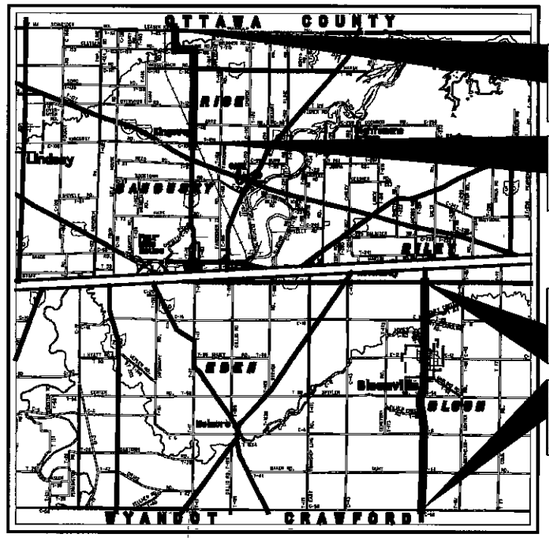
SEN - SR 19-0.00/14.03
060290 PID - 25650
Dist 2 6/21/2006



LOCATION MAP

LATITUDE: N41°13'42" LONGITUDE: W83°04'25"

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

	SEN-19-0.00	SAN-19-14.03
CURRENT ADT (2005)	2230	4560
DESIGN YEAR ADT (2017)	2570	5240
DESIGN HOURLY VOLUME (2017)	280	520
DIRECTIONAL DISTRIBUTION	55%	55%
TRUCKS (24 HOUR B&C)	6%	9%
DESIGN SPEED	65 MPH	65 MPH
LEGAL SPEED	55 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION -	RURAL MAJOR COLLECTOR	RURAL MAJOR COLLECTOR

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2

Plan Prepared By:
Tamara Maas
Andrea Fintel
Sarah Lenhart
Jim Bradley, P.E.

ROADWAY

STATE OF OHIO
JULIE M. FAHY
E-63302
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Julie M Fahy
DATE: 4-4-2005

STRUCTURES

STATE OF OHIO
JAMES T. BRADLEY
E-45046
REGISTERED PROFESSIONAL ENGINEER

SIGNED James Bradley
DATE: 4-4-2005

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SEN-19-0.00
SAN-19-14.03

VILLAGE OF BLOOMVILLE
BLOOM TOWNSHIP
SANDUSKY TOWNSHIP
RICE TOWNSHIP
SENECA COUNTY
SANDUSKY COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

LOCATION 1
RESURFACING SR 19 IN SENECA COUNTY FROM CRAWFORD COUNTY LINE TO US 224 INCLUDING PAVEMENT REPAIRS, GUARDRAIL UPGRADES, CURB RAMP UPGRADES, AND CULVERT & BRIDGE REPAIRS.

LOCATION 2
RESURFACING SR 19 IN SANDUSKY COUNTY FROM KINGSWAY RD. TO OTTAWA COUNTY LINE INCLUDING PAVEMENT REPAIRS, & GUARDRAIL UPGRADES.

PROJECT EARTH DISTURBED AREA = 0.19 Ac.
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 0.13 Ac.
NOTICE OF INTENT EARTH DISTURBED AREA = 4.90 Ac.

2005 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 39, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED Todd M. Audet
DATE 4-1-05 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 4-21-06 DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

BP-2.1	07/16/04	GR-1.1	07/16/04	TC-65.10	10/19/01
BP-2.5	07/28/00	GR-2.1	01/16/04	TC-65-11	10/19/01
BP-3.1	07/16/04	GR-2.2	04/18/03	TC-65.12	10/19/01
BP-4.1	07/16/04	GR-2.4	04/18/03	TC-71.10	04/19/02
BP-5.1	07/28/00	GR-3.4	04/18/03		
		GR-4.1	04/18/03	MT-97.10	04/19/02
CB-1.2	07/19/02	GR-4.2	10/17/03	MT-97.11	04/19/02
MH-1.2	07/19/02	GR-5.3	01/16/04	MT-99.20M	01/30/95
DM-4.3	07/19/02	DBR-2-73	07/19/02		
DM-4.4	07/19/02				
		HW-1.1	07/20/01		
		HW-2.2	07/19/02		

SUPPLEMENTAL SPECIFICATIONS

800	01/20/06
802	04/15/05
832	04/17/04
833	02/12/03

SPECIAL PROVISIONS

US ARMY CORP OF ENGINEERS NATIONWIDE PERMIT #3 DATED 12-20-04

FEDERAL PROJECT NO. E 032(057)
PID NO. 25650
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT

SEN-19-0.00
SAN-19-14.03

1
98

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BEGIN LOCATION 1
STA. 0+00.00
S.L.M. 0.00
BEGIN TYP. SECT. "A"

LEGEND

Butt Joint As Per Std. Drwg. BP-3.1

HORIZONTAL SCALE IN FEET
0 10 20 40

No Work To Be Performed

BUTT JOINT STA. 0+44

2.5'
20.4'
2.5'

CRAWFORD COUNTY
SENECA COUNTY

1 2 S.R. 19 36 37 38

8"x5½" CMP

Ex. 12" Steel

MATCH LINE STA. 38+50

SEN-19-0.85
See Sheet No.s 52 & 63 for Drainage Details & Quantities

MATCH LINE STA. 38+50

39 44 S.R. 19 45

Ex 10" Plastic
Ex 4" Plastic
GTE
T.
52'-18" Ø Type B, 706.02
Ex. 18" Conc
CB 2-3
Ex C.B. To Be Removed
5'-8" Ø Type C
Sprint Cable

SEN-19-1.03
See Sheet No.s 52 & 64 for Drainage Details & Quantities

53 54 55

T.R. 44 STA. 54+01
15'
2.5'
21.3'
2.5'
5'-12" Ø Type B, 706.02
CB 2-3
Ex. 24" Conc
Ex. 12" VIT
Sprint Telephone
T
15'-12" Ø Type C
Ex. 12"
5'-24" Ø Type B, 706.02
15'
T.R. 44 STA. 54+01

MATCH LINE STA. 55+50

For Typical Sections, See Sheet No. 20
For Pavement Quantities, See Sheet No.s 44, 46 & 48

SCHEMATIC PLAN LOCATION 1

SEN-19-0.00
SAN-19-14.03

2
98

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SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

HORIZONTAL SCALE IN FEET
0 10 20 40

LEGEND

- Butt Joint As Per Std. Drwg. BP-3.1
- Feather As Per Std. Drwg. BP-3.1
- Plane 1½" and Pave 1½" See Typical Section Sheet No. 22
- Taper Intermediate Course 1¾" to 0"

SEN-19-1.23
See Sheet No.s 52 & 65 for Drainage Details & Quantities

SEN-19-1.90
See Sheet No.s 52 & 66 for Drainage Details & Quantities

MATCH LINE STA. 55+50

MATCH LINE STA. 102+50

Ex. 3x3 C B Sta 65+08, 25.0' Lt

Buried Sprint

CB 2-3

Ex. 8" Clay

5'-8" Ø Type C

S.R. 19

50'-12" Ø Type B, 706.02

Ex. 3x3 C B.

3'-6" Ø Type C

Ex. 6" Clay

Buried Sprint Fiberoptic Cable

2.5'

20.4'±

2.5'

56 65 66 100 101 102

Ex. 8" Clay

Ex. 8" Clay

Ex 8" Clay

10'-8" Ø Type C

CB 2-3

10'-15" Ø Type C

Ex. 15" Clay

Verizon Telephone

Res. Drive

18"

10'-8" Ø Type C

Ex. 20" Conc.

MATCH LINE STA. 102+50

MATCH LINE STA. 108+25

SUSPEND TYP. SECT. "A"
BEGIN TYP. SECT. "B"
STA. 103+38.73

END TYP. SECT. "B"
BEGIN TYP. SECT. "C"
STA. 103+70.00

END TYP. SECT. "C"
BEGIN TYP. SECT. "D"
STA. 103+74.00

END TYP. SECT. "D"
BEGIN TYP. SECT. "E"
STA. 103+99.00

END TYP. SECT. "E"
BEGIN TYP. SECT. "D"
STA. 104+37.66

END TYP. SECT. "D"
BEGIN TYP. SECT. "C"
STA. 104+62.66

END TYP. SECT. "C"
BEGIN TYP. SECT. "B"
STA. 104+66.66

END TYP. SECT. "B"
RESUME TYP. SECT. "A"
STA. 104+98.73

Telephone Line

+57

+80

103 105 S.R. 19 106 107 108

2.5'

19.5'

2.5'

C.R. 6 STA. 107+40

15'

C.R. 6 STA. 107+40

15'

SILVER CREEK

SEN-19-0197
38.5'x32'

FOR STRUCTURE WORK, SEE SHEET NO.S 91-98
PLANE 3", PAVE 3"

For Typical Sections, See Sheet No.s 20-22
For Pavement Quantities, See Sheet No.s 44, 46 & 48
For Guardrail Details & Quantities, See Sheet No.s 51 & 58

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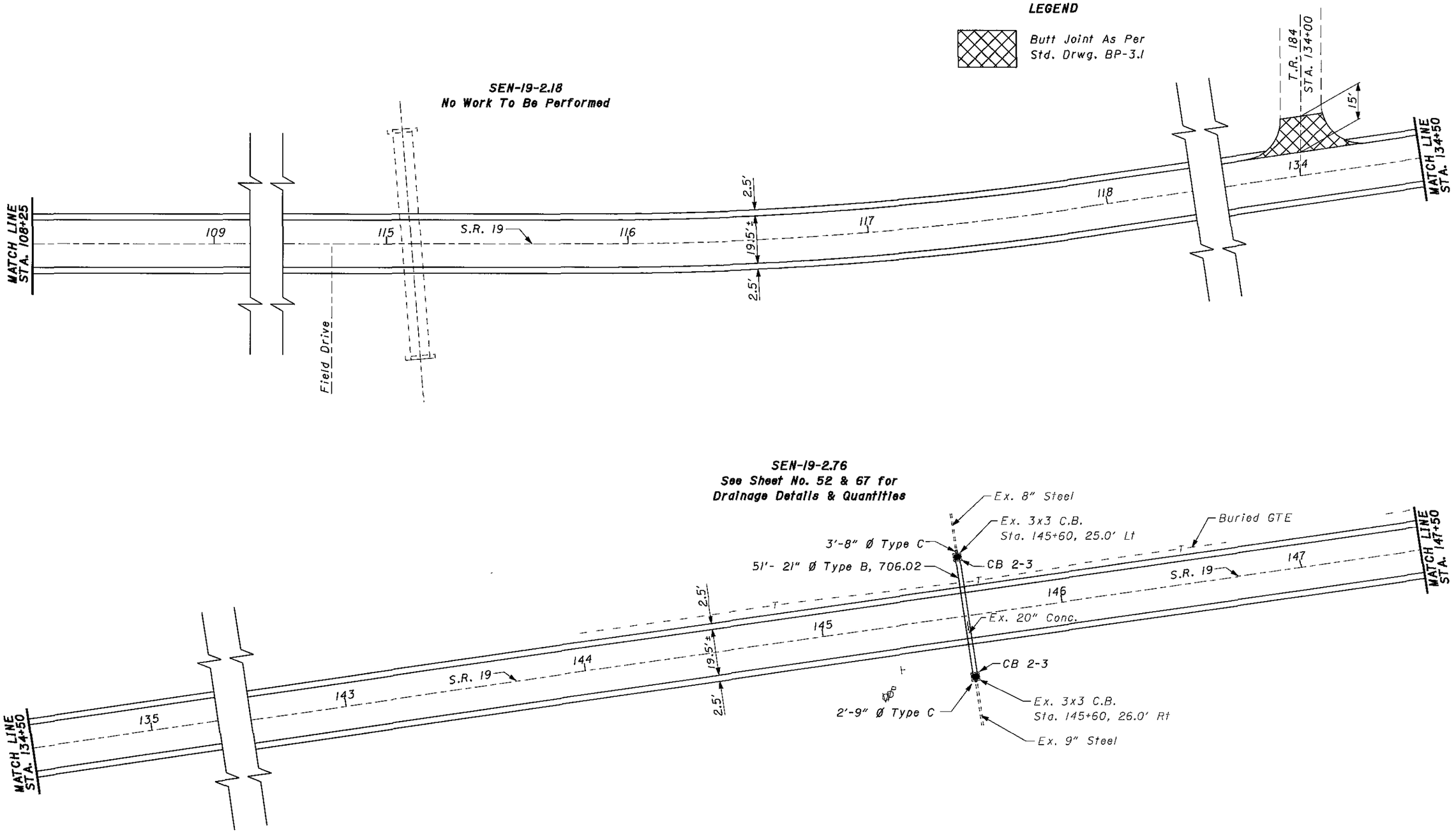


For Typical Sections, See Sheet No. 20
For Pavement Quantities, See Sheet No.s 44, 46 & 48

HORIZONTAL SCALE IN FEET

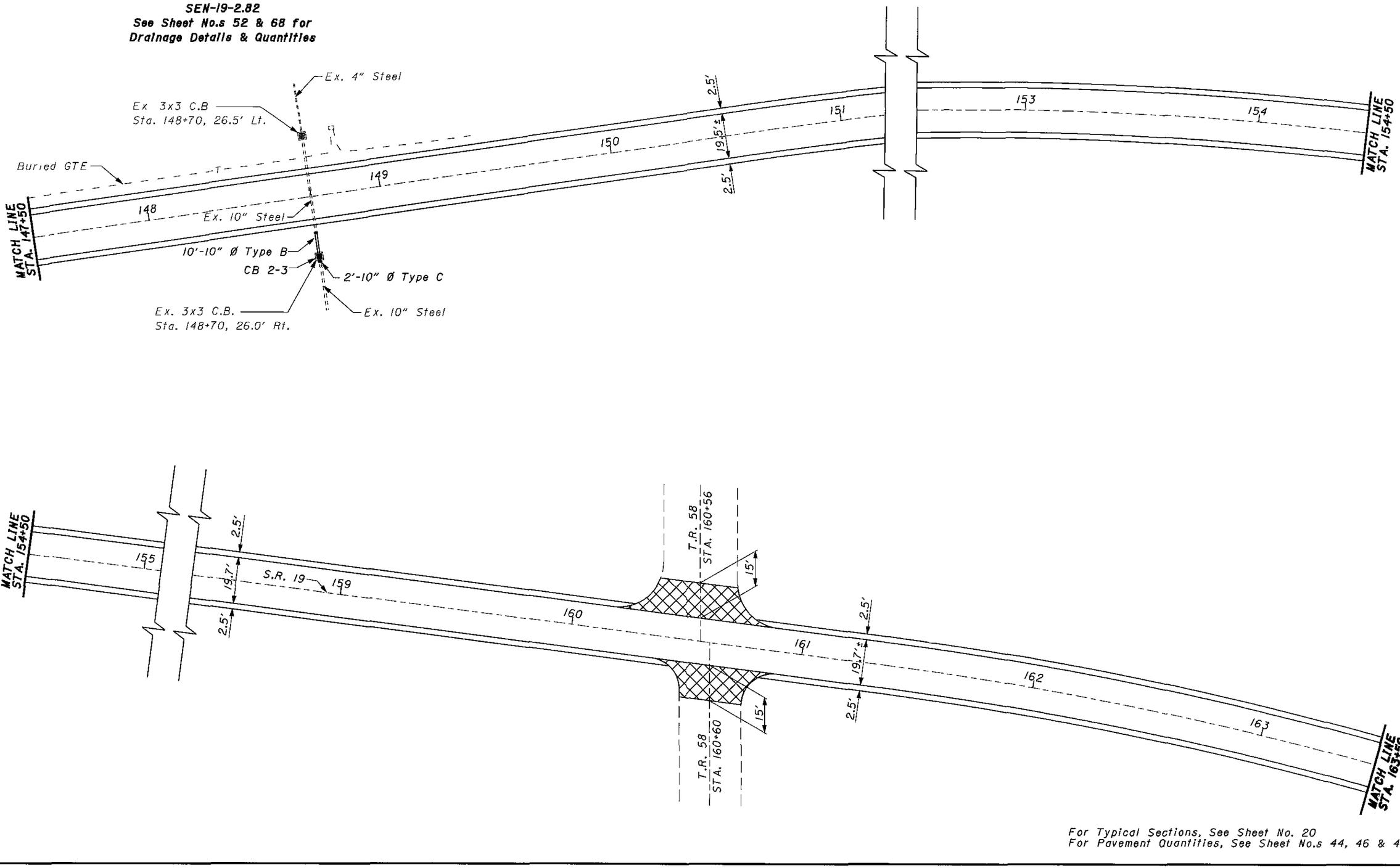
SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

LEGEND

Butt Joint As Per Std. Drwg. BP-3.1

SEN-19-2.82
See Sheet No.s 52 & 68 for Drainage Details & Quantities



For Typical Sections, See Sheet No. 20
For Pavement Quantities, See Sheet No.s 44, 46 & 48

HORIZONTAL SCALE IN FEET
0 10 20 40

SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

5
98

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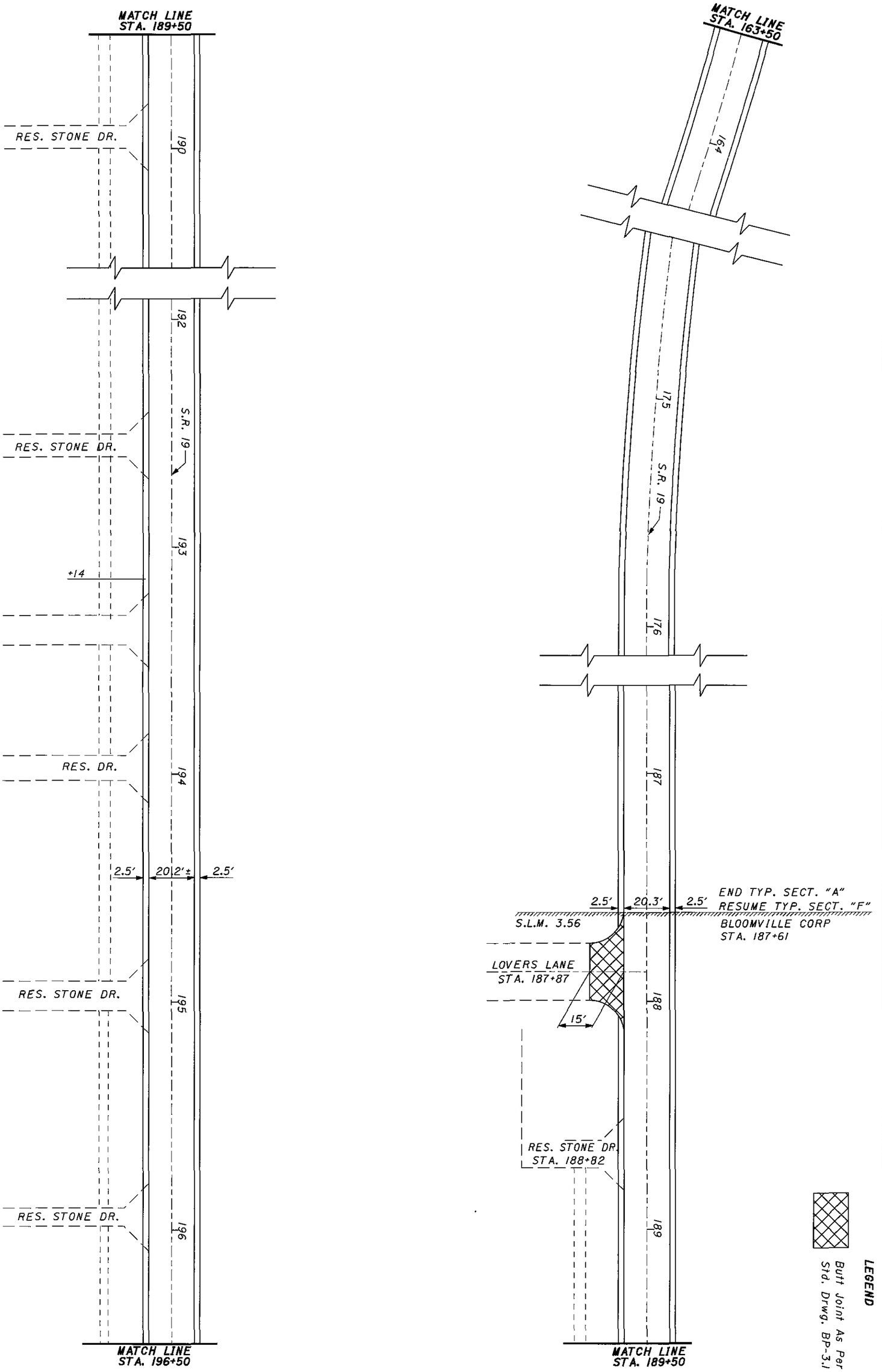

For Typical Sections, See Sheet No.s 20 & 23
For Pavement Quantities, See Sheet No.s 44, 46 & 48

6/98

SEN-19-0.00
SAN-19-14.03

SCHEMATIC PLAN
LOCATION 1

0 20
10 40
HORIZONTAL
SCALE IN FEET

N

SCHEMATIC PLAN
LOCATION 1

LEGEND

- Butt Joint As Per Std. Drwg. BP-3.1
- Feather As Per Std. Drwg. BP-3.1
- Taper Planing 1½" to 2¼" & Intermediate Course 1¾" to ¾" For Typical Sections, See Sht No. 23

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

MATCH LINE STA. 196+50

197 S.R. 19 — 198 — 199 — 200 — 201 — 202

MATCH LINE STA. 202+25

END TYP. SECT. "F" / BEGIN TYP. SECT. "G" STA. 197+98.00

RES. STONE DR.

Item 609, Curb, Type 6 For Details & Quantities, See Sheet No.s 50 & 53

+85, +75, +40, +18

2.5', 20.1', 39.6', 21.8', 24.3', 2.5'

ASPHALT PARKING

SCHOOL

15'

BEEGHLY AVE. STA. 198+10

Item 609, Curb, Type 6 For Details & Quantities, See Sheet No.s 50 & 53 (3 places)

MATCH LINE STA. 202+25

203 — 204 — 205 — S.R. 19 — 206 — 207 — 208

MATCH LINE STA. 208+50

40.2', 40.3', 43.9'

W. STOUT ST. STA. 202+44

END TYP. SECT. "G" / BEGIN TYP. SECT. "H" STA. 202+62.00

E. STOUT ST. STA. 202+39

+52, +62

ALLEY STA. 204+31

COLLEGE ST. STA. 204+67

RES. STONE DRIVE

+23

ASPHALT ALLEY STA. 206+39

RES. ASPH. DRIVE

SUSPEND TYP. SECT. "H" / BEGIN TYP. SECT. "I" STA. 207+74.00

W. ELLEN ST. STA. 207+91

W. ELLEN ST. STA. 207+95

+04

FIRE HYDRANT

19'

10', 16'

Item 609, Curb, Type 6. For Details & Quantities, See Sheet No.s 50 & 53

For Typical Sections, See Sheet No.s 23 & 24
For Pavement Quantities, See Sheet No.s 44, 46 & 48

SEN-19-0.00
SAN-19-14.03

7
98

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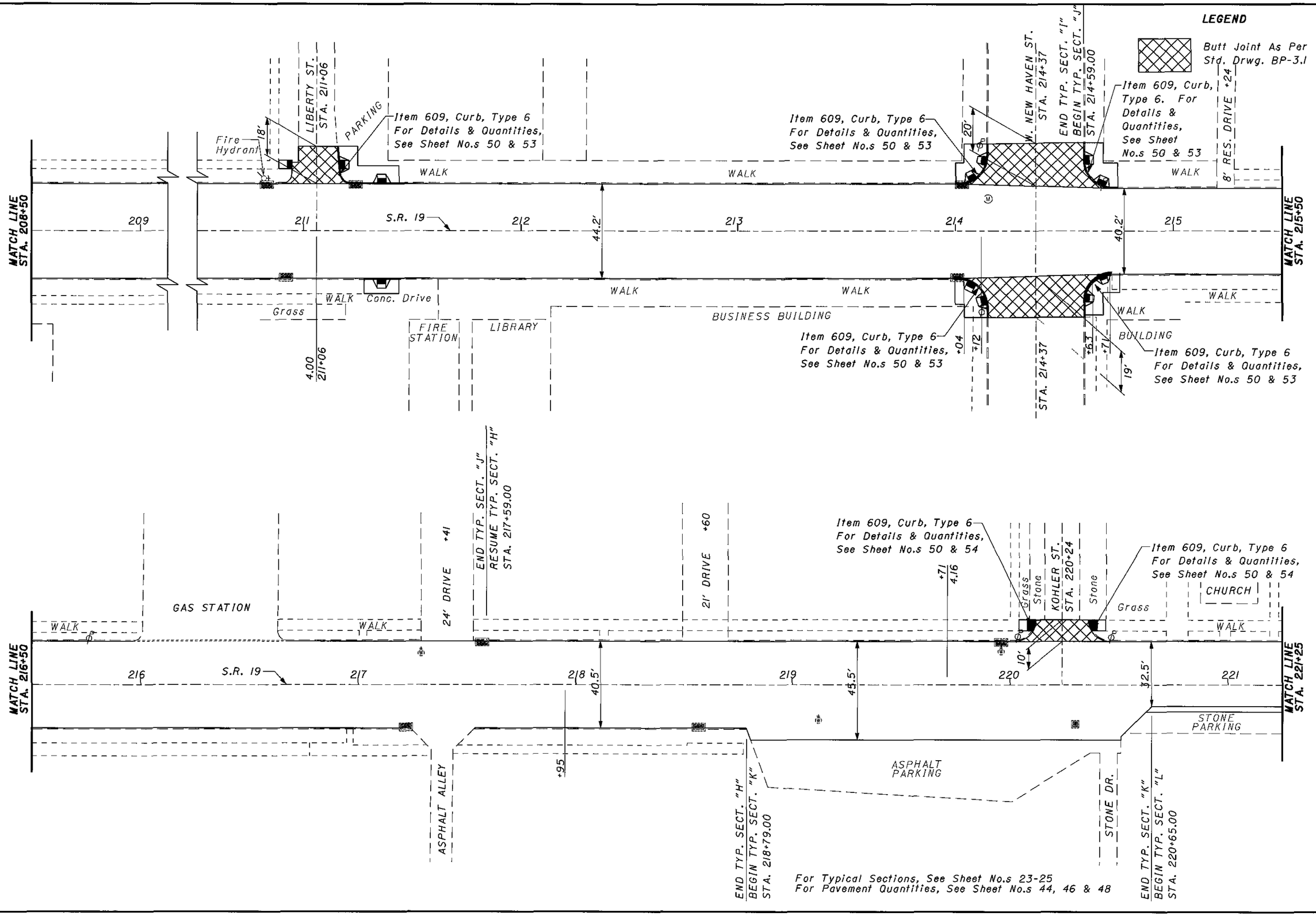

SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

8
98

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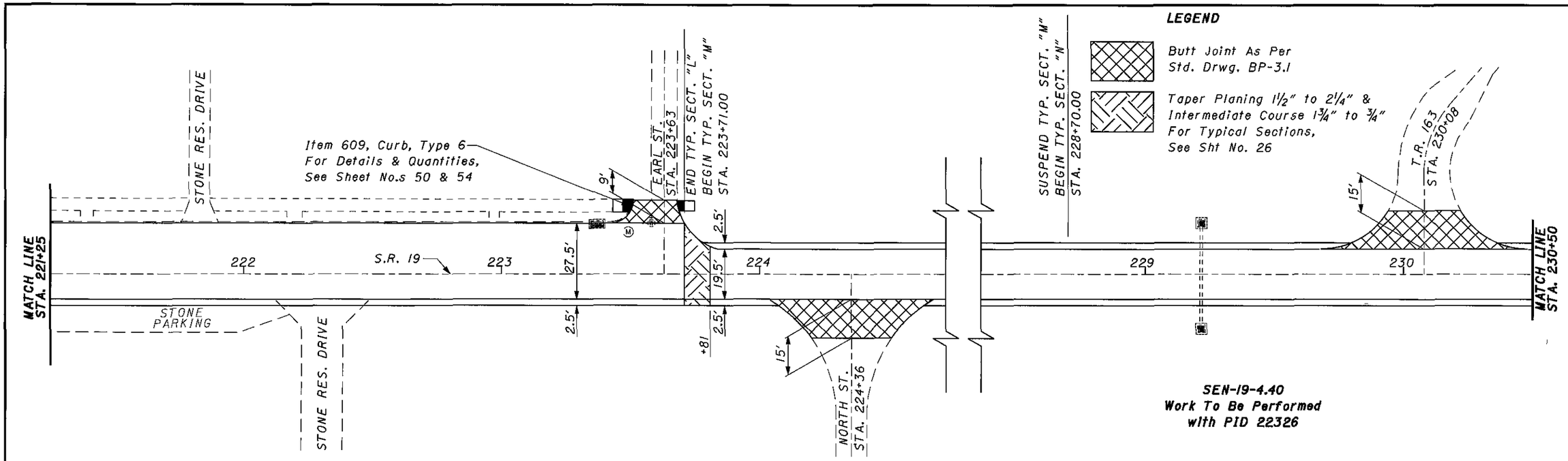

SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

9
98

HORIZONTAL SCALE IN FEET

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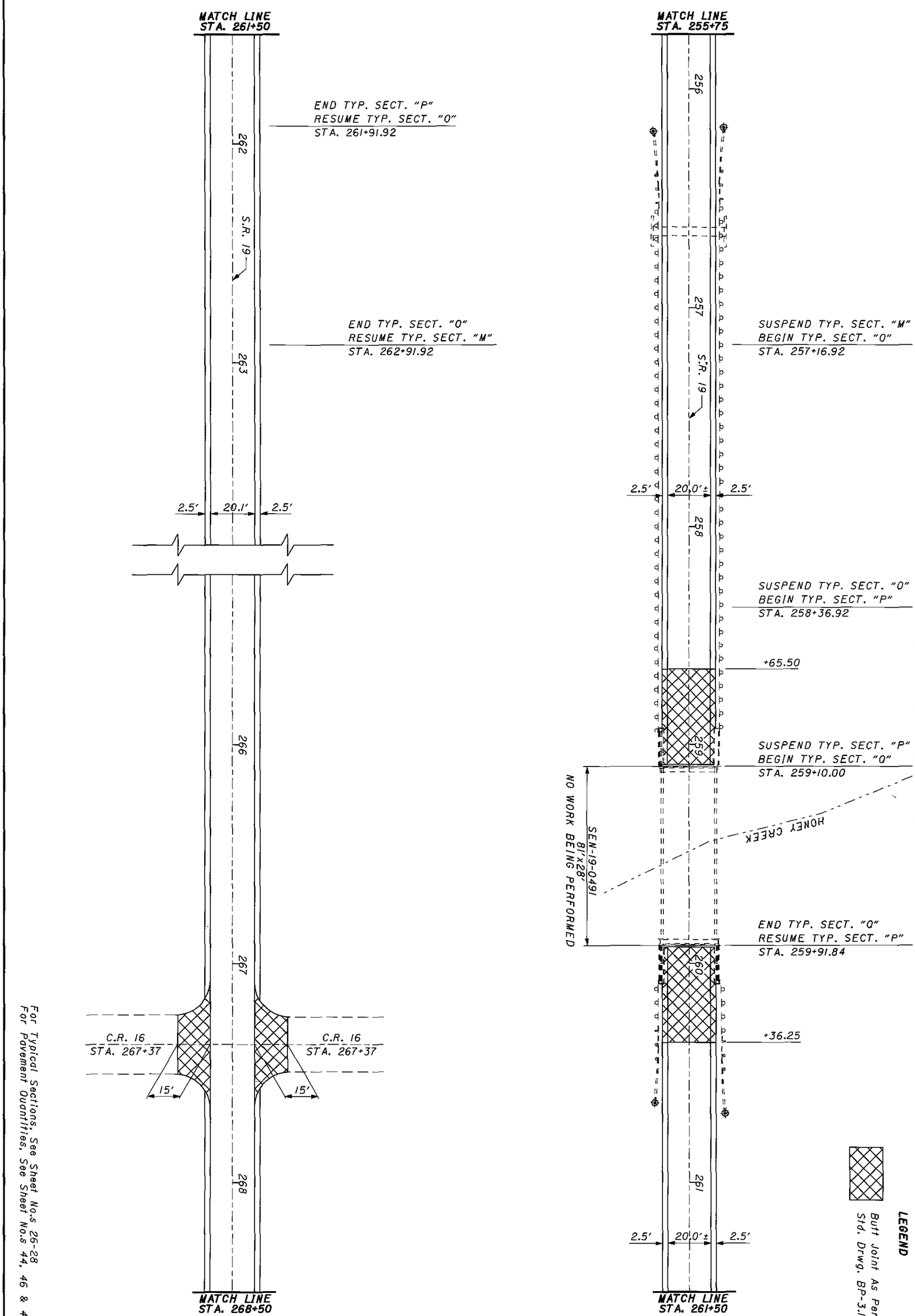


For Typical Sections, See Sheet No.s 26-28
For Pavement Quantities, See Sheet No.s 44, 46 & 48

10/98	**SEN-19-0.00** **SAN-19-14.03**	**SCHEMATIC PLAN** **LOCATION 1**

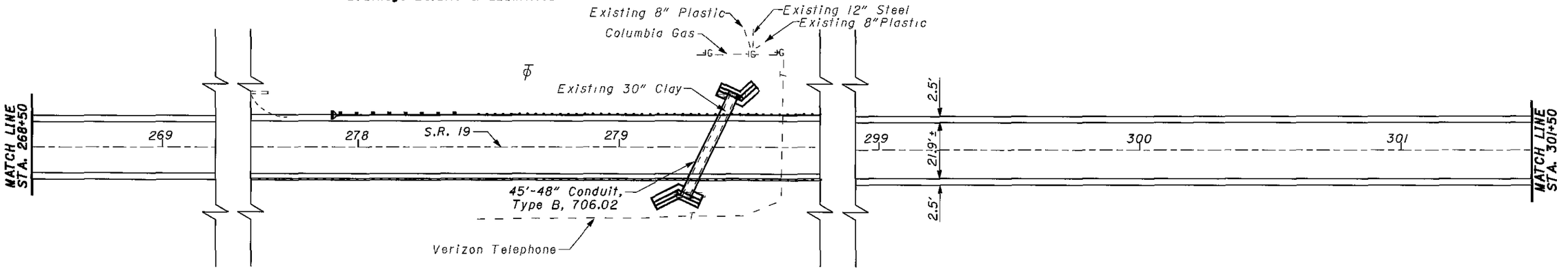
0 20
10 40
HORIZONTAL
SCALE IN FEET

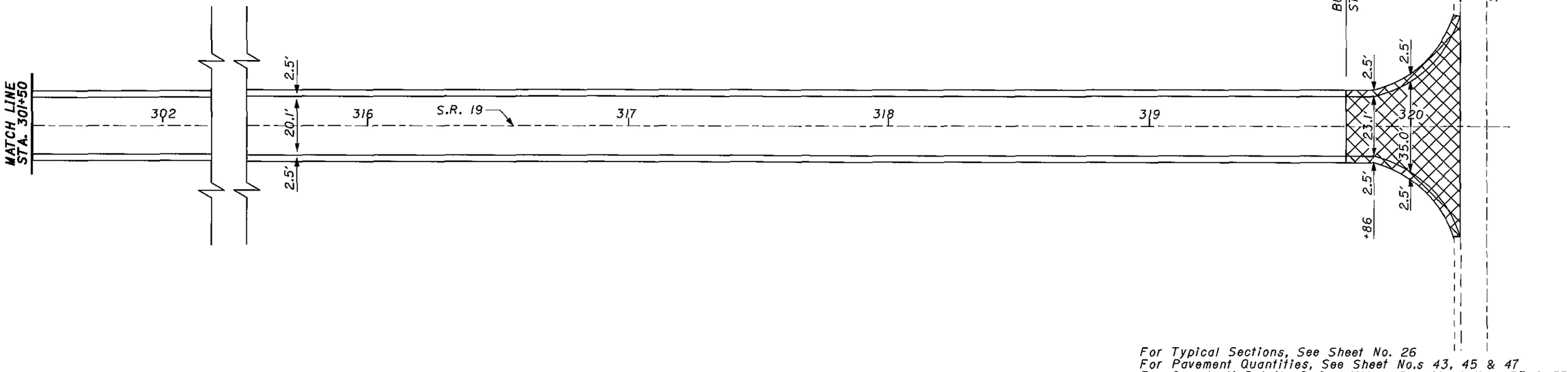
N

LEGEND

Butt Joint As Per Std. Drwg. BP-3.1

SEN-19-5.29
See Sheet No.s 69-72 for Drainage Details & Quantities





For Typical Sections, See Sheet No. 26
For Pavement Quantities, See Sheet No.s 43, 45 & 47
For Guardrail Details & Quantities, See Sheet No.s 53 & 57

HORIZONTAL SCALE IN FEET
0 10 20 40

SCHEMATIC PLAN
LOCATION 1

SEN-19-0.00
SAN-19-14.03

II
98

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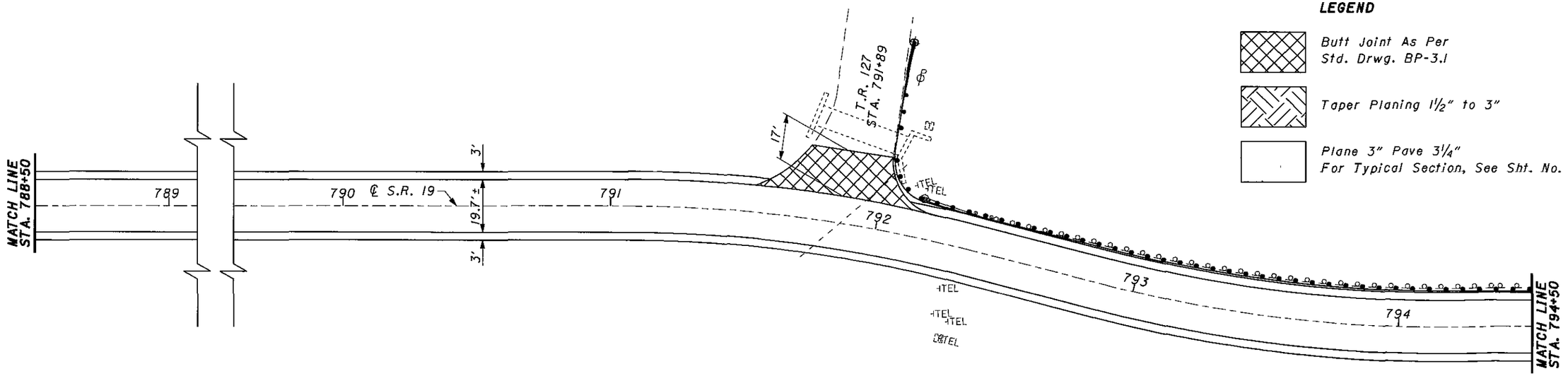
For Typicals, See Sheet No. 29
For Pavement Quantities, See Sheet No.s 45, 47 & 48

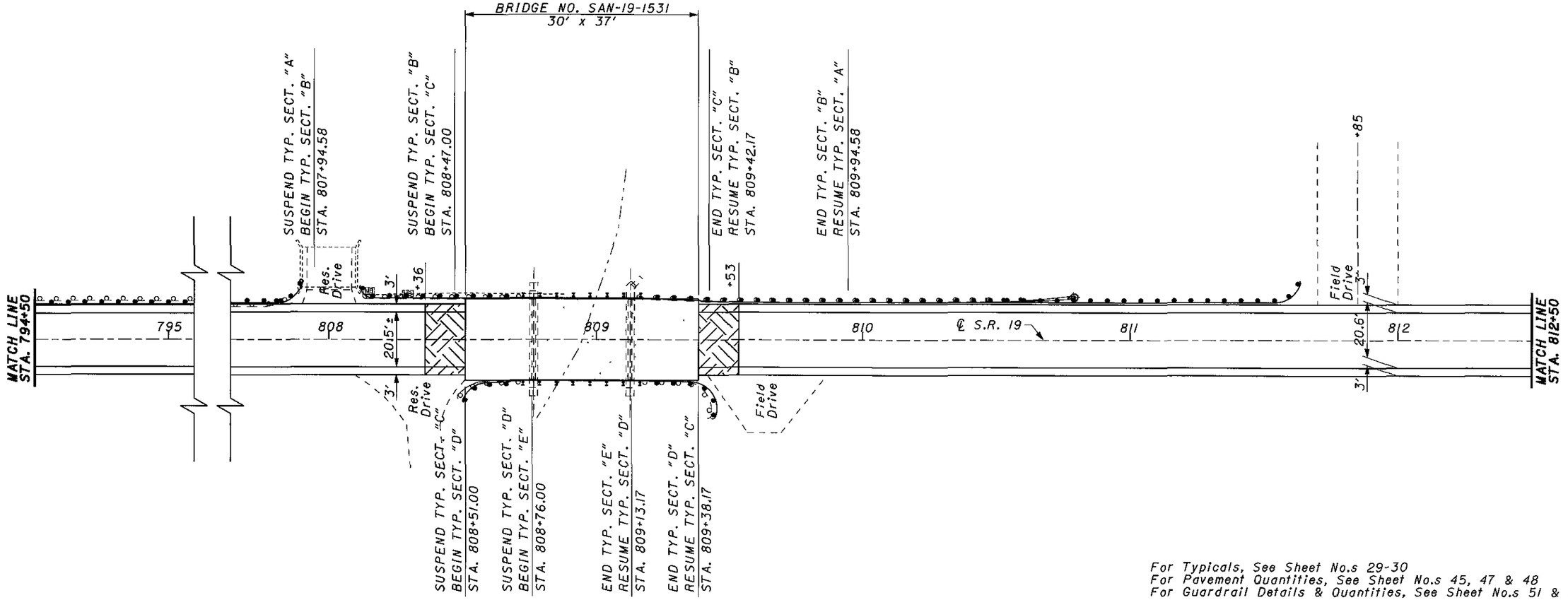
SCHEMATIC PLAN
LOCATION 2

SEN-19-0.00
SAN-19-14.03

12
98



NO WORK BEING PERFORMED
PLANE 3", PAVE 3¼"
FOR PAVEMENT QUANTITIES, SEE SHEET NO.S 43 & 45



For Typicals, See Sheet No.s 29-30
For Pavement Quantities, See Sheet No.s 45, 47 & 48
For Guardrail Details & Quantities, See Sheet No.s 51 & 60

HORIZONTAL SCALE IN FEET
0 10 20 40

SCHEMATIC PLAN
LOCATION 2

SEN-19-0.00
SAN-19-14.03

13
98

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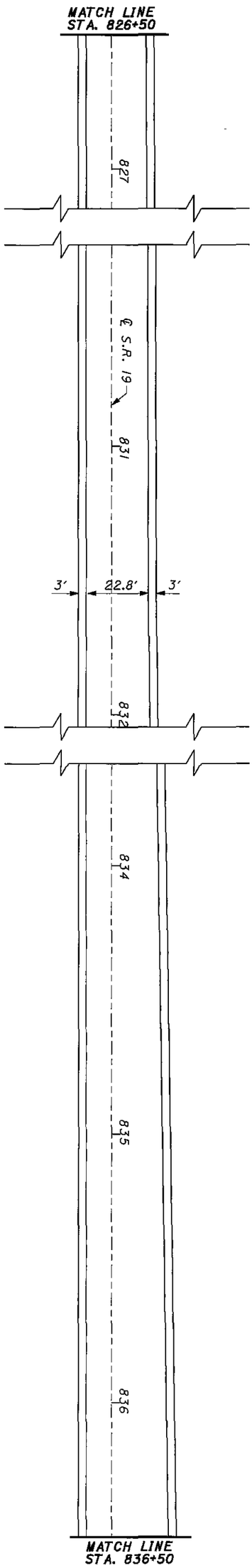
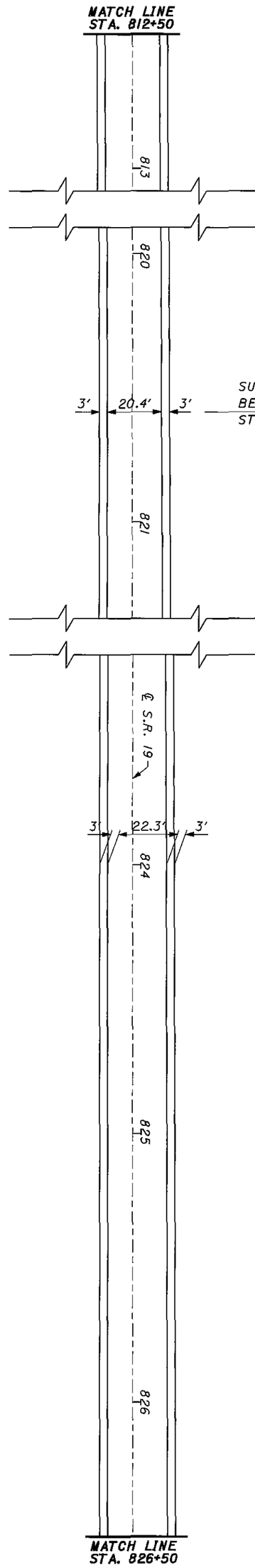


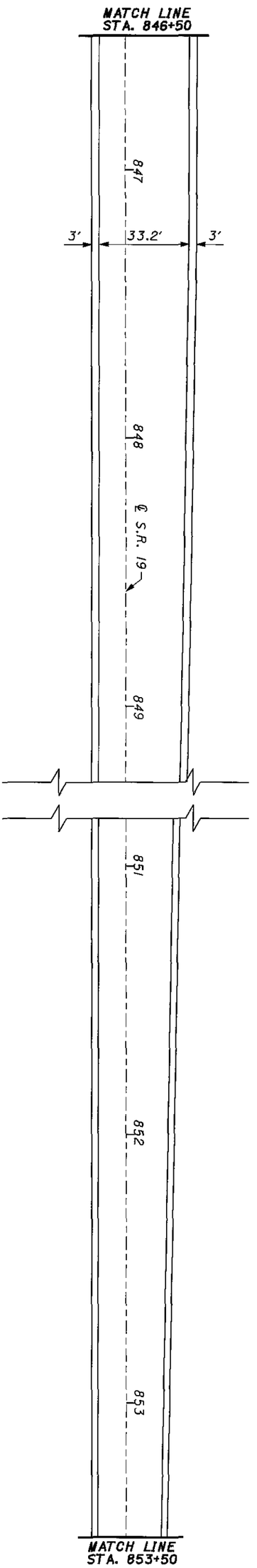


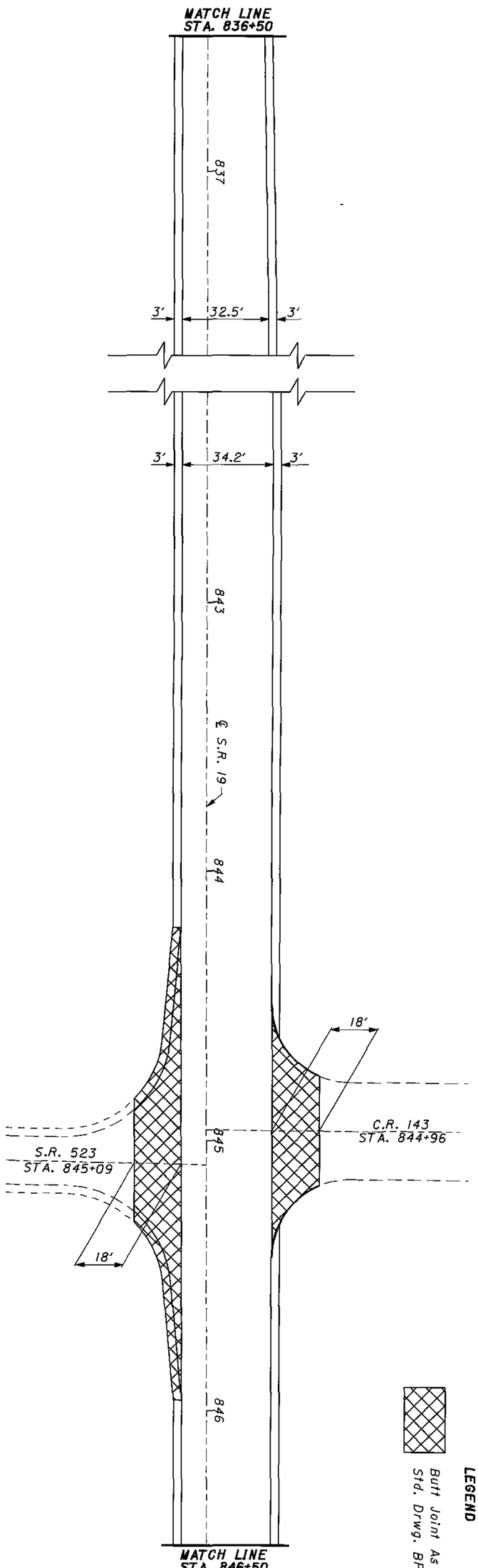
For Typicals, See Sheet No.s 29 & 32
For Pavement Quantities, See Sheet No.s 45, 47 & 48

14 / 98	**SEN-19-0.00** **SAN-19-14.03**	**SCHEMATIC PLAN** **LOCATION 2**

0 20
10 40
HORIZONTAL
SCALE IN FEET

N





LEGEND

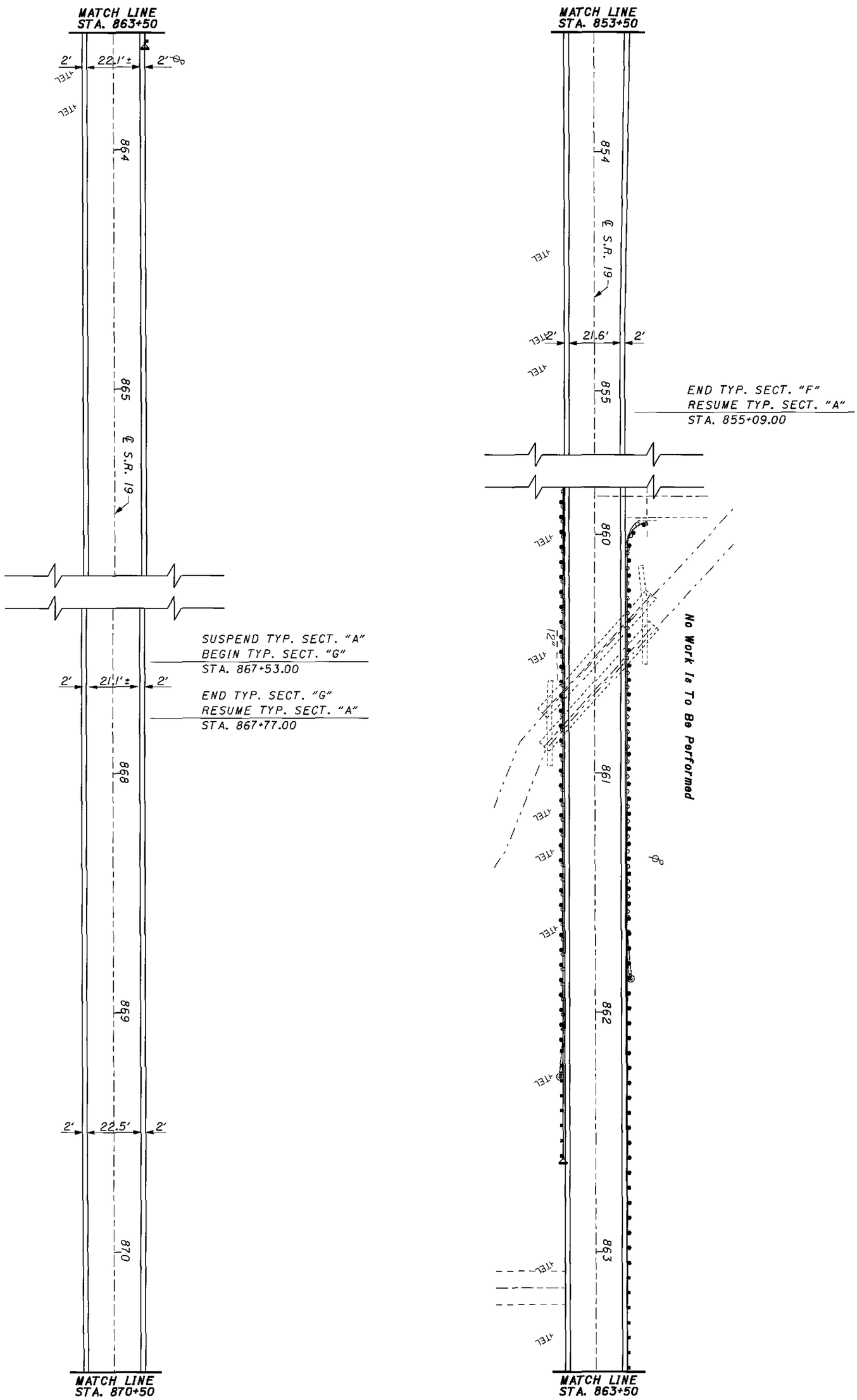
Butt Joint As Per Std. Drwg. BP-3.1

For Typicals, See Sheet No.s 32
For Pavement Quantities, See Sheet No.s 45, 47 & 48

