REVIEWER NOTES

1. THE BRIDGE WILL HAVE A ONE-WAY TEMPORARY BRIDGE CONSTRUCTED DOWNSTREAM OF THE EXISTING STRUCTURE. THE TEMPORARY BRIDGE SHALL HAVE A MINIMUM CLEAR WIDTH BETWEEN FACES OF RAILING OF 18'-0" TO ACCOMMODATE FARM EQUIPMENT THAT NAVIGATES THE CONSTRUCTION AREA FREQUENTLY.

2. RIGHT-OF-WAY ACQUISITION WILL BE NECESSARY.

3. IT IS ANTICIPATED THAT AERIAL UTILITY RELOCATION WILL BE NEEDED.

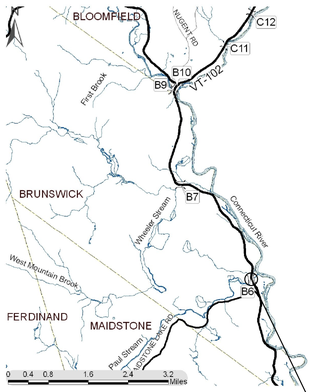
4. A SIMPLIFIED PAVEMENT DESIGN HAS BEEN DONE FOR THIS PROJECT.

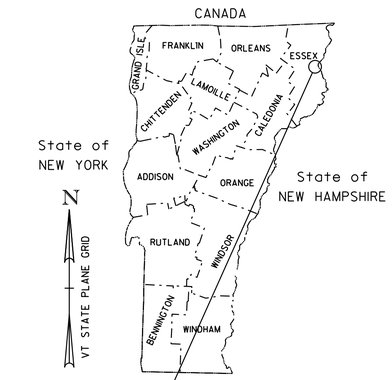
5. FURTHER SURVEY ALONG VT ROUTE 102, WILL BE NECESSARY TO REFINE THE PROPOSED ALIGNMENT. THIS SHALL BE REQUESTED BY THE DESIGN SECTION.

6. DISCUSSIONS ARE UNDER WAY REGARDING THE STATUS OF THE DRIVEWAY AT 15+30 LT, WHICH DOES NOT APPEAR TO BE UNDER A CURRENT PERMIT. SEE MESSAGES FROM DALE PERRON FOR FURTHER INFORMATION.

7. STATIONS ARE SHOWN FOR THE CENTERLINE OF BEARINGS AT THE ABUTMENTS AT THIS CONCEPTUAL STAGE, AND STRUCTURE LENGTH IS ACTUALLY SPAN LENGTH. THE BEGIN AND END BRIDGE STATIONS WILL BE SHOWN ON THE PRELIMINARY PLANS WHEN THE END OF BRIDGE DETAILS ARE DEVELOPED.

# STATE OF VERMONT
# AGENCY OF TRANSPORTATION




# PROPOSED IMPROVEMENT
# BRIDGE PROJECT

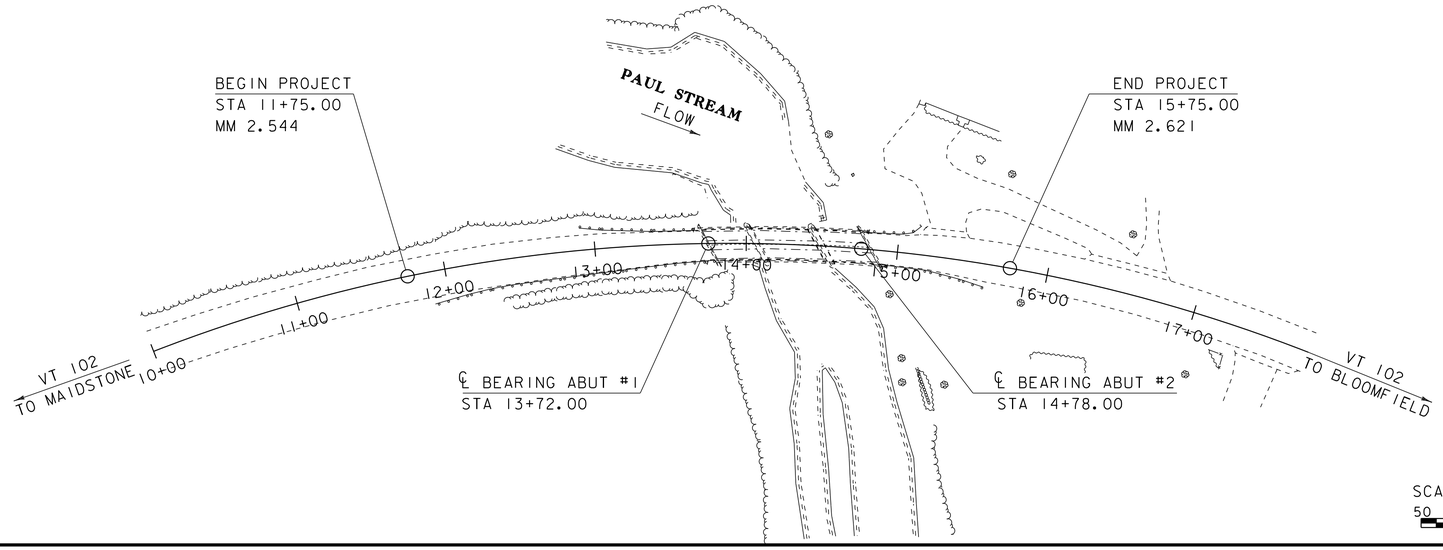
TOWN OF BRUNSWICK
COUNTY OF ESSEX

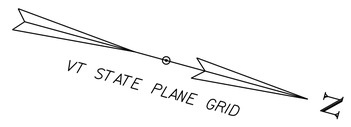
ROUTE NO : VT ROUTE 102, RURAL MAJOR COLLECTOR BRIDGE NO : 6

PROJECT LOCATION: 4.8 MILES SOUTH OF THE INTERSECTION OF VT ROUTE 105 AND VT ROUTE 102

PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW SINGLE SPAN STRUCTURE ON THE SAME ALIGNMENT.

| | |
|---|---|
| LENGTH OF STRUCTURE: | 106.00 FEET |
| LENGTH OF ROADWAY: | 294.00 FEET |
| LENGTH OF PROJECT: | 400.00 FEET |




SCALE 1" = 50'-0"
50 0 50

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

| | |
|---|---|
| QUALITY ASSURANCE PROGRAM : LEVEL 2 | |
| SURVEYED BY : | R. GILMAN |
| SURVEYED DATE : | 05/20/2013 |
| DATUM | |
| VERTICAL | NAVD88 |
| HORIZONTAL | NAD 83 (2011) |

**CONCEPTUAL PLANS**
**26-JUN-2014**

CHIEF ENGINEER OF THE HIGHWAY DIVISION
APPROVED _____ DATE _____

PROJECT MANAGER : C.P. WILLIAMS

PROJECT NAME : BRUNSWICK
PROJECT NUMBER : BF 0271(23)

SHEET 1 OF 24 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
**LRFD**

## INDEX OF SHEETS

### PLAN SHEETS



### STANDARDS LIST

### STRUCTURES DETAIL SHEETS

| | | |
|---|---|---|
| SD-366.00 | LONGSPAN STEEL BEAM GUARDRAIL, GALVANIZED | 11/25/2013 |
| SD-501.00 | CONCRETE DETAILS AND NOTES | 5/7/2010 |
| SD-502.00 | CONCRETE DETAILS AND NOTES | 5/7/2010 |
| SD-516.00 | BRIDGE JOINT ASHPALTIC PLUG | 5/7/2010 |
| SD-516.11a | BRIDGE EXPANSION JOINT, VERMONT | 2/24/2011 |
| SD-516.11b | BRIDGE EXPANSION JOINT, VERMONT | 2/25/2011 |
| SD-601.00 | STRUCTURAL STEEL DETAILS AND NOTES | 5/7/2010 |
| SD-602.00 | STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES | 5/7/2010 |

## FINAL HYDRAULIC REPORT

### TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON A TEMPORARY BRIDGE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY
4. THE APPROACHES FOR THE TEMPORARY BRIDGE SHALL BE PAVED.

### DESIGN VALUES

| | | | |
|---|---|---|---|
| 1. | DESIGN LIVE LOAD | | HL-93 |
| 2. | FUTURE PAVEMENT | $d_p$: | 3.0 INCH |
| 3. | DESIGN SPAN | $L$: | 106.00 FT |
| 4. | MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) | $\Delta$: | - - - |
| 5. | PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX) | $f_y$: | 270 KSI |
| 6. | PRESTRESSED CONCRETE STRENGTH | $f'_c$: | 6.0 KSI |
| 7. | PRESTRESSED CONCRETE RELEASE STRENGTH | $f'_{ci}$: | 5.0 KSI |
| 8. | CONCRETE, HIGH PERFORMANCE CLASS AA | $f'_c$: | 4.0 KSI |
| 9. | CONCRETE, HIGH PERFORMANCE CLASS A | $f'_c$: | 4.0 KSI |
| 10. | CONCRETE, HIGH PERFORMANCE CLASS B | $f'_c$: | 3.5 KSI |
| 11. | CONCRETE, CLASS C | $f'_c$: | 3.0 KSI |
| 12. | REINFORCING STEEL | $f_y$: | 60 KSI |
| 13. | STRUCTURAL STEEL AASHTO M270 | $f_y$: | - - - |
| 14. | NOMINAL BEARING RESISTANCE OF SOIL | $q_n$: | 4.0 KSF |
| 15. | SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | $\phi$: | - - - |
| 16. | NOMINAL BEARING RESISTANCE OF ROCK | $q_n$: | 10.0 KSF |
| 17. | ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | $\phi$: | - - - |
| 18. | PILE RESISTANCE FACTOR | $\phi$: | - - - |
| 19. | LATERAL PILE DEFLECTION | $\Delta$: | - - - |
| 20. | BASIC WIND SPEED | $V_{3s}$: | - - - |
| 21. | MINIMUM GROUND SNOW LOAD | $p_g$: | - - - |
| 22. | SEISMIC DATA — $PGA$: 0 | $S_s$: | - - - |
| | | $S_1$: | - - - |
| 23. | | | - - - |
| 24. | | | - - - |
| 25. | | | - - - |
| 26. | | | - - - |

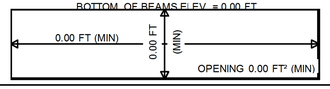
### LRFR LOAD RATING FACTORS

| LOADING LEVELS | TRUCK | | | | | | |
|---|---|---|---|---|---|---|---|
| | H-20 | HL-93 | 3S2 | 6 AXLE | 3A. STR. | 4A. STR. | 5A. SEM |
| TONNAGE | 20 | 36 | 36 | 66 | 30 | 34.5 | 38 |
| INVENTORY | | | | | | | |
| POSTING | | | | | | | |
| OPERATING | | | | | | | |
| COMMENTS: | | | | | | | |

### AS BUILT "REBAR" DETAIL

| LEVEL I | LEVEL II | LEVEL III |
|---|---|---|
| TYPE: | TYPE: | TYPE: |
| GRADE: | GRADE: | GRADE: |

### TEMPORARY BRIDGE PROFILE ALONG TEMP CL




### TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT |
|---|---|---|---|---|---|
| 2016 | 550 | 75 | 58 | 11.2 | 65 |
| 2036 | 580 | 75 | 58 | 16.1 | 100 |

20 year ESAL for flexible pavement from 2016 to 2036 : 269000

40 year ESAL for flexible pavement from 2016 to 2056 : 602000

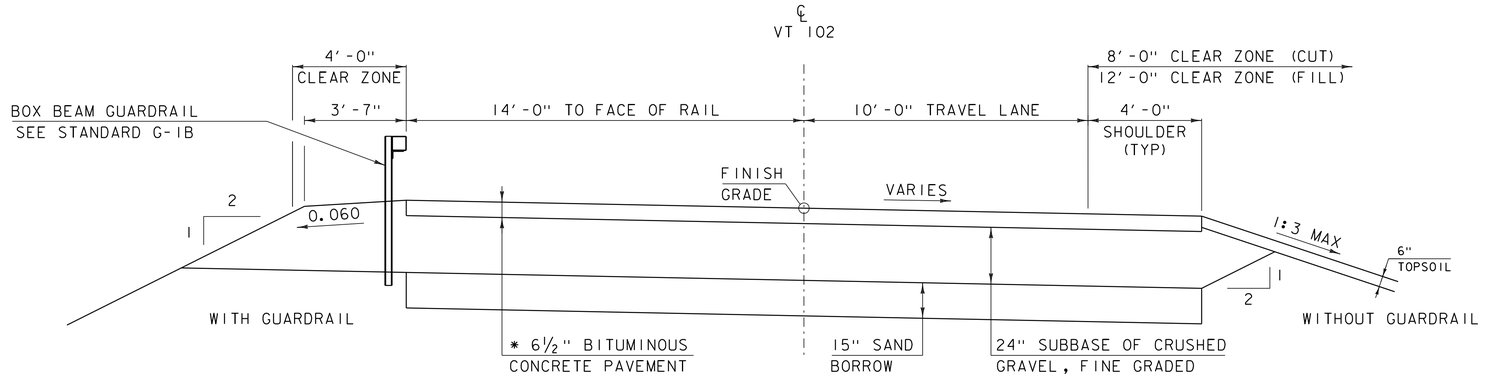
Design Speed : 50 mph

PROJECT NAME: **BRUNSWICK**

PROJECT NUMBER: **BF 0271(23)**

FILE NAME: **13c056\s13c056forms.dgn**
PROJECT LEADER: **C.P.WILLIAMS**
DESIGNED BY: **G. SWEENY**
**PRELIMINARY INFORMATION SHEET 1**

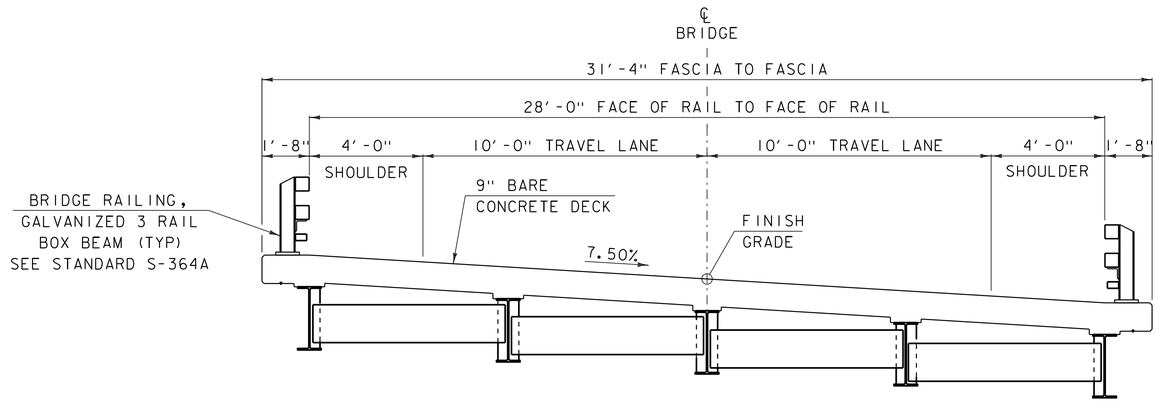
PLOT DATE: 3/19/2014
DRAWN BY: **D.D.BEARD**
CHECKED BY:
SHEET 2 OF 24




## PROPOSED VT 102 TYPICAL SECTION

SCALE ⅜" = 1'-0"

* 1½" TYPE IVS OVER
1½" TYPE IVS OVER
3½" TYPE IIS




## PROPOSED BRIDGE TYPICAL SECTION

SCALE ⅜" = 1'-0"

NOTE: GIRDERS SHOWN FOR EXAMPLE,
SUPERSTRUCTURE NOT YET DESIGNED

### MATERIAL TOLERANCES

(IF USED ON PROJECT)

| | |
|---|---|
| SURFACE | |
| - PAVEMENT (TOTAL THICKNESS) | +/- ¼" |
| - AGGREGATE SURFACE COURSE | +/- ½" |
| SUBBASE | +/- 1" |
| SAND BORROW | +/- 1" |

PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 0271(23)

FILE NAME: 13c056\sl3c056typical.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: ----------
TYPICAL SECTIONS

PLOT DATE: 26-JUN-2014
DRAWN BY: G. SWEENY
CHECKED BY: ------
SHEET 3 OF 24

## GENERAL INFORMATION

### SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

## R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

| POINT | CODE | DESCRIPTION |
|---|---|---|
| | CH | CHANNEL EASEMENT |
| | CONST | CONSTRUCTION EASEMENT |
| | CUL | CULVERT EASEMENT |
| | D&C | DISCONNECT & CONNECT |
| | DIT | DITCH EASEMENT |
| | DR | DRAINAGE EASEMENT |
| | DRIVE | DRIVEWAY EASEMENT |
| | EC | EROSION CONTROL |
| | HWY | HIGHWAY EASEMENT |
| | I&M | INSTALL & MAINTAIN EASEMENT |
| | LAND | LANDSCAPE EASEMENT |
| | R&RES | REMOVE & RESET |
| | R&REP | REMOVE & REPLACE |
| | SR | SLOPE RIGHT |
| | UE | UTILITY EASEMENT |
| | (P) | PERMANENT EASEMENT |
| | (T) | TEMPORARY EASEMENT |
| ■ | BNDNS | BOUND SET |
| ⧈ | BNDNS | BOUND TO BE SET |
| ● | IPNS | IRON PIN SET |
| ◎ | IPNS | IRON PIN TO BE SET |
| ⊠ | CALC | EXISTING ROW POINT |
| ○ | PROW | PROPOSED ROW POINT |
| [LENGTH] | | LENGTH CARRIED ON NEXT SHEET |

## COMMON TOPOGRAPHIC POINT SYMBOLS

| POINT | CODE | DESCRIPTION |
|---|---|---|
| | APL | BOUND APPARENT LOCATION |
| | BM | BENCHMARK |
| | BND | BOUND |
| | CB | CATCH BASIN |
| | COMB | COMBINATION POLE |
| | DITHR | DROP INLET THROATED DNC |
| | EL | ELECTRIC POWER POLE |
| | FPOLE | FLAGPOLE |
| | GASFIL | GAS FILLER |
| | GP | GUIDE POST |
| | GSO | GAS SHUT OFF |
| | GUY | GUY POLE |
| | GUYW | GUY WIRE |
| | GV | GATE VALUE |
| | H | TREE HARDWOOD |
| | HCTRL | CONTROL HORIZONTAL |
| | HVCTRL | CONTROL HORIZ. & VERTICAL |
| | HYD | HYDRANT |
| | IP | IRON PIN |
| | IPIPE | IRON PIPE |
| | LI | LIGHT - STREET OR YARD |
| | MB | MAILBOX |
| | MH | MANHOLE (MH) |
| | MM | MILE MARKER |
| | PM | PARKING METER |
| | PMK | PROJECT MARKER |
| | POST | POST STONE/WOOD |
| | RRSIG | RAILROAD SIGNAL |
| | RRSL | RAILROAD SWITCH LEVER |
| | S | TREE SOFTWOOD |
| | SAT | SATELLITE DISH |
| | SHRUB | SHRUB |
| | SIGN | SIGN |
| | STUMP | STUMP |
| | TEL | TELEPHONE POLE |
| | TIE | TIE |
| | TSIGN | SIGN W/DOUBLE POST |
| | VCTRL | CONTROL VERTICAL |
| | WELL | WELL |
| | WSO | WATER SHUT OFF |

