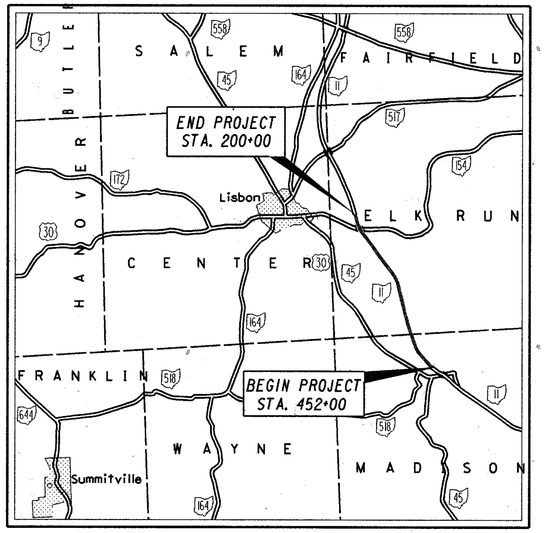


LATITUDE N 40°44'35" LONGITUDE W 80°42'40"

LOCATION MAP

SCALE IN MILES

0 1 2 3 4

PORTION TO BE IMPROVED
STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (1995)	9,130
DESIGN YEAR ADT (2015)	14,570
DESIGN HOURLY VOLUME (2015)	1,457
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	12%
DESIGN SPEED	60 mph
LEGAL SPEED	55 mph

DESIGN FUNCTIONAL CLASSIFICATION - DIVIDED ARTERIAL (RURAL)

DESIGN EXCEPTION

	APPROVAL DATE
SHOULDER WIDTH	3-8-94
BRIDGE PARAPET/CURB CONFIGURATION	3-8-94

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:

O.D.O.T.
DISTRICT 11
NEW PHILADELPHIA, OHIO

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

COL-11-9.63

MADISON AND ELKRUN TOWNSHIPS
COLUMBIANA COUNTY

INDEX OF SHEETS

PROJECT DESCRIPTION

RESURFACING 4.81 MILES OF S.R. 11, INCLUDING NEW GUARDRAIL, RIGHT OF WAY FENCE, TRAFFIC CONTROL SIGNS, AND PAVEMENT MARKING.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

1995 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 AND THAT THE PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED John T. Chan
DATE 9-10-96 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED Jerry Wray
DATE 9/20/96 DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

BP - 3.1	2-21-92	GR-3.2	5-6-91	LA-1	6-1-79	TC-35.10	8-29-84	TBR-91	4-24-92	
		GR-3.3	5-6-91	MT-95.30	10-10-88	TC-41.10	8-29-84			
CB-4	11-10-83	GR-4.1	5-6-91	MT-95.40	10-01-92	TC-41.20	6-21-94			
CB-5	11-10-83	GR-4.2	5-6-91	MT-96.10	9-9-88	TC-41.50	6-21-94			
		GR-5.1	10-30-92	MT-96.20	9-9-88	TC-42.10	8-19-77			
F-2	5-1-76	GR-7.1	10-30-92	MT-96.25	9-9-88	TC-42.20	3-26-79			
F-3	5-1-76	GR-8.1	1-31-94	MT-97.10	4-29-88	TC-51.10	1-20-84			
F-5	5-1-76			MT-98.12	6-24-93	TC-51.11	1-20-84			
F-6	5-1-76	MC-4	7-26-76	MT-98.13	6-24-93	TC-52.10	4-3-79			
		MC-6	1-30-84	MT-98.14	6-24-93	TC-52.20	4-3-79			
		MC-9.2	5-6-91	MT-98.15	6-24-93	TC-61.10	4-5-82			
GR-1.1	5-6-91	MC-9.3	10-30-92	MT-98.16	6-24-93	TC-65.10	7-7-95			
GR-1.2	10-30-92	MC-9.4	10-30-92	MT-99.10	11-14-86	TC-65.11	7-7-95			
GR-1.3	2-21-92	MC-10	5-1-76	MT-99.20	4-29-88	TC-72.20	2-26-82			
GR-2.1	5-6-91	MC-11	8-1-78	MT-105.10	7-1-92					
GR-3.1	5-6-91	HL-50.11	5-1-87	MT-105.11	7-1-92					

SUPPLEMENTAL SPECIFICATIONS

802	4-13-90
815	7-17-95
820	3-18-92
910	5-20-91
931	7-19-94
933	7-22-94
944	5-2-94

FEDERAL PROJECT NO. NH-78(40)
P.I.D. NO. 12147
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
COL-11-9.63
1/74

NH-78(40)

END PROJECT
STA. 200+00
S.L.M. 14.44

END WORK
STA. 199+56.25

P.I. = STA. 215+43.33
Δ = 29°00'00" Lt.
D = 1°28'00"
R = 3906.53
T = 1010.30'
L = 1977.27'
E = 128.53
e_{max} = 0.0479

P.C. 205+33.03

P.T. 225+10.30

S 18°04'38" E

S 47°04'38" E

℄ S.R. 11

℄ S.R. 154

RAMP "A"

RAMP "B"

RAMP "C"

RAMP "D"

RAMP "D" CONNECTOR

BRIDGE NO.
COL-11-1378 L & R

BRIDGE NO.
COL-11-1363 L & R
(NO WORK)

STA. 234+02.93 ℄ S.R. 11 =
STA. 59+07.50 ℄ S.R. 154

LITTLE BEAVER CREEK

MIDDLE FORK

P.C. 246+11.69

P.I. = STA. 253+50.00
Δ = 21°24'17" Rt.
D = 1°28'00"
R = 3906.53'
T = 738.31'
L = 1459.41'
E = 69.16'
e_{max} = 0.0479

MATCH LINE STA. 256+00

MATCH LINE STA. 256+00

MATCH LINE 309+00

P.T. 260+71.10

MEDIAN CROSSOVER
STA. 269+80

P.C. 306+96.69

S 25°40'21" E

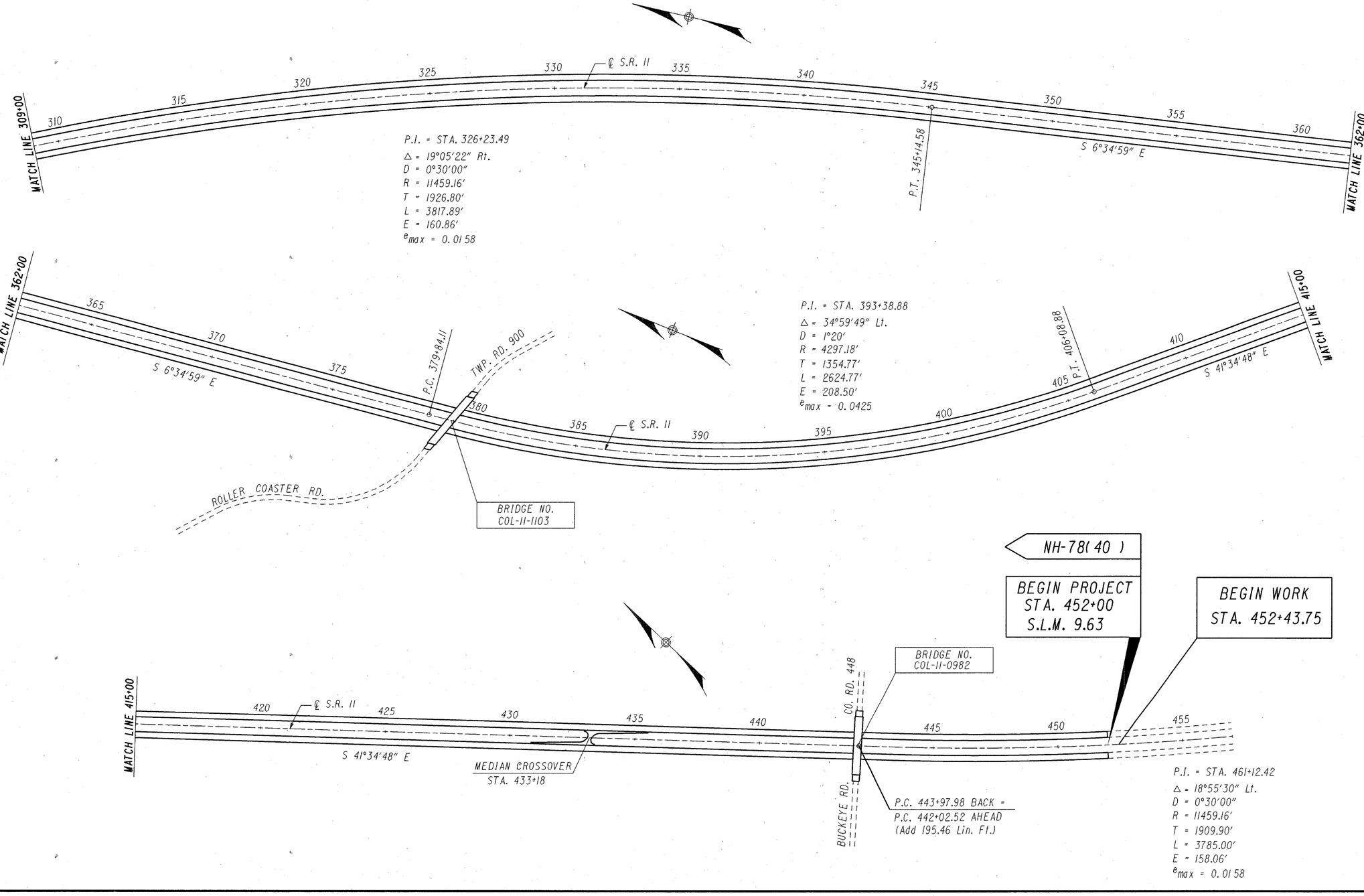
HORIZONTAL SCALE IN FEET
0 100 200 400

SCHEMATIC PLAN

COL-11-9.63

2
74

30119602.TKR



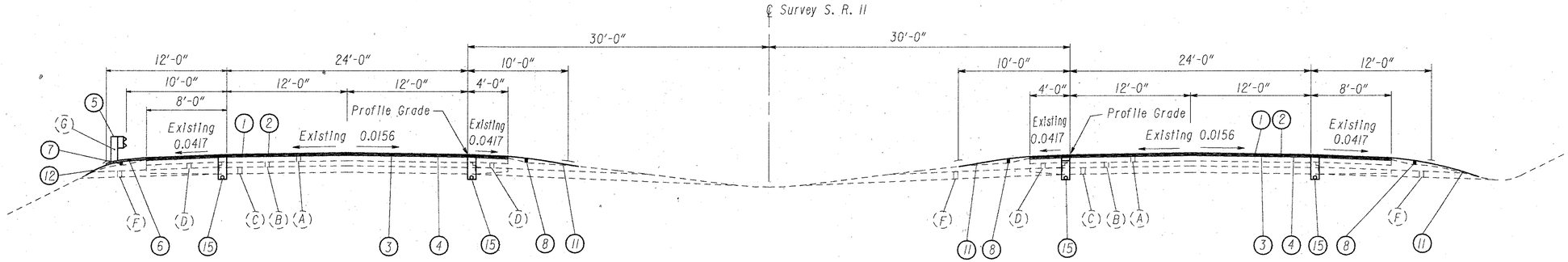
0 100 200 400
HORIZONTAL
SCALE IN FEET

SCHEMATIC PLAN

COL-11-9.63

3
74

30119602.TKR



NORMAL SECTION

SECTION APPLIES:

STA. 200+00 to STA. 203+75 = 175.00 L.F.

STA. 226+75 to STA. 244+50 = 1,279.48 L.F. ≠

STA. 262+50 to STA. 306+25 = 4,600.00 L.F.

STA. 346+00 to STA. 378+25 = 3,225.00 L.F.

STA. 407+75 to STA. 443+25 = 3,550.00 L.F.

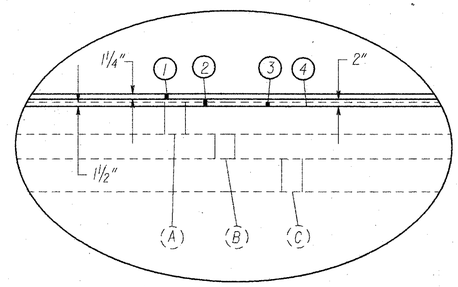
TOTAL = 12,929.48 L.F.

≠ DEDUCT FOR BRIDGES AND APPROACH SLABS :

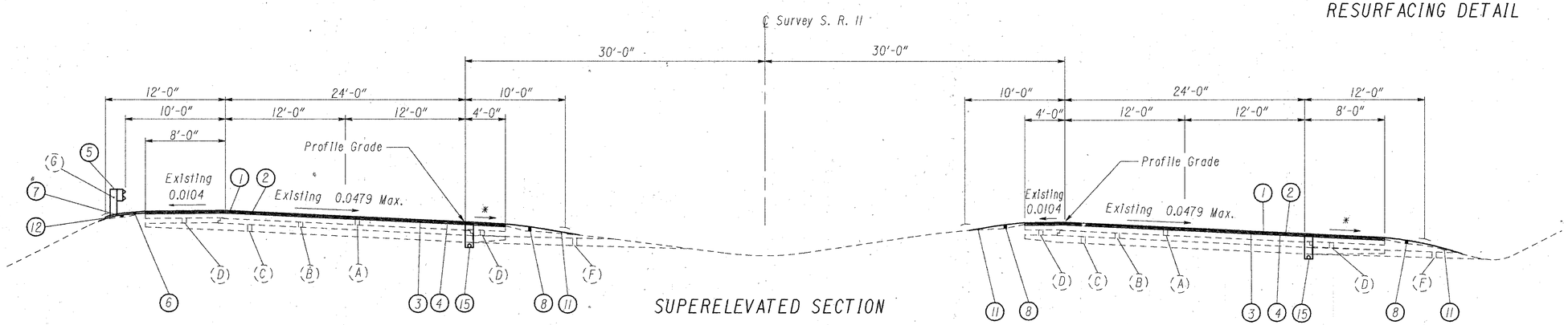
Br. No. COL - 11 - 1363 : STA. 240+00.74 to STA. 243+15.26 = 314.52 L.F.

Br. No. COL - 11 - 1378 : STA. 233+12.43 to STA. 234+93.43 = 181.00 L.F.

TOTAL = 495.52 L.F.



RESURFACING DETAIL



SUPERELEVATED SECTION

SECTION APPLIES:

STA. 203+75 to STA. 226+75 = 2,300.00 L.F.

STA. 244+50 to STA. 262+50 = 1,800.00 L.F.

STA. 306+25 to STA. 346+00 = 3,975.00 L.F.

STA. 378+25 to STA. 407+75 = 2,950.00 L.F.

STA. 443+25 to STA. 452+00 = 875.00 L.F.

TOTAL = 11,900.00 L.F.

For Legend, See Sheet No. 5

For Linear Grading Details, See Sheet No. 7

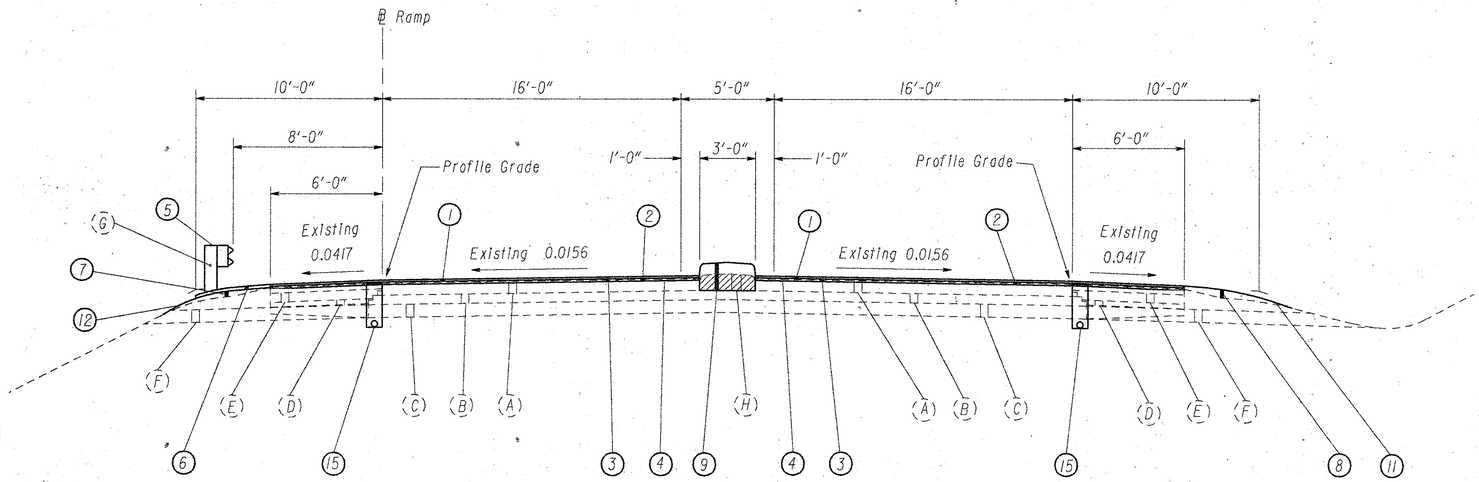
* Existing 0.0417 or Pavement Slope, If Greater

CALCULATED JPB CHECKED SHG

TYPICAL SECTIONS - MAINLINE

COL-11-9.63

9603.dgn JPB(2)



NORMAL SECTION

SECTION APPLIES :

Ramp 'C'

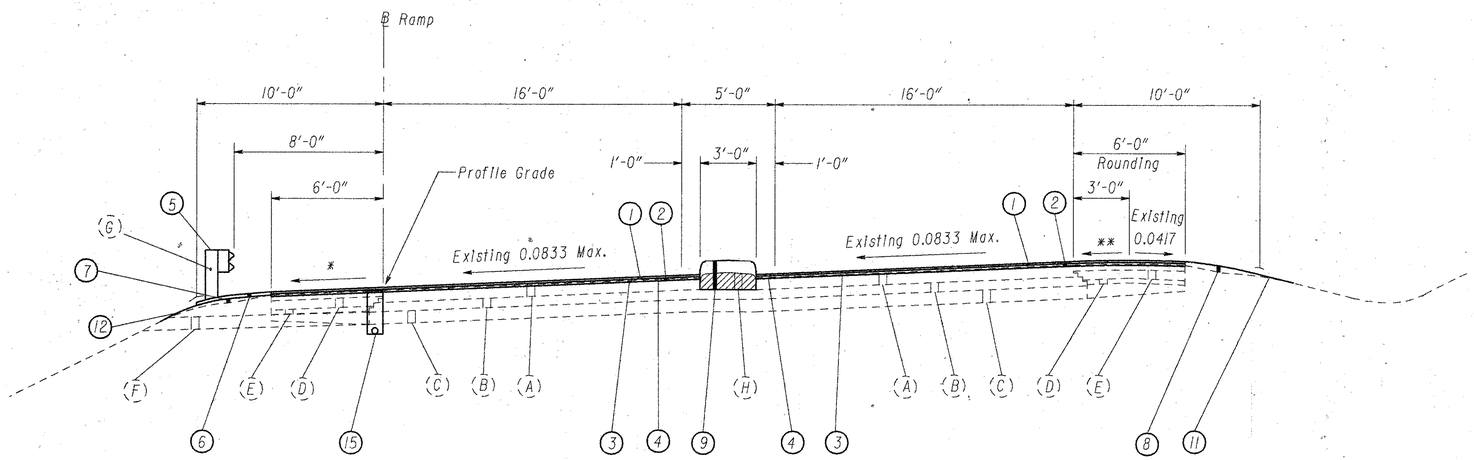
STA. 218+39.69 to STA. 221+60.66 = 320.97 L.F.

For Linear Grading Details, See Sheet No. 7

* Existing 0.0417 or Pavement Slope, If Greater

** Same Slope As Pavement

Note : Left and Right Side Configuration on Ramps Is Referenced to the Direction of Travel.



SUPERELEVATED SECTION

SECTION APPLIES :

Ramp 'C'

STA. 221+60.66 to STA. 225+90.32 = 429.66 L.F.

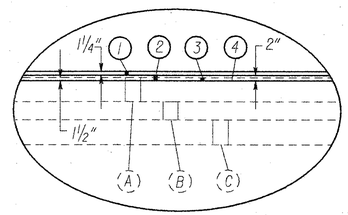
PROPOSED LEGEND

1. Item 446 - 1¼" Asphalt Concrete Surface Course, Type I, AC-20, As Per Plan
2. Item 446 - 2" Asphalt Concrete Intermediate Course, Type 2, AC-20
3. Item 254 - Pavement Planing, Bituminous (1½" Nominal Depth)
4. Item 407 - Tack Coat
5. Item 606 - Guardrail, Type 5
6. Item 448 - 2" Asphalt Concrete Intermediate Course, Type I, (Under Guardrail), As Per Plan
7. Item 203 - Linear Grading, Method A
8. Item 203 - Linear Grading, Method B
9. Item 612 - Concrete Median
10. Item 607 - Fence, Type 47
11. Item 659 - Seeding and Mulching, and Water
12. Item 670 - Slope Erosion Protection
13. Item 301 - 3" Bituminous Aggregate Base, AC-20
14. Item 304 - Aggregate Base
15. Item 605 - Shallow Pipe Underdrain, As Per Plan
16. Item 605 - 4" Shallow Pipe Underdrain, 707.15, As Per Plan
17. Item 408 - Bituminous Prime Coat Applied at 0.4 Gal./ S.Y.
18. Item 203 - Subgrade Compaction

To Be Removed

EXISTING LEGEND

- (A) Existing Asphalt Concrete Pavement
- (B) Existing Bituminous Macadam Base
- (C) Existing Subbase
- (D) Existing Aggregate Base
- (E) Existing Bituminous Aggregate Base
- (F) Existing Aggregate Drains
- (G) Existing Guardrail
- (H) Existing Concrete Median
- (I) Existing 2" Asphalt Concrete Under Guardrail (To Be Removed)



RESURFACING DETAIL

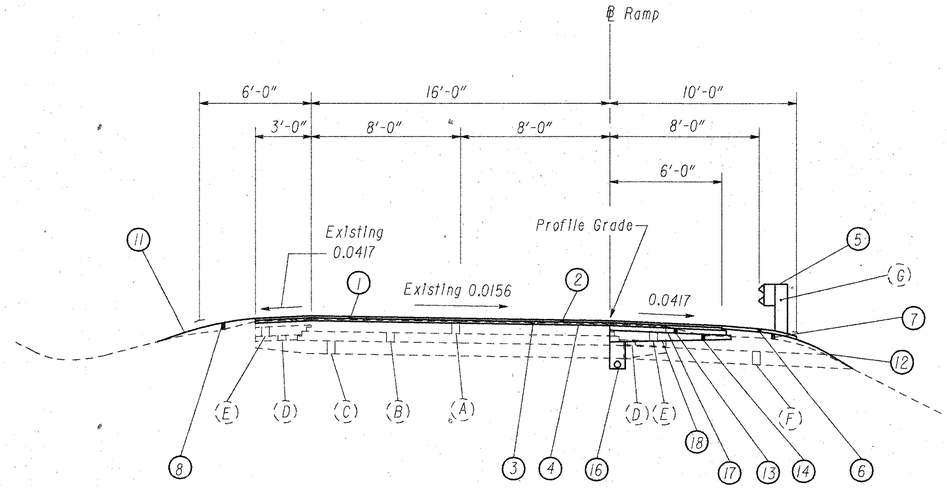
CALCULATED JPB CHECKED SHG

TYPICAL SECTIONS - DIRECTIONAL RAMPS

COL-11-9.63

5
74

'9603.dgn JPB(4)



NORMAL SECTION

SECTION APPLIES :

Ramp 'A'

STA. 223+05.92 to STA. 230+13.94 = 708.02 L.F.

STA. 232+01.44 to STA. 232+70.30 = 68.86 L.F.

Ramp 'B'

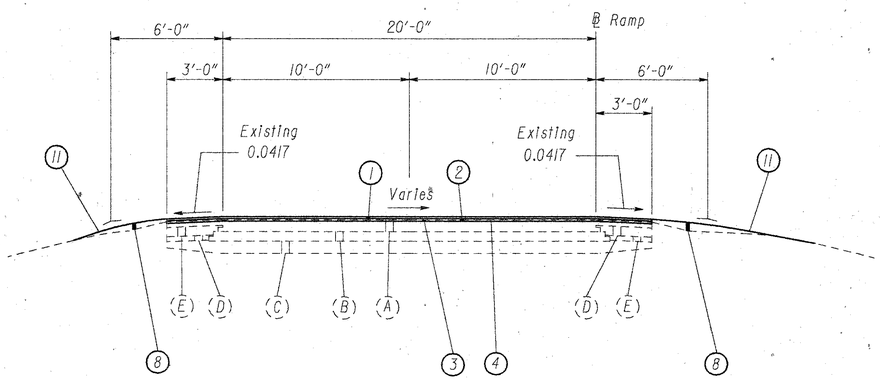
STA. 218+00.00 to 221+00.00 = 300.00 L.F.

STA. 227+08.64 to STA. 229+87.30 = 278.66 L.F.

Ramp 'D'

STA. 240+00.00 to STA. 243+00.00 = 300.00 L.F.

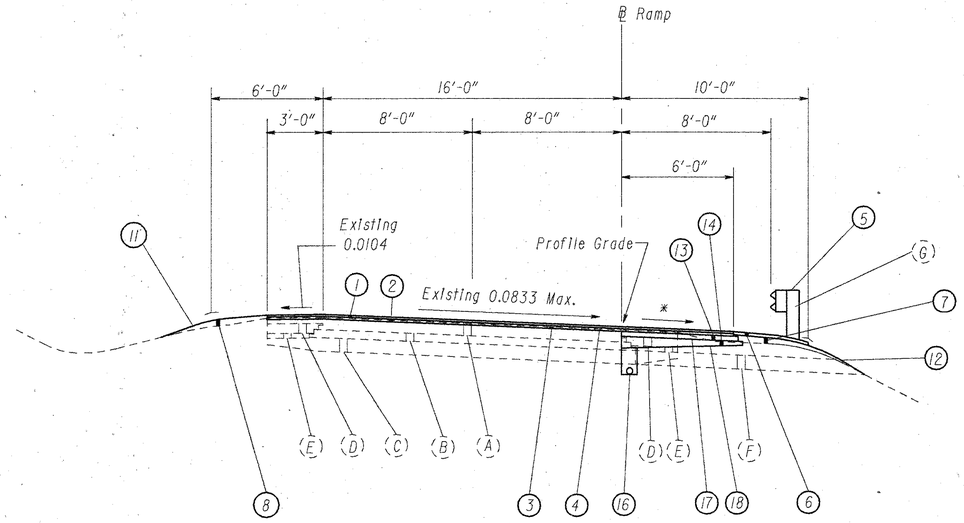
TOTAL = 1655.54 L.F.



NORMAL SECTION

SECTION APPLIES :

Ramp 'D' Connector Sta. 0+12.00 to 0+98.36 = 86.36 L.F.



SUPERELEVATED SECTION

SECTION APPLIES :

Ramp 'A'

STA. 222+05.92 to STA.223+05.92 = 100.00 L.F.

STA. 230+13.94 to STA.232+01.44 = 187.50 L.F.

Ramp 'B'

STA. 221+00.00 to STA. 227+08.64 = 608.64 L.F.

Ramp 'C'

STA. 225+90.32 to STA. 231+51.67 = 561.35 L.F.

Ramp 'D'

STA. 230+25.60 to STA. 240+00.00 = 974.40 L.F.

TOTAL = 2431.89 L.F.

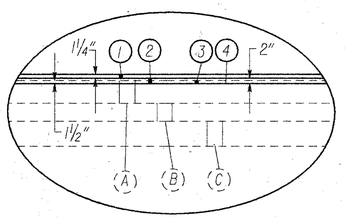
For Legend, See Sheet No. 5

For Linear Grading Details, See Sheet No. 7

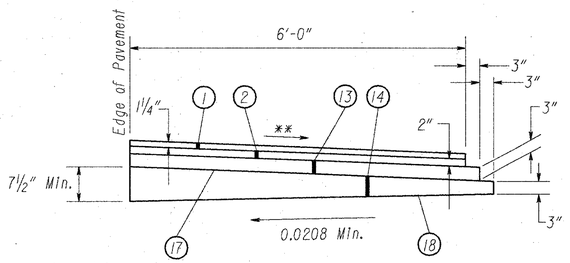
* 0.0417 or Pavement Slope, if Greater

** See Typical Section for Slope

Note : Left and right side configuration on ramps is referenced to the direction of travel.



RESURFACING DETAIL



RAMP RIGHT SHOULDER DETAIL

CALCULATED JPB CHECKED SHG

TYPICAL SECTIONS - RAMPS

COL-11-9.63

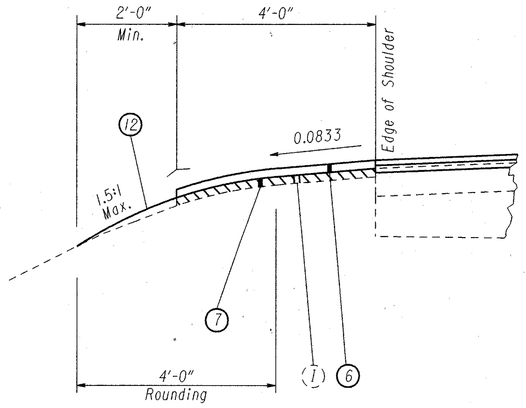
6/74

'19603.dgn JPB(3)

Note : Left and right side configuration on ramps is referenced to the direction of travel.

LINEAR GRADING, METHOD A

(Guardrail Not Shown)



PROPOSED LEGEND

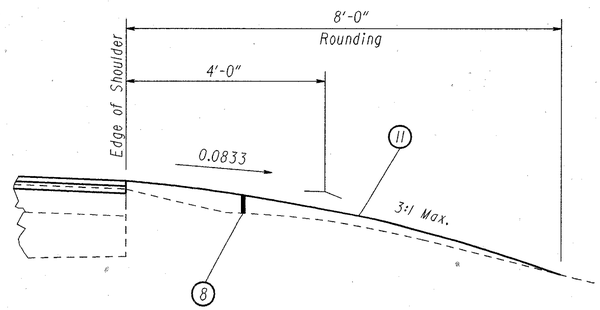
- (6) Item 448 - 2" Asphalt Concrete Intermediate Course, Type I (Under Guardrail), As Per Plan
- (7) Item 203 - Linear Grading, Method A
- (8) Item 203 - Linear Grading, Method B
- (11) Item 659 - Seeding and Mulching, and Water
- (12) Item 670 - Slope Erosion Protection
- To Be Removed by Item 203, Excavation

EXISTING LEGEND

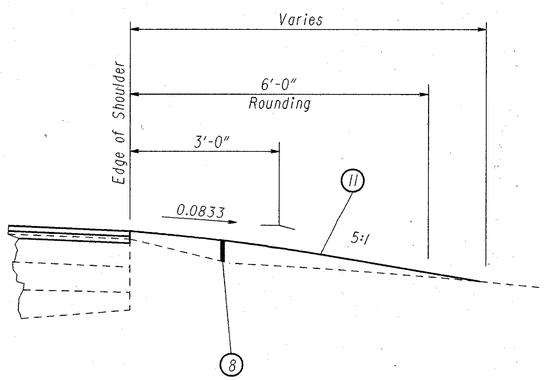
- (1) Existing 2" Asphalt Concrete Under Guardrail (To Be Removed)

LINEAR GRADING, METHOD B

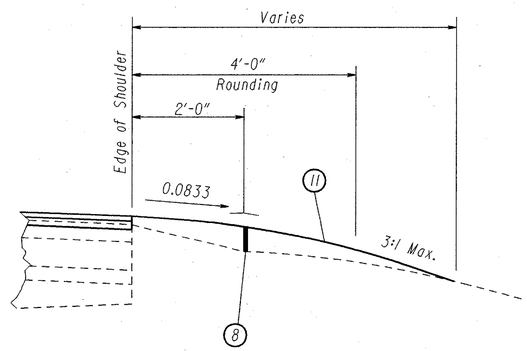
Mainline Outside



Mainline Median



Ramps (Left & Right)



CALCULATED JPB
CHECKED SHG

LINEAR GRADING DETAILS

COL-11-9.63

7
74

CALCULATED SHG CHECKED JPB

GENERAL NOTES

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:

Public Projects Coordinator
AEP - Ohio Power Company
1 Riverside Plaza - Metal Forge
Columbus, Ohio 43215-2373
Telephone : (614) 223-1579

The location of the underground utilities shown on the plans are as obtained from the owners as required by O.R.C. Section 153.64.

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, unless denoted "assumed elevation", 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.

ITEM 201, CLEARING AND GRUBBING, AS PER PLAN

Work under this item shall consist of preparing the existing groundline where the new right of way fence will be located. The work limits shall be within two feet on each side of the new Type 47 fence limits. This work shall consist of the following:

1) Removal of trees, stumps, and brush to ground level.
2) Removal of litter.
3) Mowing the vegetation to a height between 3" and 5".
4) Treating the prepared area with herbicide within 24 hours after the vegetation is cut.

Herbicide shall be 1 gallon of Dow "Tordon K" combined with two quarts of 2, 4 D-amine or an approved equal in sufficient water to make 50 gallons of total spray mix per acre. The required treated area is estimated to be 4.7 acres.

Only properly licensed personnel shall apply herbicides as required by the Ohio Revised Code.

The following is an estimate of the number of trees to be removed:

Size: 18" Number: 130
Size: 30" Number: 20

The State reserves the right to order the removal of additional trees, stumps, or both, outside the limits of construction, but within the limited access right of way.

Payment for the above work will be made at the lump sum contract price for Item 201, Clearing and Grubbing, As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals as necessary to complete the work.

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 on Standard Construction Drawing GR-1.1. Payment shall be included in the contract price for the respective guardrail items.

ITEM 202, ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E

Existing Type E Anchor Assemblies that are designated for removal shall be carefully dismantled and stored on the project for reuse. Any components of the assembly that are not considered salvageable, as determined by the Engineer, shall be disposed of by the Contractor per Section 202.02.

Payment for the above work will be made at the contract price for Item 202, Each, Anchor Assembly Removed For Reuse, Type E, and shall include the cost of all labor, tools, equipment, materials, and incidentals necessary to complete the work.

ITEM 606, ANCHOR ASSEMBLY, TYPE E

This item shall consist of furnishing and installing an ET-2000, Option "B" guardrail end terminal as manufactured by SYRO Steel Company, 1170 N. State Street, Girard, Ohio 44420 (telephone 216-545-4373).

The length of the ET-2000 system is considered to be 50', inclusive of two 25' long rail elements. Installations shall be in accordance with the manufacturer's specifications, and at the locations shown in the plans.

Payment for the above work shall be made at the contract price for Item 606, Each, Anchor Assembly, Type E, and shall include all labor, tools, equipment, and materials necessary to construct a complete and functional anchor assembly system, including all related hardware, not separately specified, as required by the manufacturer.

ITEM 203, LINEAR GRADING, METHOD B

This work shall include the excavation and embankment required to grade beyond the paved shoulders. Vegetation, material buildup, and collected debris on the shoulder or within the linear grading limits shall be removed and disposed of by the Contractor as per 203.05, or wasted over fill slopes at the direction of the Engineer.

Method B applies to areas without guardrail. The excavated material shall be replaced with compactable granular material conforming to 203.02, placed to grade as shown on the Typical Sections. The graded areas shall be seeded as per 659.

Linear grading widths shown on the plan represent minimum requirements, and the Engineer may increase these widths as determined by his analysis of project conditions at no additional cost to the State.

The method of measurement shall be considered as one station per 100 linear feet measured separately for the outside shoulders on mainline, and the left and right shoulders on each ramp.

Payment for the above work, except for Item 659, will be made at the respective contract price for Item 203, Station, Linear Grading, Method B, and shall include the cost of all labor, materials, equipment, and incidentals as necessary to complete the work.

PAVING UNDER GUARDRAIL

This operation shall include preparation of the graded shoulder using Item 203, Linear Grading, Method A, and paving under the guardrail using Item 448, Asphalt Concrete Intermediate Course, Type 1 (Under Guardrail), As Per Plan.

Item 203, Linear Grading, Method A, shall consist of excavating topsoil, placing granular material, and applying herbicide as specified in the plans and in accordance with the following:

All collected debris and topsoil, including rhizomes, roots, and other vegetative plant material, shall be removed and disposed of as specified in 203.05.

The removed material shall be replaced with compactable granular material conforming to 203.02, placed to grade as shown on the Typical Sections, or as approved by the Engineer.

Herbicide shall be Treflan E. C., Spike, or an approved equal, and shall be applied to the prepared area after final leveling and grading has been completed. The application shall be just prior to paving, and shall strictly adhere to the manufacturer's instructions.

Only properly licensed personnel shall apply herbicides as required by the Ohio Revised Code.

All equipment, materials, and labor required to prepare the graded shoulder as outlined above shall be included for payment under Item 203, Linear Grading, Method A.

Paving under guardrail shall consist of placing a 2" course of Item 448 using the following method:

1) Place Item 448
2) Bore asphalt at post locations (may be omitted if steel posts are used)
3) Set guardrail posts
4) Patch around posts. The materials used for patching shall be a bituminous concrete approved by the Engineer. Patched areas shall be compacted using either hand or mechanical methods. Finished surfaces shall be smooth and sloped to drain away from the posts.

All equipment, materials, and labor required to pave under guardrail, with the exception of setting guardrail posts, shall be included in payment under Item 448, Asphalt Concrete Intermediate Course, Type 1 (Under Guardrail), As Per Plan.

ITEM 202, RAISED PAVEMENT MARKER REMOVED FOR STORAGE, AS PER PLAN

Existing raised pavement markers shall be removed per Section 202.071, except that the requirement to fill the depressions shall be waived. The following quantity has been carried to the General Summary to remove existing raised pavement markers:

Item 202, Raised Pavement Marker Removed For Storage, As Per Plan - - - 737 Each

FENCE GROUNDING

Proposed right of way fence which crosses under overhead power lines or transmission lines shall be grounded as detailed in Standard Construction Drawing HL-50.11, and as directed by the Engineer. For quantities, see sheet no. 19.

ITEM 202, CATCH BASIN CLEANOUT

This item shall consisit of removing all foreign material, material buildup, and obstructions from the inside of existing catch basins, and the sumps of existing inlets.

The cleanout shall be accomplished by using a high pressure water jet, vacu-jet, or any other method as approved by the Engineer. The Contractor shall dispose of all collected material and debris as per 203.05.

For locations and quantities, see sheet no. 17.

Payment for the above work will be made at the contract price for Item 202, Catch Basin, Cleanout, and shall include the cost of all labor, tools, equipment, materials, and incidentals necessary to complete the work.

ITEM SPECIAL, IMPACT ATTENUATOR, TYPE I, (BI-DIRECTIONAL)

This work shall consist of furnishing and installing an impact attenuator system.

The impact attenuator system shall be one of the following:

1. The Breakmaster impact attenuating system manufactured by Energy Absorption Systems, Inc., which is distributed by Baldwin & Sours, 5263 Traube Road, Columbus, Ohio 43228 (telephone 614-851-8800).

2. The C.A.T. impact attenuating system manufactured by SYRO Steel Company, 1170 North State Street, Girard, Ohio 44420 (telephone 216-545-4373).

The attenuator shall be designed for bi-directional impacts, and shall be placed in accordance with the manufacturer's specifications, and at the locations shown on the plans.

The nose cover of the attenuator shall be marked with three evenly spaced four inch wide horizontal stripes of white reflective material meeting the requirements of 730.19 for a permanent installation.

Payment for the above work will be made at the contract price for Item Special, Each, Impact Attenuator, Type I (Bi-directional). This item shall include the cost of all labor, materials, equipment, and incidentals necessary to complete this item in place, including all related hardware, not separately specified, as required by the manufacturer to construct a complete and functional impact attenuator system.

ITEM 659, SEEDING AND MULCHING

Seeding and mulching shall be applied to all areas of exposed soil within the limits of Item 203, Linear Grading, Method B, and the median reconstruction. Quantity calculations for Item 659, Seeding and Mulching, are based on these areas.

WATERING PERMANENT SEEDED AREAS

The following estimated quantity is to be used as directed by the Engineer to promote growth, and to care for permanent seeded areas per 659.09:

Item 659, Water - - - - - - - - - - - 176 M Gal.

EROSION CONTROL

Item 670 is provided in the plans for erosion control. Rock of a stable nature shall not be removed in order to place this item. The Engineer shall check and non-perform quantities, or adjust locations and quantities of this item where indicated by field conditions during construction. In addition, this item shall meet the requirement of 108.04.

PROFILE AND ALIGNMENT

The proposed pavement resurfacing shall follow the alignment and profile of the existing pavement. The proposed asphalt concrete overlay shall have a uniform thickness of 3¼" after a pavement planing thickness of 1½".

PREVIOUS CONSTRUCTION PLANS

The following previous construction plans, which show the original alignment and profile, are available for inspection at the ODOT District 11 office:

COL-11-10.22/COL-154-1.71 Original construction plan, 1968
COL-11-9.63 Subdrainage construction plan, 1982
COL-11-9.63 Resurfacing plan, 1983

COL-11-9.63

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CALCULATED SHG CHECKED JPB

GENERAL NOTES

ITEM 407, TACK COAT

The rate of application of the 407 tack coat shall be subject to adjustment as directed by the Engineer. Plan quantities indicate an average application rate of 0.075 gallons per square yard of tack coat for estimating purposes only.

ITEM 446, ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20, AS PER PLAN

Materials furnished for fine and coarse aggregates used in this item shall exclude all stone and crushed carbonate stone.

SAME SEASON COMPLETION OF THE RESURFACING COURSES

Any length of resurfacing work started in a construction season shall have the surface course placed during the same season.

ITEM 254, PATCHING PLANED SURFACE

The following quantity is to be used as directed by the Engineer for the purpose of patching the planed surface per Section 254.05:

Item 254, Patching Planed Surface - - - - - - - - - - - - - - - - 22,000 Sq. Yd.

ITEM 606, ANCHOR ASSEMBLY REBUILT, TYPE E

This item shall consist of installing a Type E anchor Assembly by using salvaged components removed under Item 202, Anchor Assembly Removed for Reuse, Type E. Before any salvaged part can be used, they shall be inspected and approved for reuse by the Engineer. Any parts that are missing or do not meet the Engineer's approval shall be replaced by the Contractor. The installation of the rebuilt Type E Anchor Assembly shall conform to the pertinent standard drawings and the manufacturer's specifications.

Payment for the above work will be made at the contract price for Item 606, Each, Anchor Assembly Rebuilt, Type E, and shall include the cost of all labor, tools, equipment, materials, and incidentals necessary to complete the work.

MAINTENANCE OF TRAFFIC

MAINLINE

At least one lane of traffic shall be maintained in each direction at all times as per Standard Construction Drawing MT-95.30. The length of restricted traffic lanes shall be kept to a minimum consistent with the specification requirements for the protection of work items which necessitate the restriction. The limits and duration of lane closures shall be subject to the approval of the Engineer.

During construction of the pavement transition under bridge no's. COL-11-0982 and COL-11-1103 as shown in the detail on sheet no. 42, portable concrete barrier shall be utilized as shown in Standard Construction Drawing MT-95.40.

The following quantities have been included in the Maintenance of Traffic General Summary for the purpose of maintaing traffic during pavement transition construction as stated above:

Item 622, Portable Concrete Barrier, 32" - - - - - - 4,940 Lin. Ft.
Item 614, Barrier Reflector, Type B - - - - - - - - - 206 Each
Item 614, Object Marker - - - - - - - - - - - - - - - 214 Each

INTERCHANGE RAMPS

Ramp traffic shall be maintained by use of portions of the existing or resufaced pavement and shoulders.

Ramp traffic may be stopped by utilizing flaggers for intermittent periods not to exceed ten minutes during ramp resurfacing operations.

Traffic shall not be allowed to form a queue which extends beyond the limits of the ramp onto the speed change lane or mainline. The limits and duration of any traffic stoppage shall at all times be subject to the direction of the Engineer.