15/98	SEN-19-0.00 SAN-19-14.03	SCHEMATIC PLAN LOCATION 2

0 20
10 40
HORIZONTAL SCALE IN FEET

N



For Typicals, See Sheet No.s 29 & 32
For Pavement Quantities, See Sheet No.s 45, 47 & 48
For Guardrail Details & Quantities, See Sheet No.s 51 & 61

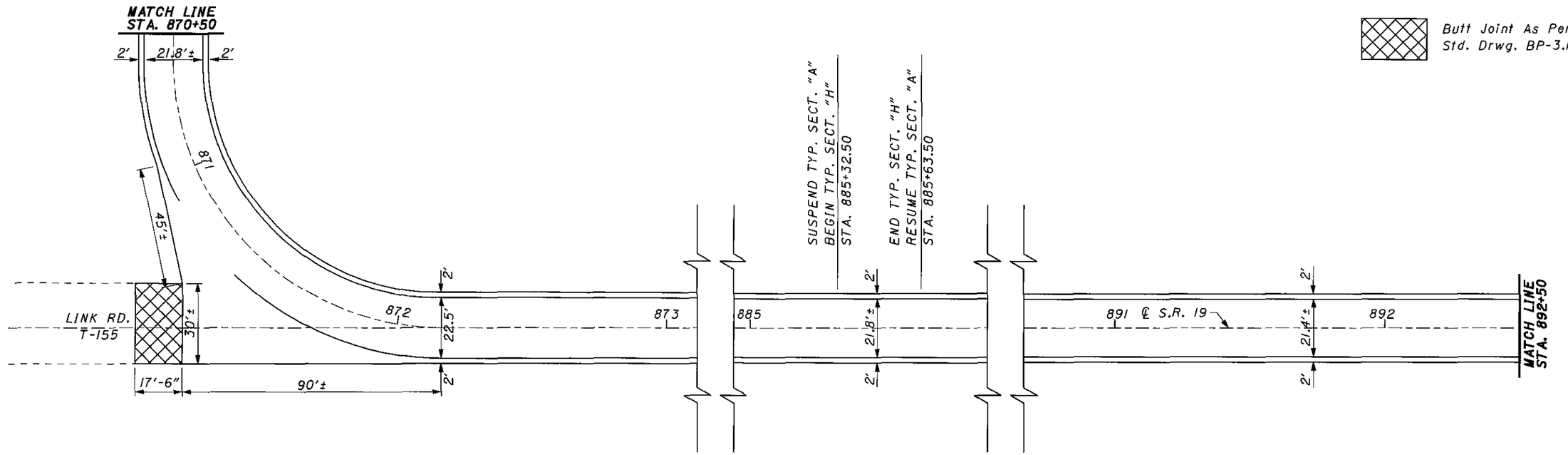
98 16

SEN-19-0.00
SAN-19-14.03

SCHEMATIC PLAN
LOCATION 2

0 20
10 40
HORIZONTAL SCALE IN FEET

N



LEGEND

Butt Joint As Per Std. Drwg. BP-3.1

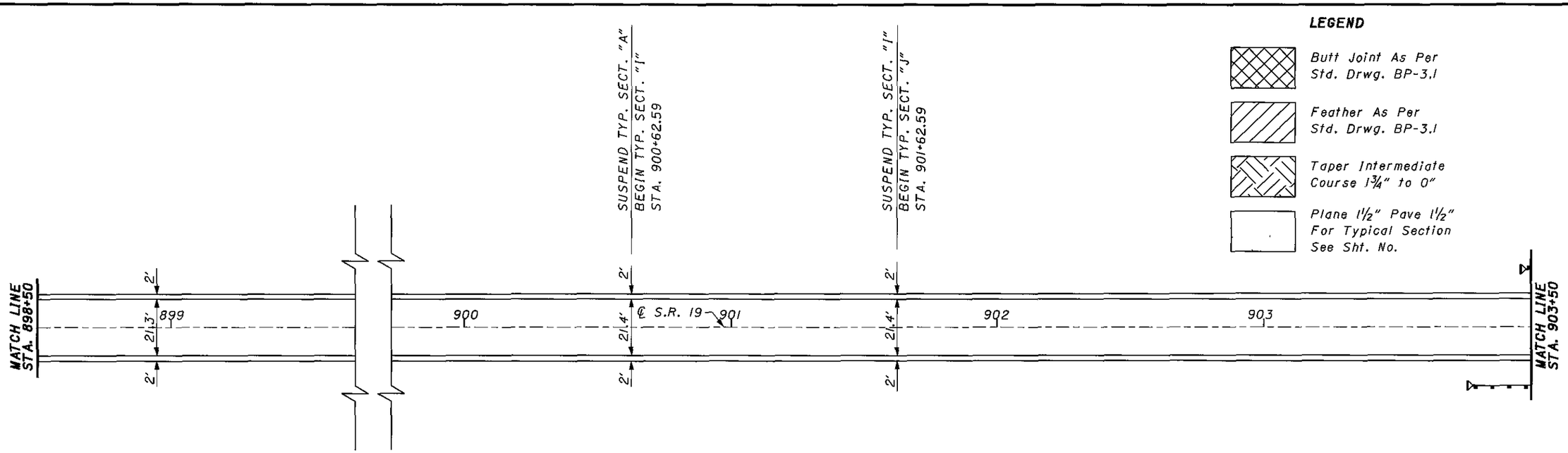
HORIZONTAL SCALE IN FEET

For Typicals, See Sheet No.s 29 & 33
For Pavement Quantities, See Sheet No.s 45, 47 & 48

SCHEMATIC PLAN
LOCATION 2

SEN-19-0.00
SAN-19-14.03

17
98



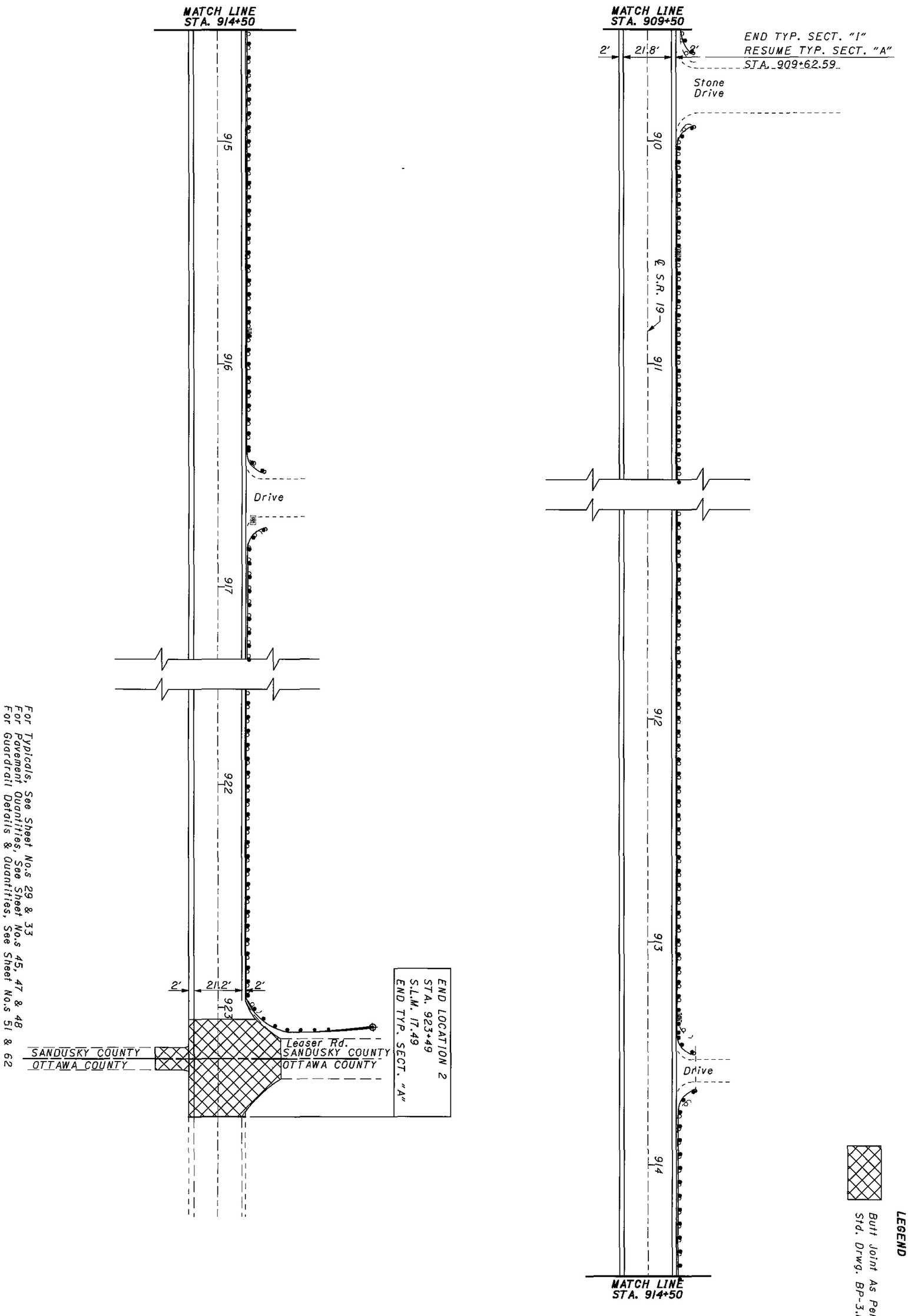
For Typicals, See Sheet No.s 29, 33-35
For Pavement Quantities, See Sheet No.s 45, 47 & 48
For Guardrail Details & Quantities, See Sheet No.s 51 & 61

HORIZONTAL SCALE IN FEET
0 10 20 40

SCHEMATIC PLAN LOCATION 2

SEN-19-0.00
SAN-19-14.03

18
98



For Typicals, See Sheet No.s 29 & 33
For Pavement Quantities, See Sheet No.s 45, 47 & 48
For Guardrail Details & Quantities, See Sheet No.s 51 & 62

LEGEND

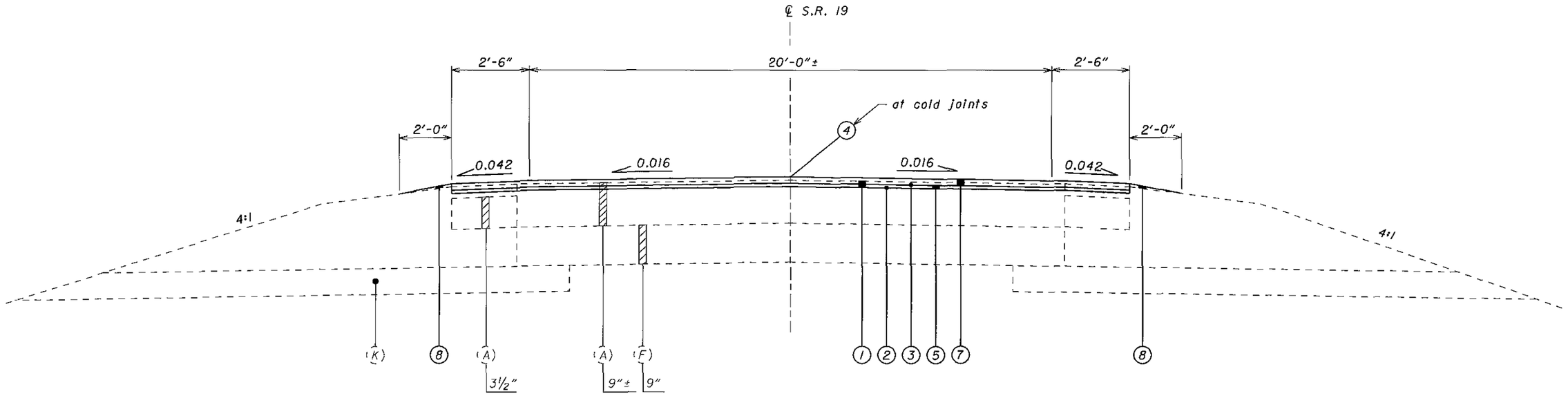
Butt Joint As Per Std. Drwg. BP-3.1

98 / 19	**SEN-19-0.00** **SAN-19-14.03**	**SCHEMATIC PLAN** **LOCATION 2**

0 10 20 40
HORIZONTAL SCALE IN FEET

N

Typical Section "A"



NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 0+00.00 to Sta. 103+38.73 = 10338.73 Ft.
Sta. 104+98.73 to Sta. 187+61.00 = 8262.27 Ft.
18601.00 Ft.

PROPOSED LEGEND

(1) Item 254 - 1½" Pavement Planing, Asphalt Concrete - (Unless Otherwise Noted)
(2) Item 407 - Tack Coat (0.075 gal./sq. yd.)
(3) Item 407 - Tack Coat for Intermediate Course (0.04 gal./sq. yd.)
(4) Item 409 - Sealing, Misc.: Longitudinal Joint Sealer
(5) Item 442 - 1¾" Asphalt Concrete Intermediate Course, 19MM, Type A (448), PG70-22M, As Per Plan
(6) Item 442 - ¾" Asphalt Concrete Intermediate Course, 9.5MM, Type A (448), PG70-22M, As Per Plan
(7) Item 442 - 1½" Asphalt Concrete Surface Course, 9.5MM, Type A (448)
(8) Item 617 - Compacted Aggregate, Type A

EXISTING LEGEND

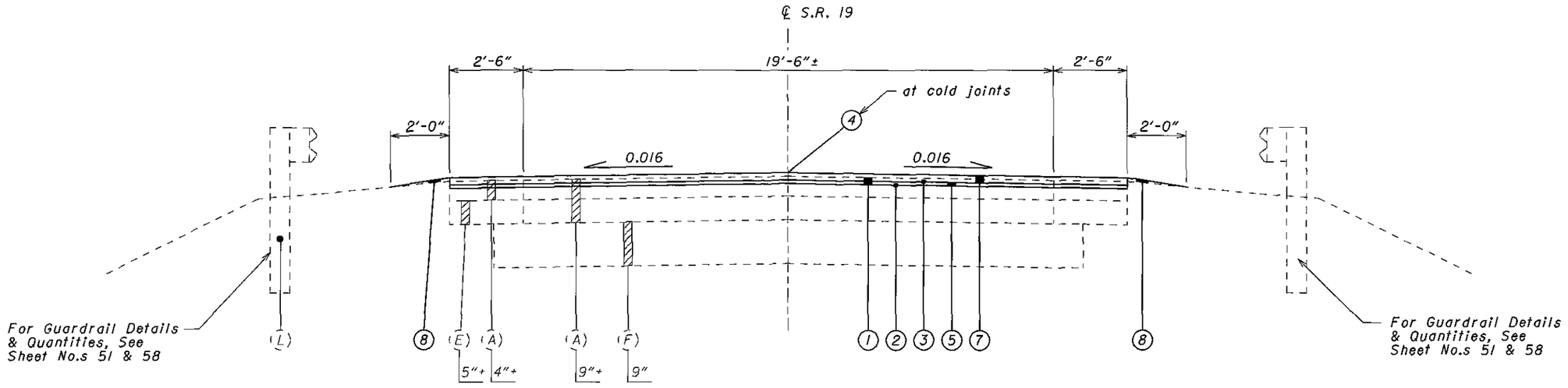
(A) Existing Asphalt (Thickness Shown)
(B) Existing Concrete Base
(C) Reinforced Concrete
(D) Bituminous Aggregate Base (Thickness Shown)
(E) Aggregate Base (Thickness Shown)
(F) Waterbound Macadam (Thickness Shown)
(G) Subbase (Thickness Shown)
(H) Existing Type 2 Curb & Gutter
(I) Existing Type 6 Curb
(J) Existing Brick
(K) Existing Underdrain
(L) Existing Guardrail

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

20
98

Typical Section "B"

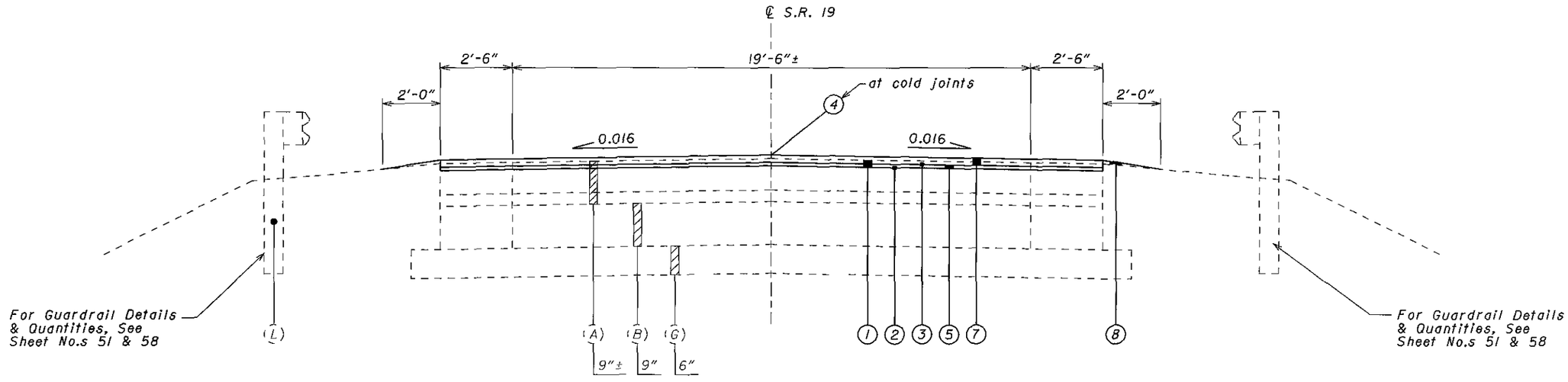


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 103+38.73 to Sta. 103+70.00 = 31.27 Ft.
Sta. 104+66.66 to Sta. 104+98.73 = 32.07 Ft.
63.34 Ft.

Typical Section "C"



NORMAL SECTION - S.R. 19

Section Applies To:

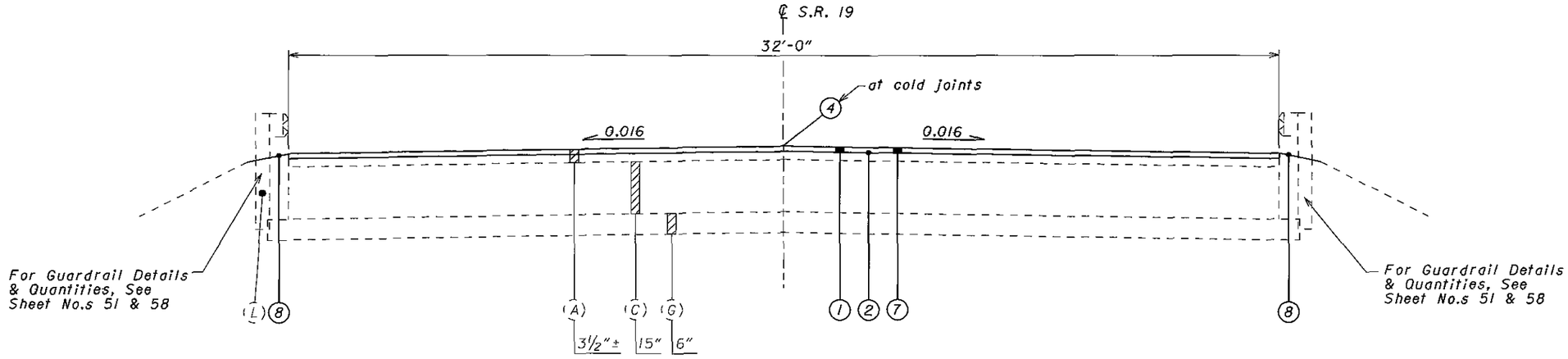
Sta. 103+70.00 to Sta. 103+74.00 = 4.00 Ft.
Sta. 104+62.66 to Sta. 104+66.66 = 4.00 Ft.
8.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "D"

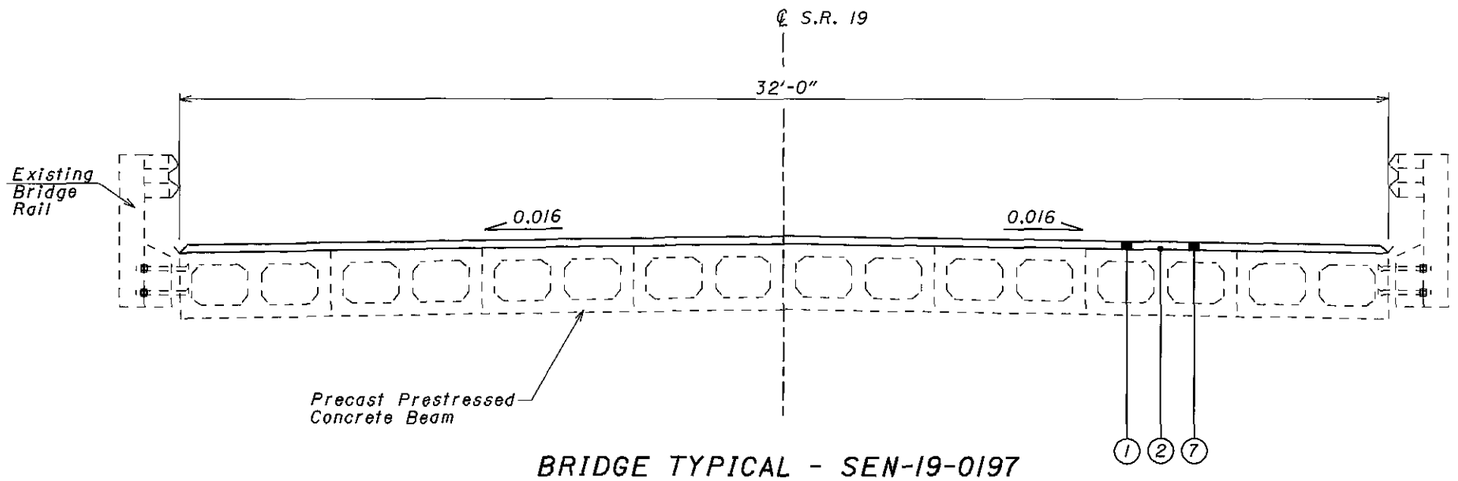


APPROACH SLAB - S.R. 109

Section Applies To:

Sta. 103+74.00 to Sta. 103+99.00 = 25.00 Ft.
Sta. 104+37.66 to Sta. 104+62.66 = 25.00 Ft.
50.00 Ft.

Typical Section "E"



BRIDGE TYPICAL - SEN-19-0197

FOR WORK AT STRUCTURE, SEE SHEET NO.S 91-98

Section Applies To:

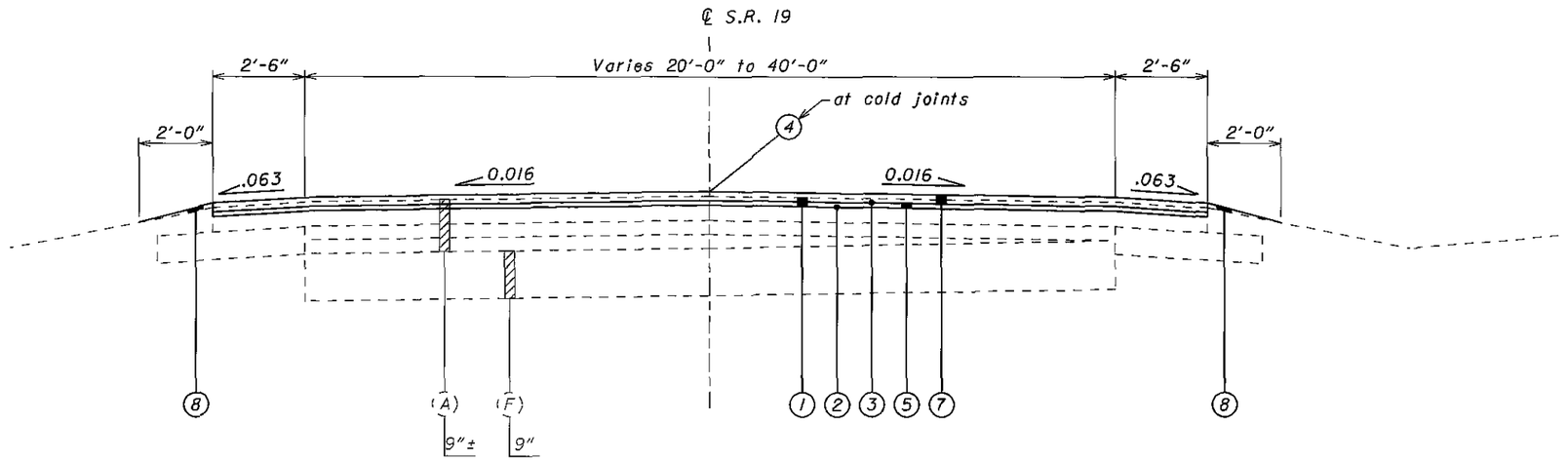
Sta. 103+99.00 to Sta. 104+37.66 = 38.66 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "F"

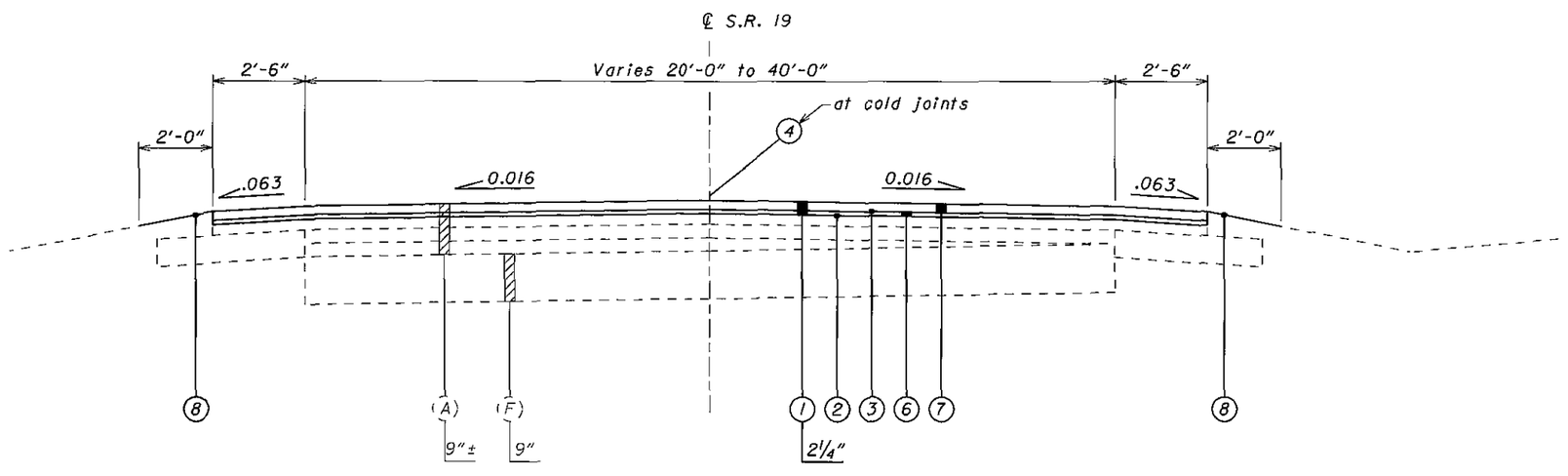


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 187+61.00 to Sta. 197+98.00 = 1037.00 Ft.

Typical Section "G"



NORMAL SECTION - S.R. 19

Section Applies To:

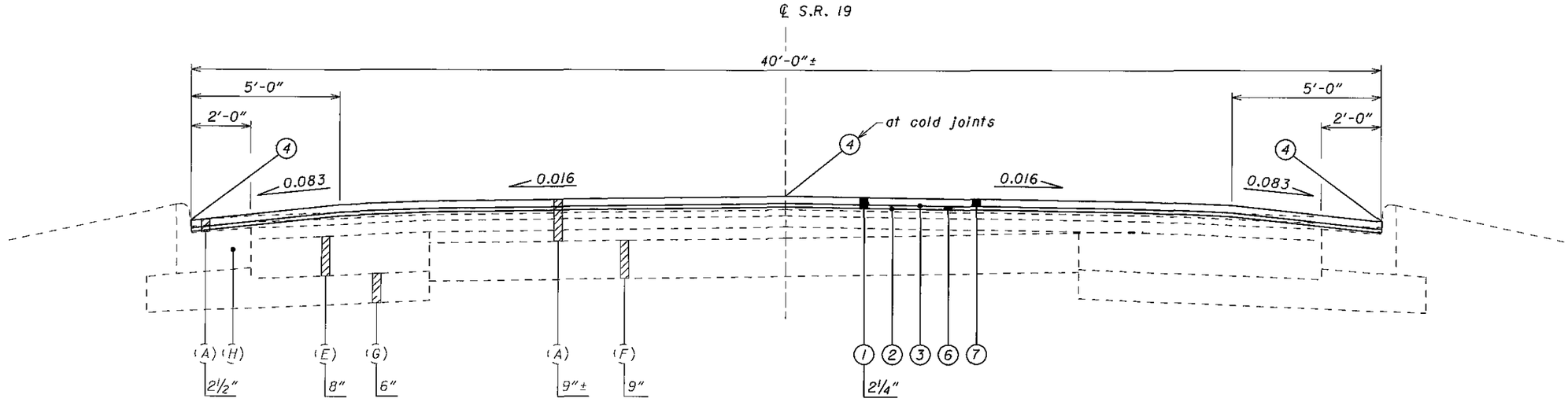
Sta. 197+98.00 to Sta. 202+62.00 = 464.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "H"

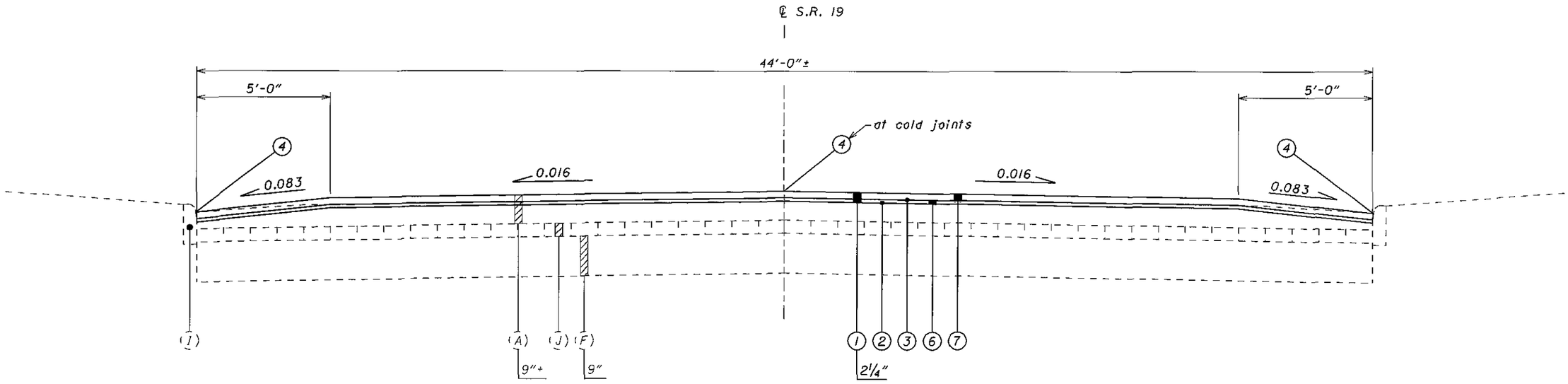


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 202+62.00 to Sta. 207+74.00 = 512.00 Ft.
Sta. 217+59.00 to Sta. 218+79.00 = 120.00 Ft.
632.00 Ft.

Typical Section "I"



NORMAL SECTION - S.R. 19

Section Applies To:

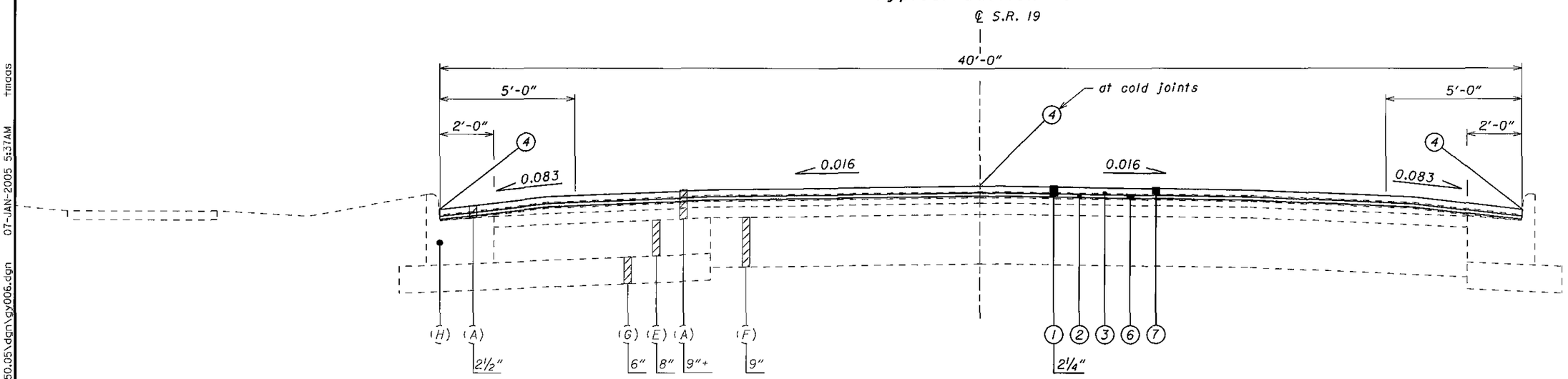
Sta. 207+74.00 to Sta. 214+59.00 = 685.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "J"

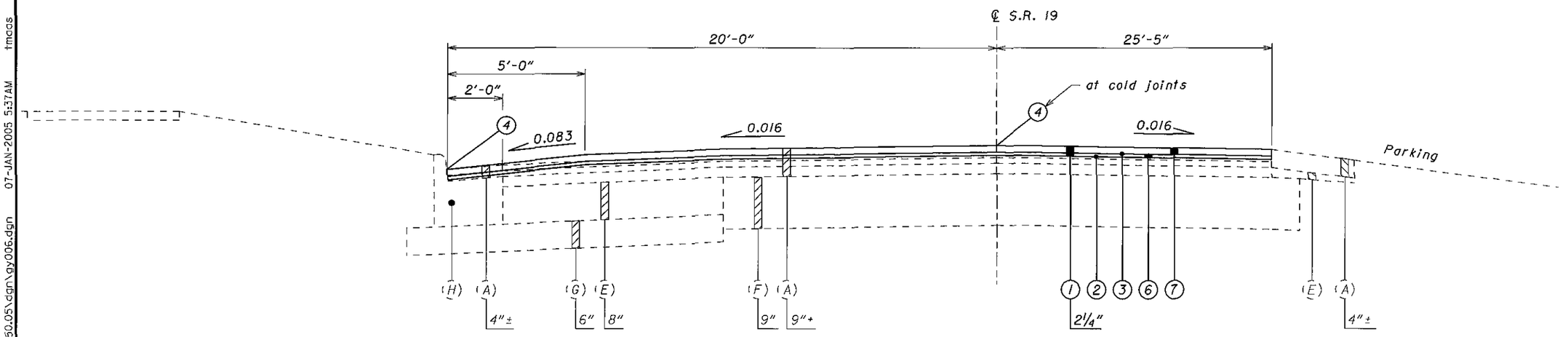


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 214+59.00 to Sta. 217+59.00 = 300.00 Ft.

Typical Section "K"



NORMAL SECTION - S.R. 19

Section Applies To:

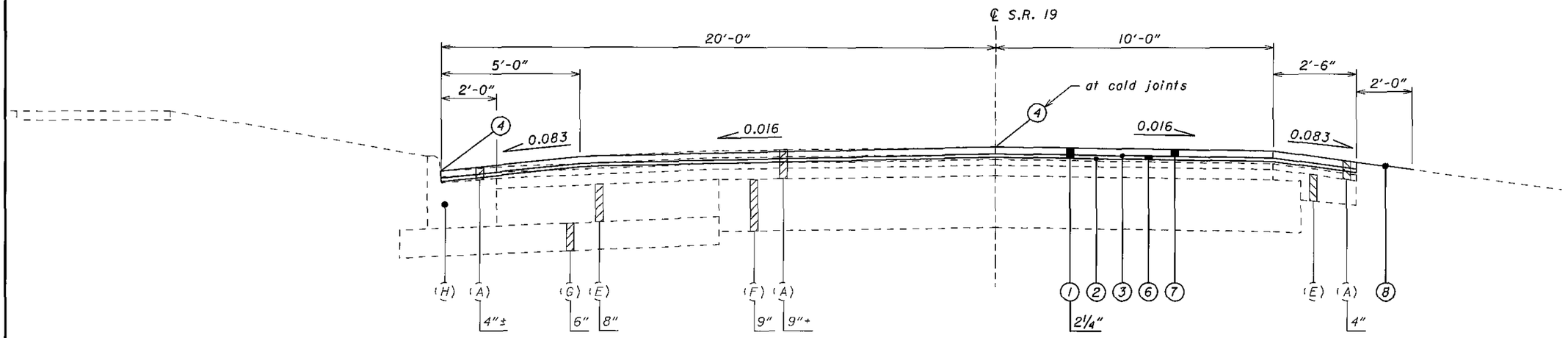
Sta. 218+79.00 to Sta. 220+65.00 = 186.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "L

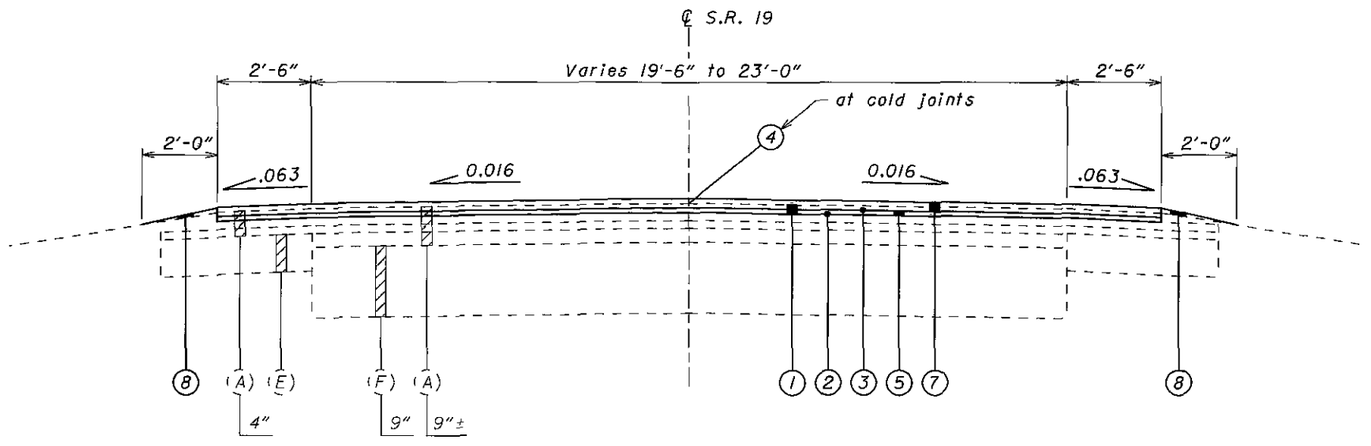


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 220+65.00 to Sta. 223+71.00 = 306.00 Ft.

Typical Section "M"



NORMAL SECTION - S.R. 19

Section Applies To:

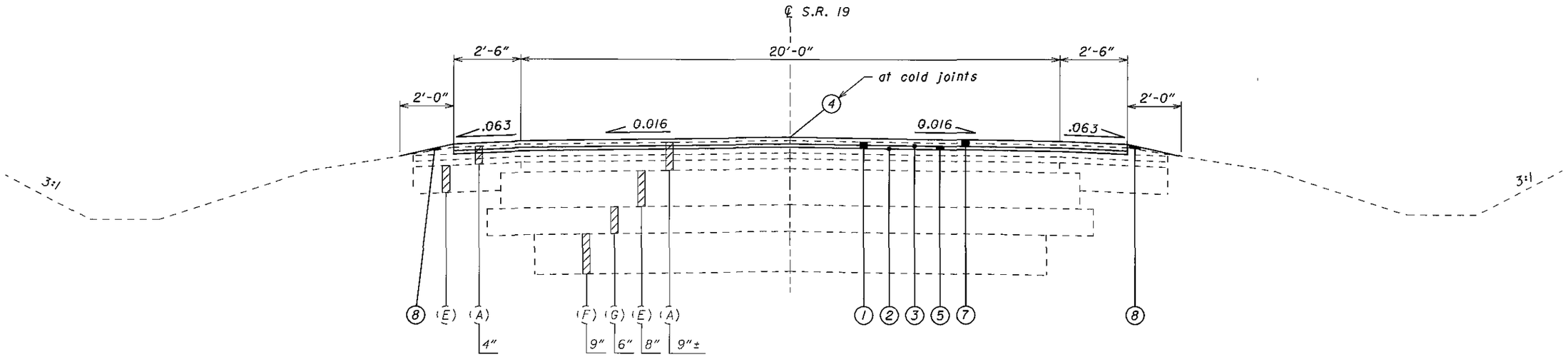
Sta. 223+71.00 to Sta. 228+70.00 = 499.00 Ft.
Sta. 231+30.00 to Sta. 257+16.92 = 2586.92 Ft.
Sta. 262+91.92 to Sta. 320+19.00 = 5727.08 Ft.
8813.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "N"

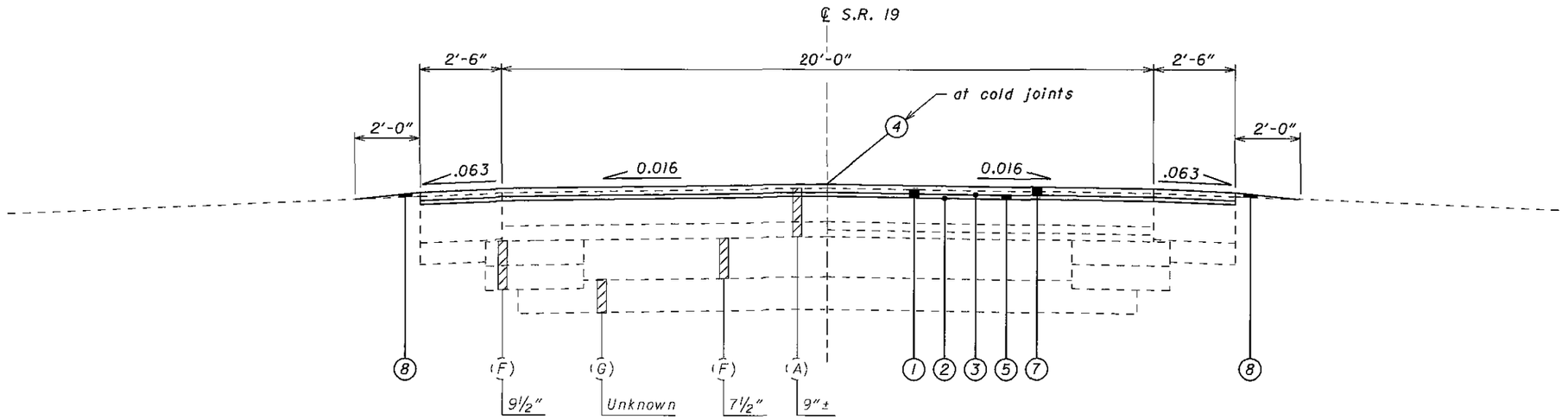


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 228+70.00 to Sta. 231+30.00 = 260.00 Ft.

Typical Section "O"



NORMAL SECTION - S.R. 19

Section Applies To:

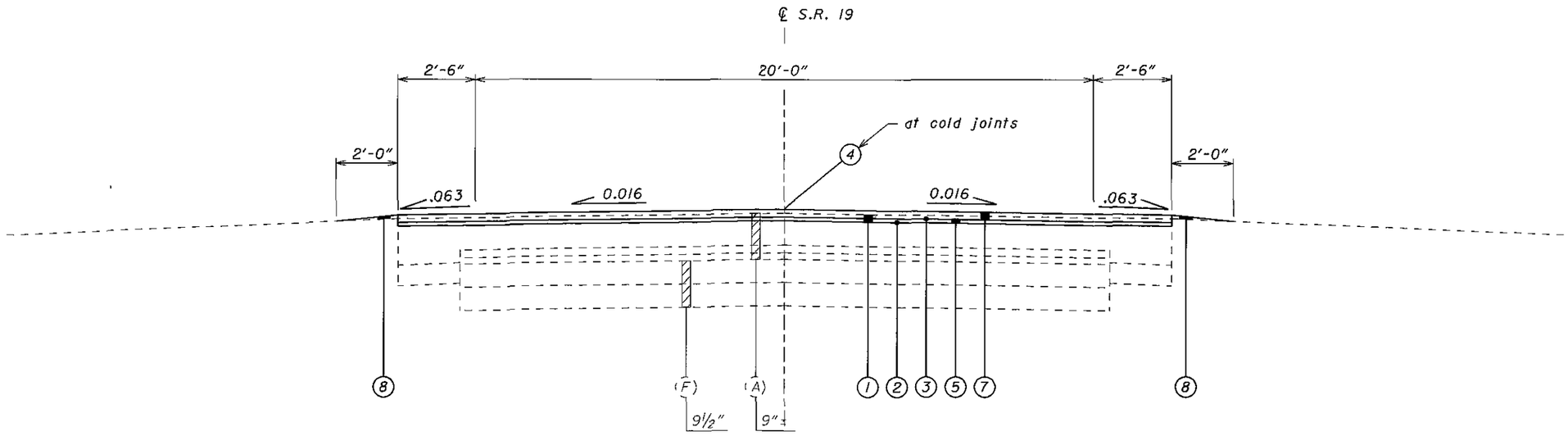
Sta. 257+16.92 to Sta. 258+36.92 = 120.00 Ft.
Sta. 261+91.92 to Sta. 262+91.92 = 100.00 Ft.
220.00 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

Typical Section "P"

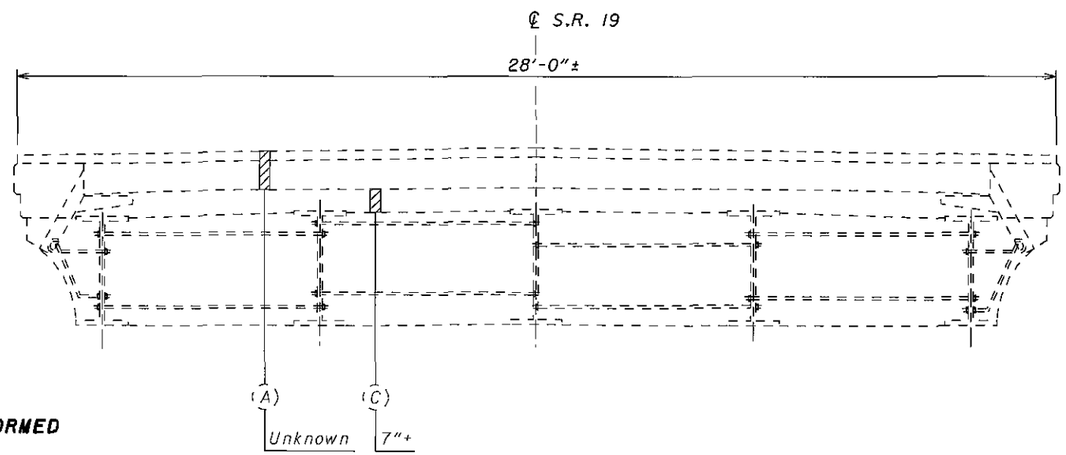


NORMAL SECTION - S.R. 19

Section Applies To:

Sta. 258+36.92 to Sta. 259+10.00 - 73.08 Ft.
Sta. 259+91.84 to Sta. 261+91.92 - 200.08 Ft.
273.16 Ft.

Typical Section "Q"



NO WORK IS TO BE PERFORMED

BRIDGE TYPICAL - SEN-19-0491

Section Applies To:

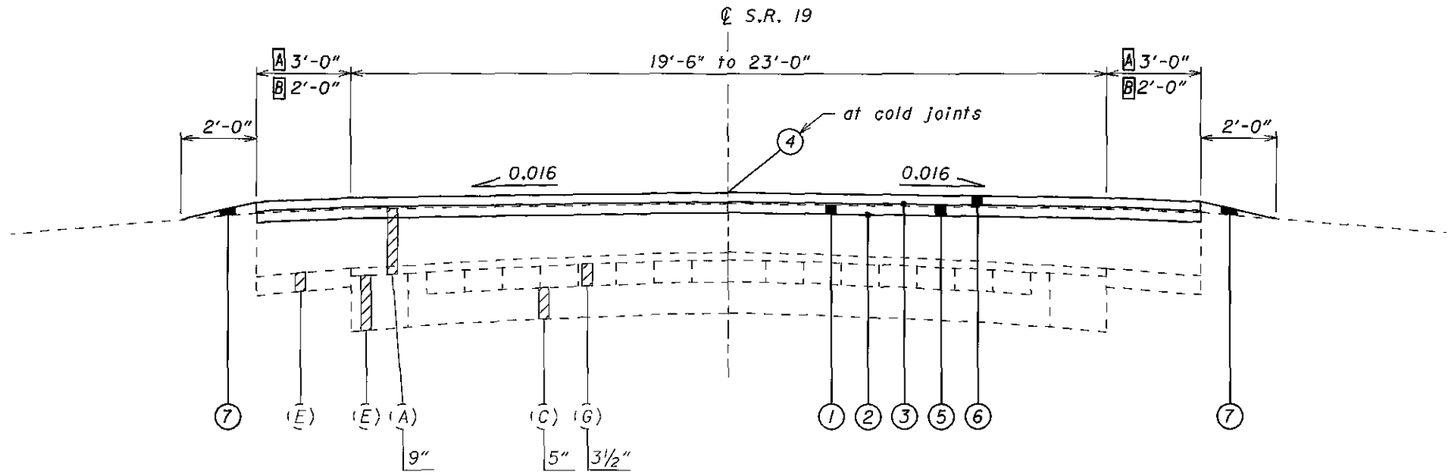
Sta. 259+10.00 to Sta. 259+91.84 - 81.84 Ft.

For Legend, See Sheet No. 20

TYPICAL SECTION - LOCATION 1

SEN-19-0.00
SAN-19-14.03

TYPICAL SECTION "A"



NORMAL SECTION - S.R. 19

Section Applies:

A Sta. 740+87.00 to Sta. 752+36.00 = 1149.00 Ft.

Deduct For Railroad: Sta. 752+36.00 to Sta. 753+51.00 = -115.00 Ft.

A Sta. 753+51.00 to Sta. 807+94.58 = 5443.58 Ft.
A Sta. 809+94.58 to Sta. 820+59.00 = 1064.42 Ft.
B Sta. 855+09.00 to Sta. 867+53.00 = 1244.00 Ft.
B Sta. 867+77.00 to Sta. 885+32.50 = 1755.50 Ft.
B Sta. 885+63.50 to Sta. 900+62.59 = 1499.09 Ft.
B Sta. 909+62.59 to Sta. 923+49.00 = 1386.41 Ft.
13427.00 Ft.

