

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-490-1.609

CITY OF CLEVELAND
CUYAHOGA COUNTY

MICROFILMED
AUG 10 1999

PLAN PREPARED BY:
O.D.O.T.
DISTRICT 12



PROJECT DESCRIPTION:

THIS PROJECT INCLUDES THE REMOVAL OF FORM BOARDS, CLEANING AND REPAIRING DRAINAGE SYSTEM, PATCHING ABUTMENT BACKWALL SPALL, SEALING ABUTMENTS AND WEARING SURFACE REPAIR.

The Standard 1997 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and 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 highways to traffic and provisions for the maintenance and safety of traffic will be as indicated in the plans.

ENGLISH BRIDGE NO.: CUY-490-0100

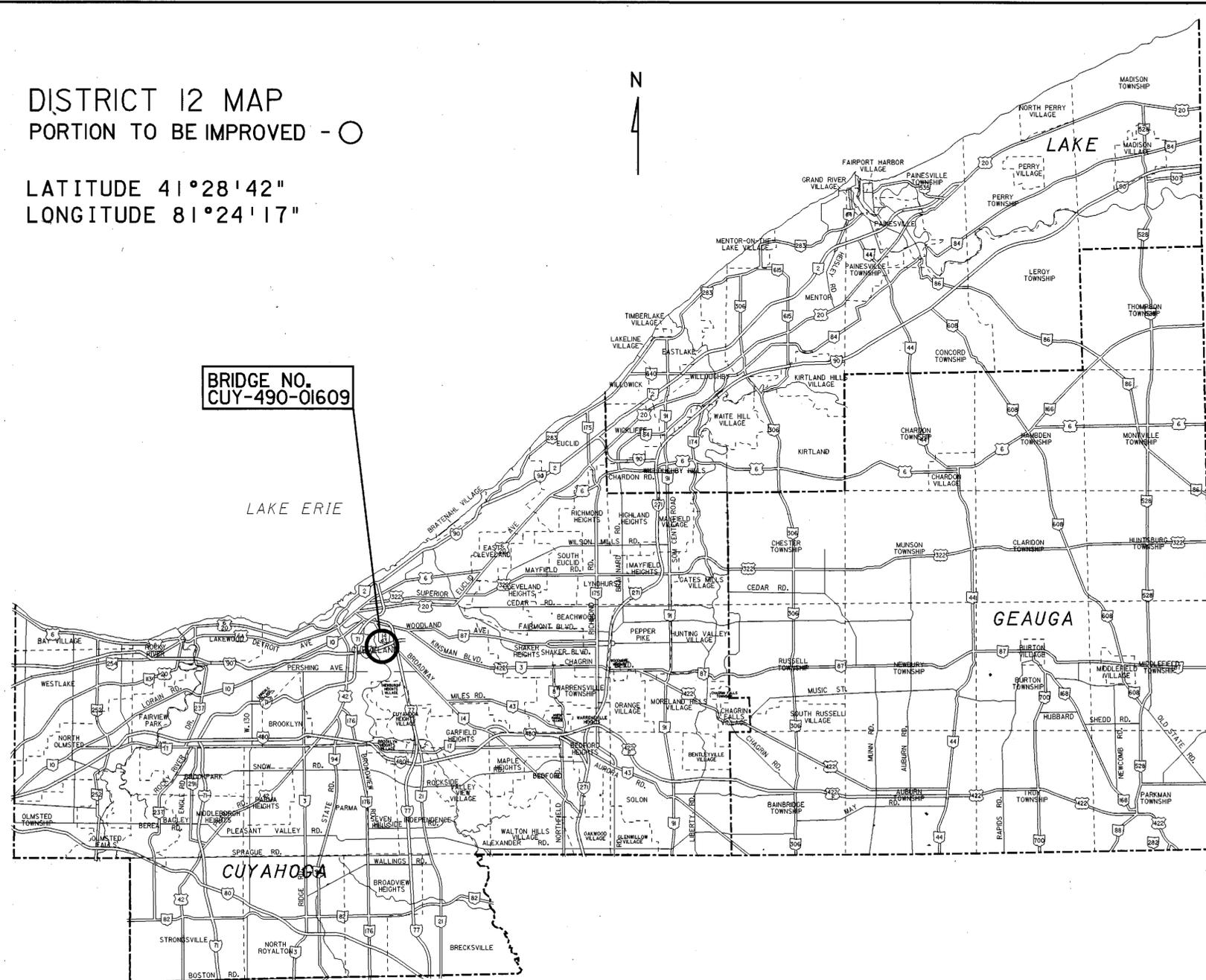
Approved
Date 27-JAN-98 *David J. Coulter*
District Deputy Director of Transportation

Approved
Date 2-20-98 *Gregory J. ...*
Director, Department of Transportation

DISTRICT 12 MAP
PORTION TO BE IMPROVED - ○

LATITUDE 41°28'42"
LONGITUDE 81°24'17"

BRIDGE NO.
CUY-490-01609



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SHEETS DELETED 5

UNDERGROUND UTILITIES

**2 WORKING DAYS
BEFORE YOU DIG**

CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

**NON MEMBERS
MUST BE CALLED DIRECTLY**



| STANDARD DRAWINGS | SUPPLEMENTAL SPECIFICATIONS |
|--------------------|-----------------------------|
| MT-35.10M 1/30/95 | |
| MT-35.11M 1/30/95 | |
| MT-97.10M 4/25/94 | |
| MT-105.10M 4/25/94 | |
| MT-105.11M 4/25/94 | |

FEDERAL PROJECT NO.

PID NO.
17506

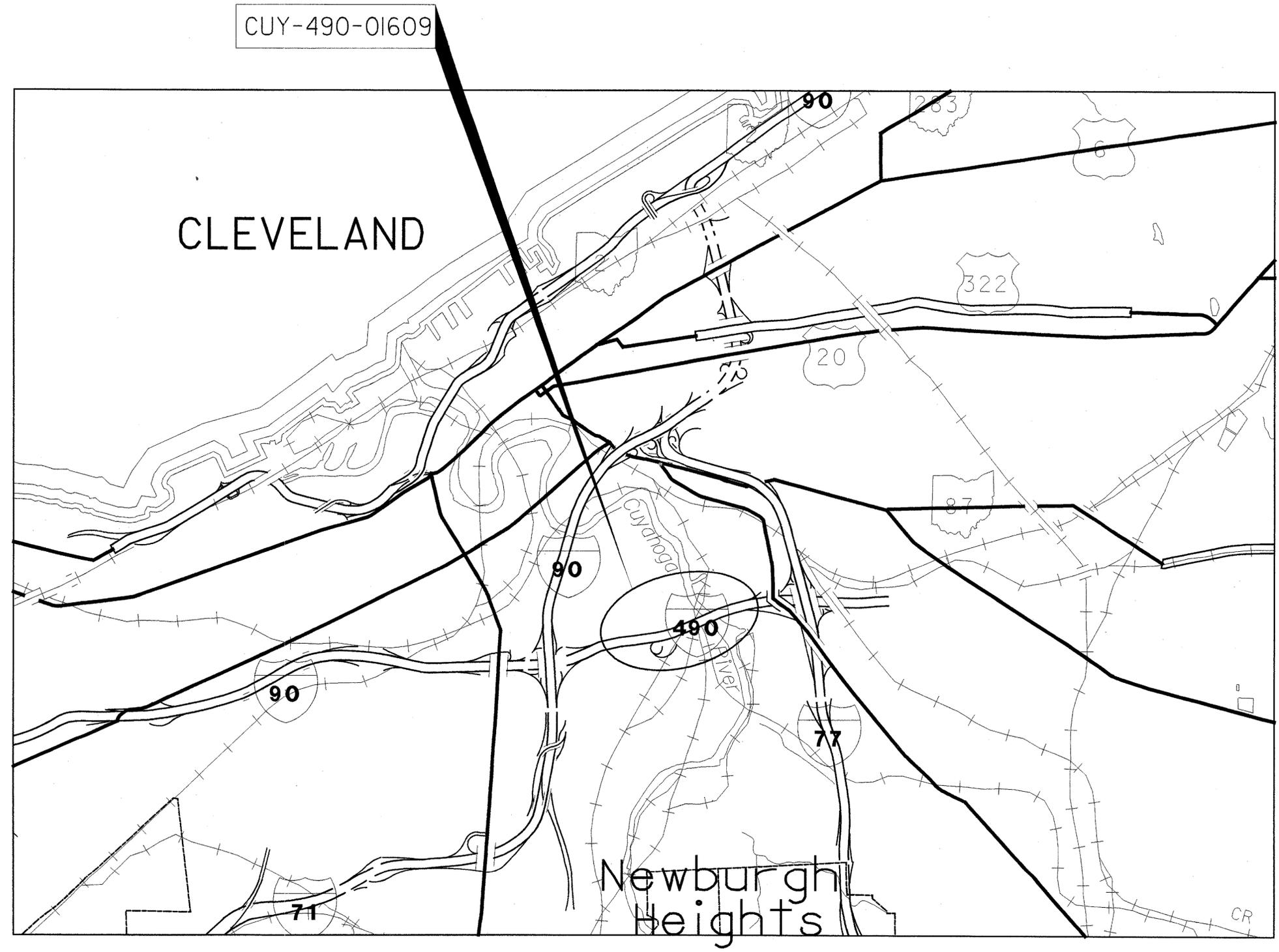
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT

CUYAHOGA COUNTY
CUY-490-1.609

PLOT SUBMITTED BY: mmalloy
 PLOT SUBMITTED: 05-11-98
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 FILE NAME: dgn
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PROPOSAL NOTES

COOPERATION WITH RAILROAD
 BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE
 PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS, CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05 AND 105.02

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES 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. PLANS OF THE EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT THE ODOT DISTRICT TWELVE OFFICE IN GARFIELD HEIGHTS, OHIO.

LIMITATIONS OF OPERATIONS

THE CONTRACTOR'S ACTIVITIES AND WORK SCHEDULE SHALL BE CONSTRAINED BY THE FOLLOWING SPECIAL LIMITATIONS.

1. MAINTENANCE OF TRAFFIC RESTRICTIONS
2. SUNDAY WORK IS PERMITTED.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

ITEM SPECIAL CLEANING BRIDGE DRAINAGE SYSTEM

THIS ITEM SHALL CONSIST OF INSPECTING AND REMOVING ALL DIRT AND DEBRIS FROM ALL BRIDGE DRAINAGE SYSTEMS INCLUDING THE UNDERGROUND STORM SEWER TO THE ADJACENT MANHOLE AND THE PAVED GUTTER LOCATED ON THE SOUTH SIDE OF THE BRIDGE.

THE CONTRACTOR SHALL SWEEP THE SHOULDERS PRIOR TO TO THE CLEANING OF THE DRAINAGE SYSTEM AND AFTER ALL WORK HAS BEEN COMPLETED.

AFTER THE DIRT AND DEBRIS ARE REMOVED THE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER MAKING CERTAIN THE WATER FLOWS SMOOTHLY. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT PRIOR TO BEGINNING OF WORK FOR THE PURPOSE OF EXAMINATION.

COST FOR FURNISHING ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE BID PRICE FOR THIS ITEM.

| ITEM | UNIT | DESCRIPTION |
|---------|------|---------------------------------|
| SPECIAL | LUMP | CLEANING BRIDGE DRAINAGE SYSTEM |

ITEM - 518 STRUCTURE DRAINAGE, MISC.: PARTIAL REPLACEMENT OF NEOPRENE DRAINAGE TROUGH

THIS ITEM SHALL CONSIST OF ALL REMOVAL AND DISPOSAL, MATERIALS, MEASURING, CALCULATIONS, CUTTING, LABOR, AND EQUIPMENT NECESSARY TO REPLACE A PORTION OF NEOPRENE TROUGH, END PANEL, AND NEOPRENE DOWNSPOUT AS SPECIFIED IN THE PLANS AT THE FOLLOWING LOCATIONS:

- NORTH END OF EXPANSION JOINT 1L
 - SOUTH END OF EXPANSION JOINT 1R
 - NORTH AND SOUTH END OF EXPANSION JOINT 2L AND 2R
 - SOUTH END OF EXPANSION JOINT 3L, 3R, 4L, AND 4R
- AND IN THIS NOTE, AND AS DIRECTED BY THE ENGINEER.

THE SHEET MATERIAL SHALL BE 3mm THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEET SHALL BE "FAIRPRENE NUMBER NN-0003" AS MANUFACTURED BE E.I. DUPONT DE NEMOURS AND COMPANY INCORPORATED, "WINGPRENE" AS MANUFACTURED BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED EQUAL. THE SHEETING SHALL CONFORM TO THE FOLLOWING:

| DESCRIPTION OF TEST | ASTM METHOD | REQUIREMENT |
|--|-------------|-------------|
| THICKNESS (mm) | D 751 | 3 ±0.3 |
| BREAKING STRENGTH, GRAB Wx F (N) MIN. | D 751 | 3115 X 3115 |
| ADHESIVE 25mm STRIP 51mm MIN., (N) MIN. | D 751 | 40 |
| BURST STRENGTH (MULLEN) (kPa) MIN. | D 751 | 9653 |
| HEAT AGING 70 HOURS AT 100°C, 180 DEGREES BEND | D 2136 | NO CRACKING |
| LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40°C, BEND AROUND 6mm MANDREL | D 2136 | NO CRACKING |

THE NEOPRENE DOWNSPOUTS SHALL BE FIELD INSTALLED TO INSURE PROPER ALIGNMENT WITH HOPPER.

ALL DOWNSPOUTS, SPLICES, AND END PANELS SHALL BE INSTALL USING ADHESIVES. ADHESIVES FOR FIELD BONDING SHALL BE SIKASTIX 323 BY THE SIKA CHEMICAL CORPORATION OF LYNHURST, NEW JERSEY; FEL-POXY FP-101 BY FELT PRODUCTS MANUFACTURING COMPANY OF SKOKIE, ILLINOIS; MARK-184 BY POLY-CARB OF SOLON, OHIO; OR OTHER AS RECOMMENDED BY THE SHEETING MANUFACTURER.

PRIOR TO INSTALLATION, ALL SURFACES WHICH ARE TO BE BONDED TOGETHER SHALL BE THOROUGHLY CLEANED AND KEPT DRY UNTIL THE ADHESIVE HAS BEEN APPLIED.

THE PREPERATION OF SURFACES SHALL BE ACCOMPLISHED NOT MORE THAN 24 HOURS PRIOR TO ADHESIVE BONDING, IMMEDIATELY AFTER MECHANICAL PREPARATION, THE FRESH SURFACES SHALL BE WIPED WITH METHYLETHYL, KETONE, TOLUENE, OR OTHER APPROVED SOLVENTS TO REMOVE CONTAMINANTS. CONTINUOUS AND CONSISTENT PRESSURE SHALL BE MAINTAINED ON THE BONDED COMPONENTS UNTIL THE ADHESIVE HAS ACHIEVED ENOUGH STRENGTH TO RESIST STRESS.

PRIOR TO USE, ALL EXTERIOR NEOPRENE SURFACES SHALL BE CLEANED WITH METHYLETHYL, KETONE, TOLUENE, OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN, NOT MORE THAN SEVEN (7) DAYS PRIOR TO INSTALLATION, A THIN COATING OF APPROVED CYCLIZING PASTE SHALL BE APPLIED TO THE NEOPRENE BONDING SURFACE ONLY. AFTER 25 TO 40 MINUTES, THE PASTE SHALL BE WASHED FROM THE SURFACES WITH CLEAN WATER.

SUBSTRATE SURFACES SHALL BE CLEAN, DRY AND MAINTAINED ABOVE 7°C DURING INSTALLATION AND ADHESIVE CURING. SUPPLEMENTAL HEATING WILL BE PERMITTED. ADHESIVE SHALL BE APPLIED LIBERALLY TO THE NEOPRENE BONDING SURFACES USING A SERRATED SPATULA IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COATING.

