

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

Version

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS

PLAN SHEETS

1

TITLE SHEET

2

PRELIMINARY INFORMATION SHEET

3

TYPICAL SECTION SHEET

4

TYPICAL EARTHWORK SECTIONS

5

MATERIAL TRANSITION DIAGRAM

6 - 8

QUANTITY SHEETS

9

BRIDGE QUANTITY SHEET

10

CONVENTIONAL SYMBOLOGY LEGEND SHEET

11

PROJECT NOTES

12 - 13

TIE SHEET 1-2

14 - 15

LAYOUT SHEETS 1-2

16 - 17

VT 102 PROFILE AND BANKING DIAGRAM 1-2

18

DRIVEWAY PROFILE

19

TRAFFIC CONTROL DETAIL SHEET

20 - 21

PHASE 1 TRAFFIC CONTROL SHEETS 1-2

22 - 23

PHASE 2 TRAFFIC CONTROL SHEETS 1-2

24 - 25

DETOUR PROFILE AND BANKING DIAGRAM 1-2

26

TRAFFIC CONTROL PLAN

27 - 28

UTILITY RELOCATION SHEETS 1-2

29

TRAFFIC SIGN SUMMARY SHEET

30

BORING LAYOUT SHEET

31 - 32

BORING LOGS 1-2

33

PLAN AND ELEVATION

34

TYPICAL DECK SECTION

35

DECK REINFORCING PLAN

36

FRAMING PLAN AND DETAILS

37

FRAMING DETAILS

38

CAMBER AND DEFLECTION DETAILS

39

BEARING DETAILS

40

ABUTMENT 1 PLAN AND ELEVATION

41

ABUTMENT 2 PLAN AND ELEVATION

42

ABUTMENT 1 PILE CAP PLAN AND ELEVATION

43

ABUTMENT 2 PILE CAP PLAN AND ELEVATION

44 - 45

WINGWALL PLAN AND ELEVATION 1-2

46

WINGWALL AND PILE DETAILS

47

APPROACH SLAB DETAILS

48

REINFORCING STEEL SCHEDULE SHEET

49

BRIDGE RAIL LAYOUT

50 - 57

VT 102 CROSS SECTIONS 1-8

58 - 64

TEMPORARY DETOUR CROSS SECTIONS 1-7

65 - 68

CHANNEL CROSS SECTIONS 1-4

69

EPSC NARRATIVE

70 - 71

EPSC EXISTING PLAN SHEETS 1-2

72 - 73

EPSC CONSTRUCTION PLAN SHEETS 1-2

74 - 75

EPSC FINAL PLAN SHEETS 1-2

76 - 77

EPSC DETAILS SHEETS 1-2

STANDARDS LIST

B-5

SLOPE GRADING, EMBANKMENTS, MUCK

06-01-1994

B-71

STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES

07-08-2005

G-1bM

BOX BEAM GUARD RAIL

06-13-1997

G-19

GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS

11-15-2002

J-3

MAIL BOX SUPPORT DETAILS

08-07-1995

S-364A

BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM

02-02-2017

S-364B

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

02-02-2017

S-364C

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

02-02-2017

S-364D

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

02-02-2017

T-1

TRAFFIC CONTROL GENERAL NOTES

04-25-2016

T-10

CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING

08-06-2012

T-17

TRAFFIC CONTROL MISCELLANEOUS DETAILS

08-06-2012

T-28

CONSTRUCTION SIGN DETAILS

08-06-2012

T-30

CONSTRUCTION SIGN DETAILS

08-06-2012

T-35

CONSTRUCTION ZONE LONGITUDNAL DROP-OFFS

08-06-2012

T-42

BRIDGE NUMBER PLAQUE

04-09-2014

T-44

DELINEATORS AND MILEPOSTS

04-09-2014

T-45

SQUARE TUBE SIGN POST AND ANCHOR

01-02-2013

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: August 2015

DRAINAGE AREA : 53.3 sq. mi.

CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested

STREAM CHARACTERISTICS : Sinuous, alluvial, locally braided and anabranchd

NATURE OF STREAMBED : Silt, sand, gravel and cobbles

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = 1300 cfs

2% = 4100 cfs

10% = 2550 cfs

1% = 4800 cfs

4% = 3400 cfs

0.2% = 6700 cfs

DATE OF FLOOD OF RECORD: Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY : @ 2% AEP = 8.0 fps

ICE CONDITIONS : Moderate

DEBRIS: Moderate

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No

IS ORDINARY RISE RAPID? No

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Maybe

IF YES, DESCRIBE: This site may be affected by floodwaters from the Connecticut River.

We do not have enough information to determine that and it was not considered in this study.

WATERSHED STORAGE: 5%HEADWATERS:UNIFORM: XIMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Three span conrete T-beam bridge

YEAR BUILT: 1932

CLEAR SPAN(NORMAL TO STREAM): approximately 87' total

VERTICAL CLEARANCE ABOVE STREAMBED: 13'

WATERWAY OF FULL OPENING: 650 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace with a new bridge

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

43% AEP = 868.4'

10% AEP = 870.2'

4% AEP = 871.1'

2% AEP = 871.7'

1% AEP = 872.4'

VELOCITY = 5.4 fps

" 7.3 fps

" 7.8 fps

" 9.5 fps

" 10.7 fps

LONG TERM STREAMBED CHANGES: About 4' of scour through the bridge area.

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: Above 1% AEP

RELIEF ELEVATION: 875.0'

DISCHARGE OVER ROAD @ 1% AEP: NA

UPSTREAM STRUCTURE

TOWN: NA - stream divides

DISTANCE:

HIGHWAY #: STRUCTURE #:

CLEAR SPAN: CLEAR HEIGHT:

YEAR BUILT: FULL WATERWAY:

STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: NA - confluence with Connecticut River

DISTANCE: 900'

HIGHWAY #: STRUCTURE #:

CLEAR SPAN: CLEAR HEIGHT:

YEAR BUILT: FULL WATERWAY:

STRUCTURE TYPE:

LRFR LOAD RATING FACTORS

LOADING LEVELS

H-20

HL-93

3S2

6 AXLE

3A. STR.

4A. STR.

5A. SEMI

TONNAGE

20

36

36

66

30

34.5

38

INVENTORY

1.23

1.14

POSTING

OPERATING

1.60

1.48

3.01

1.90

2.13

2.64

2.67

COMMENTS:

AS BUILT "REBAR" DETAIL

LEVEL I

LEVEL II

LEVEL III

TYPE:

TYPE:

TYPE:

GRADE:

GRADE:

GRADE:

TEMPORARY BRIDGE PROFILE ALONG TEMP CL

BOTTOM OF BEAMS ELEV. = 872.50 FT

117.50 FT (MIN)

7.33 FT (MIN)

OPENING 660.00 FT\* (MIN)

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY<sub>Final:</sub> 469 KIP

2. PILE TEST RESISTANCE FACTOR<sub>φ:</sub> 0.65

3. MAXIMUM PILE TIP ELEVATION777 FT

4.

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

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

STRUCTURES DETAIL SHEETS

SD-501.00

CONCRETE DETAILS AND NOTES

2/9/2012

SD-502.00

CONCRETE DETAILS AND NOTES

10/10/2012

SD-516.10

BRIDGE JOINT ASPHALTIC PLUG

8/29/2011

SD-602.00

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

5/2/2011

HIGHWAY SAFETY AND DESIGN DETAIL

HSD-400.01

SAFETY EDGE DETAIL

1/5/2018

HSD-621.06

GUARDRAIL TERMINAL LABEL DETAILS

2/27/2017

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge

CLEAR SPAN(NORMAL TO STREAM): 80'

VERTICAL CLEARANCE ABOVE STREAMBED: 14'

WATERWAY OF FULL OPENING: 780 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP = 868.3'

10% AEP = 870.1'

4% AEP = 870.9'

2% AEP = 871.4'

1% AEP = 871.9'

VELOCITY= 5.4 fps

" 7.4 fps

" 7.8 fps

" 8.7 fps

" 9.9 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: Above 1% AEP

RELIEF ELEVATION: 875.0'

DISCHARGE OVER ROAD @ 1% AEP: NA

BRIDGE LOW CHORD ELEVATION: 872.6' average, downstream

FREEBOARD: @ 2% AEP = 1.2'

SCOUR: Foundations should be designed to be freestanding to 6' below streambed

REQUIRED CHANNEL PROTECTION: Stone fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: -DEPTH OR ELEVATION: -

ORDINARY LOW WATER: -

ORDINARY HIGH WATER: -

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single span bridge

CLEAR SPAN(NORMAL TO STREAM): 90' minimum

VERTICAL CLEARANCE ABOVE STREAMBED: Elev. 872.5' minimum

WATERWAY AREA OF FULL OPENING: 660 sq. ft. minimum

ADDITIONAL INFORMATION

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

<sub>dp:</sub> 2.5 INCH

3. DESIGN SPAN

<sub>L:</sub> 106.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)

<sub>Δ:</sub> ---

5. PRESTRESSING STRAND

<sub>fy:</sub> ---

6. PRESTRESSED CONCRETE STRENGTH

<sub>f'c:</sub> ---

7. PRESTRESSED CONCRETE RELEASE STRENGTH

<sub>f'cr:</sub> ---

8. CONCRETE, HIGH PERFORMANCE CLASS AA

<sub>f'c:</sub> 4.0 KSI

9. CONCRETE, HIGH PERFORMANCE CLASS A

<sub>f'c:</sub> 4.0 KSI

10. CONCRETE, HIGH PERFORMANCE CLASS B

<sub>f'c:</sub> 3.5 KSI

11. CONCRETE, CLASS C

<sub>f'c:</sub> 3.0 KSI

12. REINFORCING STEEL

<sub>fy:</sub> 60 KSI

13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)

<sub>fy:</sub> 50 KSI

14. NOMINAL BEARING RESISTANCE OF SOIL

<sub>qn:</sub> ---

15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

<sub>φ:</sub> ---

16. NOMINAL BEARING RESISTANCE OF ROCK

<sub>qn:</sub> ---

17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

<sub>φ:</sub> ---

18. PILE RESISTANCE FACTOR

<sub>φ:</sub> 0.65

19. LATERAL PILE DEFLECTION

<sub>Δ:</sub> 0.54 INCH

20. BASIC WND SPEED

<sub>V3s:</sub> ---

21. MINIMUM GROUND SNOW LOAD

<sub>pg:</sub> ---

22. SEISMIC DATA

<sub>PGA:</sub> 0.65

<sub>Ss:</sub> ---

<sub>Sf:</sub> ---

23.

24.

25.

26.

PROJECT NAME: BRUNSWICK

PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056pl.dgn

PLOT DATE: 8/29/2018

PROJECT LEADER: J. FRENCH

DRAWN BY: M. SMITH

DESIGNED BY: J. FRENCH

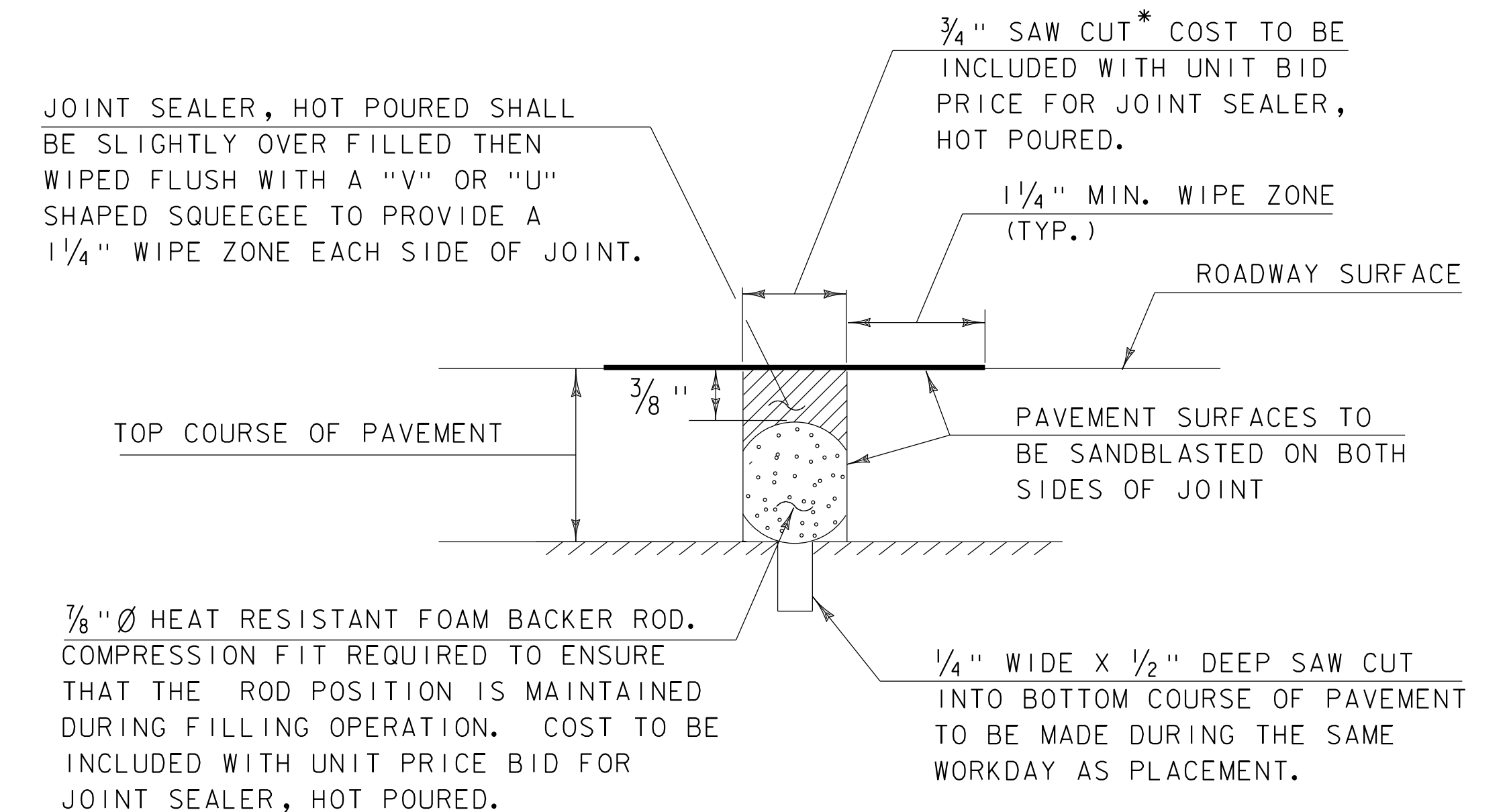
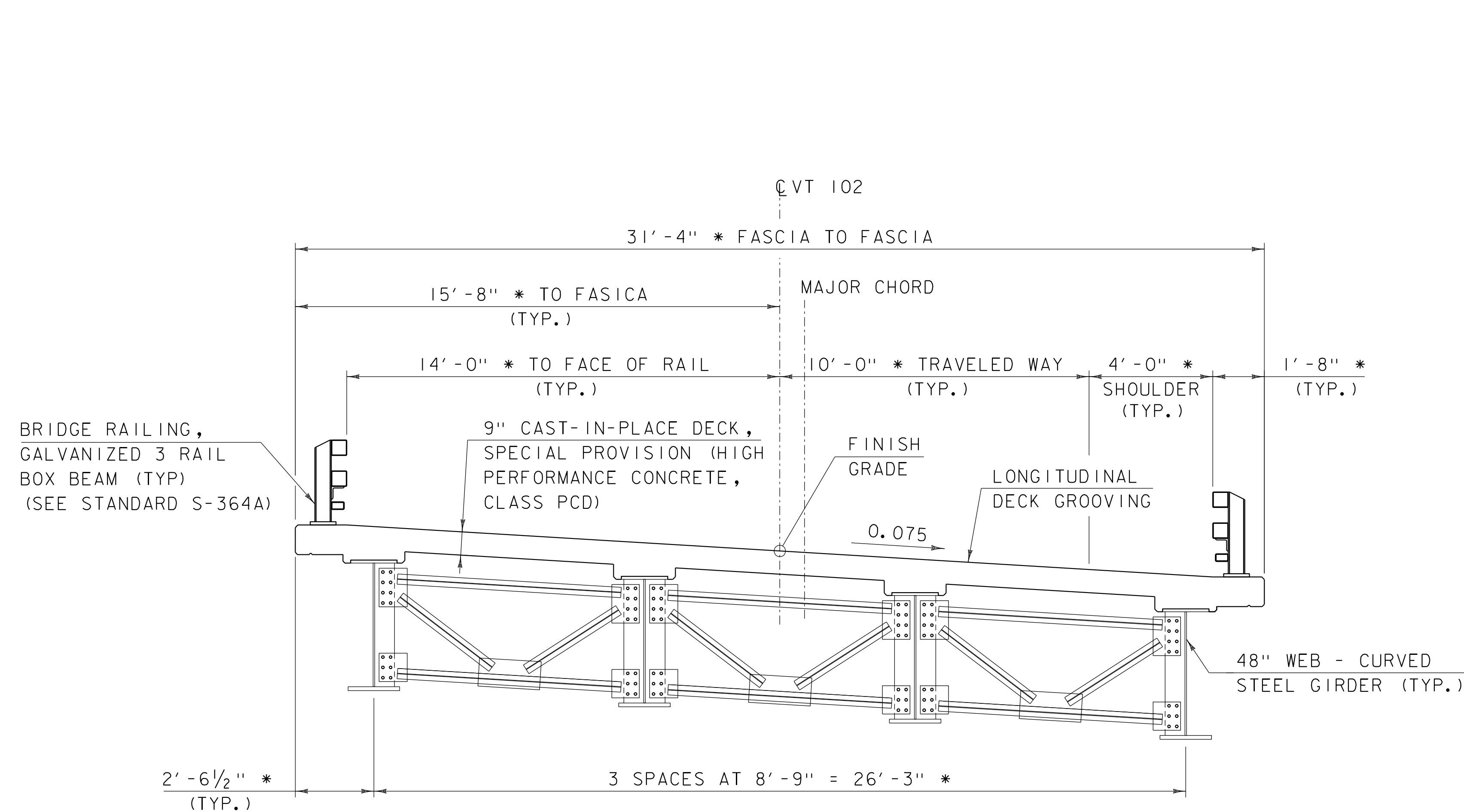
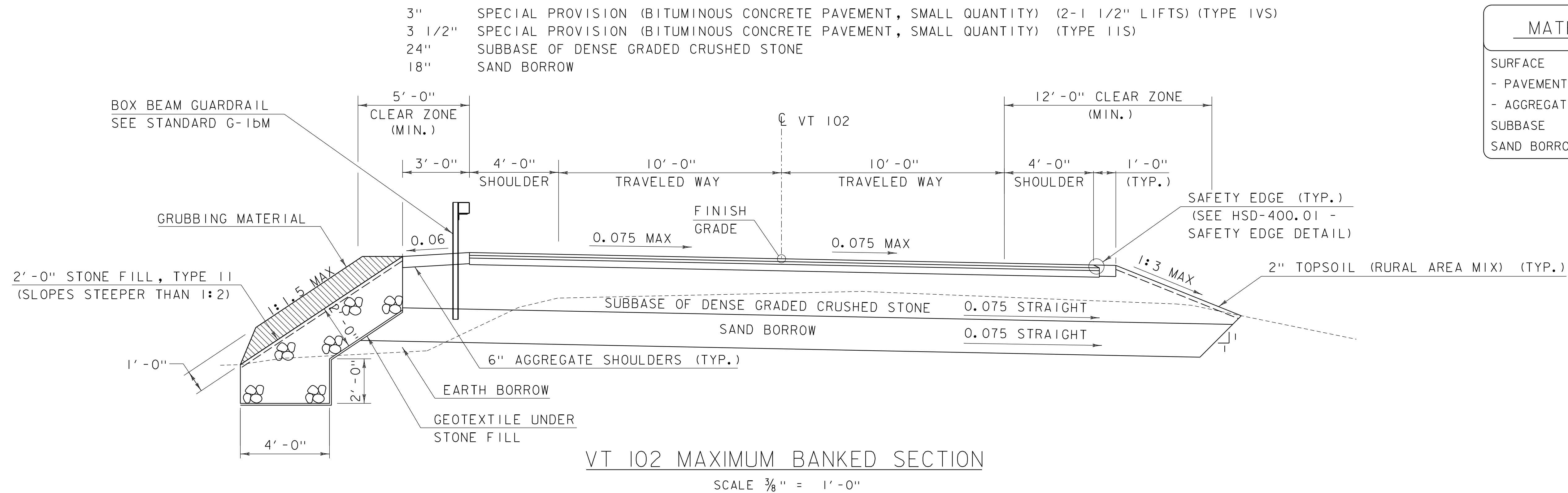
CHECKED BY: J. BYATT

PRELIMINARY INFORMATION SHEET

SHEET 2 OF 77



| MATERIAL TOLERANCES          |          |
|------------------------------|----------|
| SURFACE                      |          |
| - PAVEMENT (TOTAL THICKNESS) | +/- 1/4" |
| - AGGREGATE SURFACE COURSE   | +/- 1/2" |
| SUBBASE                      | +/- 1"   |
| SAND BORROW                  | +/- 1"   |



## SAWED PAVEMENT JOINT DETAIL

(NOT TO SCALE)

\* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. ALL WORK SHALL BE PAID UNDER ITEM 524.11, "JOINT SEALER, HOT POURED".

\* RADIAL DIMENSION

TYPICAL BRIDGE SECTION  
SCALE  $\frac{3}{8}$ " = 1'-0"

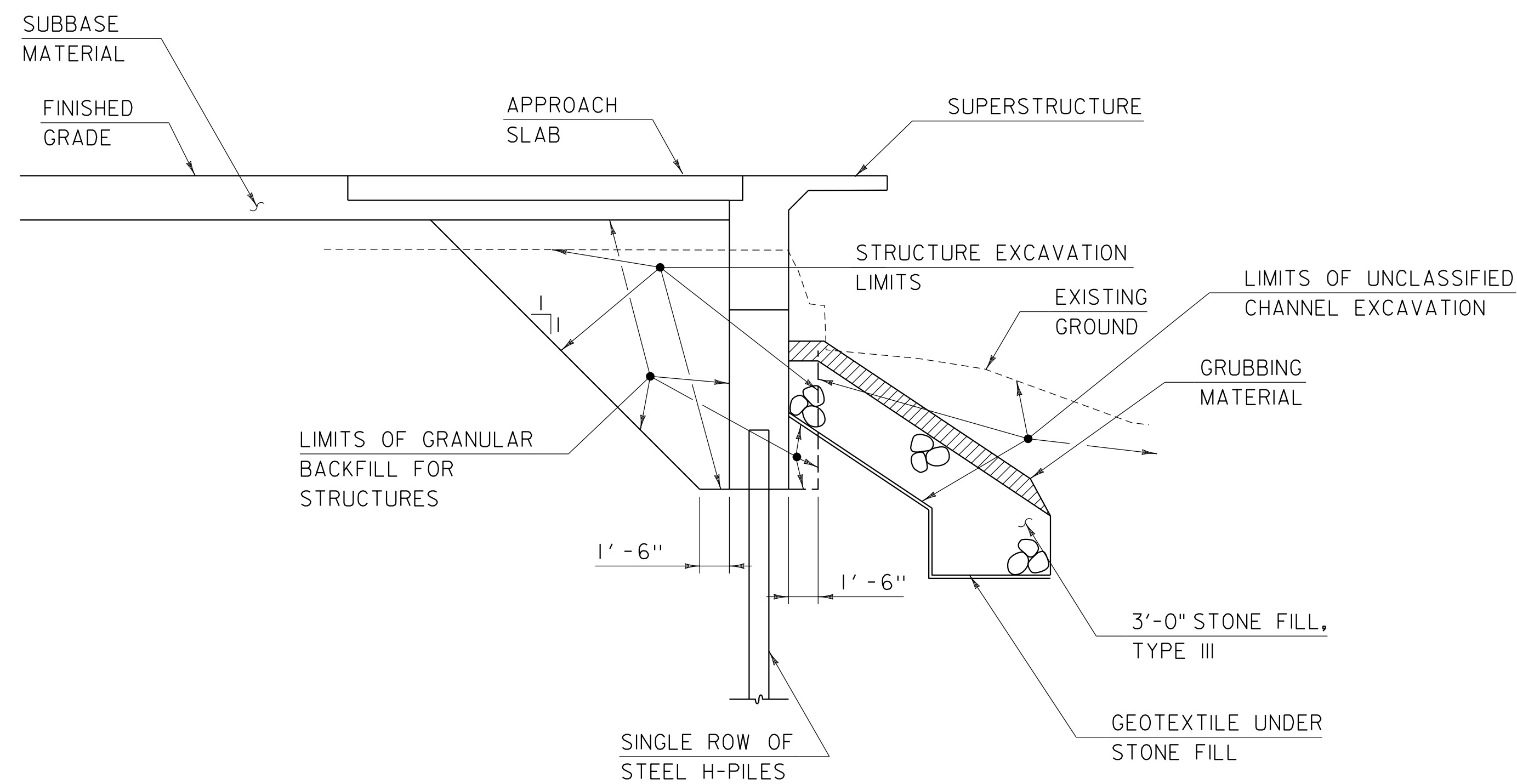
|                 |             |
|-----------------|-------------|
| PROJECT NAME:   | BRUNSWICK   |
| PROJECT NUMBER: | BF 0271(23) |

FILE NAME: z13c056frm.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TYPICAL SECTION SHEET

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 3 OF 77



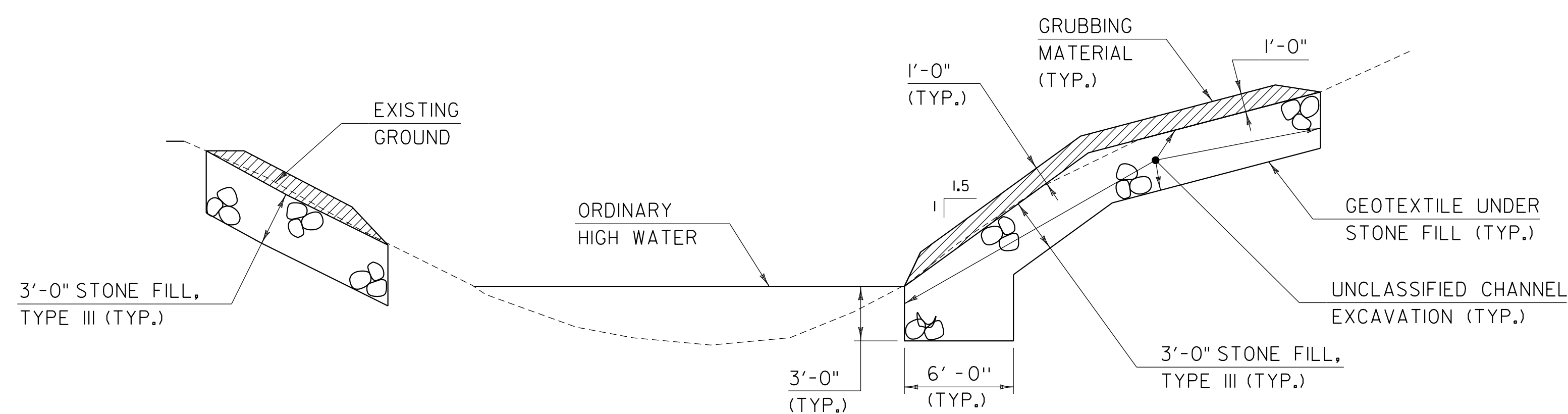




## TYPICAL ABUTMENT EARTHWORK SECTION

SCALE:  $\frac{3}{16}" = 1'-0"$

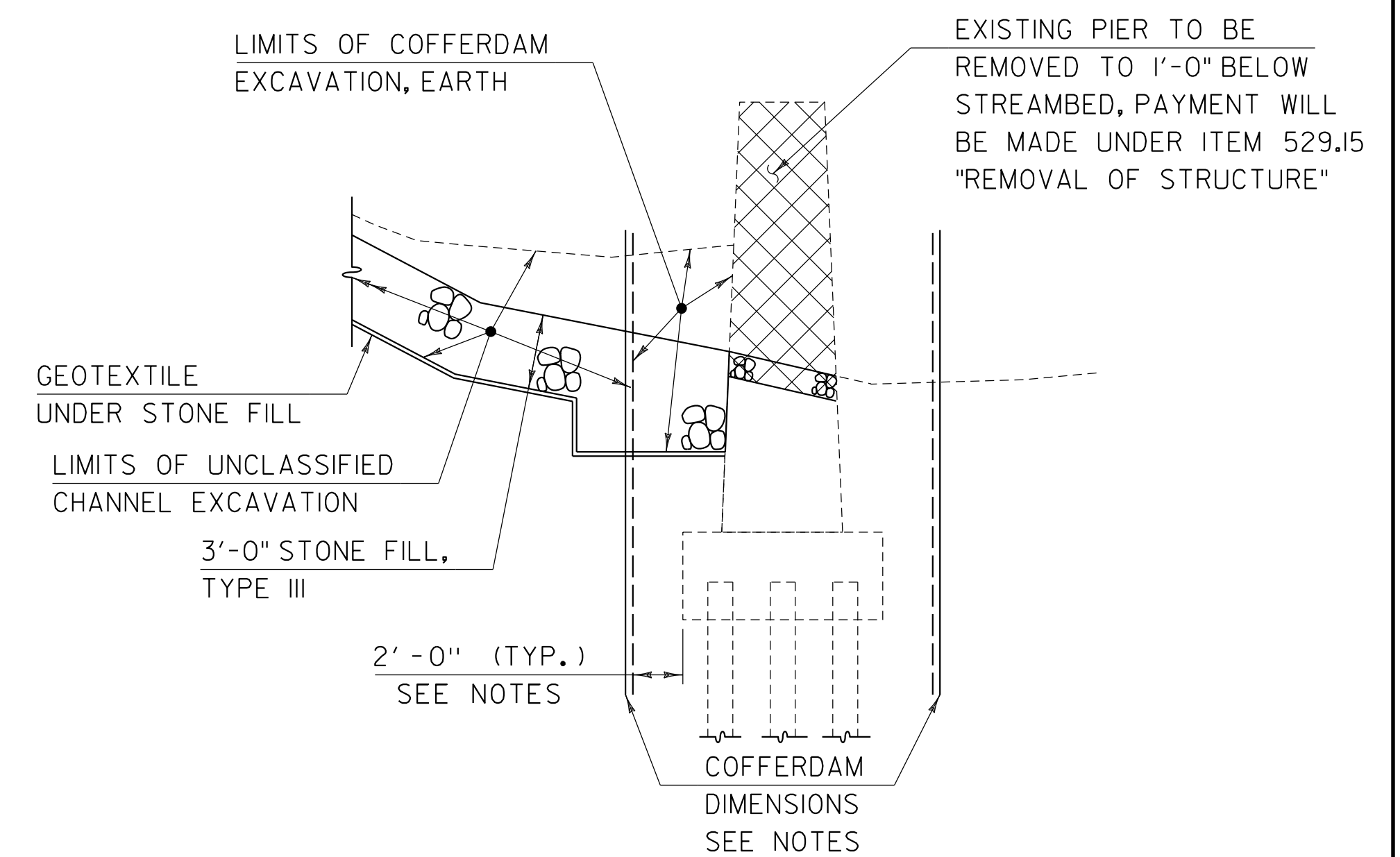
NOTE: ACTUAL EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, PAYMENT UNDER CONTRACT ITEM 204.25 WILL ONLY BE MADE TO THE LIMITS SHOWN.



## TYPICAL CHANNEL SECTION

SCALE:  $\frac{3}{16}" = 1'-0"$

\* WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

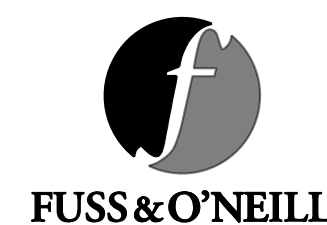


## TYPICAL PIER EARTHWORK SECTION

SCALE:  $\frac{3}{16}" = 1'-0"$

### COFFERDAM NOTES

1. COFFERDAM DIMENSIONS TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF "COFFERDAM EXCAVATION, EARTH" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING AND FROM BOTTOM OF EXCAVATION UP TO THE EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION. NO MEASUREMENT AND PAYMENT WILL BE MADE FOR COFFERDAM EXCAVATION OUTSIDE THE PAY LIMITS DEFINED IN NOTE 2.



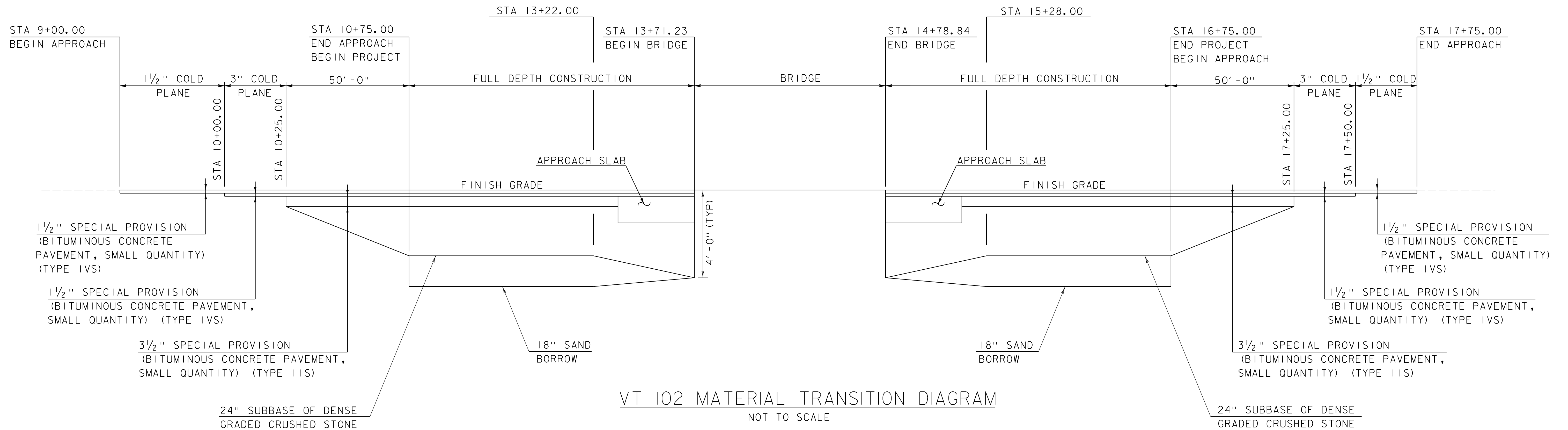
FUSS & O'NEILL

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

FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
TYPICAL EARTHWORK SECTIONS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 4 OF 77





|                             |                       |
|-----------------------------|-----------------------|
| PROJECT NAME: BRUNSWICK     |                       |
| PROJECT NUMBER: BF 0271(23) |                       |
| FILE NAME: z13c056frm.dgn   | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH   | DRAWN BY: J. FOWLER   |
| DESIGNED BY: S. FORTIER     | CHECKED BY: K. HAYDEN |
| MATERIAL TRANSITION DIAGRAM | SHEET 5 OF 77         |



| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |  |  |  |  |  |  |  |         |                    |              |                    | QUANTITY SHEET 1 |       |              |                                                              |             |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|---------|--------------------|--------------|--------------------|------------------|-------|--------------|--------------------------------------------------------------|-------------|-------|---------------------------|------|--------------------------------------------------|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--|--|--|--|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |  |  |  |  |  |  |  |         |                    |              |                    | TOTALS           |       | DESCRIPTIONS |                                                              |             |       |                           |      | DETAILED SUMMARY OF QUANTITIES                   |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | ROADWAY | EROSION<br>CONTROL | BRIDGE NO. 6 | FULL C.E.<br>ITEMS | GRAND TOTAL      | FINAL | UNIT         | ITEMS                                                        | ITEM NUMBER | ROUND | QUANTITIES                | UNIT | ITEMS                                            |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | LS           | CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS | 201.10      | -     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1400    |                    |              |                    | 1400             |       | CY           | COMMON EXCAVATION                                            | 203.15      |       |                           |      | <u>EARTHWORK SUMMARY</u>                         |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 669          |                    | 669              |       | CY           | UNCLASSIFIED CHANNEL EXCAVATION                              | 203.27      |       | 1384                      | CY   | COMMON EXCAVATION                                |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 150     |                    |              |                    | 150              |       | CY           | EARTH BORROW                                                 | 203.30      |       | 782                       | CY   | COMMON EXC. AVAILABLE FOR EMBANKMENT (PHASE 1)   |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1100    |                    |              |                    | 1100             |       | CY           | SAND BORROW                                                  | 203.31      |       | 160                       | CY   | STRUCTURE EXCAVATION (ASSUME 75% SUITABLE)       |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | CY           | TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)           | 204.22      | EST   | 942                       | CY   | TOTAL FILL AVAILABLE FOR EMBANKMENT              |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 213          |                    | 213              |       | CY           | STRUCTURE EXCAVATION                                         | 204.25      |       | 1071                      | CY   | TOTAL FILL REQUIRED (INCLUDING 1.15 FILL FACTOR) |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 251          |                    | 251              |       | CY           | GRANULAR BACKFILL FOR STRUCTURES                             | 204.30      |       | 129                       | CY   | TOTAL EARTH BORROW                               |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 75           |                    | 75               |       | CY           | COFFERDAM EXCAVATION, EARTH                                  | 208.30      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | LS           | COFFERDAM (PIER 1)                                           | 208.40      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | LS           | COFFERDAM (PIER 2)                                           | 208.40      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 550     |                    |              |                    | 550              |       | SY           | COLD PLANING, BITUMINOUS PAVEMENT                            | 210.10      | 8     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 2000    |                    |              |                    | 2000             |       | CY           | SUBBASE OF DENSE GRADED CRUSHED STONE                        | 301.35      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 20      |                    |              |                    | 20               |       | CY           | AGGREGATE SURFACE COURSE                                     | 401.10      | 2.7   |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 120     |                    |              |                    | 120              |       | TON          | AGGREGATE SHOULDERS                                          | 402.12      | 1     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 20      |                    |              |                    | 20               |       | CWT          | EMULSIFIED ASPHALT                                           | 404.65      | 4     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | LS           | FURNISHING EQUIPMENT FOR DRIVING PILING                      | 504.10      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 736          |                    | 736              |       | LF           | STEEL PILING, HP 14 x 89                                     | 505.18      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 2            |                    | 2                |       | EACH         | DYNAMIC PILE LOADING TEST                                    | 505.45      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 126307       |                    | 126307           |       | LB           | STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)                  | 506.56      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 3976         |                    | 3976             |       | LB           | REINFORCING STEEL, LEVEL I (BLACK)(FPQ)                      | 507.11      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 6041         |                    | 6041             |       | LB           | REINFORCING STEEL, LEVEL I (EPOXY)(FPQ)                      | 507.11      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 35249        |                    | 35249            |       | LB           | REINFORCING STEEL, LEVEL III (FPQ)                           | 507.13      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | LS           | SHEAR CONNECTORS (864 - 8" x 7/8")                           | 508.15      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 335          |                    | 335              |       | SY           | LONGITUDINAL DECK GROOVING (FPQ)                             | 509.10      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 32           |                    | 32               |       | GAL          | WATER REPELLENT, SILANE                                      | 514.10      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 59           |                    | 59               |       | LF           | BRIDGE EXPANSION JOINT, ASPHALTIC PLUG                       | 516.10      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 59           |                    | 59               |       | LF           | JOINT SEALER, HOT POURED                                     | 524.11      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 222          |                    | 222              |       | LF           | BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM                   | 525.335     |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | LS           | ONE-WAY TEMPORARY BRIDGE (2115 SF)                           | 528.10      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 1            |                    | 1                |       | EACH         | REMOVAL OF STRUCTURE (3881 SF)                               | 529.15      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | HR           | POWER BROOM RENTAL, TYPE I                                   | 608.30      | 0.7   |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 0.1     |                    |              |                    | 0.1              |       | MGAL         | DUST CONTROL WITH WATER                                      | 609.10      | 0.02  |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 300     |                    |              |                    | 300              |       | CY           | STONE FILL, TYPE II                                          | 613.11      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 652          |                    | 652              |       | CY           | STONE FILL, TYPE III                                         | 613.12      |       |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 2       |                    |              |                    | 2                |       | EACH         | RELOCATE MAILBOX, SINGLE SUPPORT                             | 617.10      | -     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 756     |                    |              |                    | 756              |       | LF           | BOX BEAM GUARDRAIL                                           | 621.30      | -     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | EACH         | MANUFACTURED TERMINAL SECTION, TANGENT                       | 621.51      | -     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 4            |                    | 4                |       | EACH         | GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM       | 621.725     | -     |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  | 380     |                    |              |                    | 380              |       | LF           | REMOVAL AND DISPOSAL OF GUARDRAIL                            | 621.80      | 4.9   |                           |      |                                                  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | PROJECT NAME:             |      | BRUNSWICK                                        |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | PROJECT NUMBER:           |      | BF 0271(23)                                      |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | FILE NAME: z13C056qss.dgn |      |                                                  |  |  |  |  |  |  |  | PLOT DATE: 8/29/2018  |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | PROJECT LEADER: J. FRENCH |      |                                                  |  |  |  |  |  |  |  | DRAWN BY: S. FORTIER  |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | DESIGNED BY: S. FORTIER   |      |                                                  |  |  |  |  |  |  |  | CHECKED BY: K. HAYDEN |  |  |  |  |  |  |  |  |  |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                              |             |       | QUANTITY SHEET 1          |      |                                                  |  |  |  |  |  |  |  | SHEET 6 OF 77         |  |  |  |  |  |  |  |  |  |



| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |  |  |  |  |  |  |  |         |                    |              |                    | QUANTITY SHEET 2 |       |              |                                                               |             |       |  |                                |      |       |
|----------------------------------------------|--|--|--|--|--|--|--|--|--|---------|--------------------|--------------|--------------------|------------------|-------|--------------|---------------------------------------------------------------|-------------|-------|--|--------------------------------|------|-------|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |  |  |  |  |  |  |  |         |                    |              |                    | TOTALS           |       | DESCRIPTIONS |                                                               |             |       |  | DETAILED SUMMARY OF QUANTITIES |      |       |
|                                              |  |  |  |  |  |  |  |  |  | ROADWAY | EROSION<br>CONTROL | BRIDGE NO. 6 | FULL C.E.<br>ITEMS | GRAND TOTAL      | FINAL | UNIT         | ITEMS                                                         | ITEM NUMBER | ROUND |  | QUANTITIES                     | UNIT | ITEMS |
|                                              |  |  |  |  |  |  |  |  |  | 500     |                    |              |                    | 500              |       | HR           | UNIFORMED TRAFFIC OFFICERS                                    | 630.10      | EST   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 750     |                    |              |                    | 750              |       | HR           | FLAGGERS                                                      | 630.15      | EST   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              | 1                  | 1                |       | LS           | FIELD OFFICE , ENGINEERS                                      | 631.10      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              | 1                  | 1                |       | LS           | TESTING EQUIPMENT, CONCRETE                                   | 631.16      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              | 1                  | 1                |       | LS           | TESTING EQUIPMENT, BITUMINOUS                                 | 631.17      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              | 3000               | 3000             |       | DL           | FIELD OFFICE TELEPHONE (N.A.B.I.)                             | 631.26      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | LS           | MOBILIZATION/DEMOBILIZATION                                   | 635.11      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | LS           | TRAFFIC CONTROL                                               | 641.10      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 2       |                    |              |                    | 2                |       | EACH         | PORTABLE CHANGEABLE MESSAGE SIGN                              | 641.15      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1750    |                    |              |                    | 1750             |       | LF           | DURABLE 4 INCH WHITE LINE , THERMOPLASTIC                     | 646.402     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1750    |                    |              |                    | 1750             |       | LF           | DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC                     | 646.412     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1750    |                    |              |                    | 1750             |       | LF           | TEMPORARY 4 INCH WHITE LINE, PAINT                            | 646.602     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1750    |                    |              |                    | 1750             |       | LF           | TEMPORARY 4 INCH YELLOW LINE, PAINT                           | 646.612     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 360     |                    |              |                    | 360              |       | EACH         | LINE STRIPING TARGETS                                         | 646.76      | 4     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 420     |                    | 670          |                    | 1090             |       | SY           | GEOTEXTILE UNDER STONE FILL                                   | 649.31      | 4     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 190                |              |                    | 190              |       | SY           | GEOTEXTILE FOR SILT FENCE                                     | 649.51      | 5     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 130                |              |                    | 130              |       | SY           | GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED              | 649.515     | 8     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 170                |              |                    | 170              |       | SY           | GEOTEXTILE FOR FILTER CURTAIN                                 | 649.61      | 3     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 55                 |              |                    | 55               |       | LB           | SEED                                                          | 651.15      | 1     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 450                |              |                    | 450              |       | LB           | FERTILIZER                                                    | 651.18      | 0.1   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 2                  |              |                    | 2                |       | TON          | AGRICULTURAL LIMESTONE                                        | 651.20      | 0.2   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 2                  |              |                    | 2                |       | TON          | HAY MULCH                                                     | 651.25      | 0.2   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 250                |              |                    | 250              |       | CY           | TOPSOIL                                                       | 651.35      | 8.1   |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 420                | 239          |                    | 659              |       | SY           | GRUBBING MATERIAL                                             | 651.40      | 4     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 1                  |              |                    | 1                |       | LS           | EPSC PLAN                                                     | 652.10      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 90                 |              |                    | 90               |       | HR           | MONITORING EPSC PLAN                                          | 652.20      | 2     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 1                  |              |                    | 1                |       | LU           | MAINTENANCE OF EPSC PLAN (N.A.B.I.)                           | 652.30      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 1550               |              |                    | 1550             |       | SY           | TEMPORARY EROSION MATTING                                     | 653.20      | 26    |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 2                  |              |                    | 2                |       | EACH         | FILTER BAG                                                    | 653.45      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 600                |              |                    | 600              |       | LF           | BARRIER FENCE                                                 | 653.50      | 31    |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         | 1050               |              |                    | 1050             |       | LF           | PROJECT DEMARCATION FENCE                                     | 653.55      | 12    |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | LS           | TREE PROTECTION                                               | 656.85      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 2       |                    |              |                    | 2                |       | SF           | TRAFFIC SIGNS, TYPE A                                         | 675.20      | 0.74  |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 45      |                    |              |                    | 45               |       | LF           | SQUARE TUBE SIGN POST AND ANCHOR                              | 675.341     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 9       |                    |              |                    | 9                |       | EACH         | REMOVING SIGNS                                                | 675.50      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 4       |                    |              |                    | 4                |       | EACH         | DELINEATOR WITH STEEL POST                                    | 676.10      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 1       |                    |              |                    | 1                |       | LU           | PRICE ADJUSTMENT, FUEL (N.A.B.I.)                             | 690.50      | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 204          |                    | 204              |       | CY           | SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS PCD)(FPQ) | 900.608     |       |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    | 62           |                    | 62               |       | CY           | SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS PCS)(FPQ) | 900.608     |       |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  | 15      |                    |              |                    | 15               |       | EACH         | SPECIAL PROVISION (CPM SCHEDULE)                              | 900.620     | -     |  |                                |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | PROJECT NAME: BRUNSWICK        |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | PROJECT NUMBER: BF 0271(23)    |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | FILE NAME: z13C056qss.dgn      |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | PLOT DATE: 8/29/2018           |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | PROJECT LEADER: J. FRENCH      |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | DRAWN BY: S. FORTIER           |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | DESIGNED BY: S. FORTIER        |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | CHECKED BY: K. HAYDEN          |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | QUANTITY SHEET 2               |      |       |
|                                              |  |  |  |  |  |  |  |  |  |         |                    |              |                    |                  |       |              |                                                               |             |       |  | SHEET 7 OF 77                  |      |       |



# QUANTITY SHEET 3

[illegible]

|                           |                       |
|---------------------------|-----------------------|
| PROJECT NAME:             | BRUNSWICK             |
| PROJECT NUMBER:           | BF 0271(23)           |
| <hr/>                     |                       |
| FILE NAME: z13C056qss.dgn | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH | DRAWN BY: S. FORTIER  |
| DESIGNED BY: S. FORTIER   | CHECKED BY: K. HAYDEN |
| QUANTITY SHEET 3          | SHEET 8 OF 77         |



# BRIDGE QUANTITY SHEET 1

[illegible]

|                             |                       |
|-----------------------------|-----------------------|
| PROJECT NAME: BRUNSWICK     |                       |
| PROJECT NUMBER: BF 0271(23) |                       |
| FILE NAME: z13C056qss.dgn   | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH   | DRAWN BY: S. FORTIER  |
| DESIGNED BY: S. FORTIER     | CHECKED BY: K. HAYDEN |
| BRIDGE QUANTITY SHEET       | SHEET 9 OF 77         |



GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY 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. SYMBOLGY 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 RADIUS OF         |
| T    | CURVE TANGENT LENGTH    |
| L    | CURVE LENGTH OF         |
| E    | CURVE EXTERNAL DISTANCE |

UTILITY SYMBOLGY

| 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 SYMBOLGY

| PROJECT DESIGN & LAYOUT SYMBOLGY |                       |
|----------------------------------|-----------------------|
| — -- — 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       |
| PDF ——— PDF ———               | PROJECT DEMARCATION FENCE  |
| BF — x — x — BF — x — x —     | BARRIER FENCE              |
| xxxxxxxxxxxxxxxxxxxxxxxx      | TREE PROTECTION ZONE (TPZ) |
| //////////                    | STRIPING LINE REMOVAL      |
| ~~~~~                         | SHEET PILES                |

CONVENTIONAL BOUNDARY SYMBOLGY

| 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 ——— P ———           | PROPERTY LINE (P/L)                    |
| SR ——— SR ———         | SLOPE RIGHTS                           |
| 6f ——— 6f ———         | 6F PROPERTY BOUNDARY                   |
| 4f ——— 4f ———         | 4F PROPERTY BOUNDARY                   |
| HAZ ——— HAZ ———       | HAZARDOUS WASTE                        |

EPSC LAYOUT PLAN SYMBOLGY

| EPSC MEASURES       |                                            |
|---------------------|--------------------------------------------|
| ONNOONNOONNO        | FILTER CURTAIN                             |
| ▣ — ▣ — ▣ — ▣       | SILT FENCE                                 |
| ▣ — x — x — x — x — | SILT FENCE WOVEN WIRE                      |
| ▶ —▶ —▶ —           | CHECK DAM                                  |
| ▣                   | DISTURBED AREAS<br>REQUIRING RE-VEGETATION |
| ▣                   | EROSION MATTING                            |

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

| ENVIRONMENTAL RESOURCES |                                 |
|-------------------------|---------------------------------|
| ——— T&E ———             | 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 SYMBOLGY

| EXISTING FEATURES |                    |
|-------------------|--------------------|
| -----             | ROAD EDGE PAVEMENT |
| -----             | ROAD EDGE GRAVEL   |
| -----             | DRIVEWAY EDGE      |
| -----             | DITCH              |
| -----             | FOUNDATION         |
| x — x — x — x —   | 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 0271(23)           |
| FILE NAME: z13c056frm.dgn          | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH          | DRAWN BY: J. FOWLER   |
| DESIGNED BY: S. FORTIER            | CHECKED BY: K. HAYDEN |
| CONVENTIONAL SYMBOLGY LEGEND SHEET | SHEET 10 OF 77        |





GENERAL

1.

ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2017, AND ITS LATEST REVISIONS.
2.

THE BRIDGE WAS DESIGNED FOR THE HL-93 LIVE LOAD WITH 2½" FUTURE PAVEMENT.
3.

ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL AND VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
4.

THE CONTRACTOR SHALL BE MADE AWARE THAT EXISTING UTILITIES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE 6. THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE. NO CLAIMS ARE MADE AS TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL UTILITIES ON SITE DURING ALL STAGES OF CONSTRUCTION. SEE UTILITY PLANS AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
5.

ALL PG BINDER USED IN BITUMINOUS CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH SUBSECTION 702.02
6.

EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL COLD PLANED SURFACES AT THE RATE OF 0.080 GAL/SY AND BETWEEN ALL COURSES OF PAVEMENT AT THE RATE OF 0.040 GAL/SY OR AS DIRECTED BY THE ENGINEER.
7.

ANY REQUIRED SAWCUT OF EXISTING PAVEMENT SHALL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
8.

ALL EDGES OF PAVEMENT SHALL BE BACKED UP WITH 6" AGGREGATE SHOULDER MATERIAL AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID UNDER ITEM 402.12, "AGGREGATE SHOULDERS".
9.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY CAUSED BY THE CONTRACTOR AT THE CONTRACTOR’S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.
10.

UPON COMPLETION OF THE BRIDGE CONSTRUCTION THE CONTRACTOR SHALL REMOVE THE DETOUR, RESTORE THE DETOUR SITE TO THE ORIGINAL GRADE (TO BE PAID FOR UNDER ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115 SF)) AND STABILIZE AS SHOWN ON THE EPSC FINAL CONDITIONS PLAN.
11.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

EARTHWORK AND RELATED ITEMS

12.

TEMPORARY CONSTRUCTION FILLS WITHIN THE WATERCOURSE FOR ANY PURPOSE SHALL CONSIST OF CLEAN STONE FILL ONLY. NO FILL BEYOND THE LIMIT SHOWN SHALL OCCUR WITHOUT THE APPROVAL OF THE RIVER MANAGEMENT ENGINEER.
13.

THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.
14.

ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR THE REMOVAL OF THE EXISTING STRUCTURE INCLUDING THE SUPERSTRUCTURE, PIER, AND ABUTMENTS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. THE PIER SHALL BE REMOVED TO 1’-0" BELOW STREAMBED.
15.

BOTH SIDES OF THE ABUTMENTS SHALL BE BACKFILLED SIMULTANEOUSLY. NO MORE THAN TWO (2) FEET OF DIFFERENTIAL BACKFILL HEIGHT SHALL BE PERMITTED. BACKFILLING ABOVE THE CONSTRUCTION JOINT SHALL NOT BEGIN UNTIL THE ABUTMENT AND DECK CONSTRUCTION IS COMPLETE.

H-PILES

16.

TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUB-SECTION 505.04 (f).
17.

TO ENSURE THAT THE NOMINAL CAPACITY HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE UNIT, FOR A TOTAL OF 2 TESTS. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. ADDITIONAL TEST REQUIRED BY THE ENGINEER WILL BE PAID FOR AT THE UNIT PRICE BID FOR CONTRACT ITEM 505.45.
18.

THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNDR) OF 469 KIPS, AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AND AS INTERPRETED BY THE RESIDENT ENGINEER. HOWEVER, THE PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 40 FEET BELOW THE BOTTOM OF THE PILE CAP.
19.

FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED TO BE AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTH MAY VARY.

CONCRETE

20.

CONCRETE USED FOR DECK, APPROACH SLABS AND, END DIAPHRAGMS, SHALL BE ITEM 900.608, SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS PCD). CONCRETE USED FOR PILE CAP SHALL BE ITEM 900.608, SPECIAL PROVISION (HIGH PERFORMANCE, CONCRETE, CLASS PCS.
21.

WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
22.

ALL REINFORCING STEEL IN THE DECK AND END DIAPHRAGMS SHALL BE LEVEL III - STAINLESS STEEL. REINFORCEMENT IN THE PILE CAP AND APPROACH SLABS SHALL BE LEVEL I. LEVEL I EPOXY COATED REINFORCEMENT IS DESIGNATED BY AN "E" IN THE BAR MARK PREFIX.
23.

ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING INSTITUTE".
24.

MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACKFACES OF WALLS AGAINST EARTH:

2.0 INCH

ALONG TOP SURFACE OF DECK SLAB:

3.0 INCH

ALONG BOTTOM SURFACE OF DECK SLAB:

1.5 INCH

ELSEWHERE UNLESS OTHERWISE INDICATED:

3.0 INCH



FUSS&O'NEILL

|                             |                       |
|-----------------------------|-----------------------|
| PROJECT NAME: BRUNSWICK     |                       |
| PROJECT NUMBER: BF 0271(23) |                       |
| FILE NAME: z13c056notes.dgn | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH   | DRAWN BY: M. SMITH    |
| DESIGNED BY: A. GIRALDI     | CHECKED BY: J. FRENCH |
| PROJECT NOTES               | SHEET II OF 77        |



GPS CONTROL POINTS

RUS

NORTH = 798683.542

EAST = 1874495.072

ELEV. = 917.998

GENERAL LOCATION, BRUNSWICK, VT. OWNERSHIP, STEPHEN RUSSO, 5234 VT ROUTE 102, BRUNSWICK, VT 05905. TO REACH FROM THE INTERSECTION OF VT ROUTE 102 AND VT ROUTE 105 IN BLOOMFIELD GO SOUTH ALONG VT ROUTE 102 FOR 5.2 MI (8.4 KM) TO THE INTERSECTION OF MAIDSTONE LAKE ACCESS ROAD RIGHT. CONTINUE STRAIGHT AHEAD AND GO SOUTH ALONG VT ROUTE 102 FOR 0.25 MI (0.4 KM) TO THE INTERSECTION OF A FIELD DRIVE RIGHT, JUST NORTHEAST OF THE RUSSO FAMILY FARM. TURN RIGHT AND GO NORTHWEST ALONG THE FIELD DRIVE FOR ABOUT 20 M (65.6 FT) TO THE SITE OF THE MARK ON THE LEFT. THE MARK IS SET 5 CM (2 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 19.6 M (64.3 FT) NORTHWEST OF AND ABOUT 1.0 M (3.3 FT) HIGHER THAN THE CENTERLINE OF VT ROUTE 102, 2.6 M (8.5 FT) SOUTHWEST THE CENTERLINE OF THE FIELD DRIVE, 26.8 M (87.9 FT) NORTH-NORTHEAST OF THE EAST CORNER OF THE PORCH ON THE FRONT OF THE RUSSO HOUSE, 28.7 M (94.2 FT) NORTHEAST OF THE NORTH CORNER OF THE RUSSO HOUSE, 33.2 M (108.9 FT) SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF AN EQUIPMENT SHED AND 24.5 M (80.4 FT) SOUTHWEST OF POLE NO 107/143/139.

RUS AZ MK

NORTH = 797405.112

EAST = 1874383.972

ELEV. = 899.564

GENERAL LOCATION, BRUNSWICK, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 102 AND VT ROUTE 105 IN BLOOMFIELD GO SOUTH ALONG VT ROUTE 102 FOR 5.2 MI (8.4 KM) TO THE INTERSECTION OF MAIDSTONE LAKE ACCESS ROAD RIGHT. CONTINUE STRAIGHT AHEAD AND GO SOUTH ALONG VT ROUTE 102 FOR 0.5 MI (0.8 KM) TO THE SITE OF THE MARK ON THE RIGHT, JUST NORTH OF THE NORTH END OF A GUARDRAIL. IT IS 0.2 MI (0.3 KM) SOUTH OF THE RUSSO FAMILY FARM. THE MARK IS SET 5 CM (2 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 6.2 M (20.3 FT) WEST OF AND ABOUT 0.2 M (0.7 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 102, 18.8 M (61.7 FT) SOUTH-SOUTHEAST OF POLE NO 143/107/147, 1.2 M (3.9 FT) NORTH OF THE NORTH END OF A STEEL BAND GUARDRAIL, 7.5 M (24.6 FT) EAST-NORTHEAST OF A 20 CM (8 INCH) TRIPLE TRUNK ELM AND 0.3 M (1.0 FT) EAST OF A FIBERGLASS WITNESS POST.

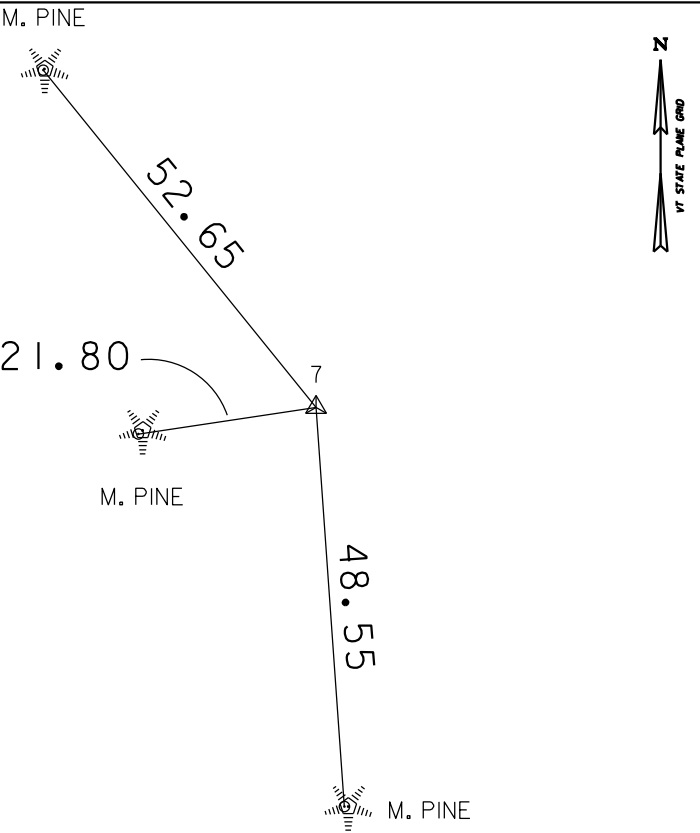
TRAVERSE TIES

HVCTRL #7

NORTH = 801031.275

EAST = 1874197.923

ELEV. = 913.786

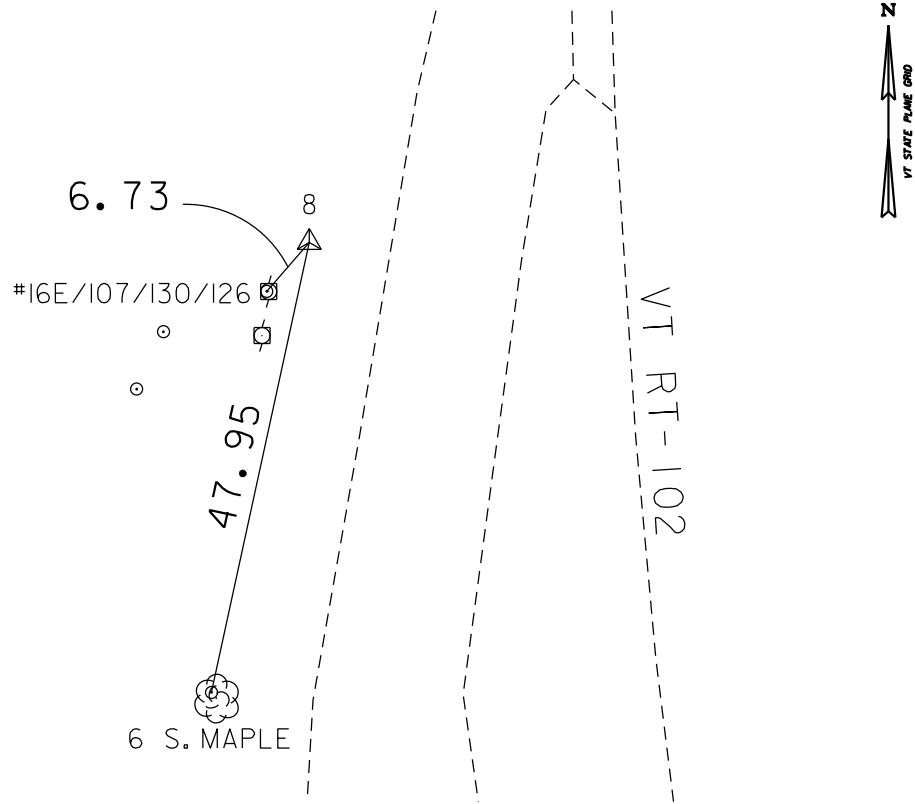


HVCTRL #8

NORTH = 802143.942

EAST = 1873582.012

ELEV. = 872.896



NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

ALIGNMENT TIES

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

NORTH =

EAST =

ELEV. =

DATUM

VERTICAL

NAVD 88

HORIZONTAL

NAD 83 2011

ADJUSTMENT

COMPASS

VERMONT

VSE

VERMONT SURVEY AND ENGINEERING, LLC

PROJECT NAME:

BRUNSWICK

PROJECT NUMBER:

BF 0271(23)

FILE NAME:

xl3c056+1.dgn

PROJECT LEADER:

C. WILLIAMS

DESIGNED BY:

VSE

TIE SHEET I

PLOT DATE:

8/29/2018

DRAWN BY:

C. CYR

CHECKED BY:

VSE

SHEET

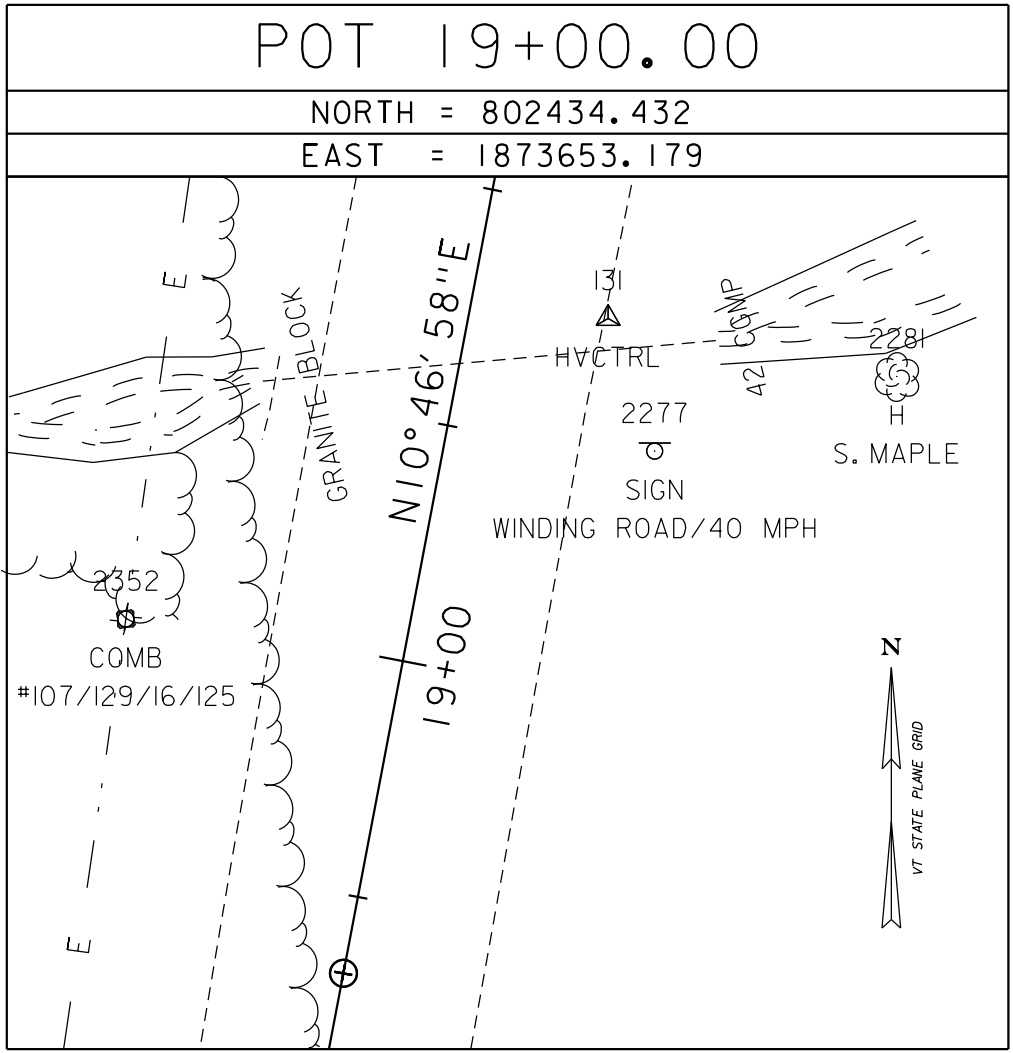
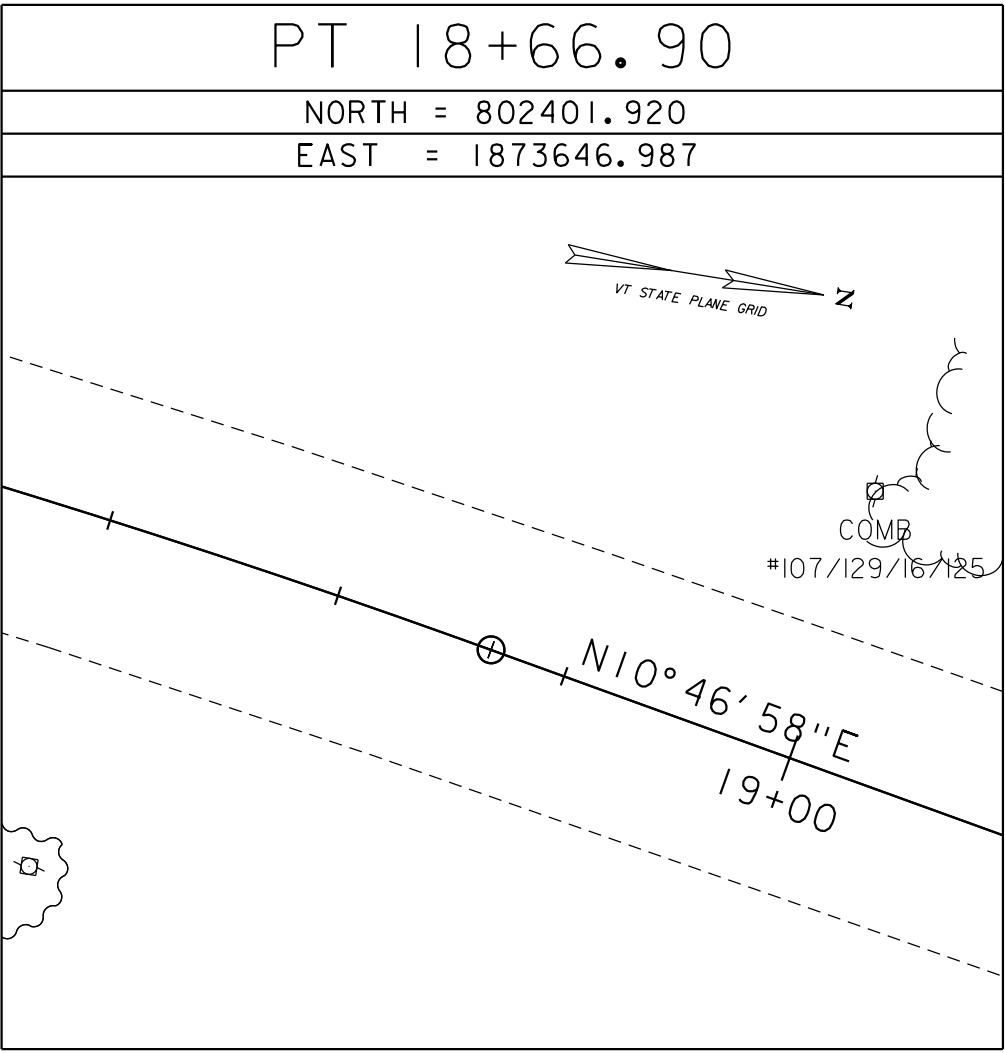
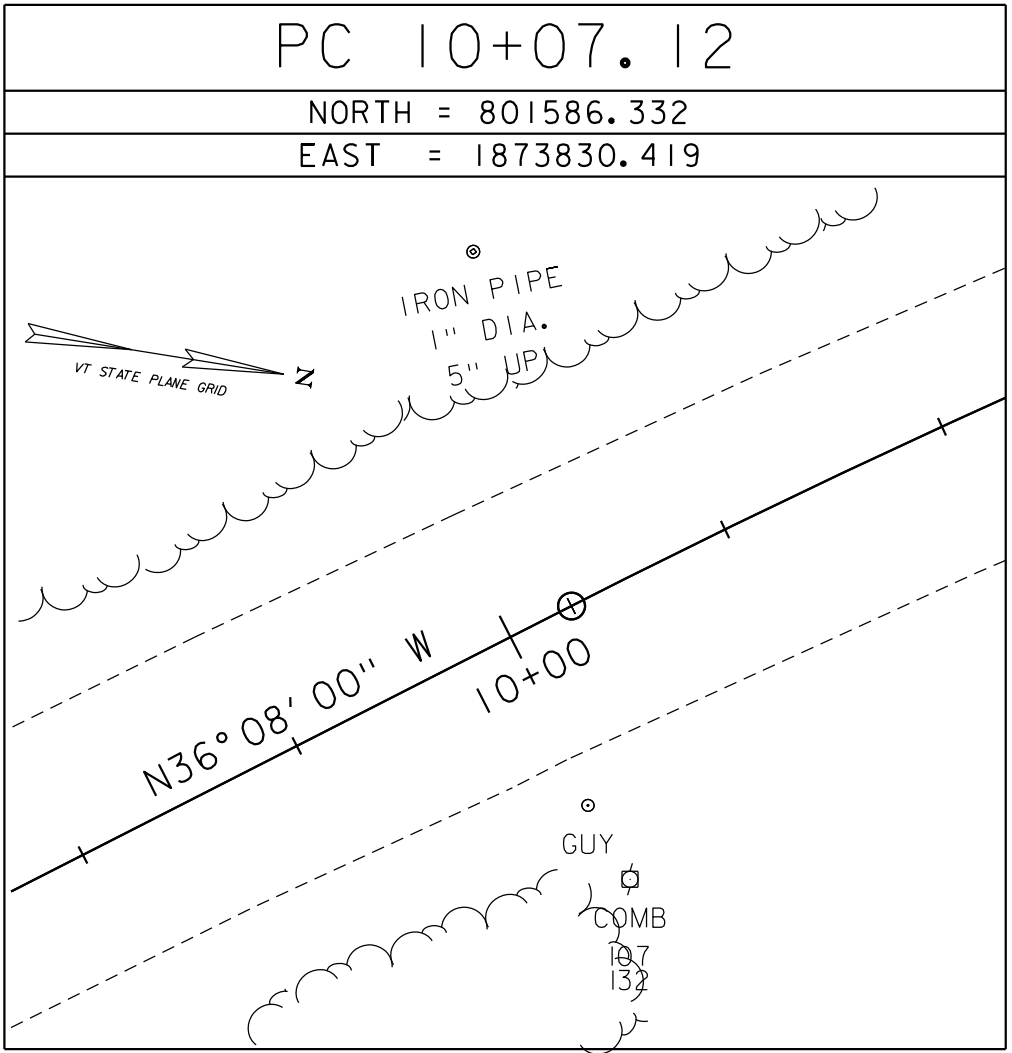
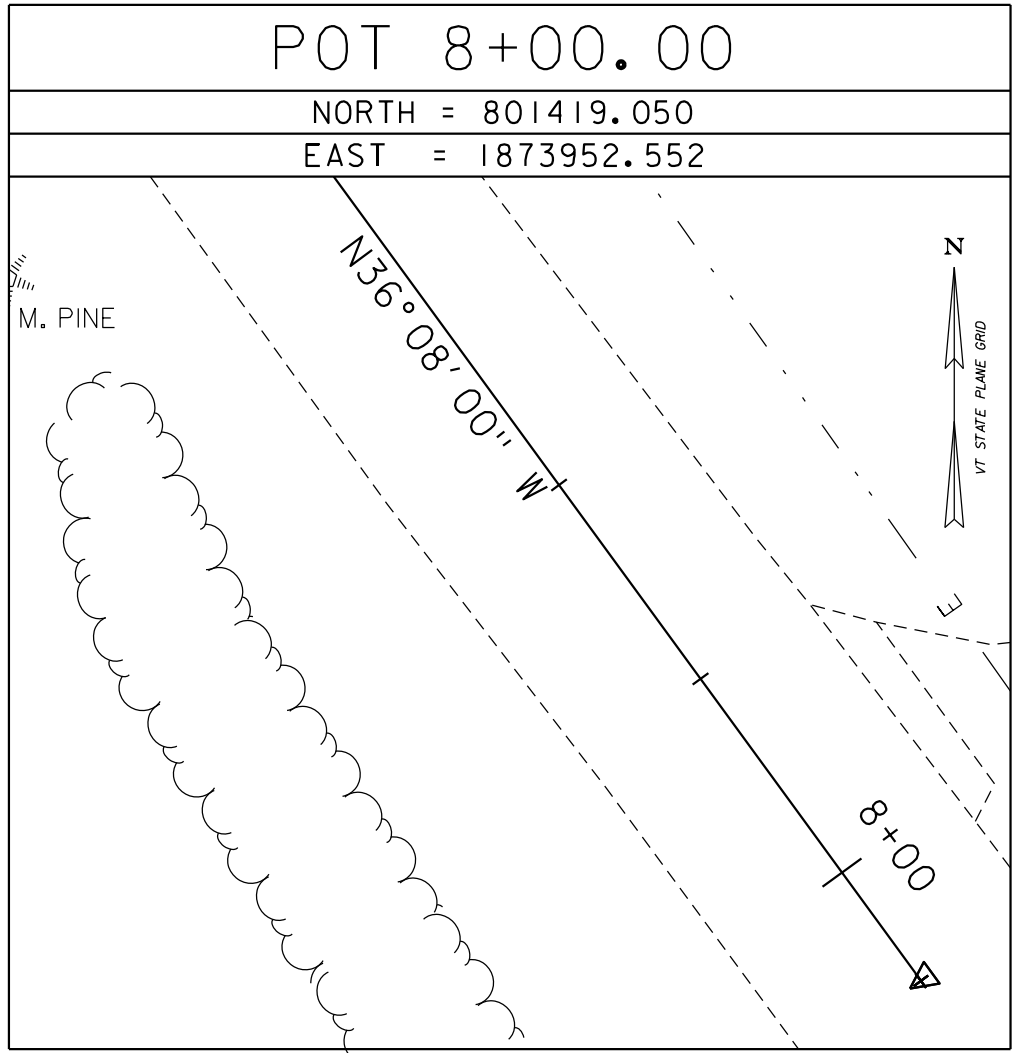
12

OF

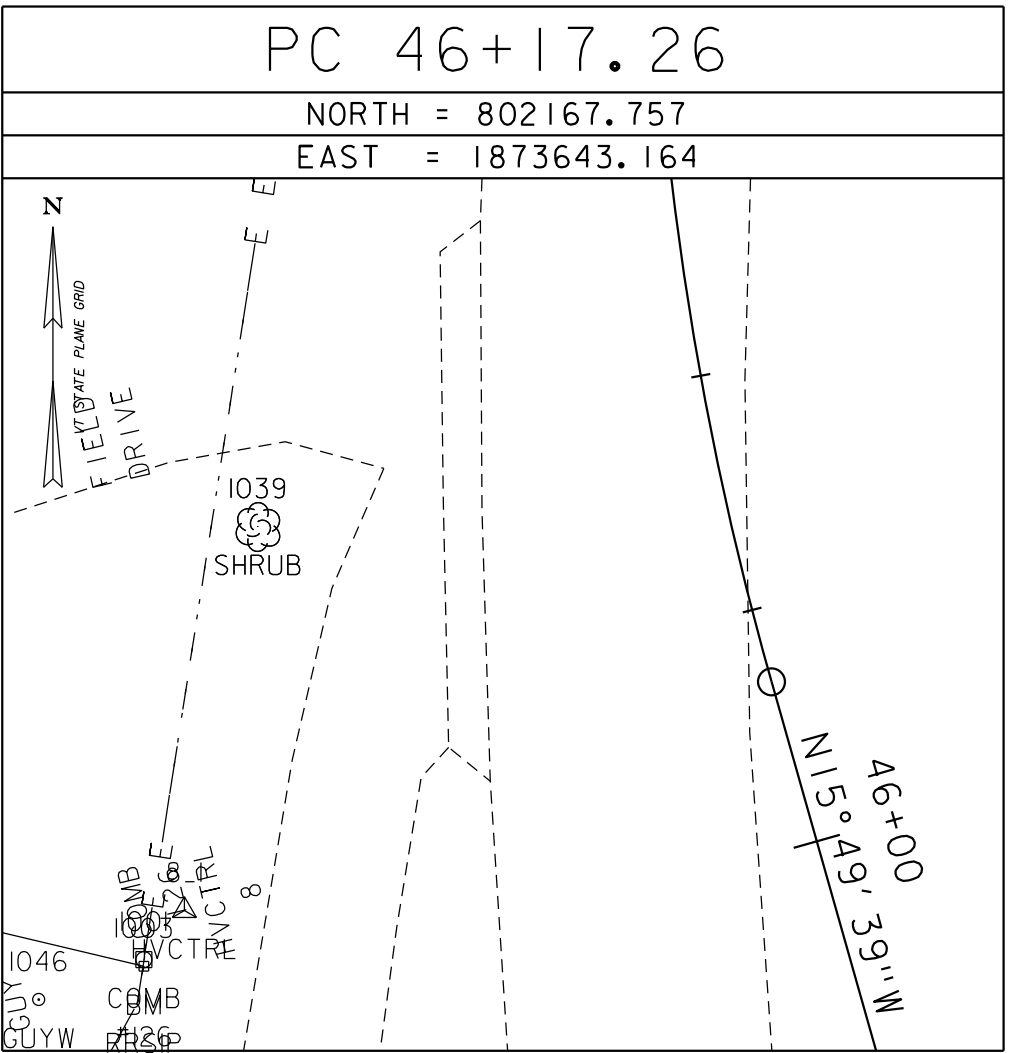
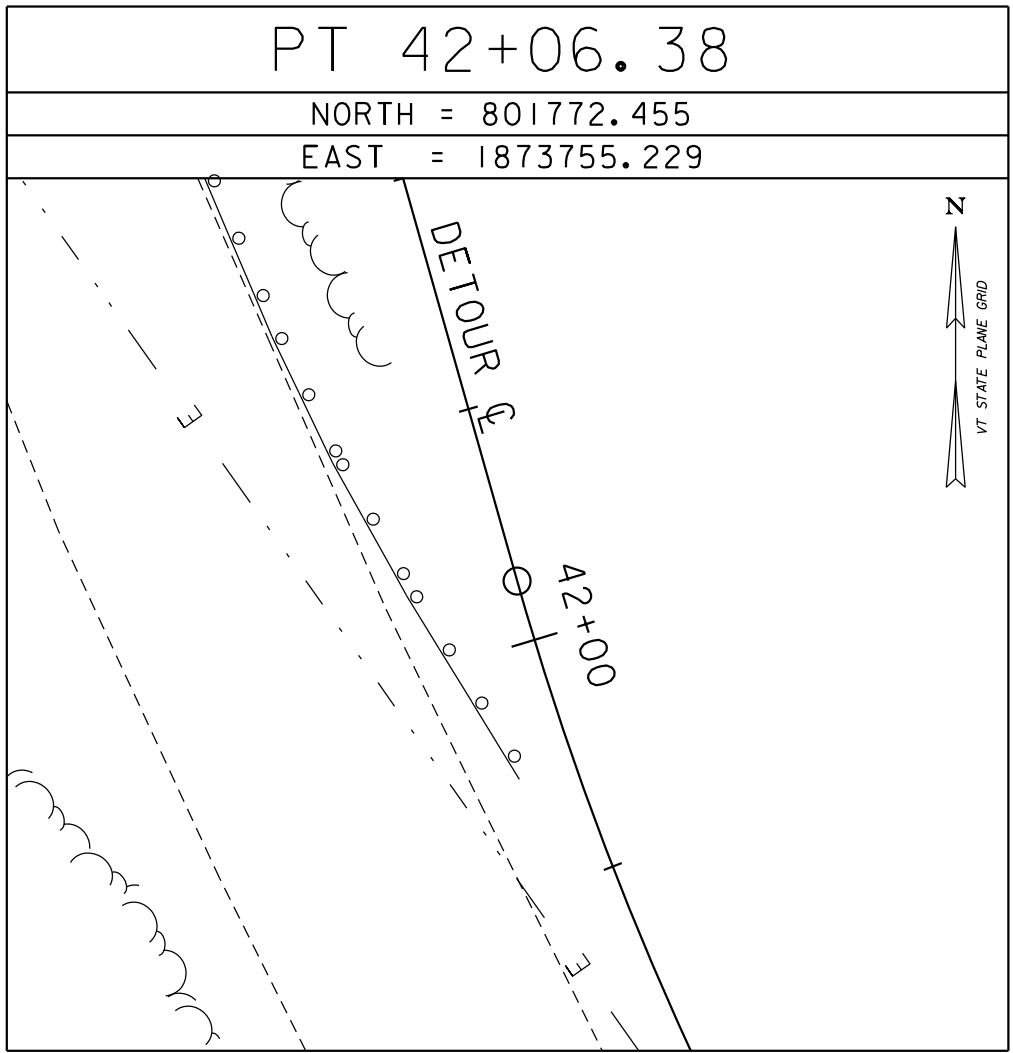
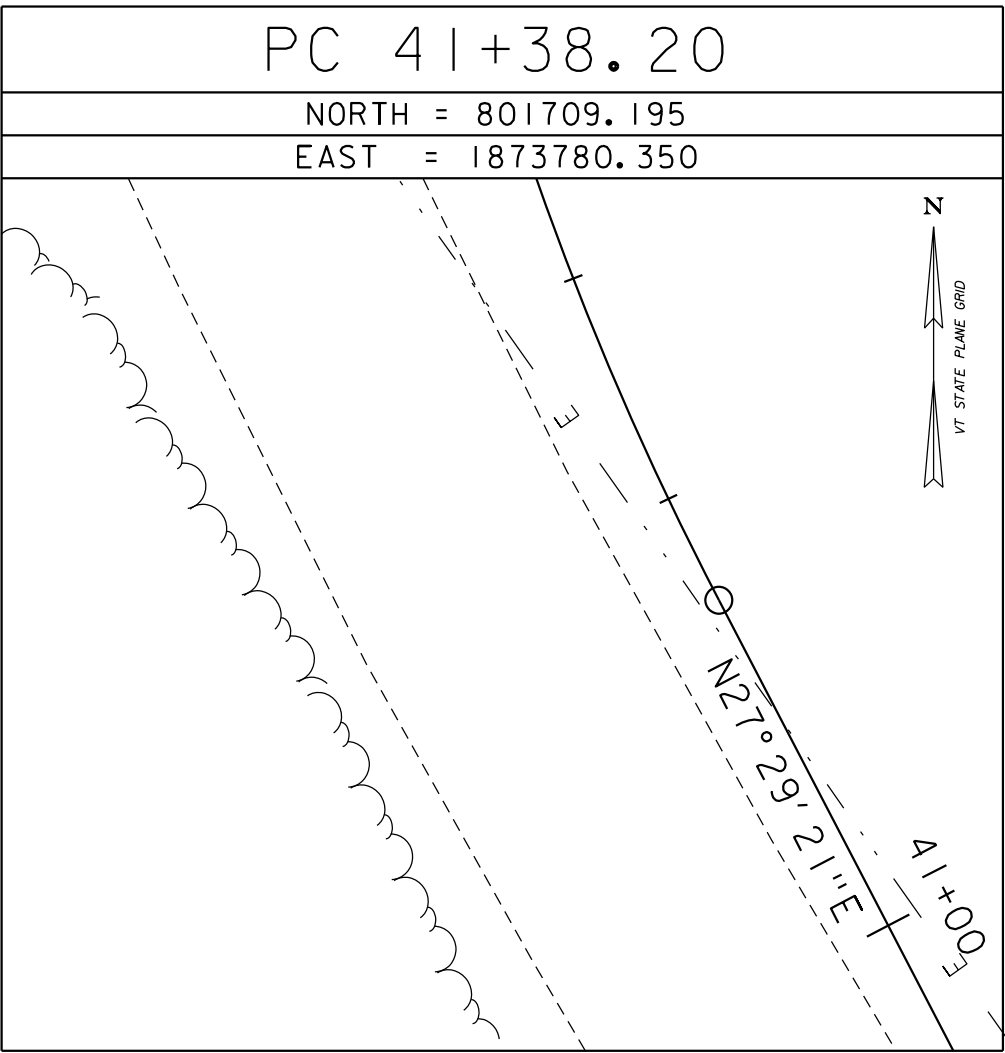
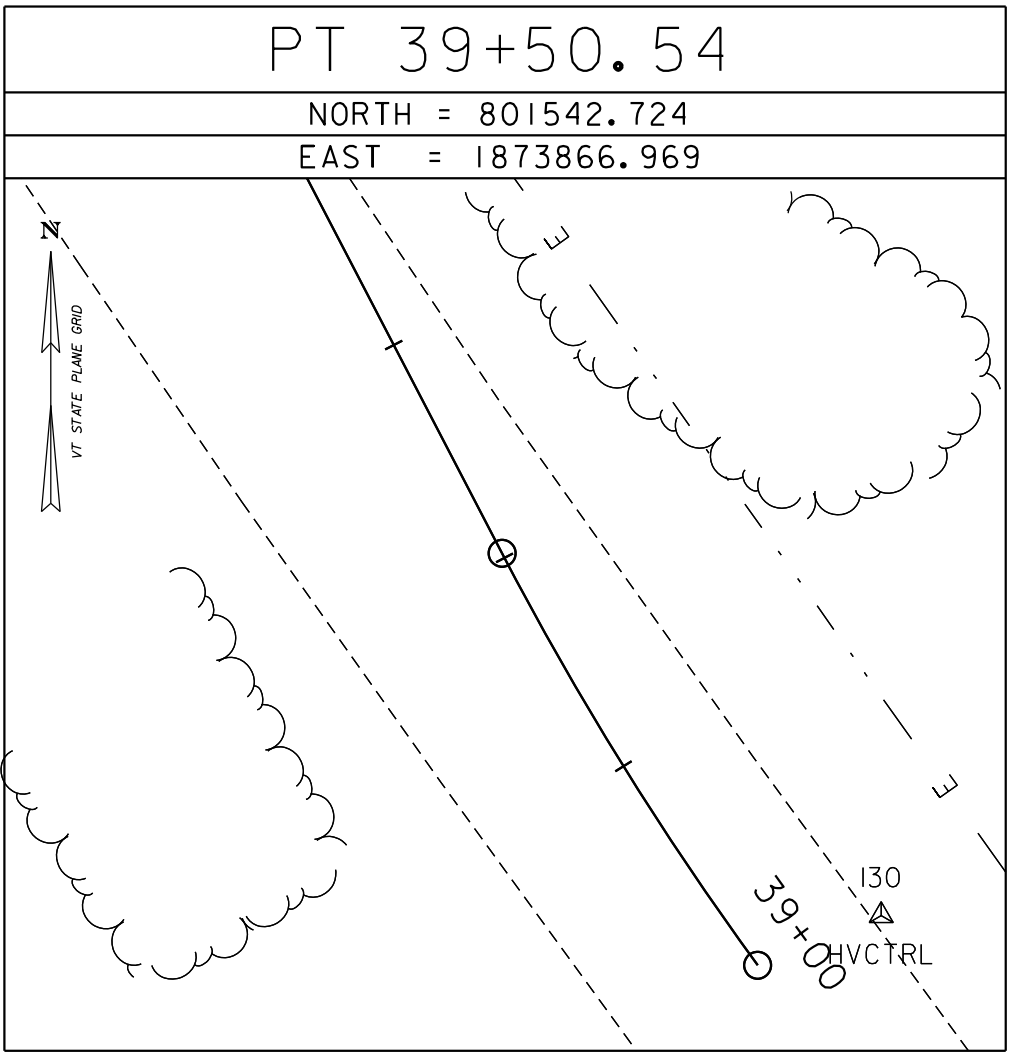
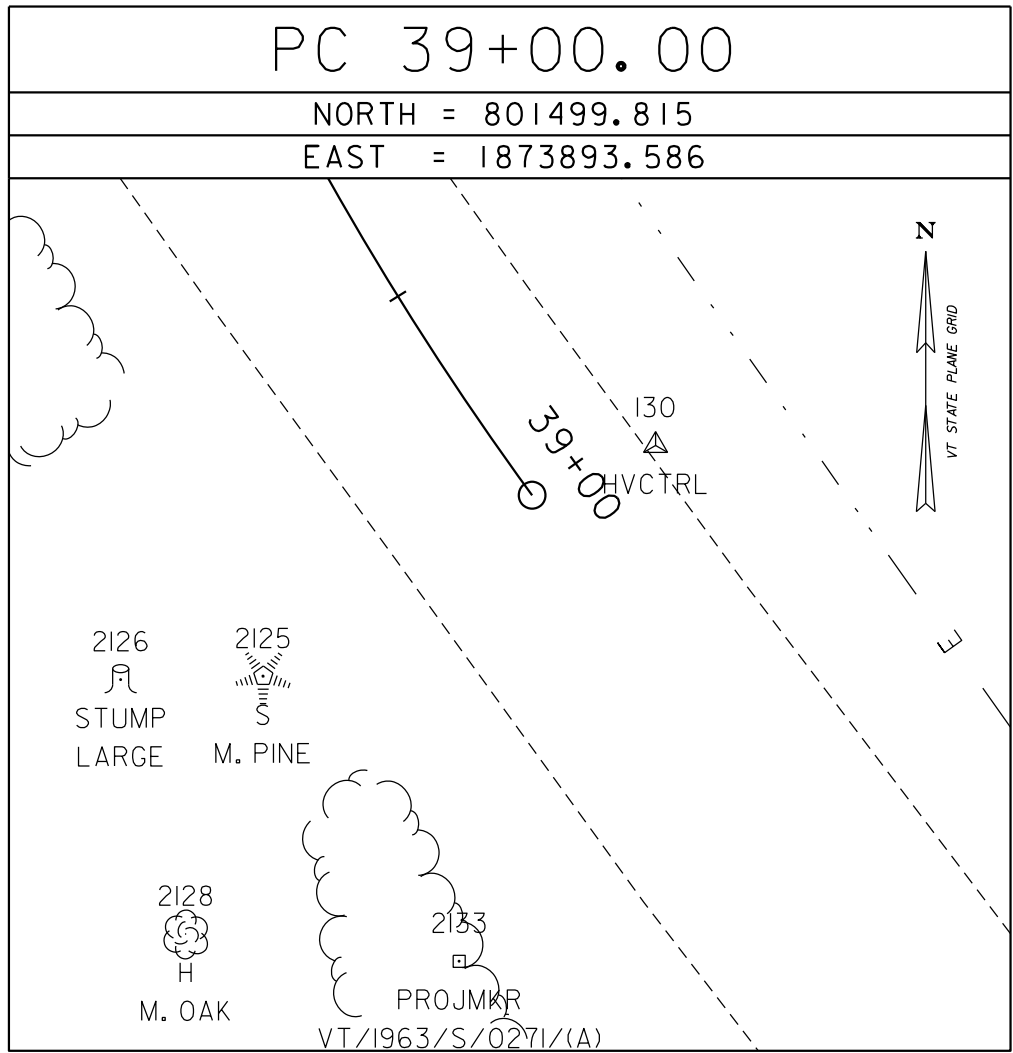
77