SPEED CHANGE LANES

Speed change lane traffic shall be maintained at all times by use of portions of the existing or resufaced pavement and shoulders. See Standard Construction Drawings MT-98.12, MT-98.13, MT-98.14, MT-98.15, and MT-98.16.

MAINTENANCE OF TRAFFIC (Cont'd.)

BRIDGES

Traffic shall be maintained on bridge no's. COL-11-1378 L&R and COL-11-1363 L&R as shown in Standard Construction Drawings MT-95.30, MT-98.12, MT-98.13, MT-98.14, MT-98.15, and MT-98.16.

Traffic shall be maintained on bridge no. COL-11-0982 by utilizing flaggers as shown in Standard Construction Drawing MT-97.10.

One lane of traffic shall be maintained on bridge no. COL-11-1103 during bridge deck rehabilitation by means of signalized alternating one-way traffic as shown in the detail on sheet no. 10, and per Standard Construction Drawings MT-96.10, MT-96.20, and MT-96.25. The initial signal cycle length shall be set at 60 seconds.

The following quantities have been included in the Maintenance of Traffic General Summary for the purpose of maintaing traffic on bridge no. COL-11-1103 as stated above:

Item 614, Temporary Raised Pavement Marker - - - - - - 662 Each
Item 614, Temporary Edge Line, Class I - - - - - - - 0.06 Mile
Item 614, Temporary Center Line, Class I - - - - - - - 0.06 Mile
Item 614, Temporary Stop Line, Class I - - - - - - - - 20 Lin. Ft.
Item 615, Temporary Pavement, Class B, As Per Plan - - 121 Sq. Yd.

Traffic shall be strictly prohibited from using the uncompleted portion of the bridge deck rehabilitation.

The Contractor shall install and maintain suitable shields between his operations and vehicles traveling under bridge no's. COL-11-0982 and COL-11-1103 during structural steel painting operations. The shields shall be of a type and construction, as approved by the Engineer, to prevent paint from dropping or blowing onto vehicles. The shields shall be suitably anchored and reinforced to prevent interference with normal traffic operations in the maintained lanes. Payment for the shields shall be included in the lump sum contract price for Item 614, Maintaining Traffic.

GENERAL

If the project is shut down for the winter, and the permanent pavement markings have not been applied, Item 614, Temporary Edge Lines, Class I, and Item 614, Temporary Lane Lines shall be applied to the mainline for the entire length of the project, and the interchange ramps.

All work and traffic control devices shall be in accordance with Item 614 and other applicable portions of the Specifications, as well as the Ohio Manual of Uniform Traffic Control Devices. Payment for all labor, equipment, and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, unless separately itemized in the plan.

GUARDRAIL REPLACEMENT

No hazard shall be left unprotected except for the actual time necessary to remove the existing guardrail, prepare the site, and install new guardrail in a continuous operation. The removal of all guardrail shall at all times be as directed by the Engineer. No guardrail shall be removed until the replacement material is on site, ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended until such time as the Engineer is assured of compliance.

TEMPORARY WORK ZONE MARKING SIGNS

The following estimated quantity has been carried to the Maintenance of Traffic General Summary for use as directed by the Engineer for temporary work zone marking signs per the requirements of Standard Construction Drawing MT-99.10:

Item 614, Work Zone Marking Sign - - - - - - - - - - - - - - - 14 Each

ITEM 622, PORTABLE CONCRETE BARRIER

It is anticipated that the same barrier will be used in various phases of construction. Movement of the concrete barrier between phases shall be accomplished in one working day. Flaggers shall be utilized for protection of vehicular traffic until movement of the barrier is complete.

ITEM 614, BARRIER REFLECTORS

Reflectors and their mounting shall conform to Supplemental Specification 802 except that the spacing shall be as shown on Standard Construction Drawing MT-95.40.

COVERING OF SIGNS

Where the plans call for a permanent sign to be covered, the Contractor shall do so in such a manner as to avoid damaging the permanent sign when the cover is removed. The cover shall be totally opaque. The use of adhesive tape applied directly to a sign is strictly prohibited.

ITEM SPECIAL, 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 of 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 foot 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 64 square feet has been provided in the Maintenance of Traffic General Summary.

ITEM SPECIAL, 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 10 each has been provided in the Maintenance of Traffic General Summary.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

The Contractor shall furnish, install, maintain, cover during suspension of work, and subsequently remove work zone speed limit signs and supports (R-10-48) (45 mph) within the work limits in accordance with the following requirements.

The Contractor shall cover or remove any existing speed limit or minimum speed signs within the reduced speed zone. These signs shall be restored during suspension or termination of the reduced speed limit. The expense of covering or removal and restoration of existing speed limit or minimum speed signs shall be included in the pay item for the work zone speed limit signs.

The work zone speed limit signs may be erected or uncovered no more than 4 hours before the actual start of work. The signs shall be removed or covered no later than 4 hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer.

The Contractor shall erect a work zone speed limit sign in advance of any lane restiction expected to last at least 30 days, or as directed by the Engineer. The sign shall be mounted on both sides of divided highways, 500 feet in advance of the lane reduction taper. The sign shall be mounted on the right side, 250 feet in advance of the lane reduction taper on undivided highways. The sign shall be repeated, on the side nearest traffic, every 1 mile for 55 mph zones, and every ½ mile for 45 mph zones. These signs shall also be erected immediately after each open entrance ramp within the zone. A sign to indicate the resumption of the statutory speed limit shall be erected at the end of any reduced speed zone. This sign shall be an R-8A.

The Contractor may use signs and supports in used but good condition provided the signs meet current ODOT specifications. Sign faces shall be reflectorized with Type G sheeting complying with the requirements of 730.19 and U.S. Department of Transportation supplemental specification for Type III-C Sheeting, FP-85. Work zone speed limit signs shall be mounted on two (2) Item 630 Ground Mounted Supports, No. 4 posts.

Work zone speed limit signs and supports will be measured as the number of sign installations, including the signs and necessary supports. If a sign and support combination is removed and reerected at another location within the project due to changes in the speed zone directed by the Engineer, it shall be considered another unit.

Payment for accepted quantities, complete in place, will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals, and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removing the signs and supports.

Item 614, Work Zone Speed Limit Sign - - - - - - - - - - - - - - 42 Each

NOTIFICATION OF WORK ZONE LANE RESTRICTIONS

The Contractor shall notify the Engineer at least eighteen (18) days prior to implementing any work zone restrictions which will reduce the width or vertical clearance of any lane on which traffic will be maintained during construction.

The Engineer shall immediately notify the Roadway Services Manager to advise the Office of Highway Management of the restrictions.

ITEM 615, TEMPORARY PAVEMENT, CLASS B, AS PER PLAN

The temporary pavement to be constructed as detailed on sheet no. 10 shall remain in place upon completion of the project, thereby waiving the requirements of Section 615.08.

COL-11-9.63

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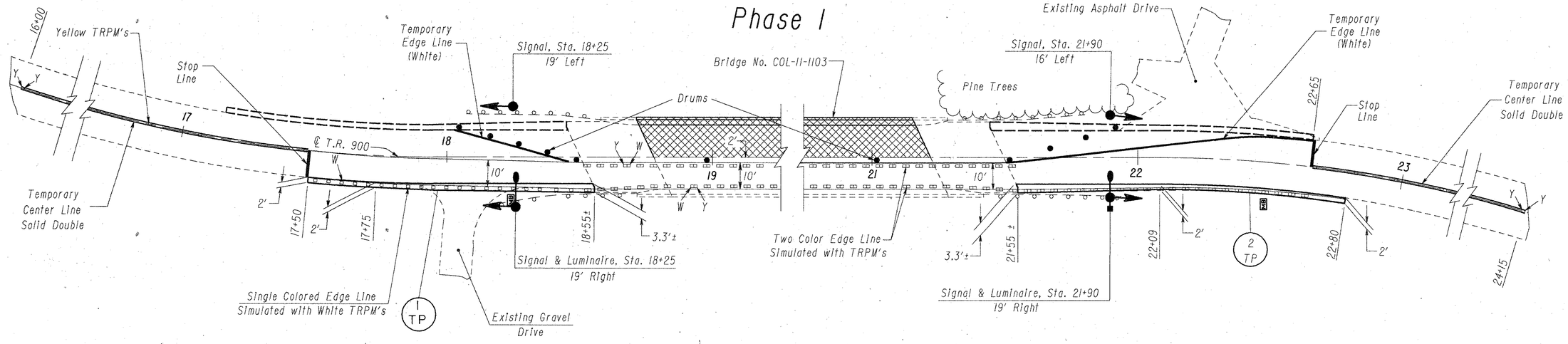
Phase 1



Item 615 Temporary Pavement, Class B, As Per Plan :

1-TP: ((25 L.F. x 2') + (80 L.F. x 2.65' avg.)) ÷ 9 = 29.1 S.Y.

2-TP: ((54 L.F. x 2.65' avg.) + (71 L.F. x 2')) ÷ 9 = 31.7 S.Y.

TOTAL = 60.8 S.Y. USE 61 S.Y.

Item 614 Temporary Center Line, Class I :

(Sta. 24+15 - Sta. 22+65) + (Sta. 17+50 - Sta. 16+00) = 300 L.F. ÷ 5280 = 0.06 Mile

Item 614 Temporary Edge Line, Class I :

Sta. 18+03 to Sta. 18+49 : 46'

Sta. 21+50 to Sta. 22+65 : 115'

163' ÷ 5280 = 0.03 Mile

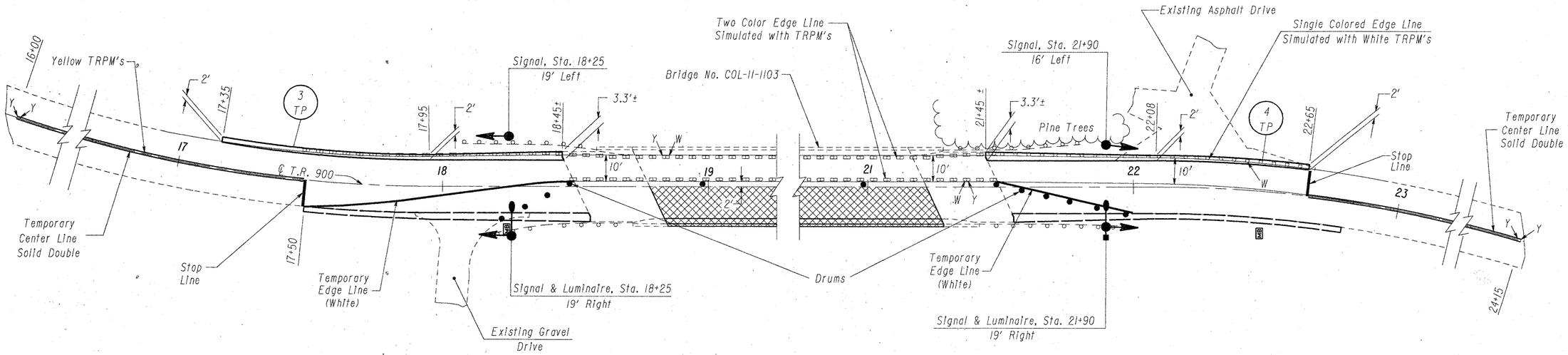
Item 614 Temporary Stop Line, Class I :

2 x 10 L.F. = 20 Lin. Ft.

Item 614 Temporary Raised Pavement Markers :

STATIONING			SPACING	TYPE A			REMARKS
FROM	TO	SIDE	(FT.)	W	Y	Y/Y	(LINE TYPE)
16+00	17+50	℄	20			18	DOUBLE YELLOW
17+50	18+50	R	5	21			EDGE
18+50	21+55	℄	5	62	62		EDGE
18+50	22+65	R	5	84	84		EDGE
22+65	24+15	℄	20			18	DOUBLE YELLOW
SUB-TOTAL				167	146	36	
TOTAL				349			

Phase 2



Item 615 Temporary Pavement, Class B, As Per Plan :

3-TP: ((60 L.F. x 2') + (50 L.F. x 2.65' avg.)) ÷ 9 = 28.1 S.Y.

4-TP: ((63 L.F. x 2.65' avg.) + (57 L.F. x 2')) ÷ 9 = 31.2 S.Y.

TOTAL = 59.3 S.Y.

USE 60 S.Y.

Item 614 Temporary Edge Line, Class I :

Sta. 17+50 to Sta. 18+50 : 102'

Sta. 21+48 to Sta. 22+00 : 52'

154' ÷ 5280 = 0.03 Mile

Item 614 Temporary Raised Pavement Markers :

STATIONING			SPACING	TYPE A		REMARKS
FROM	TO	SIDE	(FT.)	W.	Y	(LINE TYPE)
17+50	21+50	L	5'	84	84	EDGE
18+50	21+50	℄	5'	61	61	EDGE
21+50	22+65	L	5'	23		EDGE
SUB-TOTAL				168	145	
TOTAL				313		

For Details not shown, See Standard Drawings MT-96.10, MT-96.20, MT-96.25.

NOTE: Quantities Carried to Sheet No. 9.

▨ - Work Zone

HORIZONTAL SCALE IN FEET

CALCULATED JPB

CHECKED SHG

MAINTENANCE OF TRAFFIC

COL-11-9.63

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GENERAL

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMRNT MARKERS (TRPM'S). THE MARKERS SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL

ALL MARKERS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH MARKER AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATE FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCHES FOR TYPE A OR 3.0 SQUARE INCHES FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

SPECIFIC INTENSITY

TYPE A

INCIDENCE ANGLE (DEGREES)	WHITE	YELLOW
0	1.0	0.6
20	0.4	0.24
45	—	—

TYPE B

	WHITE	YELLOW
0	3.0	1.8
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH DAY AND NIGHT. THEIR DAY TIME VISIVILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

1) THE MARKERS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.

2) WHEN VIEWED FROM ABOVE, THE MARKERS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.

3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE MARKER SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETROREFLECTING AUTOMOTIVE HEADLIGHT BACK TO DRIVER.

INSTALLATION

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, ABITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE MARKER UNDER THE ABOVE CONDITIONS. WHEN IT IS NEDESSARY TO ATTACH MARKERS TO NEW CONCRETE PAVEMENT WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS EXPENSE, ANY MARKERS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

MARKERS ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES. THE CONTRACTOR SHALL IMMEDIATELY, AT HIS EXPENSE, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING DAY AND NIGHT AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE MARKERS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING INES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY SHALL BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES LATERALLY TO AVOID PLACEMENT ON JOINTS, OR ON CRACKED OR DETERIORATED PAVEMENT. MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS DESTRACTS FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20'C/C
LANE LINE	A OR B	40'C/C•
CENTER LINE (SINGLE/BROKEN)	A OR B	40'C/C•
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20'C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10'C/C

• CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4 @ 3.33'C/C 30'GAP (40'CYCLE)
CENTER LINE (DOUBLE/SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE/BROKEN)	A	4 @ 3.33'C/C 30'GAP (40'CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW MARKERS USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW AND WHITE MARKERS SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION ONLY.

REMOVAL

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT. PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

PAVEMENT

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH MARKER AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TEMPORARY RAISED PAVEMENT MARKERS WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXECPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS.

CALCULATED | CHECKED

07/03/90

ITEM 614 - TEMPORARY RAISED PAVEMENT MARKERS

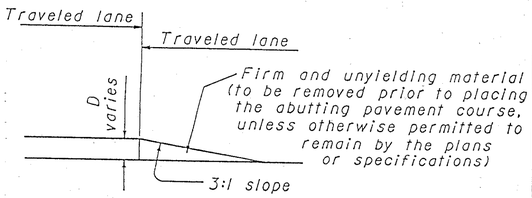
COL-11-9.63

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-151 (Low Shoulder) signs or OW-171 (Uneven Lanes) and OWP-171 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-171 and OWP-171 signs required.

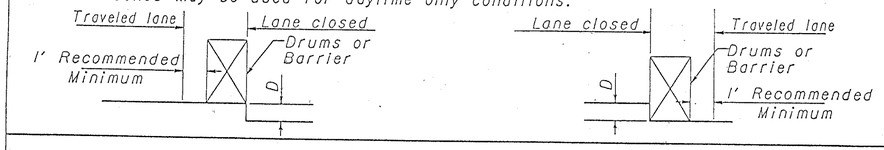


CONDITION I
DROPOFFS BETWEEN TRAVELED LANES

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

D (In.)	Treatment
≤1½	Erect OW-171 and OWP-171 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.

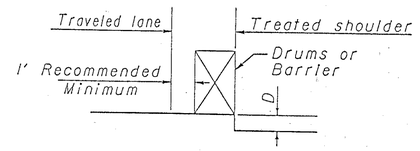


CONDITION II
DROPOFFS WITHIN GRADED SHOULDER AREA

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.

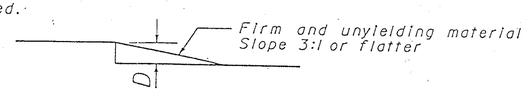
D (In.)	Treatment
≤1½	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
>1½-5	1) If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums 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-151 signs required.

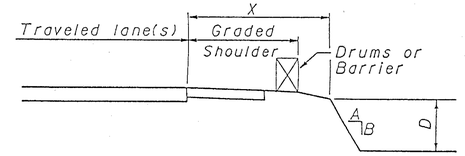


CONDITION III
DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

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.

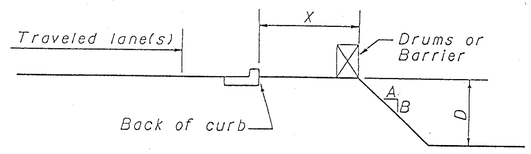


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	≤3	Steeper than 3:1	None	None
4-12	>3-<12	Steeper than 3:1	Drums	Drums
4-12	>12	Steeper than 3:1	Drums	Barrier
>12-20	<12	Steeper than 3:1	None	None
>12-20	>12-<24	Steeper than 3:1	Drums	Drums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

DROPOFFS IN WORK ZONES

COL-11-9.63

11A
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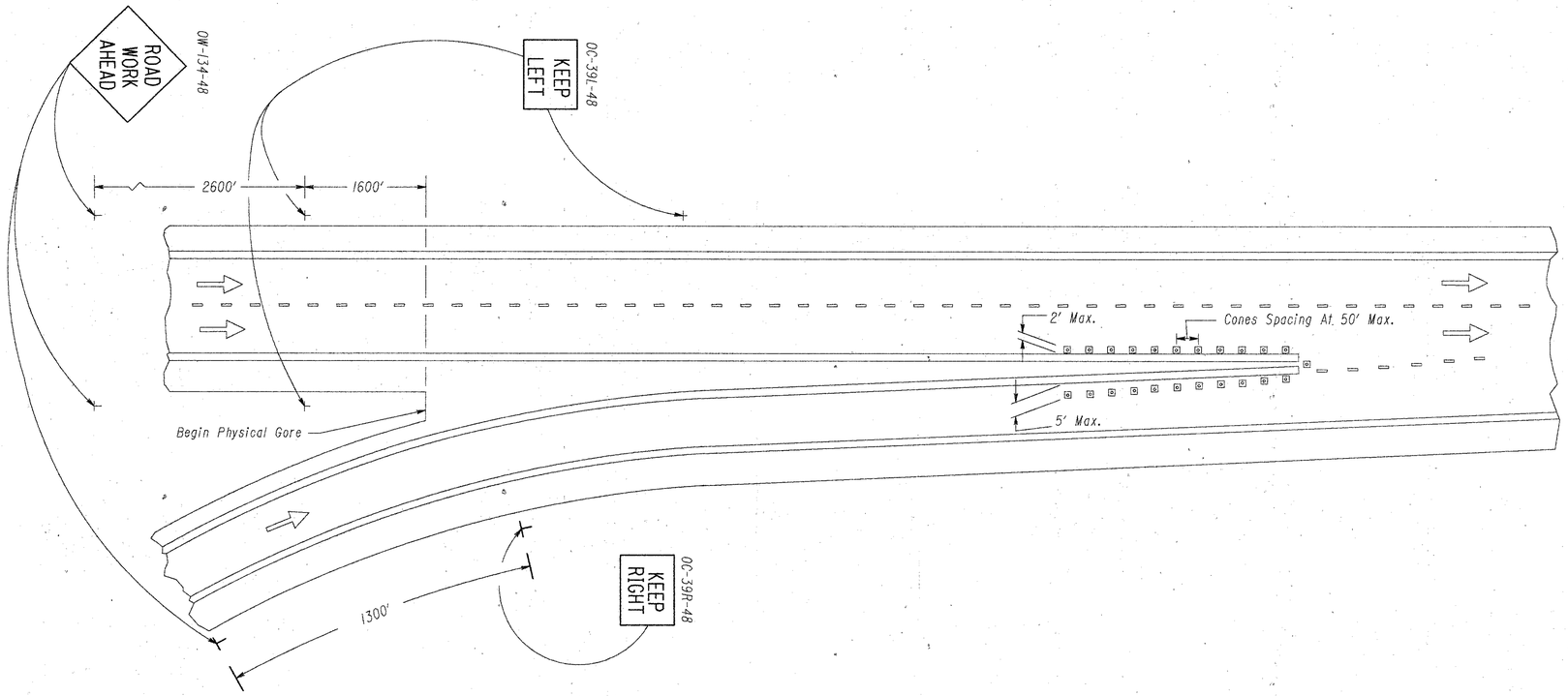
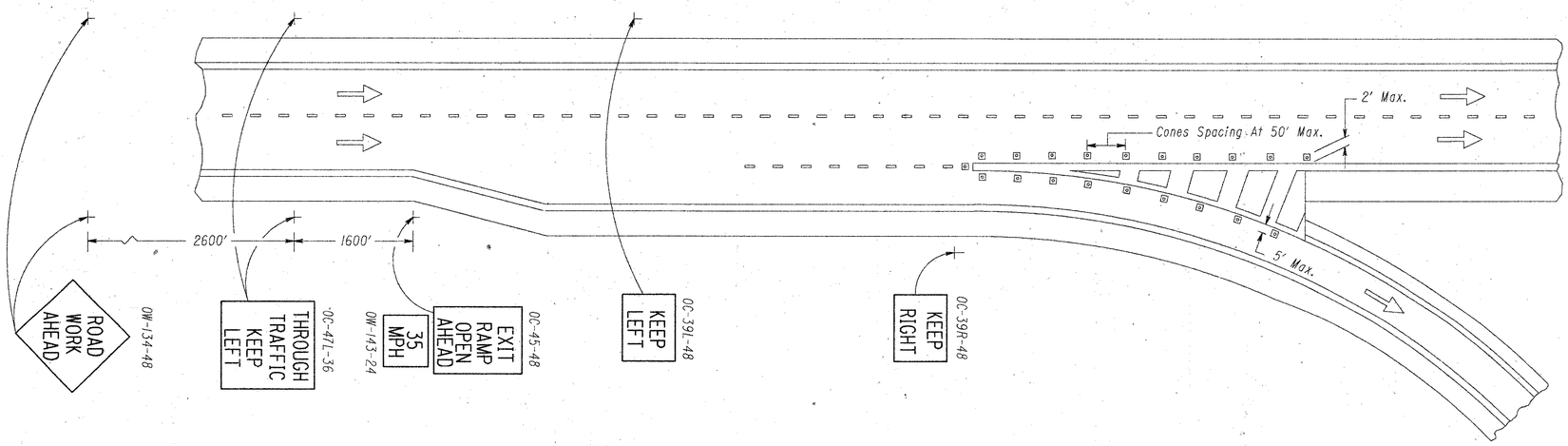
ENTRANCE GORE TRAFFIC CONTROL



EXIT GORE TRAFFIC CONTROL



GENERAL NOTES

1. The requirements of the Traffic Control for Long Line Pavement Marking Operations SCD MT-99.20 shall apply in lieu of this detail where edge lines and/or channelizing lines are sprayed in moving operations separate from any other work.
2. Where the work in the gore area requires more positive traffic control or overnight work area protection, SCD MT-98.14, MT-98.15 should be employed.
3. The spacing between signs shown on this detail may be adjusted (increased or decreased) with the approval of the Engineer to position them no closer than 200 feet to existing signs which must remain in use.
4. At an isolated entrance gore area, a flashing arrow panel conforming to requirements in section 7G-8 of the OMUTCD and SCD TC-35.10 may be substituted for the advance OC-39-48 signs.
5. At an interchange where both exits and entrances are marked with traffic control in place at the same time, the OW-134-48 sign on the entrance ramp is not required.
6. For night closures, the OW-134-48 and the OC-47L-36 signs shall be lighted using type A flashing warning lights. Drums and steady burn lights shall be used in lieu of cones for night closures.

9/91

TRAFFIC CONTROL FOR WORK IN GORE AREAS (PAVEMENT MARKING)

COL-11-9.63

11B
74

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
8	16	17	18	19	21											
															ROADWAY	
LUMP											201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	8
		739									202	30500	739	LIN FT	CONCRETE MEDIAN REMOVED	
		19987.5									202	38000	19,987.5	LIN FT	GUARDRAIL REMOVED	
		400									202	38300	400	LIN FT	GUARDRAIL REMOVED, BARRIER DESIGN	
		1									202	42810	1	EACH	ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	
737											202	54101	737	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE, AS PER PLAN	8
		1									202	58500	1	EACH	CATCH BASIN ABANDONED	
				32138							202	75000	32,138	LIN FT	FENCE REMOVED	
		20									202	98100	20	EACH	REMOVAL MISC.: CATCH BASIN CLEANOUT	8
	988		1455								203	12000	2443	CU YD	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
			1603								203	20000	1603	CU YD	EMBANKMENT	
	2442										203	50000	2442	SQ YD	SUBGRADE COMPACTION	
			206								203	60200	206	STATION	LINEAR GRADING, METHOD A	
			846								203	60204	846	STATION	LINEAR GRADING, METHOD B	
		20012.5									606	13000	20012.5	LIN FT	GUARDRAIL, TYPE 5	
		900									606	15500	900	LIN FT	GUARDRAIL, BARRIER DESIGN, TYPE 5	
		4									606	25000	4	EACH	ANCHOR ASSEMBLY, TYPE A	
		20									606	26100	20	EACH	ANCHOR ASSEMBLY, TYPE E	
		23									606	26500	23	EACH	ANCHOR ASSEMBLY, TYPE T	
		1									606	27850	1	EACH	ANCHOR ASSEMBLY REBUILT, TYPE E	
		4									606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
		2									606	35100	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
		6									606	35120	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 3	
				51553							607	15000	51,553	LIN FT	FENCE, TYPE 47	
		171									622	24000	171	LIN FT	CONCRETE BARRIER, TYPE D	
				9							625	32000	9	EACH	GROUND ROD	
		4									SPECIAL	69010360	4	EACH	IMPACT ATTENUATOR, TYPE 1, BI-DIRECTIONAL	8
															EROSION CONTROL	
					20000						207	30000	20,000	LIN FT	FILTER FABRIC FENCE (SEE PROPOSAL NOTE)	
					300						207	70000	300	EACH	STRAW OR HAY BALES	
				30							601	32100	30	CU YD	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
			81297								659	10000	81,297	SQ YD	SEEDING AND MULCHING	
			7								659	20000	7	TON	COMMERCIAL FERTILIZER	
			37								659	30000	37	TON	AGRICULTURAL LIMING	
176											659	35000	176	M GAL	WATER	
			17198								670	41000	17,198	SQ YD	SLOPE EROSION PROTECTION	

CALCULATED SHG
CHECKED TKD

GENERAL SUMMARY

COL-11-9.63

12/74

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
9	14	15	16	17	18	20	44									
															DRAINAGE	
						1705					603	00406	1705	LIN FT	4" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM D-3034 SDR 35,	
															SS 931, OR SS 944	
				18							604	09001	18	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	45
				1							604	20800	1	EACH	INLET RECONSTRUCTED TO GRADE	
						65					SPECIAL	60436600	65	EACH	PRECAST REINFORCED CONCRETE OUTLET	46
						6327					605	05101	6327	LIN FT	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	47
						61,823					605	30001	61,823	LIN FT	SHALLOW UNDERDRAIN, AS PER PLAN	46
															PAVEMENT	
	103102	102837	12821								254	01000	218,760	SQ YD	PAVEMENT PLANING, BITUMINOUS	
22000											254	01600	22,000	SQ YD	PATCHING PLANED SURFACE	
	213	213	206								301	10002	632	CU YD	BITUMINOUS AGGREGATE BASE, AC-20	
			360								304	20000	360	CU YD	AGGREGATE BASE (SEE PROPOSAL NOTE)	
	7729	7713	961				54				407	10000	16,451	GALLON	TACK COAT	
			987								408	10000	987	GALLON	BITUMINOUS PRIME COAT	
	5626	5615	805								446	01200	12,046	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	
	3610	3550	543				35				446	01401	7736	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	9
					757						448	14101	757	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER	8
															GUARDRAIL), AS PER PLAN	
				137							612	42100	137	CU YD	CONCRETE MEDIAN	
															FOR TRAFFIC CONTROL SUMMARY	50
															FOR MAINTENANCE OF TRAFFIC SUMMARY	50
															FOR CAST-IN-PLACE STRUCTURES SUMMARY	69
LUMP											614	11000	LUMP		MAINTAINING TRAFFIC	
											619	15020	LUMP		FIELD OFFICE, TYPE C	
											SPECIAL	619 25010	LUMP		COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE (SEE PROPOSAL NOTE)	
											623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
											624	10000	LUMP		MOBILIZATION	

CALCULATED SHG
CHECKED TKD

GENERAL SUMMARY

COL-11-9.63

MAINLINE RESURFACING QUANTITIES

CALCULATED JPB CHECKED SHG

LOCATION	STATION FROM	STATION TO	LENGTH	WIDTH	AREA	254 PAVEMENT PLANING, BITUMINOUS	301 THICKNESS	301 BITUMINOUS AGGREGATE BASE		407 TACK COAT at 0.075 GAL./S.Y.	446 THICKNESS	446 ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 2	446 THICKNESS	446 ASPHALT CONCRETE SURFACE COURSE TYPE 1 **	REMARKS
	FROM	TO	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	INCH	CU. YD.		GAL.	INCH	CU. YD.	INCH	CU. YD.	
Feather	199+56.25	199+81.25	25.00	36.00	100.00	100.00	- - -	- - -		7.5	--	--	2.00 avg.	5.56	** As Per Plan
	199+81.25	200+00.00	18.75	36.00	75.00	75.00	- - -	- - -		5.6	1.63 avg.	3.40	1.25	2.60	
Mainline Northbound S.R. 11 & Shoulders	200+00.00	206+00.00	600.00	36.00	2400.00	2400.00	- - -	- - -		180.0	2.00	133.33	1.25	83.33	
	206+00.00	218+00.00	1200.00	48.50 avg.	6466.67	6466.67	- - -	- - -		485.0	2.00	359.26	1.25	224.54	
	218+00.00	221+81.00	381.00	42.00 avg.	1778.00	1778.00	- - -	- - -		133.4	2.00	98.78	1.25	61.74	
	221+81.00	230+00.00	819.00	36.00	3276.00	3276.00	- - -	- - -		245.7	2.00	182.00	1.25	113.75	
	230+00.00	230+50.00	50.00	37.00 avg.	205.56	205.56	- - -	- - -		15.4	2.00	11.42	1.25	7.14	
	230+50.00	231+50.00	100.00	40.00 avg.	444.44	444.44	- - -	- - -		33.3	2.00	24.69	1.25	15.43	
	231+50.00	232+62.43	112.43	73.40 avg.	916.93	916.93	- - -	- - -		68.8	2.00	50.94	1.25	31.84	
Feather	232+62.43	232+81.18	18.75	63.00 avg.	131.25	131.25	- - -	- - -		9.8	1.63 avg.	5.94	1.25	4.56	
	232+81.18	232+99.93	18.75	61.50 avg.	128.13	128.13	- - -	- - -		9.6	--	--	2.13 avg.	7.58	
	232+99.93	233+12.43	12.50	60.31 avg.	83.76	83.76	- - -	- - -		6.3	--	--	1.75	4.07	
	233+12.43	233+37.43	25.00	59.00 avg.	163.89	163.89	- - -	- - -		12.3	--	--	3.00 avg.	13.66	
Br. No. COL-11-1378															
Feather	234+68.43	234+93.43	25.00	48.00	133.33	133.33	- - -	- - -		10.0	--	--	3.00 avg.	11.11	
	234+93.43	235+05.93	12.50	48.00	66.67	66.67	- - -	- - -		5.0	--	--	1.75	3.24	
	235+05.93	235+24.68	18.75	48.00	100.00	100.00	- - -	- - -		7.5	--	--	2.13 avg.	3.47	
	235+24.68	235+43.43	18.75	48.00	100.00	100.00	- - -	- - -		7.5	1.63 avg.	4.53	1.25	3.47	
Mainline Northbound S.R. 11 & Shoulders	235+43.43	239+13.24	369.81	36.00	1479.24	1479.24	- - -	- - -		110.9	2.00	82.18	1.25	51.36	
Feather	239+13.24	239+31.99	18.75	38.70 avg.	80.63	80.63	- - -	- - -		6.0	1.63 avg.	3.65	1.25	2.80	
	239+31.99	239+45.49	13.50	36.80 avg.	55.20	55.20	- - -	- - -		4.1	--	--	2.25 avg.	3.45	
	239+45.49	239+56.99	11.50	36.00	46.00	46.00	- - -	- - -		3.5	--	--	1.75 avg.	2.24	
	239+56.99	240+00.74	43.75	36.00	175.00	175.00	- - -	- - -		13.1	--	--	1.50	7.29	
	240+00.74	240+25.74	25.00	36.00	100.00	100.00	- - -	- - -		7.5	--	--	1.50 avg.	4.17	
Br. No. COL-11-1363															
Feather	242+90.26	243+15.26	25.00	36.00	100.00	100.00	- - -	- - -		7.5	--	--	1.50 avg.	4.17	
	243+15.26	243+59.01	43.75	36.00	175.00	175.00	- - -	- - -		13.1	--	--	1.50	7.29	
	243+59.01	243+84.01	25.00	36.00	100.00	100.00	- - -	- - -		7.5	--	--	2.00 avg.	5.56	
	243+84.01	244+02.76	18.75	36.00	75.00	75.00	- - -	- - -		5.6	1.63 avg.	3.40	1.25	2.60	
Mainline & Shoulders Northbound	244+02.76	378+60.00	13457.24	36.00	53828.96	53828.96	- - -	- - -		4037.2	2.00	2990.50	1.25	1869.09	
Transition under Bridge No. COL-11-1103	378+60.00	379+10.00	50.00	36.00	200.00	200.00	- - -	- - -		15.0	2.00	11.11	1.25	6.95	
	379+10.00	379+41.25	31.25	36.00	125.00	125.00	5.38 avg.	18.68		9.4	2.00	6.95	1.25	4.34	See Transition Detail on Sheet No. 42
	379+41.25	380+78.75	137.50	36.00	550.00	550.00	4.75	72.57		41.3	2.00	30.56	1.25	19.10	
	380+78.75	381+10.00	31.25	36.00	125.00	125.00	5.38 avg.	18.68		9.4	2.00	6.95	1.25	4.34	
	381+10.00	381+60.00	50.00	36.00	200.00	200.00	- - -	- - -		15.0	2.00	11.11	1.25	6.95	
Mainline & Shoulders Northbound	381+60.00	442+49.49	6089.49	36.00	24457.96	24457.96	- - -	- - -		1826.9	2.00	1353.22	1.25	845.76	
Transition under Bridge No. COL-11-0982	442+49.49	442+99.49	50.00	36.00	200.00	200.00	- - -	- - -		15.0	2.00	11.11	1.25	6.95	
	442+99.49	443+30.74	31.25	36.00	125.00	125.00	5.38 avg.	18.68		9.4	2.00	6.95	1.25	4.34	See Transition Detail on Sheet No. 42
	443+30.74	*442+60.28	125.00	36.00	500.00	500.00	4.75	65.97		37.5	2.00	27.78	1.25	17.36	
	442+60.28	442+91.53	31.25	36.00	125.00	125.00	5.38 avg.	18.68		9.4	2.00	6.95	1.25	4.34	
	442+91.53	443+41.53	50.00	36.00	200.00	200.00	- - -	- - -		15.0	2.00	11.11	1.25	6.95	
Mainline & Shoulders Northbound	443+41.53	452+00.00	858.47	36.00	3433.88	3433.88	- - -	- - -		257.6	2.00	190.77	1.25	119.23	
Feather	452+00.00	452+18.75	18.75	36.00	75.00	75.00	- - -	- - -		5.6	1.63 avg.	3.40	1.25	2.60	
	452+18.75	452+43.75	25.00	36.00	100.00	100.00	- - -	- - -		7.5	--	--	2.00 avg.	5.56	
															For Feather Details, See Sheet No. 41.
															* STA. EQN. STA. 443+97.98 BACK = STA. 442+02.52 AHEAD
TOTALS - CARRIED TO GENERAL SUMMARY						103,101.5		213.3		7,728.9		5,625.9		3,610.1	

COL-11-9.63

MAINLINE RESURFACING QUANTITIES

CALCULATED JPB | CHECKED SHG

LOCATION	STATION FROM	STATION TO	LENGTH LIN. FT.	WIDTH LIN. FT.	AREA SQ. YD.	254 PAVEMENT PLANING, BITUMINOUS SQ. YD.	301 THICKNESS INCH	301 BITUMINOUS AGGREGATE BASE CU. YD.	407 TACK COAT at 0.075 GAL./S.Y. GAL.	446 THICKNESS INCH	446 ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 2 CU. YD.	446 THICKNESS INCH	446 ASPHALT CONCRETE SURFACE COURSE TYPE 1 ** CU. YD.	REMARKS
Feather	199+56.25	199+81.25	25.00	36.00	100.00	100.00	- - -	- - -	7.5	--	--	2.00 avg.	5.56	** As Per Plan
	199+81.25	200+00.00	18.75	36.00	75.00	75.00	- - -	- - -	5.6	1.63 avg.	3.40	1.25	2.60	
Mainline Southbound S.R. 11 & Shoulders	200+00.00	214+00.00	1400.00	36.00	5600.00	5600.00	- - -	- - -	420.0	2.00	311.11	1.25	194.44	
	214+00.00	215+00.00	100.00	42.00 avg.	466.67	466.67	- - -	- - -	35.0	2.00	25.93	1.25	16.20	
	215+00.00	218+07.71	307.71	48.00	1641.12	1641.12	- - -	- - -	123.1	2.00	91.17	1.25	56.98	
	218+07.71	222+00.00	392.29	61.50 avg.	2680.65	2680.65	- - -	- - -	201.0	2.00	148.93	1.25	93.08	
	222+00.00	223+00.00	100.00	40.00 avg.	444.44	444.44	- - -	- - -	33.3	2.00	24.69	1.25	15.43	
	223+00.00	223+50.00	50.00	37.00 avg.	205.56	205.56	- - -	- - -	15.4	2.00	11.42	1.25	7.14	
	223+50.00	232+62.43	912.43	36.00	3649.72	3649.72	- - -	- - -	273.7	2.00	202.76	1.25	126.73	
Feather	232+62.43	232+81.18	18.75	36.00	75.00	75.00	- - -	- - -	5.6	1.63 avg.	3.40	1.25	2.60	
	232+81.18	232+99.93	18.75	36.00	75.00	75.00	- - -	- - -	5.6	--	--	2.13 avg.	4.44	
	232+99.93	233+12.43	12.50	36.00	50.00	50.00	- - -	- - -	3.8	--	--	1.75	2.43	
	233+12.43	233+37.43	25.00	36.00	100.00	100.00	- - -	- - -	7.5	--	--	3.00 avg.	8.33	
Br. No. COL-11-1378														
Feather	234+68.43	234+93.43	25.00	36.00	100.00	100.00	- - -	- - -	7.5	--	--	3.00 avg.	8.33	
	234+93.43	235+05.93	12.50	36.00	50.00	50.00	- - -	- - -	3.8	--	--	1.75 avg.	2.43	
	235+05.93	235+24.68	18.75	36.00	75.00	75.00	- - -	- - -	5.6	--	--	2.13 avg.	4.44	
	235+24.68	235+43.43	18.75	36.00	75.00	75.00	- - -	- - -	5.6	1.63 avg.	3.40	1.25	2.60	
Mainline Southbound S.R. 11 & Shoulders	235+43.43	239+13.24	369.81	36.00	1479.24	1479.24	- - -	- - -	110.9	2.00	82.18	1.25		
Feather	239+13.24	239+25.00	11.76	36.00	47.04	47.04	- - -	- - -	3.5	1.77 avg.	2.31	1.25	1.63	
	239+25.00	239+31.99	6.99	45.75 avg.	35.53	35.53	- - -	- - -	2.7	1.39 avg.	1.37	1.25	1.23	
	239+31.99	239+56.99	25.00	44.60 avg.	123.89	123.89	- - -	- - -	9.3	--	--	2.00 avg.	6.88	
	239+56.99	240+00.74	43.75	42.10 avg.	204.65	204.65	- - -	- - -	15.3	--	--	1.50	8.53	
	240+00.74	240+25.74	25.00	40.30 avg.	111.94	111.94	- - -	- - -	8.4	--	--	1.50 avg.	4.66	
Br. No. COL-11-1363														
Feather	242+90.26	243+15.26	25.00	59.00 avg.	163.89	163.89	- - -	- - -	12.3	--	--	1.50 avg.	6.83	
	243+15.26	243+59.01	43.75	58.00 avg.	281.94	281.94	- - -	- - -	21.1	--	--	1.50	11.75	
	243+59.01	243+84.01	25.00	57.10 avg.	158.61	158.61	- - -	- - -	11.9	--	--	2.00 avg.	8.81	
	243+84.01	244+02.76	18.75	56.50 avg.	117.71	117.71	- - -	- - -	8.8	1.63 avg.	5.33	1.25	4.09	
Mainline & Shoulders Southbound	244+02.76	255+00.00	1097.24	40.13 avg.	4892.47	4892.47	- - -	- - -	366.9	2.00	271.80	1.25	169.88	
	255+00.00	378+20.00	12,320.00	36.00	49280.00	49280.00	- - -	- - -	3696.0	2.00	2738.33	1.25	1711.66	
Transition under Bridge No. COL-11-1103	378+20.00	378+70.00	50.00	36.00	200.00	200.00	- - -	- - -	15.0	2.00	11.11	1.25	6.95	
	378+70.00	379+01.25	31.25	36.00	125.00	125.00	5.38 avg.	18.68	9.4	2.00	6.95	1.25	4.34	See Transition Detail on Sheet No. 42
	379+01.25	380+38.75	137.50	36.00	550.00	550.00	4.75	72.57	41.3	2.00	30.56	1.25	19.10	
	380+38.75	380+70.00	31.25	36.00	125.00	125.00	5.38 avg.	18.68	9.4	2.00	6.95	1.25	4.34	
	380+70.00	381+20.00	50.00	36.00	200.00	200.00	- - -	- - -	15.0	2.00	11.11	1.25	6.95	
Mainline & Shoulders Southbound	381+00.00	442+49.49	6129.49	36.00	24518.00	24518.00	- - -	- - -	1838.9	2.00	1362.40	1.25	851.59	
Transition under Bridge No. COL-11-0982	442+49.49	442+99.49	50.00	36.00	200.00	200.00	- - -	- - -	15.0	2.00	11.11	1.25	6.95	
	442+99.49	443+30.74	31.25	36.00	125.00	125.00	5.38 avg.	18.68	9.4	2.00	6.95	1.25	4.34	
	443+30.74	442+60.28 *	125.00	36.00	500.00	500.00	4.75	65.97	37.5	2.00	27.78	1.25	17.36	See Transition Detail on Sheet No. 42
	442+60.28	442+91.53	31.25	36.00	125.00	125.00	5.38 avg.	18.68	9.4	2.00	6.95	1.25	4.34	
	442+91.53	443+41.53	50.00	36.00	200.00	200.00	- - -	- - -	15.0	2.00	11.11	1.25	6.95	
Mainline & Shoulders Southbound	443+41.53	452+00.00	858.47	36.00	3433.88	3433.88	- - -	- - -	257.5	2.00	190.81	1.25	119.27	
Feather	452+00.00	452+18.75	18.75	36.00	75.00	75.00	- - -	- - -	5.6	1.63 avg.	3.40	1.25	2.60	
	452+18.75	452+43.75	25.00	36.00	100.00	100.00	- - -	- - -	7.5	--	--	2.00 avg.	5.56	
TOTALS - CARRIED TO GENERAL SUMMARY						102,837.0		213.3		7,712.6		5614.7		3,550.4	

For Feather Details, See Sheet No. 41.

