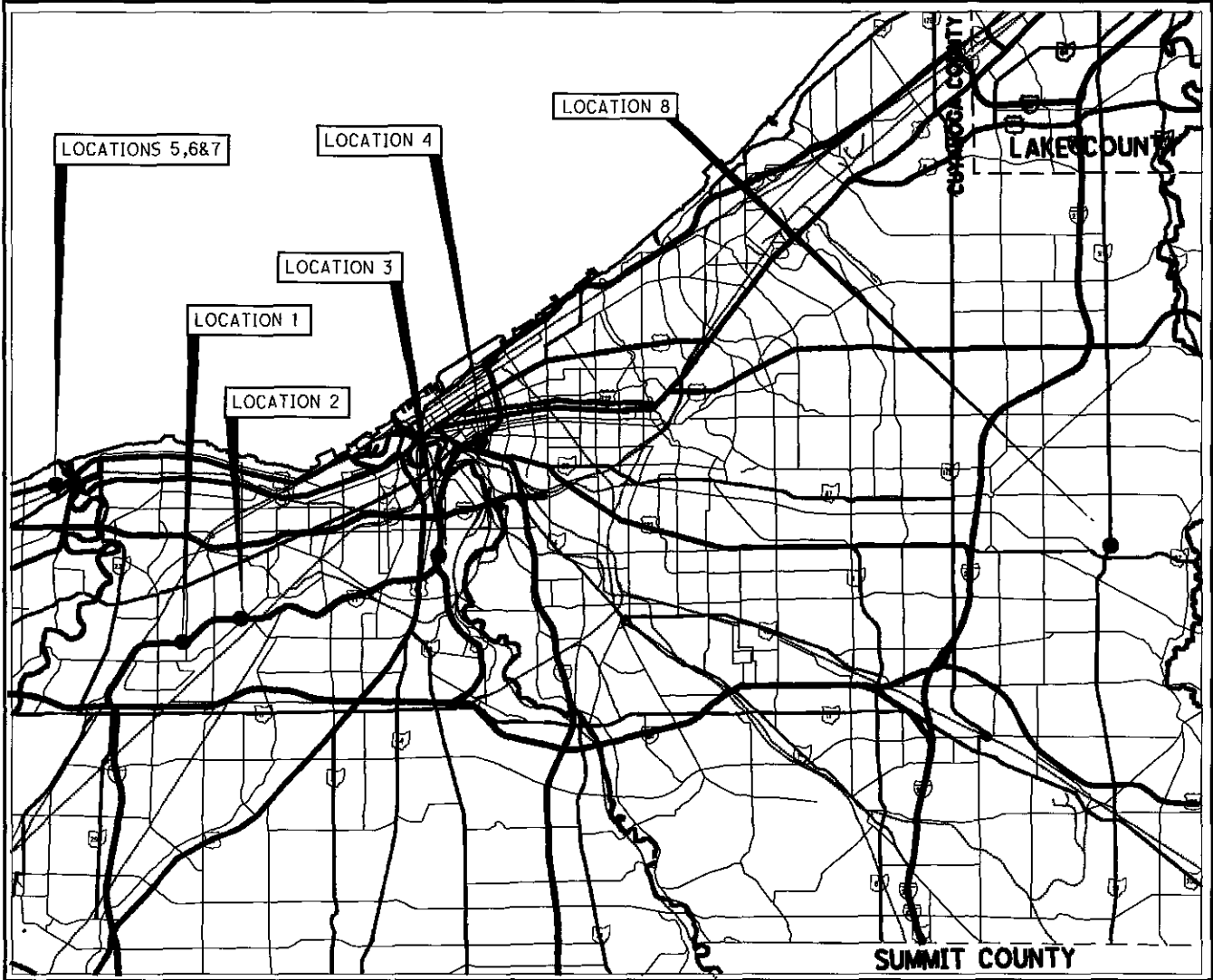


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

PROJECT DESCRIPTION
MISC. REPAIRS



LOCATION	BRIDGE NUMBER	STRUCTURAL FILE NUMBER	CITY, TOWNSHIP, OR VILLAGE	LOCATION	BRIDGE NUMBER	STRUCTURAL FILE NUMBER	CITY, TOWNSHIP, OR VILLAGE
1	CUY-71-1245	1804952	FAIRVIEW PARK	5	CUY-2-0725	1810561	ROCKY RIVER
2	CUY-71-1372	1805045	LINNDALE	6	CUY-2-0731 L	1800604	ROCKY RIVER
3	CUY-71-1791 R	1805371	CLEVELAND	7	CUT-2-0731 R	1801112	ROCKY RIVER
4	CUY-90-1676	1807838	CLEVELAND	8	CUY-91-0803	1809482	PEPPER PIKE

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MAINTENANCE OF TRAFFIC	30-35

2005 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

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

LATITUDE: 41°21'44" LONGITUDE: 81°49'15"

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

PLAN PREPARED BY:

ODOT - DISTRICT TWELVE
PRODUCTION DEPARTMENT
5500 TRANSPORTATION BLVD.
GARFIELD HTS., OHIO 44125

THIS IS A MAINTENANCE PROJECT

PROJECT EARTH DISTURBED AREA = N/A (MAINT. PROJECT)
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = N/A (MAINT. PROJECT)
NOTICE OF INTENT EARTH DISTURBED AREA = N/A (MAINT. PROJECT)

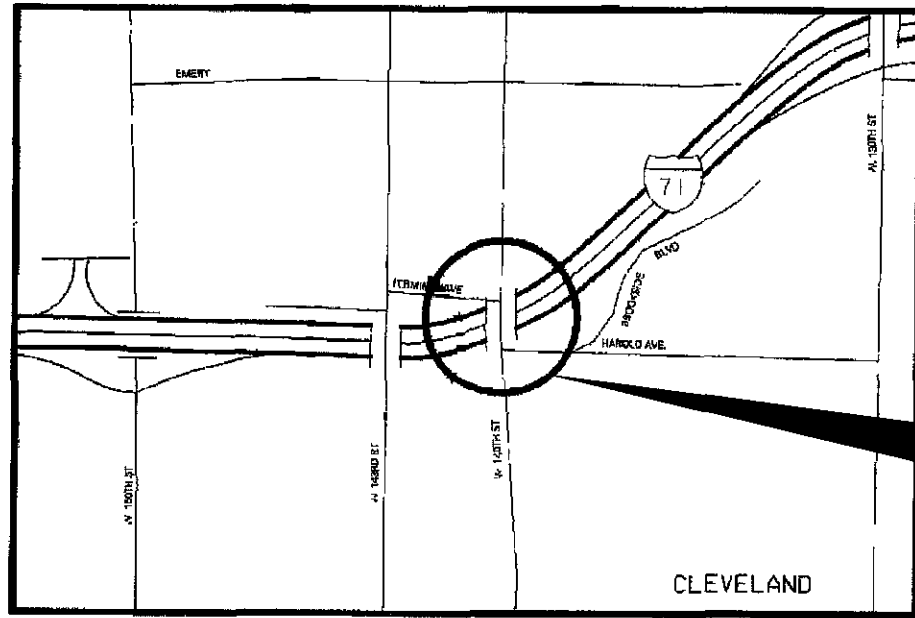
ENGINEER OF RECORD	STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS
 <i>Keri J. Welch</i> KERI J. WELCH	EXJ-2-81	07/19/02	BP-5.1	07/28/00	MT-96.10	04/19/02	MT-99.50	10/18/02	800 01/19/07
	EXJ-3-87	07/19/02			MT-96.21	04/19/01	MT-99.50	10/18/02	832 04/25/06
	GSD-1-96	07/19/02	MT-35.10	04/20/01	MT-96.25	04/20/01	MT-101.20	09/05/06	
	VPF-1-90	07/19/02	MT-95.30	09/05/06	MT-97.10	09/05/06	MT-102.30	09/05/06	
			MT-95.31	09/05/06	MT-98.12	04/19/02	MT-105.10	10/18/02	
	TC-41.10	01/19/01	MT-95.32	09/05/06	MT-98.13	04/19/02	MT-105.11	10/18/02	
	TC-41.20	01/19/01	MT-95.40	10/20/06	MT-98.14	04/19/02	MT-110.20	10/18/02	
	TC-52.10	04/20/01	MT-95.41	10/20/06	MT-98.15	07/16/04			
	TC-52.20	04/20/01	MT-95.50	09/05/06	MT-98.16	04/19/02			
									SPECIAL PROVISIONS

Approved *Dave Ray*
Date *2-5-07* District Deputy Director of Transportation

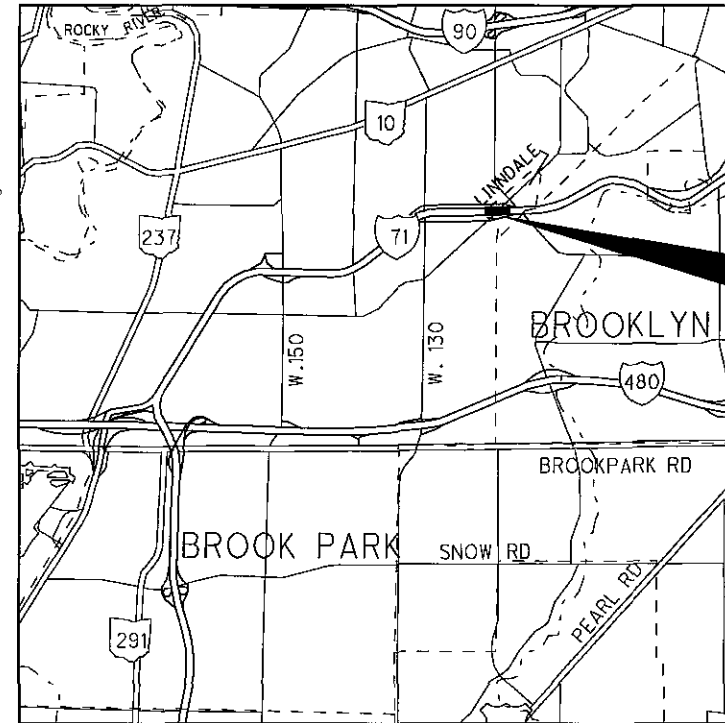
Approved *Keith C. Swearingin*
Date *2-13-07* Director, Department of Transportation

D12 - BH-FY2007 Misc. 1
070231 PID - 80803
Dist 12 5/2/2007

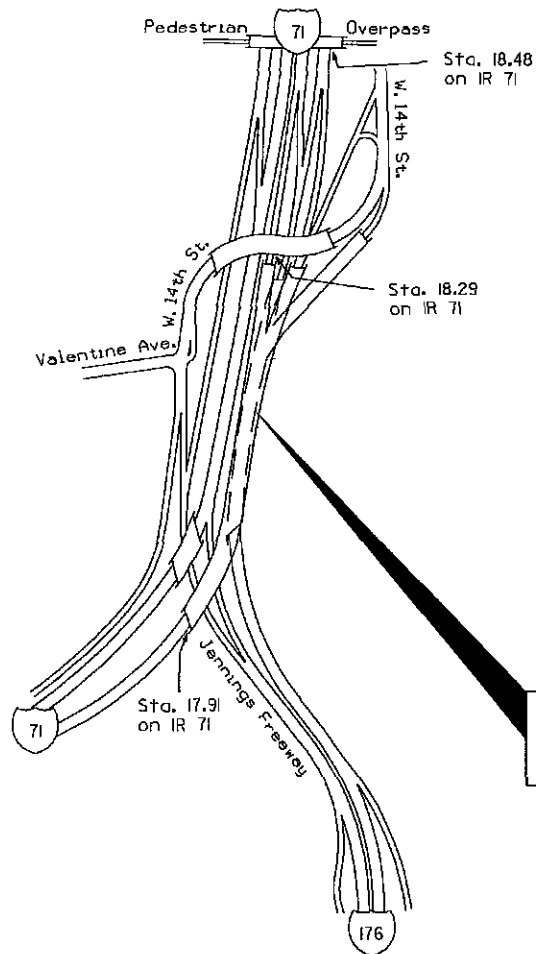
FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 80803
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NORFOLK SOUTHERN
D12 BH FY2007 MISC. 1
1/35



LOCATION 1
CUI-71-1245
SFN 1804952



LOCATION 2
CUI-71-1372
SFN 1805045

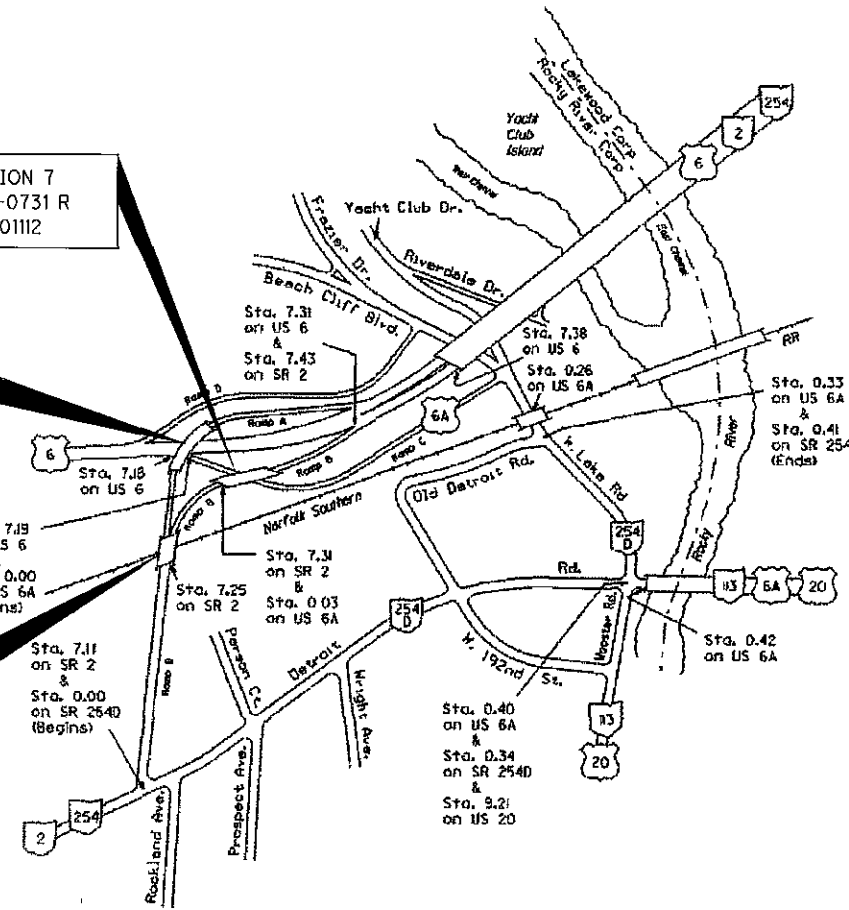


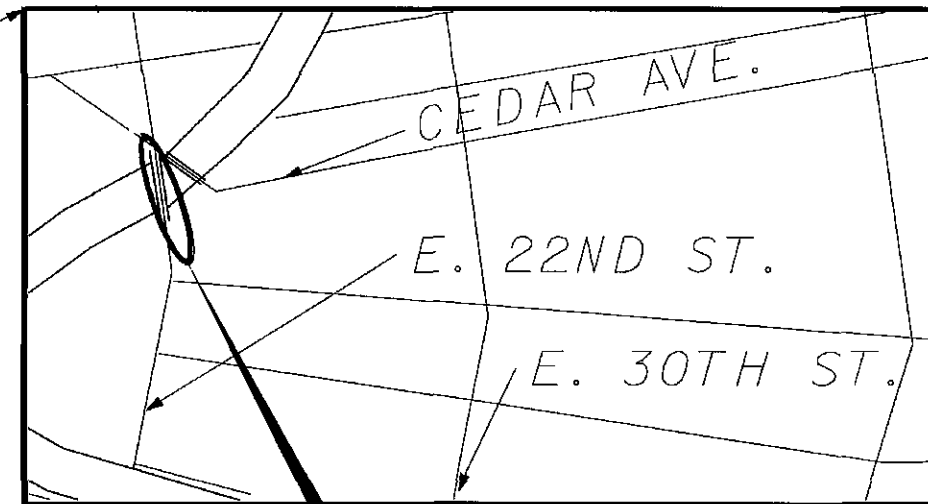
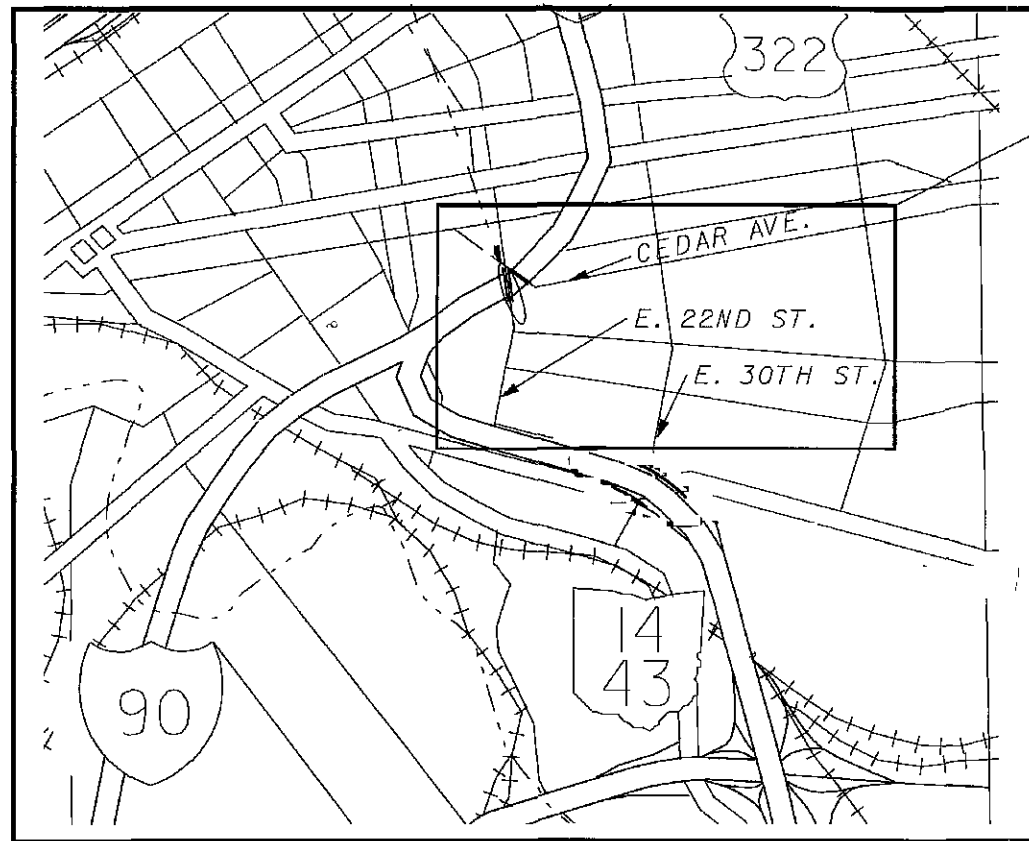
LOCATION 3
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SFN 1805371

LOCATION 6
CUI-2-0731 L
SFN 1800604

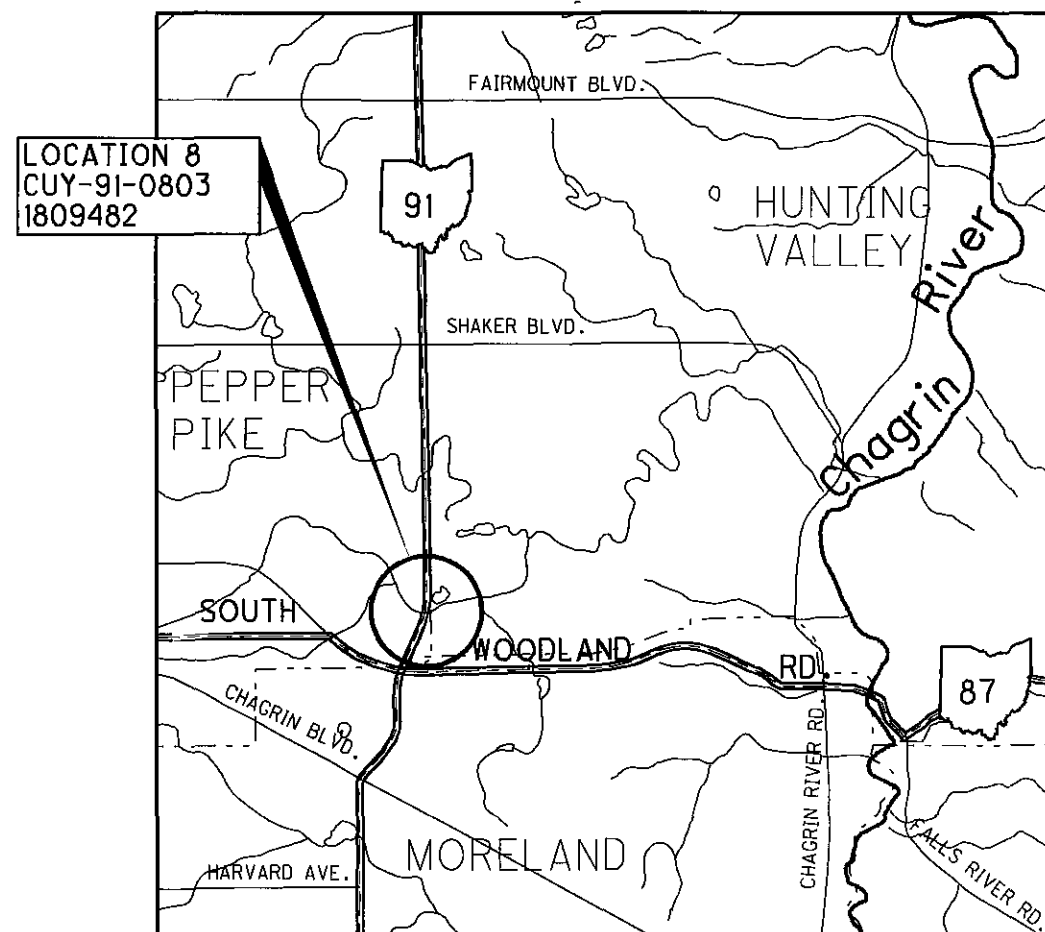
LOCATION 5
CUI-2-0725
SFN 1810561

LOCATION 7
CUI-2-0731 R
SFN 1801112





LOCATION 4
CUI-90-1676
SFN 1807838



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LOCATION MAPS

D12 BH FY2007

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Project Description

This project consists of miscellaneous concrete and steel bridge repairs

Refer to Standard Bridge Drawings

Listed on title sheet

And to Supplemental Specifications

Listed on title sheet

And to Proposal Notes

- Steel Price Adjustment
- Temporary Sediment and Erosion Controls

Design Specifications

The structures conform to "Standard Specifications for Highway Bridges" adopted by the America Association of State Highway and Transportation Officials, 17th Edition, 2002 and the ODOT Bridge Design Manual

Right of Way

All work is to be performed within the existing right of way or easements or within State property

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 sections 102.05, 105.02, and 513.04 of the 2005 Construction and Material Specifications

Base contract bid prices upon a recognition of the uncertainties described above and upon a pre-bid examination of the existing structure by the contractor. However, the Department will pay for all project work based upon actual details and dimensions that have been verified in the field.