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

## PROPOSED GEOMETRY CODES

| CODE | DESCRIPTION |
|---|---|
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| CC | CENTER OF CURVE |
| PT | POINT OF TANGENCY |
| PCC | POINT OF COMPOUND CURVE |
| PRC | POINT OF REVERSE CURVE |
| POB | POINT OF BEGINNING |
| POE | POINT OF ENDING |
| STA | STATION PREFIX |
| AH | AHEAD STATION SUFFIX |
| BK | BACK STATION SUFFIX |
| D | CURVE DEGREE OF (100FT) |
| R | CURVE RADUIS OF |
| T | CURVE TANGENT LENGTH |
| L | CURVE LENGTH OF |
| E | CURVE EXTERNAL DISTANCE |

## UTILITY SYMBOLOGY

### UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEP.
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

### ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEP.
- UTILITY POLE GUY WIRE

## PROJECT CONSTRUCTION SYMBOLOGY

### PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

### PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PROJECT DEMARCATION FENCE
- BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

## CONVENTIONAL BOUNDARY SYMBOLOGY

### BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P/L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6F PROPERTY BOUNDARY
- 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZARDOUS WASTE

## EPSC LAYOUT PLAN SYMBOLOGY

### EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

### ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — HAZ — HAZARDOUS WASTE AREA
- AG — AGRICULTURAL LAND
- HABITAT — FISH & WILDLIFE HABITAT
- FLOOD PLAIN — FLOOD PLAIN
- OHW — ORDINARY HIGH WATER (OHW)
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

### ARCHEOLOGICAL & HISTORIC

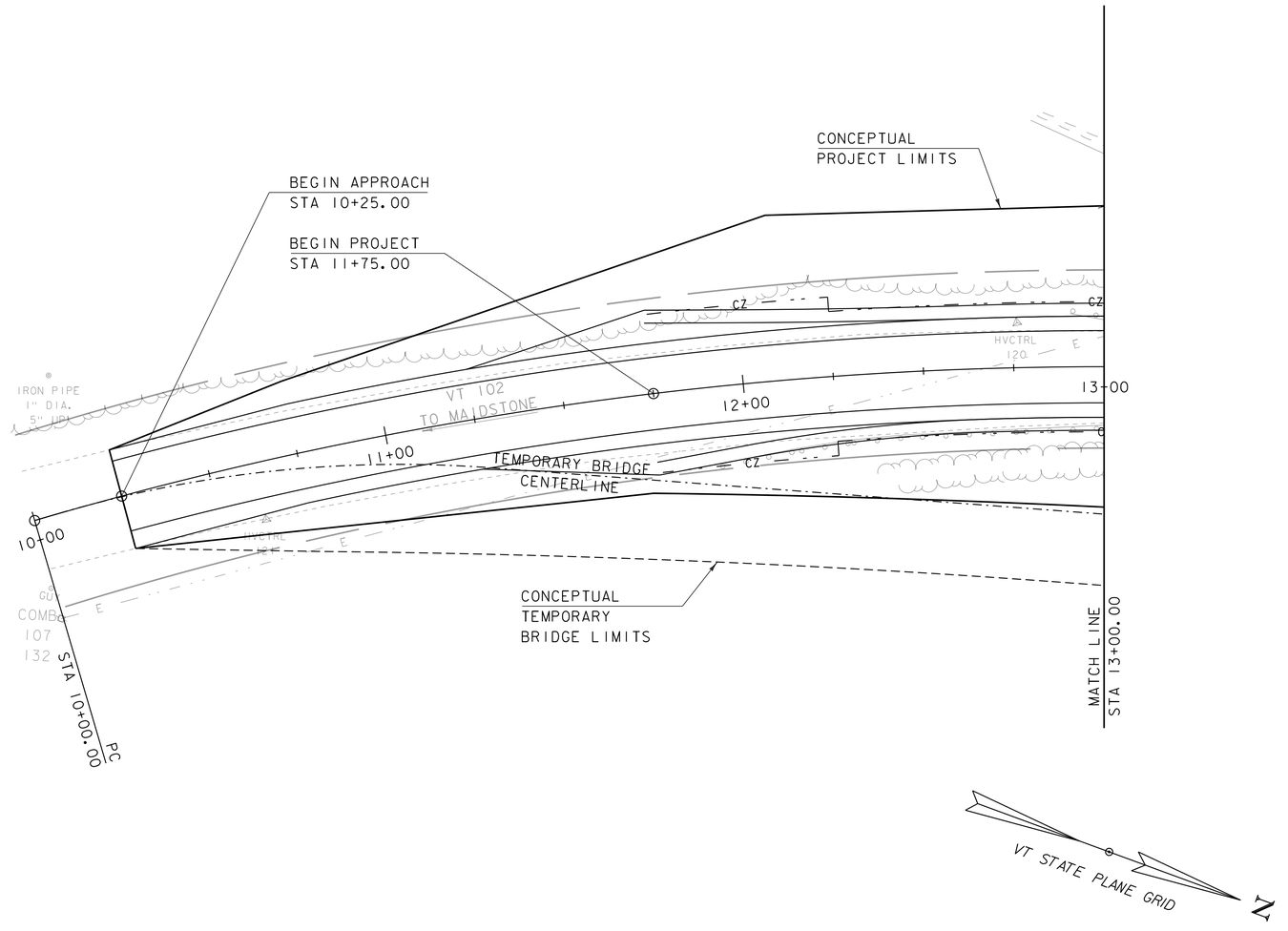
- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ — HISTORIC STRUCTURE

## CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

### EXISTING FEATURES

- ROAD EDGE PAVEMENT
- ROAD EDGE GRAVEL
- DRIVEWAY EDGE
- DITCH
- FOUNDATION
- FENCE (EXISTING)
- FENCE WOOD POST
- FENCE STEEL POST
- GARDEN
- ROAD GUARDRAIL
- RAILROAD TRACKS
- CULVERT (EXISTING)
- STONE WALL
- WALL
- WOOD LINE
- BRUSH LINE
- HEDGE
- BODY OF WATER EDGE
- LEDGE EXPOSED

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: l3c056/sl3c056forms.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: M.LONGSTREET |
| DESIGNED BY: ------ | CHECKED BY: ------ |
| SYMBOLOGY LEGEND SHEET | SHEET 4 OF 24 |

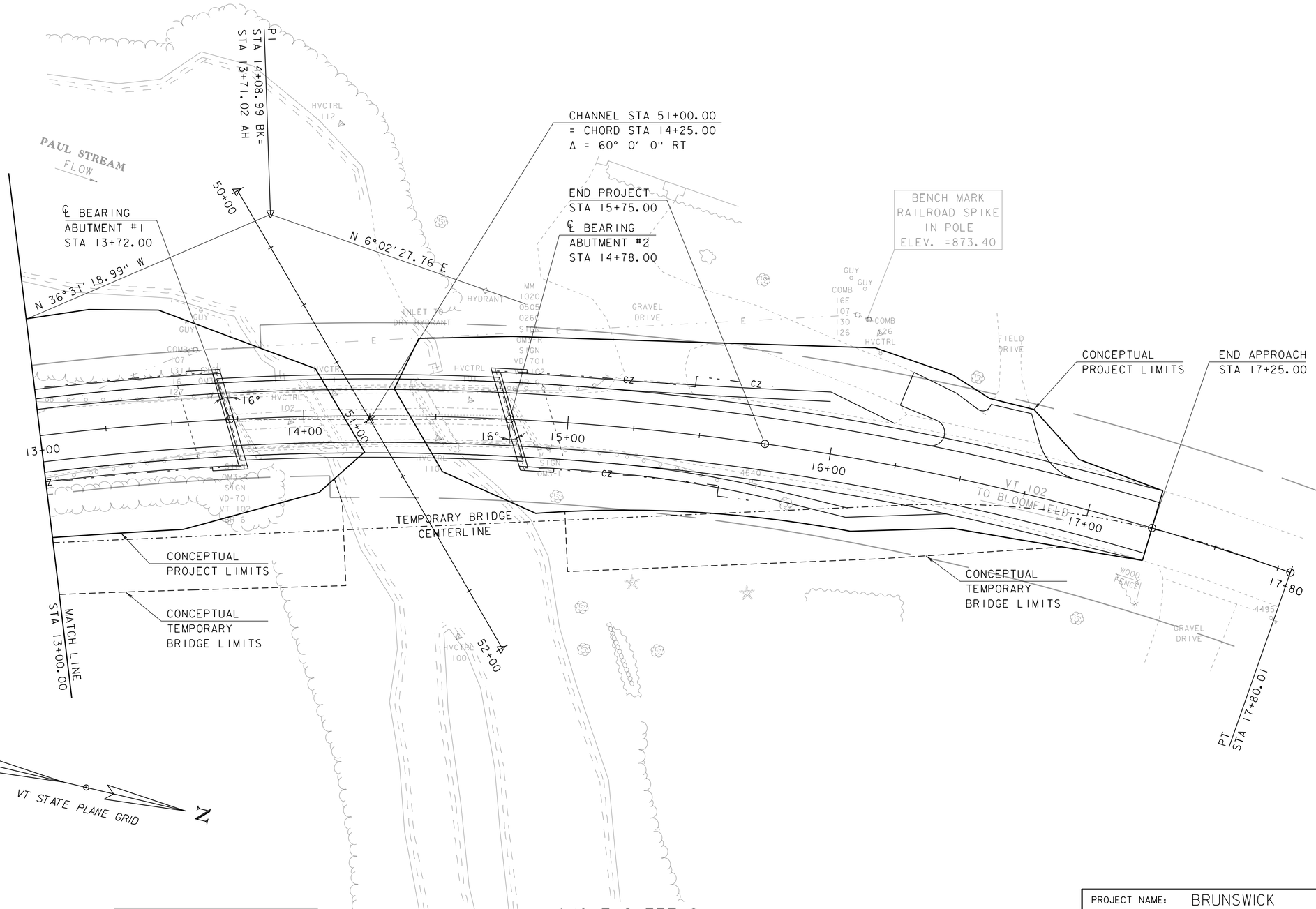



## LAYOUT SHEET 1

SCALE 1" = 20'-0"

20 0 20

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 0271(23) |
| FILE NAME: 13c056/sl3c056border.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| LAYOUT SHEET 1 | SHEET 5 OF 24 |

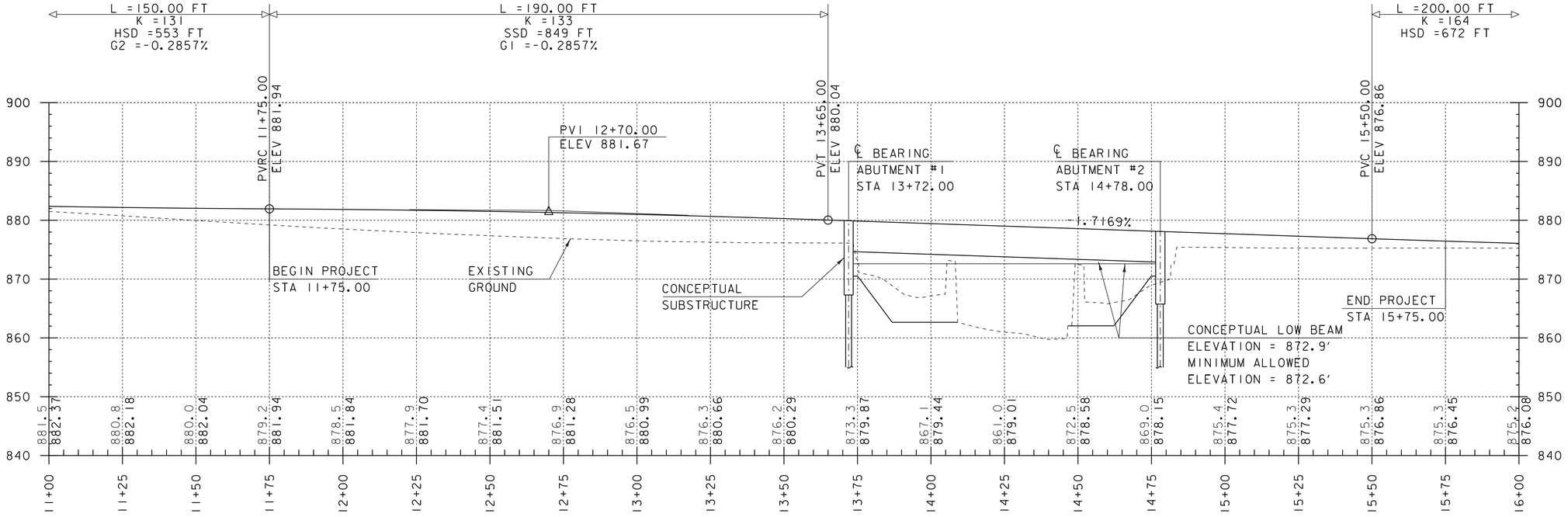


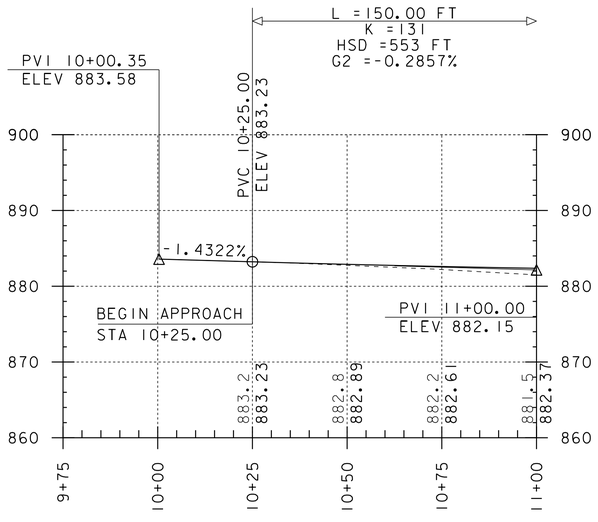

EXISTING BRIDGE INFORMATION
3 SPAN CONCRETE T-BEAM
BUILT 1932, 109' LENGTH
40' MAXIMUM SPAN
23'-4" FASCIA TO FASCIA

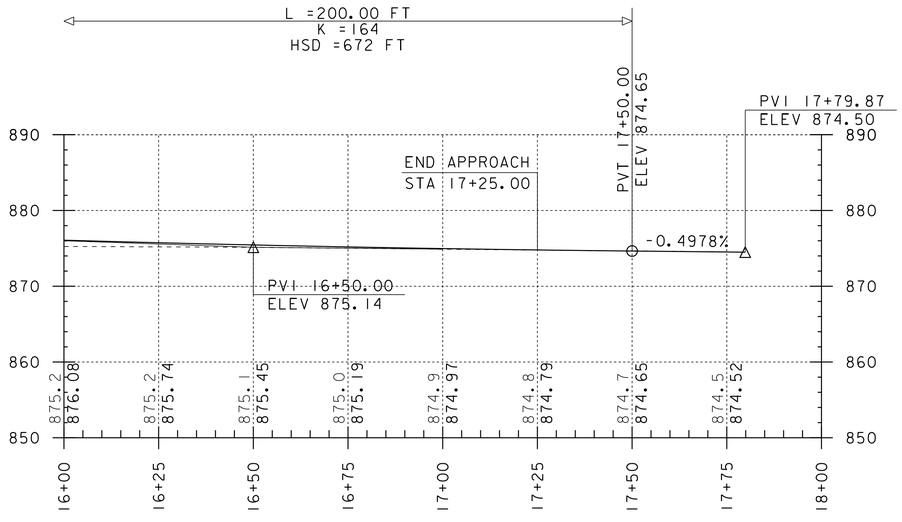
## LAYOUT SHEET 2

SCALE 1" = 20'-0"
20 0 20

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: I3c056/sl3c056border.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| LAYOUT SHEET 2 | SHEET 6 OF 24 |




NOTE:

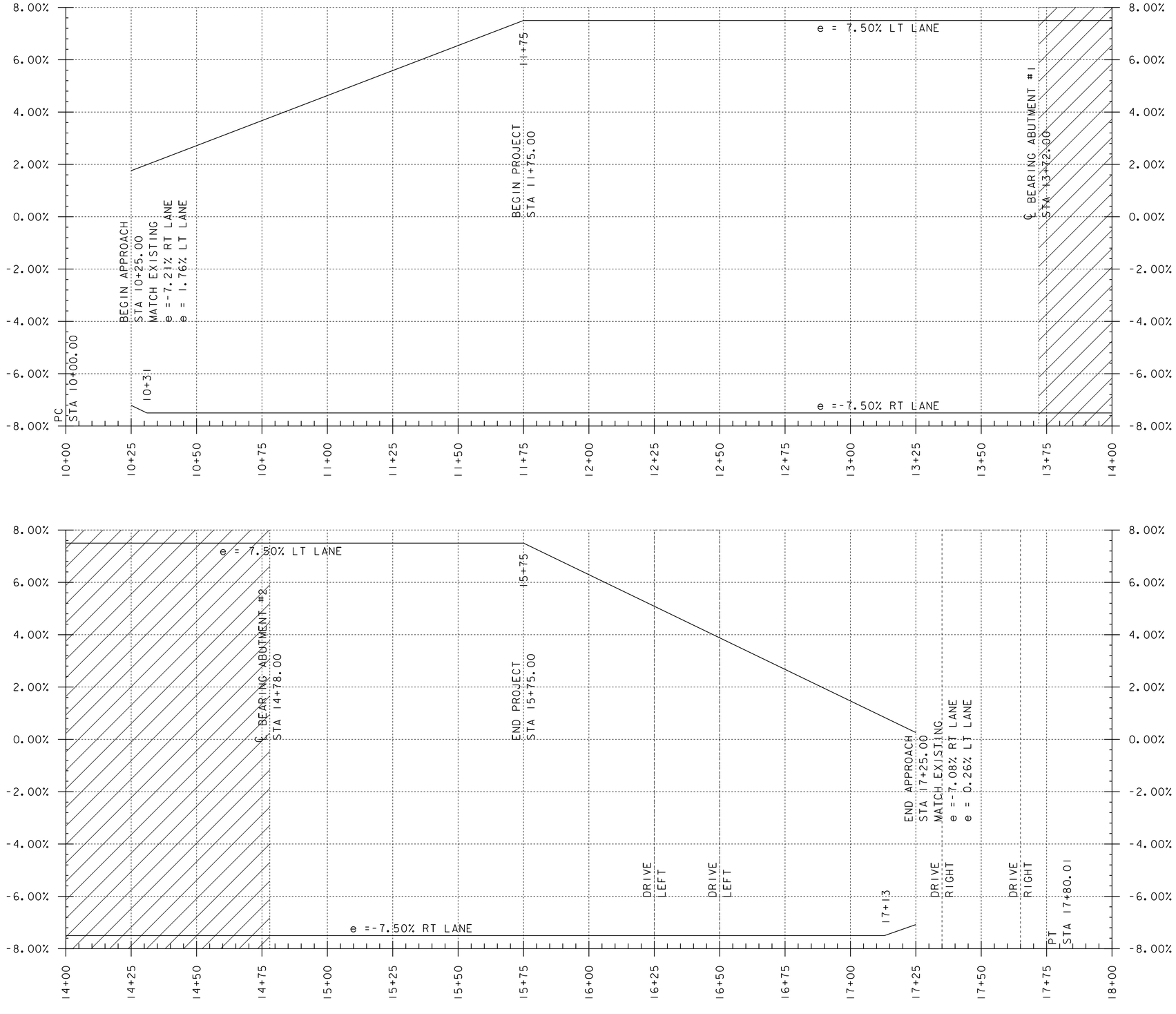
ADDITIONAL SURVEY IS NEEDED TO COMPLETE THE ROADWAY WORK AT EACH END OF THE PROJECT. THE PROFILE INFORMATION SHOWN IS INCOMPLETE.

