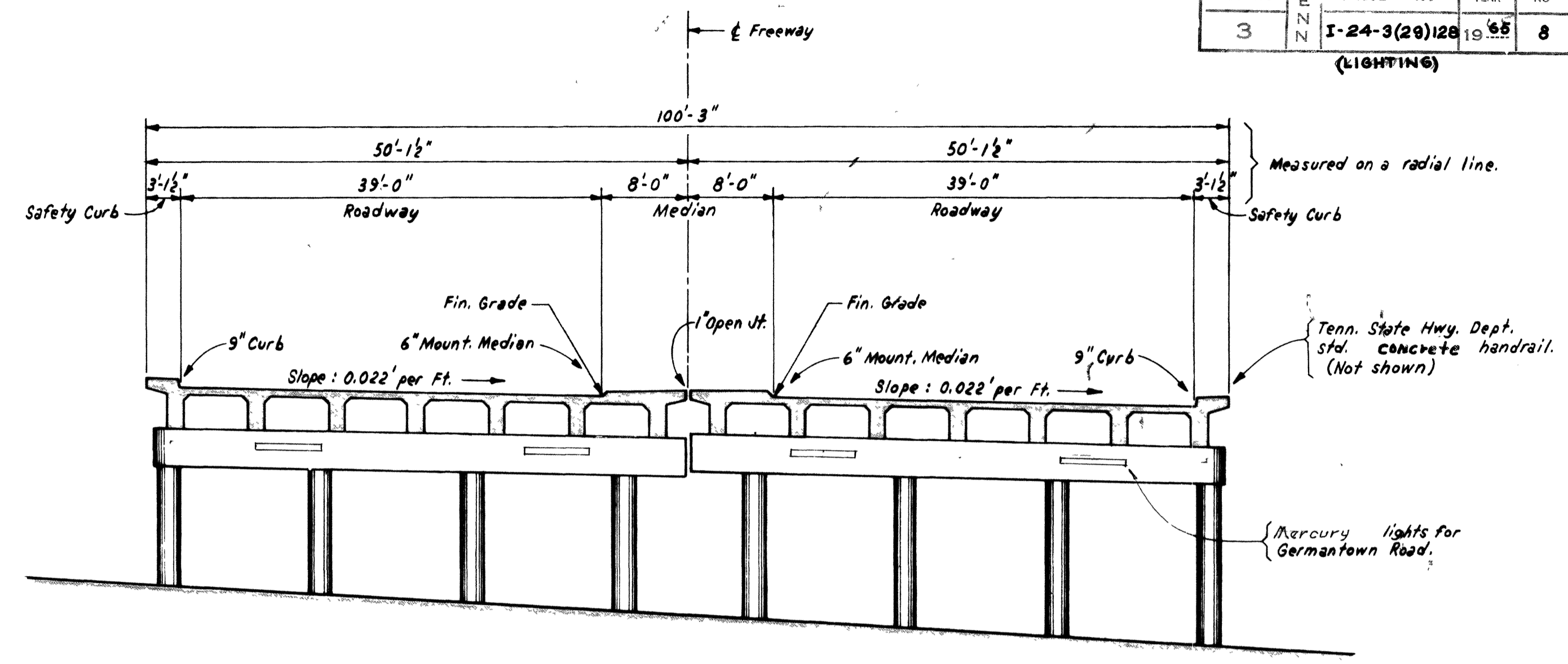
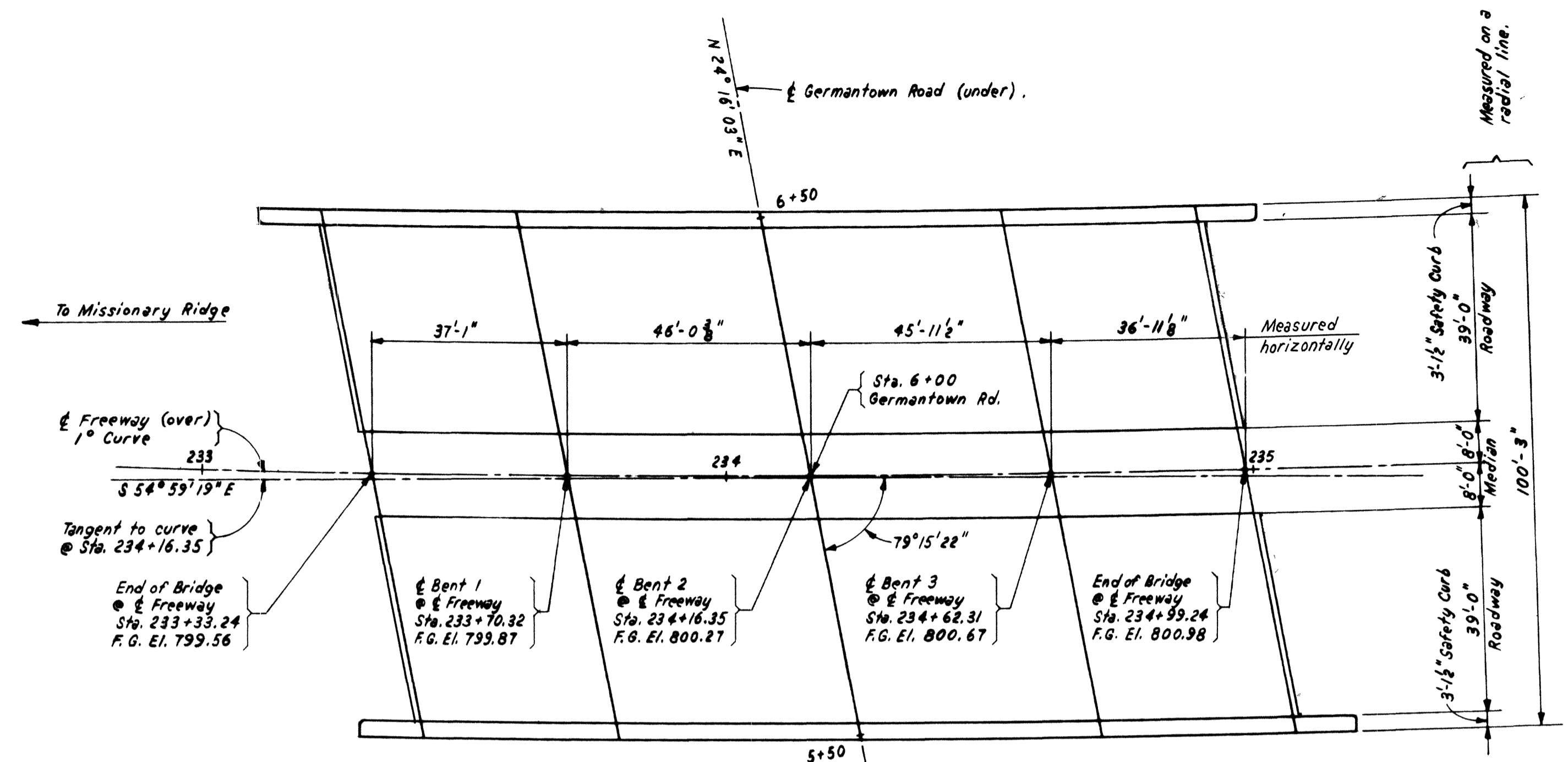


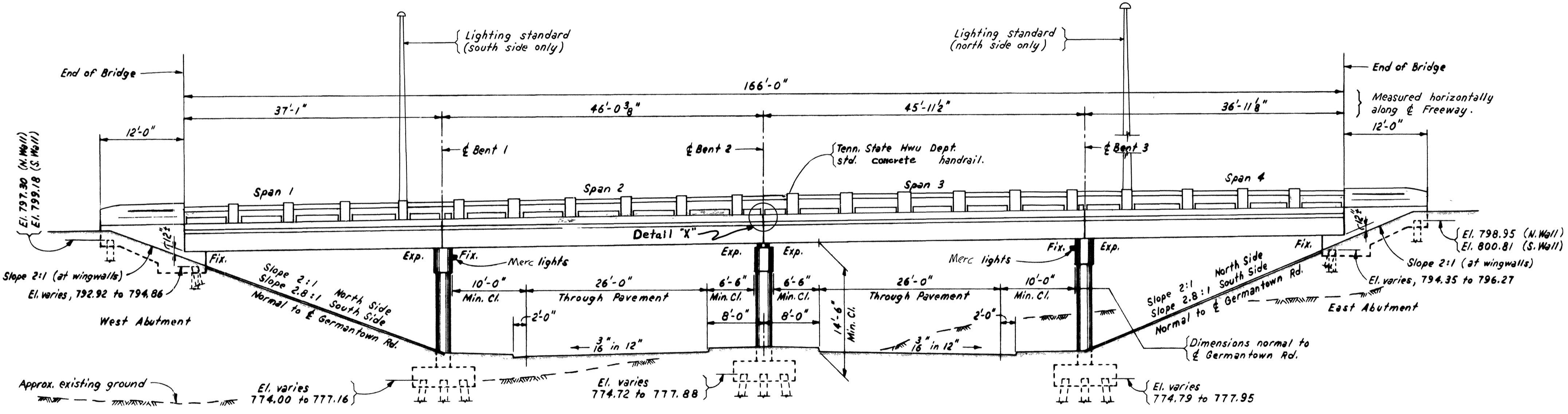
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|---------------------|-------|--------------------|---------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | STATE AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 3 | TENN. | E-24-3(15) | 128 | 1965 | 90 | 204 |
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | STATE AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 3 | TENN. | I-24-3(20) | 128 | 1965 | 8 | 18 |



NOTE:
Where underground pipe lines may be encountered during construction, it shall be the Contractor's responsibility to protect these lines from any damage.
Where relocation or readjustment of a utility may be required, it shall be done by the owner of the same.

PLAN
Scale: 1"=20'

TYPICAL CROSS SECTION
LOOKING WEST
Scale: 1"=10'



ELEVATION
LOOKING NORTH
Scale: 1"=10'

Handrail Note
Build handrail according to std. dwg. H-5-110 except use end post as shown on dwg. H-2-4. Dimension L=6'-5 1/4" (±). See also details on H-2-12.

| ESTIMATED QUANTITIES | | | | | | | | |
|----------------------|------------|-----------------|-----------------------|----------------|---------------------|-----------------|-------------------|-------------------|
| ITEM NO. | 17-2 | 132-1 | 135-4 | 135-12 | 139-1 | 139-3 | 704 | 501 |
| ITEM | Dry Excav. | Struct. Steel * | Class "A" Concrete ** | Reinf. Steel † | Precast Piling Test | Concrete Size 1 | Concrete Handrail | Lighting Complete |
| STRUCT. | C.Y. | Lbs. | C.Y. | Lbs. | L.F. | L.F. | L.F. | Lump Sum |
| West Abut. | 4.5 | | 49.3 | 4,973 | | | | |
| Bent 1 | 4 | | 103.8 | 19,338 | | | | |
| Bent 2 | 13.6 | | 107.5 | 19,063 | | | | |
| Bent 3 | 21.0 | | 103.8 | 19,338 | | | | |
| East Abut. | 4.4 | | 49.1 | 4,963 | | | | |
| Span 1 | | | 198.0 | 45,382 | | | | |
| Span 2 | | 3,430 | 246.2 | 66,934 | | | | |
| Span 3 | | 3,430 | 245.9 | 66,934 | | | | |
| Span 4 | | | 197.3 | 45,382 | | | | |
| TOTALS | 439 | 6,860 | 1,300.9 | 292,307 | 400 | 4,900 | 332 | Lump Sum |

* Includes bronze alloy plates in bearings and anchor bolts for bearings.
** That part of concrete replaced by the embedded parts of the piles is not included in the estimated quantities shown.
† The estimated quantities shown for the bents are based on using pile footings.
If it becomes necessary to use Size 2 piling, the Contractor will be allowed an increase of 25% in his Size 1 bid price.

NOTES:
For General Notes and Specifications, see G-9-90.

Two 39' roadways with a 16' median and two safety curbs.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3()

**GERMANTOWN ROAD UNDERPASS
GENERAL DRAWING**

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP
CHKD: AC
SUPV: AC

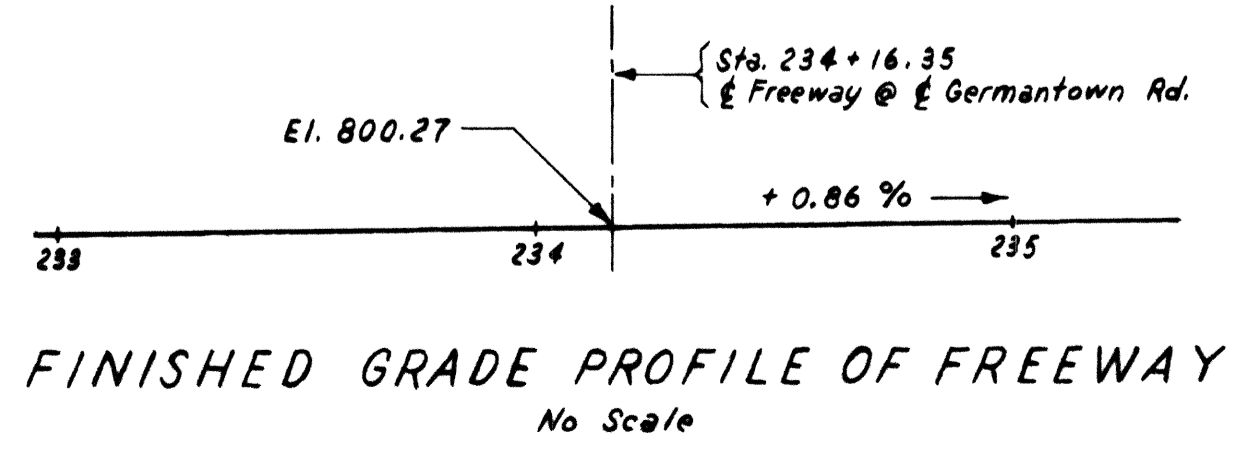
DRWN: JRP
CHKD: AC
SUPV: AC

SCALE: AS NOTED
FILE NO. 57.77

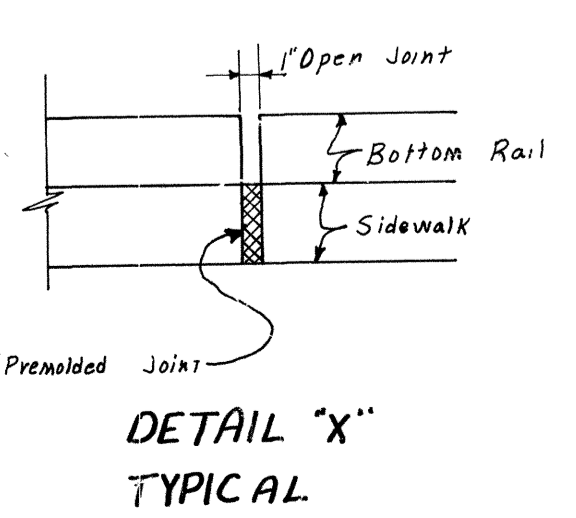
DATE: 4-17-59
SHEET NO. H-2-1

| DRAWING NO. | TITLE |
|-------------|---|
| H-2-1 | General Drawing |
| H-2-2 | Sounding Data |
| H-2-3 | Abutments |
| H-2-4 | Abutment Wingwalls |
| H-2-5 | Bents - Column and Footing Details |
| H-2-6 | Bents |
| H-2-7 | Deck Layout Plan |
| H-2-8 | Deck Cross Section and Diaphragms |
| H-2-9 | Deck Reinforcing Plan |
| H-2-10 | Beams |
| H-2-11 | Standard Bearings for Concrete T-Beam Bridges |
| H-2-12 | Lighting, Handrail and Drains |
| H-2-13 | Reinforcing Steel - Abutments and Bents |
| H-2-14 | Reinforcing Steel - Deck |
| H-5-110 * | Handrail |
| H-5-111 | Piles |

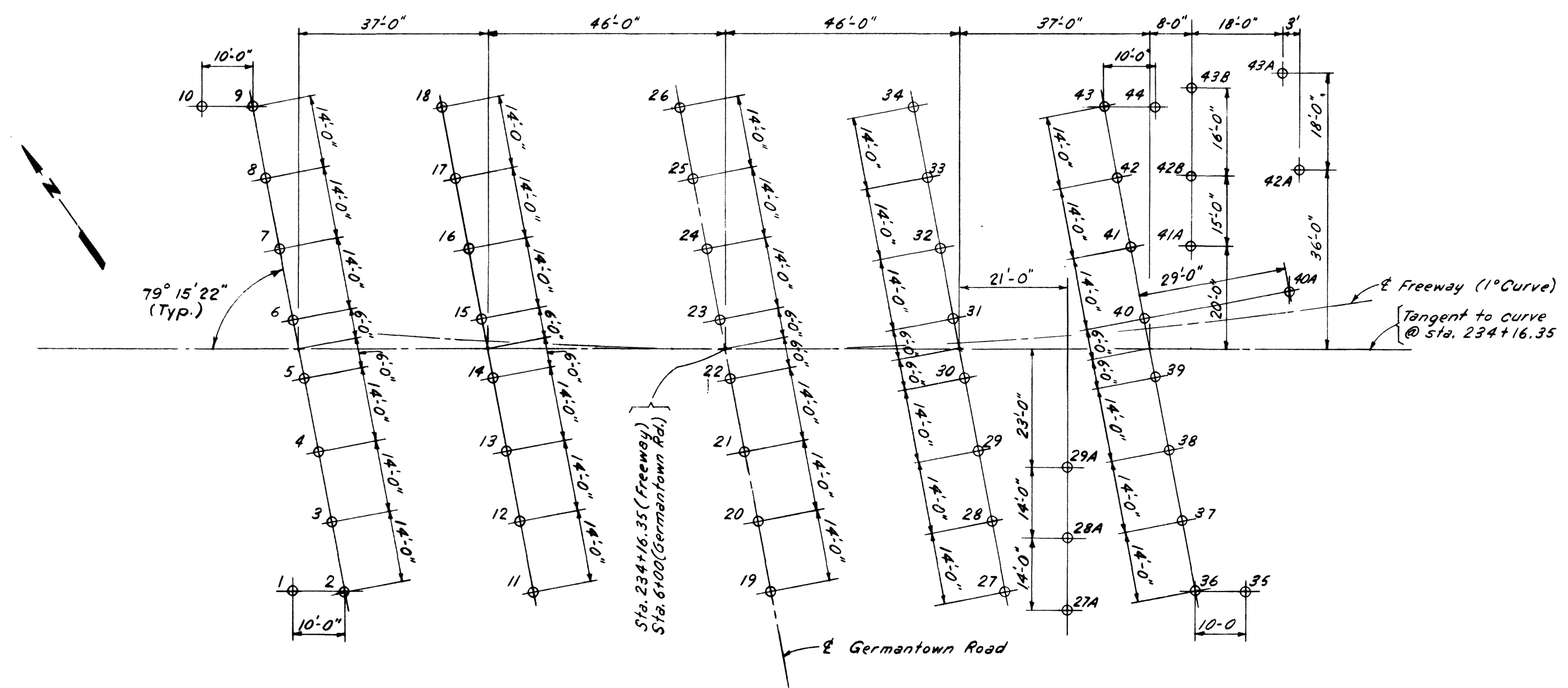
* See Also Note
This Sheet



FINISHED GRADE PROFILE OF FREEWAY
No Scale



Revised July 1965 Changed fluorescent luminaire to Merc
 Revised Jan. 1961 Freeway Bracket Addition to Concrete Handrail
 Revised April 1960 Changed Handrail to Lighting Standards
 Revised Feb. 1960 Changed Handrail to Steel Handrail



SOUNDING PLAN
Scale: 1" = 20'

SOUNDING DATA

| Hole No. | Ground Elev. | Rock Elev. | Hole No. | Ground Elev. | Rock Elev. |
|----------|--------------|------------|----------|--------------|------------|
| 1 | 774.5 | ** | 24 | 778.0 | 729.0 |
| 2 | 774.3 | ** | 25 | 776.9 | 722.9 |
| 3 | 774.0 | 689.0 | 26 | 775.8 | 720.8 |
| 4 | 774.0 | 689.0 | 27 | 791.1 | * |
| 5 | 772.7 | 725.7 | 27A | 792.4 | * |
| 6 | 673.0 | 636.0 | 28 | 789.7 | * |
| 7 | 772.5 | ** | 28A | 792.4 | * |
| 8 | 771.7 | 729.7 | 29 | 788.5 | * |
| 9 | 772.5 | 730.5 | 29A | 791.4 | * |
| 10 | 773.6 | 734.6 | 30 | 787.1 | * |
| 11 | 777.0 | 715.0 | 31 | 785.9 | * |
| 12 | 776.1 | 751.1 | 32 | 784.6 | * |
| 13 | 775.1 | 703.1 | 33 | 783.9 | * |
| 14 | 774.1 | 707.1 | 34 | 782.6 | * |
| 15 | 773.6 | 712.6 | 39 | 792.1 | * |
| 16 | 773.2 | 712.2 | 40 | 790.1 | * |
| 17 | 773.0 | 706.0 | 40A | 795.3 | 703.3 |
| 18 | 772.9 | 715.9 | 41A | 788.8 | * |
| 19 | 782.4 | 742.4 | 42A | 796.1 | 704.1 |
| 20 | 781.5 | 725.5 | 42B | 788.8 | * |
| 21 | 780.7 | ** | 43A | 795.1 | 707.1 |
| 22 | 779.8 | 735.8 | 43B | 788.8 | * |
| 23 | 779.0 | ** | | | |

* Not drilled - Inaccessible.
** No rock encountered after drilling 92'.

DRILLERS LOG

Hole No. 1 Ground Elev. 774.5 - Rock not reached (92' depth)
0' to 10' - Dark brown clay and chert.
10' to 27' - Wet yellow clay and chert.
27' to 92' - Mud and water.

Hole No. 2 Ground Elev. 774.3 - Rock not reached. (92' depth)
0' to 22' - Yellow clay and chert.
22' to 62' - Brown wet heavy clay.
62' to 92' - Mud and water.

Hole No. 3 Ground Elev. 774.0 - Rock Elev. 689.0 (85' depth)
0' to 17' - Dark brown clay and chert.
17' to 67' - Mud and sand.
67' to 85' - Mud and water.

Hole No. 4 Ground Elev. 774.0 - Rock Elev. 689.0 (85' depth)
0' to 17' - Dark brown clay and chert.
17' to 67' - Mud and sand.
67' to 85' - Mud and water.

Hole No. 5 Ground Elev. 772.7 - Rock Elev. 725.7 (47' depth)
0' to 12' - Dark brown wet clay.
12' to 37' - Wet yellow clay.
37' to 47' - Brown wet heavy clay.

Hole No. 6 Ground Elev. 673.0 - Rock Elev. 636.0 (37' depth)
0' to 17' - Brown wet clay.
17' to 37' - Yellow wet heavy clay.

Hole No. 7 Ground Elev. 772.5 - Rock not reached. (92' depth)
0' to 17' - Dark brown clay and chert.
17' to 92' - Light brown clay and little sand.

Hole No. 8 Ground Elev. 771.7 - Rock Elev. 729.7 (42' depth)
0' to 32' - Brown clay and chert.
32' to 42' - Medium brown clay with little chert.

Hole No. 9 Ground Elev. 772.5 - Rock Elev. 730.5 (42' depth)
0' to 32' - Brown clay and chert.
32' to 42' - Medium brown clay with little chert.

Hole No. 10 Ground Elev. 773.6 - Rock Elev. 734.6 (39' depth)
0' to 25' - Brown clay and chert.
25' to 39' - Medium brown clay and little chert.

DRILLERS LOG

Hole No. 11 Ground Elev. 777.0 - Rock Elev. 715.0 (62' depth)
0' to 17' - Yellow clay and chert.
17' to 62' - Brown wet heavy clay.

Hole No. 12 Ground Elev. 776.1 - Rock Elev. 751.1 (25' depth)
0' to 25' - Red clay and chert.

Hole No. 13 Ground Elev. 775.1 - Rock Elev. 703.1 (72' depth)
0' to 22' - Red clay and chert.
22' to 40' - Brown wet clay and chert.
40' to 72' - Brown wet heavy clay.

Hole No. 14 Ground Elev. 774.1 - Rock Elev. 707.1 (67' depth)
0' to 27' - Yellow clay and chert.
27' to 40' - Yellow wet clay and little chert.
40' to 67' - Yellow wet heavy clay.

Hole No. 15 Ground Elev. 773.6 - Rock Elev. 712.6 (61' depth)
0' to 27' - Yellow clay and chert.
27' to 42' - Brown wet clay and chert.
42' to 61' - Brown wet clay and sand.

Hole No. 16 Ground Elev. 773.2 - Rock Elev. 712.2 (61' depth)
0' to 27' - Yellow clay and chert.
27' to 42' - Brown wet clay and chert.
42' to 61' - Brown wet clay and sand.

Hole No. 17 Ground Elev. 773.0 - Rock Elev. 706.0 (67' depth)
0' to 20' - Yellow clay and heavy chert.
20' to 67' - Brown mud and sand.

Hole No. 18 Ground Elev. 772.9 - Rock Elev. 715.9 (57' depth)
0' to 25' - Light red clay and chert.
25' to 47' - Brown clay and chert.
47' to 57' - Dark brown wet clay.

Hole No. 19 Ground Elev. 782.4 - Rock Elev. 742.4 (40' depth)
0' to 40' - Yellow clay and chert.

Hole No. 20 Ground Elev. 781.5 - Rock Elev. 725.5 (56' depth)
0' to 20' - Brown clay and chert.
20' to 42' - Brown stiff clay.
42' to 56' - Dark brown wet heavy clay.

Note: Points 27 through 44 were inaccessible to drilling crew, so holes were not drilled at these locations.

DRILLERS LOG

Hole No. 21 Ground Elev. 780.7 - Rock not reached (92' depth)
0' to 32' - Brown clay and chert.
32' to 52' - Brown stiff clay.
52' to 92' - Brown wet heavy clay.

Hole No. 22 Ground Elev. 779.8 - Rock Elev. 735.8 (44' depth)
0' to 22' - Red clay and little chert.
22' to 37' - Brown stiff clay.
37' to 44' - Brown stiff clay.

Hole No. 23 Ground Elev. 779.0 - Rock not reached. (92' depth)
0' to 12' - Brown clay and chert.
12' to 27' - Red clay and little chert.
27' to 92' - Dark brown wet clay.

Hole No. 24 Ground Elev. 778.0 - Rock Elev. 729.0 (49' depth)
0' to 17' - Red clay and chert.
17' to 22' - Brown stiff clay.
22' to 49' - Dark brown wet heavy clay.

Hole No. 25 Ground Elev. 776.9 - Rock Elev. 722.9 (54' depth)
0' to 16' - Dry red clay and chert.
17' to 32' - Red stiff clay.
32' to 54' - Brown wet heavy clay.

Hole No. 26 Ground Elev. 775.8 - Rock Elev. 720.8 (55' depth)
0' to 20' - Brown clay and chert.
20' to 55' - Yellow wet heavy clay.

Hole No. 40A Ground Elev. 795.3 - Rock Elev. 703.3 (92' depth)
0' to 15' - Brown clay and heavy chert.
15' to 33' - Light red sandy clay and light chert.
33' to 92' - Moist brown sandy clay and chert.

Hole No. 42A Ground Elev. 796.1 - Rock Elev. 704.1 (92' depth)
0' to 15' - Brown clay and heavy chert.
15' to 33' - Light red sandy clay and light chert.
33' to 92' - Moist brown sandy clay and chert.

