

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength 1

TRAFFIC DATA

|                                           |       |
|-------------------------------------------|-------|
| Current (2019) AADT .....                 | 2,890 |
| Future (2039) AADT .....                  | 3,180 |
| DHV - % of AADT .....                     | 10%   |
| Design Hour Volume .....                  | 318   |
| Heavy Trucks (% of AADT) .....            | 11%   |
| Heavy Trucks (% of DHV) .....             | 9%    |
| Directional Distribution (% of DHV) ..... | 65%   |
| 18 kip Equivalent P 2.0 .....             | 203   |
| 18 kip Equivalent P 2.5 .....             | 193   |
| Design Speed (mph) .....                  | 50    |

HYDROLOGIC DATA

|                                  |           |
|----------------------------------|-----------|
| Drainage Area .....              | 5.8 sq mi |
| Design Discharge (Q50) .....     | 412.8 cfs |
| Check Discharge (Q100) .....     | 483.6 cfs |
| Headwater Elevation (Q1.1) ..... | 545.2 ft  |
| Headwater Elevation (Q25) .....  | 547.7 ft  |
| Headwater Elevation (Q50) .....  | 548.0 ft  |
| Headwater Elevation (Q100) ..... | 548.5 ft  |
| Discharge Velocity (Q1.1) .....  | 3.1 fps   |
| Discharge Velocity (Q50) .....   | 6.4 fps   |
| Discharge Velocity (Q100) .....  | 6.9 fps   |

MATERIALS

|                 |           |
|-----------------|-----------|
| Concrete:       |           |
| Precast .....   | Class "P" |
| All Other ..... | Class "A" |

|                                 |                             |
|---------------------------------|-----------------------------|
| Reinforcing Steel .....         | ASTM A 615/A 615M, Grade 60 |
| Welded Wire Reinforcement ..... | ASTM A 1064/A 1064M         |

BASIC DESIGN STRESSES

|                        |                  |
|------------------------|------------------|
| Concrete .....         | f 'c = 4,000 psi |
| Precast Concrete ..... | f 'c = 5,000 psi |

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

CARIBOU  
AROOSTOOK COUNTY  
US1 OTTER BROOK BRIDGE  
OVER  
OTTER BROOK  
ROUTE 1  
STATE PROJECT NO. 022228.00  
PROJECT LENGTH 0.038 mi.  
BRIDGE NO. 5902

LIST OF DRAWINGS

|                                                              |     |
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UTILITIES

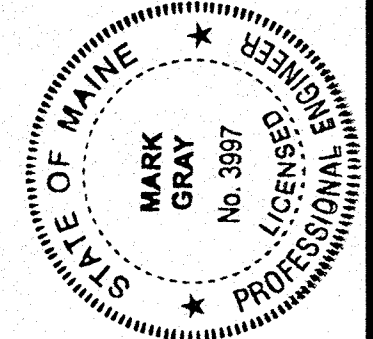
Emera Maine  
Charter Communications  
Consolidated Communications

MAINTENANCE OF TRAFFIC

Maintain one 15'-0" wide lane of alternating one - way traffic using traffic signals on temporary detour bypass.

|                   |                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| PROJECT LOCATION: | On Route 1, located 0.37 miles north of Watson Memorial Drive.<br>Lat./Long. 46° 55' 16.1" N 68° 01' 10.2" W |
| PROGRAM AREA:     | Highway Bridges-Traditional                                                                                  |
| OUTLINE OF WORK:  | Bridge Culvert Replacement                                                                                   |

|                                                |                                  |         |
|------------------------------------------------|----------------------------------|---------|
| STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION | APPROVED                         | DATE    |
|                                                | COMMISSIONER: <i>[Signature]</i> | 9/12/19 |
| CHIEF ENGINEER: <i>[Signature]</i>             |                                  | 9-6-19  |



|                    |             |
|--------------------|-------------|
| <i>[Signature]</i> | SIGNATURE   |
| 3997               | P.E. NUMBER |
| 8-29-2019          | DATE        |

|                         |            |
|-------------------------|------------|
| PROJECT INFORMATION     |            |
| PROGRAM                 | BRIDGE     |
| PROJECT MANAGER         | J. STETSON |
| DESIGNER                | M. GRAY    |
| CONSULTANT              |            |
| PROJECT RESIDENT        |            |
| CONTRACTOR              |            |
| PROJECT COMPLETION DATE |            |

|                                              |             |
|----------------------------------------------|-------------|
| CARIBOU<br>U.S. ROUTE 1 - OTTER BROOK BRIDGE | TITLE SHEET |
|----------------------------------------------|-------------|

