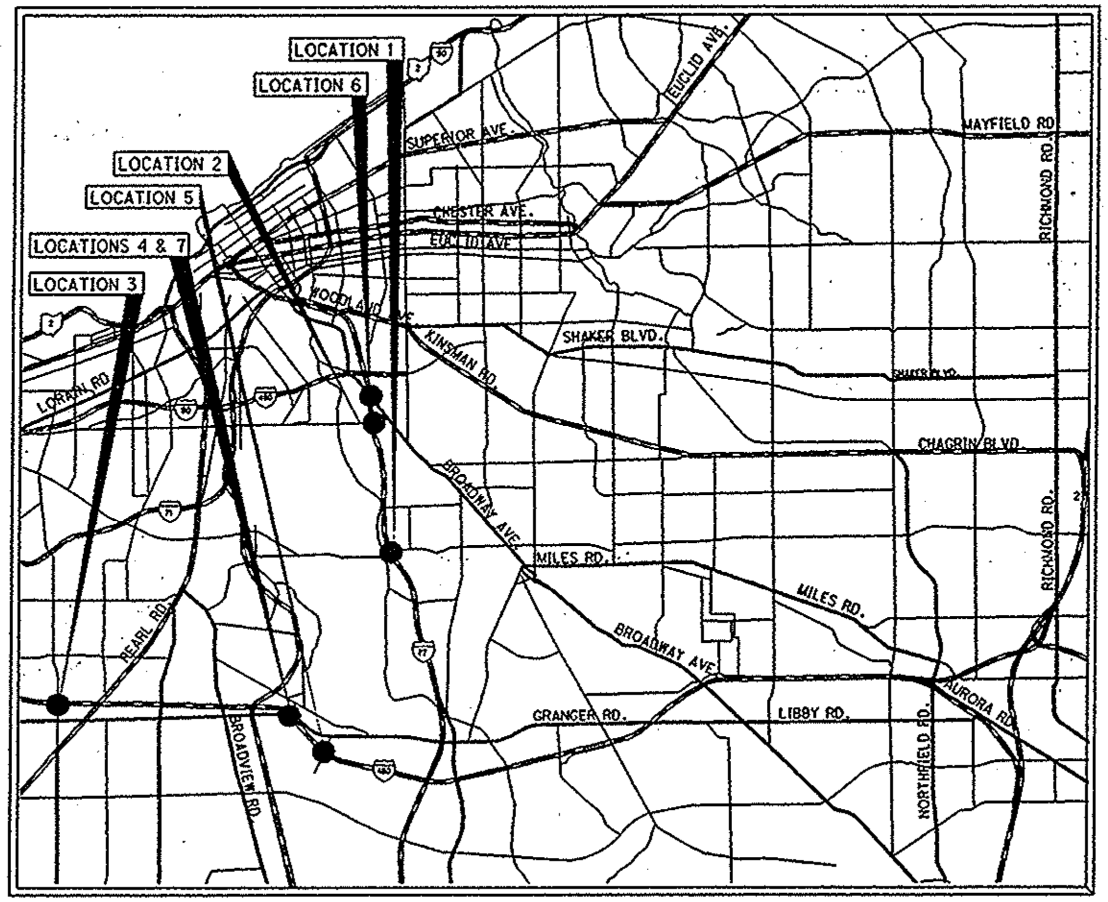
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
D12 BH FY2008

PROJECT DESCRIPTION

MISC. REPAIRS INCLUDING A WEARING SURFACE REPLACEMENT, PATCHING AND SEALING OF CONCRETE SURFACES, FENCE REPLACEMENT, SEALING JOINTS, FIBER WRAP, REPLACING CONCRETE MEDIAN, BEARING RESET, CONCRETE SLOPE PROTECTION, REPAIRING AND CLEANING DRAINAGE SYSTEMS AND REPLACING LIGHTING ACCESS PANELS (SEE SITE PLANS FOR DETAILED LIST OF PROPOSED WORK)



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

LOCATION	BRIDGE NUMBER	STRUCTURAL FILE NUMBER	CITY, TOWNSHIP, OR VILLAGE
1	CUY-77-1212	1806459	NEWBURGH HTS.
2	CUY-77-1375	1806637	CLEVELAND
3	CUY-480-1304	1813005	BROOKLYN
4	CUY-480-1594	1813048	BROOKLYN HTS.
5	CUY-480-1686	1813099	BROOKLYN HTS.
6	CUY-14-0255	1806661	CLEVELAND
7	CUY-17-1227	1802402	BROOKLYN HTS.

INDEX OF SHEETS

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.

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

STATE OF OHIO
YOUSSEF S. SEIF
E-59487
REGISTERED PROFESSIONAL ENGINEER

YOUSSEF S. SEIF

STANDARD CONSTRUCTION DRAWINGS

AS-1-81	07/19/02	HL-10.13	01/17/03	MT-95.50	09/05/06	
				MT-97.10	09/05/06	
BP-1.1	07/28/00	TC-52.10	01/19/07	MT-98.10	10/19/07	
BP-2.2	07/16/04	TC-52.20	01/19/07	MT-98.11	10/19/07	
BP-3.1	10/19/07			MT-98.20	10/19/07	
		MT-35.10	04/20/01	MT-99.50	10/18/02	
RB-1-55	02/02/59	MT-95.30	09/05/06	MT-105.10	10/18/02	
		MT-95.31	09/05/06	MT-105.11	10/18/02	
VPF-1-90	07/19/02	MT-95.32	09/05/06	MT-110.20	10/18/02	

SUPPLEMENTAL SPECIFICATIONS

800	01/18/08
832	04/25/06
848	04/15/05

SPECIAL PROVISIONS

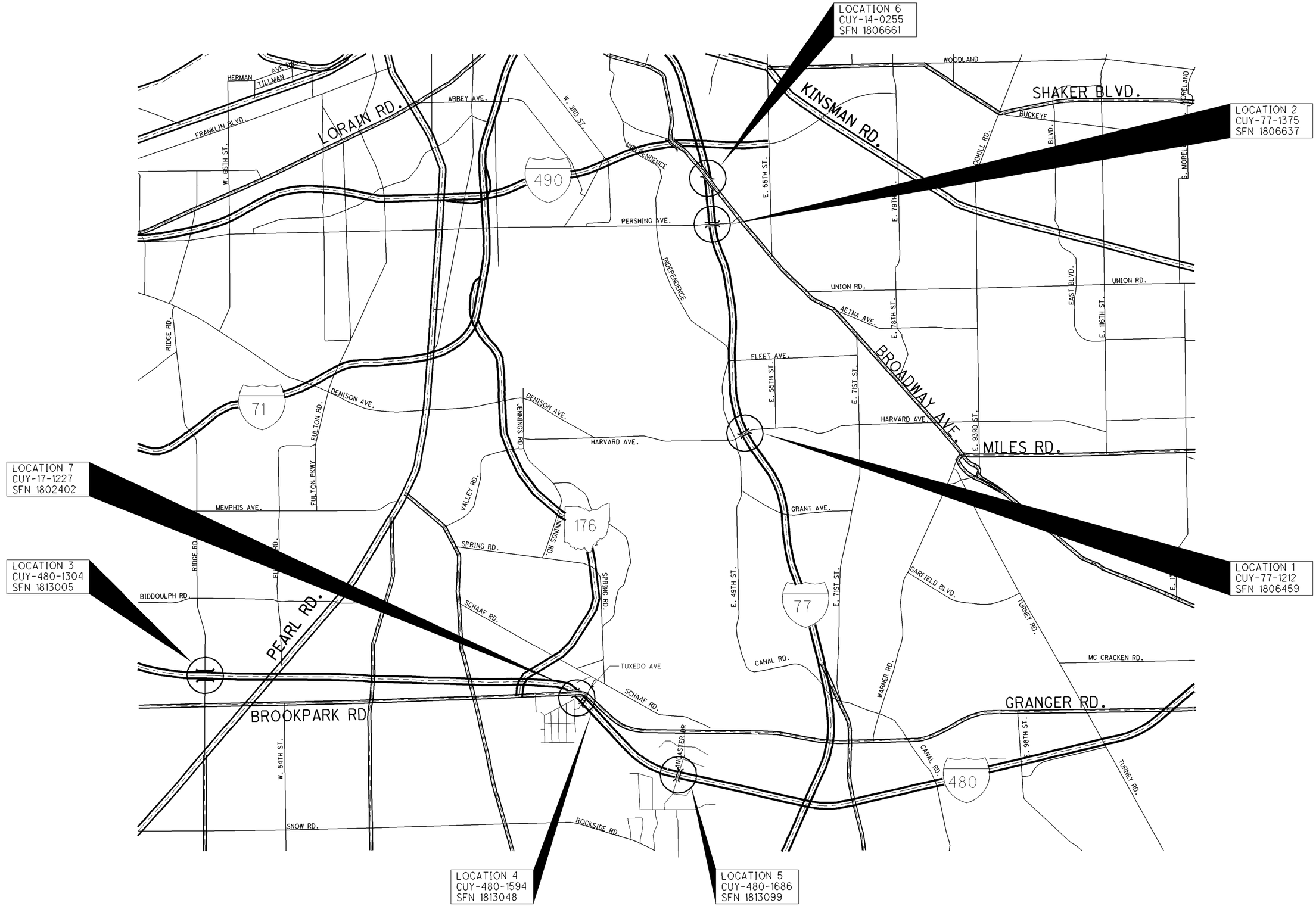
Approved Brent H. ... PE
Date 4/14/08 District Deputy Director of Transportation

Approved James G. Beasley, ...
Date 1-28-08 Director, Department of Transportation

FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 82183
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE

D12 BH FY2008

D12 - VA-BH-FY2008
080266 PID - 82183
Dist 12 4/9/2008



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CHECKED YSS

LOCATION MAPS

D12 BH FY2008

Project Description

This project consists of a wearing surface replacement and miscellaneous concrete and steel bridge repairs

Refer to Standard Bridge Drawings

Listed on title sheet

And to Supplemental Specifications

Listed on title sheet

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.

Asbestos Avoidance

During design of the project, asbestos containing material was identified on these structures. The Asbestos Inspection Report completed in November 2007 is on file and the findings of this report can be reviewed at the District. The project does not require the removal or disturbance of the asbestos containing materials. The contractor is required to take precaution so that the asbestos containing material is not cut or damaged during construction activities.

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..... **8 Months**

Item 201 – Clearing and Grubbing, As Per Plan

Clear and grub all trees, shrubs, brush, roots and all other obstructions to perform the work.

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 – Portion of Traffic Island Removed

Remove only the portion of the traffic island on the bridge approach slab. The contractor is required to maintain the joint opening between the bridge and approach slab.

Prior to removal, the contractor shall field survey the existing traffic island for use in construction of the proposed traffic island.

Item 202 – Fence Removed, As Per Plan A

The contractor shall field verify the existing post spacing on each structure as shown in the plan details.

Item 202 – Fence Removed, As Per Plan B

The contractor shall field verify the existing post spacing, baseplate dimensions, and bolt spacing on each structure prior to removal of the existing fence.

Item 509 - Epoxy Coated Reinforcing Steel, As Per Plan A

This contingency item is to be used to replace the reinforcing steel deemed too deteriorated for reuse, as directed by the Engineer. The removal of the existing deteriorated reinforcing steel shall be included with this pay item. All labor, equipment, materials and incidentals necessary to complete the above work are included for payment per Item 509 – Epoxy Coated Reinforcing Steel, As Per Plan A.

Item 509 - Epoxy Coated Reinforcing Steel, As Per Plan B

This item shall include all labor, equipment, materials and incidentals to install the reinforcing steel, including dowel holes and grout material. Dowel holes shall conform to Section 510 of the CMS. Grout material shall be non-shrink, non-metallic grout conforming to CMS 705.20. All labor, equipment, materials and incidentals necessary to complete the above work are included for payment per Item 509 – Epoxy Coated Reinforcing Steel, As Per Plan B.

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

Location 2 – work includes all piers and newly patched areas. Color shall be Federal Color # 25630 (light grey, semi-gloss).

Location 4 – work includes newly patched areas on the abutment. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 5 - work includes newly patched areas. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 6 - work includes newly patched areas. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 7 – work includes newly patched areas. Color shall be Federal Color # 36492 (light grey, semi-gloss).

Contractor shall ensure all existing underpass lighting and their components are protected during the sealing operations. No sealer shall be placed on any of the underpass lighting or its components. All visible concrete surfaces within the areas specified shall be sealed; however, any areas on a structure to be fiberwrapped shall be sealed and paid for under Item Special – Composite Fiber Wrap System.

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GENERAL NOTES

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

Location 1 – work includes all substructure concrete (abutments, wingwalls, piers) and parapets as detailed in the plans. Seal all existing fiber wrapped columns with only the urethane top coat. Color shall be Federal Color #25630 (light grey, semi-gloss).

Location 2 – work includes the entire parapet, abutments and wingwalls. Color shall be Federal Color #25630 (light grey, semi-gloss).

Location 3 – work includes all substructure concrete (abutments, wingwalls, piers) and parapets as detailed in the plans. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 4 – work includes the entire parapet only. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 5 – work includes the entire parapet and wingwalls. Color shall be Federal Color #36492 (light grey, semi-gloss).

Location 7 – work includes the entire parapet only. Color shall be Federal Color #36492 (light grey, semi-gloss).

Follow Item 512 of the CMS with the following modifications:

512.03E – Remove dust, dirt, oil, wax, curing compounds, efflorescence, laitance, and other foreign materials from the surfaces to be sealed. Sandblasting is not required.

512.03H – Contractor shall ensure the final color has a uniform appearance.

Contractor shall ensure all existing underpass lighting and their components are protected during the sealing operations. No sealer shall be placed on any of the underpass lighting or its components. All visible concrete surfaces within the areas specified shall be sealed; however, any areas on a structure to be fiberwrapped shall be sealed and paid for under Item Special – Composite Fiber Wrap System.

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.

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.

Item 516 – Jacking and Temporary Support of Superstructure, As Per Plan

This work consists of raising or re-positioning existing structures to the dimensions and requirements defined in the project plans. Submit construction plans in accordance with CMS 501.05. If, during the jacking operations, cracking of the concrete superstructure, separation of the concrete deck from the steel stringers, or other damage to the structure is visually observed, immediately cease the jacking operation and install supports to the satisfaction of the Engineer. Analyze the damage and submit a method of correction to the Engineer for approval. Epoxy inject all beams that separate from the deck for the distance of the separation in accordance with CMS 512.07. The Department will not pay for the cost of this epoxy injection or other required repairs. The bridge bearings shall be fully seated at all contact areas. If full seating is not attained, submit a repair plan to the Engineer. The Department will not pay for the repair costs to ensure full seating on bearings.

The Department will measure this work on a lump sum basis. The Department will pay for the accepted quantities at the contract price for Item 516 – Jacking and Temporary Support of Superstructure, As Per Plan.

Item 518 – Structure Drainage, Misc.: Cleaning Bridge Drainage System

This item shall consist of removing all dirt and debris from the scupper drainage systems at locations shown in the plans.

After all dirt and debris are removed, the system shall be flushed with clean water making certain the water flows smoothly through the entire drainage system with no overflow caused blockages. This item also includes all equipment and man power necessary to provide access for the Engineer to inspect entire drainage system before and after cleaning.

All equipment, labor, materials and incidentals necessary to perform the above work shall be included for payment on a lump sum basis under Item 518 – Structure Drainage, Misc.: Cleaning Bridge Drainage System.