Hole No. 43A Ground Elev. 795.1 - Rock Elev. 707.1 (88' depth)
0' to 15' - Brown clay and heavy chert.
15' to 32' - Light red sandy clay and light chert.
32' to 88' - Moist brown sandy clay and chert.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3()

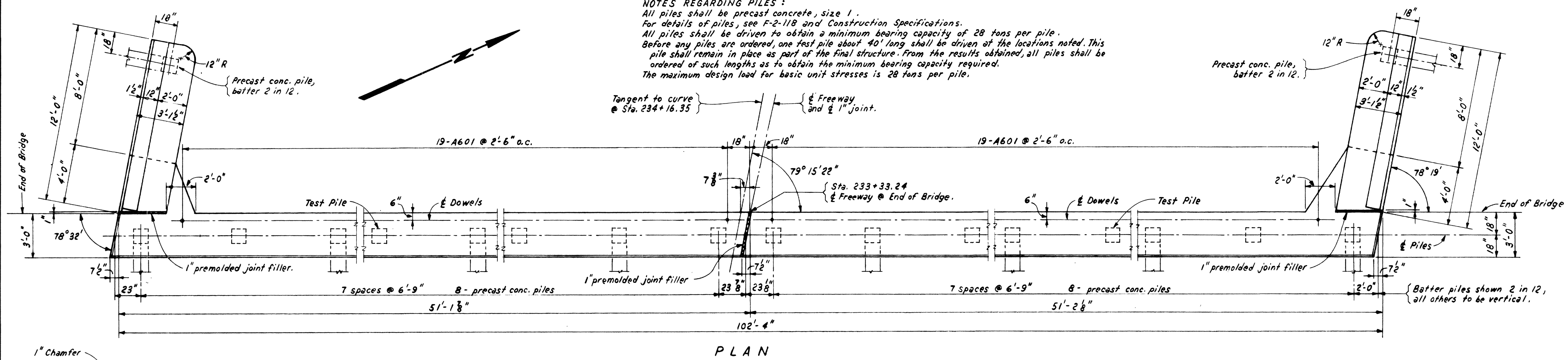
**GERMANTOWN ROAD UNDERPASS
SOUNDING DATA**

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

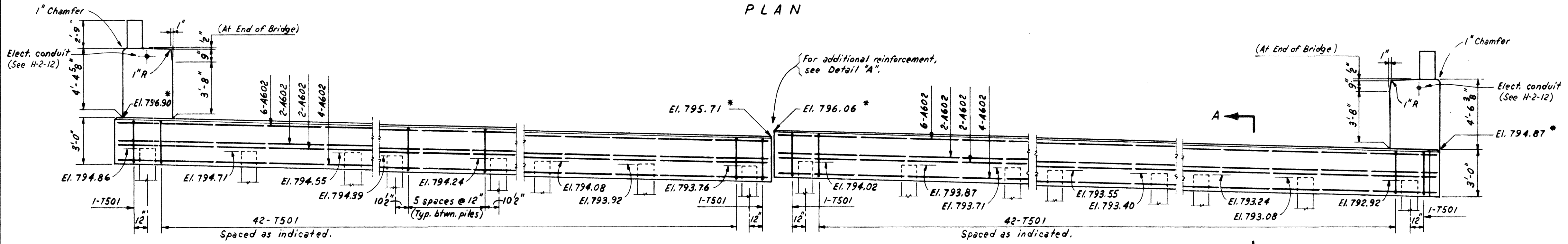
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| CHKD: | AC SUPY: AC | FILE NO. 57.77 | SHEET NO. H-2-2 |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | STATE AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|---------------------|-------------|-----------|--------------|
| 3 | TENN. | E24-3(1) | 128 | | 92 | 204 |

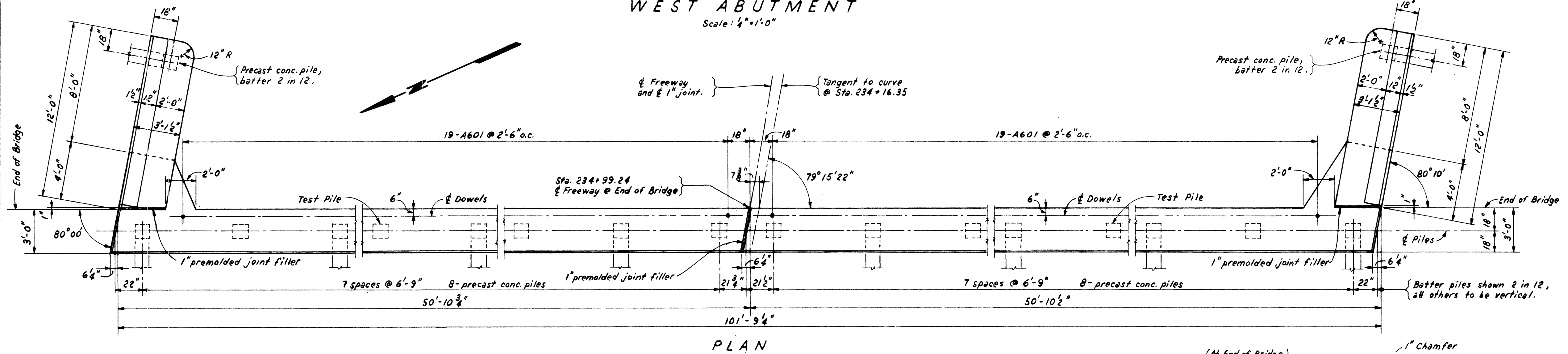
NOTES REGARDING PILES:
 All piles shall be precast concrete, size 1.
 For details of piles, see F-2-11B and Construction Specifications.
 All piles shall be driven to obtain a minimum bearing capacity of 28 tons per pile.
 Before any piles are ordered, one test pile about 40' long shall be driven at the locations noted. This pile shall remain in place as part of the final structure. From the results obtained, all piles shall be ordered of such lengths as to obtain the minimum bearing capacity required.
 The maximum design load for basic unit stresses is 28 tons per pile.



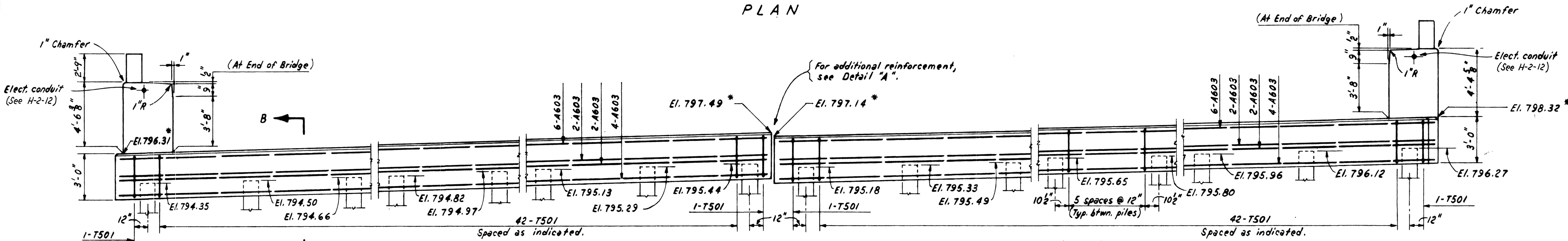
PLAN



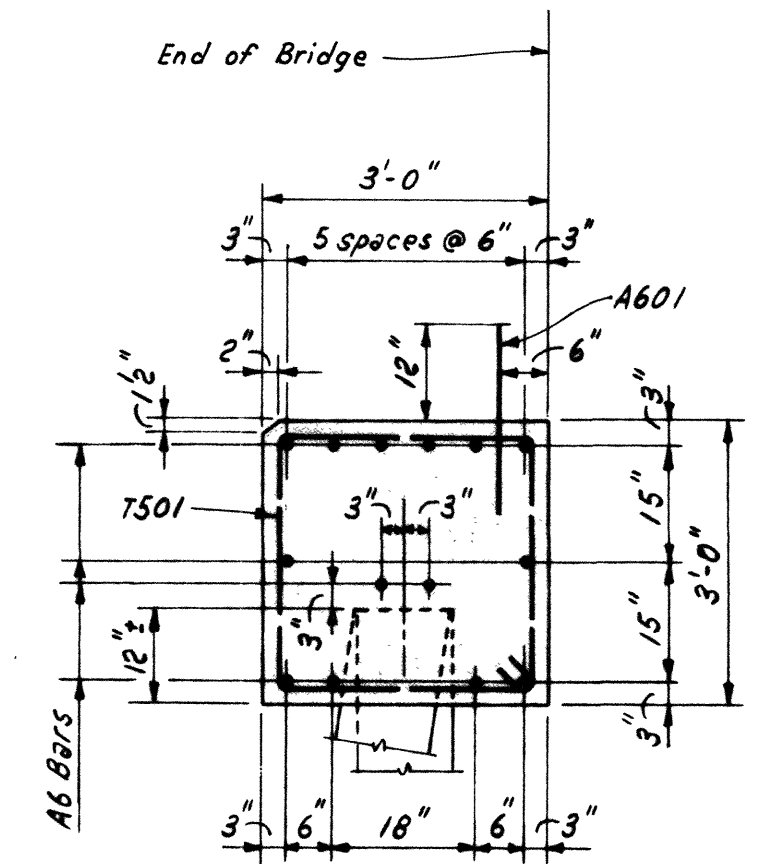
ELEVATION
WEST ABUTMENT
Scale: 1/4" = 1'-0"



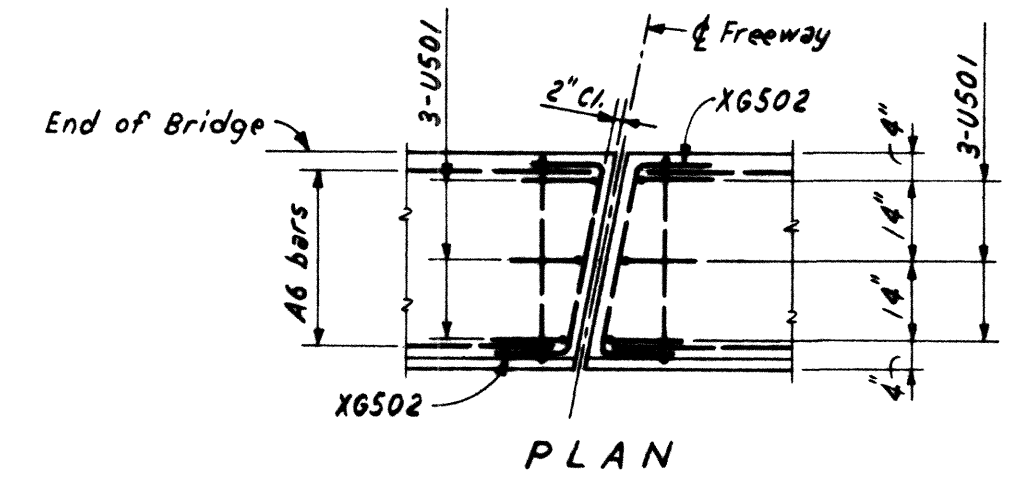
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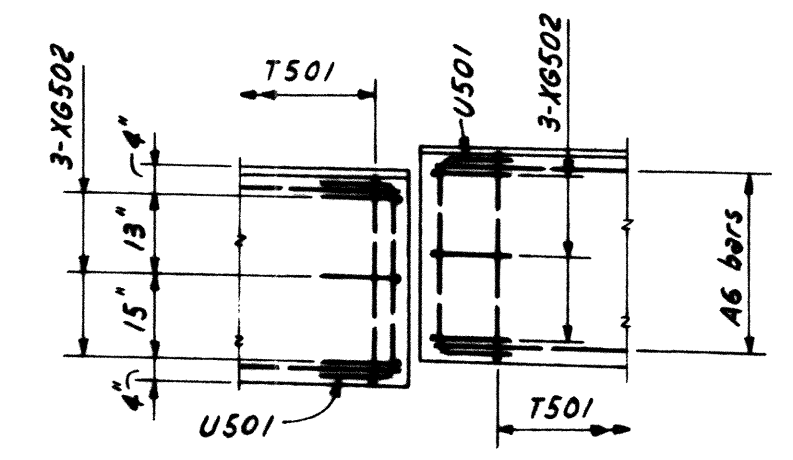
ELEVATION
EAST ABUTMENT
Scale: 1/4" = 1'-0"



SECTIONS A-A & B-B
Scale: 1/2" = 1'-0"



PLAN

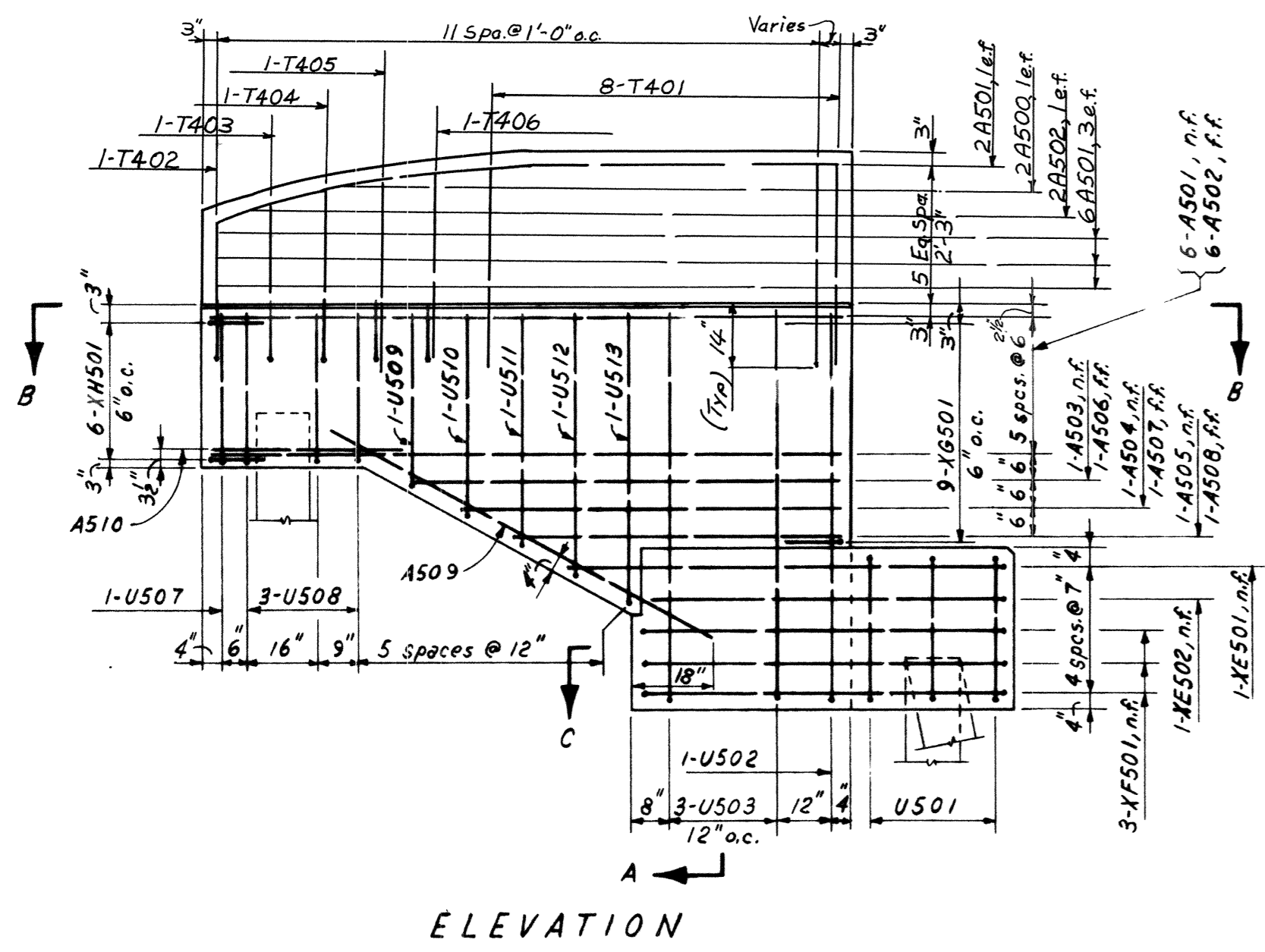


ELEVATION
DETAIL "A"
Scale: 3/8" = 1'-0"

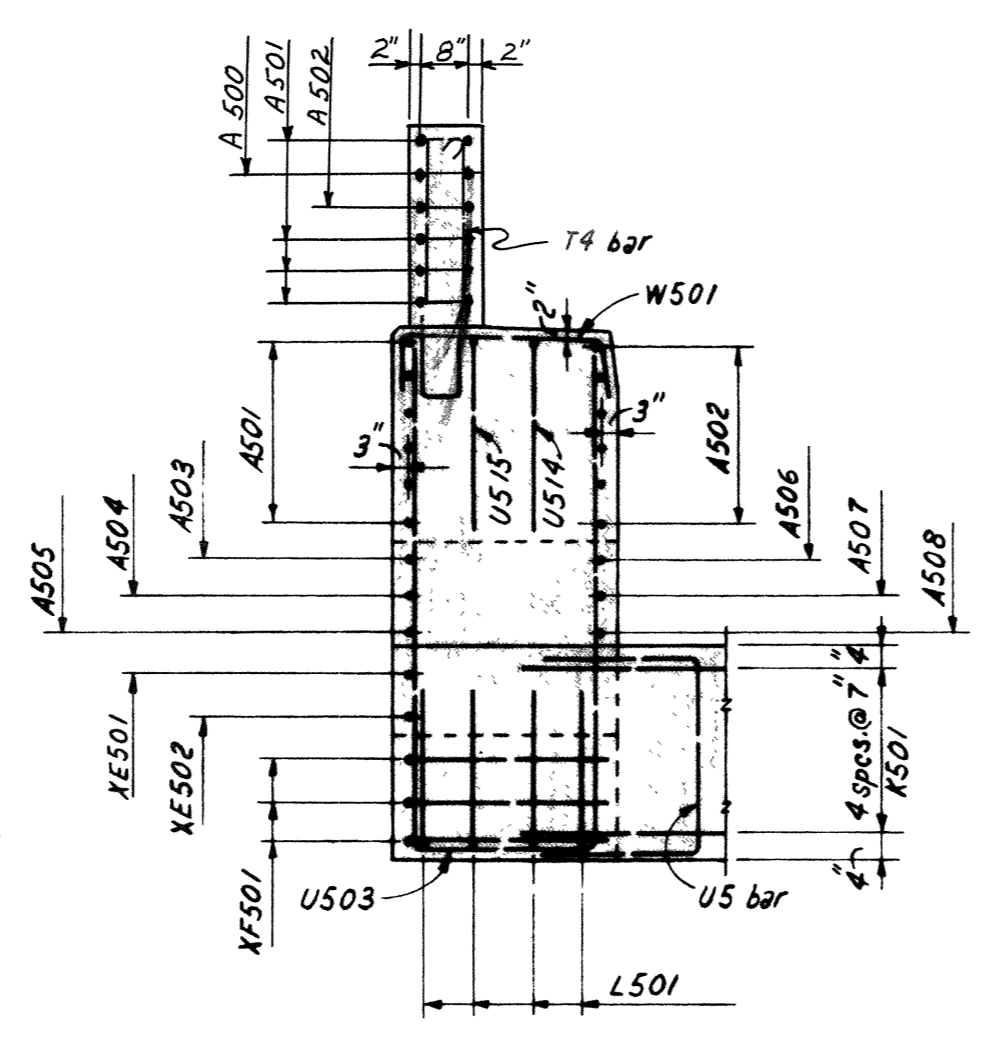
NOTES:
 For General Notes and Specifications, see G-9-90.
 For Deck Layout Plan, see H-2-7.
 For Lighting, Handrailing, and Drainage details, see H-2-12.
 For details of piles, see H-5-111.
 All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
 Chamfer all exposed edges 3/8", except as noted.
 Marks to all reinforcing steel in the Abutments shall have suffix "A", (thus: A601-A, T501-A, etc.).

| | | | |
|--|-----------|-----------------|-----------------|
| STATE OF TENNESSEE DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS CHATTANOOGA FREEWAY HAMILTON COUNTY-F.A. PROJ. NO. I-24-3() | | | |
| GERMANTOWN ROAD UNDERPASS ABUTMENTS | | | |
| SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN. | | | |
| AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN. | | | |
| DSGN: JRP | DRWN: JRP | SCALE: AS NOTED | DATE: 4-17-59 |
| CHKD: JAM | CHKD: JAM | FILE NO. 57.77 | SHEET NO. H-2-3 |
| CHKD: JAM | SUPV: AC | | |

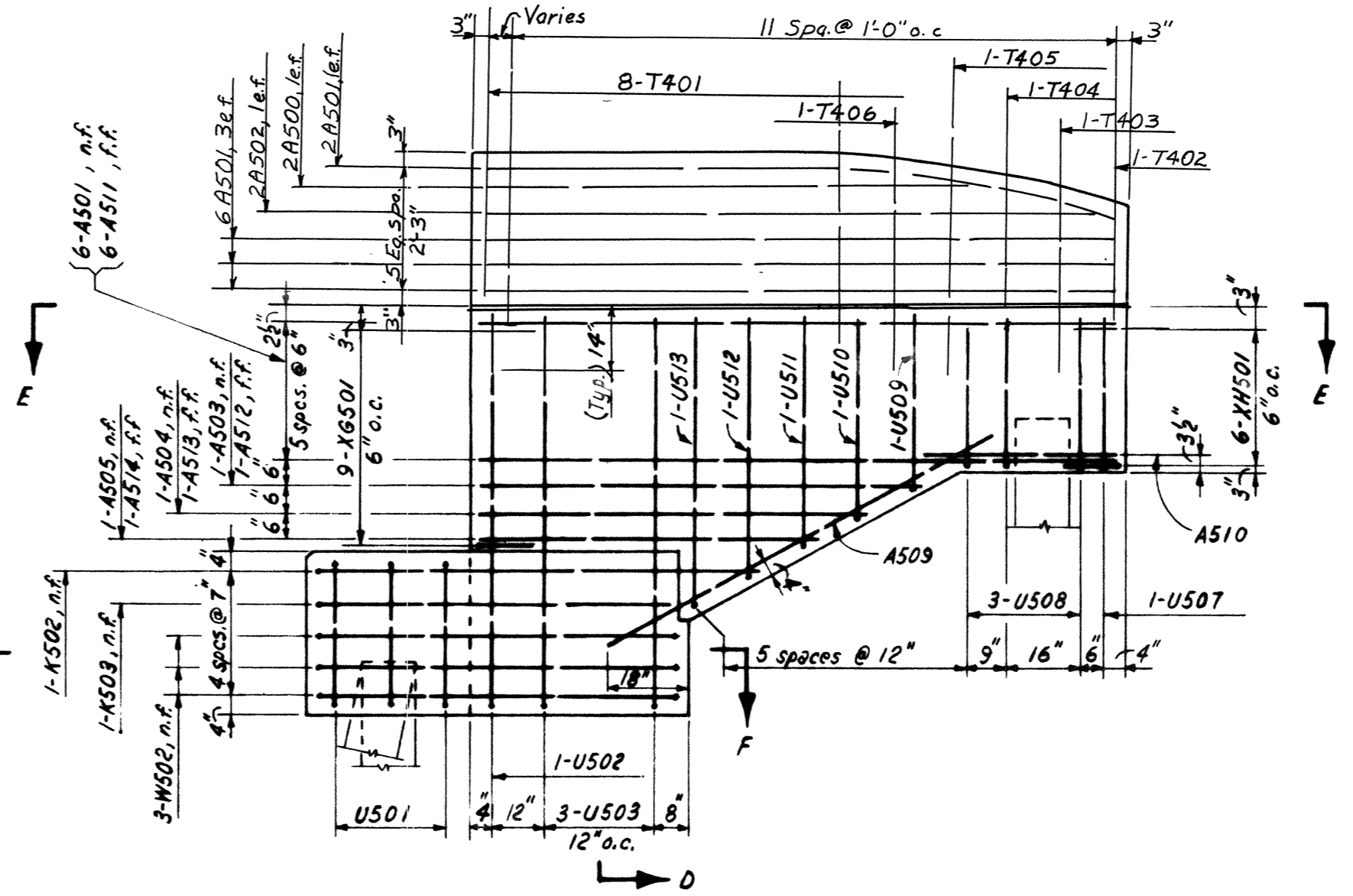
Revised Oct. 1960 Changed handrailing to Concrete Handrailing
 Revised Feb. 1960 Changed handrailing to steel handrailing, (affecting parapet dimensions).



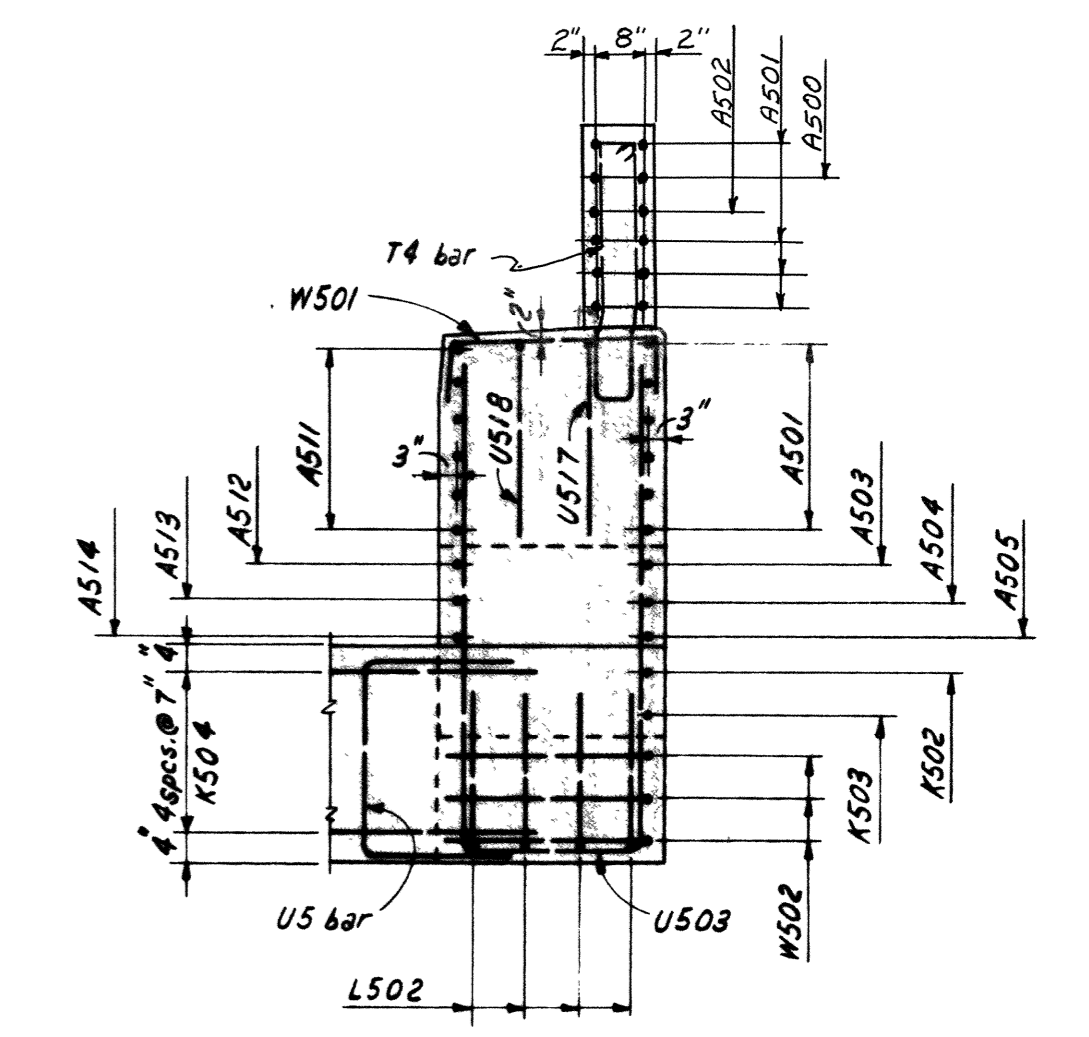
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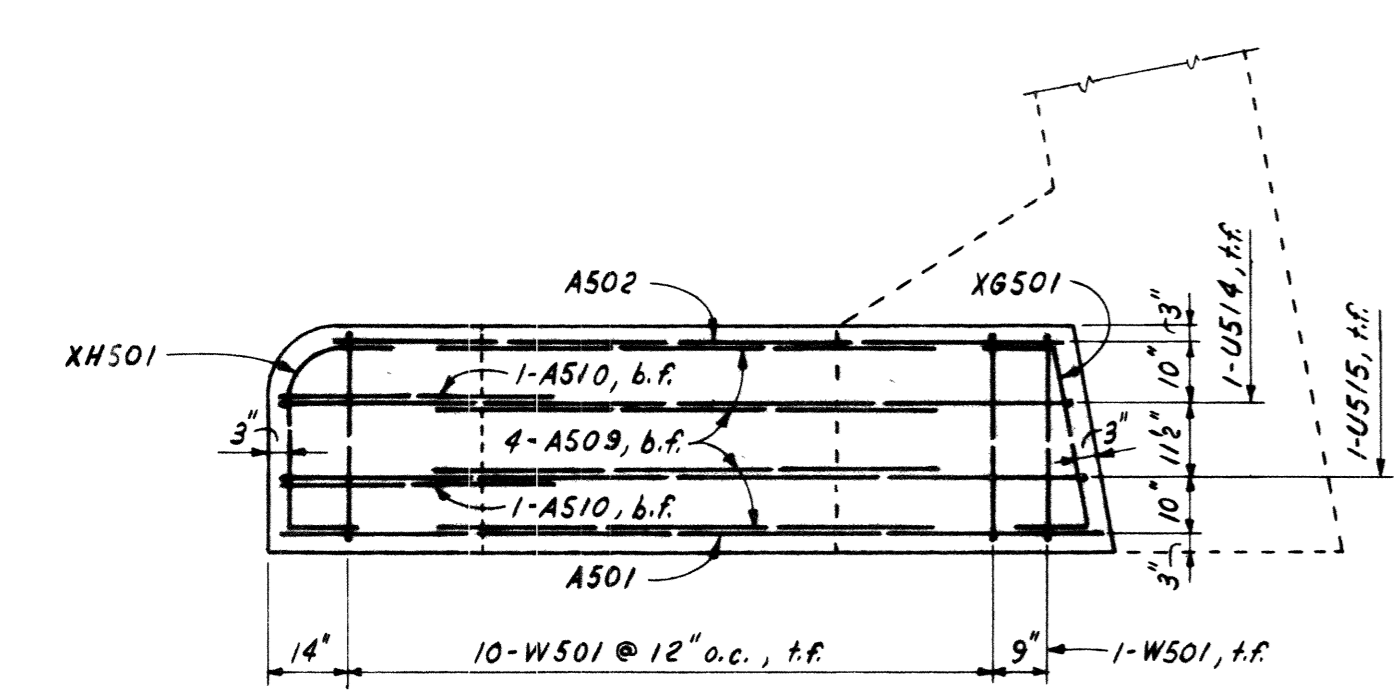
SECTION A-A