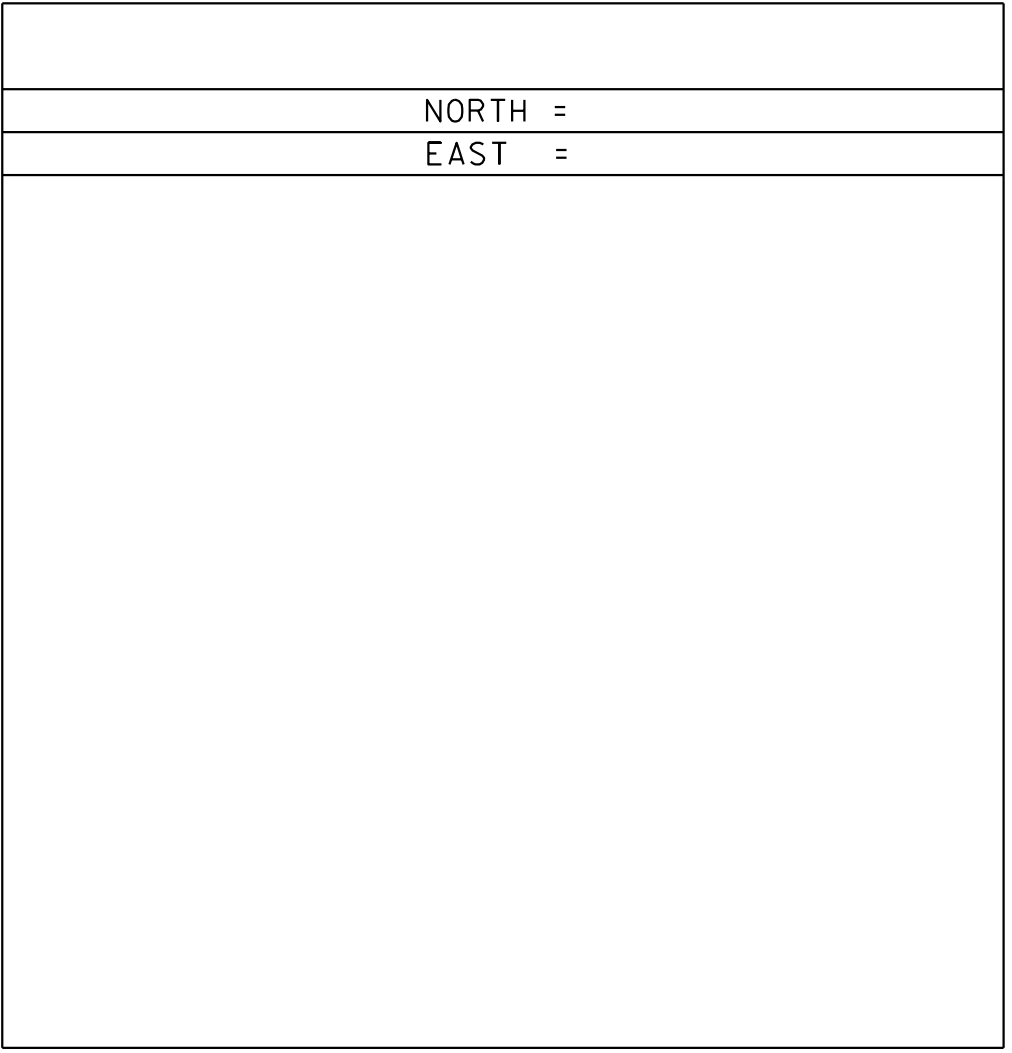
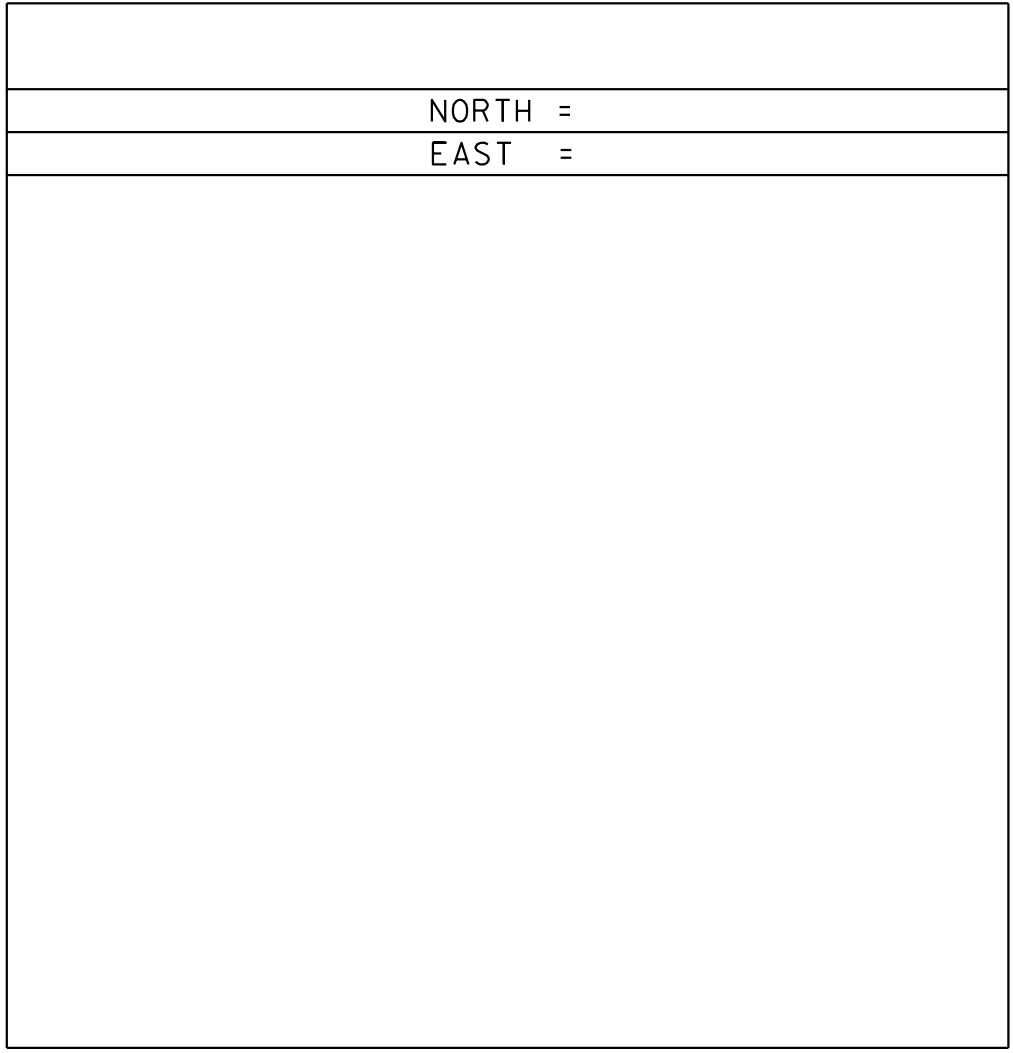
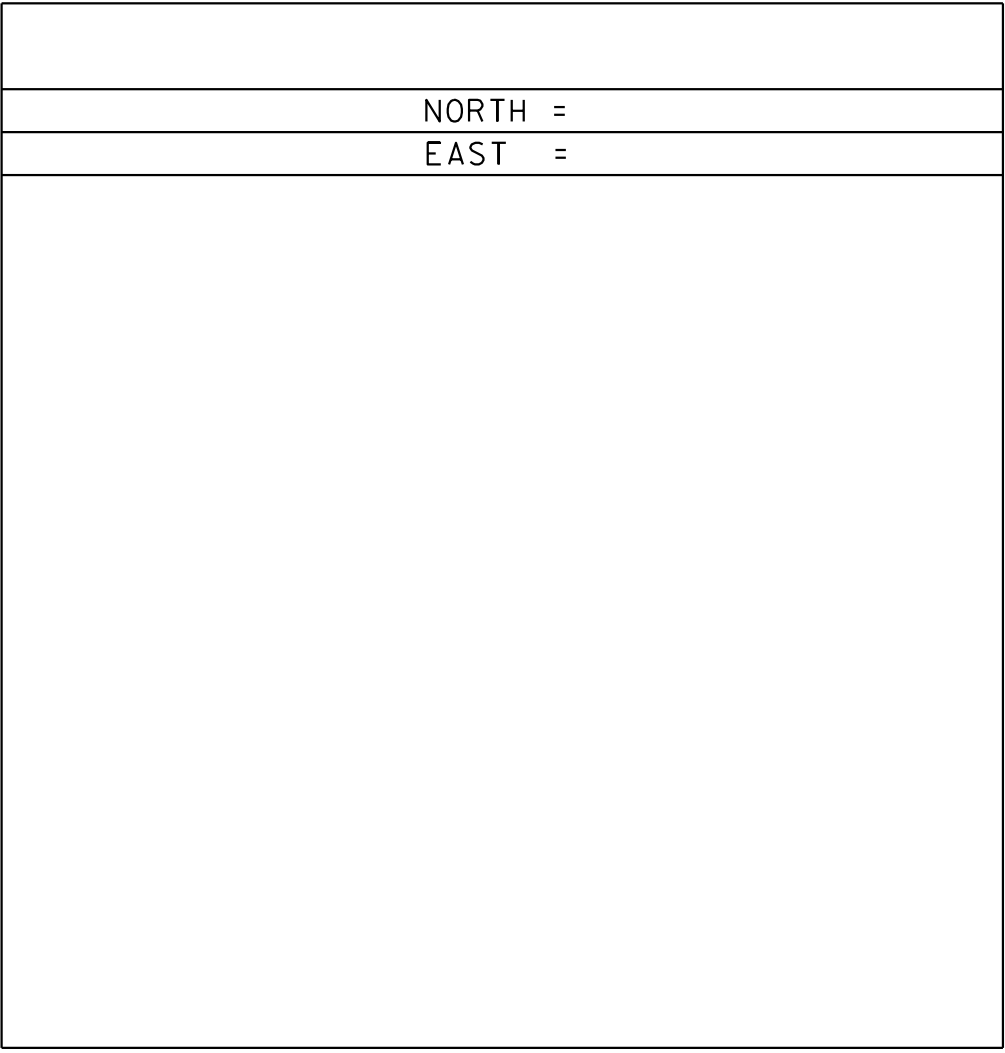
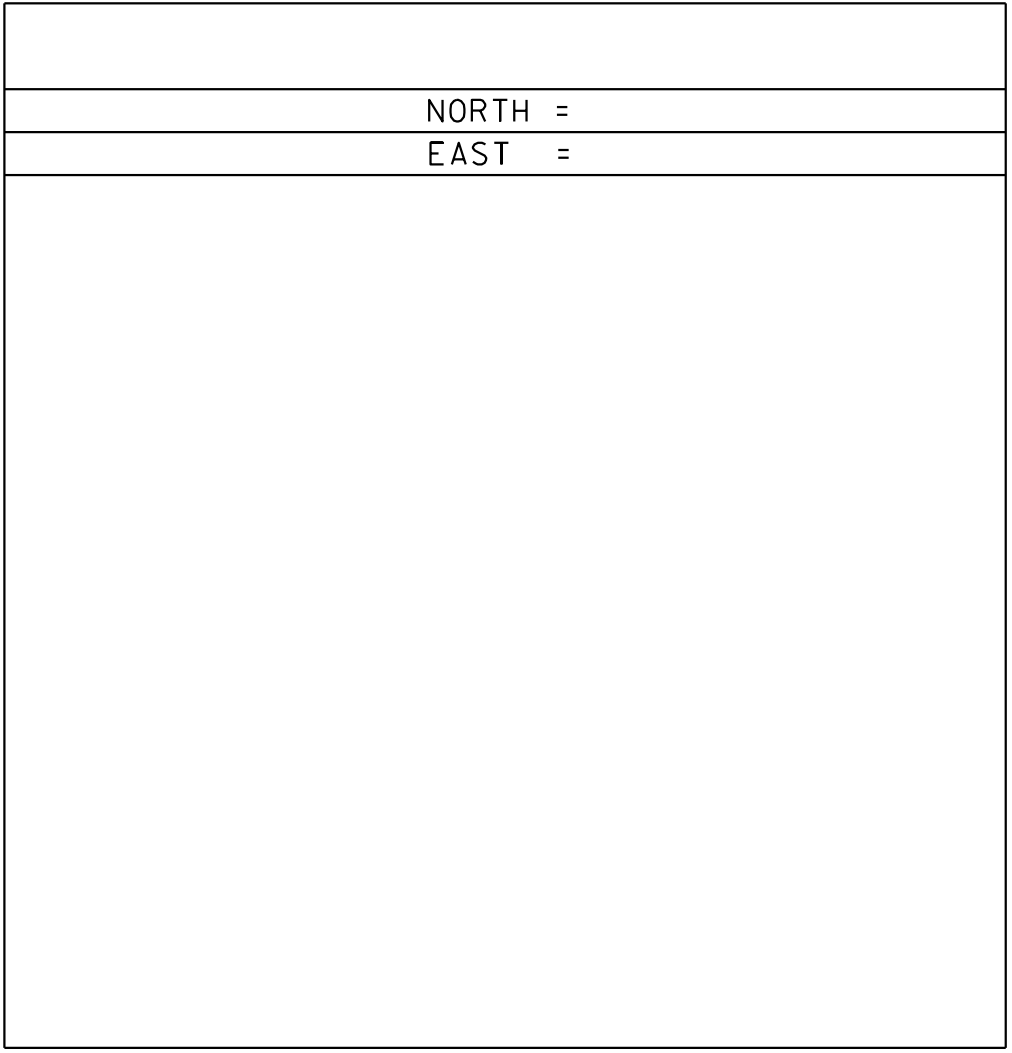
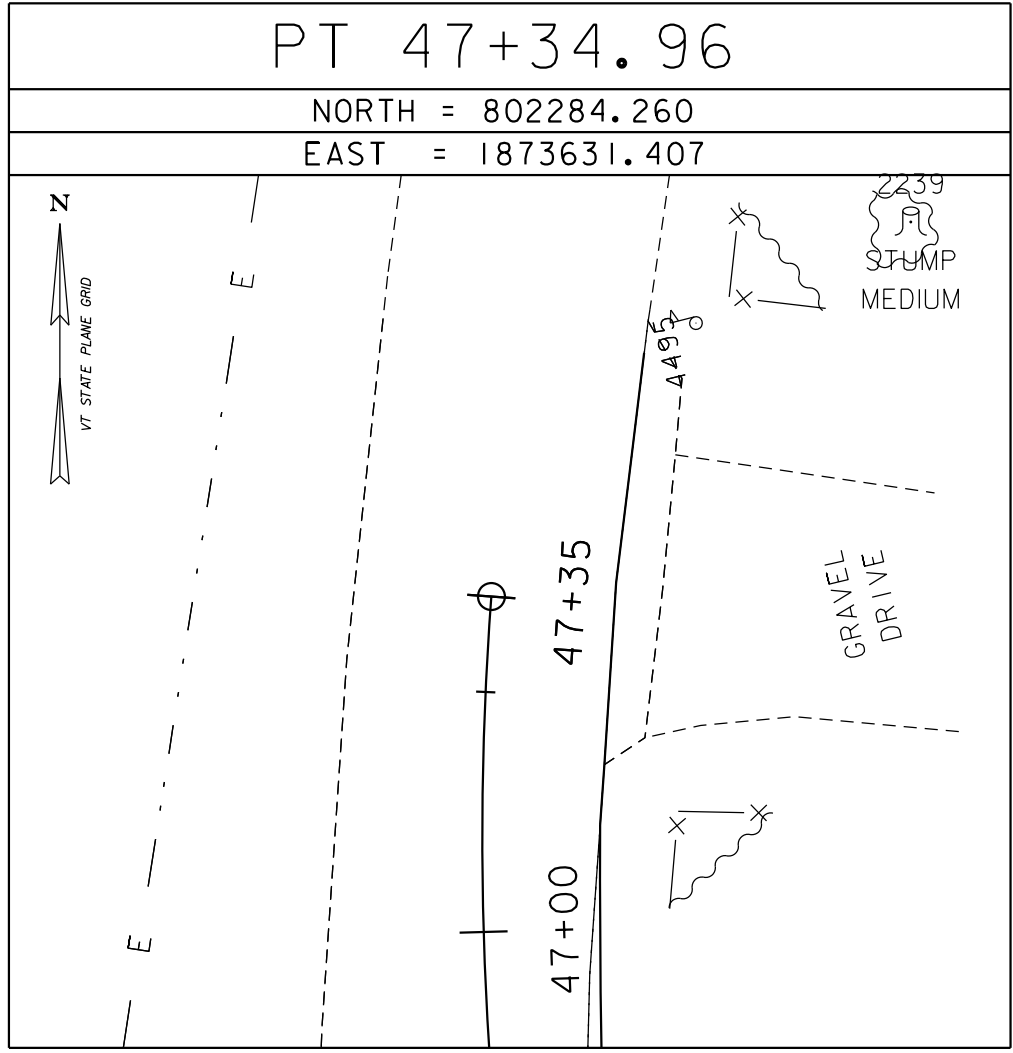
ALIGNMENT TIES



ALIGNMENT TIES



ALIGNMENT TIES



|            |             |
|------------|-------------|
| DATUM      |             |
| VERTICAL   | NAD 88      |
| HORIZONTAL | NAD 83 2011 |
| ADJUSTMENT | COMPASS     |



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

FILE NAME: z13c056tiebdr  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TIE SHEET 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 13 OF 77



REMOVAL AND DISPOSAL OF GUARDRAIL  
11+90 TO 13+00 RT  
12+91 TO 13+00 LT

BOX BEAM GUARDRAIL  
9+93 TO 13+00 LT  
10+76 TO 13+00 RT

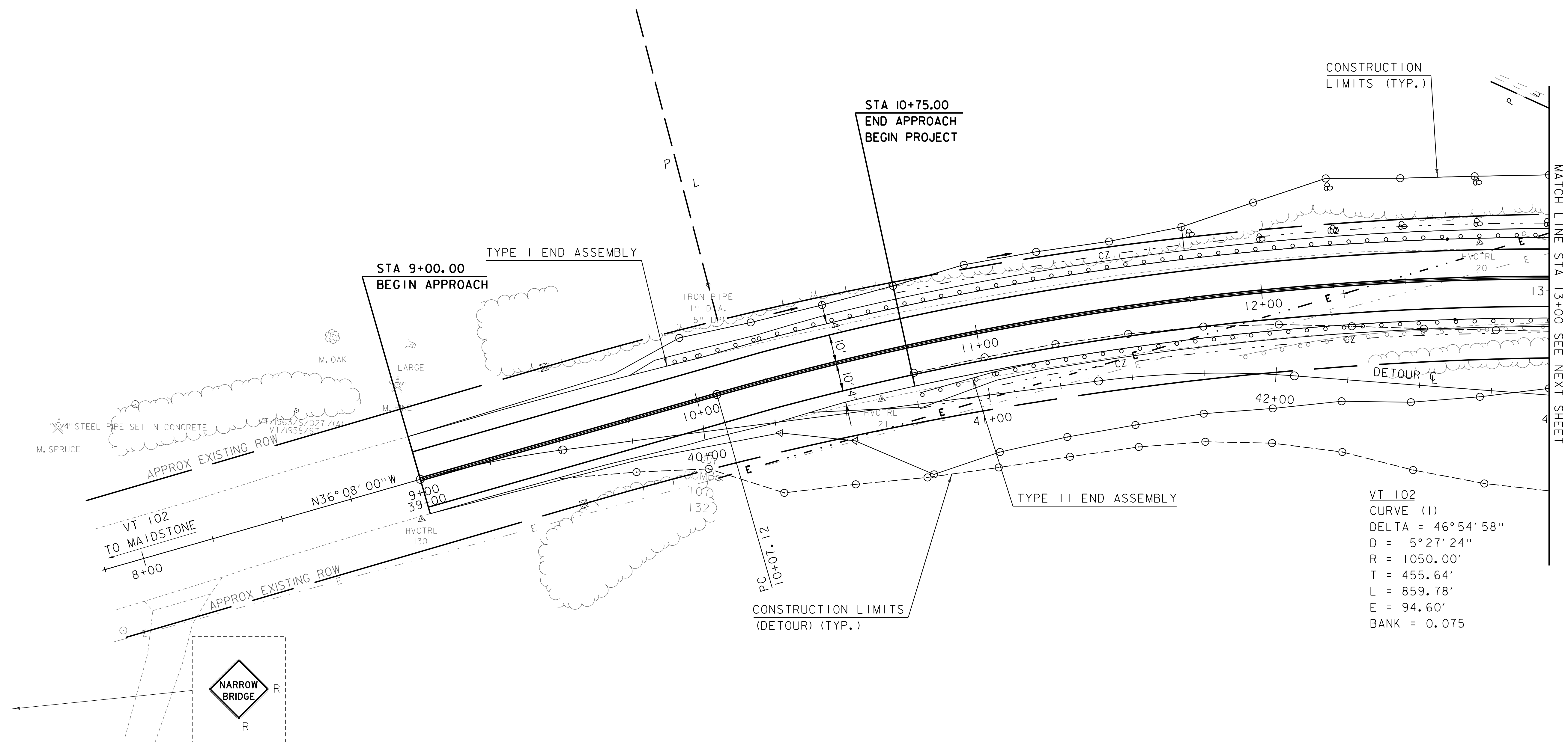
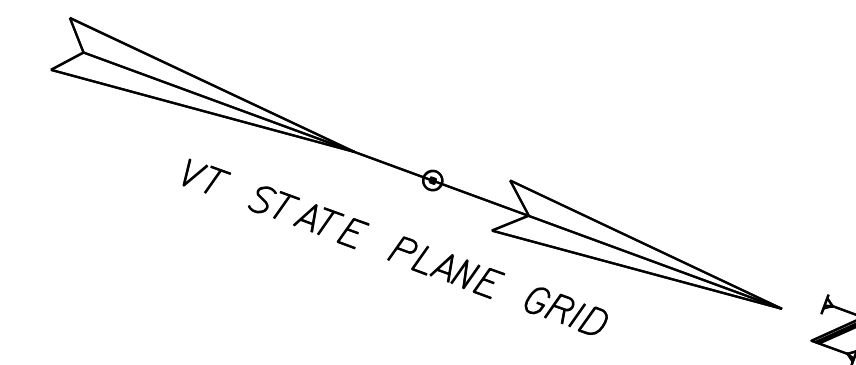
STONE FILL, TYPE II  
11+75 TO 13+00 LT

DURABLE 4 INCH WHITE LINE, THERMOPLASTIC  
9+00 TO 13+00 LT & RT

DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC  
9+00 TO 13+00 LT & RT

DELINEATOR WITH STEEL POST  
9+93 LT  
10+76 RT

REMOVING SIGNS  
AS SHOWN - 1



VT 102  
CURVE (1)  
DELTA = 46°54'58"  
D = 5°27'24"  
R = 1050.00'  
T = 455.64'  
L = 859.78'  
E = 94.60'  
BANK = 0.075



PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)  
FILE NAME: z13c056bdrnu1.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
LAYOUT SHEET 1

PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 14 OF 77



CONSTRUCT DRIVES  
16+10 LT (28 FT WIDE, 4 FT PAVED APRON, RES.)  
16+63 LT (27 FT WIDE, 4 FT PAVED APRON, RES.)  
17+50 RT (30 FT WIDE, 4 FT PAVED APRON, RES.)

REMOVAL AND DISPOSAL OF GUARDRAIL  
13+00 TO 13+79 RT  
13+00 TO 13+69 LT  
14+77 TO 15+14 LT  
14+90 TO 15+60 RT

BOX BEAM GUARDRAIL  
13+00 TO 13+41 RT  
13+00 TO 13+34 LT  
15+07 TO 15+78 LT  
15+18 TO 15+96 RT

MANUFACTURED TERMINAL SECTION, TANGENT  
15+78 TO 15+91 LT

RELOCATE MAILBOX, SINGLE SUPPORT  
15+72 RT

STONE FILL, TYPE II  
13+00 TO 13+53 LT

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM  
13+34 TO 13+66 LT  
14+75 TO 15+07 LT  
13+41 TO 13+73 RT  
14+86 TO 15+18 RT

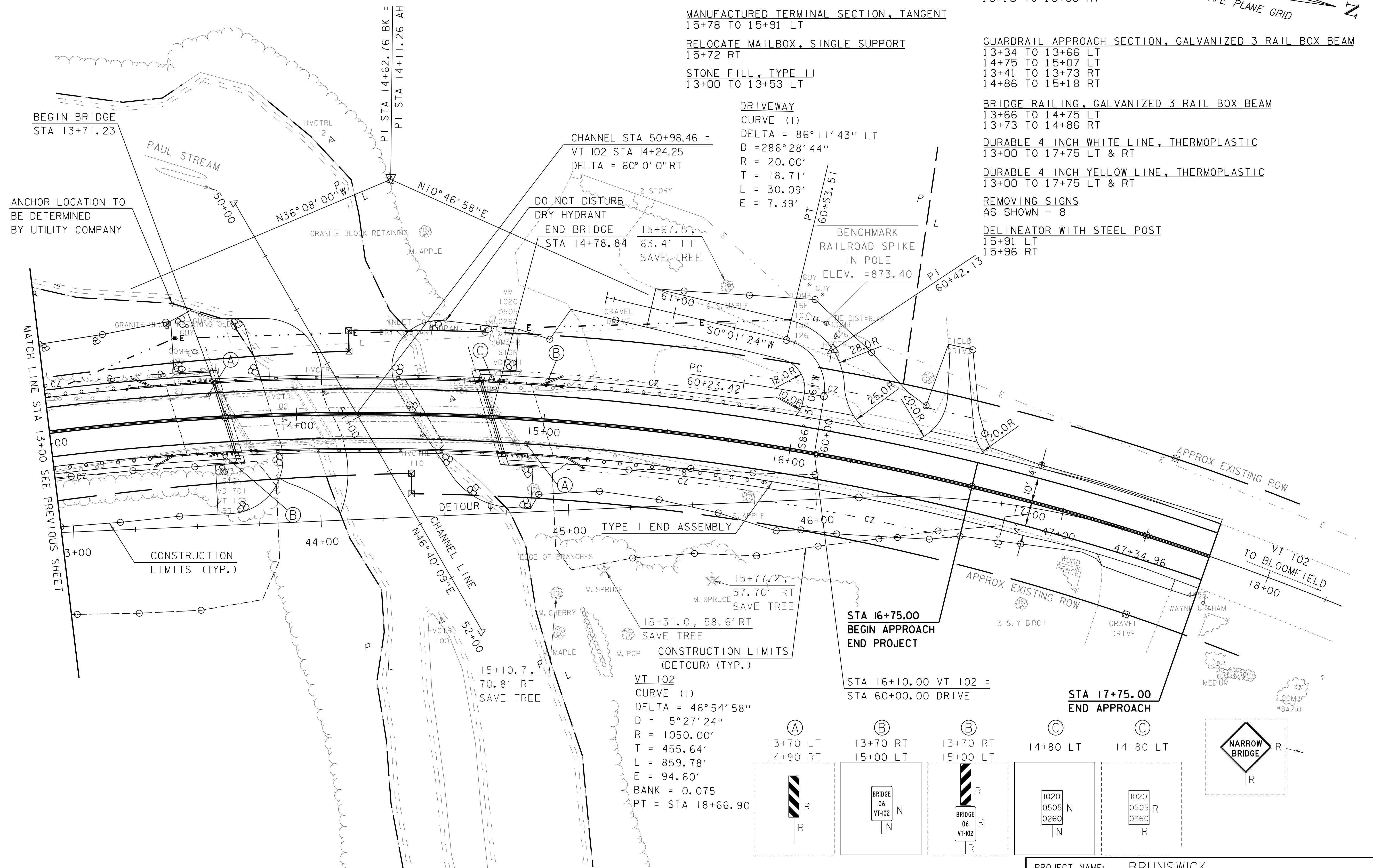
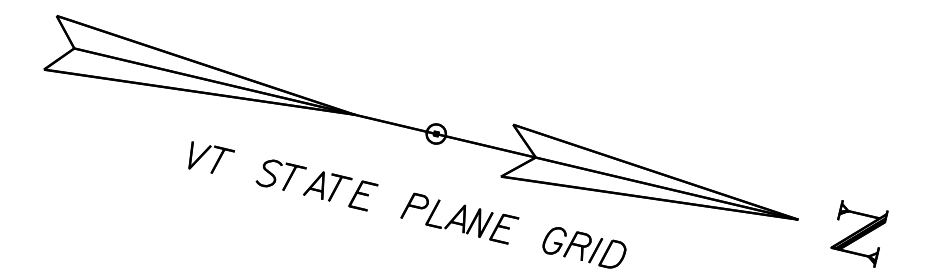
BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM  
13+66 TO 14+75 LT  
13+73 TO 14+86 RT

DURABLE 4 INCH WHITE LINE, THERMOPLASTIC  
13+00 TO 17+75 LT & RT

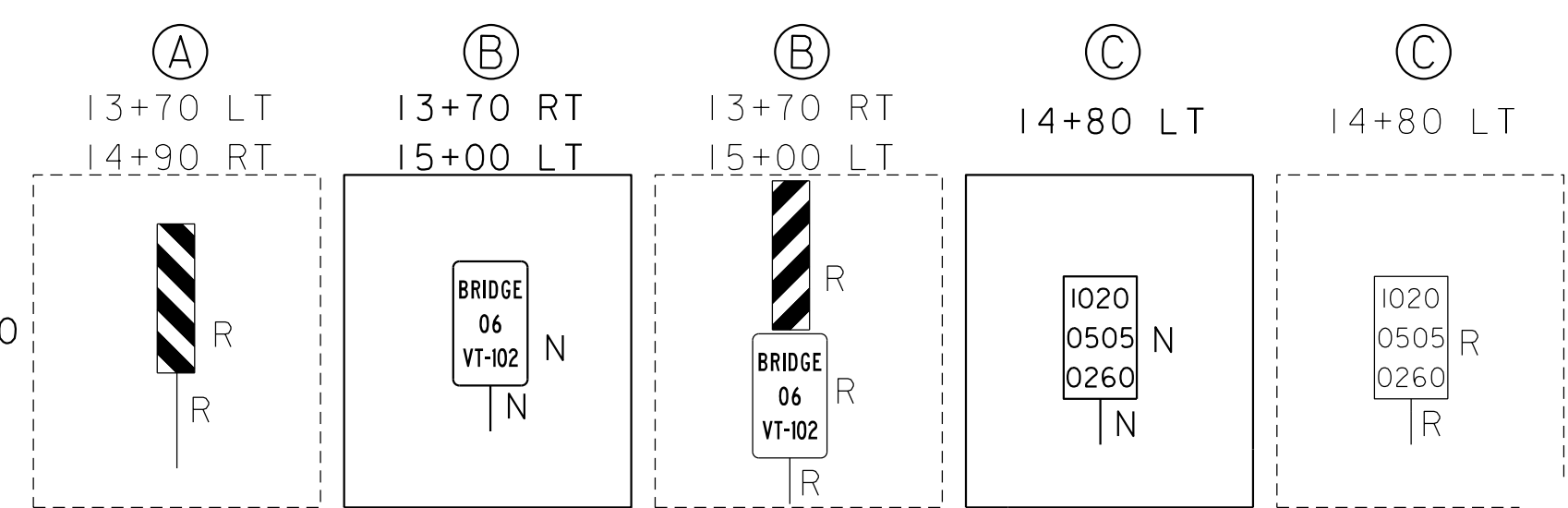
DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC  
13+00 TO 17+75 LT & RT

REMOVING SIGNS  
AS SHOWN - 8

DELINEATOR WITH STEEL POST  
15+91 LT  
15+96 RT



VT 102  
CURVE (I)  
DELTA = 46°54'58"  
D = 5°27'24"  
R = 1050.00'  
T = 455.64'  
L = 859.78'  
E = 94.60'  
BANK = 0.075  
PT = STA 18+66.90

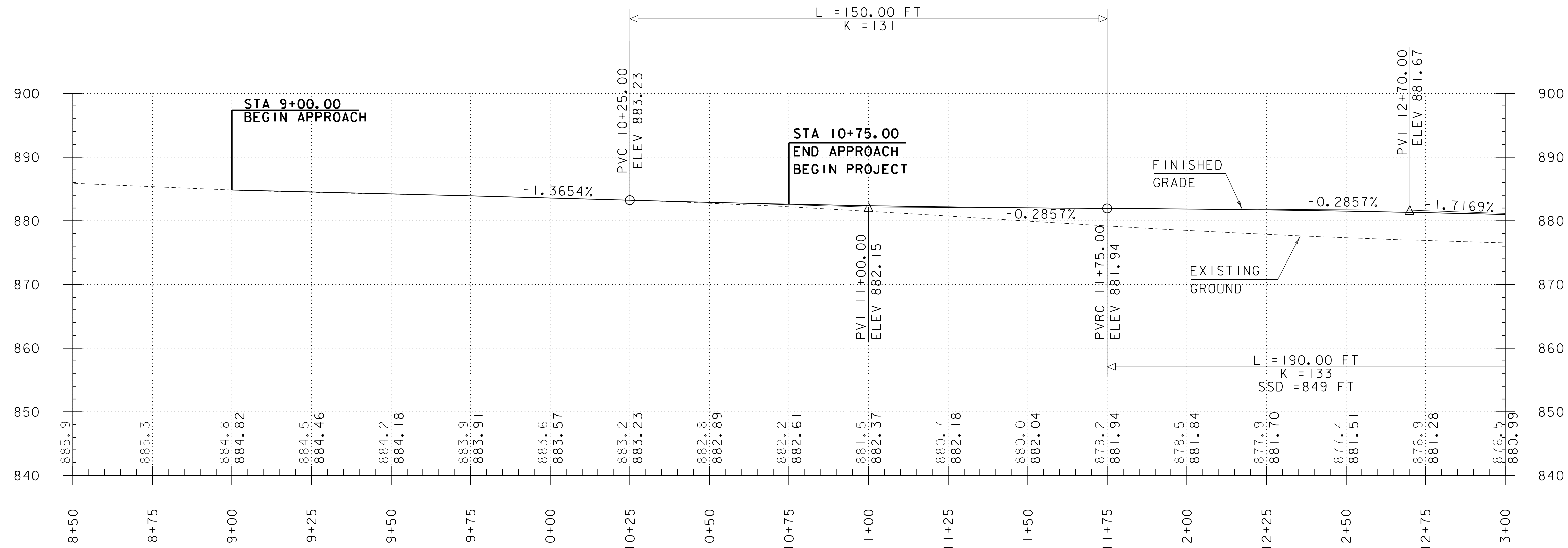


EXISTING BRIDGE INFORMATION  
3 SPAN CONCRETE T-BEAM  
BUILT 1932, 109' LENGTH  
40' MAXIMUM SPAN  
23'-4" FASCIA TO FASCIA



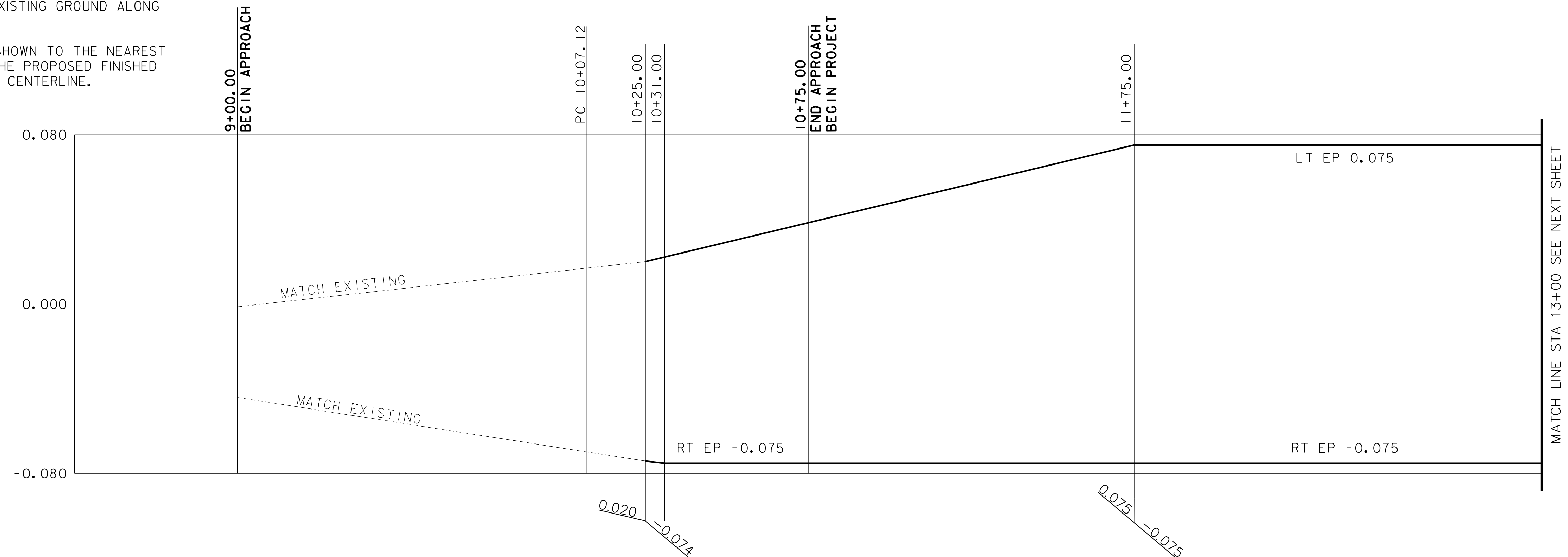
PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)  
FILE NAME: z13c056bdrnuL.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
LAYOUT SHEET 2  
PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 15 OF 77





#### VT 102 PROFILE

HOR. SCALE 1" = 20' - 0"  
VER. SCALE 1" = 10' - 0"



#### VT 102 BANKING DIAGRAM

SCALE = HORIZONTAL IN FEET  
= VERTICAL SUPERELEVATION IN PERCENTAGE



FUSS & O'NEILL

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

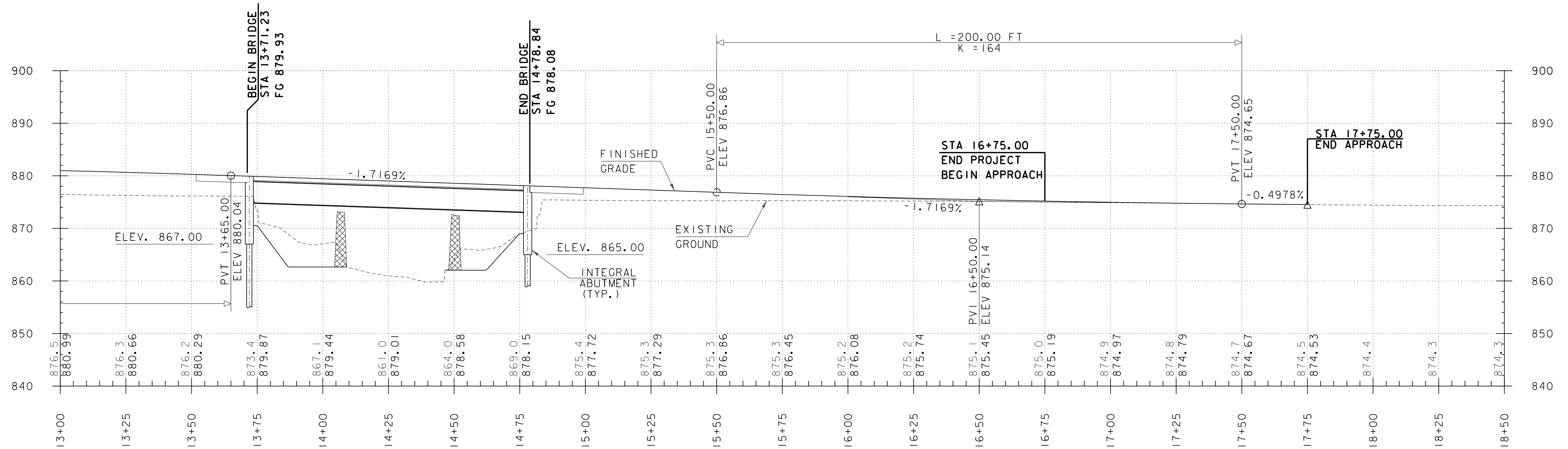
FILE NAME: z13c056pro.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER

PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN

VT 102 PROFILE AND BANKING DIAGRAM 1

SHEET 16 OF 77





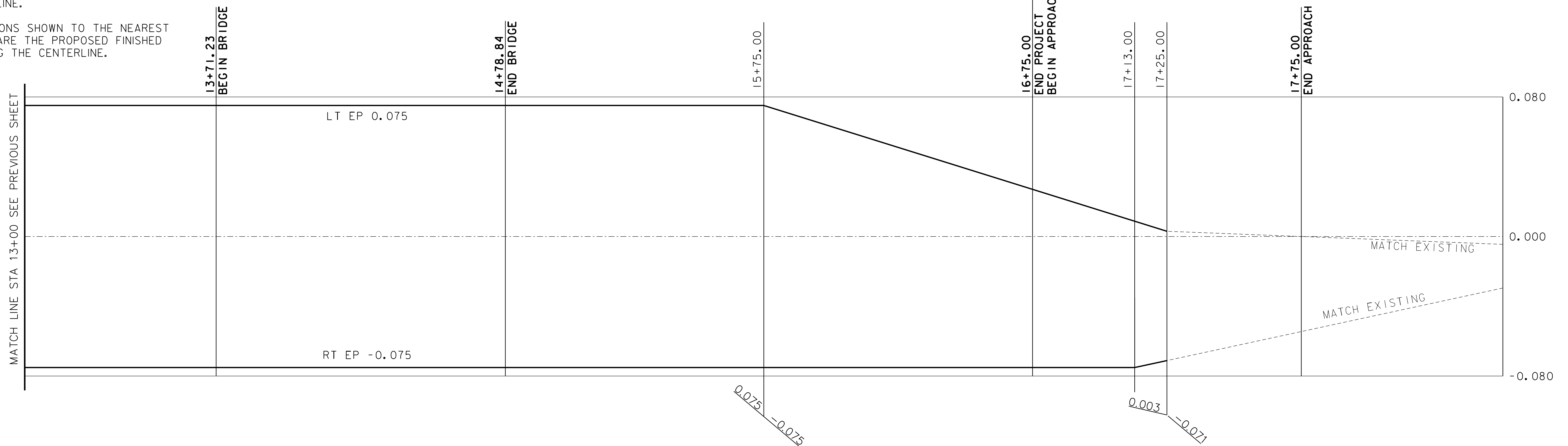
### VT 102 PROFILE

HOR. SCALE 1" = 20'-0"  
VER. SCALE 1" = 10'-0"

NOTES  
STATIONS AND ELEVATIONS ARE IN FEET.

THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG THE CENTERLINE.

THE ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE THE PROPOSED FINISHED GRADE ALONG THE CENTERLINE.



### VT 102 BANKING DIAGRAM

SCALE = HORIZONTAL IN FEET  
= VERTICAL SUPERELEVATION IN PERCENTAGE



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

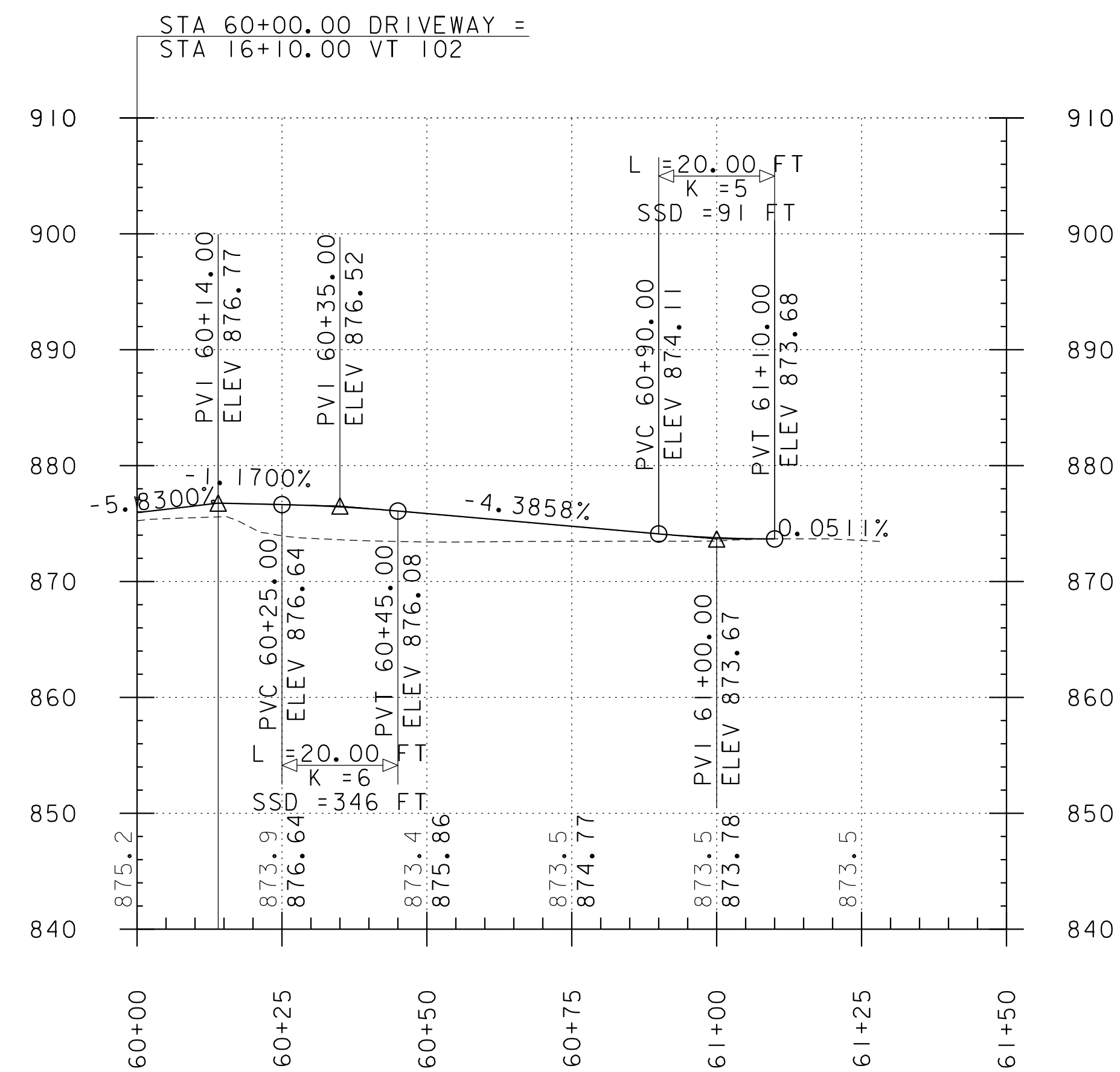
FILE NAME: z13c056pro.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN

VT 102 PROFILE AND BANKING DIAGRAM 2

SHEET 17 OF 77





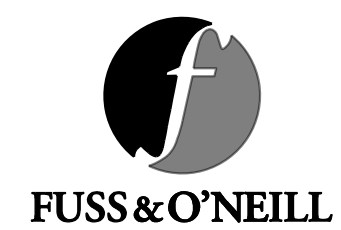
DRIVEWAY PROFILE

HOR. SCALE 1" = 20'-0"  
VER. SCALE 1" = 10'-0"

NOTES  
STATIONS AND ELEVATIONS ARE IN FEET.

THE ELEVATIONS SHOWN TO THE NEAREST  
TENTH ARE THE EXISTING GROUND ALONG  
THE CENTERLINE.

THE ELEVATIONS SHOWN TO THE NEAREST  
HUNDREDTH ARE THE PROPOSED FINISHED  
GRADE ALONG THE CENTERLINE.

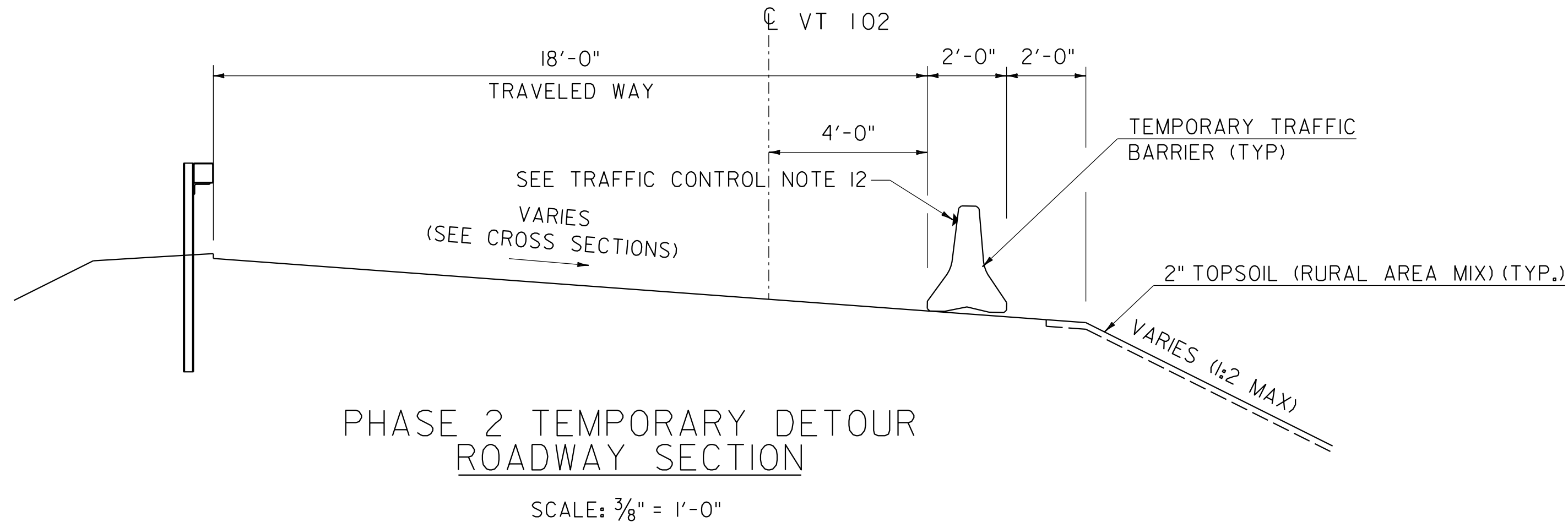
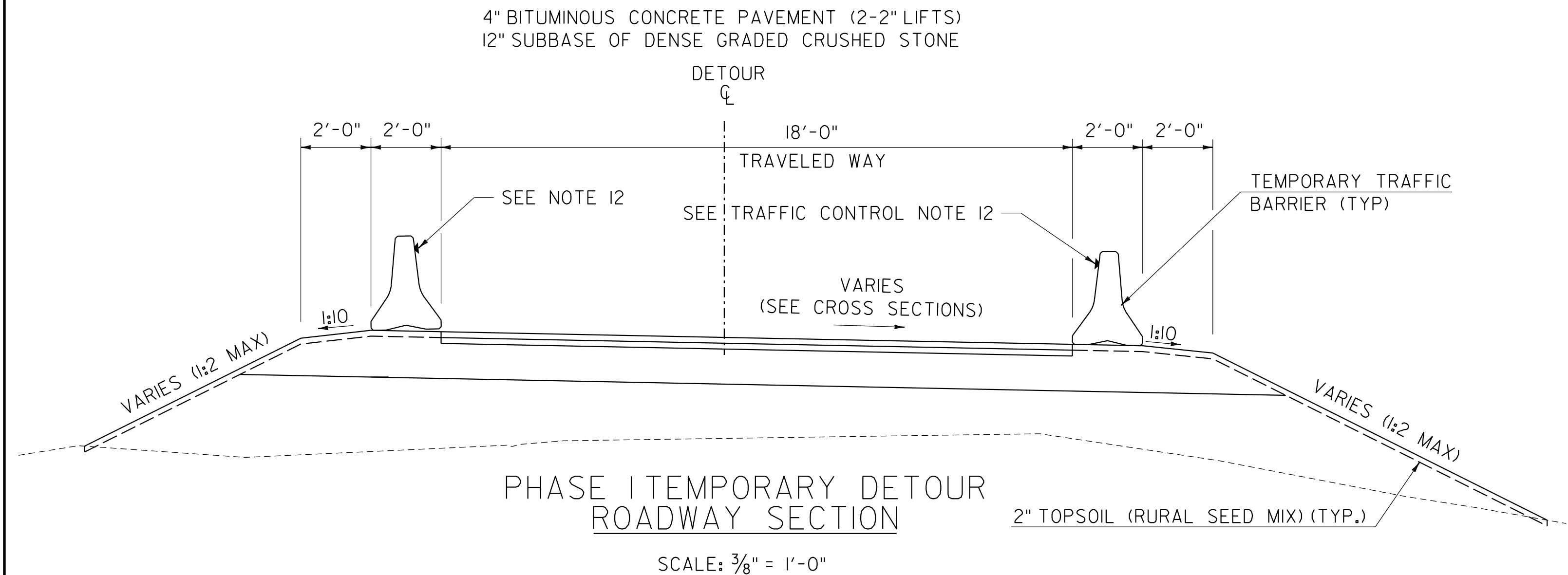


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056pro.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
DRIVEWAY PROFILE

PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 18 OF 77





NOTE  
PHASE 2 TRAFFIC SHALL OPERATE ON PROPOSED VT  
102 ROADWAY PRIOR TO PLACING THE TOP 1 1/2"  
OF PAVEMENT (SEE TYPICAL SECTION SHEET)

TRAFFIC CONTROL NOTES

1. ANY USE OF UNIFORMED TRAFFIC OFFICERS SHALL BE PAID UNDER ITEM 630.10 UNIFORMED TRAFFIC OFFICERS. ANY USE OF FLAGGERS SHALL BE PAID UNDER ITEM 630.15 FLAGGERS.
2. TEMPORARY TRAFFIC SIGNAL SHALL BE PAID UNDER ITEM 900.620 SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE).
3. TRAFFIC CONTROL SHALL CONSIST OF ONE-WAY ALTERNATING TRAFFIC UNDER SIGNALIZED CONTROL. ANY EXCAVATION, GRANULAR BACKFILL FOR STRUCTURES, SUBBASE MATERIALS, DRAINAGE CULVERTS, TEMPORARY BRIDGE, TEMPORARY TRAFFIC BARRIER, TRAFFIC CONTROL DEVICES, REMOVAL OF EXISTING AND TEMPORARY PAVEMENT MARKINGS, PAVEMENT MARKING MASK, BITUMINOUS CONCRETE PAVEMENT, AND OTHER ITEMS REQUIRED TO CONSTRUCT, INSPECT, MAINTAIN AND REMOVE THE TEMPORARY DETOUR WILL BE INCLUDED UNDER PAY ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115 SF). THE PROJECT TRAFFIC CONTROL PLAN AND TEMPORARY CONSTRUCTION SIGNING WILL BE INCLUDED UNDER PAY ITEM 641.10 TRAFFIC CONTROL.
4. ANY VEGETATION WITHIN OR OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THE PLANS WHICH IS DISTURBED IN ORDER TO MAINTAIN TRAFFIC IN CONJUNCTION WITH THIS PLAN OR ANY OTHER PLAN, SHALL BE RE-ESTABLISHED TO THE SATISFACTION OF THE ENGINEER. PAYMENT WILL BE MADE UNDER THE APPROPRIATE PAY ITEM.
5. FLAGGERS SHAL DIRECT BICYCLISTS AND PEDESTRIANS THROUGH THE WORK ZONE IN THE SAME MANNER AS VEHICULAR TRAFFIC. FLAGGER PERSONNEL MAY ASK RIDERS TO GO LAST TO ENSURE THEIR SAFETY.
6. ACCESS TO ALL EXISTING DRIVES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES AT ALL TIMES OR COORDINATE EMERGENCY ROUTES.
7. INSTALLATION OF NECESSARY SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES. THE CONTRACTOR SHALL ATTEMPT TO MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES.
8. THE CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-344-7233 PRIOR TO COMMENCING ANY WORK.
9. ALL SIGN PACKAGES SHALL CONFORM TO THE 2009 MUTCD OR ITS LATEST REVISION.
10. NON-CRASHWORTHY FEATURES RESULTING FROM CONSTRUCTION ACTIVITIES THAT ARE LOCATED WITHIN THE CLEAR ZONE SHALL BE PROPERLY PROTECTED. ALL TEMPORARY DEVICES SHALL BE NCHRP REPORT 350 OR MASH COMPLIANT AND SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.
11. WHERE TEMPORARY BARRIER IS USED, BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE OR PROTECTED WITH AN ENERGY ABSORPTION ATTENUATOR. ENERGY ABSORPTION ATTENUATORS WILL BE INCLUDED UNDER PAY ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115 SF).

12. BARRIER SHALL BE DELINEATED ON SIDES EXPOSED TO TRAFFIC. DELINEATION COLOR SHALL MATCH CORRESPONDING TEMPORARY PAVEMENT MARKINGS. REFLECTORS SHALL BE MOUNTED EVERY 20 FEET ALONG THE SIDE OF THE BARRIER EXPOSED TO TRAFFIC. BARRIER DELINEATION WILL BE INCLUDED UNDER PAY ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115 SF).
13. REFER TO MUTCD FIGURE 6H-12, LANE CLOSURE ON A TWO-LANE ROAD USING TRAFFIC CONTROL SIGNALS (TA-12) AND THE TRAFFIC CONTROL PLAN FOR ADDITIONAL INFORMATION REGARDING REQUIRED SIGNAGE AND SIGN LOCATIONS.
14. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS), WARNING MOTORISTS OF CHANGING TRAFFIC PATTERNS, WILL BE INCLUDED UNDER PAY ITEM 641.15 PORTABLE CHANGEABLE MESSAGE SIGN. WARNINGS FOR CHANGING TRAFFIC PATTERNS SHALL OCCUR ONE WEEK PRIOR TO THE CHANGE IN TRAFFIC PATTERN, AND REMAIN IN PLACE FOR ONE WEEK AFTER THE CHANGE IN TRAFFIC PATTERN HAS OCCURRED. PCMS SHALL BE LOCATED 500 FEET PRIOR TO THE FIRST CONSTRUCTION APPROACH SIGN.

SIGNAL OPERATION NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S (VTRANS) "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, WITH CURRENT REVISIONS.
2. PORTABLE TEMPORARY TRAFFIC SIGNALS SHALL BE PAID AS ITEM 900.620 SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE) AND SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 678.
3. THE TEMPORARY TRAFFIC CONTROL SYSTEM SHALL CONSIST OF SIGNS, AND POSTS, WARNING SIGNS, LUMINAIRES, FLASHING BEACONS, ASSOCIATED PAVEMENT MARKINGS AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
4. THE CONTRACTOR SHALL INSTALL PORTABLE TRAFFIC SIGNAL TRAILERS IN PLACE OF A STATIC SIGNAL SYSTEM AS SHOWN ON THE PLANS. THE TRAILERS SHALL COMMUNICATE VIA RADIO INTERFACE TO FUNCTION AS A SINGLE CONTROL SYSTEM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED ON THE TRAILER, LOCATED AT A DISTANCE OF 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE LATEST EDITION OF THE MUTCD FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
5. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8.0 FEET NOR MORE THAN 15.0 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO ENSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROADWAY GRADE.
6. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.

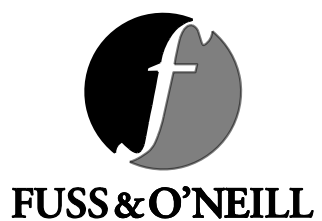
7. SIGNAL FACES SHALL BE L.E.D. AND CONSIST OF 12 INCH LENSES (RED, YELLOW AND GREEN BALLS)

8. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES UNDER EACH PHASE OF CONSTRUCTION IF NECESSARY.
9. THE TRAFFIC SIGNALS SHALL NOT OPERATE WITHOUT THE PAVEMENT MARKINGS AND SIGNAL RELATED SIGNING IN PLACE.
10. INSTALL WIRING BETWEEN POWER SOURCES AND SIGNAL TRAILERS TO PROVIDE FOR A SAFE INSTALLATION. ANY NECESSARY CONNECTIONS TO UTILITY POLES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY.
11. LUMINAIRES SHALL BE INSTALLED AT EACH OF THE APPROACHES TO ADEQUATELY ILLUMINATE THE STOP BAR AREAS. 250 WATT HIGH PRESSURE SODIUM, 150 WATT MERCURY OR AN EQUIVALENT WATTAGE L.E.D. LAMP ARE ALL ACCEPTABLE FORMS OF LUMINAIRE. THE MOUNTING HEIGHT SHALL BE 30 FEET ABOVE THE CENTERLINE OR AS DIRECTED BY THE ENGINEER. WHILE THE INTENT IS TO ILLUMINATE THE TEMPORARY SIGNAL SYSTEM, MEASURED NIGHTTIME ILLUMINANCE AT EACH STOP BAR SHALL NOT BE LESS THAN 1.0 FOOT-CANDLE. THE ENGINEER SHALL ORDER CHANGES TO THE LIGHTING COMPONENTS IF DETERMINED TO BE INSUFFICIENT. LUMINAIRES SHALL BE PLACED BEHIND GUARDRAIL OR OUTSIDE OF THE CLEAR ZONE. LUMINAIRES SHALL BE PAID FOR UNDER PAY ITEM 900.620 SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE).
12. ALL TRAFFIC SIGNS, INCLUDING STOP SIGNS, MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COMPLETELY COVERED DURING OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER.
13. CONSTRUCTION APPROACH SIGNS SHALL BE PROVIDED ON EACH APPROACH PER THE TRAFFIC CONTROL PLANS IN THIS PLAN SET. ADDITIONAL SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER PER STANDARD T-1.
14. SIGNAL TIMING SHOWN ON THE PLANS MAY REQUIRE FINE-TUNING BY THE ENGINEER IN THE FIELD BASED ON TRAFFIC OBSERVATION (COST OF ADJUSTMENTS SHALL BE INCIDENTAL TO ITEM 900.620 SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)).
15. WHEN THE TEMPORARY TRAFFIC CONTROL SIGNALS ARE CHANGED TO FLASHING MODE, EITHER MANUALLY OR AUTOMATICALLY, RED SIGNAL INDICATIONS SHALL BE FLASHED ON ALL APPROACHES.
16. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.

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

FILE NAME: z13c056+cpdet.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TRAFFIC CONTROL DETAIL SHEET

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 19 OF 77



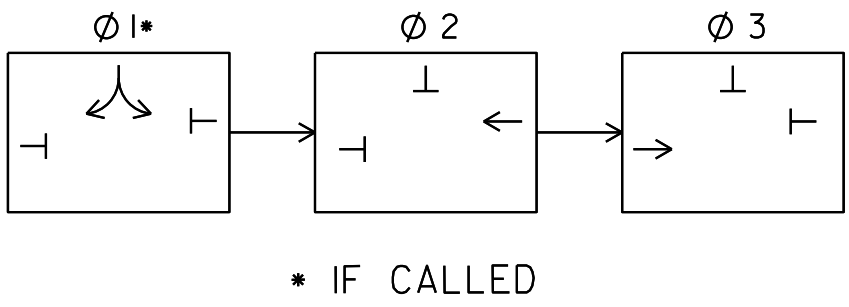
FUSS & O'NEILL



| SIGNAL PHASING DATA                                  |      |      |      |
|------------------------------------------------------|------|------|------|
| SIGNAL PHASING<br>(ALL ENTRIES BELOW ARE IN SECONDS) |      |      |      |
| PHASE                                                | Ø1   | Ø2   | Ø3   |
| INITIAL                                              | 3    | 5    | 5    |
| VEHICLE EXT.                                         | 2    | 3    | 3    |
| MAX. 1                                               | 10   | 15   | 15   |
| MAX. 2                                               |      |      |      |
| YELLOW                                               | 3    | 3    | 3    |
| RED                                                  | 30   | 39   | 39   |
| RECALL                                               | NONE | SOFT | NONE |
| DELAY                                                | NONE | NONE | NONE |

| NEW | LEGEND                                                                                                          |
|-----|-----------------------------------------------------------------------------------------------------------------|
|     | SIGNAL HEAD (12 INCH, LED, RED, YELLOW, GREEN BALLS)                                                            |
|     | PORTABLE TRAFFIC SIGNAL TRAILER WITH TRAFFIC ACTUATORS, EMERGENCY VEHICLE PRE-EMPTION, AND RADIO COMMUNICATION. |

PHASE SEQUENCE



TEMPORARY TRAFFIC BARRIER

39+75 TO 43+00 LT  
40+00 TO 43+00 RT

TEMPORARY 4 INCH WHITE LINE, PAINT

39+00 TO 43+00 LT  
39+00 TO 43+00 RT

TEMPORARY 24 INCH STOP BAR, PAINT

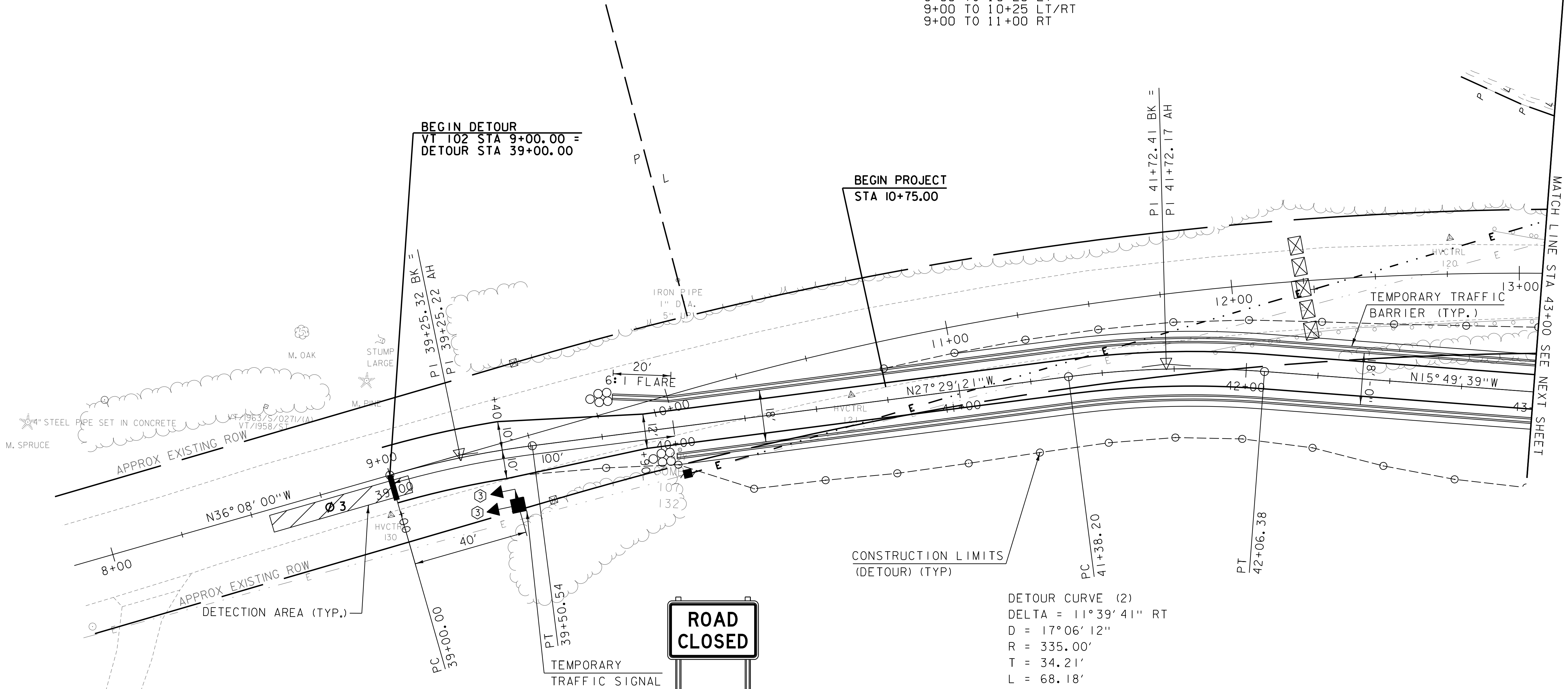
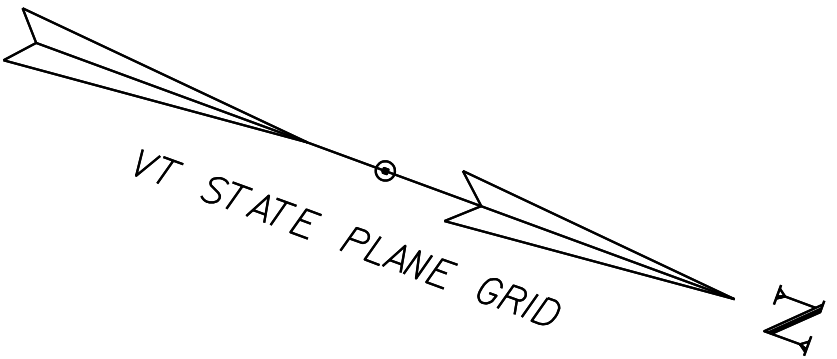
39+00 RT

ENERGY ABSORPTION ATTENUATOR

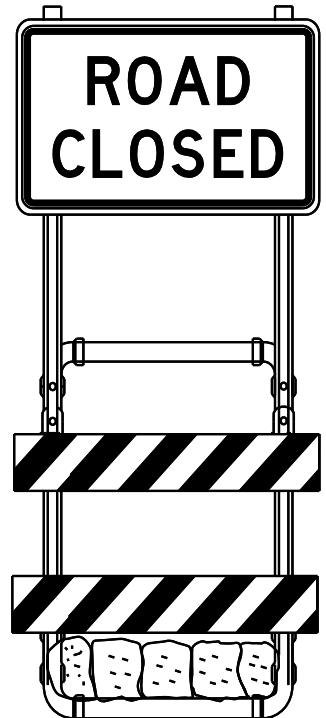
39+66 LT  
39+90 RT

PAVEMENT MARKING MASK

9+00 TO 10+25 LT  
9+00 TO 10+25 LT/RT  
9+00 TO 11+00 RT



DETOUR CURVE (1)  
DELTA = 8°38'39" RT  
D = 17°06'12"  
R = 335.00'  
T = 25.32'  
L = 50.54'  
E = 0.96'  
BANK = 0.068 MAX



RII-2 B/W SIGN  
MOUNTED ON  
TYPE III BARRICADE  
(MODIFIED)



DETOUR CURVE (2)  
DELTA = 11°39'41" RT  
D = 17°06'12"  
R = 335.00'  
T = 34.21'  
L = 68.18'  
E = 1.74'  
BANK = 0.020 MAX

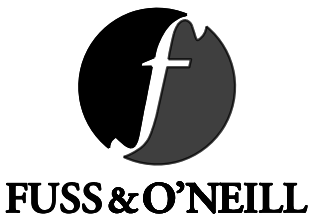
LEGEND

TYPE III BARRICADE

TYPE III BARRICADE (MOD.)

ENERGY ABSORPTION ATTENUATOR

TEMPORARY TRAFFIC BARRIER



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

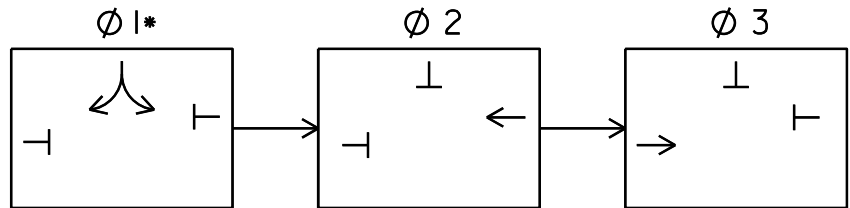
FILE NAME: z13c056bdr+tpl.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
PHASE I TRAFFIC CONTROL SHEET I

PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 20 OF 77



| NEW | LEGEND                                                                                                          |
|-----|-----------------------------------------------------------------------------------------------------------------|
|     | SIGNAL HEAD (12 INCH, LED, RED, YELLOW, GREEN BALLS)                                                            |
|     | PORTABLE TRAFFIC SIGNAL TRAILER WITH TRAFFIC ACTUATORS, EMERGENCY VEHICLE PRE-EMPTION, AND RADIO COMMUNICATION. |

PHASE SEQUENCE



\* IF CALLED

NOTES

1. TEMPORARY SHEET PILING OR OTHER MEANS OF RETAINING STRUCTURE MAY BE REQUIRED. PAYMENT WILL BE INCIDENTAL TO ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115).
2. TEMPORARILY RELOCATE THE MAILBOX LOCATED AT APPROXIMATELY STA. 15+71, RIGHT AS DIRECTED BY THE ENGINEER, WHILE THE TEMPORARY DETOUR IS IN PLACE. ONCE THE DETOUR IS REMOVED THE MAILBOX SHALL BE RESET IN ITS ORIGINAL LOCATION.
3. SEE TRAFFIC CONTROL PLAN FOR TEMPORARY SIGNING.
4. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER TO MAINTAIN DRIVEWAY ACCESS.
5. THE TEMPORARY BRIDGE SHALL BE A SINGLE SPAN STRUCTURE.
6. SEE TRAFFIC CONTROL DETAIL SHEET FOR ADDITIONAL INFORMATION.

PAVEMENT MARKING MASK

16+00 TO 17+48 LT  
16+00 TO 17+48 LT/RT  
16+00 TO 17+48 RT

TEMPORARY 24 INCH STOP BAR, PAINT

46+43 TO 46+62 LT  
47+35 LT

TEMPORARY TRAFFIC BARRIER

43+00 TO 43+80 LT  
43+00 TO 43+80 RT  
44+97 TO 46+03 LT  
44+97 TO 45+70 RT

TEMPORARY 4 INCH WHITE LINE, PAINT

43+00 TO 47+35 LT  
43+00 TO 47+35 RT

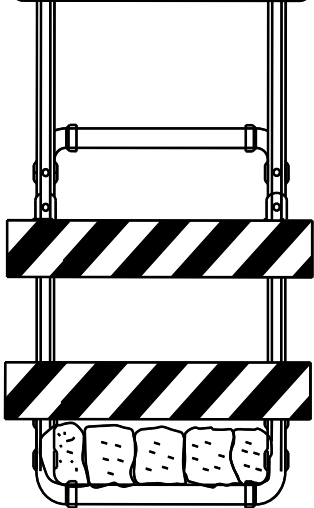
TEMPORARY  
TRAFFIC SIGNAL (TYP.)

END DETOUR

DETOUR STA 47+34.96 =  
VT 102 STA 17+48.15

| VT 102                                               |      |      |      |
|------------------------------------------------------|------|------|------|
| SIGNAL PHASING DATA                                  |      |      |      |
| SIGNAL PHASING<br>(ALL ENTRIES BELOW ARE IN SECONDS) |      |      |      |
| PHASE                                                | Ø1   | Ø2   | Ø3   |
| INITIAL                                              | 3    | 5    | 5    |
| VEHICLE EXT.                                         | 2    | 3    | 3    |
| MAX. 1                                               | 10   | 15   | 15   |
| MAX. 2                                               |      |      |      |
| YELLOW                                               | 3    | 3    | 3    |
| RED                                                  | 30   | 39   | 39   |
| RECALL                                               | NONE | SOFT | NONE |
| DELAY                                                | NONE | NONE | NONE |

ROAD  
CLOSED



R11-2 B/W SIGN  
MOUNTED ON  
TYPE III BARRICADE  
(MODIFIED)

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE (MOD.)

ENERGY ABSORPTION ATTENUATOR

TEMPORARY TRAFFIC BARRIER



FUSS & O'NEILL

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

FILE NAME: z13c056bdr+tpl.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
PHASE I TRAFFIC CONTROL SHEET 2

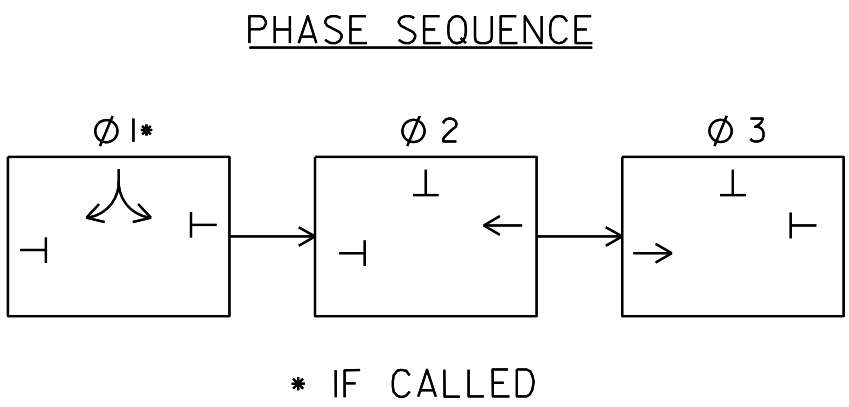
PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 21 OF 77



VT 102

| SIGNAL PHASING DATA                                  |      |      |      |
|------------------------------------------------------|------|------|------|
| SIGNAL PHASING<br>(ALL ENTRIES BELOW ARE IN SECONDS) |      |      |      |
| PHASE                                                | Ø1   | Ø2   | Ø3   |
| INITIAL                                              | 3    | 5    | 5    |
| VEHICLE EXT.                                         | 2    | 3    | 3    |
| MAX. 1                                               | 10   | 15   | 15   |
| MAX. 2                                               |      |      |      |
| YELLOW                                               | 3    | 3    | 3    |
| RED                                                  | 30   | 39   | 39   |
| RECALL                                               | NONE | SOFT | NONE |
| DELAY                                                | NONE | NONE | NONE |

| NEW | LEGEND                                                                                                          |
|-----|-----------------------------------------------------------------------------------------------------------------|
|     | SIGNAL HEAD (12 INCH, LED, RED, YELLOW, GREEN BALLS)                                                            |
|     | PORTABLE TRAFFIC SIGNAL TRAILER WITH TRAFFIC ACTUATORS, EMERGENCY VEHICLE PRE-EMPTION, AND RADIO COMMUNICATION. |

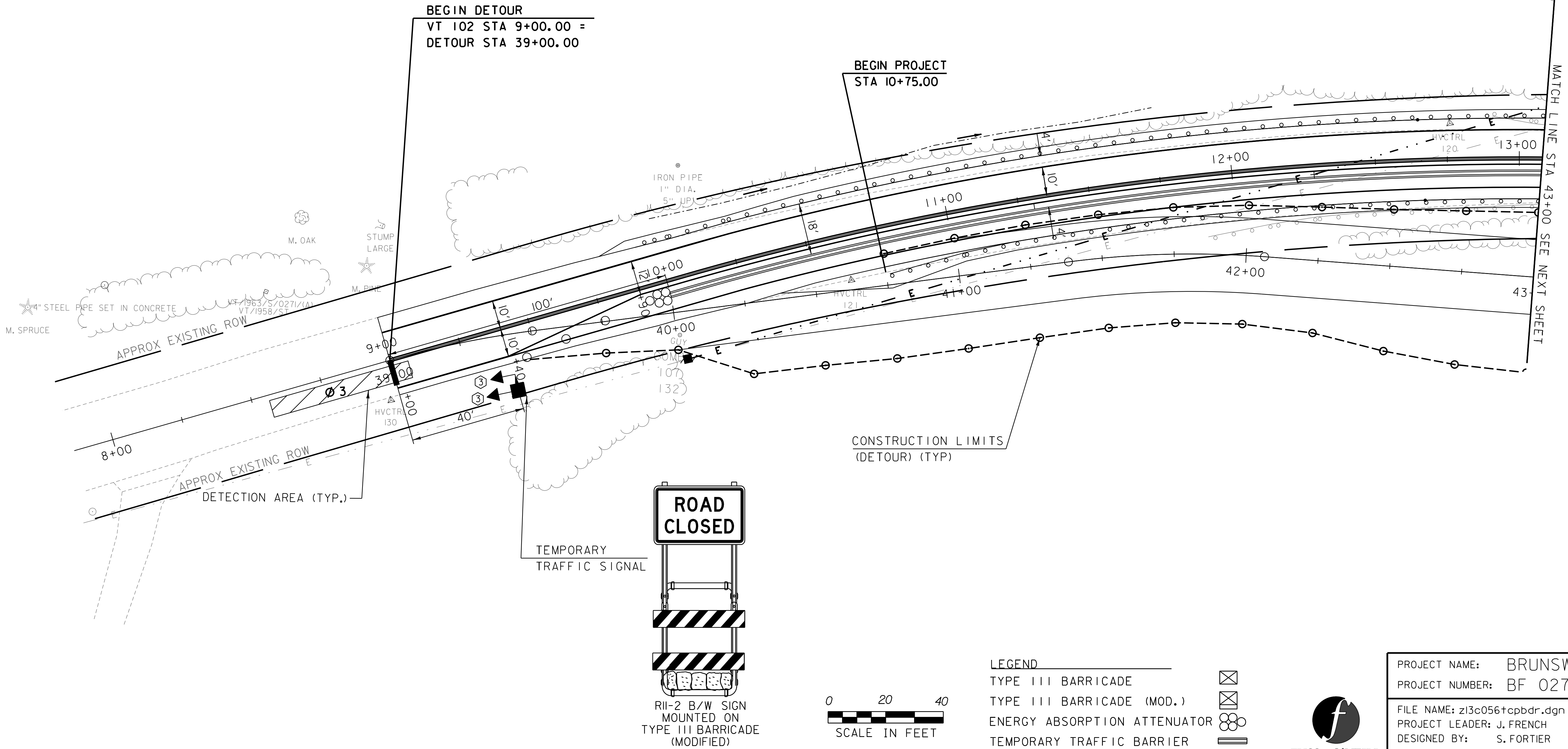
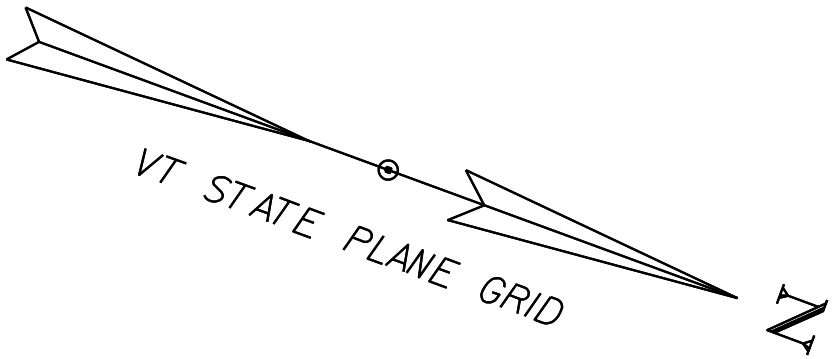


TEMPORARY TRAFFIC BARRIER  
10+00 TO 13+08 RT

TEMPORARY 4 INCH WHITE LINE, PAINT  
9+00 TO 13+08 LT  
9+00 TO 13+08 RT

ENERGY ABSORPTION ATTENUATOR  
9+91 RT

REMOVAL OF EXISTING PAVEMENT MARKINGS  
39+00 TO 40+50 LT  
39+00 TO 40+50 RT



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

FILE NAME: z13c056+cpbdr.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
PHASE 2 TRAFFIC CONTROL SHEET 1

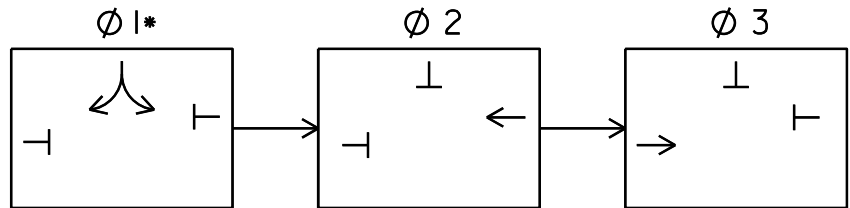
PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 22 OF 77





| NEW | LEGEND                                                                                                          |
|-----|-----------------------------------------------------------------------------------------------------------------|
|     | SIGNAL HEAD (12 INCH, LED, RED, YELLOW, GREEN BALLS)                                                            |
|     | PORTABLE TRAFFIC SIGNAL TRAILER WITH TRAFFIC ACTUATORS, EMERGENCY VEHICLE PRE-EMPTION, AND RADIO COMMUNICATION. |

PHASE SEQUENCE



\* IF CALLED

NOTES

- TEMPORARY SHEET PILING OR OTHER MEANS OF RETAINING STRUCTURE MAY BE REQUIRED. PAYMENT WILL BE INCIDENTAL TO ITEM 528.10 ONE-WAY TEMPORARY BRIDGE (2115 SF).
- TEMPORARILY RELOCATE THE MAILBOX LOCATED AT APPROXIMATELY STA. 15+71, RIGHT AS DIRECTED BY THE ENGINEER, WHILE THE TEMPORARY DETOUR IS IN PLACE. ONCE THE DETOUR IS REMOVED THE MAILBOX SHALL BE RESET IN ITS ORIGINAL LOCATION.
- SEE TRAFFIC CONTROL PLAN FOR TEMPORARY SIGNING.
- CONTRACTOR TO COORDINATE WITH PROPERTY OWNER TO MAINTAIN DRIVEWAY ACCESS.
- SEE TRAFFIC CONTROL DETAIL SHEET FOR ADDITIONAL INFORMATION.