Item 518 – Structure Drainage, Misc.: Flexible Conduit with Reducer

This item shall include all equipment, labor, materials and incidentals necessary to install the flexible conduit with reducer to connect the existing scupper to the drainage pipe, including a neoprene coupling. The removal of the existing conduit shall also be included. Payment for the above described work shall be made under Item 518 – Structure Drainage, Misc.: Flexible Conduit with Reducer.

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GENERAL NOTES

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Item 519 – Patching Concrete Structures, As Per Plan

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.

All equipment, labor, and materials to perform the above described work shall be included for payment under Item 519 – Patching Concrete Structures, As Per Plan.

Item Special - Structure Misc.: Emergency Asphalt Paving Operation on Standby

This item shall apply to the following structure:

Location 4 – Cuy-480-1304

The Contractor shall make arrangements to have an asphalt concrete supplier and asphalt paving company on call on Sundays that the bridge deck overlay is scheduled. If the Contractor has not stated to pour the concrete overlay by 3 AM Sunday, the Project Engineer will direct the Contractor to stop operations and pave the bridge with asphalt. The asphalt Contractor will have the ability to mobilize operations within 12 hours. This includes providing 448 Asphalt and a paving crew with compaction equipment.

The paving and all existing traffic control must be in place by 5 AM on Monday.

The following items shall be used in this operation:

Item	Unit	Description
614	Cu. Yd.	Asphalt Concrete for Maintaining Traffic
848	Sq. Yd.	Wearing Course Removed, Asphalt

The state will pay for all costs associated with placing and removing the asphalt if the Contractor was not responsible for the delay. The Contractor will have to pay all the cost associated with the placement and removal of the asphalt.

Payment for all of the above shall be at the unit price bid per each for Item Special – Structure, Misc.: Emergency Asphalt Paving Operation on Standby which shall include all labor, equipment, materials, and incidentals necessary to complete the above work.

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

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.

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

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, PIS 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

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 ½ 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.

Additionally, on locations containing conduits and/or downspouts attached to the columns to receive fiber wrap, the Contractor must maintain the same service provided while disconnecting the conduit from the column only. Reconnect the conduit after the application of the urethane top coat.

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

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 ½ 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.

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. Urethane coating shall match concrete sealer for the structure.

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 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 – Structure Misc.: Patching Concrete Bridge Deck

The engineer shall determine and designate the areas to be repaired on the following structure:

Location 5 – Cuy-480-1686

This item shall consist of furnishing all necessary labor, equipment and materials to repair concrete bridge decks, including the removal of loose and unsound concrete and/or bituminous patches, surface preparation, placing, finishing and curing of the polymer concrete.

The material used for this item of work shall be FlexSet polymer concrete as manufactured by Roklin Systems Incorporated, 20541 Pascal Way, Lake Forest, CA 92630.

Surface preparation, typically including removal of loose and unsound materials, cleanout with a brush and blow out with compressed air, along with mixing, installation and recommended cure time shall all be completed in accordance with the most current manufacturer recommendations. Note that when repairing areas previously patched with asphalt concrete, additional effort will be required to remove any and all existing asphalt concrete and asphalt cement remaining in the repair area so that the FlexSet material bonds directly with existing clean sound concrete.

Any additional cost related to furnishing and utilizing the "ZIP" catalyst, to accelerate curing in cooler temperatures, shall be included in the unit price bid and shall be used based upon the recommendations of the manufacturer.

Since only loose and unsound materials are being removed, repair areas will vary in shape, size and depth. Depth of repairs areas will typically transition from 1/8 inch +/- at the edges of the repair to an estimated depth that could approach 3 to 4 inches or more in some areas of the patch.

The quantity shall be the actual volume in cubic feet of polymer concrete complete, in place and accepted. The volume calculation shall be based upon the following conversion: one 5-gallon FlexSet Kit (60 lbs.) is equal to 1/3 cubic feet. Payment shall be made at the contract unit price for Item Special – Structure Misc.: Patching Concrete Bridge Deck.

Item 601 – Concrete Slope Protection, As Per Plan

This item shall include the removal of the existing rock slope protection prior to constructing the proposed concrete slope protection.

All labor, equipment, materials, and incidentals necessary to complete the above work shall be included for payment under Item 601 – Concrete Slope Protection, As Per Plan.

Item Special – Vandal Protection Fence, 6' Straight, Coated Fabric A

This item shall be as per standard drawing VPF-1-90 with modifications per plan details and the manufacturer's recommendations. Place proposed base plates per plan details. Contractor shall match the existing post spacing, as well as determine the base plate dimensions and bolt spacing and avoid conflict with the grout filled posts shown in the details.

The fence, fence fabric, rails, posts, plates, tiewires, nuts, bolts, anchor bolts, caulk and any additional visible hardware shall be coated black.

Payment for all of the above including dowel holes for anchor bolts shall be at the unit price bid per linear foot for Item Special – Vandal Protection Fence 6 Foot Straight, Coated Fabric. Any patching deemed necessary by the Engineer due to doweling for anchor bolts shall be at the expense of the Contractor.

All labor, equipment, materials and incidentals necessary to complete the above work are included for payment per Item Special – Vandal Protection Fence, 6' Straight, Coated Fabric.

Item Special – Vandal Protection Fence, 6' Straight, Coated Fabric B

This item shall be as per standard drawing VPF-1-90 with modifications per plan details and the manufacturer's recommendations. Place proposed base plates per plan details. Contractor shall match the existing post spacing, base plate dimensions and bolt spacing.

The fence, fence fabric, rails, posts, plates, tiewires, nuts, bolts, anchor bolts, caulk and any additional visible hardware shall be coated black.

Payment for all of the above including dowel holes for anchor bolts shall be at the unit price bid per linear foot for Item Special – Vandal Protection Fence 6 Foot Straight, Coated Fabric. Any patching deemed necessary by the Engineer due to doweling for anchor bolts shall be at the expense of the Contractor.

All labor, equipment, materials and incidentals necessary to complete the above work are included for payment per Item Special – Vandal Protection Fence, 6' Straight, Coated Fabric.

Item 609 – 6" Concrete Traffic Island, As Per Plan

The proposed traffic island shall duplicate the existing traffic island. The curb for the proposed traffic island shall be poured integrally with the median using Class C Concrete.

All labor, equipment, materials (excluding the reinforcing steel), and incidentals necessary to complete the above work shall be included for payment under Item 609 – 6" Concrete Traffic Island, As Per Plan.

Item 625 – Lighting, Misc.: Replace Missing Handhole Coverplate

Contractor shall replace the missing handhole coverplates per Standard Drawing HL-10.13.

All equipment, labor, and materials to perform the above described work shall be included for payment under Item 625 – Lighting, Misc.: Replace Missing Handhole Coverplate.

Item 632 - Detector Loop, As Per Plan

An estimated quantity of Item 632 - Detector Loop, As Per Plan has been provided as a contingency quantity when wire is cut, broken, or destroyed due to wearing surface replacement operations. It is imperative that replacement of loop detectors be installed and fully functional in the shortest possible time.

Failure to comply with the above stated requirements will result in the assessment of liquidated damages according to Section 108.07 of the 2005 Construction and Materials Specifications for each calendar day beyond the specified limit.

New loop detectors shall be placed at the same locations and same size as the existing. Replace the loop detector wire to the pullbox or pole, whichever is applicable, under Item 632 and TC-82.10. The new cable splice kits are to be included in this pay item.

This work includes the poured epoxy insulated splice(s) required to connect the loop detector wire to the existing lead-in cable at the pullbox. The splices must be in accordance with Section 725.15 of the 2005 Construction and Materials Specifications. Payment is to be made per each loop detector connected to the lead-in cable.

The Contractor shall contact The Village of Brooklyn Heights 7 days prior to planing through the intersection to adjust signal operation as needed. The Contractor shall inquire with the Village on the exact location of the replacement loops.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 632 – Detector Loop, As Per Plan……**1 EACH**

CALCULATED SKP CHECKED YSS

GENERAL NOTES

D12 BH FY2008

Item 848 – Micro-Silica Modified Concrete Overlay Using Hydrodemolition, As Per Plan (---- Thick):
Item 848 – Surface Preparation Using Hydrodemolition, As Per Plan:
Item 848 – Micro-Silica Modified Concrete Overlay (Variable Thickness), Material Only, As Per Plan:

These items shall be performed per Supplemental Specification "Bridge Deck Repair and Overlay with Concrete Using Hydrodemolition" with the following revisions:

The thickness of the concrete overlay removed, asphalt wearing course removed, proposed overlay, and the depth of hydrodemolition shall be as specified in the plans.

Construction joints will not be permitted in the wheel line.

Install groove and joint seal in approach slabs according to Standard Construction Drawing AS-1-81, Sheet 2, Detail B.

At all Interstate locations, provide a minimum of 8' between the edge of the workzone and the Bidwell machine during wearing surface placement operations.

(See 848.12) The components of the micro-silica modified concrete shall be proportioned as follows:

CONCRETE TABLE
Quantities Per Cubic Yard
Aggregates (SSD)

Micro-Silica Overlay Concrete, as per plan

Aggre Type	Fine Aggr (lb)	* #8 Coarse Aggr (lb)	Aggr Total (lb)	Ce-ment Cont (lb)	Micro-Silica (lb)	Water to Cemen titious Ratio	Air Cont +/- 2%	** Fiber (1¼" Poly-propylene) (lb)
Gravel	1410	1430	2840	600	50	0.40	8	1
Lime-stone	1410	1450	2860	600	50	0.40	8	1
Slag	1300	1350	2650	600	50	0.40	8	1

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

** Fiber mesh shall be 100% virgin polypropylene in a fibrillated-network form. And shall be 1¼" in length.

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, Micro-Silica 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 in the table will be corrected. (Fiber mesh weights not included in mix design)

All coarse aggregate shall have an absorption of 1.00% or greater as defined by ASTM C127.

Item 848, Cont.

In addition to the above requirements, the following revisions shall apply for Location 4 – Cuy-480-1304:

(See 848.18) The removal operations shall not begin if sustained rains (5 hours or more with breaks between showers less than 1½ hours) are predicted within 48 hours of commencement.

(See 848.21) The final deck sounding may take place within 24 hours of a rain, and the deck does not have to be completely dry.

(See 848.23) Full depth repair is not required if less than one half of the deck original concrete thickness is sound.

(See 848.29) 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 1D, 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.

(See 848.29) Traffic will not be permitted on the finished overlay surface until after the completion of the 24 hour wet cure and after two test beams have attained an average modulus of rupture of 600 PSI (4.2 Mpa).

(See 848.30) The overlay surface evaporation rate requirements are in effect from 9:30 AM to 11:00 PM. They are not in effect from 11:00 PM to 9:30 AM.

(See 848.31) For each phase, provide enough material for two beam breaks each at 12 hours, 24 hours, 36 hours, and 48 hours. The Department will perform the beam break test and document the time of the pour, the time of the beam break tests, and the modulus of rupture for each beam until the modulus of rupture of the two tests is not less than 650 PSI (4.5 MPa). Traffic is allowed on the overlay at 600 PSI (4.5 Mpa).

If the Contractor can not commence the concrete pour by 3 a.m. Sunday, the Contractor shall follow Item Special – Structure, Misc.: Emergency Asphalt Paving Operation on Standby.

All other requirements of the Supplemental Specification shall remain in effect.

CALCULATED SKP CHECKED YSS

GENERAL NOTES

D12 BH FY2008

LOCATION/BRIDGE NO.															* DENOTES CONTINGENCY QUANTITY	
		1	2	3	4	5	6	7								
		CUY-77-1212 1806459 UNDER HARVARD AVE.	CUY-77-1375 1806637 UNDER PERSHING AVE.	CUY-480-1304 1813005 OVER RIDGE RD.	CUY-480-1594 1813048 UNDER TUXEDO AVE.	CUY-480-1686 1813099 UNDER LANCASTER DR.	CUY-14-0255 1806661 OVER I-77	CUY-17-1227 1802402 OVER I-480		GENERAL	ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SEE SHT
															ROADWAY	
										LUMP	201	11001	**LUMP**		CLEARING AND GRUBBING, AS PER PLAN	3
															EROSION CONTROL	
										1000	832	30000	**1000**	EACH	EROSION CONTROL	
															LIGHTING	
					1			1			625	98000	**2**	EACH	LIGHTING, MISC.: REPLACE MISSING HANDHOLE COVERPLATE	6
															TRAFFIC CONTROL	
					0.08						642	00302	**0.08**	MILE	CENTER LINE, TYPE 2	
					15						642	00502	**15**	FT	STOP LINE, TYPE 2	
					60						642	00602	**60**	FT	CROSSWALK LINE, TYPE 2	
															TRAFFIC SIGNALS	
					1						632	26501	**1**	EACH	DETECTOR LOOP, AS PER PLAN	6
															STRUCTURES	
								49			202	30900	**49**	SQ YD	PORTION OF TRAFFIC ISLAND REMOVED	
					804	898		1136			202	75001	**2838**	FT	FENCE REMOVED, AS PER PLAN A	3
		436	371								202	75001	**807**	FT	FENCE REMOVED, AS PER PLAN B	3
					586						509	10000	**586**	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN A*	3
								327			509	10001	**327**	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN B	3
			232		36	3	196	405			512	10101	**872**	SQ YD	SEALING CONCRETE SURFACES, EPOXY-URETHANE, AS PER PLAN A	3
		1139	366	1784	915	1108		1291			512	10101	**6603**	SQ YD	SEALING CONCRETE SURFACES, EPOXY-URETHANE, AS PER PLAN B	4
								7.2			516	14600	**7.2**	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: 4" PRECOMPRESSED EXPANSION JOINT FILLER	4
								11			516	14600	**11**	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.: 5" PRECOMPRESSED EXPANSION JOINT FILLER	4
						5					516	46700	**5**	EACH	RESET BEARING	
						LUMP					516	47001	**LUMP**		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	4
							LUMP	LUMP			518	63300	**LUMP**		STRUCTURE DRAINAGE, MISC.: CLEANING BRIDGE DRAINAGE SYSTEM	4
								LUMP			518	63300	**LUMP**		STRUCTURE DRAINAGE, MISC.: FLEXIBLE CONDUIT WITH REDUCER	4
		1530	1899	610	950	117		405			519	11101	**5511**	SQ FT	PATCHING CONCRETE STRUCTURES, AS PER PLAN	5
					1						SPECIAL	530E00400	**1**	EACH	STRUCTURE, MISC.: EMERGENCY ASPHALT PAVING OPERATION ON STAND-BY	5
			7563		1365		3680				SPECIAL	530E00600	**12608**	SQ FT	STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM	5

CALCULATED SKP
CHECKED YSS

GENERAL SUMMARY

D12 BH FY2008

LOCATION/BRIDGE NO.

