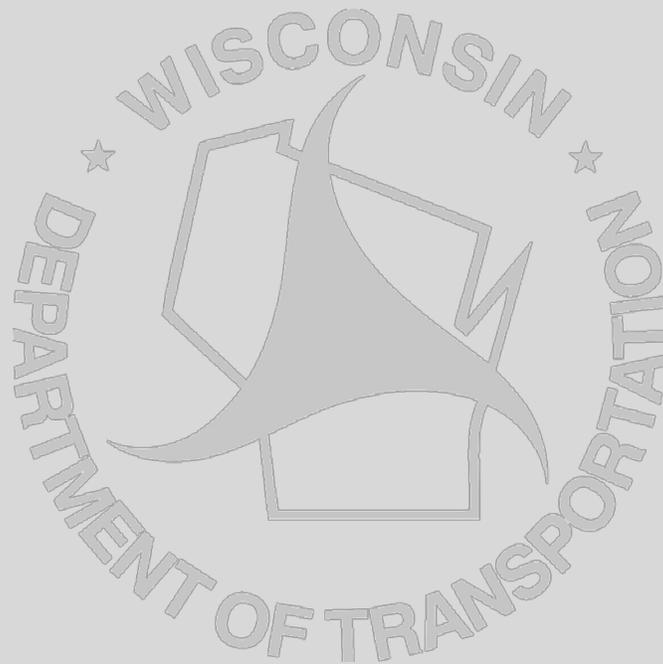


STRUCTURE SURVEY REPORT WORKSHOP

Wisconsin Department of Transportation

Division of Transportation System Development



2014

CORRESPONDENCE/MEMORANDUM.....BUREAU OF STRUCTURES

Date: November 13, 2007

To: Region Designers

From: Bill Dreher, DTSD, BOS, Structures Design Section

SUBJECT: 2007 Structure Survey Report Workshop

This is the handbook for the Training Course titled “Structure Survey Report Training”.

This handbook contains “typical” examples of Structure Survey Report (SSR) submittals. We feel that it is important to have good working examples of the various SSR’s and attachments to help understand the type of information that is needed to complete preliminary and final structure design.

Also included in this handbook is information about project scheduling, geotechnical coordination, structure details, structure cost, and consultant preliminary plan submittal.

It is our desire to provide this information and training in order to maintain and improve the working relationships between the Region Project Development Designers and Structures Designers, improve product quality, and reduce design costs.

TABLE OF CONTENTS

1. Structure Survey Report Workshop (Objectives and BOS Staff)
2. Scheduling
3. Technical Service and Soil Boring Coordination
4. Typical Structure Types Used in Wisconsin
5. Structure Costs and Preliminary Estimates for Alternatives
6. SSR Where to Start and Separation SSR
7. Survey for Stream Crossing Structures
8. Stream Crossing SSR (Bridge)
9. Stream Crossing SSR (Box Culvert)
10. Box Culvert SSR (Extension)
11. Rehabilitation SSR
12. Retaining Wall SSR
13. Sign Bridge SSR
14. Consultant Preliminary Plan Review and Approval
15. Other Support Services

STRUCTURE SURVEY REPORT WORKSHOP

Structure Survey Reports are the primary tools that Region Project Development Designers use to request structure design services from the Structures Design Section.

The purpose of this workshop is to maintain and improve the working relationships between the Transportation Regions and the Structures Design Section. One key factor of a successful working relationship is the communication of expectations and information required for the design of projects.

The primary goal of the workshop is to clearly define the data in the SSR needed to help Structures designers to supply the Regions with the plans they require. This workshop will also cover scheduling, geotechnical coordination, structure types that are typically used, structural details that can be utilized, relative cost of various structure types, and the review and approval of consultant preliminary and final plans.

Ultimately the results of good communication between Region designers and Structures designers will be reduced design cost, reduced re-design frequency, and improved project quality.

Objectives of the Training Course:

- **Inform Region staff about organizational structure in the Structures Design Section and Liaison assignments.**
- **Discuss information required for preliminary and final structure design.**
- **Inform Region staff about structure design scheduling and the monthly structure progress report.**
- **Discuss various structure types typically used and conditions that may influence design.**
- **Discuss relative cost of various structure types.**
- **Inform Region staff about various structure elements and aesthetic treatments that are available for use.**
- **Discuss the consultant preliminary structure submittal and approval process.**

STRUCTURES DESIGN SECTION

The Structures Design Section consists of three units. The two design units follow projects from early project scoping through construction. The Consultant Review, Contracting and Hydraulics unit reviews consultant plans, performs hydraulic and scour analyses for in-house designs and designs/contracts plans for development for box culverts. In addition to addressing design and construction related questions, the units will be assisting the regions with project scoping, Value Engineering Studies, cost estimating, selecting structural engineering consultants, and supporting Regions structural staff.

Structures Design Section

Design Chief

Bill Dreher 608-266-8489

Design Unit A

Unit Supervisor

Aaron Bonk 608-261-0261

Structural Engineers

Andy Casper 608-261-6109
Matt Coupar 608-266-5083
Steve Doocy 608-261-6063
Emily Kuehne 608-266-5089
Max Kulick 608-261-6108
Rita Lederle 608-261-6113
Nick Rice 608-266-5092
John Sendor 608-266-5163
Adam Swierczek 608-267-4593
Vu Thao 608-267-2869

Engineer Specialist

Dean Smith 608-266-5091

Engineer Technician

Joel Huenink 608-266-5160

Design Unit B

Unit Supervisor

Laura Shadewald 608-267-9592

Structural Engineers

Tim Borowski 608-266-4547
Micah Brooks 608-266-5080
Brandan Burger 608-267-4019
Alex Crabtree 608-266-3686
Ruth Coisman 608-261-8205
Danielle DeTennis 608-266-8689
Chris Doll 608-266-3229
Michael Larson 608-267-4539
Philip Meinel 608-261-2590
John Resheske 608-266-8491
Steve Revello 608-266-5095

Engineer Technician

Mohammad Hajipour 608-261-6112
Warner Risser 608-266-5081

Consultant Review, Contracting, and Hydraulics

Unit Supervisor

Najoua Ksontini 608-266-2657

Structural/Hydraulics Engineers

Matt Allie 608-266-8483
Dan Breunig 608-266-0214
Tony Landini 608-266-7818
Steve Neary 608-266-2311
Kristin Revello 608-266-5090
Leon Schuchardt 608-266-8494

Engineer Specialist

Chris Foltman 608-266-5094

Liaisons

The Structures Design Section will have an engineer assigned to each one of the five regions to act as a liaison. The liaisons will serve as the main contact between the regions and the Structures Design Section. The following is the list of the liaisons:

Southwest Region:	Matt Coupar
Southeast Region:	Vu Thao
Northwest Region:	Vu Thao
Northeast Region:	Steve Revello
North Central Region:	Brandan Burger

Services We Provide

- Address design/construction-related structure questions
- Attend project scoping meetings
- Participate in Value Engineering studies
- Preliminary design and plan development for bridges
- Final design and contract plan development for bridges
- Design and contract plan development for retaining walls and sign structures
- Cost estimates for new and rehabilitation structures work
- Review fabrication drawings
- Evaluate bridge/box culvert hydraulics for compliance to current standards
- Participate in selection of structural engineering consultants
- Mentor, train and support region structural staff
- Review consultant plans
- Manage consultant contracts and services

SCHEDULING

SCHEDULING

WHO	WHAT	WHEN
Region	Early notification to Bureau of Structures of anticipated need for Structures Design services.	2–3 years prior to final plans due date
Region	Send SSR and supporting data to BOS and Geotechnical Engineer.	15 months prior to final plans due date
BOS	Preliminary layout and sizing of Structure to assist in locating soil borings.	
Geotechnical Section	Perform soil borings and develop Site Investigation Report.	
BOS	Preliminary Structure Plan completed and a copy sent to the Region	7 months prior to final plans due date
Region	Concurrence with Preliminary Structure Plan and “go ahead” to spend project Resources on Final Design and Plan Preparation.	6 months prior to final plans due date
BOS	Complete Final Structure Plans and Quantities and send a copy to the Region. Original structure plans are placed in EPLANS checked folder and inserted into PSE by BOS staff	Final plans due date
Region	PS&E or shelf date	1 to 3 months after final plans due date

SCHEDULING

CALENDAR VIEW

2-3 Years REGION INFORMS BOS

15 Months REGION SENDS SSR TO BOS AND GEOTECH

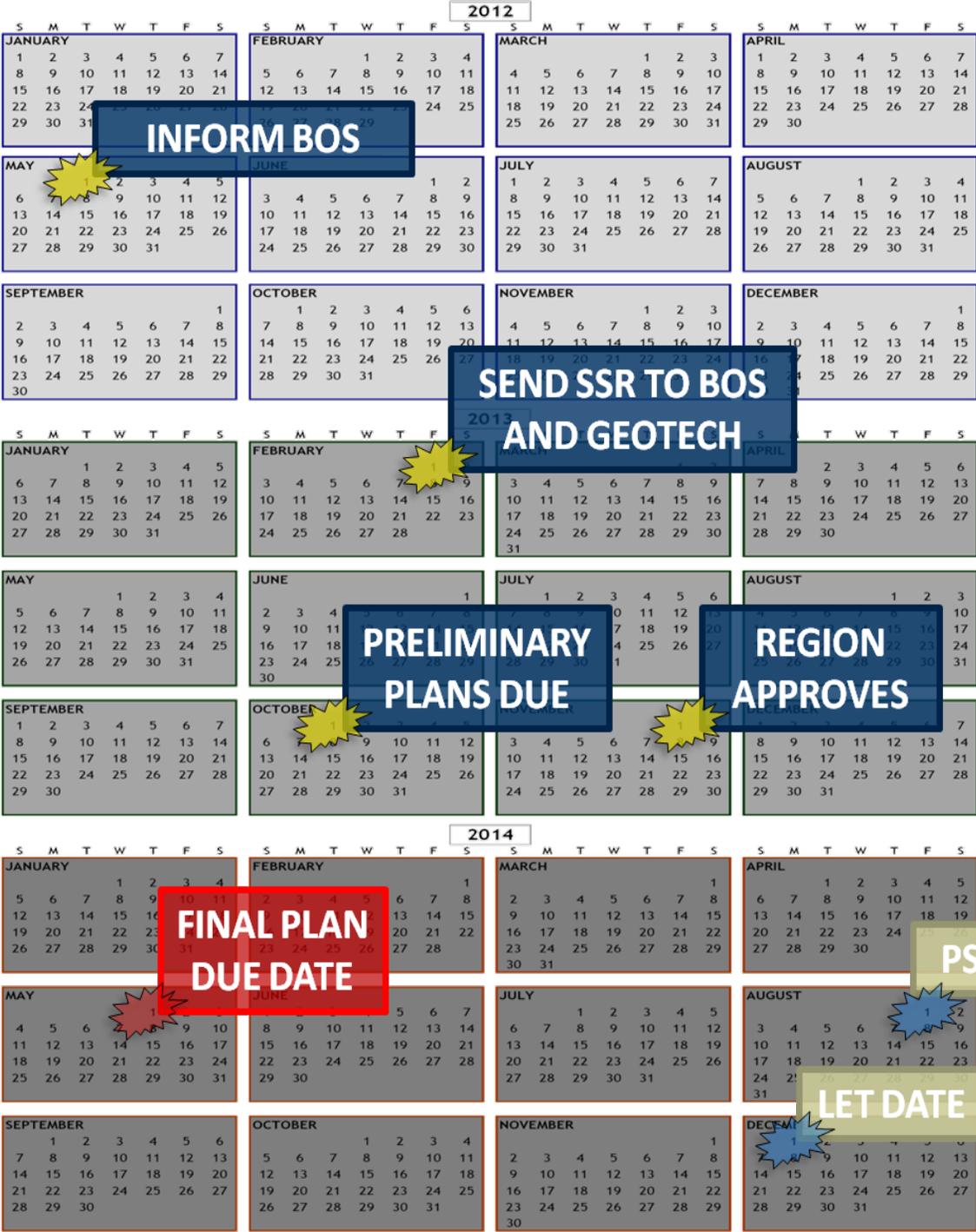
7 Months PRELIMINARY PLANS DUE

6 Months REGION APPROVES

FINAL PLAN DUE DATE

1-3 Months PS&E

6 Months LET DATE



TECHNICAL SERVICES AND SOIL BORING COORDINATION

STRUCTURE SOIL BORING REQUESTS

The Region should make requests for subsurface investigation at the same time the structure survey report is submitted to Bureau of Structures, Structures Design Section. This submittal should be **15 months** in advance of the **final** plans due date. Subsurface investigations are required for most structures and some rehabilitation projects. The Region should make the request for soil borings to the Central Office Geotechnical Section through the Region Soils Engineer. After the Region's submittal, the Geotechnical Section will schedule and conduct the necessary soil borings.

In some instances, the geotechnical work will proceed after receipt of the request, but in advance of the development of the preliminary structure plans. The Geotechnical Section may request preliminary bridge plans prior to conducting soil investigations under the following conditions:

1. A review of available subsurface information indicates the possibility of very shallow and/or highly variable bedrock.
2. The span of the existing or estimated proposed structure falls in the 20 to 30 foot range and there is uncertainty if the proposed structure will be a bridge or box culvert.
3. The proposed structure is over a body of water and appears to be a multi-span structure.

The request for subsurface investigation should generally include the following items:

- Two copies of the structure survey report.
- Two copies of the plan and profile sheet for the proposed structure showing existing and proposed grades, streambed, existing structure location, proposed structure location, utilities, benchmark locations and elevations.
- Two copies of the contour maps or layout sheets showing structure configuration, span lengths, stationing, and reference line positions for all substructure locations.
- Information about any potential retaining walls attached to the proposed bridge or the need for any temporary structure borings.
- Two copies of the County map showing the location of the site.

Note the attached checklist that may be used for subsurface investigation requests.

SUBSURFACE INVESTIGATION REQUEST

REQUESTOR

Name: _____
District: _____

Transmittal Date _____

Requested Return Date _____

PS&E/Shelf Date _____

PROJECT DESCRIPTION

I.D. Number: _____

Highway/Roadway Name: _____

Limits: _____

County: _____

Structure Numbers: New _____ Existing _____

Structure Over: _____

Consultant Project: yes no

WORK DESCRIPTION (Submit Items Listed Below)

SOIL BORINGS Comments _____
 Plan/Profile _____
 Cross-sections _____
 Other _____

STRUCTURE INVESTIGATION Comments _____
 Plan/Profile Layouts _____
 Structure Layout _____
 Benchmark _____
 County Maps _____
 Other _____

OTHER (Describe) Comments _____
 Plan/Profile Layouts _____
 Project Description _____
 Other _____

REQUIRED DISTRICT ACTIVITIES

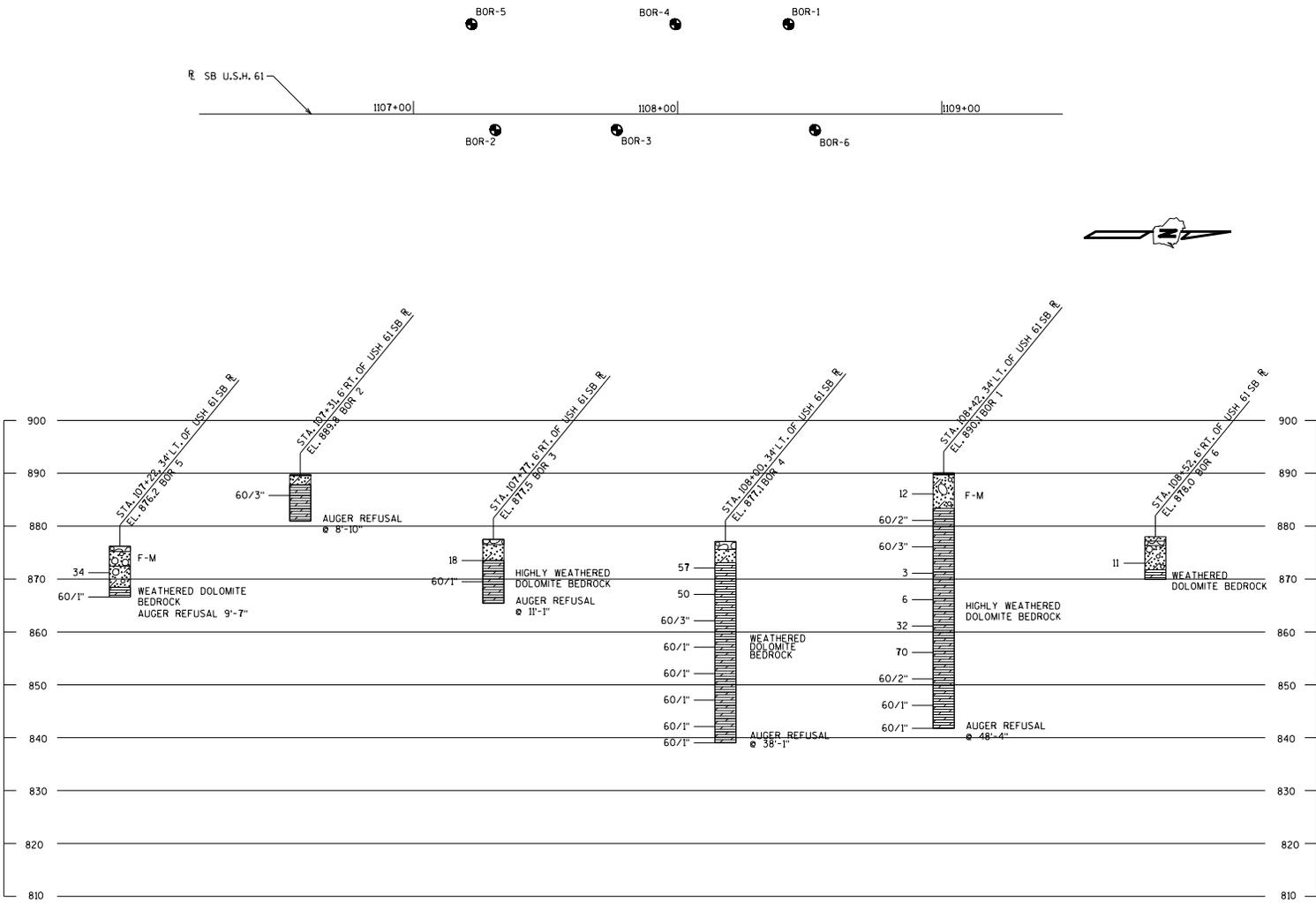
Staking, Utility Locate, Landowner Contact, Entry Constraints
Railroad/Marine Notification, Traffic Control
Locate ROW Limits, Provide Gradelines

Additional Comments: _____

DUBUQUE - DICKEYVILLE
EAGLE PT RD OVERPASS

STATE PROJECT NUMBER

1200-01-74

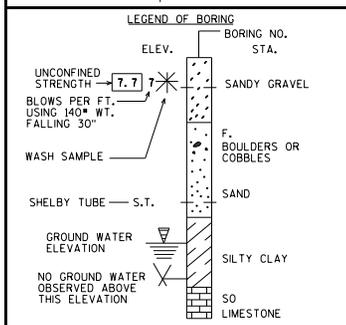
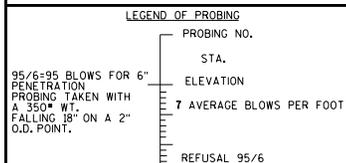


ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL	SILT	SANDSTONE
SAND	PEAT	LIMESTONE
GRAVEL	CLAY	IGNEOUS ROCK



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 14" I.D. SPLIT SPOON SAMPLER WITH A 140* HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY		PR	PLANS Ckd.
SUBSURFACE EXPLORATION			SHEET 3

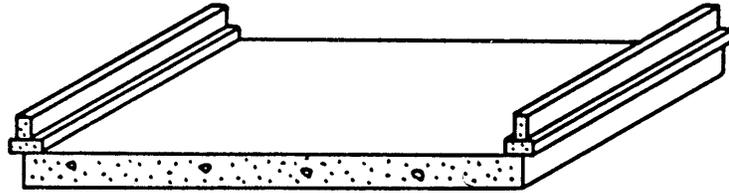
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TYPICAL STRUCTURE TYPES USED IN WISCONSIN

BRIDGE SELECTION CRITERIA

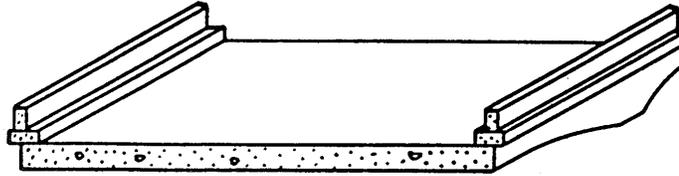
- Selection of Structure Type
- Span Arrangements
- Economics
- Aesthetics
- Hydraulic Consideration
- Geometrics of Design and Loading
- Maintenance
- Construction
- Foundations
- Environmental Consideration
- Safety

For a discussion of structure type refer to Chapter 17 of the Bridge Manual.



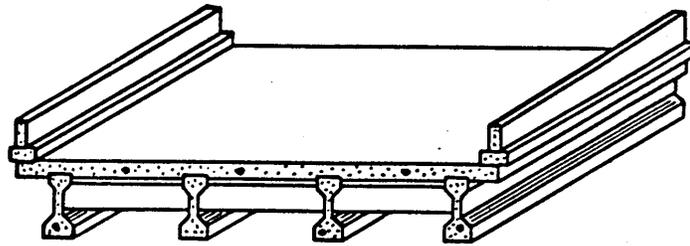
FLAT CONCRETE SLAB





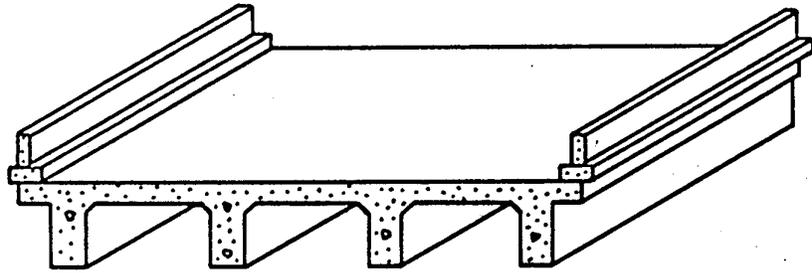
HAUNCHED CONCRETE SLAB





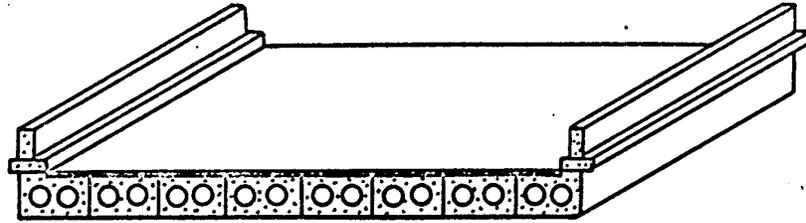
PRESTRESSED GIRDER





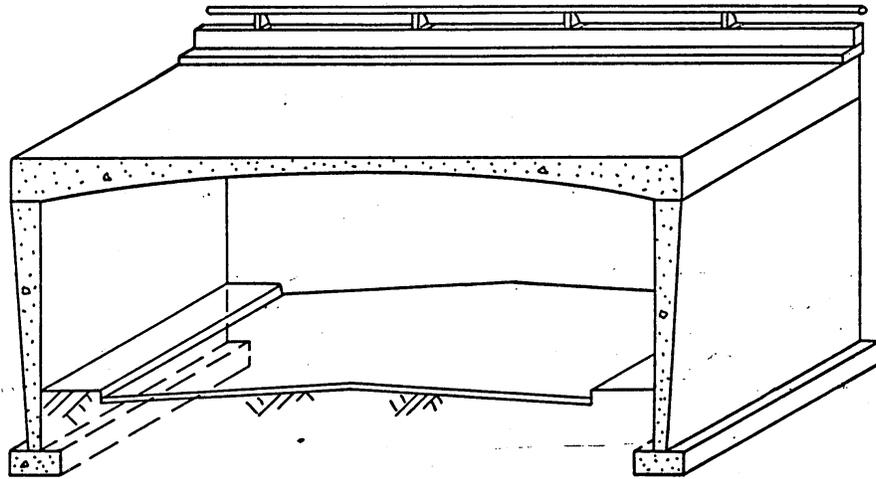
CONCRETE DECK GIRDER





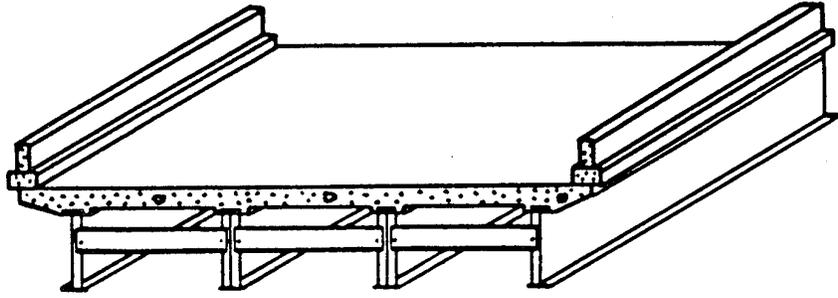
PRECAST PRESTRESSED SLAB





CONCRETE RIGID FRAME





STEEL GIRDER



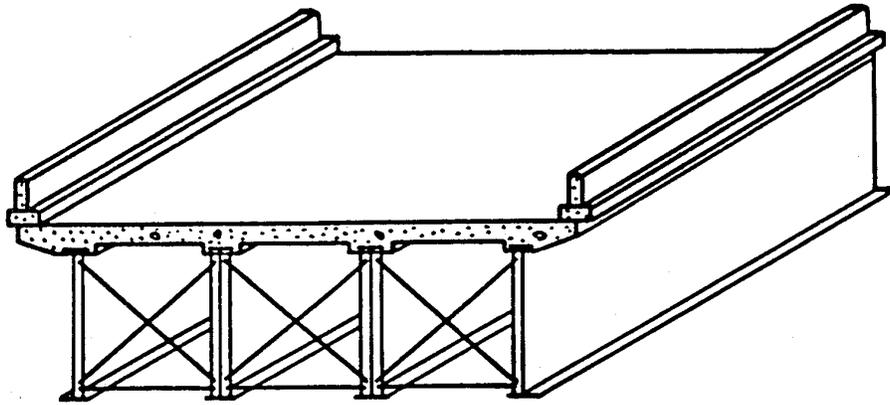
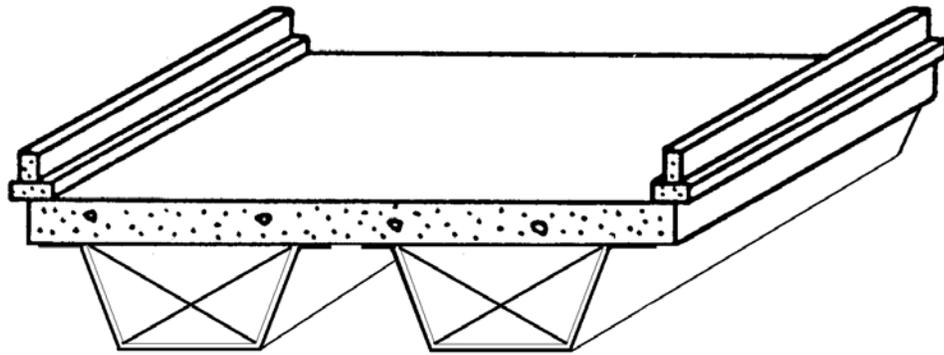


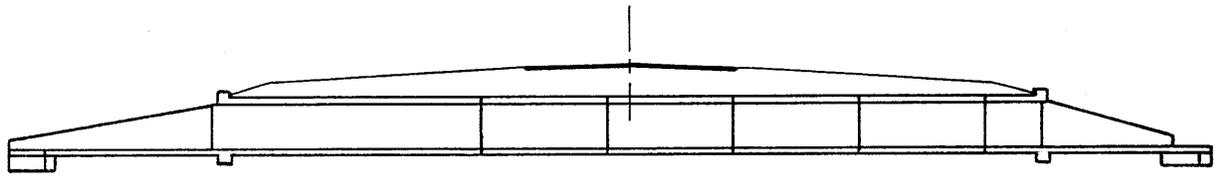
PLATE GIRDER





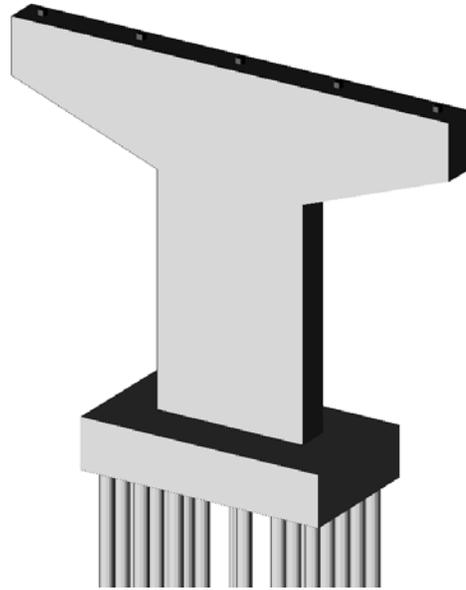
STEEL TUB GIRDERS





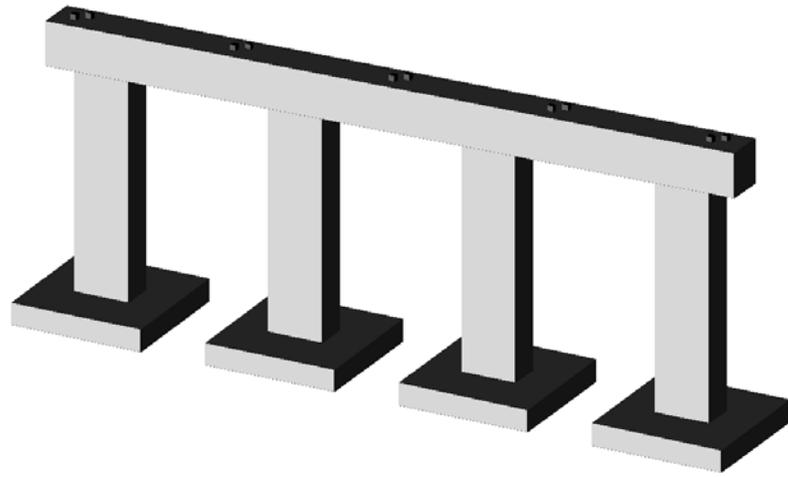
BOX CULVERT





HAMMERHEAD PIER





MULTI COLUMNED PIER



BRIDGE RAILING SELECTION CRITERIA

Bridge “railings” is a broad term which includes traffic safety barriers, bicycle and pedestrian railings. All bridge railings must have passed the crash tests established by the Federal Highway Administration. See Chapter 30 in the Bridge Manual for more guidance on bridge rails.

Selection criterion for bridge railings is listed below:

- All railing must be crash-tested.
- Railing must meet criteria for TL-3 or greater to be used on all roadways.
- Railings meeting TL-2 criteria may be used on roadways where the speed is 45mph or less.
- A concrete barrier between vehicular traffic and pedestrian traffic is required if speed is greater than 45 mph.
- Open metal railing may be used if roadway slope is less than .5%.
- Environmental concerns may impact railing choices.
- Aesthetic considerations may impact railing choices.
- Protective screening required on overpasses with pedestrian traffic.



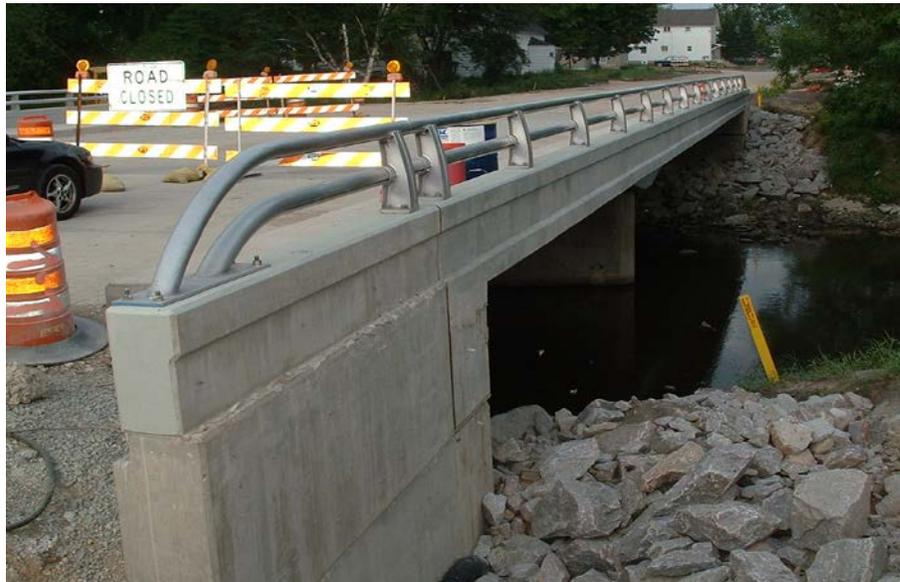
Type SS32/36/42/56" Parapet

Most commonly used - Meets TL-4 criteria



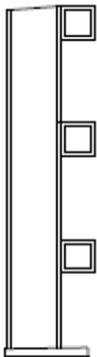
Type LF parapet

Most commonly used (prior to SS## Parapet) - Meets TL-4 criteria



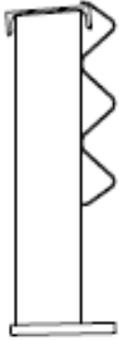
Type A Parapet with H Rail

To be used on sidewalks - Meets TL-4 criteria



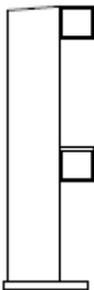
Type M Rail

Used where an open railing is desired – Meets TL-4 criteria



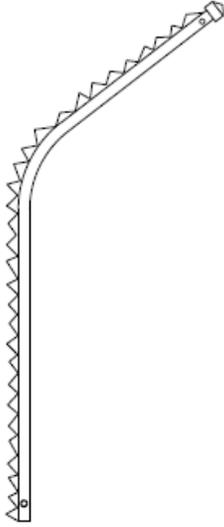
Type W Rail

Used on structures 80 ft or less in length – Meets TL-3 criteria



F Rail

Not to be used on the NHS (National Highway System)
May be used on non-NHS with speeds 45 mph or less



Protective Screening

Required on overpasses with pedestrian traffic

DECORATIVE RAILS



Texas Rail

Costly – Meets TL-2 criteria – 45 mph or less



Combination Railing

Meets TL-2 criteria – 45 mph or less

DECORATIVE RAILS



Type PF Rail



Modified F Rail

AESTHETIC FEATURES ON STRUCTURES

- Locals, DNR, and other organizations may have input into desirable look of structure.
- Consider maintenance requirement for desired aesthetic features.
- Specify on the Structure Survey Report whether anti-graffiti coating is required.
- Regional Office should establish one of the following levels of aesthetics and indicate it on the Structure Survey Report.
- Levels of Aesthetics:
 - **Level One:** Standard structure details.
 - **Level Two:** Cosmetic improvements. Use of color stains/paints, texturing surfaces, more pleasing column shapes.
 - **Level Three:** Needs to blend in with existing landscape. Structure systems that are more architecturally pleasing.
 - **Level Four:** Level Three plus structure needs to incorporate landscaping for total appearance.



LEVEL 1



LEVEL 2



**STRUCTURE COST AND
PRELIMINARY ESTIMATES OF
ALTERNATIVES**

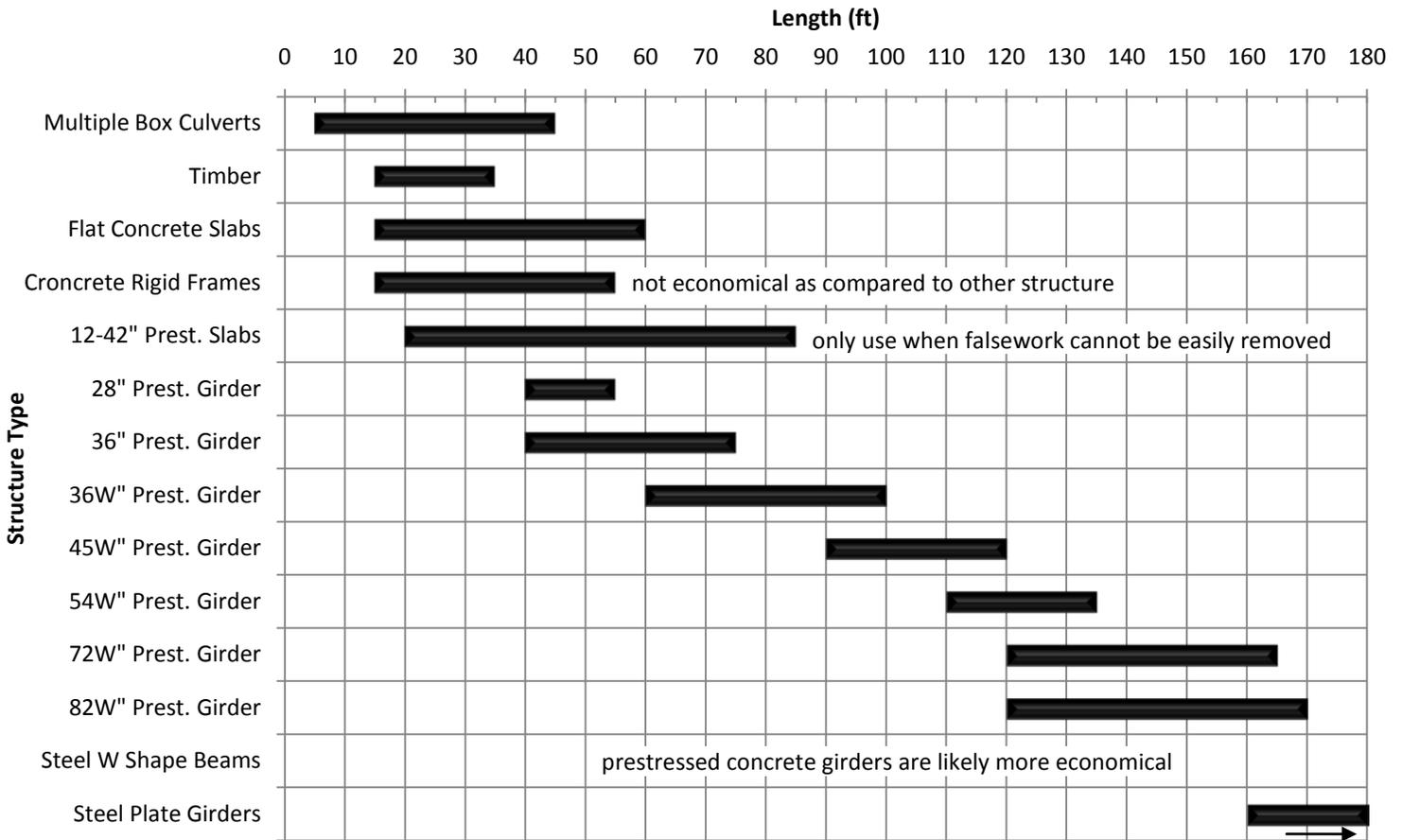
FACTORS GOVERNING BRIDGE COSTS

Bridge costs are tabulated based on the bids received for all bridges let to contract. While these costs indicate some trends, they do not reflect all the factors that affect the final bridge cost. Each bridge has its own conditions which affect the cost at the time a contract is let.

Some factors governing bridge costs are:

1. Location - rural or urban, or remote regions
2. Type of crossing
3. Type of superstructure
4. Skew of bridge
5. Bridge on horizontal curve
6. Type of foundation
7. Type and height of piers
8. Depth and velocity of water
9. Type of abutment
10. Ease of falsework erection
11. Need for special equipment
12. Need for maintaining traffic during construction
13. Limit on construction time
14. Complex forming costs and design details
15. Span arrangements, beam spacing, etc.

ECONOMIC SPAN LENGTHS



2011 YEAR END STRUCTURE COSTS

Stream Crossing

Structure Type	No. of Bridges	Total Area Square Foot	Total Costs	Super. Only Cost Per Square Foot	Total Cost Per Square Foot
Pres. Conc. Girders	44	340,000	\$ 32,000,000	\$ 65	\$ 95
Reinf. Conc. Slabs	6	34,000	\$ 3,500,000	\$ 55	\$ 100

Grade Separation

Structure Type	No. of Bridges	Total Area Square Foot	Total Costs	Super. Only Cost Per Square Foot	Total Cost per Square Foot
Pres. Conc. Girders	36	260,000	\$ 25,000,000	\$ 55	\$ 95
Reinf. Conc. Slabs	36	85,000	\$ 10,000,000	\$ 50	\$ 110

2011 CONTRACT UNIT BID PRICES

Item No.	Bid Item	Unit	Cost
206.6010.S	Temporary Shoring	LS	--
210.0100	Backfill Structure	CY	22.49
303.0115	Pit Run	CY	9.63
311.0115	Breaker Run	CY	23.50
502.0100	Concrete Masonry Bridges	CY	460.00
502.1100	Concrete Masonry Seal	CY	153.00
502.2000	Compression Joint Sealer Preformed Elastomeric (width)	LF	42.12
502.3100	Expansion Device (structure) (LS)	LF	158.73
502.3110.S	Expansion Device Modular (structure) (LS)	LF	
502.3200	Protective Surface Treatment	SY	2.35
502.6500	Protective Coating Clear	GAL	65.00
503.0128	Prestressed Girder Type I 28-Inch	LF	97.82
503.0136	Prestressed Girder Type I 36-Inch	LF	148.35
503.0137	Prestressed Girders Type I 36W-Inch	LF	156.50
503.0145	Prestressed Girder Type I 45-Inch	LF	162.29
503.0146	Prestressed Girders Type I 45W-Inch	LF	180.85
503.0154	Prestressed Girder Type I 54-Inch	LF	
503.0155	Prestressed Girder Type I 54W-Inch	LF	178.03
503.0170	Prestressed Girder Type I 70-Inch	LF	
503.0172	Prestressed Girders Type I 72W-Inch	LF	183.14
503.0182	Prestressed Girder Type I 82W-Inch	LF	
504.0100	Concrete Masonry Culverts	CY	439.50
504.0500	Concrete Masonry Retaining Walls	CY	461.74
505.0405	Bar Steel Reinforcement HS Bridges	LB	0.86
505.0410	Bar Steel Reinforcement HS Culverts	LB	0.56
505.0415	Bar Steel Reinforcement HS Retaining Walls	LB	0.92
505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	0.91
505.0610	Bar Steel Reinforcement HS Coated Culverts	LB	1.38
505.0615	Bar Steel Reinforcement HS Coated Retaining Walls	LB	0.96
506.0105	Structural Carbon Steel	LB	4.57
506.0605	Structural Steel HS	LB	1.48
506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	63.22
506.2610	Bearing Pads Elastomeric Laminated	EACH	729.90
506.3005	Welded Shear Stud Connectors 7/8 x 4-Inch	EACH	3.50
506.3010	Welded Shear Stud Connectors 7/8 x 5-Inch	EACH	4.83
506.3015	Welded Shear Stud Connectors 7/8 x 6-Inch	EACH	3.54
506.3020	Welded Shear Stud Connectors 7/8 x 7-Inch	EACH	5.18
506.3025	Welded Shear Stud Connectors 7/8 x 8-Inch	EACH	3.82
506.4000	Steel Diaphragms (structure)	EACH	500.20
506.5000	Bearing Assemblies Fixed (structure)	EACH	958.92
506.6000	Bearing Assemblies Expansion (structure)	EACH	1,526.50
507.0200	Treated Lumber and Timber	MBM	
508.1600	Piling Treated Timber Delivered	LF	
510.2005	Preboring Cast-in-Place Concrete Piling	LF	27.36
510.3021	Piling CIP Concrete Delivered and Driven 10 ¾ x 0.219-Inch	LF	32.44

**SEPARATION
STRUCTURE SURVEY REPORT**

SEPARATION STRUCTURE SURVEY REPORT SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Section 6.2 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1694)

Complete DT1694, Grade Separation

- Completed except for items that Central Office Design will enter (grayed out boxes).

SURVEY INFORMATION

_____ Project Location Map

- Indicate location of structure and structure number. Showing other proposed structures within project limits.

_____ Small County Map

- Indicate location of structure.

_____ Plan and Profile Sheet

- Proposed profile grade line of BOTH roadways, proposed horizontal and vertical curve data of BOTH roadways, and structure location.

_____ Layout Information

- Existing and proposed highways and structures, station numbers, reference line intersections, and angles.

_____ Typical Roadway Section

- Typical dimensions, slopes and clear zone requirements for each roadway.

_____ Photographs (Labeled)

- Existing structure, utilities, and/or buildings.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

SEPARATION STRUCTURE SURVEY REPORT

DT1694 6/2012

Grade Separation **Railroad** **Retaining Wall** **Noise Barrier**

Sign Structure **High Mast Lighting** **Other:** _____

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 5300-02-02	Construction Project ID 5300-02-73	Highway (Project Name) High Point Road Bridge			
Final Plan Due Date 05-01-2015	Preliminary Plan Due Date 10-01-2012	<input type="checkbox"/> Town <input type="checkbox"/> Village <input checked="" type="checkbox"/> City Madison			
PS&E Date 08-01-2015	Letting Date 12-01-2012	County Dane			
New Structure Number B-13-572	Existing Structure Number B-13-233	Section 26	Town 7N	Range 8E	
Station 249+10.72	Latitude: 430902.82 Longitude: 892405.81	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Structure Located on National Highway System			
For Survey and CADD Files Horizontal Coordinate System: NAD 83(1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data			
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed	Functional Class
Feature On High Point Road		Feature On 2036	21,000	40 MPH	Urban Collector
Feature Under USH 12		Feature Under 2036	83,000	60 MPH	Freeway
Region Contact: Joe Smith (Area Code) Telephone Number(s): (608)242-8808 Email: Joe.Smith@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:			

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (see ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of feature on and feature under showing the following:
 - (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance; (g) For railroad project, survey top of each rail and provide proposed geometrics in conformance with railroad company standards.
3. **Layout Sketch** of the site drawn to a scale of not less than 1 inch = 100 feet showing the following:
 - (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) Reference line intersection stationing and intersection angle; (e) North Arrow; (f) Buildings; (g) Above and below ground facilities; (h) Proposed structure when report submitted with Preliminary Plan; (i) Railroad company stationing; (j) Station at ends of existing structure; (k) Other features which influence the design.
4. **Typical Sections** of all roadways showing the following:
 - (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Subgrade; (e) Sidewalk, curb and gutter; (f) Median treatment at underpass mounted or ditch section; (g) Clear zone width; (h) Horizontal clearances at underpass.
5. **Labeled Photographs** of: (a) Existing structure; (b) Site pictures in all controlling directions including, but not limited to North, East, South and West; (c) Buildings within 100 feet of proposed structure.