|              |
|--------------|
| SHEET NUMBER |
| 1            |
| OF 12        |

Date:8/23/2019

Username: armand.j.paradis

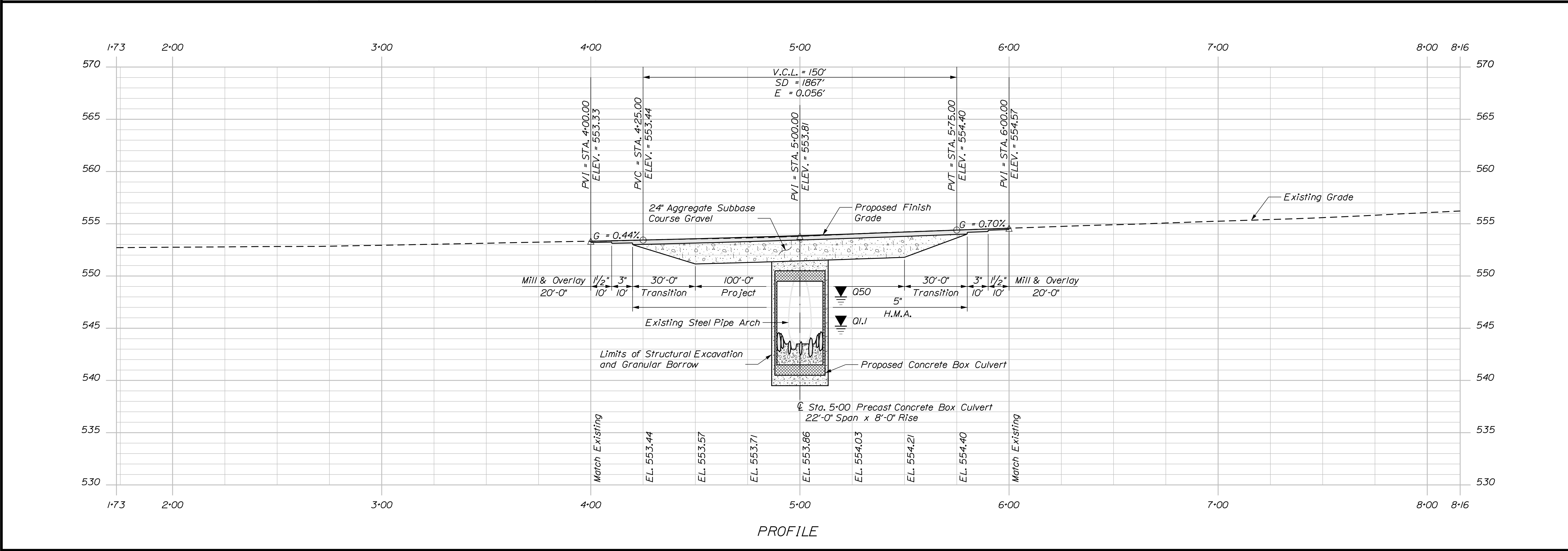
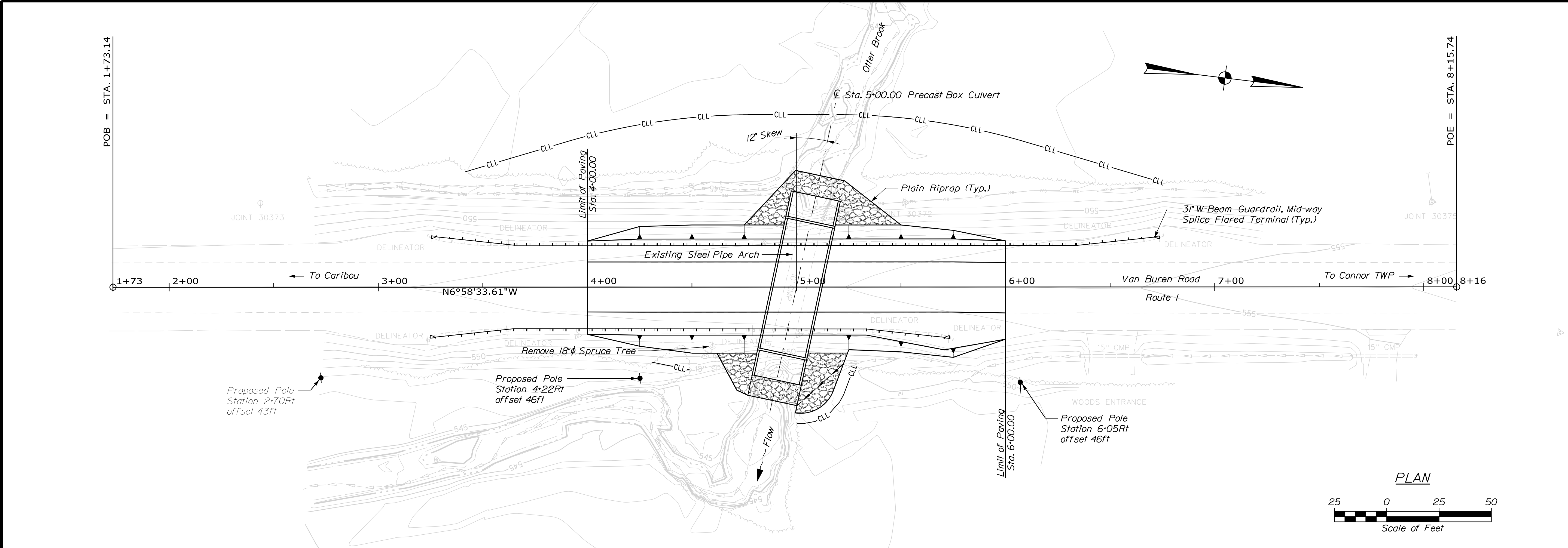
Division: BRIDGE