PROPOSED LEGEND

(1) Item 254 - 1½" Pavement Planing, Asphalt Concrete (Unless Otherwise Noted)
(2) Item 407 - Tack Coat (0.075 gal./sq. yd.)
(3) Item 407 - Tack Coat for Intermediate Course (0.04 gal./sq. yd.)
(4) Item 409 - Sealing, Misc.: Longitudinal Joint Sealer
(5) Item 442 - 1¾" Asphalt Concrete Intermediate Course, 19MM, Type A (448), PG70-22M, As Per Plan
(6) Item 442 - 1½" Asphalt Concrete Surface Course, 9.5MM, Type A (448)
(7) Item 617 - Compacted Aggregate, Type A

EXISTING LEGEND

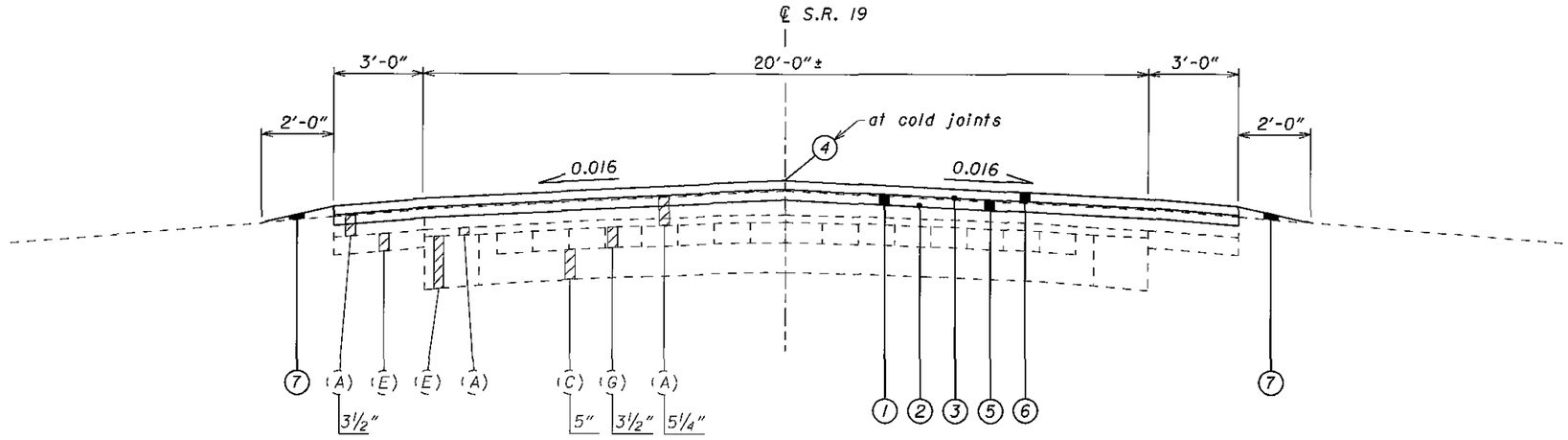
(A) Existing Asphalt (Thickness Shown)
(B) Existing Reinforced Concrete
(C) Existing Concrete Base
(D) Bituminous Aggregate Base (Thickness Shown)
(E) Aggregate Base (Thickness Shown)
(F) Subbase (Thickness Shown)
(G) Existing Brick
(H) Aggregate Drain
(I) Existing Guardrail

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

29
98

TYPICAL SECTION "B"

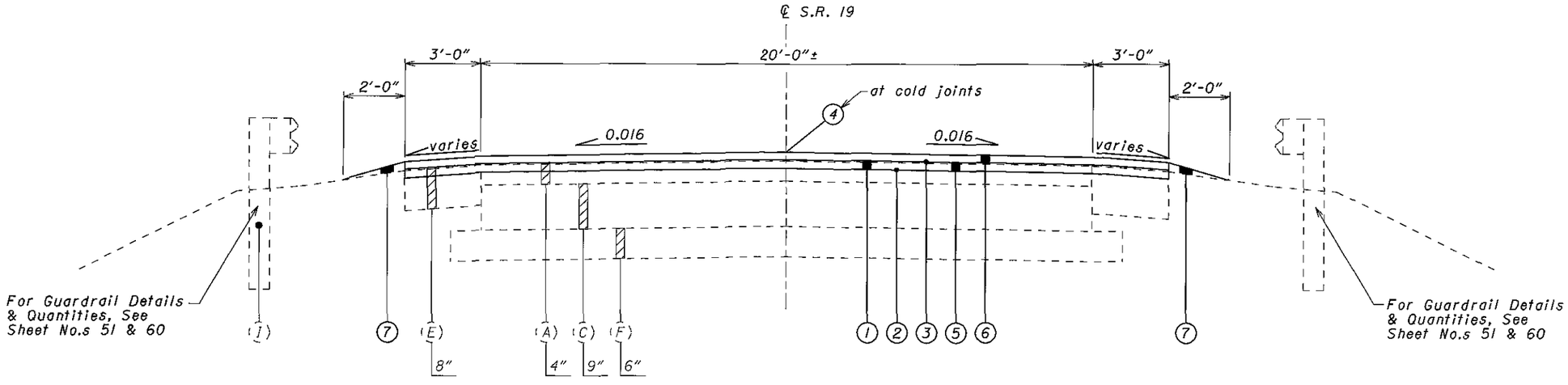


NORMAL SECTION - S.R. 19

Section Applies:

Sta. 807+94.58 to Sta. 808+47.00 = 52.42 Ft.
Sta. 809+42.17 to Sta. 809+94.58 = 52.41 Ft.
104.83 Ft.

TYPICAL SECTION "C"



NORMAL SECTION - S.R. 19

Section Applies:

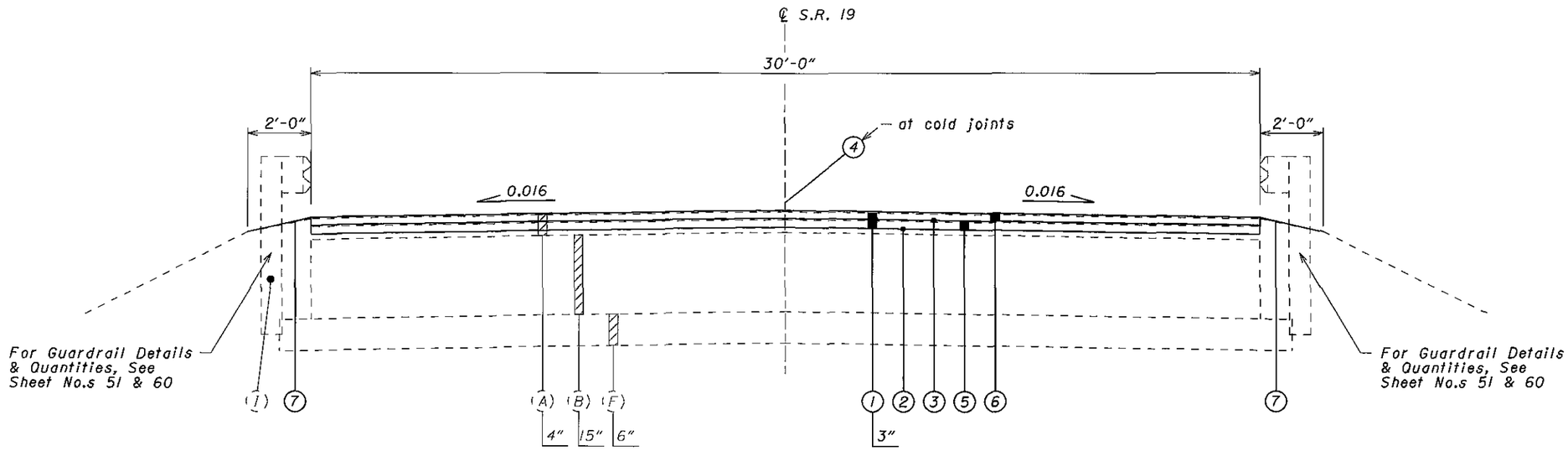
Sta. 808+47.00 to Sta. 808+51.00 = 4.00 Ft.
Sta. 809+38.17 to Sta. 809+42.17 = 4.00 Ft.
8.00 Ft.

For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

TYPICAL SECTION "D"

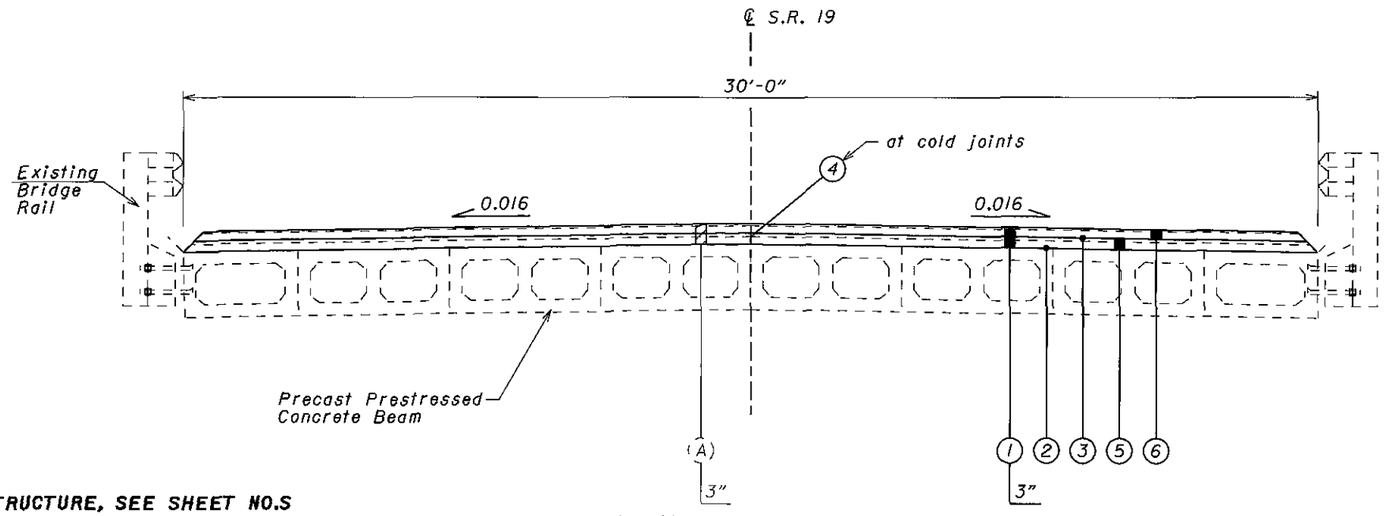


APPROACH SLAB - S.R. 19

Section Applies:

Sta. 808+51.00 to Sta. 808+76.00 = 25.00 Ft.
Sta. 809+13.17 to Sta. 809+38.17 = 25.00 Ft.
50.00 Ft.

Typical Section "E"



FOR WORK AT STRUCTURE, SEE SHEET NO.S

BRIDGE TYPICAL - SAN-19-1531

Section Applies To:

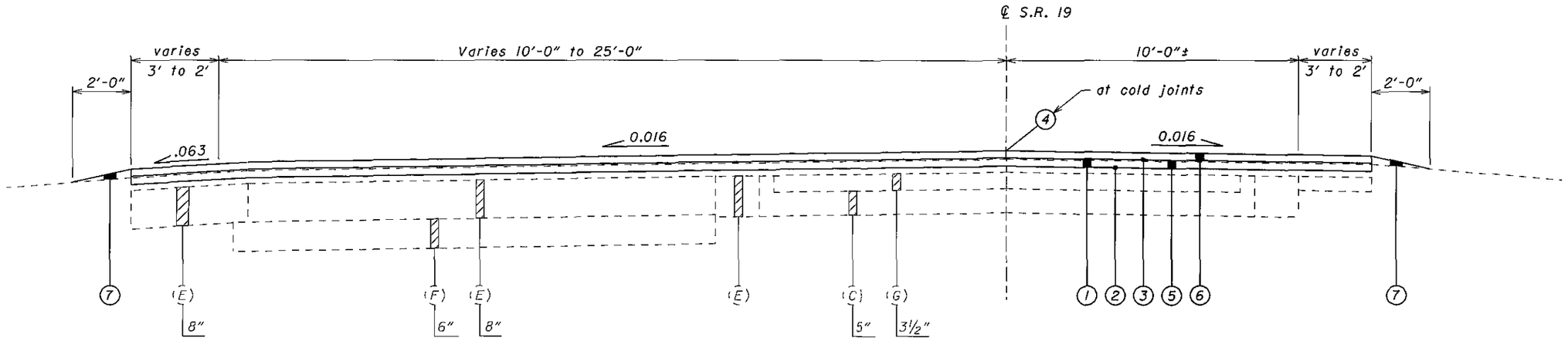
Sta. 808+76.00 to Sta. 809+13.17 = 37.17 Ft.

For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

TYPICAL SECTION "F"

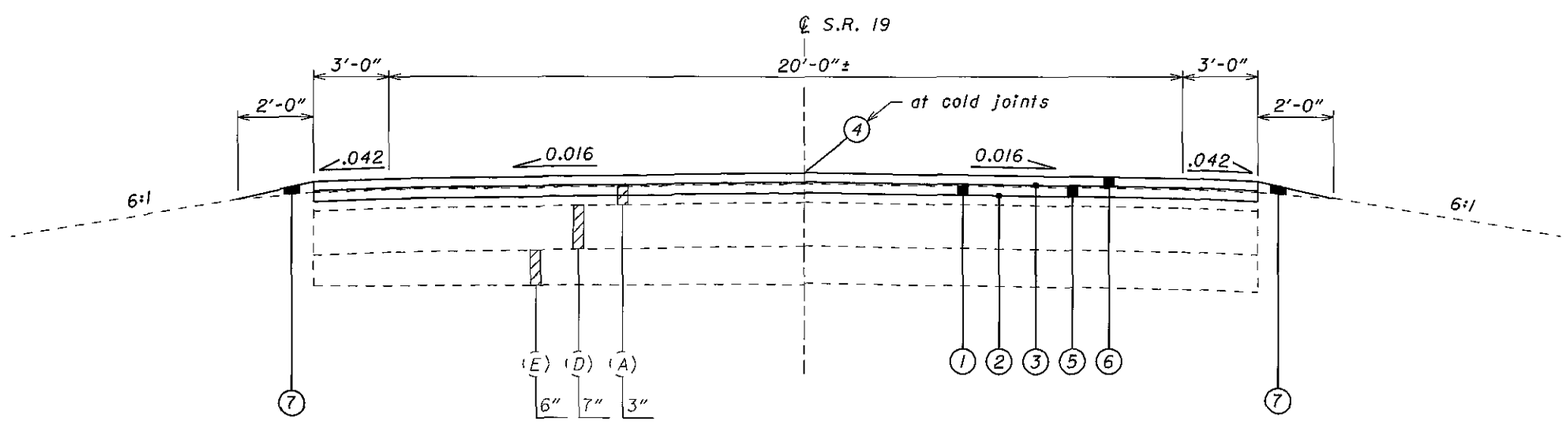


NORMAL SECTION - S.R. 19

Section Applies:

Sta. 820+59.00 to Sta. 855+09.00 = 3450.00 Ft.

TYPICAL SECTION "G"



NORMAL SECTION - S.R. 19

Section Applies:

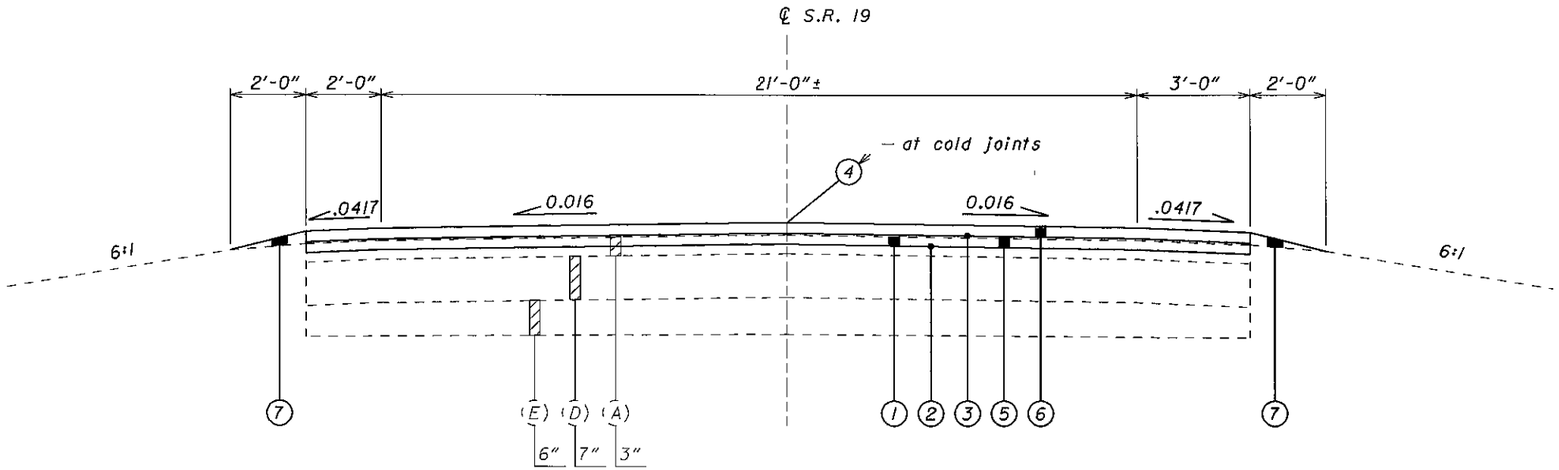
Sta. 867+53.00 to Sta. 867+77.00 = 24.00 Ft.

For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

TYPICAL SECTION "H"

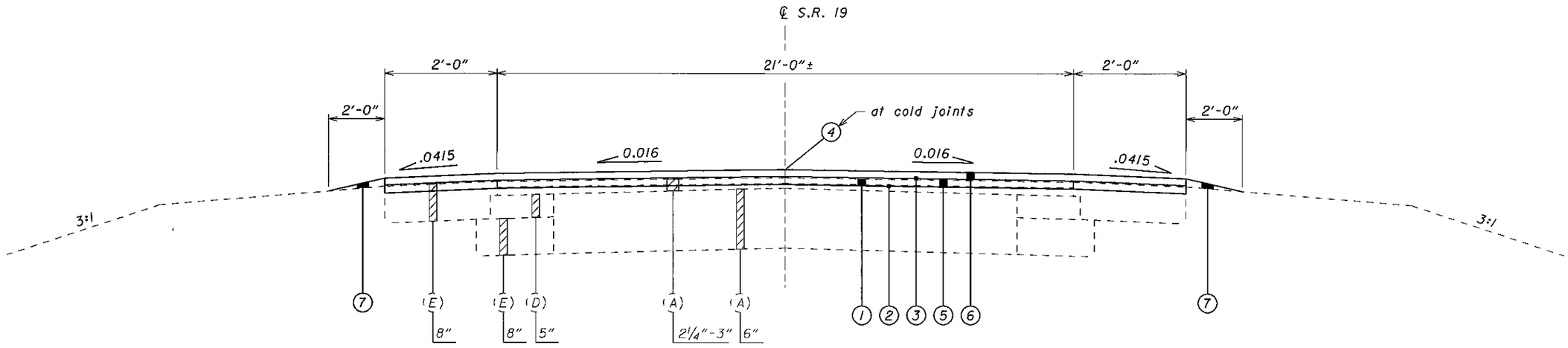


NORMAL SECTION - S.R. 19

Section Applies:

Sta. 885+32.50 to Sta. 885+63.50 = 31.00 Ft.

TYPICAL SECTION "I"



NORMAL SECTION - S.R. 19

Section Applies:

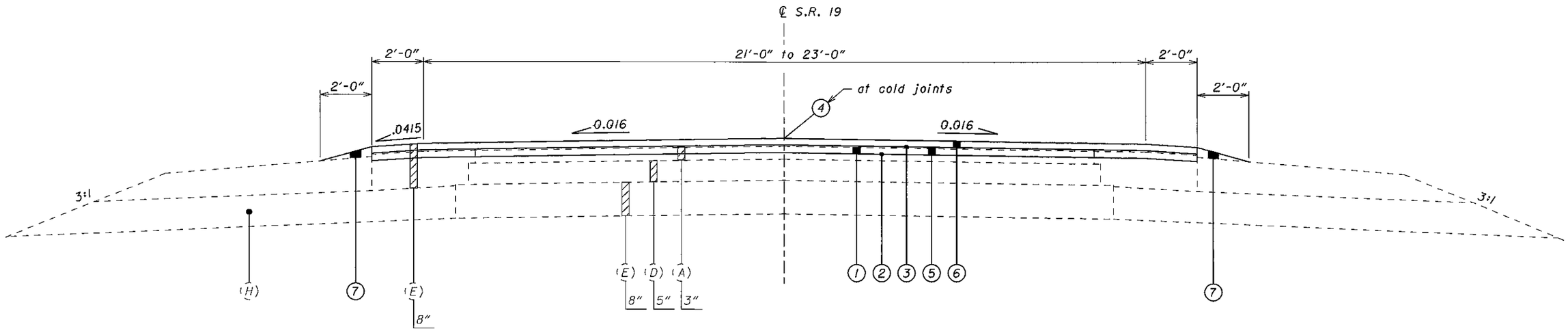
Sta. 900+62.59 to Sta. 901+62.59 = 100.00 Ft.
Sta. 908+62.59 to Sta. 909+62.59 = 100.00 Ft.
200.00 Ft.

For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

TYPICAL SECTION "J"

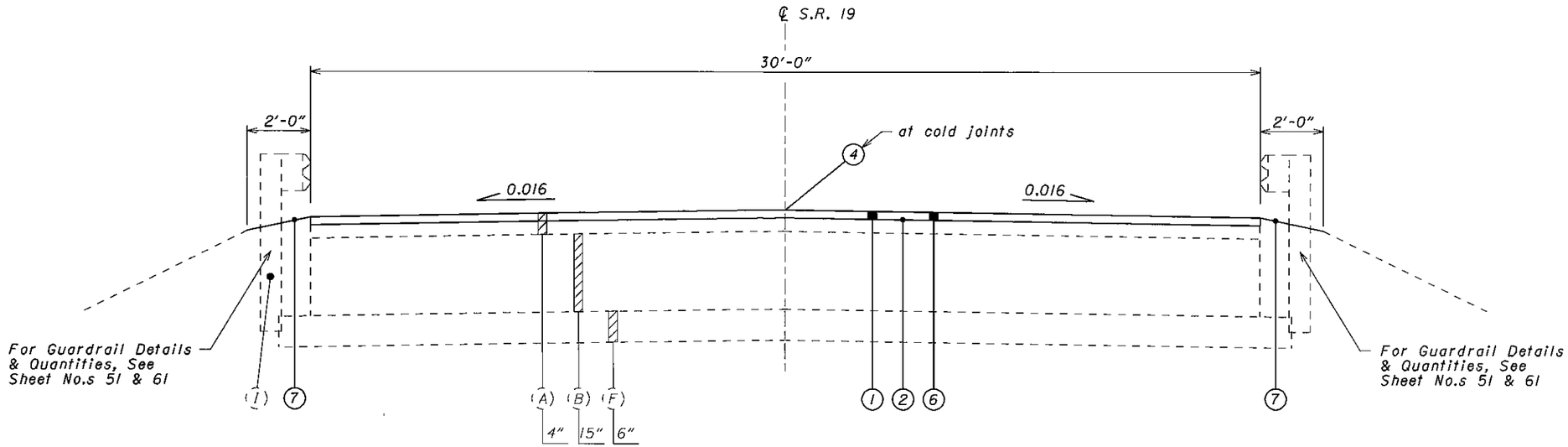


NORMAL SECTION - S.R. 19

Section Applies:

Sta. 901+62.59 to Sta. 905+35.00 = 272.41 Ft.
Sta. 907+06.10 to Sta. 908+62.59 = 256.49 Ft.
528.90 Ft.

TYPICAL SECTION "K"



APPROACH SLAB - S.R. 19

Section Applies:

Sta. 905+35.00 to Sta. 905+60.00 = 25.00 Ft.
Sta. 906+81.10 to Sta. 907+06.10 = 25.00 Ft.
50.00 Ft.

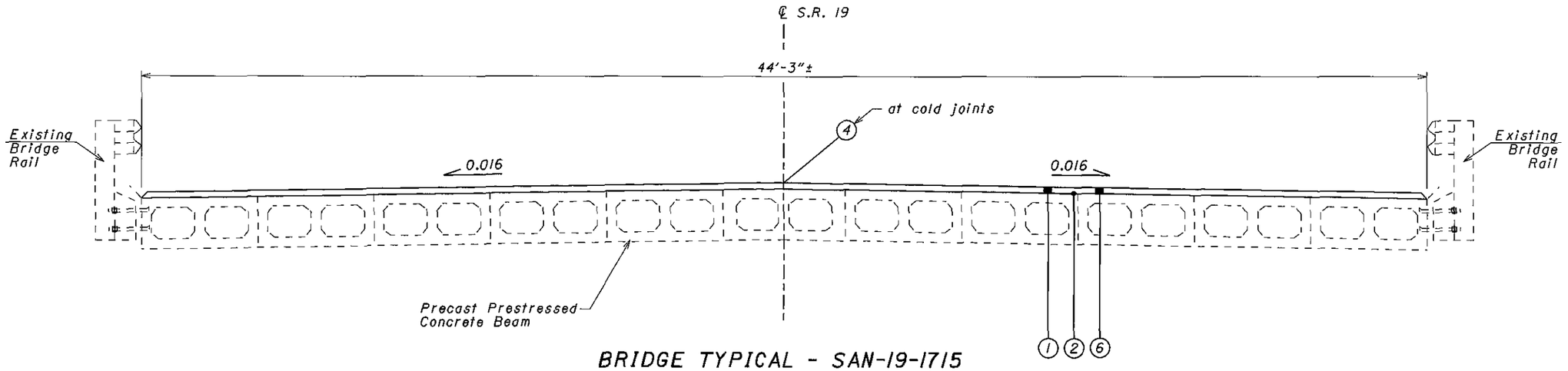
For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

34
98

Typical Section "L"



BRIDGE TYPICAL - SAN-19-1715

Section Applies To:

Sta. 904+60.00 to Sta. 905+81.10 = 121.10 Ft.

For Legend, See Sheet No. 29

TYPICAL SECTION - LOCATION 2

SEN-19-0.00
SAN-19-14.03

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

Columbia Gas of Ohio, Inc.
333 S. Erie Street
Toledo, OH 43602
(419) 252-8110

Sprint United Telephone
122 South Elizabeth Street
Lima, OH 45801
(419) 226-6120

SBC (formerly Ameritech)
130 N. Erie Street - Room 206
Toledo, OH 43624
(419) 245-7301

Verizon Wireless
26935 Northwest Highway Suite 100
Southfield, MI 48034
(248) 915-3560

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CONVERSION OF STANDARD CONSTRUCTION DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.02 OF THE 2002 CONSTRUCTION AND MATERIAL SPECIFICATIONS. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

PROFILE AND ALIGNMENT

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

PERMIT NOTIFICATION:

THE CONTRACTOR SHALL GIVE A 10 DAY NOTICE PRIOR TO ANY LANE RESTRICTION TO AVOID ANY CONFLICT OF PERMITTED LOADS DURING THIS CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 2
ATTENTION: JOHN TANSEY
317 EAST POE RD.
BOWLING GREEN, OHIO 43402

PAVEMENT DEFOLIATION NOTIFICATION

THE CONTRACTOR SHALL NOTIFY THE DISTRICT AT LEAST 14 DAYS PRIOR TO THE START DATE SO THAT THE ROADWAY CAN BE DEFOLIATED BEFORE WORK BEGINS. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 2
OFFICE OF SPECIAL PROJECTS
ATTENTION: LESTER CALCAMUGGIO
SECOND CONTACT: STEVE HAMILTON
317 EAST POE ROAD
BOWLING GREEN, OH 43402

PAVING AT RAILROADS: (LOCATION 2)

THE INTENT OF THIS PROJECT AT THE RAILROAD CROSSING IS TO GRIND AND PAVE CLOSE TO THE OUTER GRADE CROSSING MATERIAL (TIMBERS, RUBBER OR CONCRETE) AS DETERMINED BY THE ENGINEER AND BY THE LOCAL RAILROAD REPRESENTATIVE. NO WORK SHALL BE DONE TO THE CENTER AREA BETWEEN THE RAILS. THE CLOSEST PRACTICAL BUTT JOINT LOCATION ADJACENT TO THE CROSSING IS APPROXIMATELY 1 FOOT; HOWEVER, THE PLACEMENT OF THE BUTT JOINT CAN BE FURTHER FROM THE CROSSING DEPENDING ON THE PROFILE AND THE CONDITION OF THE EXISTING APPROACH PAVEMENTS.

LOCAL CONTACT PERSON:

NORFOLK SOUTHERN RAILROAD
MR. DON KRUPP, ROADMASTER
P.O. BOX 349 BUILDING 14
BELLEVUE, OHIO 44811

PHONE (419) 483-1136
CELL (260) 437-5154
FAX (419) 483-1123

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

KARST AREA IN NORTHWEST OHIO: SEN-19-0.00

THE UNDERLYING GEOLOGY OF THE PROJECT AREA IS A KARST REGION, WHICH IS HIGHLY SUSCEPTIBLE TO GROUND WATER CONTAMINATION. OHIO EPA HAS ESTABLISHED THIS ENTIRE KARST REGION AS A SOURCE WATER PROTECTION AREA TO PROTECT THE 15 PUBLIC WATER SYSTEMS WHICH USE GROUND WATER IN THE REGION AS THEIR DRINKING WATER SOURCE. IN ORDER TO MINIMIZE THE POTENTIAL TO CONTAMINATE GROUND WATER IN THIS SENSITIVE AREA, ALL PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL BE PERFORMED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUND WATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT THE TROY TOWNSHIP FIRE DEPARTMENT, BLOOMVILLE, OH 44818, (419) 884-1827 FOR CLEAN UP OF THE SPILL.

MITIGATING ENVIRONMENTAL IMPACTS - SEN/SAN-SR 19-0.00/14/.96

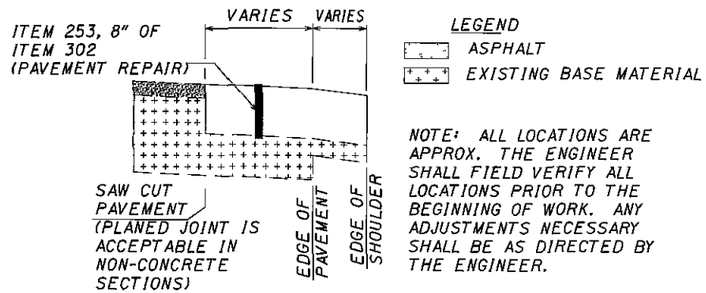
ANY UNAVOIDABLE CUTTING OF TREES WITH SUITABLE ROOSTING AND BROOD-REARING HABITAT FOR THE INDIANA BAT (LIVING OR STANDING DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES, OR CAVITIES) WILL BE PERFORMED ONLY BEFORE APRIL 15 OR AFTER SEPTEMBER 15 WHEN THE SPECIES WOULD NOT BE USING SUCH HABITAT.

ITEM 253, PAVEMENT REPAIR:

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED FOR 8" PAVEMENT REPAIR ON LOCATION 1 & 2 AS DIRECTED BY THE ENGINEER AND ARE BASED ON THE PERCENTAGE SHOWN AT EACH LOCATION:

LOCATION 1 - 5%	4940 SQ. YARDS
LOCATION 2 - 6%	3317 SQ. YARDS
	8257 SQ. YARDS

QUANTITIES CARRIED TO THE GENERAL SUMMARY



NOTE: ALL LOCATIONS ARE APPROX. THE ENGINEER SHALL FIELD VERIFY ALL LOCATIONS PRIOR TO THE BEGINNING OF WORK. ANY ADJUSTMENTS NECESSARY SHALL BE AS DIRECTED BY THE ENGINEER.

CALCULATED TLM
CHECKED JMF

GENERAL NOTES

SEN-19-0.00
SAN-19-14.03

ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE, AS PER PLAN

ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM TYPE A, AS PER PLAN AND ITEM 442, ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5MM, TYPE A, AS PER PLAN SHALL FOLLOW THE SPECIFICATIONS FOR THE 442 ITEM EXCEPT FOR SECTION 442.04 ASPHALT BINDER, THE BINDER SHALL BE PG70-22M FOR THE INTERMEDIATE COURSE.

ITEM SPECIAL - MAILBOX SUPPORT

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAIL-BOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4" BY 4" SQUARE OR 4 1/2" DIAMETER ROUND, AND CONFORM TO 710.14.
STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2" I.D., AND CONFORM TO AASHTO M 181.

HARDWARE (PLATES, SCREWS, BOLTS, ETC.) SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT, SINGLE.

ITEM 409 - SEALER, MISC.: LONGITUDINAL JOINT SEALER

409.01 DESCRIPTION

THE WORK SHALL CONSIST OF FURNISHING AND INSTALLING A HOT-APPLIED ASPHALTIC JOINT ADHESIVE/SEALER ON LONGITUDINAL COLD CONSTRUCTION JOINTS IN ASPHALT CONCRETE PAVEMENTS AS SHOWN IN THE PLANS IN ACCORDANCE WITH THESE SPECIAL PROVISIONS.

409.02 MATERIALS

MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS:

Characteristic	Test	Value
Brookfield Viscosity @ 400°F	ASTM D 3236	4000 - 10000 cp
Cone Penetration @ 77°F	ASTM D 5329	60 - 100
Flow @ 140°F	ASTM D 5329	5mm maximum
Resilience @ 77°F	ASTM D 5329	30% minimum
Ductility @ 77°F	ASTM D 113	30 cm minimum
Ductility @ 39.2°F	ASTM D 113	30 cm minimum
Tensile Adhesion @ 77°F	ASTM D 5329	500% minimum
Softening Point	ASTM D 36	170°F minimum
Asphalt Compatibility	ASTM D 5329	Pass

THE MATERIAL SHALL BE "CRAFCO PAVEMENT JOINT ADHESIVE, PRODUCT NO. 34524" OR APPROVED EQUAL.

409.03 INSTALLATION

INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

409.04 BASIS OF PAYMENT

WORK UNDER THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER POUND, FURNISHED AND PLACED. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PERFORM THE WORK, COMPLETE IN PLACE AND ACCEPTED.

PAYMENT SHALL BE MADE UNDER:
ITEM 409, SEALER, MISC.: LONGITUDINAL JOINT SEALER

LOCATION 1 = 35663 FT.
LOCATION 2 = 18582 FT.
54245 FT.

$$54245 \text{ FT.} \times \frac{1 \text{ LB.}}{3 \text{ FT.}} = 18081 \text{ LB.}$$

QUANTITIES WERE DETERMINED BY THE RATE 1 LB./3 FT.
QUANTITY CARRIED TO THE GENERAL SUMMARY.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS265M	ET-2000 (1997) PLAN, ELEVATION AND SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION AND SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION AND SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS AND HBA POSTS 1-4 PLAN, ELEVATION AND SECTION	5/22/00	7/31/00

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OHIO, 44224, (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18".

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND.

CALCULATED TLM CHECKED JMF

GENERAL NOTES

SEN-19-0.00
SAN-19-14.03

THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 209 - RESHAPING UNDER GUARDRAIL

GRADED SHOULDERS AT LOCATIONS WHERE EXISTING GUARDRAIL IS REMOVED, OR WHERE NEW GUARDRAIL IS TO BE ERECTED, SHALL BE RESHAPED AS DIRECTED BY THE ENGINEER TO INSURE A SMOOTH DRAINABLE SURFACE FREE OF ALL IRREGULARITIES. EXCESS EXCAVATION RESULTING FROM RESHAPING SHOULDERS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR RESHAPING GRADED SHOULDERS AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT PRICE PER STATION FOR ITEM 209, RESHAPING UNDER GUARDRAIL.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF PIPES UNDER ITEM 603 AND ITEM 604 DRAINAGE STRUCTURES.

THE ABOVE QUANTITIES ARE BASED ON THE TYPICAL SECTION SHOWN ON SHEET

ITEM 302, 10" ASPHALT CONCRETE BASE, PG64-22	10 CU. YD.
ITEM 304, 6" AGGREGATE BASE	6 CU. YD.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

CALCULATED TLM CHECKED JMF

GENERAL NOTES

SEN-19-0.00
SAN-19-14.03

38
98

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ITEM 614 - MAINTAINING TRAFFIC

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 12:00N MONDAY
MONDAY	12:00N FRIDAY THROUGH 12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH 12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 12:00N MONDAY
FRIDAY	12:00N THURSDAY THROUGH 12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH 12:00N MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07.

THE CONTRACTOR MAY CLOSE THE HIGHWAY TO TRAFFIC FOR THE REPLACEMENT OF CROSSOVER PIPES. THE CONTRACTOR WILL BE RESPONSIBLE FOR BARRICADES AND SIGNS AS PER 614.05. THE DEPARTMENT WILL BE RESPONSIBLE FOR THE DETOUR. THE CONTRACTOR SHALL SCHEDULE THE CLOSING SO THAT THEY DO NOT INTERFERE WITH OTHER CLOSURES. PRIOR TO CLOSING THE ROADWAY THE CONTRACTOR SHALL PROVIDE ADVANCE WRITTEN NOTICE TO THE ENGINEER 5 WORKING DAYS BEFORE THE CLOSURE. ALL CLOSURES SHALL BE APPROVED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM BID FOR THE PAVEMENT RESURFACING ON THIS SHEET. THE PERMITTED LENGTH OF TIME THE ROADWAY CAN BE CLOSED FOR EACH OCCURRENCE IS 5 CONSECUTIVE DAYS.

S.R. 19 - CULVERT SEN-19-0.85
S.R. 19 - CULVERT SEN-19-1.03
S.R. 19 - CULVERT SEN-19-1.23
S.R. 19 - CULVERT SEN-19-2.76
S.R. 19 - BRIDGE NO. SEN-19-0197

THE PERMITTED LENGTH OF TIME THE ROADWAY CAN BE CLOSED FOR THE FOLLOWING CULVERT IS 3 CONSECUTIVE DAYS.

S.R. 19 - CULVERT SEN-19-5.29

AFTER THE ABOVE TIME LIMITS, LIQUIDATED DAMAGES WILL BE ACCESSED AS PER 108.07.01.

DETOUR SHALL BE DESIGNATED AS S.R. 100 TO S.R. 67 TO U.S. 224

PLANED SURFACES

NO PLANED SURFACES SHALL BE OPEN TO THE PUBLIC FOR MORE THAN 5 DAYS.

PLACEMENT OF ASPHALT CONCRETE

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 50 M. GAL

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS 614.04 AND 614.11.

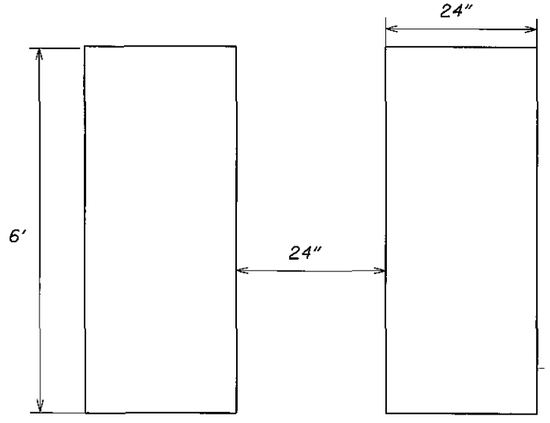
LOCATION 1 - SR 19
ITEM 614 WORK ZONE MARKING SIGN 19 EACH
ITEM 614 WORK ZONE CENTER LINE, CLASS II, 642 PAINT 18.12 MILE

LOCATION 2 - SR 19
ITEM 614 WORK ZONE MARKING SIGN 12 EACH
ITEM 614 WORK ZONE CENTER LINE, CLASS II, 642 PAINT 29.70 MILE

QUANTITIES CARRIED TO GENERAL SUMMARY.

CROSSWALK LINE, AS PER PLAN

24" WHITE LONGITUDINAL LINES SHALL BE PLACED PARALLEL TO TRAFFIC FLOW AS SHOWN IN FOLLOWING DETAIL. THE MARKING DESIGN SHOULD AVOID THE WHEEL PATHS.



ITEM 614 - REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL TO THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER SQUARE FEET FOR ITEM SPECIAL, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 50 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614 - REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM SPECIAL, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 5 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

CALCULATED TLM CHECKED JMF

MAINTENANCE OF TRAFFIC NOTES

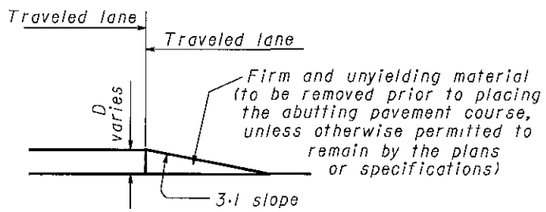
SEN-19-0.00
SAN-19-14.03

GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for Item 614 - Maintaining Traffic.
2. While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
5. Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC-9.2 and Item 622.
6. When drums are specified for a dropoff condition, a minimum number of four drums shall be used Spacing shall be as indicated in the plans or as specified in the OMUTCD
7. When OW-15I (Low Shoulder) signs or OW-17I (Uneven Lanes) and OWP-17I signs are required, they shall be placed 750' in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition When the dropoff condition extends more than one-half mile, additional signs should be erected at intervals of one mile or less.
8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" and approval is granted by the Project Engineer.
10. Pavement Repairs (or similar work):
    a. Lengths greater than 60 feet - utilize appropriate treatment from Condition I.
    b. Lengths of 60 feet or less - repairs shall be effected in accordance with 255.08. Drums may be used as a separator adjacent to the traveled lane

OPTIONAL WEDGE TREATMENT
(MILLING OR RESURFACING)

1. This treatment may be used when permitted for Condition I only
2. OW-17I and OWP-17I signs required.

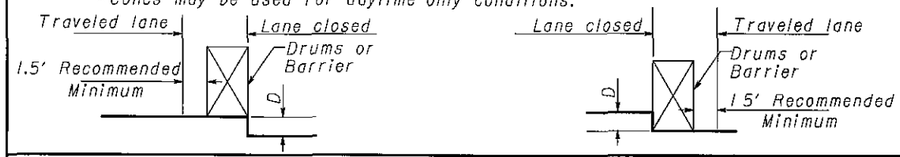


CONDITION I
DROPOFFS BETWEEN TRAVELED LANES

1 These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D (In.)	Treatment
≤1½	Erect OW-17I and OWP-17I signs.
>1½-3	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
>3-5	Lane closure utilizing drums as shown below.
>5	Lane closure utilizing portable concrete barrier as shown below.

*Cones may be used for daytime only conditions.

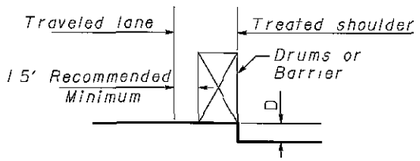


CONDITION II
DROPOFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concrete) For the purposes herein, its maximum width shall be considered to be twelve (12) feet.

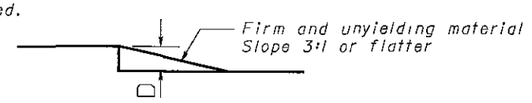
D (In.)	Treatment
≤1½	1) If edgelines are present, no treatment necessary OR 2) Erect OW-17I and OWP-17I signs.
>1½-5	1) If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
>5-12 Daylight only	If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below
>5-24	1) If min. lane width* requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums.
>24	Lane closure utilizing portable concrete barrier as shown below.

*Minimum lane widths shall be 10' unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

1. This treatment may not be used within a bituminous shoulder where a hot longitudnal joint per 401.15 is required.
2. OW-15I signs required.

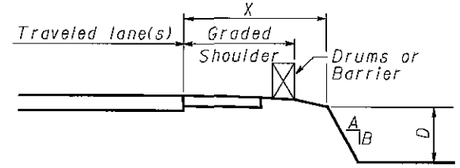


CONDITION III
DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. See Note 2 under Condition II.
2. Use Chart A or B below, as applicable.

CHART A

USE FOR: 1. Uncurbed Facilities.
2. Curbed Facilities, where:
   a Curbs are less than 6" in height.
   b. Curbs are 6" or greater in height and the legal speed is greater than 40 mph

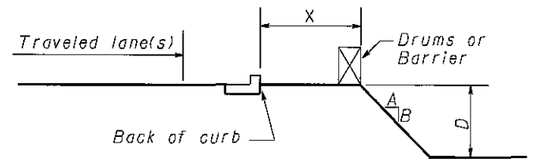


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	≤3	Steeper than 3:1	None	None
4-12	>3-≤12	Steeper than 3:1	Drums	Drums
4-12	>12	Steeper than 3:1	Drums	Barrier
>12-20	≤12	Steeper than 3:1	None	None
>12-20	>12-≤24	Steeper than 3:1	Drums	Drums
>12-20	>24	Steeper than 3:1	Drums	Barrier
>20-30	≤24	Steeper than 3:1	None	Drums
>20-30	>24	Steeper than 3:1	Drums	Barrier
>30	Any	Any	None	None

(a) Use treatment specified under Condition II.

CHART B

USE FOR: Curbed facilities, where the curb is 6" or greater in height and the legal speed is 40 mph or less.