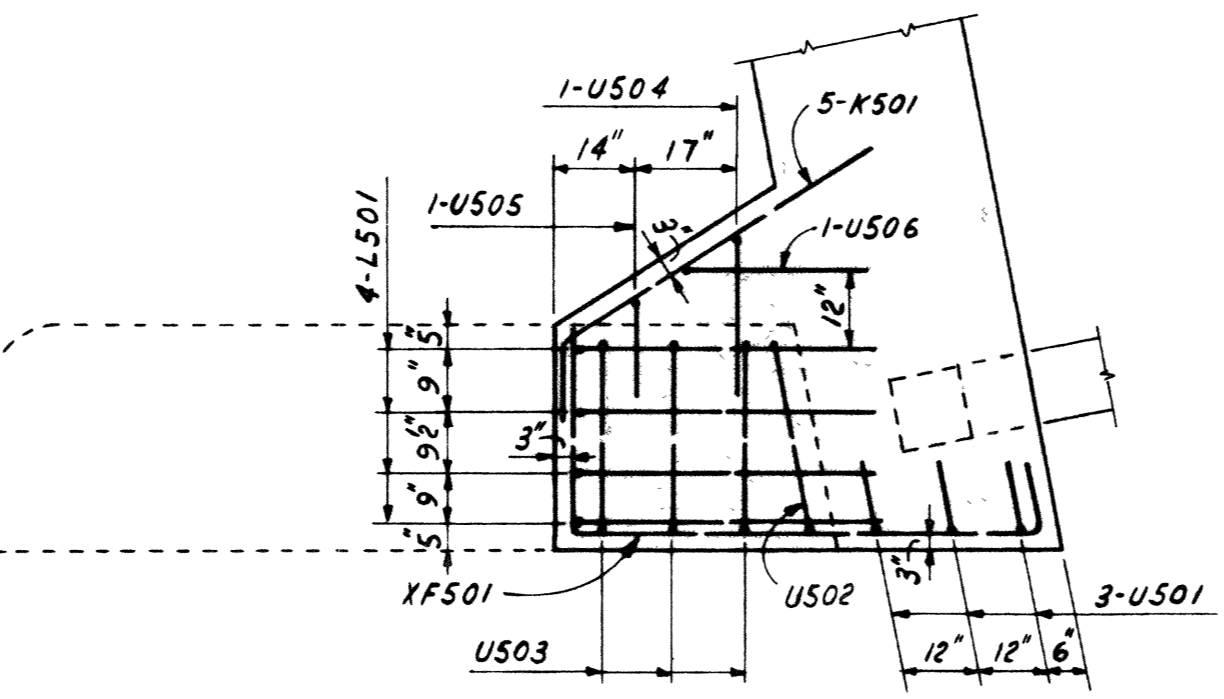
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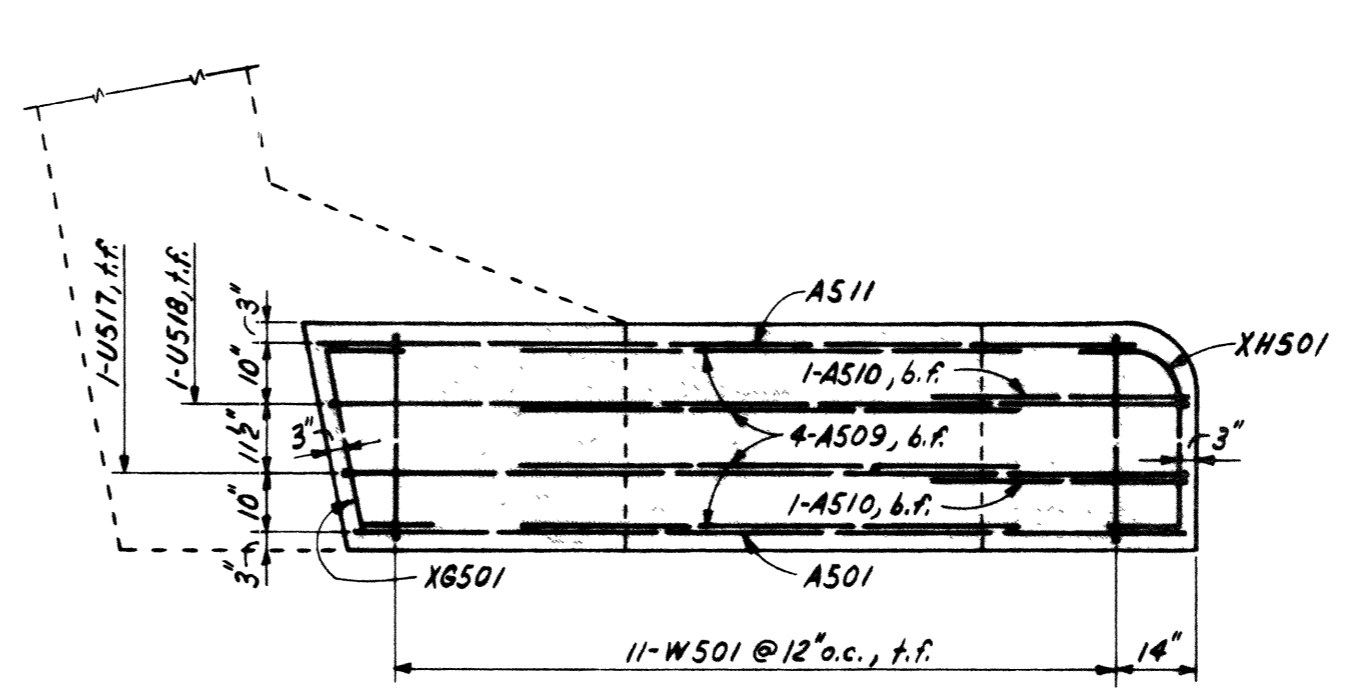
SECTION D-D



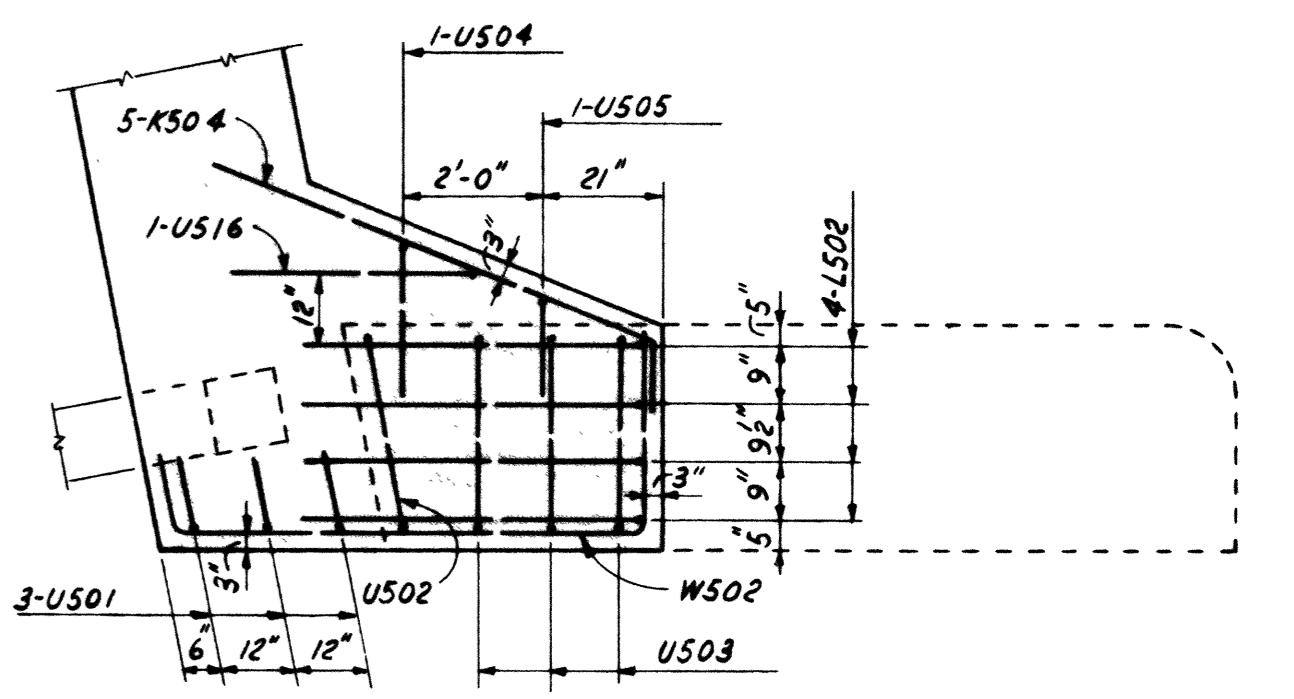
SECTION B-B



SECTION C-C



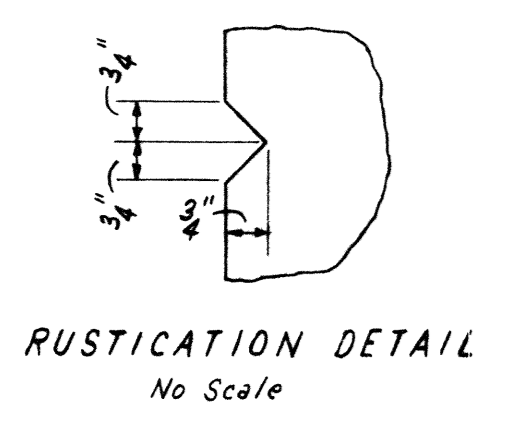
SECTION E-E



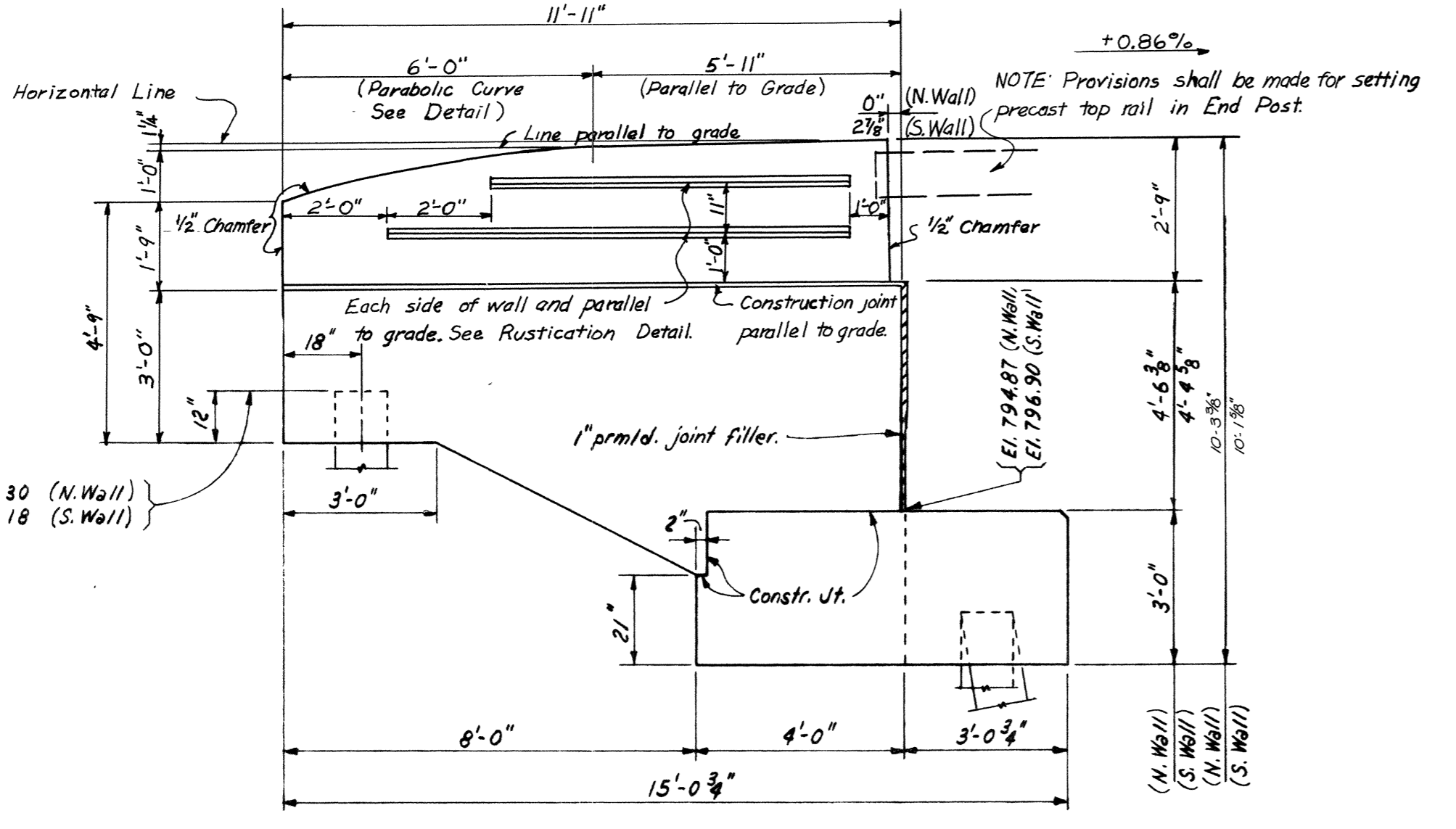
SECTION F-F

REINFORCING DETAILS
WEST ABUTMENT - SOUTH WINGWALL AND EAST ABUTMENT - NORTH WINGWALL

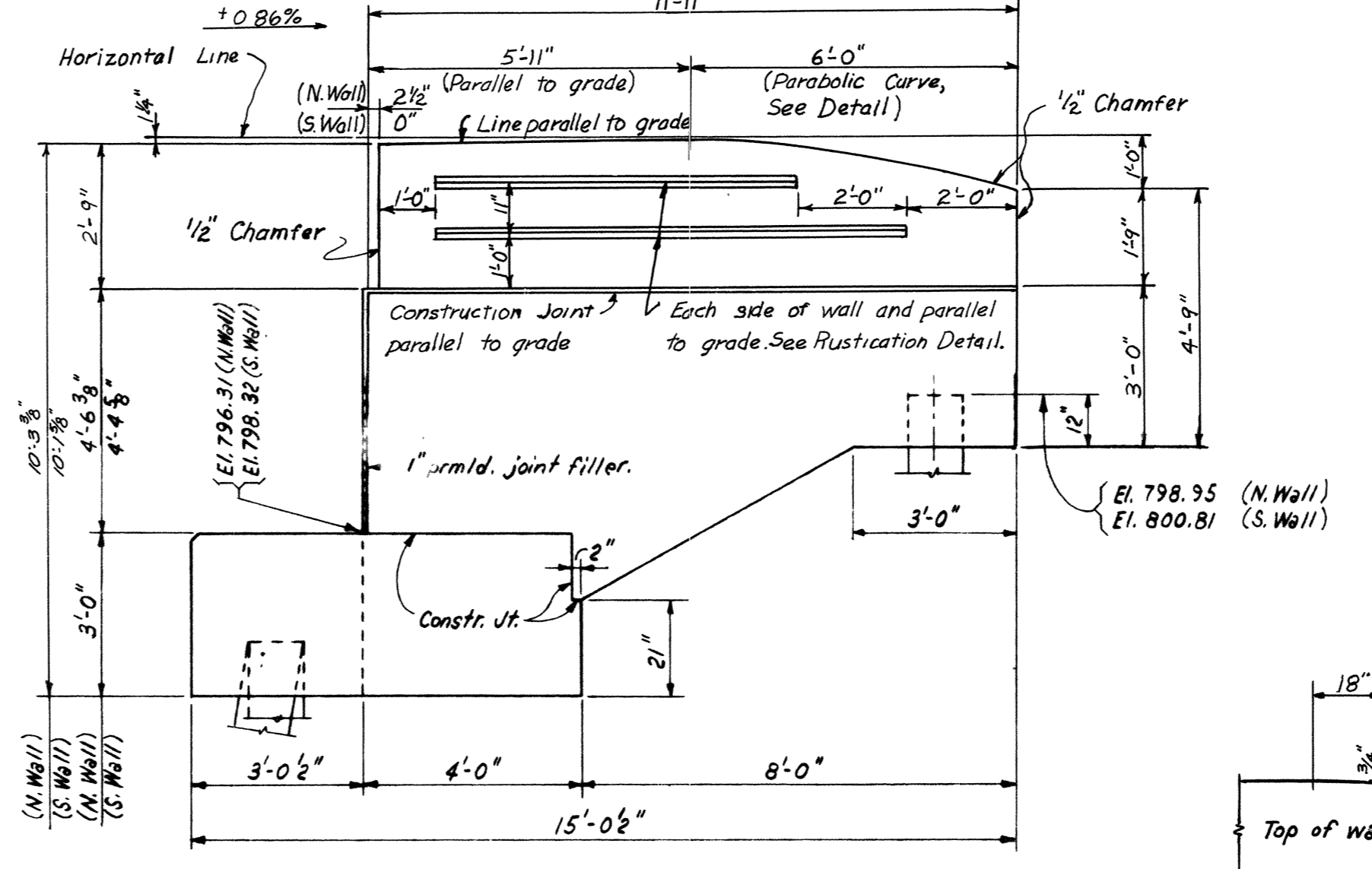
REINFORCING DETAILS
WEST ABUTMENT - NORTH WINGWALL AND EAST ABUTMENT - SOUTH WINGWALL



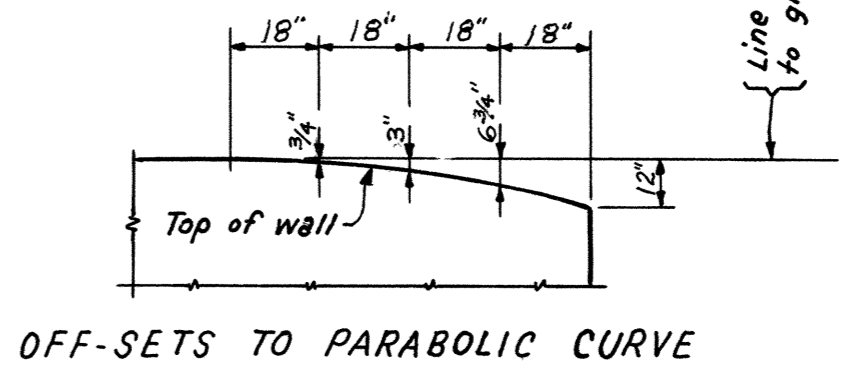
RUSTICATION DETAIL
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WEST ABUTMENT



EAST ABUTMENT



OFF-SETS TO PARABOLIC CURVE

Abbreviations:
e.f. each face
n.f. near face
f.f. far face
t.f. top face
b.f. bottom face

NOTES:
For General Notes and Specifications, see G-9-90.
For Deck Layout Plan, see H-2-7.
For Lighting, Handrailing, and Drainage details, see H-2-12.
For details of piles, see F-2-118.
For reinforcing steel and bending diagrams, see H-2-13.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
Chamfer all exposed edges 3/4", except as noted.
Marks to all reinforcing steel in the Abutments shall have suffix "A", (thus: A501-A, A501-A, etc.).
All piles shall be driven to obtain a minimum bearing capacity of 28 tons per pile.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3 ()

GERMANTOWN ROAD UNDERPASS
ABUTMENT WINGWALLS

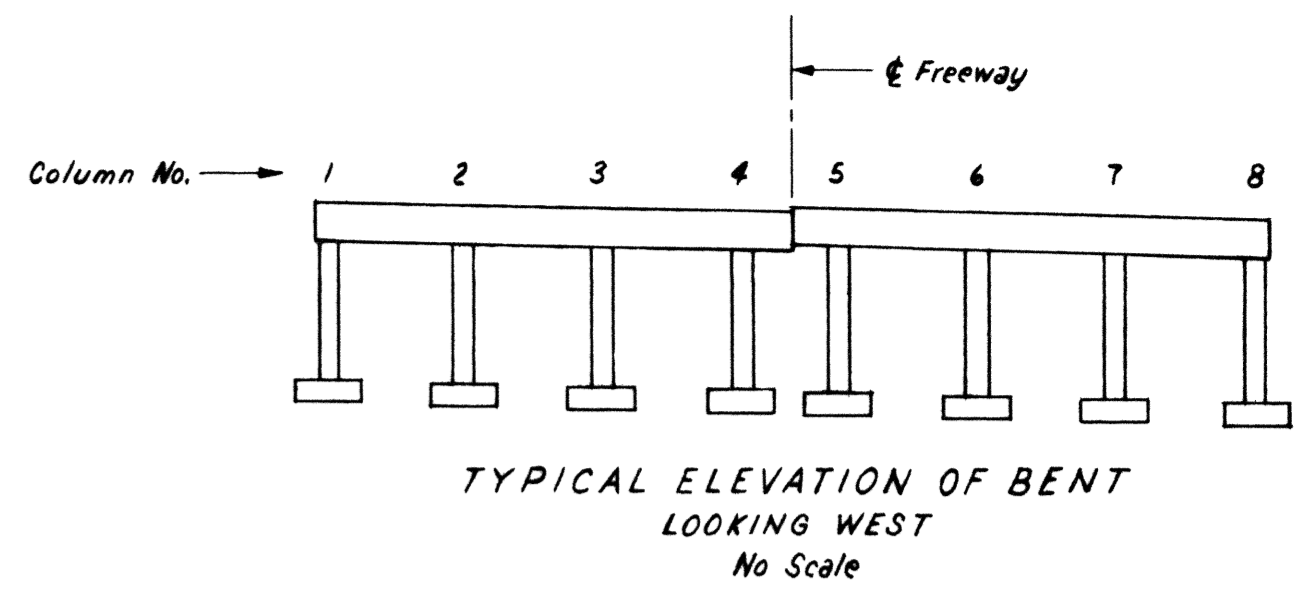
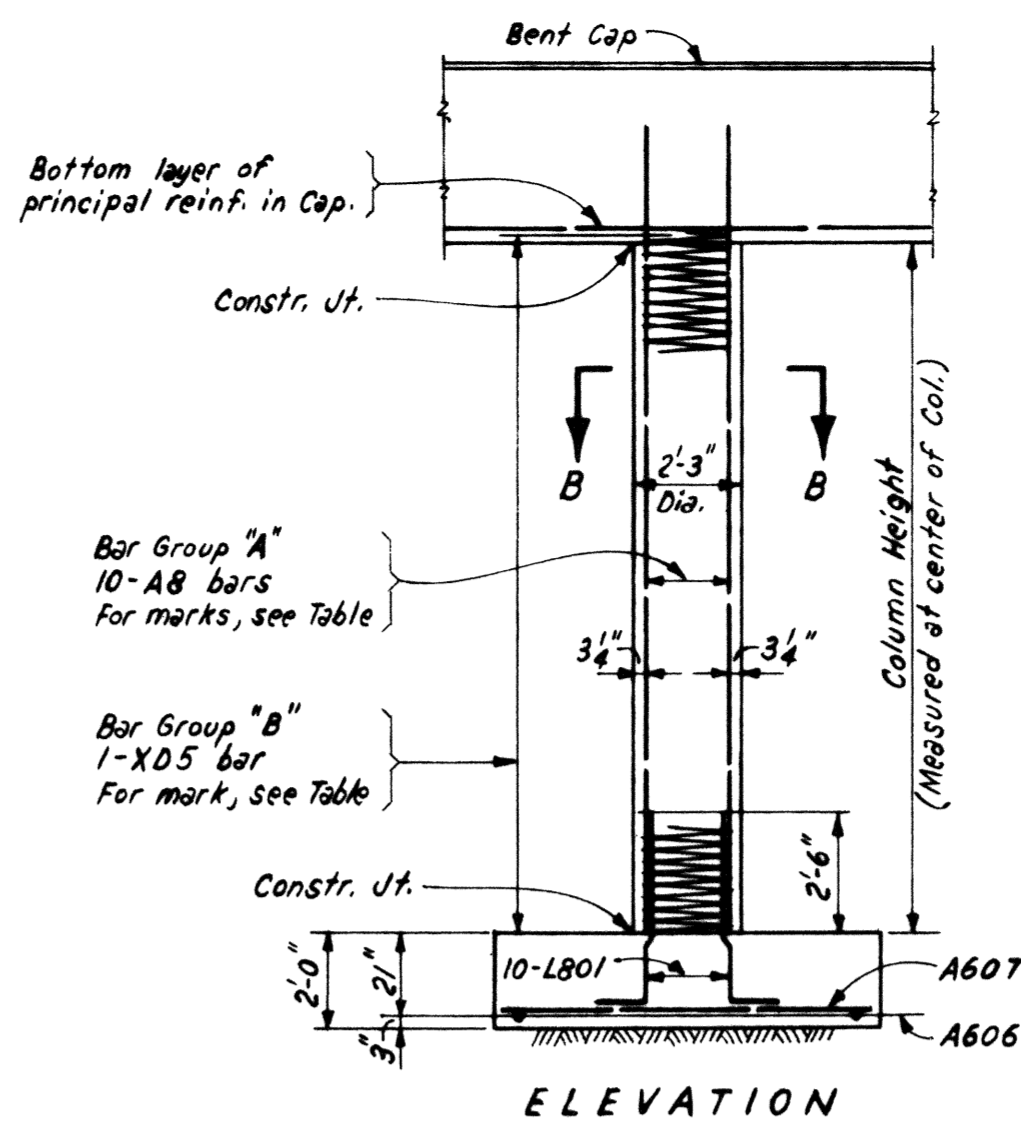
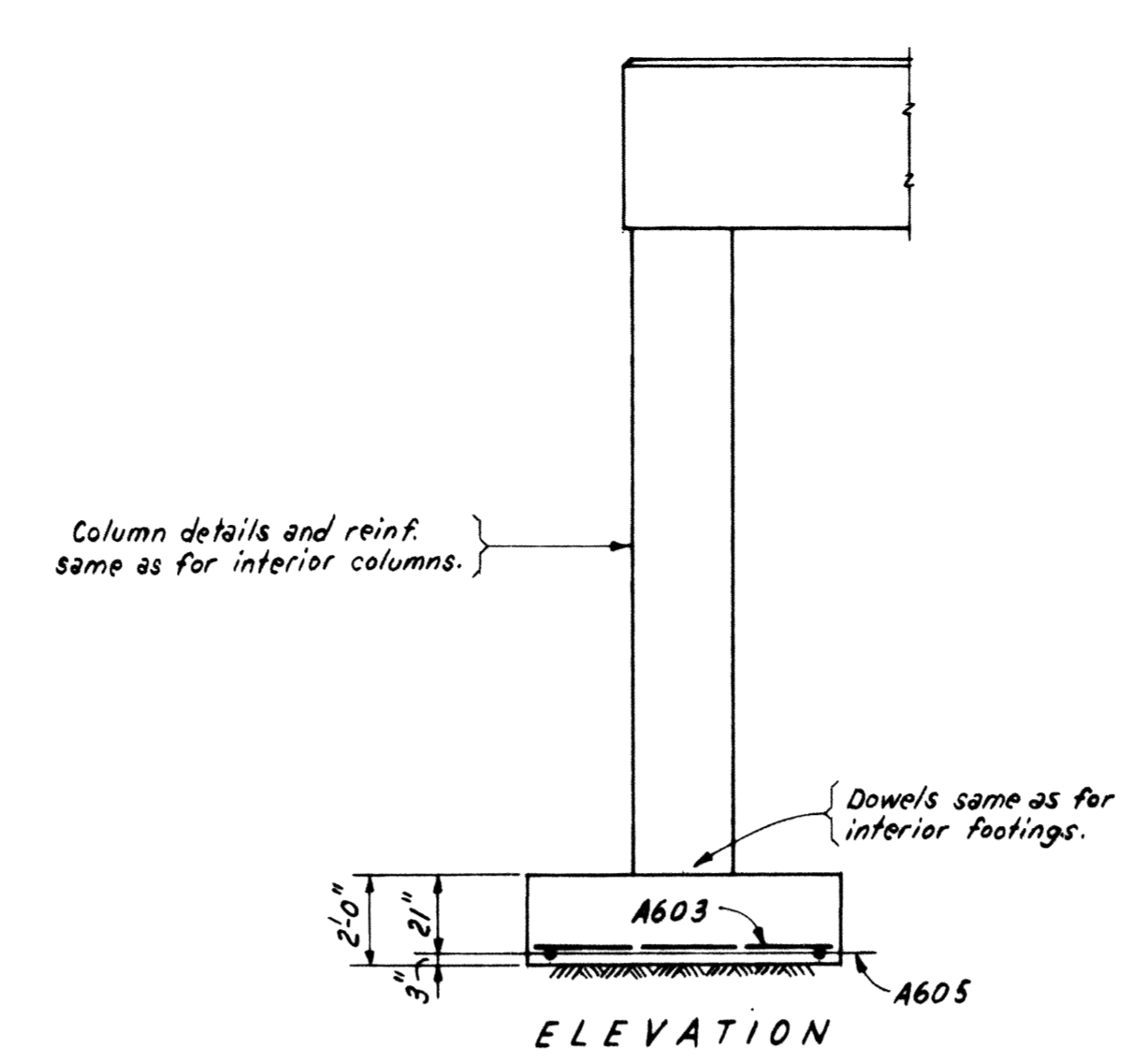
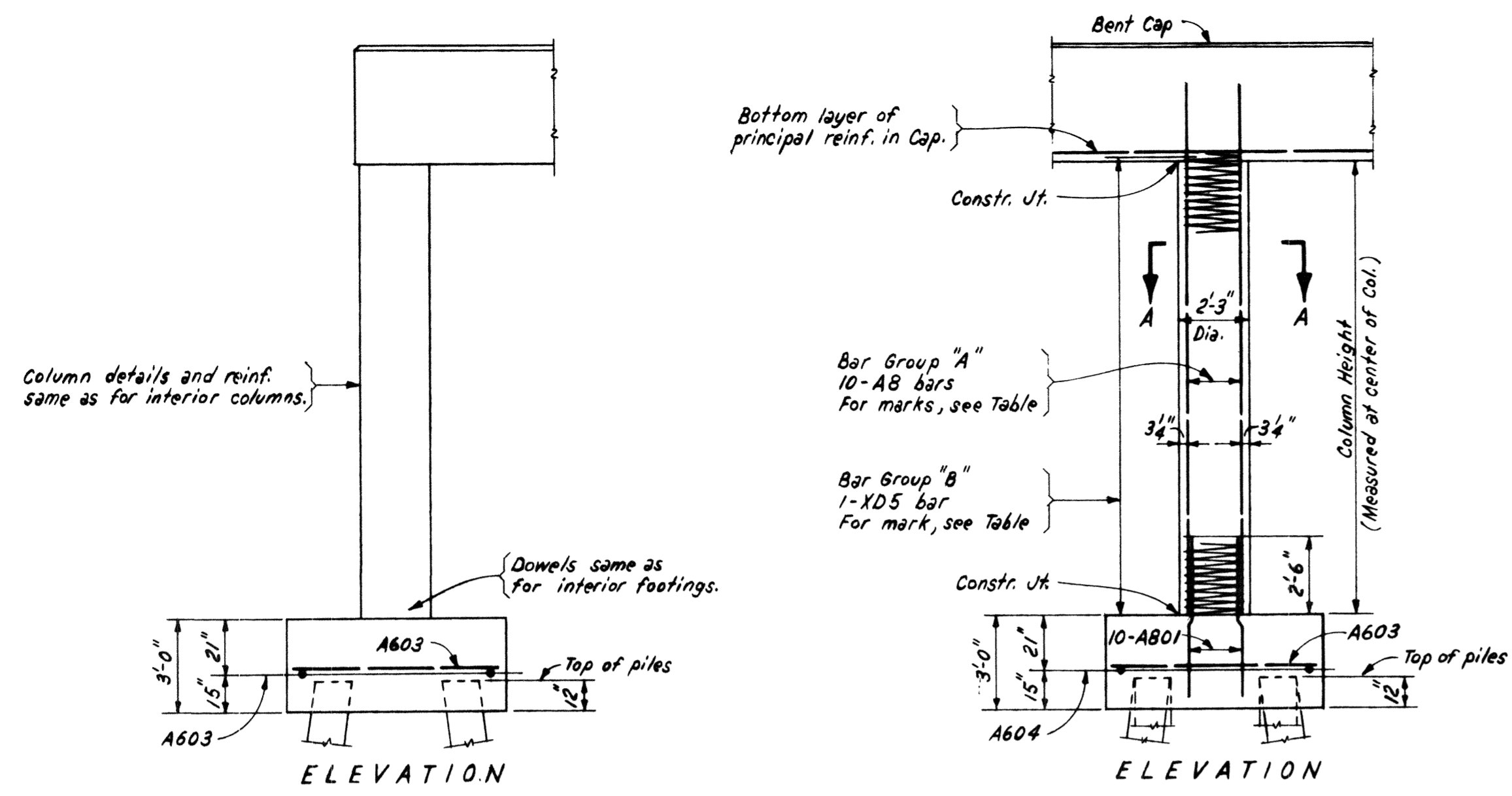
SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP
CHKD: JAM
SUPV: AC