Filename: \\00\BRIDGE\WSTA\001\_Title.dgn

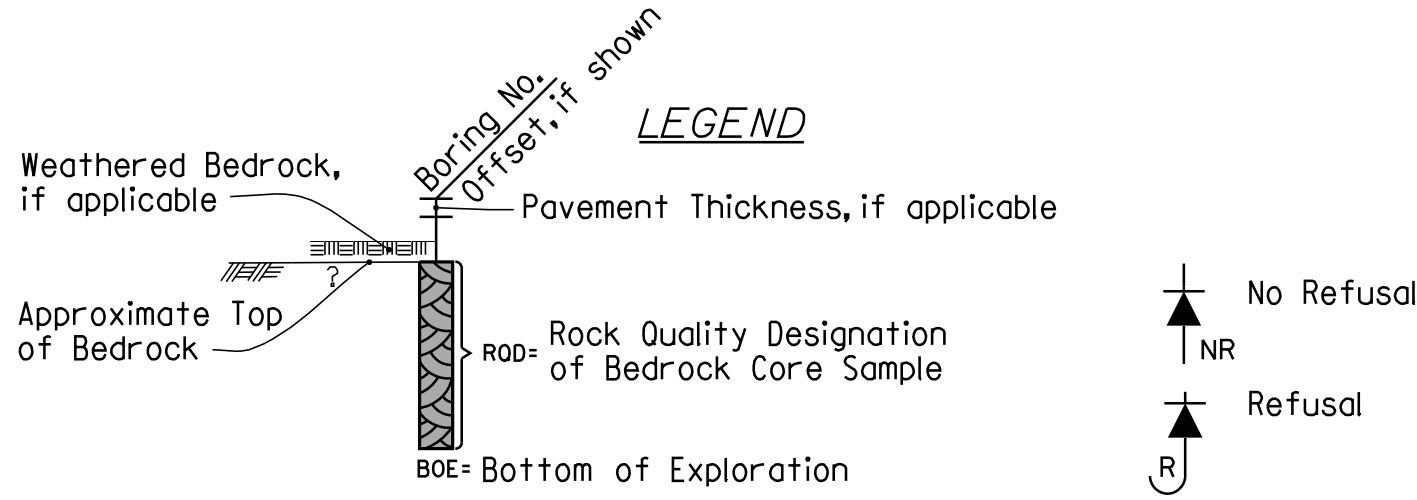
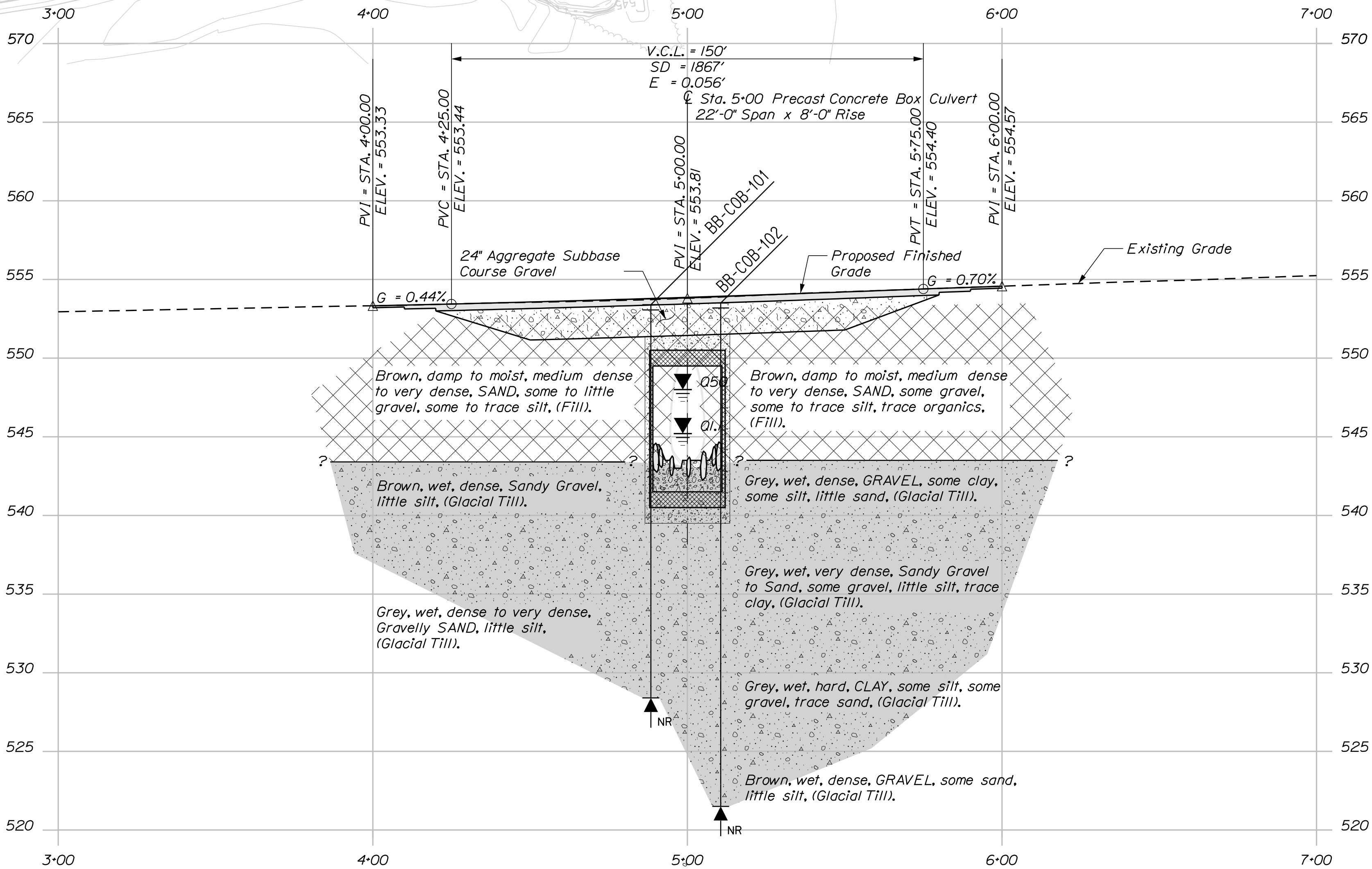
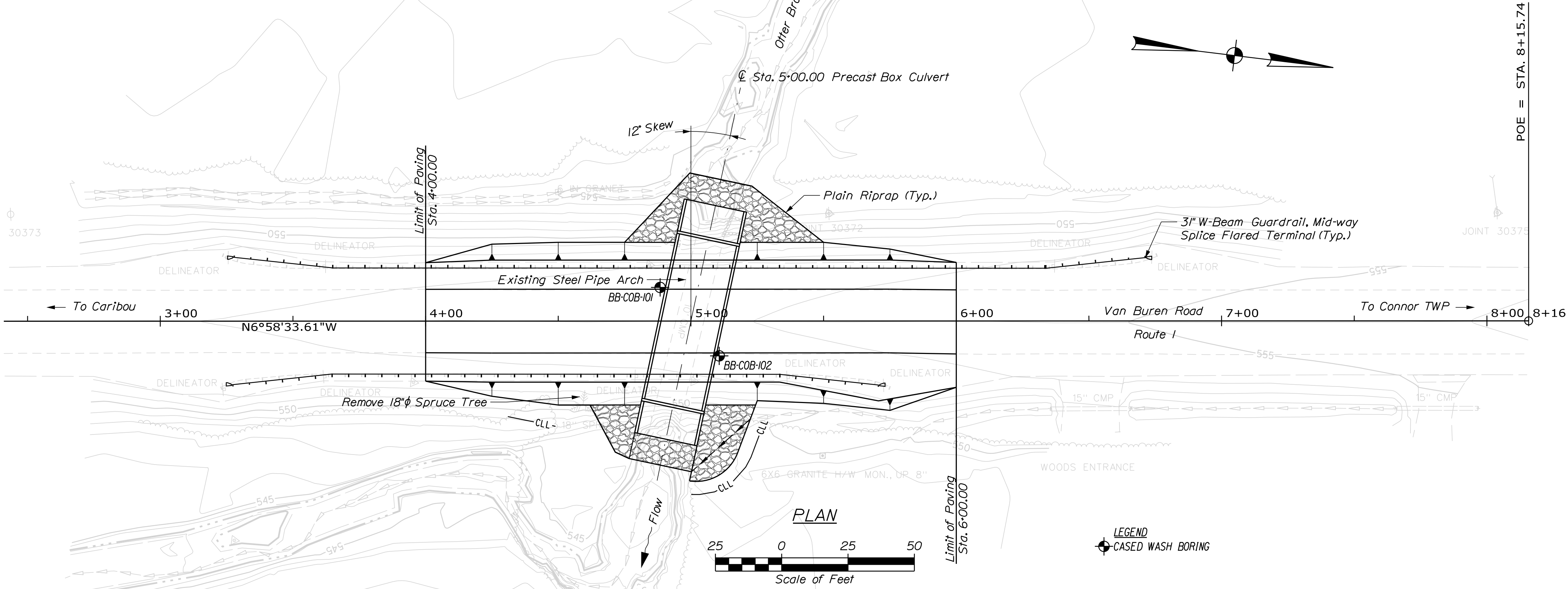
WIN 022228.00

