STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

WILTON
FRANKLIN COUNTY
PINE BROOK BRIDGE
OVER
PINE BROOK
ROUTE 156 WELD ROAD
STATE PROJECT NO. 19295.00
PROJECT LENGTH 0.000 mi.
BRIDGE NO. 2666

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Fifth Edition 2010.

TRAFFIC DATA

Current (2011) AADT 1000

HYDROLOGIC DATA

Drainage Area	1.46 sq mi
Design Discharge (Q50)	384.0 cfs
Check Discharge (Q100)	459.1 cfs
Headwater Elevation (Q50)	589.53 ft
Headwater Elevation (Q100)	590.31 ft
Discharge Velocity (Q50)	10.20 fps
Discharge Velocity (Q100)	10.94 fps
Headwater Elevation (Q1.1)	585.06 ft
Discharge Velocity (Q1.1)	4.85 fps
Headwater Elevation (Q25)	588.80 ft

MATERIALS

Concrete: ..... Class "A"

Reinforcing Steel ..... ASTM A 615/A 615M, Grade 60

BASIC DESIGN STRESSES

Reinforcing Steel ..... f y = 60,000 psi

Concrete
Class A ..... f 'c = 4,350 psi
Shotcrete ..... f 'c = 5,000 psi

LIST OF DRAWINGS

Title Sheet 1
Estimated Quantities, General Construction Notes and Rebar Schedule 2
General Plan and Profile 3
Invert Lining Details ..... 4 & 5
External Fish Weir Details 6
Right of Way Sheet 7

UTILITIES

Argent Communications, LLC
Bee Line Tv, Inc.
Central Maine Power Company
Northern New England Telephone Operations LLC (Fairpoint Communications)

MAINTENANCE OF TRAFFIC

The road will be open to two lanes of traffic during construction.
When needed, single lane closures will be maintained by flaggers.
See Special Provision Section 107 Limitation of Operations.

PROJECT LOCATION:	Located on State Route 156; 4.4 miles Northerly of the Jay town line. Lat.: 44°37'5.03", Long.: 70°15'58.42".
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Bridge Culvert Rehabilitaion And Install Concrete Fish Weirs

WIN 19295.00

019295.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED
COMMISSIONER: DATE 10/10/13
CHIEF ENGINEER: DATE 10-10-13

STATE OF MAINE PROFESSIONAL ENGINEER Michael Harry Wight 8089 LICENSED

Michael Wight
SIGNATURE 8089
P.E. NUMBER 101812013
DATE

PROJECT INFORMATION
PROGRAM BRIDGE
PROJECT MANAGER S. BUDGE
DESIGNER M. WIGHT
CONSULTANT
PROJECT RESIDENT
CONTRACTOR
PROJECT COMPLETION DATE

WILTON
PINE BROOK BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 7

Filename:\00\BRIDGE\MSTA\001_Title.dgn Division: BRIDGE Username: david.show Date:10/8/2013

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.20	COMMON EXCAVATION	10	CY
203.24	COMMON BORROW	10	CY
203.25	GRANULAR BORROW	18	CY
502.2483	PUMPED GROUT	6	CY
502.325	STRUCTURAL CONCRETE CULVERT INVERT LINING (18 CY)	1	LS
502.326	STRUCTURAL CONCRETE - FISH WEIRS (22 CY)	1	LS
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	2,125	LB
503.13	REINFORCING STEEL, PLACING	2,125	LB
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
524.301	TEMPORARY STRUCTURAL SUPPORT	1	LS
610.08	PLAIN RIPRAP	26	CY
613.319	EROSION CONTROL BLANKET	10	SY
615.07	LOAM	5	CY
618.1411	SEEDING METHOD NUMBER 3 - PLAN QUANTITY	1	UN
619.1201	MULCH	1	UN
619.1401	EROSION CONTROL MIX	5	CY
620.58	EROSION CONTROL GEOTEXTILE	70	SY
629.05	HAND LABOR, STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	20	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.33	DRUM	10	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	200	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (60 CD)	1	LS
652.38	FLAGGER	80	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

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

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

5. 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.

6. 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.

7. 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.

8. The Contractor shall minimize, to the maximum extent possible, the void spaces in the riprap aprons at both ends of the culverts. Granular Borrow meeting the material requirements for underwater backfill shall be spread between the layers of individual stones. Granular Borrow used to fill the void spaces shall not be paid for directly but shall be considered incidental to Item No. 610.08, Plain Riprap.

GENERAL CONSTRUCTION NOTES

9. Dredge material shall be disposed of on site. The location where the material will be spread will be determined by the Resident. The Contractor shall stay within the right of way limits when placing the dredge material.

10. The Contractor shall make every effort to avoid disturbing the existing streambed material immediately upstream of the new plain riprap apron. If the streambed material is disturbed, similar size material that was in the original stream shall be placed back in the streambed. This work shall be considered incidental to related contract items.

11. The Contractor has the option of using pumped grout to fill the space between the upstream end of the external fish weir and the end of the existing culvert.

REINFORCING STEEL SCHEDULE

INVERT LINING

STRAIGHT BARS				BENT BARS												
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	H	O	R	LOCATION
A500	16	40'-0"	Invert Lining (Part of Set A)	A550	58	11'-2"	C						10"		18'-0"	Internal Fish Weir (Part of Set B)
A501	16	19'-0"	Invert Lining (Part of Set A)	A551	116	3'-10"	V				2'-0"	1'-10"	1'-7¼"			Internal Fish Weir (Part of Set B)

