

PROJECT REFERENCE NO. 1-4700
 SHEET NO. 23
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 ENGINEER: [Name]

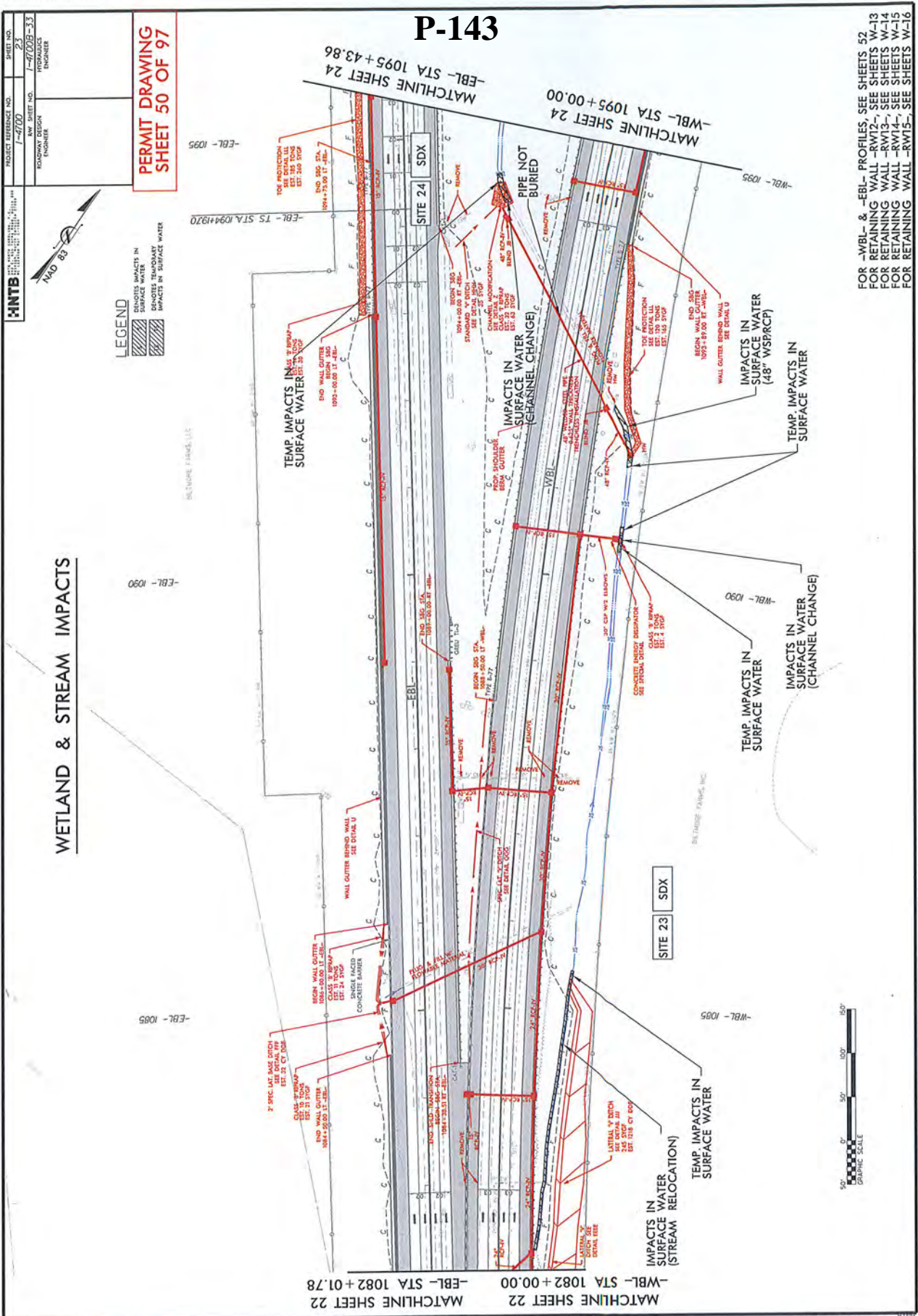
**PERMIT DRAWING
 SHEET 50 OF 97**

WETLAND & STREAM IMPACTS

LEGEND
 ▨ DROUGHT IMPACTS IN SURFACE WATER
 ▨ DROUGHT IMPACTS IN SURFACE WATER
 ▨ DROUGHT IMPACTS IN SURFACE WATER



P-143



FOR WBL & EBL PROFILES, SEE SHEETS 52
 FOR RETAINING WALL -RW12-, SEE SHEETS W-13
 FOR RETAINING WALL -RW13-, SEE SHEETS W-14
 FOR RETAINING WALL -RW14-, SEE SHEETS W-15
 FOR RETAINING WALL -RW15-, SEE SHEETS W-16
 FOR RETAINING WALL -RW16-, SEE SHEETS W-17



17/19/2017

17/19/2017

PROJECT REFERENCE NO.	1-4700
SHEET NO.	51 OF 97
DESIGNER	ROADWAY DESIGN ENGINEER
ENGINEER	ROADWAY DESIGN ENGINEER

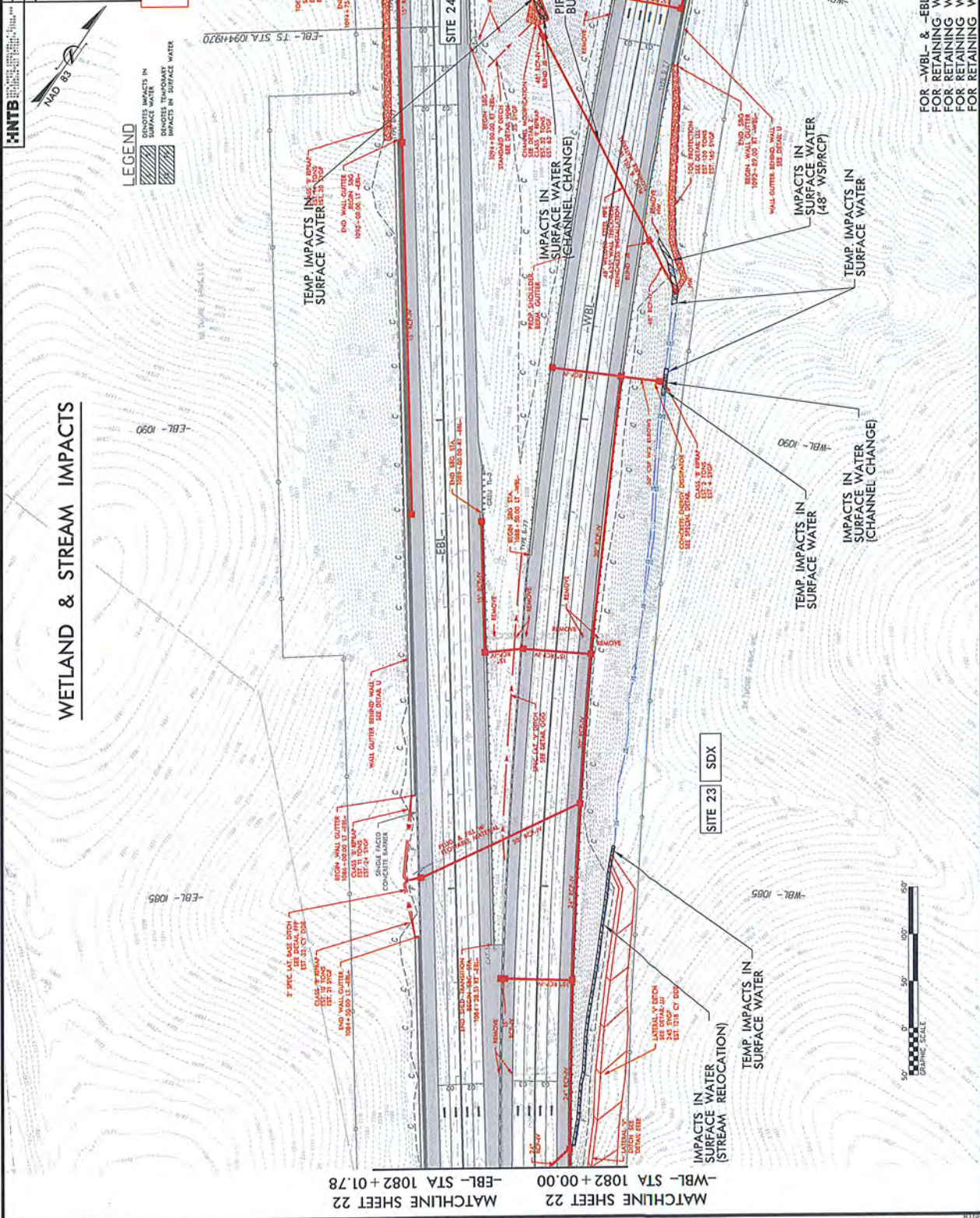


**PERMIT DRAWING
SHEET 51 OF 97**

LEGEND
 Hatched area: IMPACTS IN SURFACE WATER
 Dotted area: IMPACTS IN SURFACE WATER
 Dashed line: TEMPORARY IMPACTS IN SURFACE WATER

WETLAND & STREAM IMPACTS

P-144



FOR -WBL- & -EBL- PROFILES SEE SHEETS 52
 FOR RETAINING WALL -RWT2- SEE SHEETS W-13
 FOR RETAINING WALL -RWT3- SEE SHEETS W-14
 FOR RETAINING WALL -RWT4- SEE SHEETS W-15
 FOR RETAINING WALL -RWT5- SEE SHEETS W-16

7/19/2012

11/2/2018

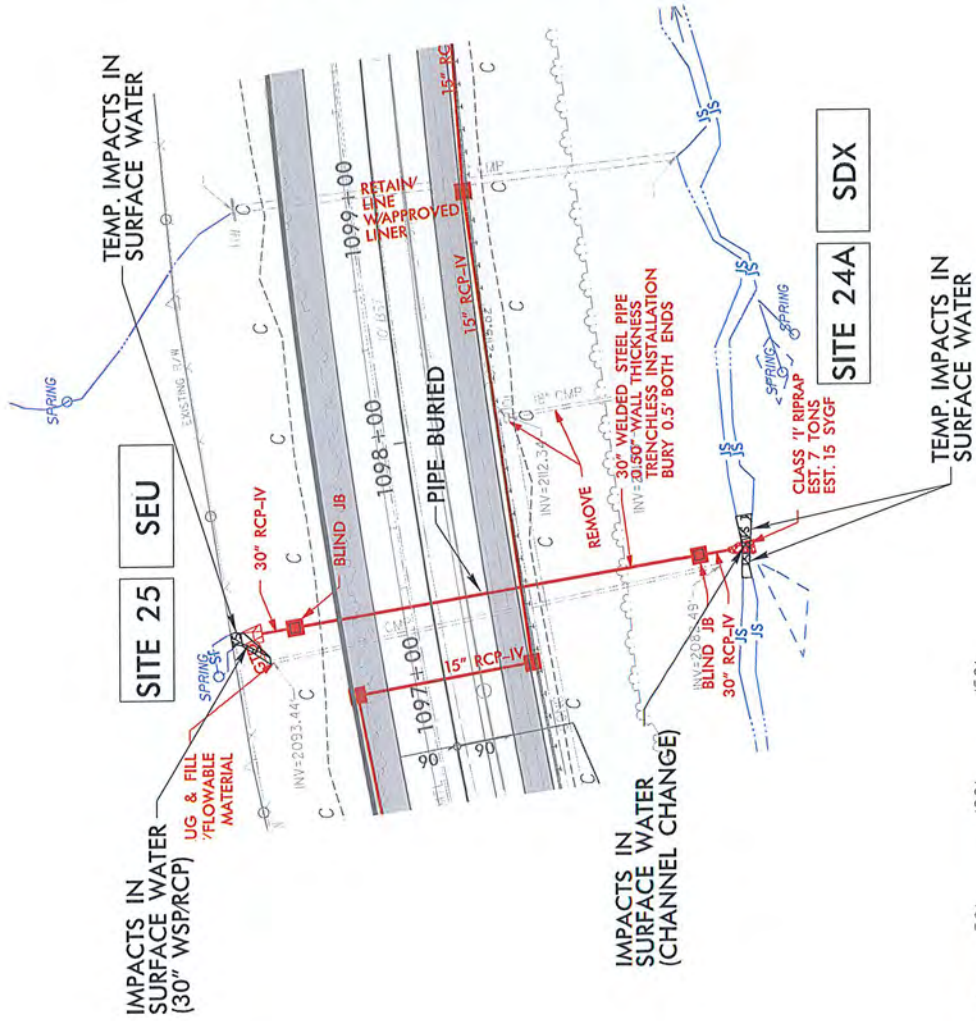
PROJECT REFERENCE NO.	1-4700	SHEET NO.	24
ROADWAY PROJECT NO.	1-4700B-34	REV SHEET NO.	
ROADWAY DESIGNER		ENGINEER	



**PERMIT DRAWING
SHEET 54 OF 97**

LEGEND

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



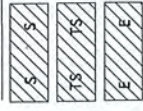
SITE 25 **SEU** **SITE 24A** **SDX**

PROJECT REFERENCE NO. 1-4700
 SHEET NO. 1-4700-54
 ROADWAY DESIGN ENGINEER
 PROFESSIONAL ENGINEER

**PERMIT DRAWING
 SHEET 56 OF 97**



LEGEND



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES EXCAVATION IN WETLAND

IMPACTS IN SURFACE WATER (STREAM RELOCATION)

30" WELDED STEEL PIPE 0.50" WALL THICKNESS TRENCHLESS INSTALLATION

PIPE NOT BURIED

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

SITE 26

SDX

CLASS 'B' RIPRAP EST. 5 TONS EST. 14 SYGF

REMOVE

SITE 29

SDX

CLASS 'B' RIPRAP EST. 22 TONS EST. 55 SYGF

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

CLASS '1' RIPRAP EST. 4 TONS EST. 12 SYGF

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

24" WELDED STEEL PIPE 0.50" WALL THICKNESS TRENCHLESS INSTALLATION

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (30" CMP/RCP)

TEMP. IMPACTS IN SURFACE WATER

EXCAVATION IN WETLAND

PROTECTION DETAIL III 45 TONS 65 SYGF

SITE 27

SDY

WCV

EXCAVATION IN WETLAND

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

TEMP. IMPACTS IN SURFACE WATER

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

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24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

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24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

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24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

CLASS '1' RIPRAP EST. 11 TONS EST. 22 SYGF

REMOVE

STANDARD BASE DITCH SEE DETAIL W WWWW

STANDARD BASE DITCH SEE DETAIL CC

STANDARD BASE DITCH SEE DETAIL CC

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

REMOVE

24" CSP W/2 ELBOWS

REMOVE

24" CSP BLIND 'B'

24" CSP BLIND 'B'

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

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24" RCP-IV

24" RCP-IV

24" RCP-IV

24" RCP-IV

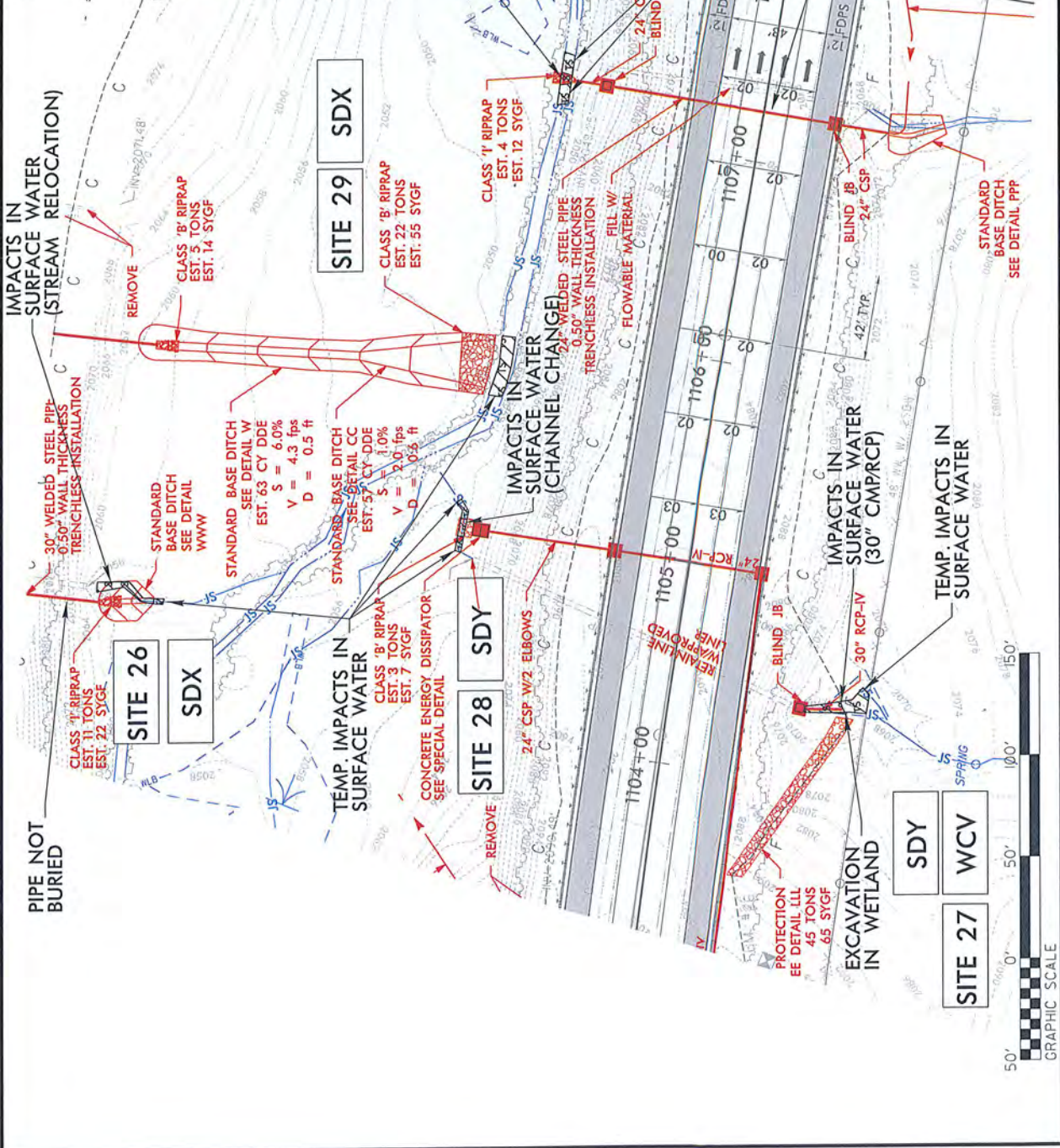
PROJECT REFERENCE NO.	1-4700
SHEET NO.	26
DATE	1-17-08
DESIGNED BY	ENGINEER
CHECKED BY	ENGINEER