022228.00





|                                                |  |                        |  |                  |  |                 |  |                  |  |
|------------------------------------------------|--|------------------------|--|------------------|--|-----------------|--|------------------|--|
| STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION |  | 022228.00              |  | BRIDGE NO. 5902  |  | WIN 022228.00   |  | BRIDGE PLANS     |  |
| U.S. ROUTE 1 - OTTER BROOK BRIDGE              |  | OTTER BROOK            |  | AROOSTOOK COUNTY |  | SHEET NUMBER    |  | 3                |  |
| CARIBOU                                        |  | GENERAL PLAN & PROFILE |  | OF 12            |  | DATE            |  | P.E. NUMBER      |  |
| SIGNATURE                                      |  | DATE                   |  | DATE             |  | DATE            |  | DATE             |  |
| A. PARADIS                                     |  | AUG. 2019              |  | AUG. 2019        |  | AUG. 2019       |  | AUG. 2019        |  |
| T. WHITE                                       |  | JUN. 2018              |  | JUN. 2018        |  | JUN. 2018       |  | JUN. 2018        |  |
| J. STETSON                                     |  | J. STETSON             |  | J. STETSON       |  | J. STETSON      |  | J. STETSON       |  |
| PROJ. MANAGER                                  |  | DESIGN-DETAILED        |  | CHECKED-REVIEWED |  | DESIGN-DETAILED |  | CHECKED-REVIEWED |  |
| M. GRAY                                        |  | R. MYERS               |  | B. SLAVEN        |  | R. MYERS        |  | B. SLAVEN        |  |
| REVISIONS 1                                    |  | REVISIONS 2            |  | REVISIONS 3      |  | REVISIONS 4     |  | FIELD CHANGES    |  |
| REVISIONS 1                                    |  | REVISIONS 2            |  | REVISIONS 3      |  | REVISIONS 4     |  | FIELD CHANGES    |  |



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<br>DEPARTMENT OF TRANSPORTATION |  | U.S. ROUTE 1 - OTTER BROOK BRIDGE<br>OTTER BROOK<br>CARIBOU |  | AROOSTOOK COUNTY |  | SHEET NUMBER<br><b>4</b><br>OF 12 |  |
| 022228.00                                      |  | BORING LOCATION PLAN &<br>INTERPRETIVE SUBSURFACE PROFILE   |  | PROJECT NO.      |  | PROJECT NO.                       |  |
| WIN                                            |  | DATE                                                        |  | PROJECT NO.      |  | PROJECT NO.                       |  |
| 022228.00                                      |  | 022228.00                                                   |  | PROJECT NO.      |  | PROJECT NO.                       |  |
| BRIDGE NO. 5902                                |  | FIELD CHANGES                                               |  | PROJECT NO.      |  | PROJECT NO.                       |  |
| BRIDGE PLANS                                   |  | PROJECT NO.                                                 |  | PROJECT NO.      |  | PROJECT NO.                       |  |

|                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Maine Department of Transportation                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | Project: Otter Brook Bridge #5902 carries Route 1 over Otter Brook Location: Caribou, Maine                                                                                                                                             |  |  |  |  |  |  |  |  |  | Boring No.: BB-CDB-101                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |
| Soil/Bore Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  | WIN: 22228.00                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| Driller: S. W. Cole Explorations, Inc.                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  | Elevation (ft.): 553.4                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  | Auger ID/DD: 5" Solid Stem                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |  |
| Operator: K. Hanson                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |  | Datum: NAVD88                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |
| Logged By: N. Strout                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Rig Type: Dierich D-50                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  | Hammer Wt./Fall: 140#/30"                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Date Start/Finish: 5/25/2018                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  | Drilling Method: Cased-Wash                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |  | Core Barrel#: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |  |
| Boring Location: 4+88.4, 12.7 ft Lt.                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Casing ID/DD: 4" / 4.5"                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  | Water Level#: 10.0' (during drilling)                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |
| Hammer Efficiency Factor: 0.918                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathode <input type="checkbox"/>                                                                                                   |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test<br>PP = Pocket Penetrometer<br>MW = Unsuccessful Field Vane Shear Test Attempt                     |  |  |  |  |  |  |  |  |  | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WDC = Weight of 140lb. Hammer<br>Nq = SPT Uncorrected Corrected for Hammer Efficiency<br>N60 = Hammer Efficiency Factor/60%Uncorrected |  |  |  |  |  |  |  |  |  | S <sub>u</sub> = Peak/Retained Field Vane Undrained Shear Strength (psf)<br>S <sub>u</sub> (qs) = Lab Vane Undrained Shear Strength (psf)<br>Sq = Spoon/Retained Conpressive Strength (psf)<br>Nuncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test                                                                                         |  |  |  |  |  |  |  |  |  |
| Sample Information<br>Sample No.<br>Pen./Rec. (ft.)<br>Sample Depth (ft.)<br>Blows / 6 in. Shear Strength or RDP (15)<br>Noncorrected<br>N60<br>Casing<br>Blows<br>Elevation (ft.)                                                                                                                     |  |  |  |  |  |  |  |  |  | Graphic Log<br>Visual Description and Remarks<br>Laboratory Testing Results/ AASHTO and Unified Class                                                                                                                                   |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| 5                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  | 553.1                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | 4" of Pavement.<br>Brown, damp, very dense, SAND, some gravel, trace silt, (Ffill).<br>Brown, moist, dense, SAND, little gravel, little silt, (Ffill).<br>Brown, moist, medium dense, SAND, some silt, little gravel, (Ffill).<br>Brown, moist, medium dense, SAND, little gravel, little silt, (Ffill).                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
| 10                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 543.4                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Brown, wet, dense, Sandy GRAVEL, little silt, (Glacial Till).<br>Grey, wet, dense, Gravelly SAND, little silt, (Glacial Till).                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |
| 15                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 528.4                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Grey, wet, very dense, Sandy GRAVEL, little silt, trace clay, (Glacial Till).<br>Grey, wet, very dense, SAND, some gravel, little silt, trace clay, (Glacial Till).<br>Grey, wet, dense, GRAVEL, some clay, some silt, little sand, (Glacial Till).<br>Grey, wet, very dense, SAND, some gravel, little silt, trace clay, (Glacial Till).<br>Grey, wet, hard, CLAY, some silt, some gravel, trace sand, (Glacial Till).<br>Brown, wet, dense, GRAVEL, some sand, little silt. |  |  |  |  |  |  |  |  |  |
| 20                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 521.5                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Bottom of Exploration at 32.0 feet below ground surface. No refusal.                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |  |
| 25                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 520.0                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Bottom of Exploration at 25.0 feet below ground surface. No refusal.                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |  |
| 30                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| 35                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| 40                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| 45                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| 50                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| Remarks:<br>Automatic Hammer SN 367<br>Casing driven using 140# Auto-Hammer<br>bgs = below ground surface<br>Artesian water flow at 30 ft bgs, following sample 90 (30-32 ft), flow at 100 gallons/minute                                                                                              |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.<br>* 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<br>Boring No.: BB-CDB-101                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |

|                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Maine Department of Transportation                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | Project: Otter Brook Bridge #5902 carries Route 1 over Otter Brook Location: Caribou, Maine                                                                                                                                             |  |  |  |  |  |  |  |  |  | Boring No.: BB-CDB-102                                                                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |
| Soil/Bore Exploration Log<br>US CUSTOMARY UNITS                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  | WIN: 22228.00                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| Driller: S. W. Cole Explorations, Inc.                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  | Elevation (ft.): 553.5                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  | Auger ID/DD: 5" Solid Stem                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  |
| Operator: K. Hanson                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |  | Datum: NAVD88                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  | Sampler: Standard Split-Spoon                                                                                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Logged By: N. Strout                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Rig Type: Dierich D-50                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  | Hammer Wt./Fall: 140#/30"                                                                                                                                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |
| Date Start/Finish: 5/24/2018                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  | Drilling Method: Cased-Wash                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |  | Core Barrel#: N/A                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |
| Boring Location: 5+10.7, 13.1 ft Rt.                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Casing ID/DD: 4" / 4.5"                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |  | Water Level#: 9.0' (during drilling)                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |  |  |
| Hammer Efficiency Factor: 0.918                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |  | Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathode <input type="checkbox"/>                                                                                                   |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| Definitions:<br>D = Split Spoon Sample<br>MD = Unsuccessful Split Spoon Sample Attempt<br>U = Thin Wall Tube Sample<br>MU = Unsuccessful Thin Wall Tube Sample Attempt<br>V = Field Vane Shear Test<br>PP = Pocket Penetrometer<br>MW = Unsuccessful Field Vane Shear Test Attempt                     |  |  |  |  |  |  |  |  |  | R = Rock Core Sample<br>SSA = Solid Stem Auger<br>HSA = Hollow Stem Auger<br>RC = Roller Cone<br>WDC = Weight of 140lb. Hammer<br>Nq = SPT Uncorrected Corrected for Hammer Efficiency<br>N60 = Hammer Efficiency Factor/60%Uncorrected |  |  |  |  |  |  |  |  |  | S <sub>u</sub> = Peak/Retained Field Vane Undrained Shear Strength (psf)<br>S <sub>u</sub> (qs) = Lab Vane Undrained Shear Strength (psf)<br>Sq = Spoon/Retained Conpressive Strength (psf)<br>Nuncorrected = Raw Field SPT N-value<br>Hammer Efficiency Factor = Rig Specific Annual Calibration Value<br>PI = Plasticity Index<br>G = Grain Size Analysis<br>C = Consolidation Test                             |  |  |  |  |  |  |  |  |  |
| Sample Information<br>Sample No.<br>Pen./Rec. (ft.)<br>Sample Depth (ft.)<br>Blows / 6 in. Shear Strength or RDP (15)<br>Noncorrected<br>N60<br>Casing<br>Blows<br>Elevation (ft.)                                                                                                                     |  |  |  |  |  |  |  |  |  | Graphic Log<br>Visual Description and Remarks<br>Laboratory Testing Results/ AASHTO and Unified Class                                                                                                                                   |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 5                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  | 553.1                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | 3.75" of Pavement.<br>Brown, damp, very dense, SAND, some gravel, trace silt, (Ffill).<br>Similar to above except dense and little silt.<br>Brown, damp, medium dense, SAND, some gravel, trace silt, (Ffill).<br>Brown and grey, moist, medium dense, SAND, some gravel, some silt, trace organics, (Ffill).                                                                                                     |  |  |  |  |  |  |  |  |  |
| 10                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 543.5                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Grey, wet, dense, GRAVEL, some clay, some silt, little sand, (Glacial Till).<br>Grey, wet, very dense, Sandy GRAVEL, little silt, trace clay, (Glacial Till).<br>Grey, wet, very dense, SAND, some gravel, little silt, trace clay, (Glacial Till).<br>Grey, wet, dense, GRAVEL, some clay, some silt, little sand, (Glacial Till).<br>Grey, wet, hard, CLAY, some silt, some gravel, trace sand, (Glacial Till). |  |  |  |  |  |  |  |  |  |
| 15                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  | 521.5                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  | Bottom of Exploration at 32.0 feet below ground surface. No refusal.                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |  |  |
| 20                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 25                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 30                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 35                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 40                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 45                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| 50                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| Remarks:<br>Automatic Hammer SN 367<br>Casing driven using 140# Auto-Hammer<br>bgs = below ground surface<br>Artesian water flow at 30 ft bgs, following sample 90 (30-32 ft), flow at 100 gallons/minute                                                                                              |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual.<br>* 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<br>Boring No.: BB-CDB-102                                                                                                                                                                                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |  |