The existing structure plans may be reviewed at the.

Ohio Department of Transportation
District 12 Office
5500 Transportation Boulevard
Garfield Heights, OH 44125

Cooperation Between Contractors

The Contractor shall cooperate and coordinate his/her operations with the contractors on other projects that may be in force during the life of the contract. No waiver of any provisions of 105.08 of the 2005 Construction and Material Specifications is intended.

Utility Ownership

The nature of the work required by this project will not affect any known utilities in the work areas.

Existing Dimensions

All dimensions are ±

Limitations of Operations

General

The contractor's activities and work schedule shall be constrained by the following special limitations:

1. Maintenance of Traffic Restrictions (Refer to the Maintenance of Traffic sheets in this plan.)
2. Contractor shall prevent any debris from entering any stream, river, channel, or any other body of water.

Cuy-91-0803

In addition to the "General" Limitations of Operations, the Contractor shall incorporate the following provisions, which shall be considered incidental to the items of work, as required of the State by the ODNR for Cuy-91-0803.

1. BMP's shall be applied to minimize siltation impacts as a result of the proposed work.
2. All demolition debris shall be removed from the project site and recycled or disposed of at an approved upland site.
3. One lane or bi-directional traffic is required at all times.

Cuy-90-1676

In addition to the "General" Limitations of Operations, the Contractor shall incorporate the following provisions, which shall be considered incidental to the items of work, for Cuy-90-1676:

1. Proposed work shall not be done while PID 77039 is under construction.

Material Requirements

Structural Steel.

All proposed structural steel shall be ASTM A709 Grade 36 or Grade 50 (minimum yield = 36 ksi), unless otherwise noted.

Fasteners

All bolts, washers, and nuts shall be ASTM A-325 and galvanized as per Section 711.02 of the CMS, unless otherwise noted.

Placing/Planing of Asphalt Concrete

The contractor shall schedule his work force and adjust work limits as needed in order to pave/plane full width in each direction. No latitudinal elevation differences shall exist between lanes in the same direction at the end of each work day.

Profile and Alignment (Cuy-91-0803)

The proposed pavement resurfacing and concrete slab shall follow the existing alignment for the project limits.

Item 619 - Field Office, Type B, As Per Plan

A Type B Field Office may be required for this project.

In addition to the requirements as described in Item 619 of the CMS, the field office shall include broadband (DSL or cable) access.

Item 619 - Field Office, Type B, As Per Plan **9 Months**

Asbestos Abatement

Location 6 Cuy-2-0731 L
Location 7 Cuy-2-0731 R

The project plans indicate that 1/16th inch sheets of asbestos containing material (ACM) are located under the shear key that is being patched. The contractor shall take all precautions possible to ensure that asbestos containing materials do not become friable (broken-up or dispersed). Additionally, the removal and disposal of the ACM shall comply with the Ohio Administrative Code, the Occupational Safety and Health Administration (OSHA) regulations and the National Emission Standard for Hazardous Air Pollutants (NESHAP) standards for asbestosis.

Basis of Payment

The contractor shall furnish all the labor, equipment and materials necessary to properly handle, transport and dispose of asbestos containing materials and concrete encasement in a licensed (by the local health department) and permitted by the Ohio Environmental Protection Agency - Division of Air Pollution Control to accept ACM. Payment for this work shall be made at the contract price bid of lump sum. The following estimated quantity has been included in the general summary for the work noted above:

690E9810 Item Special - Misc.. Work Involving Asbestos Containing Materials Lump Sum

Item 202 – Portions of Structure Removed, As Per Plan

This item shall include the elements indicated in the plans and general notes and that are not separately listed for payment, except for wearing course removal. Items to be removed include all existing materials being replaced by new construction and are directed to be removed by the Engineer. The use of explosives, headache balls, and/or hoe-rams will not be permitted. The method of removal and the weight of the hammer shall be approved by the Engineer. Perform all work in a manner that will not cut, elongate, or damage the existing reinforcing steel to be preserved. Chipping hammers shall not be heavier than the nominal 90-pound class. Pneumatic hammers shall not be placed in direct contact with reinforcing steel that is to be retained in the rebuilt structure. Submit construction plans according to CMS 501.05.

Item 202 – Bridge Railing Removed for Reuse, As Per Plan

This item shall be used to remove the aluminum railing from the barrier from the bridge to patch the barrier. The railing shall be stored for reuse. The Contractor shall be liable for the condition and safe keeping of the railing.

Payment for labor of removal, storage and re-installation shall be included in Item 202- Bridge Railing Removed for Reuse, As Per Plan.

GENERAL NOTES

D12 BH FY2007

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Item 254 – Pavement Planing, Asphalt Concrete, 1½", As Per Plan

This item shall be used to remove the existing asphalt overlay full width to the depth specified for a distance of 25 Ft. to the North and South of the structure. The planed roadway surfaces shall be exposed to traffic for no more than two (2) weeks (14 calendar days). The time limit shall begin on the first day of planing, and shall continue based on calendar days until completion of the asphalt concrete intermediate course.

Areas which have transverse wedges (butt joints) are to be removed in two passes as required for maintaining traffic. No additional payment shall be made for the second pass.

Prior to planing the pavement, the contractor shall field survey the existing pavement markings and proposed final pavement markings. The plan sheet quantities were developed based upon previous plan upgrades. An exact field survey was not performed. The plan sheets shall be used for reference only, with the field survey used to confirm the plans. Any discrepancies between the plans and the field survey, the field survey shall dictate. All costs associated with this survey shall be included in the unit bid price for Item 254 – Pavement Planing, As Per Plan.

The depth of pavement planing may be variable across the pavement width, however, the depth may be adjusted by the Engineer in order to achieve appropriate pavement crown for drainage and/or to minimize removal of material in areas with less than typical or average structural strength, i.e. left turning lane. All provisions stated in Item 254 – Pavement Planing shall be followed.

Item 407 - Tack Coat

The rate of application of the Item 407 Tack Coat is subject to adjustment as directed by the Engineer. Estimated plan quantities used an average application rate of 0.10 Gallons of Tack Coat per Square Yard.

Item 509 – Epoxy Coated Reinforcing Steel, As Per Plan

In addition to the provisions of Item 509, the #10 reinforcing bars shall not be lapped or spliced. Repair all damage to the epoxy coating, as a result of this work, according to 709.00.

Item 510 – Dowel Holes with Non-shrink, Non-metallic Grout

Drill dowel holes where shown in the plans. Install reinforcing steel according to Item 510 using epoxy grout, 705.20. Prior to drilling holes, locate all existing reinforcing steel bars in the area of the hole with the aid of a reinforcing steel bar locator (pachometer). If an existing bar is encountered at the same location as the proposed dowel hole, move the dowel hole to either side of the existing bar.

Item 511 – Class HP Concrete, Bridge Deck, As Per Plan

The provisions of Item 511 shall apply except as noted below.

Integral Curb

Proposed curb shall be integral with the concrete slab as per Curb 2-B on Standard Drawing BP-5.1.

Mix Options

All concrete shall be HP4, as per plan. The following proportions will be used as a starting mix design.

Concrete Table
Quantities Per Cubic Yard
Aggregates (SSD)

Agg Type	Fine Agg (lb)	#8 Coarse Agg (lb)*	#57 Coarse Agg (lb)*	Total (lb)	Cement Content (lb)	GGBF Slag (lb)	Micro-silica (lb)	Water to Cement Ratio ± 0.1	Air Content ± 2%
Gravel	1245	360	1315	2920	400	170	30	0.43	7
Limestone	1245	360	1335	2940	400	170	30	0.43	7
Slag	1245	315	1155	2715	400	170	30	0.43	7

* All coarse aggregates shall have an absorption of 1.00% or greater as defined per ASTM C127.

The weights specified in the concrete table were calculated for materials of the following bulk specific gravities (SSD): natural sand and gravel, 2.62; limestone sand, 2.68; limestone, 2.65; slag, 2.30; fly ash, 2.65; GGRF slag, 2.90; Microsilica solids, 2.20; and Portland cement, 3.15. For aggregates of specific gravities differing more than plus or minus 0.02 from these, the weights will be corrected.

Measurement

The estimated quantity of deck slab concrete is based on the constant deck slab thickness, as shown, plus the quantity of concrete that forms each Type 2-B curb, that is integral with the slab and is constructed in accordance with Standard Drawing BP-5.1. Deviate from this slab thickness as necessary to place the deck surface at the finished grade, using the existing concrete culvert as a form.

Basis of Payment:

Payment for the above completed and accepted quantities will be made at the contract bid price for Item 511 - Class HP Concrete, Bridge Deck, As Per Plan.

Item 512 - Sealing Of Concrete Structures (Epoxy-Urethane), As Per Plan

Location 1 – work includes sealing pier caps (including the top) and pier columns with the exception of those being fiber wrapped.

Location 2 – work includes sealing median curb and inside, top and outside face of barrier.

Location 5 – work includes sealing inside, top and outside face of barrier. Color shall be Federal Color #595b-20219 (cocoa).

Locations 6 & 7- work includes sealing abutment, wingwalls and inside, top and outside face of barrier. Color shall be Federal Color #595b-20219 (cocoa).

The limits of sealing shall be as detailed in the plans and as directed by the engineer. Seal the entire area of exposed concrete surface for any structure unit (abutment, parapet, etc.) being patched or repaired.

The final color of the sealing shall closely match the existing color as approved by the engineer.

Item 512 - Sealing Of Concrete Structures (Non-Epoxy), As Per Plan

Location 2 – work includes sidewalk.

Locations 5, 6, and 7 – work includes sidewalk. Color shall be Federal Color #595b-20219 (cocoa).

The limits of sealing shall be as detailed in the plans and as directed by the Engineer. Seal the entire area of exposed concrete surface for any structure unit (sidewalk and curb) being patched or repaired.

The final color of the sealing shall closely match the existing color as approved by the Engineer.

Item 513 – Structural Steel Members, Level UF, As Per Plan

All requirements of 513 apply to shop fabricated members. Perform work for field-fabricated members according to Item 513, except as modified herein. The Department will not require the Contractor performing field fabrication to be pre-qualified as specified in Supplement 1078. Submit a written letter of material acceptance, 501.06, to the Engineer. Provide shop drawings according to 513.04 or supply the Engineer with "as-built" drawings meeting 513.04 after completion of field fabrication. The Engineer will review the submitted drawings for concurrence with the final as-built condition. If necessary, the Engineer may contact the Office of Structural Engineering for technical assistance. If the Engineer is satisfied with the "as-built" drawings and the delivered materials, supply a copy of the drawings, stamped and dated, along with microfilm, to the Structural, Welding and Metals Section of the Office of Material Management for record purposes.

Item 513 – Structural Steel, Misc.: Coating System Repair

After all new steel members or expansion joints are installed, and/or after all retrofits are performed, repair any damaged areas of paint, which were damaged from the installation or retrofitting process, on all new and existing steel which is not going to be painted per CMS 514.

These damaged paint areas shall be repaired in accordance with section 514 of the ODOT CMS with the following modifications:

- For existing steel on exterior girders, apply a three-coat system consisting of an organic zinc prime coat, an epoxy intermediate coat, and a urethane finish coat. For all other existing steel, apply a two-coat paint system consisting of organic zinc prime coat and an epoxy top coat. (Section 514.02)
- Existing steel may be cleaned according to commercial blast specification SSPC-SP6. (Section 514.13)
- No destructive testing is to be performed on existing steel. (Section 514.21)
- Paint feathering is not required. Minimal overspray is permissible, as determined by the Engineer. (Section 514.22)

The final color of the finish coat shall closely match the existing bridge color as approved by the engineer.

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Item 513 – Replacement of Deteriorated End Crossframes, As Per Plan

Existing damaged or deteriorated channels and angles are to be removed and replaced as per the plans or as directed by the Engineer. The existing end crossframe members shall be removed flush with the beam web. All end crossframe members in one bay shall be removed and replaced prior to removing any end crossframe members in another bay.

Existing gusset plates are to be reused as weld connecting points for the new steel cross frame members. Cut or grind existing gusset plates to have a 1½" ± tab remaining for welding purposes.

Clean and paint areas of coating system damaged by this work per Item 513 – Structural Steel Misc.. Coating System Repair. The coating system repair is incidental to this pay item.

All equipment, labor, and materials required to remove and install the end crossframes and repair the coating system shall be included for payment under Item 513 – Replacement of Deteriorated End Crossframe, As Per Plan.

Item Special – Patching Concrete Structures, Misc.: Repair Corroded Reinforcement using Sprayed Zinc

Refer to ASTM A780 for repair method and spray paint material specifications. All areas called for concrete patching shall be examined by the Engineer for reinforcement corrosion. Reinforcement deemed by the Engineer to be corroded shall be cleaned as specified in Item 519 then spray painted using method A1 of ASTM A780. The 24 hours limitation specified in Item 519 shall be waived in areas designated to spray painting. Painting shall commence within 24 hours after cleaning. Concrete patching shall commence within 24 hours after the minimum paint drying time as specified by the manufacturer.

Measurement & Payment

The Department will measure the quantity of painted reinforcement on a linear foot basis. The Department will pay for the accepted quantities of painted reinforcement at the contract price for Item Special – Patching Concrete Structures, Misc.: Repair Corroded Reinforcement using Sprayed Zinc.

Item 516 - Structural Steel Expansion Joint, As Per Plan

Replace the expansion joint strip seal gland and retainers at those locations indicated in the plans.

Expansion joint gap tables are provided for informational purposes only. The values listed are based on the available record data and field observation. Field measure the actual gap at the actual temperature prior to the manufacture of joint components. If the measured values practically compare to the given values, use the retainers and strip seal size as given in the plans. Otherwise, adjust these sizes as recommended by the manufacturer and approved by the Engineer. No separate payment will be made for measurement, adjustment, welding, and steel components, including plates and retainers.

This pay item includes the necessary removal of any concrete or asphalt to gain access to the joint, as shown in the plans. The Contractor is responsible for repairing any concrete or asphalt that is damaged while performing this item. Restore the damaged concrete areas around the expansion joint with CMS 499.05 MS Concrete. This portion of the work will be paid for under "Item 519 - Patching Concrete Structures, As Per Plan, B" restore the damaged concrete areas around the expansion joint with material approved by the engineer. Both the concrete and asphalt repairs shall be as directed by the Engineer.

Item 516 - Structural Steel Expansion Joint, As Per Plan, Cont.

Submit to the project engineer as-built drawings that specify the seal gland manufacturer, model number, and size, and retainer dimensions that were installed under this item.

All labor, equipment, and material necessary to complete the above work is included in the unit bid price for Item 516 - Structural Steel Expansion Joint, As Per Plan.

Item 516 - Elastomeric Compression Seal

Replace the expansion joint compression seals at those locations indicated in the plans.

Expansion joint gap tables are provided for informational purposes only. The values listed are based on the available record data and field observation. Field measure the actual gap at the actual temperature prior to the manufacture of joint components. If the measured values practically compare to the given values, use the compression seal size as given in the plans. Otherwise, adjust these sizes as recommended by the manufacturer and approved by the engineer. No separate payment will be made for measurement or adjustment.

All equipment, material, and labor required to perform the work specified in this note and in the corresponding plan sheets will be paid for under Item 516 - Elastomeric Compression Seal.

Item 516 - Elastomeric Compression Seal, As Per Plan

Perform work as described under "Item 516 - Elastomeric Compression Seal". Additionally, in order to gain access to the compression seal on the sidewalks, remove the cover plates. The removal length is from the curb to a point located 1" from the parapet (sidewalk side) and the width is the entire plate width. Replace the plate with one of equal size and thickness using A36 or A50 steel. Weld the new plate in the same location as the existing plate.

Clean and paint areas of coating system damaged by this work per Item 513 – Structural Steel Misc. Coating System Repair. The coating system repair is incidental to this pay item.

All equipment, material, and labor required to perform the work specified in this note is paid for under Item 516 - Elastomeric Compression Seal, As Per Plan.

Item 516 – Structural Joint or Joint Sealer, Misc.: Precompressed Expansion Joint Filler

Description

This work consists of sealing joints using precompressed expansion joint filler in accordance with these specifications, in reasonably close conformity with the plans and manufacturer's specifications and recommendations, and as directed by the Engineer. Completely cover and fill the joint gap with the filler.

Expansion joint gap values listed are anticipated based on available record data. Field measure the actual gap at the actual temperature prior to the manufacturing of joint components. If the measured values are reasonably close to the given values, the filler size given in the plans may be used. Otherwise, adjust the size as recommended by the manufacturer and approved by the Engineer. No separate payment will be made for measurement and adjustment.

Item 516 – Structural Joint or Joint Sealer, Misc.: Precompressed Expansion Joint Filler, Cont.

Materials:

Use precompressed expansion joint filler such as the Emseal DSM System or an approved equal, as directed by the Engineer. The Emseal DSM System is comprised of three components: 1) acrylic-modified asphalt impregnated foam compressed 5-times and factory coated with highway-grade, fuel resistant silicone; 2) field-applied epoxy adhesive primer; 3) field-applied silicone corner beads. Emseal DSM System can be obtained from:

Emseal Joint Systems, Ltd
108 Milk Street, Suite 3
Westborough, MA 10581-1228
Phone: (800) 526-8365

Store and incorporate all material in the work as recommended by the manufacturer.

Surface Preparation

Blast clean the faces to which the seal must adhere so that it is free of foreign material such as dirt, dust, grease, form release agents, and any other material detrimental to the adhesion of the sealant according to manufacturer specifications. Blasting abrasive containing more than 1% free silica is not allowed.

Installation

Install the joint filler only when the surfaces are dry and the surface temperature is above 50 degrees Fahrenheit. Do not proceed with installation under adverse weather conditions. Prime both surfaces adjacent to the joint with adhesive as recommended by the manufacturer. Remove the joint filler from the packaging, coat it with adhesive as recommended by the manufacturer, and insert its narrow edge into the joint opening. The joint filler must be wedged in place while it recovers. At temperatures above 68 degrees Fahrenheit, the material will recover within a few hours. At temperatures below 68 degrees Fahrenheit, accelerate recovery by heating with an open flame, gas burner, infra-red lamp, or hot air blower. Keep the number of joints in the filler to a minimum. Where a joint is required, create by pushing miters together and applying a thin bead of silicone sealant along the mitered joint in the silicone facing. Install the joint filler approximately ¼" recessed from the surface such that when the field-applied corner beads of silicone are installed, the system will be essentially flush with the substrate surface. Once the joint filler has fully expanded across the joint gap, gun and tool a ¼" x ¼" bead of silicone into each of the corners formed at the substrate-to-bellows interface.

All joint armor modifications detailed in the plans are included for payment with this item of work. New steel is to be level and flush with existing steel. Field measure and verify steel dimensions indicated in the plans prior to ordering material.

Payment for labor, materials, and installation of this work is included in Item 516 – Structural Joint or Joint Sealer, Misc.: Precompressed Expansion Joint Filler.

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Item 519 – Patching Concrete Structures, As Per Plan, A

Prior to the surface cleaning specified in 519.04 and within 24 hours of placing patching material, blast clean all surfaces to be patched, including the exposed reinforcing steel. Acceptable methods include high-pressure water blasting with or without abrasives in the water, abrasive blasting with containment, or vacuum abrasive blasting.

Item 519 – Patching Concrete Structures, As Per Plan, B

Use CMS 499.05 MS Concrete for all concrete repairs associated with expansion joint work including roadway repair on the bridge surface and backwall repair, as indicated in the plans and directed by the Engineer.

Prior to the surface cleaning specified in 519.04 and within 24 hours of placing patching material, blast clean all surfaces to be patched, including the exposed reinforcing steel. Acceptable methods include high-pressure water blasting with or without abrasives in the water, abrasive blasting with containment, or vacuum abrasive blasting.

The wet cure time is reduced from 72 hours to 24 hours or until a beam break of 600 PSI is achieved, whichever is greater. After the 24-hour wet cure, the finished overlay surface shall be cured by spraying a uniform application of curing material of 705.07, Type 1 or ID, as per CMS 511.17 method (B) membrane curing. If the curing compound can not be placed within the same short-term closure period as the overlay, the Contractor may allow traffic onto the overlay, and shall, at the next available short-term closure period, apply the membrane curing compound.

Item Special - Patching Concrete Structures, Misc.: Repair Wind Shear Key

All patching shall be in accordance to CMS 519.

Refer to ASTM A780 for repair method and spray paint material specifications. All areas called for concrete patching shall be examined by the Engineer for reinforcement corrosion. Reinforcement deemed by the Engineer to be corroded shall be cleaned as specified in Item 519 and subsequently spray painted using method A1 of ASTM A780. The 24-hour limitation is waived for areas designated for spray painting. Commence painting within 24 hours after cleaning. Commence concrete patching within 24 hours after the minimum drying time as specified by the manufacturer.