**PERMIT DRAWING
SHEET 57 OF 97**



LEGEND

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND



IMPACTS IN SURFACE WATER (STREAM RELOCATION)

30" WELDED STEEL PIPE 0.50" WALL THICKNESS TRENCHLESS INSTALLATION

CLASS 'I' RIPRAP EST. 11 TONS EST. 22 SYGF

PIPE NOT BURIED

SITE 26
SDX

STANDARD BASE DITCH SEE DETAIL WWWW

STANDARD BASE DITCH SEE DETAIL W
EST. 63 CY DDE
S = 6.0%
V = 4.3 fps
D = 0.5 ft

TEMP. IMPACTS IN SURFACE WATER

CLASS 'B' RIPRAP EST. 3 TONS EST. 7 SYGF

STANDARD BASE DITCH CC SEE DETAIL CC
EST. 57 CY DDE
S = 1.0%
V = 3.0 fps
D = 0.5 ft

CONCRETE ENERGY DISSIPATOR SEE SPECIAL DETAIL

SITE 28
SDY

REMOVE

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

CLASS 'B' RIPRAP EST. 22 TONS EST. 55 SYGF

SITE 29
SDX

CLASS 'I' RIPRAP EST. 4 TONS EST. 12 SYGF

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

24" CSP W/2 ELBOWS

FILL W/ FLOWABLE MATERIAL

WELDED STEEL PIPE 0.50" WALL THICKNESS TRENCHLESS INSTALLATION

24" CSP BLIND JB

TEMP. IMPACTS IN SURFACE WATER

EXCAVATION IN WETLAND

PROTECTION EE DETAIL LLL 45 TONS 65 SYGF

24" RCP-IV

IMPACTS IN SURFACE WATER (30" CMP/RCP)

TEMP. IMPACTS IN SURFACE WATER

SITE 27
WCV

BLIND JB

24" RCP-IV

IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

SITE 30
SDY

BLIND JB

24" RCP-IV

IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

PIPE NOT BURIED

STANDARD BASE DITCH SEE DETAIL PPP

42" TYP.

24" CSP

IMPACTS IN SURFACE WATER

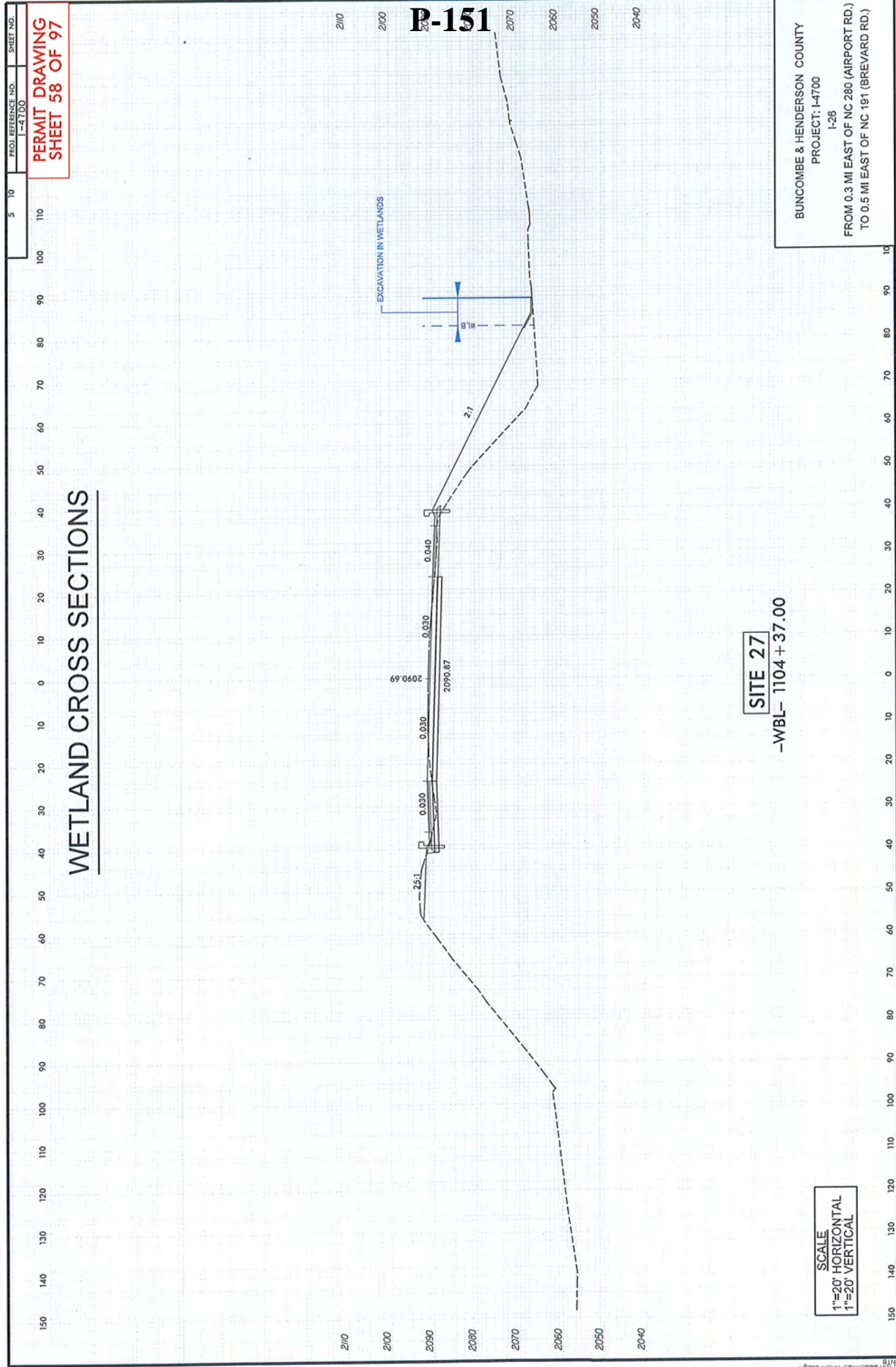
GRAPHIC SCALE
50' 0' 50' 100'

PROJ. REFERENCE NO. 1-4700
SHEET NO. 58 OF 97

5 10 110

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

WETLAND CROSS SECTIONS



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EXCAVATION IN WETLANDS

1.8

2:1

2090.69
2090.87
0.030
0.030
0.030
0.040

SITE 27

-WBL- 1104+37.00

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

PROJECT REFERENCE NO.	7-4700	SHEET NO.	1-4700-35
CONTRACT NO.	1-4700-35	DATE	11/11/11
ENGINEER	ROADWAY DESIGN	HYDRAULICS	ENGINEER

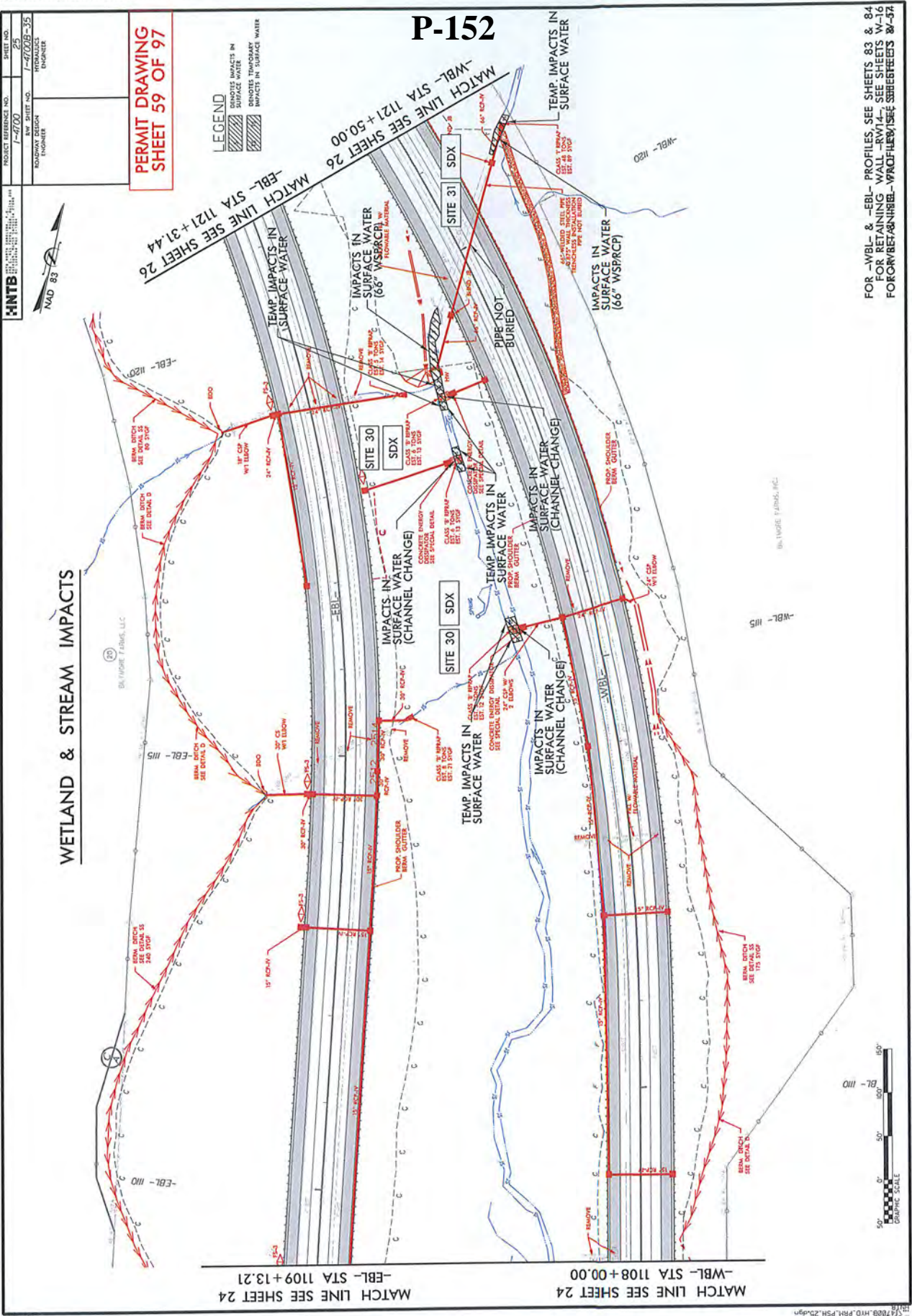
**PERMIT DRAWING
SHEET 59 OF 97**

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WETLAND & STREAM IMPACTS



LEGEND
 ▨ DENOTES IMPACTS IN SURFACE WATER
 ▨ DENOTES TEMPORARY IMPACTS IN SURFACE WATER



7/19/2017



FOR -WBL- & -EBL- PROFILES, SEE SHEETS 83 & 84
 FOR RETAINING WALLS, SEE SHEETS 85 & 86
 FOR REBAR/PIPE-IMPACTS, SEE SHEETS 87-97

MATCH LINE STA 1108+00.00 SEE SHEET 24
 -WBL- STA 1109+13.21
 MATCH LINE STA 1121+31.44 SEE SHEET 26
 -WBL- STA 1121+50.00 SEE SHEET 26

PROJECT REFERENCE NO. **17-0000**
 SHEET NO. **7-0000-35**
 HNTB CONSULTING ENGINEERS
 1000 EAST 10TH AVENUE
 DENVER, CO 80202
 DATE: 11/19/2017

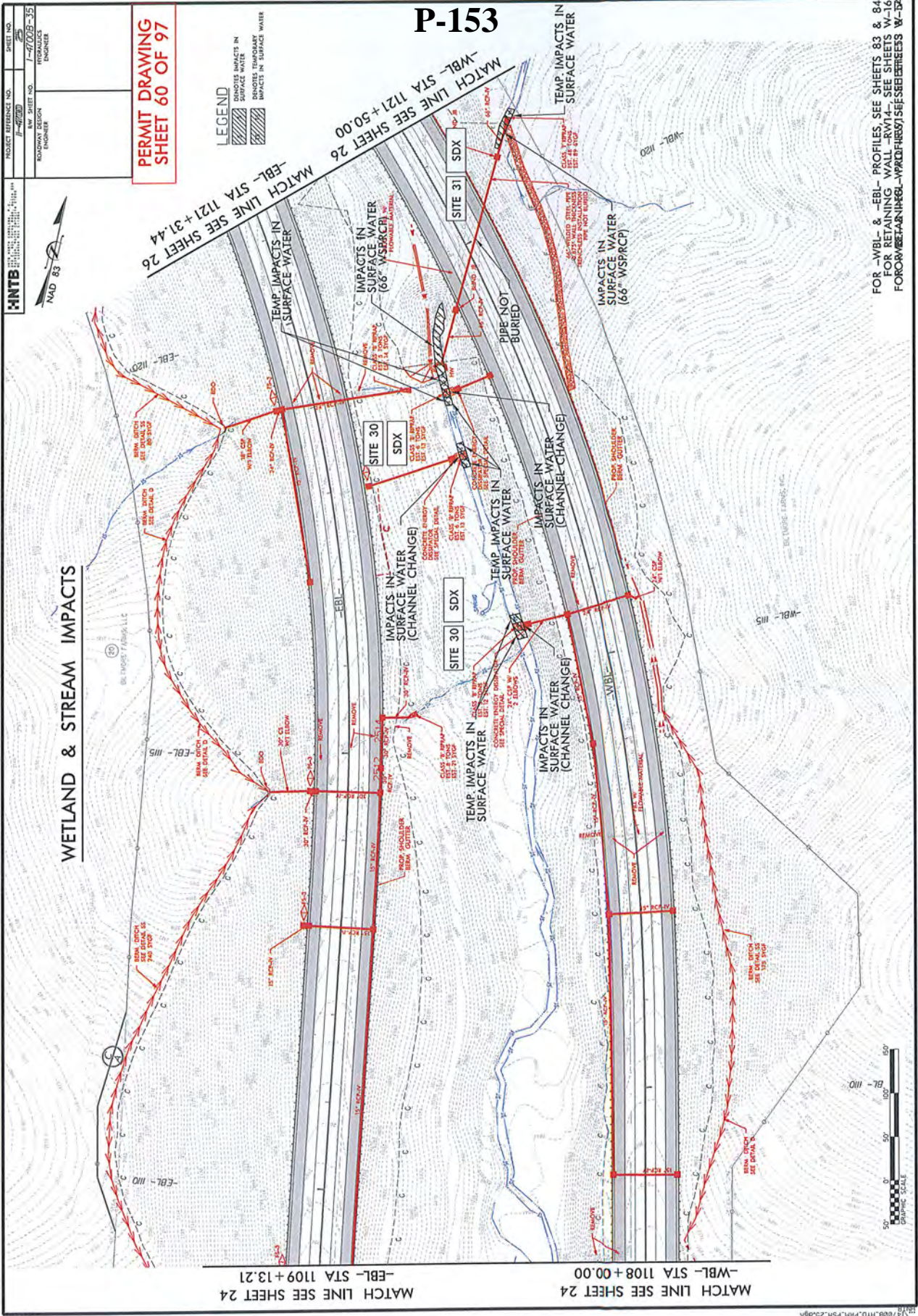


PERMIT DRAWING
SHEET 60 OF 97

LEGEND
 [Hatched Box] DENOTES IMPACTS IN SURFACE WATER
 [Dashed Box] DENOTES TEMPORARY IMPACTS IN SURFACE WATER

P-153

WETLAND & STREAM IMPACTS



MATCH LINE SEE SHEET 24
 -WBL- STA 1108+00.00
 -EBL- STA 1109+13.21

MATCH LINE SEE SHEET 26
 -WBL- STA 1121+50.00
 -EBL- STA 1121+31.44



FOR -WBL- & -EBL- PROFILES, SEE SHEETS 83 & 84
 FOR RETAINING WALL -RW14-, SEE SHEETS W-16
 FOR RETAINING WALL -RW15-, SEE SHEETS W-17
 FOR RETAINING WALL -RW16-, SEE SHEETS W-18