X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-10	<12	Any	None	Drums
0-10	>12	Any	Drums	Drums
>10	Any	Any	None	None

DESIGN AGENCY
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN

PLAN INSERT SHEET
DROPOFFS IN WORK ZONES

SEN-19-0.00
SAN-19-14.03

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
				44	45	50	51	52	90	92						
															ROADWAY	
											201	11000	LUMP		CLEARING AND GRUBBING	
								3			202	20010	3	EACH	HEADWALL REMOVED	
				2325	1257					316	202	23500	3898	SQ YD	WEARING COURSE REMOVED	
						1885					202	30000	1885	SQ FT	WALK REMOVED	
						254					202	32000	254	FT	CURB REMOVED	
								235			202	35100	235	FT	PIPE REMOVED, 24" AND UNDER	
								45			202	35200	45	FT	PIPE REMOVED, OVER 24"	
							4812.5				202	38000	4812.5	FT	GUARDRAIL REMOVED	
							425				202	38500	425	FT	BRIDGE RAILING REMOVED	
							2				202	53100	2	EACH	MAILBOX REMOVED	
									606		202	54000	606	EACH	RPM REMOVED	
								8			202	58100	8	EACH	CATCH BASIN REMOVED	
							100	16			203	20000	116	CU YD	EMBANKMENT	
							67				209	15000	67	STATION	RESHAPING UNDER GUARDRAIL	
							1012.5				606	13000	1012.5	FT	GUARDRAIL, TYPE 5	
							4650				606	13030	4650	FT	GUARDRAIL, TYPE 5, USING 9 FOOT POSTS	
							25				606	17290	25	FT	GUARDRAIL, TYPE 5, LONG-SPAN	
							2				606	20000	2	EACH	FLARED END SECTION	
							13				606	22010	13	EACH	ANCHOR ASSEMBLY, TYPE E-98	
							2				606	25000	2	EACH	ANCHOR ASSEMBLY, TYPE A	
							15				606	26500	15	EACH	ANCHOR ASSEMBLY, TYPE T	
							12				606	35140	12	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
						1867					608	10000	1867	SQ FT	4" CONCRETE WALK	
						15					608	49001	15	EACH	CURB RAMP, AS PER PLAN, DESIGN A	
						3					608	49001	3	EACH	CURB RAMP, AS PER PLAN, DESIGN F	
						14					608	49001	14	EACH	CURB RAMP, AS PER PLAN, FLUSH	
						273					609	26000	273	FT	CURB, TYPE 6	
							2				SPECIAL	69050100	2	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	37
															EROSION CONTROL	
								6			601	32104	6	CU YD	ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER	
							100				601	34200	100	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
							2196	351			659	10000	2547	SQ YD	SEEDING AND MULCHING	
							0.30				659	20000	0.30	TON	COMMERCIAL FERTILIZER	
							12				659	35000	12	M GAL	WATER	
											832	10000	1	EACH	STORM WATER POLLUTION PREVENTION PLAN	
											832	30000	5000	EACH	EROSION CONTROL	

CALCULATED TLM CHECKED JMF

GENERAL SUMMARY

SEN-19-0.00
SAN-19-14.03

SHEET NUMBER												ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
36	37	38	44	45	49	51	52	74	75	90	92						
																DRAINAGE	
							17.31					602	20000	17.31	CU YD	CONCRETE MASONRY	
							5					603	01100	5	FT	6" CONDUIT, TYPE C	
							33					603	02000	33	FT	8" CONDUIT, TYPE C	
							14					603	03300	14	FT	10" CONDUIT, TYPE C	
							72					603	04400	72	FT	12" CONDUIT, TYPE B, 706.02	
							15					603	04600	15	FT	12" CONDUIT, TYPE C	
							10					603	06100	10	FT	15" CONDUIT, TYPE C	
							52					603	07400	52	FT	18" CONDUIT, TYPE B, 706.02	
							51					603	08900	51	FT	21" CONDUIT, TYPE B, 706.02	
							5					603	10400	5	FT	24" CONDUIT, TYPE B, 706.02	
							45					603	20900	45	FT	48" CONDUIT, TYPE B, 706.02	
							8					604	04900	8	EACH	CATCH BASIN, NO. 2-3	
					4							604	09000	4	EACH	CATCH BASIN ADJUSTED TO GRADE	
							1					604	31500	1	EACH	MANHOLE, NO. 3	
																PAVEMENT	
8257												253	01000	8257	SQ YD	PAVEMENT REPAIR	
			82093	54936								254	01000	137029	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, 1½"	
			11260									254	01000	11260	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, 2¼"	
				296								254	01000	296	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, 3"	
		10										302	46000	10	CU YD	ASPHALT CONCRETE BASE, PG64-22, 10"	
		6										304	20000	6	CU YD	AGGREGATE BASE, 6"	
			7176	4237							14	407	10000	11413	GALLON	TACK COAT	
											11	407	13901	11	GALLON	TACK COAT, 702.13, AS PER PLAN	93
			3827	2226							13	407	14000	6066	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
	18081											409	98010	18081	POUND	SEALER, MISC.: LONGITUDINAL JOINT SEALER	37
			3986	2354							14	442	10500	6354	CU YD	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (448)	
			247									442	20101	247	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5 MM, TYPE A (448), PG70-22M, APP	37
			4076	2705							16	442	20201	6797	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448), PG70-22M, APP	37
			646	386								617	10100	1032	CU YD	COMPACTED AGGREGATE	
																TRAFFIC CONTROL	
									614			621	00100	614	EACH	RPM	
						92						626	00300	92	EACH	BARRIER REFLECTOR, TYPE A2	
								12				630	03100	12	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
								2.0				630	80100	2.0	SQ FT	SIGN, FLAT SHEET	
							18.31					642	00090	18.31	MILE	EDGE LINE	
							9.96					642	00290	9.96	MILE	CENTER LINE	
							191					644	00400	191	FT	CHANNELIZING LINE	
							65					644	00500	65	FT	STOP LINE	
							696					644	00601	696	FT	CROSSWALK LINE, AS PER PLAN	
							185					644	00700	185	FT	TRANSVERSE LINE/DIAGONAL LINE	
							197					644	00800	197	FT	CURB MARKING	
							1					644	01000	2	EACH	RAILROAD SYMBOL MARKING	
							2					644	01100	2	EACH	SCHOOL SYMBOL MARKING, 72"	
							2					644	01200	750	FT	PARKING LOT STALL MARKING	
							750					644	01300	6	EACH	LANE ARROW	
							6					644	01410	2	EACH	WORD ON PAVEMENT, 96"	
							2					644	01600	1	EACH	HANDICAP SYMBOL MARKING	

CALCULATED TLM
CHECKED JMF

GENERAL SUMMARY

SEN-19-0.00
SAN-19-14.03

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								39	51	52						
															STRUCTURES	
											503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
											503	21300	LUMP		UNCLASSIFIED EXCAVATION	
									425		517	72300	425	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2	
															STEEL POSTS AND ANCHOR BOLTS)	
										17	512	10100	17	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
															FOR STRUCTURE QUANTITIES, SEE SHEET NO.S 92	
															MAINTENANCE OF TRAFFIC	
								31			614	12460	31	EACH	WORK ZONE MARKING SIGN	
								50			614	12510	50	EACH	REPLACEMENT SIGN	
								5			614	12600	5	EACH	REPLACEMENT DRUM	
								47.82			614	21500	47.82	MILE	WORK ZONE CENTER LINE, CLASS II, 642 PAINT	
								50			616	10000	50	M GAL	WATER	
											SPECIAL	10810000	LUMP		CPM PROGRESS SCHEDULE	
											614	11000	LUMP		MAINTAINING TRAFFIC	
											623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
											624	10000	LUMP		MOBILIZATION	

CALCULATED TLM
CHECKED JMF

GENERAL SUMMARY

SEN-19-0.00
SAN-19-14.03

LOCATION	ROUTE	SIDE	STATION FROM	STATION TO	TYPICAL SECTION	LENGTH	AVERAGE WIDTH	SURFACE AREA	202 WEARING COURSE REMOVED	254 PAVEMENT PLANING, ASPHALT CONRETE, 1 1/2"	254 PAVEMENT PLANING, ASPHALT CONRETE, 2 1/4"	407 TACK COAT	407 TACK COAT FOR INTERMEDIATE COURSE	442 ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), PG70-22M		442 ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5MM, TYPE A (448), PG70-22M, APP		442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), PG70-22M, APP		617 COMPACTED AGGREGATE, TYPE A	
								SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	GAL.	GAL.	IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.
1	S.R. 19	Rt. & Lt.	0+00.00	0+44.00	A	44.0	20.4	99.7	99.7			7.5	4.0	1.50	4.2			1.75	4.8		
1	S.R. 19	Rt. & Lt.	0+44.00	53+26.00	A	5282.0	20.9 avg.	12266.0		12266.0		919.9	490.6	1.50	511.1			1.75	596.3		
1	S.R. 19	Rt. & Lt.	53+26.00	103+38.73	A	5012.7	20.9 avg.	11640.7		11640.7		873.1	465.6	1.50	485.0			1.75	565.9		
1	S.R. 19	Rt. & Lt.	103+38.73	103+70.00	B	31.3	19.5 avg.	67.8		67.8		5.1	2.7	1.50	2.8			1.75	3.3		
1	S.R. 19	Rt. & Lt.	103+70.00	103+74.00	C	4.0	19.5 avg.	8.7		8.7		0.7	0.3	1.50	0.4			1.75	0.4		
1	S.R. 19	Rt. & Lt.	103+74.00	103+99.00	D	25.0															
1	S.R. 19	Rt. & Lt.	103+99.00	104+37.66	E	38.7															
1	S.R. 19	Rt. & Lt.	104+37.66	104+62.66	D	25.0															
1	S.R. 19	Rt. & Lt.	104+62.66	104+66.66	C	4.0	19.5 avg.	8.7		8.7		0.7	0.3	1.50	0.4			1.75	0.4		
1	S.R. 19	Rt. & Lt.	104+66.66	104+98.73	B	32.1	19.5 avg.	69.5		69.5		5.2	2.8	1.50	2.9			1.75	3.4		
1	S.R. 19	Rt. & Lt.	104+98.73	187+61.00	A	8262.3	19.7 avg.	18085.2		18085.2		1356.4	723.4	1.50	753.5			1.75	879.1		
1	S.R. 19	Rt. & Lt.	187+61.00	197+98.00	F	1037.0	20.3 avg.	2339.0		2339.0		175.4	93.6	1.50	97.5			1.75	113.7		
1	S.R. 19	Rt. & Lt.	197+98.00	199+75.00	G	177.0	40.0 avg.	786.7			786.7	59.0	31.5	1.50	32.8	0.75	16.4				
1	S.R. 19	Rt. & Lt.	199+75.00	201+40.00	G	165.0	21.8 avg.	399.7			399.7	30.0	16.0	1.50	16.7	0.75	8.3				
1	S.R. 19	Rt. & Lt.	201+40.00	202+62.00	G	122.0	23.0 avg.	311.8			311.8	23.4	12.5	1.50	13.0	0.75	6.5				
1	S.R. 19	Rt. & Lt.	202+62.00	207+74.00	H	512.0	40.3 avg.	2292.6			2292.6	171.9	91.7	1.50	95.5	0.75	47.8				
1	S.R. 19	Rt. & Lt.	207+74.00	214+59.00	I	685.0	44.0 avg.	3348.9			3348.9	251.2	134.0	1.50	139.5	0.75	69.8				
1	S.R. 19	Rt. & Lt.	214+59.00	217+59.00	J	300.0	40.0 avg.	1333.3			1333.3	100.0	53.3	1.50	55.6	0.75	27.8				
1	S.R. 19	Rt. & Lt.	217+59.00	218+79.00	H	120.0	40.0 avg.	533.3			533.3	40.0	21.3	1.50	22.2	0.75	11.1				
1	S.R. 19	Rt. & Lt.	218+79.00	220+65.00	K	186.0	45.5 avg.	940.3			940.3	70.5	37.6	1.50	39.2	0.75	19.6				
1	S.R. 19	Rt. & Lt.	220+65.00	223+71.00	L	306.0	30.0 avg.	1020.0			1020.0	76.5	40.8	1.50	42.5	0.75	21.3				
1	S.R. 19	Rt. & Lt.	223+71.00	228+70.00	M	499.0	19.5 avg.	1081.2		1081.2		81.1	43.2	1.50	45.0			1.75	52.6		
1	S.R. 19	Rt. & Lt.	228+70.00	231+30.00	N	260.0	19.6 avg.	566.2		566.2		42.5	22.6	1.50	23.6			1.75	27.5		
1	S.R. 19	Rt. & Lt.	231+30.00	257+16.92	M	2586.9	19.6 avg.	5633.7		5633.7		422.5	225.3	1.50	234.7			1.75	273.9		
1	S.R. 19	Rt. & Lt.	257+16.92	258+36.92	O	120.0	20.0 avg.	266.7		266.7		20.0	10.7	1.50	11.1			1.75	13.0		
1	S.R. 19	Rt. & Lt.	258+36.92	258+65.50	P	28.6	20.0 avg.	63.5		63.5		4.8	2.5	1.50	2.6			1.75	3.1		
1	S.R. 19	Rt. & Lt.	258+65.50	259+10.00	P	44.5	20.0 avg.	98.9	98.9			7.4	4.0	1.50	4.1			1.75	4.8		
1	S.R. 19	Rt. & Lt.	259+10.00	259+91.84	Q																
1	S.R. 19	Rt. & Lt.	259+91.84	260+36.25	P	44.4	20.0 avg.	98.7	98.7			7.4	3.9	1.50	4.1			1.75	4.8		
1	S.R. 19	Rt. & Lt.	260+36.25	261+91.92	P	155.7	20.0 avg.	345.9		345.9		25.9	13.8	1.50	14.4			1.75	16.8		
1	S.R. 19	Rt. & Lt.	261+91.92	262+91.92	O	100.0	20.1 avg.	223.3		223.3		16.8	8.9	1.50	9.3			1.75	10.9		
1	S.R. 19	Rt. & Lt.	262+91.92	319+75.25	M	5683.3	21.0 avg.	13261.1		13261.1		994.6	530.4	1.50	552.5			1.75	644.6		
1	S.R. 19	Rt. & Lt.	319+75.25	320+19.00	M	43.8	30.1 avg.	146.3	146.3			11.0	5.9	1.50	6.1			1.75	7.1		
LOCATION 1 PAVEMENT TOTALS									443.6	65927.2	10966.6	5800.5	3093.2		3222.3		228.6		3226.4		
LOCATION 1 SHOULDER TOTALS FROM SHEET NO. 46									98.2	16166.0	293.7	1242.1	662.5		689.8		6.1		790.6		645.6
EXTRA AREA AND DEDUCTIONS CARRIED FROM SHEET NO. 48									1783.0			133.8	71.3		74.3		12.0		58.6		
LOCATION 1 TOTALS CARRIED TO GENERAL SUMMARY									2325	82093	11260	7176	3827		3986		247		4076		646

* Computer Calculated Value

CALCULATED TLM
CHECKED JMF

PAVEMENT CALCULATIONS - LOCATION 1

SEN-19-0.00
SAN-19-14.03

LOCATION	ROUTE	SIDE	STATION FROM	STATION TO	TYPICAL SECTION	LENGTH	AVERAGE WIDTH	SURFACE AREA	202 WEARING COURSE REMOVED	254 PAVEMENT PLANING, ASPHALT CONRETE, 1 1/2"	254 PAVEMENT PLANING, ASPHALT CONRETE, 3"		407 TACK COAT	407 TACK COAT FOR INTERMEDIATE COURSE		442 ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), PG70-22M		442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), PG70-22M. APP			617 COMPACTED AGGREGATE, TYPE A		
								SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.		GAL.	GAL.		IN.	CU. YD.	IN.	CU. YD.		IN.	CU. YD.	
2	SR 19	Rt. & Lt.	740+87.00	741+31.00	A	44.0	19.8 avg.	96.8	96.8				7.3	3.9		1.50	4.0	1.75	4.7				
2	SR 19	Rt. & Lt.	741+31.00	751+92.25	A	1061.3	19.7 avg.	2323.0		2323.0			174.2	92.9		1.50	96.8	1.75	112.9				
2	SR 19	Rt. & Lt.	751+92.25	752+36.00	A	43.8	19.5 avg.	94.8	94.8				7.1	3.8		1.50	3.9	1.75	4.6				
2	SR 19	Rt. & Lt.	753+51.00	753+94.75	A	43.8	19.5 avg.	94.8	94.8				7.1	3.8		1.50	3.9	1.75	4.6				
2	SR 19	Rt. & Lt.	753+94.75	807+94.58	A	5399.8	19.6 avg.	11759.6		11759.6			882.0	470.4		1.50	490.0	1.75	571.6				
2	SR 19	Rt. & Lt.	807+94.58	808+47.00	B	52.4	20.5 avg.	119.4		119.4			9.0	4.8		1.50	5.0	1.75	5.8				
2	SR 19	Rt. & Lt.	808+47.00	808+51.00	C	4.0	20.5 avg.	9.1		9.1			0.7	0.4		1.50	0.4	1.75	0.4				
2	SR 19	Rt. & Lt.	808+51.00	808+76.00	D	25.0	30.0 avg.	83.3			83.3		6.3	3.3		1.50	3.5	1.75	4.1				
2	SR 19	Rt. & Lt.	808+76.00	809+13.17	E	37.2	30.0 avg.	123.9			123.9		9.3	5.0		1.50	5.2	1.75	6.0				
2	SR 19	Rt. & Lt.	809+13.17	809+38.17	D	25.0	30.0 avg.	83.3			83.3		6.3	3.3		1.50	3.5	1.75	4.1				
2	SR 19	Rt. & Lt.	809+38.17	809+42.17	C	4.0	20.5 avg.	9.1		9.1			0.7	0.4		1.50	0.4	1.75	0.4				
2	SR 19	Rt. & Lt.	809+42.17	809+94.58	B	52.4	20.5 avg.	119.4		119.4			9.0	4.8		1.50	5.0	1.75	5.8				
2	SR 19	Rt. & Lt.	809+94.58	820+59.00	A	1064.4	20.5 avg.	2424.5		2424.5			181.8	97.0		1.50	101.0	1.75	117.9				
2	SR 19	Rt. & Lt.	820+59.00	842+49.00	F	2190.0	27.0 avg.	6570.0		6570.0			492.8	262.8		1.50	273.8	1.75	319.4				
2	SR 19	Rt. & Lt.	842+49.00	847+28.00	F	479.0	34.0 avg.	1809.6		1809.6			135.7	72.4		1.50	75.4	1.75	88.0				
2	SR 19	Rt. & Lt.	847+28.00	855+09.00	F	781.0	27.0 avg.	2343.0		2343.0			175.7	93.7		1.50	97.6	1.75	113.9				
2	SR 19	Rt. & Lt.	855+09.00	867+53.00	A	1244.0	21.4 avg.	2958.0		2958.0			221.8	118.3		1.50	123.2	1.75	143.8				
2	SR 19	Rt. & Lt.	867+53.00	867+77.00	G	24.0	21.1 avg.	56.3		56.3			4.2	2.3		1.50	2.3	1.75	2.7				
2	SR 19	Rt. & Lt.	867+77.00	885+32.50	A	1755.5	22.0 avg.	4291.2		4291.2			321.8	171.6		1.50	178.8	1.75	208.6				
2	SR 19	Rt. & Lt.	885+32.50	885+63.50	H	31.0	21.8 avg.	75.1		75.1			5.6	3.0		1.50	3.1	1.75	3.7				
2	SR 19	Rt. & Lt.	885+63.50	900+62.59	A	1499.1	21.4 avg.	3564.5		3564.5			267.3	142.6		1.50	148.5	1.75	173.3				
2	SR 19	Rt. & Lt.	900+62.59	901+62.59	I	100.0	21.4 avg.	237.8		237.8			17.8	9.5		1.50	9.9	1.75	11.6				
2	SR 19	Rt. & Lt.	901+62.59	905+35.00	J	372.4	21.4 avg.	885.5		885.5			66.4	35.4		1.50	36.9	1.75	43.0				
2	SR 19	Rt. & Lt.	905+35.00	905+60.00	K	25.0	44.8 avg.	124.4		124.4			9.3			1.50	5.2						
2	SR 19	Rt. & Lt.	905+60.00	906+81.10	L	121.1	44.8 avg.	602.8		602.8			45.2			1.50	25.1						
2	SR 19	Rt. & Lt.	906+81.10	907+06.10	K	25.0	44.8 avg.	124.4		124.4			9.3			1.50	5.2						
2	SR 19	Rt. & Lt.	907+06.10	908+62.59	J	156.5	22.8 avg.	396.4		396.4			29.7	15.9		1.50	16.5	1.75	19.3				
2	SR 19	Rt. & Lt.	908+62.59	909+62.59	I	100.0	22.3 avg.	247.8		247.8			18.6	9.9		1.50	10.3	1.75	12.0				
2	SR 19	Rt. & Lt.	909+62.59	923+05.25	A	1342.7	21.5 avg.	3207.5		3207.5			240.6	128.3		1.50	133.6	1.75	155.9				
2	SR 19	Rt. & Lt.	923+05.25	923+49.00	A			168.0 *	168.0				12.6	6.7		1.50	7.0	1.75	8.2				
LOCATION 2 PAVEMENT TOTALS									454.4	44258.4	290.5		3375.2	1766.2		1875.0		2146.3				
LOCATION 2 SHOULDER TOTALS FROM SHEET NO. 47									107.1	10244.5	5.4		776.8	414.6		431.7		503.4			386.4	
EXTRA AREA AND DEDUCTIONS CARRIED FROM SHEET NO. 48									695.0	432.6			84.6	45.1		46.9		54.9				
LOCATION 2 TOTALS CARRIED TO GENERAL SUMMARY									1257	54936	296		4237	2226		2354		2705			386	

* Computer Calculated Value

CALCULATED TLM
CHECKED JMF

PAVEMENT CALCULATIONS - LOCATION 2

SEN-19-0.00
SAN-19-14.03

45
98

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LOCATION	ROUTE	SIDE	STATION TO STATION		TYPICAL SECTION	LENGTH	WIDTH		SHOULDER AREA	202	254		407		442						617	
							LEFT	RIGHT		WEARING COURSE REMOVED	PAVEMENT PLANING, ASPHALT CONRETE, 1 1/2"	PAVEMENT PLANING, ASPHALT CONRETE, 2 1/4"	TACK COAT	TACK COAT FOR INTERMEDIATE COURSE	ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), PG70-22M		ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5MM, TYPE A (448), PG70-22M, APP		ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), PG70-22M, APP		COMPACTED AGGREGATE, TYPE A	
						LIN. FT.	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	GAL.	GAL.	IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.
1	S.R. 19	Rt. & Lt.	0+00.00	0+44.00	A	44.0	2.5 avg.	2.5 avg.	24.4	24.4			1.8	1.0	1.50	1.0			1.75	1.2	1.75	1.0
1	S.R. 19	Rt. & Lt.	0+44.00	53+26.00	A	5282.0	2.5 avg.	2.5 avg.	2934.4		2934.4		220.1	117.4	1.50	122.3			1.75	142.6	1.75	114.1
1	S.R. 19	Rt. & Lt.	53+26.00	103+38.73	A	5012.7	2.5 avg.	2.5 avg.	2784.9		2784.9		208.9	111.4	1.50	116.0			1.75	135.4	1.75	108.3
1	S.R. 19	Rt. & Lt.	103+38.73	103+70.00	B	31.3	2.5 avg.	2.5 avg.	17.4		17.4		1.3	0.7	1.50	0.7			1.75	0.8	1.75	0.7
1	S.R. 19	Rt. & Lt.	103+70.00	103+74.00	C	4.0	2.5 avg.	2.5 avg.	2.2		2.2		0.2	0.1	1.50	0.1			1.75	0.1	1.75	0.1
1	S.R. 19	Rt. & Lt.	103+74.00	103+99.00	D																1.75	0.1
1	S.R. 19	Rt. & Lt.	103+99.00	104+37.66	E																	
1	S.R. 19	Rt. & Lt.	104+37.66	104+62.66	D																1.75	0.1
1	S.R. 19	Rt. & Lt.	104+62.66	104+66.66	C	4.0	2.5 avg.	2.5 avg.	2.2		2.2		0.2	0.1	1.50	0.1			1.75	0.1	1.75	0.1
1	S.R. 19	Rt. & Lt.	104+66.66	104+98.73	B	32.1	2.5 avg.	2.5 avg.	17.8		17.8		1.3	0.7	1.50	0.7			1.75	0.9	1.75	0.7
1	S.R. 19	Rt. & Lt.	104+98.73	187+61.00	A	8262.3	2.5 avg.	2.5 avg.	4590.2		4590.2		344.3	183.6	1.50	191.3			1.75	223.1	1.75	178.5
1	S.R. 19	Rt. & Lt.	187+61.00	197+98.00	F	1037.0	2.5 avg.	2.5 avg.	576.1		576.1		43.2	23.0	1.50	24.0			1.75	28.0	1.75	22.4
1	S.R. 19	Rt. & Lt.	197+98.00	199+75.00	G	177.0	2.5 avg.		49.2			49.2	3.7	2.0	1.50	2.0	0.75	1.0			1.75	3.8
1	S.R. 19	Rt. & Lt.	199+75.00	201+40.00	G	165.0	2.5 avg.	2.5 avg.	91.7			91.7	6.9	3.7	1.50	3.8	0.75	1.9			1.75	3.6
1	S.R. 19	Rt. & Lt.	201+40.00	202+62.00	G	122.0	2.5 avg.	2.5 avg.	67.8			67.8	5.1	2.7	1.50	2.8	0.75	1.4			1.75	2.6
1	S.R. 19	Rt. & Lt.	202+62.00	207+74.00	H	512.0	curb	curb														
1	S.R. 19	Rt. & Lt.	207+74.00	214+59.00	I	685.0	curb	curb														
1	S.R. 19	Rt. & Lt.	214+59.00	217+59.00	J	300.0	curb	curb														
1	S.R. 19	Rt. & Lt.	217+59.00	218+79.00	H	120.0	curb	curb														
1	S.R. 19	Rt. & Lt.	218+79.00	220+65.00	K	186.0	curb	drive														
1	S.R. 19	Rt. & Lt.	220+65.00	222+50.00	L	185.0	curb	2.5 avg.	51.4			51.4	3.9	2.1	1.50	2.1	0.75	1.1				
1	S.R. 19	Rt. & Lt.	222+50.00	223+71.00	L	121.0	curb	2.5 avg.	33.6			33.6	2.5	1.3	1.50	1.4	0.75	0.7			1.75	2.6
1	S.R. 19	Rt. & Lt.	223+71.00	228+70.00	M	499.0	2.5 avg.	2.5 avg.	277.2		277.2		20.8	11.1	1.50	11.6			1.75	13.5	1.75	10.8
1	S.R. 19	Rt. & Lt.	228+70.00	231+30.00	N	260.0	2.5 avg.	2.5 avg.	144.4		144.4		10.8	5.8	1.50	6.0			1.75	7.0	1.75	5.6
1	S.R. 19	Rt. & Lt.	231+30.00	257+16.92	M	2586.9	2.5 avg.	2.5 avg.	1437.2		1437.2		107.8	57.5	1.50	59.9			1.75	69.9	1.75	55.9
1	S.R. 19	Rt. & Lt.	257+16.92	258+36.92	O	120.0	2.5 avg.	2.5 avg.	66.7		66.7		5.0	2.7	1.50	2.8			1.75	3.2	1.75	2.6
1	S.R. 19	Rt. & Lt.	258+36.92	258+65.50	P	28.6	2.5 avg.	2.5 avg.	15.9		15.9		1.2	0.6	1.50	0.7			1.75	0.8	1.75	0.6
1	S.R. 19	Rt. & Lt.	258+65.50	259+10.00	P	44.5	2.5 avg.	2.5 avg.	24.7	24.7			1.9	1.0	1.50	1.0			1.75	1.2	1.75	1.0
1	S.R. 19	Rt. & Lt.	259+10.00	259+91.84	Q	81.8																
1	S.R. 19	Rt. & Lt.	259+91.84	260+36.25	P	44.4	2.5 avg.	2.5 avg.	24.7	24.7			1.9	1.0	1.50	1.0			1.75	1.2	1.75	1.0
1	S.R. 19	Rt. & Lt.	260+36.25	261+91.92	P	155.7	2.5 avg.	2.5 avg.	86.5		86.5		6.5	3.5	1.50	3.6			1.75	4.2	1.75	3.4
1	S.R. 19	Rt. & Lt.	261+91.92	262+91.92	O	100.0	2.5 avg.	2.5 avg.	55.6		55.6		4.2	2.2	1.50	2.3			1.75	2.7	1.75	2.2
1	S.R. 19	Rt. & Lt.	262+91.92	319+75.00	M	5683.1	2.5 avg.	2.5 avg.	3157.3		3157.3		236.8	126.3	1.50	131.6			1.75	153.5	1.75	122.8
1	S.R. 19	Rt. & Lt.	319+75.00	320+19.00	M	44.0	2.5 avg.	2.5 avg.	24.4	24.4			1.8	1.0	1.50	1.0			1.75	1.2	1.75	1.0
LOCATION 1 SHOULDER TOTALS CARRIED TO SHEET NO. 44										**98.2**	**16166.0**	**293.7**	**1242.1**	**662.5**	**689.8**		**6.1**		**790.6**		**645.6**	

CALCULATED TLM CHECKED JMF

SHOULDER CALCULATIONS - LOCATION 1

SEN-19-0.00
SAN-19-14.03

LOCATION	ROUTE	SIDE	STATION TO STATION		TYPICAL SECTION	LENGTH	WIDTH		SHOULDER AREA	202	254			407			442		442		617	
							LEFT	RIGHT		WEARING COURSE REMOVED	PAVEMENT PLANING, ASPHALT CONRETE, 1 1/2"	PAVEMENT PLANING, ASPHALT CONRETE, 3"		TACK COAT	TACK COAT FOR INTERMEDIATE COURSE		ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), PG70-22M		ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), PG70-22M, APP		COMPACTED AGGREGATE, TYPE A	
						LIN. FT.	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.		GAL.	GAL.		IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.
2	SR 19	Rt. & Lt.	740+87.00	741+31.00	A	44.0	3.0 avg.	3.0 avg.	29.3	29.3				2.2	1.2		1.50	1.2	1.75	1.4	1.75	1.0
2	SR 19	Rt. & Lt.	741+31.00	751+92.25	A	1061.3	3.0 avg.	3.0 avg.	707.5		707.5			53.1	28.3		1.50	29.5	1.75	34.4	1.75	22.9
2	SR 19	Rt. & Lt.	751+92.25	752+36.00	A	43.8	3.0 avg.	3.0 avg.	29.2	29.2				2.2	1.2		1.50	1.2	1.75	1.4	1.75	0.9
2	SR 19	Rt. & Lt.	753+51.00	753+94.75	A	43.8	3.0 avg.	3.0 avg.	29.2	29.2				2.2	1.2		1.50	1.2	1.75	1.4	1.75	0.9
2	SR 19	Rt. & Lt.	753+94.75	807+94.58	A	5399.8	3.0 avg.	3.0 avg.	3599.9		3599.9			270.0	144.0		1.50	150.0	1.75	175.0	1.75	116.7
2	SR 19	Rt. & Lt.	807+94.58	808+47.00	B	52.4	3.0 avg.	3.0 avg.	34.9		34.9			2.6	1.4		1.50	1.5	1.75	1.7	1.75	1.1
2	SR 19	Rt. & Lt.	808+47.00	808+51.00	C	4.0	3.0 avg.	3.0 avg.	2.7			2.7		0.2	0.1		1.50	0.1	1.75	0.1	1.75	0.1
2	SR 19	Rt. & Lt.	808+51.00	808+76.00	D	25.0																
2	SR 19	Rt. & Lt.	808+76.00	809+13.17	E	37.2																
2	SR 19	Rt. & Lt.	809+13.17	809+38.17	D	25.0																
2	SR 19	Rt. & Lt.	809+38.17	809+42.17	C	4.0	3.0 avg.	3.0 avg.	2.7			2.7		0.2	0.1		1.50	0.1	1.75	0.1	1.75	0.1
2	SR 19	Rt. & Lt.	809+42.17	809+94.58	B	52.4	3.0 avg.	3.0 avg.	34.9		34.9			2.6	1.4		1.50	1.5	1.75	1.7	1.75	1.1
2	SR 19	Rt. & Lt.	809+94.58	820+59.00	A	1064.4	3.0 avg.	3.0 avg.	709.6		709.6			53.2	28.4		1.50	29.6	1.75	34.5	1.75	23.0
2	SR 19	Rt. & Lt.	820+59.00	842+49.00	F	2190.0	3.0 avg.	3.0 avg.	1460.0		1460.0			109.5	58.4		1.50	60.8	1.75	71.0	1.75	47.3
2	SR 19	Rt. & Lt.	842+49.00	847+28.00	F	479.0	3.0 avg.	3.0 avg.	319.3		319.3			24.0	12.8		1.50	13.3	1.75	15.5	1.75	10.3
2	SR 19	Rt. & Lt.	847+28.00	855+09.00	F	781.0	2.5 avg.	2.5 avg.	433.9		433.9			32.5	17.4		1.50	18.1	1.75	21.1	1.75	16.9
2	SR 19	Rt. & Lt.	855+09.00	867+53.00	A	1244.0	2.0 avg.	2.0 avg.	552.9		552.9			41.5	22.1		1.50	23.0	1.75	26.9	1.75	26.9
2	SR 19	Rt. & Lt.	867+53.00	867+77.00	G	24.0	2.0 avg.	2.0 avg.	10.7		10.7			0.8	0.4		1.50	0.4	1.75	0.5	1.75	0.5
2	SR 19	Rt. & Lt.	867+77.00	885+32.50	A	1755.5	2.0 avg.	2.0 avg.	780.2		780.2			58.5	31.2		1.50	32.5	1.75	37.9	1.75	37.9
2	SR 19	Rt. & Lt.	885+32.50	885+63.50	H	31.0	2.0 avg.	2.0 avg.	13.8		13.8			1.0	0.6		1.50	0.6	1.75	0.7	1.75	0.7
2	SR 19	Rt. & Lt.	885+63.50	900+62.59	A	1499.1	2.0 avg.	2.0 avg.	666.3		666.3			50.0	26.7		1.50	27.8	1.75	32.4	1.75	32.4
2	SR 19	Rt. & Lt.	900+62.59	901+62.59	I	100.0	2.0 avg.	2.0 avg.	44.4		44.4			3.3	1.8		1.50	1.9	1.75	2.2	1.75	2.2
2	SR 19	Rt. & Lt.	901+62.59	905+35.00	J	372.4	2.0 avg.	2.0 avg.	165.5		165.5			12.4	6.6		1.50	6.9	1.75	8.0	1.75	8.0
2	SR 19	Rt. & Lt.	905+35.00	905+60.00	K	25.0																
2	SR 19	Rt. & Lt.	905+60.00	906+81.10	L	121.1																
2	SR 19	Rt. & Lt.	906+81.10	907+06.10	K	25.0																
2	SR 19	Rt. & Lt.	907+06.10	908+62.59	J	156.5	2.0 avg.	2.0 avg.	69.6		69.6			5.2	2.8		1.50	2.9	1.75	3.4	1.75	3.4
2	SR 19	Rt. & Lt.	908+62.59	909+62.59	I	100.0	2.0 avg.	2.0 avg.	44.4		44.4			3.3	1.8		1.50	1.9	1.75	2.2	1.75	2.2
2	SR 19	Rt. & Lt.	909+62.59	923+05.25	A	1342.7	2.0 avg.	2.0 avg.	596.7		596.7			44.8	23.9		1.50	24.9	1.75	29.0	1.75	29.0
2	SR 19	Rt. & Lt.	923+05.25	923+49.00	A	43.8	2.0 avg.	2.0 avg.	19.4	19.4				1.5	0.8		1.50	0.8	1.75	0.9	1.75	0.9
LOCATION 2 SHOULDER TOTALS CARRIED TO SHEET NO. 45										107.1	10244.5	5.4		776.8	414.6		431.7		503.4		386.4	

CALCULATED TLM
CHECKED JMF

SHOULDER CALCULATIONS - LOCATION 2

SEN-19-0.00
SAN-19-14.03

LOCATION	ROUTE	DESCRIPTION	PAVEMENT TOTAL AREA	202 WEARING COURSE, REMOVED		254 PAVEMENT PLANING, ASPHALT CONC., 1 1/2"		407 TACK COAT	407 TACK COAT FOR INTERMEDIATE COURSE			442 ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), PG70-22M		442 ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5MM, TYPE A (448), PG70-22M, APP		442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), PG70-22M, APP		
			SQ. YD.	SQ. YD.		SQ. YD.		GALLON	GAL.			IN.	CU. YD.	IN.	CU. YD.	IN.	CU. YD.	
1	SR 19	INTERSECTIONS	1205	1205.0				90.4	48.2			1.50	50.2			1.75	58.6	
1	SR 19	INTERSECTIONS IN BLOOMVILLE	578	578.0				43.4	23.1			1.50	24.1	0.75	12.0			
LOCATION 1 TOTALS CARRIED TO SHEET NO. 44				1783.0				133.8	71.3				74.3		12.0		58.6	
2	SR 19	INTERSECTIONS	596	596.0				44.7	23.8			1.50	24.8			1.75	29.0	
2	SR 19	LINK RD. (T-155) INTERSECTION	240	58.2		181.9		18.0	9.6			1.50	10.0			1.75	11.7	
2	SR 19	GLASSER RD. (T-153) INTERSECTION	292	40.8		250.7		21.9	11.7			1.50	12.1			1.75	14.2	
LOCATION 2 TOTALS CARRIED TO SHEET NO. 45				695.0		432.6		84.6	45.1				46.9				54.9	

* CALCULATED BY CAD

CALCULATED TLM CHECKED JMF

EXTRA AREA AND DEDUCTIONS-LOCATION 1 & 2

SEN-19-0.00
SAN-19-14.03

UTILITY ADJUSTMENTS SUBSUMMARY
CATCH BASIN, INLET, MANHOLE, WATERVALVE BOX, MONUMENT BOX, ADJUSTED TO GRADE OR FEATHER TO CASTING AS NOTED

ROUTE	STATION	SIDE	ITEM TYPE (604)					638	WORK REQUIRED		
			CATCH BASIN	INLET	MAN-HOLE	GAS VALVE	MONU-MENT BOX	WATER VALVE BOX	FEATHER TO TOP OF CASTING	ADJUST TO GRADE	RECON-STRUCT TO GRADE
LOCATION 1											
SR 19	198+12	Rt.						X	X		
SR 19	202+40	Lt.						X	X		
SR 19	202+50	Rt.						X	X		
SR 19	202+64	Rt.	X						X		
SR 19	202+67	Lt.	X						X		
SR 19	204+41	Rt.	X						X		
SR 19	204+51	Rt.			X				X		
SR 19	204+80	Lt.	X						X		
SR 19	207+64	Lt.	X						X		
SR 19	207+71	Rt.	X							X	
SR 19	210+83	Lt.	X						X		
SR 19	210+92	Rt.	X						X		
SR 19	211+24	Lt.	X						X		
SR 19	214+01	Rt.	X							X	
SR 19	214+03	Lt.	X						X		
SR 19	214+15	Lt.			X				X		
SR 19	217+22	Rt.	X							X	
SR 19	217+29	Lt.						X	X		
SR 19	217+57	Lt.	X						X		
SR 19	218+57	Rt.	X						X		
SR 19	219+12	Rt.						X	X		
SR 19	219+96	Lt.						X	X		
SR 19	219+96	Lt.	X						X		
SR 19	220+30	Rt.	X							X	
SR 19	223+37	Lt.	X						X		
SR 19	223+49	Lt.			X				X		
SR 19	223+58	Lt.						X	X		
TOTALS CARRIED TO GENERAL SUMMARY										4	

UTILITY ADJUSTMENTS SUBSUMMARY
CATCH BASIN, INLET, MANHOLE, WATERVALVE BOX, MONUMENT BOX, ADJUSTED TO GRADE OR FEATHER TO CASTING AS NOTED

ROUTE	STATION	SIDE	ITEM TYPE (604)					638	WORK REQUIRED		
			CATCH BASIN	INLET	MAN-HOLE	GAS VALVE	MONU-MENT BOX	WATER VALVE BOX	FEATHER TO TOP OF CASTING	ADJUST TO GRADE	RECON-STRUCT TO GRADE

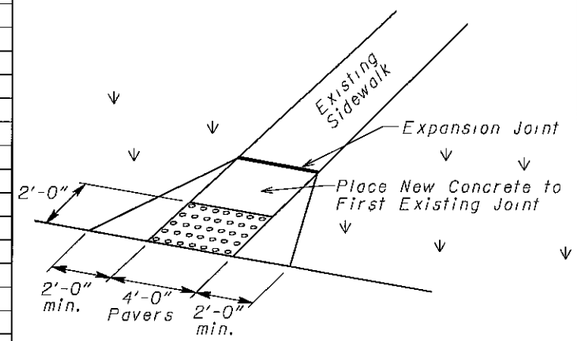
CALCULATED TLM CHECKED JMF

UTILITY SUBSUMMARY

SEN-19-0.00
SAN-19-14.03

SHEET NO.	REFERENCE NO.	LOCATION	ROUTE	STATION	SIDE	NEAREST CROSS STREET NAME	202		608	Walk Info Only		608			609
							Walk Removed	Curb Removed	4" Concrete Walk	Length	Width	Curb Ramp, As Per Plan, Design A	Curb Ramp, As Per Plan, Design F	Curb Ramp, As Per Plan, Flush (*)	Curb, Type 6
							SQ FT	FT	SQ FT	FT	FT	EACH	EACH	EACH	FT
53	CR-1	1	SR 19	198+02	RT	BEEGHLY AVE	52		44	14.5	3.5			1	
53	CR-2	1	SR 19	198+00	RT	BEEGHLY AVE	85		79	15	8	1			
53	CR-3	1	SR 19	199+21	RT	BEEGHLY AVE	30		20	5	6		1		
53	CR-4	1	SR 19	199+21	LT	BEEGHLY AVE	30		20	5	6		1		
53	CR-5	1	SR 19	202+31	RT	STOUT AVE	24		16	4	4			1	
53	CR-6	1	SR 19	202+38	LT	STOUT AVE	24		16	4	4			1	
53	CR-7	1	SR 19	202+47	RT	STOUT AVE	24	4	16	4	4			1	4.0
53	CR-8	1	SR 19	202+50	LT	STOUT AVE	26	4	18	4.5	4			1	4.0
53	CR-9	1	SR 19	204+50	RT	COLLEGE ST	26	4	18	4.5	4			1	4.0
53	CR-10	1	SR 19	204+79	RT	COLLEGE ST	32	4	24	6	4			1	4.0
53	CR-11	1	SR 19	207+82	LT	W. ELLEN ST	30	5	20	4	5			1	5.0
53	CR-12	1	SR 19	207+11	RT	E. ELLEN ST	24	4	16	4	4			1	4.0
53	CR-13	1	SR 19	208+00	LT	W. ELLEN ST	58	13	185	15	17	2			28.0
53	CR-14	1	SR 19	208+03	RT	E. ELLEN ST	96	24	161	16	15	2			28.0
53	CR-15	1	SR 19	210+95	LT	LIBERTY ST	24		16	4	4			1	
53	CR-16	1	SR 19	210+16	LT	LIBERTY ST	286	43	270	27	17	2			43.0
53	CR-17	1	SR 19	211+36	RT	LIBERTY ST	104	16	96	16	6.5		1		16.0
53	CR-18	1	SR 19	214+13	RT	E.NEW HAVEN ST	196	28	180	11.5	10.5	2			28.0
53	CR-19	1	SR 19	214+13	LT	W. NEW HAVEN ST	194	28	178	10.5	9	2			28.0
53	CR-20	1	SR 19	214+63	RT	E.NEW HAVEN ST	194	30	178	10.5	9	2			30.0
53	CR-21	1	SR 19	214+62	LT	W. NEW HAVEN ST	220	32	204	11.5	11.5	2			32.0
54	CR-22	1	SR 19	220+12	LT	KOHLER ST	35	5	25	4	5			1	5.0
54	CR-23	1	SR 19	220+36	LT	KOHLER ST	36	5	26	4	5			1	5.0
54	CR-24	1	SR 19	223+50	LT	EARL ST	35	5	25	4	5			1	5.0
54	CR-25	1	SR 19	223+32	LT	EARL ST			16	4	4			1	
GRAND TOTALS							1885	254	1867			15	3	14	273
TOTALS CARRIED TO GENERAL SUMMARY							1885	254	1867			15	3	14	273

* - See Detail This Sheet



DETAIL NO. 1

Existing Sidewalk
Level With Street

CALCULATED ALF
CHECKED JMF

CURB RAMP AND SIDEWALK SUBSUMMARY

SEN-19-0.00
SAN-19-14.03

GUARDRAIL TABLE

SHEET NO.	REFERENCE NO.	LOCATION	SIDE	202 GUARDRAIL REMOVED FEET	202 BRIDGE RAILING REMOVED FEET	202 MAILBOX REMOVED EACH	517 RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP & TYPE 2 STEEL POSTS & ANCHOR BOLTS) FEET	606 GUARDRAIL, TYPE 5 FEET	606 GUARDRAIL, TYPE 5, USING 9 FOOT POSTS FEET	606 GUARDRAIL, TYPE 5, LONG-SPAN FEET	606 FLARED END SECTION EACH	606 ANCHOR ASSEMBLY, TYPE E-98 EACH	606 ANCHOR ASSEMBLY, TYPE A EACH	606 ANCHOR ASSEMBLY, TYPE T EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 4 EACH	626 BARRIER REFLECTOR, TYPE A2 EACH	690 SPECIAL-MAILBOX SUPPORT SYSTEM, SINGLE EACH
Location 1 - SEN SR 19																	
58	1-G	101+71.45 TO 105+90.20	RT	212.5	43.75		43.75	75	200			2			2	6	
58	2-G	102+50.84 TO 106+65.20	LT	212.5	43.75		43.75	87.5	225			1		1	2	6	
59	3-G	277+05.30 TO 280+80.30	RT					275				2				5	
59	4-G	277+93.14 TO 282+43.14	LT					350				2				6	
Location 2 - SAN SR 19																	
60	5-G	TR 127 TO 807+88.53	LT	1575				25	1525	25			1	2		18	
60	6-G	808+12.10 TO 809+68.35	LT	225	43.75	2	43.75	25	262.5					2	2	5	2
60	7-G	808+49.60 TO 809+55.85	RT	62.5	43.75		43.75	62.5			2				2	3	
61	8-G	858+52.34 TO 859+74.17	LT	137.5					62.5			1		1		3	
61	9-G	858+62.53 TO 862+59.85	RT	100				50	275			1		1		5	
61	10-G	859+94.75 TO 863+54.64	LT	300				62.5	237.5			1		1		5	
61	11-G	903+79.29 TO 908+41.80	RT	300	125		125		237.5			2			2	6	
61, 62	12-G	903+99.40 TO 909+61.39	LT	425	125		125		375			1		1	2	7	
62	13-G	909+91.38 TO 913+50.52	LT	350					337.5					2		5	
62	14-G	913+66.04 TO 916+48.59	LT	287.5					262.5					2		4	
62	15-G	916+73.71 TO LEASER RD	LT	625					650				1	2		8	
TOTALS CARRIED TO GENERAL SUMMARY				4812.5	425	2	425	1012.5	4650	25	2	13	2	15	12	92	2

NOTE: *Caution shall be used when placing proposed Guardrail, as to avoid damaging any existing drainage (pipes, culverts, etc.) within the work area of Any Run of Guardrail.*

The Contractor Shall Exercise Caution When Working in the Proximity of any Underground Utilities. All Existing Underground Utilities Shall Remain Active and In Place During Construction of Any Guardrail Run, Unless Otherwise Noted in the Plan or as Directed by the Engineer.

Caution Must Be Used When Removing and Replacing Guardrail, As to Maintain the Existing Shoulders and Embankment.

The Following Items are to be used As Directed By The Engineer. The Estimated Quantities will be Carried to the General Summary and are to be Used For Proposed Guardrail Runs:

Item 209, 67 Station Reshaping Under Guardrail
Item 659, 2196 Sq. Yds. Seeding and Mulching
Item 659, 0.30 Ton Commercial Fertilizer
Item 659, 12 M Gal Water

THE FOLLOWING ITEMS AND QUANTITIES ARE INTENDED FOR SAN SR 19 NEAR TR 127 SHT. NO. 60 AS NECESSARY. THESE ITEMS ARE TO BE USED AS DIRECTED BY THE ENGINEER. EMBANKMENT MAY ALSO BE NECESSARY AT SITE ON SHT. NO. 58.

Item 203, 100 Cu Yd Embankment
Item 601, 100 Cu Yd Rock Channel Protection, Type C without Filter

Quantities Carried to General Summary.

CALCULATED SKL
DESIGN JMF

GUARDRAIL SUBSUMMARY

SEN-19-0.00
SAN-19-14.03

51
98

DRAINAGE SUBSUMMARY

SHEET NO.	LOCATION	202				203	503		601	602	603										604		659	512
		HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CATCH BASIN REMOVED	EMBANKMENT	UNCLASSIFIED EXCAVATION	COFFERDAMS, CRIBS AND SHEETING	ROCK CHANNEL PROTECTION TYPE B WITH FILTER FABRIC	CONCRETE MASONRY	6" CONDUIT, TYPE C	8" CONDUIT, TYPE C	10" CONDUIT, TYPE C	12" CONDUIT, TYPE B, 706.02	12" CONDUIT, TYPE C	15" CONDUIT, TYPE C	18" CONDUIT, TYPE B, 706.02	21" CONDUIT, TYPE B, 706.02	24" CONDUIT, TYPE B, 706.02	48" CONDUIT, TYPE B, 706.02		CATCH BASIN, NO. 2-3	MANHOLE, NO. 3	SEEDING AND MULCHING	SEALING CONCRETE SURFACES EPOXY-URETHANE
		EACH	FT	FT	EACH	CU YD	LUMP	LUMP	CU YD	CU YD	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT		EACH	EACH	SQ YD	SQ YD
63	SEN-19-0.85	1	52		1	5	LUMP			0.31		5					52					1		67	
64	SEN-19-1.03		55		1	3								22	15				5			1	1	79	
65	SEN-19-1.23		60		2						5	5		50								2		44	
66	SEN-19-1.90				1							20				10						1		17	
67	SEN-19-2.76		56		2							3	2					51				2		59	
68	SEN-19-2.82		12		1								12									1		41	
69-72	SEN-19-5.26	2		45		8	LUMP	LUMP	6	17										45				44	17
TOTALS CARRIED TO GENERAL SUMMARY		3	235	45	8	16			6	17.31	5	33	14	72	15	10	52	51	5	45		8	1	351	17

CALCULATED JJP
CHECKED JMF

DRAINAGE SUBSUMMARY

SEN-19-0.00
SAN-19-14.03

52
98

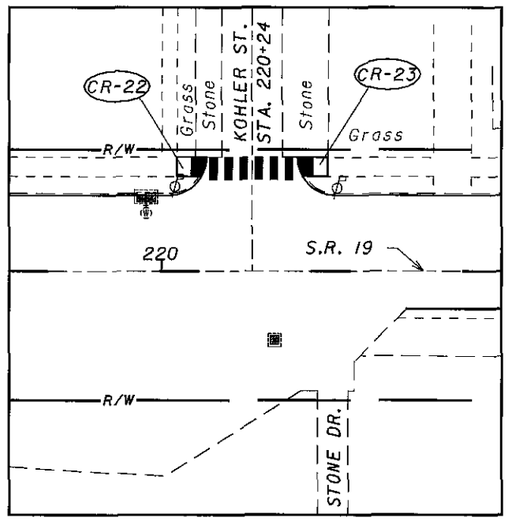
See Sheet No. 50 For Curb Ramp Quantities

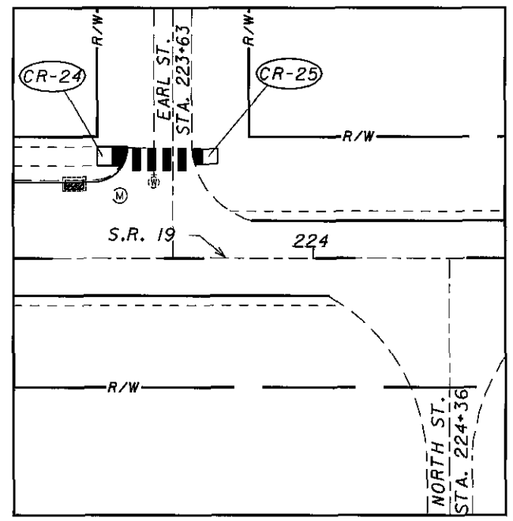
HORIZONTAL SCALE IN FEET
0 20 40

CURB RAMP PLACEMENT PLAN
LOCATION 1 - S.R. 19 (BLOOMVILLE)

SEN-19-0.00
SAN-19-14.03

53
98



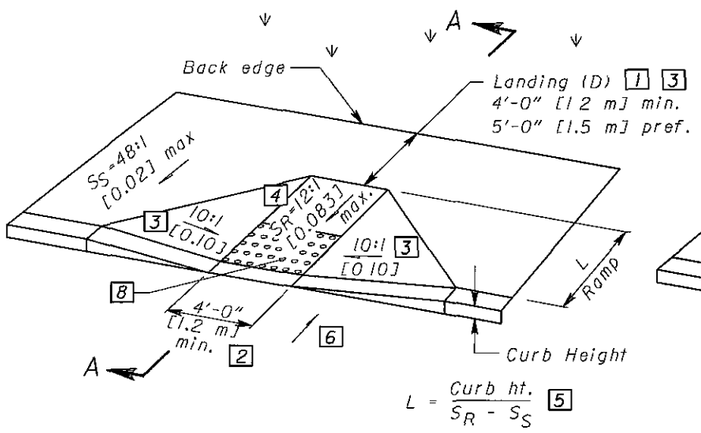


See Sheet No. 50 For Curb Ramp Quantities

HORIZONTAL SCALE IN FEET
0 10 20 40

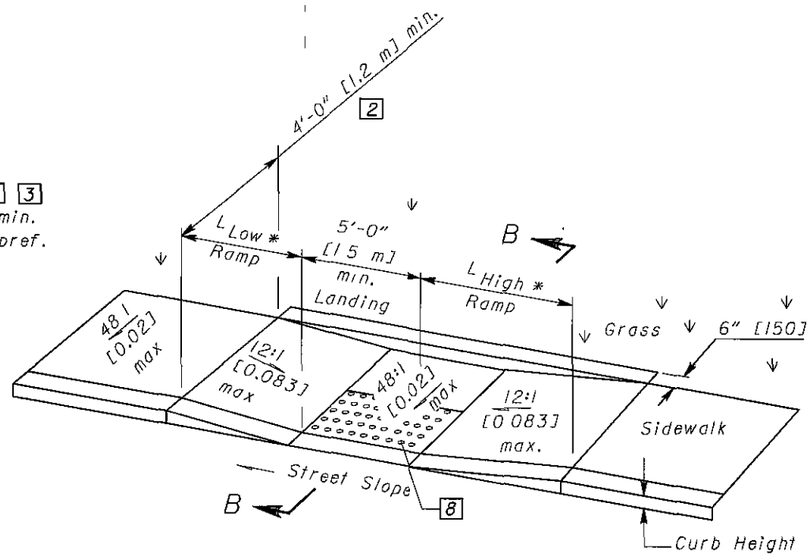
CURB RAMP PLACEMENT PLAN
LOCATION 1 - S.R. 19 (BLOOMVILLE)

SEN-19-0.00
SAN-19-14.03



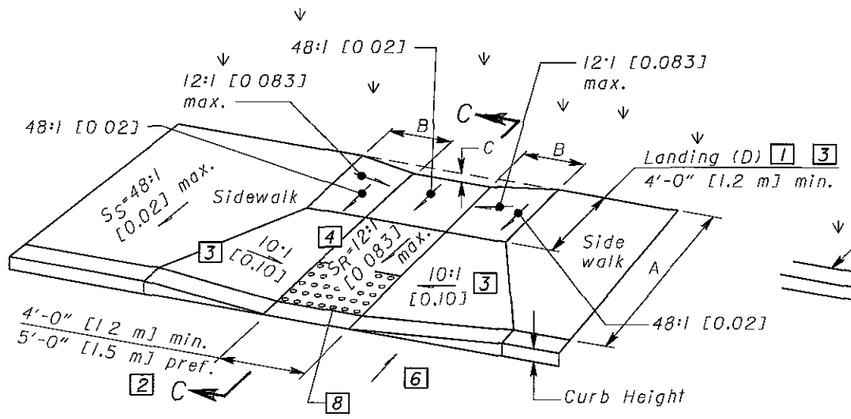
See Sht. 3/3 for SECTION A-A

PERPENDICULAR CURB RAMP DETAIL



See Sht. 3/3 for SECTION B-B

PARALLEL CURB RAMP DETAIL (DOUBLE)

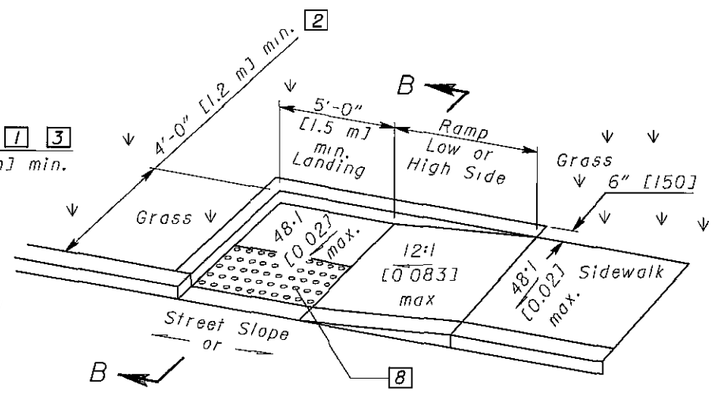


See Sht. 3/3 for SECTION C-C

COMBINED CURB RAMP DETAIL

$B = C / 0.083$

$C = [\text{Curb ht} + A(S_S)] - [(A-D)S_R + D(0.02)]$



See Sht. 3/3 for SECTION B-B

PARALLEL CURB RAMP DETAIL (SINGLE)

Street Slope	Ramp Length @ 1"/ft [0.083]	
	$L_{LOW\ SIDE}$ *	$L_{HIGH\ SIDE}$ *
0.01	5'-5" [1.6 m]	6'-10" [2.1 m]
0.02	4'-10" [1.5 m]	7'-11" [2.4 m]
0.03	4'-5" [1.3 m]	9'-5" [2.9 m]
0.04	4'-1" [1.2 m]	11'-8" [3.6 m]
0.05	3'-9" [1.1 m]	15'-2" [4.6 m]

* Measured along the back of a 6" [150] high curb

$$L_{HIGH} = \frac{\text{Curb ht.}}{0.083 - \text{Street Slope}}$$ 7

$$L_{LOW} = \frac{\text{Curb ht}}{0.083 + \text{Street Slope}}$$ 7

LEGEND

1 May be reduced to 3'-0" [915] in existing sidewalks if the landing is unconstrained along the back edge.

2 May be reduced to 3'-4" [1.02 m] in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.

3 Where landing width (D) has been reduced to 3'-0" [915] the flared sides shall have a maximum slope of 12:1 [0.083].

Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheel chair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.

4 The slope of the ramp toward the curb is preferred to be 12:1 [0.083] or flatter related to the horizontal, but the maximum slope shall be 12:1 [0.083] relative to the existing or proposed walk slope.