During the performance of this work, constrain the bridge to ensure no lateral shifting takes place. Additionally, place shims between the end diaphragm and backwall on the lower end of the bridge to prevent longitudinal "downhill" sliding. Remove all temporary constraint mechanisms once the concrete for this repair has cured.

On either side of the wind shear key, along its vertical interface with the abutment beam seat, install 1" thick neoprene (per 711.23) to act as a bearing pad. Remove approximately 1/2" of the vertical face of the abutment on both sides of the wind shear key to accommodate a portion of the neoprene thickness. Adhere the neoprene to the abutment and pour wind shear key patching material directly against it. Install or cut neoprene so that its edge is flush with the top of the beam seat.

All equipment, material, and labor required to perform the work specified in this note and in the corresponding plan sheets will be paid for under Item Special - Patching Concrete Structures, Misc.: Repair Wind Shear Key.

Item Special – Structure, Misc.: Composite Fiber Wrap System

Location 1 – work includes fiber wrapping of pier columns and urethane top coat as directed by the engineer.

Description

This work shall consist of providing and installing a fiber wrap column preparation, wrapping the column and all incidentals necessary to complete.

The installation shall be per the manufacturer's requirements.

Materials

Suppliers shall have a minimum of 10 installations and furnish certified test reports including 1000-hour tests for 140 degree F water, salt water, alkaline soil, ozone, and effervescence in addition to the requirements listed below.

The fabric for the composite casing shall be continuous filament woven fabric. Primary fibers for the fabric shall be (E) electrical glass fibers. The fiber shall have a minimum nominal thickness of 0.05 inches. The minimum weight of the fabric shall be 27.0 ounces per square yard.

The epoxy shall be supplied by the manufacturer to meet the composite strength given below. Polyester resin shall not be allowed as a substitute for epoxy resin.

The composite of the fiber wrapped column casing system shall conform to the following requirements:

Property	Requirements	ASTM Test Method
Ultimate Tensile Strength, PSI Min. in Primary Fiber Direction	60,000 PSI	D3039, Average of 7, 1" by 10" normalized to 0.80" thick 0.01" per Minute Testing Speed
Ultimate Tensile Strength, PSI Min. in Orthogonal Fiber Direction	3,000 PSI	D3039, Average of 7, 1" by 10" normalized to 0.80" thick 0.01" per Minute Testing Speed
Tensile Strength (Min. After Test) 1000 Hours exposure to 100% Humidity	60,000 PSI	C581
Tensile Strength (Min. After Test) 1000 Hours exposure to Ozone	60,000 PSI	D1149 Except Not Under Stress During Ozone Exposure
Tensile Strength (Min. After Test) 1000 Hours exposure to Alkali	60,000 PSI	D3083 Using Soil Burial – Water Content of 73% +/- 3%
Tensile Strength (Min. After Test) 1000 Hours exposure to Salt Water	60,000 PSI	C581 and D1141 Omitting Addition of Heavy Metal Reagents
Tensile Strength (Min. After Test) 1000 Hours exposure @ 140 Degrees F	60,000 PSI	D3045
Tensile Strength (Min. After Test) Ultraviolet (UV) Exposure	60,000 PSI	G154 Using FS40 UV-B Bulbs for a Min. 40 cycles. The cycle shall be 4 hours of condensate exposure at 40 degrees C.
Elongation Percent, Min Percent, Max	1.7% 5.0%	
Tensile Modulus, PSI Min. of Primary Fibers	3,000,000	D3039
Visual Defects	Acceptance Level III	D2563
Coefficient of Thermal Expansion in the Primary Direction	4,300,000 PPM/Deg F (+15%)	D696

Item Special – Structure, Misc.: Composite Fiber Wrap System, Cont.

Surface Preparation

The surface to receive the composite wrap shall be free from fins, sharp edges, and protrusions that will cause voids behind the casing or that, in the opinion of the engineer, will damage the fiber. If fibers are to wrap around corners of rectangle cross-sections, the corners shall be rounded to a 1/2 inch radius. This will help prevent stress concentrations in the fiber wrap and voids between the fiber wrap and the concrete. In addition, the surface shall be smooth and free of voids or undulations that would prevent full contact between the concrete and the fiber wrap.

Composite Application

The ambient temperature and the temperature of the epoxy resin components shall be between 55 deg F and 95 deg F at the time of mixing. The composite shall be applied when the relative humidity is less than 85% and the surface temperature is more than 5 deg F above the dew point. Application shall begin within one hour after the batch has been mixed.

The components of the epoxy resin shall be mixed with a mechanical mixer and applied uniformly to the fiber at a rate that shall insure complete saturation of the fabric.

The fabric/epoxy composite shall be applied to the surface of the column by wrapping methods that produce a uniform force that is distributed across the entire width of the fabric. The primary fibers of the fabric shall not deviate from a horizontal line more than 1/2 inch per foot. Entrapped air shall be released or rolled out before the epoxy sets.

Successive layers of composite materials shall be placed before polymerization of the previous layer of epoxy is too dry to achieve adequate bond between layers. If polymerization does occur between layers, the surface must be roughened using a light abrasive that will not damage the fiber.

The final layer of epoxy shall be applied to the final layer of fabric, with care taken to insure coating of all edges and seams. Spaces between the bands of fabric shall be filled with epoxy thickened as directed by the manufacturer.

A final inspection shall be performed on all fiber wrapped columns after the epoxy sets yet prior to the application of the urethane top coat. All defects (including bubbles, delaminations and fabric tears) more than 1 square inch of the surface area, or as specified by the project engineer, shall be repaired as such:

1. Small defects (on the order of 6" diameter) shall be injected or back filled with epoxy.
2. Bubbles less than 12" diameter shall be repaired by injecting with epoxy. Two holes shall be drilled into the bubble to allow injection of the epoxy and escape of entrapped air.
3. Bubbles, delaminations and fabric tears greater than 12" in diameter shall be repaired by removing and reapplying the required number of layers of the composite and the required finish coating. All repairs shall be approved by the project engineer.

GENERAL NOTES

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Item Special – Structure, Misc.: Composite Fiber Wrap System, Cont.

Coating System Application

A final urethane coating is required to protect the fibers from the elements specifically UV radiation and to give the final aesthetic effect

After 96 hours from the final application of epoxy, if the final epoxy coat is completely polymerized, the exterior surfaces of the composite wrap shall be cleaned and roughened by a light abrasive. Care should be taken during the roughening process so that the fibers are not damaged. All cleaned and roughened surfaces shall be dry before applying the urethane coating.

Measurement and Payment

The bid price shall include all labor, materials and equipment necessary to provide and install a fiber wrap column casing system using high strength, hybrid fiber/epoxy composites field applied to the column, including erection of scaffolding, cleaning, surface preparation, wrapping the column, urethane top coat and all incidentals necessary to complete the installation per the manufacturer's requirements. Payment for all of the above shall be at the unit price bid per square foot for Item – Special, Structure Misc. Composite Fiber Wrap System.

Item Special – Vandal Protection Fence, 8' Straight, Coated Fabric

This item shall be as per the details in the plans with the applicable portions of the standard drawing VPF-1-90 and the manufacturer's recommendations. Place proposed base plates at the same location as the existing fence posts.

The color of the fence and fence fabric, rails, posts, plates, tie wires, nuts, bolts, anchor bolts, caulk and any additional visible hardware shall be coated grey.

Payment for all of the above shall be at the unit price bid per linear foot for Item Special – Vandal Protection Fence 6 Foot Straight, Coated Fabric which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

Item Special – Vandal Protection Fence, 4' Straight, Coated Fabric

This item shall be as per the details in the plans with the applicable portions of the standard drawing VPF-1-90 and the manufacturer's recommendations. Place proposed base plates along the curb line as detailed in the plans.

The color of the fence and fence fabric, rails, posts, plates, tie wires, nuts, bolts, anchor bolts, caulk and any additional visible hardware shall be coated grey.

Payment for all of the above shall be at the unit price bid per linear foot for Item Special – Vandal Protection Fence 4 Foot Straight, Coated Fabric which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

GENERAL NOTES

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LOCATION															▲ CONTINGENCY QUANTITY * AS DIRECTED BY ENGINEER					
						1	2	3	4	5	6	7	8		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHT
						CUY-71-1245 1804952 W. 140 TH ST	CUY-71-1372 1805045 BELLALIRE	CUY-71-1791 R 1805371 OVER SR 176	CUY-90-1676 1807838 E. 22ND ST	CUY-2-0725 1810561 NS RR	CUY-2-0731 L 1800604 US 6	CUY-2-0731 R 1801112 US 6	CUY-91-0803 1809482 0.24 MI NORTH OF SR 87	GENERAL						
														1000	832	30000	1000	EACH	EROSION CONTROL	
																			ROADWAY	
													87		202	23500	87	SQ YD	WEARING COURSE REMOVED	
													87		202	24000	87	SQ YD	BRICK BASE REMOVED, 3"	
													50		202	32000	50	FT	CURB REMOVED	
																			PAVEMENT	
													167		254	01001	167	SQ YD	PAVEMENT PLANING ASPHALT CONCRETE, 1½", AS PER PLAN	5
													17		407	10000	17	GALLON	TACK COAT	5
													7		448	47020	7	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22	
																			STRUCTURAL	
													87		202	11305	87	SQ YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
										216					202	38603	216	FT	BRIDGE RAILING REMOVED FOR REUSE, AS PER PLAN	4
							1008								202	75000	1008	FT	FENCE REMOVED	
													29		503	21100	29	CU YD	UNCLASSIFIED EXCAVATION	
										63 ▲			10,503		509	10001	10,566	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	5
										10 ▲			44		510	10000	54	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT	5
													45		511	50001	45	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN	5
													LUMP		511	52000	LUMP	CLASS HP CONCRETE, TEST SLAB		
						114	225			68	148	117			512	10051	558	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY), AS PER PLAN	5
							1149			285	345	388			512	10101	2281	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY URETHANE), AS PER PLAN	5
							1708								513	21501	1708	POUND	REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN	6
											38	38			516	10900	76	FT	ELASTOMERIC COMPRESSION SEAL	
											14	14			516	10901	28	FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN	6
								205							516	12201	205	FT	STRUCTURAL STEEL EXPANSTION JOINT, AS PER PLAN (ABUTMENT)	6
								169							516	12201	169	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN (INTERMEDIATE)	6
							450								516	14600	450	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: PRECOMPRESSED EXPANSION JOINT FILLER (2")	6
							100 ▲			100 ▲					517	76302	200	EACH	RAILING MISC.: GALVANIZED STEEL ANCHOR BOLTS & HEXAGON NUTS	18,25
						142	140			1265	172	250			519	11101	2141	SQ FT	PATCHING CONCRETE STRUCTURES, AS PER PLAN, A	7
								1085							519	11101	1085	SQ FT	PATCHING CONCRETE STRUCTURES, AS PER PLAN, B	7
											8	9			SPECIAL	519E11600	17	SQ FT	PATCHING CONCRETE STRUCTURES, MISC.: REPAIR WIND SHEAR KEY	7
						852				1250					SPECIAL	519E11720	2102	FT	PATCHING CONCRETE STRUCTURES, MISC.: REPAIR CORRODED REINFORCEMENT USING SPRAYED ZINC *	6
								6							SPECIAL	519E12510	6	SQ YD	PATCHING CONCRETE BRIDGE DECK	
									343						520	11100	343	SQ FT	PNEUMATICALLY PLACED MORTAR *	
						2516									SPECIAL	530E00600	2516	SQ FT	STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM	7,8
							1008								607	39910	1008	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC	8
							896								SPECIAL	607E40000	896	FT	VANDAL PROTECTION FENCE, 4' STRAIGHT, COATED FABRIC	8

GENERAL SUMMARY

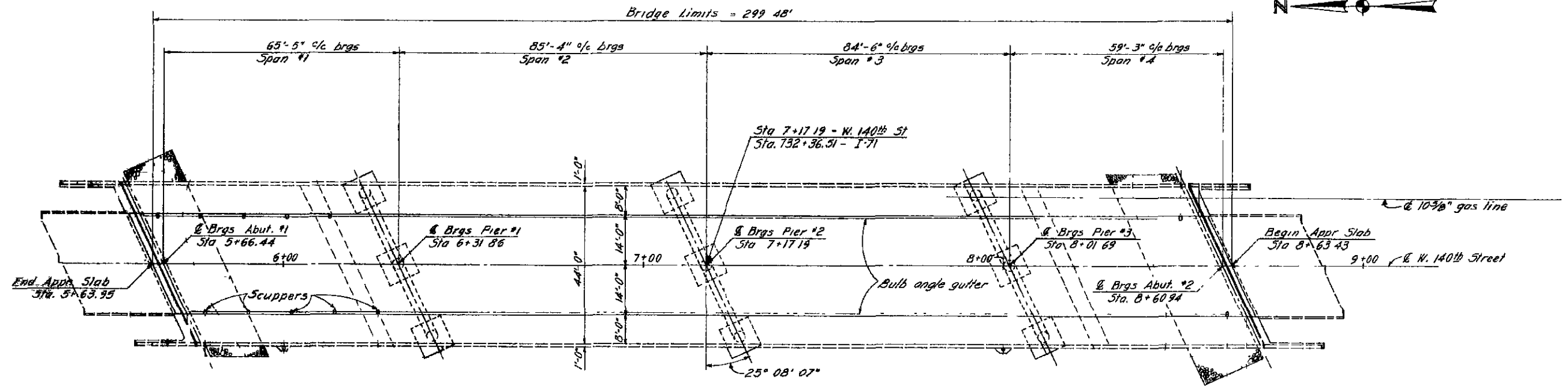
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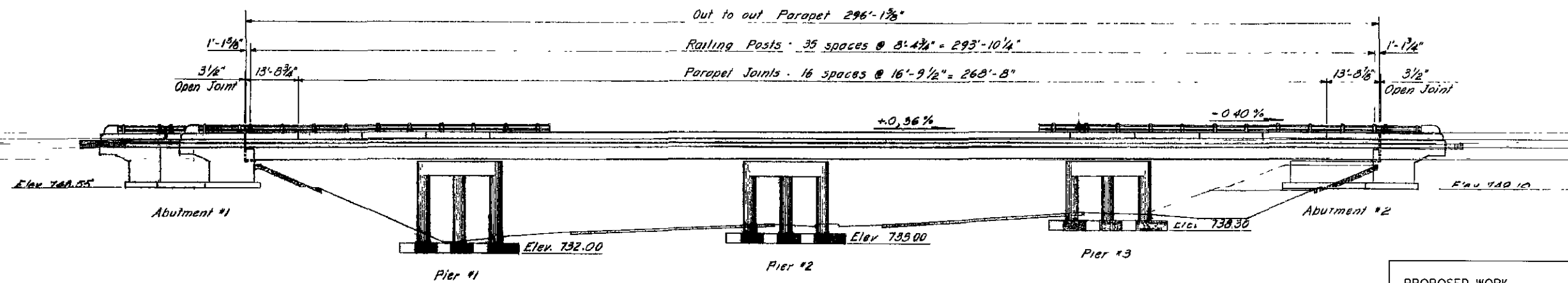
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LOCATION	BRIDGE NO. SFN DESCRIPTION	STRUCTURE TYPE	STRUCTURE LIMITS	BRIDGE WIDTH OUT/OUT	LANES ON	LANES UNDER	PROPOSED WORK
1	Cuy-71-1245 1804952 Under West 140th Street	4 span continuous steel beam	297'	46'	2	8	Fiber Wrap pier columns Seal piers with Epoxy-Urethane Patching
2	Cuy-71-1372 1805045 Under Bellaire Road	4 span continuous steel beam	448'	85'	5	8	Seal Median Joint, Repair end crossframes, Install fence at curbline, Remove and install new VPF, Patch concrete, Seal concrete
3	Cuy-71-1791 R 1805371 Over SR 176	28 span continuous steel beam	1811'	64'	3	3	Replace expansion joints Patch deck
4	Cuy-90-1676 1807838 Under East 22nd Street	2 span continuous steel beam	100'	114'	2	6	Repair Backwall
5	Cuy-2-0725 1810561 Over NS Railroad	2 span continuous steel beam	151'	37'	2	0	Patch barrier Seal Barrier with Epoxy-Urethane
6	Cuy-2-0731 L 1800604 US 6	3 span concrete box beam	247'	19'	1	4	Joint Repair, Patch railing, sidewalk and Abutment, Seal concrete surfaces, Repair Shear Key
7	Cuy-2-0731 R 1801112 US 6	3 span concrete box beam	187'	25'	2	8	Joint Repair, Patch railing, sidewalk and Abutment, Seal concrete surfaces, Repair Shear Key
8	Cuy-91-0803 1809482 Stream 0.24 miles north of 87	1 span filled concrete culvert	18'	NA	2	NA	Structural Overlay

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PLAN



ELEVATION

PROPOSED WORK

- FIBER WRAP PIERS
- SEAL PIERS WITH EPOXY-URETHANE
- PATCHING

PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE +/-.

DO ONLY WORK LISTED UNDER PROPOSED WORK.

D12 BH FY2007
PID No. 80803

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LOCATION 1 - SITE PLAN
CUY-71-1245
W 140th OVER I-71

DESIGNED
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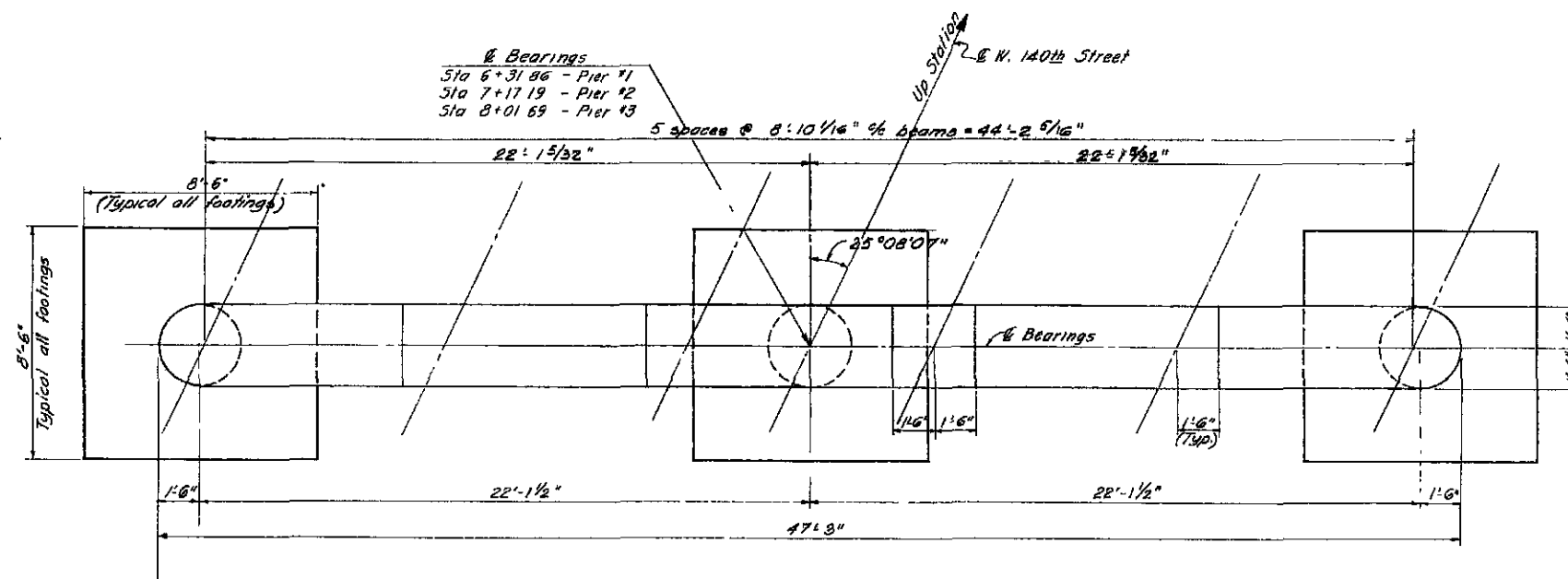
DRAWN
KJW
REVIEWED