		1 CUY-77-1212 1806459 UNDER HARVARD AVE.	2 CUY-77-1375 1806637 UNDER PERSHING AVE.	3 CUY-480-1304 1813005 OVER RIDGE RD.	4 CUY-480-1594 1813048 UNDER TUXEDO AVE.	5 CUY-480-1686 1813099 UNDER LANCASTER DR.	6 CUY-14-0255 1806661 OVER I-77	7 CUY-17-1227 1802402 OVER I-480	8	GENERAL	ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SEE SHT
															STRUCTURES, CONT.	
						56					SPECIAL	530E01200	**56**	CU FT	STRUCTURE, MISC.: PATCHING CONCRETE BRIDGE DECK	6
						425					601	21001	**425**	SQ YD	CONCRETE SLOPE PROTECTION, AS PER PLAN	6
					804	898		1136			SPECIAL	607E39900	**2838**	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC A	6
		436	371								SPECIAL	607E39900	**807**	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC B	6
								49			609	54001	**49**	SQ YD	6" CONCRETE TRAFFIC ISLAND, AS PER PLAN	6
					1306						848	50321	**1306**	SQ YD	EXISTING CONCRETE OVERLAY REMOVED, AS PER PLAN	7
					1306						848	10001	**1306**	SQ YD	MICROSILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (1 1/2" THICK), AS PER PLAN	7
					1306						848	20001	**1306**	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN	7
					85						848	30001	**85**	CU YD	MICROSILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	7
					35						848	50000	**35**	SQ YD	HAND CHIPPING	
															MAINTENANCE OF TRAFFIC	
										250	614	11100	**250**	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
										16	614	18601	**16**	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	33
										LUMP	614	11000	**LUMP**		MAINTAINING TRAFFIC	
										8	619	16011	**8**	MONTH	FIELD OFFICE, TYPE B, AS PER PLAN	3
										LUMP	624	10000	**LUMP**		MOBILIZATION	

CALCULATED SKP
CHECKED YSS

GENERAL SUMMARY

D12 BH FY2008

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LOCATION	BRIDGE NO. SFN DESCRIPTION	STRUCTURE TYPE	STRUCTURE LIMITS	BRIDGE WIDTH OUT/OUT	LANES ON	LANES UNDER
1	CUY-77-1212 1806459 UNDER HARVARD AVE	2 SPAN CONTINUOUS STEEL BEAM	119'	84.2'	6	6
2	CUY-77-1375 1806637 UNDER PERSHING AVE	4 SPAN CONTINUOUS STEEL BEAM	229'	70'	4	6
3	CUY-480-1304 1813005 OVER RIDGE RD	3 SPAN CONTINUOUS STEEL BEAM	212'	149.3'	8	7
4	CUY-480-1594 1813048 UNDER TUXEDO AVE	6 SPAN CONTINUOUS STEEL BEAM	377'	42.4'	2	13
5	CUY-480-1686 1813099 UNDER LANCASTER DR	5 SPAN CONTINUOUS STEEL BEAM	452'	40.4'	2	9
6	CUY-14-0255 1806661 OVER I-77	2 SPAN CONTINUOUS STEEL BEAM	297'	60.7'	4	6
7	CUY-17-1227 1802402 OVER I-480	5 SPAN CONTINUOUS STEEL BEAM	484'	72.4'	4	12

CALCULATED SKP
CHECKED YSS

BRIDGE DATA SHEET

D12 BH FY2008

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33

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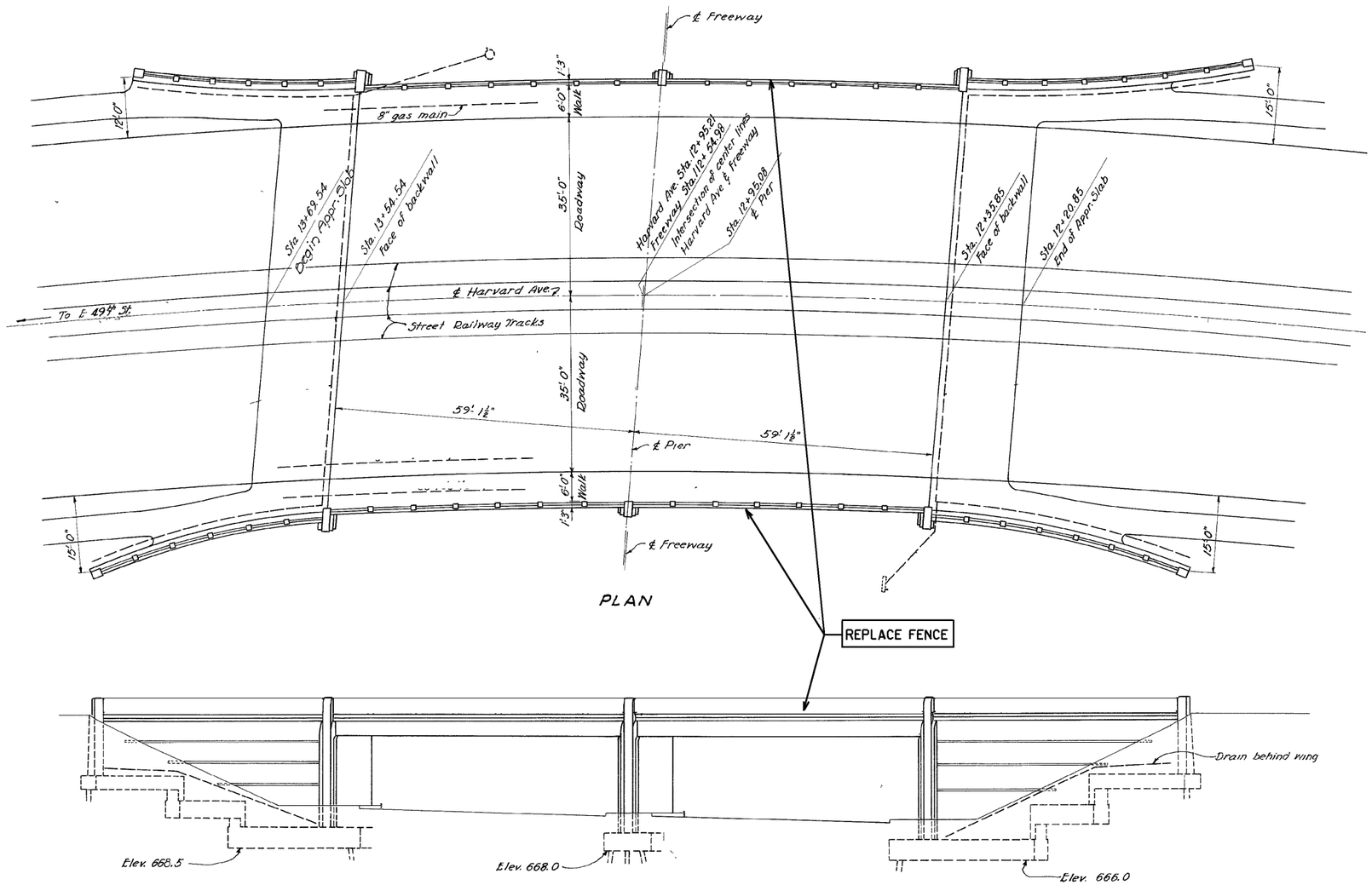

PROPOSED WORK

- PATCH ABUTMENTS AND PIERS
- REPLACE FENCE WITH VPF
- SEAL SUBSTRUCTURE AND PARAPETS

- DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INRORMATION PURPOSE

- PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT.

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1806459	

LOCATION 1
CUY-77-1212
UNDER HARVARD AVE.

D12 BH FY2008
PID No. 82183

1 / 2

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33

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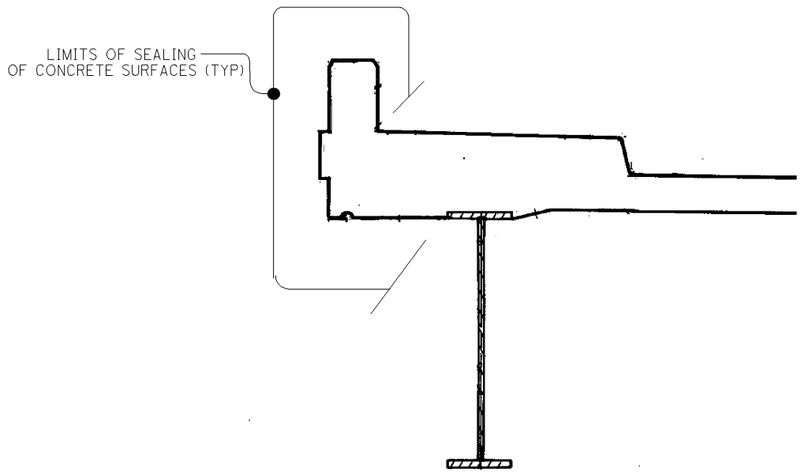

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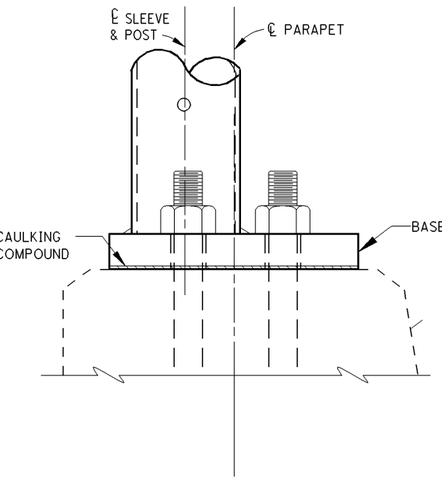

PROPOSED BP-5 BASE PLATE

✳ OR AS RECOMMENDED BY MANUFACTURER

NOTE: ALL DIMENSIONS TO BE FIELD VERIFIED
PRIOR TO PLACING ORDER

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1806459	

LOCATION 1
CUY-77-1212
UNDER HARVARD AVE.

D12 BH FY2008
PID No. 82183

2 / 2

12
33

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PATCH AND FIBER WRAP
COLUMN AND CAP AS NEEDED
SEAL EXPOSED AREA OF PIERS

SEAL PARAPET

REPLACE FENCE

GENERAL PLAN

GENERAL ELEVATION

WEST ABUTMENT

EAST ABUTMENT

PIER 3

PIER 2

PIER 1

PROPOSED WORK

- PATCH, FIBER WRAP, SEAL PIERS
- REPLACE FENCE WITH VPF
- SEAL ENTIRE PARAPET

- DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INRORMATION PURPOSE

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DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1806637	

LOCATION 2
CUY-77-1375
I-77 UNDER PERSHING AVE.

D12 BH FY2008
PID No. 82183

1 / 3

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33

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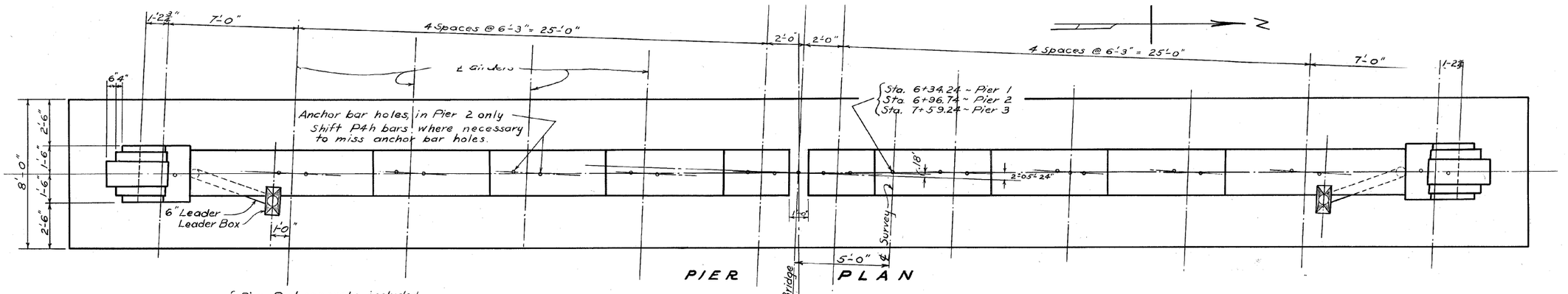


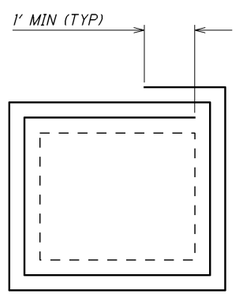
HALF ELEVATION of EAST SIDE of PIER

END ELEVATION

PLAN of PIER POSTS

PATCH AND SEAL (NO FIBER WRAP) END COLUMNS

PATCH AND FIBER WRAP AS NEEDED
SEAL THE FULL EXPOSED AREA OF PIERS



FIBER WRAP
TWO CONTINUOUS WRAPS
(TYP)

- DETAILS ON THIS SHEET ARE TAKEN FROM RECORD PLANS AND SHOULD BE USED ONLY FOR IN FORMATION PURPOSE

- PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
YSS	YSS		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SKP		1806637	

LOCATION 2 - DETAILS
CUY-77-1375
I-77 UNDER PERSHING AVE

D12 BH FY2008
PID No. 82183

2 / 3

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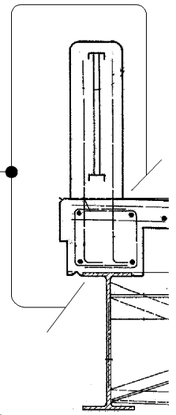

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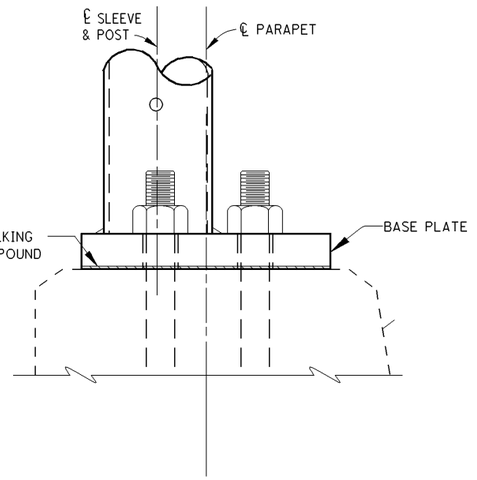

PROPOSED BP-5 BASE PLATE

✳ OR AS RECOMMENDED BY MANUFACTURER

NOTE: ALL DIMENSIONS TO BE FIELD VERIFIED PRIOR TO PLACING ORDER

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DESIGN AGENCY
Ohio Dept of Transportation
District 12