## VT RT 102 PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

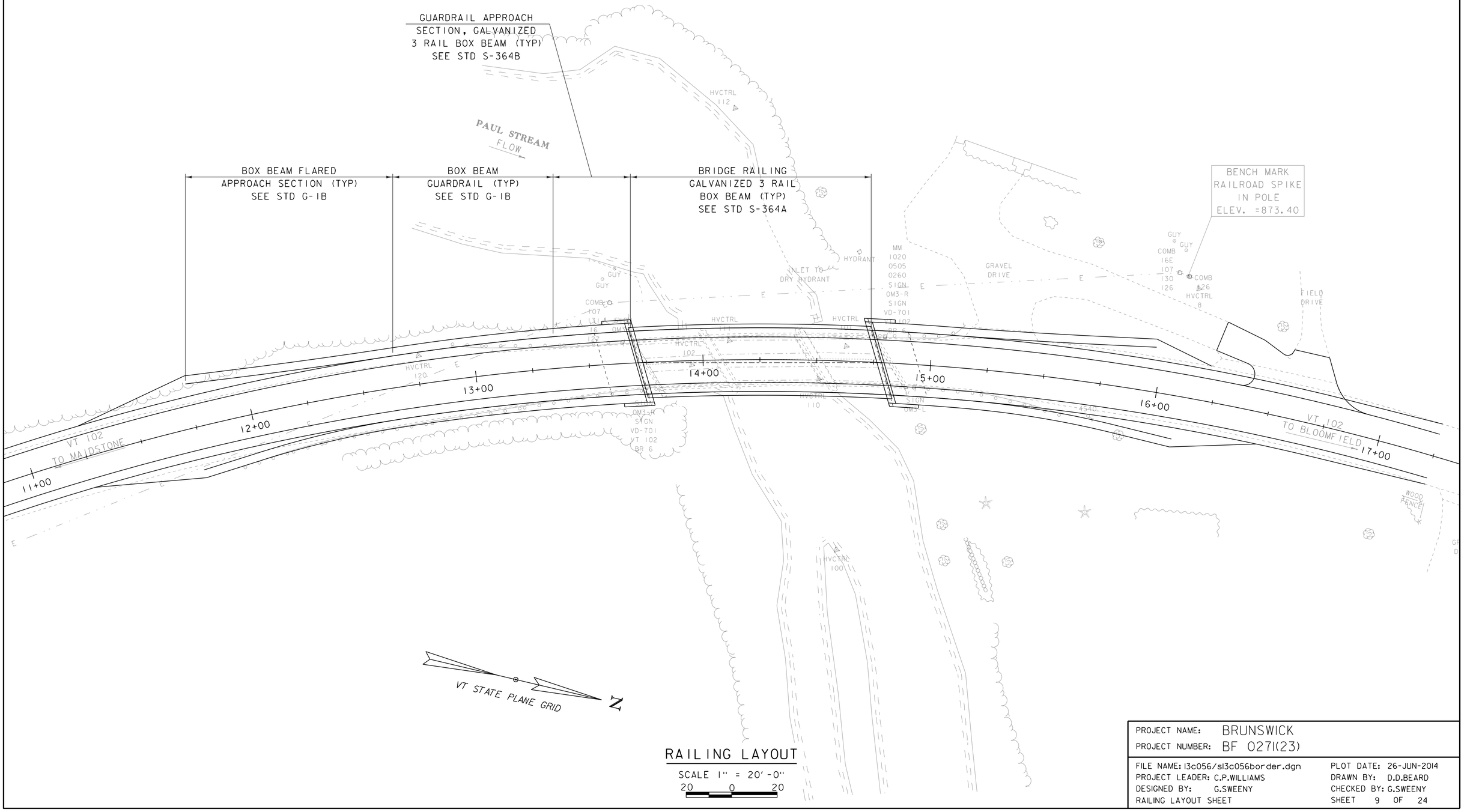
| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: | I3c056\sI3c056profile.dgn |
| PROJECT LEADER: | C.P.WILLIAMS |
| DESIGNED BY: | G.SWEENY |
| PROFILE SHEET | |
| PLOT DATE: | 26-JUN-2014 |
| DRAWN BY: | D.D.BEARD |
| CHECKED BY: | ------ |
| SHEET | 7 OF 24 |




## VT RT 102 BANKING DIAGRAM

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=2.00% SLOPE

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: I3c056/sI3c056profile.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| BANKING DIAGRAM SHEET | SHEET 8 OF 24 |




# RAILING LAYOUT

SCALE 1" = 20'-0"

20 0 20

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: I3c056/sI3c056border.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| RAILING LAYOUT SHEET | SHEET 9 OF 24 |

## SOIL CLASSIFICATION

| AASHTO | |
|---|---|
| A1 | Gravel and Sand |
| A3 | Fine Sand |
| A2 | Silty or Clayey Gravel and Sand |
| A4 | Silty Soil - Low Compressibility |
| A5 | Silty Soil - Highly Compressible |
| A6 | Clayey Soil - Low Compressibility |
| A7 | Clayey Soil - Highly Compressible |

## ROCK QUALITY DESIGNATION

| R.Q.D. (%) | ROCK DESCRIPTION |
|---|---|
| <25 | Very Poor |
| 25 to 50 | Poor |
| 51 to 75 | Fair |
| 76 to 90 | Good |
| >90 | Excellent |

## SHEAR STRENGTH

| UNDRAINED SHEAR STRENGTH IN P.S.F. | CONSISTENCY |
|---|---|
| <250 | Very Soft |
| 250-500 | Soft |
| 500-1000 | Med. Stiff |
| 1000-2000 | Stiff |
| 2000-4000 | Very Stiff |
| >4000 | Hard |

## CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

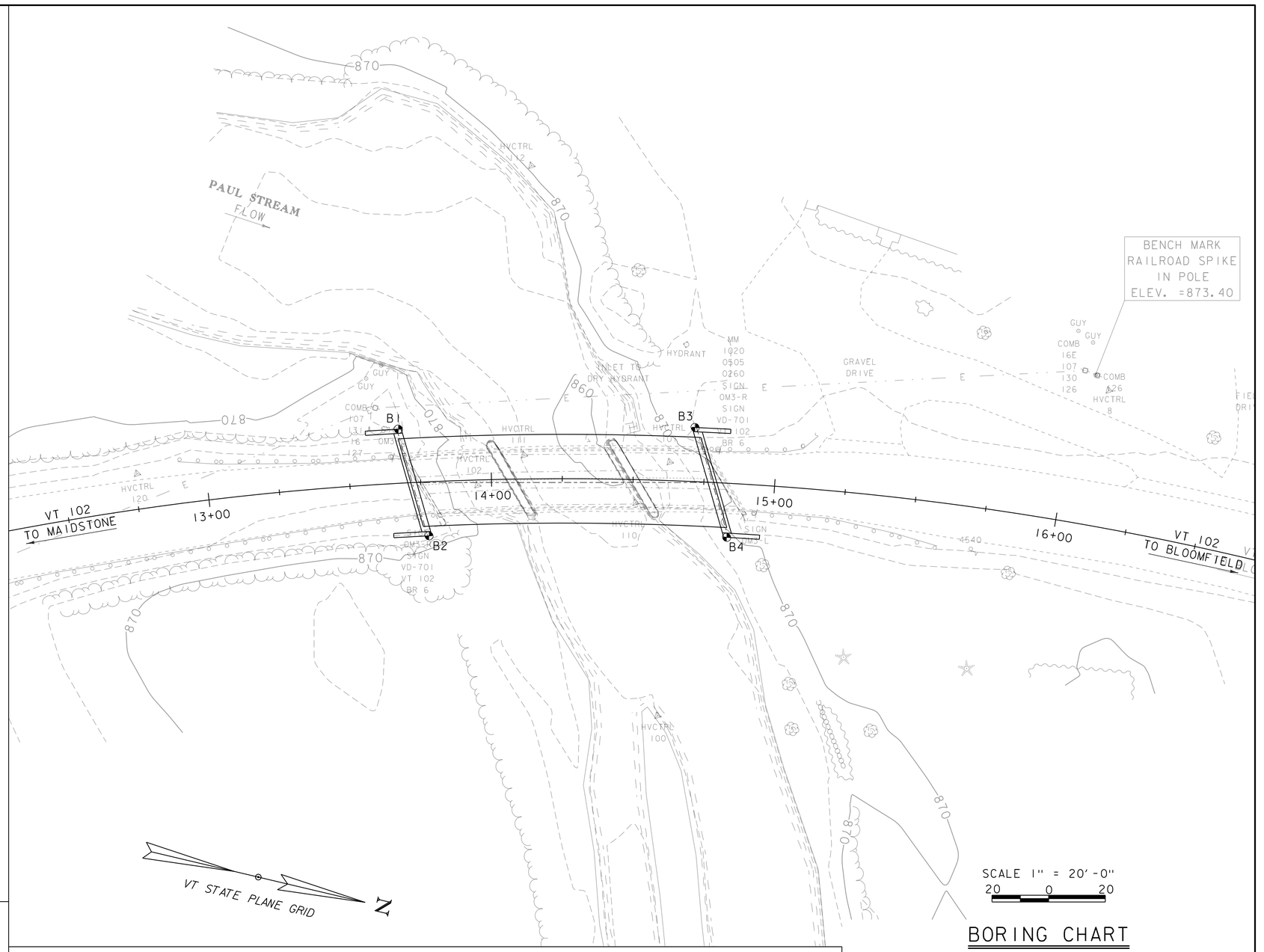
| DENSITY (GRANULAR SOILS) | | CONSISTENCY (COHESIVE SOILS) | |
|---|---|---|---|
| N | DESCRIPTIVE TERM | N | DESCRIPTIVE TERM |
| <5 | Very Loose | <2 | Very Soft |
| 5-10 | Loose | 2-4 | Soft |
| 11-24 | Med. Dense | 5-8 | Med. Stiff |
| 25-50 | Dense | 9-15 | Stiff |
| >50 | Very Dense | 16-30 | Very Stiff |
| | | 31-60 | Hard |
| | | >60 | Very Hard |

## COMMONLY USED SYMBOLS

| | |
|---|---|
| ▼ | Water Elevation |
| ⊗ | Standard Penetration Boring |
| ⊕ | Auger Boring |
| ⊙ | Rod Sounding |
| S | Sample |
| N | Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1⅜" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30" |
| VS | Field Vane Shear Test |
| US | Undisturbed Soil Sample |
| B | Blast |
| DC | Diamond Core |
| MD | Mud Drill |
| WA | Wash Ahead |
| HSA | Hollow Stem Auger |
| AX | Core Size 1⅛" |
| BX | Core Size 1⅝" |
| NX | Core Size 2⅛" |
| M | Double Tube Core Barrel Used |
| LL | Liquid Limit |
| PL | Plastic Limit |
| PI | Plasticity Index |
| NP | Non Plastic |
| w | Moisture Content (Dry Wgt. Basis) |
| D | Dry |
| M | Moist |
| MTW | Moist To Wet |
| W | Wet |
| Sat | Saturated |
| Bo | Boulder |
| Gr | Gravel |
| Sa | Sand |
| Si | Silt |
| Cl | Clay |
| HP | Hardpan |
| Le | Ledge |
| NLTD | No Ledge To Depth |
| CNPF | Can Not Penetrate Further |
| TLOB | Top of Ledge Or Boulder |
| NR | No Recovery |
| Rec. | Recovery |
| %Rec. | Percent Recovery |
| ROD | Rock Quality Designation |
| CBR | California Bearing Ratio |
| < | Less Than |
| > | Greater Than |
| R | Refusal (N > 100) |
| VTSPG | NAD83 - See Note 7 |

### COLOR

| | | | |
|---|---|---|---|
| blk | Black | pnk | Pink |
| bl | Blue | pu | Purple |
| brn | Brown | rd | Red |
| dk | Dark | tn | Tan |
| gry | Gray | wh | White |
| gn | Green | yel | Yellow |
| lt | Light | mltc | Multicolored |
| or | Orange | | |




## DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

## GENERAL NOTES

1. The subsurface explorations shown herein were made between _____ and _____ by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

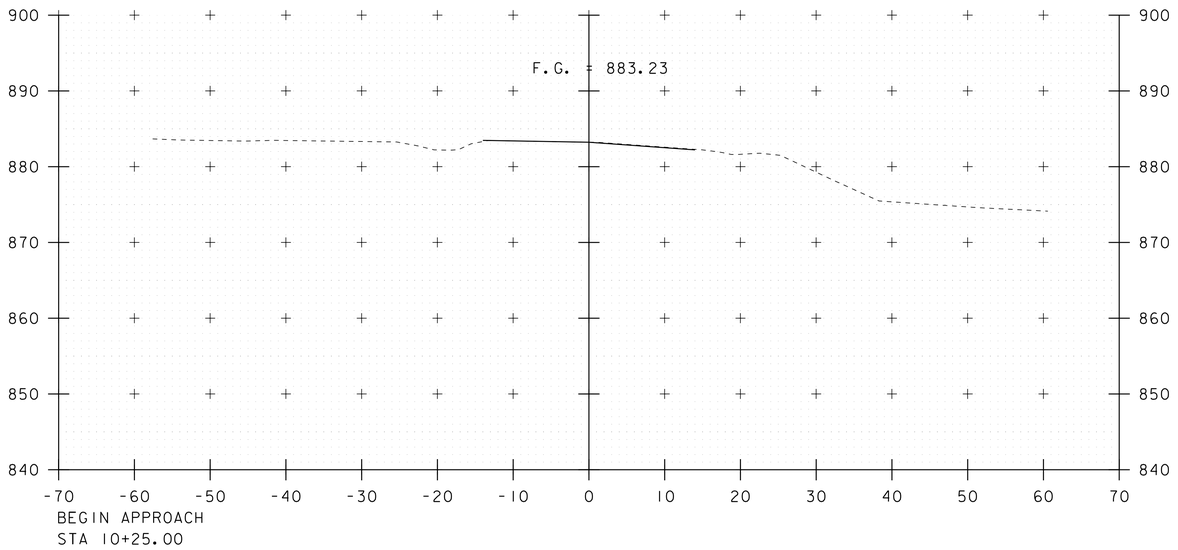
## BORING CHART

| HOLE NO. | SURV. STATION | OFFSET | GROUND ELEV. | ELEV. TLOB |
|---|---|---|---|---|
| B1 | 13+68 | 19. OLT | | |
| B2 | 13+77 | 19. ORT | | |
| B3 | 14+70 | 19. OLT | | |
| B4 | 14+84 | 19. ORT | | |

PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 027I(23)

FILE NAME: I3c056/sI3c056boring.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
BORING INFORMATION SHEET

PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 10 OF 24

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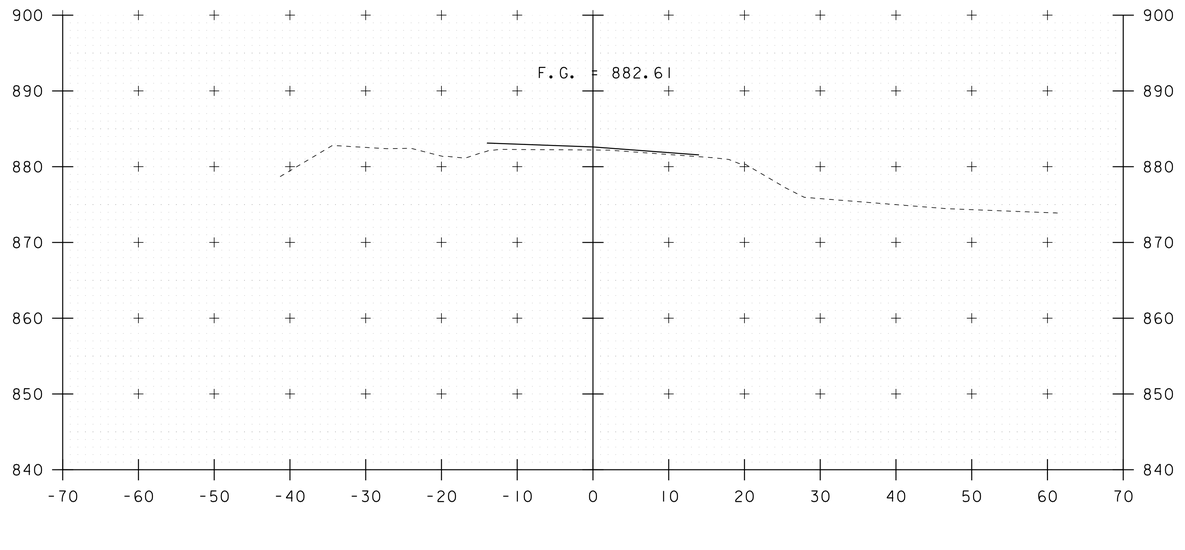


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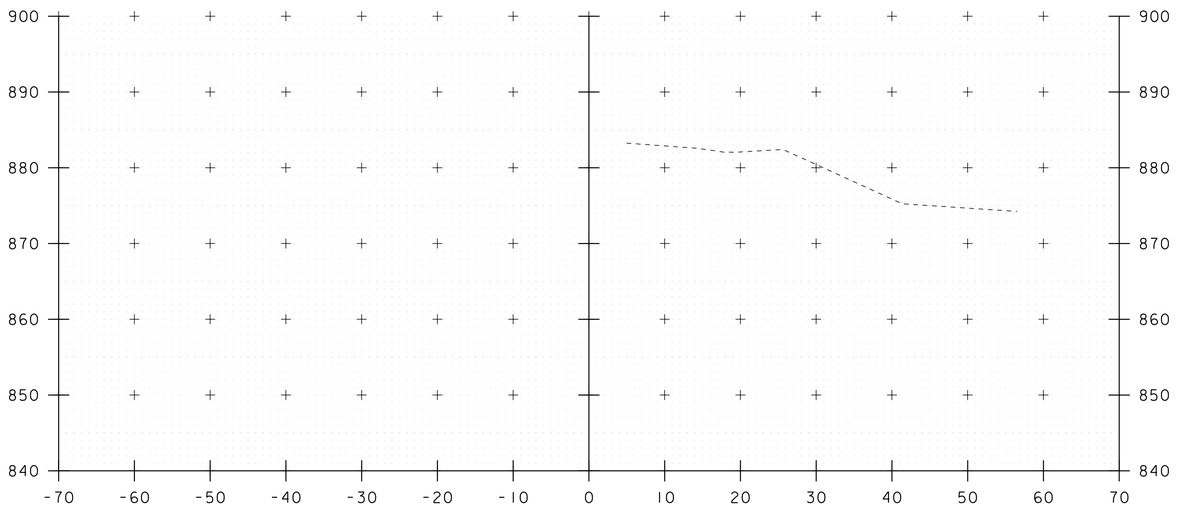


