

# OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

STRUCTURE FILE NO's:  
5100453, 5101174, 5103215

| FEDERAL REGION | STATE | FEDERAL PROJECT |
|----------------|-------|-----------------|
| 5              | OHIO  |                 |

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PLAN NO. BR-19-94

| PART | CNTY | ROUTE | STRUCTURE NUMBER | INDEX  |
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The Standard 1993 Construction Materials 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 on Parts No. 3 and That Provisions for the Maintenance and Safety of Traffic Will be as Set Forth in the Plans.

### TYPE OF WORK:

OVERLAY / PARAPET REFACING & CONSTRUCTION / END DAM REPLACEMENTS / REFURBISHING BEARING DEVICES / STRUCTURAL PAINTING and VARIOUS

Approved Date: 8/5/94 *[Signature]*  
DISTRICT DEPUTY DIRECTOR of TRANSPORTATION

Approved Date: 9-22-94 *B.D. Hamblerman*  
ENGINEER of BRIDGES

Approved Date: 12-27-94 *Alexander H. Hynds*  
DEPUTY DIRECTOR, OPERATIONS

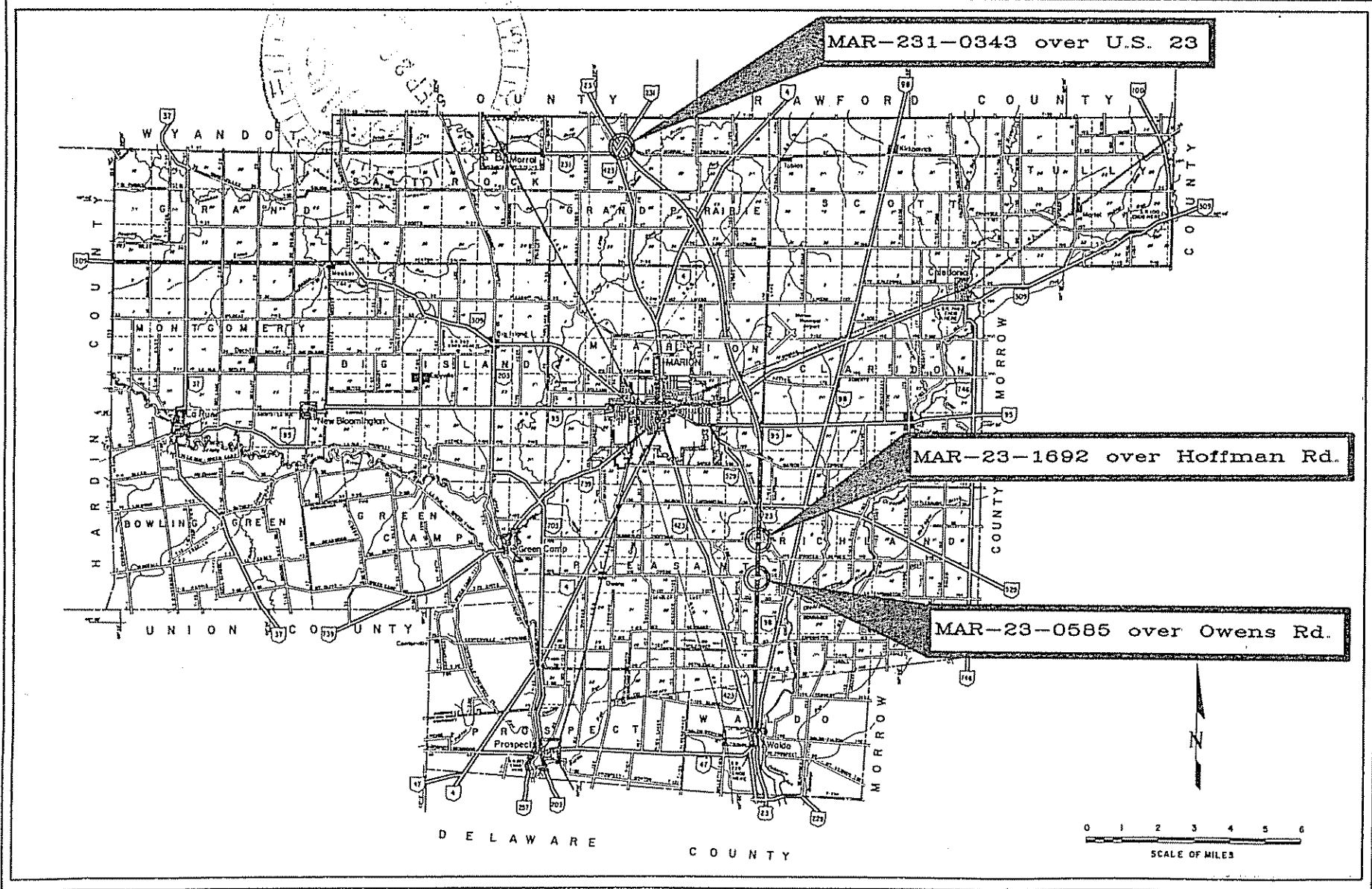
Approved Date: \_\_\_\_\_

Approved Date: \_\_\_\_\_

Approved Date: \_\_\_\_\_

Approved Date: 12-27-94 *Jerry Wray*  
DIRECTOR, DEPARTMENT of TRANSPORTATION

Location Map



TITLE SHEET DESIGN BY: JOHN K. HARDING

| STANDARD DRAWINGS |          |
|-------------------|----------|
| BP-3.1            | 02-21-92 |
| GR-8.1            | 1-31-74  |
| EXJ-4-87          | 1-20-74  |
| GR-1.1            | 05-06-91 |
| GR-1.2            | 10-30-92 |
| GR-3.1            | 05-06-91 |
| MT-96.11          | 09-09-88 |
| MT-96.20          | 09-09-88 |
| MT-96.25          | 09-09-88 |
| TC-65.10          | 02-01-90 |
| MC-9.2            | 5-6-91   |

| SUPPLEMENTAL SPECIFICATIONS |          |
|-----------------------------|----------|
| 802                         | 04-13-90 |
| 862                         | 12-16-88 |
| 933                         | 7-22-94  |
| 852                         | 07-30-93 |

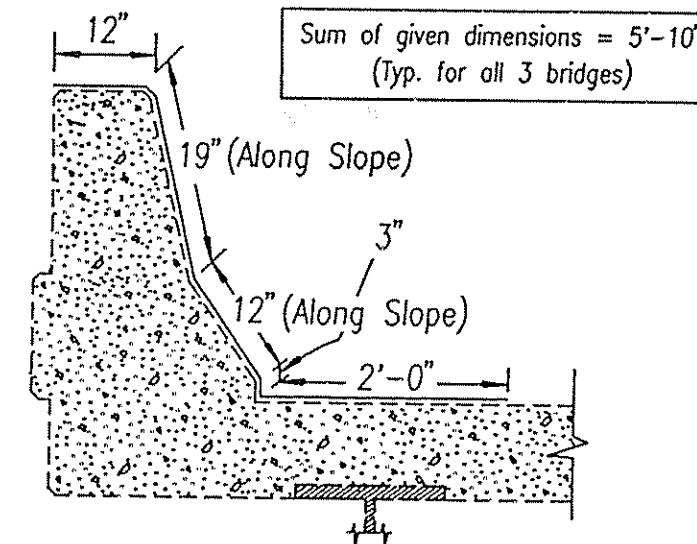
# ESTIMATED QUANTITIES / SEALING DETAILS

| FHWA REGION | STATE | FEDERAL PROJECT |
|-------------|-------|-----------------|
| 5           | OHIO  |                 |

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| ITEM | ITEM EXT. NO. | DESCRIPTION   | UNIT    | MAR-23-0585 | MAR-23-1692 | MAR-231-0343 | TOTAL |
|------|---------------|---|---------|-------------|-------------|--------------|-------|
| 202  | E11300        | PORTIONS OF STRUCTURE REMOVED   | CU.YD.  | 6           | 7.5         | 8            | 21.5  |
| 202  | E38000        | GUARDRAIL REMOVED   | LIN.FT. | 100         | 100         | 100          | 300   |
| 202  | E54100        | RAISED PAVEMENT MARKER REMOVED FOR STORAGE                                    | EACH    | ---         | ---         | 11           | 11    |
| 203  | E12000        | EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION                              | CU.YD.  | ---         | ---         | 40           | 40    |
| 203  | E20000        | EMBANKMENT  | CU.YD.  | ---         | ---         | 2            | 2     |
| 254  | E01000        | PAVEMENT PLANING, BITUMINOUS  | SQ.YD.  | 705         | 869         | 167          | 1,741 |
| 254  | E01010        | PAVEMENT PLANING, PORTLAND CEMENT CONCRETE                                    | SQ.YD.  | ---         | ---         | 765          | 765   |
| 301  | E10002        | BITUMINOUS AGGREGATE BASE, AC-20  | CU.YD.  | ---         | ---         | 35           | 35    |
| 404  | E20000        | ASPHALT CONCRETE, AC-20   | CU.YD.  | 6.5         | 6.5         | 11           | 24    |
| 407  | E10000        | TACK COAT   | GAL.    | 8           | 8           | 28           | 44    |
| 509  | E15800        | EPOXY COATED REINFORCING STEEL, GRADE 60                                      | LBS.    | 975         | 974         | 1,118        | 3,067 |
| 511  | E31500        | CLASS S CONCRETE, SUPERSTRUCTURE  | CU.YD.  | 5           | 4.25        | 4.5          | 13.75 |
| 511  | E44100        | CLASS C CONCRETE, ABUTMENT  | CU.YD.  | 3.5         | 4.5         | 4.5          | 12.5  |
| 516  | E11210        | STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL                   | LIN.FT. | 53          | 68          | 69           | 190   |
| 516  | E45304        | REFURBISH BEARING DEVICE  | EACH    | 8           | ---         | 7            | 15    |
| 517  | E76201        | RAILING FACED, As Per Plan (see general note on 3/10)                         | LIN.FT. | 476         | 611         | 513          | 1,600 |
| 519  | E11100        | PATCHING CONCRETE STRUCTURES  | SQ.FT.  | 3           | ---         | ---          | 3     |
| 606  | E35000        | BRIDGE TERMINAL ASSEMBLY, TYPE 1  | EACH    | 4           | 4           | 4            | 12    |
| 606  | E13000        | GUARDRAIL, TYPE-5   | LIN.FT. | 100         | 100         | 100          | 300   |
| 614  | E11000        | MAINTAINING TRAFFIC   | LUMP    | LUMP        | LUMP        | LUMP         | LUMP  |
| 619  |               | COM   | LUMP    |             |             |              | LUMP  |
| 619  | E15000        | FIELD OFFICE, TYPE A  | LUMP    | LUMP        | LUMP        | LUMP         | LUMP  |
| 622  | E40020        | PORTABLE CONCRETE BARRIER, 32"  | LIN.FT. | ---         | ---         | 830          | 830   |
| 624  | E10000        | MOBILIZATION  | LUMP    | LUMP        | LUMP        | LUMP         | LUMP  |
| 642  | E00102        | EDGE LINE, TYPE 2   | MILE    | .16         | .18         | .17          | .51   |
| 642  | E00302        | CENTERLINE, TYPE 2 - (DOUBLE YELLOW)  | MILE    | .08         | .09         | .09          | .26   |
| 802  | E00200        | BARRIER REFLECTOR, TYPE B   | EACH    | 8           | 8           | 8            | 24    |
| 862  | E00100        | RAISED PAVEMENT MARKER  | EACH    | 6           | 7           | 6            | 19    |
| Spec | 512E67502     | SEALING OF CONCRETE SURFACES (EPOXY) See Proposal Note                        | SQ.YD.  | 315         | 398         | 336          | 1,049 |
| Spec | 514E25600     | SURFACE PREPARATION, (EEU)  | SQ.FT.  | ---         | ---         | 174          | 174   |
| Spec | 514E25606     | SPOT PRIME (EPOXY)  | SQ.FT.  | ---         | ---         | 174          | 174   |
| Spec | 514E25610     | FULL PRIME (EPOXY)  | SQ.FT.  | ---         | ---         | 174          | 174   |
| Spec | 514E25616     | COMPLETE COAT FINISH (URETHANE)   | SQ.FT.  | ---         | ---         | 174          | 174   |
| Spec | 519E22000     | MICRO SILICA MODIFIED CONCRETE OVERLAY (1-1/4" thick) See Proposal Note       | SQ.YD.  | 631         | 813         | 833          | 2,277 |
| Spec | 519E22100     | MICRO SILICA MODIFIED CONCRETE OVERLAY (Variable thickness) See Proposal Note | CU.YD.  | 17          | 18          | 27           | 62    |
| Spec | 519E22200     | FULL DEPTH REPAIR   | CU.YD.  | ---         | 1           | 1            | 2     |
| Spec | 519E22300     | TEST SLAB See Proposal Note   | LUMP    | LUMP        | LUMP        | LUMP         | LUMP  |

## SEALING CONCRETE SURFACES



**APPLY ITEM SPECIAL: "Sealing of concrete surfaces"**

The sealing procedure shall cover the face of the proposed parapets according to the dimensions shown on the detail, and shall be applied full length of each parapet.