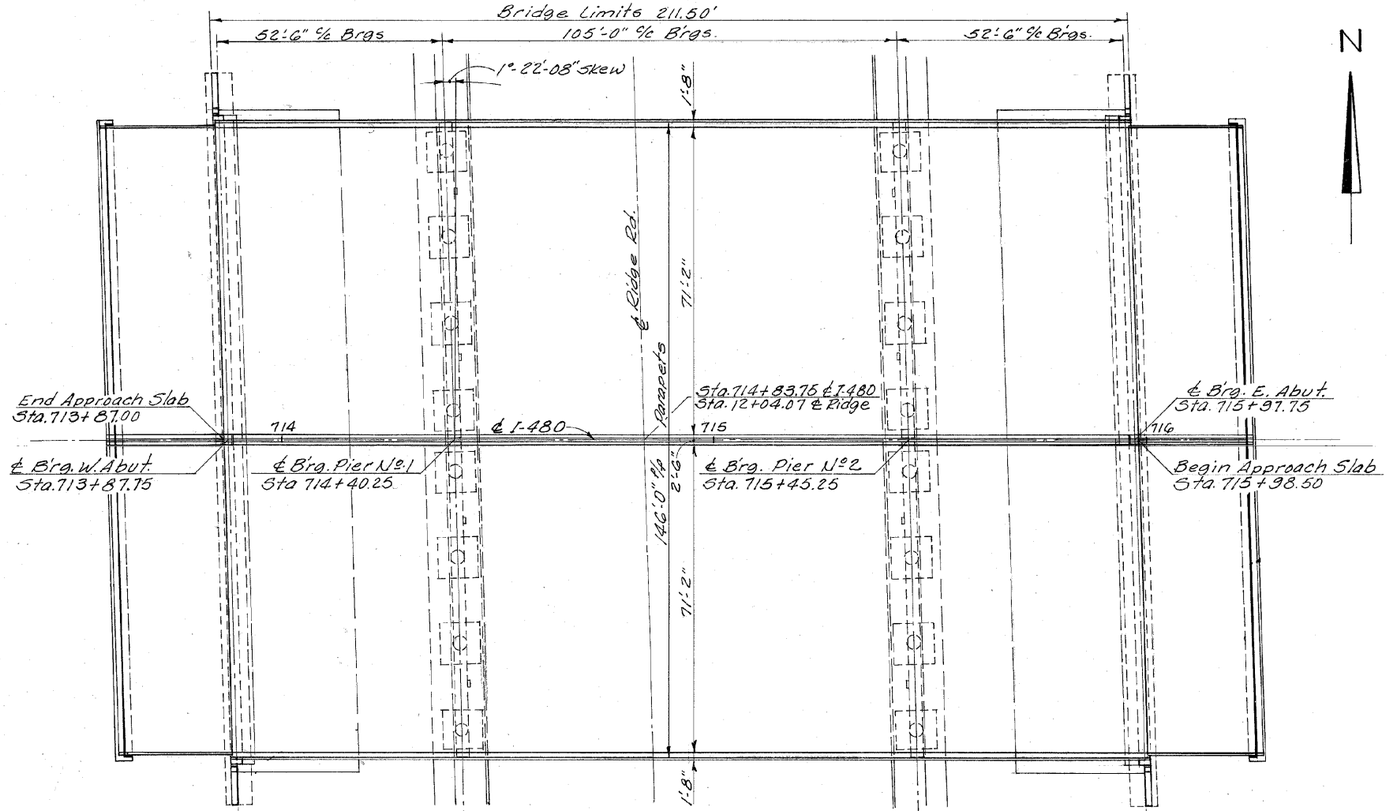
DESIGNED	DRAWN	REVIEWED	DATE
YSS	YSS		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SKP		1806637	

LOCATION 2 - DETAILS
CUY-77-1375
I-77 UNDER PERSHING AVE

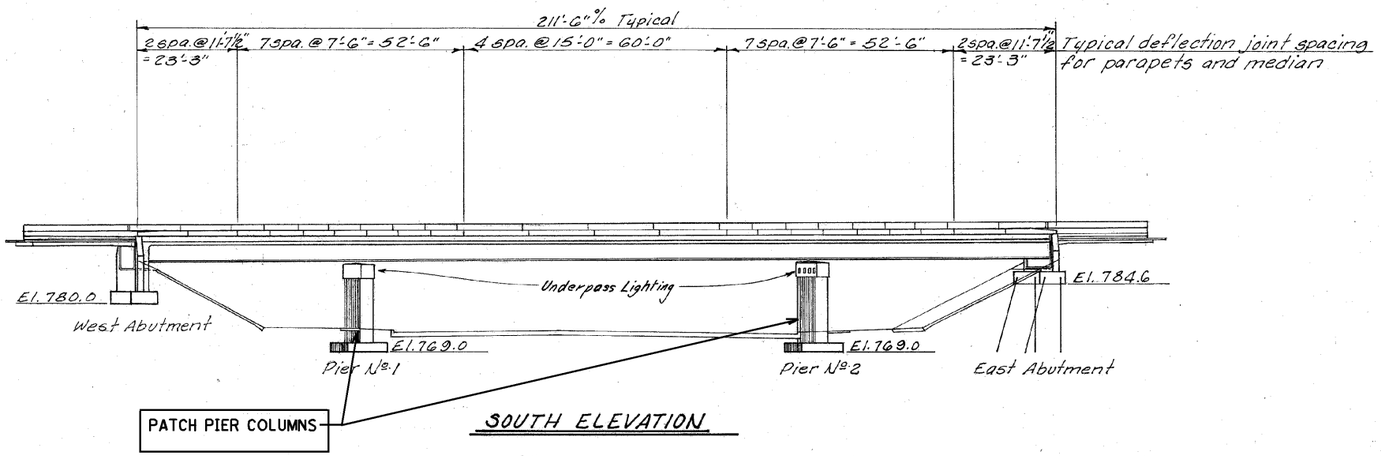
D12 BH FY2008
PID No. 82183

3 / 3

15
33



GENERAL PLAN



SOUTH ELEVATION

PROPOSED WORK

- PATCH PIER COLUMNS
- SEALING OF CONCRETE (INCLUDING PIERS, ABUTMENTS, DIAPHRAM, WING WALLS AND PARAPET)

-DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INFORMATION PURPOSE.

-PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT.

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813005	

LOCATION 3
CUY-480-1304
OVER RIDGE RD.

D12 BH FY2008
PID No. 82183

1 / 2

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33

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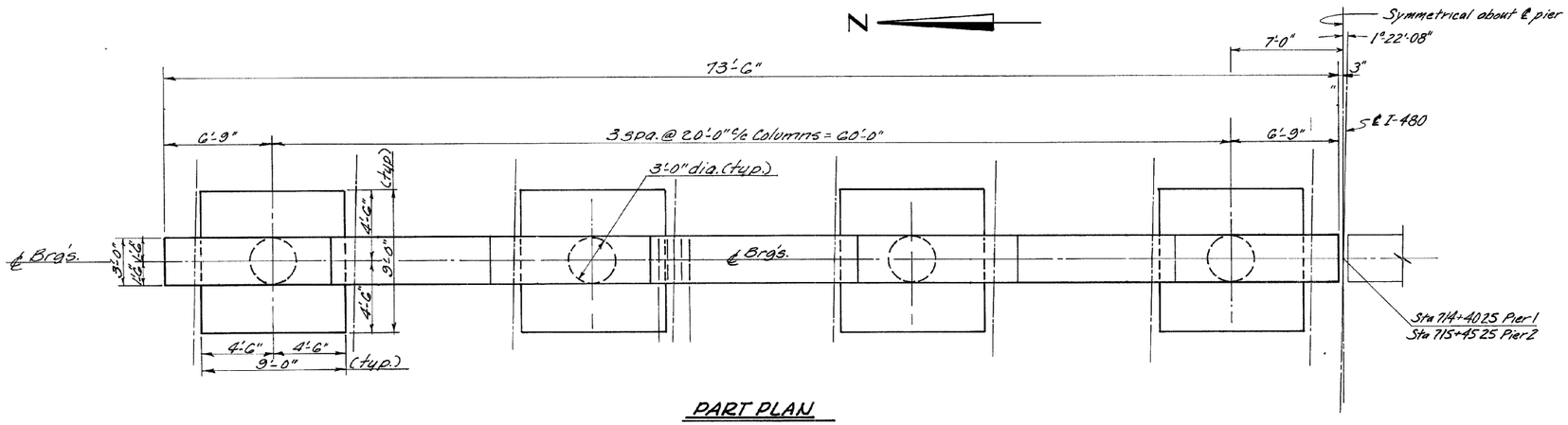
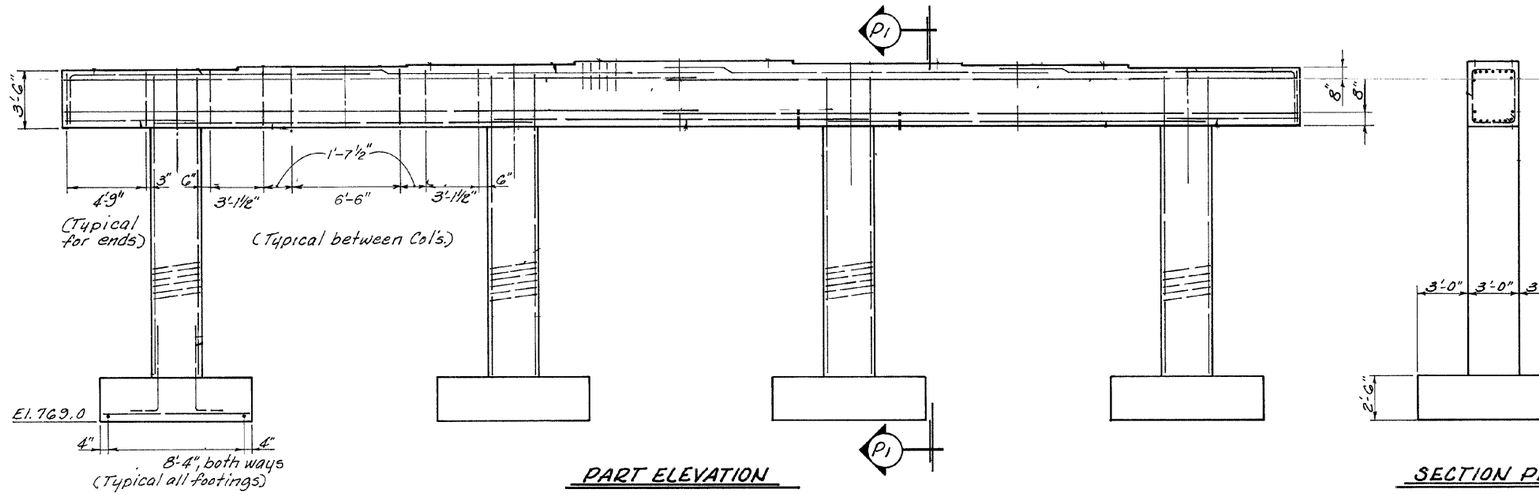
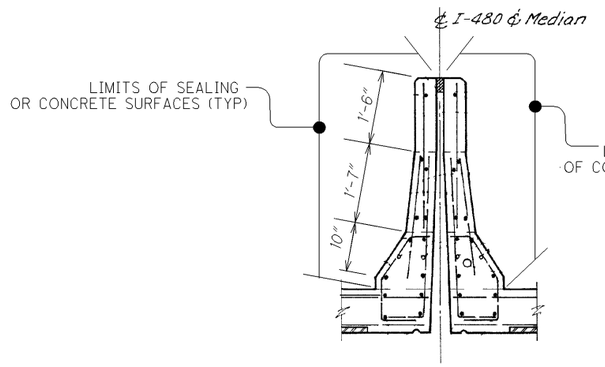


PART PLAN

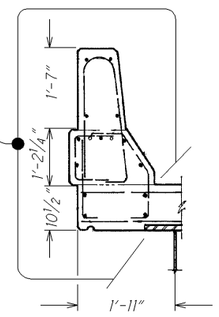


PART ELEVATION

SECTION P1-P1



INTERIOR PARAPET DETAIL



EXTERIOR PARAPET DETAIL

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813005	

LOCATION 3
CUY-480-1304
OVER RIDGE RD.

D12 BH FY2008
PID No. 82183

2 / 2

17
33

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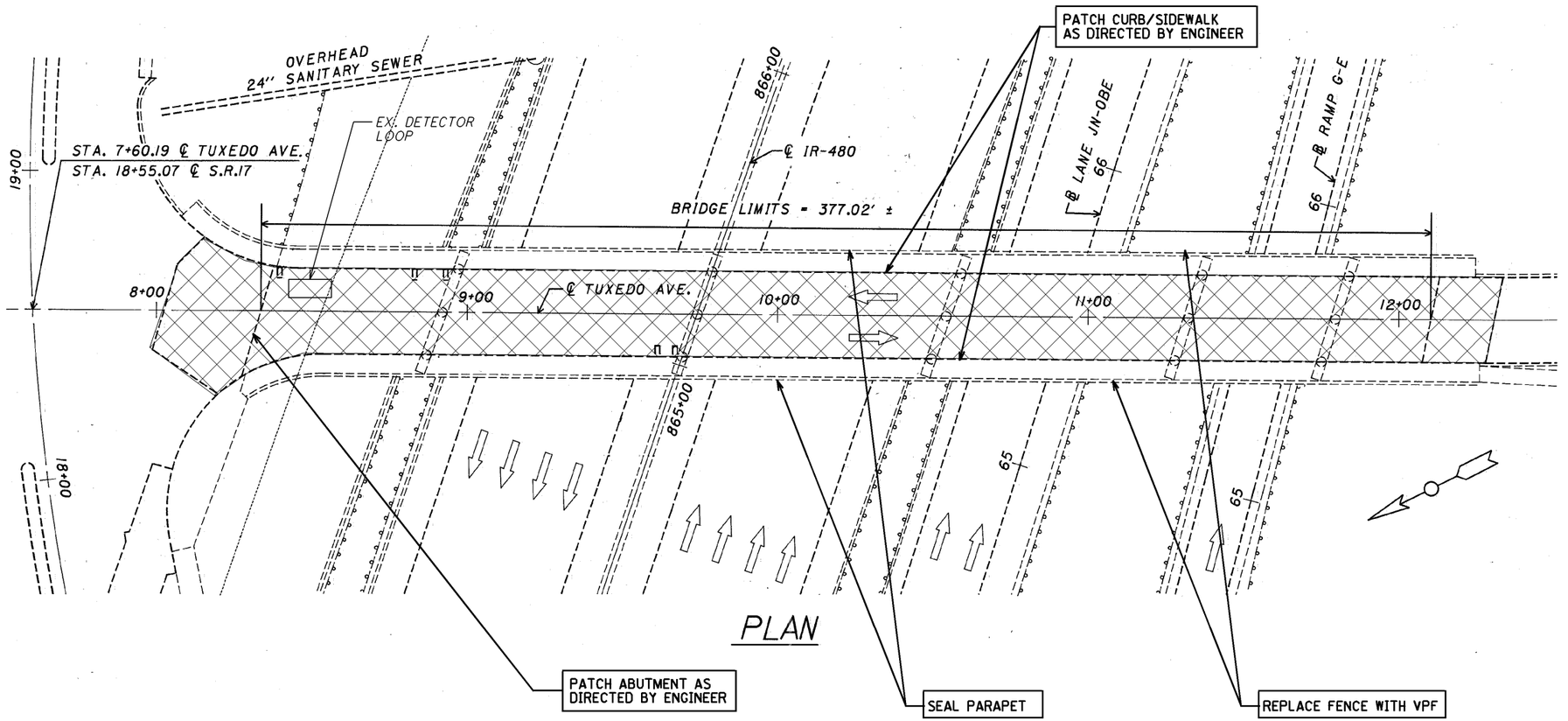
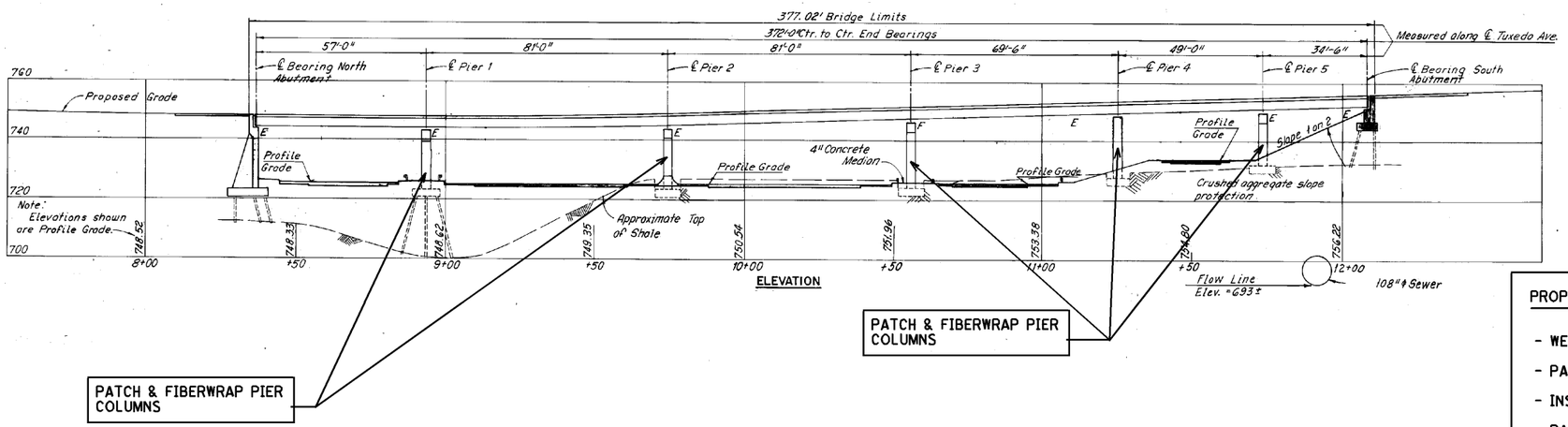


WEARING SURFACE TO BE REMOVED AND REPLACED PER ITEM 848 - MICROSILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN



-DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INFORMATION PURPOSE.

-PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT.

PROPOSED WORK

- WEARING SURFACE REPLACEMENT
- PATCH CURB/SIDEWALK
- INSTALL VANDAL PROTECTION FENCE
- PATCH PIER COLUMNS & NORTH ABUTMENT
- FIBER WRAP PIER COLUMNS PIERS
- SEAL PARAPET
- REPLACE MISSING HANDHOLE COVERPLATE

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813048	

LOCATION 4
CUY-480-1594
UNDER TUXEDO AVE.

D12 BH FY2008
PID No. 82183

1 / 5

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33

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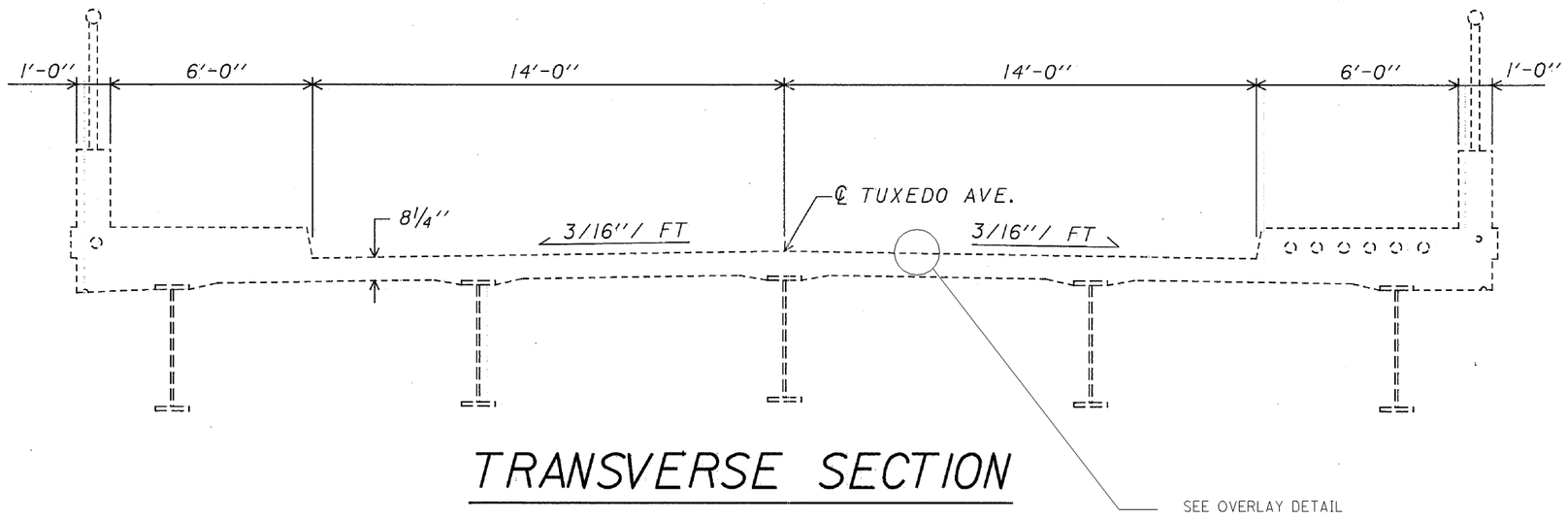
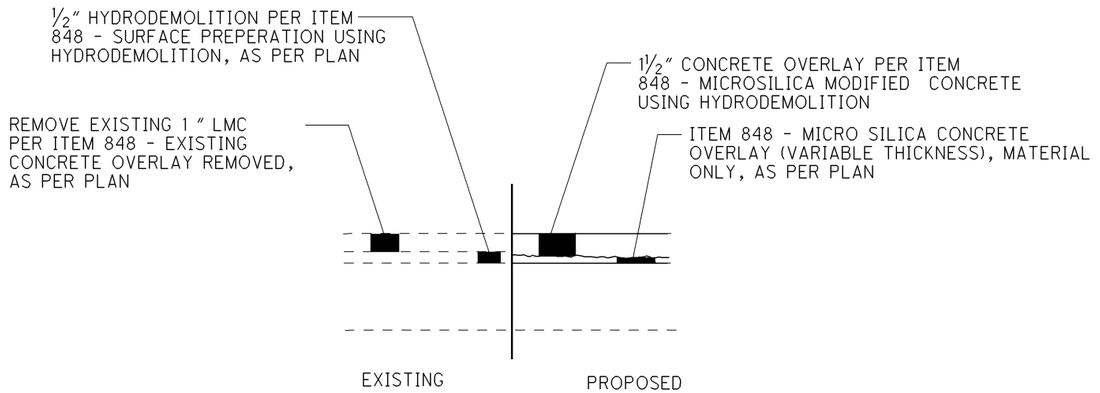


TRANSVERSE SECTION



OVERLAY DETAIL

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813048	

LOCATION 4
CUY-480-1594
UNDER TUXEDO AVE.

D12 BH FY2008
PID No. 82183

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33

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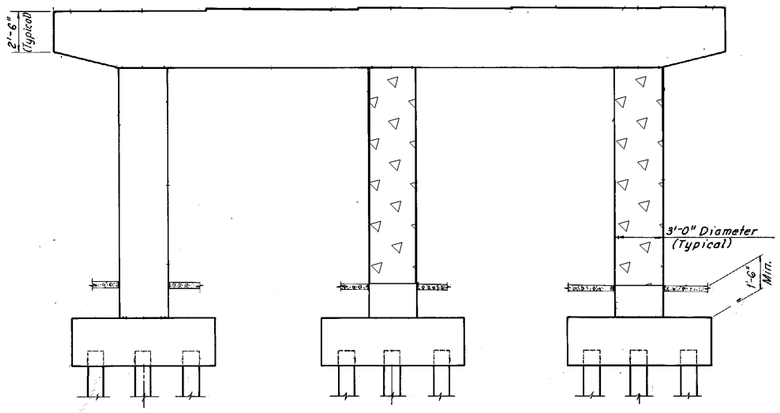
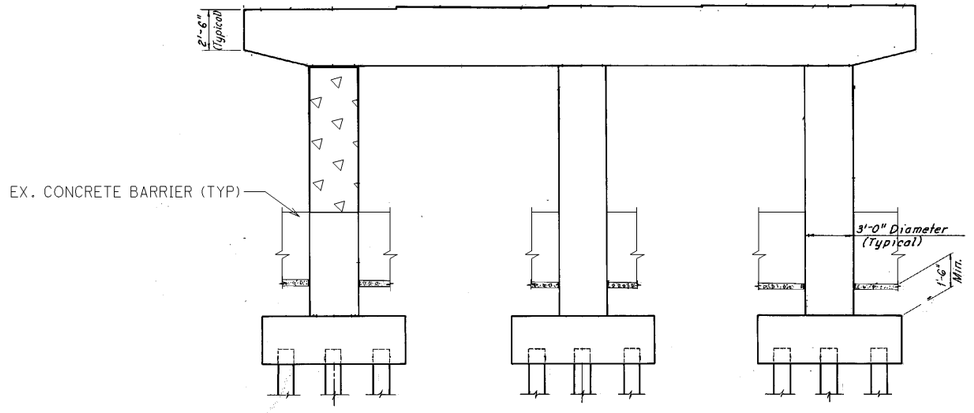


PIER 1 ELEVATION



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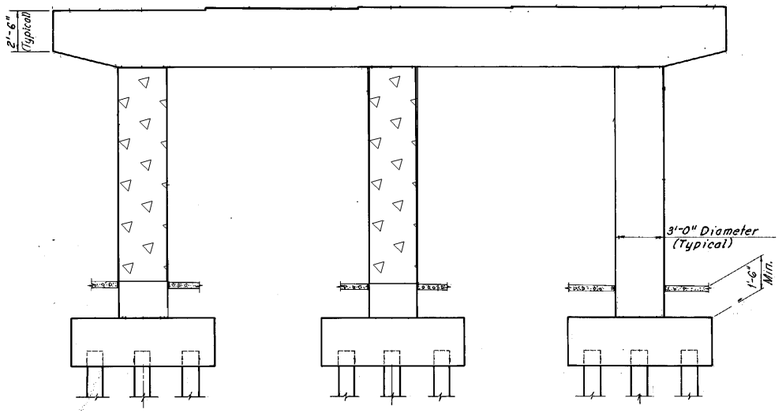

PIER 3 ELEVATION

AREA TO BE PATCHED AND FIBER WRAPPED. SEE DETAIL ON SHEET 4 OF 5

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813048	

LOCATION 4
CUY-480-1594
UNDER TUXEDO AVE.

D12 BH FY2008
PID No. 82183

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33

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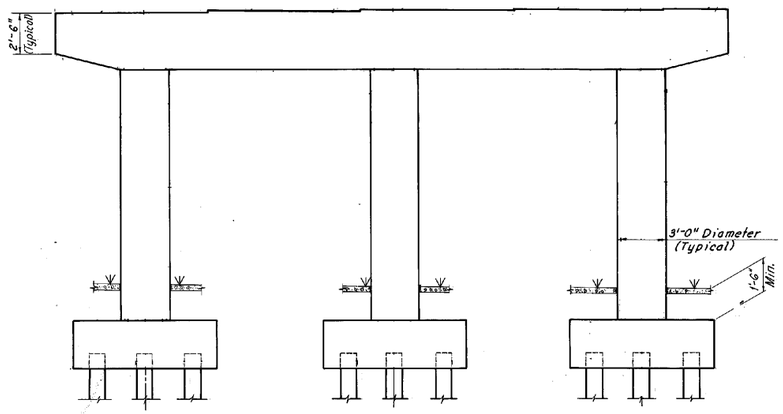

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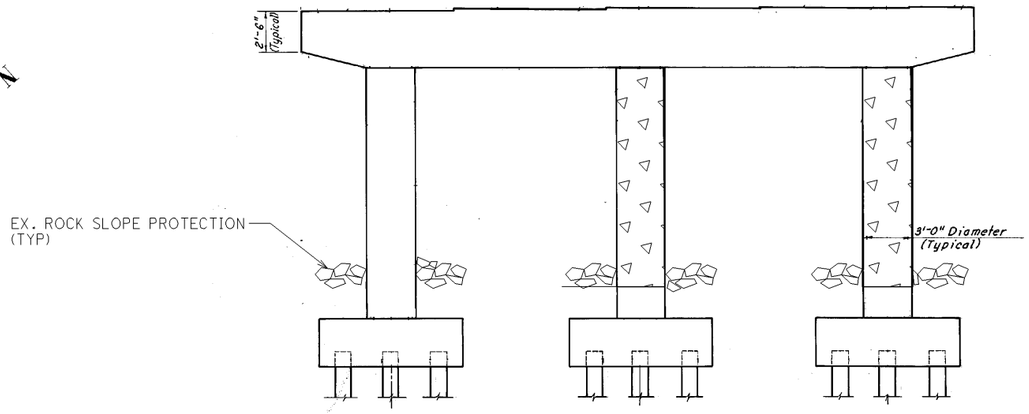
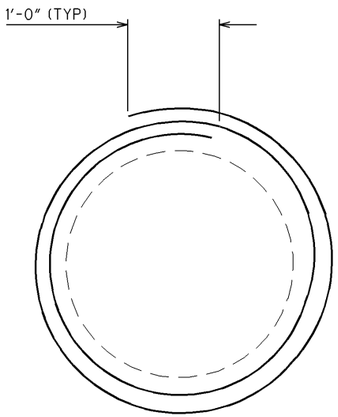
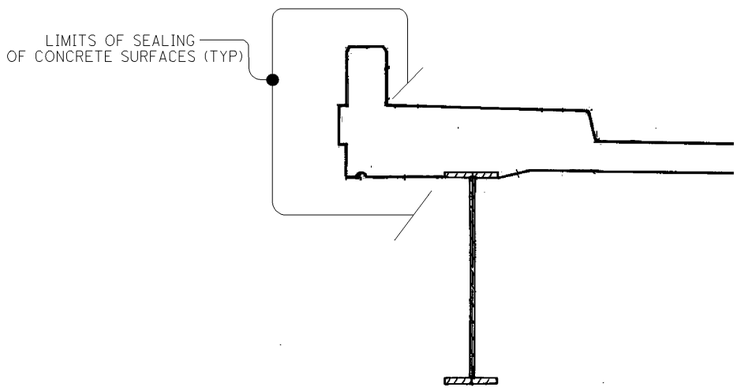


PIER 5 ELEVATION

AREA TO BE PATCHED AND FIBER WRAPPED. SEE DETAIL ON THIS SHEET.



FIBER WRAP DETAIL
(TWO CONTINUOUS WRAPS)



PARAPET SEALING DETAIL

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813048	

LOCATION 4
CUY-480-1594
UNDER TUXEDO AVE.