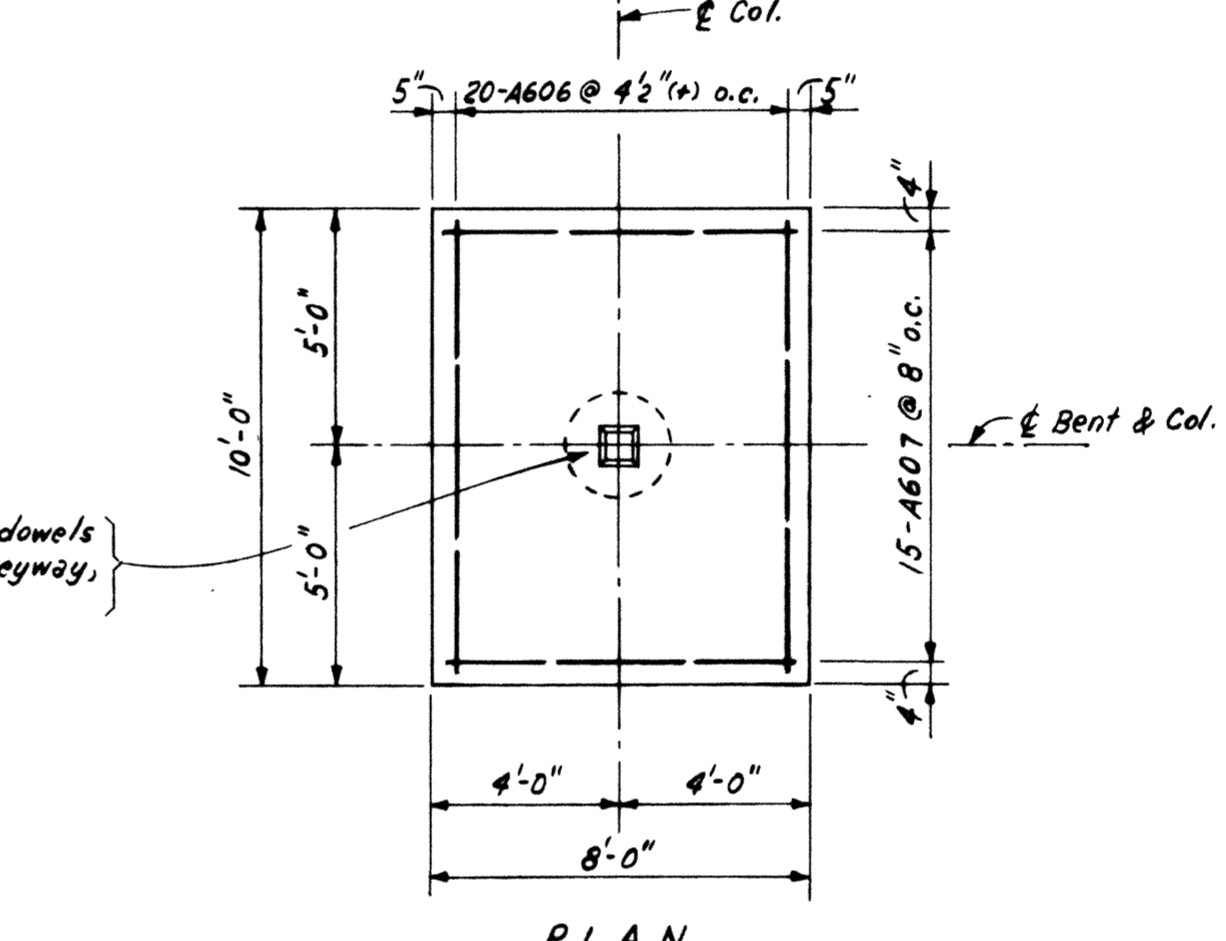
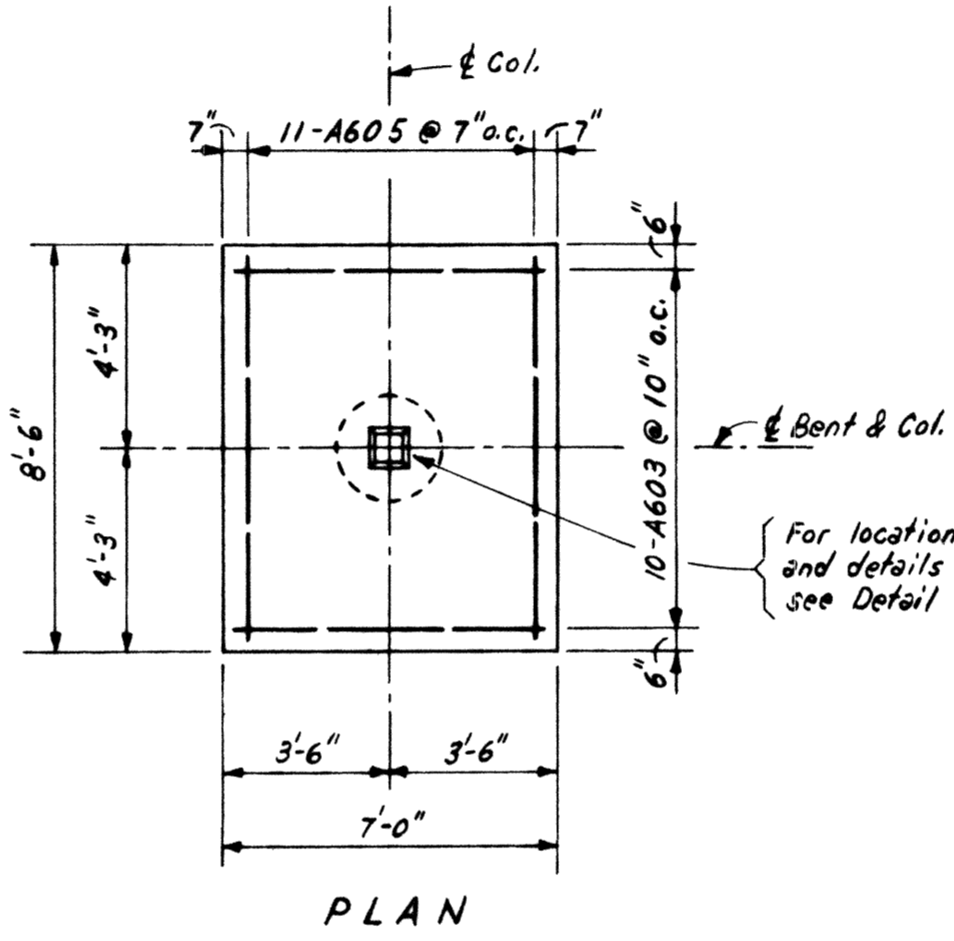
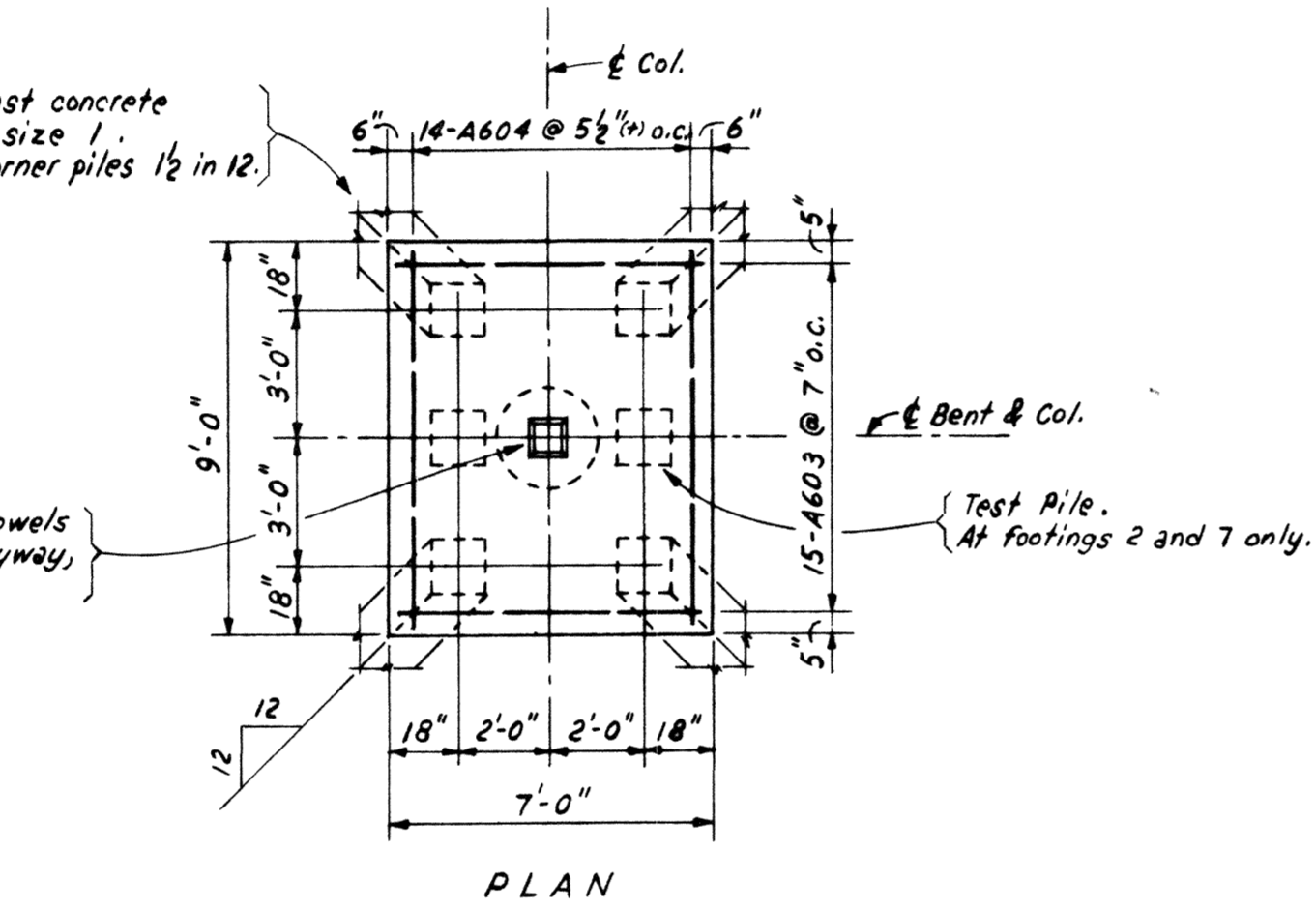
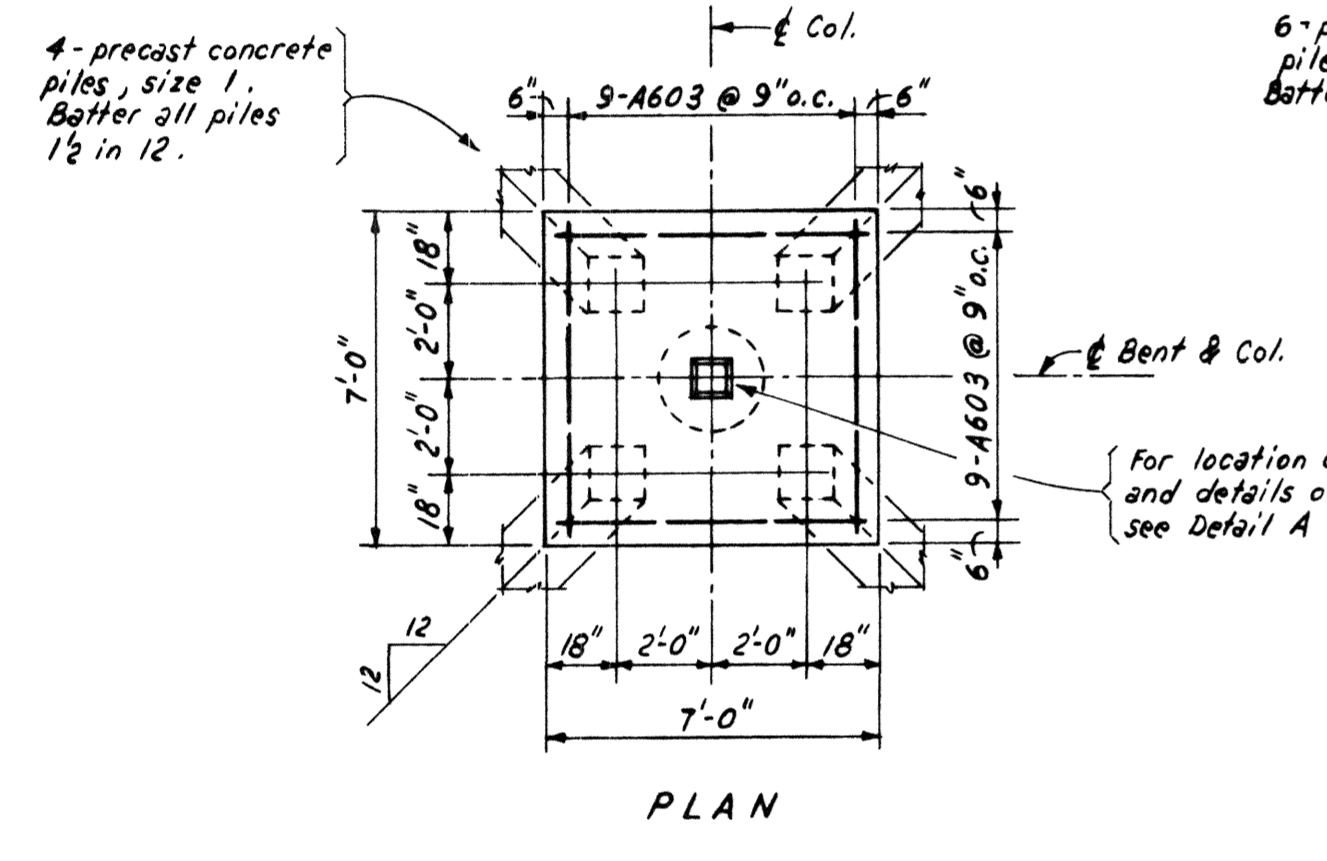
SCALE: 3/8" = 1'-0"
FILE NO. 57.77

DATE: 4-17-59
SHEET NO. H-2-4

Revised Oct. 1960 Changed Handrailing to Concrete Handrailing (affecting parapet dimensions).
Revised Feb. 1960 Changed handrailing to steel handrailing, (affecting parapet dimensions).



| COLUMN AND FOOTING DATA | | | | | | |
|-------------------------|----------------|--------------------|---------------|------------------------|------------------------|--|
| Bent and Column | Elev. Top Ftg. | Elev. Pile Cut-off | Column Height | Reinf. Steel Group "A" | Reinf. Steel Group "B" | |
| Bent 1 | | | | | | |
| Col. 1 | 779.16 | 777.16 | 14'-3" | A802 | XD501 | |
| Col. 2 | 778.82 | 776.82 | 14'-3" | A802 | XD501 | |
| Col. 3 | 778.49 | 776.49 | 14'-3" | A802 | XD501 | |
| Col. 4 | 778.15 | 776.15 | 14'-3" | A802 | XD501 | |
| Col. 5 | 777.01 | 775.01 | 15'-6" | A803 | XD502 | |
| Col. 6 | 776.67 | 774.67 | 15'-6" | A803 | XD502 | |
| Col. 7 | 776.34 | 774.34 | 15'-6" | A803 | XD502 | |
| Col. 8 | 776.00 | 774.00 | 15'-6" | A803 | XD502 | |
| Bent 2 | | | | | | |
| Col. 1 | 779.88 | 777.88 | 13'-6" | A804 | XD503 | |
| Col. 2 | 779.54 | 777.54 | 13'-6" | A804 | XD503 | |
| Col. 3 | 779.21 | 777.21 | 13'-6" | A804 | XD503 | |
| Col. 4 | 778.87 | 776.87 | 13'-6" | A804 | XD503 | |
| Col. 5 | 777.73 | 775.73 | 14'-9" | A805 | XD504 | |
| Col. 6 | 777.39 | 775.39 | 14'-9" | A805 | XD504 | |
| Col. 7 | 777.06 | 775.06 | 14'-9" | A805 | XD504 | |
| Col. 8 | 776.72 | 774.72 | 14'-9" | A805 | XD504 | |
| Bent 3 | | | | | | |
| Col. 1 | 779.95 | 777.95 | 14'-3" | A802 | XD501 | |
| Col. 2 | 779.61 | 777.61 | 14'-3" | A802 | XD501 | |
| Col. 3 | 779.28 | 777.28 | 14'-3" | A802 | XD501 | |
| Col. 4 | 778.94 | 776.94 | 14'-3" | A802 | XD501 | |
| Col. 5 | 777.80 | 775.80 | 15'-6" | A803 | XD502 | |
| Col. 6 | 777.46 | 775.46 | 15'-6" | A803 | XD502 | |
| Col. 7 | 777.13 | 775.13 | 15'-6" | A803 | XD502 | |
| Col. 8 | 776.79 | 774.79 | 15'-6" | A803 | XD502 | |



EXTERIOR COLUMNS & FOOTINGS
COL. & FTG. 1 AND 8

INTERIOR COLUMNS & FOOTINGS
COL. & FTG. 2 THRU 7

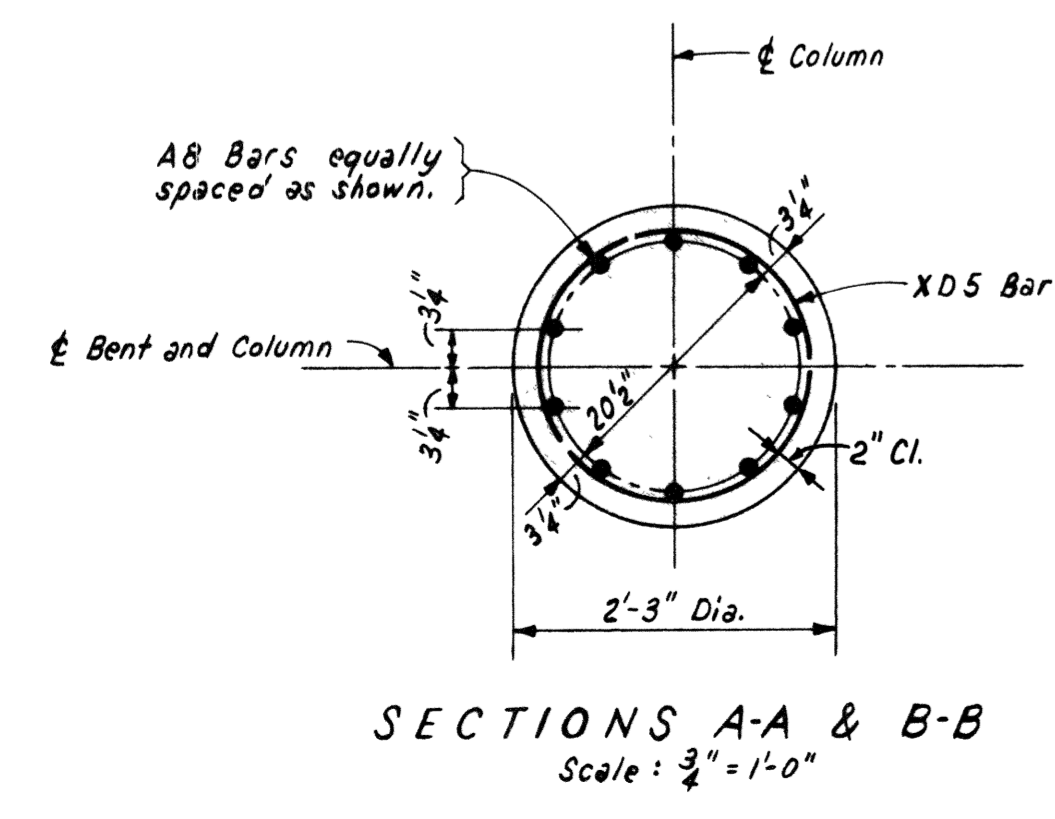
EXTERIOR COLUMNS & FOOTINGS
COL. & FTG. 1 AND 8

INTERIOR COLUMNS & FOOTINGS
COL. & FTG. 2 THRU 7

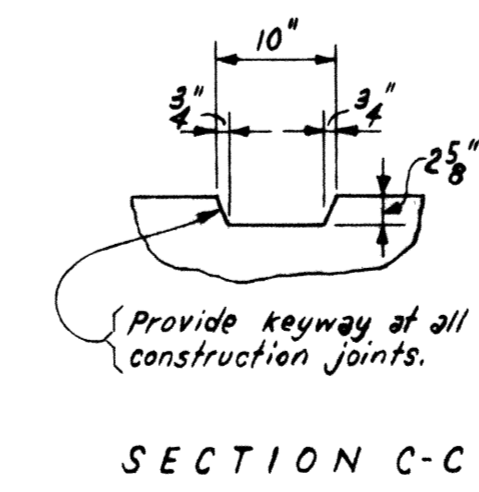
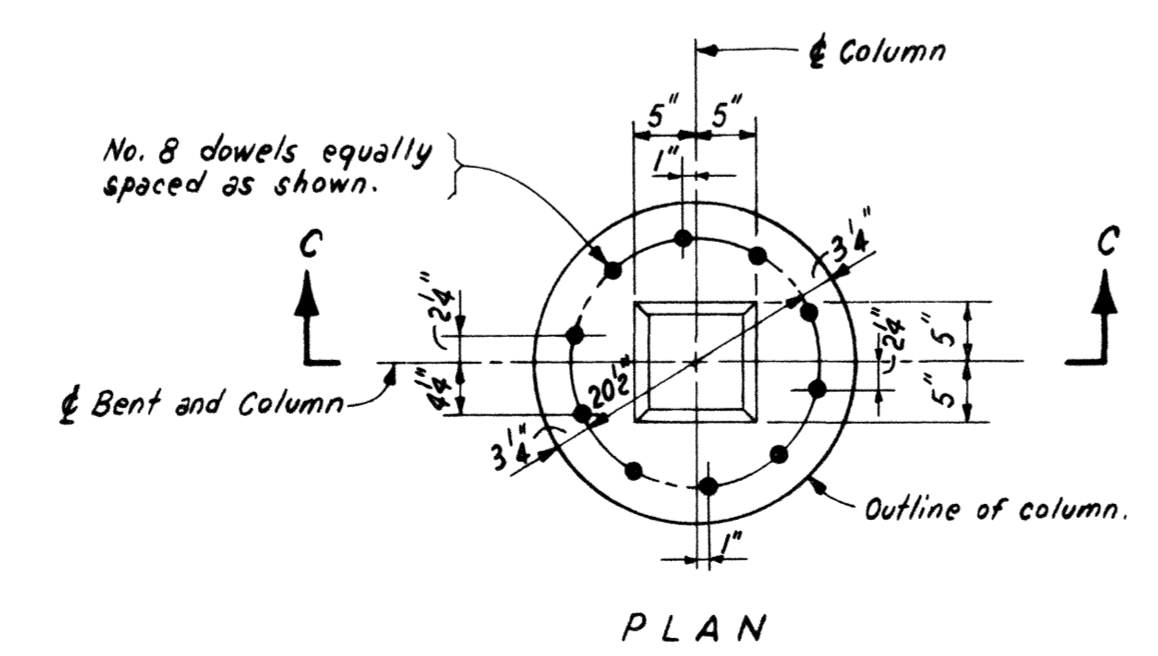
DETAILS FOR FOOTINGS ON PILES
Scale: 1/4" = 1'-0"

DETAILS FOR FOOTINGS ON SOIL
Scale: 1/4" = 1'-0"

The sounding data furnished by the Tenn. State Hwy. Dept. indicates that either pile footings or spread footings may be used. Excavation for the footings shall first be carried to the elevations shown for pile cut-offs. Then, the Engineer shall examine the soil and decide whether to use a pile footing or a spread footing.



NOTE: Exceptional care shall be exercised in placing longitudinal reinforcement in the columns so as to avoid possible interference with principal reinforcement in bent cap.



NOTES REGARDING PILES:
All piles shall be precast concrete, size 1. For details of piles, see H-5-111 and Construction Specifications. All piles shall be driven to obtain a minimum bearing capacity of 28 tons per pile. Before any piles are ordered, one test pile about 40' long shall be driven at the locations noted. This pile shall remain in place as part of the final structure. From the results obtained, all piles shall be ordered of such lengths as to obtain the minimum bearing capacity required. The maximum design load for basic unit stresses is 28 tons per pile.

NOTES REGARDING FOOTINGS ON SOIL:
The maximum design bearing pressure for basic unit stresses is 4,000 pounds per square foot.