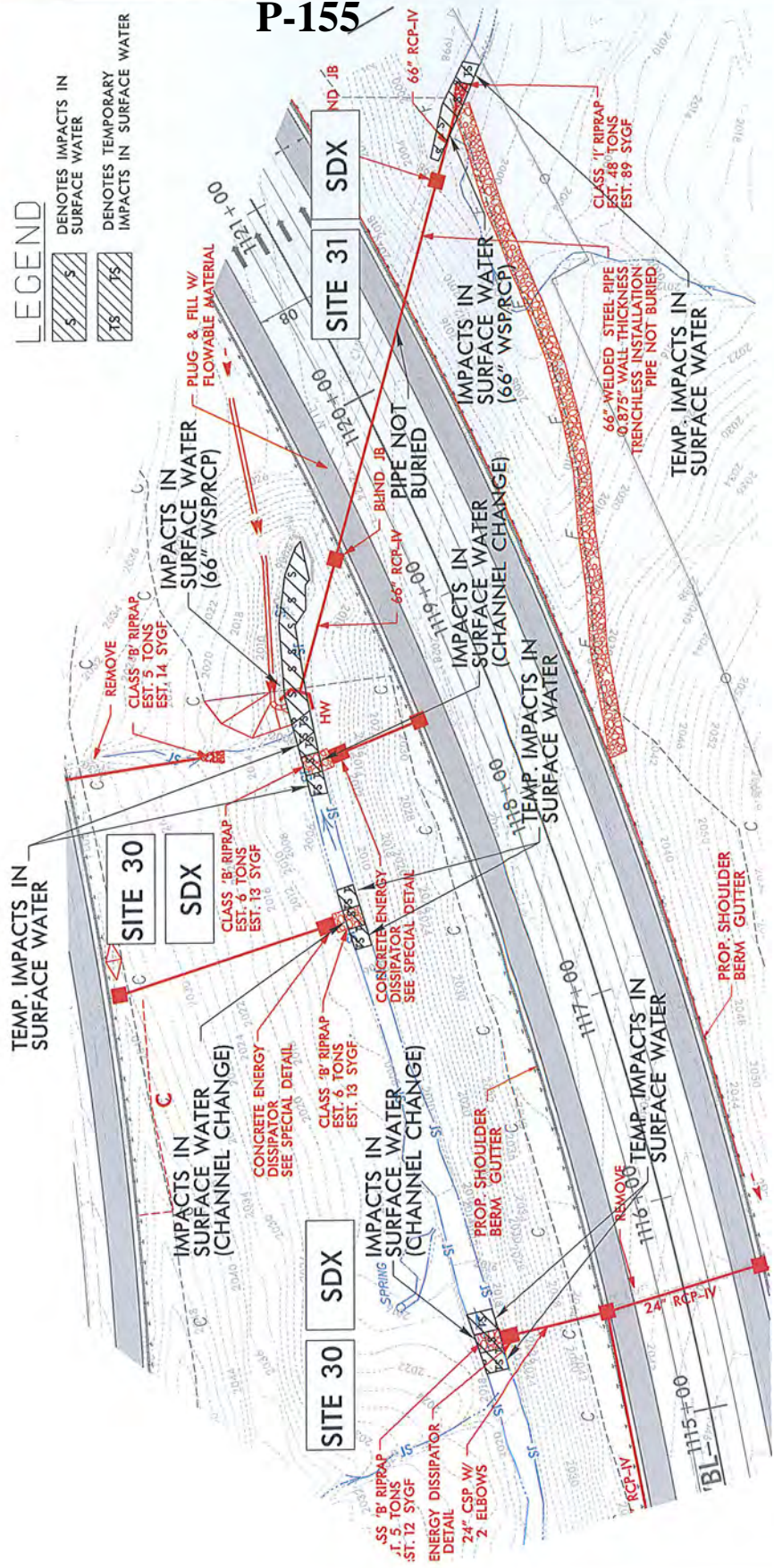
PROJECT REFERENCE NO. 1-4700
 SHEET NO. 25
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER



**PERMIT DRAWING
 SHEET 62 OF 97**

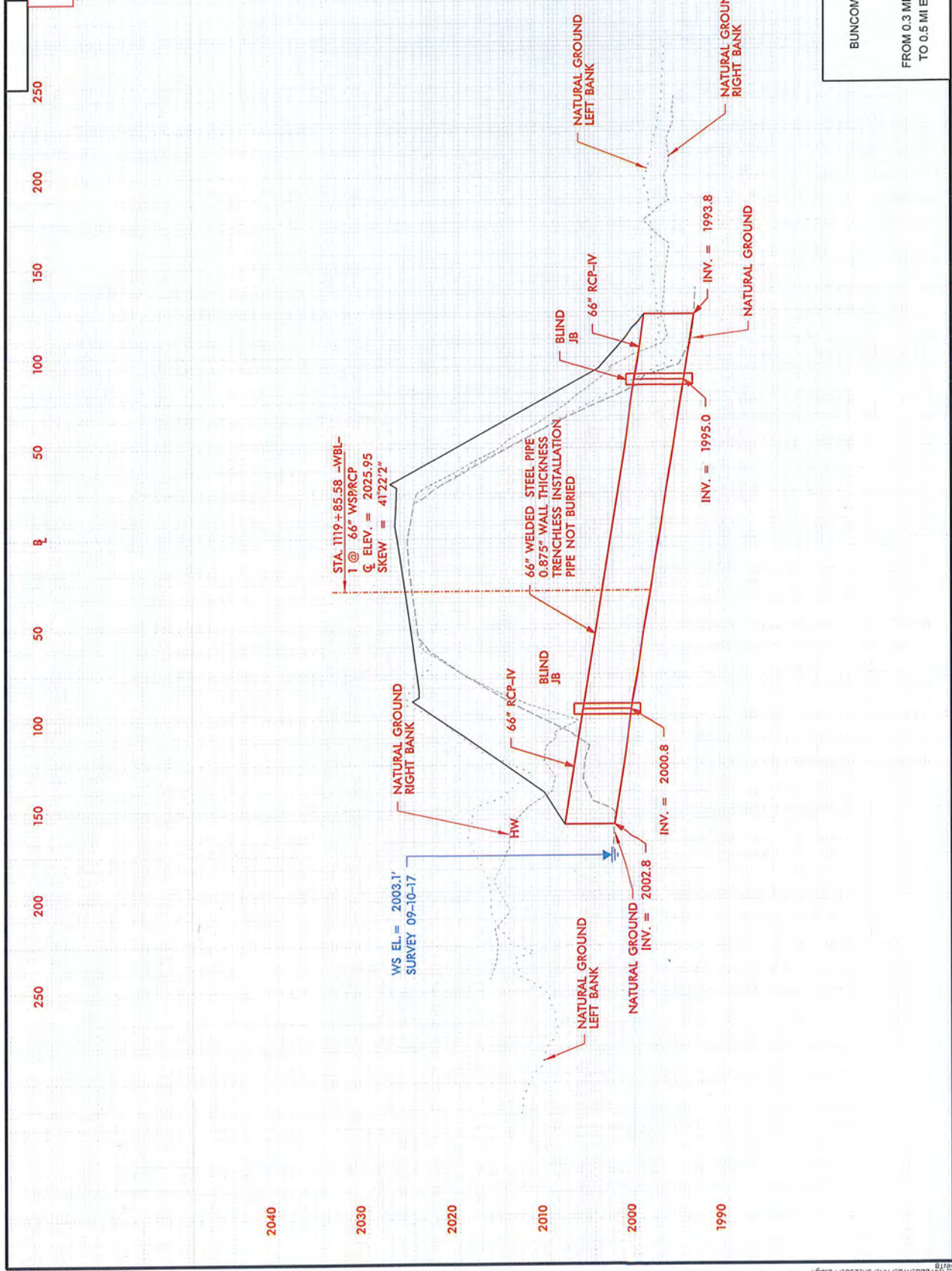
P-155

LEGEND
 [Hatched box with 'S'] DENOTES IMPACTS IN SURFACE WATER
 [Hatched box with 'TS'] DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJ. REFERENCE NO. 1-41700 SHEET NO. PERMIT DRAWING SHEET 63 OF 97

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BUNCOMBE & HENDERSON COUNTY
 PROJECT: 1-41700
 1-26
 FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
 TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

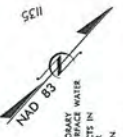
PROJECT REFERENCE NO. 1-4700
 SHEET NO. 26
 ROADWAY DESIGN ENGINEER
 MECHANICAL ENGINEER

**PERMIT DRAWING
 SHEET 64 OF 97**

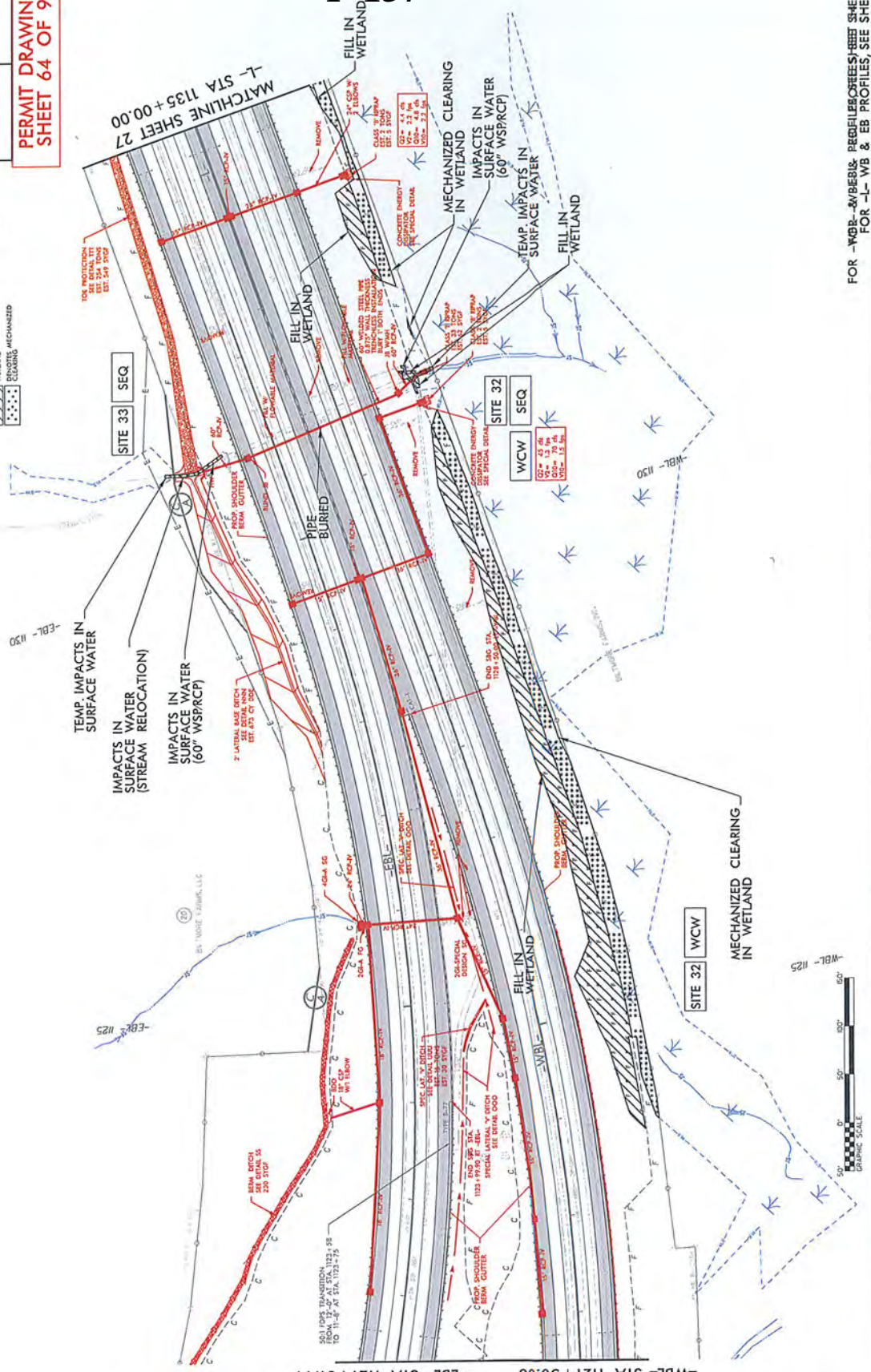
P-157

WETLAND & STREAM IMPACTS

HNTB



LEGEND
 Hatched pattern: DENOTES TEMPORARY WATER SURFACE IMPACTS IN SURFACE WATER
 Stippled pattern: DENOTES FILL IN SURFACE WATER
 Dotted pattern: DENOTES MECHANIZED CLEARING



7/19/2017

FOR -WBR--WB&B&L--PROFILES--SEE SHEET 88
 FOR --L--WB & EB PROFILES, SEE SHEET 85



MATCHLINE SHEET 25
 -WBL- STA 1121 + 50.00
 -EBL- STA 1121 + 31.44

MATCHLINE SHEET 27
 -L- STA 1135 + 00.00

PROJECT REFERENCE NO. 7-4700
 SHEET NO. 25
 ROADWAY IMPROVEMENT ENGINEER
 PROJECT NO. 17/028-36
 ROADWAY IMPROVEMENT ENGINEER

**PERMIT DRAWING
 SHEET 65 OF 97**

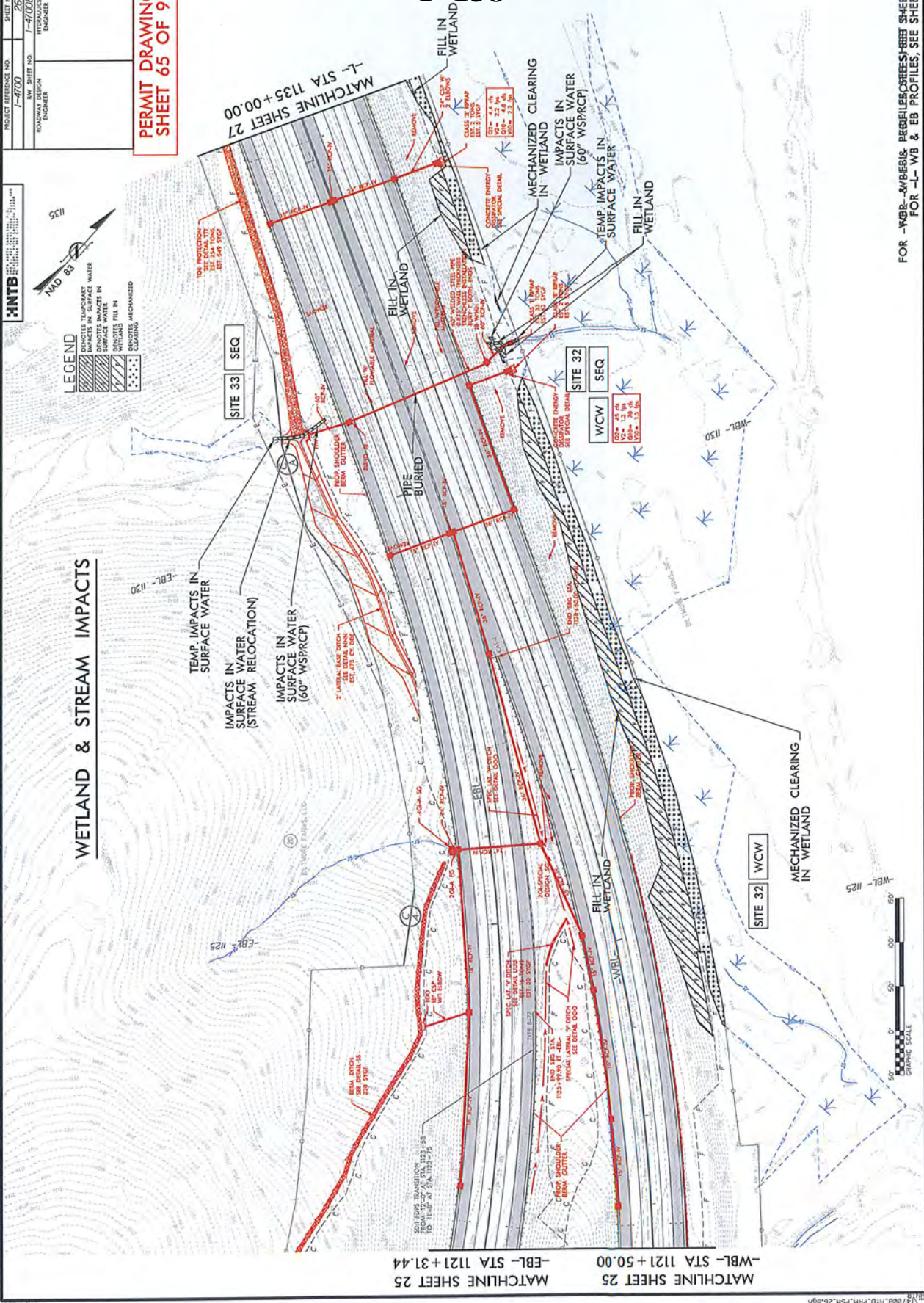
P-158

INTB



LEGEND
 Hatched pattern: DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 Dotted pattern: DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 Stippled pattern: DENOTES MECHANIZED CLEARING

WETLAND & STREAM IMPACTS



7/19/2017

FOR -WB- & WB- PROFILES/CSFILES/BBB SHEET 88
 FOR -L- WB & EB PROFILES, SEE SHEET 85

MATCHLINE SHEET 25
 -WBL- STA 1121 + 50.00
 MATCHLINE SHEET 25
 -EBL- STA 1121 + 31.44
 MATCHLINE SHEET 27
 -L- STA 1135 + 00.00

