STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Seventh Edition 2014, with Interims through 2016.

DESIGN LOADING

Live Load ..... HL - 93 Modified

TRAFFIC DATA

Current (2015) AADT	8,630
Future (2035) AADT	10,360
DHV - % of AADT	10%
Design Hour Volume	1036
Heavy Trucks (% of AADT)	4%
Heavy Trucks (% of DHV)	4%
Directional Distribution (% of DHV)	51%
18 kip Equivalent P 2.0	226
18 kip Equivalent P 2.5	216
Design Speed (mph)	25

HYDROLOGIC DATA

Drainage Area	108.5 sq mi
Design Discharge (Q50)	8604 cfs
Check Discharge (Q100)	9852 cfs
Headwater Elevation (Q50)	341.7 ft
Headwater Elevation (Q100)	342.7 ft
Discharge Velocity (Q50)	6.9 fps
Discharge Velocity (Q100)	7.2 fps
Headwater Elevation (Q1.1)	333.9 ft
Discharge Velocity (Q1.1)	4.8 fps
Headwater Elevation (Q25)	340.6 ft

MATERIALS

Concrete:	
Barriers, Curbs, Sidewalks & Transition Barriers	Class "LP"
Fill	"Fill"
All Other	Class "A"
Reinforcing Steel	
Plain	ASTM A 615/A 615M, Grade 60
Stainless	ASTM A 955/A 995M, Grade 75
Glass Fiber Reinforced Polymer (GFRP)	C5A S807-10, ACI 440.5, 440.6
Structural Steel:	
All Material (except as noted)	ASTM A 709, Grade 50 (metalized or galvanized)
High Strength Bolts	ASTM A 325, Type 1 (galvanized)

BASIC DESIGN STRESSES

Concrete:	
Class "LP"	f 'c = 5,000 psi
Class "A"	f 'c = 4,000 psi
Class "Fill"	f 'c = 3,000 psi
Reinforcing Steel:	
Plain	f y = 60,000 psi
Stainless	f y = 75,000 psi
Glass Fiber Reinforced Polymer (GFRP)	
Minimum Tensile Strength	= 95,000 psi
Minimum Elastic Modulus	= 5,700,000 psi
Structural Steel:	
ASTM A 709, Grade 50	F y = 50,000 psi
ASTM A 709, Grade 36	F y = 36,000 psi
ASTM A 325	F μ = 120,000 psi
ASTM F 1554	F y = 105,000 psi F μ = 125,000 psi

PARIS
OXFORD COUNTY
BILLINGS BRIDGE OVER
OVER
LITTLE ANDROSCOGGIN RIVER

PROJECT NO. STP-2261(800)
BRIDGE REPLACEMENT
PROJECT LENGTH 0.09 mi.
BRIDGE NO. 2979

INDEX OF SHEETS

* Plan provided by MaineDOT

UTILITIES

Central Maine Power Company
Fairpoint Communications
Oxford Networks
Time Warner Cable
Town of Paris Sewer and Water

MAINTENANCE OF TRAFFIC

Maintain one 13'-0" wide lane of alternating two - way traffic using temporary traffic signals.

PROJECT LOCATION:	State Route 117/119, 0.04 miles west of Highland Avenue
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Superstructure replacement and substructure widening and related approach work.

PROJECT NO. STP-2261(800) WIN 022618.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

	APPROVED	DATE
COMMISSIONER:		12/19/17
CHIEF ENGINEER:		12-19-17

STATE OF MAINE GREGORY GOODRICH No. 13225 LICENSED PROFESSIONAL ENGINEER

SIGNATURE
13225
P.E. NUMBER
12-13-2017
DATE

PROJECT INFORMATION

PROGRAM	BRIDGE
PROJECT MANAGER	JOEL KITTREDGE
DESIGNER	
CONSULTANT	VHB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

TITLE SHEET

SHEET NUMBER
1
OF 57

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits and right of way lines, refer to Right of Way Map.

2. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

4. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

5. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

6. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

7. Place a 24-in. wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

8. An NCHRP350 compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

9. Extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract items.

10. Protective Coating for Concrete Surfaces shall be applied to the following areas:

All exposed surfaces of concrete curbs and sidewalks.
Fascias down to the drip notch.
All exposed surfaces of Concrete Transition Barriers.
Concrete wearing surfaces.
Top of abutment backwalls and to one foot below the top of backwalls on the back side.

11. Project information referred to below may be accessed at the following MaineDOT web address: http://www.maine.gov/mdot/contractors/.

a. The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

b. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report is based on MaineDOT's interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

c. The project geotechnical report titled: Geotechnical Design Report may be accessed at the MaineDOT web address.

12. Geotechnical information furnished or referred to in this plan set is for the use of the Bidders and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidders' or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between the boring locations.

GENERAL CONSTRUCTION NOTES (CONTINUED)

13. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.

14. The existing superstructure shall be removed by and become the property of the Contractor. The steel portions of the existing bridge are coated with a lead-based paint system. The Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste generated by the process of demolishing the bridge. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once the existing bridge is removed, the Contractor is solely responsible for the care, custody and control of the components of the existing bridge and any hazardous waste generated as a result of the storage, recycling or disposal of the bridge components, including lead-coated steel. The Contractor shall recycle or reuse the steel in accordance with the Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations," Chapter 850. A copy of this regulation is available at MaineDOT's offices on Child Street in Augusta. Payment for all labor, materials, equipment and other costs required to remove and dispose of the existing bridge will be considered incidental to the bridge removal pay item.

15. Acrylic latex color finish green shall be placed on all paved islands.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	BY	DATE
CHECKED-REVIEWED	JAW	KDW	11/17
DESIGN2-DETAILED2		GSG	11/17
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

GENERAL NOTES

SHEET NUMBER

2

OF 57

ESTIMATED QUANTITIES				
ITEM NO.	DESCRIPTION		QUANTITY	UNIT
202.10	Removing Existing Superstructure Property of Contractor	(195 CY)	1	LS
202.12	Removing Existing Structural Concrete		85	CY
202.1235	Diamond Grinding Concrete Pavement		480	SY
202.202	Removing Pavement Surface		430	SY
203.20	Common Excavation		1740	CY
203.22	Unclassified Excavation		355	CY
203.24	Common Borrow		20	CY
203.25	Granular Borrow		170	CY
206.082	Structural Earth Excavation - Major Structures, Plan Quantity		180	CY
206.092	Structural Rock Excavation - Major Structures		30	CY
304.10	Aggregate Subbase Course-Gravel		1255	CY
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size		30	T
403.2081	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Polymer Modified)		150	T
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)		80	T
403.211	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (shimming)		5	T
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)		30	T
403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course, Polymer Modified)		175	T
409.15	Bituminous Tack Coat, Applied		105	GAL
424.3331	Asphalt Low Modulus Crack Sealer, Applied		10	LB
424.304	High Molecular Weight Methacrylate Sealer		5	Gal
502.219	Structural Concrete, Abutments and Retaining Walls	(40 CY)	1	LS
502.239	Structural Concrete Piers	(30 CY)	1	LS
502.26	Structural Concrete Roadway and Sidewalk Slab on Steel Bridges	(165 CY)	1	LS
502.49	Structural Concrete Curbs and Sidewalks	(40 CY)	1	LS
502.565	Concrete Fill		5	CY
503.12	Reinforcing Steel, Fabricated and Delivered		18300	LB
503.13	Reinforcing Steel, Placing		18300	LB
503.17	Mechanical/Welded Splice		892	EA
503.26	Stainless Steel Reinforcement, Fabricated and Delivered		18500	LB
503.27	Stainless Steel Reinforcement, Placing		18500	LB
504.701	Structural steel fabricated and delivered, rolled	(196200 LB)	1	LS
504.71	Structural steel erection	(196200 LB)	1	LS
505.08	Shear Connectors	(3540 EA)	1	LS
506.9104	Thermal Spray Coating (Shop Applied)		1	LS
507.0821	Steel Bridge Railing, 3 Bar	(127 LF)	1	LS
507.0831	Steel Bridge Railing, 4 Bar	(181 LF)	1	LS
508.14	High Performance Waterproofing Membrane	(94 SY)	1	LS
510.11	Special Detour, Pedestrian Traffic Only		1	LS
511.07	Cofferdam (Abutment 1)		1	LS
511.07	Cofferdam (Abutment 2)		1	LS
511.07	Cofferdam (Pier)		1	LS
514.06	Curing Box for Concrete Cylinders		1	EA
515.20	Protective Coating for Concrete Surfaces		1405	SY
518.50	Repair of Upward Facing Surfaces - to Reinforcing Steel < 8 inches		200	SF
518.511	Full Depth Concrete Repair		8	SF
518.60	Repair of Vertical Surfaces < 8 inches		90	SF
518.70	Repair of Overhead Surfaces < 8 inches		51	SF
523.52	Bearing Installation		18	EA
523.5401	Laminated Elastomeric Bearings, Fixed		6	EA
523.5402	Laminated Elastomeric Bearings, Expansion		12	EA
524.301	Temporary Structural Support		1	LS
526.301	Temporary Concrete Barrier, Type 1	(60 LF)	1	LS
526.302	Portable Concrete Barrier, Anchored		140	LF
526.34	Permanent Concrete Transition Barrier		4	EA
527.34	Work Zone Crash Cushions		2	U
530.30	Glass Fiber Reinforced Polymer, Fabricated and Delivered		49300	LF
530.31	Glass Fiber Reinforced Polymer, Placing		49300	LF
603.159	12 Inch Culvert Pipe Option III		28	LF
603.169	15 Inch Culvert Pipe Option III		105	LF
604.072	Catch Basin Type AI-C		6.375	EA
604.18	Adjusting Manhole or Catch Basin to Grade		7	EA
604.182	Cleaning Existing Catch Basin and Manhole		7	EA
604.249	Catch Basin Type F6-C		1	EA
605.12	15 Inch Underdrain Type C		250	LF
606.1722	Bridge Transition - Type II		3	EA
606.178	Guardrail Beam		6	LF
606.23	Guardrail Type 3c - Single Rail		19	LF
606.231	Guardrail Type 3c - 15 ft radius and less		37.625	LF
606.25	Terminal Connector		1	EA
606.265	Terminal End-Single Rail - Galvanized Steel		2	EA
606.353	Reflectorized Flexible Guardrail Marker		8	EA
606.79	Guardrail 350 Flared Terminal		2	EA
607.163	Chain Link Fence - 4 foot - PVC Coated		60	LF
608.26	Curb Ramp Detectable Warning Field		70	SF
609.11	Vertical Curb Type 1		469	LF
609.12	Vertical Curb Type 1 - Circular		43	LF
609.23	Terminal Curb Type 1		3	EA
609.2371	Terminal Curb Type 1 - 7 Foot Circular		5	EA
609.238	Terminal Curb Type 1 - 8 Foot		2	EA
609.247	Terminal Curb Type 2 - 7 feet		1	EA
610.08	Plain Riprap		250	CY
615.07	Loam		20	CY
618.13	Seeding Method Number 1		1	U
618.14	Seeding Method Number 2		2	U
618.141	Seeding Method Number 3		3	U
619.12	Mulch		3	U

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
619.14	Erosion Control Mix	40	CY
627.733	4" White or Yellow Painted Pavement Marking Line	1750	LF
627.75	White or Yellow Pavement & Curb Marking	130	SF
627.78	Temp 4" Pvmt Mark Line W or Y	95	LF
629.05	Hand Labor, Straight Time	40	HR
631.12	All Purpose Excavator (including operator)	40	HR
631.172	Truck-large (including operator)	80	HR
631.32	Culvert Cleaner (including operators)	16	HR
639.18	Field Office, Type A	1	EA
643.72	Temporary Traffic Signal	1	LS
645.103	Demount Guide Sign	4	EA
645.106	Demount Regulatory, Warning, Confirmation, and Route Marker Assembly Sign	1	EA
645.113	Reinstall Guide Sign	4	EA
645.116	Reinstall Regulatory, Warning, Confirmation and Route Marker Assembly Sign	1	EA
652.312	Type III Barricades	18	EA
652.33	Drum	85	EA
652.34	Cone	100	EA
652.35	Construction Signs	403	SF
652.361	Maintenance Of Traffic Control Devices	1	LS
652.38	Flaggers	260	HR
652.41	Portable-Changeable Message Sign	4	EA
656.75	Temporary Soil Erosion and Water Pollution Control	1	LS
658.20	Acrylic Latex Color Finish	45	SY
659.10	Mobilization	1	LS

NON-PARTICIPATING - SEWER AND WATER - ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.1912	Remove Abandoned Asbestos Cement Pipe	190	LF
801.011	Sewer Manhole Bypass Pumping System	1	LS
801.03	Test Pits	2	EA
801.18	12-Inch PVC Sanitary Sewer (SDR-35)	175	LF
802.10	12" Ductile Iron Water Main	500	LF
802.181	12-Inch Preinsulated DI Sanitary Sewer	1	LS
803.138	Sewer Services	45	LF
803.1732	Sewer Manhole - 4 Foot Diameter	22	VF
812.164	Rebuilding Sewer Manhole Invert	1	EA
822.302	12-Inch Preinsulated Ductile Iron Pipe	1	LS
823.311	12-Inch Gate Valve With Box	5	EA
823.3251	8-Inch Gate Valve With Box	3	EA
824.30	Fire Hydrant Assembly	1	EA
825.33	1-Inch Corporations	6	EA
825.331	1-Inch Curb Stops	6	EA
825.43	1-Inch Copper Service Pipe	160	LF
825.5411	Temporary Water Main	1	LS
827.304	Trench Rock Excavation	100	CY
827.311	Unsuitable Soil Excavation, Removal, & Refill	150	CY

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

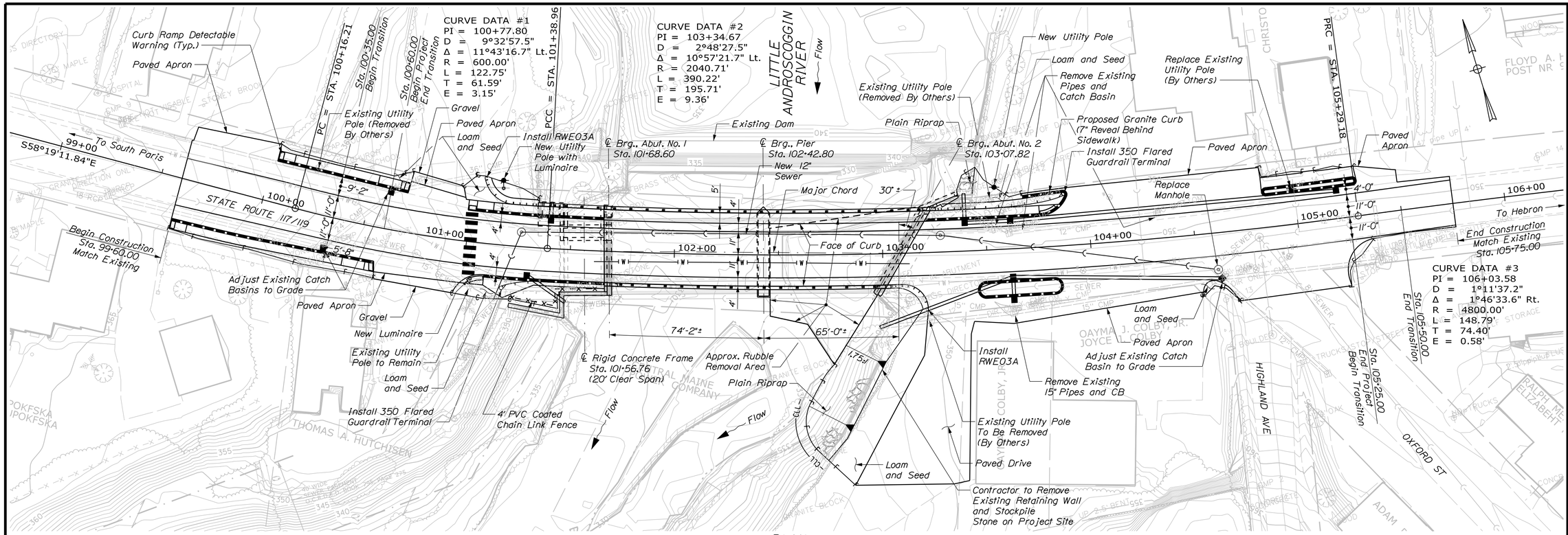
QUANTITIES

SHEET NUMBER

3

OF 57

Filename: ...\BRIDGE\MSTA\003_quantities.dgn Username: kwentworth Division: Structures Date:12/18/2017



PLAN

25 0 25 50

Scale of Feet

ROADWAY CONSTRUCTION NOTES

1. A temporary ramp shall be constructed with HMA at the ends of the roadway section paved or milled each day. The use of millings or RAP will not be allowed, but cold patch may be temporarily utilized until HMA plants are open for the season. Temporary ramps shall be constructed at a length of four feet per inch of transition depth. Materials, placement, maintenance, and removal shall be incidental to contract items.

2. Grind transition tapers at Catch Basins under Item 202.202 Removing Pavement Surface in accordance with Standard Detail 609(05) or as directed by the Resident.

3. Trim all tree branches to 20 feet above the pavement and 21 feet from centerline. A tree specialist shall be subcontracted for this work and payment will be made by invoice plus 5%. Any tree branches damaged by the Contractor during construction will be trimmed at the Contractor's expense.

4. Driveway fill side slopes shall be the same as the non-guardrail fill slopes unless otherwise noted on the plans.

5. All waste material not used on the project shall be disposed of off the project in acceptable waste areas reviewed by the Resident. Grading, seeding and mulching of waste areas shall be considered incidental.

6. Existing inslopes steeper than 2:1 in proposed fill areas shall be benched as directed by the Resident.

7. Residential paved entrances shall be constructed with: 2" hot mix asphalt and 12" aggregate subbase course gravel.

8. Commercial paved entrances shall be constructed with: 3" hot mix asphalt and 11" aggregate subbase course gravel.

9. Gravel entrances shall be constructed with 14" aggregate subbase course gravel or 11" aggregate subbase course gravel and 3" untreated aggregate surface course unless otherwise noted in the plans or directed by the Resident.

10. A 3' paved lip shall be placed at all unpaved entrances unless otherwise noted in the plans or directed by the Resident.

11. All paved walks to be constructed with 12" aggregate subbase course-gravel and 2" hot mix asphalt unless otherwise noted in the plans or directed by the Resident.

ROADWAY CONSTRUCTION NOTES (CONTINUED)

12. Any necessary cleaning of existing pavement prior to paving or milling shall be incidental to the related paving or milling items. This includes killing and removal of all vegetative matter.

13. Prior to surface paving, existing culverts to remain shall be cleaned as directed by the Resident. Payment will be made under Item 631.32 Culvert Cleaner (Including Operators).

14. Granular borrow used under pipes shall meet the requirements for material for underwater backfill as specified in Standard Specification 703.19.

15. Existing culverts and catch basins will be cleaned as directed by the Resident under the appropriate pay items.

16. Any necessary cutting of existing catch basins to allow for proposed pipe connections will not be paid for separately and will be considered incidental to Item 603 or 605.

17. Existing abandoned water mains broken by the Contractor during construction shall have the ends plugged with brick and mortar. Cost for all labor and material will be considered incidental to the contract and no direct payment will be made.

18. All existing guardrail shall be removed and become the property of the Contractor. Removal and disposal shall be considered incidental to the guardrail items.

19. Two Reflectorized Flexible G.R. Markers (Item 606.353) will be installed at each guardrail end.

20. Loam has been estimated for disturbed lawn areas. Actual placement of the loam shall be as noted on the plans or designated by the Resident.

21. Unless otherwise noted Seeding Method No. 1 shall be utilized on all lawns and developed areas; Seeding Method No. 2 shall be utilized on all other areas.

22. Loam shall be placed to a nominal depth of 4 inches in lawn areas and 2 inches in all other areas unless otherwise noted or directed.

23. Any base pavement not surfaced before winter will require temporary pavement markings of paint, both yellow centerline and white edge lines and will be considered part of Item 627.78.

ROADWAY CONSTRUCTION NOTES (CONTINUED)

24. The Contractor will be responsible for maintaining all existing mailboxes to ensure that the mail will be deliverable. Payment for this work will be made under the appropriate rental items.

25. Any damage to the slopes caused by the Contractor's equipment, personnel, or operation shall be repaired to the satisfaction of the resident. All work, equipment, and materials required to make repairs shall be at the Contractor's expense.

26. Areas requiring fill on the project will come from suitable material from excavation, ditch and inslope or equipment rental areas.

27. No separate payment for superintendent or foreman will be made for the supervision of equipment and layout of work being paid for under the equipment rental items.

28. "Undetermined Locations" shall be determined by the Resident.

29. Final striping for the project shall be done by the Contractor per the striping layout in the contract documents or as provided by the Department. Payment shall be made under appropriate contract items.

30. Excluding water gate valves, all HMA for patching around adjusted, altered, or rebuilt utility structures shall meet the gradation requirements of a 9.5 mm or 12.5 mm mixture. The Contractor shall saw cut the existing pavement for the patch at least two feet away from the nearest edge of the structure. The Contractor shall place HMA in lifts of 3" or less, as directed by the resident, and compact the HMA using a minimum of a 150 pound plate compactor. HMA for patching around adjusted, altered, or rebuilt utility structures is considered incidental to the respective pay item for adjust, alter, or rebuild utility structure.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

vhb

	J. KITTREDGE	DATE
PROJ. MANAGER		
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
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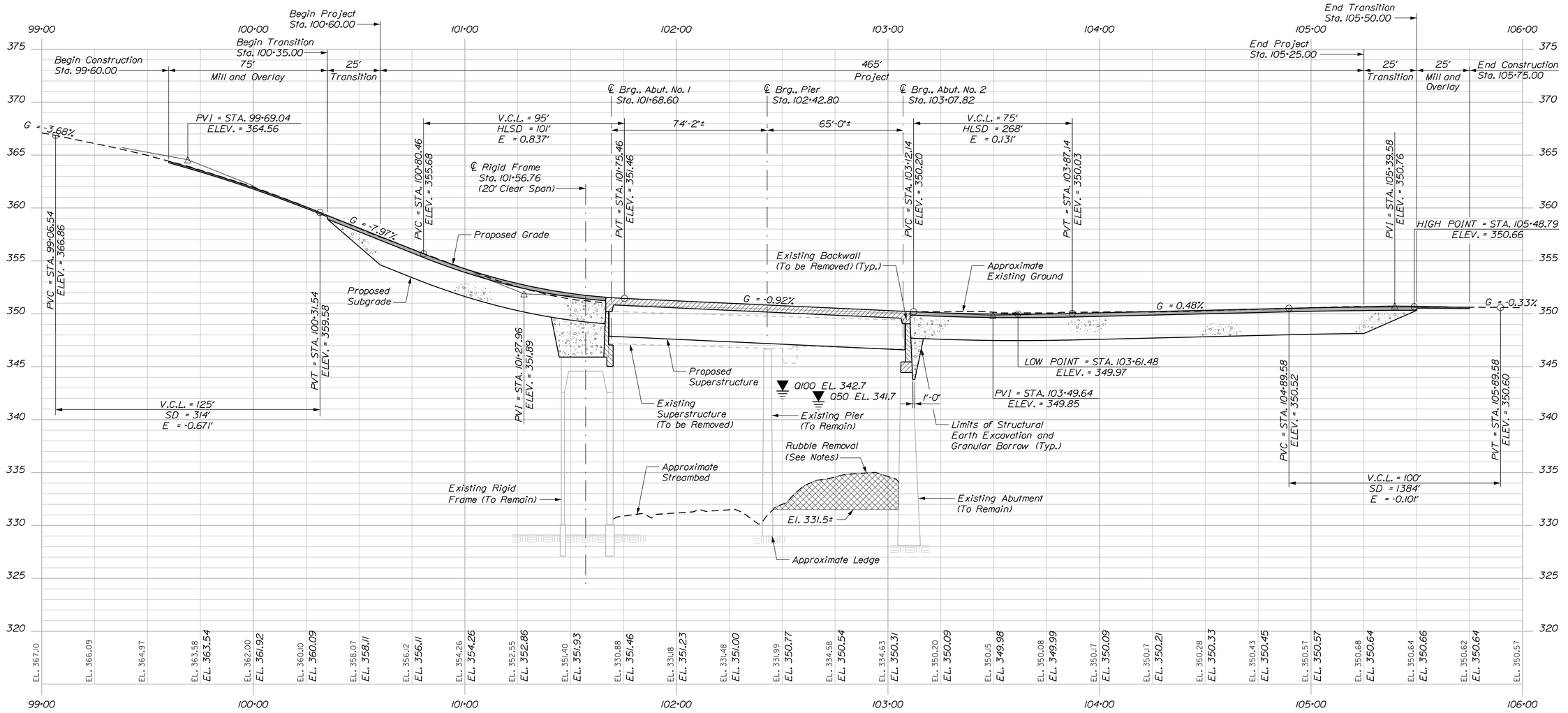
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

GENERAL PLAN

SHEET NUMBER
4
OF 57

Filename: ...\BRIDGE\MSTA\004_genplan.dgn Division: Structures Username: kwentworth Date:11/16/2017



PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

CHANNEL RUBBLE REMOVED NOTES

1. Remove existing concrete and rock rubble under span 2 to the limits shown in the General Plan and Profile. All costs included in Item 203.22.
2. Remove all concrete masonry debris from the channel within 25 feet downstream of the bridge to the toe of the existing dam. All cost included in Item 203.22.

STATE OF MAINE
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PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
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BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

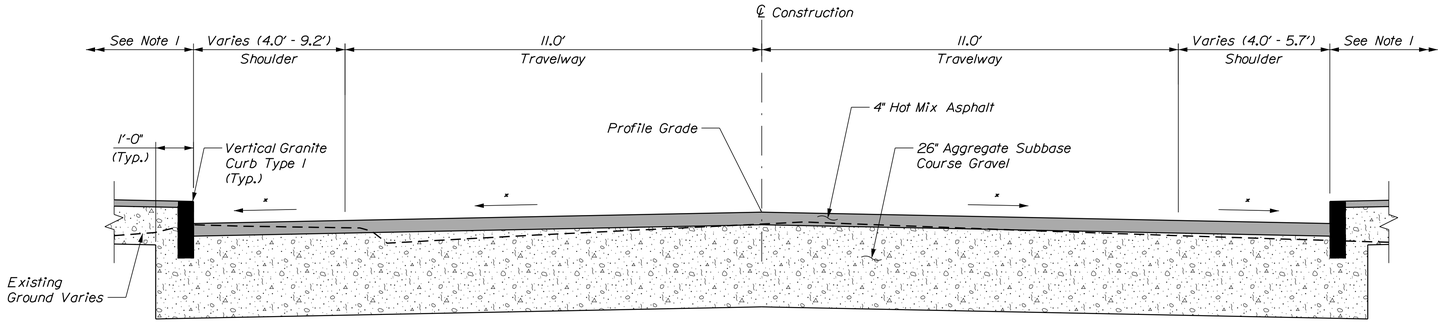
PROFILE

SHEET NUMBER

5

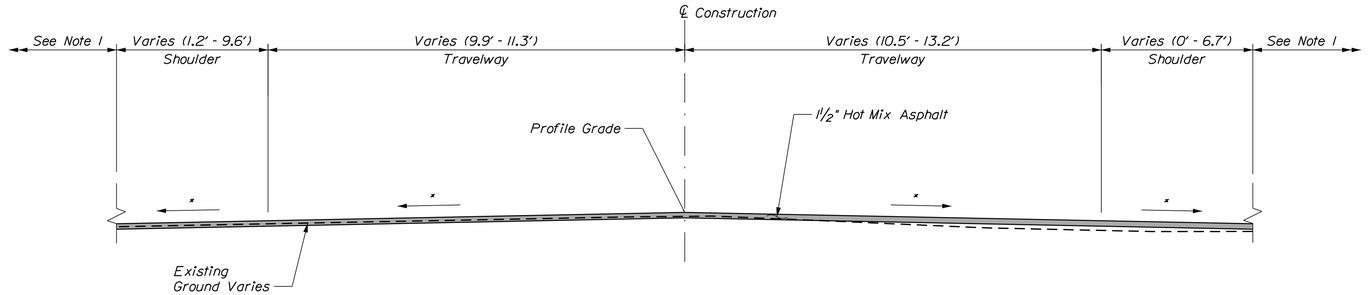
OF 57

Filename: ...\BRIDGE\MSTA\005_profile.dgn Division: Structures Username: kwentworth Date:11/16/2017



FULL-DEPTH SECTION

Sta. 100+60.00 to Sta. 101+66.27 and
Sta. 103+11.02 to Sta. 105+25.00
*See Superelevation Table for Cross Slope



MILL AND OVERLAY SECTION

Sta. 99+60.00 to Sta. 100+35.00 and
Sta. 105+50.00 to Sta. 105+75.00
*See Superelevation Table for Cross Slope

SUPERELEVATION TABLE				
Left Shoulder %	Left Travelway %	Station	Right Travelway %	Right Shoulder %
Match Existing	Match Existing	99+60	Match Existing	Match Existing
		100+35		
-4%	-4%	100+55	-3.5%	-3.5%
		100+80	-2%	-2%
		101+30		
-2%	-2%	101+65		
		103+40		
-4%	-4%	103+75		
		104+40		
Match Existing	Match Existing	105+25	Match Existing	Match Existing
		105+75		

NOTE

1. See Typical Sections and Details (2 of 2) Sheet for Pavement Notes and other details.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

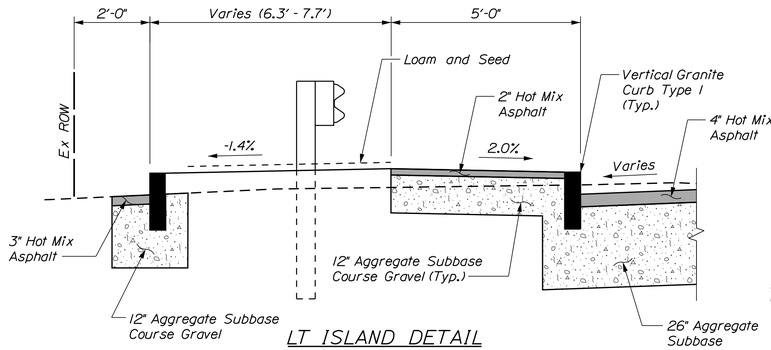
TYPICAL SECTIONS AND DETAILS (1 OF 2)

SHEET NUMBER

6

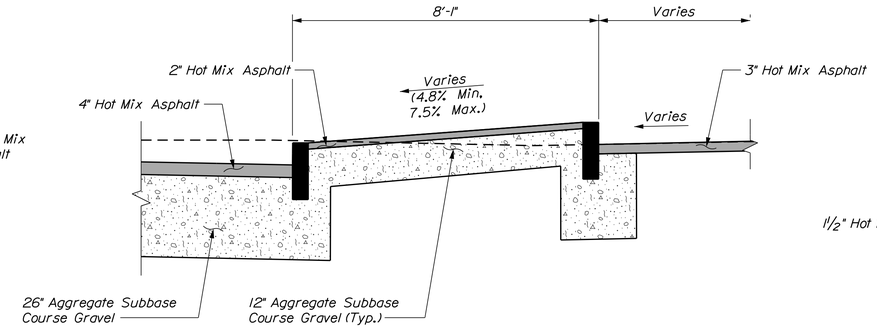
OF 57

Filename: ...\BRIDGE\MSTA\006_roadtyp_01.dgn Division: Structures Username: kwentworth Date:11/16/2017



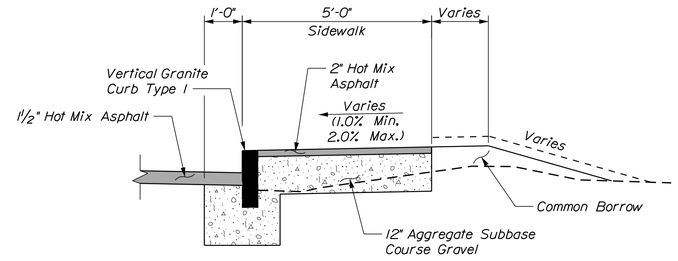
LT ISLAND DETAIL

Sta. 103+68.3 to Sta. 103+90.6



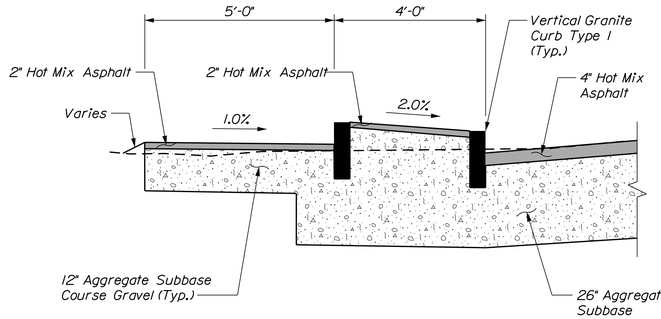
RT ISLAND DETAIL

Sta. 103+45.1 to Sta. 103+85.7



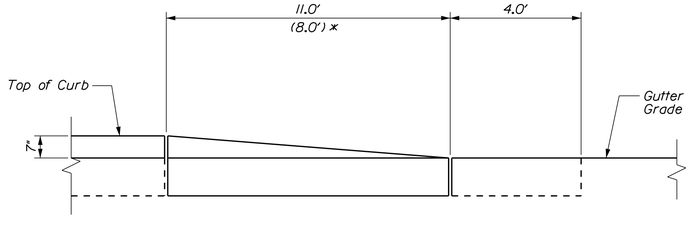
SIDEWALK DETAIL

Sta. 99+60.0 to Sta. 100+35.0, RT
Sta. 100+02.2 to Sta. 100+35.0, LT



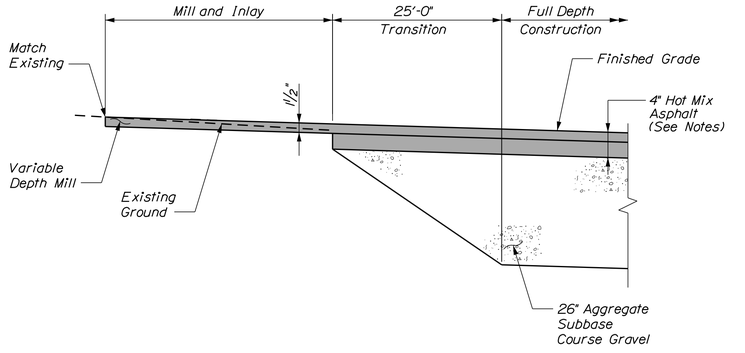
LT ISLAND DETAIL

Sta. 104+84.3 to Sta. 105+30.5

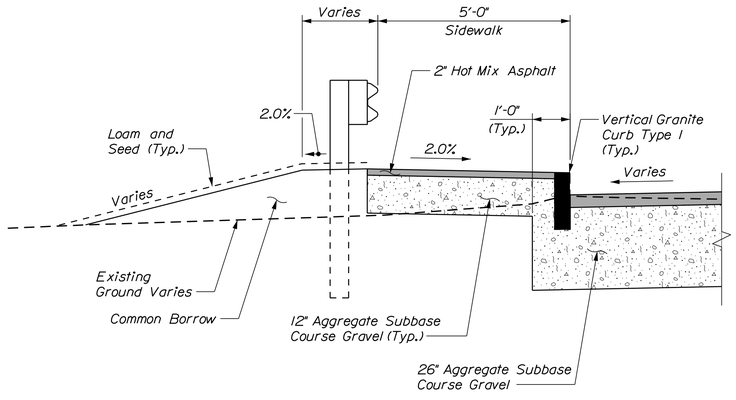


TERMINAL CURB DETAIL

Sta. 100+43.4 to Sta. 100+58.0, RT
Sta. 100+52.9 to Sta. 100+68.4, LT
* Sta. 100+99.0 to Sta. 101+11.4 LT

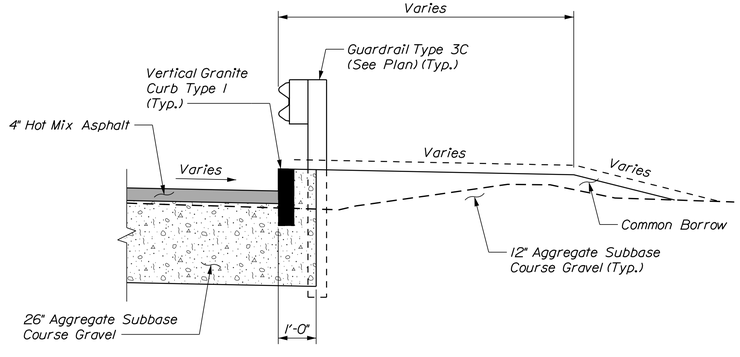


MILL AND INLAY DETAIL



LT GUARDRAIL DETAIL

Sta. 101+06.0 to Sta. 101+33.3 and
Sta. 103+26.1 to Sta. 103+88.6



RT GUARDRAIL DETAIL

Sta. 101+18.5 to Sta. 101+67.1

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	REVISIONS 1	
CHECKED-REVIEWED	JAW	REVISIONS 2	
DESIGN2-DETAILED2		REVISIONS 3	
DESIGN3-DETAILED3		REVISIONS 4	
		FIELD CHANGES	

DATE	BY
11/17	KDW
11/17	GSG

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

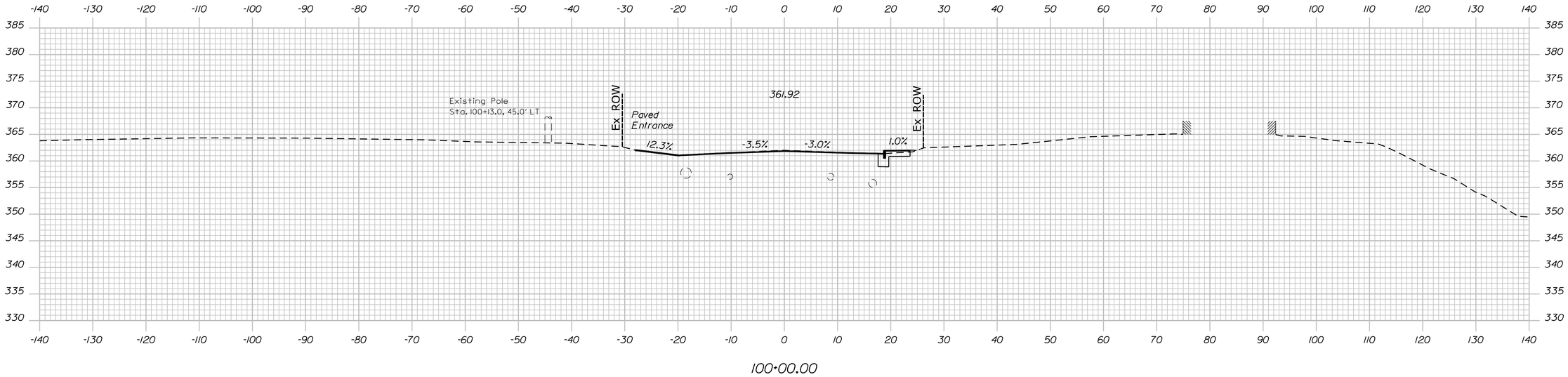
TYPICAL SECTIONS AND DETAILS (2 OF 2)

SHEET NUMBER

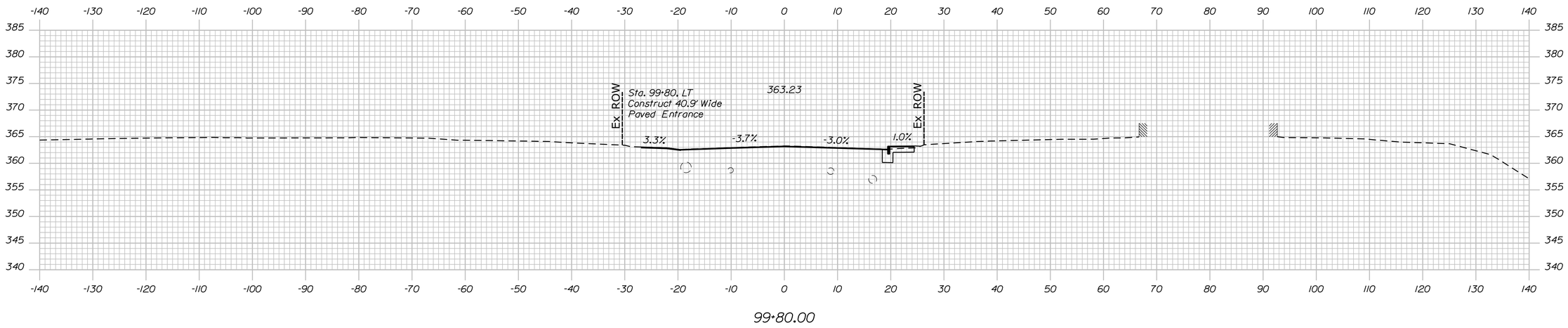
7

OF 57

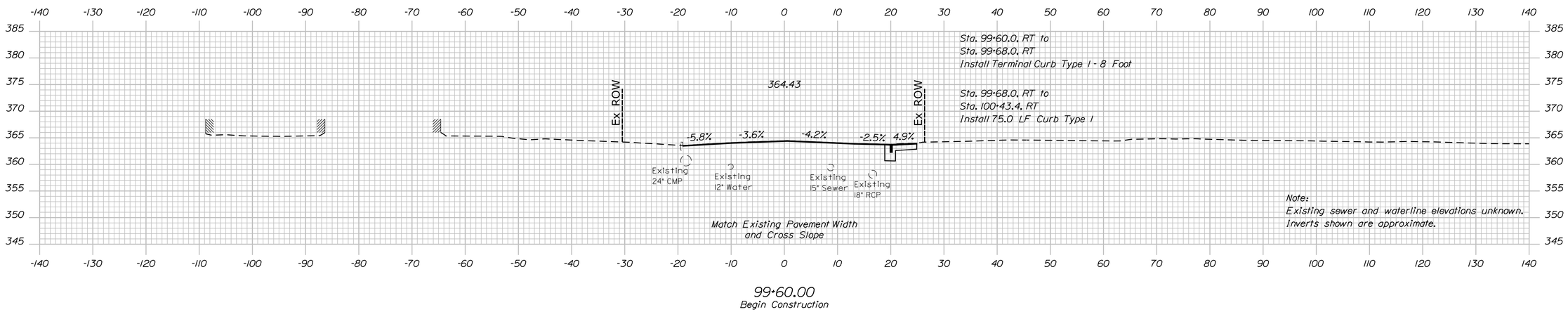
Filename: ...\BRIDGE\MSTA\007_roadtyp_02.dgn Division: Structures Username: kwentworth Date:12/13/2017



100+00.00



99+80.00



99+60.00
Begin Construction

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

CROSS SECTIONS (1 OF 12)

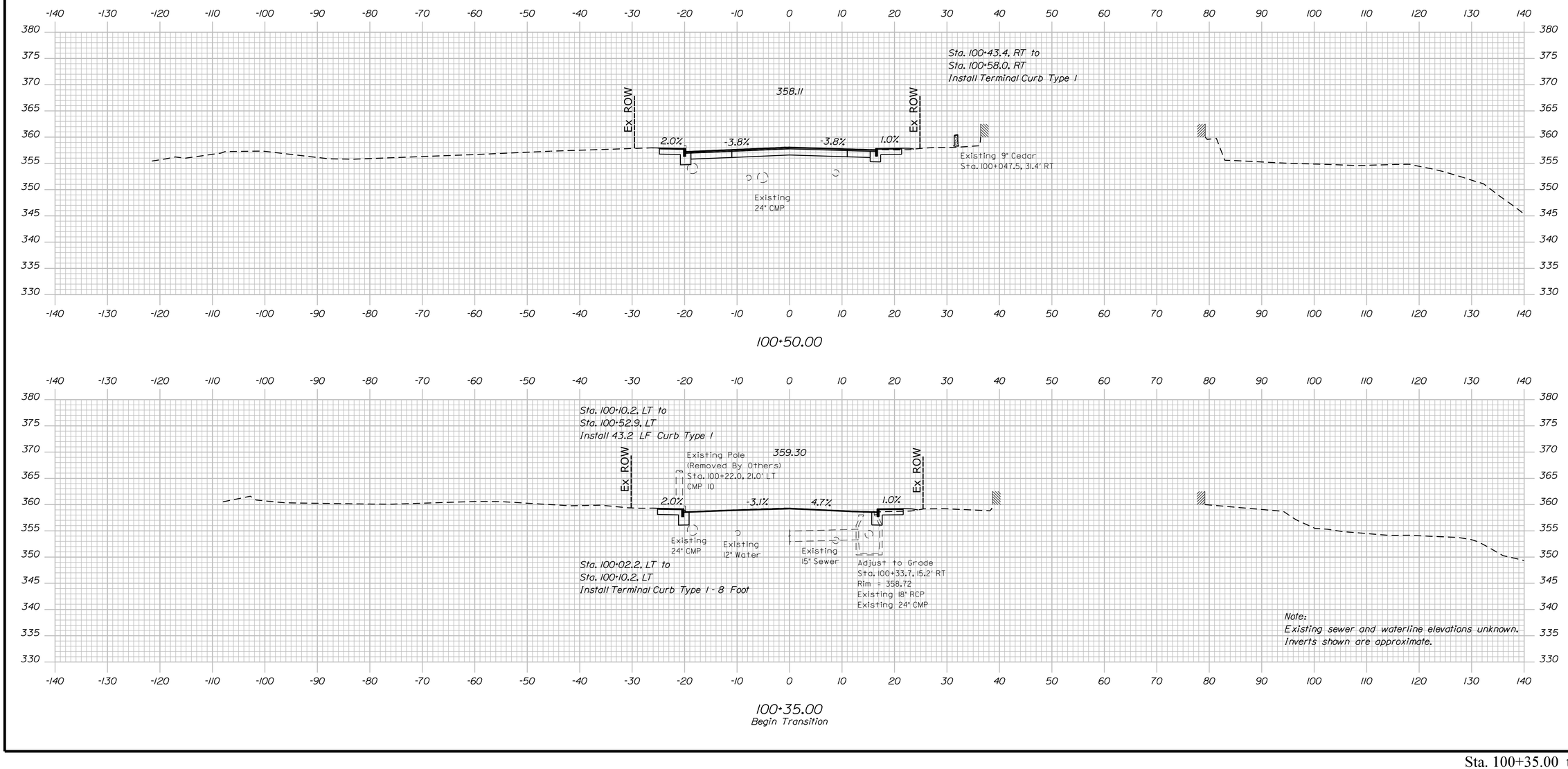
SHEET NUMBER

8

OF 57

Filename: ...\BRIDGE\MSTA\008_xs_01.dgn Division: Structures Username: kwentworth Date:11/16/2017