Proposed Structure

Preference for Structure Type at this Site:

45W Prestressed Concrete Girder

No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 3)

Spans- Number 2		Approximate Centerline to Centerline Span Lengths Along Reference Line of Highway 117 Ft.			
Clear Roadway Width on Structure 54.0 Ft.		Cross Slope on Deck or N.C. (Normal Crown) 0.02 Ft./Ft.		Skew 37.1381 <input type="checkbox"/> R.H.F. <input checked="" type="checkbox"/> L.H.F.	
Sidewalks/Multi-Use Path <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Left Clear Sidewalk/Path Width 8.00 Ft.	Separation Barrier <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Right Clear Sidewalk/Path Width 8.00 Ft.	Separation Barrier <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Type of Slope Protection Retaining Walls					
Specify Wing Location(s) for Beam Guard Attachment N/A - sidewalk and retining wall			Specify Wing Location(s) for Surface Drain Anchors all corners		
Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach N/A					

YES NO

- Structure Will be Constructed to Accommodate Traffic Staging
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Vertical Clearance Design

- 14' 9" to 15' 3"
- 16' 3" to 16' 9"
- Other: 16'-4" MIN to 16'-9" DES

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 3)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 3)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 - Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

For Structure Designers Use Only Proposed Structure

Spans – Number:	Span Lengths (C.L. to C.L. of Substructure):	Skew:	<input type="checkbox"/> R.H.F. <input type="checkbox"/> L.H.F.
Latitude:	Longitude:		

Additional Information

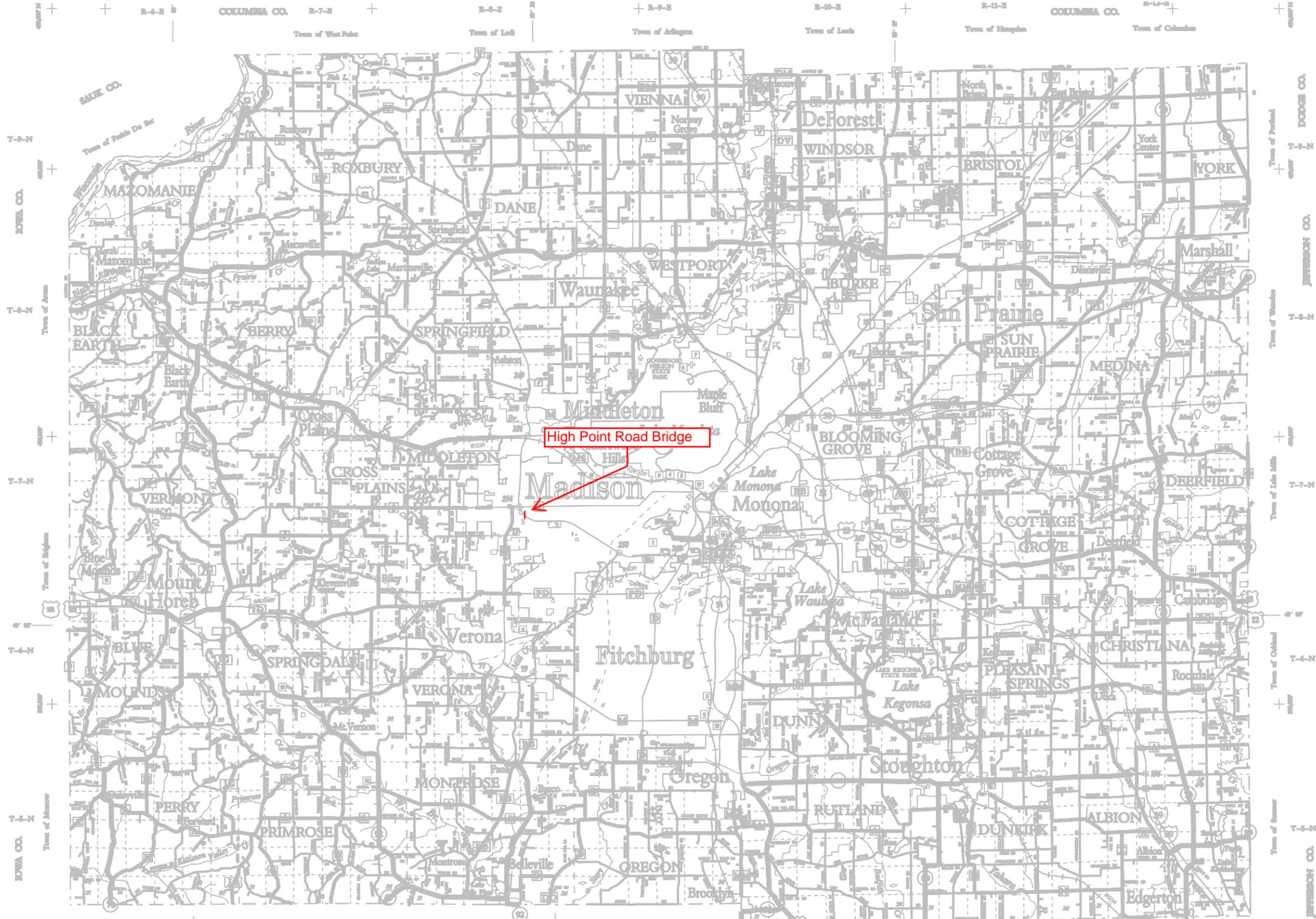
Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

Need confirmation of proposed structure type and approximate pier and abutment locations before soil borings can be made. SSR has been sent to Geotechnical for scheduling purposes.

Level 3 Aesthetics

Coordination with City of Madison. Project Agreement includes \$300,000 for CSD items. City requests same aesthetics (Capital Foundation theme) that was used on the IH39 bridges (Buckeye Road B-13-544 and Hanson Road B-13-540). This does include the medallion that was used on those bridges.

High Point Road will be closed during construction. Need to stage bridge construction since only single lane closures and rolling stops can be used on USH 12.



LEGEND

- Turnpike
- Mainline Divided
- U.S. or State Hwy
- County Trunk Hwy
- Town Road
- Highway
- Railroad
- State Trail
- Interchange
- Highway Separation
- Interstate Highway No. 94
- U.S. Highway No. 54
- State Highway No. 59
- County Highway Letter
- State Boundary
- County Boundary
- Chil Town Boundary
- Section Line
- Dike
- Hospital
- School
- Airport
- County Seat
- Unincorporated Village
- Fish Hatchery
- Cannery
- Public Hunt or Fish Club
- Public Camp or Picnic Club
- Ranger Station
- State Park
- County Park - With Facilities
- Wilderness Park
- Post Area - Modern Facilities
- Wayside - Basic Facilities
- U.W. Administration
- Badger Public Health Care Center
- Oshkosh Convolutional Institute
- U.S. Forest Products Lab
- Univ. of Wisconsin - Madison
- Madison Mental Health Institute
- Central Wisconsin Center for the Developmentally Handicapped
- Wis. Corr. Cr. System Headquarters
- Veterans Administration Hospital
- Donald Bush
- Care of the Mounds
- Death Chimney
- Alliant Energy Center
- Thompson Convolutional Center
- Oregon Convolutional Center
- Madison Theatre Convention Center
- Kohl Center



SECTION NUMBERING OF A TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

For boundaries of public hunting and fishing grounds please contact the Department of Natural Resources

Grid based on the state plane coordinate system north zone and the MAD 27

MILES OF HIGHWAY
as of Dec. 31, 2009

STATE HIGHWAY 487
COUNTY HIGHWAY 184
LOCAL ROAD 289
OTHER ROAD 0
TOTAL FOR COUNTY 487

Land Area (200 Census) - 1,581 sq. mi.
Population (200 Census) - 615,215
County Seat - Madison

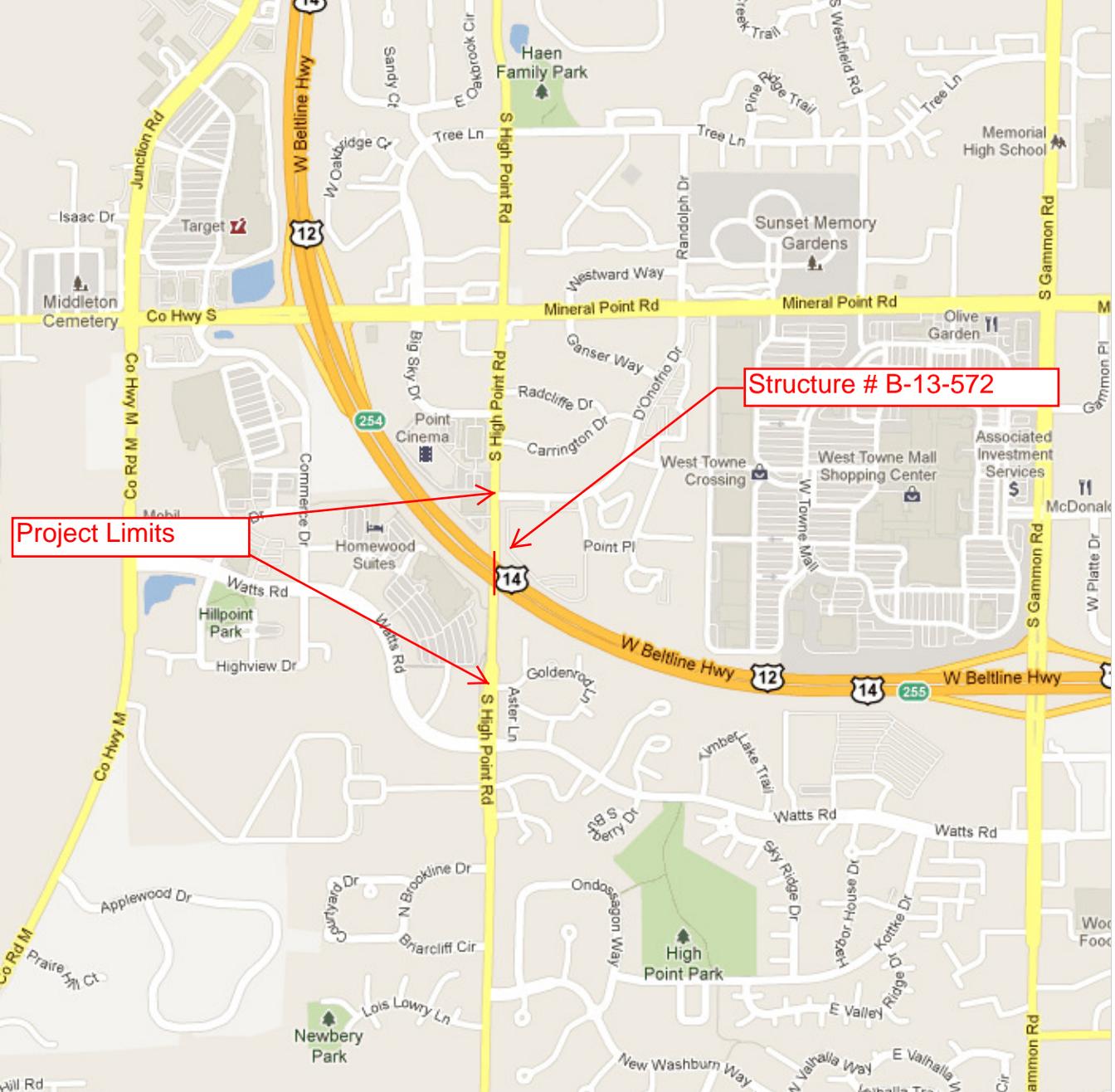
DANE CO.

DEPARTMENT OF TRANSPORTATION
STATE OFFICE BUILDING
Madison, Wisconsin

SCALE 0 1 2 MILES

Created for
JAN. 2011

Data compiled from U.S.G.S. Quadmaps
1:250,000 Scale



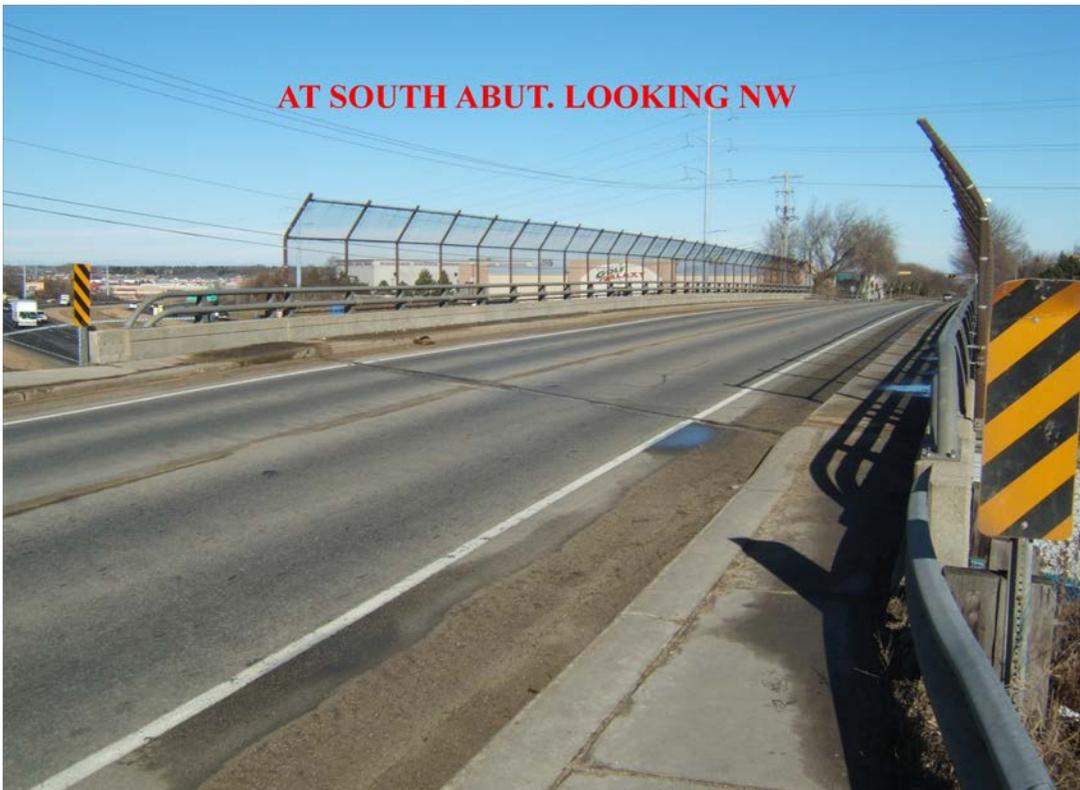
Structure # B-13-572

Project Limits

AT NORTH ABUT. LOOKING SOUTH

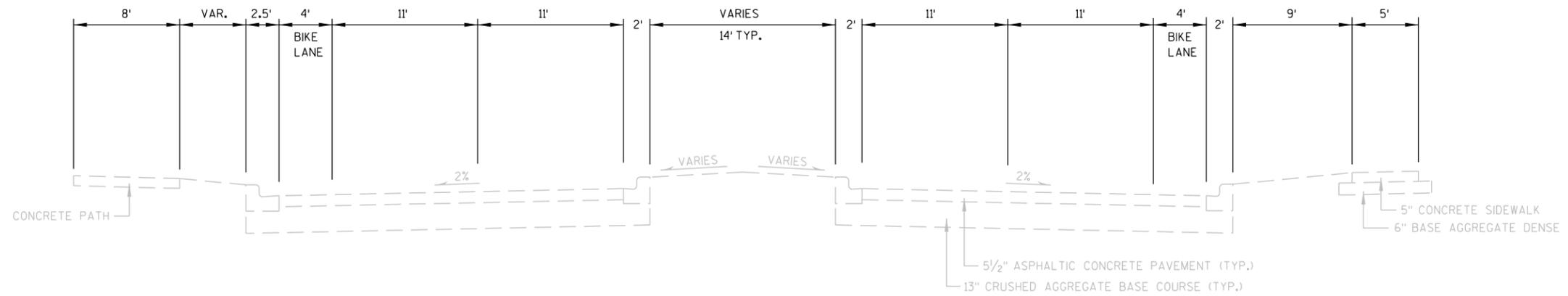


AT SOUTH ABUT. LOOKING NW



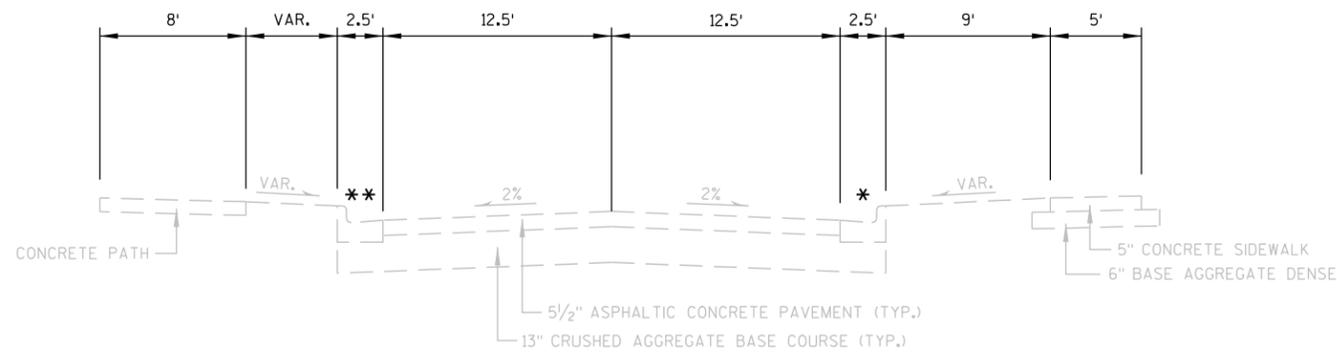
AT SW CORNER LOOKING EAST





EXISTING TYPICAL SECTION

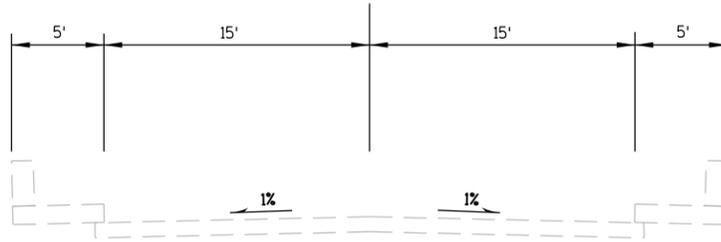
STA. 237+39 - STA. 243+50



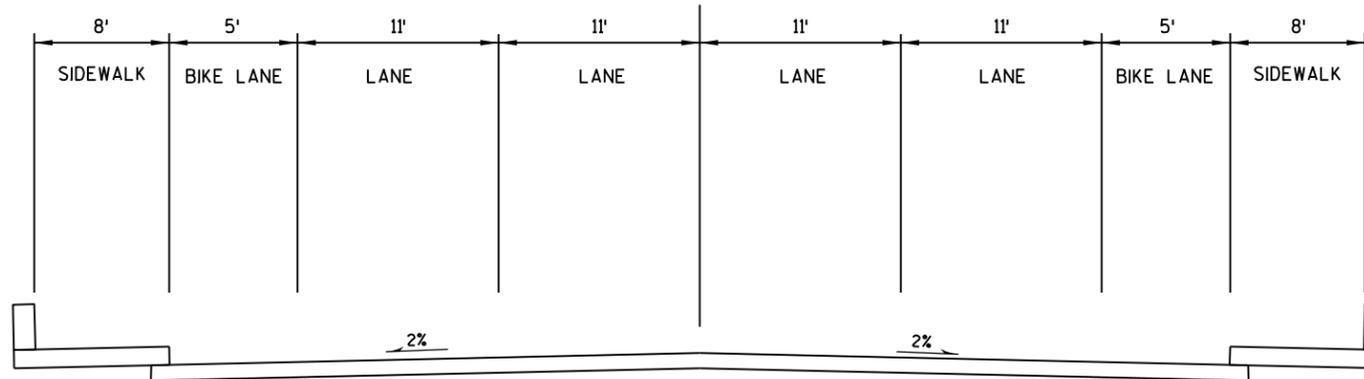
EXISTING TYPICAL SECTION

STA. 243+50 - STA. 255+14

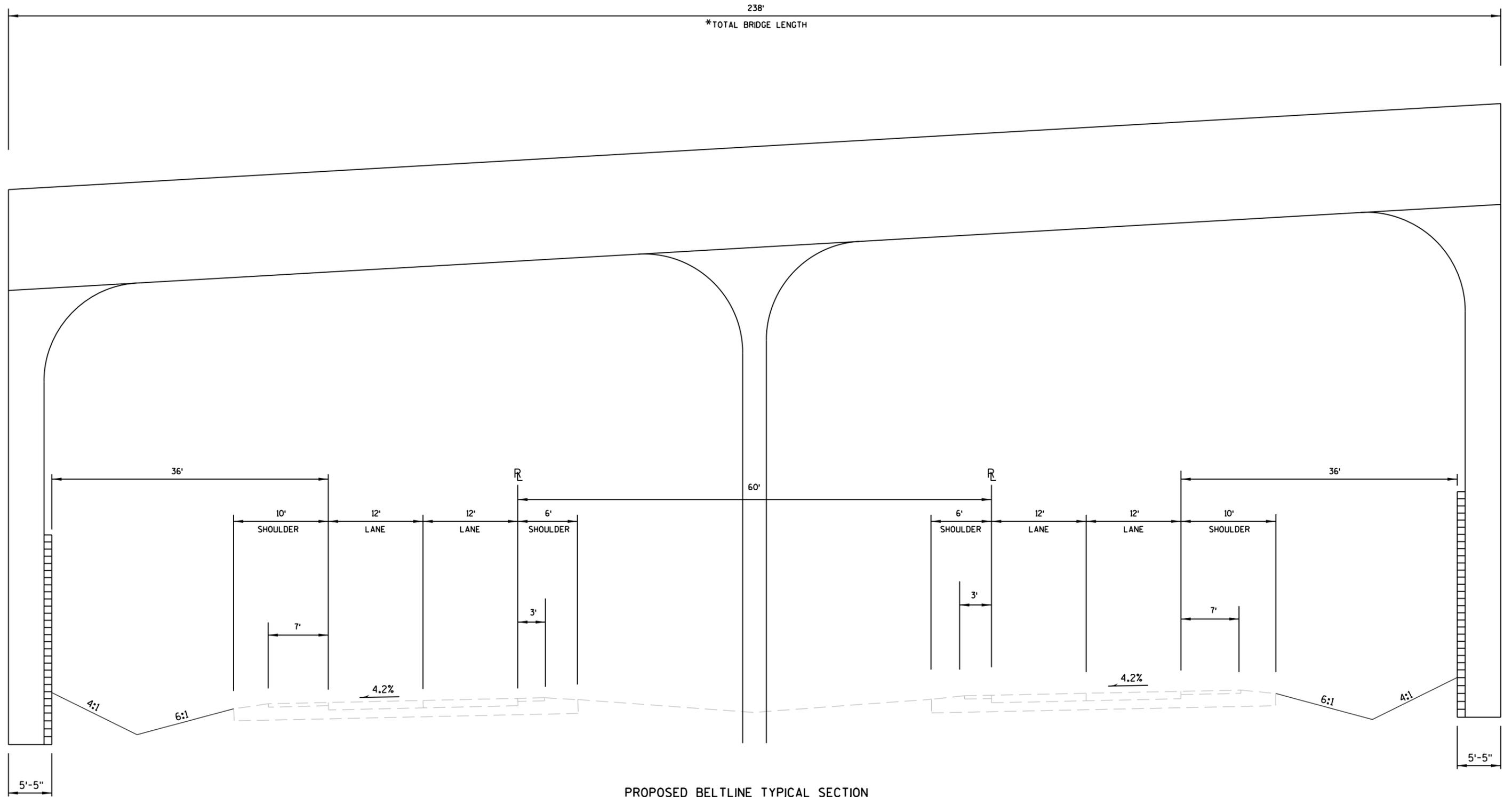
- *24" CURB & GUTTER STA. 243+50 - STA. 247+70
- **24" CURB & GUTTER STA. 243+70 - STA. 247+93



EXISTING TYPICAL SECTION
HIGH POINT BRIDGE

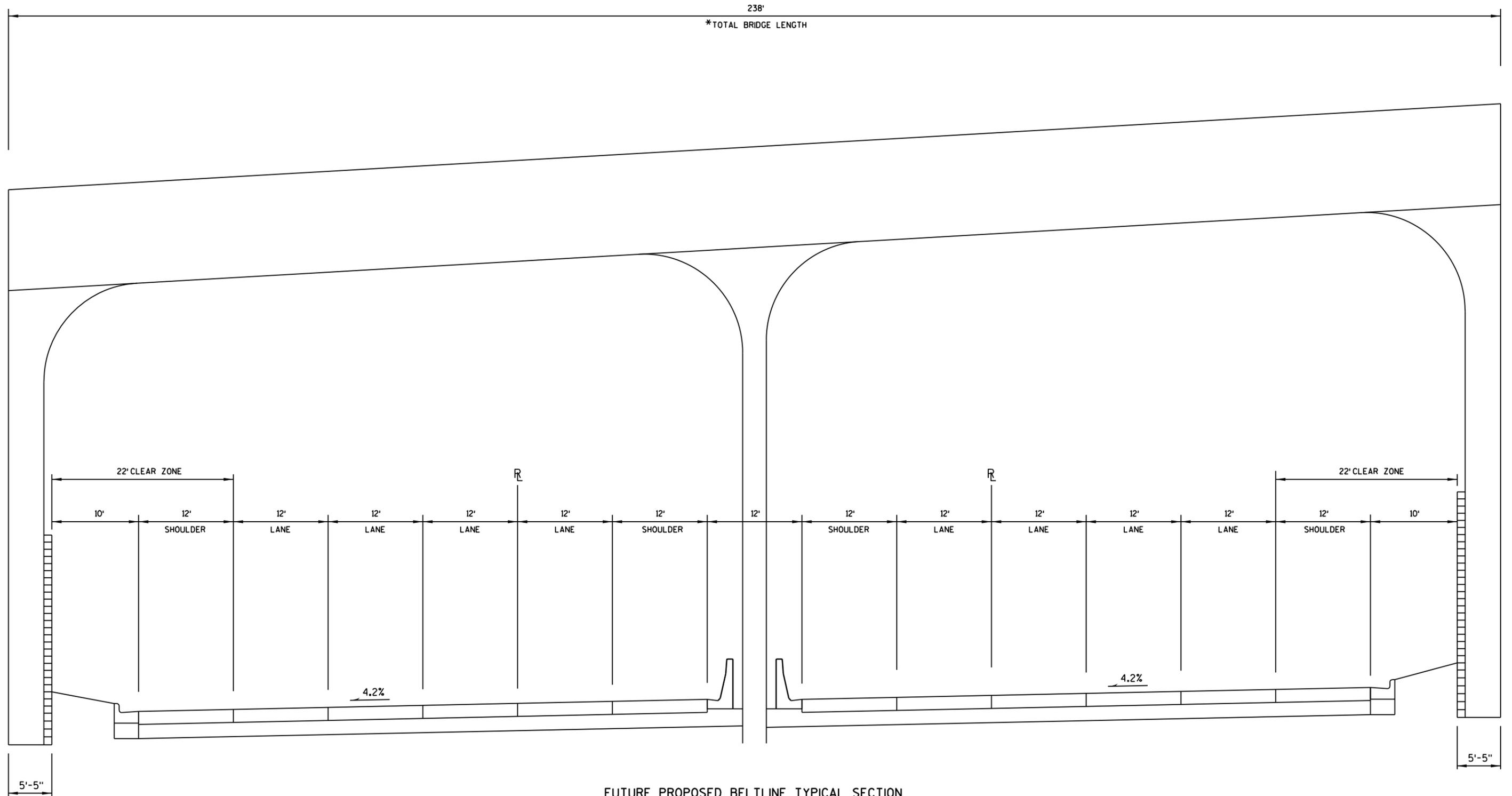


PROPOSED TYPICAL SECTION
HIGH POINT BRIDGE
STA. 247+83.60 - STA. 250+21.60



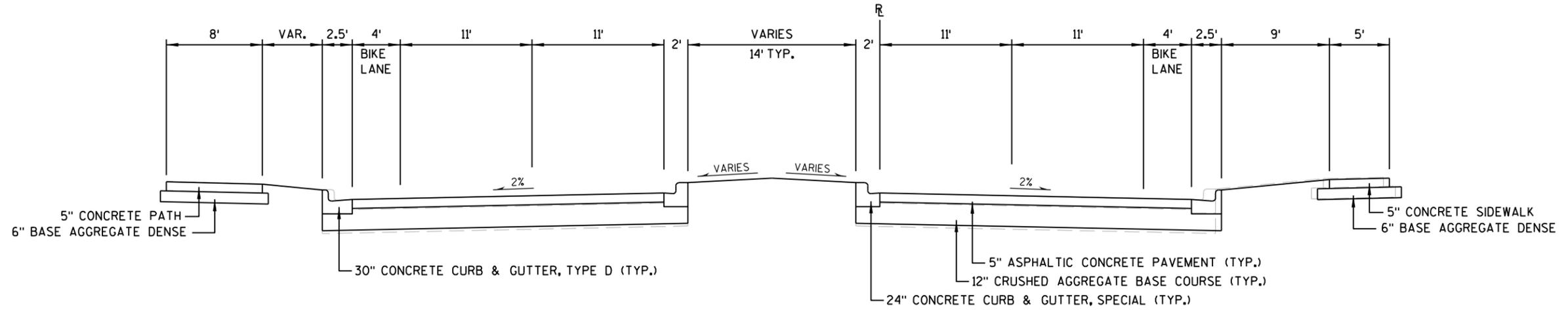
PROPOSED BELTLINE TYPICAL SECTION

*BRIDGE IS SKEWED FROM BELTLINE, SEE BRIDGE PLANS



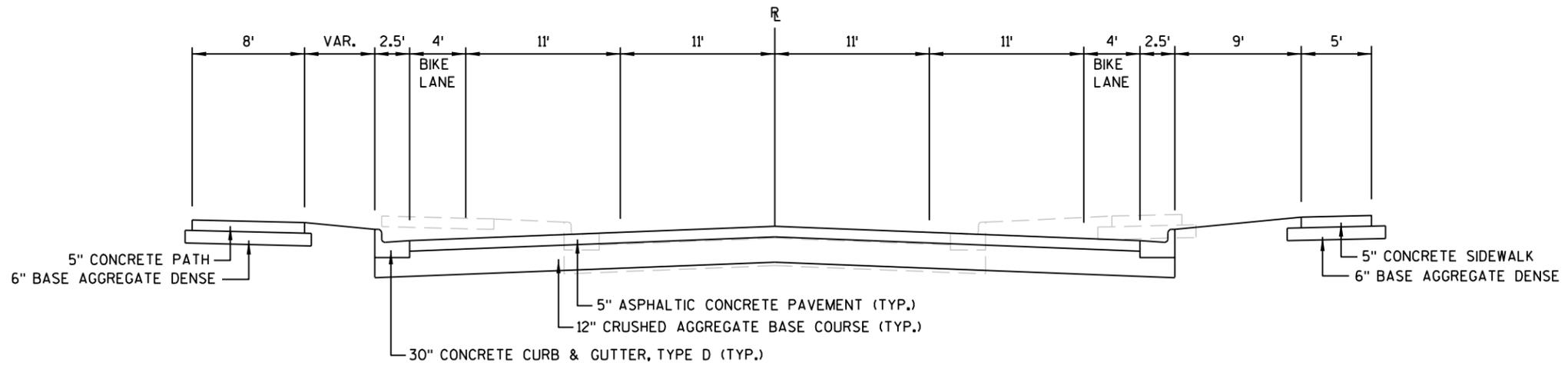
FUTURE PROPOSED BELTLINE TYPICAL SECTION

*BRIDGE IS SKEWED FROM BELTLINE, SEE BRIDGE PLANS



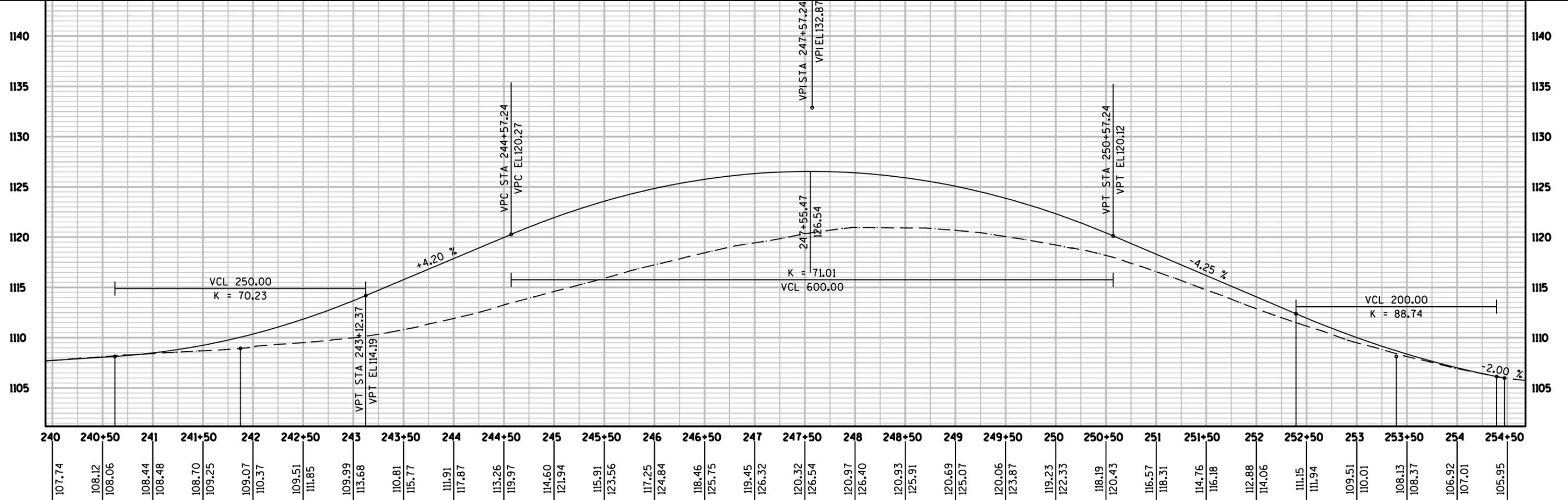
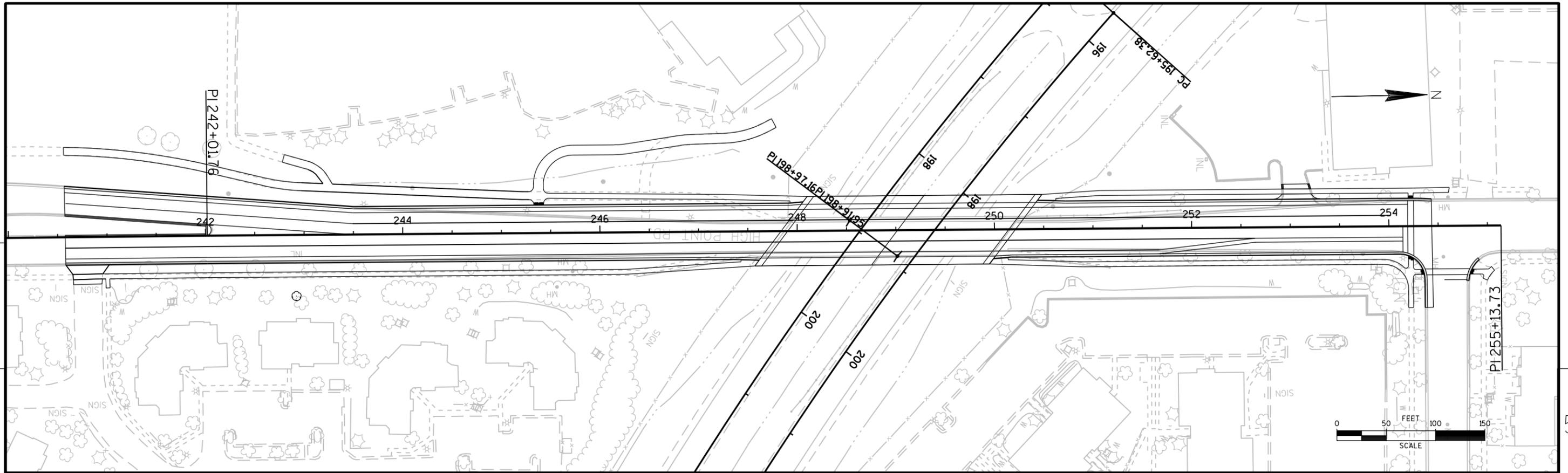
PROPOSED TYPICAL SECTION

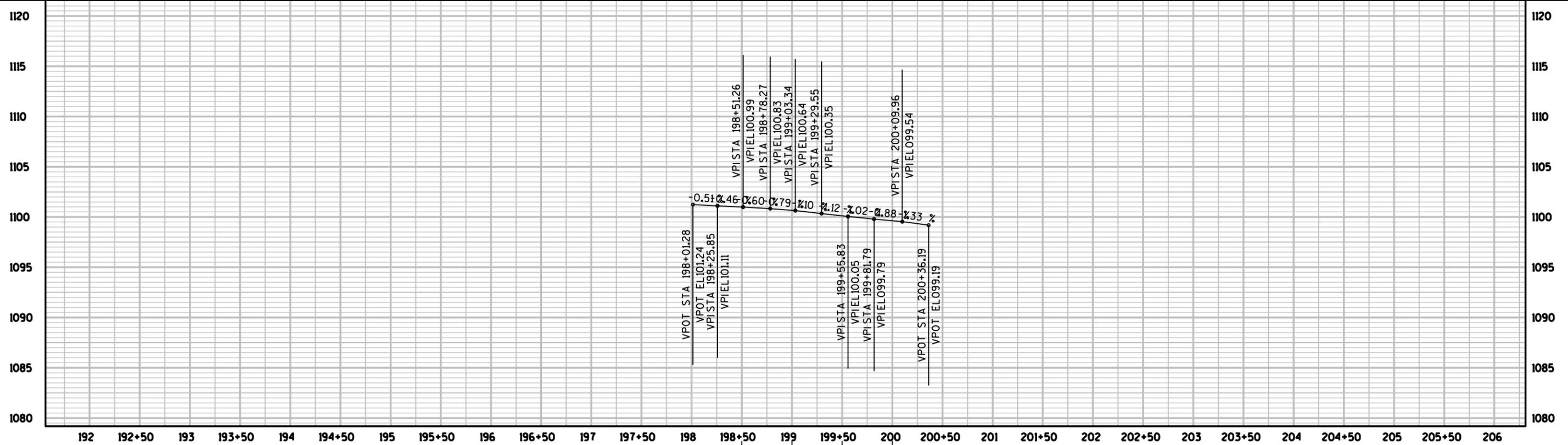
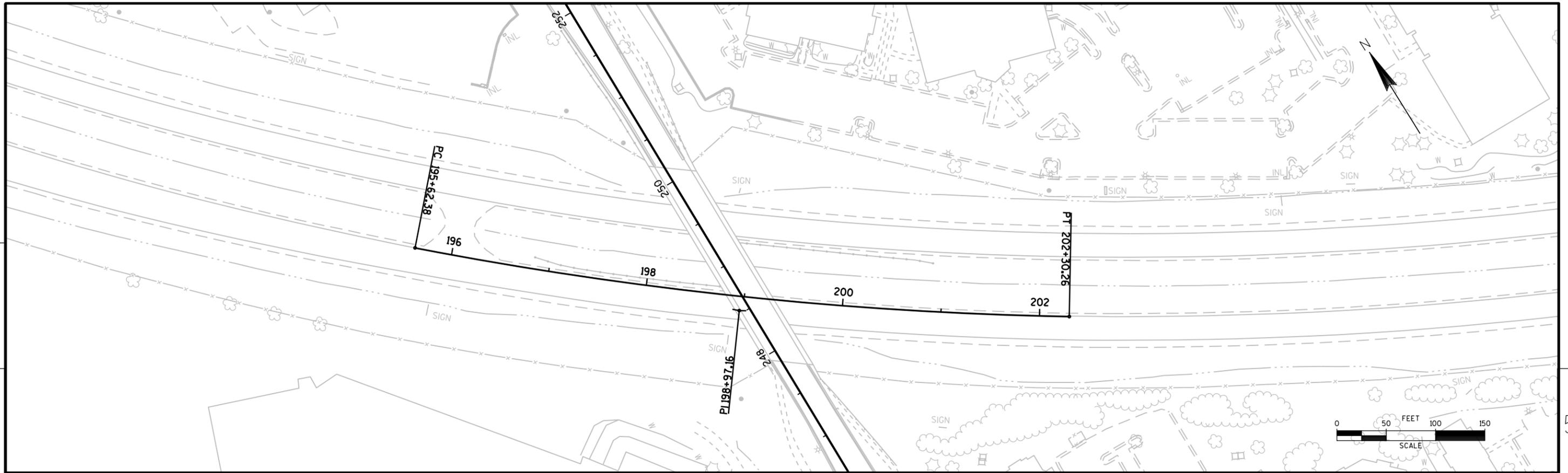
STA. 237+39 - STA. 243+50

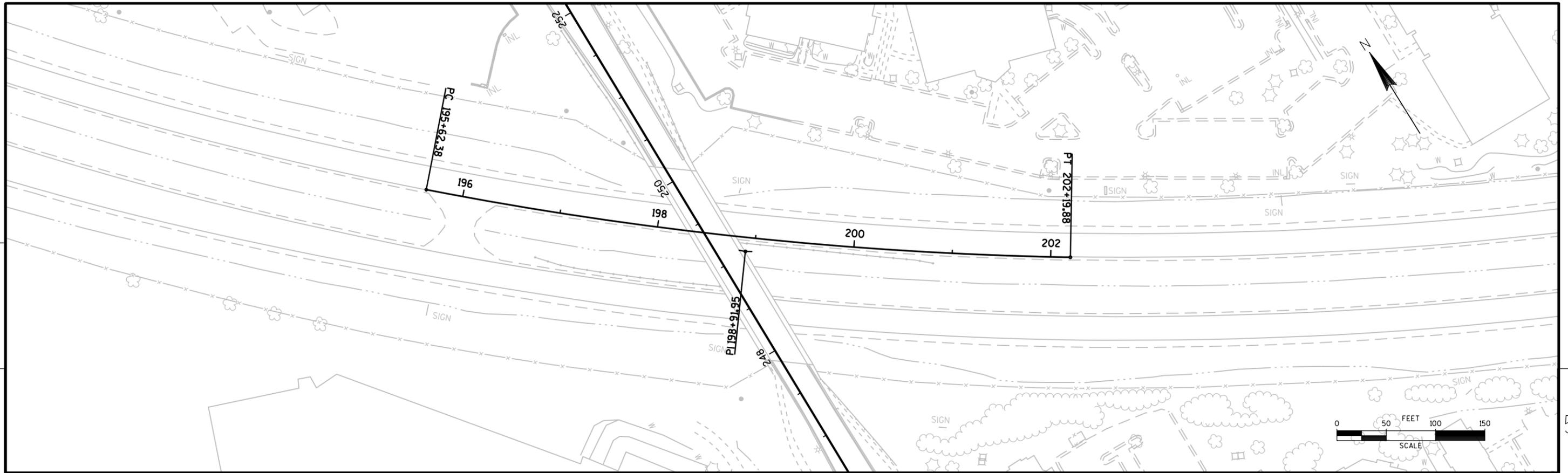


PROPOSED TYPICAL SECTION

STA. 243+50 - STA. 247+83.60
STA. 250+21.60 - STA. 255+14

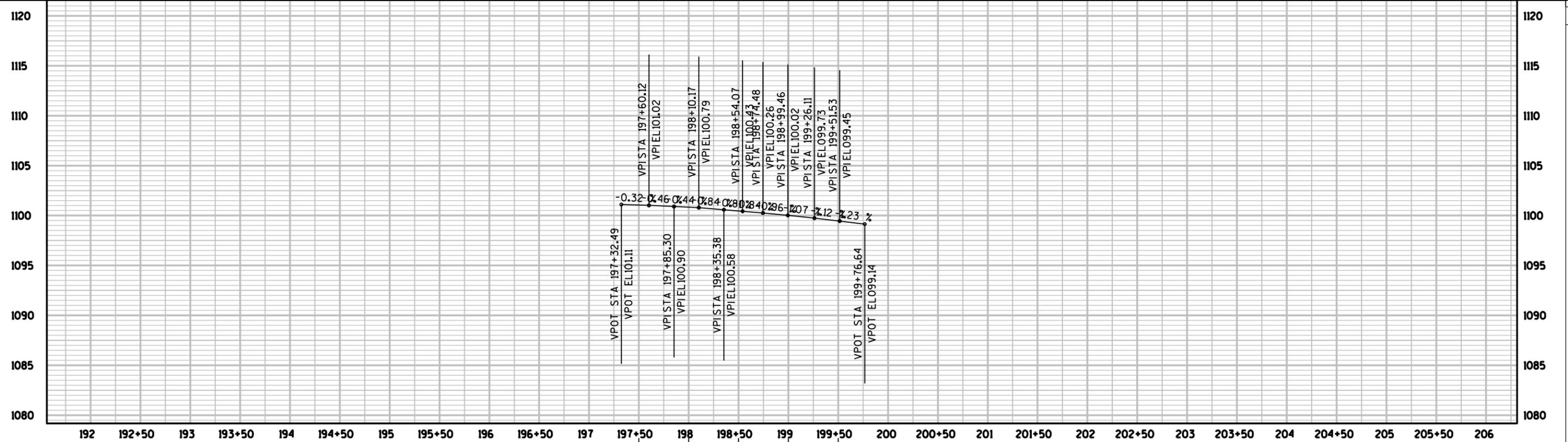
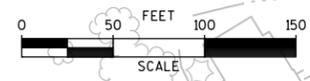