In existing sidewalks, where the maximum ramp slope (S_R) is not feasible, it may be reduced as follows:

A) 10:1 [0.10] for a max. rise of 6" [150],
B) 8:1 [0.125] for a max. rise of 3" [75],
C) 6:1 [0.167] over a max. run of 2'-0" [610] for historic areas where a flatter slope is not feasible

5 The minimum length of a perpendicular ramp is 6' [2.0 m] from the back of a 6" [150] curb and may be increased where feasible to obtain a flatter ramp slope or to better blend with the walk configuration

6 Gutter counter slopes at the foot of perpendicular curb ramps should not exceed 20:1 [0.05] over a distance of 2'-0" [610] from the curb

7 Dimensions derived by equation are nominal. Construct ramps to meet required slopes and existing conditions

8 Detectable Warnings (truncated domes) are to be installed in the location shown. Dimensions of the domes are 24" [610] from the back of the curb by the width of the ramp See NOTES on sheet 3.

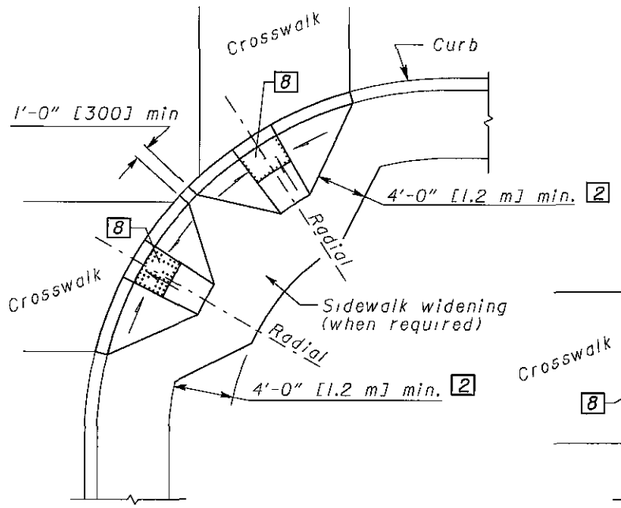
7-12-02

CURB RAMPS WITH TRUNCATED DOMES

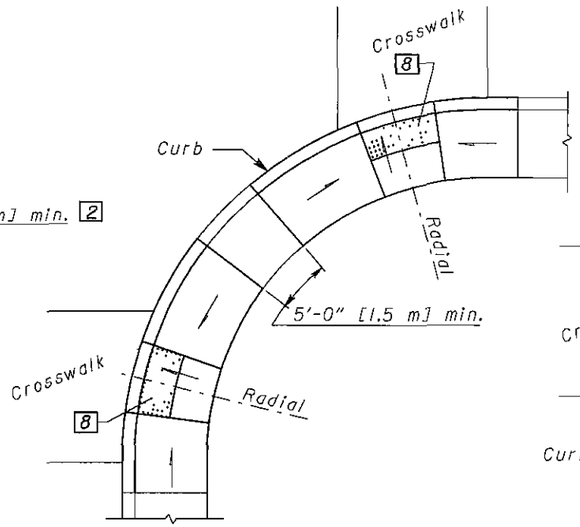
SEN-19-0.00
SAN-19-14.03

1 / 3

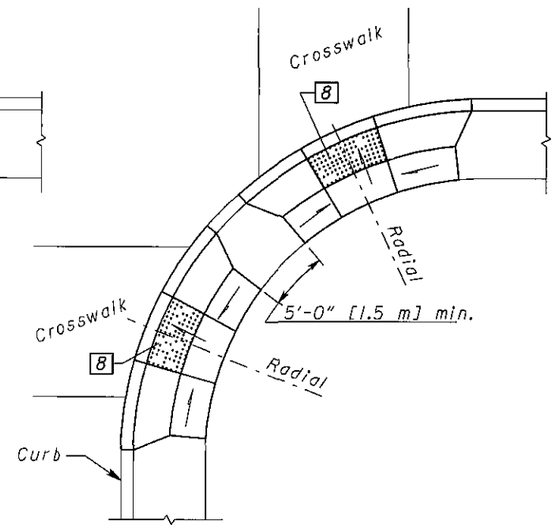
55
98



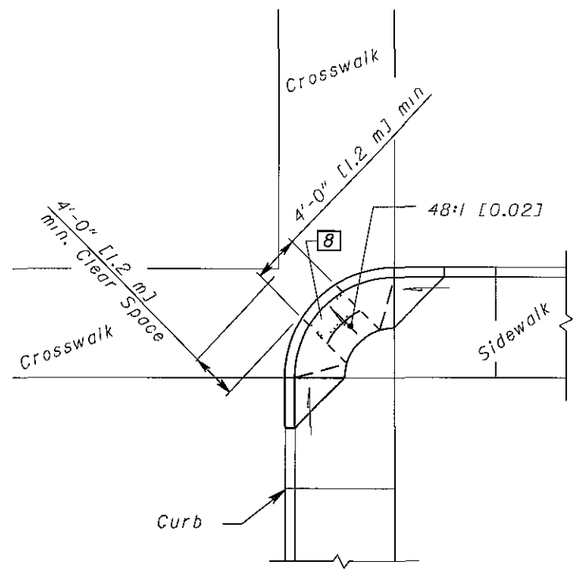
DESIGN A
PERPENDICULAR RAMP



DESIGN B
PARALLEL RAMP



DESIGN C
COMBINATION RAMP



DESIGN D
DIAGONAL RAMP

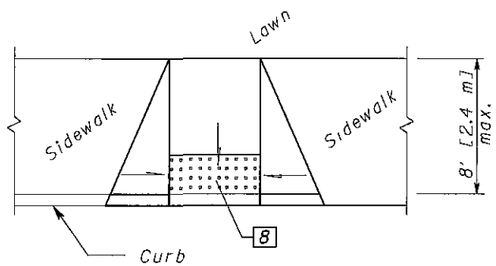
Use in existing walks only and when site constraints prohibit other designs. The diagonal ramp may be perpendcular, parallel or combination

Avoid using where curb radii are less than 20'-0" [6.0 m].

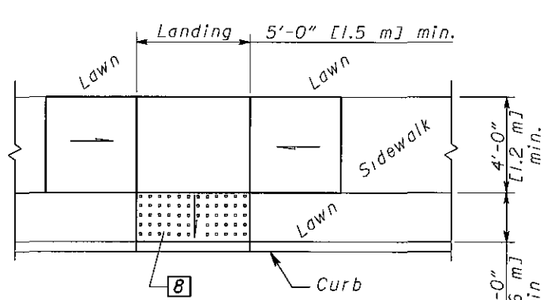
CORNER CURB RAMP DESIGNS

(See Curb Ramp Details on Sht. 1/3 for additional requirements.)

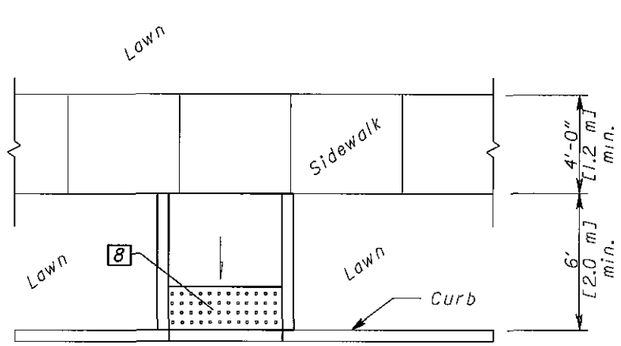
For LEGEND, See sheet 1



DESIGN E
PERPENDICULAR RAMP



DESIGN F
PARALLEL RAMP



DESIGN G
PERPENDICULAR RAMPS
w/o FLARES

MID BLOCK CURB RAMP DESIGNS

(See Curb Ramp Details on Sht 1/3 for additional requirements.)

CURB RAMPS WITH TRUNCATED DOMES 7-12-02

SEN-19-0.00
SAN-19-14.03

NOTES

SURFACE TEXTURE: Texture of concrete surfaces shall be obtained by coarse brooming transverse to the ramp slopes and shall be rougher than adjacent walk.

TRUNCATED DOMES: Install detectable warnings (truncated domes) for a distance of 24" [610] from the back of the curb for the entire width of the ramp opening as shown on details on Sheet 1

Pavers will meet ASTM C 902 Class SX, Type I, or C 936, or C 1272 Type R

Acceptable manufacturers and products are:

1) Whitacre-Greer Fireproofing Company,
   1400 S. Mahoning Ave, Alliance, OH, 44601, (800) WG PAVER
   ADA Paver, 4"x8"x2-1/4", Clear Red (Rustic) #30.

2) Hanover Architectural Products,
   240 Bender Rd., Hanover, PA. 17331, (717) 637-0500
   Detectable Warning Paver, 12"x12"x2", or 24"x24"x2",
   Red or Quarry Red

3) Endicott Clay Products,
   PO Box 17, Fairbury, NE, 68352, (402) 729-5804
   Handicap Detectable Warning Paver,
   4"x8"x2-1/4", Red Blend

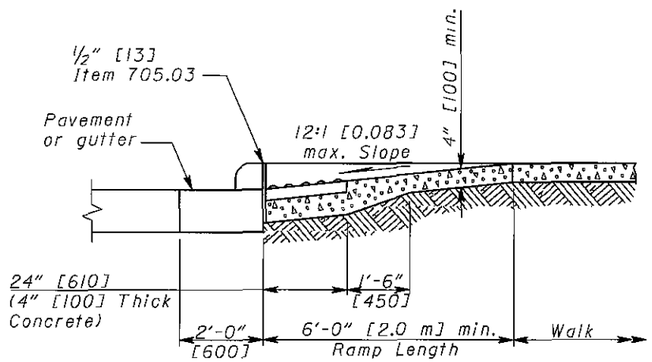
Pavers will laid on top of a 4" [100] unreinforced concrete base. Setting bed and joints to be mortared in accordance with manufacturer's instruction, or with a maximum 1/2" [13] thick bed of latex modified cement mortar. Mortar joints to a width not greater than 5/32" [4] and not less than 1/16" [1.5] Pavers shall not be directly touching each other unless they have spacing bars.

Mortared joints are to be flush with top surface and struck so as to give a smooth surface. Pavers shall be laid such that joints are level with adjoining joints so as to provide a smooth transition from brick to brick and brick to concrete surface.

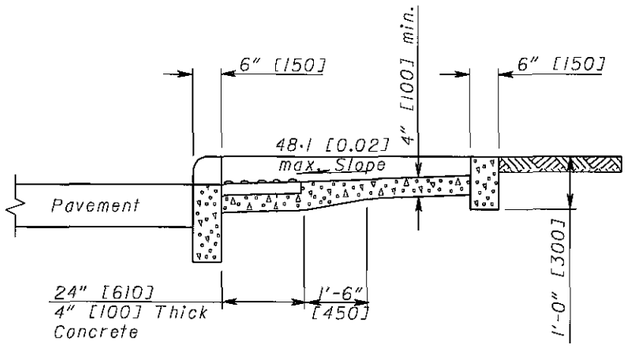
The surface of any two adjacent units should not differ by more than 1/8" [3] in height Bricks shall be placed in a running bond pattern. Face of all brick shall be clean of cement and protected so as to avoid chipping during constructionn.

EXPANSION JOINTS: shall be provided in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. A 1/2" [13] Item 705.03 expansion joint filler shall be provided around the edge of ramps built in existing concrete walk. Lines shown on this drawing indicate the ramp edge and slope changes and are not necessarily joint lines.

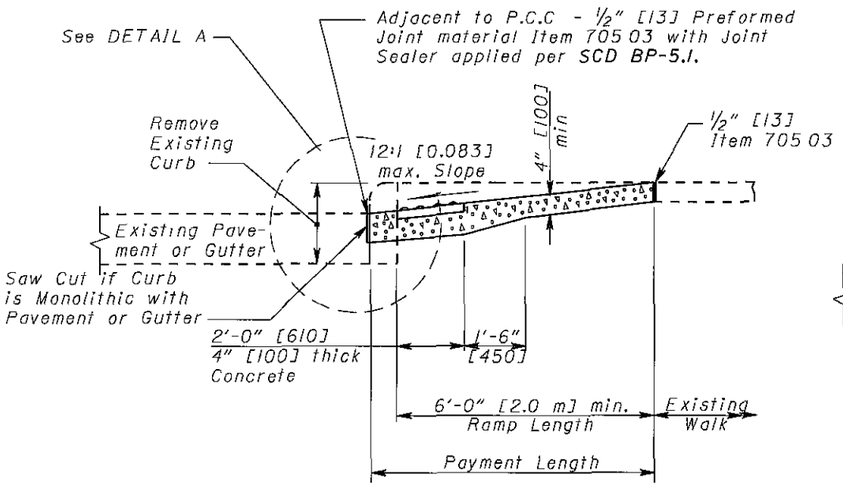
PAYMENT: Walk and curb, Items 608 and 609, shall be measured through the curb ramp area paid for under their respective Items. **Item 608 - Curb Ramp, As Per Plan, Each** constructed in new curb and walk shall include the cost of any additional materials and installation (including truncated domes), grading, forming and finishing. **Item 608 - Curb Ramp. As Per Plan, Square Foot [Meter],** constructed in existing curb and walk shall include the cost of furnishing and installing all materials (including truncated domes), grading, forming, and finishing of the curb and walk of the curb ramp. Removal of existing curb and walk shall be paid for under Item 202.



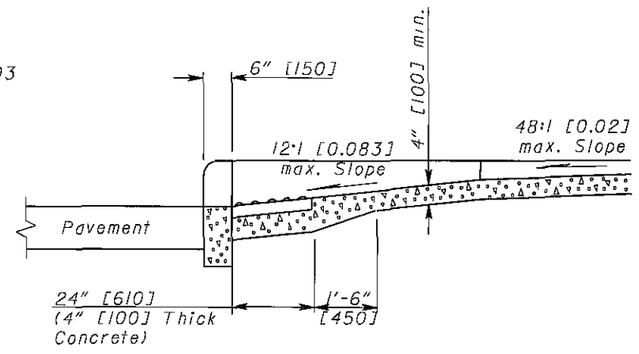
SECTION A-A
NORMAL DETAIL
See Sheet 1 of 3.
(Gutter shown)



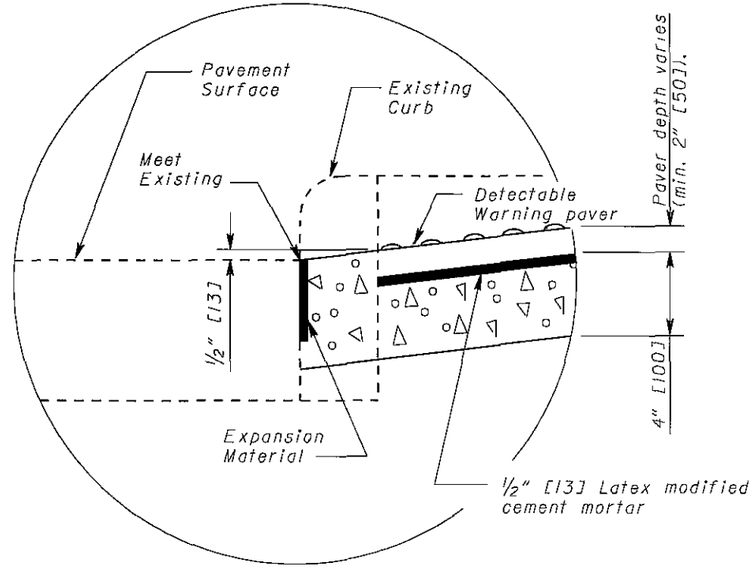
SECTION B-B
See Sheet 1 of 3.



SECTION A-A
EXISTING WALK DETAIL
See Sheet 1 of 3



SECTION C-C
See Sheet 1 of 3.



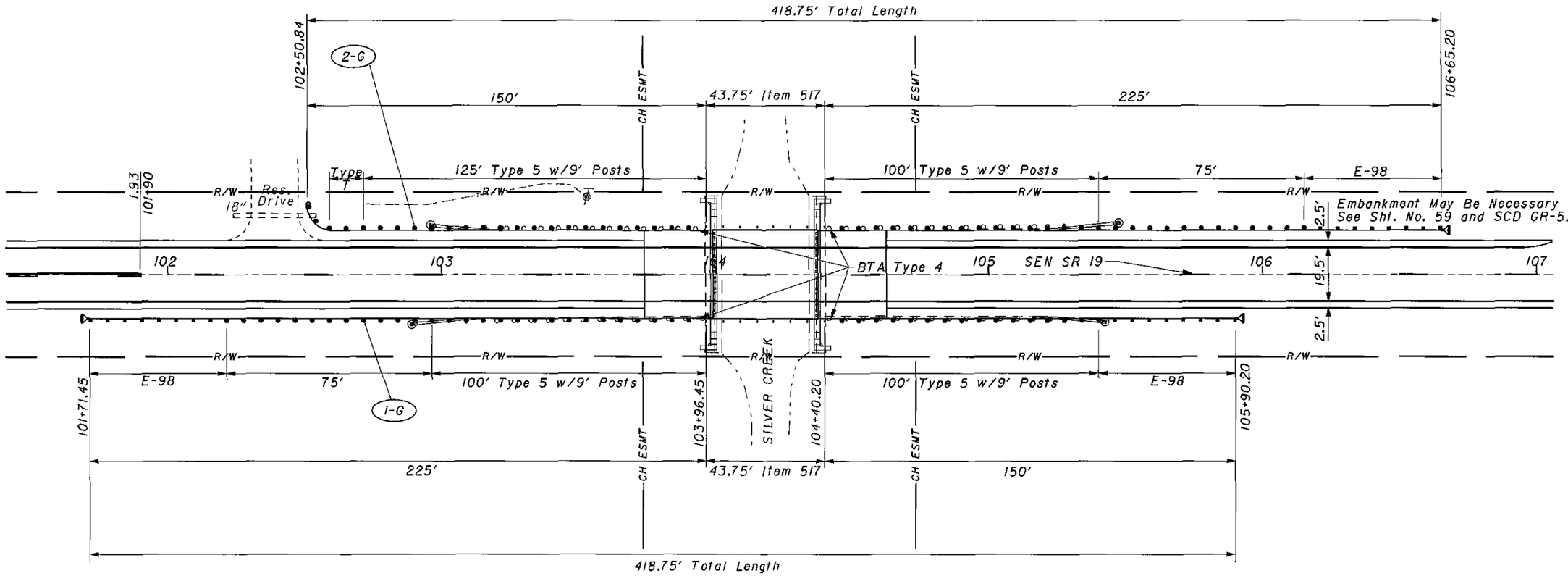
DETAIL A

7-12-02

CURB RAMPS WITH TRUNCATED DOMES

SEN-19-0.00
SAN-19-14.03

Bridge No. SEN-19-0197



Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted

See Sht. No. 51 For Quantities

HORIZONTAL SCALE IN FEET
0 20 40

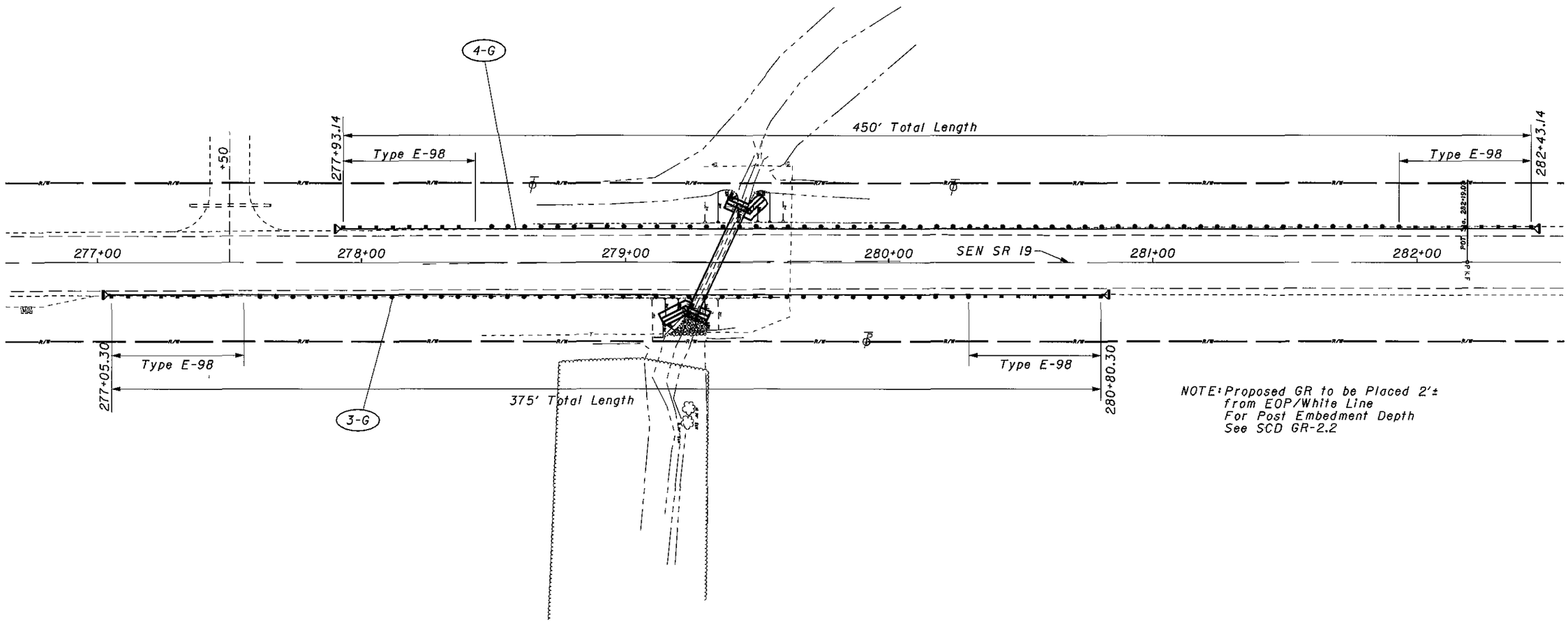
CALCULATED SKL
CHECKED JMF

GUARDRAIL DETAILS
LOCATION 1

SEN-19-0.00
SAN-19-14.03

58
98

Culvert SEN-19-0529



NOTE: Proposed GR to be Placed 2'± from EOP/White Line For Post Embedment Depth See SCD GR-2.2

Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted

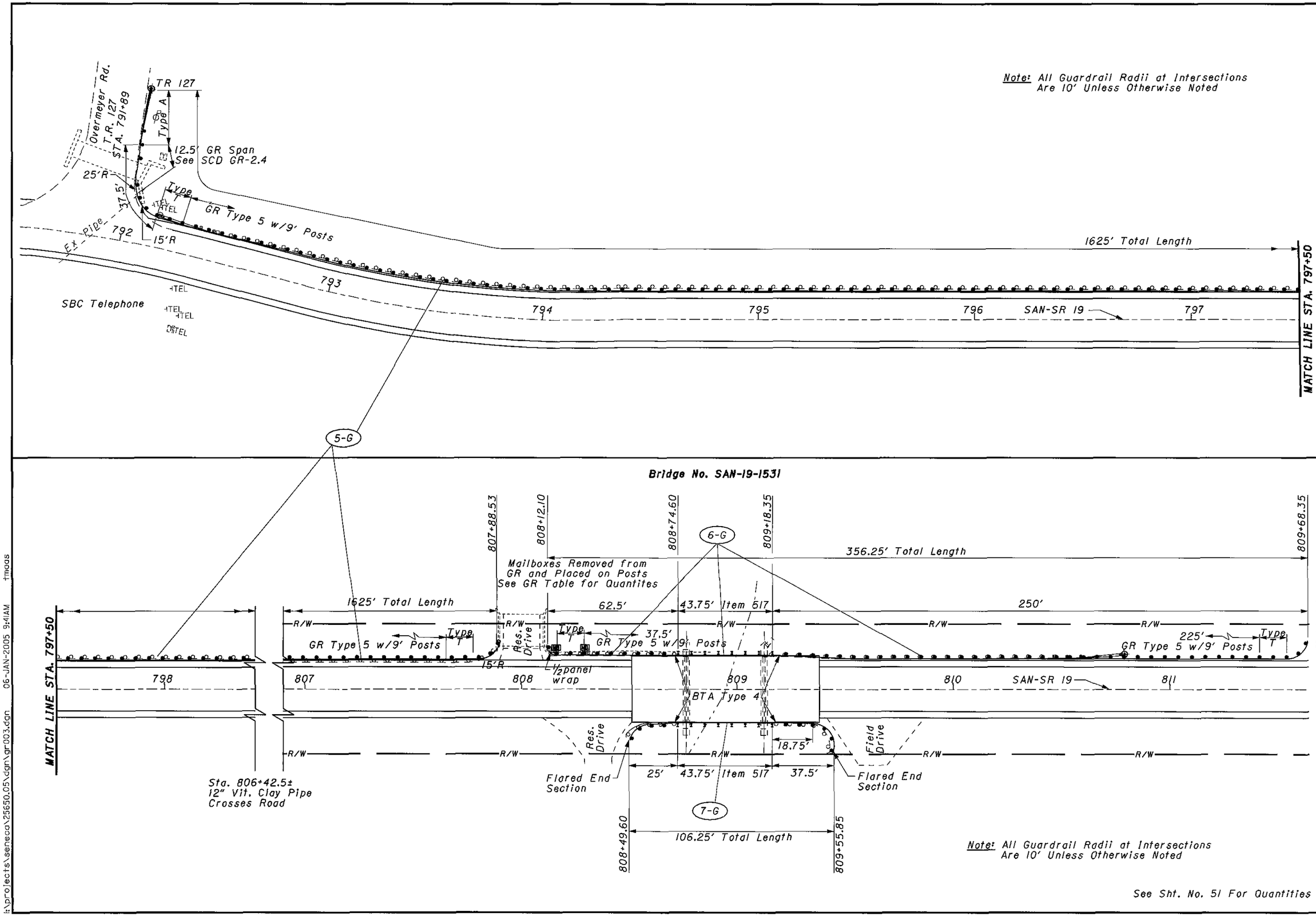
See Sht. No. 69-72 for Culvert Details
See Sht. No. 51 for Quantities

HORIZONTAL SCALE IN FEET
0 20 40

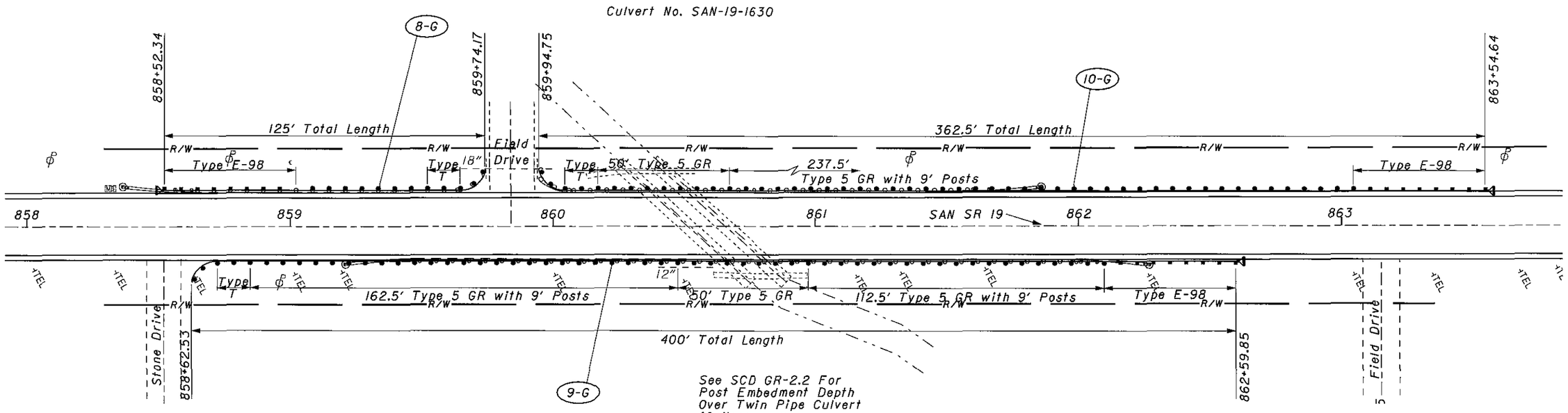
CALCULATED SKL
CHECKED JMF

GUARDRAIL DETAILS
LOCATION 1

SEN-19-0.00
SAN-19-14.03

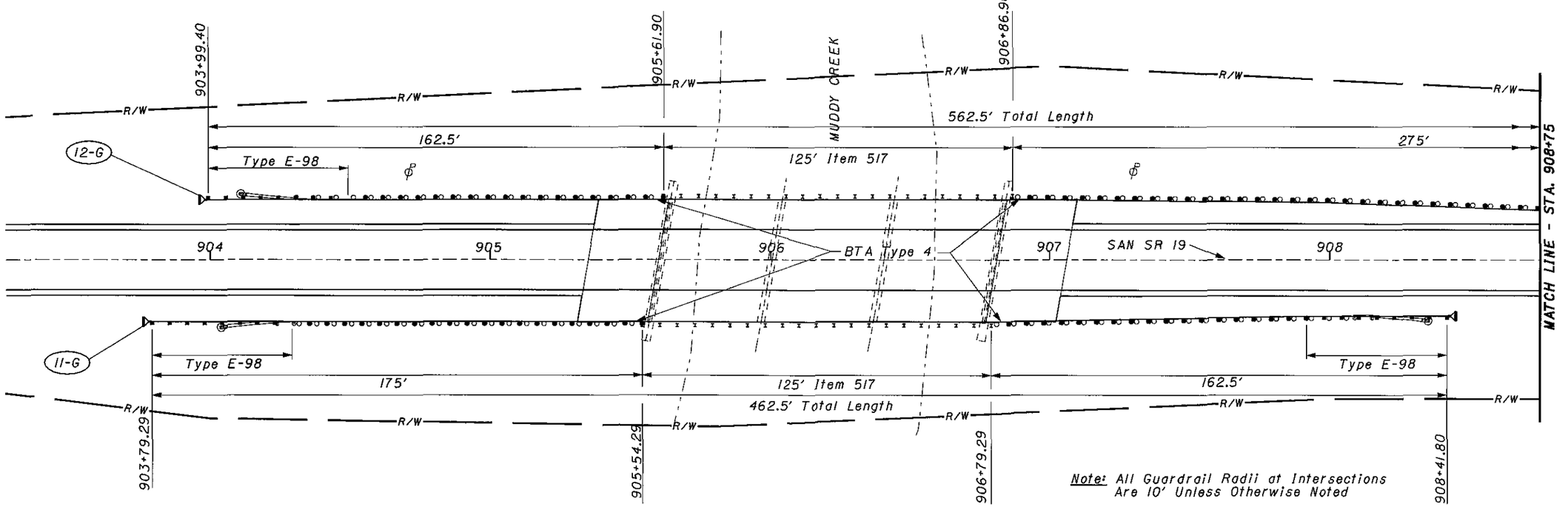

Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted
TR 127
Overmeyer Rd.
T.R. 127
STA. 791+89
Ø Type A
12.5' GR Span
See SCD GR-2.4
25'R
37.5'
Type T
GR Type 5 w/9' Posts
792
15'R
Ex. Pipe
1625' Total Length
793
SBC Telephone
794
795
796
SAN-SR 19
797
MATCH LINE STA. 797+50
5-G
Bridge No. SAN-19-1531
807+88.53
808+12.10
808+74.60
809+18.35
809+68.35
6-G
356.25' Total Length
Mailboxes Removed from GR and Placed on Posts See GR Table for Quantites
1625' Total Length
62.5'
43.75' Item 517
250'
225'
GR Type 5 w/9' Posts
Res. Drive
15'R
½panel wrap
798
807
808
809
810
811
BTA Type 4
Field Drive
field drive
18.75'
25'
37.5'
Flared End Section
Sta. 806+42.5±
12" Vit. Clay Pipe
Crosses Road
7-G
808+49.60
809+55.85
106.25' Total Length
Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted
See Sht. No. 51 For Quantities
HORIZONTAL SCALE IN FEET
CALCULATED SKL
CHECKED JMF
GUARDRAIL DETAILS
LOCATION 2 - SR 19
SEN-19-0.00
SAN-19-14.03
60
98
t:\projects\seneca\25650_05\dgn\gr003.dgn 06-JAN-2005 9:41AM tmaas

Culvert No. SAN-19-1630



Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted

Bridge No. SAN-19-1715



Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted

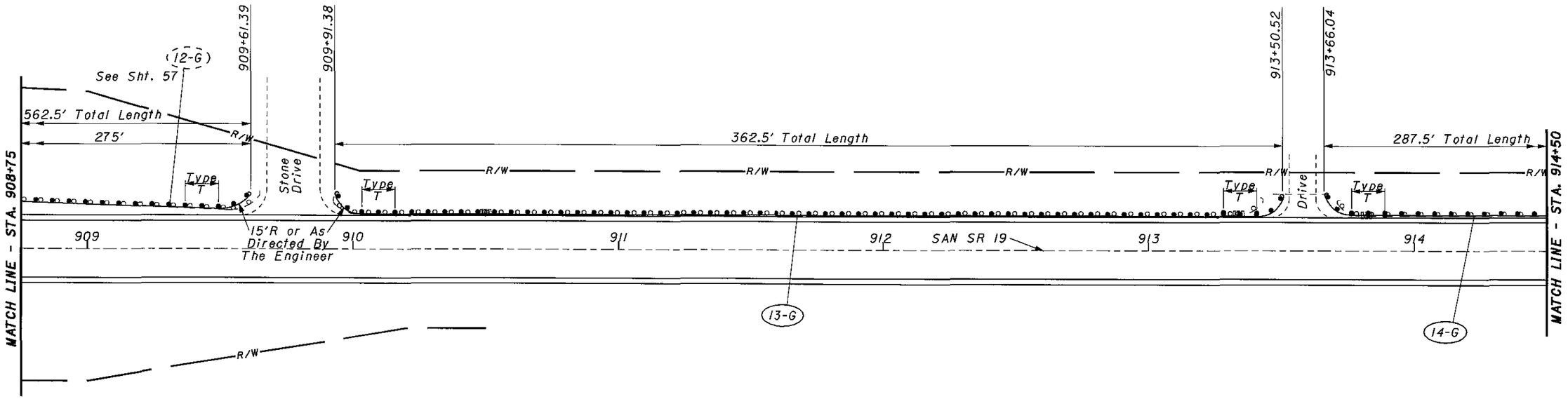
See Sht. No. 51 For Quantities

HORIZONTAL SCALE IN FEET

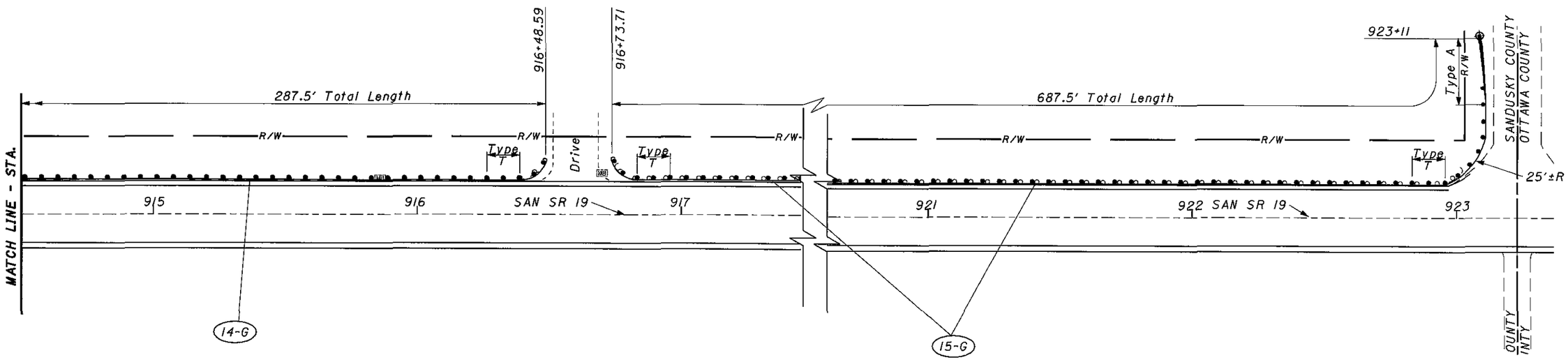
CALCULATED SKL
CHECKED JMF

GUARDRAIL DETAILS
LOCATION 2 - SR 19

SEN-19-0.00
SAN-19-14.03



Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted



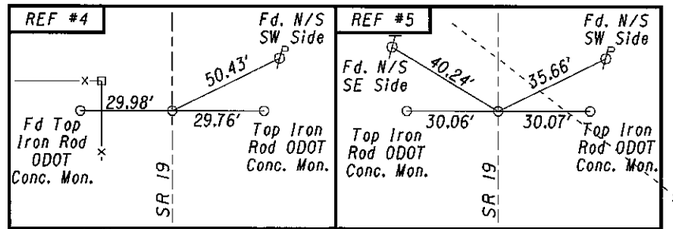
Note: All Guardrail Radii at Intersections Are 10' Unless Otherwise Noted

See Sht. No. 51 For Quantities

HORIZONTAL SCALE IN FEET
0 20 40
CALCULATED SKL
CHECKED JMF

GUARDRAIL DETAILS
LOCATION 2 - SR 19

SEN-19-0.00
SAN-19-14.03

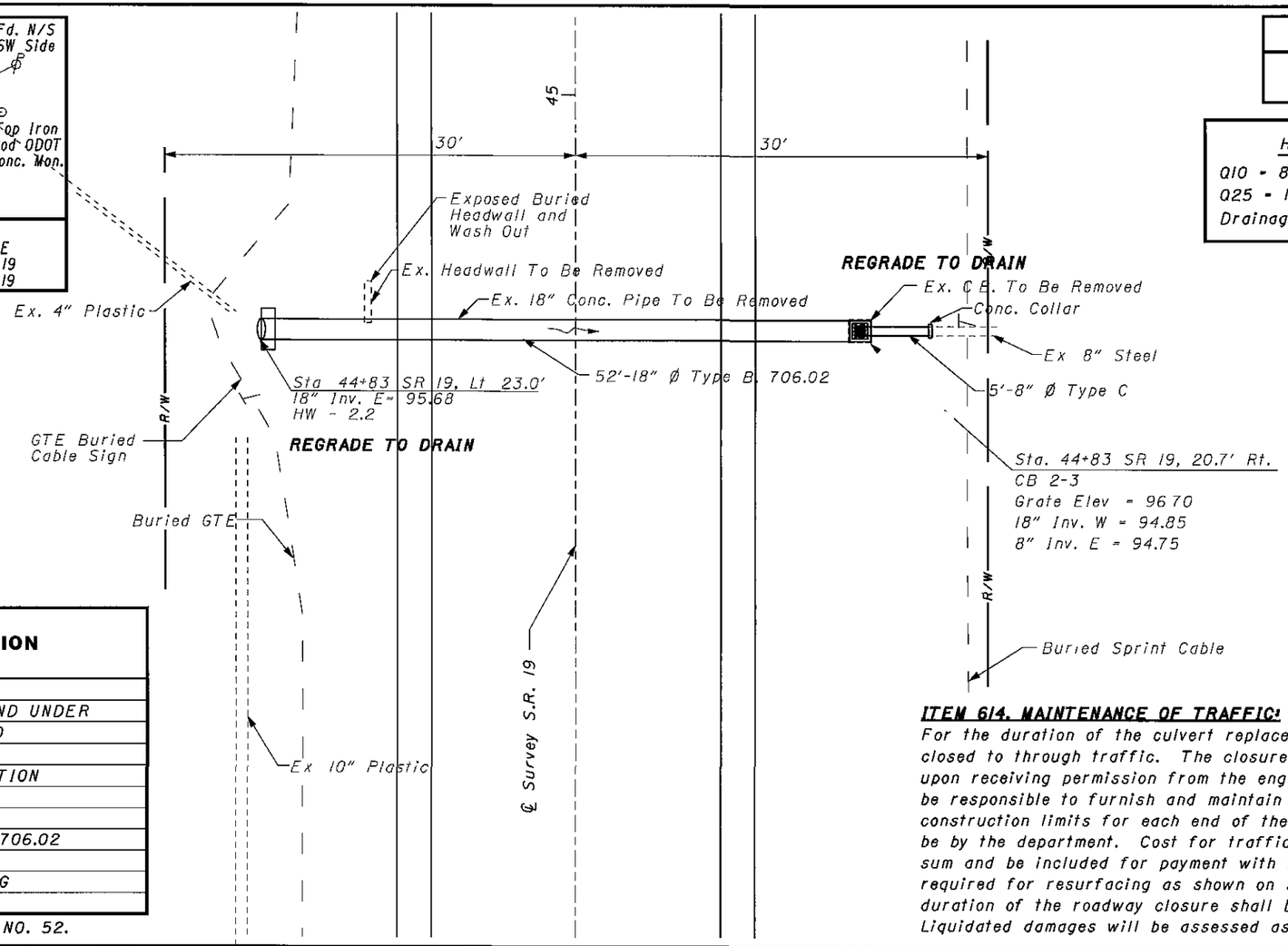


STA. 38+22
PK/WASHER ON SURFACE
1.5' LT. OF ℄ PAVT. SR 19
8.5' LT. EDGE PAVT SR 19

STA. 47+99
PK/WASHER ON SURFACE
0.5' LT. OF ℄ PAVT. SR 19
9.5' LT. EDGE PAVT SR 19

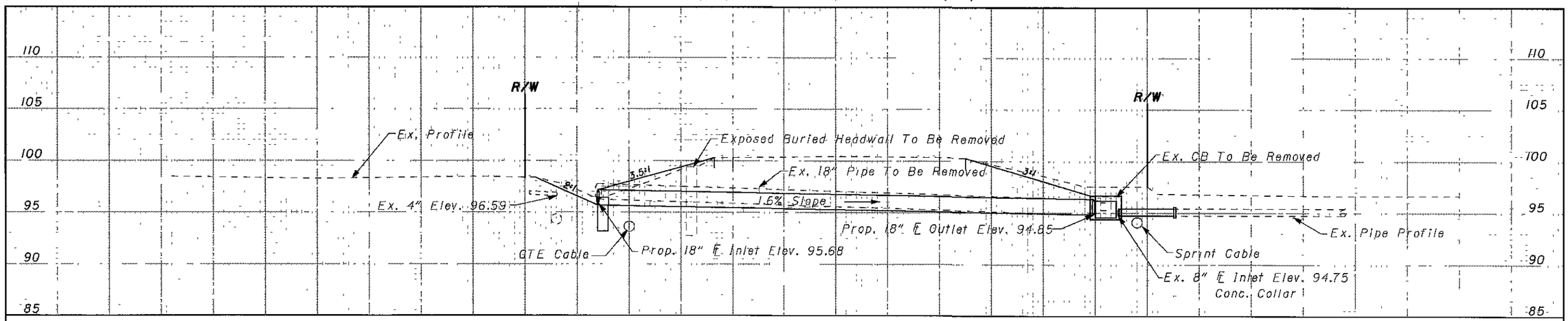
BM #1 - El. 100.00
60" dia. Spike In West Side of Power Pole
Sta. 44+38, 29.0' Rt.

BM #2 - El. 101.70
60" dia. Spike In East Side of Power Pole
Sta. 45+95, 26.0' Lt.



ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	11000	EACH	1	HEADWALL REMOVED
202	35100	FT	52	PIPE REMOVED, 24" AND UNDER
202	58100	EACH	1	CATCH BASIN REMOVED
203	20000	CU YD	5	EMBANKMENT
503	21300		LUMP	UNCLASSIFIED EXCAVATION
602	20000	CU YD	0.31	CONCRETE MASONRY
603	02000	FT	5	8" CONDUIT, TYPE C
603	08900	FT	52	18" CONDUIT, TYPE B, 706.02
604	04900	EACH	1	CATCH BASIN 2-3
659	10000	SQ FT	67	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.



PROFILE AT STA. 44+86

Proposed Work:

1. Replace Crossover.
2. Replace Catch Basin.

Hydraulic Data

Q10 = 8.2 CFS, V10 = 6.4 FPS
Q25 = 10.2 CFS, V25 = 6.4 FPS
Drainage Area = 6.2 AC

Design Traffic

2016 ADT = 2570

ITEM 614, MAINTENANCE OF TRAFFIC:

For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.

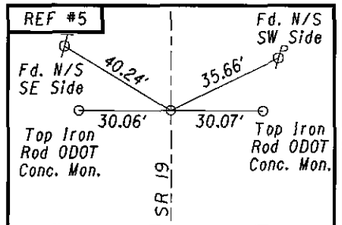
HORIZONTAL SCALE IN FEET
0 2.5 5 10

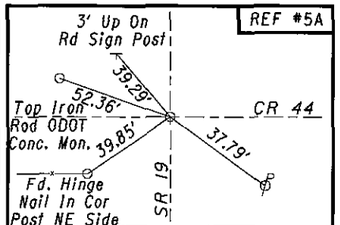
JJP JMF

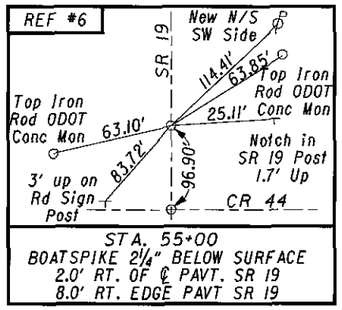
CULVERT PLAN AND PROFILE
SEN-19-0.85

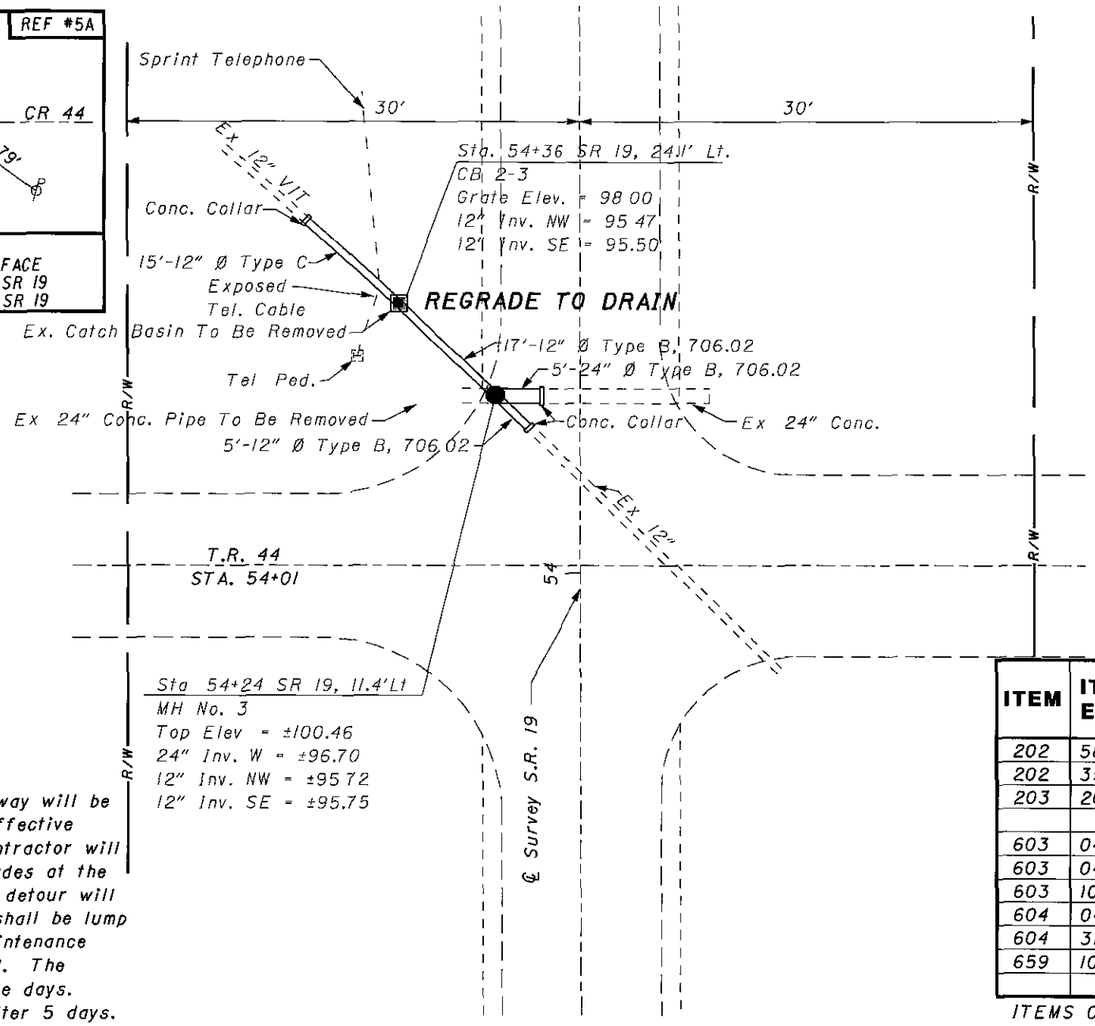
SEN-19-0.00
SAN-19-14.03

63
98









BM #1 - El. 100.00
60" dia. Spike In N/S Side of Power Pole
Sta. 53+80, 40.0' Lt.

All Outs Are Taken From ℄ Pavement

ITEM 614, MAINTENANCE OF TRAFFIC:

For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.

Design Traffic

2016 ADT = 2570

Hydraulic Data

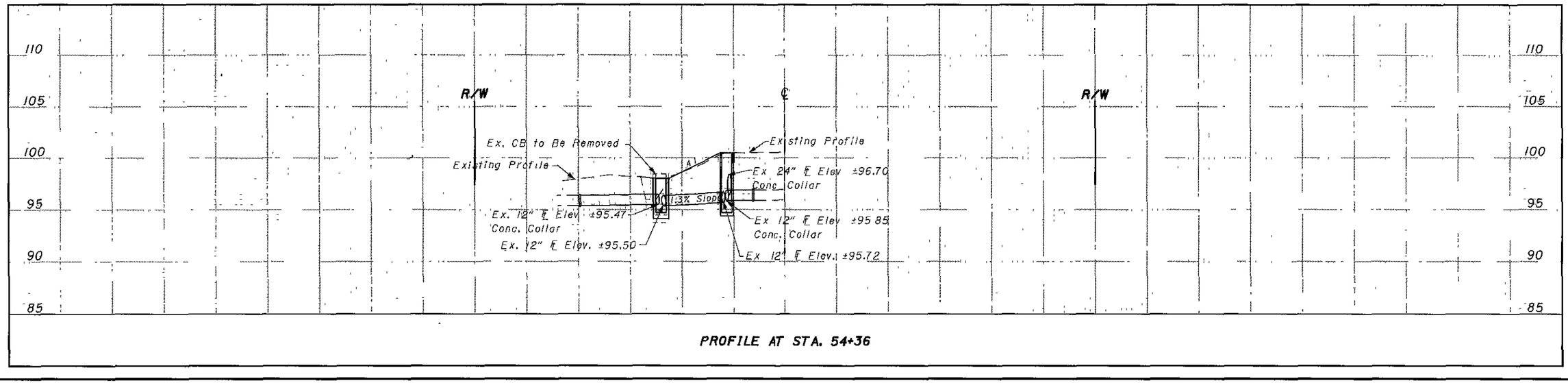
Q10 = 2.4 CFS, V10 = 4.4 FPS
Q25 = 3.5 CFS, V25 = 4.4 FPS
Drainage Area = 1.4 AC

PROPOSED WORK

1. Replace existing catch basins.
2. Tie drainage together with manhole.
3. Replace ends of existing pipe.

ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	58100	EACH	1	CATCH BASIN REMOVED
202	35100	FT	55	PIPE REMOVED, 24" AND UNDER
203	20000	CU YD	3	EMBANKMENT
603	04400	FT	22	12" CONDUIT, TYPE B, 706.02
603	04600	FT	15	12" CONDUIT, TYPE C
603	10400	FT	5	24" CONDUIT, TYPE B, 706.02
604	04900	EACH	1	CATCH BASIN, NO. 2-3
604	31500	EACH	1	MANHOLE, NO. 3
659	10000	SQ YD	79	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.