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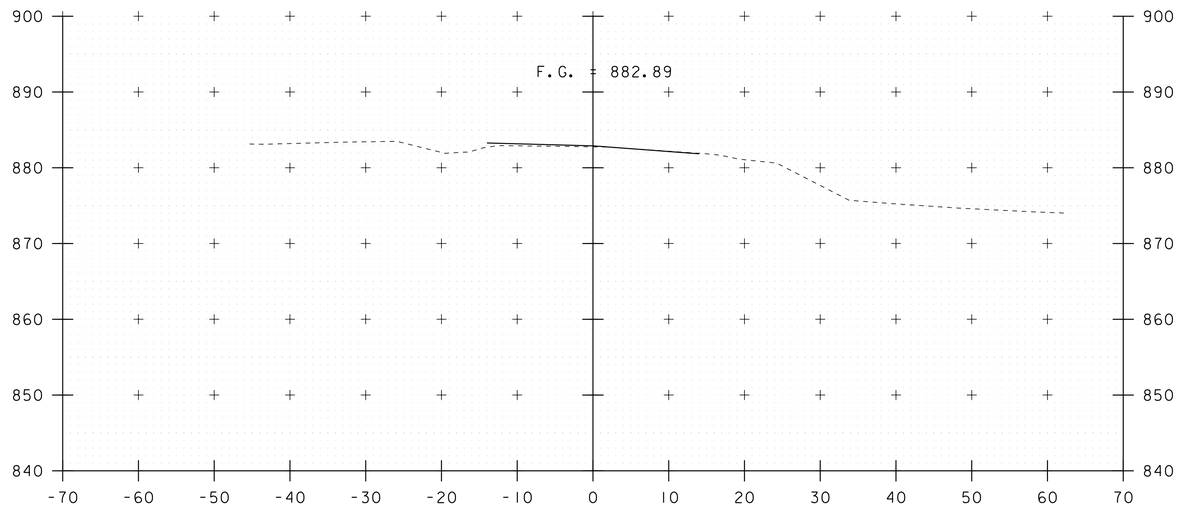


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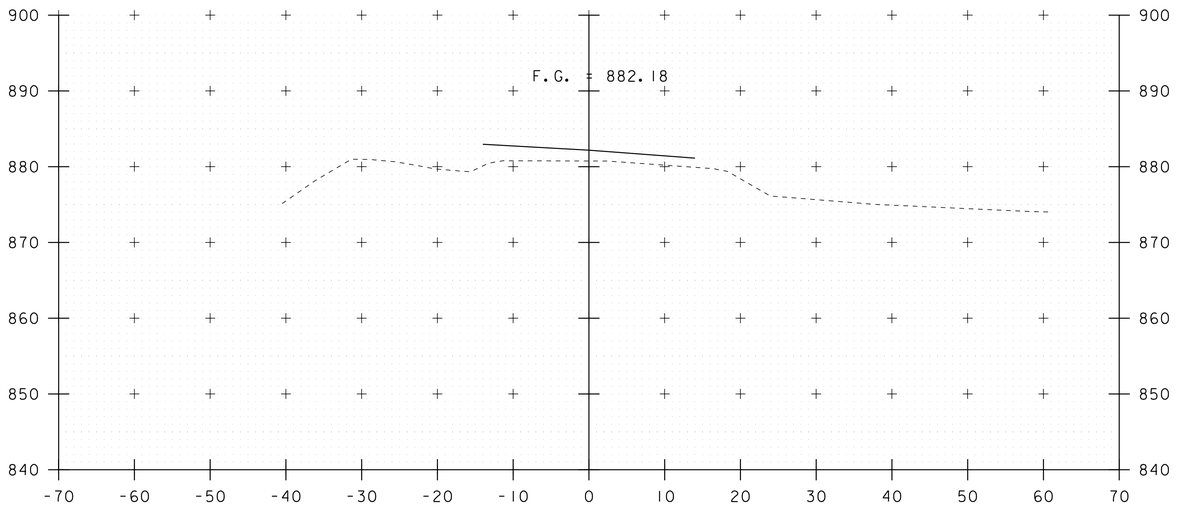
STA. 10+00 TO STA. 10+75

| | |
|---|---|
| PROJECT NAME: BRUNSWICK | |
| PROJECT NUMBER: BF 0271(23) | |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| MAINLINE CROSS SECTIONS 1 | SHEET 11 OF 24 |

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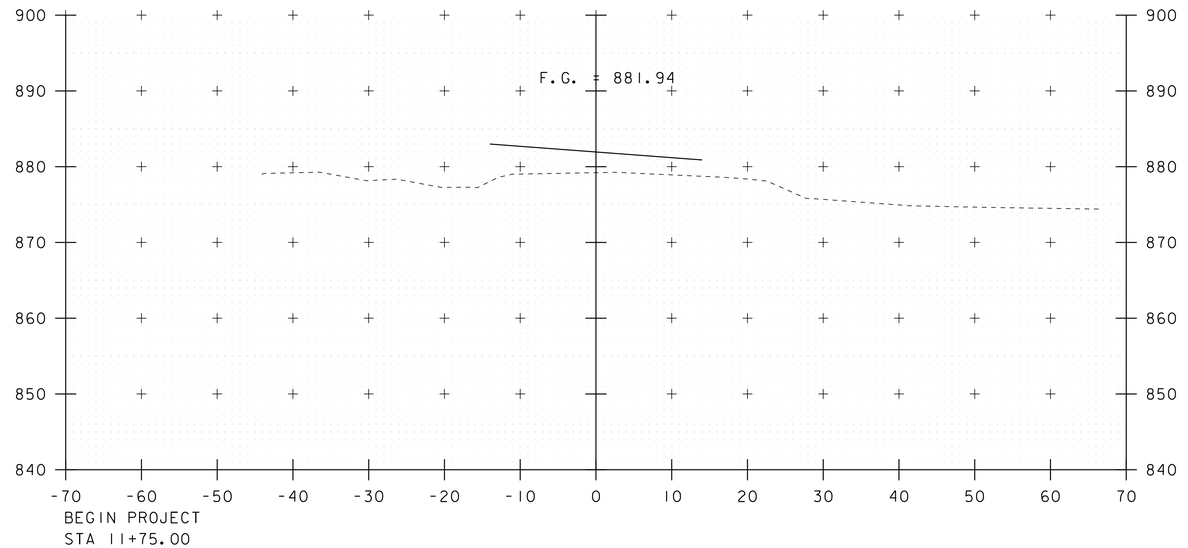


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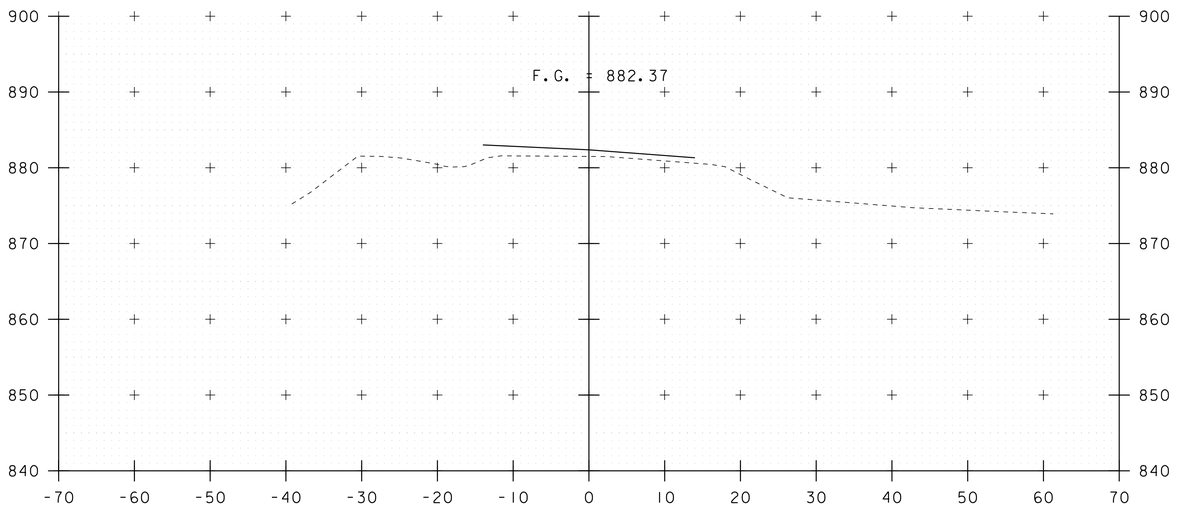


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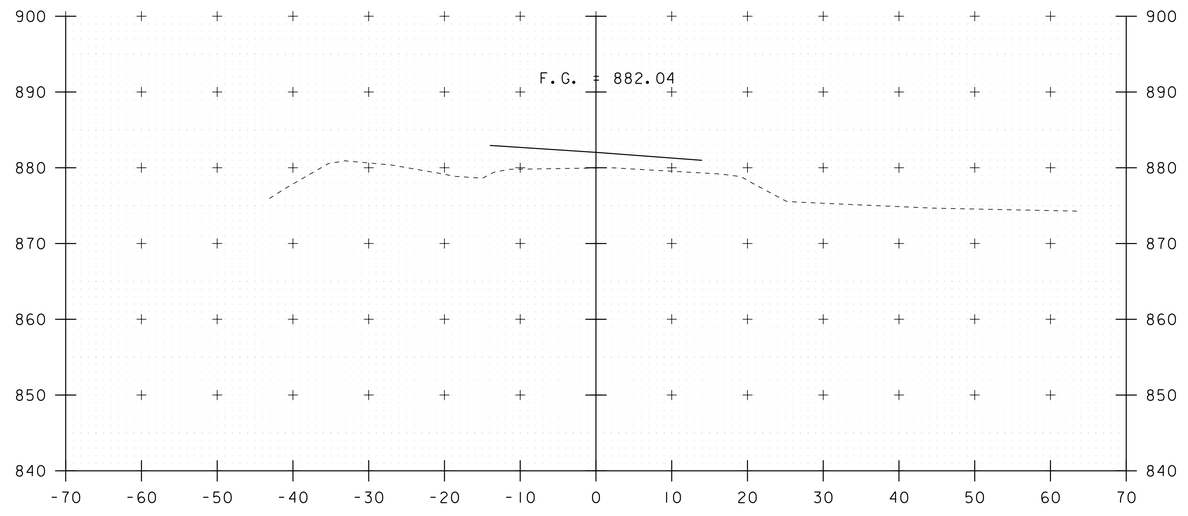


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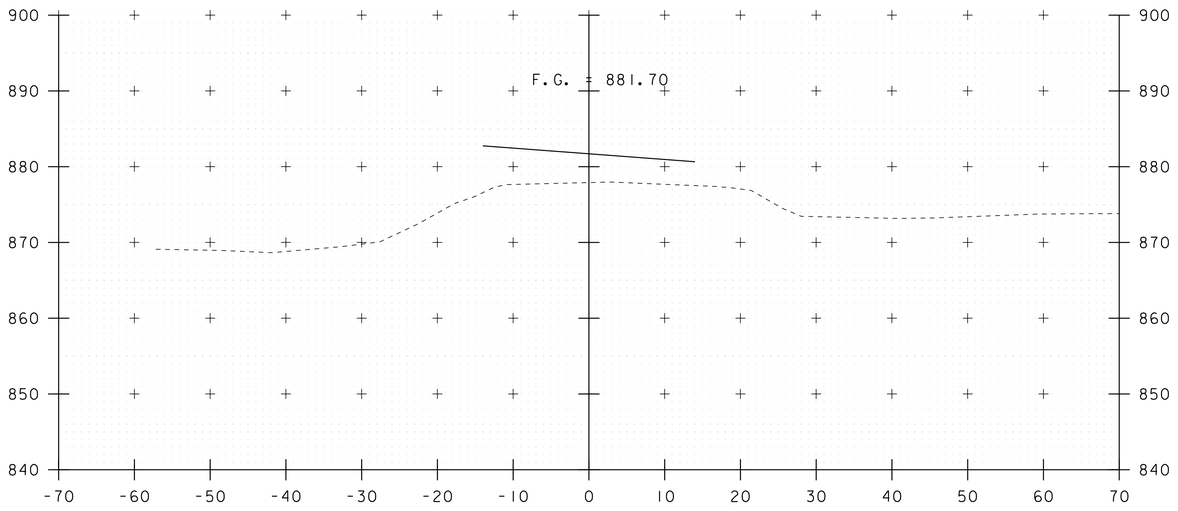
STA. 11+00 TO STA. 11+75

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 0271(23) |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| MAINLINE CROSS SECTIONS 2 | SHEET 12 OF 24 |

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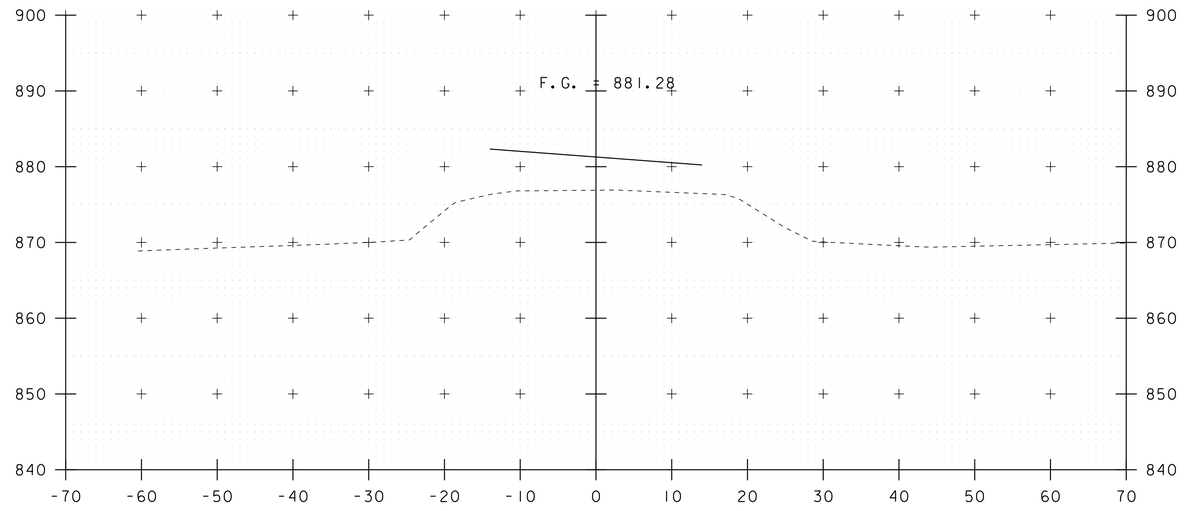


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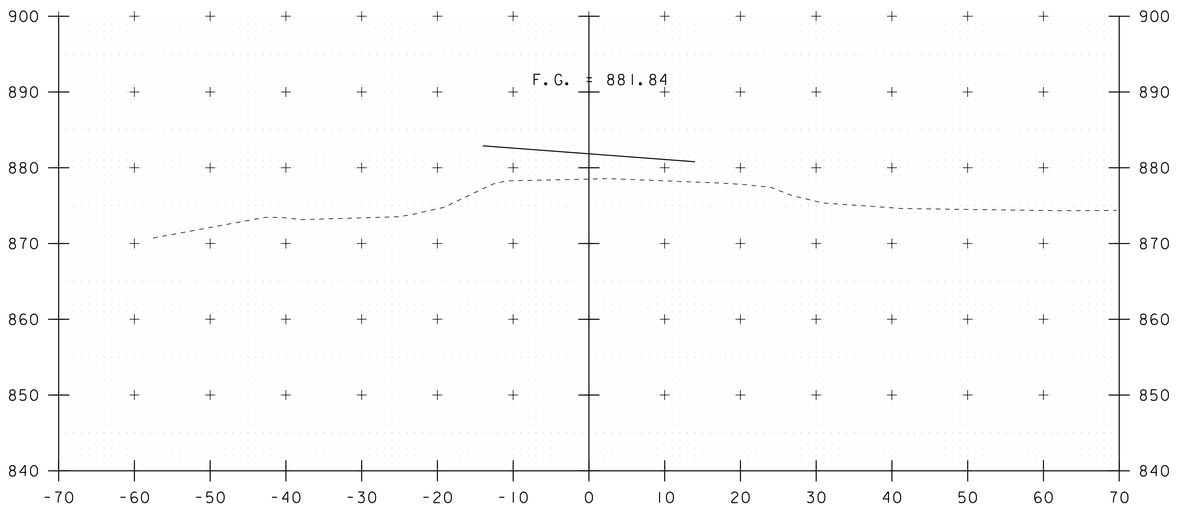


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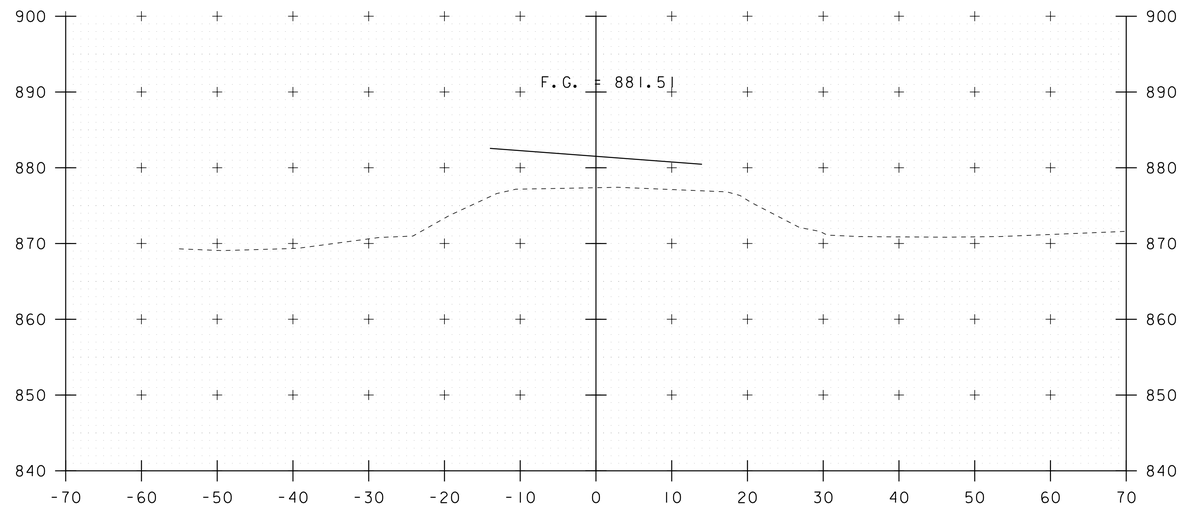