DATE

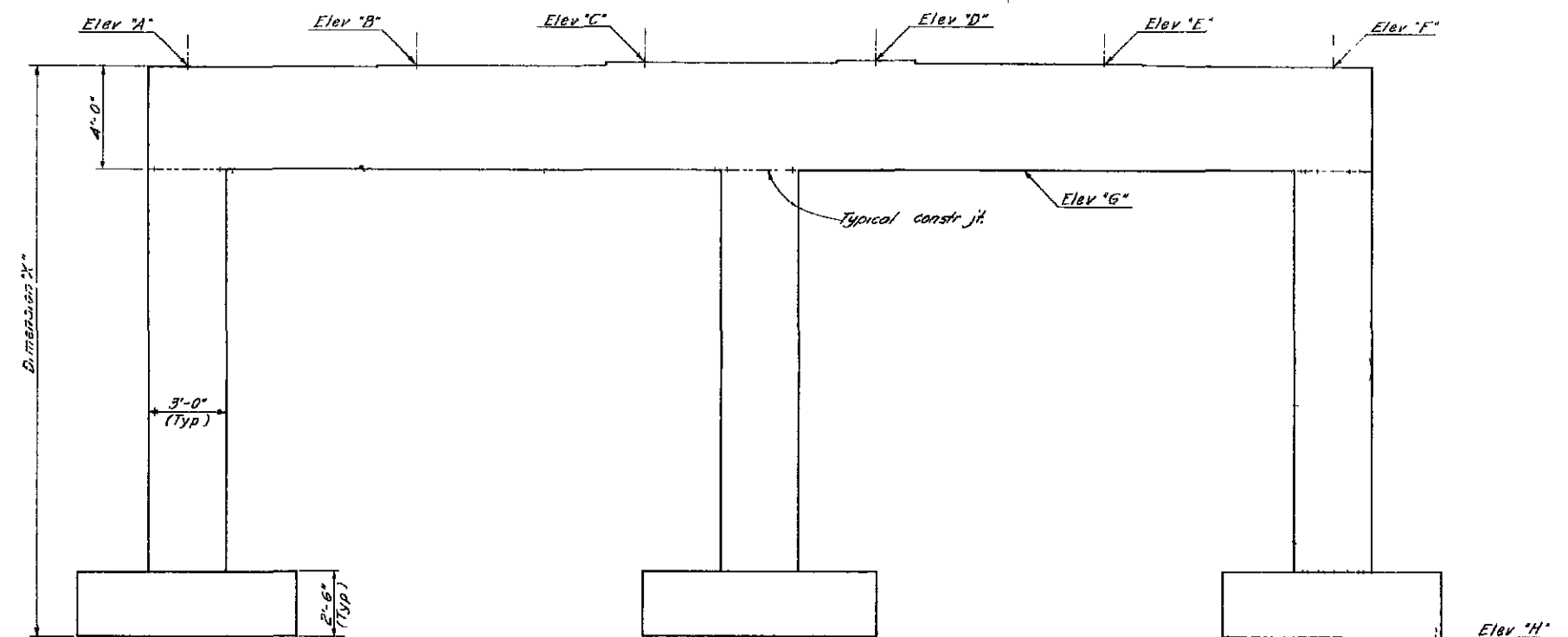
REVIEWED

STRUCTURE FILE NUMBER
1804952

DESIGN AGENCY
Ohio Dept of Transportation
District 12

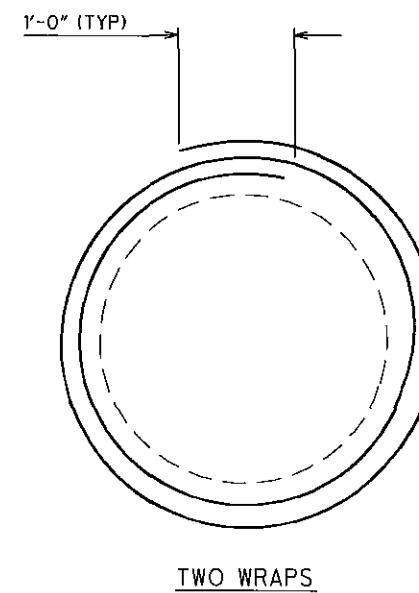


PLAN



ELEVATION

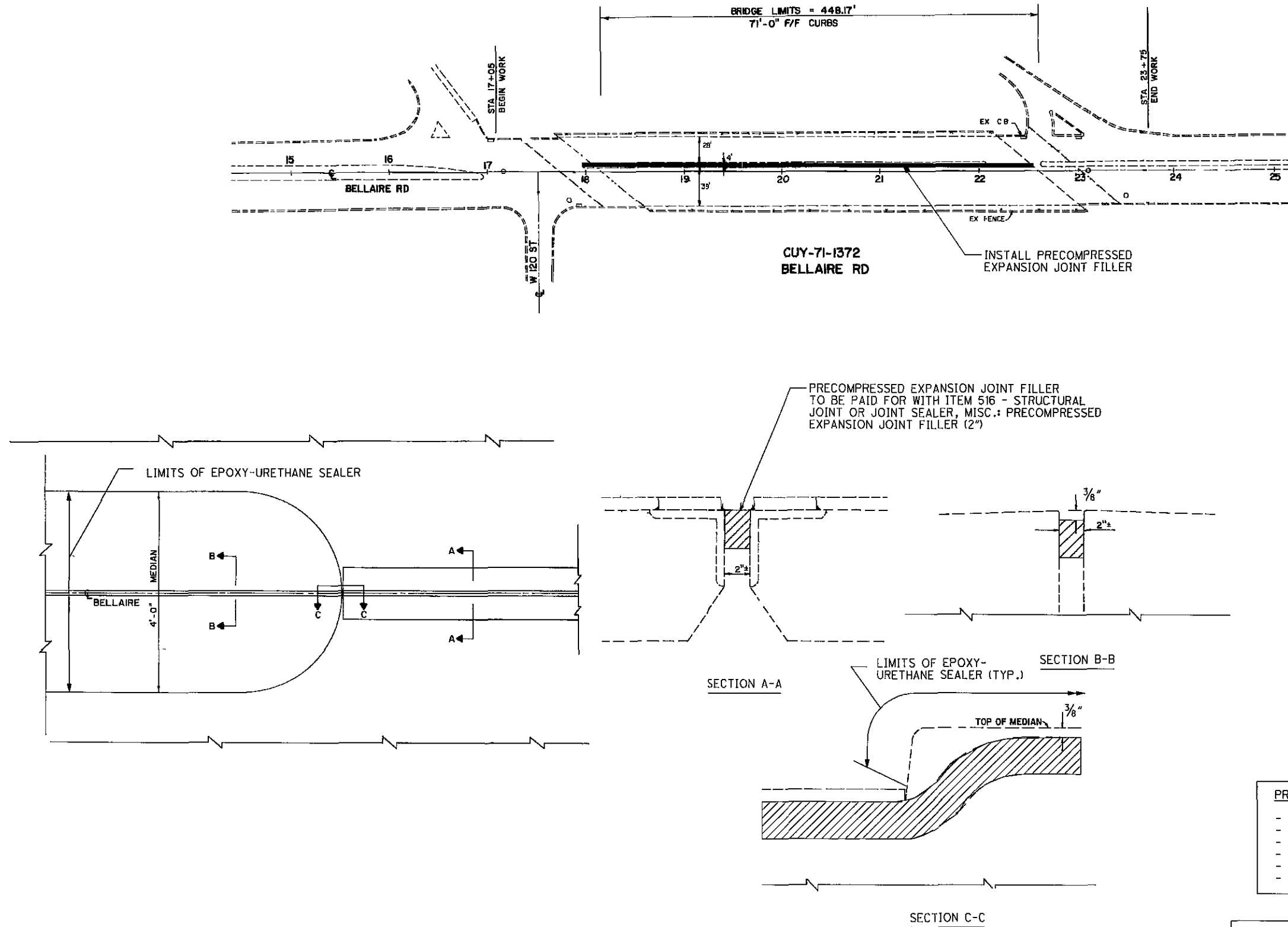
ELEVATION									DIMENSION
LOCATION	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"X"
Pier #1	756.41	756.33	756.69	756.70	756.59	756.48	752.41	732.00	24'-4.75"
Pier #2	756.72	756.66	757.00	757.01	756.89	756.78	752.72	735.00	21'-6.75"
Pier #3	756.87	757.00	757.12	757.12	756.99	756.87	752.87	735.30	18'-6.75"



PLAN AND ELEVATION VIEWS ARE TAKEN FROM
ORIGINAL PLANS AND SHOULD BE USED FOR
INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE +/-.

DO ONLY WORK LISTED UNDER PROPOSED WORK.

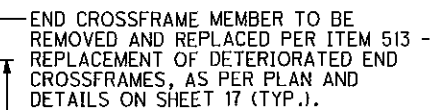


- PROPOSED WORK**
- SEAL MEDIAN JOINT
 - REPAIR END FRAMES
 - PATCH BARRIER AND CURB
 - SEAL CONCRETE
 - INSTALL VANDAL PROTECTION FENCE
 - INSTALL PEDESTRIAN FENCE

PLAN AND ELEVATION VIEWS ARE TAKEN FROM
ORIGINAL PLANS AND SHOULD BE USED FOR
INFORMATIONAL PURPOSES.

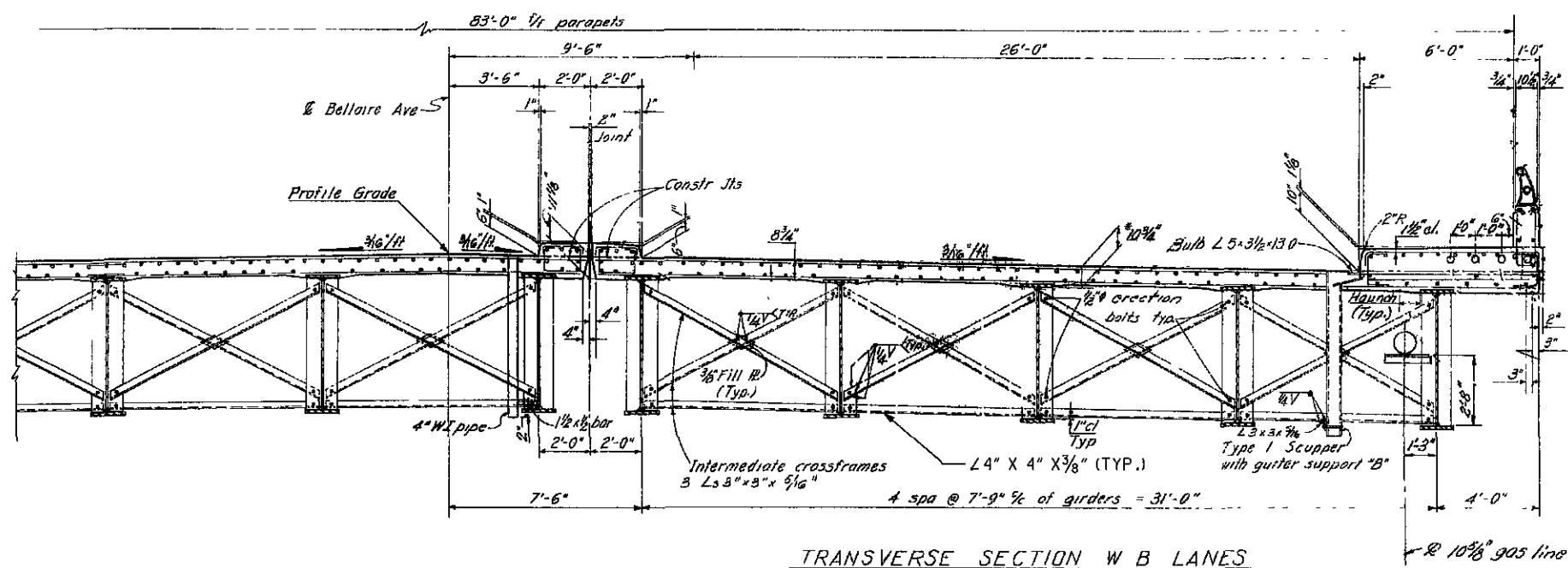
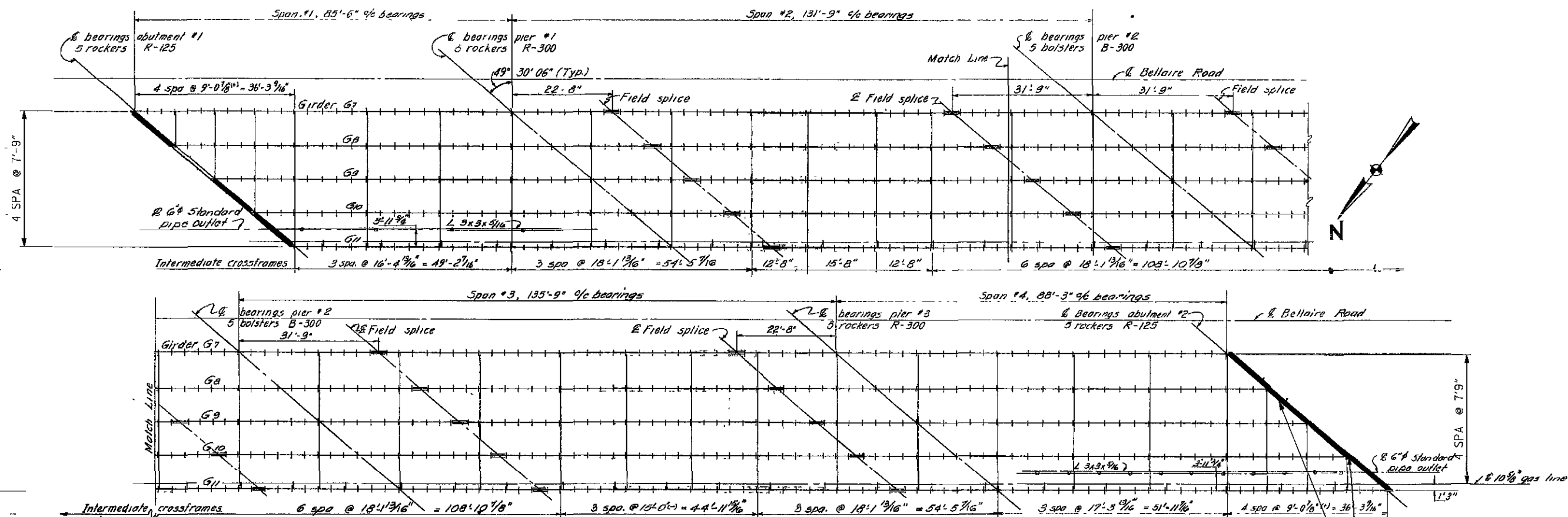
ALL DIMENSIONS ARE +/-.

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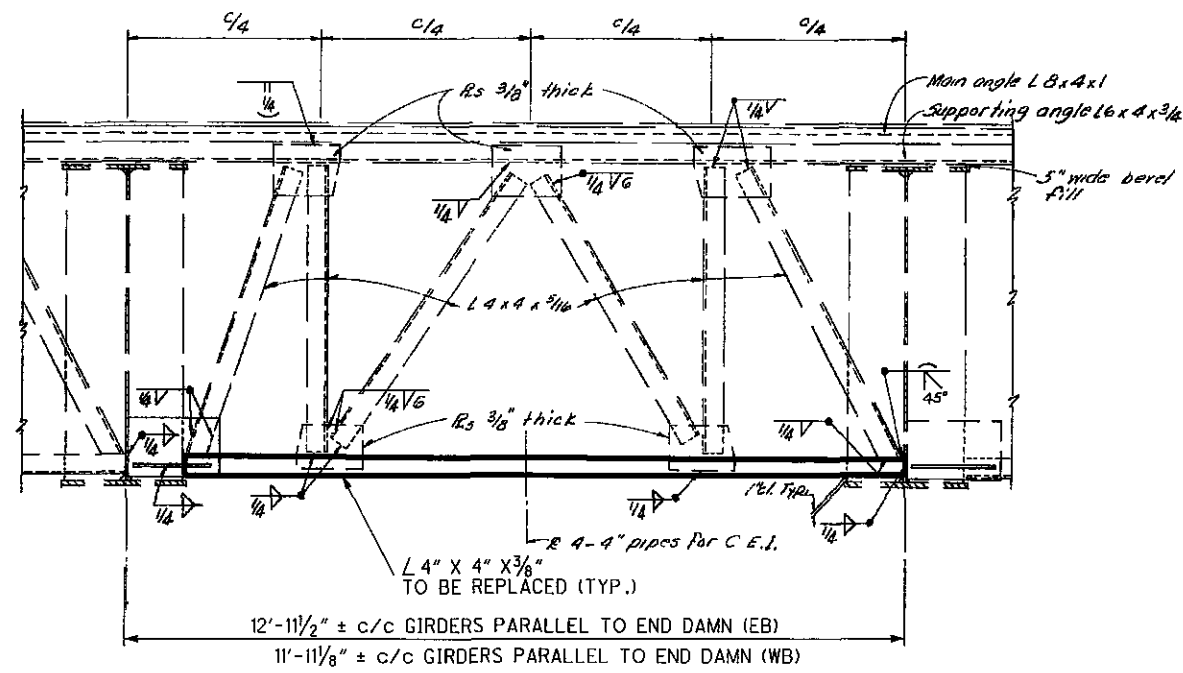


END CROSSFRAME MEMBER TO BE REMOVED AND REPLACED PER ITEM 513 - REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN AND DETAILS ON SHEET 17 (TYP.).

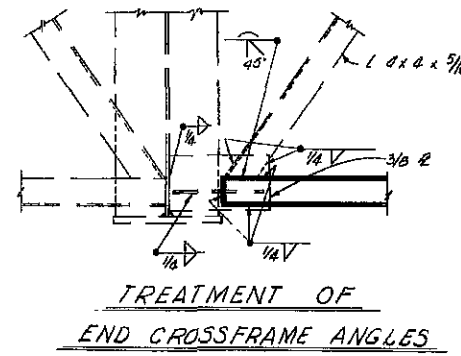
PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE +/-

DO ONLY WORK LISTED UNDER PROPOSED WORK.



SPECIAL END CROSSFRAMES

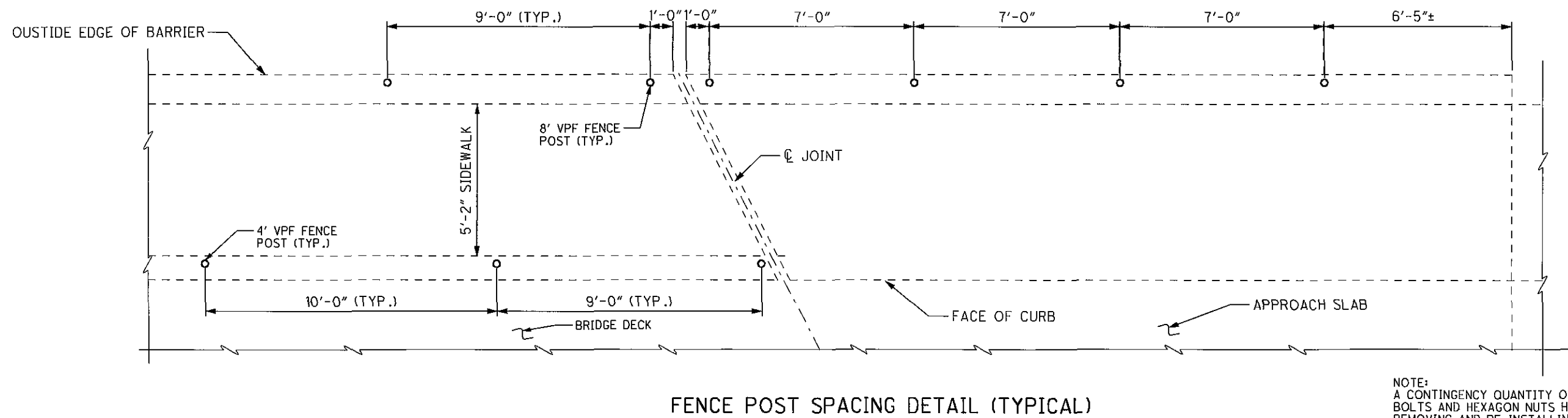
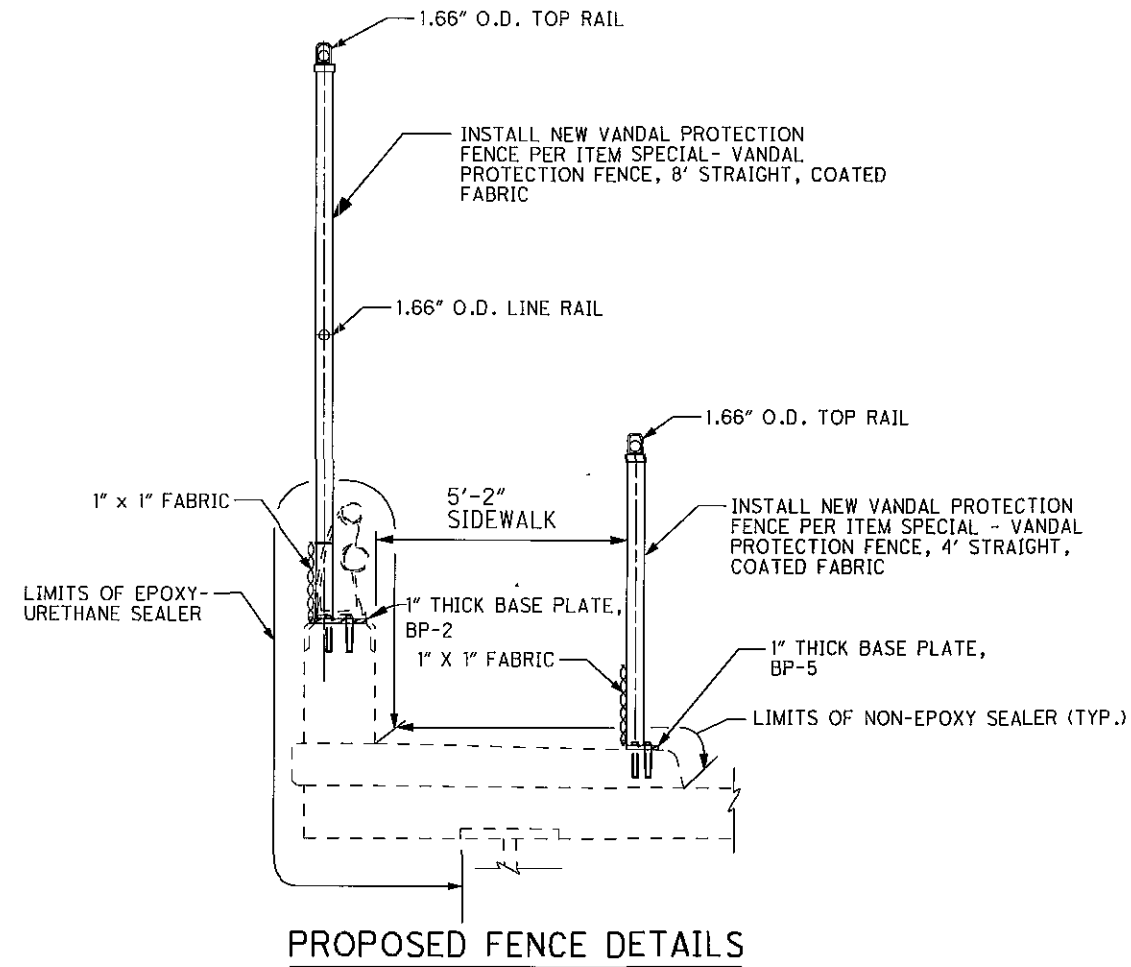
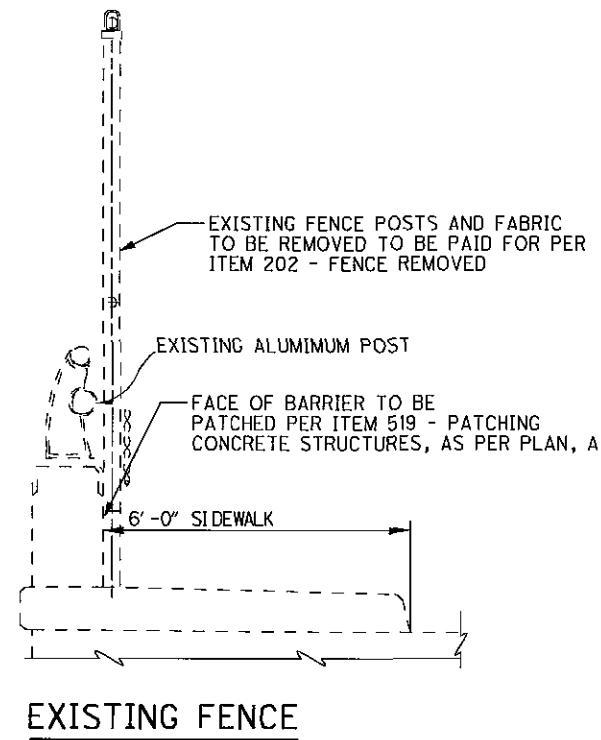


PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE +/-.