**PARAPET LENGTHS**  
(Lengths given reflect proposed end section extensions)

MAR-23-0585 - Sum of both parapets = 485'-8"  
 MAR-23-1692 - Sum of both parapets = 614'  
 MAR-231-0343 - Sum of both parapets = 518'-1/2"

**CALCULATIONS**  
for Sealing of Concrete Surfaces (Item Special)  
(Calculations include proposed end section extensions)

$485.666 \times 5.8333 = 2833.0535 \div 9 = 314.78372$  (or 315 sq.yds.)  
 $614 \times 5.8333 = 3581.6462 \div 9 = 397.96068$  (or 398 sq.yds.)  
 $518.04166 \times 5.8333 = 3021.8924 \div 9 = 335.76582$  (or 336 sq.yds.)

STRUCTURE FILE NO's: 5100453, 5101174 and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

MAR-23-0585, MAR-23-1692 & MAR-231-0343  
EST. QUANT. / SEALING OF CONCRETE PARAPETS  
/ BARRIER REFLECTOR SUB-SUMMARY

| DESIGNED | DRAWN (ACD)        | TRACED | CHECKED   | REVIEWED | DATE        | REVISED |
|----------|--------------------|--------|-----------|----------|-------------|---------|
|          | <i>[Signature]</i> |        | <i>LM</i> |          | DPP 9-28-91 |         |

# GENERAL NOTES (Continued on next sheet)

|                |       |                 |  |
|----------------|-------|-----------------|--|
| FEDERAL REGION | STATE | FEDERAL PROJECT |  |
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**DESIGN DATA:**

Concrete Class S - compressive strength 4500 p.s.i. (superstructure)

Concrete Class C - compressive strength 4000 p.s.i. (substructure)

Reinforcing steel - ASTM A615, A616 or A617  
Grade 60 minimum yield strength 60,000 p.s.i.

**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 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 Sections 102.05 and 105.02.

Contract 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.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED:**

This item shall include the cost of all labor, equipment and incidentals necessary to remove and dispose of all 2 ft. sections of concrete from deck ends and the specified 1'-3" vertical and horizontal removal areas of the abutments (as shown on plan sheet 8/11). This work shall be done on all three structures. The removal process shall be done in such a manner as to avoid damaging the existing upper and lower mats of longitudinal deck steel or the existing vertical steel in the abutment removal areas. Reinforcing steel bars to be left undamaged in the removal process/areas shall be cleaned and preserved for re-use. The Contractor may at the discretion of the Engineer, use the waste concrete from deck ends as rip rap.

**ITEM 202 - GUARDRAIL REMOVED**

This item shall consist of removing and disposing of 25' of existing guardrail from each corner of all three structures. Once the required re-facing work has been completed, the Contractor shall replace the guardrail with new guardrail as per Item 606 - guardrail, Type 5, and Item 606 - Bridge Terminal Assembly, Type 1, in accordance with Std. Dwg. GR-3.1.

**CONNECTIONS BETWEEN EXISTING & PROPOSED GUARDRAIL**

When it is necessary to splice proposed G.R. to existing G.R. only the existing G.R. shall be cut, drilled or punched. The connection shall be made using a "beam rail splice" as shown on Std. Dwg. GR-1.1. Payment shall be included in the unit price bid for respective G.R. runs.

**ITEM SPECIAL, SEALING OF CONCRETE SURFACES:**

A concrete sealer shall be applied to the concrete surfaces shown on plan sheet 2/11. See proposal for surface prep-

aration requirements, application rates, material requirements and application procedures.

**ITEM 203 - EMBANKMENT:**

Repair work shall be done to the East abutment embankment of MAR-231-0343 according to the detail on sheet no. 7/10.

**ITEM 254 - PAVEMENT PLANING, BITUMINOUS**

This item shall consist of planing existing bituminous wearing course and waterproofing from structures and tapers of MAR-23-0585 and MAR-23-1692. The proposed planing shall be done in accordance with the details in this plan. (See plan sheet 4/11).

**ITEM 254 - PAVEMENT PLANING, PORTLAND CEMENT**

This item shall cover the cost of planing existing concrete wearing course from the deck surface of MAR-231-0343.

**ITEM 404 - ASPHALT CONCRETE, AC-20**

This item includes the amount of item 404 - Asphalt Concrete that will be used for tapers on MAR-23-0585, MAR-23-1692 and MAR-231-0343. Also included with this item for payment is a calculated amount of Item 404 - Asphalt Concrete, for the rebuilding of the shoulders on MAR-231-0343 in accordance with the detail shown on plan sheet no. 4/11. (The quantity of Item 404 - Asphalt Concrete calculated for the tapers was based on an average depth of 3/4" for each of the tapers.)

**ITEM 407 - TACK COAT**

The rate of application of 407 - Tack Coat shall be subject to adjustment, as directed by the Engineer. Plan quantities indicate an average application rate of 0.1 gallons per sq. yd. of tack coat for estimating purposes only. The quantity of Tack Coat shown on the Estimated Quantities Sheet includes the amount of Tack Coat needed for the tapers AND for rebuilding the shoulders on MAR-231-0343.

**ITEM 511 - CLASS C CONCRETE**

Payment for Item 511 - Class C Concrete shall include the cost of all labor, equipment, materials and all incidentals necessary to form and replace all of the concrete removed from the abutment backwalls during Item 202 - Portions of Structure Removed. (See plan sheet 8/11 for details).

**ITEM 511 - CLASS S CONCRETE**

Payment for Item 511 - Class S Concrete shall include the cost of all labor, equipment, materials and incidentals necessary to form and replace all of the concrete removed from the deck ends as per Item 202 - Portions of Structure Removed. This item shall also include the cost of all labor, equipment, materials and incidentals necessary to form the proposed parapet end section extensions as per the details on plan sheet 11/11 of this plan. The quantities shown on the Estimated Quantities Sheet for Item 511 - Class S Concrete includes the amount needed to construct the proposed parapet end sections.

**ITEM 516 - REFURBISHING BEARING DEVICE; APP**

This item shall include jacking and temporary support of the superstructure; bearing disassembly; cleaning (grinding if necessary); sandblasting and painting of the steel bearing components using system OZEU paint; replacement of any damaged sheet lead (711.19) or preformed bearing pads, installation of any necessary steel shims of the same size as the bearings to provide a snug fit. Contractor shall be sure that all bearings are shimmed adequately and that no beams and/or bearing devices are "floating" (711.21); re-assembly of the bearings; and removal of the jacks.

Self-lubricating bronze bearing plates shall be cleaned, and the lubricant recesses shall be re-filled by compressing a suitable solid lubricant into the recesses under a hydraulic pressure of at least 10,500 P.S.I. The lubricant shall be of the solid type and shall consist of graphite, metallic substances having lubricating properties and a lubricating binder. Materials which do not have lubricating qualities or which promote chemical or electro-lytic reactions, will not be acceptable. A similar lubricant shall be used to coat the sliding surfaces, both bronze and steel, before reassembling the self-lubricating bronze bearings. The contractor shall submit his jacking plan for each bridge to the Director for approval at least 20 days before jacking is to begin. The Contractor shall thoroughly clean both abutment beam seats of all loose dirt and debris. All the work mentioned above shall be performed on abutment bearings only. All described work shall be to the satisfaction of the Engineer.

Payment for all above described labor and materials will be made at the contract price bid for ITEM 516 - Refurbish Bearing Devices.

**ITEM 517 - RAILING FACED, AS PER PLAN**

This work shall be done before proposed end dam replacements and/or proposed overlays are done. (Typ.)

**Description:**

This item of work shall consist of facing curb style parapets, using cast in place concrete, to obtain the deflector shape as shown in the plans.

**Removal:**

The Contractor shall carefully remove the existing aluminum railing, posts and existing concrete curb. All loose or unsound concrete shall be removed. Also to be removed shall be any sound concrete necessary to obtain a minimum 4" thickness of new concrete.

**Dowel Holes and Reinforcing Steel:**

Dowel holes shall be drilled where shown in the plans. Reinforcing steel shall be installed using epoxy grout per Supplemental Specification 852. All existing reinforcing steel bars in the area of the dowel hole shall be located with the aid of a reinforcing steel bar locator (pachometer) prior to drilling the holes. If an existing bar is encountered at the same location as a proposed dowel hole, the dowel hole shall be moved to either side of the existing bar. All reinforcing steel, dowel holes and grouting shall be included with this item 517 for payment.

**Surface Preparation:**

The parapet surface next to the refacing shall be thoroughly cleaned by abrasive blasting followed by an air blast. Use of hand tools may be necessary to remove scale from any exposed reinforcing steel. The surface shall be made free from spalls, laitence, and all traces of foreign material. Detergent cleaning shall precede blast cleaning as necessary to ensure removal of contaminants that are detrimental to achieving an adequate bond.

Materials: Reinforcing steel - 509, grade 60, epoxy coated;  
Concrete: 511 Class S

**Shrinkage Crack Control Joints:**

Shrinkage control joints shall be placed in the new concrete at the same location as the existing deflection joints and shall be made at right angle to the deck by sawing to match alignment of existing deflection joints. The saw cut shall be made in the complete circumference of the parapet, starting and ending at the elevation of the concrete deck. The depth of the saw cut shall be one (1) inch. The saw cutting shall be done no more than 48 hours after the concrete placement. The use of an edge guide, fence or jig is required to insure that the cut is straight, true and aligned on all faces of the parapet. The joint width shall be the width of the saw blade, not to exceed one-quarter (1/4") of an inch. The sawcut shall be filled with a caulking material conforming to Federal Specification TT-S-00227E. The bottom one half inch (1/2") of both the inside and outside faces of the parapet should be left unsealed to allow any water which may enter the joint to escape.

**Method of Measurement:**

The quantity shall be the actual length of railing faced as measured from end of wingwall. This item shall include the furnishing of all labor, equipment and materials necessary to complete this work. All costs of removal, dowel holes, reinforcing steel, concrete and shrinkage control joints complete and in place shall be included in the unit price bid

| ITEM | UNIT    | DESCRIPTION               |
|------|---------|---------------------------|
| 517  | LIN.FT. | RAILING FACED AS PER PLAN |

The Department of Communications, located at 400 East William Street, Delaware, Ohio 43015, shall be notified at least seven (7) days in advance of starting work.

PHONE: (614) 363-1251 ext. 469

Structure File Numbers = 5100453, 5101174 and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

GENERAL NOTES  
MAR-23-0585 / MAR-23-1692  
MAR-231-0343

| DESIGNED | DRAWN (ACD)             | TRACED | CHECKED     | REVIEWED      | DATE   | REVISED |
|----------|-------------------------|--------|-------------|---------------|--------|---------|
|          | <i>J.H. [Signature]</i> |        | <i>R.M.</i> | <i>D.P.P.</i> | 8/4/94 |         |

# General Notes Continued

## ITEM 519 - PATCHING CONCRETE STRUCTURES, As Per Plan.

This item shall include patching areas as shown on the details on sheet no. 7/11.

## ITEM 614 - MAINTAINING TRAFFIC

[MAR-231-0343] - The Contractor shall arrange his operations in accordance with Std. Dwgs. MT-96.11, MT-96.20, MT-96.25. All vehicles, equipment, men and their activities are restricted at all times to one side of the pavement unless otherwise approved by the Engineer.

Also included under this item for payment:

[MAR-23-0585 and MAR-23-1692] - The Contractor shall plan his operations in such a manner as to maintain un-interrupted thru traffic on one structure while work is being done on the other. Advanced road closure signs (Such as the one shown on plan sheet 5/11 at bottom of location maps) shall be placed by the Contractor at locations approved by the Engineer. Type-III barricade shall be used for closing structures to traffic.

## NON-FUNCTIONING TRAFFIC CONTROL SIGNALS / DEVICES...

The Contractor shall provide ODOT with a phone number where the Contractor or a representative of the Contractor can be reached 24 hours a day.

The Contractor shall have four (4) hours from the time ODOT first attempts to contact the Contractor using the 24 hour number, to have the signal(s) / device(s) in full operating order, or to provide two (2) flaggers at the project to maintain traffic, or to provide two (2) off duty law enforcement officers (LEO's) at the project to maintain traffic.

If the Contractor does not meet this four (4) hour response time, the Contractor shall pay for all LEO's, state or private traffic crews, equipment and materials used at the discretion of ODOT to establish traffic control.

In addition, \$100.00 per hour in liquidated damages will be deducted from the project estimates for each hour after the initial four (4) hour period, that the Contractor fails to provide maintenance of traffic at the project.

## ITEM 619 - FIELD OFFICE, TYPE A

The Contractor shall provide a suitable field office having a minimum of 150 sq. ft. of floor space and in addition to the requirements of ITEM 619, he shall provide and maintain sanitary provisions as per 107.06. All of the above shall be included in the lump sum bid price for ITEM 619 - FIELD OFFICE.