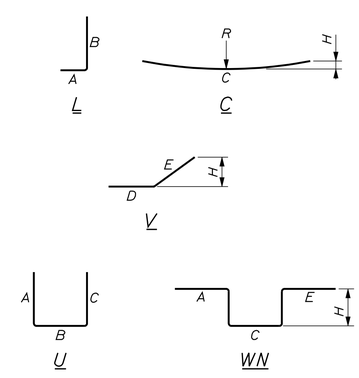
INTERNAL FISH WEIRS

STRAIGHT BARS				BENT BARS												
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	H	O	R	LOCATION
				FW550	10	9'-8½"	V				9'-2"	6½"	4"			Internal Fish Weir
				FW551	20	3'-1½"	L	2'-0"	1'-1½"							Internal Fish Weir
				FW552	20	3'-3½"	L	2'-0"	1'-3½"							Internal Fish Weir
				FW553	20	3'-5"	L	2'-0"	1'-5"							Internal Fish Weir
				FW554	20	3'-5½"	L	2'-0"	1'-5½"							Internal Fish Weir
				FW555	20	2'-11½"	L	2'-0"	11½"							Internal Fish Weir
				FW556	10	9'-4"	C						7½"		17'-6"	Internal Fish Weir

EXTERNAL FISH WEIRS

STRAIGHT BARS				BENT BARS												
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	H	O	R	LOCATION
FW500	52	13'-2"	External Fish Weir	FW557	14	24'-3"	U	6'-1"	12'-1"	6'-1"						External Fish Weir
FW501	8	8'-6"	External Fish Weir	FW558	14	26'-6"	U	6'-8"	13'-2"	6'-8"						External Fish Weir
FW502	4	3'-6"	External Fish Weir	FW559	10	8'-11½"	WN	2'-2½"		2'-6"		2'-2½"	1'-0½"			External Fish Weir
FW503	18	2'-3"	External Fish Weir	FW560	56	3'-8"	L	10"	2'-10"							External Fish Weir (Part of Set A)
FW504	8	4'-6"	External Fish Weir													