THE ACCEPTED NUMBER OF PARTIAL REPLACEMENTS OF NEOPRENE DRAINAGE TROUGH WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER PARTIAL REPLACEMENT, WHICH SHALL BE FULL COMPENSATION FOR ALL REMOVAL AND DISPOSAL, MATERIALS, MEASURING, CALCULATING, CUTTING, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

| ITEM | UNIT | DESCRIPTION |
|------|------|--|
| 518 | EACH | STRUCTURE DRAINAGE, MISC.: PARTIAL REPLACEMENT OF NEOPRENE DRAINAGE TROUGH |

ITEM - 518 STRUCTURE DRAINAGE, MISC. NEOPRENE TROUGH END PANEL REPLACEMENT

THIS ITEM SHALL CONSIST OF ALL REMOVAL AND DISPOSAL, MATERIALS, MEASURING, CALCULATIONS, CUTTING, LABOR, INSTALLATION, AND EQUIPMENT NECESSARY TO REPLACE NEOPRENE END PANELS AS SPECIFIED IN THE PLANS AT THE FOLLOWING LOCATIONS:

- SOUTH END OF EXPANSION JOINT 1L
- NORTH END OF EXPANSION JOINT 1R
- NORTH END OF EXPANSION JOINT 3L, 4L, AND 4R
- NORTH AND SOUTH END OF EXPANSION JOINT 5R
- SOUTH END OF EXPANSION JOINT 6CB

AND IN THIS NOTE, AND AS DIRECTED BY THE ENGINEER.

THE NEOPRENE END PANEL SHALL BE THE SAME MATERIAL AND THICKNESS AS SPECIFIED IN ITEM - 518 STRUCTURE DRAINAGE, MISC.: PARTIAL REPLACEMENT OF NEOPRENE DRAINAGE TROUGH

THE NEOPRENE END PANEL SHALL BE INSTALLED USING AN ADHESIVE AS SPECIFIED IN ITEM - 518 STRUCTURE DRAINAGE, MISC.: PARTIAL REPLACEMENT OF NEOPRENE DRAINAGE TROUGH

THE ACCEPTED NUMBER OF NEOPRENE END PANEL REPLACEMENTS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER NEOPRENE END PANEL REPLACEMENT, WHICH SHALL BE FULL COMPENSATION FOR ALL REMOVAL AND DISPOSAL, MATERIALS, MEASURING, CALCULATING, CUTTING, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

| ITEM | UNIT | DESCRIPTION |
|------|------|--|
| 518 | EACH | STRUCTURE DRAINAGE, MISC.: NEOPRENE TROUGH END PANEL REPLACEMENT |

| | |
|---------------|---|
| GENERAL NOTES | DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT. |
| | DATE 1-98 |
| | REVIEWED GWM |
| | STRUCTURE FILE NUMBER 1811991 |
| | DRAWN JRC |
| | REVISED |
| | DESIGNED JRC |
| | CHECKED MJM |
| | CUYAHOGA COUNTY CUY-490-1.609 |
| | 3 21 |

ITEM SPECIAL - SEALING OF CONCRETE SURFACES

A sealer shall be applied to exposed concrete surface areas of bridges as designated on the plans and below. Sealing shall not be done until all concrete repairs to the bridge have been completed.

When the pay item description designates epoxy-urethane, the first coat shall be epoxy and the second coat shall be urethane. When the pay item description designates 'non-epoxy', only a non-epoxy sealer shall be used. The selected sealer shall be one that is on ODOT's approved list which is maintained in the Bureau of Testing at 1600 West Broad Street in Columbus, Ohio. When the pay item description does not designate a sealer, any sealer included herein may be used.

To be coated with epoxy-urethane

1. Backwall, abutment seats, and breastwall of the west abutment.
2. Backwall, abutment seats, and breastwall of the east abutment.
3. Backwall, abutment seats, and breastwall of abutment BC.
4. Backwall, abutment seats, and breastwall of abutment CB.

To be coated with non-epoxy

1. None

Description: This item shall consist of the necessary labor, materials and equipment to prepare and treat Portland cement concrete surfaces with an approved sealer in accordance with these specifications. The sealer shall be applied at the coverage rates specified under Coverage for the types of surfaces and the type of sealer described herein.

Materials: The sealing system shall meet the following performance requirements:

1. Absorption - The absorption of treated concrete under total immersion shall not exceed 1.0% after 48 hours or 2.0% after 50 days (ASTM C642, non-air entrained concrete). Concrete should be proportioned and mixed in accordance with ASTM C672.
2. Scaling Resistance - treated concrete shall pass ASTM C672, Scaling Resistance test with a rating of 'No Scaling' after 100 cycles (non-air entrained concrete) as compared to 'Severe Scaling' on untreated concrete.
3. NCHRP 244, Series II - Cube Test
 - 3.1 Weight gain - not to exceed 25% of untreated cube
 - 3.2 Absorbed chloride - not to exceed 25% of untreated cube
4. NCHRP 244, Series IV - Southern Exposure
 - 4.1 Absorbed chloride - not to exceed 1.0% of untreated concrete

To become prequalified, the manufacturer shall provide to the Laboratory the test data from an approved independent testing facility, plus one liter (one quart) sample and the MSDS. Drums or containers of the sealer or sealer components shall be delivered to the job site unopened and with the manufacturer's numbered seal intact.

Surface Condition: Surfaces to which sealers are to be applied shall be dry and free from dust, dirt, oil, wax, curing compounds, efflorescence, laitance, coatings and other foreign materials and shall be structurally sound. Weak sections and spalled areas which are designated for repair on these plans shall have been repaired before application of the sealer.

The sealer shall be applied only after new concrete has air dried for at least five (5) days after completion of required curing. Cavities which require grout filling shall have been filled, cured and air-dried for five days.

Accelerated cured precast concrete may be treated after R has attained the required 28 day strength and after cavities which require grout filling have been filled, cured and air-dried for five days.

Surface Preparation: The surface shall be thoroughly cleaned to remove dust, dirt, oil, wax, curing components, efflorescence, laitance, coatings and other foreign materials. The use of chemicals and other cleaning compounds to facilitate the removal of these foreign materials shall be approved by the sealer manufacturer or its representative before use. The sealer shall be applied within 48 hours following surface preparation.

Cleaning equipment shall be fitted with suitable traps, filters, drip pans and other devices to prevent oil and other foreign material from being deposited on the surface.

Required cleaning methods for the following categories are:

- A. All concrete surfaces to be sealed
 1. A sandblast followed by air brooming or power sweeping to remove dust and sand from the surfaces and opened pores. All curing compound shall be removed.

Application: Concrete sealer shall be applied as follows:

- A. Epoxy & Urethane sealer. Apply sealer at surface temperature of 10C (50 F) or above with a brush, squeegee, roller or spraying equipment. Two coats of sealer shall be applied. Elapsed time between coats shall be in accordance with the manufacturer's recommendation. Both coats shall be from the same manufacturer. The second coat only shall be tinted to Federal Color Standard No. 36492 (gray) or 37722 (buff), unless otherwise specified on the plan. Pigment content shall be limited so as not to reduce sealing effectiveness of the second coat. Sealers shall be free from sags and runs.
- B. Non-epoxy sealer. A non-epoxy sealer shall be applied according to the manufacturer's recommended mode of application and under the observation of the Engineer. When spray equipment is used, the sealer shall be sprayed onto concrete surfaces in a one-pass operation. On vertical surfaces a second pass may be required within 10 to 15 minutes to achieve absorption at the application rate prescribed under Coverage. Clear non-epoxy sealers shall be tinted with a vanishing dye that does not damage the concrete.
 1. Do not proceed with application of the sealer if the ambient temperature is below 5C (40 degrees F) or when the ambient temperature is expected to fall below 0C (32 degrees F) within 12 hours after application.
 2. Do not proceed with application of the sealer if rain is anticipated within 2 hours after application.
 3. On horizontal surfaces the sealer shall be uniformly sprayed to saturate/flood the surface. Proper quantities are being applied when the sealer stands for a few seconds before completely penetrating. If recommended by the manufacturer, the sealer shall be broomed in. On smooth-finished or dense concrete, all excess material shall be squeegeed off after 10 minutes to assure that no excess solids remain which can cause excessive slickness.

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PLOTTED BY: mma/loy
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4. On vertical surfaces the sealer shall be uniformly sprayed to saturate/flood the surface. Proper quantities of penetrating sealer are being applied when excess sealer runs 150 to 300 mm (6 to 12 inches) below the spray pattern. If recommended by the manufacturer, the sealer may be applied with a brush or roller.

If the applicator is unable to complete the entire application continuously, the location where the application was stopped shall be noted or clearly marked.

Test Application: Prior to final application, the Contractor shall apply sealer to measured test coverage areas on horizontal and vertical surfaces of the different components of the structure to be sealed for the purpose of demonstrating the desired physical and visual effect of an epoxy application or of obtaining a visual illustration of the absorption necessary to achieve the specified coverage rate for a non-epoxy sealer. In the latter case, the applicator shall use at least 2 liter (2/3 gallon) of sealer following the manufacturer's recommended method of application for the total of the test surfaces. Horizontal test surfaces shall be located on the deck and on the safety curb or sidewalk, and vertical test surfaces shall be located on an abutment parapet and pier face so that the different textures are displayed.

Coverage: Epoxy sealer shall be applied to concrete surfaces as designated on the plans and in this note at the rate of 3.0 square meter/liter (120 square feet per gallon) for each coat. This specified coverage shall be obtained regardless of the number of passes per coat.

Non-epoxy sealers: A minimum of one liter (gallon) of non-epoxy sealer shall be applied for each: 2.5 square meter (100 square feet) of surfaces subject to abrasive wear (bridge decks, bridge deck shoulders and sidewalks); 3.1 square meter (125 square feet) of curbs and vertical surfaces of beams and deck slabs subject to direct roadway drainage; and 3.7 square meter (150 square feet) of surfaces not subject to abrasive wear of direct roadway drainage (for example, parapets, abutments, pier caps and median dividers).

Appearance. The sealer shall result in a uniform appearance. Also, the second coat of sealer shall be opaque.

Traffic: Traffic may be allowed on deck shoulder areas which have been sealed with an epoxy or urethane sealer after 12 hours. Traffic may be allowed on a deck only after a non-epoxy sealer appears totally dry.

Precautions. Precautions shall be followed as indicated on the manufacturer's MSDS.

Protection of Adjoining Surfaces and the Public. When applying a sealer, the Contractor shall protect by masking off or by other means adjoining surfaces of the structure which are not to be sealed. The Contractor shall also make provision to protect the public when applying sealer to the fascia of a bridge and/or portions of the underside of the deck of a bridge that spans an area used by the public.

Asphalt and mastic type surfaces shall be protected from spillage and heavy overspray. The sealers shall not come in contact with joint sealants which have not been allowed to cure according to the manufacturer's instructions. Joint sealants, traffic paints and asphalt overlays may be applied to the treated surfaces 48 hours after the sealer has been applied. When a siloxane sealer is applied, the adjoining and nearby surfaces of steel, aluminum or glass shall be covered where there is a possibility of sealer being deposited on the surfaces.

Environmental Requirements. Protect plants and vegetation from overspray by covering with drop cloths.

Equipment. Application equipment shall be that which is recommended by the sealer manufacturer. The spray equipment, tanks, hoses, brooms, rollers, coaters, squeegees, etc., shall be thoroughly clean, free of foreign matter, oil residue and water prior to applying the concrete sealer.

Mixing. Mixing shall be according to the manufacturer's recommended procedures. Material shall be mixed to a uniform consistency which shall be maintained during application.

Storage. Sealer components shall be stored in tightly sealed containers in a dry location and as recommended by the manufacturer.

Method of Measurement. The quantity shall be the actual area in square meters (square yards) of surfaces sealed and shall include surface preparation, material, application, and prequalification testing costs.

Basis of Payment. Payment for completed work will be made at the contract price for:

| ITEM | UNIT | DESCRIPTION |
|---------|--------------|---|
| Special | Square Meter | Structure Misc.: Sealing of concrete surfaces with epoxy-urethane |

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

Patch spall located on the east abutment backwall approximately 26m north of E 490 measured along E bearings.

Spall is approximately 305mm x 305mm x 125mm deep and is adjacent to the joint armor. The spall shall be patched per proposal note "PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR".

ITEM 202 - PORTIONS OF STRUCTURE REMOVED

This item shall consist of the removal of the Latex Modified Concrete overlay at the locations described in the plan to a minimum depth of 32 mm and and all disposal, labor, and equipment necessary to complete the to removal.

Payment for completed work will be made at the contract price bid under:

| ITEM | UNIT | DESCRIPTION |
|------|-----------|-------------------------------|
| 202 | Sq. Meter | Portions of Structure Removed |

ITEM 202 - PORTIONS OF STRUCTURE REMOVED

This item shall consist of all removal and disposal, labor, and equipment necessary to remove all form boards as specified in the plans and as directed by the engineer.

The accepted number of form boards removed will be paid for at the contract unit price per portions of structure removed, which shall be full compensation for all removal and disposal, labor, and equipment necessary to complete this item.

Payment for completed work will be made at the contract price bid under:

| ITEM | UNIT | DESCRIPTION |
|------|------|-------------------------------|
| 202 | Each | Portions of Structure Removed |

GENERAL NOTES

CUYAHOGA COUNTY
 CUY-490-1.609

DESIGN AGENCY
 OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

DATE 1-98
 REVIEWED GWM
 STRUCTURE FILE NUMBER 181/991

DESIGNED JRC
 CHECKED MJM

DRAWN JRC

REVISY

5A

21

PLOTTED BY: jcaiani
 PLOTTED FROM: jcaiani
 FILE NAME: f:\le name.dgn
 PLOT SUBMITTED: 24-DEC-1997 17:55

ITEM SPECIAL-SEALING NEW CONCRETE WEARING SURFACE CONSTRUCTION JOINTS WITH HMMM

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF THE LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE APPLICATION OF SEALER TO NEW CONCRETE WEARING SURFACE CONSTRUCTION JOINTS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

THIS WORK ITEM SHALL NOT BE PERFORMED DURING THE PERIOD BEGINNING NOVEMBER 1ST AND ENDING MARCH 31ST.