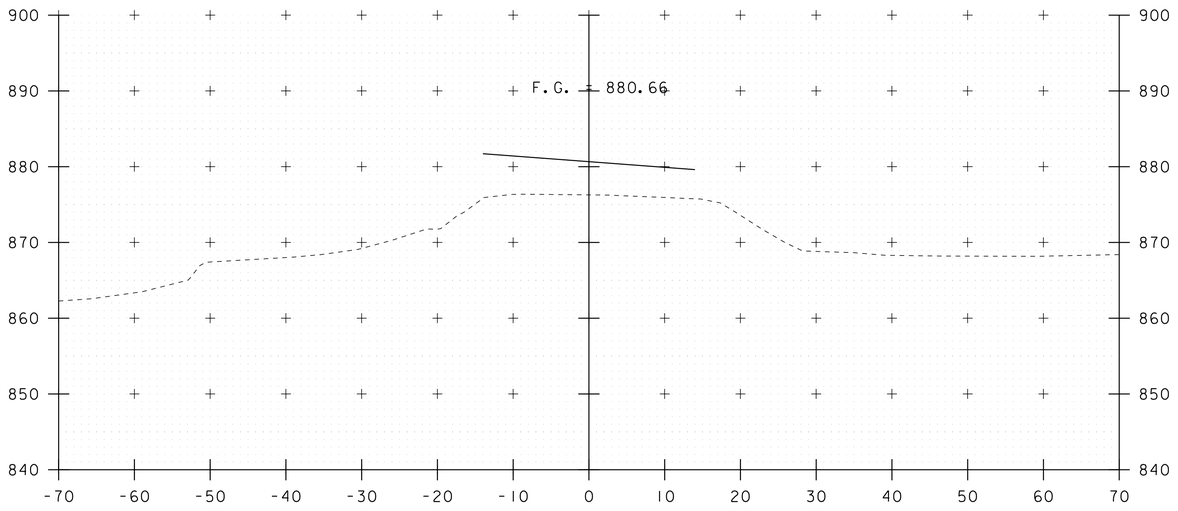

12+50

STA. 12+00 TO STA. 12+75

PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 0271(23)

FILE NAME: 13c056/sl3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
MAINLINE CROSS SECTIONS 3

PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 13 OF 24

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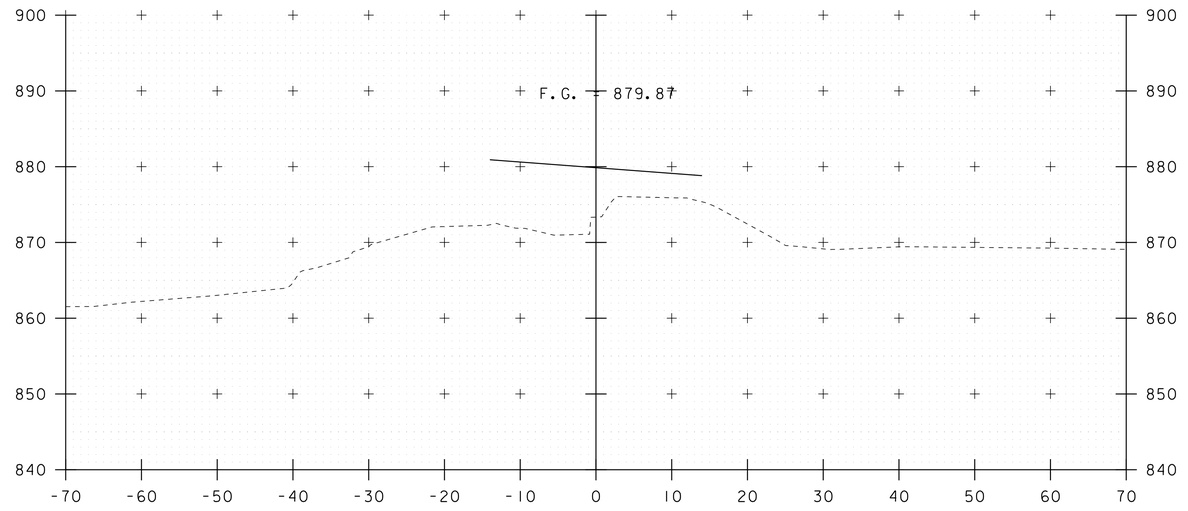


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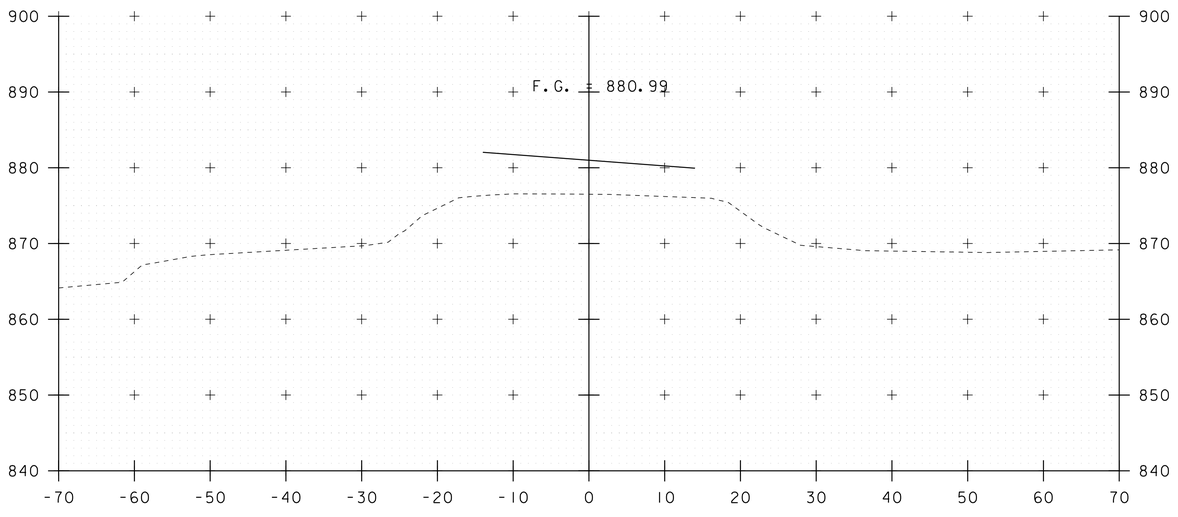


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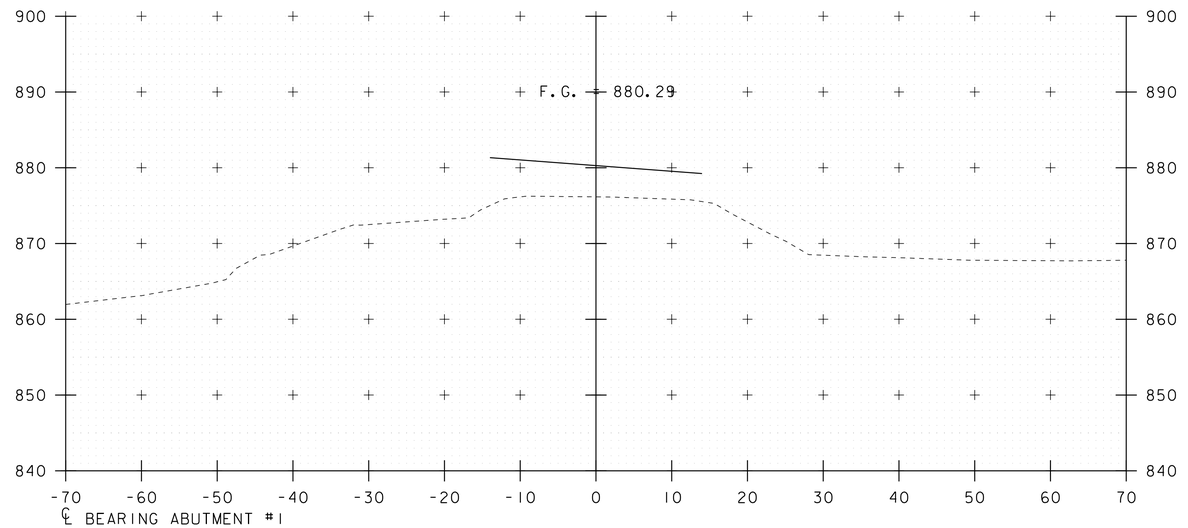
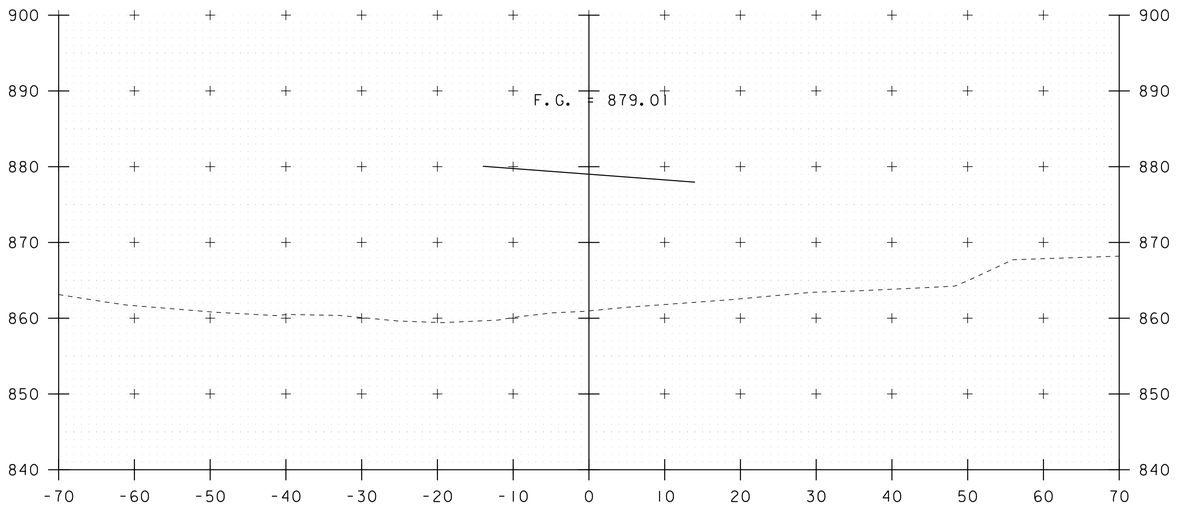



℄ BEARING ABUTMENT #1
STA 13+72.00

13+50

STA. 13+00 TO STA. 13+75

| | |
|---|---|
| PROJECT NAME: BRUNSWICK | |
| PROJECT NUMBER: BF 0271(23) | |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| MAINLINE CROSS SECTIONS 4 | SHEET 14 OF 24 |

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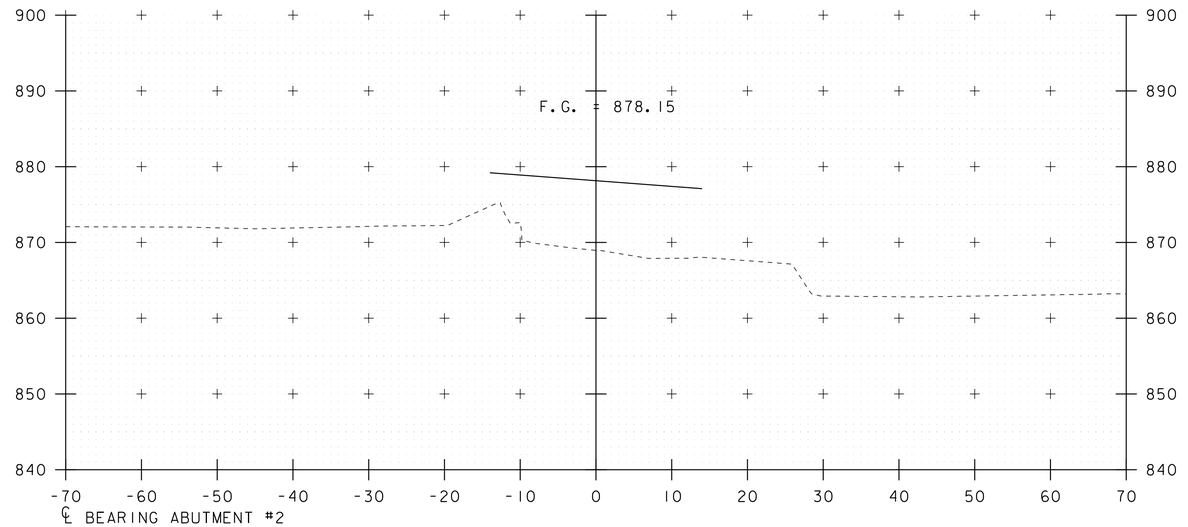


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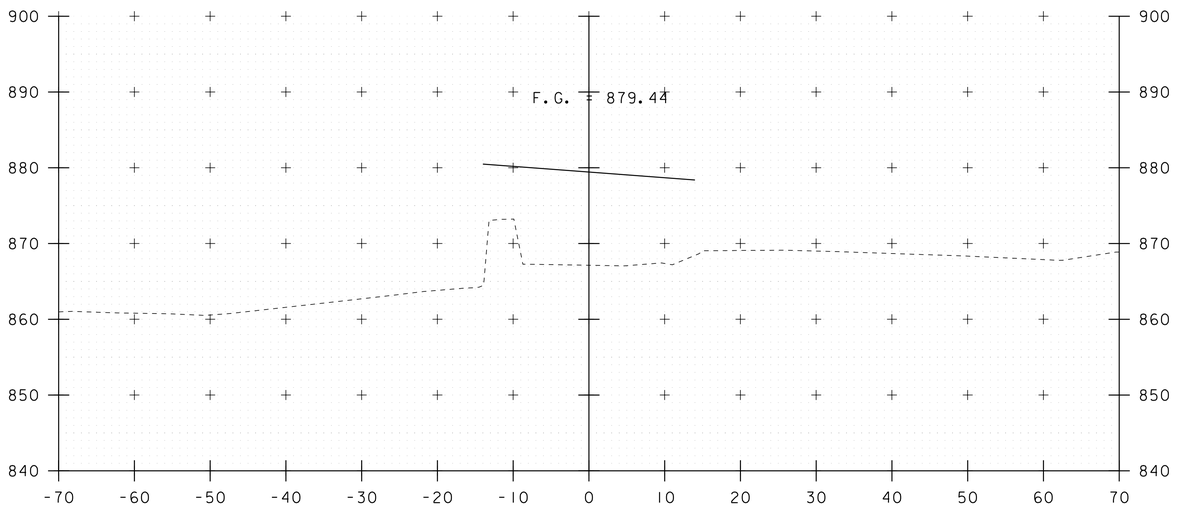


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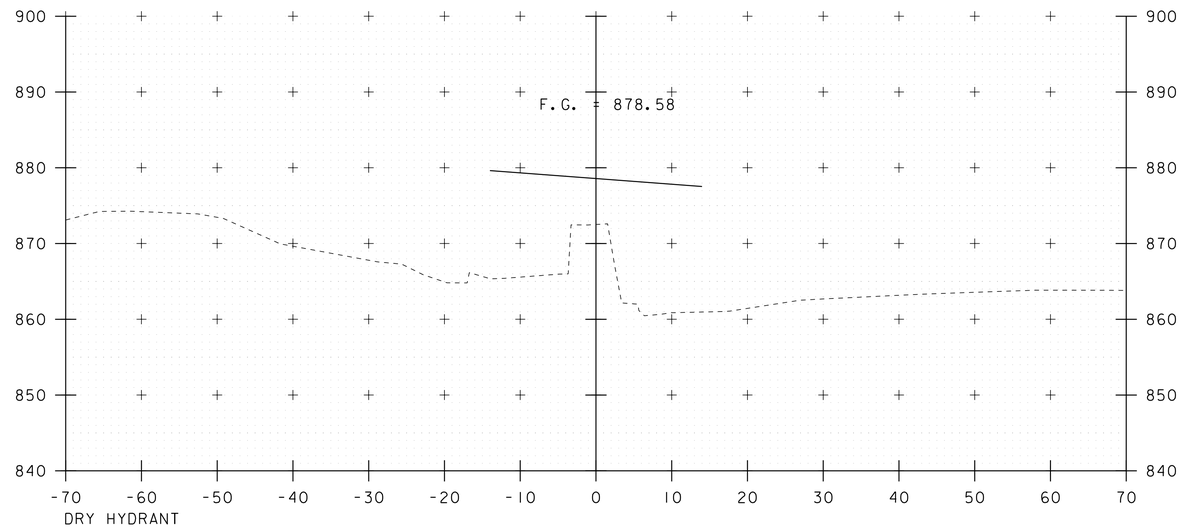
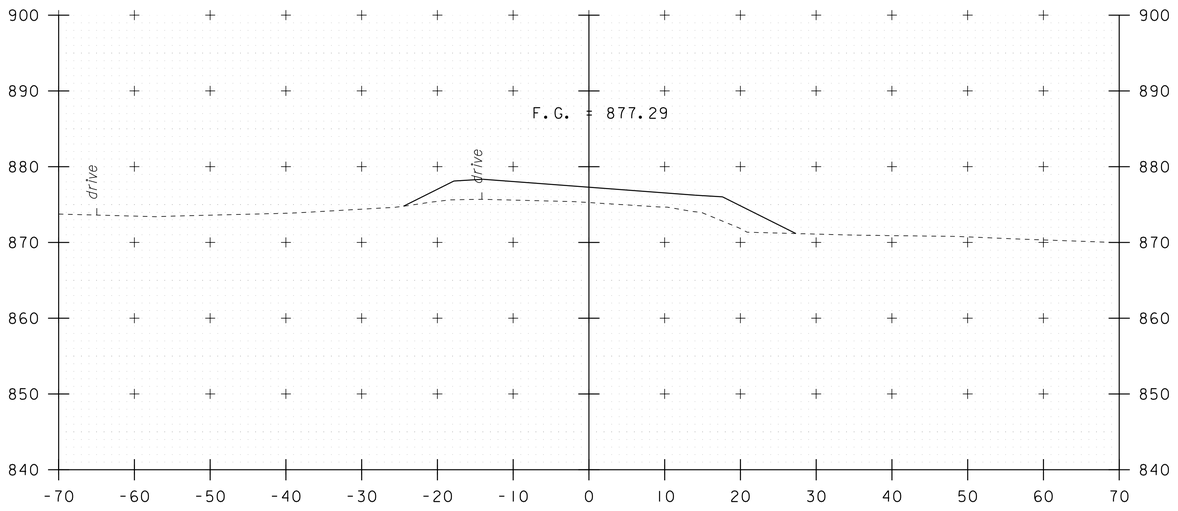



DRY HYDRANT
STA 14+67.00, 48.20 LT

14+50

STA. 14+00 TO STA. 14+75

| | |
|---|---|
| PROJECT NAME: BRUNSWICK | |
| PROJECT NUMBER: BF 0271(23) | |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| MAINLINE CROSS SECTIONS 5 | SHEET 15 OF 24 |