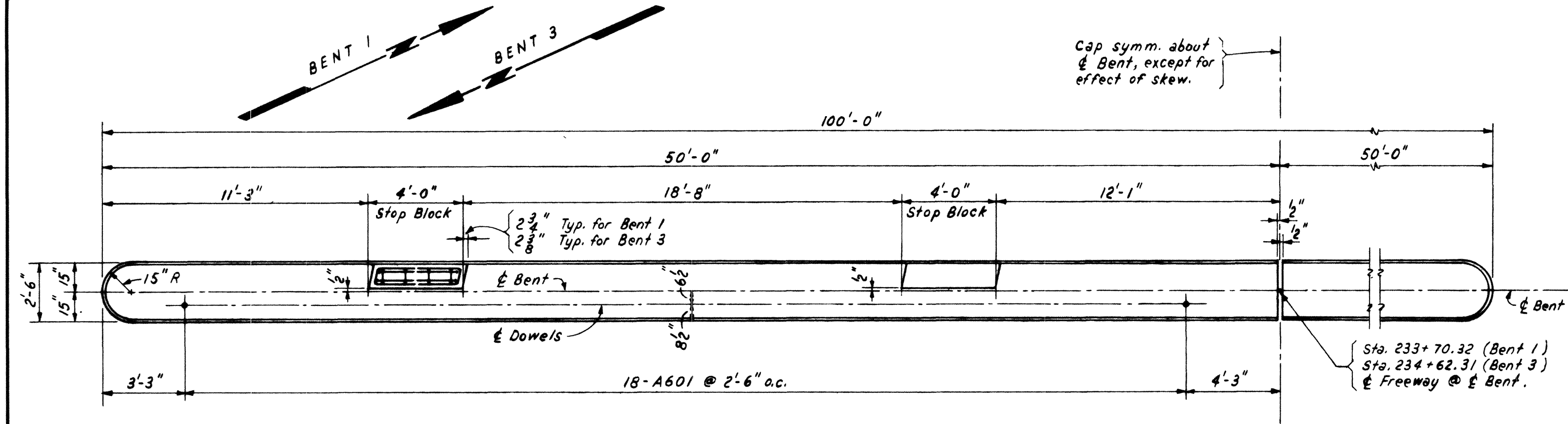
NOTES:
For General Notes and Specifications, see G-9-90. For location of Bents, see H-2-1 and H-2-7. For lighting details, see G-7-5 and H-2-12. For reinforcing steel and bending diagrams, see H-2-13. All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted. Chamfer all exposed edges 3/8", except as noted. Marks to all reinforcing steel in the Bents shall have suffix "B", (thus: A802-B, A603-B, etc.).

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3()

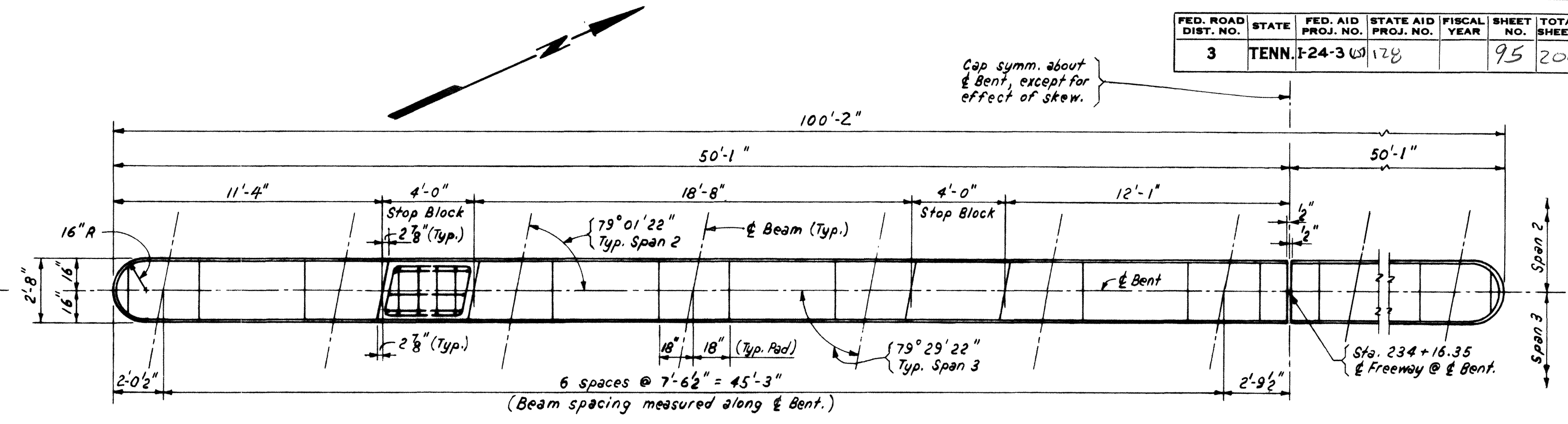
GERMANTOWN ROAD UNDERPASS
BENTS-COLUMN AND FOOTING DETAILS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAK F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

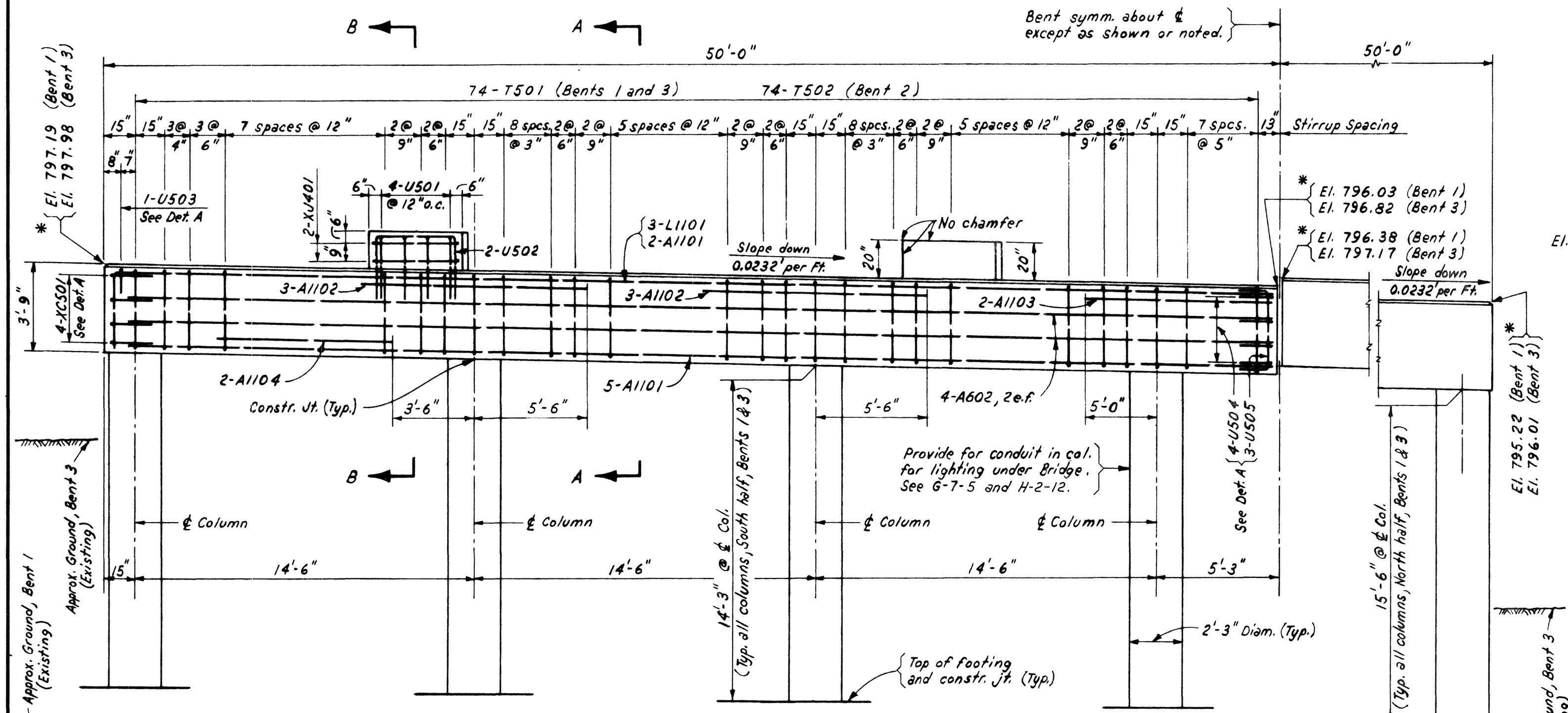
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| DSGN: JRP | DRWN: JRP | SCALE: AS NOTED | DATE: 4-17-59 |
| CHKD: FAM | CHKD: FAM | FILE NO. 57.77 | SHEET NO. H-2-5 |
| | SUPV: AC | | |



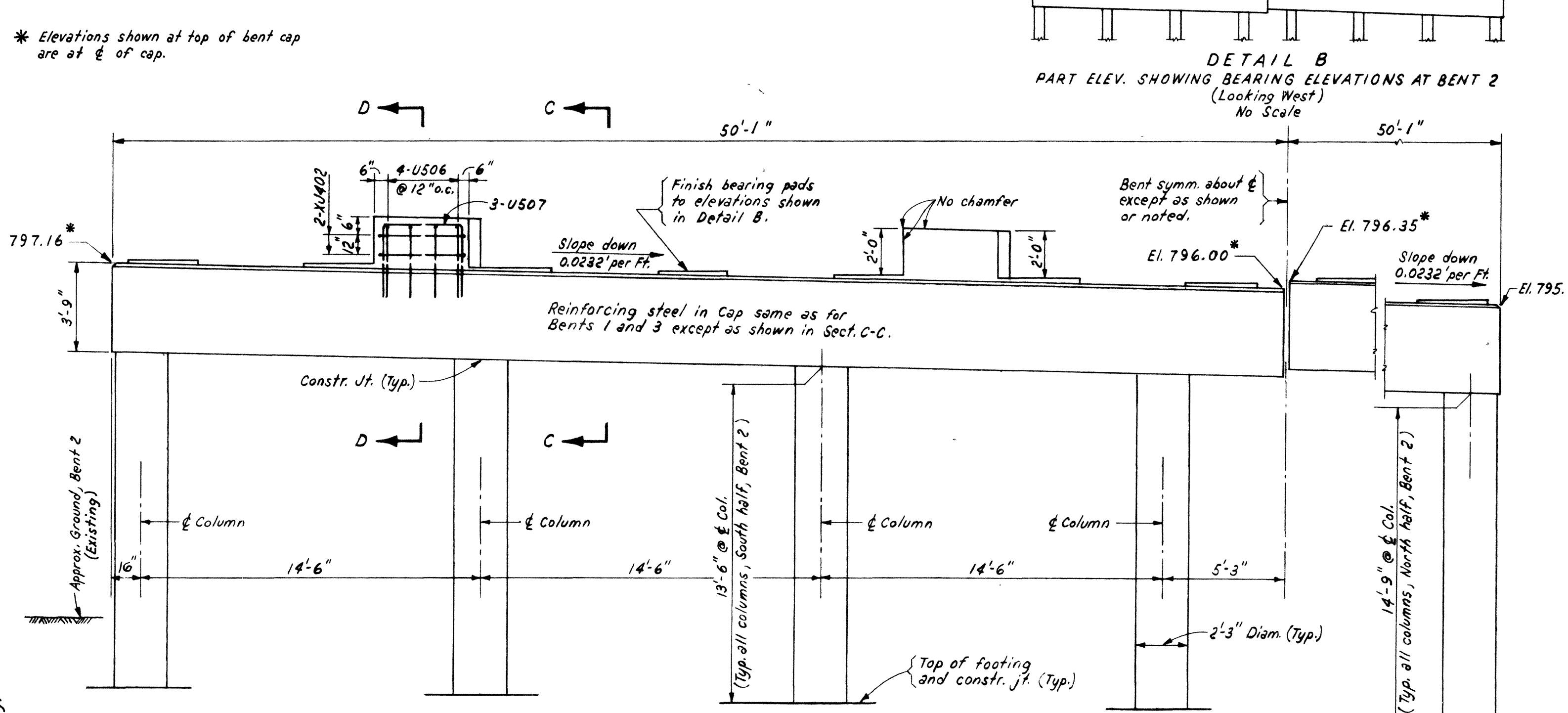
PLAN OF CAPS



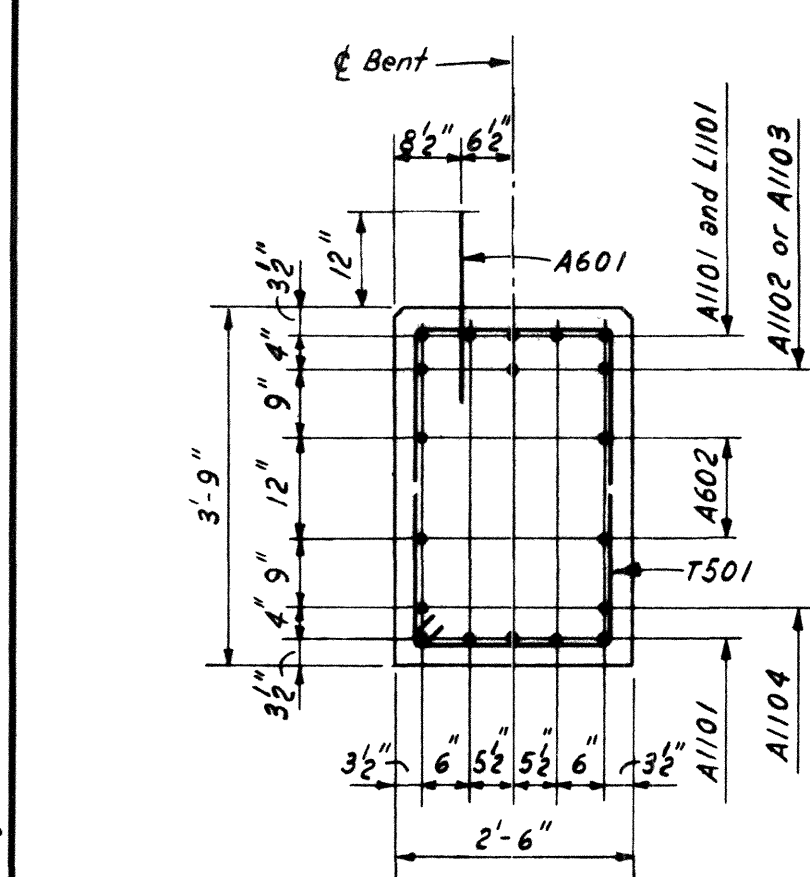
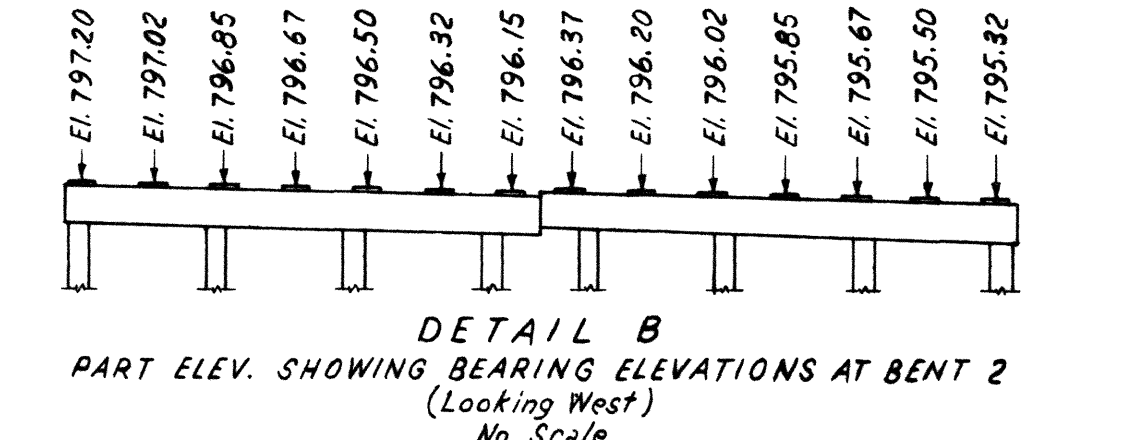
PLAN OF CAP



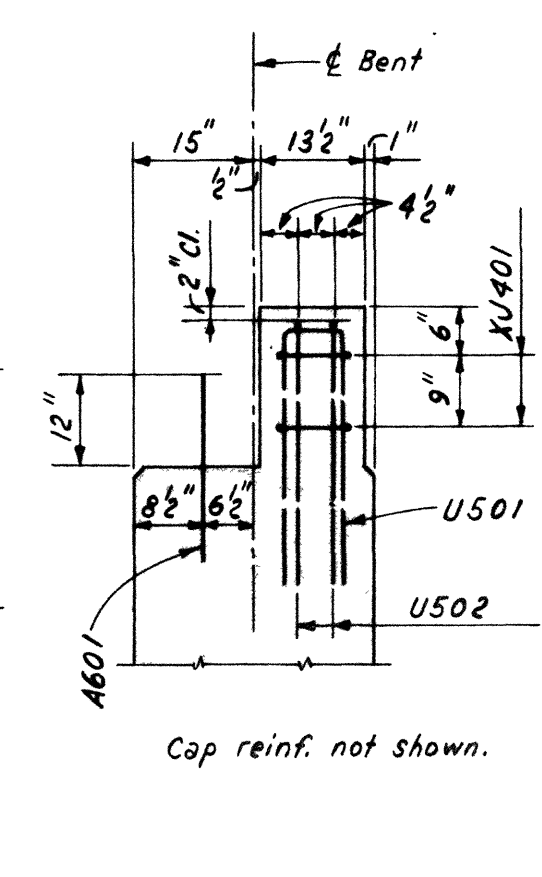
ELEVATION
LOOKING WEST FOR BOTH BENTS
BENTS 1 AND 3
Scale: 1/4" = 1'-0"



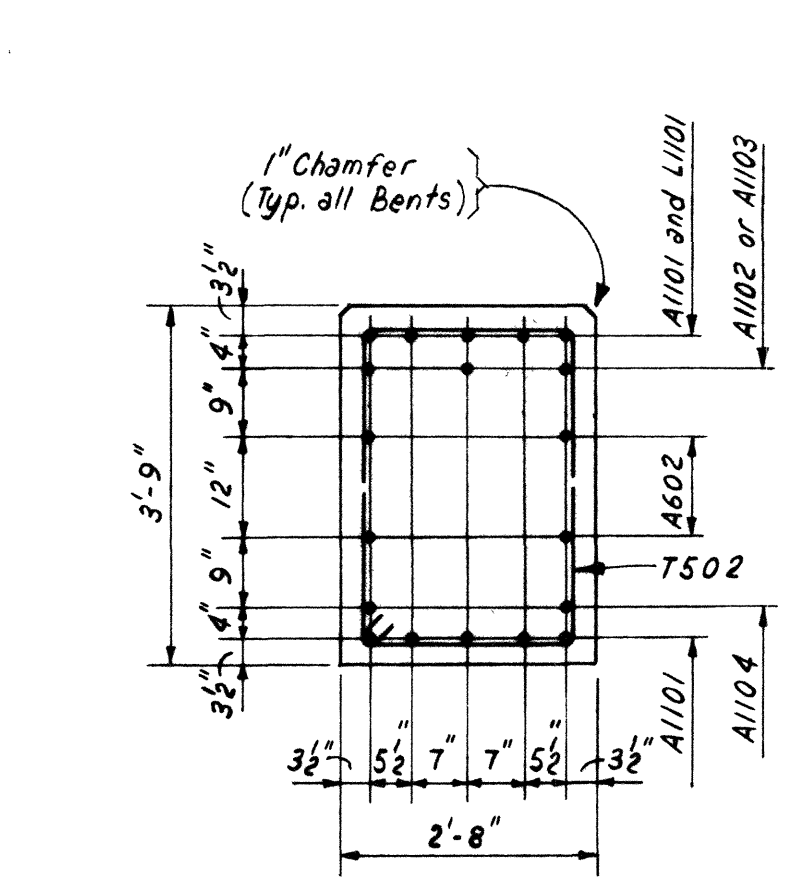
ELEVATION
LOOKING WEST
BENT 2
Scale: 1/4" = 1'-0"



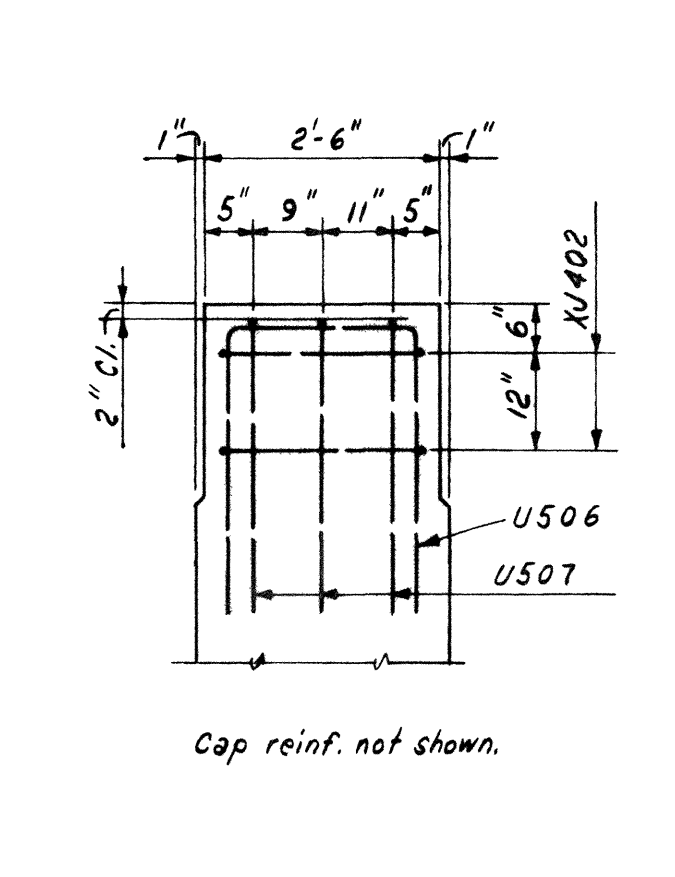
SECTION A-A
Scale: 1/2" = 1'-0"



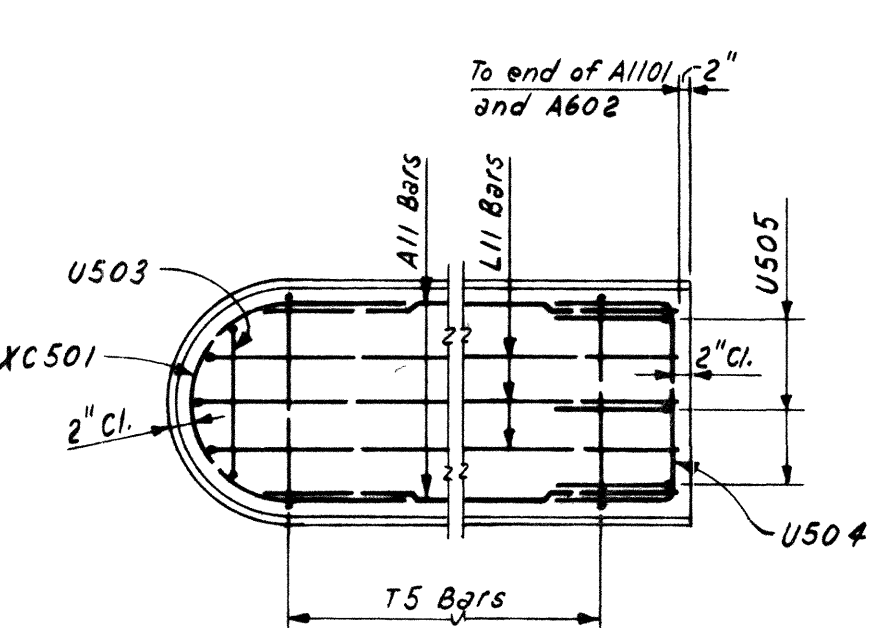
SECTION B-B
Scale: 1/2" = 1'-0"



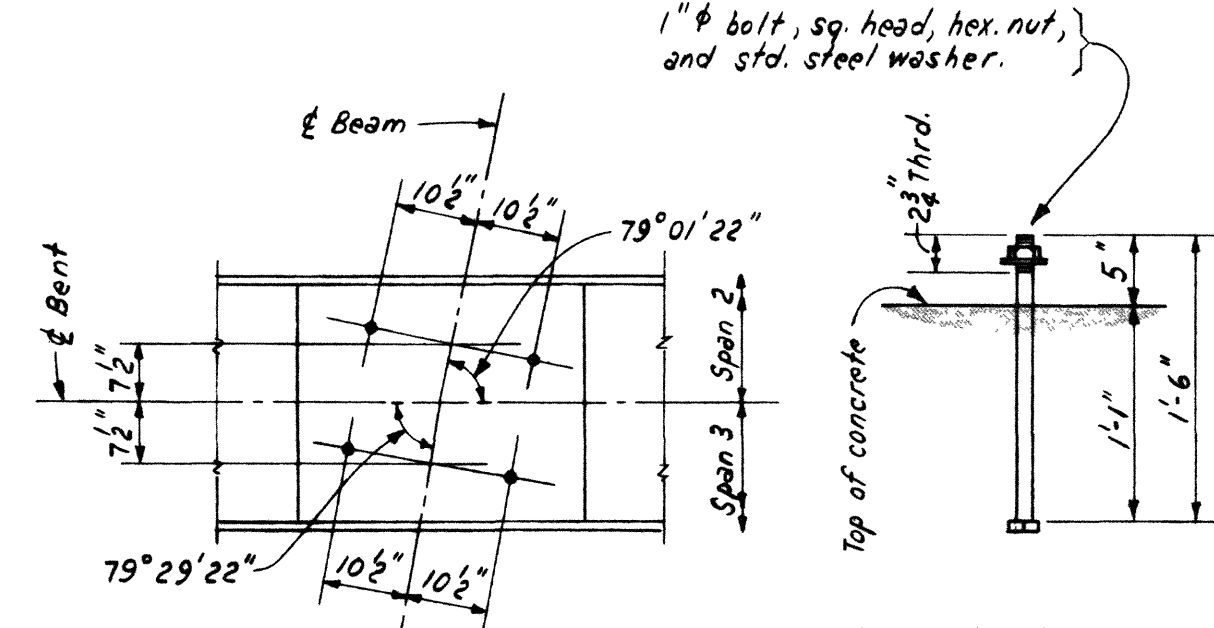
SECTION C-C
Scale: 1/2" = 1'-0"



SECTION D-D
Scale: 1/2" = 1'-0"



DETAIL A
PART PLAN OF CAP SHOWING REINF.
Scale: 1/2" = 1'-0"



ANCHOR BOLT DETAILS
Scale: 1/2" = 1'-0"

Abbreviations:
e.f. each face

NOTES:
For General Notes and Specifications, see G-9-90
For location of Bents, see H-2-1 and H-2-7.
For lighting details, see G-7-5 and H-2-12.
For details of piles, see H-5-11.
For reinforcing steel and bending diagrams, see H-2-13.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
Chamfer all exposed edges 3/8" except as noted.
Marks to all reinforcing steel in the Bents shall have suffix "B", (thus: A1101-B, T501-B, etc.).
All piles shall be driven to obtain a minimum bearing capacity of 28 tons per pile.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3()

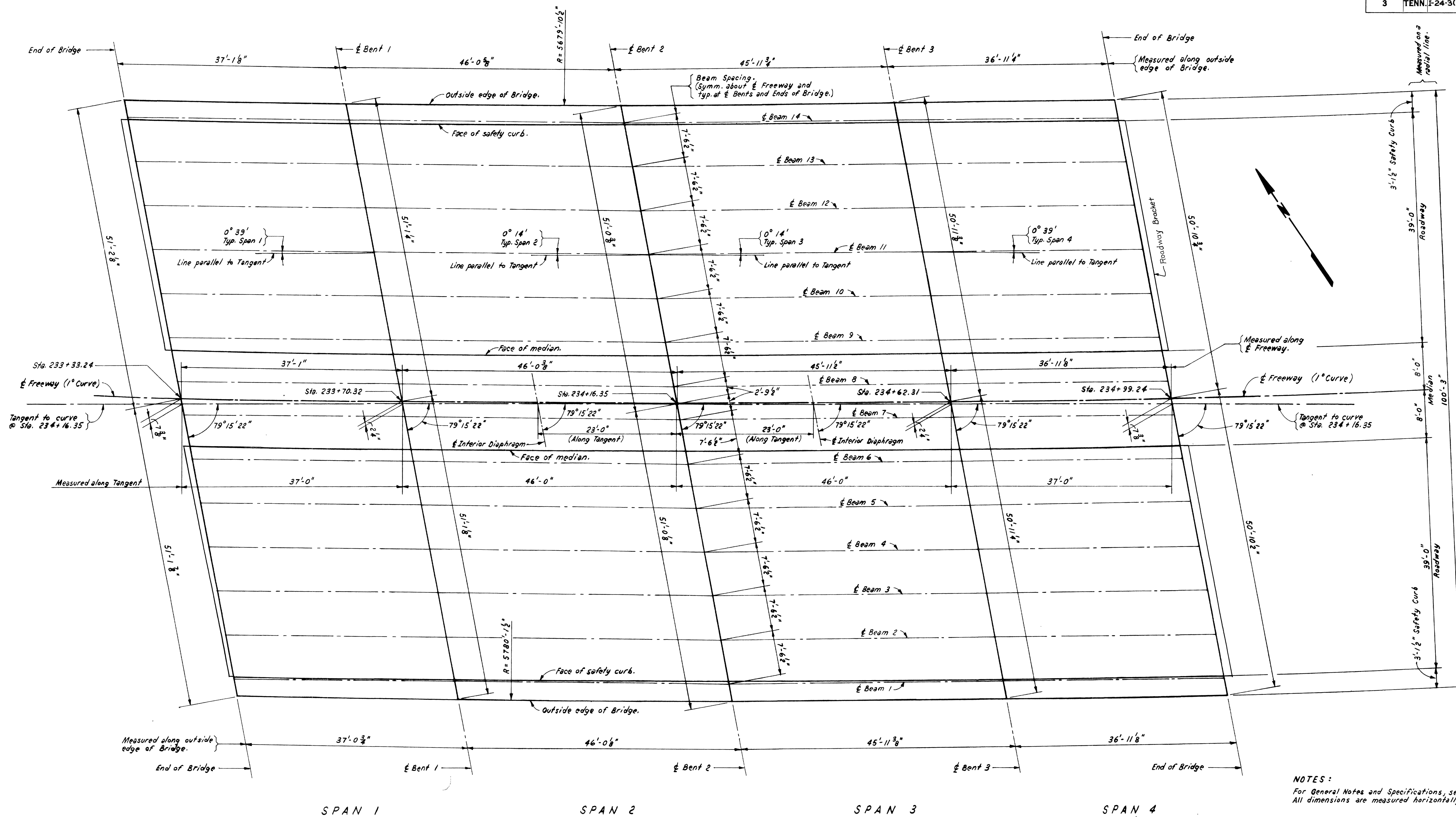
GERMANTOWN ROAD UNDERPASS
BENTS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP
CHKD: FAM
SUPV: AC

SCALE: AS NOTED
DATE: 4-17-59
FILE NO. 57.77 SHEET NO. H-2-6

REPRODUCED FROM ORIGINAL DRAWING

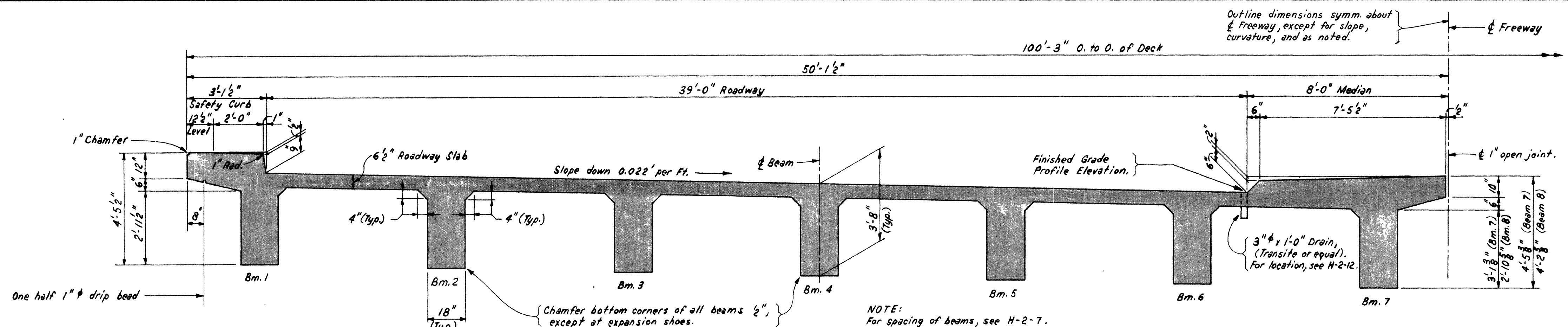


NOTES:
 For General Notes and Specifications, see G-9-90.
 All dimensions are measured horizontally.