REMOVAL OF EXISTING PAVEMENT MARKINGS

46+00 TO 47+35 LT  
 46+00 TO 47+35 RT

ENERGY ABSORPTION ATTENUATOR

15+44 RT

TEMPORARY TRAFFIC BARRIER

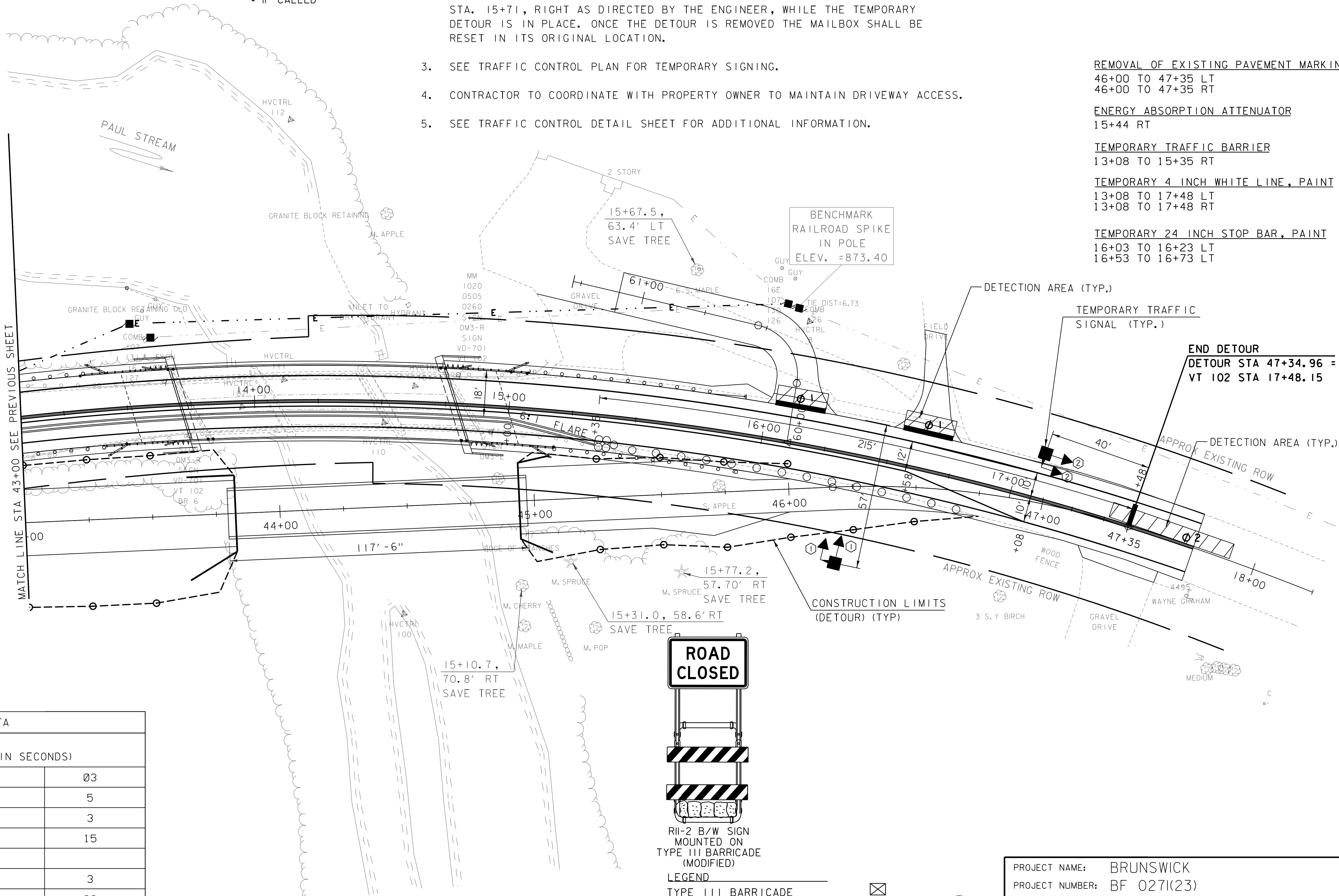
13+08 TO 15+35 RT

TEMPORARY 4 INCH WHITE LINE, PAINT

13+08 TO 17+48 LT  
 13+08 TO 17+48 RT

TEMPORARY 24 INCH STOP BAR, PAINT

16+03 TO 16+23 LT  
 16+53 TO 16+73 LT



VT 102

SIGNAL PHASING DATA

| SIGNAL PHASING<br>(ALL ENTRIES BELOW ARE IN SECONDS) |      |      |      |
|------------------------------------------------------|------|------|------|
| PHASE                                                | Ø1   | Ø2   | Ø3   |
| INITIAL                                              | 3    | 5    | 5    |
| VEHICLE EXT.                                         | 2    | 3    | 3    |
| MAX. 1                                               | 10   | 15   | 15   |
| MAX. 2                                               |      |      |      |
| YELLOW                                               | 3    | 3    | 3    |
| RED                                                  | 30   | 39   | 39   |
| RECALL                                               | NONE | SOFT | NONE |
| DELAY                                                | NONE | NONE | NONE |

ROAD  
 CLOSED

RII-2 B/W SIGN  
 MOUNTED ON  
 TYPE III BARRICADE  
 (MODIFIED)

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE (MOD.)

ENERGY ABSORPTION ATTENUATOR

TEMPORARY TRAFFIC BARRIER



FUSS & O'NEILL

PROJECT NAME: BRUNSWICK

PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056+cpbdr.dgn

PROJECT LEADER: J. FRENCH

DESIGNED BY: S. FORTIER

PHASE 2 TRAFFIC CONTROL SHEET 2

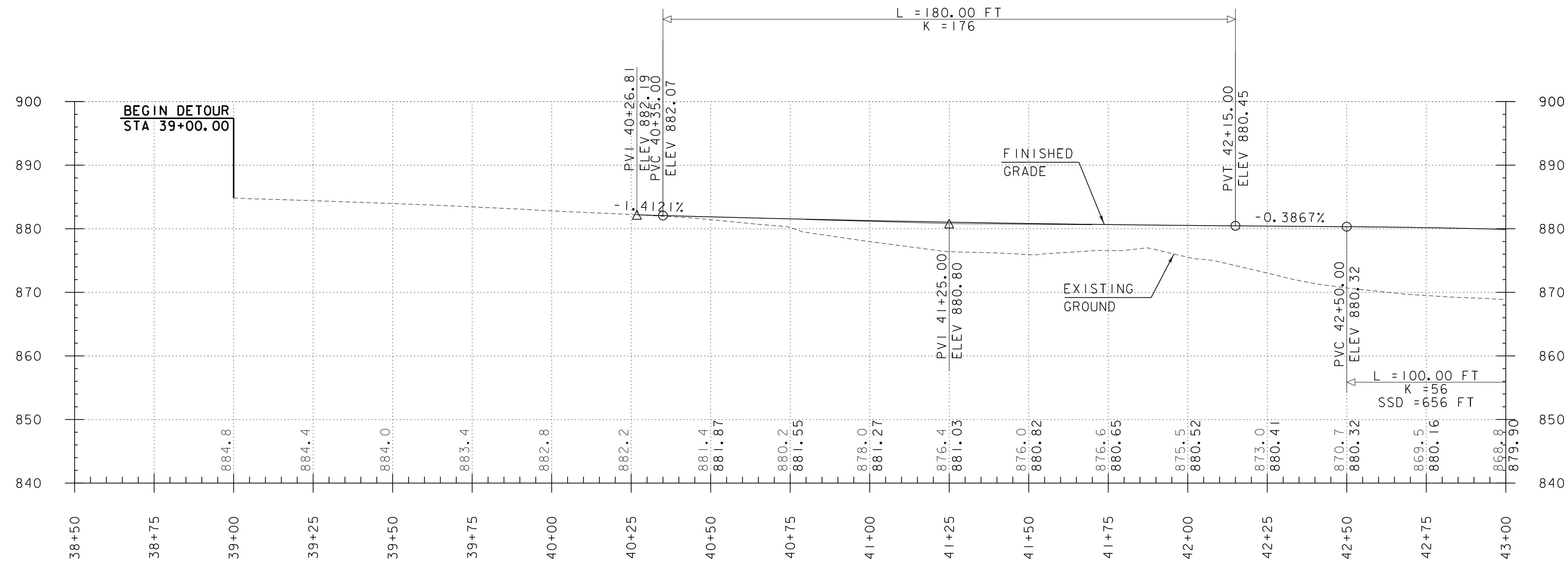
PLOT DATE: 8/29/2018

DRAWN BY: S. FORTIER

CHECKED BY: K. HAYDEN

SHEET 23 OF 77

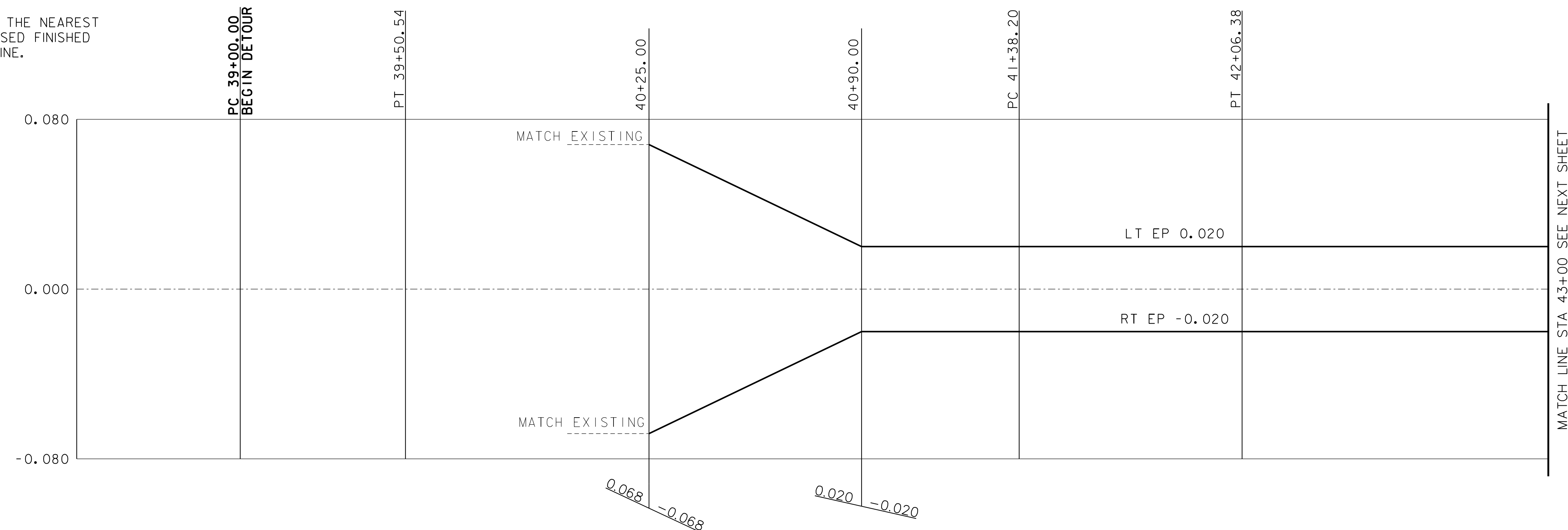




NOTES  
STATIONS AND ELEVATIONS ARE IN FEET.

THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE OLD GROUND ALONG THE CENTERLINE.

THE ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE THE PROPOSED FINISHED GRADE ALONG THE CENTERLINE.



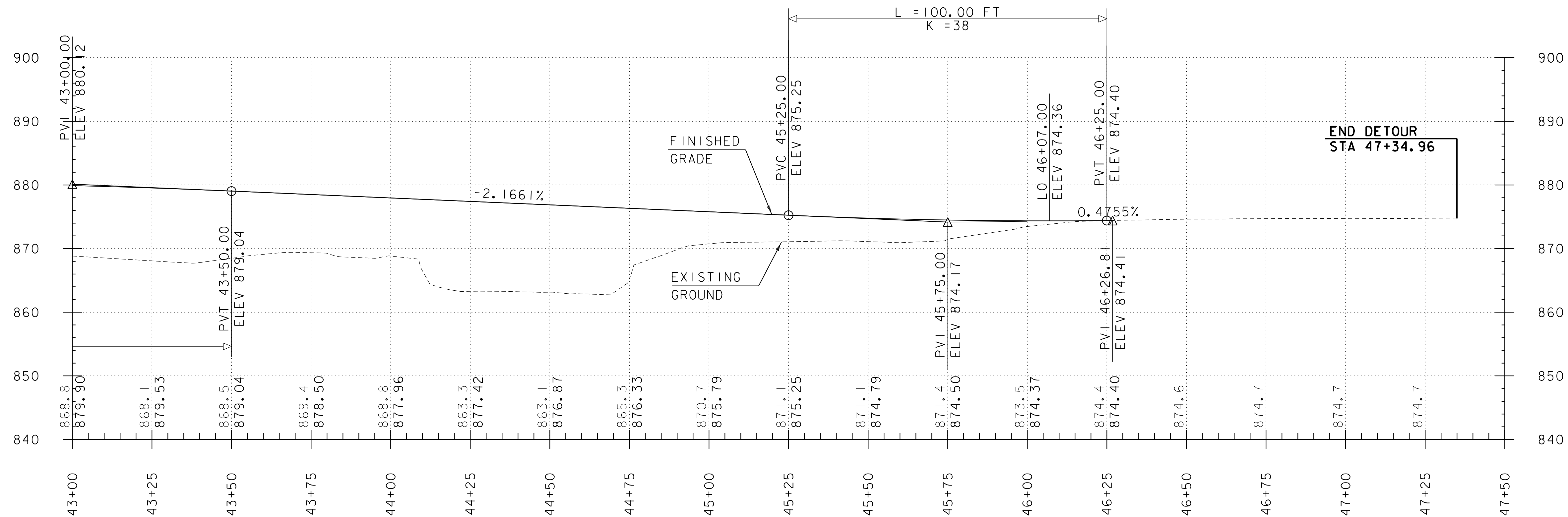
TEMPORARY DETOUR BANKING DIAGRAM

SCALE = HORIZONTAL IN FEET  
= VERTICAL SUPERELEVATION IN PERCENTAGE



|                 |             |                                      |                  |             |            |
|-----------------|-------------|--------------------------------------|------------------|-------------|------------|
| PROJECT NAME:   | BRUNSWICK   | FILE NAME:                           | z13c056+cpro.dgn | PLOT DATE:  | 8/29/2018  |
| PROJECT NUMBER: | BF 0271(23) | PROJECT LEADER:                      | J. FRENCH        | DRAWN BY:   | S. FORTIER |
|                 |             | DESIGNED BY:                         | S. FORTIER       | CHECKED BY: | K. HAYDEN  |
|                 |             | DETOUR PROFILE AND BANKING DIAGRAM 1 |                  | SHEET       | 24 OF 77   |





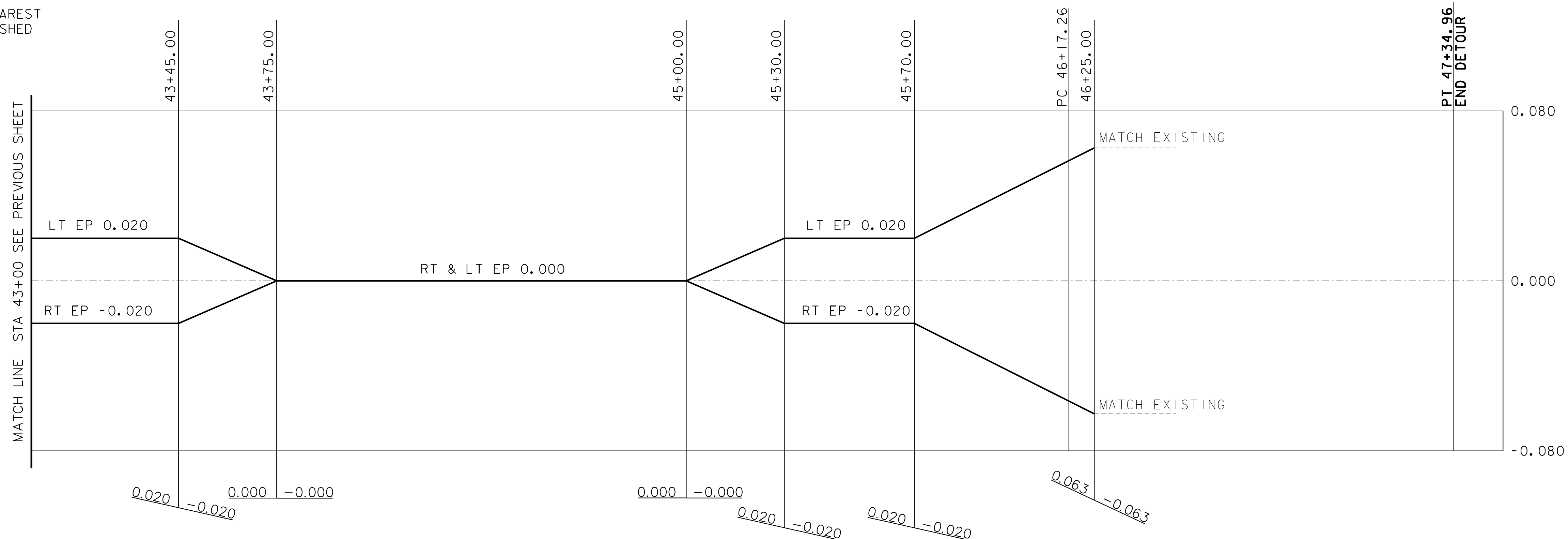
TEMPORARY DETOUR PROFILE

HOR. SCALE 1" = 20'-0"  
VER. SCALE 1" = 10'-0"

NOTES  
STATIONS AND ELEVATIONS ARE IN FEET.

THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE OLD GROUND ALONG THE CENTERLINE.

THE ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE THE PROPOSED FINISHED GRADE ALONG THE CENTERLINE.



TEMPORARY DETOUR BANKING DIAGRAM

SCALE = HORIZONTAL IN FEET  
= VERTICAL SUPERELEVATION IN PERCENTAGE

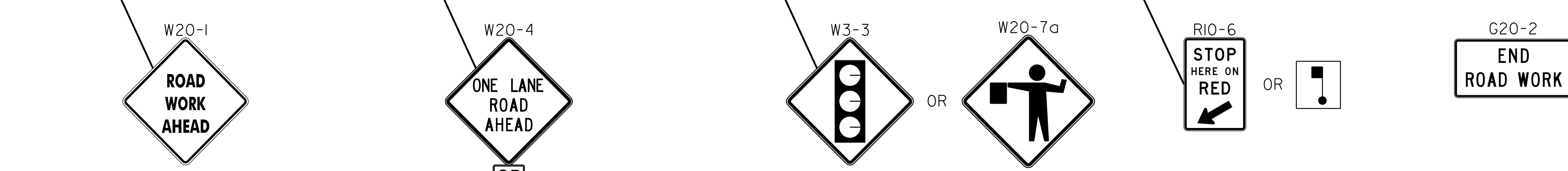
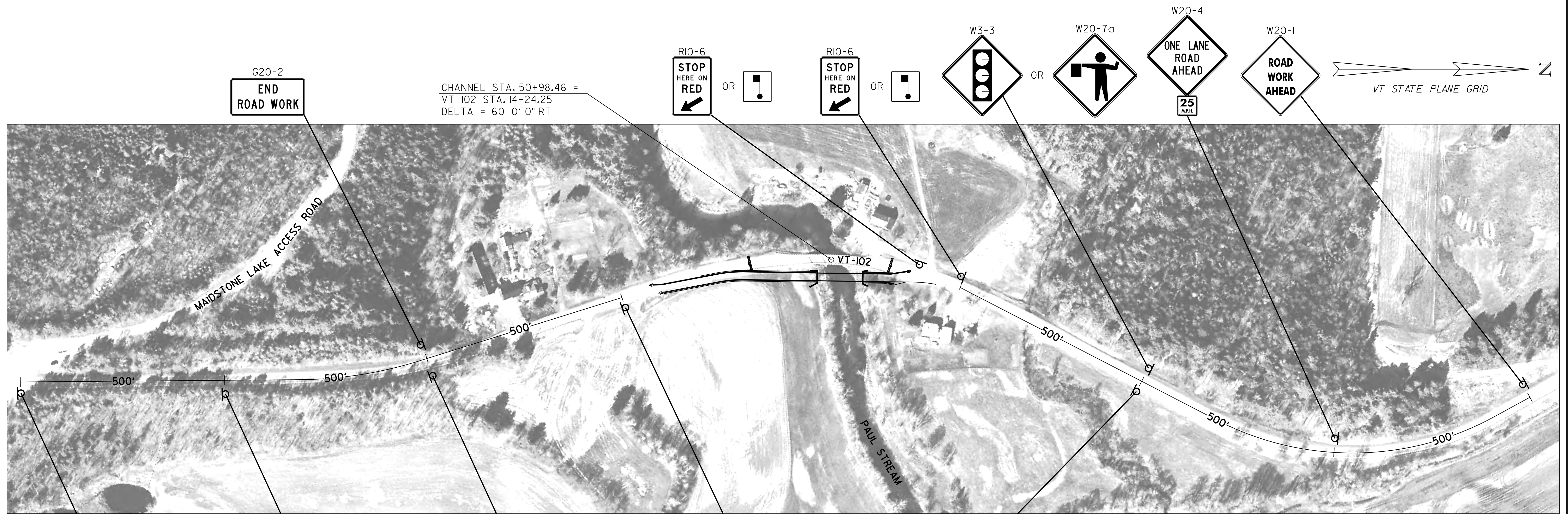


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056+cppro.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
DETOUR PROFILE AND BANKING DIAGRAM 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 25 OF 77

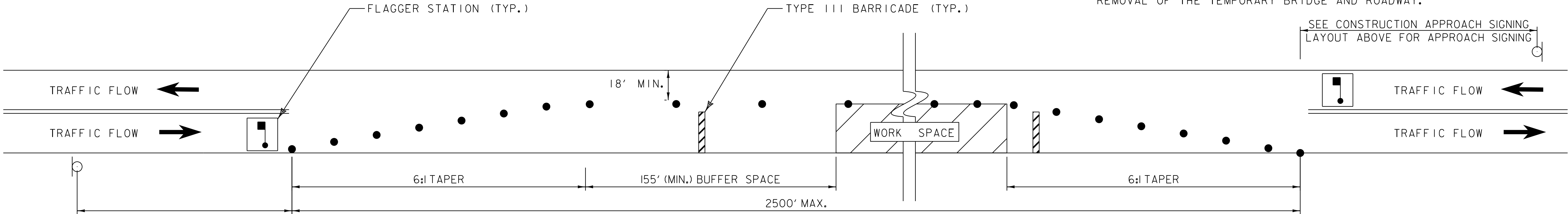




**CONSTRUCTION APPROACH SIGNING**

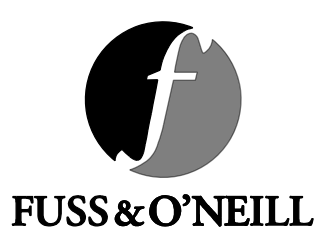


- NOTES**
1. ALL TEMPORARY TRAFFIC SIGNS SHALL BE PAID FOR UNDER ITEM 641.10 TRAFFIC CONTROL, UNLESS OTHERWISE SPECIFIED.
  2. NO CONSTRUCTION SIGN SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND INTERSECTING ROADS.
  3. ALL PERMANENT SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED DURING CONSTRUCTION.
  4. CONTRACTOR SHALL COORDINATE WITH ADJACENT PROPERTY OWNERS TO MAINTAIN ACCESS TO DRIVES.
  5. FLAGGERS SHALL BE USED AT THE LOCATIONS SHOWN DURING INSTALLATION AND REMOVAL OF THE TEMPORARY BRIDGE AND ROADWAY.



**TYPICAL WORK ZONE LAYOUT FOR ALTERNATING ONE-WAY TRAFFIC WITH FLAGGER CONTROL**

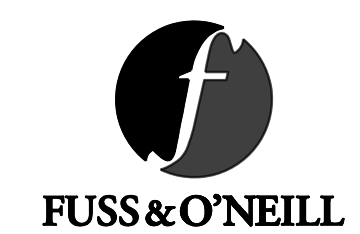
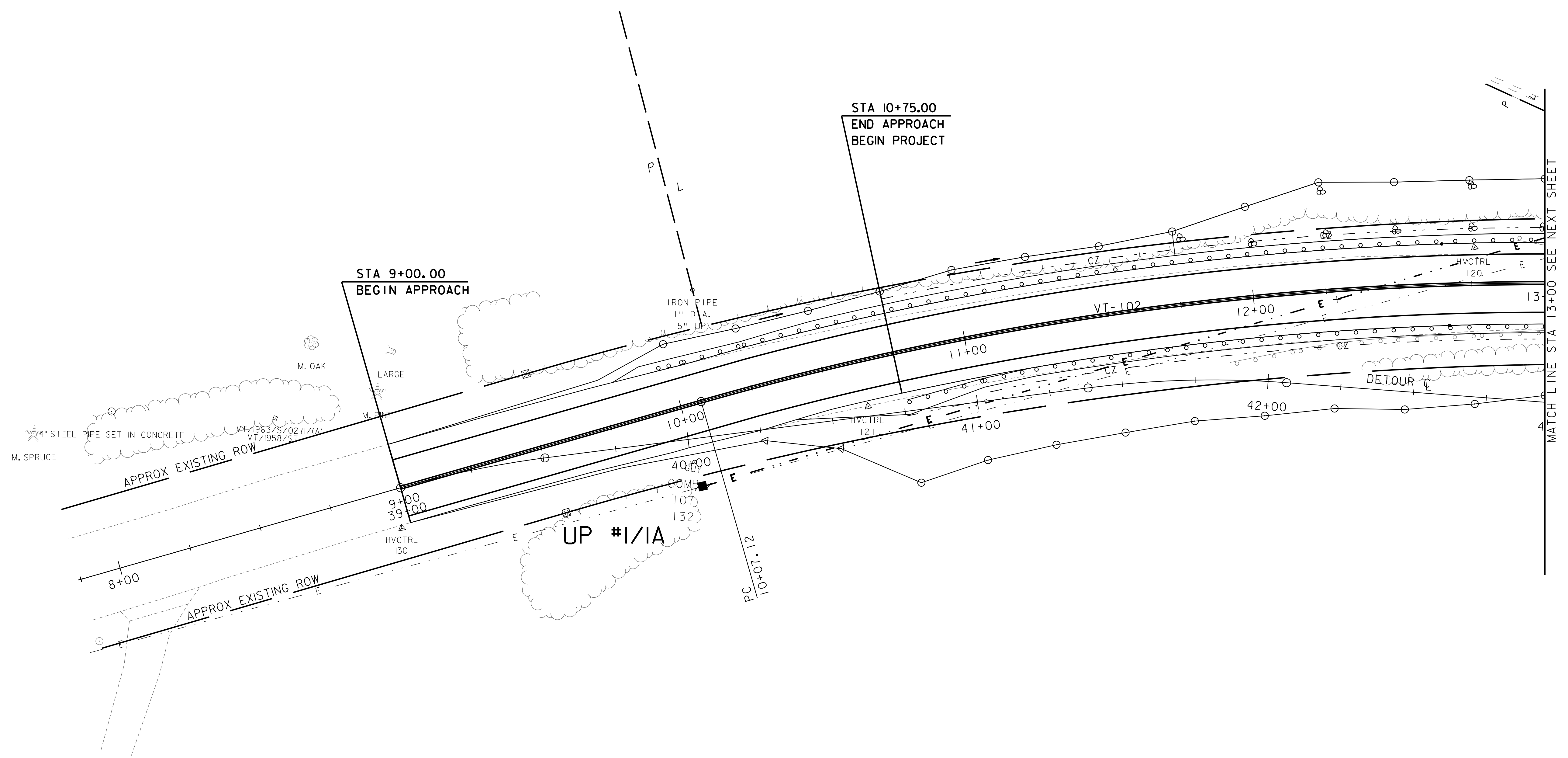
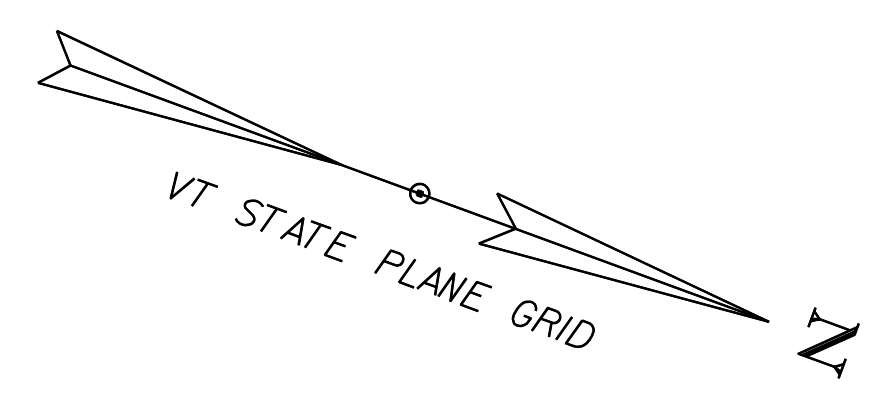
NOT TO SCALE



|                      |                    |             |            |
|----------------------|--------------------|-------------|------------|
| PROJECT NAME:        | BRUNSWICK          | PLOT DATE:  | 8/29/2018  |
| PROJECT NUMBER:      | BF 0271(23)        | DRAWN BY:   | S. FORTIER |
| FILE NAME:           | z13c056+cpsign.dgn | CHECKED BY: | K. HAYDEN  |
| PROJECT LEADER:      | J. FRENCH          | SHEET       | 26 OF 77   |
| DESIGNED BY:         | S. FORTIER         |             |            |
| TRAFFIC CONTROL PLAN |                    |             |            |

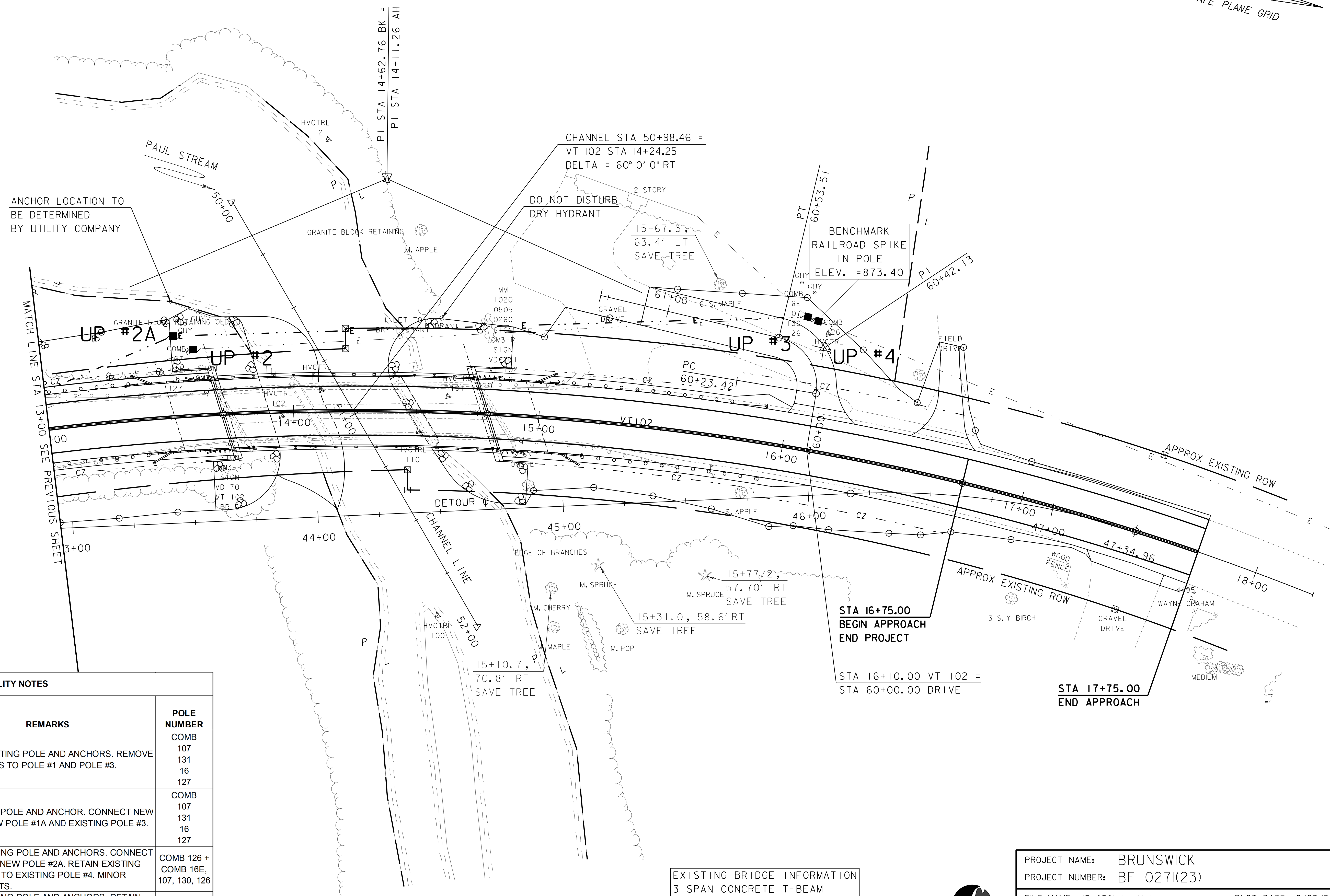


| UTILITY NOTES |         |          |                                                                                                   |                 |
|---------------|---------|----------|---------------------------------------------------------------------------------------------------|-----------------|
| MARK          | STATION | OFFSET   | REMARKS                                                                                           | POLE NUMBER     |
| UP#1          | 10+00   | 28.1' RT | REMOVE EXISTING POLE AND ANCHORS. REMOVE CONNECTIONS TO POLE #2 AND EXISTING POLE TO THE SOUTH.   | COMB 107<br>132 |
| UP#1A         | 10+00   | 28.1' RT | INSTALL NEW POLE. CONNECT NEW LINE TO NEW POLE #2A. CONNECT EXISTING LINE FROM POLE TO THE SOUTH. | COMB 107<br>132 |



|                 |             |                            |                  |             |            |
|-----------------|-------------|----------------------------|------------------|-------------|------------|
| PROJECT NAME:   | BRUNSWICK   | FILE NAME:                 | z13c056bdru1.dgn | PLOT DATE:  | 8/29/2018  |
| PROJECT NUMBER: | BF 0271(23) | PROJECT LEADER:            | J. FRENCH        | DRAWN BY:   | S. FORTIER |
|                 |             | DESIGNED BY:               | S. FORTIER       | CHECKED BY: | K. HAYDEN  |
|                 |             | UTILITY RELOCATION SHEET 1 |                  | SHEET       | 27 OF 77   |





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



PLOT DATE: 8/29/2018  
DRAWN BY: S. FORTIER  
CHECKED BY: K. HAYDEN  
SHEET 28 OF 77



# TRAFFIC SIGN SUMMARY SHEET

[illegible]



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<br>Blow Count Per Foot For:<br>2" O.D. Sampler<br>1 3/8" I.D. Sampler<br>Hammer Weight Of 140 Lbs.<br>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 1 1/8"                                                                                                                                   |
| BX    | Core Size 1 5/8"                                                                                                                                   |
| NX    | Core Size 2 1/8"                                                                                                                                   |
| 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                                                                                                                                   |
| RQD   | 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          |
| gr'y | 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.

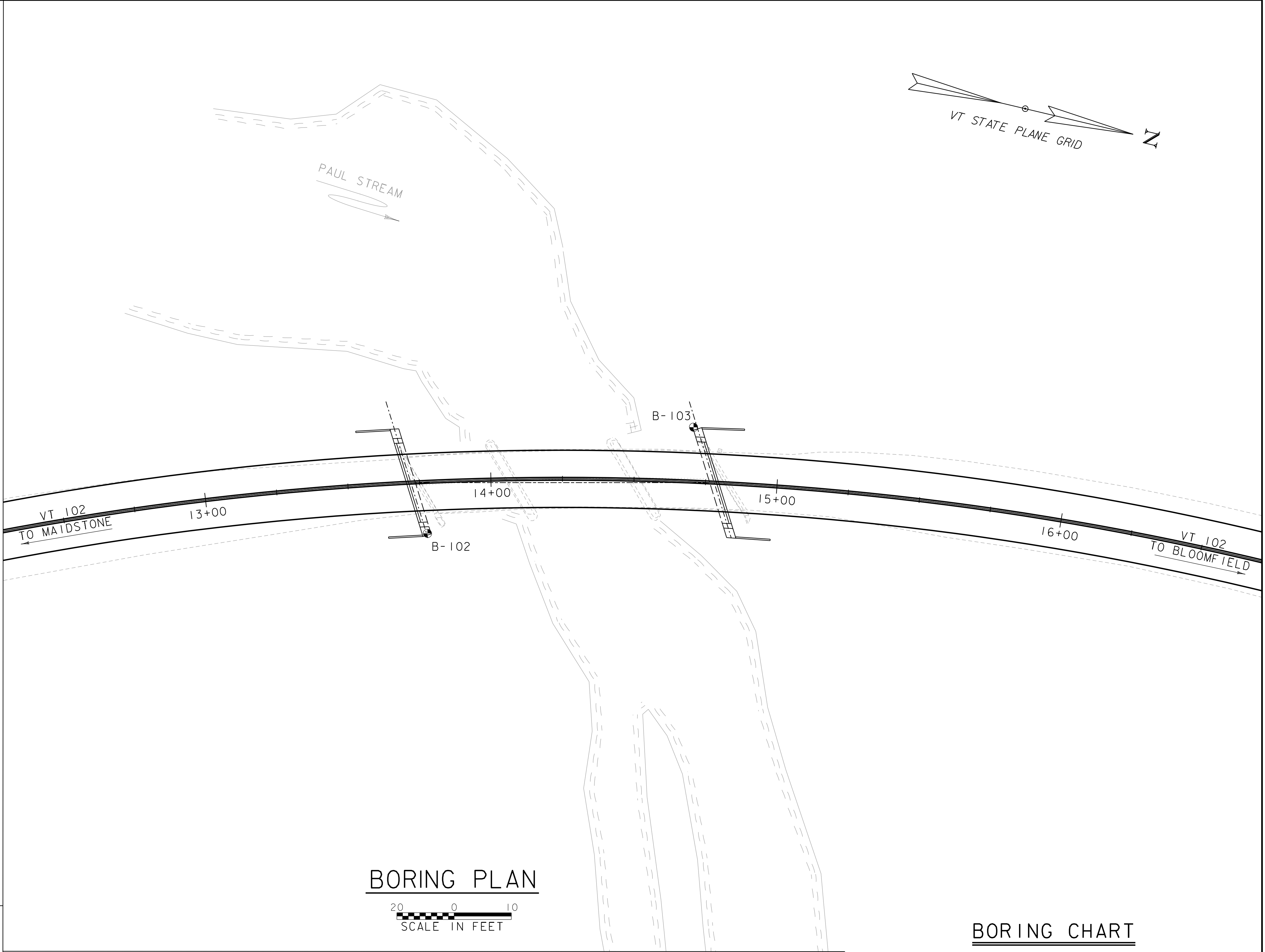
MUCK - Soft organic soil (containing > 10% organic material).

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.



BORING PLAN



GENERAL NOTES

- The subsurface explorations shown herein were made between 8/21/14 and 9/17/14 by the Agency.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 |
|----------|---------------|---------|--------------|------------|
| B-102    | 13+77         | 18.0 RT | 875.85       | 692.95     |
| B-103    | 14+70         | 19.0 LT | 873.00       | 684.30     |
|          |               |         |              |            |
|          |               |         |              |            |

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

FILE NAME: z13c056boring.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
BORING LAYOUT SHEET

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 30 OF 77



BOTTOM OF  
ABUT. I  
EL. 867.0'

|  STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION                                                                                                                                                                                                                             |                                                                                     |                                                                                                              |  | BORING LOG                              |                     |                       |                    | Boring No.: B-102        |        |            |  |                     |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--|-----------------------------------------|---------------------|-----------------------|--------------------|--------------------------|--------|------------|--|---------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  | BRUNSWICK<br>BF 0271(23)<br>VT-102 BR-6 |                     |                       |                    | Page No.: 1 of 3         |        |            |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    | Pin No.: 13C056          |        |            |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    | Checked By: END          |        |            |  |                     |  |
| Boring Crew: GARROW, HOOK, NIETO                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |                                                                                                              |  | Casing                                  |                     | Sampler               |                    | Groundwater Observations |        |            |  |                     |  |
| Date Started: 9/09/14 Date Finished: 9/17/14                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |                                                                                                              |  | Type: WB SS                             |                     |                       |                    | Date                     |        | Depth (ft) |  | Notes               |  |
| VTSPG NAD83: N 801914.92 ft E 1873682.66 ft                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                                                                                              |  | Hammer Wt: N.A. 140 lb.                 |                     |                       |                    | 09/10/14                 |        | 11.4       |  | After 14 hrs.       |  |
| Station: 13+77.00 Offset: 18.00                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  | Hammer Fall: N.A. 30 in.                |                     |                       |                    | 09/11/14                 |        | 5.6        |  | After 12 hrs.       |  |
| Ground Elevation: 875.85 ft                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                     |                                                                                                              |  | Hammer/Rod Type: Auto/AWJ               |                     |                       |                    | 09/11/14                 |        | 137.0      |  | Aquifer, See Remark |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  | Rig: CME 55 TRACK                       |                     | C <sub>u</sub> = 1.46 |                    |                          |        |            |  |                     |  |
| Depth (ft)                                                                                                                                                                                                                                                                                                                                                                                                           | Strata (1)                                                                          | CLASSIFICATION OF MATERIALS (Description)                                                                    |  | Run (Dip deg.)                          | Cone Rec. % (RQD %) | Blow Count (N Value)  | Moisture Content % | Gravel %                 | Sand % | Fines %    |  |                     |  |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                   |    | Field Note: Fill material was added for drill rig platform. Fill material was Broken Rock, Gravel, and Sand. |  |                                         |                     | 2-4-2-1 (6)           |                    |                          |        |            |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 2-1-1-3 (2)           | 4.3                |                          |        |            |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 3-4-9-6 (13)          | 5.7                | 82.7                     | 13.7   | 3.6        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 3-4-5-4 (9)           | 6.4                | 64.4                     | 29.5   | 6.1        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 5-2-3-4 (5)           | 11.9               | 38.0                     | 53.9   | 8.1        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 13-1-3 (36)           | 9.8                | 48.1                     | 42.5   | 9.4        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 22-30 (36)            | 13.1               | 24.1                     | 55.3   | 20.6       |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 9-29 (36)             | 9.7                | 61.6                     | 29.8   | 8.6        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 35-25 (64)            | 24.4               | 4.2                      | 65.5   | 30.3       |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     | 47-16 (12)            | 24.4               | 0.4                      | 85.9   | 13.7       |  |                     |  |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                   |    | A-2-4, SiSa, gry, MTW, Rec. = 0.9 ft                                                                         |  |                                         |                     | 6-3-3-3 (28)          | 26.0               | 0.2                      | 62.6   | 37.2       |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     | A-2-4, Sa, gry, MTW, Rec. = 1.0 ft                                                                           |  |                                         |                     | WH-1-2-2 (3)          |                    |                          |        |            |  |                     |  |
| 30                                                                                                                                                                                                                                                                                                                                                                                                                   |    | A-3, Sa, gry, MTW, Rec. = 0.7 ft                                                                             |  |                                         |                     | 1-3-3-3 (6)           | 20.6               | 5.2                      | 91.3   | 3.5        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     | Field Note: Open hole drilling. Sampled with NWJ rod                                                         |  |                                         |                     |                       |                    |                          |        |            |  |                     |  |
| 40                                                                                                                                                                                                                                                                                                                                                                                                                   |    | A-2-4, Sa, gry, MTW, Rec. = 1.0 ft                                                                           |  |                                         |                     | 5-5-6-8 (11)          | 20.6               | 0.4                      | 81.5   | 18.1       |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    |                          |        |            |  |                     |  |
| 50                                                                                                                                                                                                                                                                                                                                                                                                                   |  | A-1-b, Sa, gry, Moist, Rec. = 2.0 ft                                                                         |  |                                         |                     | 1-5-9-11 (14)         | 16.7               | 5.1                      | 87.9   | 7.0        |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    |                          |        |            |  |                     |  |
| 60                                                                                                                                                                                                                                                                                                                                                                                                                   |  | A-2-4, Sa, gry, MTW, Rec. = 1.1 ft                                                                           |  |                                         |                     | 2-6-10-9 (16)         | 20.1               | 1.4                      | 82.9   | 15.7       |  |                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    |                          |        |            |  |                     |  |
| Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.<br>2. N Values have not been corrected for hammer energy. C <sub>u</sub> is the hammer energy correction factor.<br>3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made. |                                                                                     |                                                                                                              |  |                                         |                     |                       |                    |                          |        |            |  |                     |  |

ESTIMATED  
PILE TIP  
EL. 777.0'

|                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  |                         |  |                       |  |          |  |        |  |         |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|--|--------------------------------------------------|--|-----------------------------|--------------------------|--------------------------|--|-------------------------|--|-----------------------|--|----------|--|--------|--|---------|--|
|                                                                                                                                                                                                                                                                                                                                   |  | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |  | <b>BORING LOG</b>                                |  |                             | Boring No.: <b>B-102</b> |                          |  |                         |  |                       |  |          |  |        |  |         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                        |  | <b>BRUNSWICK<br/>BF 0271(23)<br/>VT-102 BR-6</b> |  |                             | Page No.: <b>2 of 3</b>  |                          |  |                         |  |                       |  |          |  |        |  |         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                        |  |                                                  |  |                             | Pin No.: <b>13C056</b>   |                          |  |                         |  |                       |  |          |  |        |  |         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                        |  |                                                  |  |                             | Checked By: <b>END</b>   |                          |  |                         |  |                       |  |          |  |        |  |         |  |
| Boring Crew: <u>GARROW, HOOK, NIETO</u>                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                        |  | Casing                                           |  | Sampler                     |                          | Groundwater Observations |  |                         |  |                       |  |          |  |        |  |         |  |
| Date Started: <u>9/09/14</u> Date Finished: <u>9/17/14</u>                                                                                                                                                                                                                                                                                                                                                           |  |                                                                                                        |  | Type: <u>WB SS</u>                               |  | Date                        |                          | Depth (ft)               |  | Notes                   |  |                       |  |          |  |        |  |         |  |
| VTSPG NAD83: <u>N 801914.92 ft E 1873682.66 ft</u>                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                        |  | Hammer Wt: <u>N.A.</u> 140 lb.                   |  | 09/10/14                    |                          | 11.4                     |  | After 14 hrs.           |  |                       |  |          |  |        |  |         |  |
| Station: <u>13+77.00</u> Offset: <u>18.00</u>                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                                        |  | Hammer Fall: <u>N.A.</u> 30 in.                  |  | 09/11/14                    |                          | 5.6                      |  | After 12 hrs.           |  |                       |  |          |  |        |  |         |  |
| Ground Elevation: <u>875.85 ft</u>                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                        |  | Hammer/Rod Type: <u>Auto/AWJ</u>                 |  | 09/11/14                    |                          | 137.0                    |  | Aquifer, See Remark     |  |                       |  |          |  |        |  |         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                        |  | Rig: <u>CME 55 TRACK</u>                         |  | <u>C<sub>u</sub> = 1.46</u> |                          |                          |  |                         |  |                       |  |          |  |        |  |         |  |
| CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                        |  | Run (Dip deg.)                                   |  | Cone Rec. %<br>(RCO %)      |                          | Drill Rate<br>min/feet   |  | Blow(s)<br>(N Value)    |  | Moisture<br>Content % |  | Gravel % |  | Sand % |  | Fines % |  |
| A-2-4, SiSa, gry, MTW, Rec. = 1.5 ft                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 7-8-9-9<br>(17)         |  | 22.1                  |  | 0.1      |  | 78.3   |  | 21.6    |  |
| 80 A-4, Si, gry, MTW, Rec. = 1.6 ft                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 6-6-7-<br>10<br>(13)    |  | 30.3                  |  |          |  | 16.6   |  | 83.4    |  |
| 90 Field Note: No Recovery. Appears to be Silty Sand                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 5-5-8-<br>10<br>(13)    |  |                       |  |          |  |        |  |         |  |
| 100 A-2-4, SiSa, gry, MTW, Rec. = 1.3 ft                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 2-4-6-<br>10<br>(10)    |  | 22.3                  |  | 0.2      |  | 71.4   |  | 28.4    |  |
| 110 A-2-4, SiSa, gry, MTW, Rec. = 0.6 ft                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 5-8-12-<br>36<br>(20)   |  | 21.6                  |  | 1.5      |  | 71.8   |  | 26.7    |  |
| 120 Field Note: Cleaned out with roller cone<br>A-4, SiSa, gry, MTW, Rec. = 1.9 ft                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 10-14-<br>13-15<br>(27) |  | 23.0                  |  |          |  | 61.0   |  | 39.0    |  |
| 130 A-4, SaSi, gry, MTW, Rec. = 1.5 ft                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  | 14-20-<br>17-22<br>(37) |  | 20.5                  |  | 3.8      |  | 44.1   |  | 52.1    |  |
| Field Note: Aquifer at 137.0 ft.                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  |                         |  |                       |  |          |  |        |  |         |  |
| Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.<br>2. N Values have not been corrected for hammer energy. C <sub>u</sub> is the hammer energy correction factor.<br>3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made. |  |                                                                                                        |  |                                                  |  |                             |                          |                          |  |                         |  |                       |  |          |  |        |  |         |  |

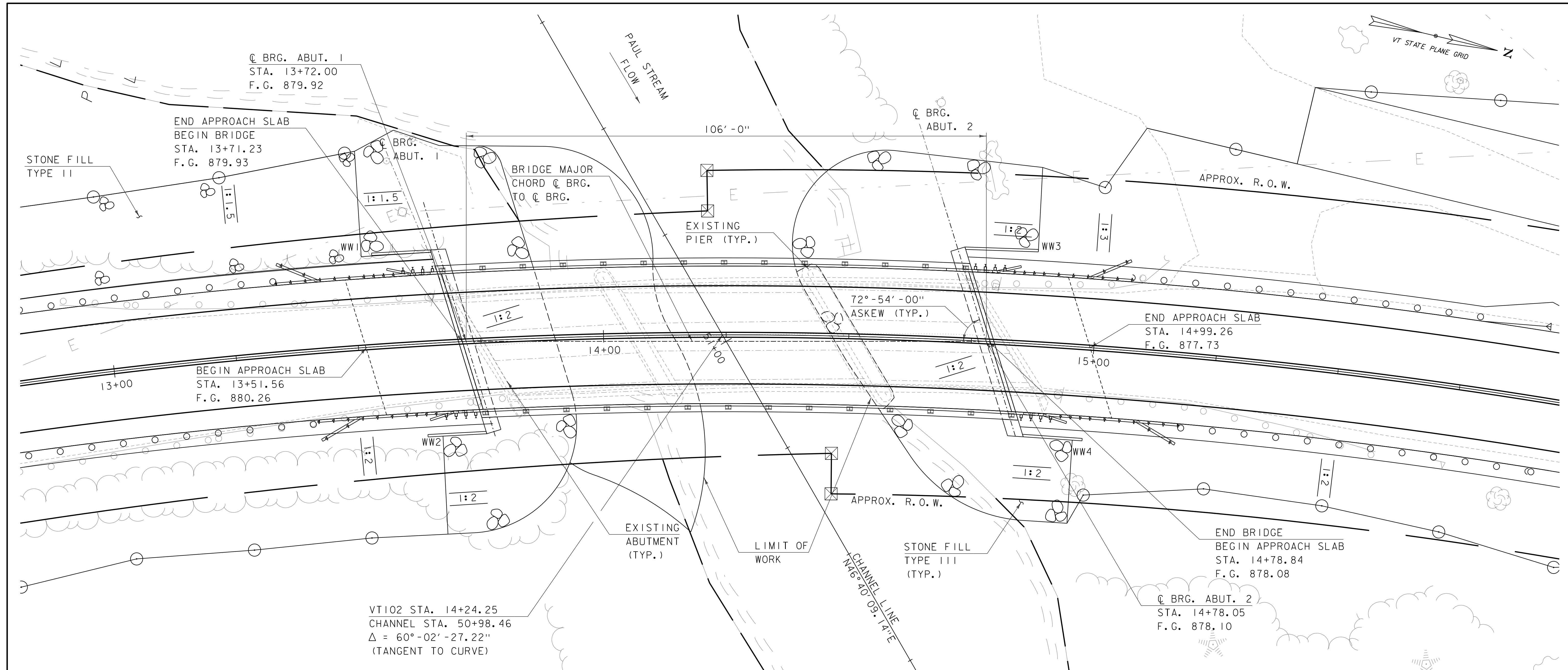
|  STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |                                                                                                                                                                                                                                                                                                                    |  |  | BORING LOG                              |  |                                     |  | Boring No.: B-102        |  |                      |  |                     |  |          |  |        |  |                           |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------|--|-------------------------------------|--|--------------------------|--|----------------------|--|---------------------|--|----------|--|--------|--|---------------------------|--|
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  | BRUNSWICK<br>BF 0271(23)<br>VT-102 BR-6 |  |                                     |  | Page No.: 3 of 3         |  |                      |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  | Pin No.: 13C056          |  |                      |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  | Checked By: END          |  |                      |  |                     |  |          |  |        |  |                           |  |
| Boring Crew: GARROW, HOOK, NIETO                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                    |  |  | Casing                                  |  | Sampler                             |  | Groundwater Observations |  |                      |  |                     |  |          |  |        |  |                           |  |
| Date Started: 9/09/14 Date Finished: 9/17/14                                                                                                                                               |                                                                                                                                                                                                                                                                                                                    |  |  | Type: WB SS                             |  |                                     |  | Date                     |  | Depth (ft)           |  | Notes               |  |          |  |        |  |                           |  |
| VTSPG NAD83: N 801914.92 ft E 1873682.66 ft                                                                                                                                                |                                                                                                                                                                                                                                                                                                                    |  |  | Hammer Wt: N.A. 140 lb.                 |  |                                     |  | 09/10/14                 |  | 11.4                 |  | After 14 hrs.       |  |          |  |        |  |                           |  |
| Station: 13+77.00 Offset: 18.00                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  | Hammer Fall: N.A. 30 in.                |  |                                     |  | 09/11/14                 |  | 5.6                  |  | After 12 hrs.       |  |          |  |        |  |                           |  |
| Ground Elevation: 875.85 ft                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                    |  |  | Hammer/Rod Type: Auto/AWJ               |  | C <sub>u</sub> = 1.46               |  | 09/11/14                 |  | 137.0                |  | Aquifer, See Remark |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  | Rig: CME 55 TRACK                       |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                               |                                                                                                                                                                                                                                                                                                                    |  |  | Run (Dip deg.)                          |  | Cone Rec. % (C <sub>u</sub> Rec. %) |  | Drill Rate (in/min)      |  | Blow Count (N Value) |  | Moisture Content %  |  | Gravel % |  | Sand % |  | Fines %                   |  |
| 150                                                                                                                                                                                        | A-4, Si, brn, MTW, Rec. = 1.0 ft                                                                                                                                                                                                                                                                                   |  |  |                                         |  |                                     |  |                          |  | 8-10-16-21 (26)      |  | 24.0                |  | 16.0     |  | 87.0   |  |                           |  |
|                                                                                                                                                                                            | Field Note: Sleeved 3.0 inch casing. Sampling with AWJ rod                                                                                                                                                                                                                                                         |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 160                                                                                                                                                                                        | A-4, SiSa, Lt/brn, MTW, Rec. = 1.0 ft                                                                                                                                                                                                                                                                              |  |  |                                         |  |                                     |  |                          |  | 7-13-16-20 (29)      |  | 18.2                |  | 3.7      |  | 52.9   |  | 43.4                      |  |
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 170                                                                                                                                                                                        | A-4, SiSa, brn-gry, MTW, Rec. = 1.4 ft                                                                                                                                                                                                                                                                             |  |  |                                         |  |                                     |  |                          |  | 11-42-27-36 (69)     |  | 18.5                |  | 7.0      |  | 54.2   |  | 38.8                      |  |
|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 180                                                                                                                                                                                        | Field Note: Cleaned out with roller cone                                                                                                                                                                                                                                                                           |  |  |                                         |  |                                     |  |                          |  | 13-19-28-29 (47)     |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            | Visual Description: GrSa with Broken Rock, brn-gry, Moist, Rec. = 0.1 ft. Insufficient sample for testing.                                                                                                                                                                                                         |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 190                                                                                                                                                                                        | Field Note: Pulled 3.0 inch casing and changed bit. Advanced to 175.0 ft.                                                                                                                                                                                                                                          |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            | Field Note: Pulled 3.0 inch casing and changed bit. Advanced to 179.0 ft.                                                                                                                                                                                                                                          |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 200                                                                                                                                                                                        | A-2-4, SiGrSa, Lt/brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.                                                                                                                                                                                                                              |  |  |                                         |  |                                     |  |                          |  | 6-4-8-12 (12)        |  | 14.3                |  | 35.8     |  | 39.6   |  | 24.6                      |  |
|                                                                                                                                                                                            | 182.9 ft - 183.9 ft, White to dark-gray to pink, medium to coarse-grained Granite, with close to very closely spaced horizontal jointing. Very hard, Unweathered, Fair rock, BXDC, RMR = 42                                                                                                                        |  |  | 1                                       |  | 100 (0)                             |  | 5                        |  |                      |  |                     |  |          |  |        |  | Top of Bedrock @ 182.9 ft |  |
| 200                                                                                                                                                                                        | 183.9 ft - 188.9 ft, White to dark-gray to pink, medium to coarse-grained Granite, with close to very closely spaced horizontal jointing. Very hard, Unweathered, Fair rock, BXGDC, RMR = 42                                                                                                                       |  |  | 2                                       |  | 12 (None)                           |  | 24 (0)                   |  |                      |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            | 183.9 ft - 188.9 ft, White to dark-gray to pink, medium to coarse-grained Granite, with close to very closely spaced horizontal jointing. Very hard, Unweathered, Fair rock, BXGDC, RMR = 42. Note: Drillers reported catcher in bottom of core barrel failed resulting in rock becoming ground up by core barrel. |  |  | 3                                       |  | 96 (None)                           |  | 24 (0)                   |  |                      |  |                     |  |          |  |        |  |                           |  |
| 200                                                                                                                                                                                        | 188.9 ft - 193.9 ft, White to dark-gray to pink, medium to coarse-grained Granite, with close to very closely spaced horizontal jointing. Very hard, Unweathered, Fair rock, BXGDC, RMR = 42                                                                                                                       |  |  | 4                                       |  | 90 (None)                           |  | 7 (0)                    |  |                      |  |                     |  |          |  |        |  |                           |  |
|                                                                                                                                                                                            | 193.9 ft - 197.9 ft, White to dark-gray to pink, medium to coarse-grained Granite, with close to very closely spaced horizontal jointing. Very hard, Unweathered, Fair rock, BXGDC, RMR = 42                                                                                                                       |  |  |                                         |  |                                     |  |                          |  | 5                    |  |                     |  |          |  |        |  |                           |  |
| Hole stopped @ 197.9 ft                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  | 6                    |  |                     |  |          |  |        |  |                           |  |
| Remarks:                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 1. Artesian conditions noted at 137.0 feet. Water overflowed casing sticking up 12 feet above the ground surface.                                                                          |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 2. The Ground Elevation was taken on top of the fill material that was added for a drill rig platform.                                                                                     |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 3. 3-inch steel drill casing was removed during removal of casing. 3-inch casing still remains in the ground from 50 feet below the ground surface to bottom of exploration.               |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| Notes:                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 1. Stratification lines represent approximate boundaries between material types. Translation may be gradual.                                                                               |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 2. N Values have not been corrected for hammer energy. C <sub>u</sub> is the hammer energy correction factor.                                                                              |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |
| 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.            |                                                                                                                                                                                                                                                                                                                    |  |  |                                         |  |                                     |  |                          |  |                      |  |                     |  |          |  |        |  |                           |  |



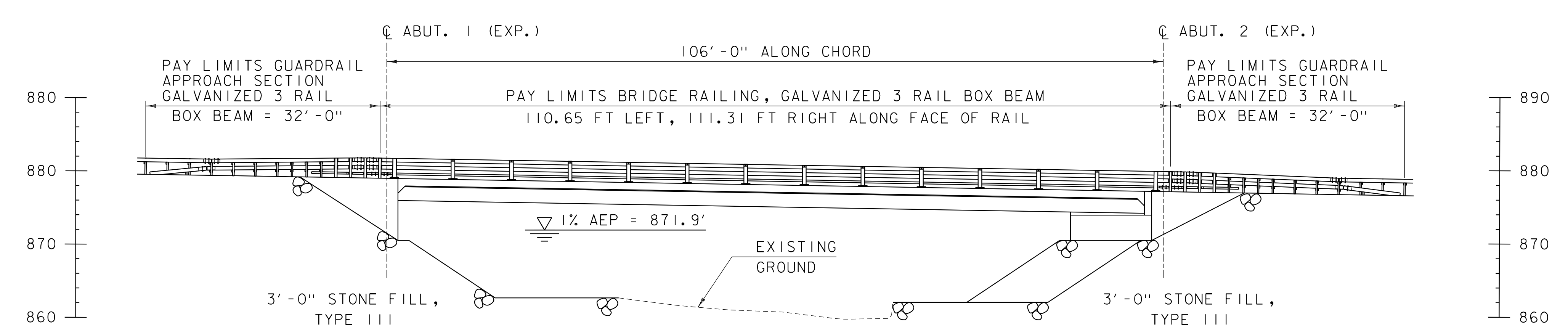
BOTTOM OF  
ABUT. 2  
EL. 865.0'

|                                                                                   |                                                                                   |                                                                                                        |  |                                                              |                     |                             |                          |                     |                    |                    |          |        |         |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------|---------------------|-----------------------------|--------------------------|---------------------|--------------------|--------------------|----------|--------|---------|
|  |                                                                                   | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |  | <b>BORING LOG</b>                                            |                     |                             | Boring No.: <b>B-103</b> |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   |                                                                                                        |  | <b>BRUNSWICK</b><br><b>BF 0271(23)</b><br><b>VT-102 BR-6</b> |                     |                             | Page No.: <b>1 of 3</b>  |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   |                                                                                                        |  |                                                              |                     |                             | Pin No.: <b>13C05E</b>   |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   |                                                                                                        |  |                                                              |                     |                             | Checked By: <b>END</b>   |                     |                    |                    |          |        |         |
| Boring Crew: <u>GARROW, HOOK, NIETO</u>                                           |                                                                                   |                                                                                                        |  | Casing                                                       |                     | Sampler                     | Groundwater Observations |                     |                    |                    |          |        |         |
| Date Started: <u>8/21/14</u> Date Finished: <u>8/29/14</u>                        |                                                                                   |                                                                                                        |  | Type:                                                        | <u>WB</u>           | <u>SS</u>                   | Date                     | Depth (ft)          | Notes              |                    |          |        |         |
| VTSPG NAD83: <u>N 802008.42 ft    E 1873627.34 ft</u>                             |                                                                                   |                                                                                                        |  | I.D.:                                                        | <u>4 in.</u>        | <u>1.5 in.</u>              |                          |                     |                    |                    |          |        |         |
| Station: <u>14+70</u> Offset: <u>19.00</u>                                        |                                                                                   |                                                                                                        |  | Hammer Wt:                                                   | <u>N.A.</u>         | <u>140 lb.</u>              |                          |                     |                    |                    |          |        |         |
| Ground Elevation: <u>873.0 ft</u>                                                 |                                                                                   |                                                                                                        |  | Hammer Fall:                                                 | <u>N.A.</u>         | <u>30 in.</u>               | 08/22/14                 | 11.5                | AM                 |                    |          |        |         |
|                                                                                   |                                                                                   |                                                                                                        |  | Hammer/Rod Type:                                             | <u>Auto/AWJ</u>     |                             | 08/26/14                 | 5.4                 | Overnight.         |                    |          |        |         |
|                                                                                   |                                                                                   |                                                                                                        |  | Rig:                                                         | <u>CME 55 TRACK</u> | <u>C<sub>2</sub> = 1.46</u> | 08/29/14                 | 4.1                 | Overnight.         |                    |          |        |         |
| Depth (ft)                                                                        | Strata (1)                                                                        | CLASSIFICATION OF MATERIALS (Description)                                                              |  |                                                              |                     | Run (Dip deg.)              | Core Rec. % (ROD %)      | Drill Rate (in/min) | Blows/ft (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
| 10                                                                                |  | A-2.4, Sa, brn, Moist, Rec. = 0.6 ft, Lab Note: Grass & Roots were within sample.                      |  |                                                              |                     | 1-1-1.1                     | 15.1                     | 12.2                | 70.9               | 16.9               |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, tan-brn, Moist, Rec. = 1.3 ft                                                               |  |                                                              |                     | 1-1-1.2                     | 12.2                     | 0.1                 | 82.2               | 17.7               |          |        |         |
|                                                                                   |                                                                                   | A-1-b, GrSa, Ltbrn, Moist, Rec. = 1.3 ft, Lab Note: Broken Rock was within sample.                     |  |                                                              |                     | 3-7-11                      | 5.2                      | 33.5                | 62.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-1-a, SiGr, Lt'gry, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.                    |  |                                                              |                     | 15-5                        | 8.8                      | 50.1                | 40.1               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | Field Note:, No Recovery                                                                               |  |                                                              |                     | 26-27                       |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-4, SiSa, Ltbrn, Moist, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample.                       |  |                                                              |                     | 26-13                       | 24.0                     | 9.1                 | 47.2               | 43.7               |          |        |         |
|                                                                                   |                                                                                   | A-2.4, SiSa, Ltbrn, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample.                     |  |                                                              |                     | 26-13                       | 24.1                     | 11.4                | 65.6               | 23.0               |          |        |         |
|                                                                                   |                                                                                   | A-4, SiSa, Ltbrn, Moist, Rec. = 1.2 ft                                                                 |  |                                                              |                     | 3-3-1-3                     | 22.8                     | 1.2                 | 54.0               | 44.8               |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, Ltbrn, Moist, Rec. = 0.4 ft                                                                 |  |                                                              |                     | 5-2-1-2                     | 24.0                     | 2.0                 | 86.9               | 11.1               |          |        |         |
|                                                                                   |                                                                                   | A-2.4, SiSa, Ltbrn, Moist, Rec. = 1.1 ft                                                               |  |                                                              |                     | 2-2-2-1                     | 23.4                     | 0.8                 | 84.7               | 14.5               |          |        |         |
| 20                                                                                |  | A-2.4, Sa, Ltbrn, Moist, Rec. = 1.6 ft                                                                 |  |                                                              |                     | 4-2-1-1                     | 23.4                     | 0.8                 | 84.7               | 14.5               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, Ltbrn, Moist, Rec. = 0.3 ft                                                                   |  |                                                              |                     | 1-2-2-3                     | 21.8                     | 4.1                 | 89.4               | 6.5                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 1-3-3-4                     | 21.5                     | 0.5                 | 73.8               | 25.7               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
| 30                                                                                |  | A-4, SiSa, gry, Moist, Rec. = 0.5 ft                                                                   |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 40                                                                                |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 50                                                                                |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 60                                                                                |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 70                                                                                |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 80                                                                                |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 90                                                                                |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 100                                                                               |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 110                                                                               |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 120                                                                               |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 130                                                                               |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 140                                                                               |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 150                                                                               |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 160                                                                               |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 170                                                                               |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.9 ft                                                                     |  |                                                              |                     | 2-3-3-4                     | 23.6                     | 0.2                 | 90.0               | 9.8                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.6 ft                                                                     |  |                                                              |                     | 4-5-4-5                     | 25.0                     |                     | 92.3               | 7.7                |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 3-3-4-5                     | 20.8                     | 4.0                 | 89.1               | 6.9                |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 1.3 ft                                                                   |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
| 180                                                                               |  | A-2.4, SiSa, gry, Moist, Rec. = 1.3 ft                                                                 |  |                                                              |                     | 2-2-3-4                     | 24.0                     | 0.8                 | 83.0               | 16.2               |          |        |         |
|                                                                                   |                                                                                   | Field Note:, Switched to NWJ due to and open hole drilling                                             |  |                                                              |                     | 1-3-3-4                     |                          |                     |                    |                    |          |        |         |
|                                                                                   |                                                                                   | A-2.4, Sa, gry, Moist, Rec. = 0.2 ft                                                                   |  |                                                              |                     | 4-4-5-7                     | 25.4                     | 0.3                 | 83.8               | 15.9               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
|                                                                                   |                                                                                   | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.5 ft                                                                     |  |                                                              |                     | 5-9-7-14                    | 17.4                     | 0.5                 | 95.3               | 4.2                |          |        |         |
| 190                                                                               |  | A-4, Si, gry, Moist, Rec. = 0.7 ft                                                                     |  |                                                              |                     | 5-8-10                      | 25.9                     |                     | 18.9               | 81.1               |          |        |         |
|                                                                                   |                                                                                   | A-3, Sa, gry, Moist, Rec. = 0.                                                                         |  |                                                              |                     |                             |                          |                     |                    |                    |          |        |         |





PLAN  
SCALE 1" = 10'-0"

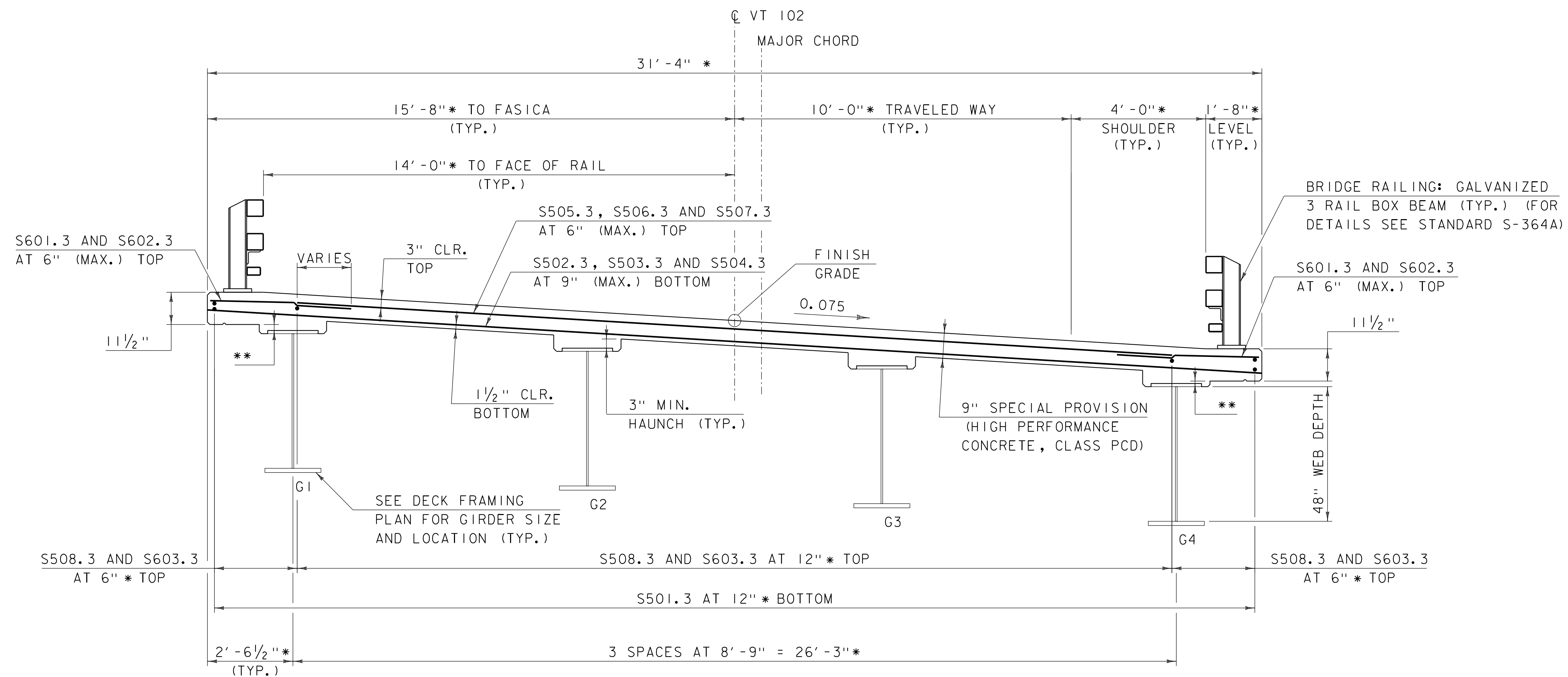


ELEVATION  
SCALE 1" = 10'-0"



|                    |               |             |           |
|--------------------|---------------|-------------|-----------|
| PROJECT NAME:      | BRUNSWICK     | PLOT DATE:  | 8/29/2018 |
| PROJECT NUMBER:    | BF 0271(23)   | DRAWN BY:   | M. SMITH  |
| FILE NAME:         | z13c056pe.dgn | CHECKED BY: | J. FRENCH |
| PROJECT LEADER:    | J. FRENCH     | SHEET       | 33 OF 77  |
| DESIGNED BY:       | A. GIRALDI    |             |           |
| PLAN AND ELEVATION |               |             |           |



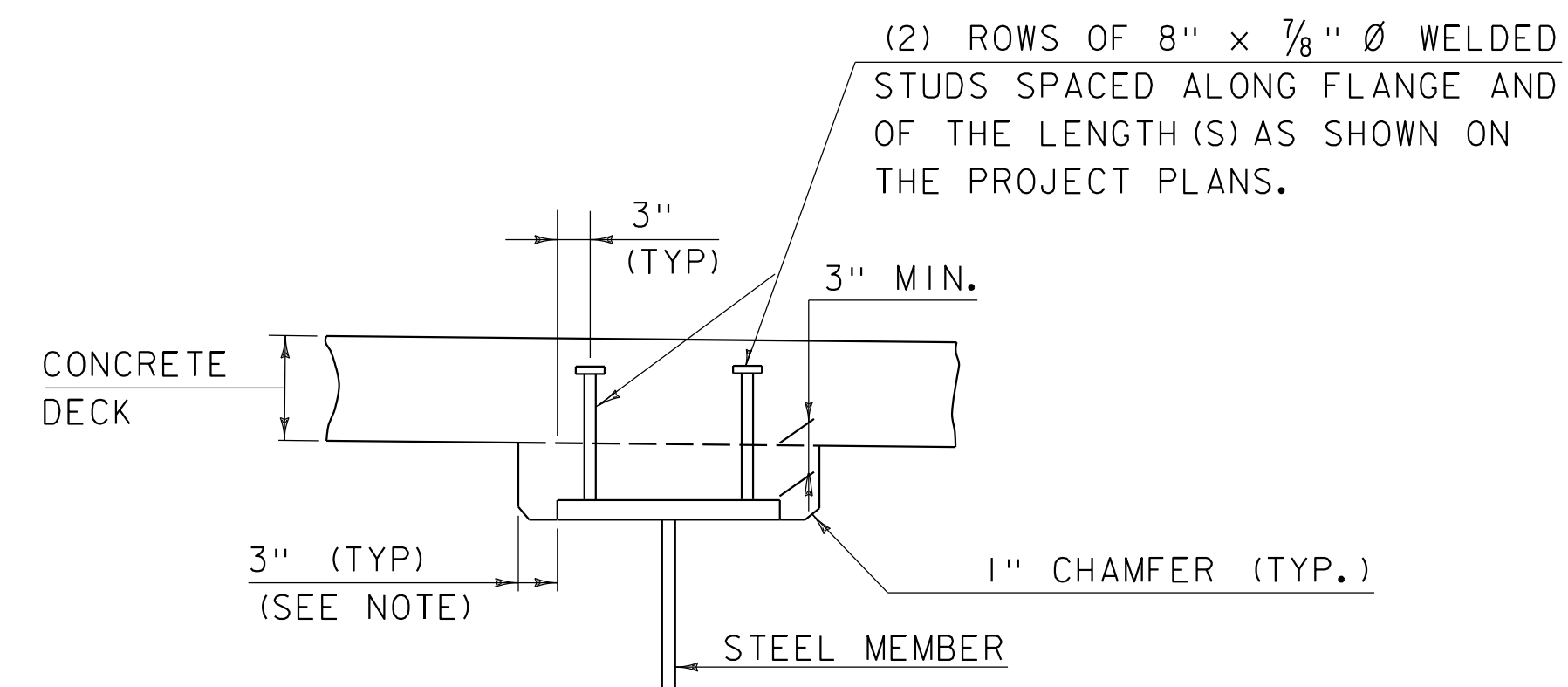


### DECK TYPICAL

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

\* RADIAL DIMENSION

\*\* EXTERIOR HAUNCH MAY BE LESS THAN 3" AND SHALL BE SET TO MEET THE 11 1/2" FASCIA DEPTH

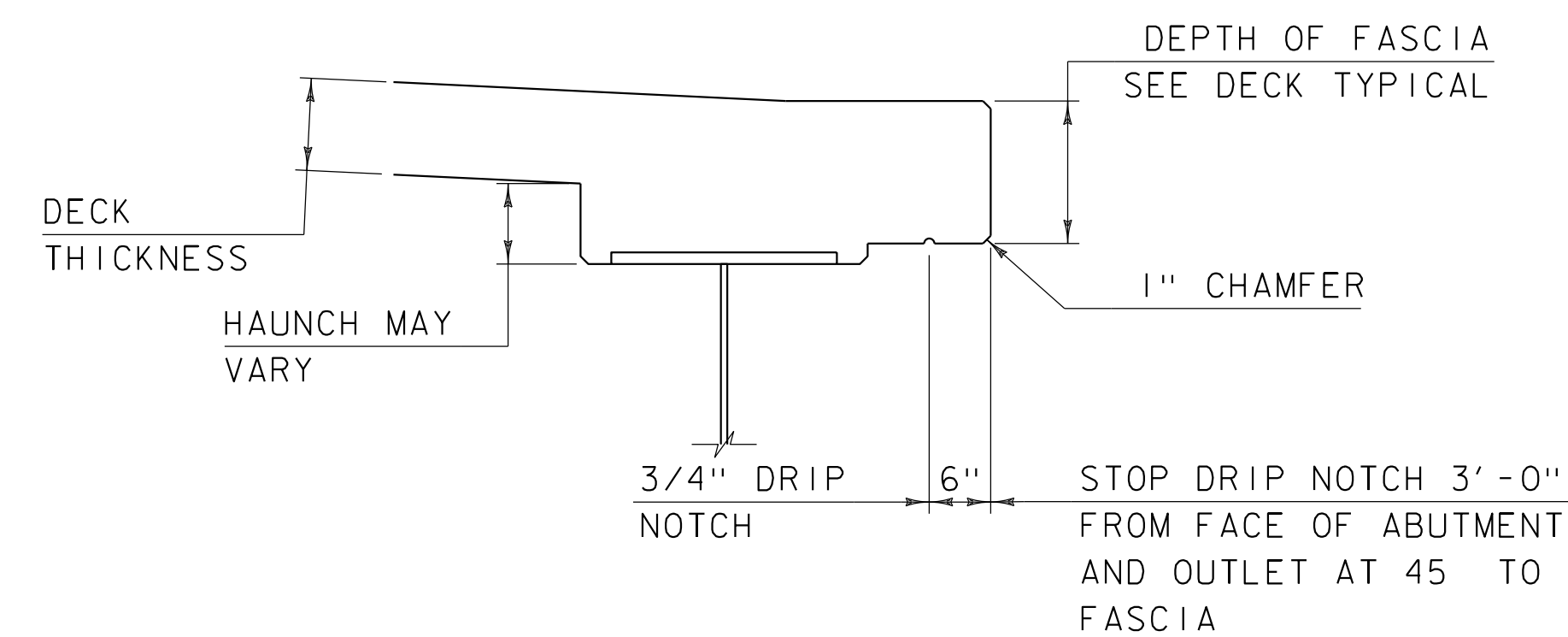


#### NOTES:

1. THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

### HAUNCH AND SHEAR CONNECTOR DETAIL

SCALE: 3/4" = 1'-0"



### FASCIA & DRIP NOTCH DETAIL

SCALE: 3/8" = 1'-0"

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

FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
TYPICAL DECK SECTION

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 34 OF 77







# BRIDGE DECK REINFORCING PLAN

SCALE: 1/4" = 1'-0"

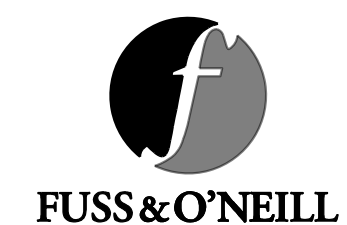
## NOTES:

1. TRANSVERSE TOP BARS WILL HAVE A SPLICE OF 2'-5" WHERE THE SPACING IS 3 INCHES, OTHERWISE THE SPLICE IS 2'-2".
2. TRANSVERSE DECK BARS ARE LAID OUT RADially.

