

| STATE PROJECT | FEDERAL PROJECT | |
|---------------|-----------------|----------|
| | PROJECT | CONTRACT |
| 9863-01-70 | | |
| | | |
| | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
 PLAN OF PROPOSED IMPROVEMENT

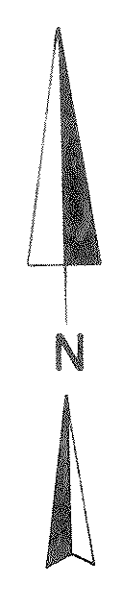
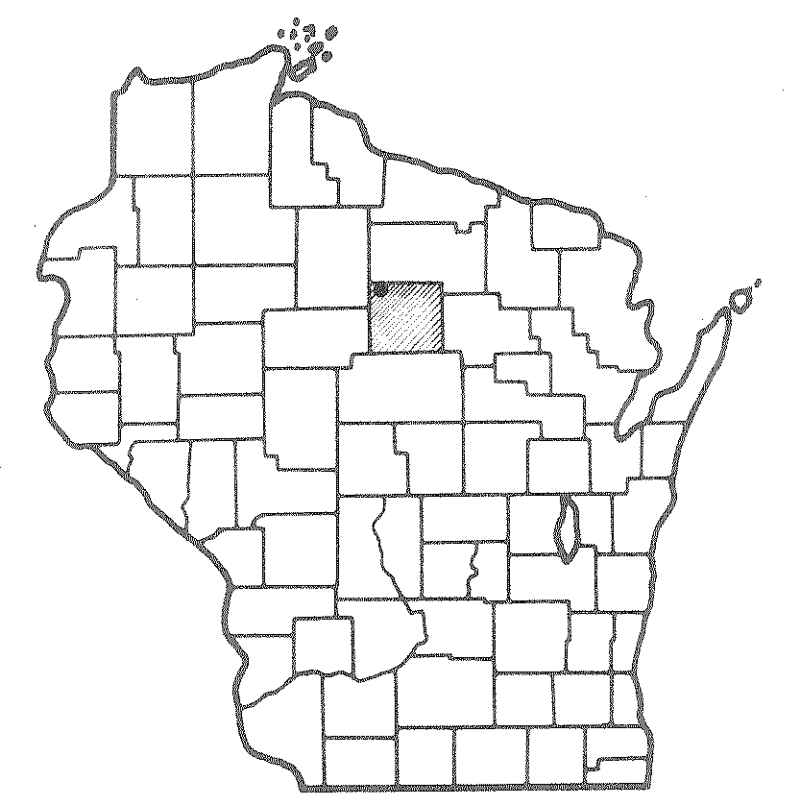
BIG SOMO RIVER BRIDGE & APPROACHES

MARTIN ROAD LINCOLN COUNTY

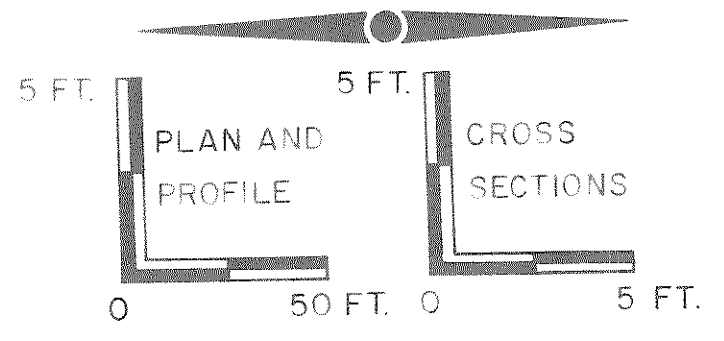
Index of Sheets

| | |
|-------------|--------------------------|
| Sheet No. 1 | Title |
| Sheet No. | Typical Cross Sections |
| Sheet No. | Estimate of Quantities |
| Sheet No. | Miscellaneous Quantities |
| Sheet No. | Right of Way Plat |
| Sheet No. | Plan and Profile |
| Sheet No. | Standard Details |
| Sheet No. | Structure Plans |
| Sheet No. | Computer Earthwork Data |
| Sheet No. | Cross Sections |

TOTAL SHEETS =

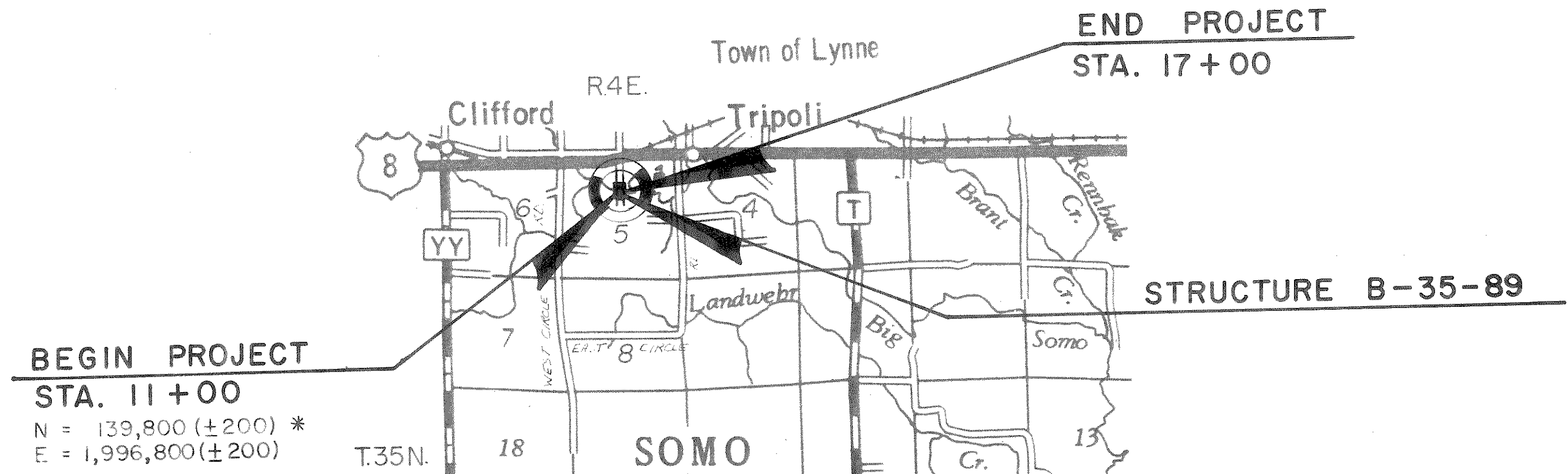


STATE PROJECT NUMBER
9863-01-70



Design Designation

- A.D.T. (1986) ■ 20
- A.D.T. (2006) ■ 30
- D.H.V. (2006) ■ 6
- D. ■ 60/40
- T. ■ 10% A.D.T.
- V. ■ 40 M.P.H.



**BEGIN PROJECT
 STA. 11+00**
 N = 139,800 (±200) *
 E = 1,996,800 (±200)

**END PROJECT
 STA. 17+00**

STRUCTURE B-35-89

Layout
 Scale 0 0.5 1 2 Mi.
 Total Net Length of Centerline = 0.114 Mi. (RURAL)

Conventional Signs

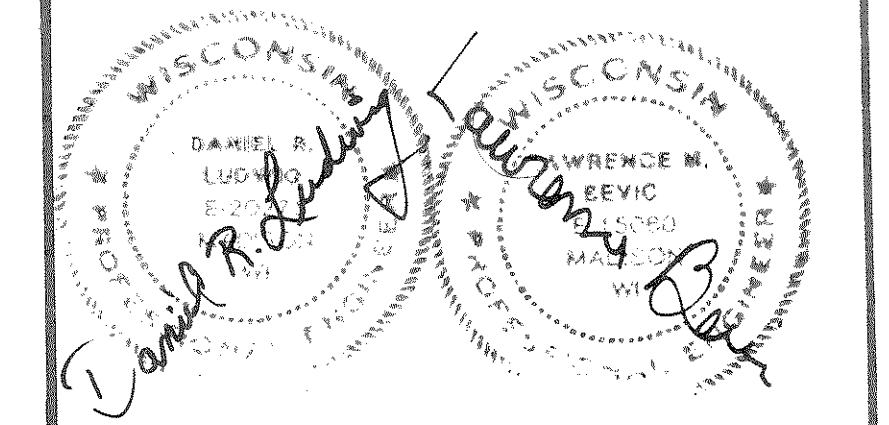
| | | | |
|--|-------|-------------------------------|-------|
| County Line | ----- | Culverts in Place | ----- |
| Township or Range Line | ----- | Culverts Required | ----- |
| Section Line | ----- | Drop Inlet | ----- |
| New Right of Way Line | ----- | Power Pole | ----- |
| Present Right of Way Line | ----- | Telephone or Telegraph Pole | ----- |
| Wire Fence | ----- | Right of Way Markers | ----- |
| Corporate or City Limits | ----- | Reference Stake for Hubs Only | ----- |
| Property Line | ----- | Marsh | ----- |
| Traveled Way or P.E. | ----- | Hedge | ----- |
| Railroads | ----- | Trees | ----- |
| Base or Survey Line | ----- | Ground Elevation | ----- |
| Caution Symbol (combustible fluids under pressure) | ----- | Grade Elevation | ----- |

* COORDINATES SCALED FROM U.S.G.S. TOPOGRAPHIC MAP BRANTWOOD, WISCONSIN, QUADRANGLE FOR IDENTIFICATION ONLY.

FILE COPY

APPROVED FOR
 LINCOLN
 COUNTY BY
 10-9-85
 (Date) *Michael J. Hepp*
 (Signature of Official)

ORIGINAL
 PLANS PREPARED BY
 BARRIENTOS & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 MADISON, WISCONSIN



STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

| | |
|---------------------------|------------------------|
| Surveyor <u>BAI</u> | District Checker _____ |
| Designer <u>BAI</u> | C.O. Checker _____ |
| District Supervisor _____ | C.O. Coordinator _____ |

Approved: _____
 Date _____ District Transportation Director

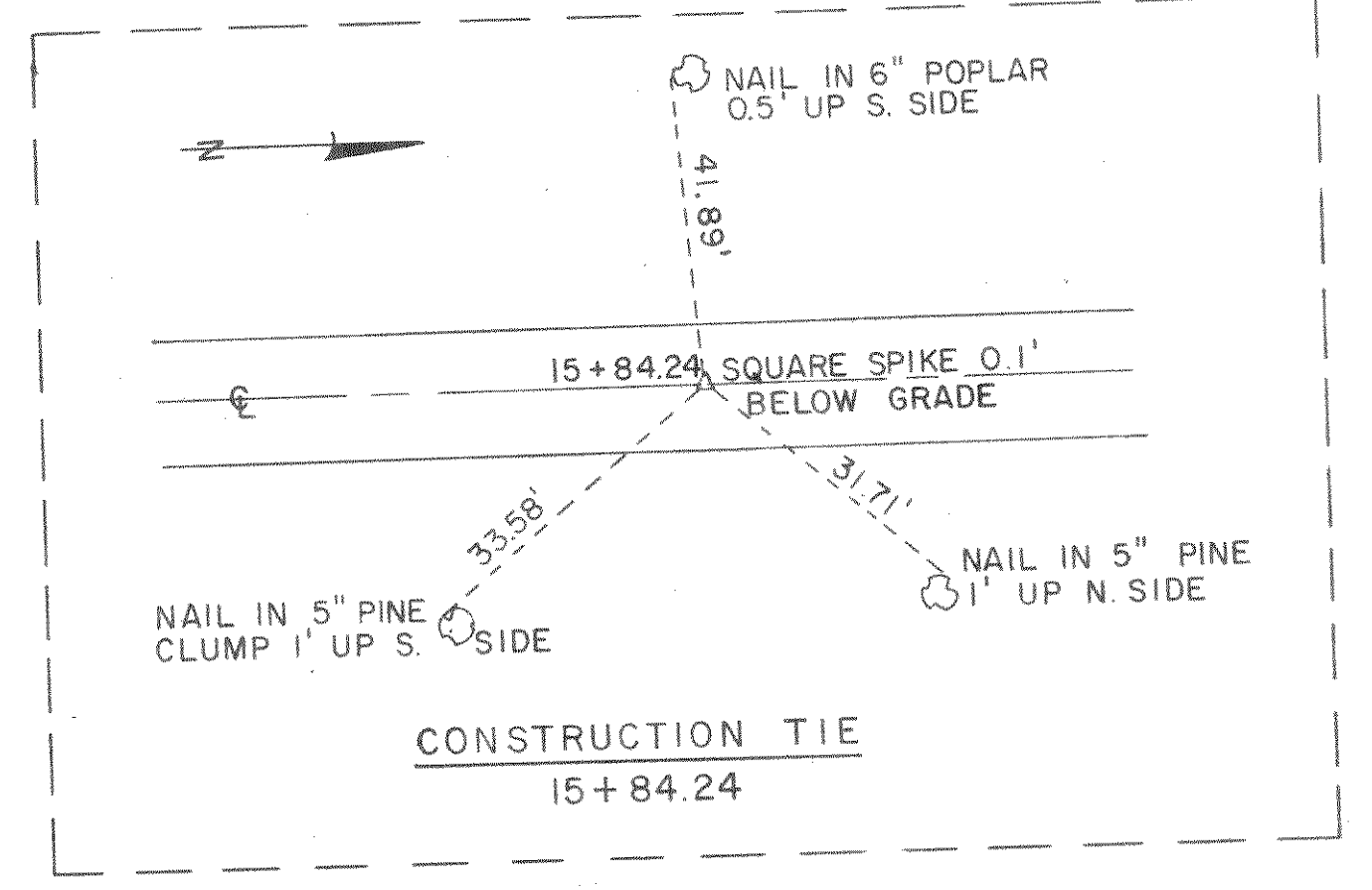
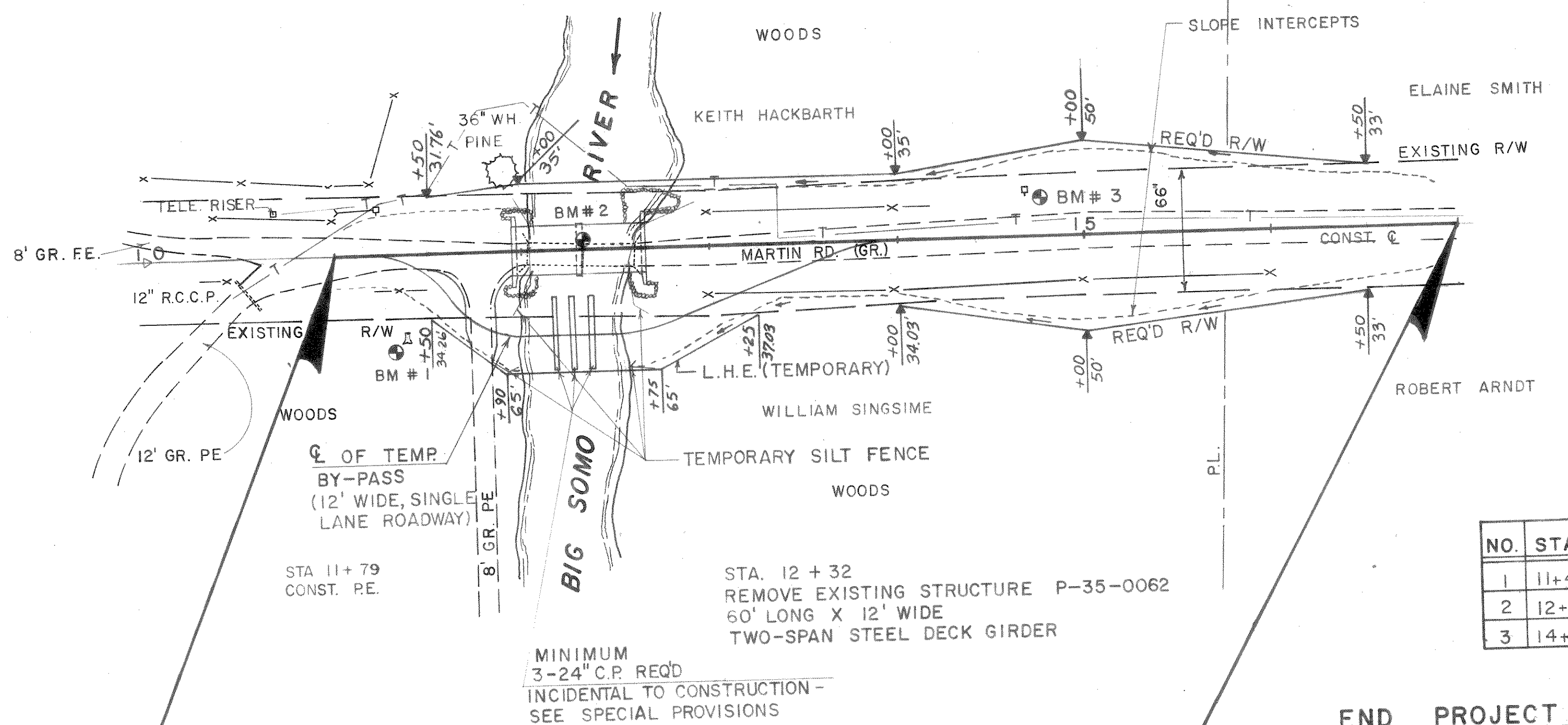
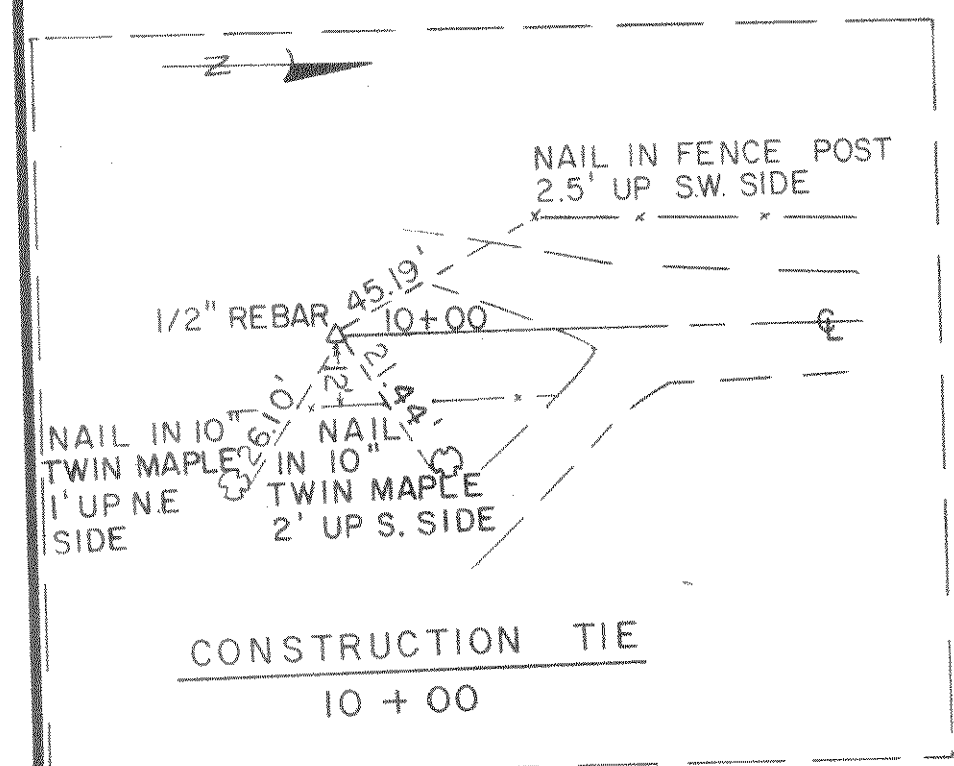
Approved: _____
 Date _____ Chief Design Engineer