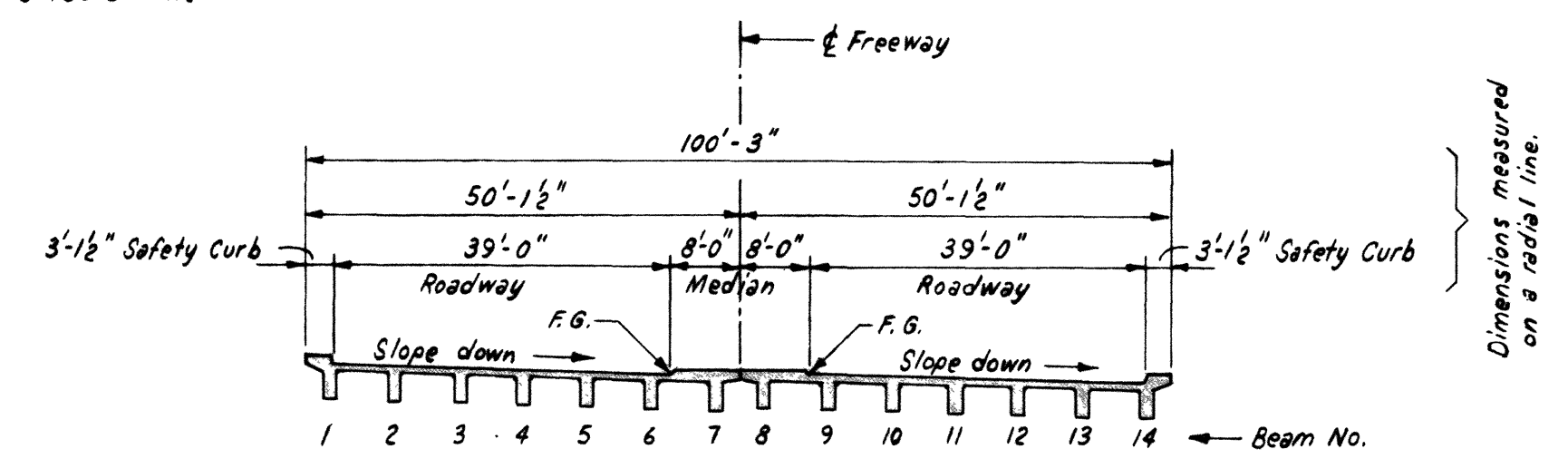
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|--|-----------|-------------------|-----------------|
| STATE OF TENNESSEE DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS CHATTANOOGA FREEWAY HAMILTON COUNTY-F.A. PROJ. NO. I-24-3() | | | |
| GERMANTOWN ROAD UNDERPASS DECK LAYOUT PLAN | | | |
| SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN. AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN. | | | |
| DSGN: JRP | DRWN: JRP | SCALE: 1" = 1'-0" | DATE: 4-17-59 |
| CHKD: AC | CHKD: AC | FILE NO. 57.77 | SHEET NO. H-2-7 |

Revised Jan. 1967 Roadway Bracket Addition.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | STATE AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|---------------------|-------------|-----------|--------------|
| 3 | TENN. | I-24-3(1) | 128 | | 97 | 204 |



Dimensions measured on a radial line.

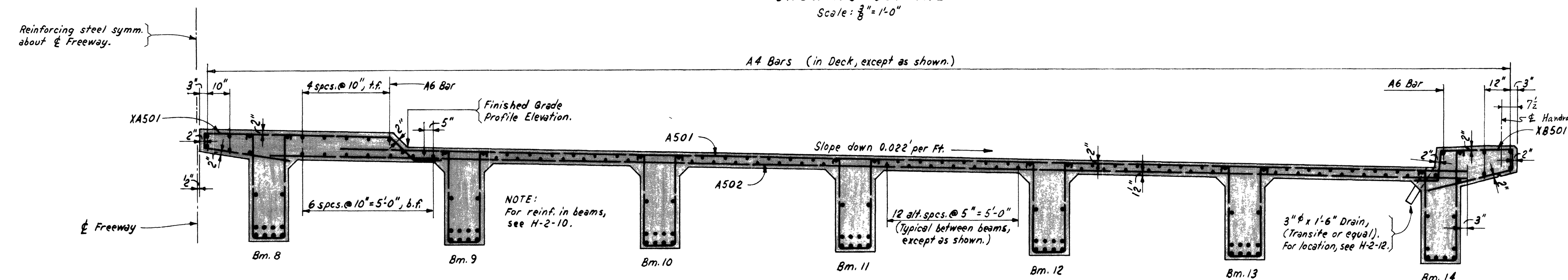


KEY CROSS SECTION
LOOKING WEST
Scale: 1" = 20'

TYPICAL CROSS SECTION
SHOWING OUTLINE
Scale: 3/8" = 1'-0"

NOTE:
For spacing of beams, see H-2-7.

Chamfer bottom corners of all beams 1/2", except at expansion shoes.

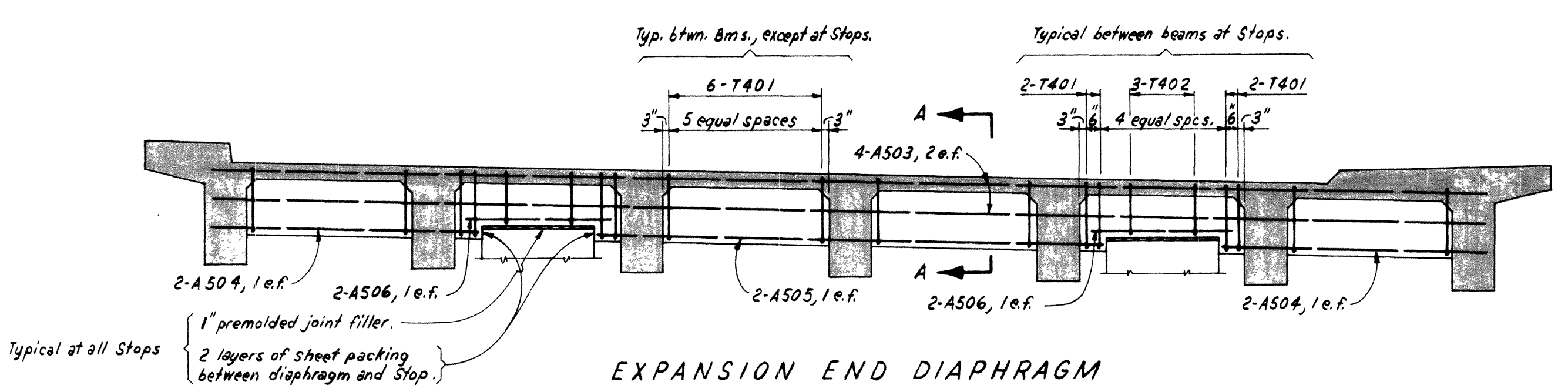


TYPICAL CROSS SECTION
SHOWING REINFORCING STEEL
Scale: 3/8" = 1'-0"

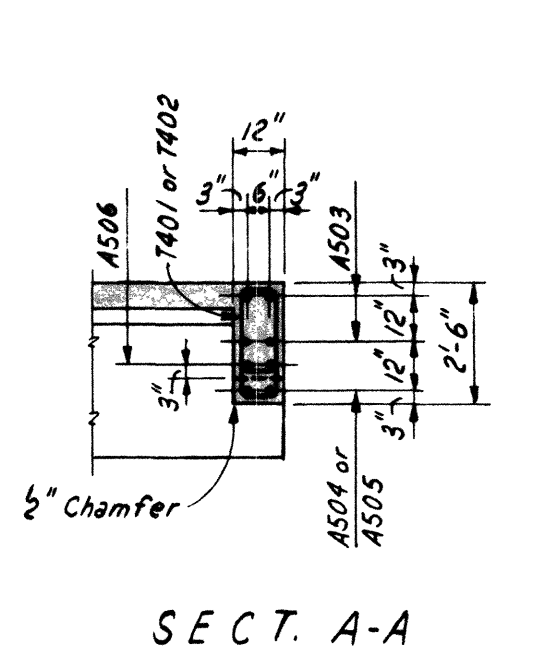
NOTE: Provisions shall be made for setting steel for handrail. See Dwg. H-5-110.

NOTE:
For reinf. in beams, see H-2-10.

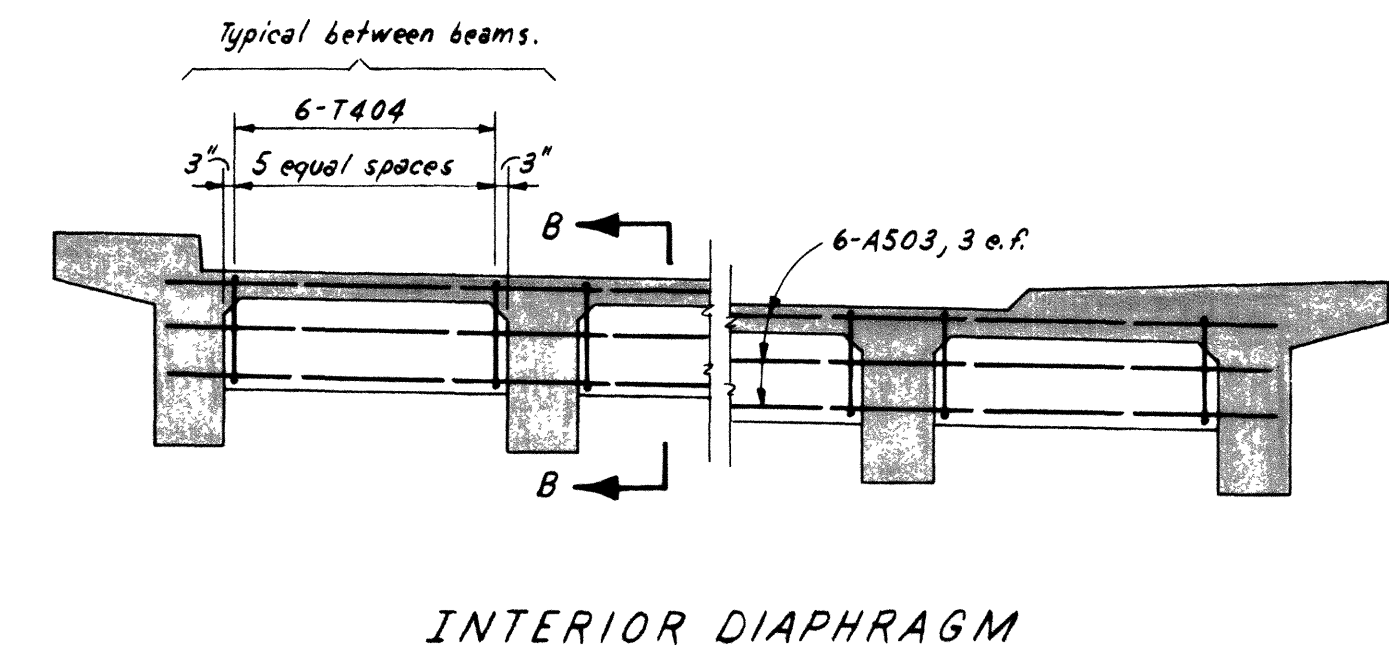
NOTE:
12 alt. spcs. @ 5" = 5'-0"
(Typical between beams, except as shown.)



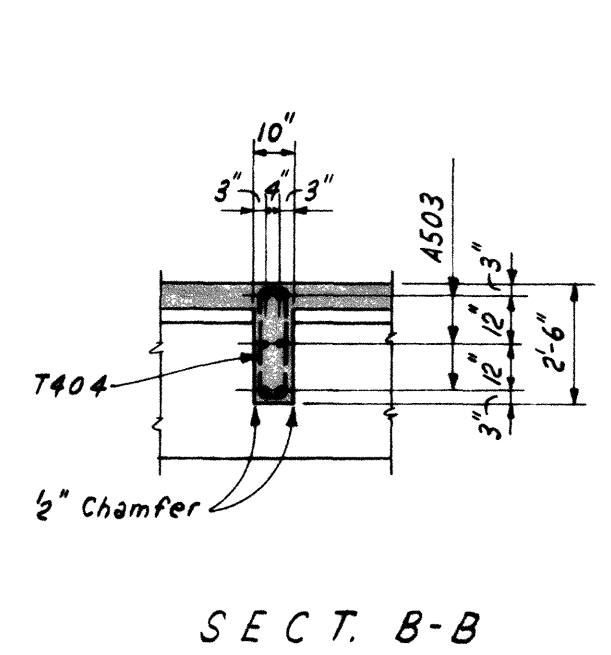
EXPANSION END DIAPHRAGM



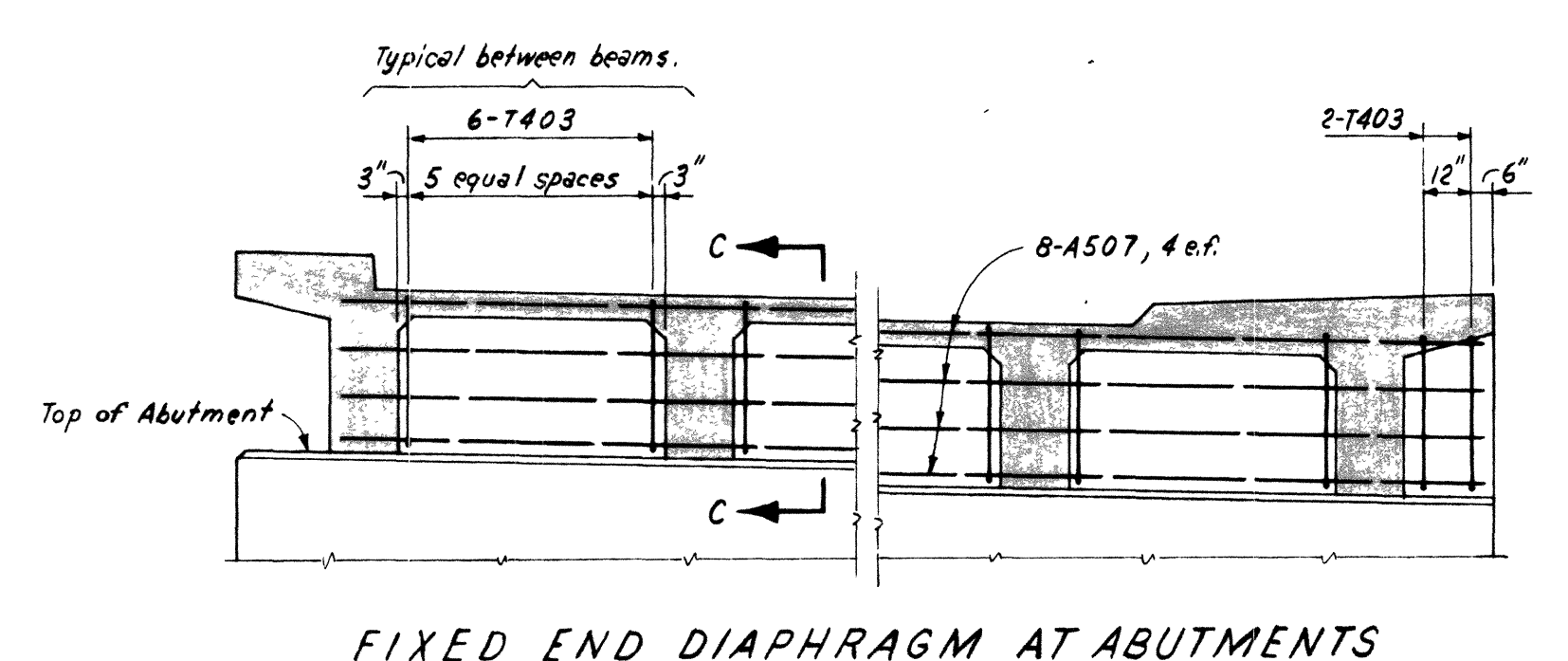
SECT. A-A



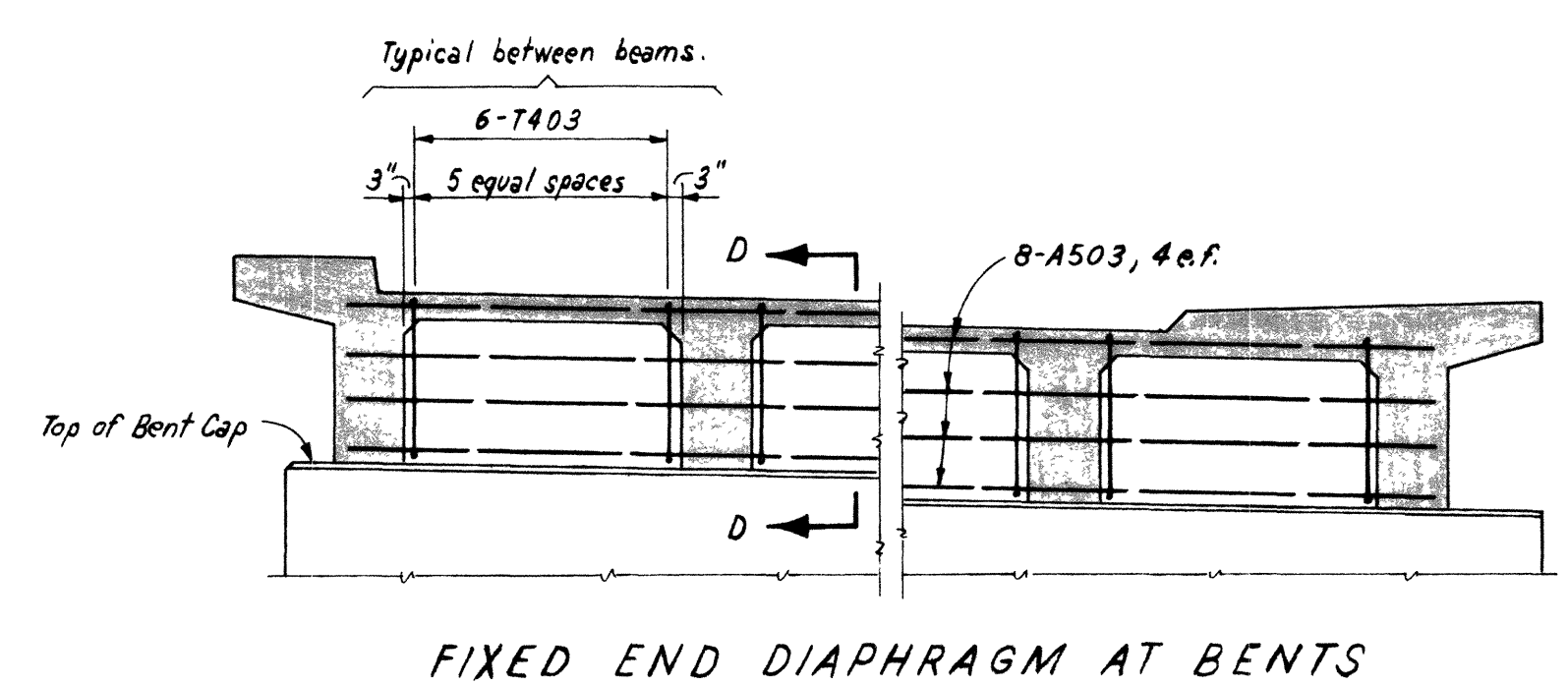
INTERIOR DIAPHRAGM



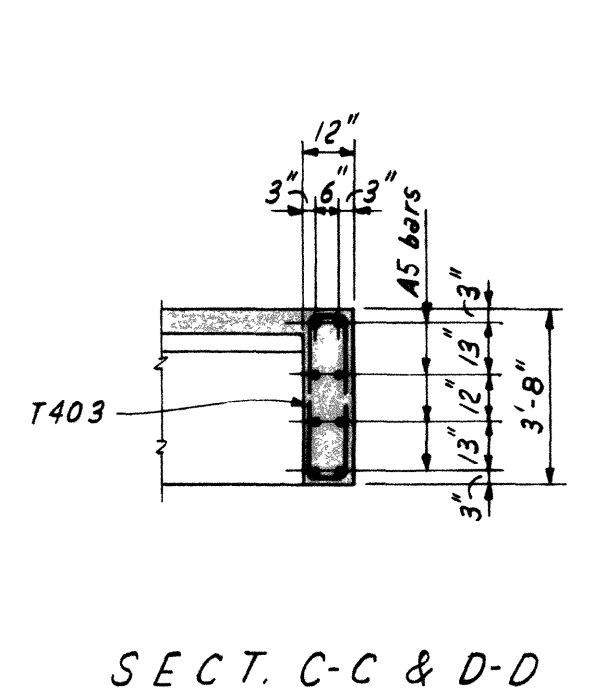
SECT. B-B



FIXED END DIAPHRAGM AT ABUTMENTS



FIXED END DIAPHRAGM AT BENTS



SECT. C-C & D-D

DIAPHRAGM DETAILS
Scale: 1/4" = 1'-0"

NOTE:
For outline of end diaphragms, see "Beam End Details", H-2-10.
For details of Stops, see H-2-6.

Abbreviations:
t.f. top face
b.f. bottom face
e.f. each face

NOTES:
For General Notes and Specifications, see G-9-90.
For Deck Layout Plan see H-2-7.
For Handrailing, Lighting and Drainage details, see H-2-14.
For reinforcing steel and bending diagrams, see H-2-14.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
When pouring the Deck, provisions shall be made for setting anchor bolts for handrail posts and lighting standards.
Chamfer all exposed edges 1/2", except as noted.
Marks to all reinforcing steel in the Deck shall have suffix "D", (thus: A501-D, T401-D, etc.).
Sheet packing shall be placed with graphite surfaces in contact with each other.

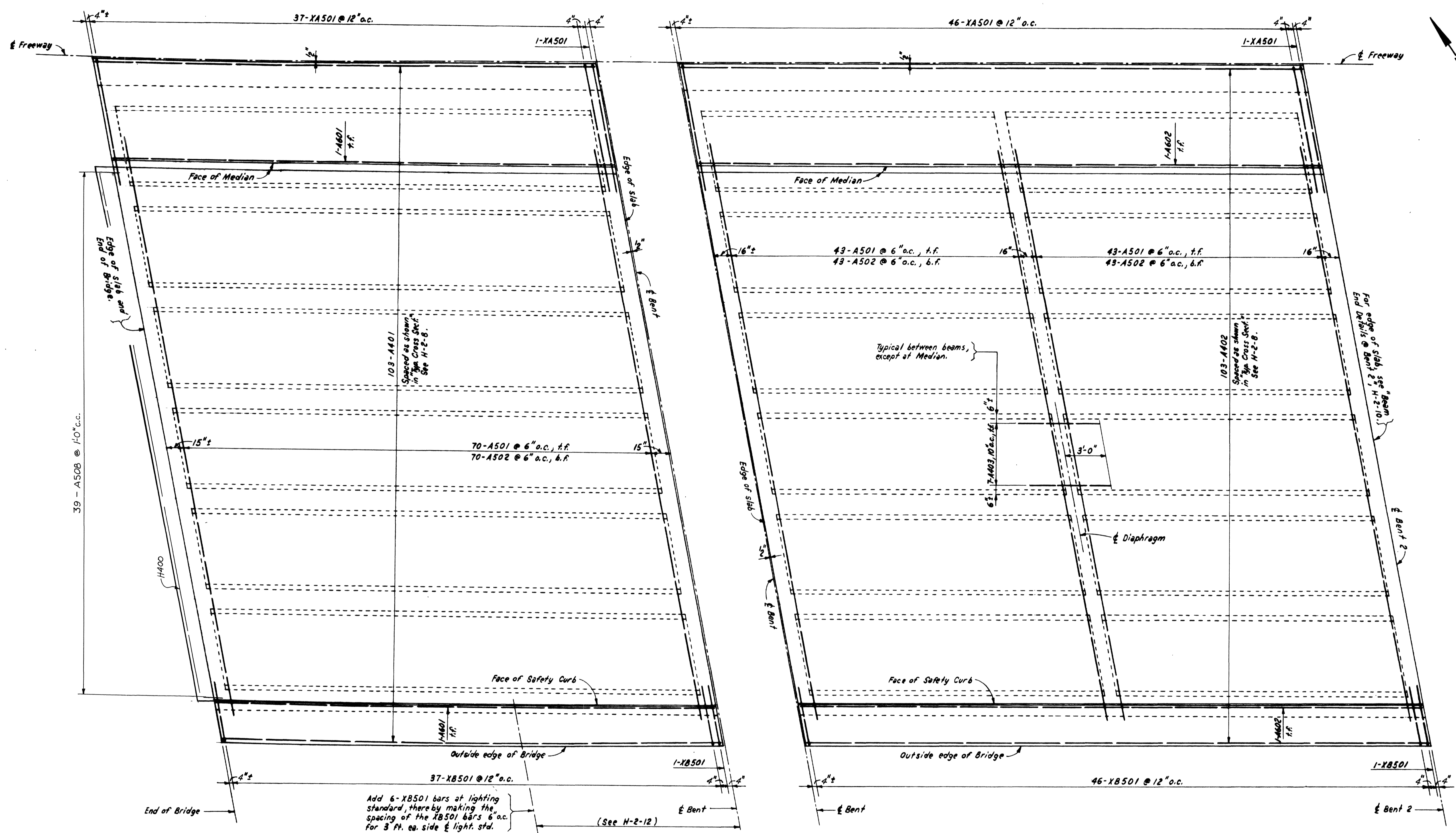
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3(1)

GERMANTOWN ROAD UNDERPASS
DECK CROSS SECTION AND DIAPHRAGMS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP DRWN: JRP SCALE: AS NOTED DATE: 4-17-59
CHKD: JAM SUPV: AC FILE NO. 57.77 SHEET NO. H-2-8

Rev. 11/26/64 Section 4 and 4a/1
Revised... Det. 1560... Changed Handrailing To Concrete Handrailing



HALF PLAN OF DECK SPANS 1 & 4
 SPAN 1 SOUTH HALF - AS SHOWN
 SPAN 4 SOUTH HALF - SIMILAR
 SPANS 1 & 4 NORTH HALF - SIMILAR

For outline dimensions of Deck, see H-2-7.