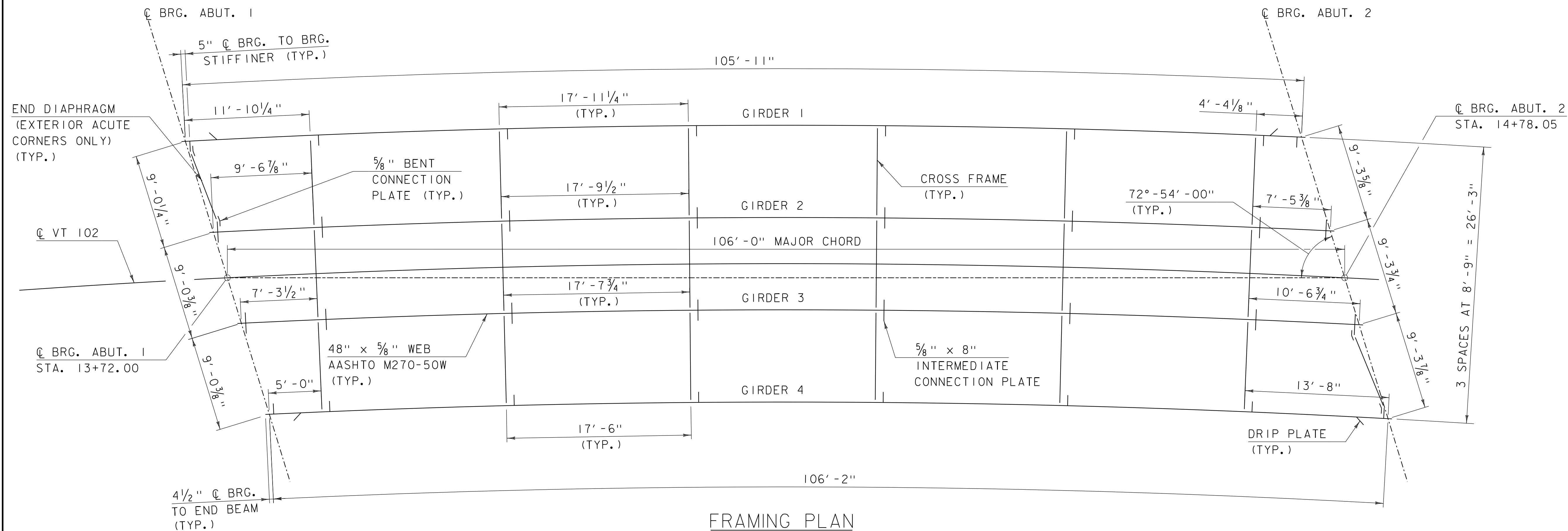
PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
DECK REINFORCING PLAN

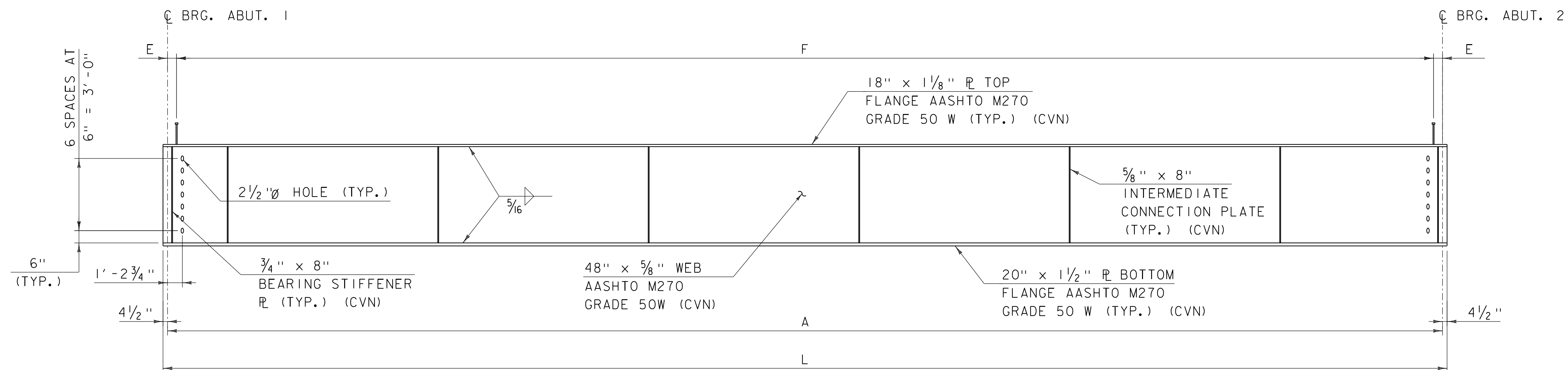
PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 35 OF 77







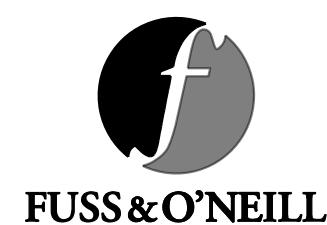
FRAMING PLAN  
HORIZONTAL SCALE: 3/16" = 1' - 0"



GIRDER ELEVATION  
HORIZONTAL SCALE: 3/16" = 1' - 0"  
VERTICAL SCALE: 3/8" = 1' - 0"

NOTE: SEE SHEET 34 FOR  
SHEAR CONNECTOR DETAIL

| GIRDER DIMENSIONS |        |        |         | SHEAR CONNECTOR SPACING  |                         | SHEAR CONNECTORS PER GIRDER |
|-------------------|--------|--------|---------|--------------------------|-------------------------|-----------------------------|
|                   | A      | L      | RADIUS  | E                        | F                       |                             |
| GIRDER 1          | 105.92 | 106.67 | 1063.13 | 1 SP. AT 5 1/2" = 5 1/2" | 105 SP AT 12" = 105'-0" | 216                         |
| GIRDER 2          | 106.00 | 106.75 | 1054.38 | 1 SP. AT 6" = 6"         | 105 SP AT 12" = 105'-0" | 216                         |
| GIRDER 3          | 106.09 | 106.84 | 1045.63 | 1 SP. 6 1/2" = 6 1/2"    | 105 SP AT 12" = 105'-0" | 216                         |
| GIRDER 4          | 106.17 | 106.92 | 1036.88 | 1 SP. AT 7" = 7"         | 105 SP AT 12" = 105'-0" | 216                         |
|                   |        |        |         |                          |                         | 864 TOTAL                   |

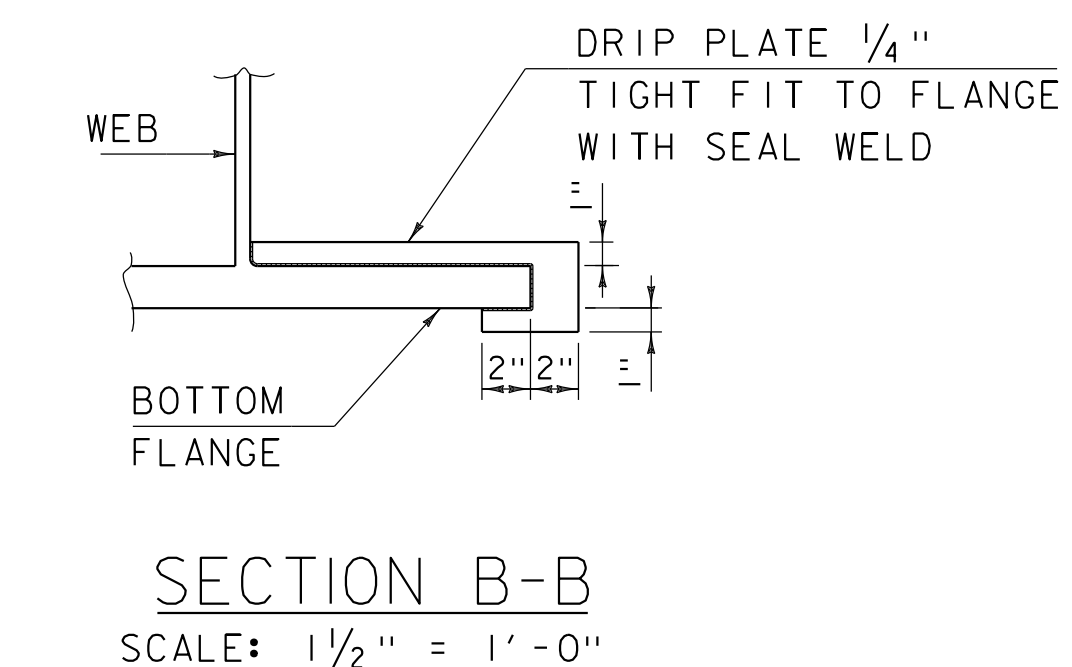
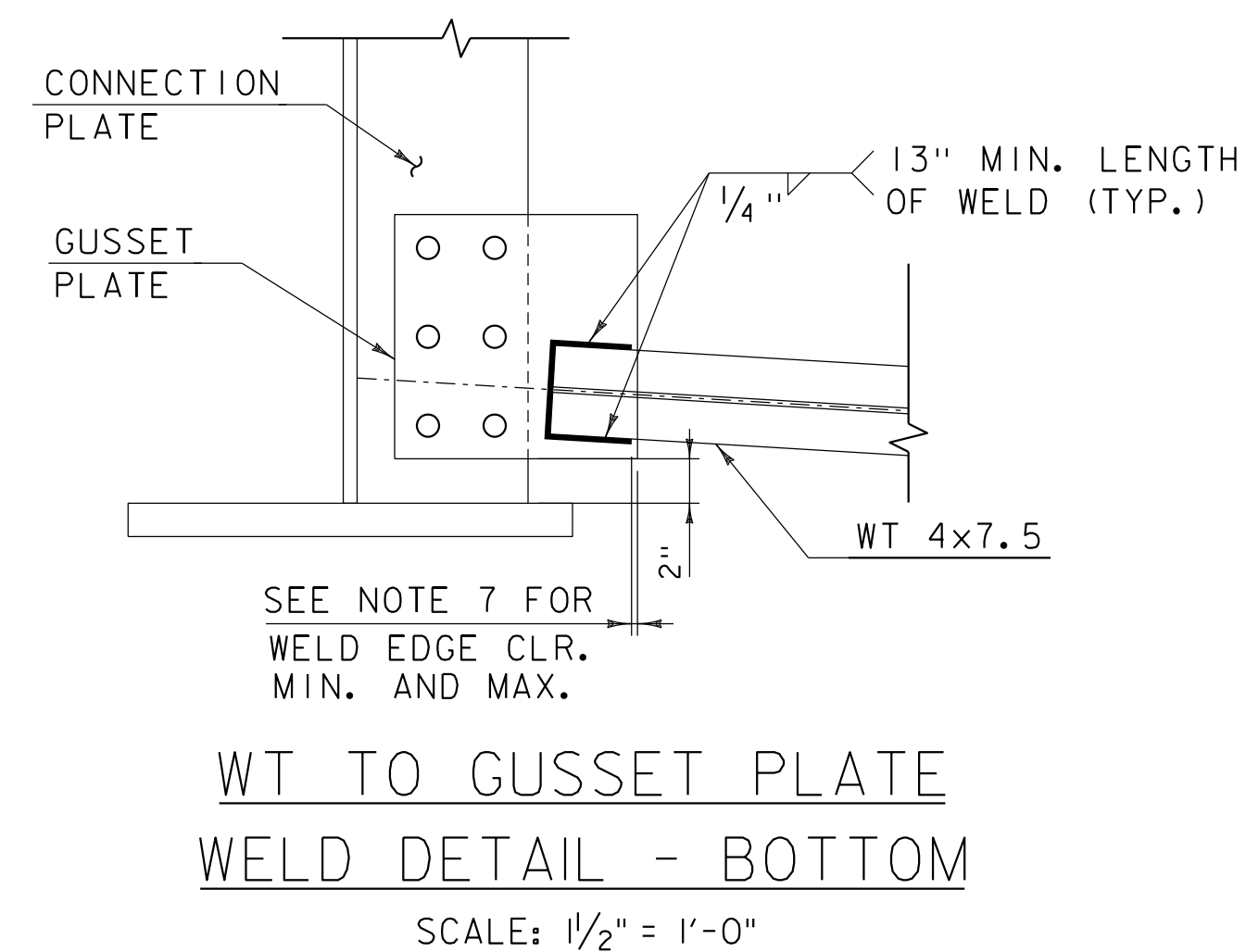
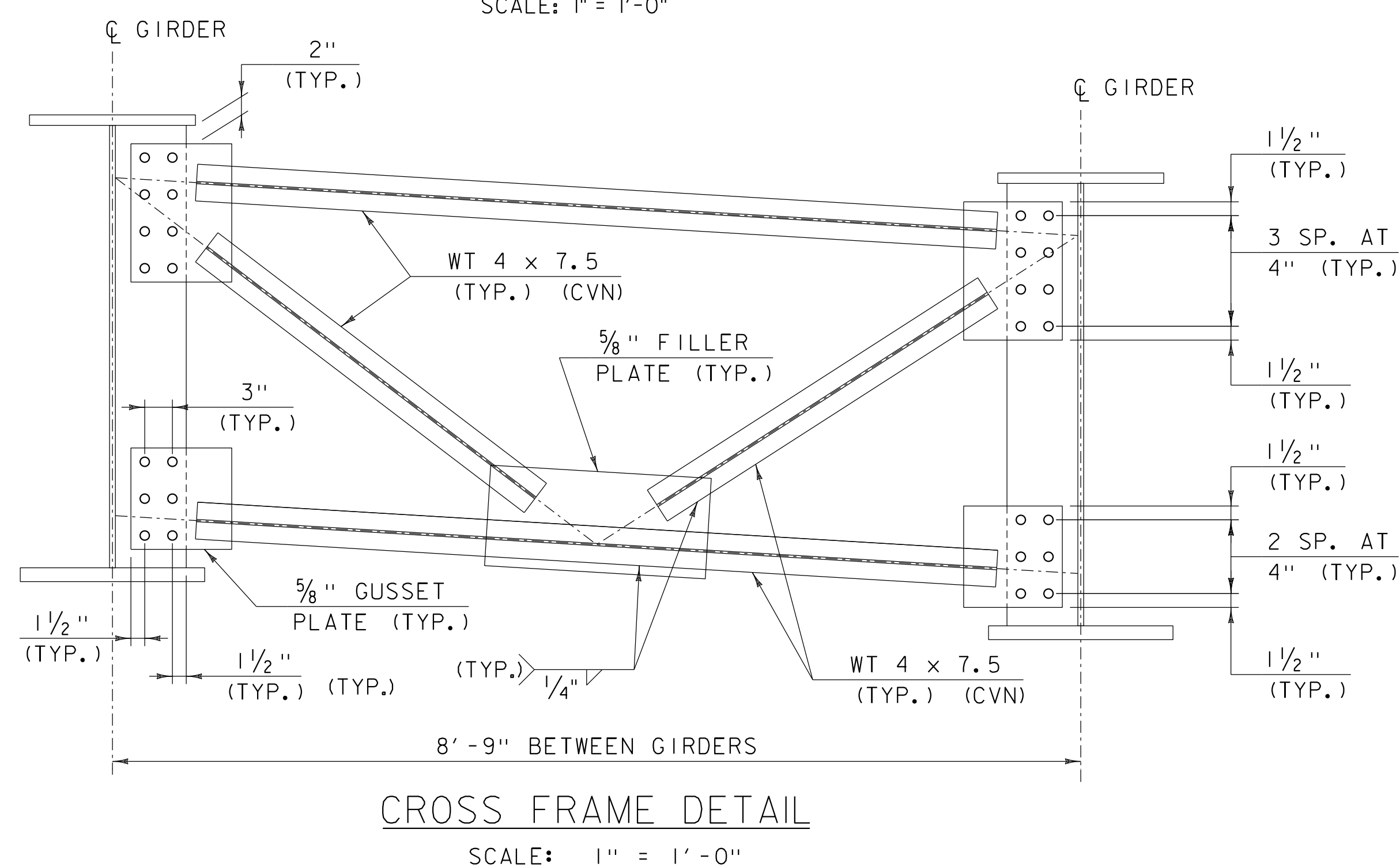
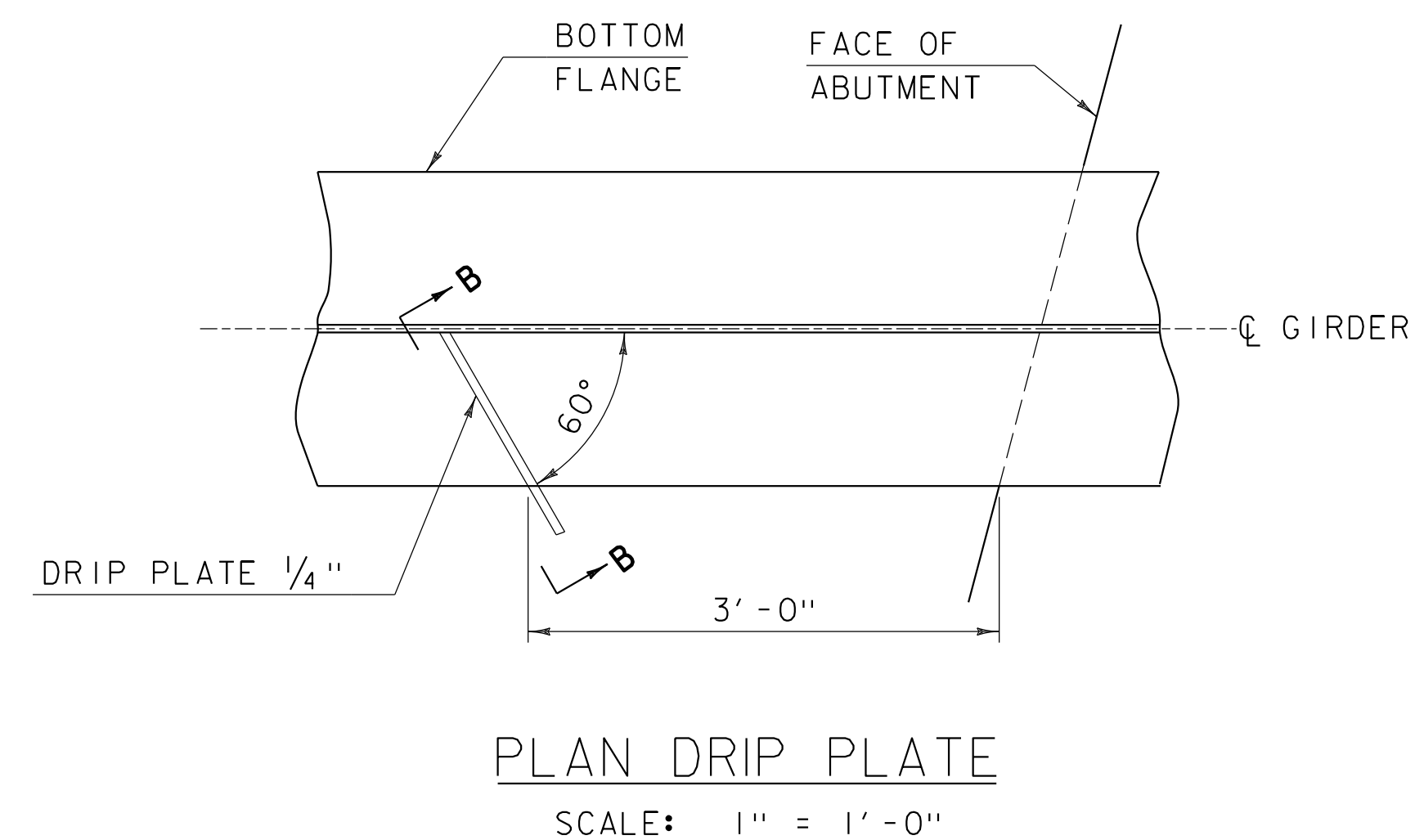
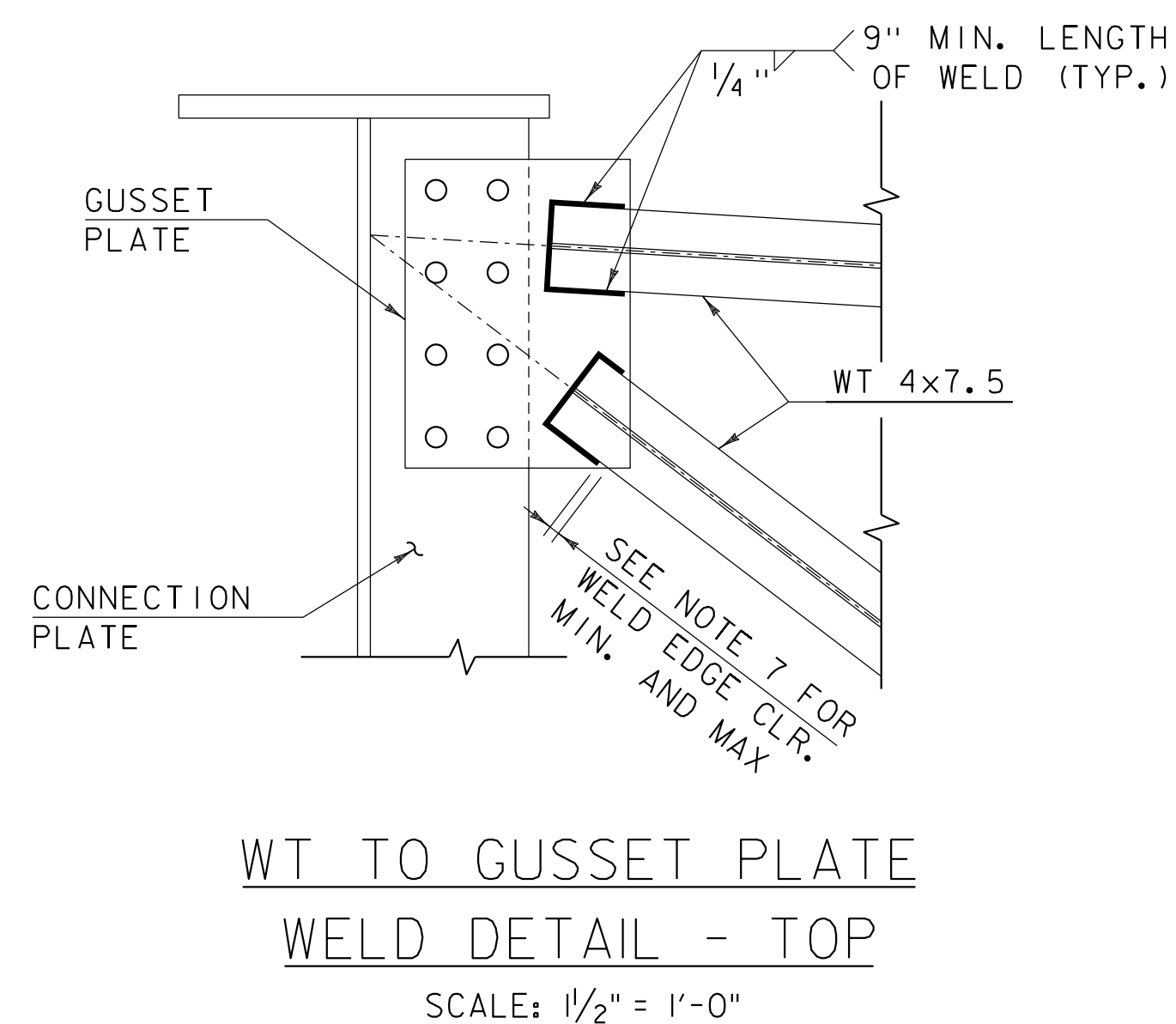
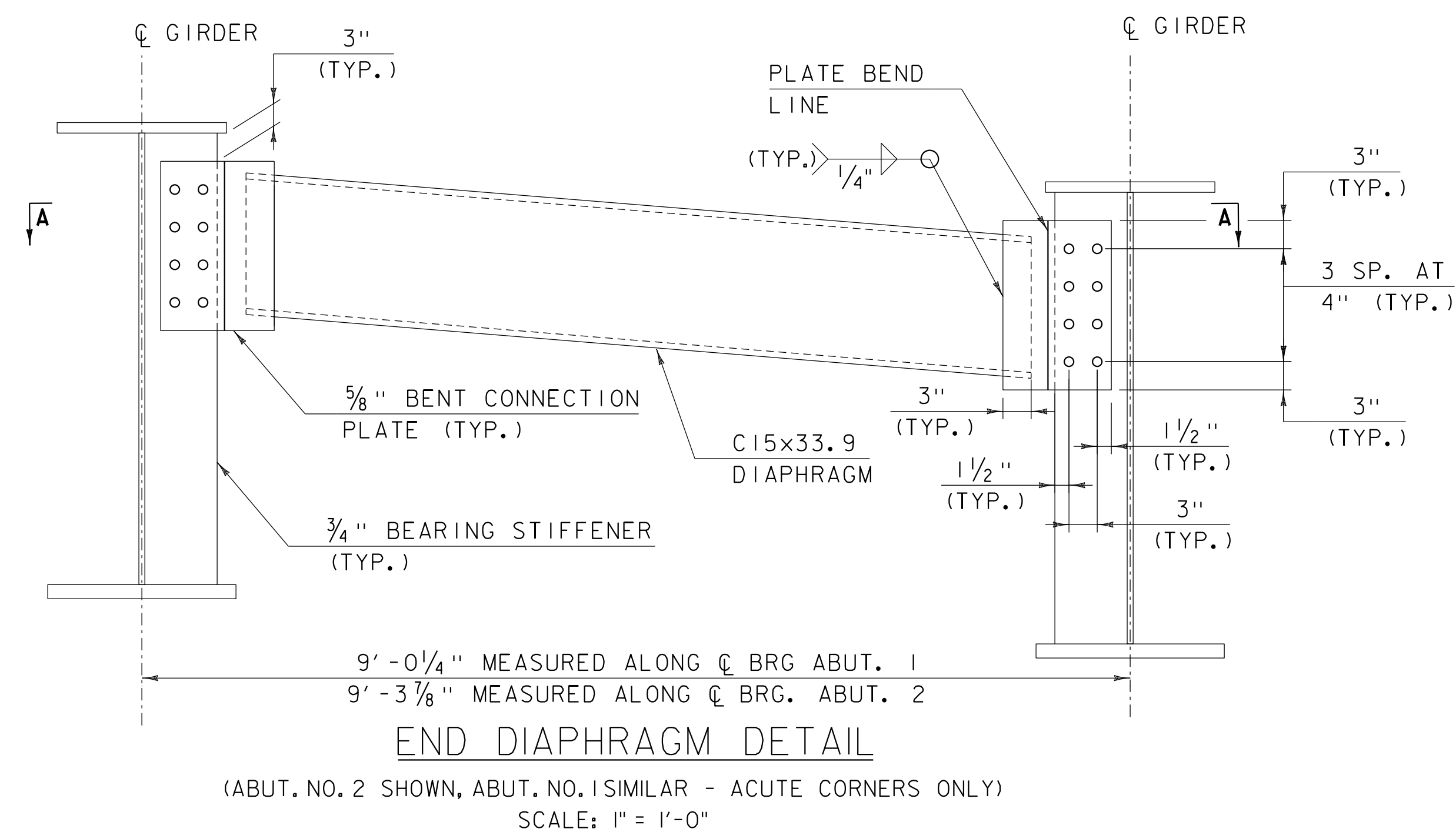
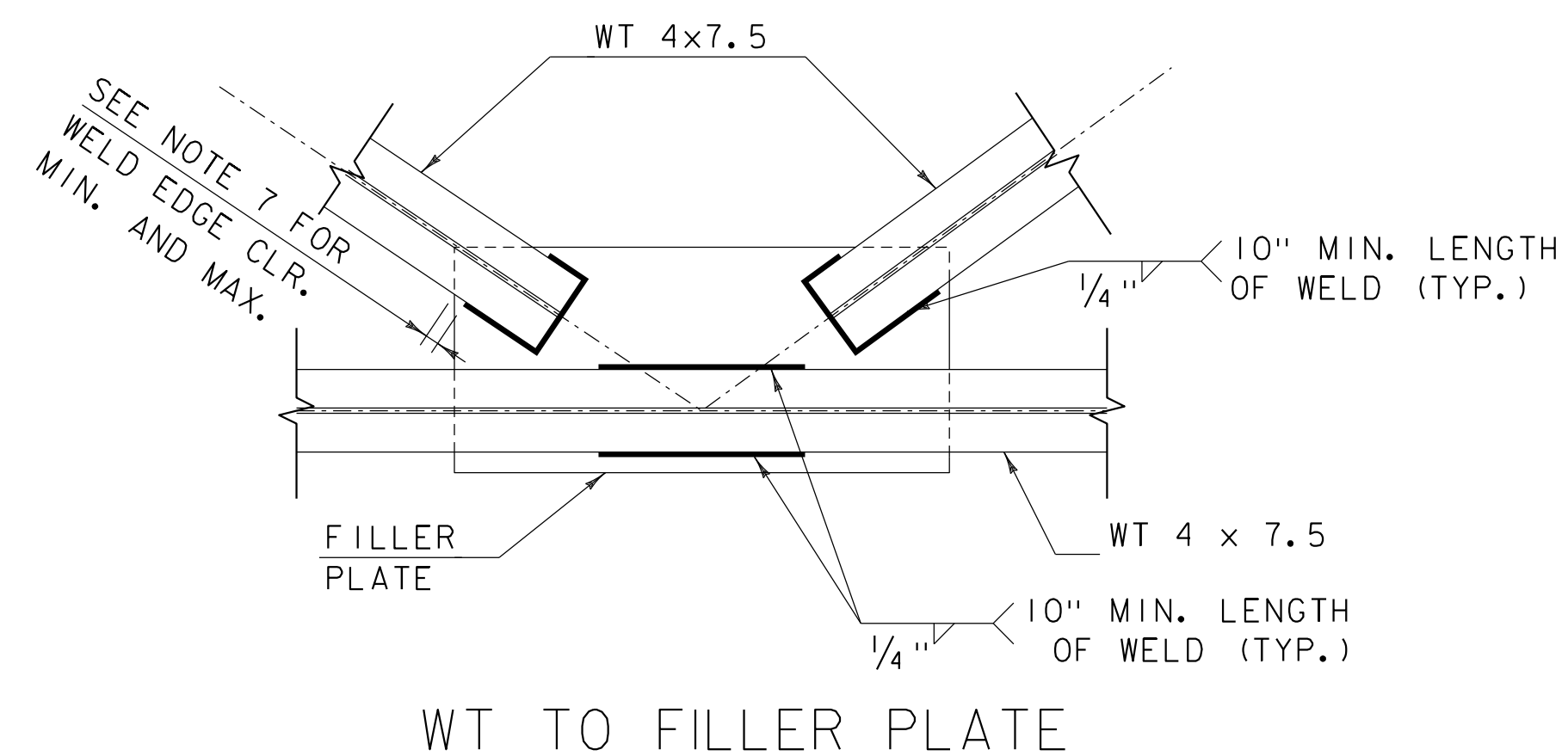
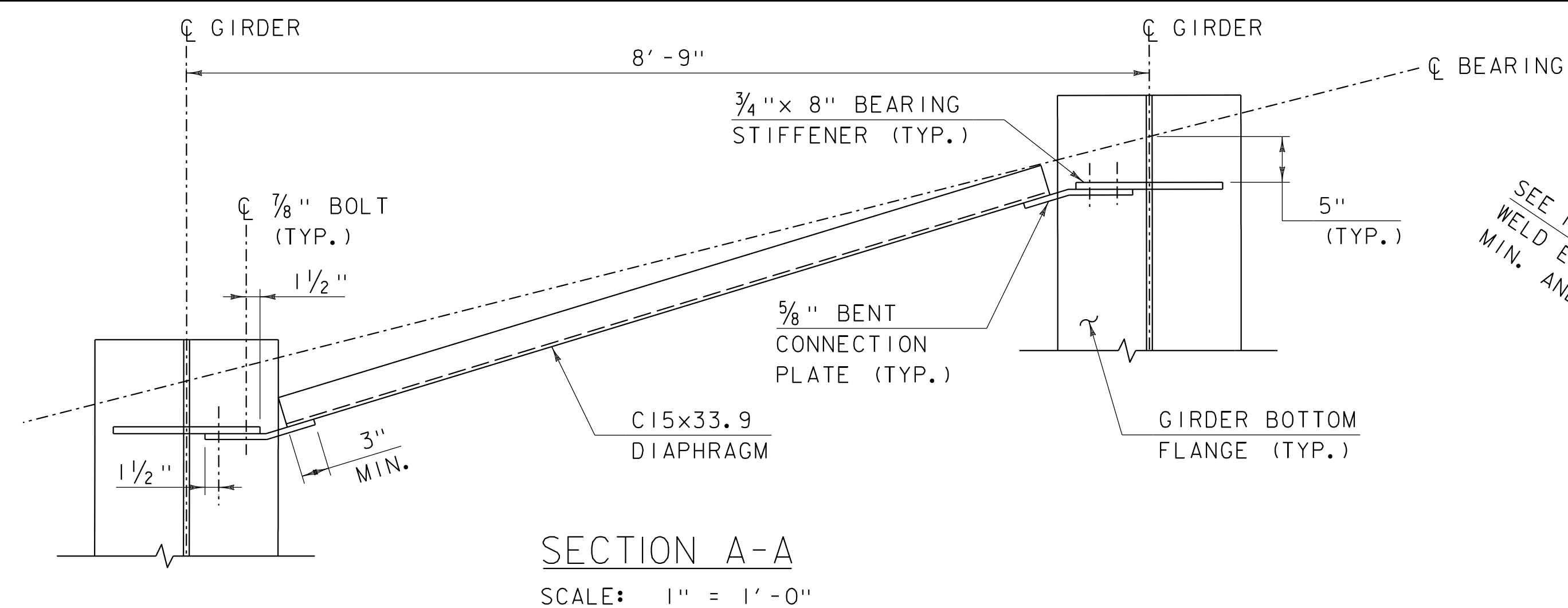


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
FRAMING PLAN AND DETAILS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 36 OF 77





## STRUCTURAL STEEL GENERAL NOTES:

1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 1 5/16" DIAMETER HOLES, PER SUBSECTION 506.19, UNLESS OTHERWISE SPECIFIED.
2. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
3. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
4. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
5. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
6. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.
7. NO WELD FOR 1/4" MIN. - 1/2" MAX. DISTANCE FROM GUSSET PLATE EDGES.

NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS AS INDICATED ON PROJECT PLANS.

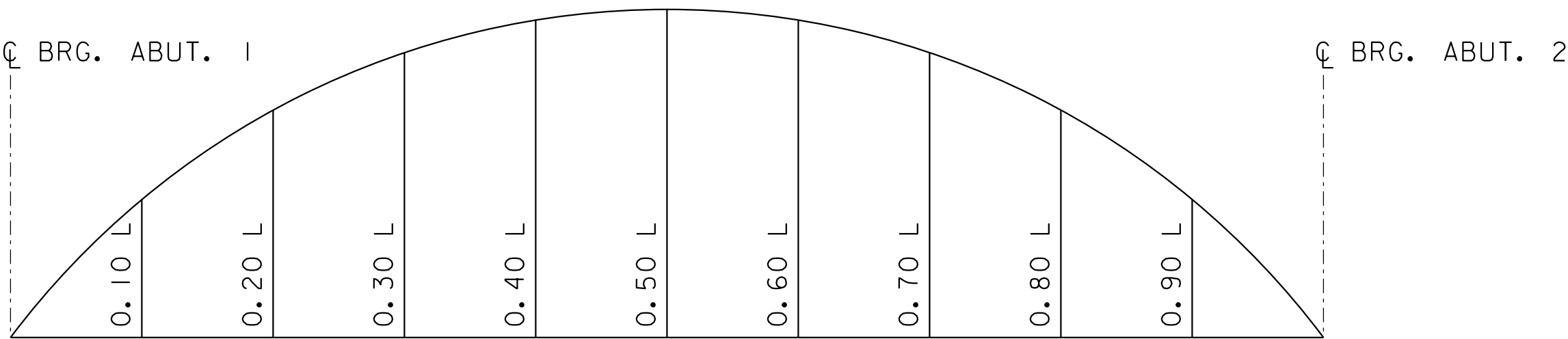
PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
FRAMING DETAILS

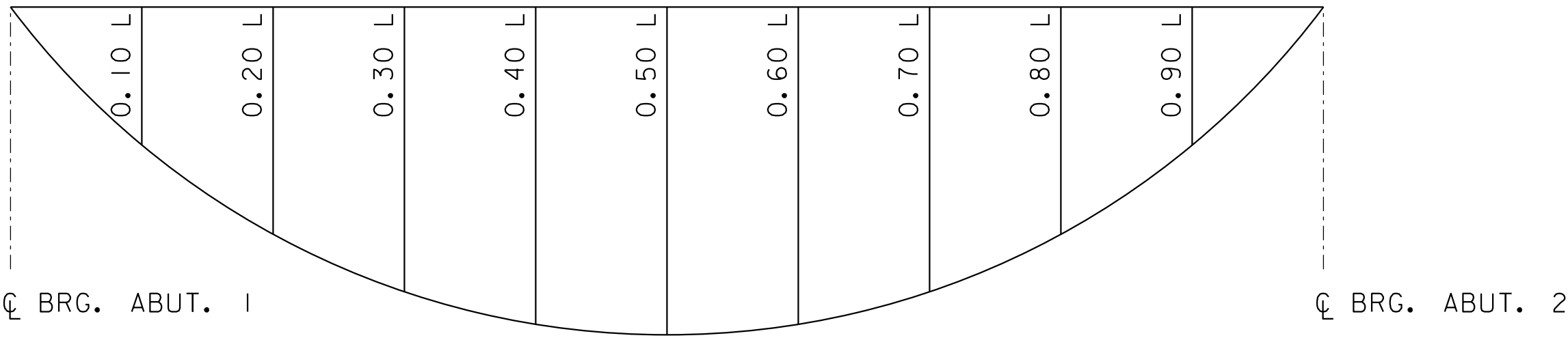
PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 37 OF 77







CAMBER DIAGRAM  
SEE TABLES BELOW



DEAD LOAD DEFLECTION DIAGRAM  
SEE TABLES BELOW

|          |                  | CAMBER TABLE AT 1/10 <sup>TH</sup> POINTS (INCHES) |         |         |         |         |         |         |         |         |  |
|----------|------------------|----------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--|
|          | POINT ON GIRDER  | 0.10L                                              | 0.20L   | 0.30L   | 0.40L   | 0.50L   | 0.60L   | 0.70L   | 0.80L   | 0.90L   |  |
| GIRDER 1 | STEEL DL         | 5/16                                               | 9/16    | 3/4     | 15/16   | 15/16   | 15/16   | 13/16   | 9/16    | 5/16    |  |
|          | CONCRETE SLAB DL | 15/16                                              | 1 13/16 | 2 1/2   | 2 7/8   | 3 1/16  | 2 7/8   | 2 1/2   | 1 13/16 | 1       |  |
|          | SUPERIMPOSED DL  | 0                                                  | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 0       |  |
|          | RESIDUAL CAMBER  | 1/2                                                | 7/8     | 1 1/8   | 1 1/4   | 1 5/16  | 1 1/4   | 1 1/8   | 7/8     | 1/2     |  |
|          | TOTAL CAMBER     | 1 3/4                                              | 3 1/4   | 4 7/16  | 5 1/8   | 5 3/8   | 5 3/16  | 4 7/16  | 3 1/4   | 1 13/16 |  |
| GIRDER 2 | STEEL DL         | 1/4                                                | 1/2     | 11/16   | 13/16   | 7/8     | 13/16   | 11/16   | 1/2     | 1/4     |  |
|          | CONCRETE SLAB DL | 7/8                                                | 1 11/16 | 2 5/16  | 2 11/16 | 2 7/8   | 2 11/16 | 2 5/16  | 1 11/16 | 7/8     |  |
|          | SUPERIMPOSED DL  | 0                                                  | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 0       |  |
|          | RESIDUAL CAMBER  | 1/2                                                | 7/8     | 1 1/8   | 1 1/4   | 1 5/16  | 1 1/4   | 1 1/8   | 7/8     | 1/2     |  |
|          | TOTAL CAMBER     | 1 11/16                                            | 3 1/16  | 4 3/16  | 4 7/8   | 5 1/8   | 4 7/8   | 4 3/16  | 3 1/8   | 1 11/16 |  |
| GIRDER 3 | STEEL DL         | 1/4                                                | 1/2     | 5/8     | 3/4     | 13/16   | 3/4     | 5/8     | 1/2     | 1/4     |  |
|          | CONCRETE SLAB DL | 13/16                                              | 1 9/16  | 2 1/8   | 2 1/2   | 2 5/8   | 2 1/2   | 2 1/8   | 1 9/16  | 13/16   |  |
|          | SUPERIMPOSED DL  | 0                                                  | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 0       |  |
|          | RESIDUAL CAMBER  | 1/2                                                | 7/8     | 1 1/8   | 1 1/4   | 1 5/16  | 1 1/4   | 1 1/8   | 7/8     | 1/2     |  |
|          | TOTAL CAMBER     | 1 9/16                                             | 2 15/16 | 3 15/16 | 4 5/8   | 4 13/16 | 4 9/16  | 3 15/16 | 2 15/16 | 1 9/16  |  |
| GIRDER 4 | STEEL DL         | 1/4                                                | 7/16    | 9/16    | 11/16   | 3/4     | 11/16   | 9/16    | 7/16    | 1/4     |  |
|          | CONCRETE SLAB DL | 3/4                                                | 1 3/8   | 1 7/8   | 2 3/16  | 2 5/16  | 2 3/16  | 1 7/8   | 1 3/8   | 3/4     |  |
|          | SUPERIMPOSED DL  | 0                                                  | 0       | 1/16    | 1/16    | 1/16    | 1/16    | 1/16    | 0       | 0       |  |
|          | RESIDUAL CAMBER  | 1/2                                                | 7/8     | 1 1/8   | 1 1/4   | 1 5/16  | 1 1/4   | 1 1/8   | 7/8     | 1/2     |  |
|          | TOTAL CAMBER     | 1 7/16                                             | 2 11/16 | 3 5/8   | 4 3/16  | 4 7/16  | 4 1/4   | 3 5/8   | 2 11/16 | 1 7/16  |  |

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

FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
CAMBER AND DEFLECTION DETAILS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 38 OF 77



FUSS&O'NEILL

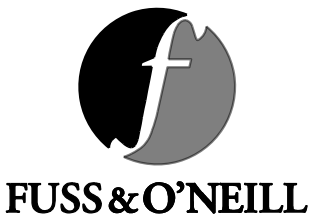
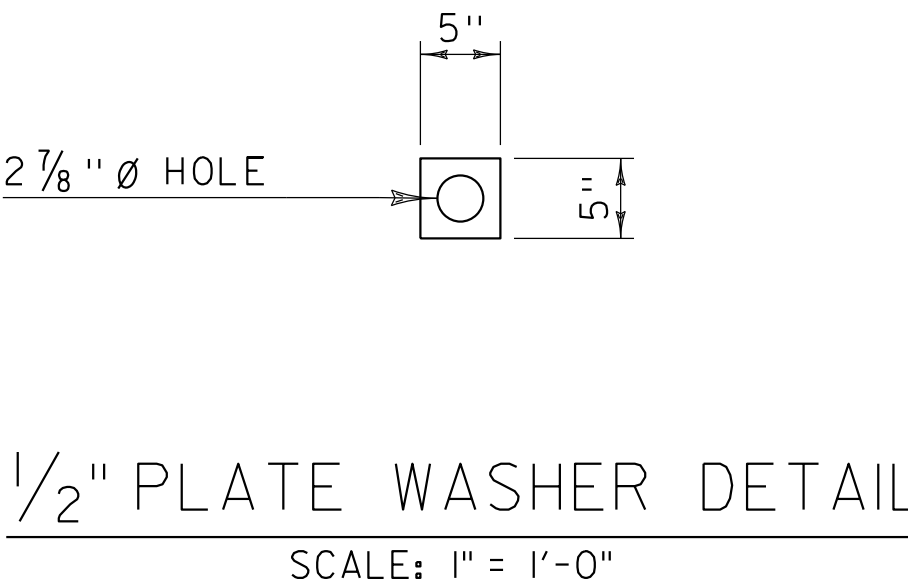
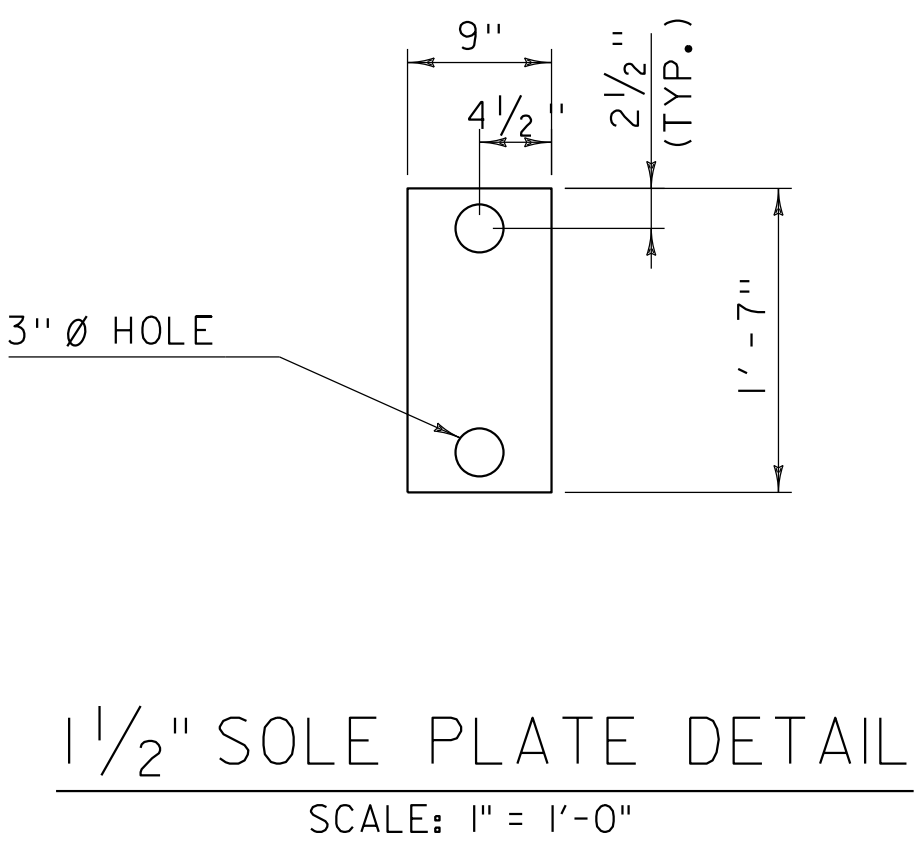
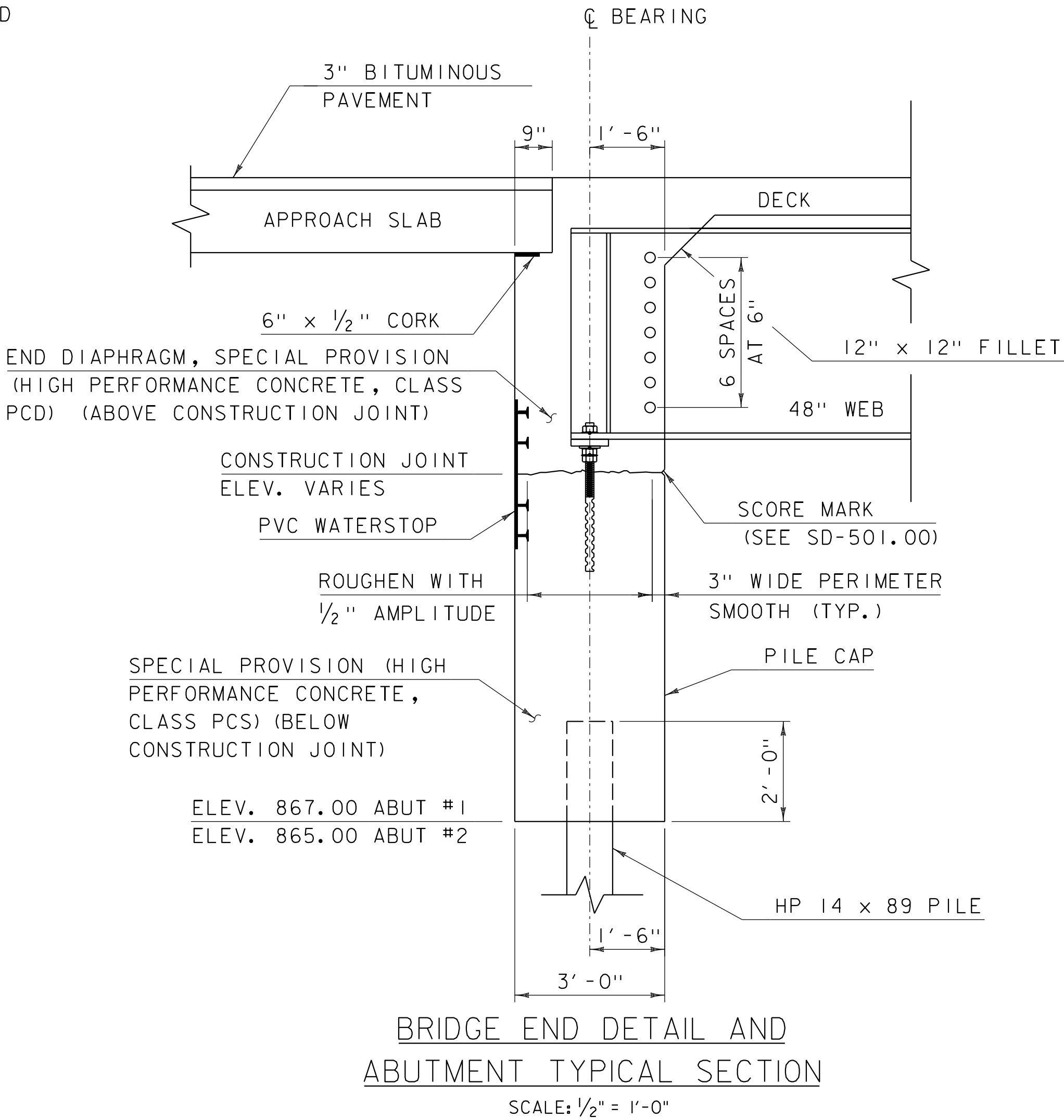
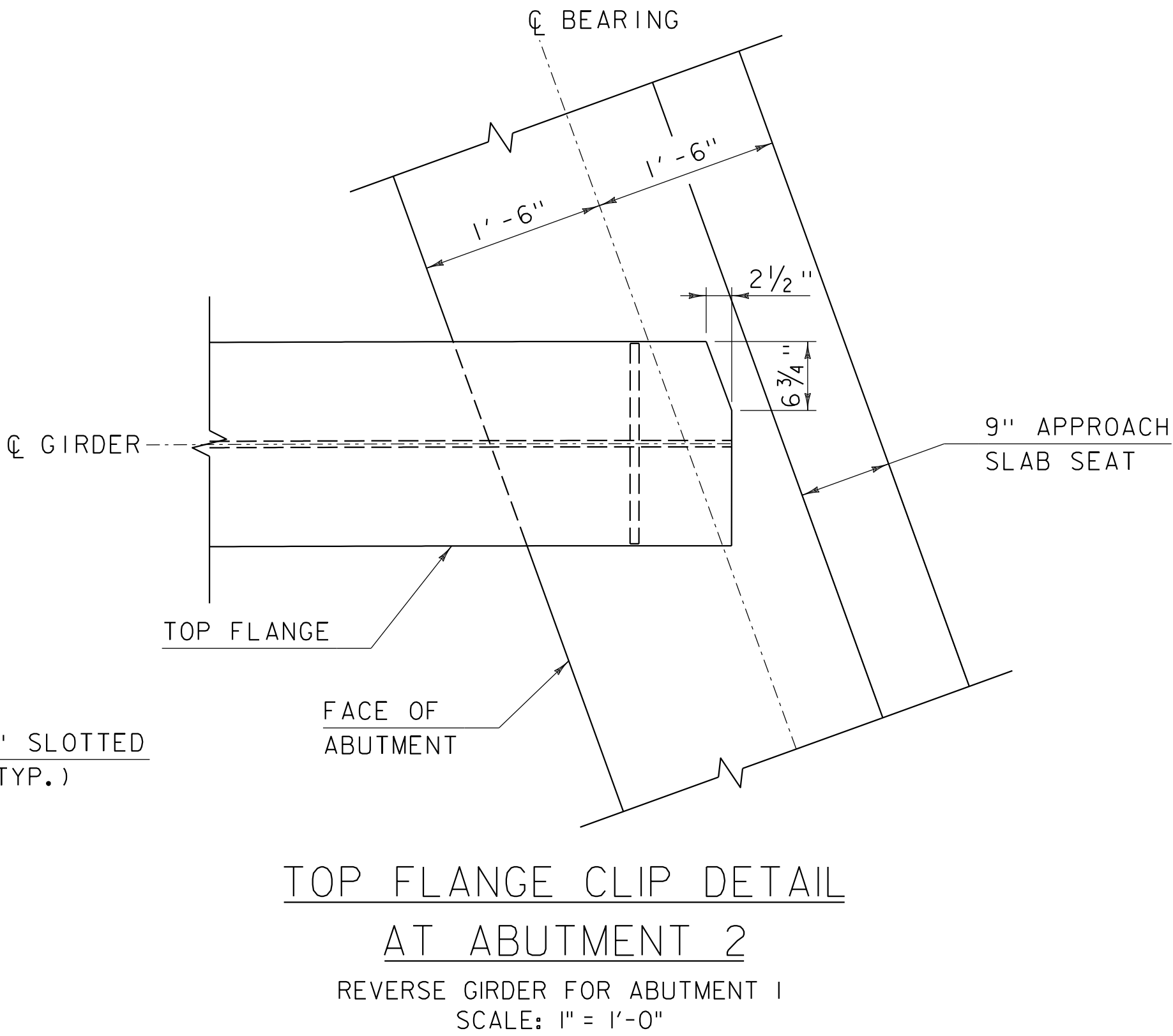
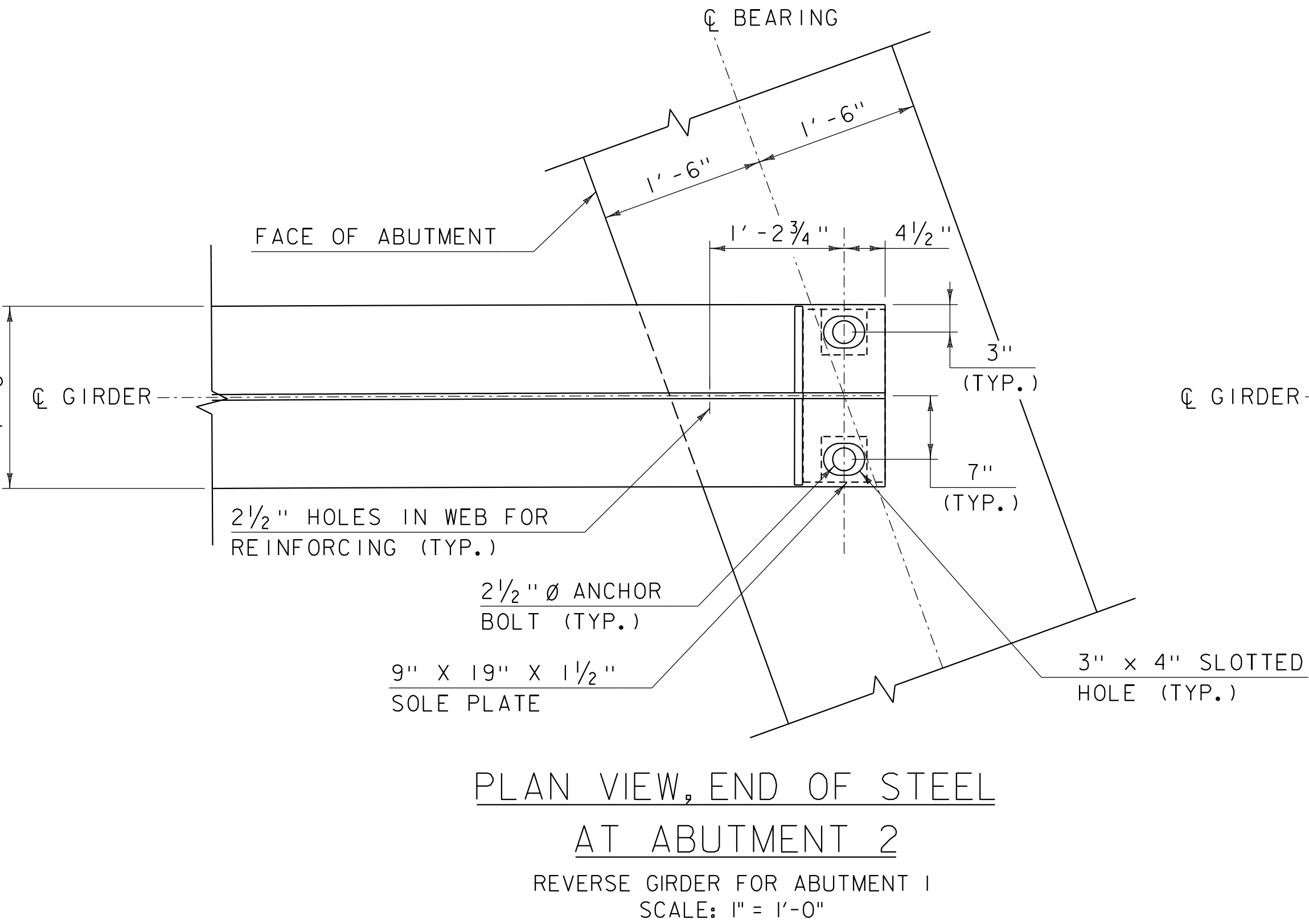
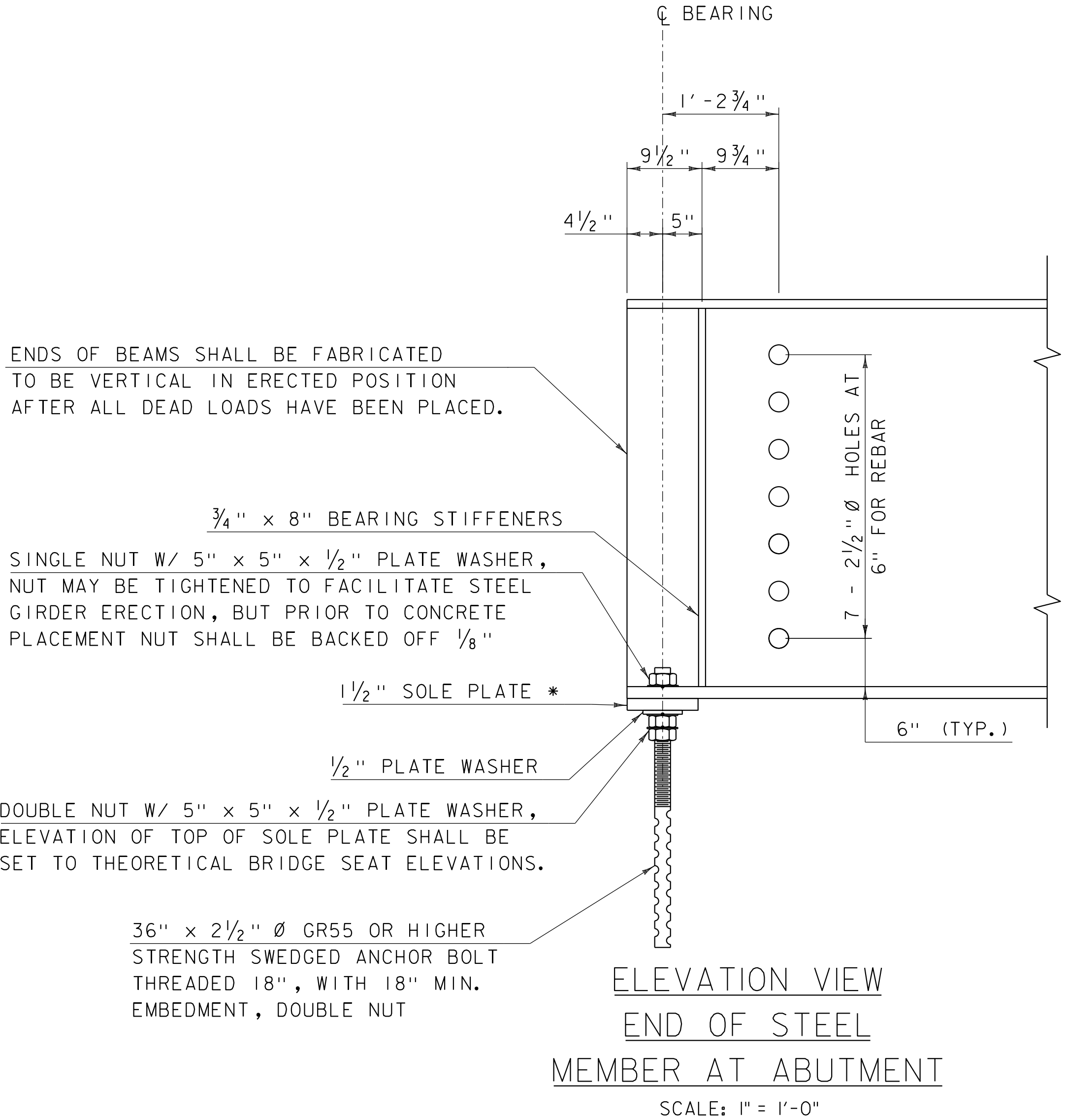


NOTES:

- 1. PAYMENT FOR THE SOLE PLATES, ANCHOR BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO ITEM 506.56, STRUCTURAL STEEL, CURVED PLATE GIRDER.
- 2. ANCHOR BOLTS SHALL BE 2½" DIAMETER, TYPE I BOLTS MEETING ASTM F1554, GR. 55. NUTS SHALL MEET AASHTO M291, THE CONTRACTOR SHALL ENSURE THAT THE ANCHOR BOLTS ARE INSTALLED IN PLUMB POSITION.
- 3. ALL STEEL IN BEARING DEVICE ASSEMBLY SHALL BE AASHTO M270M/M270 GR 50.
- 4. SUBSTITUTIONS FOR BEARING DEVICE ASSEMBLY COMPONENT MATERIALS AND SIZES SHALL BE DETAILED ON THE FABRICATION DRAWINGS. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO FABRICATION AS PER SUBSECTION 506.04.

| THEORETICAL TOP OF SOLE PLATE ELEVATION |             |             |
|-----------------------------------------|-------------|-------------|
|                                         | ABUTMENT #1 | ABUTMENT #2 |
| GIRDER 1                                | 875.69      | 873.89      |
| GIRDER 2                                | 874.99      | 873.18      |
| GIRDER 3                                | 874.30      | 872.47      |
| GIRDER 4                                | 873.60      | 871.76      |

\* GREASE TOP OF SOLE PLATE BEFORE GIRDER PLACEMENT

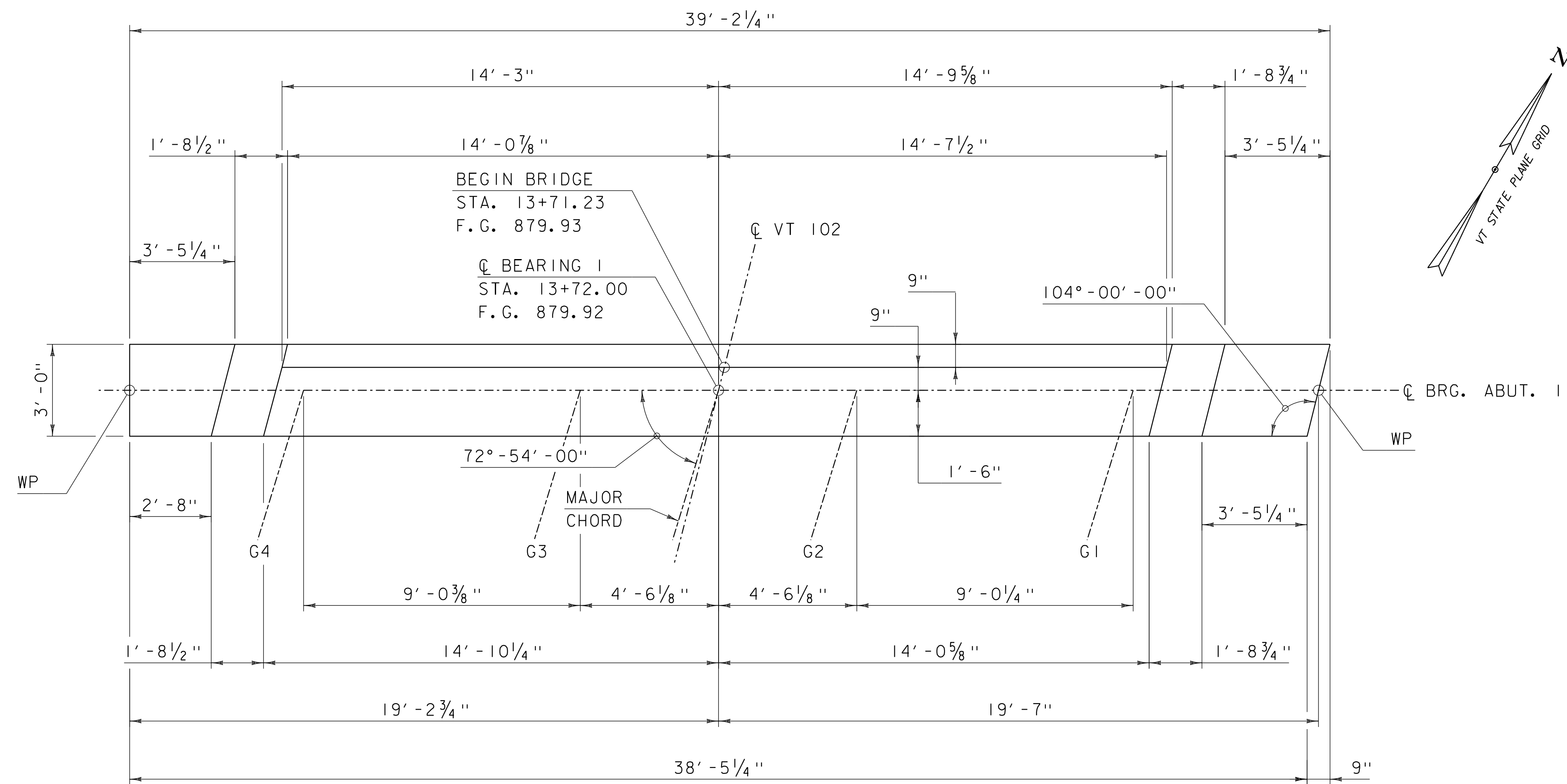


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

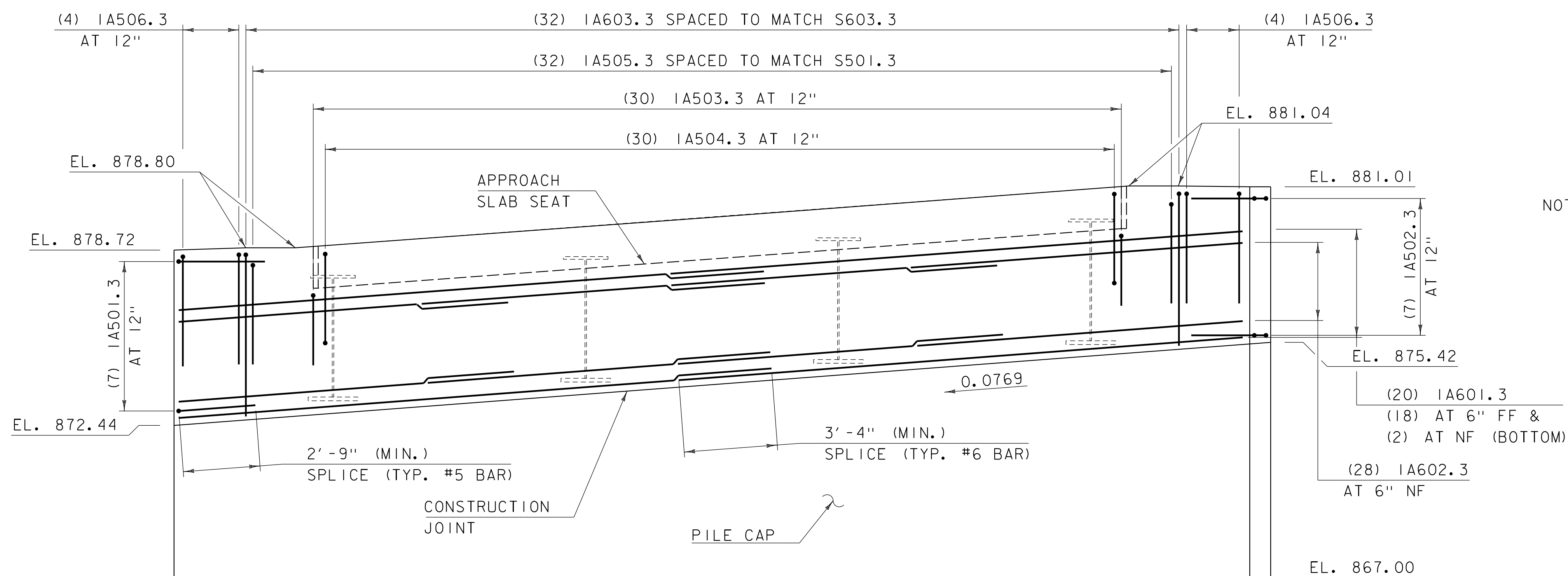
FILE NAME: z13c056sup.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
BEARING DETAILS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 39 OF 77



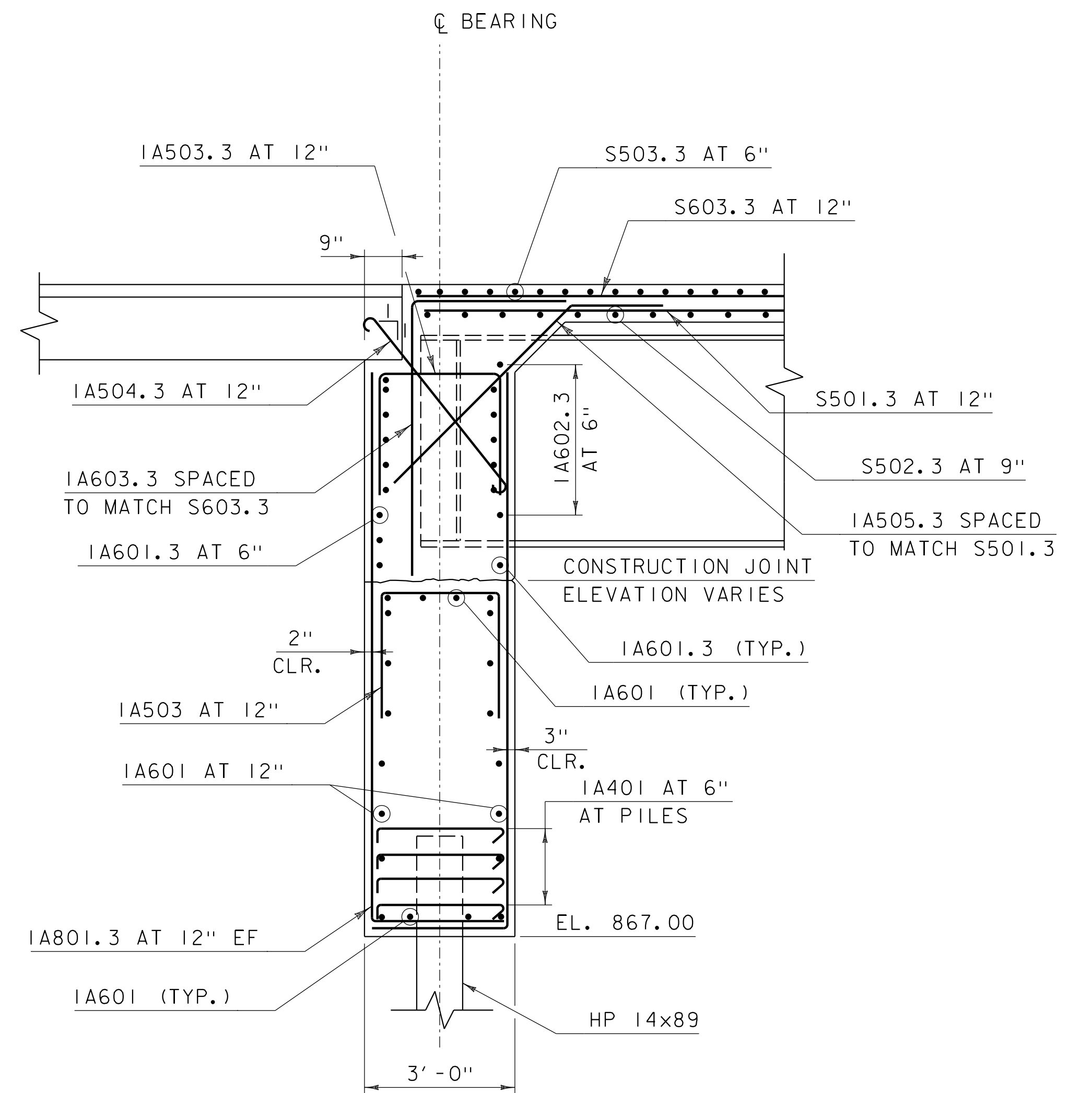
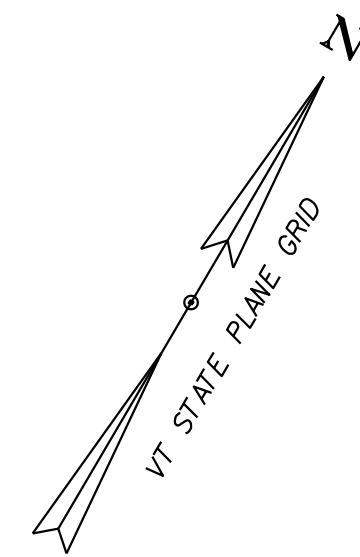


ABUTMENT I PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



ABUTMENT I ELEVATION  
SCALE:  $\frac{3}{8}$ " = 1'-0"

NOTE: ELEVATIONS SHOWN ARE  
AT  $\angle$  OF BEARING



ABUTMENT #1 TYPICAL REBAR SECTION  
SCALE:  $\frac{1}{2}$ " = 1'-0"

NOTE: LAYOUT DIMENSIONS ARE PROVIDED  
RELATIVE TO THE SKEWED  $\angle$  BEARING,  
NOT NORMAL TO THE GIRDERS.

NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
X = LATERAL TIES  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE  
SPECIFIED ON THE PLANS

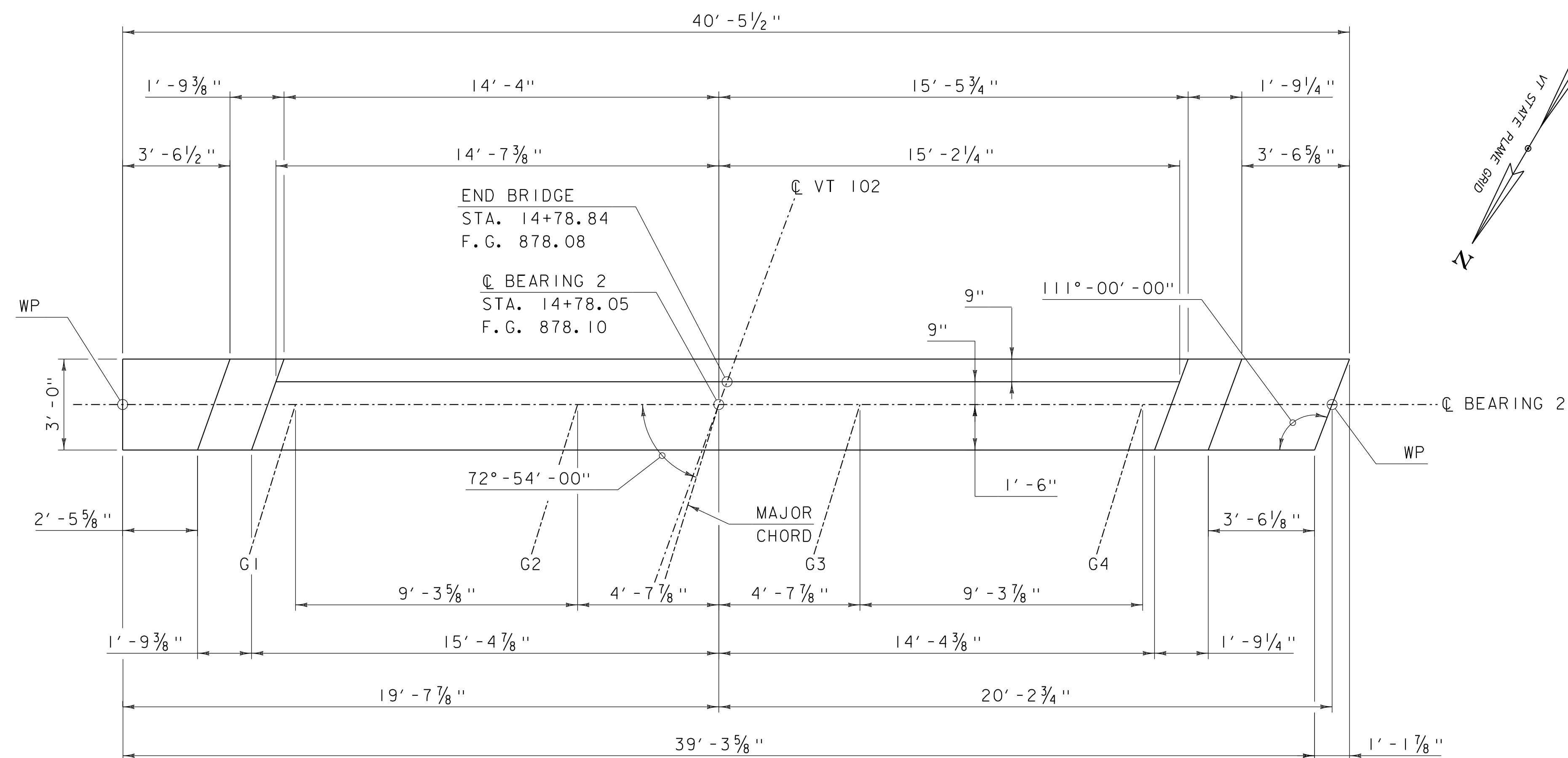
PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
ABUTMENT I PLAN AND ELEVATION

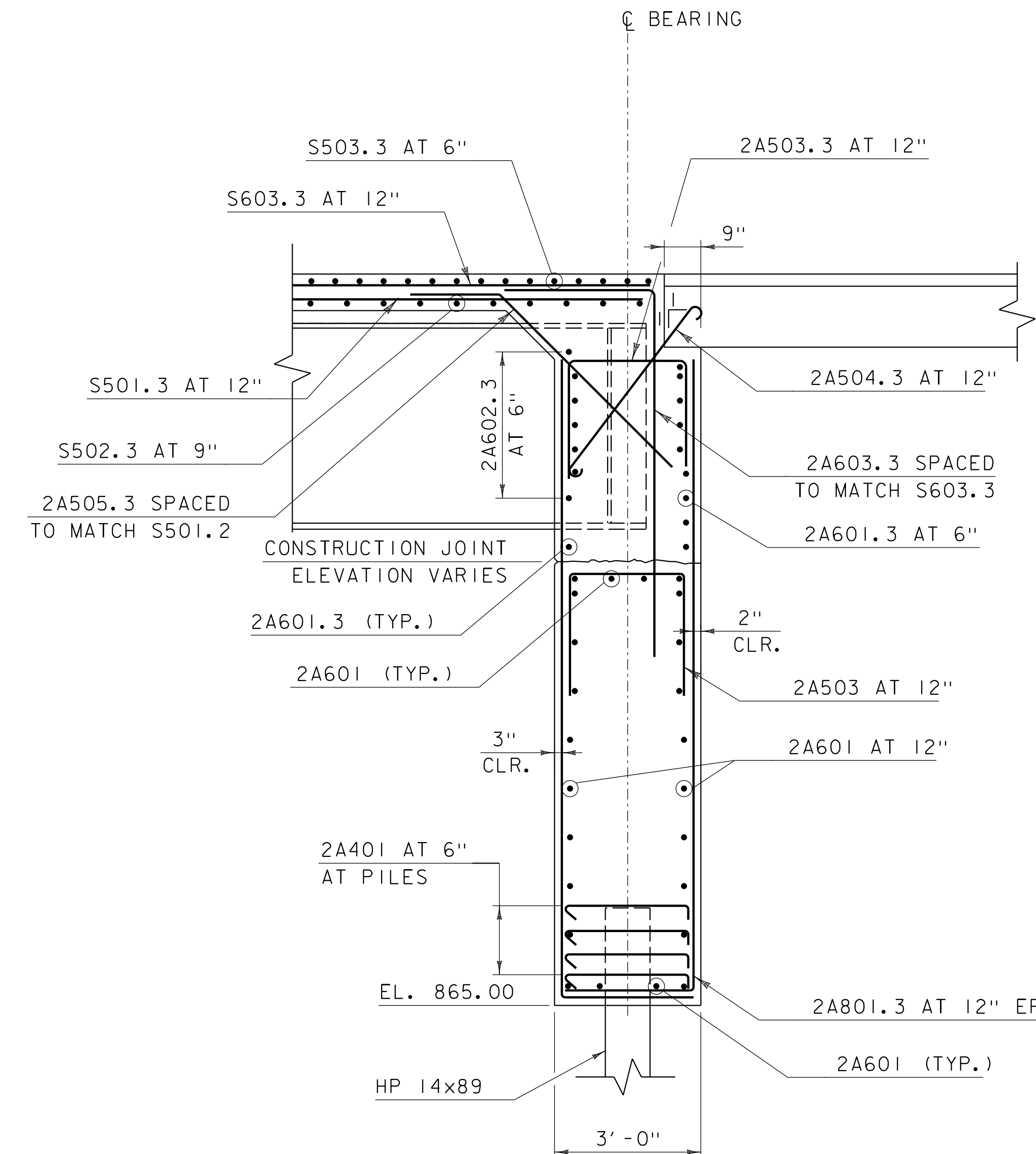
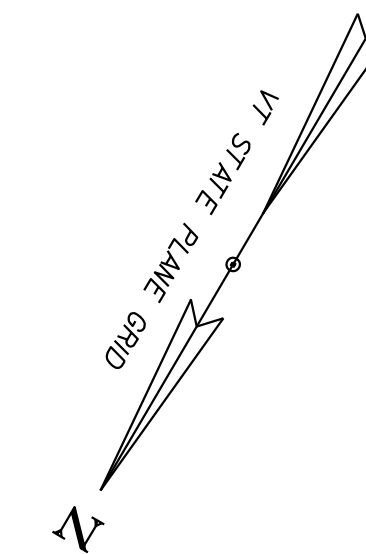
PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 40 OF 77



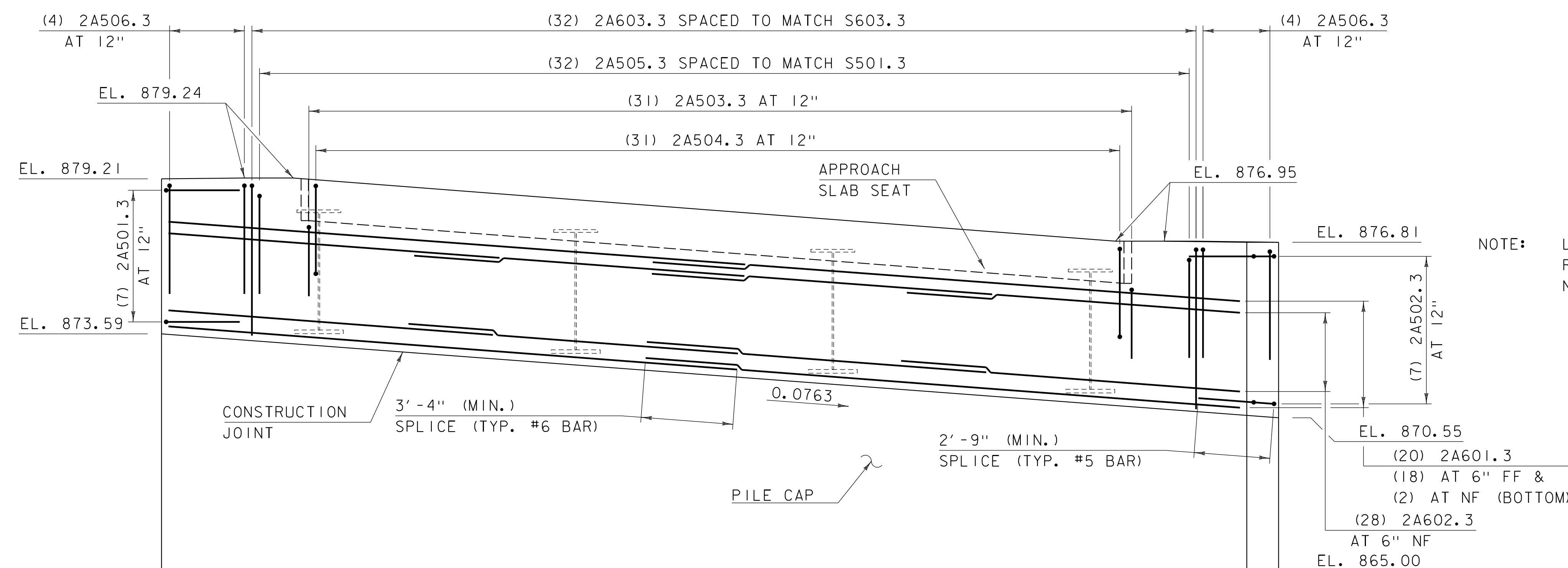




ABUTMENT 2 PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



ABUTMENT #2 TYPICAL REBAR SECTION  
SCALE:  $\frac{1}{2}$ " = 1'-0"



ABUTMENT 2 ELEVATION  
SCALE:  $\frac{3}{8}$ " = 1'-0"

NOTE: LAYOUT DIMENSIONS ARE PROVIDED RELATIVE TO THE SKEWED C BEARING, NOT NORMAL TO THE GIRDERS.

NOTE:

NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
X = LATERAL TIES  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

NOTE: ELEVATIONS SHOWN ARE AT C OF BEARING

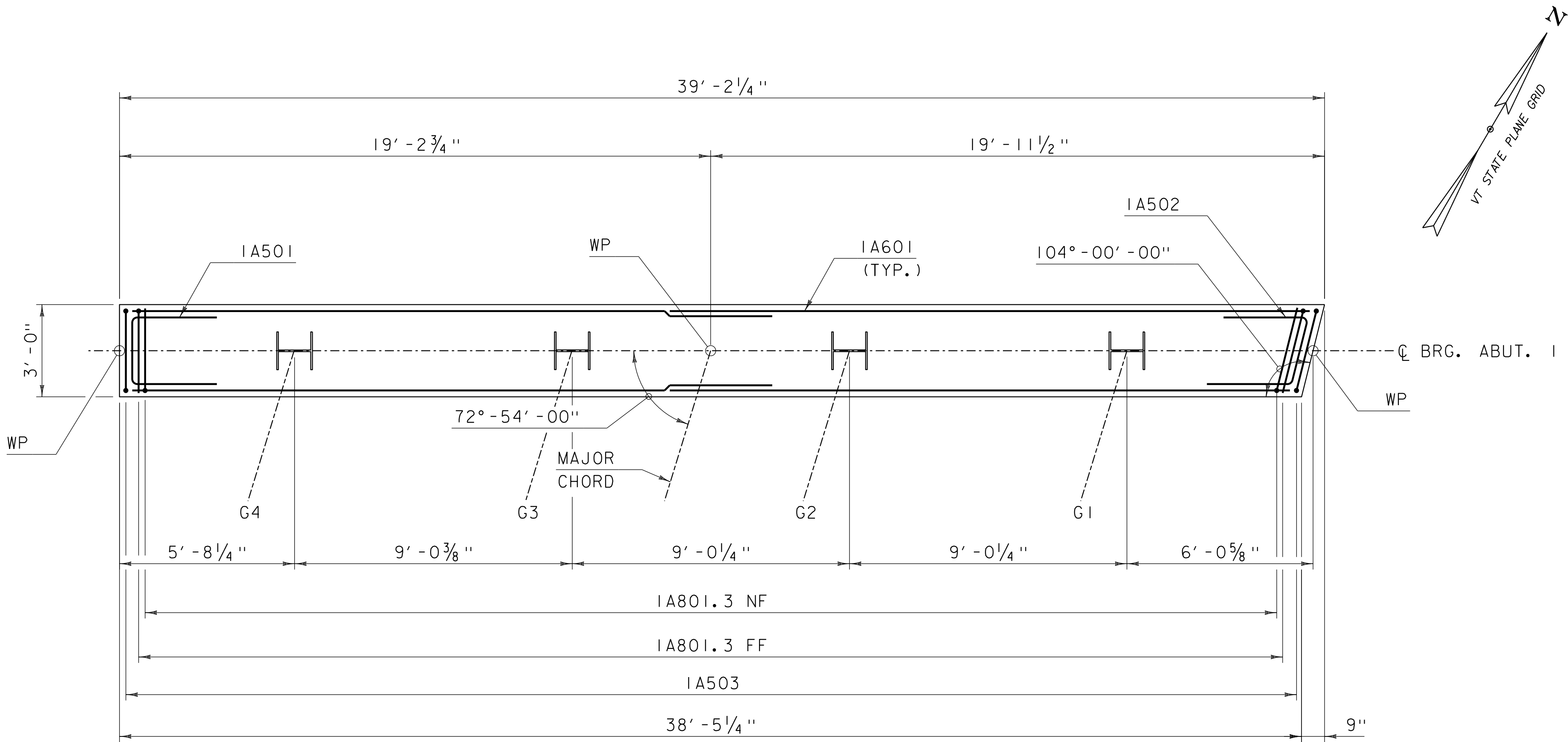


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

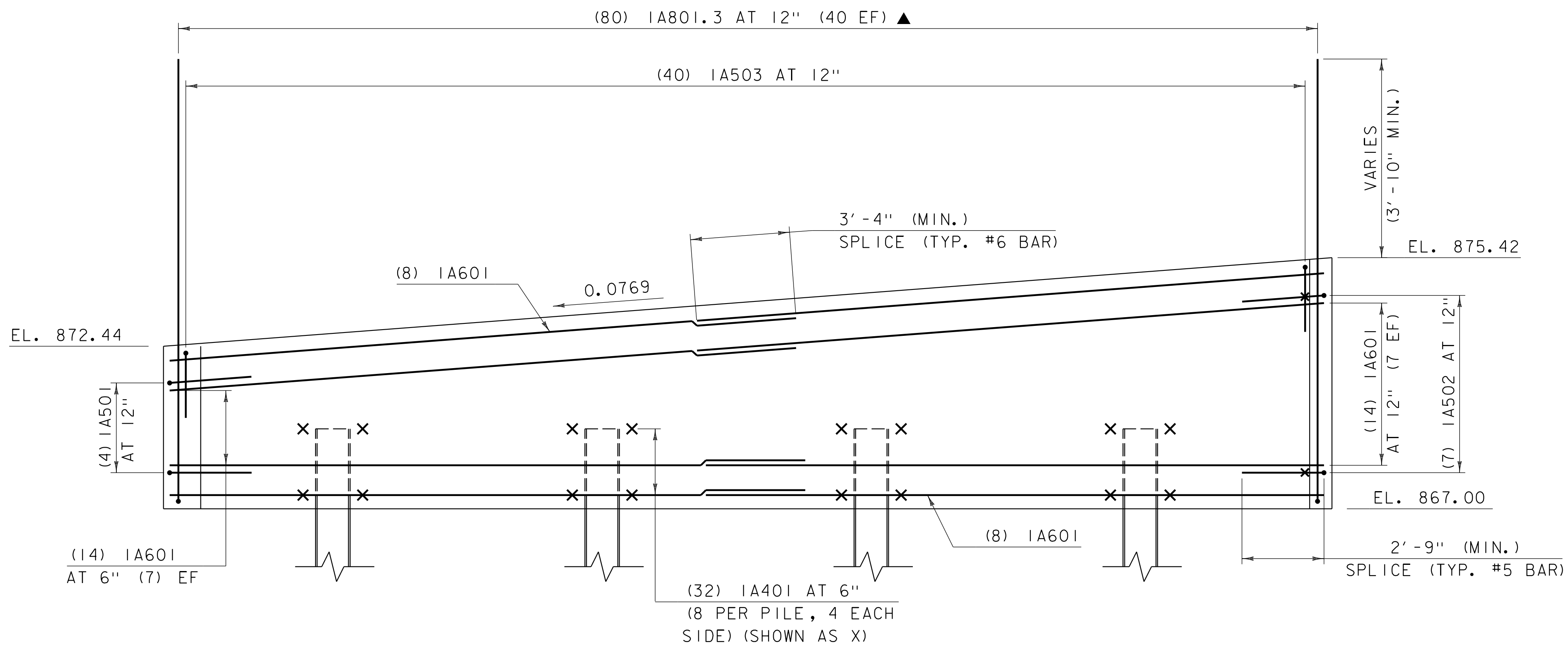
FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
ABUTMENT 2 PLAN AND ELEVATION

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 41 OF 77





ABUTMENT I PILE CAP PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



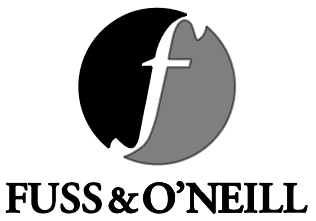
ABUTMENT I PILE CAP ELEVATION  
SCALE:  $\frac{3}{8}$ " = 1'-0"

NOTE: SEE PROJECT NOTES FOR ADDITIONAL FABRICATION CONSTRUCTION, AND SEQUENCE NOTES.