* STA. EQN. STA. 443+97.98 BACK = STA. 442+02.52 AHEAD

COL-11-9.63

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	LOCATION	STATION FROM	STATION TO	LENGTH LIN. FT.	WIDTH LIN. FT.	AREA SQ. YD.	254 PAVEMENT PLANING, BITUMINOUS SQ. YD.	203 DEPTH INCHES	203 EXCAVATION CU. YD.	203 SUBGRADE COMPACTION SQ. YD.	301 3" BITUMINOUS AGGREGATE BASE CU. YD.	304 5.25" AVG. AGGREGATE BASE CU. YD.	407 TACK COAT at 0.075 GAL./S.Y. GAL.	408 BITUMINOUS PRIME COAT at 0.4 GAL./S.Y.	446 THICKNESS INCH	446 ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 2 CU. YD.	446 THICKNESS INCH	446 ASPHALT CONCRETE SURFACE COURSE TYPE 1 ** CU. YD.
LEFT SHOULDER AND PAVEMENT	RAMP 'A'	222+05.92	223+05.92	100.00	20.00 avg.	222.22	222.22						16.7		2.00	12.35	1.25	7.72
		223+05.92	232+13.15	907.23	19.00	1915.26	1915.26						143.6		2.00	106.40	1.25	66.50
		AREA 3 *				114.02	114.02						8.6		2.00	6.33	1.25	3.96
	FEATHER	AREA 2 *				49.95	49.95						3.7		1.63 avg.	2.26	1.25	1.73
		AREA 1 *				119.26	119.26						8.9		--	--	2.00 avg.	6.63
	RAMP 'B'	218+00.00	221+00.00	300.00	23.00 avg.	766.67	766.67						57.5		2.00	42.59	1.25	26.62
		221+00.00	222+00.00	100.00	17.00 avg.	188.89	188.89						14.2		2.00	10.49	1.25	6.56
		222+00.00	222+50.00	50.00	18.50 avg.	102.78	102.78						7.7		2.00	5.71	1.25	3.57
		222+50.00	229+87.30	737.30	19.00	1556.52	1556.52						116.7		2.00	86.47	1.25	54.05
		229+87.30	230+37.30	50.00	18.00 avg.	100.00	100.00						7.5		2.00	5.56	1.25	3.47
	FEATHER	AREA 1 *				228.20	228.20						17.1		--	--	2.00 avg.	12.68
		AREA 2 *				109.30	109.30						8.2		1.63 avg.	4.95	1.25	3.80
	RAMP 'C'	AREA 3 *				182.50	182.50						13.7		2.00	10.14	1.25	6.34
		AREA 4 *				174.90	174.90						13.1		2.00	9.72	1.25	6.07
		AREA 5 *				154.90	154.90						11.6		2.00	8.61	1.25	5.38
		219+37.37	225+40.32	602.95	46.00	3081.74	3081.74						231.1		2.00	171.21	1.25	107.00
		225+40.32	226+40.32	100.00	18.00 avg.	200.00	200.00						15.0		2.00	11.11	1.25	6.94
		226+40.32	230+51.67	411.35	19.00	868.41	868.41						65.1		2.00	48.25	1.25	30.15
		230+51.67	231+51.67	100.00	20.00 avg.	222.22	222.22						16.7		2.00	12.35	1.25	7.72
	FEATHER	230+25.60	230+35.60	10.00	20.90 avg.	23.22	23.22						1.7		--	--	2.00 avg.	1.29
		230+35.60	230+43.35	7.75	17.72 avg.	15.26	15.26						1.1		1.63 avg.	0.69	1.25	0.53
	RAMP 'D'	230+43.35	231+25.60	82.25	16.83 avg.	153.81	153.81						11.5		2.00	8.55	1.25	5.34
		231+25.60	239+13.24	787.64	19.00	1662.80	1662.80						124.7		2.00	92.38	1.25	57.74
	FEATHER	239+13.24	239+24.00	10.76	19.00	22.72	22.72						1.7		1.84 avg.	1.16	1.25	0.79
		239+24.00	239+31.99	7.99	18.85 avg.	16.73	16.73						1.3		1.46 avg.	0.68	1.25	0.58
		239+31.99	239+56.99	25.00	18.70 avg.	51.94	51.94						3.9		--	--	2.00 avg.	2.89
		239+56.99	240+00.74	43.75	18.65 avg.	90.66	90.66						6.8		--	--	1.25	3.78
		240+00.74	240+25.74	25.00	18.50 avg.	51.39	51.39						3.9		--	--	1.25	2.14
	FEATHER	AREA 1 *				64.90	64.90						4.9		--	--	2.00 avg.	3.61
		AREA 2 *				34.90	34.90						2.6		1.63 avg.	1.58	1.25	1.21
	CONNECTOR TO RAMP 'D'	AREA 3 *				99.10	99.10						7.4		2.00	5.51	1.25	3.44
		AREA 4 *				176.10	176.10						13.2		2.00	9.78	1.25	6.11
RIGHT SHOULDER	RAMP 'A'	222+05.92	223+05.92	100.00	7.00 avg.	77.78		13.75	29.71	77.78	6.48	11.34		31.8	2.00	4.32	1.25	2.71
		223+05.92	232+13.15	907.23	6.00	604.82		13.75	231.01	604.82	50.40	88.20		241.9	2.00	33.60	1.25	21.00
	FEATHER	AREA 4 *				23.87		13.75	9.12	23.87	2.00	3.48		9.5	2.00	1.33	1.25	0.83
		AREA 5 *				15.75		13.75	6.02	15.75	1.31	2.30		6.3	1.63 avg.	0.71	1.25	0.55
		AREA 6 *				31.40		13.75	12.00	31.40	2.62	4.58		12.6	--	--	2.00 avg.	1.74
	RAMP 'B'	221+00.00	222+00.00	100.00	7.00 avg.	77.78		13.75	29.71	77.78	6.48	11.34		31.1	2.00	4.32	1.25	2.71
		222+00.00	230+37.30	837.30	6.00	558.20		13.75	231.20	558.20	46.52	81.40		223.3	2.00	30.01	1.25	19.38
	RAMP 'C'	225+40.32	230+51.67	511.35	6.00	340.90		13.75	130.20	340.90	28.41	49.71		136.4	2.00	18.94	1.25	11.84
		230+51.67	231+51.67	100.00	7.00 avg.	77.78		13.75	29.71	77.78	6.48	11.34		31.1	2.00	4.32	1.25	2.71
	FEATHER	230+25.60	230+35.60	10.00	3.30 avg.	3.67		13.75	1.40		0.31	0.53		1.5	--	--	2.00 avg.	0.20
		230+35.60	230+43.35	7.75	3.53 avg.	3.04		13.75	1.16		0.25	0.44		1.2	1.63 avg.	0.14	1.25	0.11
	RAMP 'D'	230+43.35	230+75.60	32.25	5.05 avg.	18.10		13.75	16.91		1.51	2.64		7.2	2.00	1.01	1.25	0.63
		230+75.60	239+13.24	837.64	6.00	558.43		13.75	213.29	558.43	46.54	81.44		223.4	2.00	31.02	0.25	19.39
	FEATHER	239+13.24	239+24.00	10.76	6.00	7.17		13.75	2.74	7.17	0.60	1.05		2.9	1.84 avg.	0.37	1.25	0.25
		239+24.00	239+31.99	7.99	6.00	5.33		13.75	2.03	5.33	0.44	0.78		2.1	1.46 avg.	0.22	1.25	0.18
		239+31.99	239+56.99	25.00	6.00	16.67		13.75	6.37	16.67	1.39	2.43		6.7	--	--	2.00 avg.	0.93
		239+56.99	240+00.74	43.75	6.00	29.17		13.75	11.14	29.17	2.43	4.25		11.7	--	--	1.25	1.01
		240+00.74	240+25.74	25.00	6.00	16.67		13.75	6.37	16.67	1.39	2.43		6.7	--	--	1.25	0.93
TOTALS - CARRIED TO GENERAL SUMMARY							12,821.3		988.1	2,441.7	205.6	359.7	961.4	987.4		805.1		543.4

* For Intersection Details, See Sheet No. 43.
** As Per Plan
For Feather Details, See Sheet No. 41.

CALCULATED JPB
CHECKED SHG

RAMP RESURFACING & SHOULDER WIDENING QUANTITIES

COL-11-9.63

16
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30L19621.dgn JPB(3)

REF. NO.	PLAN SHEET NO.	STATION FROM	STATION TO	SIDE	202 CATCH BASIN CLEANOUT	202 CATCH BASIN ABANDONED	202 GUARDRAIL REMOVED	202 GUARDRAIL REMOVED, BARRIER DESIGN	202 ANCHOR ASSEMBLY REMOVED FOR REUSE, TYPE E	202 CONCRETE MEDIAN REMOVED	SPECIAL IMPACT ATTENUATER, TYPE 1, BI-DIRECTIONAL	606 GUARDRAIL, TYPE 5	606 GUARDRAIL, BARRIER DESIGN TYPE 5	606 ANCHOR ASSEMBLY REBUILT, TYPE E	606 ANCHOR ASSEMBLY TYPE A	606 ANCHOR ASSEMBLY TYPE E	606 ANCHOR ASSEMBLY TYPE T	606 BRIDGE TERMINAL ASSEMBLY TYPE 1	606 BRIDGE TERMINAL ASSEMBLY TYPE 2	606 BRIDGE TERMINAL ASSEMBLY TYPE 3	622 CONCRETE BARRIER, TYPE 'D'	802 BARRIER REFLECTOR TYPE A	802 BARRIER REFLECTOR TYPE B	604 CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	604 INLET RECONSTRUCTED TO GRADE	612 CONCRETE MEDIAN	COMMENTS
					EACH	EACH	LIN.FT.	LIN.FT.	EACH	LIN.FT.	EACH	LIN.FT.	LIN.FT.	EACH	EA.	EA.	EA.	EA.	EA.	EA.	LIN.FT.	EA.	EA.	EACH	EACH	CU.YD.	
1-GR	23	200+24.50	201+28	LT			50.00		1			37.50		1			1					3					
2-GR	23	213+05	216+32	RT			318.75					262.50				1	1					3					
3-GR	23	215+41	216+51.50	LT			112.50					50.00				1	1					3					
4-GR	24	226+65	232+95.94	RT			625.00					581.25				1				1		7					
5-GR	24	230+78.45	233+15.92	℄			112.50	100.00			1	156.25	37.50							1		3					
6-GR	24	234+47.03	236+65.78	RT			212.50					206.25					1			1		3					
7-GR	24	234+88.69	237+26.16	℄			112.50	100.00			1	156.50	37.50							1		3					
8-GR	24	235+17.93	240+07.41	LT			475.00					487.50								1		6					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
9-GR	24	237+84	240+02.75	℄			93.75	100.00			1	143.75	37.50									3					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
10-GR	24	239+74.50	240+05.10	LT			31.25																				
11-GR	24	242+09.50	243+84	RT			68.75					62.50					1					3					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
12-GR	24	243+10.74	243+42	RT			31.25																				
13-GR	24,25	243+09.89	245+29	℄			93.75	100.00			1	143.75	37.50									3					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
14-GR	24,25	243+18.25	249+72	LT			650.00					600.00				1						8					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
15-GR	25	263+14	271+15	RT			800.00					737.50				1	1					9					
16-GR	25	263+39	271+39	LT			800.00					737.50				1	1					9					
17-GR	26	282+74	286+50	RT			375.00					312.50				1	1					5					
18-GR	26	292+51.50	299+65.50	RT			712.50					650.00				1	1					8					
19-GR	26	294+40	299+52.50	LT			512.50					450.00				1	1					6					
20-GR	27	302+64	324+34	RT			2156.25					2100.00				1	1					23					
21-GR	27	303+71	308+21	LT			450.00					387.50				1	1					6					
22-GR	27	312+81	314+81	LT			200.00																				
23-GR	27,28	317+38.50	325+70	LT			837.50																				
		312+70	325+70	LT								1237.50				1	1					14					
24-GR	29	358+38	364+15.50	RT			575.00																				
		358+38	374+38	RT								1537.50				1	1					17					
25-GR	29,30	360+38	376+02	LT			1556.25					1500.00				1	1					17					
26-GR	29	367+50.50	374+27.50	RT			675.00																				
27-GR	30	377+50.50	379+31.76	RT			137.50					131.25				1		1				2					
		379+29.66	379+73.16	RT																	43.5		3				SEE STD. DWG. GR-8.
28-GR	30	380+06.84	380+50.34	LT																	43.5		3				SEE STD. DWG. GR-8.
		380+05	381+30	LT			125.00																				
29-GR	30	377+63	380+25	℄			81.25					37.50	187.50		1		1					3					SEE SHEET NO. 48.
30-GR	30	379+55	382+17	℄			81.25					37.50	187.50		1		1					3					SEE SHEET NO. 48.
31-GR	30	384+77.50	392+65	LT			775.00																				
		380+48.24	392+66.99	LT								1143.75				1		1				14					
32-GR	30	385+04.50	394+50	RT			962.50					900.00				1	1					10					
33-GR	30,31	397+89.50	416+15	LT			1812.50					1750.00				1	1					19					
		442+60	443+72.31	LT								100.00					1		1			2					
34-GR	32	443+70.31	442+24.12	LT																	48.0		2				STATION EQUATION **; SEE STD. DWG. GR-8.
		442+22.02	452+09.52	LT			981.25					968.75						1				11					CONNECT TO EXISTING GUARDRAIL
35-GR	32	442+13	443+69.27	RT			175.00					106.25				1		1				2					
		443+67.17	442+07.25	RT																	35.5		3				STATION EQUATION **; SEE STD. DWG. GR-8.
36-GR	32	441+65	442+19.50	℄			137.50					25.00	187.50		1		1					3					STATION EQUATION **; SEE SHEET NO. 48.
37-GR	32	443+71	444+25	℄			137.50					25.00	187.50		1		1					3					STATION EQUATION **; SEE SHEET NO. 48.
38-GR	32	442+05.25	452+05.25	RT			731.25					1000.00							1			11					CONNECT TO EXISTING GUARDRAIL
39-GR	24	230+13	233+67.02	RC			350.00					337.50					1			1		5					
40-GR	24	231+20	239+90.77	RD			862.50					812.50				1						13					CONNECT TO EXISTING BRIDGE TERMINAL ASSEMBLY
1-CB	24	226+50		℄	1																			1			EXISTING NO. 4 CATCH BASIN
2-CB	24	231+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
3-CB	24	231+48		L	1																			1			RAISE 1.75"
4-CB	24	235+08		℄	1																			1			LOWER 3"
5-CB	25	245+15		℄	1																						EXISTING NO. 2-2B CATCH BASIN
6-CB	25	248+50		℄	1																			1			EXISTING NO. 4 CATCH BASIN
7-CB	25	263+56		℄	1																			1			EXISTING NO. 4 CATCH BASIN
8-CB	25	270+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
9-CB	26	282+50		℄	1																			1			EXISTING NO. 4 CATCH BASIN
10-CB	26	295+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
11-CB	27	306+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
12-CB	29	364+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
13-CB	29	374+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
14-CB	30	386+50		℄	1																			1			EXISTING NO. 4 CATCH BASIN
15-CB	30	399+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
16-CB	31	411+50		℄	1																			1			EXISTING NO. 4 CATCH BASIN
17-CB	32	433+00		RT.	1																			1			EXISTING NO. 5 CATCH BASIN
18-CB	32	433+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
19-CB	32	443+00 BACK		℄		1																					EXISTING NO. 4 CATCH BASIN
20-CB	32	446+00		℄	1																			1			EXISTING NO. 4 CATCH BASIN
1-I	24	222+00	***RAMP 'C'***	RT.	1																				1		RAISE 7"
1-CM	24	218+77.69 'C'	225+40.32 'C'	℄						668.85																111	4.47 SQ.FT. PLANIMETERED END AREA x LENGTH ÷ 27
		225+40.32 'C'	226+06 'C'							70.55																26	6.5'AVG. x 1.5' x LENGTH ÷ 27
TOTALS		**QUANTITIES CARRIED TO GENERAL SUMMARY**			20	1	19,987.5	400.0	1	739.3	4	20,012.5	900.0	1	4	20	23	4	2	6	170.5	263*	11*	18	1	137	* QUANTITY CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY. ** STA. 443+97.98 BACK = STA.442+02.52 AHEAD

CALCULATED JPB
CHECKED SHG

GUARDRAIL, DRAINAGE, AND CONCRETE MEDIAN QUANTITIES

COL-11-9.63

17
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LINEAR GRADING, METHOD A & ASPHALT PAVING UNDER GUARDRAIL

REF. NO.	STATION FROM	STATION TO	SIDE	LENGTH	WIDTH	AREA	203 LINEAR GRADING, METHOD A	448 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN	670 SLOPE EROSION PROTECTION 7.5' WIDE	203 EXCAVATION
				LIN. FT.	LIN. FT.	SQ. YD.	STA.	CU. YD.	SQ. YD.	CU. YD.
1-GR	200+24.50	201+28	LT.	103.50	6	69.00	1.04	3.83	86.25	2.61
2-GR	213+05	216+32	RT.	327.00	6	218.00	3.27	12.11	272.50	8.23
3-GR	215+41	216+51.50	LT.	110.50	6	73.67	1.11	4.09	92.08	2.78
4-GR	226+65	232+95.94	RT.	630.94	6	420.83	6.31	23.38	525.78	15.89
6-GR	234+47.03	236+65.78	RT.	218.75	6	145.83	2.19	8.10	182.29	5.51
8-GR	235+17.93	240+07.41	LT.	489.48	6	326.32	4.89	18.13	407.90	12.33
11-GR	242+09.50	243+84	RT.	174.50	6	116.33	1.75	6.46	145.42	4.40
14-GR	243+18.25	249+72	LT.	653.75	6	435.83	6.54	24.22	544.79	16.46
15-GR	263+14	271+15	RT.	801.00	6	534.00	8.01	29.67	667.50	20.17
16-GR	263+39	271+39	LT.	800.00	6	533.64	8.00	29.64	666.67	20.15
17-GR	282+74	286+50	RT.	376.00	6	250.67	3.76	13.93	313.33	9.44
18-GR	292+51.50	299+65.50	RT.	714.00	6	476.00	7.14	26.45	595.00	17.94
19-GR	294+40	299+52.50	LT.	512.50	6	341.67	5.12	18.99	427.08	12.91
20-GR	302+64	324+34	RT.	2170.00	6	1446.67	21.70	80.39	1808.33	54.31
21-GR	303+71	308+21	LT.	450.00	6	300.00	4.50	16.67	375.00	11.33
23-GR	312+70	325+70	LT.	1300.00	6	866.67	13.00	48.16	1083.33	21.10
24-GR	358+38	374+38	RT.	1600.00	6	1066.67	16.00	59.27	1333.33	14.48
25-GR	360+38	376+02	LT.	1564.00	6	1042.67	15.64	57.94	1303.33	39.19
27-GR	377+50.50	379+31.76	RT.	181.26	6	120.84	1.81	6.71	151.05	3.46
31-GR	380+50.34	392+67	LT.	1216.66	6	811.11	12.17	45.07	1013.88	19.52
32-GR	385+04.61	394+50	RT.	945.39	6	630.26	9.45	35.02	787.83	24.24
33-GR	397+89.50	416+15	LT.	1825.50	6	1217.00	18.26	67.62	1521.25	45.65
34-GR	442+59.81 BK	443+70.31 BK	LT.	110.50	6	73.67	1.11	4.09	92.08	24.71
	442+24.12 AH	452+09.52		985.40	6	656.93	9.85	36.50	821.17	
35-GR	442+13.02 BK	443+67.17 BK	RT.	154.15	6	102.77	1.54	5.71	128.46	4.41
38-GR	442+07.25	452+05.25	RT.	998.00	6	665.33	9.98	36.97	831.67	18.42
39-GR	230+13.02	233+67.02	LT.	354.00	5 AVG.	196.67	3.54	10.93	295.00	8.81
40-GR	231+20	239+90.77	RT.	870.77	5 AVG.	483.76	8.71	26.88	725.64	21.72
TOTALS CARRIED TO GENERAL SUMMARY							206.39	756.93	17,197.94	460.17

LINEAR GRADING, METHOD B MAINLINE OUTSIDE

STATION FROM	STATION TO	SIDE	LENGTH	203 LINEAR GRADING, METHOD B
			LIN. FT.	STA.
200+00	200+24.50	NORTHBOUND	24.50	0.25
201+28	215+41		1413.00	14.13
216+51.50	218+00		148.80	1.49
221+00	231+50		1050.00	10.50
249+72	263+39		1367.00	13.67
271+39	294+40		2301.00	23.01
299+52.50	303+71		418.50	4.19
308+21	312+70		449.00	4.49
325+70	360+38		3468.00	34.68
376+02	380+50.34		448.34	4.48
392+67	397+89.50		522.50	5.23
416+15	442+59.81 BK		2644.81	26.45
200+00	213+05	SOUTHBOUND	1305.00	13.05
216+32	222+00		568.39	5.68
222+00	226+65		464.69	4.65
236+65.78	240+00		334.22	3.34
243+84	263+14		1930.00	19.30
271+15	282+74		1159.00	11.59
286+50	292+51.50		601.58	6.02
299+65.50	302+64		298.50	2.99
324+34	358+38		3404.00	34.04
374+38	377+50.50		312.50	3.13
379+31.76	385+04.61		572.85	5.73
394+50	442+13.02 BK		4763.02	47.63
SUBTOTAL				299.72

LINEAR GRADING, METHOD B MEDIAN AND RAMPS

MAINLINE MEDIAN (NORTHBOUND & SOUTHBOUND)

STA. 230+78.45 - STA. 200+00.00 = 3078.45'
STA. 377+63.07 - STA. 245+28.61 = 1323.46'
STA. 441+64.76 - STA. 382+16.93 = 5847.83'
STA. 452+00.00 - STA. 442+04.21 AH = 995.79'
23156.53'
23156.53' X 2 = 46313.06'

MEDIAN SUBTOTAL = 46,313.06 L.F.
= 463.13 STA.

RAMP "A"
STA. 232+70.30 - STA. 222+05.92 = 1064.38
(2 SIDES X 1064.38') = 2128.76'

RAMP "B"
STA. 230+37.30 - STA. 218+00.00 = 1237.30'
(2 SIDES X 1237.30') = 2474.60'

RAMP "C"
STA. 225+40.32 - STA. 218+39.69 = 700.63'
STA. 231+51.67 - STA. 225+40.32 = 611.35'
STA. 230+13.06 - STA. 218+39.69 = 1173.37'
2485.35

RAMP "D"
STA. 231+19.80 - STA. 230+25.60 = 94.20'
STA. 240+00.00 - STA. 230+25.60 = 974.40'
1068.60'

RAMP "D" CONNECTOR
100' X 2 SIDES = 200.00'

RAMPS SUBTOTAL = 8,357.31 L.F.
= 83.57 STA.

SEEDING AND MULCHING

LINEAR GRADING, METHOD A :
206.39 STA. x 100 L.F./STA. x 6' WIDTH ÷ 9 = 13,759.33 S.Y.

LINEAR GRADING, METHOD B :
MAINLINE OUTSIDE :
299.72 STA. x 100 L.F./STA. x 6' WIDTH ÷ 9 = 19,981.33 S.Y.
MAINLINE MEDIAN :
46313.06' x 6' ÷ 9' = 30,875.37 S.Y.
RAMPS :
8357.31' x 4' ÷ 9' = 3714.36 S.Y.
FROM EARTHWORK SUMMARY TABLE = 12,967.00 S.Y.
TOTAL = 81,297.39 S.Y.
USE 81,297 S.Y.

COMMERCIAL FERTILIZER

(81,297 S.Y. x 9 x 20) ÷ (1000 x 2000) = **7.32 TON**

AGRICULTURAL LIMING

81,297 S.Y. x 9 x (46#/1000) x 220% ÷ 2000 = **37.02 TON** **USE 37 Ton**

WATER

(81,297 S.Y. x 9 x 120) ÷ (1000 x 1000) x 2 APPLICATIONS = 175.60 M GAL.
(Carried to Sheet No. 8) **USE 176 M GAL.**

EARTHWORK SUMMARY

FROM SHEET NO.	203 EXCAVATION CU. YD.	203 EMBANKMENT CU. YD.	659 SEEDING & MULCHING SQ. YD.
33	110	28	1050
34	334	10	1950
35	224	27	1650
36	244	16	1800
37	73	178	1300
38	2	509	2039
39	8	426	1300
40	0	409	1878
SUBTOTAL	995	1603	12,967
TOTALS	995	1603	

TOTALS CARRIED TO GENERAL SUMMARY

TOTAL LINEAR GRADING, METHOD B

(FOR MAINLINE OUTSIDE, MEDIAN AND RAMPS)

MAINLINE OUTSIDE = 299.72 STA.
MAINLINE MEDIAN = 463.13 STA.
RAMPS = 83.57 STA.

TOTAL METHOD B = 846.42 STA.

TOTALS CARRIED TO GENERAL SUMMARY

FOR A DESCRIPTION OF EACH METHOD OF LINEAR GRADING, SEE NOTES ON SHEET NO. 8.

CALCULATED TKD CHECKED SHG

LINEAR GRADING, SEEDING & MULCHING, AND EARTHWORK QUANTITIES

COL-11-9.63

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REF. NO.	PLAN SHEET NO.	202	607														625	601
		FENCE REMOVED	FENCE TYPE 47	POST ASSEMBLY			LINE POST	FENCE TERMINAL			STREAM CROSSING						GROUND ROD	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
				(C)	(E)	(I)	(L)	(A)	(TB)		(T1)	(T2)	(T3)					
		LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH		EACH	EACH	EACH				EACH	CU. YD.
1A-F	23	1294																
1B-F	23, 24	2009																
1-F	23, 24		3958	1	2	8	4					1					1	3.33
2A-F	23	780																
2B-F	24	1742																
2-F	23, 24		3716	3	2	5	2					1						3.33
3A-F	24	908																
3-F	24		1640	1	1	5		1										3.33
4A-F	24	437																
4-F	24		995	2	3			1				1						3.33
5A-F	24, 25	467																
5-F	24, 25		2022	2		6		1	1									
6A-F	24, 25	962																
6-F	24, 25		2448	3		4		1	1									3.33
7A-F	25-27	4382																
7B-F	27, 28	538																
7C-F	29, 30	2278																
7-F	25-30		11559	7		26	1		1			7	1				3	
8A-F	25-27	5032																
8-F	25-27		6140	3	1	14			1			5						
9A-F	27, 28	364																
9B-F	28	406																
9C-F	29, 30	2901																
9-F	27-30		5691	2	1	15	1					2	2				3	
10A-F	30	797																
10B-F	30, 31	2147																
10C-F	32	203																
10-F	30-32		6681	8		11			2			1					1	3.33
11A-F	30	1775																
11B-F	31, 32	2250																
11-F	30-32		5604	2		12	1		1			3	3				1	9.99
12A-F	32	318																
12-F	32		488	2		1		1										
13A-F	32	148																
13-F	32		413	1	1			1			1							
14-F	24		51					2										
15-F	24		51					2										
16-F	24		48					2										
17-F	24		48					2										
SUB-TOTALS		32138	51553	38	9	107	9	14	7		1	21	6				9	29.97
TOTALS		32,138	51,553														9	29.97

(CARRIED TO GENERAL SUMMARY)

FENCE LEGEND

- (C) — CORNER POST ASSEMBLY
- (E) — END POST ASSEMBLY
- (I) — INTERMEDIATE ANCHOR POST ASSEMBLY
- (L) — WOOD POST OR CONCRETE ENCASED STEEL LINE POST
- (A) — ABUTMENT CONNECTION
- (TB) — FENCE TERMINAL (TYPE B)
- (T1) — CROSSING, TYPE 1
- (T2) — CROSSING, TYPE 2
- (T3) — CROSSING, TYPE 3
- ⏚ — GROUND ROD
- ROCK CHANNEL PROTECTION

FOR DETAILS SEE STANDARD DRAWINGS F-2, F-3, F-5, AND F-6.

CALCULATION:

ITEM 601, ROCK CHANNEL PROTECTION, TYPE B

$10' \times 6' \times \frac{18''}{12} \div 27 = 3.33$ CU. YD.

CALCULATED TKD
CHECKED SHG

FENCE QUANTITIES

COL-11-9.63

19/74

30119626.TKD

STATION FROM	STATION TO	LANE	SIDE	603 4" CONDUIT TYPE F, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS 931 or SS944 LIN. FT.	605 SHALLOW PIPE UNDERDRAIN, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	OUTLET STATION	OUTLET FITTINGS STD. END EACH	END CAP EACH	90° BEND EACH	TEE EACH	45° BEND EACH	SEE NOTE
225+65	232+50	SOUTHBOUND	OUTSIDE	8.0	51 0.0	1	230+75		1		1		
				9.0	175.0	1	232+50	1		1			
235+00	331+50			9.0	400.0	1	235+00	1	1	1			
				13.0	500.0	1	243+25	1	1	1			
				13.0	500.0	1	264+00	1		1			
				9.0	250.0	1	269+00				1		
				13.0	700.0	1	271+50				1		
				14.0	500.0	1	278+50				1		
				11.0	325.0	1	283+50				1		
				14.0	625.0	1	286+75				1		
				14.0	500.0	1	293+00				1		
				8.0	550.0	1	298+00				1		
				9.0	550.0	1	303+50				1		
				12.0	500.0	1	309+00				1		
				9.0	500.0	1	314+00				1		
				8.0	500.0	1	319+00				1		
				14.0	250.0	1	324+00				1		
				13.0	500.0	1	326+50		1		1		
354+50	381+50			9.0	500.0	1	359+50		1		1		
				12.0	500.0	1	364+50				1		
				8.0	500.0	1	369+50				1		
				9.0	450.0	1	374+00				1		
				14.0	750.0	1	381+50	1		1			
406+11	415+50			9.0	939.0		415+50	1	1	1			A
428+00	433+00			9.0	500.0		433+00		1		1		A
433+00	443+00			10.0	1000.0		443+00	1		1			A
				24.0	1000.0		212+50		1		1		A
				24.0	300.0		215+50				1		A
202+50	233+00			24.0	1150.0		226+00				1		A
				24.0	500.0		231+00				1		A
				25.0	200.0		233+00	1		1			A
235+08	239+75			25.0	467.0		235+08	1	1	1			A
243+31	245+55			25.0	224.0		243+31	1	1	1			A
263+56	287+50	SOUTHBOUND	MEDIAN	24.0	644.0		263+56		1		1		A
				17.0	1250.0		270+00				1		A
				24.0	500.0		282+50		1		1		A
295+00	306+97			24.0	1100.0		295+00	1		1			A
				24.0	97.0		306+00		1		1		A
348+00	374+00			24.0	600.0		354+00		1		1		A
				24.0	1000.0		364+00				1		A
				24.0	1000.0		374+00	1		1			A
				24.0	500.0		386+50		1		1		A
381+50	446+00			24.0	1250.0		399+00				1		A
				24.0	1250.0		411+50				1		A
				24.0	1250.0		424+00				1		A
				31.0	900.0		433+00				1		A
				24.0	1000.0		443+00				1		A
				24.0	* 495.5		446+00	1		1			A
219+00	230+00	NORTHBOUND	OUTSIDE	19.0	500.0	1	224+00		1		1		
				24.0	600.0	1	230+00	1		1			
235+25	240+00			10.0	475.0	1	235+25	1	1	1			
243+00	245+50			12.0	250.0	1	243+00	1	1	1			
				9.0	494.0	1	263+56	1		1			
263+56	307+00			8.0	1100.0	1	268+50				1		
				12.0	500.0	1	279+50				1		
				12.0	1000.0	1	284+50				1		
				11.0	400.0	1	294+50				1		
				9.0	550.0	1	298+50				1		
				10.0	300.0	1	304+00		1		1		
355+50	415+50			11.0	500.0	1	360+50		1		1		
				9.0	500.0	1	365+50				1		
				9.0	500.0	1	370+50				1		
				17.0	500.0	1	375+50	1		1			
				13.0	950.0	1	385+00				1		
				9.0	500.0	1	390+00				1		
				10.0	200.0	1	392+00				1		
				12.0	650.0	1	398+50				1		
				8.0	500.0	1	403+50				1		
				9.0	500.0	1	408+50				1		
				9.0	500.0	1	413+50				1		
				12.0	200.0	1	415+50	1		1			
428+00	439+00			10.0	500.0		433+00		1		1		1
				13.0	600.0	1	439+00				1		

STATION FROM	STATION TO	LANE	SIDE	603 4" CONDUIT TYPE F, 707.17 NON-PERFORATED ASTM D-3034 SDR 35, SS 931 or SS944 LIN. FT.	605 SHALLOW PIPE UNDERDRAIN, AS PER PLAN LIN. FT.	605 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	OUTLET STATION	OUTLET FITTINGS STD. END EACH	END CAP EACH	90° BEND EACH	TEE EACH	45° BEND EACH	SEE NOTE
439+00	452+00	NB	OUT.	13.0	400.0		1	443+00				1		
				9.0	* 695.5		1	448+00				1		
				8.0	400.0		1	452+00	1		1	1		
226+00	233+00	NORTHBOUND	MEDIAN	24.0	500.0			231+00		1		1		A
				21.0	200.0			233+00	1		1			A
235+08	240+00			25.0	202.0			235+08	1		1			A
				25.0	290.0			237+10		1		1		A
243+31	334+00			25.0	169.0			243+31	1		1			A
				25.0	350.0			245+00				1		A
				24.0	250.0			248+50				1		A
				24.0	1256.0			251+00				1		A
				24.0	644.0			263+56	1		1			A
				31.0	1250.0			270+00				1		A
				24.0	1250.0			282+50				1		A
				24.0	1100.0			295+00				1		A
				24.0	1000.0			306+00				1		A
				24.0	1000.0			316+00				1		A
				24.0	300.0			326+00				1		A
				24.0	500.0			329+00		1		1		A
349+00	374+00			24.0	500.0			354+00		1		1		A
				24.0	1000.0			364+00				1		A
				24.0	1000.0			374+00	1		1			A
406+50	446+00			24.0	500.0			411+50		1		1		A
				24.0	1250.0			424+00				1		A
				17.0	900.0			433+00				1		A
				24.0	1000.0			443+00				1		A
				24.0	* 495.5			446+00	1		1			A
RAMPS														
218+00	222+00	A	R			400.0				1				
RAMP 'A' STA. 222+05.92 = COL-11 STA. 222+00														
	232+00			16.0		94.08	1	223+00				1		
				18.0		500.0	1	228+00				1		
				16.0		400.0	1	232+00	1		1			
222+05.92	232+00		L	12.0		494.08	1	227+00		1		1		
				11.0		500.0	1	232+00	1		1			
217+00	230+37.30	B	R	15.0		500.0	1	222+00		1		1		
				15.0		500.0	1	227+00				1		
				16.0		337.30	1	230+37.30	1		1			
218+75	221+50	C	L	15.0		275.0	1	218+75	1	1	1			
220+50	231+51.67		R	15.0		500.0	1	220+50	1		1			
				9.0		601.67	1	231+51.67				1		
RAMP 'C' STA. 231+51.67 = COL-11 STA. 231+50														
231+50	233+00			9.0		150.0	1	233+00	1		1			
232+00	239+75	D	R	18.0		500.0	1	232+00	1		1			
				12.0		275.0	1	237+00	1	1	1			
233+00	236+00		L	20.0		300.0	1	233+00	1	1	1			
TOTALS- CARRIED TO GENERAL SUMMARY.				1,705.0	61,822.5	6,327.1	65							

NOTE: LEFT AND RIGHT IS REFERENCED TO THE DIRECTION OF TRAVEL.

NOTE NO. 'A'- OUTLET INTO EXISTING CATCH BASIN

* STATION EQUATION : STA. 443+97.98 BACK = STA. 442+02.52 AHEAD

CALCULATED JPB

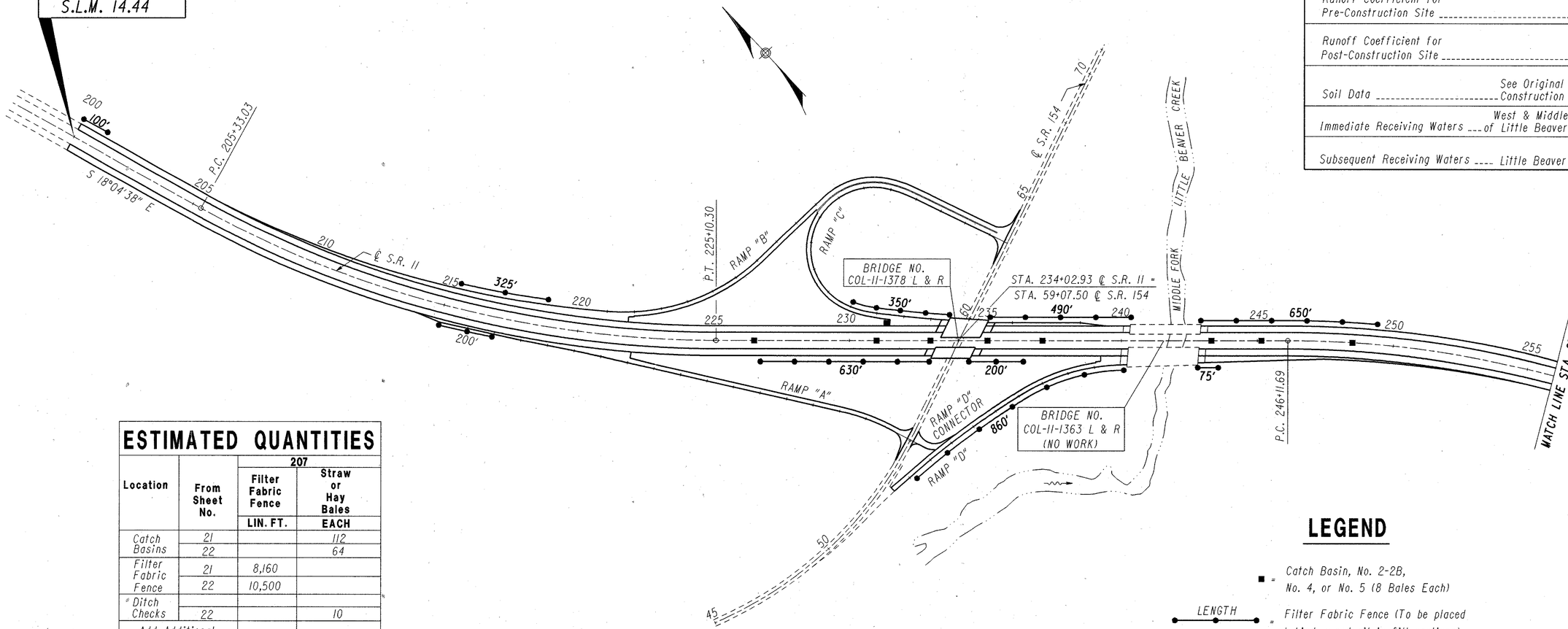
CHECKED SHG

UNDERDRAIN QUANTITIES

COL-11-9.63

NH-78(40)

END PROJECT
STA. 200+00
S.L.M. 14.44



ESTIMATED QUANTITIES

Location	From Sheet No.	207 Filter Fabric Fence LIN. FT.	207 Straw or Hay Bales EACH
Catch Basins	21		112
	22		64
Filter Fabric Fence	21	8,160	
	22	10,500	
* Ditch Checks	22		10
Add Additional Quantities To Be Used AS Directed By The Engineer		1,340	114
TOTALS- Carried To General Summary		20,000	300

PROJECT DATA

Total Area (Right-of-Way)	218 Ac.
Area to Undergo Excavation, Filling, or Grading	13 Ac.
Runoff Coefficient for Pre-Construction Site	0.6
Runoff Coefficient for Post-Construction Site	0.6
Soil Data	See Original Construction Plans
Immediate Receiving Waters	West & Middle Fork of Little Beaver Creek
Subsequent Receiving Waters	Little Beaver Creek

0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED TKD
CHECKED SHG

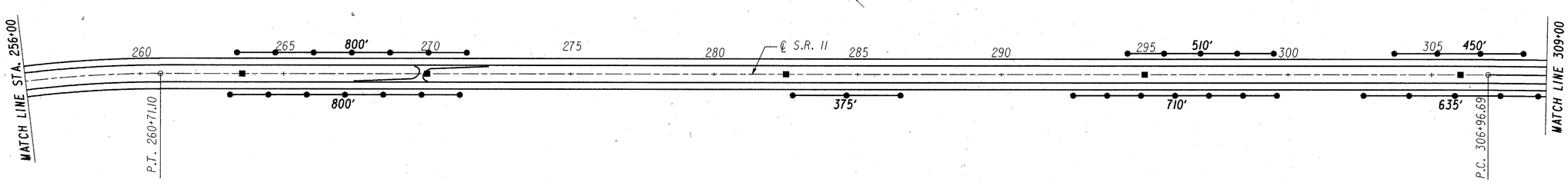
LEGEND

■ = Catch Basin, No. 2-2B, No. 4, or No. 5 (8 Bales Each)

LENGTH = Filter Fabric Fence (To be placed behind guardrail in fill sections)

▌ = Bale Ditch Check (5 Bales Each)

For locations of guardrail, see sheet no. 17.
For details not shown, see Std. Dwg. MC-11.