## ITEM 642 = CENTERLINES & EDGE LINES, TYPE 2

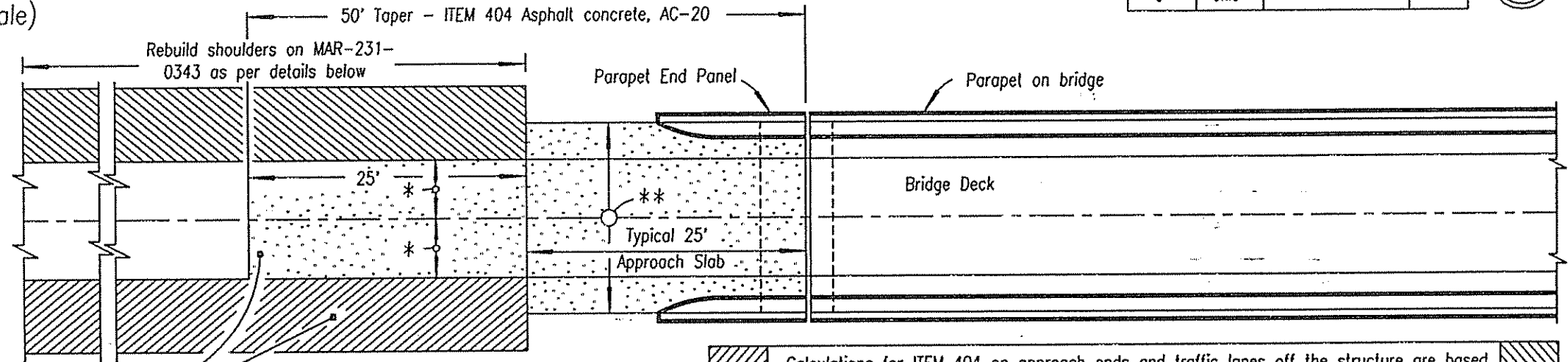
Upon completion of the overlay and the tapers, the Contractor shall replace centerlines (double solid yellow) and solid white edge lines to their original configuration.

## ITEM SPECIAL - FULL DEPTH REPAIR

A quantity has been provided on the Estimated Quantities Sheet for full depth failure areas of the deck that need to be removed and replaced as directed by the Engineer.

# RESURFACING DETAILS

(Not To Scale)



PLAN VIEW  
(See plan views on sheets 6/11 and 7/11 for skew information)

| FEDERAL REGION | STATE | FEDERAL PROJECT |
|----------------|-------|-----------------|
| 5              | OHIO  |                 |

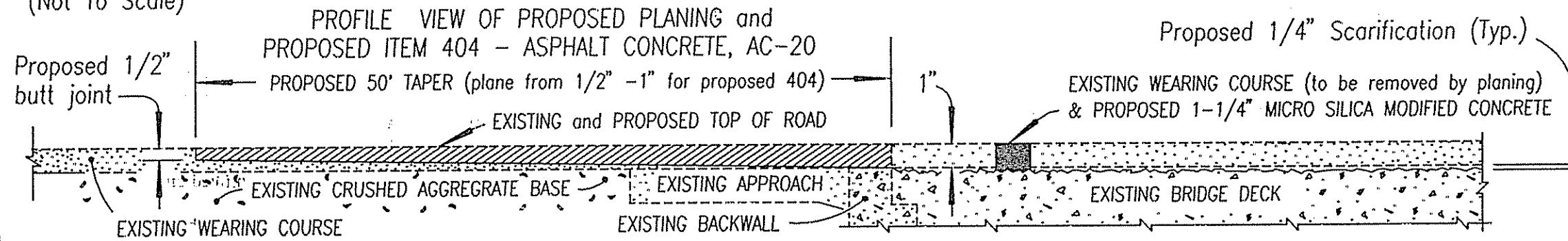
Proposed planing and ITEM 404 (See detail directly below for additional details)  
Proposed rebuilding of shoulders for MAR-231-0343 only. (See detail at bottom of sheet for additional details)

Calculations for ITEM 404 on approach ends and traffic lanes off the structure are based on an average depth of 3/4" and the length and width dimensions given in this detail.

- \* { MAR-23-0585 has 12' wide lanes
- \* { MAR-23-1692 has 10' wide lanes
- \* { MAR-231-0343 has 12' wide lanes.
- \*\* { MAR-23-0585 - 28'
- \*\* { MAR-23-1692 - 28'
- \*\* { MAR-231-0343 - 32'

## PLANING / RESURFACING DETAIL

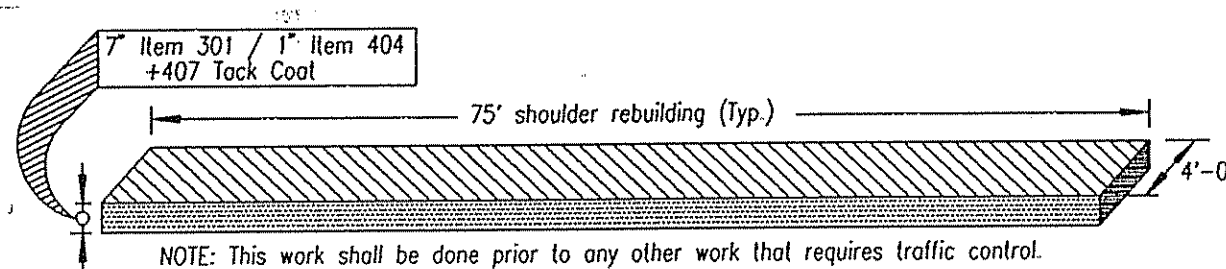
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## REBUILDING SHOULDERS DETAIL for FRA-231-0343

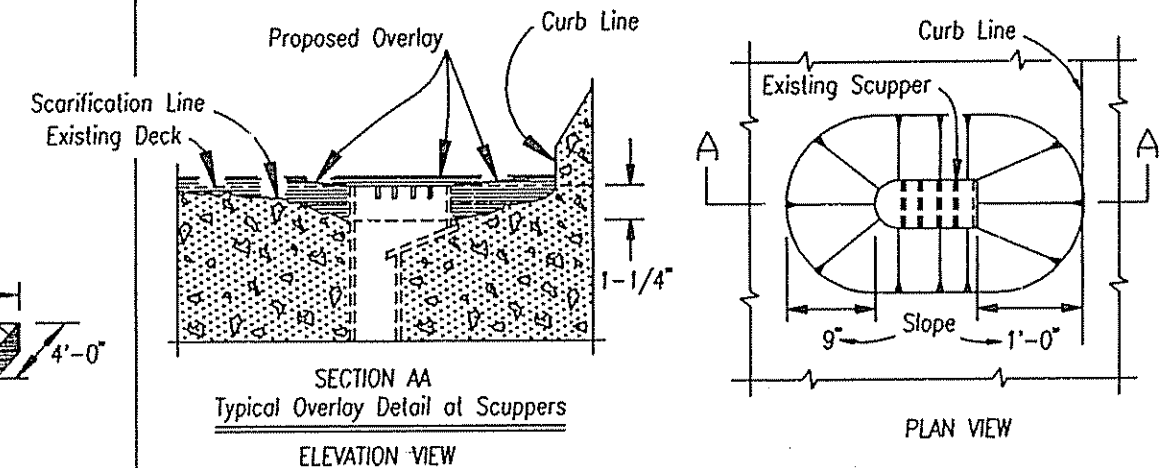
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MAR-231-0343 Typical detail for re-building shoulders off the structure. This work shall be done under pay Item's 203-Excavation Not Including Embankment Construction and Item's 301 & 404 for rebuilding the shoulders as shown in this detail.



## SCUPPER DETAILS

Not To Scale



STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

Continued GENERAL NOTES  
and RESURFACING DETAILS

| DESIGNED | DRAWN (ACB) | TRACED | CHECKED | REVIEWED | DATE       | REVISED |
|----------|-------------|--------|---------|----------|------------|---------|
|          |             |        | KM      |          | DPP 8/4/94 |         |

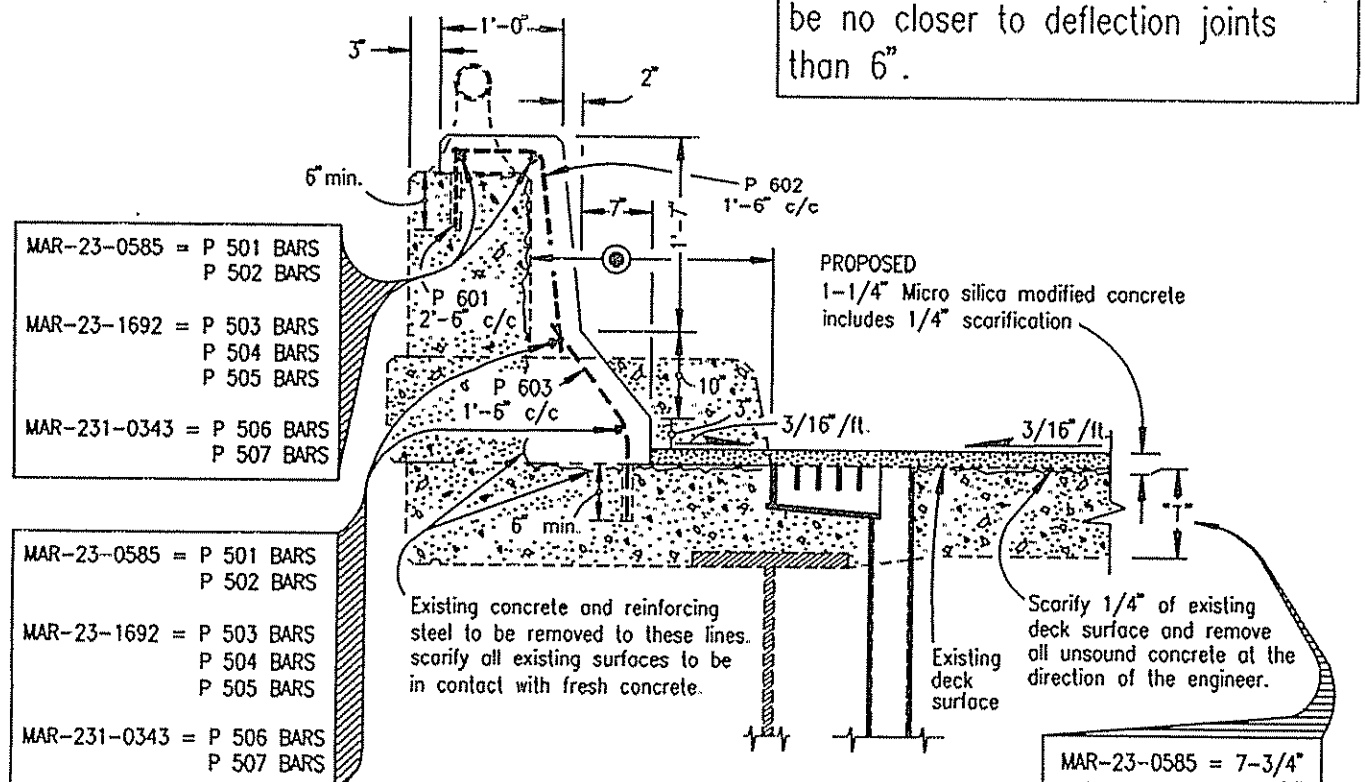
REFACING DETAILS FOR:

MAR-23-0585 / MAR-23-1692 / MAR-231-0343

This detail DOES NOT apply to proposed 14' parapet end section transitions.

The existing concrete safety curb widths for structures are: (MAR-23-0585 / 2'-0") - (MAR-23-1692) - (MAR-231-0343 / 1'-10")

P 601, P 602 and P 603 bars shall be no closer to deflection joints than 6".