DO ONLY WORK LISTED UNDER PROPOSED WORK.

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NOTE:
A CONTINGENCY QUANTITY OF 100 PCS EACH ANCHOR BOLTS AND HEXAGON NUTS HAS BEEN INCLUDED FOR REMOVING AND RE-INSTALLING THE BRIDGE RAILING. TO BE PAID FOR WITH ITEM 517 - RAILING MISC : GALVANIZED STEEL ANCHOR BOLTS AND HEXAGON NUTS.

D12 BH-FY2007
PID No. 80803

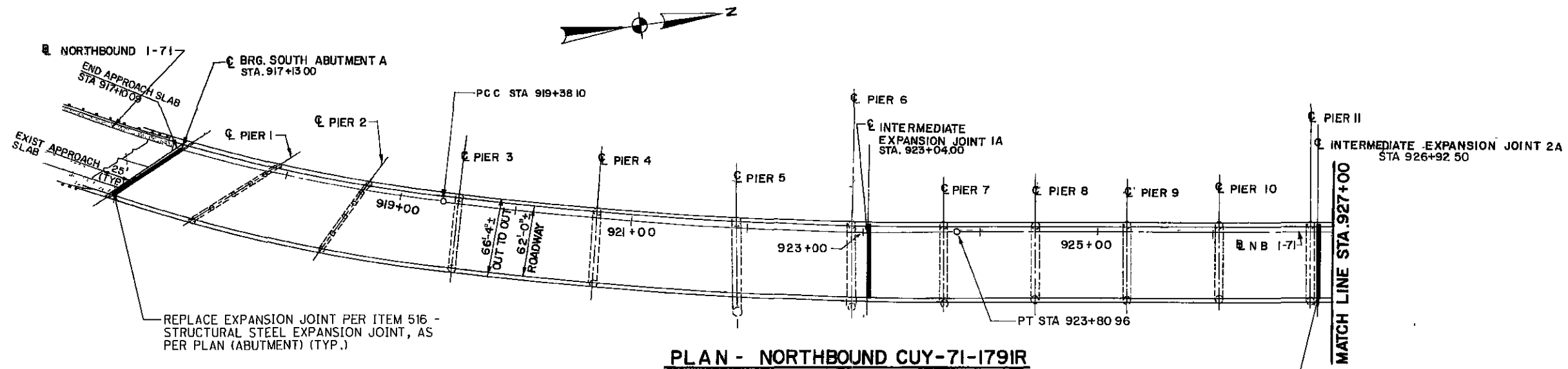
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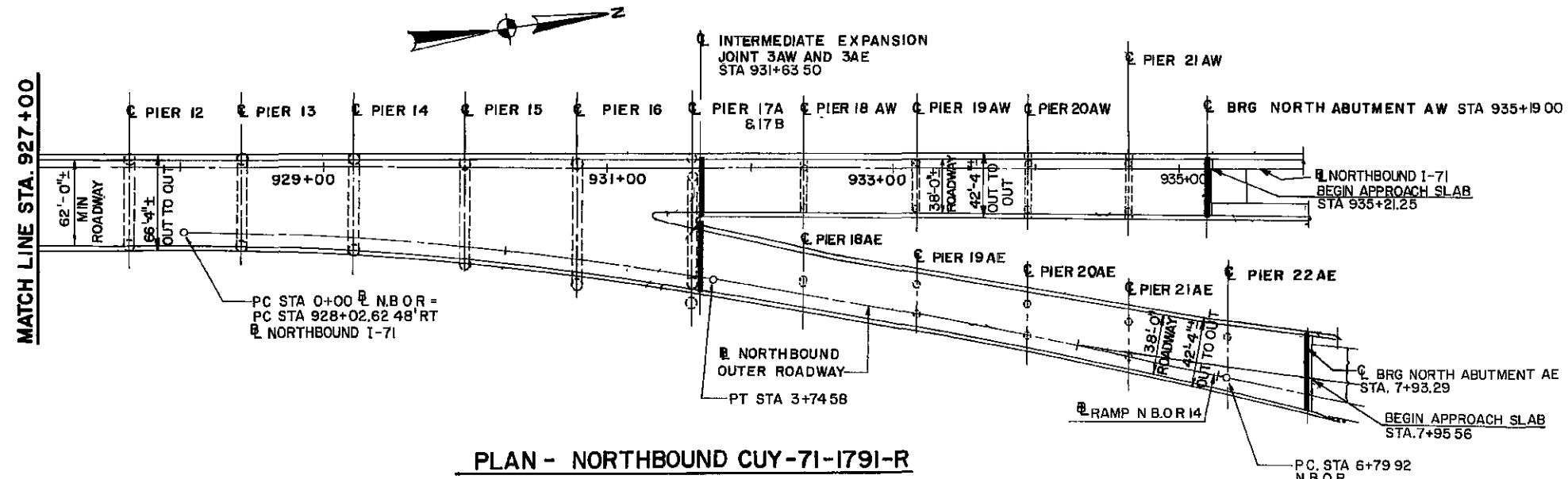
LOCATION 2 - FENCE DETAILS
CUY-71-1372
BELLAIRE ROAD OVER I-71

DESIGNED	DRAWN	REVIEWED	DATE
KJW	KJW		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDL		1805045	

DESIGN AGENCY
Ohio Dept of Transportation
District 12



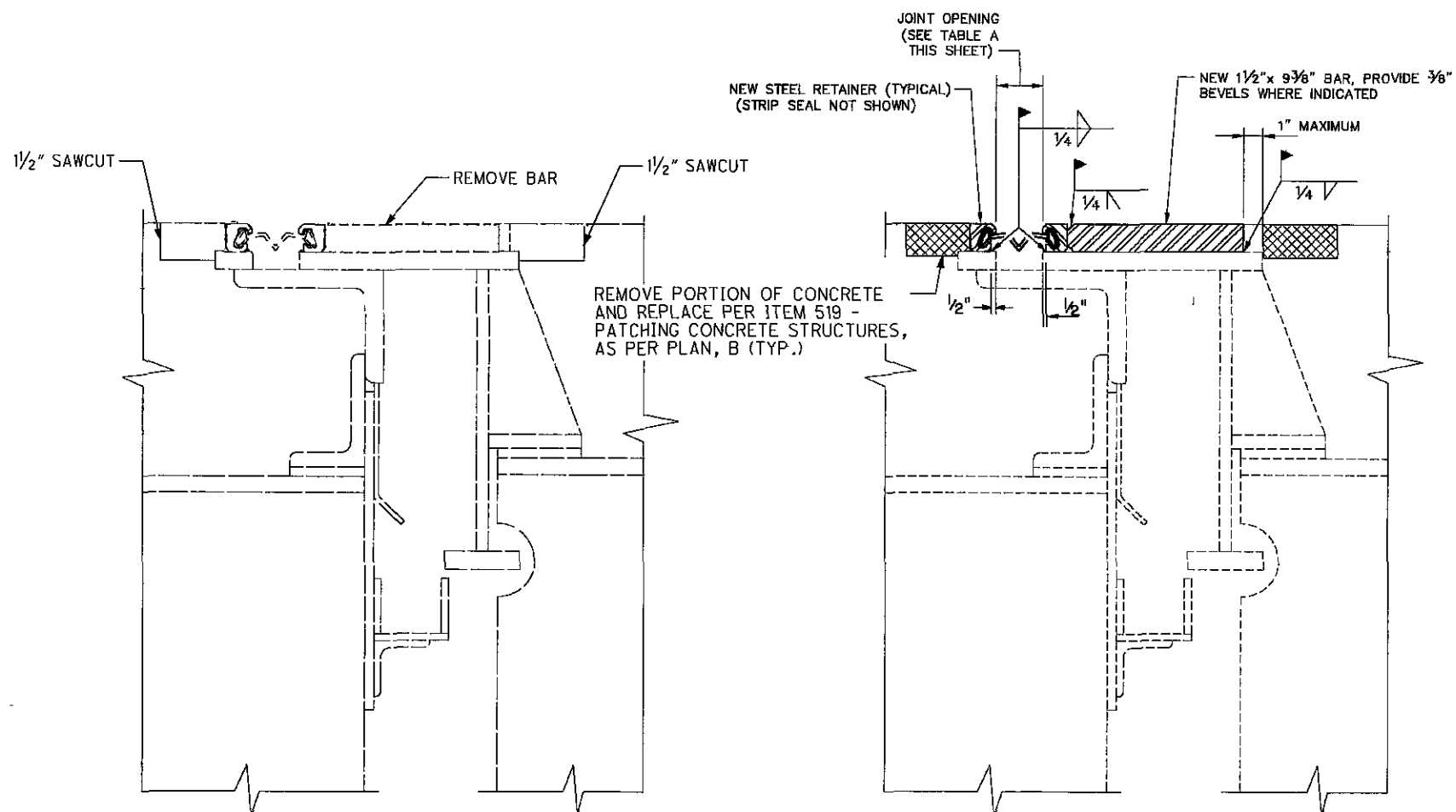
REPLACE EXPANSION JOINT PER ITEM 516 -
STRUCTURAL STEEL EXPANSION JOINT, AS
PER PLAN (INTERMEDIATE) (TYP.)



PROPOSED WORK
- REPLACE EXPANSION JOINTS
- PATCH DECK

PLAN AND ELEVATION VIEWS ARE TAKEN FROM
ORIGINAL PLANS AND SHOULD BE USED FOR
INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE +/-.
DO ONLY WORK LISTED UNDER PROPOSED WORK



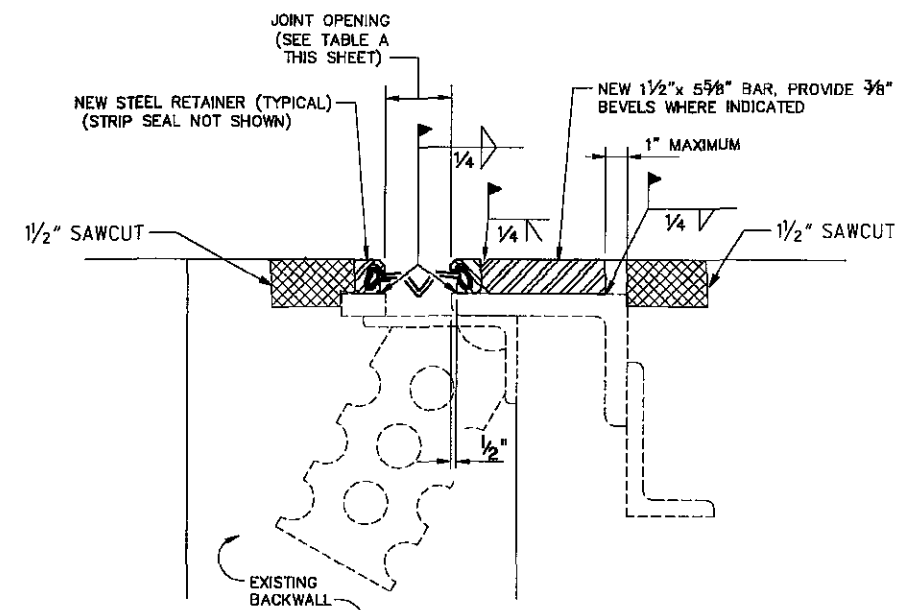
EXISTING EXPANSION JOINT AT INTERMEDIATE JOINTS

MODIFIED EXPANSION JOINT AT INTERMEDIATE JOINTS

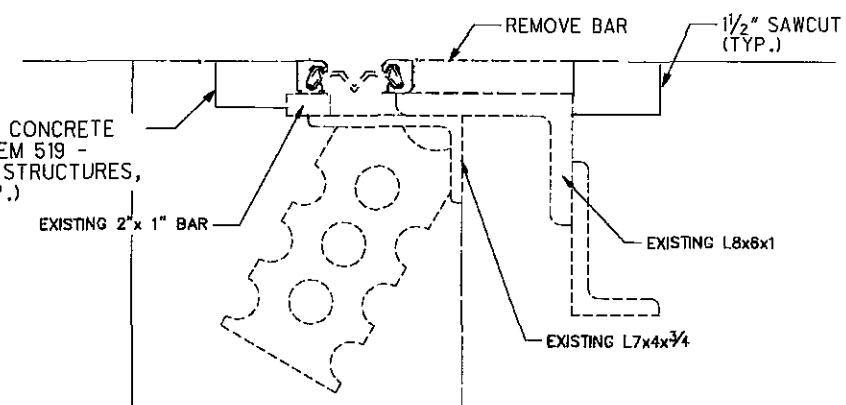
JOINT	SKEW	DISTANCE "D _A "	JOINT LENGTH	JOINT OPENING*	TEMPERATURE ADJUSTMENT INCREMENTS PER 10° F.	SEAL SIZE (IN)
SOUTH ABUTMENT A	41° 28'31"	365'-0"	79'-4 ³ / ₈ "	2 ⁷ / ₈ "	¼"	5"
INTERMEDIATE JOINT 1A	NONE	226'-0"	62'-0 ³ / ₁₆ "	2"	¾"	4"
INTERMEDIATE JOINT 2A	NONE	229'-6"	62'-0"	2"	¾"	4"
INTERMEDIATE JOINT 3AW	NONE	241'-6"	38'-0"	2"	¾"	4"
INTERMEDIATE JOINT 3AE	10° 48'43"	241'-6"	42'-5 ⁵ / ₁₆ "	2"	¾"	4"
NORTH ABUTMENT AW	NONE	204'-6"	38'-0"	2"	5/16"	4"
NORTH ABUTMENT AE	11° 55'25"	277'-10 ⁷ / ₁₆ "	51'-5 ⁵ / ₈ "	2 ³ / ₈ "	7/16"	4"

*ASSUMES 60° AMBIENT TEMPERATURE IF TEMPERATURE IS OTHER THAN 60° F. ADJUST THE JOINT OPENING BY THE INCREMENTAL CHANGE GIVEN IN THIS TABLE. THE INCREMENT SHALL BE ADDED TO THE JOINT OPENING FOR EACH 10° F DROP BELOW 60° F, AND SHALL BE SUBTRACTED FROM THE JOINT OPENING FOR EACH 10° F RISE ABOVE 60° F.

JOINT LENGTH IS HORIZONTALLY MEASURED ALONG THE CENTERLINE
OF THE JOINT TOE TO TOE OF ROADWAY PARAPETS



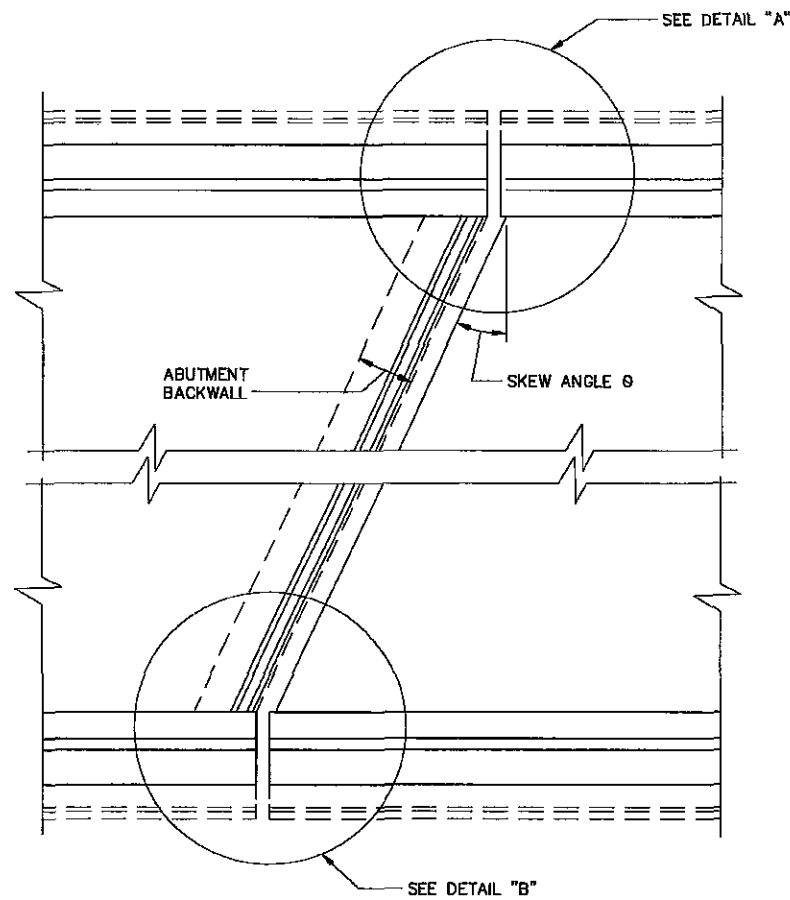
MODIFIED EXPANSION JOINT AT ABUTMENTS



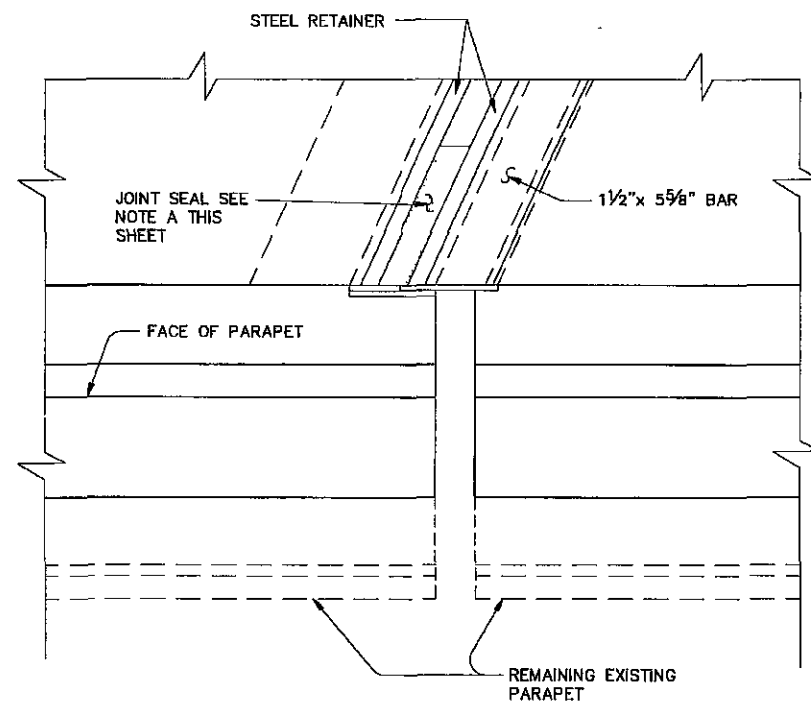
EXISTING EXPANSION JOINT
AT ABUTMENTS

 ITEM 519 - PATCHING CONCRETE STRUCTURES,
AS PER PLAN, B

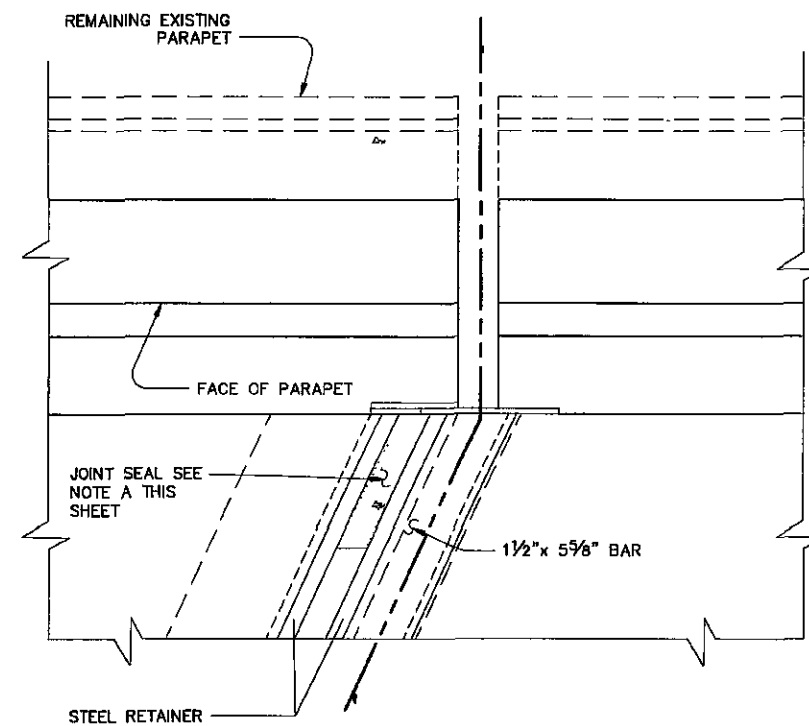
NOTE: PAYMENT FOR WORK ON THIS SHEET SHALL
BE PAID FOR PER ITEM 516 - STRUCTURAL STEEL
EXPANSION JOINT, AS PER PLAN (ABUTMENT) AND
ITEM 516 - STRUCTURAL STEEL EXPANSION JOINT,
AS PER PLAN (INTERMEDIATE).