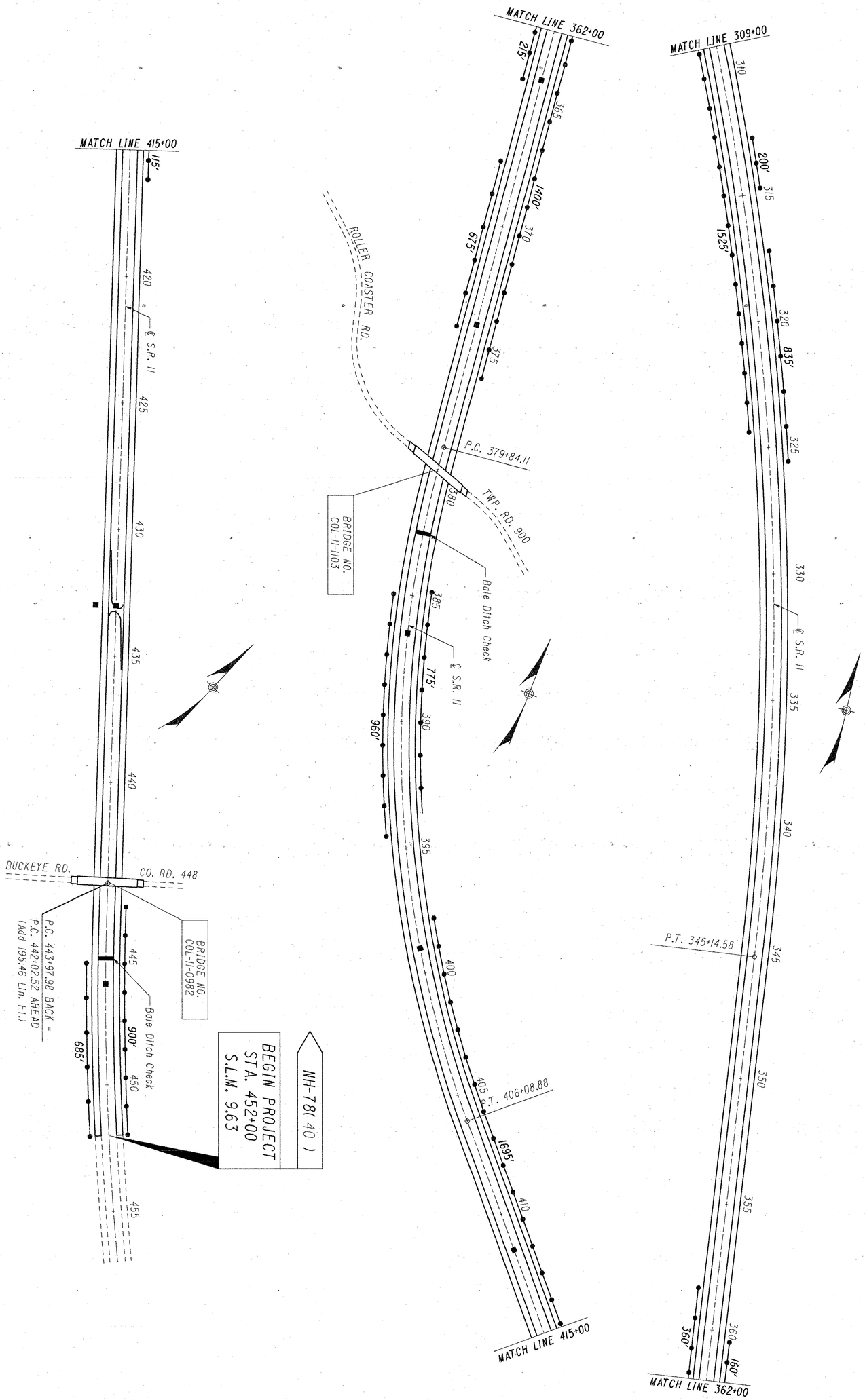


STORM WATER POLLUTION PREVENTION PLAN
STA. 200+00 TO STA. 309+00

COL-11-9.63

21
74

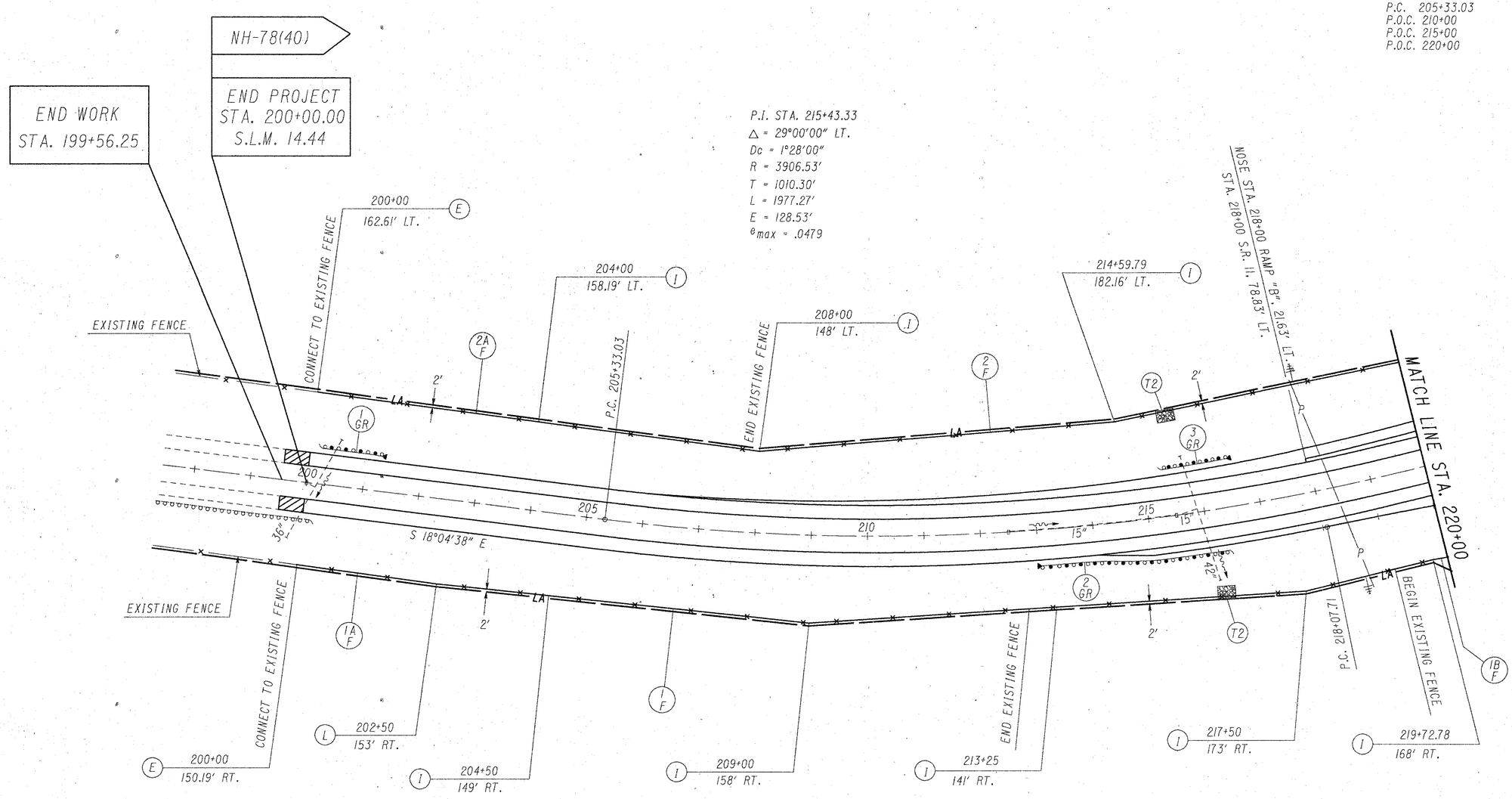
30119629.TKD



22/74	COL-11-9.63	STORM WATER POLLUTION PREVENTION PLAN STA. 309+00 TO STA. 452+00	CALCULATED TKD CHECKED SHG	0 200 100 400 HORIZONTAL SCALE IN FEET

CENTERLINE REFERENCE MONUMENTS

P.O.T. 200+50
P.C. 205+33.03
P.O.C. 210+00
P.O.C. 215+00
P.O.C. 220+00



RAMP "A" CURVE 1
P.I. STA. 220+56.86
△ = 2°29'28" RT.
Dc = 0°30'
R = 11459.16'
T = 249.15'
L = 498.21'
E = 2.71'

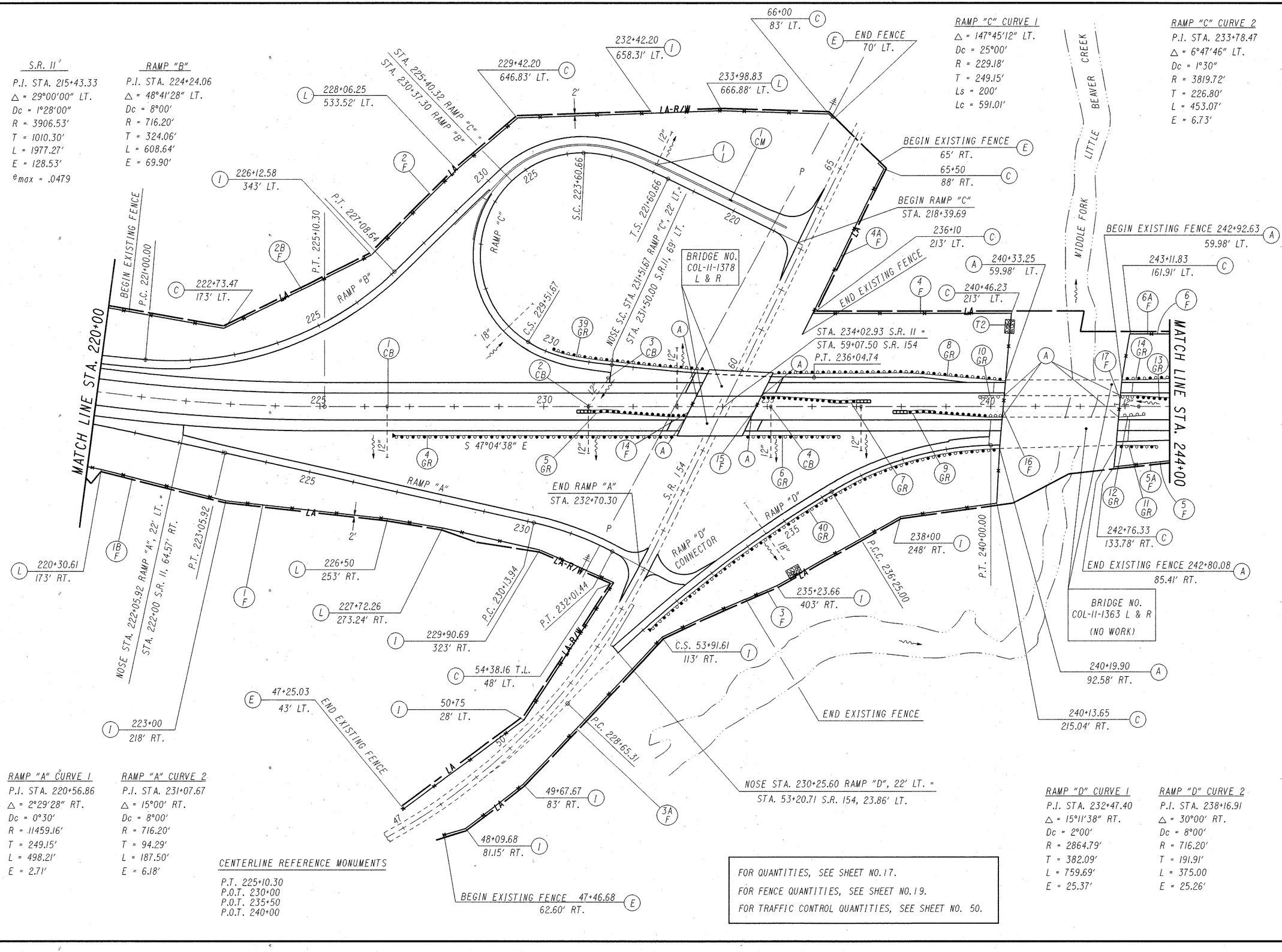
FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 200+00 TO STA. 220+00

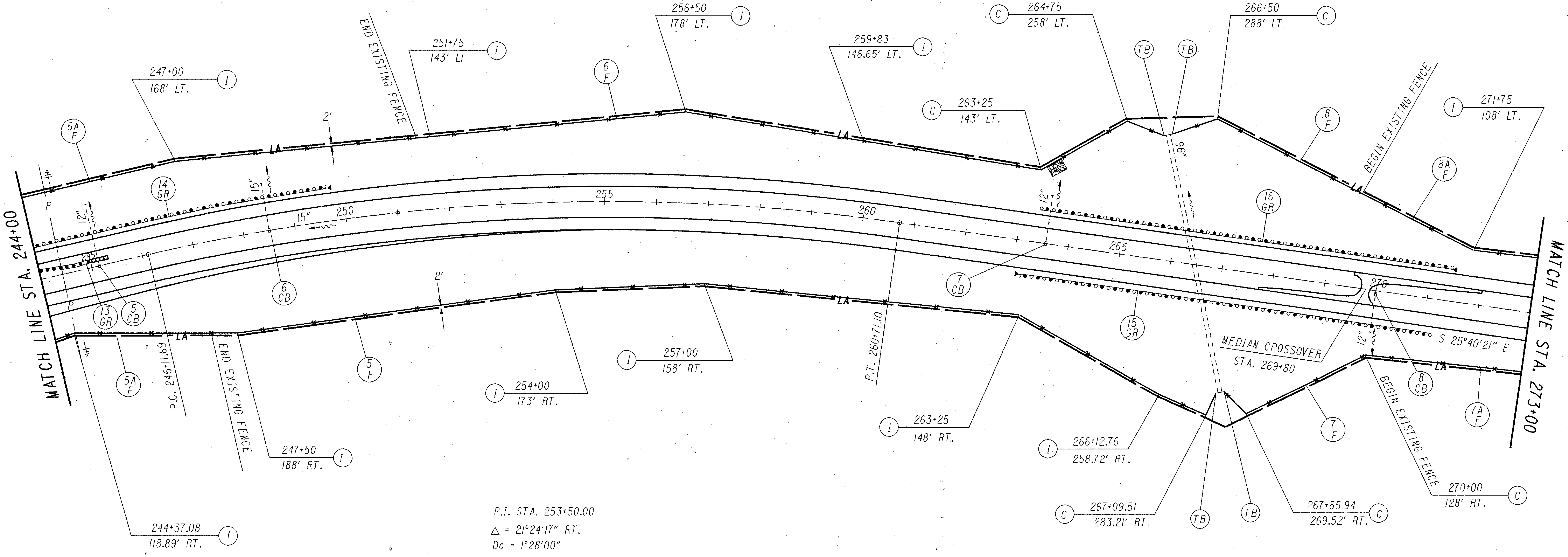
COL-11-9.63

23
74


S.R. 11
P.I. STA. 215+43.33
△ = 29°00'00" LT.
Dc = 1°28'00"
R = 3906.53'
T = 1010.30'
L = 1977.27'
E = 128.53'
emax = .0479
RAMP "B"
P.I. STA. 224+24.06
△ = 48°41'28" LT.
Dc = 8°00'
R = 716.20'
T = 324.06'
L = 608.64'
E = 69.90'
RAMP "C" CURVE 1
△ = 147°45'12" LT.
Dc = 25°00'
R = 229.18'
T = 249.15'
Ls = 200'
Lc = 591.01'
RAMP "C" CURVE 2
P.I. STA. 233+78.47
△ = 6°47'46" LT.
Dc = 1°30"
R = 3819.72'
T = 226.80'
L = 453.07'
E = 6.73'
HORIZONTAL SCALE IN FEET
0 50 100 200
PLAN
STA. 220+00 TO STA. 244+00
COL-11-9.63
24
74
MATCH LINE STA. 220+00
MATCH LINE STA. 244+00
BEGIN EXISTING FENCE
P.C. 221+00.00
222+73.47
173' LT.
P.T. 225+10.30
226+12.58
343' LT.
P.T. 227+08.64
STA. 225+40.32 RAMP "C" =
STA. 230+37.30 RAMP "B"
228+06.25
533.52' LT.
229+42.20
646.83' LT.
232+42.20
658.31' LT.
233+98.83
666.88' LT.
66+00
83' LT.
END FENCE
70' LT.
BEGIN EXISTING FENCE
65' RT.
65+50
88' RT.
BEGIN RAMP "C"
STA. 218+39.69
236+10
213' LT.
240+33.25
59.98' LT.
BEGIN EXISTING FENCE 242+92.63
59.98' LT.
243+11.83
161.91' LT.
END EXISTING FENCE
240+46.23
213' LT.
WIDDLE FORK LITTLE BEAVER CREEK
RAMP "A"
RAMP "B"
RAMP "C"
RAMP "D"
RAMP "D" CONNECTOR
END RAMP "A"
STA. 232+70.30
S.C. 223+60.66
T.S. 221+60.66
NOSE S.C. STA. 231+51.67 RAMP "C", 22' LT. =
STA. 231+50.00 S.R. 11, 69' LT.
BRIDGE NO.
COL-11-1378
L & R
STA. 234+02.93 S.R. 11 =
STA. 59+07.50 S.R. 154
P.T. 236+04.74
S 47°04'38" E
S.R. 154
LA
LA-R/W
2'
12"
18"
60
65
50
47
P
220
225
230
235
240
NOSE STA. 222+05.92 RAMP "A", 22' LT. =
STA. 222+00 S.R. 11, 64.57' RT.
P.T. 223+05.92
220+30.61
173' RT.
226+50
253' RT.
227+72.26
273.24' RT.
P.C. 230+13.94
P.T. 232+01.44
229+90.69
323' RT.
54+38.16 T.L.
48' LT.
47+25.03
43' LT.
END EXISTING FENCE
50+75
28' LT.
223+00
218' RT.
49+67.67
83' RT.
48+09.68
81.15' RT.
BEGIN EXISTING FENCE 47+46.68
62.60' RT.
P.C. 228+65.31
NOSE STA. 230+25.60 RAMP "D", 22' LT. =
STA. 53+20.71 S.R. 154, 23.86' LT.
C.S. 53+91.61
113' RT.
235+23.66
403' RT.
P.C.C. 236+25.00
P.T. 240+00.00
238+00
248' RT.
END EXISTING FENCE
240+19.90
92.58' RT.
240+13.65
215.04' RT.
BRIDGE NO.
COL-11-1363 L & R
(NO WORK)
END EXISTING FENCE 242+80.08
85.41' RT.
242+76.33
133.78' RT.
RAMP "A" CURVE 1
P.I. STA. 220+56.86
△ = 2°29'28" RT.
Dc = 0°30'
R = 11459.16'
T = 249.15'
L = 498.21'
E = 2.71'
RAMP "A" CURVE 2
P.I. STA. 231+07.67
△ = 15°00' RT.
Dc = 8°00'
R = 716.20'
T = 94.29'
L = 187.50'
E = 6.18'
RAMP "D" CURVE 1
P.I. STA. 232+47.40
△ = 15°11'38" RT.
Dc = 2°00'
R = 2864.79'
T = 382.09'
L = 759.69'
E = 25.37'
RAMP "D" CURVE 2
P.I. STA. 238+16.91
△ = 30°00' RT.
Dc = 8°00'
R = 716.20'
T = 191.91'
L = 375.00
E = 25.26'
CENTERLINE REFERENCE MONUMENTS
P.T. 225+10.30
P.O.T. 230+00
P.O.T. 235+50
P.O.T. 240+00
FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

CENTERLINE REFERENCE MONUMENTS

P.C. 246+11.69
P.O.C. 250+50
P.O.C. 256+00
P.T. 260+71.10
P.O.T. 266+00
P.O.T. 271+00



MATCH LINE STA. 244+00
MATCH LINE STA. 273+00
END EXISTING FENCE
BEGIN EXISTING FENCE
MEDIAN CROSSOVER
STA. 269+80
S 25°40'21" E
P.C. 246+11.69
P.T. 260+71.10
247+00
168' LT.
251+75
143' LT
256+50
178' LT.
259+83
146.65' LT.
263+25
143' LT.
264+75
258' LT.
266+50
288' LT.
271+75
108' LT.
244+37.08
118.89' RT.
247+50
188' RT.
254+00
173' RT.
257+00
158' RT.
263+25
148' RT.
266+12.76
258.72' RT.
267+09.51
283.21' RT.
267+85.94
269.52' RT.
270+00
128' RT.

P.I. STA. 253+50.00
Δ = 21°24'17" RT.
Dc = 1°28'00"
R = 3906.53'
T = 738.31'
L = 1459.41'
E = 69.16'
e_{max} = .0479

FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 244+00 TO STA. 273+00

COL-11-9.63

CENTERLINE REFERENCE MONUMENTS

P.O.T. 276+00
P.O.T. 281+00
P.O.T. 286+00
P.O.T. 291+00
P.O.T. 296+00

HORIZONTAL SCALE IN FEET
0 50 100 200

FOR QUANTITIES, SEE SHEET NO.17.
FOR FENCE QUANTITIES, SEE SHEET NO.19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

PLAN
STA. 273+00 TO STA. 300+00

COL-11-9.63

CENTERLINE REFERENCE MONUMENTS

P.O.T. 301+00
P.C. 306+96.69
P.O.C. 311+00
P.O.C. 315+50
P.O.C. 321+00

P.I. STA. 326+23.49
△ = 19°05'22" RT.
Dc = 0°30'00"
R = 11459.16'
T = 1926.80'
L = 3817.89'
E = 160.86'
e_{max} = .0158

FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

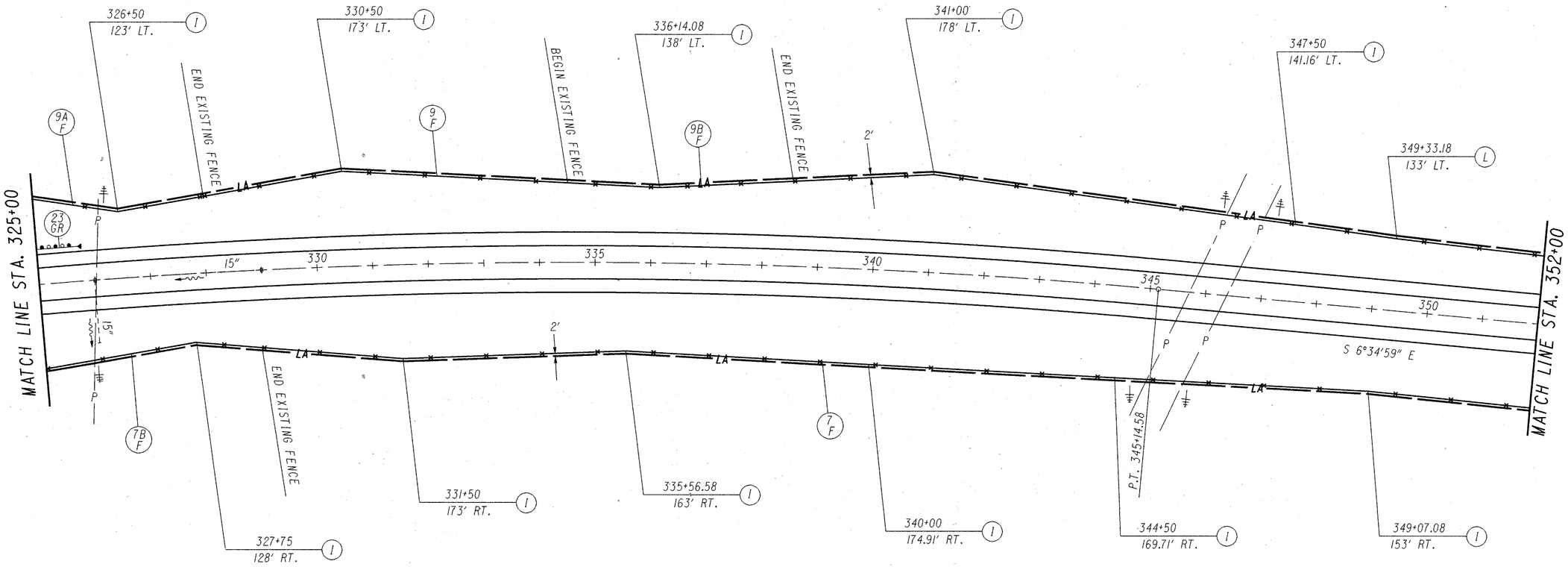
HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 300+00 TO STA. 325+00

COL-11-9.63

CENTERLINE REFERENCE MONUMENTS

P.O.C. 325+50
P.O.C. 331+00
P.O.C. 336+00
P.O.C. 341+00
P.T. 345+14.58
P.O.T. 350+00



P.I. STA. 326+23.49
△ = 19°05'22" RT.
Dc = 0°30'00"
R = 11459.16'
T = 1926.80'
L = 3817.89'
E = 160.86'
e max = .0158

FOR QUANTITIES, SEE SHEET NO.17.
FOR FENCE QUANTITIES, SEE SHEET NO.19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 325+00 TO STA. 352+00

COL-11-9.63

28
74

CENTERLINE REFERENCE MONUMENTS

P.O.T. 355+00
P.O.T. 360+00
P.O.T. 365+00
P.O.T. 370+00
P.O.T. 375+00

FOR QUANTITIES, SEE SHEET NO.17.
FOR FENCE QUANTITIES, SEE SHEET NO.19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

PLAN
STA. 352+00 TO STA. 375+00

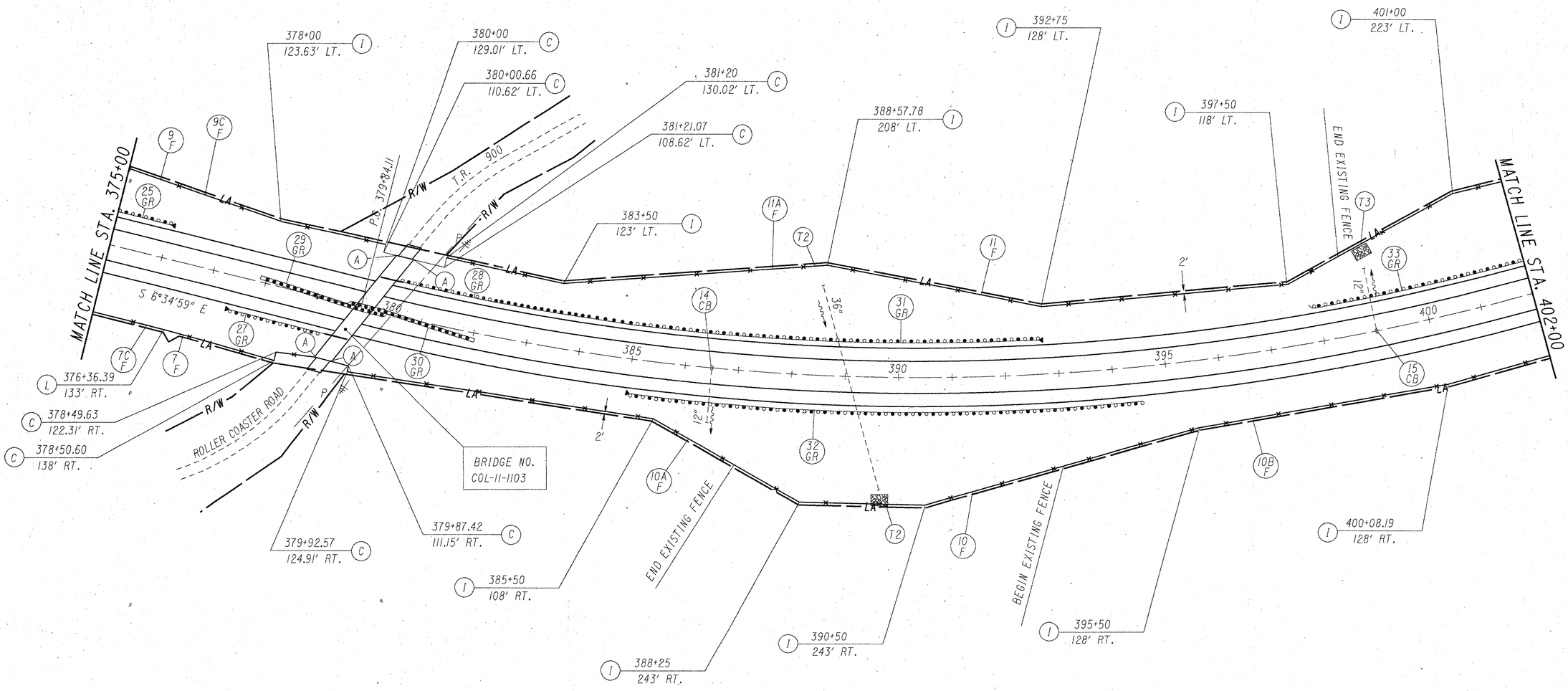
COL-11-9.63

29
74

CENTERLINE REFERENCE MONUMENTS

P.O.C. 381+00
P.O.C. 385+00
P.O.C. 388+32.22
P.O.C. 395+50
P.O.C. 401+00

P.I. STA. 393+38.88
△ = 34°59'49" LT.
Dc = 1°20'
R = 4297.18'
T = 1354.77'
L = 2624.77'
E = 208.50'
e_{max} = .0425



FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 375+00 TO STA. 402+00

COL-11-9.63

30
74

CENTERLINE REFERENCE MONUMENTS

P.T. 406+08.88
P.O.T. 411+00
P.O.T. 416+00
P.O.T. 421+00
P.O.T. 426+00

P.I. STA. 393+38.88
△ = 34°59'49" LT.
Dc = 1°20'
R = 4297.18'
T = 1354.77'
L = 2624.77'
E = 208.50'
e_{max} = .0425

FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

HORIZONTAL SCALE IN FEET
0 50 100 200

PLAN
STA. 402+00 TO STA. 427+00

COL-11-9.63

CENTERLINE REFERENCE MONUMENTS

P.O.T. 431+00
P.O.T. 436+00
P.O.T. 441+00
P.O.C. 445+55.85
P.O.C. 451+50

P.I. STA. 461+12.42
△ = 18°55'30" LT.
Dc = 0°30'00"
R = 11459.16
T = 1909.90'
L = 3785.0'
E = 158.06'
emax = .0158

NH-78(40)

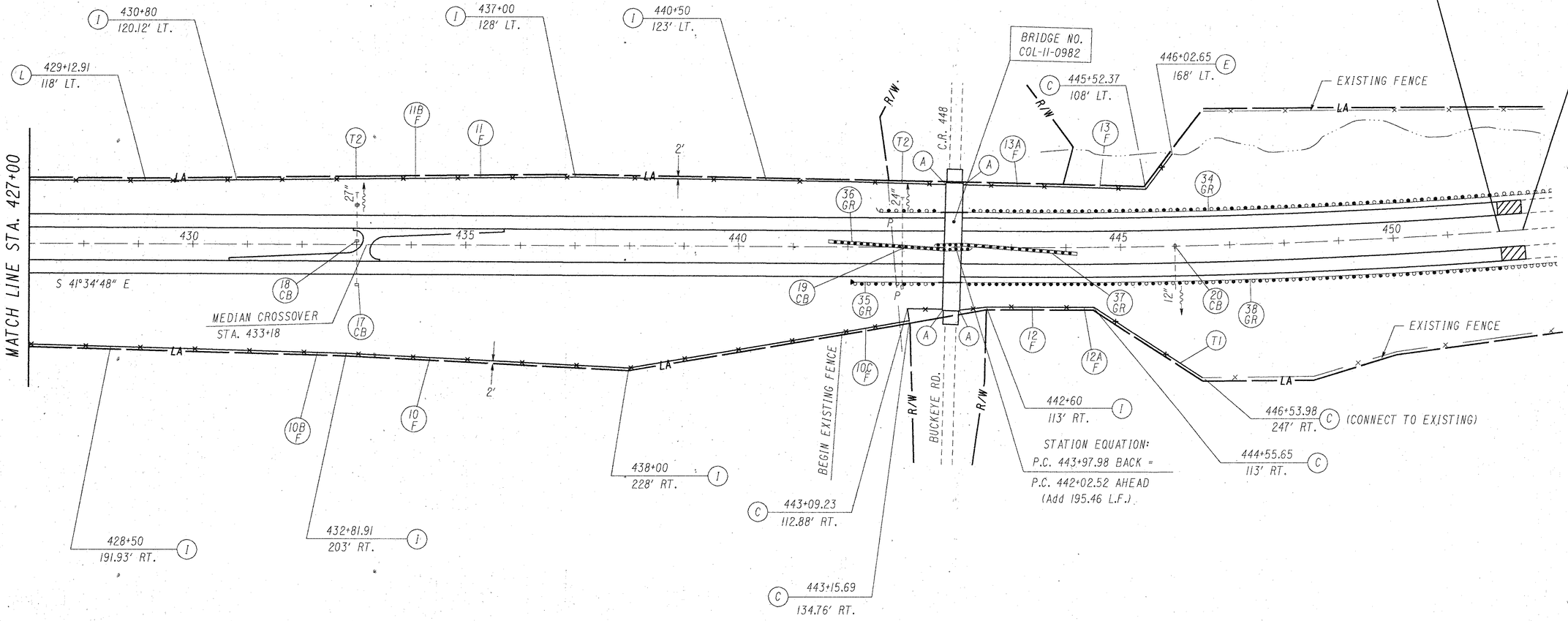
BEGIN PROJECT
STA. 452+00.00
S.L.M. 9.63

BEGIN WORK
STA. 452+43.75

HORIZONTAL SCALE IN FEET
0 50 100 200

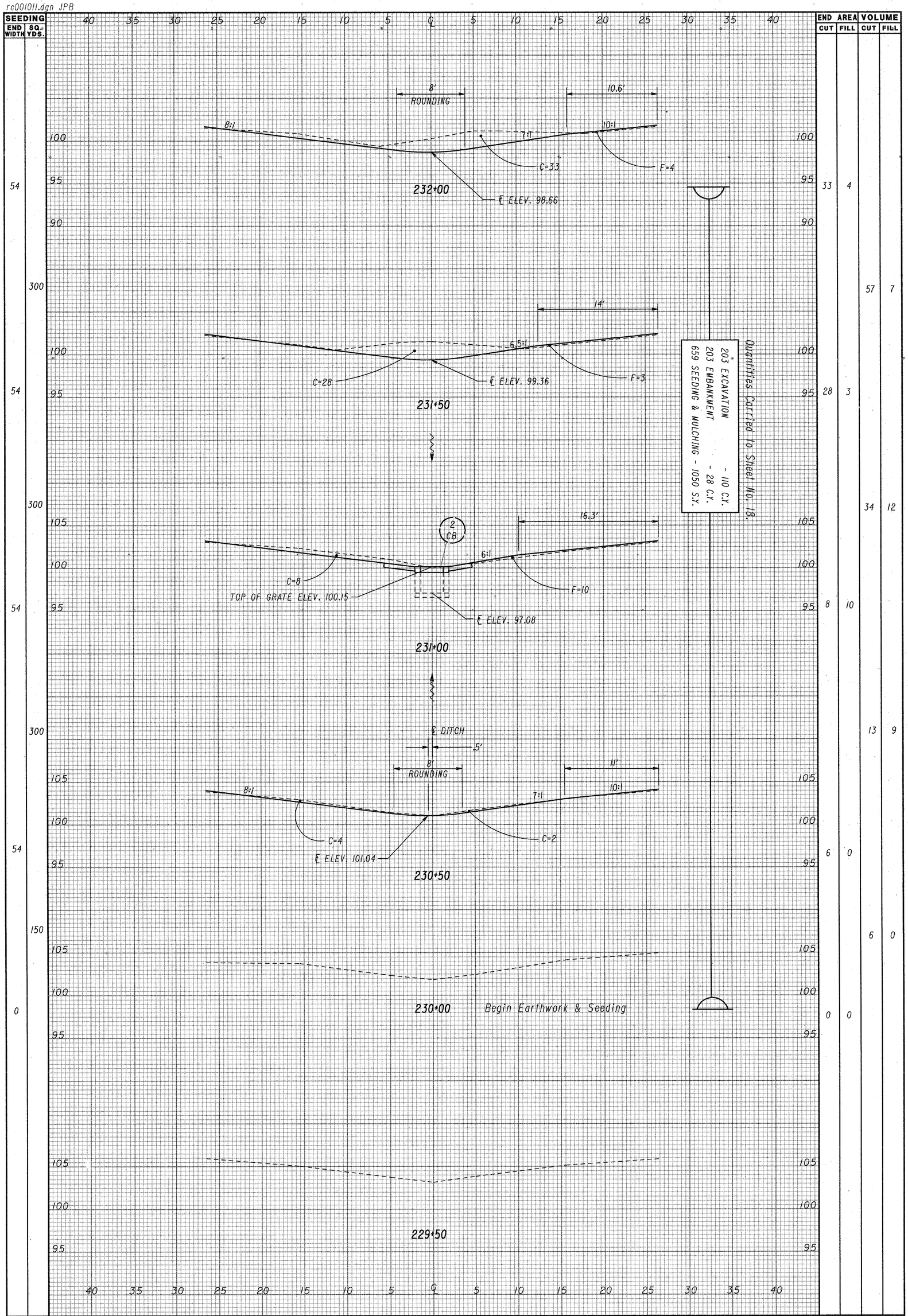
PLAN
STA. 427+00 TO STA. 452+00

COL-11-9.63



FOR QUANTITIES, SEE SHEET NO. 17.
FOR FENCE QUANTITIES, SEE SHEET NO. 19.
FOR TRAFFIC CONTROL QUANTITIES, SEE SHEET NO. 50.

rc0010II.dgn JPB



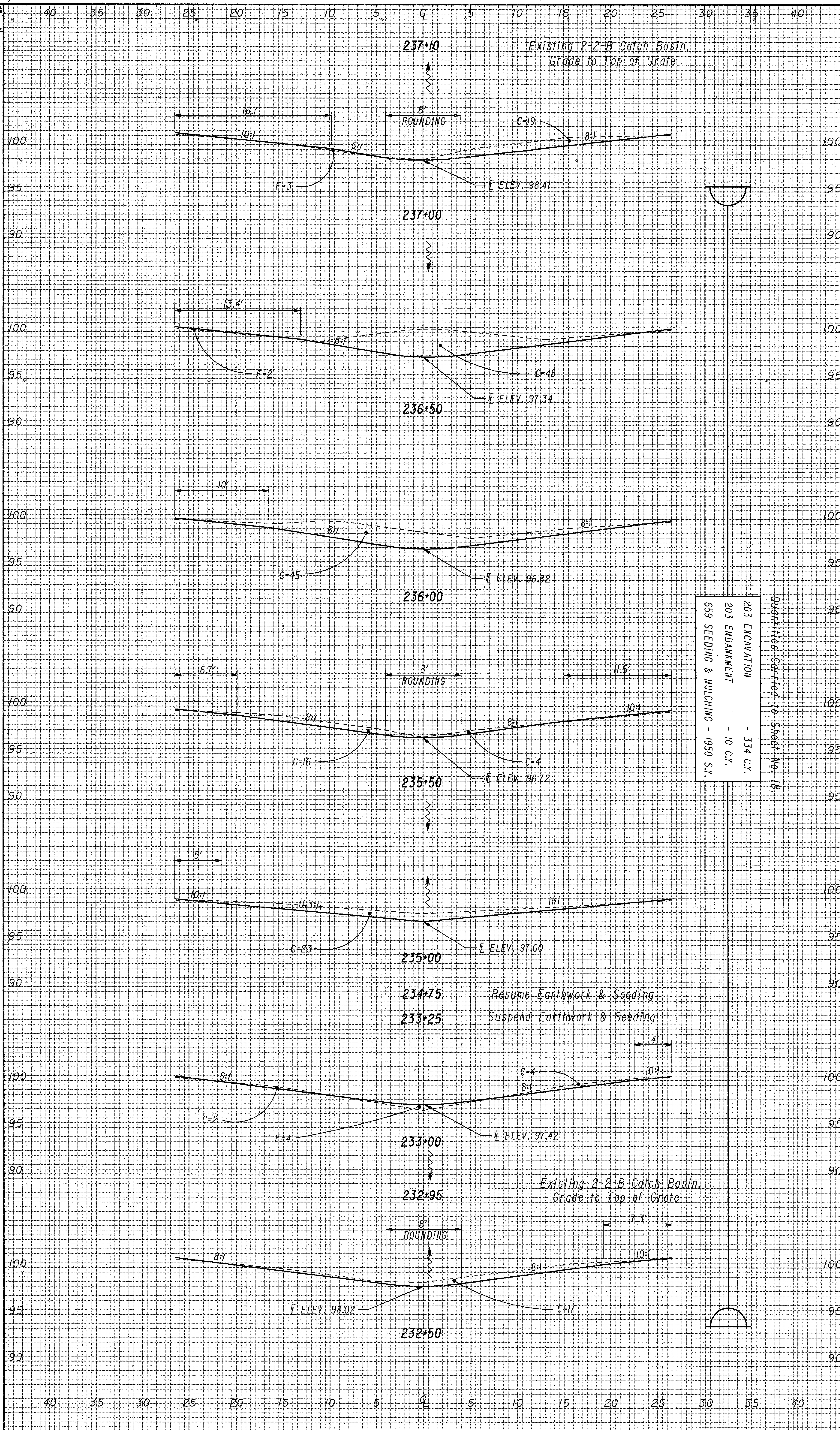
33/74

COL-11-9.63

CROSS SECTION SHEET
STA. 229+50 TO STA. 232+00

CALCULATED JPB
CHECKED SHG

rc00201l.dgn JPB



Quantities Carried to Sheet No. 18.

203 EXCAVATION	- 334 C.Y.
203 EMBANKMENT	- 10 C.Y.
659 SEEDING & MULCHING	- 1950 S.Y.

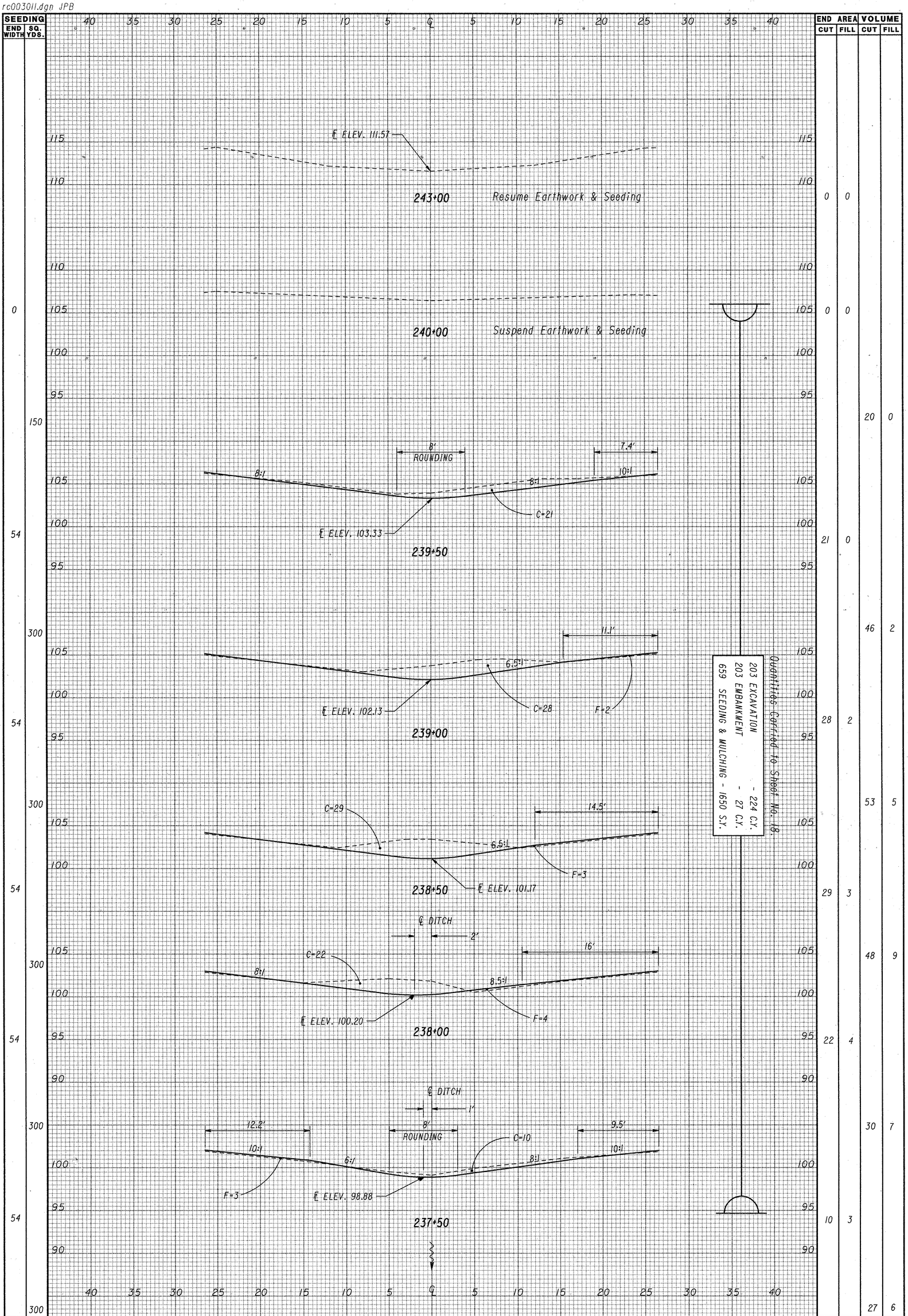
Station	Seeding End Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Volume Cut	Volume Fill
237+10	54		19	3		
		300			62	5
236+50	54		48	2		
		300			87	2
236+00	54		45	0		
		300			61	0
235+50	54		20	0		
		300			40	0
235+00	54		23	0		
		75			12	0
234+75 / 233+25	0		0	0		
		75			3	2
233+00	54		6	4		
		300			22	4
232+50	54		17	0		
		300			47	4

CALCULATED JPB
CHECKED SHG

COL-11-9.63

CROSS SECTION SHEET
STA. 232+50 TO STA. 237+00

rc0030111.dgn JPB



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0	0	0		
0	0	0	0		
54	150	21	0	20	0
54	300	28	2	46	2
54	300	29	3	53	5
54	300	22	4	48	9
54	300	10	3	30	7
	300			27	6

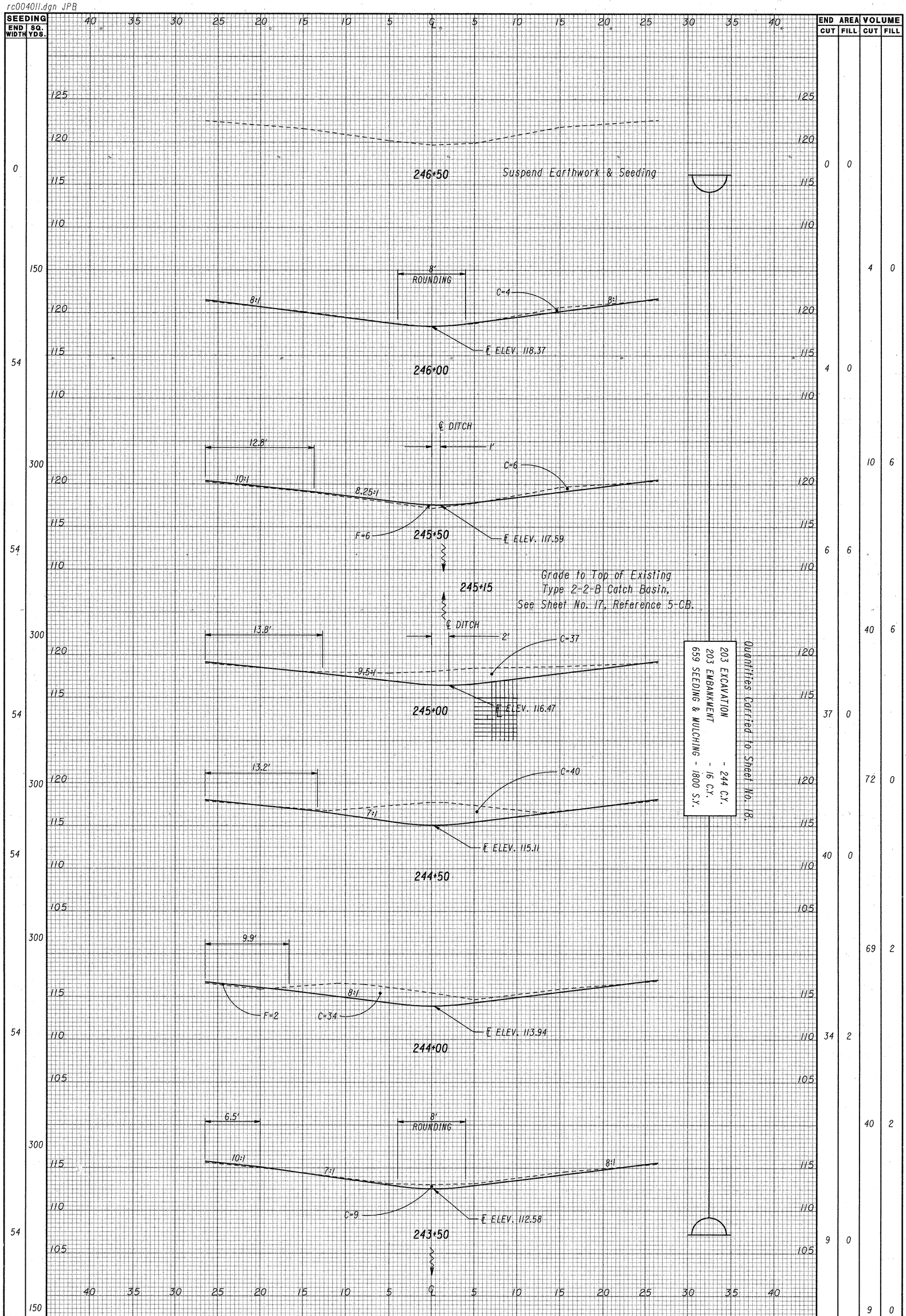
35/74

COL-11-9.63

CROSS SECTION SHEET
STA. 237+50 TO STA. 243+00

CALCULATED JPB
CHECKED SHG

rc0040111.dgn JPB



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0		0	0		
	150			4	0
54		4	0		
	300			10	6
54		6	6		
	300			40	6
54		37	0		
	300			72	0
54		40	0		
	300			69	2
54		34	2		
	300			40	2
54		9	0		
	150			9	0

203 EXCAVATION - 244 C.Y.
203 EMBANKMENT - 16 C.Y.
659 SEEDING & MULCHING - 1800 S.Y.

Quantities Carried to Sheet No. 18.