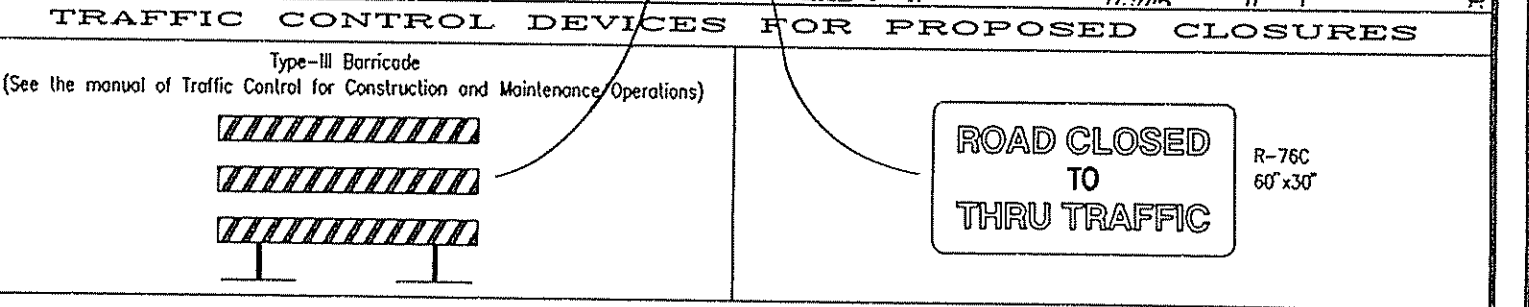
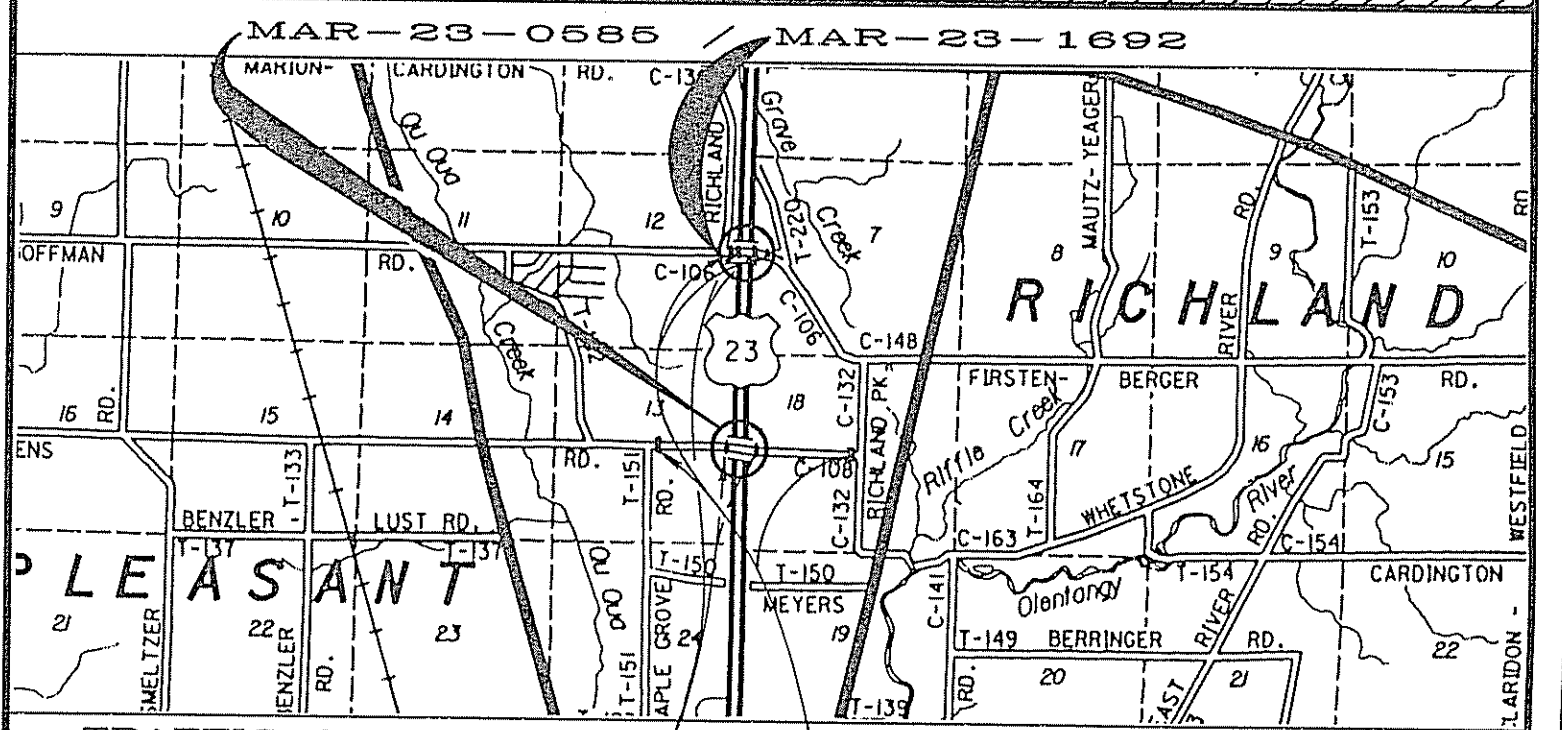
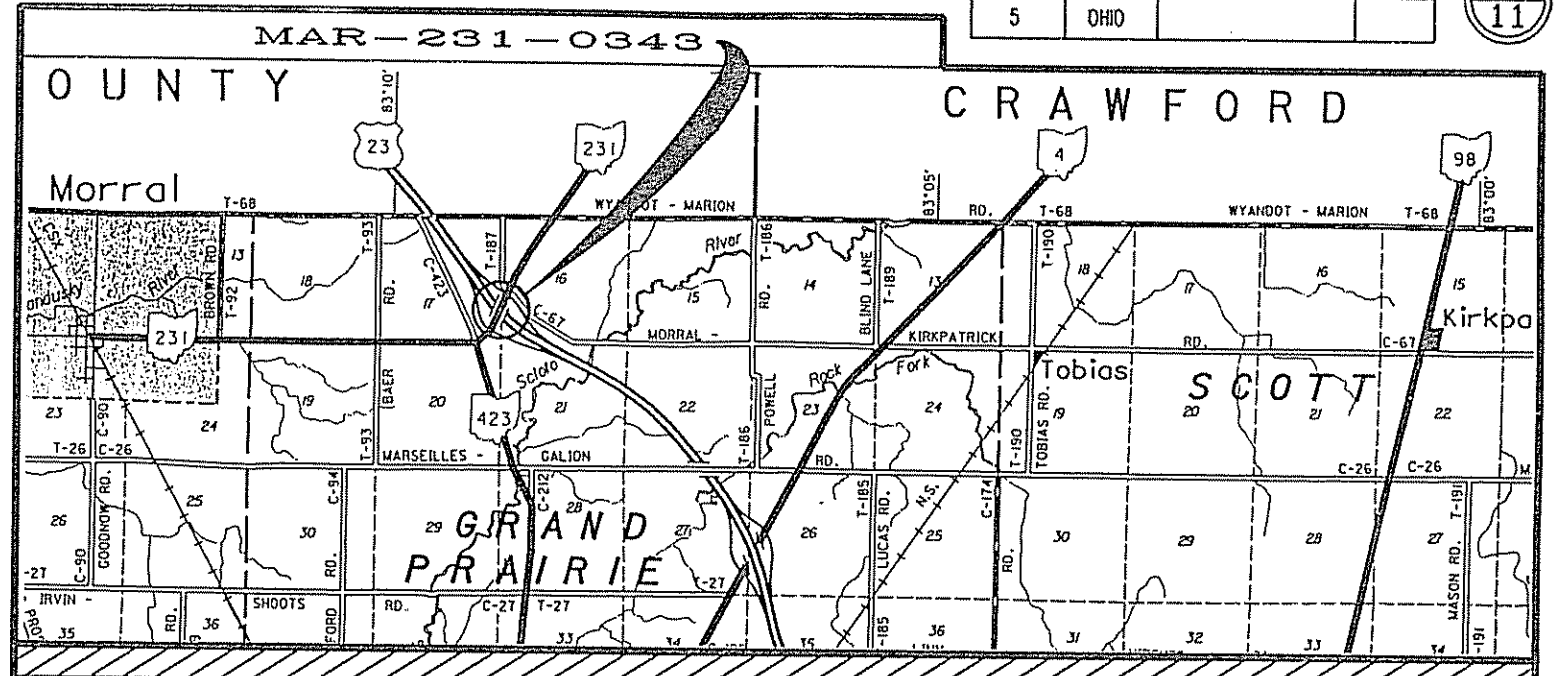
- MAR-23-0585 = P 501 BARS  
P 502 BARS
- MAR-23-1692 = P 503 BARS  
P 504 BARS  
P 505 BARS
- MAR-231-0343 = P 506 BARS  
P 507 BARS

TRANSVERSE SECTION  
NOT TO SCALE

LOCATION MAPS

|             |       |                 |
|-------------|-------|-----------------|
| FHWA REGION | STATE | FEDERAL PROJECT |
| 5           | OHIO  |                 |

5  
11



STRUCTURE FILE NUMBERS = 5100453, 5101174 and 5103215

See sheet 8/11 for reinforcing steel list for ITEM -517 Refacing of Parapet.

See sheet 9/11 for additional proposed parapet reinforcing steel details.

See sheet 2/11 for sealing of concrete surfaces

SIGNAL TIMING DIAGRAM

| MAR-231-0343 |            |            |            |            |            |
|--------------|------------|------------|------------|------------|------------|
| Interval 1   | Interval 2 | Interval 3 | Interval 4 | Interval 5 | Interval 6 |
| 15           | 20         | 4          | 15         | 20         | 4          |
| RED          | GREEN      | AMBER      | RED        | GREEN      | AMBER      |

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

Transverse Section /  
Signal Timing Chart / Location Maps

| DESIGNED | DRAWN (AND) | TRACED | CHECKED | REVIEWED | DATE       | REVISED |
|----------|-------------|--------|---------|----------|------------|---------|
|          |             |        |         |          | DPP 8/4/94 |         |

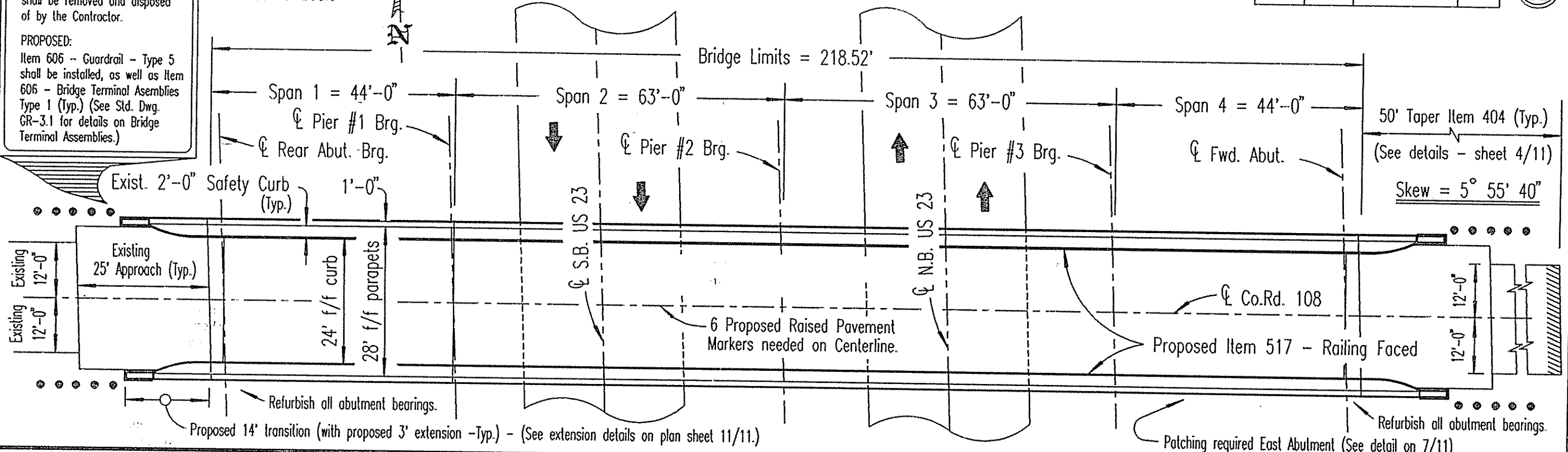
# PLAN VIEWS of MAR-23-0585 & MAR-23-1692

| FHWA REGION | STATE | FEDERAL PROJECT |
|-------------|-------|-----------------|
| 5           | OHIO  |                 |

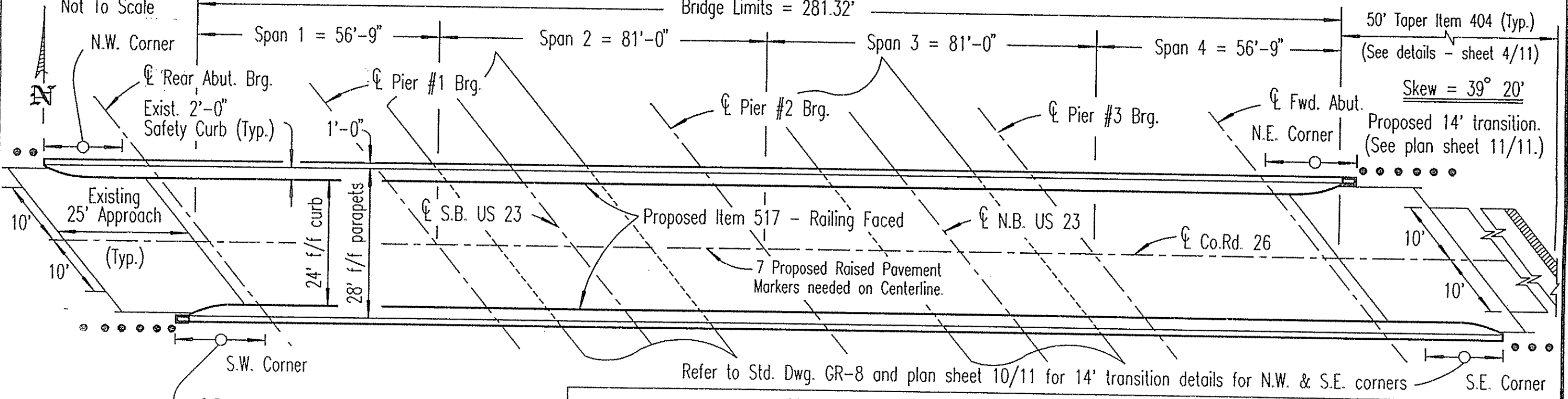
25' of existing guardrail from each corner of all 3 structures shall be removed and disposed of by the Contractor.

PROPOSED:  
Item 606 - Guardrail - Type 5 shall be installed, as well as Item 606 - Bridge Terminal Assemblies Type 1 (Typ.) (See Std. Dwg. GR-3.1 for details on Bridge Terminal Assemblies.)