HNTB

1-4700
SHEET NO. 1-4700B-35
ROADWAY DESIGN
ENGINEER

26

PERMIT DRAWING
SHEET 66 OF 97



LEGEND

- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

SITE 33 SEQ

SITE 32 SEQ

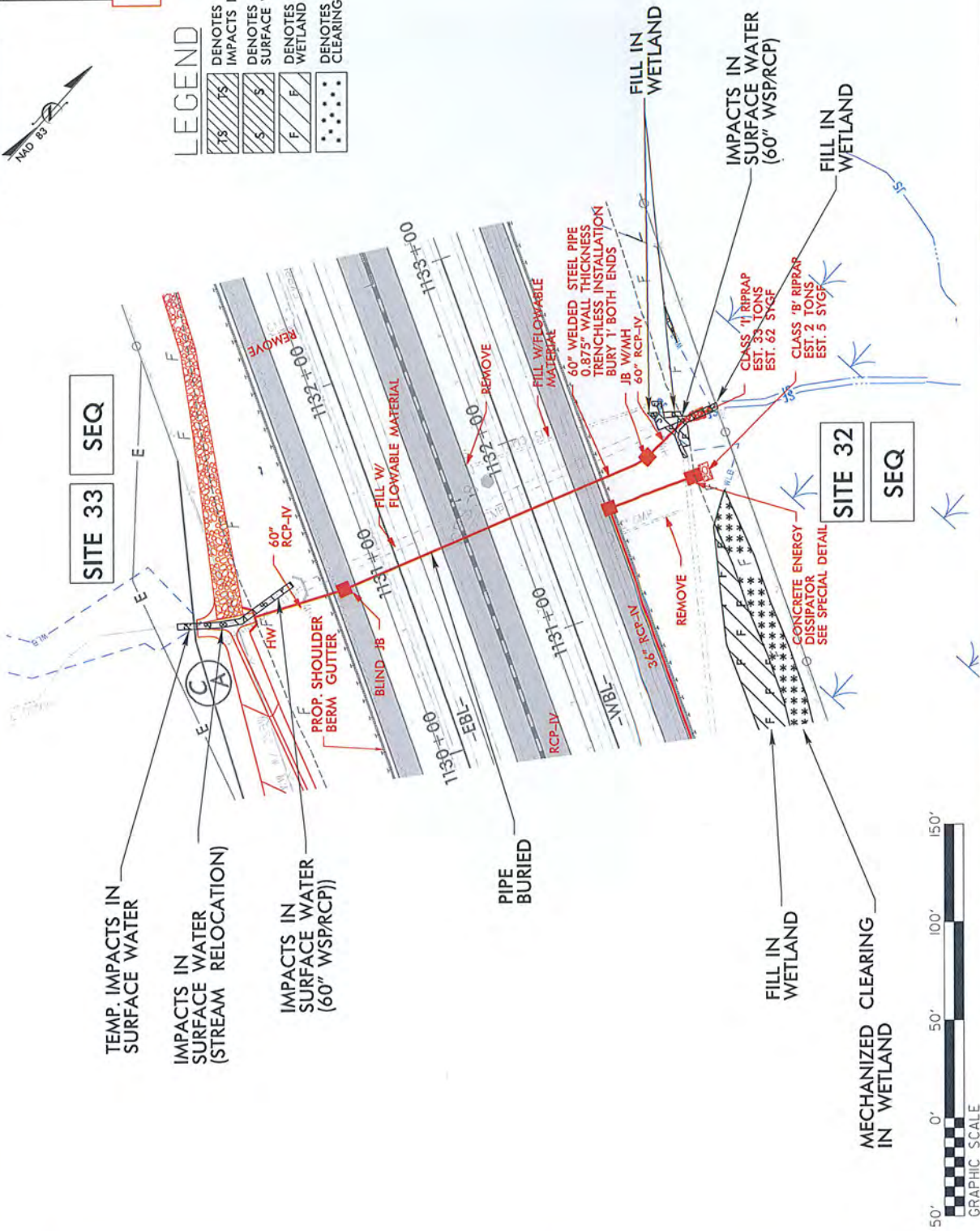
TEMP. IMPACTS IN SURFACE WATER

IMPACTS IN SURFACE WATER (60" WSP/RCP)

PIPE BURIED

FILL IN WETLAND

MECHANIZED CLEARING IN WETLAND



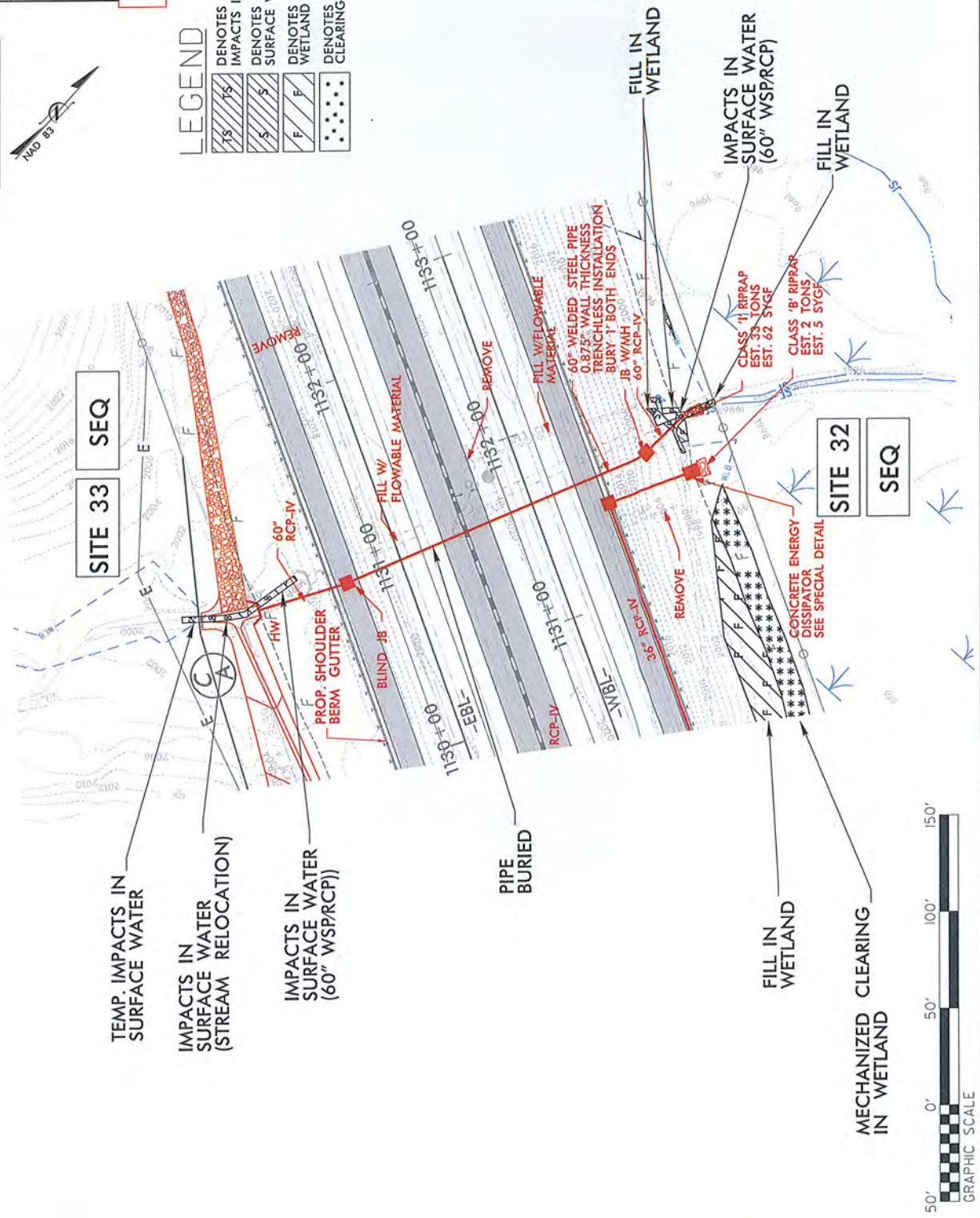
HNTB CONSULTANTS AND ENGINEERS
 1-4700
 1-4700B-36
 CIVIL ENGINEER
 PERMIT DRAWING
 SHEET 67 OF 97

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LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING



SITE 33
SEQ

SITE 32
SEQ



PROJ. REFERENCE NO. I-4700 SHEET NO.

PERMIT DRAWING SHEET 68 OF 97

5 10

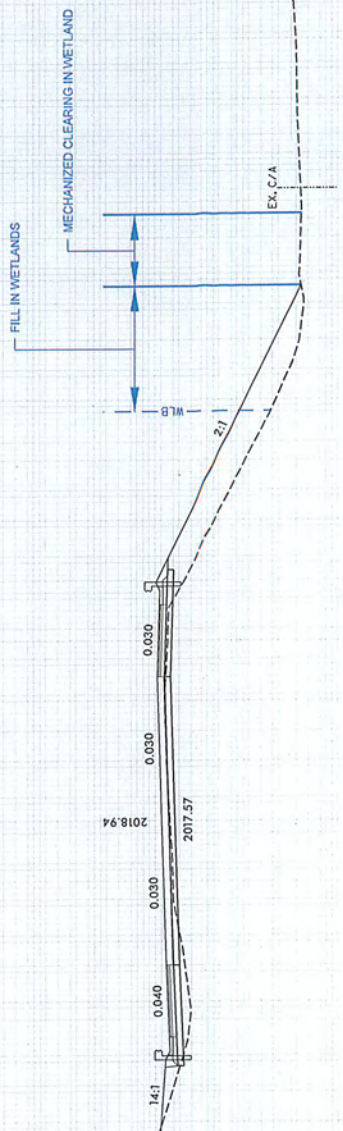
110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

WETLAND CROSS SECTIONS

P-161

2050 2040 2030 2020 2010 2000 1990

2050 2040 2030 2020 2010 2000 1990



SITE 32

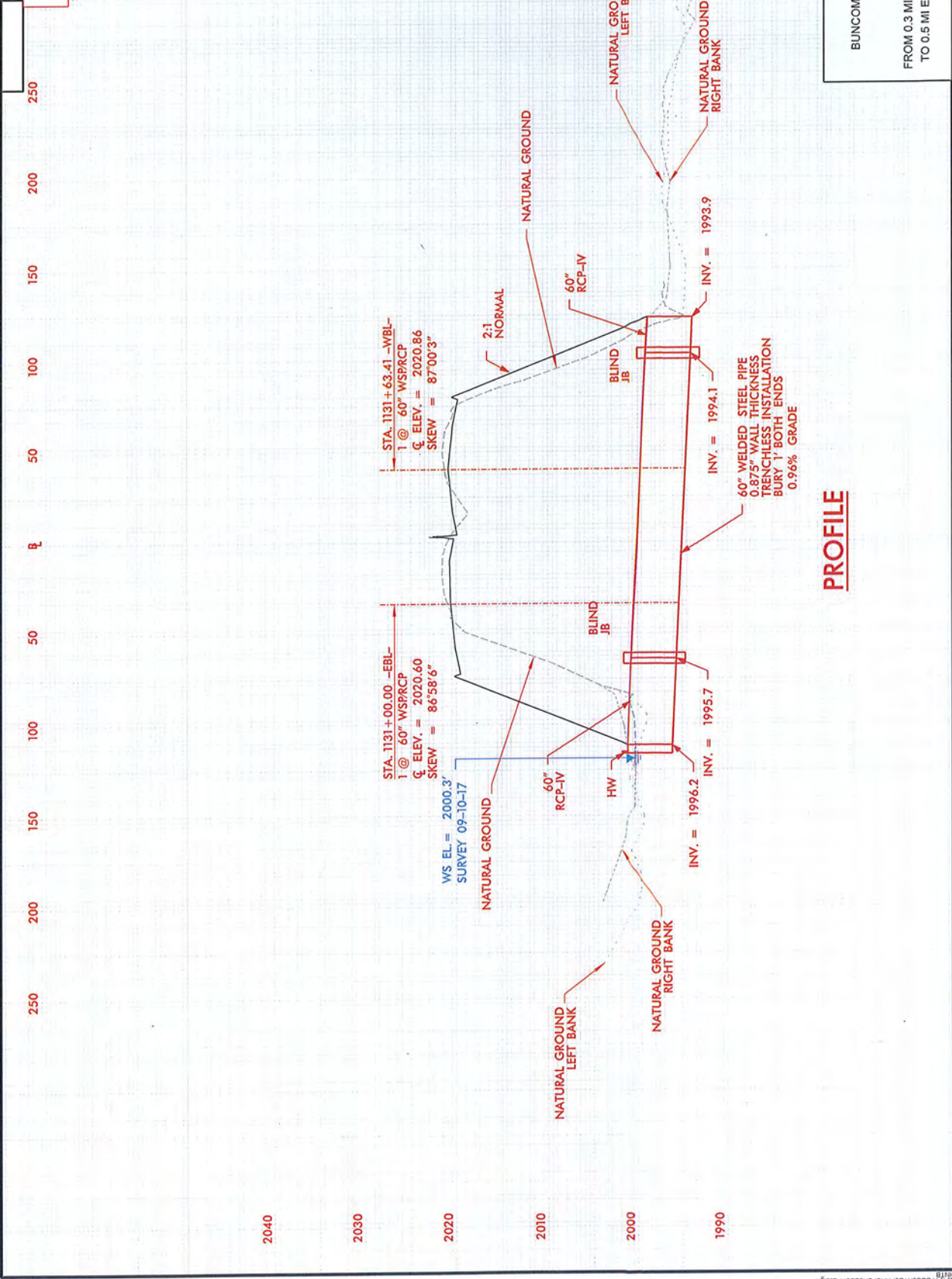
-WBL- 1128 +00.00

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

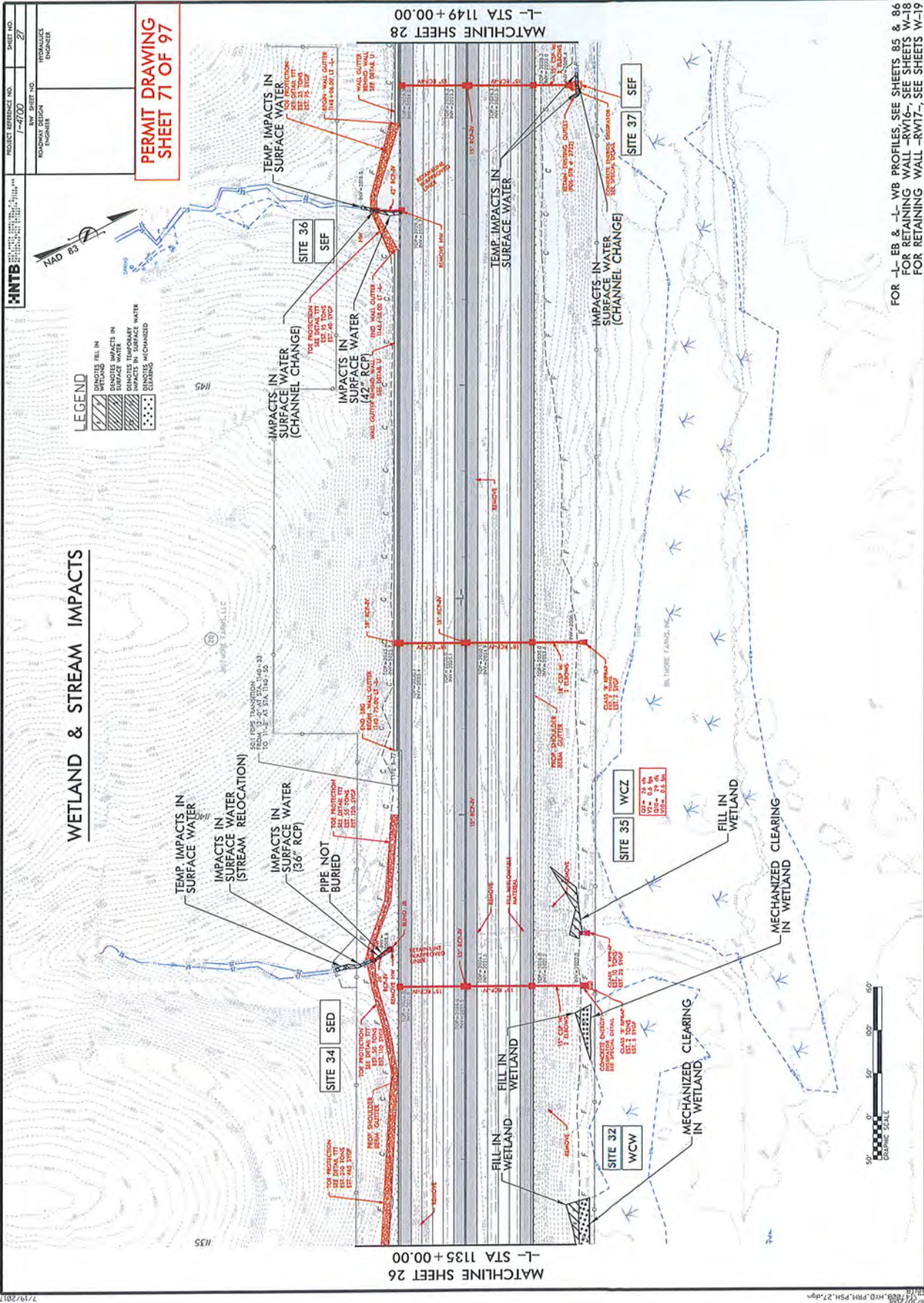
PROJ. REFERENCE NO. I-4700
 SHEET NO. PERMIT DRAWING
 SHEET 69 OF 97

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PROFILE

BUNCOMBE & HENDERSON COUNTY
 PROJECT: I-4700
 I-26
 FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
 TO 0.5 MI EAST OF NC 191 (BREVARD RD.)