B. MATERIALS

THE MATERIAL USED FOR TREATING THE CONSTRUCTION JOINTS SHALL BE A LOW VISCOSITY, NON-FUMING, HIGH MOLECULAR WEIGHT METHACRYLATE (HMMM) RESIN CONFORMING TO THE FOLLOWING:

1. VISCOSITY SHALL BE LESS THAN 25 CPS (BROOKFIELD VISCOMETER, MODEL RVT WITH UL ADAPTER OR MODEL LVF, #1 SPINDLE AND UL ADAPTER @ 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) ASTM D 1824)
2. DENSITY SHALL BE GREATER THAN 1.0 KG/L (8.4 LBS/GAL) @ 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) (ASTM D 2849)
3. FLASH POINT SHALL BE GREATER THAN 93 DEGREES CELSIUS (200 DEGREES FAHRENHEIT) (PENSKY-MARTENS CC) (ASTM D 93)
4. VAPOR PRESSURE SHALL BE LESS THAN 1.0 MM Hg @ 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) (ASTM D 323)
5. TG (DSL) SHALL BE GREATER THAN 58 DEGREES C (135 DEGREES FAHRENHEIT) (ASTM D 3418)
6. SHELF LIFE SHALL BE 1 YEAR MINIMUM AT MANUFACTURER'S RECOMMENDED ENVIRONMENTAL CONSIDERATIONS
7. GEL TIME SHALL BE GREATER THAN 40 MINUTES - 100 G MASS (ASTM D 2471) (THIN FILM)
8. PERCENT SOLIDS SHALL BE GREATER THAN 90% BY WEIGHT
9. BOND STRENGTH SHALL BE GREATER THAN 1500 PSI (ASTM 882)

THE RESIN MAY BE OBTAINED FROM ONE OF THE FOLLOWING SUPPLIERS:

| | |
|---|---|
| 3M COMPANY 3M CENTER ST. PAUL, MN 55144-1000 PHONE: 1-612-733-7119 | SIKA CORPORATION 201 POLITO AVENUE LYNDHURST, NJ 07071 PHONE: 1-201-933-8800 |
|---|---|

ADHESIVE ENGINEERING COMPANY
CONCRETE 2075
1411 INDUSTRIAL ROAD
SAN CARLOS, CA 94070
PHONE: 1-415-592-7900

TRANSCO INDUSTRIES, INC.
20 JONES STREET
NEW ROCHELLE, NY 10801
PHONE: 1-914-636-1000

A COMPATIBLE PROMOTER/INITIATOR SYSTEM CAPABLE OF PROVIDING THE SAME PHYSICAL QUALITIES OF THE HARDENED RESIN AS IF PROMOTED/INITIATED WITH 2% COBALT NAPHTHANATE (6%) AND 2% CUMENE HYDROPEROXIDE SHALL ALSO BE PROVIDED. MATERIALS SHALL BE STORED AT 18-27 DEGREES CELSIUS (65-80 DEGREES FAHRENHEIT). THE SYSTEM SHALL PROVIDE A RESIN SET TIME OF NOT LESS THAN 40 MINUTES TO NOT MORE THAN 1-1/2 HOURS AT THE TIME AND TEMPERATURE OF APPLICATION. THE GEL TIME SHALL BE ADJUSTED TO COMPENSATE FOR THE CHANGE IN TEMPERATURE THROUGHOUT THE DAY. THE TEMPERATURE OF THE SURFACES TO BE TREATED MAY RANGE FROM 10 DEGREES CELSIUS (50 DEGREES FAHRENHEIT) TO 50 DEGREES CELSIUS (120 DEGREES FAHRENHEIT). THE CONTRACTOR SHALL ARRANGE TO HAVE A TECHNICAL REPRESENTATIVE ON SITE TO PROVIDE MIXING PROPORTIONS, EQUIPMENT SUITABILITY, AND SAFETY ADVICE TO THE CONTRACTOR AND ENGINEER. ANY CONFLICT BETWEEN THESE PROVISIONS AND REPRESENTATIVE'S ADVICE SHALL BE RESOLVED AT THE JOB SITE. THE TECHNICAL REPRESENTATIVE SHALL REMAIN AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER AGREE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF THE APPLICATION OF THE SEALER.

THE PROMOTER AND INITIATOR, IF SUPPLIED SEPARATE FROM THE RESIN, SHALL NOT CONTACT EACH OTHER DIRECTLY. CONTAINERS OF PROMOTERS OR INITIATORS SHALL NOT BE STORED TOGETHER IN A MANNER THAT WILL ALLOW LEAKAGE OR SPILLAGE FROM ONE TO CONTACT THE CONTAINERS OR MATERIAL OF THE OTHER.

BEFORE USING THE MATERIAL THE CONTRACTOR SHALL SUBMIT TO ODOT'S BUREAU OF TESTING COPIES OF THE MANUFACTURER'S CERTIFIED TEST DATA SHOWING THAT THE MATERIAL COMPLIES WITH THE QUALITATIVE AND QUANTITATIVE REQUIREMENTS OF THE SPECIFICATION. THE TEST DATA SHALL BE DEVELOPED BY AN INDEPENDENT APPROVED TESTING LABORATORY, AND SHALL INCLUDE THE BRAND NAME OF THE MATERIAL, NAME OF MANUFACTURER, NUMBER OF THE LOT TESTED AND DATE OF MANUFACTURE. WHEN THE MATERIAL HAS BEEN APPROVED BY THE DIRECTOR, FURTHER TESTING BY THE MANUFACTURER WILL NOT BE REQUIRED UNLESS THE FORMULATION OF MANUFACTURING PROCESS HAS BEEN CHANGED, IN WHICH CASE NEW CERTIFIED TEST RESULTS WILL BE REQUIRED. THE MANUFACTURER SHALL CERTIFY THAT THE FORMULATION IS THE SAME AS THAT FOR WHICH DATA HAS BEEN SUBMITTED. THE STATE RESERVES THE RIGHT TO SAMPLE AND TEST DELIVERED LOTS FOR COMPLIANCE.

C. APPLICATION

APPLICATION OF THE CONSTRUCTION JOINT SEALER MATERIAL SHALL BE IN STRICT ACCORDANCE WITH THE SUPPLIER'S CURRENT PUBLISHED INSTRUCTIONS AND/OR SPECIFIC INSTRUCTIONS OF THE MANUFACTURER'S TECHNICAL REPRESENTATIVE AND AS FOLLOWS. THE CONSTRUCTION JOINT AREA TO BE TREATED SHALL REMAIN DRY FOR A MINIMUM OF 8 HOURS AND ABOVE 10 DEGREES CELSIUS (50 DEGREES FAHRENHEIT) PRIOR TO APPLICATION. CONSTRUCTION JOINTS SHALL BE DIRECTLY SEALED WITH HMMM RESIN APPLIED WITH PLASTIC SQUEEZE BOTTLES, CAULKING OR OTHER

EQUIPMENT CAPABLE OF DELIVERING A NARROW RESIN STREAM AND APPROVED BY THE ENGINEER. ADDITIONAL APPLICATION OF MATERIAL TO THE CONSTRUCTION JOINT AREA CAN BE ANTICIPATED IF THE INITIAL APPLICATION DISSIPATES FULLY INTO THE CONSTRUCTION JOINT. IN THESE AREAS, A SECOND COAT WILL BE REQUIRED AFTER THE FIRST COAT HAS STARTED TO CURE.

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PREVENT ANY RESIN FROM FLOWING INTO LANES OPEN TO TRAFFIC.

CLEANING AND FLUSHING OF EQUIPMENT, TOOLS, ETC. SHALL BE DONE WITH AN APPROPRIATE SOLVENT, AS APPROVED BY THE ENGINEER, IN SUCH A MANNER TO MINIMIZE PERSONAL AND ENVIRONMENTAL HAZARDS. WORKMEN SHOULD BE ADVISED THE RESIN WILL SOFTEN GUM RUBBER SOLES, AND A FACE-MASK SHOULD BE USED TO PROTECT FROM ACCIDENTAL SPLASHES. CLOTHING AND LEATHER SATURATED WITH RESIN WILL HARDEN AND BECOME USELESS.

A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER OR SUPPLIER MUST BE PRESENT ON SITE PRIOR TO STARTING APPLICATION.

E. RESTRICTIONS

TRAFFIC AND EQUIPMENT SHALL NOT BE PERMITTED ON THE SEALED CONSTRUCTION JOINTS UNTIL THE HMMM RESIN IS TACK FREE AND A MINIMUM OF 6 HOURS HAVE ELAPSED SINCE APPLICATION. THE RESIN SHALL BE PROTECTED FROM MOISTURE FOR NOT LESS THAN 4 HOURS AFTER PLACEMENT.

F. METHOD OF MEASUREMENT

SEALING CONCRETE CONSTRUCTION JOINTS WITH HMMM RESIN SHALL BE MEASURED AS THE ACTUAL LENGTH IN METERS OF CONSTRUCTION JOINT SEALED.

G. BASIS OF PAYMENT

ACCEPTED QUANTITIES OF SEALING NEW CONCRETE WEARING SURFACE CONSTRUCTION JOINTS WITH HMMM RESIN SHALL BE PAID FOR AT THE UNIT PRICE BID PER METER WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, APPLICATION OF THE RESIN, PROVIDING MANUFACTURER'S TECHNICAL REPRESENTATIVE, PROTECTION OF WATERWAYS AND TRAFFIC BELOW BRIDGE, CLEAN UP AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PAYMENT SHALL BE MADE UNDER:

| ITEM | UNIT | DESCRIPTION |
|---------|-------|---|
| SPECIAL | METER | STRUCTURE MISC.; SEALING CONCRETE WEARING SURFACE CONSTRUCTION JOINTS WITH HMMM RESIN |

GENERAL NOTES

CUYAHOGA COUNTY
 CUY-490-1.609

| | | | |
|----------|------|-----------------------|---------|
| DESIGNED | JRC | CHECKED | MJM |
| DRAWN | JRC | REVISED | |
| REVIEWED | GWM | STRUCTURE FILE NUMBER | 1811991 |
| DATE | 1-98 | | |

DESIGN AGENCY
 OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

ESTIMATED QUANTITIES

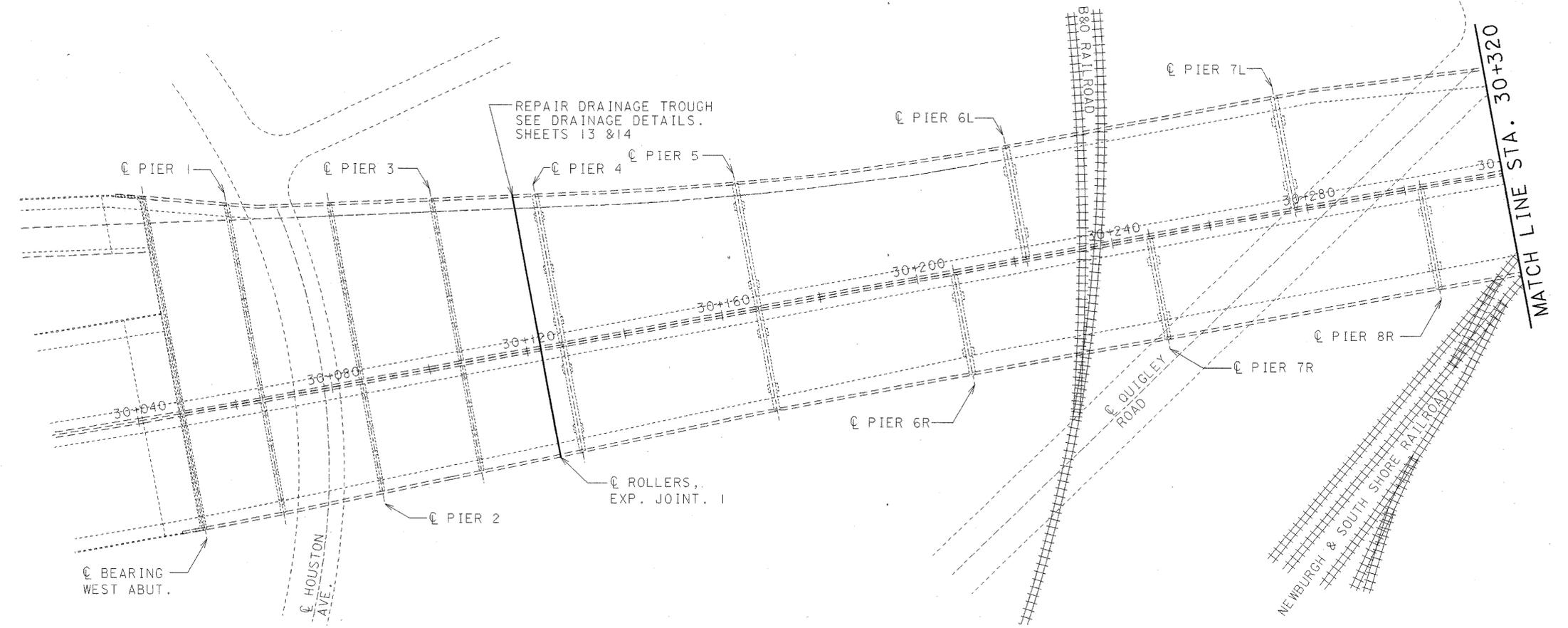
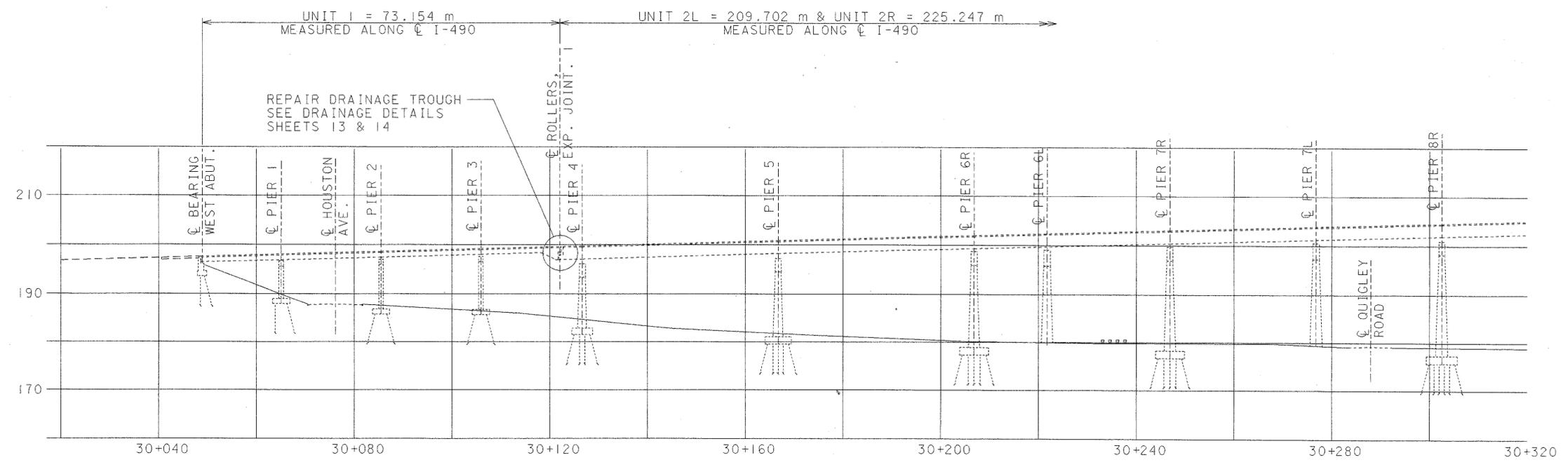
* AS DIRECTED BY THE ENGINEER

| ITEM | ITEM EXT. | DESCRIPTION | QUANTITY | UNIT |
|---------|-----------|--|----------|-----------|
| 202 | 11305 | PORTIONS OF STRUCTURE REMOVE | 618 | SQ. METER |
| 202 | 11500 | PORTIONS OF STRUCTURE REMOVE* | 11 | EACH |
| 202 | 23500 | WEARING COURSE REMOVED, ASPHALT* | 360 | SQ. METER |
| SPECIAL | 51267510 | STRUCTURE MISC.: SEALING OF CONCRETE SURFACES WITH EPOXY-URETHANE | 405 | SQ. METER |
| 518 | 62200 | STRUCTURE DRAINAGE, MISC.: PARTIAL REPLACEMENT OF NEOPRENE DRAINAGE TROUGH* | 10 | EACH |
| 518 | 62200 | STRUCTURE DRAINAGE, MISC.: NEOPRENE TROUGH END PANEL REPLACEMENT* | 8 | EACH |
| SPECIAL | 51863300 | STRUCTURE DRAINAGE, MISC.: CLEANING BRIDGE DRAINAGE SYSTEM* | LUMP | LUMP |
| SPECIAL | 51911502 | PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR | 0.25 | SQ. METER |
| SPECIAL | 51922006 | MICRO-SILICA MODIFIED CONCRETE OVERLAY (38mm THICK) | 618 | SQ. METER |
| SPECIAL | 53001300 | STRUCTURE, MISC.: SEALING NEW CONCRETE WEARING SURFACE CONSTRUCTION JOINTS WITH HMWM RESIN | 192 | METER |
| 614 | 11000 | MAINTAINING TRAFFIC | LUMP | LUMP |
| 614 | 11100 | LAW ENFORCEMENT OFFICER WITH PATROL CAR | 112 | M.H. |
| 624 | 10000 | MOBILIZATION | LUMP | LUMP |

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|  | CUYAHOGA COUNTY CUY-490-1.609 | ESTIMATED QUANTITIES CUY-490-01609 L&R I-490 OVER THE CUYAHOGA RIVER | DESIGNED JRC | CHECKED MJM | DRAWN JRC | REVISED | REVIEWED GWM | DATE 1-98 | STRUCTURE FILE NUMBER 181991 | DESIGN AGENCY OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT. |
|---|----------------------------------|--|-----------------|----------------|--------------|---------|-----------------|--------------|---------------------------------|---|