Sta. 99+60.00 to Sta. 100+00.00



Sta. 100+35.00 to Sta. 100+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

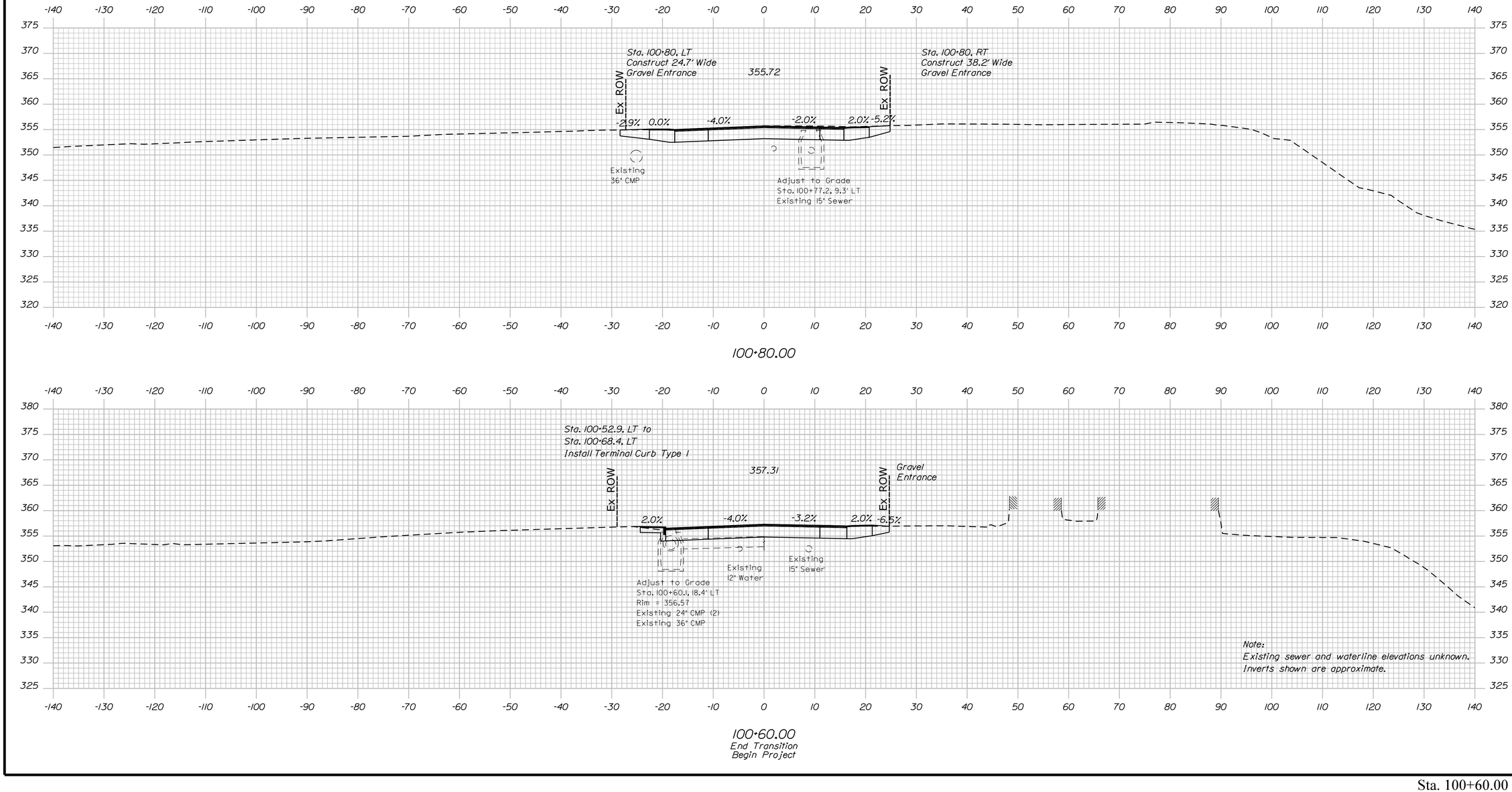
CROSS SECTIONS (2 OF 12)

SHEET NUMBER

9

OF 57

Filename: ...\BRIDGE\MSTA\009_xs_02.dgn Division: Structures Username: kwentworth Date:11/16/2017



Sta. 100+60.00 to Sta. 100+80.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE	BY	DATE
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

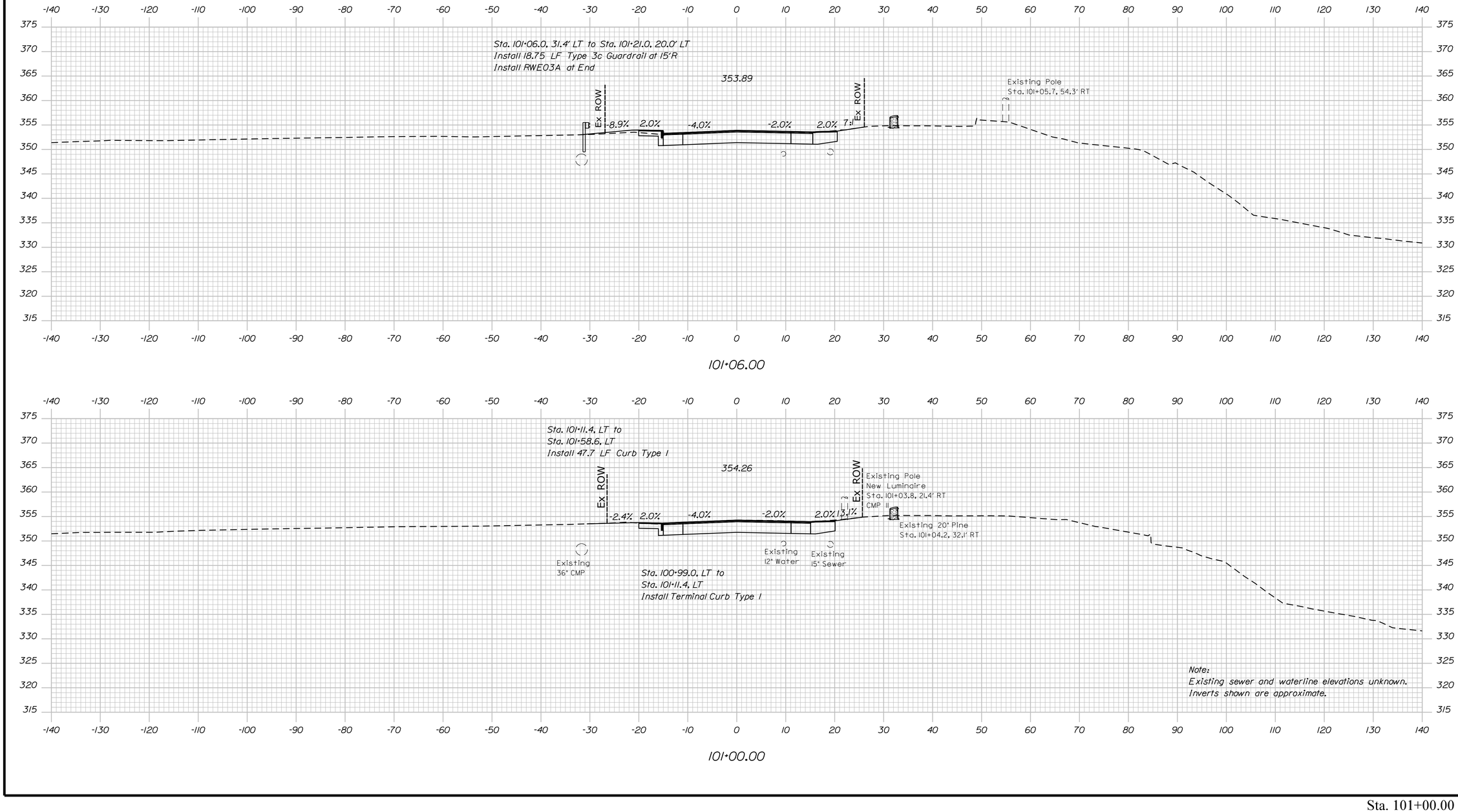
CROSS SECTIONS (3 OF 12)

SHEET NUMBER

10

OF 57

Filename: ...\BRIDGE\MSTA\010_xs_03.dgn Division: Structures Username: kwentworth Date:11/16/2017



Sta. 101+00.00 to Sta. 101+06.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN
022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

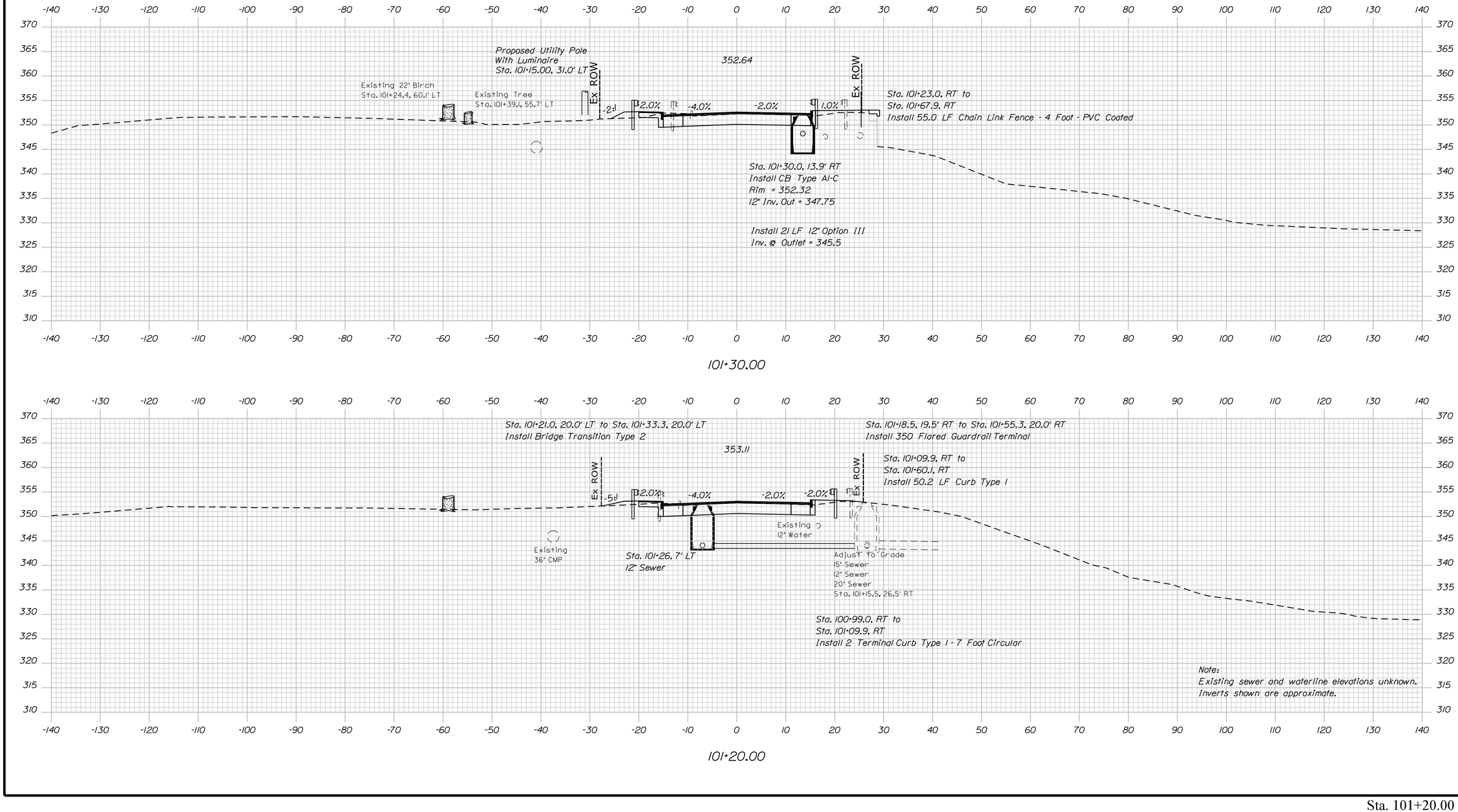
CROSS SECTIONS
(4 OF 12)

SHEET NUMBER

11

OF 57

Filename: ...\BRIDGE\MSTA\011_xs_04.dgn Division: Structures Username: kwentworth Date:11/16/2017



Sta. 101+20.00 to Sta. 101+30.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN
022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

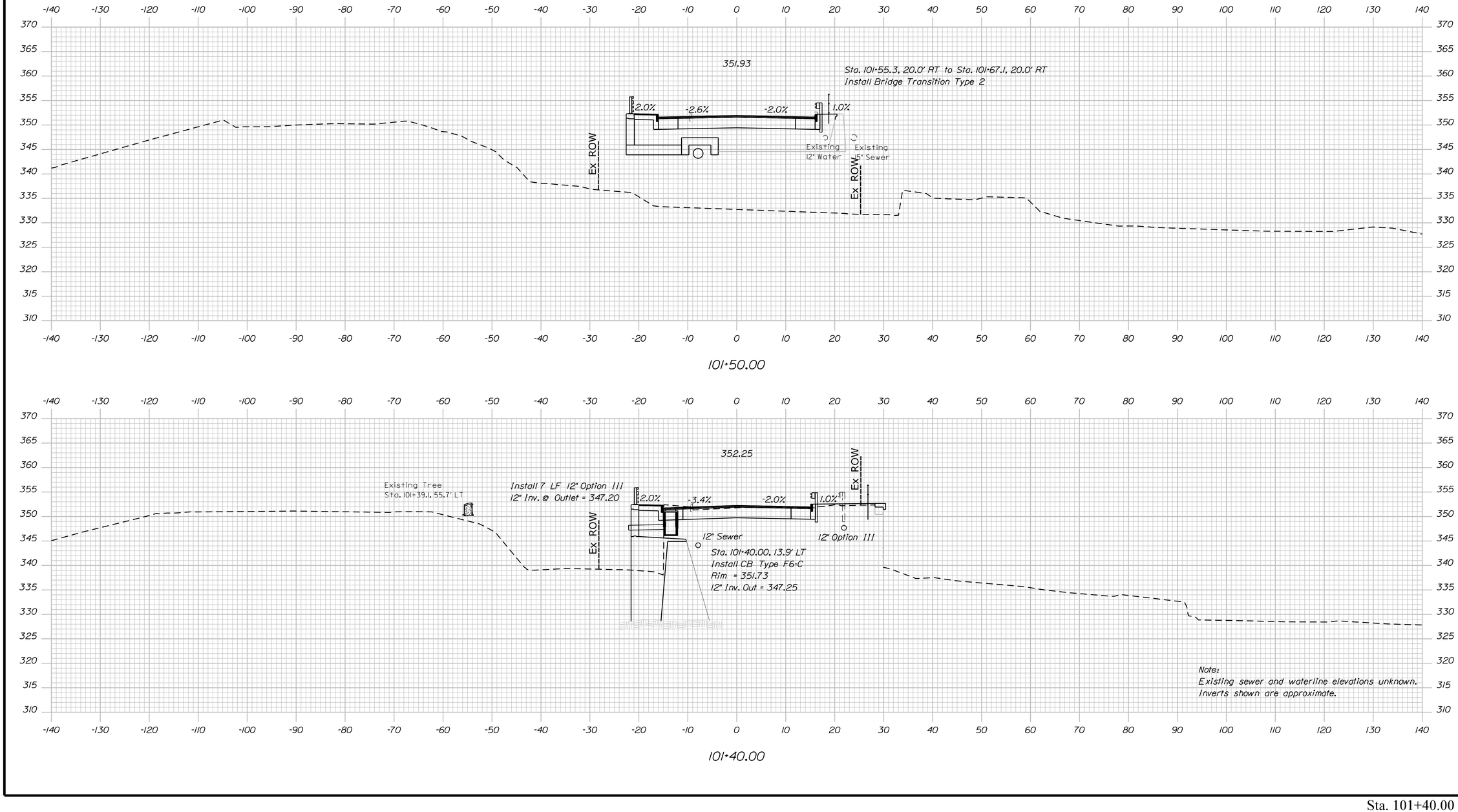
PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

CROSS SECTIONS
(5 OF 12)

SHEET NUMBER
12
OF 57

Filename: ...\BRIDGE\MSTA\012_xs_05.dgn Division: Structures Username: kwentworth Date:11/16/2017



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN **022618.00**

BRIDGE NO. 2979 — BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

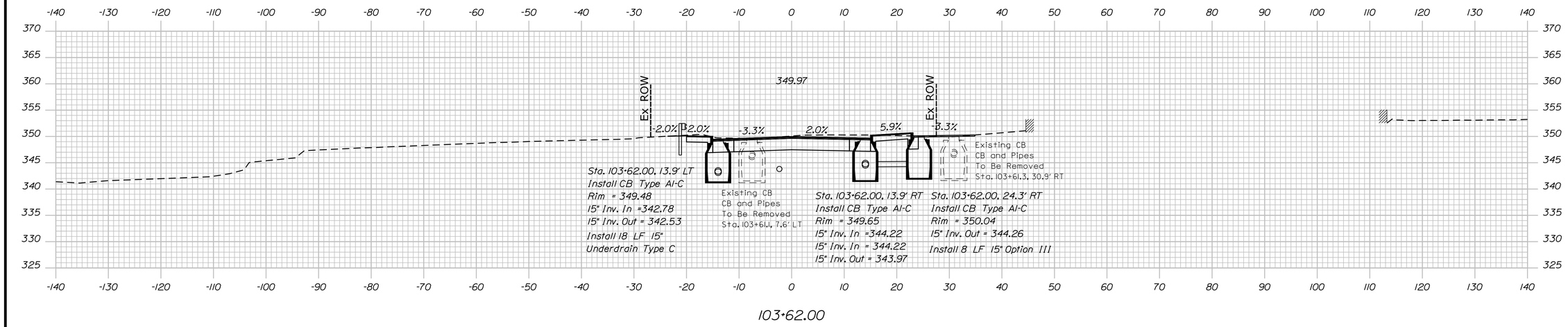
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

CROSS SECTIONS
(6 OF 12)

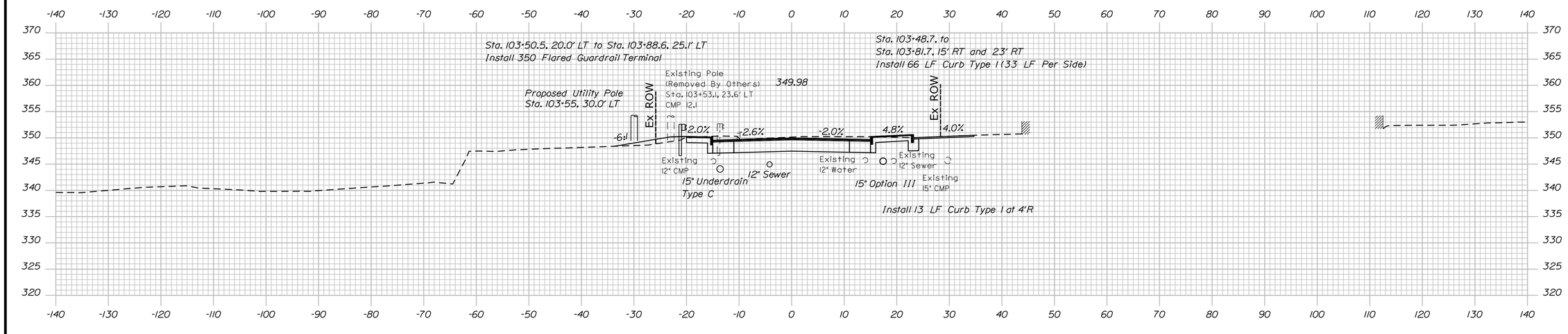
SHEET NUMBER
13
OF 57

Filename: ...\BRIDGE\MSTA\013_xs_06.dgn Division: Structures Username: kwentworth Date:11/16/2017

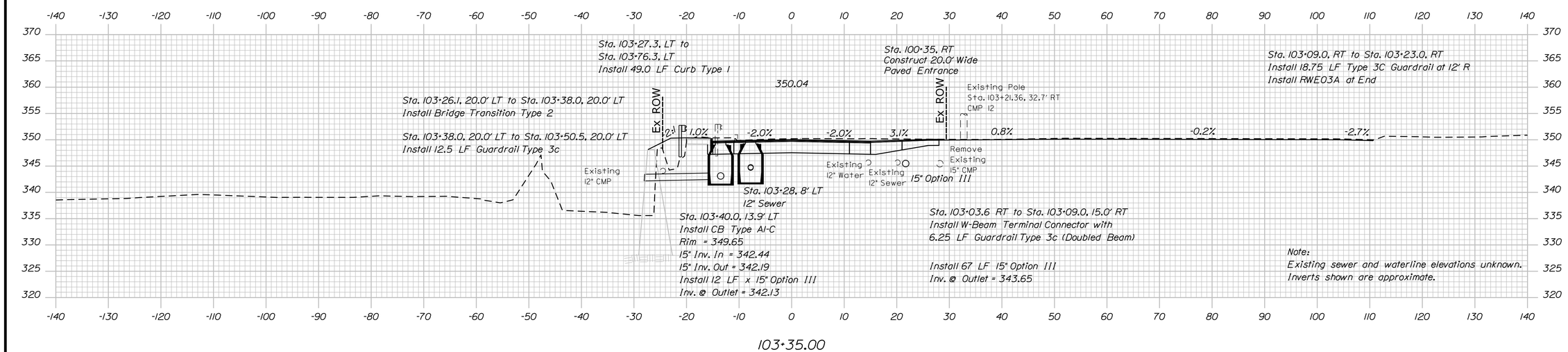
Sta. 101+40.00 to Sta. 101+50.00



103+62.00



103+50.00



103+35.00

Sta. 103+35.00 to Sta. 103+62.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

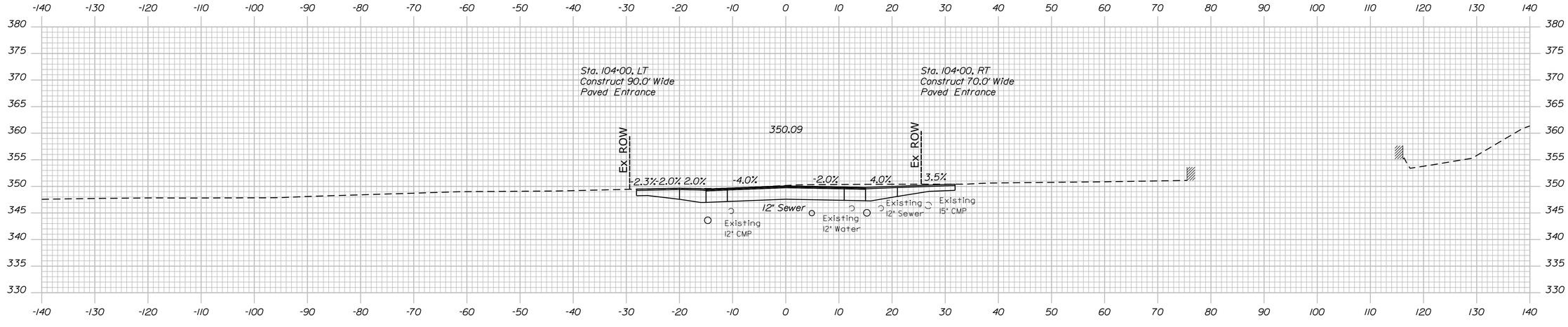
	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

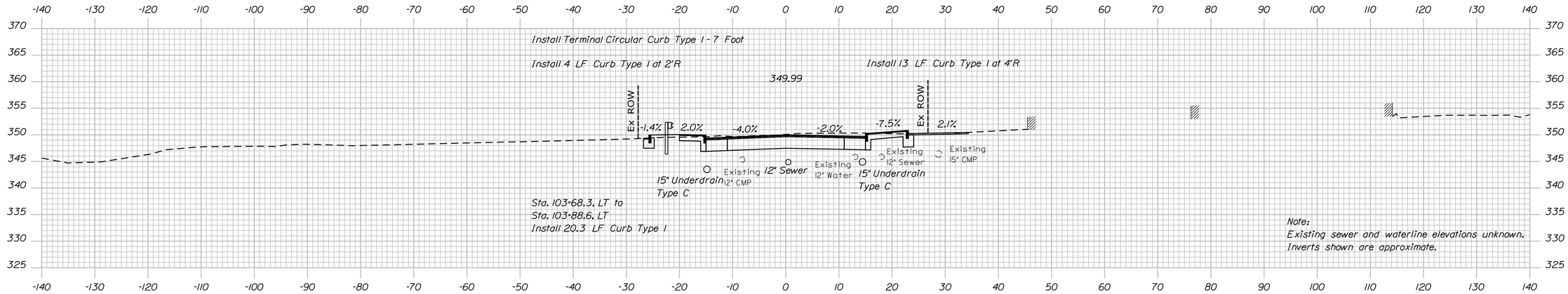
CROSS SECTIONS
(7 OF 12)

SHEET NUMBER
14
OF 57

Filename: ...\BRIDGE\MSTA\014_xs_07.dgn Division: Structures Username: kwentworth Date:11/16/2017



104+00.00



103+75.00

Sta. 103+75.00 to Sta. 104+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN
022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

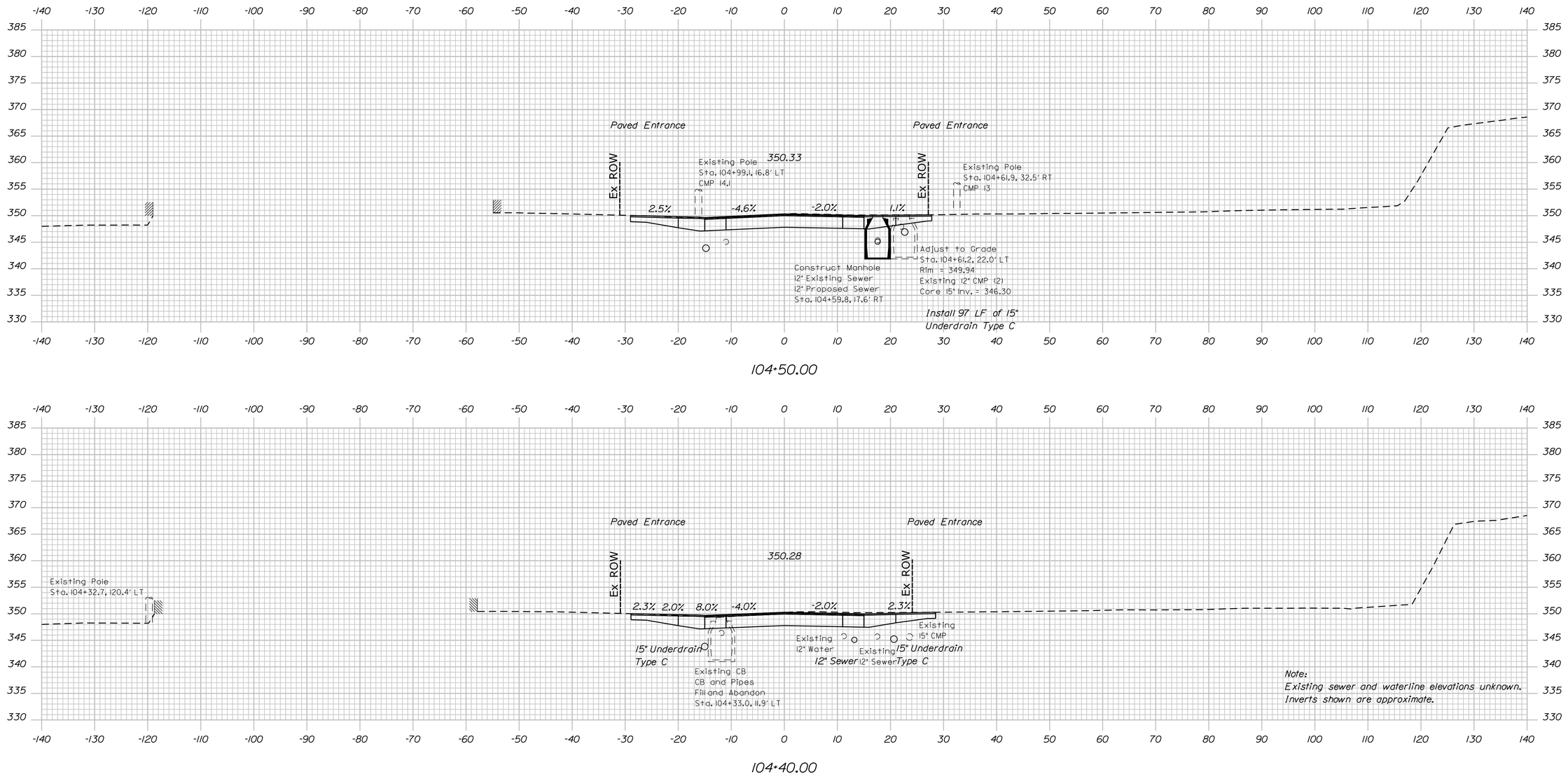
	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

CROSS SECTIONS
(8 OF 12)

SHEET NUMBER
15
OF 57

Filename: ...\BRIDGE\MSTA\015_xs_08.dgn Division: Structures Username: kwentworth Date:11/16/2017



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

	J. KITTREDGE	DATE
PROJ. MANAGER		
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

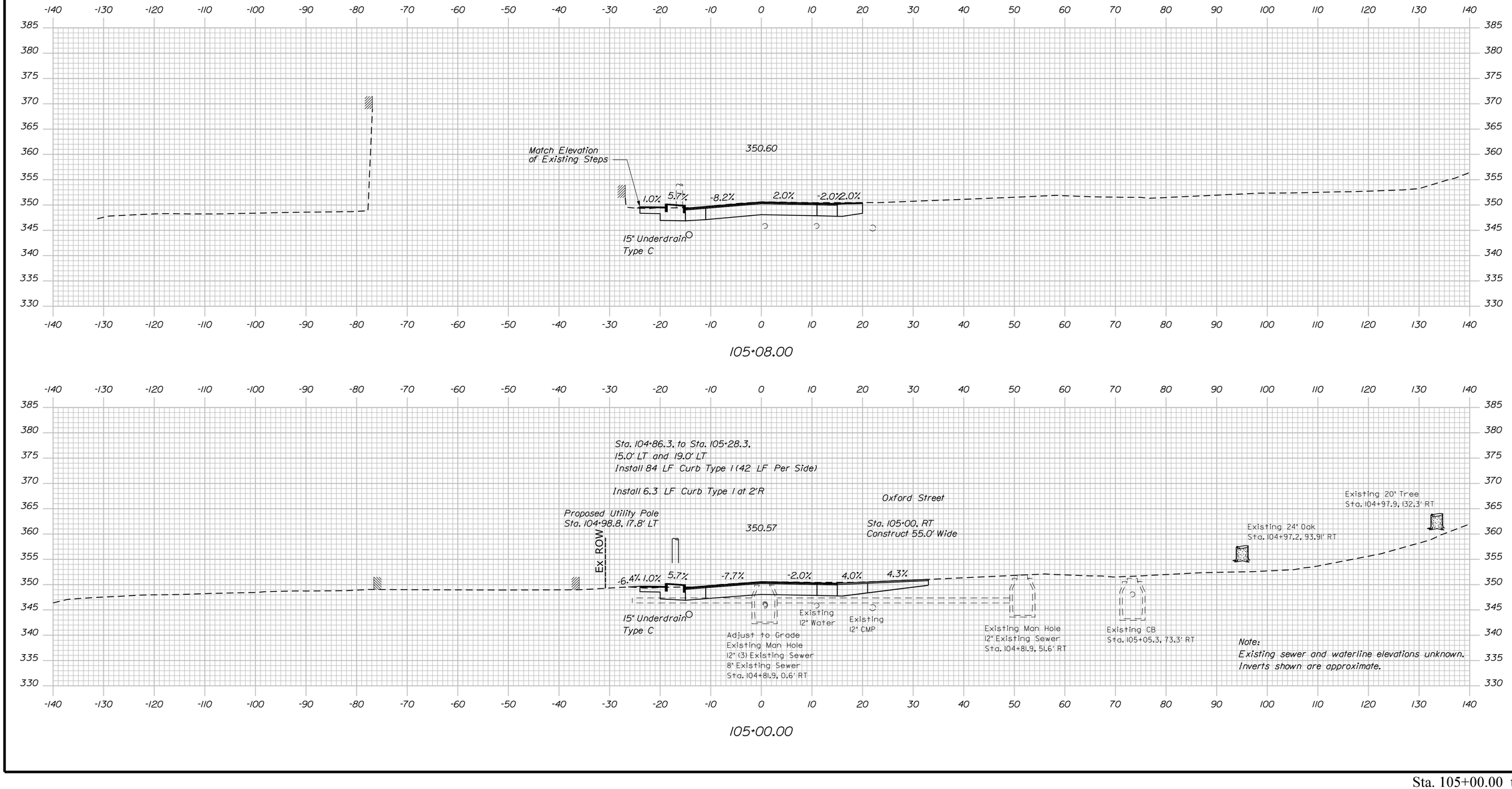
CROSS SECTIONS (9 OF 12)

SHEET NUMBER

16

OF 57

Sta. 104+40.00 to Sta. 104+50.00



Sta. 105+00.00 to Sta. 105+08.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

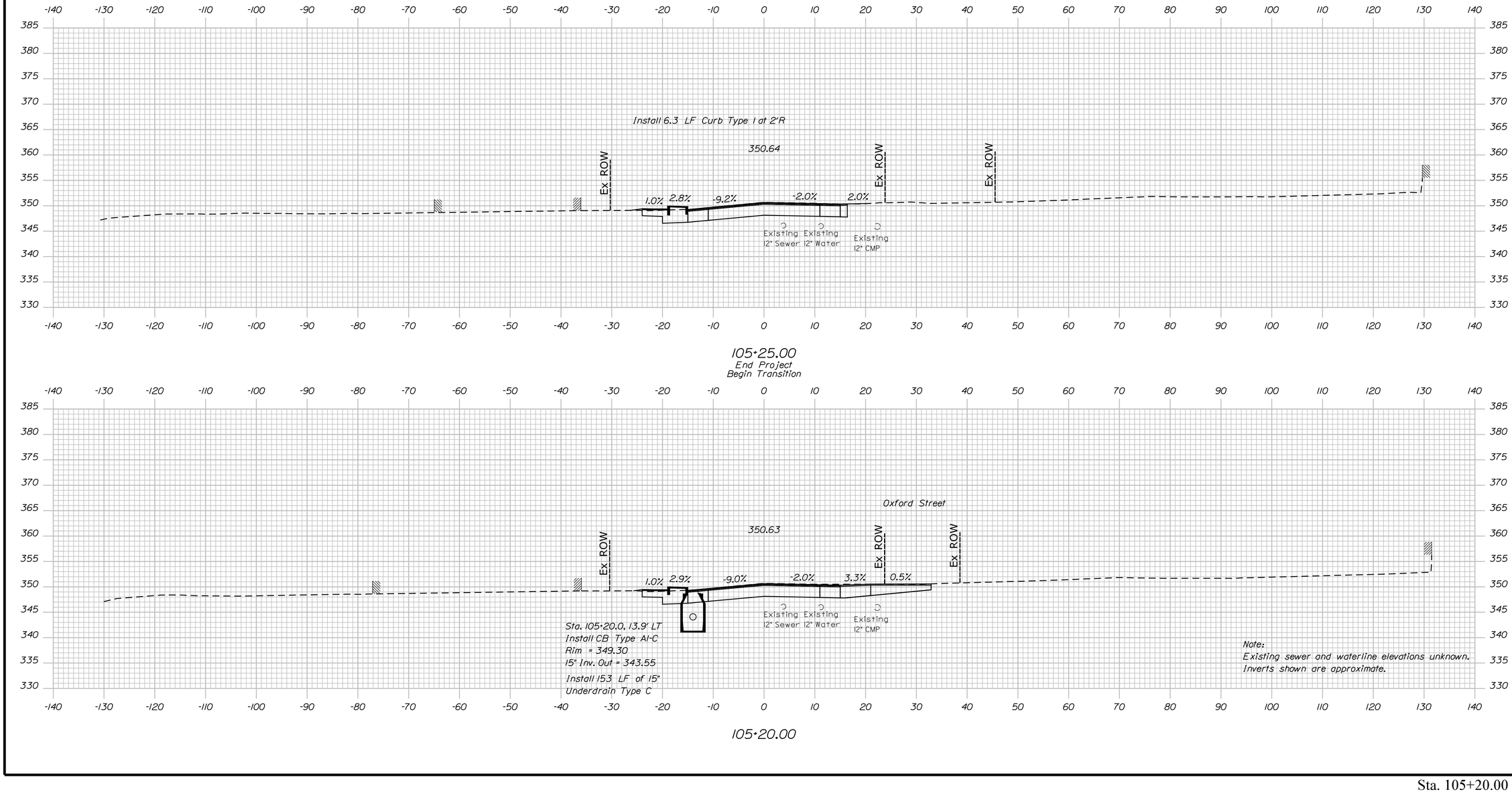
	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

CROSS SECTIONS (10 OF 12)

SHEET NUMBER
17
OF 57

Filename: ...\BRIDGE\MSTA\017_xs_10.dgn Division: Structures Username: kwentworth Date:11/16/2017



Sta. 105+20.00 to Sta. 105+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

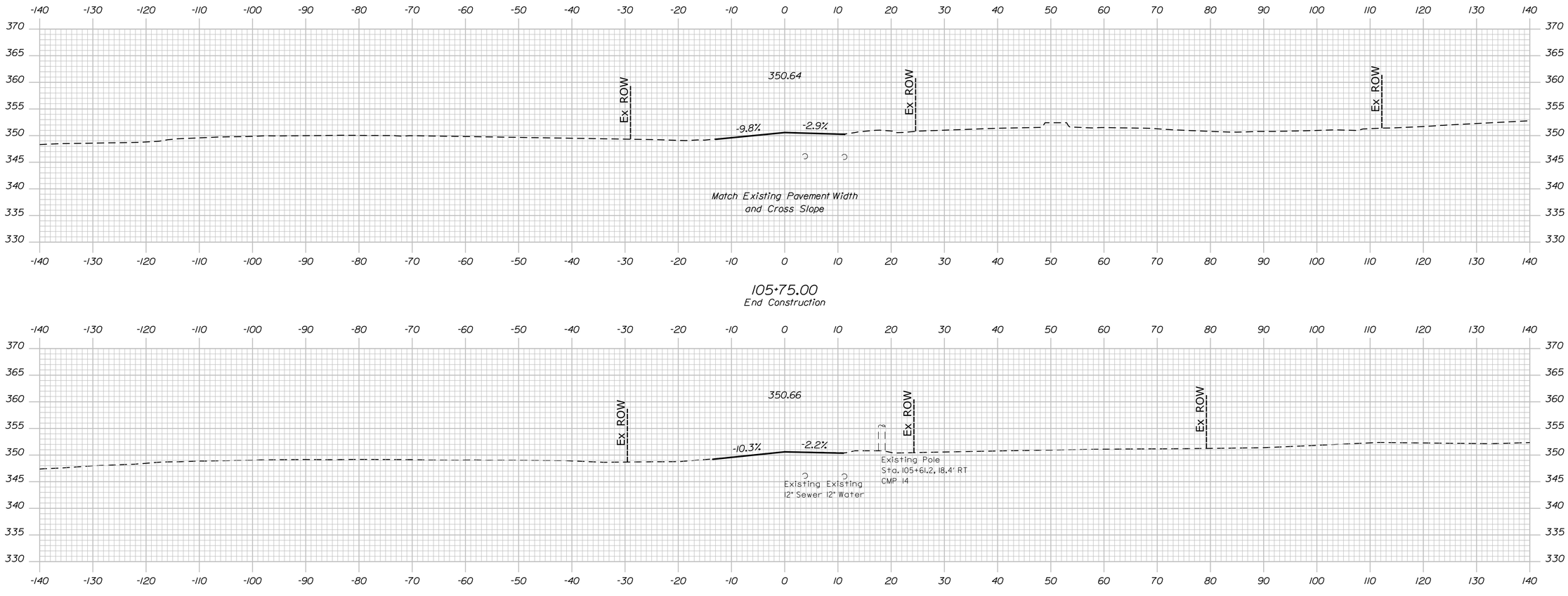
CROSS SECTIONS
(11 OF 12)

SHEET NUMBER

18

OF 57

Filename: ...\BRIDGE\MSTA\018_xs_11.dgn Division: Structures Username: kwentworth Date:11/16/2017



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE	BY	DATE
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

CROSS SECTIONS (12 OF 12)

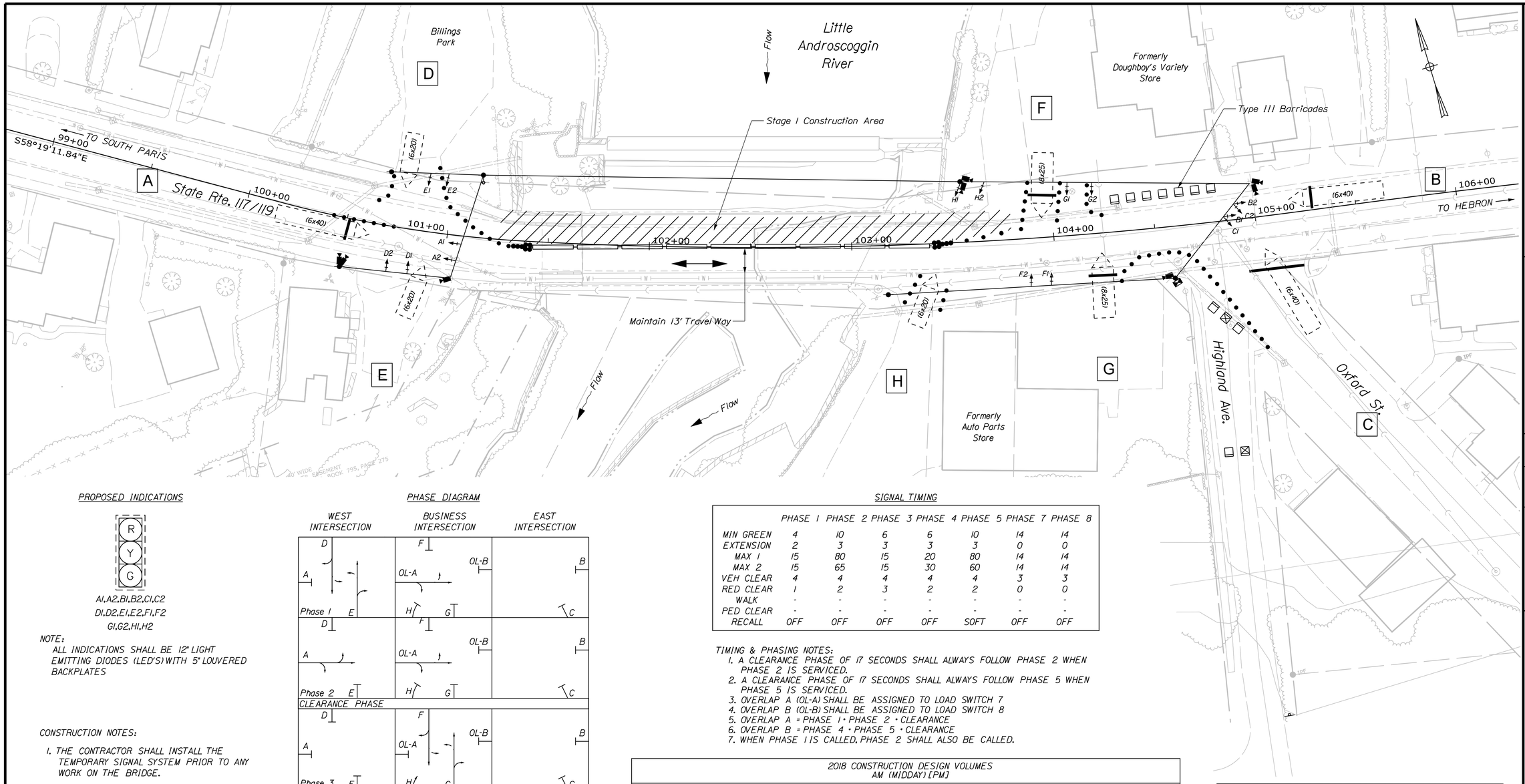
SHEET NUMBER

19

OF 57

Sta. 105+40.00 to Sta. 105+75.00

Filename: ...\BRIDGE\MSTA\019_xs_12.dgn Division: Structures Username: kwentworth Date:11/16/2017



PROPOSED INDICATIONS

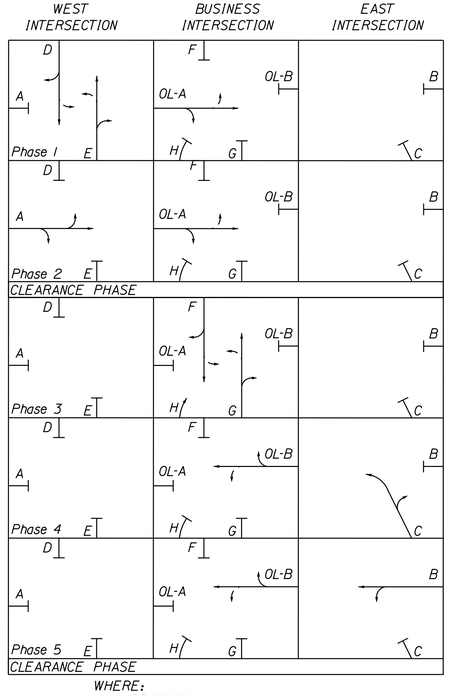
A1,A2,B1,B2,C1,C2
D1,D2,E1,E2,F1,F2
G1,G2,H1,H2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED BACKPLATES

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SIGNAL SYSTEM PRIOR TO ANY WORK ON THE BRIDGE.
2. APPROACHES E, F, AND G SHALL INCLUDE AN R10-11B - NO TURN ON RED SIGN.
3. APPROACH H SHALL NOT BE PERMITTED TO TURN LEFT (RIGHT TURN ONLY).
4. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TEMPORARY SIGNAL SYSTEM USING PORTABLE TRAFFIC SIGNAL TRAILERS IN ACCORDANCE WITH THE CONTRACTOR'S TRAFFIC CONTROL PLAN SUBMITTED IN ACCORDANCE WITH SECTION 652.3.3.
5. IF THE FORMER DOUGHBOYS VARIETY OR THE FORMER AUTO PARTS LOCATIONS ARE UNOCCUPIED AT THE START OF CONSTRUCTION, THE CONTRACTOR MAY ELIMINATE THE SIGNAL HEADS AND PHASING FOR THESE LOCATIONS.