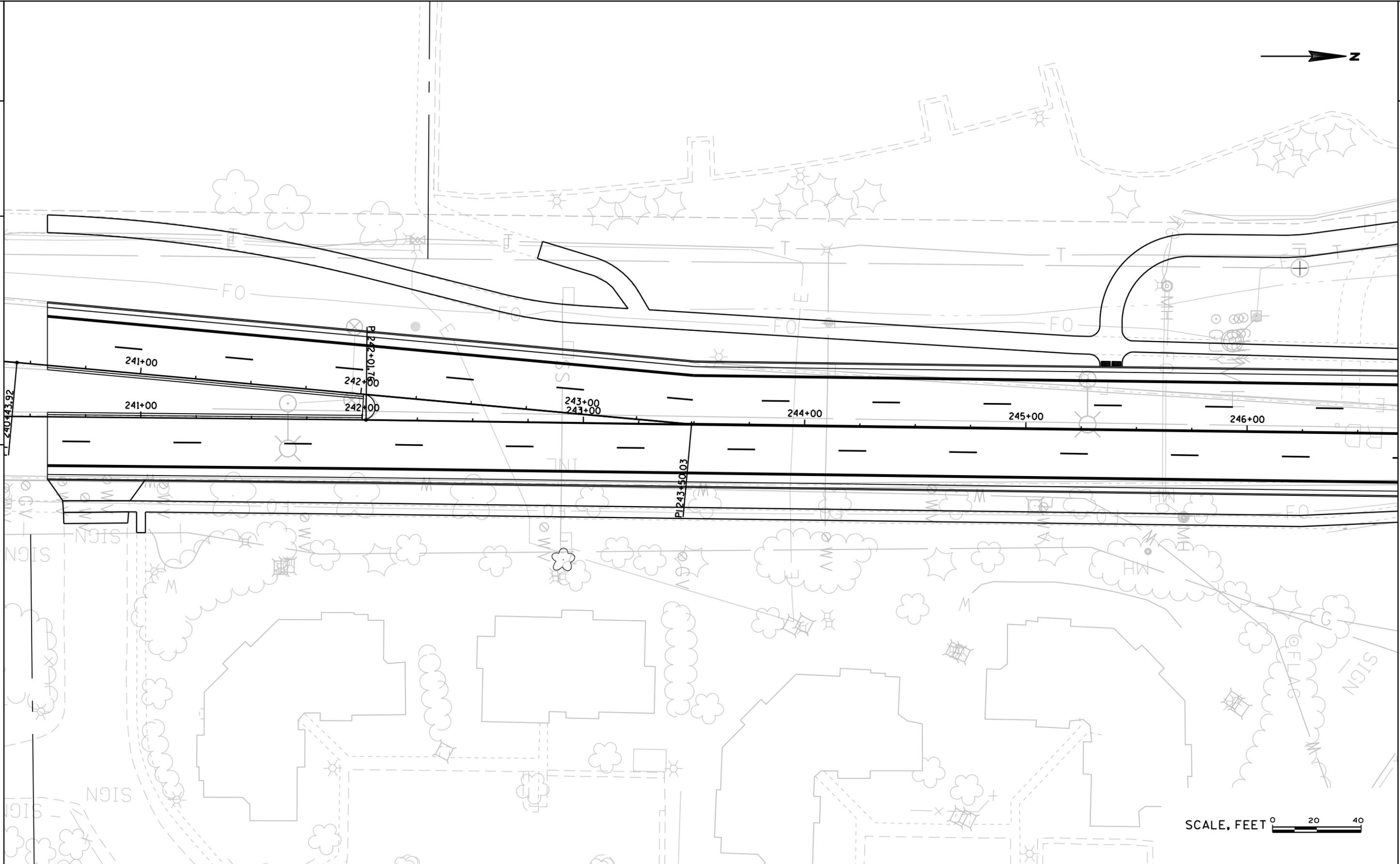




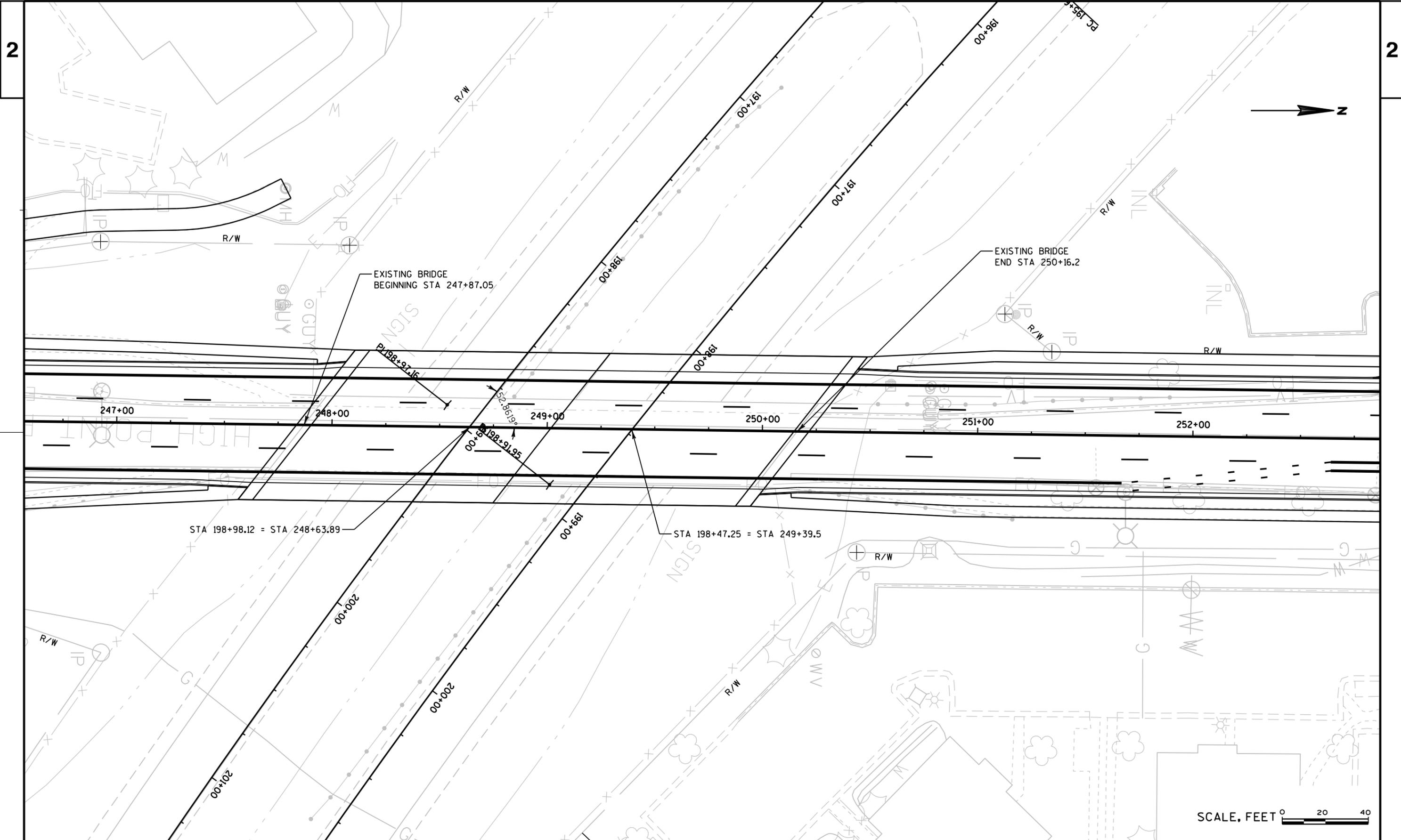
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5





PROJECT NO: 5300-02-02/73	HWY: USH 12	COUNTY: DANE	PLAN DETAIL SHEET	SHEET	E
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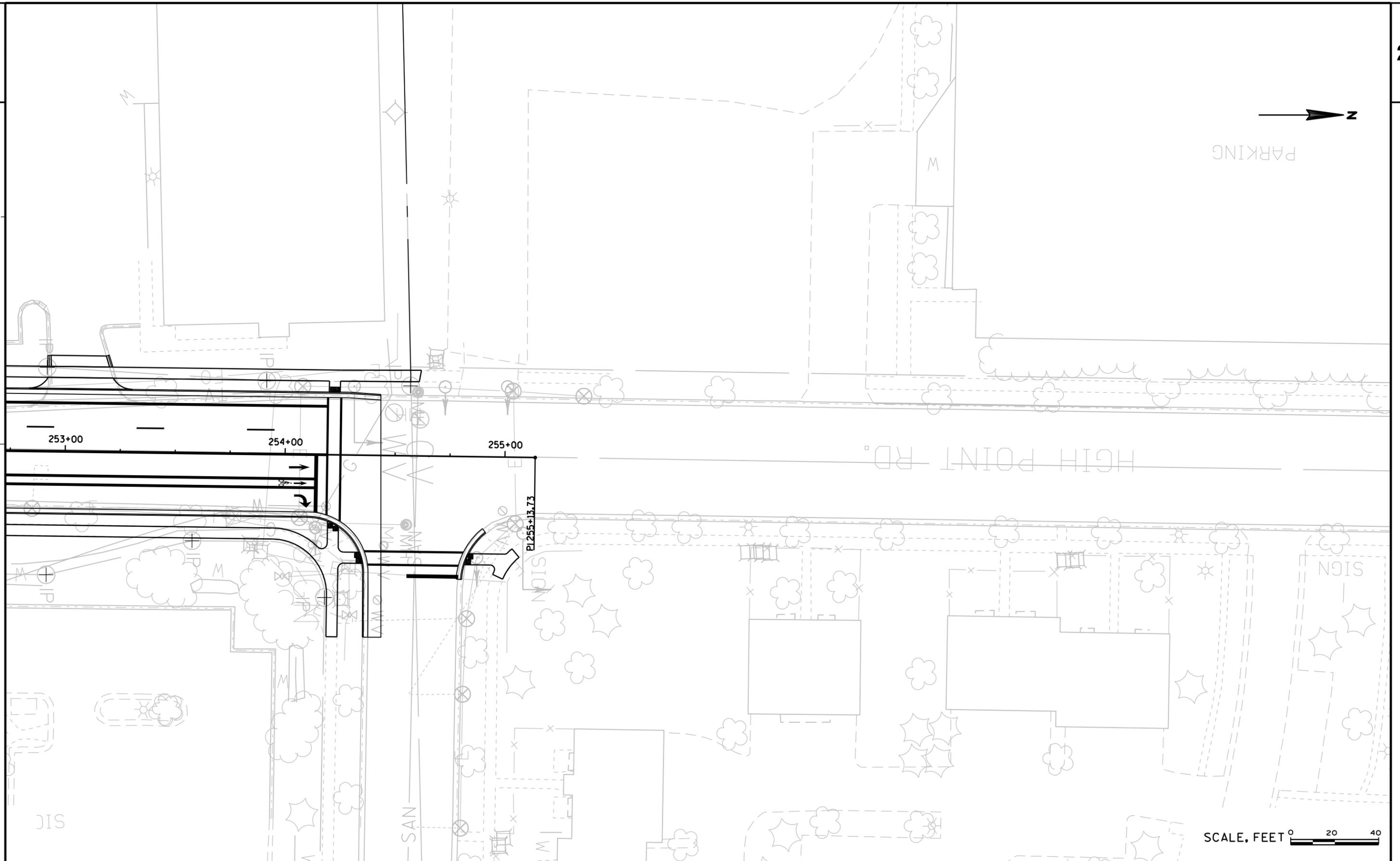
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2

PROJECT NO: 5300-02-02/73	HWY: USH 12	COUNTY: DANE	PLAN DETAIL SHEET	SHEET	E
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2

2



PROJECT NO: 5300-02-02/73	HWY: USH 12	COUNTY: DANE	PLAN DETAIL SHEET	SHEET	E
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FILE NAME : C:\Users\ND1\53000202\HIPTRD\PLAN DETAIL3.dgn PLOT DATE : 18-AUG-2011 14:10 PLOT BY : dotajf PLOT NAME : PLOT SCALE : 40.000000:1.000000 WISDOT/CADD SHEET 42

** NOT FOR BRIDGE B-13-572 **

** Example of vertical curve information we like submitted **

136RAB1 : Alignment Station Map
Station Back Station Ahead
80+07.01
116+91.55 116+91.55

CAiCE Visual Roads Design System
Profile Report

Profile Name : 136RAB1 Wed Dec 07 14:05:56 2011
Description : 136 EB RAB PROFILE

		STATION	ELEVATION	GRADE PERCENT	TOTAL VC LEN	BACK VC LEN	AHEAD VC LEN	K-VALUE
VPI AT	1	85+25.00	885.44					
VPC		85+37.50	885.80	2.8480				
VPI AT	2	86+50.00	889.00		225.000	112.500	112.500	104.570100
VPT		87+62.50	894.62	4.9997				
VPC		91+75.05	915.25	4.9997				
VPI AT	3	94+00.05	926.50		450.000	225.000	225.000	150.034344
VPT		96+25.05	931.00	2.0004				
VPI AT	4	96+83.00	932.16		0.000	0.000	0.000	0.000000
VPC		98+47.50	933.20	0.6303				
VPI AT	5	100+22.50	934.30		350.000	175.000	175.000	123.322346
VPT		101+97.50	930.44	-2.2078				
VPI AT	6	103+45.00	927.18		0.000	0.000	0.000	0.000000
VPC		103+55.00	926.85	-3.3143				
VPI AT	7	104+50.00	923.70		190.000	95.000	95.000	128.057000
VPT		105+45.00	919.14	-4.7980				
VPI AT	8	109+50.00	899.71					

End of Report Profile.

CAiCE Visual Roads Design System
Profile Elevation Report

Profile Name : 136RAB1 Wed Dec 07 14:05:56 2011
Description : 136 EB RAB PROFILE

STATION	ELEVATION	GRADE PERCENT	LOCATION
85+25.00	885.44	2.848	BETWEEN VPI 1 AND VPI 2
85+30.00	885.58	2.848	BETWEEN VPI 1 AND VPI 2
85+35.00	885.72	2.848	BETWEEN VPI 1 AND VPI 2
85+40.00	885.87	2.872	ON VERTICAL CURVE AT VPI 2
85+45.00	886.01	2.920	ON VERTICAL CURVE AT VPI 2
85+50.00	886.16	2.968	ON VERTICAL CURVE AT VPI 2
85+55.00	886.31	3.015	ON VERTICAL CURVE AT VPI 2
85+60.00	886.46	3.063	ON VERTICAL CURVE AT VPI 2
85+65.00	886.62	3.111	ON VERTICAL CURVE AT VPI 2
85+70.00	886.77	3.159	ON VERTICAL CURVE AT VPI 2
85+75.00	886.93	3.207	ON VERTICAL CURVE AT VPI 2
85+80.00	887.09	3.254	ON VERTICAL CURVE AT VPI 2
85+85.00	887.26	3.302	ON VERTICAL CURVE AT VPI 2
85+90.00	887.42	3.350	ON VERTICAL CURVE AT VPI 2
85+95.00	887.59	3.398	ON VERTICAL CURVE AT VPI 2
86+00.00	887.76	3.446	ON VERTICAL CURVE AT VPI 2
86+05.00	887.94	3.494	ON VERTICAL CURVE AT VPI 2
86+10.00	888.11	3.541	ON VERTICAL CURVE AT VPI 2
86+15.00	888.29	3.589	ON VERTICAL CURVE AT VPI 2
86+20.00	888.47	3.637	ON VERTICAL CURVE AT VPI 2
86+25.00	888.65	3.685	ON VERTICAL CURVE AT VPI 2
86+30.00	888.84	3.733	ON VERTICAL CURVE AT VPI 2
86+35.00	889.03	3.780	ON VERTICAL CURVE AT VPI 2
86+40.00	889.22	3.828	ON VERTICAL CURVE AT VPI 2
86+45.00	889.41	3.876	ON VERTICAL CURVE AT VPI 2
86+50.00	889.61	3.924	ON VERTICAL CURVE AT VPI 2
86+55.00	889.80	3.972	ON VERTICAL CURVE AT VPI 2
86+60.00	890.00	4.019	ON VERTICAL CURVE AT VPI 2
86+65.00	890.20	4.067	ON VERTICAL CURVE AT VPI 2
86+70.00	890.41	4.115	ON VERTICAL CURVE AT VPI 2
86+75.00	890.62	4.163	ON VERTICAL CURVE AT VPI 2
86+80.00	890.83	4.211	ON VERTICAL CURVE AT VPI 2
86+85.00	891.04	4.259	ON VERTICAL CURVE AT VPI 2

SURVEY FOR STREAM CROSSING STRUCTURES

SURVEY FOR STREAM CROSSING STRUCTURES

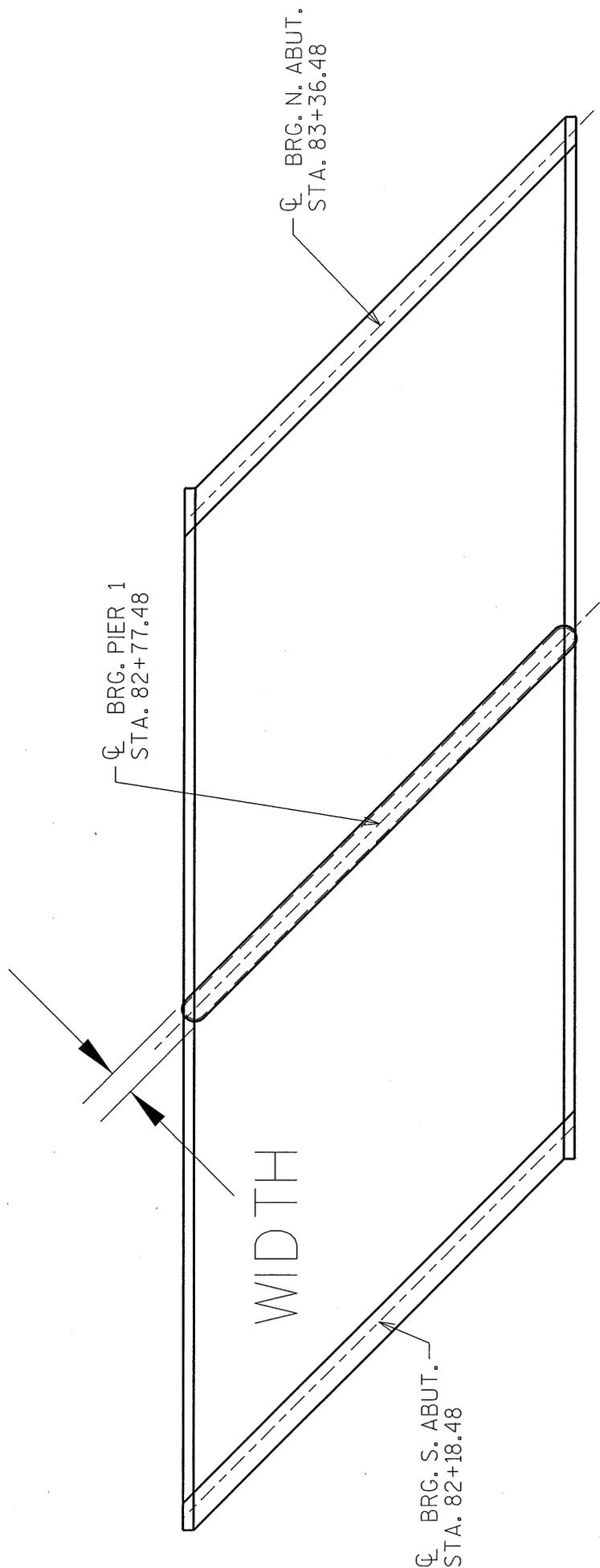
FDM sections containing survey details

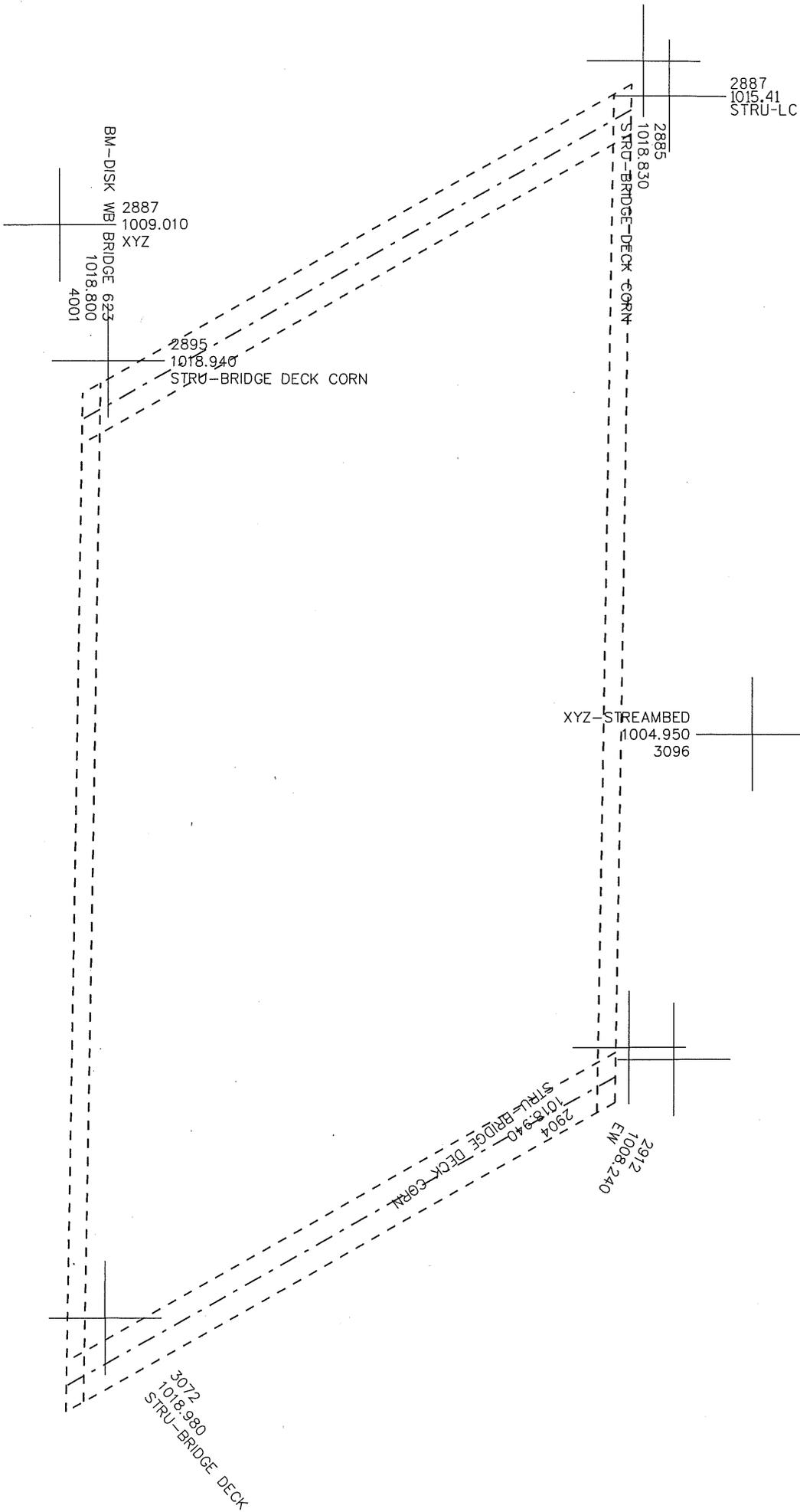
- a. 9-55-1
- b. 9-55-5
- c. 9-55-10
- d. 9-55-15

The following information is requested on the Structure Survey Report or should be submitted as an attachment to the form. Much of this information can be collected during field survey for inclusion in the Structure Survey Report that will be submitted to the Bureau of Structures. Use the same datum for site, upstream and downstream survey if structures are within one-half mile of subject structure. Examples and diagrams depicting most of the items listed below are provided on the following pages.

1. Latitude and longitude
 - a. For structure location reference
 - b. Taken at location of existing structure name plate
2. Distance from proposed site (in miles) to upstream and downstream structures
 - a. Measured along thread (center) of channel
3. Skew
 - a. Structure - angle of abutment centerline, as shown on existing structure plans
 - b. Stream - angle that the direction of streamflow makes with the structure face/parapet
 - c. Flow normal to the structure is defined as 0°
4. Finished grade and low chord elevations
 - a. Take elevation at low face of bridge on low end
 - b. Low chord - bottom of gider, slab, or superstructure
 - c. Finished grade - top of deck at face of parapet or rail, same location as low chord
 - d. Take top of deck/slab elevation shot at each corner of the structure, include in DGN file
5. Recorded high water elevation and date of occurrence
 - a. Can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, local officials, bridge inspector, or WisDOT bridge maintenance engineer
6. Observed high water mark elevation
 - a. Only required if there are signs of recent flood or high water
 - b. May include any water mark, sediment, or debris on the bridge or abutments
 - c. Indicates level to which floodwaters rose; record elevation at top of such a mark
7. Low water elevation
 - a. Elevation of the stream at the structure during low flow season
 - b. Approximate elevation (e.g. 1' deep, dry, etc.) is sufficient in most cases

8. Ordinary high water mark (OHWM)
 - a. Record elevation if marked by the DNR. Described as, “the point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.”
 - b. Request from DNR on projects where navigational clearance is a consideration
 - c. May be necessary on other projects
9. Observed water surface and streambed elevations at structure
 - a. Water elevations should be taken on the same day, provide date of survey
 - b. If recorded on multiple days provide all elevations and corresponding date
 - c. Take both elevations at same point; along structure face near center of channel
 - d. Indicate location of survey shots or include surveyed points in DGN contour file
10. Water surface elevation 1500’ upstream and downstream of site
 - a. Record streambed elevation if dry at any of the locations
 - b. If abrupt change in stream profile occurs within 1500’ of structure contact hydraulic engineer to determine revised locations
 - i. If a dam is located nearby take water elevation on face nearest to project
 - c. Record water surface elevation at location where 2 streams join if within 1500’ of structure
 - d. If upstream or downstream structures are about 1500’ or further away from site then the water surface elevation taken at the respective structure can replace the 1500’ elevation
 - i. Provide distance from existing structure to elevation shot if using alternate location
 - e. Do not survey structures located downstream of mouth of subject stream
 - f. If there are two or more branches of stream upstream of subject bridge, survey bridge on branch with larger drainage area
11. Stream cross sections
 - e. Label station and elevation of each point in cross section, or
 - f. Provide DGN file containing surveyed stream channel points with ID and elevation labels
 - g. Indicate cross section location or provide ground shots in DGN file that can be referenced
 - h. Stream/floodplain cross sections taken at:
 - i. Upstream and downstream faces of existing structure
 - ii. Approximately 1 bridge length upstream and downstream of existing structure
 - iii. Additional downstream cross sections are beneficial
 - iv. Floodplain cross sections should be normal to flow (example on following pages)
12. Survey notes and/or sketches
 - a. Plan view of existing structure with length and width labeled or show in DGN contour file
 - b. Elevation view of existing structure at both faces, include dimensioned measure downs to stream bed or surveyed ground shots in channel
 - c. Other features of the site such as observed scour, supplementary structures or obstructions
 - d. Location of upstream and downstream structures
13. Labeled photographs
 - a. Reflect site land cover, stream bank vegetation, and channel geometry – avoid snow cover
 - b. Subject structure, elevation view of both faces
 - c. Roadway approaches, up-station and down-station
 - d. Panoramic view upstream and downstream stream and floodplain, unobstructed
 - e. Upstream and downstream structures
 - f. Buildings within 100 ft of proposed structure





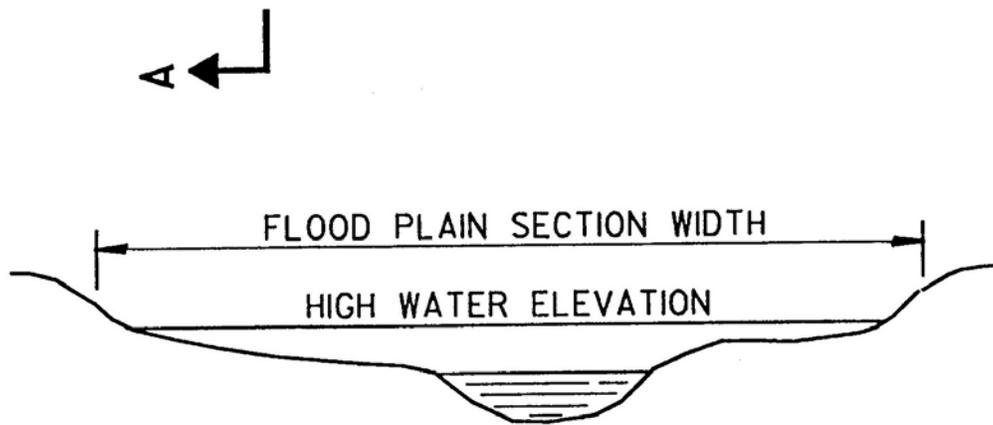
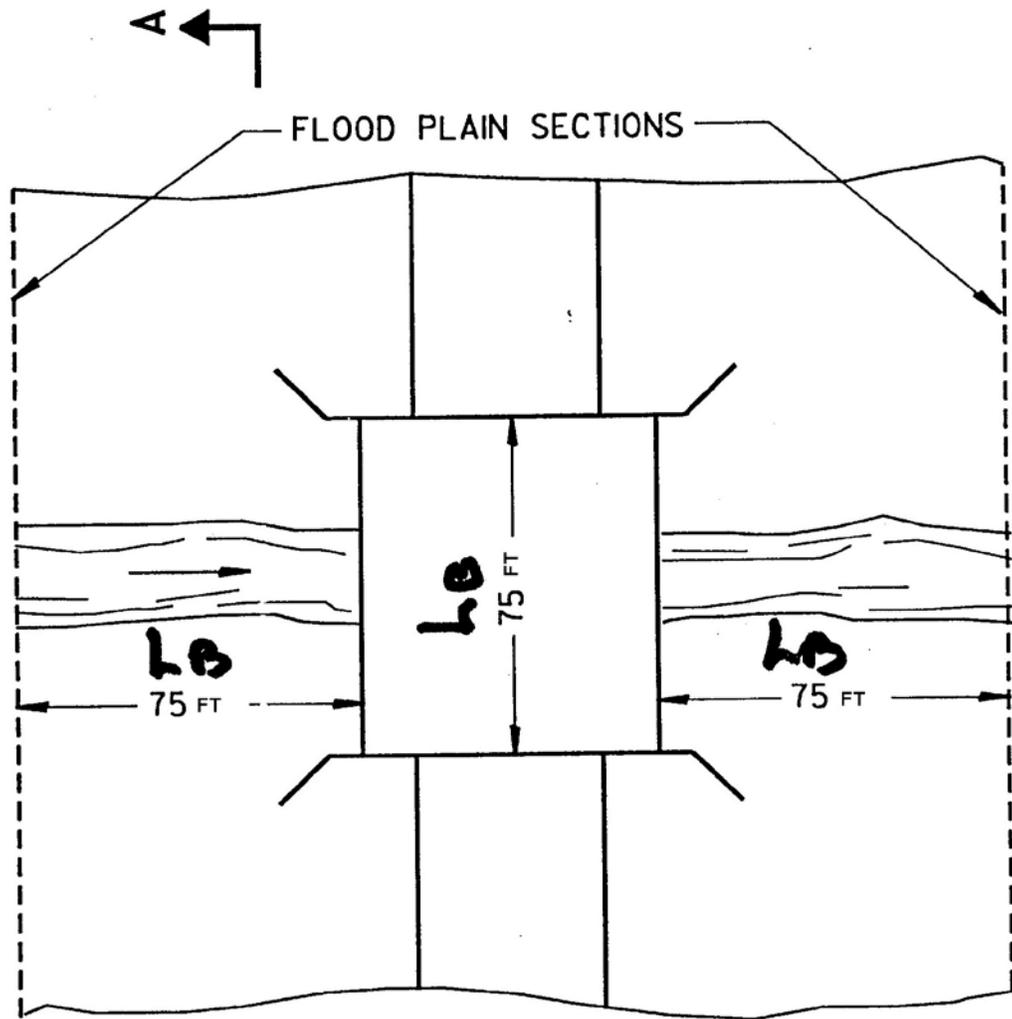
Observed High Water Mark Elevation



Low Water Elevation



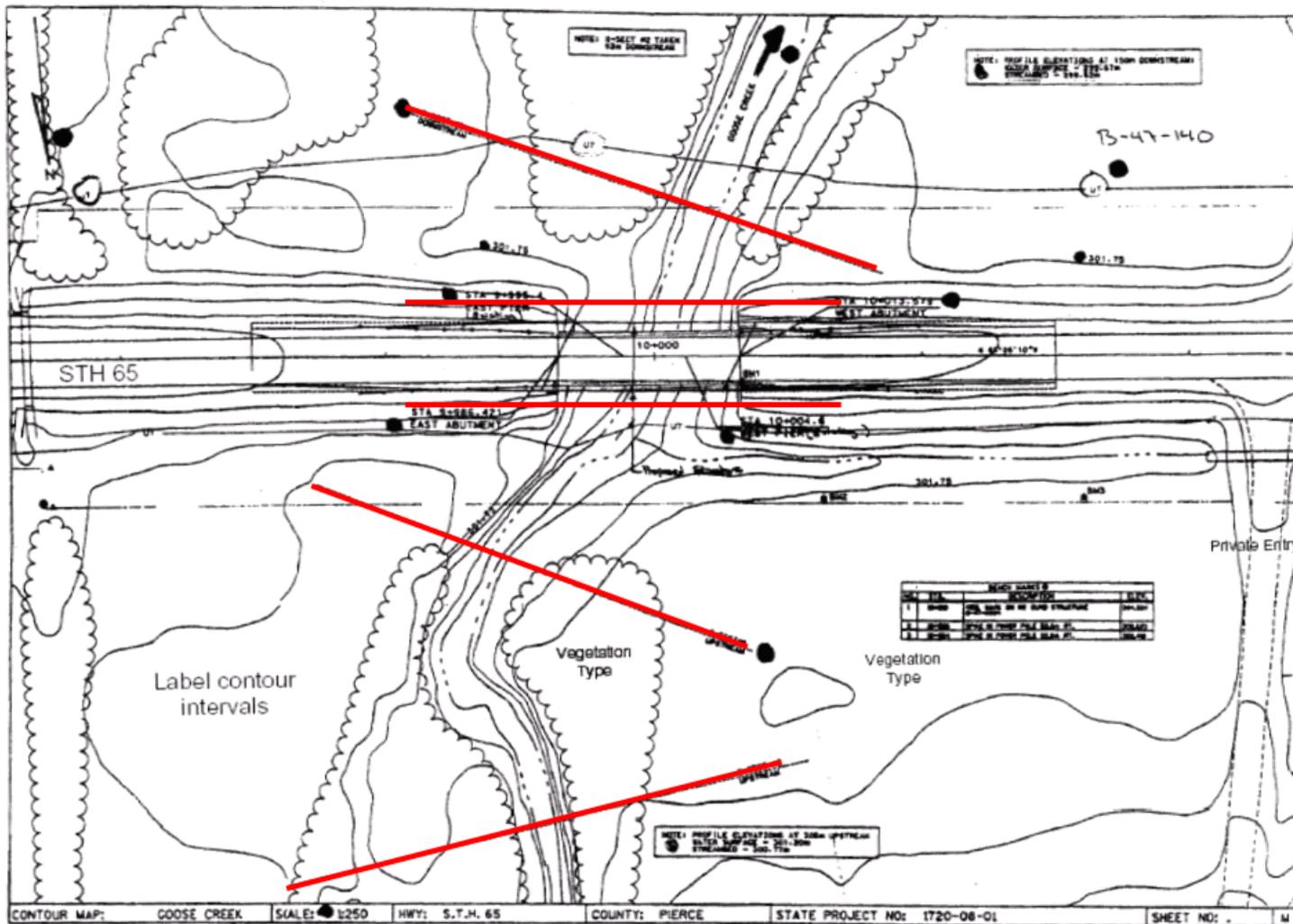
Stream Cross Sections



SECTION A-A
NORMAL TO FLOW

Stream Cross Section Location and Orientation

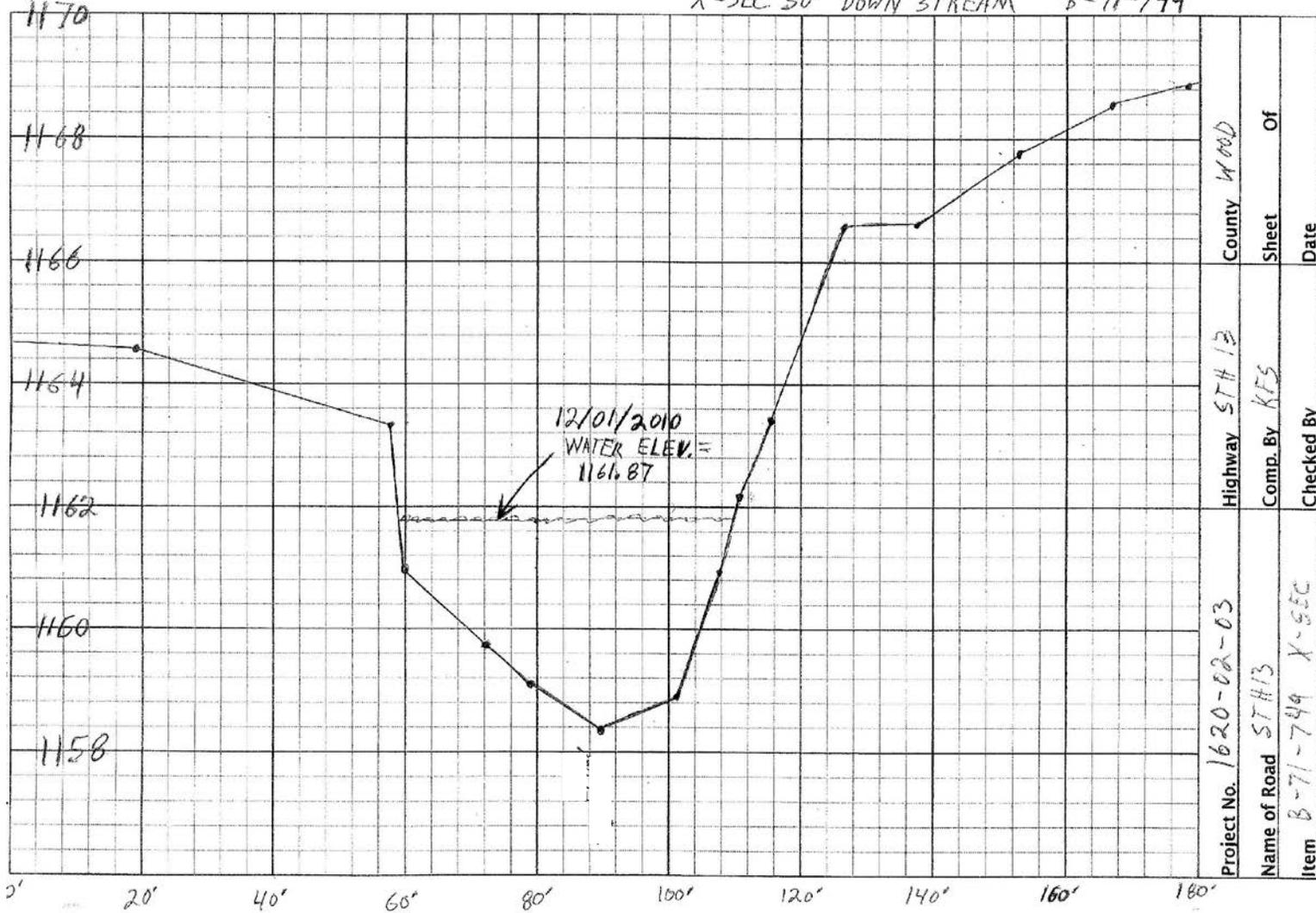
● Information included on contour map submitted to central office



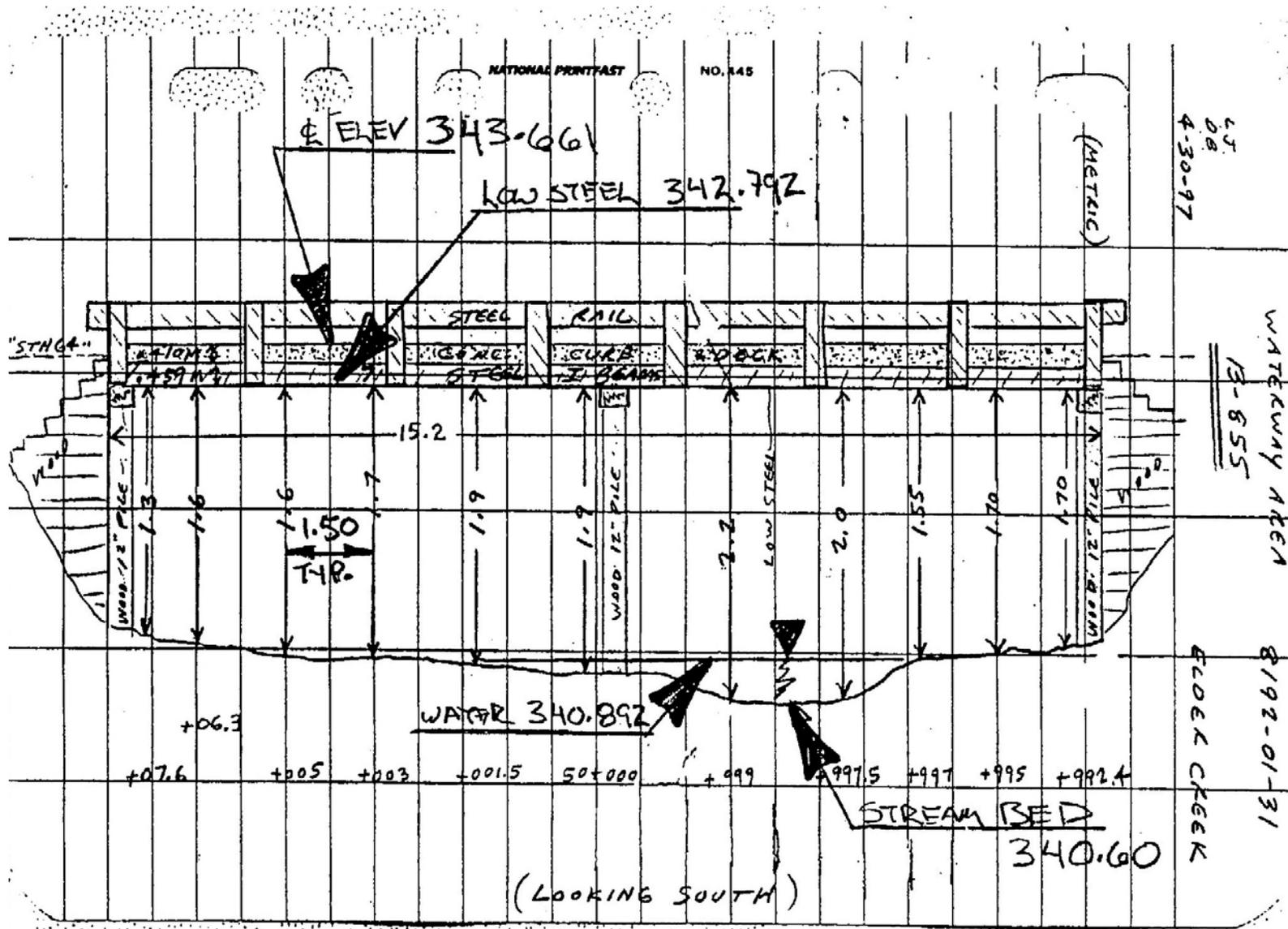
Stream Cross Section Plot

- Cross section should be drawn looking in downstream direction
- Ground shots surveyed across stream channel and banks and provided in DGN file can be used instead

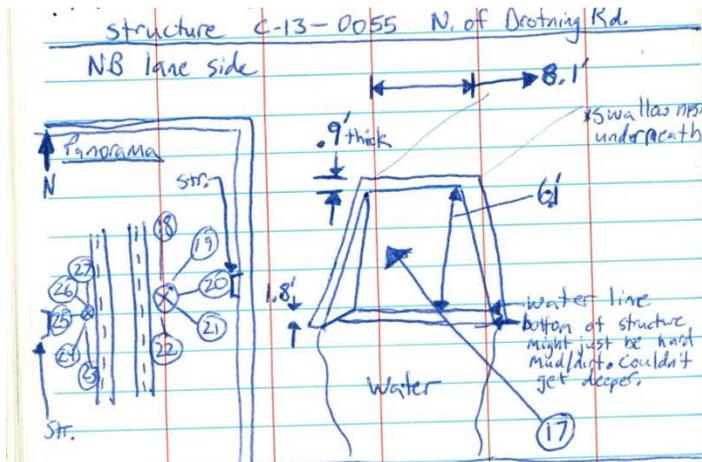
X-SEC 50' DOWN STREAM B-71-749



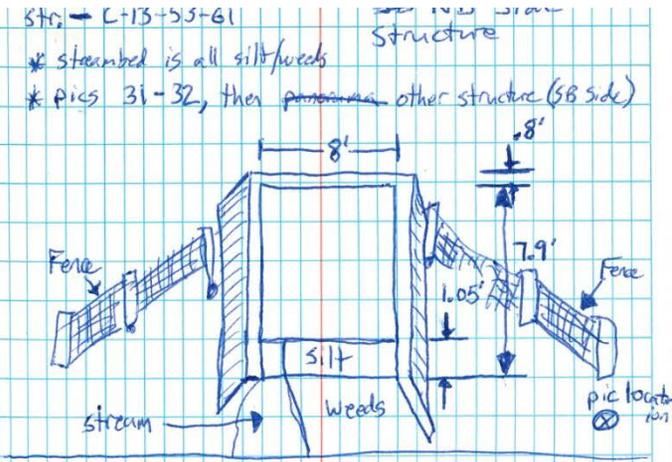
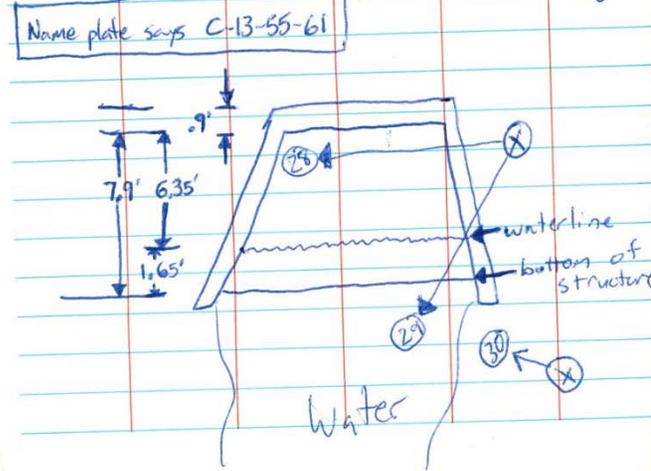
Stream Bed Measure Downs



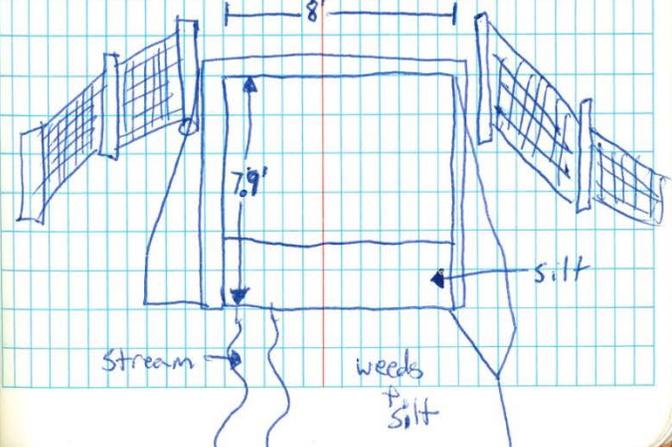
Labeled Culvert Inlet and Outlet Sketches



SB lane side for structure C-13-0055
N. of Drotning



* pic starting with structure sign, SB Side, * swallow nests
Then panorama.



STH 23 OVER UNNAMED TRIBUTARY TO NARROWS CREEK, 5080-09-02, SAUK CO.



STRUCTURE FROM UPSTREAM (LOOKING SOUTHWEST)



STRUCTURE FROM DOWNSTREAM (LOOKING NORTHEAST)

STH 23 OVER UNNAMED TRIBUTARY TO NARROWS CREEK, 5080-09-02, SAUK CO.



PANORAMIC VIEW UPSTREAM (LOOKING EAST)



PANORAMIC VIEW DOWNSTREAM (LOOKING WEST)

STH 23 OVER UNNAMED TRIBUTARY TO NARROWS CREEK, 5080-09-02, SAUK CO.



UPSTREAM STRUCTURE



DOWNSTREAM STRUCTURE

STH 23 OVER UNNAMED TRIBUTARY TO NARROWS CREEK, 5080-09-02, SAUK CO.



STH 23 APPROACH LOOKING NORTH



STH 23 APPROACH LOOKING SOUTH



Translate DWG to DGN Workflow using Civil 3D

Contents

Translate DWG to DGN Workflow using Civil 3D	2
AutoCAD Civil 3D 2014	2
Export to AutoCAD	2
Export to MicroStation DGN	2
Verify DGN results	4
DGN Cleanup	4

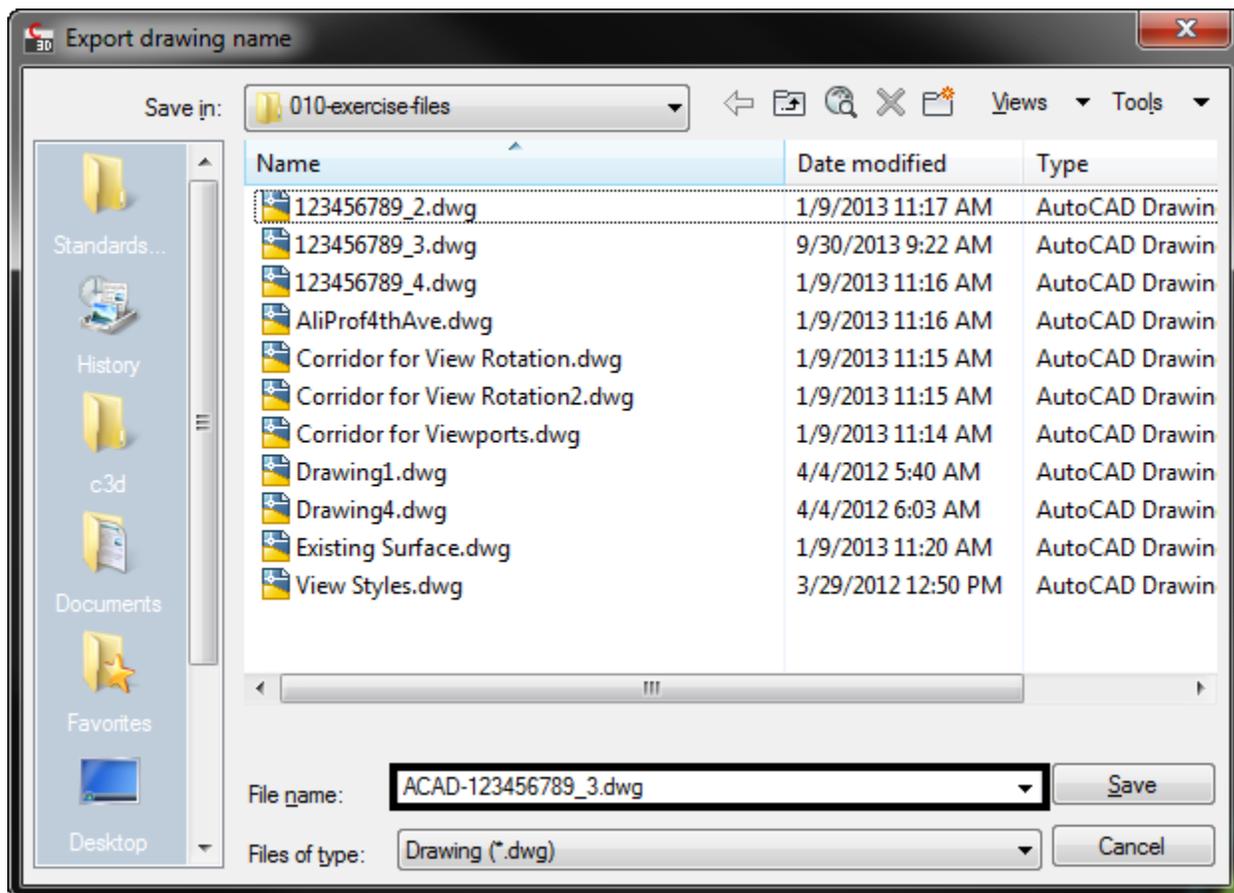
Translate DWG to DGN Workflow using Civil 3D

This workflow document will outline the steps involved to translate an AutoCAD Civil 3D 2014 file formation to MicroStation V8 DGN file format. The workflow will be Civil 3D based and the final deliverable will be the V8 DGN file. The workflow requires the installation of Productivity Pack 1 to be installed.