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CUYAHOGA COUNTY
 CUY-490-1.609

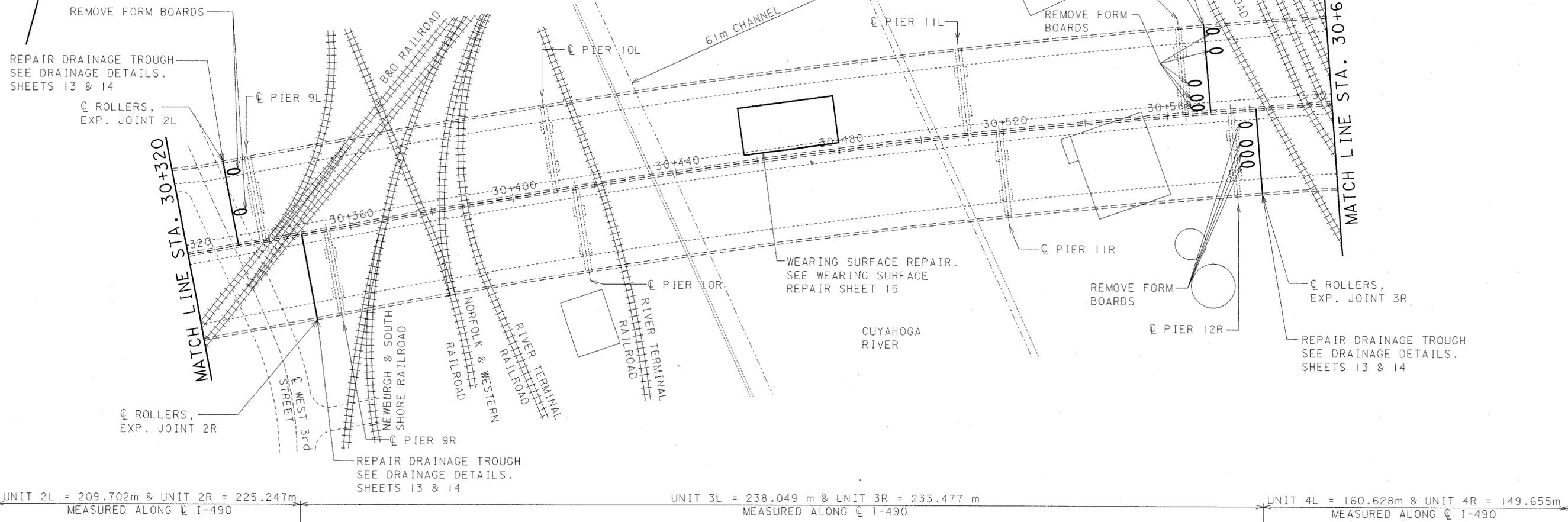
PLAN AND ELEVATION
 CUY-490-01609 L&R
 I-490 OVER THE CUYAHOGA RIVER
 STA. 30+040 TO STA. 30+320

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|----------|------|-----------------------|---------|
| DESIGNED | JRC | CHECKED | MJM |
| DRAWN | JRC | REVISED | |
| REVIEWED | GWM | STRUCTURE FILE NUMBER | 1811991 |
| DATE | 1-98 | | |

OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

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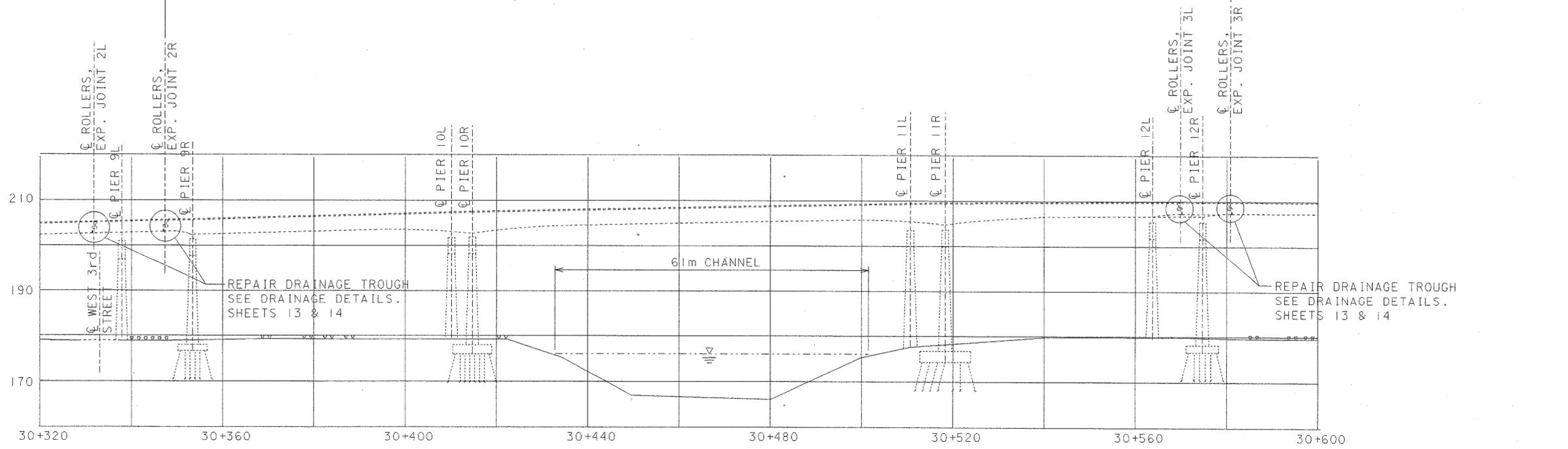
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UNIT 2L = 209.702m & UNIT 2R = 225.247m MEASURED ALONG C I-490

UNIT 3L = 238.049 m & UNIT 3R = 233.477 m MEASURED ALONG C I-490

UNIT 4L = 160.628m & UNIT 4R = 149.655m MEASURED ALONG C I-490



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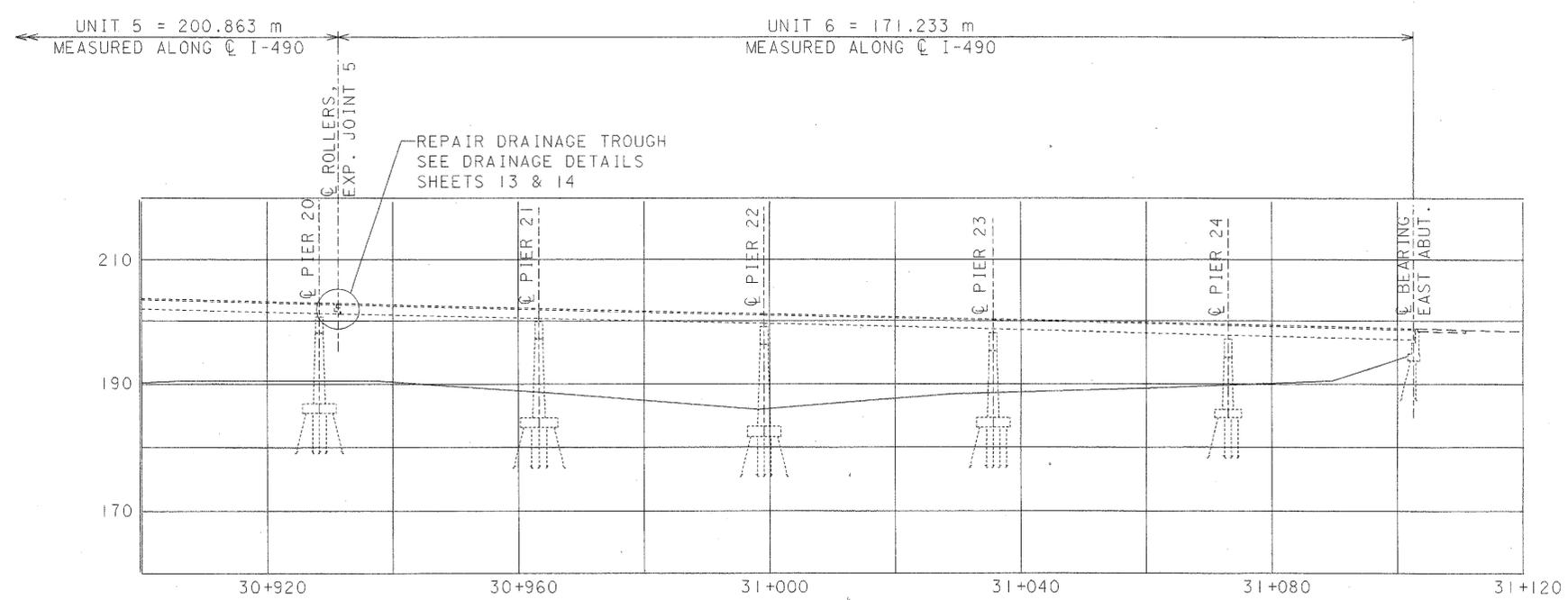
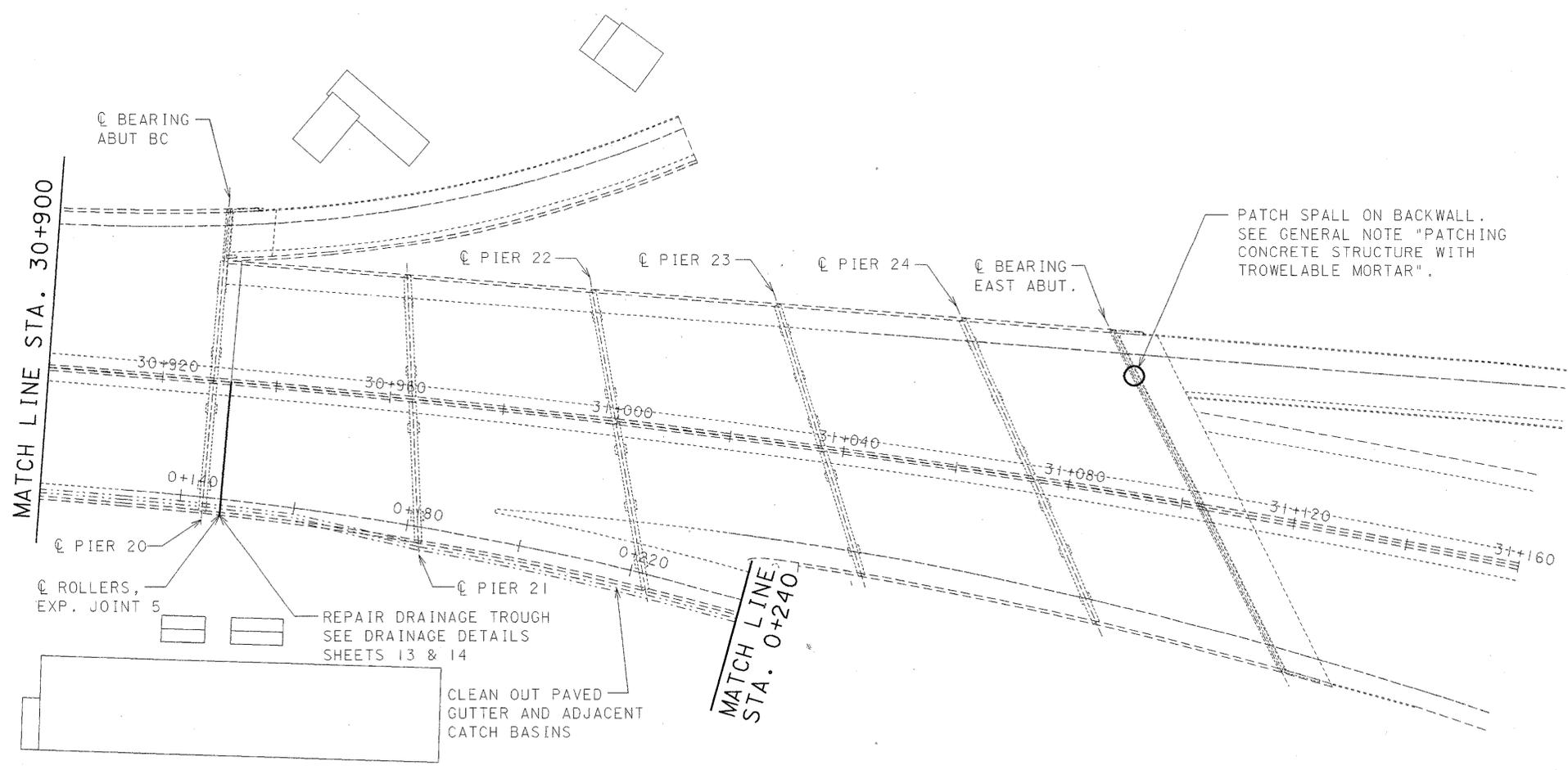
OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

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| DATE | 1-98 |
| REVIEWED | GWM |
| STRUCTURE FILE NUMBER | 18 / 1991 |
| DRAWN | JRC |
| REVISED | |
| DESIGNED | JRC |
| CHECKED | MJM |