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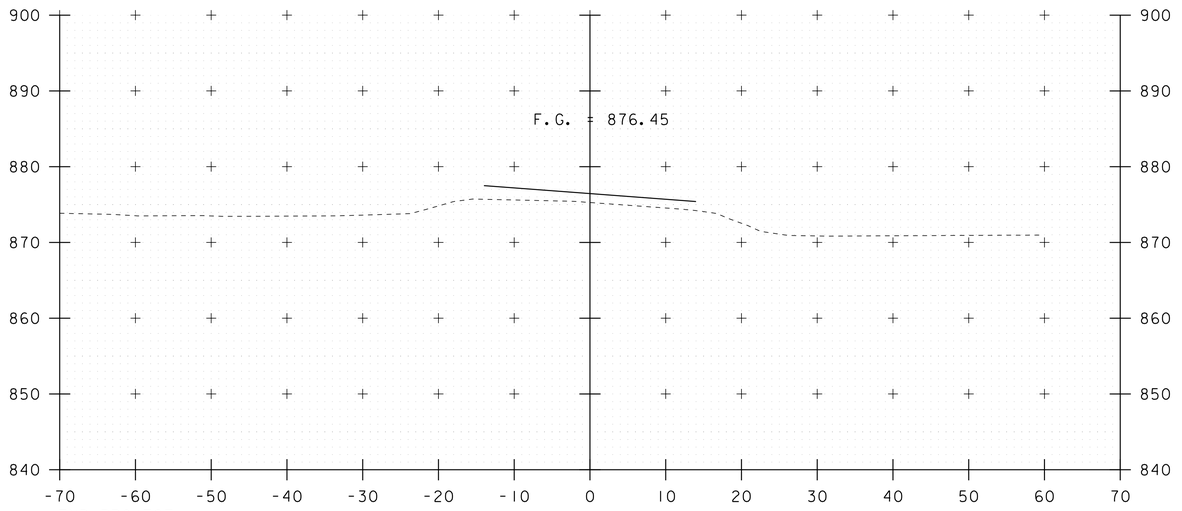


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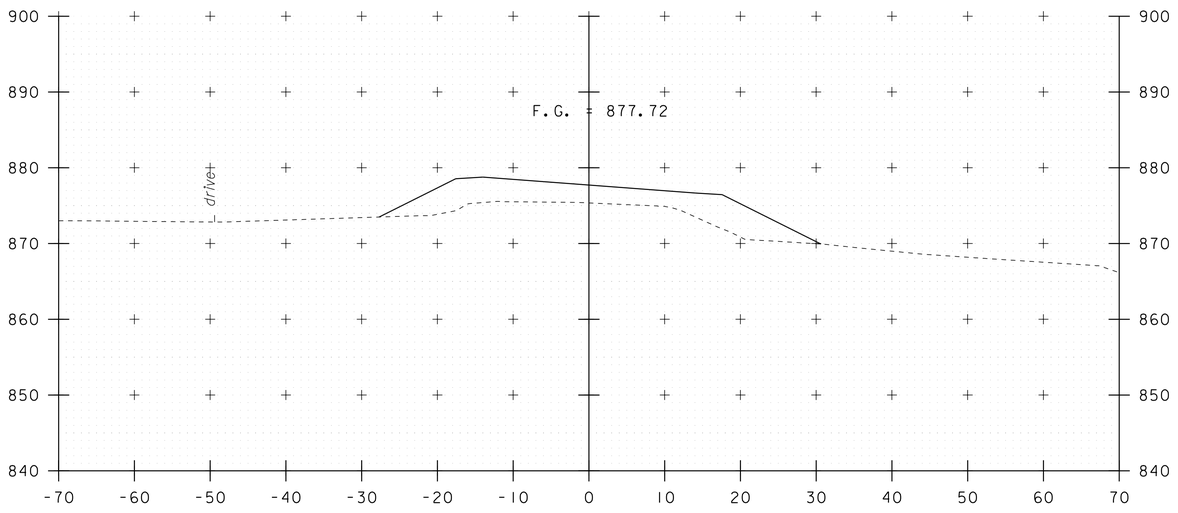


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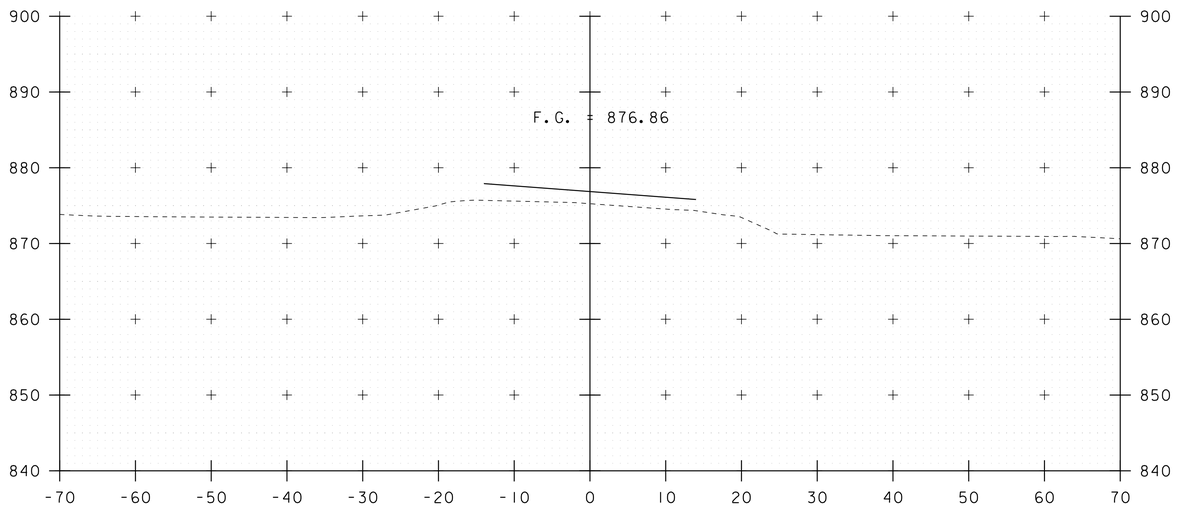


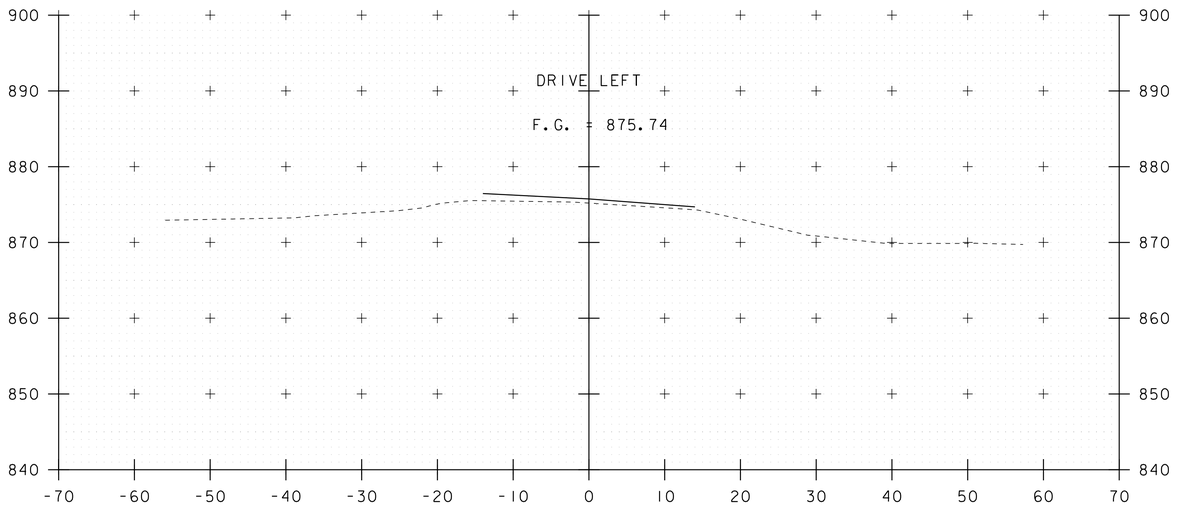

15+50

STA. 15+00 TO STA. 15+75

PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 027I(23)

FILE NAME: I3c056/sI3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
MAINLINE CROSS SECTIONS 6

PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 16 OF 24

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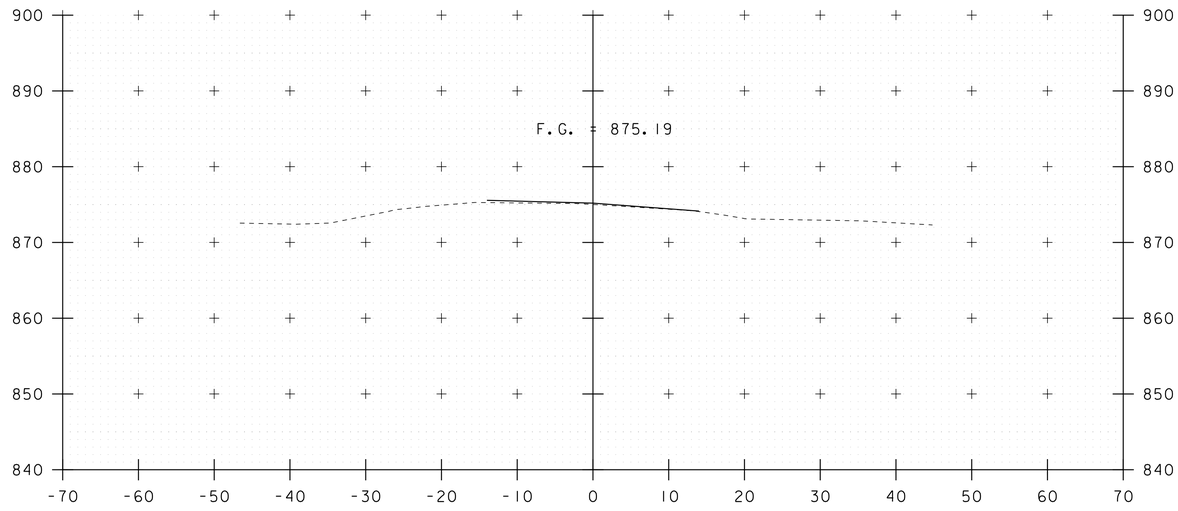


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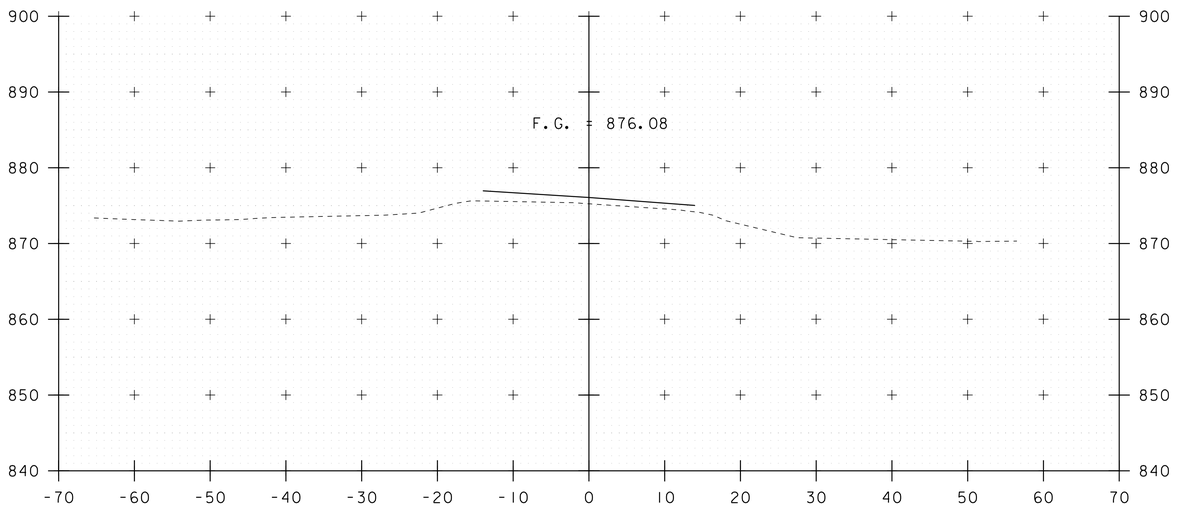


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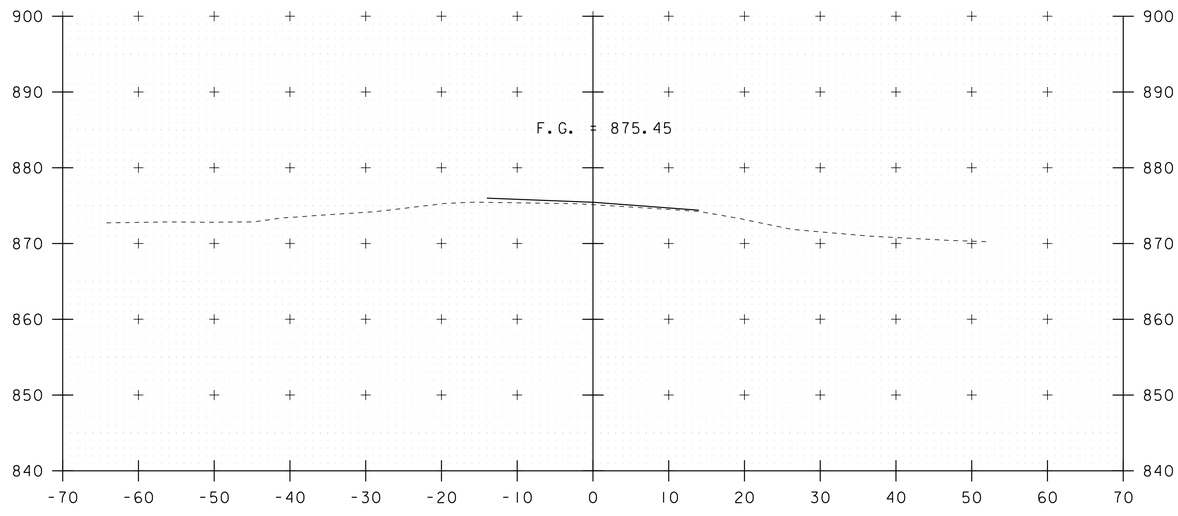


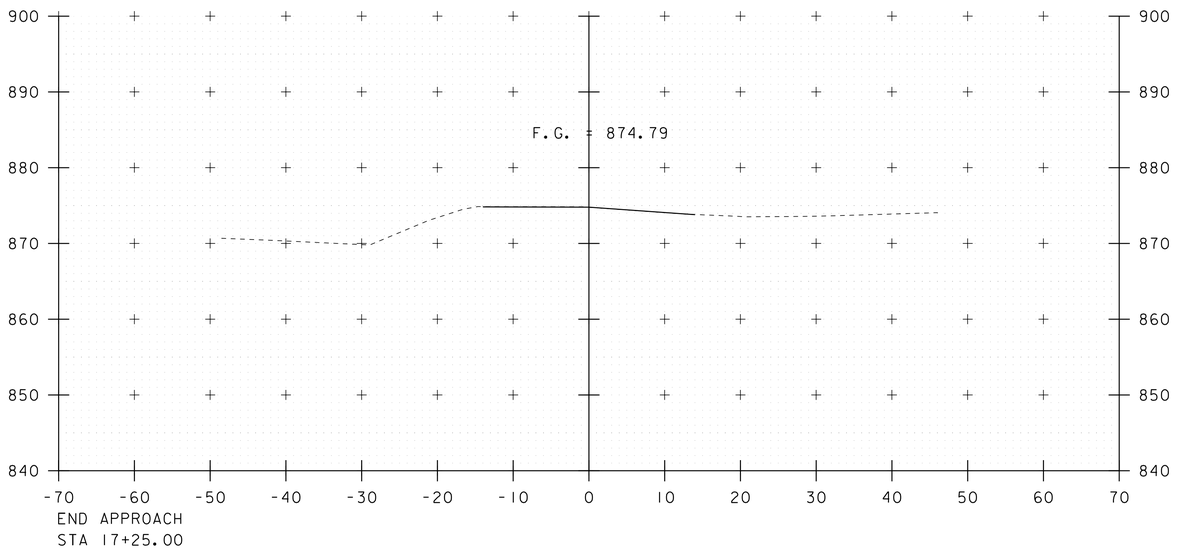

16+50

STA. 16+00 TO STA. 16+75

PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 0271(23)

FILE NAME: l3c056/sl3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
MAINLINE CROSS SECTIONS 7

PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 17 OF 24

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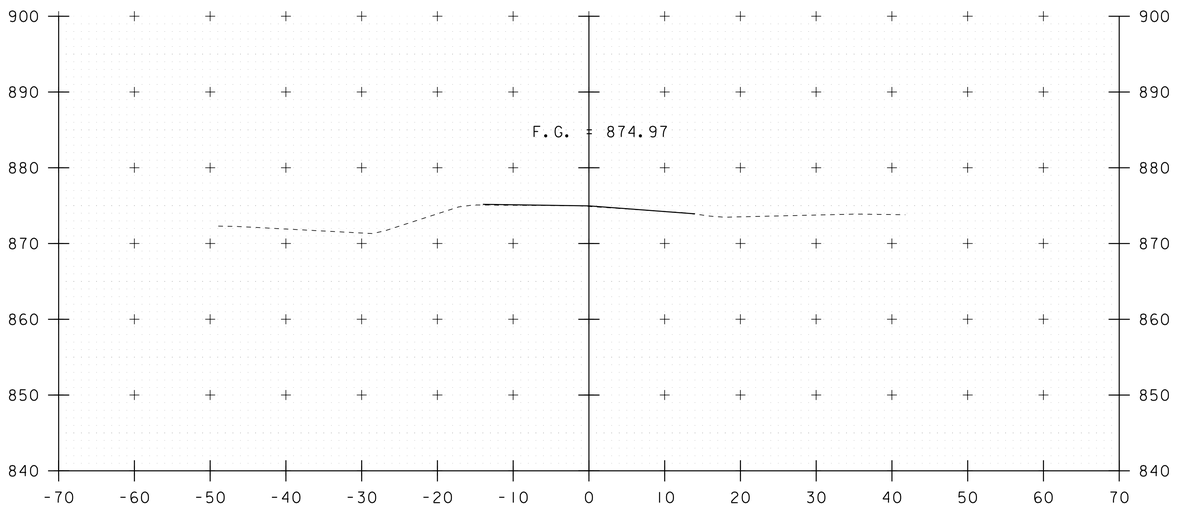