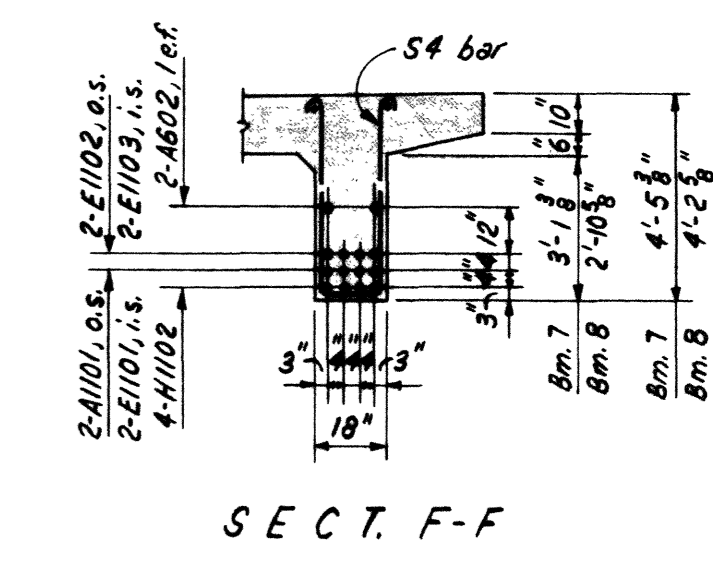
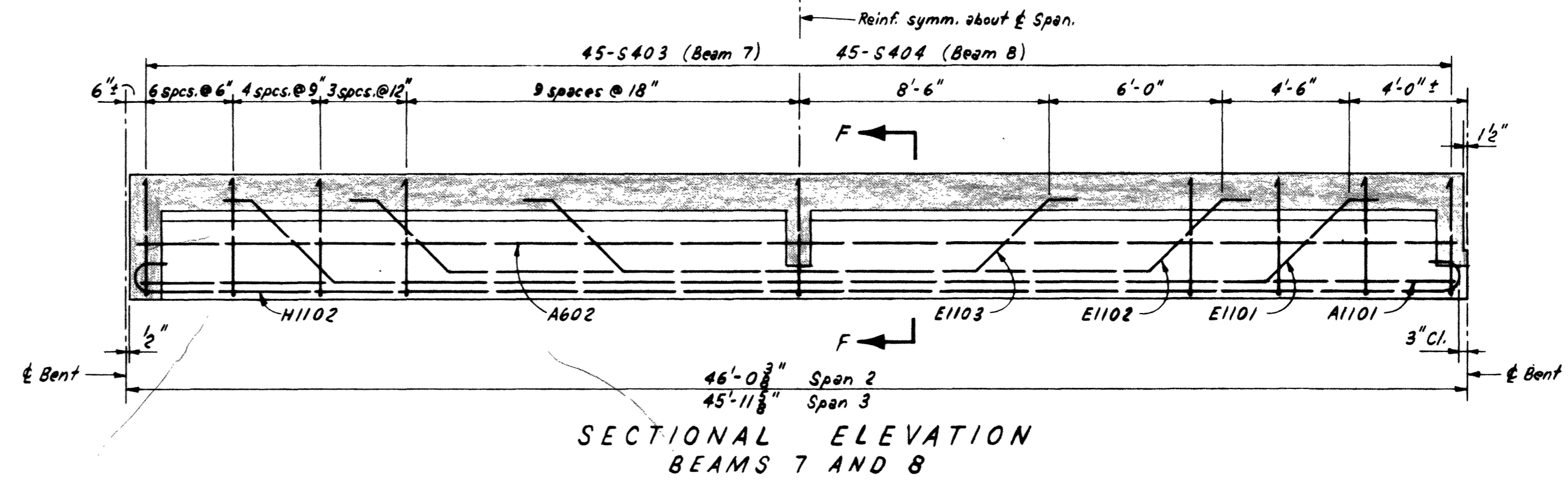
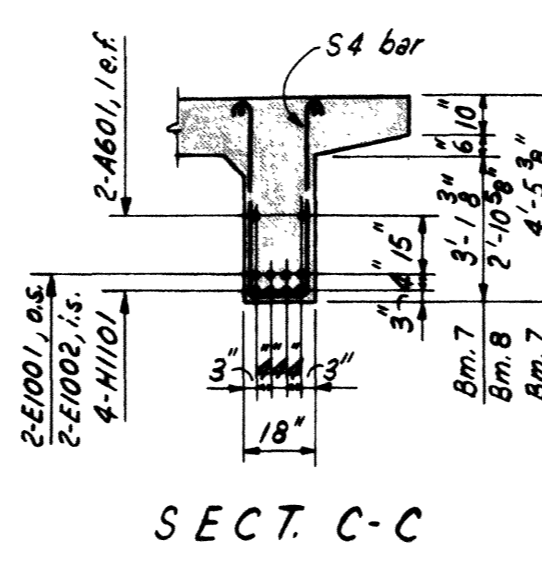
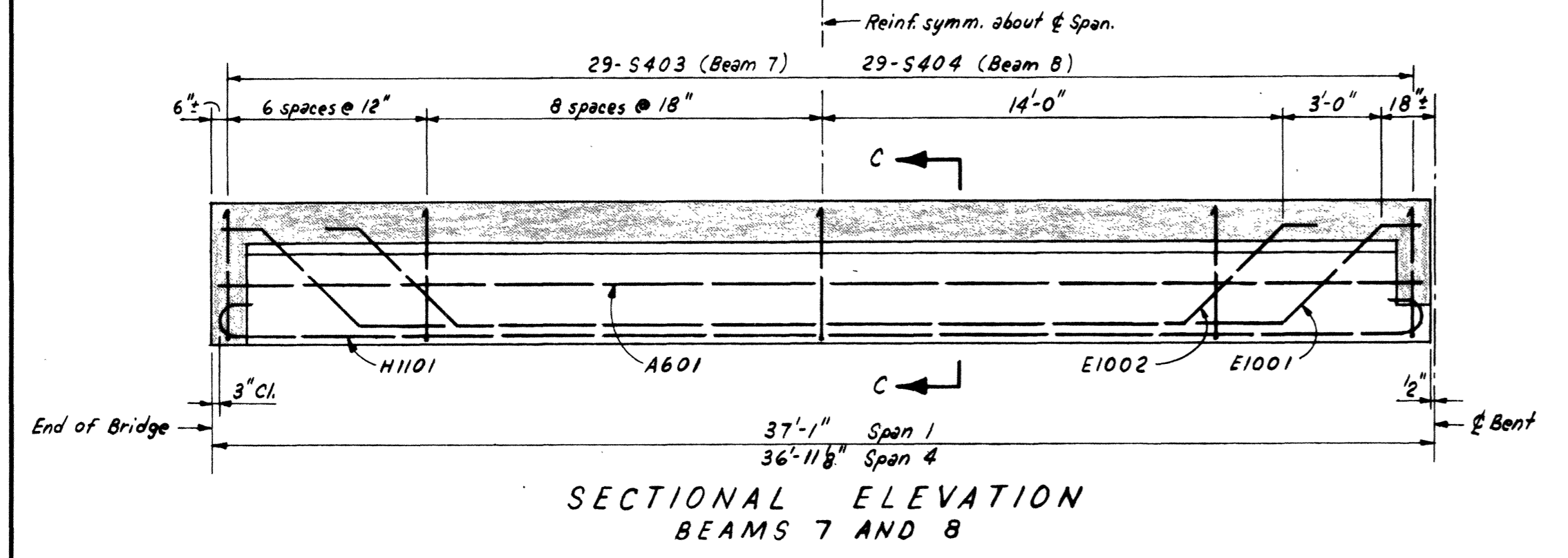
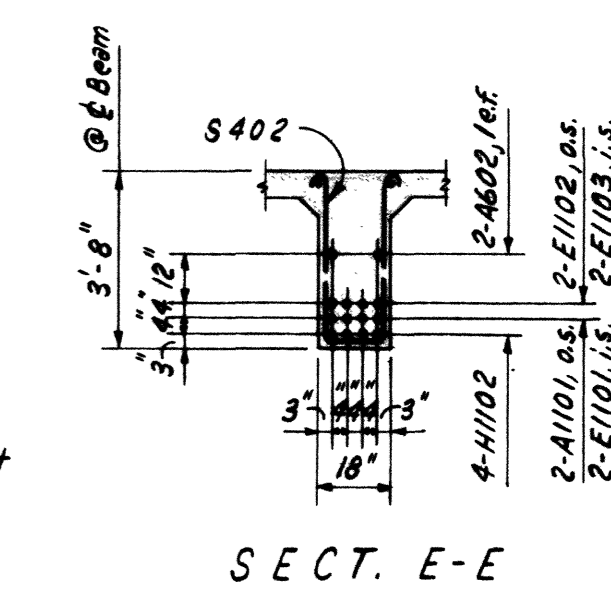
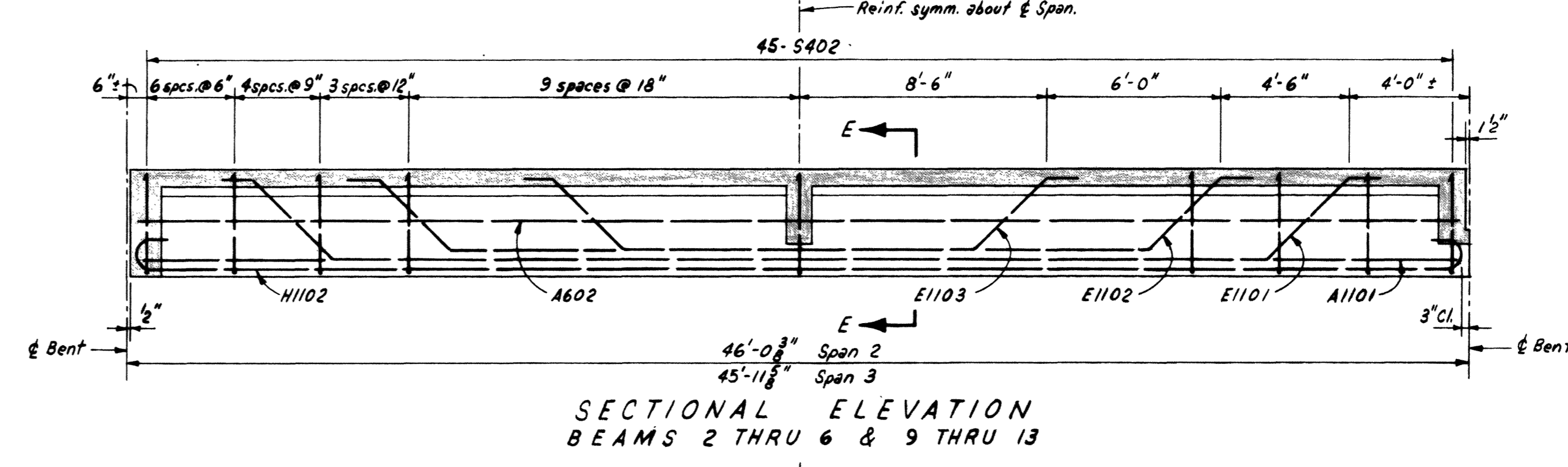
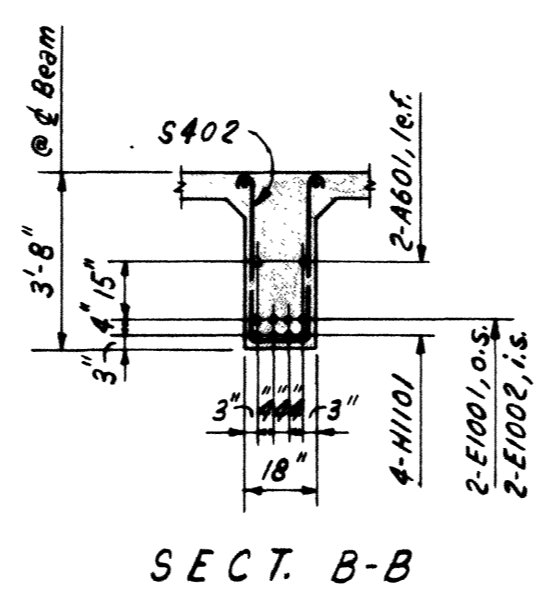
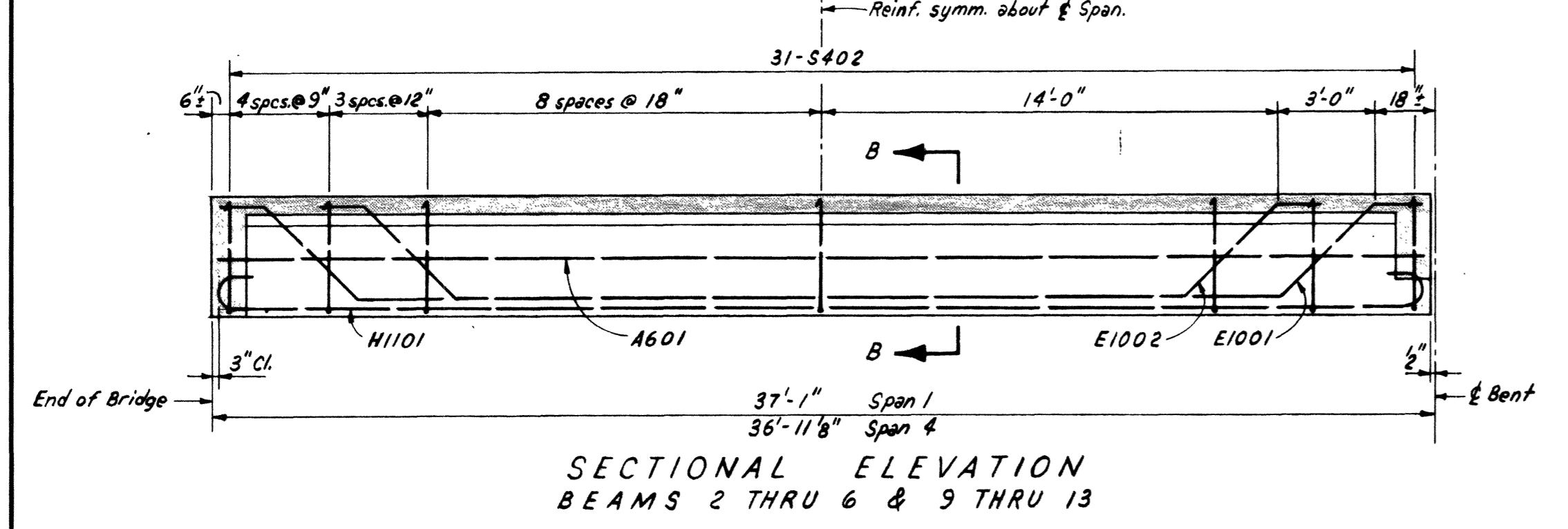
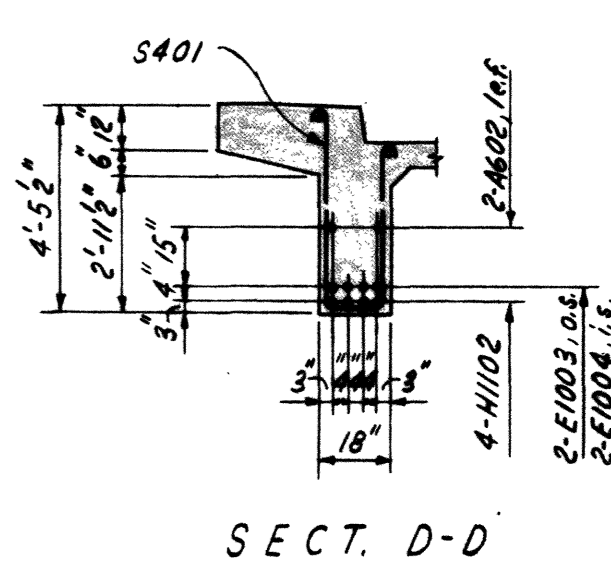
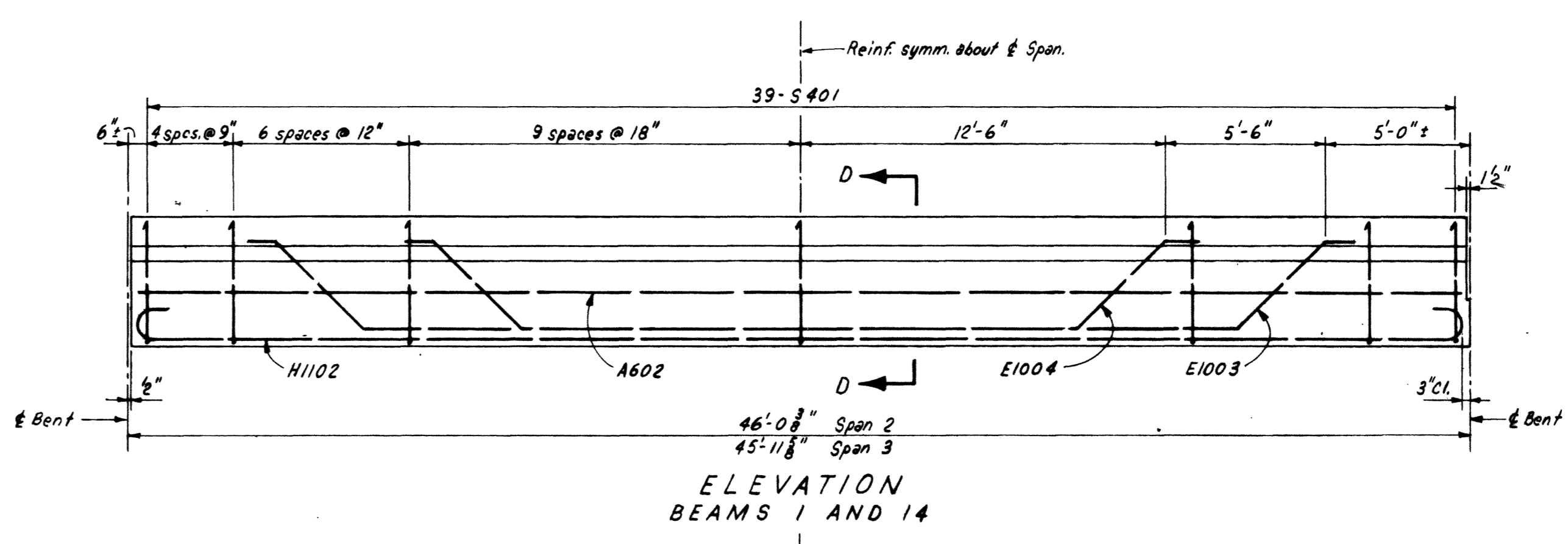
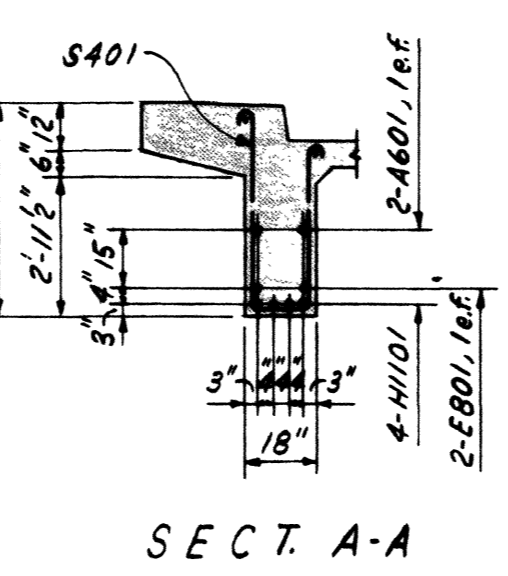
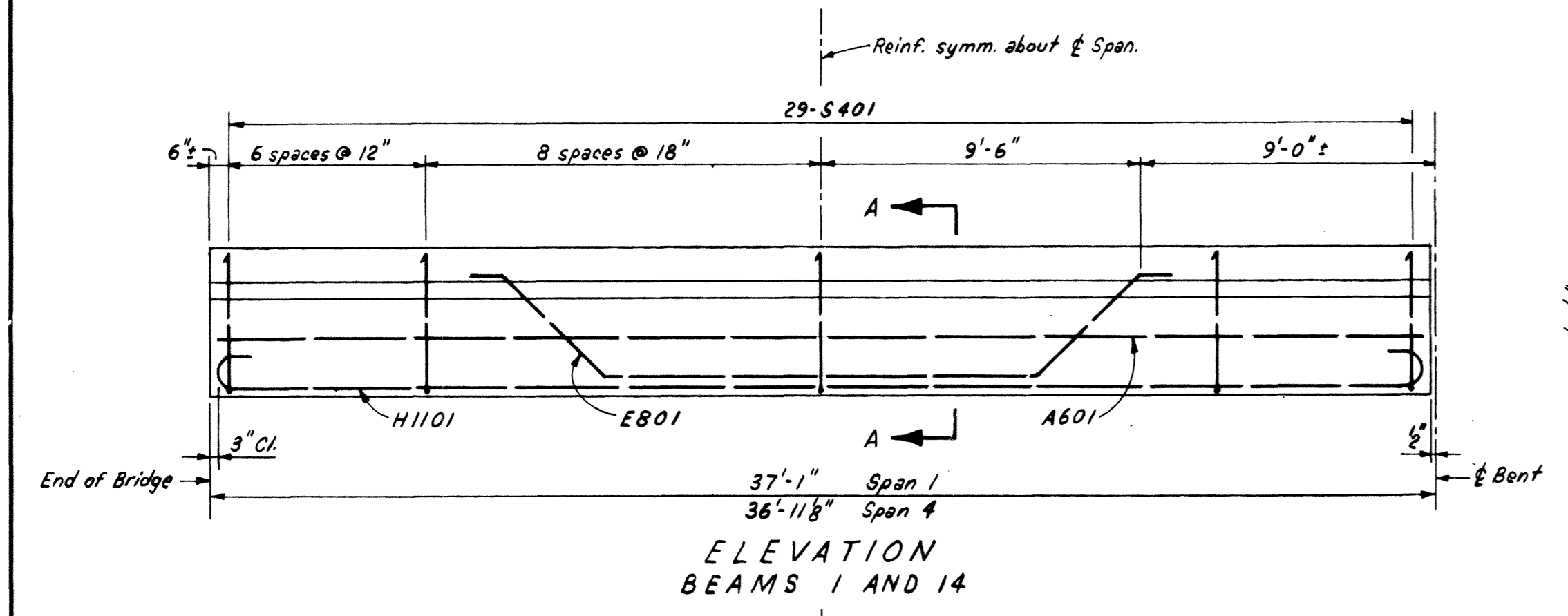
HALF PLAN OF DECK SPANS 2 & 3
 SPAN 2 SOUTH HALF - AS SHOWN
 SPAN 3 SOUTH HALF - SIMILAR
 SPANS 2 & 3 NORTH HALF - SIMILAR

Abbreviations:
 t.f. top face
 b.f. bottom face

NOTES:
 For General Notes and Specifications, see G-9-90.
 For Deck Layout Plan, see H-2-7.
 For Lighting, Handrailing, and Drainage Details, see H-2-12.
 For reinforcing steel and bending diagrams, see H-2-14.
 All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
 When pouring the Deck, provisions shall be made for setting anchor bolts for handrail posts and lighting standards.
 Chamfer all exposed edges $\frac{3}{8}$ " except as noted.
 Marks to all reinforcing steel in the Deck shall have suffix "D", (Mus: AS01-D, XB501-D, etc.).

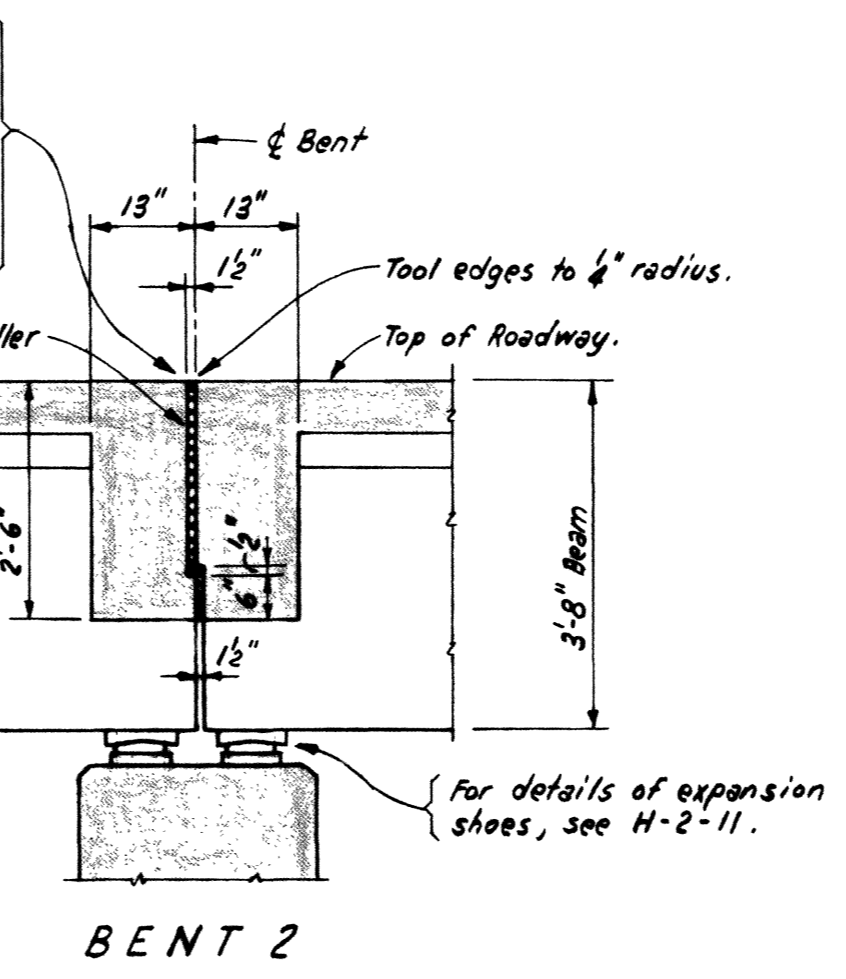
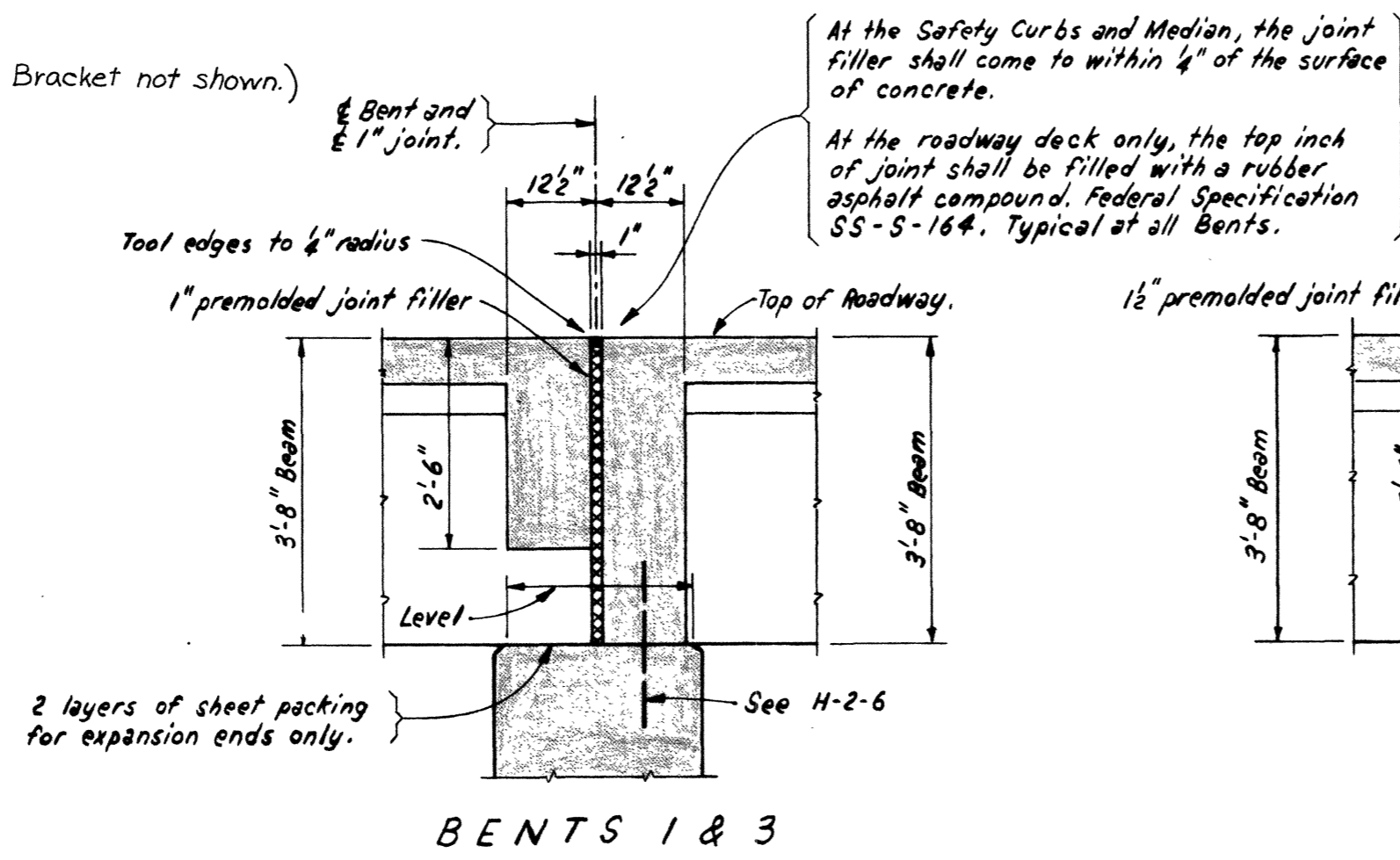
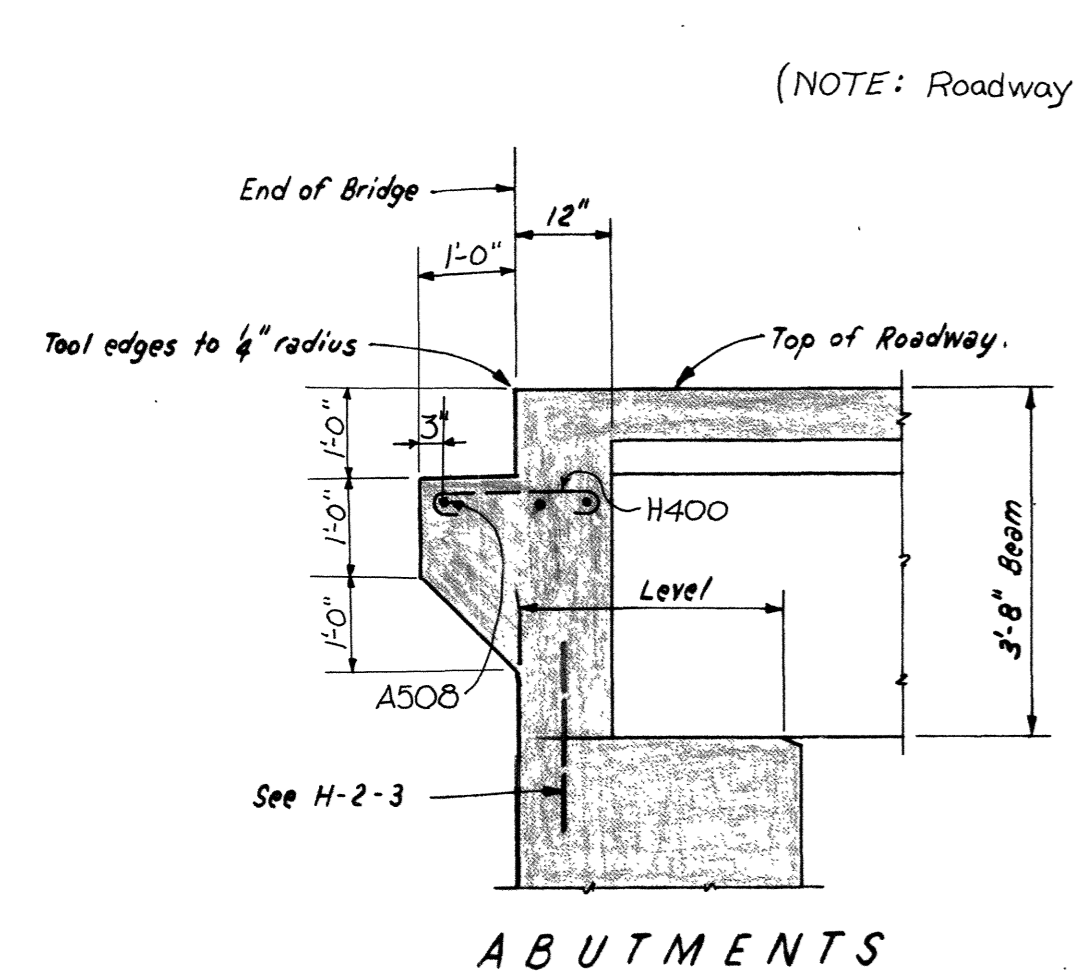
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|--|-----------|-------------------|-----------------|
| STATE OF TENNESSEE DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS CHATTANOOGA FREEWAY HAMILTON COUNTY-F.A. PROJ. NO. I-24-3() | | | |
| GERMANTOWN ROAD UNDERPASS DECK REINFORCING PLAN | | | |
| SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN. AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN. | | | |
| DSGN: JRP | DRWN: JRP | SCALE: 4" = 1'-0" | DATE: 4-17-59 |
| CHKD: JAM | CHKD: JAM | FILE NO. 57.77 | SHEET NO. H-2-9 |
| CHKD: JAM | SUPV: AC | | |