PLAN AND ELEVATION
 CUY-490-01609 L&R
 I-490 OVER THE CUYAHOGA RIVER
 STA. 30+320 TO STA. 30+600

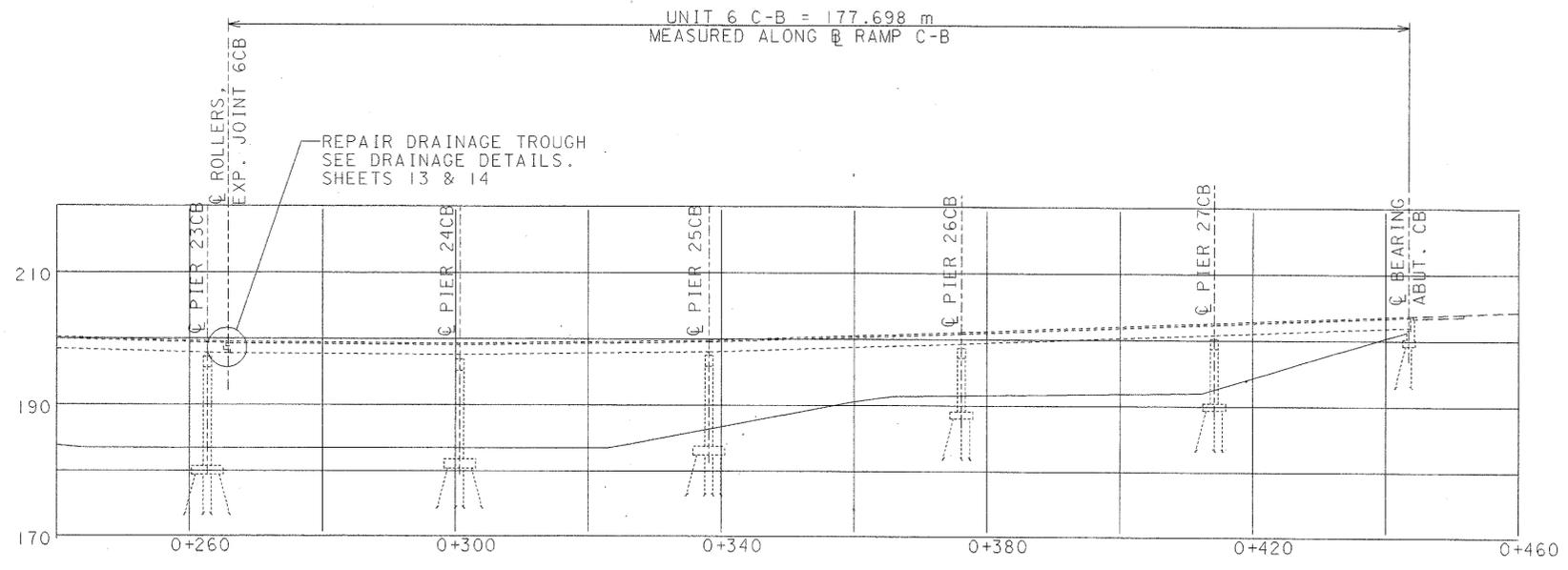
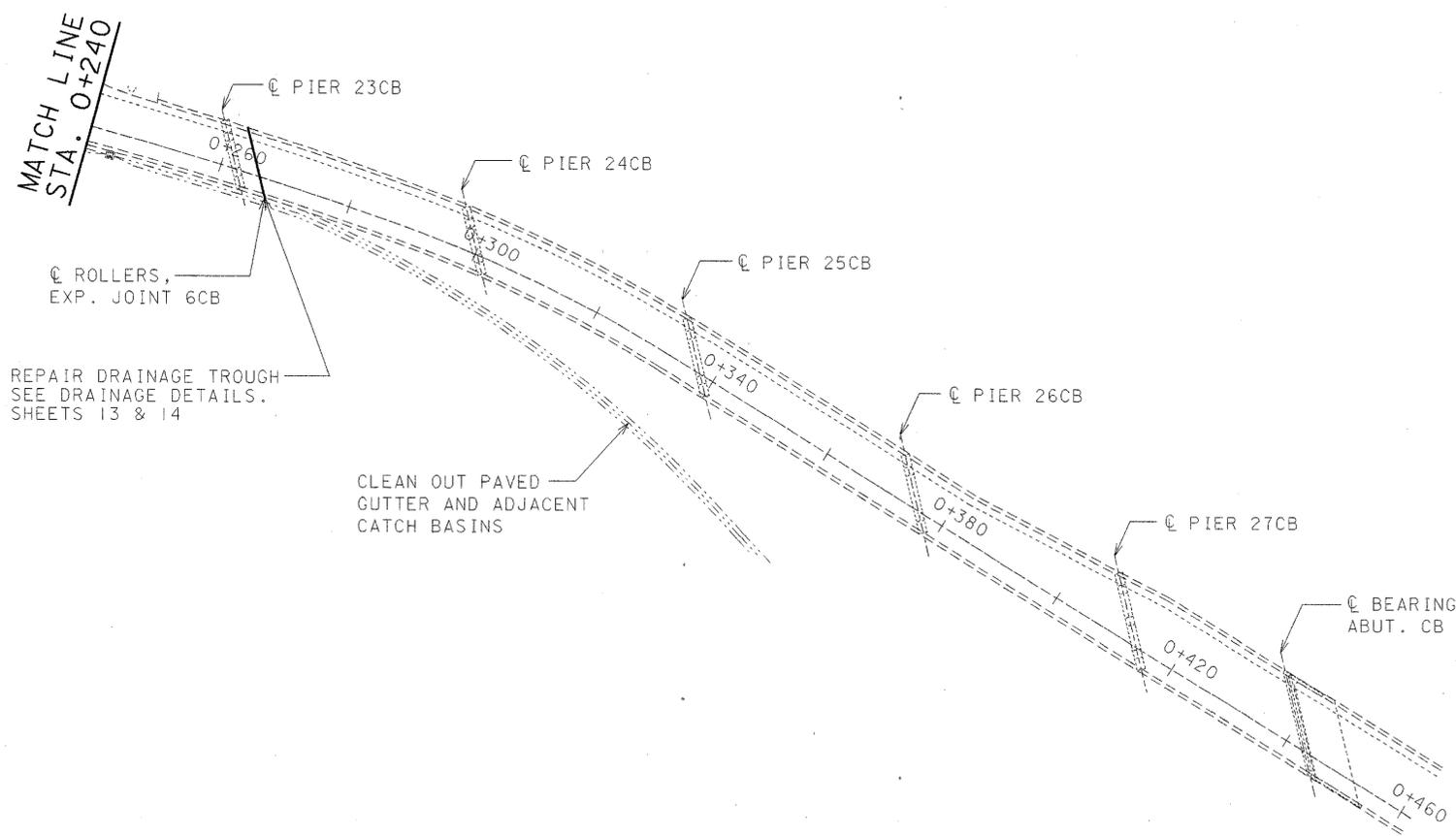
CUYAHOGA COUNTY
 CUY-490-1.609

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OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

DATE: 1-98
 REVIEWED: GMM
 STRUCTURE FILE NUMBER: 181991
 DRAWN: JRC
 REVISED:
 DESIGNED: JRC
 CHECKED: MJM

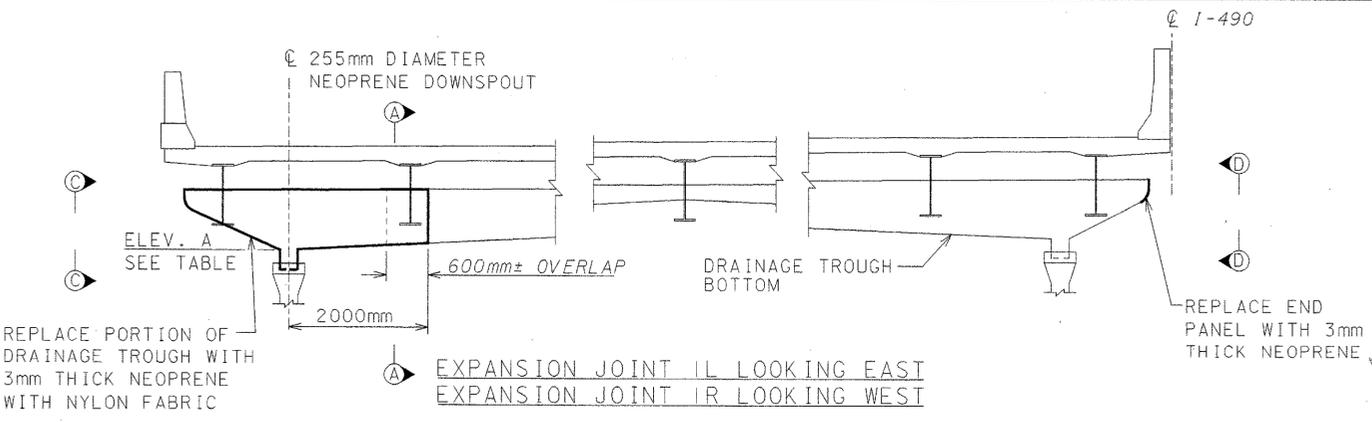
PLAN AND ELEVATION
 CUY-490-01609 L&R
 I-490 OVER THE CUYAHOGA RIVER
 STA. 0+240 TO STA. 0+460

CUYAHOGA COUNTY
 CUY-490-1.609

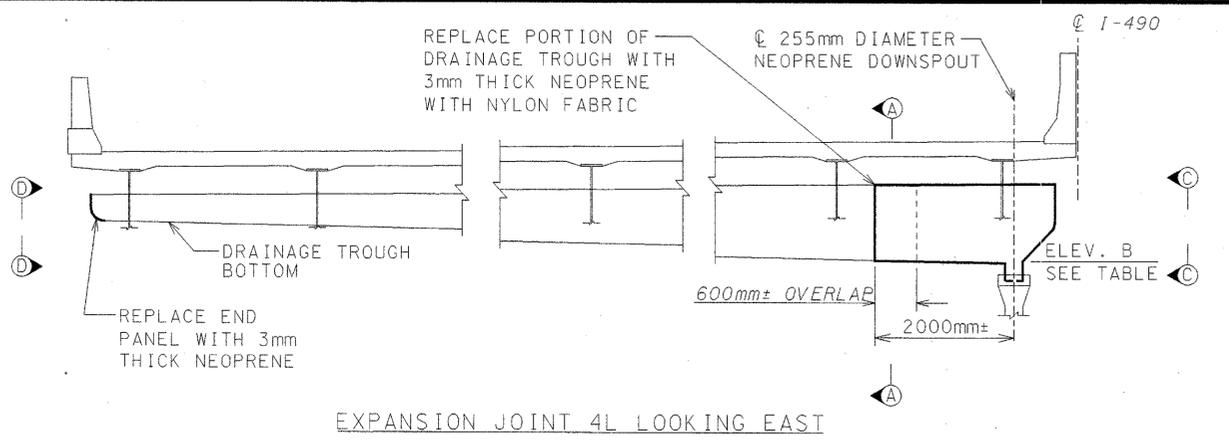
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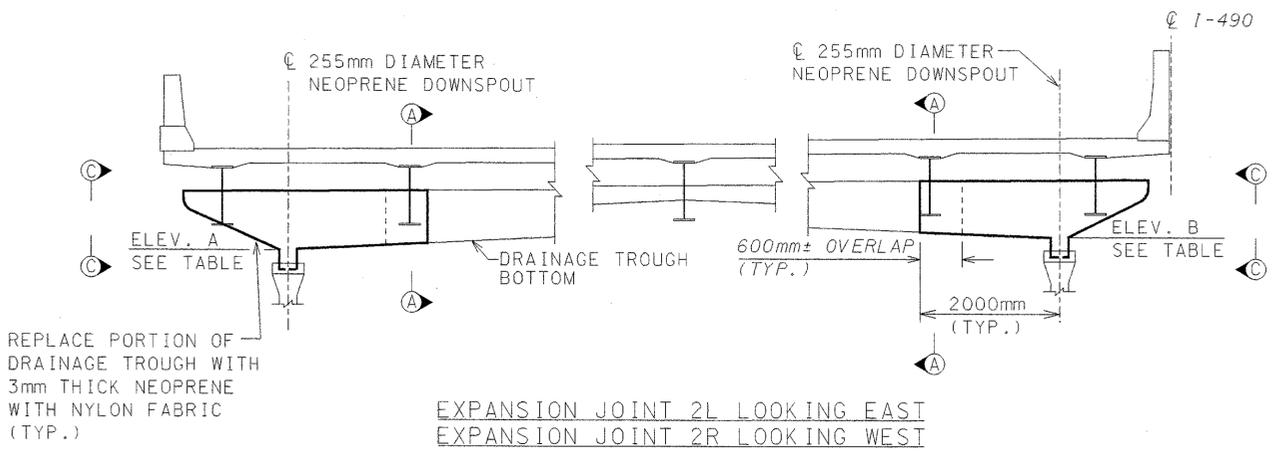
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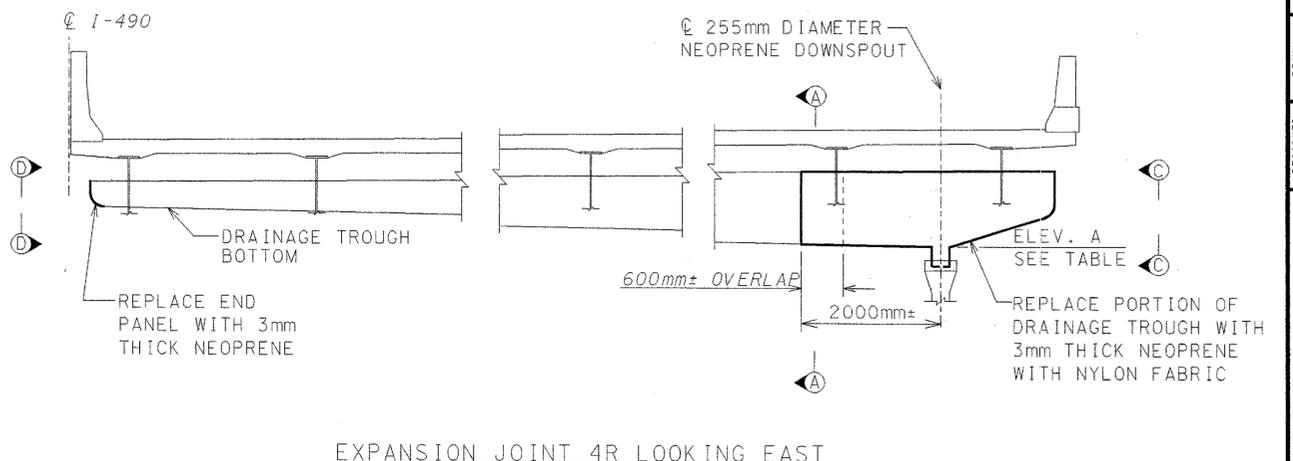
EXPANSION JOINT 1L LOOKING EAST
 EXPANSION JOINT 1R LOOKING WEST



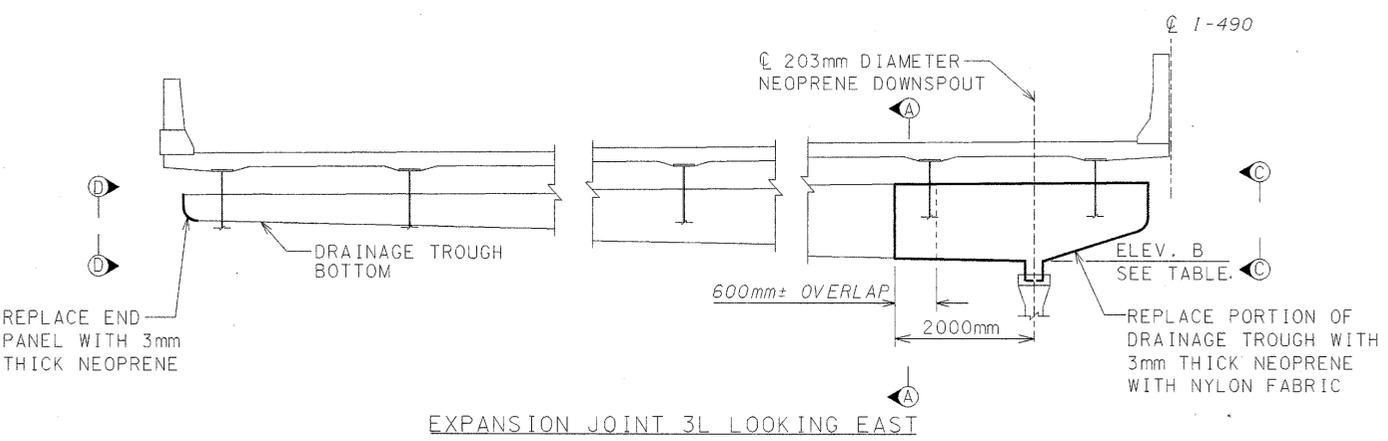
EXPANSION JOINT 4L LOOKING EAST



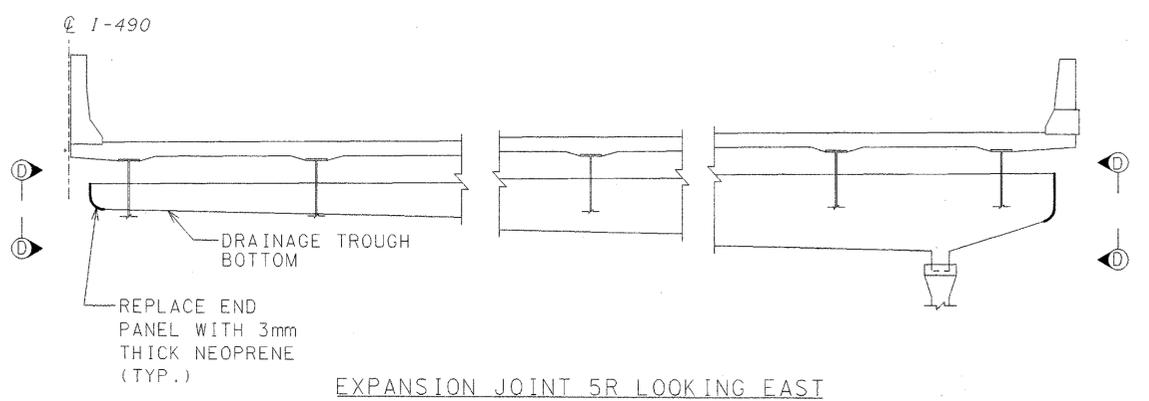
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 EXPANSION JOINT 2R LOOKING WEST