(36) 74

COL-11-9.63

CROSS SECTION SHEET
STA. 243+50 TO STA. 246+50

CALCULATED JPB
CHECKED SHG

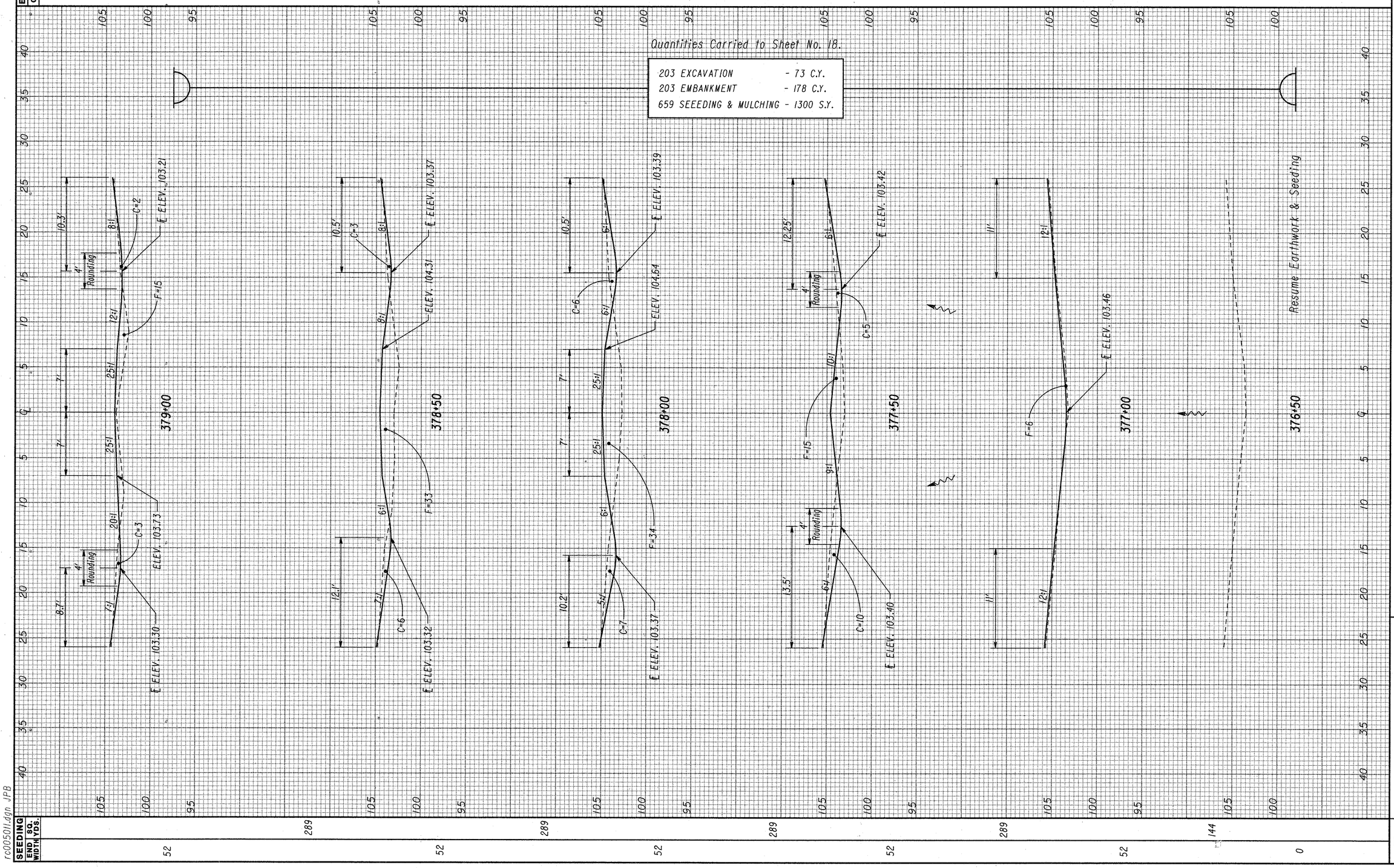
CROSS SECTION SHEET
STA. 376+50 TO STA. 379+00

CALCULATED JPB
CHECKED SHG

END AREA	VOLUME
CUT / FILL	CUT / FILL
5 / 15	13 / 45
9 / 33	20 / 62
13 / 34	26 / 45
15 / 15	14 / 20
0 / 6	0 / 6
0 / 0	

Quantities Carried to Sheet No. 18.

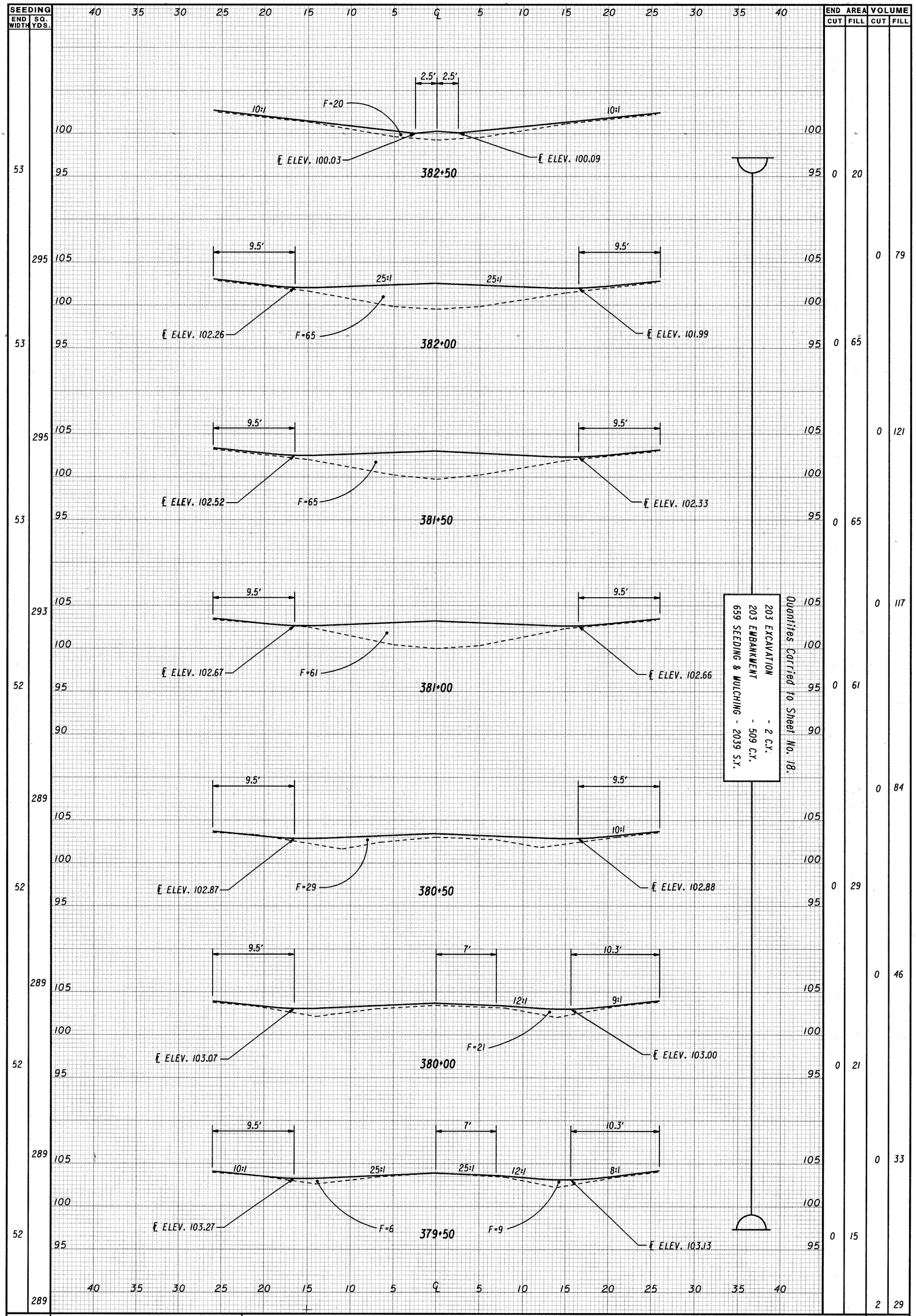
203 EXCAVATION	- 73 C.Y.
203 EMBANKMENT	- 178 C.Y.
659 SEEEDING & MULCHING	- 1300 S.Y.



SEEDING	END SQ.	WIDTH YDS.
	52	
	289	
	52	
	289	
	52	
	289	
	52	
	144	
	0	

rc00501l.dgn JPB

COL-11-9.63



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
53	295	0	20	0	79
53	295	0	65	0	121
53	293	0	65	0	117
52	289	0	61	0	84
52	289	0	29	0	46
52	289	0	21	0	33
52	289	0	15	2	29

38/74

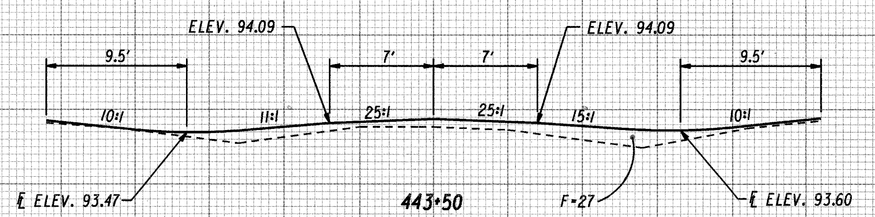
COL-11-9.63

CROSS SECTION SHEET
STA. 379+50 TO STA. 382+50

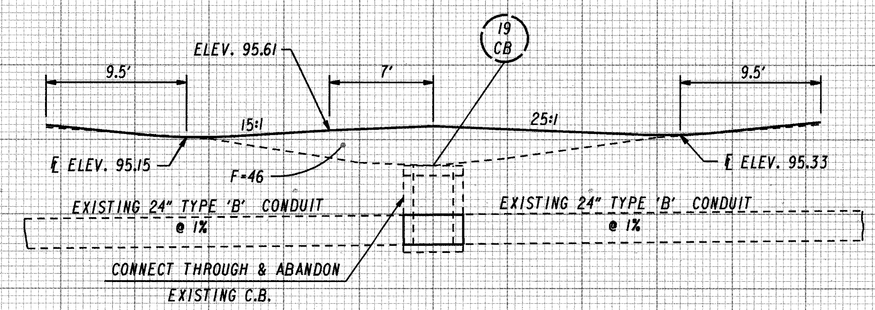
CALCULATED JPB

CHECKED SHG

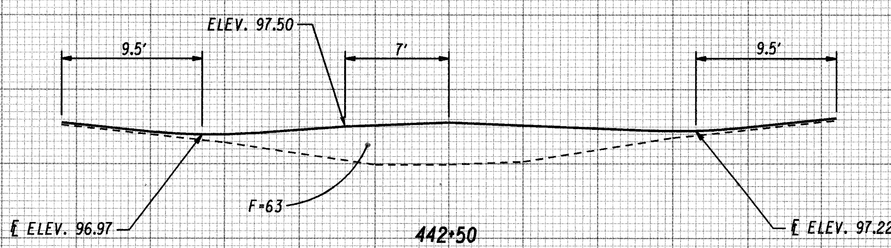
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
52		0	27		
	289			0	68
52		0	46		
	289			0	101
52		0	63		
	289			0	118
52		0	64		
	289			4	99
52		0	43		
	144			4	40
0		0	0		
0		0	0		
	147			0	19



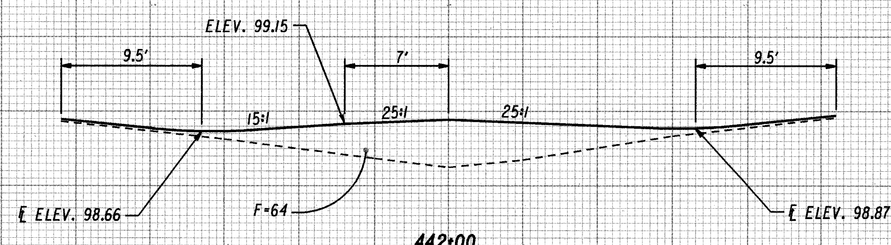
443+50



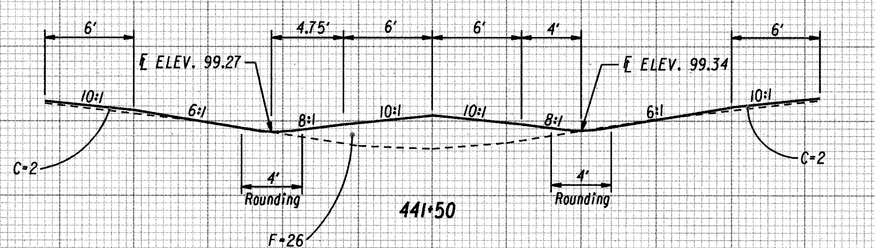
443+00



442+50



442+00



441+50

441+00 Resume Earthwork & Seeding

383+00 Suspend Earthwork & Seeding

Quantities Carried to Sheet No. 18.

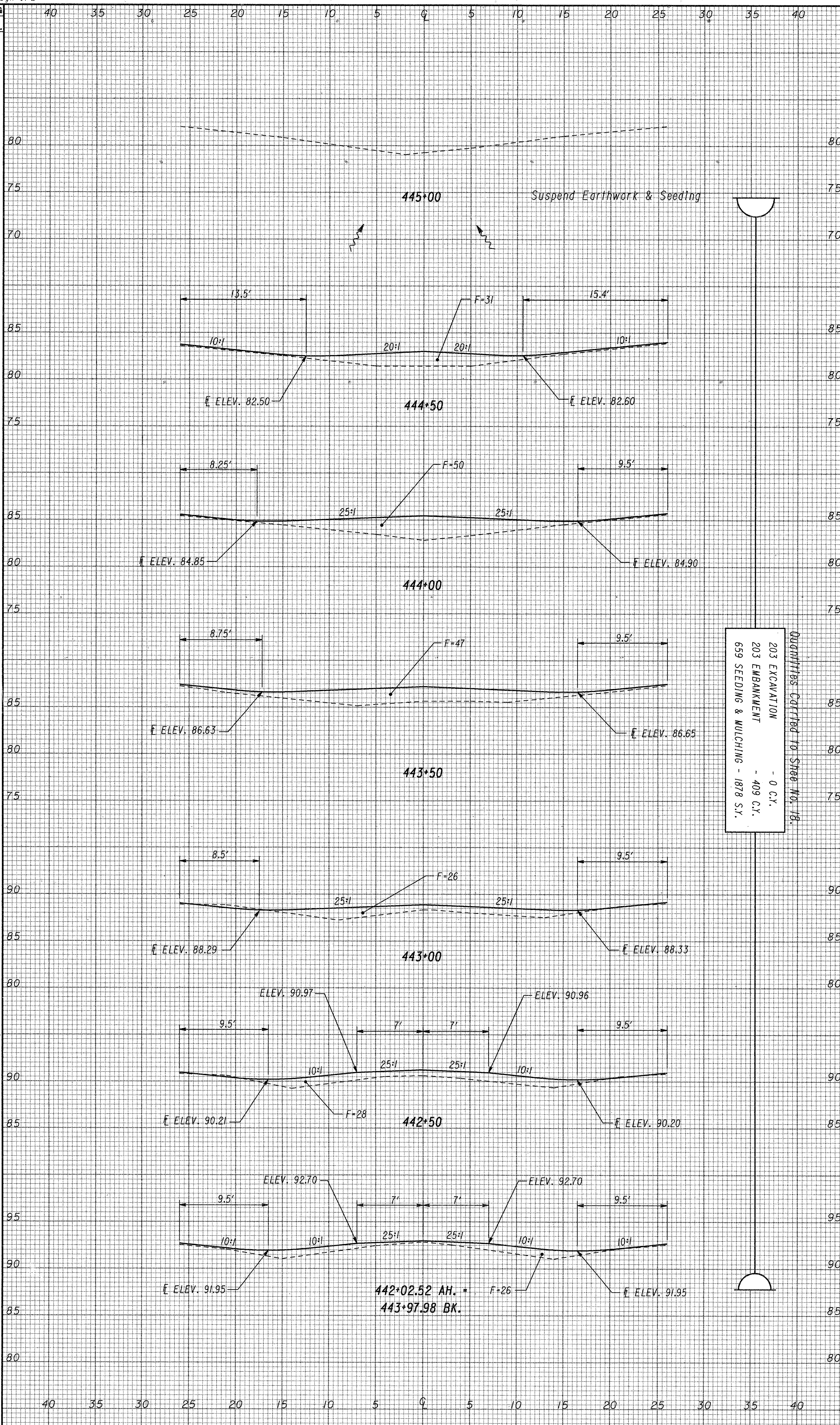
203 EXCAVATION - 8 C.Y.
203 EMBANKMENT - 426 C.Y.
659 SEEDING & MULCHING - 1300 S.Y.

39/74

COL-11-9.63

CROSS SECTION SHEET
STA. 383+00 TO STA. 443+50 (BACK)

CALCULATED JPB
CHECKED SHG



445+00
Suspend Earthwork & Seeding
444+50
13.5'
15.4'
F=31
10:1
20:1
20:1
10:1
℄ ELEV. 82.50
℄ ELEV. 82.60
444+00
8.25'
9.5'
F=50
25:1
25:1
℄ ELEV. 84.85
℄ ELEV. 84.90
443+50
8.75'
9.5'
F=47
℄ ELEV. 86.63
℄ ELEV. 86.65
443+00
8.5'
9.5'
F=26
25:1
25:1
℄ ELEV. 88.29
℄ ELEV. 88.33
442+50
ELEV. 90.97
ELEV. 90.96
9.5'
7'
7'
9.5'
10:1
25:1
25:1
10:1
℄ ELEV. 90.21
F=28
℄ ELEV. 90.20
ELEV. 92.70
ELEV. 92.70
9.5'
7'
7'
9.5'
10:1
10:1
25:1
25:1
10:1
10:1
℄ ELEV. 91.95
442+02.52 AH. = 443+97.98 BK.
F=26
℄ ELEV. 91.95
Quantities Carried to Shee No. 18.
203 EXCAVATION - 0 C.Y.
203 EMBANKMENT - 409 C.Y.
659 SEEDING & MULCHING - 1878 S.Y.

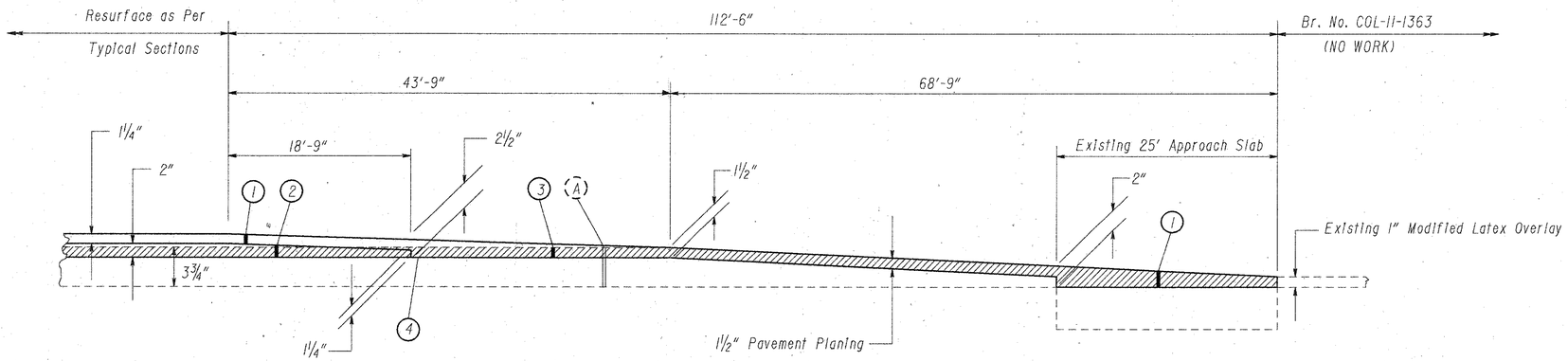
Seeding End Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Volume Cut	Volume Fill
0		0	0		
	144			0	29
52		0	31		
	289			0	75
52		0	50		
	289			0	90
52		0	47		
	289			0	68
52		0	26		
	289			0	50
52		0	28		
	289			0	50
52		0	26		
	289			0	47

40/74

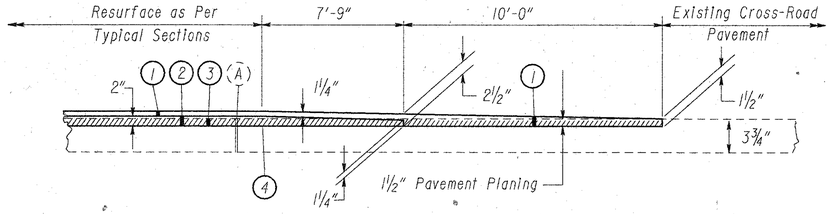
COL-11-9.63

CROSS SECTION SHEET
STA. 442+02.52 (AHEAD) TO STA. 445+00

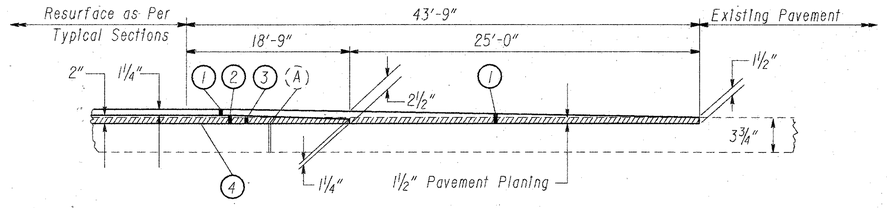
CALCULATED JPB
CHECKED SHG



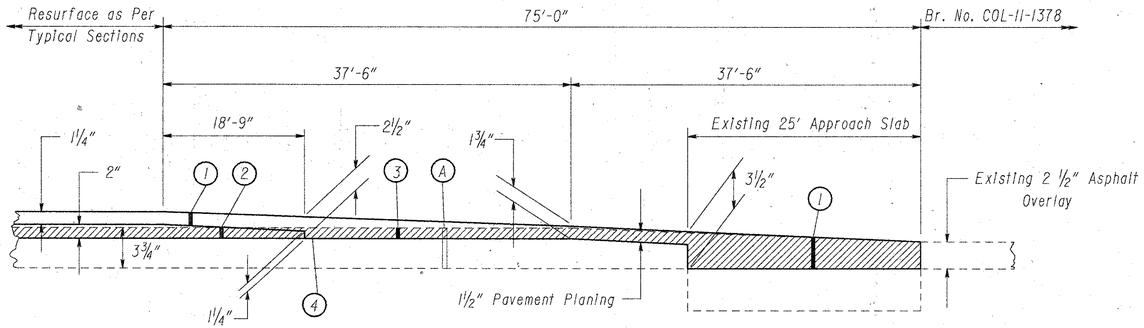
Feather Detail at Both Ends of Br. No. COL-11-1363 L&R



Typical Ramp Intersection Feather Detail



Typical Feather Detail at Beginning and End of Project



Feather Detail at Both Ends of Br. No. COL-11-1378 L&R

Legend

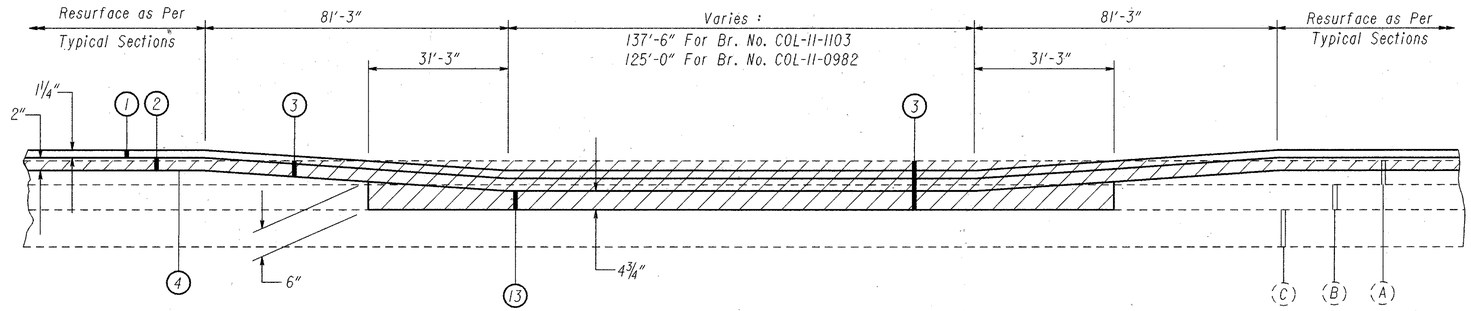
1 — 446 Asphalt Concrete Surface Course, Type 1, As Per Plan
2 — 446 Asphalt Concrete Intermediate Course, Type 2
3 — 254 Pavement Planing, Bituminous (1½" Nominal)
4 — 407 Tack Coat
A — Existing Asphalt Concrete

For Quantities See Sheet No.'s 14-16.

CALCULATED JPB CHECKED SHG

FEATHER DETAILS

COL-11-9.63



Limiting Stations :

Br. No. COL-11-1103

(Southbound) Sta. 378+20 to Sta. 381+20 = 300.0 Lin. Ft.

(Northbound) Sta. 378+60 to Sta. 381+60 = 300.0 Lin. Ft.

Br. No. COL-11-0982

(Northbound & Southbound) Sta. 442+49.49 to Sta. 443+41.53 = 287.5 Lin. Ft. *

* Station Equation, Sta. 443+97.98 Back = Sta. 442+02.52 Ahead

Legend

1 — Item 446, 1¼" Asphalt Concrete Surface Course, Type 1, As Per Plan
2 — Item 446, 2" Asphalt Concrete Intermediate Course, Type 2
3 — Item 254, Pavement Planing, Bituminous
4 — Item 407, Tack Coat
13 — Item 301, Bituminous Aggregate, AC-20

A — Existing Asphalt Concrete
B — Existing Bituminous Macadam Base
C — Existing Subbase

CALCULATED JPB
CHECKED SHG

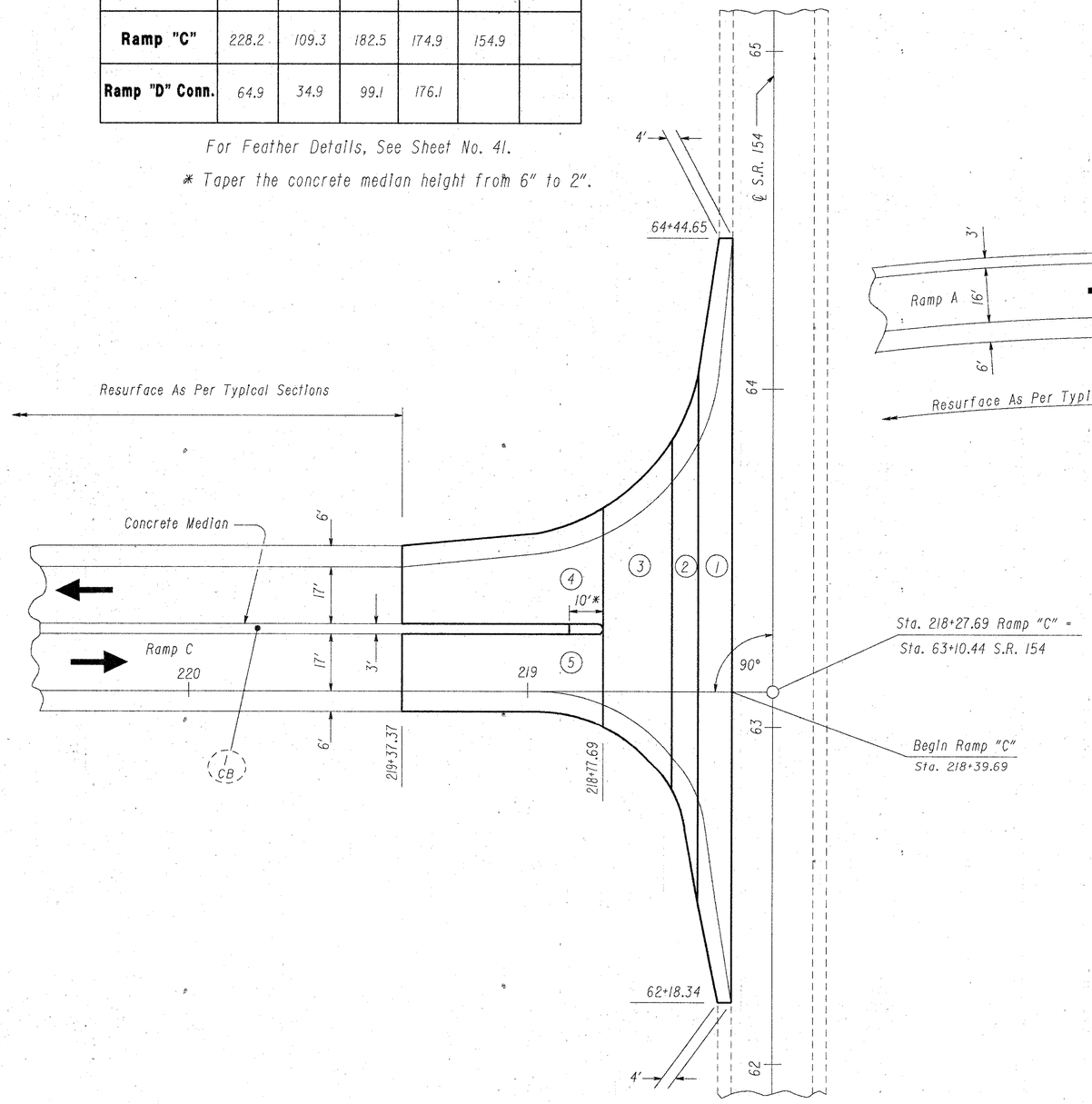
PAVEMENT TRANSITION DETAIL UNDER BRIDGES

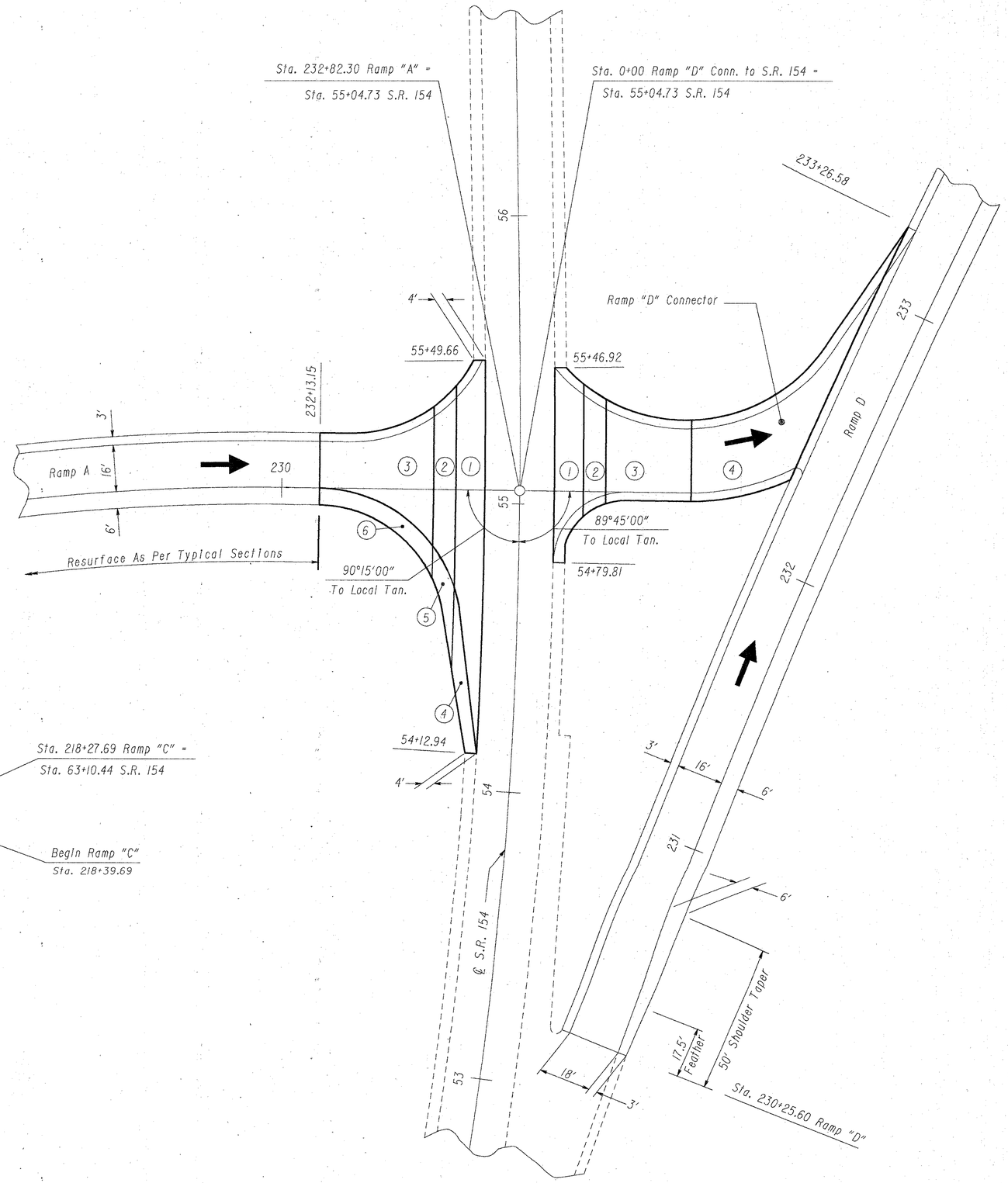
COL-11-9.63

Areas Used in Resurfacing Calculations on Sheet No. 16.						
Location	Area (1) Sq. Yd.	Area (2) Sq. Yd.	Area (3) Sq. Yd.	Area (4) Sq. Yd.	Area (5) Sq. Yd.	Area (6) Sq. Yd.
Ramp "A"	119.26	49.95	114.02	23.87	15.75	31.40
Ramp "C"	228.2	109.3	182.5	174.9	154.9	
Ramp "D" Conn.	64.9	34.9	99.1	176.1		

For Feather Details, See Sheet No. 41.

* Taper the concrete median height from 6" to 2".





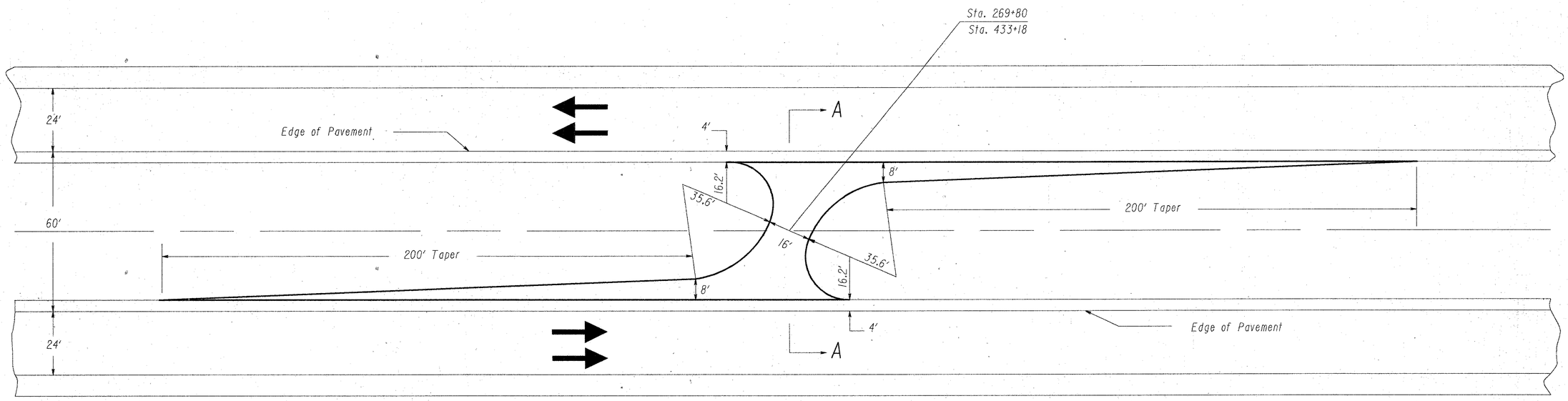
HORIZONTAL SCALE IN FEET
0 20 40

CALCULATED TKD
CHECKED SHG

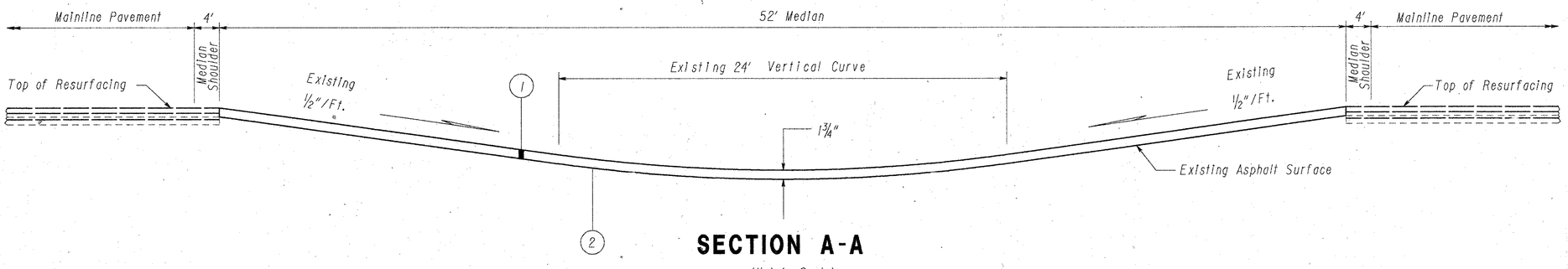
INTERSECTION DETAILS

COL-11-9.63

43
74



PLAN



SECTION A-A

(Not to Scale)

LEGEND

(1) Item 446, 1¾" Asphalt Concrete Surface Course, Type I, AC-20, As Per Plan

(2) Item 407, Tack Coat

CALCULATIONS

Planimetered Area = 793.21 Sq. Ft.

Item 407: 793.21 Sq. Ft. ÷ 9 x 0.075 Gal/Sq. Yd. x 2 locations = 13.2 Gal.

Item 446: 793.21 Sq. Ft. x 1.75" ÷ 12 ÷ 27 x 2 locations = 8.6 Cu. Yd.