PROJECT REFERENCE NO.	1-4700
HWY SHEET NO.	27
DESIGN REGION	INDIANNA
ENGINEER	INDIANNA

**PERMIT DRAWING
SHEET 71 OF 97**

LEGEND

- SINGLES FILL IN WETLANDS
- DOUBLE FILL IN WETLANDS
- REMOVES TEMPORARY IMPACTS IN SURFACE WATER
- REMOVES TEMPORARY IMPACTS IN SURFACE WATER
- REMOVES TEMPORARY IMPACTS IN SURFACE WATER

WETLAND & STREAM IMPACTS

MATCHLINE SHEET 28
-L- STA 1149+00.00

MATCHLINE SHEET 26
-L- STA 1135+00.00

FOR -L- EB & -L- WB PROFILES, SEE SHEETS 85 & 86
FOR RETAINING WALL -RW16-, SEE SHEETS W-18
FOR RETAINING WALL -RW17-, SEE SHEETS W-19



7/19/2017

11/13/2016

HNTB
 PROJECT REFERENCE NO. 1-4700
 SHEET NO. 27
 DRAWING NO. 1-4700B-37
 ROADWAY DESIGN ENGINEER

**PERMIT DRAWING
 SHEET 72 OF 97**



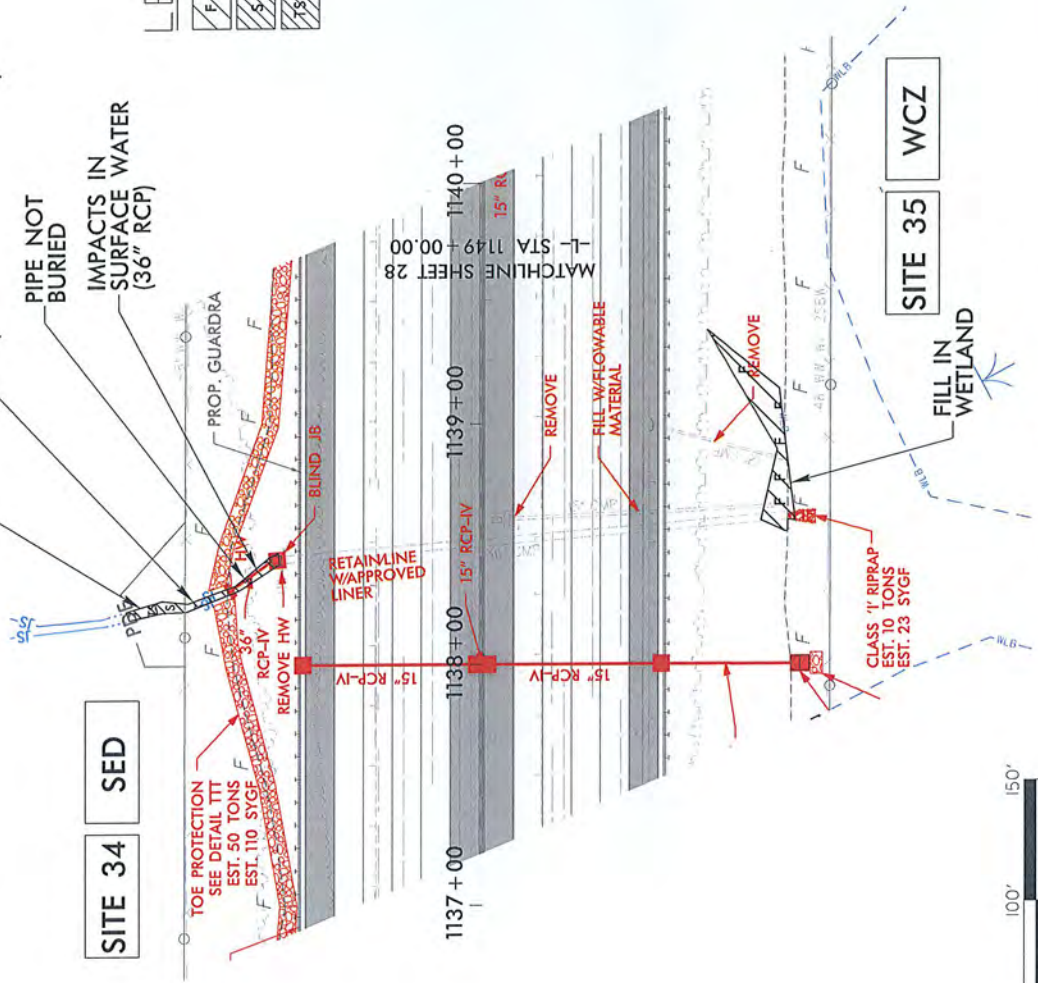
LEGEND

- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER
 IMPACTS IN SURFACE WATER (STREAM RELOCATION)
 PIPE NOT BURIED
 IMPACTS IN SURFACE WATER (36" RCP)

SITE 34 SED

SITE 35 WCZ



FOR -L- EB & -L- WB PROFILES SEE SHEETS 55 & 56
 FOR RETAINING WALL -RW16- SEE SHEETS W-17
 FOR RETAINING WALL -RW17- SEE SHEETS W-18

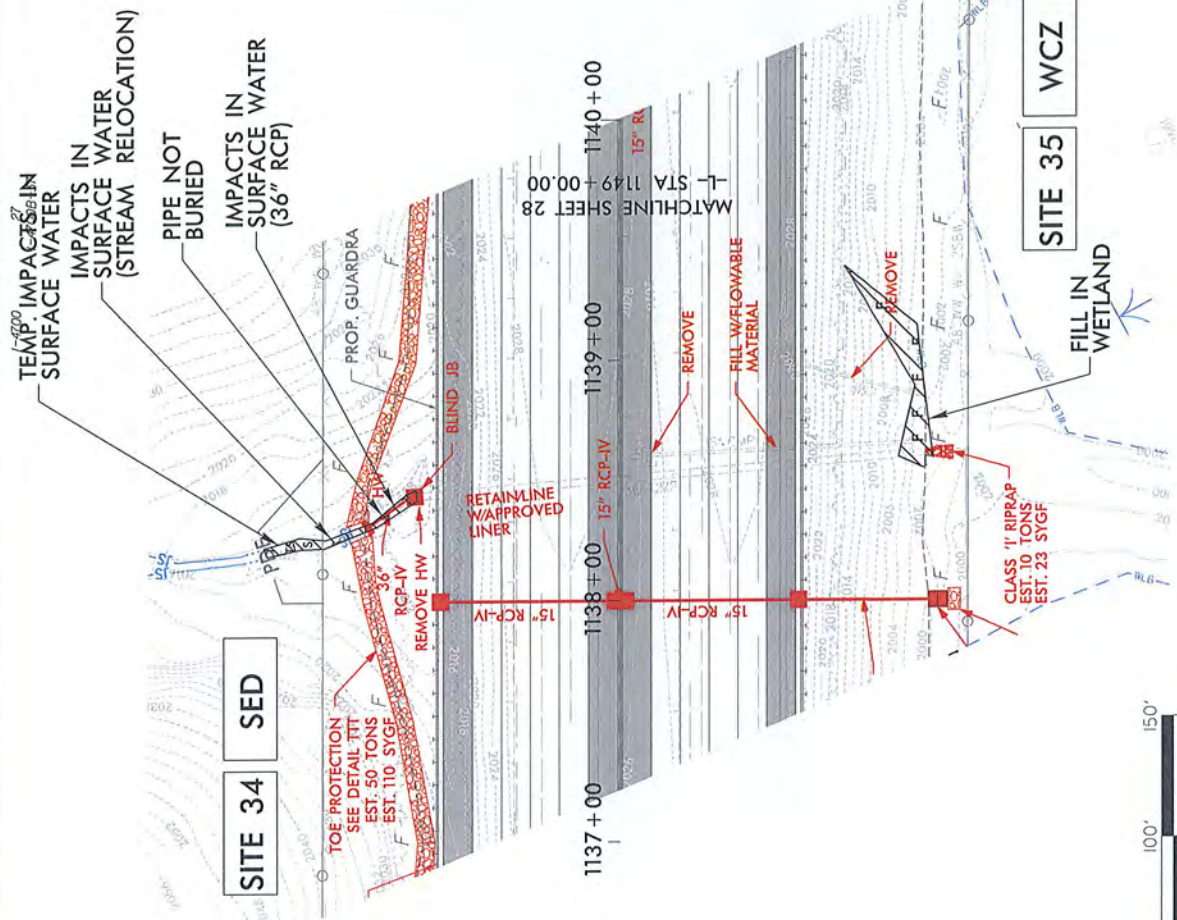
HNTB CONSULTANTS, INC. 1111 14th St., N.W. Atlanta, GA 30334
 PROJECT REFERENCE NO. 7-2700
 SHEET NO. 27
 DRAWING NO. 1-4700B-37
 ENGINEER
 REGISTERED PROFESSIONAL ENGINEER

**PERMIT DRAWING
SHEET 73 OF 97**



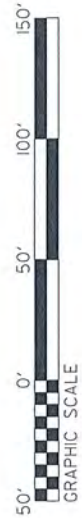
LEGEND

- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SITE 34 SED

SITE 35 WCZ



FOR -L- EB & -L- WB PROFILES, SEE SHEETS 55 & 56
 FOR RETAINING WALL -RW7-6-, SEE SHEETS W-17
 FOR RETAINING WALL -RW7-7-, SEE SHEETS W-18

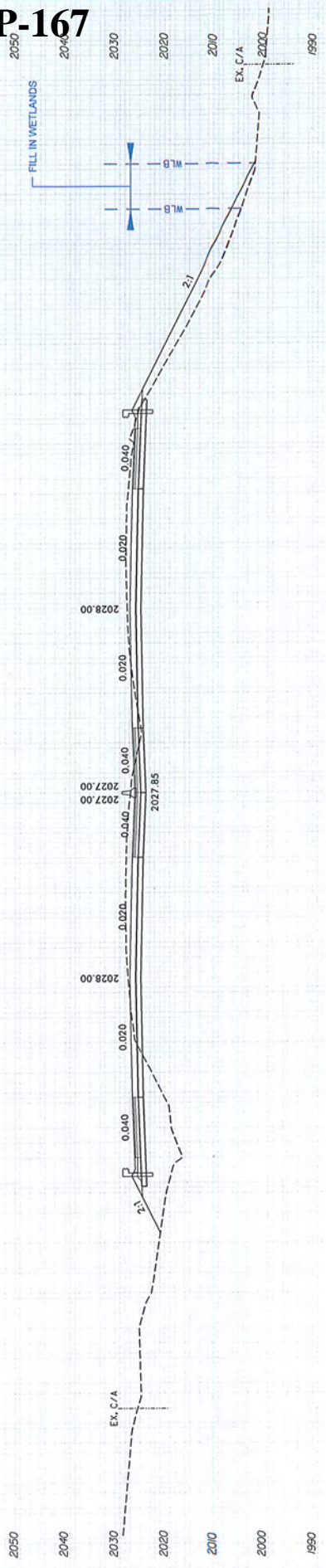
PROJ. REFERENCE NO. -4700
SHEET NO. 5 10 110

PERMIT DRAWING
SHEET 74 OF 97

WETLAND CROSS SECTIONS

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

P-167



SITE 35
-L3- 1139 + 00.00

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-28
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREWARD RD.)

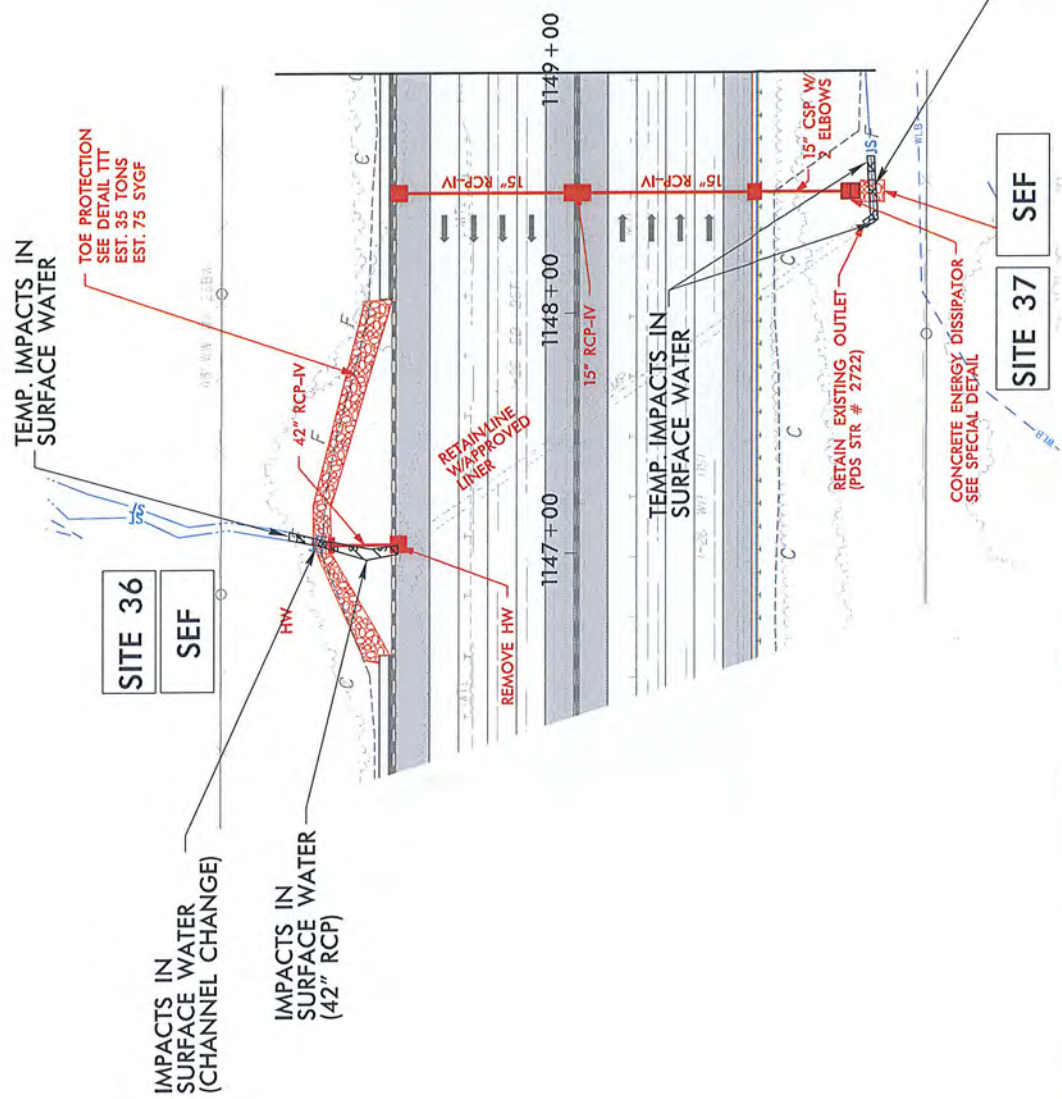
HNTB	PROJECT REFERENCE NO. I-4700	SHEET NO. 27
	RAW SHEET NO. I-4700B-37	
	BOARDING ENGINEER	REGISTERED ENGINEER

PERMIT DRAWING
SHEET 75 OF 97



LEGEND

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SITE 36
SEF

SITE 37
SEF



PROJECT REFERENCE NO. 7-4700	SHEET NO. 27
ROW SHEET NO. 1-4700B-37	DATE 11/11/11
DESIGNED BY ENGINEER	CHECKED BY ENGINEER