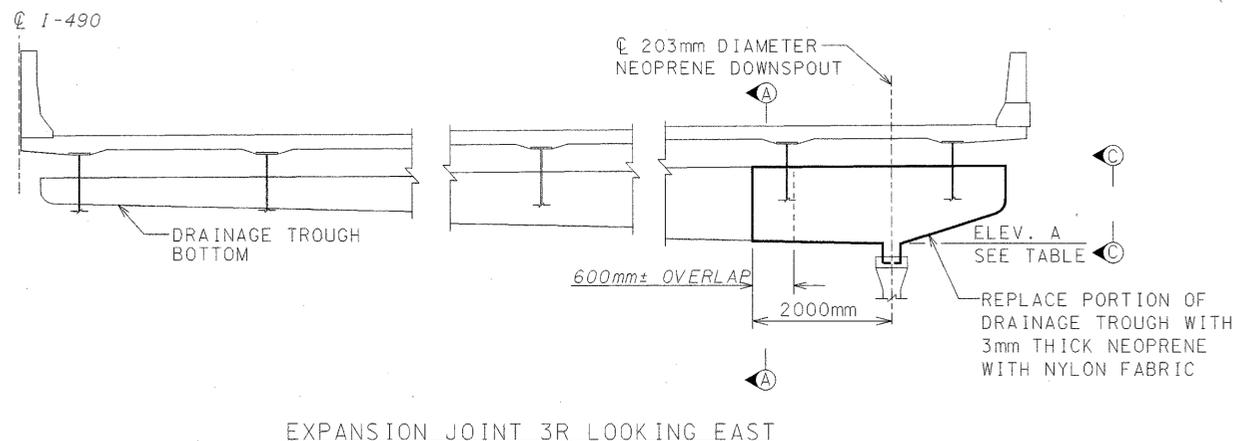
EXPANSION JOINT 4R LOOKING EAST



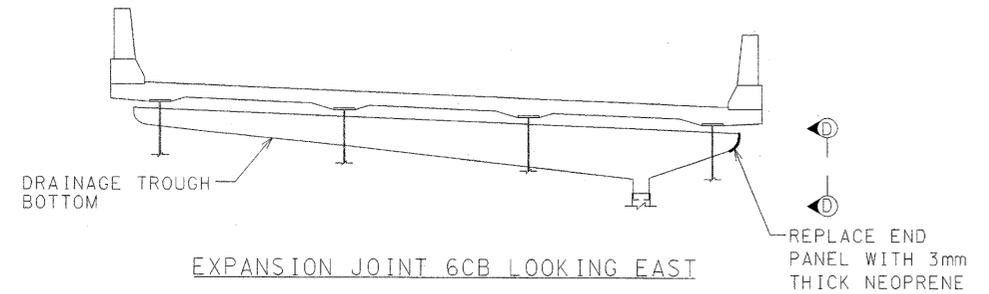
EXPANSION JOINT 3L LOOKING EAST



EXPANSION JOINT 5R LOOKING EAST



EXPANSION JOINT 3R LOOKING EAST



EXPANSION JOINT 6CB LOOKING EAST

| | | EXPANSION JOINT | | | | | | | |
|-------|--|-----------------|---------|---------|---------|---------|---------|---------|---------|
| ELEV. | | 1L | 1R | 2L | 2R | 3L | 3R | 4L | 4R |
| A | | 197.846 | 198.126 | 203.811 | 203.997 | N/A | 208.130 | N/A | 206.216 |
| B | | N/A | N/A | 203.738 | 204.158 | 208.407 | N/A | 206.493 | N/A |

NOTE: ALL ELEVATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.
 ALL ELEVATIONS SHALL BE SET TO INSURE POSITIVE FLOW.

OHIO DEPARTMENT
 OF TRANSPORTATION
 DISTRICT 12 BRIDGE DEPT.

DATE
 1-98

REVIEWED
 GWM

DESIGNED
 JRC

DRYING
 JRC

CHECKED
 M/M

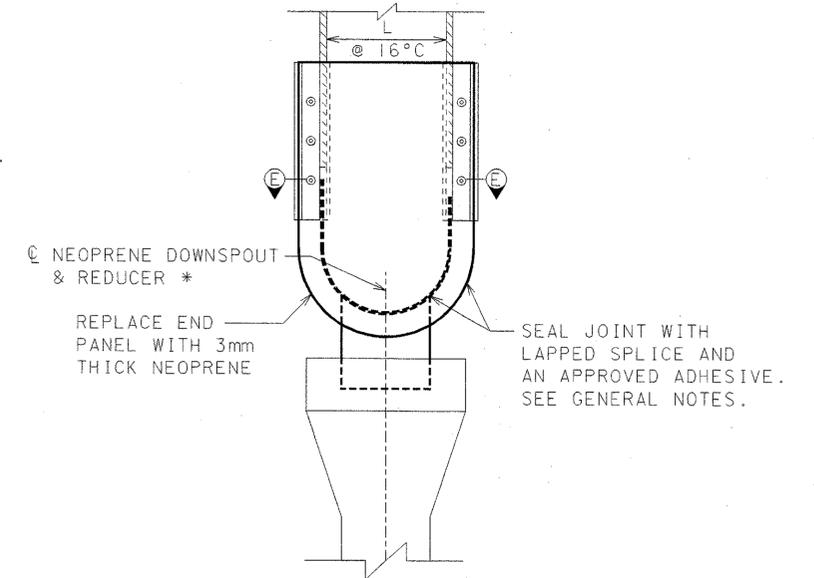
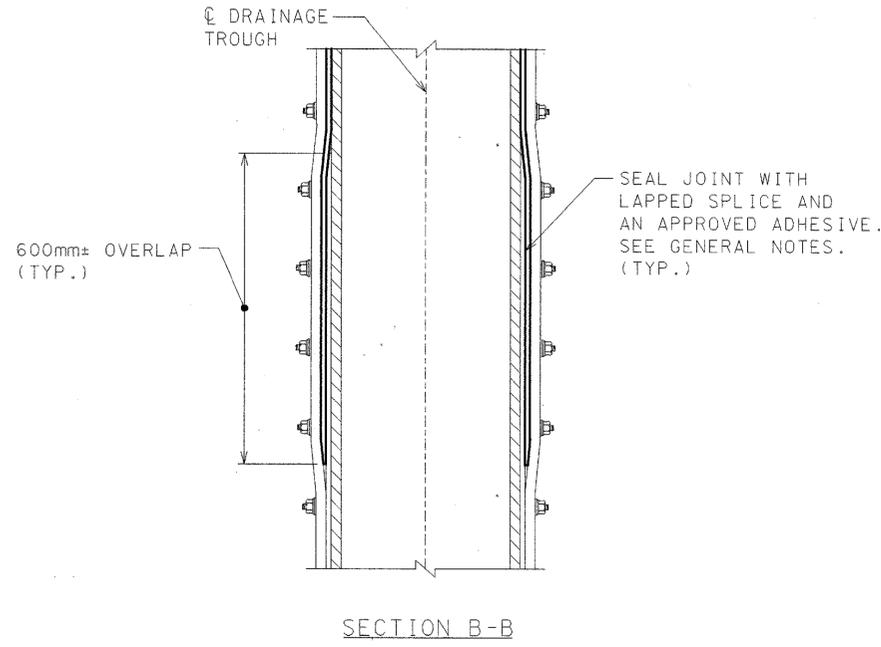
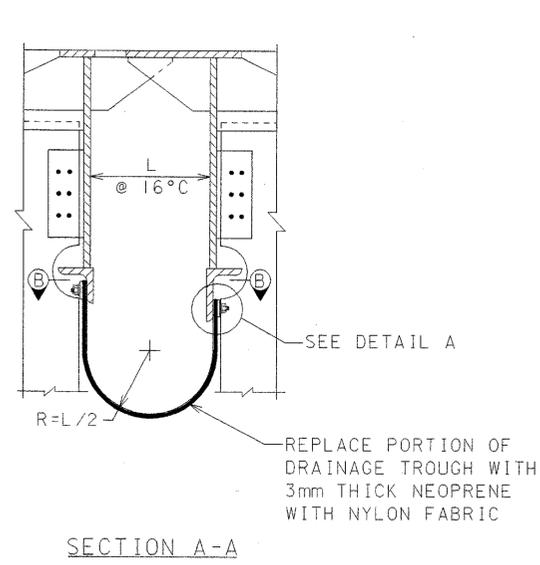
STRUCTURE FILE NUMBER
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DRAINAGE DETAIL I
 CUY-490-01609 L&R
 OVER THE CUYAHOGA RIVER
 I-490

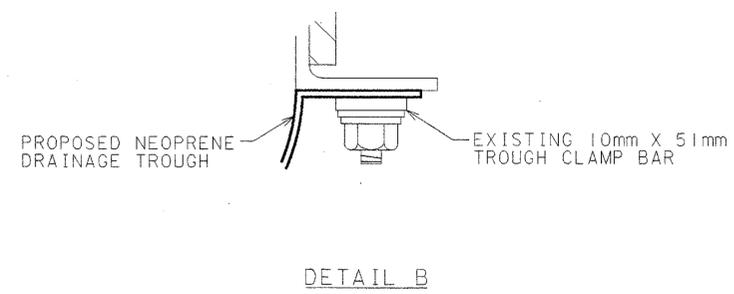
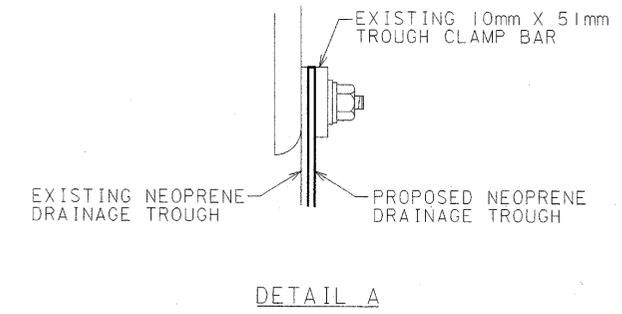
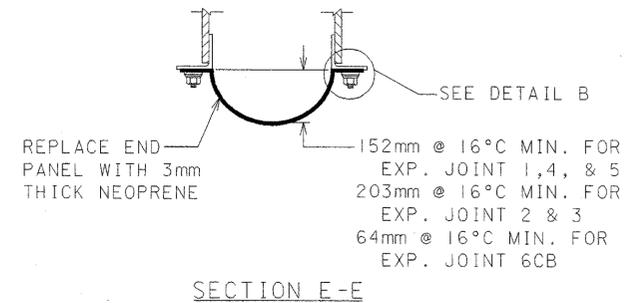
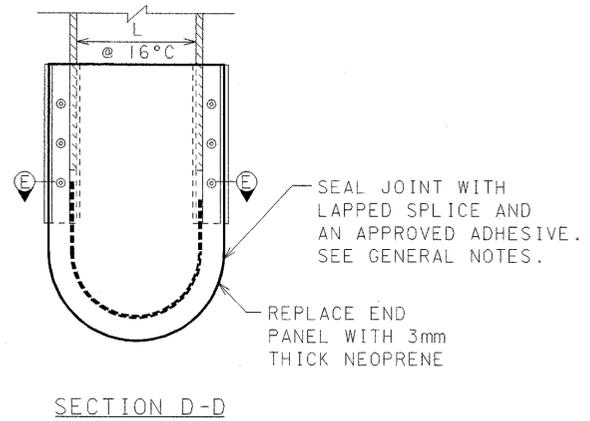
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* FIELD CUT HOLE IN BOTTOM OF TROUGH FOR DOWNSPOUT. AND FIELD INSTALL DOWNSPOUT SO THAT CL DOWNSPOUT COINCIDES WITH CL REDUCER @ 16°C.

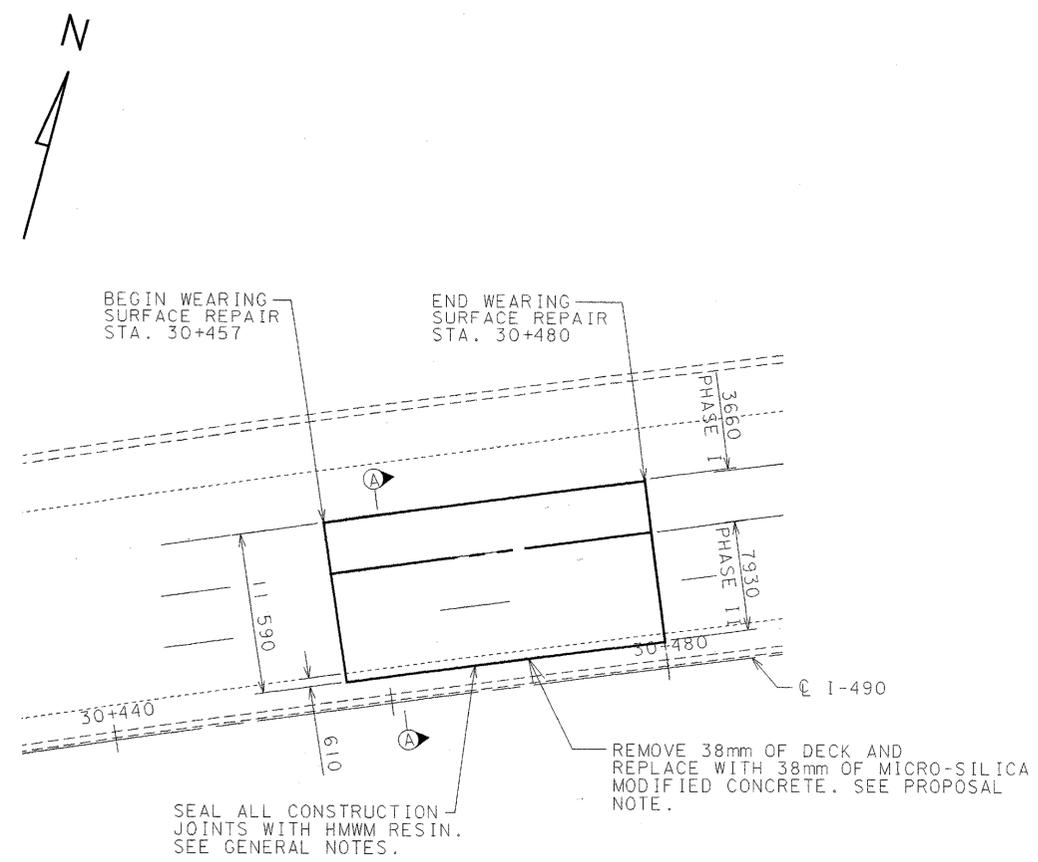


| TABLE OF DIMENSIONS | |
|---------------------|--------|
| EXPANSION JOINT | L (mm) |
| 1L | 95 |
| 1R | 102 |
| 2L | 137 |
| 2R | 133 |
| 3L | 117 |
| 3R | 140 |
| 4L | 143 |
| 4R | 108 |
| 5R | 95 |
| 6CB | 127 |