PHASE DIAGRAM



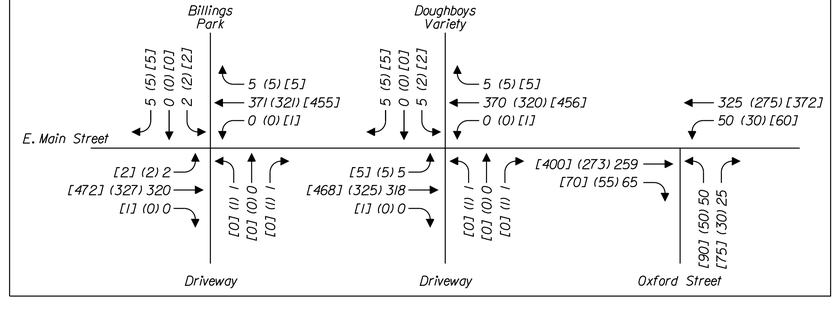
WHERE:
→ PROTECTED TRAFFIC MOVEMENT
- - → PERMISSIVE TRAFFIC MOVEMENT

SIGNAL TIMING

	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 7	PHASE 8
MIN GREEN	4	10	6	6	10	14	14
EXTENSION	2	3	3	3	3	0	0
MAX 1	15	80	15	20	80	14	14
MAX 2	15	65	15	30	60	14	14
VEH CLEAR	4	4	4	4	4	3	3
RED CLEAR	1	2	3	2	2	0	0
WALK	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-
RECALL	OFF	OFF	OFF	OFF	SOFT	OFF	OFF

TIMING & PHASING NOTES:
1. A CLEARANCE PHASE OF 17 SECONDS SHALL ALWAYS FOLLOW PHASE 2 WHEN PHASE 2 IS SERVICED.
2. A CLEARANCE PHASE OF 17 SECONDS SHALL ALWAYS FOLLOW PHASE 5 WHEN PHASE 5 IS SERVICED.
3. OVERLAP A (OL-A) SHALL BE ASSIGNED TO LOAD SWITCH 7
4. OVERLAP B (OL-B) SHALL BE ASSIGNED TO LOAD SWITCH 8
5. OVERLAP A = PHASE 1 • PHASE 2 • CLEARANCE
6. OVERLAP B = PHASE 4 • PHASE 5 • CLEARANCE
7. WHEN PHASE 1 IS CALLED, PHASE 2 SHALL ALSO BE CALLED.

2018 CONSTRUCTION DESIGN VOLUMES
AM (MIDDAY) [PM]



PLAN

25 0 25 50
Scale of Feet

LEGEND

- CONSTRUCTION AREA
- PORTABLE CONCRETE BARRIER
- CHANNELIZATION DEVICES
- IMPACT ATTENUATION DEVICE
- TRAFFIC SIGNAL
- RELOCATED TRAFFIC SIGNAL
- NON-INVASIVE VEHICLE DETECTOR
- NON-INVASIVE VEHICLE DETECTION ZONE
- CONTROLLER CABINET
- TYPE III BARRICADE
- TYPE III BARRICADE W/ SIGN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE
DESIGN-DETAILED	KDD
CHECKED-REVIEWED	JAW
DESIGN2-DETAILED2	
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

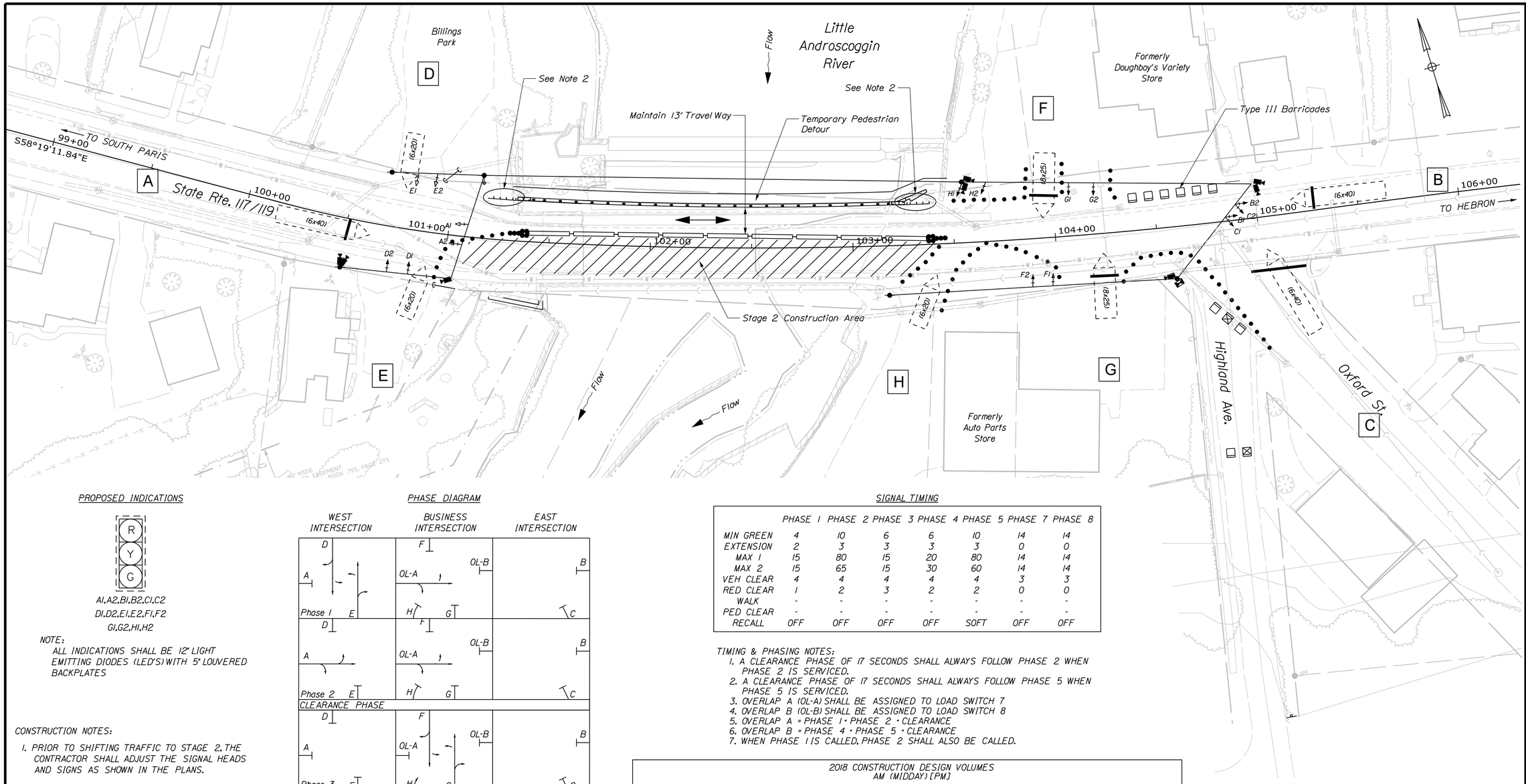
BY	DATE
KDW	11/17
GSG	11/17

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

TEMPORARY SIGNAL PLAN STAGE 1

SHEET NUMBER
20
OF 57

Filename: ...\MSTA\020_TempSignal_01.dgn Division: Structures Username: kwentworth Date:11/16/2017



PROPOSED INDICATIONS

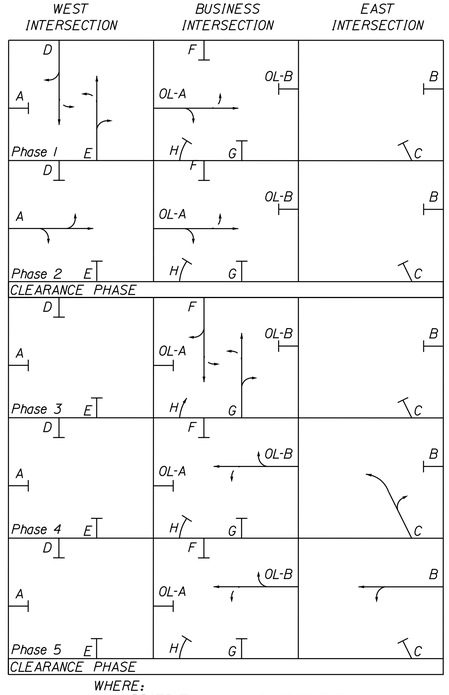
A1,A2,B1,B2,C1,C2
D1,D2,E1,E2,F1,F2
G1,G2,H1,H2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED BACKPLATES

CONSTRUCTION NOTES:

1. PRIOR TO SHIFTING TRAFFIC TO STAGE 2, THE CONTRACTOR SHALL ADJUST THE SIGNAL HEADS AND SIGNS AS SHOWN IN THE PLANS.
2. PRIOR TO SHIFTING TRAFFIC TO STAGE 2, THE CONTRACTOR SHALL PROTECT THE BLUNT ENDS OF BRIDGE APPROACH GUARDRAIL IN A MANNER ACCEPTABLE TO THE RESIDENT. PROTECTION SHALL NOT IMPEDE THE MINIMUM 13-FOOT TRAVEL WAY.
3. APPROACHES E, F, AND G SHALL INCLUDE AN R10-11B - NO TURN ON RED SIGN.
4. APPROACH H SHALL NOT BE PERMITTED TO TURN LEFT (RIGHT TURN ONLY).
5. IF THE FORMER DOUGHBOYS VARIETY OR THE FORMER AUTO PARTS LOCATIONS ARE UNOCCUPIED AT THE START OF STAGE 2, THE CONTRACTOR MAY ELIMINATE THE SIGNAL HEADS AND PHASING FOR THESE LOCATIONS.
6. AT THE END OF STAGE 2, ALL TEMPORARY SIGNAL EQUIPMENT SHALL BE REMOVED AND SALVAGED BACK TO THE CONTRACTOR.

PHASE DIAGRAM



WHERE:
→ PROTECTED TRAFFIC MOVEMENT
- - → PERMISSIVE TRAFFIC MOVEMENT

SIGNAL TIMING

	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 7	PHASE 8
MIN GREEN	4	10	6	6	10	14	14
EXTENSION	2	3	3	3	3	0	0
MAX 1	15	80	15	20	80	14	14
MAX 2	15	65	15	30	60	14	14
VEH CLEAR	4	4	4	4	4	3	3
RED CLEAR	1	2	3	2	2	0	0
WALK	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-
RECALL	OFF	OFF	OFF	OFF	SOFT	OFF	OFF

TIMING & PHASING NOTES:
1. A CLEARANCE PHASE OF 17 SECONDS SHALL ALWAYS FOLLOW PHASE 2 WHEN PHASE 2 IS SERVICED.
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4. OVERLAP B (OL-B) SHALL BE ASSIGNED TO LOAD SWITCH 8
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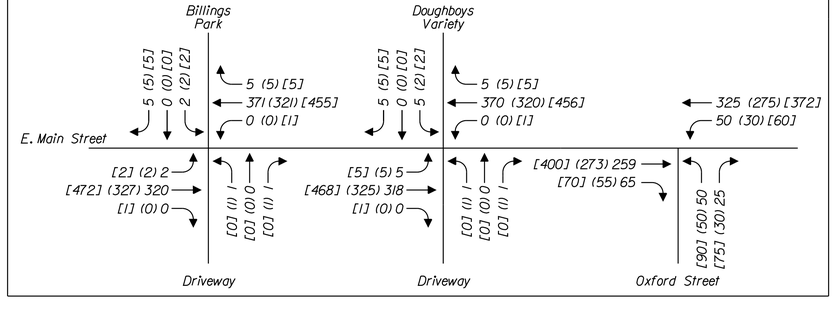
2018 CONSTRUCTION DESIGN VOLUMES
AM (MIDDAY) [PM]



PLAN

25 0 25 50
Scale of Feet

LEGEND

- CONSTRUCTION AREA
- PORTABLE CONCRETE BARRIER
- CHANNELIZATION DEVICES
- IMPACT ATTENUATION DEVICE
- TRAFFIC SIGNAL
- RELOCATED TRAFFIC SIGNAL
- NON-INVASIVE VEHICLE DETECTOR
- NON-INVASIVE VEHICLE DETECTION ZONE
- CONTROLLER CABINET
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- TYPE III BARRICADE W/ SIGN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)
WIN 022618.00
BRIDGE NO. 2979
BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE
DESIGN-DETAILED	KCD
CHECKED-REVIEWED	JAW
DESIGN2-DETAILED2	
DESIGN3-DETAILED3	

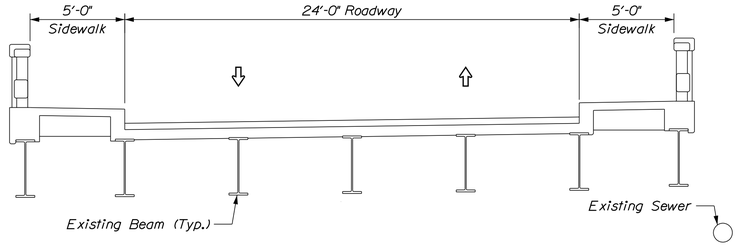
	BY	DATE
REVISIONS 1	KDW	11/17
REVISIONS 2	GSG	11/17
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

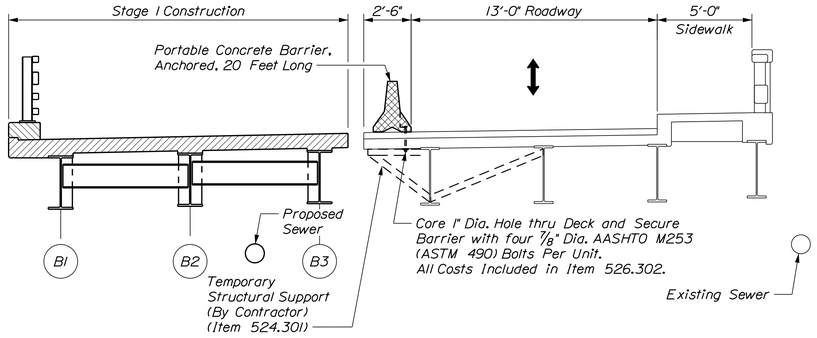
TEMPORARY SIGNAL PLAN STAGE 2

SHEET NUMBER
21
OF 57

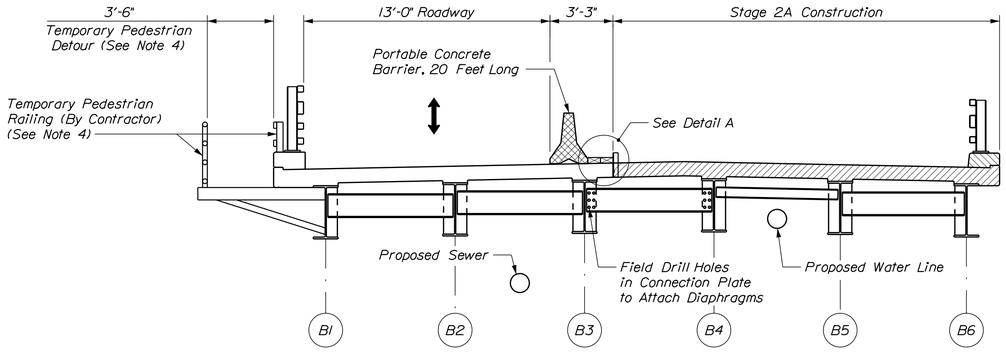
Filename: ...\MSTA\021_TempSignal_02.dgn Username: kwentworth Division: Structures Date:12/13/2017



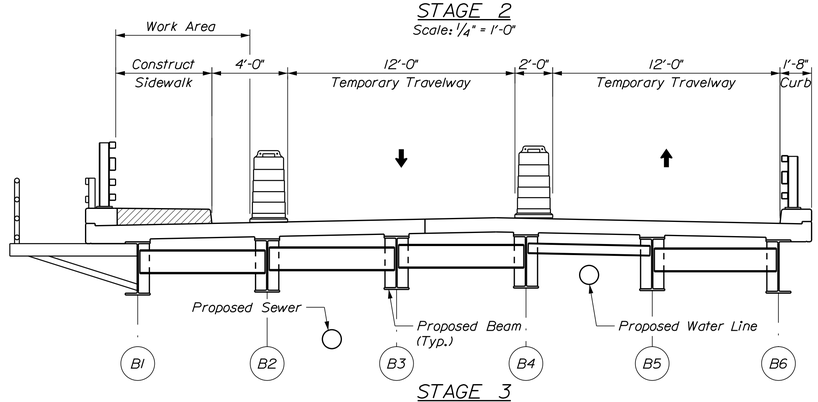
EXISTING BRIDGE
Scale: 1/4" = 1'-0"



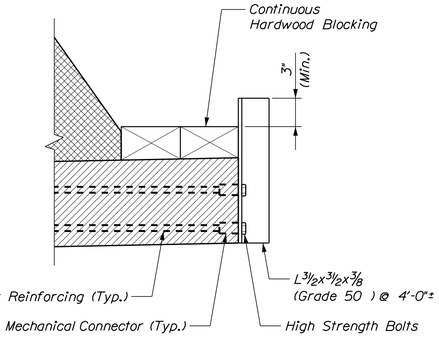
STAGE I
Scale: 1/4" = 1'-0"



STAGE 2
Scale: 1/4" = 1'-0"



STAGE 3
Scale: 1/4" = 1'-0"



DETAIL A
(See Note 3)

CONSTRUCTION PHASING NOTES

1. All construction shall be completed using approved Traffic Control Procedures and in accordance with approved Traffic Control Plans.
2. Deck formwork between B3 and B4 shall be designed for HL-93 loading and all applicable dead loads. Cost included in Item 502.26.
3. Design load is 3.4 klf with 4'-0" maximum spacing. Remove Temporary Angle Bracing as shown in Detail A once deck formwork is in place between B3 and B4. All costs included in Item 526.302. Details shown are conceptual. The Contractor shall design the anchored connection in accordance with the MaineDOT Standard Specifications and submit details and calculations to the Resident for approval.
4. The Contractor shall design the Temporary Pedestrian Detour in accordance with the Standard Specifications and submit details and calculations to the Resident for approval. All costs included in Item 510.11, Special Detour, Pedestrian Traffic Only.
5. See Temporary Signal Plans and Portable Concrete Barrier (Anchored) sheets for additional information.
6. Install diaphragms between B3 and B4 after Phase 2A deck placement and prior to forming Phase 2B Closure Pour. Field Drill connection plate on B3 or B4 using holes in diaphragm member as a template.
7. See Temporary Signal Plan Stage 2 for temporary pedestrian access.
8. Diamond grinding to be completed under localized lane closures after Stage 3 is completed.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN
022618.00

BRIDGE NO. 2979

BRIDGE PLANS

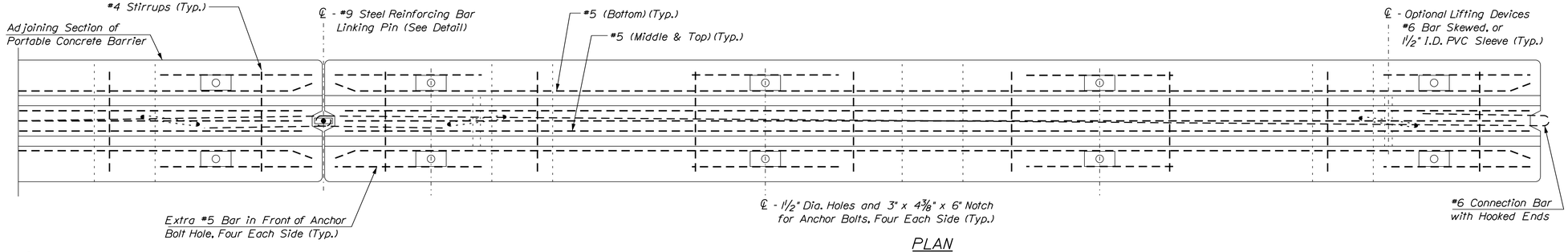
vhb

PROJ. MANAGER	J. KITTREDGE	BY	DATE
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

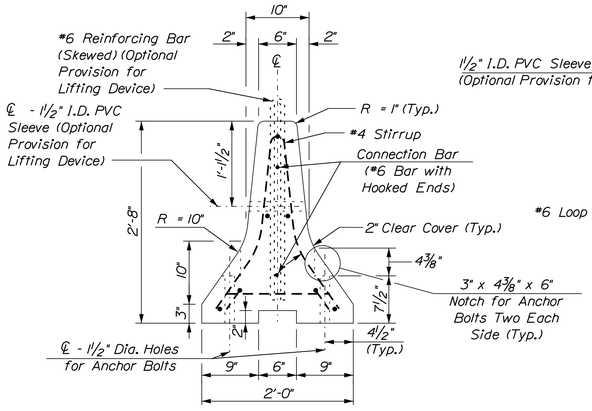
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

STAGED CONSTRUCTION DETAILS

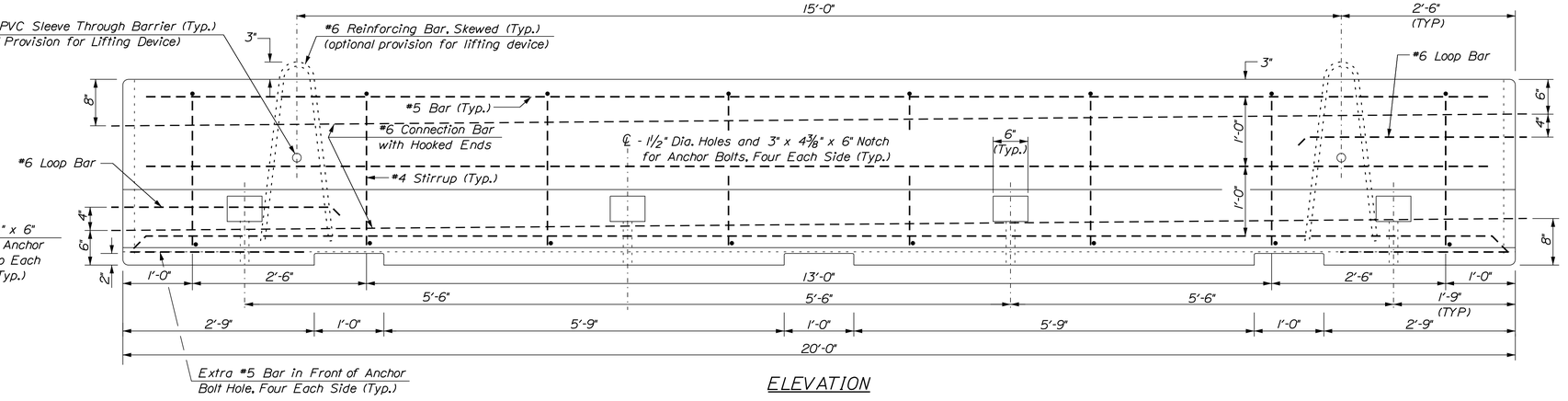
SHEET NUMBER
22
OF 57



PLAN



TYPICAL SECTION



ELEVATION

GENERAL NOTES

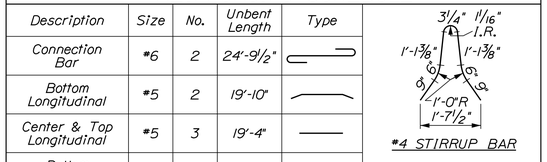
1. The portable concrete barrier details, as shown on this sheet, are in compliance with the requirements of NCHRP Report 350.
2. Concrete barrier shall be furnished by the Contractor and paid as Item 526.302, Portable Concrete Barrier, Anchored. End treatments and connections to existing barriers, when required, shall be subsidiary to Item 526.302.
3. The Contractor shall furnish and install approved retroreflective delineators at 25-foot intervals along the top and/or one foot down the side of the portable concrete barrier, subsidiary to Item 526.302. The color of delineators shall, in all cases, conform to the color of edge line markings.
4. Unprotected openings in portable concrete barrier will not be permitted, unless specifically authorized by the Resident.
5. Other barrier configurations and end connections are subject to approval by the Resident. Barriers of different geometric shapes shall not be mixed on the same run.

MATERIAL NOTES

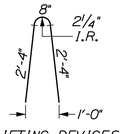
1. Barriers shall have a minimum 28 day compression strength of 4,000 psi. Barriers shall have a smooth uniform surface free of defects and irregularities. Casting date shall be shown on barrier. All exposed edges of concrete shall be chamfered ¾" unless otherwise noted.
2. All reinforcing steel shall be AASHTO M31 (ASTM-A615) Grade 60. Reinforcement shown is the minimum required.
3. Each barrier unit shall include one linking pin.
4. Lifting options shown are advisory only. It shall be the Contractor's responsibility to provide adequate lifting points on each barrier.
5. Connecting devices shall be compatible with other units.
6. Delineators shall be attached to the barrier using an approved adhesive material or by bolts and anchors.

PORTABLE CONCRETE BARRIER REINFORCING SCHEDULE

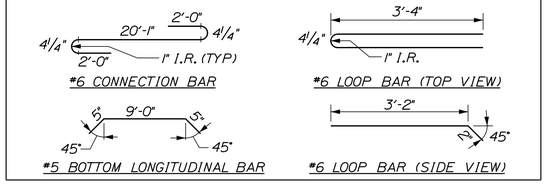
Description	Size	No.	Unbent Length	Type
Connection Bar	#6	2	24'-9½"	
Bottom Longitudinal	#5	2	19'-10"	
Center & Top Longitudinal	#5	3	19'-4"	
Bottom Transverse	#5	8	1'-4"	
Stirrups	#4	8	5'-0"	
Extra Anchor Hole Bar	#5	8	2'-5"	
Lifting Device (Optional)	#6	2	5'-4"	
Loop Bar	#6	2	6'-10¼"	



#4 STIRRUP BAR



#6 LIFTING DEVICES (OPTIONAL)

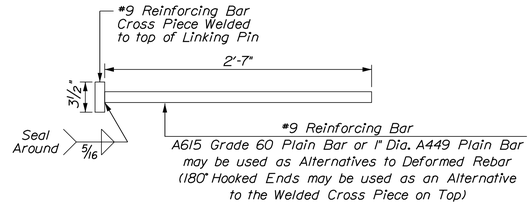


#6 CONNECTION BAR

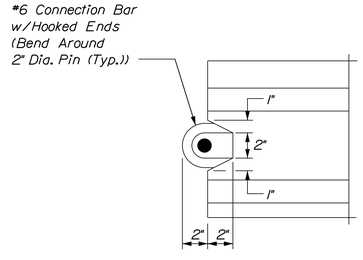
#6 LOOP BAR (TOP VIEW)

#5 BOTTOM LONGITUDINAL BAR

#6 LOOP BAR (SIDE VIEW)



LINKING PIN



END NOTCH DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	BY	DATE
CHECKED-REVIEWED	JAW	KDW	11/17
DESIGN2-DETAILED2		GSG	11/17
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

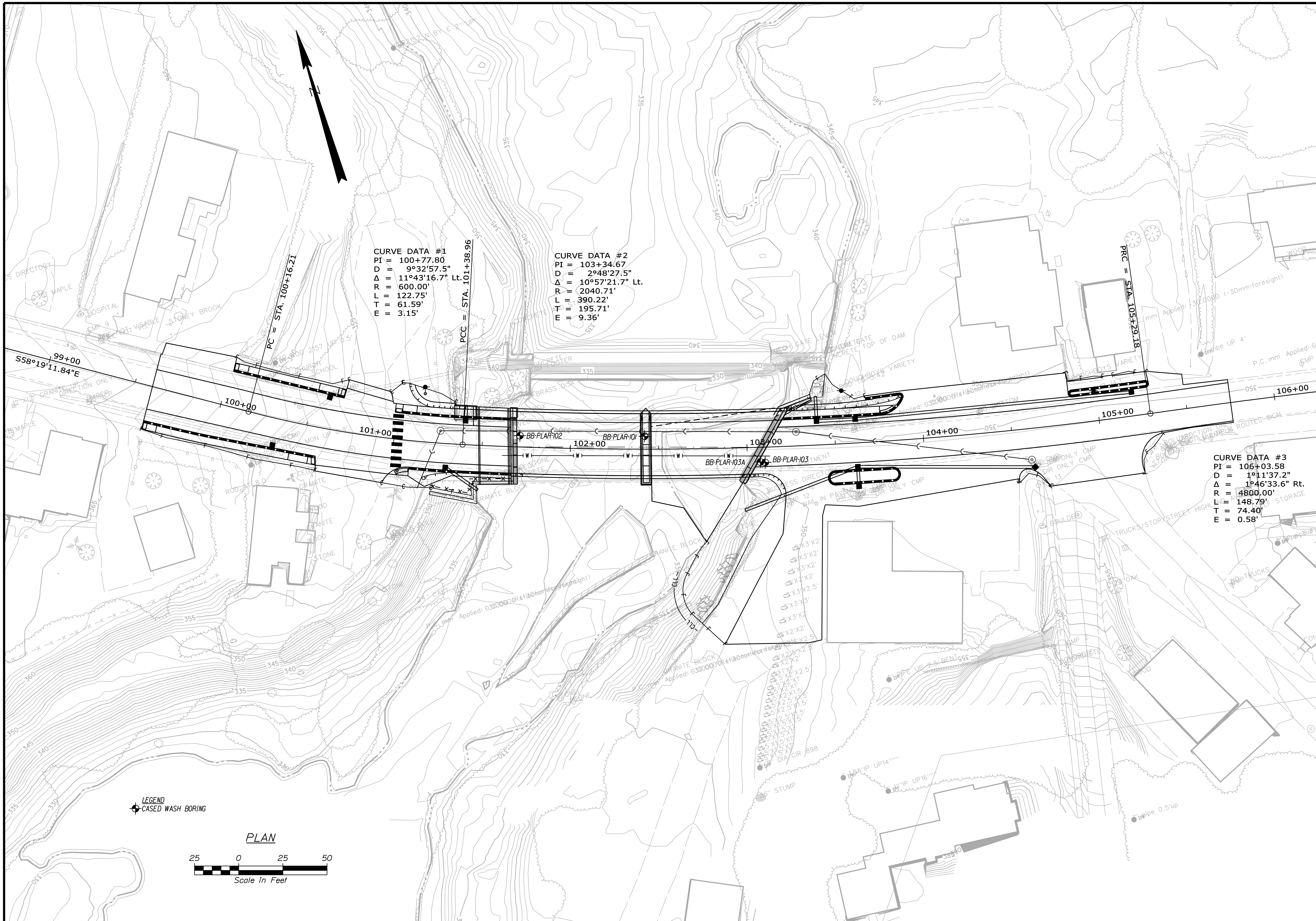
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

PORTABLE CONCRETE BARRIER (ANCHORED)

SHEET NUMBER 23 OF 57

Filename: ...\BRIDGE\MSTA\023_tcp_01.dgn Division: Structures Username: kwentworth Date:12/13/2017

Filename: ...\00\geotech\msta\024_BLP1.dgn Division: GEOTECH Username: Terry.White Date:11/8/2017



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022618.00

WIN
22618.00

BRIDGE NO. 2979

BRIDGE PLANS

STATE OF MAINE MICHAEL A. ST. PIERRE No. 12519 LICENSED PROFESSIONAL ENGINEER

SIGNATURE		
12519		
P.E. NUMBER		
11/8/2017		
DATE		

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN2-DETAILED2	M.ST.PIERRE T.WHITE	NOV 2017
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

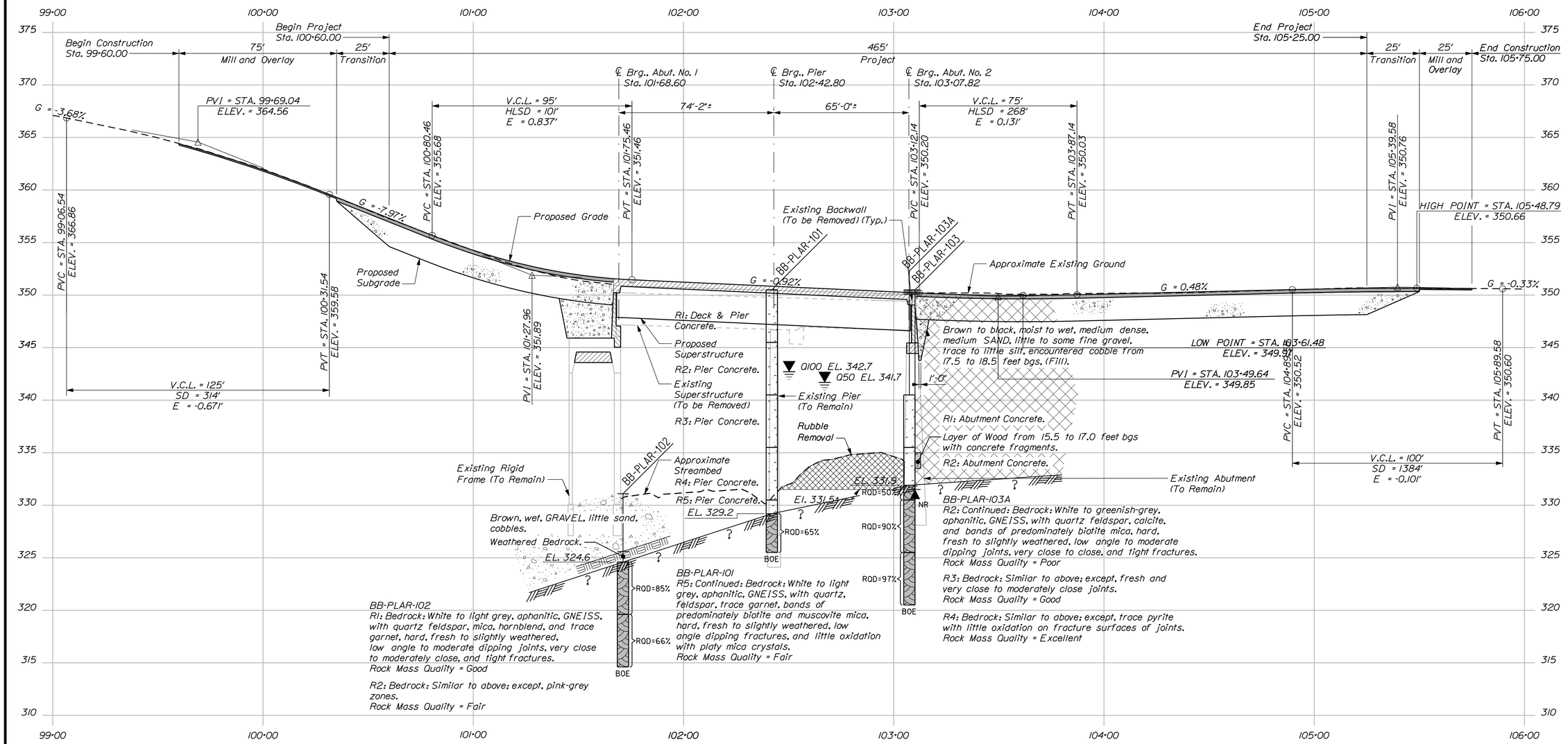
BILLINGS BRIDGE
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

BORING LOCATION PLAN

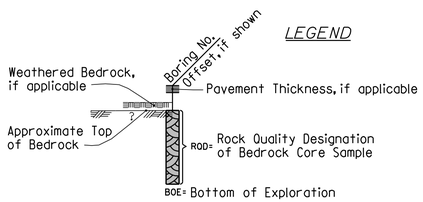
SHEET NUMBER

24

OF 57



LEGEND



Concrete

Wood

No Refusal (NR)

Refusal (R)

PROFILE

HORIZ 25 0 25 50

VERT 5 0 5 10

SCALE

Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022618.00

WIN 22618.00

BRIDGE PLANS

BRIDGE NO. 2979

STATE OF MAINE — MICHAEL A. ST. PIERRE No. 12519 — REGISTERED PROFESSIONAL ENGINEER

SIGNATURE 12519

P.E. NUMBER 11/8/2017

DATE

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED	M.ST.PIERRE	NOV 2017
DESIGN2-DETAILED2	T.WHITE	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER

25

OF 57

Maine Department of Transportation — BB-PLAR-102

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Billings Bridge (No. 2979) carries Routes 117/119 over
Location: Paris, Maine

Boring No.: BB-PLAR-102
WIN: 22618.00

Driller:	S.W. Cole Explorations, LLC	Elevation (ft.): 331.1	Auger ID/OD: N/A
Operator:	J. Lee	Datum: NAVD88	Sampler: Standard Split Spoon
Logged By:	E. Walker	Rig Type: CME 850	Hammer Wt./Fall: 140 lbs/30 inches
Date Start/Finish:	2/20/2017	Drilling Method: Cased Wash Boring	Core Barrel: NQ2 (2-inch-diameter)
Boring Location:	Sta 101+71.2, 6.4 feet Lt.	Casing ID/OD: HW (4/4.5 inches)	Water Level*: 19 feet bgs
Hammer Efficiency Factor: 0.60		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒	

Definitions:
D = Split Spoon Sample; R = Rock Core Sample; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); T_v = Pocket Torvane Shear Strength (
WO = Unsuccessful Split Spoon Sample Attempt; SSA = Solid Stem Auger; $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf); WC = Water Content, percent
U = Thin Wall Tube Sample; HSA = Hollow Stem Auger; q_p = Unconfirmed Compressive Strength (ksf); LL = Liquid Limit
WU = Unsuccessful Thin Wall Tube Sample Attempt; RC = Roller Cone; N=uncorrected = Raw Field SPT N-value; PL = Plastic Limit
V = Field Vane Shear Test; PP = Pocket Penetrometer; WOH = Weight of Hole or Casing; Hammer Efficiency Factor = Rig Specific Annual Calibration %; PI = Plasticity Index
WH = Unsuccessful Field Vane Shear Test Attempt; WOP = Weight of Pre Person; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; G = Grain Size Analysis
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected; C = Consolidation Test

Depth (ft.)	Sample No.	Rec./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Shear Strength (psf) or ROD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							47/6"			Brown, wet, GRAVEL, little sand, cobbles. RC through bedrock from 19.5 to 20.6 feet bgs.	
							43				
							58				
							140				
							OPEN				
5	10	5/5	5.50 - 5.92	50-5"	- -			325.60		Weathered bedrock. 5.50	
	R1	60/58.5	6.50 - 11.50	ROD = 85%			N62	324.60		RC through weathered bedrock from 24.5 to 25.5 feet bgs. 6.50	UCT q_p = 17,162 psi
10										Top of Bedrock at Elevation 324.6 feet. R1: Bedrock: White to light grey, aphanitic- GNEISS, with quartz feldspar, mica, hornblend, and trace garnet, hard, fresh to slightly weathered, low angle to moderate dipping joints, very close to moderately close, and tight fractures. Rock Mass Quality = Good R1: Core Times (minsec) 6.5-7.5 feet (4:08) 7.5-8.5 feet (4:23) 8.5-9.5 feet (4:11) 9.5-10.5 feet (4:12) 10.5-11.5 feet (4:18) R2: Bedrock: Similar to R1 except with pink-grey zones. Rock Mass Quality = Fair R2: Core Times (minsec) 11.5-12.5 feet (5:31) 12.5-13.5 feet (5:36) 13.5-14.5 feet (5:43) 14.5-15.5 feet (5:18) 15.5-16.5 feet (5:16)	
	R2	60/58	11.50 - 16.50	ROD = 66%							
15								314.60		Bottom of Exploration at 16.50 feet below ground surface. 16.50	
20											
25											

Remarks:
-bgs = below existing ground surface (bridge deck)
-Reinforced concrete deck was 10.5-inches-thick
-Unsupported HW casing through bridge deck to Elevation 331.1 feet (bottom of river)

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1
Boring No.: BB-PLAR-102

Maine Department of Transportation — BB-PLAR-101

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Billings Bridge (No. 2979) carries Routes 117/119 over
Location: Paris, Maine

Boring No.: BB-PLAR-101
WIN: 22618.00

Driller:	MaineDOT	Elevation (ft.): 350.5	Auger ID/OD: N/A
Operator:	T. Daggett	Datum: NAVD88	Sampler: N/A
Logged By:	B. Miller	Rig Type: CME 45C	Hammer Wt./Fall: N/A
Date Start/Finish:	11/7/20164 09:00-14:30	Drilling Method: Cased Wash Boring	Core Barrel: NQ2 (2-inch-diameter)
Boring Location:	Sta 102+42.0, 7.3 feet Lt.	Casing ID/OD: NW (3/3.5 inches)	Water Level*: Not Observed
Hammer Efficiency Factor: 0.943		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐	

Definitions:
D = Split Spoon Sample; R = Rock Core Sample; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf)
WO = Unsuccessful Split Spoon Sample Attempt; SSA = Solid Stem Auger; $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf); WC = Water Content, percent
U = Thin Wall Tube Sample; HSA = Hollow Stem Auger; q_p = Unconfirmed Compressive Strength (ksf); LL = Liquid Limit
WU = Unsuccessful Thin Wall Tube Sample Attempt; RC = Roller Cone; N=uncorrected = Raw Field SPT N-value; PL = Plastic Limit
V = Field Vane Shear Test; PP = Pocket Penetrometer; WOH = Weight of Hole or Casing; Hammer Efficiency Factor = Rig Specific Annual Calibration %; PI = Plasticity Index
WH = Unsuccessful Field Vane Shear Test Attempt; WOP = Weight of Pre Person; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; G = Grain Size Analysis
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected; C = Consolidation Test

Depth (ft.)	Sample No.	Rec./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Shear Strength (psf) or ROD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	R1	60/60	0.00 - 5.00				N02	350.5		R1: DECK AND PIER CONCRETE	
5	R2	60/60	5.00 - 10.00							R2: PIER CONCRETE	
10	R3	60/60	10.00 - 15.00							R3: PIER CONCRETE	
15	R4	60/60	15.00 - 20.00							R4: PIER CONCRETE	
20	R5	60/60	20.00 - 25.00	ROD = 65%				329.20		R5: PIER CONCRETE	
25								325.50		Top of Bedrock at Elevation 329.2 feet. 21.30 R5: Continued: Bedrock: White to light grey, aphanitic- GNEISS, with quartz, feldspar, trace garnets, bands of predominately biotite and muscovite mica, hard, fresh to slightly weathered, low angle dipping fractures, and little oxidation with platy mica crystals. Rock Mass Quality = Fair	UCT q_p = 7,409 psi
30										Bottom of Exploration at 25.00 feet below ground surface. 25.00	
35											
40											
45											
50											