D12 BH FY2008
PID No. 82183

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33

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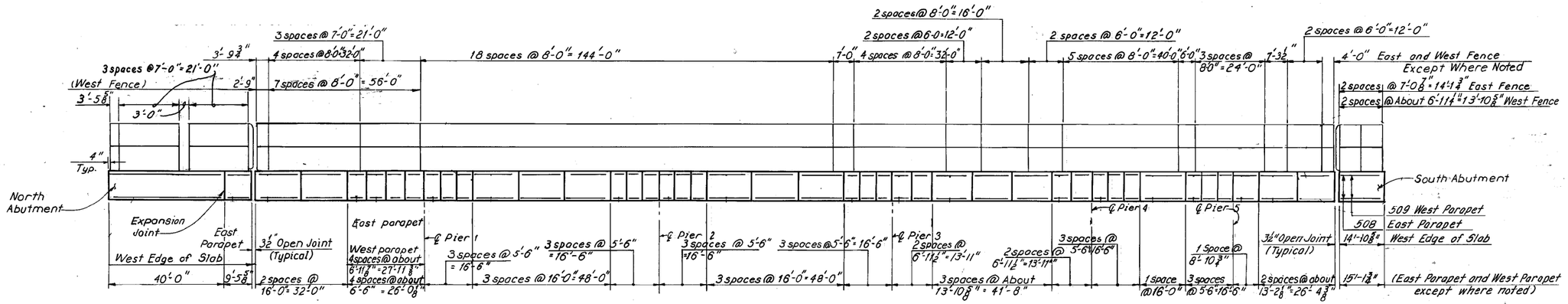
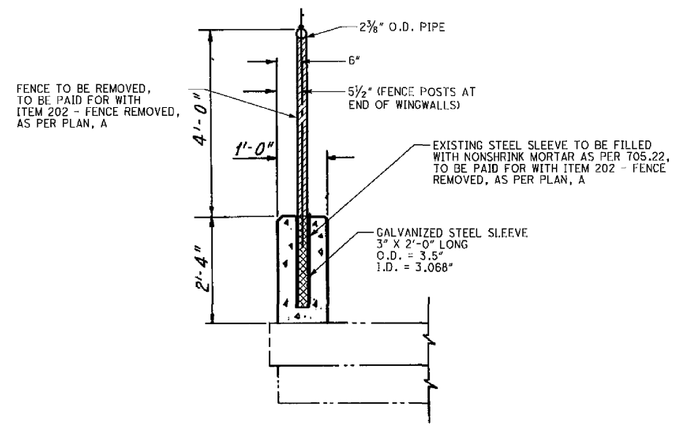


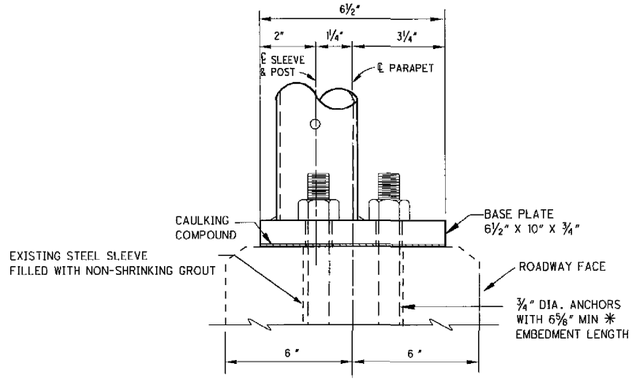
EXISTING **PARAPET AND FENCE DETAILS**



EXISTING FENCE DETAILS

ITEM 202 - FENCE REMOVED, AS PER PLAN

FILL EXISTING STEEL SLEEVE WITH NONSHRINK MORTAR



PROPOSED BASE PLATE

*OR AS RECOMMENDED BY MANUFACTURER

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813048	

LOCATION 4
CUY-480-1594
OVER TUXEDO AVE.

D12 BH FY2008
PID No. 82183

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33

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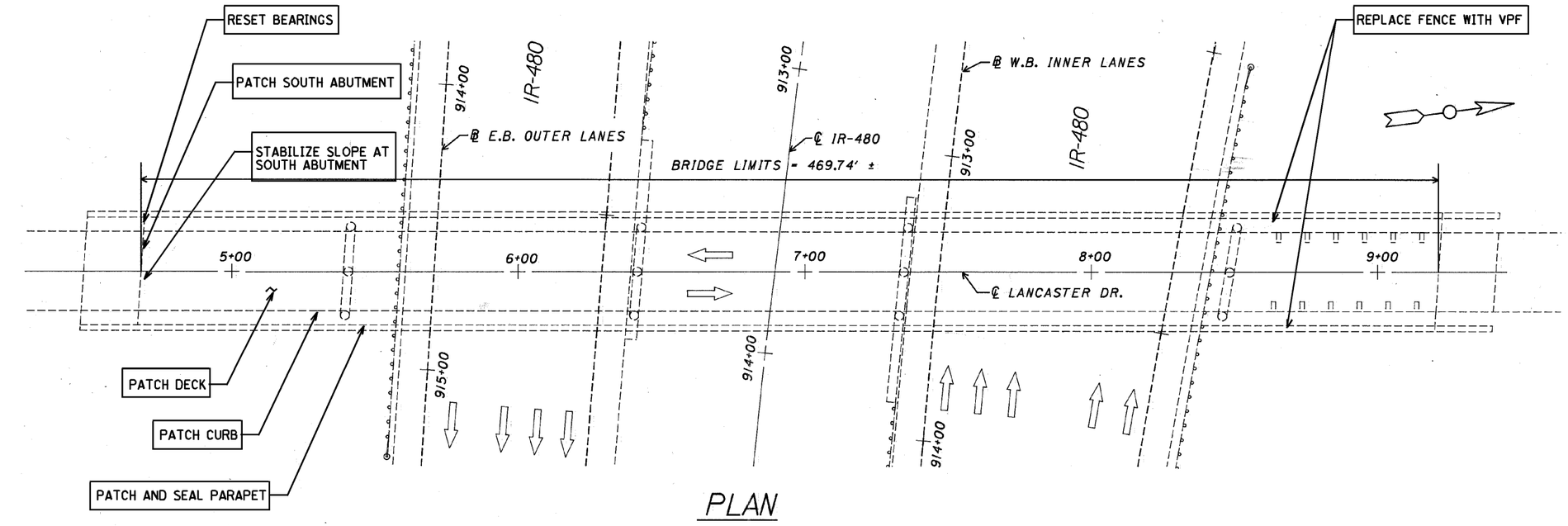
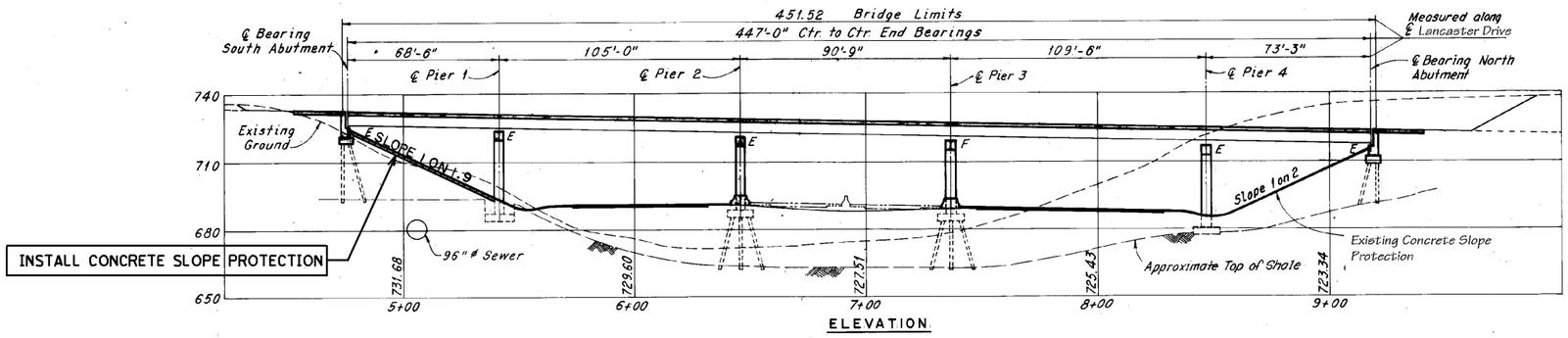


PLAN



ELEVATION

- DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INFORMATION PURPOSE
- PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT

PROPOSED WORK

- PATCH DECK CONCRETE
- PATCH CURB
- PATCH AND SEAL PARAPET
- SLOPE STABILIZATION SOUTH ABUTMENT
- PATCH SOUTH ABUTMENT
- RESET BEARINGS ON SOUTH ABUTMENT
- INSTALL VANDAL PROTECTION FENCE

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813099	

LOCATION 5
CUY-480-1686
UNDER LANCASTER DR.

D12 BH FY2008
PID No. 82183

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23
33

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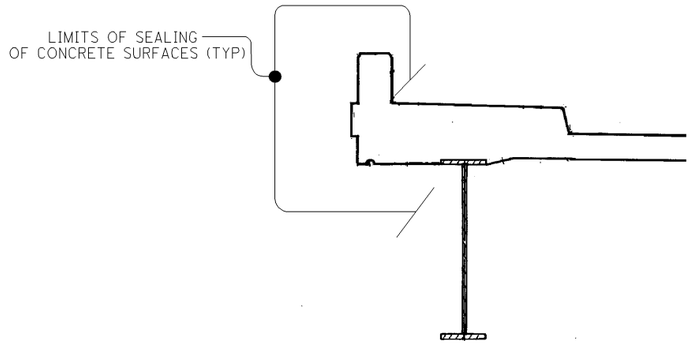

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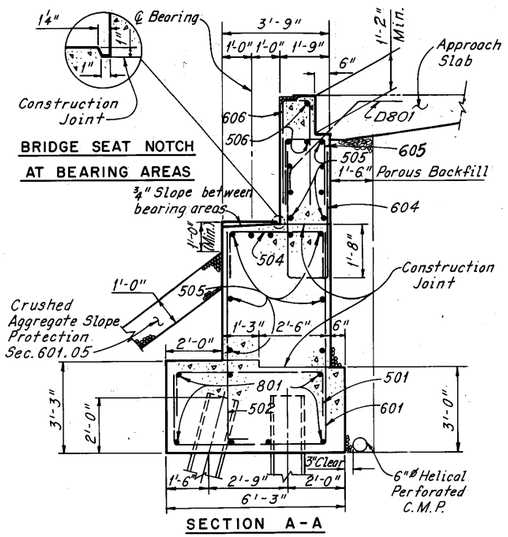
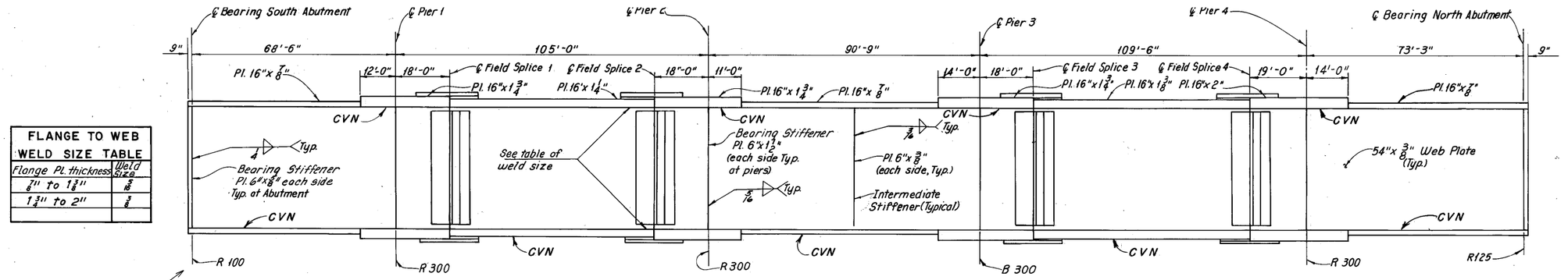


PATCH ABUTMENT CONCRETE

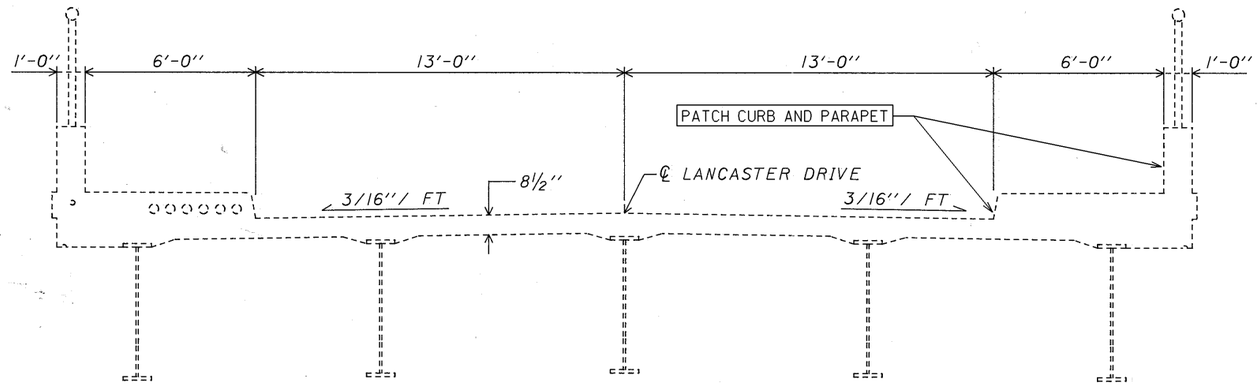
EXISTING ABUTMENT SECTION



FLANGE TO WEB WELD SIZE TABLE	
Flange Pl. thickness	Weld size
7/8" to 1 3/8"	5/8
1 3/4" to 2"	3/4

RESET BEARINGS

EXISTING GIRDER DETAILS



TRANSVERSE SECTION

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
YSS			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SKP		1813099	

LOCATION 5
CUY-480-1686
UNDER LANCASTER DRIVE

D12 BH FY2008
PID No. 82183

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33

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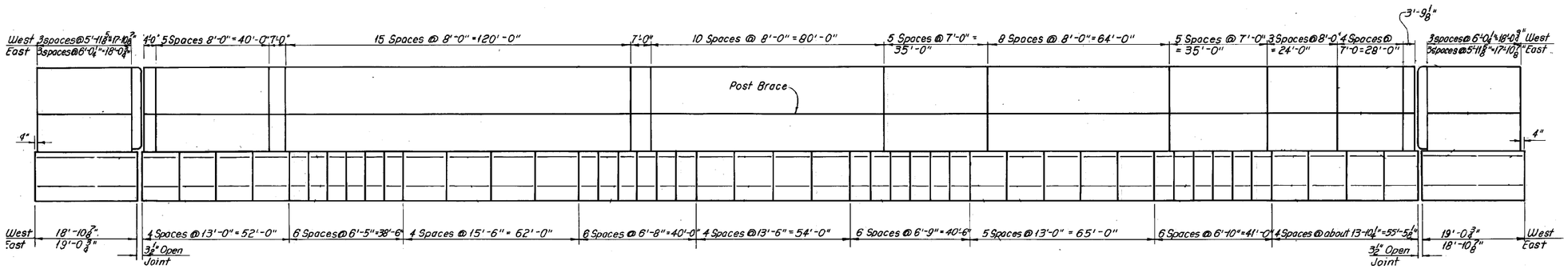
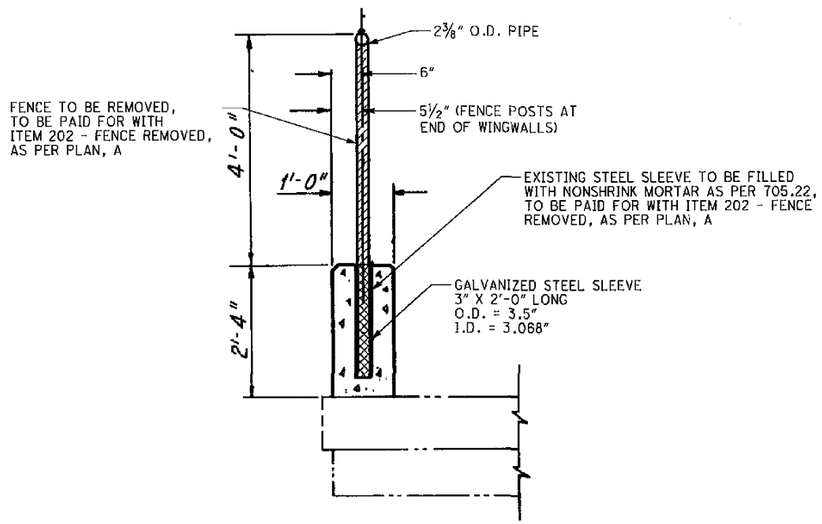