AutoCAD Civil 3D 2014

Export to AutoCAD

1. In AutoCAD Civil 3D open DWG drawing file you want to convert to MicroStation DGN.
2. In the command line type “**EXPORTTOAUTOCAD**”. The Export drawing name dialog will appear with the file name you are exporting with an ACAD- prefix.



3. Click the **Save** button. The file will be exported to the folder.

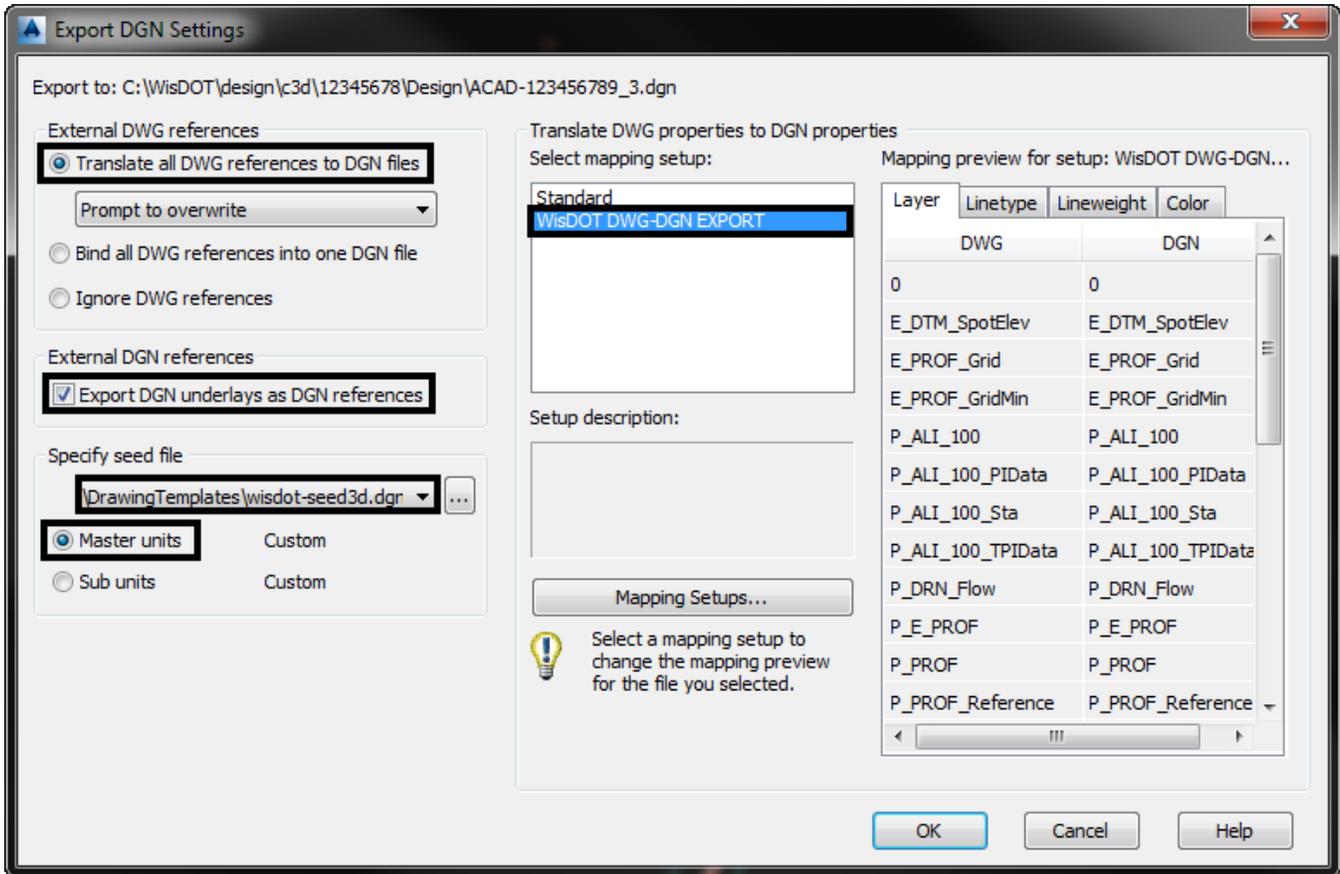
Note: Exporting a Civil 3D file to AutoCAD will create a new DWG file with all AEC objects exploded. The default Export Options should work for most files. If any options need to be changed use the command entry: -exporttoautocad or aectoacad

Export to MicroStation DGN

4. In AutoCAD Civil 3D open the previously exported “ACAD-file. Some of the colors of the elements may have changed now that the Styles are not being used.
5. From the Application Menu Button select **Export > DGN File**. The Export DGN File dialog will appear.
6. Click the **Save** button to create the DGN file with the same name as the original dwg file. The Export DGN Settings dialog will appear.



7. In the External DWG references section of the dialog select the radio button **Translate all DWG references to DGN files**.
8. Check **ON** Export DGN underlays as DGN references.
9. In the **Specify Seed File** section of the dialog select the browse icon. The Select Seed File dialog will appear.
10. Select the **wisdot-seed3d.dgn** file from C:\WisDOT\Std\C3D2014\DrawingTemplates then click **Open**.
11. Make sure the **Master units** radio button is selected.



12. Click the **OK** button in the Export DGN settings dialog. The file will be exported to DGN.



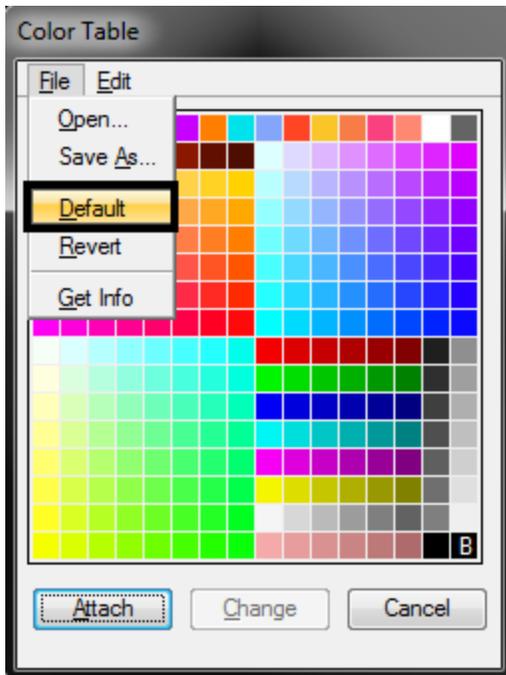
Verify DGN results

1. **Open** the exported DGN file in **MicroStation**.
2. Locate a known coordinate location in the file and verify the coordinates out to 3 decimal points.
3. From the MicroStation pull down menu **Settings > Design File**. The Design File Settings dialog will appear.
4. On the left side of the dialog select **Working Units**. Verify the units are **US Survey Feet**.

DGN Cleanup

Color

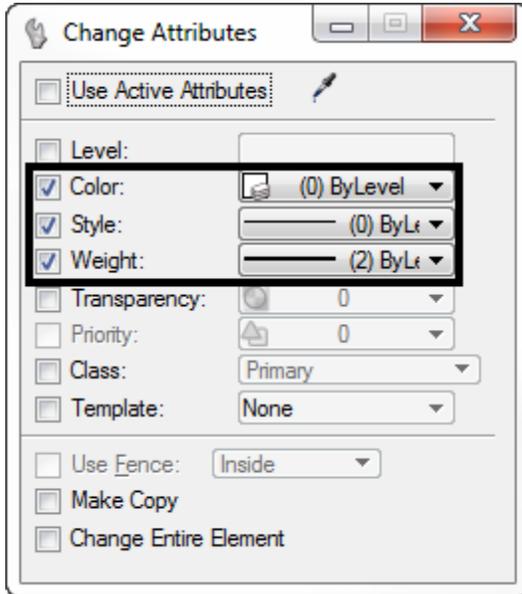
5. From the MicroStation pull down menu **Settings > Color Table**. The Color Table dialog will appear.
6. From the Color Table dialog pull down menu **File > Default**. The WisDOT default color table will be loaded.





ByLevel Symbology

7. **Select All** elements in the drawing.
8. Select the Change Attributes icon. From the Tool settings dialog check **ON Color, Style, and Weight** and check OFF all others. Set the Color, Style, and Weight to **ByLevel** for all three. Then accept the change in the MicroStation view.



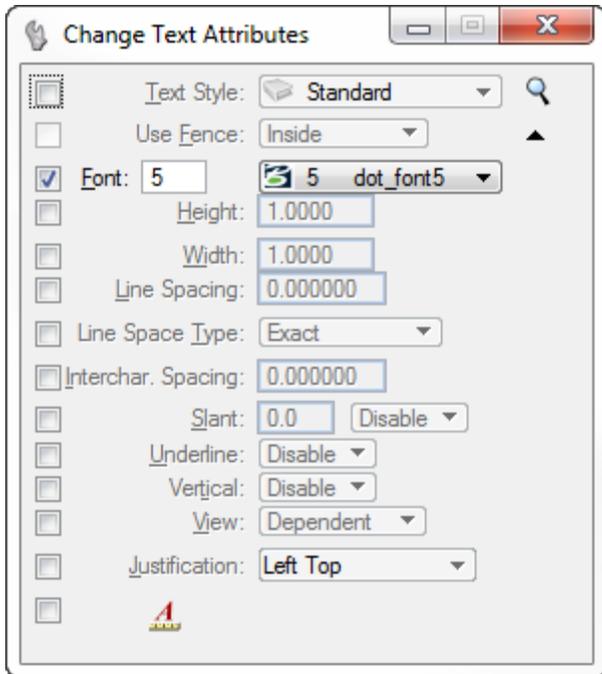
9. Clear the selection set.

Text

In the MicroStation file all the AutoCAD text has been converted to TrueType fonts. This causes display issues with some of the characters as shown below.

Profile View of STH25BestFit

10. **Select All** elements in the drawing. Select the Change Text Attributes icon. From the Tool settings dialog check on **Font** and set it to “5 dot_font5” then accept the change in the MicroStation view.



Profile View of STH25BestFit

11. Clear the selection set.
12. **Save Settings** and **Exit** MicroStation.

**STREAM CROSSING
STRUCTURE SURVEY REPORT
(BRIDGE)**

STREAM CROSSING - BRIDGE

The instructions in this section should be used when a girder, slab, truss or other B-numbered structure (excluding box culverts) that spans a stream or waterway will be replaced. The purpose of this section is to communicate the information pertinent to structure hydraulic design. Since BOS designers seldom visit the structure site in person a complete Stream Crossing SSR and supporting materials provide the most thorough understanding of the stream conditions for the project. This information allows BOS to produce a structurally and hydraulically sound design and plan set more efficiently.

The stream crossing structure preliminary design process consists of the following: existing condition hydraulic analysis; proposed structure type, size and location evaluation; proposed condition hydraulic analysis; structural design; production of preliminary bridge plans.

Items listed in the SSR Instructions and Stream Crossing Checklist include:

- a. Small County Map (and Location Map if project includes multiple structures)
- b. Plan and Profile Sheet
- c. Contour Map
- d. Typical Roadway Cross Section
- e. Stream Cross Sections
- f. Labeled Photographs
- g. FEMA Floodplain Map
- h. Copy of DNR Initial Concurrence Letter

The following pages provide an example of a completed Stream Crossing SSR, explanations of SSR sections, and examples of supporting materials listed above with explanations.

STREAM CROSSING SURVEY REPORT

SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Chapter 8 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1698)

- Complete DT1698, Stream Crossing OR Box Culvert
- Indicate structure "Preference" (bridge or box culvert).
 - Utilities on structure.

SURVEY INFORMATION

_____ Small County Map

- Indicate location of structure (include project location map when multiple structures present).
- 8.5x11 of USGS quadrangle showing structure location.

_____ Plan and Profile Sheet

- Existing and proposed profile grade line of roadway, proposed horizontal and vertical curve data of roadway, and existing structure location.

_____ Contour Map

- Contours labeled, existing structures shown, north arrow, stream direction, and scale 1"=20'.

_____ Typical Roadway Section

- Typical dimensions of roadway, sidewalk, and curb & gutter; slopes; and clear zone requirements.

_____ Stream Cross Sections

- Survey notes showing existing bridge measurements, channel "measure downs" on both faces of bridge, streambed and water elevations at structure, and stream cross sections.

_____ Photographs (Labeled)

- Panoramic view up- and downstream showing stream, banks and floodplains, existing structure, up- and downstream structures, and roadway.

_____ FEMA Floodplain Map

- Location of structure relative to any mapped floodplain.

_____ DNR Initial Concurrence

- Copy of DNR Initial Concurrence Letter.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

STREAM CROSSING STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation

DT1698 6/2012

- Stream Crossing**
 Box Culvert
 Box Culvert Extension:
 Right
 Other: _____
 Left

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 1690-02-04	Construction Project ID 1690-02-74	Highway (Project Name) STH 69		
Final Plan Due Date 3/13/2012	Preliminary Plan Due Date 8/15/2011	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Mount Pleasant		
PS&E Date 5/15/2012	Letting Date 11/13/2012	County Green		
New Structure Number B-23-151	Existing Structure Number B-32-007	Section 19	Town 3 N	Range 8 E
Station 502+93; CL south abut. cap	Latitude: 42.746216 Longitude: -89.59931	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83 (1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data		
Feature On STH 69		Design Year 2029	Average Daily Traffic (ADT) 7,410	Roadway Design Speed 60 mph
Feature Under <input checked="" type="checkbox"/> Waterway: Burgy Creek		<input type="checkbox"/> Other:		
Region Contact: Rick Reilly and Gerry Simonsen (Area Code) Telephone Number(s): (608) 254-2556 & 264-3598 Email: rick.reilly@dot.wi.gov & gerry.simonsen@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (See ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with hydraulic engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of highway showing: (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance.
3. **Contour Map** of the site drawn to a scale of not less than 1" = 20' with one-foot contours and showing: (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) North arrow; (e) Buildings; (f) Above and below ground facilities; (g) Recommended channel change; (h) Direction of stream flow; (i) Station at ends of existing structure; (j) Location of river cross sections or individual survey shots; (k) Proposed structure and extent of riprap for report submitted with preliminary plans; (l) Other features that influence design.
4. **Typical Roadway Cross Section** of proposed approaches showing: (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Sidewalk, curb & gutter; (e) Subgrade and pavement thickness; (f) Clear zone width.
5. **Stream Cross Sections** at upstream and downstream face of existing bridge and at one structure length upstream and downstream. Water and streambed elevations to be taken at structure and water surface elevations 1500 feet upstream and downstream of existing bridge.
6. **Labeled Photographs** of: (a) Existing structure; (b) Upstream and downstream structures; (c) Buildings within 100 feet of the proposed structure; (d) Unobstructed panoramic view looking upstream and downstream from location of proposed structure, showing stream and floodplains; (e) Any noteworthy details on existing structure or surrounding site (i.e. downstream obstructions); (f) Air photo mosaics referenced to contour map DGN if available.
7. Attach a copy of the regulatory floodplain map (FEMA map) depicting the site.
8. Report submitted with preliminary plans – **Hydraulic Report** (See Bridge Manual Chapter 8) which may contain: (a) USGS quadrangle sheet showing proposed location, highway alignment and reach of river; (b) All available flood history, high water marks with date of occurrence, nature of flooding, damages, scour information, and factors affecting water stages; (c) Navigation clearance; (d) Discussion of alternatives considered, factors influencing selection.
9. Attach a copy of DNR initial concurrence letter.

Proposed Structure

Preference for Structure Type at this Site:

No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 5)

Clear Roadway Width on Structure
36 Ft.

Cross Slope on Deck or N.C. (Normal Crown)
0.054 Ft./Ft.

Sidewalks/Multi-Use Path
 Yes No

Left Clear Sidewalk/Path Width
10 Ft.

Separation Barrier
 Yes No

Right Clear Sidewalk/Path Width
N/A Ft.

Separation Barrier
 Yes No

Specify Wing Location(s) for Beam Guard Attachment
All four wings, runs full length of structure.

Specify Clear Zone Width When Beam Guard Not Used on Culvert
N/A

Specify Wing Location(s) for Surface Drain Anchors
N/A

Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach

YES NO

- Project Is in Flood Hazard Area (FIS Mapped Floodplain)
- Structure Will be Constructed to Accommodate Traffic Staging
- Temporary Structure Required
- Riprap Required
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 4)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 4)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 - Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

Removal

- Normal Removal
- Removal With Minimal Debris
- Removal With Capture System

Existing Structures

STRUCTURE DATA		UPSTREAM	AT SITE	DOWNSTREAM
Structure Number (B/P/C)		P-23-103	B-23-007	B-23-76
Highway, Railroad, Path, or Structure Name		Washington Rd.	STH 69	Feldt Rd.
Year Built		1968	1951	1990
◇ Latitude		42.712724	42.714527	42.720408
◇ Longitude		-89.61841	-89.598881	-89.585867
‡ Distance from Proposed Site in Miles		1.2		1.02
Number of Spans		1	2	1
Clear Span (Between Inside Faces of Substructure Units) Lengths Along C.L. Rdwy/Track		21'	60'	32'
Sidewalk: Right Side Clear Width			N/A	
Left Side Clear Width			N/A	
Roadway Width on Structure Between Curbs		15'	24'	18'
Superstructure Type		Concrete Rigid Frame	Concrete Slab	Concrete Slab
Abutment Type(s)		Concrete	Wood Timber	Concrete
Pier Type(s) and Width(s)		no piers	Wood Piles 2ft	no piers
Is Structure Supported on Piles?		unknown	yes	yes
Condition: Superstructure Rating (NBI)		N/A	7 (cracking on deck)	7
Substructure Rating (NBI)		N/A	4 (fair)	8
Sufficiency Rating (NBI)		N/A	46.3	92.4
Skew: Stream		0	30 degrees	0
Structure		0	25	0
* Elevation + +	Finished Grade	100	847.52	100
	Low Chord	95.7	844.35	97
Character of Material in Stream Bed		Muck	Muck	Muck
Does Drift Pass Satisfactorily (Y/N/no record)		yes	yes	yes
Does Ice Pass Satisfactorily (Y/N/no record)		yes	yes	yes
Evidence of Damage From Floating Debris		none observed	none observed	none observed
Streambed Scour Visible (Y/N) ⊗		no	no	no
Streambank Scour Visible (Y/N) ⊗		no	(see pictures)	no
Recorded High Water Elevation - Date		N/A	841 April 2004	N/A
** Observed High Water Mark Elevation ⊗		N/A	(none noted)	N/A
History of Flooding over Roadway (Date or Frequency)		N/A	none	N/A
Abutment Slope Washout From: Stream Flow ⊗		none	(none, rip rap present)	none
Roadway Drainage ⊗		none	none	none
Low Water Elevation		N/A	835	N/A
° Ordinary High Water Mark			(none noted)	
Observed Water Elevation		88.3	836.52	91.7
Streambed Elevation		87.2	834.5	89.2
Water Surface Elevation	Date	1500' Upstream ‡	At Site	1500' Downstream ‡
	7/26/06	837.87	836.52	832.78

⊗ Provide labeled photograph.

* Use same vertical datum for all structures within 1500' of existing structure.

** High water marks may include, but are not limited to, debris, leaves, or dirt on structure that appear to have been left by recent flooding.

+ + Take these elevations at the same location.

† Information on high water can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, FIS, local officials, bridge inspector, or WisDOT bridge maintenance engineer.

° If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."

‡ Measured along thread of channel. If there is an abrupt river profile change within 1500' contact hydraulic engineer for revised location.

◇ Lat./Long. taken at name plate location (with photograph or sketch of location).

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

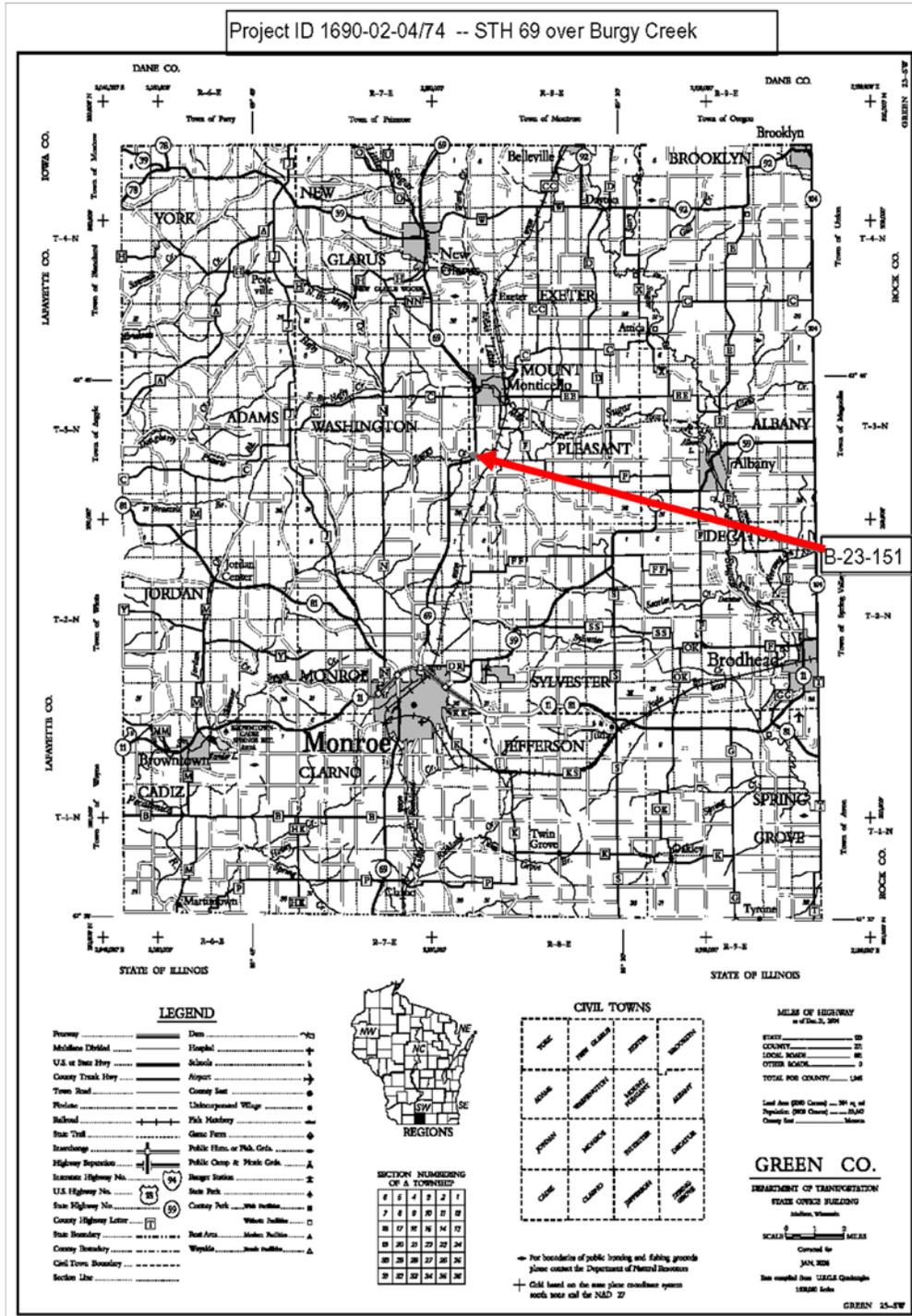
DNR indicated preference for a bridge with a pier outside of the creek channel.

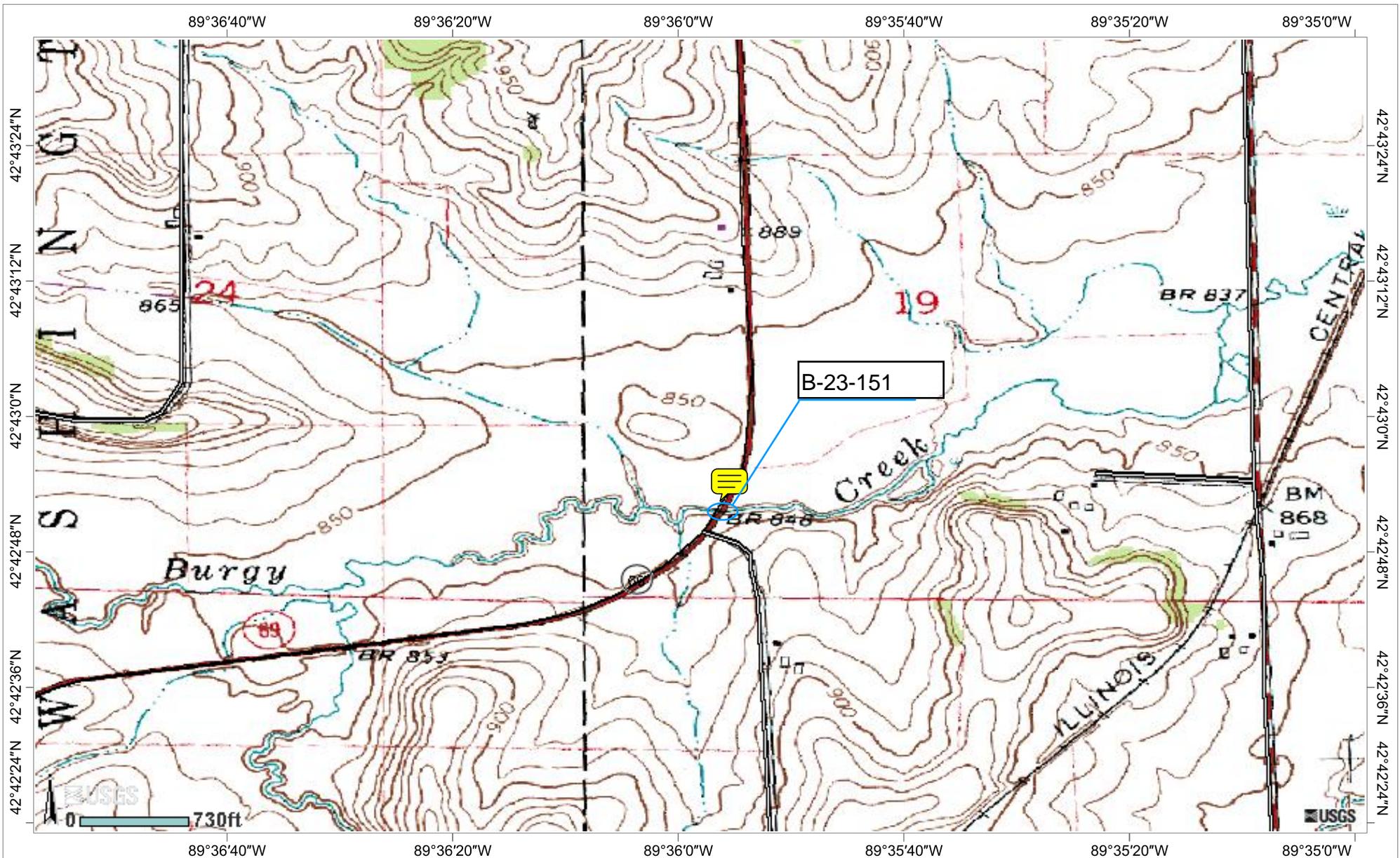
Traffic will be detoured during construction.

Recorded High Water Elevation and Date gathered from a resident who lives near the structure and observed the floodwaters and an approximate elevation.

Instructions for Structure Survey (Supporting Materials)

- a. Small County Map and Location Map (next page)
 - Location of proposed structure indicated
 - Close up of structure location is provided on USGS Quad map (always provide if there are multiple structures on project)





Geographic Coordinate System (WGS84)

Instructions for Structure Survey (Supporting Materials)

b. Plan and Profile Sheet

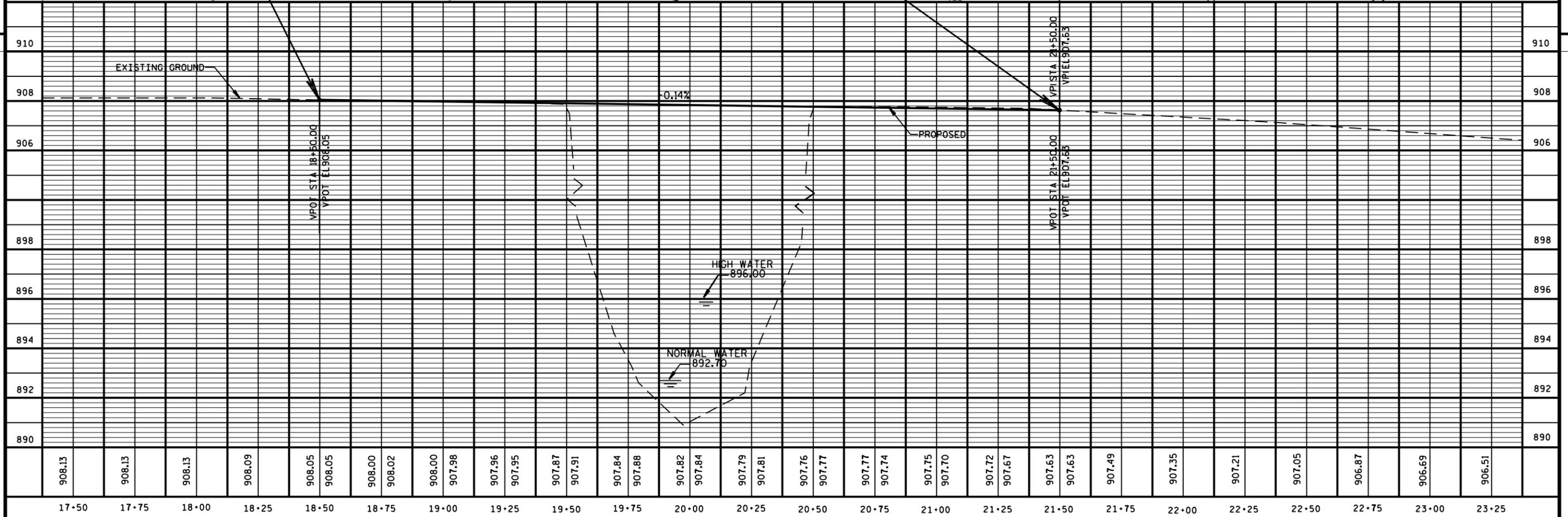
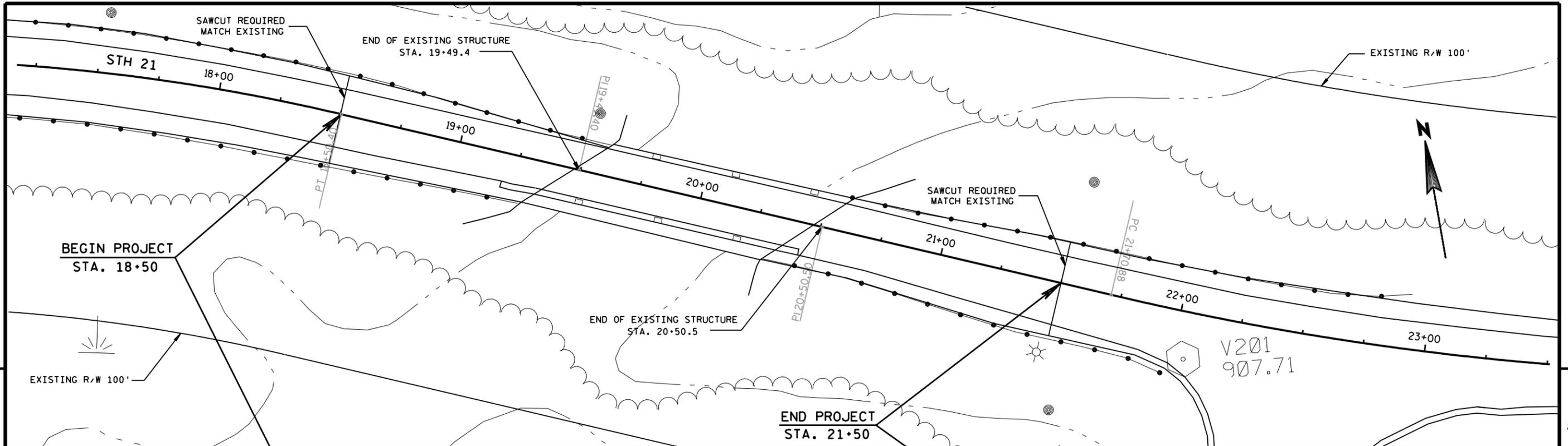
- Provide existing and proposed roadway profiles as PDF attachment.
- Roadway alignment and roadway profile will also be requested as DGN by designer.
- Structural designer determines deck elevations from proposed roadway profile.

c. Contour Map

- Provide as PDF attachment and as DGN
- Include:
 - 1 ft. contour lines
 - Existing structure with stations at both ends labeled
 - Proposed highway alignment and right-of-way
 - Station numbers
 - North arrow
 - Above and below ground facilities and/or utilities
 - Recommended channel change (if applicable)
 - Direction of stream flow
 - Topography (vegetation, buildings, driveways, etc.)
 - Features that may influence design
 - Location of individual survey shots or stream cross sections
 - Proposed structure and extent of riprap (**Only required for consultant submittal of preliminary plans**)
- Contours of surrounding area
 - Should extend several hundred feet out from structure both along roadway and along stream (when possible)
 - Allows cross sections to capture entire width of floodplain
 - Allows additional representative cross sections to be cut further up- and downstream for a more comprehensive hydraulic analysis
 - Use Civil 3D export workflow to produce a 3D MicroStation file
 - Should contain continuous contour lines with elevations
 - See workflow in Section 6 of this manual

d. Typical Roadway Cross Section

- Proposed and existing approach (approaches, if geometry differs in either direction)
- Desired cross section over proposed structure, including shoulders, bike lanes, raised sidewalks, etc.



PROJECT NO: 6160-03-72 HWY: STH 21 COUNTY: JUNEAU PLAN AND PROFILE SHEET E



Low Steel
 Upstream Girder
 North End 844.42
 Center 844.43
 South End 844.56

Water Surface
 1,500' Upstream
 837.87
 7/31/06

Water Surface
 At Structure
 836.52
 7/26/06

6" PVC
 DRAIN TILE
 INV. 837.94

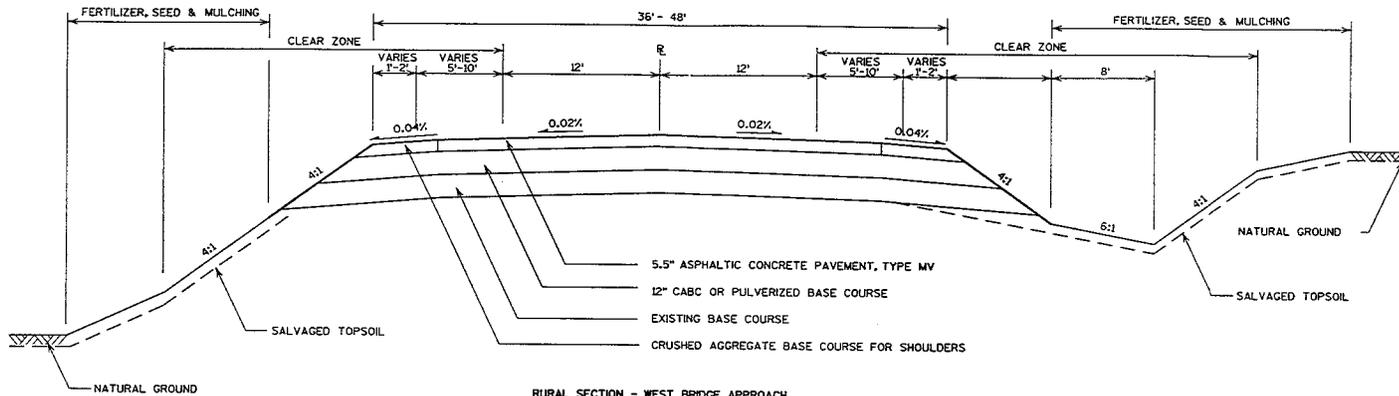
Water Surface
 1,500' Downstream
 832.78
 7/27/06

STRU5049 847.20 POC12 848.02 STRU5048 849.12

STRU5050 847.13 POC10 848.14 STRU5047 849.31 STRU5051 849.28

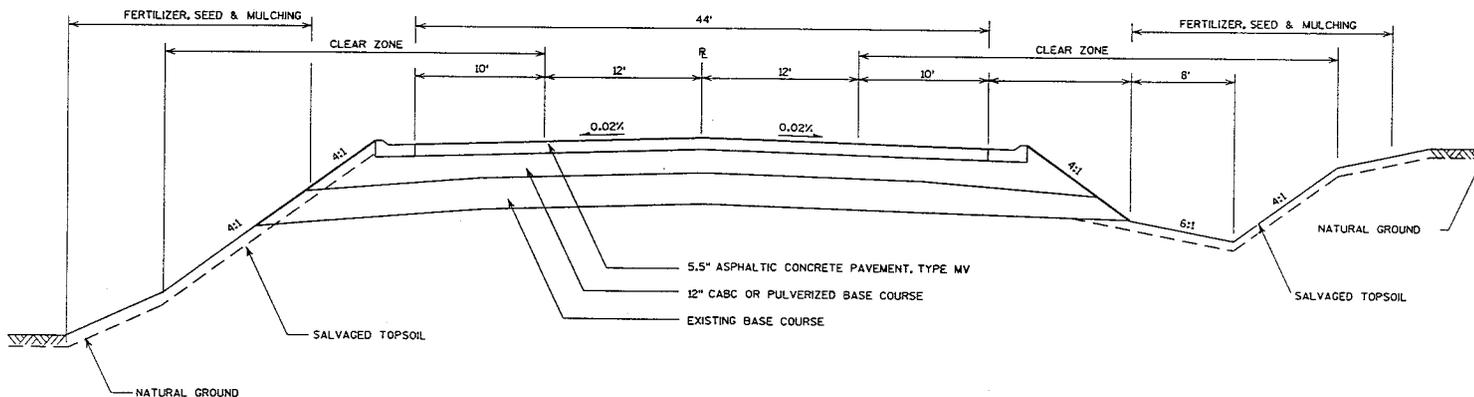
6" PVC
 DRAIN TILE
 INV. 837.28

Inv. 24"
 CMCP



RURAL SECTION - WEST BRIDGE APPROACH

(NOTE : THICKNESSES OF THE VARIOUS SECTION ELEMENTS ARE PRELIMINARY ONLY AND WILL BE DETERMINED DURING DESIGN.)



EAST BRIDGE APPROACH

(NOTE : THICKNESSES OF THE VARIOUS SECTION ELEMENTS ARE PRELIMINARY ONLY AND WILL BE DETERMINED DURING DESIGN.)

Instructions for Structure Survey (Supporting Materials)

e. Stream Cross Sections

- Four stream channel cross sections, normal to direction flow, **looking downstream**
 - Upstream face of bridge
 - Downstream face of bridge
 - Approximately one bridge length upstream
 - Approximately one bridge length downstream
- Provide plotted stream cross sections with point elevation and stations labeled (see next page) *or*,
- Provide DGN file containing surveyed points
 - Include point ID for each (XYZ, TSL, EOP, etc.)
 - Include point elevation for each

f. Labeled Photographs

- Existing structure
 - Both abutments
 - Piers
 - Elevation view of structure faces
- Upstream and downstream structures
- Buildings within 100 feet of proposed structure
 - In comment section note location of building in DGN topography file
- Unobstructed panoramic view upstream and downstream of proposed structure location showing stream and floodplains
- Any noteworthy details on existing structure or surrounding site (see examples)
 - Unusual substructure or superstructure units
 - Close up of utilities located on structures
 - Nearby dams, other unusual structures, or floodplain obstructions
 - Other site specific details
- Air photo mosaics and/or orthophotos referenced to contour map DGN when available

g. FEMA Floodplain Map

h. Copy of DNR Initial Concurrence Letter

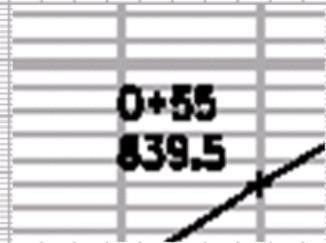
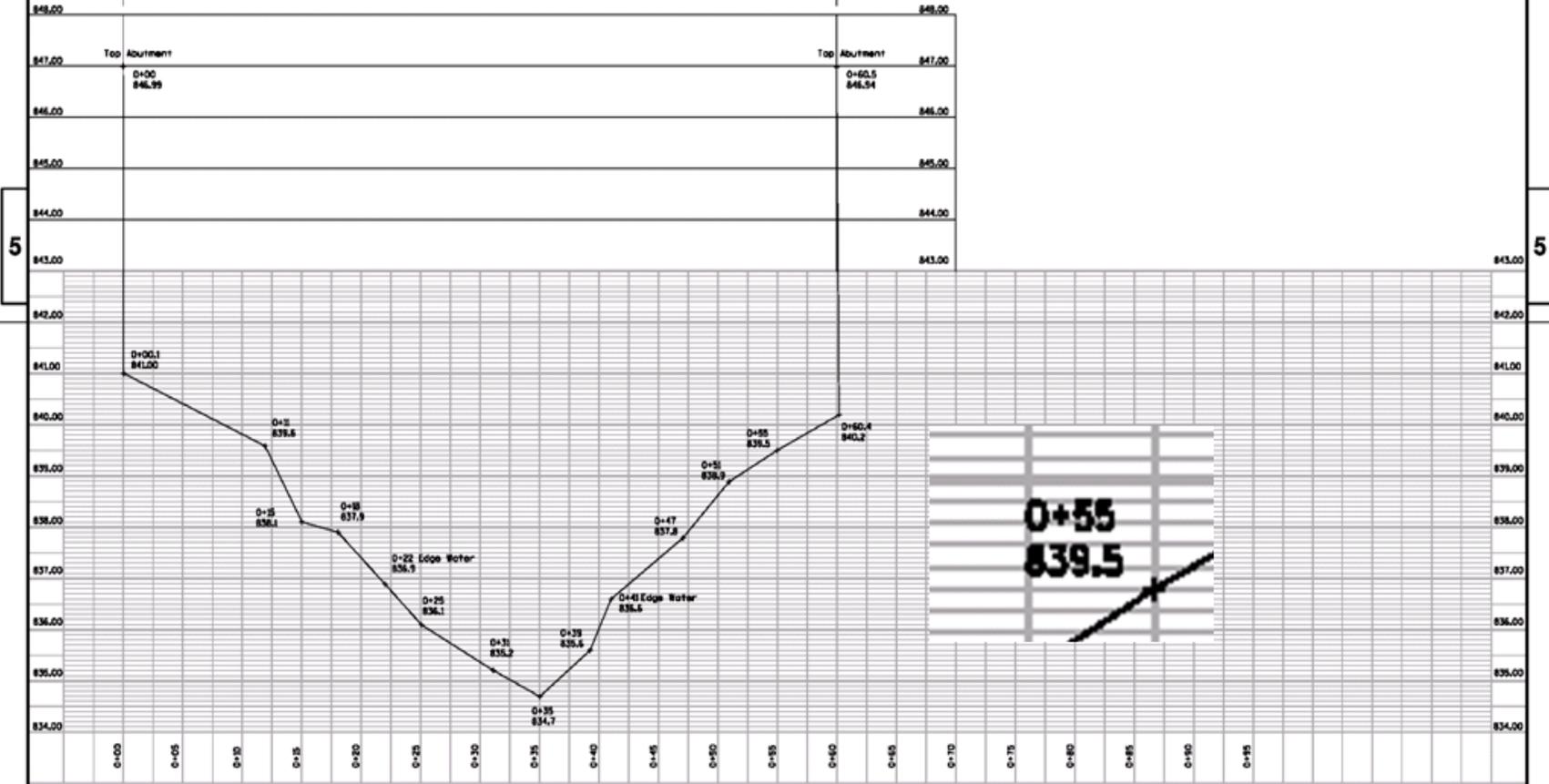
i. Hydraulic Report (**Only required for consultant submittal of preliminary plans**)

BURGY CREEK BRIDGE, STH 69
TOWN MOUNT PLEASANT, GREEN COUNTY

UPSTREAM WATERWAY OPENING
FACE NORTH ABUTMENT = 0+00



60.5'



5

5

PROJECT NO: 1690-02-04

HWY: STH 69

COUNTY: GREEN

BURGY CREEK CROSS SECTIONS

SHEET

E

FILE NAME : c:\user\p\p01\16900204\B2307\Cad.Links\upstrm_8880.dgn

PLOT DATE : 30-AUG-2006 07:58

PLOT BY : DOTYR

PLOT NAME :

PLOT SCALE : 40.000000:1.000000

WISDOT/CADD'S SHEET 38

B-23-7 (B-23-151 PROPOSED) STH 69 OVER BURGY CREEK 1690-02-04 GREEN CO.