Remarks:
-drilled through 10-inch-thick concrete deck
-top of pier was approximately 4 feet beneath the top of the deck
-existing pier footing is founded on bedrock

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1
Boring No.: BB-PLAR-101

Maine Department of Transportation — BB-PLAR-103A

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Billings Bridge (No. 2979) carries Routes 117/119 over
Location: Paris, Maine

Boring No.: BB-PLAR-103A
WIN: 22618.00

Driller:	S.W. Cole Explorations, LLC	Elevation (ft.): 350.5	Auger ID/OD: 5-inch-diameter Solid Stem
Operator:	J. Lee	Datum: NAVD88	Sampler: Standard Split Spoon
Logged By:	E. Walker	Rig Type: CME 850	Hammer Wt./Fall: 140 lbs/30 inches
Date Start/Finish:	2/21/2017	Drilling Method: Cased Wash Boring	Core Barrel: NQ2 (2-inch-diameter)
Boring Location:	Sta 103+07.3, 8.4 feet Rt.	Casing ID/OD: NW (3/3.5"): HW (4/4.5")	Water Level*: 5 feet bgs
Hammer Efficiency Factor: 0.60		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒	

Definitions:
D = Split Spoon Sample; R = Rock Core Sample; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf)
WO = Unsuccessful Split Spoon Sample Attempt; SSA = Solid Stem Auger; $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf); WC = Water Content, percent
U = Thin Wall Tube Sample; HSA = Hollow Stem Auger; q_p = Unconfirmed Compressive Strength (ksf); LL = Liquid Limit
WU = Unsuccessful Thin Wall Tube Sample Attempt; RC = Roller Cone; N=uncorrected = Raw Field SPT N-value; PL = Plastic Limit
V = Field Vane Shear Test; PP = Pocket Penetrometer; WOH = Weight of Hole or Casing; Hammer Efficiency Factor = Rig Specific Annual Calibration %; PI = Plasticity Index
WH = Unsuccessful Field Vane Shear Test Attempt; WOP = Weight of Pre Person; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; G = Grain Size Analysis
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected; C = Consolidation Test

Depth (ft.)	Sample No.	Rec./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Shear Strength (psf) or ROD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	350.0		5-inch-thick layer of pavement. 0.42 Augered to 5 feet bgs and set HW casing. Soil sample not retrieved. Soils similar to boring BB-PLAR-103 from 0 to 5.9 feet bgs. (Fill).	
5							NW	344.60		CONCRETE. Placed and spun NW casing to 10 feet bgs. 5.90	
10	R1	60/52	10.00 - 15.00				N02			R1: ABUTMENT CONCRETE	
15	R2	60/59	15.00 - 20.00							R2: ABUTMENT CONCRETE	
20	R3	60/60	20.00 - 25.00	ROD = 50%				331.90		Top of Bedrock at Elevation 331.9 feet. 18.60 R2: Bedrock: White to greenish-grey, aphanitic. GNEISS, with quartz feldspar, calcite, and bands of predominately biotite mica, hard, fresh to slightly weathered, low angle to moderate dipping joints, very close to close, and tight fractures. Rock Mass Quality = Poor R2: Core Times (minsec) 18.6-19.0 feet (1:01) 19.0-20.0 feet (2:41) R3: Bedrock: Similar to R2 except, fresh and very close to moderately close joints. Rock Mass Quality = Good R3: Core Times (minsec) 20.0-21.0 feet (1:52) 21.0-22.0 feet (2:46) 22.0-23.0 feet (2:35) 23.0-24.0 feet (2:49) 24.0-25.0 feet (3:05) R4: Bedrock: Similar to R2 except, trace pyrite with little oxidation on fracture surfaces of joints. Rock Mass Quality = Excellent R4: Core Times (minsec) 25.0-26.0 feet (3:16) 26.0-27.0 feet (4:18) 27.0-28.0 feet (3:40) 28.0-29.0 feet (2:42) 29.0-30.0 feet (2:54)	
25	R4	60/60	25.00 - 30.00	ROD = 93%				320.50			
30										Bottom of Exploration at 30.00 feet below ground surface. 30.00	
35											
40											
45											
50											

Remarks:
-bgs = below existing ground surface

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1
Boring No.: BB-PLAR-103A

Maine Department of Transportation — BB-PLAR-103

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Billings Bridge (No. 2979) carries Routes 117/119 over
Location: Paris, Maine

Boring No.: BB-PLAR-103
WIN: 22618.00

Driller:	S.W. Cole Explorations, LLC	Elevation (ft.): 350.5	Auger ID/OD: 5-inch-diameter Solid Stem
Operator:	J. Lee	Datum: NAVD88	Sampler: Standard Split Spoon
Logged By:	E. Walker	Rig Type: CME 850	Hammer Wt./Fall: 140 lbs/30 inches
Date Start/Finish:	2/21/2017	Drilling Method: Cased Wash Boring	Core Barrel: NQ2 (2-inch-diameter)
Boring Location:	Sta 103+10.0, 8.7 feet Rt.	Casing ID/OD: HW (4/4.5 inches)	Water Level*: 15 feet bgs
Hammer Efficiency Factor: 0.60		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒	

Definitions:
D = Split Spoon Sample; R = Rock Core Sample; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); T_v = Pocket Torvane Shear Strength (psf)
WO = Unsuccessful Split Spoon Sample Attempt; SSA = Solid Stem Auger; $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf); WC = Water Content, percent
U = Thin Wall Tube Sample; HSA = Hollow Stem Auger; q_p = Unconfirmed Compressive Strength (ksf); LL = Liquid Limit
WU = Unsuccessful Thin Wall Tube Sample Attempt; RC = Roller Cone; N=uncorrected = Raw Field SPT N-value; PL = Plastic Limit
V = Field Vane Shear Test; PP = Pocket Penetrometer; WOH = Weight of Hole or Casing; Hammer Efficiency Factor = Rig Specific Annual Calibration %; PI = Plasticity Index
WH = Unsuccessful Field Vane Shear Test Attempt; WOP = Weight of Pre Person; N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency; G = Grain Size Analysis
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected; C = Consolidation Test

Depth (ft.)	Sample No.	Rec./Rec. (in.)	Sample Depth (ft.)	Blows/6 in. or Shear Strength (psf) or ROD (%)	N-uncorrected	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	350.0		5-inch-thick layer of pavement. 0.42	
	10	11/11	1.00 - 1.92	14/50-5"	- -				Brown, medium SAND, little gravel, trace silt, (Fill).	
5										
	20	22/10	5.00 - 6.83	2/4/22/50-4"	26	26			Brown, moist, medium dense, medium SAND, little fine gravel, little silt, (Fill).	GM27117 A-1-b, SM-SM W=5.5%
10										
	30	24/20	10.00 - 12.00	10/7/12/20	19	19	121		Brown, moist, medium dense, medium SAND, little silt, little gravel, (Fill).	
							118			
15							149			
							166			
	40	24/18	15.00 - 17.00	10/10/16/24	26	26	118			GM27118 A-1-b, SM W=14.9%
							122		40 &43: 15-15.5 feet bgs: Black, wet, medium dense, medium SAND, some fine gravel, trace silt, (Fill); 42: 15.5-17 feet bgs: Wood	
	50 R1	20/14 12/12	17.00 - 18.67 18.67 - 18.50	18/100/45/50-2"	- -	N02	331.50		Mixed concrete and wood fragments. Cobble from 17.5 to 18.5 feet bgs.	
20									Broke RC drilling through cobble. Abandoned boring. 19.00	
									Bottom of Exploration at 19.00 feet below ground surface.	
25										

Remarks:
-bgs = below existing ground surface

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1
Boring No.: BB-PLAR-103

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

022618.00

WIN
22618.00

BRIDGE NO. 2979

BRIDGE PLANS

STATE OF MAINE — MICHAEL A. ST. PIERRE No. 12519 — REGISTERED PROFESSIONAL ENGINEER

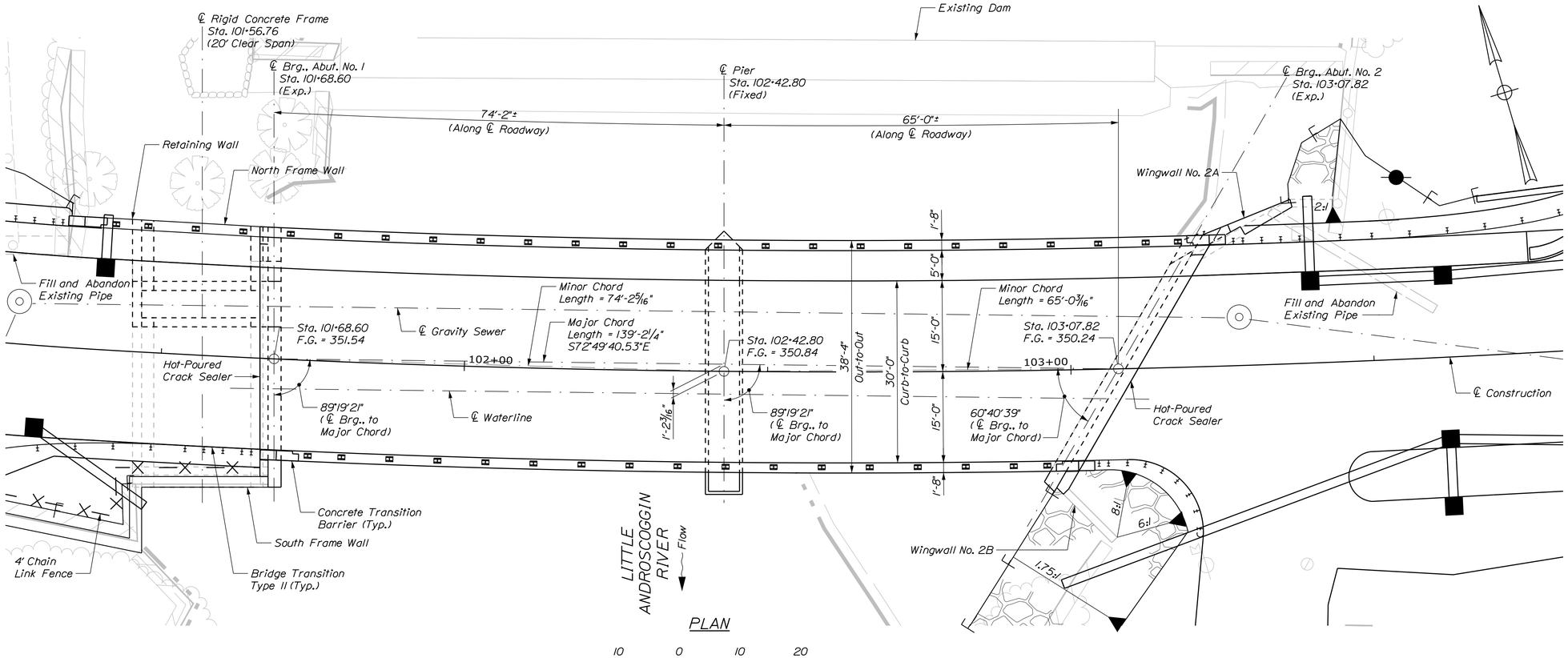
SIGNATURE	
P.E. NUMBER	12519
DATE	11/8/2017

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN2-DETAILED2	M.ST.PIERRE	NOV 2017
DESIGN3-DETAILED3	T. WHITE	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

BORING LOGS

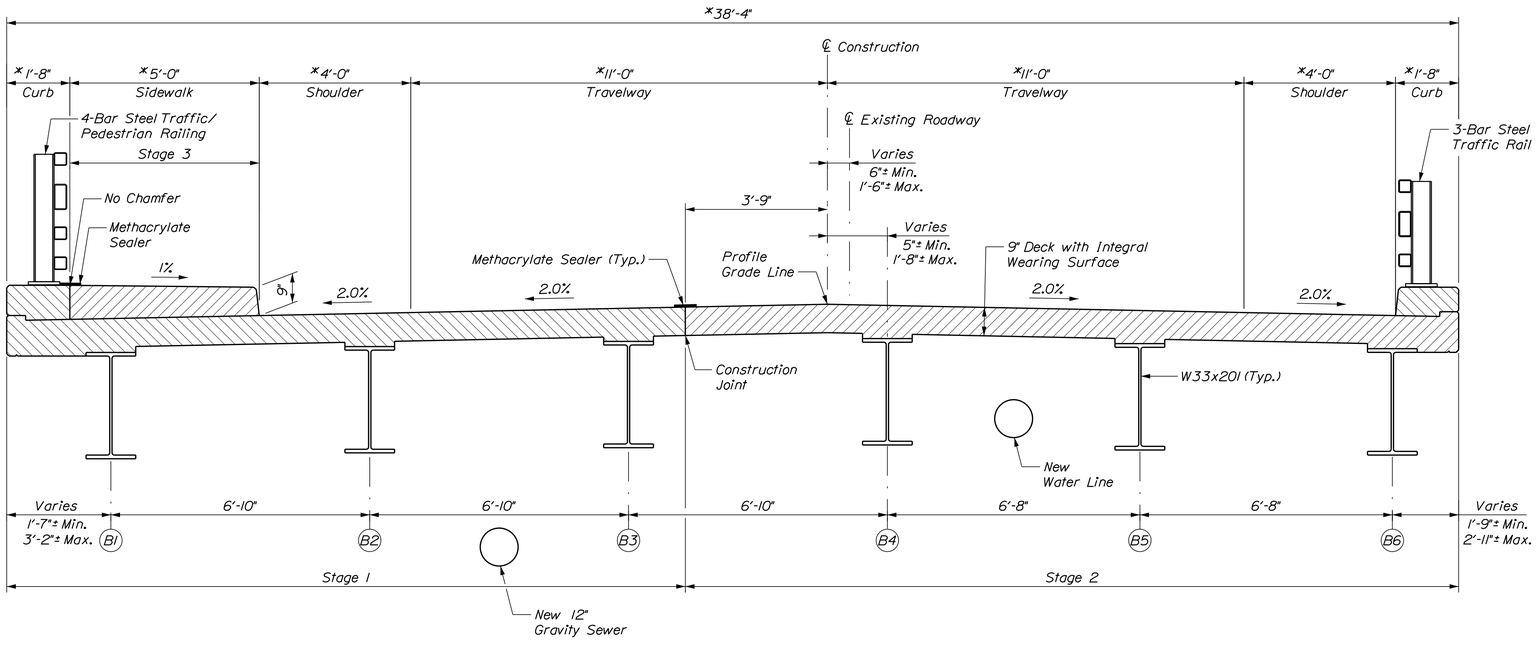
SHEET NUMBER
26
OF 57



PLAN

10 0 10 20

Scale of Feet



SUPERSTRUCTURE SECTION

(Looking Upstation)

* Radial Dimension

Scale: 1/2" = 1'-0"

SUPERSTRUCTURE NOTES

1. The theoretical blocking used for design of the structure is 2 inches at the centerline of bearing at the abutments and piers.

2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.

3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.

4. The superstructure slab concrete shall be placed in one continuous operation and the concrete shall be kept plastic one complete span behind the span being placed.

5. The formwork and its supports, over the full width of the structural slab, shall remain in place until a minimum of 48 hours has elapsed after placement of the final section of the slab. After this period, removal of formwork for sections meeting the requirements for form removal of Standard Specifications Section 502, Structural Concrete, may proceed.

6. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb or sidewalk concrete.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	BY	DATE
CHECKED-REVIEWED	JAW	KDW	11/17
DESIGN2-DETAILED2		GSG	11/17
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

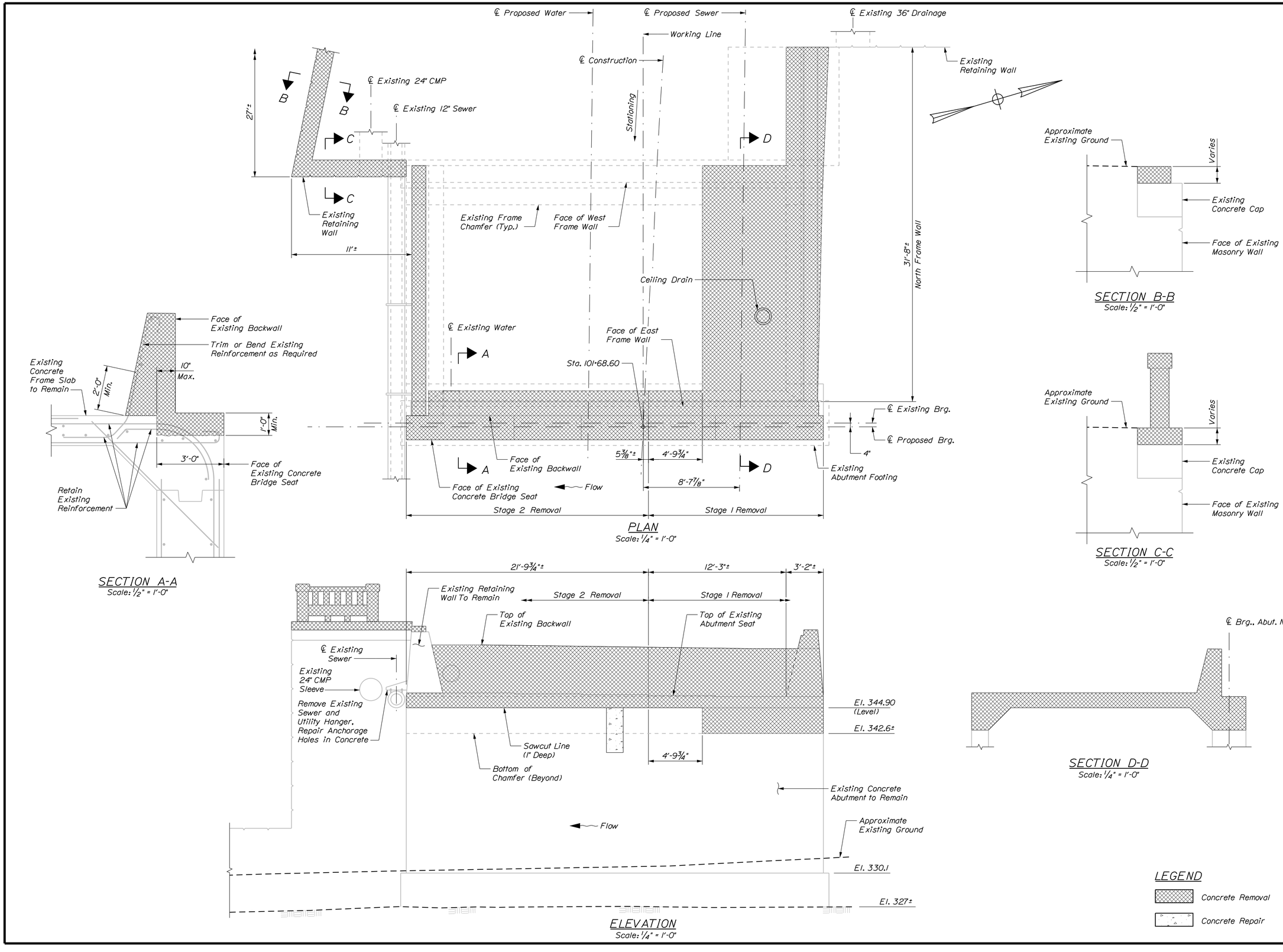
BRIDGE PLAN AND SUPERSTRUCTURE SECTION

SHEET NUMBER

27

OF 57

Filename: ...\BRIDGE\MSTA\027_bridgeplan.dgn Division: Structures Username: kwentworth Date:11/16/2017



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

	BY	DATE
J. KITTREDGE		
PROJ. MANAGER	KDW	11/17
DESIGN-DETAILED	CSG	11/17
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

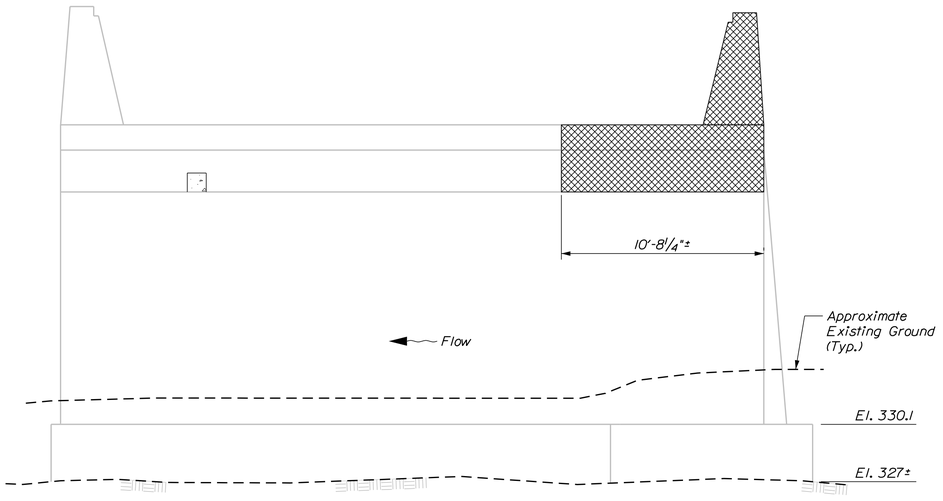
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

ABUTMENT NO.1 REMOVAL AND REPAIRS

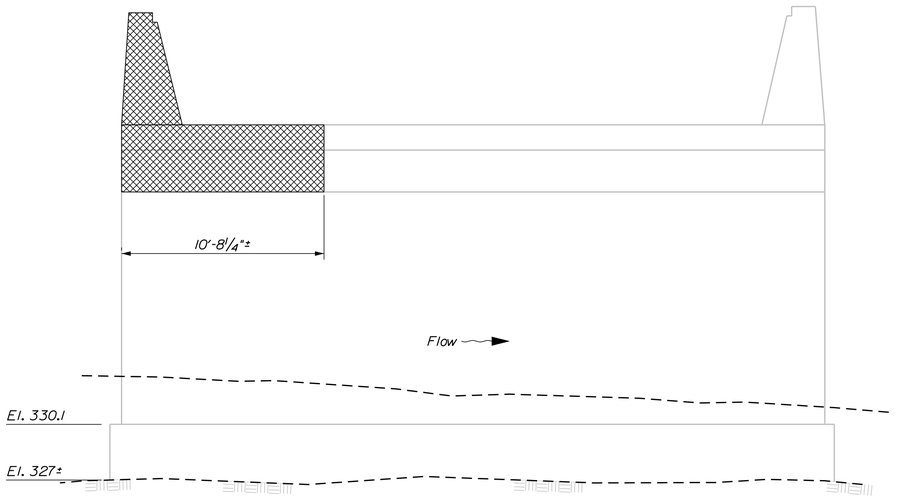
SHEET NUMBER

28

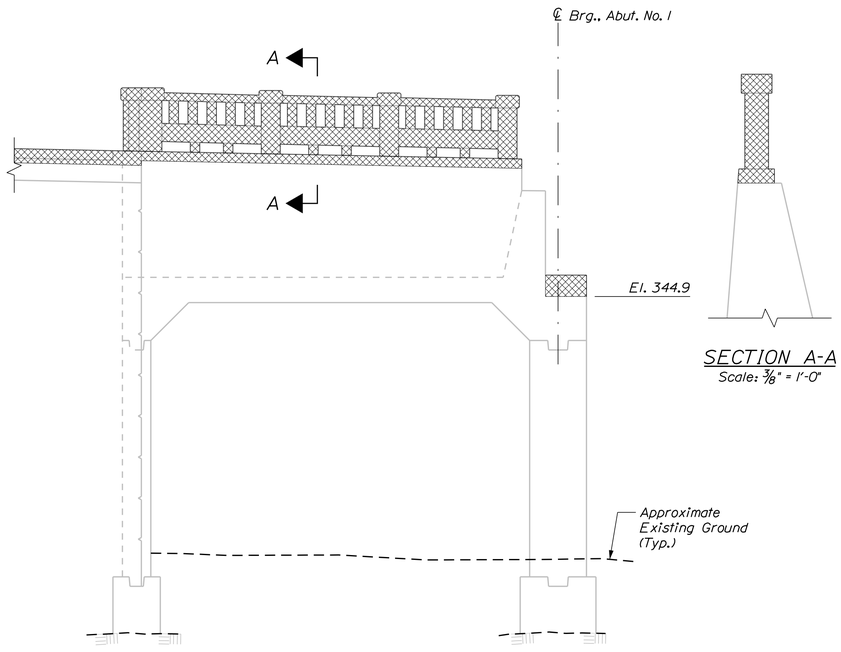
OF 57



WEST FRAME WALL ELEVATION
Scale: 1/4" = 1'-0"



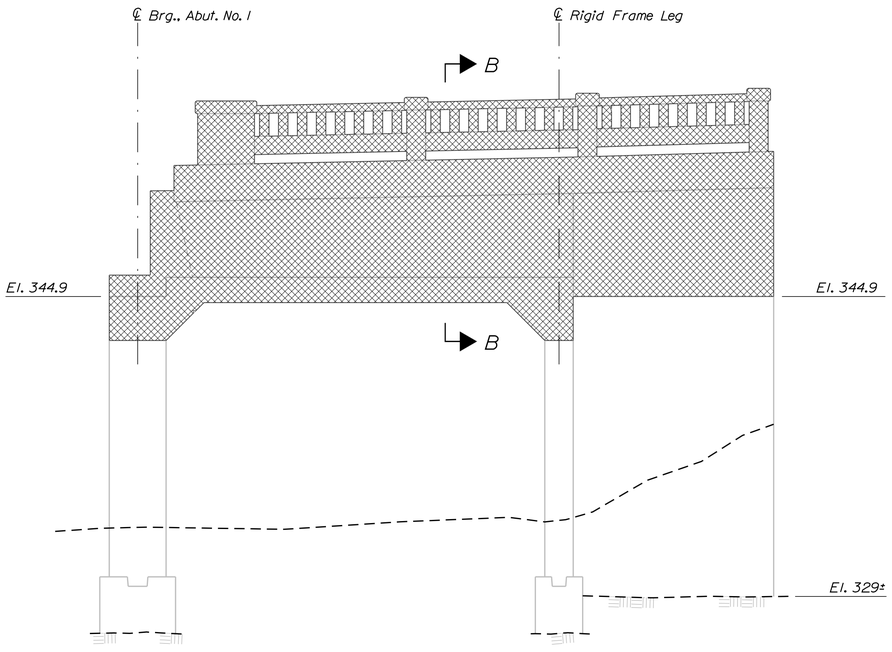
EAST FRAME WALL ELEVATION
Scale: 1/4" = 1'-0"



SOUTH FRAME WALL ELEVATION
Scale: 1/4" = 1'-0"

SECTION A-A
Scale: 3/8" = 1'-0"

SECTION B-B
Scale: 3/8" = 1'-0"



NORTH FRAME WALL ELEVATION
Scale: 1/4" = 1'-0"

LEGEND
- Concrete Removal
- Concrete Repair

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

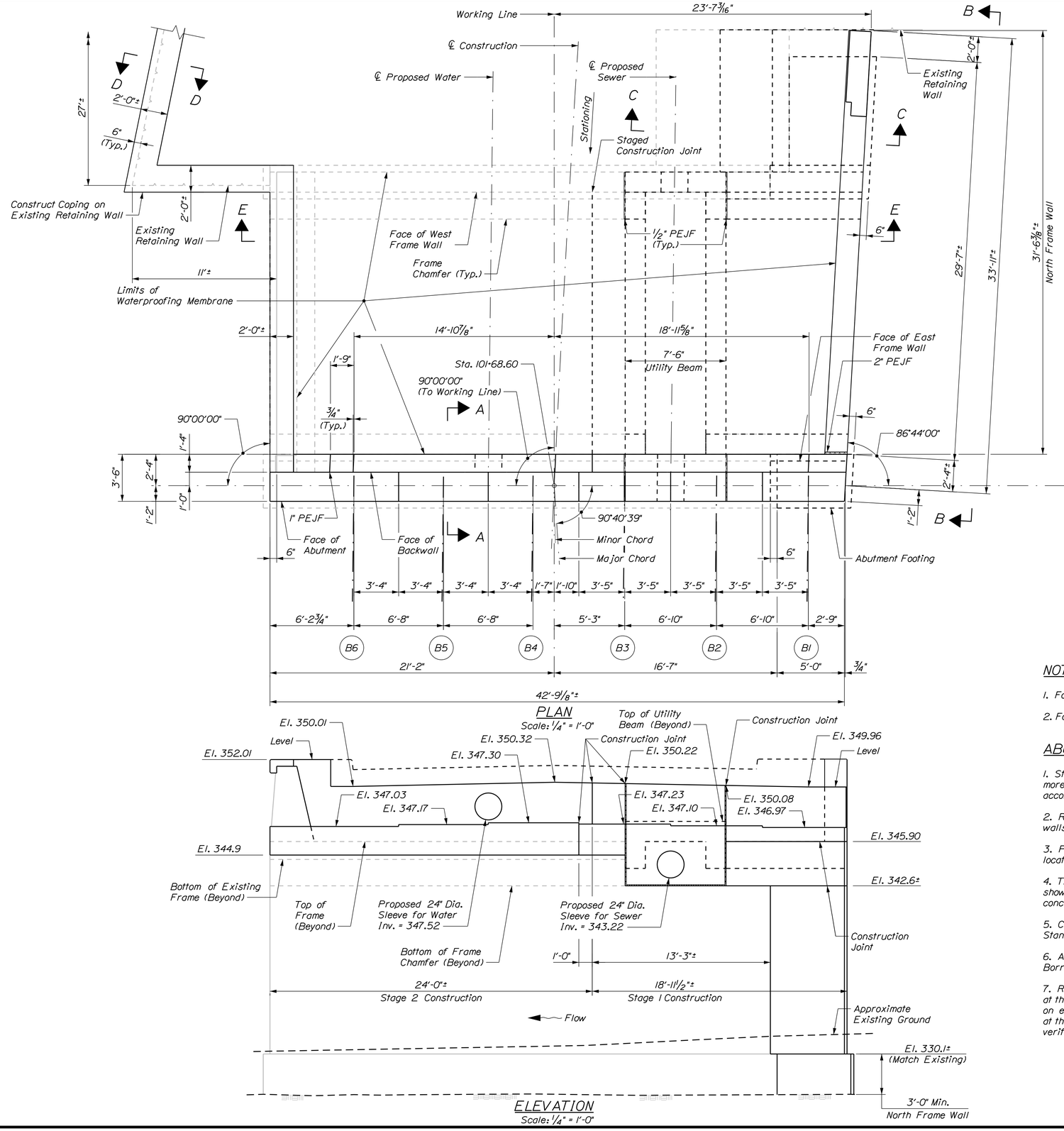
BY: KDW, GSG

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

FRAME REMOVAL
AND REPAIRS

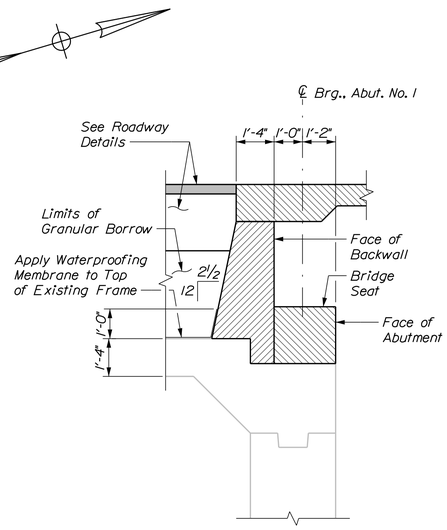
SHEET NUMBER
29
OF 57

Filename: ...\MSTA\029_subframe_01.dgn Division: Structures Username: kwentworth Date:11/16/2017



PLAN
Scale: 1/4" = 1'-0"

ELEVATION
Scale: 1/4" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"

NOTE

1. For View B-B, and Sections C-C, and D-D, see Abutment No. 1 Details (2 of 6).

2. For Views E-E, see Abutment No. 1 Details (3 of 6).

ABUTMENT NOTES

1. Structural Earth Excavation, Abutments and Retaining Walls, required more than 12 inches below the bottom of the structure, will be paid for in accordance with Standard Specifications Section 206, Structural Excavation.

2. Reinforcing steel shall have a minimum concrete cover of 2 inches in walls and 3 inches in footings unless otherwise noted.

3. Provide 3 additional stirrups in the curbs at each Bridge Rail Post location.

4. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb concrete.

5. Cover joints where waterstops are not required in accordance with Standard Details Section 502.

6. Abutments, wingwalls, and their footings shall be backfilled with Granular Borrow. Pay limits will be the structural excavation limits in cut areas.

7. Remove bedrock as required to construct footing thickness to 3 foot minimum at the frame and 2 foot minimum at the wall. Bedrock elevations assumed based on existing plans. If bedrock is lower, fill void with concrete fill up to El. 327 at the frame and El. 329 at the wall, then construct footing above. Contractor to verify all existing elevations prior to construction.

LEGEND

Proposed New Concrete

Proposed Grout

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 — BRIDGE PLANS

BRIDGE NO. 2979

vhb

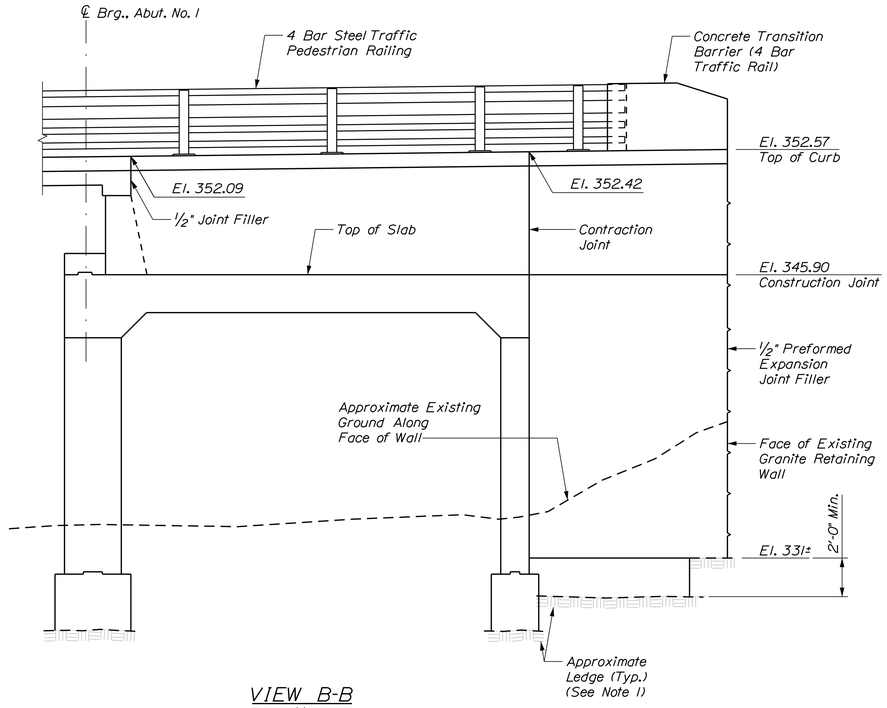
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

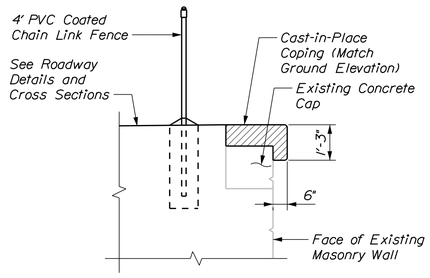
ABUTMENT NO. 1 DETAILS (1 OF 6)

SHEET NUMBER
30
OF 57

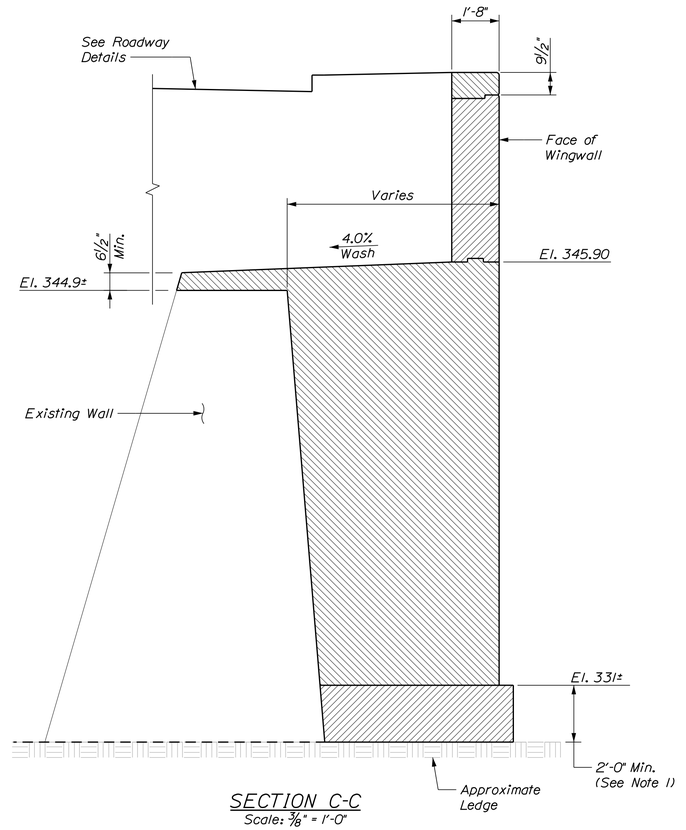
Filename: ...\BRIDGE\MSTA\030_abut1_01.dgn Division: Structures Username: kwentworth Date:12/13/2017



VIEW B-B
Scale: 1/4" = 1'-0"



SECTION D-D
Scale: 3/8" = 1'-0"



SECTION C-C
Scale: 3/8" = 1'-0"

NOTE

1. See Note 7 on Abutment No. 1 Details (1 of 6).

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

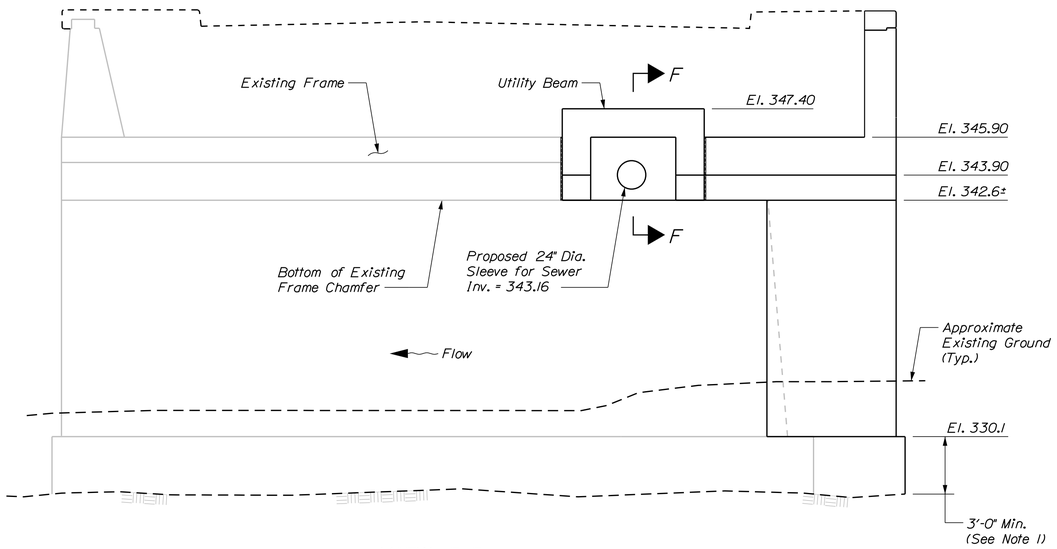
PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

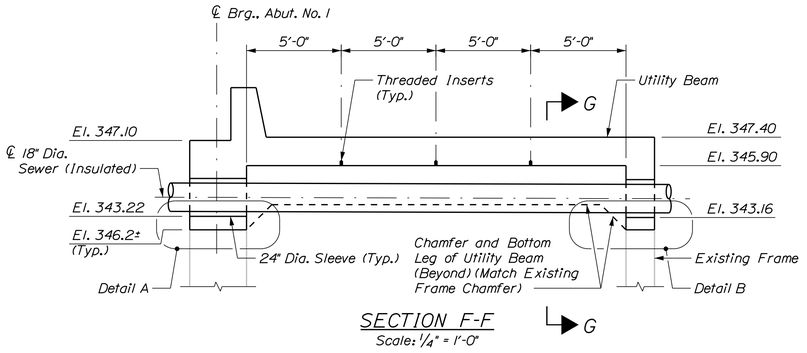
ABUTMENT NO. 1
DETAILS (2 OF 6)

SHEET NUMBER
31
OF 57

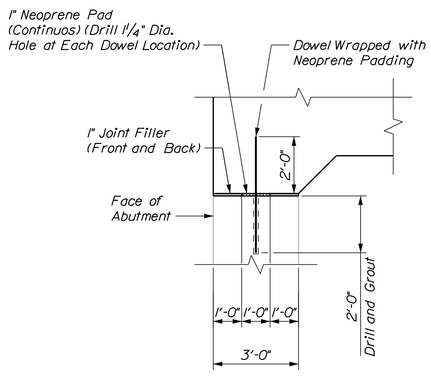
Filename: ...\MSTA\031_subframe_02.dgn Division: Structures Username: kwentworth Date:12/13/2017



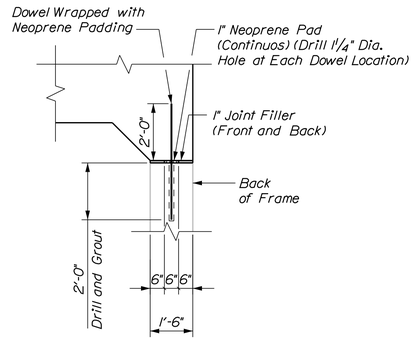
VIEW E-E
Scale: 1/4" = 1'-0"



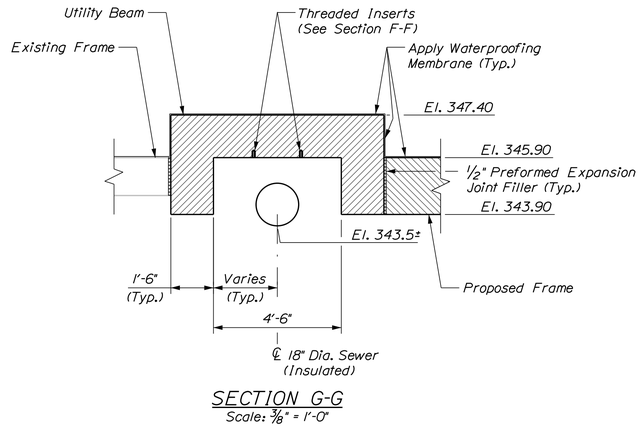
SECTION F-F
Scale: 1/4" = 1'-0"



DETAIL A
Scale: 3/8" = 1'-0"



DETAIL B
Scale: 3/8" = 1'-0"



SECTION G-G
Scale: 3/8" = 1'-0"

NOTE

1. See Note 7 on Abutment No. 1 Details (1 of 6) Sheet.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

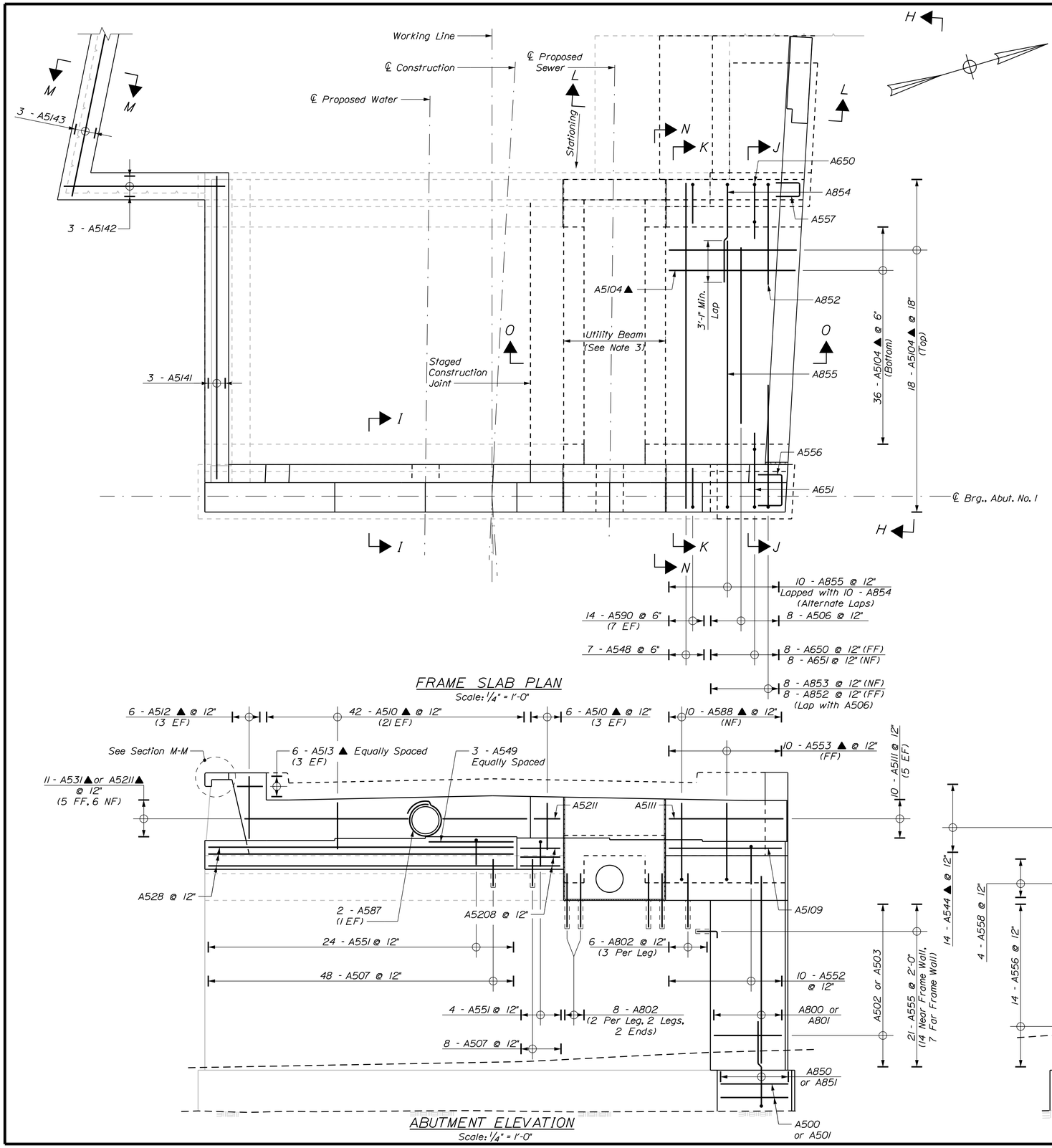
PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

ABUTMENT NO. 1
DETAILS (3 OF 6)

SHEET NUMBER
32
OF 57

Filename: ...\MSTA\032_subframe_03.dgn Division: Structures Username: kwentworth Date:12/13/2017

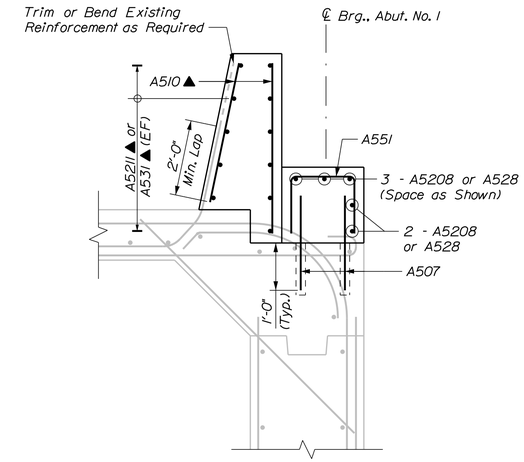


NOTES

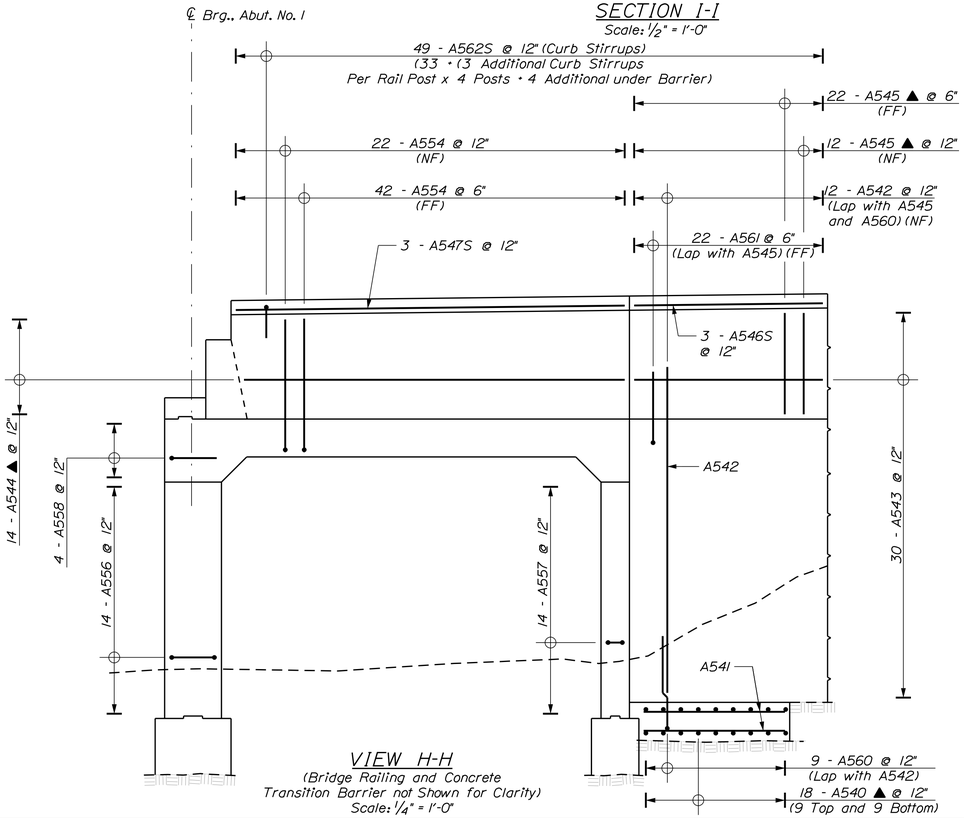
1. For Sections J-J, K-K, L-L, and M-M see Abutment No. 1 Details (5 of 6).
2. For Sections N-N and O-O see Abutment No. 1 Details (6 of 6).
3. See Abutment No. 1 Details (6 of 6) for Utility Beam Reinforcing.