FW505	6	3'-3"	External Fish Weir													
FW506	18	4'-0"	External Fish Weir													
FW507	6	3'-9¾"	External Fish Weir													
FW508	0		Omitted													
FW509	6	2'-9¾"	External Fish Weir													
FW510	18	5'-0"	External Fish Weir													
FW511	12	6'-11"	External Fish Weir													
FW512	14	5'-10"	External Fish Weir													

TYPE - BENDING DIAGRAMS



NOTES

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 A 615/A 615M, 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 will be based on crank bars as scheduled on the plans.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

019295.00

BRIDGE NO. 2666 — WIN 19295.00 — BRIDGE PLANS

PROJ. MANAGER	S. BOOGE	BY	DATE
DESIGN-DETAILED	M. WIGHT	D. SHAW	OCT. 2013
CHECKED-REVIEWED	M. POULIN		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

WILTON — PINE BROOK BRIDGE — FRANKLIN COUNTY

ESTIMATED QUANTITIES, GENERAL CONSTRUCTION NOTES AND REBAR SCHEDULE

SHEET NUMBER 2 OF 7

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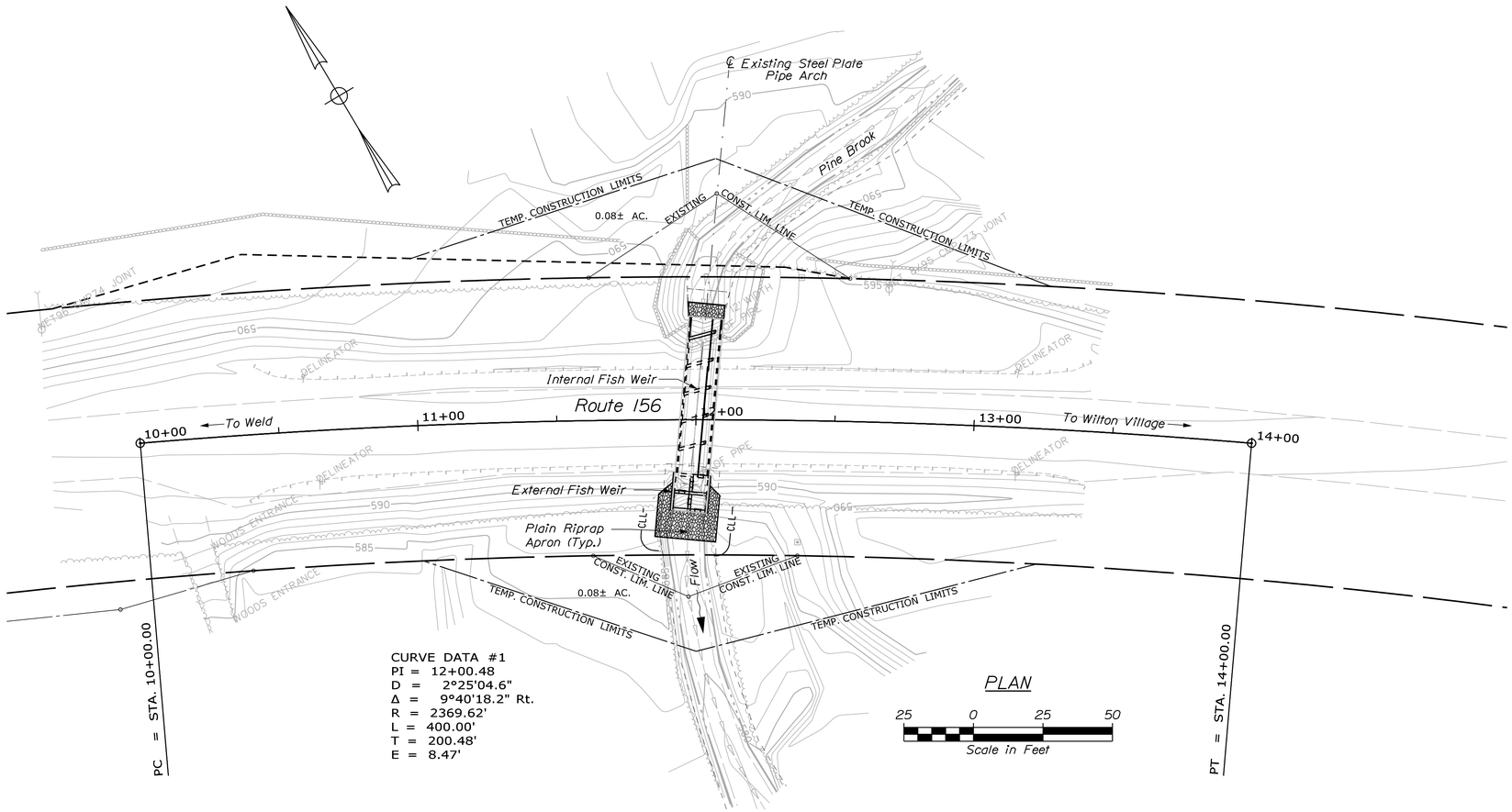
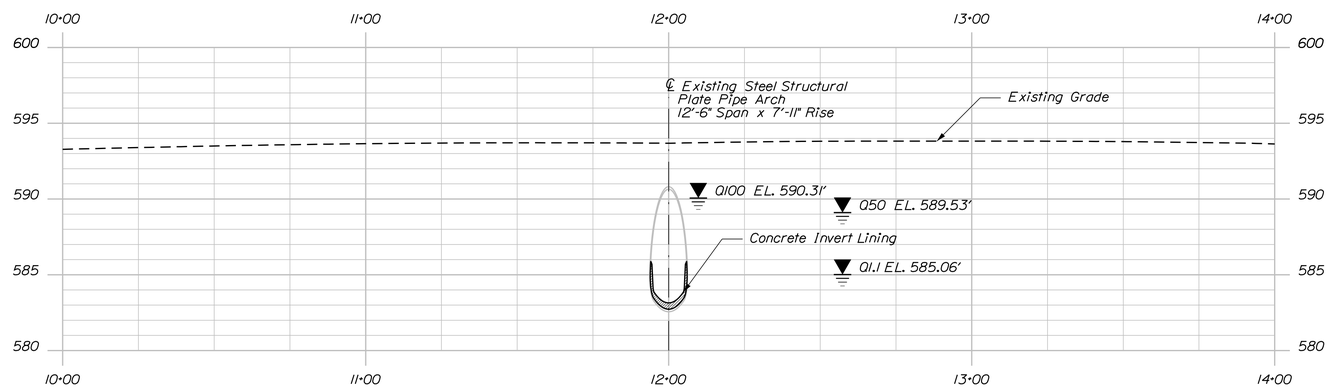
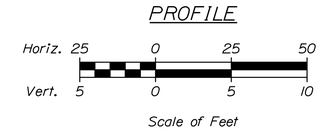