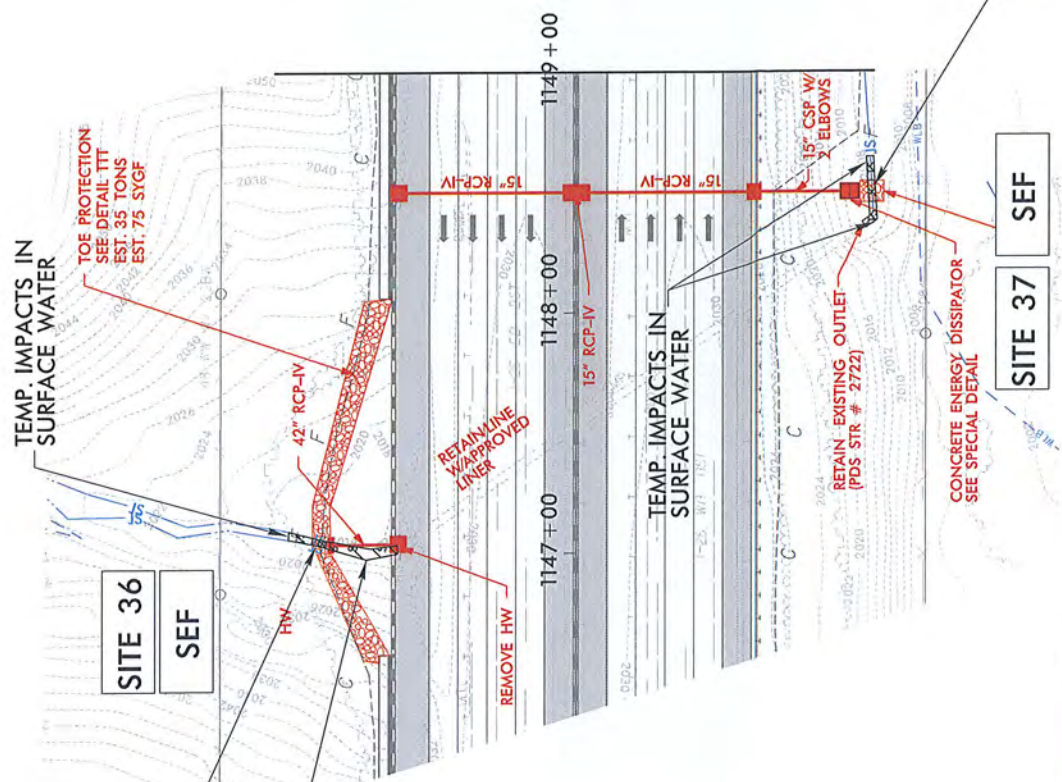
PERMIT DRAWING
SHEET 76 OF 97



LEGEND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



INTB PROJECT REFERENCE NO. 17-0700 SHEET NO. 28
 ROADWAY DESIGN ENGINEER
 ENVIRONMENTAL ENGINEER

PERMIT DRAWING SHEET 77 OF 97

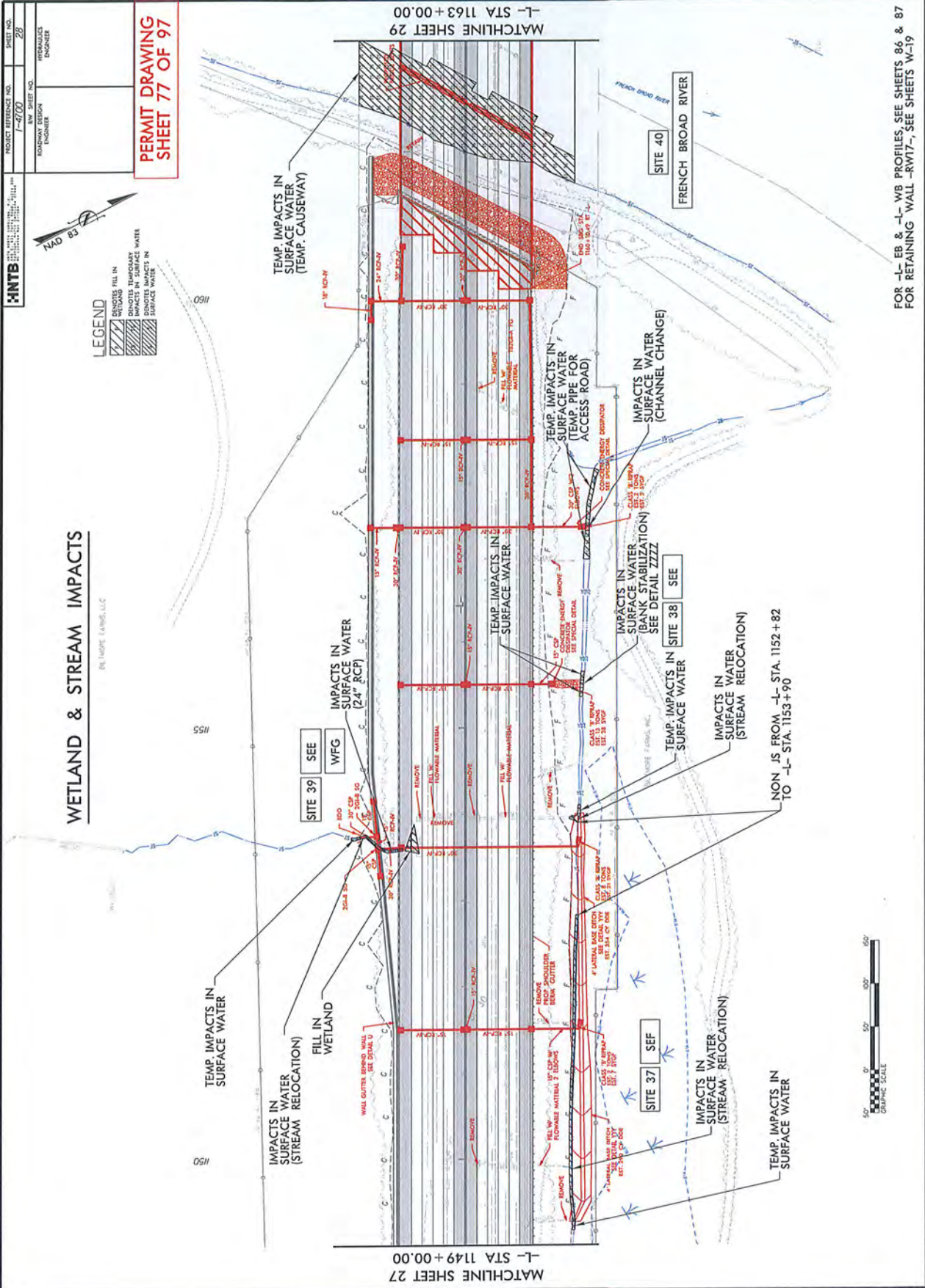


LEGEND

- TEMPORARY FILL IN
- IMPACTS IN SURFACE WATER
- TEMPORARY IMPACTS IN SURFACE WATER
- IMPACTS IN SURFACE WATER

WETLAND & STREAM IMPACTS

ENVIRONMENTAL ENGINEERING, LLC



FOR -L-EB & -L-WB PROFILES, SEE SHEETS 86 & 87 FOR RETAINING WALL -RW17-, SEE SHEETS W-19

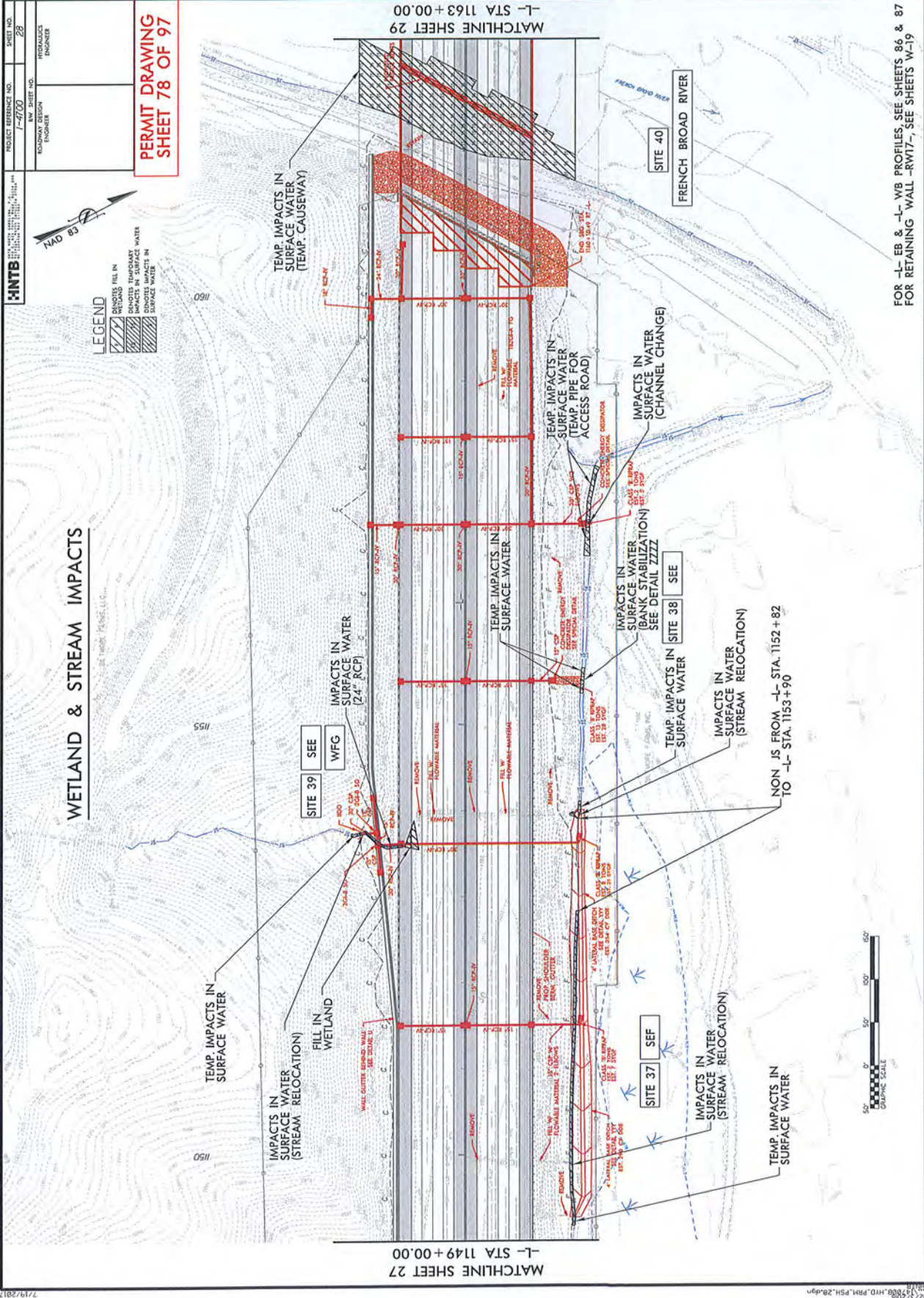


HNTB CONSULTANTS INC. 11111 17th St., Suite 100, Houston, TX 77035
 PROJECT REFERENCE NO. 1-4700
 SHEET NO. 28
 HNTB REGIONAL ENGINEER
 PERMIT DRAWING
 SHEET 78 OF 97



LEGEND
 Hatched pattern: REMOVES FILL IN SURFACE WATER
 Dotted pattern: REMOVES TEMPORARY IMPACTS IN SURFACE WATER
 Stippled pattern: REMOVES PERMANENT IMPACTS IN SURFACE WATER

WETLAND & STREAM IMPACTS



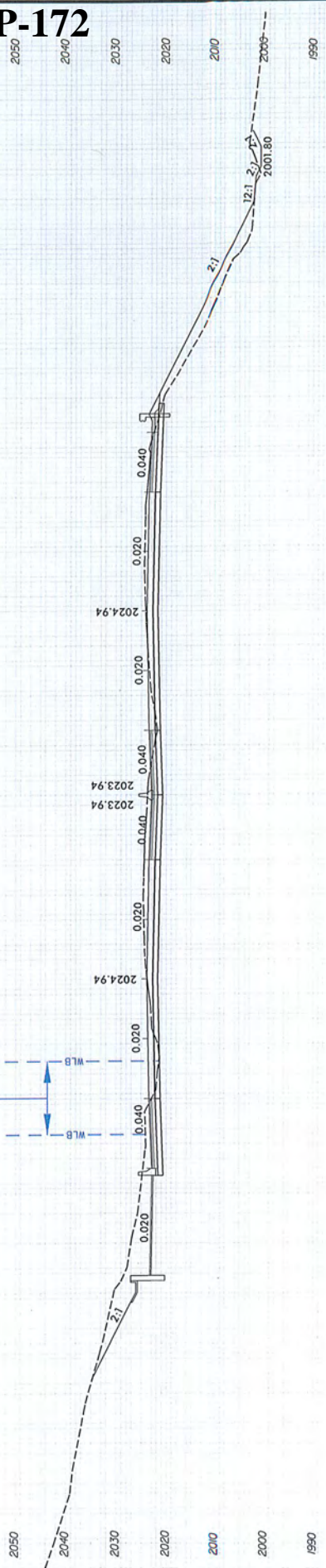
FOR -L- EB & -L- WB PROFILES, SEE SHEETS 86 & 87
 FOR RETAINING WALL -RW17-, SEE SHEETS W-19

PROJ. REFERENCE NO. I-4700
SHEET NO. 5 10 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 79 OF 97

WETLAND CROSS SECTIONS

P-172



SITE 39
-L3- 1153 + 60.00

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

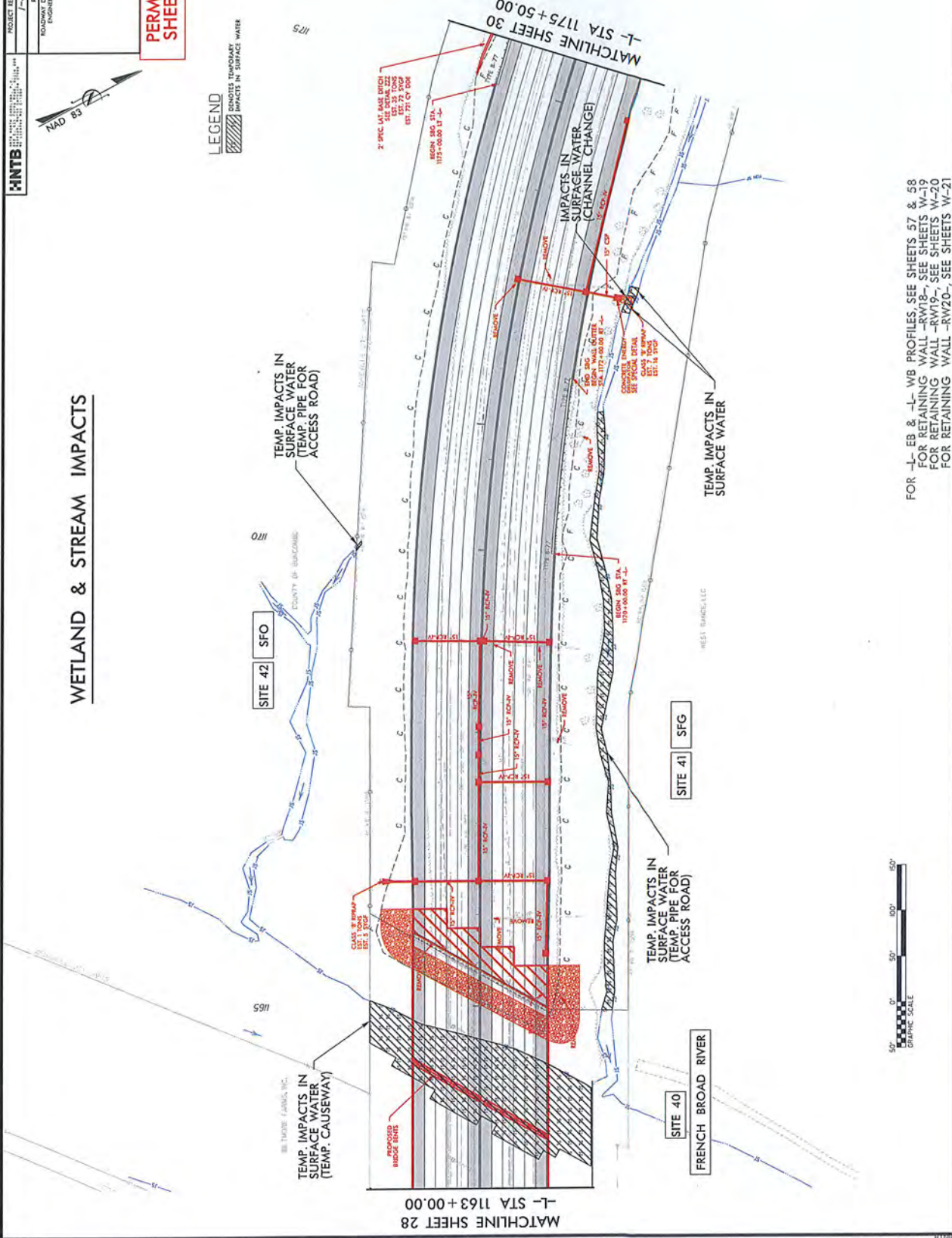
HNTB	PROJECT REFERENCE NO. 7-4700	SHEET NO. 29
	REV SHEET NO. 1-47009-39	DATE 11/15/2018
	ISSUED FOR CONSTRUCTION	PROJECT FRENCH BROAD RIVER
	DESIGNED BY ENGINEER	DRAWN BY ENGINEER

PERMIT DRAWING
SHEET 80 OF 97

WETLAND & STREAM IMPACTS



LEGEND
Hatched area: DENOTES TEMPORARY IMPACTS IN SURFACE WATER



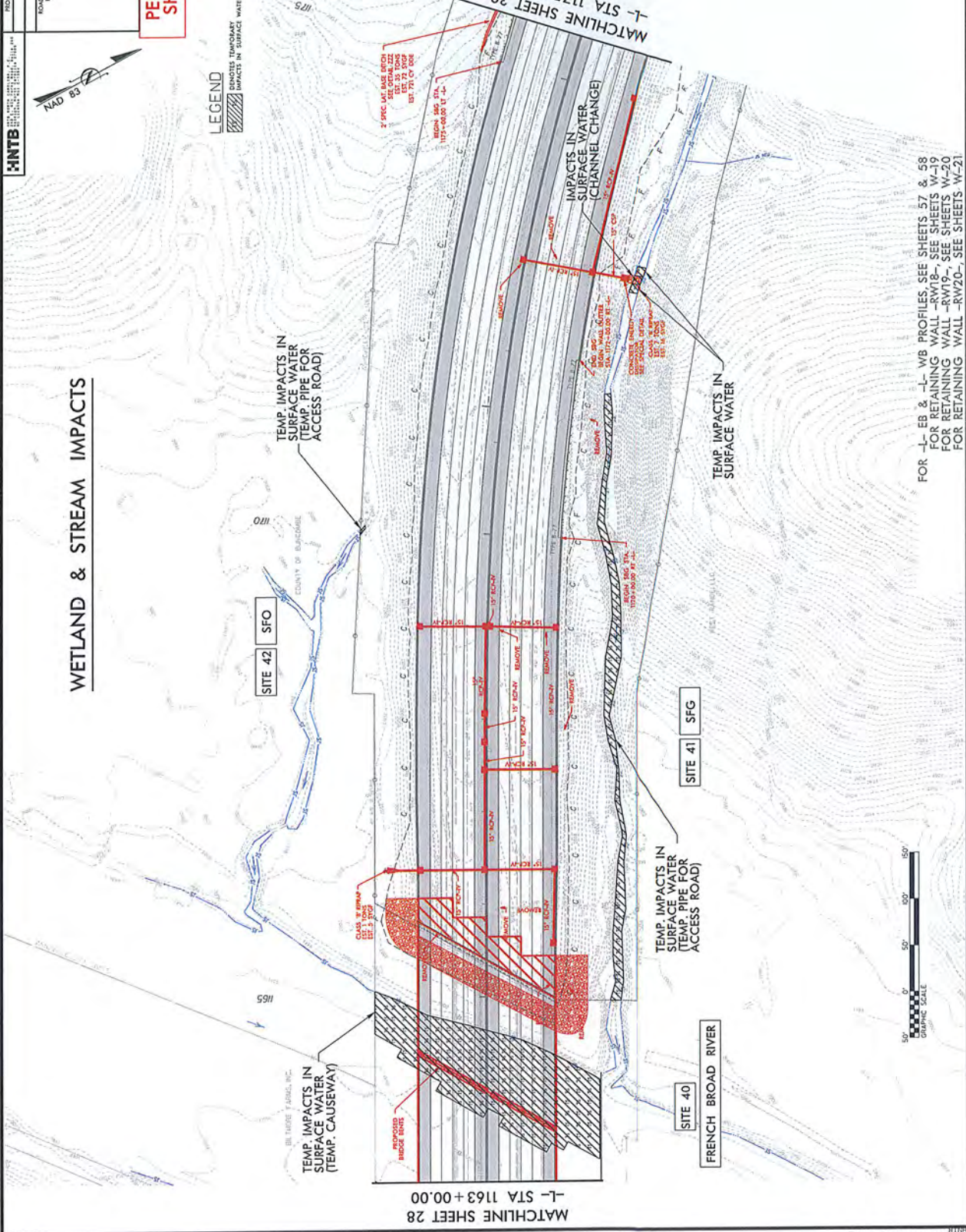
FOR -L- EB & -L- WB PROFILES SEE SHEETS 57 & 58
FOR RETAINING WALL -RW18- SEE SHEETS W-19
FOR RETAINING WALL -RW19- SEE SHEETS W-20
FOR RETAINING WALL -RW20- SEE SHEETS W-21