(Quantities Carried to General Summary)

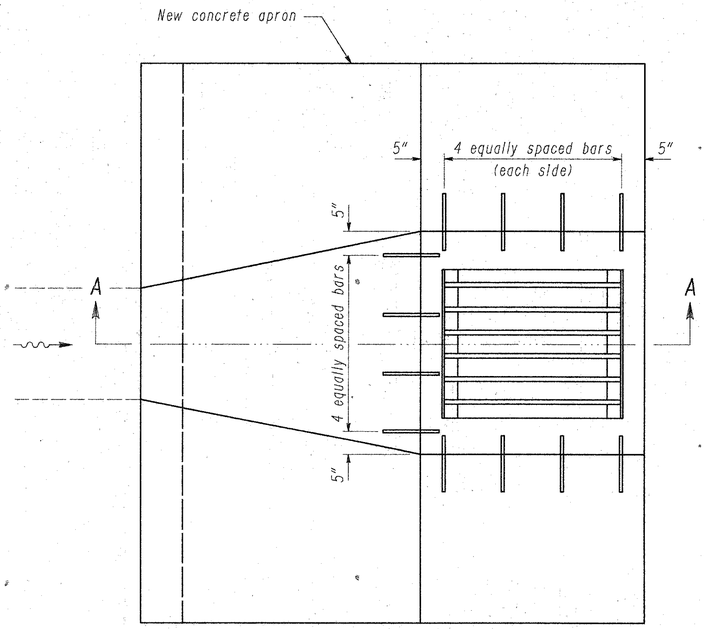
CALCULATED TKD
CHECKED SHG

TYPICAL MEDIAN CROSSOVER DETAIL

COL-11-9.63

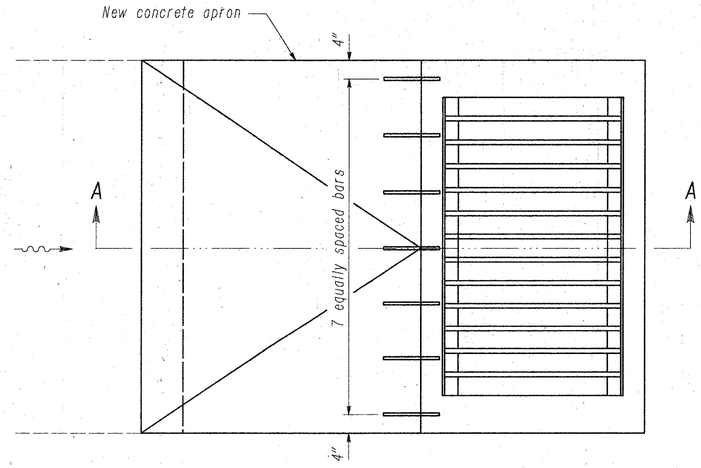
44
74

3011 9625.TXD



PLAN VIEW

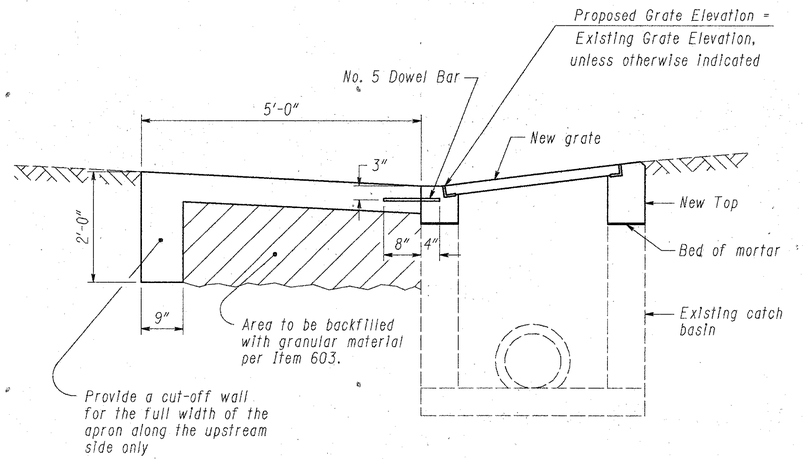
Reconstructed No. 5 Catch Basin



PLAN VIEW

Reconstructed No. 4 Catch Basin

NOTE: For details not shown, see Standard Construction Drawings CB-4 and CB-5.



SECTION A-A

ITEM 604, CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN

This item shall consist of removing and disposing of the existing concrete apron, and reconstructing the existing catch basin to grade using a new top portion and grate, and constructing a new reinforced concrete apron as shown herein.

Furnishing and placing the steel for the $\frac{5}{8}$" x 12" dowel bars shall be per Item 509. The dowel bars shall be epoxy coated per Section 509.10. The dowel bars shall be installed per Item 510, or cast into the new top. Bolts or inserts may be used. The 6" concrete apron shall be reinforced per Section 601.04(3).

For locations and quantities, see sheet no. 17.

Payment for the above work, including dowel bar placement, concrete apron construction, and reinforcing steel, will be made at the contract price for Item 604, Each, Catch Basin Adjusted To Grade, As Per Plan, and shall include the cost of all labor, materials, equipment, and incidentals necessary to complete the work.

CALCULATED SHG
CHECKED SHG

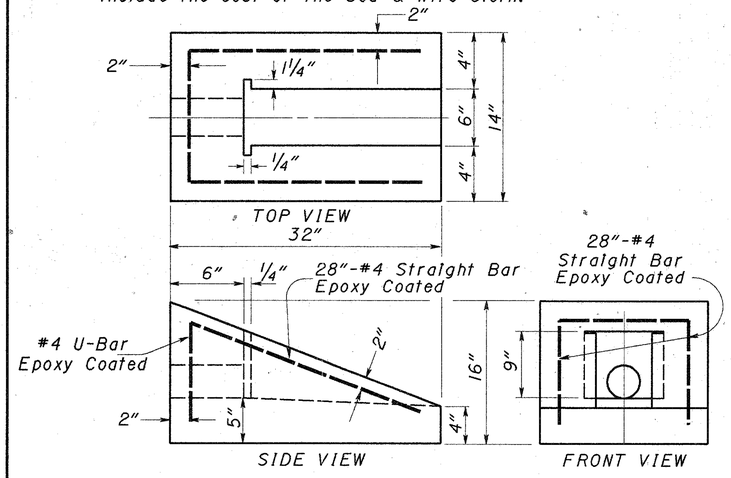
CATCH BASIN DETAILS

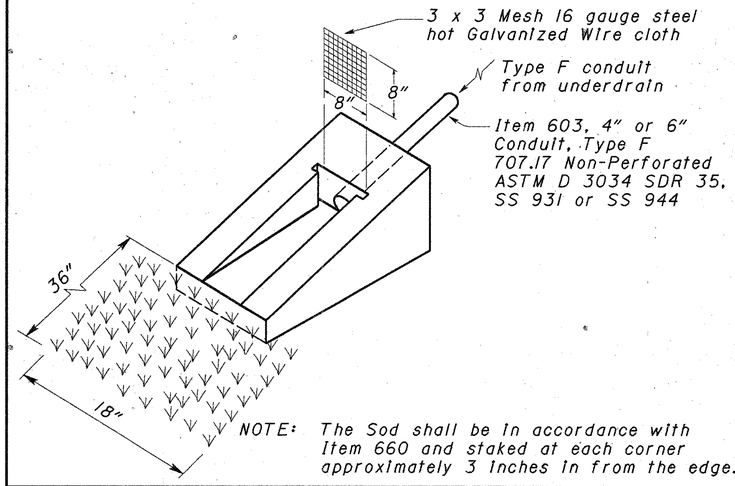
COL-11-9.63

30110930.dgn JPB

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

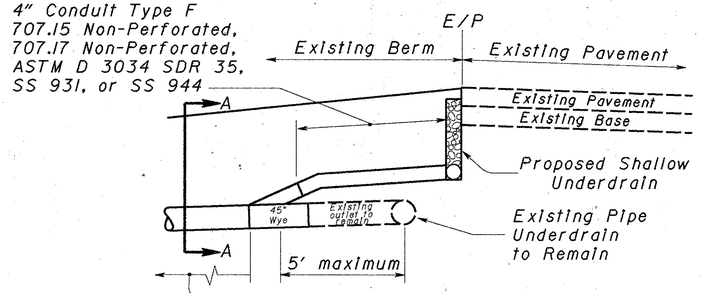
The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.

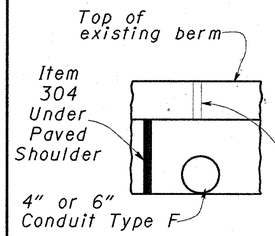




NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

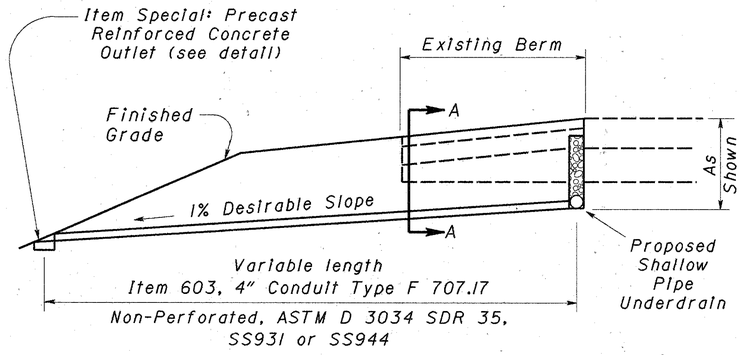
OUTLET DETAILS





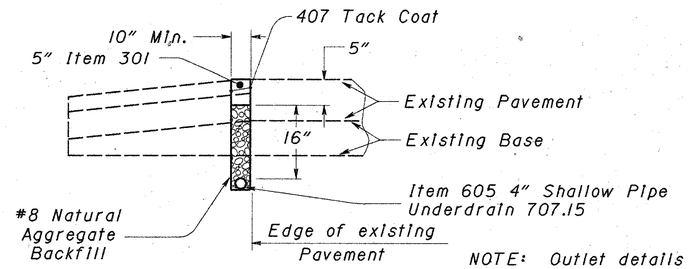
SECTION A-A

NOTE: The cost of the 4" conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains be included with the cost of the 6" conduit Type F beyond the existing underdrain.



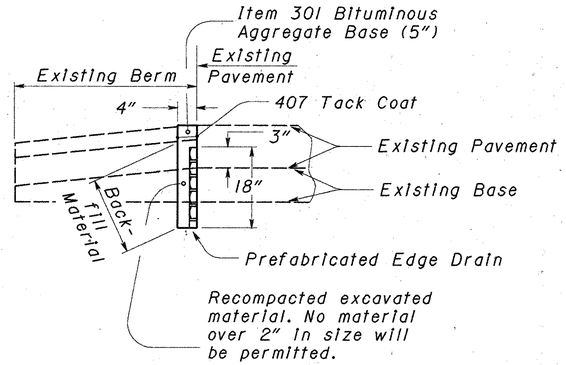
NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used between the underdrain & catch basin.

PIPE UNDERDRAIN SYSTEM



NOTE: Outlet details to be the same as shown above.

PREFABRICATED EDGE DRAIN SYSTEM



DESCRIPTION : THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM OR PREFABRICATED EDGE DRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

MATERIALS : THE UNDERDRAIN SHALL BE A PIPE UNDERDRAIN SYSTEM PER ITEM 605 OR A PREFABRICATED EDGE DRAIN SYSTEM MEETING THE FOLLOWING REQUIREMENTS. THE PREFABRICATED EDGE DRAIN SHALL CONSIST OF A POLYMERIC CORE WITH A MINIMUM THICKNESS OF ONE INCH WRAPPED IN FABRIC MEETING 712.09 TYPE A. THE DRAIN CORE MATERIAL SHALL BE RESISTANT TO PETROLEUM BASED CHEMICALS, NATURAL OCCURING SOIL CHEMICALS, AND ROAD DE-ICING AGENTS.

THE CORE SHALL PROVIDE A MINIMUM OF 100 SQUARE INCHES UNOBSTRUCTED (ONE SIDE ONLY) DRAINAGE AREA PER FOOT OF WIDTH. SIDE WALLS OF THE CORE SHALL PROVIDE AT LEAST 5% OPEN AREA TO PERMIT UNOBSTRUCTED FLOW THROUGH THE FILTER AND WALL TO THE CORE.

THE PREFABRICATED EDGE DRAIN SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6000 LBS PER SQUARE FOOT WITH A MAXIMUM 20% COMPRESSION IN A PARALLEL PLATE COMPRESSION TEST (ASTM-D 695). THE MINIMUM (SINGLE SIDE) CORE FLOW CAPACITY SHALL BE 10 GALLONS PER MINUTE PER FOOT OF WIDTH FOR A 0.1 GRADIENT AT 10 LBS PER SQUARE INCH BLADDER LOAD PER ASTM D 4716.

CONSTRUCTION : THE PREFABRICATED EDGE DRAIN SHALL BE INSTALLED IN A TRENCH AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMENDATIONS. THE CONTRACTOR HAS THE OPTION TO BACKFILL THE TRENCH WITH THE EXCAVATED MATERIAL OR NO. 8 NATURAL AGGREGATE. IF THE EXCAVATED MATERIAL IS USED FOR THE BACKFILL IT SHALL BE PLACED IN THREE (3) LIFTS MINIMUM WITH EACH LIFT OF UNCOMPACTED MATERIAL NOT EXCEEDING 8" IN THICKNESS. EACH LIFT SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T99. IF NO. 8 NATURAL AGGREGATE IS USED IT SHALL BE PLACED IN ONE (1) OR MORE LIFTS WITH A VIBRATORY COMPACTOR RUN OVER THE FINAL LIFT TO CONSOLIDATE THE AGGREGATE PRIOR TO PLACING THE ASPHALT PLUG. THE FIRST LAYER OF THE BACKFILL MATERIAL SHALL BE PLACED SIMULTANEOUSLY WITH THE TRENCHING OPERATION TO HOLD THE EDGE DRAIN FLUSH AGAINST THE TRENCH WALL.

THE PREFABRICATED EDGE DRAIN SHALL BE SPLICED AS REQUIRED PRIOR TO PLACEMENT IN THE TRENCH, USING MATERIAL FURNISHED BY THE MANUFACTURER AND IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ALL MATERIAL REQUIRED FOR THE SPLICES WILL BE SUPPLIED BY THE MANUFACTURER, BUT ANY EQUIPMENT REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR. SPLICES SHALL PREVENT SEPERATION OF ADJOINING SECTIONS OF THE PREFABRICATED EDGE DRAIN PANELS.

THE UNDERDRAIN OUTLETS SHALL BE PLACED IN ACCORDANCE WITH ITEM 603 USING OUTLET FITTINGS. THE MANUFACTURER SHALL SUPPLY OUTLET FITTINGS WHICH WILL MAKE THE TRANSITION BETWEEN THE PREFABRICATED EDGE DRAIN AND THE OUTLET PIPE.

THE OUTLETS FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAIN. THE OUTLETS ON CRACK AND SEAT PROJECTS SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO CRACKING AND SEATING THE EXISTING PAVEMENT.

METHOD OF MEASUREMENT : COMPLETED AND ACCEPTED UNDERDRAINS WILL BE MEASURED BY THE LINEAR FOOT.

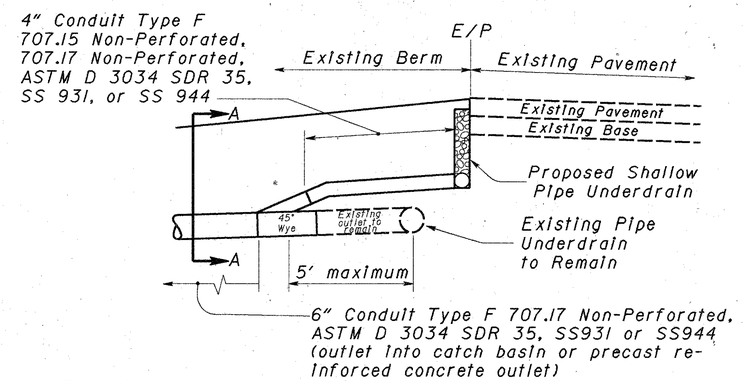
BASIS OF PAYMENT : WORK COMPLETED AND ACCEPTED UNDER THIS ITEM AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 605 - SHALLOW UNDERDRAIN, AS PER PLAN. WHICH PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; REMOVING AND DISPOSING ALL SURPLUS EXCAVATION IN ACCORDANCE WITH 203; FOR FURNISHING MATERIALS, INCLUDING MATERIAL FOR SPLICES; OUTLET FITTINGS AND ITEM 301; FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

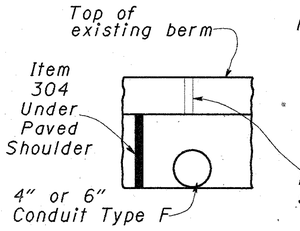
ITEM 605 - SHALLOW UNDERDRAIN, AS PER PLAN

2-5-93

COL-11-9.63

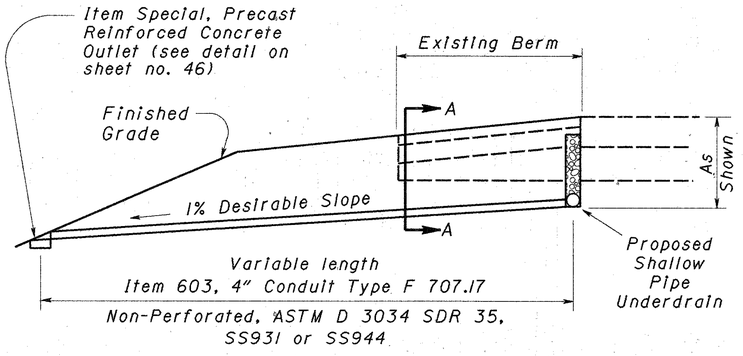
OUTLET DETAILS





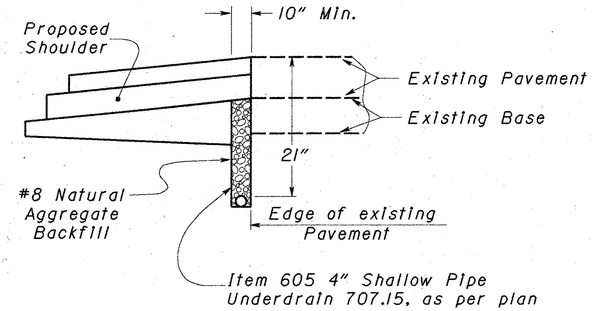
SECTION A-A

NOTE:
The cost of the 4" conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains be included with the cost of the 6" conduit Type F beyond the existing underdrain.



NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used between the underdrain & catch basin.

PIPE UNDERDRAIN DETAIL



DESCRIPTION : THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

MATERIALS : THE UNDERDRAIN SHALL BE A PIPE UNDERDRAIN SYSTEM PER ITEM 605. THE OUTLETS FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAIN TO DRAIN THE SUBBASE AND SUBGRADE. ALL PIPE BENDS AND BRANCHES NEEDED TO CONNECT THE PROPOSED UNDERDRAIN TO THE PROPOSED OUTLET OR TO AN EXISTING UNDERDRAIN SHALL BE MANUFACTURED FITTINGS.

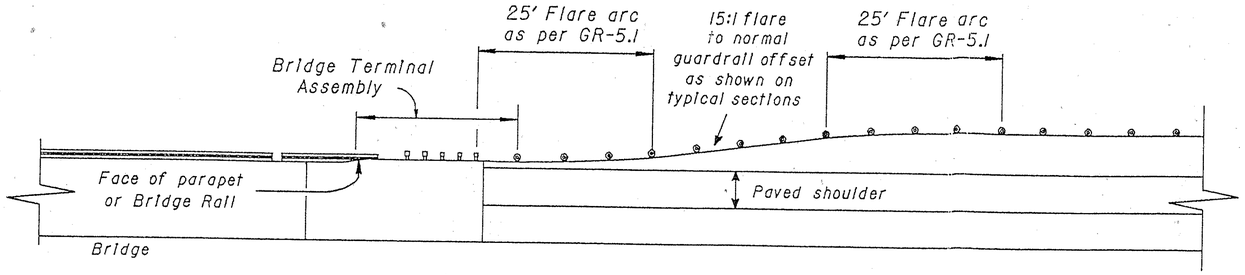
METHOD OF MEASUREMENT : COMPLETED AND ACCEPTED UNDERDRAINS WILL BE MEASURED BY THE LINEAR FOOT IN PLACE.

BASIS OF PAYMENT : WORK COMPLETED AND ACCEPTED UNDER THIS ITEM AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 605 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN. THE PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; FOR FURNISHING MATERIALS, INCLUDING MATERIAL FOR OUTLET FITTINGS, FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTIALS NECESSARY TO COMPLETE THE WORK.

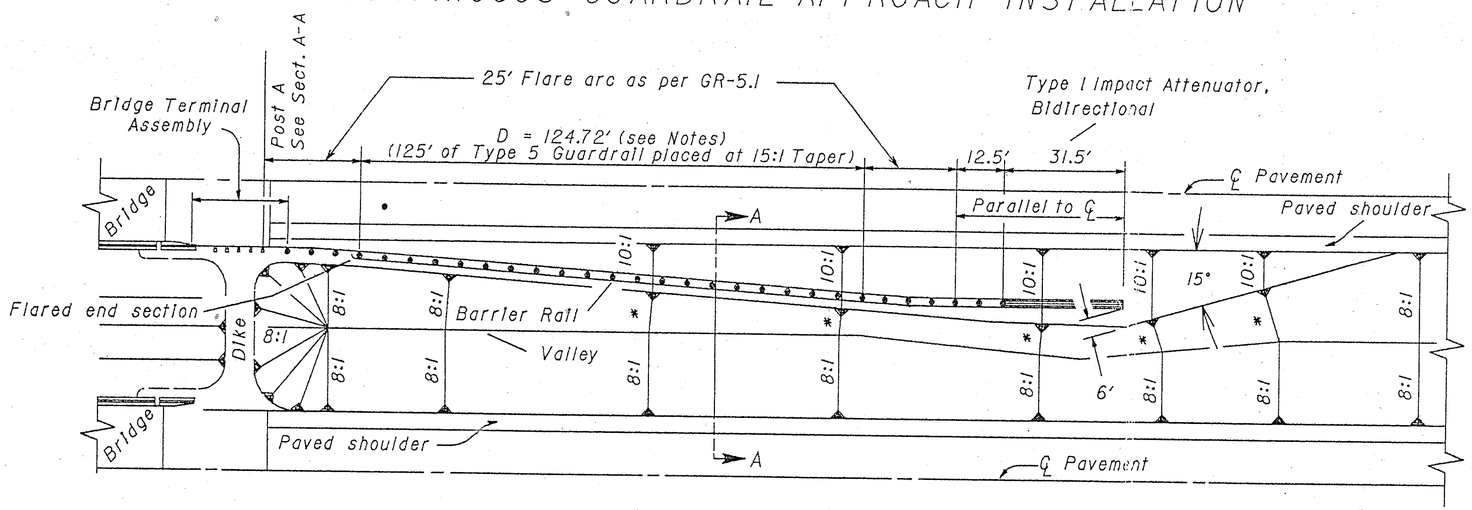
ITEM 605 - 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN

2-5-93

COL-11-9.63

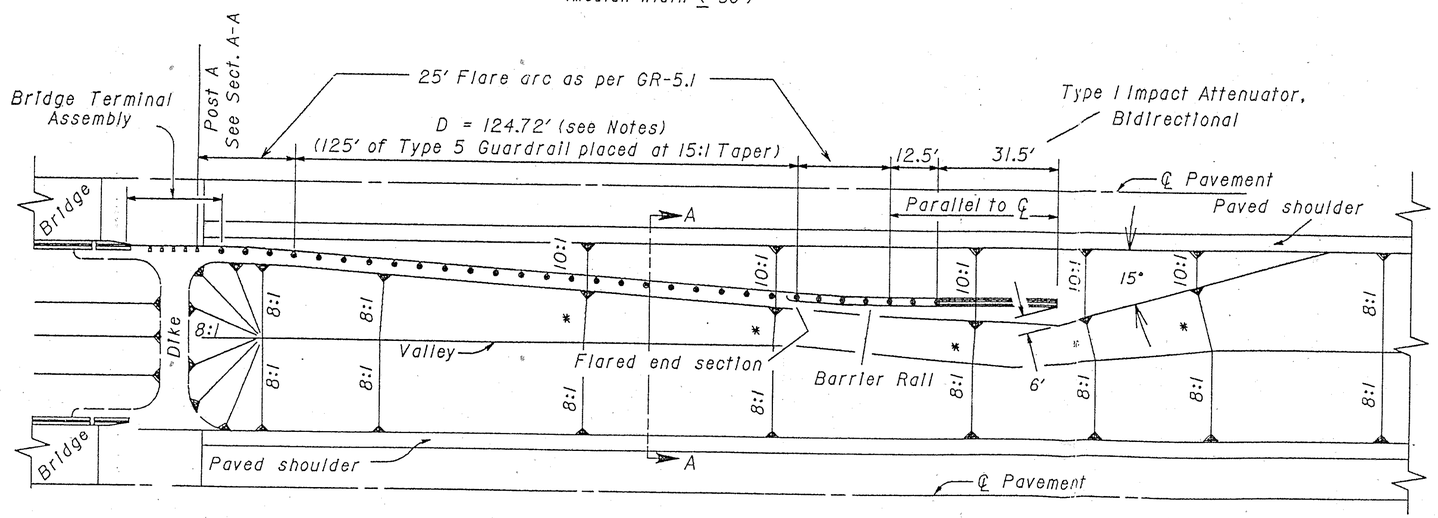


CONTINUOUS GUARDRAIL APPROACH INSTALLATION



DESIGN A
(Median Width ≤ 50')

* Slope varies



DESIGN B
(Median Width > 50')

* Slope varies

INTRODUCED GUARDRAIL APPROACH INSTALLATION

(Designs A and B shown for 4 to 10 foot Paved Median Shoulder Width.)

NOTES

DESIGN A is to be used for median widths equal to or less less than 50 ft. Median widths of greater than 50 ft. are to use Design B.

TAPER DISTANCE "D" is shown for a median shoulder from 4 ft. to 10 ft. For facilities constructed with a median shoulder width greater than 10 ft., distance "D" becomes 99.78 ft. (100.0 ft. of Type 5 Guardrail placed at 15:1 Taper).

STORM SEWERS and catch basins shall be constructed only at locations shown on the plan and profile sheets.

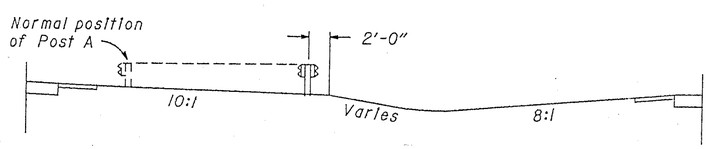
PAYMENT ITEMS for Design A and Design B are as follows:

Paved Median Shoulders from 4 to 10 feet (see plan views).

PAYMENT ITEMS	UNIT	DESIGN A	DESIGN B
Bridge Terminal Assembly, Type 1 or Type 3	EA	1	1
Guardrail, Type 5	LIN. FT.	43.75	168.75
Type 5 Guardrail, Barrier Design	LIN. FT.	162.5	37.5
Impact Attenuator, Type 1, Bidirectional	EA	1	1

Paved Median Shoulders of greater than 10 feet (not Shown).

PAYMENT ITEMS	UNIT	DESIGN A	DESIGN B
Bridge Terminal Assembly, Type 1 or Type 3	EA	1	1
Guardrail, Type 5	LIN. FT.	43.75	143.75
Type 5 Guardrail, Barrier Design	LIN. FT.	137.5	37.5
Impact Attenuator, Type 1, Bidirectional	EA	1	1



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at Post A is above the edge of pavement at that point.

SECTION A-A

3-18-94

GUARDRAIL AT BRIDGES

COL-11-9.63

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TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

References to supplemental specifications 857, 858, 861, 957, 958 and 961 on the Traffic Control Standard Construction Drawings in these plans shall be considered to read as respective references to Items 630, 631, 633, 730, 731 and 733.
References to Item 608, 4" Concrete Walk On The Traffic Control Standard Construction Drawing TC-83.20 In these plans shall be considered to read Item 633, Controller Work Pad.

ITEM 630 - REFURBISHING SIGN, AS PER PLAN

This item of work shall consist of cleaning, repair panel if needed, replacement of damaged or missing copy and border, remove existing route shield and furnish and install new route shield on existing sign. The Contractor shall clean the existing sign by using a cleaning solution that will not damage the reflectivity of the existing sign. The Contractor shall replace all damaged or missing copy with the same type of copy used on the existing sign. The Contractor shall remove the existing route shield from the existing sign before cleaning the sign. The Contractor shall then place a new route shield in the same location on the sign as the existing route shield. The new route shield shall be furnished as part of this item.

All new route shields and copy shall be the same size as existing.

All material removed from the existing sign shall be disposed of by the Contractor as part of this Item.

All material, labor and incidentals required to do the work shall be included in the unit bid per square foot of existing sign refurbished.

TRAFFIC CONTROL - GENERAL NOTES

COL-11-9.63

TRAFFIC

JM 30110963

SHEET NUMBER								PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NO.
9	17			53	66		67									
															MAINTENANCE OF TRAFFIC	
14											614	12460	14	EACH	WORK ZONE MARKING SIGN	
42											614	12470	42	EACH	WORK ZONE SPEED LIMIT SIGN	
662											614	12800	662	EACH	TEMPORARY RAISED PAVEMENT MARKER	
206											614	13300	206	EACH	BARRIER REFLECTOR, TYPE B	
214											614	13350	214	EACH	OBJECT MARKER	
							28.73				614	20000	28.73	MILE	TEMPORARY LANE LINE, CLASS I	
0.06											614	21000	0.06	MILE	TEMPORARY CENTER LINE, CLASS I	
0.06							57.47				614	22000	57.53	MILE	TEMPORARY EDGE LINE, CLASS I	
64											SPECIAL	61412500	64	SF	REPLACEMENT SIGN	
10											SPECIAL	61412600	10	EACH	REPLACEMENT DRUM	
20											614	26000	20	LF	TEMPORARY STOP LINE, CLASS I	
							1200				614	28000	1200	LF	TEMPORARY GORE MARKING, CLASS II	
121											615	25001	121	SY	TEMPORARY PAVEMENT, CLASS B, AS PER PLAN	
4940											622	40020	4940	LF	PORTABLE CONCRETE BARRIER, 32"	
															TRAFFIC CONTROL	
							58				620	10300	58	EACH	DELINEATOR, TYPE C, POST MOUNTED	
							163				620	31200	163	EACH	DELINEATOR REMOVED FOR DISPOSAL	
					4						620	40300	4	EACH	REFLECTOR, TYPE D	
							737				621	00100	737	EACH	RAISED PAVEMENT MARKER	
				5.72							630	00100	5.72	CY	CONCRETE FOR EMBEDDED FOUNDATION	
				130							630	02100	130	LF	GROUND MOUNTED SUPPORT, NO. 2 POST	
				408							630	03100	408	LF	GROUND MOUNTED SUPPORT, NO. 3 POST	
				186	56						630	04100	241	LF	GROUND MOUNTED SUPPORT, NO. 4 POST	
				82							630	06500	82	LF	GROUND MOUNTED SUPPORT, W6X9 BEAM	
				82							630	07600	82	LF	GROUND MOUNTED SUPPORT, W10X12 BEAM	
				30							630	08004	30	LF	ONE WAY SUPPORT, NO. 3 POST	
				6							630	09000	6	EACH	BREAKAWAY BEAM CONNECTION	
				350	56						630	80100	406	SF	SIGN, FLAT SHEET	
				201							630	80102	201	SF	SIGN, FLAT SHEET, TYPE G	
				80							630	80200	80	SF	SIGN, EXTRUSHEET	
				85							630	80204	85	SF	SIGN, EXTRUSHEET, TYPE G	
				5							630	82000	5	EACH	SIGN BACKING ASSEMBLY	
				1288							630	82701	1288	SF	REFURBISHING SIGN, AS PER PLAN	
				83	8						630	84900	91	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
				1							630	85400	1	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
				62	8						630	86002	70	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
				2							630	86102	2	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
							21.31				642	00102	21.31	MILE	EDGE LINE, TYPE 2	
							9.7				642	00202	9.7	MILE	LANE LINE, TYPE 2	
							0.01				642	00302	0.01	MILE	CENTER LINE, TYPE 2	
							1490				642	00402	1490	LF	CHANNELIZING LINE, TYPE 2	
							190				642	00502	190	LF	STOP LINE, TYPE 2	
							550				642	00702	550	LF	TRANSVERSE LINE, TYPE 2	
							80				642	00902	80	SF	ISLAND MARKING, TYPE 2	
	263										802	00100	263	EACH	BARRIER REFLECTOR, TYPE A	
	11										802	00200	11	EACH	BARRIER REFLECTOR, TYPE B	

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL - GENERAL SUMMARY

COL-11-9.63

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	* Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced. WORK REQUIRED	SIGN CODE	SIGN DIMENSION	630																										
							SIGN CLEARANCE	SUPPORT LENGTHS			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL		REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	SIGNS, FLAT SHEET	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED SUPPORTS, NO. 2 POST	GROUND MOUNTED SUPPORTS, NO. 3 POST	GROUND MOUNTED SUPPORTS, NO. 4 POST	ONE WAY SUPPORTS, NO. 3 POST	GROUND MOUNTED SUPPORTS, S4x7.7	GROUND MOUNTED SUPPORTS, W6x9	GROUND MOUNTED SUPPORTS, W10x12	GROUND MOUNTED SUPPORTS, W8x18	GROUND MOUNTED SUPPORTS, W10x22	SIGN ATTACHMENT ASSEMBLY	BREAKAWAY BEAM CONNECTION	CONCRETE FOR EMBEDDED FOUNDATIONS	SIGN BACKING ASSEMBLY	REFURBISHING SIGN, AS PER PLAN
						INCHES	FEET	LT.	CNTR.	RT.	EACH		EACH	EACH	EACH	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	CU. YD.	EACH	SQ. FT.
54	1	200+70	Lt.	Remove Signs and Support							2			1																			
	1	200+75	Lt.	Erect New Sign On New Support	M-2-36	36x36	14.0		14.8							9.0						14.8											
	1	200+75	Lt.	Erect New Sign On New Support	M-39-36	36x18										4.5																	
54	2	214+08	Rt.	*																													142.5
55	3	222+95	Rt.	*																													30
	4	223+32	Rt.	Remove Sign and Support							1			1																			
	4	223+32	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.2							1.08				11.2													
	5	223+32	Lt.	Remove Sign and Support							1			1																			
	5	223+32	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.5							1.08				11.5													
	6	224+00	Lt.	Remove Sign and Supports							1			2																			
	6	224+05	Lt.	Erect New Sign On New Supports	W-49R-48	48x48	14.0	16.3		15.8						16.0					32.1												
	7	230+59	Lt.	*																													30
	8	235+28	Lt.	Remove Sign and Supports							1			2																			
	8	235+33	Lt.	Erect New Sign On New Supports	W-97-48	48x60	14.0	17.3		15.8						20.0						33.1											
	9	235+52	Rt.	Remove Sign and Supports							1			2																			
	9	235+57	Rt.	Erect New Sign On New Supports	W-49R-48	48x48	14.0	17.1		18.3						16.0						35.4											
55	10	239+53	Lt.	*																													142.5
56	11	255+50	Lt.	Erect New Sign On New Supports	GSP	120x48	21.0	17.0		22.0									40.0								39.0				2	2.20		
	12	260+97	Lt.	*																													120
	13	264+60	Rt.	Remove Signs and Support							2			1																			
	13	264+65	Rt.	Erect New Sign On New Support	M-2-36	36x36	14.0		15.8							9.0						15.8											
	13	264+65	Rt.	Erect New Sign On New Support	M-39-36	36x18										4.5																	
	14	269+03	Lt.	Remove Sign and Supports									1		2																		
56	14	269+08	Lt.	Erect New Sign On New Supports	GSS-A	120x54	14.0	22.3		20.3									45.0								42.6					2.20		
57	15	275+40	Lt.	Remove Sign and Support							1			1																			
	15	275+40	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.0							1.08				12.0													
	16	275+40	Rt.	Remove Sign and Support							1			1																			
	16	275+40	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.5							1.08				11.5													
	17	276+93	Rt.	Remove Signs and Supports							2			4																			
	17	276+98	Rt.	Erect New Sign On New Supports	R-10-48	48x60	30.0	20.0		21.0						20.0		40.0								41.0				2	0.66		
	17	276+98	Rt.	Erect New Sign On New Supports	R-9A-48	48x60										20.0																	
	18	282+98	Lt.	*																													120
57	19	285+08	Rt.	*																													56
59	20	328+32	Lt.	Remove Sign and Support							1			1																			
	20	328+32	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.8							1.08				11.8													
	21	328+32	Rt.	Remove Sign and Support							1			1																			
59	21	328+32	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.5							1.08				11.5													
60	22	369+50	Rt.	Remove Signs and Supports							2			4																			
60	22	369+55	Rt.	Erect New Sign On New Supports	W-42-48	48x48	14.0	17.1		18.5						16.0						35.6											
60	22	369+55	Rt.	Erect New Sign On New Supports (Median)	W-42-48	48x48	12.0	16.1		15.8						16.0					31.9												
61	23	379+90	Rt.	Remove Sign and Support							1			1																			
	23	379+90	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		11.6							1.08				11.6													
	24	381+15	Lt.	Remove Sign and Support							1			1																			
61	24	381+15	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.0							1.08				12.0													
62	25	410+07	Rt.	*																													96
62	26	424+92	Lt.	*																													56
63	27	434+05	Lt.	Remove Sign and Support							1			1																			
	27	434+05	Lt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.0							1.08				12.0													
	28	434+05	Rt.	Remove Sign and Support							1			1																			
	28	434+05	Rt.	Erect New Sign On New Support	N-45-12	12x13	14.0		12.0							1.08				12.0													
	29	434+22	Rt.	*																													180
	30	434+95	Lt.	Remove Signs and Supports							2			4																			
	30	435+00	Lt.	Erect New Sign On New Supports	R-10-48	48x60	30.0	20.0		21.0						20.0		40.0								41.0				2	0.66		
63	30	435+00	Lt.	Erect New Sign On New Supports	R-9A-48	48x60										20.0																	
64	31	227+55 Ramp A	Rt.	Remove Route Sign Assemblies							6																						
	31	227+55 Ramp A	Rt.	*																													78
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-25-21	21x15										2.19															1		
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-2-24-3	30x24										5.0																	
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-24-21	21x15										2.19															1		
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-1-24	24x24										4.0																	
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-40-24	24x12										2.0																	
	31	227+50 Ramp A	Rt.	Erect New Sign On Existing Supports	M-8-24	24x12										2.0																	
	32	229+97 Ramp A	Rt.	Remove Signs and Support							2			1																			
	32	229+92 Ramp A	Rt.	Erect New Sign On New Supports	N-19A-30	30x18	12.0		15.6							3.75						15.6											
	32	229+92 Ramp A	Rt.	Erect New Sign On New Supports	N-15-36	36x8										2.0																	
	32	229+92 Ramp A	Rt.	Erect New Sign On New Supports	N-18BB-36	36x36										9.0																	
	32	229+92 Ramp A	Rt.	Erect New Sign On New Supports	R-41A-36	36x24											6.0																
	33	229+97 Ramp A	Lt.	Remove Sign and Support							1			1																			
	33	229+92 Ramp A	Lt.	Erect New Sign On New Support	R-41A-36	36x24	12.0		13.5								6.0				13.5												
	34	232+23 Ramp A	Rt.	Remove Signs and Supports							4			2																			
	34	232+23 Ramp A	Rt.	Erect New Sign On New Supports	R-1-48	48x48	12.0	14.1		14.7							16.0				28.8												
64	34	232+23 Ramp A	Rt.	Erect New Sign On New Supports	R-41B-36	36x36											9.0																

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL - QUANTITIES

COL-11-9.63

51
74

JM 30110924

630

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	* Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced. WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL		REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	SIGNS, FLAT SHEET	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED, SUPPORTS, NO. 2 POST	GROUND MOUNTED, SUPPORTS, NO. 3 POST	GROUND MOUNTED, SUPPORTS, NO. 4 POST	ONE WAY SUPPORTS, NO. 3 POST	GROUND MOUNTED, SUPPORTS, S4x7.7	GROUND MOUNTED, SUPPORTS, W6x9	GROUND MOUNTED, SUPPORTS, W10x12	GROUND MOUNTED, SUPPORTS, W8x18	GROUND MOUNTED, SUPPORTS, W10x22	SIGN ATTACHMENT ASSEMBLY	BREAKAWAY BEAM CONNECTION	CONCRETE FOR EMBEDDED FOUNDATIONS	SIGN BACKING ASSEMBLY	REFURBISHING SIGN, AS PER PLAN
						INCHES	FEET	LT.	CNTR.	RT.	EACH		EACH	EACH	EACH	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	CU. YD.	EACH	SQ. FT.
64	35	232+23 Ramp A	Lt.	Remove Signs and Supports							2			2																		
	35	232+23 Ramp A	Lt.	Erect New Sign On New Supports	R-41B-36	36x36	12.0	14.7		14.0							9.0				14.0		14.7									
	35	232+23 Ramp A	Lt.	Erect New Sign On New Supports	R-43L-48	48x18											6.0															
	35	232+23 Ramp A	Lt.	Erect New Sign On New Supports	R-43L-48	48x18											6.0															
	36	219+73 Ramp C	Rt.	Remove Sign and Support							1			1																		
	36	219+78 Ramp C	Rt.	Erect New Sign On New Support	R-15A-36	36x36	12.0		13.3							9.0					13.3											
	37	219+50 Ramp C	Cntr	Remove Sign and Support							1			1																		
	37	219+55 Ramp C	Cntr	Erect New Sign On New Support	R-37R-24	24x30			13.0								5.0				13.0											
	38	219+18 Ramp C	Lt.	Remove Signs and Supports							4			2																		
	38	219+18 Ramp C	Lt.	Erect New Sign On New Supports	R-1-48	48x48	12.0	14.9		14.1							16.0				14.1		14.9									
	38	219+18 Ramp C	Lt.	Erect New Sign On New Supports	R-41B-36	36x36											9.0															
	38	219+18 Ramp C	Lt.	Erect New Sign On New Supports	R-43R-48	48x18											6.0															
	38	219+18 Ramp C	Lt.	Erect New Sign On New Supports	R-43L-48	48x18											6.0															
	39	222+20 Ramp C	Lt.	Remove Signs and Support							2			1																		
	39	222+25 Ramp C	Lt.	Erect New Sign On New Supports	N-19A-30	30x18	12.0		15.7							3.75						15.7										
	39	222+25 Ramp C	Lt.	Erect New Sign On New Supports	N-15-36	36x8										2.0																
	39	222+25 Ramp C	Lt.	Erect New Sign On New Supports	N-18BB-36	36x36										9.0																
	39	222+25 Ramp C	Lt.	Erect New Sign On New Supports	R-41A-36	36x24											6.0															
	40	227+71 Ramp C	Lt.	Remove Sign and Support							1			1																		
	40	227+75 Ramp C	Lt.	Erect New Sign On New Support	R-41A-36	36x24	12.0		13.5								6.0				13.5											
	40	227+71 Ramp C	Rt.	Remove Sign and Support							1			1																		
	40	227+75 Ramp C	Rt.	Erect New Sign On New Support	R-41A-36	36x24	12.0		13.2								6.0				13.2											
	41	221+30 to 229+50	Cntr	Remove Sign and Support							11			11																		
	41	221+30 Ramp C	Cntr	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	222+20 Ramp C	Cntr	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	223+00 Ramp C	Cntr	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	223+80 Ramp C	Cntr	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	224+60 Ramp C	Cntr	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	225+40 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36			13.5								7.5				13.5											
	41	226+23 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36	12.0		13.5								7.5				13.5											
	41	227+05 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36	12.0		13.8								7.5				13.8											
	41	227+86 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36	12.0		13.8								7.5				13.8											
	41	228+67 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36	12.0		13.8								7.5				13.8											
	41	229+53 Ramp C	Rt.	Erect New Sign On New Support	W-33-30	30x36	12.0		13.6								7.5				13.6											
	42	230+95 Ramp D	Rt.	Remove Sign and Support							1			1																		
64	42	231+00 Ramp D	Rt.	Erect New Sign On New Support	R-15A-36	36x36	12.0		14.0							9.0					14.0											
65	43	42+92 S.R. 154	Rt.	Remove Signs and Support							2			1																		
	43	42+97 S.R. 154	Rt.	Erect New Sign On New Support	M-2-24	24x24	12.0		13.8							4.0					13.8											
	43	42+97 S.R. 154	Rt.	Erect New Sign On New Support	M-17-24	24x12										2.0																
	44	43+97 S.R. 154	Rt.	Remove Sign and Support							1			1																		
	44	43+97 S.R. 154	Rt.	Erect New Sign On New Support	N-45-12	12x13	12.0		12.3							1.08				12.3												
	45	45+92 S.R. 154	Rt.	*																												22.5
	46	49+92 S.R. 154	Rt.	*																												48
	47	53+88 S.R. 154	Lt.	Remove Signs and Support							2			1																		
	47	53+83 S.R. 154	Lt.	Erect New Sign On New Support	M-2-24-3	30x24	12.0		14.6							5.0					14.6											
	47	53+83 S.R. 154	Lt.	Erect New Sign On New Support	M-40-24	24x12										2.0																
	48	54+02 S.R. 154	Rt.	*																												22.5
	49	55+75 S.R. 154	Lt.	*																												24
	49	55+75 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-38-24	24x12										2.0															1	
	49	55+75 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-2-24	24x24										4.0																
	49	55+75 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-24-21	21x15										2.19																
	50	63+12 S.R. 154	Rt.	*																												24
	51	63+20 S.R. 154	Rt.	*																												48
	52	63+95 S.R. 154	Lt.	Remove Route Sign Assemblies							9																					
	52	63+95 S.R. 154	Lt.	*																												48
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-26-21	21x15										2.19															1	
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-2-24	24x24										4.0																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-38-24	24x12										2.0																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-37-24	24x12										2.0																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-2-24	24x24										4.0																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-24L-21	21x15										2.19																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-24R-21	21x15										2.19															1	
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-2-24-3	30x24										5.0																
	52	63+95 S.R. 154	Lt.	Erect New Sign On Existing Supports	M-37-24	24x12										2.0																
	53	67+15 S.R. 154	Rt.	Remove Signs and Support							2			1																		
	53	67+20 S.R. 154	Rt.	Erect New Sign On New Support	M-2-24-3	30x24	12.0		13.5							5.0					13.5											
65	53	67+20 S.R. 154	Rt.	Erect New Sign On New Support	M-39-24	24x12										2.0																