MAR-23-0585  
Not To Scale



MAR-23-1692



Proposed 14' transition, with proposed 1'-4" extensions on N.E. & S.W. corners. (See plan sheet 11/11 for extension details.)

STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

|          |                    |        |                    |          |            |         |
|----------|--------------------|--------|--------------------|----------|------------|---------|
| DESIGNED | DRAWN (ACD)        | TRACED | CHECKED            | REVIEWED | DATE       | REVISED |
|          | <i>[Signature]</i> |        | <i>[Signature]</i> |          | DPP 8/4/94 |         |

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

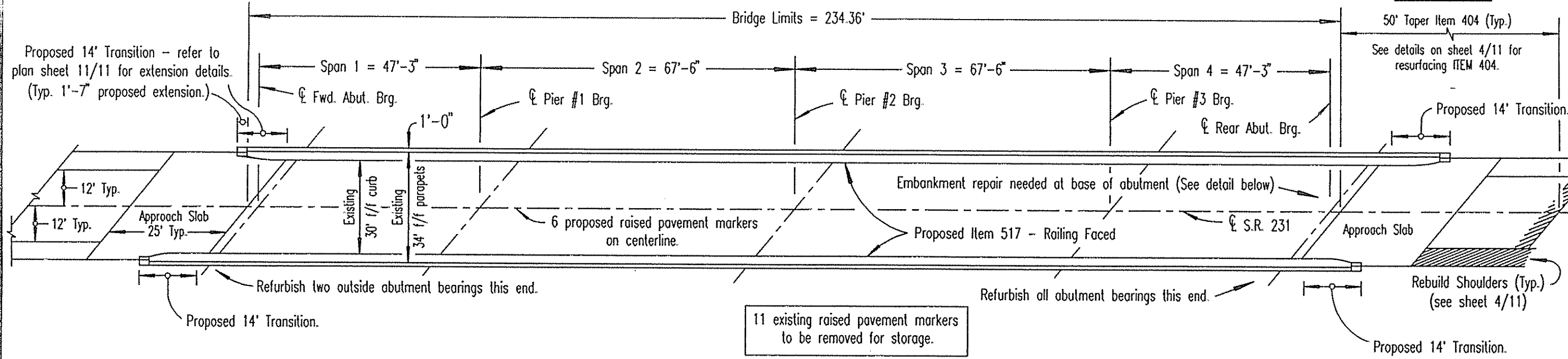
MAR-23-0585 and MAR-23-0687  
PLAN VIEWS

# PLAN VIEW - MAR-231-0343

|                |       |                 |  |
|----------------|-------|-----------------|--|
| FEDERAL REGION | STATE | FEDERAL PROJECT |  |
| 5              | OHIO  |                 |  |

7  
11

Skew = 22° 03'



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

O.U.P.S. REFERENCE NO'S for THIS PLAN

|              |  |
|--------------|--|
| MAR-23-0585  | { 302PAZ-33 (Pleasant Township)<br>302PAZ-34 (Richland Township) |
| MAR-23-1692  | { 302PAZ-35 (Pleasant Township)<br>302PAZ-36 (Richland Township) |
| MAR-231-0343 | - 302PAZ-37 (Grand Prairie Township)                             |

The utility owners shown in this plan are as obtained from: OHIO UTILITIES PROTECTION SERVICE (O.U.P.S.). These utility owners shall be contacted prior to any digging on the project so that any and all utilities within the work limits of this project can be properly and clearly identified by their owners as required by Section 153.64 of the OHIO REVISED CODE (ORC).

**UTILITY OWNERSHIP / UNDERGROUND UTILITIES**

- COLUMBIA GAS OF OHIO**  
1-(614)-460-2079  
939 W. GOODALE BLVD.  
COLUMBUS, OHIO 43212
- COLUMBIA GAS TRANSMISSION**  
Mr. Mark Brodt  
1-(614)-895-5033  
4111 Executive Parkway  
Sunbury Woods Office Park  
Westerville, Ohio 43081
- AMERITECH (OHIO BELL)**  
Mr. Mike Kellner  
1-(614)-223-8535  
150 East Gay St. Room 6C  
Columbus, Ohio 43215

**UNITED TELEPHONE**  
Ms. Mary Martin  
1-(419)-755-7138  
175 Ashland Road  
Mansfield, Ohio 44902

**OHIO POWER**  
Mr. Stanley Wilson  
1-(614)-464-7911  
215 North Front Street  
Columbus, Ohio 43215

**ASHLAND PATROLIUM**  
Mr. James Neiderhouser  
1-(419)-884-0800  
245 Mill Street  
Lexington, Ohio 44904

**TIMES MIRROR CABLE**  
1-(614)-387-2288  
160 North Greenwood  
Marion, Ohio 43302

**SUBURBAN NATURAL GAS**  
Mr. Aaron Roll  
1-(800)-262-2321  
369-2345  
575 Sunbury Road, Suite A  
Delaware, Ohio 43015

**WARNER CABLE**  
Mr. Rick Liedtke  
1-(513)-644-9171  
14500 Industrial Parkway  
Marysville, Ohio 43040

**UNITED TELEPHONE**  
1-(419)-755-7138  
175 Ashland Road  
Mansfield, Ohio 44902

**AT&T**  
Mr. Art Fincher  
1-(404)-810-4497  
1200 Peachtree Street  
Room P.A. 158  
Atlanta, Georgia 30309

**OHIO AMERICAN WATER**  
Mr. Ron Griffith  
1-(614)-387-2293  
365 East Center Street  
Marion, Ohio 43302

**OHIO EDISON**  
Mr. Joseph Lunardini  
1-(800)-321-0468  
1-(216)-384-5715 ex.4631  
FAX 1-(216)-384-5014  
76 South Main Street  
Akron, Ohio 44308

**SCI CABLE**  
1-(614)-382-1088  
1195 North Main  
Marion, Ohio 43302

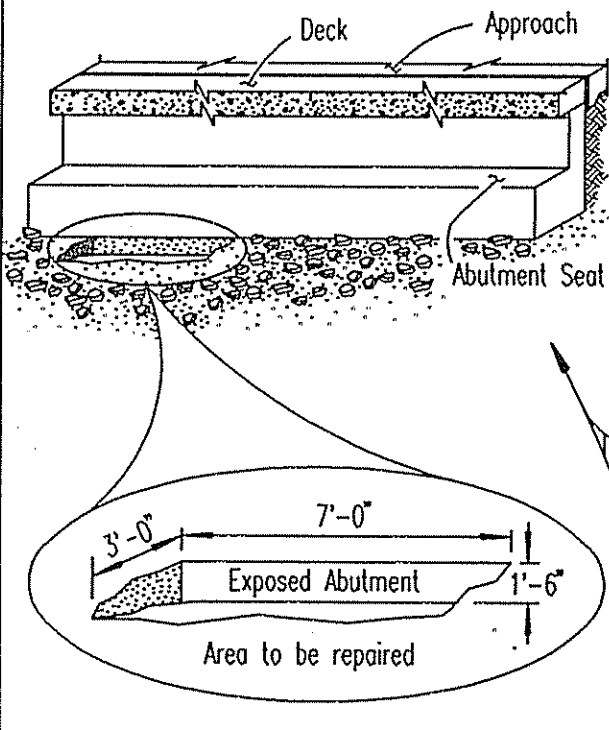
**MARION RURAL ELECTRIC**  
Mr. John Metcalf  
1-(614)-382-1234  
2859 Marion-Upper Sandusky Rd.  
P.O. Box 501  
Marion, Ohio 43302

**CARDINGTON WATER & SEWER**  
1-(419)-864-7607  
215 Park Ave.  
P.O. Box 10  
Cardington, Ohio 43315

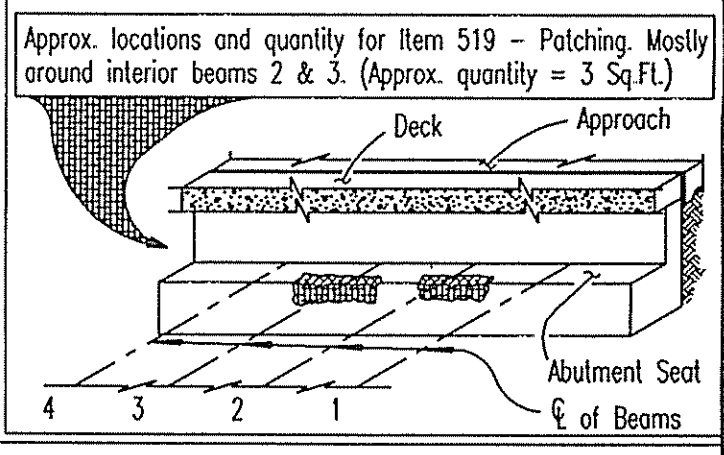
**GTE NORTH, INC.**  
Mr. Jerry Owings  
1-(614)-383-0551 & 369-0576  
550 Leader Street  
Marion, Ohio 43302

**MARATHON PIPELINE**  
Mr. Bob Sherrer  
1-(216)-825-1541  
2809 Baughman Road  
Clinton, Ohio 44216

**Item 203 - Embankment**  
MAR-231-0343 - East end of structure



**PATCHING DETAILS**  
MAR-23-0585 - East End of Structure



"At the discretion of the Engineer, the Contractor shall repair the washed out area of slope / footer protection under the East end of the structure on the Northern side of the structure. Also at the Engineer's discretion, some of the waste concrete from the refacing of parapets and/or the deck ends may be used as rip rap. Material shall be measured in a cubic yard quantity."

|   |  |  |             |        |         |          |            |         |
|---|--|--|-------------|--------|---------|----------|------------|---------|
| STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215  |  | DESIGNED   | DRAWN (AND) | TRACED | CHECKED | REVIEWED | DATE       | REVISED |
| STATE OF OHIO<br>DEPARTMENT OF TRANSPORTATION<br>DIVISION OF HIGHWAYS<br>DISTRICT SIX BRIDGE DEPARTMENT |  | PLAN VIEW MAR-231-0343<br>& UTILITIES<br>EMBANKMENT & PATCHING DETAILS |             |        |         |          | DPP 8/4/94 |         |

REINFORCING STEEL LISTS for DECK ENDS (PAYMENT UNDER ITEM 509)

| MARK         | NO.   | LENGTH IN FEET | WEIGHT IN POUNDS | SHAPE | BENDING DIAGRAMS |                |
|--------------|-------|----------------|------------------|-------|------------------|----------------|
| MAR-23-0585  | S 601 | 6              | 25'-9"           | 232   | S                | [Hatched Area] |
|              | S 701 | 6              | 25'-9"           | 316   | S                |                |
| MAR-23-1692  | S 602 | 6              | 33'-3"           | 300   | S                | [Hatched Area] |
|              | S 702 | 6              | 33'-3"           | 408   | S                |                |
| MAR-231-0343 | S 603 | 6              | 34'-1"           | 307   | S                | [Hatched Area] |
|              | S 703 | 6              | 34'-1"           | 418   | S                |                |

REINFORCING STEEL LISTS for ABUTMENT BACKWALL (PAYMENT UNDER ITEM 509)

| MARK        | NO.   | LENGTH IN FEET | WEIGHT IN POUNDS | SHAPE | BENDING DIAGRAMS |                |
|-------------|-------|----------------|------------------|-------|------------------|----------------|
| MAR-23-0585 | A 501 | 4              | 25'-9"           | 107   | S                | [Hatched Area] |
|             | A 502 | 8              | 18'-0"           | 150   | S                |                |
| MAR-23-1692 | A 503 | 8              | 18'-8"           | 156   | S                | [Hatched Area] |
|             | A 504 | 8              | 18'-0"           | 150   | S                |                |

REINFORCING STEEL LIST for PROPOSED PARAPET END SECTION EXTENSIONS

| MARK  | NO. | LENGTH FEET & INCHES | WEIGHT IN POUNDS | SHAPE |
|-------|-----|----------------------|------------------|-------|
| E 501 | 44  | 3'-1"                | 142              | S     |
| E 502 | 44  | 8'-3"                | 379              | B     |
| E 503 | 12  | 3'-4"                | 42               | B     |
| E 504 | 6   | 1'-8"                | 11               | B     |
| E 505 | 12  | 1'-11"               | 24               | B     |
| E 506 | 12  | 3'-4"                | 42               | S     |
| E 507 | 6   | 1'-8"                | 11               | S     |
| E 508 | 12  | 1'-11"               | 24               | S     |