HNTB	PROJECT REFERENCE NO. 7-4700	SHEET NO. 29
	ROW SHEET NO. 7-47009-39	
	DESIGNED BY ENGINEER	PROJECT ENGINEER

**PERMIT DRAWING
SHEET 81 OF 97**

WETLAND & STREAM IMPACTS

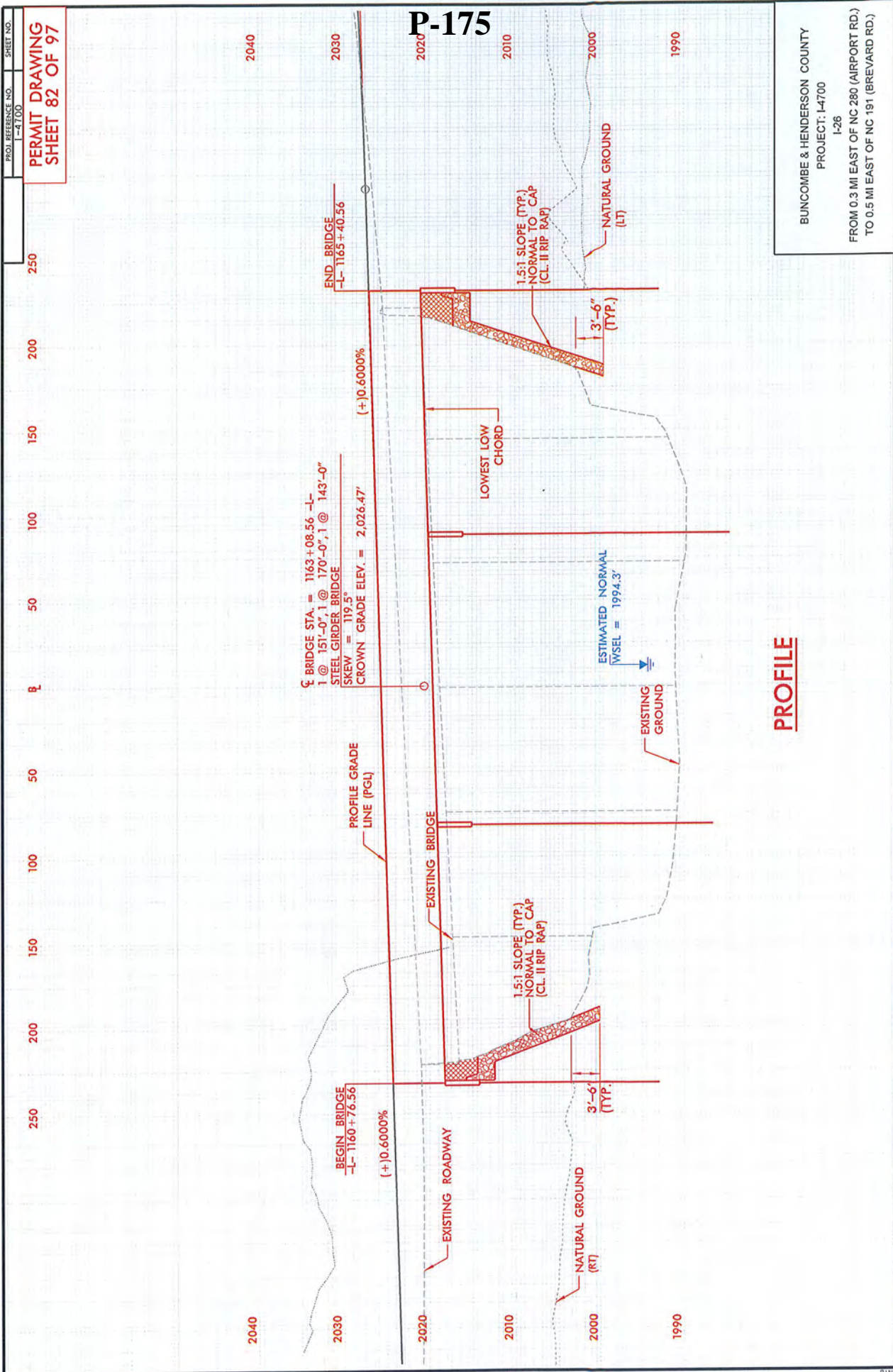


FOR -L- EB & -L- WB PROFILES, SEE SHEETS 57 & 58
 FOR RETAINING WALL -RW18-, SEE SHEETS W-19
 FOR RETAINING WALL -RW19-, SEE SHEETS W-20
 FOR RETAINING WALL -RW20-, SEE SHEETS W-21

PROJ. REFERENCE NO. 1-4700
SHEET NO.

PERMIT DRAWING
SHEET 82 OF 97

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PROFILE

BUNCOMBE & HENDERSON COUNTY
PROJECT: 14700
1-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

HNTB	PROJECT REFERENCE NO. 1-4700	SHEET NO. 30
	RAW SHEET NO. 1-4700B-40	
	DESIGNED BY ENGINEER	CHECKED BY ENGINEER

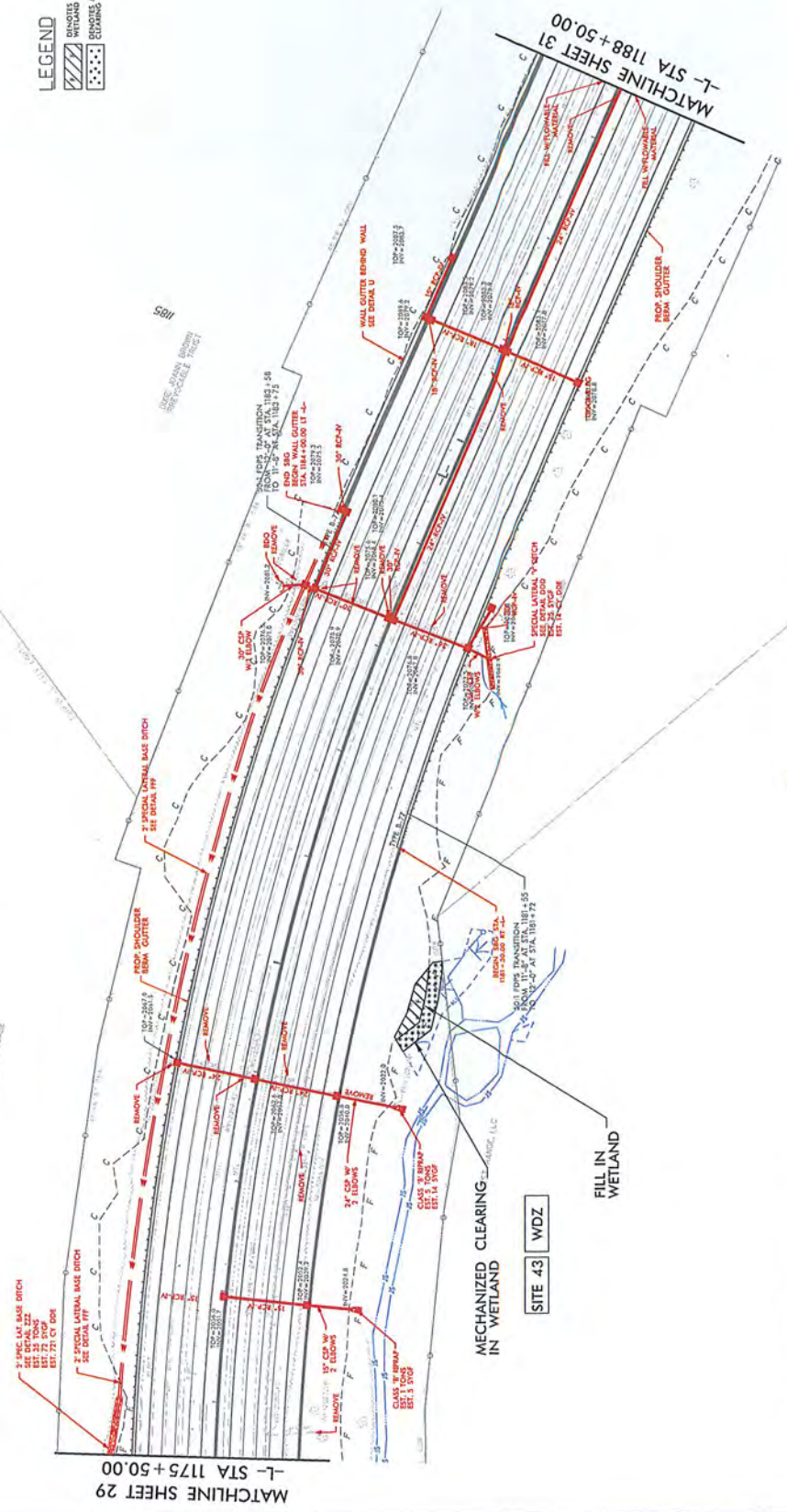
**PERMIT DRAWING
SHEET 83 OF 97**

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WETLAND & STREAM IMPACTS

LEGEND

	WITHOUT FILL IN
	WITH FILL IN
	REMOVES, MECHANIZED CLEARING



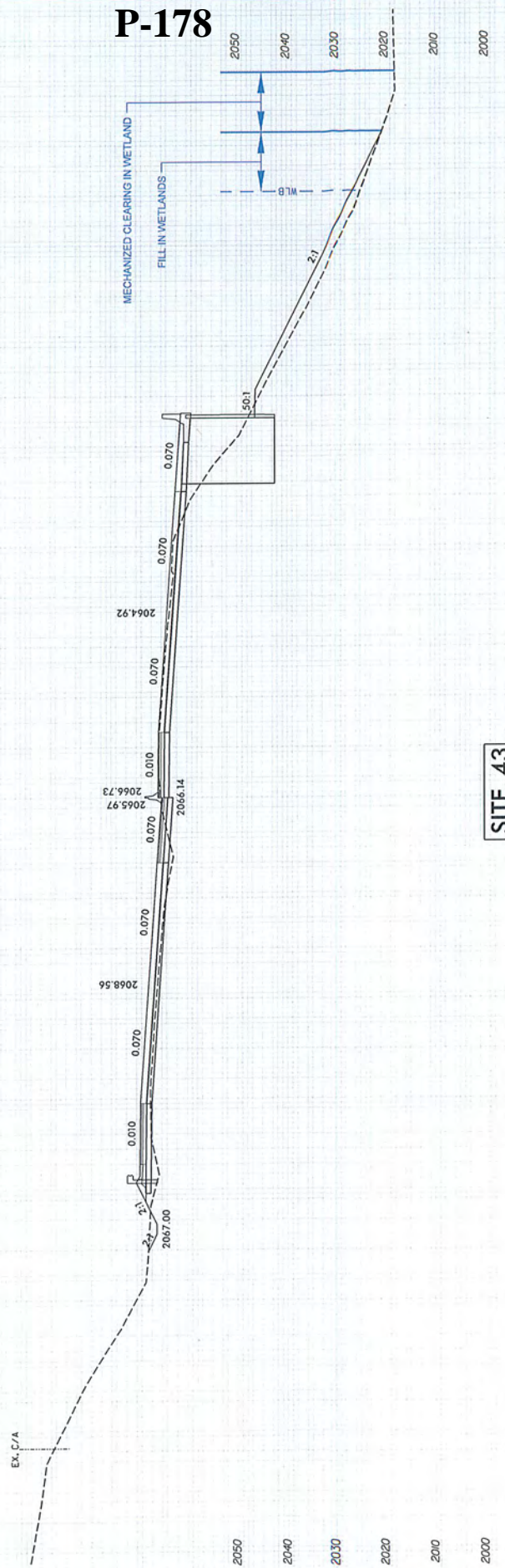
FOR -L- EB & -L- WB PROFILES, SEE SHEETS 58 & 59
FOR RETAINING WALL -RW20-, SEE SHEETS W-21
FOR RETAINING WALL -RW21-, SEE SHEETS W-22

PROJ. REFERENCE NO. 1-47100
SHEET NO. 5 10 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 85 OF 97

WETLAND CROSS SECTIONS

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SITE 43
-L3- 1180 + 00.00

BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

SCALE
1"=20' HORIZONTAL
1"=20' VERTICAL

HNTB

PROJECT REFERENCE NO. 7-4700
 SHEET NO. 31
 NEW SHEET NO. 1-4700B-41
 ROADWAY DESIGN ENGINEER

**PERMIT DRAWING
 SHEET 88 OF 97**



LEGEND

DENOTES IMPACTS IN SURFACE WATER

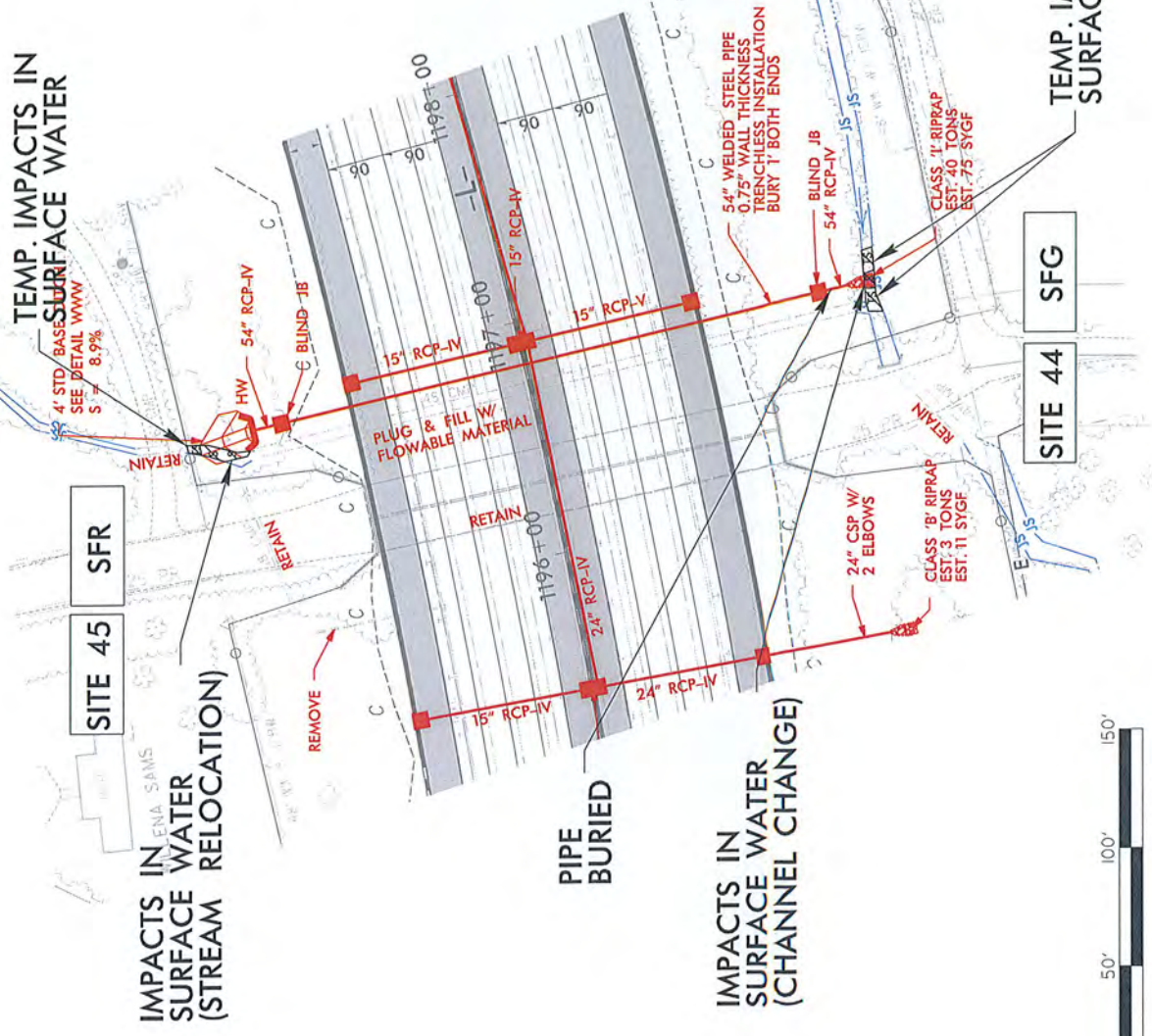
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

4" STD. BASE SFR SEE DETAIL WWWW S = 8.9%

SITE 45 SFR

IMPACTS IN SURFACE WATER (STREAM RELOCATION)



PIPE BURIED

IMPACTS IN SURFACE WATER (CHANNEL CHANGE)