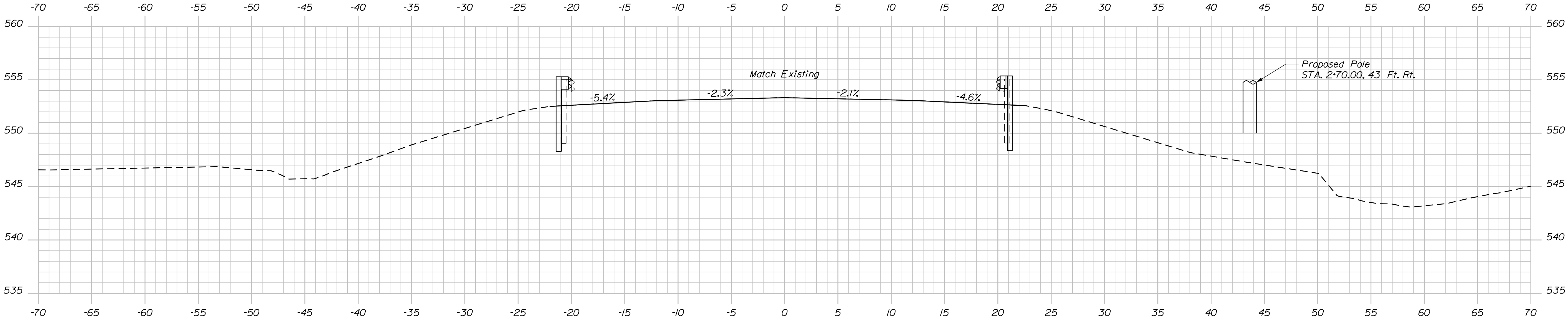
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|-----------------------------------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|------------------|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|--|--|--|--|--------------|--|--|--|--|--|--|--|--|--|-------------|--|--|--|--|--|--|--|--|--|
| STATE OF MAINE                    |  |  |  |  |  |  |  |  |  | DEPARTMENT OF TRANSPORTATION |  |  |  |  |  |  |  |  |  | 022228.00        |  |  |  |  |  |  |  |  |  | WIN 022228.00   |  |  |  |  |  |  |  |  |  | BRIDGE NO. 5902 |  |  |  |  |  |  |  |  |  | BRIDGE PLANS |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |
| U.S. ROUTE 1 - OTTER BROOK BRIDGE |  |  |  |  |  |  |  |  |  | OTTER BROOK                  |  |  |  |  |  |  |  |  |  | AROOSTOOK COUNTY |  |  |  |  |  |  |  |  |  | BORING LOGS     |  |  |  |  |  |  |  |  |  | SHEET NUMBER    |  |  |  |  |  |  |  |  |  |              |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |
| CARIBOU                           |  |  |  |  |  |  |  |  |  | SIGNATURE                    |  |  |  |  |  |  |  |  |  | P.E. NUMBER      |  |  |  |  |  |  |  |  |  | DATE            |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |              |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |
| DESIGN-DETAILED                   |  |  |  |  |  |  |  |  |  | CHECKED-REVIEWED             |  |  |  |  |  |  |  |  |  | DESIGN-DETAILED  |  |  |  |  |  |  |  |  |  | DESIGN-DETAILED |  |  |  |  |  |  |  |  |  | DESIGN-DETAILED |  |  |  |  |  |  |  |  |  |              |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |
| JUL 2019                          |  |  |  |  |  |  |  |  |  | T. WHITE                     |  |  |  |  |  |  |  |  |  | B. SLAVEN        |  |  |  |  |  |  |  |  |  | REVISIONS 1     |  |  |  |  |  |  |  |  |  | REVISIONS 2     |  |  |  |  |  |  |  |  |  | REVISIONS 3  |  |  |  |  |  |  |  |  |  | REVISIONS 4 |  |  |  |  |  |  |  |  |  |
| FIELD CHANGES                     |  |  |  |  |  |  |  |  |  |                              |  |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |              |  |  |  |  |  |  |  |  |  |             |  |  |  |  |  |  |  |  |  |

Username: armand.i.paradis

Date:8/21/2019

Division: BRIDGE

Filename: ... \006\_XSECT\_4+00\_4+00\_001.dgn



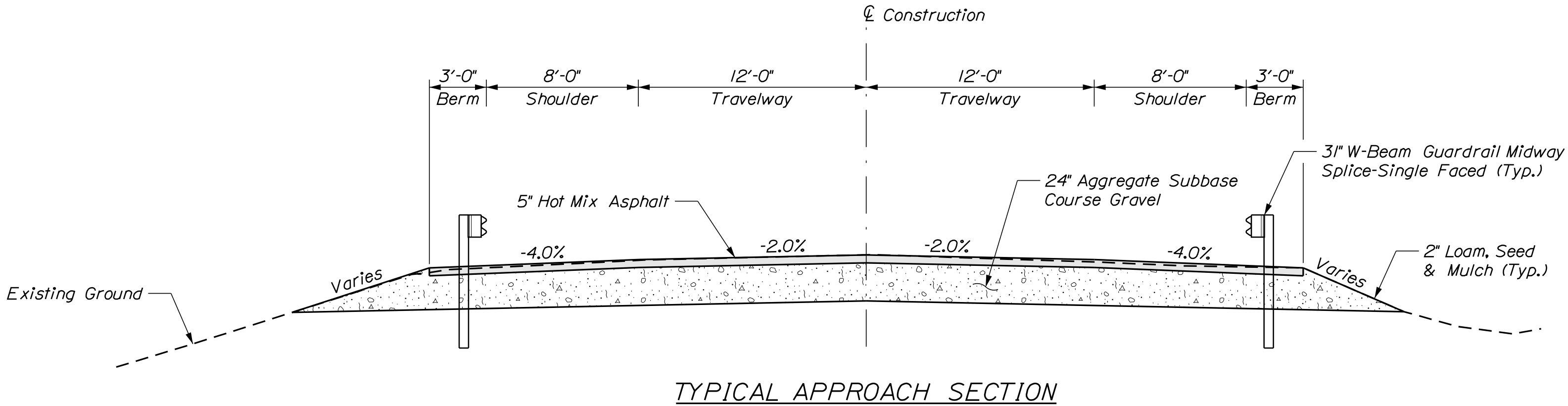
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Install 31" W-Beam Guardrail - Mid-way Splice Flared Terminal

Sta. 3+65.02±, 20.0± Ft. Lt. to Sta. 6+33.90±, 20.0± Ft. Lt.  
Install 31" W-Beam Guardrail - Mid-way Splice

4+00.00

Sta. 3+64.33±, 20.0± Ft. Rt. to Sta. 5+33.21±, 20.0± Ft. Rt.  
Install 31" W-Beam Guardrail - Mid-way Splice

Sta. 3+24.85±, 23.2± Ft. Rt. to Sta. 3+64.33±, 20.0± Ft. Rt.  
Install 31" W-Beam Guardrail - Mid-way Splice Flared Terminal