Approved: _____
 Date _____ Director of Development

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 REGION 5 WISCONSIN DIVISION

Approved: _____
 Date _____ Division Administrator

FINAL PLANS 12-20-85



BENCH MARKS

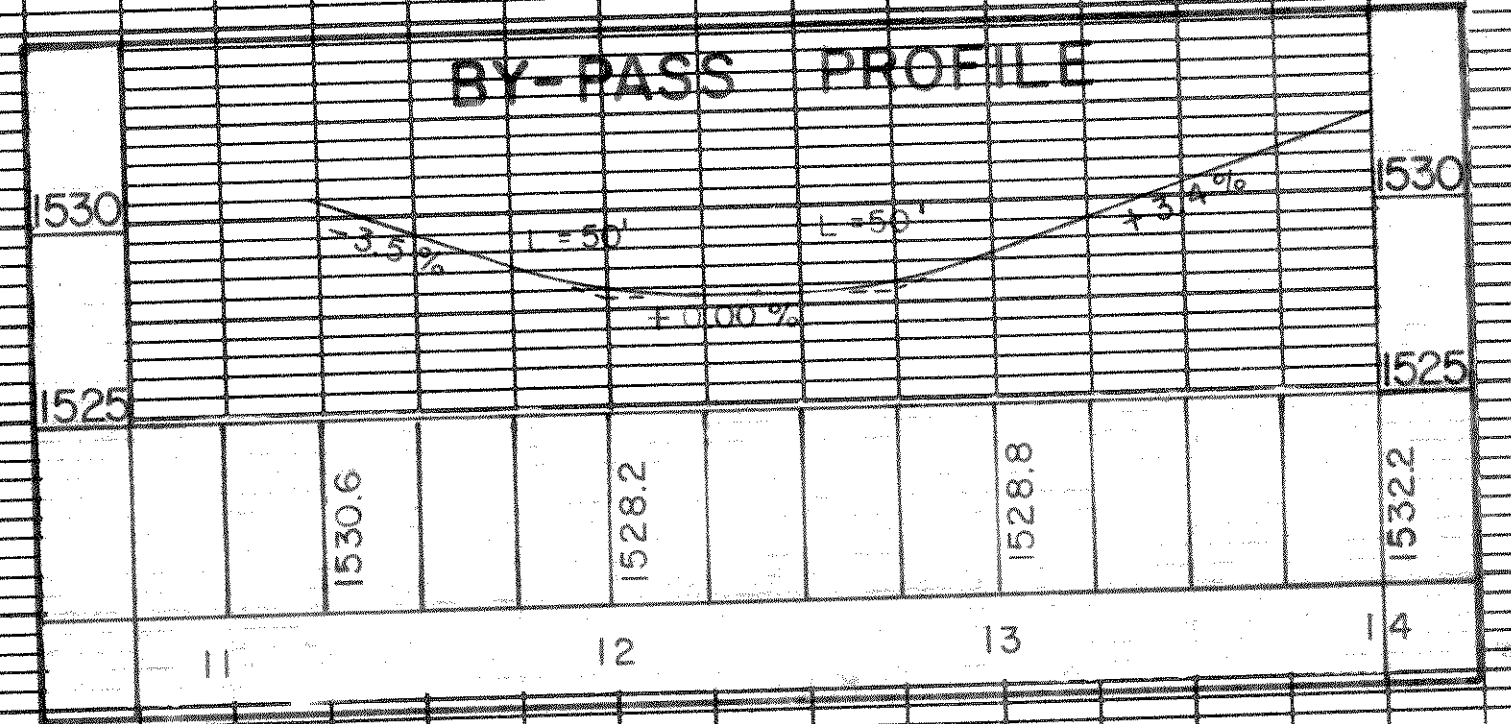
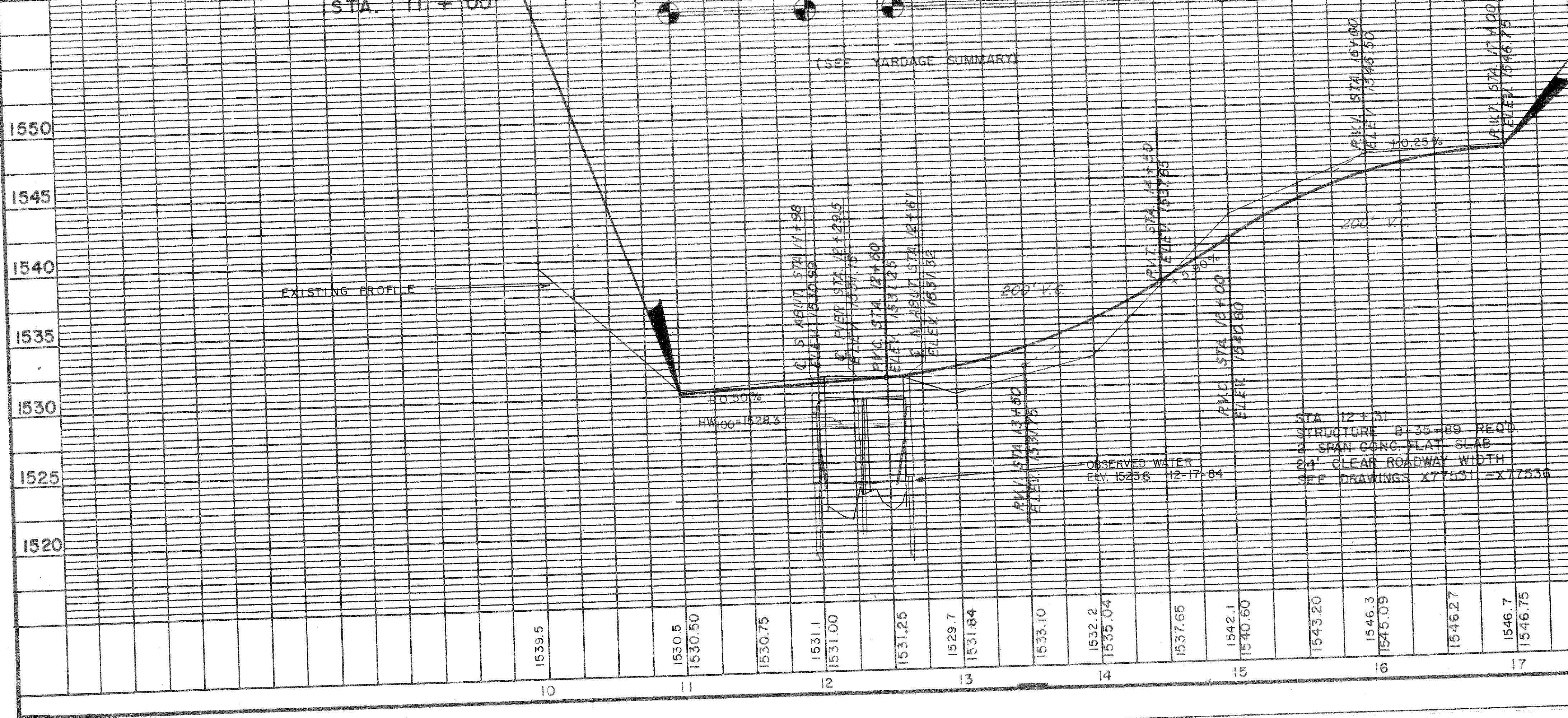
| NO. | STA. | DESCRIPTION | ELEV. |
|-----|-------|---|----------|
| 1 | 11+40 | SPIKE IN 18" STUMP, 48' R. | 1527.18' |
| 2 | 12+34 | CHIS "D", TOP OF W. END OF PIER, 4' L. | 1529.55' |
| 3 | 14+71 | SPIKE IN POWER POLE, E. SIDE .5' UP, 24' L. | 1542.53' |

BEGIN PROJECT STA. 11+00
END PROJECT STA. 17+00

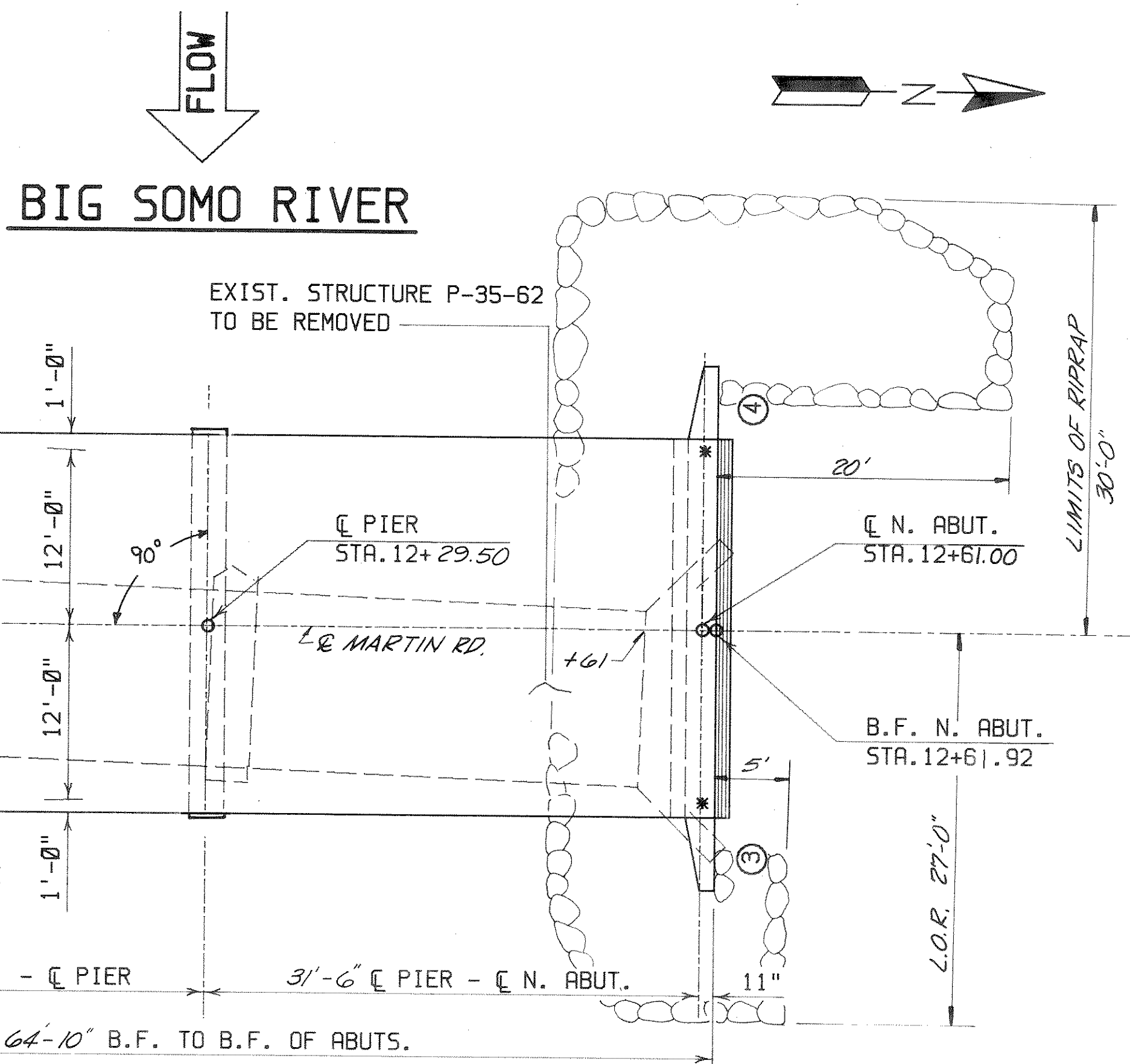
YARDAGE SUMMARY

| PHASE | DESCRIPTION | CUT (C.Y.) | FILL (C.Y.) | BORROW (C.Y.) | WASTE (C.Y.) |
|---------|--------------------------------------|------------|-------------|---------------|--------------|
| PHASE 1 | CONSTRUCT TEMPORARY BY-PASS BRIDGE | 0 | 160 | 44 | 208 |
| PHASE 2 | CONSTRUCT BRIDGE & APPROACHES BRIDGE | 31 | 933 | 98 | 394 |
| PHASE 3 | REMOVE TEMPORARY BY-PASS BRIDGE | 44 | 0 | 0 | 208 |