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field
S = Stainless Steel



SECTION I-I
Scale: 1/2" = 1'-0"



VIEW H-H
(Bridge Railing and Concrete Transition Barrier not Shown for Clarity)
Scale: 1/4" = 1'-0"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

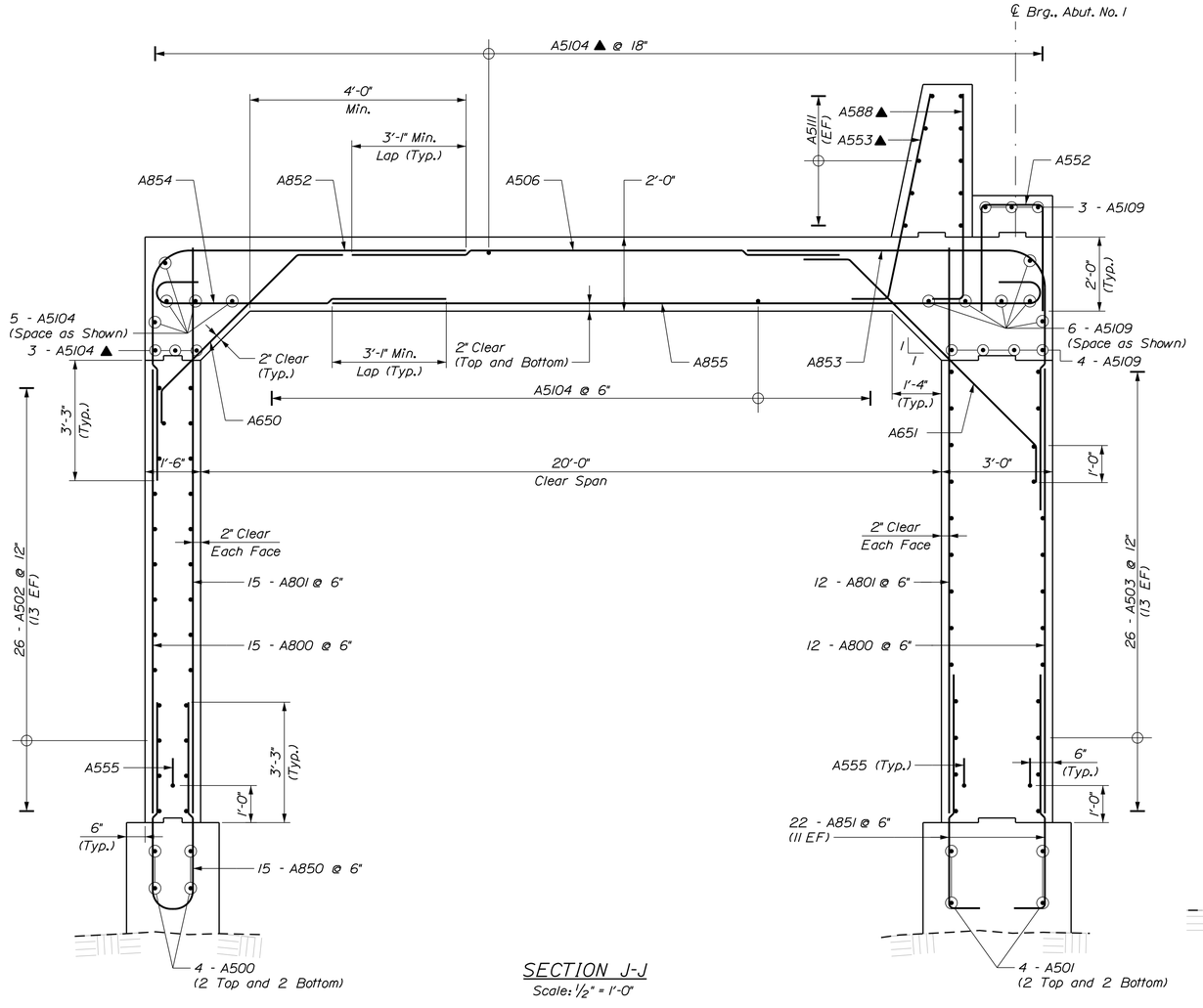
vhb

	J. KITTREDGE	DATE
PROJ. MANAGER		
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

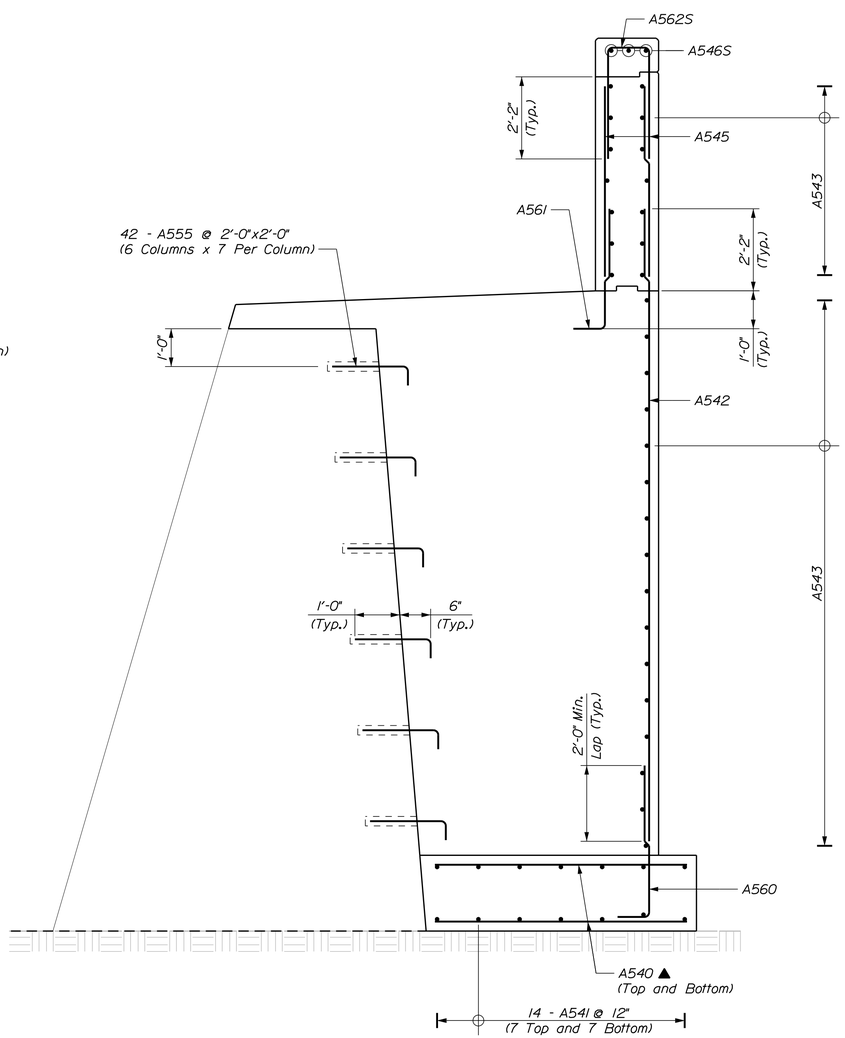
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

ABUTMENT NO. 1 DETAILS (4 OF 6)

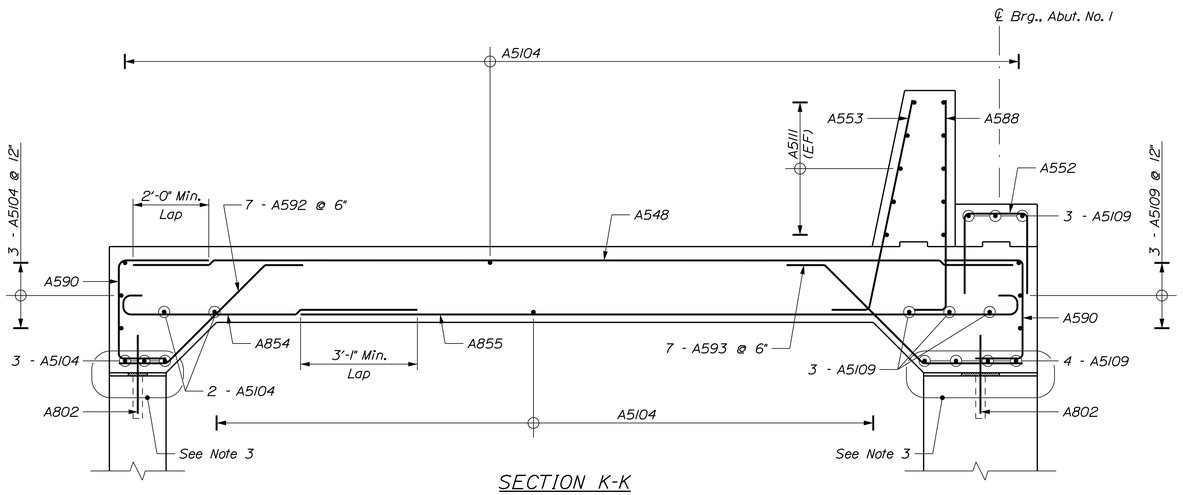
SHEET NUMBER
33
OF 57



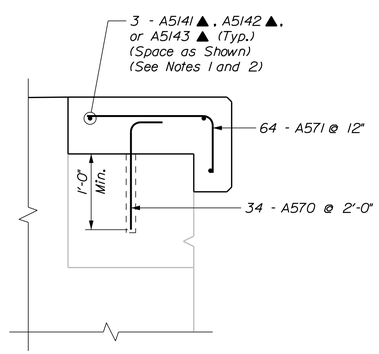
SECTION J-J
Scale: ½" = 1'-0"



SECTION L-L
Scale: ½" = 1'-0"



SECTION K-K
Scale: ½" = 1'-0"



SECTION M-M
Scale: 1" = 1'-0"

NOTES

1. Provide 3 - bars in top of coping above frame, adjacent to frame and along southern wall. Cut bars in field to fit each location.

2. Coping section with A5143 longitudinal bars shown, coping sections with A5141 and A5142 similar.

3. See Details A and B on Abutment Details (3 of 6) Sheet for neoprene bearing pad, neoprene dowel wrapping and drill and grout details.

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field
S = Stainless Steel

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

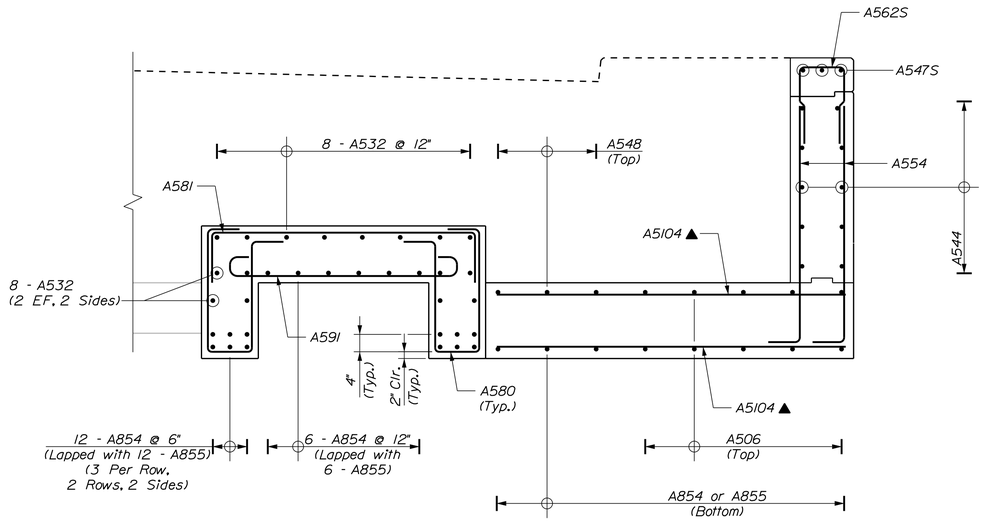
vhb

PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	KDW 11/17
CHECKED-REVIEWED	JAW	GSG 11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

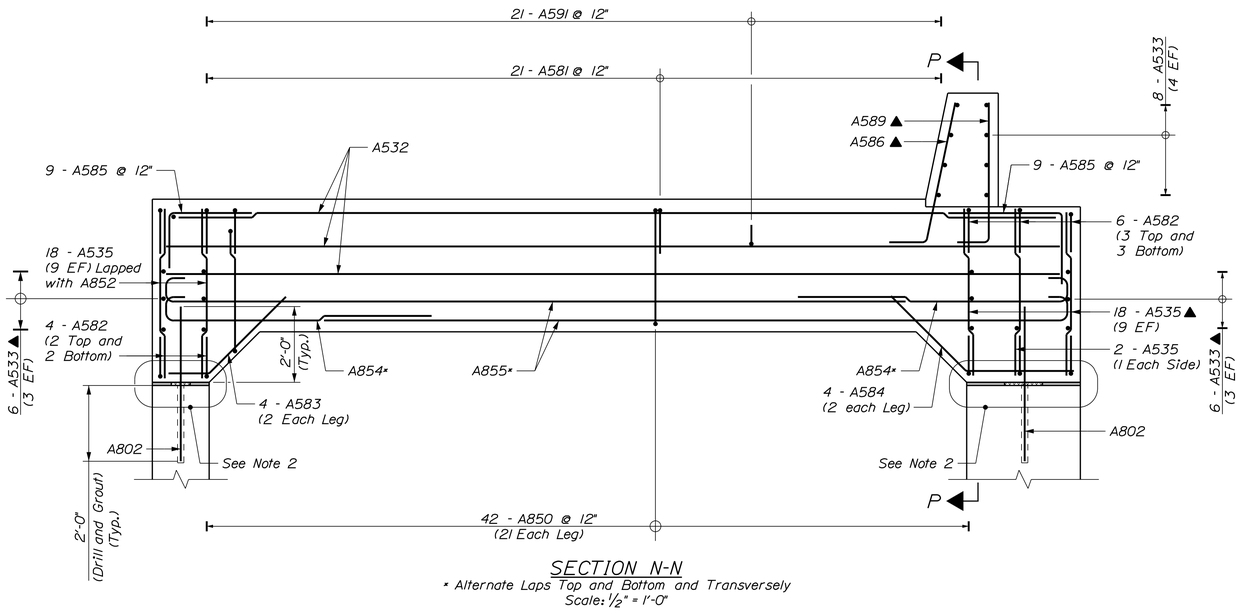
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

ABUTMENT NO. 1
DETAILS (5 OF 6)

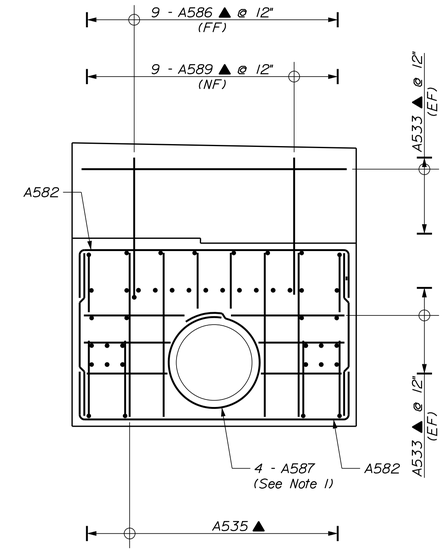
SHEET NUMBER
34
OF 57



SECTION O-O
(Existing Reinforcement not Shown for Clarity)
Scale: 1/2" = 1'-0"



SECTION N-N
* Alternate Laps Top and Bottom and Transversely
Scale: 1/2" = 1'-0"



SECTION P-P
Scale: 1/2" = 1'-0"

NOTES

1. Provide 2 - A587 bars per frame face (1 EF), 4 total.

2. See Details A and B on Abutment Details (3 of 6) Sheet for neoprene bearing pad, neoprene dowel wrapping and drill and grout details.

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field
S = Stainless Steel

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN **022618.00**

BRIDGE NO. 2979 — BRIDGE PLANS

vhb

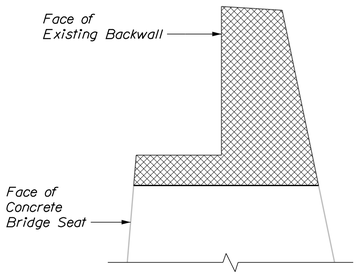
PROJ. MANAGER	J. WITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

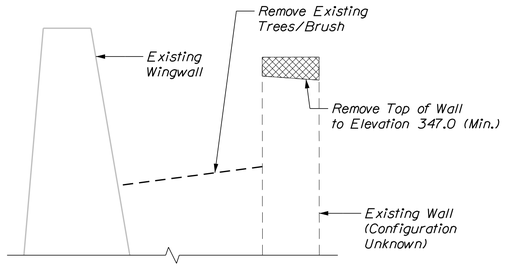
ABUTMENT NO. 1
DETAILS (6 OF 6)

SHEET NUMBER
35
OF 57

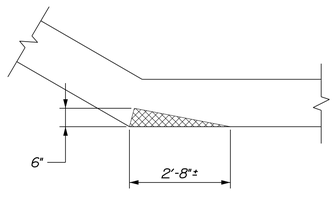
Filename: ...\BRIDGE\MSTA\035_abut1_05.dgn Username: kwentworth Division: Structures Date:11/30/2017



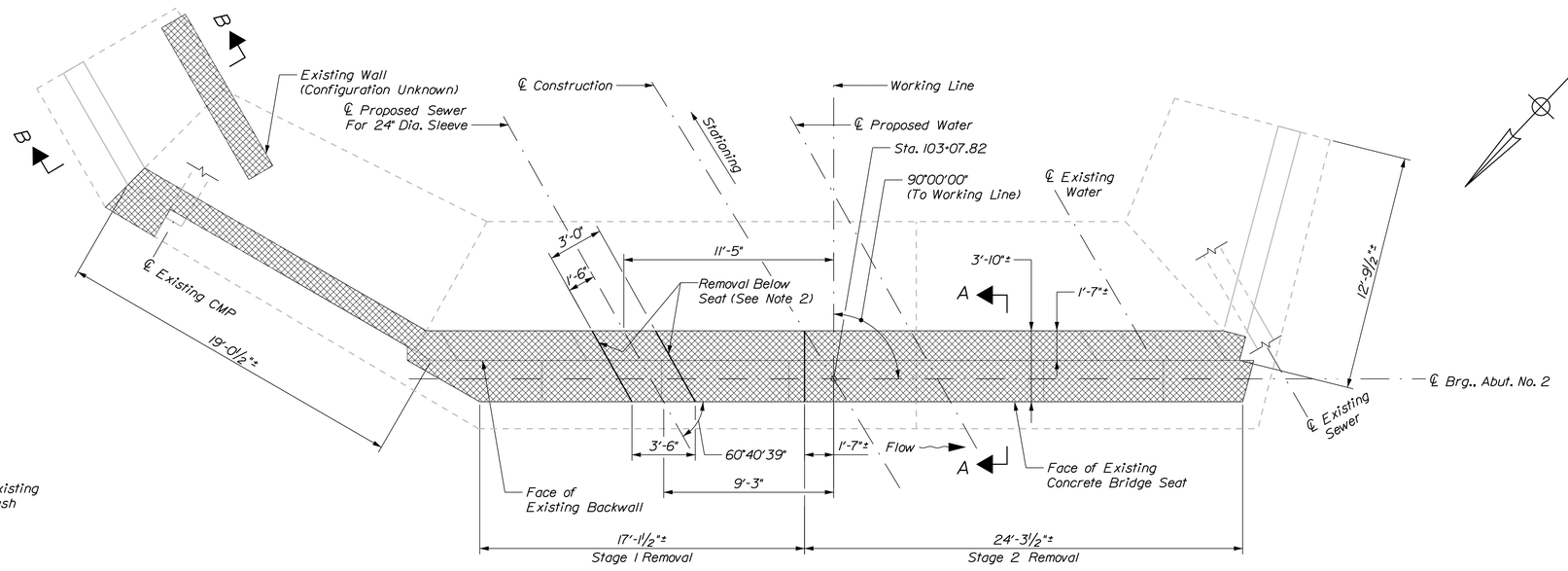
SECTION A-A
Scale: 1/2" = 1'-0"



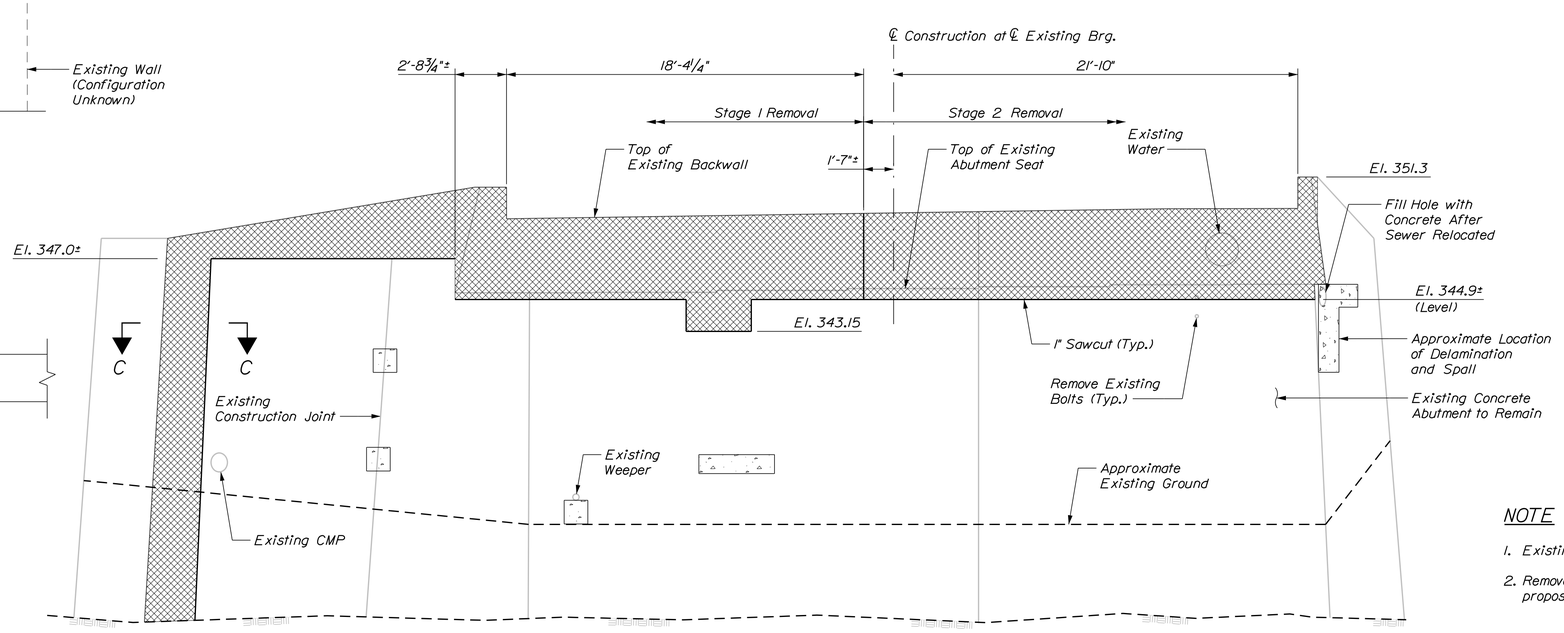
SECTION B-B
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 1/2" = 1'-0"



PLAN
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"

NOTE

1. Existing elevations are approximate.
2. Remove portion of existing following angle of proposed sewer.

ABUTMENT NOTE

1. Maximum calculated footing pressure is 18.2 ksf.

LEGEND

- Concrete Removal
- Concrete Repair

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

vhb

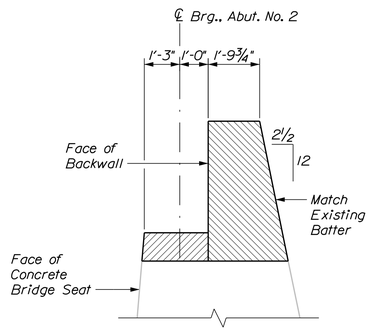
	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	KDW	11/17
CHECKED-REVIEWED	GSG	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
J. KITTREDGE		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

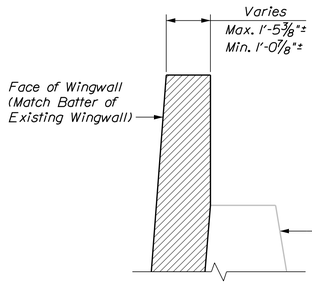
ABUTMENT NO. 2 REMOVAL AND REPAIRS

SHEET NUMBER
36
OF 57

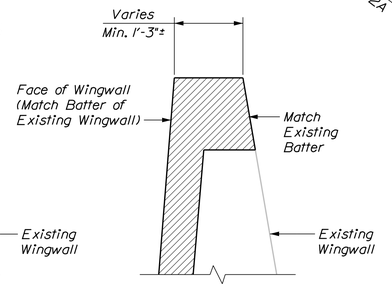
Filename: ...\BRIDGE\MSTA\036_abut2_01.dgn Division: Structures Username: kwentworth Date:11/16/2017



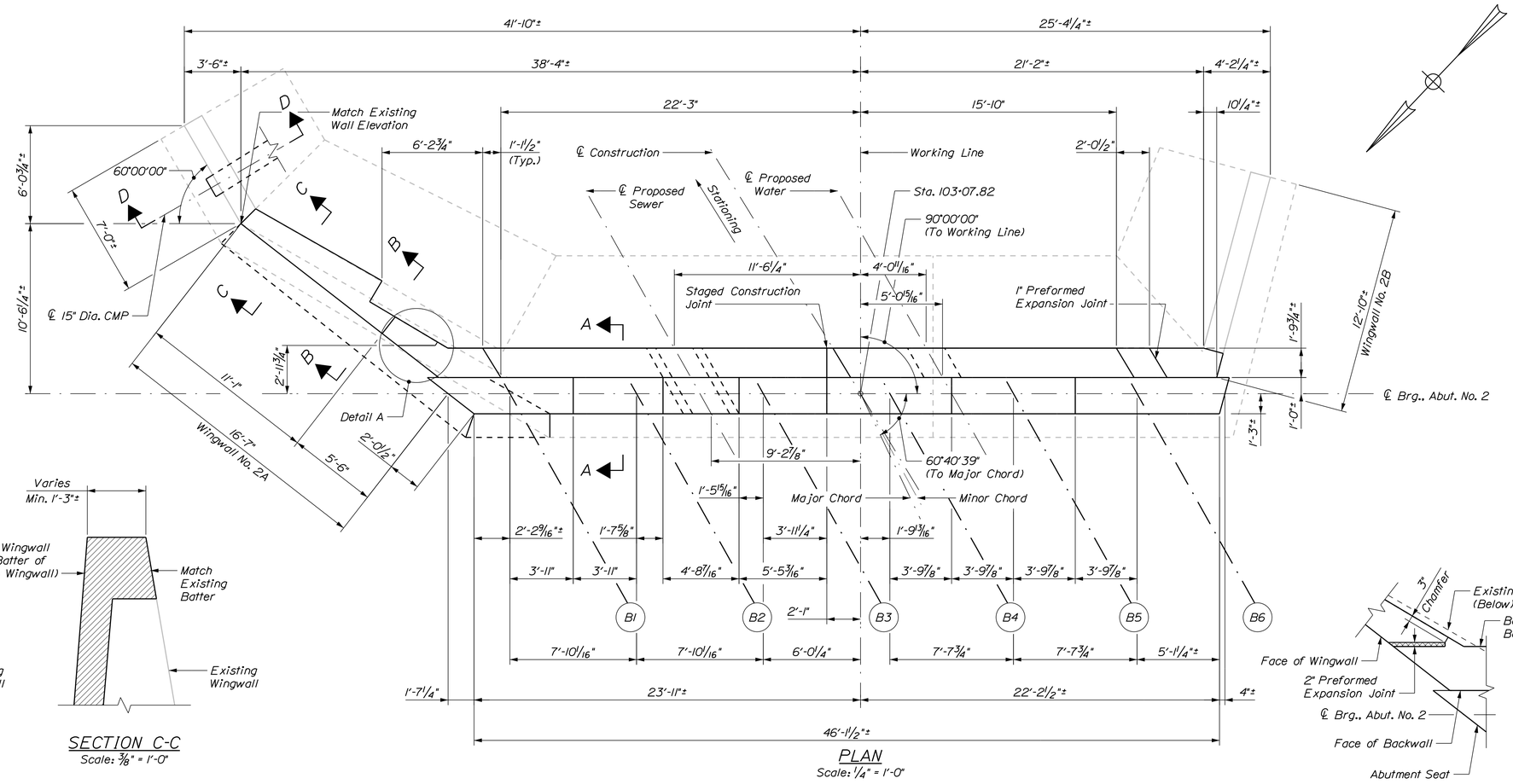
SECTION A-A
Scale: ⅜" = 1'-0"



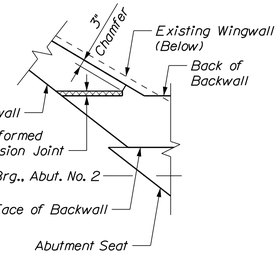
SECTION B-B
Scale: ⅜" = 1'-0"



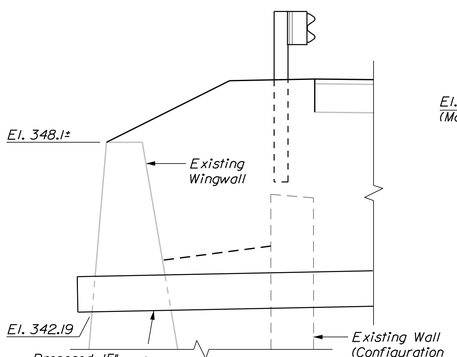
SECTION C-C
Scale: ⅜" = 1'-0"



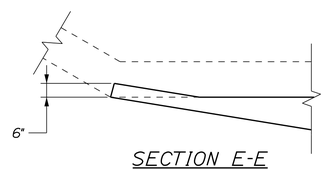
PLAN
Scale: ¼" = 1'-0"



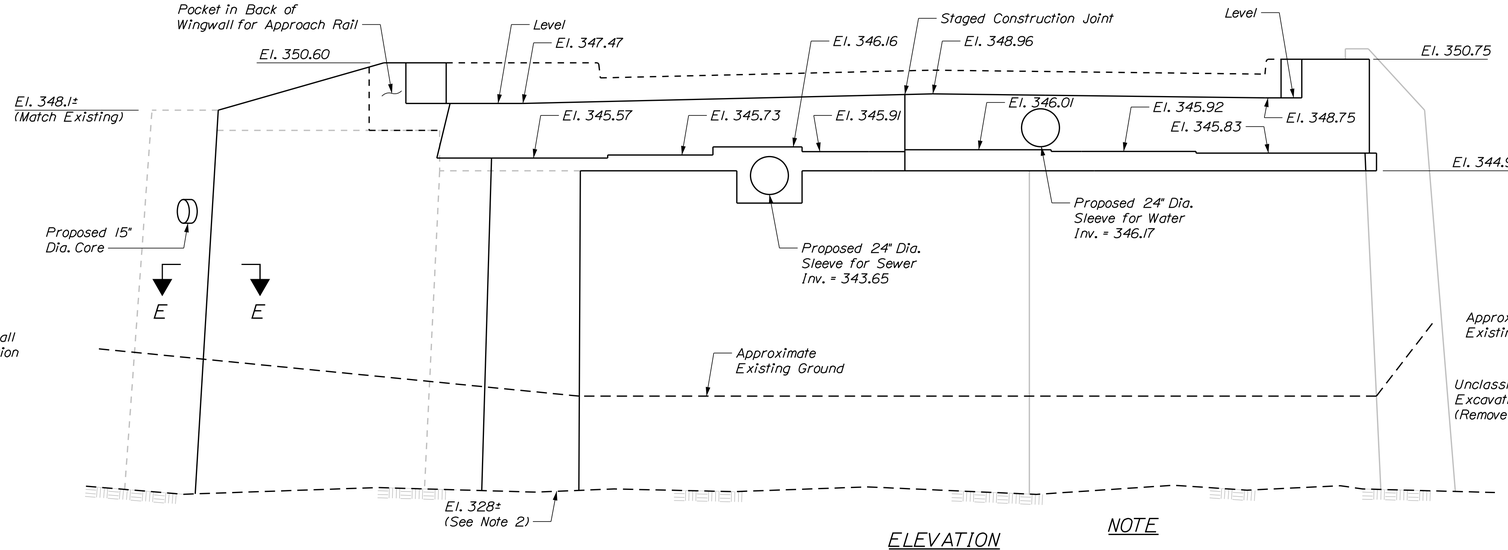
DETAIL A
Scale: ⅜" = 1'-0"



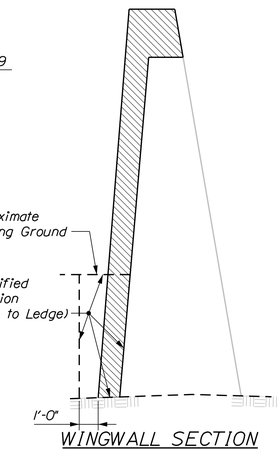
SECTION D-D
Scale: ⅜" = 1'-0"



SECTION E-E
Scale: ⅜" = 1'-0"



ELEVATION
Scale: ¼" = 1'-0"



WINGWALL SECTION
Scale: ¼" = 1'-0"

NOTE

1. See Abutment No. 1 Details (1 of 6) for Abutment Notes.

2. Bedrock elevation assumed based on existing plans. Contractor to verify elevations prior to construction.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

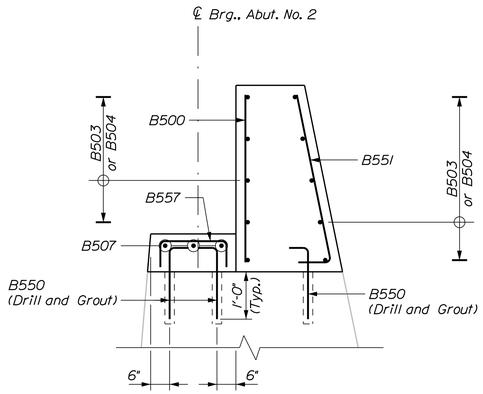
	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

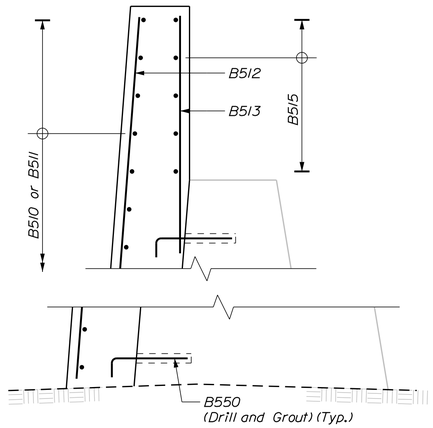
ABUTMENT NO. 2
DETAILS (1 OF 2)

SHEET NUMBER
37
OF 57

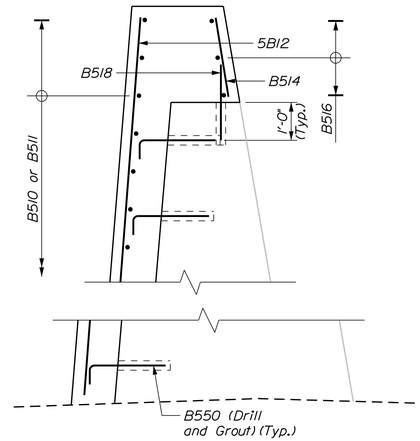
Filename: ...\BRIDGE\MSTA\037_abut2_02.dgn Division: Structures Username: kwentworth Date:11/16/2017



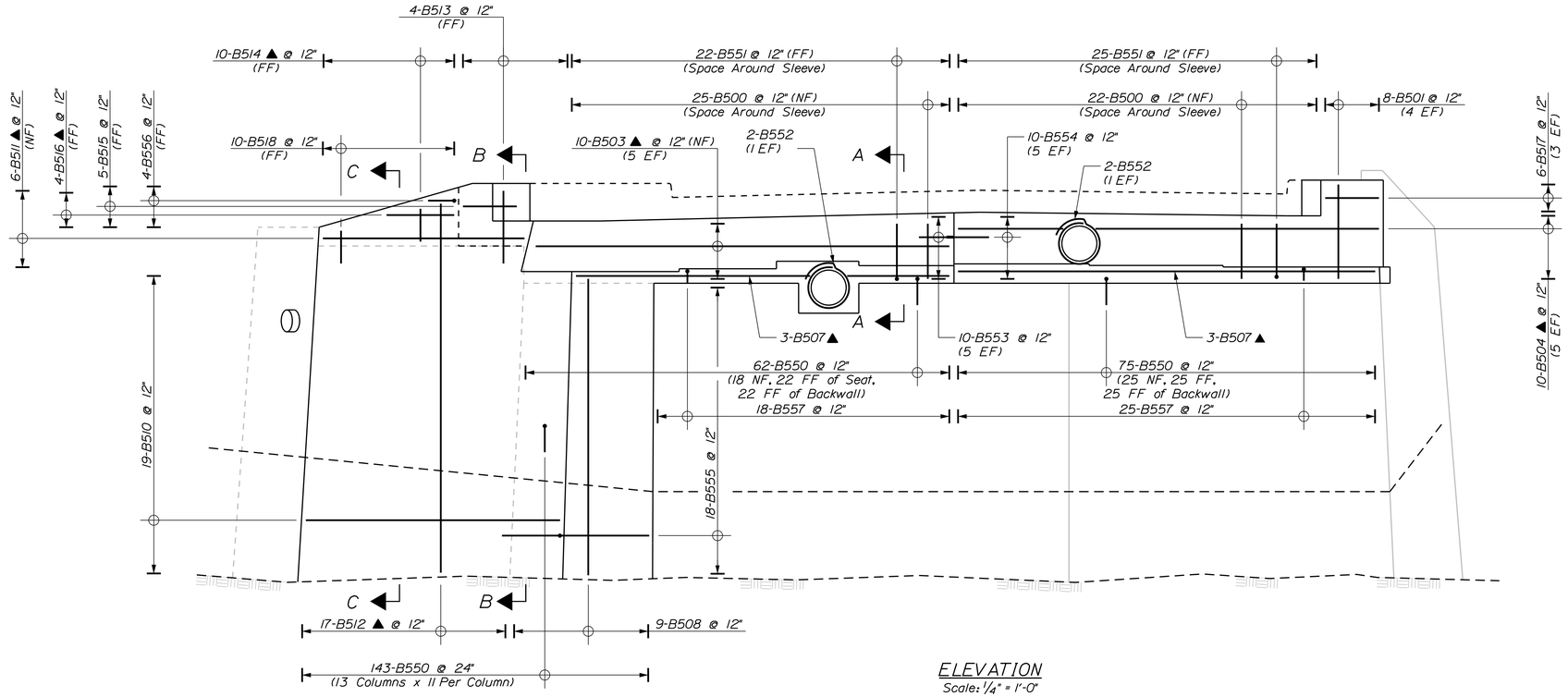
SECTION A-A
Scale: 1/2" = 1'-0"



SECTION B-B
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 1/2" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	KDW	11/17
CHECKED-REVIEWED	CSG	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

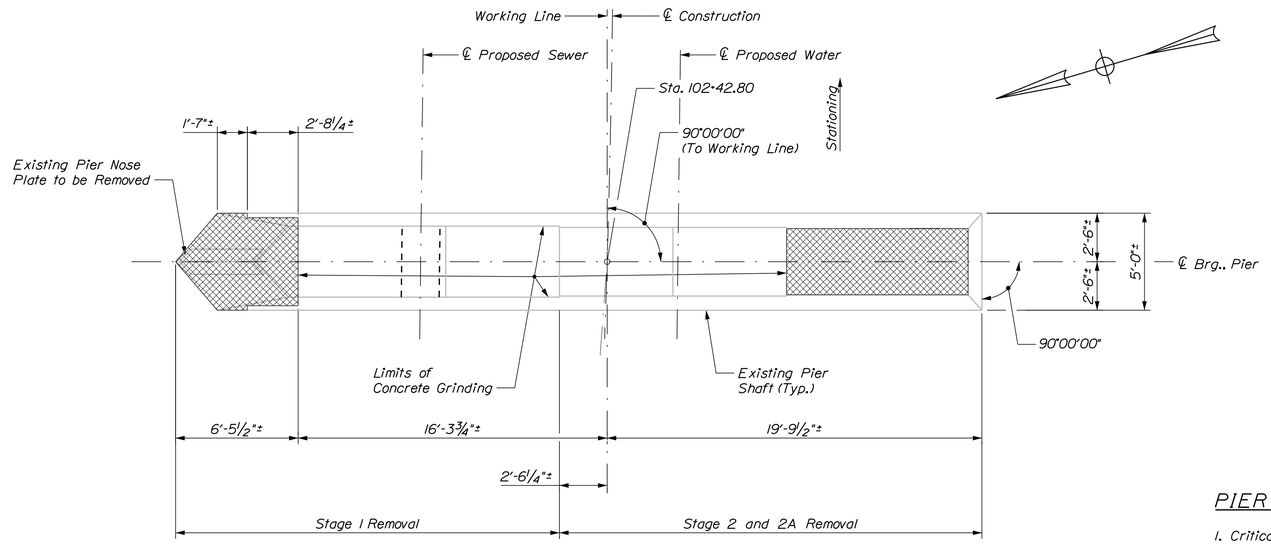
J. KITTREDGE
KCD
JAW

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

ABUTMENT NO. 2
DETAILS (2 OF 2)

SHEET NUMBER
38
OF 57

Filename: ...\BRIDGE\MSTA\038_ww_01.dgn Division: Structures Username: kwentworth Date:11/16/2017



PLAN
Scale: ¼" = 1'-0"

PIER DESIGN CRITERIA

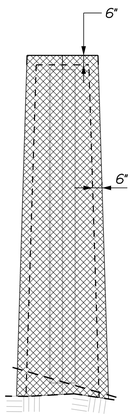
1. Critical AASHTO Load Combination - Strength I (Maine Modified) Limit State.