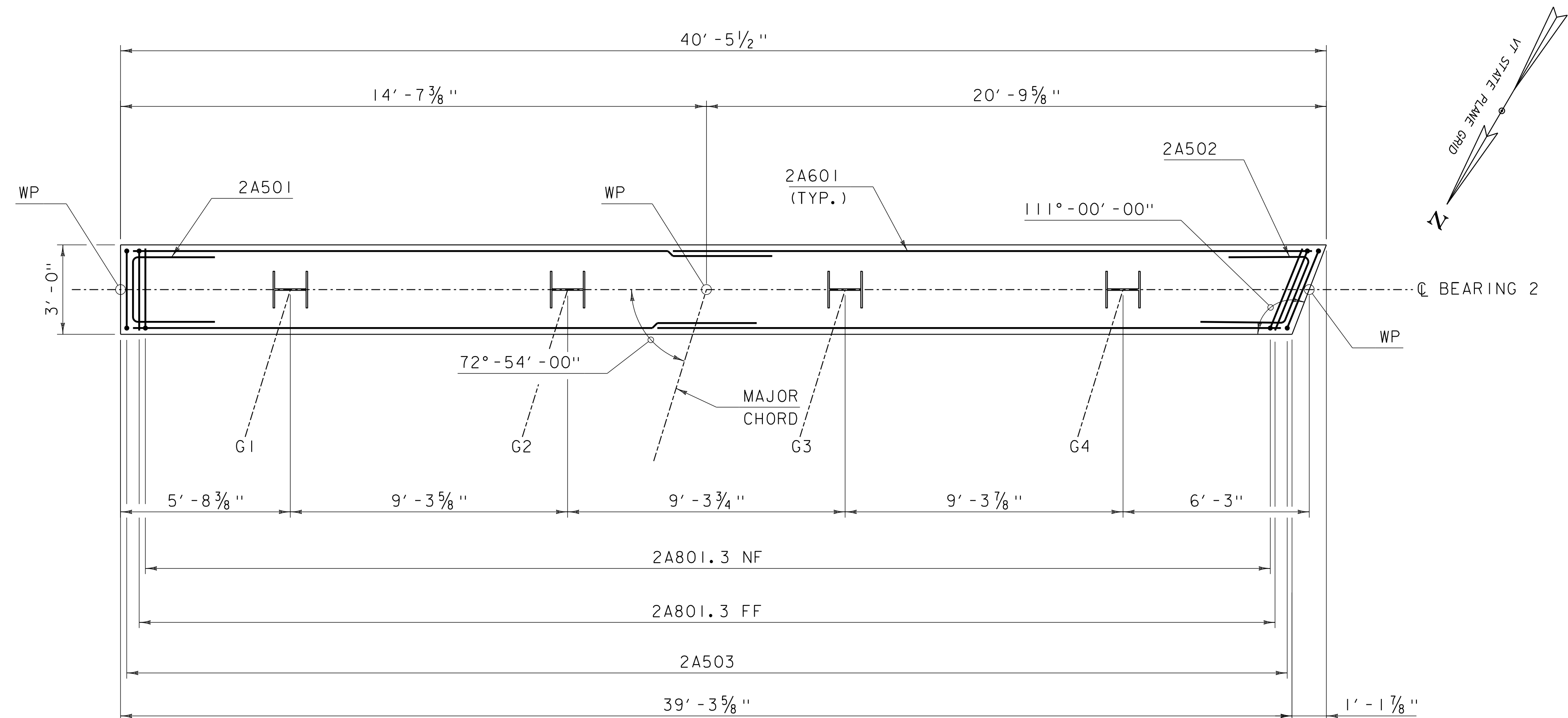
NOTE:  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
X = LATERAL TIES  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

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

FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
ABUTMENT I PILE CAP PLAN AND ELEVATION SHEET 42 OF 77



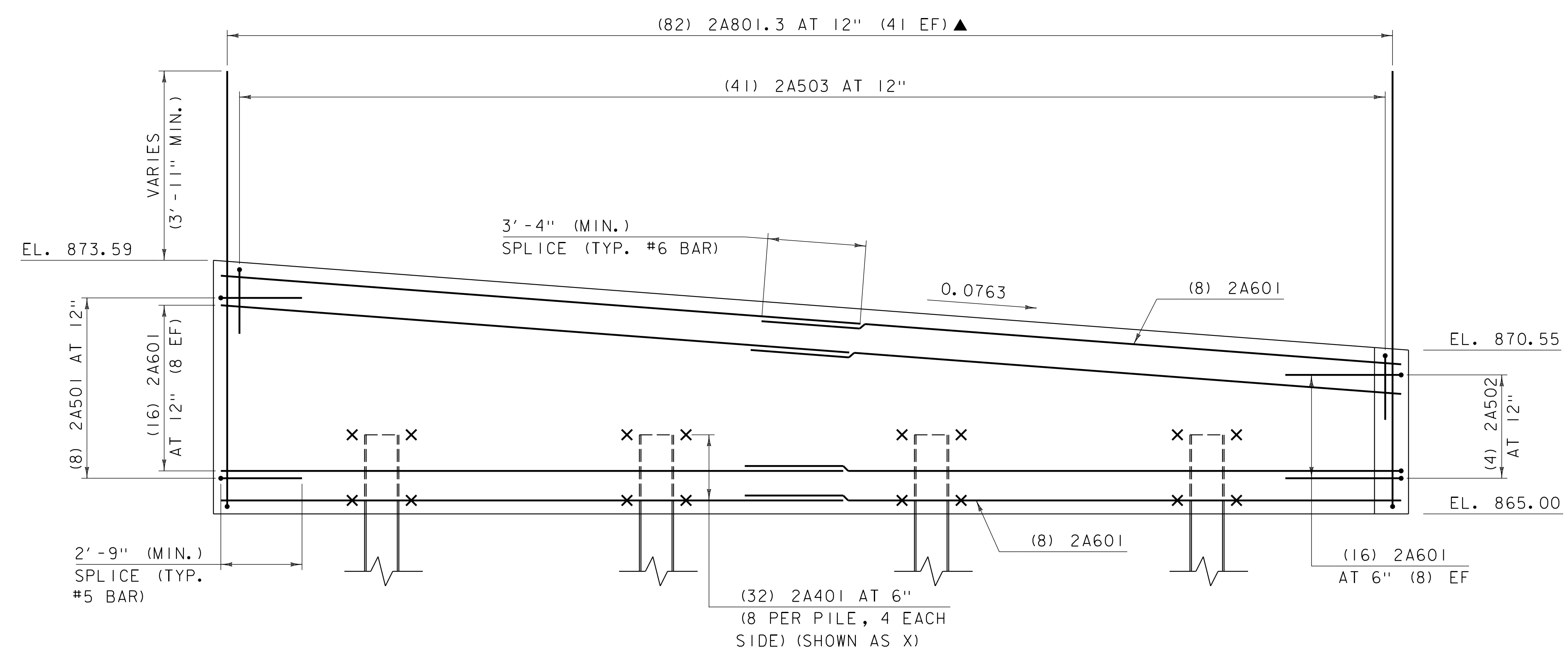




NOTE: SEE PROJECT NOTES FOR ADDITIONAL FABRICATION CONSTRUCTION, AND SEQUENCE NOTES.

ABUTMENT 2 PILE CAP PLAN

SCALE: 3/8" = 1'-0"

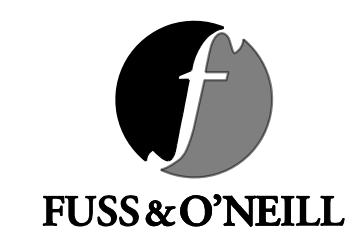


NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- X = LATERAL TIES
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

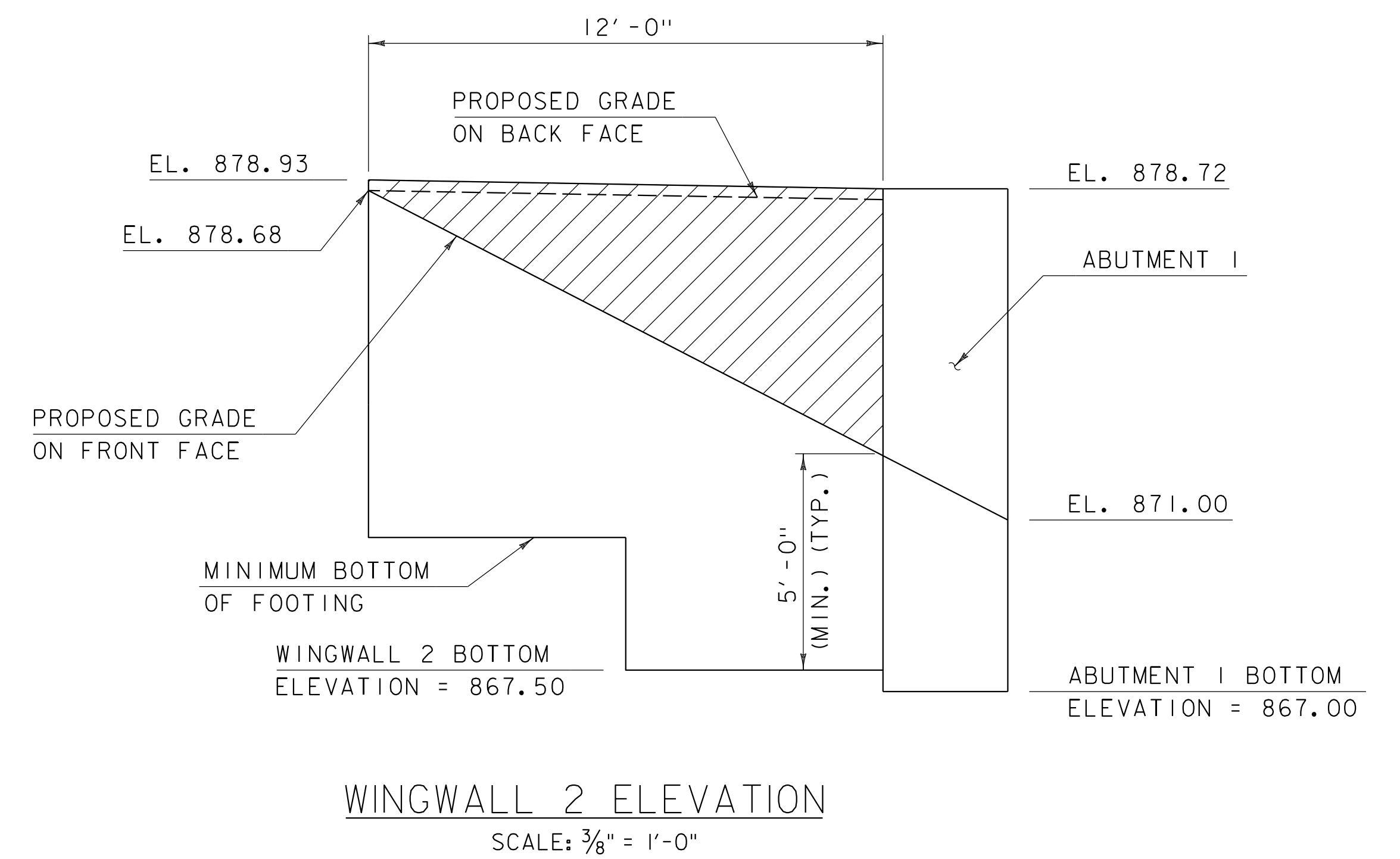
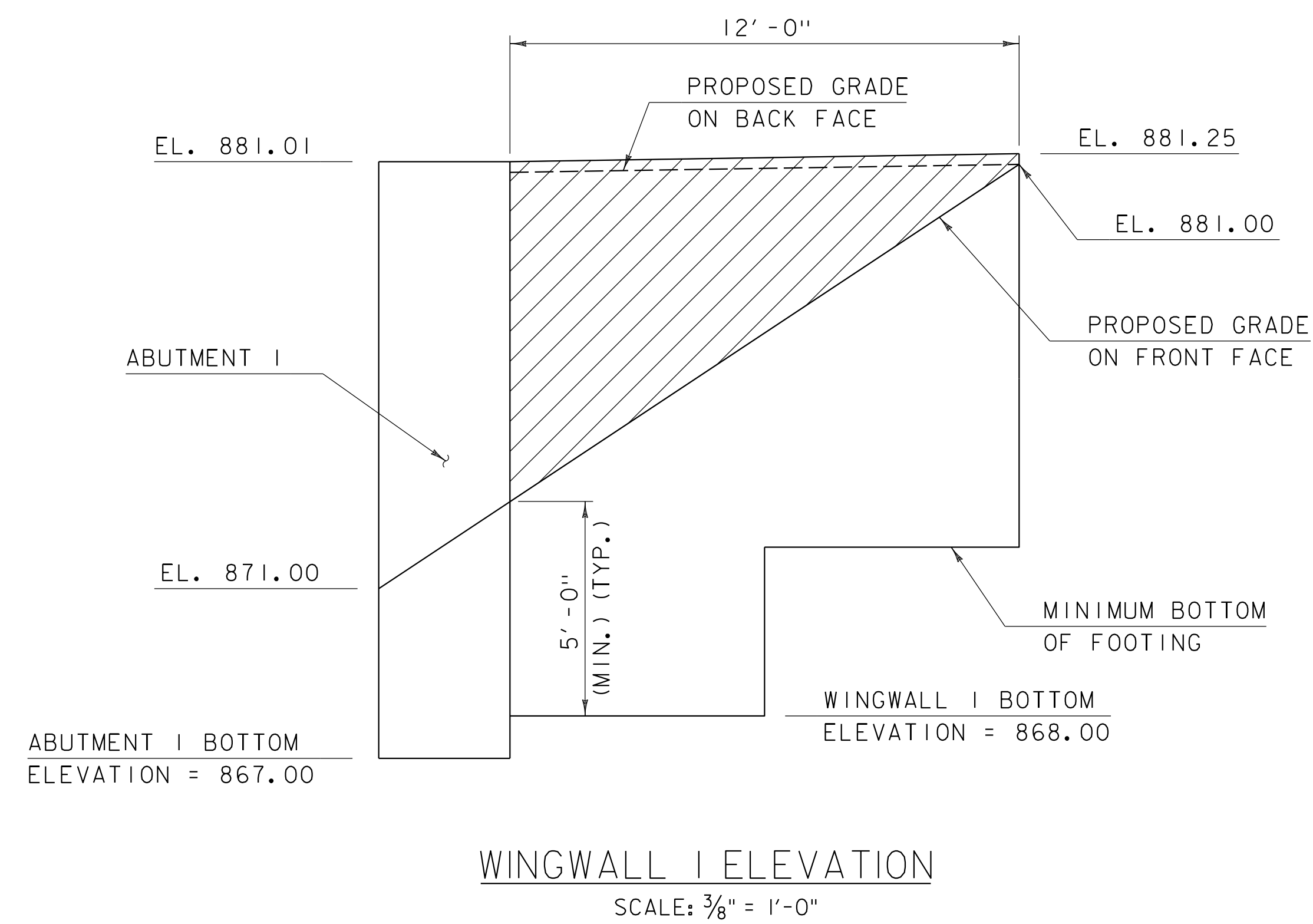
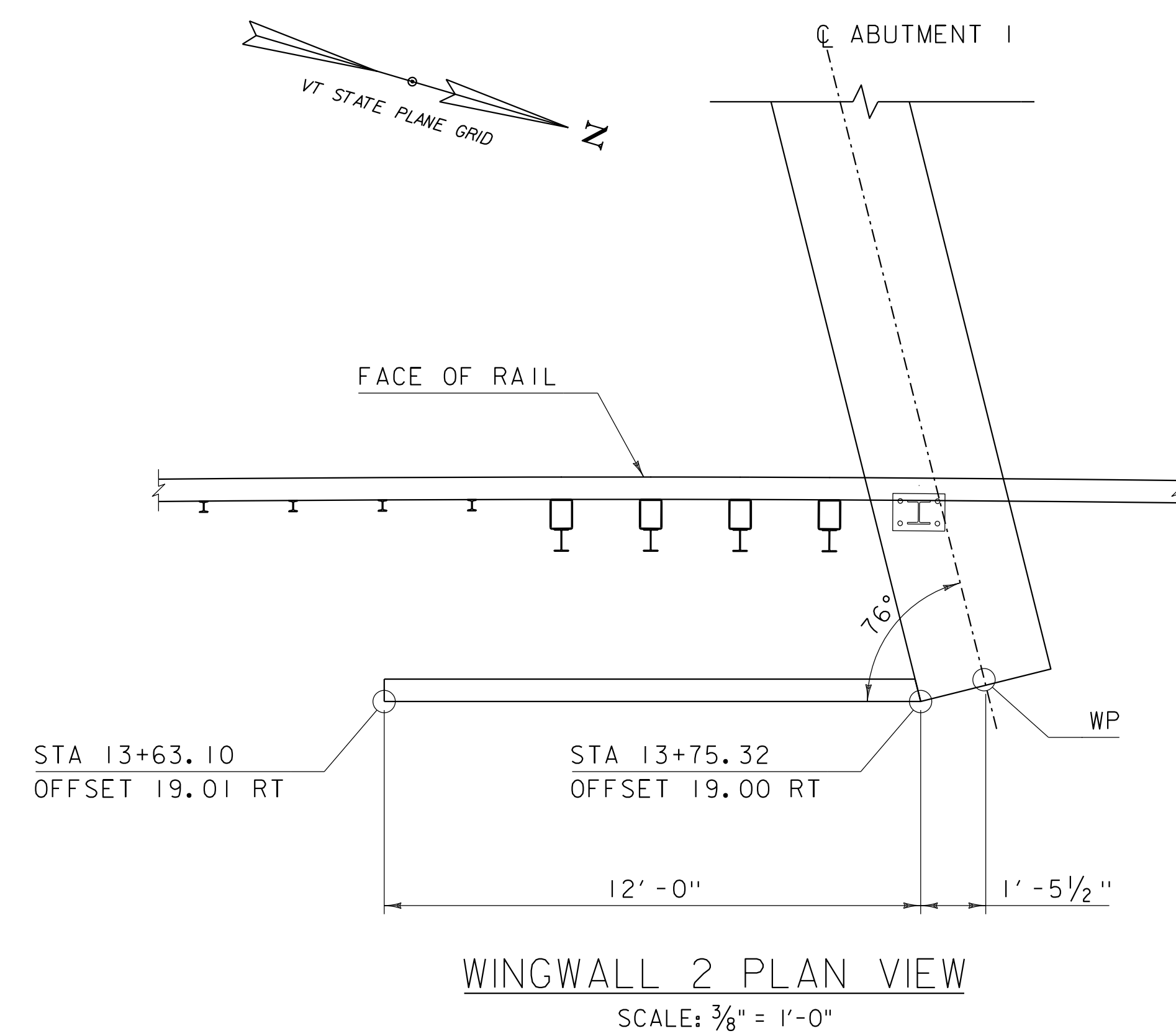
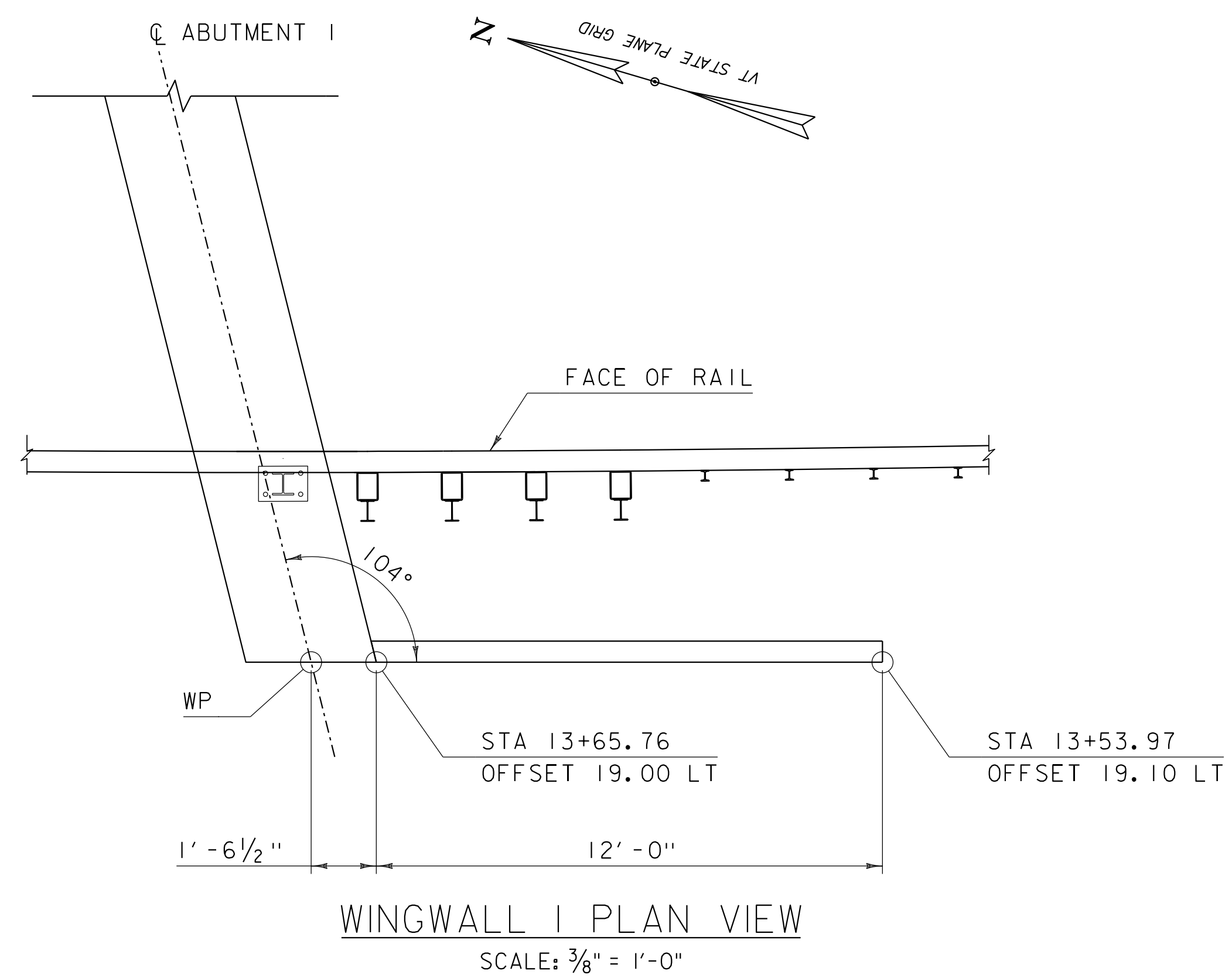
ABUTMENT 2 PILE CAP ELEVATION

SCALE: 3/8" = 1'-0"



|                                                       |                       |
|-------------------------------------------------------|-----------------------|
| PROJECT NAME: BRUNSWICK                               |                       |
| PROJECT NUMBER: BF 0271(23)                           |                       |
| FILE NAME: z13c056sub.dgn                             | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH                             | DRAWN BY: M. SMITH    |
| DESIGNED BY: A. GIRALDI                               | CHECKED BY: J. FRENCH |
| ABUTMENT 2 PILE CAP PLAN AND ELEVATION SHEET 43 OF 77 |                       |





PAY LIMITS OF 900.670  
"SPECIAL PROVISION  
(RETAINING WALL) "



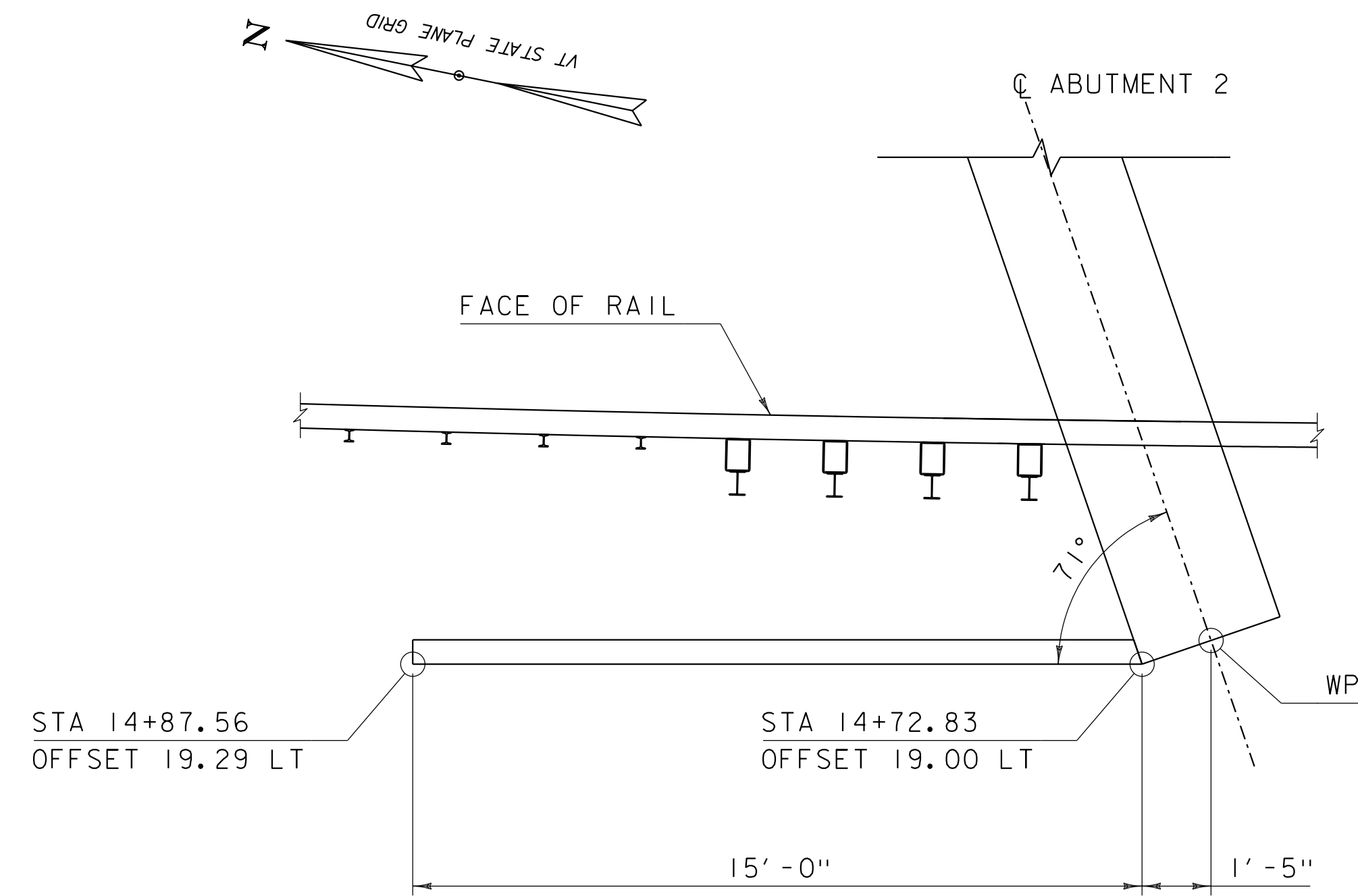
**FUSS & O'NEILL**

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

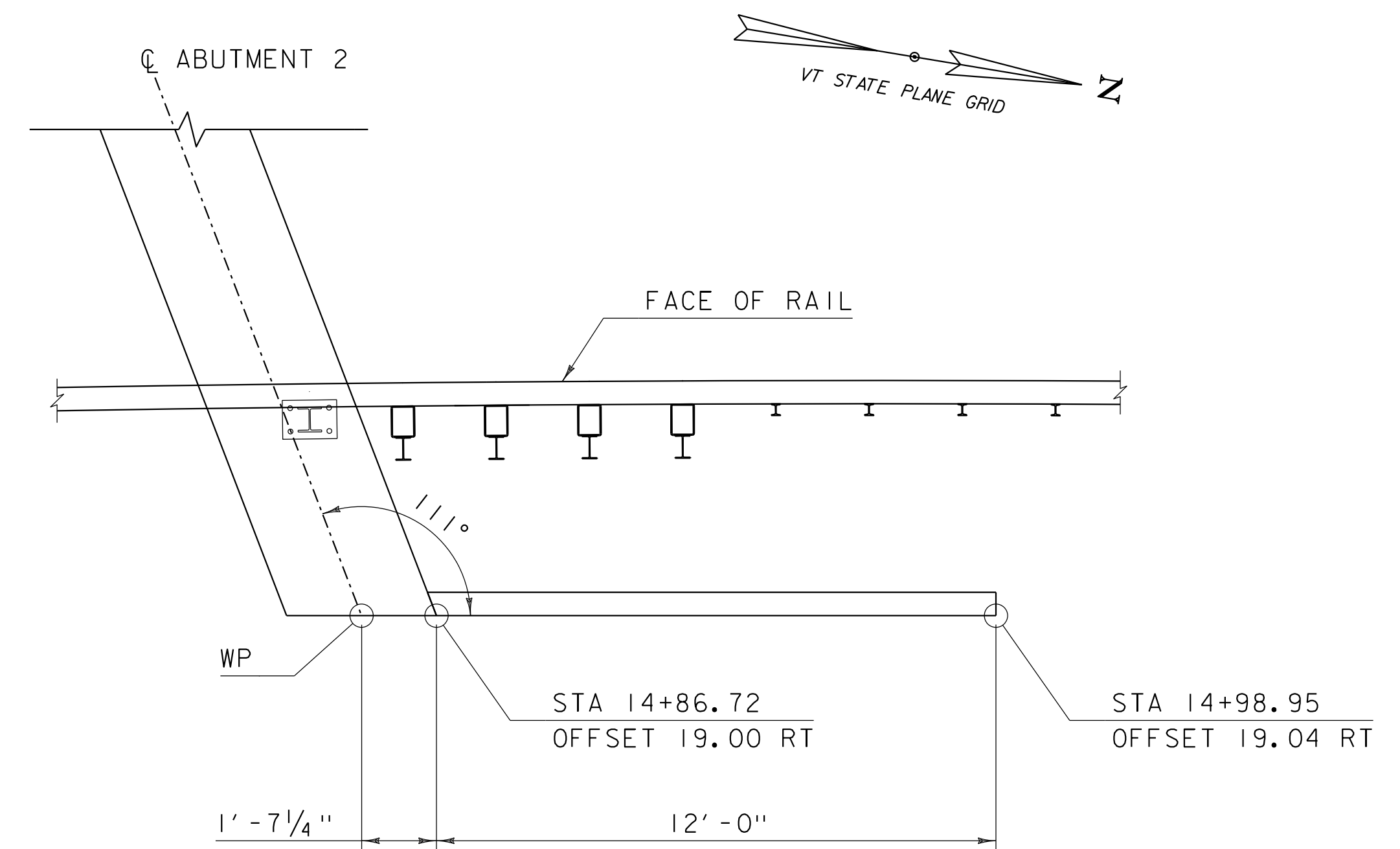
FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRADLI  
WINGWALL PLAN AND ELEVATION I

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 44 OF 77

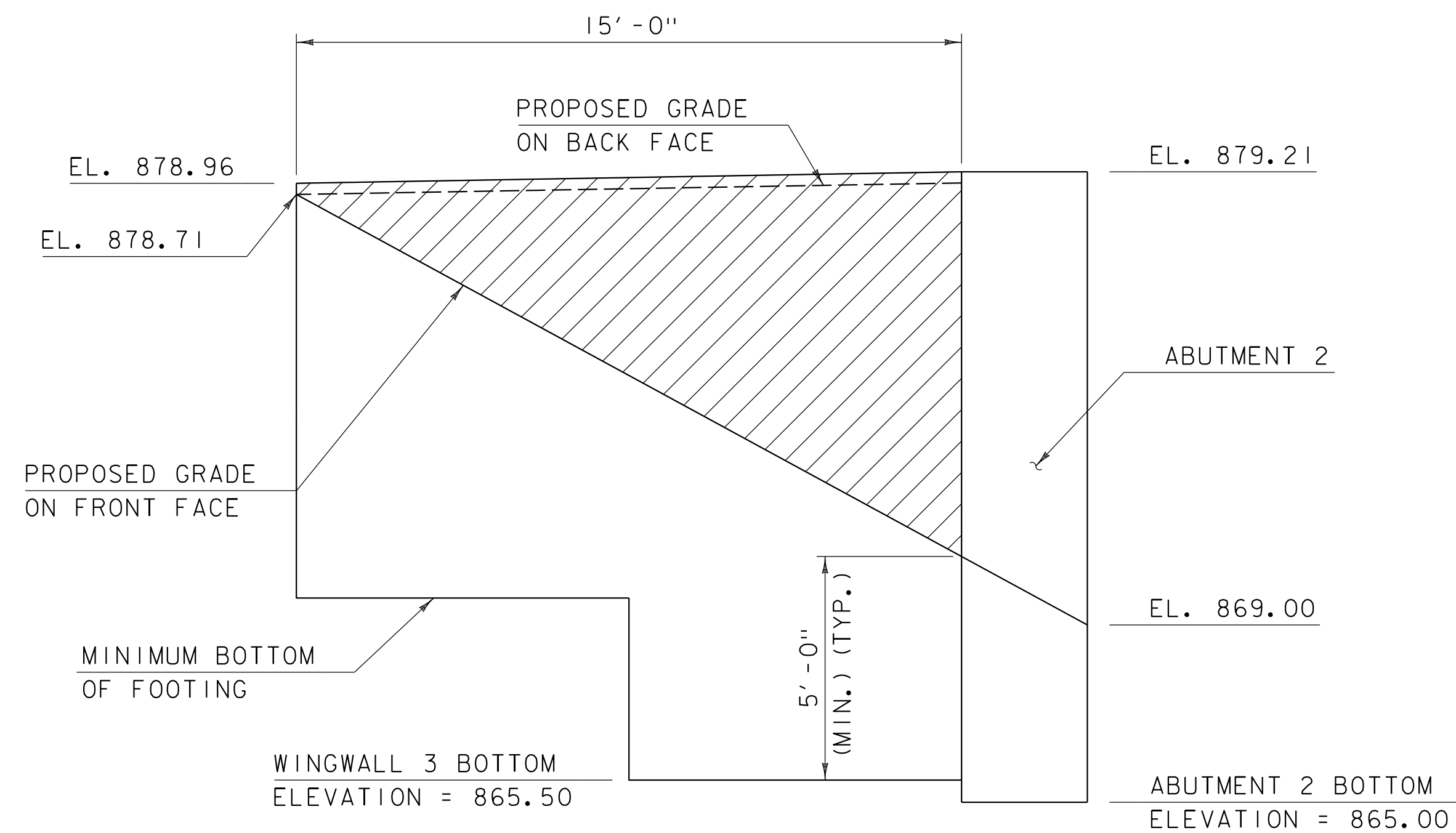




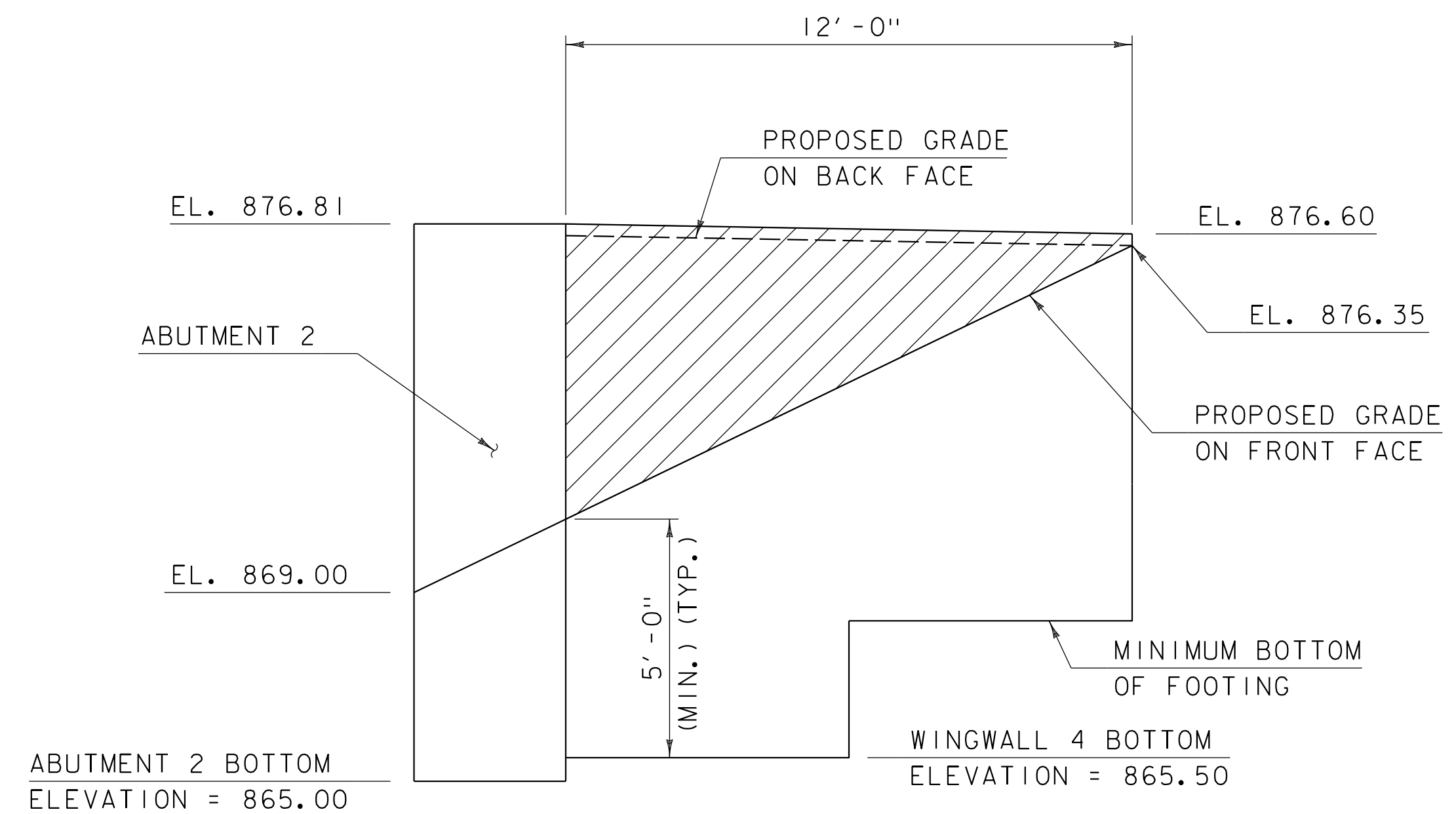
WINGWALL 3 PLAN VIEW  
SCALE:  $\frac{3}{8}" = 1'-0"$



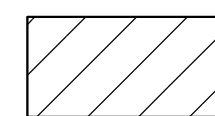
WINGWALL 4 PLAN VIEW  
SCALE:  $\frac{3}{8}" = 1'-0"$



WINGWALL 3 ELEVATION  
SCALE:  $\frac{3}{8}" = 1'-0"$



WINGWALL 4 ELEVATION  
SCALE:  $\frac{3}{8}" = 1'-0"$



PAY LIMITS OF 900.670  
"SPECIAL PROVISION  
(RETAINING WALL) "



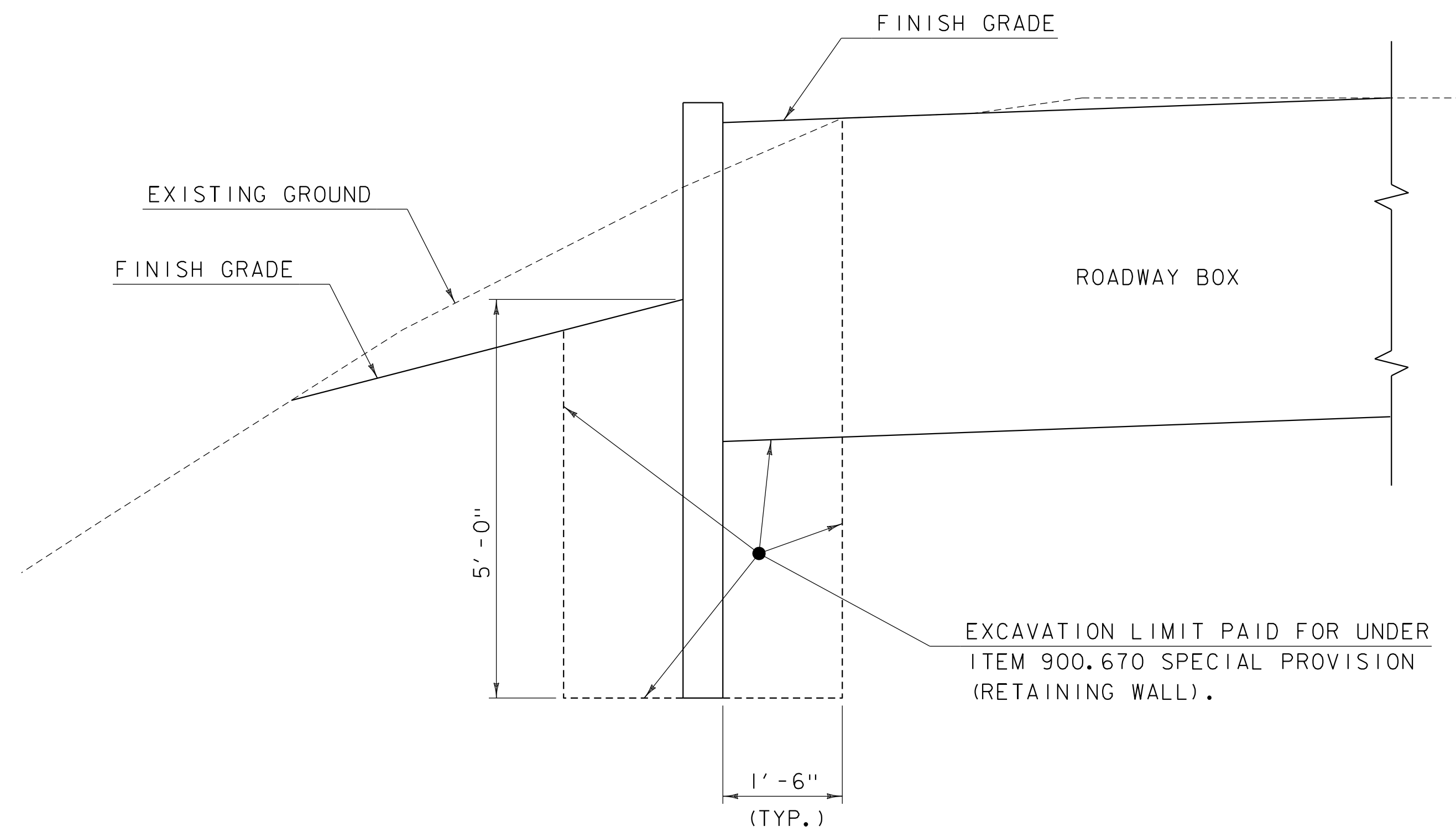
FUSS & O'NEILL

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

FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
WINGWALL PLAN AND ELEVATION 2

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 45 OF 77

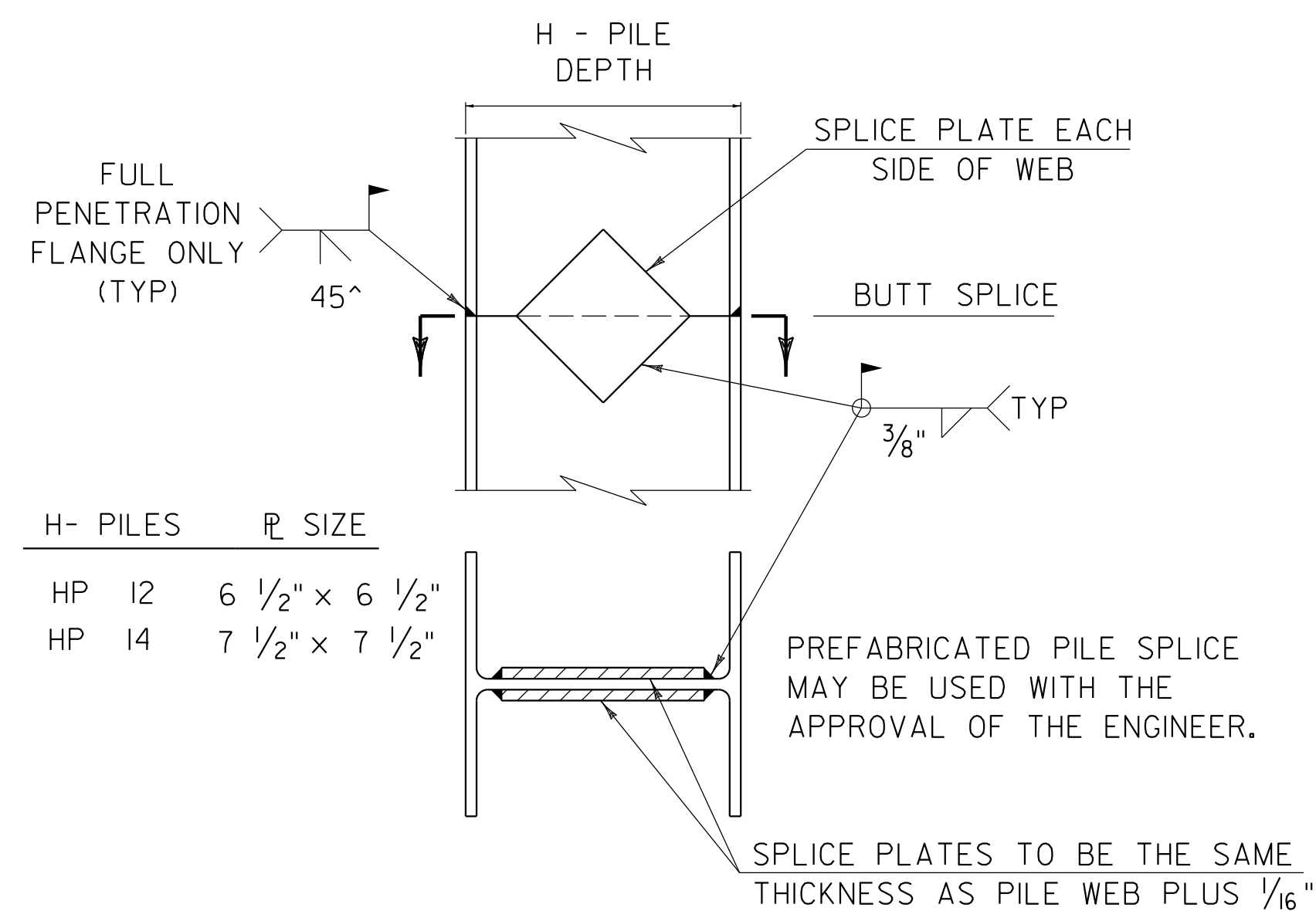




TYPICAL WINGWALL EXCAVATION DETAIL

SCALE:  $\frac{3}{4}" = 1'-0"$

NOTE: EXTENT OF ACTUAL EXCAVATION REQUIRED WILL DEPEND ON WALL SYSTEM SELECTED.



DETAIL OF PILE SPLICE

SCALE:  $\frac{3}{8}" = 1'-0"$

## NOTES:

- ALL WINGWALLS SHALL BE SELECTED FROM THE LIST OF WALLS ON THE APPROVED RETAINING WALL DOCUMENT AVAILABLE FROM VAOT GEOTECHNICAL ENGINEERING WEB SITE. THE RETAINING WALL SHALL HAVE A VERTICAL CONCRETE FACING.
- THE WALL SHALL BE PAID FOR UNDER ITEM 900.670 "SPECIAL PROVISION (RETAINING WALL)".
- THE BOTTOM OF WALL SHALL BE A MINIMUM OF 5 FEET BELOW THE FINISH GRADE IN THE FRONT OF WALL.
- THE WALL SHALL BE DESIGNED IN ACCORDANCE WITH 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND ITS LATEST REVISIONS. THE DESIGN SHALL INCLUDE THE EFFECT OF ALL LOADS INCLUDING BUT NOT LIMITED TO LIVE LOAD, VEHICLE IMPACT ON ADJACENT GUARDRAIL AND POSTS, EARTH SURCHARGE, AND HYDROSTATIC PRESSURE.
- DESIGN OF WALL SELECTED SHALL PERMIT INSTALLATION OF GUARDRAIL POSTS (AND OTHER OBSTRUCTIONS) WITHOUT DAMAGE TO THE SYSTEM. ANY ANCHORS PROVIDED SHALL BE LAID OUT TO AVOID RAIL POST. ANY CHANGES TO THE REINFORCING OR ANCHORING SYSTEM SHALL BE DETAILED IN THE FABRICATION DRAWINGS.
- THE FOLLOWING SOIL PROPERTIES SHALL BE USED IN THE DESIGN OF THE WINGWALLS:

|                               |          |
|-------------------------------|----------|
| FOUNDATION SOIL DESIGN VALUES |          |
| NOMINAL BEARING RESISTANCE:   | 20.0 KSF |

|                            |         |
|----------------------------|---------|
| FOUNDATION SOIL PARAMETERS |         |
| UNIT WEIGHT:               | 130 PCF |
| FRICTION ANGLE:            | 38°     |

|                                          |         |
|------------------------------------------|---------|
| GRANULAR BACKFILL FOR STRUCTURES         |         |
| UNIT WEIGHT:                             | 140 PCF |
| FRICTION ANGLE:                          | 34°     |
| ACTIVE EARTH PRESSURE COEFFICIENT, $K_a$ | 0.28    |

|                                                   |      |
|---------------------------------------------------|------|
| BEARING RESISTANCE FACTORS (STRENGTH LIMIT STATE) | 0.45 |
|---------------------------------------------------|------|

|                                            |     |
|--------------------------------------------|-----|
| SLIDING RESISTANCE FACTORS                 |     |
| MSEW:                                      | 1.0 |
| GRAVITY/SEMI-GRAVITY (PROPRIETARY SYSTEM): | 1.0 |
| NON-GRAVITY CANTILEVERED AND ANCHORED:     | 0.8 |

|                                                 |     |
|-------------------------------------------------|-----|
| GEOSYNTHETIC RESISTANCE FACTORS (IF APPLICABLE) |     |
| TENSILE RESISTANCE OF GEOSYNTHETIC:             | 0.9 |
| REINFORCEMENT AND CONNECTORS                    |     |
| PULLOUT RESISTANCE OF TENSILE REINFORCEMENT:    | 0.9 |

- THE INTERFACE BETWEEN THE WINGWALL AND THE ABUTMENT STEM SHALL BE DESIGNED TO ALLOW 0.54 INCHES OF MOVEMENT. A JOINT DETAIL SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL. ALL COMPONENTS SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 900.670 SPECIAL PROVISION (RETAINING WALL).
- WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES TO 1' BELOW GRADE. PAYMENT SHALL BE INCIDENTAL TO CONTRACT ITEM 900.670 SPECIAL PROVISION (RETAINING WALL).

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

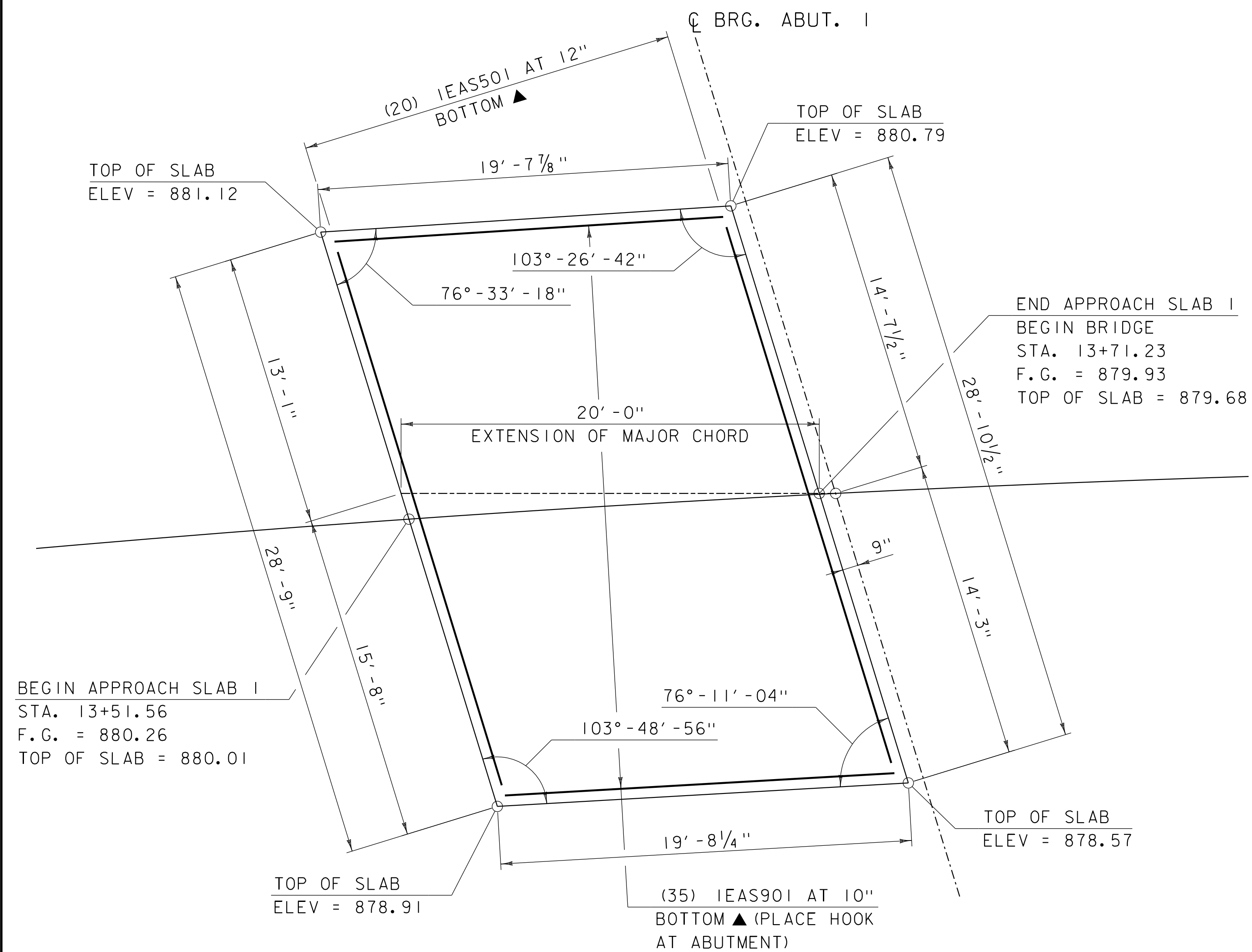
FILE NAME: z13c056sub.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
WINGWALL AND PILE DETAILS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 46 OF 77

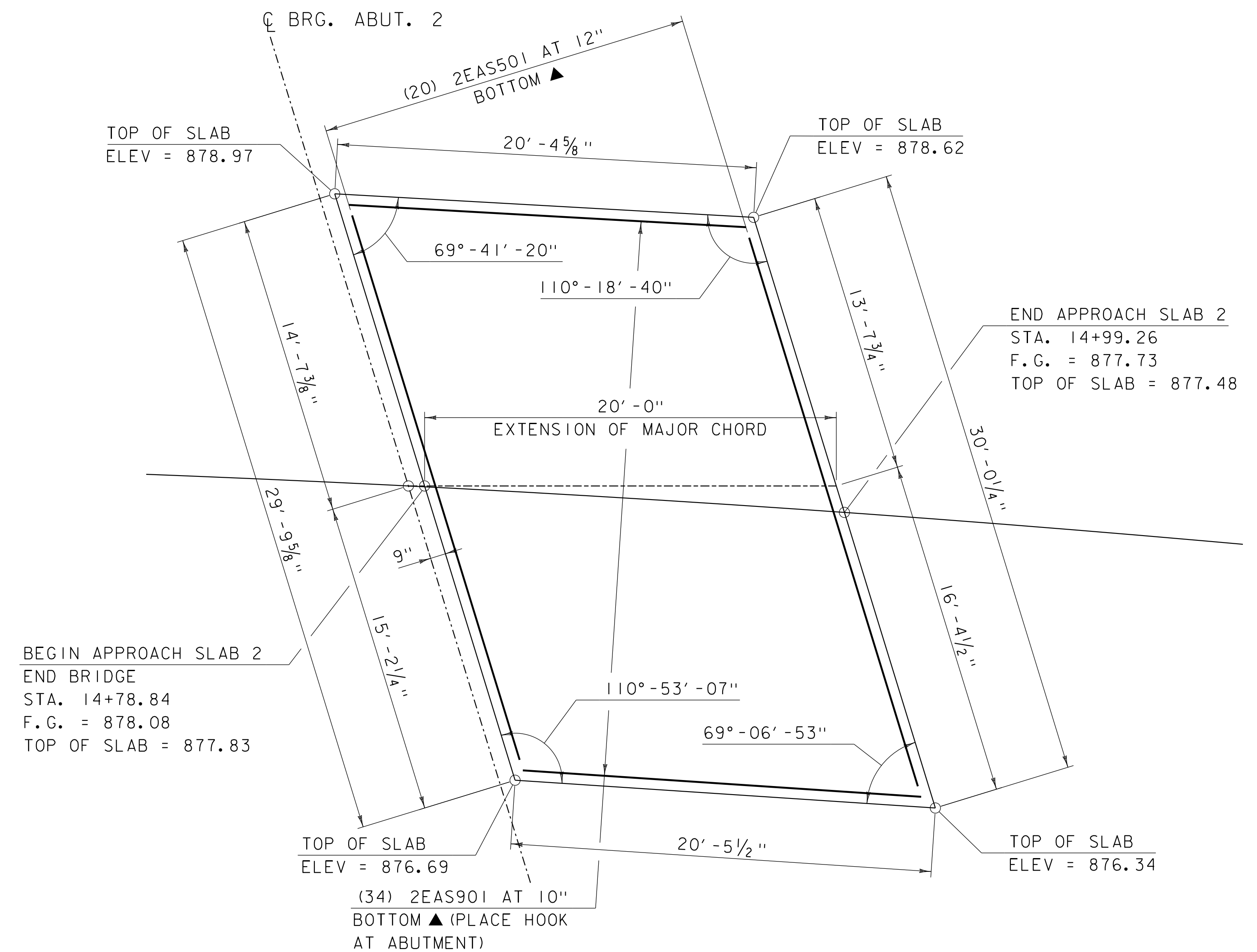


FUSS & O'NEILL

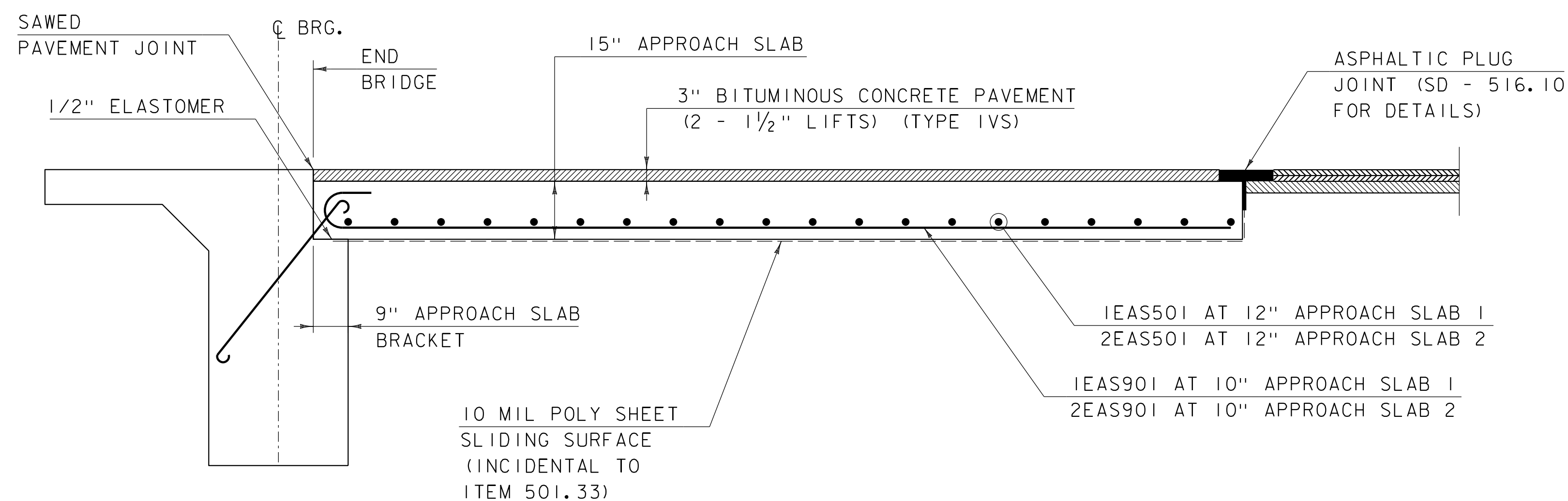




APPROACH SLAB 1 LAYOUT  
SCALE: 1/4" = 1'-0"



APPROACH SLAB 2 LAYOUT  
SCALE: 1/4" = 1'-0"



TYPICAL APPROACH SLAB  
SCALE: 1/2" = 1'-0"



PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)  
FILE NAME: z13c056approach.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: J. FRENCH  
APPROACH SLAB DETAILS

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. BYATT  
SHEET 47 OF 77



# REINFORCING STEEL SCHEDULE

## ~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. \* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

### ASTM STANDARD REINFORCING BARS

| BAR SIZE<br>DESIGNA-<br>TION | WEIGHT<br>POUNDS<br>PER FOOT | NOMINAL DIMENSIONS ROUND SECTION |                             |                     |
|------------------------------|------------------------------|----------------------------------|-----------------------------|---------------------|
|                              |                              | DIAMETER<br>INCHES               | AREA<br>INCHES <sup>2</sup> | PERIMETER<br>INCHES |
| #3                           | 0.376                        | 0.375                            | 0.11                        | 1.178               |
| #4                           | 0.668                        | 0.500                            | 0.20                        | 1.571               |
| #5                           | 1.043                        | 0.625                            | 0.31                        | 1.963               |
| #6                           | 1.502                        | 0.750                            | 0.44                        | 2.356               |
| #7                           | 2.044                        | 0.875                            | 0.60                        | 2.749               |
| #8                           | 2.670                        | 1.000                            | 0.79                        | 3.142               |
| #9                           | 3.400                        | 1.128                            | 1.00                        | 3.544               |
| #10                          | 4.303                        | 1.270                            | 1.27                        | 3.990               |
| #11                          | 5.313                        | 1.410                            | 1.56                        | 4.430               |
| #14                          | 7.65                         | 1.693                            | 2.25                        | 5.32                |
| #18                          | 13.60                        | 2.257                            | 4.00                        | 7.09                |

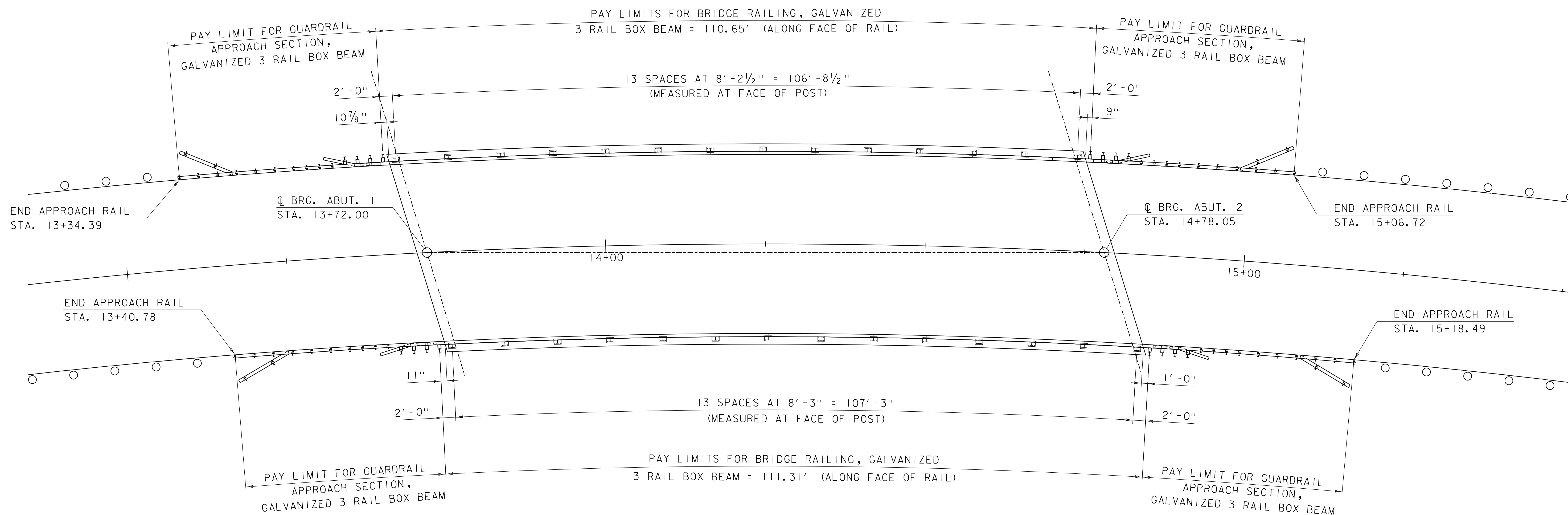
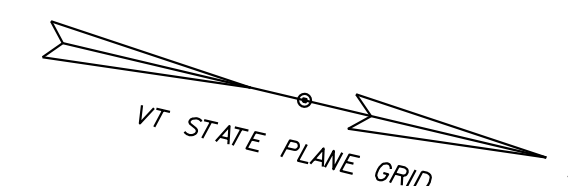
PROJECT NAME: **BRUNSWICK**  
PROJECT NUMBER: **BF 0271(23)**

FILE NAME: z13c056schedule.dgn  
PROJECT MANAGER: **JF**  
DESIGNED BY: **AEG**  
**REINFORCING STEEL SCHEDULE SHEET**

PLOT DATE: **7/23/2018**  
DRAWN BY: **MWS**  
CHECKED BY: **JF**  
SHEET 48 OF 77

|                                         |                             |
|-----------------------------------------|-----------------------------|
| PROJECT NAME: <b>BRUNSWICK</b>          |                             |
| PROJECT NUMBER: <b>BF 0271(23)</b>      |                             |
| FILE NAME: z13c056schedule.dgn          | PLOT DATE: <b>7/23/2018</b> |
| PROJECT MANAGER: <b>JF</b>              | DRAWN BY: <b>MWS</b>        |
| DESIGNED BY: <b>AEG</b>                 | CHECKED BY: <b>JF</b>       |
| <b>REINFORCING STEEL SCHEDULE SHEET</b> | SHEET 48 OF 77              |





### BRIDGE RAIL LAYOUT

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



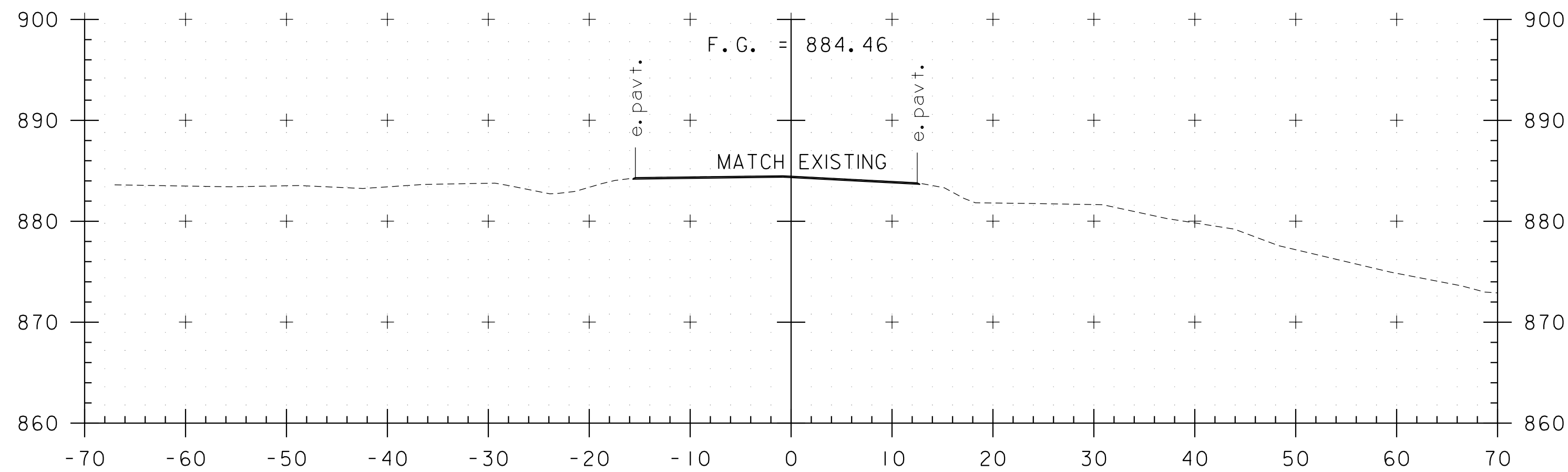
FUSS & O'NEILL

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

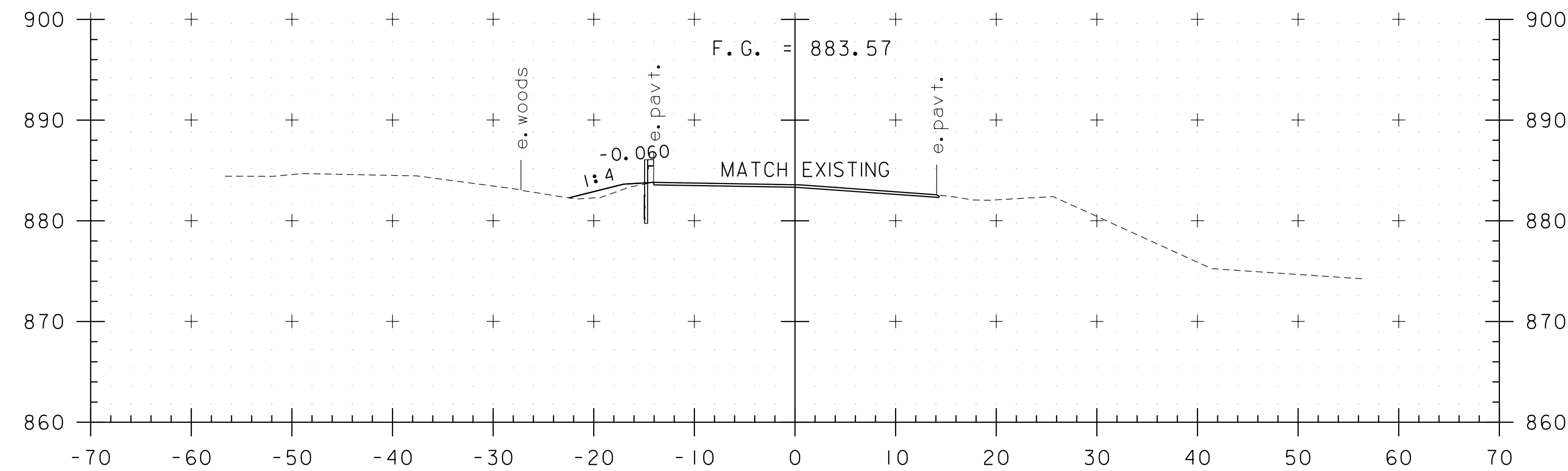
FILE NAME: z13c056rail.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: A. GIRALDI  
BRIDGE RAIL LAYOUT

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. FRENCH  
SHEET 49 OF 77

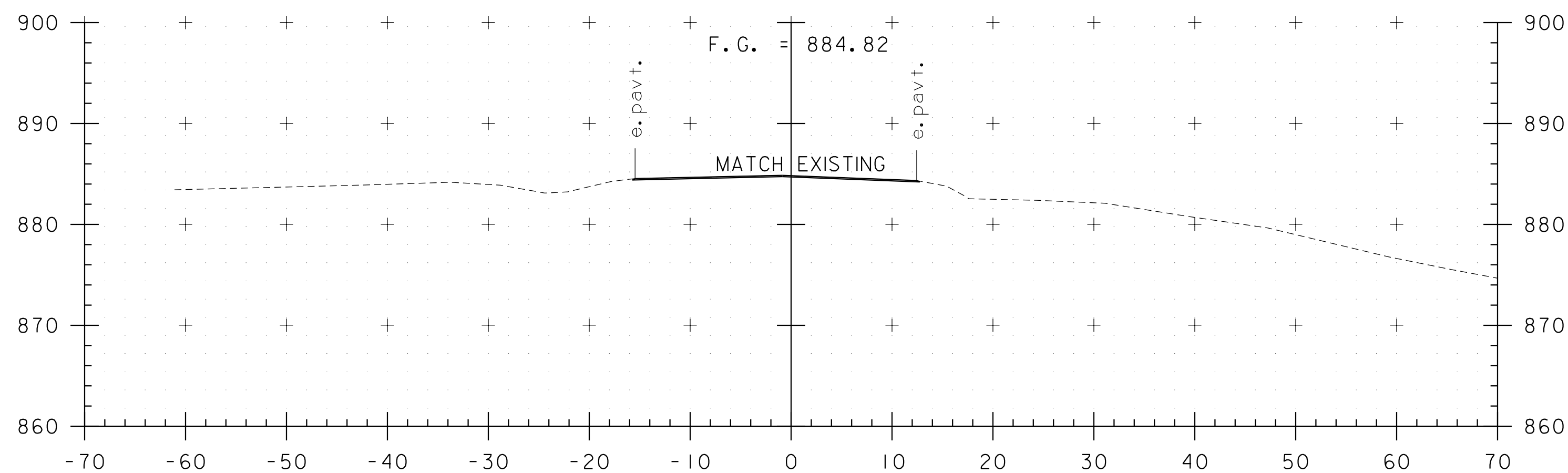




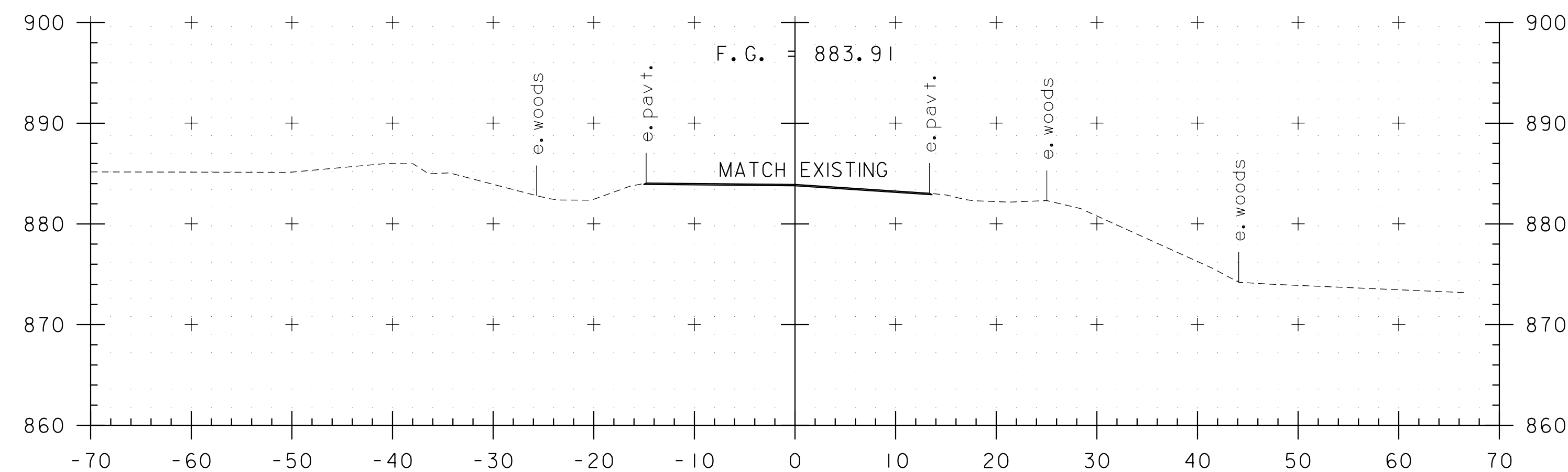
9+25



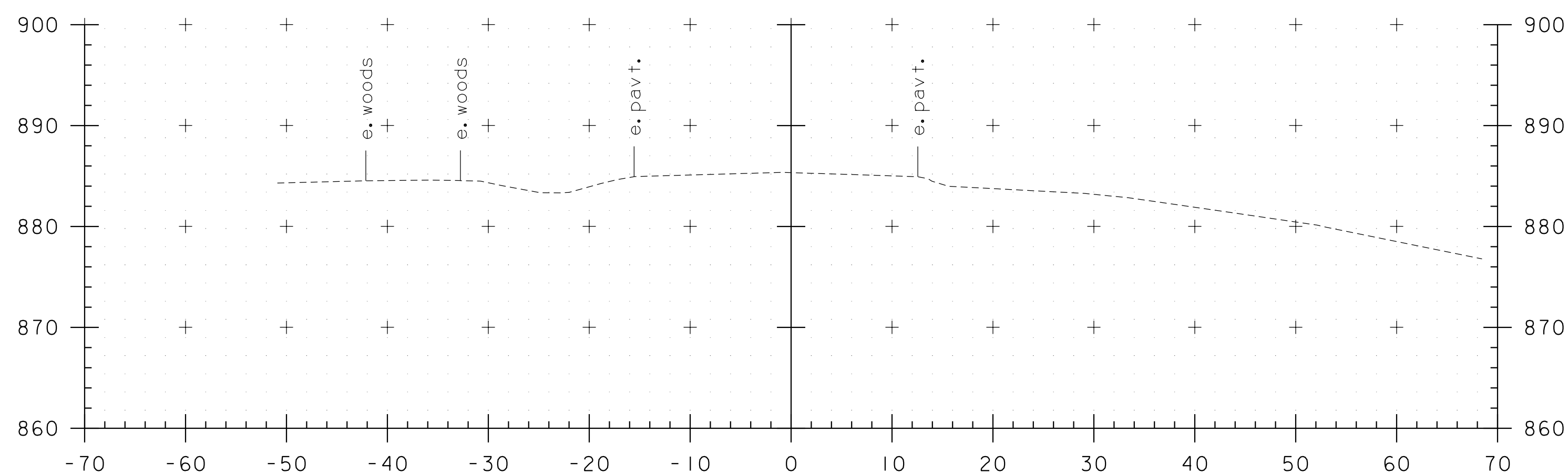
10+00



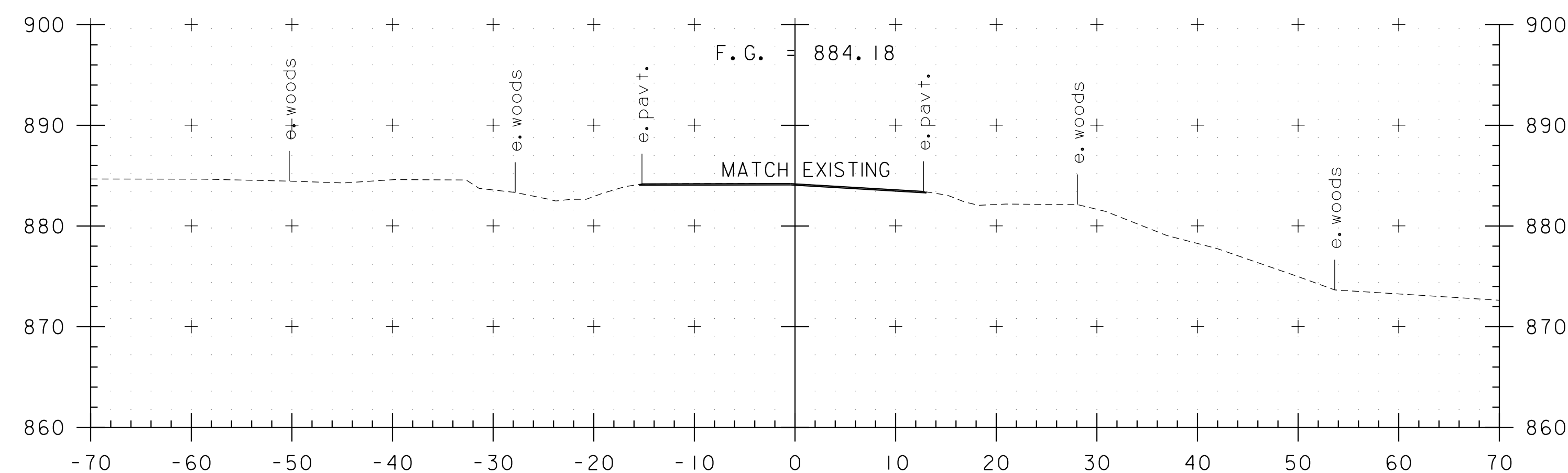
9+00  
BEGIN APPROACH



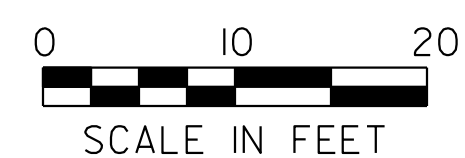
9+75



8+75



9+50



STA 8+75 TO STA 10+00

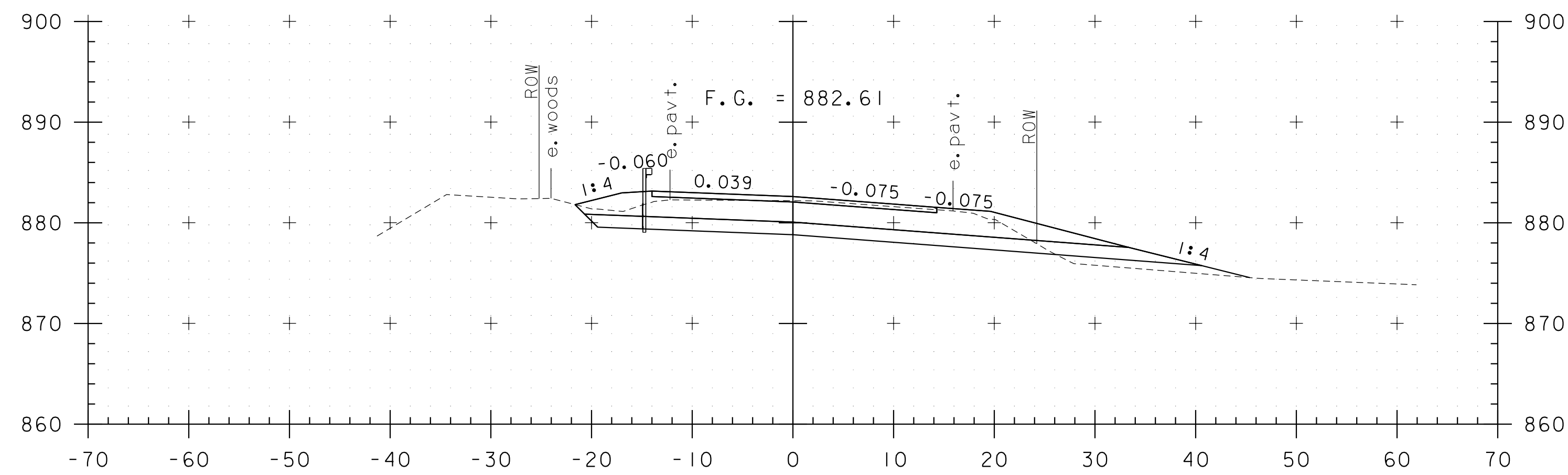


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

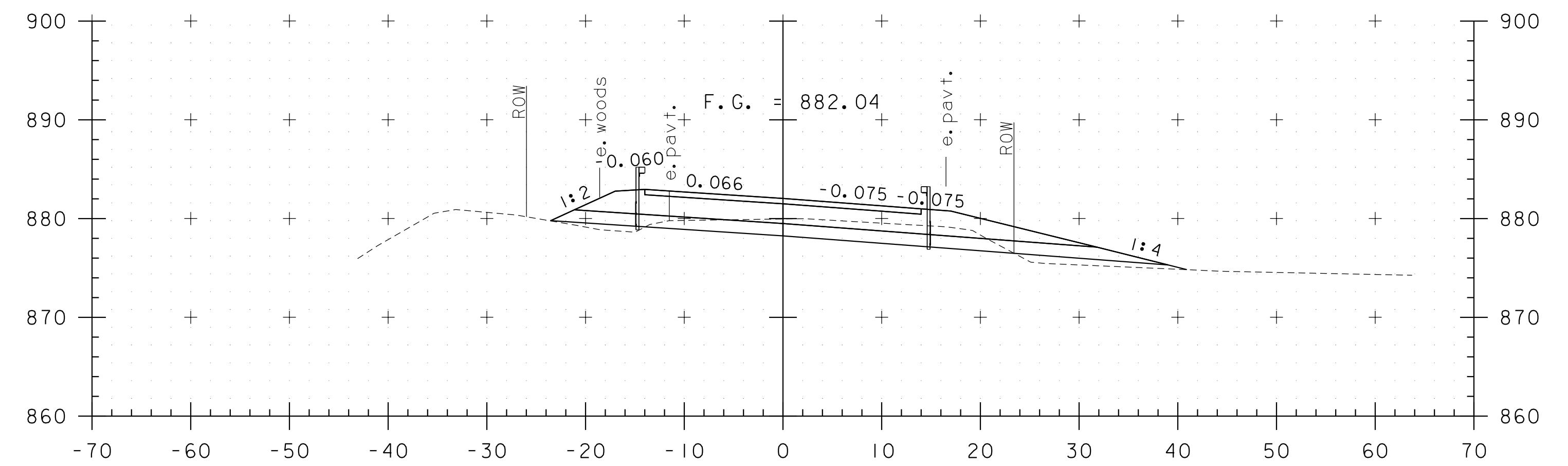
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS I

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 50 OF 77

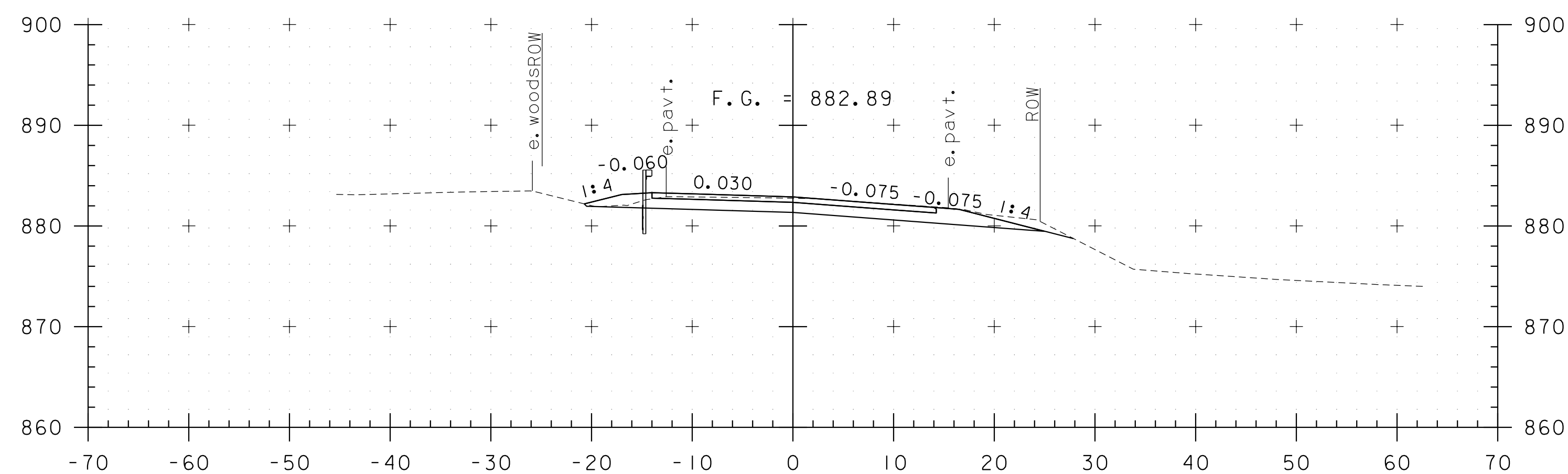




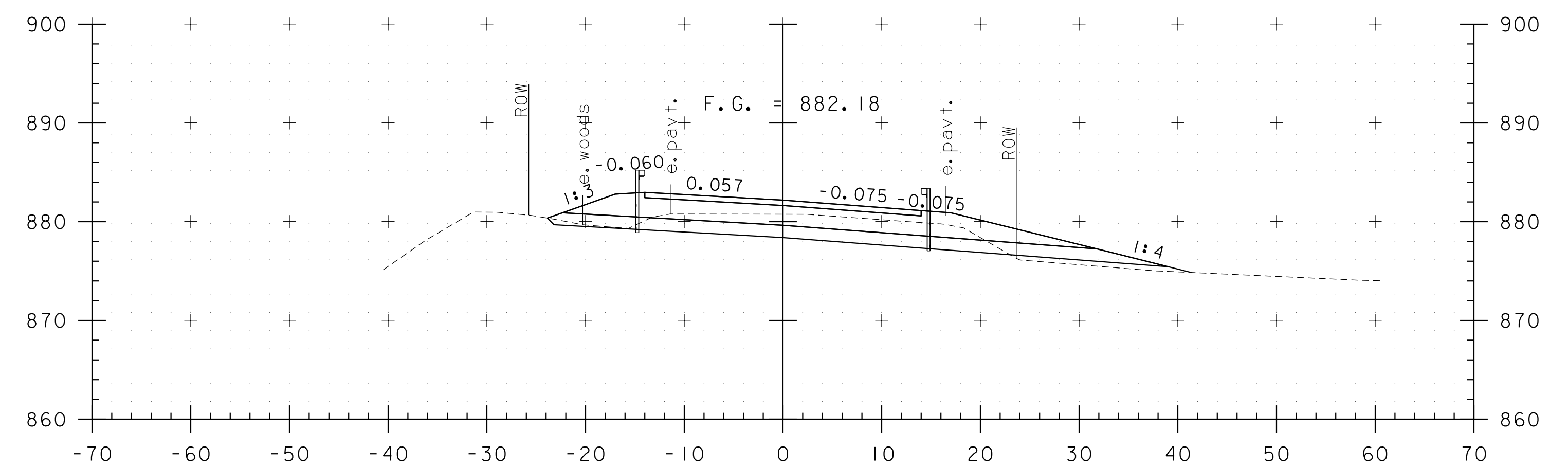
10+75  
BEGIN PROJECT



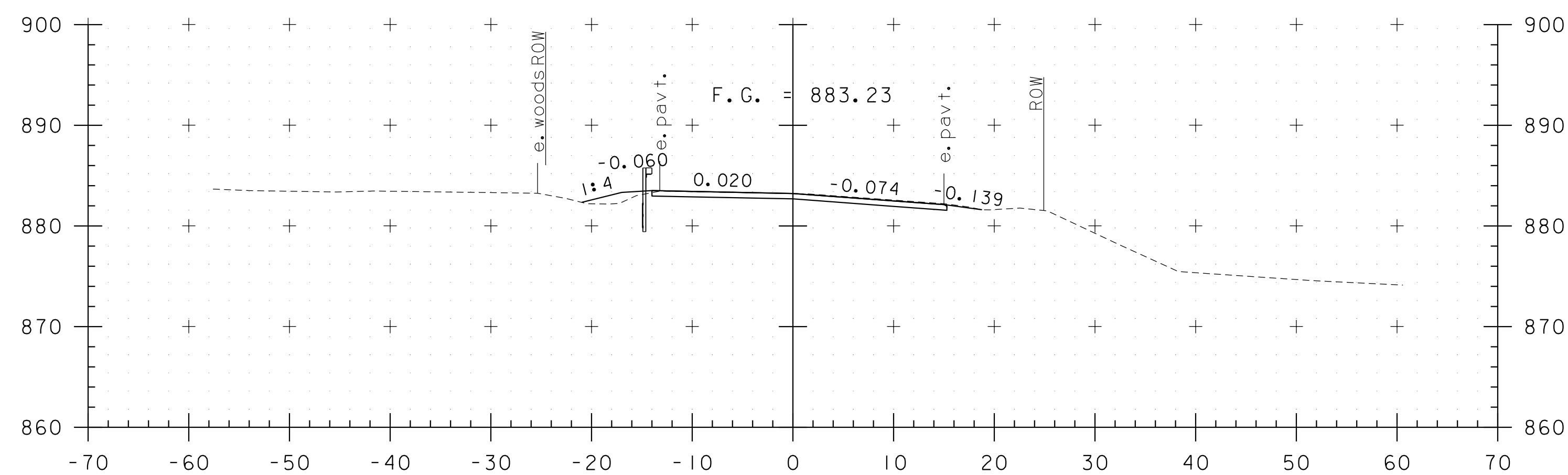
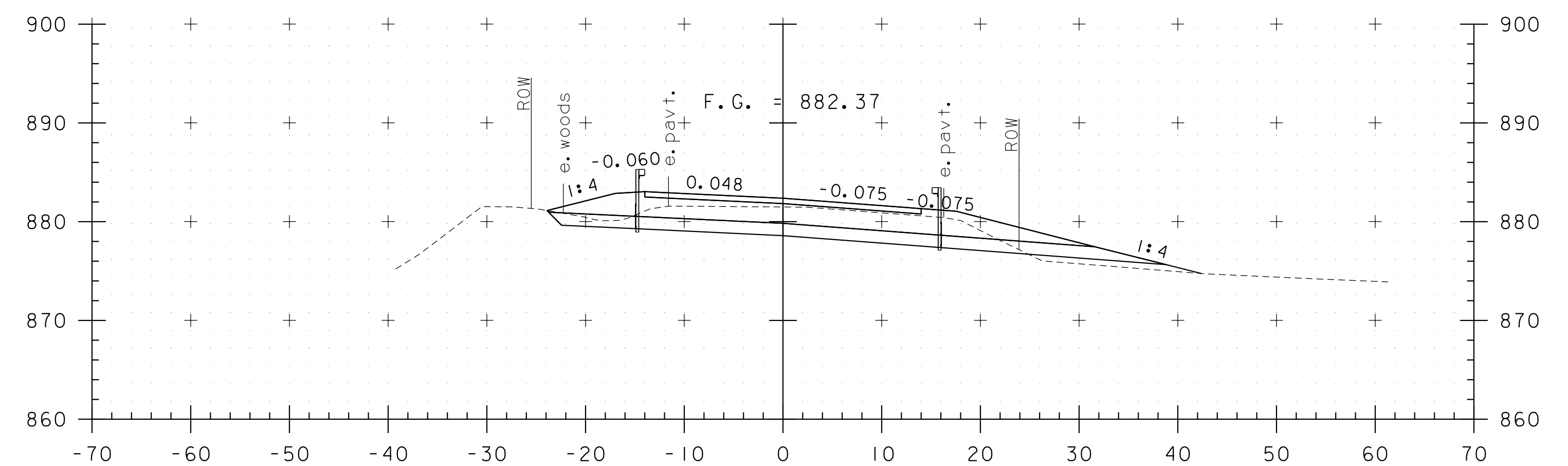
11+50