EXISTING
SOUTH ABUTMENT PARAPET

EXISTING
EAST AND WEST PARAPET AND FENCE DETAIL

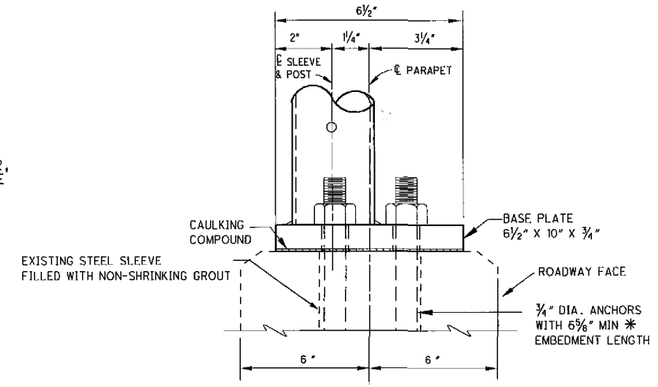
EXISTING
NORTH ABUTMENT PARAPET



EXISTING FENCE DETAILS

ITEM 202 - FENCE REMOVED, AS PER PLAN

FILL EXISTING STEEL SLEEVE WITH NONSHRINK MORTAR



PROPOSED BASE PLATE

*OR AS RECOMMENDED BY MANUFACTURER

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1813099	

LOCATION 5
CUY-480-1686
UNDER LANCASTER DRIVE

D12 BH FY2008
PID No. 82183

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25
33

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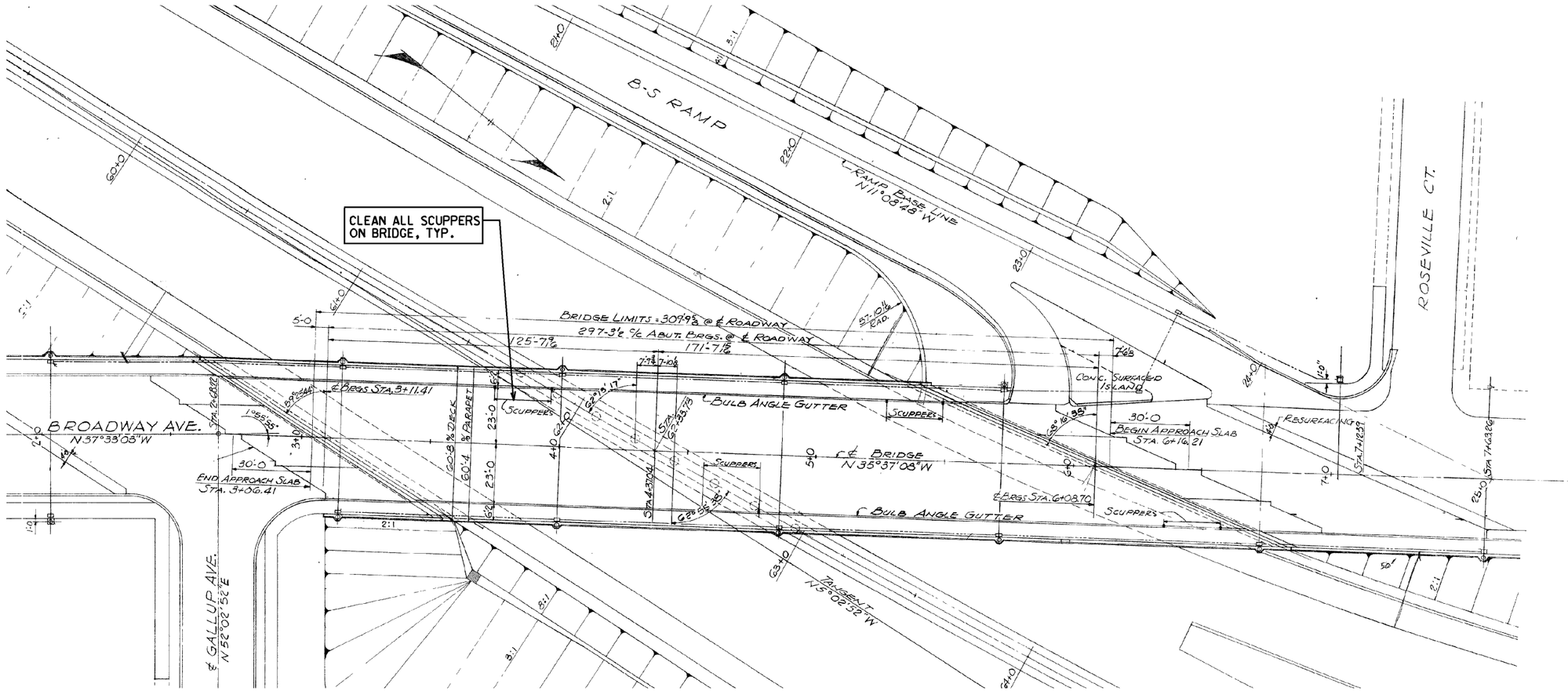
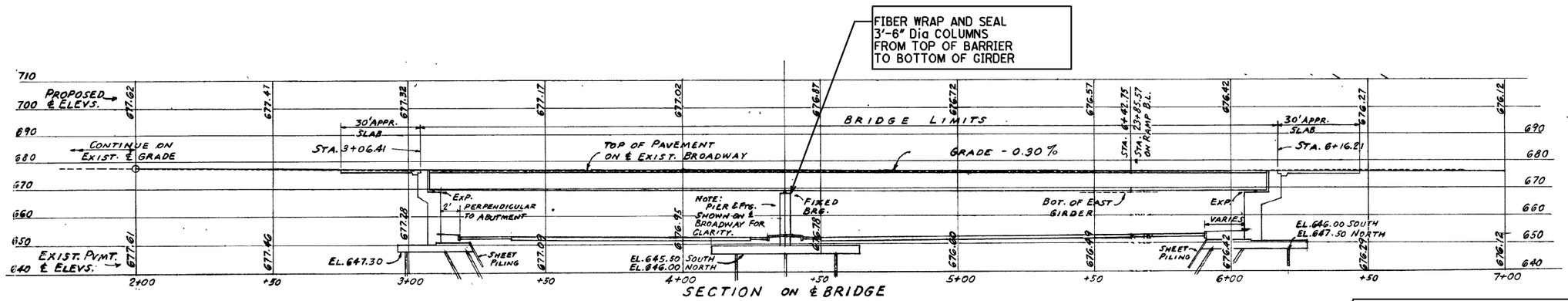


GENERAL PLAN



SECTION ON ℄ BRIDGE

- DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INFORMATION PURPOSE.
- PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT.

PROPOSED WORK

- FIBER WRAP AND SEAL COLUMNS
- CLEAN SCUPPERS

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
YSS			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SKP		1806661	

LOCATION 6
CUY-14-0255
UNDER BROADWAY AVE.

D12 BH FY2008
PID No. 82183

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33

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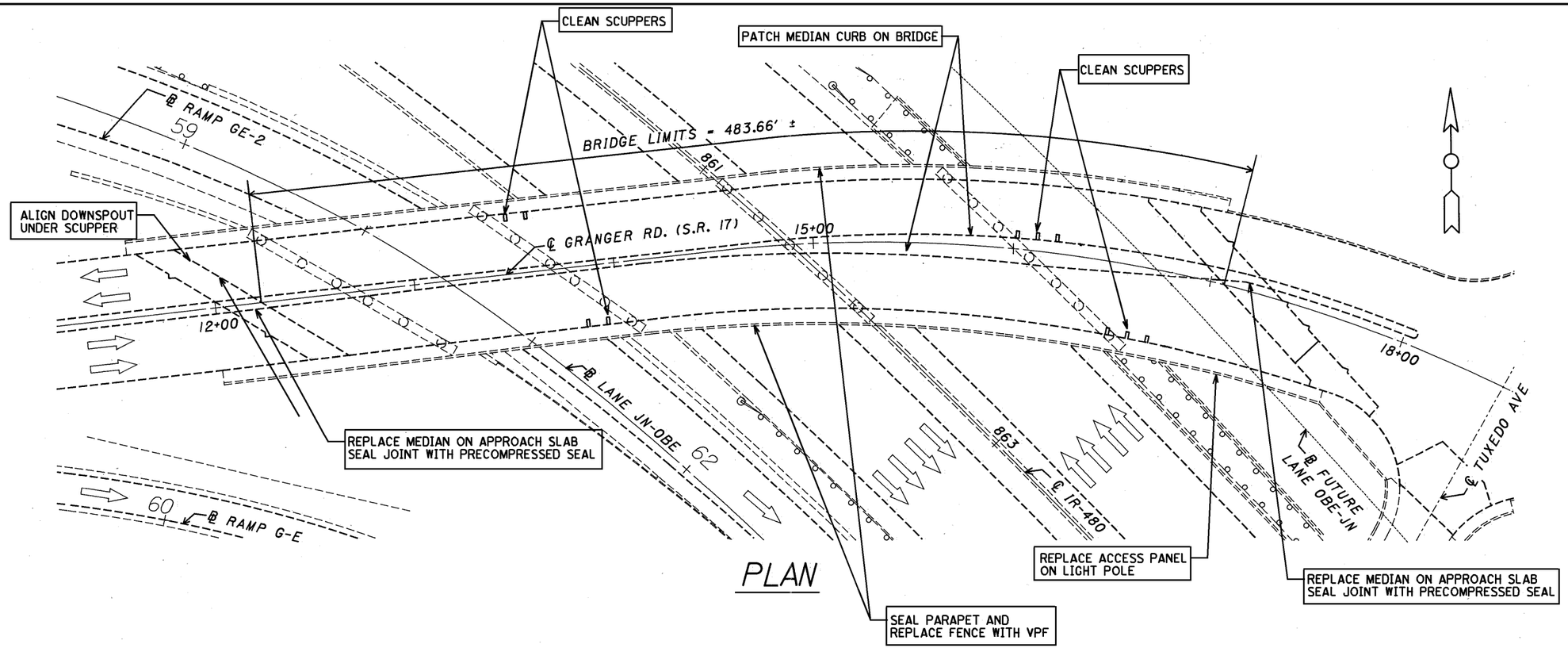
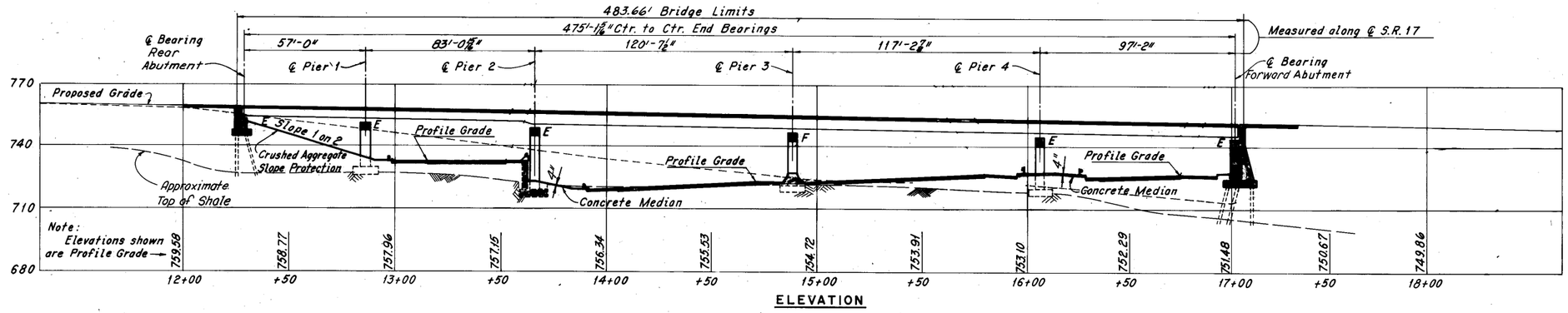


PLAN



ELEVATION

-DETAILS ON THIS SHEET ARE TAKEN FROM ORIGINAL RECORD PLANS AND SHOULD BE USED ONLY FOR INFORMATION PURPOSE.

-PERFORM ONLY THE WORK LISTED UNDER PROPOSED WORK, IN GENERAL NOTES, AND AS INDICATED IN THE FRAMED TEXT.

PROPOSED WORK

- REPLACE MISSING HANDHOLE COVERPLATES ON LIGHT POLE
- CLEAN SCUPPERS
- REPLACE MEDIAN ON APPROACH SLAB
- SEAL MEDIAN USING PRECOMPRESSED SEAL
- PATCH MEDIAN CURB ON BRIDGE
- REPLACE FENCE WITH VPF
- ALIGN DOWNSPOUT UNDER BRIDGE
- SEAL PARAPET

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
YSS			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SKP		1802402	

LOCATION 7
CUY-17-1227
OVER I-480

D12 BH FY2008
PID No. 82183

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33

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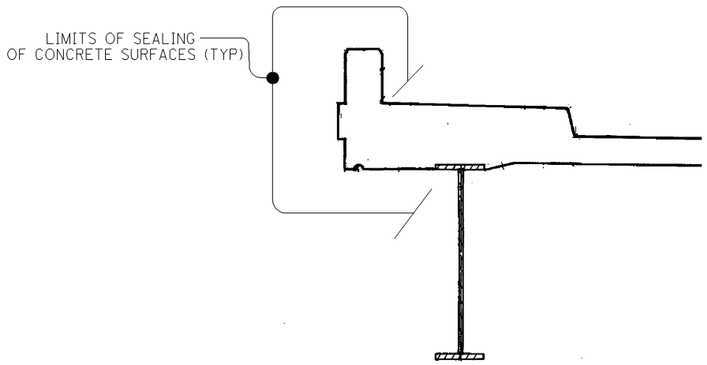
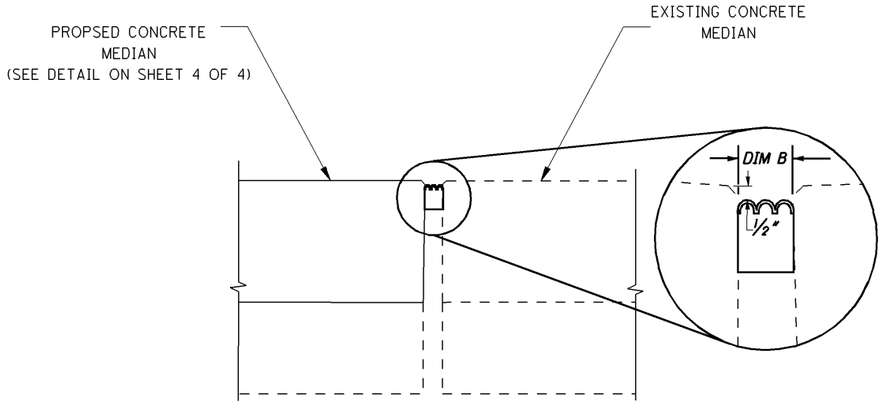
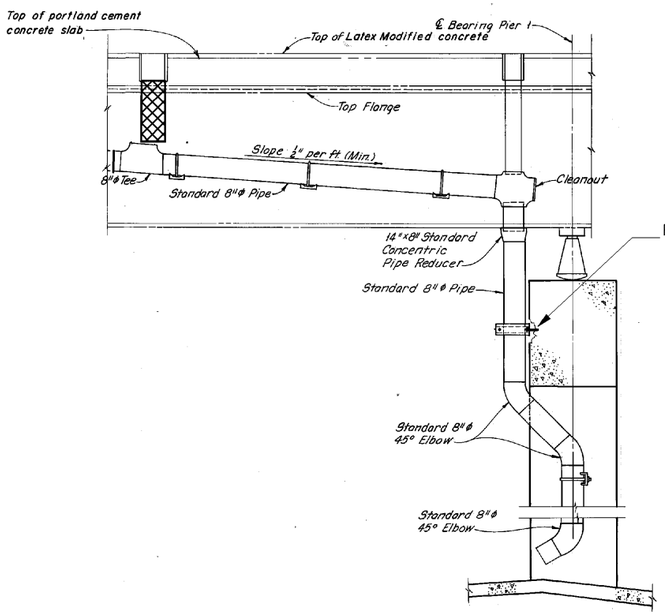