2. Buoyancy: Water level assumed at EL. 333.9.

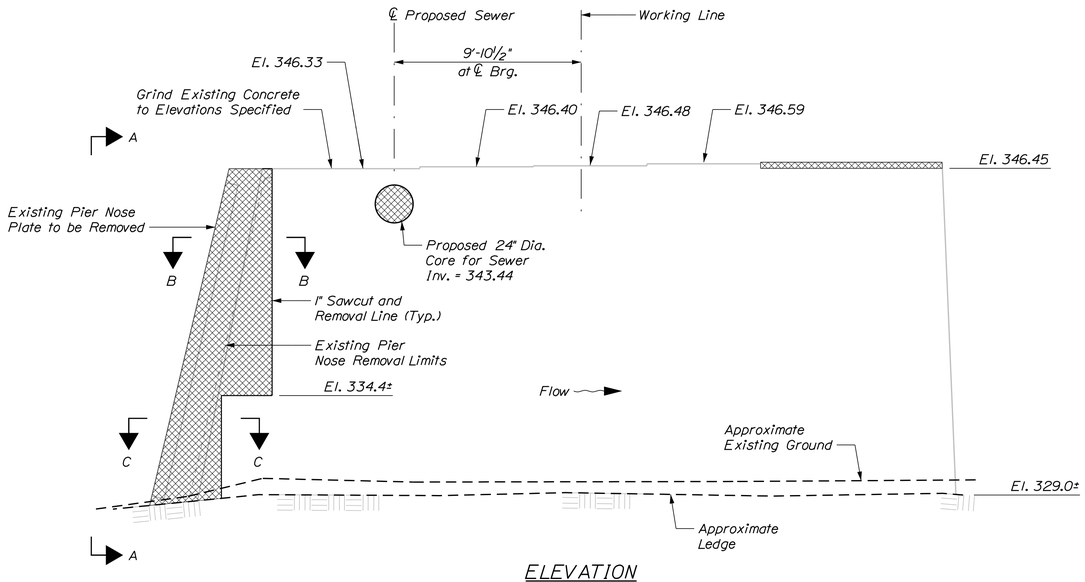
3. Stream flow: Velocity of 4.8 fps skewed at 30° to longitudinal centerline of pier.

4. Wind: 115 mph or 0.031 ksf.

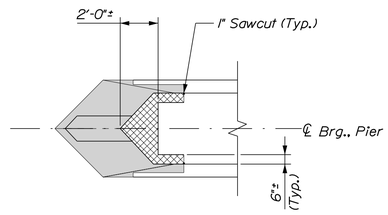
5. Ice: Thickness 3 feet, pressure 29 ksf at EL. 333.9, 30% of nose force applied transverse to pier.



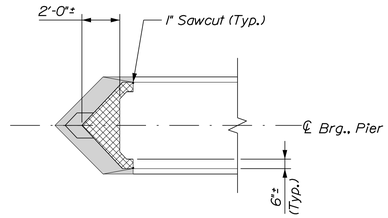
VIEW A-A
Scale: ¼" = 1'-0"



ELEVATION
Scale: ¼" = 1'-0"



VIEW B-B
Scale: ¼" = 1'-0"



VIEW C-C
Scale: ¼" = 1'-0"

LEGEND

- Concrete Removal
- Concrete Removal Below Section

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

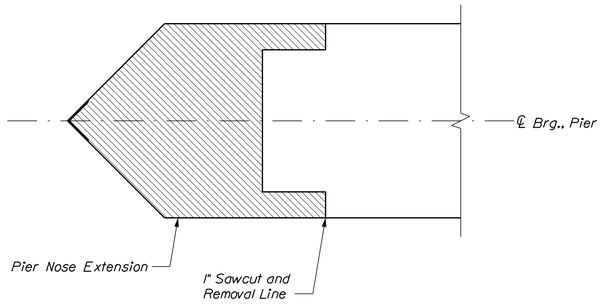
vhb

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KDW	11/17
CHECKED-REVIEWED	CSG	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

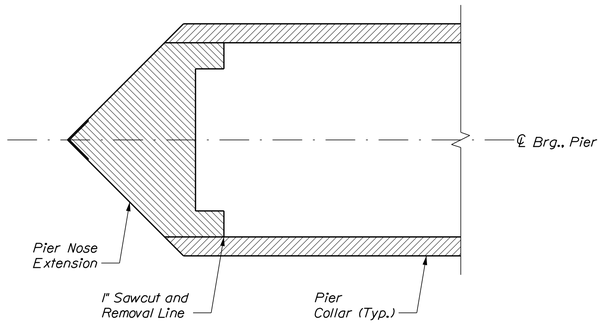
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

PIER NO. 1 REMOVAL AND REPAIRS

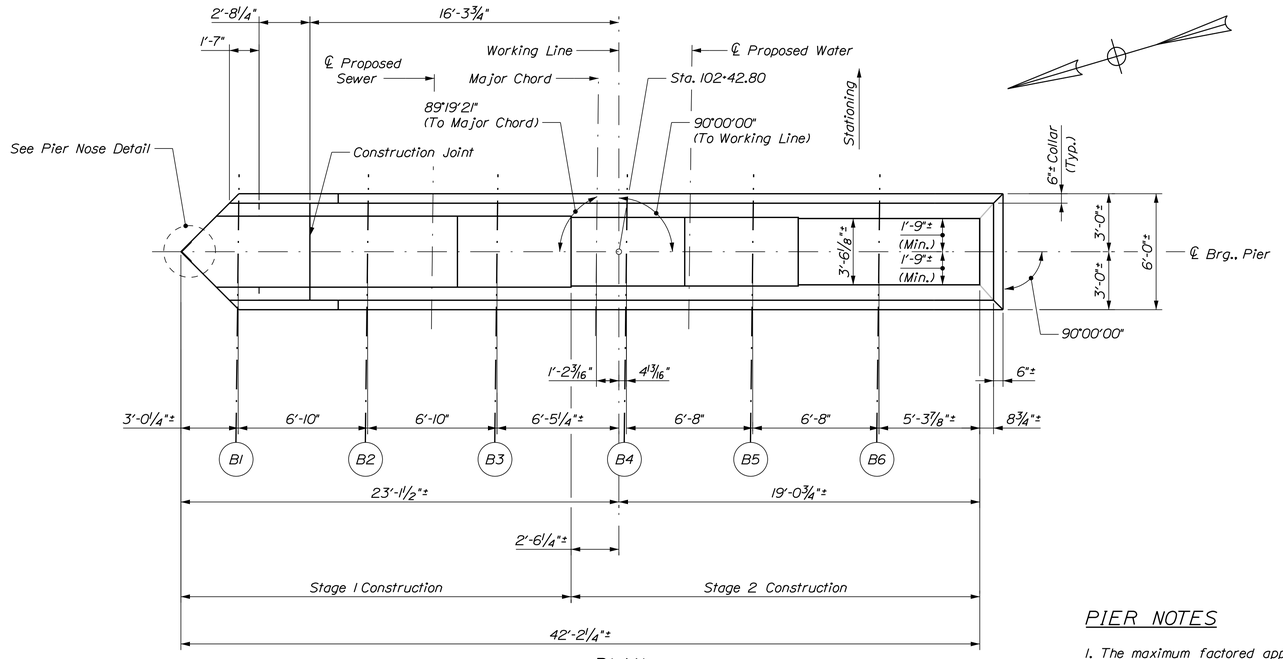
SHEET NUMBER
39
OF 57



SECTION C-C
Scale: 1/2" = 1'-0"



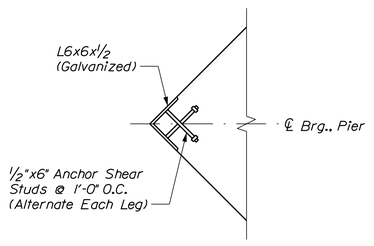
SECTION D-D
Scale: 1/2" = 1'-0"



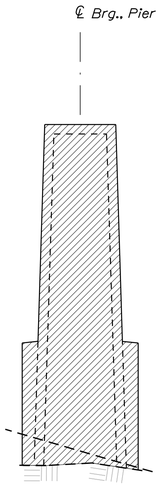
PLAN
(Minor Chords Not Shown)
Scale: 1/4" = 1'-0"

PIER NOTES

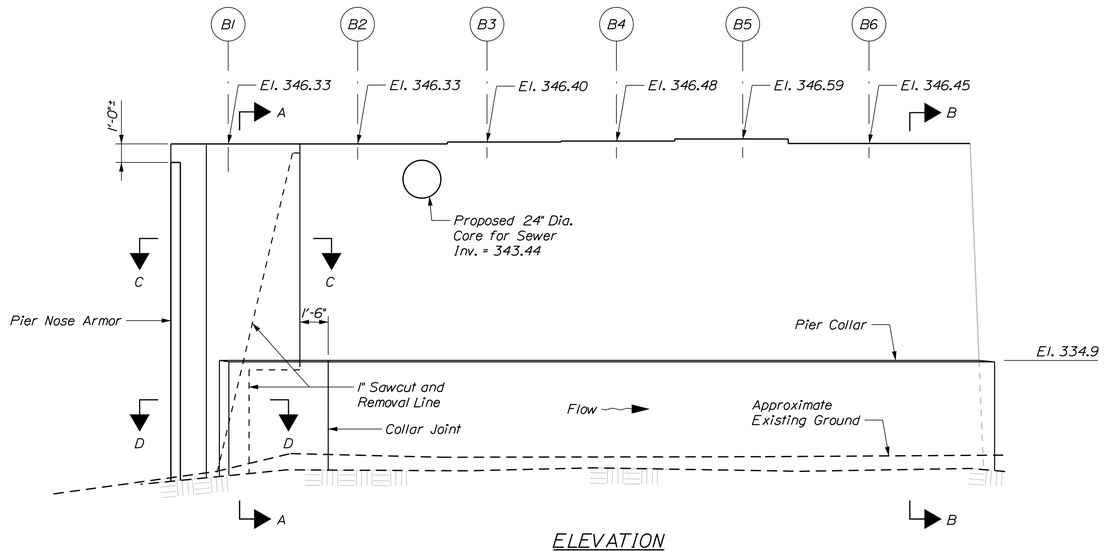
1. The maximum factored applied footing pressure is 16.9 ksf.
2. Reinforcing steel shall have a minimum concrete cover of 3 inches unless otherwise noted.
3. Collar may be constructed at any stage.



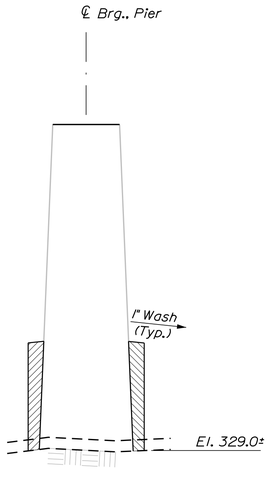
PIER NOSE DETAIL
Scale: 1" = 1'-0"



SECTION A-A
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"



SECTION B-B
Scale: 1/4" = 1'-0"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

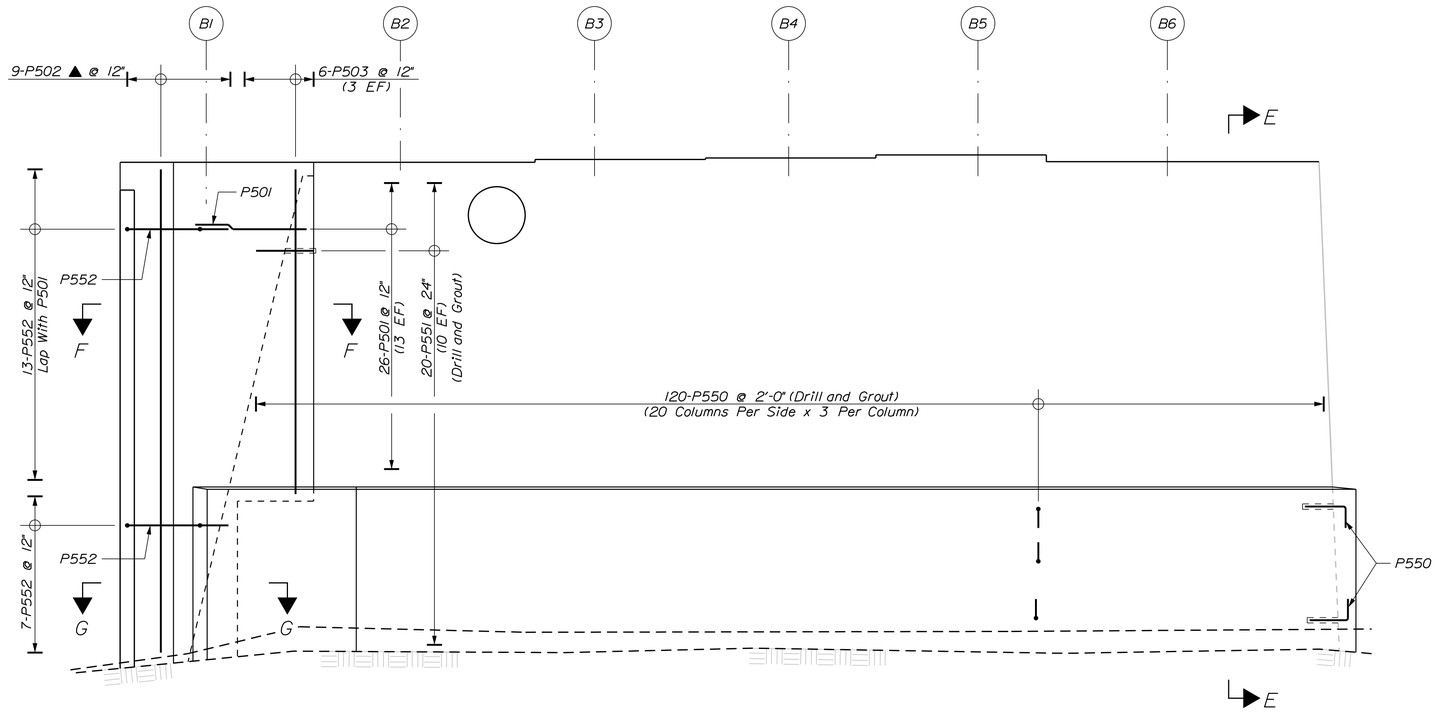
			DATE
PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

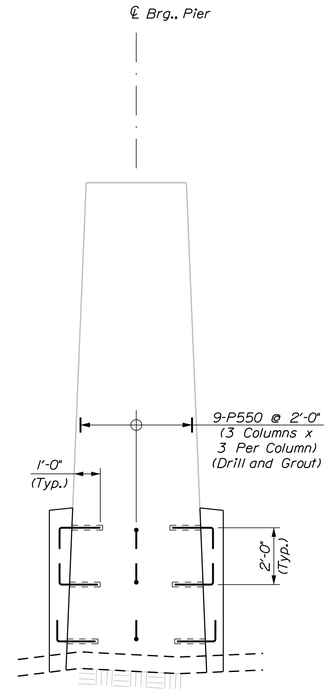
PIER DETAILS (1 OF 2)

SHEET NUMBER
40
OF 57

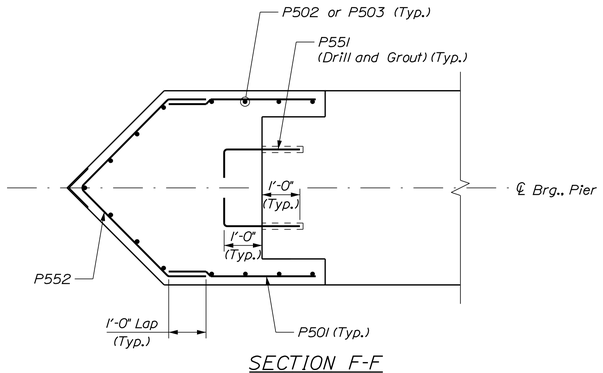
Filename: ...\BRIDGE\MSTA\040_pier_02.dgn Division: Structures Username: kwentworth Date:11/16/2017



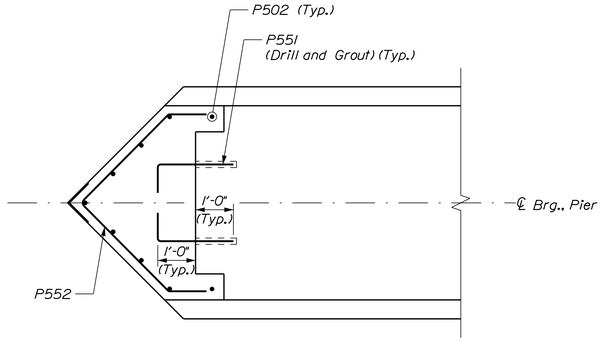
ELEVATION
Scale: 3/8" = 1'-0"



SECTION E-E
Scale: 3/8" = 1'-0"



SECTION F-F
Scale: 1/2" = 1'-0"



SECTION G-G
Scale: 1/2" = 1'-0"

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN
022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

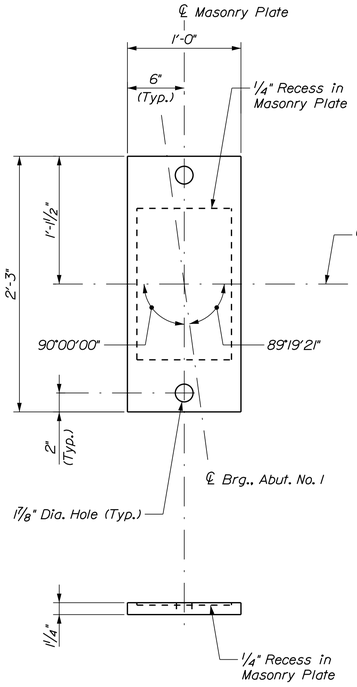
PIER DETAILS (2 OF 2)

SHEET NUMBER
41
OF 57

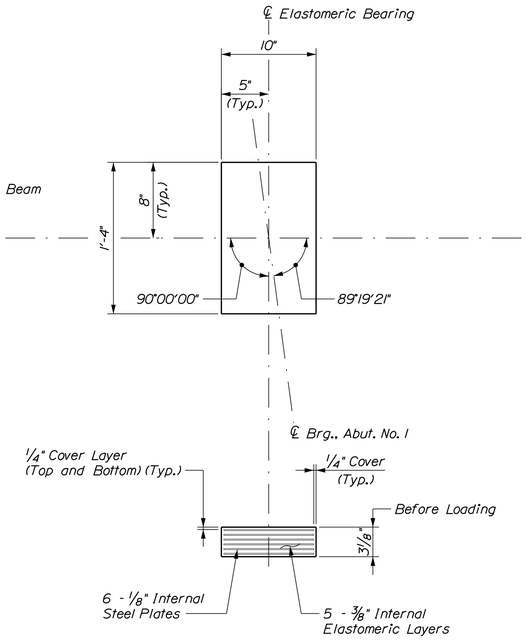
Filename: ...\BRIDGE\MSTA\041_pier_03.dgn Division: Structures Username: kwentworth Date:11/16/2017

NOTES

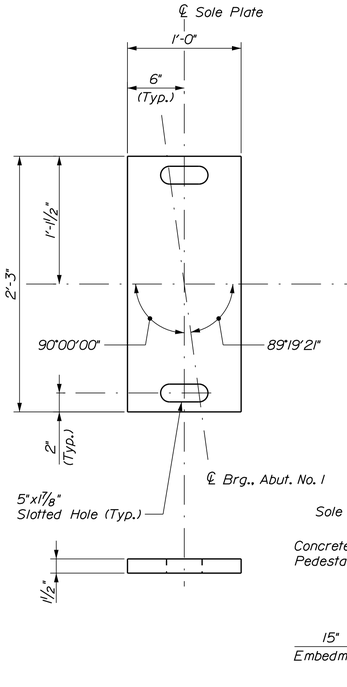
1. See Pier Bearings Sheet for Elastomeric Bearing Notes.
2. Mask 1/2"± along bottom flange to complete weld to sole plate.



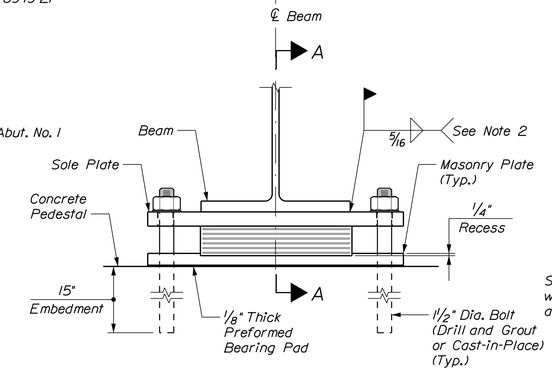
MASONRY PLATE



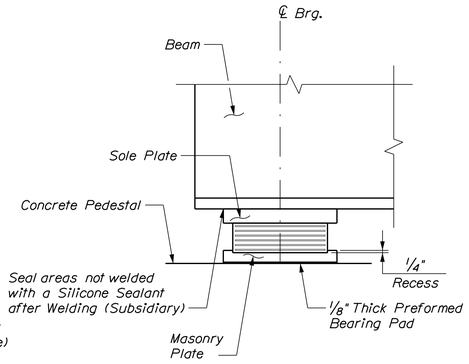
ELASTOMERIC BEARING



SOLE PLATE



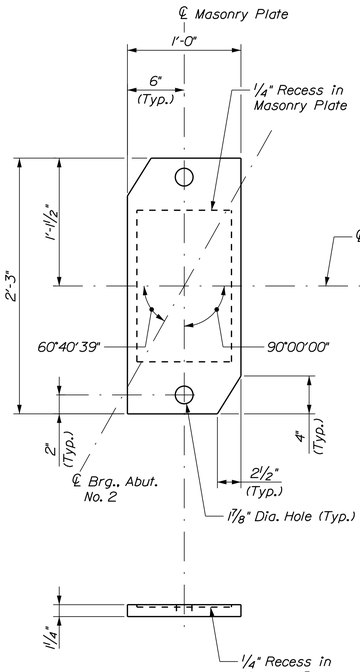
ELEVATION



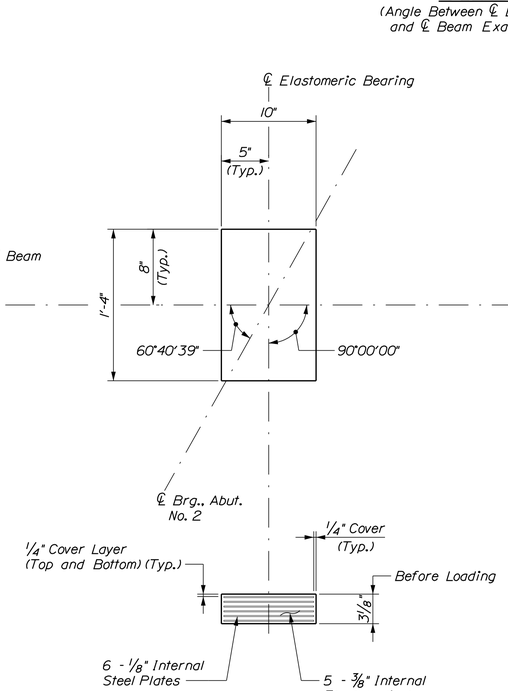
SECTION A-A

ABUTMENT NO. 1

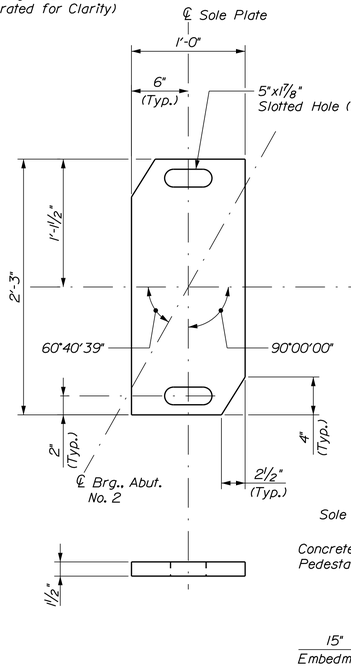
(Angle Between ℄ Bearing Abutment No. 1 and ℄ Beam Exaggerated for Clarity)



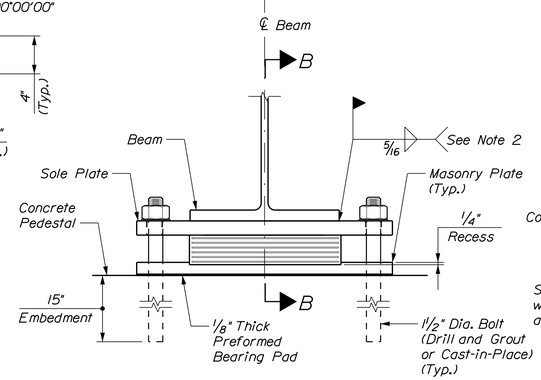
MASONRY PLATE



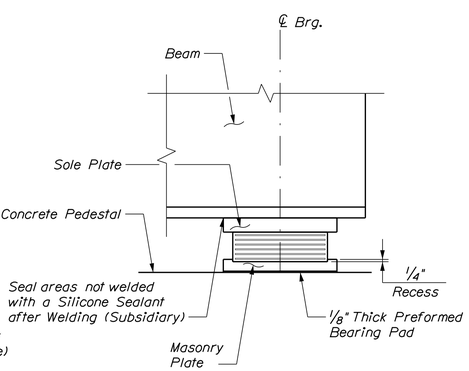
ELASTOMERIC BEARING



SOLE PLATE



ELEVATION



SECTION B-B

ABUTMENT NO. 2

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

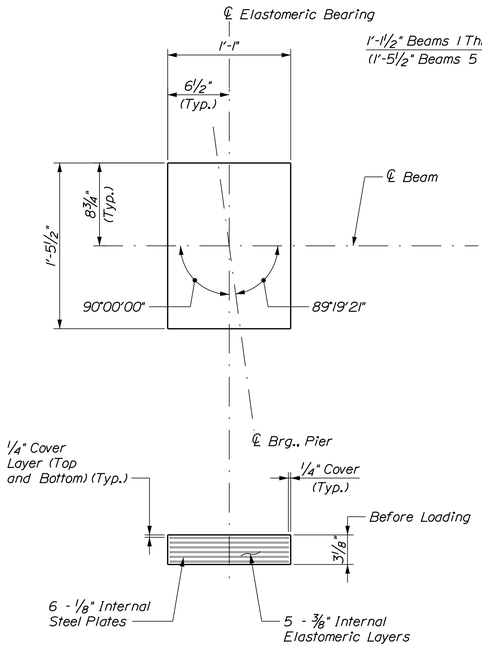
BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KDW	11/17
CHECKED-REVIEWED	CSG	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

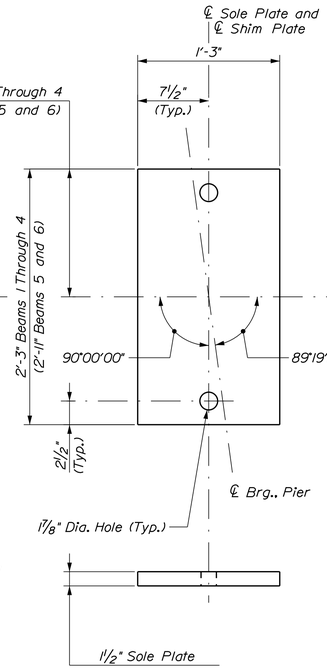
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

ABUTMENT BEARINGS

SHEET NUMBER
42
OF 57

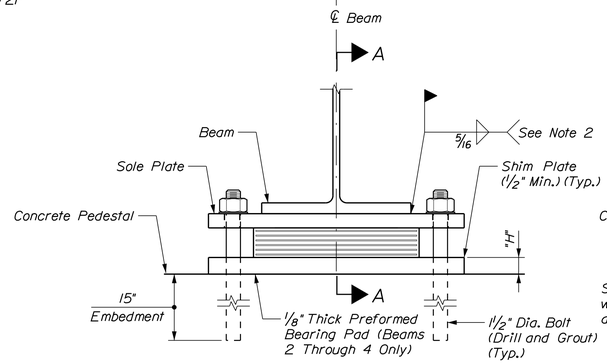


ELASTOMERIC BEARING

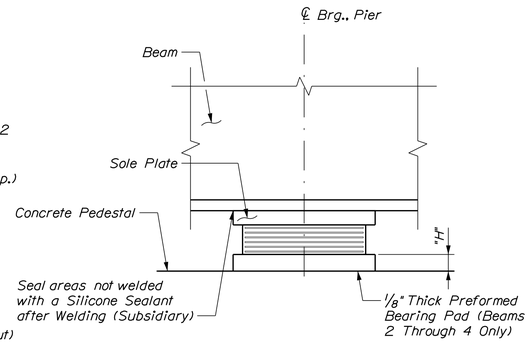


SOLE PLATE AND SHIM PLATE

SHIM PLATE THICKNESS "H"	
Beam 1	N/A
Beam 2	1½"
Beam 3	2¼"
Beam 4	2¾"
Beam 5	N/A
Beam 6	N/A



ELEVATION



SECTION A-A

PIER NO. 1
(Angle Between ℄ Bearing Pier No. 1 and ℄ Beam Exaggerated for Clarity)

NOTE

1. See Note 2 on Abutment Bearings Sheet.

ELASTOMERIC BEARING NOTES

1. The shear modulus of the elastomer shall be between 100 and 130 psi.

2. Vulcanizing of the elastomer to the steel plates shall be done during the primary mold process.

3. Masonry plates, sole plates and shear pins shall meet the requirements of ASTM A 709/A 709M, Grade 50. Anchor rods shall meet the requirements of ASTM F 1554, Grade 105 and shall be swedged on the embedded portion of the rod.

4. Masonry plates shall be galvanized in accordance with Section 506. Sole plates for steel superstructures shall be treated in the same manner as the structural steel. Anchor rods, washers, nuts and shear pins shall be galvanized to ASTM A 153 or ASTM B 695, Class 50, Type 1.

5. All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge and a direction arrow which points upstation. All marks shall be permanent and shall be visible after the bearing is installed.

6. Bearings shall be covered during transit.

7. The bearings are designed so that the superstructure may be erected when the ambient air temperature is within the range of 65 °F and 90 °F. If the ambient air temperature is outside this range, the bearings shall be reset as directed by the Resident.

8. All necessary precautions shall be taken to protect bearing components from field weld flash and spatter. Heat from welding operations shall be controlled such that steel adjacent to the elastomer does not exceed 200 °F. The temperature shall be verified by the use of temperature indicating crayons or other suitable means.

9. Upset the threads on the anchor rods after assembly of the bearing. Touch up burred threads with zinc-rich paint.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

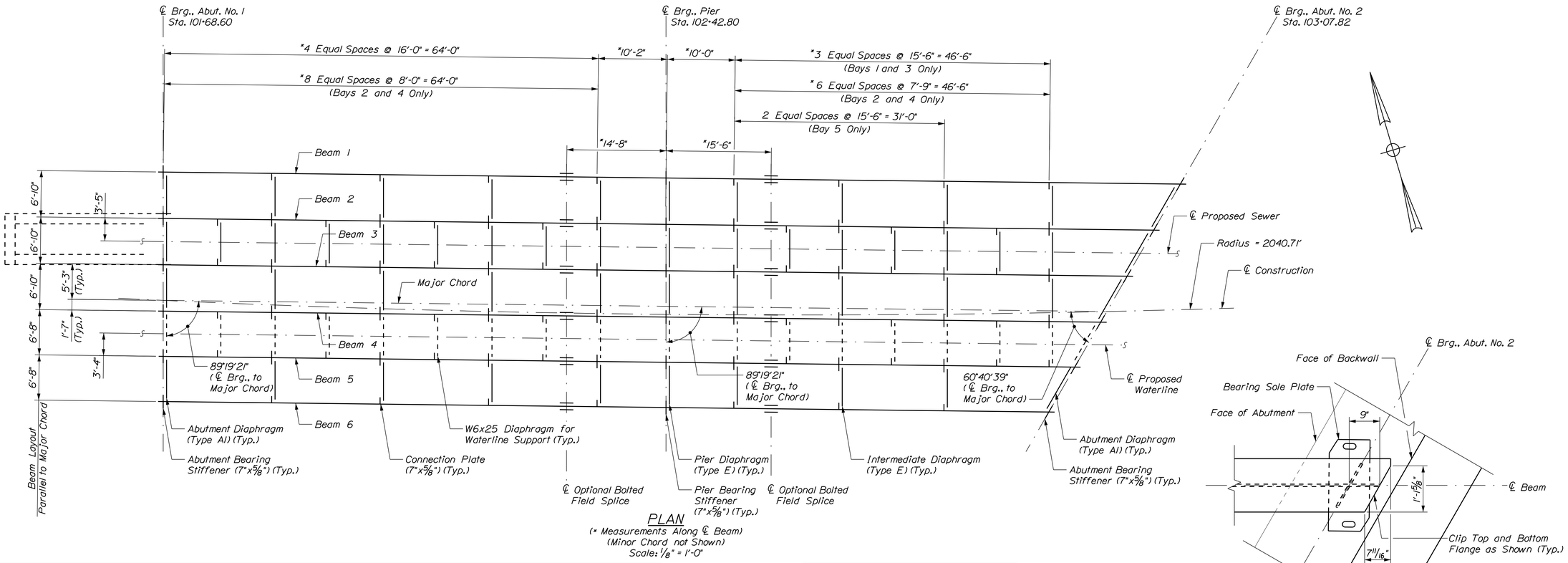
vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	BY	DATE
CHECKED-REVIEWED	JAW	KDW	11/17
DESIGN2-DETAILED2		GSG	11/17
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

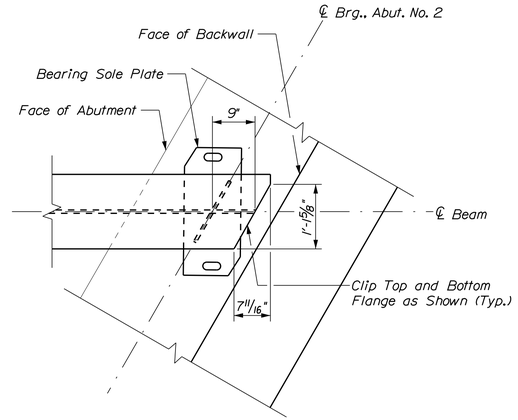
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

PIER BEARINGS

SHEET NUMBER
43
OF 57



PLAN
(* Measurements Along ℄ Beam)
(Minor Chord not Shown)
Scale: 1/8" = 1'-0"



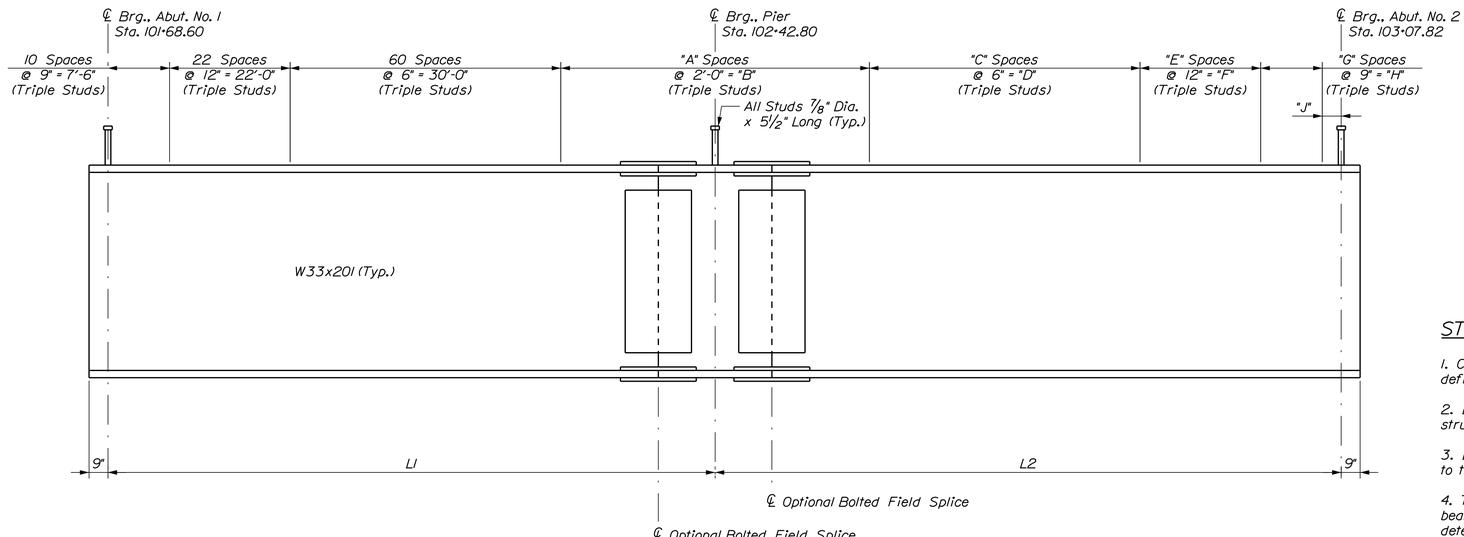
FLANGE CLIP DETAIL
Not to Scale

SHEAR STUD LAYOUT

Beam No.	A	B	C	D	E	F	G	H	J	Total
Beam 1	15	30'	76	38'	15	15'	10	7.5'	1/2"	630
Beam 2	14	28'	75	37.5'	14	14'	9	6.75'	4 1/2"	618
Beam 3	14	28'	69	34.5'	14	14'	8	6'	2 3/8"	597
Beam 4	13	26'	68	34'	13	13'	7	5.25'	6 3/8"	585
Beam 5	13	26'	62	31'	12	12'	7	5.25'	8 1/2"	564
Beam 6	13	26'	57	28.5'	11	11'	7	5.25'	4 1/2"	546

DIMENSION ALONG ℄ BEAM

Beam No.	L1	L2
Beam 1	74'-2"	75'-10 7/16"
Beam 2	74'-2"	71'-11 3/8"
Beam 3	74'-2"	68'-0 3/8"
Beam 4	74'-2"	64'-1 5/16"
Beam 5	74'-2"	60'-3 1/2"
Beam 6	74'-2"	56'-5 1/2"



BEAM ELEVATION AND STUD LAYOUT
(Connection Plates and Bearing Stiffeners not Shown)
(Total Shear Stud Quantity = 3540)
Not to Scale

STRUCTURAL STEEL NOTES

1. Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.

2. Bearing stiffeners shall be plumb after erection and dead loading of the structure.

3. Diaphragm connection plates may be either plumb or normal to the top flange.

4. The Contractor may substitute welded plate girders in place of the rolled beams shown on the plans, as approved by the Resident. The fabricator shall determine the plate thicknesses based upon the depth and moment of inertia of the rolled section. Refer to Standard Notes for Structural Steel in MaineDOT Bridge Design Guide for additional requirements.