SHRINKAGE = 30%

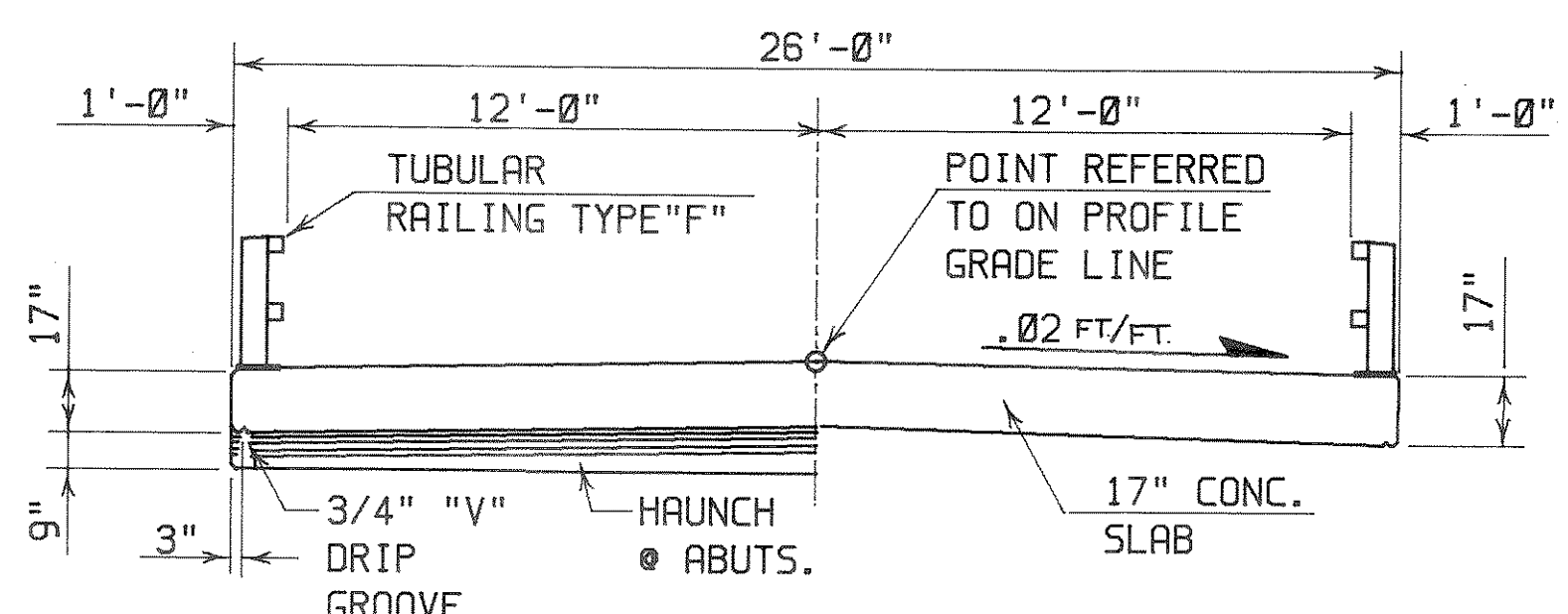


*ANCHOR ASSEMBLY FOR PLATE BEAM TYPE GUARD RAIL



PLAN

2 SPAN CONC. SLAB



CROSS SECTION THRU ROADWAY

HYDRAULIC DATA

| | |
|---------------------|--------------|
| DRAINAGE AREA | 29.2 SQ. MI. |
| HIGHWATER 100 | EL. 1528.3 |
| Q 100 | 2,200 C.F.S. |
| WATERWAY AREA | 251 SQ. FT. |
| VELOCITY | 8.8 F.P.S. |
| ROADWAY OVERTOPPING | N/A |

TRAFFIC DATA

| | |
|---------------|-----------|
| A.D.T. (1986) | 20 |
| A.D.T. (2006) | 30 |
| R.D.S. | 40 M.P.H. |

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP10x57 STEEL "H" PILES EST. 20' LG. AND DRIVEN TO A MIN. BEARING VALUE OF 55 TONS / PILE.

PIER TO BE FOUNDED ON MATERIAL HAVING A MINIMUM BEARING CAPACITY OF 4 K.S.F.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE NOTED.
 THE SLOPES IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH HEAVY RIPRAP TO THE EXTENT SHOWN ON THIS SHEET.
 JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M153 TYPE 1, 11, OR 111 OR M213.
 THIS STRUCTURE WILL REPLACE P-35-62 WHICH IS A STEEL DECK GIRDER STRUCTURE.
 FALSEWORK TO BE SUPPORTED ON PILES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

DESIGN DATA

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 P.S.F.

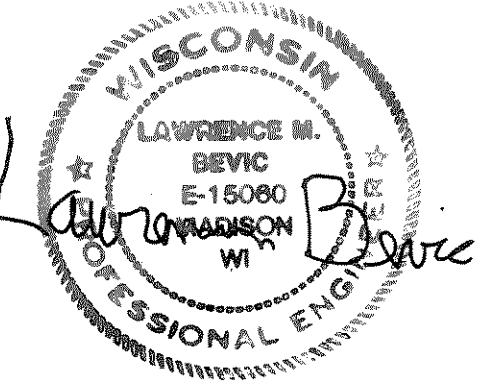
RATINGS: DESIGN RATING H20
 INVENTORY RATING H21
 OPERATING RATING H526

ALLOWABLE DESIGN STRESSES

CONCRETE MASONRY - SLAB ---- f'c = 4,000 P.S.I.
 OTHER ---- f'c = 3,500 P.S.I.
 HIGH STRENGTH BAR STEEL REINFORCEMENT GRADE-60 ---- fy = 60,000 P.S.I.

TOTAL ESTIMATED QUANTITIES

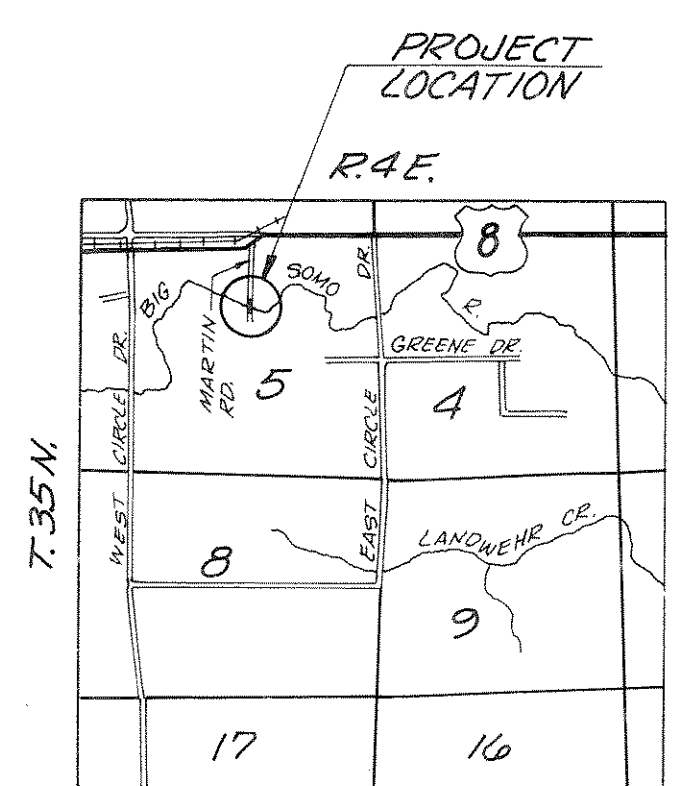
| BID ITEMS | UNIT | SOUTH ABUT. | PIER | NORTH ABUT. | SUPER | TOTAL |
|--|------|-------------|-------|-------------|--------|-------------|
| REMOVING OLD STRUCTURE STA. 12+31 | L.S. | | | | | 1 |
| EXCAVATION FOR STRUCTURES, BRIDGES B-35-89 | L.S. | | | | | 1 |
| CONCRETE MASONRY, BRIDGES | C.Y. | 16.7 | 35.8 | 16.7 | 91.8 | 161 |
| HIGH STRENGTH BAR STEEL REINFORCEMENT, BRIDGES | LBS. | 1,210 | 2,540 | 1,210 | 10,290 | 15,250 |
| COATED HIGH STRENGTH BAR STEEL REINFORCEMENT | LBS. | | | | 5,330 | 5,330 |
| TUBULAR RAILING TYPE "F" - B-35-89 | L.S. | | | | | 1 |
| HEAVY RIPRAP | C.Y. | 50 | | 80 | | 130 |
| STRUCTURAL CARBON STEEL | LBS. | | | | 260 | 260 |
| STEEL PILING, DELIVERED & DRIVEN HP10x57 | L.F. | 80 | | 80 | | 160 |
| EXCAVATION FOR ABUTMENTS B-35-89 | L.S. | | | | | 1 |
| PROTECTIVE SURFACE TREATMENT | GAL. | | | | 17 | 17 |
| NON BID ITEMS | | | | | | |
| FILLER | SIZE | | | | | 1/2" x 3/4" |
| POLYVINYL CHLORIDE WATERSTOP | L.F. | 30 | | 30 | | 60 |



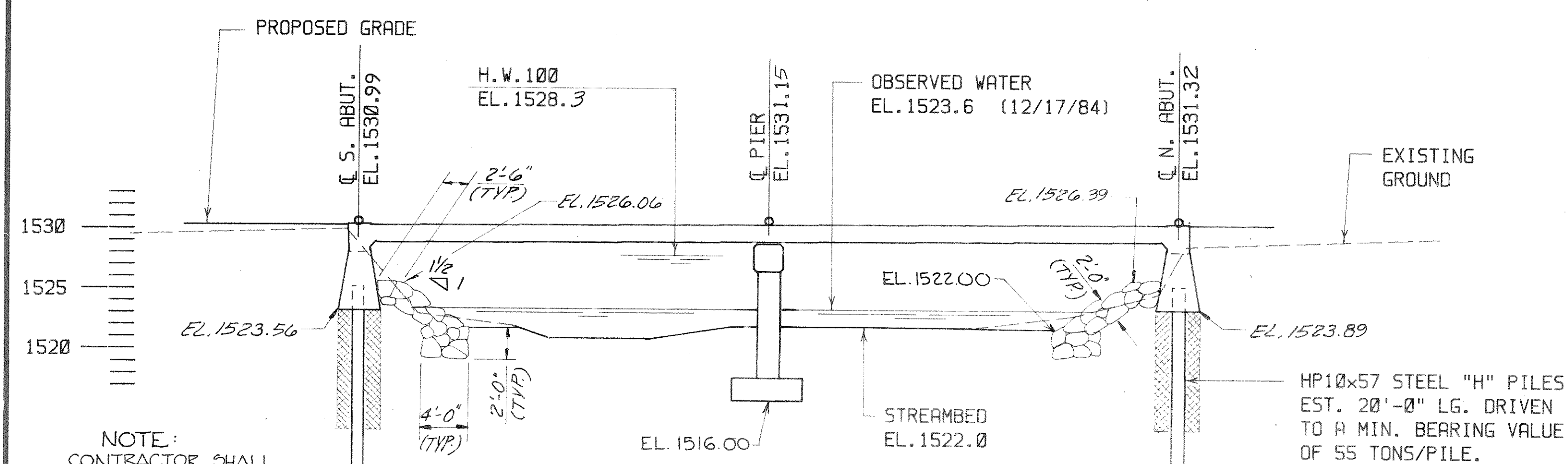
PLANS PREPARED BY BARRIENTOS & ASSOCIATES, INC. CONSULTING ENGINEERS
 3822 MINERAL POINT RD. - MADISON, WI. 53705
 PH. 608 - 238 - 6761

LIST OF DRAWINGS

- GENERAL PLAN - X 77531
- SUBSURFACE EXPLORATION - X 77532
- ABUTS. - X 77533
- PIER - X 77534
- SUPERSTRUCTURE - X 77535
- TUBULAR RAILING TYPE "F" - X 77536

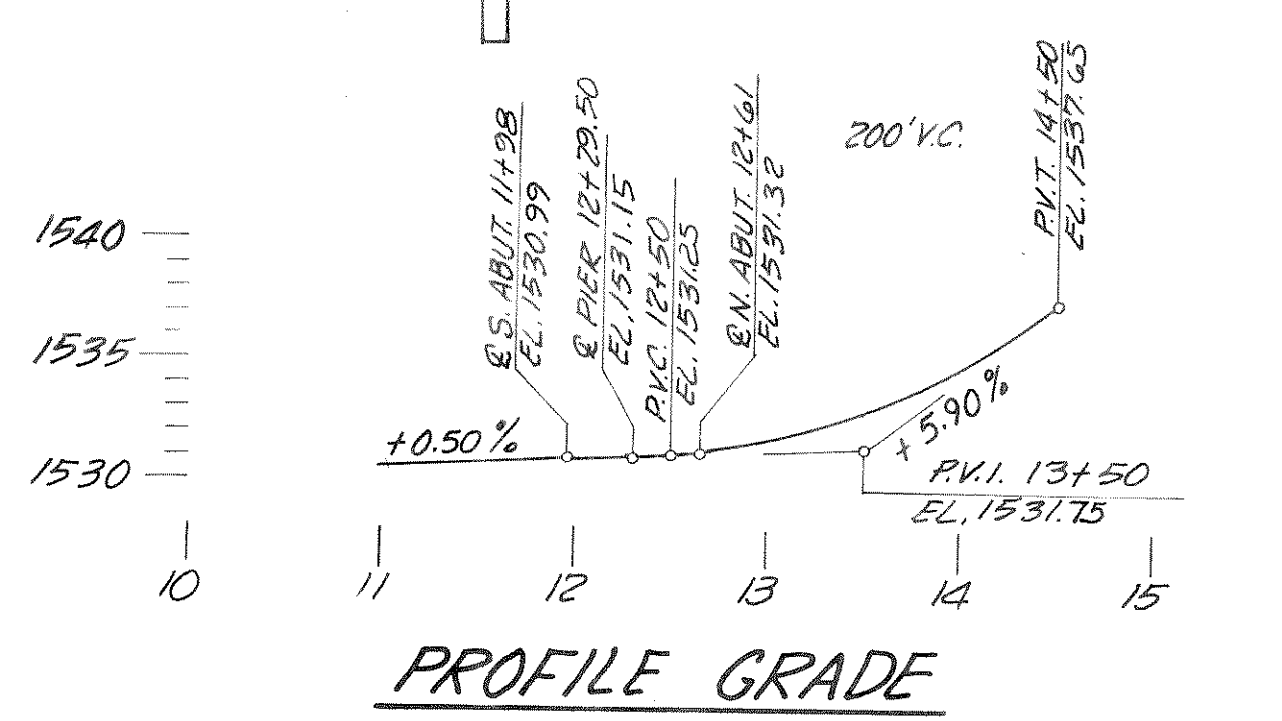


LAYOUT



ELEVATION

RAILING NOT SHOWN



PROFILE GRADE

NOTE: CONTRACTOR SHALL ATTEMPT STANDARD PILE DRIVING AT EA. ABUTMENT. IF THIS PROVES IMPOSSIBLE A TRENCH 3'-6" x 10'-0" DEEP SHALL BE EXCAVATED AS SHOWN. AFTER ALL COBBLES & BOULDERS ARE REMOVED, TRENCH SHALL BE REFILLED USING "STANDARD COMPACTION" & PILES THEN DRIVEN. SEE "SPECIAL PROVISIONS"

BENCH MARKS

| NO. | STA. | LOCATION | ELEV. |
|-----|-------|---|---------|
| 1 | 11+40 | SPIKE IN 18" STUMP 48' RT. | 1527.18 |
| 2 | 12+34 | CHIS. SQ. TOP OF W. END OF PIER 4' LT. | 1529.55 |
| 3 | 14+71 | SPIKE IN POWER POLE E. SIDE 5' UP 24' LT. | 1542.53 |

| | | | |
|--|------------------|----------|--------------|
| No. | Date | Revision | By |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS | | | |
| STRUCTURE B-35-89 | | | |
| MARTIN RD. OVER BIG SOMO RIVER | | | |
| County | LINCOLN | Town | SOMO |
| Design Spec. | A.A.S.H.T.O. '83 | Load | H20 |
| Const. Spec. | WIS '81 | Drawn By | T.L. |
| Designed By | L.M.B. | Checked | T.E.P. |
| Plans Checked | L.M.B. | Date | |
| Approved State Bridge Engineer | | | |
| GENERAL PLAN | | | SHEET 1 OF 6 |
| | | | X 77531 |

FLOW
 ↓
BIG SOMO RIVER
 →

ABBREVIATIONS

F — Fine M — Medium C — Coarse
 Ws — Weathered So — Sound

MATERIAL SYMBOLS

| | | |
|---------|------|--------------|
| Topsoil | Silt | Sandstone |
| Sand | Peat | Limestone |
| Gravel | Clay | Igneous Rock |

LEGEND OF PROBING

Probing No.
 Sta.
 Elevation
 95/6=95 Blows for 6" Penetration
 Probing taken with a 350# wt. Falling 18" on a 2" O. D. Point.
 Refusal 95/6
 7 Average Blows Per Foot

LEGEND OF BORING

Boring No.
 Sta.
 Elev.