Revised Jan. 1961 Roadway Bracket Addition
 MICROFILMED



BEAM DETAILS - SPANS 1 & 4
Scale: 1/4" = 1'-0"

BEAM DETAILS - SPANS 2 & 3
Scale: 1/4" = 1'-0"



BEAM END DETAILS
Scale: 1/2" = 1'-0"

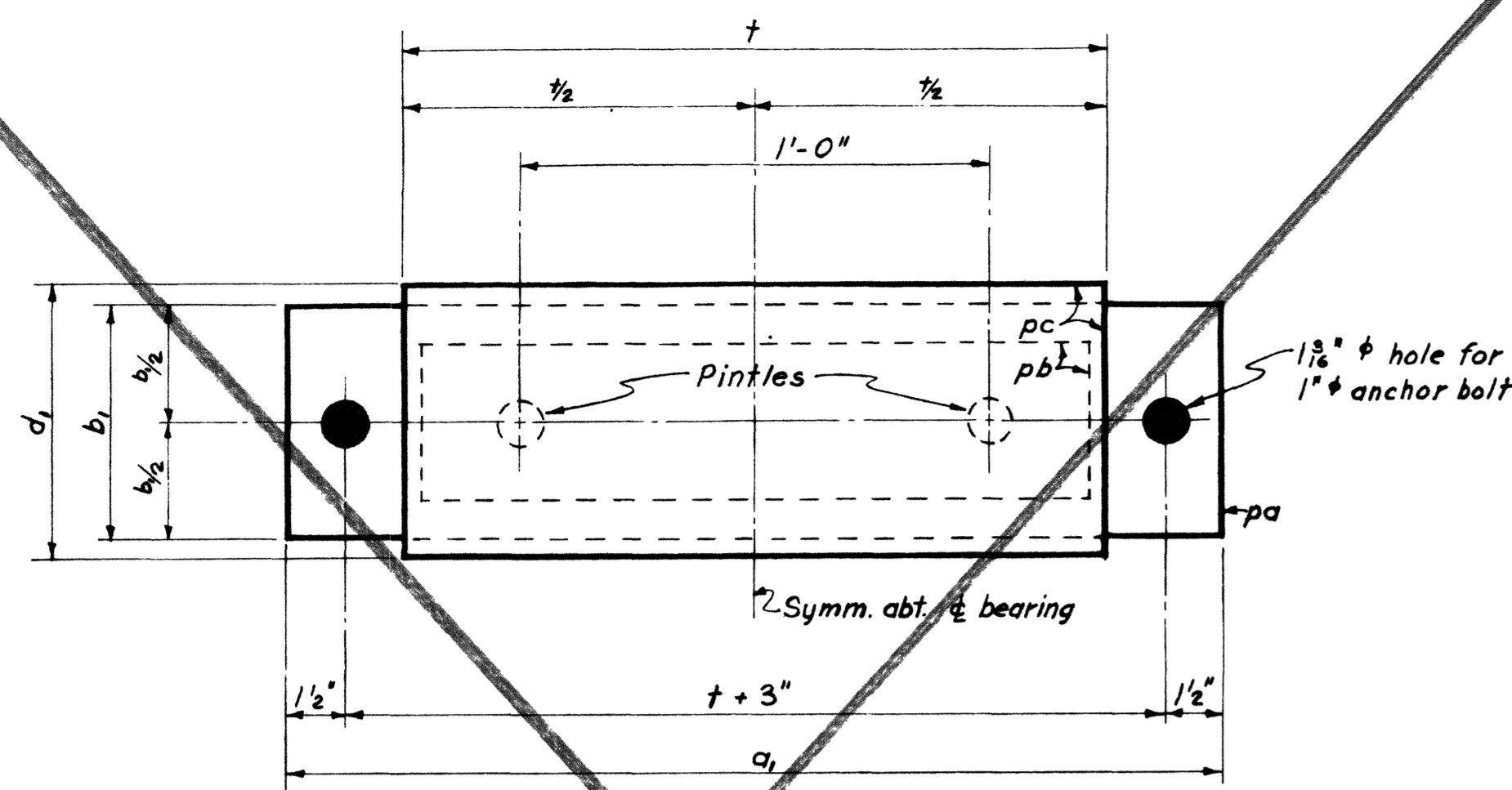
NOTE: Beams shown are interior beams. For details of diaphragms, see H-2-8. Details shown are normal to Abutments and Bents.

NOTES:
For General Notes and Specifications, see 6-9-90.
For Deck Layout Plan, see H-2-7.
For reinforcing steel and bending diagrams, see H-2-14.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
Chamfer all exposed edges 3/8", except as noted.
Sheet packing shall be placed with graphite surfaces in contact with each other.
Beams shall be cambered for dead load deflection. See 6-9-90.
Mark to all reinforcing steel in the Deck shall have suffix "D", (thus: H1101-D, S401-D, etc.).

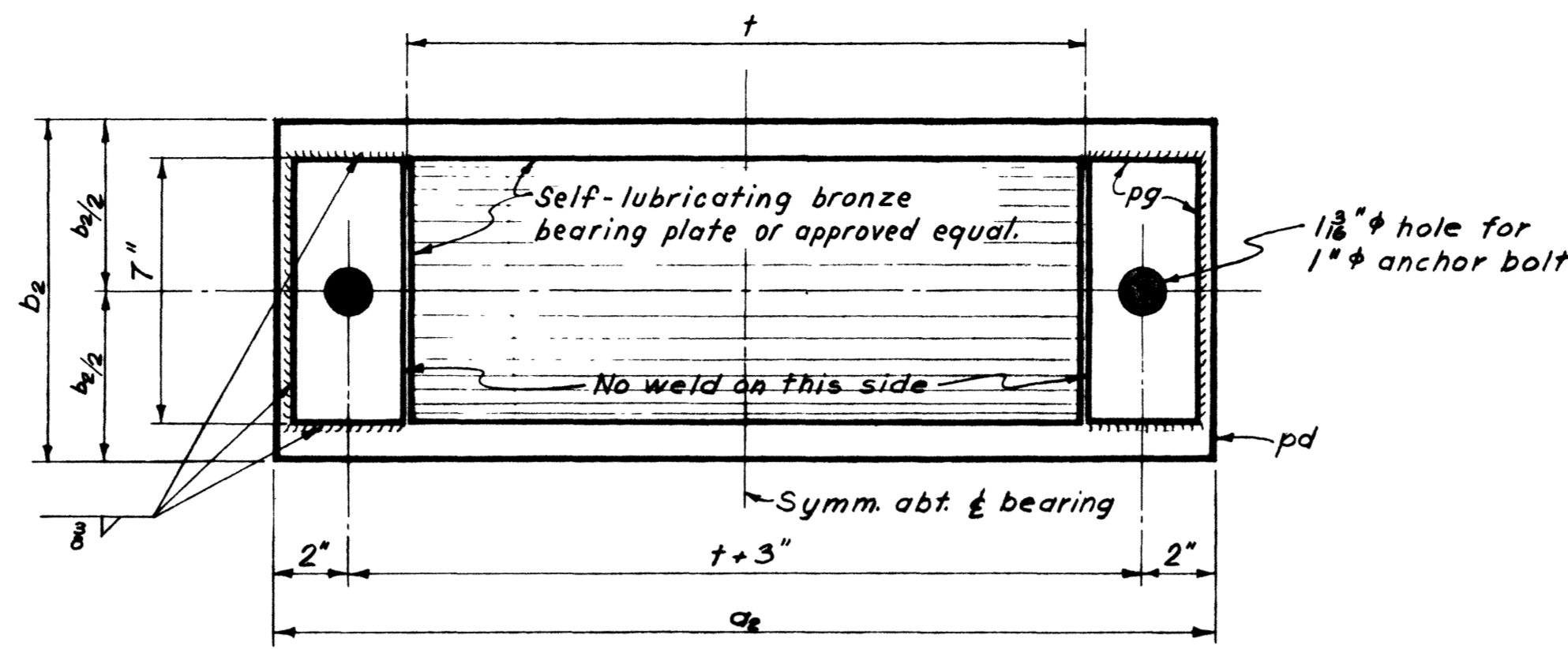
Abbreviations:
e.f. each face
o.s. outside steel
i.s. inside steel

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3()
GERMANTOWN ROAD UNDERPASS
BEAMS
SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.
DSGN: JP-JB DRWN: JRP SCALE: AS NOTED DATE: 4-17-59
CHKD: JAM CHKD: JAM FILE NO. 57.77 SHEET NO. H-2-10
SUPV: AC

Revised Jan. 1961 Roadway Bracket Addition

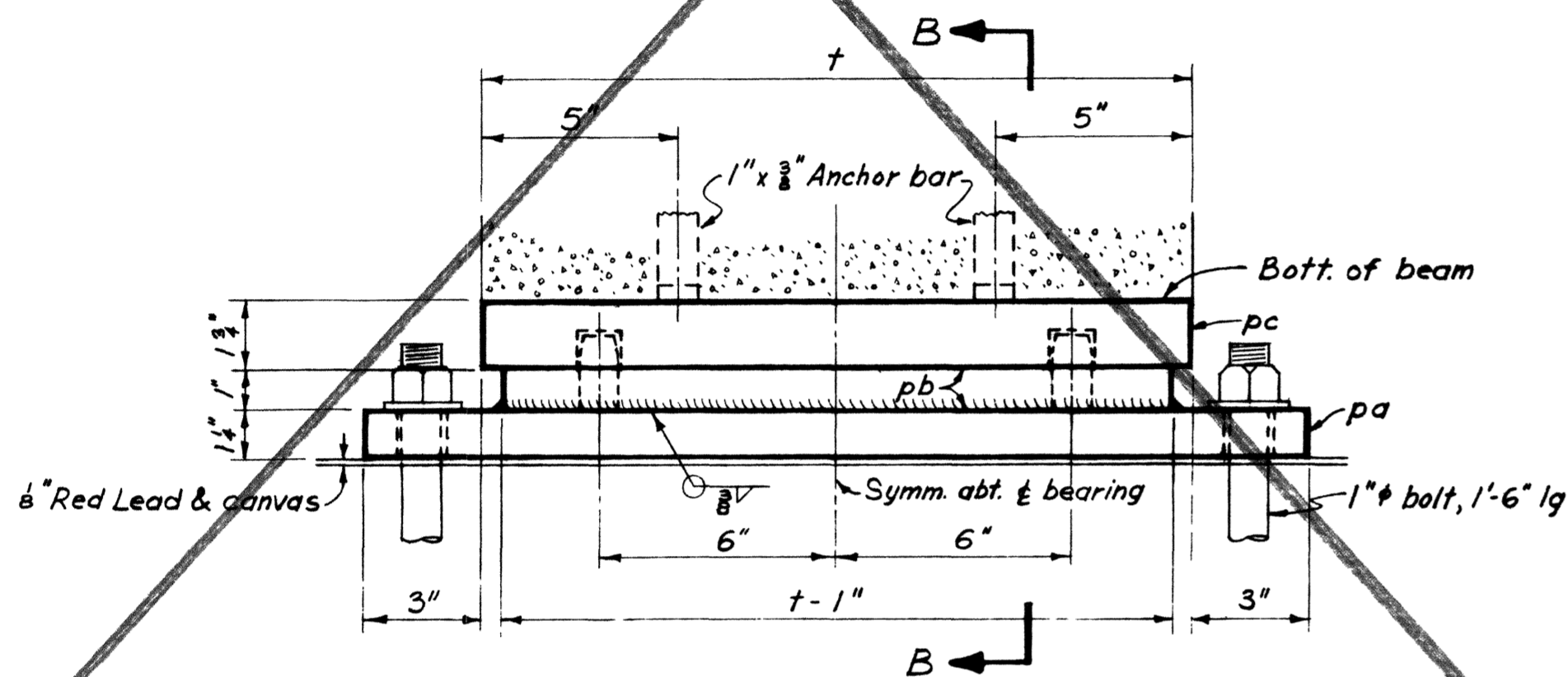


PLAN

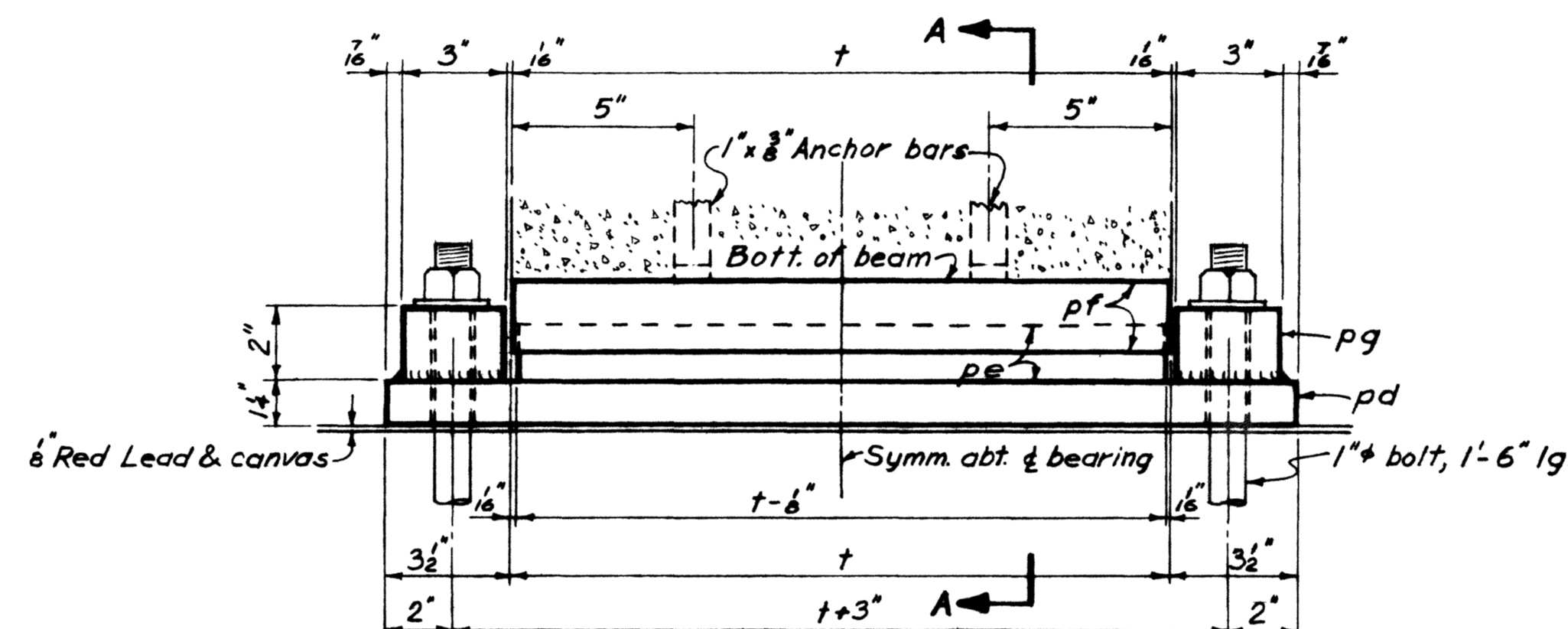


PLAN
Sole plate pf not shown

| FIXED SHOE DIMENSIONS | | | | | | |
|-----------------------|-------|----|--------|----|----|-----|
| Span Length | b | c | d | e | t | |
| Up to 35' | 2'-0" | 6" | 1" | 6" | 3" | 18" |
| 35' to 45' | 2'-0" | 6" | 1" | 7" | 4" | 18" |
| 45' to 55' | 2'-0" | 6" | 1" | 8" | 5" | 18" |
| 55' to 65' | 2'-4" | 7" | 1 1/2" | 9" | 6" | 22" |

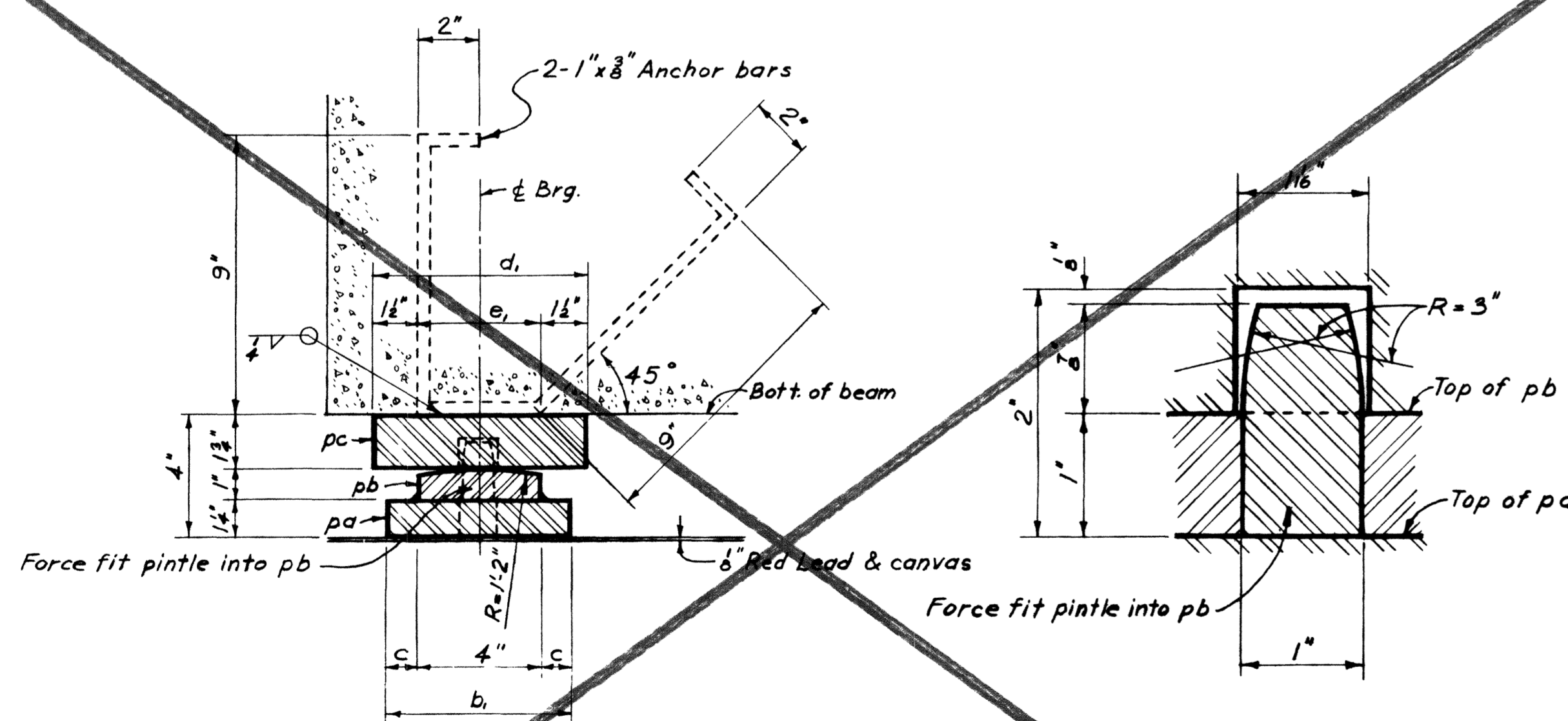


ELEVATION



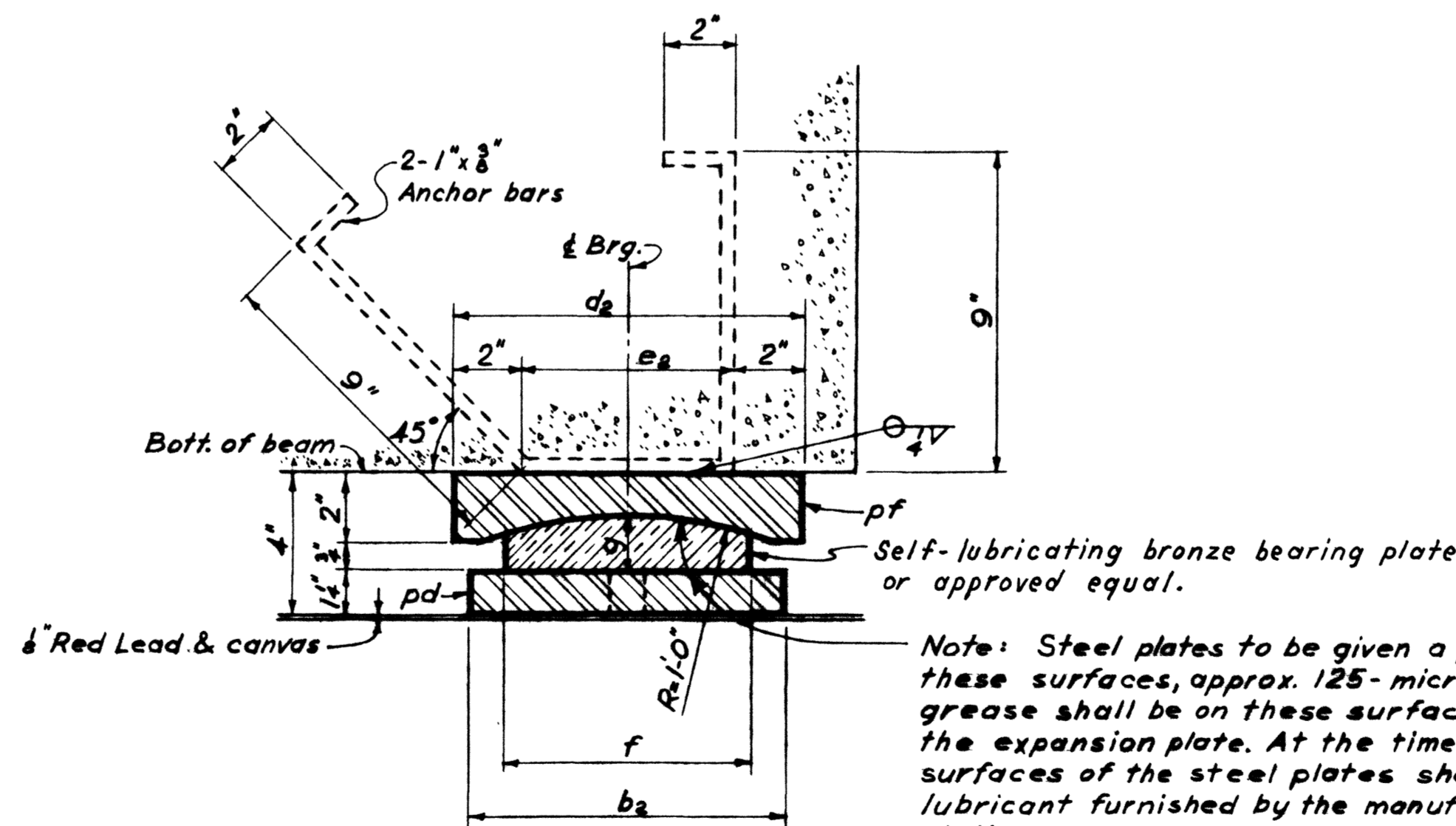
ELEVATION

| EXPANSION SHOE DIMENSIONS | | | | | | | |
|---------------------------|-------|-----|-----|----|----|--------|-----|
| Span Length | a2 | b2 | d2 | e2 | f | g | t |
| Up to 43' | 2'-1" | 8" | 9" | 5" | 6" | 1 1/2" | 18" |
| 43' to 50' | 2'-1" | 9" | 10" | 6" | 7" | 1 1/2" | 18" |
| 50' to 56' | 2'-1" | 10" | 11" | 7" | 8" | 1 1/2" | 18" |
| 56' & over | 2'-5" | 10" | 11" | 7" | 8" | 1 1/2" | 22" |



SECTION B-B

DETAIL OF PINTLE



SECTION A-A
Plate pg not shown

NOTES:
Material: All material except as noted shall be structural steel conforming to the specifications for steel for bridges and buildings, A.S.T.M. designation A7, latest revision. See "Special Provisions" regarding self-lubricating bronze bearing plates.

Note: Steel plates to be given a plain machined finish on these surfaces, approx. 125-microinch rms. No paint or grease shall be on these surfaces or on the surfaces of the expansion plate. At the time of assembly these surfaces of the steel plates shall be coated with a lubricant furnished by the manufacturer of the expansion plate.

DETAILS OF FIXED BEARING

DETAILS OF EXPANSION BEARING

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY - F.A. PROJ. NO. 1-24-3 ()

STANDARD BEARINGS
FOR
CONCRETE T-BEAM BRIDGES

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN

| | | | |
|-----------|-----------|-------------------|---------------|
| DSGN: AFH | DRWN: JRP | SCALE: 3" = 1'-0" | DATE: 4-17-59 |
| CHKD: TMS | CHKD: AC | FILE NO. 57.77 | SHEET NO. |
| | SUPV: AC | | H-2-11 |