B-23-7 NW ABUTMENT



B-23-7 NE ABUTMENT



B-23-7 EXISTING PILING



B-23-7 BURGY CREEK AND OVBANKS LOOKING DOWNSTREAM



B-23-7 BURGY CREEK AND OVBANKS LOOKING UPSTREAM



B-23-7 STH 69 LOOKING NORTH



B-23-7 STH 69 LOOKING SOUTH



DOWNSTREAM STRUCTURE



UPSTREAM STRUCTURE

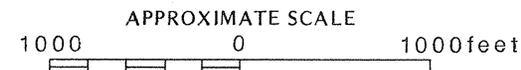
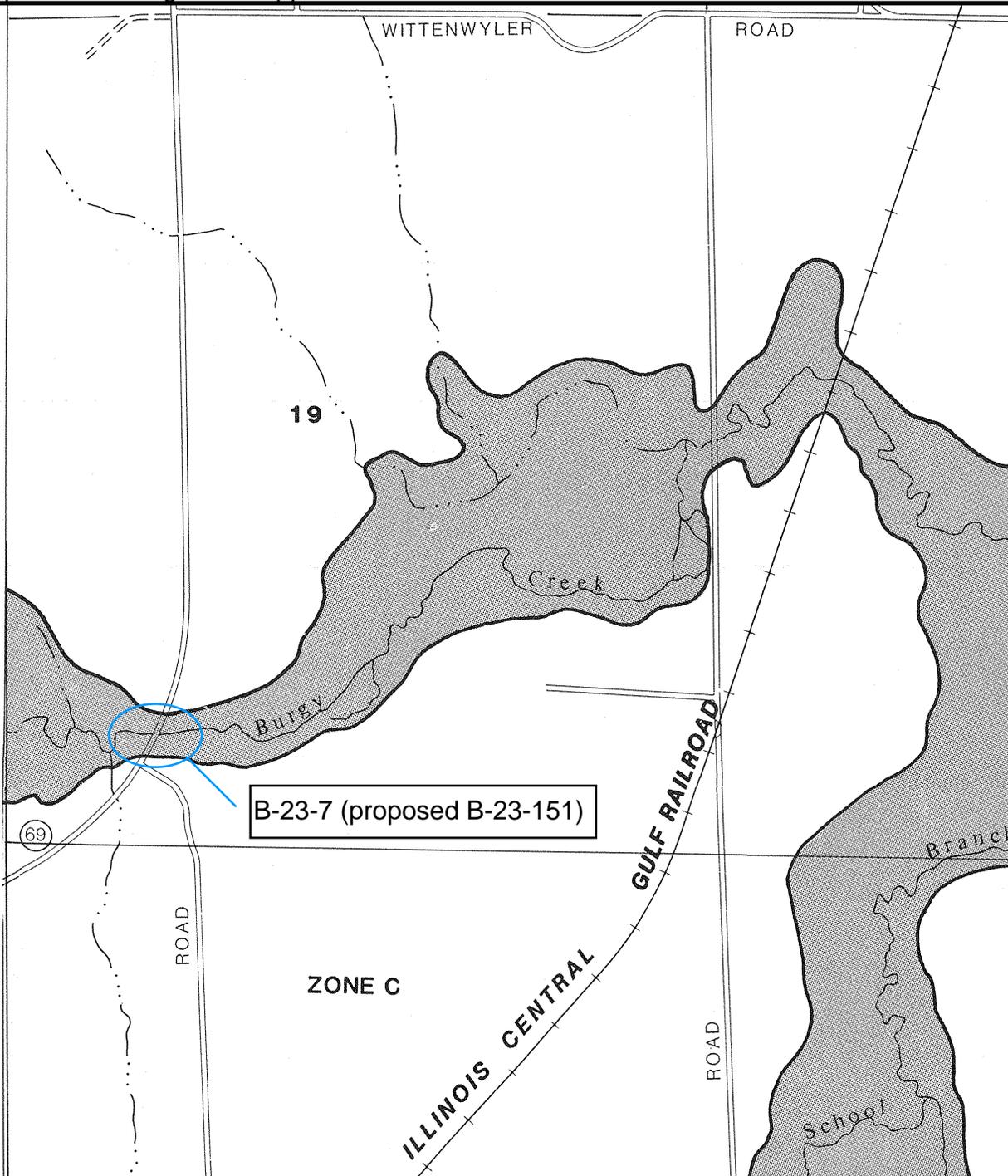
EXAMPLES OF NOTEWORTHY DETAILS



ABUTMENT ADDITION AND WINGWALL DIFFERENT THAN AT OTHER CORNERS OF THE STRUCTURE (ALSO IDENTIFIES UTILITY LOCATED ON STRUCTURE)



DAM DOWNSTREAM OF EXISTING STRUCTURE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

COUNTY OF
GREEN,
WISCONSIN
(UNINCORPORATED AREAS)

PANEL 80 OF 145
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
550157 0080 B

EFFECTIVE DATE:
SEPTEMBER 15, 1983



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
La Crosse Service Center
3550 Mormon Coulee Road
La Crosse WI 54601

Scott Walker, Governor
Cathy Stepp, Secretary
Scott Humrickhouse, Regional Director
Telephone 608-785-9000
FAX 608-785-9990
TTY Access via relay - 711



October 20, 2011

Gary Krug
WisDOT
718 W. Clairemont Avenue
Eau Claire, WI 54701

SUBJECT: DOT/DNR Initial Project Review
Project I.D. # 7170-00-00/70
B-6-185
STH 25 Bridge and Approaches
Fox Coulee Creek
Buffalo County

Dear Mr. Krug:

Preliminary information on the above referenced project has been reviewed by DNR Southwest Region staff under the DOT/DNR Cooperative Agreement. Pertinent environmental considerations are presented below:

WETLANDS

The proposed project site does not have any mapped wetlands within the Wisconsin Wetland Inventory system. A site inspection verified that no wetlands will be taken by the structure replacement as proposed.

WILDLIFE/FISHERIES

The project area likely provides a corridor for the movement of mammals, as well as a source of water for area wildlife.

ENDANGERED RESOURCES

The Natural Heritage Inventory indicates that the Eastern Massasauga occurs within in the proposed project area. No impacts to the species are expected provided these impact avoidance measures are taken: construction must take place between October 1 and April 15; silt fence is to be installed with a turn-a-round, and a large mesh e-mat that will not trap the species.

FLOODPLAINS

A determination must be made as to whether the project lies within a mapped/zoned floodplain. If the project lies in such an area, DNR requires the results of a 100-year flood analysis for the structure(s). Also, if the new structure(s) will create an increase in the 100-year backwater, DNR requires that letters be sent to all affected upstream landowners. For areas lying outside of mapped/zoned floodplain, DNR may request results of DOT flow and backwater calculations.

Page 2 Information

1. Indicate Aesthetics Level
 - a. See Bridge Manual Chapter 4 for description of each aesthetics level
 - b. Provide additional information about desired aesthetics if above Level 1
2. Sidewalks/Multi-use path
 - a. If yes, provide information for left and/or right sidewalk(s)
 - b. If no, indicate status of Trans 75 Complete Streets Compliance Check Sheet
3. Flood Hazard Area
 - a. Yes if structure site lies within mapped floodplain
4. Structural Approach Slab
 - a. Used on all IH bridges and USH bridges
 - b. Other locations can be considered with approval of the Chief Structural Design Engineer
5. Conduit in Parapet
 - a. Not a utility requiring approval (i.e. for lighting)
6. Utilities on Structure
 - a. If yes, provide coordination or approval information and comment on Page 4
 - b. If no, no additional information is needed
7. Structure Removal
 - a. Input on removal type provided by DNR

Existing Structures Information Page

1. Highway, railroad, path, or structure name
 - a. Provide the highway number, street name, or railroad line that is carried by the site, upstream and downstream structures
 - b. If structure carries a path or private entry provide its name or type (e.g. Hank Aaron State Trail)
 - c. If structure has a specific name it can also be listed (e.g. Hoan Bridge)
2. Latitude and longitude
 - a. For structure location reference
 - b. Taken at location of bridge name plate
3. Distance from proposed site in miles
 - a. Measured along thread (center) of channel
4. Roadway width on structure between curbs
 - a. If no curbs provide roadway width between parapets or rails
 - b. If structure is buried provide roadway width (edges of pavement)
5. Abutment type(s): e.g. concrete, timber, masonry (photos helpful)
6. Pier type(s) and width(s): e.g. solid shaft, multi-column, pile bents (photos helpful)
7. NBI condition - values can be found in Highway Structures Information System (HSI)
8. Skew
 - a. Structure - angle of abutment centerline, as shown on existing structure plans
 - b. Stream - angle that the direction of streamflow makes with the bridge face/parapet
 - i. Flow normal to the structure is defined as 0°
9. Finished grade and low chord elevations
 - a. Take elevation at low face of bridge on low end
 - b. Low chord - bottom of gider, slab, or superstructure
 - c. Finished grade - top of deck at face of parapet or rail, same location as low chord
10. Recorded high water elevation and date of occurrence
 - a. Of particular importance when Flood Insurance Study is not available for stream
 - b. Can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, local officials, bridge inspector, or WisDOT bridge maintenance engineer
 - i. Attempt should be made to contact these resources
 - ii. If high water elevation and date cannot be provided note resources that were contacted
 - c. If record cannot be provided any local elevation estimate and approximate date are better than no noted observation
11. Observed high water mark elevation
 - a. Only required if there are signs of recent flood or high water (see picture below)

- b. May include any water mark, sediment, or debris on the bridge or abutments
- c. Indicates level to which floodwaters rose; record elevation at top of such a mark



12. Abutment slope washout due to:
 - a. Stream flow - washout aligns with expansion, contraction or direction of flow
 - b. Roadway drainage - washout located near surface drain outlet, swale, etc.
13. Low water elevation
 - a. Elevation of the stream at the structure during low flow season
 - b. Approximate elevation (e.g. 1' deep, dry, etc.) is sufficient in most cases
14. Ordinary high water mark (OHWM)
 - a. If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."
 - b. Request from DNR on projects where navigational clearance is a consideration
 - c. May be necessary on other projects
15. Observed water elevation and streambed elevation
 - a. Water elevations should be taken on the same day, provide date of survey
 - b. If recorded on multiple days provide all elevations and corresponding date
 - c. Take both elevations at same point; along structure face near center of channel
 - d. Indicate location of survey shots or include surveyed points in DGN contour file
16. Water surface elevation
 - a. Record streambed elevation if dry at any of the locations
 - b. If abrupt change in stream profile occurs within 1500' of structure contact hydraulic engineer to determine revised locations
 - i. If a dam is located nearby take water elevation on face nearer to structure
 - c. Record water surface elevation at stream confluence, if within 1500' of structure
 - d. If up- or downstream structures are close to 1500' away or further water surface elevation at the structure can replace the 1500' elevation
 - i. Note the distance to elevation shot if an alternate location is used

**STREAM CROSSING
STRUCTURE SURVEY REPORT
(BOX CULVERT)**

STREAM CROSSING - BOX CULVERT

The instructions in this section should be used for any box culvert or C-numbered structure. Much of the information requested for stream crossings is common between bridges and box culverts so the same SSR form and checklist are used for both. This section highlights information requested that is unique to culverts as well as information about the structure type.

Primary uses for box culverts as highway structures are

1. Convey water
2. Convey livestock
3. Convey pedestrians (on foot, skis or bicycles) and vehicles (snowmobiles and farm implements)

Advantages of box culverts

1. Ease of construction
2. Low initial construction costs
3. Minimal long-term maintenance costs
4. Improved safety, where clear zone is used rather than beam guard

Box culvert survey

1. Provide existing culvert survey notes and information
 - a. Inlet and outlet configurations
 - b. Invert and water surface elevations
 - i. Elevation at both inlet and outlet
 - ii. Invert elevation should be taken on floor or at bottom of structure
 - iii. If existing box is silted, indicate depth of silt in barrel
 - c. Floor material
 - d. Outlet scour, wing wall and barrel condition
2. Survey of streambed profile along ditch or stream channel up- and downstream of anticipated end of proposed box
3. Photographs of channel, floodplains, and culvert inlet and outlet
 - a. This information is important for hydraulic analysis, show:
 - b. Existing culvert wing wall angles
 - c. Entrance and exit conditions
 - d. Barrel condition
4. Record date surveyed
 - a. Water elevations should be taken on the same day
 - b. If elevations are recorded on multiple days provide all elevations and corresponding date

5. Water surface elevation
 - a. Record streambed elevation if dry at any of the locations
 - b. Record water surface elevation at stream confluence, if within 1500' of structure
 - c. If up- or downstream structures are close to 1500' away or further water surface elevation at the structure can replace the 1500' elevation
 - i. Note the distance to elevation shot if an alternate location is used

Box culvert design

1. Provide existing culvert length in Clear Span Lengths box on Existing Structures page
 - a. For a box culvert, 10' span x 6' rise 65' long, list as:
 - b. "10' span, 65' long"
2. Clear zone or beam guard can be used along road at culverts
 - a. Specify clear zone width if beam guard won't be used
 - b. Provide right-of-way in DGN roadway alignment file and/or note R/W constraints
3. DNR concerns or requirements for fish passage and water handling
 - a. Indicate if DNR liaison has requested box culvert floor to be placed below streambed (typically use 6 inches to 1 foot below streambed)
 - b. Include DNR initial concurrence letter with submittal
4. Submit cross sections of proposed roadway near the structure
5. Special design considerations
 - a. Indicate need for riprap
 - b. Drainage inlet opening into box
 - c. Safety details such as fencing or railings
6. Box culvert plans will typically show a note indicating that the contractor has the option to use pre-cast alternative

STREAM CROSSING SURVEY REPORT

SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Chapter 8 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1698)

- Complete DT1698, Stream Crossing OR Box Culvert
- Indicate structure "Preference" (bridge or box culvert).
 - Utilities on structure.

SURVEY INFORMATION

_____ Small County Map

- Indicate location of structure (include project location map when multiple structures present).
- 8.5x11 of USGS quadrangle showing structure location.

_____ Plan and Profile Sheet

- Existing and proposed profile grade line of roadway, proposed horizontal and vertical curve data of roadway, and existing structure location.

_____ Contour Map

- Contours labeled, existing structures shown, north arrow, stream direction, and scale 1"=20'.

_____ Typical Roadway Section

- Typical dimensions of roadway, sidewalk, and curb & gutter; slopes; and clear zone requirements.

_____ Stream Cross Sections

- Survey notes showing existing bridge measurements, channel "measure downs" on both faces of bridge, streambed and water elevations at structure, and stream cross sections.

_____ Photographs (Labeled)

- Panoramic view up- and downstream showing stream, banks and floodplains, existing structure, up- and downstream structures, and roadway.

_____ FEMA Floodplain Map

- Location of structure relative to any mapped floodplain.

_____ DNR Initial Concurrence

- Copy of DNR Initial Concurrence Letter.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

STREAM CROSSING STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation

DT1698 6/2012

Stream Crossing
 Box Culvert
 Box Culvert Extension:
 Right
 Other: _____
 Left

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 9240-10-00	Construction Project ID 9240-10-70	Highway (Project Name) STH 182		
Final Plan Due Date 11/30/2012	Preliminary Plan Due Date 5/31/2012	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Eisenstein		
PS&E Date 3/1/17	Letting Date 9/12/17	County Price		
New Structure Number C-50-17	Existing Structure Number C-50-9717	Section 13	Town 40N	Range 1E
Station 391+00	Latitude: 45.945935 Longitude: -90.297039	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83 (1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data		
Feature On STH 182		Design Year 2033	Average Daily Traffic (ADT) 770	Roadway Design Speed 55 mph
Feature Under <input checked="" type="checkbox"/> Waterway: Hay Creek		<input type="checkbox"/> Other:		
Region Contact: Dan Kaiser (Leader) & Mitch Gray (Manager) (Area Code) Telephone Number(s): (715) 356-5697 & 356-5057 Email: dan.kaiser@dot.wi.gov & mitch.gray@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (See ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with hydraulic engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of highway showing: (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance.
3. **Contour Map** of the site drawn to a scale of not less than 1" = 20' with one-foot contours and showing: (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) North arrow; (e) Buildings; (f) Above and below ground facilities; (g) Recommended channel change; (h) Direction of stream flow; (i) Station at ends of existing structure; (j) Location of river cross sections or individual survey shots; (k) Proposed structure and extent of riprap for report submitted with preliminary plans; (l) Other features that influence design.
4. **Typical Roadway Cross Section** of proposed approaches showing: (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Sidewalk, curb & gutter; (e) Subgrade and pavement thickness; (f) Clear zone width.
5. **Stream Cross Sections** at upstream and downstream face of existing bridge and at one structure length upstream and downstream. Water and streambed elevations to be taken at structure and water surface elevations 1500 feet upstream and downstream of existing bridge.
6. **Labeled Photographs** of: (a) Existing structure; (b) Upstream and downstream structures; (c) Buildings within 100 feet of the proposed structure; (d) Unobstructed panoramic view looking upstream and downstream from location of proposed structure, showing stream and floodplains; (e) Any noteworthy details on existing structure or surrounding site (i.e. downstream obstructions); (f) Air photo mosaics referenced to contour map DGN if available.
7. Attach a copy of the regulatory floodplain map (FEMA map) depicting the site.
8. Report submitted with preliminary plans – **Hydraulic Report** (See Bridge Manual Chapter 8) which may contain: (a) USGS quadrangle sheet showing proposed location, highway alignment and reach of river; (b) All available flood history, high water marks with date of occurrence, nature of flooding, damages, scour information, and factors affecting water stages; (c) Navigation clearance; (d) Discussion of alternatives considered, factors influencing selection.
9. Attach a copy of DNR initial concurrence letter.

Proposed Structure

Preference for Structure Type at this Site:

Conspan precast arch

No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 5)

Clear Roadway Width on Structure
36 Ft.

Cross Slope on Deck or N.C. (Normal Crown)
.045 superelevation Ft./Ft.

Sidewalks/Multi-Use Path
 Yes No

Left Clear Sidewalk/Path Width
N/A Ft.

Separation Barrier
 Yes No

Right Clear Sidewalk/Path Width
N/A Ft.

Separation Barrier
 Yes No

Specify Wing Location(s) for Beam Guard Attachment
N/A

Specify Clear Zone Width When Beam Guard Not Used on Culvert
24'

Specify Wing Location(s) for Surface Drain Anchors
N/A

Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach
N/A

YES NO

- Project Is in Flood Hazard Area (FIS Mapped Floodplain)
- Structure Will be Constructed to Accommodate Traffic Staging
- Temporary Structure Required
- Riprap Required
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 4)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 4)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

Removal

- Normal Removal
- Removal With Minimal Debris
- Removal With Capture System

Existing Structures

STRUCTURE DATA		UPSTREAM	AT SITE	DOWNSTREAM	
Structure Number (B/P/C)		B-153-02.6	C-50-9717	old 182 bridge	
Highway, Railroad, Path, or Structure Name		Forest Rd 153	STH 182	vacated town rd	
Year Built		unknown	1953	unknown	
◊ Latitude		45.969467	45.945935	45.945659	
◊ Longitude		-90.300815	-90.297039	-90.297403	
‡ Distance from Proposed Site in Miles		1.5		.02	
Number of Spans		1	1	1	
Clear Span (Between Inside Faces of Substructure Units) Lengths Along C.L. Rdwy/Track		27.75'	15.78'	22.0'	
Sidewalk: Right Side Clear Width			N/A		
Left Side Clear Width			N/A		
Roadway Width on Structure Between Curbs		24'	32'	19'	
Superstructure Type		asphalt	15' span SPPA, 74' long	asphalt	
Abutment Type(s)		wood plank	N/A	concrete	
Pier Type(s) and Width(s)		N/A	N/A	N/A	
Is Structure Supported on Piles?		unknown	no	unknown	
Condition: Superstructure Rating (NBI)		N/A	N/A	N/A	
Substructure Rating (NBI)		N/A	N/A	N/A	
Sufficiency Rating (NBI)		N/A	N/A (culvert)	N/A	
Skew: Stream		0	27D LHF	40D LHF	
Structure		0	29D LHF	0	
* Elevation + +	Finished Grade	1527.59	1517.25	1511.63	
	Low Chord	1524.84	1512.90	1510.09	
Character of Material in Stream Bed		sand/silt	sand/silt	sand/muck	
Does Drift Pass Satisfactorily (Y/N/no record)		yes	yes	yes	
Does Ice Pass Satisfactorily (Y/N/no record)		yes	yes	yes	
Evidence of Damage From Floating Debris		no	no	no	
Streambed Scour Visible (Y/N) ⊗		no	yes (see details, pg. 5)	no	
Streambank Scour Visible (Y/N) ⊗		no		no	
†	Recorded High Water Elevation - Date		1522.7 5/12	1508.7 (spring runoff)	1507.8 (spring runoff)
	** Observed High Water Mark Elevation ⊗		none observed	none observed	none observed
	History of Flooding over Roadway (Date or Frequency)		not reported	not reported	not reported
	Abutment Slope Washout From: Stream Flow ⊗		none	none	none
	Roadway Drainage ⊗		none	none	none
	Low Water Elevation		1520.12	1505.55	1505.42
	° Ordinary High Water Mark			unknown	
	Observed Water Elevation		1520.5	1506.0	1505.9
	Streambed Elevation		1518.6	1504.0	1502.0
	Water Surface Elevation	Date	1500' Upstream ‡	At Site	1500' Downstream ‡
7/18/12		1506.38	1505.55	1504.61	

⊗ Provide labeled photograph.

* Use same vertical datum for all structures within 1500' of existing structure.

** High water marks may include, but are not limited to, debris, leaves, or dirt on structure that appear to have been left by recent flooding.

+ + Take these elevations at the same location.

† Information on high water can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, FIS, local officials, bridge inspector, or WisDOT bridge maintenance engineer.

° If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."

‡ Measured along thread of channel. If there is an abrupt river profile change within 1500' contact hydraulic engineer for revised location.

◊ Lat./Long. taken at name plate location (with photograph or sketch of location).

Existing Culvert Information

Number of Barrels			1
Barrel Width Perpendicular to Walls			15.78
Allowable High Water			1512.6
Floor: Concrete, Earth, Silted			earth
If Silted Indicate Depth of Silt in Barrel			N/A
Elevation:	Inlet	Invert	1503.93
		Finished Grade	1517.29
		Top of Opening	1513.18
Discharge		Top of Water	1506.02
		Invert	1504.00
		Finished Grade	1517.29
		Top of Opening	1512.61
		Top of Water	1506.00
		<i>For Structures with Concrete Aprons:</i>	
At Beginning of Upstream Apron			N/A
Apron Elevation			
Streambed			
Top of Water			
At End of Downstream Apron			N/A
Apron Elevation			
Streambed			
Top of Water			
Condition [Ⓢ] :	Wingwalls		poor
	Barrel		poor

Attach Sketch

[Ⓢ] Provide labeled photograph.

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

STREAM CONTAINS MULTIPLE CHANGING BEAVER DAMS

Existing Culvert Information

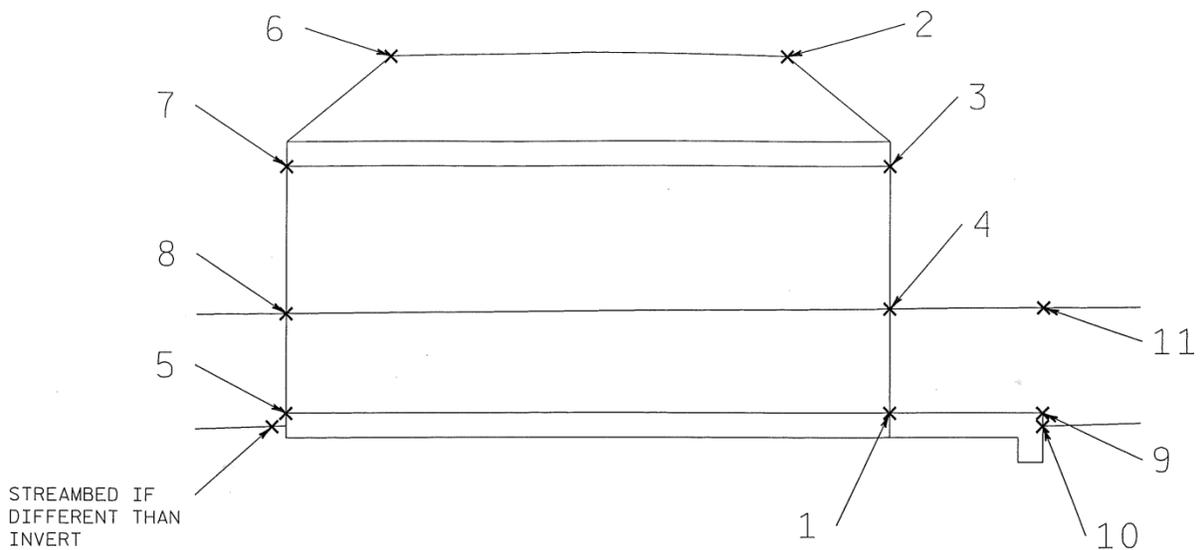
Number of Barrels		1	
Barrel Width Perpendicular to Walls		15.78	
Allowable High Water		1512.6	
Floor: Concrete, Earth, Silted		earth	
If Silted Indicate Depth of Silt in Barrel		N/A	
Elevation:	Inlet	Invert	1503.93 1
		Finished Grade	1517.29 2
		Top of Opening	1513.18 3
		Top of Water	1506.02 4
Discharge		Invert	1504.00 5
		Finished Grade	1517.29 6
		Top of Opening	1512.61 7
		Top of Water	1506.00 8
<i>For Structures with Concrete Aprons:</i>			
At Beginning of Upstream Apron		N/A	
	Apron Elevation	9	
	Streambed	10	
	Top of Water	11	
At End of Downstream Apron		N/A	
	Apron Elevation	12*	
	Streambed	13*	
	Top of Water	14*	
Condition@:	Wingwalls	poor	
	Barrel	poor	

Attach Sketch

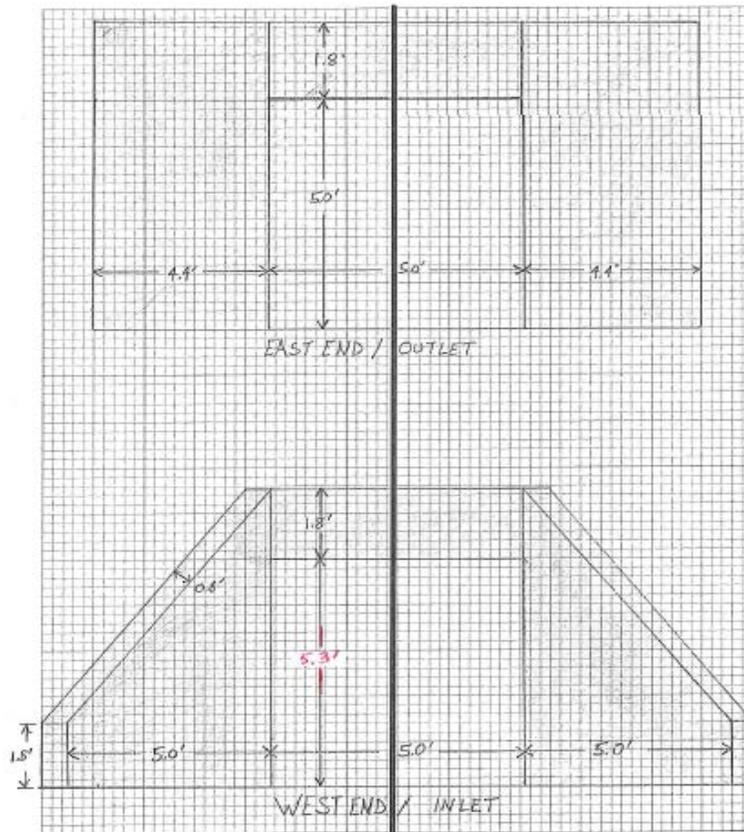
Ⓢ Provide labeled photograph.

* - Same as point 9, 10, and 11, respectively, on DS end of culvert

Finished grade elevations should be taken at edges of pavement over the structure



CULVERT PROFILE CROSS SECTION



C-38-639 SKETCH OF INLET AND OUTLET WITH DIMENSIONS



C-38-639 OULET CONDITIONS



C-32-43 OUTLET CONDITIONS FACING DOWNSTREAM



OUTLET CONDITIONS FACING UPSTREAM



C-50-17 OUTLET FACING UPSTREAM (NORTH)



C-32-43 LOOKING SOUTH AT OUTLET SCOUR HOLE AND DOWNSTREAM CONDITIONS



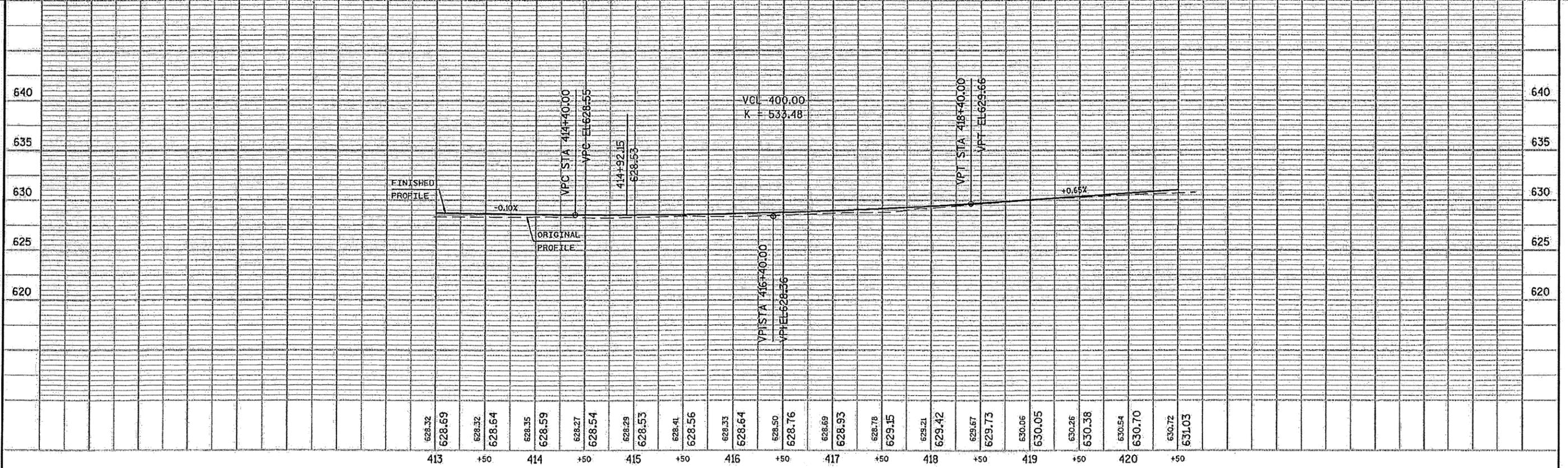
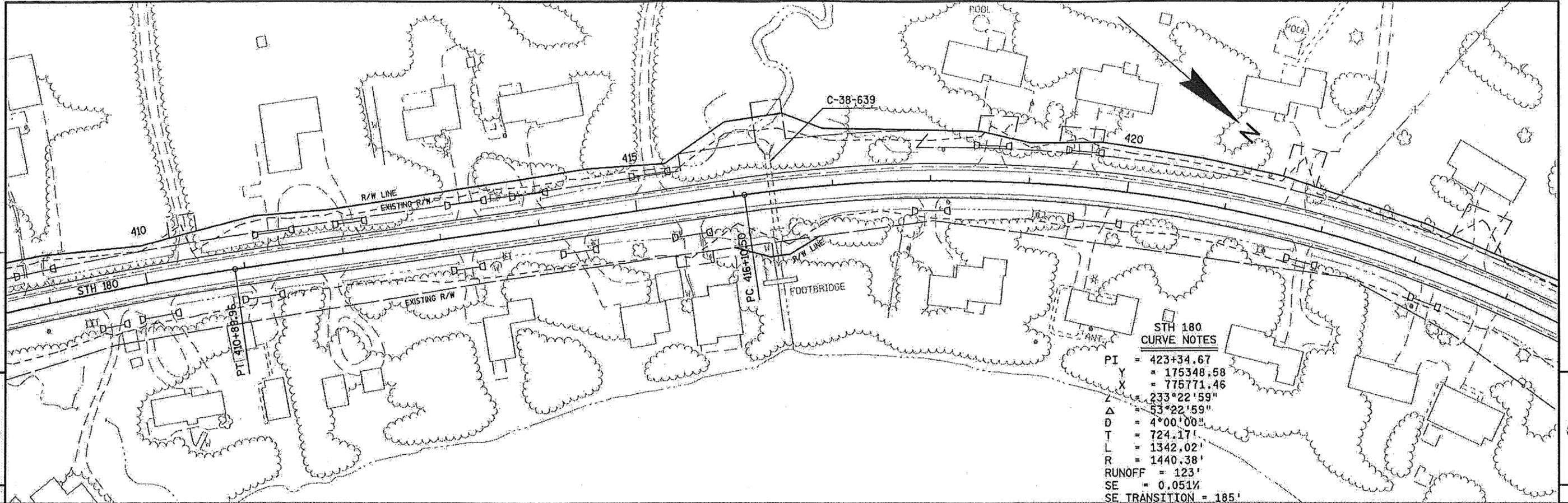
C-32-43 LOOKING SOUTH TOWARDS OUTLET

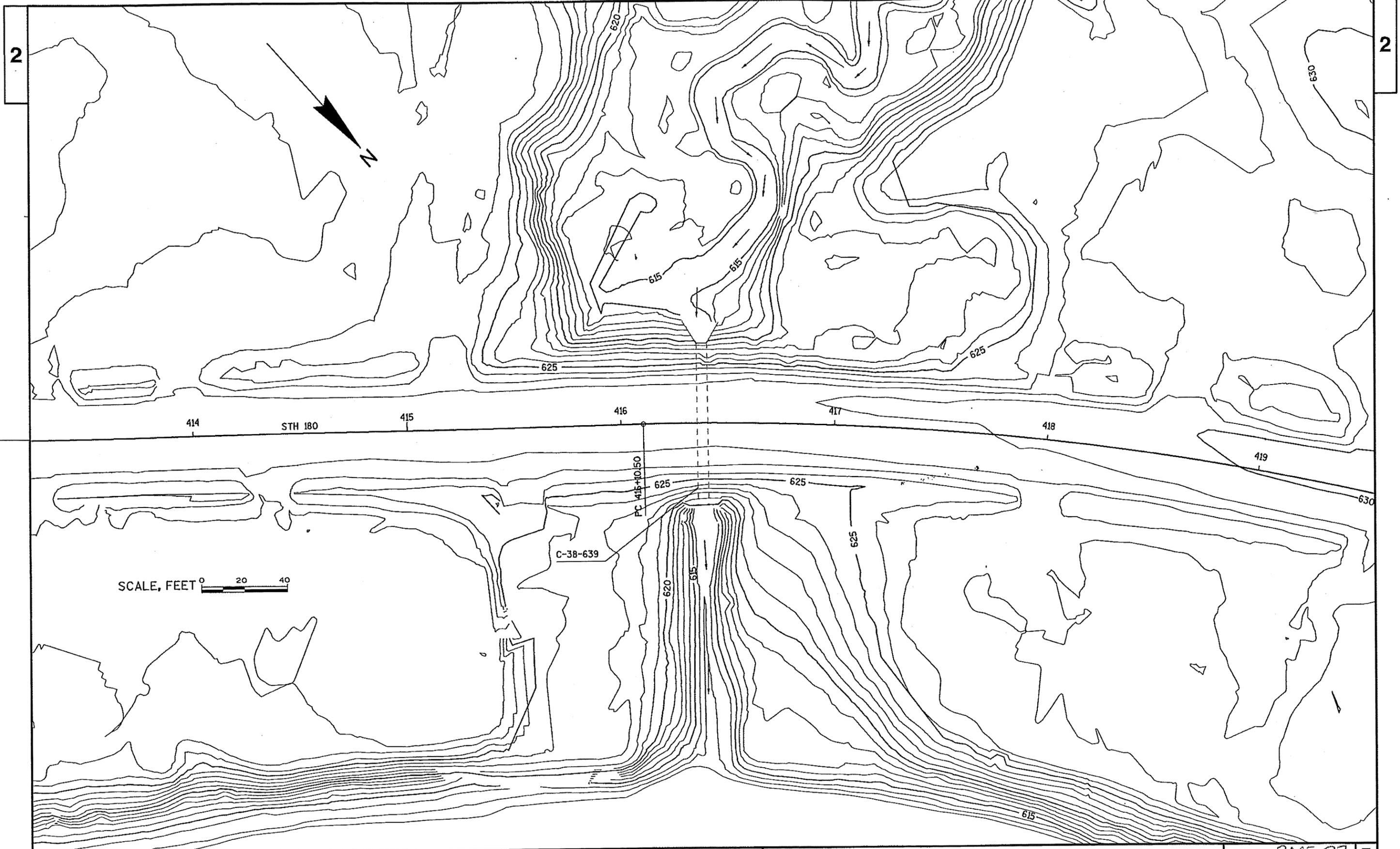


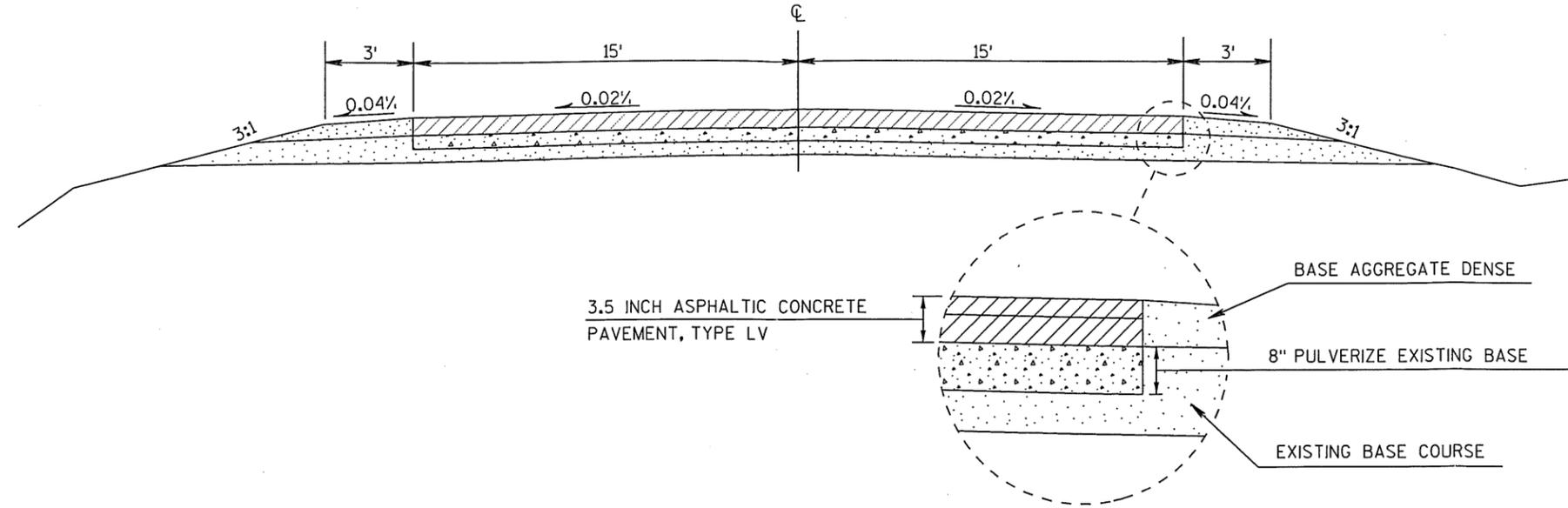
C-32-43 SPALLS AND EXPOSED REBAR BELOW ROADWAY INLET



C-32-43 FLOOR SCOUR BELOW ROADWAY INLET

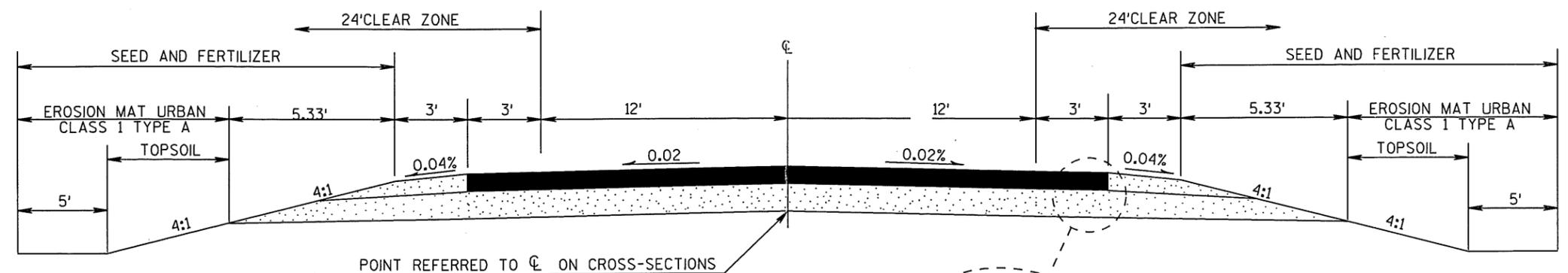






EXISTING TYPICAL SECTION

CP 50-182-017 (STH 182)



PROPOSED TYPICAL SECTION

CP 50-182-017 (STH 182)

**STREAM CROSSING
STRUCTURE SURVEY REPORT
(CULVERT EXTENSION)**

STREAM CROSSING - CULVERT EXTENSION

The instructions in this section should be used for any box culvert or C-numbered structure. Box culvert extensions require most of the same information as replacement culverts and often will require hydraulic analysis.

Box culvert survey

1. Provide existing culvert survey notes and information
 - a. Inlet and outlet configurations
 - b. Invert and water surface elevations
 - i. Elevation at both inlet and outlet
 - ii. Invert elevation should be taken on floor or at bottom of structure
 - iii. If existing box is silted, indicate depth of silt in barrel
 - c. Floor material
 - d. Outlet scour, wing wall and barrel condition
2. Survey of streambed profile along ditch or stream channel up- and downstream of anticipated end of proposed box
3. Photographs of channel, floodplains, and culvert inlet and outlet
 - a. This information is important for hydraulic analysis, show:
 - b. Existing culvert wing wall angles
 - c. Entrance and exit conditions
 - d. Barrel condition
4. Record date surveyed
 - a. Water elevations should be taken on the same day
 - b. If elevations are recorded on multiple days provide all elevations and corresponding date
5. Water surface elevation
 - a. Record streambed elevation if dry at any of the locations
 - b. Record water surface elevation at stream confluence, if within 1500' of structure
 - c. If up- or downstream structures are close to 1500' away or further water surface elevation at the structure can replace the 1500' elevation
 - i. Note the distance to elevation shot if an alternate location is used

Box culvert design

1. Provide existing culvert length in Clear Span Lengths box on Existing Structures page
 - a. For a box culvert, 10' span x 6' rise 65' long, list as:
 - b. "10' span, 65' long"
2. Clear zone or beam guard can be used along road at culverts
 - a. Specify clear zone width if beam guard won't be used
 - b. Provide right-of-way in DGN roadway alignment file and/or note R/W constraints
3. DNR concerns or requirements for fish passage and water handling
 - a. Indicate if DNR liaison has requested box culvert floor to be placed below streambed (typically use 6 inches to 1 foot below streambed)
 - b. Include DNR initial concurrence letter with submittal
4. Submit cross sections of proposed roadway near the structure
5. Special design considerations
 - a. Indicate need for riprap
 - b. Drainage inlet opening into box

- c. Safety details such as fencing or railings
6. Box culvert plans will typically show a note indicating that the contractor has the option to use pre-cast alternative

Box Culvert Extensions

1. Good survey data is needed, especially invert elevations, to get good match into existing box
2. Accurate culvert opening width and height needed
3. Any unusual features in vicinity of extension
4. Specify clear zone width
5. The same survey data and supporting materials (i.e. contours and roadway cross sections) are needed for box culvert extensions and replacements

BOX CULVERT EXTENSION SURVEY REPORT

SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Chapter 8 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1698)

Complete DT1698, Box Culvert Extension

- Completed except for items that Central Office Design will enter.

SURVEY INFORMATION

_____ Small County Map

- Indicate location of structure.
- 8.5x11 of USGS quadrangle showing structure location.

_____ Plan and Profile Sheet

- Existing and proposed profile grade line of roadway, proposed horizontal and vertical curve data of roadway, right-of-way, and structure location.

_____ Contour Map

- Contours labeled, existing structures shown, north arrow, stream direction, and scale 1"=20'.

_____ Typical Roadway Section

- Typical dimensions of roadway, sidewalk, and curb & gutter; slopes; and clear zone requirements.

_____ Stream Cross Sections

- Survey notes showing existing culvert measurements, including stations and off-sets of corners of existing box.
- Streambed and water elevations at structure and stream cross sections.

_____ Photographs (Labeled)

- Panoramic view up- and downstream, existing structure views, and roadway.

_____ FEMA Floodplain Map

- Location of structure relative to any mapped floodplain.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

STREAM CROSSING STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation

DT1698 6/2012

Stream Crossing
 Box Culvert
 Box Culvert Extension:
 Right
 Other: _____
 Left

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 9670-09-00	Construction Project ID 9670-09-71	Highway (Project Name) STH 180		
Final Plan Due Date 9/1/2013	Preliminary Plan Due Date 3/1/2013	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Porterfield		
PS&E Date 5/1/2014	Letting Date 11/10/2014	County Marinette		
New Structure Number C-38-639	Existing Structure Number C-38-639	Section 11	Town 31N	Range 22E
Station 416+39	Latitude: 45.171668 Longitude: -87.737074	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83 (1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data		
Feature On STH 180		Design Year 2033	Average Daily Traffic (ADT) 4,800	Roadway Design Speed 50 mph
Feature Under <input checked="" type="checkbox"/> Waterway: Unnamed tributary to Menominee River <input type="checkbox"/> Other:		Functional Class Minor Arterial		
Region Contact: Pat Zeitler (Area Code) Telephone Number(s): (920) 426-1302 Email: pat.zeitler@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (See ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with hydraulic engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of highway showing: (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance.
3. **Contour Map** of the site drawn to a scale of not less than 1" = 20' with one-foot contours and showing: (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) North arrow; (e) Buildings; (f) Above and below ground facilities; (g) Recommended channel change; (h) Direction of stream flow; (i) Station at ends of existing structure; (j) Location of river cross sections or individual survey shots; (k) Proposed structure and extent of riprap for report submitted with preliminary plans; (l) Other features that influence design.
4. **Typical Roadway Cross Section** of proposed approaches showing: (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Sidewalk, curb & gutter; (e) Subgrade and pavement thickness; (f) Clear zone width.
5. **Stream Cross Sections** at upstream and downstream face of existing bridge and at one structure length upstream and downstream. Water and streambed elevations to be taken at structure and water surface elevations 1500 feet upstream and downstream of existing bridge.
6. **Labeled Photographs** of: (a) Existing structure; (b) Upstream and downstream structures; (c) Buildings within 100 feet of the proposed structure; (d) Unobstructed panoramic view looking upstream and downstream from location of proposed structure, showing stream and floodplains; (e) Any noteworthy details on existing structure or surrounding site (i.e. downstream obstructions); (f) Air photo mosaics referenced to contour map DGN if available.
7. Attach a copy of the regulatory floodplain map (FEMA map) depicting the site.
8. Report submitted with preliminary plans – **Hydraulic Report** (See Bridge Manual Chapter 8) which may contain: (a) USGS quadrangle sheet showing proposed location, highway alignment and reach of river; (b) All available flood history, high water marks with date of occurrence, nature of flooding, damages, scour information, and factors affecting water stages; (c) Navigation clearance; (d) Discussion of alternatives considered, factors influencing selection.
9. Attach a copy of DNR initial concurrence letter.

Proposed Structure

Preference for Structure Type at this Site:

Extension

No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 5)

Clear Roadway Width on Structure
36 Ft.

Cross Slope on Deck or N.C. (Normal Crown)
.046 Ft./Ft.

Sidewalks/Multi-Use Path
 Yes No

Left Clear Sidewalk/Path Width
Ft.

Separation Barrier
 Yes No

Right Clear Sidewalk/Path Width
Ft.