Unconfined Strength → 7.7
 Blows Per Ft. Using 140# Wt. Falling 30"
 Wash Sample
 Shelby Tube — S. T.

Ground Water Elevation
 No Ground Water Observed Above This Elevation

Sandy Gravel
 Boulders or Cobbles
 Sand
 Silty Clay
 So
 Limestone

Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O. D. x 1.4" I. D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

| No. | Date | Revision | By |
|-----|------|----------|----|
| | | | |

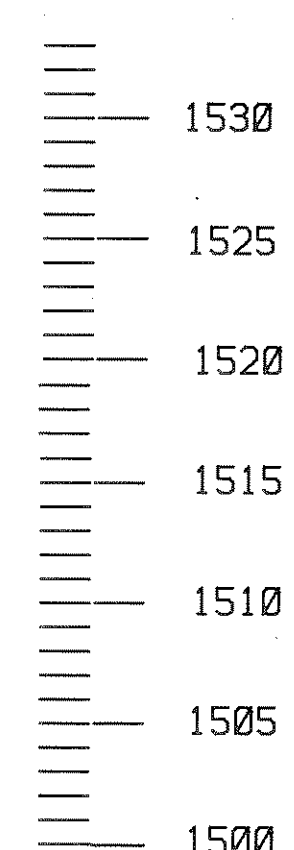
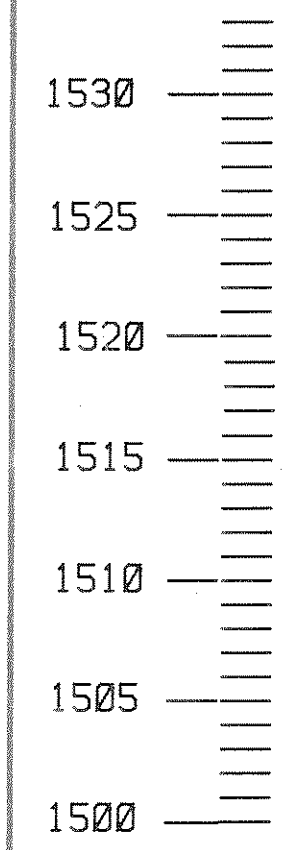
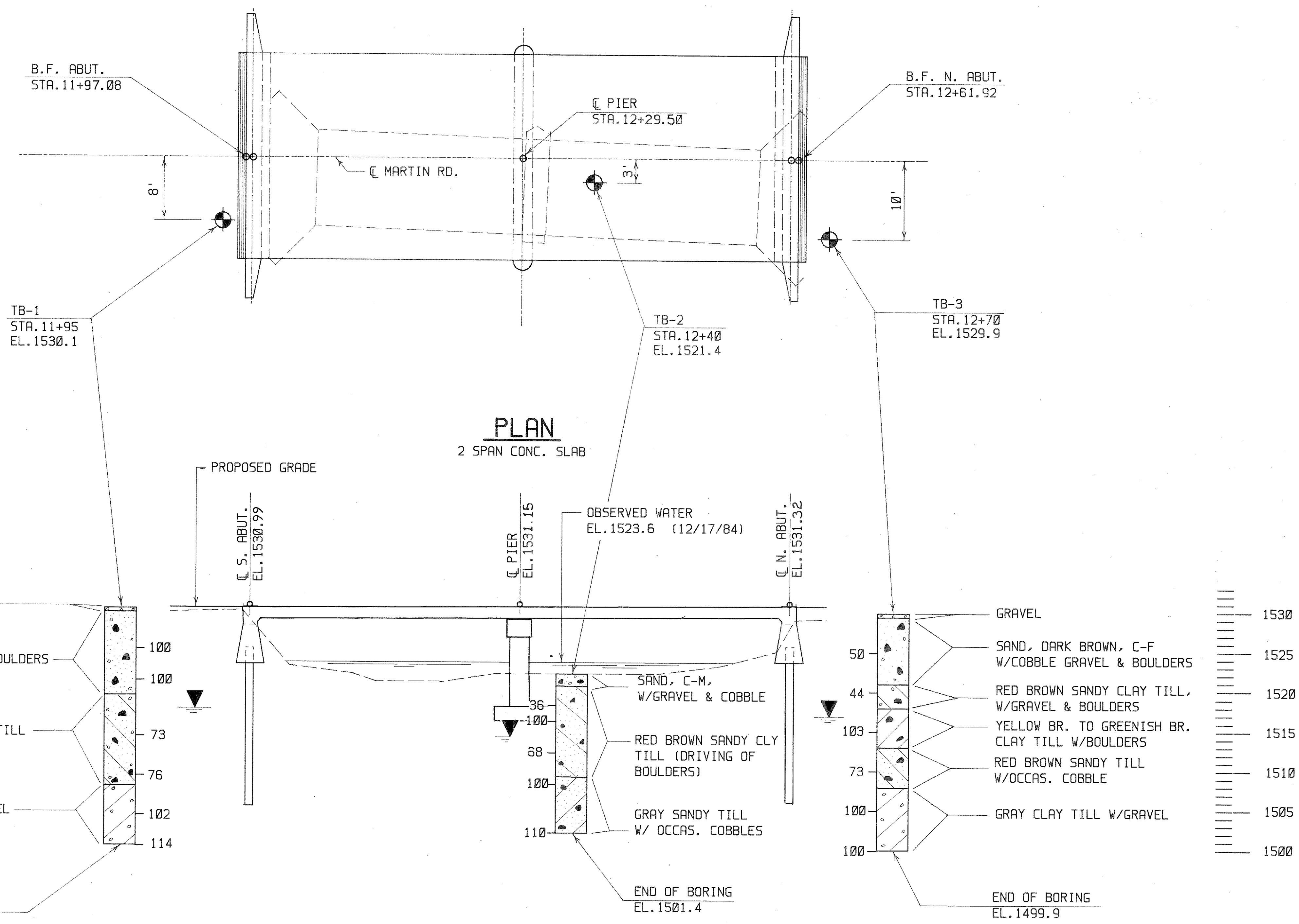
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

STRUCTURE B-35-89

Const. Spec. WIS. '81 Drawn By T.L. Plans Checked L.M.D.