CALCULATED JM
CHECKED JCN

TRAFFIC CONTROL - QUANTITIES

COL-11-9.63

52
74

JM 30110924

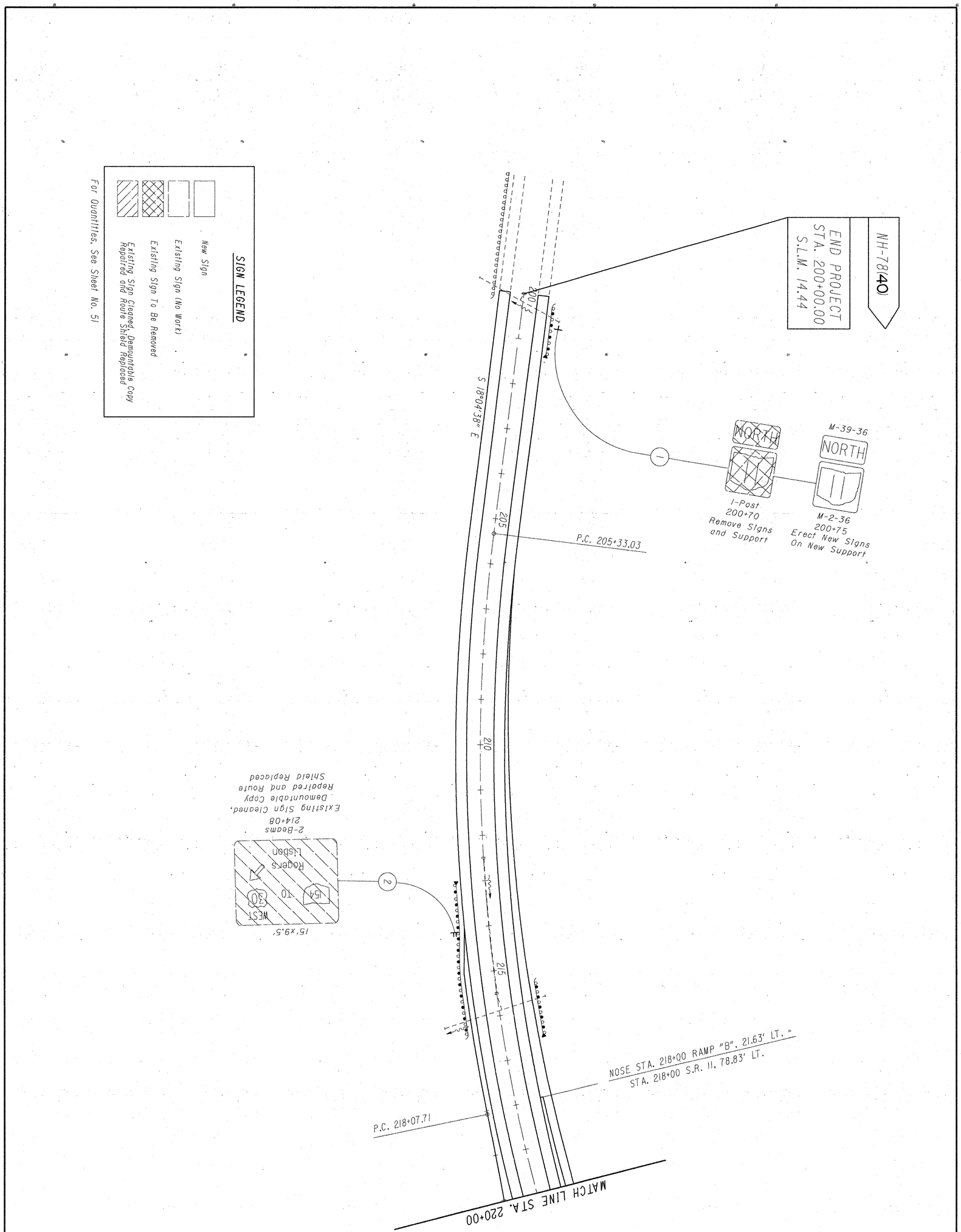
SHEET NO.	REF. NO.	STATION	SIDE OF ℄	* Existing Sign Cleaned, Demountable Copy Repaired and Route Shield Replaced. WORK REQUIRED	SIGN CODE	SIGN DIMENSION	630																										
							SIGN CLEARANCE	SUPPORT LENGTHS			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL		REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	SIGNS, FLAT SHEET	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED SUPPORTS, NO. 2 POST	GROUND MOUNTED SUPPORTS, NO. 3 POST	GROUND MOUNTED SUPPORTS, NO. 4 POST	ONE WAY SUPPORTS, NO. 3 POST	GROUND MOUNTED SUPPORTS, S4x7.7	GROUND MOUNTED SUPPORTS, W6x9	GROUND MOUNTED SUPPORTS, W10x12	GROUND MOUNTED SUPPORTS, W8x18	GROUND MOUNTED SUPPORTS, W10x22	SIGN ATTACHMENT ASSEMBLY	BREAKAWAY BEAM CONNECTION	CONCRETE FOR EMBEDDED FOUNDATIONS	SIGN BACKING ASSEMBLY	REFURBISHING SIGN, AS PER PLAN
						INCHES	FEET	LT.	CNTR.	RT.	EACH		EACH	EACH	EACH	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	CU. YD.	EACH	SQ. FT.
65	54	67+15 S.R. 154	Lt.	Remove Signs and Support							3			1																			
↕	54	67+20 S.R. 154	Lt.	Erect New Sign On New Support	M-26-21	21x15	12.0		14.9							2.19					14.9												
	54	67+20 S.R. 154	Lt.	Erect New Sign On New Support	M-2-24	24x24										4.0																	
	54	67+20 S.R. 154	Lt.	Erect New Sign On New Support	M-8-24	24x12										2.0																	
	55	73+40 S.R. 154	Lt.	Remove Signs and Support							2			1																			
↕	55	73+45 S.R. 154	Lt.	Erect New Sign On New Support	M-2-24	24x24	12.0		14.2							4.0					14.2												
65	55	73+45 S.R. 154	Lt.	Erect New Sign On New Support	M-17-24	24x12										2.0																	
63	56	447+02	Lt.	Remove Signs and Support							2			1																			
63	56	446+95	Lt.	Erect New Sign On New Support	M-37-36	36x18	14.0		15.5							4.5							15.5										
63	56	446+95	Lt.	Erect New Sign On New Support	M-2-36	36x36										9.0																	
TOTAL (Quantity Carried to General Summary)											83		1	62	2	349.2	200.5	80	85	129.4	407.7	185.5	29.6		82.0	81.6				6	5.72	5	1288

CALCULATED JM
CHECKED JCN

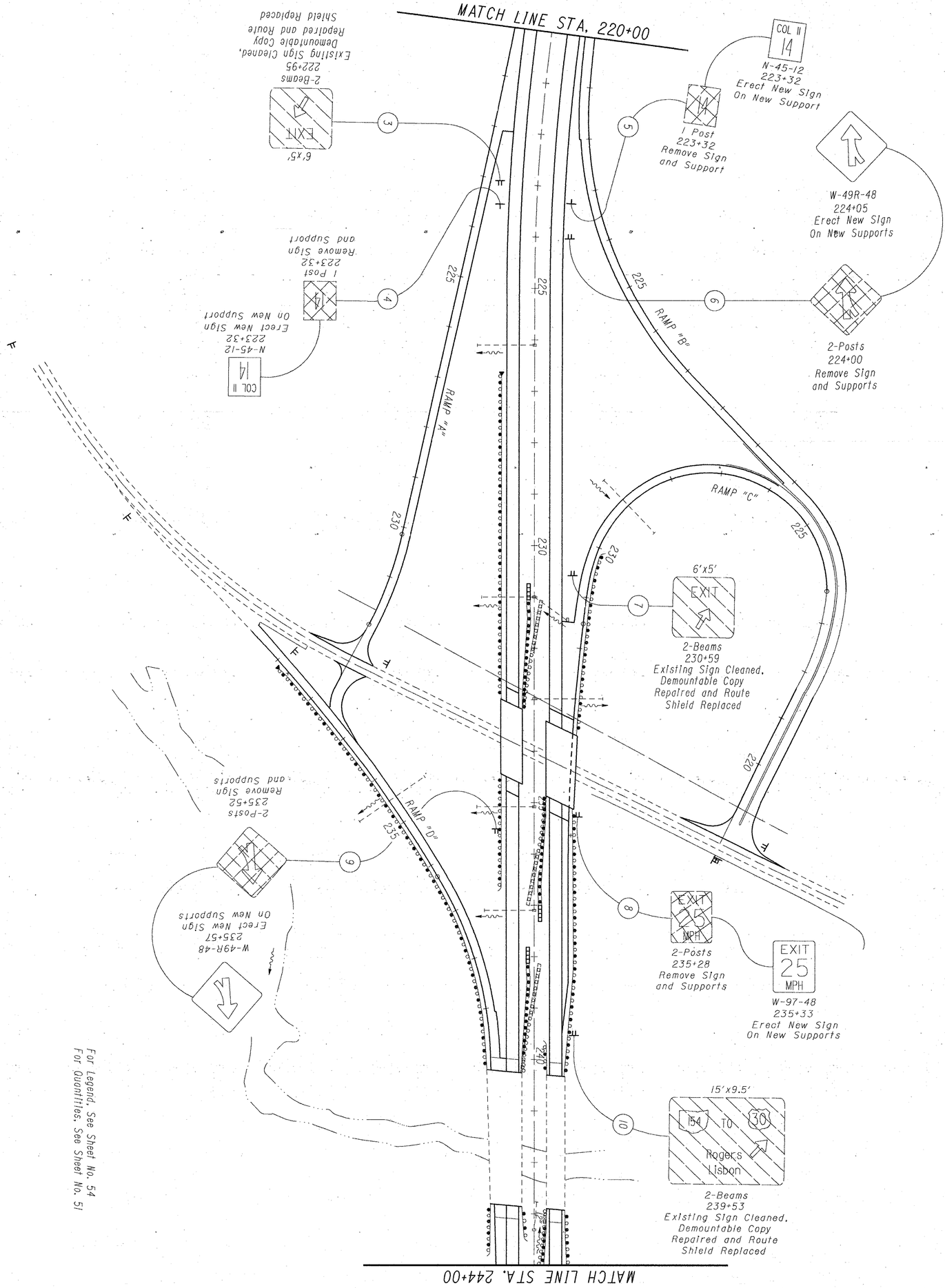
TRAFFIC CONTROL - QUANTITIES

COL-11-9.63

JM 30110924

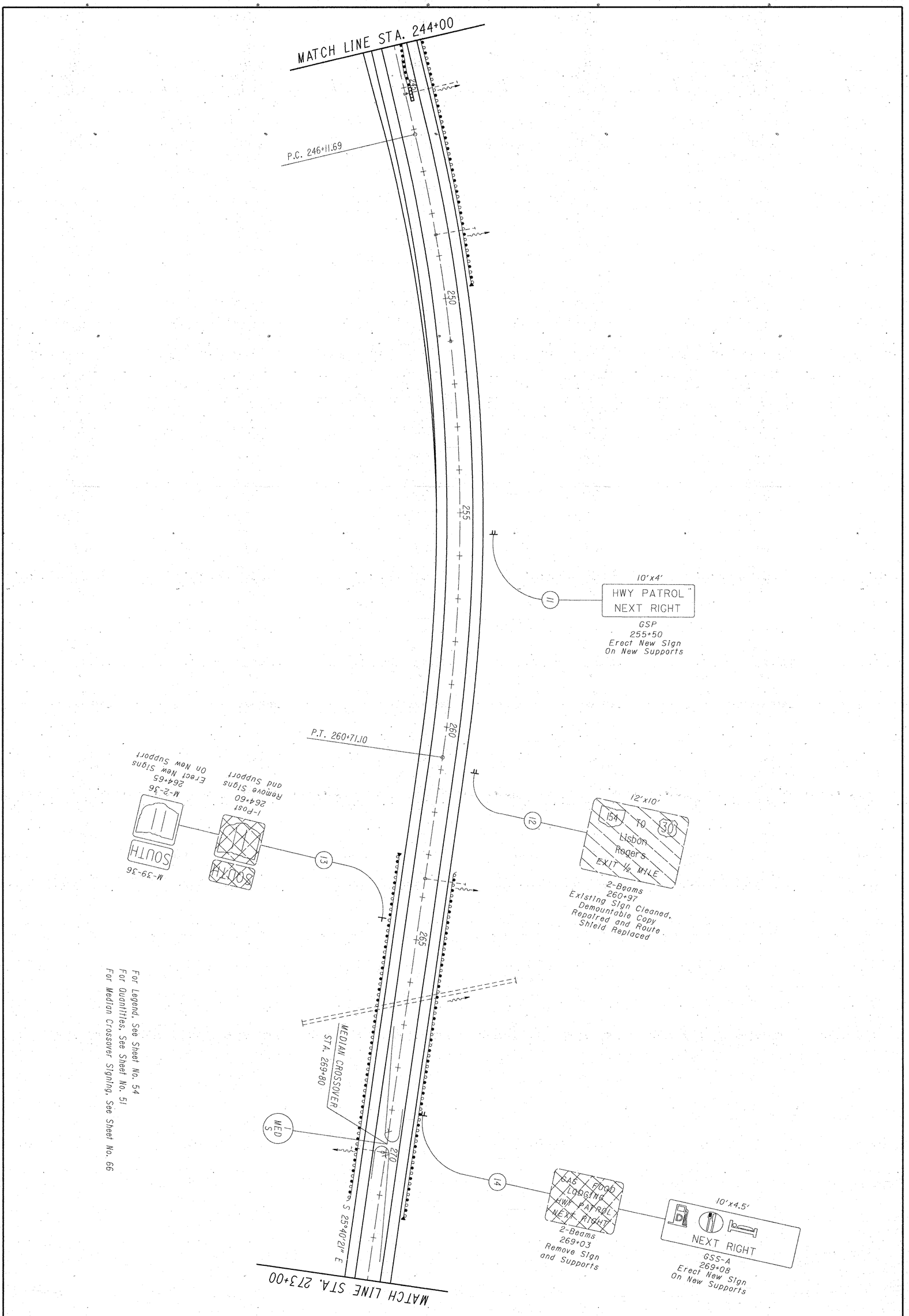


54/74	COL-11-9.63	SIGNING PLAN STA. 200+00 TO STA. 220+00	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET



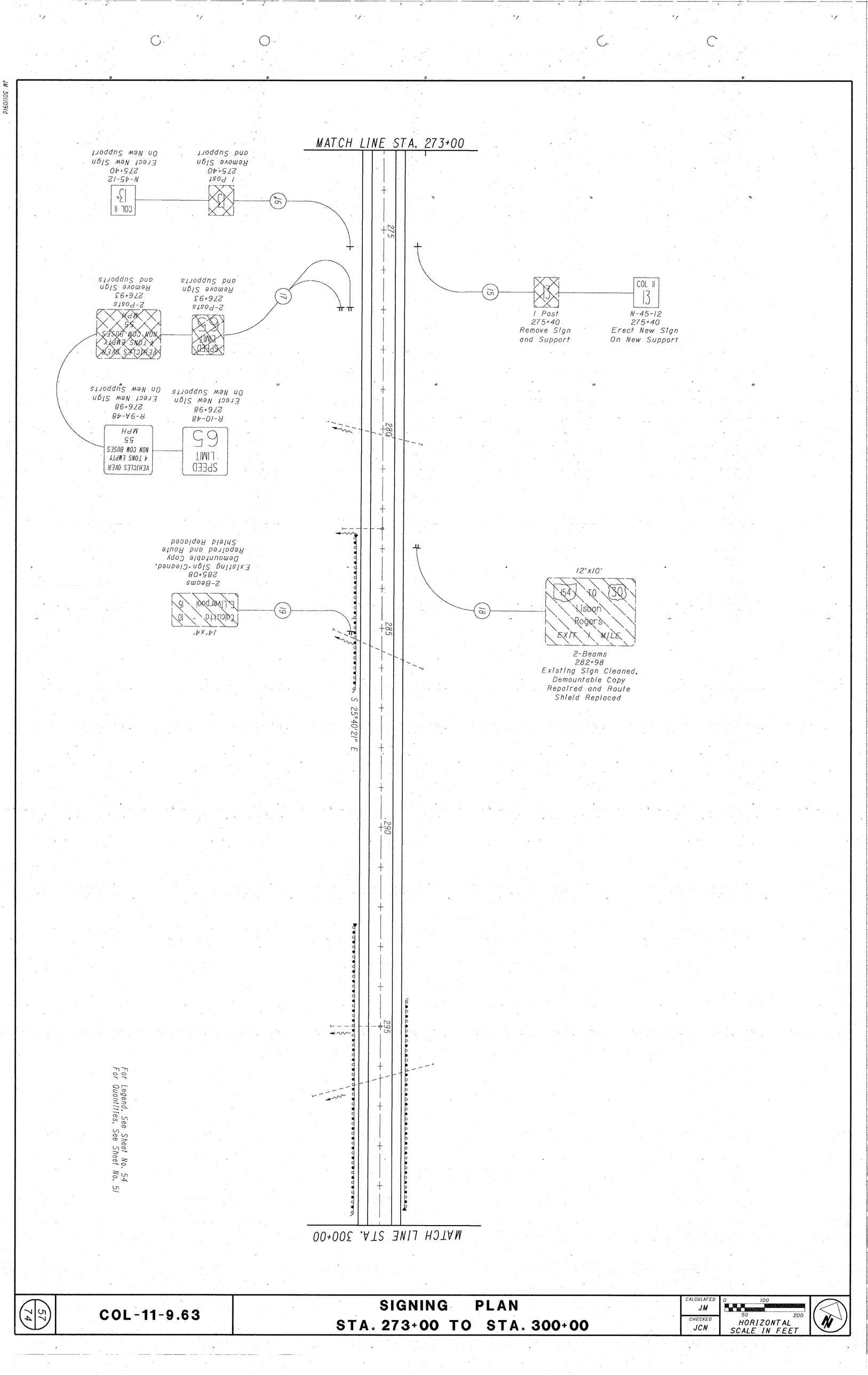
For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51

55/74	COL-11-9.63	SIGNING PLAN STA. 220+00 TO STA. 244+00	CALCULATED JM CHECKED JCN	0 100 50 200. HORIZONTAL SCALE IN FEET



For Legend, See Sheet No. 54
For Quantities, See Sheet No. 5!
For Median Crossover Signing, See Sheet No. 66

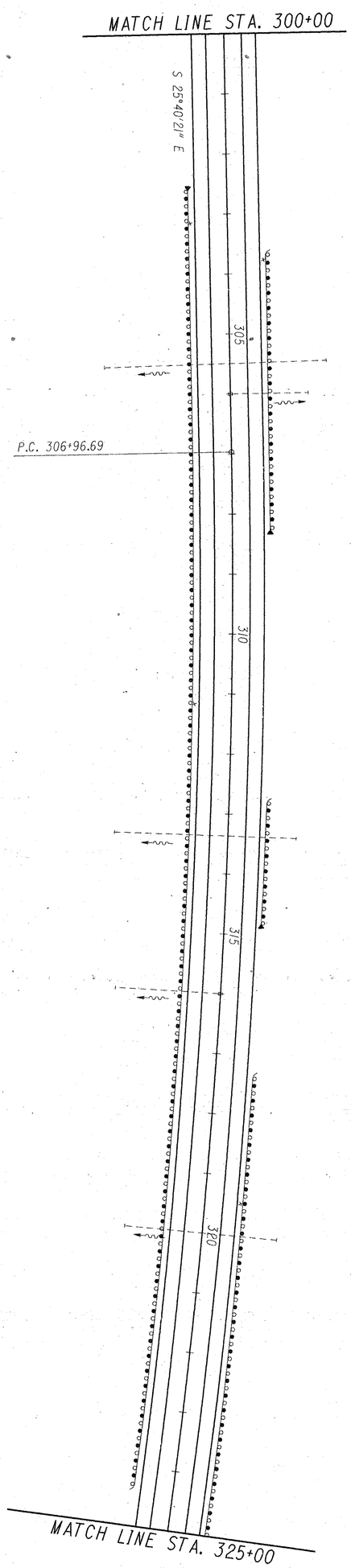
56/74	COL-11-9.63	SIGNING PLAN STA. 244+00 TO STA. 273+00	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET



For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51

57/74	COL-11-9.63	SIGNING PLAN STA. 273+00 TO STA. 300+00	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET

JM 30/10/96



P.I. STA. 326+23.49
Δ = 19°05'22" RT.
Dc = 0°30'00"
R = 11459.16'
T = 1926.80'
L = 3817.89'
E = 160.86'

58/74

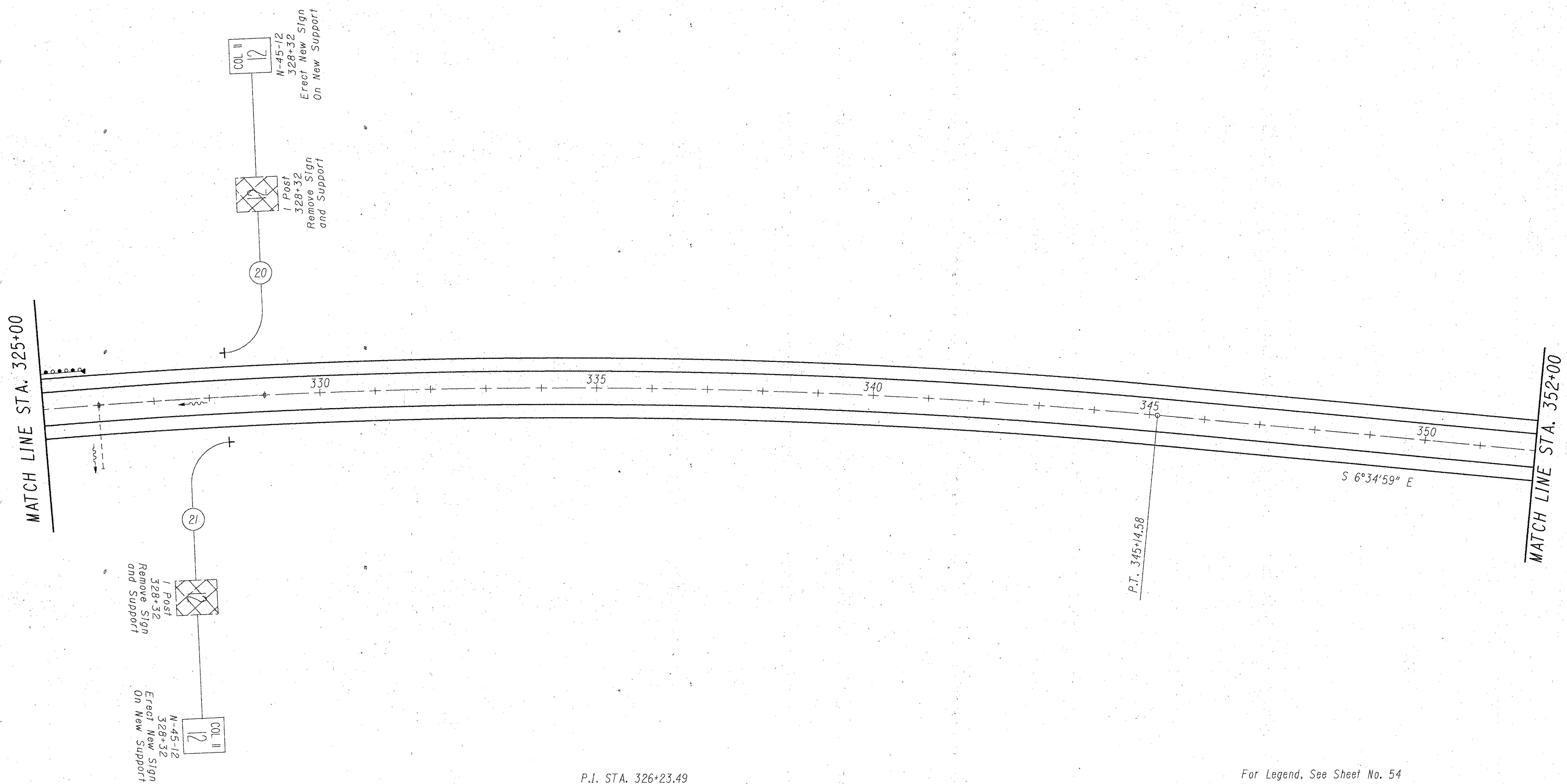
COL-11-9.63

SIGNING PLAN
STA. 300+00 TO STA. 325+00

CALCULATED JM
CHECKED JCN

0 100
50 200
HORIZONTAL SCALE IN FEET

N



P.I. STA. 326+23.49
△ = 19°05'22" RT.
Dc = 0°30'00"
R = 11459.16'
T = 1926.80'
L = 3817.89'
E = 160.86'

For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51

HORIZONTAL SCALE IN FEET (0, 50, 100, 200)

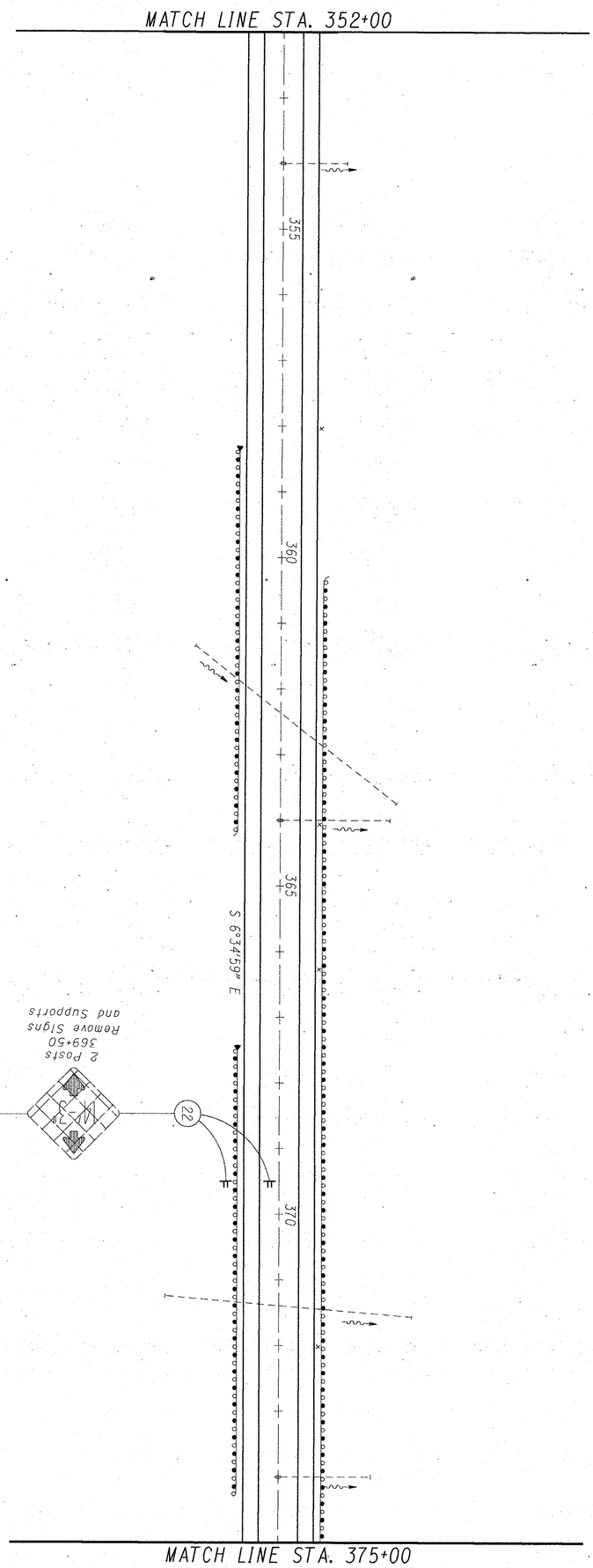
CALCULATED JM
CHECKED JCN

SIGNING PLAN
STA. 325+00 TO 352+00

COL-11-9.63

JM 3011091f

JM 3/01/96



For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51

60/74

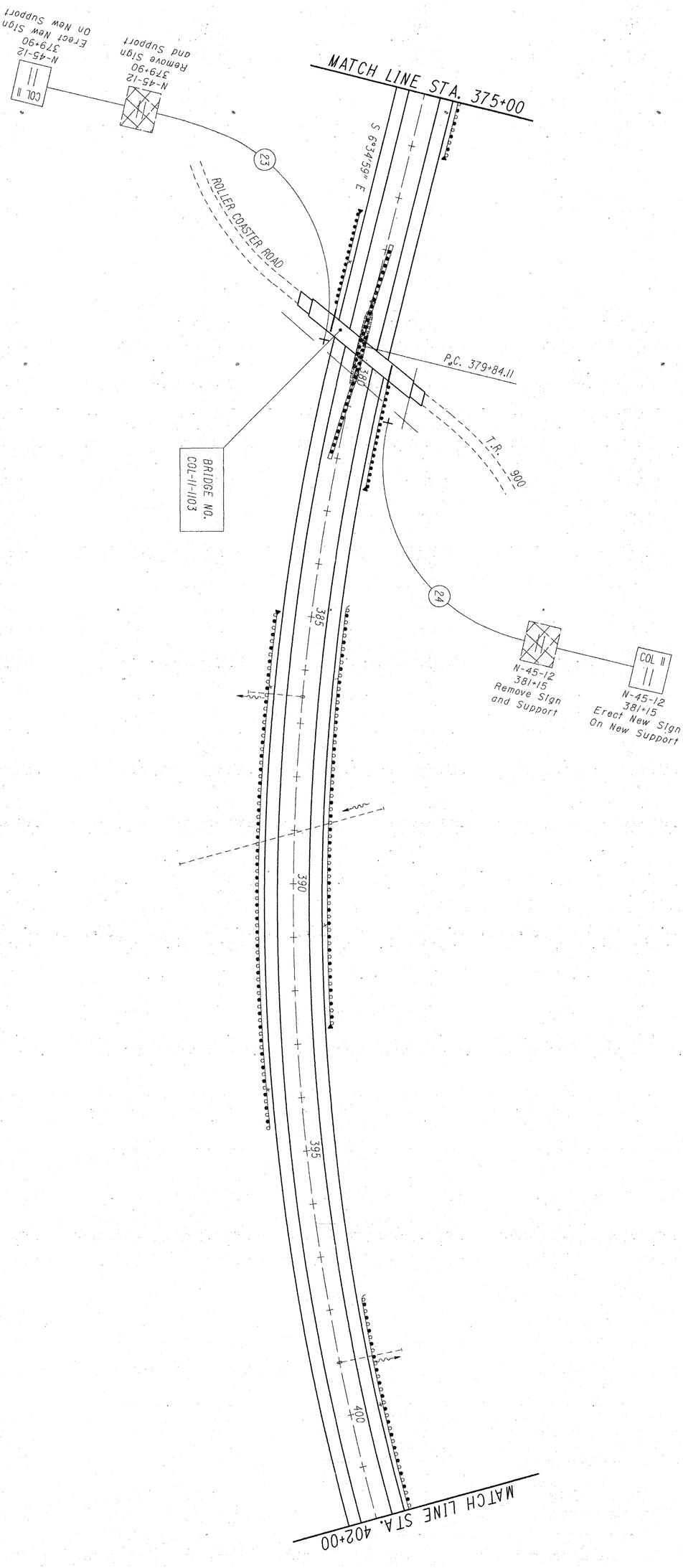
COL-11-9.63

SIGNING PLAN
STA. 352+00 TO STA. 375+00

CALCULATED JM
CHECKED JCN

0 50 100 200
HORIZONTAL SCALE IN FEET

N

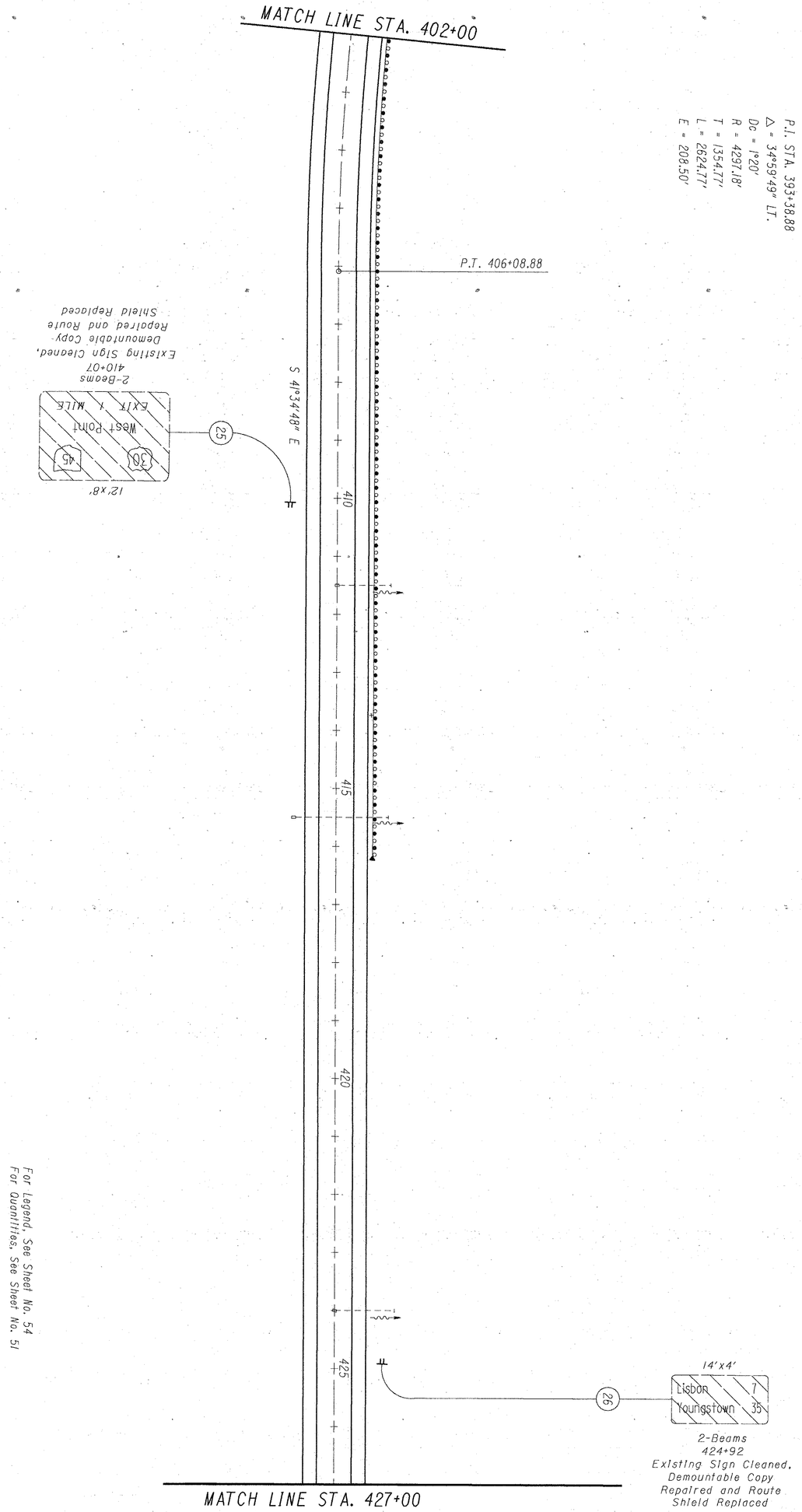


P.I. STA. 393+38.88
Δ = 34°59'49" LT.
Dc = 1°20'
R = 4297.18'
T = 1354.77'
L = 2624.77'
E = 208.50'

For Legend, See Sheet No. 54
For Quantities See Sheet No. 51

74/61	COL-11-9.63	SIGNING PLAN STA. 375+00 TO STA. 402+00	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET

JM 3/11/09



For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51

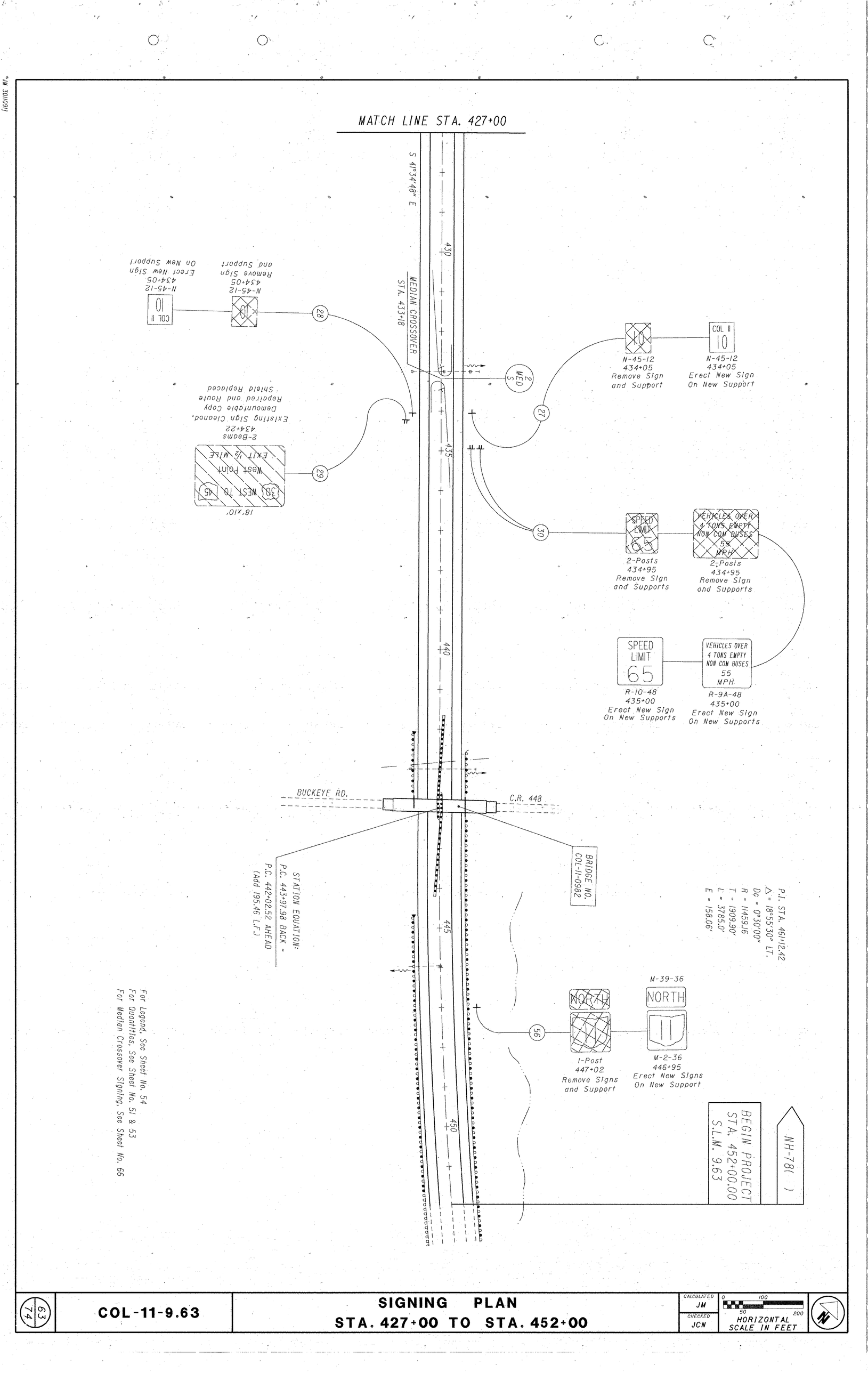
62/74

COL-11-9.63

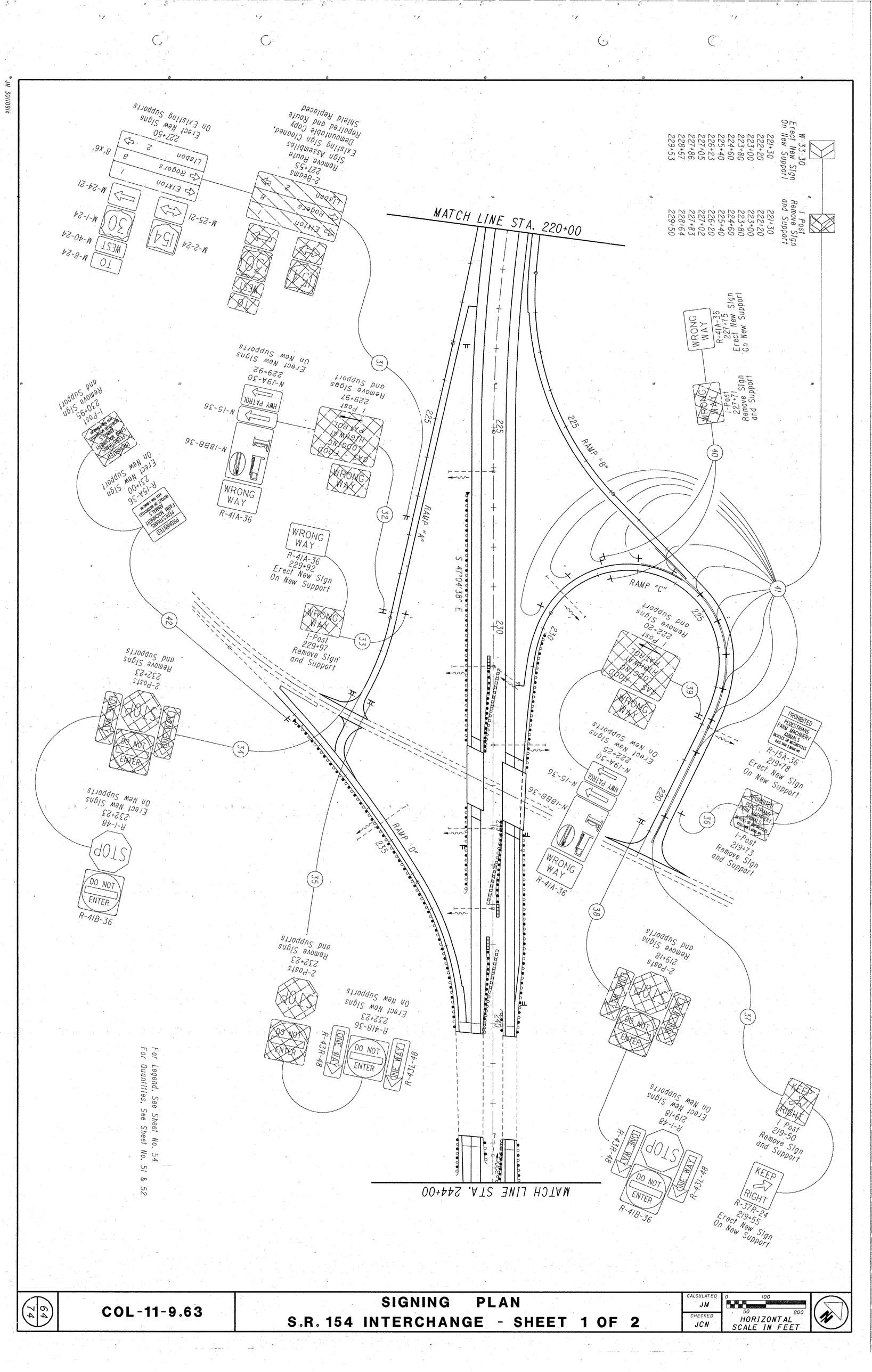
SIGNING PLAN
STA. 402+00 TO STA. 427+00

CALCULATED JM
CHECKED JCN

0 100
50 200
HORIZONTAL SCALE IN FEET

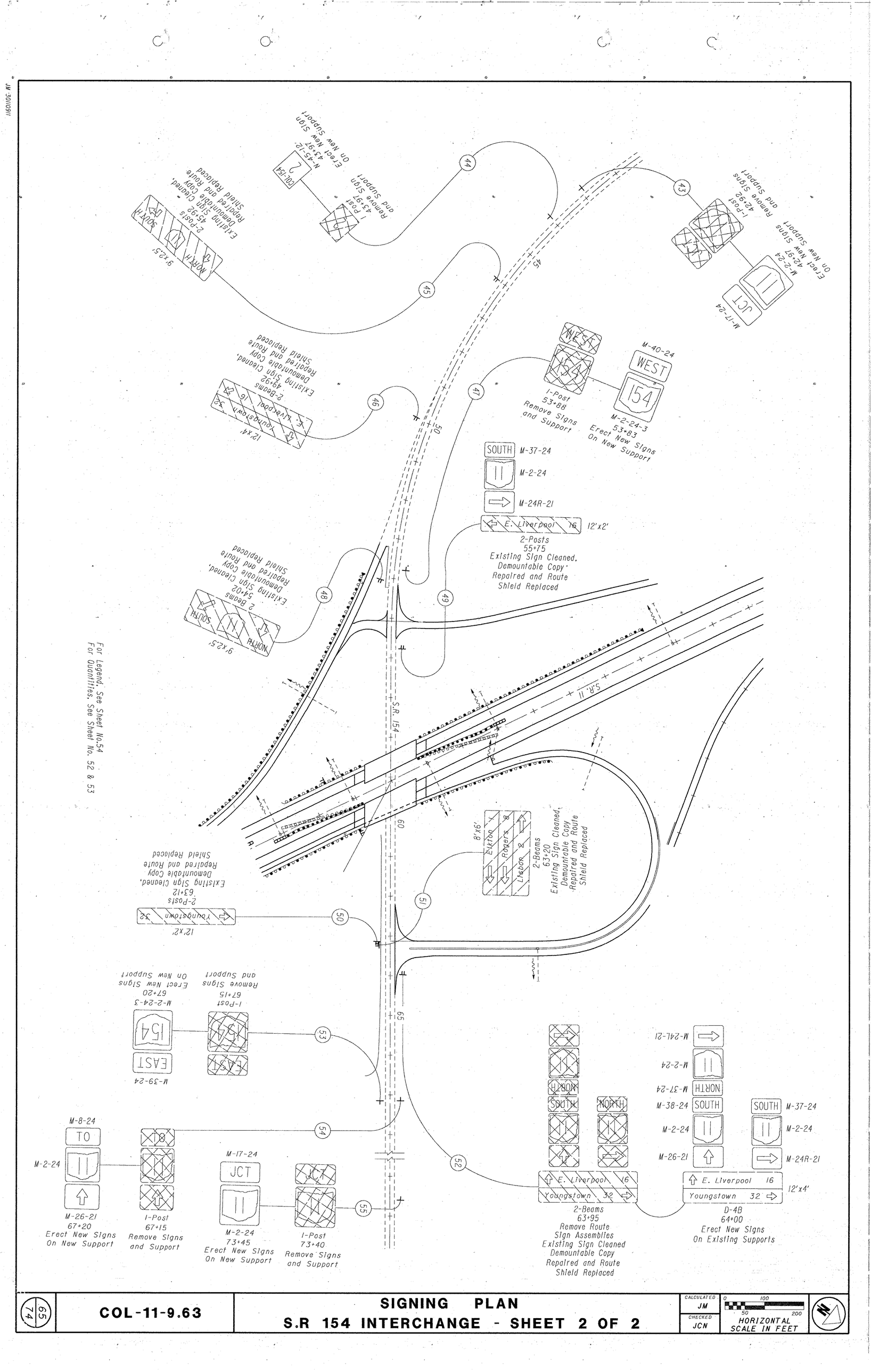


63 / 74	COL-11-9.63	**SIGNING PLAN** **STA. 427+00 TO STA. 452+00**	CALCULATED JM CHECKED JCN 0 100 50 200 HORIZONTAL SCALE IN FEET