PROFILE AT STA. 54+36

HORIZONTAL SCALE IN FEET
0 2.5 5 10

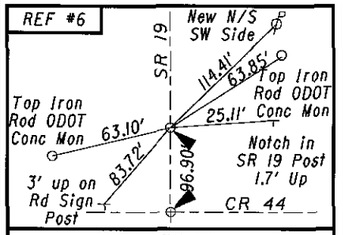
JJP JMF

CULVERT PLAN AND PROFILE

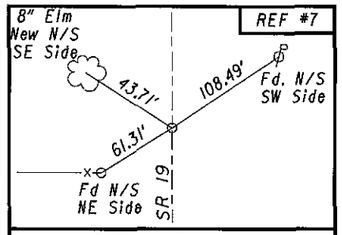
SEN-19-1.03

SEN-19-0.00
SAN-19-14.03

64
98



STA. 55+00
BOATSPIKE 2 1/4" BELOW SURFACE
2.0' RT. OF ℄ PAVT. SR 19
8.0' RT. EDGE PAVT SR 19

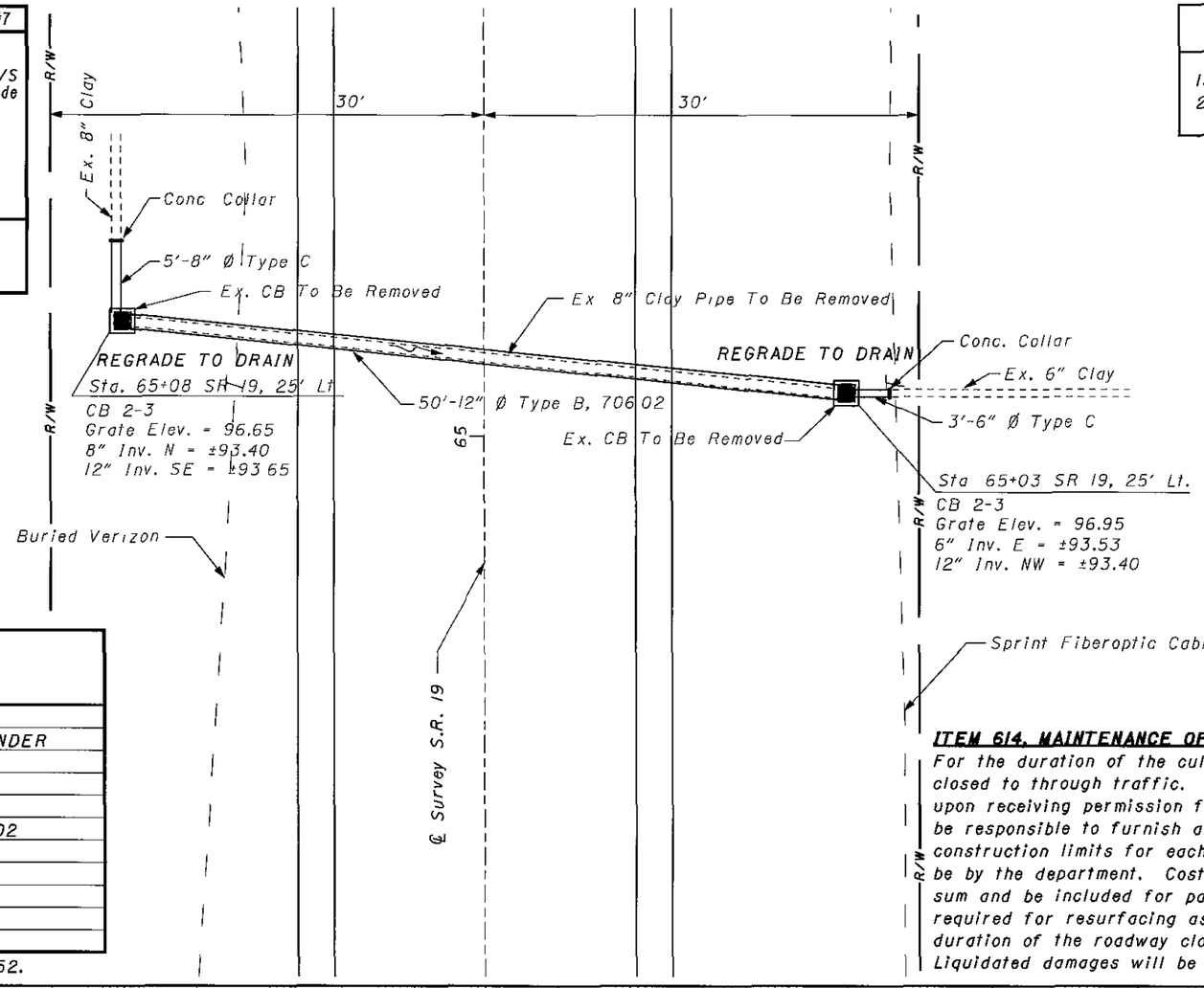


STA. 68+00
PK/WASHER ON SURFACE
℄ PAVT. SR 19
10.0' RT. EDGE PAVT SR 19

BM #1 - El. 100.00
60" dia. Spike In West Side of Power Pole
Sta. 63+50, 28.0' Rt.

BM #2 - El. 100.73
60" dia. Spike In Power Pole
Sta. 66+27, 29.0' Rt.

All Outs Are Taken From ℄ Pavement



ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	58100	EACH	2	CATCH BASIN REMOVED
202	35100	FT	60	PIPE REMOVED, 24" AND UNDER
603	01100	FT	5	6" CONDUIT, TYPE C
603	02000	FT	5	8" CONDUIT, TYPE C
603	04400	FT	50	12" CONDUIT, TYPE B, 706.02
604	04900	EACH	2	CATCH BASIN, NO. 2-3
659	10000	SQ YD	44	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.

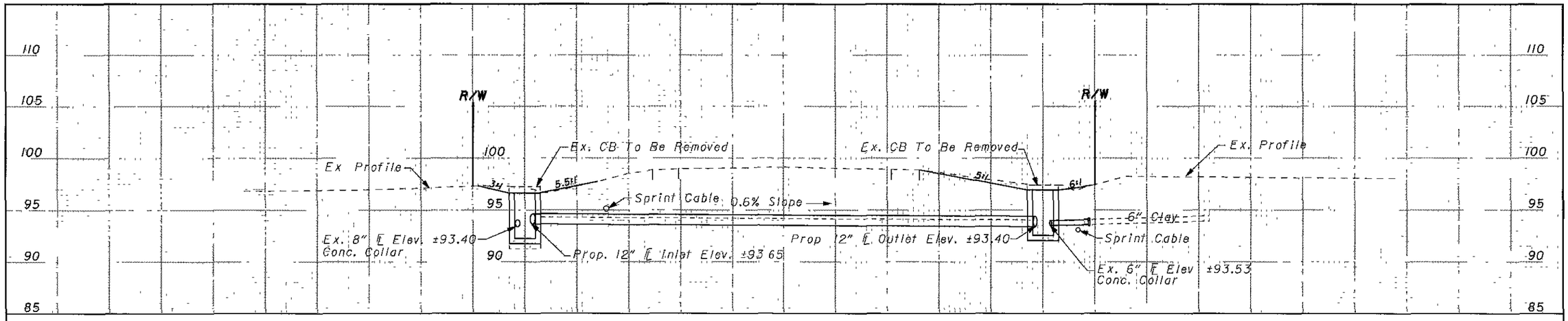
PROPOSED WORK

1. Replace existing catch basins.
2. Replace existing crossover.

Hydraulic Data
Q10 = 4.4 CFS, 3 FPS
Q25 = 4.4 CFS, 3 FPS
Drainage Area = 3.6 AC

Design Traffic
2016 ADT = 2570

ITEM 614, MAINTENANCE OF TRAFFIC:
For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.



PROFILE AT STA. 65+05

HORIZONTAL SCALE IN FEET
0 2.5 5 10

JJP JMF

CULVERT PLAN AND PROFILE
SEN-19-1.23

SEN-19-0.00
SAN-19-14.03

65
98

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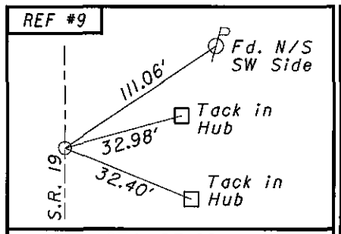
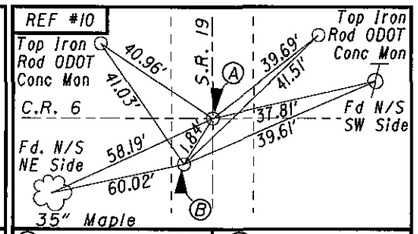


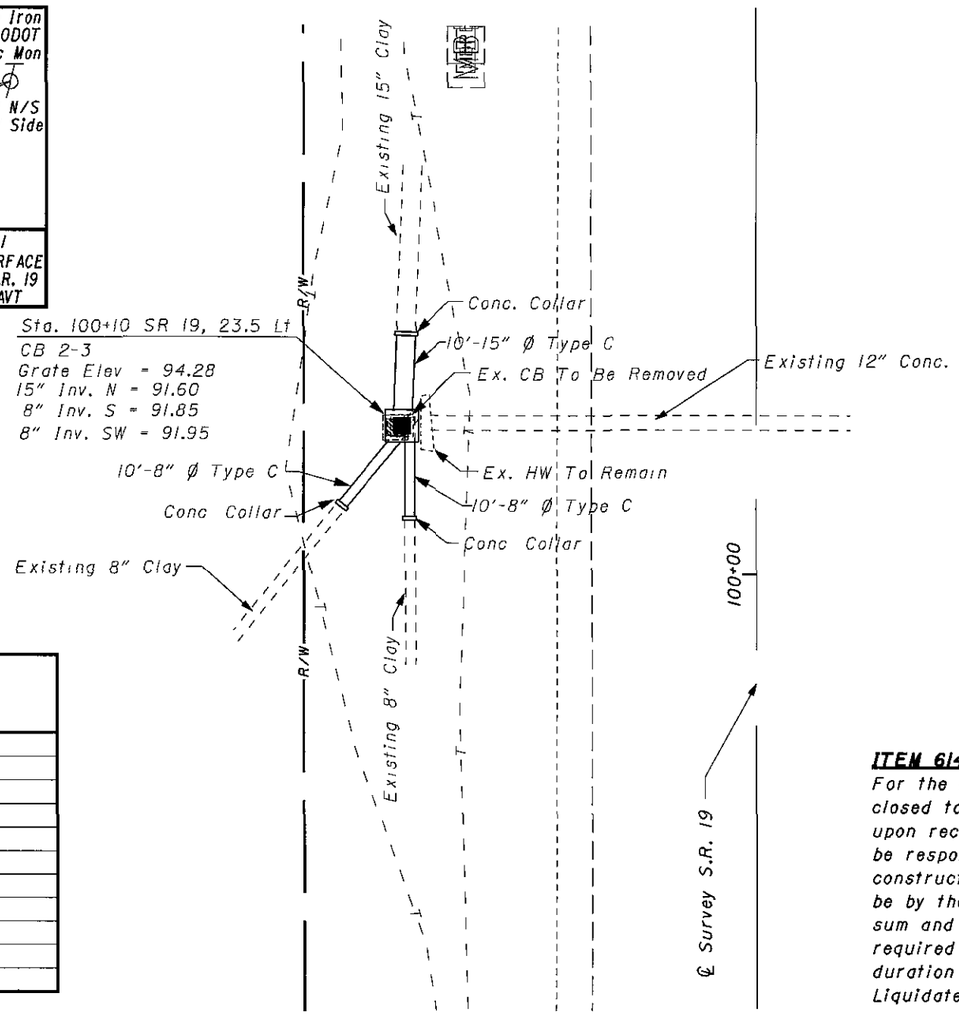
STA. 93+99
PK/WASHER ON SURFACE
℄ PAVT S.R. 19
10' RT. EDGE PAVT



Ⓐ STA. 107+43.99
PK/WASHER ON SURFACE
℄ PAVT S.R. 19
10' LT. EDGE PAVT

Ⓑ STA. 107+41
PK/WASHER ON SURFACE
0.5' LT. ℄ PAVT S.R. 19
9.5' LT. EDGE PAVT

BM - El. 97.46
60 dia. Spike in S/S Power Pole
Sta. 99+67, 29.71' Rt.



ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	58100	EACH	1	CATCH BASIN REMOVED
603	02000	FT	20	8" CONDUIT, TYPE C
603	06100	FT	10	15" CONDUIT, TYPE C
604	04900	EACH	1	CATCH BASIN, NO. 2-3
659	10000	SQ YD	17	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.

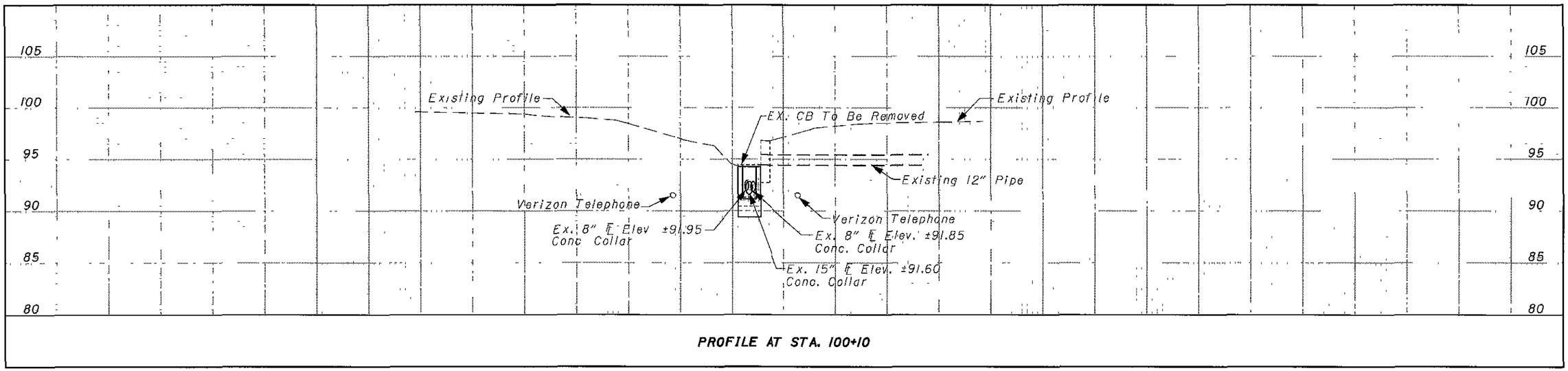
PROPOSED WORK

1. Replace catch basin on west side.
2. Tie drainage together.

Hydraulic Data
Q10 = 8.7 CFS
Q25 = 10.6 CFS
Drainage Area = 4.82 AC

Design Traffic
2016 ADT - 2570

ITEM 614. MAINTENANCE OF TRAFFIC:
For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.



PROFILE AT STA. 100+10

CULVERT PLAN AND PROFILE
SEN-19-1.90

SEN-19-0.00
SAN-19-14.03

66
98

JJP JMF

HORIZONTAL SCALE IN FEET
0 2.5 5 10

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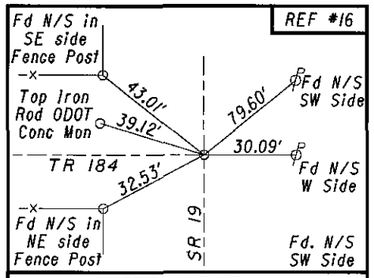
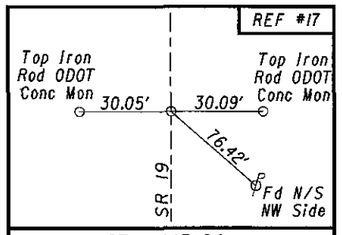
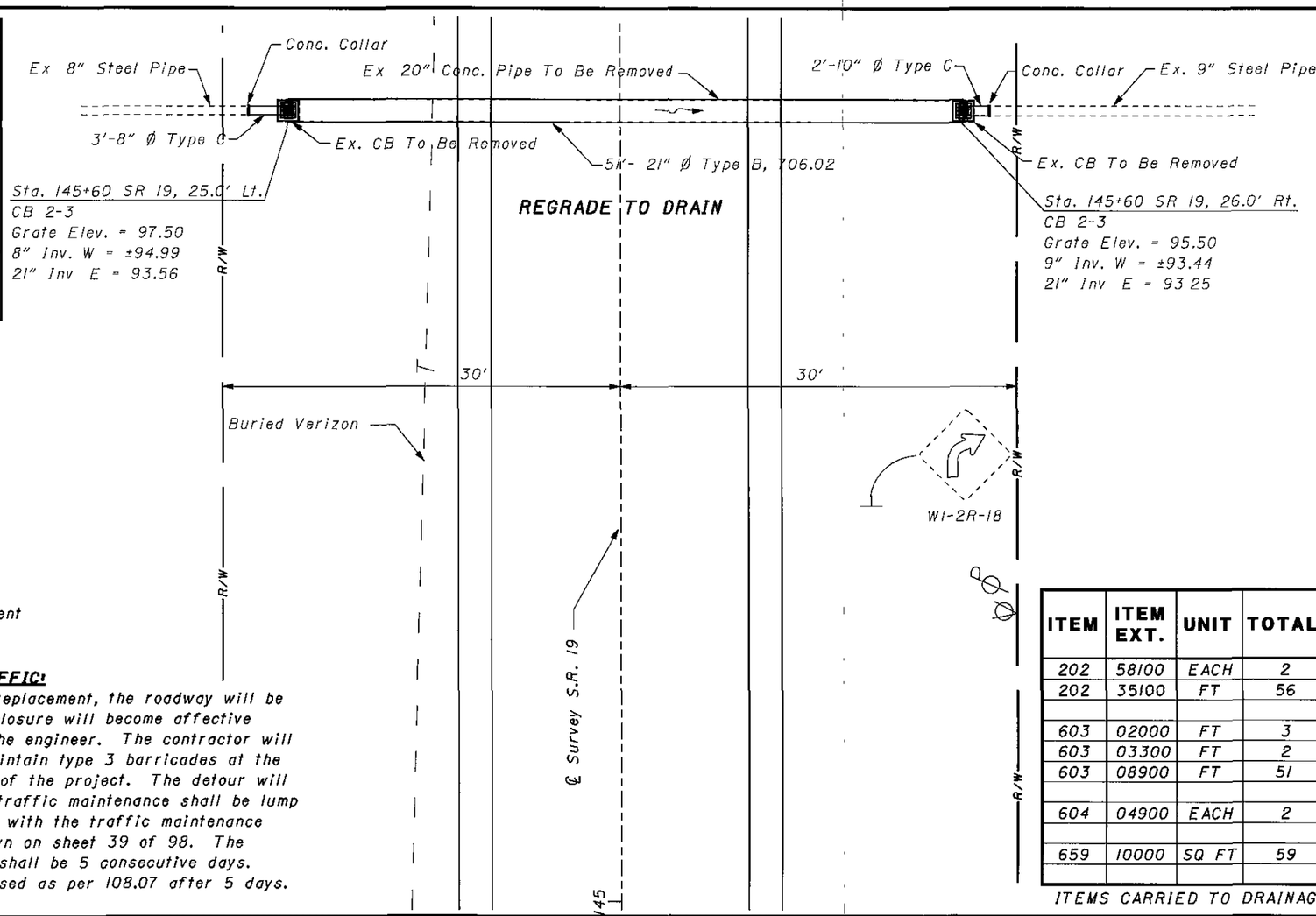


STA. 133+97
PK/WASHER ON SURFACE
0.5' LT. OF ℄ PAVT. SR 19
9.5' LT. EDGE PAVT SR 19



STA. 145+96
PK/WASHER ON SURFACE
1.0' LT. OF ℄ PAVT. SR 19
9.0' LT. EDGE PAVT SR 19

All Outs Are Taken From ℄ Pavement



ITEM 614, MAINTENANCE OF TRAFFIC:

For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.

PROPOSED WORK

1. Replace catch basin on east side.
2. Replace existing 20" conc. pipe.
3. Perform ditch cleaning.

Hydraulic Data

Q10 = 7.2 CFS, V10 = 4.4 FPS
Q25 = 8.9 CFS, V25 = 4.4 FPS
Drainage Area = 4.4 AC

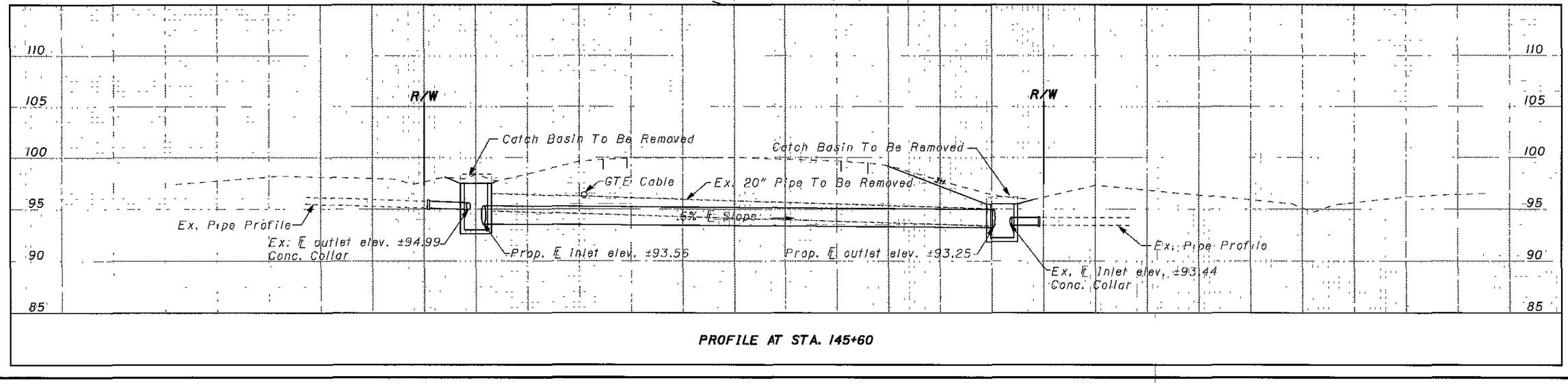
Design Traffic

2016 ADT = 2570

BM - El. 100.00
Small RR Spike In Power Pole
Sta. 145+25, 27.0' Rt.

ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	58100	EACH	2	CATCH BASIN REMOVED
202	35100	FT	56	PIPE REMOVED, 24" AND UNDER
603	02000	FT	3	8" CONDUIT, TYPE C
603	03300	FT	2	10" CONDUIT, TYPE C
603	08900	FT	51	21" CONDUIT, TYPE B, 706.02
604	04900	EACH	2	CATCH BASIN 2-3
659	10000	SQ FT	59	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.



PROFILE AT STA. 145+60

HORIZONTAL SCALE IN FEET
0 5 10 25

JJP JMF

CULVERT PLAN AND PROFILE
SEN-19-2.76

SEN-19-0.00
SAN-19-14.03

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ITEM 614. MAINTENANCE OF TRAFFIC:

For the duration of the culvert replacement, the roadway will be closed to through traffic. The closure will become affective upon receiving permission from the engineer. The contractor will be responsible to furnish and maintain type 3 barricades at the construction limits for each end of the project. The detour will be by the department. Cost for traffic maintenance shall be lump sum and be included for payment with the traffic maintenance required for resurfacing as shown on sheet 39 of 98. The duration of the roadway closure shall be 5 consecutive days. Liquidated damages will be assessed as per 108.07 after 5 days.

PROPOSED WORK

- Replace catch basin on east side.
- Reconnect existing drainage.
- Perform ditch cleaning.

Design Traffic

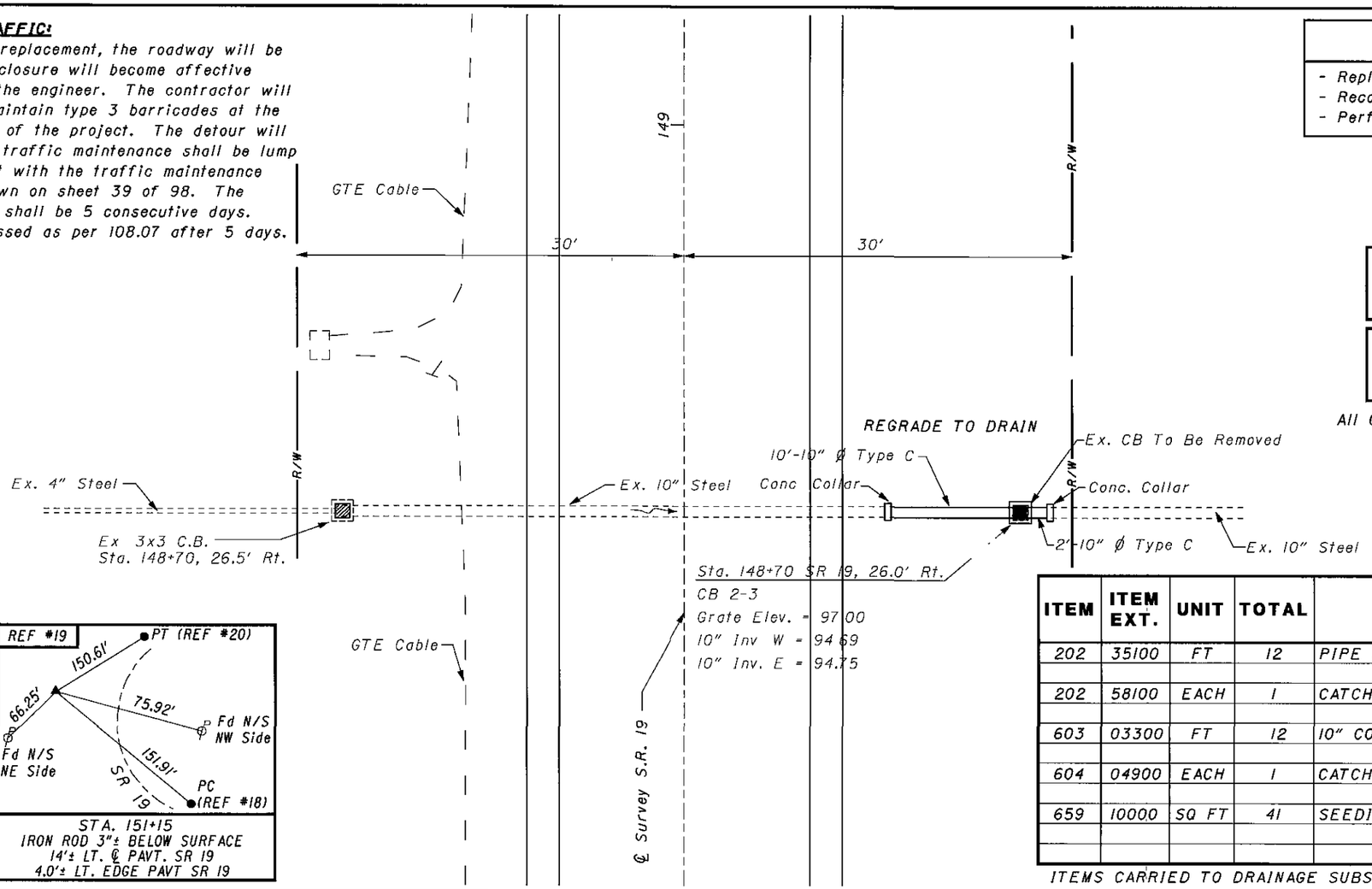
2016 ADT = 2570

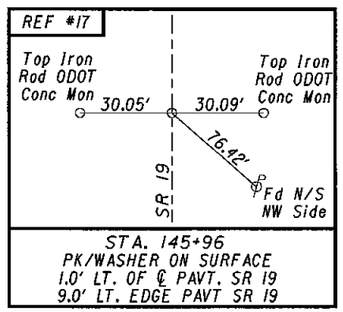
BM #1 - El. 100.00
Small RR Spike In Power Pole
Sta. 145+25, 27.0' Rt.

BM #2 - El. 99.92
Small RR Spike In Power Pole
Sta. 148+04, 30.0' Rt.

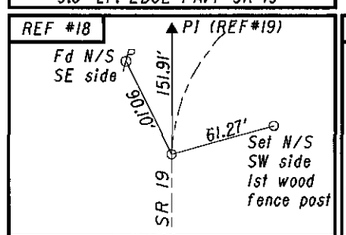
All Outs Are Taken From ℄ Pavement

HORIZONTAL SCALE IN FEET
0 2.5 5 10





STA. 145+96
PK/WASHER ON SURFACE
1.0' LT. OF ℄ PAVT. SR 19
9.0' LT. EDGE PAVT SR 19

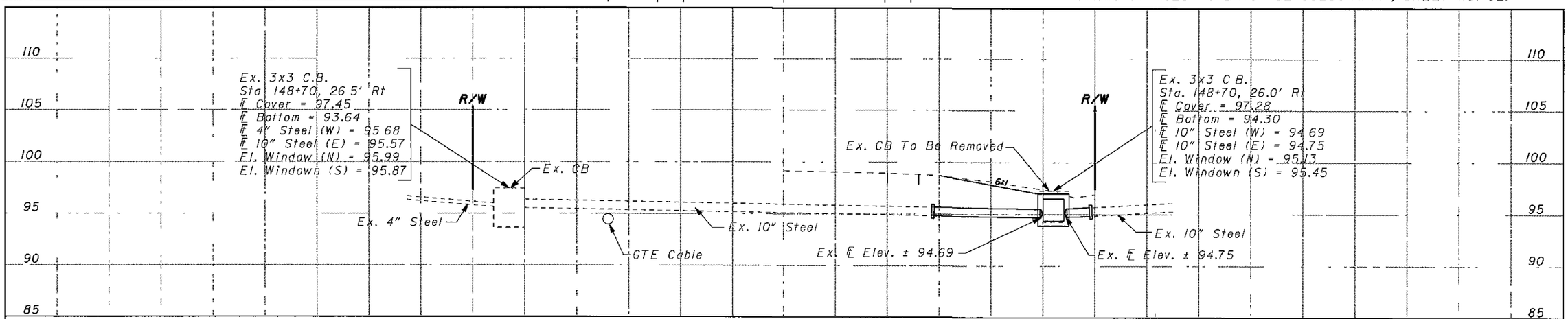


STA. 149+60
PK/WASHER ON SURFACE
℄ PAVT. SR 19
10.0' RT. EDGE PAVT SR 19

STA. 151+15
IRON ROD 3"± BELOW SURFACE
14'± LT. ℄ PAVT. SR 19
4.0'± LT. EDGE PAVT SR 19

ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	35100	FT	12	PIPE REMOVED, 24" AND UNDER
202	58100	EACH	1	CATCH BASIN REMOVED
603	03300	FT	12	10" CONDUIT, TYPE C
604	04900	EACH	1	CATCH BASIN 2-3
659	10000	SQ FT	41	SEEDING AND MULCHING

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.



PROFILE AT STA. 148+70

CULVERT PLAN AND PROFILE

SEN-19-0.00
SAN-19-14.03

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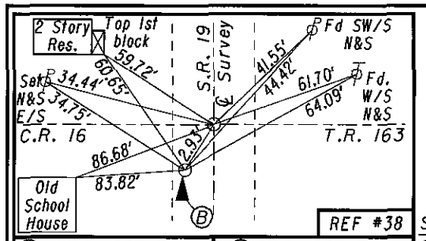
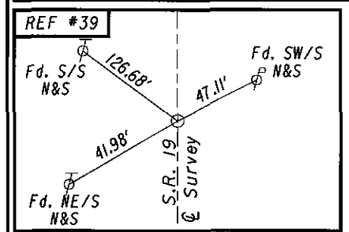


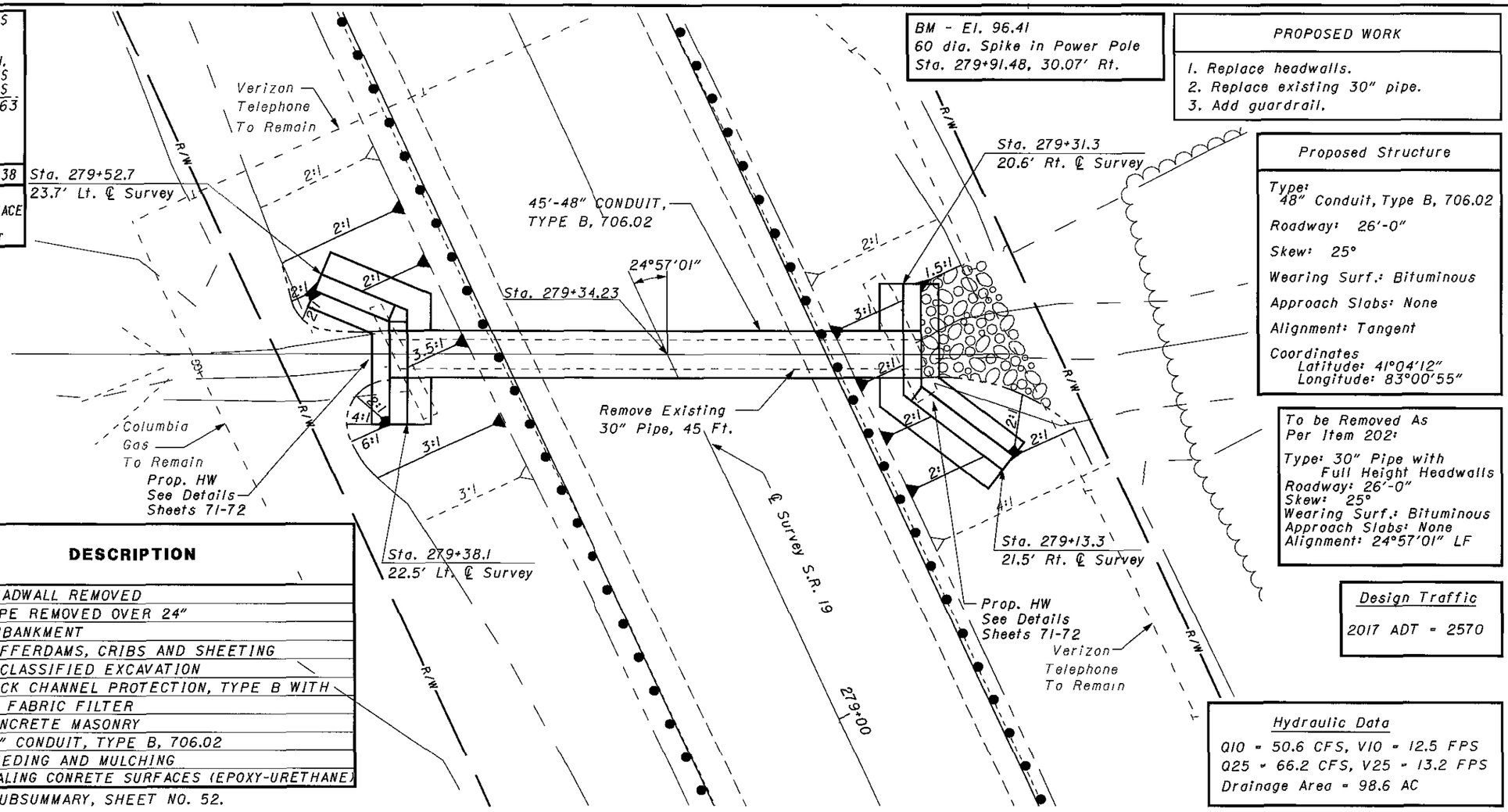
REF #38

Ⓐ STA. 267+35
PK/WASHER ON SURFACE
2' LT. ℄ PAVT S.R. 19
8' LT. EDGE PAVT

Ⓑ STA. 267+37
PK/WASHER ON SURFACE
℄ PAVT S.R. 19
10' LT. EDGE PAVT



STA. 282+20
PK/WASHER ON SURFACE
℄ PAVT. SR 19
10' RT. EDGE PAVT



BM - El. 96.41
60 dia. Spike in Power Pole
Sta. 279+91.48, 30.07' Rt.

PROPOSED WORK

1. Replace headwalls.
2. Replace existing 30" pipe.
3. Add guardrail.

Proposed Structure

Type:
48" Conduit, Type B, 706.02
Roadway: 26'-0"
Skew: 25°
Wearing Surf.: Bituminous
Approach Slabs: None
Alignment: Tangent
Coordinates
Latitude: 41°04'12"
Longitude: 83°00'55"

To be Removed As Per Item 202:

Type: 30" Pipe with Full Height Headwalls
Roadway: 26'-0"
Skew: 25°
Wearing Surf.: Bituminous
Approach Slabs: None
Alignment: 24°57'01" LF

Design Traffic

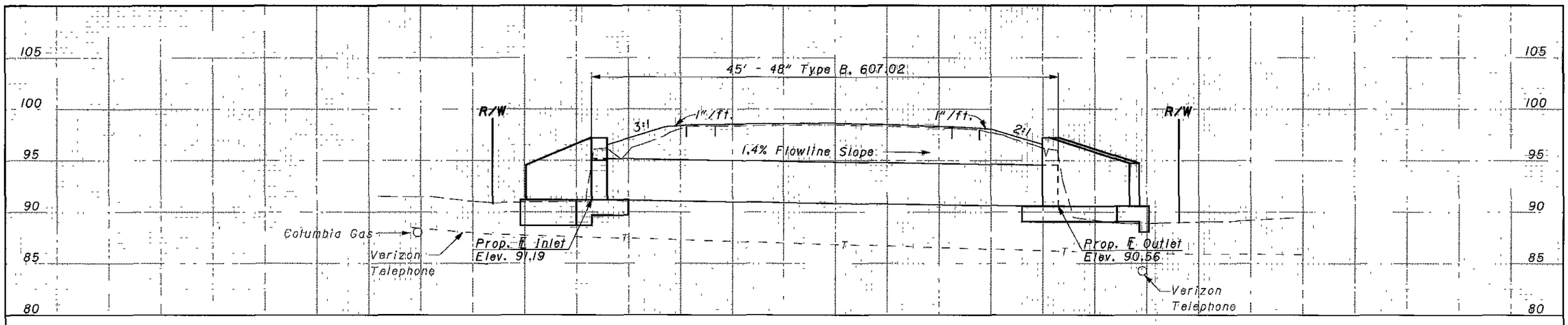
2017 ADT = 2570

Hydraulic Data

Q10 = 50.6 CFS, V10 = 12.5 FPS
Q25 = 66.2 CFS, V25 = 13.2 FPS
Drainage Area = 98.6 AC

ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION
202	20010	EACH	2	HEADWALL REMOVED
202	35200	FT	45	PIPE REMOVED OVER 24"
203	20000	CU YD	8	EMBANKMENT
503	11100	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING
503	21300	LUMP	LUMP	UNCLASSIFIED EXCAVATION
601	32104	CU YD	6	ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER
602	20000	CU YD	17	CONCRETE MASONRY
603	20900	FT	45	48" CONDUIT, TYPE B, 706.02
659	10000	SQ YD	44	SEEDING AND MULCHING
864	10100	SQ YD	17	SEALING CONRETE SURFACES (EPOXY-URETHANE)

ITEMS CARRIED TO DRAINAGE SUBSUMMARY, SHEET NO. 52.



PROFILE ALONG CULVERT AT STA. 279+34.23

HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED TLM/KJB
CHECKED DAR

CULVERT PLAN AND PROFILE
SEN-19-5.29

SEN-19-0.00
SAN-19-14.03

1 / 4

69 / 98

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PROJECT DATA	
Total Area (Right of Way)	0.125 ACRE
Area to Undergo Excavation Filling or Grading	0.19 ACRE
Runoff Coefficient for Preconstruction Site	0.76
Runoff Coefficient for Post Construction Site	0.75
Immediate Receiving Waters	Honey Creek
Subsequent Receiving Waters	Sandusky River
Soil Data: Soil Survey of Seneca County, Ohio	Sheets 60 and 61
LATITUDE: 41°04'12"	LONGITUDE: 83°00'55"

PROJECT DESCRIPTION

REPLACE EXISTING 30" PIPE WITH NEW 48" PIPE

PROJECT EARTH DISTURBED AREA = 0.19 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 0.125 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA = 4.9 ACRES

HORIZONTAL SCALE IN FEET
0 2.5 5 10

Ex. 12" CPP
Ex. 14" Steel
Ex. 12" CPP
Remove Ex. 30" Pipe
45'-48" Type B, 706.02
℄ Survey S.R. 19
279+00
16 IN" ELM
6 IN" ELM
R/W

PROJECT SITE PLAN
SEN-19-5.29
SEN-19-0.00
SAN-19-14.03
2 / 4
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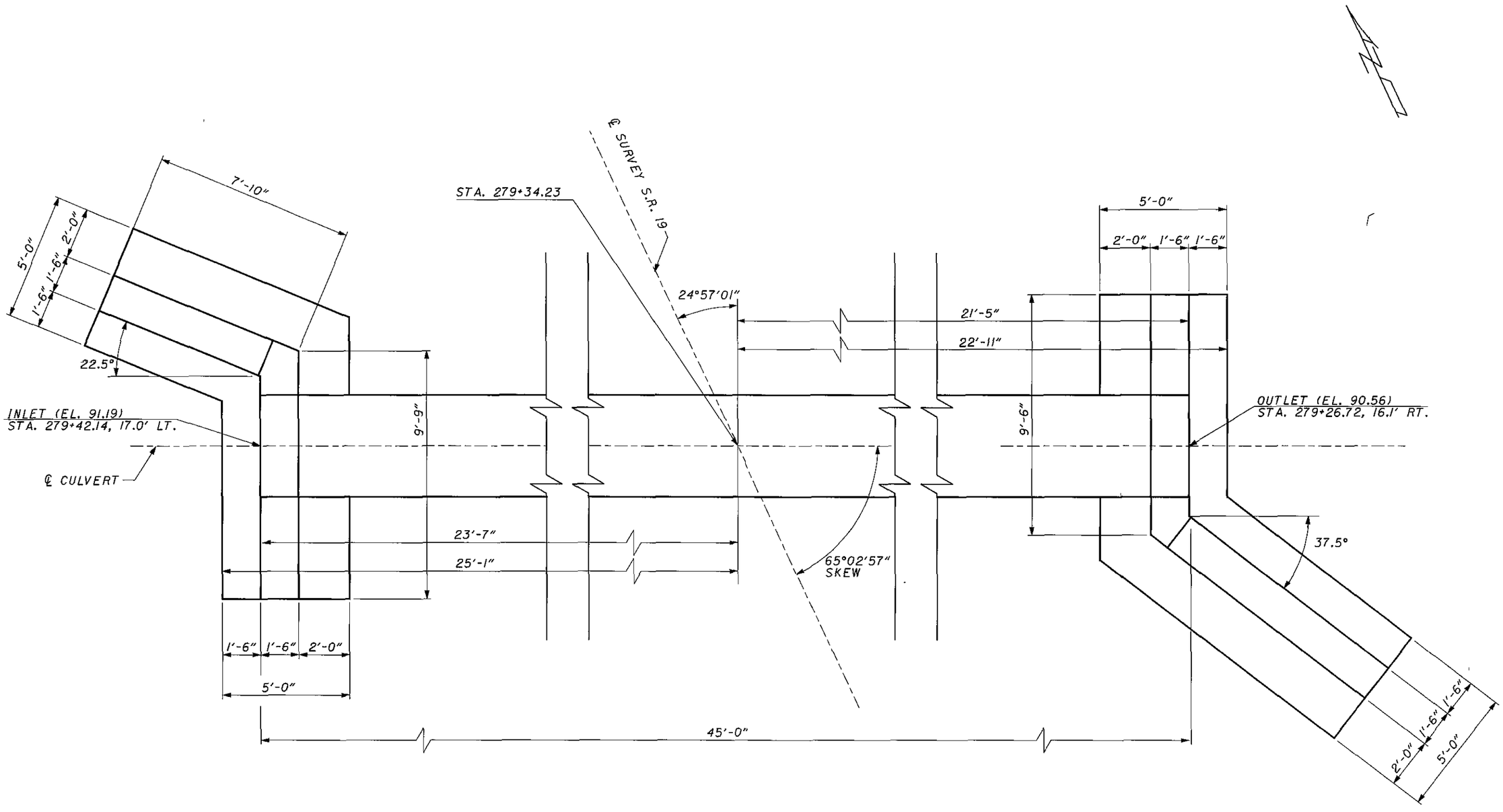

CULVERT & WINGWALL LAYOUT

Note:
For Details on Reinforcing Steel,
See Sht. 1 of 2 of Std. Dwg. HW-1.1

CALCULATED TLM
CHECKED DAR

CULVERT DETAILS - SEN-19-5.29

SEN-19-0.00
SAN-19-14.03

3 / 4

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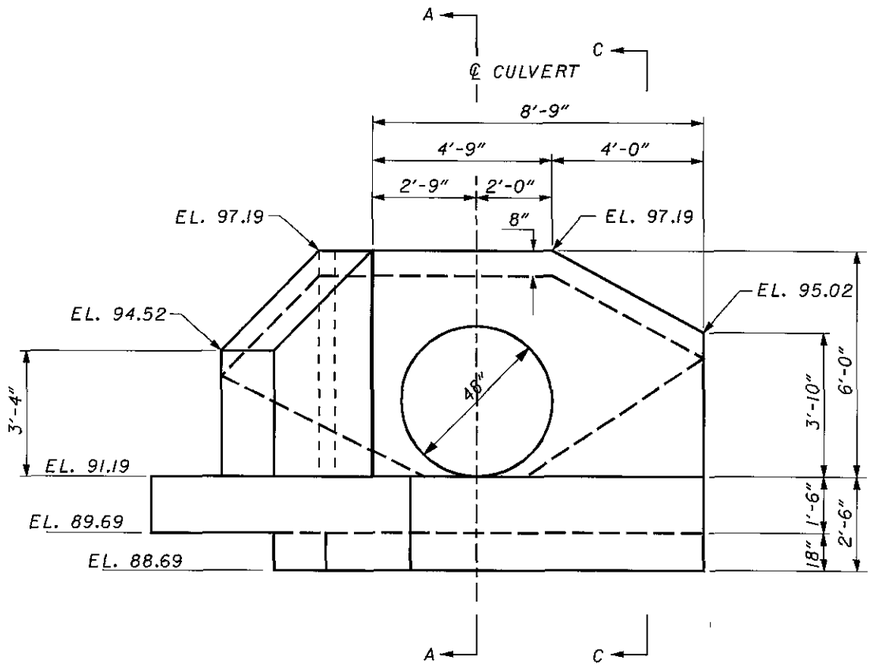
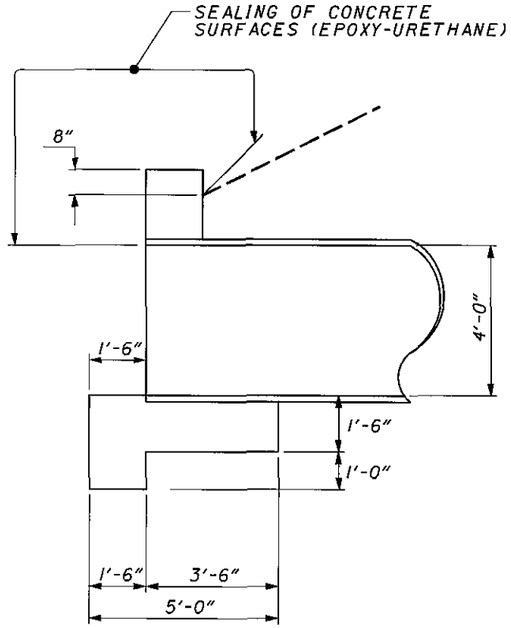


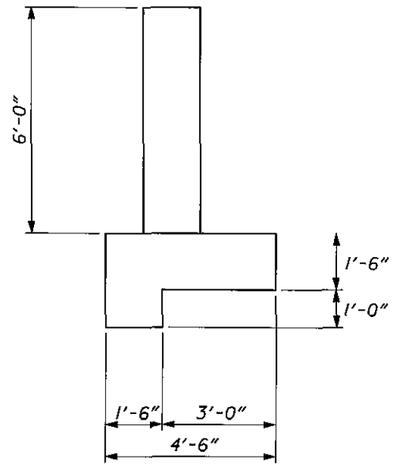
INLET ELEVATION

FLOWLINE ELEVATION: EL. 91.19

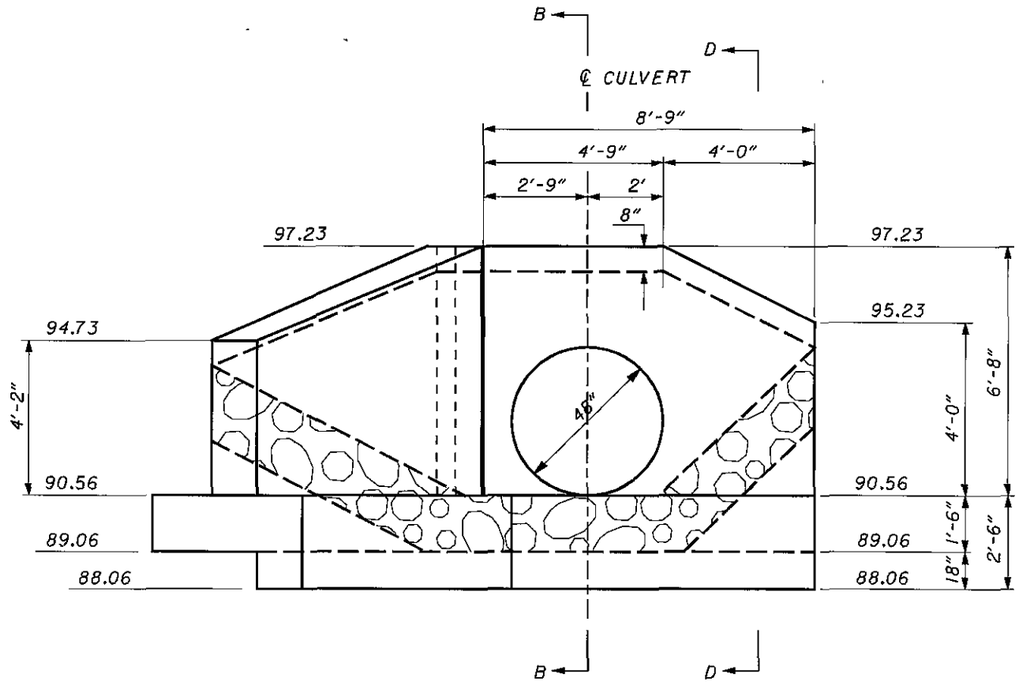


SECTION A-A

Note:
For Details on Reinforcing Steel,
See Sht. 1 of 2 of Std. Dwg. HW-1.1

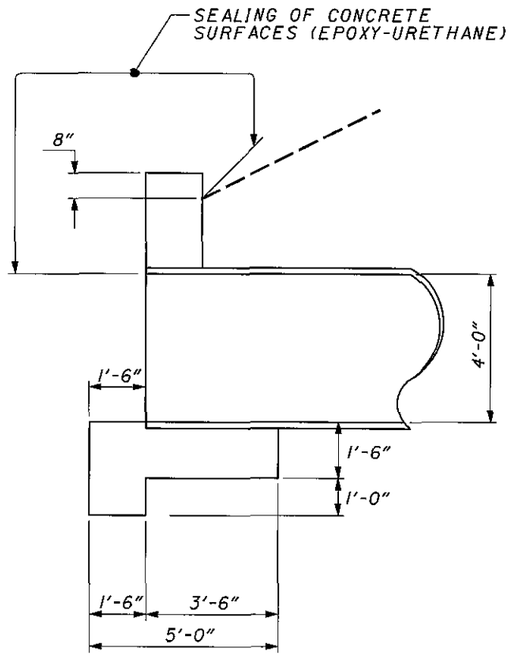


SECTION C-C

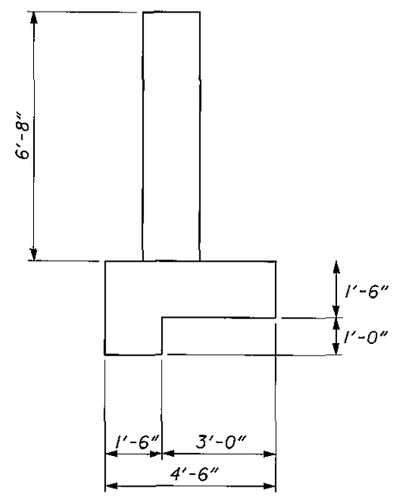


OUTLET ELEVATION

FLOWLINE ELEVATION: EL. 90.56



SECTION B-B



SECTION D-D

CALCULATED TLM
CHECKED DAR

CULVERT DETAILS - SEN-19-5.29

SEN-19-0.00
SAN-19-14.03

4 / 4

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98

LOCATION	ROUTE	SIDE	SLM OR STATION		642				644																				
					WHITE EDGE LINE	CENTER LINE			CHANNELIZING LINE		STOP LINE	CROSSWALK LINE, AS PER PLAN	RAILROAD SYMBOL MARKING	TRANSVERSE/ DIAGONAL LINE			CURB MARKING		HANDICAP SYMBOL MARKING	SCHOOL SYMBOL MARKING, 72"	PARKING LOT STALL MARKING		LANE ARROW			WORD "ONLY" ON PAVEMENT 72"
						DOUBLE SOLID	DASHED SOLID	DASHED	WHITE	BLUE				WHITE	YELLOW	BLUE	YELLOW	BLUE			WHITE	BLUE	LEFT	RIGHT	COMBO	
			FROM	TO	MILE	MILE			FEET		FEET	FEET	FEET	FEET			FEET		EACH	EACH	FEET		EACH			EACH
1	SR 19	Lt. & Rt.	0.00	0.19	0.38	0.19																				
1	SR 19	Lt. & Rt.	0.19	0.34	0.30		0.15																			
1	SR 19	Lt. & Rt.	0.34	0.77	0.86			0.43																		
1	SR 19	Lt. & Rt.	0.77	0.92	0.30		0.15																			
1	SR 19	Lt. & Rt.	0.92	1.09	0.34	0.17																				
1	SR 19	Lt. & Rt.	1.09	1.24	0.30		0.15																			
1	SR 19	Lt. & Rt.	1.24	1.68	0.88			0.44																		
1	SR 19	Lt. & Rt.	1.68	1.77	0.18		0.09																			
1	SR 19	Lt. & Rt.	1.77	1.83	0.12			0.06																		
1	SR 19	Lt. & Rt.	1.83	1.93	0.20		0.10																			
1	SR 19	Lt. & Rt.	1.93	2.11	0.36			0.18			16															
1	SR 19	Lt. & Rt.	2.11	2.26	0.30		0.15																			
1	SR 19	Lt. & Rt.	2.26	2.30	0.08	0.04																				
1	SR 19	Lt. & Rt.	2.30	2.46	0.32		0.16																			
1	SR 19	Lt. & Rt.	2.46	2.49	0.06			0.03																		
1	SR 19	Lt. & Rt.	2.49	2.59	0.20		0.10																			
1	SR 19	Lt. & Rt.	2.59	2.63	0.08			0.04																		
1	SR 19	Lt. & Rt.	2.63	2.70	0.14		0.07																			
1	SR 19	Lt. & Rt.	2.70	2.72	0.04	0.02																				
1	SR 19	Lt. & Rt.	2.72	2.87	0.30		0.15																			
1	SR 19	Lt. & Rt.	2.87	3.22	0.70	0.35																				
1	SR 19	Lt. & Rt.	3.22	3.41	0.38		0.19																			
1	SR 19	Lt. & Rt.	3.41	4.00	0.82			0.66			17	276								2	66					
1	SR 19	Lt. & Rt.	211+06	211+40								96					30								
1	SR 19	Lt. & Rt.	211+40	214+04			0.05										113	24	1		536	40				
1	SR 19	Lt. & Rt.	214+04	214+71								264														
1	SR 19	Lt. & Rt.	214+71	217+95			0.06										30				108					
1	SR 19	Lt. & Rt.	217+95	219+71				0.03																		
1	SR 19	Lt. & Rt.	4.16	4.30	0.21			0.14				60														
1	SR 19	Lt. & Rt.	4.30	4.38	0.16		0.08																			
1	SR 19	Lt. & Rt.	4.38	4.51	0.26	0.13																				
1	SR 19	Lt. & Rt.	4.51	4.66	0.30		0.15																			
1	SR 19	Lt. & Rt.	4.66	5.11	0.90			0.45			14															
1	SR 19	Lt. & Rt.	5.11	5.21	0.20		0.10																			
1	SR 19	Lt. & Rt.	5.21	5.25	0.08			0.04																		
1	SR 19	Lt. & Rt.	5.25	5.37	0.24		0.12																			
1	SR 19	Lt. & Rt.	5.37	5.44	0.14			0.07																		
1	SR 19	Lt. & Rt.	5.44	5.59	0.30		0.15																			
1	SR 19	Lt. & Rt.	5.59	5.60	0.02	0.01																				
1	SR 19	Lt. & Rt.	5.60	5.73	0.26		0.13																			
1	SR 19	Lt. & Rt.	5.73	5.80	0.14			0.07																		
1	SR 19	Lt. & Rt.	5.80	5.94	0.28		0.14																			
1	SR 19	Lt. & Rt.	5.94	6.07	0.26	0.13																				
SUBTOTALS					11.39	1.04	2.44	2.64			47	696					173	24	1	2	710	40				
TOTALS LOCATION 1 CARRIED TO SHEET NO. 74					11.39	6.12					47	696					197		1	2	750					