10+50



11+25

 $10+25$ 

11+00



STA 10+25 TO STA 11+50



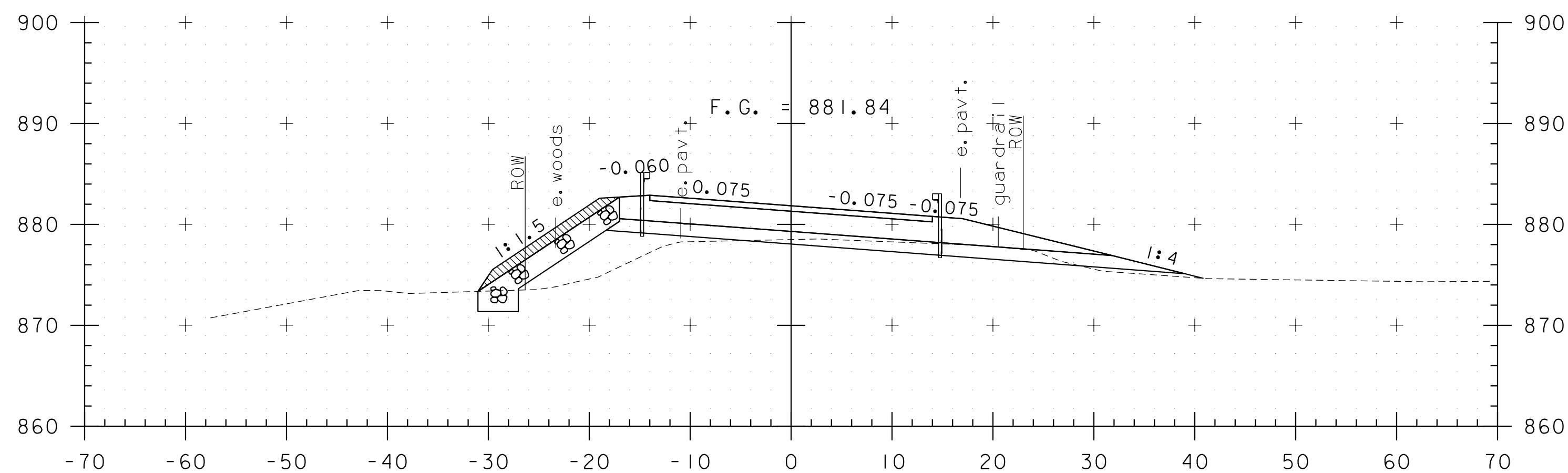
**FUSS & O'NEILL**

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

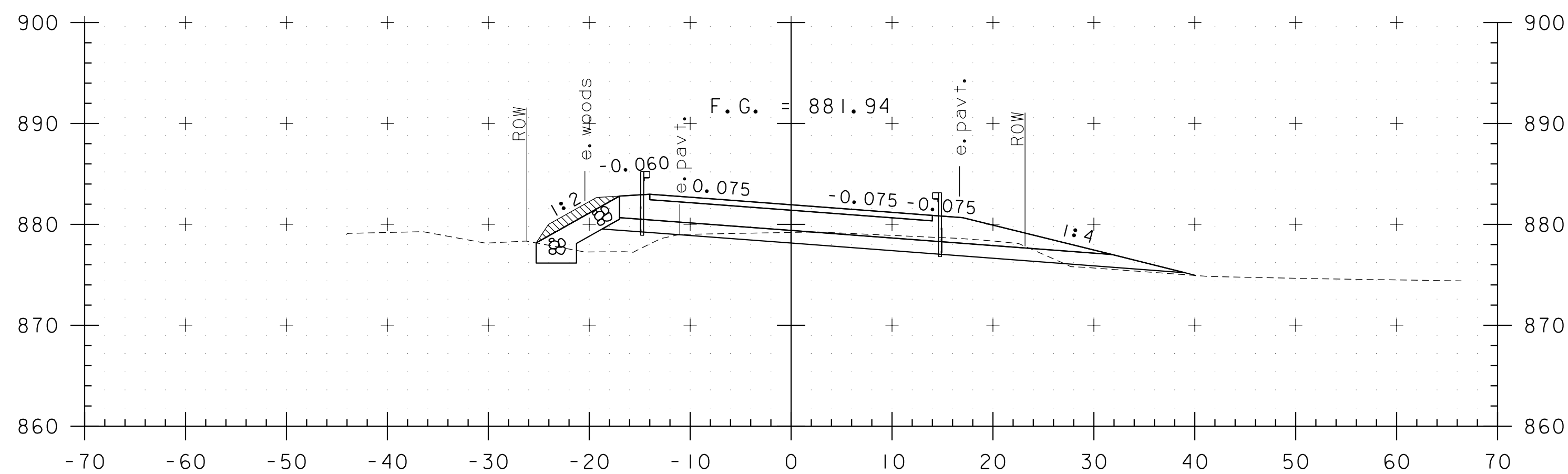
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 51 OF 77

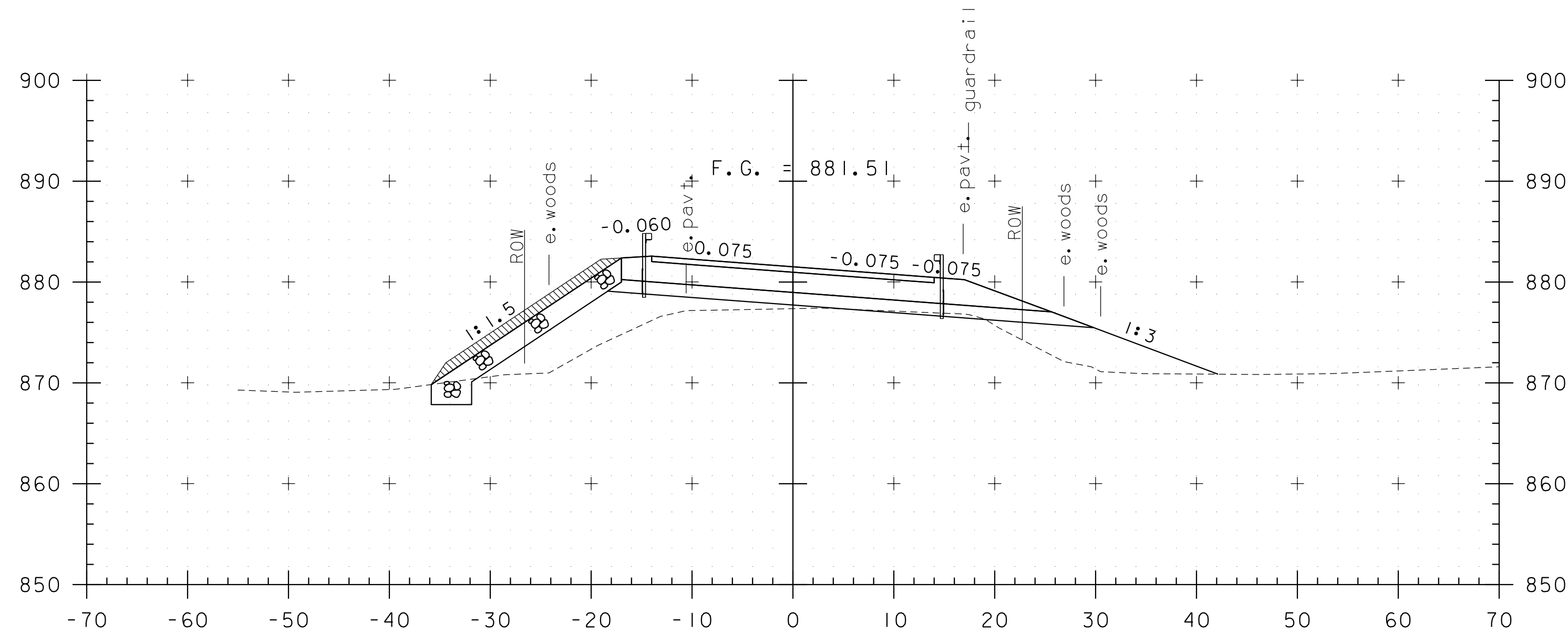




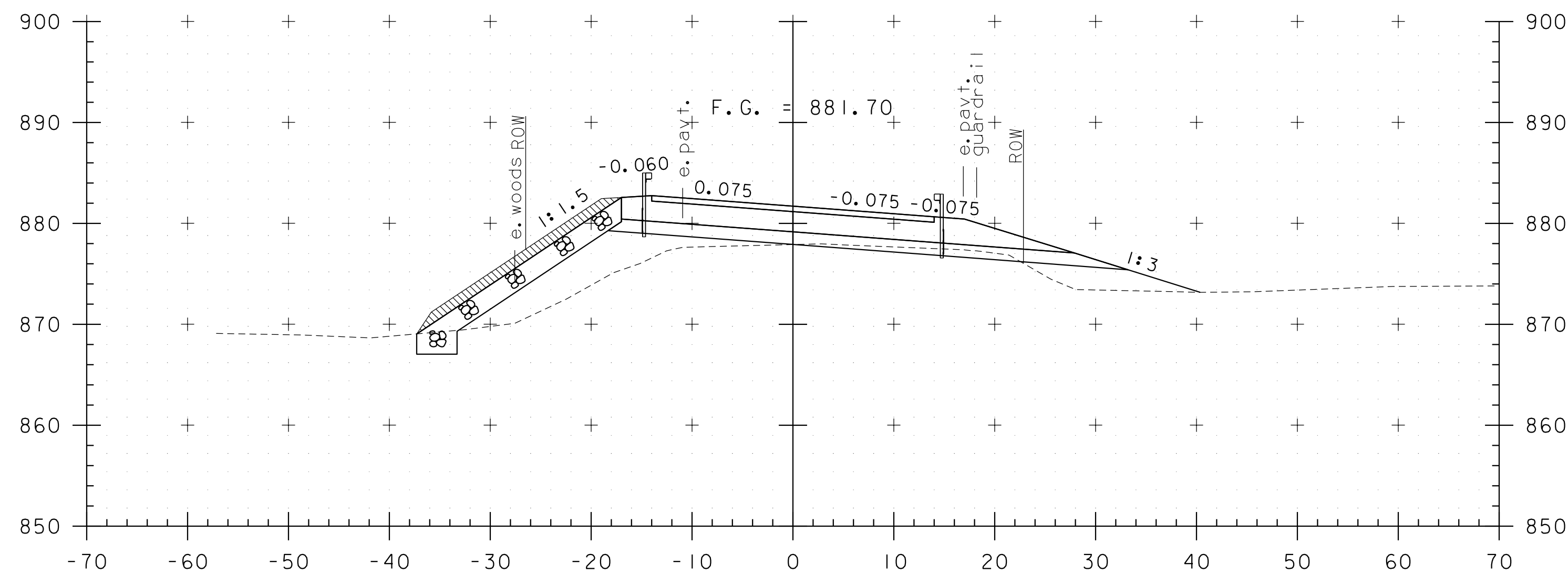
12+00



11+75



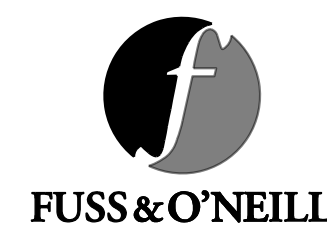
12+50



12+25



STA 11+75 TO STA 12+50

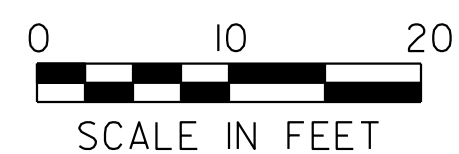
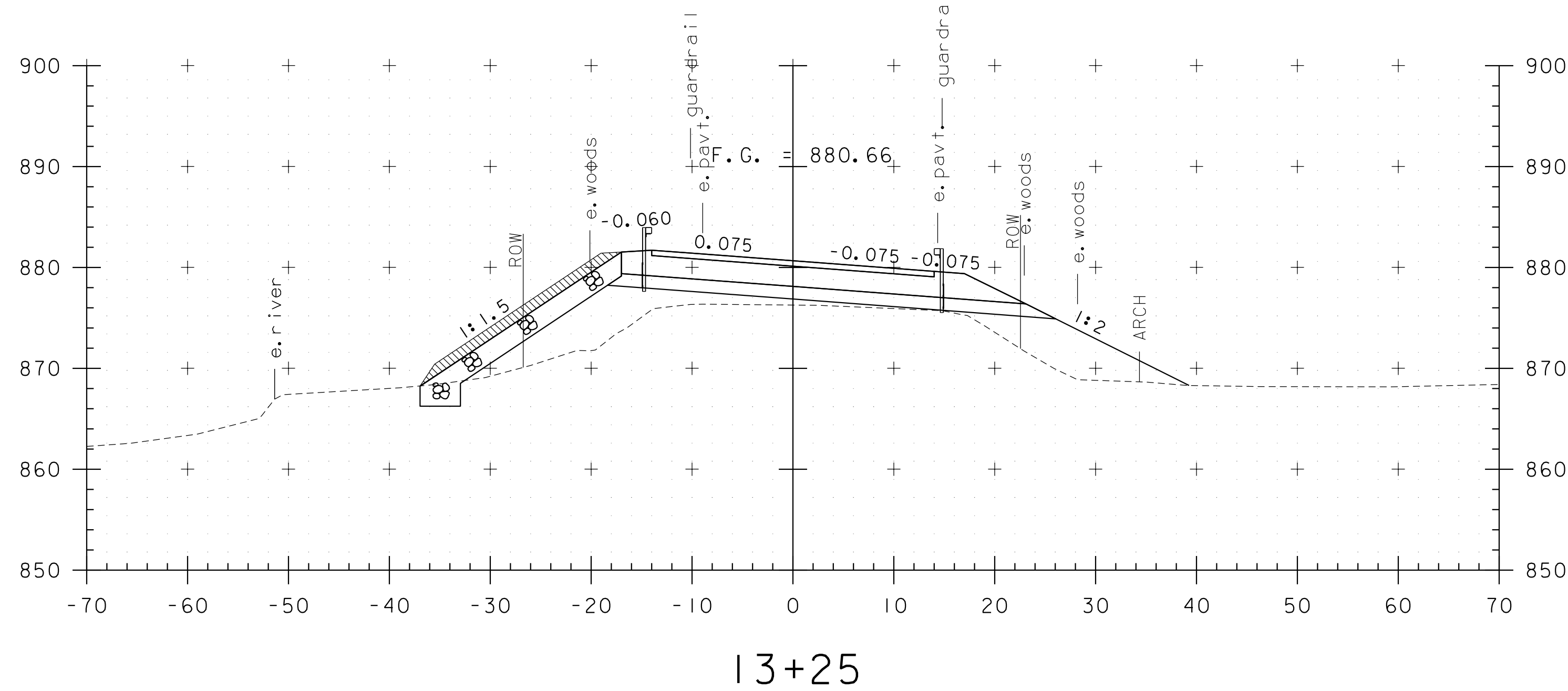
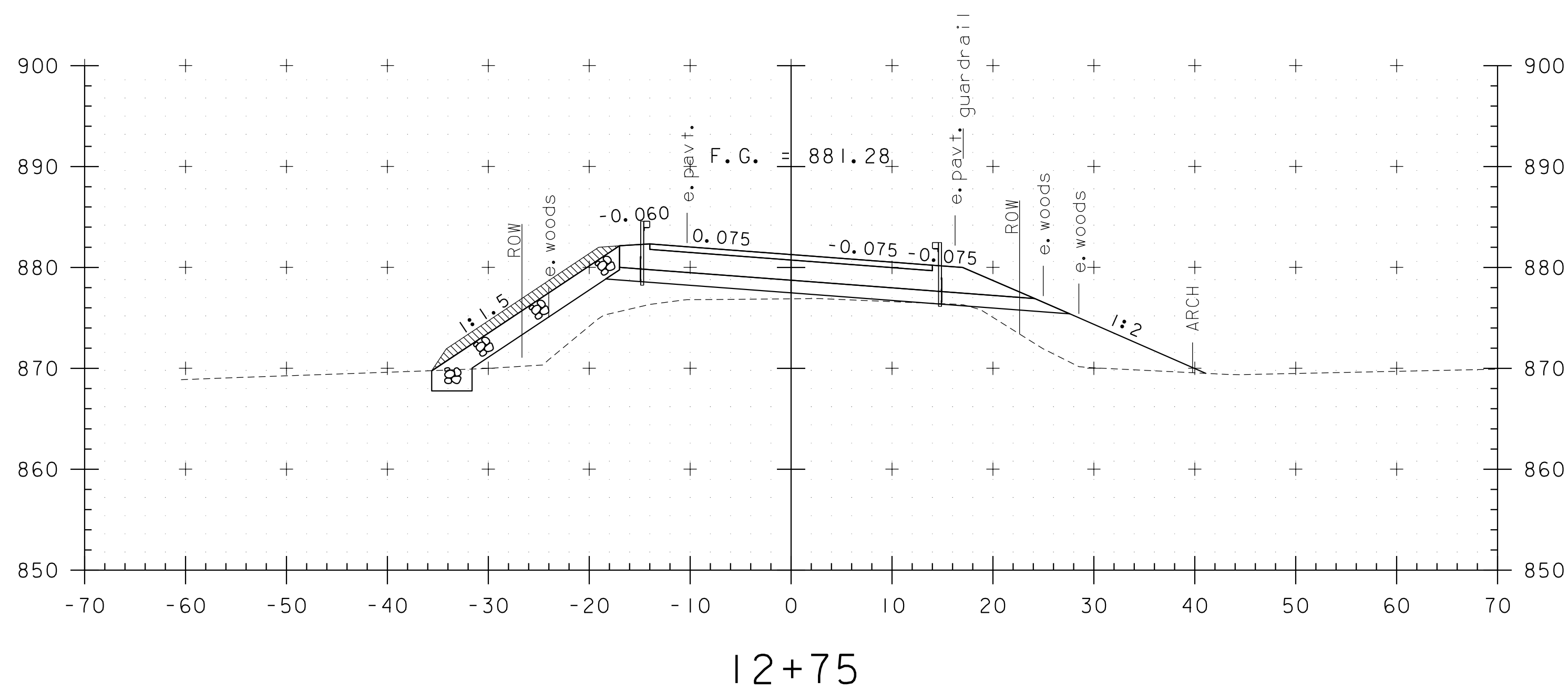
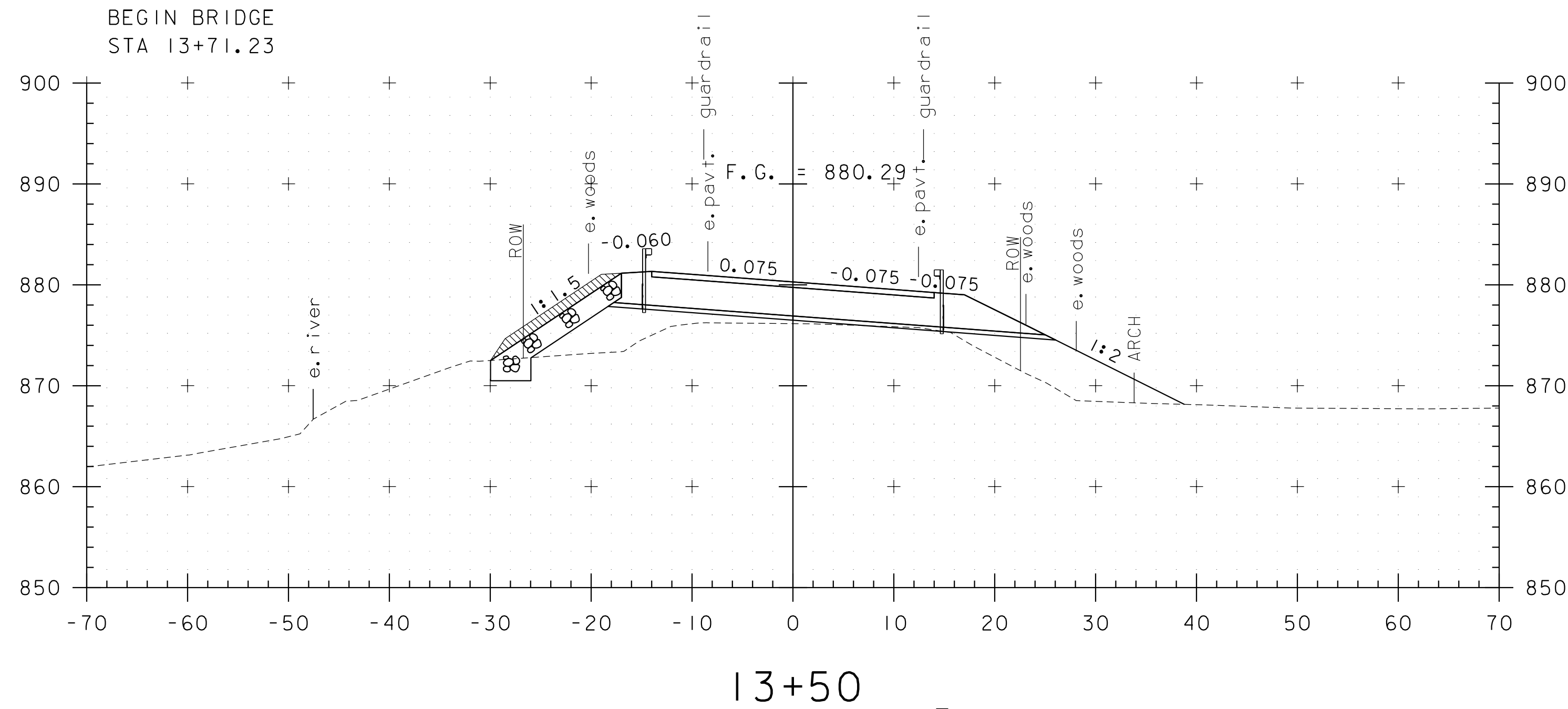
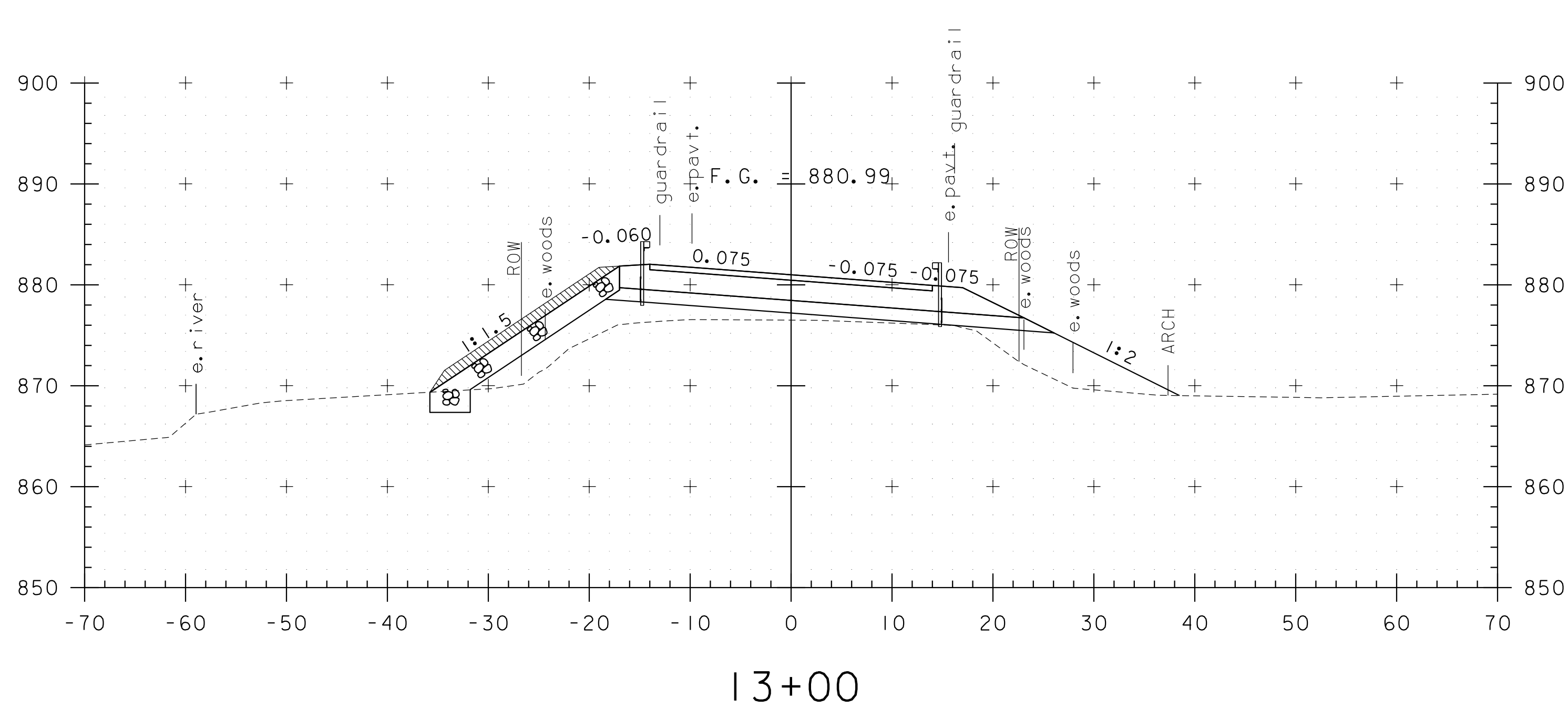


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 3

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 52 OF 77





STA 12+75 TO STA 13+50

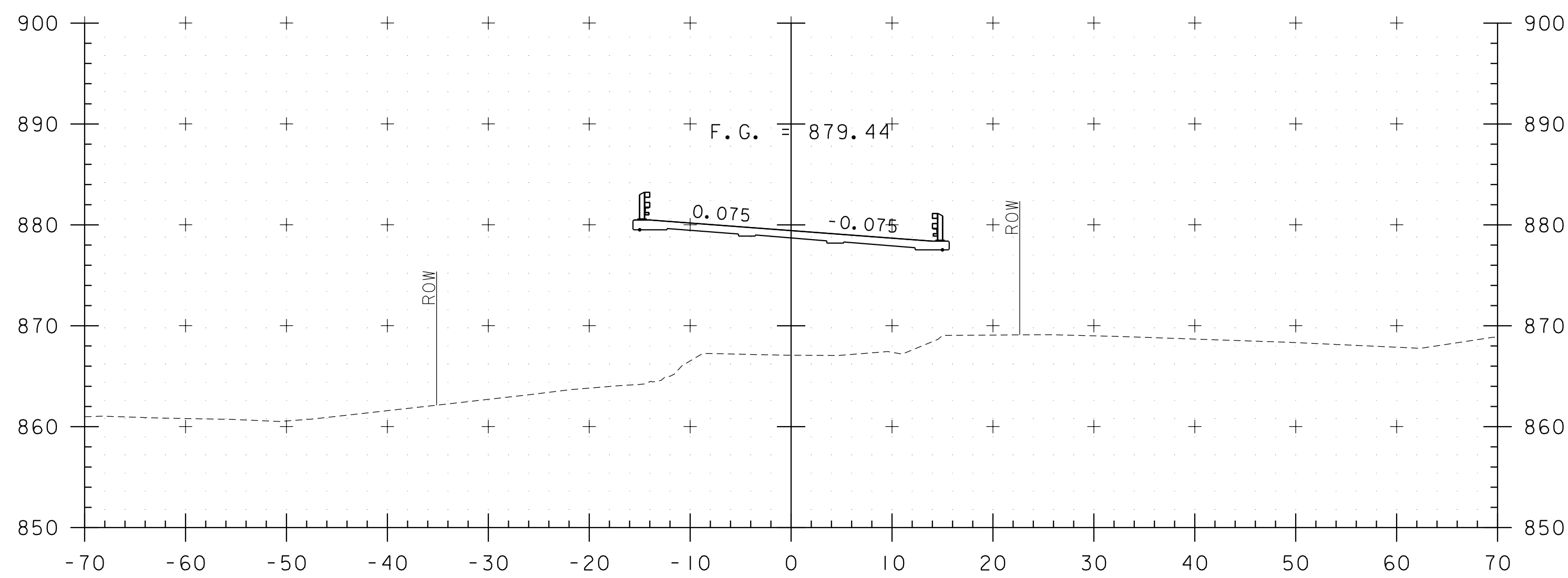


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

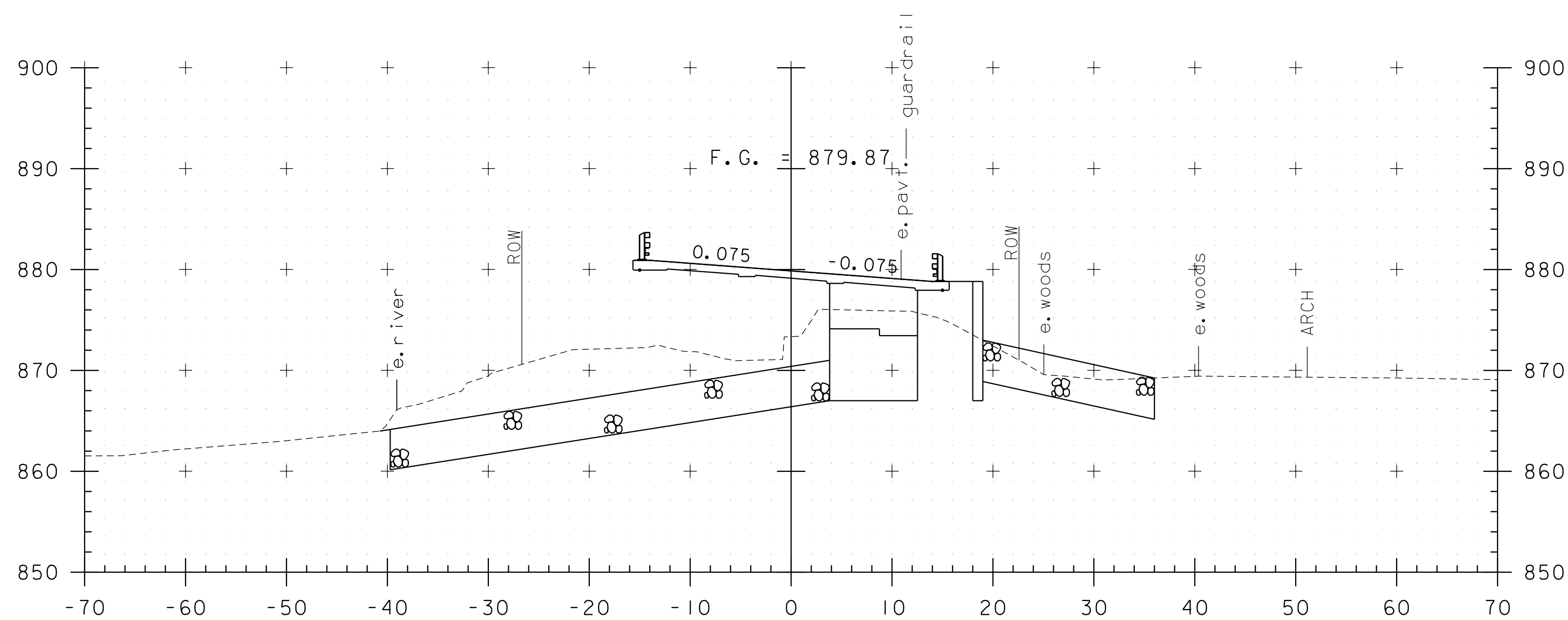
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 4

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 53 OF 77



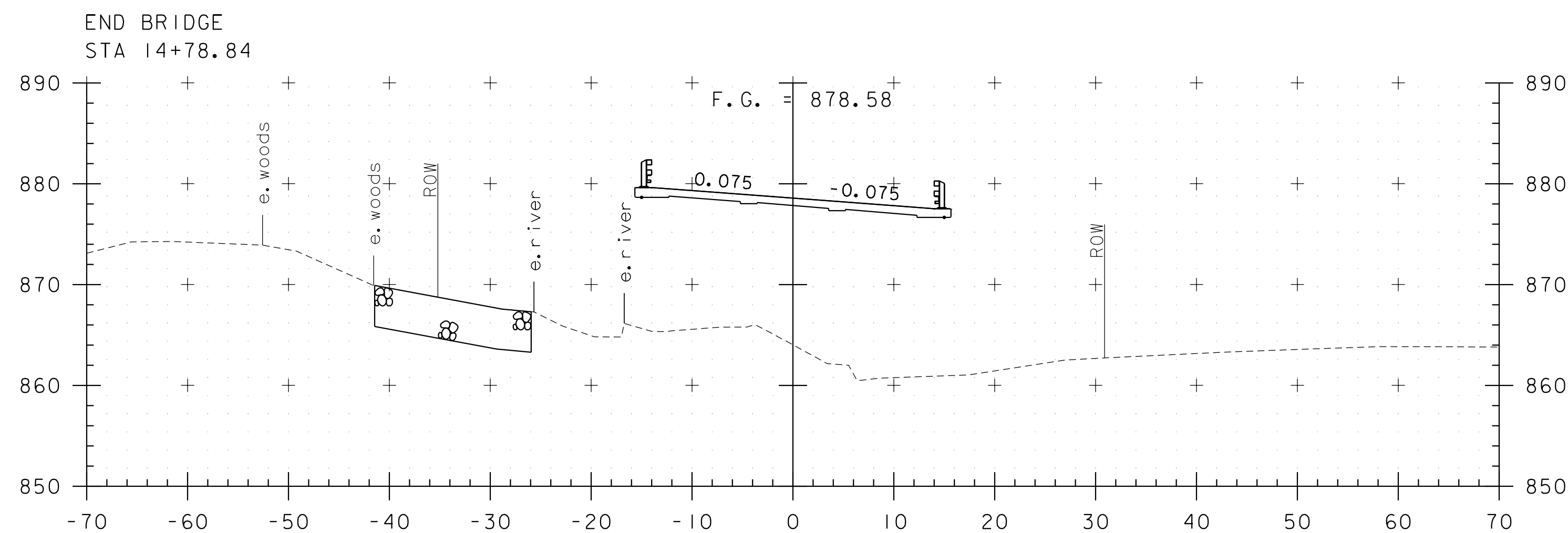


14+00

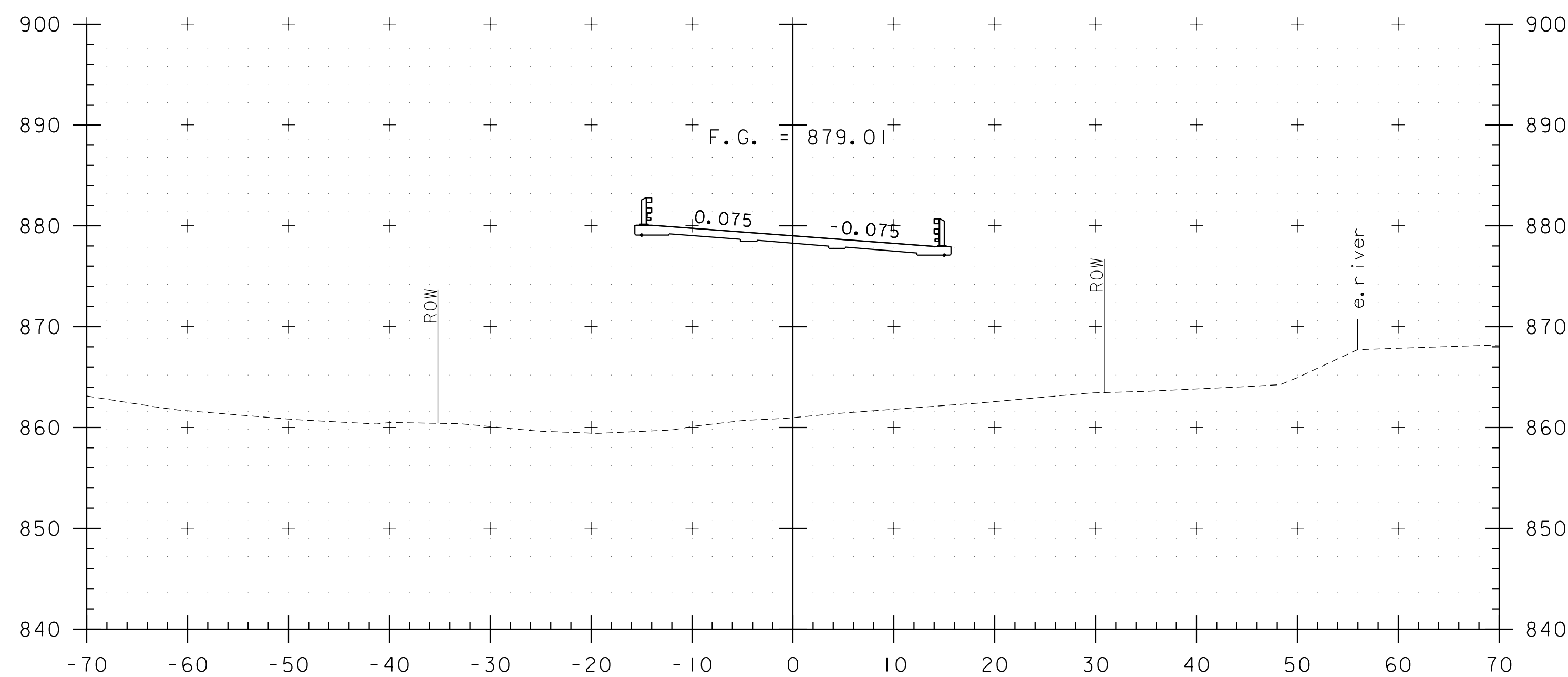


BEGIN BRIDGE  
STA 13+71.23

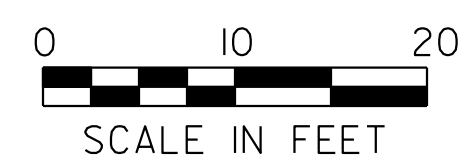
13+75



14+50



14+25



STA 13+75 TO STA 14+50

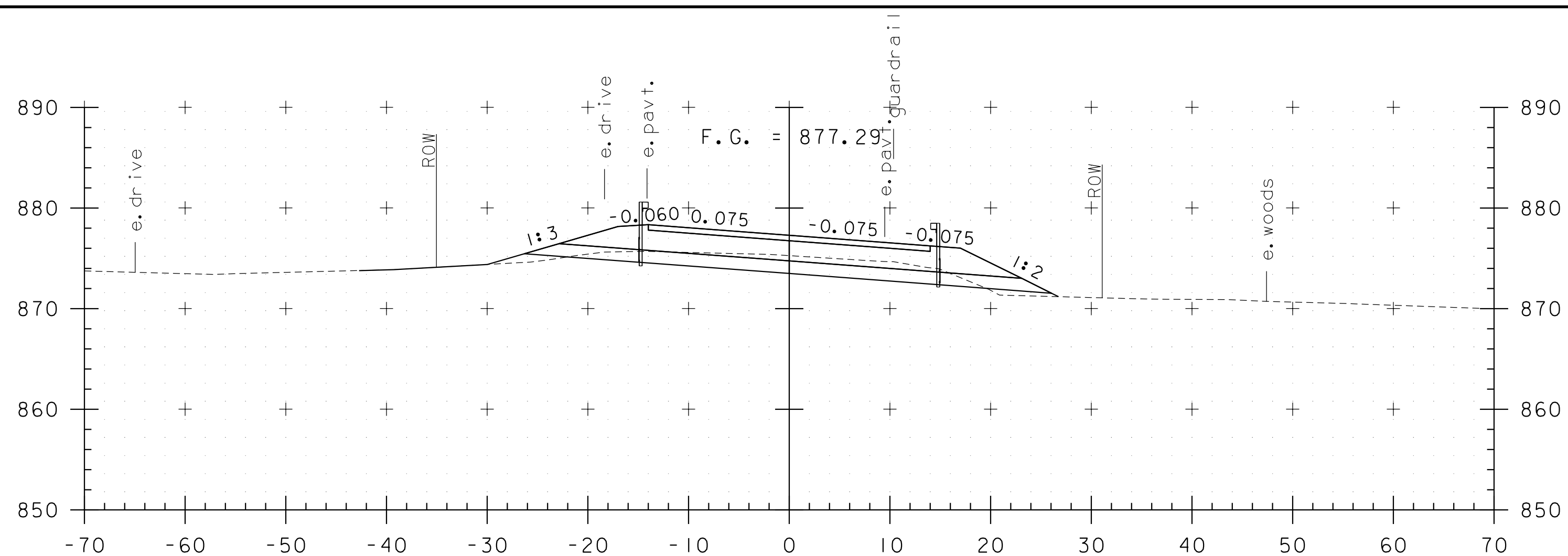


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

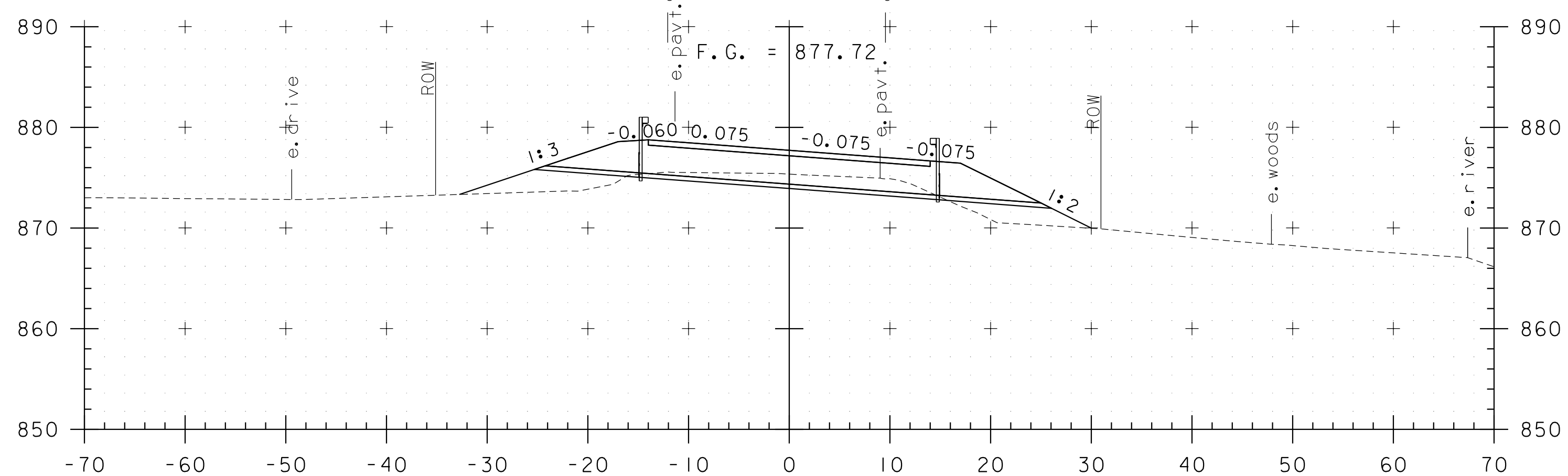
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 5

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 54 OF 77

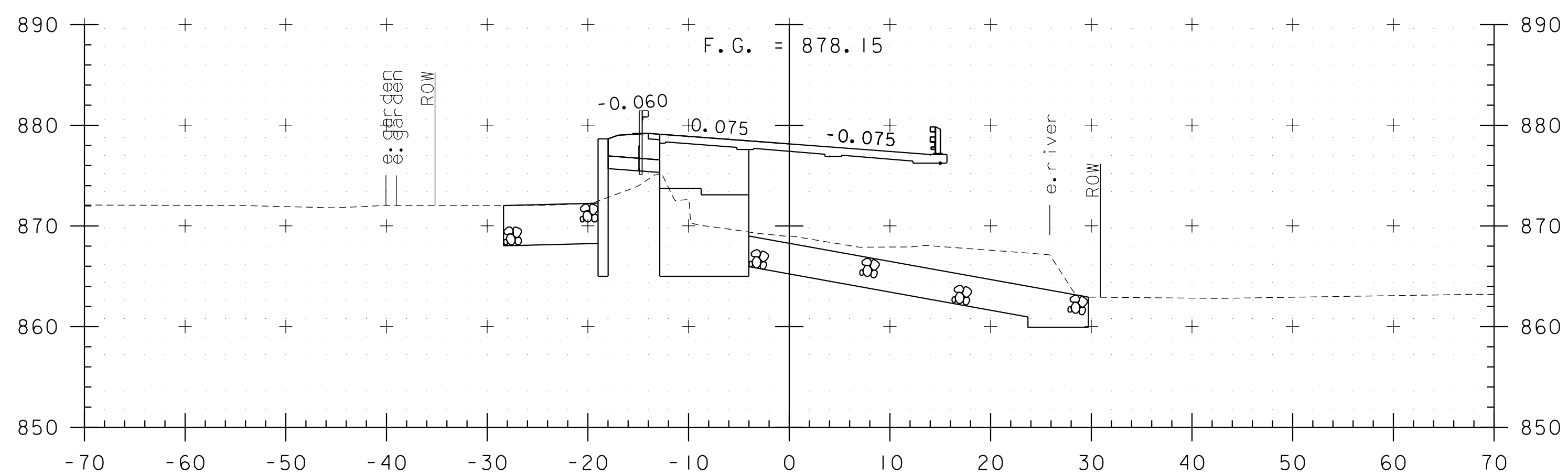




15+25

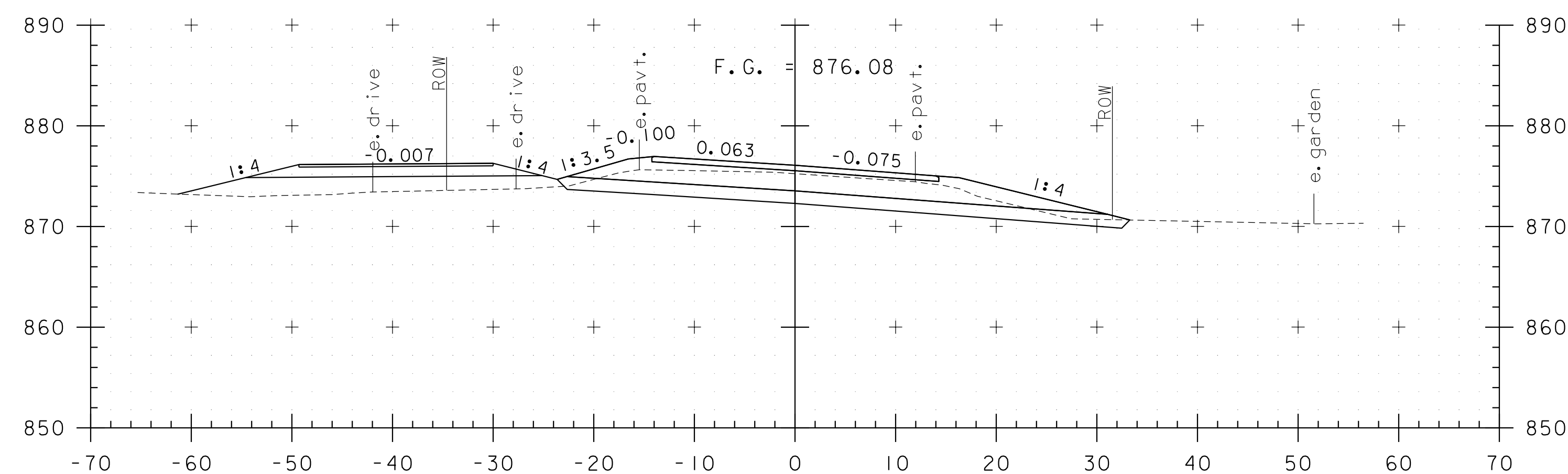


15+00

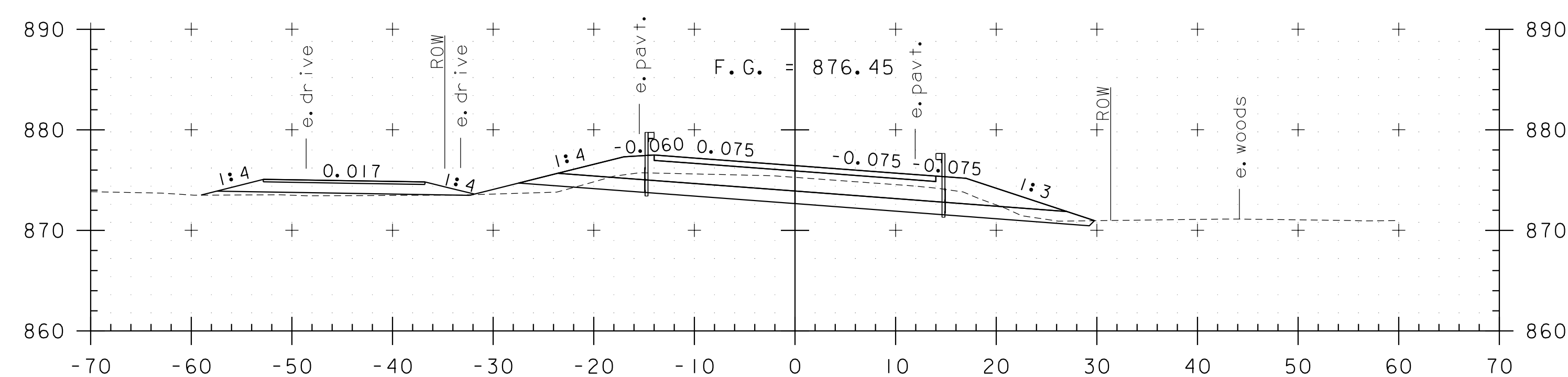


14+75

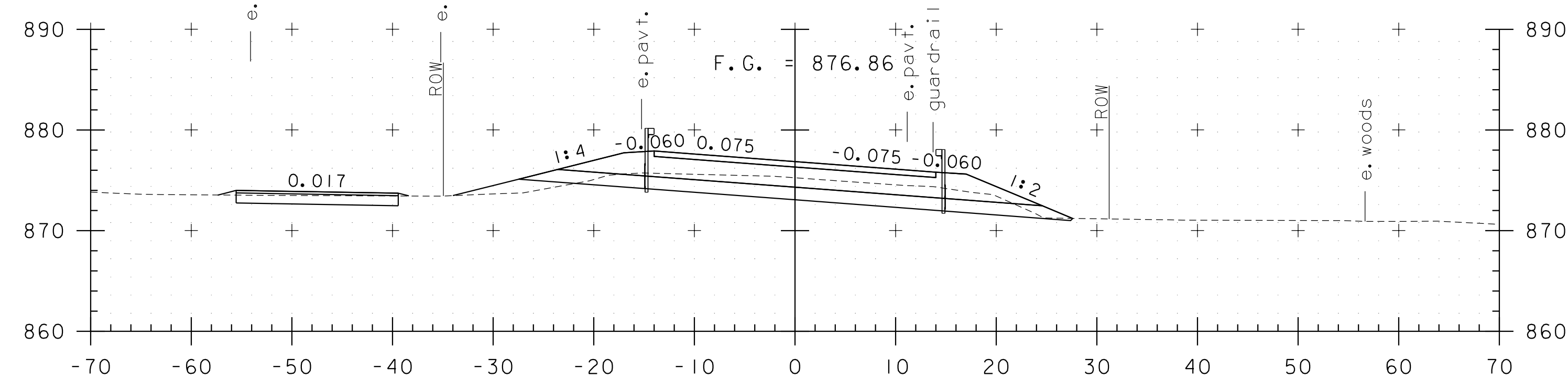
END BRIDGE  
STA 14+78.84



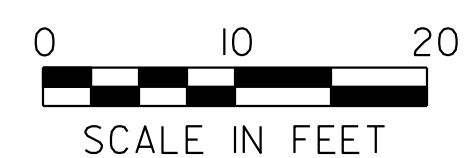
16+00



15+75



15+50



STA 14+75 TO STA 16+00

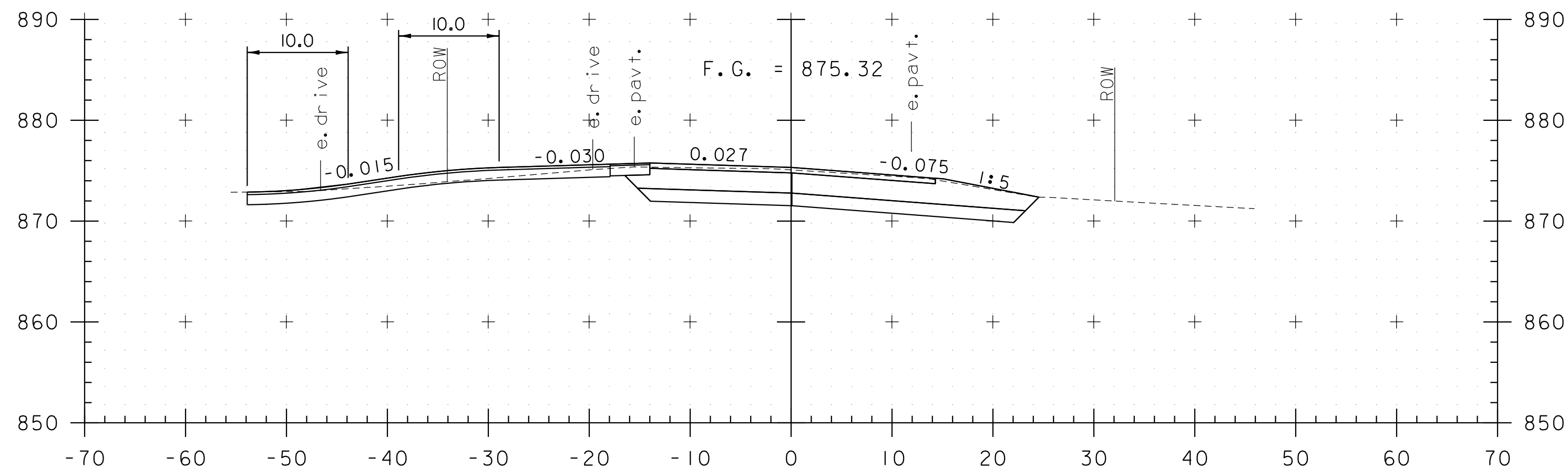


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

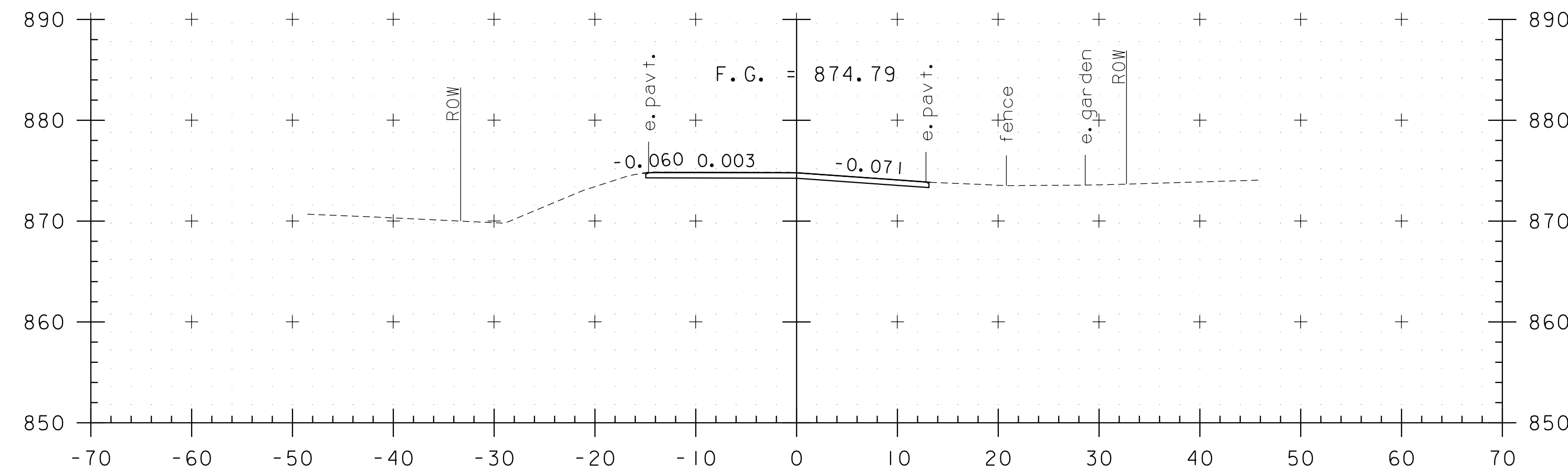
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 6

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 55 OF 77

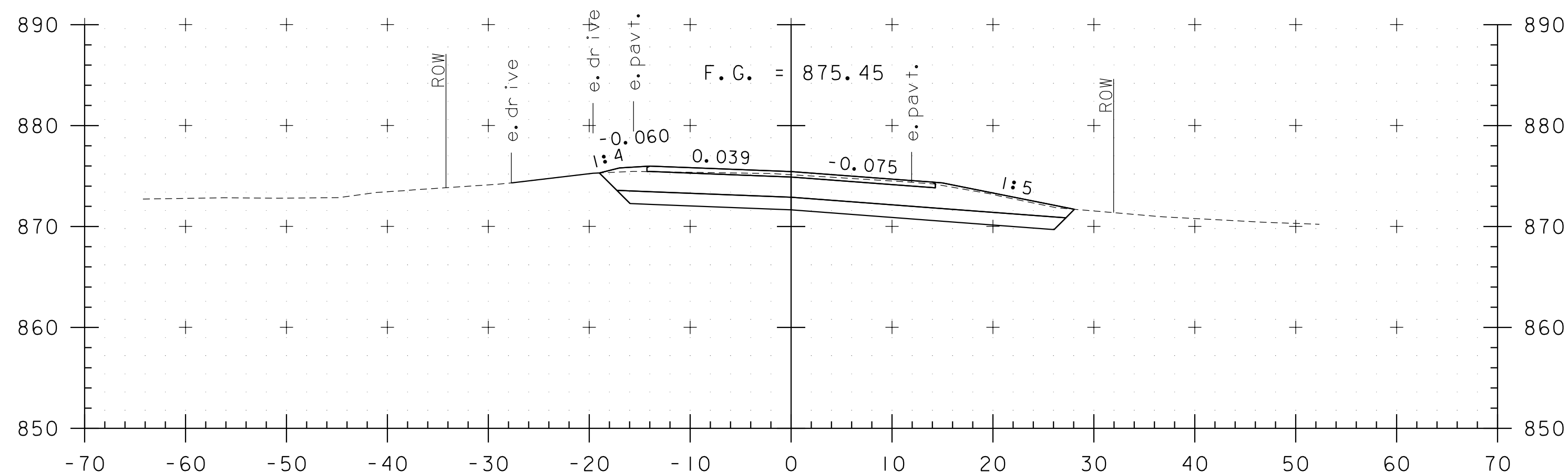




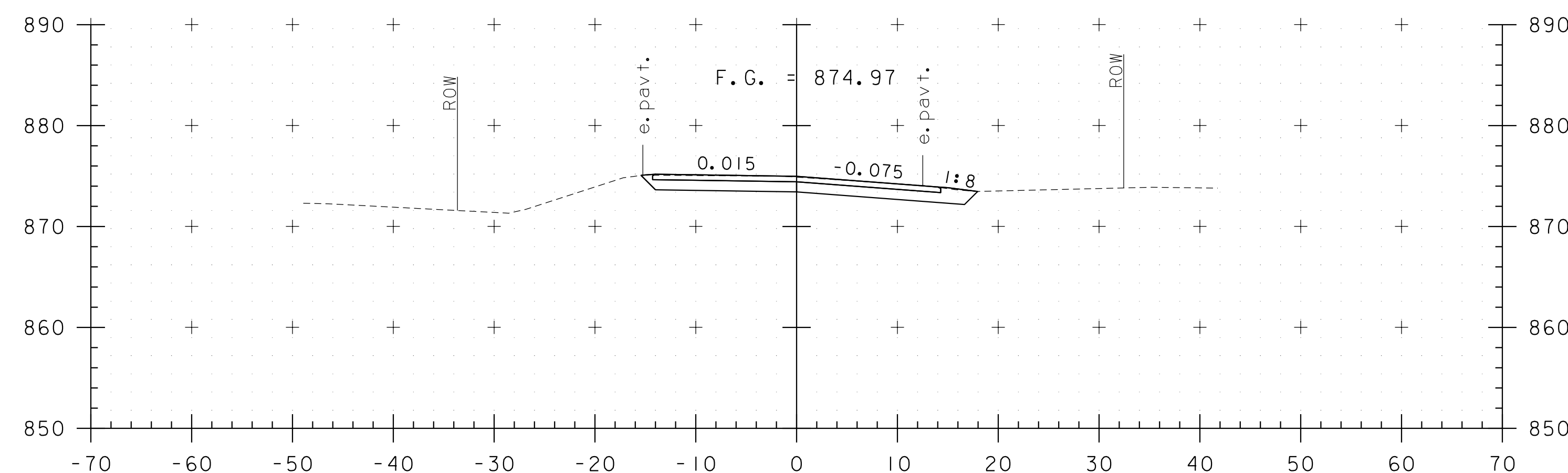
16+63  
DRIVE LT



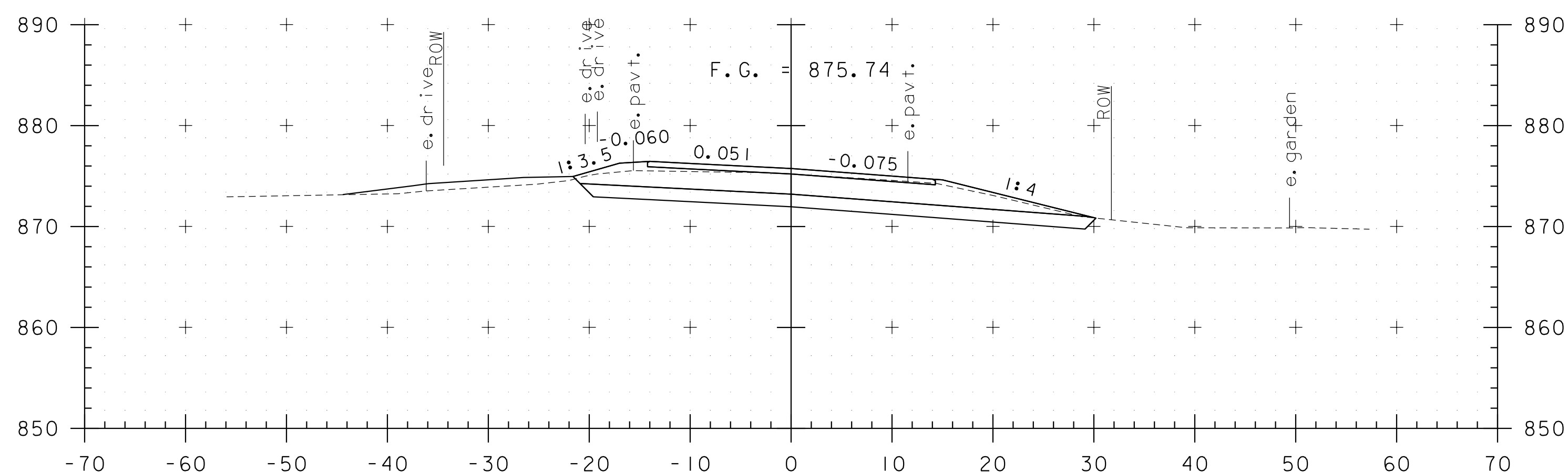
17+25



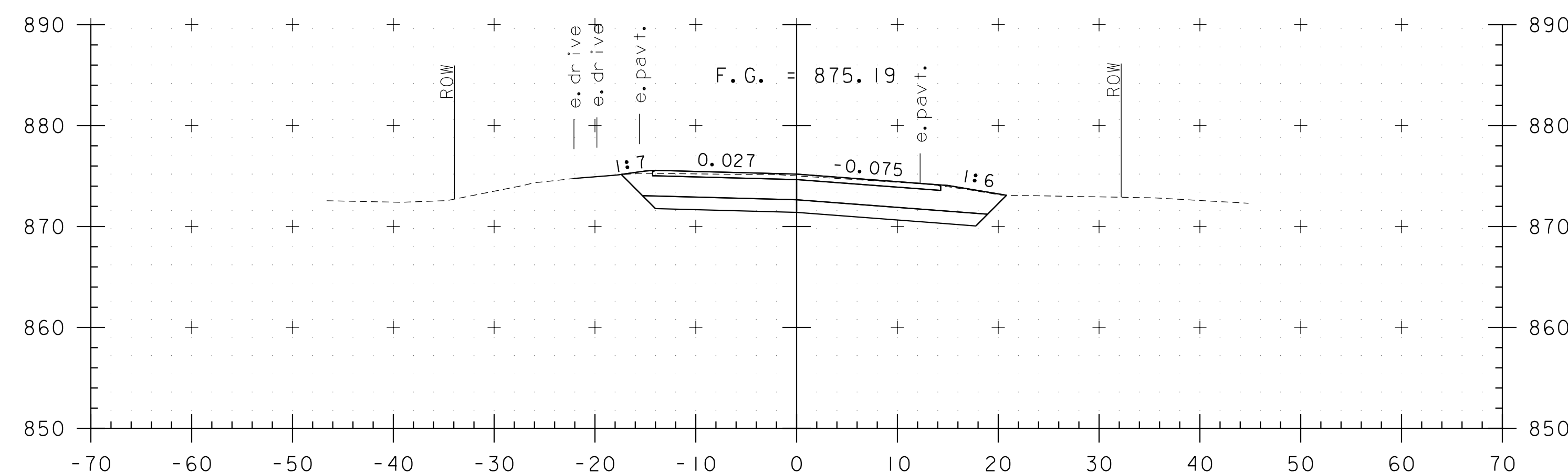
16+50



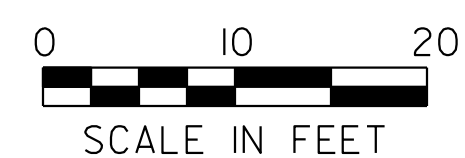
17+00



16+25



16+75  
END PROJECT



STA 16+25 TO STA 17+25

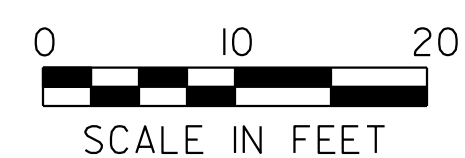
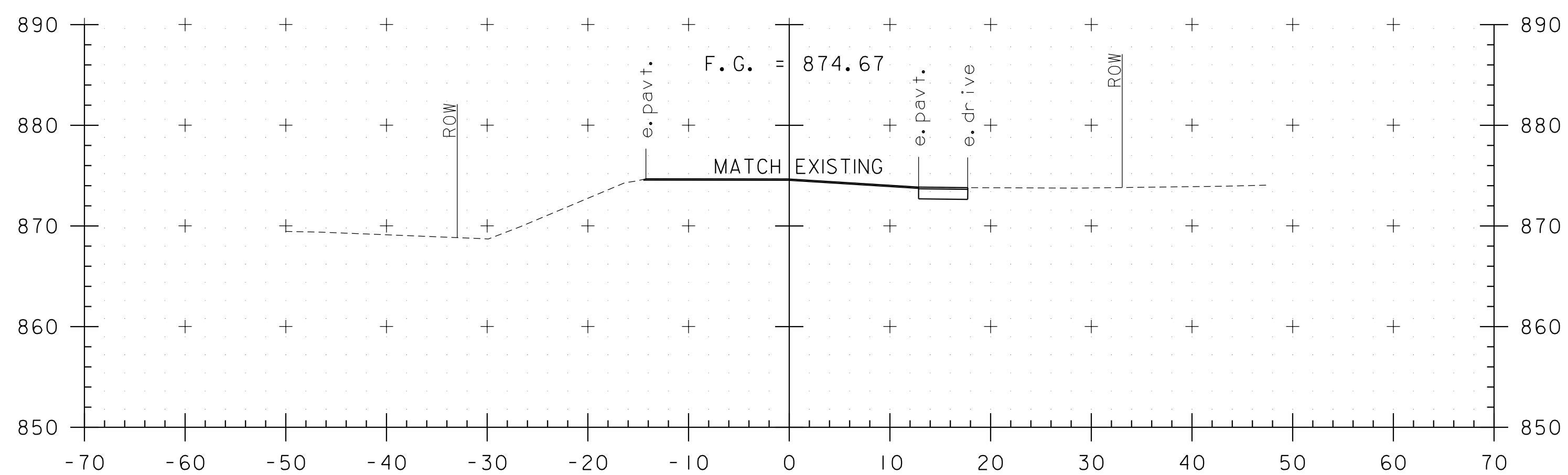
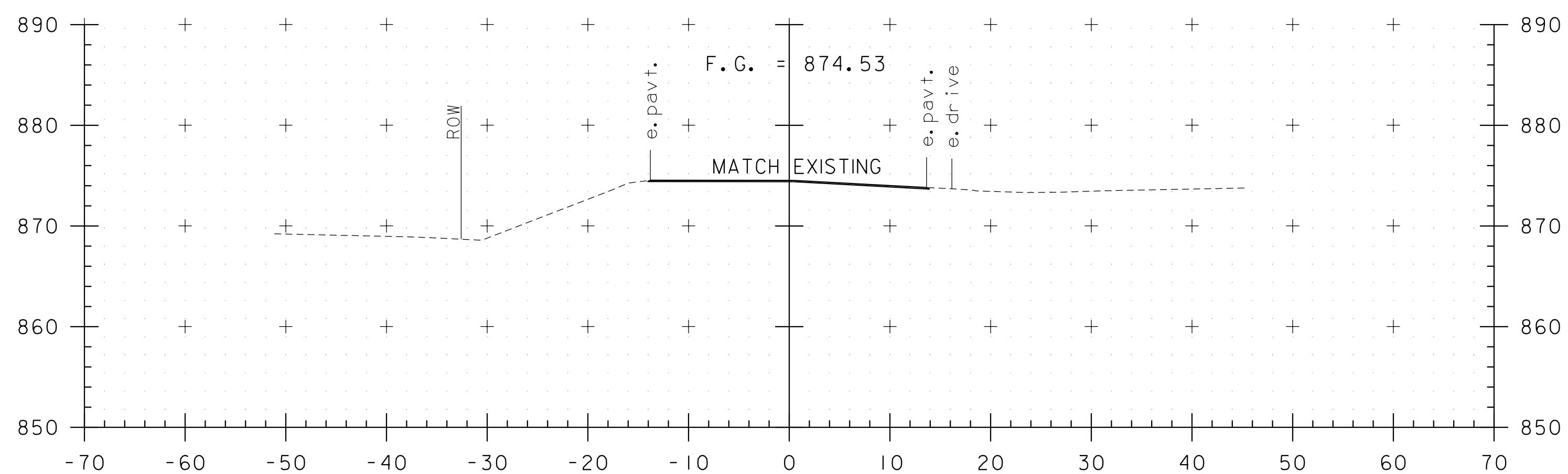


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 7

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 56 OF 77





STA 17+50 TO STA 17+75

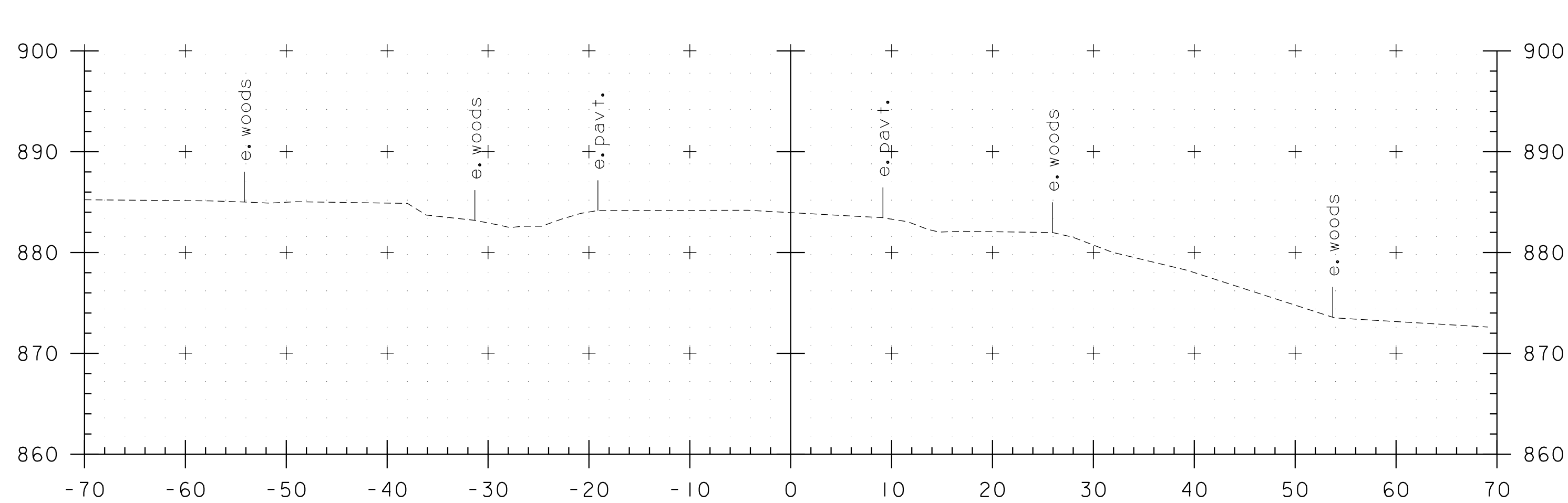


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

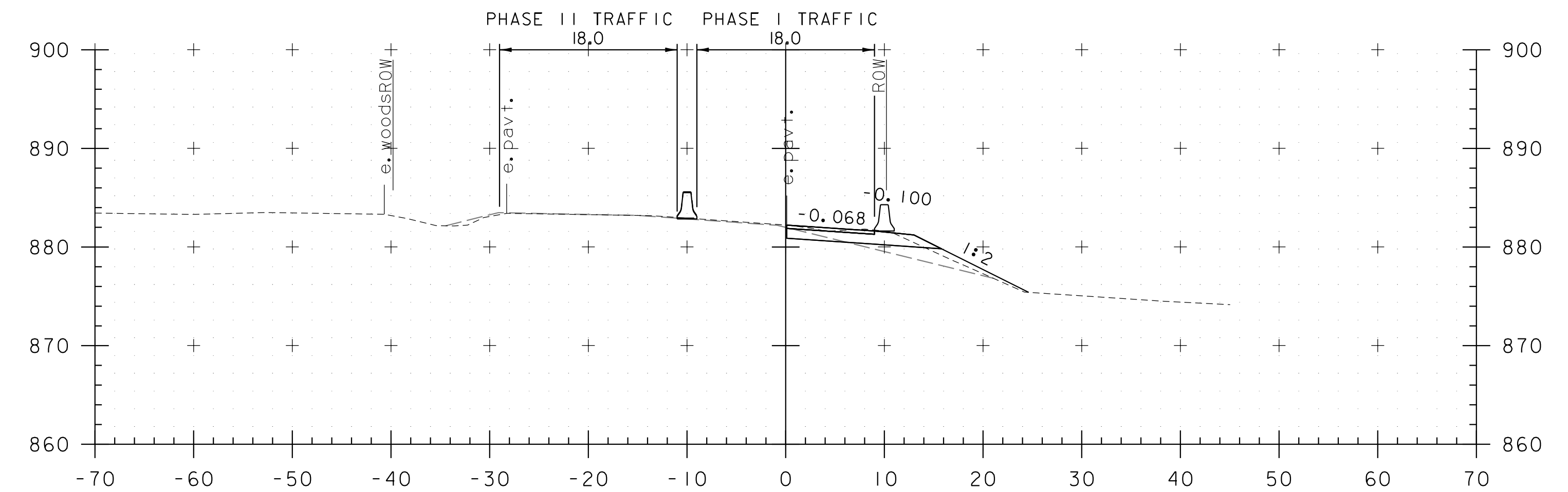
FILE NAME: z13c056xs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
VT 102 CROSS SECTIONS 8

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 57 OF 77

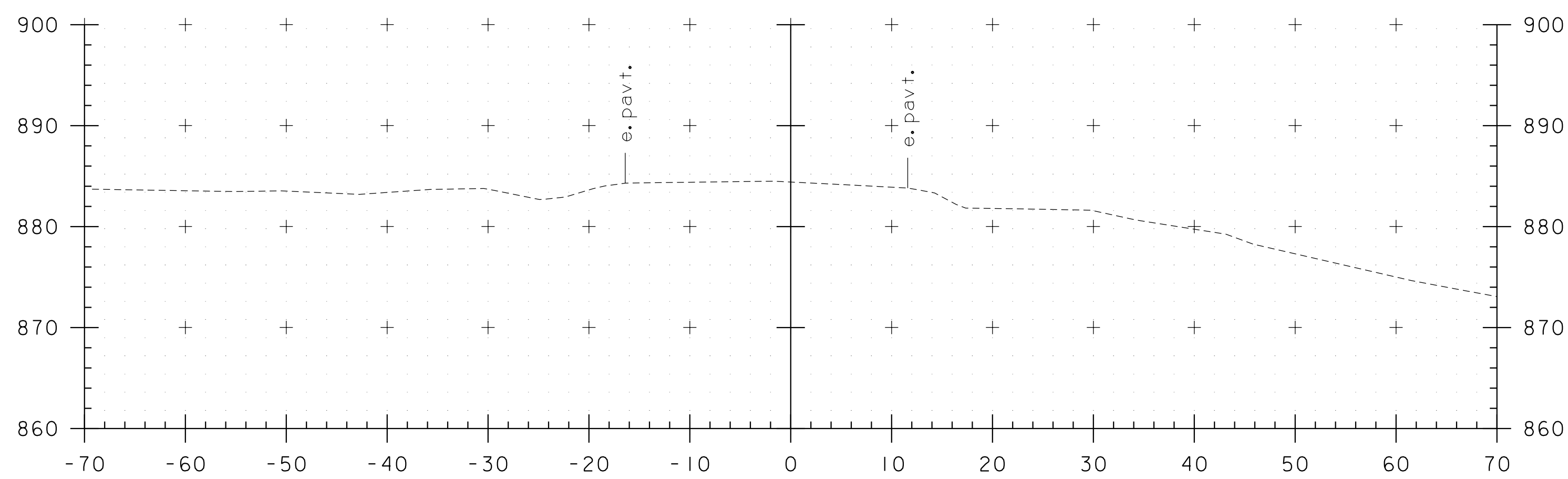




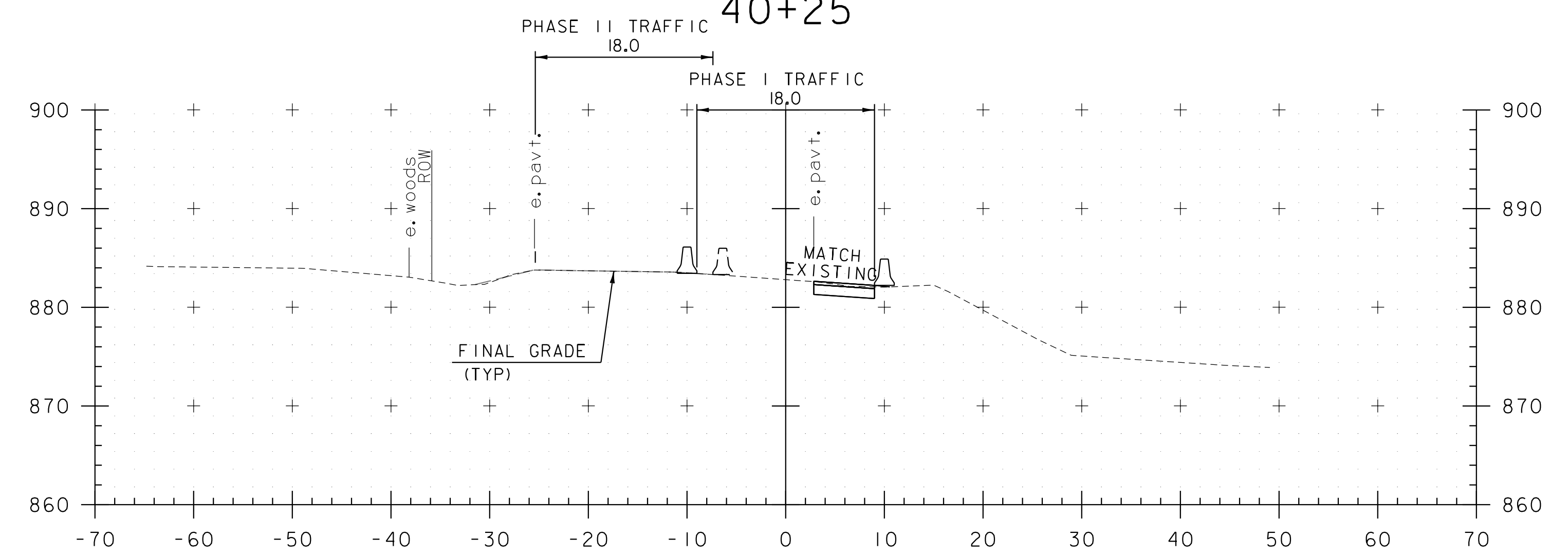
39+50



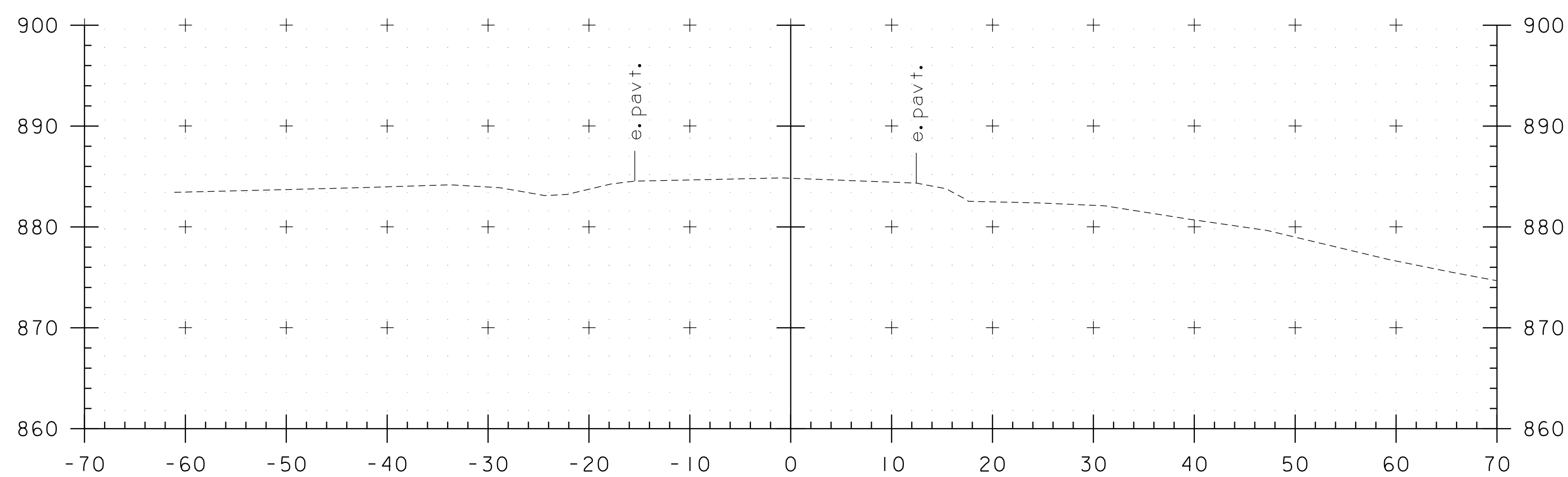
40+25



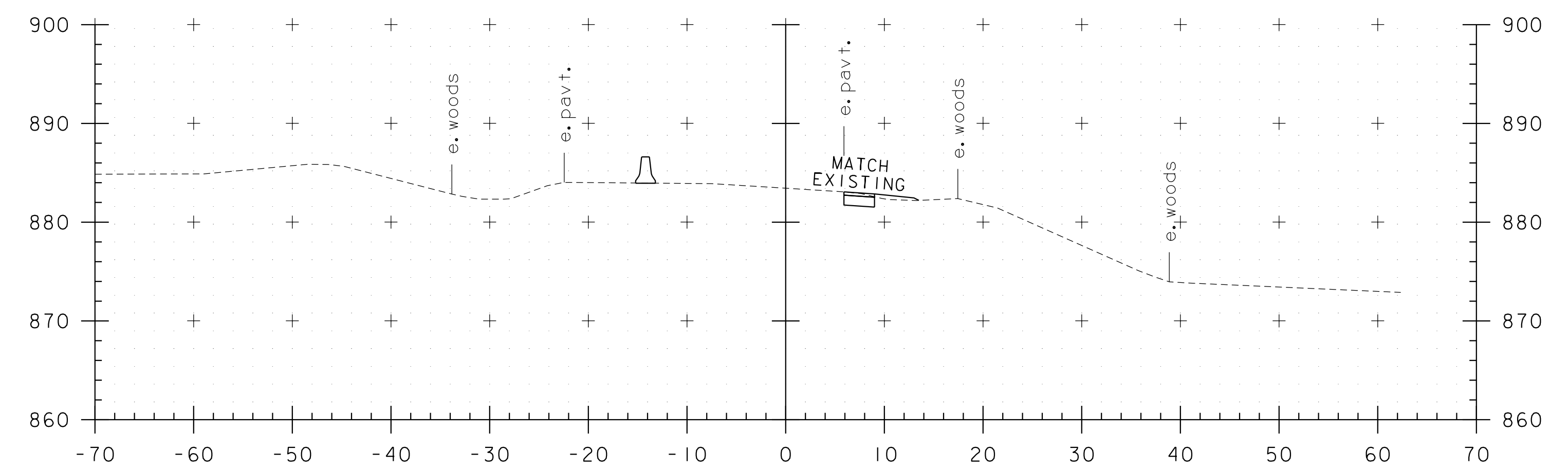
39+25



40+00



39+00



39+75



STA. 39+00 TO STA. 40+25

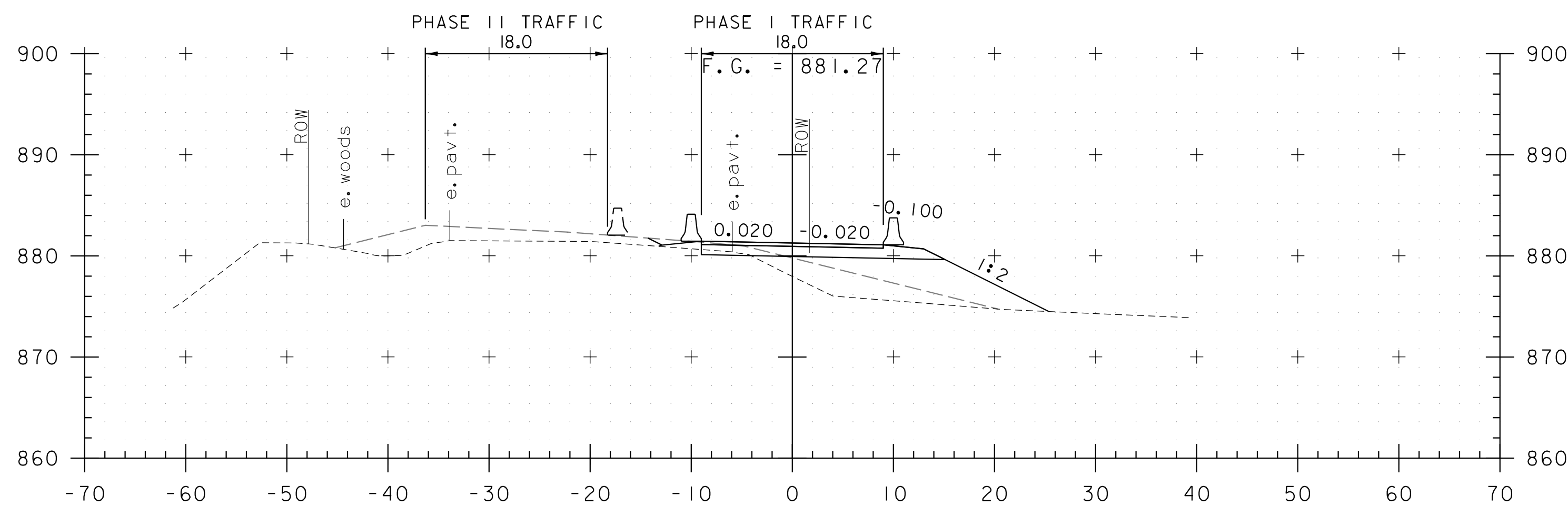


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

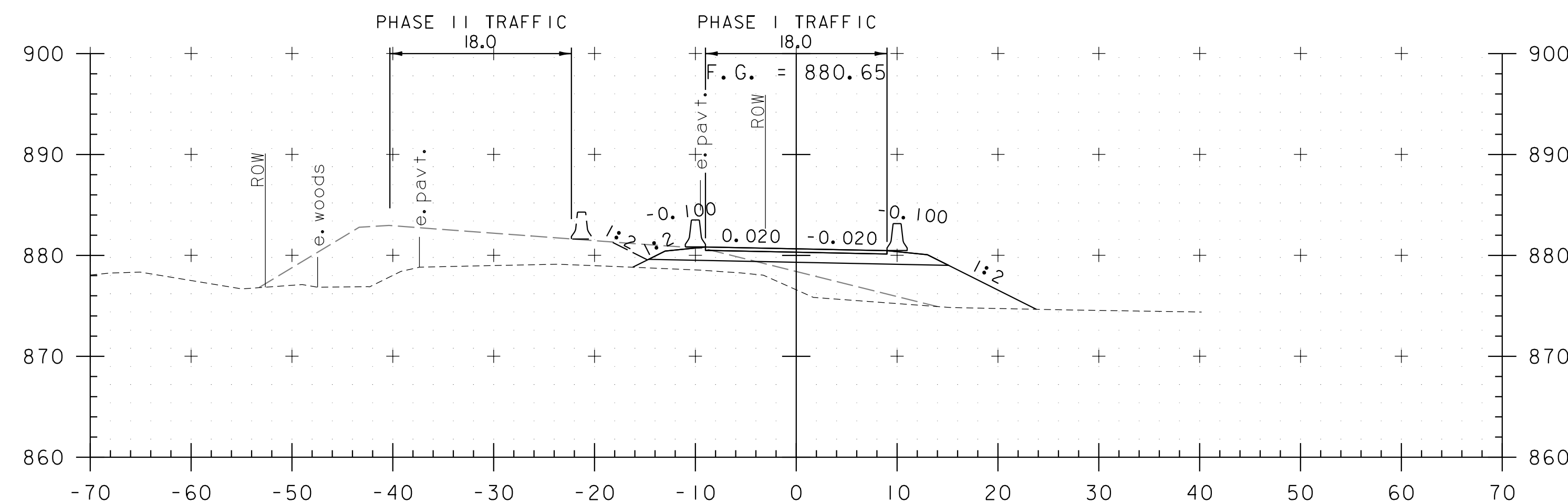
FILE NAME: z13c056tcpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS I