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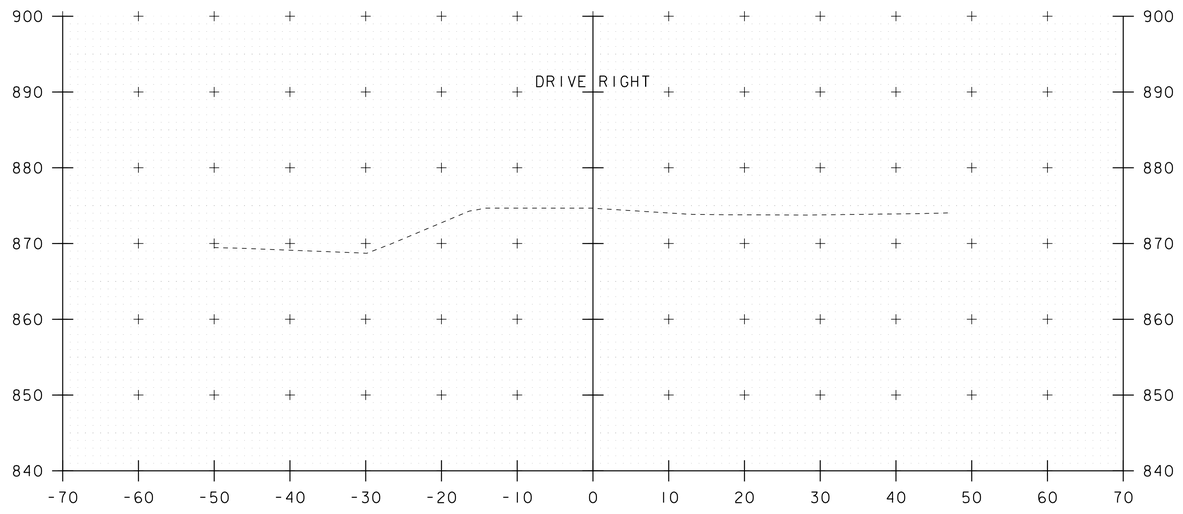
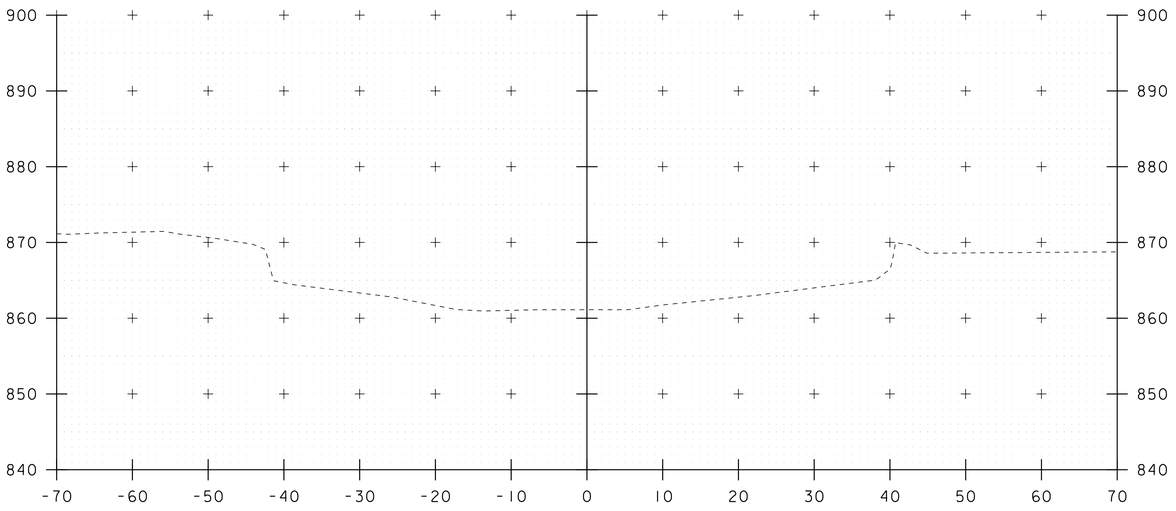


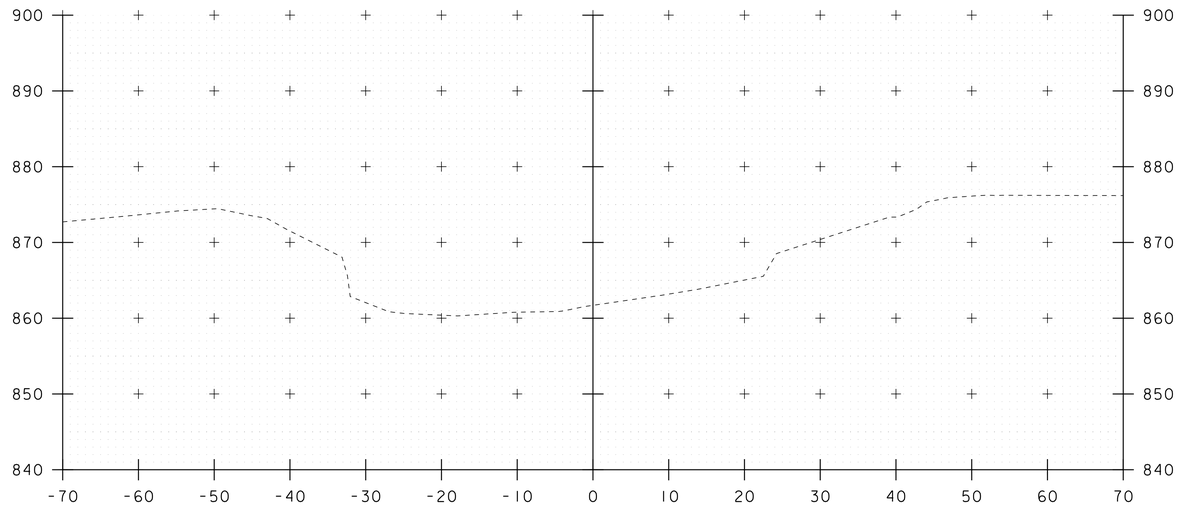

17+50

STA. 17+00 TO STA. 17+50

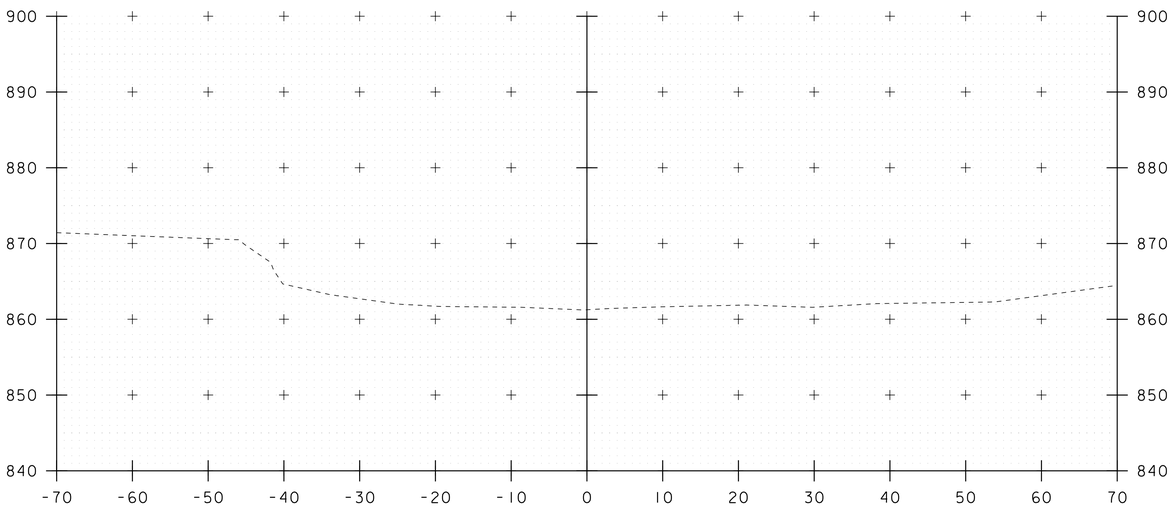
| | |
|---|---|
| PROJECT NAME: BRUNSWICK | |
| PROJECT NUMBER: BF 0271(23) | |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| MAINLINE CROSS SECTIONS 8 | SHEET 18 OF 24 |



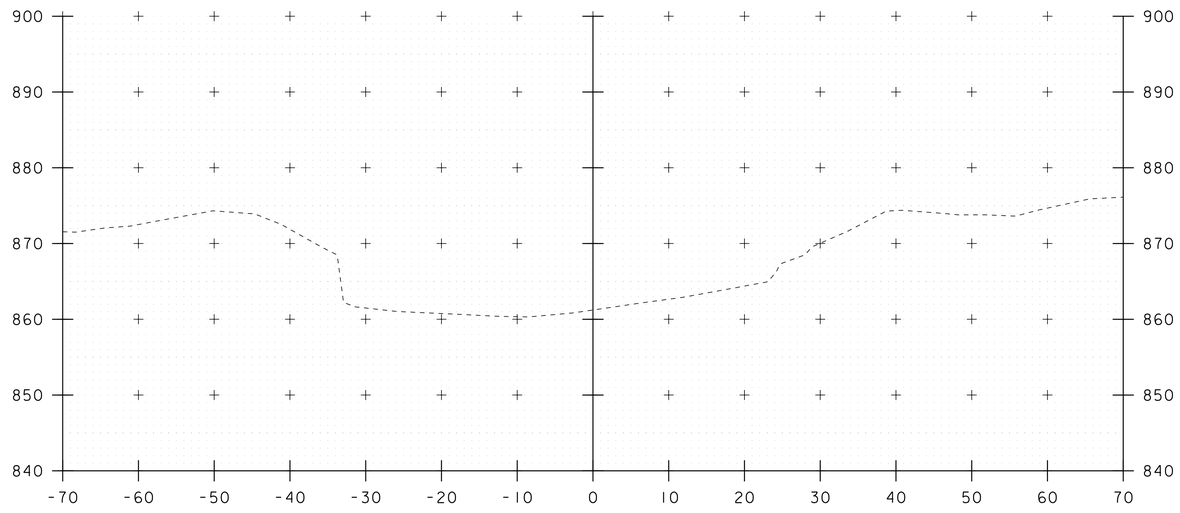

50+25




50+60




50+00



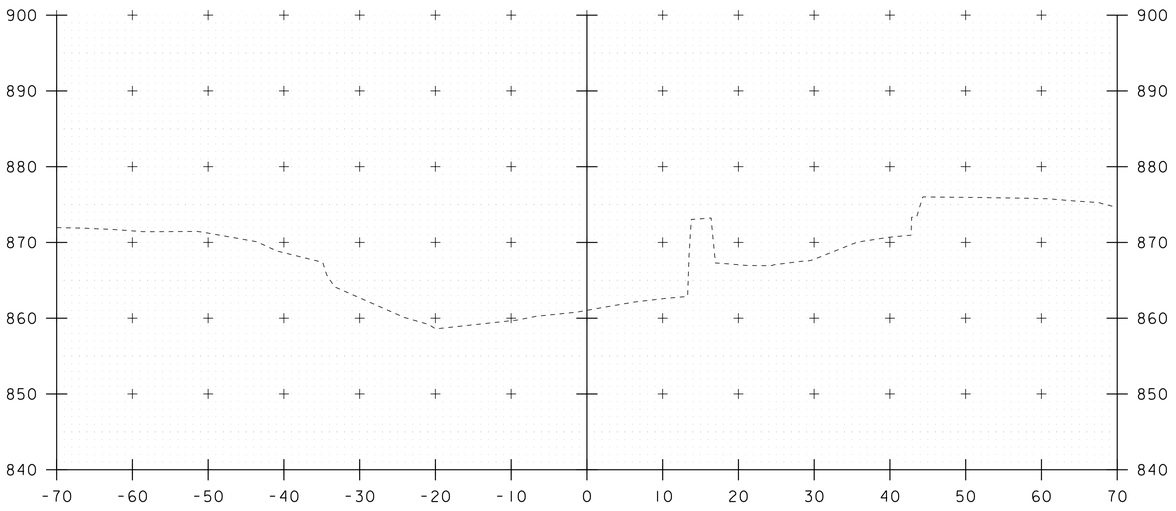

50+50

STA. 50+00 TO STA. 50+60

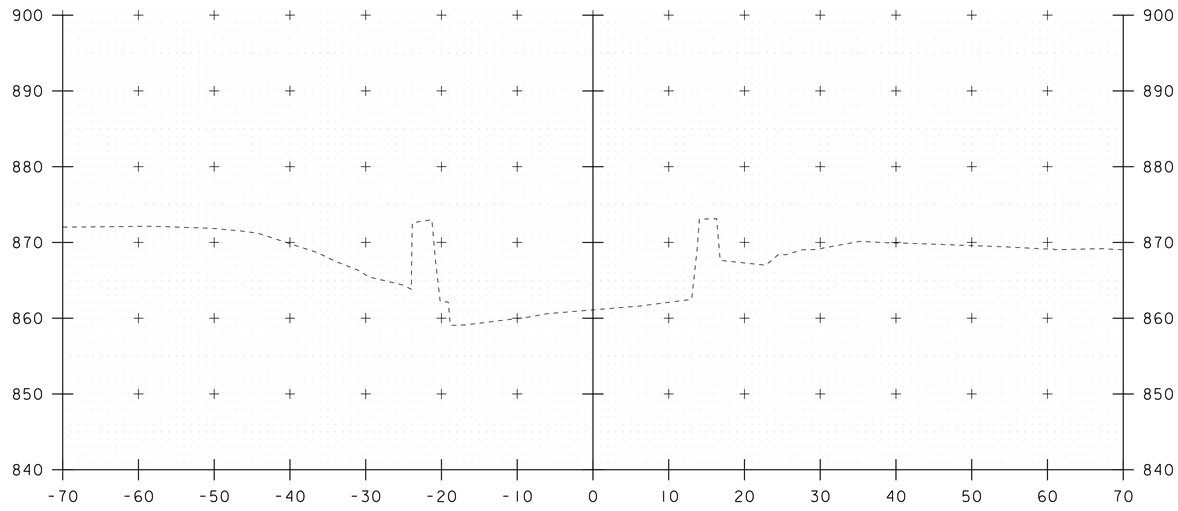
PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 027I(23)

FILE NAME: I3c056/sI3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
CHANNEL CROSS SECTIONS I

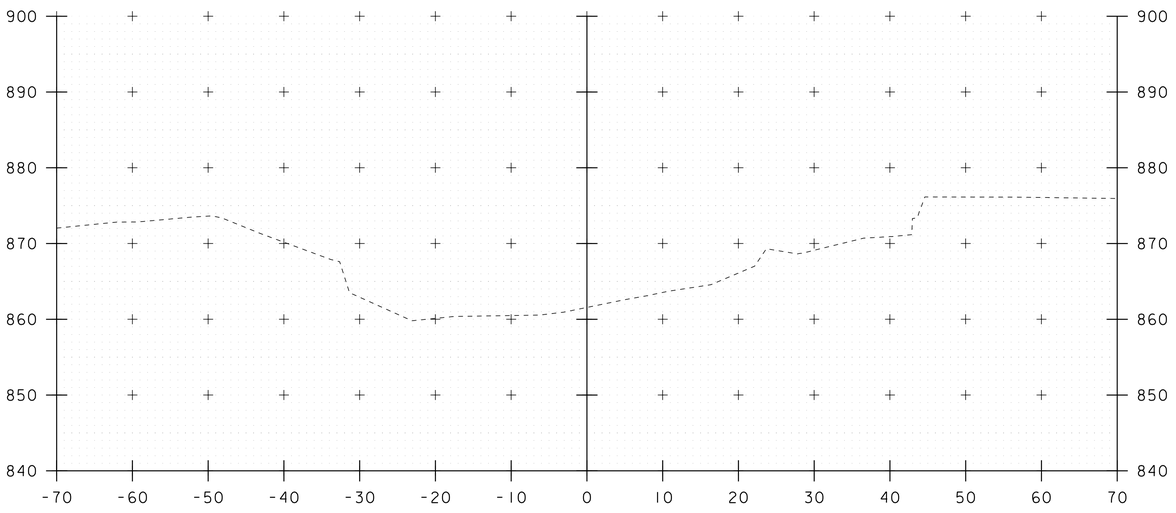
PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 19 OF 24



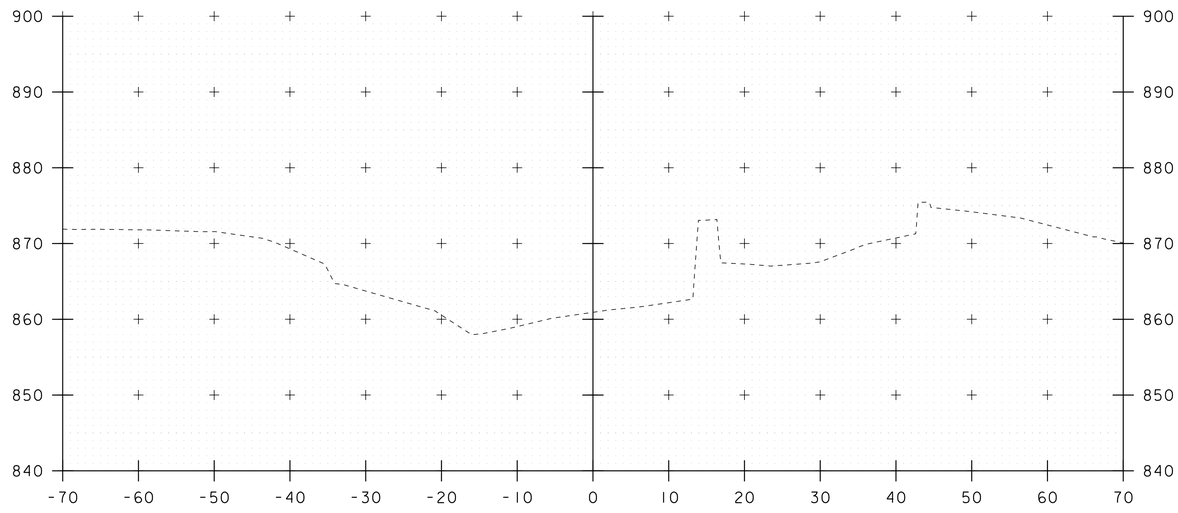

50+80




51+00




50+70



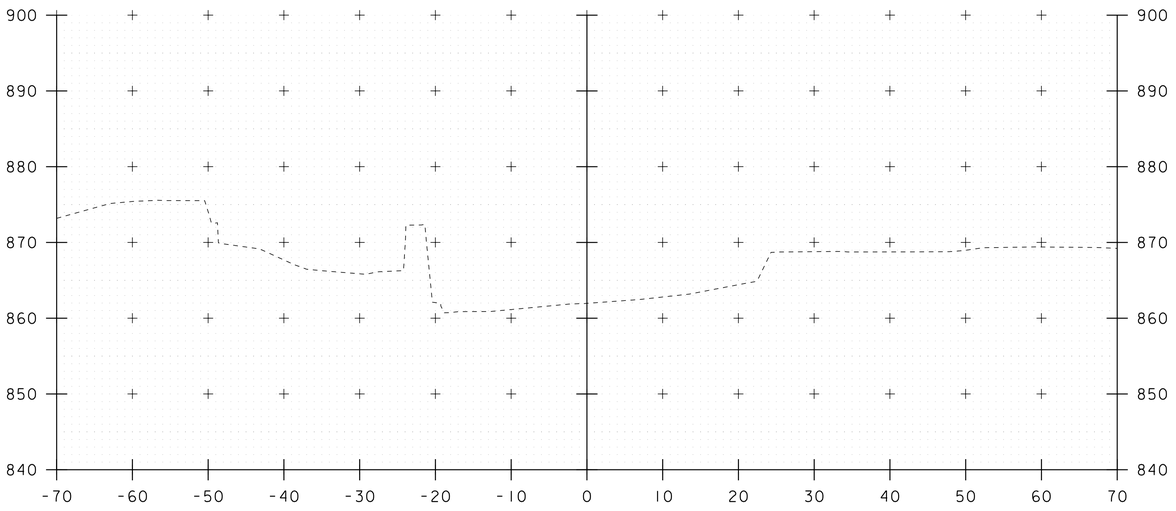

50+90

STA. 50+70 TO STA. 51+00

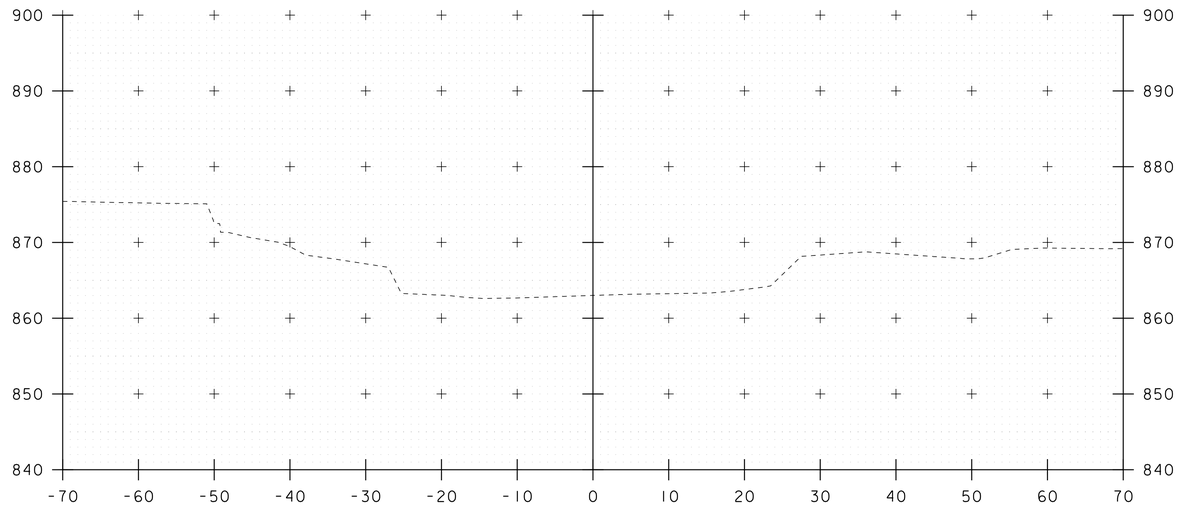
PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 0271(23)