PARAPET SEALING DETAIL



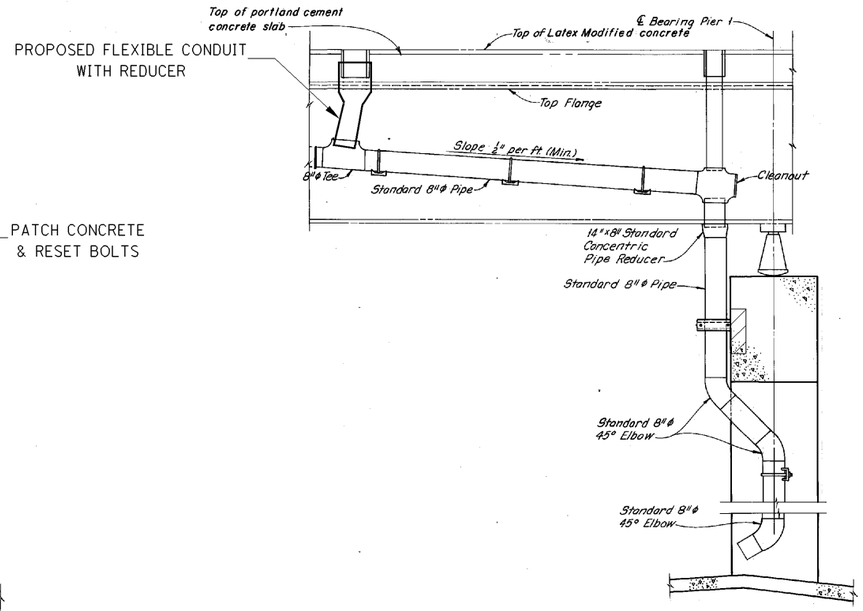
DETAIL B: PRECOMPRESSED JOINT SEAL

DIMENSION B	
	@ 50° F
EAST JOINT	5" ±
WEST JOINT	4" ±



EXISTING DRAINAGE DETAIL

PORTION OF DRAINAGE SYSTEM TO BE REMOVED



PROPOSED DRAINAGE DETAIL

PROPOSED PATCH AND BOLT RESET

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1802402	

LOCATION 7
CUY-17-1227
OVER I-480

D12 BH FY2008
PID No. 82183

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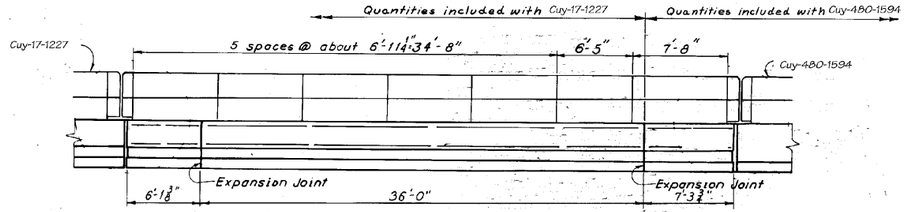
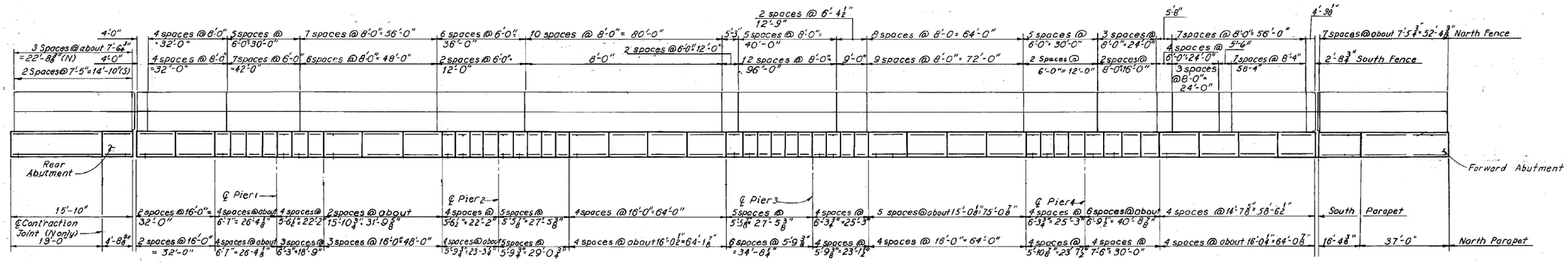
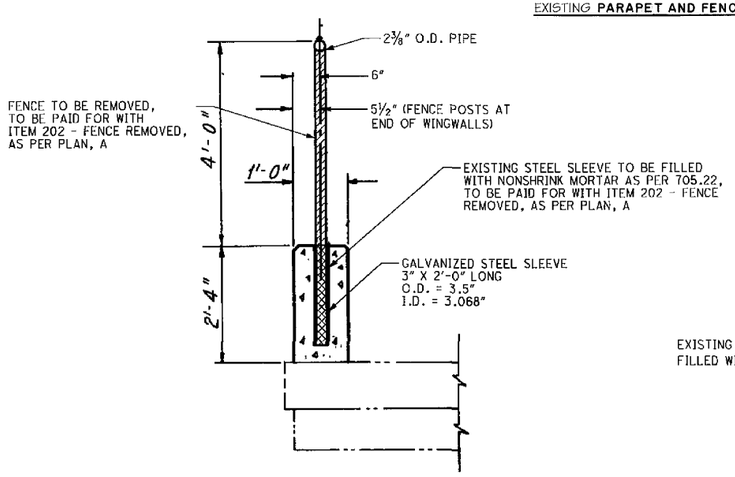
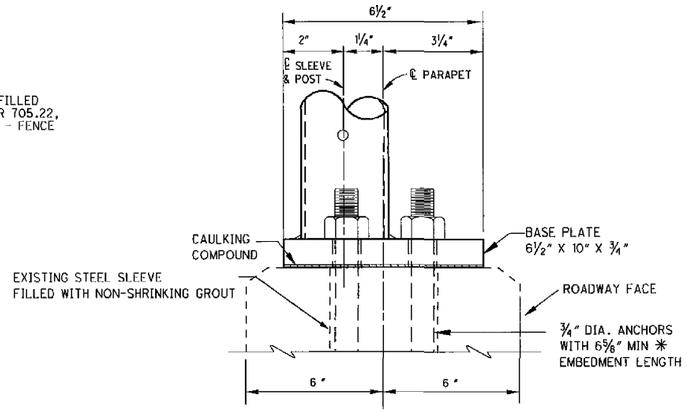




EXISTING **PARAPET AND FENCE DETAILS**



EXISTING FENCE DETAILS



PROPOSED BASE PLATE

ITEM 202 - FENCE REMOVED, AS PER PLAN

FILL EXISTING STEEL SLEEVE WITH NONSHRINK MORTAR

*OR AS RECOMMENDED BY MANUFACTURER

DESIGN AGENCY
Ohio Dept of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
SKP			
CHECKED	REVISED	STRUCTURE FILE NUMBER	
YSS		1802402	

LOCATION 7
CUY-17-1227
OVER I-480

D12 BH FY2008
PID No. 82183

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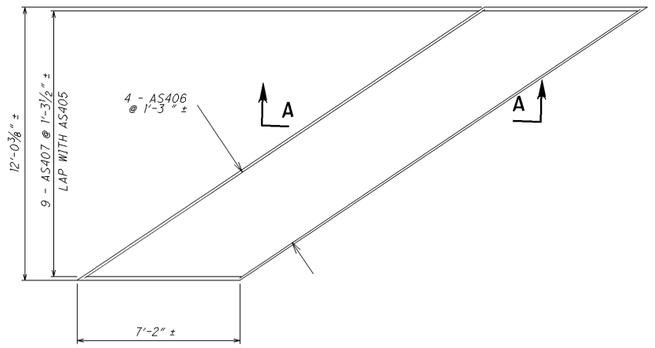
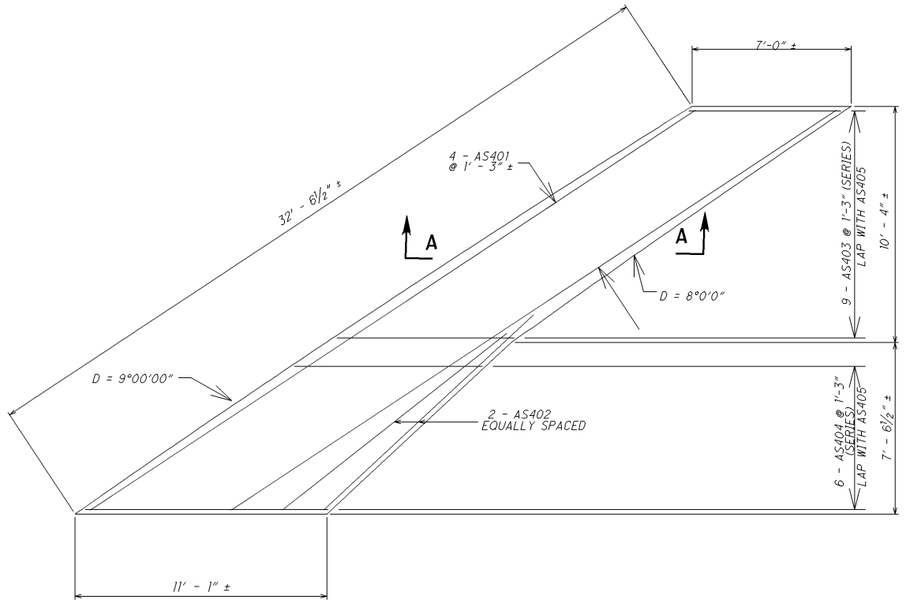
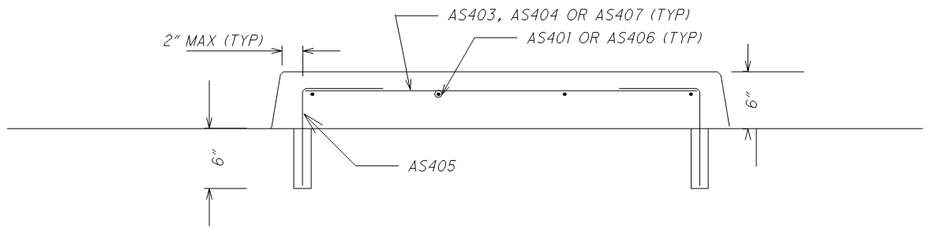


WEST APPROACH MEDIAN

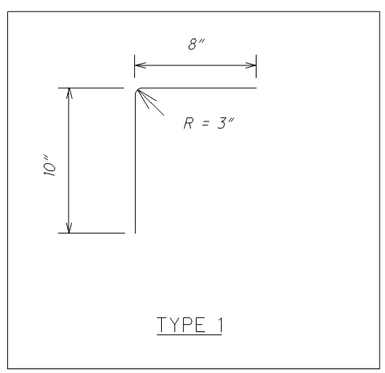


EAST APPROACH MEDIAN

MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	INC.
AS401	4	31'-11"	83	STR	
AS402	2	12'-7"	17	STR	
	1	6'-8"			
AS403	SER	TO	44	STR	1 5/8"
	OF 9	7'-9"			
	1	8'-3"			
AS404	SER	TO	38	STR	5 3/4"
	OF 6	10' 7 3/4"			
AS405	48	1'-5"	46	1	
AS406	4	21'-3"	57	STR	
AS407	9	6'-10"	42	STR	
			327		



SECTION A-A



TYPE 1

Ohio Dept of Transportation

DESIGNED	DRAWN	REVIEWED
SKP		
CHECKED	REVISED	STRUCTURE FILE NUMBER
YSS		1802402

LOCATION 7
CUY-17-1227
OVER I-480

D12 BH FY2008
PID No. 82183

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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 eleven (11) 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 accommodated on at least one side at all times, with an exception of Tuxedo Ave., where pedestrian traffic is prohibited during the full closure for the overlay.

7. The overlay on Tuxedo Ave. shall be a weekend overlay. A complete closure is permitted from 7 p.m. Thursday evening until the following Monday at 6 a.m. The complete closure of Tuxedo Ave. is prohibited while school is in session and during Brooklyn Heights Home Days.

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

   Whenever any work is being done over a traveled lane or shoulder, supply sufficient safety equipment, as approved by the Director, to protect the traveling public from any construction debris. If traveled lanes under structures are to be closed for safety reasons, method and time of closure must be approved prior to implementation. Personal cars shall not be parked within the Right of Way.

III. Maintenance of Traffic Systems, Cont.

6. Worksite Traffic Supervisor

   The contractor shall employ (other than the superintendent) and subject to the approval of the Engineer, as certified Worksite Traffic Supervisor (WTS). The WTS may be certified from one of the following organizations:

   a) American Traffic Safety Service Association (A.T.S.S.A.) Phone number 1-800-272-8772
   b) The National Safety Council, Traffic Control Zones Supervisors Course, Phone number 1-800-441-5103
   c) National Highway Institute, Design and Operation of Work Zone Traffic Control, Phone number 1-703-235-0528

   The WTS position is established for the purpose of monitoring and correcting and traffic control deficiencies in the work zone. The WTS shall oversee all operations that affect the movement of vehicular and pedestrian traffic through the work zone.

   The WTS shall be present when the contractor or subcontractor installs a traffic restriction, lave closure, etc. In lieu of the WTS being present when a subcontractor has a work zone in place, the contractor may use his own personnel that is a certified WTS. The contractor or subcontractor must present a cope of his WTS certificate to the Project Engineer. A WTS must be present when the work zone is being set up. He must approve the work zone before he leaves or performs other duties.

   When the restrictions are short term, the WTS shall monitor the zone for compliance. During the lane closure he shall make sure all control items are functioning properly. Traffic control will be the WTS' main duty during implementation of zones or short term zones. The WTS shall have the authority to have deficiencies corrected as soon as possible. The WTS shall provide the District Work Zone Traffic Control Engineer a sketch of the traffic control plan (TCP) everyday there is to be a short term traffic restriction, lane closure, etc. This TCP shall show how the work zones are to be implemented.

   The WTS shall be available on a 24-hour basis to repair and/or replace damaged or missing traffic control devices. A 24-hour phone number shall be made available to the Project Engineer in order to contact the WTS. The WTS shall have a pager and the phone number provided to the Project Engineer.

   Failure of the contractor to comply with any of the above shall constitute cause for the Project Engineer to deduct $500.00 per day from money due to the contractor not as a penalty, but as liquidated damage.

   Payment for the WTS shall be included under the lump sum Item 614 – Maintaining Traffic.

7. 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.

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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.

7. Night Vests

   All of the Contractor and Sub-Contractor personnel working during the house of darkness shall wear a 100% silver reflective safety vest or ANSI Class 2 vest. The safety vest shall be provided by the Contractor. The vest may have several lime or orange stripes on it.

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.

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 (L.E.O.'s) should not be used where the OMUTCD intends that flaggers be used. The LEO's are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Project Engineer shall have control over their placement. The official 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.

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 contactor shall have the Worksite Traffic Supervisor (WTS) turn into the Project Engineer a hand sketched traffic control plan (TCP), 2 weeks before the zone is to be set up. In addition, each affected city, village, or township shall receive a copy of the proposed TCP. This TCP shall be approved by the Engineer and all affected municipalities. The TCP shall show the locations of the work zone signs, taper lengths, delineation devices, arrow boards, and all work zone traffic control items. Standard drawings, plan sheets and the OMUTCD shall be used as references.

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.

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.

Permanent Pavement Markings

After placing the wearing surface, 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 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).

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

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