PROFILE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

019295.00

PIN 19295.00

BRIDGE NO. 2666

BRIDGE PLANS

PROJ. MANAGER	S. BODGE	BY	DATE
DESIGN-DETAILED	M. WIGHT	D. SHAW	OCT. 2013
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

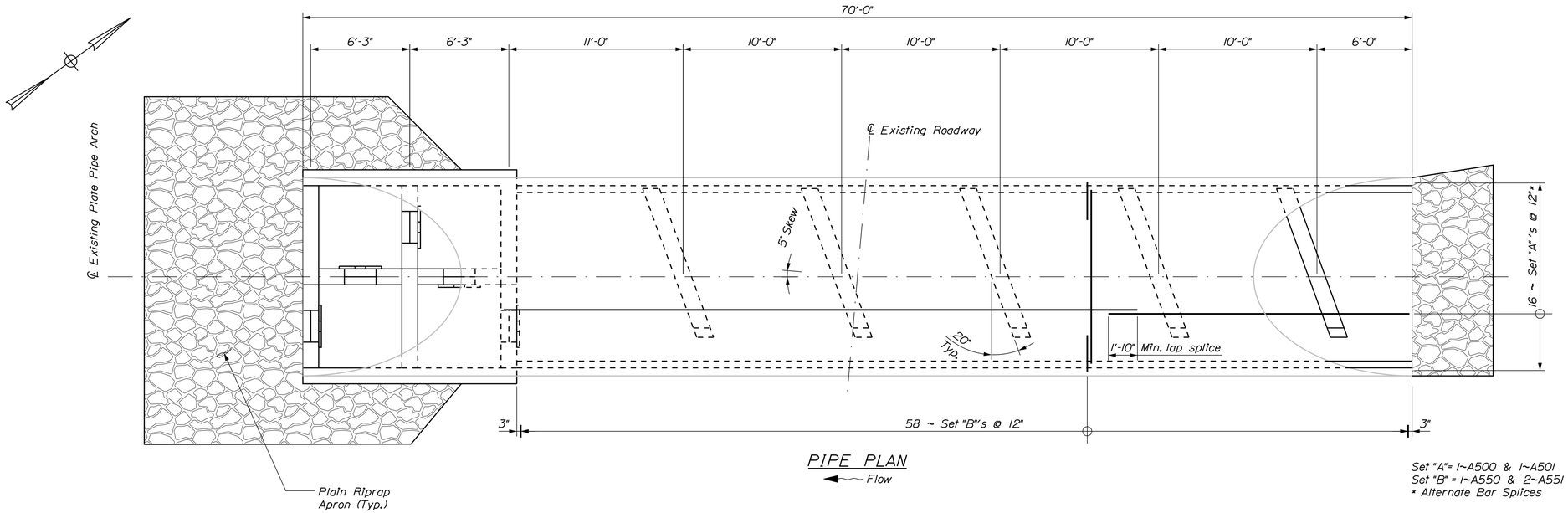
DATE

PINE BROOK BRIDGE
PINE BROOK
FRANKLIN COUNTY
WILTON

GENERAL PLAN AND PROFILE

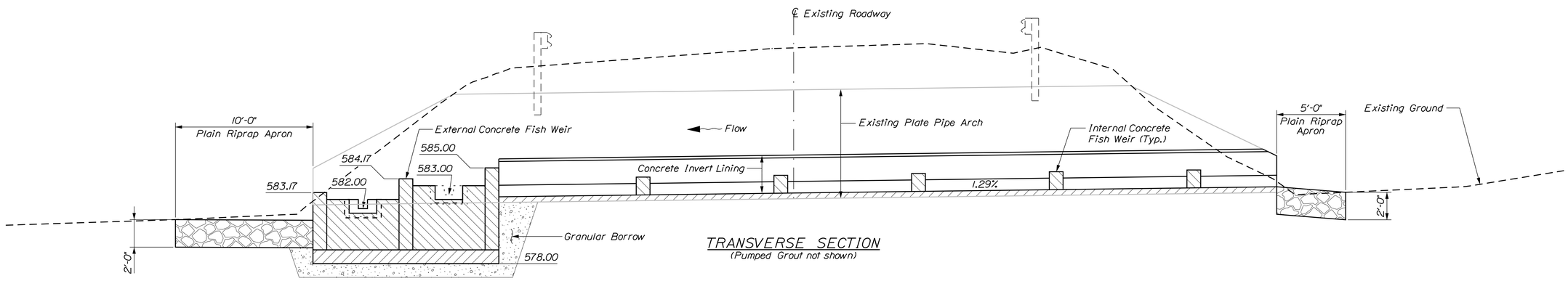
SHEET NUMBER
3
OF 7

Filename: ...\003_GeneralPlan&Profile.dgn Division: BRIDGE Username: david.shaw Date:10/9/2013

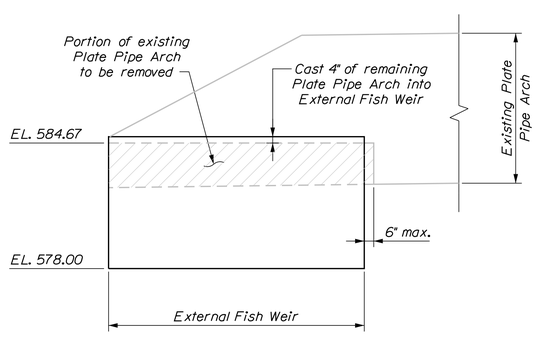


PIPE PLAN

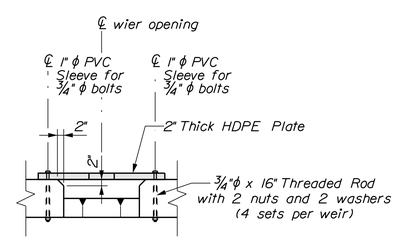
Set "A"= 1~A500 & 1~A501
Set "B" = 1~A550 & 2~A551
* Alternate Bar Splices



TRANSVERSE SECTION
(Pumped Grout not shown)

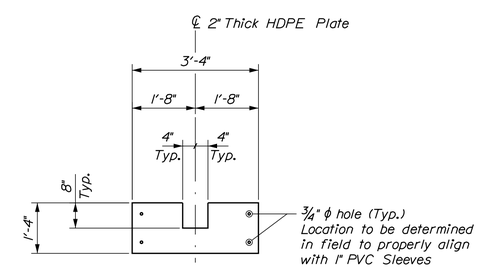


ELEVATION



WEIR NOTCH PLAN

Note: Each HDPE plate shall be furnished with (4) ¾"ϕ x 16" threaded rods, (8) washers and (8) nuts. All hardware shall be galvanized in accordance with ASTM A153.



2" THICK HDPE PLATE
(For weirs at downstream end of pipe arch)

STATE OF MAINE
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019295.00

WIN 19295.00

BRIDGE NO. 2666

BRIDGE PLANS

PROJ. MANAGER	STEPHEN B. BODGE	BY	DATE
DESIGN-DETAILED	M. WIGHT	D. SHAW	OCT. 2013
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PINE BROOK BRIDGE
PINE BROOK
WILTON FRANKLIN COUNTY