Separation Barrier
 Yes No

Specify Wing Location(s) for Beam Guard Attachment
All four wings, runs full length of structure

Specify Clear Zone Width When Beam Guard Not Used on Culvert
30

Specify Wing Location(s) for Surface Drain Anchors
none

Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach
none

YES NO

- Project Is in Flood Hazard Area (FIS Mapped Floodplain)
- Structure Will be Constructed to Accommodate Traffic Staging
- Temporary Structure Required
- Riprap Required
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 4)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 4)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

Removal

- Normal Removal
- Removal With Minimal Debris
- Removal With Capture System

Existing Structures

STRUCTURE DATA		UPSTREAM	AT SITE	DOWNSTREAM	
Structure Number (B/P/C)		N/A	C-38-639	N/A	
Highway, Railroad, Path, or Structure Name			STH 180		
Year Built			1936		
◇ Latitude			45.171668		
◇ Longitude			-87.737074		
‡ Distance from Proposed Site in Miles					
Number of Spans			SINGLE CELL 5'x5'		
Clear Span (Between Inside Faces of Substructure Units) Lengths Along C.L. Rdwy/Track			5'		
Sidewalk:	Right Side Clear Width		N/A		
	Left Side Clear Width		N/A		
Roadway Width on Structure Between Curbs			36'		
Superstructure Type			BOX CULVERT		
Abutment Type(s)			N/A		
Pier Type(s) and Width(s)			N/A		
Is Structure Supported on Piles?			no		
Condition:	Superstructure Rating (NBI)		N/A		
	Substructure Rating (NBI)		N/A		
	Sufficiency Rating (NBI)		N/A (culvert)		
Skew:	Stream		0		
	Structure		0		
* Elevation + +	Finished Grade		627.96		
	Low Chord		619.01		
†	Character of Material in Stream Bed		SANDY W/ STONE		
	Does Drift Pass Satisfactorily (Y/N/no record)		yes		
	Does Ice Pass Satisfactorily (Y/N/no record)		yes		
	Evidence of Damage From Floating Debris		no		
	Streambed Scour Visible (Y/N) ⊙	Provide Additional Details on Page 5	yes-DS (**see details)		
	Streambank Scour Visible (Y/N) ⊙		no		
	Recorded High Water Elevation - Date		616.35 (unk. date)		
	** Observed High Water Mark Elevation ⊙		none observed		
	History of Flooding over Roadway (Date or Frequency)		not reported		
	Abutment Slope Washout From:	Stream Flow ⊙	none		
		Roadway Drainage ⊙	none		
	Low Water Elevation		unknown		
	° Ordinary High Water Mark		614.09		
	Observed Water Elevation		613.97		
	Streambed Elevation		913.11		
	Water Surface Elevation	Date	1500' Upstream ‡	At Site	1500' Downstream ‡
		5/19/11	614.12 (300' US)	613.97	611.47 (100' DS at Menominee Riv.)

⊙ Provide labeled photograph.

* Use same vertical datum for all structures within 1500' of existing structure.

** High water marks may include, but are not limited to, debris, leaves, or dirt on structure that appear to have been left by recent flooding.

+ + Take these elevations at the same location.

† Information on high water can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, FIS, local officials, bridge inspector, or WisDOT bridge maintenance engineer.

° If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."

‡ Measured along thread of channel. If there is an abrupt river profile change within 1500' contact hydraulic engineer for revised location.

◇ Lat./Long. taken at name plate location (with photograph or sketch of location).

Existing Culvert Information

Number of Barrels			1
Barrel Width Perpendicular to Walls			5'
Allowable High Water			623
Floor: Concrete, Earth, Silted			CONCRETE
If Silted Indicate Depth of Silt in Barrel			N/A
Elevation:	Inlet	Invert	613.71
		Finished Grade	628.50
		Top of Opening	619.01
Discharge		Top of Water	613.97
		Invert	613.07
		Finished Grade	628.50
		Top of Opening	618.07
		Top of Water	613.29
		<i>For Structures with Concrete Aprons:</i>	
At Beginning of Upstream Apron			
		Apron Elevation	613.65
		Streambed	613.58
		Top of Water	613.99
At End of Downstream Apron			N/A
		Apron Elevation	
		Streambed	
		Top of Water	
Condition®:	Wingwalls		GOOD
	Barrel		GOOD

Attach Sketch

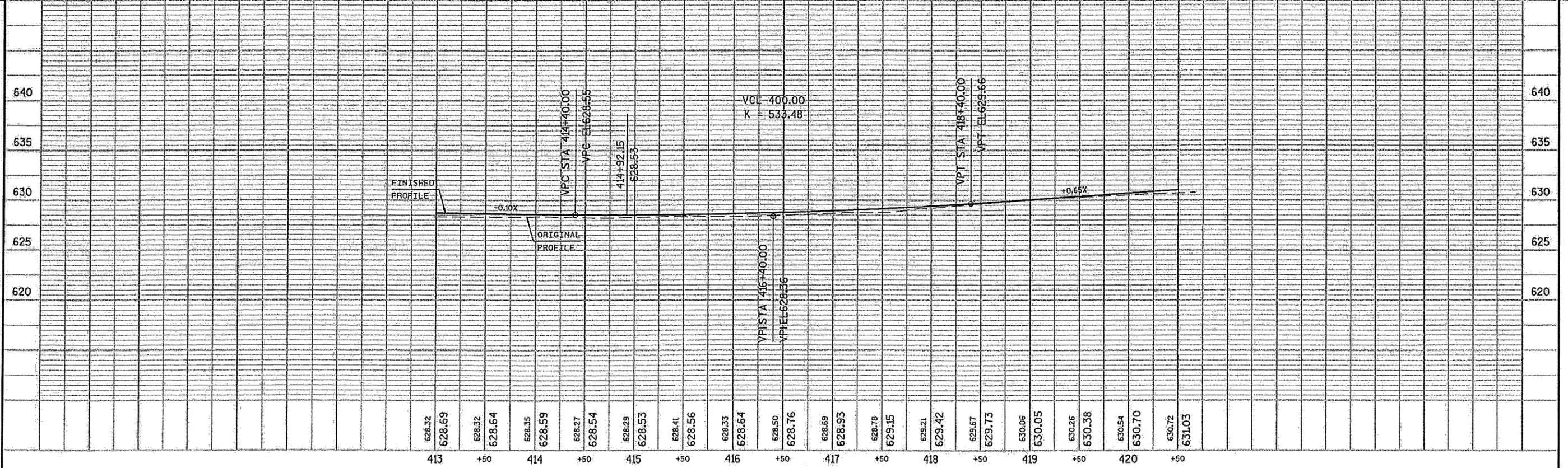
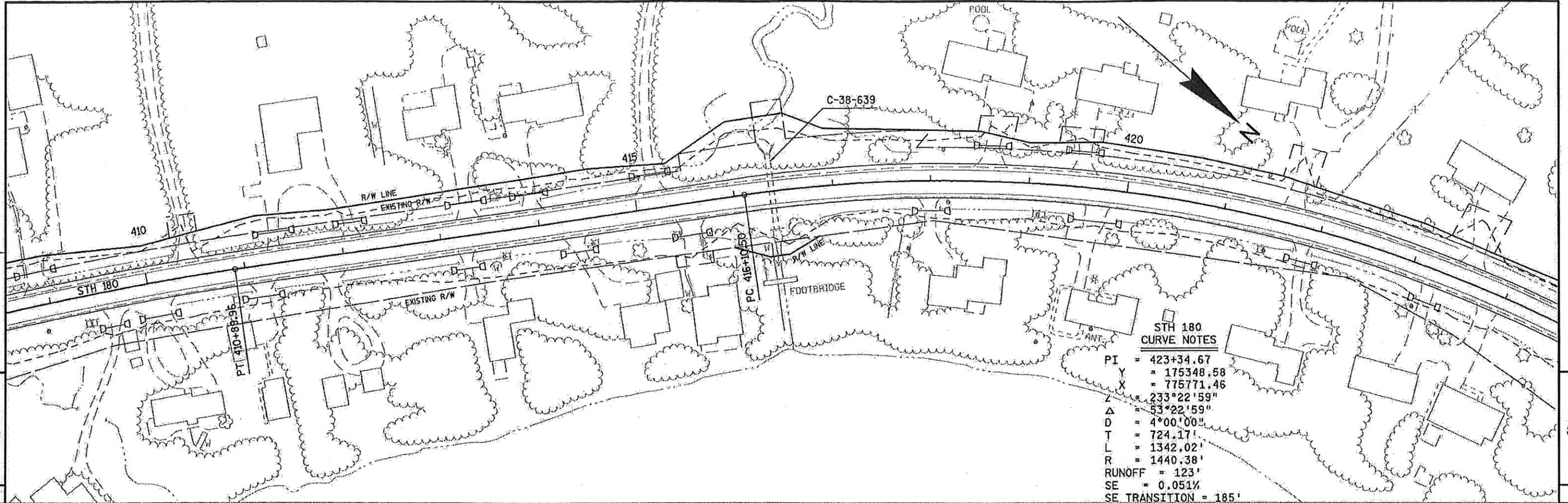
® Provide labeled photograph.

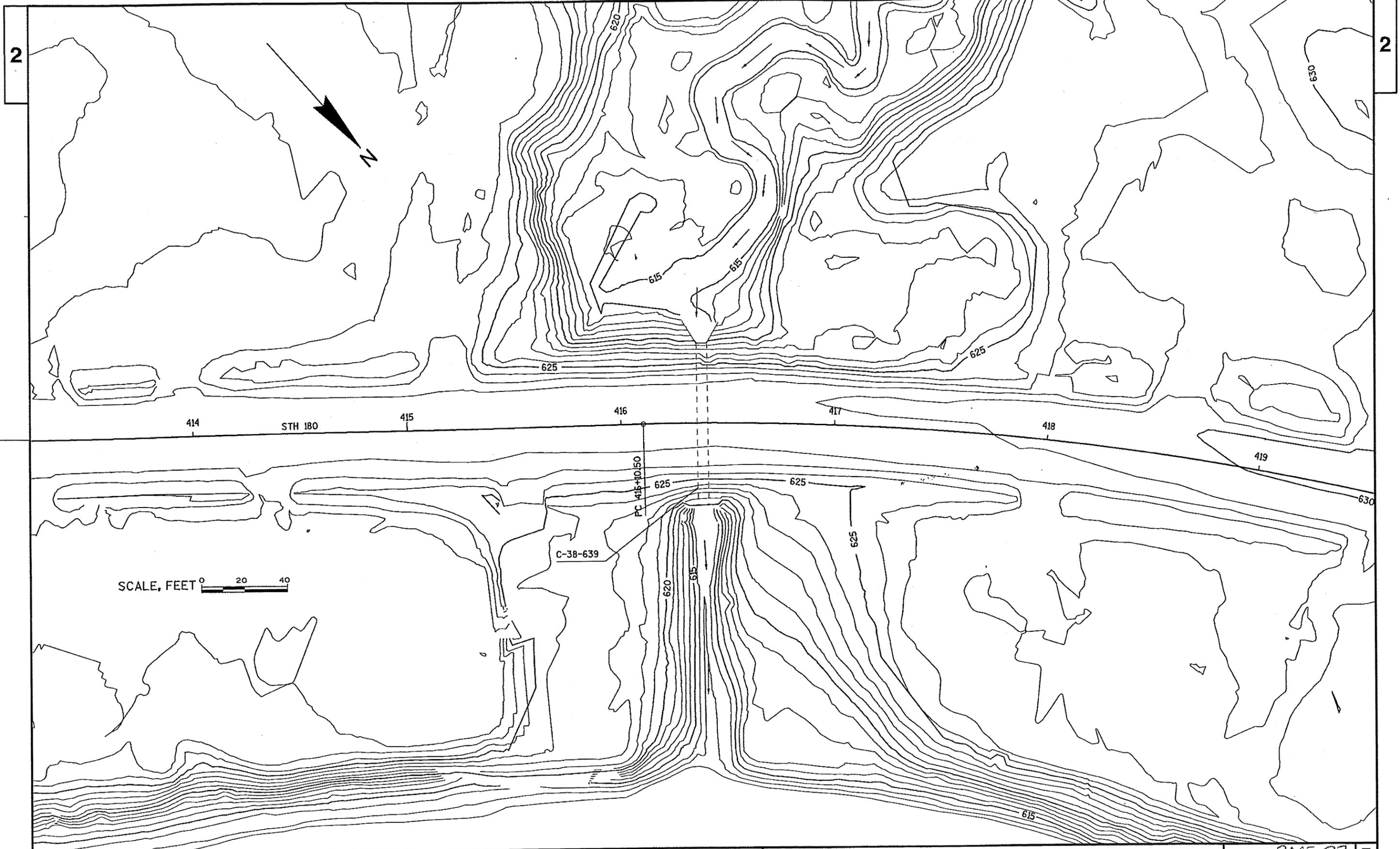
Additional Information

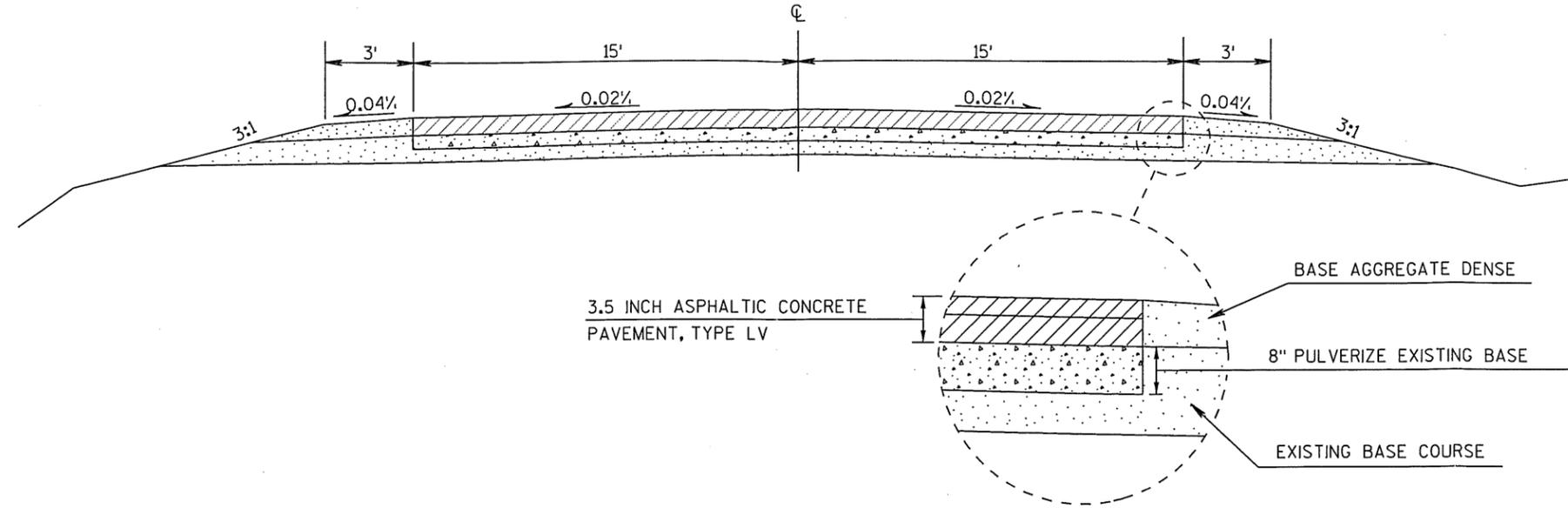
Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

A bridge unit inspection in 2010 noted some minor vertical cracking.

**Downstream scour is believed to be due to slope of culvert - which results in higher velocity water scouring at the outlet.

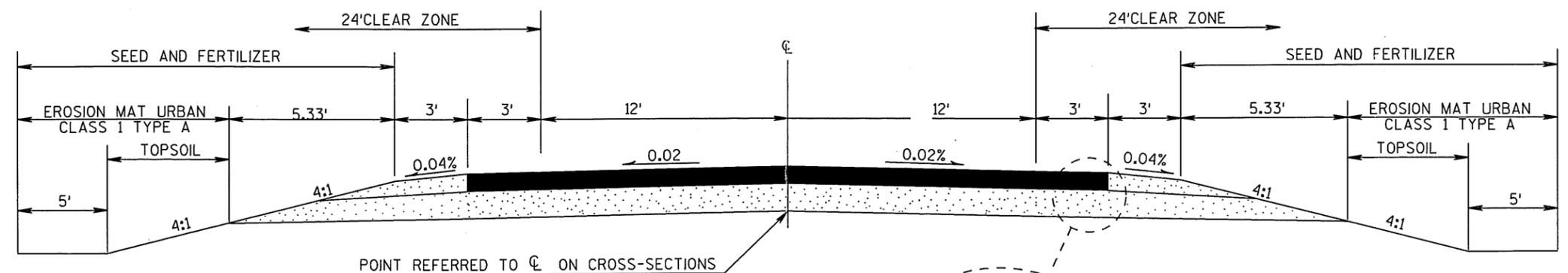






EXISTING TYPICAL SECTION

CP 50-182-017 (STH 182)



PROPOSED TYPICAL SECTION

CP 50-182-017 (STH 182)

REHABILITATION STRUCTURE SURVEY REPORT

REHABILITATION STRUCTURE SURVEY REPORT SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See Structure Survey Report for detailed description of items.
Also, see [Chapter 40 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1696)

Complete DT1696, "STRUCTURE TYPE"

- Complete form for proposed structure rehabilitation type.
- Gather Field Information that is required for the given type of "Work to be Performed".
- Include any supporting materials as directed by the SSR form or Field Information sections.

SURVEY INFORMATION

_____ Project Location Map

- Indicate location of structure and structure number. Showing other proposed structures within project limits.

_____ Small County Map??

- Indicate location of structure.

_____ Plan and Profile Sheet??

- Proposed profile grade line of roadway, proposed horizontal and vertical curve data of roadway, and structure location.

_____ Layout Information

- Existing highways and structures, location(s) of proposed rehabilitation, station numbers, and reference line.

_____ Photographs (Labeled)

- Existing structure, areas of structure needing rehabilitation, utilities, and buildings.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure rehabilitation plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section. Submit if project involves foundation modifications.

REHABILITATION STRUCTURE SURVEY REPORT

DT1696 6/2012

- Grade Separation**
 Stream Crossing
 Culvert
 Railroad
 Retaining Wall
 Noise Barrier
 Sign Structure
 Other: _____

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 1093-03-01	Construction Project ID 1093-03-74	Highway (Project Name) IH 43		
Final Plan Due Date 1/1/06	Preliminary Plan Due Date 9/1/05	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Clinton		
PS&E Date 4/1/06	Letting Date 10/1/06	County Rock		
Structure Number B-53-119		Section 1 & 2	Town 1N	Range 14E
Station 627+02	Latitude: 42.577307 Longitude: -87.737074	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83 (1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data		
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed
Feature On IH 43 S		Feature On		
Feature Under Summerville Road		Feature Under		
Region Contact: Grant Sayne - Project Manager (Area Code) Telephone Number(s): (608) 264-3598 Email: grant.sayne@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:		

Work To Be Performed

Field Information Required Item Number (see Pages 2-4)

- A. Structural Repair 1-3, 22
- B. Overlay 1-3, 10-22, 26-28, 32, 34
 - Concrete Overlay Asphalt Overlay
 - Polymer Modified Asphalt Overlay Thin Bonded Polymer Overlay
 - Other: _____
- C. New Bearings 3, 8, 9, 22
- D. New Railings 15-17, 20-23
- E. Curb and Sidewalk Repair 2, 3, 16, 22, 23
- F. Abutment Repair 2, 3, 12, 16
- G. Pier Repair 2, 3, 12, 16
- H. New Deck 1-6, 9, 10, 13-28, 32-34
- I. Widening 1-28, 30, 32-35
- J. Joint Repair 2, 3, 8, 16, 19, 22
- K. Surface Repair 2, 3, 22
- L. Raising Bridge 3, 6, 9, 16, 20-24
- M. Slope Stabilization 1-3, 30
- N. Scour Repair 1, 2 or 3, 16, 19, 21, 27, 29, 31-35
- O. Painting 16, 22, 24
- P. Other: _____

Field Information Required

If no structure number exists provide the following: Small County Map on which the location of proposed structure is shown in red and any highway relocation in green. In addition, provide Location Map of scale not less than 1" = 2000' showing the structure location and number.

- 1. Most recent inspection report, brief history of bridge construction date, and description of repairs with dates.
- 2. Outline deficient areas on existing structure plan or drawing.
- 3. Photographs of details requiring repairs or modifications, such as: bearings, x-frames, joints, etc. Photograph all deficient areas. Clearly label all photographs.
- 4. Provide proposed typical section for roadway and structure showing dimensions and cross slopes.
- 5. Survey beam seat or girder elevations at both sides of bridge at all substructure units.
- 6. Provide cross-section elevations at 10 foot intervals extending across the structure and a minimum of 100 feet beyond each end. Sections should be normal to centerline and show elevations at centerline roadway and gutter line. Take elevations along joints and at floor drains.
- 7. Show and identify starting stationing on bridge.
- 8. Record measurement, temperature of the structure, and date taken for each of the following:
 - (a) Joint opening measured normal to joint at centerline of roadway and both curb lines.
 - (b) Clearance between girder ends at piers.
 - (c) Distance from front face of abutment backwall to closest point of girder end measured parallel to girder.
 - (d) Temperature of structure determined by averaging top and under deck (if accessible) readings.
- 9. Fixed and expansion bearings - condition and orientation.
- 10. Number and width of proposed pours including construction staging sequence.
- 11. Location of existing construction joints in the deck.

12. Estimated Quantities:

Preparation, Decks, Type 1	Sq. Yd. <u>69.4</u>	
Preparation, Decks, Type 2	Sq. Yd. <u>34.7</u>	
Full Depth Deck Repair	Sq. Yd. <u>N/A</u>	Galvanic Anodes? _____
Concrete Surface Repair Superstructure	Sq. Ft. <u>30</u>	Galvanic Anodes? _____
Concrete Surface Repair Substructure	Sq. Ft. _____	Galvanic Anodes? _____
Curb Repair	LF. <u>N/A</u>	Galvanic Anodes? _____

13. Sufficiency number: 95 (obtain from HSI Bridge Inventory System)

14. Appraisal and Condition Rating

	Deck Condition	Superstructure Condition	Substructure Condition	Load Capacity Appraisal	Structural EVAL Appraisal
Current	See attached Bridge Report	" "	" "	" "	" "

15. Load Ratings

	Inventory	Operational
Current Calculated Date:	See attached Bridge Report	See attached Bridge Report
After Completed by Bridge Designer		

16. Utilities on/near Structure. (WisDOT policy is to avoid placing utilities on the structure.)

Yes No

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

17. Is existing bridge railing deficient?

Yes No If Yes – Replacement Rail Type:

18. Drains to be:

Raised Closed Downspouted New

19. Traffic maintained on bridge during work?

Yes No If Yes – Include sketches

20. Will guard rail be attached?

Yes No If Yes – Which corners? NW & NE

21. Will work to be performed eliminate all deficiencies?

Yes No If No – Explain:

22. Hazardous waste (asbestos) to be removed?

Yes No If Yes – Explain:

23. Wing location(s) for surface drain anchors:

24. Painting?

Yes No If Yes – Explain on Page 4
(all, part, railing, color system, containment, bid items)

25. Desired roadway width: (new deck / widening) _____ Ft.

Desired sidewalk clear width: Left: _____ Ft. Right: _____ Ft.

26. Maximum increase in grade line elevation 2 In.

27. Benchmark description to be shown

28. Desired final cross slopes on bridge .02 Ft./Ft.

29. Underwater Inspection Report including:

- Streambed Cross Section With Pier, Footing and Seal Elevations
- Pier Elevation Drawings
- Pier Layout
- Hydrographic Survey

30. Slope stabilization, provide:

Type: _____ Quantity: _____ CY.

Slope: _____ Ft./Ft. Fill: _____ CY.

31. Preliminary layout of grout bags or proposed scour repair.

C.I.P. Articulated Mats (for Scour) _____ CY.

Grout Bags (for Scour) _____ CY.

Heavy Riprap _____ CY.

Extra Heavy Riprap _____ CY.

- 32. Report submitted with Preliminary Plan requires **no** CADD file submittal (*See ESubmittal instructions*).
- 33. Report submitted for development of Preliminary Plan to structure design engineer requires CADD file (if available) submittal and Report submittal to Soils Engineer if project involves foundation modifications.
- 34. Coordinate with structure design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.
- 35. If project involves substructure widening coordinate with structure and/or hydraulic design engineer to determine if information on the separation and/or stream crossing SSR will be required.

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

Disk located in the corner of the bridge in the southbound lane of I-43 over Summerville Road, Sec. 1, T1N, R14E
Town of Clinton, Rock County. (1975) Elevation - None.

1. New structure constructed in 1975; no repairs were performed since its construction. See attached bridge inspection report for details.
2. Deficient areas to be determined in the field by field engineer.
3. See attached photos.
6. See attached survey information data sheet for details.
8. Expansion joint, located at west abutment - type: steel 1, temp: 45,
File Inspection Date: 2003-03-25, File Insp. (in.) 1.5
10. See attached typical drawing.
11. No existing construction joints.
12. Locations of repairs to be determined by Field Engineer.
16. No drains on bridge deck.
17. Traffic will be maintained during construction - see attached drawings.
18. Existing connecting guard rails should be maintained on Southbound NW & NE corners.

BRIDGE INSPECTION REPORT
Wisconsin Dept. of Transportation
DT2007 2003 s.84.17 Wis. Stats. Type = ROUTINE INSPECTION

page 1

Inventory Data

Feature On: IH 43 SB		Maintainer: STATE HIGHWAY DEPT		Structure No: B-53-0119	
Feature Under: SUMMERVILLE RD		Sect/Twn/Rng: S01 T01N R14E			
Location: 4.6M S JCT USH 14 TO		County: ROCK (53)	Municipality: TOWN-CLINTON (53010)		
Inv Rating: HS23	Rdwy Width (ft): 40.0	Deck Width (ft): 43.8	Existing Posting:		
Oper Rating: HS41	Total Length (ft): 141.0	Deck Area(ft2): 6175	ADT On: 13000 Yr: 1995	ADT Under: 150 Yr: 1980	

Inspection Type (* = Supplemental Form Required)

	Routine Visual	Fracture Critical*	In-Depth*	UW-Dive*	UW-Surv*	UW-Probe/Visual*	Movable*
Last Insp.	2005-03-15						
Frequency	24						
Recom. Freq.							
	Initial*	Damage	Interim	Load Posted	SI & A Field Review*		
Last Insp.							
Frequency	N/A						
Recom. Freq.	N/A						Item No. Needing Change

Load Rating Information

Overburden	Measurement (in): 0.0	Date:	Deck Surface Type: CONCRETE		
Section Loss	File Meas. (%):	File Insp. Date:	Insp. Measurement (%):	Describe:	
Re-rate for load capacity?		Reason:		Date Last Rated:	

Expansion Joints

Location	Type	Temp: File Insp. Date	45		Signing Condition			Comments
			File Insp. (in)	New Insp. (in)	Type of Marker	File	Y/N	
WEST ABU	STEEL1				Bridge Markers	Y	Y	
					Narrow Bridge			
					One Lane Road			
					Vertical Clearance			
					Weight Limit Post			
					Other(Addl. Sign)			

Clearances(Cardinal = N or E)

	File Meas. (ft.)	File Date	New Meas. (ft.)
Min. Vertical Clearance Under (Cardinal)	15.67		
Min. Vertical Clearance Under (non-Cardinal)			
Min. Vertical Clearance On			

Structure Type

Construction/Rehabilitation History

Material	Configuration	# of Spans	Overall Length (ft)	Year	Work Performed	Plan	Shop
CONT PREST CO	DECK GIRDER	1	37.5	1975	NEW STRUCTURE	C119	
CONT PREST CO	DECK GIRDER	1	59.5	9999	NOT BUILT		
CONT PREST CO	DECK GIRDER	1	40.0				

Inspection Information

Special Requirements	Y/N	Comments
Traffic Control		
Access Equipment		
Other		

Inspector Information

Team Leader Name and No. Printed: Delaney, John (1006)	Team Member(s) Name(s) Printed:	
Team Leader Signature:	Inspection Date: 2005-03-15	Inspection Agency: STATE HIGHWAY DEPARTMENT (1)
District/Local Manager and No. Printed:	District/Local Manager Signature:	Review Date:

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	12 / 4	Conc Deck No Ovl	SF	6176			6176		
		Patches at both ends and spalls at north end. Many shallow spalls/potholes thruout deck.							
X	109 / 3	P/S Conc Open Girder	LF	550	541	9			
		4 girders. East abutment some distress/delam at a few girder ends.							
X	205 / 3	R/Conc Column	EA	6	6				
X	215 / 4	R/Conc Abutment	LF	94	78	16			
		Couple light vertical cracks. SE corner next to WW is a small spall with exposed rusty rebar. NE corner next to WW is cracking/delam and spalled no exposed rebar.							
X	234 / 4	R/Conc Cap	LF	88	82	6			
X	250 / 3	Concrete Diaphragm	EA	15	13	2			
		15 diaphragms. Over pier 2 girder 1&2 corner popout spall no exposed rebar.							
X	304 / 4	Open Expansion Joint	LF	45	39	6			
		sliding steel plate - water leaching.							
X	311 / 4	Moveable Bearing	EA	4		4			
		4 bearings at west abutment. All masonry plates have heavy rusty							
X	321 / 4	R/Conc Approach Slab	EA	2			2		
		Couple spalls and concrete distress in north approach joint. Both approaches have settle also the SW, NE & NW shoulers have settled.							
X	331 / 4	Conc Bridge Railing	LF	282	200	82			
		High steel with rust stains and many light vertical cracking							
X	343 / 2	Crushed Aggregate Sp	EA	2	2				
		Small holes dug in both.							
X	357 / 4	Pack Rust Smart Flag	EA	1	1				
		Moveable bearings.							
X	358 / 4	Deck Cracking SmFlag	EA	1			1		
		Many light transverse/diagonal cracks.							
X	359 / 4	Und Dk Surf Sm Flag	EA	1	1				
		Couple light diagonal cracks at deck end. Looks good.							
X	400 / 4	Concrete Wingwall	EA	4	3	1			
		SW wing has small delam.							

General Inspection/Maintenance Notes

Patch deck spalls.
Sweep & clean flow lines.

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:
Amount: Date(YYYY-MM-DD):
Maintenance item comment:

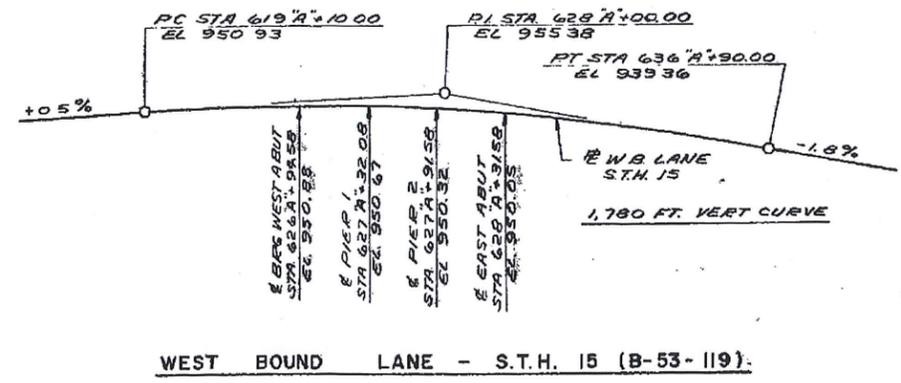
Maintenance Item:
Amount: Date(YYYY-MM-DD):
Maintenance item comment:

NBI Ratings

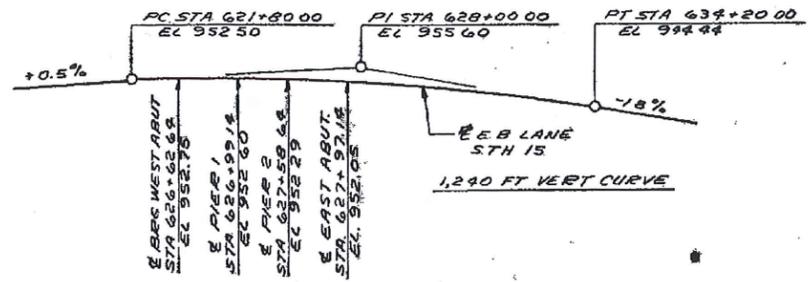
NBI	File	New	NBI	File	New
Deck	6	6	Culvert	N	N
Superstructure	8	8	Channel	N	N
Substructure	8	8	Waterway	N	N

Maintenance Item:
Amount: Date(YYYY-MM-DD):
Maintenance item comment:

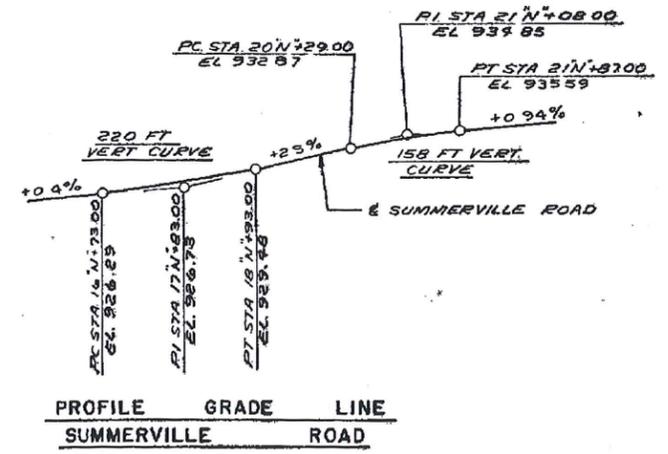
1093-1-72
 FEDERAL PROJECT DISTRICT
 729



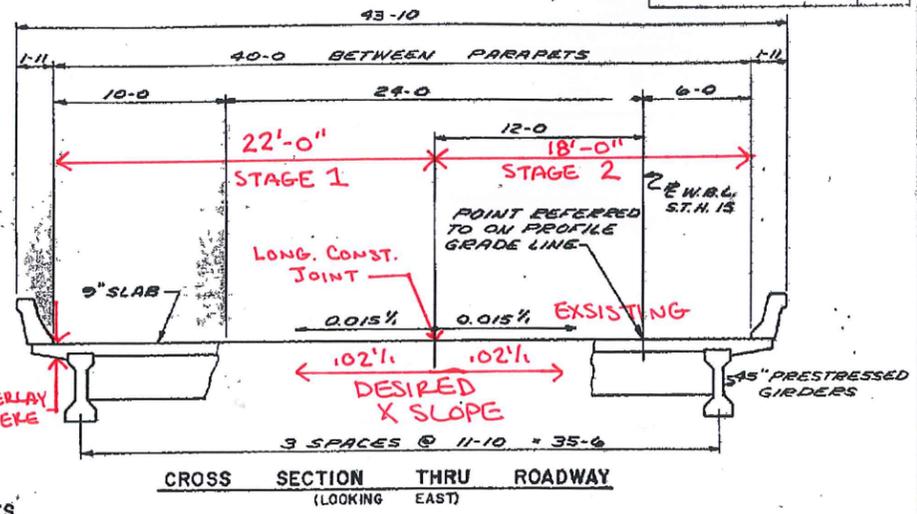
WEST BOUND LANE - S.T.H. 15 (B-53-119)



EAST BOUND LANE - S.T.H. 15 (B-53-118)
 PROFILE GRADE LINES - S.T.H. 15



PROFILE GRADE LINE
 SUMMERVILLE ROAD



CROSS SECTION THRU ROADWAY
 (LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 BAR STEEL REINFORCEMENT SHALL BE IMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
 THE FIRST DIGIT OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
 ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" AT THE PIERS SHALL BE THE FINISHED GRADED SECTION.
 THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING, CRUSHED AGGREGATE, TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.
 JOINT FILLER SHALL CONFORM TO A.A.S.H.O. DESIGNATION M153 OR M1213.

- AVG. OVERLAY 't' = 2 1/4"
 - SEE STD 40.1

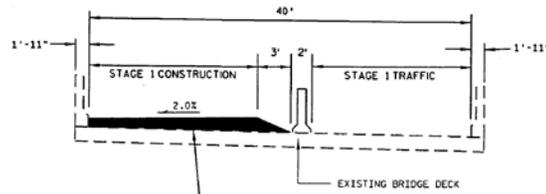
RATINGS

INV: HS 23
 OPER: HS 41
 PERMIT: 250K

TOTAL ESTIMATED QUANTITIES

BID ITEMS	UNIT	W. ABUT	PIER 1	PIER 2	E. ABUT	SUPER.	TOTAL
EXCAVATION FOR STRUCTURES	C.Y.						1
CONCRETE MASONRY	C.Y.	73	54	46	52	240	465
BAR STEEL REINFORCEMENT	LB	3,480	10,530	6,390	2,560	61,770	84,730
PRESTRESSED GIRDER, I TYPE, 45IN	L.F.					550	550
STRUCTURAL CARBON STEEL	LB					3,410	3,410
STRUCTURAL LOW-ALLOY STEEL	LB					690	690
LUBRICATED BRONZE PLATES	LB					64	64
BEARING PADS, ELASTOMERIC	S.F.					33	33
STEEL PILING, HP 10x42, DEL. & DR.	L.F.	640			640		1,280
SLOPE PAVING, CR. AGGREGATE	S.Y.	236			253		489
STEEL PILING, HP 12x53, DEL. & DR.	L.F.		360	240			600
BEARING PADS	S.F.					6	6
NON-BID ITEMS							
1/2" ALUMINUM OR ZINC PLATE	S.F.					34	34
FILLER	SIZES						1/2 & 3/4
POLYVINYL CHLORIDE WATERSTOP	L.F.	44			43		87

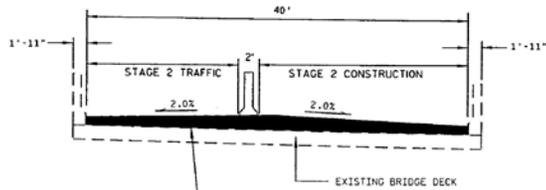
No.	Cont.	Rev.	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
STRUCTURE B-53-119			
Year 1989	By	PAGE	FluG
ESTIMATED QUANTITIES			SHEET 2 OF 12
			X50122



HMA WARRANTED MAINLINE ASPHALTIC PAVEMENT
(TO BE CONSTRUCTED IN LAYERS)

STAGING DETAIL

STAGE 1



HMA WARRANTED MAINLINE ASPHALTIC PAVEMENT
(TO BE CONSTRUCTED IN LAYERS)

STAGING DETAIL

STAGE 2

NOTE:
STAGES TO BE REPEATED FOR ALL THREE LAYERS OF ASPHALTIC PAVEMENT

**REHABILITATION STRUCTURE SURVEY REPORT
FIELD INFORMATION - SURVEY**

Survey information, existing deck elevations:

**B-53-119
IH 43 Summerville Road Overpass - SB
Survey Information**

STATION	LT EOP Offset = 24' Elevation	Center Line Offset = 12' Elevation	RT EOP Offset = 0 Elevation
APPROACHES			
623+92	952.02	952.23	952.03
624+17	951.98	952.16	951.98
624+42	951.92	952.14	951.95
624+67	951.86	952.05	951.88
624+92	951.78	951.98	951.79
625+17	951.69	951.87	951.72
625+42	951.57	951.78	951.62
625+67	951.46	951.61	951.48
625+92	951.35	951.54	951.35
626+17	951.16	951.40	951.23
626+42	951.06	951.25	951.12
626+67	950.97	951.15	951.02
626+92	950.86	951.16	950.99
BRIDGE DECK			
627+02	950.86	951.06	950.97
627+12	950.84	950.98	950.81
627+22	950.76	950.94	950.78
627+32	950.67	950.81	950.71
627+42	950.63	950.78	950.66
627+52	950.58	950.72	950.63
627+62	950.53	950.67	950.55
627+72	950.48	950.59	950.47
627+82	950.41	950.53	950.42
627+92	950.33	950.48	950.31
628+02	950.24	950.42	950.27
628+12	950.18	950.32	950.22
628+22	950.12	950.28	950.15
628+32	950.06	950.19	950.04
APPROACHES			
628+57	949.80	949.91	949.80
628+82	949.77	949.87	949.68
629+07	949.68	949.73	949.51
629+32	949.53	949.49	949.50
629+57	949.46	949.41	949.18
629+82	949.36	949.23	949.08
630+07	949.28	949.09	948.90
630+32	949.13	948.91	948.64
630+57	948.97	948.73	948.46
630+82	948.88	948.58	948.23
631+07	948.64	948.28	947.86
631+32	948.44	948.04	947.58



B-53-119 Approach Joint



B-53-119

Field Information Required

If no structure number exists provide the following: Small County Map on which the location of proposed structure is shown in red and any highway relocation in green. In addition, provide Location Map of scale not less than 1" = 2000' showing the structure location and number.

- 1. Most recent inspection report, brief history of bridge construction date, and description of repairs with dates.
- 2. Outline deficient areas on existing structure plan or drawing.
- 3. Photographs of details requiring repairs or modifications, such as: bearings, x-frames, joints, etc. Photograph all deficient areas. Clearly label all photographs.
- 4. Provide proposed typical section for roadway and structure showing dimensions and cross slopes.
- 5. Survey beam seat or girder elevations at both sides of bridge at all substructure units.
- 6. Provide cross-section elevations at 10 foot intervals extending across the structure and a minimum of 100 feet beyond each end. Sections should be normal to centerline and show elevations at centerline roadway and gutter line. Take elevations along joints and at floor drains.
- 7. Show and identify starting stationing on bridge.
- 8. Record measurement, temperature of the structure, and date taken for each of the following:
 - (a) Joint opening measured normal to joint at centerline of roadway and both curb lines.
 - (b) Clearance between girder ends at piers.
 - (c) Distance from front face of abutment backwall to closest point of girder end measured parallel to girder.
 - (d) Temperature of structure determined by averaging top and under deck (if accessible) readings.
- 9. Fixed and expansion bearings - condition and orientation.
- 10. Number and width of proposed pours including construction staging sequence.
- 11. Location of existing construction joints in the deck.
- 12. Estimated Quantities:

Preparation, Decks, Type 1	Sq. Yd. _____	
Preparation, Decks, Type 2	Sq. Yd. _____	
Full Depth Deck Repair	Sq. Yd. _____	Galvanic Anodes? _____
Concrete Surface Repair Superstructure	Sq. Ft. _____	Galvanic Anodes? _____
Concrete Surface Repair Substructure	Sq. Ft. _____	Galvanic Anodes? _____
Curb Repair	LF. _____	Galvanic Anodes? _____
- 13. Sufficiency number: _____ (obtain from HSI Bridge Inventory System)

14. Appraisal and Condition Rating

	Deck Condition	Superstructure Condition	Substructure Condition	Load Capacity Appraisal	Structural EVAL Appraisal
Current					

15. Load Ratings

	Inventory	Operational
Current Calculated Date:		
After Completed by Bridge Designer		

16. Utilities on/near Structure. (WisDOT policy is to avoid placing utilities on the structure.)

Yes No

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

17. Is existing bridge railing deficient?

Yes No If Yes – Replacement Rail Type:

18. Drains to be:

Raised Closed Downspouted New

19. Traffic maintained on bridge during work?

Yes No If Yes – Include sketches

20. Will guard rail be attached?

Yes No If Yes – Which corners?

21. Will work to be performed eliminate all deficiencies?

Yes No If No – Explain: No, repair only scour issues

22. Hazardous waste (asbestos) to be removed?

Yes No If Yes – Explain:

23. Wing location(s) for surface drain anchors:

24. Painting?

Yes No If Yes – Explain on Page 4
(all, part, railing, color system, containment, bid items)

25. Desired roadway width: (new deck / widening) _____ Ft.

Desired sidewalk clear width: Left: _____ Ft. Right: _____ Ft.

26. Maximum increase in grade line elevation _____ In.

27. Benchmark description to be shown

28. Desired final cross slopes on bridge _____ Ft./Ft.

29. Underwater Inspection Report including:

- Streambed Cross Section With Pier, Footing and Seal Elevations
- Pier Elevation Drawings
- Pier Layout
- Hydrographic Survey

30. Slope stabilization, provide:

Type: _____ Quantity: _____ CY.

Slope: _____ Ft./Ft. Fill: _____ CY.

31. Preliminary layout of grout bags or proposed scour repair.

C.I.P. Articulated Mats (for Scour) _____ CY.

Grout Bags (for Scour) _____ CY.

Heavy Riprap _____ CY.

Extra Heavy Riprap _____ CY.

- 32. Report submitted with Preliminary Plan requires **no** CADD file submittal (*See ESubmittal instructions*).
- 33. Report submitted for development of Preliminary Plan to structure design engineer requires CADD file (if available) submittal and Report submittal to Soils Engineer if project involves foundation modifications.
- 34. Coordinate with structure design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.
- 35. If project involves substructure widening coordinate with structure and/or hydraulic design engineer to determine if information on the separation and/or stream crossing SSR will be required.

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

Construction History:

1980 New Structure
2006 Concrete Overlay

Scour Mitigation Repairs:

Pier 2 Location - Fill scoured area with grout bags placed on top of cast in place articulated mat around pier 2, then use structure grout to fill any undermined areas. Grout bags should only be placed at the upstream pier 2 nose. Cast in place articulated mat should surround pier 2. See attached sketch of proposed repairs for more detail. See attached underwater dive inspection report for elevations.

Pier 3 Location - Fill scoured area with grout bags placed on top of cast in place articulated mat around pier 3, then use structure grout to fill any undermined areas. Grout bags and cast in place articulated mat should be placed around the entire perimeter of pier 3. See attached sketch of proposed repairs for more detail. See attached underwater dive inspection report for elevations.

19. Traffic will be maintained during work on bridge and no sketches are included since repairs are being made to the piers underwater. No lanes will be closed.