5. Structural steel beams shall be metalized or galvanized and seal coated (clear), except the tops of the beams. Painted top coat is not required.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

vhb

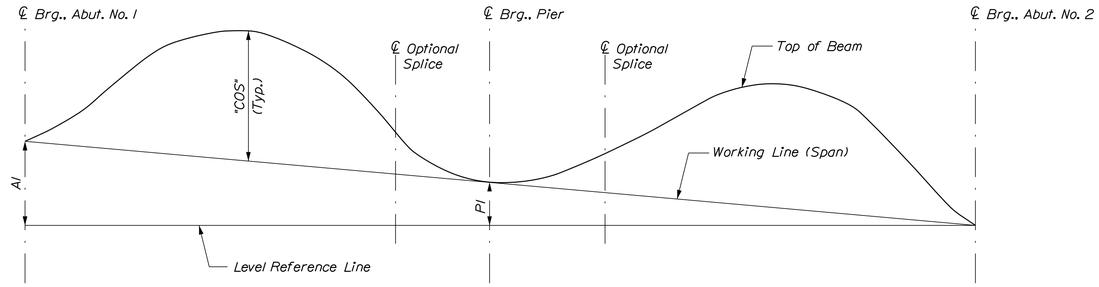
	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

FRAMING PLAN
AND GIRDER ELEVATION

SHEET NUMBER
44
OF 57

Filename: ...\MSTA\044_supframe_01.dgn Division: Structures Username: kwentworth Date:12/13/2017



CAMBER DIAGRAM

TABLE OF CAMBER ORDINATES PER SPAN ("COS") (in)

Beam	Span No. 1											Span No. 2										
	0/10	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1	0/10	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1
1	0.00	0.13	0.47	0.71	0.83	0.81	0.68	0.47	0.23	0.04	0.00	0.00	0.10	0.36	0.66	0.92	1.08	1.12	1.00	0.74	0.37	0.00
2	0.00	0.19	0.56	0.83	0.96	0.95	0.81	0.58	0.31	0.08	0.00	0.00	0.05	0.25	0.49	0.71	0.86	0.89	0.81	0.62	0.33	0.00
3	0.00	0.16	0.49	0.74	0.86	0.86	0.74	0.54	0.31	0.09	0.00	0.00	0.00	0.11	0.26	0.41	0.51	0.54	0.50	0.38	0.21	0.00
4	0.00	0.24	0.62	0.90	1.04	1.05	0.93	0.71	0.44	0.17	0.00	0.00	0.01	0.10	0.23	0.35	0.43	0.46	0.43	0.33	0.18	0.00
5	0.00	0.27	0.66	0.94	1.10	1.11	0.99	0.76	0.48	0.20	0.00	0.00	-0.02	0.04	0.13	0.22	0.28	0.31	0.30	0.23	0.13	0.00
6	0.00	0.28	0.66	0.94	1.09	1.10	0.99	0.77	0.49	0.21	0.00	0.00	-0.04	-0.01	0.05	0.11	0.16	0.19	0.18	0.15	0.09	0.00

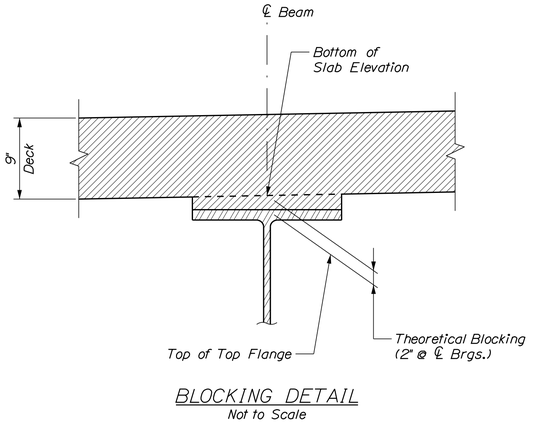
TABLE OF CAMBER DIMENSIONS (ft)

Girder	Al	Pl
1	1.40	0.67
2	1.37	0.64
3	1.33	0.60
4	1.29	0.61
5	1.25	0.57
6	1.20	0.53

BOTTOM OF SLAB ELEVATIONS @ 10th POINTS

	Beam	℄ Brg.. Abut. No. 1	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	℄ Brg.. Pier
Span 1	1	350.42	350.36	350.31	350.26	350.20	350.12	350.04	349.95	349.85	349.76	349.69
	2	350.55	350.50	350.45	350.40	350.34	350.27	350.18	350.09	349.99	349.90	349.82
	3	350.68	350.63	350.58	350.53	350.47	350.39	350.31	350.22	350.13	350.04	349.96
	4	350.75	350.71	350.67	350.63	350.57	350.50	350.43	350.34	350.25	350.16	350.08
	5	350.62	350.57	350.54	350.49	350.44	350.37	350.29	350.21	350.12	350.03	349.94
	6	350.48	350.43	350.40	350.36	350.30	350.24	350.16	350.07	349.98	349.89	349.81

	Beam	℄ Brg.. Pier	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	℄ Brg.. Abut. No. 2
Span 2	1	349.69	349.63	349.58	349.54	349.49	349.44	349.38	349.30	349.21	349.11	349.02
	2	349.82	349.76	349.71	349.67	349.63	349.57	349.51	349.44	349.36	349.28	349.18
	3	349.96	349.90	349.85	349.80	349.75	349.70	349.64	349.58	349.51	349.43	349.36
	4	350.08	350.02	349.96	349.91	349.86	349.81	349.75	349.68	349.61	349.54	349.46
	5	349.94	349.88	349.83	349.78	349.73	349.68	349.63	349.57	349.50	349.44	349.37
	6	349.81	349.75	349.70	349.65	349.61	349.56	349.50	349.45	349.39	349.34	349.28



BLOCKING DETAIL
Not to Scale

TABLE OF DEFLECTIONS (in)

Beam	Load	Span No. 1										Span No. 2										
		0/10	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1	0/10	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1
1	Steel Dead Load	0.00	-0.07	-0.13	-0.16	-0.18	-0.17	-0.15	-0.10	-0.05	-0.02	0.00	0.00	-0.02	-0.07	-0.12	-0.17	-0.20	-0.21	-0.19	-0.14	-0.08	0.00
	Fluid Dead Load	0.00	-0.22	-0.40	-0.52	-0.57	-0.55	-0.46	-0.33	-0.17	-0.05	0.00	0.00	-0.07	-0.22	-0.40	-0.55	-0.64	-0.66	-0.60	-0.46	-0.25	0.00
	Superimposed Dead Load	0.00	-0.11	-0.21	-0.28	-0.31	-0.30	-0.26	-0.19	-0.11	-0.03	0.00	0.00	-0.04	-0.13	-0.23	-0.31	-0.35	-0.36	-0.32	-0.24	-0.13	0.00
	Vertical Curve Ordinate	0.00	-0.27	-0.27	-0.25	-0.24	-0.21	-0.19	-0.15	-0.11	-0.06	0.00	0.00	-0.04	-0.07	-0.09	-0.10	-0.11	-0.12	-0.11	-0.10	-0.08	0.00
2	Steel Dead Load	0.00	-0.07	-0.13	-0.17	-0.19	-0.19	-0.16	-0.12	-0.07	-0.02	0.00	0.00	-0.01	-0.05	-0.09	-0.13	-0.15	-0.16	-0.14	-0.11	-0.06	0.00
	Fluid Dead Load	0.00	-0.28	-0.51	-0.67	-0.74	-0.72	-0.62	-0.45	-0.25	-0.08	0.00	0.00	-0.05	-0.18	-0.34	-0.49	-0.58	-0.61	-0.56	-0.42	-0.23	0.00
	Superimposed Dead Load	0.00	-0.09	-0.17	-0.22	-0.25	-0.24	-0.21	-0.16	-0.09	-0.03	0.00	0.00	-0.02	-0.07	-0.13	-0.17	-0.20	-0.21	-0.18	-0.14	-0.08	0.00
	Vertical Curve Ordinate	0.00	-0.25	-0.25	-0.24	-0.22	-0.20	-0.17	-0.14	-0.10	-0.05	0.00	0.00	-0.03	-0.05	-0.07	-0.08	-0.08	-0.08	-0.07	-0.06	-0.04	0.00
3	Steel Dead Load	0.00	-0.08	-0.14	-0.18	-0.20	-0.20	-0.17	-0.13	-0.08	-0.03	0.00	0.00	0.00	-0.03	-0.06	-0.09	-0.11	-0.11	-0.11	-0.08	-0.04	0.00
	Fluid Dead Load	0.00	-0.25	-0.46	-0.60	-0.67	-0.66	-0.57	-0.42	-0.25	-0.09	0.00	0.00	-0.01	-0.09	-0.19	-0.29	-0.36	-0.38	-0.35	-0.27	-0.15	0.00
	Superimposed Dead Load	0.00	-0.07	-0.13	-0.17	-0.20	-0.19	-0.17	-0.13	-0.08	-0.03	0.00	0.00	-0.01	-0.03	-0.07	-0.09	-0.11	-0.11	-0.10	-0.08	-0.04	0.00
	Vertical Curve Ordinate	0.00	-0.23	-0.23	-0.23	-0.21	-0.20	-0.17	-0.14	-0.10	-0.05	0.00	0.00	-0.03	-0.04	-0.06	-0.07	-0.07	-0.07	-0.06	-0.04	-0.02	0.00
4	Steel Dead Load	0.00	-0.08	-0.14	-0.19	-0.21	-0.21	-0.18	-0.14	-0.08	-0.03	0.00	0.00	0.00	-0.01	-0.03	-0.06	-0.07	-0.08	-0.07	-0.06	-0.03	0.00
	Fluid Dead Load	0.00	-0.29	-0.55	-0.72	-0.81	-0.80	-0.69	-0.52	-0.32	-0.12	0.00	0.00	0.01	-0.05	-0.13	-0.21	-0.28	-0.30	-0.28	-0.22	-0.12	0.00
	Superimposed Dead Load	0.00	-0.02	-0.04	-0.06	-0.06	-0.06	-0.06	-0.04	-0.03	-0.01	0.00	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.03	-0.02	-0.02	-0.01	0.00
	Vertical Curve Ordinate	0.00	-0.15	-0.11	-0.07	-0.05	-0.02	0.00	0.01	0.01	0.01	0.00	0.00	0.02	0.04	0.05	0.06	0.06	0.06	0.05	0.04	0.02	0.00
5	Steel Dead Load	0.00	-0.08	-0.15	-0.20	-0.22	-0.22	-0.19	-0.15	-0.09	-0.04	0.00	0.00	0.01	0.00	-0.02	-0.03	-0.05	-0.05	-0.05	-0.04	-0.02	0.00
	Fluid Dead Load	0.00	-0.30	-0.56	-0.75	-0.84	-0.83	-0.73	-0.56	-0.34	-0.14	0.00	0.00	0.03	0.00	-0.06	-0.12	-0.17	-0.19	-0.19	-0.15	-0.08	0.00
	Superimposed Dead Load	0.00	-0.02	-0.04	-0.06	-0.07	-0.07	-0.06	-0.05	-0.03	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.01	-0.01	0.00
	Vertical Curve Ordinate	0.00	-0.14	-0.10	-0.06	-0.03	-0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.02	0.03	0.04	0.05	0.05	0.05	0.04	0.03	0.02	0.00
6	Steel Dead Load	0.00	-0.08	-0.15	-0.20	-0.23	-0.23	-0.20	-0.16	-0.10	-0.04	0.00	0.00	0.01	0.01	0.00	-0.01	-0.02	-0.03	-0.03	-0.02	-0.01	0.00
	Fluid Dead Load	0.00	-0.29	-0.54	-0.72	-0.81	-0.81	-0.71	-0.55	-0.34	-0.14	0.00	0.00	0.04	0.03	0.00	-0.05	-0.08	-0.10	-0.10	-0.09	-0.05	0.00
	Superimposed Dead Load	0.00	-0.02	-0.05	-0.06	-0.07	-0.07	-0.06	-0.05	-0.03	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00
	Vertical Curve Ordinate	0.00	-0.12	-0.09	-0.05	-0.03	0.00	0.01	0.02	0.02	0.01	0.00	0.00	0.02	0.03	0.04	0.04	0.05	0.04	0.04	0.03	0.02	0.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

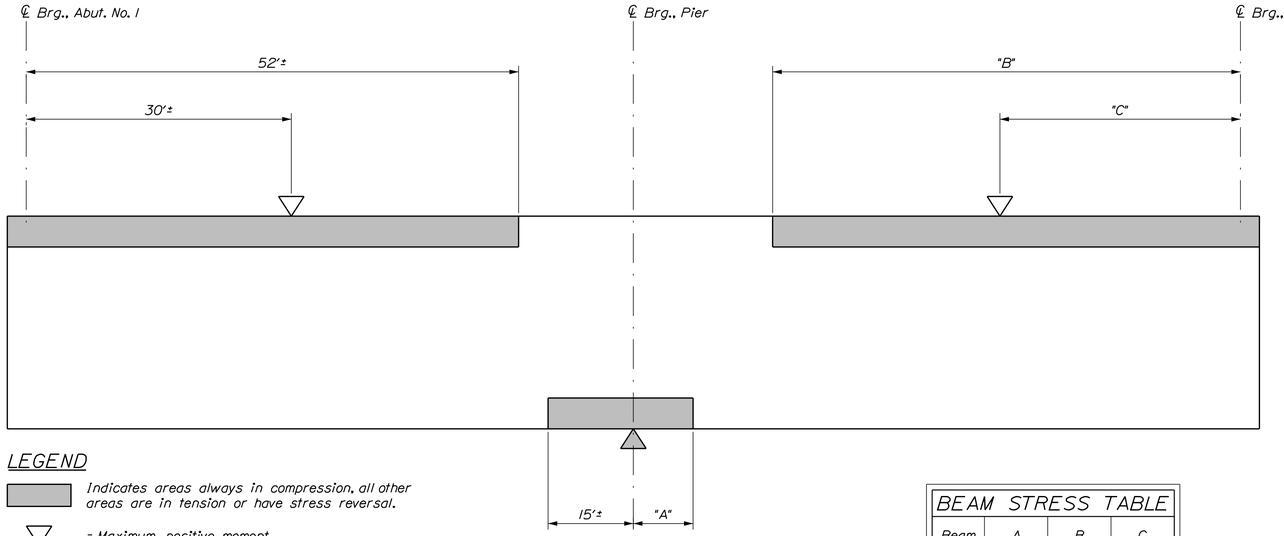
vhb

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	
DESIGN2-DETAILED2	GSG	11/17
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

DEFLECTIONS, CAMBER AND BOTTOM OF SLAB ELEVATIONS

SHEET NUMBER
45
OF 57



LEGEND

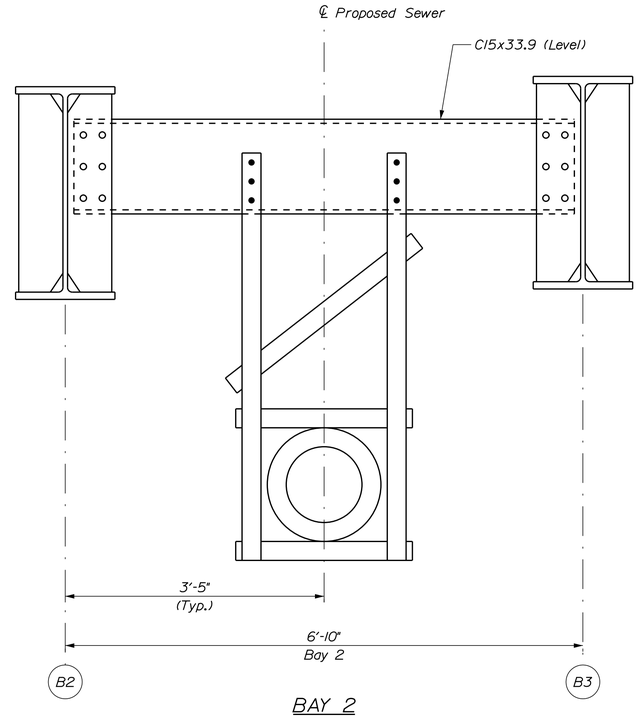
Indicates areas always in compression, all other areas are in tension or have stress reversal.

▽ = Maximum positive moment

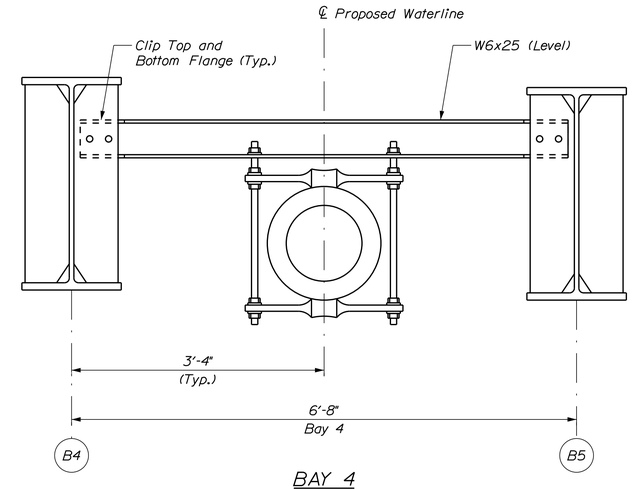
△ = Maximum negative moment

BEAM STRESS DIAGRAM
Not to Scale

BEAM STRESS TABLE			
Beam	A	B	C
1	11'±	57'±	30'±
2	11'±	54'±	29'±
3	10'±	51'±	27'±
4	10'±	48'±	26'±
5	9'±	45'±	24'±
6	9'±	42'±	23'±

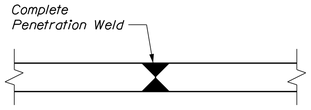


BAY 2

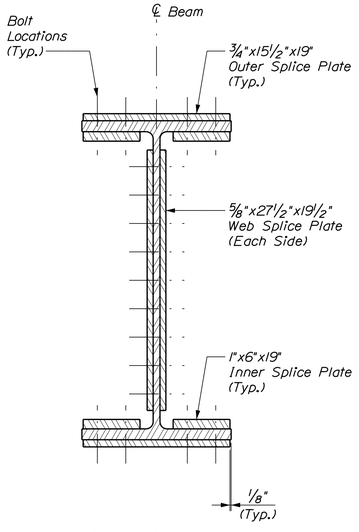


BAY 4

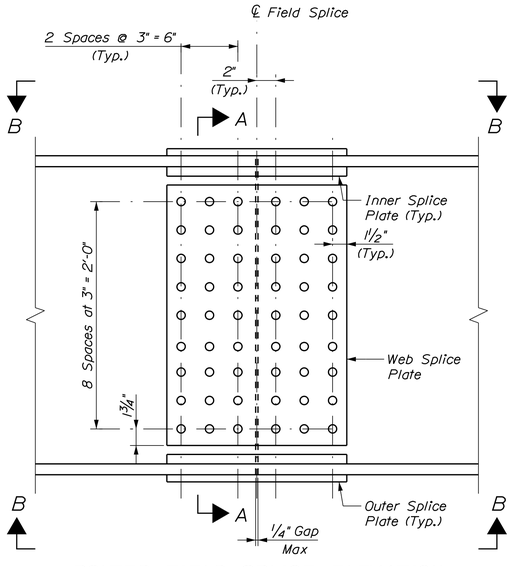
UTILITY DIAPHRAGMS
(Looking Upstation)
Scale: 1" = 1'-0"



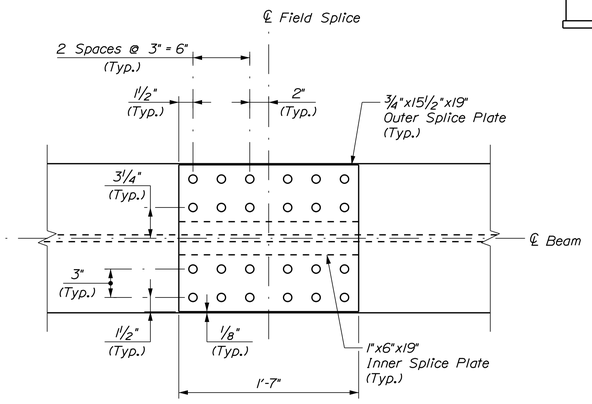
FLANGE OR WEB
BUTT WELD
Not to Scale



SECTION A-A
Scale: 1 1/2" = 1'-0"



BOLTED FIELD SPLICE ELEVATION
(Shear Stud Connectors Not Shown)
Scale: 1 1/2" = 1'-0"



VIEW B-B
Scale: 1 1/2" = 1'-0"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

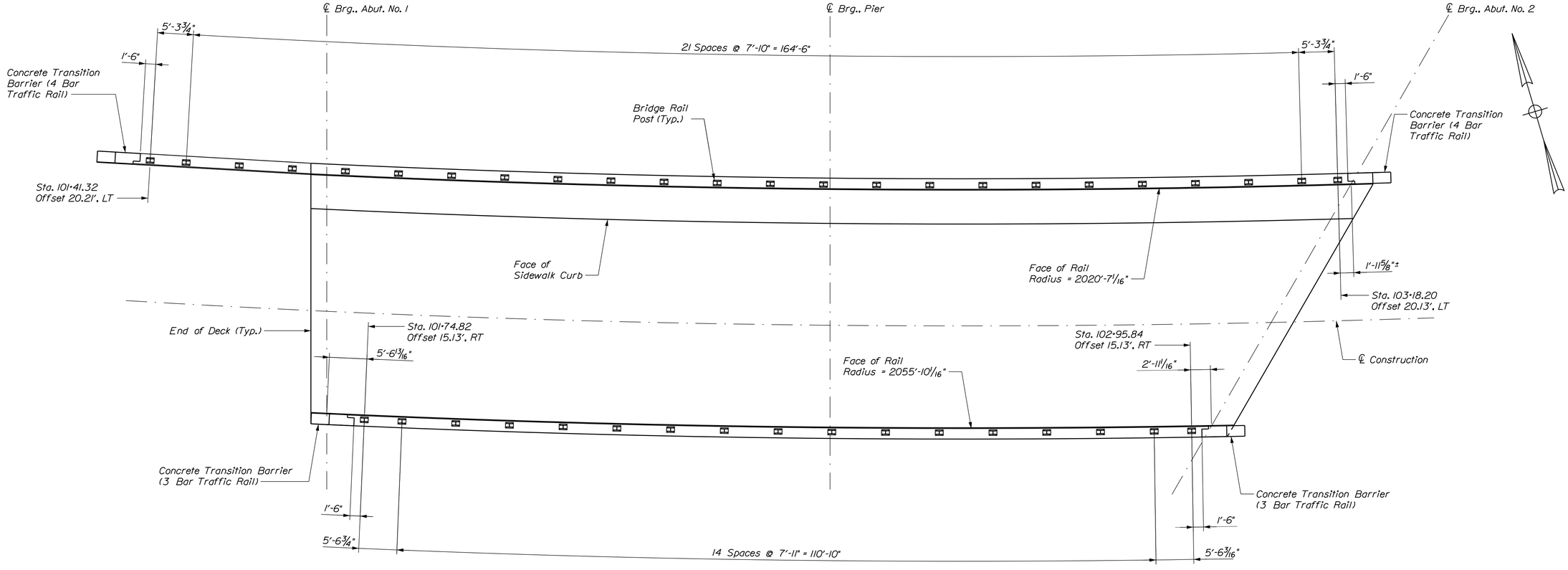
vhb

	BY	DATE
PROJ. MANAGER J. KITTREDGE		
DESIGN-DETAILED	KDW	11/17
CHECKED-REVIEWED	CSG	11/17
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

STEEL DETAILS

SHEET NUMBER
46
OF 57



BRIDGE RAIL LAYOUT PLAN

Scale: 1/8" = 1'-0"

Filename: ...\BRIDGE\MSTA\047_rail.dgn Division: Structures Username: kwentworth Date:11/16/2017

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979 BRIDGE PLANS

vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	KDW	11/17
CHECKED-REVIEWED	JAW	GSG	11/17
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

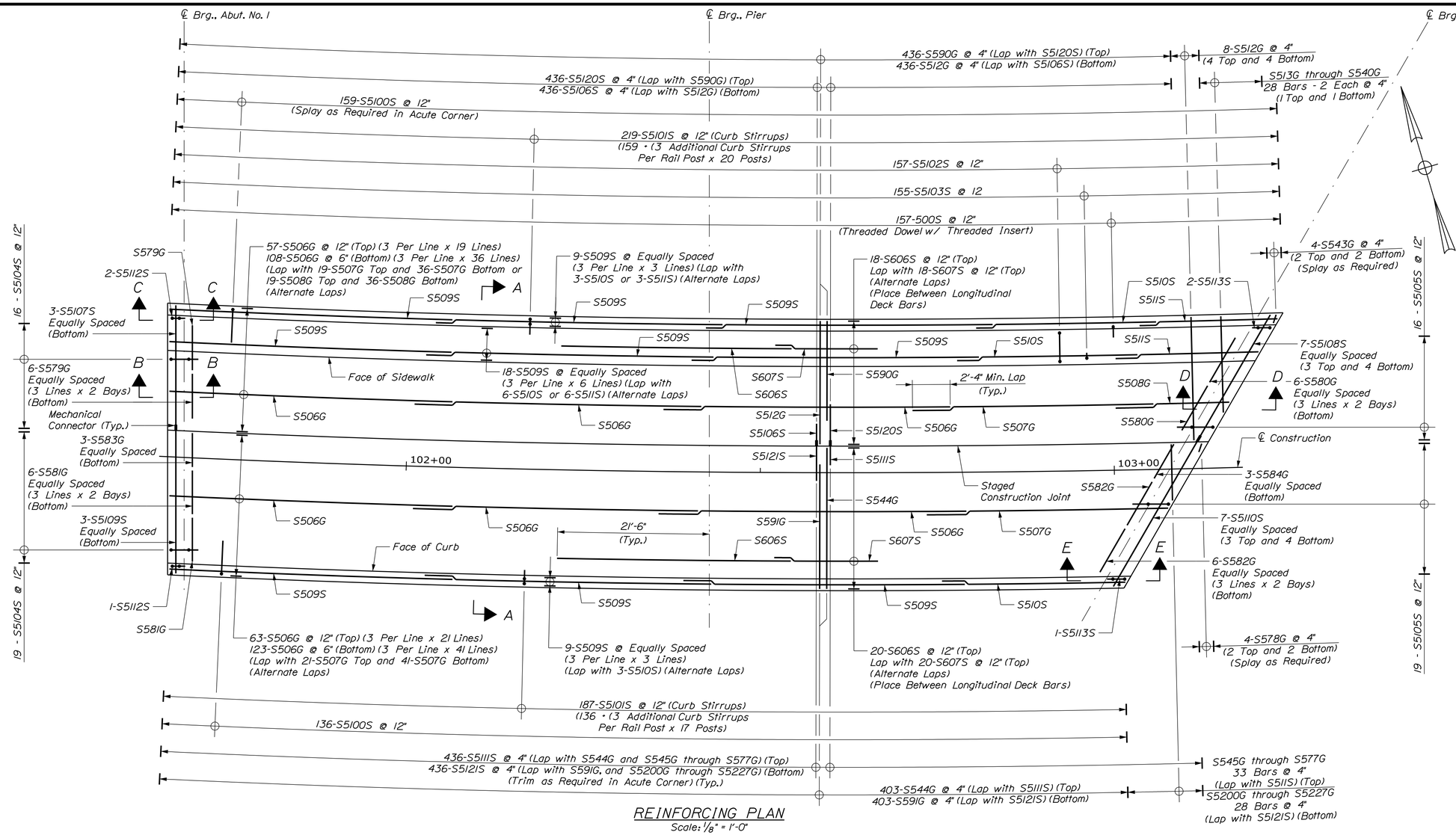
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

BRIDGE RAIL LAYOUT

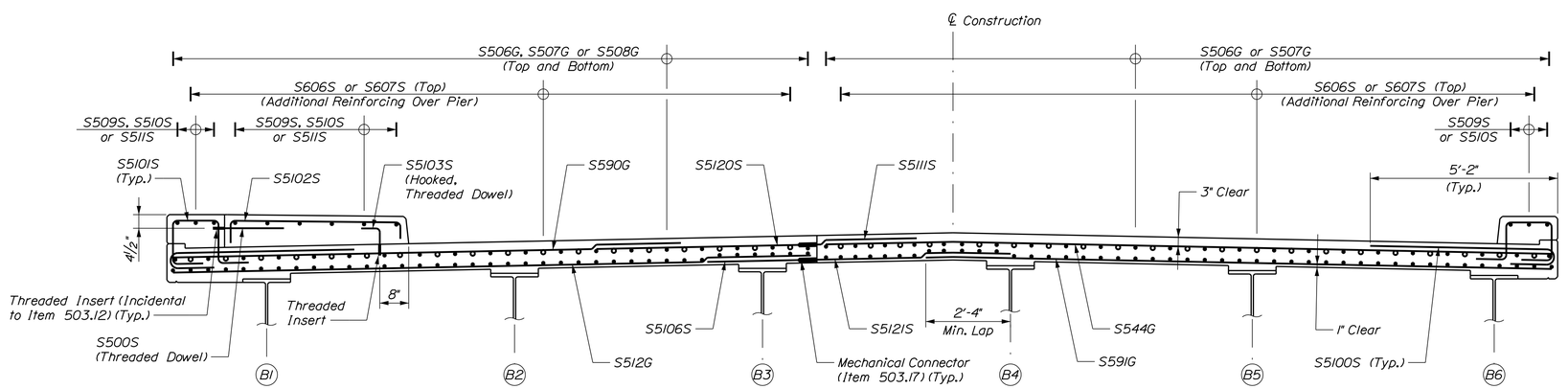
SHEET NUMBER

47

OF 57



REINFORCING PLAN
Scale: 1/8" = 1'-0"



SECTION A-A
(Looking Upstation)
Scale: 1/2" = 1'-0"

NOTES
1. See Slab Details (2 of 2) Sheet for Sections B-B, C-C, D-D, and E-E.

REINFORCING KEY
EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field
S = Stainless Steel
G = GFRP (Glass Fiber Reinforced Polymer)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

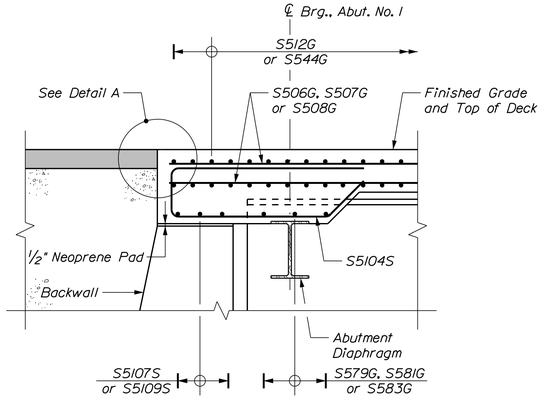
vhb

PROJ. MANAGER	J. KITTREDGE		
DESIGN-DETAILED	KCD	BY	DATE
CHECKED-REVIEWED	JAW	KDW	11/17
DESIGN2-DETAILED2		GSG	11/17
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

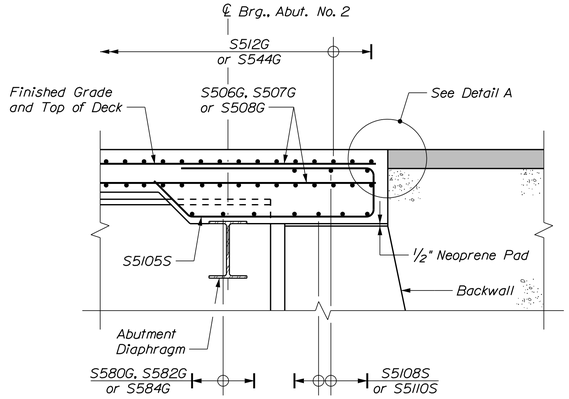
BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

SLAB DETAILS (1 OF 2)

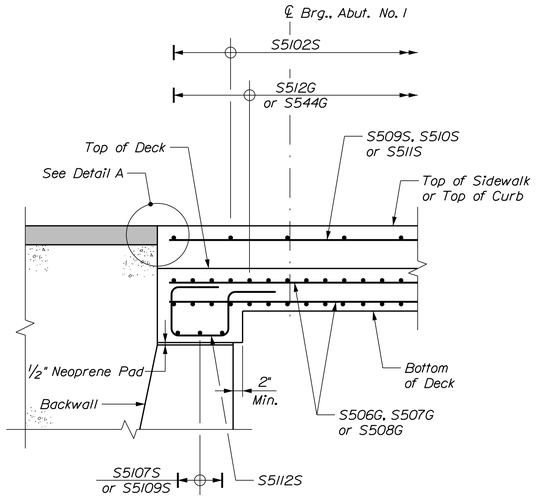
SHEET NUMBER
48
OF 57



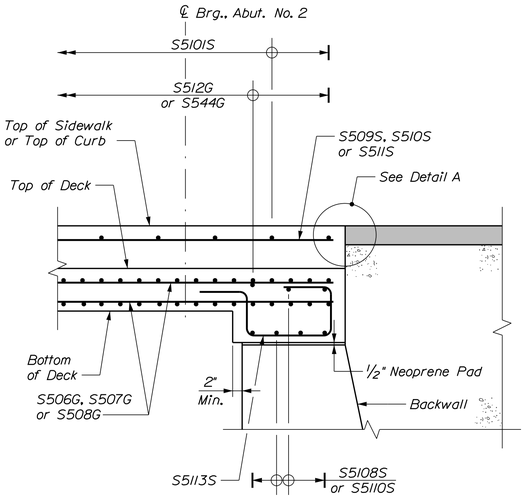
SECTION B-B
Scale: 3/4" = 1'-0"



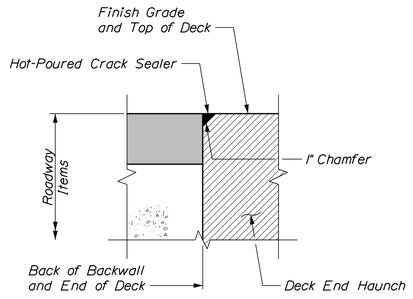
SECTION D-D
Scale: 3/4" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"



SECTION E-E
Scale: 3/4" = 1'-0"



DETAIL A
Not to Scale

REINFORCING KEY

EF = Each Face
NF = Near Face
FF = Far Face
▲ = Cut in Field
S = Stainless Steel
G = GFRP (Glass Fiber Reinforced Polymer)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

vhb

PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	DATE
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2		BY
DESIGN3-DETAILED3		KDW
REVISIONS 1		GSG
REVISIONS 2		11/17
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

SLAB DETAILS (2 OF 2)

SHEET NUMBER
49
OF 57

STRAIGHT BARS

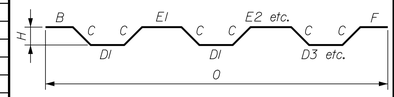
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION
A500	4	6'-9"	Abutment No. 1 and Frame	S500S	157	1'-3"	Deck
A501	4	5'-0"		S506G	351	40'-0"	
A502	26	6'-6"		S507G	117	34'-1"	
A503	26	5'-4"		S508G	55	12'-9"	
▲A5104	62	9'-9"		S509S	36	40'-0"	
A506	8	15'-6"		S510S	12	25'-5"	
A507	56	2'-0"		S511S	9	21'-6"	
A5208	5	3'-1"		S512G	444	17'-7"	
A528	5	22'-8"		S513G	2	17'-4"	
A5109	13	8'-6"		through	2 each	inc.= 6½"	
▲ A510	48	5'-1"		S540G	2	2'-8"	
A5111	10	8'-8"		S543G	4	2'-4"	
A5211	11	2'-1"		S544G	403	20'-1"	
▲ A512	6	6'-9"		S545G	1	19'-10"	
▲ A513	6	2'-4"		through	1 each	inc.= 6½"	
A5141	3	22'-6"		S577G	1	2'-6"	
▲A5142	3	12'-4"		S578G	4	2'-4"	
▲A5143	3	27'-0"		S579G	6	6'-3"	
▲ A531	11	21'-4"		S580G	6	7'-3"	
A532	16	24'-2"		S581G	6	6'-1"	
▲A533	20	7'-2"		S582G	6	7'-1"	
▲A535	38	4'-3"		S583G	3	4'-9"	
▲ A540	18	6'-0"		S584G	3	4'-9"	
A541	14	7'-7"		S590G	436	14'-1"	
A542	12	17'-0"		S591G	403	17'-7"	
A543	30	10'-2"		S5200G	1	17'-4"	
A544	14	20'-8"		through	1 each	inc.= 6½"	
▲ A545	34	5'-6"		S527G	1	2'-8"	
A546S	3	10'-2"		S606S	38	33'-0"	
A547S	3	20'-8"		S607S	38	12'-4"	
A548	7	24'-2"					
A549	3	6'-4"		3TB500	20	4'-6"	3-Bar Concrete Transition Barrier
A800	27	12'-2"		3TB501	4	2'-2"	(Quantity of Bars shown for
A801	27	15'-5"		3TB502	4	2'-0"	2 Barriers)
A802	14	4'-0"		3TB503	4	1'-10"	
				3TB504	4	1'-8"	
B500	47	3'-6"	Abutment No. 2	3TB505	4	1'-6"	
B501	8	5'-8"		3TB506	4	4'-8"	
▲B503	10	26'-0"		3TB600	8	2'-7"	
▲B504	10	24'-0"					
▲B507	6	24'-6"		4TB500	24	4'-6"	4-Bar Concrete Transition Barrier
B508	9	17'-1"		4TB501	4	2'-11"	(Quantity of Bars shown for
B510	19	18'-3"		4TB502	4	2'-9"	2 Barriers)
▲ B511	6	15'-1"		4TB503	4	2'-7"	
▲B512	17	22'-7"		4TB504	4	2'-5"	
B513	4	5'-0"		4TB505	4	2'-3"	
▲ B514	10	2'-7"		4TB506	4	4'-8"	
B515	5	4'-9"		4TB600	8	3'-4"	
▲ B516	4	8'-8"					
B517	6	3'-0"					
B518	10	2'-0"					
P501	26	3'-11"	Pier				
▲P502	9	16'-9"					
P503	6	11'-5"					

BENT BARS

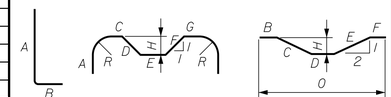
MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
A551	28	5'-4"	S	0'-0"	1'-9"	1'-10"	1'-9"			0'-0"				Abutment No. 1 and Frame
A552	10	7'-8"	S	0'-0"	2'-11"	1'-10"	2'-11"			0'-0"				
▲A553	10	6'-7"	V				0'-10"	5'-10"			5'-9"			
A554	64	7'-9"	L	6'-11"	0'-10"									
A555	63	2'-4"	L	1'-6"	0'-10"									
A556	14	4'-4"	S	0'-0"	0'-10"	2'-8"	0'-10"			0'-0"				
A557	14	2'-10"	S	0'-0"	0'-10"	1'-2"	0'-10"			0'-0"				
A558	4	5'-0"	L	2'-6"	2'-6"									
A560	9	4'-7"	L	3'-9"	0'-10"									
A561	22	3'-10"	L	3'-0"	0'-10"									
A562S	49	7'-2"	S	0'-0"	2'-11"	1'-4"	2'-11"			0'-0"				
A570	34	2'-4"	L	1'-6"	0'-10"									
A571	64	2'-5"	L	1'-8"	0'-9"									
A580	42	9'-2"	S	0'-10"	3'-2"	1'-2"	3'-2"			0'-10"				
A581	21	10'-2"	S	0'-0"	1'-6"	7'-2"	1'-6"			0'-0"				
A582	10	11'-2"	S	0'-0"	2'-0"	7'-2"	2'-0"			0'-0"				
A583	4	4'-4"	V				1'-2"	3'-2"			2'-3"			
A584	4	5'-10"	V				2'-8"	3'-2"			2'-3"			
A585	18	3'-0"	L	1'-6"	1'-6"									
▲A586	9	4'-8"	V				0'-10"	3'-11"			3'-10"			
A587	6	9'-11"	O			7'-11"				2'-0"		2'-6"		
▲A588	10	6'-8"	L	5'-10"	0'-10"									
▲A589	9	4'-8"	L	3'-10"	0'-10"									
A590	14	6'-1"	S	0'-0"	1'-2"	2'-11"	2'-0"			0'-0"				
A591	21	7'-8"	C	0'-7"	6'-6"	0'-7"								
A592	7	6'-3"	SJ	1'-2"	4'-3"	0'-10"	0'-0"	0'-0"						
A593	7	7'-9"	SJ	2'-8"	4'-3"	0'-10"	0'-0"	0'-0"						
A650	8	8'-4"	W	0'-0"		0'-0"	1'-0"	6'-4"	1'-0"	0'-0"	8½"		0'-0"	
A651	8	10'-6"	W	0'-0"		0'-0"	1'-0"	8'-6"	1'-0"	0'-0"	8½"		0'-0"	
A850	15	12'-10"	PR	5'-6"	1'-10"	5'-6"						1'-2"	0'-7"	
A851	22	6'-11"	L	6'-1"	0'-10"									
A852	8	12'-7"	W	6'-2"		6'-5"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"		1'-6"	
A853	8	14'-2"	W	6'-2"		8'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"		1'-6"	
A854	29	10'-0"	C	0'-11"	9'-0"									
A855	29	19'-3"	C	0'-11"	18'-3"									
B550	280	2'-4"	L	1'-6"	0'-10"									Abutment No. 2
B551	47	4'-4"	J	0'-10"		3'-6"					0'-8¾"		0'-1⅞"	
B552	4	11'-2"	O			9'-2"				2'-0"		2'-11"		
B553	10	2'-0"	CI		2'-0"									
B554	10	2'-0"	C2		2'-0"									
B555	18	6'-4"	V				2'-0"	4'-4"			2'-7"			
B556	4	4'-0"	V				2'-0"	2'-0"			1'-4⅛"			
▲B557	43	3'-7"	S	0'-0"	0'-10"	1'-11"	0'-10"			0'-0"				
P550	129	2'-1"	L	1'-3"	0'-10"									Pier
P551	20	2'-10"	L	2'-0"	0'-10"									
P552	20	8'-2"	PA	1'-0"	3'-1"	1'-0"					2'-2"	4'-4"		
S5100S	295	5'-6"	C	0'-7"	4'-11"	0'-0"								Deck
S5101S	406	5'-1"	S	0'-10"	1'-2"	1'-1"	1'-2"			0'-10"				
S5102S	157	6'-2"	S	0'-0"	0'-5"	4'-6"	0'-5"			0'-10"				
S5103S	155	1'-0"	L	0'-6"	0'-6"									
S5104S	35	7'-5"	SJ	0'-0"	0'-10"	2'-6"	0'-9"	3'-4"						
S5105S	35	9'-3"	SJ	0'-0"	0'-10"	3'-5"	0'-9"	4'-3"						
S5106S	436	2'-6"	CI		2'-6"									
S5107S	3	17'-8"	CI		17'-8"									
S5108S	7	20'-9"	CI		20'-9"									
S5109S	3	20'-2"	C2		20'-2"									
S5110S	7	23'-4"	C2		23'-4"									
S5111S	436	2'-6"	C2		2'-6"									
S5112S	3	4'-1"	SB	0'-10"	0'-8"	1'-0"	0'-9"	0'-10"						
S5113S	3	4'-9"	SB	0'-10"	0'-8"	1'-8"	0'-9"	0'-10"						
S5120S	436	6'-0"	CI		6'-0"									
S5121S	436	5'-0"	C2		5'-0"									
3TB550	12	10'-2"	EP	0'-11"	2'-4"	1'-3"	3'-4"	0'-10"	1'-6"					3-Bar Concrete Transition Barrier
3TB650	10	5'-10"	S	0'-0"	2'-4"	1'-1½"	2'-4"			0'-0"				(Quantity of Bars shown for
3TB651	4	7'-11"	H	0'-6"	0'-8½"	2'-9"	0'-8½"	2'-9"		0'-6"				2 Barriers)
3TB652	10	8'-9"	H	0'-6"	1'-1½"	2'-9"	1'-1½"	2'-9"		0'-6"				
4TB550	12	10'-2"	EP	0'-11"	2'-4"	1'-3"	3'-4"	0'-10"	1'-6"					4-Bar Concrete Transition Barrier
4TB650	10	7'-4"	S	0'-0"	3'-1"	1'-1½"	3'-1"			0'-0"				(Quantity of Bars shown for
4TB651	4	7'-11"	H	0'-6"	0'-8½"	2'-9"	0'-8½"	2'-9"		0'-6"				2 Barriers)
4TB652	10	8'-9"	H	0'-6"	1'-1½"	2'-9"	1'-1½"	2'-9"		0'-6"				

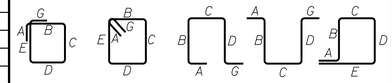
MARK | QTY. | LENGTH | TYPE | A | B | C | D | E | F | G | H | O | R | LOCATION

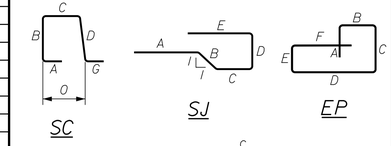
TYPE - BENDING DIAGRAMS

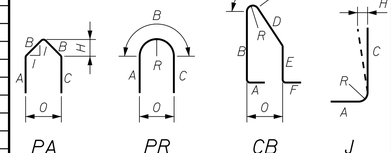


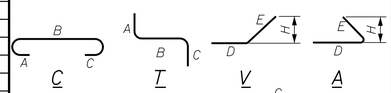
B

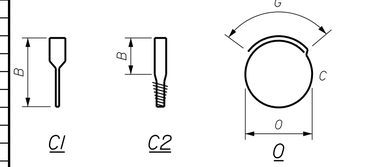












All dimensions are out-to-out of bar.

Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.

Reinforcing Bar: ASTM A615/A615M, Grade 60

GENERAL NOTES

1. The first two digits following the letter(s) of the mark indicate the size of the bar:

   Mark "A502" = bar size #5
   Mark "P805" = bar size #8
   Mark "S650" = bar size #6

2. Each crank bar, Type B, may be replaced by two (2) straight bars (one top and one bottom) of the same bar size as the crank bar. Payment in either case shall be based on crank bars as schedule on the plans.

REINFORCING KEY

▲ = Cut in Field
S = Stainless Steel
G = GFRP (Glass Fiber Reinforced Polymer)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE PLANS

BRIDGE NO. 2979

vhb

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	KCD	11/17
CHECKED-REVIEWED	JAW	11/17
DESIGN2-DETAILED2	GSG	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

REINFORCING STEEL SCHEDULE

SHEET NUMBER

50

OF 57

GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR ALL SAFETY SIGNING, BARRIERS AND TEMPORARY PAVEMENT MARKINGS NECESSARY TO PROVIDE A SMOOTH AND PROPER TRANSITION FOR TRAFFIC FLOW.

2. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE HIS OWN ACTIVITIES WITH THOSE OF THE UTILITY COMPANIES AND WITH THE TOWN AND/OR DEPARTMENT OF TRANSPORTATION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL DIG SAFE PERMITS AND COORDINATION WITH DIG SAFE. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THIS COORDINATION.

3. UNLESS OTHERWISE AUTHORIZED, THE CONTRACTOR SHALL MAINTAIN TRAFFIC FLOW IN ACCORDANCE WITH DOT REQUIREMENTS FOR THE PROJECT.

4. CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVES WITHOUT PERMISSION FROM THE DISTRICT.

5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

6. CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN A MANNER CONSISTENT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDOT).

7. BELOW GRADE UTILITY INFORMATION IS BASED ON AVAILABLE SURVEY INFORMATION. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN.

8. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. WITH THE EXCEPTION OF WATER, ADJUSTMENTS OF ALL UTILITY STRUCTURES WILL BE PERFORMED BY THE APPROPRIATE UTILITY OR ITS AUTHORIZED REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL UTILITY RELOCATION AND INSTALLATION WITH THE APPROPRIATE UTILITY.

9. ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE TO THE PLANS. TEST PITS ARE REQUIRED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. THE RESULTS OF TEST PITS WILL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE TO USE IN CONSTRUCTION. THE LAYOUT PLAN SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION.

10. CONTRACTORS ATTENTION IS DIRECTED TO THE FACT THAT THE WORK IS IN CLOSE PROXIMITY TO EXISTING UTILITIES. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED IN SUMMARY OF WORK. AT NO ADDITIONAL COST TO THE OWNER THE CONTRACTOR SHALL REPAIR OR COORDINATE WITH THE RESPECTIVE UTILITY ON DAMAGE EXISTING UTILITIES.

11. ALL STORM DRAINAGE INLETS, CULVERTS, ETC. SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS INTO THE STORM DRAIN SYSTEM.

12. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO CENTRAL MAINE POWER OR TELEPHONE COMPANY, RESPECTIVELY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.

13. EXISTING SIGNS IMPACTED BY THIS PROJECT SHALL BE RESET AT NO ADDITIONAL COST TO THE OWNER. PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MDOT.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. MATERIALS AND METHODS USED FOR TEMPORARY EROSION CONTROL SHALL BE AS SPECIFIED BY THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PREPARED BY THE MAINE SOIL AND WATER CONSERVATION DISTRICTS AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. REFER TO SPECIFICATION.

15. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIAL, UNSUITABLE MATERIAL, EXCESS MATERIAL, AND COLLECTED SEDIMENT IN ACCORDANCE WITH SPECIFICATION SECTION AND ALL STATE LAWS, AND LOCAL LAWS. REFER TO SPECIFICATION FOR ADDITIONAL DETAILS.

16. SUITABLE EXCAVATED MATERIALS MAY BE INCORPORATED INTO THE PROJECT. THE OWNER HAS THE RIGHT OF FIRST REFUSAL OF ALL EXCESS SUITABLE MATERIAL FROM THE PROJECT. THIS PROVISION SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO REMOVE AND DISPOSE OF ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING OR EXCESS SUITABLE MATERIAL UNWANTED BY THE OWNER.

17. COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

18. THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.

19. WHERE FEASIBLE, MINOR ADJUSTMENTS TO THE ALIGNMENT OF PROPOSED UTILITIES MAY BE MADE TO ACCOMMODATE EXISTING UTILITIES.

20. EXISTING WATER, AND SANITARY SEWER SYSTEMS PROPOSED TO BE REPLACED SHALL BE REMOVED UNLESS NOTED TO BE CAPPED AND ABANDONED IN PLACE.

SITE PIPING NOTES

1. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED LINES SHALL BE SUITABLY RESTRAINED WITH RETAINER GLANDS AND THRUST BLOCKS. INSTALL ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE GRADES AND ALIGNMENT INDICATED ON THE DRAWINGS.

2. THE CONTRACTOR AT NO ADDITIONAL COST SHALL CORRECT ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF FINAL COMPLETION OF THE WORK WITHIN 24 HOURS OF THE CONDITION BEING IDENTIFIED. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

3. REFER TO THE SUMMARY OF WORK FOR INFORMATION REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.

4. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.

5. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.

6. ALL OPEN TRENCHES IN THE ROADWAY, SHOULDER OR EMBANKMENT AREAS MUST BE BACKFILLED AT THE END OF THE WORKDAY. THE ROADWAY SHALL BE SWEPT CLEAN, GRADED LEVEL AND COMPACTED AFTER EACH DAYS WORK. NO FROST WILL BE PERMITTED IN THE BACKFILL. NO PILES OF SOIL, EQUIPMENT OR ANY OTHER MATERIALS SHALL REMAIN IN THE CONSTRUCTION AREA AT THE END OF EACH DAYS WORK THAT MAY OBSTRUCT SNOW REMOVAL AND PLOWING.

7. THE CONTRACTOR WILL ENCOUNTER ASBESTOS CEMENT PIPE DURING EXECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING, REMOVING AND DISPOSING OF ASBESTOS CEMENT PIPES. A BID ITEM HAS BEEN INCLUDED IN THE BID FORM TO ESTABLISH A UNIT PRICE FOR THE REMOVAL AND DISPOSAL OF ASBESTOS CEMENT PIPE.

CIVIL ABBREVIATIONS

&	AND
ø, DIA	DIAMETER
#, NO	NUMBER
APP'D	APPROVED
CB	CATCH BASIN
CEN	CENTER
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
CY	CUBIC YARD
DEMO	DEMOLITION
DI	DUCTILE IRON
DR	DRAIN
DWG	DRAWING
EL	ELEVATION
FT	FEET
HYD	HYDRANT
IN	INCH
INV	INVERT
LBS	POUNDS
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH
NGVD	NATIONAL GEODETIC VERTICAL DATUM
N/A	NOT AVAILABLE/APPLICABLE
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
S	SLOPE, SEWER
SD	STORM DRAIN
SF	SQUARE FEET
SMH	SANITARY SEWER MANHOLE
SQ	SQUARE
STA	STATION
TYP	TYPICAL
VC	VITRIFIED CLAY
W/	WITH

LEGEND

EXISTING		PROPOSED
	PROPERTY/ROW LINE	
	EASEMENT LINE	
	CENTERLINE	
	EDGE OF PAVEMENT	
8" S	SEWER	8"S
12" W	WATER	8"W
15"	STORM DRAIN	
○	SEWER MANHOLE	● SMH
▤	CATCH BASIN	■
⋈	SHUTOFF VALVE	⋈
⊗	WATER SERVICE SHUTOFF	⊗
⌂	HYDRANT	⌂

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT NO. STP-2261(800)
WIN 022618.00
BRIDGE NO. 2979
BRIDGE PLANS

STATE OF MAINE · DANIEL J. FLAIG, JR. No. 11991 · LICENSED PROFESSIONAL ENGINEER

	DATE	BY
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	1/17	DJF
CHECKED-REVIEWED	1/17	DJF
DESIGN-DETAILED2		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
No. 11991
P.E. NUMBER
11-14-17
DATE

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

GENERAL NOTES, LEGEND AND ABBREVIATIONS
FOR WATER AND SEWER

SHEET NUMBER
51
OF 57

RIGHT-OF-WAY O.C.R.D.S BOOK/PAGE-891/171

N/F STONEY BROOK HOUSING, INC. MAP/LOT-U8/108 BOOK/PAGE-2990/176

EXISTING HYDRANT

PC = STA. 100+16.21

PCC = STA. 101+38.96

N/F INHABITANTS OF SOUTH PARIS VILLAGE CORPORATION BILLINGS DAM PARK MAP/LOT-U08/109 BOOK/PAGE-517/373 (3/16TH INTEREST IN COMMON) BOOK/PAGE-530/193 (13/16TH INTEREST IN COMMON

APPROXIMATE LOCATION OF EXISTING WATER MAIN

N/F DOUGHBOY'S VARIETY, LLC MAP/LOT-U11/2 & 1 BOOK/PAGE-5172/206

N/F CHRISTOPHER BUFFINGTON MAP/LOT-U11/3 BOOK/PAGE-2706/182

UNKNOWN SEWER LINE BASED ON PAINT MARKS

SMH-39 RIM EL.=350.37'

PRC = STA. 105+29.18

N

99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00

18" RCP

BILLINGS DAM

36" CMP

24" CMP

18" RCP

SMH-37 RIM EL.=355.86'

UNKNOWN SEWER LINE BASED ON PAINT MARKS

EXISTING WATER SERVICE

18" CMP

12" CMP

EXISTING WATER SERVICE

EXISTING WATER SERVICE NO PAINT MARKS, ASSUMED TO CONTINUE ALONG ROUTE 117

N/F FLOYD A. HARLOW POST NR 9787, VFW MAP/LOT-U11/4 BOOK/PAGE-1897/340

U.S. ROUTE 117 / EAST MAIN STREET

EXISTING WATER MAIN TO BE REMOVED IN ITS ENTIRETY

CUT CAP AND ABANDON EXISTING SEWER, TYP

CUT CAP AND ABANDON EXISTING WATER, TYP

N/F JOSEPH AUPOKFSKA & ELEANOR AUPOKFSKA MAP/LOT-U7/2 BOOK/PAGE-4450/101

SMH-36 RIM EL.=353.13' INV IN(12"-E)=343.41' INV IN(15"-NW)=343.60' INV OUT(20"-SW)=343.31'

NO PAINT MARKS, SEWER MAIN DRAWN FROM SMH-36 TO SMH-38

EXISTING SEWER MAIN TO BE REMOVED IN ITS ENTIRETY

15" CMP

15" CMP

SMH-38A RIM EL.=349.97' INV IN(12" AC-NE)=344.89' INV OUT(12" PVC-W)=344.84'

12" CMP

N/F THOMAS A. HUTCHINSEN MAP/LOT-U7/1 BOOK/PAGE-2239/268

SMH-35 RIM EL.=353.26'

40' WIDE SEWER EASEMENT

LITTLE ANDROSCOGGIN RIVER FLOW

N/F CENTRAL MAINE POWER COMPANY MAP/LOT-U11 BOOK/PAGE-323/421

SMH-38 RIM EL.=350.46'

N/F OAYMA J. COLBY, JR MAP/LOT-U11/57 BOOK/PAGE-611/133

N/F OAYMA J. COLBY, JR & JOYCE J. COLBY MAP/LOT-U11/55 BOOK/PAGE-998/290

SMH RIM EL.=352.72'

ASSUMED TO CONTINUE ALONG HIGHLAND AVENUE

HIGHLAND AVENUE

OXFORD STREET

ASSUMED TO CONTINUE ALONG OXFORD STREET

N/F RALPH MERRILL & ELIZABETH MERRILL MAP/LOT-U11/19 BOOK/PAGE-602/593

ASSUMED TO CONTINUE ALONG OXFORD STREET

0 25 50

40' WIDE SEWER EASEMENT O.C.R.D.E.D. BOOK 795, PAGE 275

DEMOLITION PLAN

SCALE: 1"=25'

RIGHT-OF-WAY O.C.R.D.S BOOK/PAGE-891/171

N/F STONEY BROOK HOUSING, INC. MAP/LOT-U8/108 BOOK/PAGE-2990/176

N/F INHABITANTS OF SOUTH PARIS VILLAGE CORPORATION BILLINGS DAM PARK MAP/LOT-U08/109 BOOK/PAGE-517/373 (3/16TH INTEREST IN COMMON) BOOK/PAGE-530/193 (13/16TH INTEREST IN COMMON

N/F DOUGHBOY'S VARIETY, LLC MAP/LOT-U11/2 & 1 BOOK/PAGE-5172/206

N/F CHRISTOPHER BUFFINGTON MAP/LOT-U11/3 BOOK/PAGE-2706/182

N/F FLOYD A. HARLOW POST NR 9787, VFW MAP/LOT-U11/4 BOOK/PAGE-1897/340

N/F JOSEPH AUPOKFSKA & ELEANOR AUPOKFSKA MAP/LOT-U7/2 BOOK/PAGE-4450/101

N/F THOMAS A. HUTCHINSEN MAP/LOT-U7/1 BOOK/PAGE-2239/268

N/F CENTRAL MAINE POWER COMPANY MAP/LOT-U11 BOOK/PAGE-323/421

N/F OAYMA J. COLBY, JR MAP/LOT-U11/57 BOOK/PAGE-611/133

N/F OAYMA J. COLBY, JR & JOYCE J. COLBY MAP/LOT-U11/55 BOOK/PAGE-998/290

N/F RALPH MERRILL & ELIZABETH MERRILL MAP/LOT-U11/19 BOOK/PAGE-602/593

99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00

U.S. ROUTE 117 / EAST MAIN STREET

BILLINGS DAM

PC = STA. 100+16.21

PCC = STA. 101+38.96

PRC = STA. 105+29.18

N

0 25 50

"WEST SIDE CONNECTION" DETAIL, SEE DWG C-3

LIMIT OF WORK, ITEM #802.181 STA:101+28.20

CONSTRUCT SMH-36A STA 101+26 7'L 12" INV IN = 343.60 12" INV OUT = 343.49

12" PVC S L=28' S=0.0029

INSTALL BEND AS REQUIRED, TYP.

PROPOSED ABUTMENT (BY OTHERS)

EXTENTS OF INSULATION ON 12" DI SEWER, CARRY INSULATION ON SEWER TO WITHIN 5' OF BOTH UPSTREAM AND DOWNSTREAM MANHOLES

CONSTRUCT SMH-38 STA 103+28 8'L 12" INV IN = 344.29 12" INV OUT = 344.19

LIMIT OF WORK, ITEM #802.181 STA:101+25.60

12" INSULATED DI S BETWEEN ABUTMENTS L=196' S=0.0030

PROPOSED ABUTMENT (BY OTHERS)

PROVIDE FULL LENGTH OF SEWER PIPE CENTERED ON WATER MAIN CROSSING

REPLACE SEWER SERVICE, TYP. SEE DETAIL DWG C-4

INTERCONNECTION 12x8 TEE 8" GATE VALVE 8x6 REDUCER 6" SLEEVE TYPE COUPLING BENDS AS REQUIRED

INTERCONNECTION 12x8 TEE 8" GATE VALVE 8x6 REDUCER 6" SLEEVE TYPE COUPLING

12" GV

LIMIT OF WORK, ITEM #822.302 STA:101+41.60

PROVIDE 2" RIGID INSULATION BETWEEN PIPES

INV IN = 343.41

CORE DRILL HOLE IN EXISTING MANHOLE FOR NEW SEWER AND PROVIDE WATER TIGHT CONNECTIONS. RECONSTRUCT INVERT FOR NEW PIPE

12" INSULATED DI WATER MAIN

INSTALL 1" WATER SERVICE, TYP.

12" PVC S L=130' S=0.0038

LIMIT OF WORK, ITEM #822.302 STA:103+15.25

INSTALL WATER MAIN 18" BELOW SEWER. CENTER FULL LENGTH OF PIPE BELOW CROSSING. PROVIDE 2" RIGID INSULATION BETWEEN PIPES

CONSTRUCT SMH-38A STA 104+60 18'R

IN / IN(12" - NE)=344.84

12" INV OUT = 344.79

CONNECT TO EXISTING MAIN FOLLOWING COMPLETION OF PRESSURE TEST AND DISINFECTION OF NEW MAIN

PLACE FLOWABLE FILL WITHIN EXCAVATION LIMITS BETWEEN SMH-38A AND EXISTING CATCH BASIN

TEXT PIT TO DETERMINE LOCATION AND ELEVATION OF EXISTING WATER MAIN

"EAST SIDE CONNECTION" DETAIL, SEE DWG C-3

PROPOSED WATER AND SEWER PLAN

SCALE: 1"=25'

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

STATE OF MAINE — DANIEL J. FLAIG, JR No. 11991 — LICENSED PROFESSIONAL ENGINEER

SIGNATURE

No. 11991 P.E. NUMBER

11-14-17 DATE

PROJ MANAGER J. KITTREDGE		
DESIGN-DETAILED	DATE	BY
DRAWN-DETAILED	1/17	DJL
CHECKED-DETAILED	1/17	DJL
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER LITTLE ANDROSCOGGIN RIVER

PARIS OXFORD COUNTY

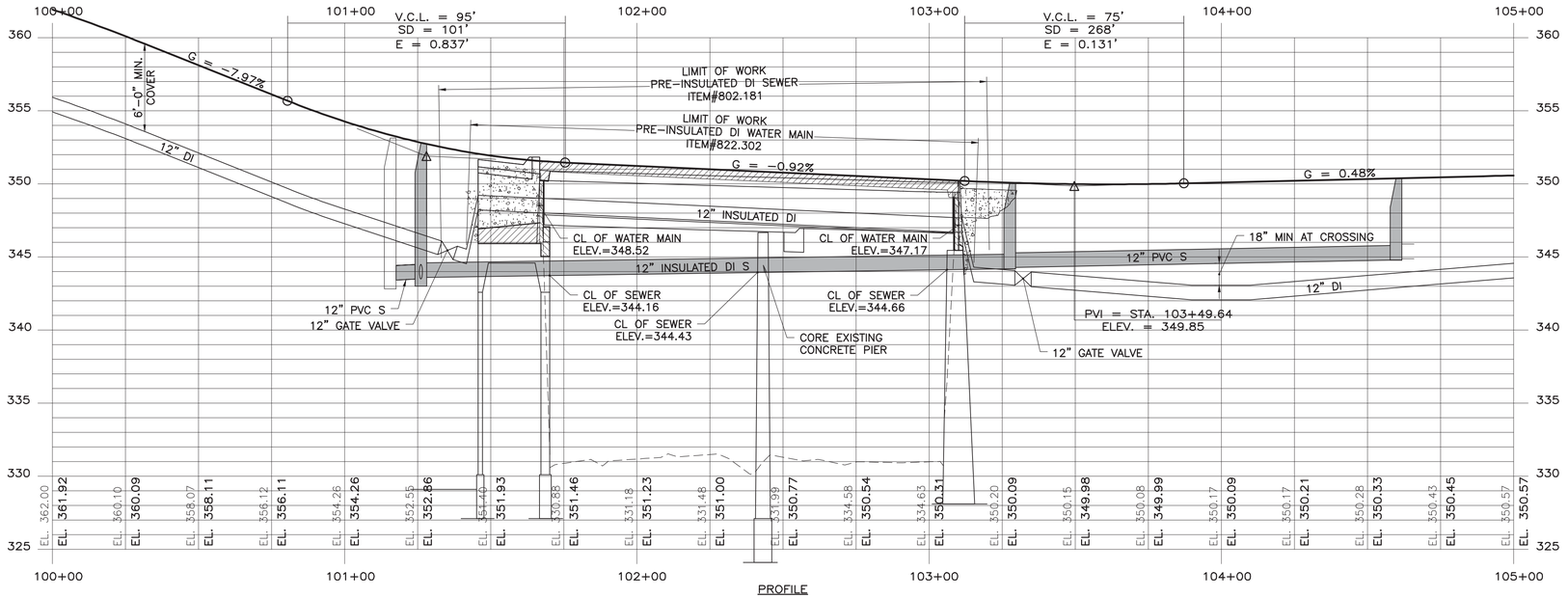
EXISTING CONDITIONS AND DEMOLITION PLAN

PROPOSED WATER AND SEWER PLAN

SHEET NUMBER

52

OF 57

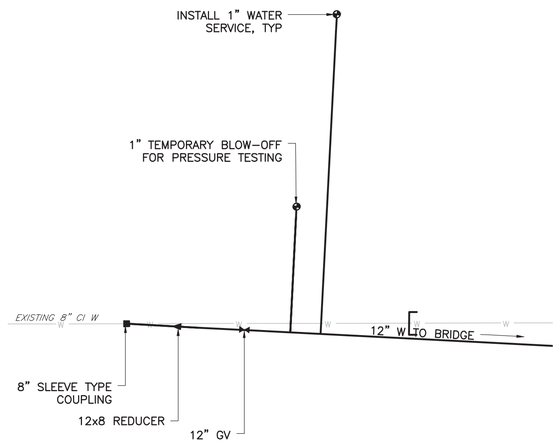


PROFILE

HORIZ. 25 0 25 50

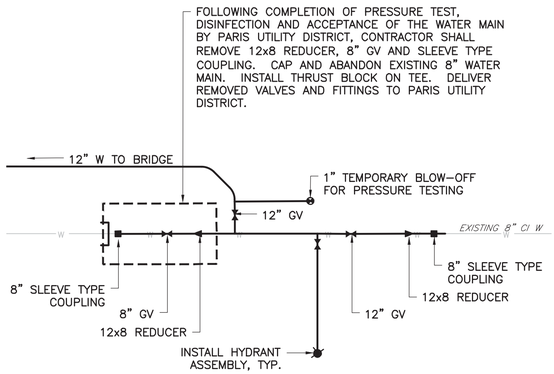
VERT. 5 0 5 10

NOTE:
REFER TO SHEET 52 FOR ADDITIONAL SEWER ELEVATIONS AND SLOPE INFORMATION.



WEST SIDE WATER CONNECTION

SCALE: 1"=5'



EAST SIDE WATER CONNECTION

SCALE: 1"=5'

NOTE:
TEMPORARY WATER REQUIRED TO HUTCHINSEN AND STONEY BROOK HOUSING BUILDINGS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00

BRIDGE NO. 2979

BRIDGE PLANS

STATE OF MAINE
DANIEL J. FLAIG, JR. No. 11991
LICENSED PROFESSIONAL ENGINEER

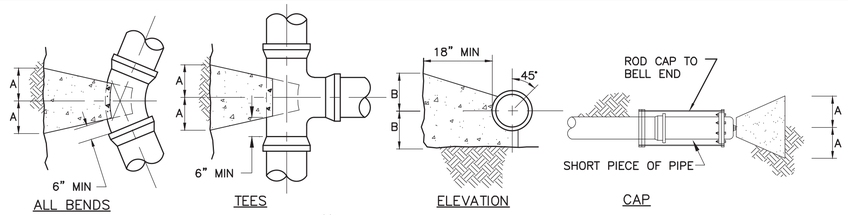
SIGNATURE
No. 11991
P.E. NUMBER
11-14-17
DATE

	BY	DATE
PROJ. MANAGER J. KITTREDGE		
DESIGN-DETAILED CGH	DJF	11/17
DRAWN-RETYPED DDL	DJF	11/17
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
OXFORD COUNTY
PARIS

WATER/SEWER PROFILE AND WATER MAIN CONNECTION DETAILS

SHEET NUMBER
53
OF 57

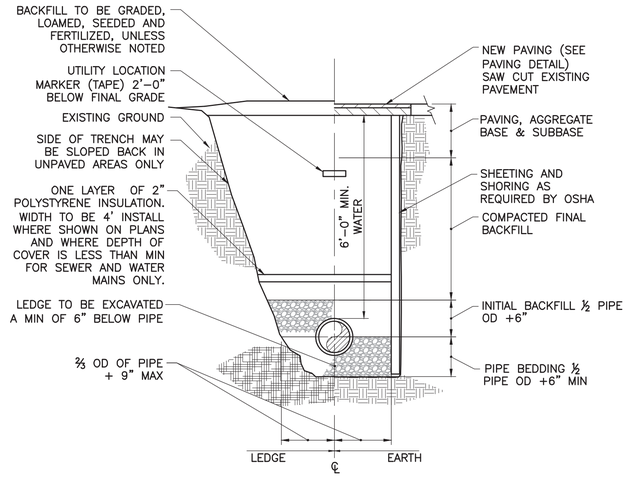


NOTES

1. THRUST BLOCK SIZES SHOWN ARE BASED ON A SOIL BEARING CAPACITY OF 2000 PSF AND TEST PRESSURES OF 180 PSI.
2. ALL BENDS, TEES, WYES, HYDS. & DEAD ENDS SHALL BE BRACED WITH CONCRETE THRUST BLOCKS.
3. RODDING MAY BE REQUIRED

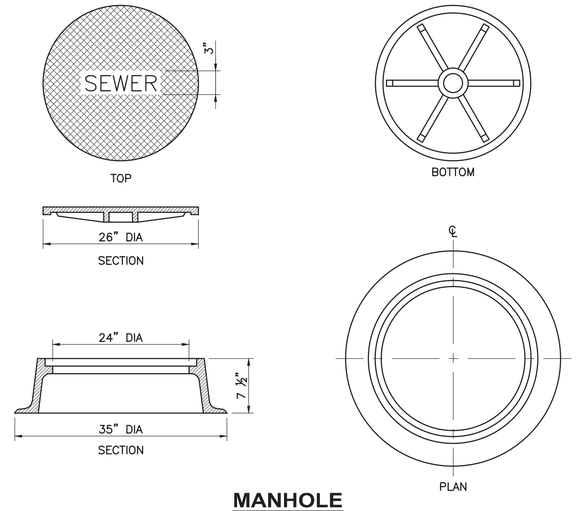
PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		VERTICAL BEND (DOWN)		PLUG		REDUCER	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
6"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
8"	20"	15"	14"	12"	9"	9"	9"	6"	18"	12"	33"	24"	14"	14"	18"	12"
10"	21"	21"	18"	15"	15"	9"	9"	9"	20"	18"	40"	27"	16"	16"	20"	18"
12"	27"	24"	23"	15"	15"	12"	12"	9"	25"	18"	48"	30"	18"	18"	25"	18"
16"	37"	30"	30"	21"	21"	15"	13"	12"	32"	24"	57"	36"	22"	22"	32"	24"

THRUST BLOCKS
SCALE: NTS

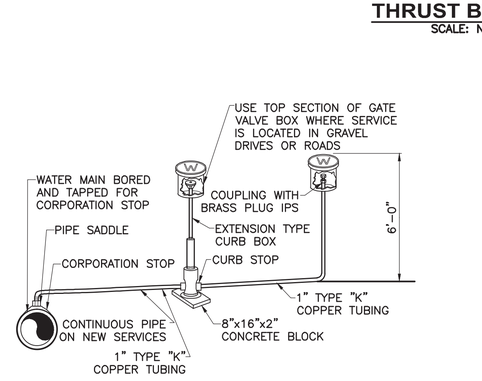


NOTES:
1. ALL EXCAVATION MUST MEET OSHA STANDARDS.
2. INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAM IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100' AND WHERE SHOWN ON PLANS TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNELED ALONG BEDDING/INITIAL BACKFILL.
3. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.

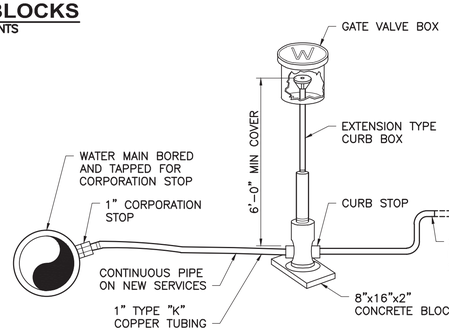
PIPE TRENCH
SCALE: NTS



MANHOLE STANDARD COVER AND FRAME
SCALE: NTS

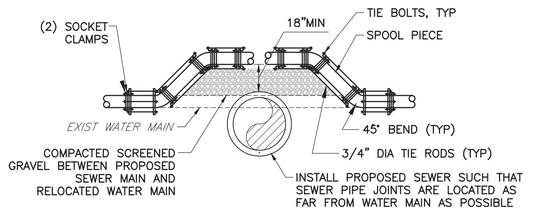


TEMPORARY BLOW-OFF
SCALE: NTS



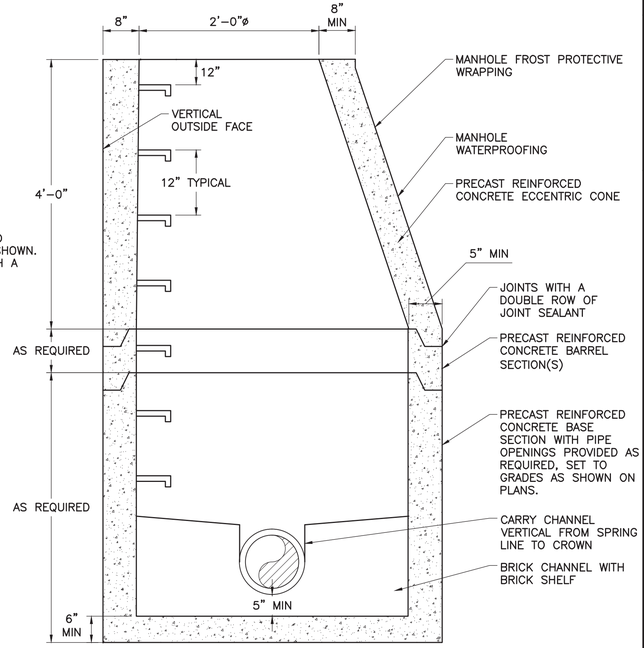
* ADJUST COVER PER FROST DEPTH FOR PROJECT AREA

WATER SERVICE CONNECTION
SCALE: NTS



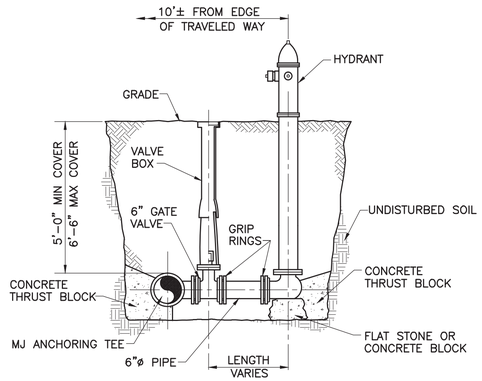
NOTES:
1. WATER MAIN MATERIALS TO BE CLASS 52 DUCTILE IRON. JOINT RESTRAINT TO BE BY MECHANICAL JOINT WITH RETAINER GLANDS, OR WITH TIE BOLTS AS SHOWN.
2. TIE RODS, TIE BOLTS, SOCKET CLAMPS AND BRIDLES SHALL BE COATED WITH A BITUMINOUS PAINT AFTER ASSEMBLY OR IF NECESSARY PRIOR TO ASSEMBLY.
3. TIE RODS: 10" DIA WATER MAIN OR LARGER – 4 REQUIRED.
   8" DIA WATER MAIN OR SMALLER – 2 REQUIRED.
4. EXISTING WATER MAINS TO BE RELOCATED OVER NEW SEWERS WHEREVER SUFFICIENT GROUND COVER EXISTS (5' MINIMUM COVER).

WATER MAIN RELOCATION
SCALE: NTS

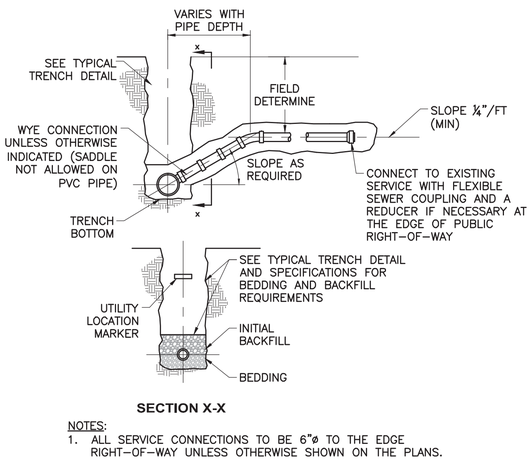


NOTES:
1. MANHOLE CHANNELS REQUIRING A CHANGE IN DIRECTION ARE TO BE BUILT ON A SMOOTH CURVE OF THE LONGEST POSSIBLE RADIUS. IF SIDE PIPES ENTER CHANNEL, SHAPE TO RECEIVE ADDED SIDE FLOW.
2. USE A FLAT SLAB TOP MANHOLE WHEN THE HEIGHT DIFFERENCE BETWEEN THE HIGHEST INVERT AND RIM IS LESS THAN 6'-0" AND WHEN MANHOLE DIAMETER IS GREATER THAN 4'-0".

TYPICAL 4-FT MANHOLE
SCALE: NTS



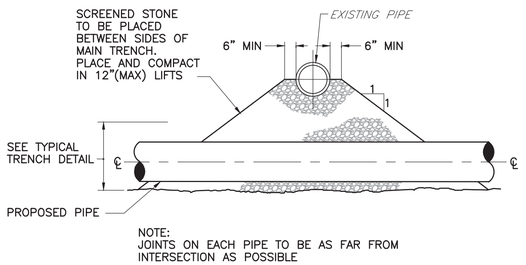
HYDRANT CONNECTION
SCALE: NTS



SECTION X-X

NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6"ø TO THE EDGE RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON THE PLANS.

SEWER SERVICE CONNECTION
SCALE: NTS



NOTE:
JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE

PIPE CROSSING
SCALE: NTS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00
BRIDGE NO. 2979

BRIDGE PLANS

STATE OF MAINE
DANIEL J. FLAIG, JR.
No. 11991
LICENSED PROFESSIONAL ENGINEER

SIGNATURE
No. 11991
P.E. NUMBER
11-14-17
DATE

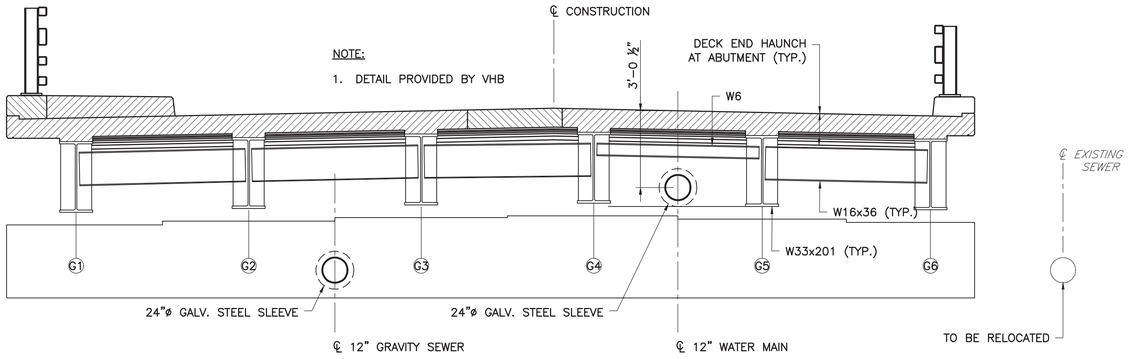
PROJ. MANAGER	J. KITTREDGE
DESIGN-DETAILED	DSH
CHECKED-REVIEWED	DJF
DESIGN-DETAILED2	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

DATE	BY
11/17	DJF
11/17	DJF

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

WATER AND SEWER DETAILS I

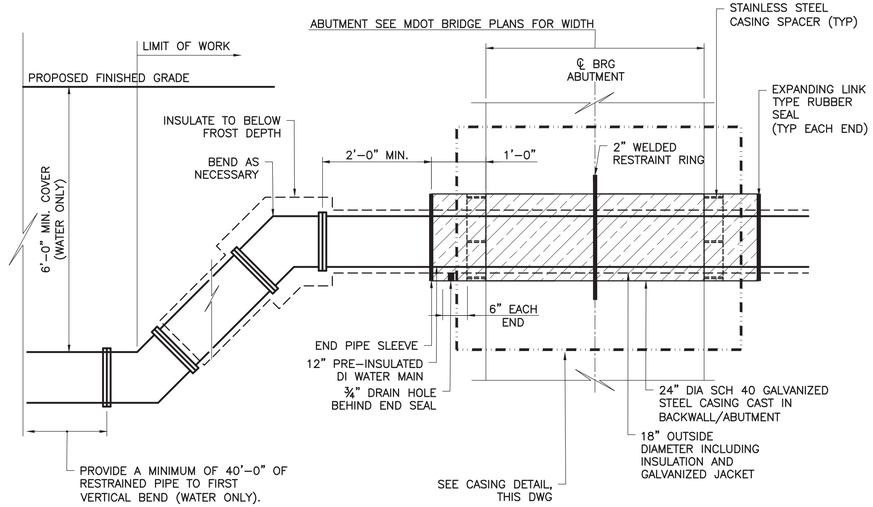
SHEET NUMBER
54
OF 57



ABUTMENT DIAPHRAGMS

(LOOKING UPSTATION)
SCALE: NTS

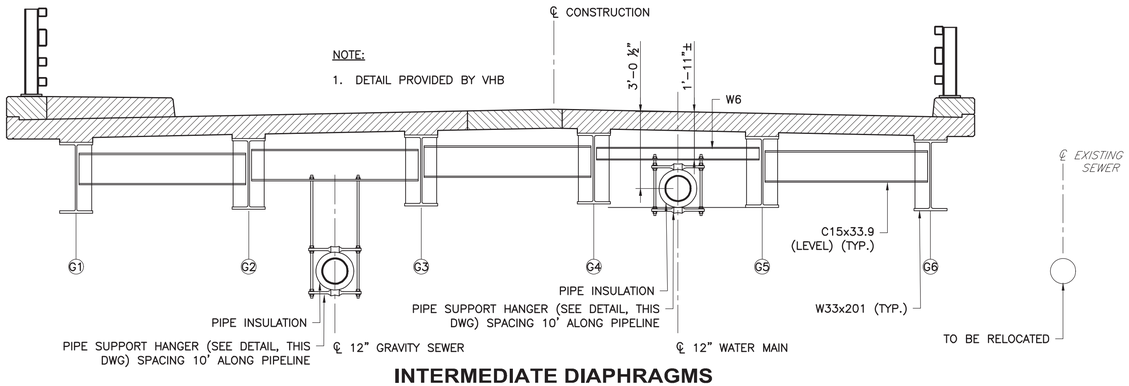
NOTE:
BRIDGE ABUTMENT DIAPHRAGMS SECTION DETAIL PROVIDED BY MDOT.



TYPICAL ABUTMENT SECTION @ WATER/SEWER

SCALE: NTS

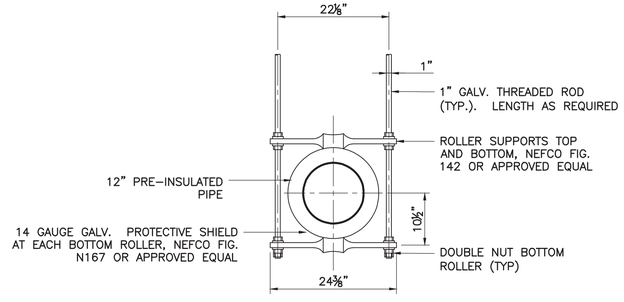
NOTE:
NO CASING REQUIRED AT CORED PIER, PROVIDE STAINLESS STEEL CASING SPACERS AND EXPANDING LINK TYPE RUBBER SEALS AT EACH END OF PIER CORE.



INTERMEDIATE DIAPHRAGMS

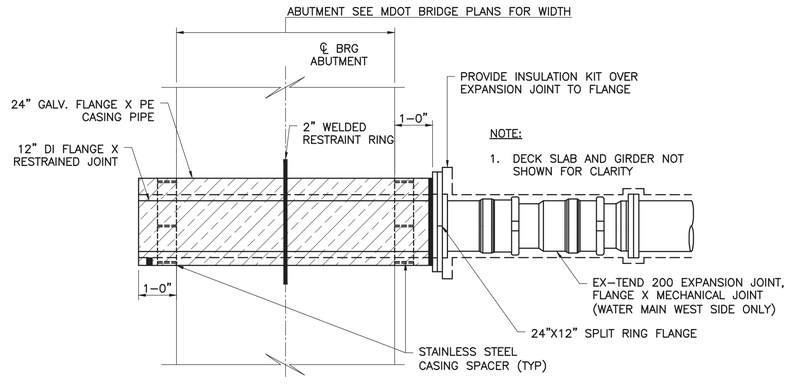
(LOOKING UPSTATION)
SCALE: NTS

NOTE:
BRIDGE ABUTMENT DIAPHRAGMS SECTION DETAIL PROVIDED BY MDOT.



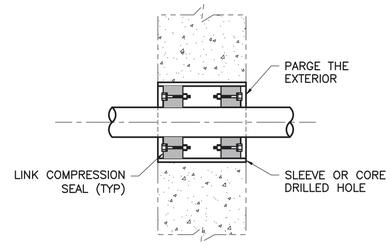
WATER/SEWER ADJUSTABLE ROLLER SUPPORT

SCALE: NTS



WEST SIDE ABUTMENT WATER CASING DETAIL

SCALE: NTS



BRIDGE PIER

PIPING PENETRATION DETAIL

SCALE: NTS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

BRIDGE NO. 2979

WIN 022618.00

BRIDGE PLANS

STATE OF MAINE — DANIEL J. FLAIG, JR. No. 11991 — LICENSED PROFESSIONAL ENGINEER

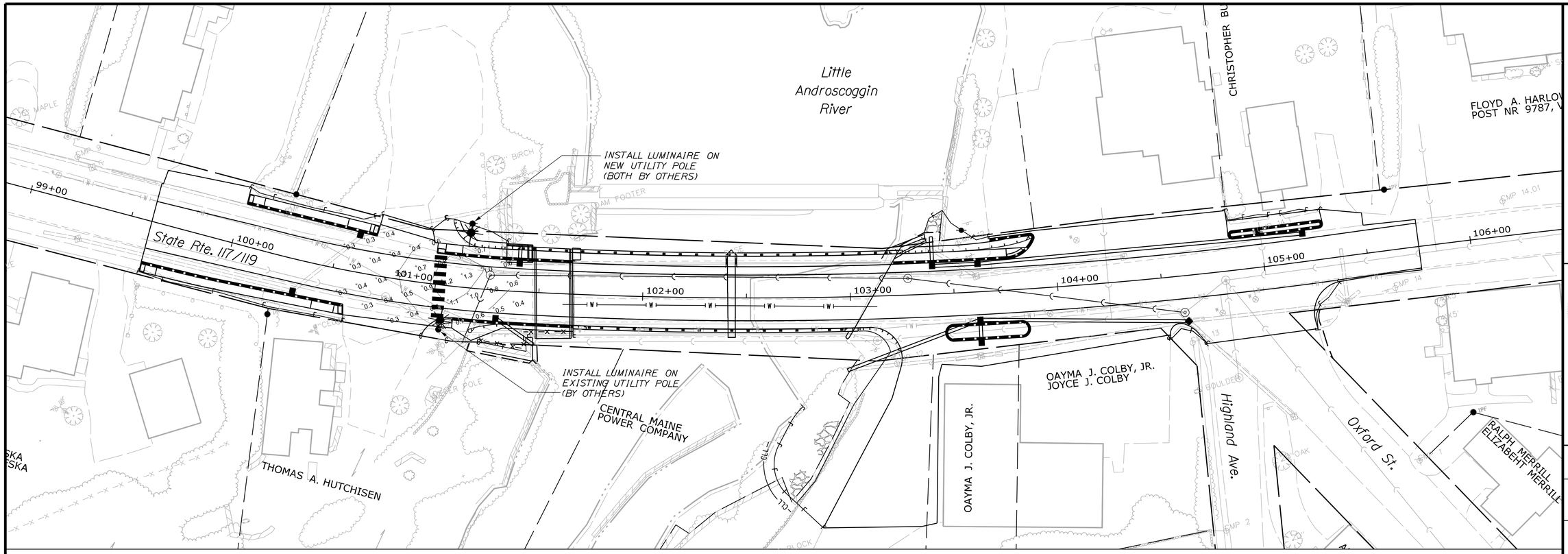
SIGNATURE	
P.E. NUMBER	No. 11991
DATE	11-14-17

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	DJF	11/17
CHECKED-REVIEWED	DJL	11/17
DESIGN2-DETAILED2	DJF	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS — OXFORD COUNTY

WATER AND SEWER DETAILS II

SHEET NUMBER
55
OF 57



HIGHWAY LIGHTING

THIS PLAN IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. PROPOSED LUMINAIRES ARE INTENDED TO BE INSTALLED AND MAINTAINED BY CENTRAL MAINE POWER COMPANY UNDER A LEASE AGREEMENT WITH THE TOWN OF PARIS. THE MUNICIPALITY WILL BE RESPONSIBLE FOR INITIATING THE LEASE AGREEMENT OR AN AMENDMENT OF AN EXISTING AGREEMENT WITH THE POWER COMPANY TO INCLUDE THE NEW LUMINAIRES.

PROPOSED LUMINAIRES WILL BE INSTALLED ON AN EXISTING UTILITY POLE AT STATION 101+03.8 RIGHT AND A NEW UTILITY POLE AT STATION 101+15.0 LEFT. THE EXISTING LUMINAIRE ON THE POLE AT STATION 101+03.8 RIGHT IS INTENDED TO BE REMOVED BEFORE INSTALLATION OF THE NEW LUMINAIRE. THE NEW UTILITY POLE AT STATION 101+15.0 LEFT WILL BE A JOINT DISTRIBUTION POLE INSTALLED BY THE UTILITY IN COORDINATION WITH THE BILLINGS BRIDGE PROJECT.

THE ASSUMED MOUNTING HEIGHT FOR PROPOSED LUMINAIRES IS 30 FEET ABOVE THE ROADWAY SURFACE ELEVATION.

THE LIGHTING DESIGN ASSUMES LUMINAIRE INSTALLATION ON MAST ARMS OF 6 FEET OR SHORTER OR ON HORIZONTAL TENON MOUNTS.

MAINEDOT WILL COORDINATE ANY NECESSARY ADJUSTMENTS OF UTILITY CONDUCTORS ON UTILITY POLES, OTHER THAN ELECTRIC CONDUCTORS, TO ACCOMMODATE INSTALLATION OF PROPOSED LUMINAIRES.

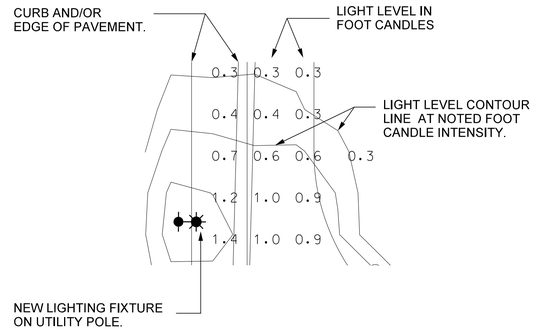
LUMINAIRES ARE INTENDED TO BE ACTIVATED BY PHOTOELECTRIC CELLS ON THE FIXTURES.

FIXTURE VOLTAGE SHALL BE DETERMINED BY THE POWER COMPANY.

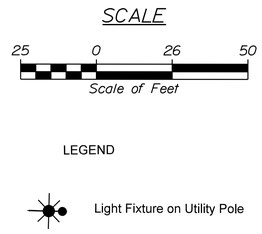
POWER SERVICE TO LUMINAIRES IS INTENDED TO BE AERIAL.

LUMINAIRES SHALL BE IES 'CUTOFF' CLASSIFICATION LIGHT EMITTING DIODE (LED) FIXTURES. IES DISTRIBUTION TYPE 2.

PHOTOMETRIC STATISTICS AND ILLUMINATION DISTRIBUTION SHOWN ARE BASED ON INSTALLATION OF AMERICAN ELECTRIC LIGHTING 'AUTOBAHN' SERIES ATBS. PERFORMANCE PACKAGE 'B'. R2 DISTRIBUTION. 24 WATTS. 3000K LED COLOR TEMPERATURE LUMINAIRES.



KEY TO PLAN



LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	D	2	ATBS B XXXXX R2 3K	ATBS B Performance Package, 3000K Color Temperature , Roadway Type II Distribution	LED	ATBS_B_XXXX X_R2_3K.ies	Absolute	0.81	24

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
CROSSWALK	+	0.6 fc	1.3 fc	0.3 fc	4.3:1	2.0:1

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. STP-2261(800)

WIN 022618.00 BRIDGE PLANS

BRIDGE NO. 2979

ALBERT L GODFREY No. 4226 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

	BY	DATE
X		
PROJ. MANAGER	ALG	10-17
DESIGN-DETAILED	JLE	10-17
CHECKED-REVIEWED	ALG	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

4226 P.E. NUMBER

11/13/2017 DATE

BILLINGS BRIDGE OVER
LITTLE ANDROSCOGGIN RIVER
PARIS OXFORD COUNTY

LIGHTING PLAN

SHEET NUMBER

56

OF 57

Filename: ...\MSTA\056_Light_Plan_01.dgn Division: HIGHWAY Username: common Date:11/13/2017