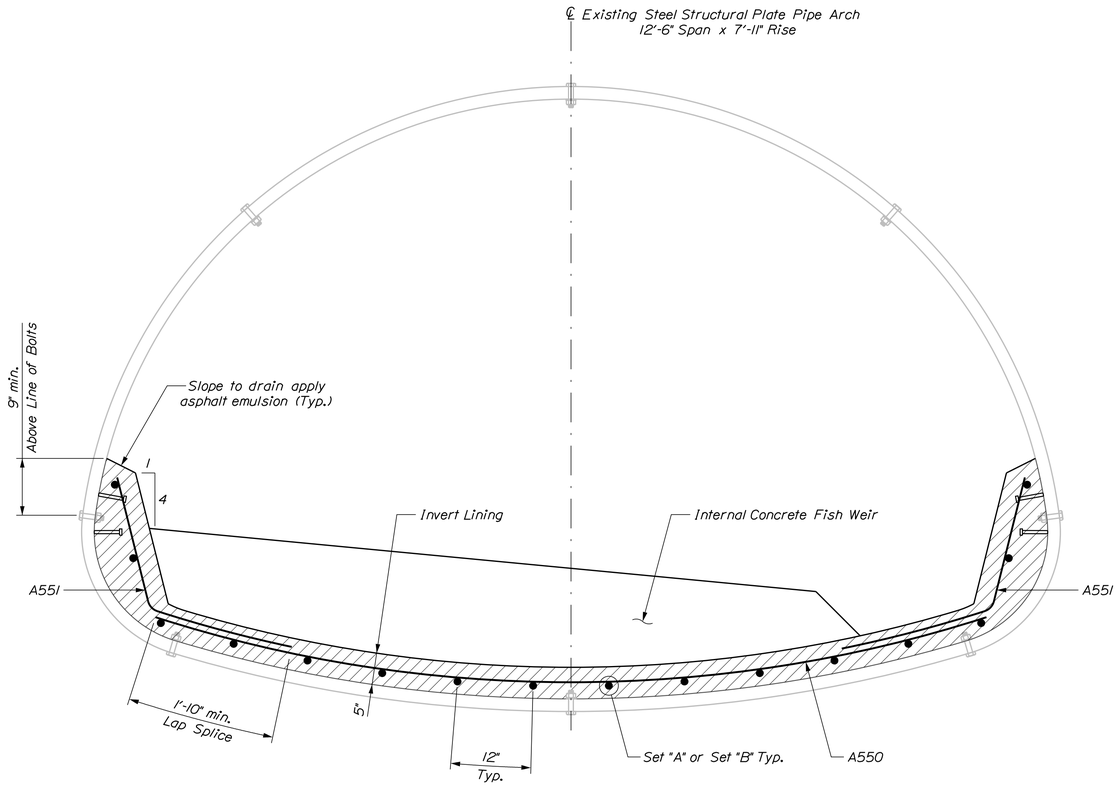
INVERT LINING DETAILS

SHEET NUMBER

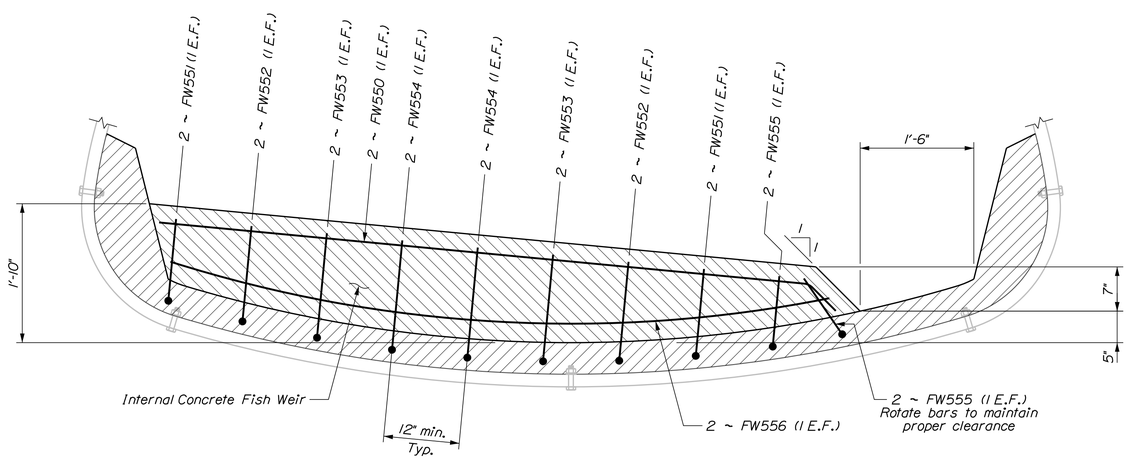
4

OF 7

Filename: ...\MSTA\004_Pipe_Details.dgn Division: BRIDGE Username: david.shaw Date:10/9/2013



PIPE ARCH SECTION



FISH WEIR ELEVATION

Invert reinforcement and Shear Connectors not shown for clarity

PIPE NOTES

1. Surfaces of the pipe against which concrete is to be placed shall be thoroughly cleaned so as to remove all loose corrosion. In areas where the metal is non - existant, a preliminary concrete placement shall be made, using forms where required, to fill voids and to establish the original lines of the pipe. The final placement shall then be made as shown. Payment for this work will be considered incidental to Item No. 502.325, Structural Concrete Invert Lining.

2. Note: Two rows of shear connectors shall be staggered longitudinally at 12" spacing along each side of the culvert. Shear connectors shall be 1/2" diameter x 4" studs or machine bolts welded to the crests of the corrugations. Approximately 228 shear connectors are required. Shear connections shall not be paid for directly. Payment will be considered incidental to item 502.325 Structural Concrete Culvert Invert Lining.

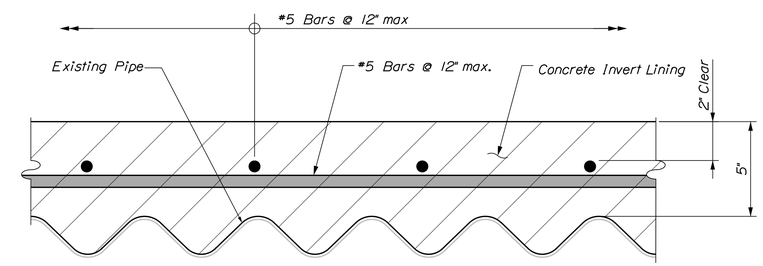
3. Reinforcing steel shall have a minimum concrete cover of 2" unless otherwise shown.

4. The existing structural plate pipe may have a slight deformation requiring field bending and/or cutting of the reinforcing steel. Any cutting and bending to field fit reinforcing steel shall be considered incidental to Item No. 503.13, Reinforcing Steel-Placing

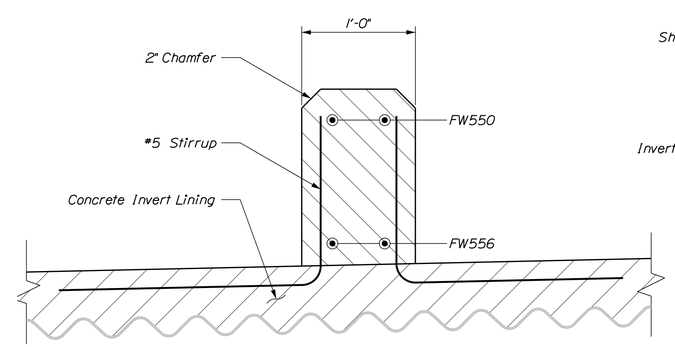
5. The concrete shall have a rough broom or gun finish along the entire length of the pipe invert.

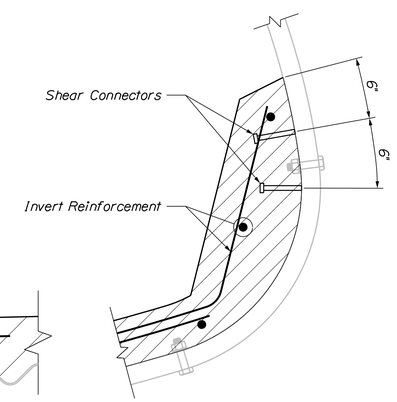
6. Asphalt Emulsion will be considered incidental to item No. 502.325 Structural Concrete Invert Lining.