PLAN AT ABUTMENT



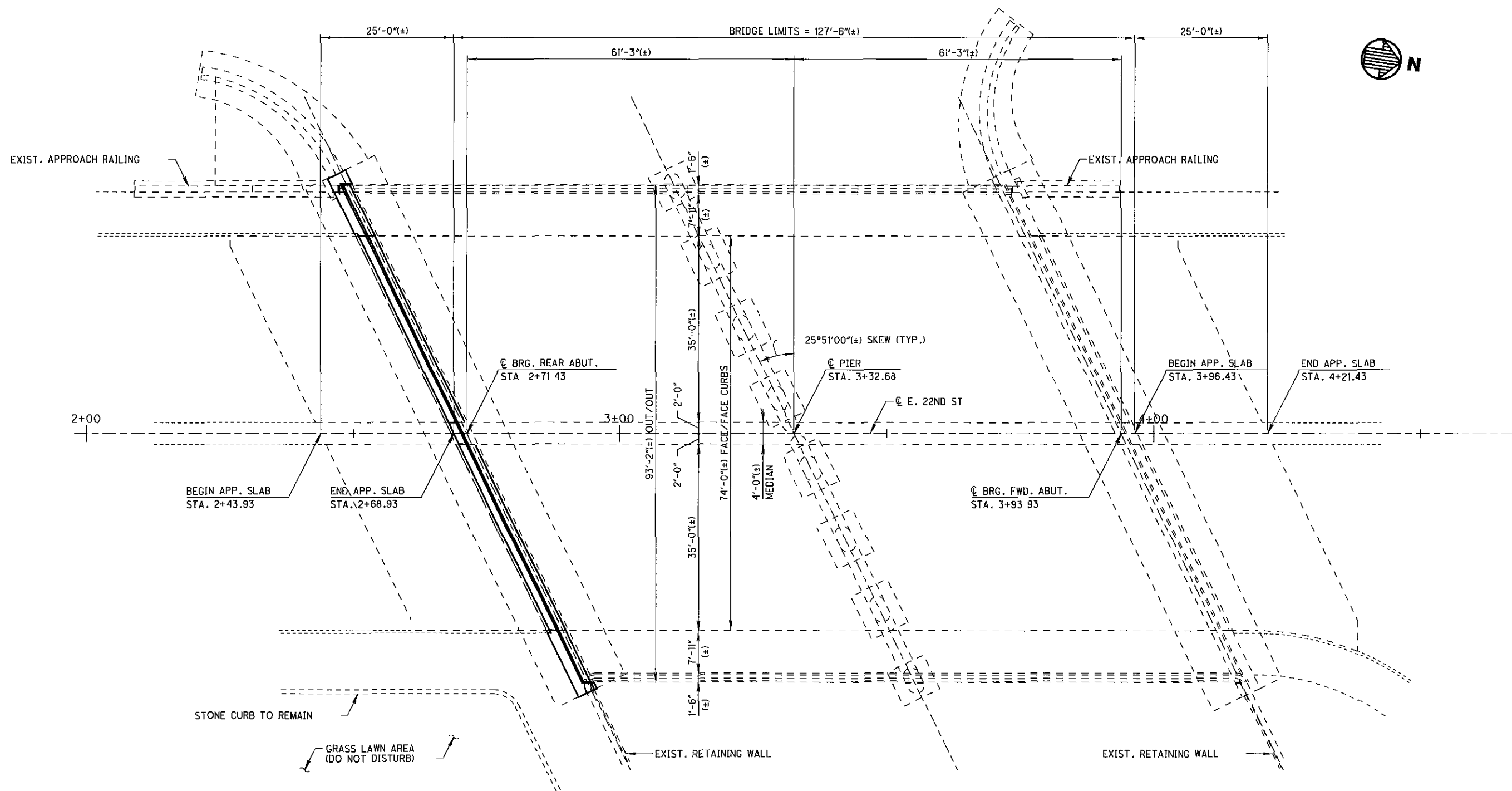
DETAIL "B"



DETAIL "A"

NOTE A:

POUR POLYURETHANE JOINT SEAL IN THE STRIP SEAL AND RETAINER FROM THE CURB LINE TO ONE FOOT FROM THE CURB LINE. PAYMENT SHALL BE INCLUDED IN ITEM 516-STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN.



GENERAL PLAN

PROPOSED WORK

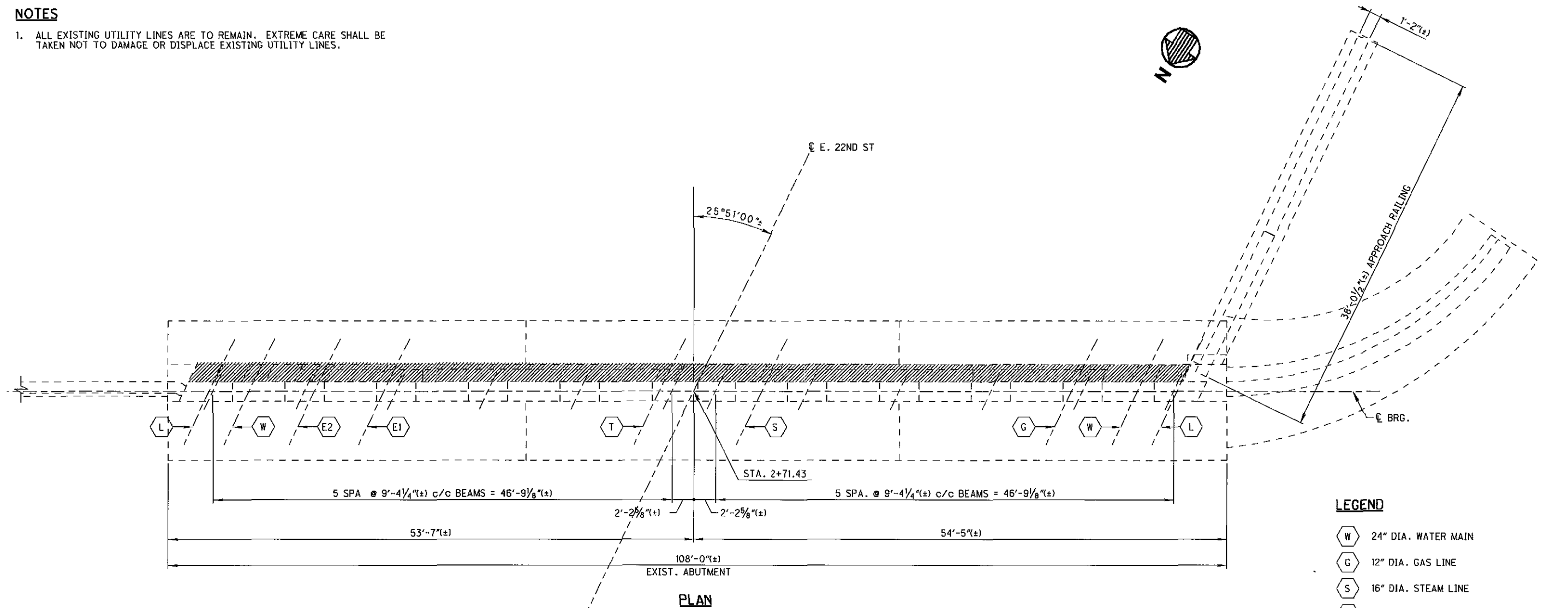
REPAIR REAR ABUTMENT BACKWALL.

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 61'-3" (±), 61'-3" (±) c/c BRGS.
 ROADWAY: 74'-0" (±) FACE/FACE OF CURBS WITH 8'-0" (±) SIDEWALKS
 SKEW: 25°51'00" (±) R F
 LOADING: CF(2000) 51
 WEARING SURFACE: 2½" SDC
 APPROACH SLABS: AS-1-54 (25' LONG)
 ALIGNMENT: TANGENT
 DATE BUILT: c. 1958
 STRUCTURAL FILE NUMBER: 1807838

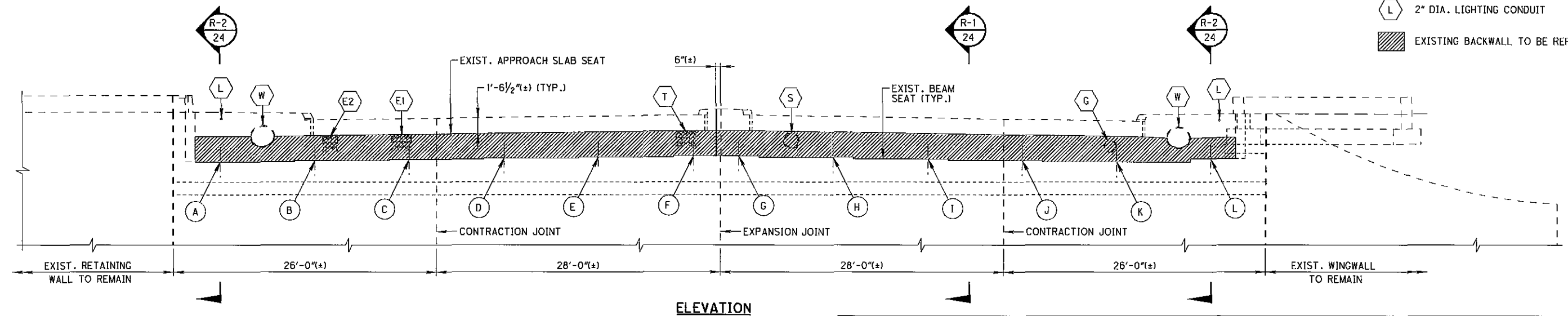
NOTES

- ALL EXISTING UTILITY LINES ARE TO REMAIN. EXTREME CARE SHALL BE TAKEN NOT TO DAMAGE OR DISPLACE EXISTING UTILITY LINES.



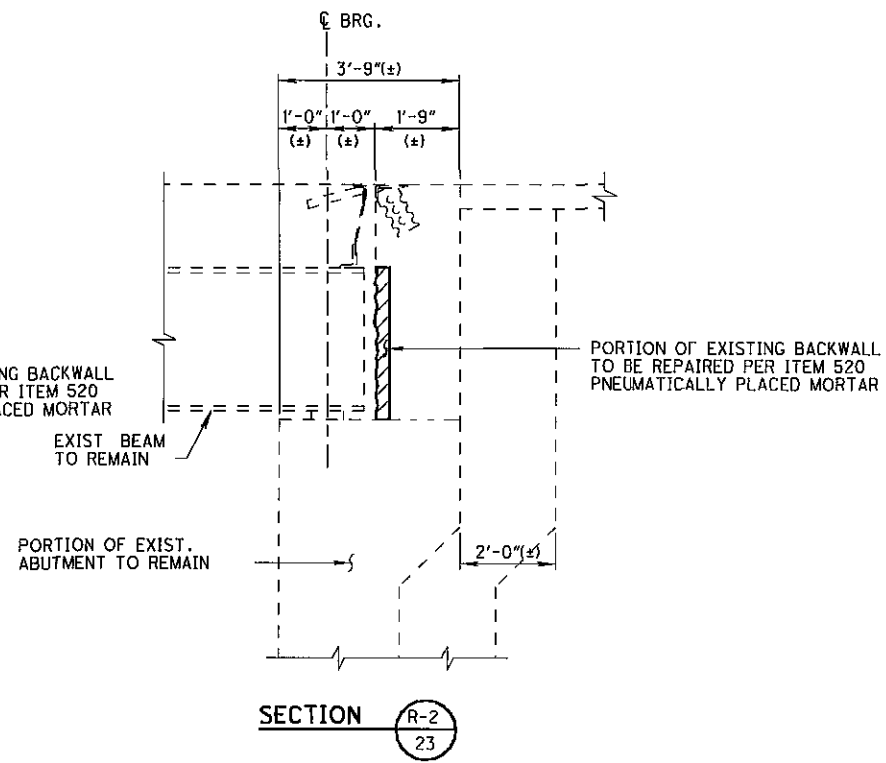
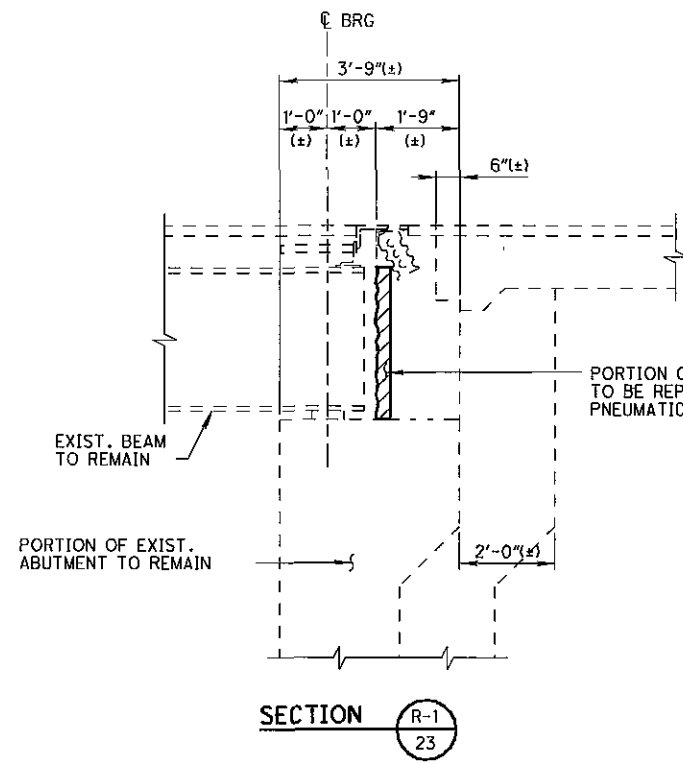
LEGEND

- W 24" DIA. WATER MAIN
- G 12" DIA. GAS LINE
- S 16" DIA. STEAM LINE
- T 12 - 4" DIA. AT&T DUCTS
- E1 12 - 4" DIA. C.E.I. DUCTS
- E2 9 - 4" DIA. C.P.P. DUCTS
- L 2" DIA. LIGHTING CONDUIT
- EXISTING BACKWALL TO BE REPAIRED

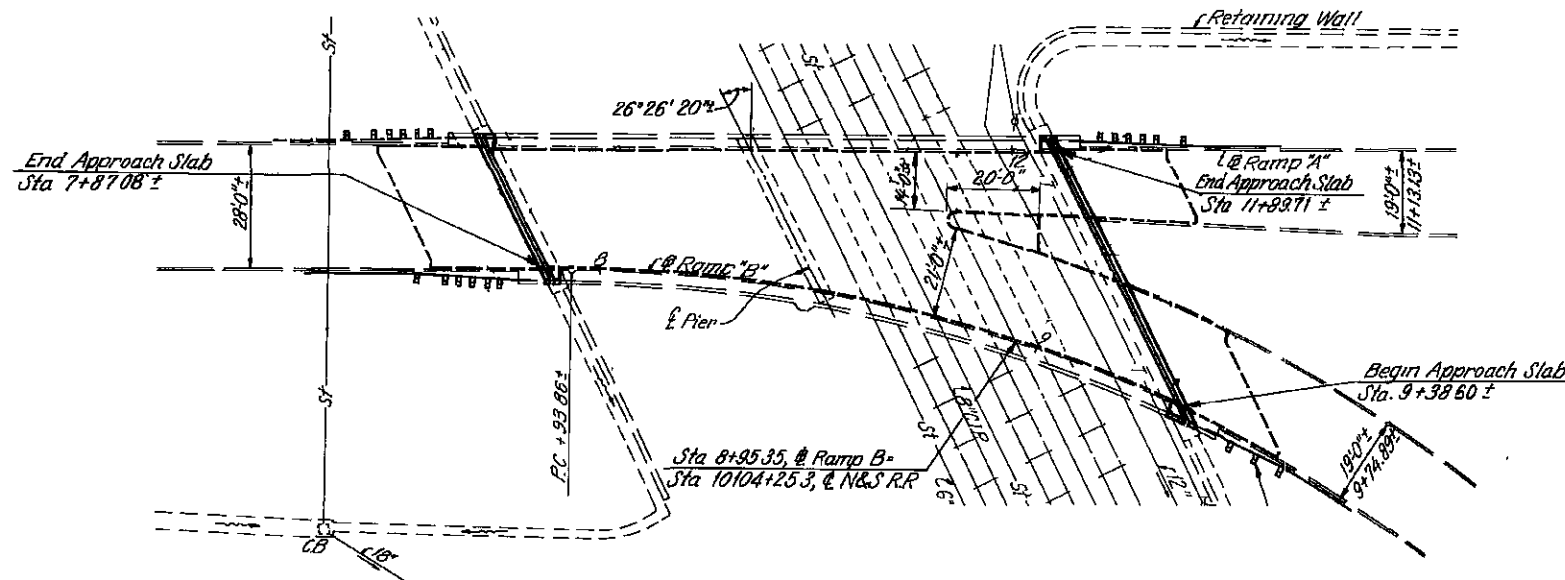


BEAM SEAT ELEVATIONS

A	B	C	D	E	F	G	H	I	J	K	L
666.22(±)	666.34(±)	666.45(±)	666.57(±)	666.67(±)	666.80(±)	666.79(±)	666.64(±)	666.50(±)	666.35(±)	666.20(±)	666.52(±)



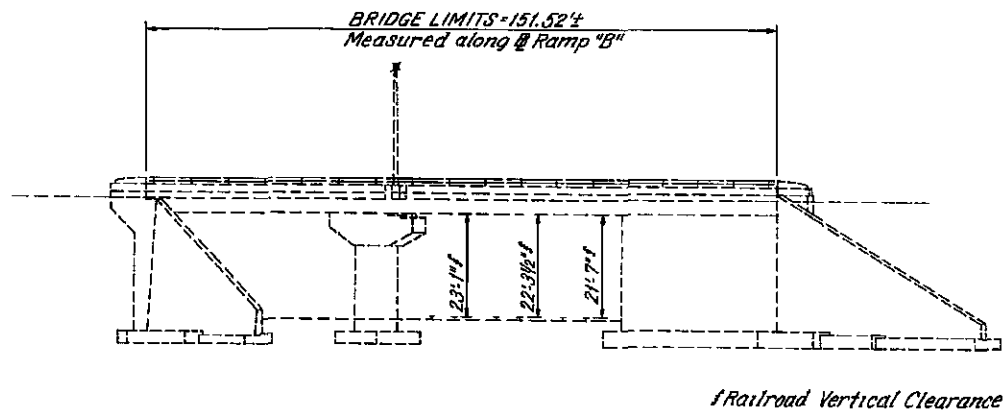
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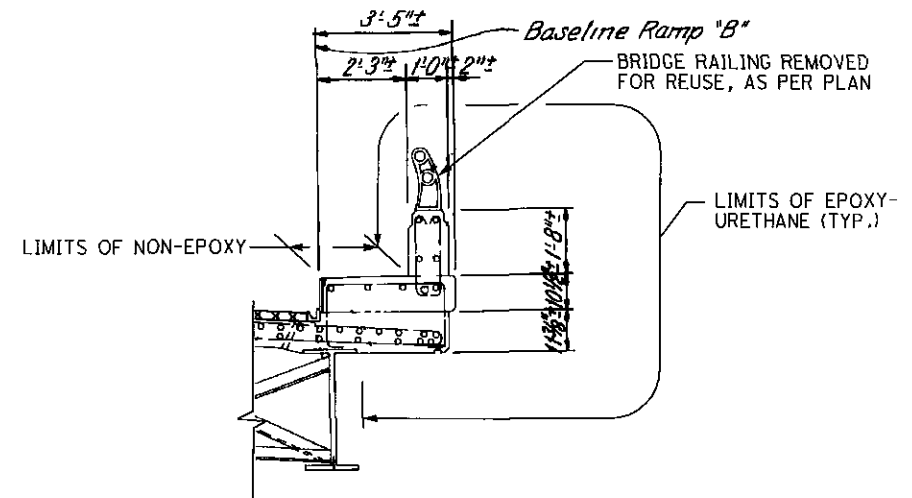
EXISTING CURVE DATA
PI Sta 9+80.64 ±
Δ = 60°48'23" Rt
D = 18°00'00"
R = 318.31'
L = 337.81'
T = 186.78'
E = 50.74'

GENERAL PLAN

680
670
660
650
640
630



GENERAL ELEVATION



NOTE:
A CONTINGENCY QUANTITY OF 100 PCS EACH ANCHOR BOLTS AND HEXAGON NUTS HAS BEEN INCLUDED FOR REMOVING AND RE-INSTALLING THE BRIDGE RAILING. TO BE PAID FOR WITH ITEM 517 - RAILING MISC.: GALVANIZED STEEL ANCHOR BOLTS AND HEXAGON NUTS.

PROPOSED WORK

- REMOVE BRIDGE RAILING FOR REUSE
- PATCH OUTSIDE AND INSIDE FACE OF BARRIER AND SIDEWALK
- SEAL BARRIER WITH EPOXY-URETHANE
- SEAL SIDEWALK WITH NON-EPOXY

PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

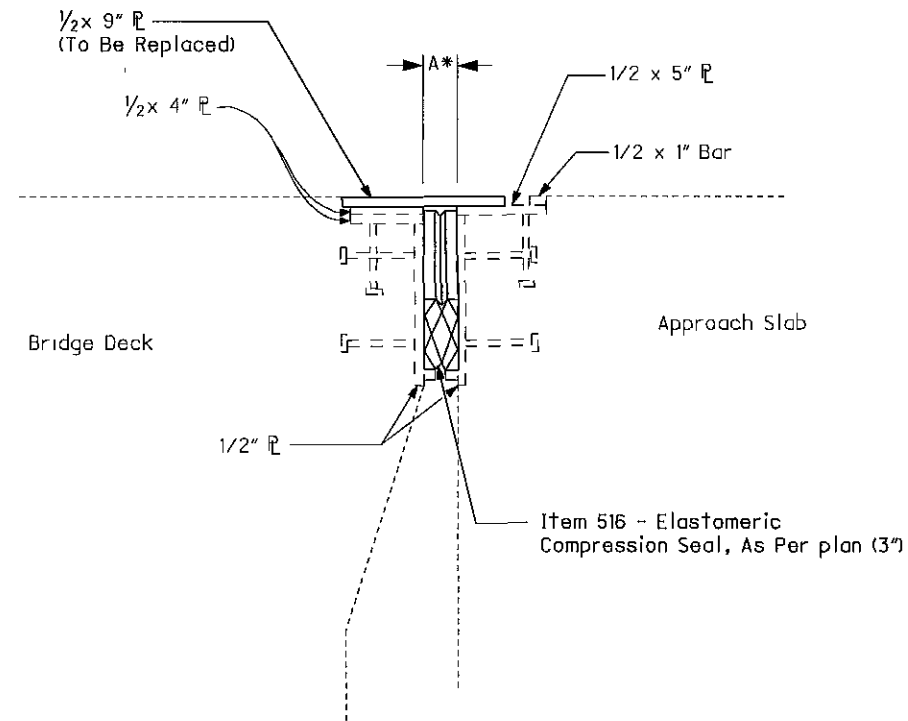
ALL DIMENSIONS ARE +/-.