FILE NAME: 13c056/sl3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
CHANNEL CROSS SECTIONS 2

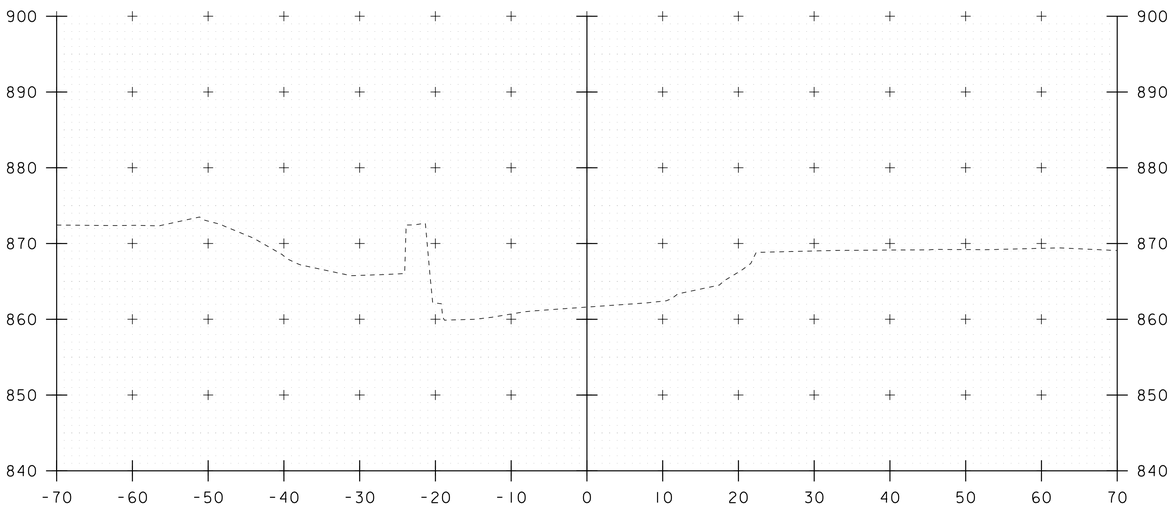
PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 20 OF 24



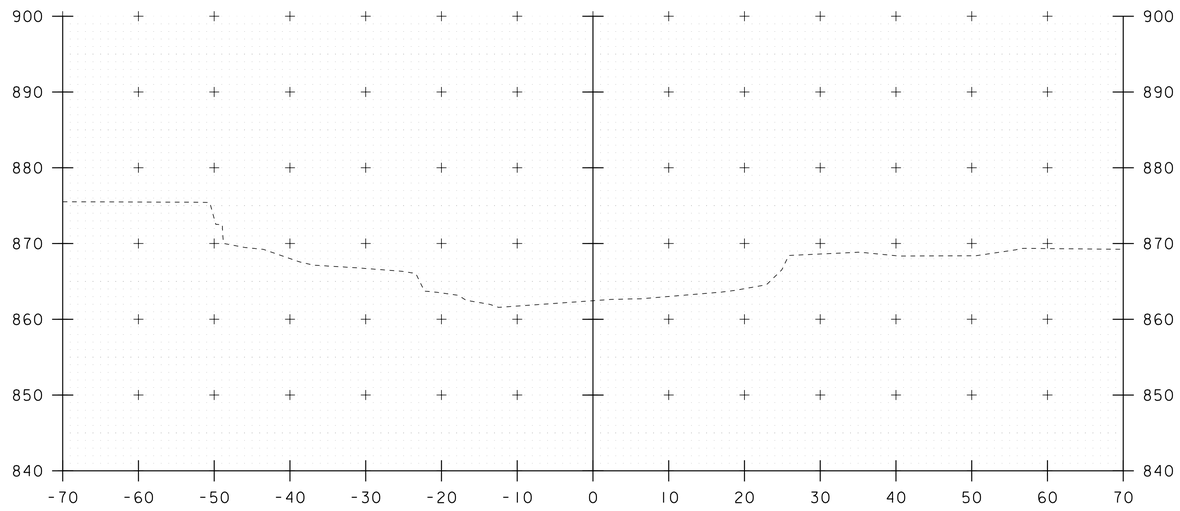

51+20




51+40




51+10



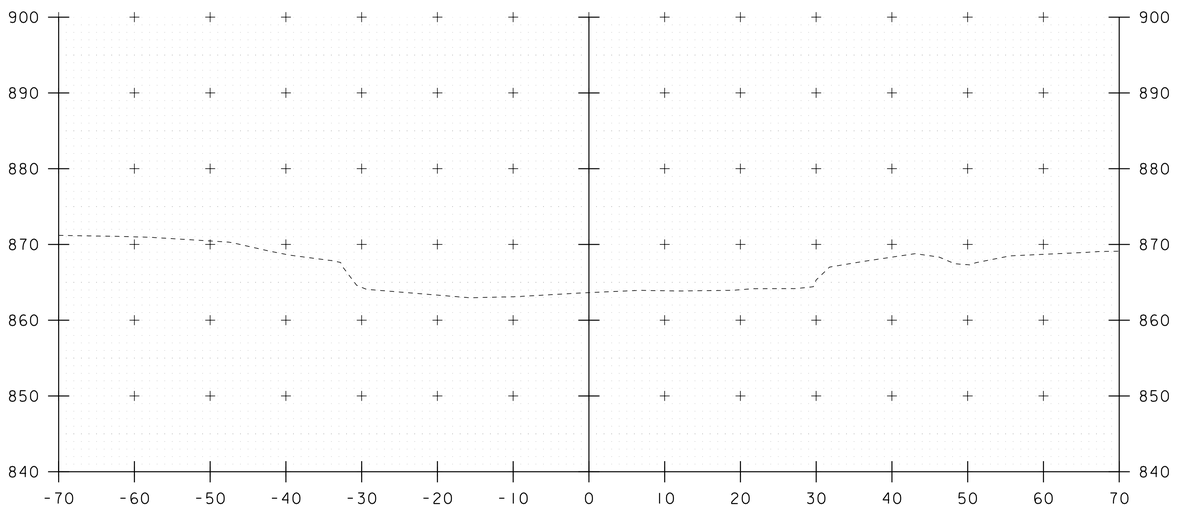

51+30

STA. 51+10 TO STA. 51+40

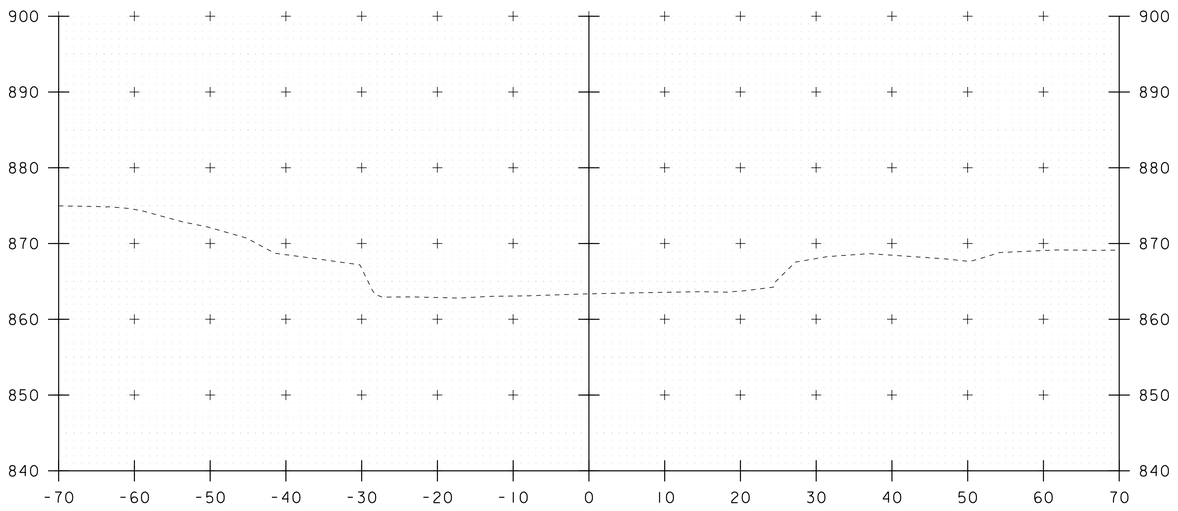
PROJECT NAME: BRUNSWICK
PROJECT NUMBER: BF 0271(23)

FILE NAME: 13c056/sl3c056xs.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: G.SWEENY
CHANNEL CROSS SECTIONS 3

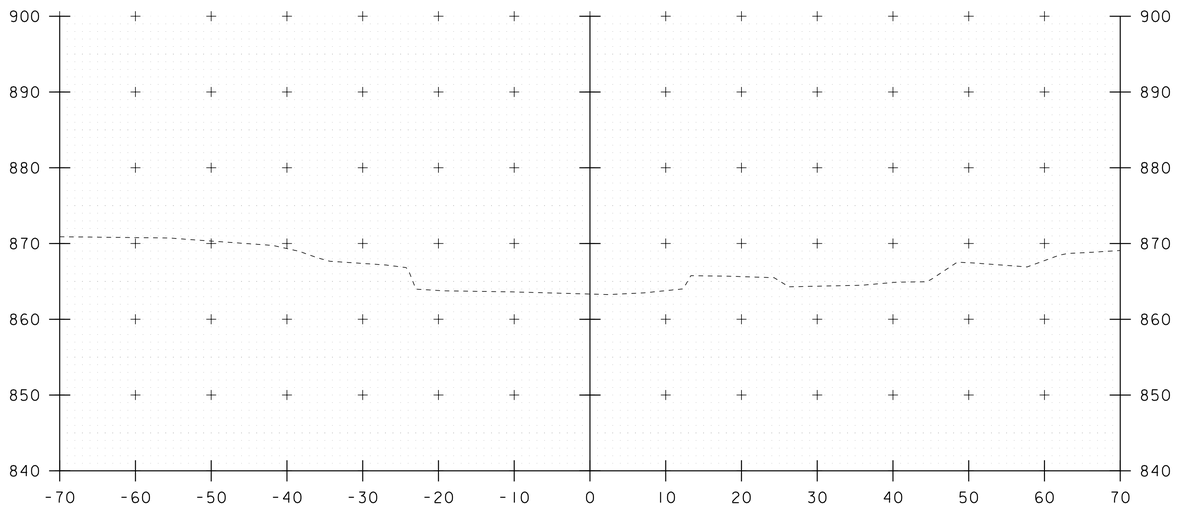
PLOT DATE: 26-JUN-2014
DRAWN BY: D.D.BEARD
CHECKED BY: G.SWEENY
SHEET 21 OF 24




51+75




51+50




52+00

STA. 51+50 TO STA. 52+00

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 0271(23) |
| FILE NAME: 13c056/sl3c056xs.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| CHANNEL CROSS SECTIONS 4 | SHEET 22 OF 24 |

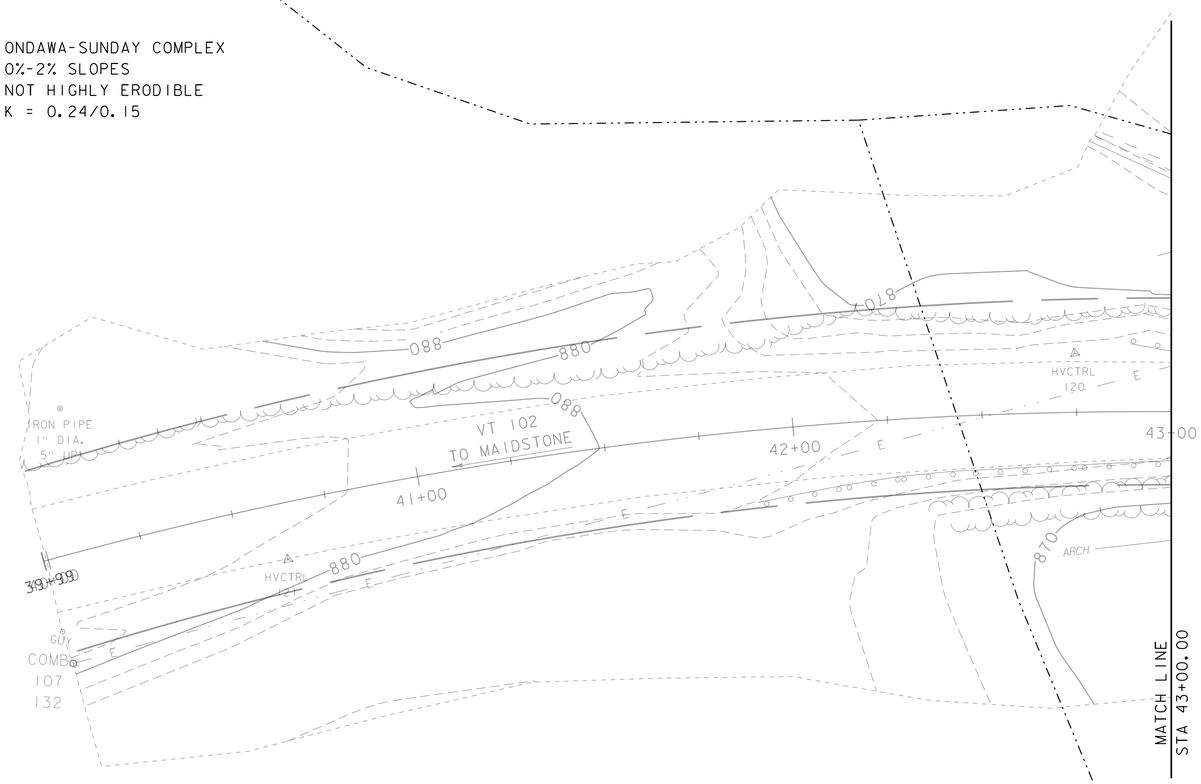
SOIL TYPE WATER

ONDAWA-SUNDAY COMPLEX
0%-2% SLOPES
NOT HIGHLY ERODIBLE
K = 0.24/0.15

ADAMS LOAMY FINE SAND
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K = 0.17

ONDAWA-SUNDAY COMPLEX
0%-2% SLOPES
NOT HIGHLY ERODIBLE
K = 0.24/0.15

ADAMS LOAMY FINE SAND
3%-8% SLOPES
NOT HIGHLY ERODIBLE
K = 0.17




## RESOURCE SITE PLAN 1

SCALE 1" = 20'-0"
20 0 20

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 0271(23) |
| FILE NAME: 13c056/sl3c056border_ero.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| RESOURCE SITE PLAN SHEET 1 | SHEET 23 OF 24 |

EXISTING CURVE 1
DELTA = 40°24'25"
D = 5°12'31"
R = 1100.00'
T = 404.80'
L = 775.76'
E = 72.12'

PAUL STREAM
FLOW

STA 44+04.80 P.C.

BENCH MARK
RAILROAD SPIKE
IN POLE
ELEV. =873.40

P
L

GRAVEL DRIVE

FIELD DRIVE

HYDRANT

DRY HYDRANT

COMB 16E 107 130 126

COMB 126 HVCTRL 8

GUY

SIGN OM3-R SIGN VD-701 VT 102 BR 6

SIGN OM3-L

SIGN OM3-C

HVCTRL 111

HVCTRL 102

HVCTRL 110

HVCTRL 100

ARCH

870

860

50+00

52+00

44+00

45+00

46+00

47+00

43+00

VT 102
TO BLOOMFIELD

WOOD FENCE

POE STA 47+77.00

PT STA 47+75.76

MATCH LINE
STA 43+00.00

PODUNK FINE SANDY LOAM
0%-2% SLOPES
NOT HIGHLY ERODIBLE
K = 0.24

PODUNK FINE SANDY LOAM
0%-2% SLOPES
NOT HIGHLY ERODIBLE
K = 0.24

ADAMS LOAMY FINE SAND
0%-3% SLOPES
NOT HIGHLY ERODIBLE
K = 0.17

VT STATE PLANE GRID

N

SOIL TYPE WATER

EXISTING BRIDGE INFORMATION
1 SPAN CONCRETE T-BEAM
BUILT 1932, 109' LENGTH
40' MAXIMUM SPAN
23'-4" FASCIA TO FASCIA

## RESOURCE SITE PLAN 2

SCALE 1" = 20'-0"
20 0 20

| | |
|---|---|
| PROJECT NAME: | BRUNSWICK |
| PROJECT NUMBER: | BF 027I(23) |
| FILE NAME: I3c056/sI3c056border_ero.dgn | PLOT DATE: 26-JUN-2014 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: D.D.BEARD |
| DESIGNED BY: G.SWEENY | CHECKED BY: G.SWEENY |
| RESOURCE SITE PLAN SHEET 2 | SHEET 24 OF 24 |