TYPICAL APPROACH SECTION

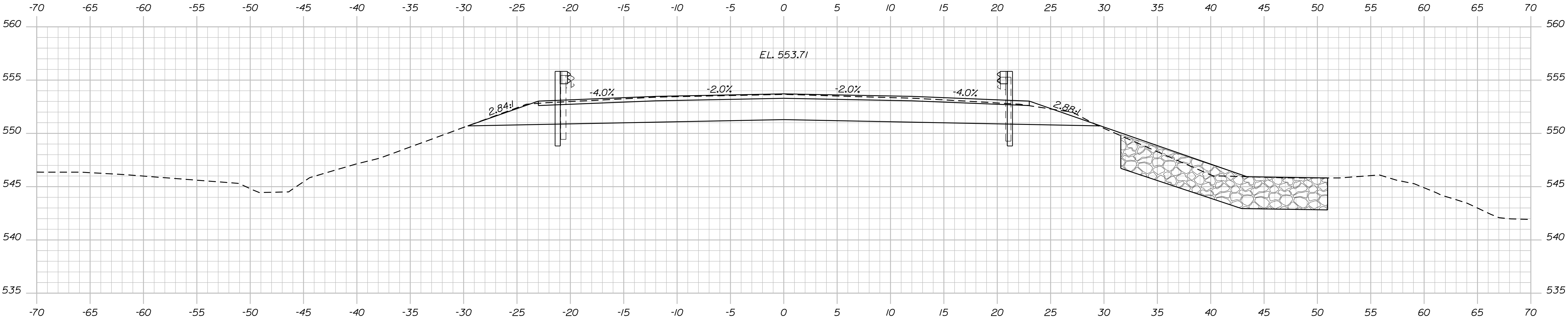
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| U.S. ROUTE 1 - OTTER BROOK BRIDGE<br>OTTER BROOK<br>CARIBOU<br>AROOSTOOK COUNTY | STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION |                   | 022228.00  |           | WIN<br>022228.00 |             | BRIDGE NO. 5902<br>BRIDGE PLANS |  |
|                                                                                 | DESIGNED-Detailed                              | J. STETSON        | BY         | DATE      | SIGNATURE        | P.E. NUMBER | DATE                            |  |
|                                                                                 | CHECKED-Reviewed                               | M. GRAY           | A. PARADIS | AUG. 2019 |                  |             |                                 |  |
|                                                                                 |                                                | DESIGNED-Detailed | B. SLAVEN  | JUN. 2018 |                  |             |                                 |  |
|                                                                                 |                                                | REVISIONS 1       |            |           |                  |             |                                 |  |
|                                                                                 |                                                | REVISIONS 2       |            |           |                  |             |                                 |  |
|                                                                                 |                                                | REVISIONS 3       |            |           |                  |             |                                 |  |
|                                                                                 |                                                | REVISIONS 4       |            |           |                  |             |                                 |  |
|                                                                                 |                                                | FIELD CHANGES     |            |           |                  |             |                                 |  |
| SHEET NUMBER                                                                    |                                                | 6                 |            |           |                  |             |                                 |  |
|                                                                                 |                                                | OF 12             |            |           |                  |             |                                 |  |

Date:8/21/2019

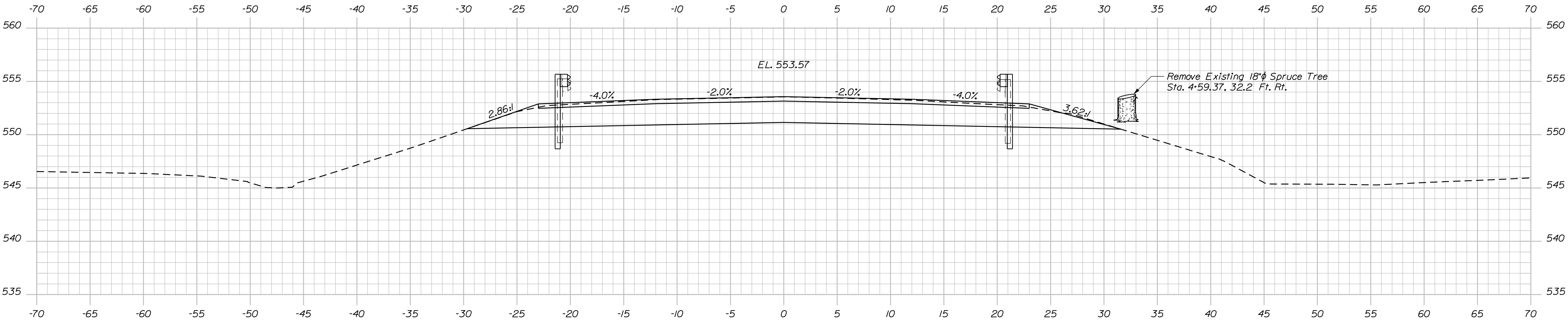
Username: armand.i.paradis

Division: BRIDGE

Filename: ... \007\_XSECT\_4+25\_4+75\_002.dgn

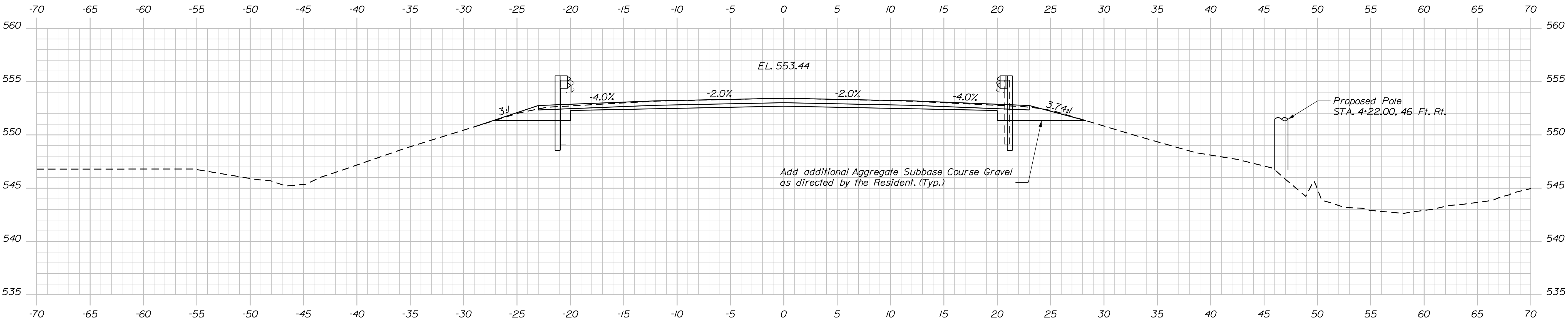


4+75.00



4+50.00

End Transition / Begin Project



4+25.00

Begin Transition at Sta. 4+20.00

|                                                |           |           |
|------------------------------------------------|-----------|-----------|
| STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION |           |           |
|                                                | 022228.00 |           |
|                                                | WIN       | 022228.00 |
| BRIDGE NO. 5902                                |           |           |
| BRIDGE PLANS                                   |           |           |