7. Voids under the plate pipe arch caused by erosion, shall be grouted as directed by the Resident. All materials and hardware needed for grouting shall be paid for under Pay Item No. 502.2483, Pumped Grout.



INVERT LINING SECTION





CONNECTION DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

019295.00

PIN 19295.00

BRIDGE NO. 2666

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	STEPHEN BODGE	BY	DATE
DESIGN-DETAILED	M. WIGHT	D. SHAW	OCT. 2013
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PINE BROOK BRIDGE
PINE BROOK
WILTON FRANKLIN COUNTY

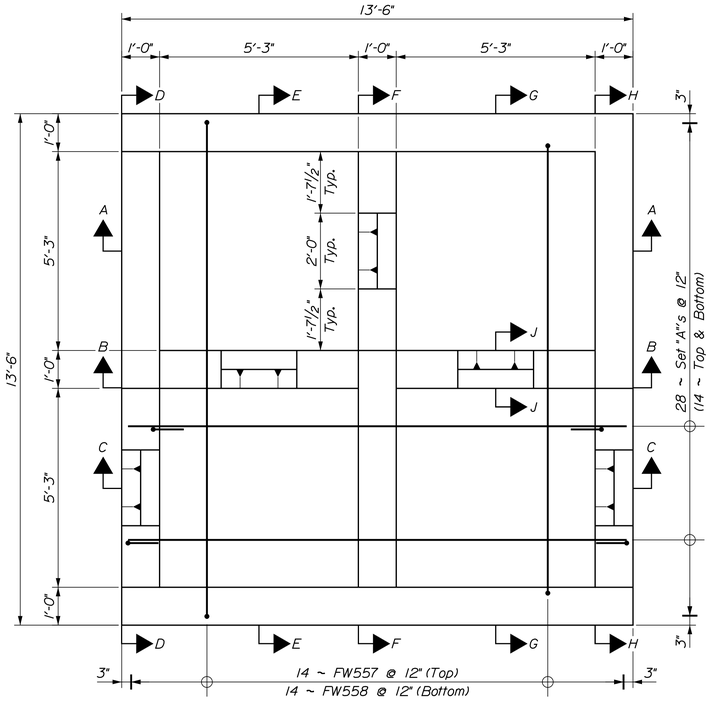
INVERT LINING DETAILS

SHEET NUMBER

5

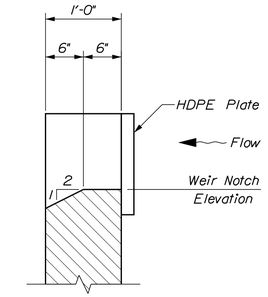
OF 7

Filename: ...\005_Pipe_Invert_Lining_Details.dgn Division: BRIDGE Username: david.shaw Date:10/9/2013

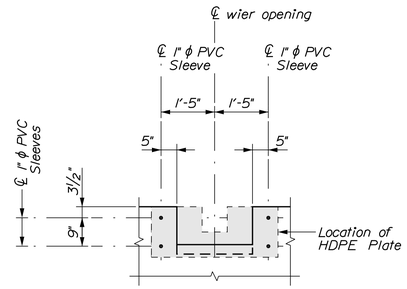


Set A = 1 ~ FW500, 2 ~ FW560 (1 Each End)

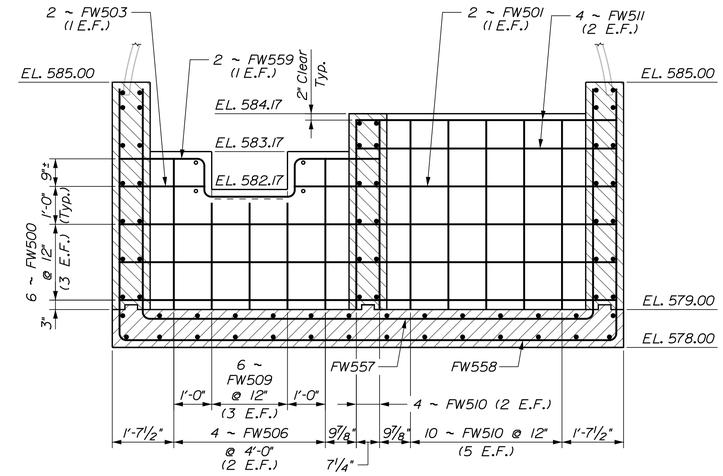
PLAN



SECTION J-J



PVC SLEEVE LAYOUT



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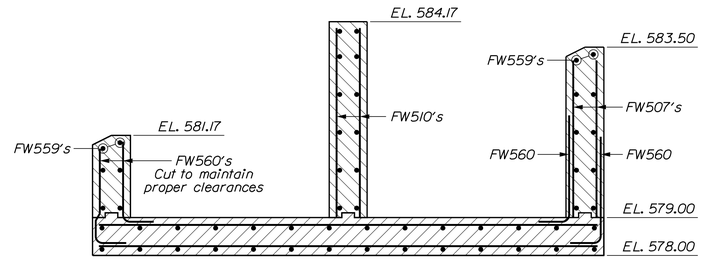