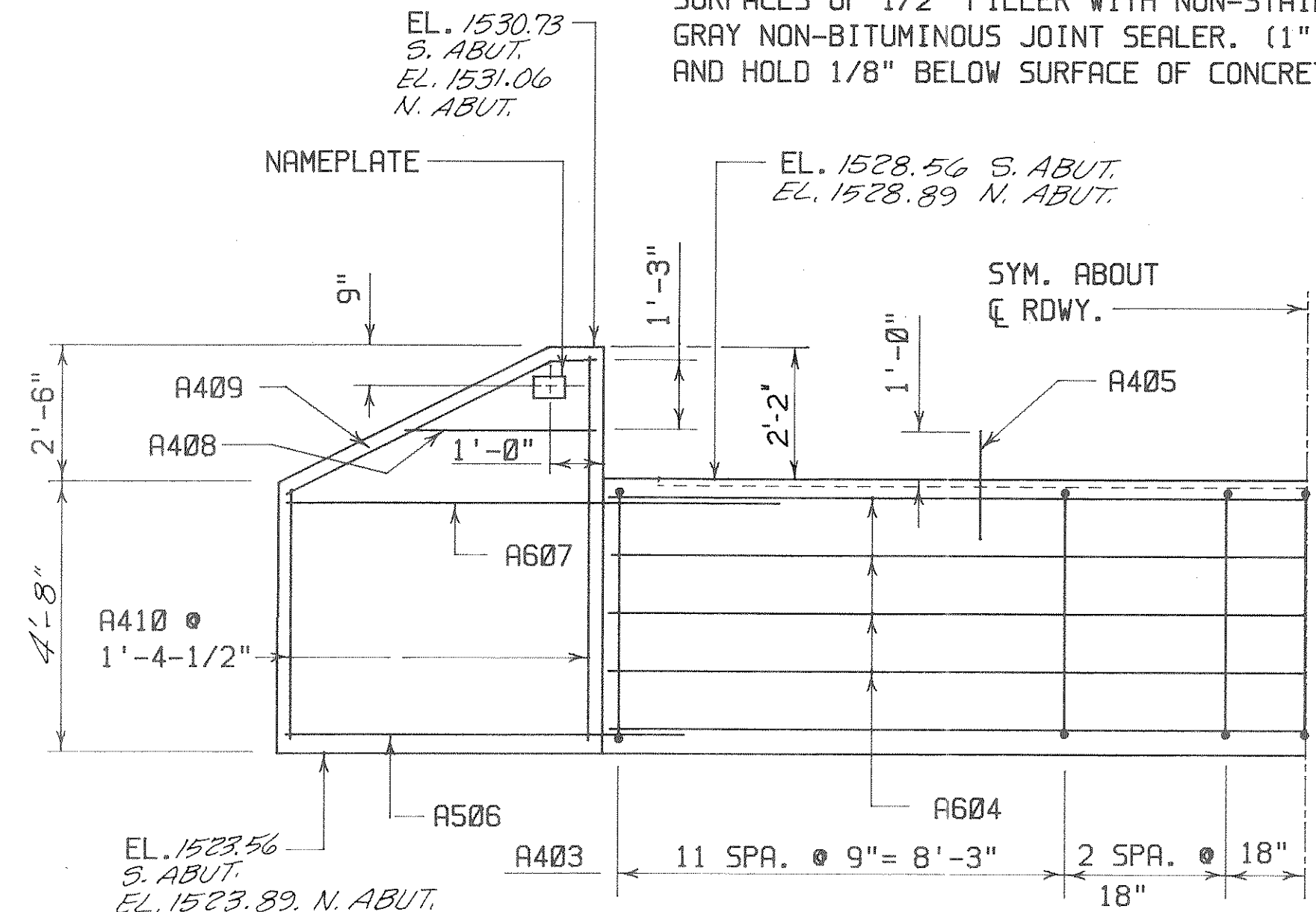
SUBSURFACE EXPLORATION

SHEET 2 OF 6
 X 77532



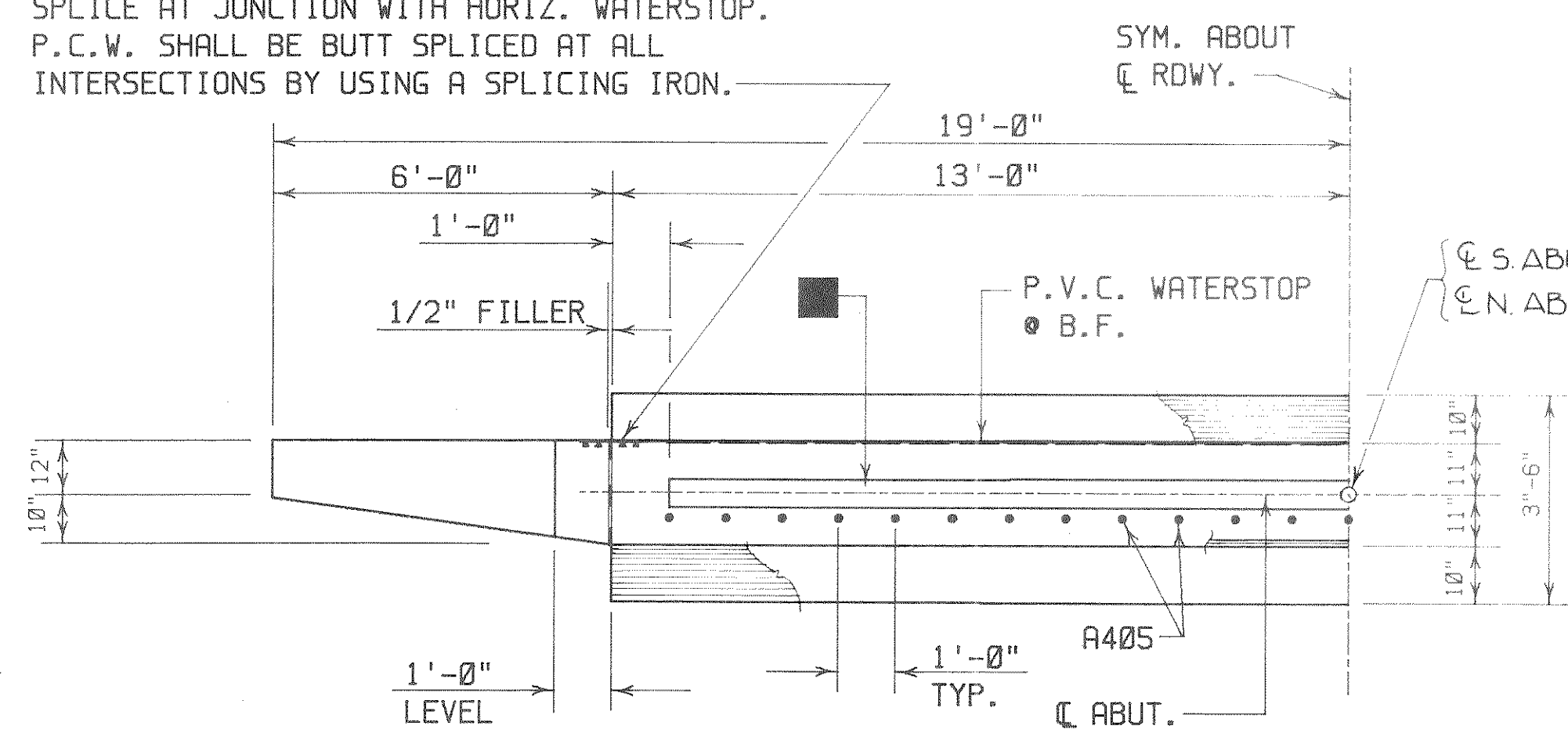
ELEVATION

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

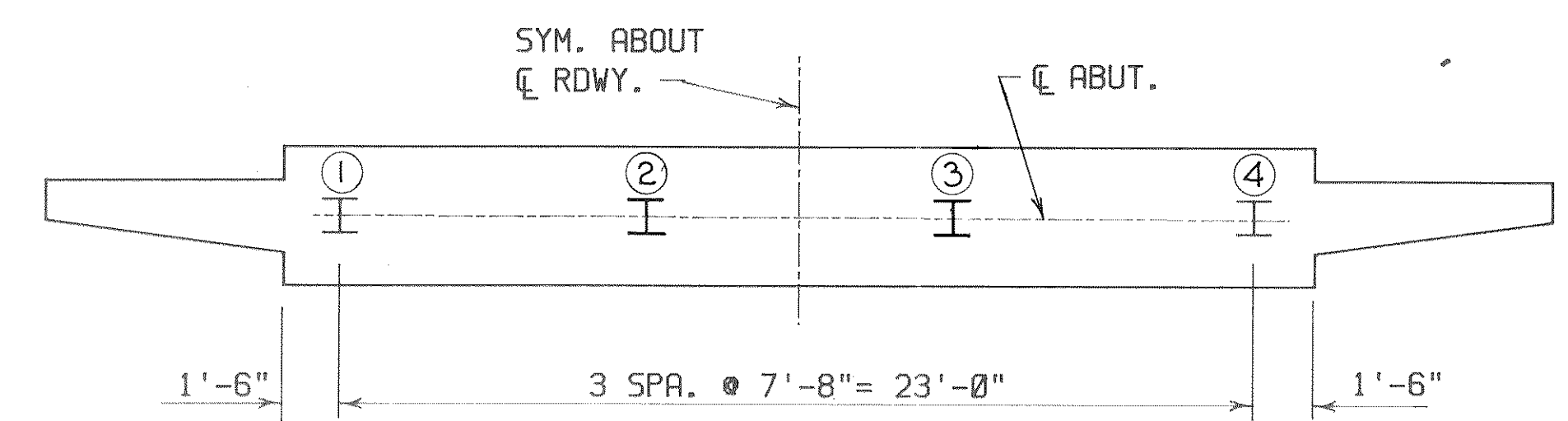


HALF ELEVATION

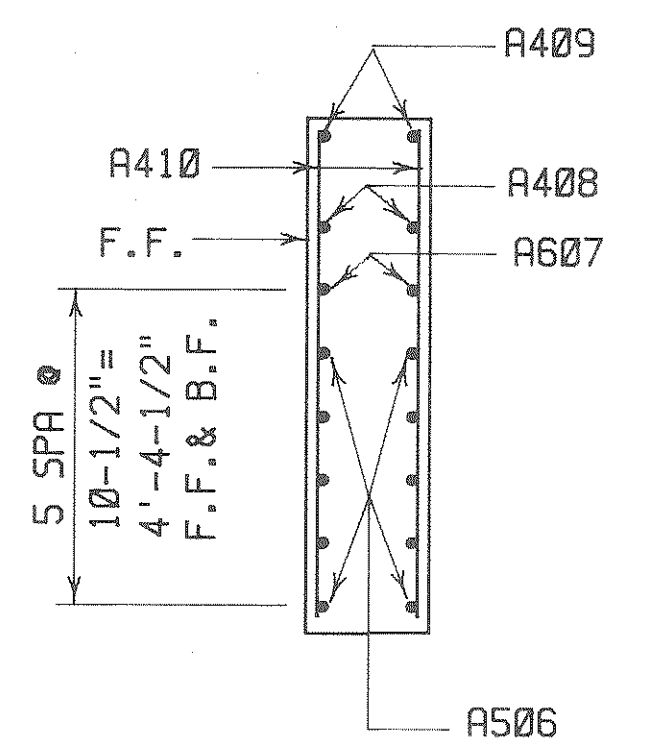
VERTICAL POLYVINYL CHLORIDE WATERSTOP TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. SPLICE AT JUNCTION WITH HORIZ. WATERSTOP. P.C.W. SHALL BE BUTT SPLICED AT ALL INTERSECTIONS BY USING A SPLICING IRON.



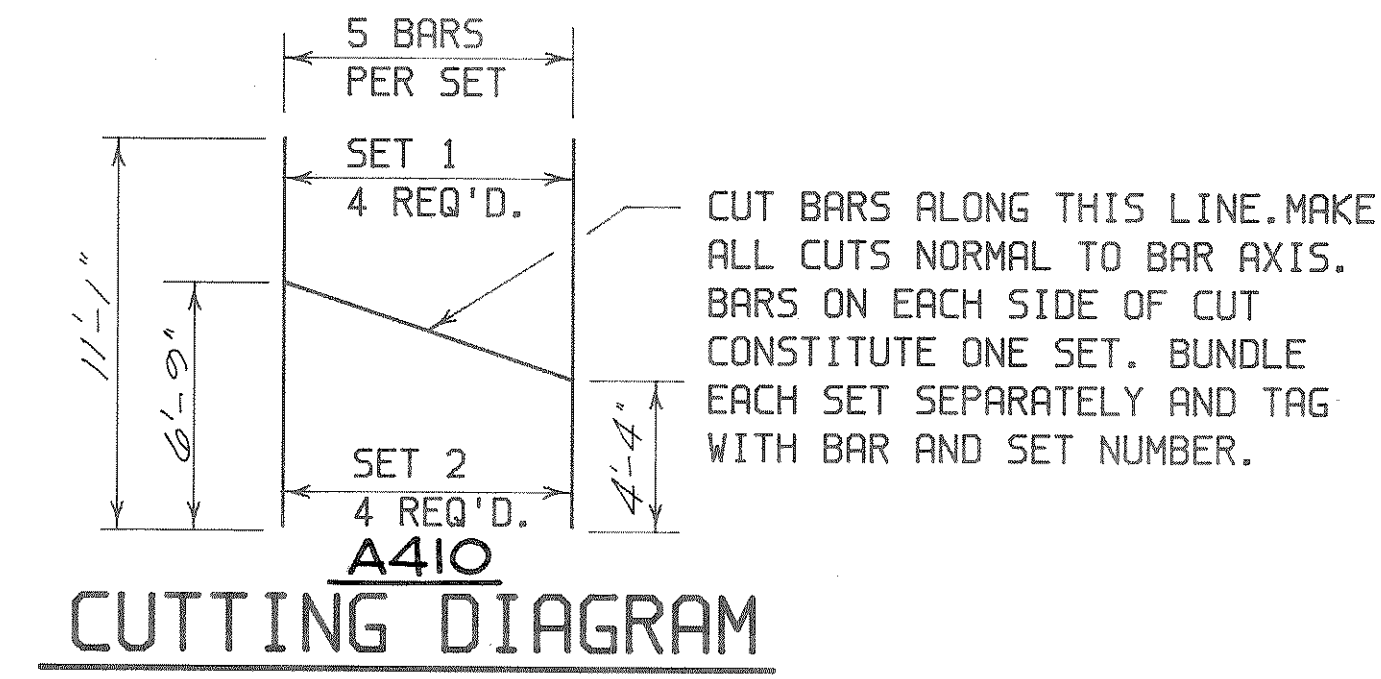
HALF PLAN



PILE PLAN

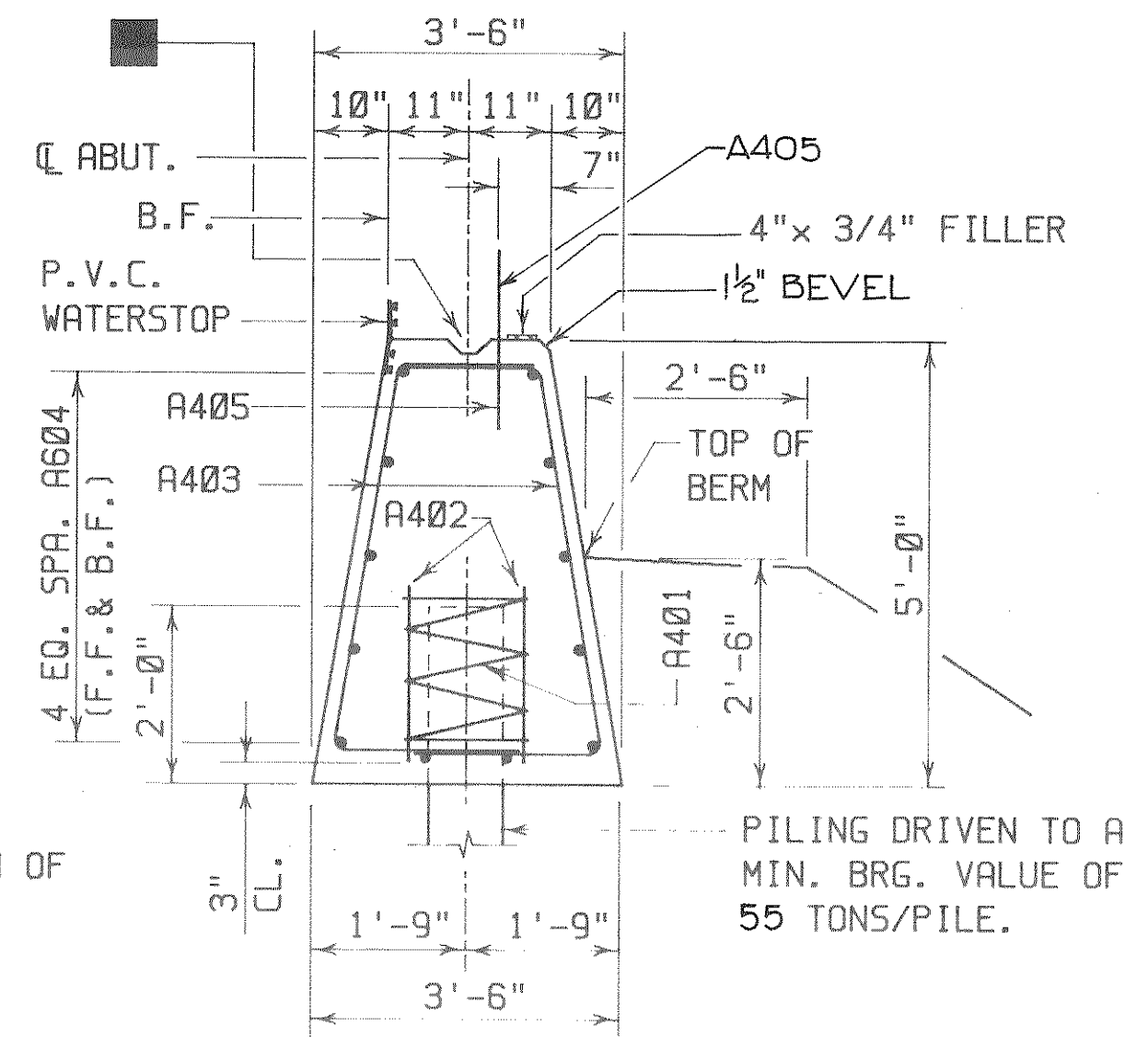


WING SECTION



CUTTING DIAGRAM

CUT BARS ALONG THIS LINE. MAKE ALL CUTS NORMAL TO BAR AXIS. BARS ON EACH SIDE OF CUT CONSTITUTE ONE SET. BUNDLE EACH SET SEPARATELY AND TAG WITH BAR AND SET NUMBER.