29. Underwater Inspection Report attached.

31. Scour repair layout and quantities to be determined by BOS.

Preliminary Estimate - Structure # B-37-187 STH 34

Pier 2 Location				Quantity	Cost Per Unit	Cost Per Item
Item #	Description	Unit				
spv.xxx:xx	C.I.P. Articulated Mat	C.Y.	26.0	\$ 825.00	\$ 21,450.00	
90034B	Grout Bags	C.Y.	12.0	\$ 700.00	\$ 8,400.00	
SPV.0035.01	Grout	C.Y.	1.0	\$ 2,000.00	\$ 2,000.00	
619.1000	Mobilization	EACH	0.5	\$ 15,000.00	\$ 7,500.00	
643.0100	Traffic Control (Project)	EACH	0.5	\$ 10,000.00	\$ 5,000.00	
Pier 2 Estimated Total					\$ 44,400.00	

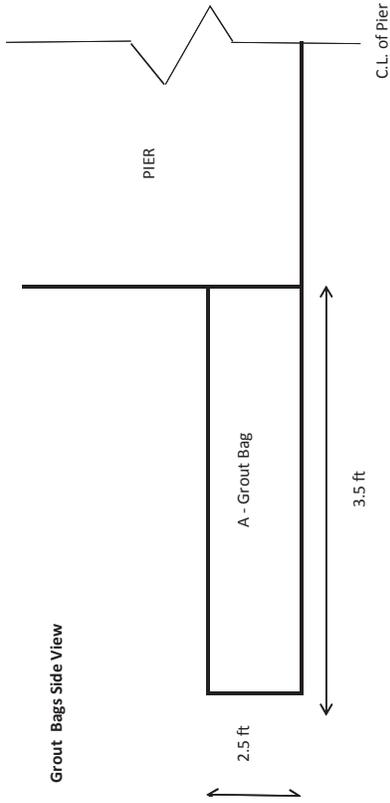
Pier 3 Location				Quantity	Cost Per Unit	Cost Per Item
Item #	Description	Unit				
spv.xxx:xx	C.I.P. Articulated Mat	C.Y.	39.0	\$ 825.00	\$ 32,175.00	
90034B	Grout Bags	C.Y.	43.0	\$ 700.00	\$ 30,100.00	
SPV.0035.01	Grout	C.Y.	1.0	\$ 2,000.00	\$ 2,000.00	
619.1000	Mobilization	EACH	0.5	\$ 15,000.00	\$ 7,500.00	
643.0100	Traffic Control (Project)	EACH	0.5	\$ 10,000.00	\$ 5,000.00	
Pier 3 Estimated Total					\$ 76,800.00	

Project				Quantity	Cost Per Unit	Cost Per Item
Item #	Description	Unit				
spv.xxx:xx	C.I.P. Articulated Mat	C.Y.	65	\$ 825.00	\$ 53,625.00	
90034B	Grout Bags	C.Y.	55	\$ 700.00	\$ 38,500.00	
SPV.0035.01	Grout	C.Y.	2	\$ 2,000.00	\$ 4,000.00	
619.1000	Mobilization	EACH	1	\$ 15,000.00	\$ 15,000.00	
643.0100	Traffic Control (Project)	EACH	1	\$ 10,000.00	\$ 10,000.00	
Project Estimated Total					\$ 121,200.00	

Remarks

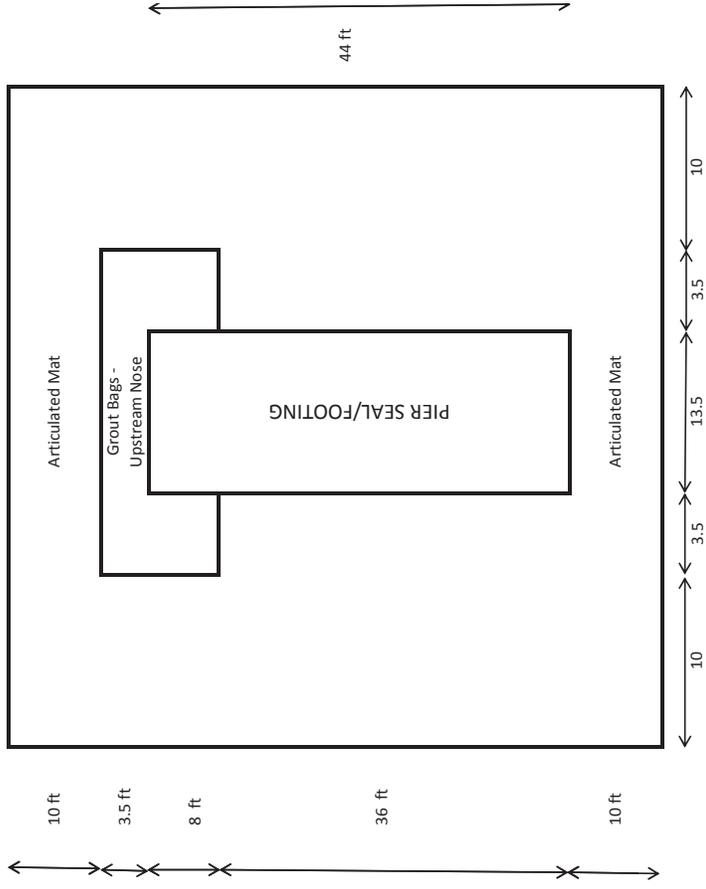
Estimate Surrounding 8 ft of the Length of Pier 2 with Grout Bags
Estimate Surrounding the Entire Length of Pier 3 with Grout Bags
Void/Undermining Demensions Taken from UW Dive Inspection
UW Dive Report States Undermining at Pier Two = 5 ft long x 5 ft deep x 1 ft high = 25 cf
UW Dive Report States Undermining at Pier Three = 3 ft long x 3 ft deep x 2 ft high = 18 cf

PIER 2 LOCATION



Area A 8.75 ft²
 Calc. Area of Concrete 8.75 ft²

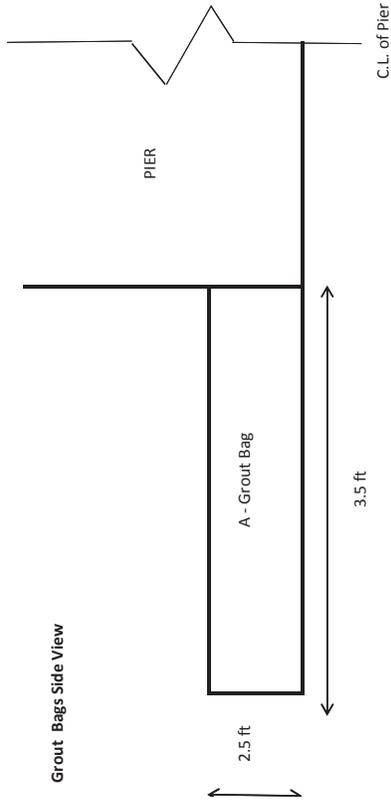
Plan View of Scour Mediation



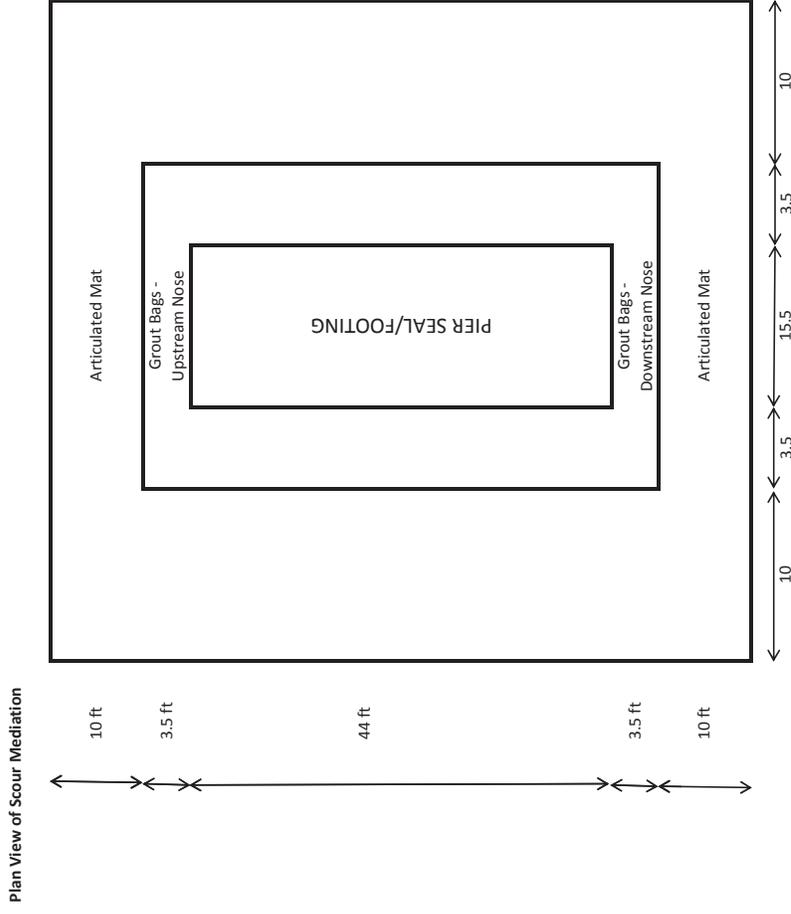
Quantity Calculations

Volume of Mat = 26 CY
 Volume of Grout = 12 CY

PIER 3 LOCATION



Area A 8.75 ft²
 Calc. Area of Concrete 8.75 ft²



Quantity Calculations

Volume of Mat = 29 CY
 Volume of Grout = 43 CY

BRIDGE INSPECTION REPORT
Wisconsin Dept. of Transportation
DT2007 2003 s.84.17 Wis. Stats. Type = UW-DIVE INSPECTION

page 1

Inventory Data

Feature On: STH 34		Maintainer: STATE HIGHWAY DEPT		Structure No: B-37-0187	
Feature Under: WISCONSIN RIVER 2		Sect/Twn/Rng: S29 T26N R07E			
Location: 1.8M N JCT CTH C TO		County: MARATHON	Municipality: TOWN-KNOWLTON (37048)		
Inv Rating: HS22	Rdwy Width (ft): 40.0	Deck Width (ft): 43.0	Existing Posting:		
Oper Rating: HS37	Total Length (ft): 554.2	Deck Area(ft2): 23830	ADT On: 5430 Yr: 2003	ADT Under: Yr:	

Inspection Type (* = Supplemental Form Required)

	Routine Visual	Fracture Critical*	In-Depth*	UW-Dive*	UW-Surv*	UW-Probe/Visual*	Movable*
Last Insp.	08-18-09		06-23-08	06-01-11	08-25-03	08-18-09	
Frequency	24		72	60	60	24	
Recom. Freq.	24				60	24	
	Initial*	Damage	Interim	Load Posted	SI & A Field Review*		
Last Insp.							
Frequency	N/A						
Recom. Freq.	N/A						Item No. Needing Change

Load Rating Information

Overburden	Measurement (in): 2.2	Date: 06-01-06	Deck Surface Type: CONCRETE		
Section Loss	File Meas. (%):	File Insp. Date: 10-13-10	Insp. Measurement (%):	Describe:	
Re-rate for load capacity?	Reason:			Date Last Rated: 06-01-04	

Expansion Joints

Location	Type	Temp:		New Insp. (in)	Signing Condition			
		File Insp. Date	File Insp. (in)		Type of Marker	File	Y/N	Comments
SOUTH EN	S-400E				Bridge Markers	Y	Y	4 TIGER BOAR
NORTH EN	S-400E				Narrow Bridge			
					One Lane Road			
					Vertical Clearance			
					Weight Limit Post			
					Other(Addl. Sign)			

Clearances(Cardinal = N or E)

	File Meas. (ft.)	File Date	New Meas. (ft.)
Min. Vertical Clearance Under (Cardinal)			
Min. Vertical Clearance Under (non-Cardinal)			
Min. Vertical Clearance On			

Structure Type

Construction/Rehabilitation History

Material	Configuration	# of Spans	Overall Length (ft)	Year	Work Performed	Plan	Shop
CONT STEEL	DECK GIRDER		122.0	1980	NEW STRUCTURE	C168	C168
CONT STEEL	DECK GIRDER		153.0	2006	CONCRETE OVER	PLAN	
CONT STEEL	DECK GIRDER		153.0				
CONT STEEL	DECK GIRDER		122.0				

Inspection Information

Special Requirements	Y/N	Comments
Traffic Control		
Access Equipment	Y	20 ft BOAT
Other		

Inspector Information

Team Leader Name and No. Printed: Forsyth, Roy A (9534)		Team Member(s) Name(s) Printed: Jordan Furlan, Mark Sorenson	
Team Leader Signature:		Inspection Date: 06-01-11	Inspection Agency: CONSULTANT (10)
District/Local Manager and No. Printed:		District/Local Manager Signature:	Review Date:

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
	22 / 4	Conc Deck/Conc Ov	SF	23830		23830			
	NEW "04; INFRARED THERMOGRAPHY SURVEY 6/08 INDICATES TOTAL 0.5% DETERIORATION SEE INSPECTION PDF								
	106 / 2	Unpnt Stl Opn Girder	LF	2755	2751	4			
	5-62 IN. KOR 10; ENDS PAINTED; MINOR RUST @ N ABUT G5								
	171 / 2	Unpainted Steel Diap	EA	96	96				
	KOR 10.								
	174 / 2	Unpainted Steel Late	EA	28	28				
	KOR 10; ENDS PAINTED "04;								
X	210 / 3	R/Conc Pier Wall	LF	120	113	7			
	TVC, 1 OPEN V CRK @ PIER1, BAY 3 & PIER 3, BAYS 1 & 3 & PIER 2, GIRDER 3; SM CHIP @ E. END PIER 3								
	215 / 3	R/Conc Abutment	LF	85	79	6			
	2 SMALL SPLS & 4 FT TVCS IN N ABUT;								
	220 / 3	R/C Sub Pile Cap/Ftg	EA	3	3				
	PIER FOOTINGS EXPOSED - INSPECT BY DIVING INSPECTION. 10/2010 DIVING INSPECTION INDICATES PIERS IN GOOD CONDITION EXCEPT UNDERMINING AT PIER 1 PENETRATING UP TO 1 FT. DEEP.								
	300 / 4	Strip Seal Exp Joint	LF	80	80				
	NEW "04;								
	311 / 4	Moveable Bearing	EA	20	20				
	ABUT, P1 & P3, BRZ PLTS (KOR 10); ABUTS PAINTED "04;								
	313 / 4	Fixed Bearing	EA	5	5				
	PIER 2.								
	322 / 4	Bituminous Approach	EA	2	2				
	NEW "08;								
	331 / 4	Conc Bridge Railing	LF	1108	800	308			
	PATCHED & STAINED "04; E RAIL WORSE								
X	342 / 2	RipRap Slope Protect	EA	2	2				
	358 / 4	Deck Cracking SmFlag	EA	1		1			
	SCTRD TIGHT LONG. & TRANS CRKS; UNSLD "09								

Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
	359 / 4	Und Dk Surf Sm Flag	EA	1	1				
FEW TVC W/ LT EFFLOR; FULL DEPTH REPAIR, SPN2-BAY1, SPN3-BAY1; DLM/SPL SPN2-BAY2;									
X	361 / 4	Scour Smart Flag	EA	1		1			
Local scour at the upstream nose of Piers 2 and 3 with undermining penetrating up to 3 ft. under the seal.									
	400 / 3	Concrete Wingwall	EA	4	4				
	405 / 2	Drainage	EA	4	2	2			
2-FLUMES - NORTH/2-DECK DRAINS - SPAN-4; BOTH DECK DRAINS PLUGGED , VEGITATION GROWING FROM E. DRAIN									
	416 / 2	Utilities	EA	1	1				
3 INCH GAS IN BAY 4.									

General Inspection/Maintenance Notes

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:
Amount: Date(YYYY-MM-DD):
Maintenance item comment:

Maintenance Item:
Amount: Date(MM-DD-YY):
Maintenance item comment:

NBI Ratings

NBI	File	New	NBI	File	New
Deck	7	7	Culvert	N	N
Superstructure	8	8	Channel	6	6
Substructure	5	5	Waterway	8	8

Maintenance Item:
Amount: Date(MM-DD-YY):
Maintenance item comment:

**Wisconsin Dept. of Transportation
Underwater Bridge Inspection Report/Dive Log
Emxx-01xx Section 84.17 Wis. Statues**

This form may be required as a supplement to form EM30-01xx for Underwater Bridge Inspections.

Structure No: B-37-0187

Inspection Date: 01-Jun-2011 **Weather Condition.:** Sunny, 70 F **Waterline Elev.(ft):** 1114.5

Safety Concern: Boat Traffic, Depth **Water Temp.(F):** 55 **Total Days On Site:** 1

Current (ft/s): 0 **Visibility:** 6 in to 1ft **Total Inspection Hours:** 3
Total Inspection Minutes:

Elevation Marker Description: Top of Pier 3 wall at upstream (w) nose. (Elev. = 1120.3 ft. from plans)

General Site Condition	
Scour at Bridge Site	Yes, local scour at Piers 2 and 3.
Embankment Erosion / Conditions	Stable
Dive Platform: Shore, Boat, Other	Boat
Location of Boat Access	<1/4 mile downstream at south bank or at southeast quadrant

Substructure Unit(s)	Pier #1	Pier #2
Level of Inspection	Level II	Level II
Abutment / Pier Type	SOLID SHAFT	SOLID SHAFT
Dive Log		
Maximum Water Depth, at Unit (ft)	20.9	39.4
Channel Bottom Material, at Unit	Sand w/ Gravel	Sand w/ Gravel
Scour at Unit	None	Yes
Marine Growth / Cleaning Performed? (Y/N)	Y / Y	Y / Y
Debris / Clearing Performed? (Y/N)	N / N	N / N
Mode: Wade, Scuba, Surface Supplied Air:	Scuba	Scuba
Inspection Comments:		Seal undermined 1 ft vertically with 2 ft penetration at NW corner.

Substructure Unit(s)	Pier #3	Pier #4
Level of Inspection	Level II	
Abutment / Pier Type	SOLID SHAFT	
Dive Log		
Maximum Water Depth, at Unit (ft)	33.5	
Channel Bottom Material, at Unit	Sand w/ Gravel	
Scour at Unit	Yes	
Marine Growth / Cleaning Performed? (Y/N)	Y / Y	/
Debris / Clearing Performed? (Y/N)	N / N	/
Mode: Wade, Scuba, Surface Supplied Air:	Scuba	
Inspection Comments:	Seal undermined 2 ft vertically with 3 ft penetration at SW corner.	

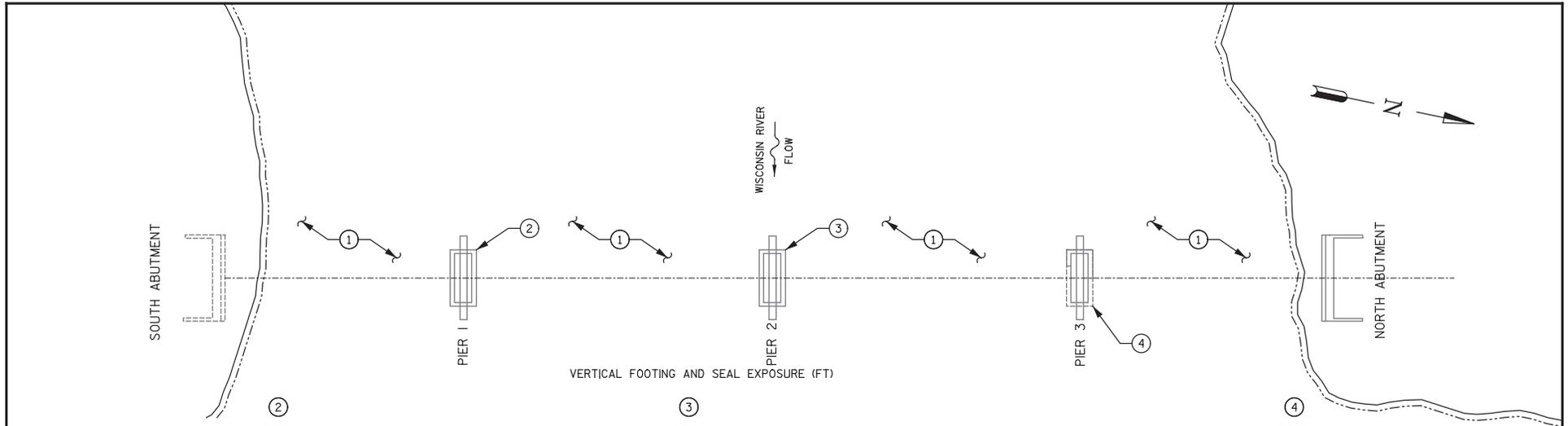
Substructure Unit(s)	Abutment Cardinal	Abutment Non-Cardinal
Level of Inspection		
Dive Log		
Maximum Water Depth, at Unit (ft)		
Channel Bottom Material, at Unit		
Scour at Unit		
Marine Growth / Cleaning Performed? (Y/N)	N / N	N / N
Debris / Clearing Performed? (Y/N)	N / N	N / N
Mode: Wade, Scuba, Surface Supplied Air:		
Inspection Comments:	The North Abutment was dry at the time of inspection and was not inspected.	The South Abutment was dry at the time of inspection and was not inspected.

Conclusions

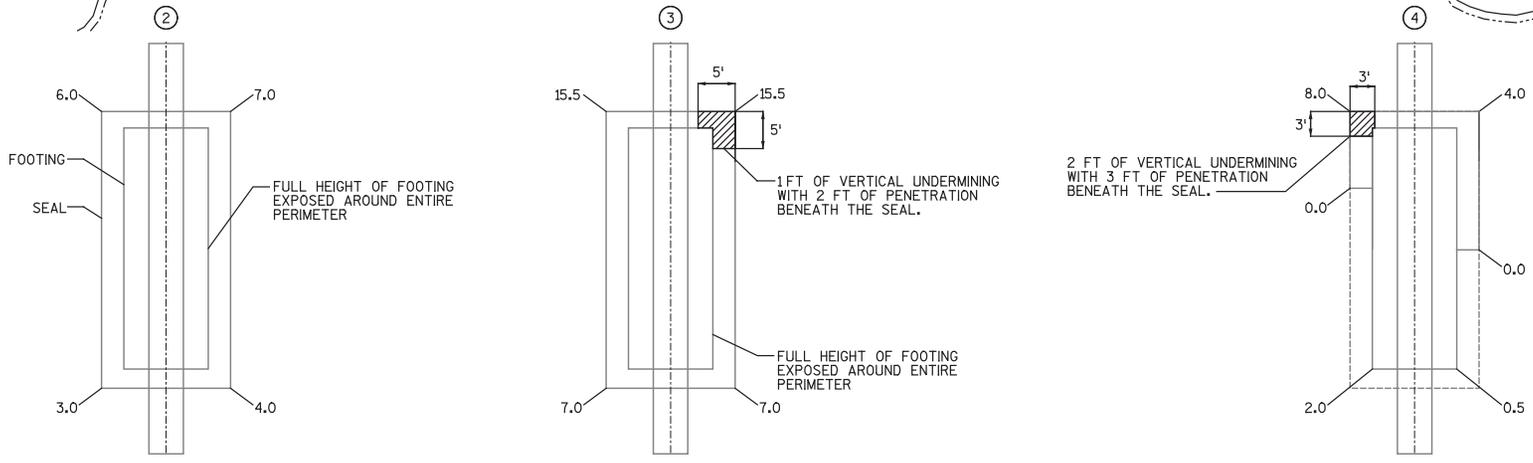
Previously noted undermining at the NW corner of Pier 1 was not observed. Piers 2 and 3 are founded on spread footings and undermining was observed at the upstream noses.

Recommendations

Place riprap at the upstream nose of Piers 2 and 3.



VERTICAL FOOTING AND SEAL EXPOSURE (FT)



INSPECTION NOTES

- ① CHANNEL BOTTOM MATERIAL CONSISTED OF 3 IN. DIAMETER SAND AND GRAVEL.

GENERAL NOTES

- 1. ACCORDING TO PLANS DATED 1/18/1979, THE 100 YEAR FLOOD WATER LEVEL IS LOCATED AT ELEVATION 1119.2.
- 2. ACCORDING TO PLANS DATED 1/18/1979, BOTH ABUTMENTS AND PIER 3 ARE FOUNDED ON HP 10 X 42 STEEL PILES. PIERS 1 AND 2 ARE FOUNDED ON SPREAD FOOTINGS.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
2011 UNDERWATER BRIDGE INSPECTIONS

STRUCTURE NO.: B-37-I87

WATERLINE REFERENCE: TOP OF PIER 3 WALL AT UPSTREAM NOSE = 1120.3

06/01/2011 WATERLINE EL. = 1120.3 - 5.8 = 1114.5

BRIDGE LOCATION: STH 34 OVER THE WISCONSIN RIVER - KNOWLTON, WI

BOAT LAUNCH: SOUTHEAST QUADRANT OF BRIDGE (1/4 MILE D/S)

INSP BY: RAF

DRAWN BY: JTF

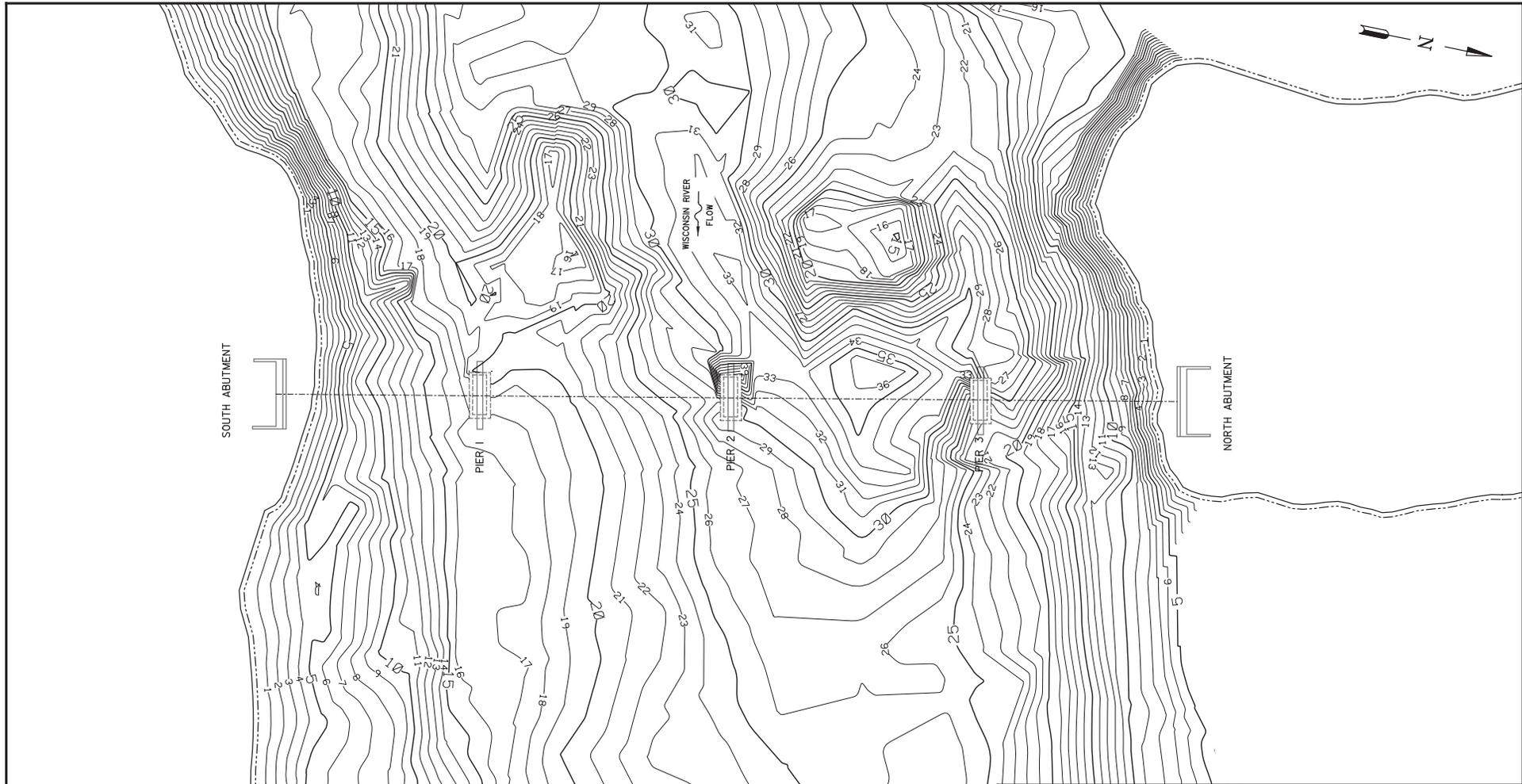
CHECKED BY: RAF

COLLINS ENGINEERS
2033 W. HOWARD AVE.
MILWAUKEE, WI 53221
(414) 282-6905

DATE: 06/01/2011

SCALE: 1"=50'

FIGURE NO.: 1



2010 HYDROGRAPHIC SURVEY PLAN

GENERAL NOTES

1. THE HYDROGRAPHIC SURVEY WAS COMPLETED ON JUNE 01, 2011 BY COLLINS ENGINEERS, INC. SOUNDINGS WERE OBTAINED USING A CONTINUOUSLY RECORDING FATHOMETER
2. OPERATING AT 200KHZ AND LINKED TO A WAAS CAPABLE GPS RECEIVER.
3. ALL WATER DEPTHS ARE IN FEET AND ARE REFERENCED TO THE WATERLINE ELEVATION STATED IN THE TITLE BLOCK.
4. BASE MAP INFORMATION SHOWN ON THIS DRAWING SHALL BE CONSIDERED APPROXIMATE.

LEGEND

- 5— MAJOR CONTOUR
- 1— MINOR CONTOUR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
2011 UNDERWATER BRIDGE INSPECTIONS

STRUCTURE NO.: B-37-I87

WATERLINE REFERENCE: TOP OF PIER 3 WALL AT UPSTREAM NOSE = 1120.3

06/01/2011 WATERLINE EL. = 1120.3 - 5.8 = 1114.5

BRIDGE LOCATION: STH 34 OVER THE WISCONSIN RIVER - KNOWLTON, WI

BOAT LAUNCH: SOUTHEAST QUADRANT OF BRIDGE (1/4 MILE D/S)

INSP BY: RAF

DRAWN BY: JTF

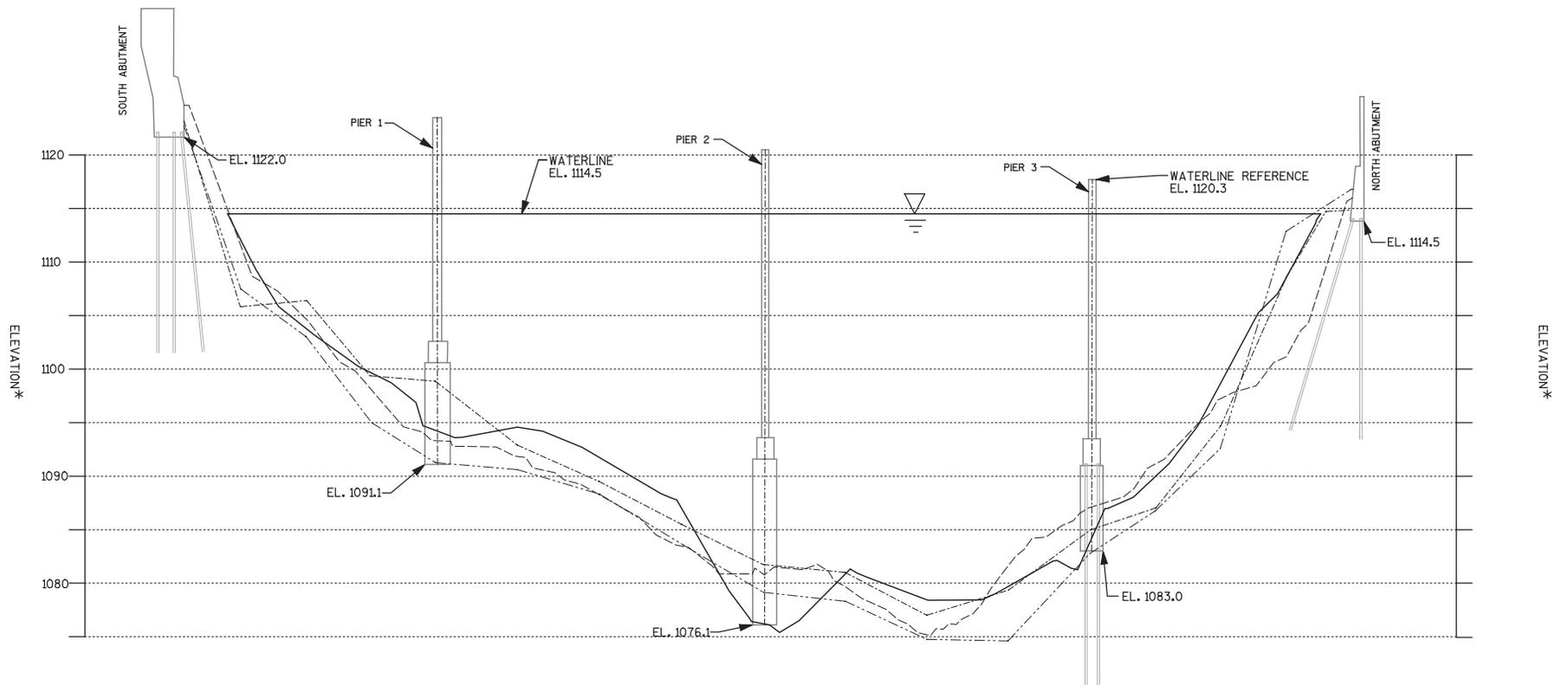
CHECKED BY: RAF

COLLINS ENGINEERS
2033 W. HOWARD AVE.
MILWAUKEE, WI 53221
(414) 282-6905

DATE: 06/01/2011

SCALE: 1"=60'

FIGURE NO.: 2



UPSTREAM FASCIA CHANNEL CROSS SECTION
(LOOKING WEST)

LEGEND	
-----	CHANNEL BOTTOM PER PLANS DATED 1979
.....	CHANNEL BOTTOM PER 2005 INSPECTION
- . - . - .	CHANNEL BOTTOM PER 2010 INSPECTION
—————	CHANNEL BOTTOM PER 6/1/11 INSPECTION

GENERAL NOTES
VERTICAL ELEVATION DATUM IS PER PLANS DATED 1/18/1979.

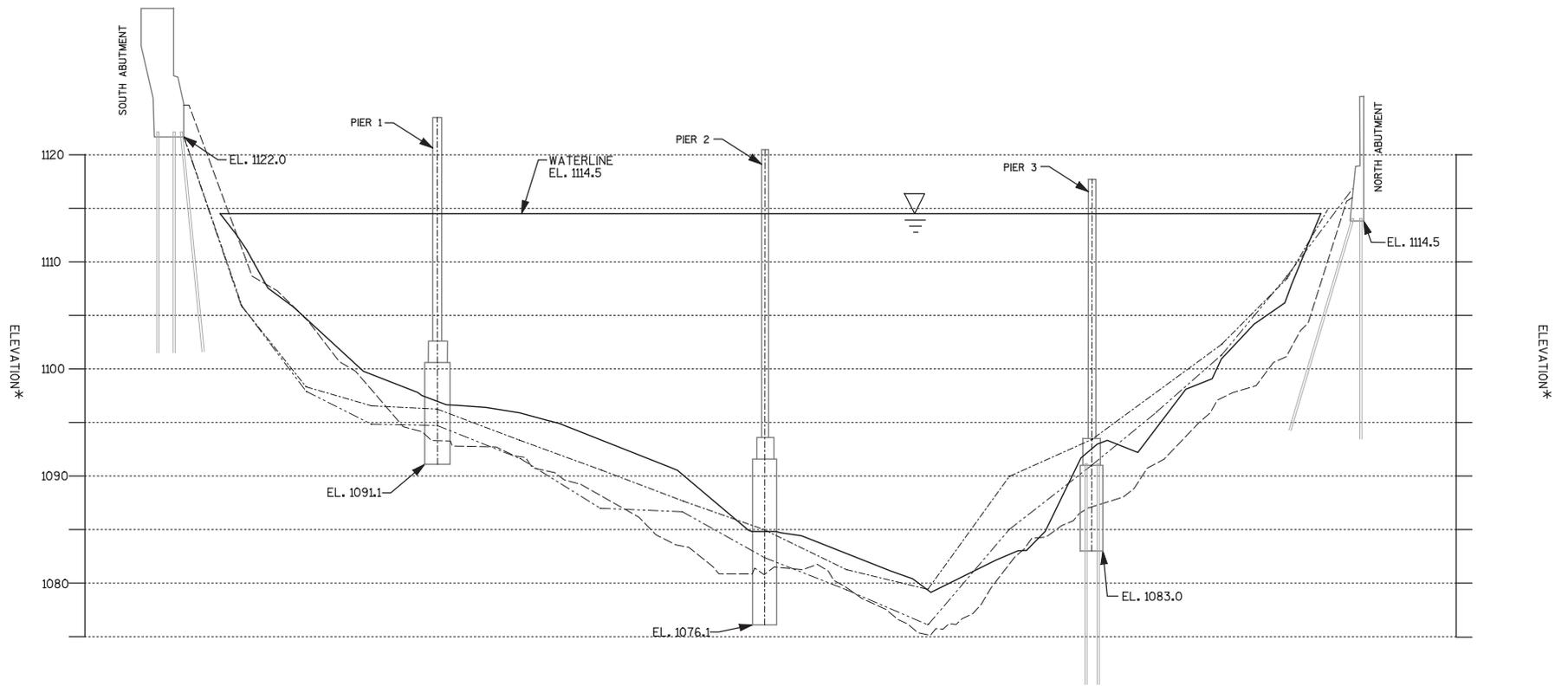
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
2011 UNDERWATER BRIDGE INSPECTIONS
STRUCTURE NO.: B-37-187

WATERLINE REFERENCE: TOP OF PIER 3 WALL AT UPSTREAM NOSE = 1120.3
06/01/2011 WATERLINE EL. = 1120.3 - 5.8 = 1114.5
BRIDGE LOCATION: STH 34 OVER THE WISCONSIN RIVER - KNOWLTON, WI
BOAT LAUNCH: SOUTHEAST QUADRANT OF BRIDGE (1/4 MILE D/S)

INSP BY: RAF
DRAWN BY: JTF
CHECKED BY: RAF

COLLINS ENGINEERS
2033 W. HOWARD AVE.
MILWAUKEE, WI 53221
(414) 282-6905

DATE: 06/01/2011
SCALE: 1"=50'
FIGURE NO.: 3



DOWNSTREAM FASCIA CHANNEL CROSS SECTION
(LOOKING WEST)

LEGEND	
-----	CHANNEL BOTTOM PER PLANS DATED 1979
.....	CHANNEL BOTTOM PER 2005 INSPECTION
- . - . - .	CHANNEL BOTTOM PER 2010 INSPECTION
—————	CHANNEL BOTTOM PER 6/1/11 INSPECTION

GENERAL NOTES
VERTICAL ELEVATION DATUM IS PER PLANS DATED 1/18/1979.

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 2011 UNDERWATER BRIDGE INSPECTIONS		
STRUCTURE NO.: B-37-I87		
WATERLINE REFERENCE: TOP OF PIER 3 WALL AT UPSTREAM NOSE = 1120.3		
06/01/2011 WATERLINE EL. = 1120.3 - 5.8 = 1114.5		
BRIDGE LOCATION: STH 34 OVER THE WISCONSIN RIVER - KNOWLTON, WI		
BOAT LAUNCH: SOUTHEAST QUADRANT OF BRIDGE (1/4 MILE D/S)		
INSP BY: RAF	COLLINS ENGINEERS <small>2033 W. HOWARD AVE. MILWAUKEE, WI 53221 (414) 282-6905</small>	DATE: 06/01/2011
DRAWN BY: JTF		SCALE: 1"=50'
CHECKED BY: RAF		FIGURE NO.: 4



PIER 5 EAST FACE AND DOWNSTREAM NOSE



PIER 6 WEST FACE AND UPSTREAM NOSE

RETAINING WALL STRUCTURE SURVEY REPORT

RETAINING WALL SURVEY REPORT

SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also see, [Chapter 14 of the Bridge Manual](#), specifically section 14.4 for further details.

STRUCTURE INFORMATION

- _____ Report (DT1694) Complete DT1694, Retaining Wall
- New Structure Number R-XX-XXXX.
 - Indicate type of wall desired in "Preference".
- _____ Additional Information
- Wall features, if any, such as aesthetic treatment, railing, fencing on top of wall, etc.

SURVEY INFORMATION

- _____ Small County Map
- Indicate location of structure (include project location map when multiple structures present).
- _____ Plan and Profile Sheet
- Proposed profile grade line of roadway, proposed horizontal and vertical curve data of roadway, and retaining wall location.
- _____ Layout Information
- Geometry table showing 25-ft stations, offsets, ground line, and top of wall elevations.
 - Roadway and wall cross sections in 25-ft stations.
 - Typical section of wall.
- _____ Typical Roadway Section
- Typical dimensions, slopes and clear zone requirements.
- _____ Photographs (Labeled)
- Existing structure, utilities, and/or buildings.

SUBMIT TO:

- _____ Bureau of Structures (ESubmit)
- Required for development of structure plans.
- _____ Region Soils Engineer
- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

SEPARATION STRUCTURE SURVEY REPORT

DT1694 6/2012

Grade Separation Railroad Retaining Wall Noise Barrier

Sign Structure High Mast Lighting Other: _____

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 5300-02-02	Construction Project ID 5300-02-73	Highway (Project Name) STH 161 near CTH Q		
Final Plan Due Date 05-01-2015	Preliminary Plan Due Date 10-01-2015	<input type="checkbox"/> Town <input type="checkbox"/> Village <input checked="" type="checkbox"/> City Madison		
PS&E Date 08-01-2015	Letting Date 12-01-2015	County Dane		
New Structure Number R-13-870	Existing Structure Number N/A	Section 26	Town 7N	Range 8E
Station 208+32.57 to 211+57.57 45'RT	Latitude: 430902.82 Longitude: 892405.81	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83(1991), US Survey Feet Vertical Datum: NAVD 88, Feet		Traffic Forecast Data		
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed
Feature On N/A		Feature On		Functional Class
Feature Under N/A		Feature Under		
Region Contact: Joe Smith (Area Code) Telephone Number(s): (608)242-8808 Email: Joe.Smith@dot.wi.gov		Consultant Contact: (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (see ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of feature on and feature under showing the following:
 - (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance; (g) For railroad project, survey top of each rail and provide proposed geometrics in conformance with railroad company standards.
3. **Layout Sketch** of the site drawn to a scale of not less than 1 inch = 100 feet showing the following:
 - (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) Reference line intersection stationing and intersection angle; (e) North Arrow; (f) Buildings; (g) Above and below ground facilities; (h) Proposed structure when report submitted with Preliminary Plan; (i) Railroad company stationing; (j) Station at ends of existing structure; (k) Other features which influence the design.
4. **Typical Sections** of all roadways showing the following:
 - (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Subgrade; (e) Sidewalk, curb and gutter; (f) Median treatment at underpass mounted or ditch section; (g) Clear zone width; (h) Horizontal clearances at underpass.
5. **Labeled Photographs** of: (a) Existing structure; (b) Site pictures in all controlling directions including, but not limited to North, East, South and West; (c) Buildings within 100 feet of proposed structure.

Proposed Structure

Preference for Structure Type at this Site:

Concrete Panel Mechanically Stabilized Earth Wall No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 3)

Spans- Number N/A		Approximate Centerline to Centerline Span Lengths Along Reference Line of Highway Length of Wall = 325 +/-			
Clear Roadway Width on Structure N/A Ft.		Cross Slope on Deck or N.C. (Normal Crown) N/A Ft./Ft.		Skew N/A <input type="checkbox"/> R.H.F. <input type="checkbox"/> L.H.F.	
Sidewalks/Multi-Use Path <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Left Clear Sidewalk/Path Width Ft.	Separation Barrier <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Right Clear Sidewalk/Path Width Ft.	Separation Barrier <input type="checkbox"/> Yes <input type="checkbox"/> No
Type of Slope Protection N/A					
Specify Wing Location(s) for Beam Guard Attachment N/A			Specify Wing Location(s) for Surface Drain Anchors N/A		
Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach N/A					

YES NO

- Structure Will be Constructed to Accommodate Traffic Staging
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Vertical Clearance Design

- 14' 9" to 15' 3"
- 16' 3" to 16' 9"
- Other: N/A

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 3)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 3)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

For Structure Designers Use Only Proposed Structure

Spans – Number:	Span Lengths (C.L. to C.L. of Substructure):	Skew:	<input type="checkbox"/> R.H.F. <input type="checkbox"/> L.H.F.
Latitude:	Longitude:		

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

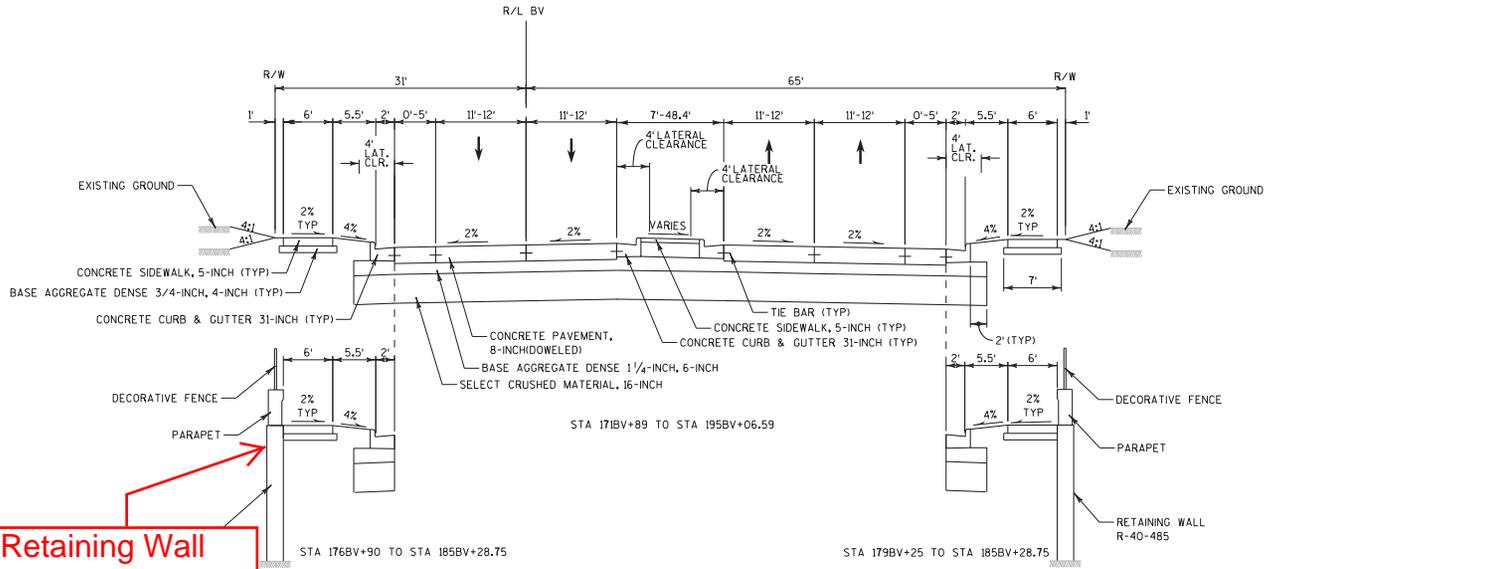
Aesthetics:

Concrete form liner on front face of wall . Concrete form liner will match adjacent bridge formliner B-13-905.

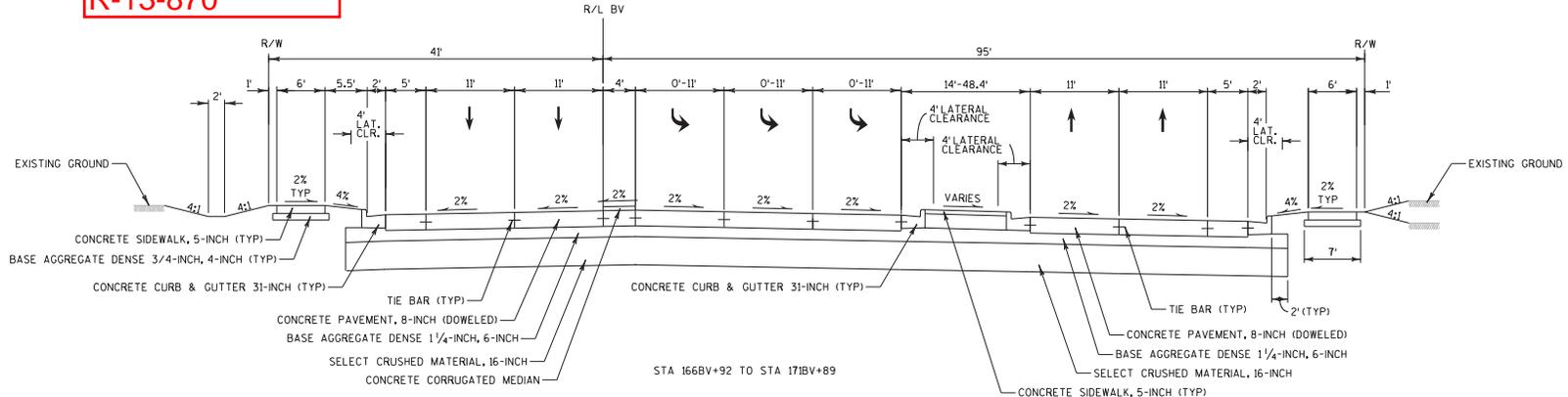
The railing for the retaining walls will be a modified version of the type 'C1' rail shown on Wisconsin Bridge Manual Standard 30.17 and will have a height of 42-inches.

Utilities:

An existing fiber optic line is located in close proximity to the proposed retaining wall. The location shown on the plans is based on system maps and may not be accurate. The exact location of the fiber optic line should be field verified during final design.