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 58 OF 77

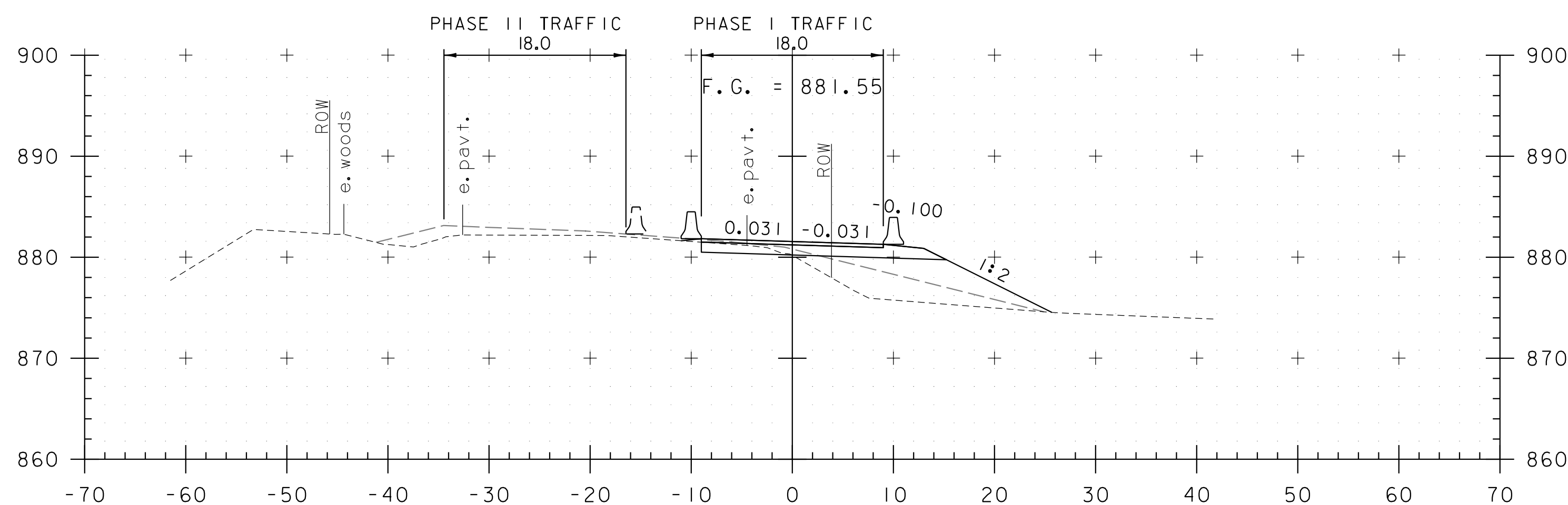




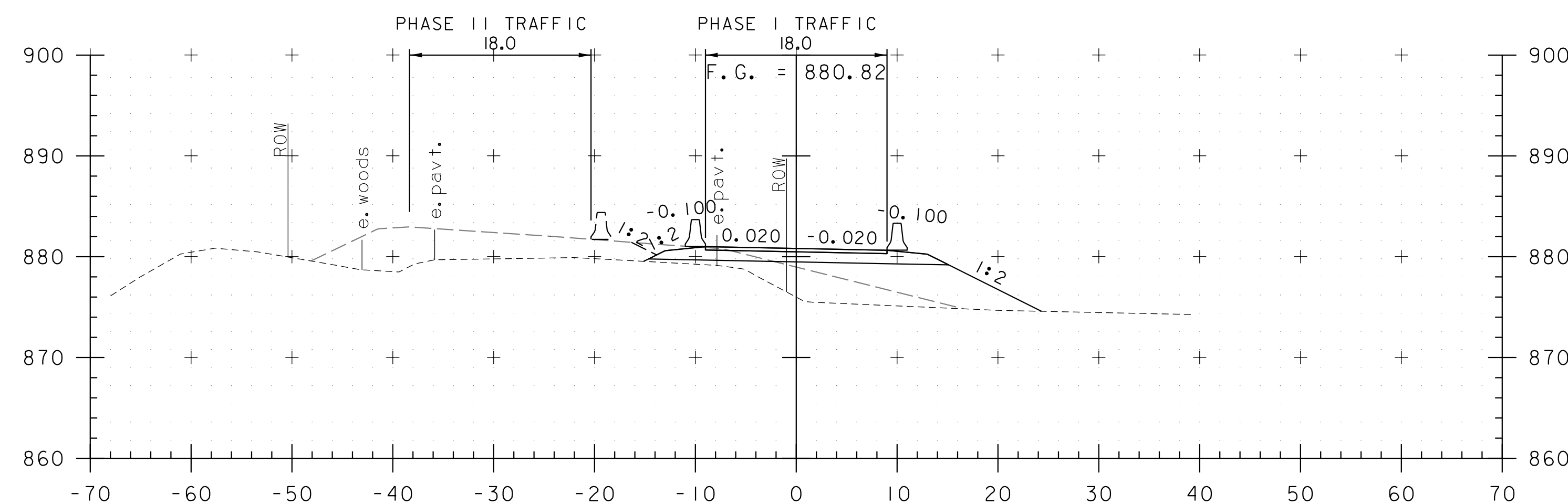
41+00



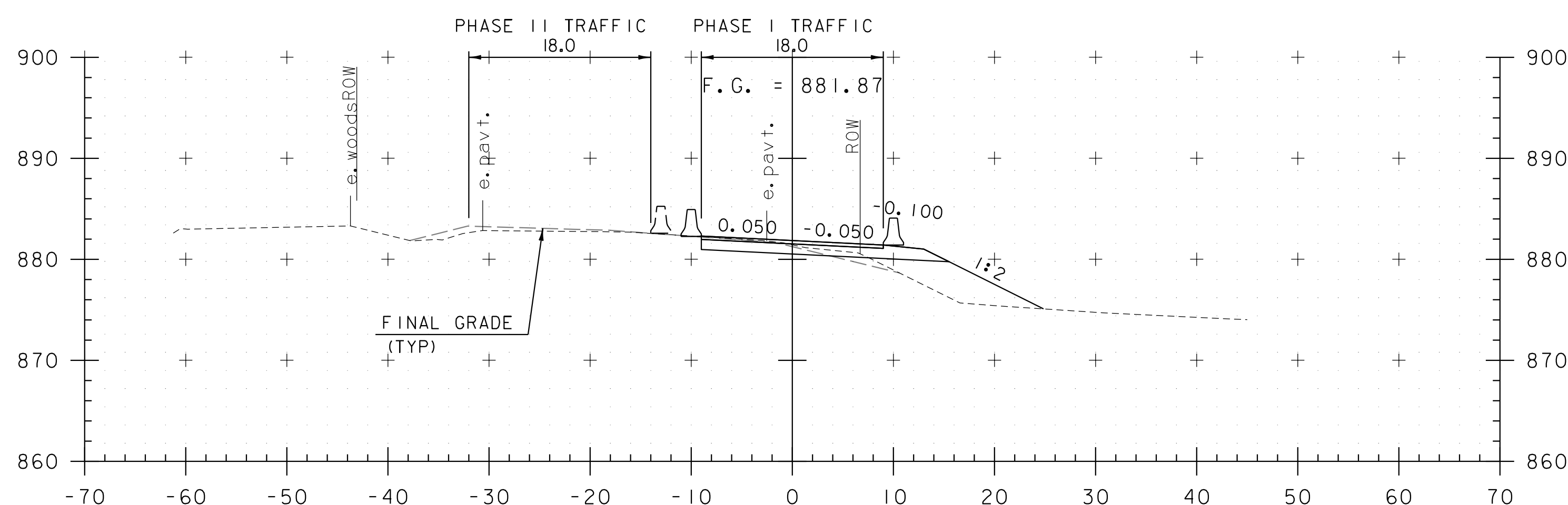
41+75



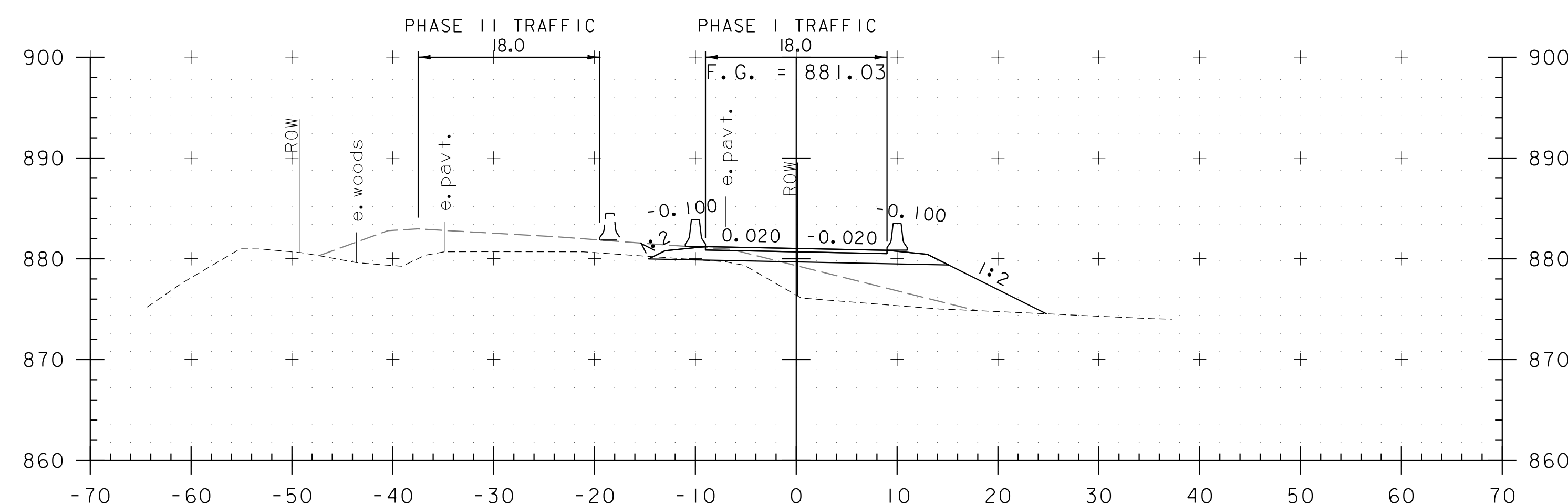
40+75



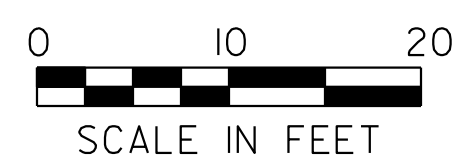
41+50



40+50



41+25



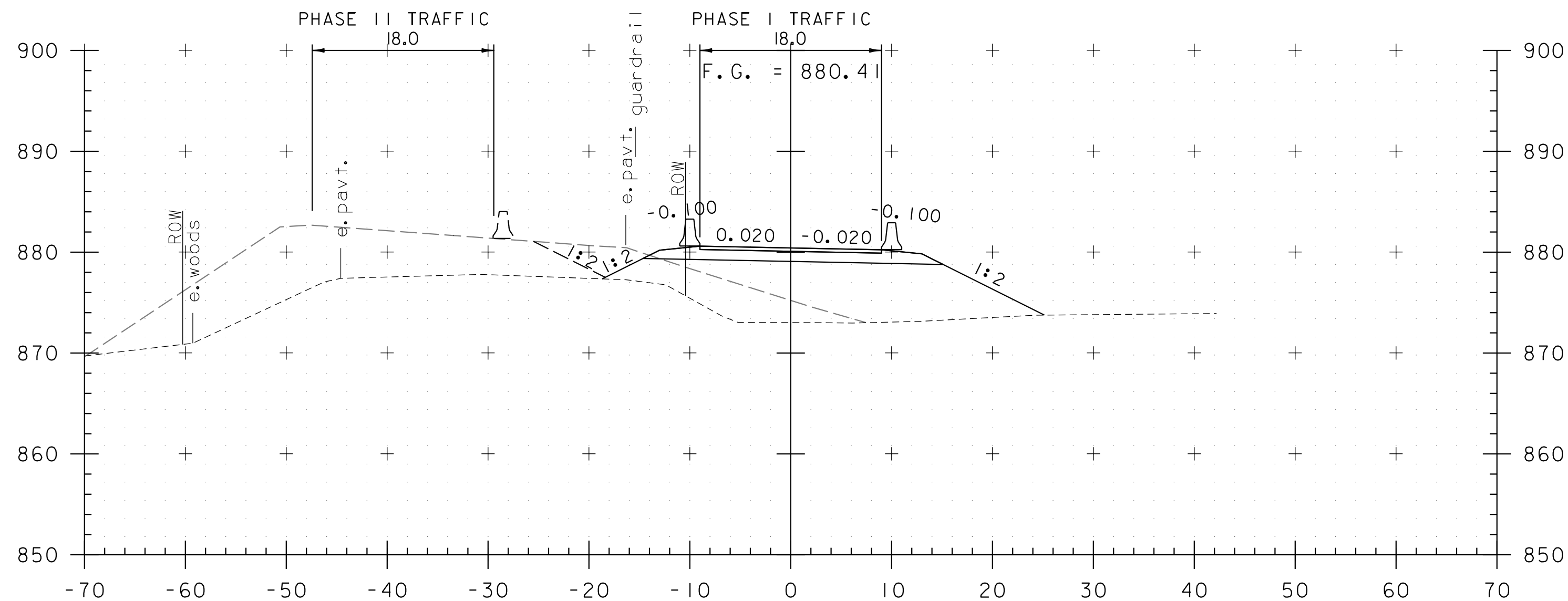
STA. 40+50 TO STA. 41+75



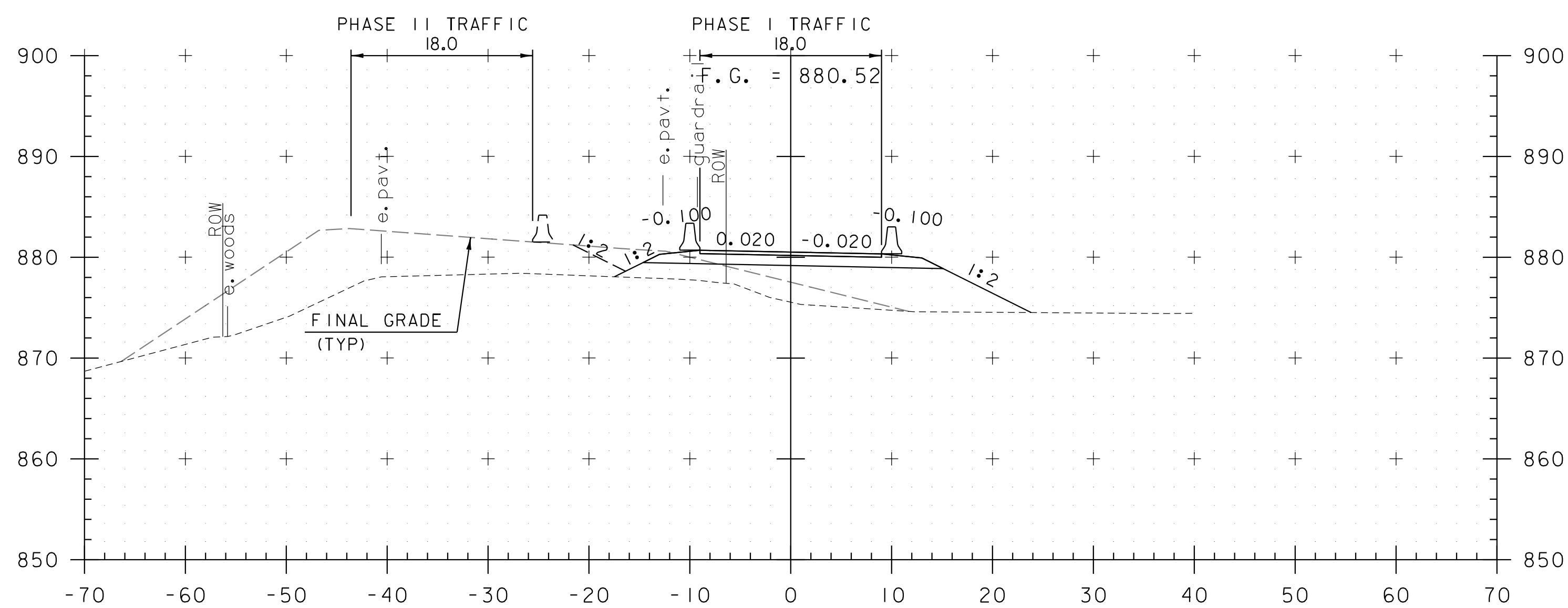
PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)  
FILE NAME: z13c056tcpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 59 OF 77

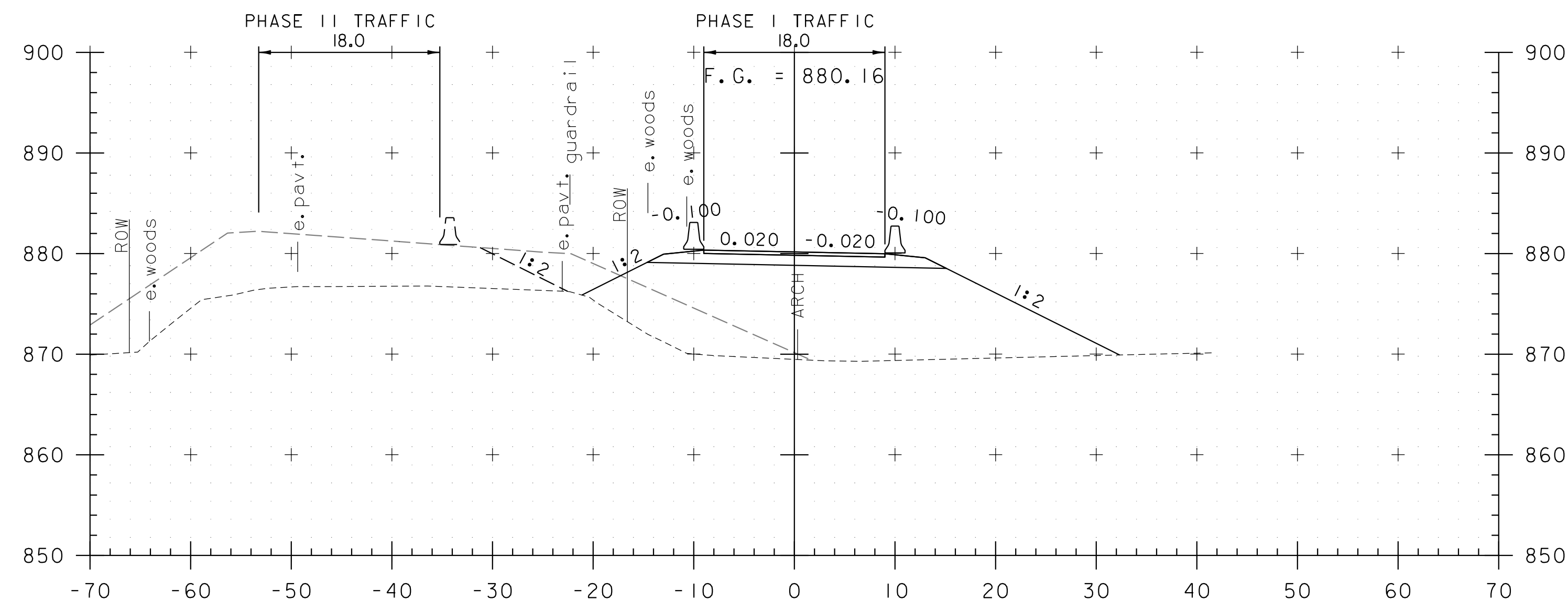




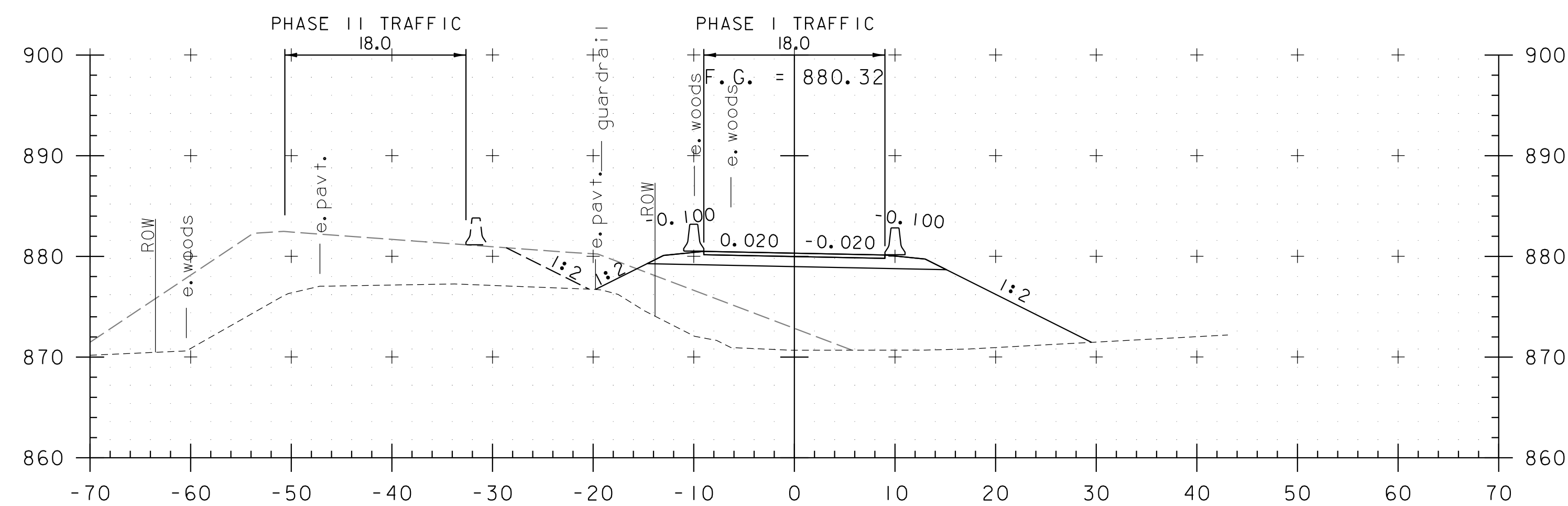
42+25



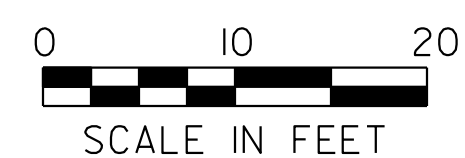
42+00



42+75



42+50



STA. 42+00 TO STA. 42+75

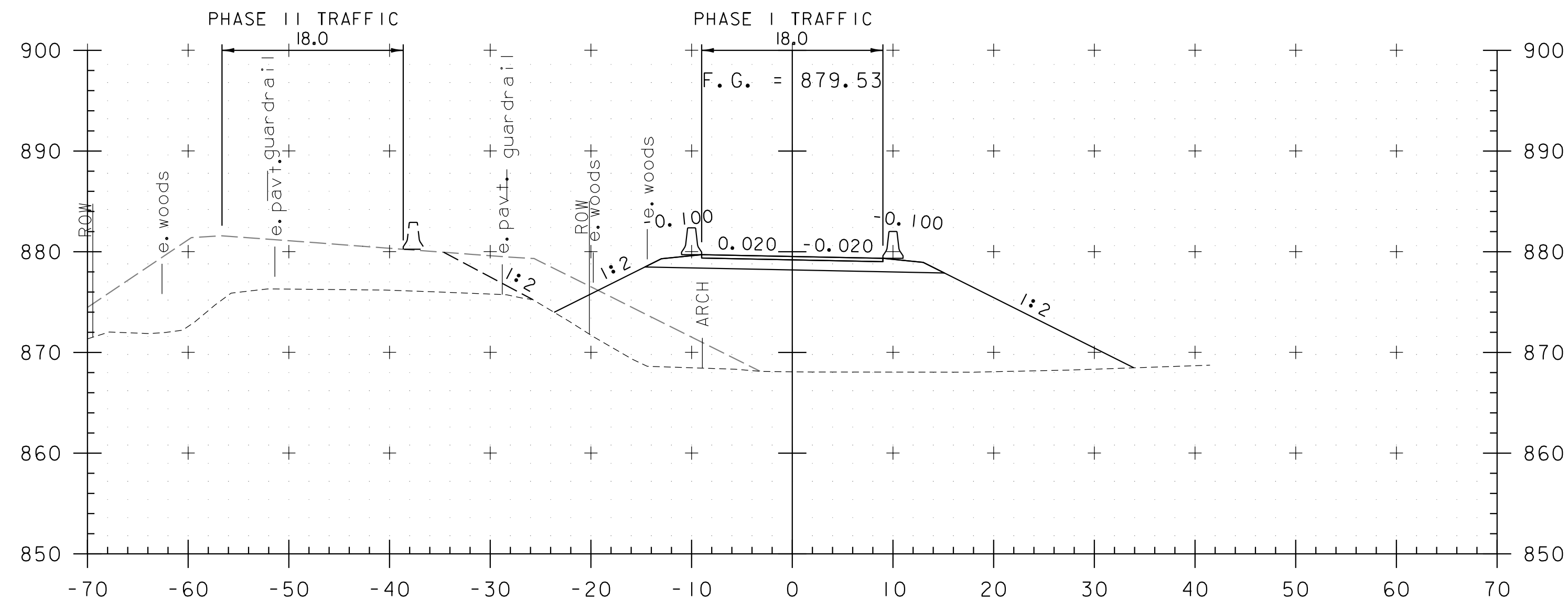


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

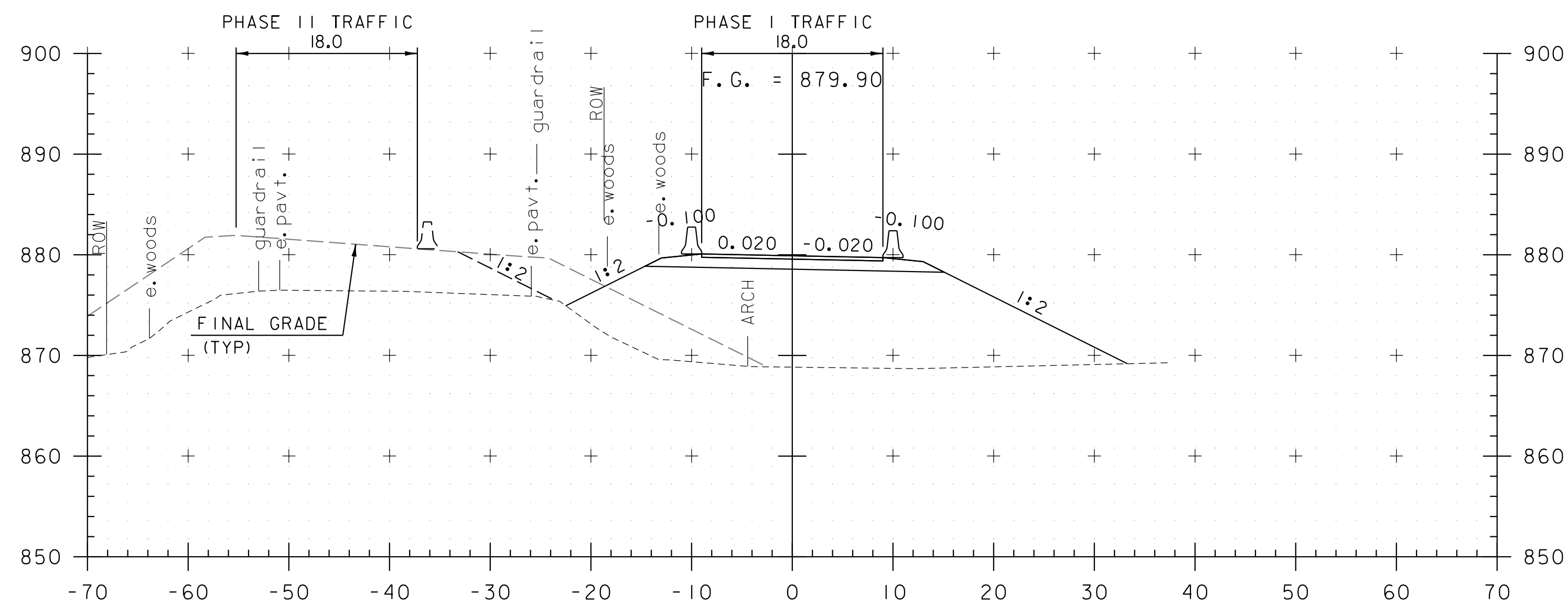
FILE NAME: z13c056+cpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 3

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 60 OF 77

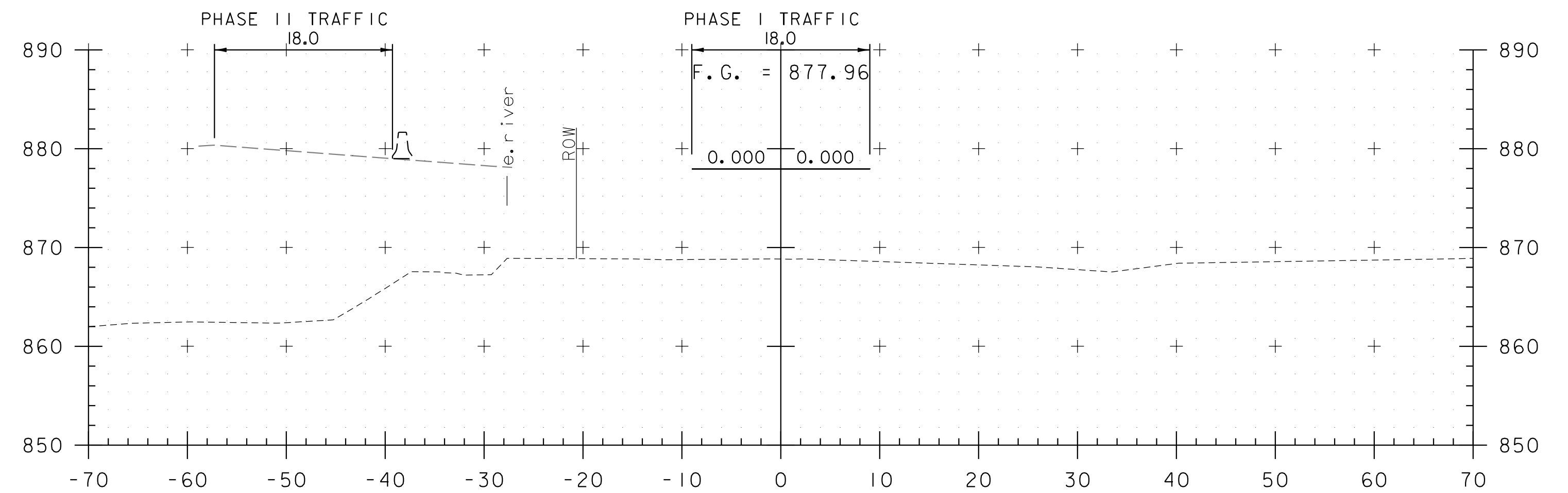




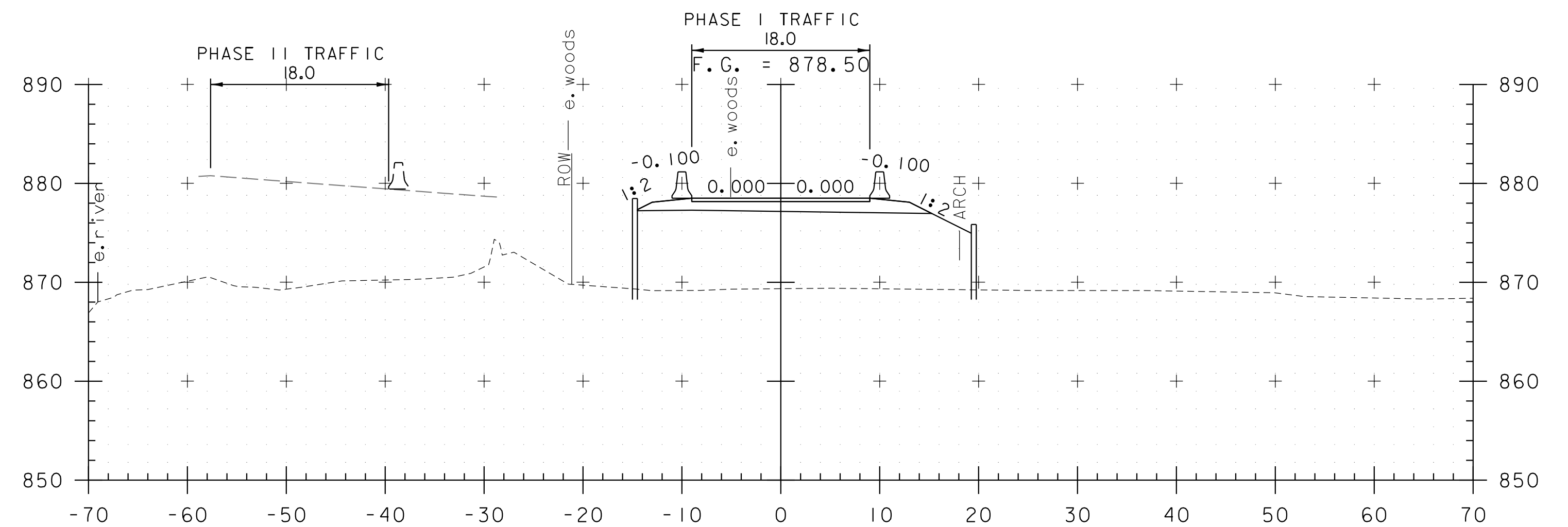
43+25



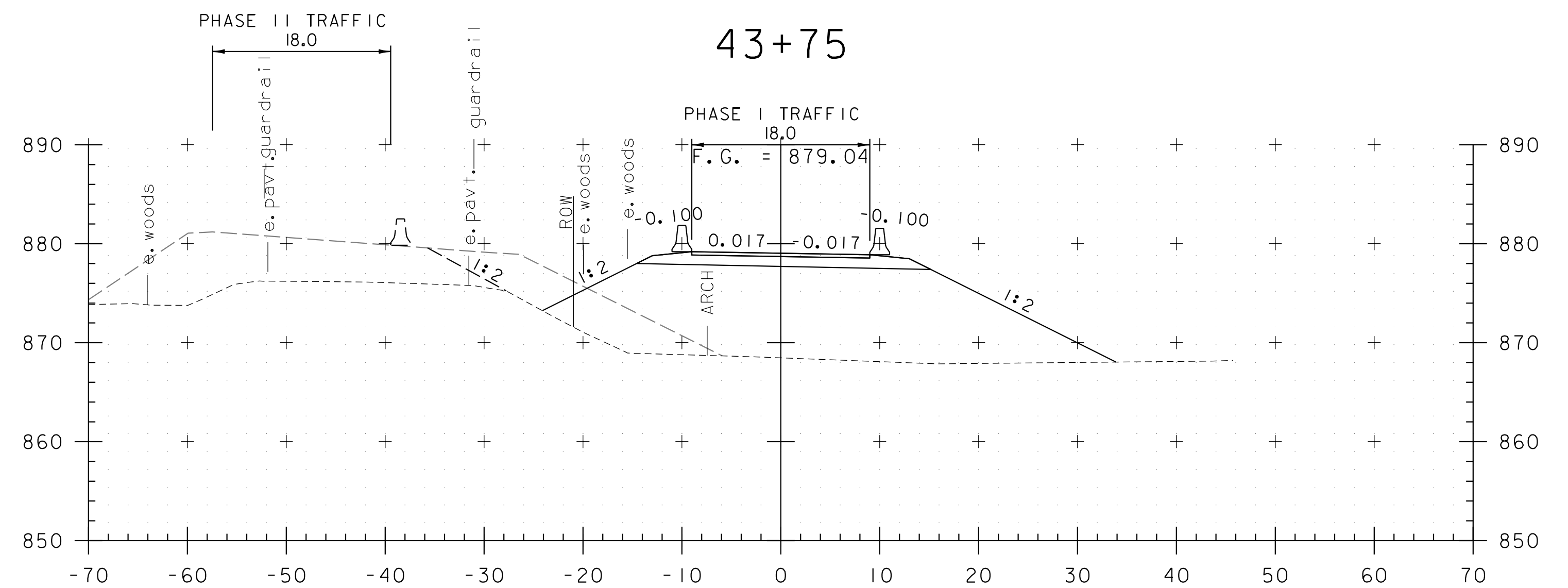
43+00



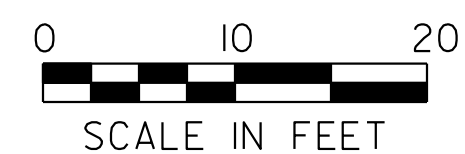
44+00



43+75



43+50



STA. 43+00 TO STA. 44+00

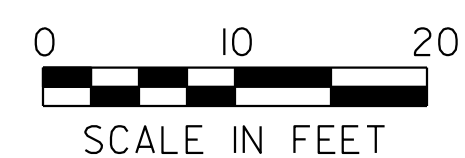
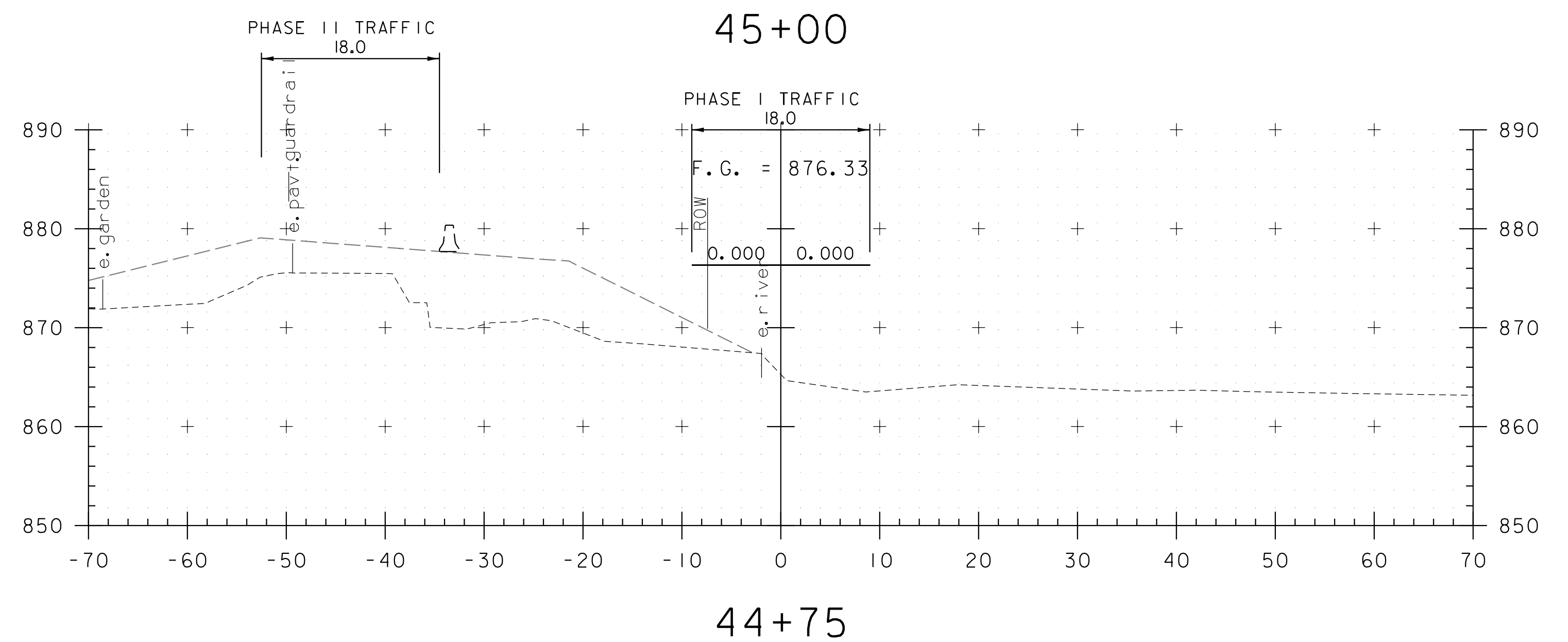
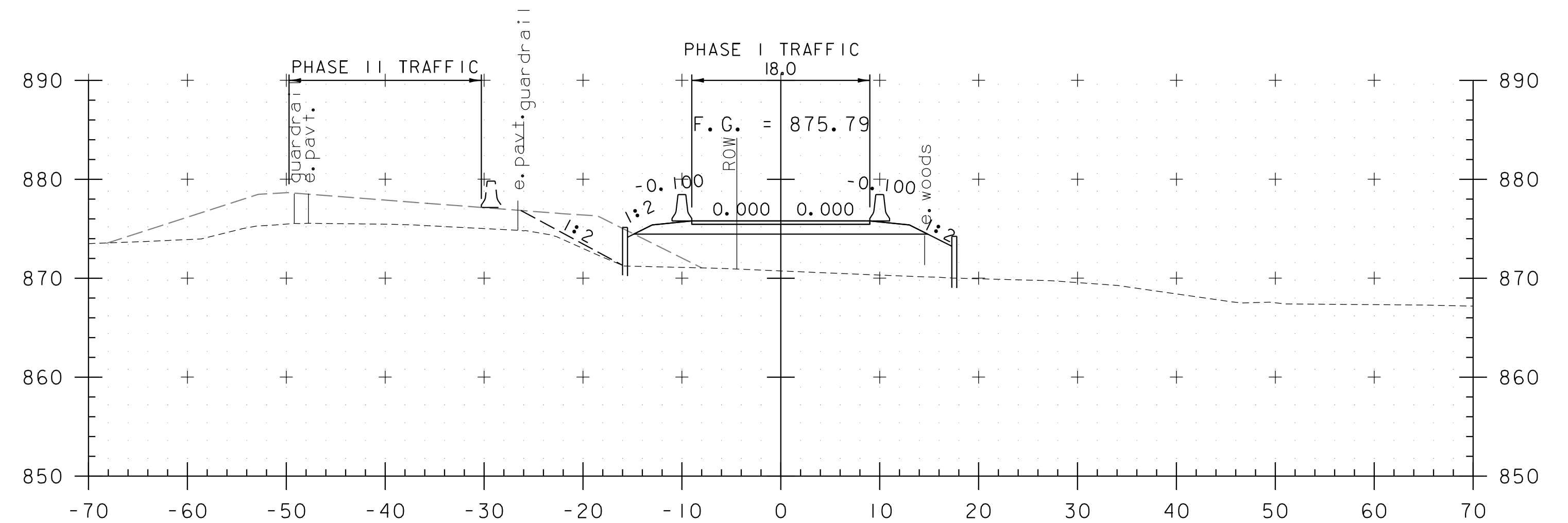
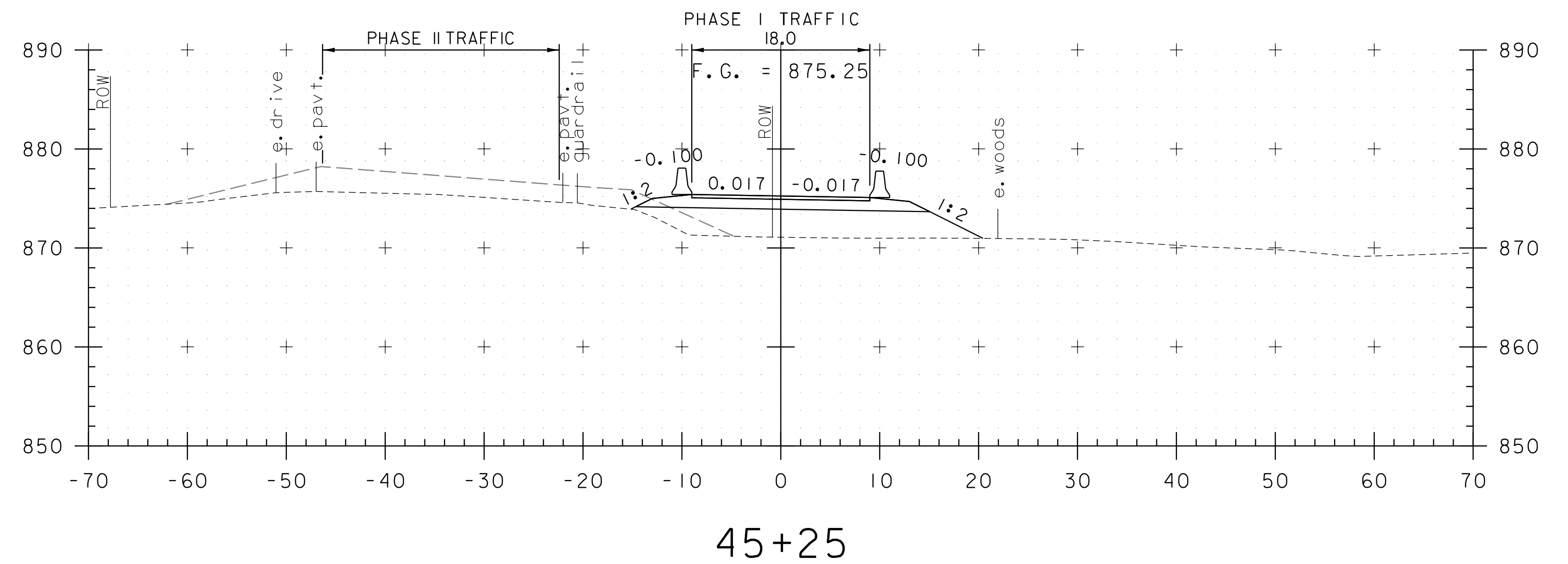
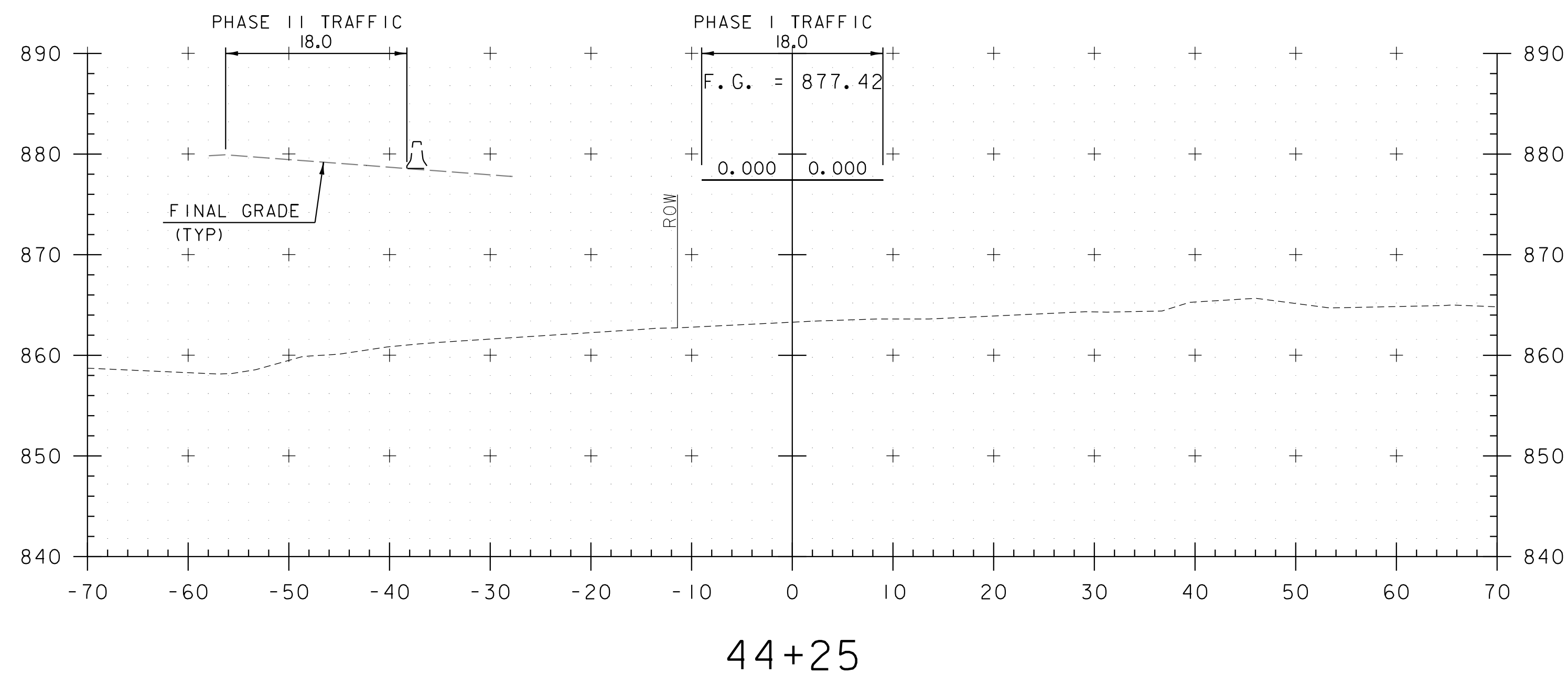
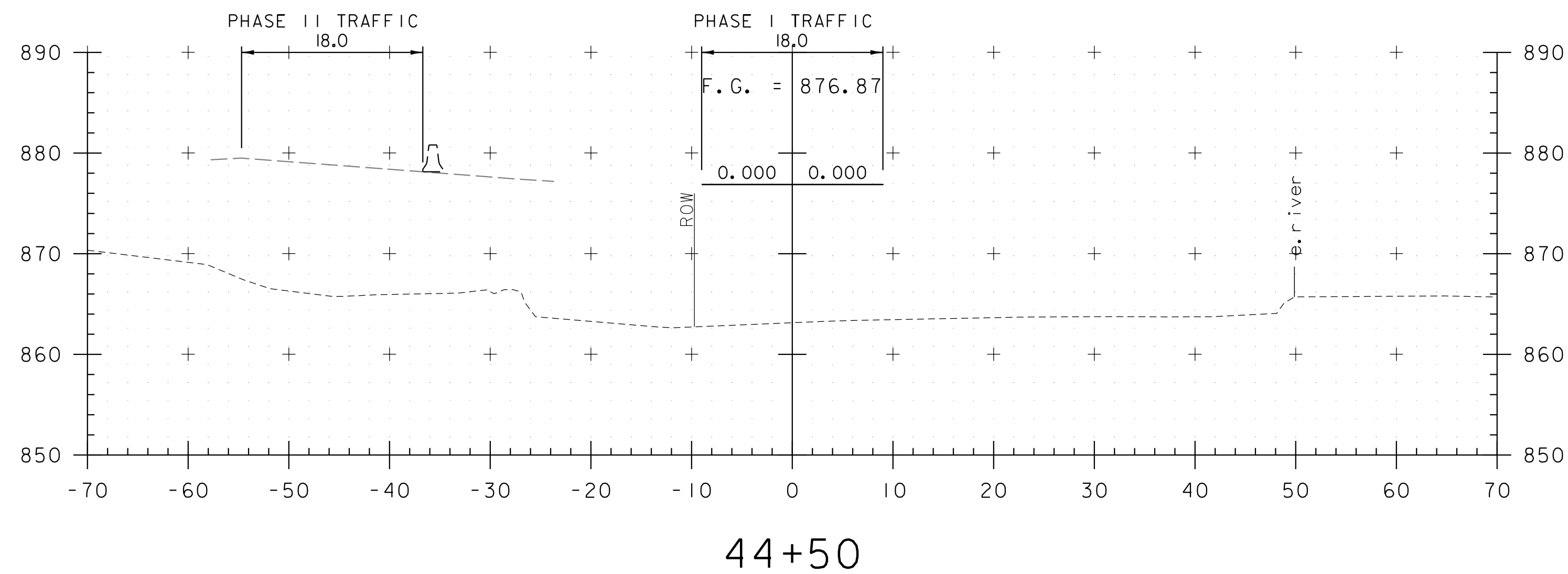


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056+cpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 4

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 61 OF 77





STA. 44+25 TO STA. 45+25

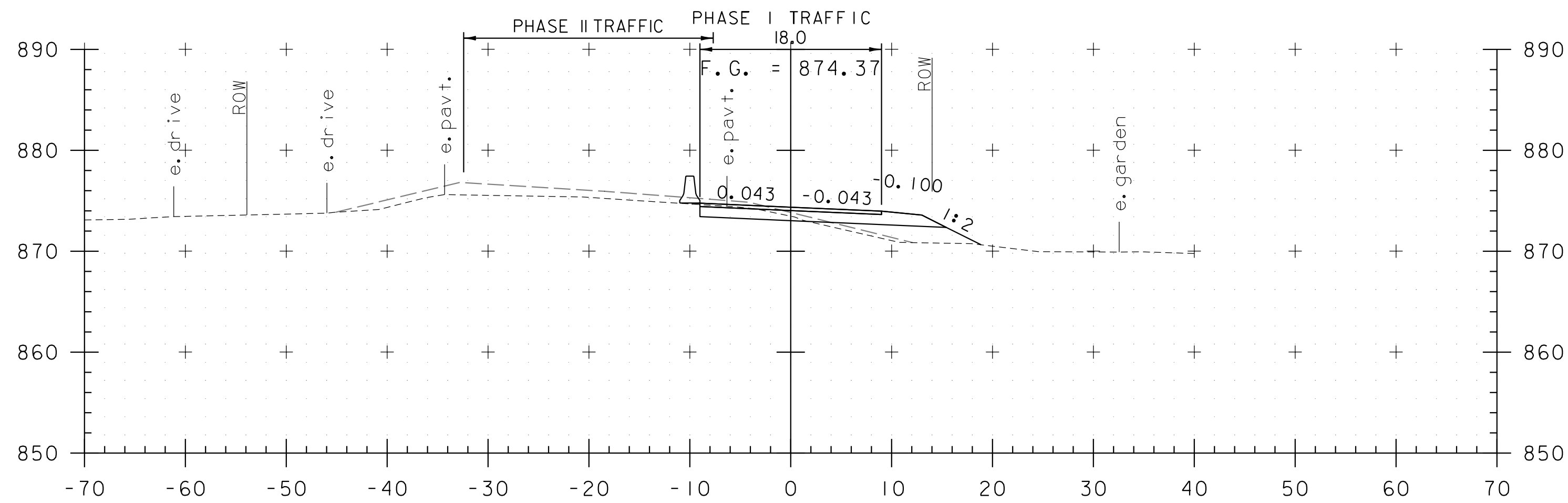


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

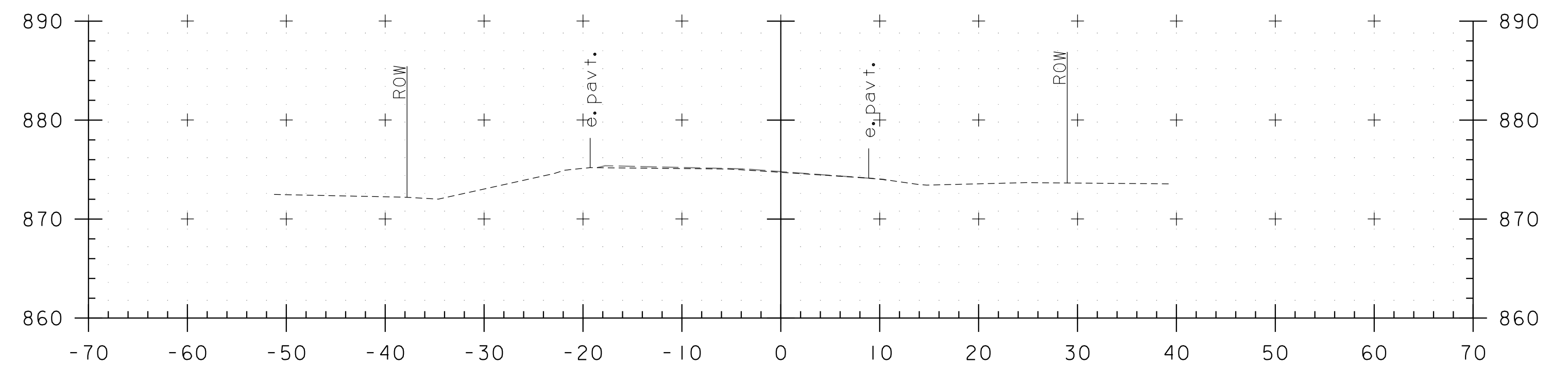
FILE NAME: z13c056+cpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 5

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 62 OF 77

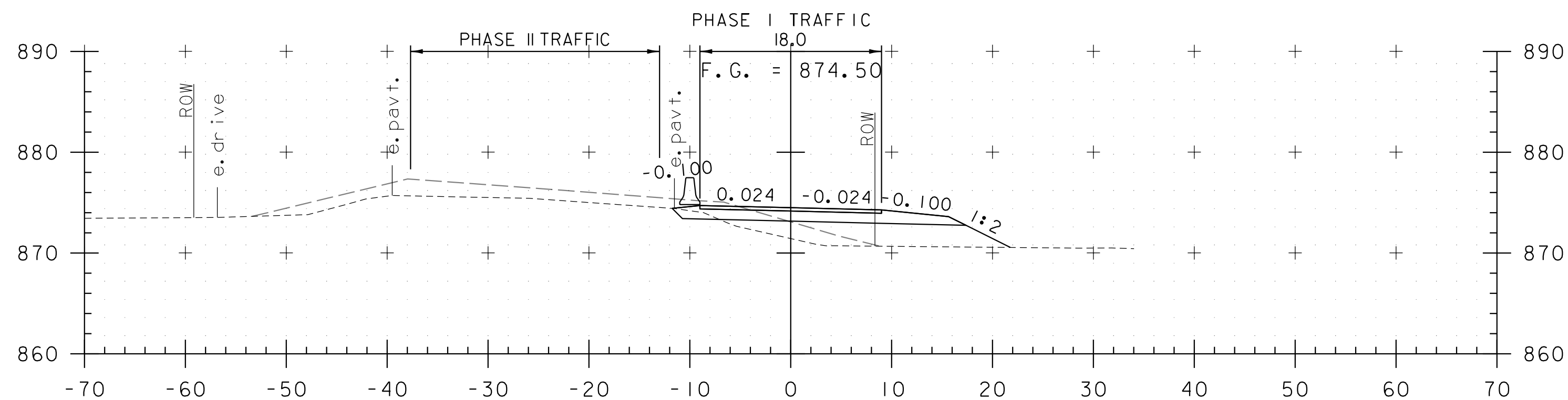




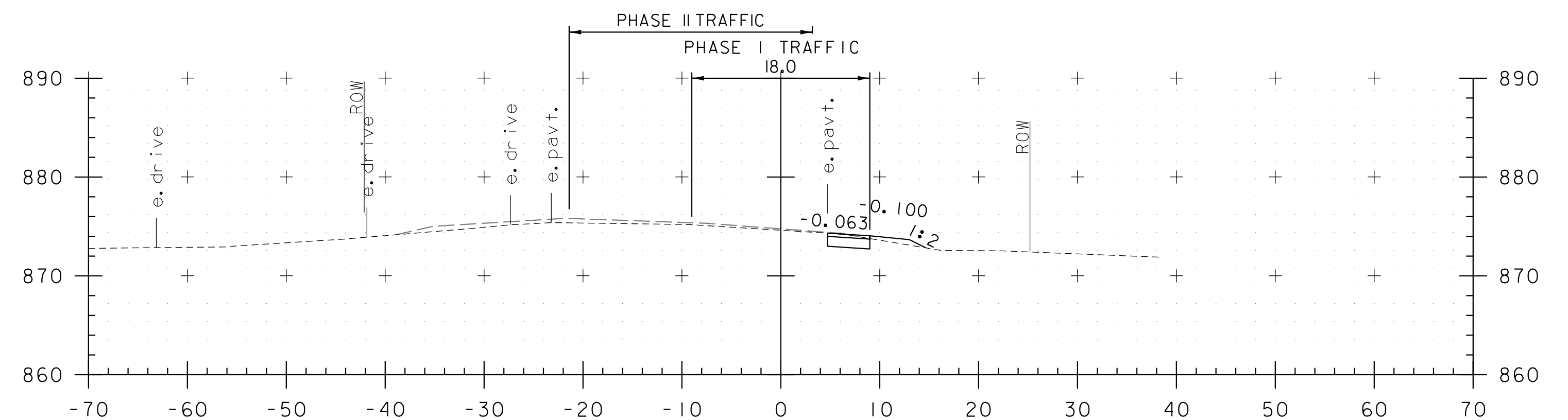
46+00



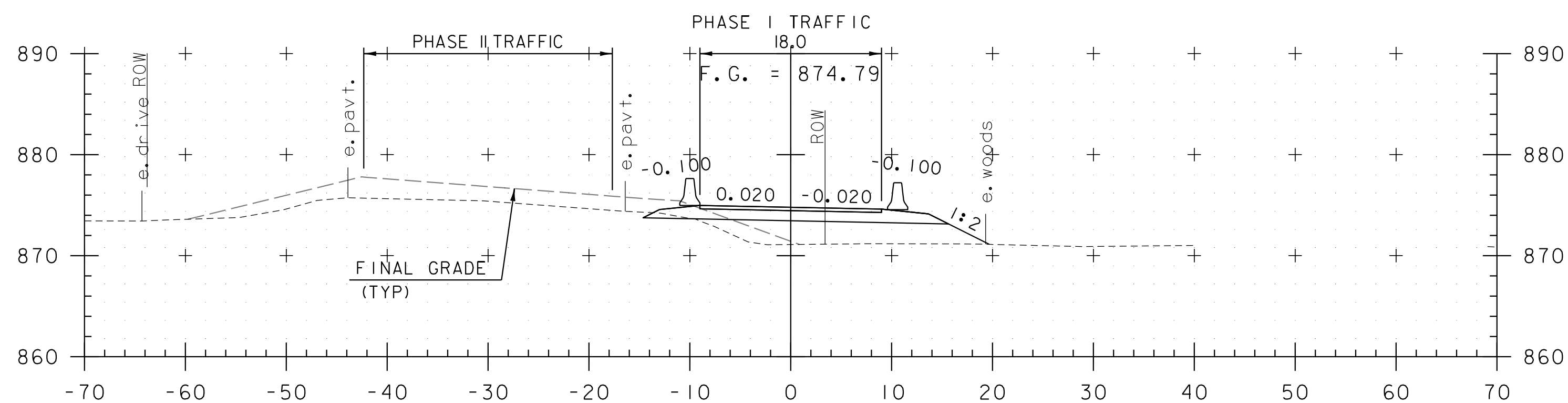
46+75



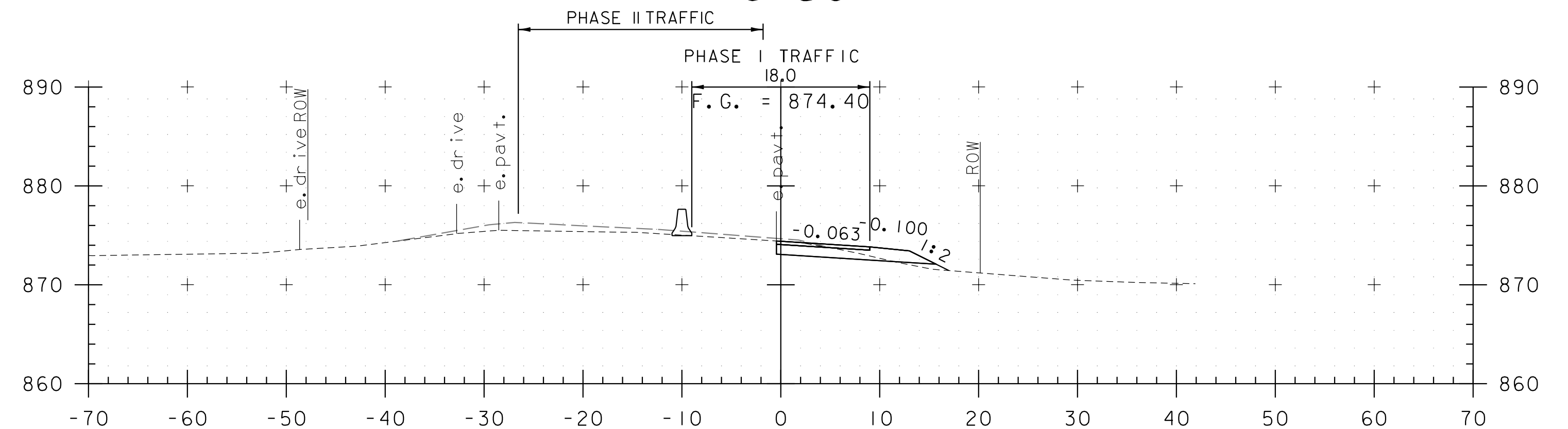
45+75



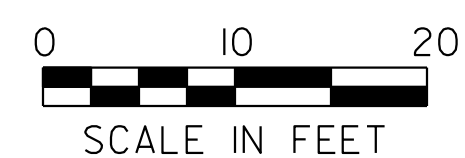
46+50



45+50



46+25



STA. 45+50 TO STA. 46+75

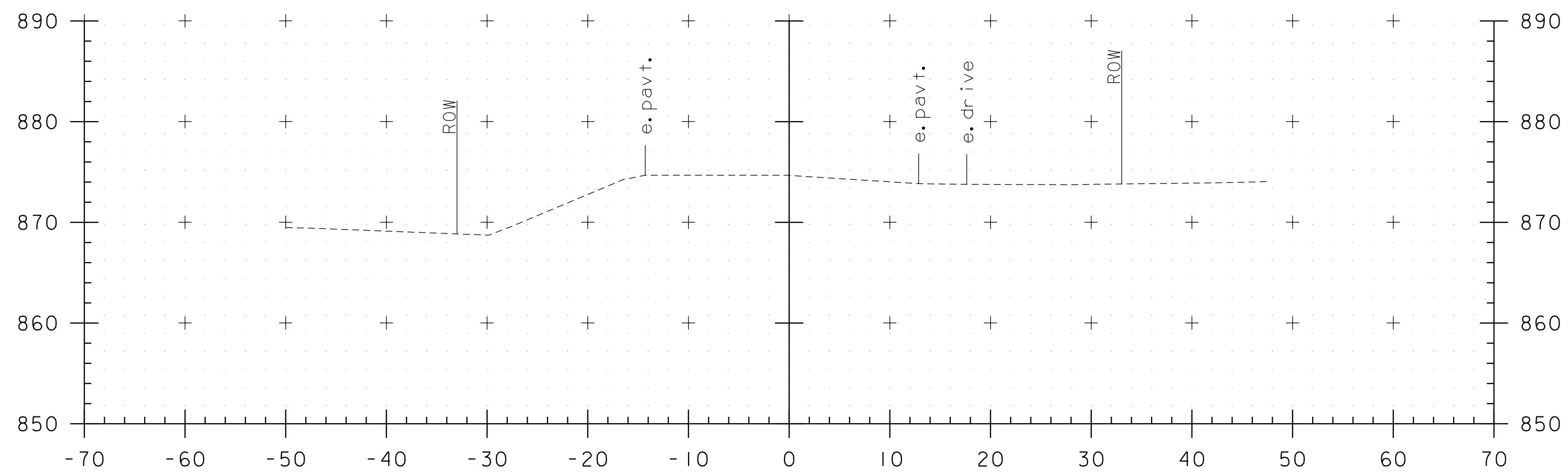


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

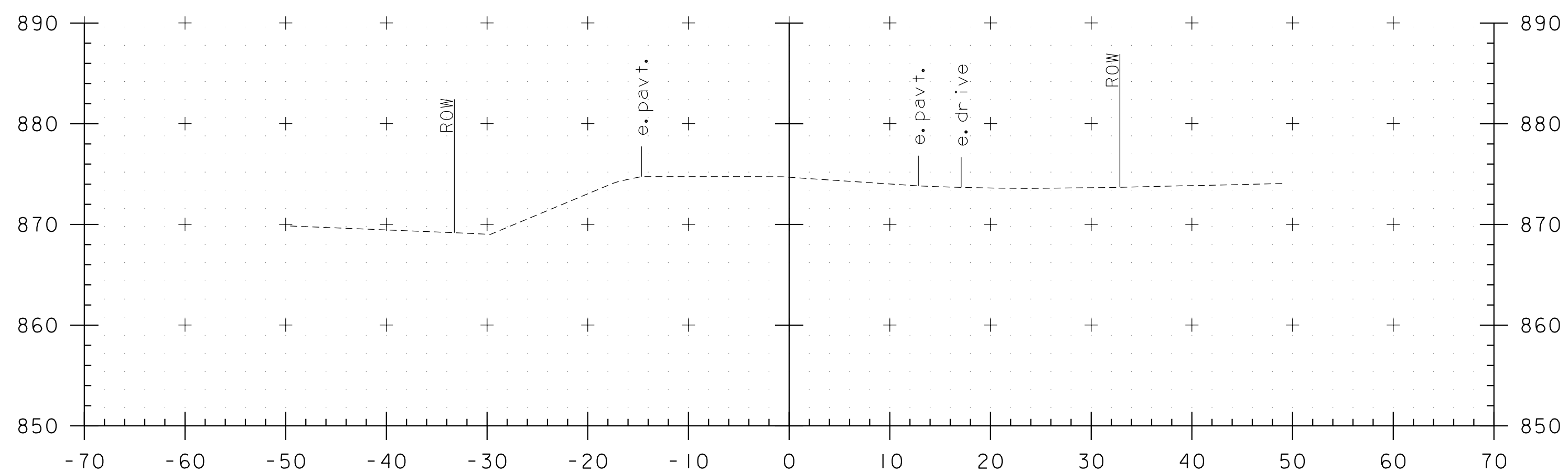
FILE NAME: z13c056t.cpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 6

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 63 OF 77

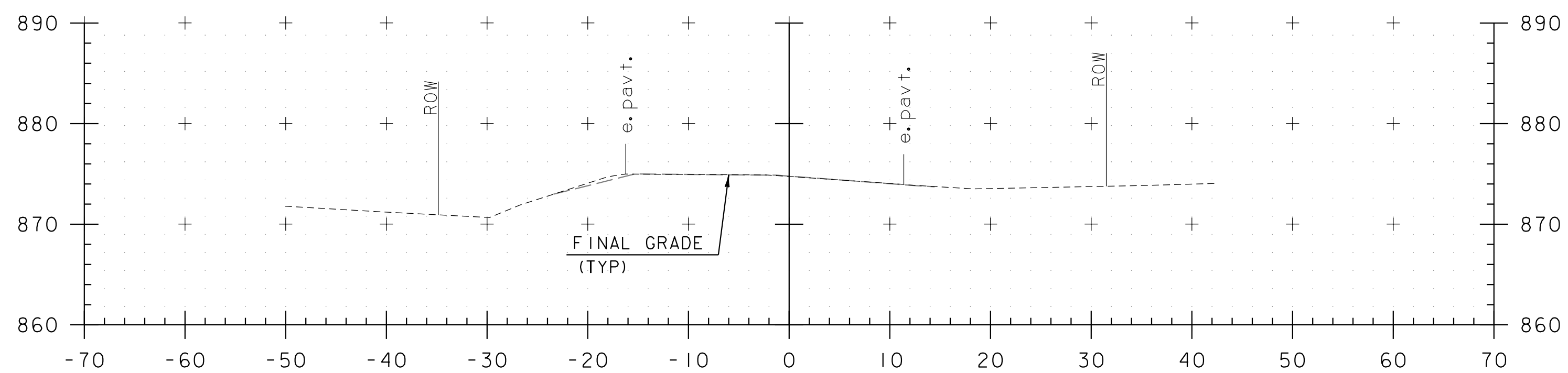




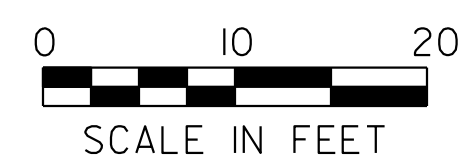
47+35



47+25



47+00



STA. 47+00 TO STA. 47+35

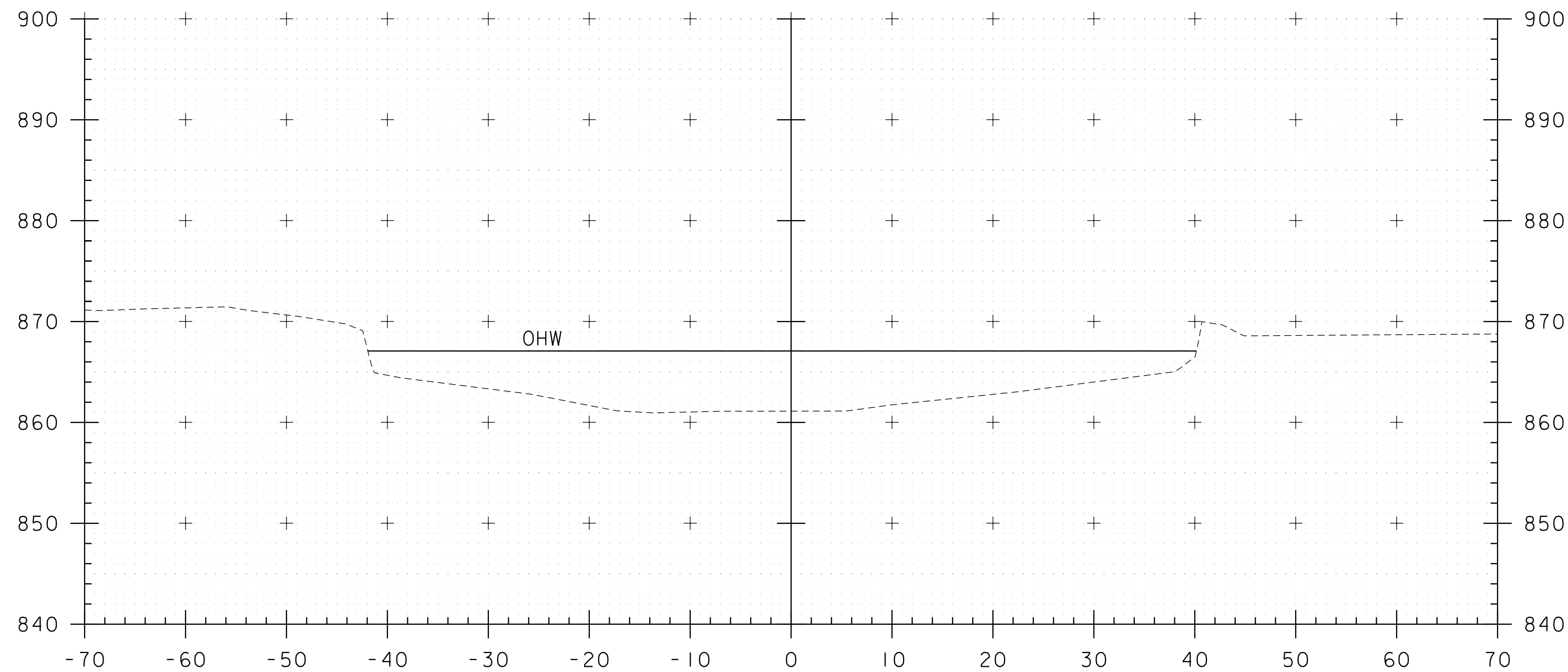


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

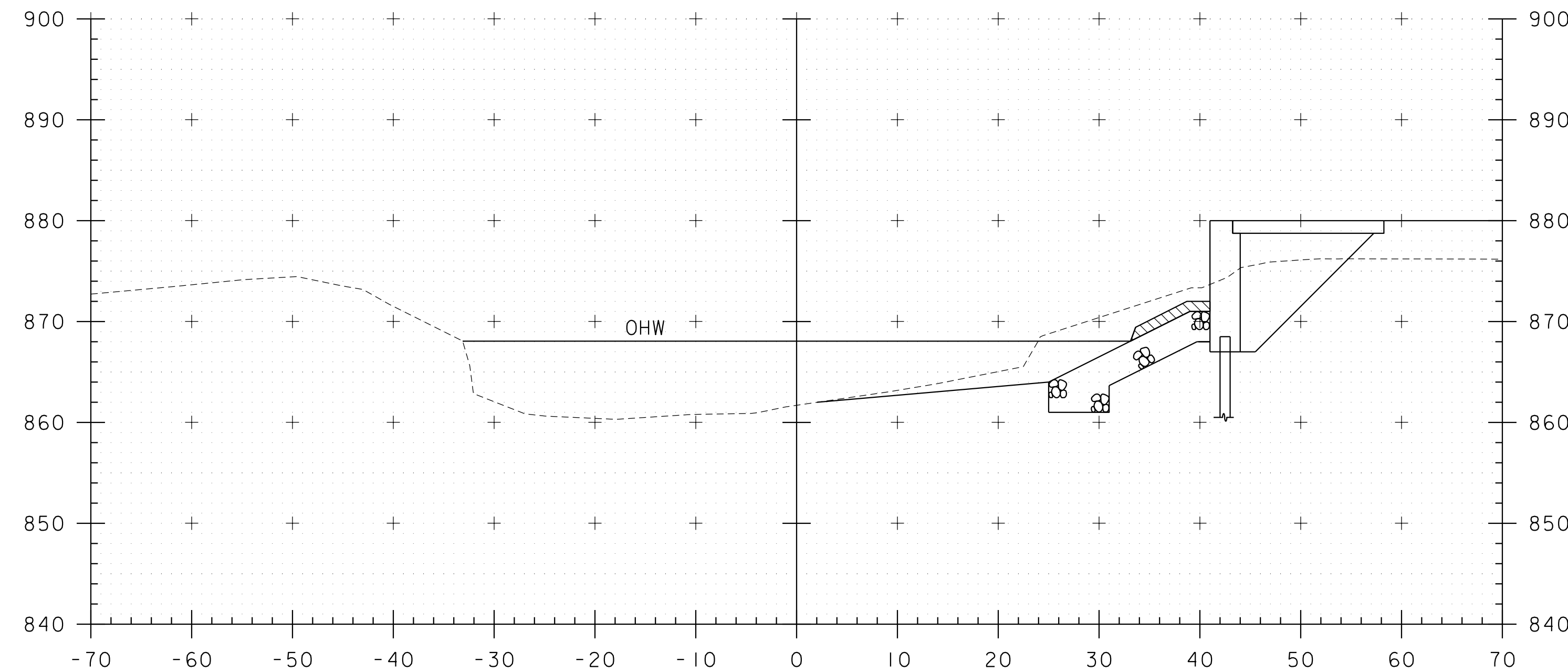
FILE NAME: z13c056+cpxs.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
TEMPORARY DETOUR CROSS SECTIONS 7

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 64 OF 77

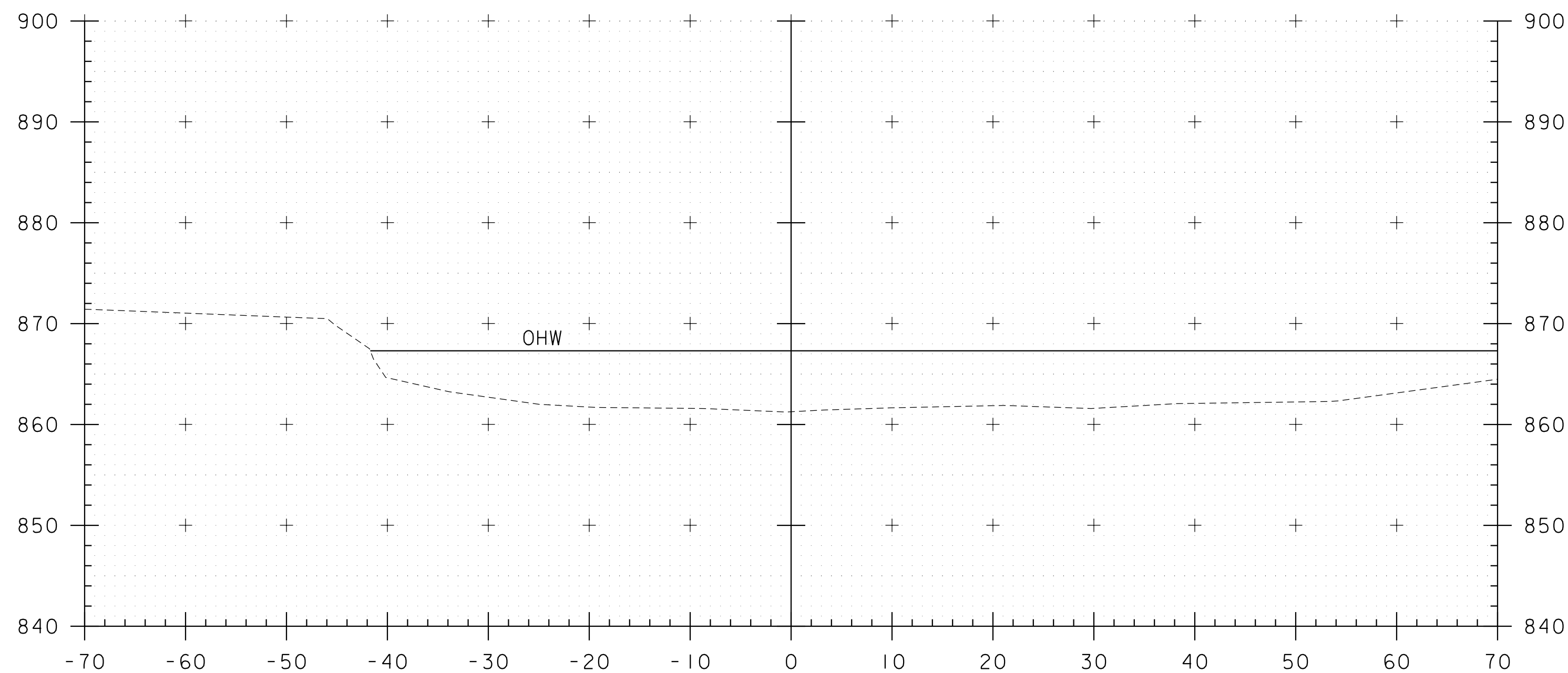




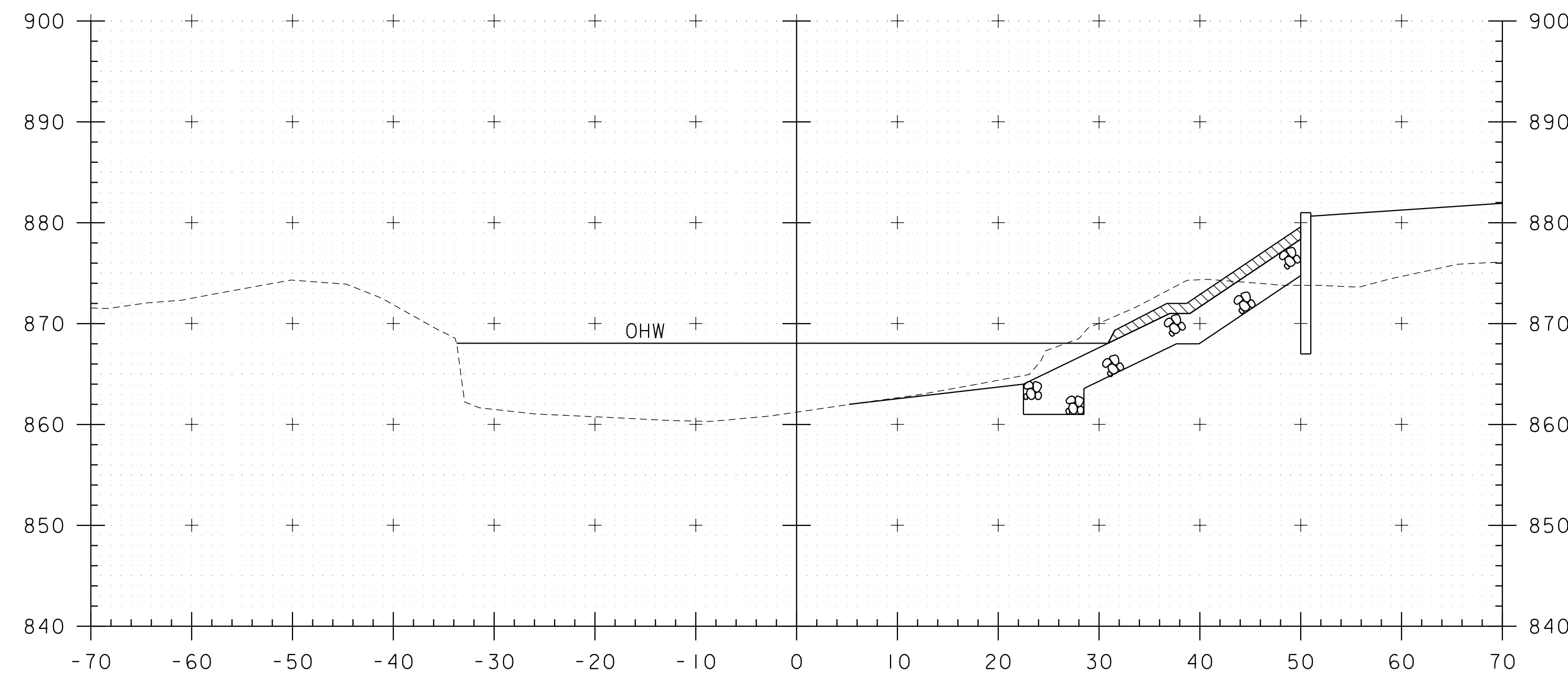
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50+60