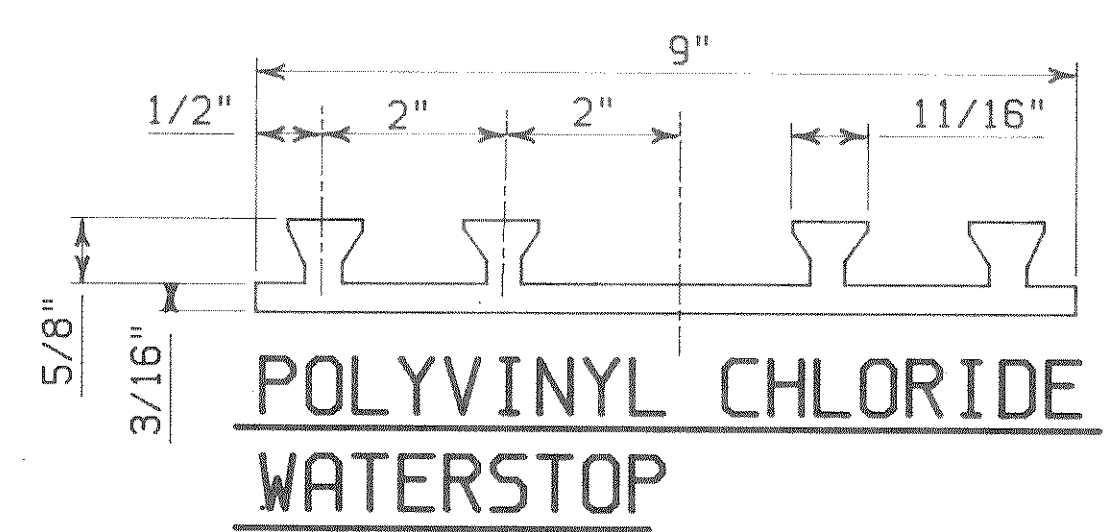


SECT. THRU BODY

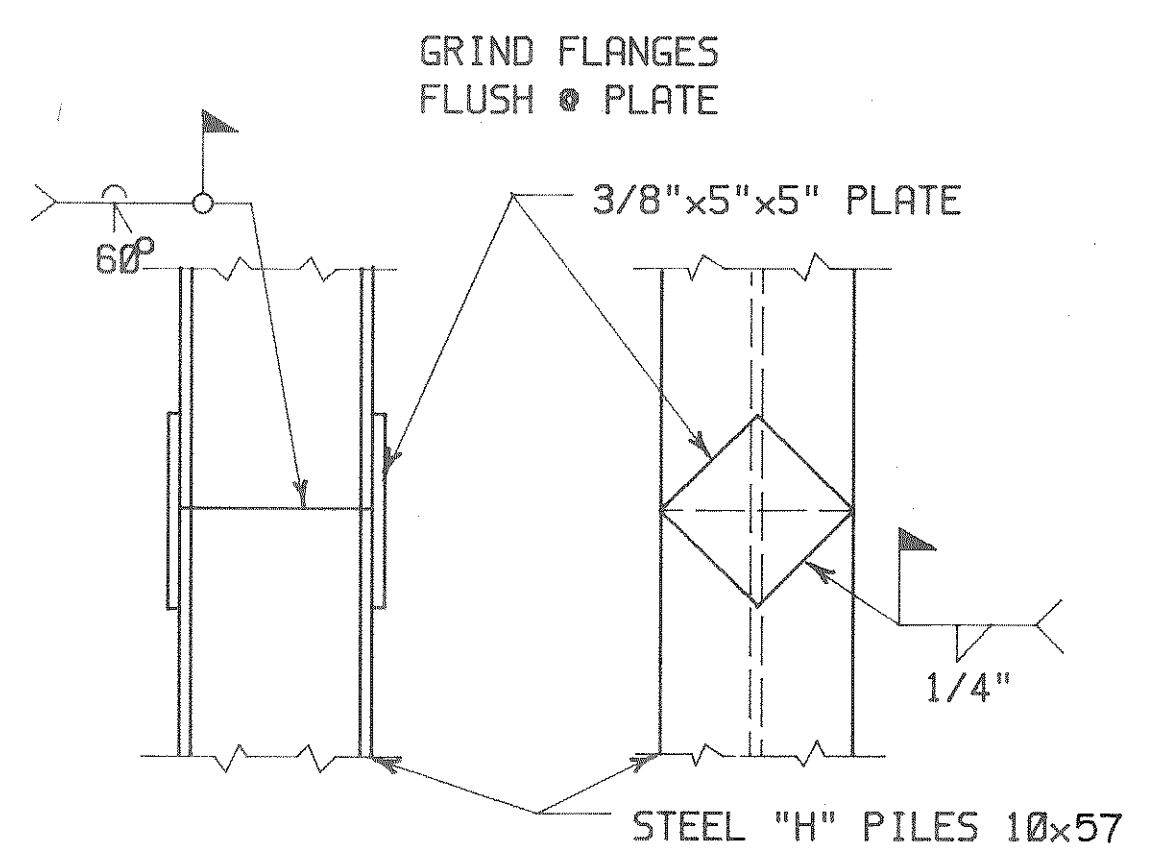
ALL HORIZ. BARS ARE A604

NOTE: FILL TO BOTTOM OF FOOTING EL. BEFORE DRIVING PILES. SEE NOTE SHT. 1

S. ABUT. STA. 11+98.00
N. ABUT. STA. 12+61.00



POLYVINYL CHLORIDE WATERSTOP



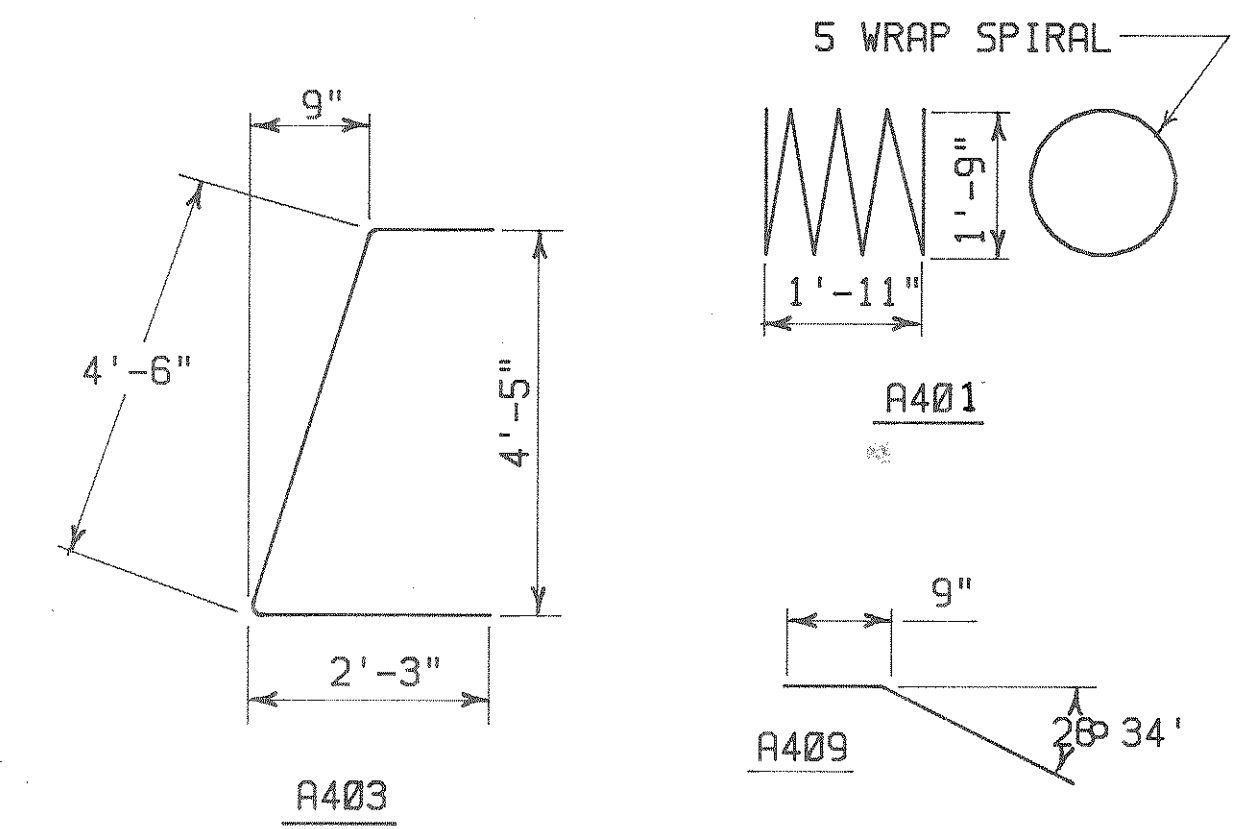
PILE SPLICE DETAIL

BILL OF BARS

(THE NO. OF BARS SHOWN ARE FOR TWO ABUTS.)

| BAR MARK | NO. REQ'D. | LENGTH | BENT | CUT | LOCATION |
|----------|------------|--------|------|-----|-----------------------|
| A401 | 8 | 28'-0" | X | | BODY - ONE PER PILE |
| A402 | 16 | 2'-3" | | | BODY - TWO PER PILE |
| A403 | 116 | 8'-2" | X | | BODY - STIRRUPS |
| A604 | 24 | 25'-8" | | | BODY - HORIZ. |
| A405 | 50 | 2'-0" | | | BODY - VERT. - DOWELS |
| A506 | 40 | 7'-4" | | | WINGS - HORIZ. |
| A607 | 8 | 9'-1" | | | WINGS - HORIZ. |
| A408 | 8 | 3'-4" | | | WINGS - HORIZ. |
| A409 | 8 | 6'-2" | X | | WINGS - TOP |
| A410 | 20 | 11'-1" | | X | WINGS - VERT. |

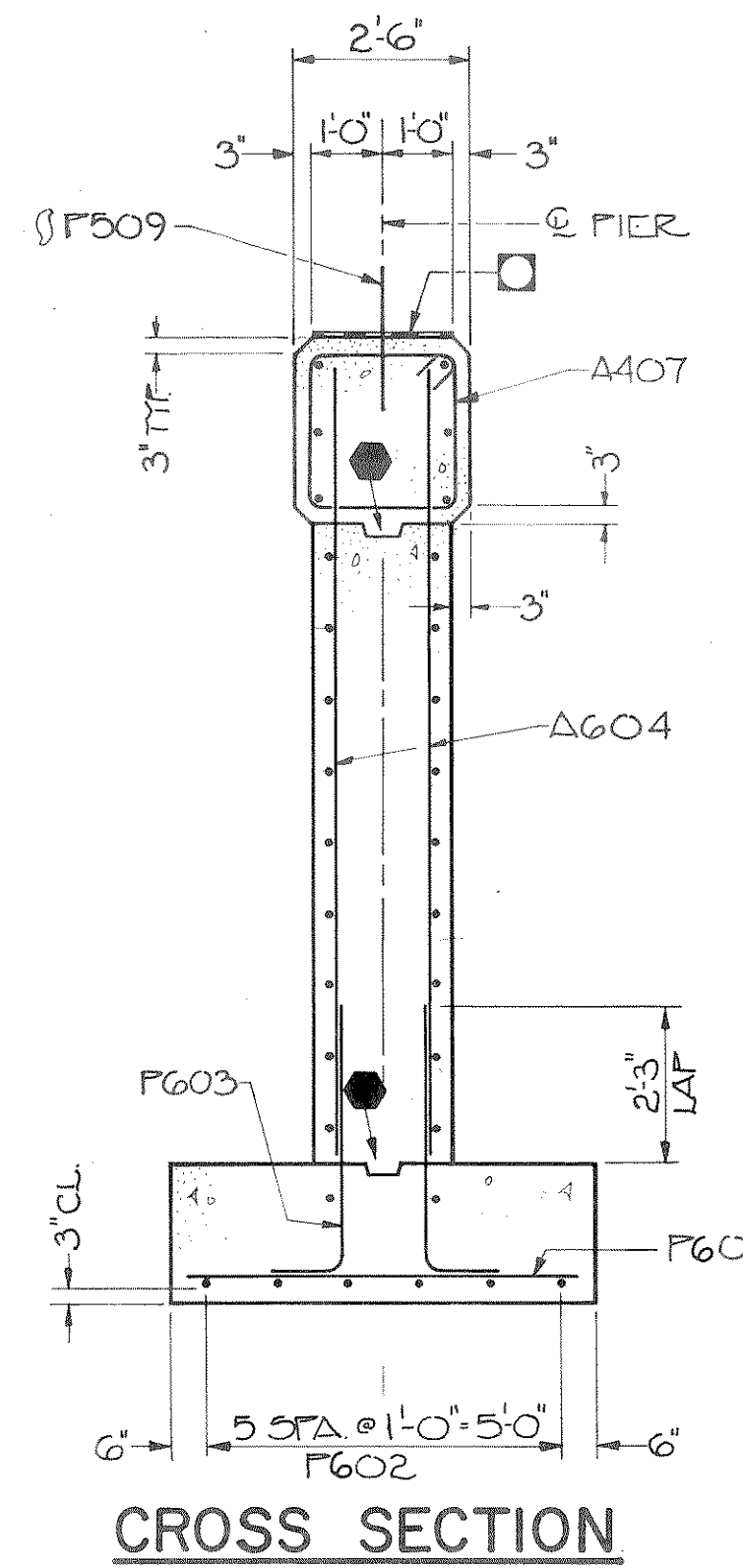
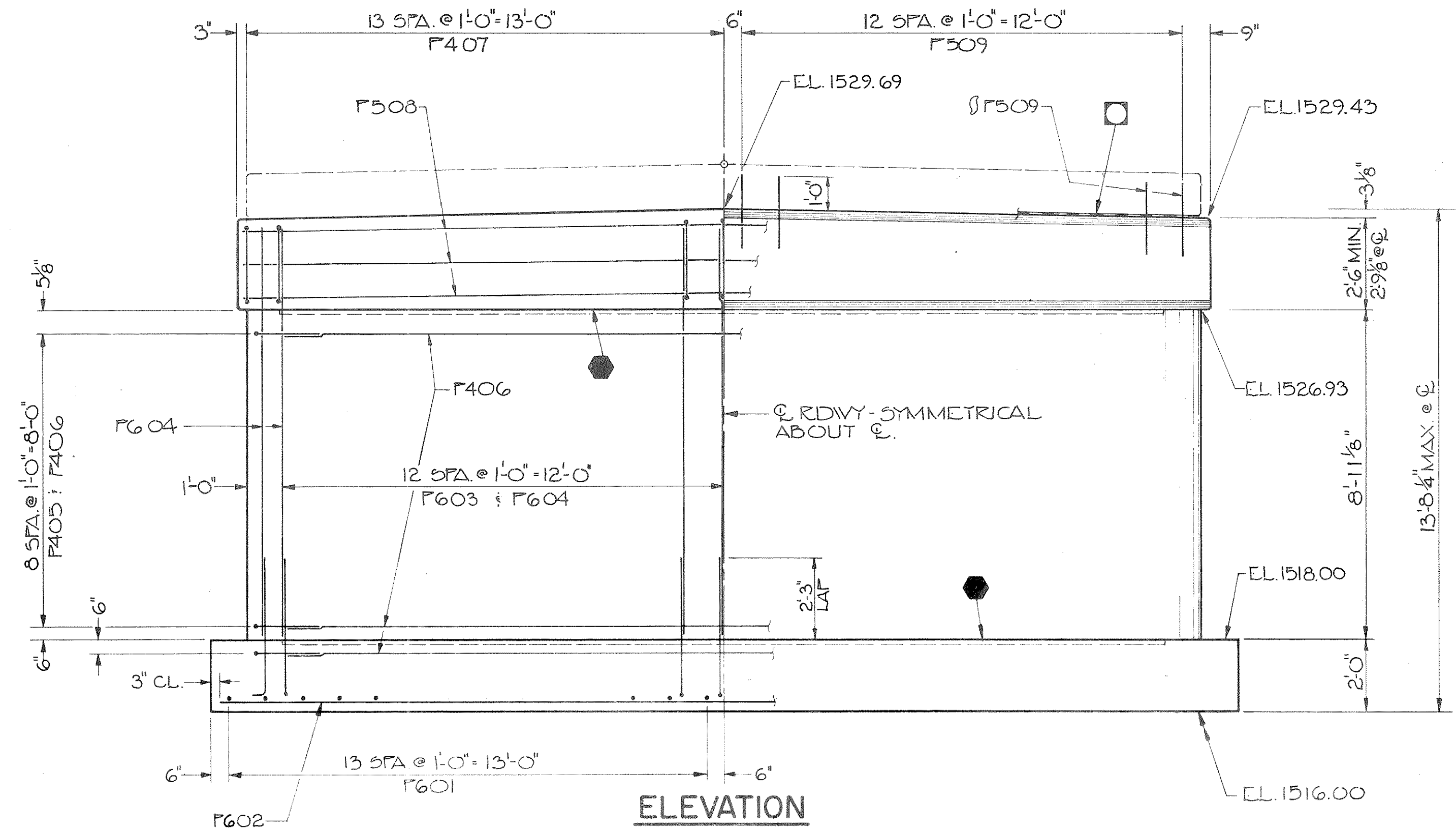
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.



CONST. JOINT KEYWAY FORMED BY A SURFACED, BEVELED 2"x 6".

NOTE: A405 BARS MAY BE PLACED AFTER CONC. IS POURED, BUT BEFORE INITIAL SET HAS OCCURED.