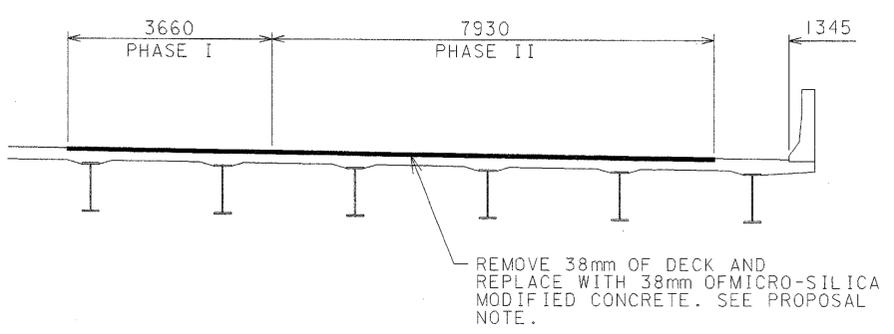
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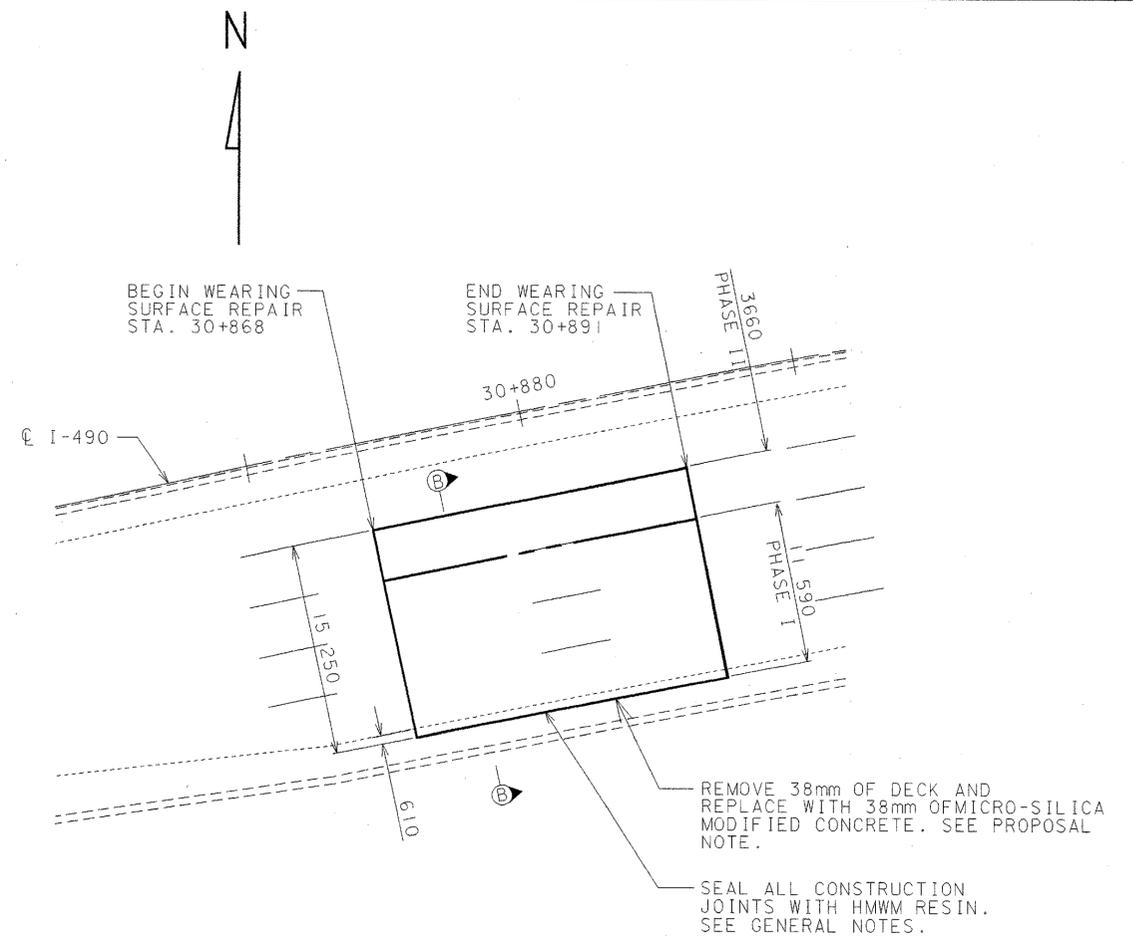
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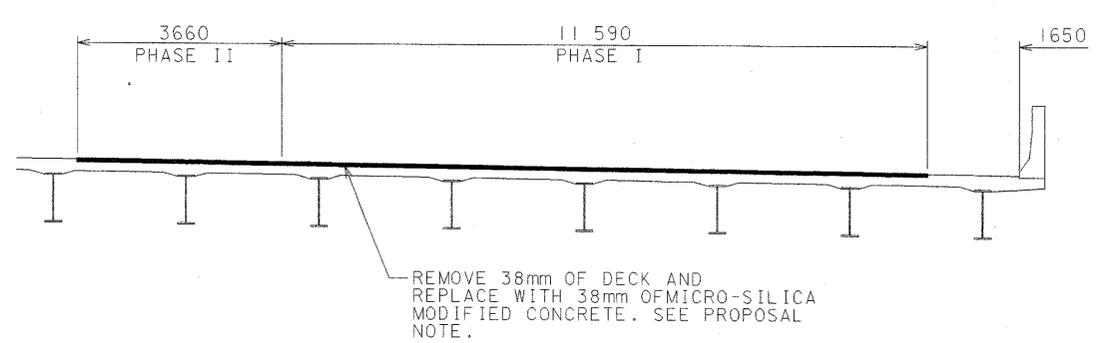
PLAN VIEW
STA 30+457 TO STA 30+480
WEST BOUND



SECTION A-A



PLAN VIEW
STA 30+868 TO STA 30+891
EAST BOUND



SECTION B-B

ITEM 614 - MAINTAINING TRAFFIC

GENERALLY THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO MAKE THE PROPOSED REPAIR WITH A MINIMUM OF HAZARD, DELAY AND INCONVENIENCE TO THE MOTORISTS USING THE HIGHWAY. FURTHERMORE, IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

NOTIFICATION

SINCE FUNCTIONAL TRAFFIC CONTROL IS A MAJOR CONCERN ON THIS PROJECT, IT IS ESSENTIAL THAT THE MOTORING PUBLIC BE ADEQUATELY FOREWARNED OF FUTURE LANE CLOSURES AND TRAFFIC CONSTRUCTIONS. THEREFORE, THE CONTRACTOR SHALL SUBMIT A SCHEDULE TO THE OHIO DEPARTMENT OF TRANSPORTATION INDICATING THE LOCATIONS AND DATES OF THE LANE CLOSURES AT LEAST 3 DAYS PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES. THE CONTRACTOR SHALL ALSO NOTIFY THE LOCAL LAW ENFORCEMENT AGENCIES OF LANE CLOSURES AT LEAST THREE DAYS PRIOR TO IMPLEMENTATION.

RESTRICTIONS

NOTWITHSTANDING THE FOLLOWING, NO LANE CLOSURES SHALL OCCUR DURING THE PERIOD BEGINNING AT 12:00 NOON ON THE DAY PRECEDING AND CONTINUING UNTIL NOON ON THE DAY FOLLOWING LEGAL HOLIDAYS AND HOLIDAY WEEKENDS SUCH AS MEMORIAL DAY, FOURTH OF JULY, AND LABOR DAY. FURTHERMORE, NO LANE CLOSURES SHALL BE IMPLEMENTED OR IN PLACE DURING INCREASED TRAFFIC VOLUMES CAUSED BY SPECIAL EVENTS OR WHEN THE ENGINEER DEEMS THE CLIMATOLOGICAL CONDITIONS TOO HAZARDOUS.

AT LEAST ONE THROUGH LANE IN EACH DIRECTION SHALL BE MAINTAINED DURING LANE CLOSURE OPERATIONS.

NO LANE CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

EXIT AND ENTRANCE RAMP LANES SHALL REMAIN OPEN AT ALL TIMES AND EXHIBIT A MINIMUM WIDTH OF 10 FEET.

NOTE: THE WEEKEND IS CONSIDERED TO START AT 6PM FRIDAY AND END 12:00 MIDNIGHT SUNDAY

THE FOLLOWING LIMITATIONS DO NOT APPLY TO WEARING SURFACE OVERLAY WORK.

NO LANE CLOSURES WEEKDAYS 7 AM TO 9 AM AND 3 PM TO 7 PM.

NO TWO-LANE CLOSURES 5 AM TO 9 PM WEEKDAYS AND 12:00 NOON TO 4:00 AM WEEKENDS.

MAINTENANCE OF TRAFFIC SYSTEMS

A. WHEN REQUIRED

WHENEVER ANY PART OF THE TRAVELED SURFACE IS BEING WORKED UPON OR IS OTHERWISE NOT SUITABLE FOR SAFE AND CONVENIENT USE BY VEHICLES, TRAFFIC CONTROL DEVICES SUFFICIENT TO PROTECT SUCH AREAS TO ASSURE THE SAFE AND CONVENIENT PASSAGE OF VEHICULAR TRAFFIC SHALL BE INSTALLED AND MAINTAINED. SUCH TRAFFIC CONTROL DEVICES AND THE MANNER IN WHICH THEY ARE USED SHALL BE CONSISTENT WITH THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, HEREINAFTER REFERRED TO AS THE "MANUAL". THE TRAFFIC CONTROL DEVICE SYSTEM SHALL CONSTITUTE THE MINIMUM PROVISIONS FOR TRAFFIC CONTROL FOR EACH PARTICULAR SITUATION. WHENEVER THE ENGINEER DEEMS IT NECESSARY ESPECIALLY WHERE A GRADE, CURVE, OR MERGE CONDITIONS EXISTS, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.

B. CONDITIONS

DURING ALL PARTS OF THIS PROJECT, SIGNING, BARRICADES, FLASHING ARROWS, ETC. SHALL BE LOCATED AS INDICATED IN THE MANUAL, AS SHOWN ON THE MAINTENANCE OF TRAFFIC SHEETS OR AS SHOWN ON STANDARD DRAWING MT-97.10M DATED APRIL 25, 1994.

C. ADVANCE WARNING SIGNS

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE.

D. FLASHING ARROW REQUIREMENT

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORIST SHALL BE WARNED AND DIRECTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW FOR EACH LANE CLOSED ACCORDING TO THOSE PROVISIONS SET FORTH IN THE "MANUAL" AND STD. DRG. MT-46.10M AND MT-46.11M.

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MAINTENANCE OF TRAFFIC NOTES

CUYAHOGA COUNTY
CUY-490-1.609

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E. LAW ENFORCEMENT OFFICER WITH PATROL CAR

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COST FOR THE SERVICES OF LAW ENFORCEMENT OFFICE WITH PATROL CAR FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC AS DETERMINED BY THE ENGINEER. THE NUMBER OF OFFICERS AND CARS REQUIRED FOR THIS PURPOSE SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE OFFICERS SHALL MOVE THEIR PATROL CARS AS NECESSARY TO INSURE THEIR CONSTANT PRESENCE AT THE POINTS OF SLOWDOWN, STOPPAGE OR BACK-UP. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS FOR SCHEDULING AND PAYMENT OF LAW ENFORCEMENT OFFICER WITH PATROL CAR. PAYMENT FOR THE ABOVE WILL BE INCLUDED IN THE MAN HOUR BID PRICE FOR ITEM SPECIAL- LAW ENFORCEMENT OFFICER WITH PATROL CAR.

F. PROTECTION OF PUBLIC

WHENEVER ANY WORK IS BEING DONE DIRECTLY OVER A TRAVELED LANE OR SHOULDER THE CONTRACTOR SHALL SUPPLY SUFFICIENT SAFETY EQUIPMENT AS APPROVED BY THE DIRECTOR TO PROTECT THE TRAVELING PUBLIC FROM ANY CONSTRUCTION DEBRIS. IF TRAVELED LANES UNDER STRUCTURES ARE TO BE CLOSED FOR REASONS OF SAFETY, METHOD AND TIME OF CLOSURE MUST BE APPROVED PRIOR TO IMPLEMENTATION. PERSONAL CARS SHALL NOT BE PARKED WITHIN THE L/A.

G. FAILURE TO COMPLY

IF THERE IS ANY FAILURE TO COMPLY WITH PROVISIONS FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES, OR WITH THE PROVISIONS OF THE "MANUAL", THE HIGHWAY IN THE VICINITY OF THE WORK AREA SHALL NOT BE CONSIDERED IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC. ANY FAILURE TO KEEP THE HIGHWAY, IN THE VICINITY OF THE WORK AREA, IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC SHALL BE CONSIDERED A BREACH OF THIS CONTRACT. WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR COMPLIES WITH THE PROVISIONS OF THE AFOREMENTIONED ITEMS.

TRAFFIC CONTROL MATERIAL

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES SHALL BE AS PROVIDED IN THE "MANUAL", OR IN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

B. SIGN SUPPORTS

SIGN SUPPORTS SHALL BE AS SHOWN ON STANDARD DRAWINGS MT-106.10M AND MT-106.11M

C. FLASHING ARROWS

THE ELECTRIC FLASHING ARROW SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-36-10M AND MT-36.11M.

D. CONES

CONES SHALL BE LOCATED AS SHOWN IN THE "MANUAL" AND THE MAINTENANCE OF TRAFFIC PLANS.

E. DRUMS

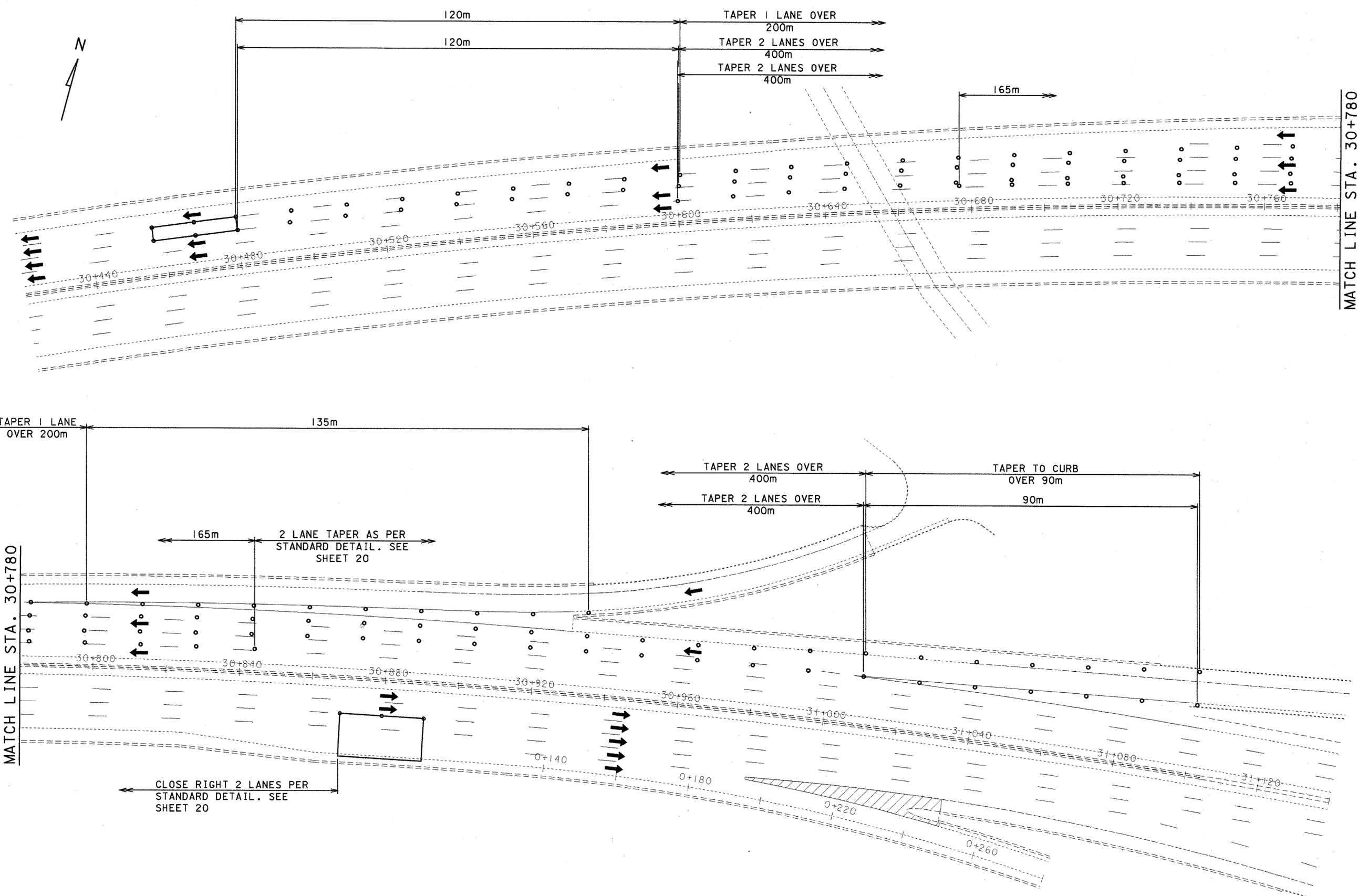
DRUMS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND ARE REQUIRED FOR NIGHTTIME CLOSURES.