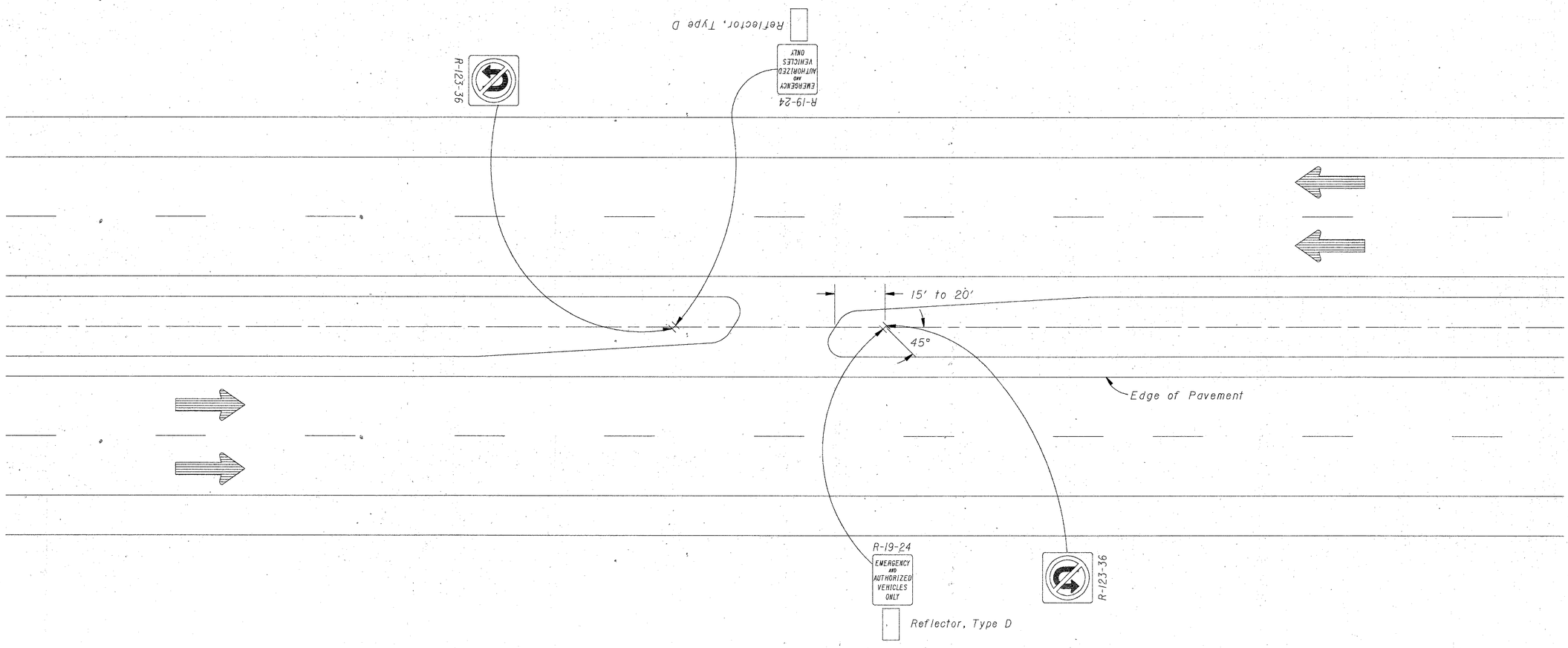


For Legend, See Sheet No. 54
For Quantities, See Sheet No. 51 & 52

64/74	COL-11-9.63	SIGNING PLAN S.R. 154 INTERCHANGE - SHEET 1 OF 2	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET



65/74	COL-11-9.63	SIGNING PLAN S.R 154 INTERCHANGE - SHEET 2 OF 2	CALCULATED JM CHECKED JCN	0 100 50 200 HORIZONTAL SCALE IN FEET



MEDIAN CROSSOVER SIGN DETAIL AND QUANTITIES

SHEET NO.	REF. NO.	STATION	SIDE OF ℄	WORK REQUIRED	SIGN CODE	SIGN DIMENSION	SIGN CLEARANCE	SUPPORT LENGTHS			620	ITEM 630							
											REFLECTOR, TYPE D			REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST, SUPPORT & DISPOSAL		SIGNS, FLAT SHEET,	GROUND MOUNTED SUPPORTS, NO.4 POST		
						INCHES	FEET	LT.	CNTR	RT.	EACH			EACH	EACH		SQ.FT.	LIN.FT.		
	1-MED-S	269+80	Ctr.	Remove Signs And Supports										4	4					
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	2-MED-S	433+18	Ctr.	Remove Signs And Supports										4	4					
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
	"	"	"	Erect New Signs On New Support	R-123-36	36x36			14.0		1						9.0	14.0		
	"	"	"	Erect New Signs On New Support	R-19-24	24x30											5.0			
TOTAL (Carried To General Summary)											4			8	8		56.0	56.0		

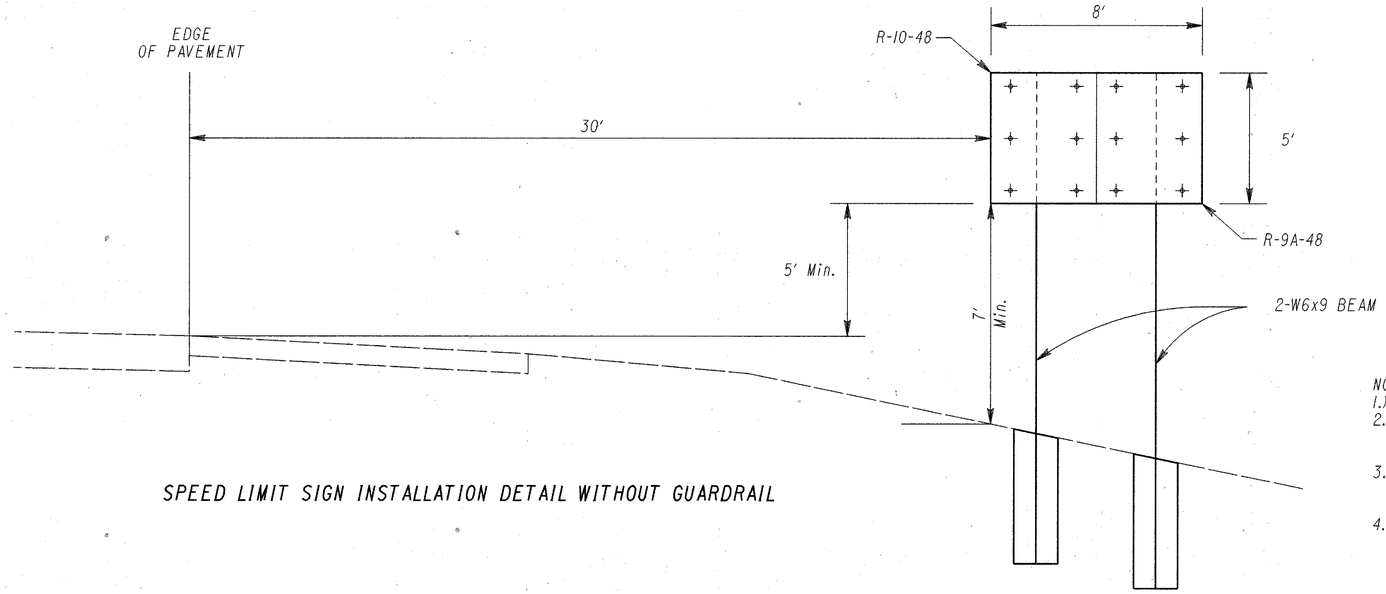
NOTES:

1. The R-19 and R-123 signs shall be erected back-to-back at approximately the midpoint of the median width at a 45° angle to the traffic flow.
2. Signing for the prohibition of U-turns at temporary crossovers which have been barricaded using an earth mound shall consist of only the R-123 signs.

CALCULATED JM
CHECKED JCN

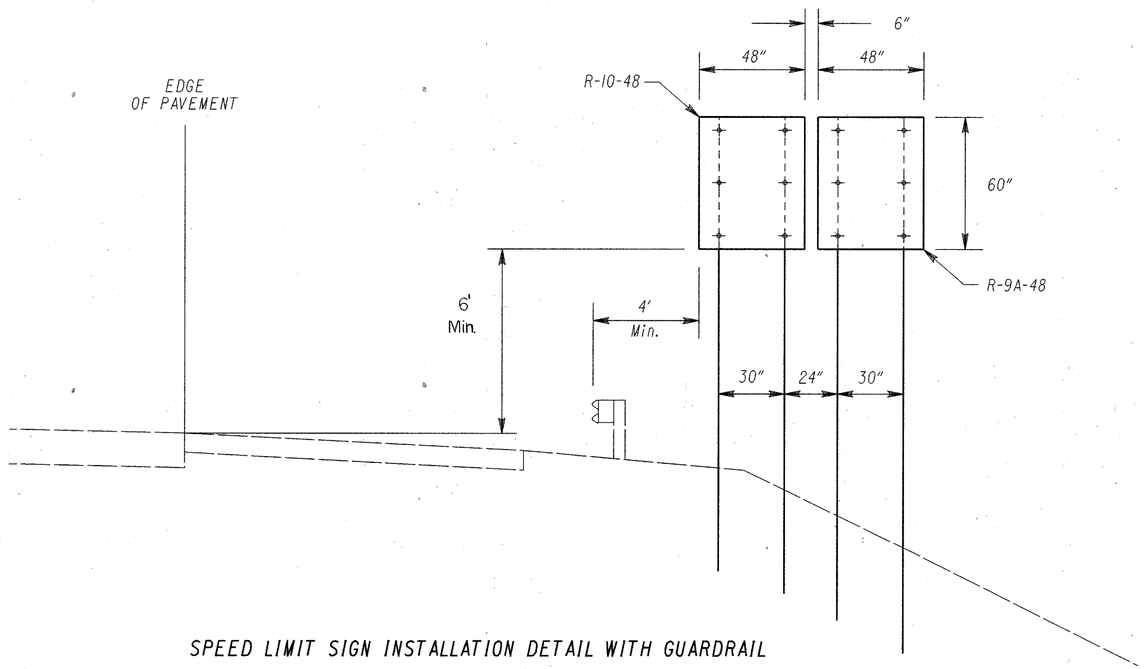
MEDIAN CROSSOVER SIGN DETAIL

COL-11-9.63



SPEED LIMIT SIGN INSTALLATION DETAIL WITHOUT GUARDRAIL

NOTE:
1.) THIS SIGN INSTALLATION IS TO BE USED WHERE THERE IS NO GUARDRAIL.
2.) THE R-10-48 AND R-9A-48 FLAT SHEET SIGNS WILL BE BOLTED TO A 96" x 60" BLANK EXTRUSHEET BY USING THE BOLT HOLES IN THE FLAT SHEET SIGNS AS SHOWN ON THE STANDARD DRAWING FOR SIGN BLANKS TC-52.20.
3.) THE SIGN INSTALLATION WILL BE OFFSET A DISTANCE OF 30 FEET IF POSSIBLE AS SHOWN ON THE DETAIL. THE MOUNTING HEIGHT OF THE SIGN WILL BE AS SHOWN ON THE DETAIL.
4.) THE SIGN INSTALLATION WILL BE MOUNTED ON TWO W6x9 BEAMS WITH BREAKAWAY BASES.



SPEED LIMIT SIGN INSTALLATION DETAIL WITH GUARDRAIL

NOTE:
1.) SIGN INSTALLATION TO BE USED WHERE THERE IS GUARDRAIL.
2.) SIGNS R-10-48 AND R-9A-48 SIGNS WILL BE MOUNTED ON #4 POSTS.

CALCULATED JM
CHECKED JCN

SPEED LIMIT SIGN INSTALLATION DETAIL

COL-11-9.63

ITEM 642 - PAVEMENT MARKING

STATION FROM	STATION TO	LANE OR RAMP	SIDE OF LANE OR RAMP	Edge Line Yellow	Edge Line White	Lane Line	Channelizing Line	Transverse Line (White)	Stop Line (White)	Center-Line Double Solid	Island Marking
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Sq. Ft.
199+56.25	452+43.75	SOUTH BOUND	Lt.	25287.5							
199+56.25	452+43.75		Ctr			25287.5					
199+56.25	243+00		Rt.		4343.75						
240+00	452+43.75		Rt.		21243.7						
199+56.25	452+43.75	NORTH BOUND	Lt.	25287.5							
199+56.25	452+43.75		Ctr			25287.5					
199+56.25	218+00		Rt.		1843.75						
215+60	452+43.75		Rt.		23683.7						
222+00	55+53	RAMP A		1075					40		
219+90	222+00						420	225			
222+00	54+14 *				1115						
232+61									60		
218+00	230+37	RAMP B		1237	1237						
230+37	64+50			773	773						
212+78	215+60					282					
215+60	218+00						240				
62+20	231+50	RAMP C		1370	1370				40		
231+50	234+15						530	325			
218+47									50		
218+47	218+77									30	
218+77	218+97										80
230+25.6	232+33.38	RAMP D		207.78							
233+26.58	240+00			673.42							
240+00	243+00						300				
243+00	246+60					360					
230+25.6	240+00 *				974.4						
TOTALS (Carried To General Summary)				55911.2	56584.3	51217	1490	550	190	30	80
				112495.5							
				21.31 MI		9.7 MI				0.01 MI	

ITEM 621 - RAISED PAVEMENT MARKER

STATION FROM	STATION TO	LANE OR RAMP	Length	Spacing	2-Way White/ Red	1-Way Yellow	1-Way White	Remarks
			Lin. Ft.	Feet	Each	Each	Each	
199+56.25	224+00	SOUTH BOUND	2443.75	80			31	LANE LINE
224+00	240+00		1600	80	20			LANE LINE
240+00	452+43.75		21243.7	80			266	LANE LINE
199+56.25	231+50	NORTH BOUND	3193.75	80			40	LANE LINE
231+50	247+50		1600	80	20			LANE LINE
247+50	452+43.75		20523.7	80			257	LANE LINE
219+90	222+00	RAMP A	420	20			21	CHANNELIZING LINE
222+00	222+80		80	40			2	WHITE EDGE LINE
222+00	222+80		80	40			2	WHITE EDGE LINE
215+60	218+00	RAMP B	240	40			6	CHANNELIZING LINE
215+60	222+80		720	40			18	WHITE EDGE LINE
218+00	222+80		480	40		12		YELLOW EDGE LINE
230+70	231+50	RAMP C	80	40			2	WHITE EDGE LINE
230+70	231+50		80	40			2	WHITE EDGE LINE
231+50	234+15		265	20			13	CHANNELIZING LINE
238+20	240+00	RAMP D	180	40		5		YELLOW EDGE LINE
238+20	243+00		480	40			12	WHITE EDGE LINE
240+00	243+00		300	40			8	CHANNELIZING LINE
TOTALS (Carried To General Summary)					40	17	680	
						737		

ITEM 620 - DELINEATORS

STATION FROM	STATION TO	LANE OR RAMP	SIDE	Type C Post Mounted	Type D Post Mounted	Spacing	Delineator Removed For Disposal
				Each	Each	Feet	Each
214+08	232+70	RAMP A	Rt	9		200	9
218+00	221+00	RAMP B	Lt	2		200	2
221+00	227+08		Rt	7		90	6
227+08	230+37		Lt	2		200	2
230+37	234+68		Lt	9		50	7
234+68	63+10		Lt	2		200	2
218+47	223+60	RAMP C	Lt	3		200	1
223+60	229+52		Lt	12		50	10
229+52	239+53		Lt	5		200	5
230+25	255+00	RAMP D	Lt	7		200	7
SOUTHBOUND							58
NORTHBOUND							54
TOTALS (Carried To General Summary)				58			163

ITEM 614 - TEMPORARY PAVEMENT MARKING

STATION FROM	STATION TO	LANE OR RAMP	No. Of Lane Lines	No. Of Appli-cations	Temporary Lane Line, Class I	Temporary Edge Line, Class I Yellow	Temporary Edge Line, Class I White	Temporary Gore Marking, Class II
					Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.
199+56.25	452+43.75	SOUTHBOUND	1	3	75862.5	75862.5	75862.5	
199+56.25	452+43.75	NORTHBOUND	1	3	75862.5	75862.5	75862.5	
RAMP A (S.R. 154 INTERCHANGE)				3				600
RAMP B (S.R. 154 INTERCHANGE)								
RAMP C (S.R. 154 INTERCHANGE)				3				600
RAMP D (S.R. 154 INTERCHANGE)								
TOTALS (Carried To General Summary)					151725	151725	151725	1200
					303450			
					28.73 MI	57.47 MI		

CALCULATED JM CHECKED JCN

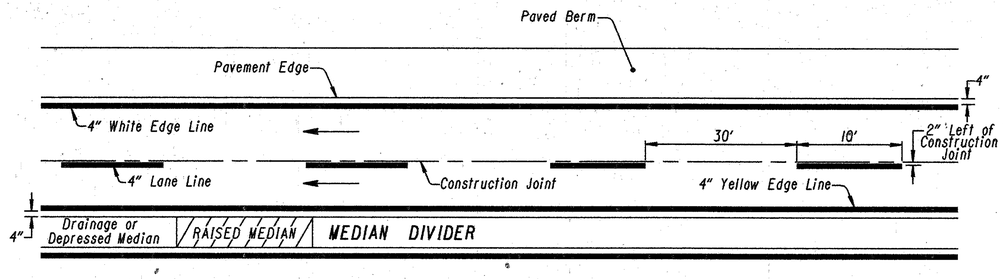
PAVEMENT MARKING, TEMPORARY PAVEMENT MARKING, DELINEATORS, RAISED PAVEMENT MARKER QUANTITIES

COL-11-9.63

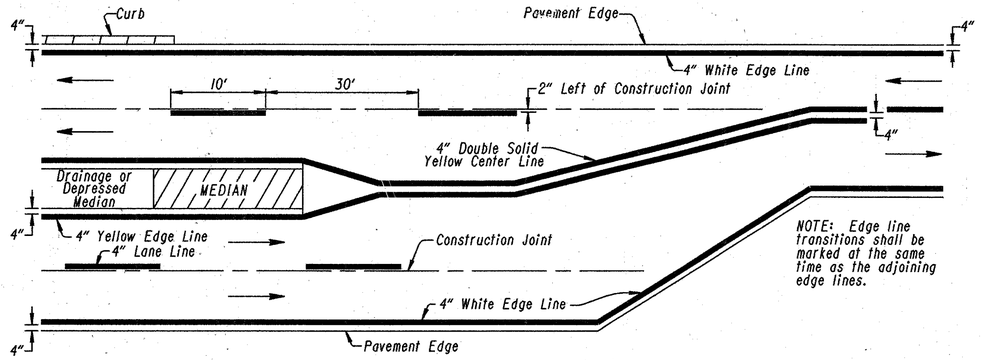
67
74

JM 30110962

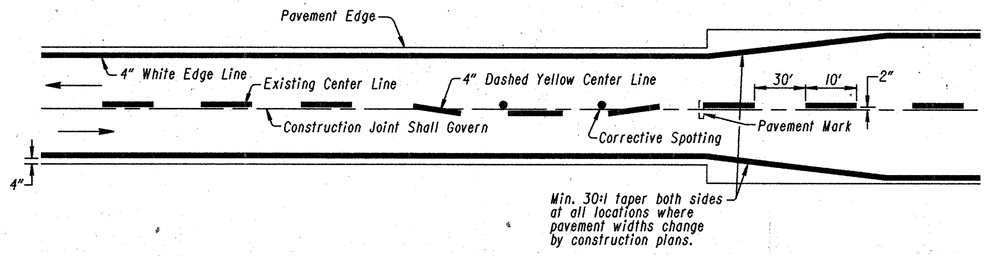
FREEWAY & EXPRESSWAY MAINLINE MARKINGS



MULTILANE DIVIDED & UNDIVIDED HIGHWAY MARKINGS



TWO LANE MARKINGS



NOTES:

1. The distance from the pavement edge to the nearside edge of the edgeline may be increased with the approval of the Engineer in order to maintain uniform lane width.
2. See TC-72.20 for freeway entrance ramp and exit ramp markings.
3. The cycle length for dashed lines shall be 40 feet plus or minus six inches. The minimum length of dash shall be sufficiently long to maintain a 3:1 ratio between length of gap and length of dash.

CONTINGENCY QUANTITIES

Specific locations and usage of the estimated quantities set up on this plan to be used "As directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project. Estimated quantities of materials shall not be ordered for delivery to the project and work shall not be performed unless authorize by the Engineer.

EXISTING STRUCTURE VERIFICATION

Details and dimensions of these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or 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. Contract bid prices shall be based 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.

ITEM 518 - SCUPPER LENGTHENING, AS PER PLAN

The Contractor will remove a minimum of 6" off the bottom of each scupper downspout, or until there is a solid section of pipe to weld the extension to, unless otherwise directed by the engineer. The Contractor will then weld an extension to the existing scupper downspout. The downspout extension will be in accordance with 518 and will extend a minimum of 8" below the bottom flange of the adjacent beam. The material and the size of the extension will be the same as that of the existing scupper downspout. The Contractor will also clean and paint the entire scupper downspout including the extension as per Item 815 - Field Painting of Existing Steel, System OZEU. Cost for all material, labor and incidentals for the above work shall be bid as an EACH item and shall be included under Item 518 - Scupper Lengthening, as Per Plan.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

An epoxy-urethane concrete sealer shall be applied to the concrete rail as shown on the Typical Section for the full length of the bridge including wingwalls. Sealer shall also be applied to the face of the backwall, all horizontal and vertical faces of the bridge seat to the ground line and all exposed vertical surfaces of the piers. See Proposal Note for the surface preparation requirements, application rates, material requirements and application procedures.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED

This item includes the removal of the existing aluminum railing and posts for Bridge No. COL-11-0982, Bridge No. COL-11-1103 and Bridge No. COL-11-1378 L&R.

CONCRETE REMOVAL

Concrete removal will be by means of approved pneumatic hammers employing pointed and blunt chisel tools. Hydraulic hoe-ram type hammers will not be permitted. The weight of the hammer will not be more than 35 pounds for removal within 18 inches of portions to be preserved. Outside of the 18 inch limit, a hammer heavier than 35 pounds, but not to exceed 85 pounds, may be used at the approval of the Engineer.

ITEM 519 - PATCHING CONCRETE STRUCTURES

A quantity of patching has been included to cover the patching of areas of the backwall and portions of the curb on Bridge No. COL-11-0982. The actual locations of these areas will be as directed by the Engineer.

PAINT COLOR

The Urethane Finish Coat will be Grey FS-595A-16440

BRIDGE SUMMARY

COL-11	COL-11	COL-11					
0982	1103	1378 L&R	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
LUMP	LUMP	LUMP	202	11200	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED
891	923	1306	SPECIAL	51267502	3120	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY) *
- -	652	- -	SPECIAL	51272000	652	SQ YD	EPOXY WATERPROOFING OVERLAY (1/4" THICK) *
- -	LUMP	- -	SPECIAL	51272500	LUMP	LUMP	TEST PATCH *
518	546	624	517	76300	1688	LIN FT	RAILING, MISC.: TOP MOUNTED THRIE BEAM RAILING
12	12	16	518	12901	40	EACH	SCUPPER LENGTHENING, AS PER PLAN
27	- -	- -	519	11100	27	SQ FT	PATCHING CONCRETE STRUCTURE
- -	195	- -	SPECIAL	51912300	195	SQ YD	PATCHING CONCRETE BRIDGE DECK - TYPE B *
8300	10500	- -	815	00050	18800 #	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
8300	10500	- -	815	00056	18800 #	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
8300	10500	- -	815	00060	18800 #	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU
8300	10500	- -	815	00066	18800 #	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
90	100	- -	815	00504	190 #	MANHOUR	GRINDING FIN, TEARS, SLIVERS
926	965	- -	815	00508	1891 #	LIN.FT	GRINDING FLANGE EDGES

 # NOTE: These pay items shall be based on and paid for each structure. The grand total shown is for information only.

*** SEE PROPOSAL NOTE**

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

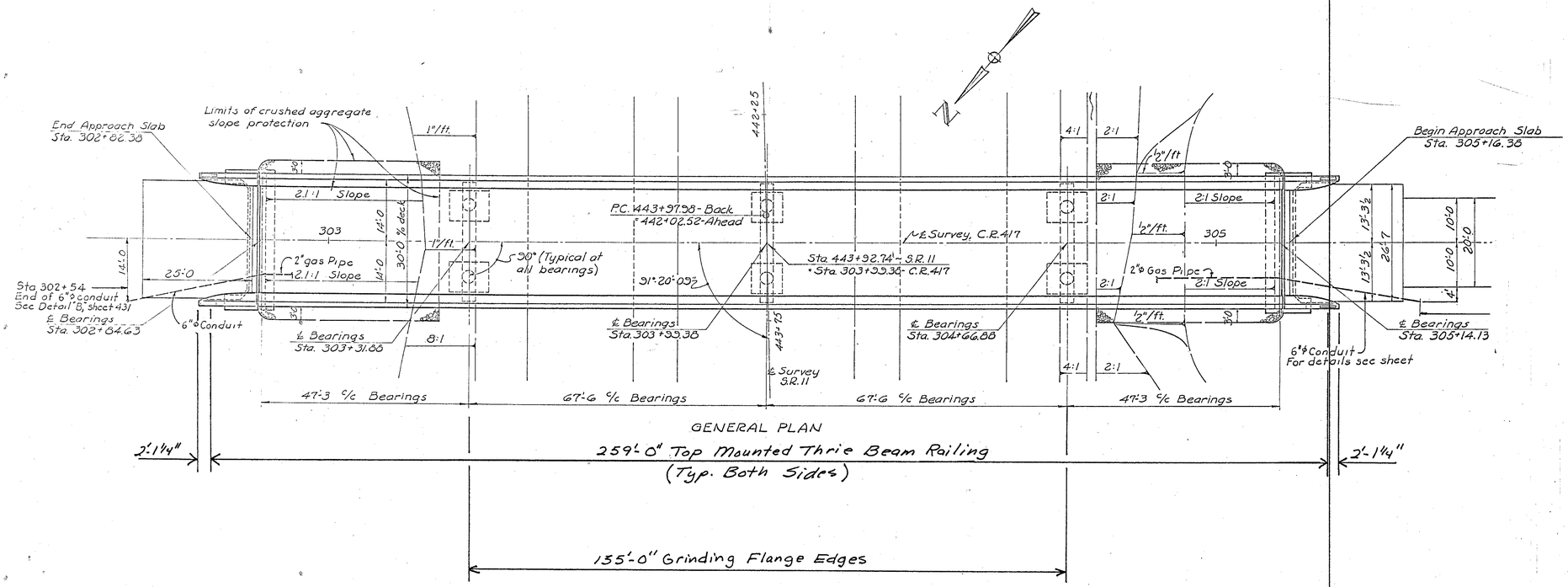
DESIGNED	DRAWN	REVIEWED	DATE
JAS	JAS		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG	SAL	1500635 1500783	1500694 1500813

BRIDGE NOTES AND SUMMARY
Bridge No. COL-11-0982 Bridge No. COL-11-1103
Bridge No. COL-11-1378 L&R

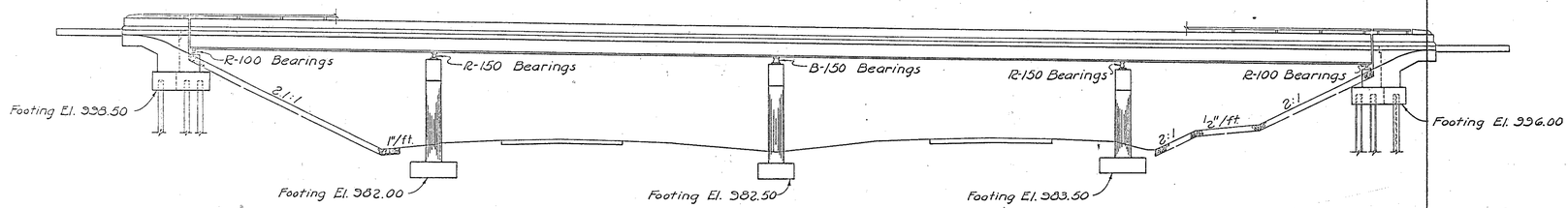
COL-11-9.63

1/6

69/74



GENERAL PLAN



Note:
All piles 10BP42
Entire number not shown

ELEVATION

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JAS	JAS	JLO	3-24-94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG		1500635	

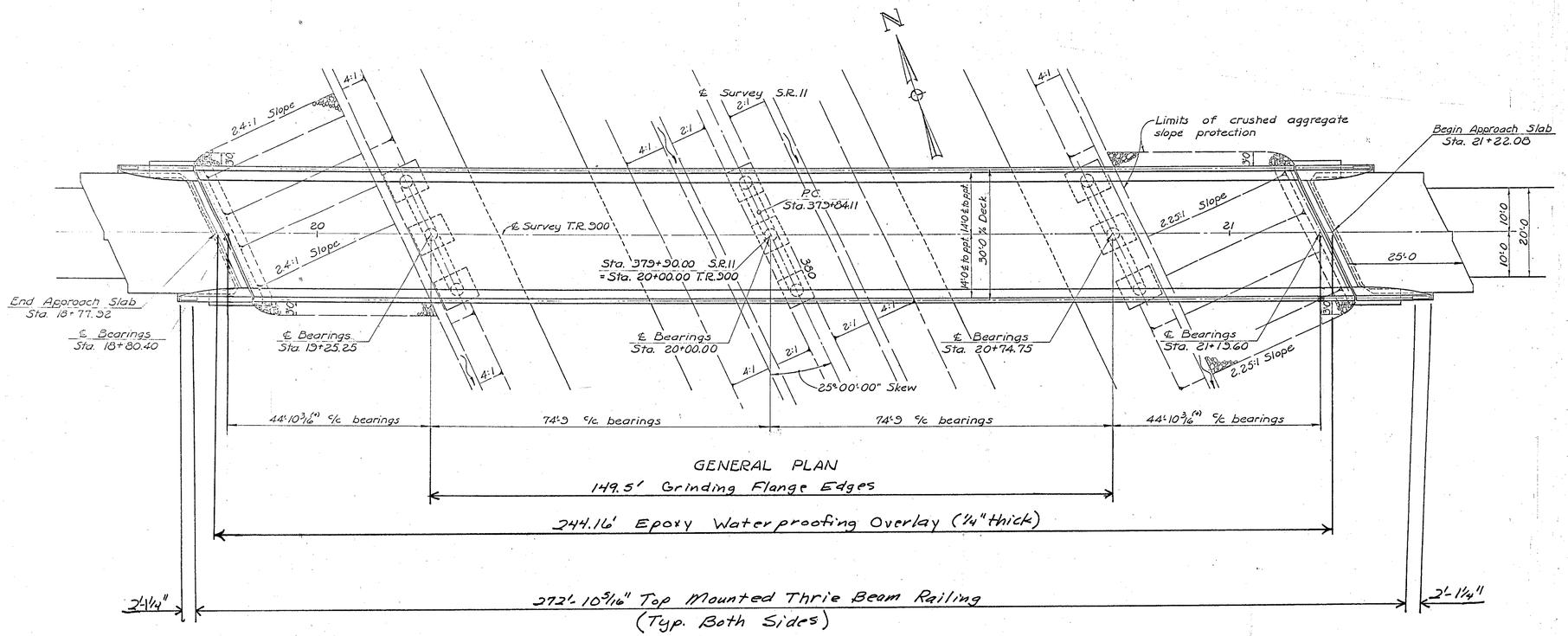
GENERAL PLAN AND ELEVATION

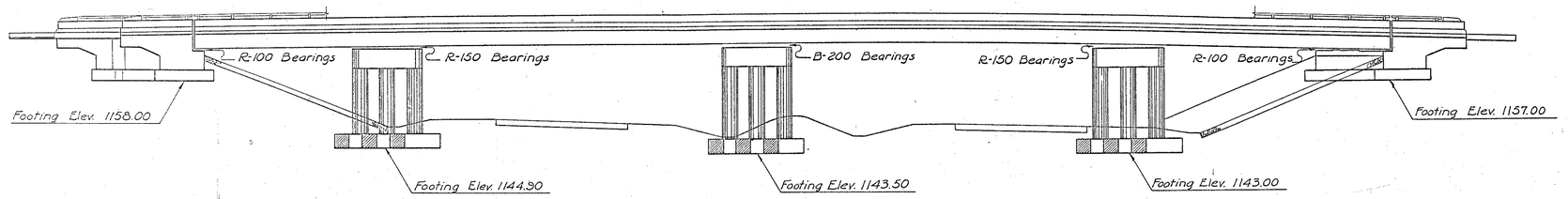
Bridge No. COL-11-0982

COL-11-9.63

2/6

70/74





ELEVATION

Note: Remove clearance sign on Brdg. No. Col-11-1103 before the start of painting procedures, and replace immediately after painting procedures are finished.

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JAS	JAS	JLO	3-24-94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WAG		1500694	

GENERAL PLAN AND ELEVATION

Bridge No. COL-11-1103

COL-11-9.63

3/6

71/74

GENERAL PLAN

ELEVATION

Note:
All piles are 10BP42.
Entire number not shown.

DESIGN AGENCY	O.D.O.T. DISTRICT 11 BRIDGE DEPARTMENT
DESIGNED JAS	DRAWN JAS
CHECKED WRG	REVISED
REVIEWED JLO 3-24-94	DATE
STRUCTURE FILE NUMBER 1500813	

GENERAL PLAN AND ELEVATION

Bridge No. COL-11-1378 Right

COL-11-9.63

4/6

72/74

GENERAL PLAN

ELEVATION

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JAS	JAS	JLO	3-24-94
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG		1500783	

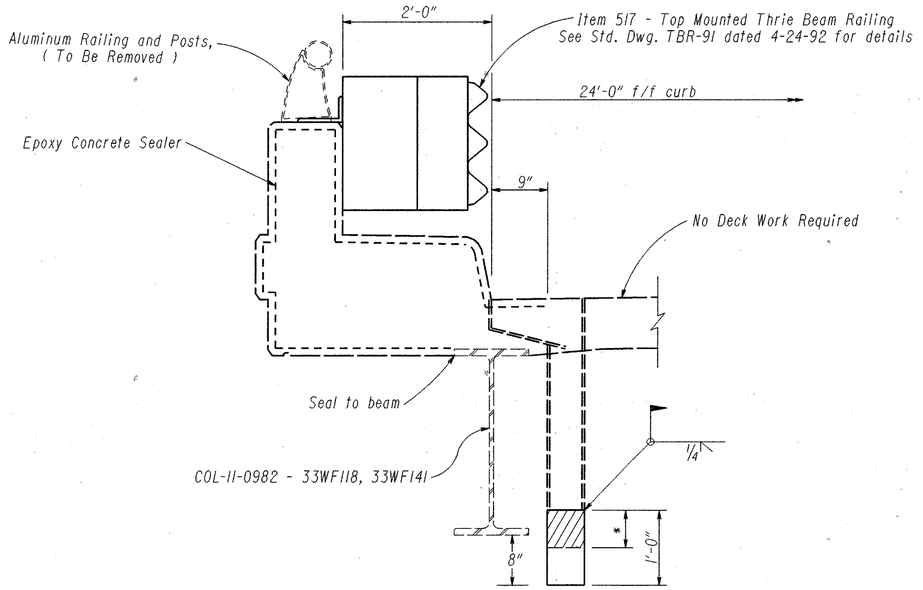
GENERAL PLAN AND ELEVATION

Bridge No. COL-11-1378 Left

COL-11-9.63

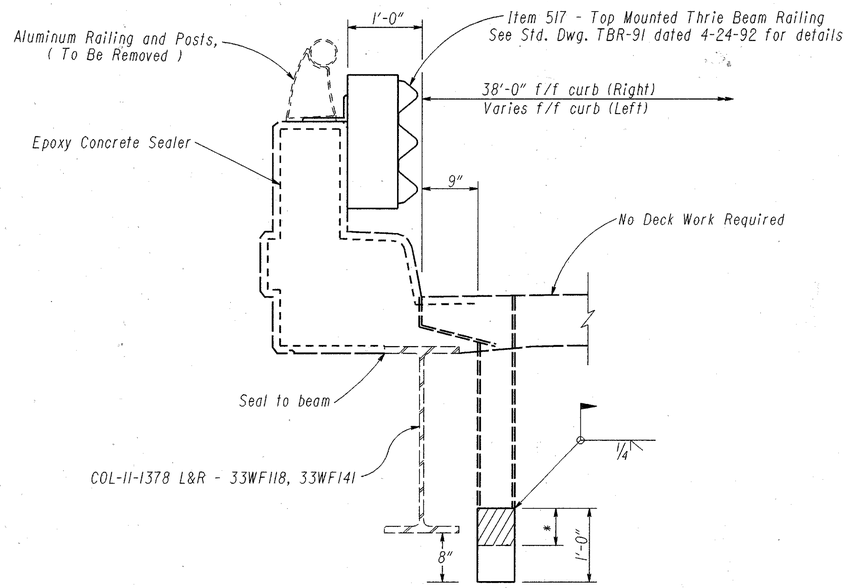
5/6

73/74



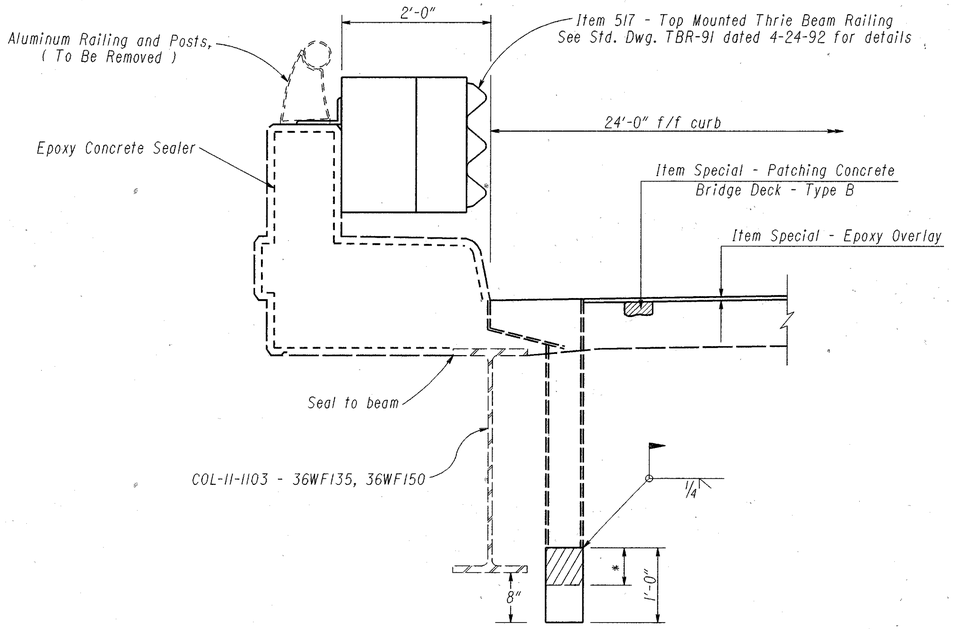
PARTIAL TYPICAL SECTION

Bridge No. COL-11-0982



PARTIAL TYPICAL SECTION

Bridge No. COL-11-1378 L&R



PARTIAL TYPICAL SECTION

Bridge No. COL-11-1103

Item Special - Sealing of Concrete Surfaces (Epoxy)
(See Proposal Note)

* The Contractor shall remove a minimum of 6" of the bottom of each scupper downspout, unless otherwise directed by the Engineer.

DESIGN AGENCY
O.D.O.T.
DISTRICT 11
BRIDGE DEPARTMENT

DESIGNED	DRAWN	REVIEWED	DATE
JAS	JAS		
CHECKED	REVISED	STRUCTURE FILE NUMBER	
WRG		1500934	
		1500933	
		1500813	

SUPERSTRUCTURE DETAILS
Bridge No. COL-11-0982 Bridge No. COL-11-1103 Bridge No. COL-11-1378 L&R

COL-11-9.63

6/6

74/74