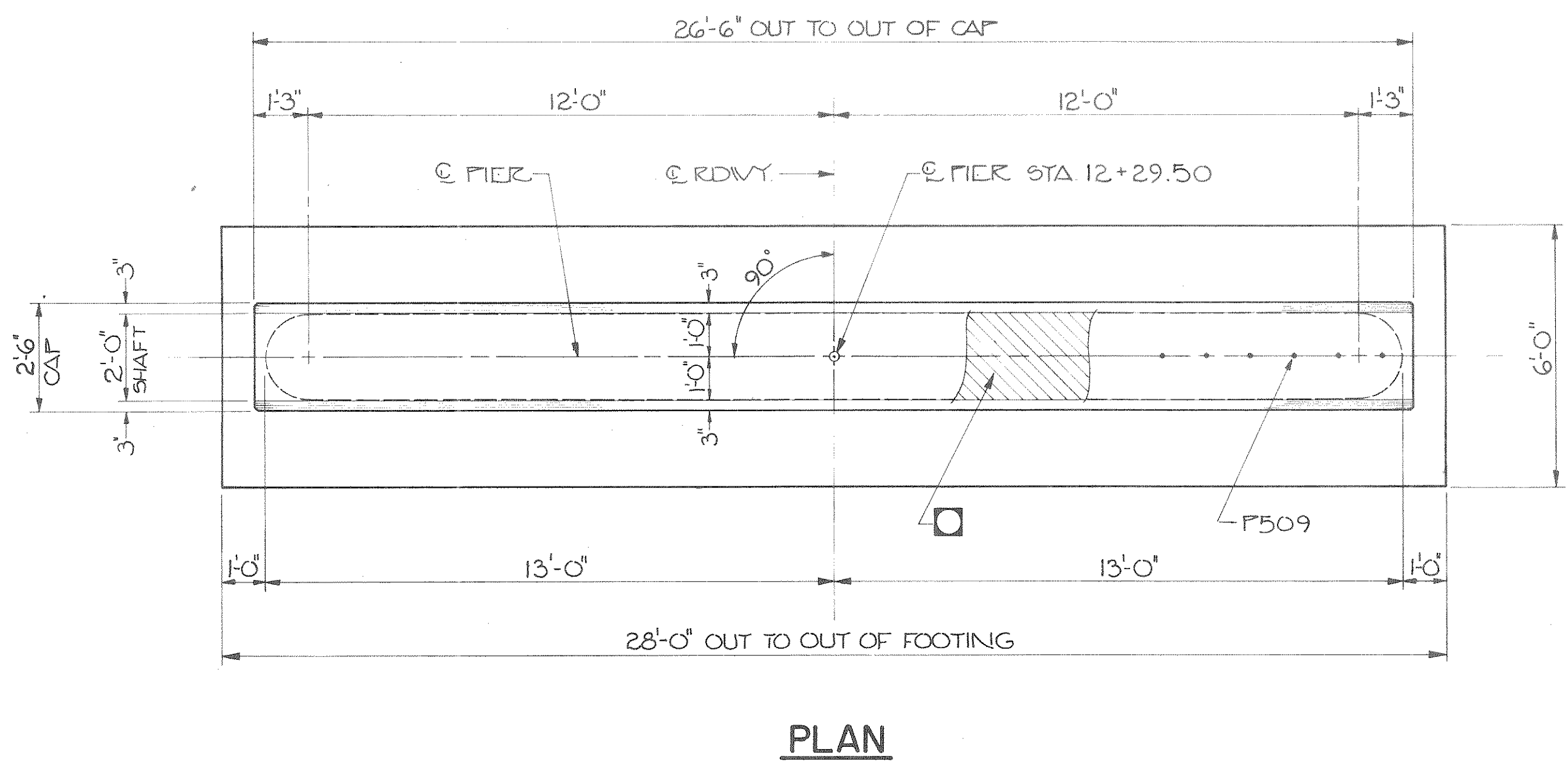
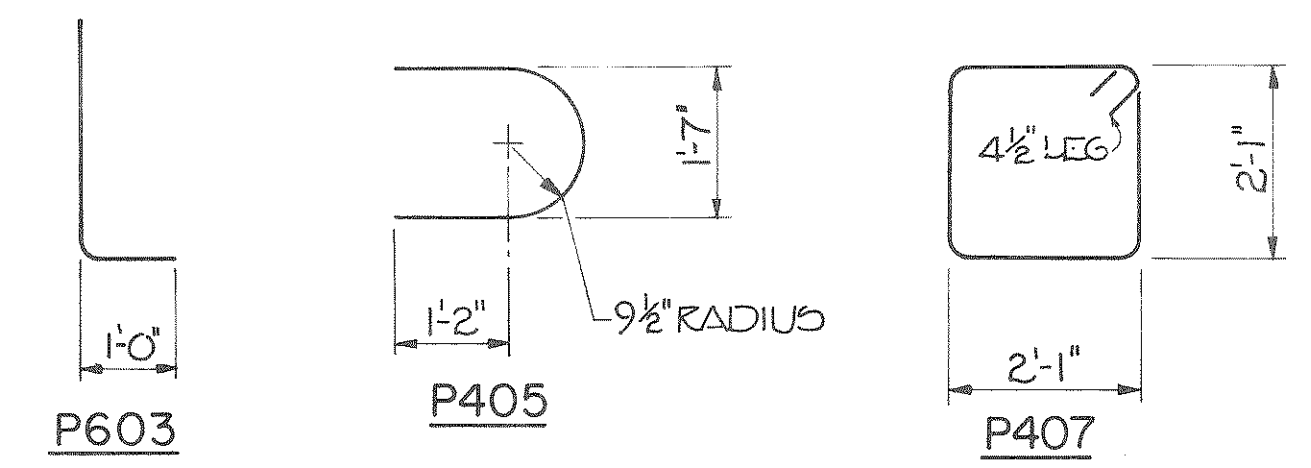
| No. | Date | Revision | By |
|--|---------|---------------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS | | | |
| STRUCTURE B-35-89 | | | |
| Const. Spec. | WIS '81 | Drawn By | TL |
| | | Plans Checked | L.M.D. |
| ABUTMENTS | | | SHEET 3 OF 6 |
| | | | X 77533 |



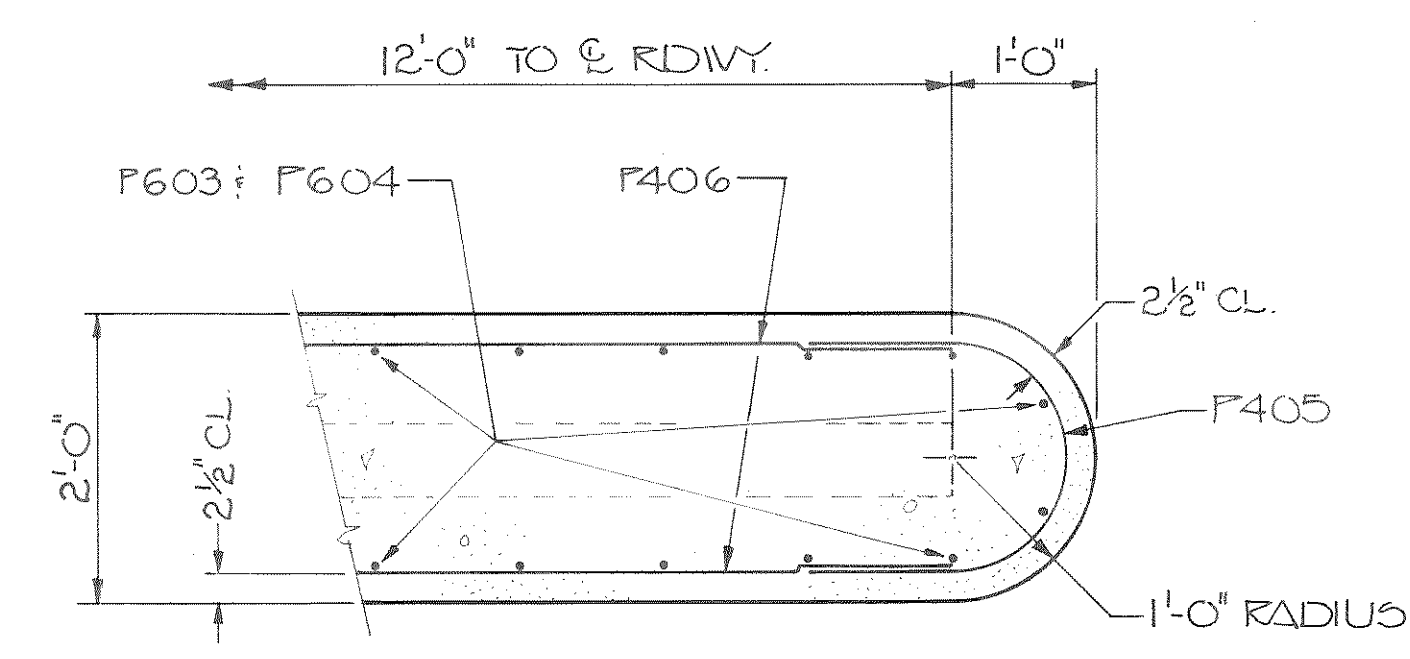
BILL OF BARS - PIER

| MARK | NO. | LENGTH | BEND | EPOX. | LOCATION |
|------|-----|--------|------|-------|----------------------|
| F601 | 28 | 5'-6" | | | FOOTING - TRANSV. |
| F602 | 6 | 27'-6" | | | " - LONGIT. |
| F603 | 54 | 4'-9" | X | | " - DOVELS |
| F604 | 54 | 11'-2" | | | SHAFT. - VERT. |
| F405 | 20 | 4'-10" | X | | " - HORIZ. @ ENDS |
| F406 | 20 | 24'-0" | | | " - " |
| F407 | 27 | 8'-10" | X | | CAP - VERT. STIRRUPS |
| F508 | 6 | 26'-1" | | | " - HORIZ. LONGIT. |
| F509 | 26 | 2'-0" | | | " - VERT. DOVELS |

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN THE BENDING DETAILS ARE OUT TO OUT OF BAR.



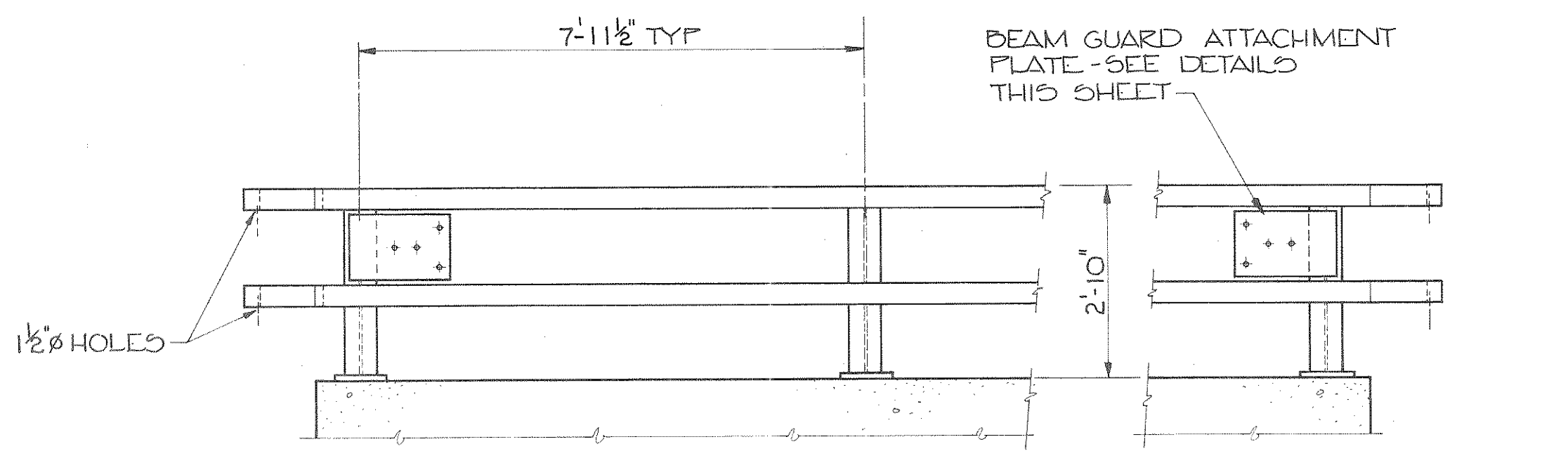
- 1/2" FILLER x 2'-0" WIDE x WIDTH OF SLAB (26'-0")
- CONSTRUCTION JOINT-KEYWAY FORMED BY A SURFACED, BEVELED 2x6.
- ⊃ F509 BARS MAY BE PLACED AFTER CONC. IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.



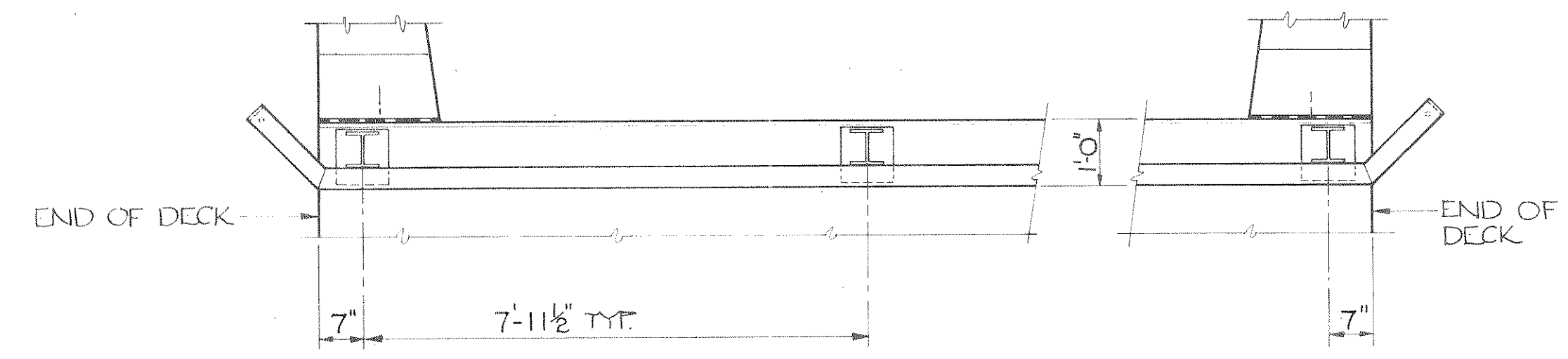
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| No. | Date | Revision | By |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS | | | |
| STRUCTURE B-35-89 | | | |
| Const. Spec. | WIS. '81 | Drawn By | ORL. |
| | | Plans Checked | L.M.B. |
| PIER | | | SHEET 4 OF 6 |
| | | | X 77534 |

GENERAL NOTES

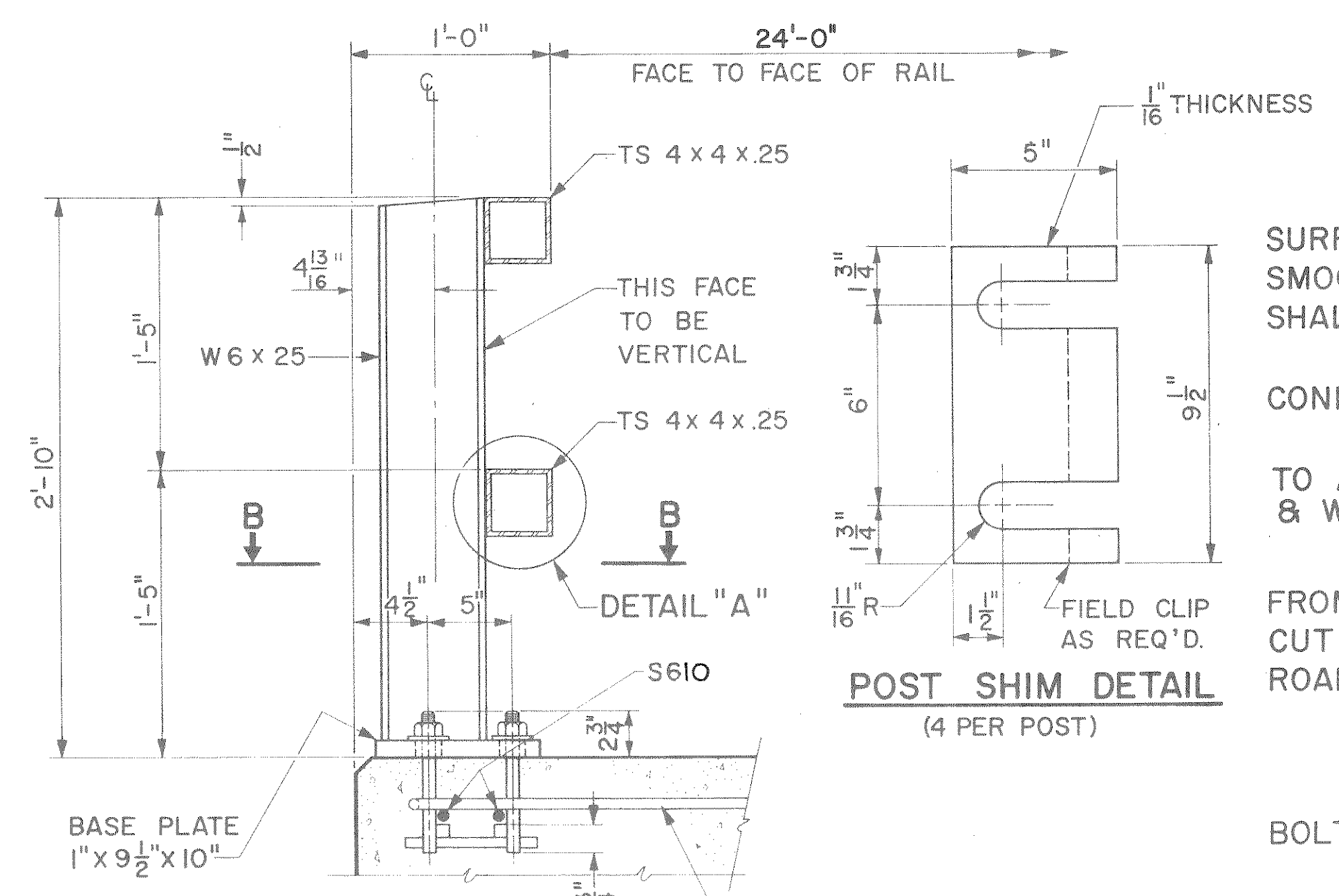
1. BID ITEM SHALL BE 'TUBULAR RAILING, TYPE F'
2. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
3. RAILING SHALL BE 4 x 4 x .25 STRUCTURAL TUBING CONFORMING TO A.S.T.M. DESIGNATION A36.
4. ANCHOR BOLTS SHALL BE 7/8" NOMINAL CONFORMING TO A.S.T.M. A449 WITH 3" THREAD AND HIGH STRENGTH NUTS & WASHERS.
5. POSTS, BASE PLATES AND SHIMS SHALL BE MADE FROM MATERIAL CONFORMING TO A.S.T.M. DESIGNATION A36. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST NORMAL TO GRADE LINE.
6. PLACE ANCHOR BOLTS NORMAL TO BASE PLATE.
7. ALL MEMBERS, INCLUDING UPPER 4" OF ANCHOR BOLTS, SHALL BE GALVANIZED AFTER FABRICATION.
8. RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.
9. BEAM GUARD ATTACHMENT MAY BE WELDED TO RAILS AND RAILS MAY BE WELDED TO POSTS.
10. FILL POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
11. CALK EXPOSED OPENINGS BETWEEN SHIMS.
12. STEEL SHIMS SHALL BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.
13. PRIOR TO GALVANIZING ALL STEEL RAILING SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.