|                                                                                                                                                      |                                                                  |                                             |           |             |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------|-----------|-------------|------|
| PROJ. MANAGER<br>DESIGN-DETAILED<br>CHECKED-REVIEWED<br>DESIGN-DETAILED<br>REVISIONS 1<br>REVISIONS 2<br>REVISIONS 3<br>REVISIONS 4<br>FIELD CHANGES | BY<br>J. STETSON<br>A. GRAY<br>R. MYERS<br>B. SLAVEN<br>T. WHITE | DATE<br>AUG. 2019<br>AUG. 2018<br>JUN. 2018 | SIGNATURE | P.E. NUMBER | DATE |
|                                                                                                                                                      |                                                                  |                                             |           |             |      |

|                                   |  |
|-----------------------------------|--|
| U.S. ROUTE 1 - OTTER BROOK BRIDGE |  |
| OTTER BROOK                       |  |
| AROOSTOOK COUNTY                  |  |
| CARIBOU                           |  |
| CROSS SECTIONS                    |  |

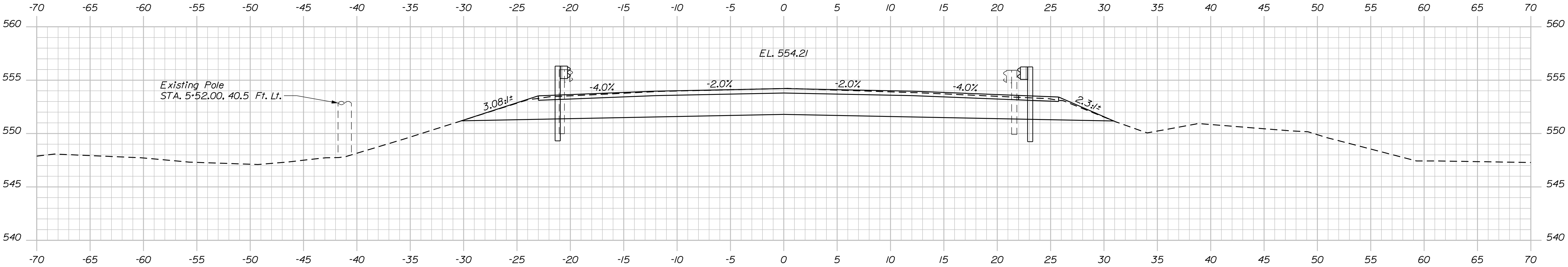
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| SHEET NUMBER |  |
| 7            |  |
| OF 12        |  |

Username: armand.i.paradis

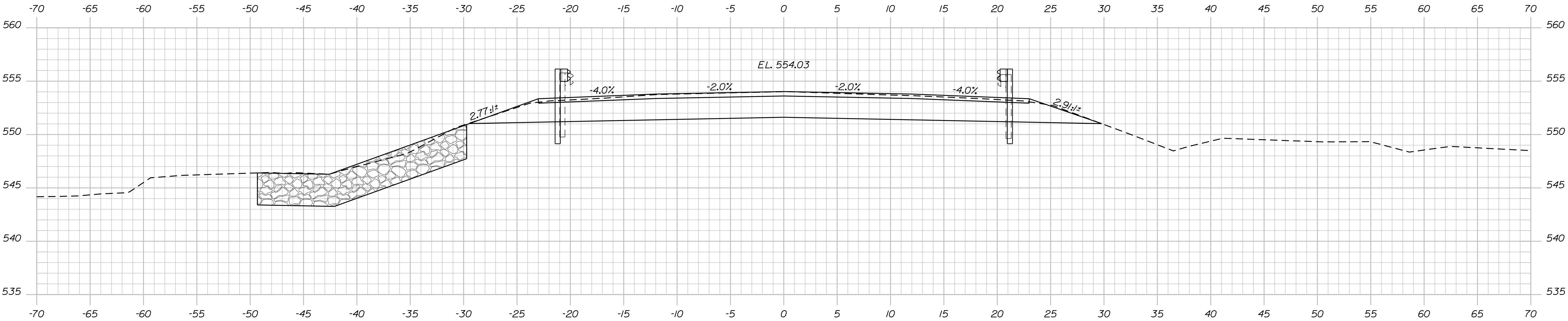
Date: 8/21/2019

Division: BRIDGE

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5+50.00  
End Project / Begin Transition



5+25.00

Sta. 5+33.21±, 20.0± Ft. Rt. to Sta. 5+72.87±, 23.4± Ft. Rt.  
Install 3" W-Beam Guardrail - Mid-way Splice

|                              |              |
|------------------------------|--------------|
| STATE OF MAINE               |              |
| DEPARTMENT OF TRANSPORTATION |              |
| 022228.00                    |              |
| WIN                          | 022228.00    |
| BRIDGE NO. 5902              | BRIDGE PLANS |

|                  |            |            |           |             |
|------------------|------------|------------|-----------|-------------|
| PROJ. MANAGER    | J. STETSON | BY         | DATE      | SIGNATURE   |
|                  |            |            |           |             |
| DESIGN-DETAILED  | M. GRAY    | A. PARADIS | AUG. 2019 | P.E. NUMBER |
|                  |            |            |           |             |
| CHECKED-REVIEWED | R. MYERS   | T. WHITE   | JUN. 2018 | DATE        |
|                  |            |            |           |             |
| DESIGN-DETAILED  | B. SLAVEN  |            |           |             |
|                  |            |            |           |             |
| REVISIONS 1      |            |            |           |             |
|                  |            |            |           |             |
| REVISIONS 2      |            |            |           |             |
|                  |            |            |           |             |
| REVISIONS 3      |            |            |           |             |
|                  |            |            |           |             |
| REVISIONS 4      |            |            |           |             |
|                  |            |            |           |             |
| FIELD CHANGES    |            |            |           |             |
|                  |            |            |           |             |

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| U.S. ROUTE 1 - OTTER BROOK BRIDGE |  |
| OTTER BROOK                       |  |
| AROOSTOOK COUNTY                  |  |
| CARIBOU                           |  |
| CROSS SECTIONS                    |  |

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| SHEET NUMBER |  |
| 8            |  |
| OF 12        |  |







|                                                |                                   |  |  |  |               |            |    |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| SHEET NUMBER<br><div>11</div> <div>OF 12</div> | U.S. ROUTE 1 - OTTER BROOK BRIDGE |  |  |  | PROJ. MANAGER | J. STETSON | BY | DATE | STATE OF MAINE<br>DEPARTMENT OF TRANSPORTATION<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><b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