CALCULATED TLM CHECKED JMF

PAVEMENT MARKING SUBSUMMARY - LOCATION 1

SEN-19-0.00
SAN-19-14.03

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LOCATION	ROUTE	SIDE	SLM		642				644																				
					WHITE EDGE LINE	CENTER LINE			CHANNELIZING LINE		STOP LINE	CROSSWALK LINE, AS PER PLAN	RAILROAD SYMBOL MARKING	TRANSVERSE/ DIAGONAL LINE			CURB MARKING		HANDICAP SYMBOL MARKING	SCHOOL SYMBOL MARKING, 72"	PARKING LOT STALL MARKING		LANE ARROW			WORD "ONLY" ON PAVEMENT 96"
						DOUBLE SOLID	DASHED SOLID	DASHED	WHITE	BLUE				WHITE	YELLOW	BLUE	YELLOW	BLUE			WHITE	BLUE	LEFT	RIGHT	COMBO	
			FROM	TO	MILE	MILE			FEET		FEET	FEET	EACH	FEET			FEET		EACH	EACH	FEET		EACH			EACH
2	SR 19	Rt. & Lt.	14.03	14.14	0.22			0.11																		
2	SR 19	Rt. & Lt.	14.14	14.25	0.22		0.11				9		1													
2	SR 19	Rt. & Lt.	14.25	14.27	0.04																					
2	SR 19	Rt. & Lt.	14.27	14.38	0.22		0.11				9		1													
2	SR 19	Rt. & Lt.	14.38	14.84	0.92			0.46																		
2	SR 19	Rt. & Lt.	14.84	14.99	0.30		0.15																			
2	SR 19	Rt. & Lt.	14.99	15.01	0.04	0.02																				
2	SR 19	Rt. & Lt.	15.01	15.19	0.36		0.18																			
2	SR 19	Rt. & Lt.	15.19	15.69	1.00			0.50																		
2	SR 19	Rt. & Lt.	15.69	15.75	0.12	0.06																				
2	SR 19	Rt. & Lt.	15.75	15.86	0.22	0.22									84											
2	SR 19	Rt. & Lt.	15.86	15.95	0.18		0.18																4			
2	SR 19	Rt. & Lt.	15.95	15.97	0.04	0.04									17											
2	SR 19	Rt. & Lt.	15.97	16.04	0.14	0.07			191														2			2
2	SR 19	Rt. & Lt.	16.04	16.22	0.36	0.36									84											
2	SR 19	Rt. & Lt.	16.22	16.48	0.52		0.26																			
2	SR 19	Rt. & Lt.	16.48	16.51	0.06	0.03																				
2	SR 19	Rt. & Lt.	16.51	16.68	0.34		0.17																			
2	SR 19	Rt. & Lt.	16.68	16.80	0.24			0.12																		
2	SR 19	Rt. & Lt.	16.80	16.97	0.34		0.17																			
2	SR 19	Rt. & Lt.	16.97	17.00	0.06	0.03																				
2	SR 19	Rt. & Lt.	17.00	17.16	0.32		0.16																			
2	SR 19	Rt. & Lt.	17.16	17.49	0.66			0.33																		
TOTALS LOCATION 2. THIS SHEET					6.92	0.83	1.49	1.52	191		18		2		185								6			2
TOTALS LOCATION FROM SHEET NO. 73					11.39	1.04	2.44	2.64			47	232					173	24	1	2	710	40				
TOTALS					18.31	1.87	3.93	4.16	191		65	232	2		185		173	24	1	2	710	40	6			2
TOTALS CARRIED TO GENERAL SUMMARY					18.31	9.96			191		65	232	2		185		197		1	2	750		6			2

CALCULATED TLM
CHECKED JMF

PAVEMENT MARKING SUBSUMMARY - LOCATION 2

SEN-19-0.00
SAN-19-14.03

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SIGNING SUBSUMMARY

SHEET NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 SIGN, FLAT SHEET	630 GROUND MOUNTED SUPPORT, NO. 3 POST
						SQ. FT.	FT.
82	1	212+65	Rt.	R-7-8	12"x18"	1.5	12.0
				R7-H8b	12"x6"	0.5	
TOTALS CARRIED TO GENERAL SUMMARY						2.0	12

CALCULATED TLM
CHECKED JMF

SEN-19-0.00
SAN-19-14.03

For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 1

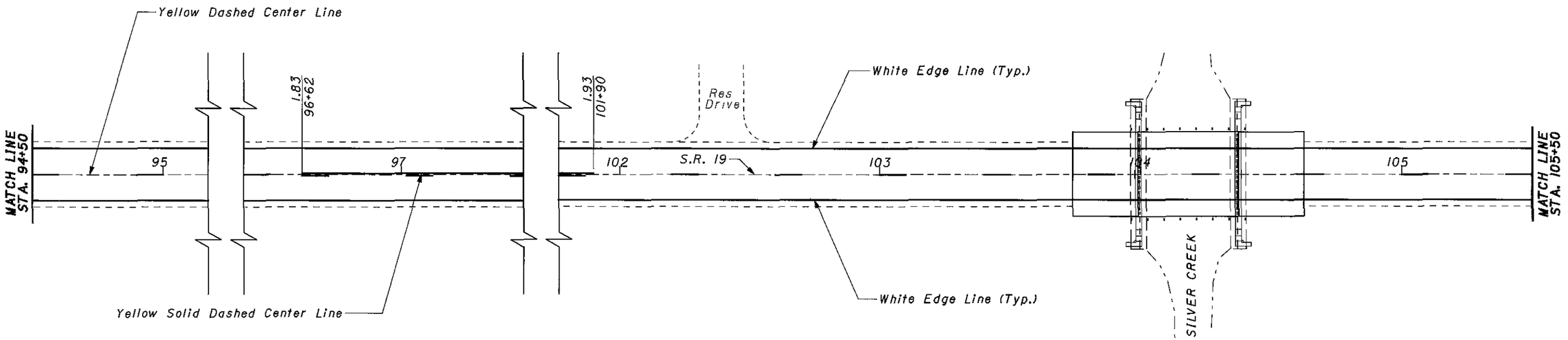
SEN-19-0.00
SAN-19-14.03

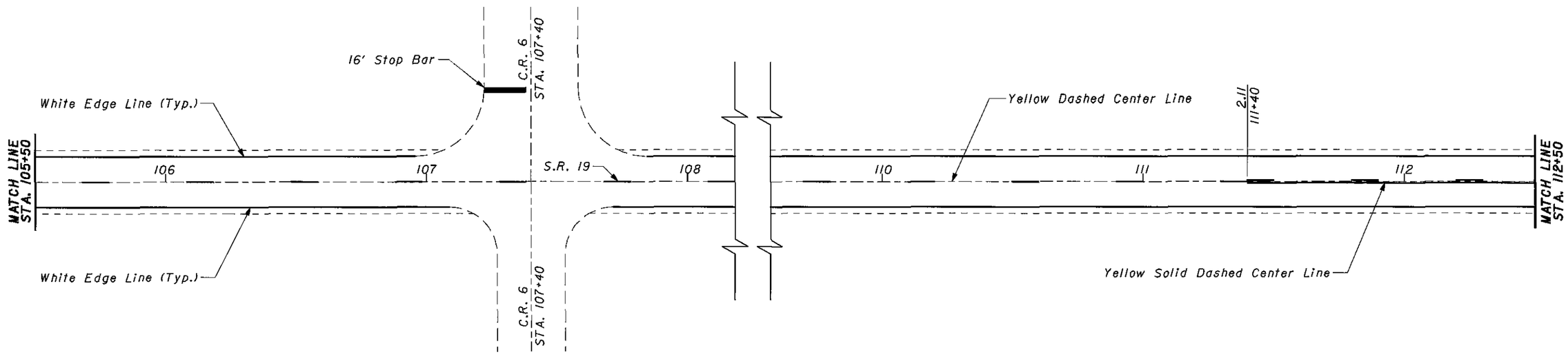
For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL LOCATION 1

SEN-19-0.00
SAN-19-14.03





For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL LOCATION 1

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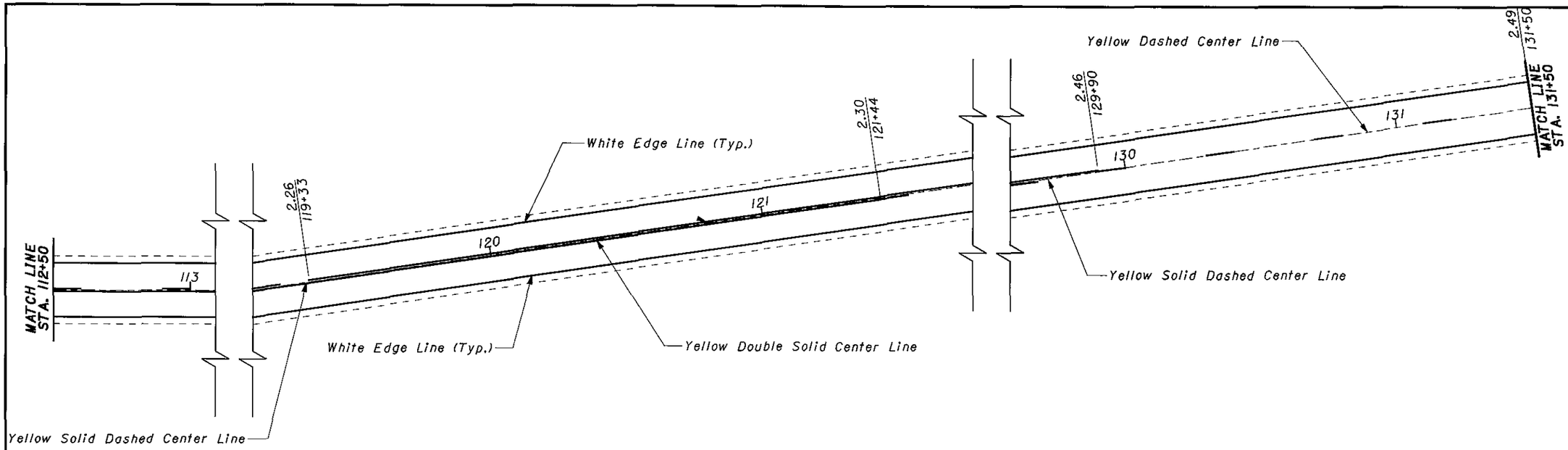

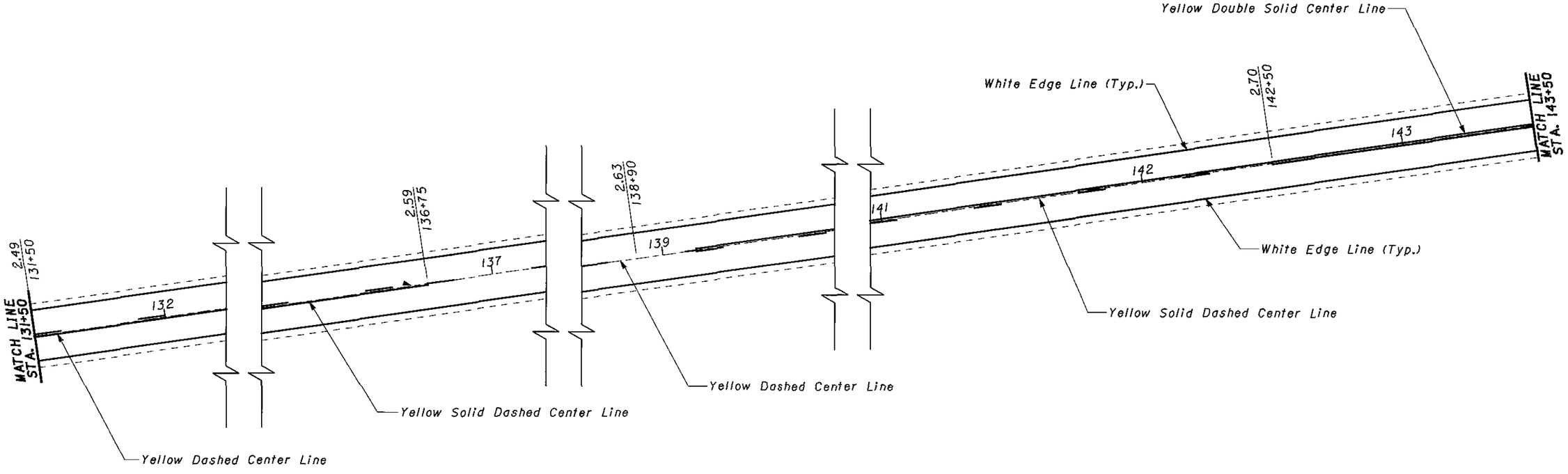

For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL DETAIL
LOCATION 1

SEN-19-0.00
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For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 1

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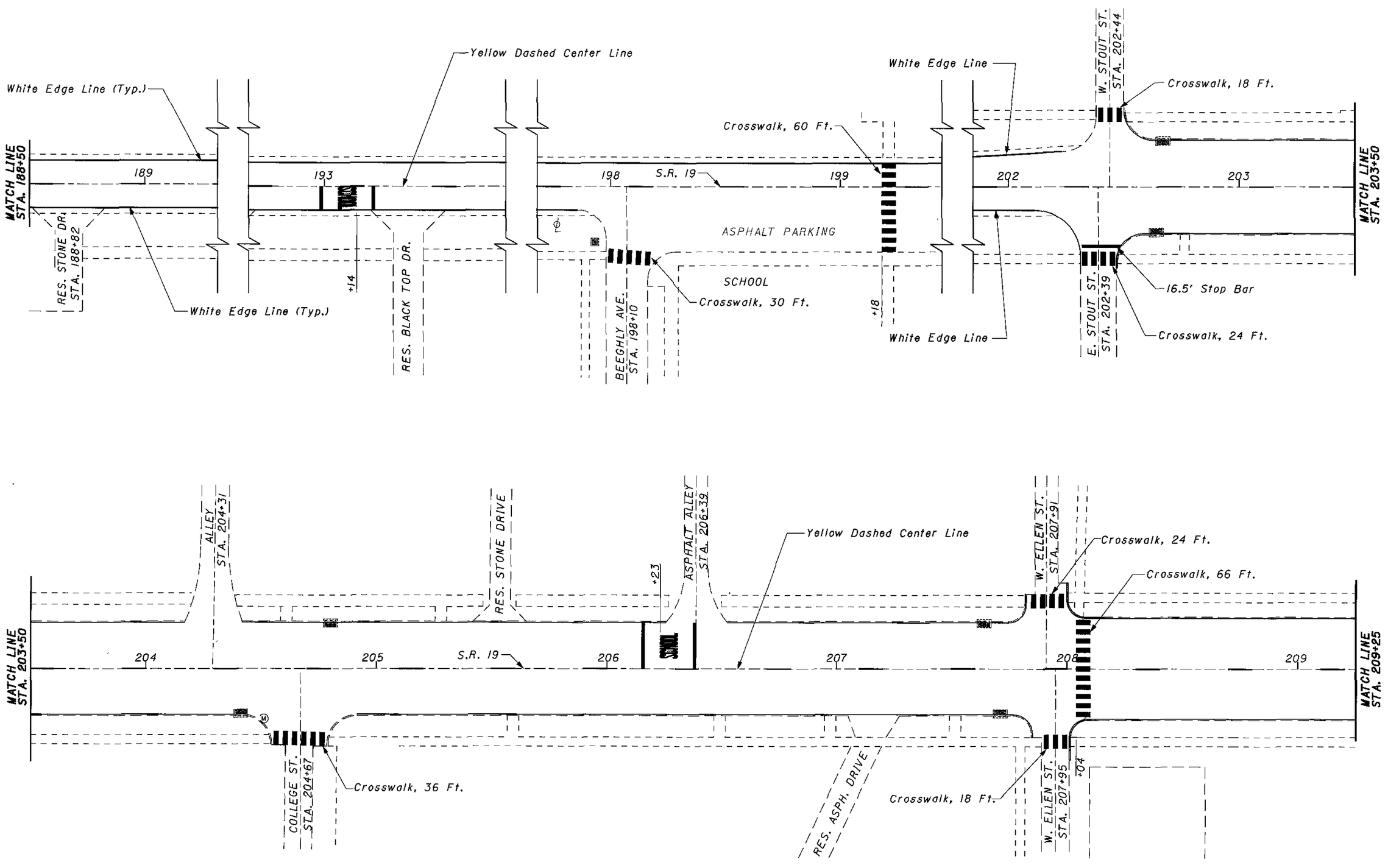
SAN-19-14.03



For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL LOCATION 1

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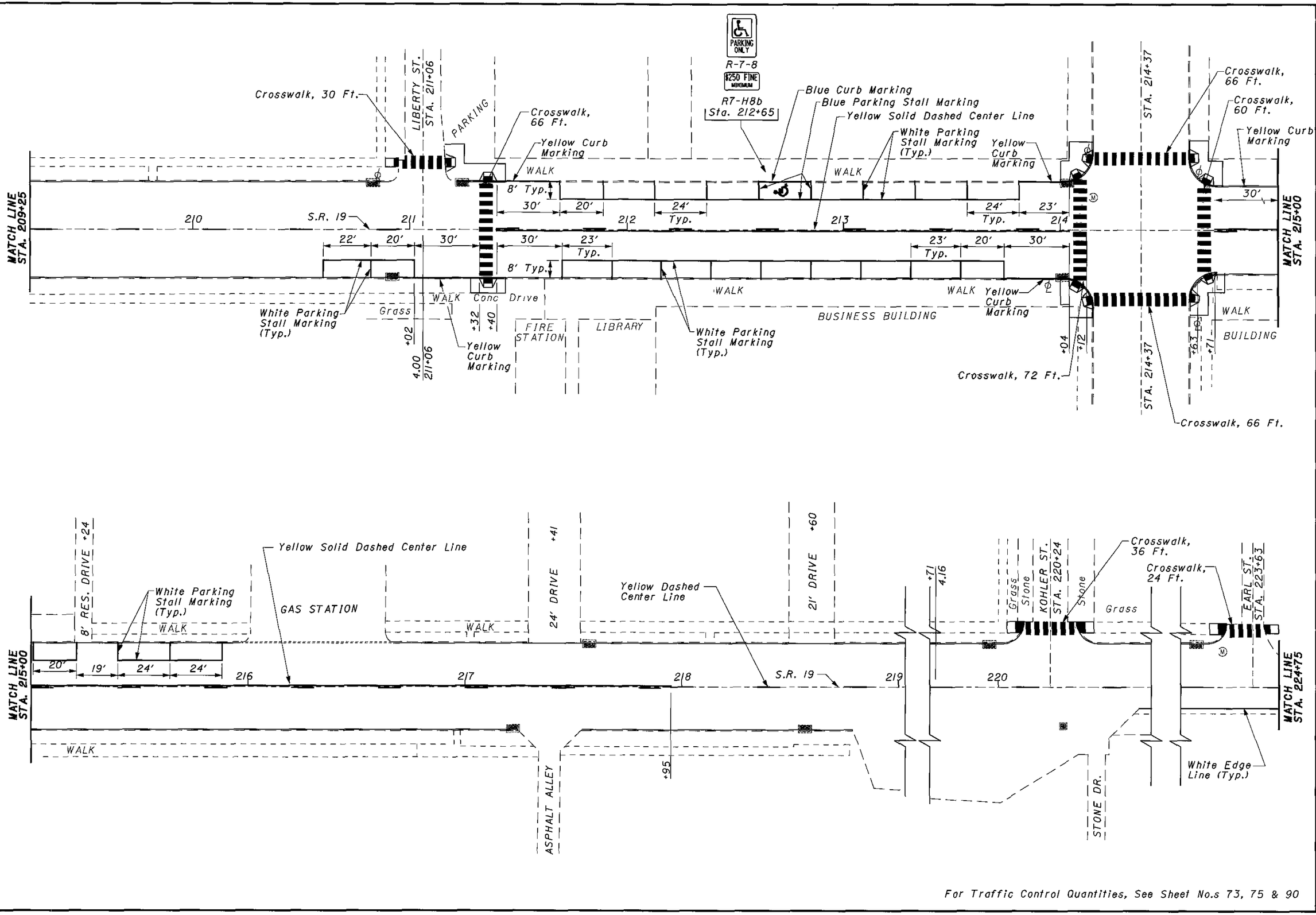

For Traffic Control Quantities, See Sheet No.s 73, 75 & 90

TRAFFIC CONTROL DETAIL
LOCATION 1

SEN-19-0.00
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For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 1

SEN-19-0.00
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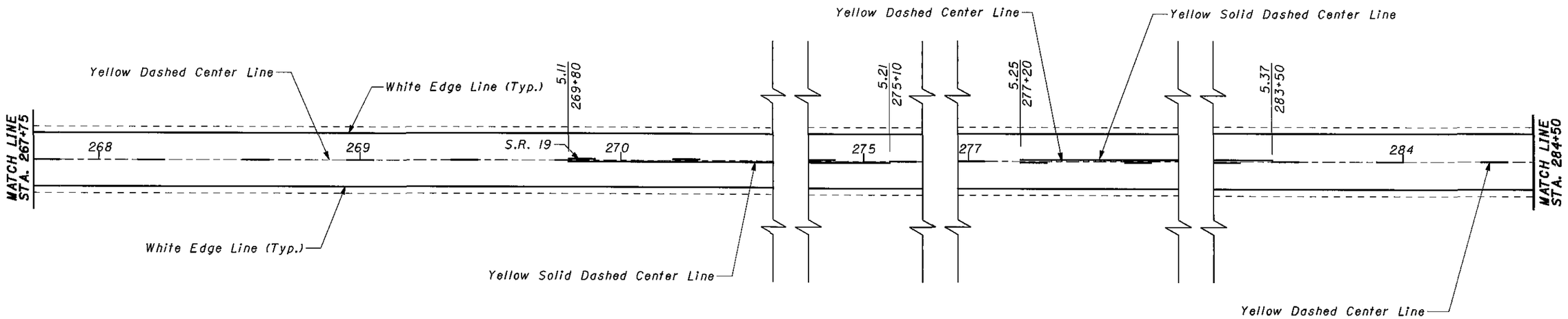

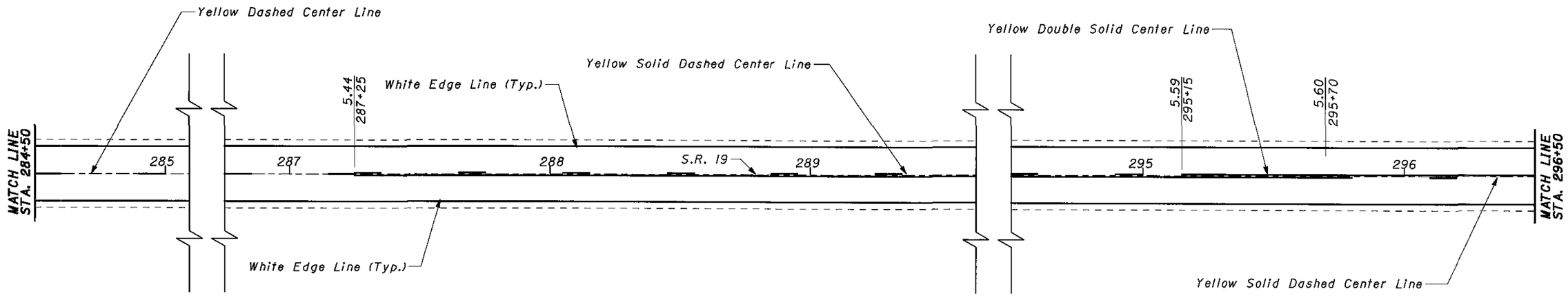

For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 1

SEN-19-0.00
SAN-19-14.03

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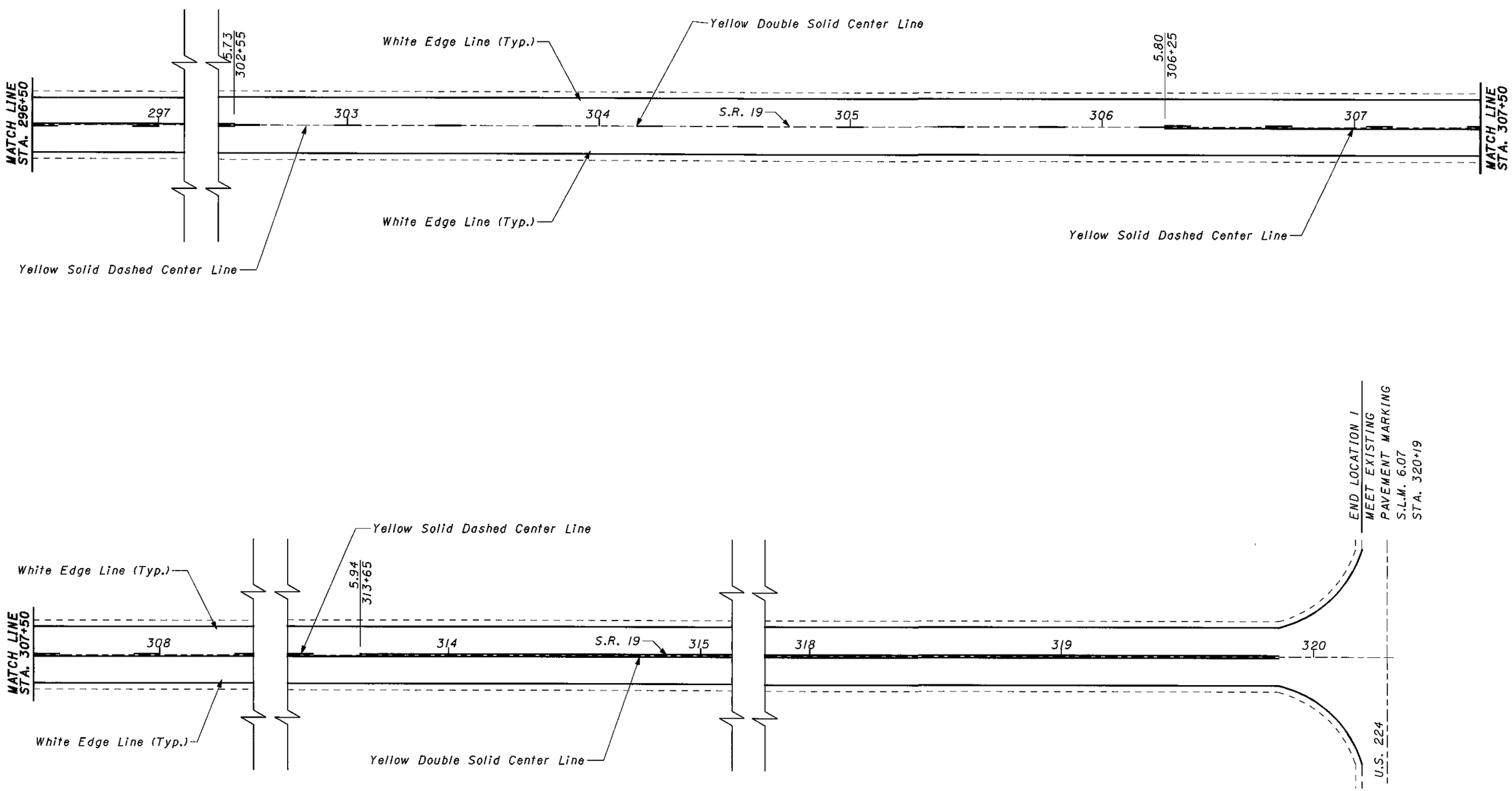


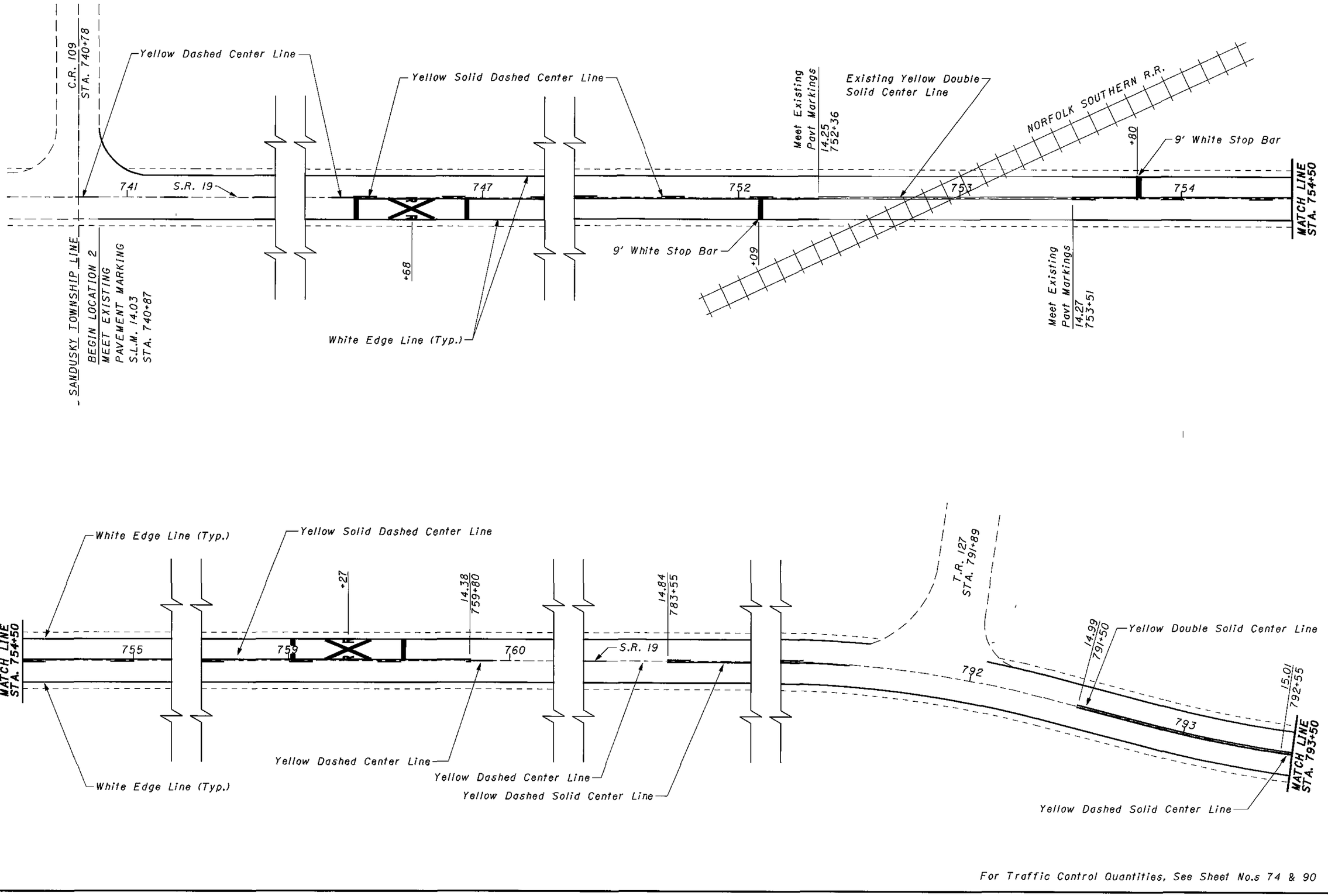
For Traffic Control Quantities, See Sheet No.s 73 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 1

SEN-19-0.00
SAN-19-14.03

85
98



For Traffic Control Quantities, See Sheet No.s 74 & 90

TRAFFIC CONTROL DETAIL
LOCATION 2

SEN-19-0.00
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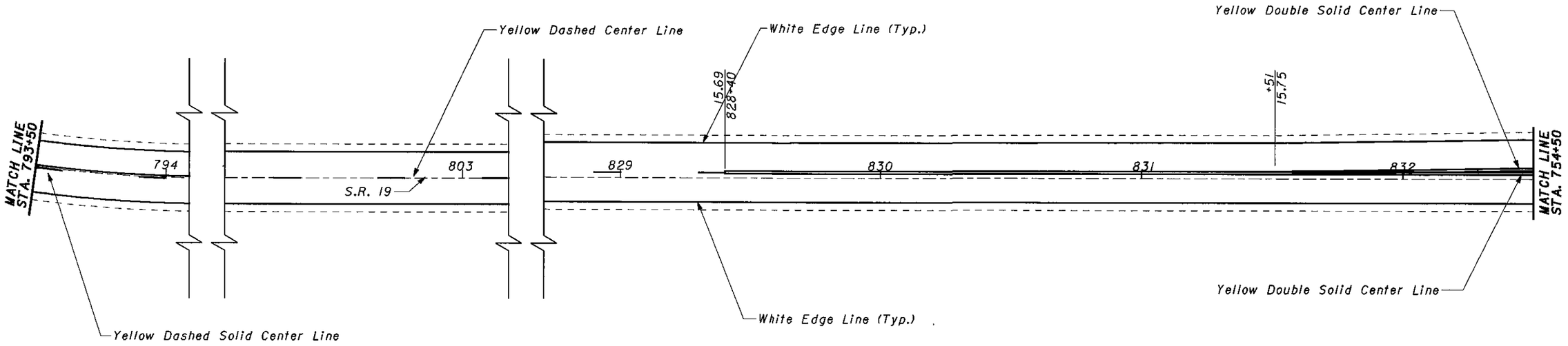

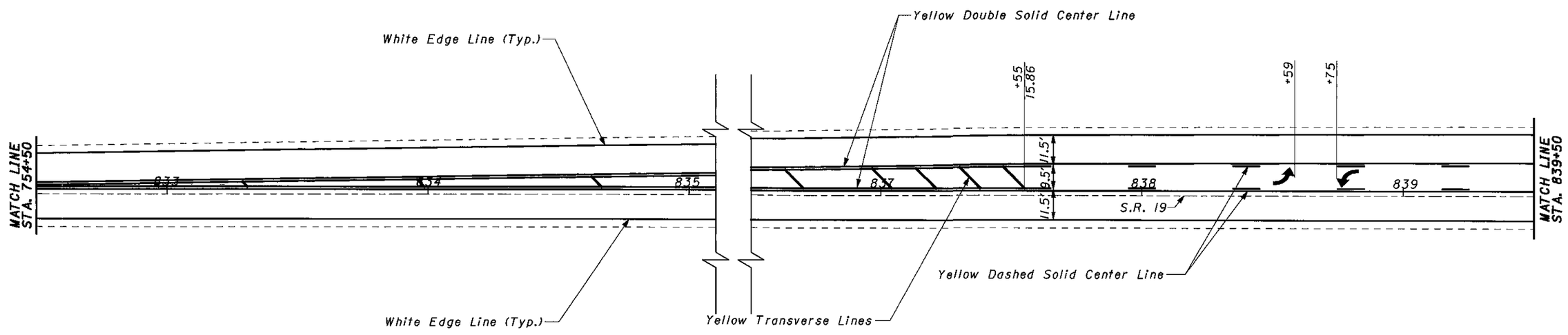

For Traffic Control Quantities, See Sheet No.s 74 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 2

SEN-19-0.00
SAN-19-14.03

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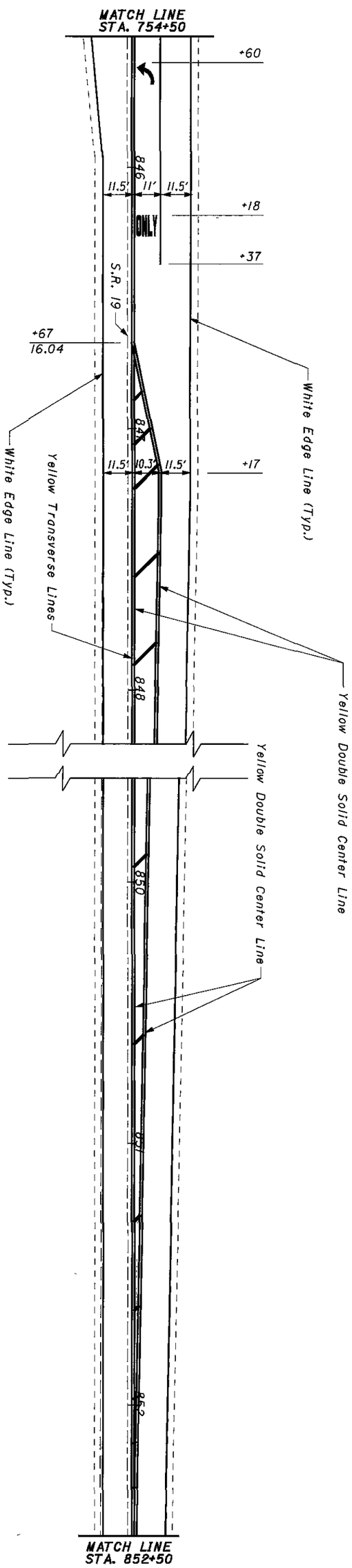

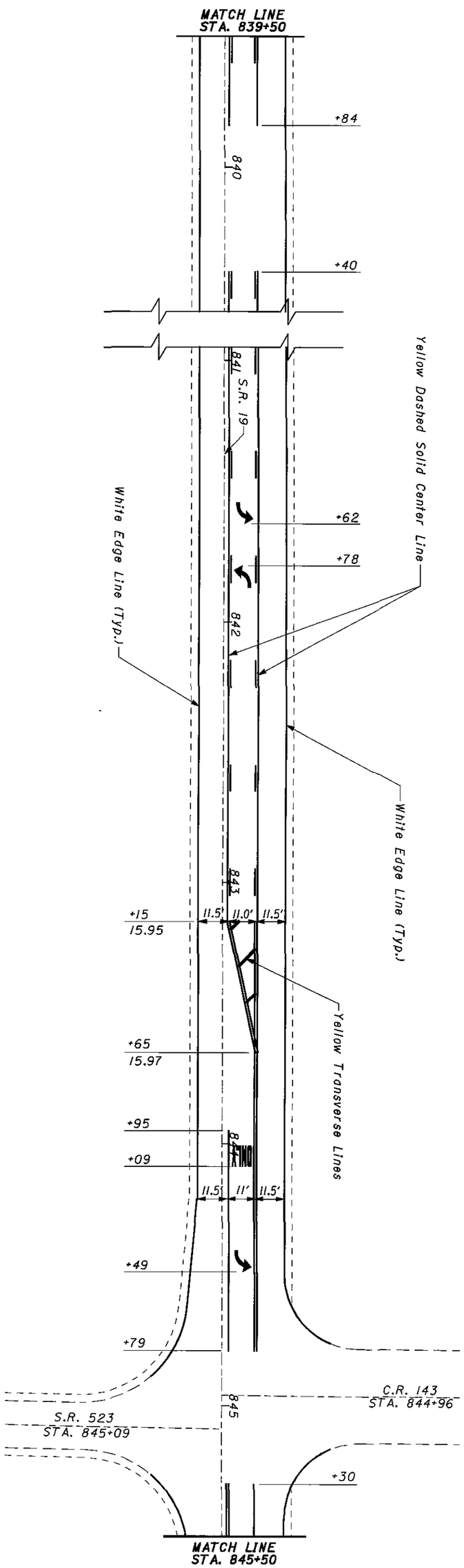

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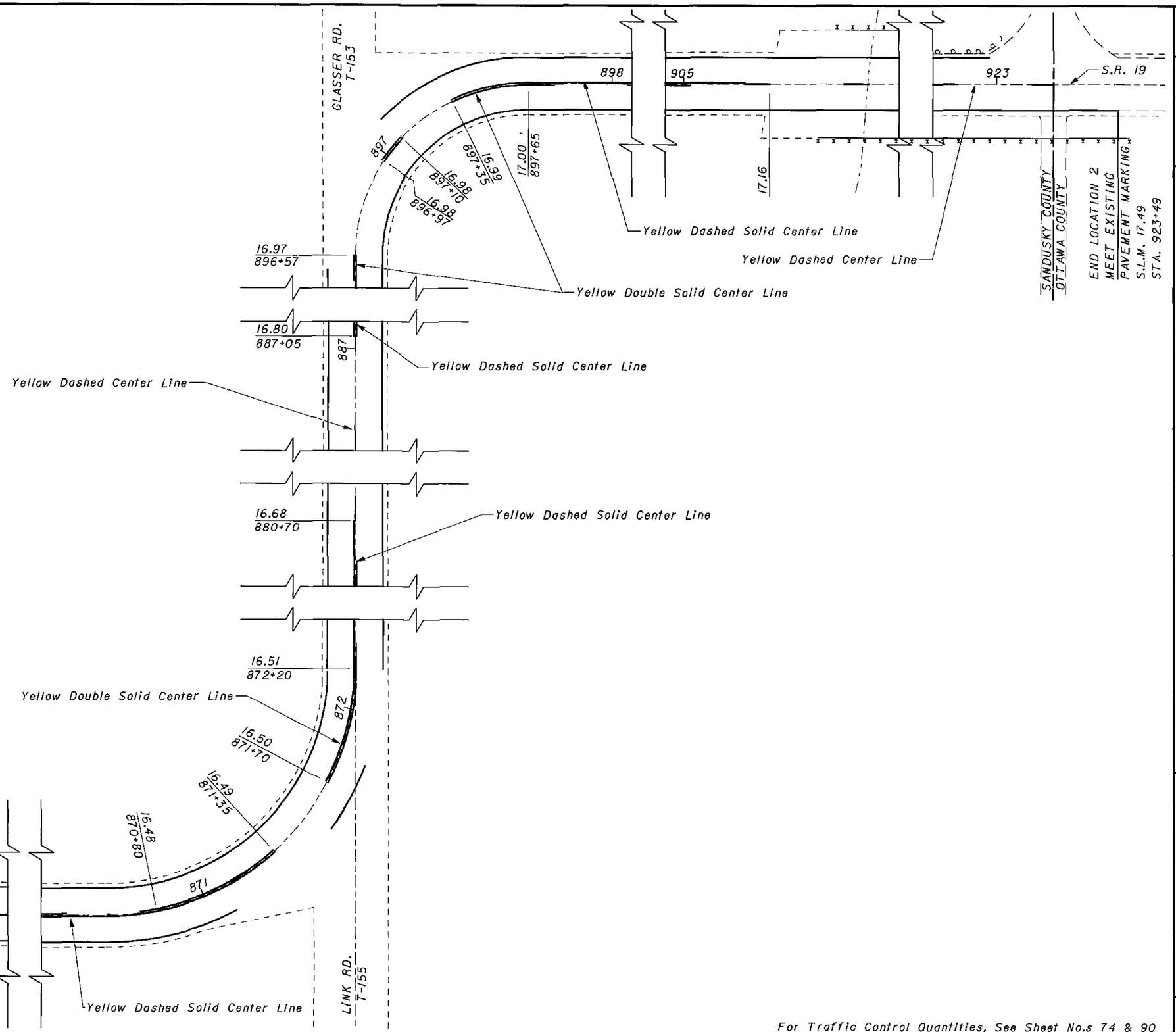

For Traffic Control Quantities, See Sheet No.s 74 & 90

HORIZONTAL SCALE IN FEET
0 10 20 40

TRAFFIC CONTROL DETAIL
LOCATION 2

SEN-19-0.00
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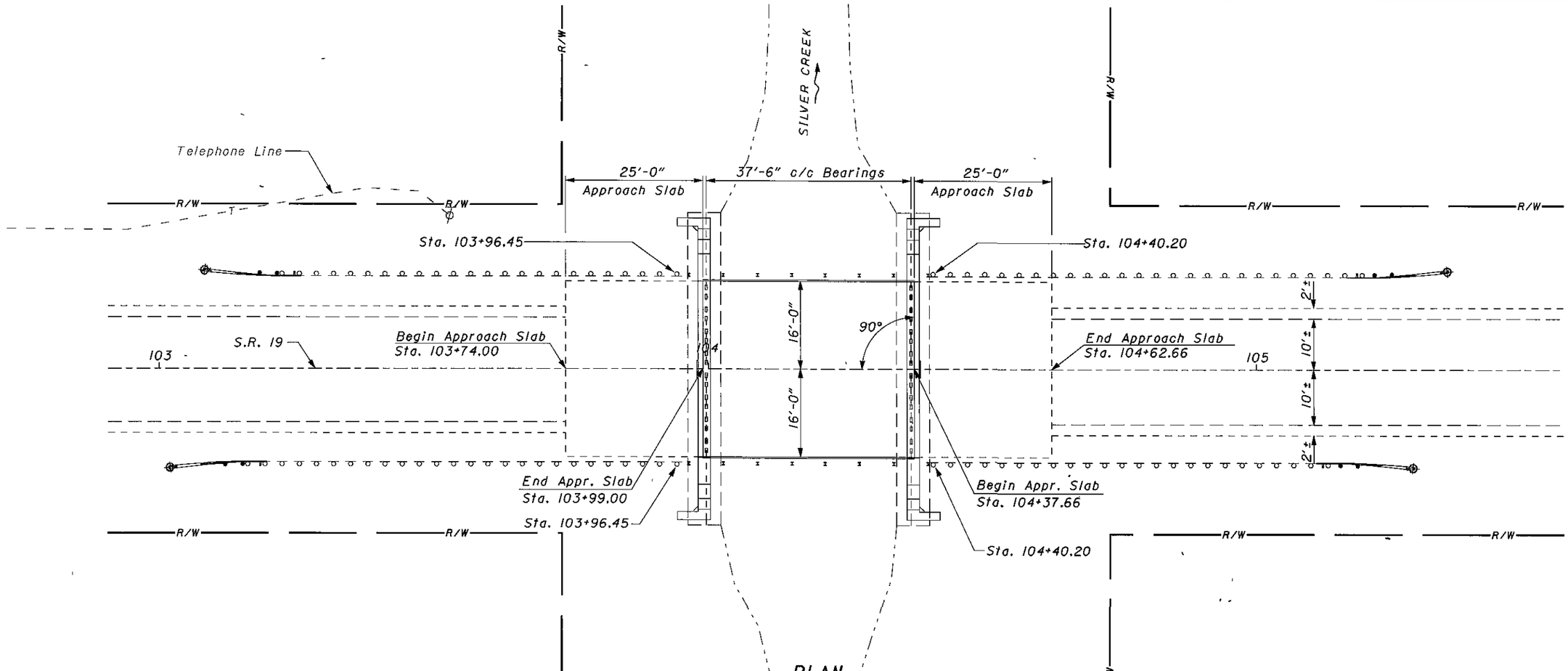
LOCATION	COUNTY	ROUTE	SIDE	SLM FROM	SLM TO	202 RPM REMOVED AND DISPOSED			621 RAISED PAVEMENT MARKERS ONE WAY WHITE	621 RAISED PAVEMENT MARKERS ONE WAY YELLOW	621 RAISED PAVEMENT MARKERS TWO WAY WHITE/WHITE	621 RAISED PAVEMENT MARKERS TWO WAY YELLOW/YELLOW	621 RAISED PAVEMENT MARKERS TWO WAY WHITE/RED
				FROM	TO	EACH			EACH	EACH	EACH	EACH	EACH
1	SEN	SR 19	EB & WB	0.00	2.75	365						181	
1	SEN	SR 19	EB & WB	2.75	2.97							28	
1	SEN	SR 19	EB & WB	2.97	3.04							4	
1	SEN	SR 19	EB & WB	3.04	3.34							38	
1	SEN	SR 19	EB & WB	3.34	3.56							14	
1	SEN	SR 19	EB & WB	4.41	5.87							96	
1	SEN	SR 19	EB & WB	5.87	6.07				39			27	
2	SAN	SR 19	EB & WB	14.03	16.26	241						58	48
2	SAN	SR 19	EB & WB	16.26	17.49							81	
TOTALS						606			39			527	48
TOTALS CARRIED TO GENERAL SUMMARY						606			614				

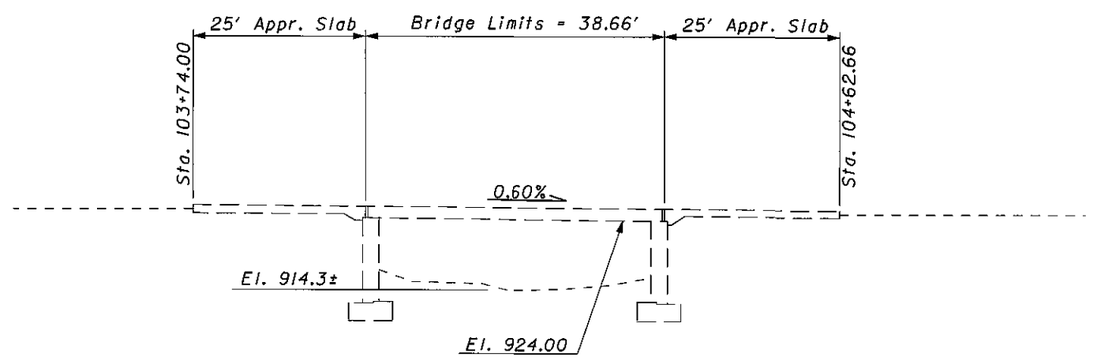
CALCULATED TLM
CHECKED JMF

RAISED PAVEMENT MARKER SUBSUMMARY

SEN-19-0.00
SAN-19-14.03



PLAN



ELEVATION

For Guardrail Details & Quantities, See Sheet No. 51 & 58

PROPOSED WORK:

1. Remove existing bituminous wearing surface.
2. Apply membrane waterproofing.
3. Seal concrete surfaces.
4. Saw and seal expansion joints and approaches.