REINFORCING STEEL LIST for REFACING WORK -- PAID FOR UNDER ITEM-517

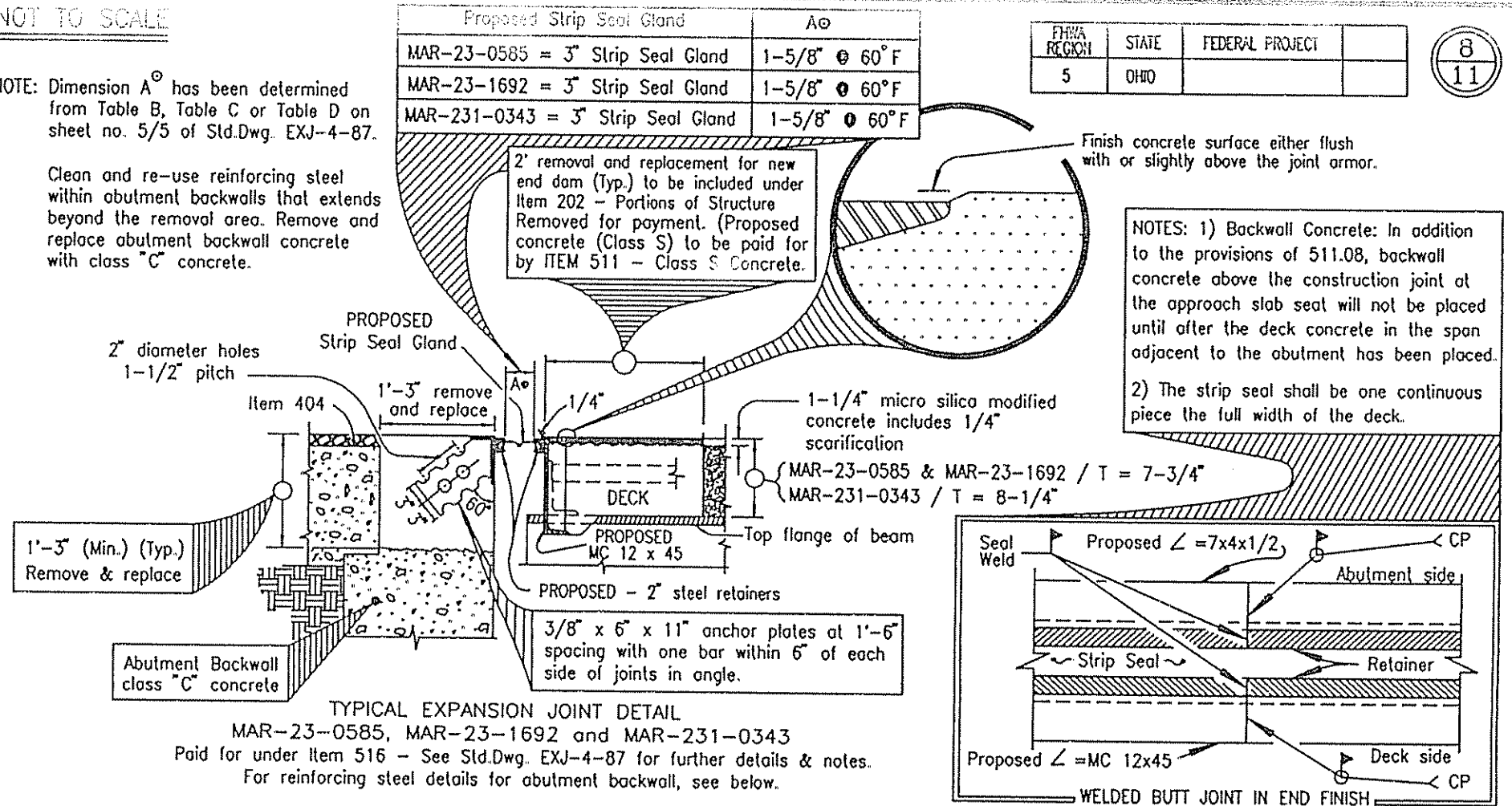
| MARK     | NO.   | LENGTH IN FEET | WEIGHT IN POUNDS | SHAPE | BENDING DIAGRAMS                    |
|----------|-------|----------------|------------------|-------|-------------------------------------|
| P 501    | 16    | 10'-8"         | 178              | S     | [Bending Diagrams for P 602, P 603] |
| P 502    | 64    | 32'-11"        | 1,940            | S     |                                     |
| P 503    | 96    | 15'-2"         | 1,519            | S     |                                     |
| P 504    | 8     | 12'-4"         | 103              | S     | [Bending Diagrams for P 602, P 603] |
| P 505    | 72    | 33'-0"         | 2,479            | S     |                                     |
| P 506    | 8     | 12'-1"         | 101              | S     |                                     |
| P 507    | 64    | 31'-0"         | 2,070            | S     | [Bending Diagrams for P 602, P 603] |
| ** P 601 | 698   | 10"            | 874              | S     |                                     |
| ** P 602 | 1,116 | 2'-4"          | 3,912            | B     |                                     |
| ** P 603 | 1,116 | 1'-11"         | 3,213            | B     |                                     |

\*\* Sum of bars used in MAR-23-0585, MAR-23-1692 and MAR-231-1692.

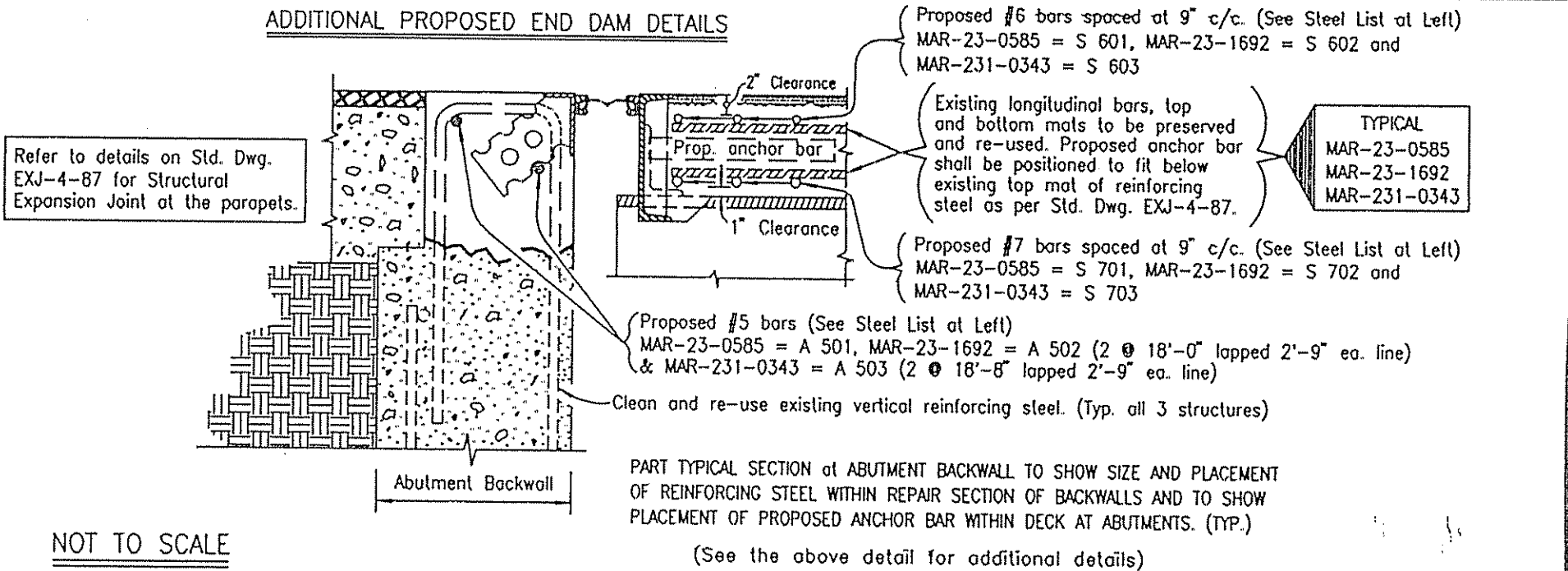
NOT TO SCALE

NOTE: Dimension A<sup>o</sup> has been determined from Table B, Table C or Table D on sheet no. 5/5 of Std.Dwg. EXJ-4-87.

Clean and re-use reinforcing steel within abutment backwalls that extends beyond the removal area. Remove and replace abutment backwall concrete with class "C" concrete.



ADDITIONAL PROPOSED END DAM DETAILS



STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

MAR-23-0585, MAR-23-1692 and MAR-231-0343  
REINFORCING STEEL LISTS / END DAM DETAILS

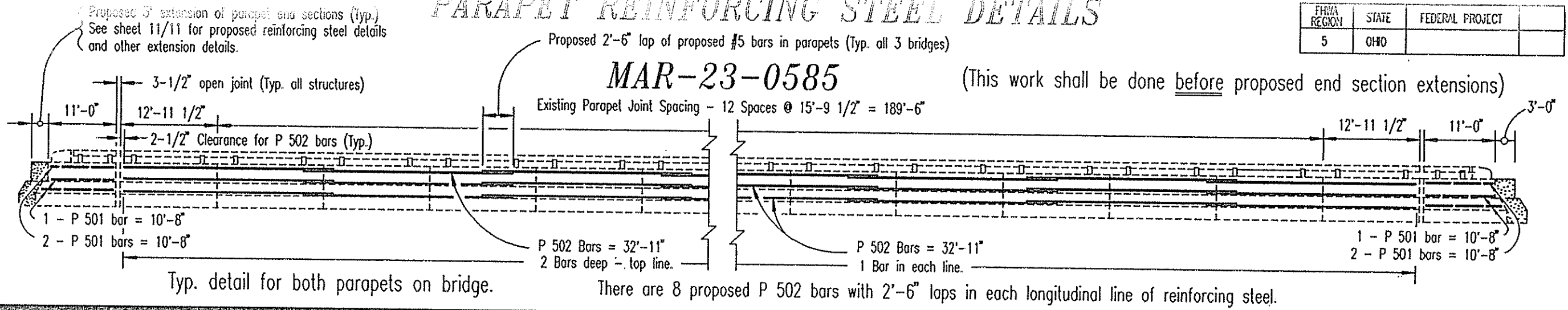
| DESIGNED | DRAWN (WCP) | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|----------|-------------|--------|---------|----------|------|---------|
|          |             |        |         |          |      |         |



# PARAPET REINFORCING STEEL DETAILS

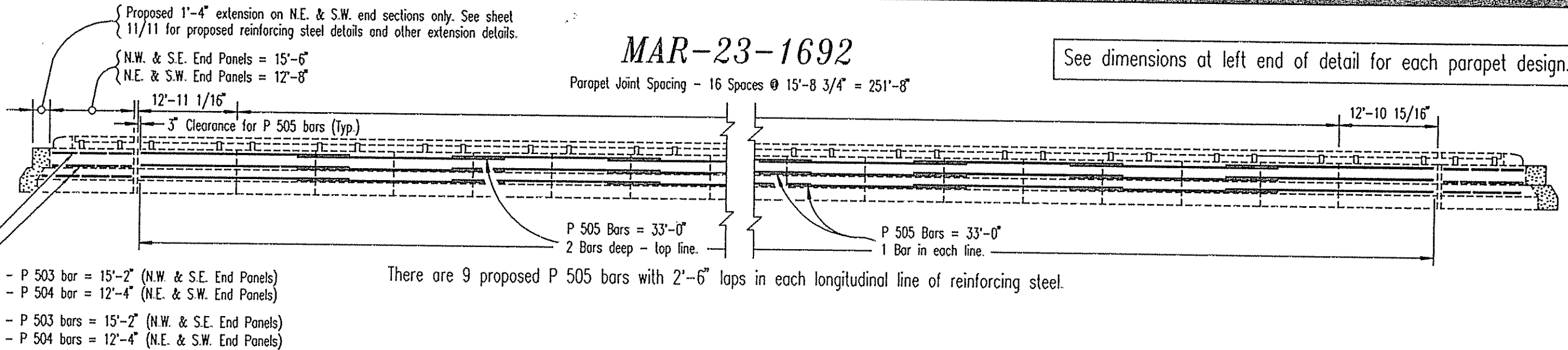
|             |       |                 |
|-------------|-------|-----------------|
| FHWA REGION | STATE | FEDERAL PROJECT |
| 5           | OHIO  |                 |

9  
11



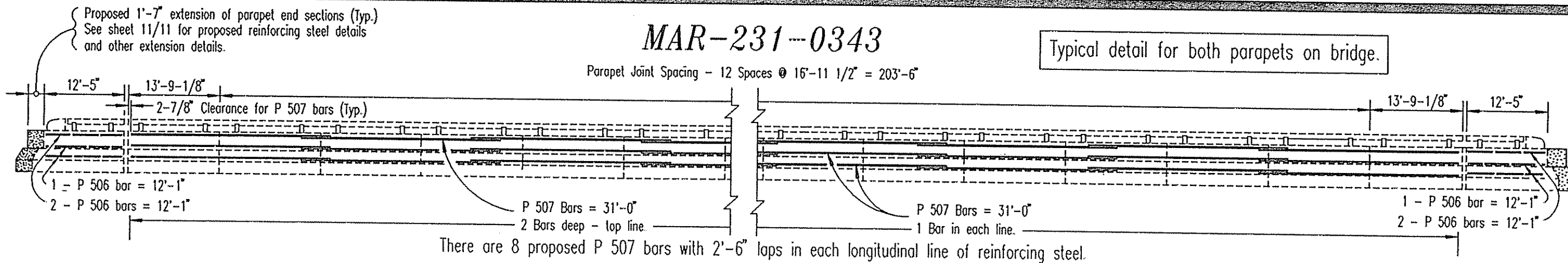
Typ. detail for both parapets on bridge.

There are 8 proposed P 502 bars with 2'-6" laps in each longitudinal line of reinforcing steel.



There are 9 proposed P 505 bars with 2'-6" laps in each longitudinal line of reinforcing steel.