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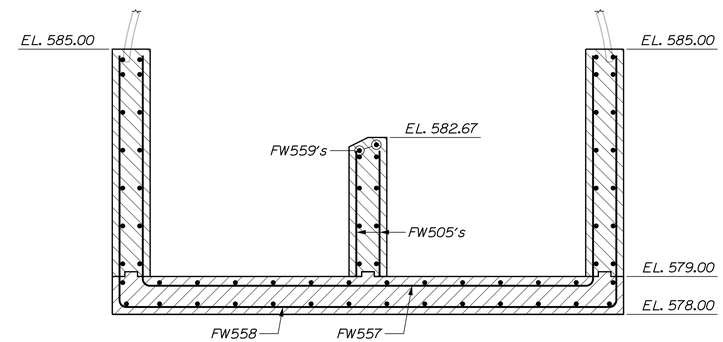
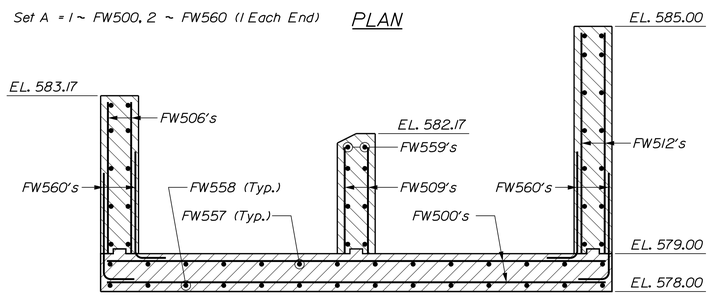
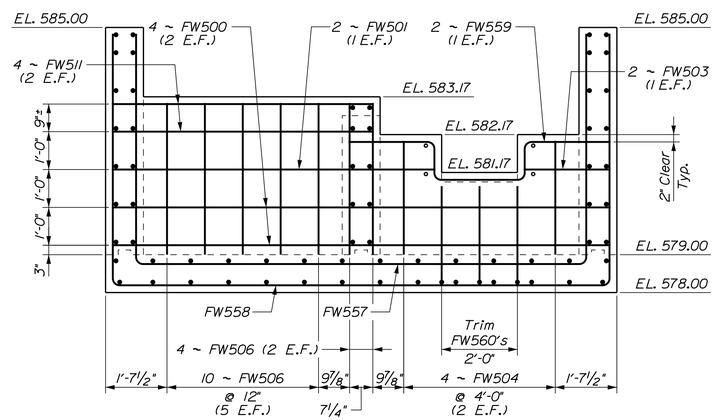


SECTION G-G

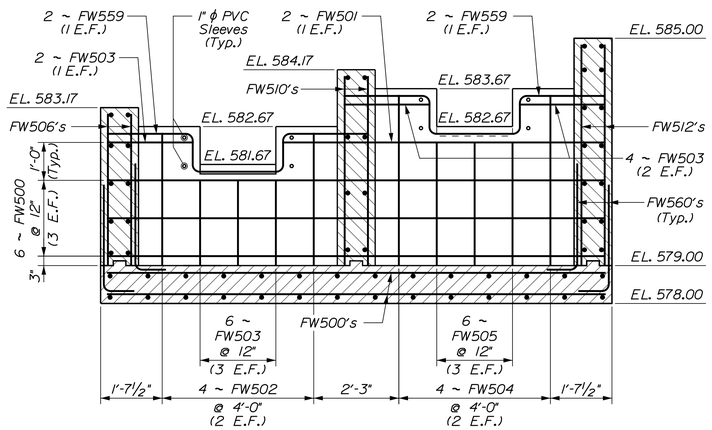


SECTION A-A

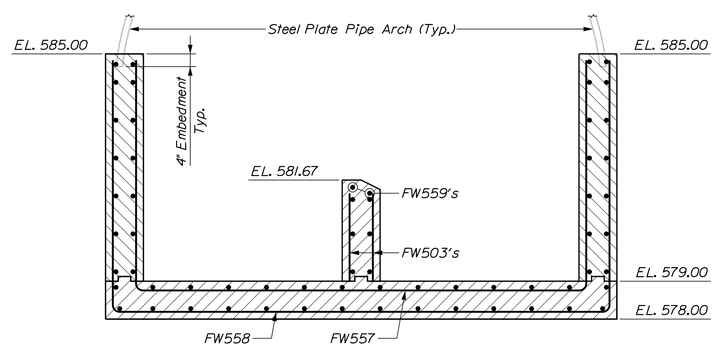
Note: FW560's not shown on all sections for clarity.



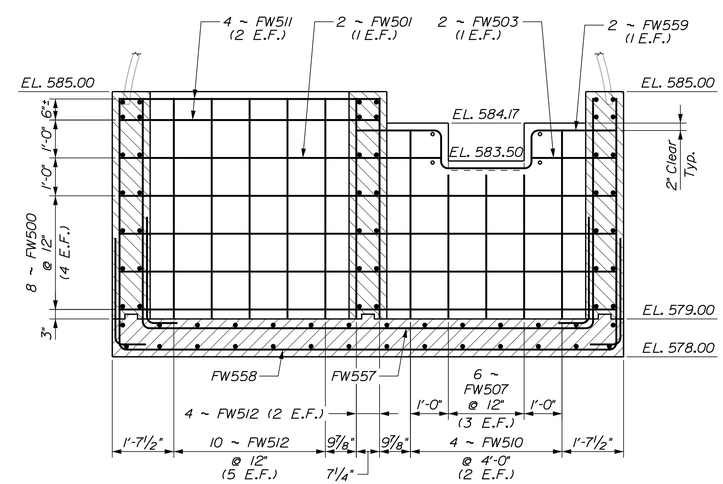
SECTION D-D



SECTION B-B



SECTION E-E



SECTION H-H

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

019295.00

BRIDGE NO. 2666

PIN 19295.00

BRIDGE PLANS

PROJ. MANAGER	S. BODGE	BY	DATE
DESIGN-DETAILED	M. WIGHT	D. SHAW	OCT. 2013
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PINE BROOK BRIDGE
PINE BROOK
FRANKLIN COUNTY
WILTON