DO ONLY WORK LISTED UNDER PROPOSED WORK

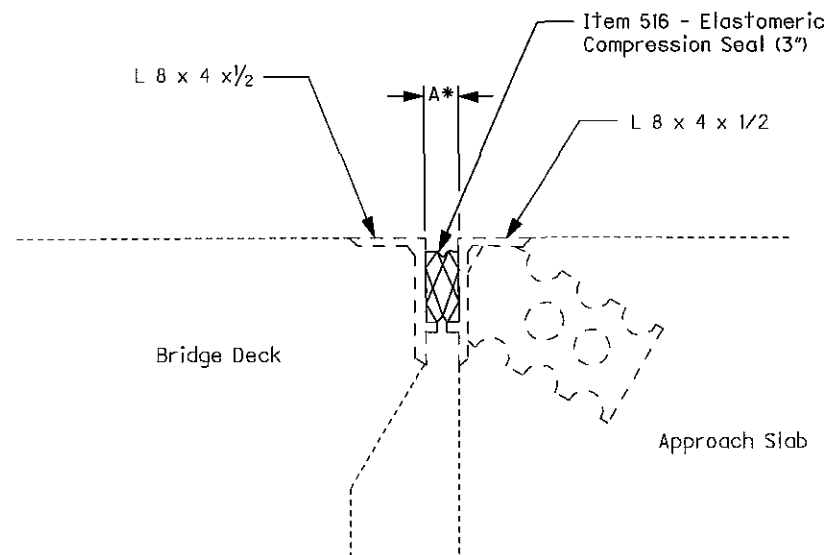


DO ONLY WORK LISTED UNDER PROPOSED WORK.

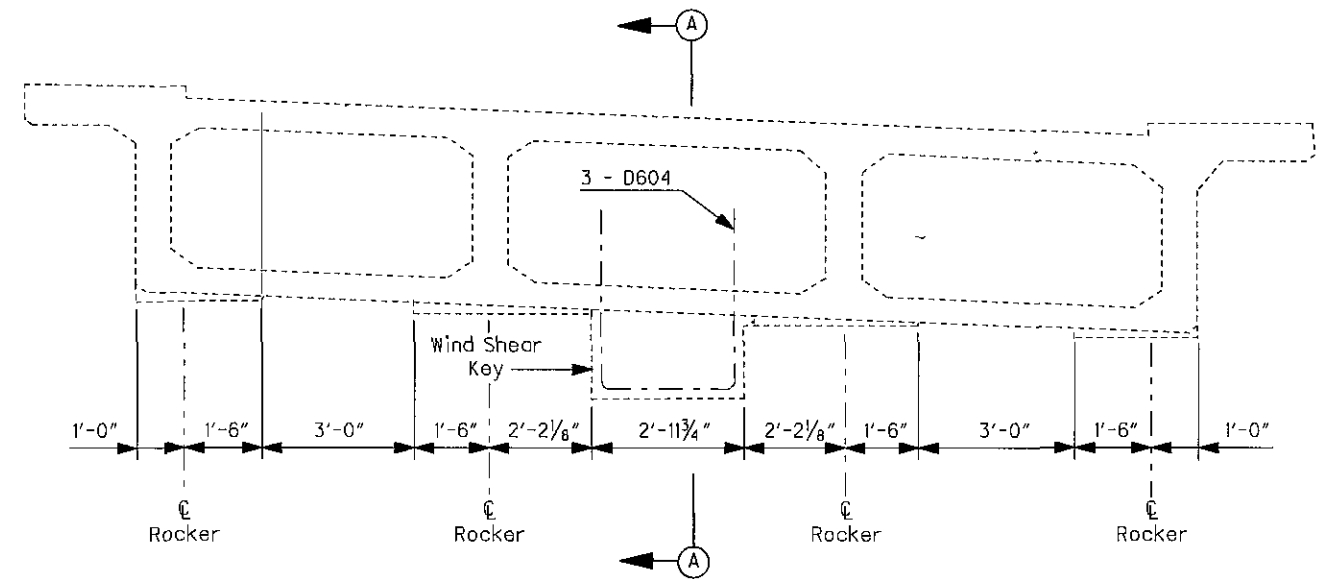
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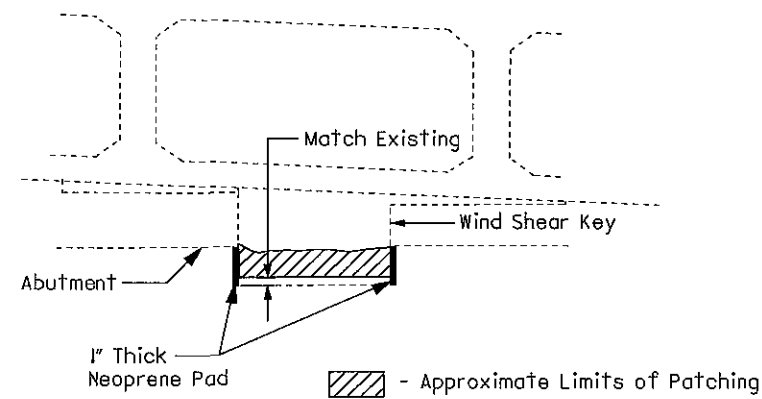
Expansion Joint Compression Seal Detail (Sidewalk)
(See Standard Drawing EXJ-2-82 for Additional Information)



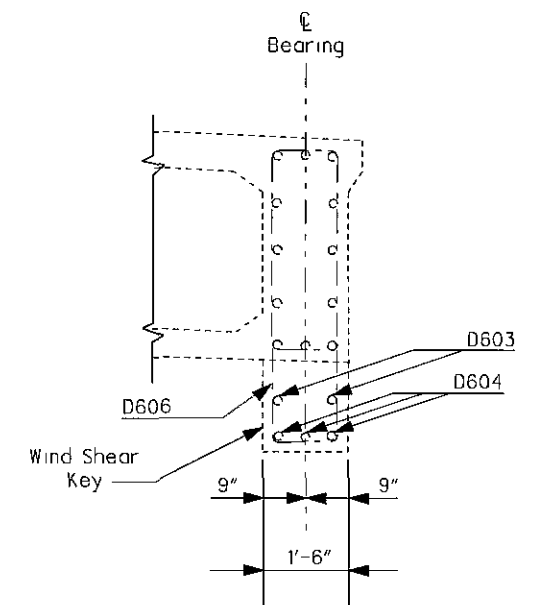
Expansion Joint Compression Seal Detail (Roadway)
(See Standard Drawing EXJ-2-82 for Additional Information)
*1 3/4" @ 50°F



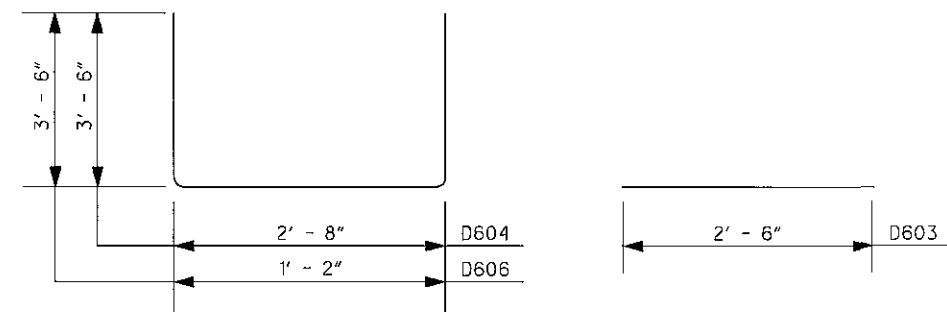
Typical End Diaphragm



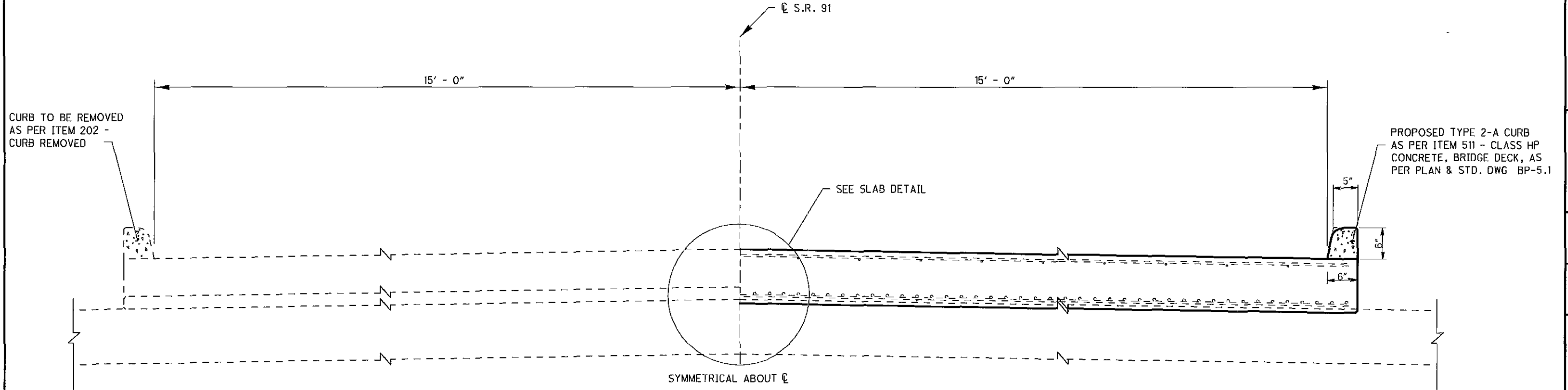
Wind Shear Key Repair Detail



Section A-A

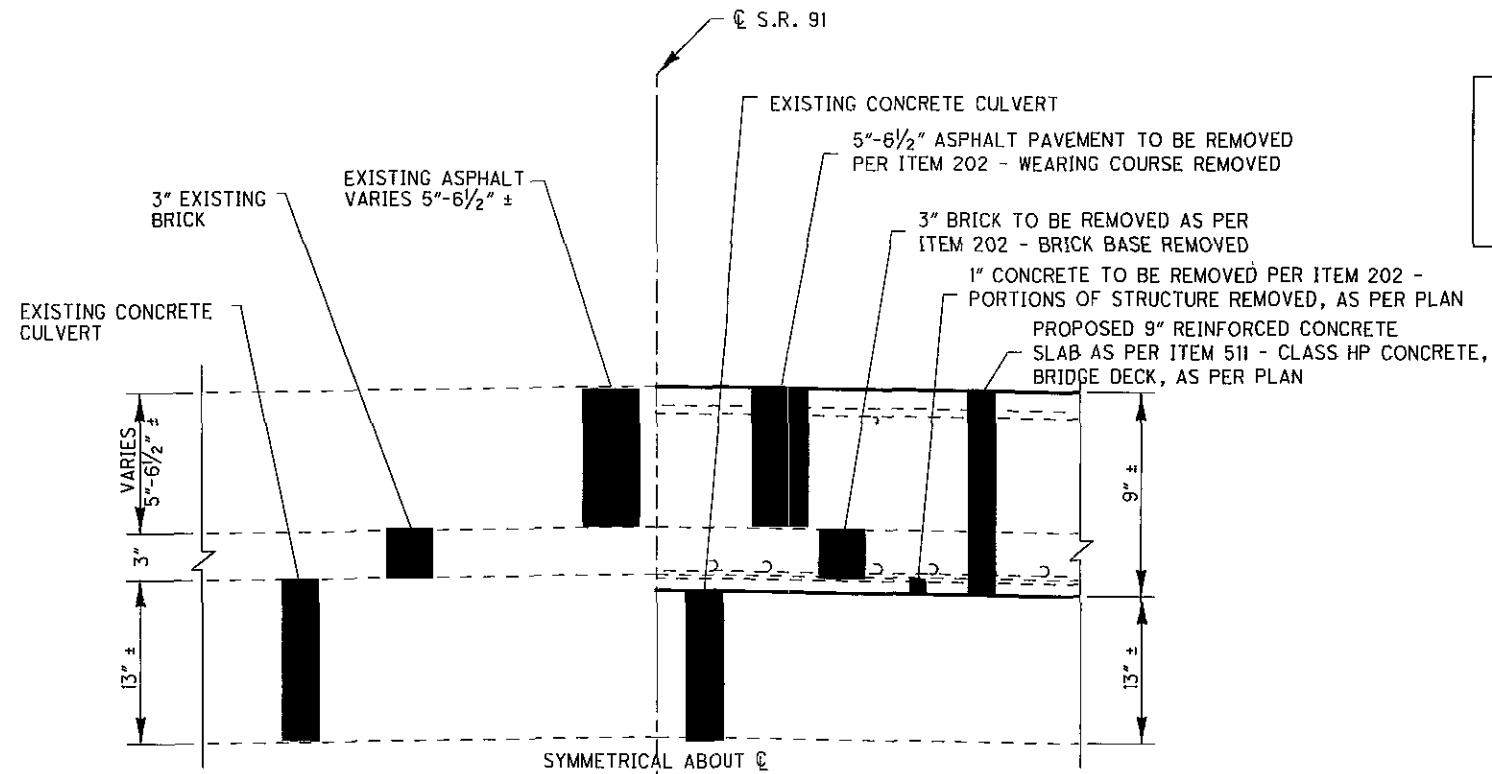


Wind Shear Key Existing Reinforcing Steel



EXISTING HALF-TRANSVERSE SECTION

PROPOSED HALF-TRANSVERSE SECTION



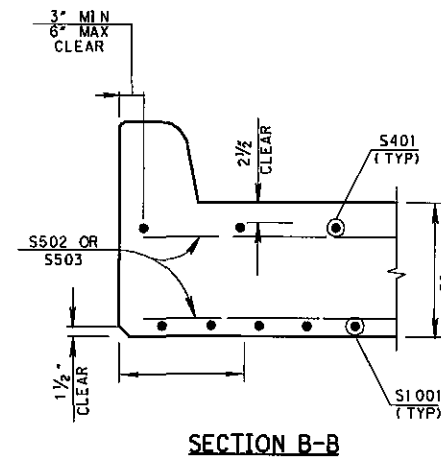
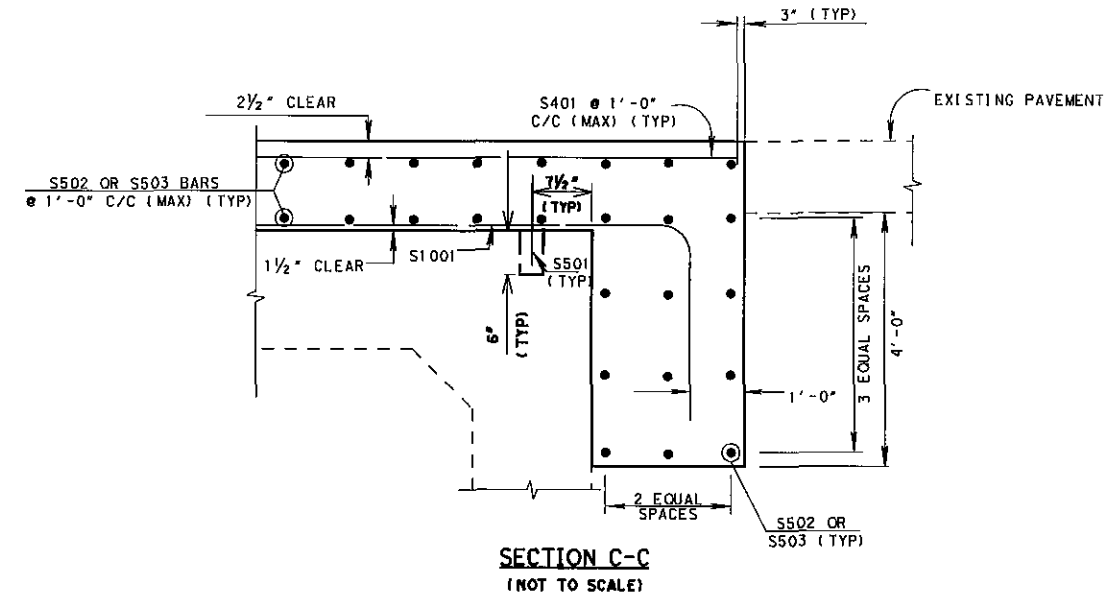
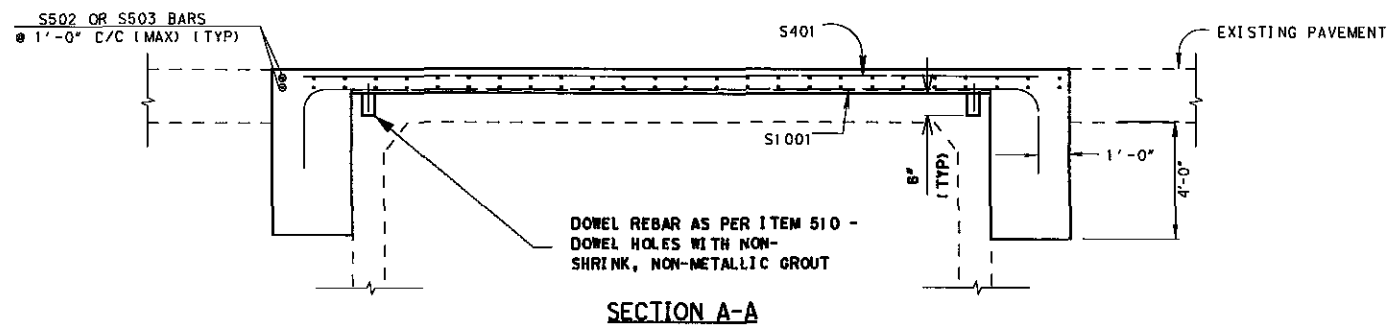
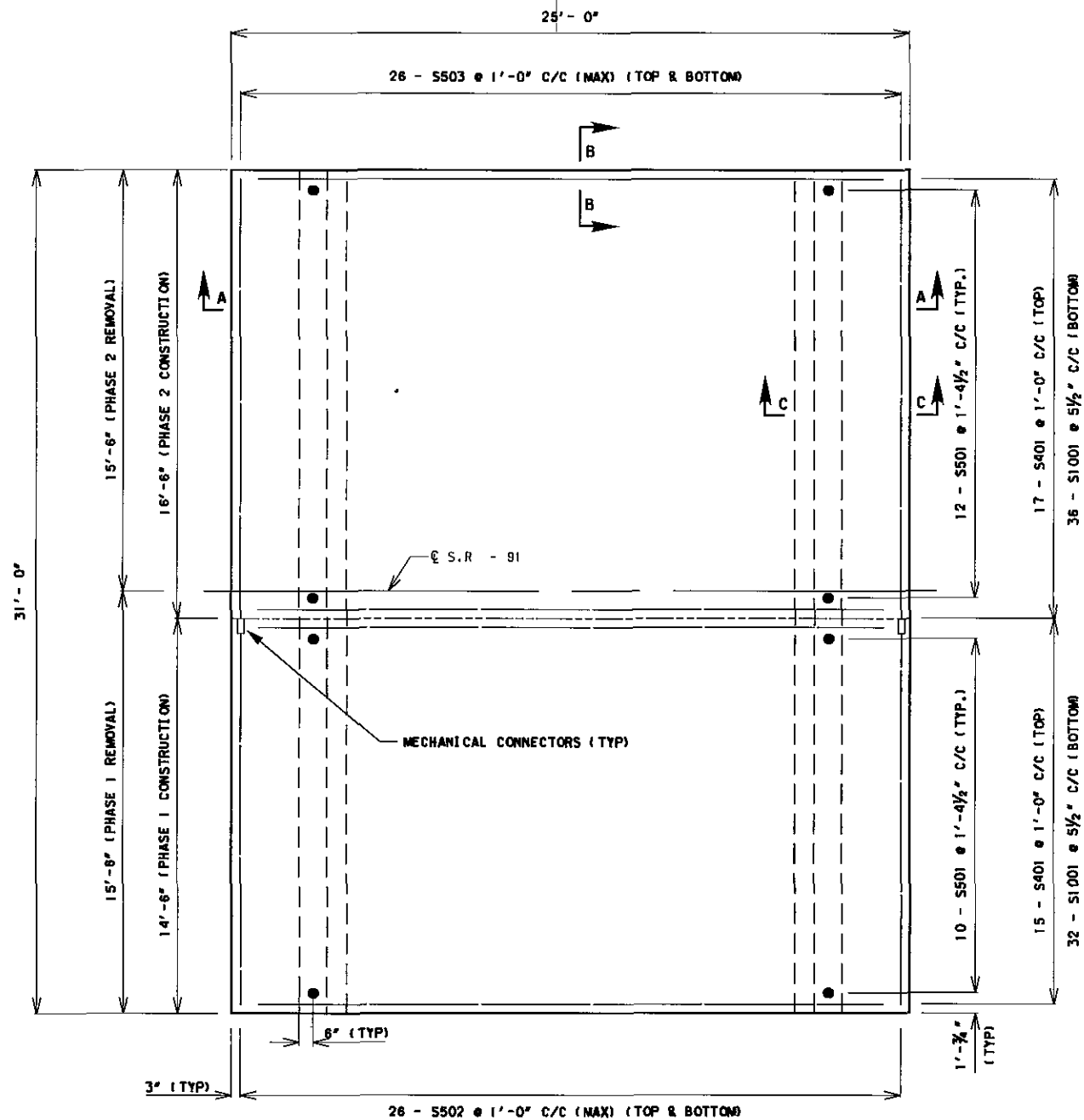
SLAB DETAIL

NOTES

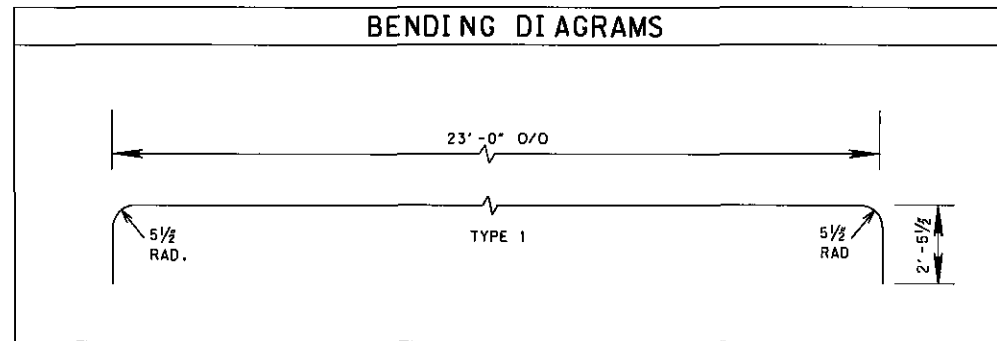
MATCH EXISTING ELEVATIONS.