See dimensions at left end of detail for each parapet design.



There are 8 proposed P 507 bars with 2'-6" laps in each longitudinal line of reinforcing steel.

Typical detail for both parapets on bridge.

For additional details of parapet steel and refacing procedures, see sheet no. 5/11.

STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

PARAPET REINFORCING  
STEEL DETAILS

| DESIGNED | DRAWN (VAD)        | TRACED | CHECKED            | REVIEWED           | DATE       | REVISED |
|----------|--------------------|--------|--------------------|--------------------|------------|---------|
|          | <i>[Signature]</i> |        | <i>[Signature]</i> | <i>[Signature]</i> | DPP 8/4/94 |         |

# PAINTING DETAILS / PARAPET END SECTION DETAILS

|                |       |                 |
|----------------|-------|-----------------|
| FEDERAL REGION | STATE | FEDERAL PROJECT |
| 5              | OHIO  |                 |

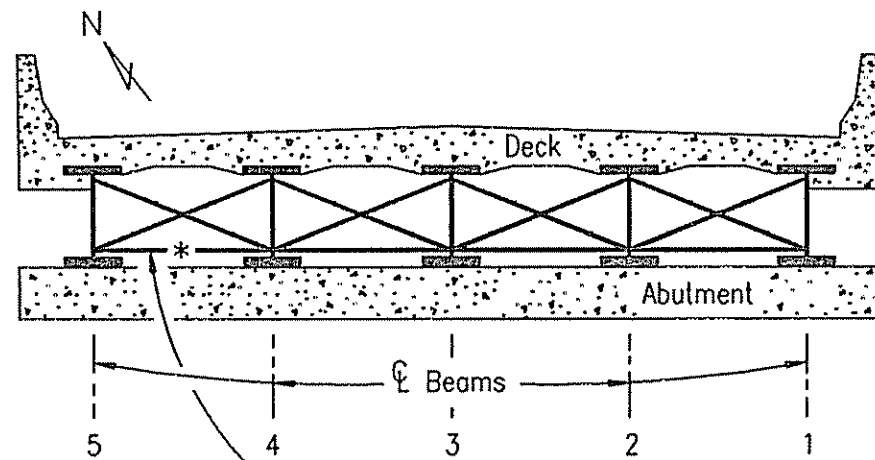
10  
11

NOT TO SCALE

## PAINTING DETAILS

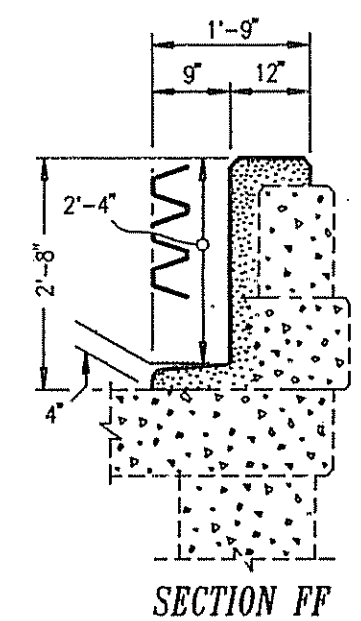
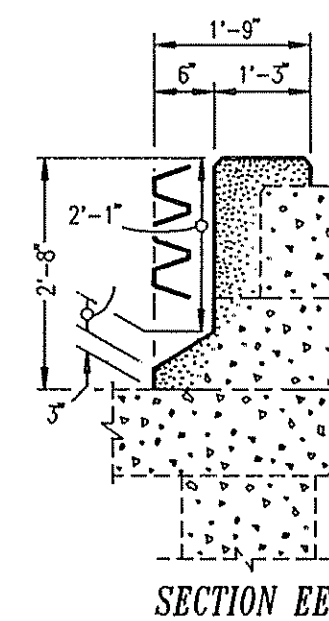
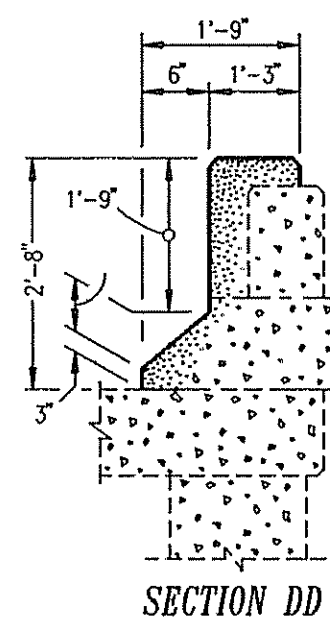
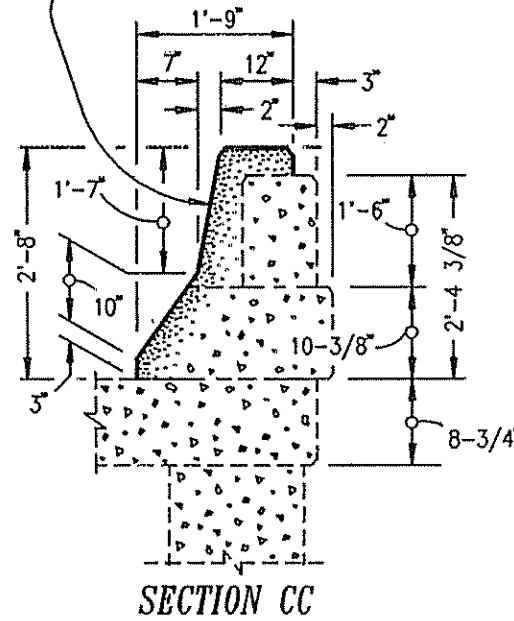
MAR-231-0343

ITEM SPECIAL - FIELD PAINTING of EXISTING STEEL  
(TOTAL QUANTITY CARRIED TO THE ESTIMATED QUANTITIES SHEET)



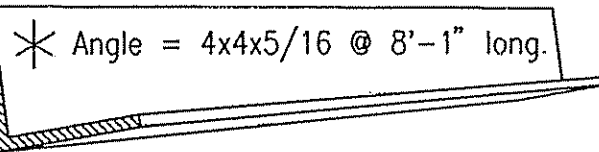
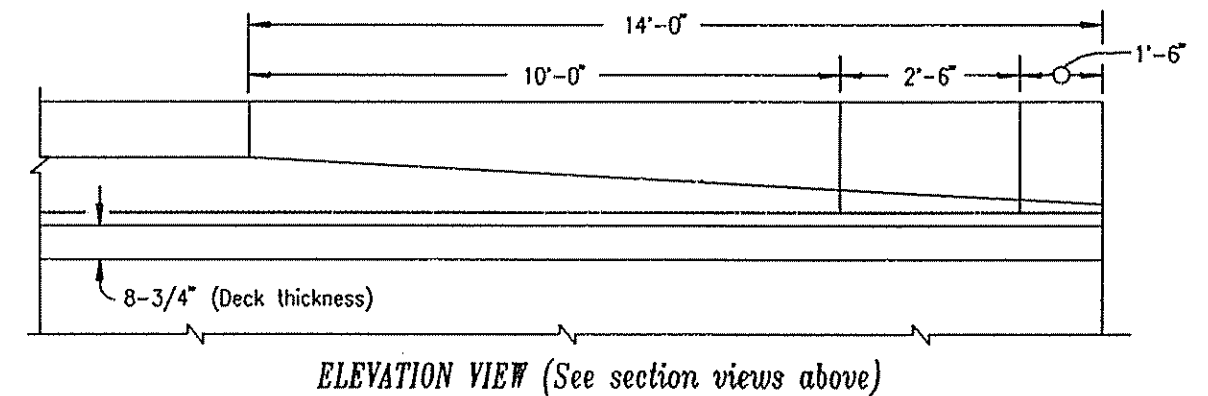
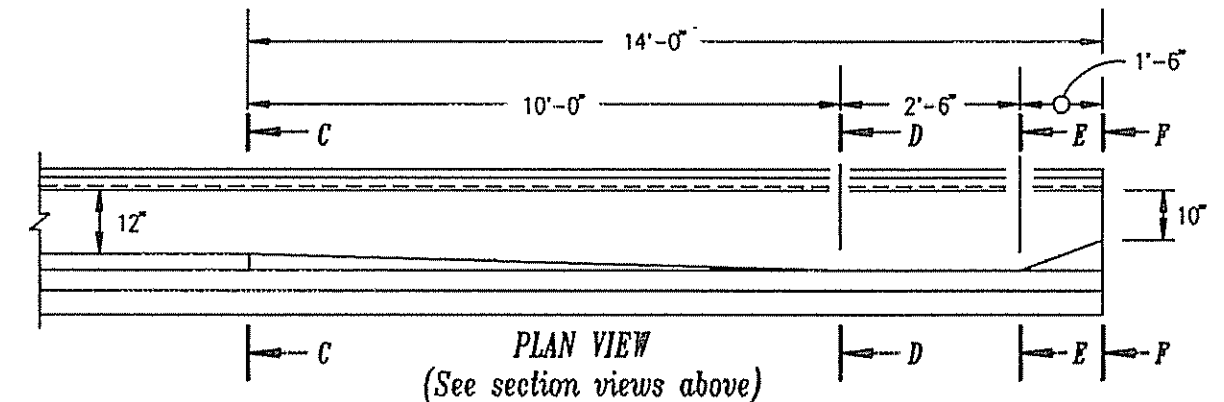
(DETAIL REPRESENTS EAST ABUTMENT)

Heavy line and dots indicate proposed refacing work.



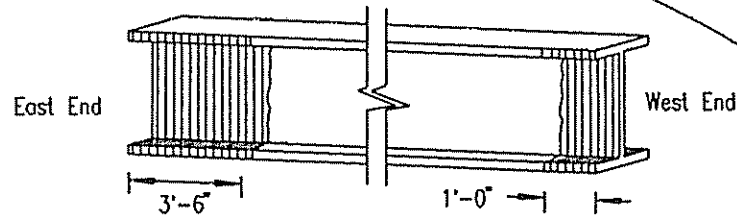
MAR-23-1692

N.W. and S.E. parapet end sections shall be constructed as per the details shown here and those described in Std. Dwg. GR-8. See sheet 11/11 for details for all other end section construction details.

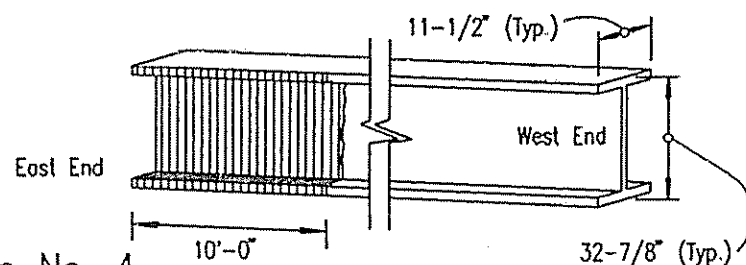


N.E. bottom end cross frame angle shall be cleaned and painted.

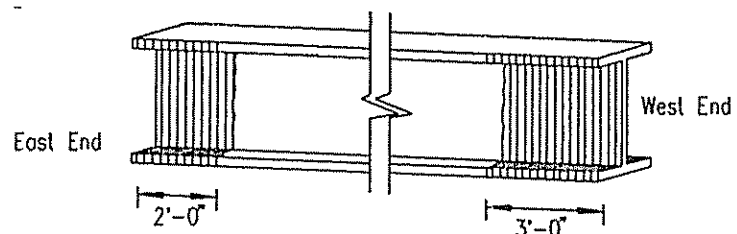
The calculated sq.ft. quantity for this single bottom end crossframe angle = 11 sq.ft. This quantity has been added to the estimated quantities sheet total for Item Spec. Field Painting of Existing Steel...