EXISTING STRUCTURE

TYPE: Prestressed Concrete Box Beams On Modified Existing Abutments.
SPANS: 37'-6" c/c Bearing
ROADWAY: 32.0' f/f Guardrail
LOADING: HS 20-44 and the alternate military loading
SKEW: 0° L.F.
WEARING COURSE: 2½" Asphalt Concrete
APPROACH SLABS: AS-1-81 (25' Long)
ALIGNMENT: Tangent
YEAR BUILT: 1936/1984
STRUCTURE FILE NO.: 7400969
CONDITION: Good
COORDINATES: N41°01'18" W83°00'54"

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2
PRODUCTION DEPARTMENT

REVIEWED	DATE	STRUCTURE FILE NUMBER
		7400969
DESIGNED JTB	DRAWN TLM	REVISED
CHECKED JTB		

STA. 104+00.27
STA. 104+38.93

SITE PLAN

BRIDGE NO. SEN-19-0.97
OVER SILVER CREEK

SEN-19-0.00
SAN-19-14.03

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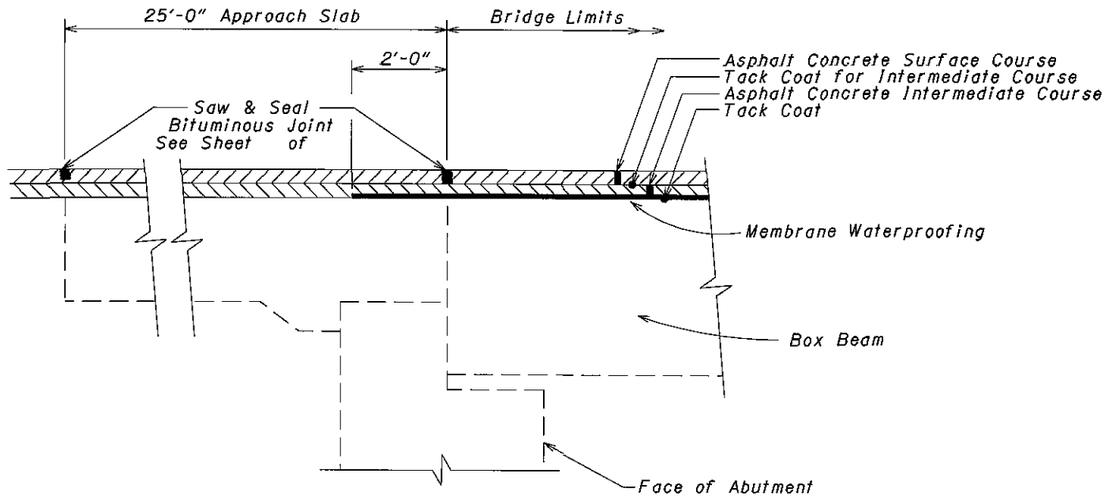
SEN-19-0197

ITEM	ITEM EXT.	UNIT	TOTAL	DESCRIPTION	ABUTS.	PIERS	SUPER	GEN.	SHEET
202	23501	SQ YD	316	WEARING COURSE REMOVED, AS PER PLAN ⊙			138	178 *	
							11		
407	10000	GALLON	14	TACK COAT ⊙				14 *	
407	13901	GALLON	11	TACK COAT, 703.13, AS PER PLAN ⊙					
407	14000	GALLON	13	TACK COAT FOR INTERMEDIATE COURSE ⊙			6	7 *	
442	10500	CU YD	14	1½" ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (448) ⊙			6	8 *	
442	20201	CU YD	16	1½" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448), PG70-22M, APP ⊙			8	8 *	
SPECIAL	51631200	FT	112	SAWING AND SEALING BITUMINOUS CONCRETE JOINTS			64	48 *	
519	11101	SQ FT	15	PATCHING CONCRETE STRUCTURE, AS PER PLAN				15	2 of 3
SPECIAL	53000800	SQ YD	152	STRUCTURE, MISC.: SURFACE PREPARATION OF CONCRETE SURFACES			152		
SPECIAL	53000800	SQ YD	152	STRUCTURE, MISC.: SPRAYED-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE			152		
SPECIAL	53000800	SQ YD	152	STRUCTURE, MISC.: PRIMER FOR SPRAYED-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE			152		
SPECIAL	53001300	FT	271	STRUCTURE, MISC.: PREPARING TRANSVERSE JOINTS AND LONGITUDINAL KEYWAYS					
SPECIAL	53000400	EACH	3	STRUCTURE, MISC.: TESTING WITH REPAIR					
512	10100	SQ YD	156	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	140		16		

⊙ QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY SHT. 40/98.
* QUANTITIES PERTAIN TO APPROACH SLABS.



DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2
PRODUCTION DEPARTMENT

REVIEWED | DATE | STRUCTURE FILE NUMBER 7400969
DRAWN TLM | REVISED
DESIGNED JTB | CHECKED JTB

ESTIMATED QUANTITIES
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

SEN-19-0.00
SAN-19-14.03

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1. REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS

864 DATED 7-11-2000

2. EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07 OR 865.08.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

3. ITEM 614, MAINTAINING TRAFFIC:

FOR PLACEMENT OF THE WATERPROOFING MEMBRANE AND INTERMEDIATE ASPHALT WEARING SURFACE, THE ROADWAY WILL BE CLOSED TO THROUGH TRAFFIC. THE CONTRACTOR SHALL SCHEDULE THE CLOSURE SO THAT IT WILL NOT COINCIDE WITH OTHER CLOSURES AND PROVIDE THE ENGINEER WITH A 5 WORKING DAY WRITTEN NOTICE. THE CLOSURE WILL BECOME EFFECTIVE UPON RECEIVING PERMISISION FROM THE ENGINEER. THE PLANNED DETOUR PERMISSION FROM THE ENGINEER. THE PLANNED DETOUR THE CONTRACTOR WILL BE RESPONSIBLE TO FURNISH AND MAINTAIN TYPE 3 BARRICADES AT EACH WORK LIMIT. COST FOR TRAFFIC MAINTENANCE SHALL BE LUMP SUM AND BE INCLUDED FOR PAYMENT WITH THE TRAFFIC MAINTENANCE REQUIRED FOR RESURFACING AS SHOWN ON SHEET 39 OF 98. THE DURATION OF THE ROADWAY CLOSURE SHALL BE 5 CONSECUTIVE DAYS. LIQUIDATED DAMAGES WILL BE ASSESSED AS PER 108.07 AFTER 5 DAYS.

7. ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN:

FROM ESTIMATING PLANS AND INSPECTION A QUANTITY OF 15 SQ. FT. HAS BEEN ESTIMATED AS A CONTINGENCY FOR PATCHING CONCRETE STRUCTURES. THE ACTUAL AREA OF PATCHING SHALL BE DETERMINED BY THE FIELD ENGINEER. PAYMENT SHALL BE MADE PER SQ. FT. AT THE PRICE BID FOR THE ACTUAL AREA PATCHED AND SHALL INCLUDE ALL COST FOR LABOR, MATERIALS AND EQUIPMENT.

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM BLASTING.

FLAT PATCHES SHALL BE PLACED, FINISHED AND CURED AS PER CLASS S CONCRETE, ITEMS 499 AND 511. ON OTHER SURFACES, REMOVE THE FORMS WITHIN 24 HOURS AFTER PLACING CONCRETE AND FINISH ALL EXPOSED SURFACES BY RUBBING TO MATCH THE SURROUNDING SURFACE. APPLY MEMBRANE CURING ACCORDING TO 511.17, METHOD B, IMMEDIATELY AFTER RUBBING THE SURFACES.

AFTER CURING AND BEFORE FINAL ACCEPTANCE, SOUND ALL PATCHED AREAS. REMOVE AND REPLACE ALL UNSOUND OR VISIBLY CRACKED AREAS.

4. ITEM 407, TACK COAT, 703.13, AS PER PLAN:

TACK COAT FURNISHED SHALL BE COMPATIBLE TO BE APPLIED TO THE MEMBRANE WATERPROOFING. PRIOR TO THE APPLICATION THE CONTRACTOR SHALL FURNISH DOCUMENTS FROM BOTH THE MANUFATURER OF THE TACK COAT AND MEMBRANE WATERPROOFING SHOWING THAT THEIR PRODUCTS ARE COMPATIBLE.

5. ITEM SPECIAL, STRUCTURES MISC., HIGH SOLIDS, COLD SPRAY-APPLIED, ELASTOMERIC WATERPROOFING MEMBRANE

1.0 DESCRIPTION

THIS WORK CONSISTS OF APPLYING A COLD SPRAY-APPLIED ELASTOMERIC MEMBRANE SYSTEM, TO ALL HORIZONTAL BRIDGE SURFACES THAT ARE TO BE OVERLAID WITH ASPHALT AND THE FOLLOWING SURFACES.

ON BRIDGES WITH CURBS, APPLY THE PRIMER, MEMBRANE AND THE TACK COAT 3 INCHES (75 MM) UP THE CURB FACE.

ON BRIDGES WITH APPROACHES TO BE OVERLAID WITH ASPHALT, APPLY THE PRIMER, MEMBRANE AND TACK COAT 2 FEET (600 MM) PAST THE BRIDGE LIMITS.

THIS WORK INCLUDES: REMOVING EXISTING ASPHALT WEARING COURSE; SURFACE PREPARATION; APPLICATION OF PRIMERS; PREPARATION OF UN-REINFORCED TRANSVERSE JOINTS IN CONCRETE AND LONGITUDINAL KEYWAYS, APPLICATION OF SPRAY APPLIED ELASTOMERIC MEMBRANE; TESTING WITH REPAIRS AND APPLYING TACK COATS FOR APPLICATION OF A SEPARATELY SPECIFIED ASPHALT OVERLAY.

2.0 MATERIALS

SUPPLY AN ELASTOMERIC WATERPROOFING MEMBRANE SYSTEM FROM A SINGLE MANUFACTURER CONFORMING TO THE PROPERTIES DESCRIBED BELOW:

A. PRIMER, SUPPLY A 100% SOLIDS, TWO COMPONENT POLYMER PRIMER, CAPABLE OF CURING AT SUBSTRATE TEMPERATURES BETWEEN 320°F AND 104°F.

B. MEMBRANE, SUPPLY A MEMBRANE ACCORDING TO THE FOLLOWING TABLE.

PROPERTY	TEST	REQUIRED VALUES
Gel Time		6 to 11 minutes at 70°F (21°C)
Cure Time		30 minutes at 70°F (21°C)
Dynamic Crack Bridging	ASTM C836, as modified	Pass at 10 cycles 1/8" gap at -15°F (-26°C)
Minimum Tensile Strength	ASTM D 638	800 psi (6.0 MPa)
Elongation at Break	ASTM D 638	80%
Water Vapor Transmission, Procedure B, Permeance (Grains/ft²/hr/in Hg)	ASTM E 96	0.1 Max
Adhesion to Concrete	ASTM D 4541	100 psi
Puncture Resistance-Membrane	ASTM E 154	40 lb (18 kg) min
Dry Film Thickness, Methods A or B or equal non-destructive ultrasonic test method.	ASTM D 4138	100 mils (1500µm) min

C. TACK COAT. SUPPLY TACK COAT ACCORDING TO 702.13 THAT IS COMPLETELY COMPATIBLE TO THE ELASTOMERIC WATERPROOFING MEMBRANE.

3.0 GENERAL

SUPPLY A COLD SPRAY-APPLIED ELASTOMERIC-MEMBRANE SYSTEM THAT CONSISTS OF A PRIMER, MEMBRANE AND TACK COAT FROM ONE MANUFACTURE.

PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT AND LABOR TO PERFORM THIS WORK.

APPLY THE COLD SPRAY-APPLIED ELASTOMERIC-MEMBRANE SYSTEM TO A UNIFORM SPECIFIED THICKNESS.

ENSURE THAT THE EDGE OF ANY EXPOSED APPLICATION IS SHARPLY DEFINED TRUE TO LINE WITH A UNIFORM EXPOSURE.

PROVIDE A MANUFACTURERS REPRESENTATIVE TO PHYSICALLY SUPERVISE ALL ASPECTS OF THE INSTALLATION AND TESTING.

4.0 WORK LIMITATIONS

THE PLANS MAY REQUIRE ADDITIONAL WORK LIMITATIONS FOR SPECIFIC BRIDGES OR PROJECTS.

A. TEMPERATURE. PERFORM THE WORK BETWEEN 32° F AND 104° F.

B. MOISTURE. DO NOT WATERPROOF:

1. IF THE CONCRETE SURFACE IS WET, DAMP, FROSTED OR ICE-COATED.
2. DURING PERIODS OF RAIN, FOG, OR MIST.
3. AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE ACCORDANCE WITH THE MANUFACTURERS PRINTED INSTRUCTIONS.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No 2
PRODUCTION DEPARTMENT

REVIEWED DATE
STRUCTURE FILE NUMBER 7400969
DRAWN TLM
REVISED
DESIGNED JTB
CHECKED JTB

GENERAL NOTES
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

SEN-19-0.00
SAN-19-14.03

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5.0 PROTECTION OF PERSONS AND PROPERTY

COLLECT, REMOVE, AND DISPOSE OF ALL BUCKETS, RAGS, OR OTHER DISCARDED MATERIALS AND LEAVE THE JOB SITE IN A CLEAN CONDITION.

PROTECT ALL PORTIONS OF THE STRUCTURE THAT ARE NOT TO BE WATERPROOFED FROM DAMAGE OR DISFIGUREMENT BY SPLASHES, SPATTERS, AND SMIRCHES OF WATERPROOFING MATERIALS.

IF THE CONTRACTOR CAUSES DIRECT OR INDIRECT DAMAGE OR INJURY TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR SHALL RESTORE THE PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THE CONDITION EXISTING BEFORE THE DAMAGE OR INJURY.

6.0 POLLUTION CONTROL

TAKE THE NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES, OR REGULATIONS OF FEDERAL, STATE, OR LOCAL AGENCIES AND REQUIREMENTS OF THIS SPECIFICATION.

7.0 SAFETY REQUIREMENTS AND PRECAUTIONS

SAFETY DATA SHEETS (MSDS) AT THE PRECONSTRUCTION MEETING FOR ALL MATERIALS AND ABRASIVES USED ON THIS PROJECT. DO NOT BEGIN WORK UNTIL SUBMITTING THE MSDS TO THE ENGINEER.

8.0 REMOVAL OF EXISTING ASPHALT WEARING COURSE

REMOVE ANY EXISTING ASPHALT CONCRETE WEARING SURFACE IN THE CONTRACT LIMITS INCLUDING ANY WATERPROOFING MATERIAL TO DEPTH OF THE EXISTING CONCRETE DECK. COMPLY WITH THE REQUIREMENTS OF CMS 202.

9.0 PREPARATION OF SURFACE

REMOVE ALL NON SOUND CONCRETE. REPAIR ANY UNSOUND CONCRETE ACCORDING TO ITEM 519. ASSURE THE SURFACE IS FREE OF OIL, GREASE OR OTHER CONTAMINATION PRIOR TO ABRASIVE CLEANING.

ABRASIVELY CLEAN SURFACES USING SANDBLASTING, WATER-BLASTING OR OTHER METHODS SUITABLE TO THE MEMBRANE MANUFACTURER. ASSURE THAT THE SURFACE PROFILE OF THE ABRASIVELY CLEANED CONCRETE IS NOT DETRIMENTAL TO THE MEMBRANES PERFORMANCE.

DO NOT ALLOW TRAFFIC ON THE CLEANED SURFACE. IF THE SURFACE IS NOT PRIMED WITH FORTY EIGHT (48) HOURS OR IF IT RAINS BETWEEN CLEANING AND PRIMER OR MEMBRANE APPLICATION, RE-CLEAN THE SURFACE.

ASSURE THE SURFACE IS FREE OF OIL, GREASE, DUST, LOOSELY ADHERING CONCRETE OR OTHER CONTAMINATION THAT MAY BE DETRIMENTAL TO THE ADHESION OF THE PRIMER, MEMBRANE AND TACK COAT BEFORE APPLYING EACH MATERIAL.

THE DEPARTMENT WILL INSPECT AND APPROVE THE SURFACE PREPARATION IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE BEFORE APPLYING EACH MATERIAL. RE-CLEAN ALL AREAS THE ENGINEER OR THE MANUFACTURER'S REPRESENTATIVE DOES NOT APPROVE.

10.0 PRIMER

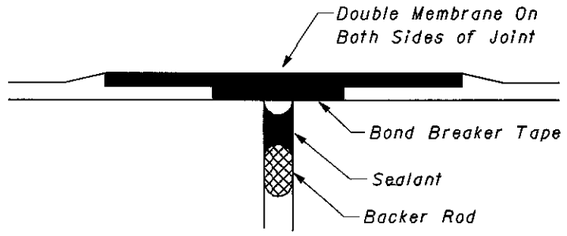
APPLY AND TEST THE PRIMER COAT AS DIRECTED BY THE MANUFACTURER IN ACCORDANCE WITH THE MANUFACTURES PRINTED INSTRUCTIONS AND THIS SPECIFICATION.

THE DEPARTMENT WILL INSPECT AND APPROVE THE PRIMER APPLICATION IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE. REPAIR ALL AREAS THE ENGINEER OR THE MANUFACTURER'S REPRESENTATIVE DOES NOT APPROVE.

11.0 COLD SPRAY-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE

APPLY AND TEST THE WATERPROOFING MEMBRANE AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE IN ACCORDANCE WITH THE MANUFACTURES PRINTED INSTRUCTIONS AND THIS SPECIFICATION.

A. TRANSVERSE JOINTS AND LONGITUDINAL KEYWAYS. PREPARE TRANSVERSE JOINTS AT THE ABUTMENT OR IN THE BRIDGE DECK ACCORDING TO SUPPLEMENTAL SPECIFICATION 801 CLASSES III OR IV AS SHOWN IN THE CONTRACT. INSTALL A 6 INCH WIDE, PVC BOND BEAKER TAPE, CENTERED OVER EACH TRANSVERSE JOINT AND EACH KEYWAY BETWEEN ADJACENT PRE-CAST BOX BEAMS AS DETAILED IN FIGURE 1. ADHERE THE PVC BOND BEAKER TAPE TO THE PRIMED SURFACE OR AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE IN ACCORDANCE WITH THE MANUFACTURES PRINTED INSTRUCTIONS AND THIS SPECIFICATION. APPLY A DOUBLE LAYER OF MEMBRANE, 12 INCHES WIDE CENTERED OVER THE PVC BOND BREAKER TAPE.



B. SPRAY APPLIED MEMBRANE -DRY FILM THICKNESS TESTS. MEASURE THE WATERPROOFING MEMBRANE THICKNESS USING A NONDESTRUCTIVE ULTRASONIC GAGE OR OTHER NON-DESTRUCTIVE TESTING GAGE. MEASURE THE DRY FILM THICKNESS, AT ONE RANDOMLY SELECTED LOCATION IN EACH 100 SQUARE FEET (9 M)^{2}OF AREA THAT WAS WATERPROOFED. AT EACH SPOT LOCATION, TAKE THREE GAGE THICKNESS READINGS. MOVE THE PROBE 1 TO 3 INCHES (25 TO 75 MM) FOR EACH NEW GAGE READING. THE SPOT THICKNESS MEASUREMENT IS THE AVERAGE OF THE THREE GAGE READINGS.

THE AVERAGE OF FIVE SPOT MEASUREMENTS IN ANY 500-SQUARE FOOT (9 M^2) AREA SHALL NOT BE LESS THAN THE SPECIFIED THICKNESS OF 100MILS (2.54 MM). NO SINGLE SPOT MEASUREMENT IN ANY 100-SQUARE FOOT (9 M ^{2} AREA SHALL BE LESS THAN 80 PERCENT OF THE SPECIFIED THICKNESS.

IF TEST VALUES ARE LESS THAN SPECIFIED: PERFORM ADDITIONAL TEST AS NECESSARY TO IDENTIFY THE LIMITS OF THE DEFECTIVE MEMBRANE.

C. SPRAY APPLIED MEMBRANE -ADHESION TESTS. PERFORM ADHESION TESTS IN ACCORDANCE WITH ASTM D 4541 AT LOCATIONS RANDOMLY SELECTED BY THE ENGINEER IN EACH 500-SQUARE FEET (9 M2) AREA WATERPROOFED. DO NOT SELECT AREAS DIRECTLY ABOVE JOINTS OR KEYWAYS DETAILED ACCORDING TO FIGURE 1. PERFORM THE TEST IN THE PRESENCE OF THE ENGINEER OR INSPECTOR. PERFORM THREE PULL OFF ADHESION TESTS ACCORDING TO ASTM D4541 ON EACH TEST SECTION. NO ADHESION TEST VALUE WILL BE BELOW 100 PSI (0.70 MPA). REPAIRS TESTED AREAS ACCORDING TO 12.0.

IF TEST VALUES ARE LESS THAN SPECIFIED: PERFORM ADDITIONAL TEST AS NECESSARY TO IDENTIFY THE LIMITS OF THE DEFECTIVE MEMBRANE. REMOVE THE MEMBRANE AND PRIMER; REPLACE THE PRIMER AND MEMBRANE ACCORDING TO THIS SPECIFICATION TO THE LIMITS OF THE DEFECTIVE MEMBRANE.

12.0 REPAIRS

REPAIR AND TEST THE WATERPROOFING MEMBRANE AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE IN ACCORDANCE WITH THE MANUFACTURES PRINTED INSTRUCTIONS AND THIS SPECIFICATION.

A. IF AN AREA IS LEFT UNTREATED OR THE MEMBRANE BECOMES DAMAGED, A PATCH REPAIR SHALL BE CARRIED OUT TO RESTORE THE INTEGRITY OF THE SYSTEM. THE DAMAGED AREA SHALL BE CUT BACK TO SOUND MATERIALS AND WIPED WITH SOLVENT (E.G. ACETONE) UP TO A WIDTH OF AT LEAST 2 INCH (50 MM) ON THE PERIPHERY, REMOVING ANY CONTAMINANTS. THE SUBSTRATE SHALL BE PRIMED AS NECESSARY, FOLLOWED BY THE APPLICATION OF THE MEMBRANE. A CONTINUOUS LAYER SHALL BE OBTAINED OVER THE SUBSTRATE WITH A 2-INCH (50 MM) OVERLAP ONTO EXISTING MEMBRANE.

B. WHERE THE MEMBRANE IS TO BE JOINED TO EXISTING CURED MATERIAL AND AT DAY JOINTS, THE NEW APPLICATION SHALL OVERLAP THE EXISTING ONE BY AT LEAST 100 MM (4 INCH). NO PREPARATION SHALL BE NECESSARY UNLESS THE EXISTING MATERIALS ARE CONTAMINATED WITH TACK COAT OR DIRT IN WHICH CASE THE REPAIR/OVERLAP SHALL FIRST BE WIPED WITH SOLVENT (E.G. ACETONE).

13.0 TACK COAT

APPLY A TACK COAT ACCORDING TO 407 AS MODIFIED BY THIS SPECIFICATION.

14.0 METHOD OF MEASUREMENT

THE DEPARTMENT WILL MEASURE REMOVAL OF WEARING COURSE BY THE NUMBER OF SQUARE FEET (SQUARE METERS) OF CONCRETE WATERPROOFED OR ON A LUMP SUM BASIS.

THE DEPARTMENT WILL MEASURE SURFACE PREPARATION BY THE NUMBER OF SQUARE FEET (SQUARE METERS) OF CONCRETE WATERPROOFED OR ON A LUMP SUM BASIS.

THE DEPARTMENT WILL MEASURE PREPARATION OF TRANSVERSE JOINTS AND LONGITUDINAL KEYWAYS BY THE NUMBER OF LINEAR FEET (LINEAR METERS) OF JOINTS AND KEYWAYS OR ON A LUMP SUM BASIS.

THE DEPARTMENT WILL MEASURE HIGH SOLIDS CONTENT, COLD SPRAY-APPLIED ELASTOMERIC WATERPROOFING MEMBRANE BY THE NUMBER OF SQUARE FEET (SQUARE METERS) OF CONCRETE WATERPROOFED OR ON A LUMP SUM BASIS.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 3
PRODUCTION DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
JTB	TLM			7400969
CHECKED	REVISED			
JTB				

GENERAL NOTES
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

SEN-19-0.00
SAN-19-14.03

4 / 8

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THE DEPARTMENT WILL MEASURE TACK COAT BY THE NUMBER OF GALLONS ACCORDING TO 407.

15.0 BASIS OF PAYMENT

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICES AS FOLLOWS:

IF THE CONTRACTOR CAUSES DAMAGE OR INJURY PUBLIC OR PRIVATE PROPERTY, THE DEPARTMENT WILL NOT PAY FOR RESTORING THE PROPERTY TO ITS ORIGINAL CONDITION.

THE DEPARTMENT WILL NOT PAY FOR REPAIRING ADJACENT COATINGS DAMAGED DURING THE REMOVAL, SURFACE PREPARATION OR WATERPROOFING OPERATIONS.

THE DEPARTMENT WILL NOT PAY FOR REPAIRING AREAS OF COATING BECAUSE OF LOW COATING THICKNESS OR LOW ADHESION VALUES.

THE DEPARTMENT WILL NOT PAY FOR ADDITIONAL TESTING REQUIRED BY ANY HAULER, TREATMENT FACILITY, DISPOSAL FACILITY OR LANDFILL.

THE DEPARTMENT WILL PAY FOR INSPECTION ACCESS; TEST AREA PREPARATION; DESTRUCTIVE AND NON-DESTRUCTIVE TESTING; AND TEST AREA REPAIR AS 1 EACH FOR EVERY 500 SQUARE FOOT AREA OF CONCRETE WATERPROOFED, UNDER TESTING WITH REPAIR. THE DEPARTMENT WILL NOT PAY FOR ACCESSING, INSPECTING, AND REPAIRING AREAS THAT ARE NOT FOUND TO BE IN CONFORMANCE WITH THE SPECIFICATIONS AND PERTINENT CONTRACT DOCUMENTS.

ITEM	UNIT	DESCRIPTION
530	SQUARE YARD	Surface Preparation of Concrete Surfaces
530	SQUARE YARD	Primer for Spray-Applied Elastomeric Waterproofing Membrane
530	FOOT	Preparing Transverse Joints and Longitudinal Keyways
530	SQUARE YARD	Spray-Applied Elastomeric Waterproofing Membrane
530	EACH	Testing with Repair

DESIGNER NOTES: DEFINE CONTRACT LIMITS LENGTH AND WIDTH; INCLUDE BID ITEM 519 AND 810 WITH ESTIMATED QUANTITIES. PROVIDE PLAN DETAIL SHOWING THE LOCATIONS AND LIMITS OF ITEM 810 AND CLASS IDENTIFICATION. PROVIDE A TRANSVERSE SECTION SHOWING THE NUMBER OF KEYWAYS TO BE PREPARED. PROVIDE DETAILS OF POSSIBLE 519 REPAIRS. PROVIDE ASPHALT BID ITEMS AND NOTES PER BDM 302.1.3.1.B EXCEPT THE FIRST APPLICATION OF 407 TACK COAT IS INCLUDED WITH THE ABOVE SPRAY APPLIED MEMBRANE NOTES.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2
PRODUCTION DEPARTMENT

REVISED | DATE
STRUCTURE FILE NUMBER 7400969

DESIGNED JTB | DRAWN TLM | CHECKED JTB | REVISED

GENERAL NOTES
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

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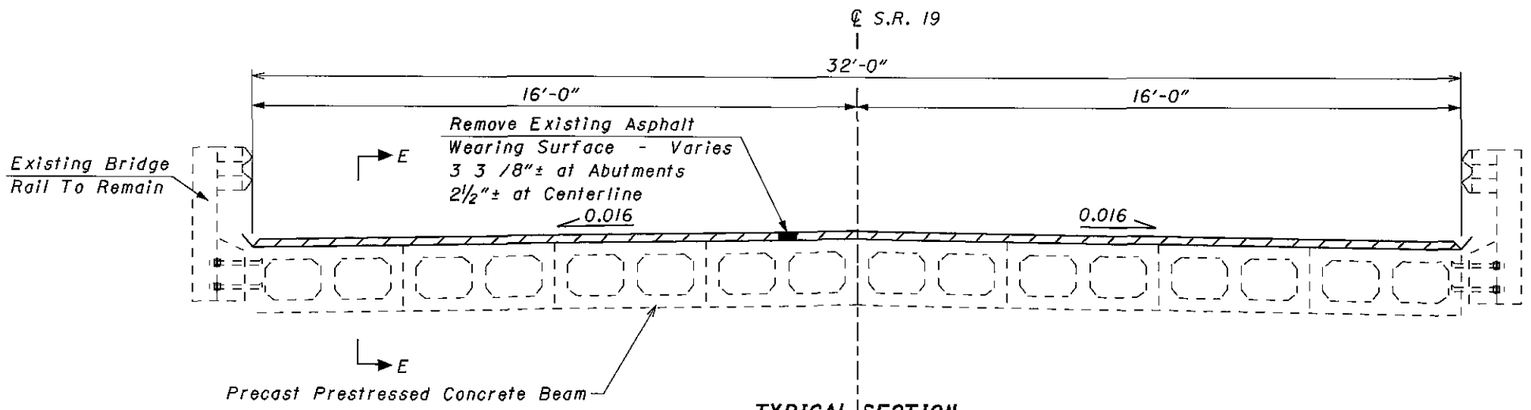
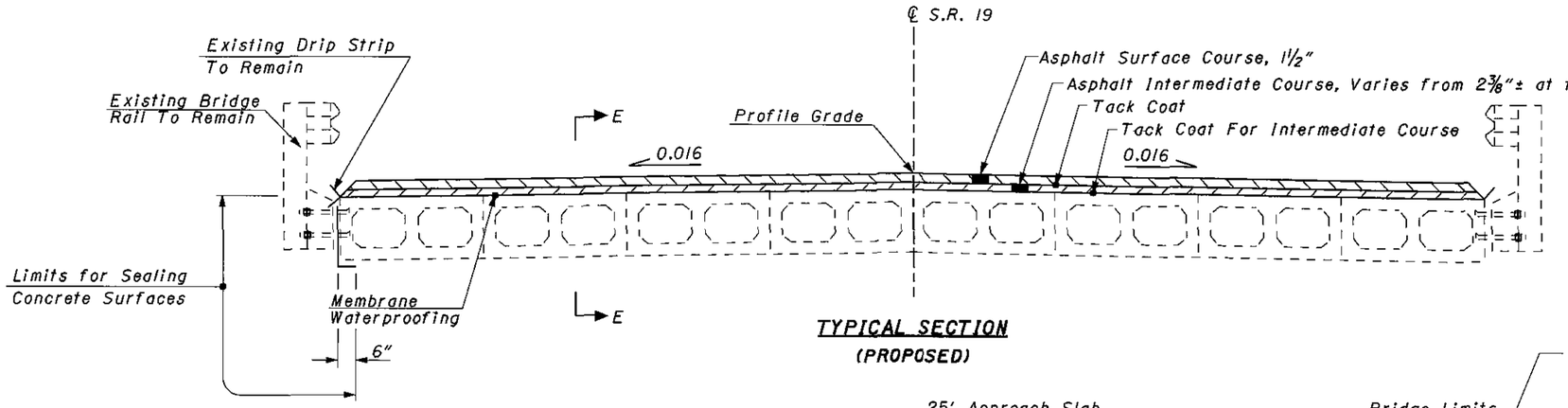


TYPICAL SECTION
(EXISTING)

NOTE:
The estimated net final camber in the beam is 5⅞"± in excel of the final profile. The existing bituminous wearing surface varies in thickness to place the top of the beam parallel to the profile grade. The contractor shall exercise care when removing the existing wearing surface not to damage the prestressed beams. Damage to the beams from improper removal methods will result in repair or replacement of the beam, as determined by the engineer and at the contractor's expense.

Placement of the new intermediate asphalt course shall be preformed in two (2) layers, with the first layer placed at a constant 1½" thickness. The second layer shall vary in thickness to place it parallel to the profile grade, as shown in the plan.



TYPICAL SECTION
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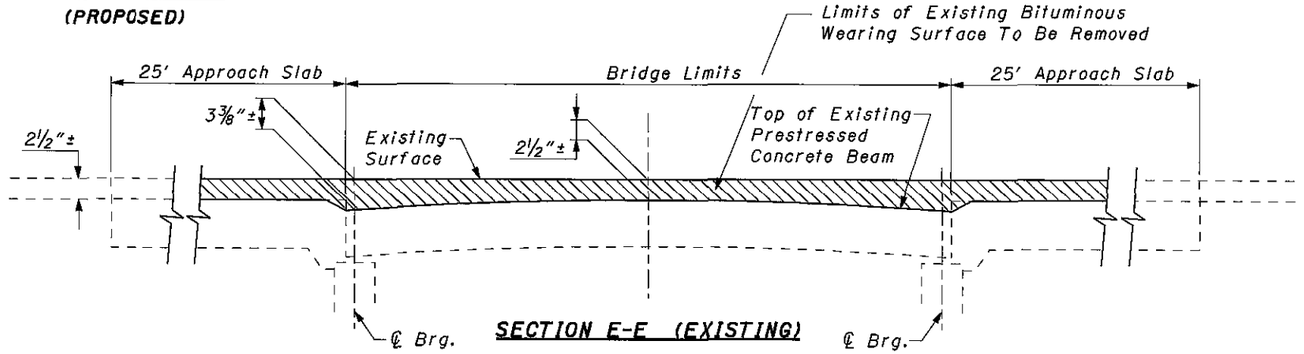
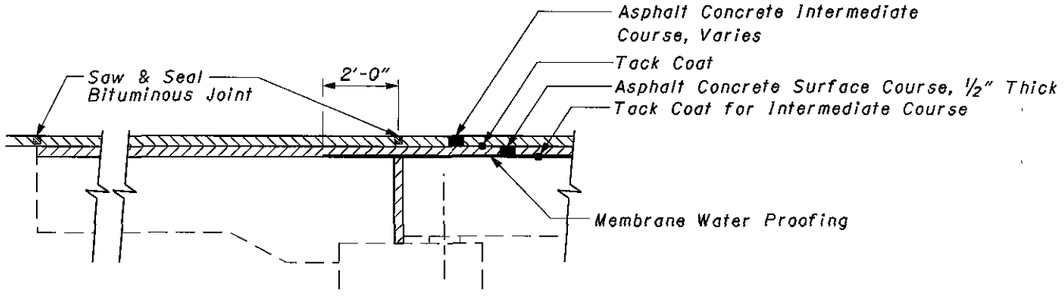
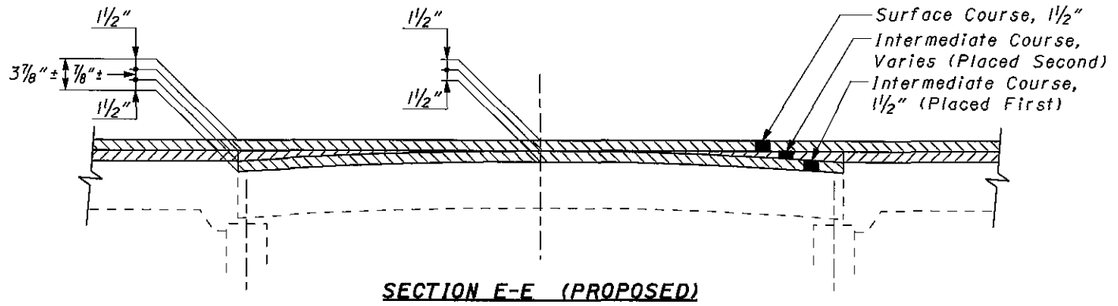


SECTION E-E (EXISTING)



SECTION A-A



SECTION E-E (PROPOSED)

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2
PRODUCTION DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JTB	TLM		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JTB		3502910	

BRIDGE DETAILS
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

SEN-19-0.00
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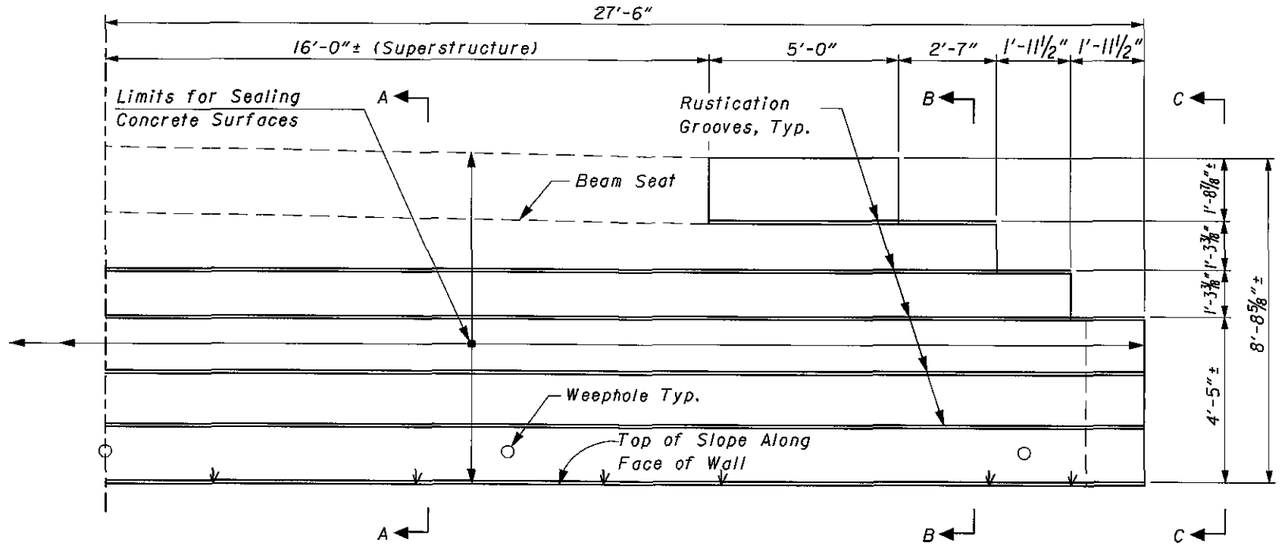
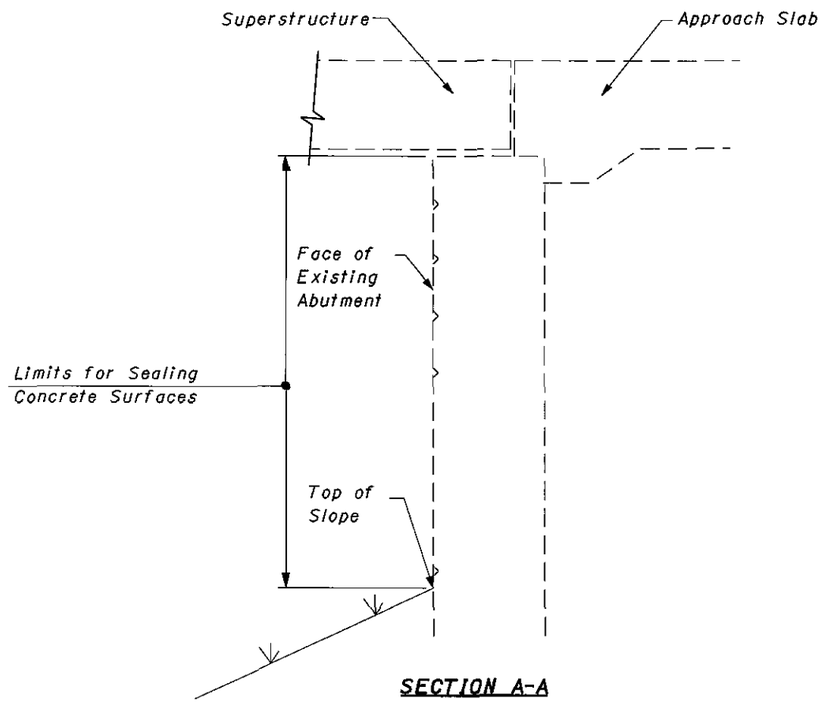
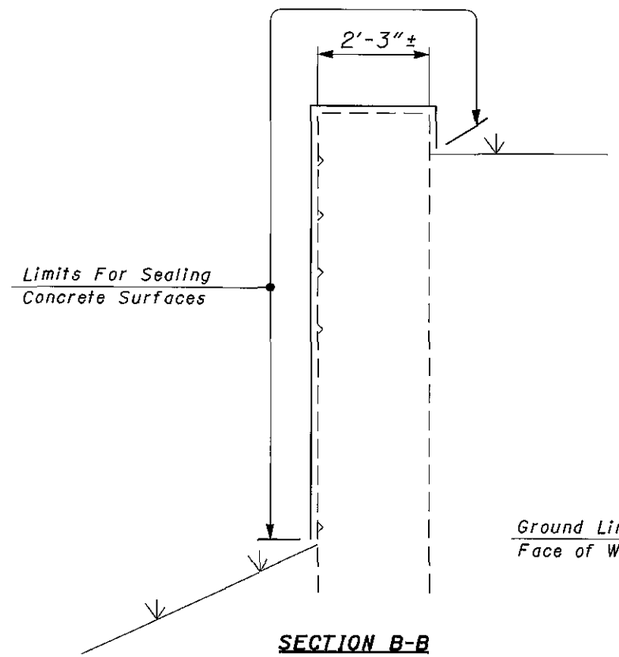


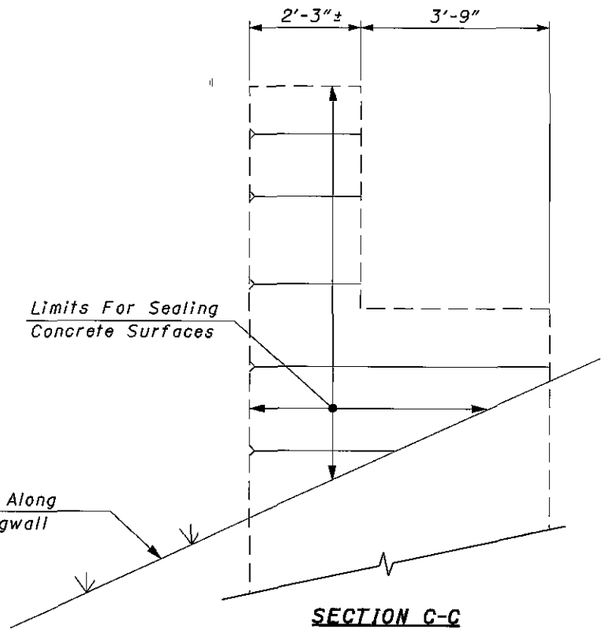
ABUTMENT ELEVATION
(TYPICAL ABOUT ℄ S.R. 19)



SECTION A-A



SECTION B-B



SECTION C-C

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT No. 2
PRODUCTION DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JTB	TLM		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JTB		3502910	

ABUTMENT DETAILS
BRIDGE NO. SEN-19-0197
OVER SILVER CREEK

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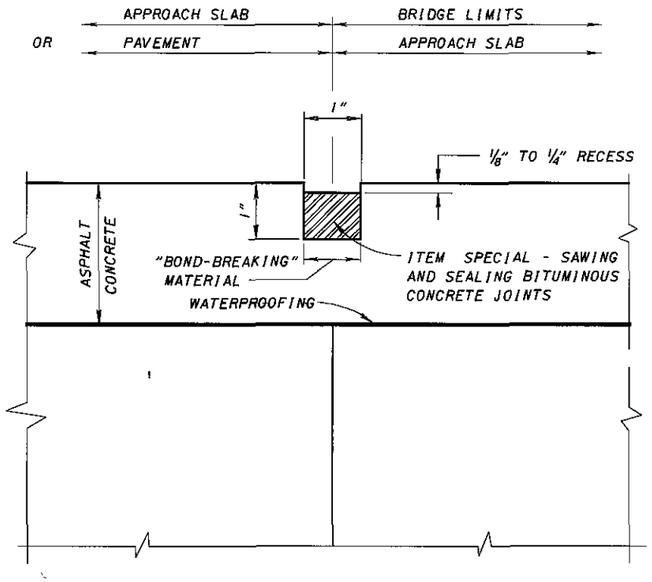

SEALING OF BITUMINOUS JOINTS

ITEM SPECIAL-SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) DESCRIPTION:

THIS WORK SHALL CONSIST OF CUTTING AND SEALING TRANSVERSE JOINTS IN THE NEW BITUMINOUS CONCRETE OVERLAY. BITUMINOUS CONCRETE JOINTS SHALL BE CONSTRUCTED DIRECTLY OVER, AND IN LINE WITH, THE EXISTING UNDERLYING TRANSVERSE ABUTMENT JOINT AND APPROACH SLAB JOINT AND APPROACH SLAB AND BUTTING PAVEMENT.

2) MATERIALS:

THE JOINT SEALANT SHALL MEET THE REQUIREMENTS OF ITEM 705.04, JOINT SEALANTS, HOT-POURED, FOR CONCRETE AND ASPHALT PAVEMENTS. ACCEPTABLE ALTERNATE MATERIALS ARE:

A SILICONE SEALANT MEETING FEDERAL SPECIFICATIONS TT-S-001543A CLASS A (ONE-PART SILICONE SEALANTS) AND TT-S-00230C CLASS A (ONE-COMPONENT SEALANTS), SUCH AS THOSE MANUFACTURED BY GENERAL ELECTRIC, SILICONE PRODUCTS DIVISION, 4015 EXECUTIVE PARK DRIVE, CINCINNATI, OHIO 45242 (513-243-1953)OR DOW CORNING, 400 TECHNE CENTER, SUITE 103, MILFORD, OHIO 45150 (513-831-3586); OR SOF-SEAL,A COLD-APPLIED, LOW-MODULUS,TWO-COMPONENT POLYMERIC COMPOUND HORIZONTAL SEALANT AS MANUFACTURED BY W.R.MEADOWS, INC., P.O.BOX 543,ELGIN,ILLINOIS 60121 (800-342-5976).

3) CONSTRUCTION DETAILS:

A) GENERAL: THE CONTRACTOR SHALL CONDUCT HIS OPERATION SO THAT THE CUTTING, CLEANING AND SEALING OF TRANSVERSE JOINTS IS A CONTINUOUS OPERATION THAT WILL BE PERFORMED AS SOON AS PRACTICAL AFTER THE PAVING, BUT NO LATER THAN FOUR (4) DAYS AFTER PLACEMENT OF THE ASPHALT CONCRETE SURFACE COURSE. TRAFFIC SHALL NOT BE ALLOWED TO KNEAD TOGETHER OR DAMAGE JOINT CUT PRIOR TO SEALING.

B) CUTTING OF TRANSVERSE JOINTS: THE CONTRACTOR SHALL SAW OR ROUT TRANSVERSE JOINTS TO THE DIMENSIONS SHOWN IN THE DETAILS ON THIS SHEET. THE CUT JOINTS SHALL LIE DIRECTLY ABOVE EACH APPROACH SLAB JOINT.

THE BLADE OR BLADES SHALL BE OF SUCH SIZE THAT THE FULL WIDTH AND DEPTH OF THE CUT CAN BE MADE WITH ONE PASS. DRY OR WET CUTTING WILL BE ALLOWED. JOINTS SHALL EXTEND THE FULL WIDTH OF THE BRIDGE.

C) CLEANING JOINTS: DRY SAWED JOINTS SHALL BE THOROUGHLY CLEANED WITH A SUFFICIENT AMOUNT OF COMPRESSED AIR TO REMOVE ANY DIRT, DUST, OR DELETERIOUS MATTER. WET SAWED JOINTS SHALL BE WASHED CLEAN OF ALL CUTTINGS BY FLUSHING WITH A JET OF WATER AND WITH OTHER TOOLS AS NECESSARY. AFTER FLUSHING, THE JOINT SHALL BE BLOWN OUT WITH COMPRESSED AIR. WHEN THE SURFACES ARE THOROUGHLY CLEAN AND DRY, AND JUST PRIOR TO PLACING THE JOINT SEALER, COMPRESSED AIR HAVING A PRESSURE OF AT LEAST 90 P.S.I. SHALL BE USED TO BLOW OUT THE JOINT AND REMOVE ALL TRACES OF DUST. IN THE EVENT FRESHLY CUT JOINTS BECOME CONTAMINATED BEFORE THEY ARE SEALED, THEY SHALL BE RECLEANED OF ALL FOREIGN MATERIAL BY HIGH PRESSURE WATER JET.

D) SEALING JOINTS: THE JOINT SHALL BE THOROUGHLY DRY WHEN THE SEALANT IS PLACED. AFTER CLEANING AND DRYING, A BOND-BREAKER MATERIAL SHALL BE APPLIED TO THE BOTTOM OF THE GROOVE.

HOT-POURED JOINT SEALANT MATERIAL SHALL BE HEATED IN A KETTLE OR MELTER CONSTRUCTED AS A DOUBLE BOILER, WITH THE SPACE BETWEEN THE INNER AND OUTER SHELLS FILLED WITH OIL OR OTHER HEAT TRANSFER MEDIUM. POSITIVE TEMPERATURE CONTROL AND MECHANICAL AGITATION SHALL BE PROVIDED. HEATING MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. JOINT SEALER MATERIAL SHALL NEVER BE KEPT HEATED AT THE POURING TEMPERATURE FOR MORE THAN FOUR (4) HOURS AND SHALL NEVER BE REHEATED. SEALER LEFT IN THE APPLICATOR AT THE END OF A DAY'S WORK SHALL NOT BE USED.

HOT-POURED SEALANT SHALL BE APPLIED IMMEDIATELY THROUGH A NOZZLE, WHICH MUST PROJECT INTO THE SAWED JOINT, FILLING FROM THE BOTTOM UP. THE SEALANT SHALL COMPLETELY FILL THE JOINT IN SUCH A MANNER THAT, AFTER COOLING, THE LEVEL OF THE SEALANT WILL NOT BE HIGHER THAN 1/8" BELOW THE PAVEMENT SURFACE. ANY DEPRESSION IN THE COOLED SEAL GREATER THAN 3/16" SHALL BE BROUGHT UP TO THE SPECIFIED LIMIT BY FURTHER ADDITION OF HOT-POURED SEALANT. CARE SHALL BE TAKEN IN THE SEALING OF THE JOINTS SO THAT THE FINAL APPEARANCE WILL PRESENT A NEAT FINE LINE.

THE COLD APPLIED SEALANT MATERIALS (POLYURETHANE, SILICONE, AND POLYMERIC COMPOUNDS) SHALL BE INSTALLED AS PER MANUFACTURERS' RECOMMENDATIONS, EXCEPT AS MODIFIED BY THIS DRAWING. THE SEALANT SHALL BE INSTALLED WHEN THE AMBIENT TEMPERATURE IS 40 DEGREES F OR HIGHER. TRAFFIC SHALL NOT BE ALLOWED ON THE JOINT FOR ONE HOUR AFTER APPLICATION OF THE SEALANT.

4) METHOD OF MEASUREMENT:

THE QUANTITY TO BE PAID FOR UNDER THIS ITEM WILL BE THE NUMBER OF LINEAR FEET OF JOINTS SAWED AND SEALED AS PER THE ABOVE REQUIREMENTS.

5) BASIS OF PAYMENT:

THE UNIT PRICE PER LINEAR FOOT FOR ITEM SPECIAL-"SAWING AND SEALING BITUMINOUS CONCRETE JOINTS" SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK, INCLUDING THE FURNISHING AND PLACING OF THE JOINT SEALER MATERIAL.

DESIGN AGENCY
OFFICE OF STRUCTURAL ENGINEERING

DESIGNED	DRAWN	REVISED	DATE
JEB/JFF	MJB/BDB	WJJ/LMW	STRUCTURE FILE NUMBER
CHECKED	REVISED		
WTF/JAM			

SAWING & SEALING BITUMINOUS CONCRETE
SEN-19-0197

HEN-109-8.01 (VAR.)

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