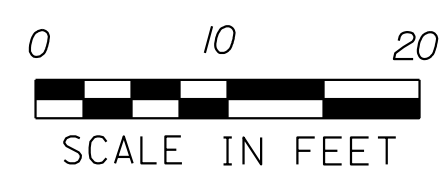


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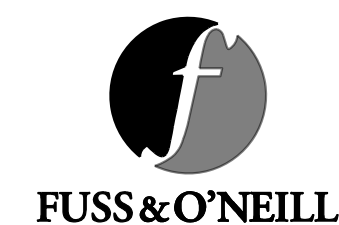


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BEGIN STONE FILL, TYPE III  
BEGIN GRUBBING MATERIAL

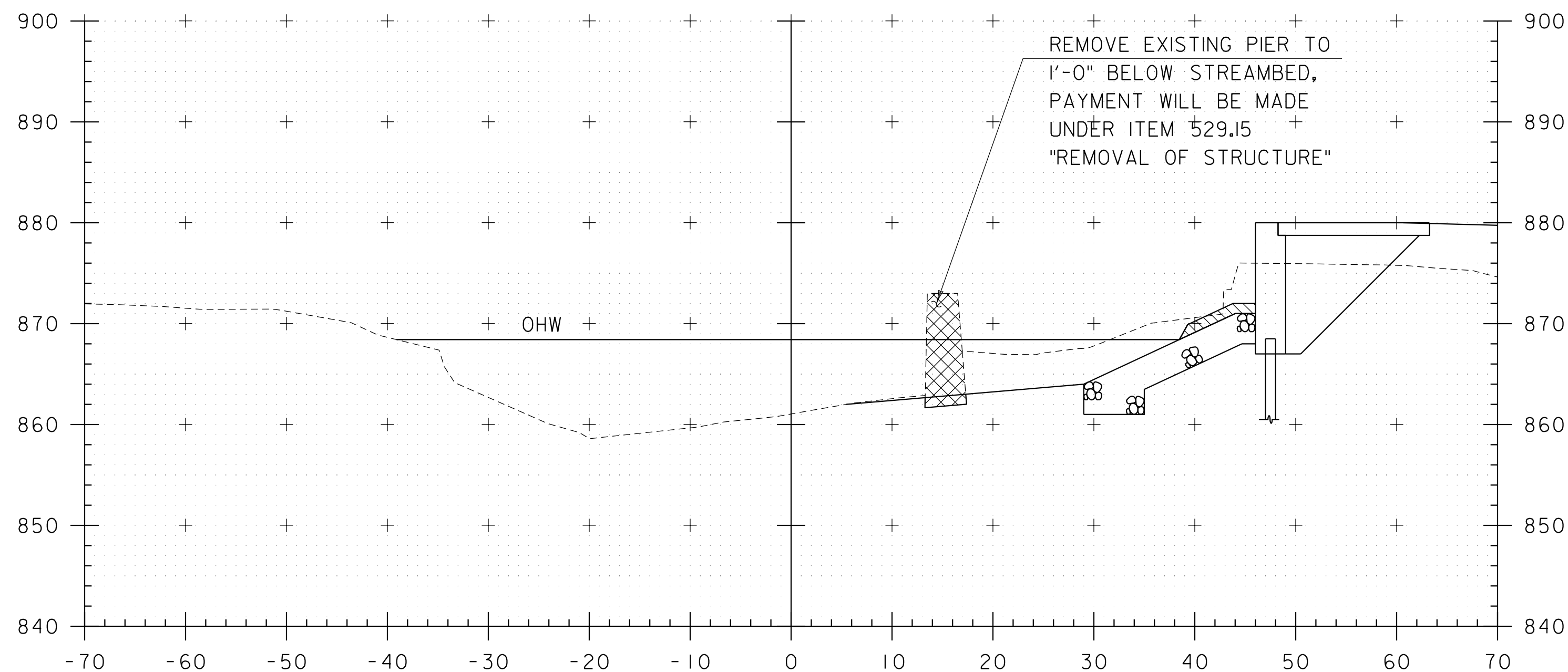


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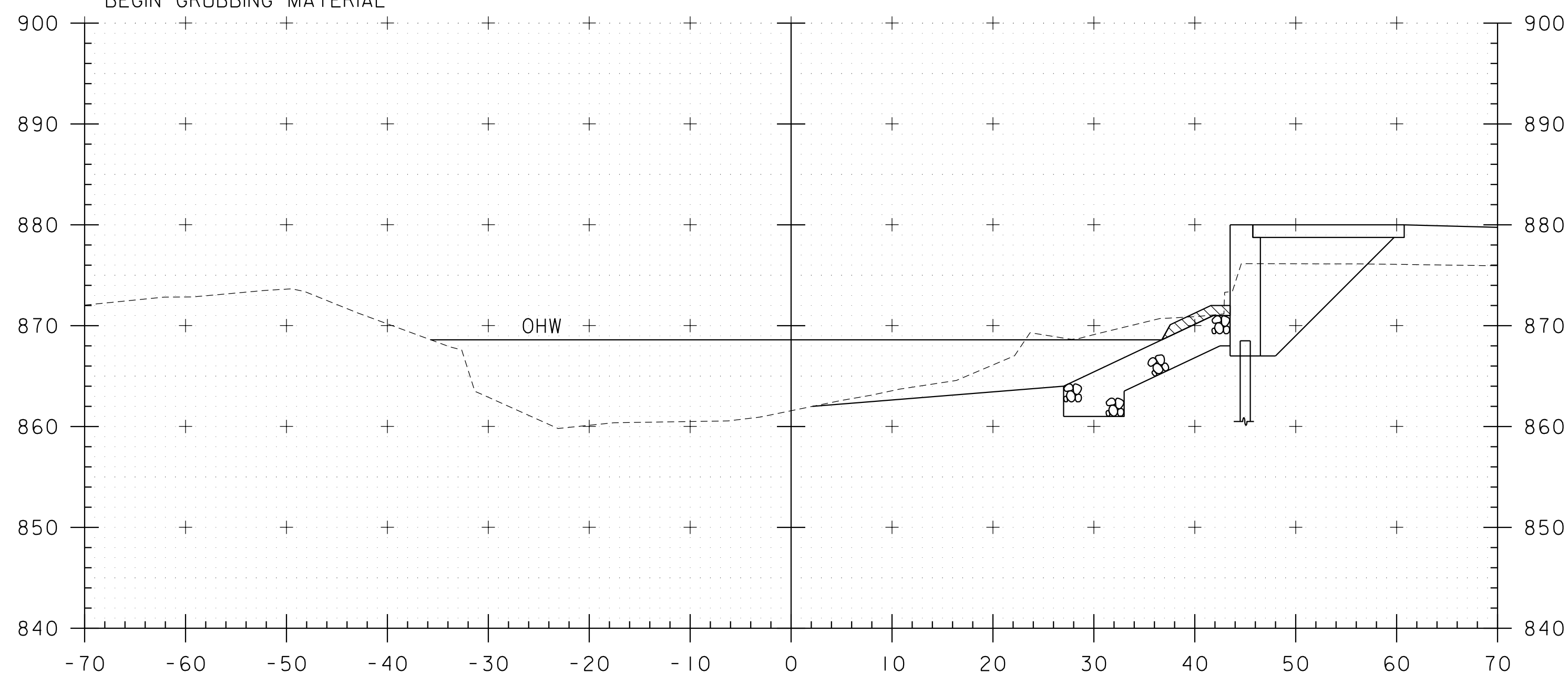
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| PROJECT NAME:            | BRUNSWICK             |
| PROJECT NUMBER:          | BF 0271(23)           |
| FILE NAME:               | z13c056xs_channel.dgn |
| PROJECT LEADER:          | J. FRENCH             |
| DESIGNED BY:             | J. FRENCH             |
| CHANNEL CROSS SECTIONS I |                       |
| PLOT DATE:               | 8/29/2018             |
| DRAWN BY:                | M. SMITH              |
| CHECKED BY:              | J. BYATT              |
| SHEET                    | 65 OF 77              |



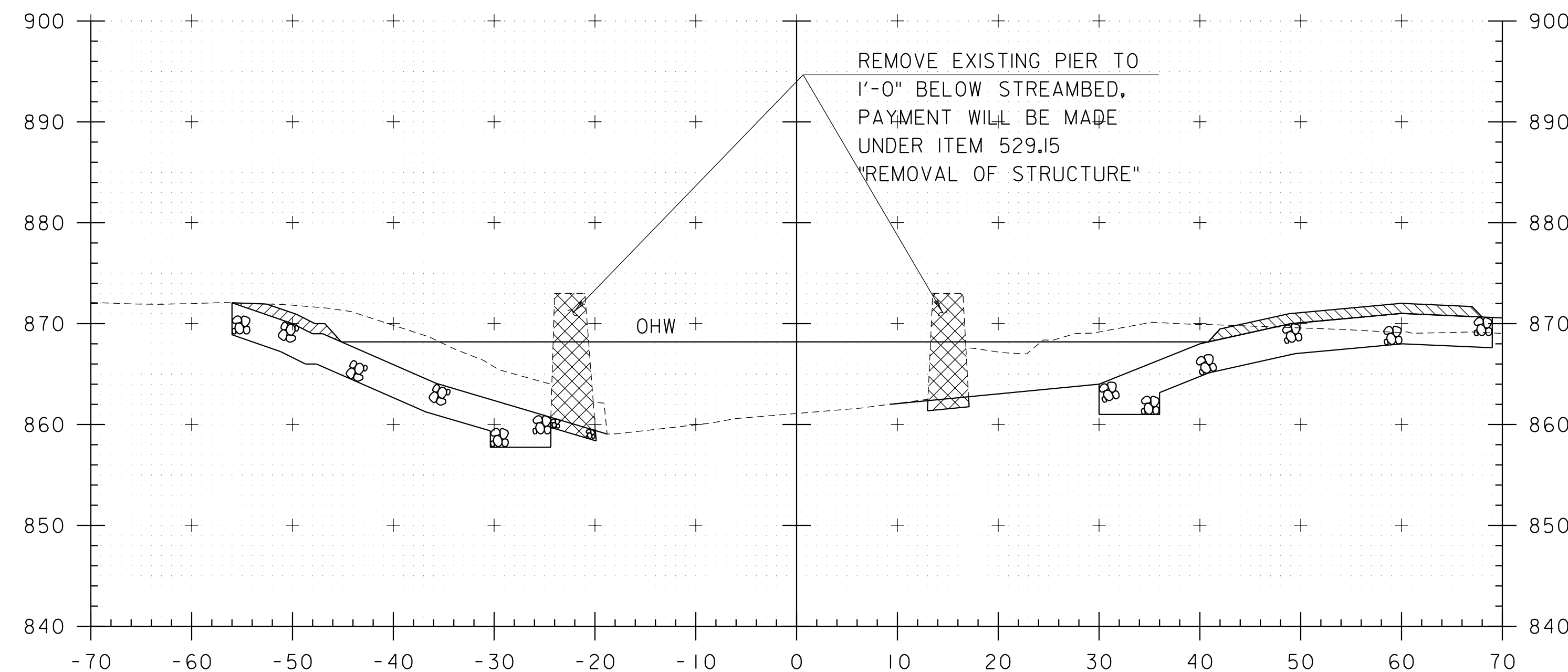


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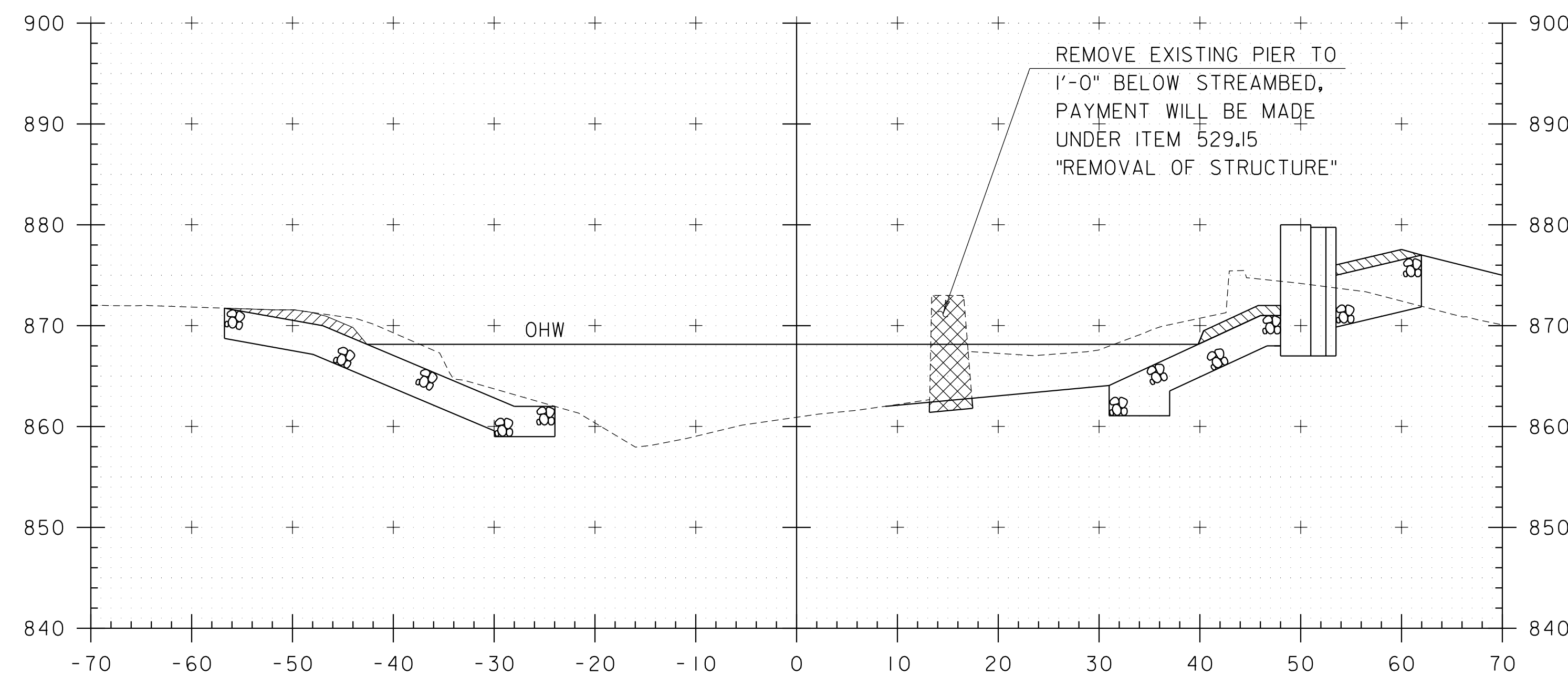
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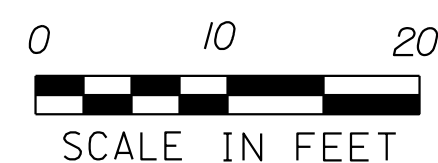
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51+00



50+90

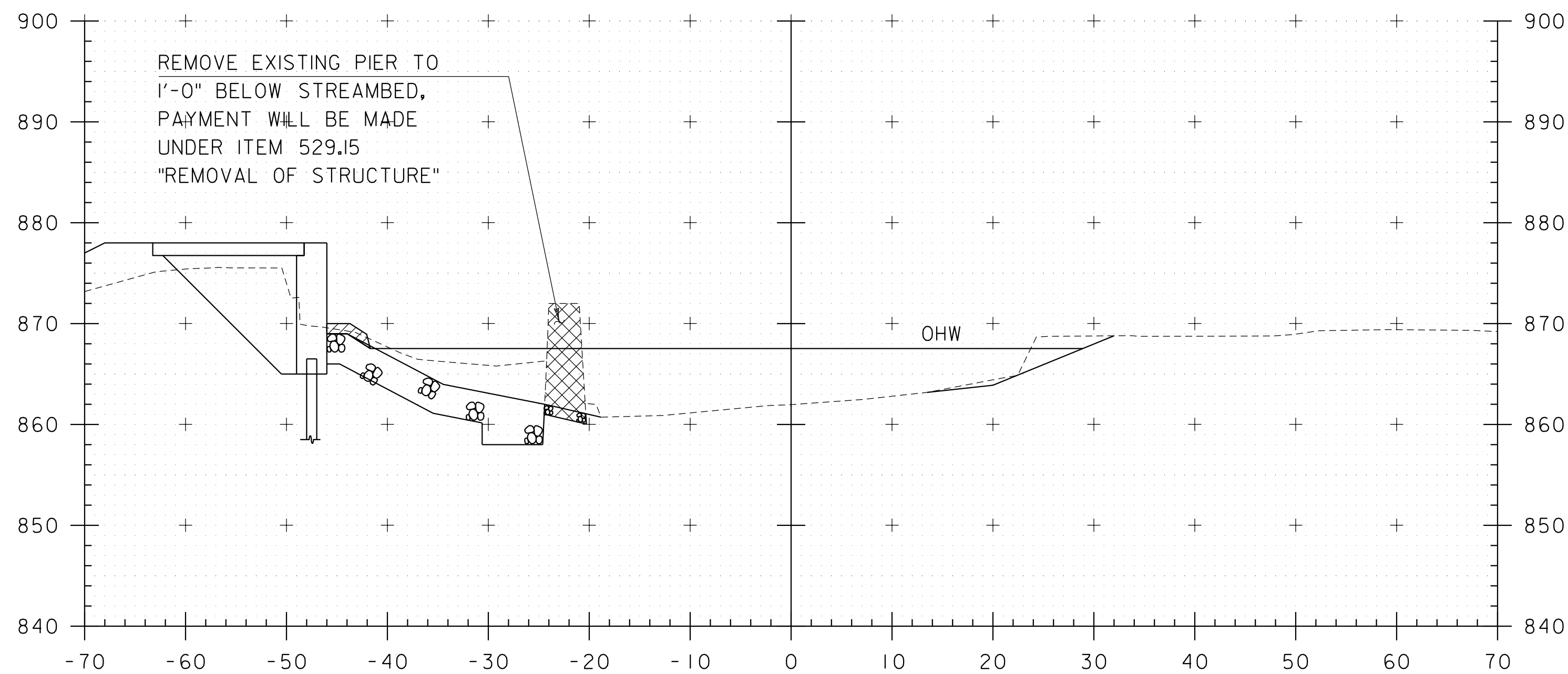


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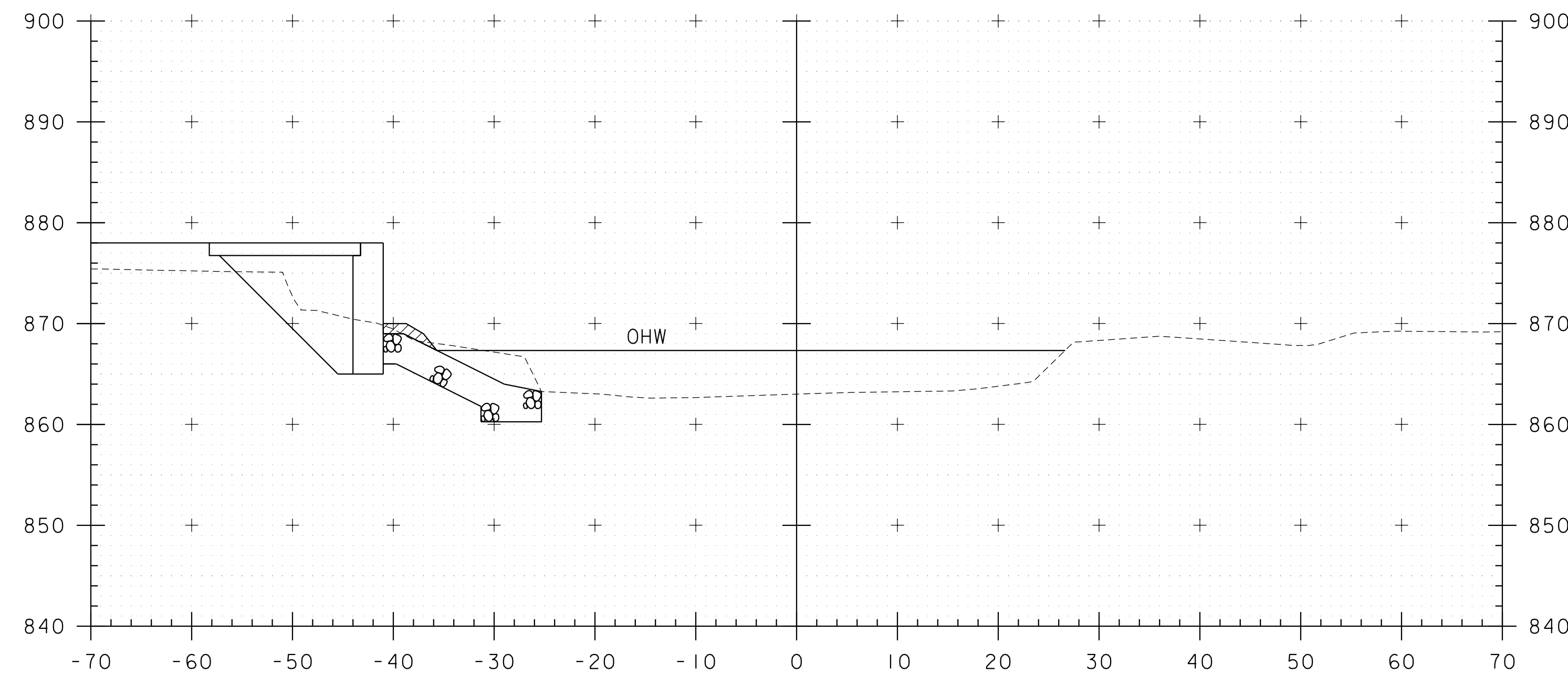


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| PROJECT NAME: BRUNSWICK          | PLOT DATE: 8/29/2018 |
| PROJECT NUMBER: BF 0271(23)      | DRAWN BY: M. SMITH   |
| FILE NAME: z13c056xs_channel.dgn | CHECKED BY: J. BYATT |
| PROJECT LEADER: J. FRENCH        | SHEET 66 OF 77       |
| DESIGNED BY: J. FRENCH           |                      |
| CHANNEL CROSS SECTIONS 2         |                      |

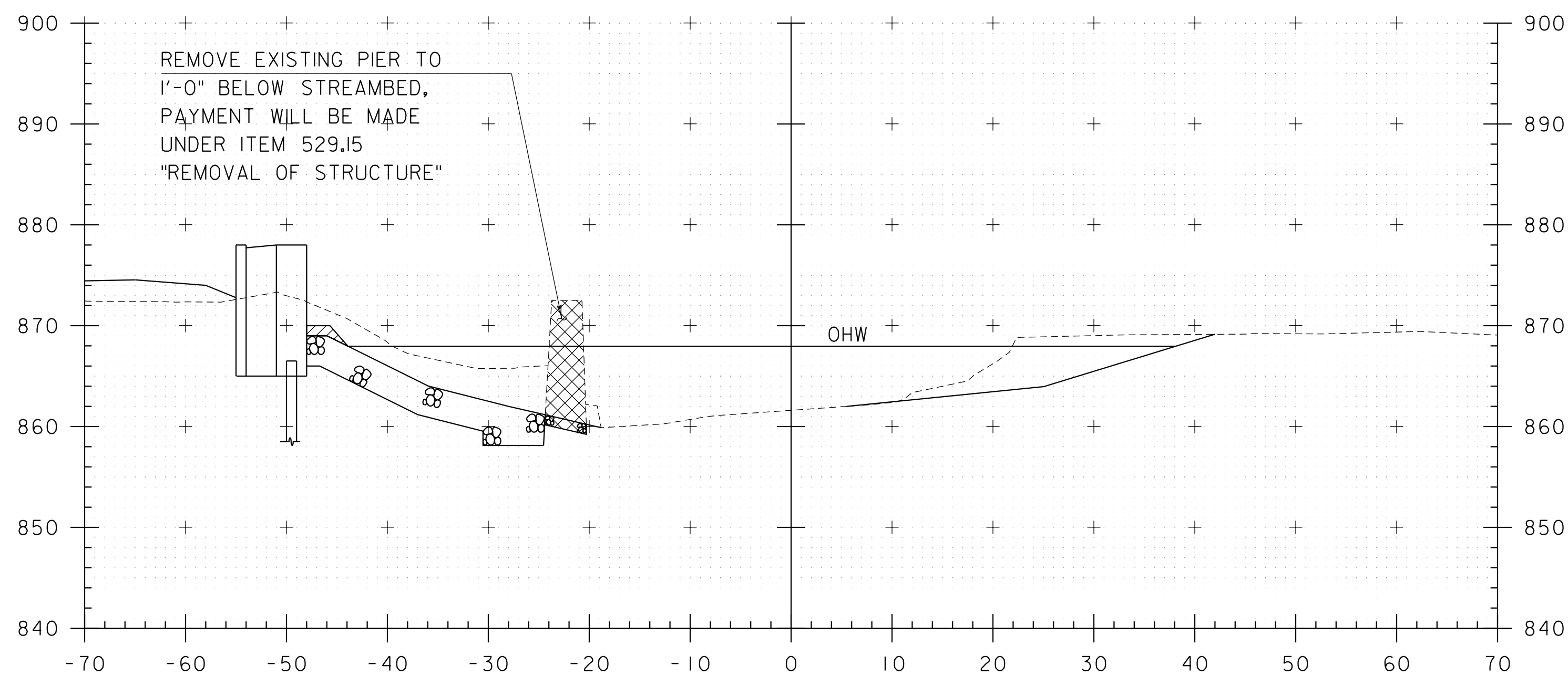




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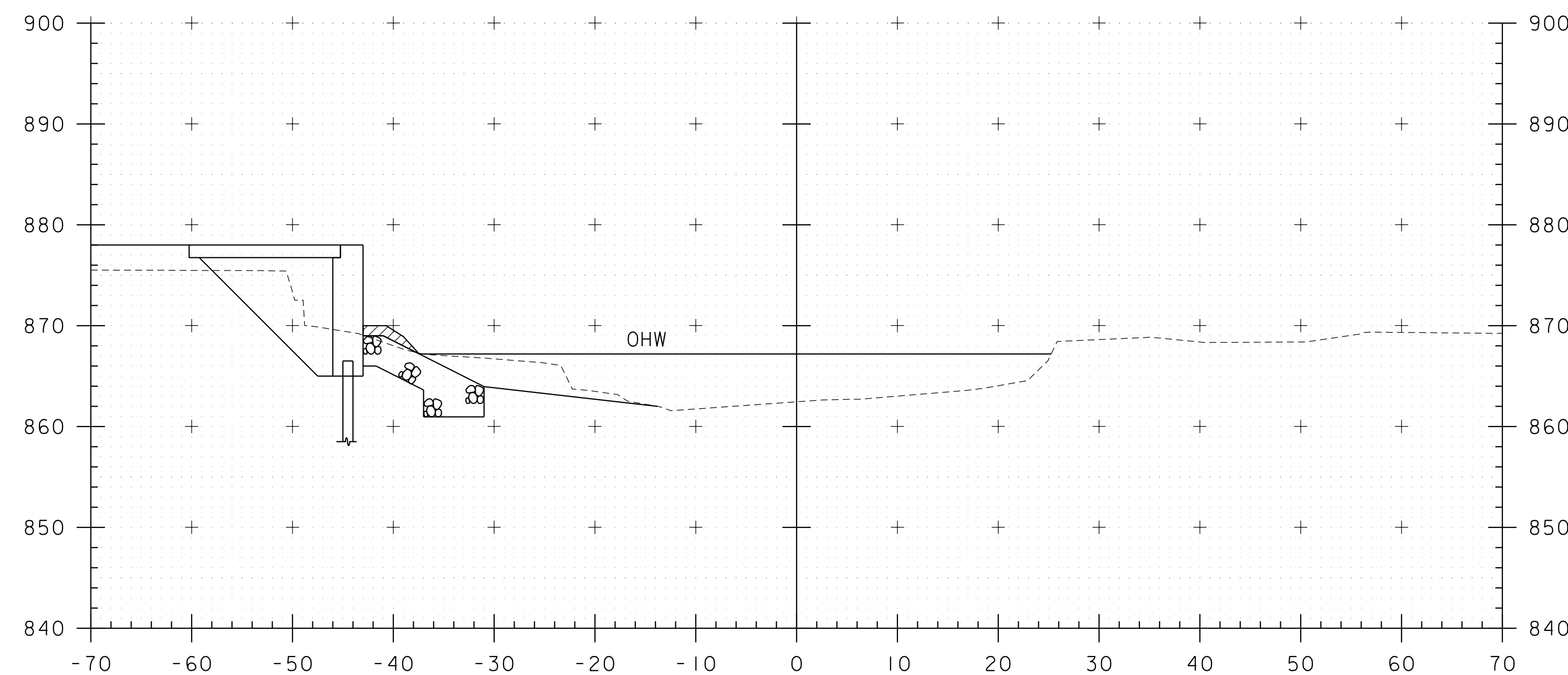


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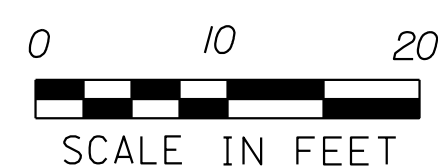
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51+30

STA 51+30 RT  
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STA 51+10 TO STA 51+40

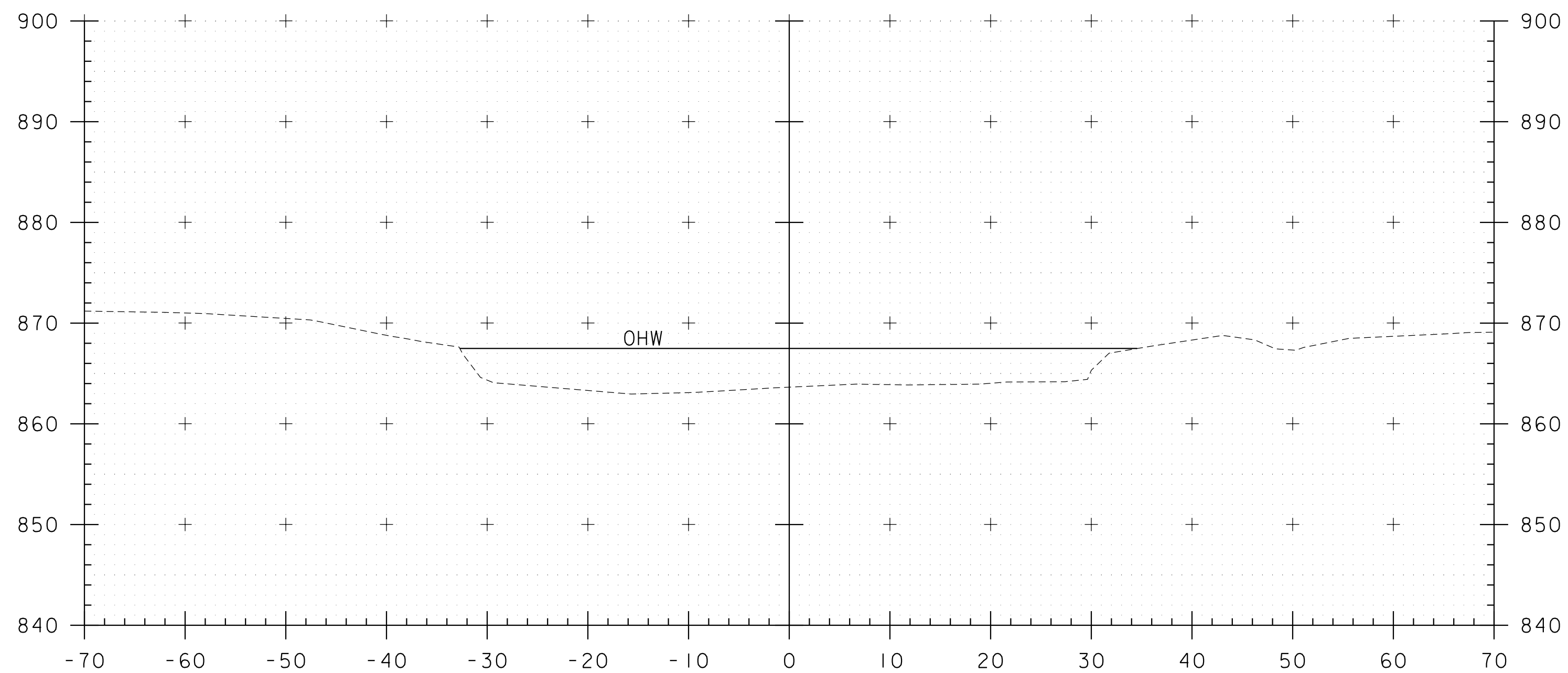


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FILE NAME: z13c056xs\_channel.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: J. FRENCH  
CHANNEL CROSS SECTIONS 3

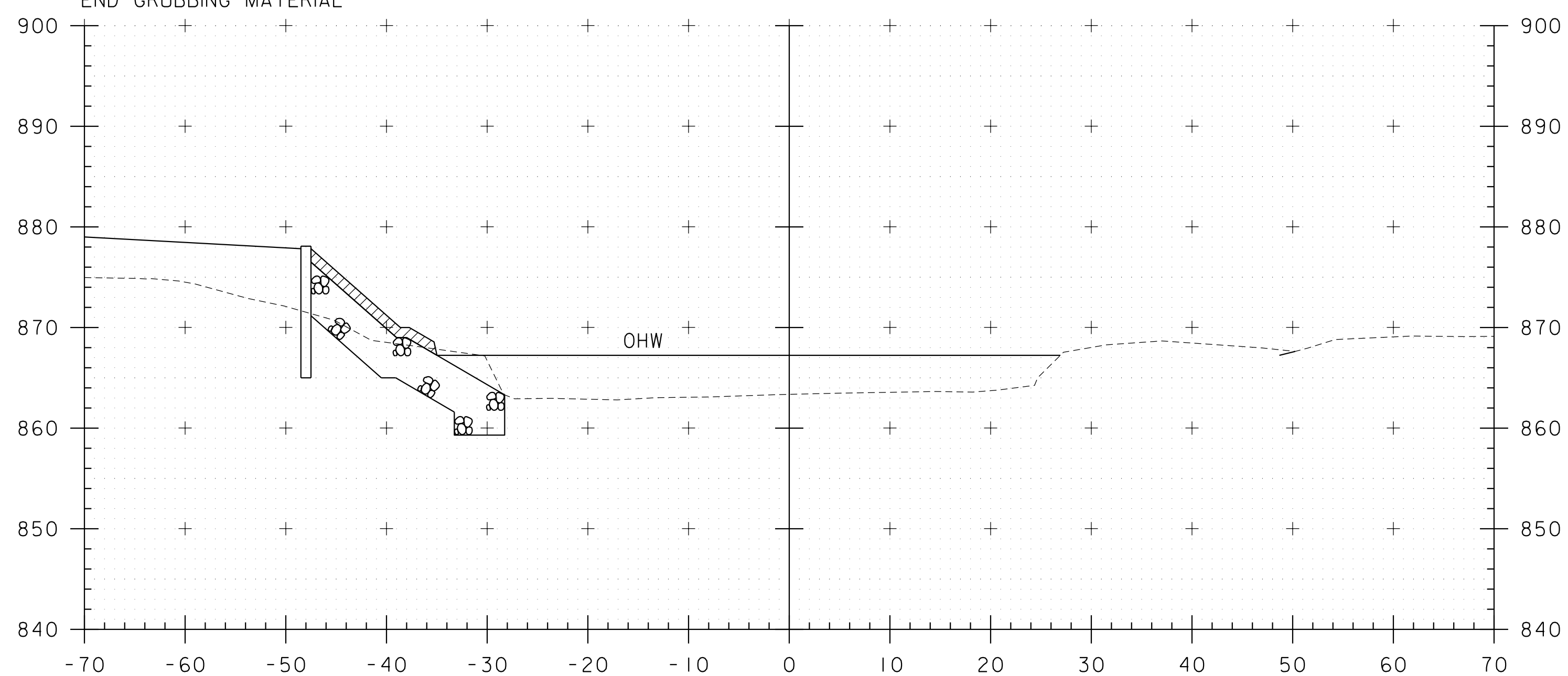
PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. BYATT  
SHEET 67 OF 77



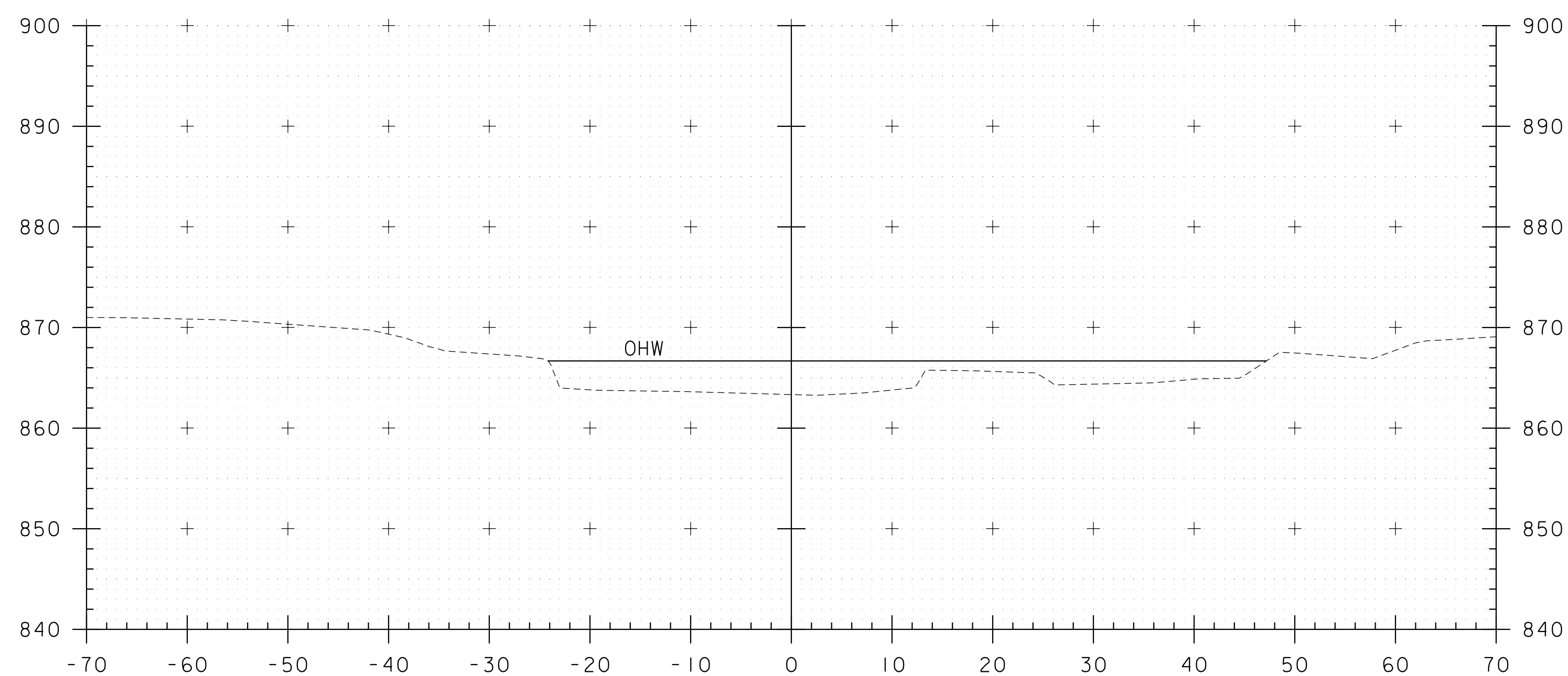


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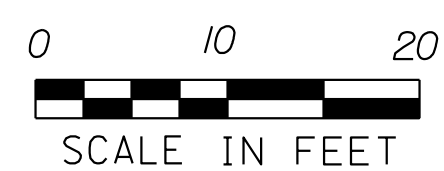
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51+50



52+00



STA 51+50 TO STA 52+00



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

FILE NAME: z13c056xs\_channel.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: J. FRENCH  
CHANNEL CROSS SECTIONS 4

PLOT DATE: 8/29/2018  
DRAWN BY: M. SMITH  
CHECKED BY: J. BYATT  
SHEET 68 OF 77



EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF VT ROUTE 102 BRIDGE 6 OVER PAUL STREAM. VT ROUTE 102 BRIDGE 6 IS LOCATED IN THE TOWN OF BRUNSWICK, APPROXIMATELY 4.8 MILES SOUTH OF THE INTERSECTION OF VT ROUTE 105 AND 102. A TEMPORARY DETOUR WILL BE REQUIRED AND A TEMPORARY BRIDGE WILL BE BUILT TO ACCOMMODATE THE DETOUR. THE TEMPORARY BRIDGE WILL BE LOCATED EAST OF THE BRIDGE REPLACEMENT.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.98 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS CHARACTERIZED AS LEVEL. TO THE NORTHWEST CORNER OF THE PROJECT IS A RESIDENCE WITH A GRAVEL DRIVEWAY. TO THE NORTHEAST CORNER OF THE PROJECT IS A RESIDENCE OUTSIDE OF THE PROJECT’S LIMITS. THE SOUTHEAST CORNER HOLDS A LARGE FIELD WHILE THE SOUTHWEST CONTAINS A LINE OF THICK TREES

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

PAUL STREAM IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE STREAM IS CHARACTERIZED AS SINUOUS, ALLUVIAL, LOCALLY BRAIDED, AND ANABRANCHED. THE STREAM BED CONSISTS OF SILT, SAND, GRAVEL AND COBBLES. THE DRAINAGE AREA IS 53.3 SQUARE MILES.

1.2.3 VEGETATION

THE VEGETATION ON THE PROJECT IS PRIMARILY BASED AROUND THE STREAM. THE AREA AROUND THE STREAM BED CONSISTS OF TALL GRASS AS WELL AS SOME SHRUBS AND TREES. THE REST OF THE PROJECT IS WELL COATED WITH GRASS WITH SOME SINGULAR TREES ON THE EAST SIDE OF THE PROJECT. THE TREES ON THE SOUTHWEST CORNER WILL HAVE TO BE REMOVED AS WELL AS THE TREE LINE ON THE SOUTHEAST SIDE FOR ACCESS TO THE TEMPORARY DETOUR.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ESSEX, VERMONT. SOILS ON THE PROJECT SITE ARE: PODUNK FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES, “K FACTOR”=0.24, ADAMS LOAMY FINE SAND, 0-3 PERCENT SLOPES, “K FACTOR”=0.17, ONDAWA-SUNDAY COMPLEX, 0 TO 2 PERCENT SLOPES, “K FACTOR”=0.24-0.15.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: NO  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT  
WATER RESOURCE: PAUL STREAM  
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC).

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR’S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED ON THIS PROJECT. THE EXISTING ROADWAY WILL BE USED TO ACCESS THE BRIDGE. ROADWAYS WILL BE SWEEPED AT THE DIRECTION OF THE ENGINEER.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS. FILTER CURTAINS WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

TEMPORARY EROSION CONTROL MATTING WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DISCHARGE FROM DE-WATERING ACTIVITIES IS ANTICIPATED WITH THE USE OF FILTER BAGS. THE CONTRACTOR MAY PROPOSE OTHER MEANS FOR THE TREATMENT OF DISCHARGE FROM DE-WATERING AND WILL BE RESPONSIBLE FOR ACQUIRING APPROVALS PRIOR TO IMPLEMENTING ALTERNATIVE TREATMENT MEANS. ALL COSTS FOR TREATMENT OF DISCHARGE FROM DE-WATERING SHALL BE PAID FOR UNDER CONTRACT ITEM 653.45.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

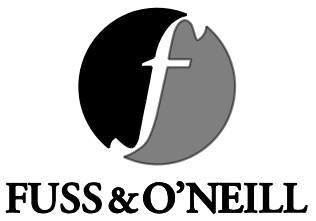
THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

1.5.3 UPDATES

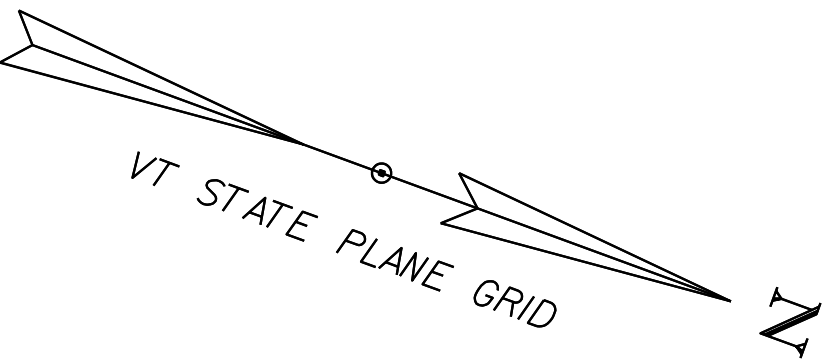


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| PROJECT LEADER: J. FRENCH    | DRAWN BY: J. FOWLER   |
| DESIGNED BY: S. FORTIER      | CHECKED BY: K. HAYDEN |
| EPSC NARRATIVE               | SHEET 69 OF 77        |



SOIL INFORMATION: ONDAWA-SUNDAY COMPLEX  
K = 0.24/0.15, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: A

SOIL INFORMATION: ADAMS LOAMY FINE SAND  
K = 0.17, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: A



**SMITH, PAUL WINSTON  
SMITH, BRIDGET  
SMITH, DANIEL WINSTON  
SMITH, SAMUEL J.**

SOIL INFORMATION: ONDAWA-SUNDAY COMPLEX  
K = 0.24/0.15, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: A

**N/F  
BATES, JAMES & SHIRLEY**

M. OAK  
STUMP  
LARGE  
M. PINE  
VT 1963 S/0271(A)  
VT 1958 ST  
STEEL PIPE SET IN CONCRETE  
M. SPRUCE

APPROX EXISTING ROW

VT 102  
TO MAIDSTONE

APPROX EXISTING ROW

HVCTRL  
130

IRON PIPE  
1" D.A.  
5" I.D.

GUY  
COMB

88000  
132

**HOOK SR., KENNETH D. & JUNE C.,  
TRUSTEES OF THE  
KENNETH D. HOOK SR. AND  
JUNE C. HOOK  
REVOCABLE FAMILY  
TRUST OF 2001**

SOIL INFORMATION: ADAMS LOAMY FINE SAND  
K = 0.17, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: A



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

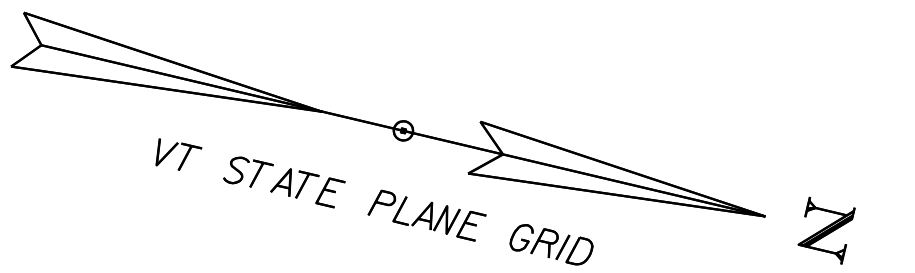
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DESIGNED BY: S. FORTIER  
EPSC EXISTING PLAN SHEET 1

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 70 OF 77

MATCH LINE STA. 13+00 SEE NEXT SHEET



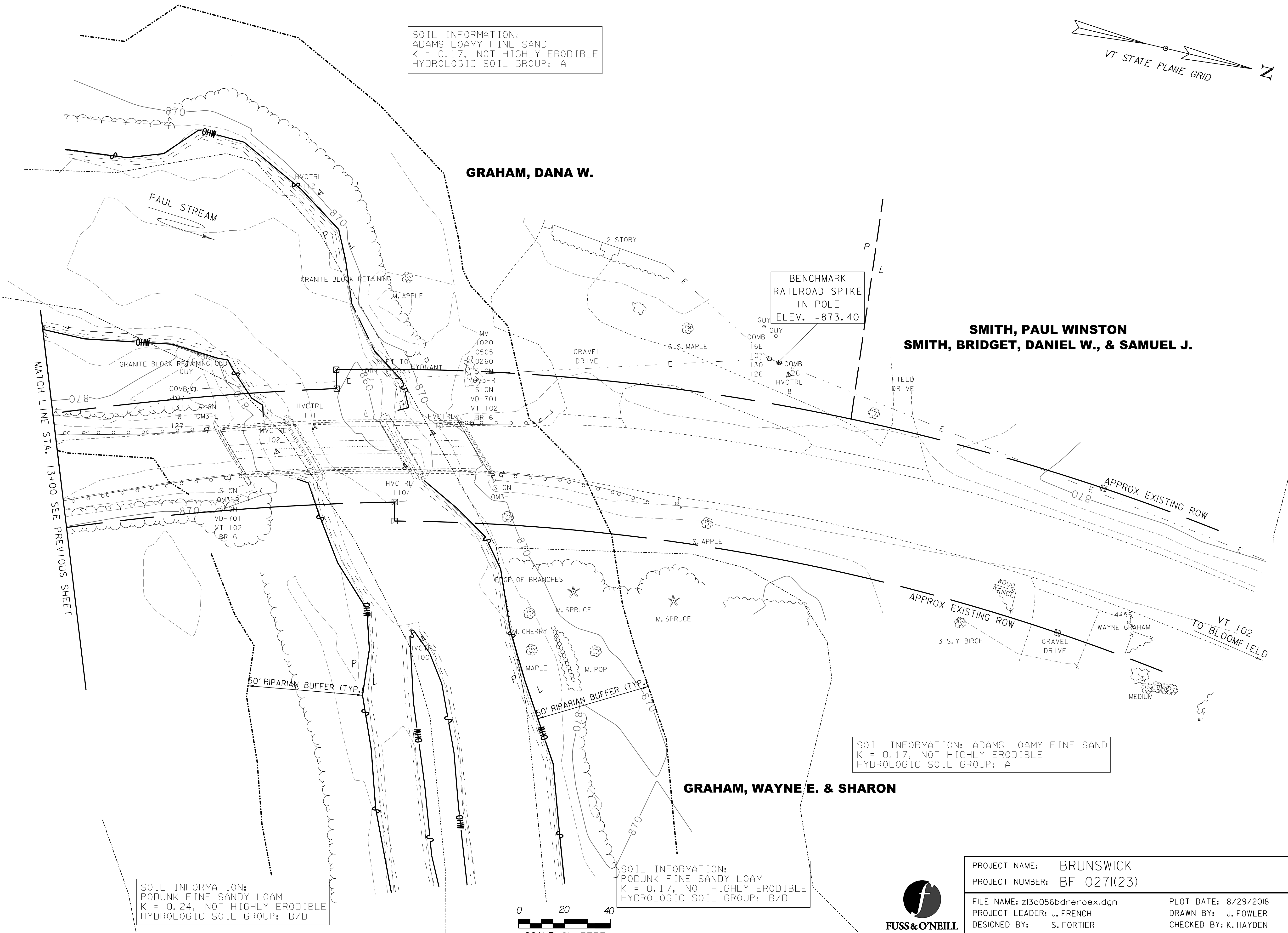
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ADAMS LOAMY FINE SAND  
K = 0.17, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: A



**GRAHAM, DANA W.**

**SMITH, PAUL WINSTON  
SMITH, BRIDGET, DANIEL W., & SAMUEL J.**

BENCHMARK  
RAILROAD SPIKE  
IN POLE  
ELEV. = 873.40



SOIL INFORMATION:  
PODUNK FINE SANDY LOAM  
K = 0.24, NOT HIGHLY ERODIBLE  
HYDROLOGIC SOIL GROUP: B/D

SOIL INFORMATION:  
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HYDROLOGIC SOIL GROUP: B/D

**GRAHAM, WAYNE E. & SHARON**

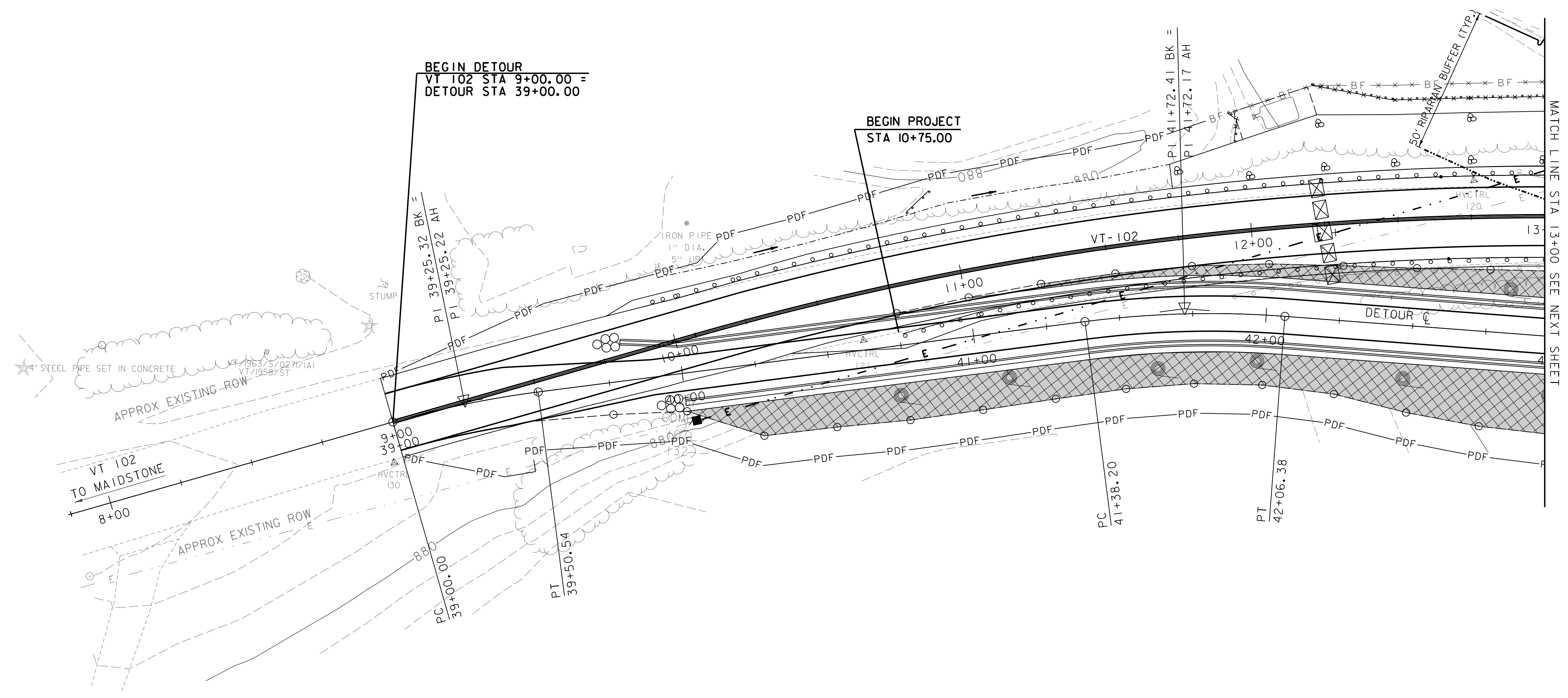
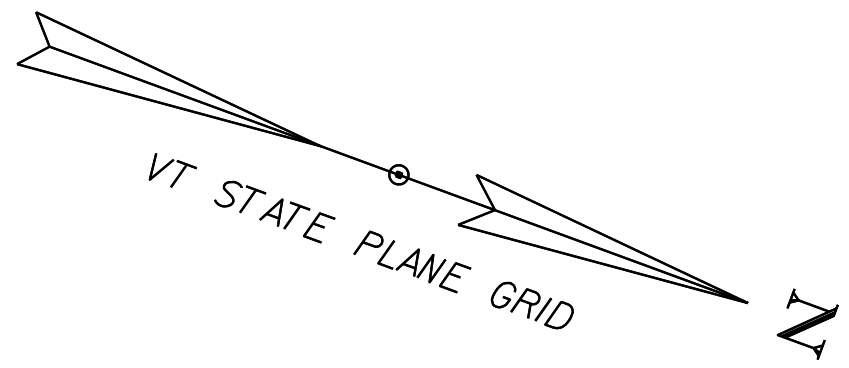
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PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056bdreroex.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
EPSC EXISTING PLAN SHEET 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 71 OF 77



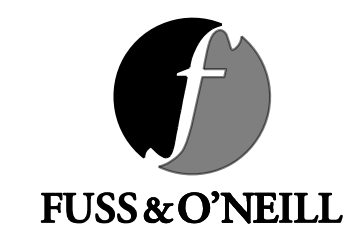
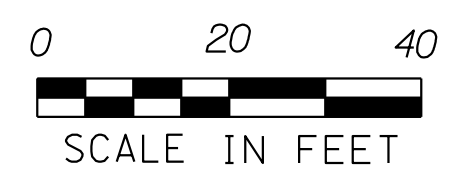




BEGIN DETOUR  
VT 102 STA 9+00.00 =  
DETOUR STA 39+00.00

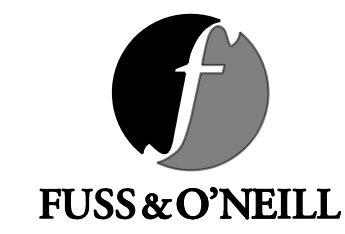
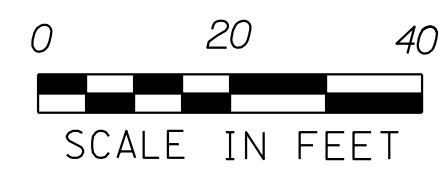
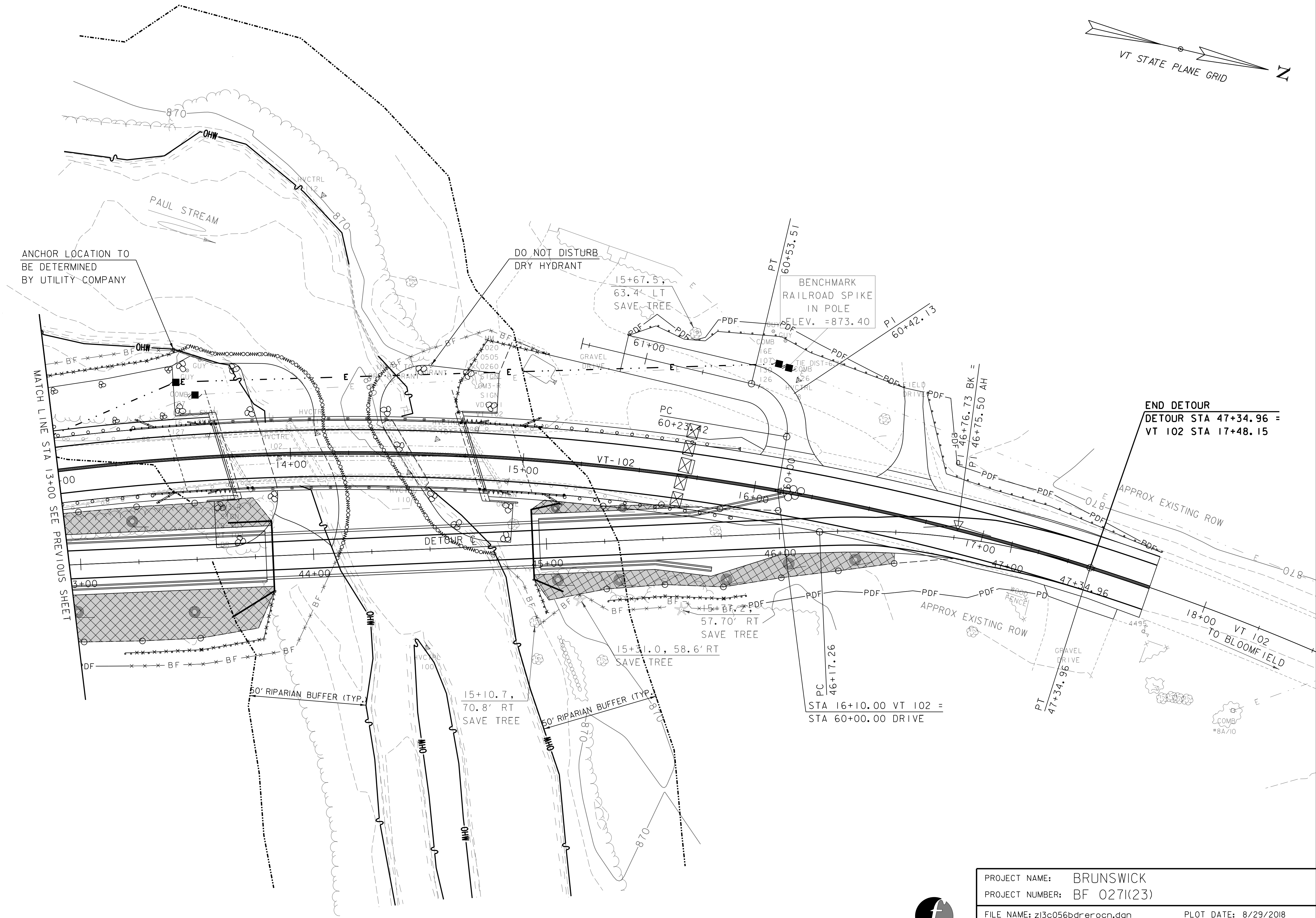
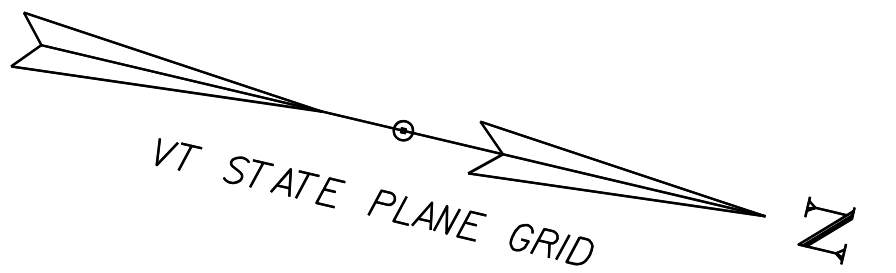
BEGIN PROJECT  
STA 10+75.00

MATCH LINE STA 13+00 SEE NEXT SHEET



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| PROJECT NUMBER: BF 0271(23)    |                       |
| FILE NAME: z13c056bdrerocn.dgn | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH      | DRAWN BY: J. FOWLER   |
| DESIGNED BY: S. FORTIER        | CHECKED BY: K. HAYDEN |
| EPSC CONSTRUCTION PLAN SHEET 1 | SHEET 72 OF 77        |



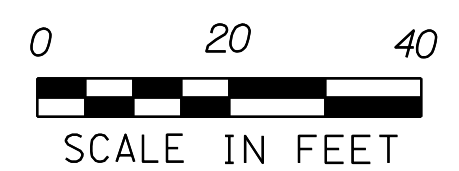
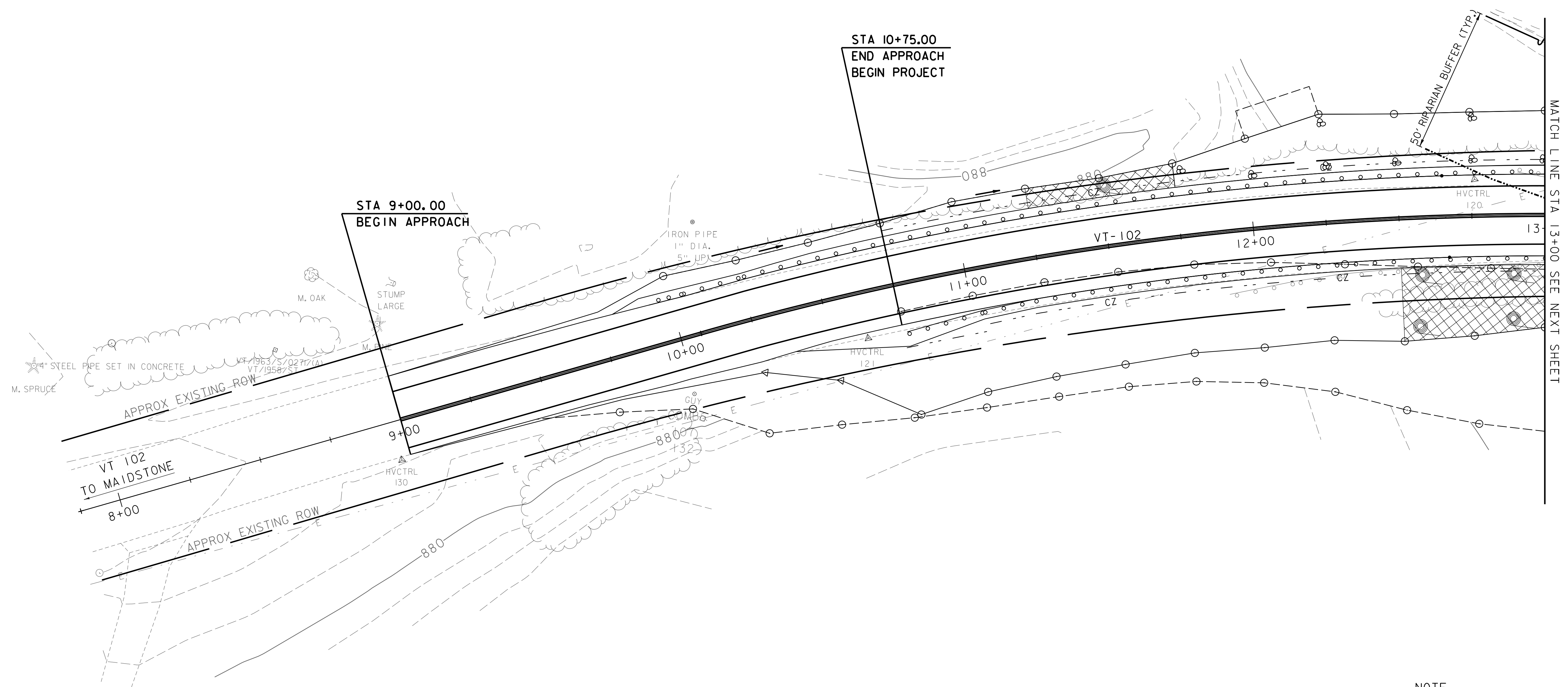
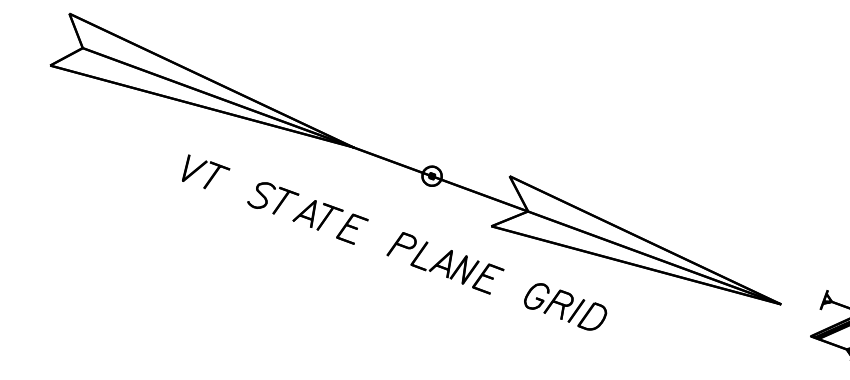


PROJECT NAME: BRUNSWICK  
PROJECT NUMBER: BF 0271(23)

FILE NAME: z13c056bdrerocn.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
EPSC CONSTRUCTION PLAN SHEET 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 73 OF 77

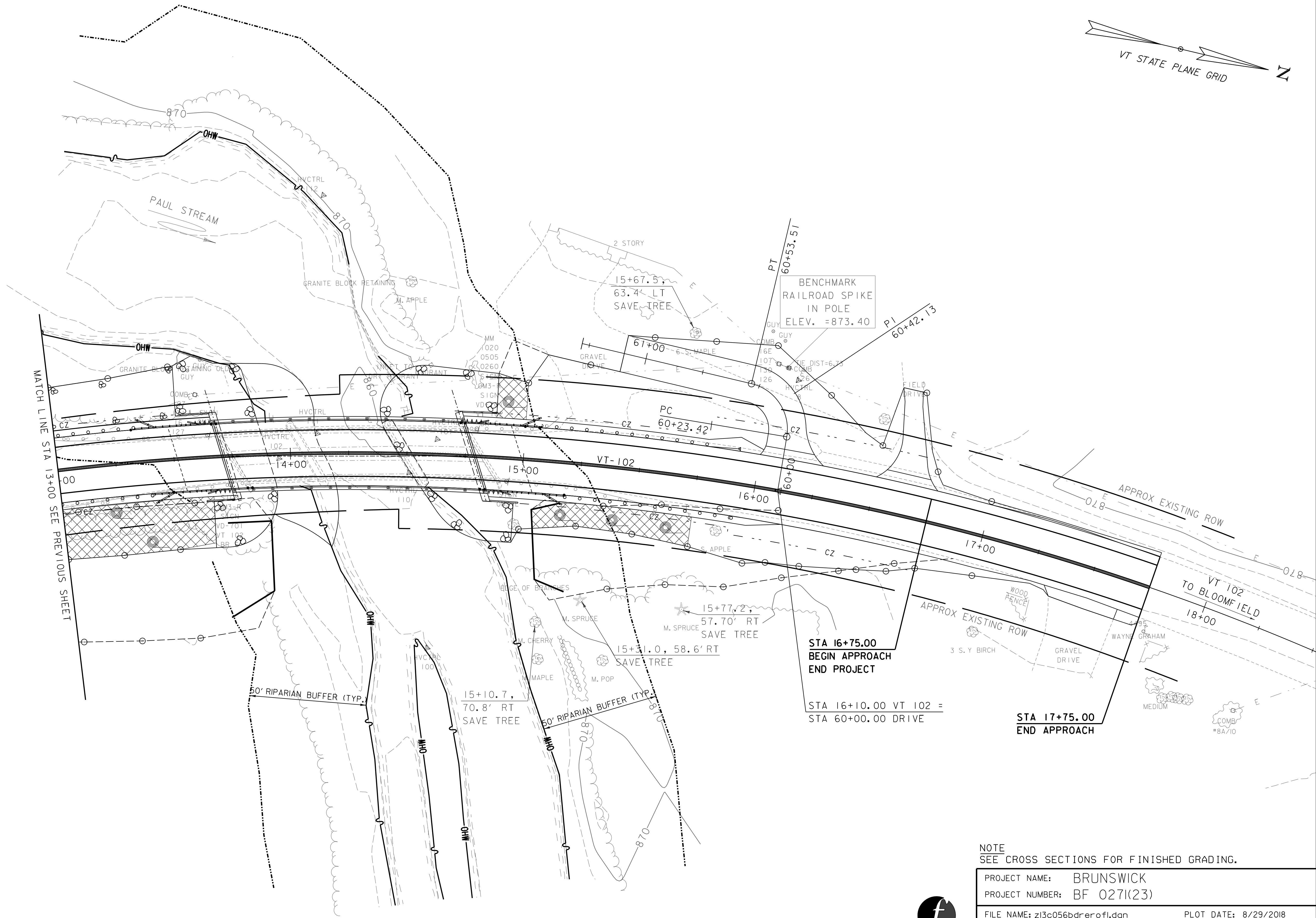
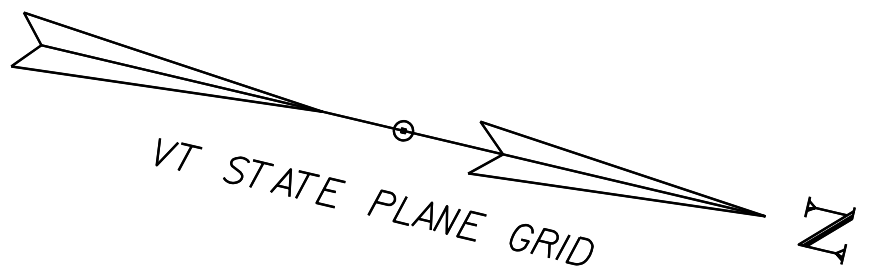




NOTE  
SEE CROSS SECTIONS FOR FINISHED GRADING.

|                                |                       |
|--------------------------------|-----------------------|
| PROJECT NAME: BRUNSWICK        |                       |
| PROJECT NUMBER: BF 0271(23)    |                       |
| FILE NAME: z13c056bdrerofl.dgn | PLOT DATE: 8/29/2018  |
| PROJECT LEADER: J. FRENCH      | DRAWN BY: J. FOWLER   |
| DESIGNED BY: S. FORTIER        | CHECKED BY: K. HAYDEN |
| EPSC FINAL PLAN SHEET 1        | SHEET 74 OF 77        |



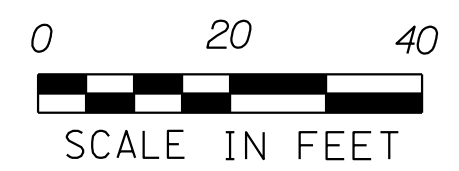


MATCH LINE STA 13+00 SEE PREVIOUS SHEET

STA 16+75.00  
BEGIN APPROACH  
END PROJECT

STA 16+10.00 VT 102 =  
STA 60+00.00 DRIVE

STA 17+75.00  
END APPROACH



NOTE  
SEE CROSS SECTIONS FOR FINISHED GRADING.

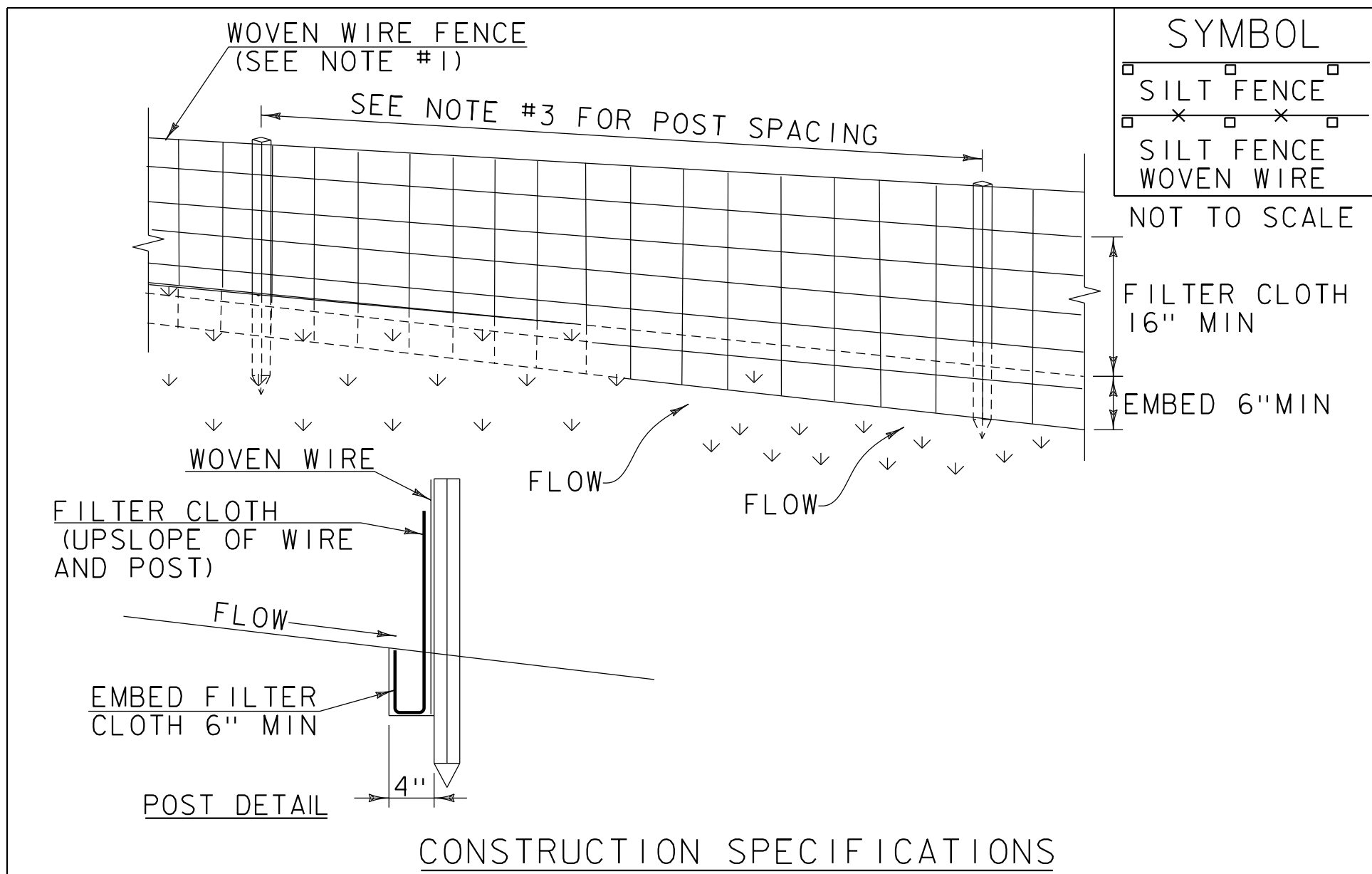
|                         |                     |             |           |
|-------------------------|---------------------|-------------|-----------|
| PROJECT NAME:           | BRUNSWICK           | PLOT DATE:  | 8/29/2018 |
| PROJECT NUMBER:         | BF 0271(23)         | DRAWN BY:   | J. FOWLER |
| FILE NAME:              | z13c056bdrerofl.dgn | CHECKED BY: | K. HAYDEN |
| PROJECT LEADER:         | J. FRENCH           | SHEET       | 75 OF 77  |
| DESIGNED BY:            | S. FORTIER          |             |           |
| EPSC FINAL PLAN SHEET 2 |                     |             |           |





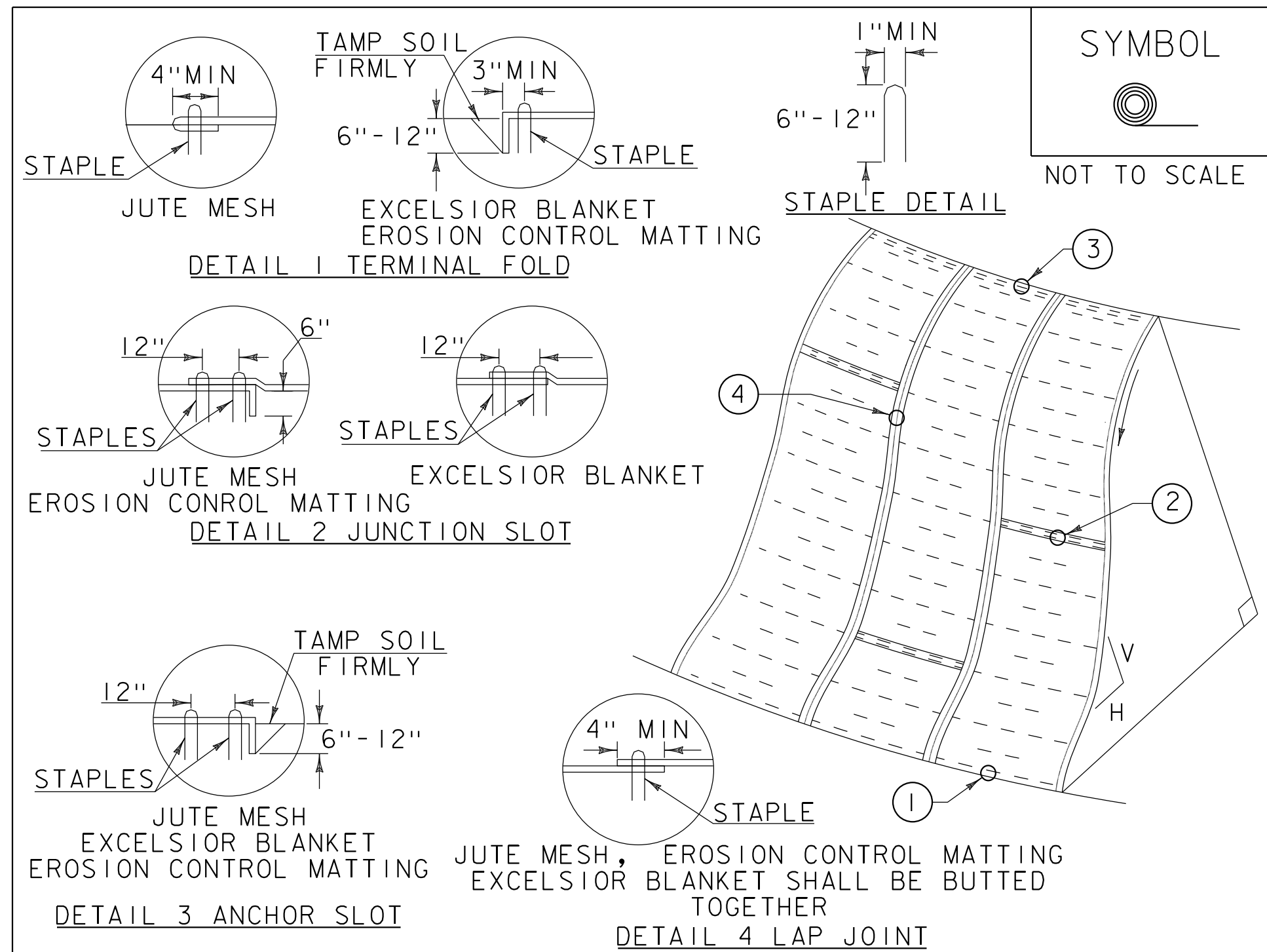






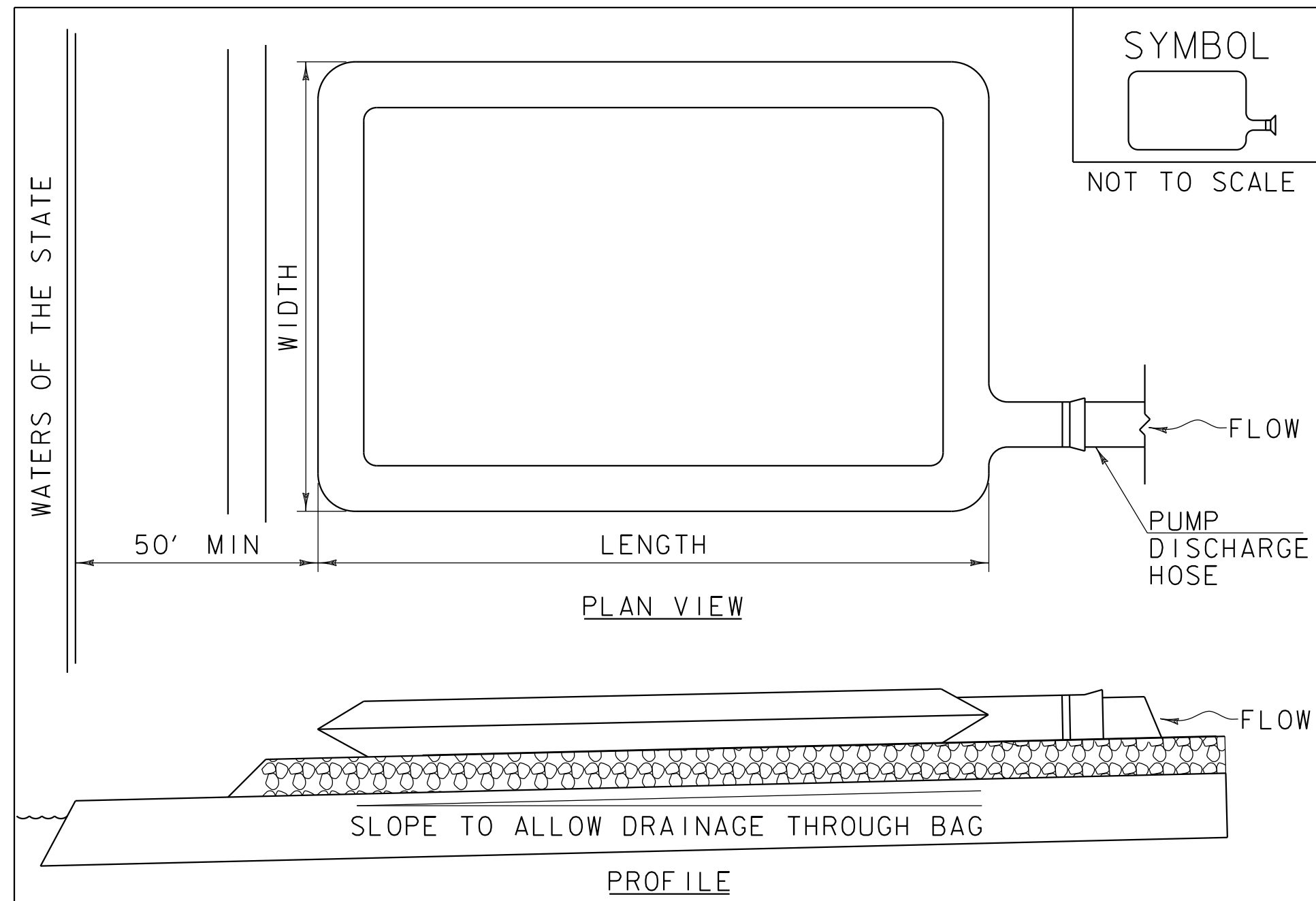
1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

|                                                                                                                                                                                                               |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC<br>ORIGINALLY DEVELOPED BY USDA-NRCS<br>VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION                                                                 | SILT FENCE |
| NOTES:<br>REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.                                 |            |
| THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515). |            |
| REVISIONS                                                                                                                                                                                                     |            |
| MARCH 21, 2008 WHF                                                                                                                                                                                            |            |
| DECEMBER 11, 2008 WHF                                                                                                                                                                                         |            |
| JANUARY 13, 2009 WHF                                                                                                                                                                                          |            |
|                                                                                                                                                                                                               |            |
|                                                                                                                                                                                                               |            |



- CONSTRUCTION SPECIFICATIONS
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
  2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
  3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
  4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
  5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

|                                                                                                                                                                                       |                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC<br>ORIGINALLY DEVELOPED BY USDA-NRCS<br>VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION                                         | ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE |
| NOTES:<br>REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.         |                                                  |
| THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.20). |                                                  |
| REVISIONS                                                                                                                                                                             |                                                  |
| APRIL 16, 2007 JMF                                                                                                                                                                    |                                                  |
| JANUARY 13, 2009 WHF                                                                                                                                                                  |                                                  |
|                                                                                                                                                                                       |                                                  |
|                                                                                                                                                                                       |                                                  |



- CONSTRUCTION SPECIFICATIONS
1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
  2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
  3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
  4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
  5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
  6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
  7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

|                                                                                                                                                                               |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                                                                                               | FILTER BAG |
| NOTES:<br>REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE. |            |
| THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.                                                |            |
| REVISIONS                                                                                                                                                                     |            |
| MARCH 24, 2008 WHF                                                                                                                                                            |            |
| JANUARY 13, 2009 WHF                                                                                                                                                          |            |
|                                                                                                                                                                               |            |
|                                                                                                                                                                               |            |



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

FILE NAME: z13c056erodet.dgn  
PROJECT LEADER: J. FRENCH  
DESIGNED BY: S. FORTIER  
EPSC DETAILS SHEET 2

PLOT DATE: 8/29/2018  
DRAWN BY: J. FOWLER  
CHECKED BY: K. HAYDEN  
SHEET 77 OF 77