Beam No. 1



Beam No. 4



Beam No. 5

STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DISTRICT SIX BRIDGE DEPARTMENT

## PAINTING DETAILS / PARAPET END SECTION DETAILS

| DESIGNED | DRAWN (ACD)        | TRACED | CHECKED            | REVIEWED | DATE       | REVISED |
|----------|--------------------|--------|--------------------|----------|------------|---------|
|          | <i>[Signature]</i> |        | <i>[Signature]</i> |          | DPP 8/4/94 |         |

# PROPOSED PARAPET END SECTION EXTENSION DETAILS

|             |       |                 |
|-------------|-------|-----------------|
| AREA REGION | STATE | FEDERAL PROJECT |
| 5           | OHIO  |                 |

11  
11

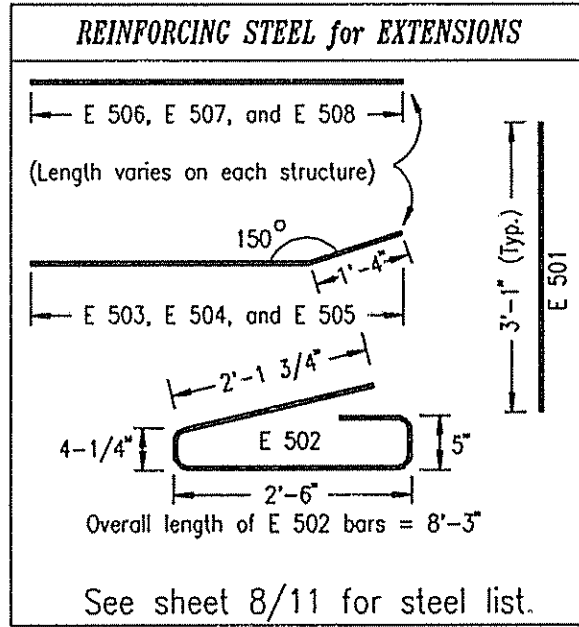
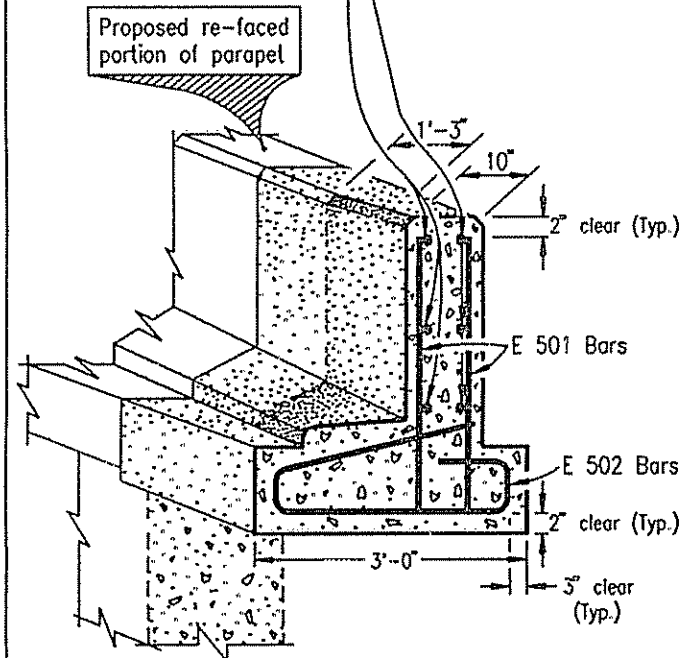
The Contractor shall follow the details shown on this plan sheet to construct proposed parapet end section extensions. Class S concrete shall be used for the proposed extensions. Quantities of class S concrete to be used for these extensions have been calculated using the dimensions shown in the details on this sheet. The additional quantity of Class S concrete required for this proposed work has been carried to the estimated quantities sheet, to be paid for under ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE. Proposed extensions shall be done after completion of proposed parapet re-facing (Typ).

NOT TO SCALE

E 506, 507 & 508 Bars  
(Doweled 6" min. - Typ.)

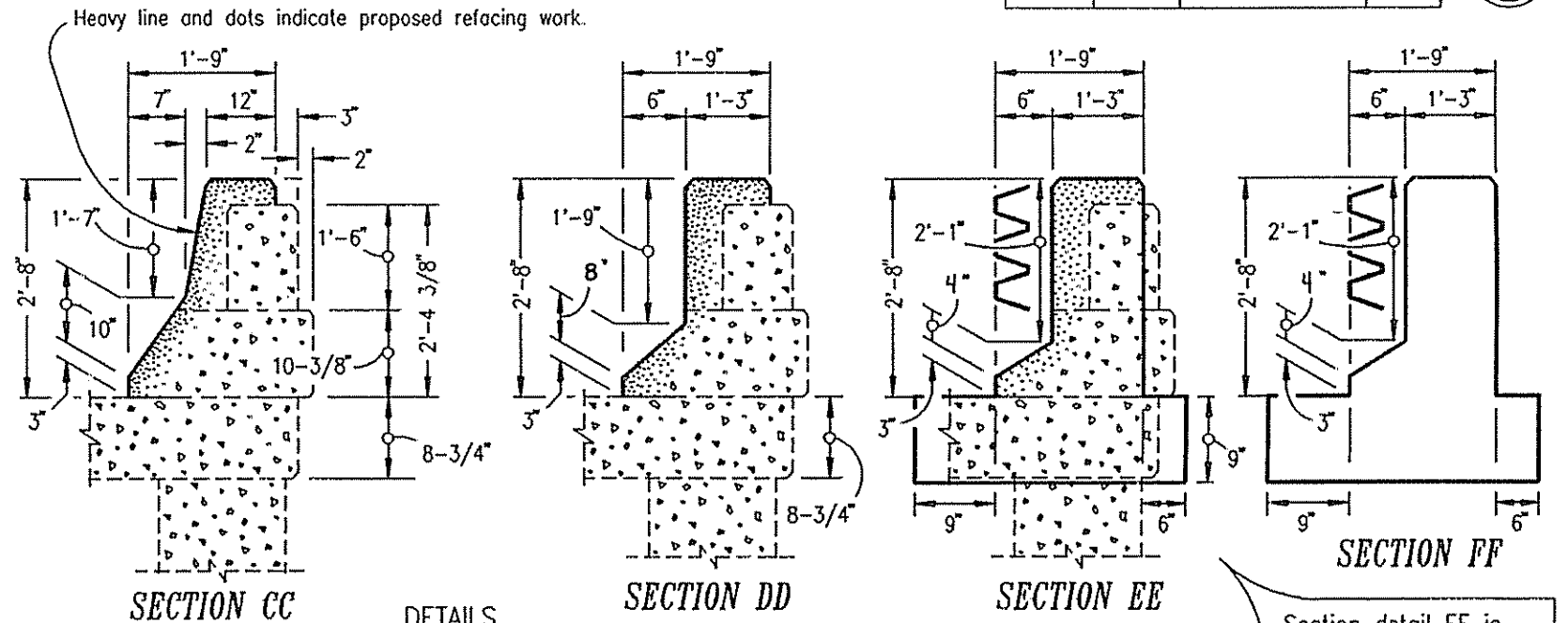
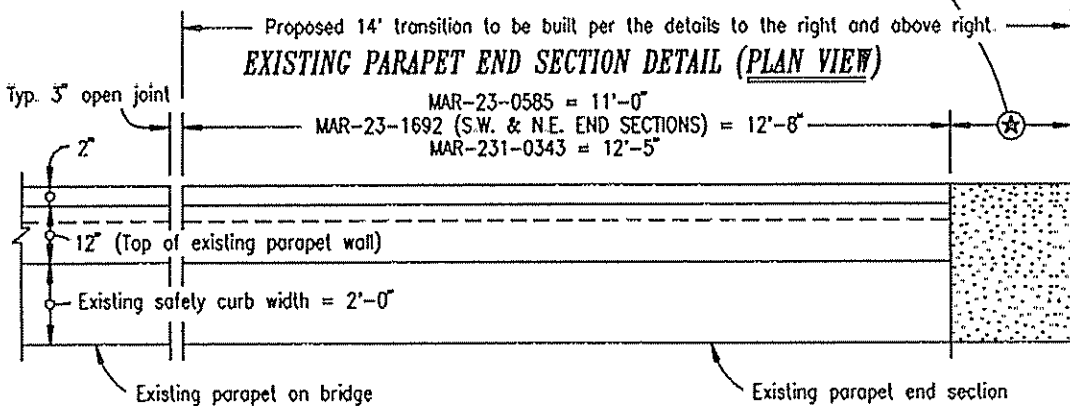
E 503, 504 & 505 Bars  
(Doweled 6" min. - Typ.)

- MAR-23-0585 { 20 - E 501 bars = 3'-1" long at 7" c/c.  
20 - E 502 bars = 8'-3" long at 7" c/c.  
12 - E 503 bars = 3'-4" doweled at 6" min.  
12 - E 506 bars = 3'-4" doweled at 6" min.
- MAR-23-1692 { 8 - E 501 bars = 3'-1" long at 7" c/c.  
8 - E 502 bars = 8'-3" long at 7" c/c.  
6 - E 504 bars = 1'-8" doweled at 6" min.  
6 - E 507 bars = 1'-8" doweled at 6" min.
- MAR-231-0343 { 16 - E 501 bars = 3'-1" long at 6" c/c.  
16 - E 502 bars = 8'-3" long at 6" c/c.  
12 - E 505 bars = 1'-11" doweled at 6" min.  
12 - E 508 bars = 1'-11" doweled at 6" min.



### PROPOSED LENGTHS OF EXTENSIONS (Class S Concrete)

- MAR-23-0585 = 3'-0" (Typ.)
- MAR-23-1692 (S.W. & N.E. END SECTIONS) = 1'-4"
- MAR-231-0343 = 1'-7" (Typ.)

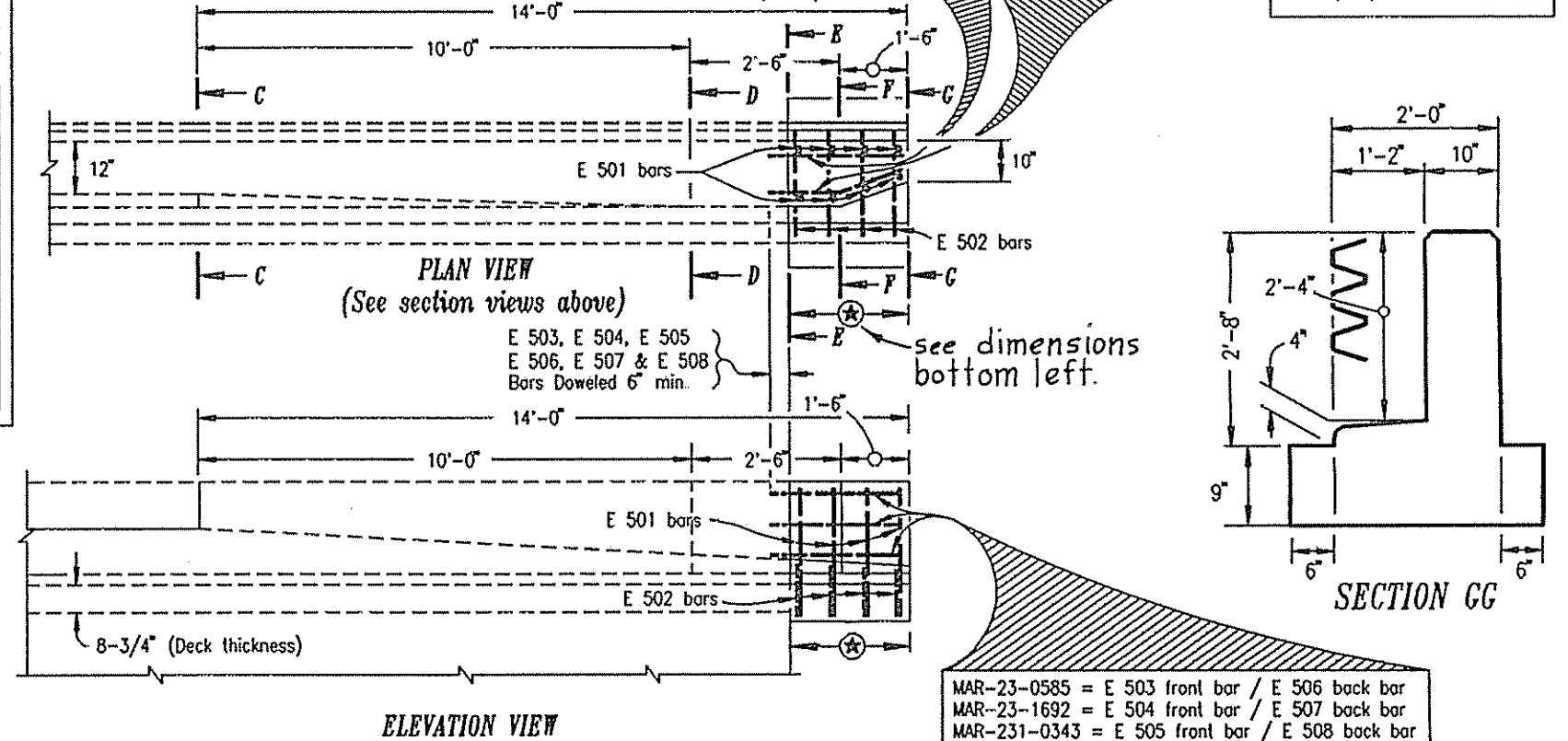


DETAILS  
NOT TO SCALE

- MAR-23-0585 = E 506 bars
- MAR-23-1692 = E 507 bars
- MAR-231-0343 = E 508 bars
- MAR-23-0585 = E 503 bars
- MAR-23-1692 = E 504 bars
- MAR-231-0343 = E 505 bars

Section detail EE is the point at which the proposed parapet end section transition meets the proposed extension.

### PROPOSED PARAPET END SECTION DETAILS (TYP.)



- MAR-23-0585 = E 503 front bar / E 506 back bar
- MAR-23-1692 = E 504 front bar / E 507 back bar
- MAR-231-0343 = E 505 front bar / E 508 back bar

STRUCTURE FILE NUMBERS = 5100453, 5101174, and 5103215

|   |   |  |          |             |        |         |          |      |         |
|---|---|--|----------|-------------|--------|---------|----------|------|---------|
| STATE OF OHIO<br>DEPARTMENT OF TRANSPORTATION<br>DIVISION OF HIGHWAYS<br>DISTRICT SIX BRIDGE DEPARTMENT | PROPOSED PARAPET END SECTION<br>EXTENSION DETAILS |  | DESIGNED | DRAWN (ACD) | TRACED | CHECKED | REVIEWED | DATE | REVISED |
|   |   |  |          |             |        |         |          |      |         |