EXTERNAL FISH WEIR DETAILS

SHEET NUMBER

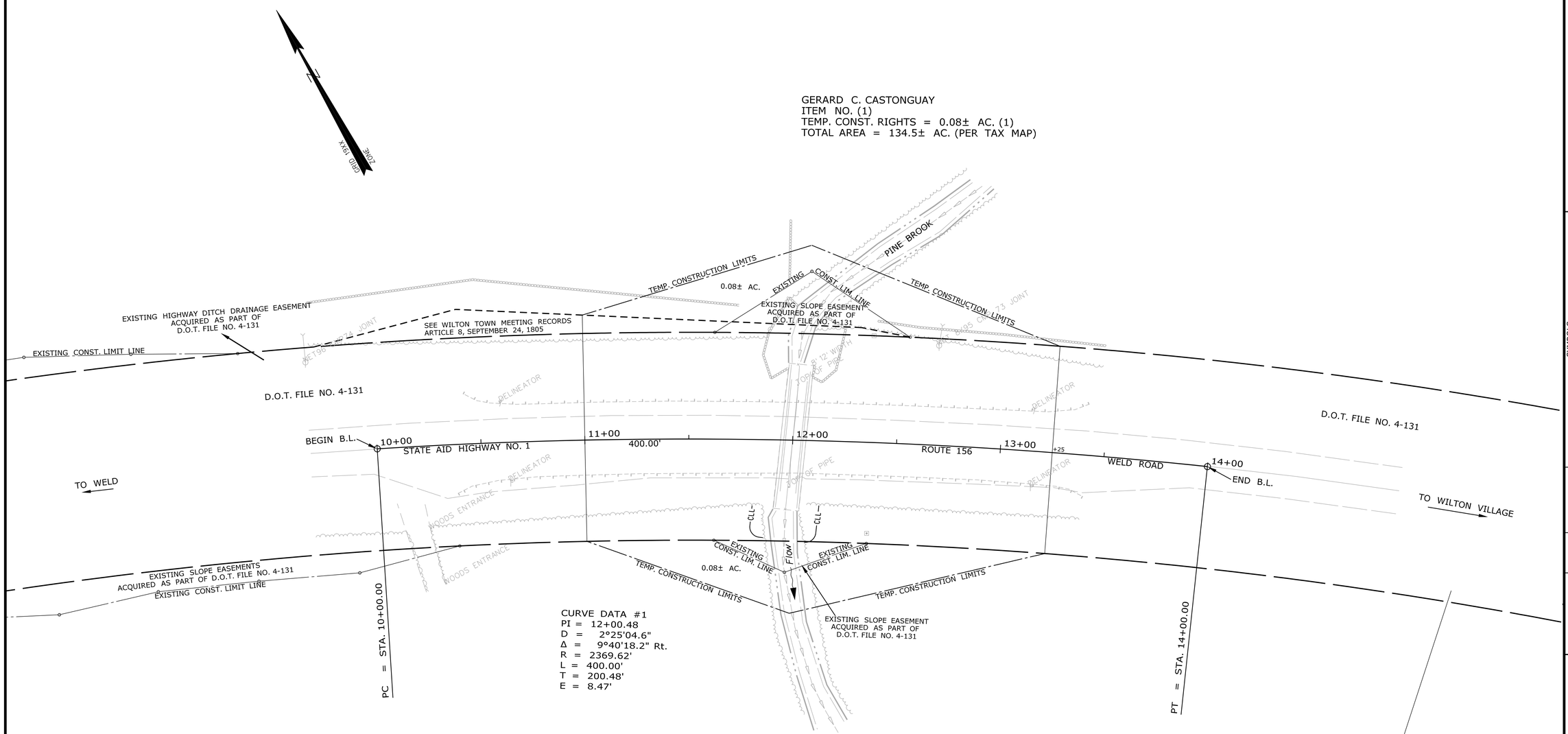
6

OF 7

Filename: ...\006_Pipe_Fish_Weir_Details.dgn Division: BRIDGE Username: david.shaw Date:10/9/2013

Filename: ...\00\ROW\MSTA\001_RWPLAN1.dgn Division: BRIDGE Username: david.show Date:10/9/2013

GERARD C. CASTONGUAY
ITEM NO. (1)
TEMP. CONST. RIGHTS = 0.08± AC. (1)
TOTAL AREA = 134.5± AC. (PER TAX MAP)



CURVE DATA #1
PI = 12+00.48
D = 2°25'04.6"
Δ = 9°40'18.2" Rt.
R = 2369.62'
L = 400.00'
T = 200.48'
E = 8.47'

FOOTHILLS LAND CONSERVANCY, INC.
MAINE DEPT. OF INLAND FISHERIES & WILDLIFE (CONSERVATION EASEMENT)
ITEM NO. (2)
TEMP. CONST. RIGHTS = 0.08± AC. (1)
TOTAL AREA = 59.6± AC. (PER TAX MAP)

EXISTING RIGHT OF WAY REFERENCES

D.O.T. FILE NO. 4-131, SHEET NO. 1, 1976

WILTON TOWN MEETING RECORDS
ARTICLE 8
SEPTEMBER 24, 1805

BRIDGE NO. 2666 — PINE BROOK BRIDGE OVER PINE BROOK — WIN 19295.00

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

SYMBOLS
- IP or IPF (IRON PIPE or PIN FOUND)
- S.T. (SEPTIC TANK)
- (ROW MONUMENT)
- BM (TRAVERSE POINT)
- WELL (WELL)
- GROUNDING UNIT LINE
- CONSTRUCTION LIMIT LINE
- PROPERTY LINE
- LIMITS OF VARIOUS RIGHT TO PORTION (L.O.V.R.P.)
- EXISTING RIGHT OF WAY
- NEW RIGHT OF WAY
- NEW ROW WITHIN EXIST. ROW
- CONTROL OF ACCESS
- WATER LINE
- GAS LINE
- ELECTRIC LINE
- TELEPHONE LINE
- SEWER LINE

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W	PNS	
PROP. LINES		
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
WILTON
RIGHT OF WAY MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK		PAGE	COUNTY RECORD			
NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

DAVID BERNHARDT
COMMISSIONER
JOYCE TAYLOR
CHIEF ENGINEER
DATE

PLAN NOT TO BE RECORDED

STATE AID HIGHWAY NO. 1
ROUTE 156 WELD ROAD
WILTON FRANKLIN COUNTY
STATE PROJECT NO. 19295.00

JULY 2013 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 4-131A
SCALE 1" = 25' | SHEET 1 OF 1

SHEET NUMBER
7
OF 7