PAYMENT

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING TEMPORARY MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE MADE UNDER THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

PAYMENT FOR PROVIDING LAW ENFORCEMENT OFFICER WITH PATROL CAR SHALL BE MADE FOR UNDER THE MAN HOUR BID PRICE FOR ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR.

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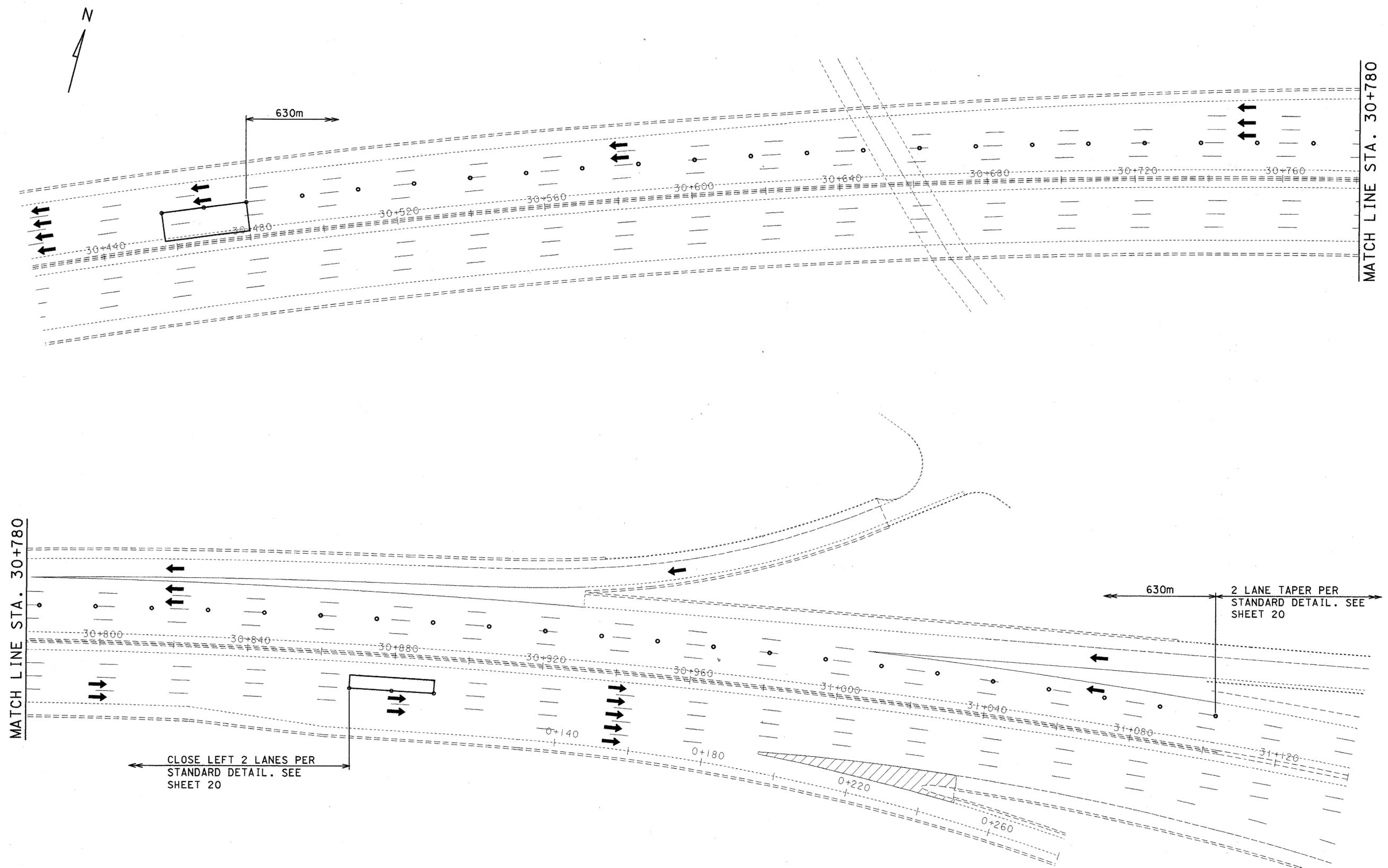


NOTE: DRUMS SHALL BE SPACED AT A MAXIMUM OF 15M INTERVALS

MATCH LINE STA. 30+780

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| OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT. | |
| DATE | 1-98 |
| REVIEWED | GWM |
| STRUCTURE FILE NUMBER | XXXXXX XXXXXX |
| DRAWN | JRC |
| REVISD | |
| DESIGNED | JRC |
| CHECKED | MJM |
| MAINTENANCE OF TRAFFIC PHASE I CUY-490-01609 L&R I-490 OVER THE CUYAHOGA RIVER | |
| CUYAHOGA COUNTY CUY-490-1.609 | |
| 18 21 | |

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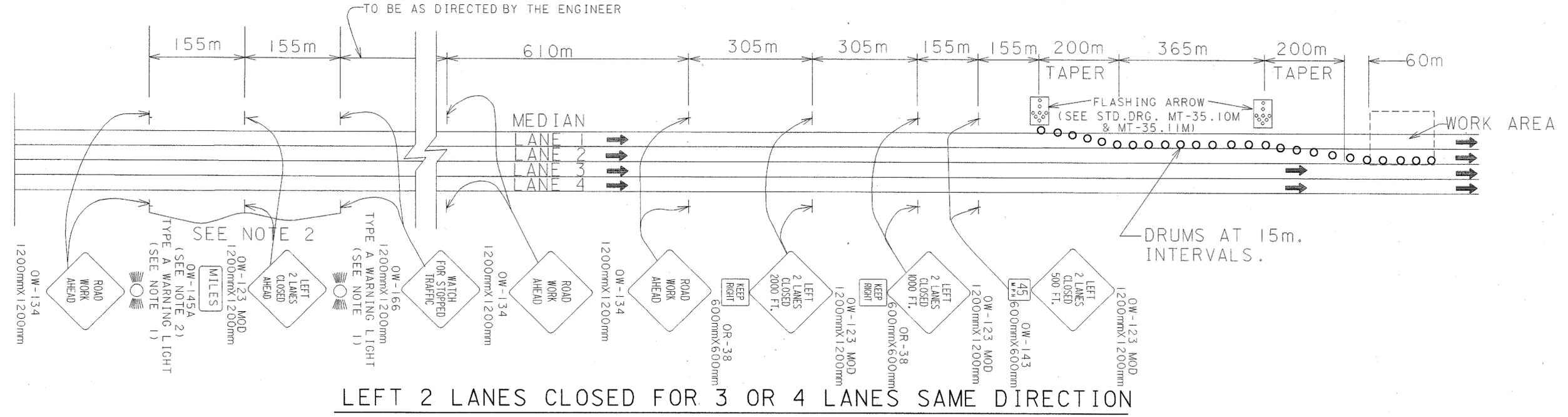
NOTE: DRUMS SHALL BE SPACED AT A MAXIMUM OF 15M INTERVALS

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| CUYAHOGA COUNTY CUY-490-1.609 | MAINTENANCE OF TRAFFIC PHASE 1 CUY-490-01609 L&R I-490 OVER THE CUYAHOGA RIVER | | DESIGNED JRC | DRAWN JRC | REVIEWED GWM | DATE 1-98 |
| | | | CHECKED M/M | REVISED | STRUCTURE FILE NUMBER 1811991 | OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT. |

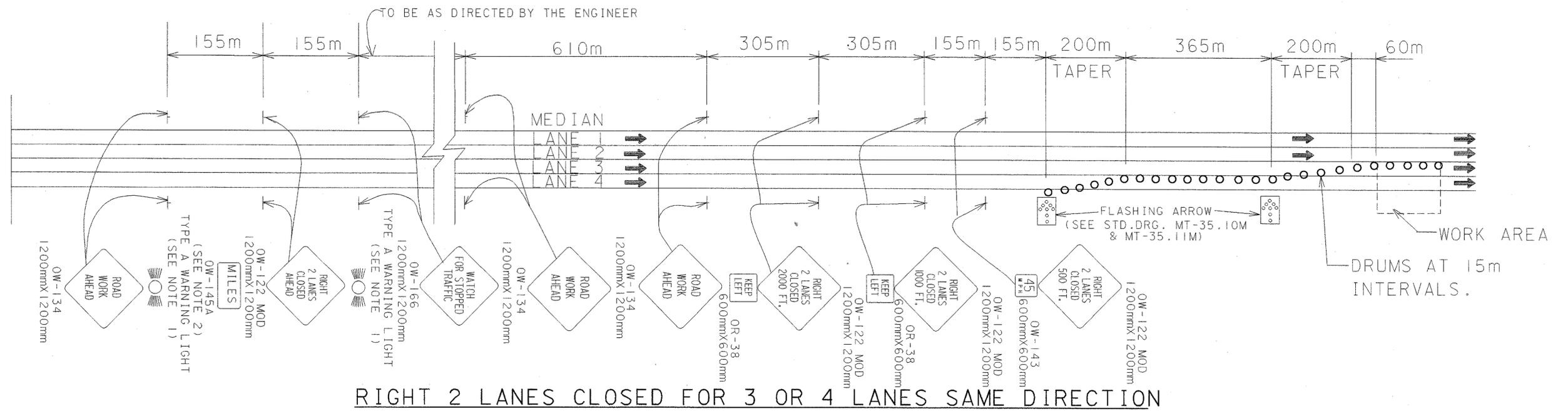
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PLOTTED BY: jcalani
PLOTTED FROM: i:\users\jcalani\cuv490\mot.f.dgn



LEFT 2 LANES CLOSED FOR 3 OR 4 LANES SAME DIRECTION



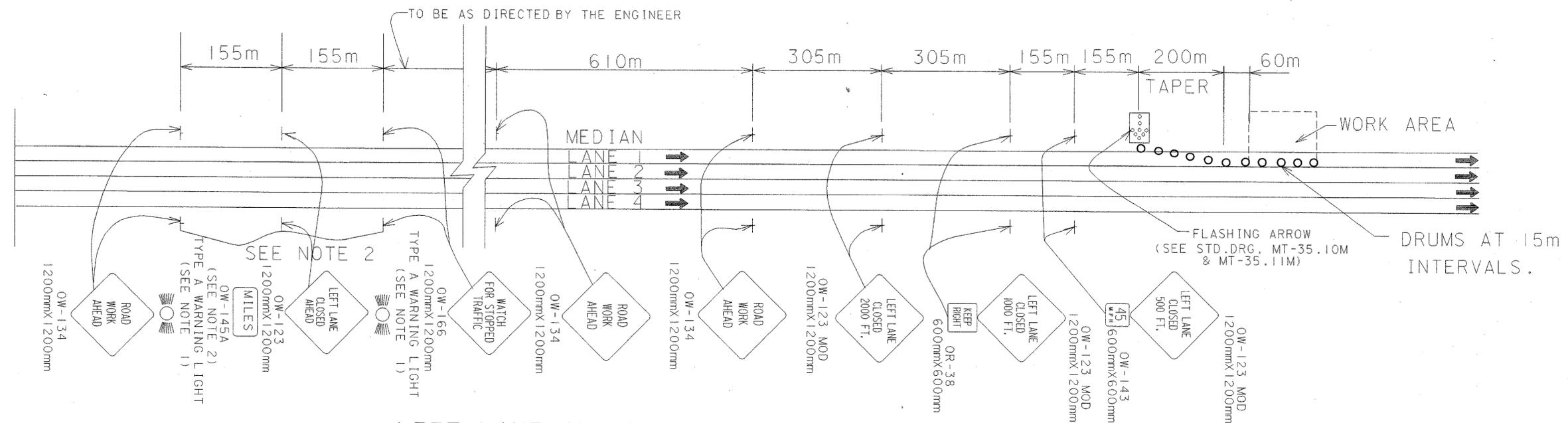
RIGHT 2 LANES CLOSED FOR 3 OR 4 LANES SAME DIRECTION

- GENERAL NOTES:
1. TYPE A FLASHING WARNING LIGHTS SHOWN ON THE "ROAD WORK AHEAD" AND "RIGHT(OR LEFT) 2 LANES CLOSED AHEAD" SIGNS ARE REQUIRED WHENEVER A NIGHT LANE CLOSURE IS NECESSARY.
 2. EXTRA ADVANCE WARNING SIGN GROUPS CONSISTING OF OW-128, OW-122 MOD, OR OW 123 MOD AND OW-166 SIGNS PLUS DISTANCE PLATES SHALL BE ERECTED AT THE DIRECTION OF THE ENGINEER.
 3. THE ARRANGEMENT OF SIGNS SHOWN ABOVE SHALL BE APPLIED TO ALL PORTIONS OF ROADWAY, INCLUDING RAMPS, WHICH ARE LOCATED WITHIN THE MAINTENANCE OF TRAFFIC LIMITS.

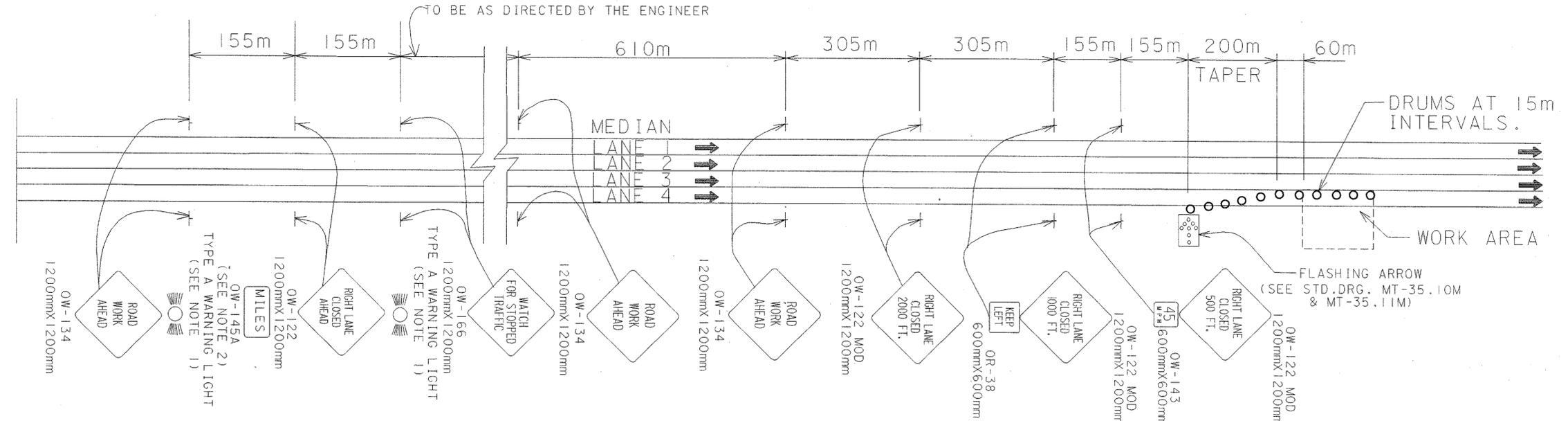
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plotted by: jcaliani
plotted from: t:\users\jcaliani\cuy490\mot.dgn



LEFT LANE CLOSED FOR 3 OR 4 LANES SAME DIRECTION



RIGHT LANE CLOSED FOR 3 OR 4 LANES SAME DIRECTION

GENERAL NOTES:

1. TYPE A FLASHING WARNING LIGHTS SHOWN ON THE "ROAD WORK AHEAD" AND "RIGHT(OR LEFT) LANE CLOSED AHEAD" SIGNS ARE REQUIRED WHENEVER A NIGHT LANE CLOSURE IS NECESSARY.
2. EXTRA ADVANCE WARNING SIGN GROUPS CONSISTING OF OW-128, OW-122, OR OW 123 AND OW-166 SIGNS PLUS DISTANCE PLATES SHALL BE ERECTED AT THE DIRECTION OF THE ENGINEER.
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