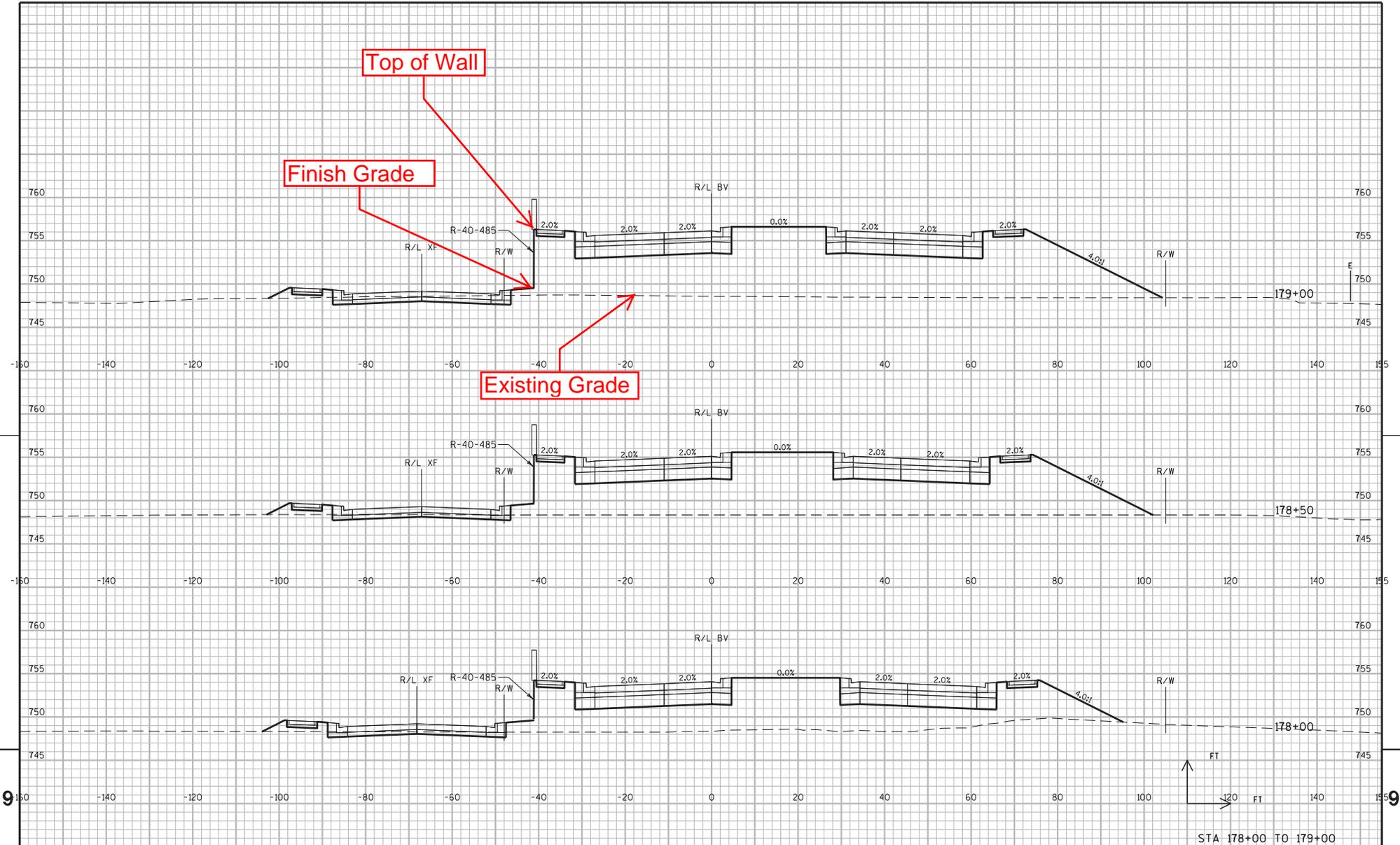
**Retaining Wall
R-13-870**



TYPICAL FINISHED SECTION

SWAN BOULEVARD

STA 166BV+92 TO STA 195BV+06.59



PROJECT NO: 1060-33-73

HWY: SWAN BOULEVARD

COUNTY: MILWAUKEE

CROSS SECTIONS: SWAN BOULEVARD

STA 178+00 TO 179+00

SHEET

E

FILE NAME : W:\Cadd\Pre\primary\Swan\Roads\Cds\090516_xs_bv.dgn

PLOT DATE : 04-JAN-2012 22:08

PLOT BY : MSCD15

PLOT NAME : 090516_xs_bv6

PLOT SCALE : 20:1

WISDOT/CADD SHEET 21

GEOMETRY TABLE (R-13-870)

Wall STA.	R.L. STA.	R.L. OFFSET TO F.F. OF WALL	TOP OF WALL EL.	FINISH GRADE EL.	EXISTING GRADE EL.
0+00.00	208+32.57	45.00' RT	882.93	882.93	882.90
0+25.00	208+57.57	45.00' RT	888.42	882.57	881.61
0+50.00	208+82.57	45.00' RT	893.90	882.21	882.55
0+75.00	209+07.57	45.00' RT	899.39	881.84	882.68
1+00.00	209+32.57	45.00' RT	904.87	881.48	881.57
1+25.00	209+57.57	45.00' RT	904.87	881.11	882.56
1+50.00	209+82.57	45.00' RT	904.87	880.75	879.03
1+75.00	210+07.57	45.00' RT	904.87	880.39	879.65
2+00.00	210+32.57	45.00' RT	904.87	880.02	881.13
2+25.00	210+57.57	45.00' RT	899.54	879.66	879.99
2+50.00	210+82.57	45.00' RT	894.20	879.29	880.46
2+75.00	211+07.57	45.00' RT	888.87	878.93	878.26
3+00.00	211+32.57	45.00' RT	883.53	878.56	878.40
3+25.00	211+57.57	45.00' RT	878.20	878.20	878.20

NOTE: ALL WALL STATIONING & OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL

**SIGN STRUCTURE
STRUCTURE SURVEY REPORT**

SIGN STRUCTURE SURVEY REPORT

SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Chapter 39 of Bridge Manual](#) for further details.

STRUCTURE INFORMATION

_____ Report (DT1694)

Complete DT1694, Sign Structure

- New Structure Number S-XX-XXXX.
- Indicate structure "Preference" (overhead, cantilever, or single pole sign support, approximate span length).
- Required min. vertical clearance (Other: 18'-3").
- Utilities (i.e. pipes under footing).
- Posted speed.

_____ Additional Information

- Protection around footings: (existing guard rail, new guard rail, footing/concrete barrier integral, between median barriers, none).
- Catwalks or lighting: (provide both/neither, provide only clearance for electrical feed entrances).
- Sign type (VMS, I, II, or III).
- Drawings with sign dimensions and tie dimensions to upright and adjacent signs.
- Direction of viewing.

SURVEY INFORMATION

_____ Small County Map

- Indicate location of structure (include project location map when multiple structure are present).

_____ Typical Roadway Section
(Include Drawings)

- Typical dimensions, slopes and clear zone requirement.
- Cross section of roadway that shows high point elevation and location.
- Cross slopes and horizontal lanes, shoulders, and side slopes in footing area such that ground elevations may be determined at footing locations.
- Horizontal tie dimensions from any of the following: reference line, edge of pavement, lane line, face of rail, to centerline of footing/upright.
- Indicate right of way.
- Right of way encroachments.

SUBMIT TO:

_____ Bureau of Structures
(ESubmit)

- Required for development of structure plans.

_____ Region Soils Engineer

- **IMPORTANT!** The official (and only) notice of the project to the Geotechnical Section.

SEPARATION STRUCTURE SURVEY REPORT

DT1694 6/2012

- Grade Separation
 Railroad
 Retaining Wall
 Noise Barrier
 Sign Structure
 High Mast Lighting
 Other: _____

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID 7200-02-01	Construction Project ID 7200-02-71	Highway (Project Name) Raio Dr Bridge Signage		
Final Plan Due Date 11/1/2012	Preliminary Plan Due Date 9/1/2012	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Troy		
PS&E Date 12/1/2012	Letting Date 6/1/2012	County St. Croix		
New Structure Number S-55-42	Existing Structure Number N/A	Section 23	Town 28N	Range 19W
Station 200+20.50 (Raio Rd)	Latitude: 44.898869 Longitude: -92.64925	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: NAD 83 (1991) Vertical Datum: NAVD 88 (2007)		Traffic Forecast Data		
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed
Feature On Radio Rd	Feature On 2032		13500	55
Feature Under STH 35	Feature Under 2032		46000	60
Region Contact: Eric Knight (Area Code) Telephone Number(s): (715) 276-8891 Email: Eric.Knight@dot.wi.gov		Consultant Contact: N/A (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

- Report submitted with Preliminary Plan requires **no** CADD file submittal (see ESubmittal instructions).
- Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.
- Coordinate with design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.
2. **Plan and Profile Sheet** on proposed reference line of feature on and feature under showing the following:
 - (a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance; (g) For railroad project, survey top of each rail and provide proposed geometrics in conformance with railroad company standards.
3. **Layout Sketch** of the site drawn to a scale of not less than 1 inch = 100 feet showing the following:
 - (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) Reference line intersection stationing and intersection angle; (e) North Arrow; (f) Buildings; (g) Above and below ground facilities; (h) Proposed structure when report submitted with Preliminary Plan; (i) Railroad company stationing; (j) Station at ends of existing structure; (k) Other features which influence the design.
4. **Typical Sections** of all roadways showing the following:
 - (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Subgrade; (e) Sidewalk, curb and gutter; (f) Median treatment at underpass mounted or ditch section; (g) Clear zone width; (h) Horizontal clearances at underpass.
5. **Labeled Photographs** of: (a) Existing structure; (b) Site pictures in all controlling directions including, but not limited to North, East, South and West; (c) Buildings within 100 feet of proposed structure.

Proposed Structure

Preference for Structure Type at this Site:

over head sign bridge truss full span attached to proposed interchange structure No Preference

Aesthetics Level – See Bridge Manual Chapter 4

1 2 3 4 (For Levels 2, 3 & 4 Explain on Page 3)

Spans- Number 1		Approximate Centerline to Centerline Span Lengths Along Reference Line of Highway 86'			
Clear Roadway Width on Structure 62 Ft.		Cross Slope on Deck or N.C. (Normal Crown) 0.02 Ft./Ft.		Skew 0 <input type="checkbox"/> R.H.F. <input type="checkbox"/> L.H.F.	
Sidewalks/Multi-Use Path <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Left Clear Sidewalk/Path Width Ft.	Separation Barrier <input type="checkbox"/> Yes <input type="checkbox"/> No		Right Clear Sidewalk/Path Width 10 Ft.	Separation Barrier <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Type of Slope Protection attached to outside of structure					
Specify Wing Location(s) for Beam Guard Attachment N/A			Specify Wing Location(s) for Surface Drain Anchors N/A		
Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach N/A					

YES NO

- Structure Will be Constructed to Accommodate Traffic Staging
- Structural Approach Slab
- Lighting Required: Bolt Circle Diameter _____ inches
- Traffic/Lighting Staff been Notified for Review
- Conduit in Parapet: Diameter _____ Number _____
- Historical Properties (Archaeological, Historic) Present Near Structure

Vertical Clearance Design

- 14' 9" to 15' 3"
- 16' 3" to 16' 9"
- Other: 18'

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES NO

- Utilities will be located on the structure?
(if YES, provide the following information as well as the alignment and profile on Page 3)
- Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures?
(if NO, please explain on Page 3)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES NO

- Structure will be Removed
 Bid Item Later Contract Other: _____
- Structure will Remain in Service, Purpose: _____

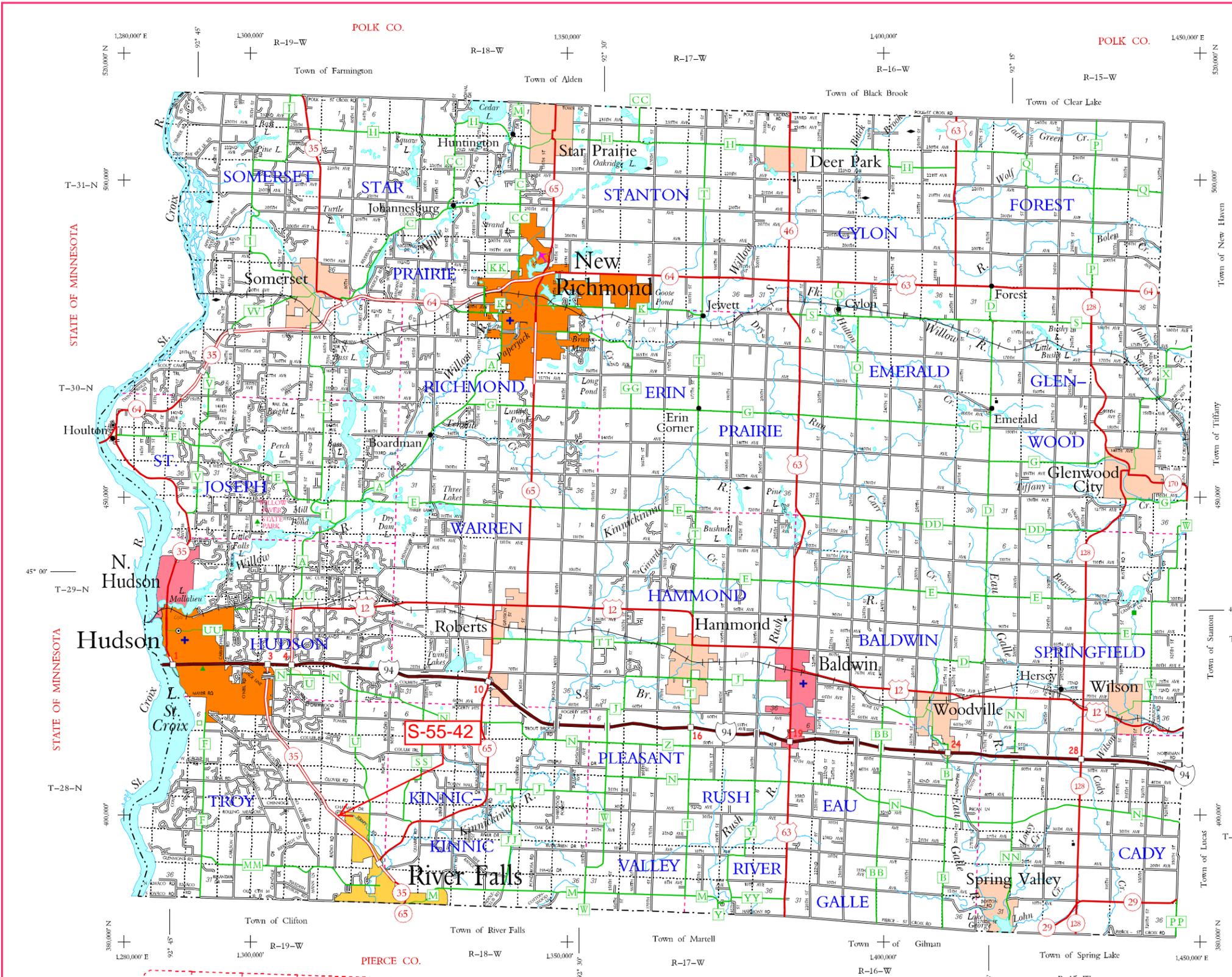
For Structure Designers Use Only Proposed Structure

Spans – Number:	Span Lengths (C.L. to C.L. of Substructure):	Skew:	<input type="checkbox"/> R.H.F. <input type="checkbox"/> L.H.F.
Latitude:	Longitude:		

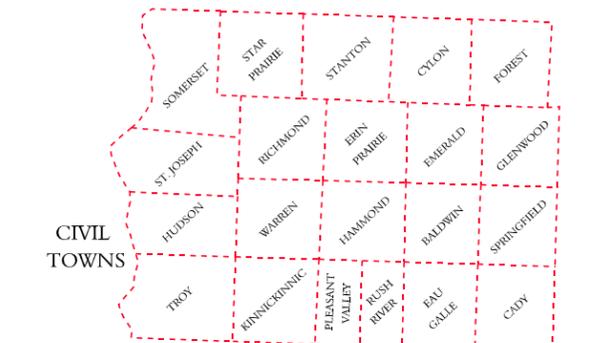
Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

Sign Type: II

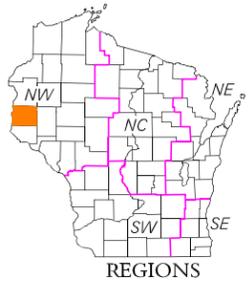


ST. CROIX 55-NW



SECTION NUMBERING OF A TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



LEGEND

- Freeway
- Multilane Divided
- U.S. or State Hwy
- County Trunk Hwy
- Town Road
- Firelane
- Railroad
- State Trail
- Interchange
- Highway Separation
- Interstate Highway No. 94
- U.S. Highway No. 18
- State Highway No. 59
- County Highway Letter T
- State Boundary
- County Boundary
- Civil Town Boundary
- Section Line
- Dam
- Hospital
- Schools
- Airport
- County Seat
- Unincorporated Village
- Fish Hatchery
- Game Farm
- Public Hunt or Fish Grds.
- Public Camp & Picnic Grds.
- Ranger Station
- State Park
- County Park With Facilities
- Without Facilities
- Rest Area Modern Facilities
- Wayside Rustic Facilities

◆ For boundaries of public hunting and fishing grounds please contact the Department of Natural Resources
 + Grid based on the state plane coordinate system central zone and the NAD 27

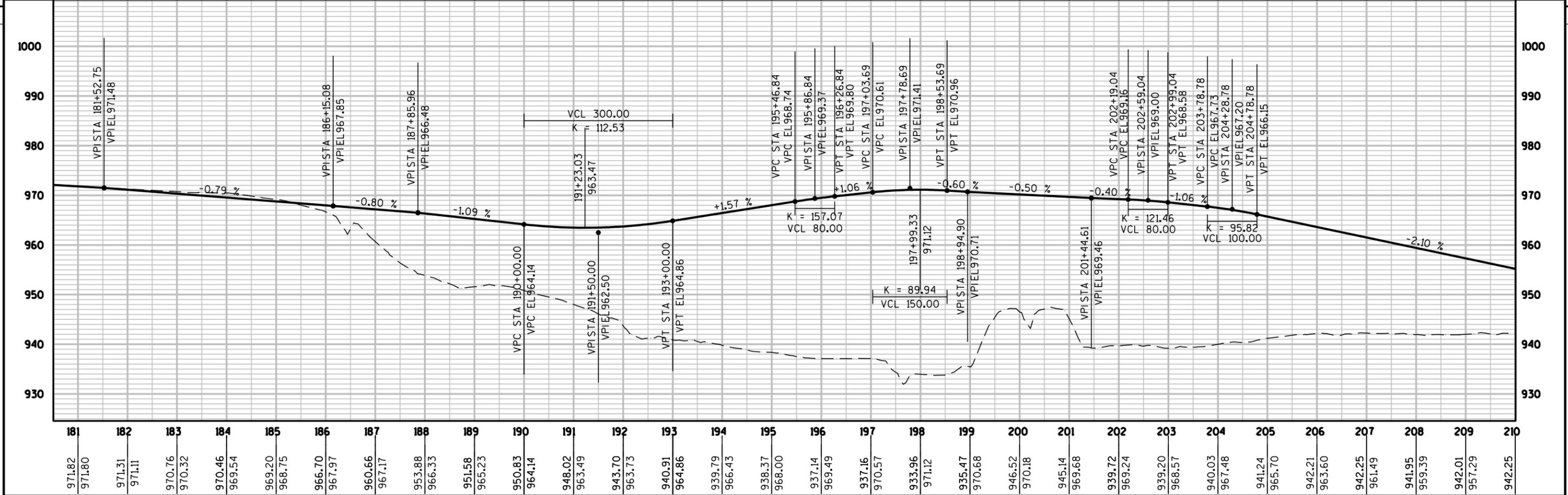
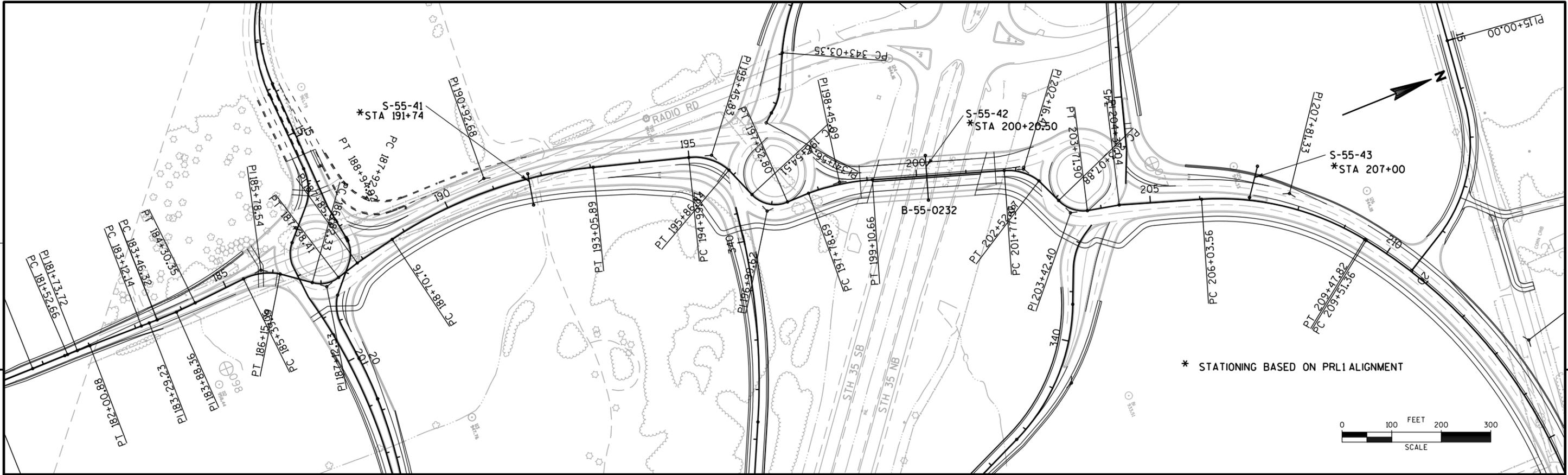
MILES OF HIGHWAY as of Dec. 31, 2008

STATE	204
COUNTY	338
LOCAL ROADS	1,383
OTHER ROADS	0
TOTAL FOR COUNTY	1,925

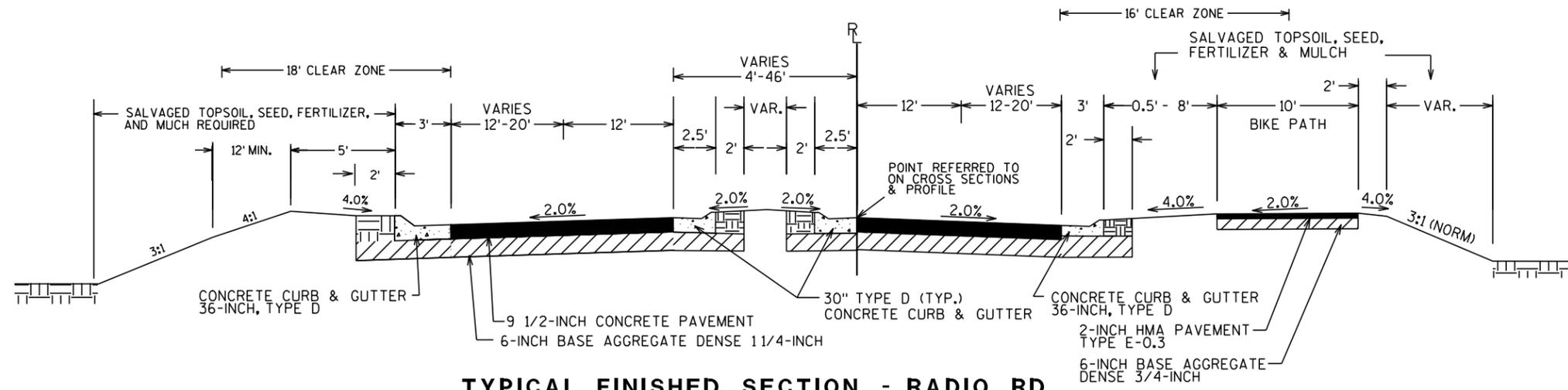
Land Area (2000 Census) 722 sq mi
 Population (2000 Census) 63,155
 County Seat Hudson

ST. CROIX CO.

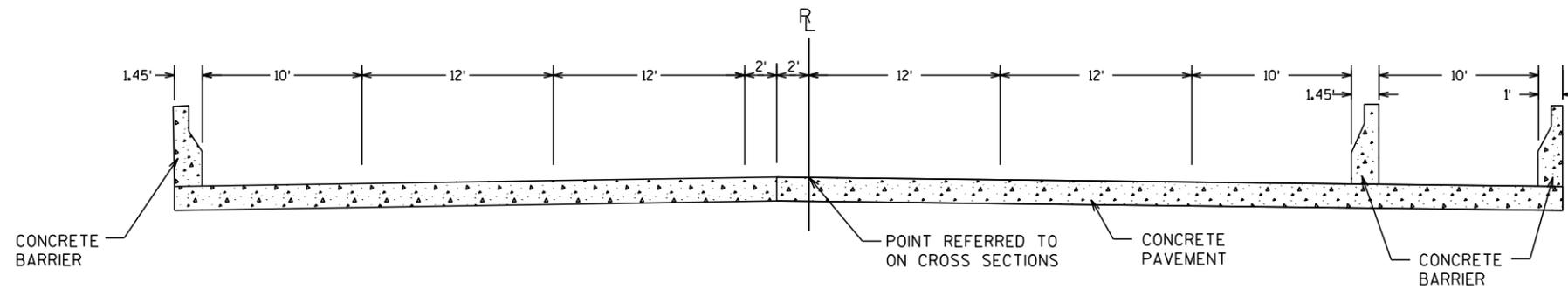
DEPARTMENT OF TRANSPORTATION
 STATE OFFICE BUILDING
 Madison, Wisconsin
 SCALE 0 1 2 MILES
 Corrected for JAN. 2010
 Base compiled from U.S.G.S. Quadrangles 1:100,000 Series



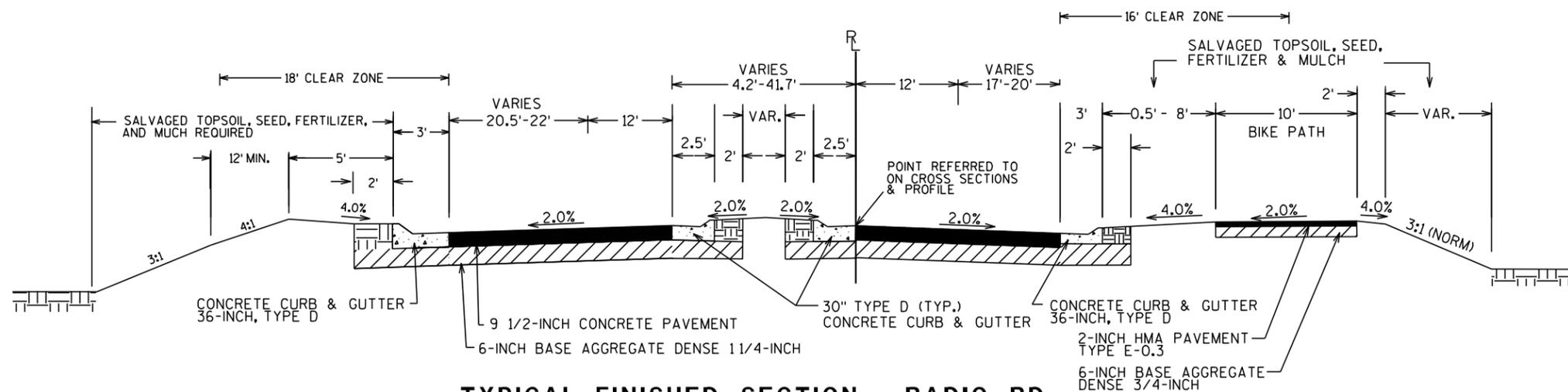
PROJECT NO: 7200-02-71 HWY: STH 35 COUNTY: ST. CROIX PLAN & PROFILE SHEET NO: E



**TYPICAL FINISHED SECTION - RADIO RD.
ROUNDAABOUT APPROACH**
STA 198+35.15 - STA 199+33.77

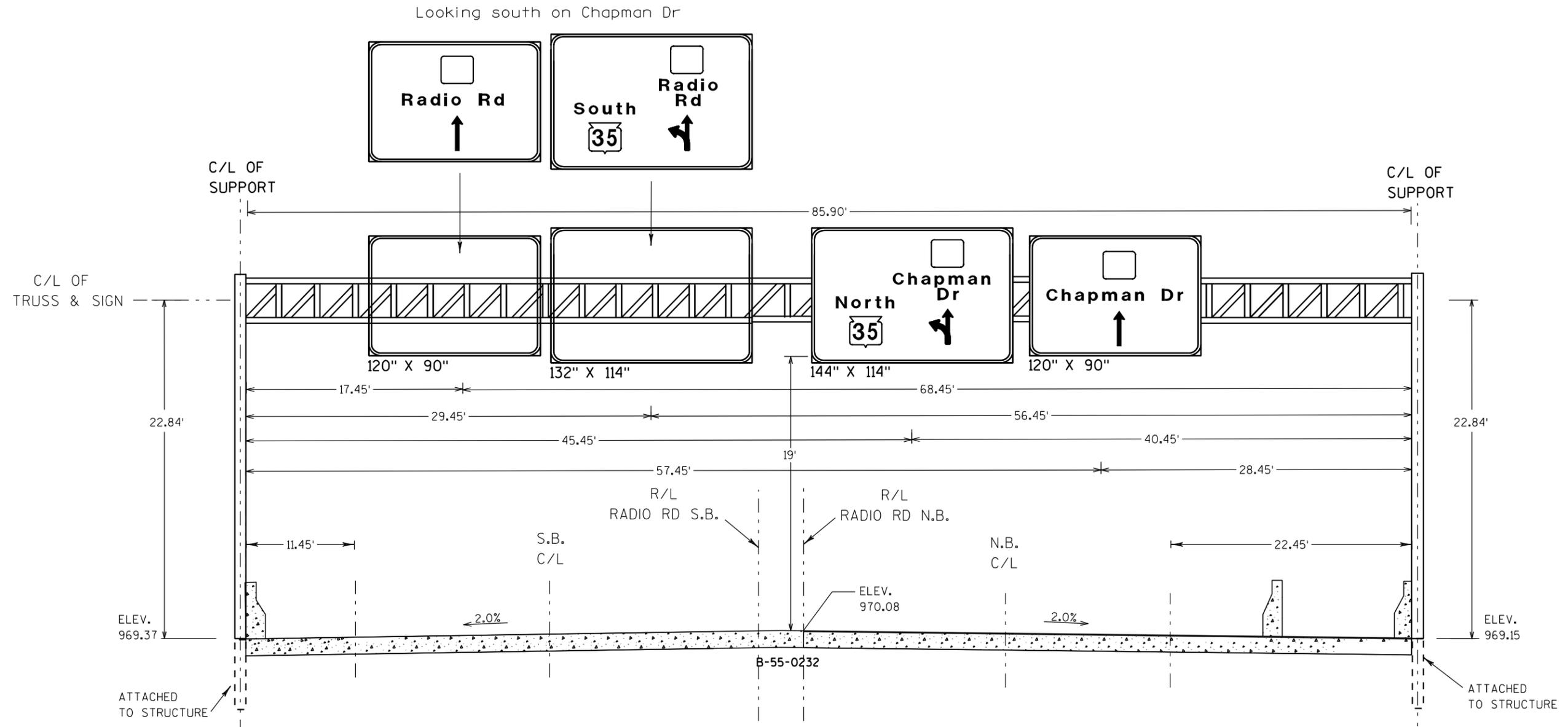


TYPICAL FINISHED SECTION - (STRUCTURE) RADIO RD./CHAPMAN DR.
STA 198+58.51 - STA 201+68.56



**TYPICAL FINISHED SECTION - RADIO RD.
ROUNDAABOUT APPROACH**
STA 201+98.00 - STA 202+71.08

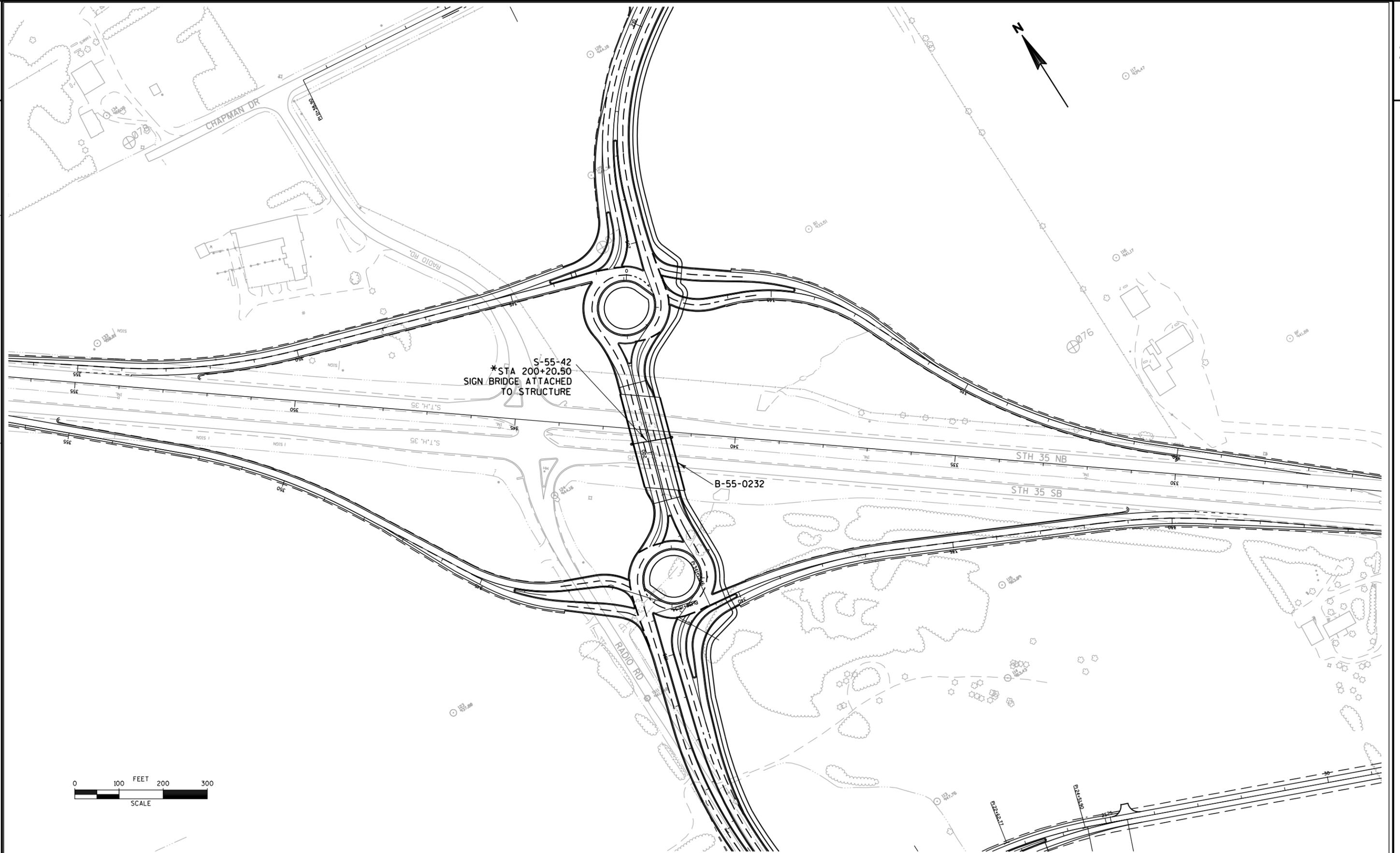
STRUCTURE NO. S-55-42



FULL SPAN OVERHEAD SIGN SUPPORT

LOOKING NORTH
STA. 200+20.50, RADIO RD. N.B.
ON STRUCTURE B-55-0232

DRAWING NOT TO SCALE



S-55-42
 *STA 200+20.50
 SIGN BRIDGE ATTACHED
 TO STRUCTURE

B-55-0232

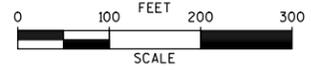
STH 35 NB

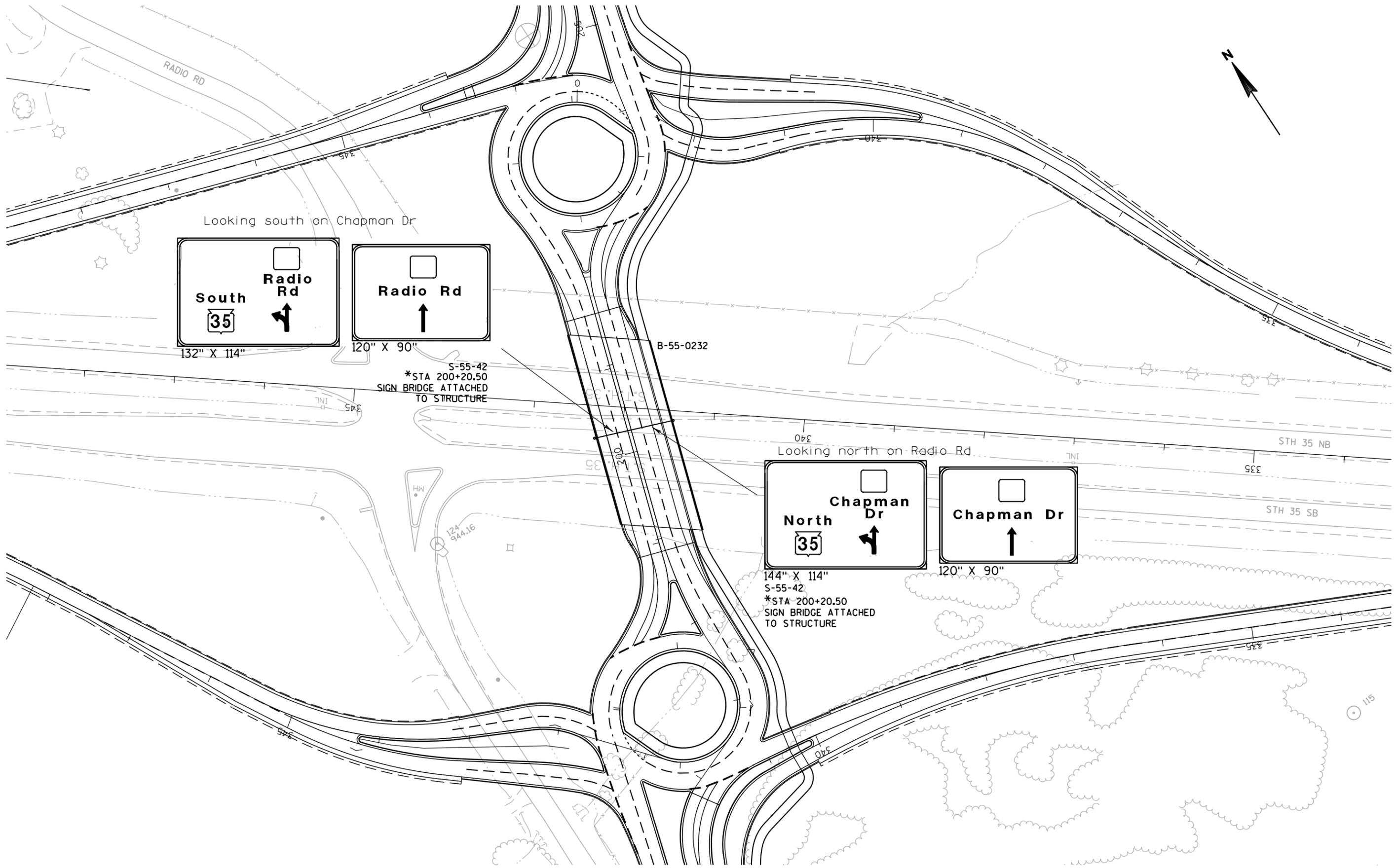
STH 35 SB

CHAPMAN DR

RADIO RD

RADIO RD





**CONSULTANT PRELIMINARY
PLAN REVIEW AND APPROVAL**

CONSULTANT PRELIMINARY PLAN REVIEW AND APPROVAL

SSR and preliminary plan submittal

1. Additional items to submit with SSR:
 - a. Hydraulic report
 - b. Geotechnical report
 - c. DGN structure layout file
2. ESubmit
 - a. SSR
 - b. Supporting material
 - c. Preliminary plans

Consultant preliminary plan review:

1. Preliminary plan submittals
 - a. Should include correct structure type, size, and location (TSL)
 - Submit as if plans will not receive WisDOT review
 - Provide supporting correspondence evaluating alternative TSL if any non-intuitive decisions were made
 - b. Suggested that preliminary plans be submitted earlier than 3 months prior to PS&E
 - Allows more time to incorporate any necessary TSL changes into final plans
 - Avoid disruption of PS&E date and final review timeline
2. BOS Consultant Review Unit
 - a. Review emphasis:
 - TSL
 - Other apparent issues
 - Does not include performing plan checking
 - b. Will send an approved set of marked up plans with comments to be addressed in final design
 - c. If TSL is not acceptable, new preliminary plan set submittal will be required

Consultant performance evaluation and rating:

1. Performance report is filled out as part of the review process
 - a. Blank Design Consultant Evaluation Report can be found in this section
 - b. Descriptions of Project Complexity and Project Rating Scale are included
2. Ratings of bridge design consultant performance are compiled

CONSULTANT PRELIMINARY PLAN SUBMITTAL TO BUREAU OF STRUCTURES CHECKLIST

See front sheet of Structure Survey Report for detailed description of items.
Also, see [Section 6.5 of Bridge Manual](#) for further details

PRELIMINARY SUBMITTAL

- | | | |
|-------|-----------------------------|--|
| _____ | Structure Survey Report | – Completed by consultant including all proposed structure information. |
| _____ | Small County Map | – Indicate location of structure. |
| _____ | Preliminary Roadway Plans | – Include existing and proposed profile grade line, proposed horizontal and vertical curve data, structure location and typical section. |
| _____ | Preliminary Structure Plans | – Include dimensions, plan views, elevation view, section through roadway and subsurface information. |
| _____ | DGN Layout File | – Proposed structure layout. |
| _____ | Geotechnical Report | – Boring logs and foundation recommendations. |
| _____ | Photographs (Labeled) | – Existing structure, utilities, and/or buildings. |

Stream Crossing Structures require the additional submittal:

- | | | |
|-------|---------------------|--|
| _____ | Contour Map | – Labeled contours, location of new and/or existing structures, proposed rip-rap limits , north arrow, stream direction, and scale 1":20'. |
| _____ | Hydraulic Report | – Discussion of hydraulics, nature of previous flooding, scour information, design considerations and alternatives considered. See Chapter 8, Appendix 8-A of Bridge Manual for example. |
| _____ | FEMA Floodplain Map | – Indicate location of proposed structure. |

Transmittal
Consultant Structure Plans

Date:

To:

ATTN:

cc: - WisDOT Region

From:

Comments: Returning Review Preliminary Structure Plans

Enclosed is the "Structure Inventory Data" form. Please fill out one per structure and return with the final plan submittal to the Structures Design Section.

This is a bridge design in accordance with the LRFD specifications. Please submit the appropriate current forms for the LRFD plan submittal of this bridge. The appropriate forms can be found at this BOS website:

https://trust.dot.state.wi.us/extntgtwy/dtid_bos/extranet/structures/LRFD/index.htm

B-XX-XXXX

Resubmit **Electronic** Copy of Revised Preliminary Structure Plans using Esubmit*

Please send **Electronic** copies of the following items using Esubmit*:

- Completed Final Structure plans that are ready for final review
- Structural Special Provisions
- Structural & quantity computations
- Completed "Structure Inventory Data" form.
- LRFD Rating form and excel spreadsheet found at BOS Website
- QA/QC Verification Form

Please submit the above documents a minimum of **two** months before the PS & E date. Review of final structure plans, incorporation of review comments, and signing of structure plans need to be completed by the PS & E date. Consultant performance rating will be based on the original final plans submittal.

Electronic structure final plans will be filed in the Structures Design Section and inserted into the plan set when the Proposal Management Section receives the completed PS & E.

* If you are unfamiliar with the process used to create electronic plans, please refer to section 15-5-10 of the FDM. Please take special note of item 7 in the procedure that indicates that all PDF files must be 11 x 17 inch documents. These must be exact dimensions.

* Please refer to section 19-10-1 of the FDM for directions on how to submit electronic plans using ESubmit. Page 4 of this section specifically addresses the electronic submittal of structure plans.

2. Project Rating Scale

①- Unacceptable Performance: Unacceptable or Marginal Work. Project submittal deficient to the point that review not possible. Excessive amount of review time and effort required. Proposed alternatives and details were not acceptable. Type, Size, and Location may have to be revised and resubmitted prior to approval. Good Engineering Practice and judgment was not exercised. Project reflects lack of knowledge of basic policies and standards. Submittal was unacceptable.

②- Below Average: Performance is Below Average. Minor deficiencies in submittal. Above average amount of review time and effort required do to deficiencies. Practical alternatives were not adequately considered and documented. Errors were noted in supporting Engineering. Some problems with details and policy.

③- Satisfactory: Performance is Acceptable. Submittal complete. Average amount of review time is required. Good engineering practice and judgment were exercised. All practical alternatives considered and reasonable alternative was selected. Type, Size, and Location meets approval. Structure plans are adequately detailed and conform to applicable standards and policy.

④- Above Average Performance: Above Average. Submittal complete and well organized. Below average amount of review time required. All requirements of the project are met and often exceeded. Project reflects above average engineering practice and insight. All practical alternatives were considered and documented. Details are complete, well organized, and conform to all standards and policy.

⑤- Outstanding: Performance Exceeds Requirements. Submittal is complete and well organized. Minimum amount of review time was required. Alternatives were evaluated in great detail and proposed alternative reflects innovation and superior qualities that distinguish it as most desirable. Project reflects superior understanding of design standards and policy.

1. Project Complexity.

Low	Inkind replace of structures less than 150 feet long. Requires standard analysis approach and effort. Potential alternatives are few and have been considered and noted. Standard structure details define proposed alternative.
Medium	Inkind Replacement of structures greater than or equal to 150 feet long. Structures on new alignments. Horizontally curved structures. Rehabilitation's requiring superstructure replacement. Rehabilitation or replacement requiring Staged construction. Requires non-standard analysis approach and above average effort. Many potential alternatives are possible and have been considered and documented. Non-Standard details are required to define proposed alternative.
High	Requires in-depth-nonstandard analysis approach with intensive effort. Moveable Bridges. Many Potential alternative that require close detailed examination. Non-standard complex details are required that are project specific. Rehabilitation of Complex structures.

TRAINING EVALUATION

DT1256 4/2003

Your input will greatly help us in our continuing effort to improve the effectiveness of our training courses. Thank you for taking the time to complete this form.

Course Title	Date of Training
Instructor Name(s)	Your Name (Optional)

1. Overall, how would you rate this course? Circle one number (10=High, 1=Low).

10 9 8 7 6 5 4 3 2 1

2. The instructor covered the course objectives.

- Strongly Agree Agree Slightly Agree Slightly Disagree Disagree Strongly Disagree

3. The instructor used effective presentation skills.

- Strongly Agree Agree Slightly Agree Slightly Disagree Disagree Strongly Disagree

4. To improve this training, what would you:

Expand:

Add:

Delete:

5. List one or two ideas from this course that you can use on your job.

6. Give other general comments about the course instructor or content.

7. Who else might benefit from this course?

**OTHER SUPPORT
SERVICES OFFERED BY
STRUCTURES DESIGN SECTION**

BOS Support Services May Include:

- Site visits to aid in structure selection
- Aesthetic concepts and alternatives for bridges
- Floodplain hydrologic and hydraulic studies
- Economic Studies for structure types including rehab vs. replacement
- Estimates for structure or bid item costs
- Estimates of structure design costs

TRAINING EVALUATION

DT1256 4/2003

Your input will greatly help us in our continuing effort to improve the effectiveness of our training courses. Thank you for taking the time to complete this form.

Course Title	Date of Training
Instructor Name(s)	Your Name (Optional)

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10 9 8 7 6 5 4 3 2 1

2. The instructor covered the course objectives.

- Strongly Agree Agree Slightly Agree Slightly Disagree Disagree Strongly Disagree

3. The instructor used effective presentation skills.

- Strongly Agree Agree Slightly Agree Slightly Disagree Disagree Strongly Disagree

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Expand:

Add:

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