TEMP. IMPACTS IN SURFACE WATER

SITE 44 SFG



HNTB CONSULTANTS, INC. ENGINEERS ARCHITECTS

PROJECT REFERENCE NO. 1-4700

SHEET NO. 31

NEW SHEET NO. 1-4700B-41

DESIGNED BY: [Name] ENGINEER

CHECKED BY: [Name] ENGINEER

PERMIT DRAWING
SHEET 89 OF 97

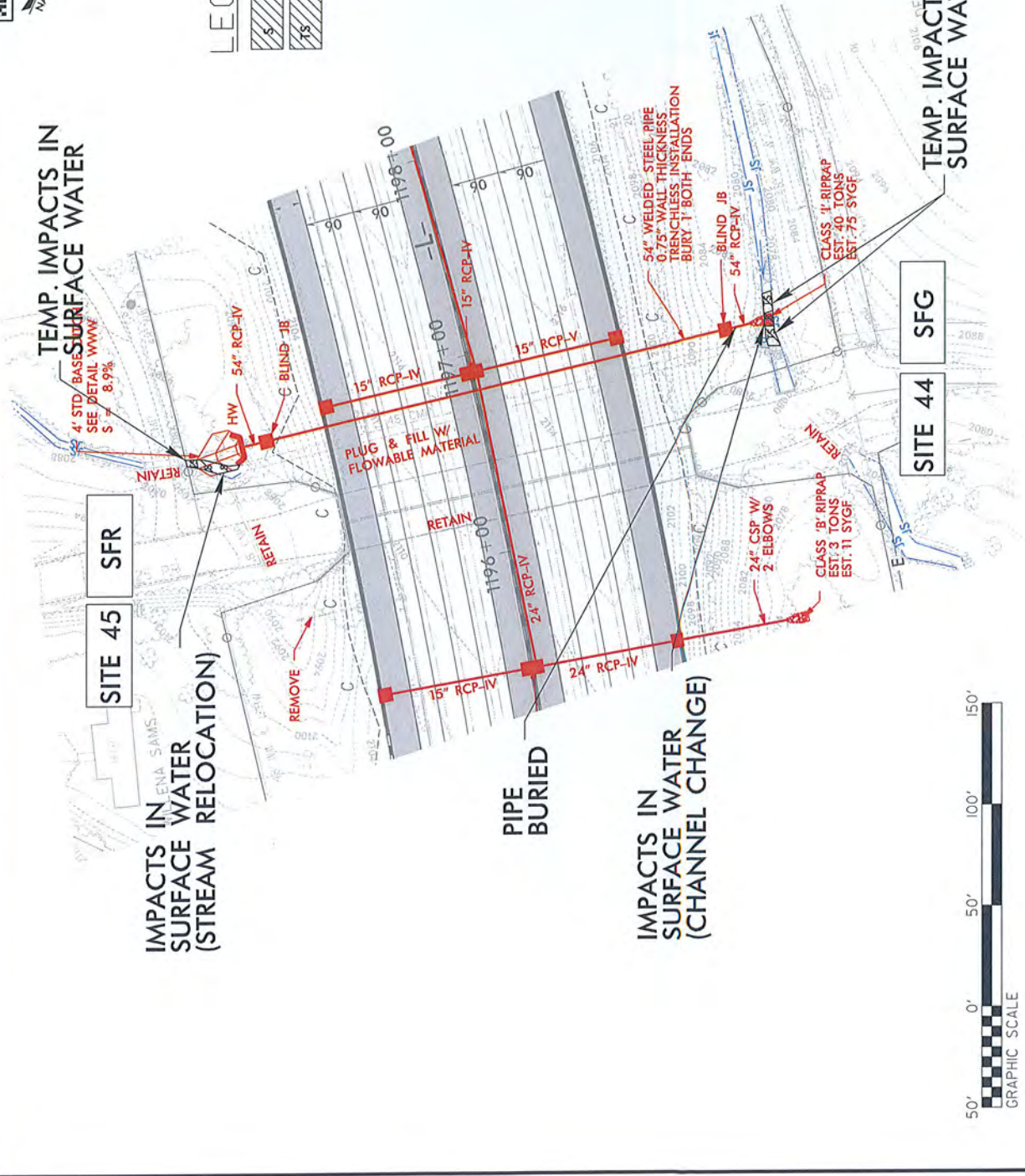
TEMP. IMPACTS IN
SURFACE WATER

SITE 45 SFR

IMPACTS IN
SURFACE WATER
(STREAM RELOCATION)

LEGEND

- [Hatched Box] DENOTES IMPACTS IN SURFACE WATER
- [Hatched Box] DENOTES TEMPORARY IMPACTS IN SURFACE WATER

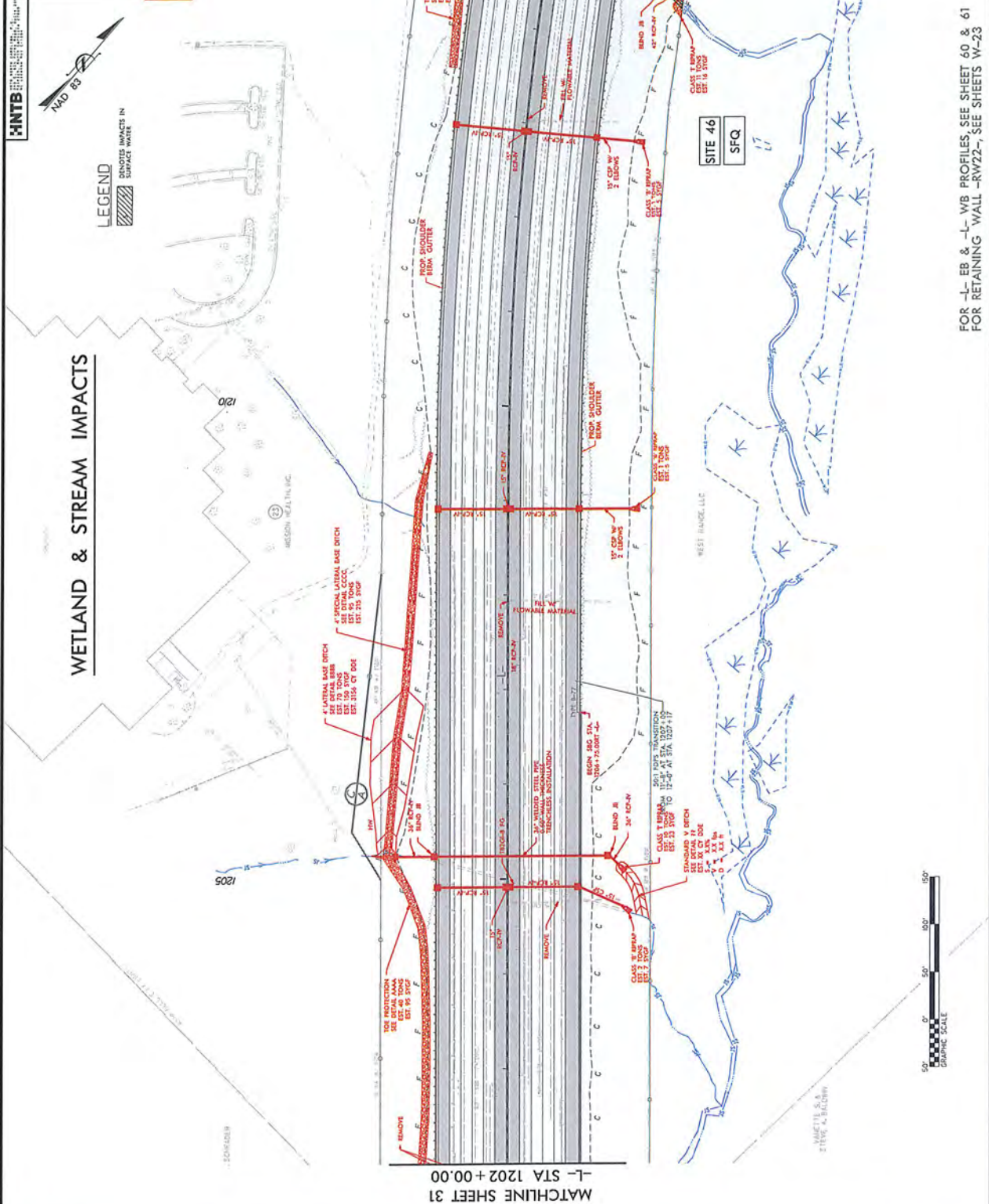


PROJECT REFERENCE NO.	1-4700
SHEET NO.	32
REVISED SHEET NO.	1-4700B-42
REVISION	IMPROVED ENHANCES

**PERMIT DRAWING
SHEET 90 OF 97**

WETLAND & STREAM IMPACTS

LEGEND
SHADES IMPACTS IN
IMPACT ZONE



FOR -L- EB & -L- WB PROFILES, SEE SHEET 60 & 61
FOR RETAINING WALL -RW22-, SEE SHEETS W-23

PROJECT REFERENCE NO. 7-4700
 SHEET NO. 33
 DATE 7/19/2017
 ENGINEER
 ENGINEER

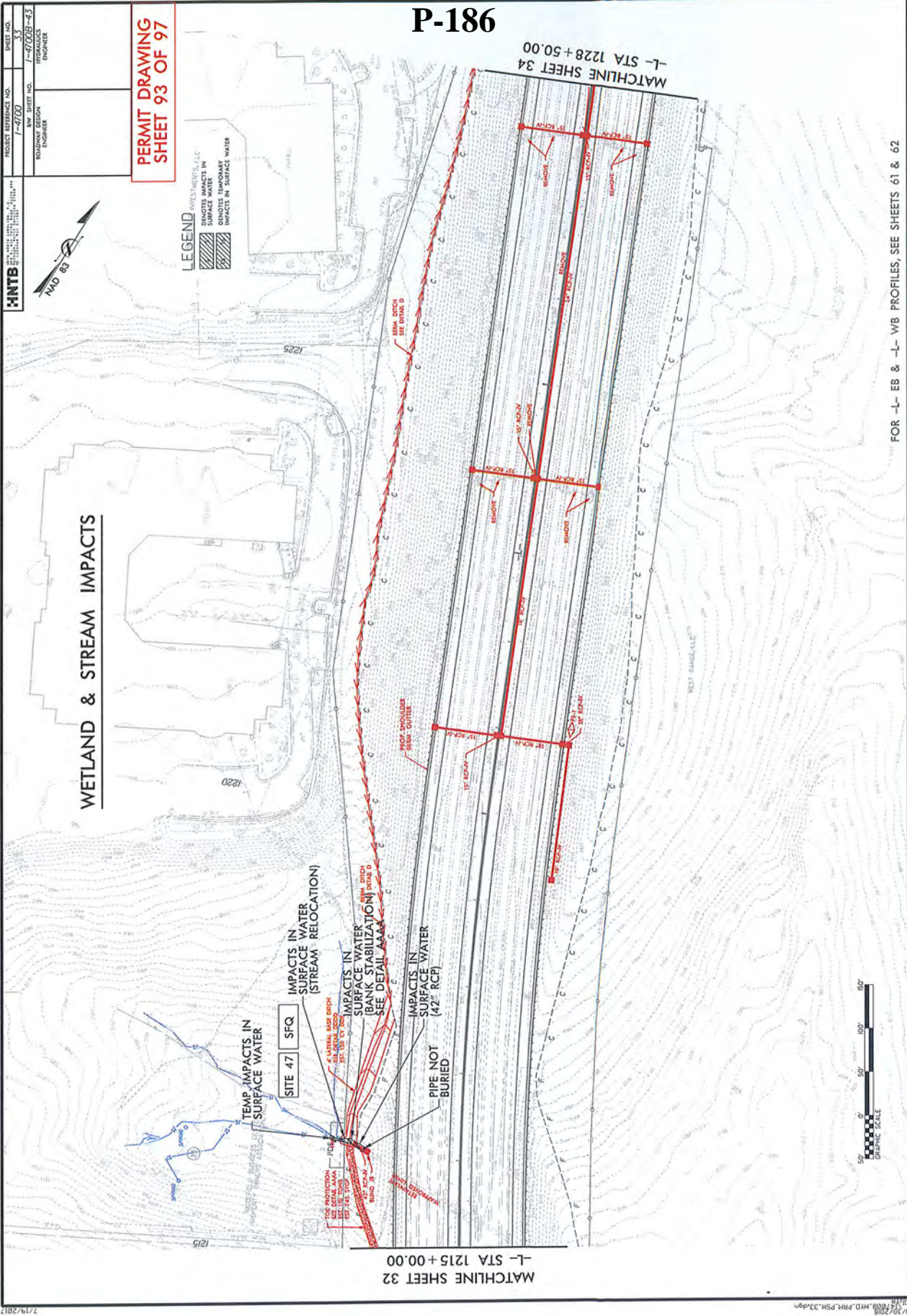
WETLAND & STREAM IMPACTS

**PERMIT DRAWING
 SHEET 93 OF 97**

LEGEND
 INVESTMENT, LLC
 SIMPLE WETLANDS IN
 IMPACTED AREAS
 DENOTES TEMPORARY
 IMPACTS IN SURFACE WATER



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MATCHLINE SHEET 32
 -L- STA 1215 + 00.00

MATCHLINE SHEET 34
 -L- STA 1228 + 50.00



FOR -L- EB & -L- WB PROFILES, SEE SHEETS 61 & 62

7/19/2017

17072018.MXD, D:\P\186.PSD, P\186.DWG



PROJECT REFERENCE NO. 1-4700
 SHEET NO. 35
 DRAWING NO. 1-4700-45
 ROADWAY DESIGN ENGINEER
 ENGINEER

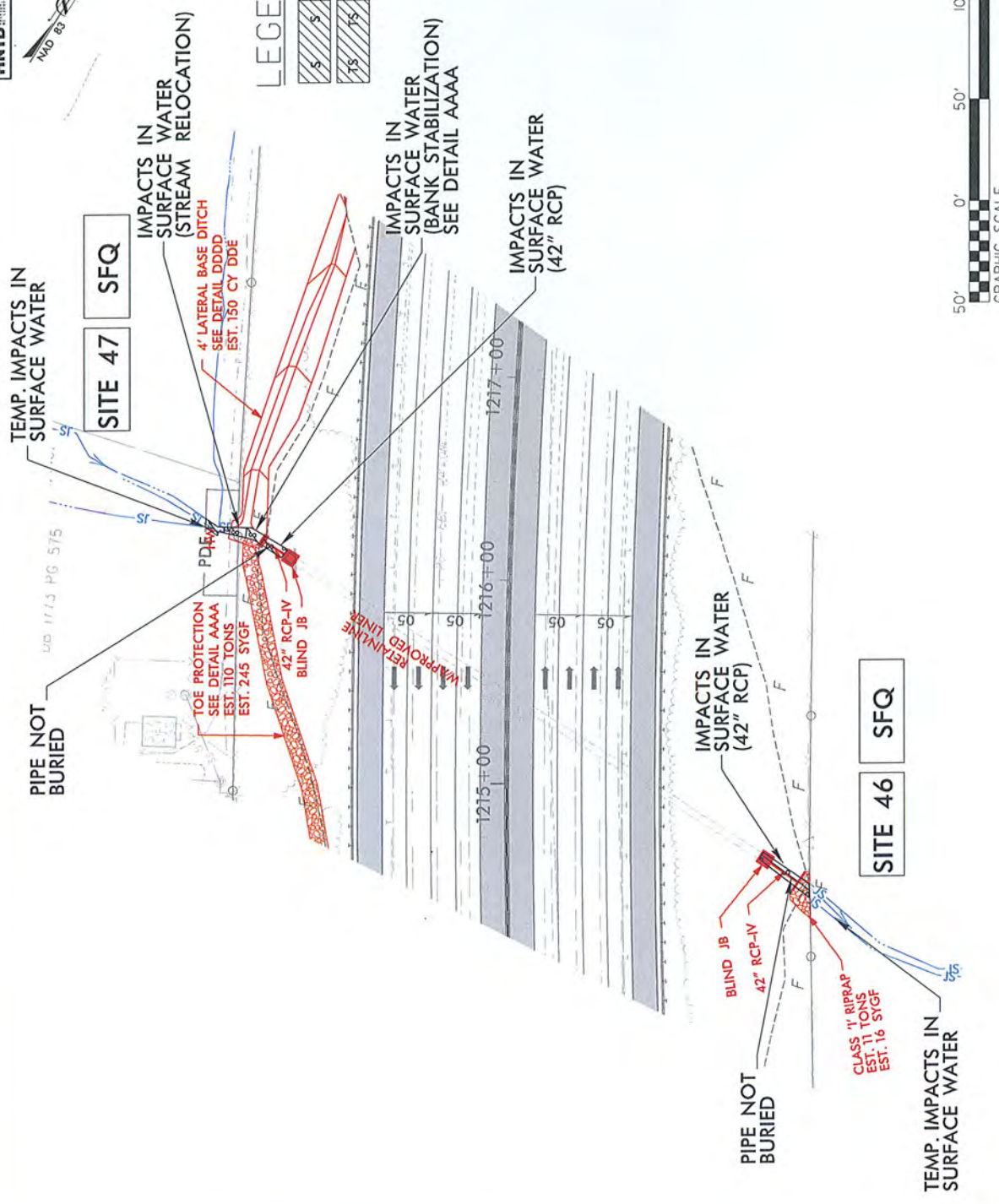
**PERMIT DRAWING
 SHEET 94 OF 97**

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LEGEND

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



HNTB

PROJECT REFERENCE NO. 1-4709-43
 SHEET NO. 1-4709-43
 ROADWAY DESIGN ENGINEER

PROJECT REFERENCE NO. 1-4709-43
 SHEET NO. 1-4709-43
 ROADWAY DESIGN ENGINEER

PERMIT DRAWING SHEET 95 OF 97



LEGEND

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