PROPOSED WORK

STRUCTURAL OVERLAY



MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE
S401	32	24'-6"	524	STR
S501	44	11"	42	STR
S502	70	14'-3"	897	STR
S503	70	16'-3"	1190	STR
S1001	68	27'-2"	7850	1



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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 affected by the work done under this contract. In addition to the Construction and Material Specifications, the following specific provisions are mandatory

I. 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 constrictions. Therefore, the contractor must submit a written schedule to the engineer, responsible law enforcement agencies, City Engineer's Office, and the ODOT Public Information Office (216-584-2007) indicating the locations and dates of the lane closures at least 3 days prior to the implementation of any such closures. Use portable changeable message signs to alert motorists 3 days prior to the implementation of any changes such as lane closures or other restrictions.

II. Lane Closure Restrictions

1. Lane closures may only be implemented at the times permitted by the "District 12 Permitted Lane Closure Times" list which is located on the ODOT web site:

www.dot.state.oh.us/dist12/workzone/laneclo.htm

The latest revision at 14 days prior to the bid date shall be in effect for this project

2. Any roadway not listed in the "District 12 Permitted Lane Closure Times" shall not have any weekday closures from 7:00AM - 9:00AM or 3:00PM - 6:00 PM
3. Unless otherwise noted, exit and entrance ramp lanes shall remain open at all times and exhibit a minimum width of ten (10) feet
4. No lane or shoulder closures shall be in place when no work is being performed
5. Maintenance of Traffic shall follow the instruction of the Standard Construction Drawings listed on the title sheet and the latest revision of the OMUTCD.
6. Pedestrian traffic shall be permitted and accommodated on at least one side at all times
7. All work on Cuy-90-1676 shall be completed during nights and weekends and in accordance with the "District 12 Permitted Lane Closure Times"
8. All work on Cuy-91-0803 shall be completed within 4 consecutive weeks (2 weeks per phase)
9. All work on Cuy-71-1791 R shall be completed with a full weekend closure of only 2 lanes at a time for 4 weekends.

Notwithstanding the above, 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 are to be implemented or in place during increased traffic volumes caused by special events or when the Engineer deems the climatological conditions too hazardous.

III. Maintenance of Traffic Systems

1. 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.

2. Conditions

During all parts of this project flaggers, signing, barricades, flashing arrows, etc. shall be located as indicated in the "Manual" or as shown in the Standard Drawings. Two-way traffic shall be maintained on one lane at least 10' wide at all times.

3. 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.

4. Flaggers

At least two flaggers are required for each closure. The Contractor shall furnish additional flaggers as directed by the Engineer.

5. Protection of Public

Personal cars shall not be parked within the Right of Way.

6. 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.

IV. Maintenance of Traffic Materials

1. Signs

Sign dimensions and specifications, including letter sizes are to 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.

2. Sign Support

Sign supports shall be of sufficient size and mass as to support the signs at the appropriate height. Supports shall be as shown on the Standard Drawings.

3. Flashing Arrow Requirement

Whenever any part of the traveled surface is closed, the motorists shall be warned and directed by the Contractor through the use of one flashing arrow panel for each lane closed. The Contractor shall refer to Standard Drawing MT-35 10 and the provisions set forth in the "Manual" for all information regarding furnishing, maintaining, and use of flashing arrow panels. Payment for the abovementioned items shall be included in the lump sum bid for Item 614 - Maintaining Traffic.

4. Drums

Drums shall be in accordance with pertinent sections of the "Manual". All costs for installing, maintaining, and subsequent removal of said drums is to be included in the lump sum bid price for Item 614 - Maintaining Traffic.

5. Cones

Cones, if utilized, are to be located as shown in the "Manual" and the Standard Drawings.

6. Flashers

Flashers shall be 12 Volt battery-operated models with 7 inch diameter yellow lenses illuminated by rapid intermittent flashers of short duration and are to be placed on all signs at all times as required by the "Manual" and the Standard Construction Drawings.

V. 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.

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Item 614 – Law Enforcement Officer with Patrol Car

In addition to the requirements of Item 614 and the latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD), a uniformed Law Enforcement Officer and official patrol car with working top mounted emergency flashing lights shall be provided for controlling traffic for the following tasks

- For lane closures: During initial set-up periods, tear down periods, substantial shifts of a closure or when new lane closure arrangements are initiated
- When directed by the Engineer

Law Enforcement Officers (LEO's) should not be used where the OMUTCD intends that flaggers be used. The LEO's are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Project Engineer shall have control over their placement. The official patrol car shall be a public safety vehicle as required by the Ohio Revised Code. The Contractor shall make arrangements with the City of Mentor for these services.

Law Enforcement Officers with Patrol Cars required by the traffic maintenance tasks above shall be paid for on a unit price (hourly) basis under Item 614 – Law Enforcement Officer with Patrol Car. The following estimated quantities have been carried to the General Summary.

Item 614 - Law Enforcement Officer with Patrol Car **250 Hours**

The hours paid shall include minimum show-up time required by the law enforcement agency involved.

If the Contractor wishes to utilize LEO's for flagging and traffic control other than for that required in these plans, he may do so at his own expense.

Construction Traffic

All construction traffic shall use acceptable truck routes to access the construction area. Use of local residential streets is strictly prohibited unless allowed in writing by the local enforcement authority.

Equipment and Material Storage

In order to provide for the safety of the traveling public the Contractor's attention is directed to 614.03. In addition the following provisions shall apply:

1. Any removed items shall not be stored on the right of way for more than thirty days.
2. The storage of equipment, materials, and vehicles within the highway right of way will be permitted. The number of areas and exact locations shall be approved by the Engineer.
3. All disturbed areas shall be returned to their original condition at no expense to the state.

Overhead-Mounted Work Zone Signals

Signals shall be overhead mounted in accordance with the details shown on SCD MT-96.21.

Contractors Equipment and Operation

All vehicles and equipment must be equipped with at least one flashing, rotating, or oscillating amber light that is visible in all directions of traffic for at least one quarter mile, day or night.

Unless behind concrete barrier, the Contractor's equipment shall be operated in the direction of traffic only.

Item 614 - Portable Changeable Message Signs, As Per Plan

The Contractor shall furnish, install, maintain, and remove when no longer needed a portable changeable message sign(s). The PCMS shall be of the type shown on the list of approved PCMS maintained by the director.

<http://www.dot.state.oh.us/testlab/applists/misc/pcms%20%20ntpep-based.htm>

With the exception that no flip disc (or variation of flip disc) units will be allowed. The PCMS shall be a class I or II type unit.

The portable changeable message sign shall be mounted on a trailer. The location of the PCMS shall be as directed by the engineer. The engineer shall be provided access to each sign unit and shall be provided with appropriate training and operation instructions.

The PCMS shall contain a cellular telephone link which will allow remote sign activation, deactivation, message changes, message additions and revisions to time of day programs. The system shall also permit verification of current and programmed messages.

The contractor shall provide to the engineer the software necessary to control the PCMS remotely.

The PCMS shall be equipped with a myriad safety beam or an approved equal as determined by the engineer. The myriad safety beam sends out a signal that activates radar detectors. The beam is approved by the F.C.C. The myriad safety beam shall use the same power supply as the PCMS. The myriad safety beam shall be able to be activated with the PCMS running or not. The myriad safety beam is distributed by The Triplex Group, Inc. P.O. Box 428, New Hope, PA 18938. Phone (215) 862-5077.

At the direction of the engineer the PCMS may be removed for periods of times when not in use. No payment will be made for these times (ex. Winter months). Two message boards at eight months each shall be used.

Item 614 - Portable Changeable Message Sign, As Per Plan... **16 Sign-Month**

Continuous Access

The Contractor shall maintain safe and adequate driveways and walkways in order to provide continuous access for pedestrians, passenger vehicles, trucks, and safety equipment to all adjoining properties. The cost for all materials, equipment and labor necessary to provide continuous access shall be included in the lump sum price bid for Item 614 - Maintaining Traffic.

Maintenance of Traffic Scheme

The Contractor shall devise a simple maintenance of traffic scheme, which shall be stamped by a Professional Engineer (scheme may be a hand sketch) and presented to the District Work Zone Safety Engineer and Project Engineer for acceptance at least two weeks prior to implementation. In general, the methods for maintaining traffic that the Contractor proposes to use for conducting the required work in a safe and efficient manner, supported by hand sketches as necessary. The maintenance of traffic scheme shall be in conformance with the Ohio Manual of Uniform Traffic Control Devices, latest revision, the references standard construction drawings, the attached maintenance of traffic sheets, and the specifications. The Contractor shall not commence work until the maintenance of traffic scheme has been approved.

All work shall be conducted from within a one or two (1 or 2) lane closure using drums according to the restrictions and the concepts presented in MT-95.30 and associated standard construction drawings MT-98.12 thru MT-98.16 (see title sheet), and these plans.

If during the project the Engineer determines that the approved maintenance of traffic plan is not performing as desired, the work shall be suspended until the problem is resolved to the satisfaction of the Engineer and the maintenance of traffic plan is revised accordingly. Any costs or delays incurred as a result of the failure of the satisfaction of the Engineer shall be the full responsibility of the Contractor.

During non-working hours, all lanes shall be in full operation with all traffic control signs, except OW-124 (Road Construction Ahead) signs, removed or covered and all channelizing devices removed from the pavement surfaces. Channelizing devices may be stored or deployed temporarily adjacent to the shoulder to minimize the nightly traffic control set-up time.

Item 621 – RPM

This item shall be used to replace any raised pavement markers that are affected by the proposed work. All equipment, labor, and materials required to the raised pavement markers shall be included for payment under Item 621 – RPM.

The following estimated quantity has been included in the General Summary to be used throughout this project.

Item 621 – RPM **42 EA.**

Item 614 - Work Zone Pavement Markings

The following estimated quantities have been carried to the General Summary, to be used as directed by the Engineer. Place temporary markings at the locations of the permanent markings as shown in the traffic control plans.

After the pavement planing process is completed, and again after the asphalt concrete intermediate course is placed, the following work zone markings shall be used:

Item 614 - Work Zone Center Line, Class I, 740 06, Type I	0.06 Mile
Item 614 - Work Zone Edge Line, Class I, 740 06, Type I	0.04 Mile
Item 614 - Work Zone Stop Line, Class I, 740 06, Type I	30 Feet

After placing the surface course, the Contractor may place permanent pavement markings at the locations previously field surveyed instead of placing temporary pavement markings, which shall be non-performed at these locations.

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Item Special - Work Zone Traffic Signal

Use portable traffic signals (PTS) in accordance with Standard Drawings MT-96 10, 96 21 and 96 25 with the following exceptions and qualifications

- Luminaires for area illumination are not required
- Temporary pavement markings and temporary raised pavement markers are not required for signalized operations lasting less than thirty-six hours
- When signalized operation will last less than thirty-six hours, removal of existing conflicting pavement markings is not required if drums (or cones during daylight hours only) provide continuous positive guidance for vehicles
- Do not use signal systems of this type for situations where traffic, including contractor vehicles, will be entering the traffic stream, from the work site, between signals

The traffic signal system may either be constructed of standard signal components conforming to Standard Drawings MT-96 10, 96 21 and 96.25, or it may be a Portable Traffic Signal (PTS) which is essentially self contained and mounted on trailers. The PTS shall conform to the following criteria.

1. The PTS shall conform to all MOUTCD requirements for traffic control signals including section 4D.20.
2. Each signal head shall have three 12-inch vehicular indications (red, yellow, and green) and their candlepower distributions shall not be less than specified for standard 12-inch signal heads in the ITE Standard for adjustable face traffic signal heads.
3. The systems may be powered by engine driven generators or by stored battery charge. The systems, including batteries, shall be designed to provide electrical energy which will maintain the above described candlepower distribution for at least twenty-four hours at full output.
4. The dimming of a PTS is permitted in accordance with the OMUTCD. The unit may include a photocell and circuitry which will permit the yellow lens of the PTS light output to be reduced by up to fifty percent during night hours. The amount of dimming, and the choice of not dimming, shall be operator selectable.
5. The signal unit generator battery and electronic controls shall be completely inaccessible to unauthorized access, and protected by a sturdy, lockable metal enclosure.
6. Signal supports shall consist of sturdy brackets attached to a trailer. The erected assembly shall be designed to solidly support the roadside signals at the specified heights and be designed for 40 mile per hour wind loads.
7. The trailer and supports shall be orange. The signal heads shall be yellow.
8. The control portion of the PTS shall meet NEMA Environmental Standards. An independent laboratory test report shall be provided to verify compliance with the NEMA Environmental Standards.
9. The PTS shall be capable of operating in manual, fixed-time, and traffic-actuated modes.
10. The controllers for the PTS system shall electronically communicate to each other by cable, radio, or other method approved by the director.

Item Special - Work Zone Traffic Signal, Cont.

11. It shall not be possible, even under manual control (1) to program the yellow clearance interval for less than three seconds, or (2) for the green interval to be displayed for less than five seconds.
12. All timing intervals shall be set to increments of one second or less.
13. The controller shall provide a variable all red clearance interval from zero to six hundred seconds.
14. The controller shall provide a method for insuring that the pairs of signal heads cannot display conflicting indications. This shall include at least a system which will identify as a conflict the display of a green in one direction while: (1) displaying a green in the conflicting direction; (2) displaying a yellow in the conflicting direction; or (3) displaying the all-red clearance interval for a conflicting approach. Further, a controller will be determined to be in conflict if a displayed green is less than five seconds or a displayed yellow is less than three seconds. Upon determination that a conflict exists, all signal heads shall display flashing red as described in item 15.
15. The controller shall provide a red flash cycle that shall be flashed continuously at a rate of not less than fifty nor more than sixty times per minute. The illuminated period of each flash shall be not less than half, nor more than two-thirds, of the total flash cycle.
16. The controller shall have circuitry which will detect low voltage and prevent the occurrence of an unsafe signal indication. This "brown out" circuit shall hold the signal safe until adequate voltage is resumed. If a microprocessor is utilized, appropriate circuitry shall be included that will reset the processor when needed while holding the signal in an all-red condition. When the processor is removed from the circuitry, the signal shall default to a safe condition.
17. If the PTS utilizes radio transmission equipment:
 - A) The transmitter shall be an accepted FCC-type and shall not exceed 1 Watt output per FCC part 90.17. The manufacturer shall also comply with all specific limitations noted in FCC part 90.17.
 - b) In case of radio interference or failure, the PTS shall display all red.
 - c) If an FCC license is required, a copy shall be kept on file with the contractor.
18. The contractor shall inspect the PTS at least once each hour for the first eight hours after it is set up or reconfigured. Thereafter, he shall inspect it at least every twenty-four hours, including weekends. The inspections are to determine that it is operating correctly and efficiently, that signals are properly aimed, and the battery charge sufficient.
19. The contractor or supplier shall submit a letter signed by the manufacturer certifying that the candidate PTS complies with each of the above requirements. The letter shall also convey detailed engineering information, drawings, and descriptions which describe how each requirement is satisfied.

MOT NOTES

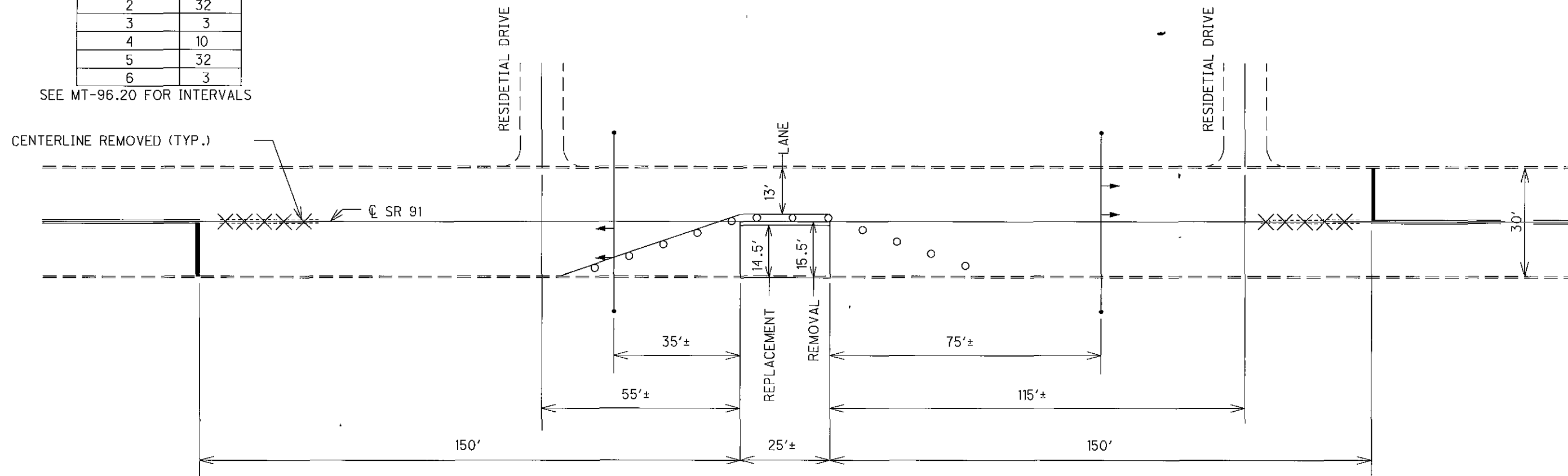
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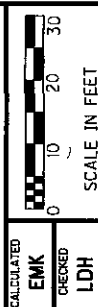
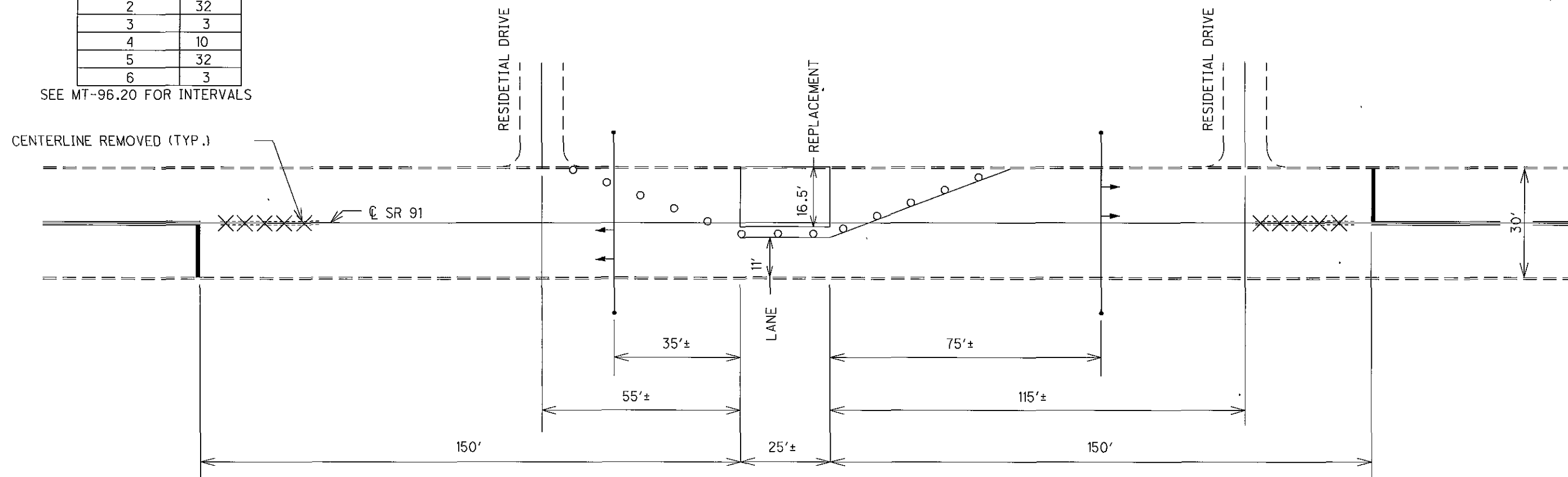
PRE-TIMED CONTROL	
INTERVAL	TIME
1	10
2	32
3	3
4	10
5	32
6	3

SEE MT-96.20 FOR INTERVALS



PRE-TIMED CONTROL	
INTERVAL	TIME
1	10
2	32
3	3
4	10
5	32
6	3

SEE MT-96.20 FOR INTERVALS



SIGNALIZED CLOSURE DETAIL

D12 BH FY2007

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