PARTIAL ELEVATION



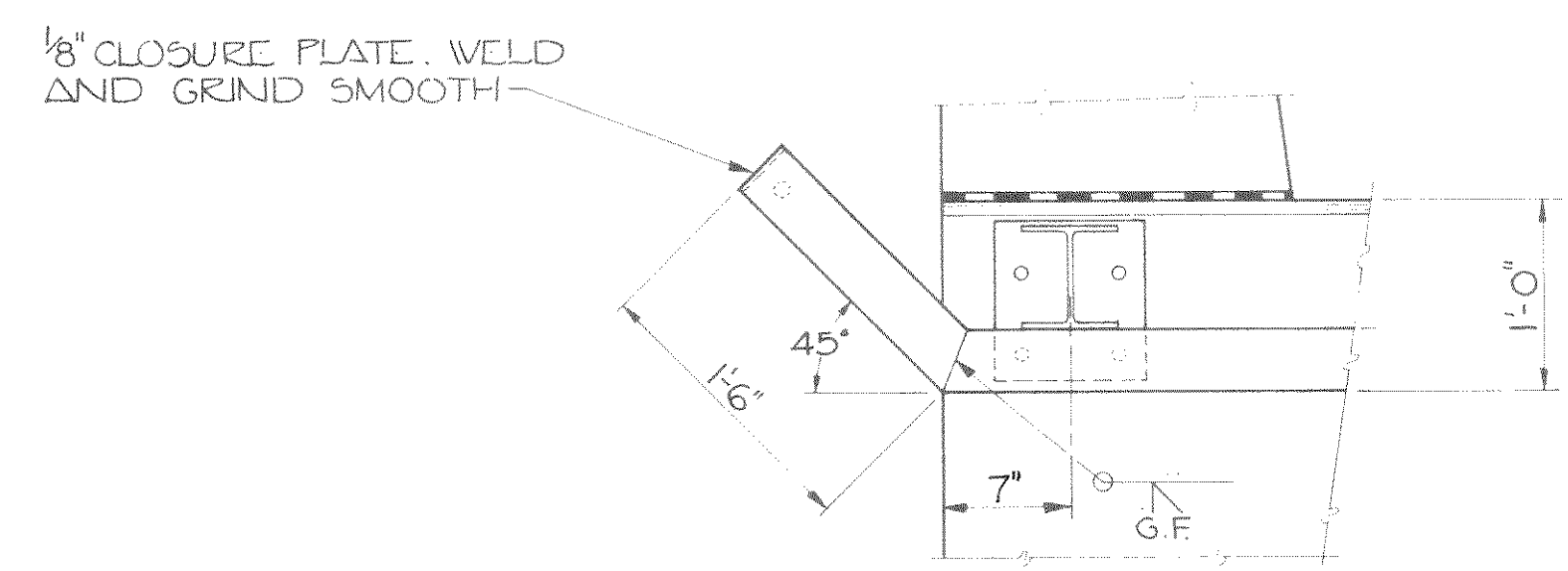
PARTIAL PLAN



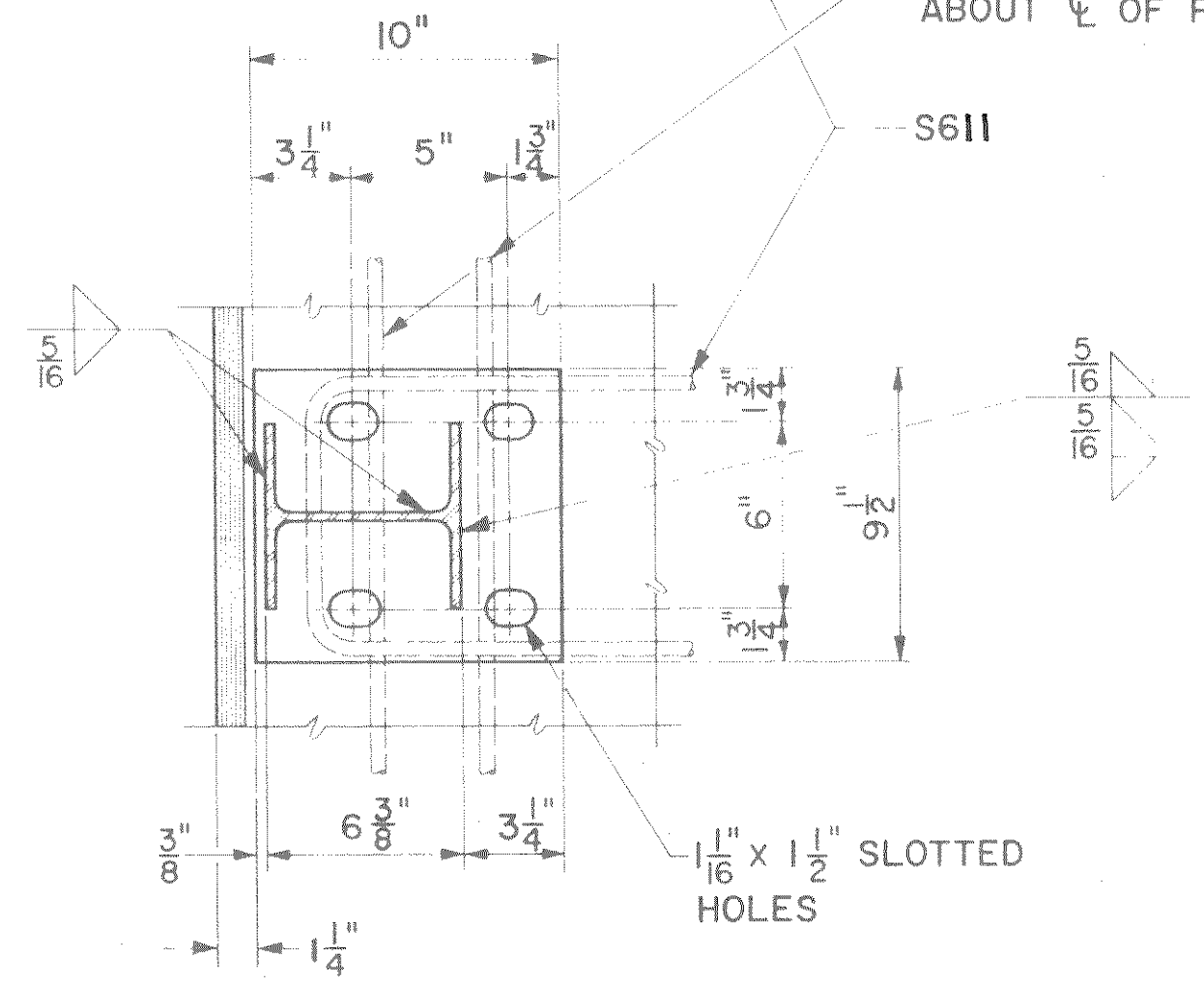
SECTION A



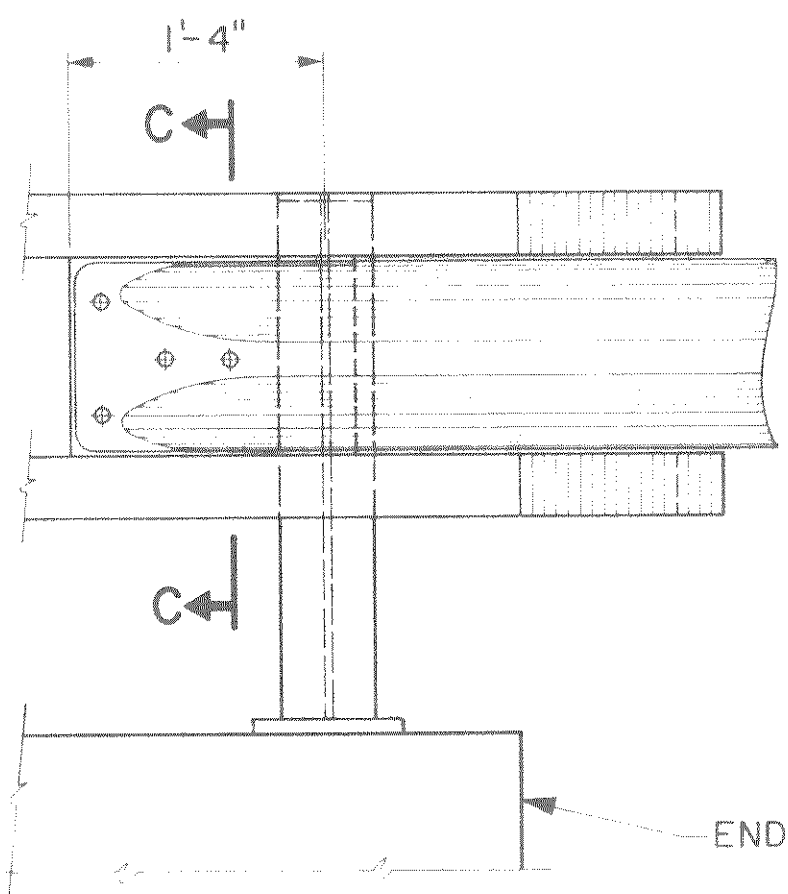
POST SHIM DETAIL
(4 PER POST)



END POST DETAIL

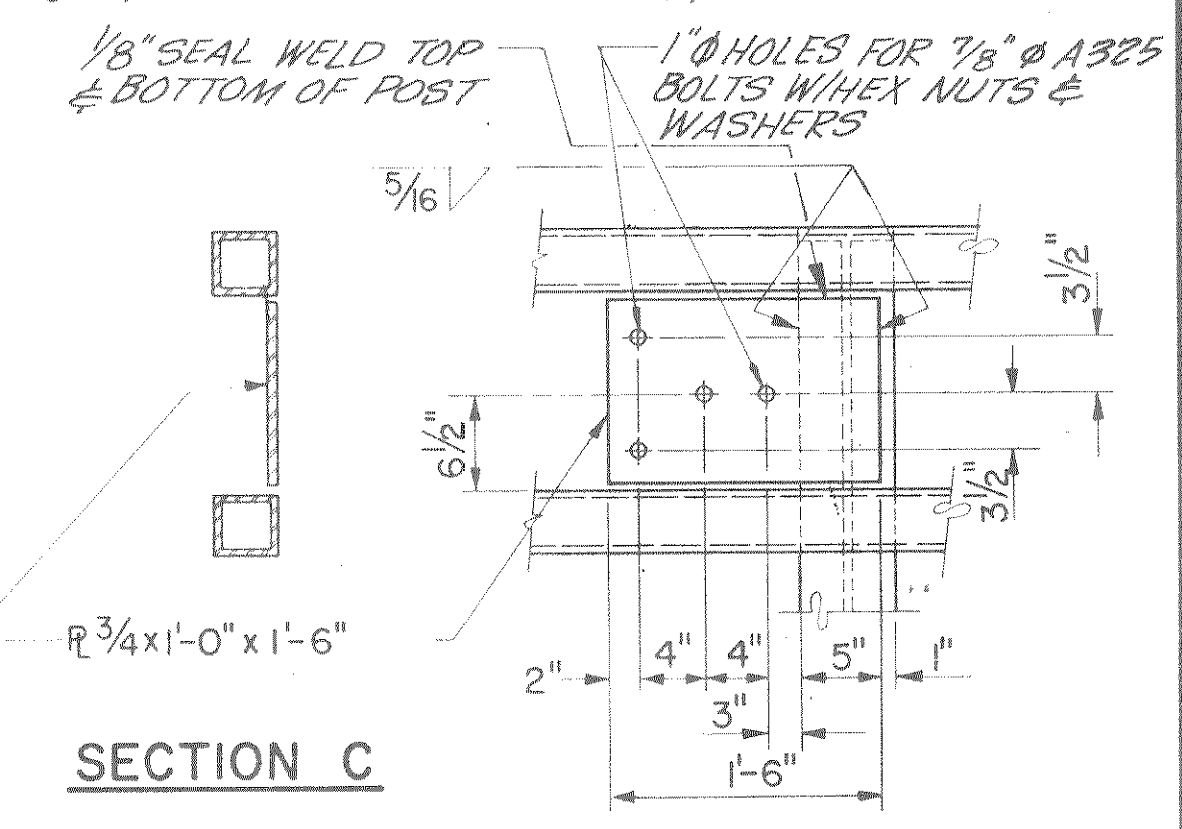


SECTION B

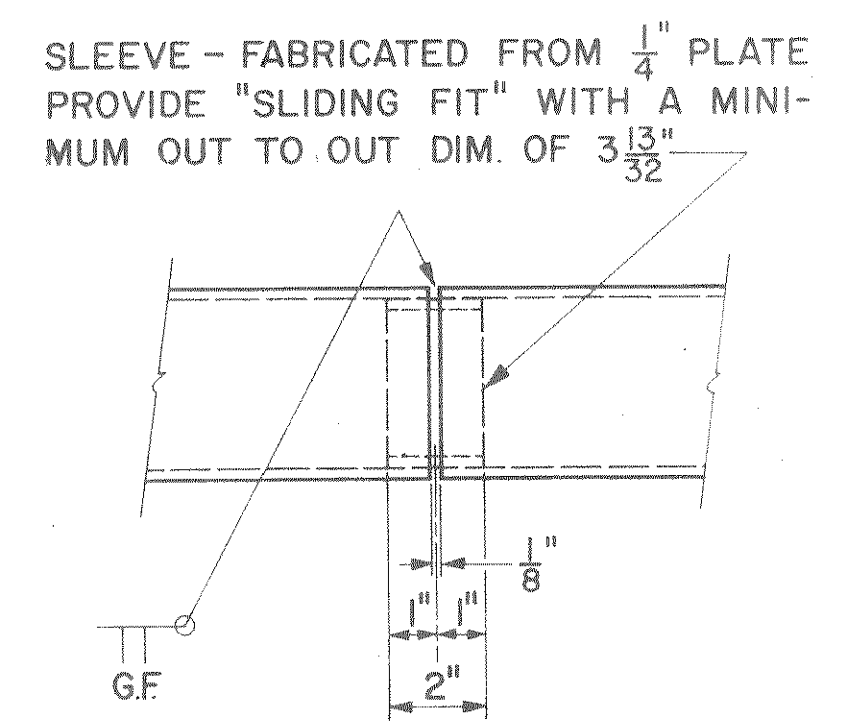


SECTION C

DETAIL AT END POST
(BEAM GUARD RAIL ATTACHMENT)

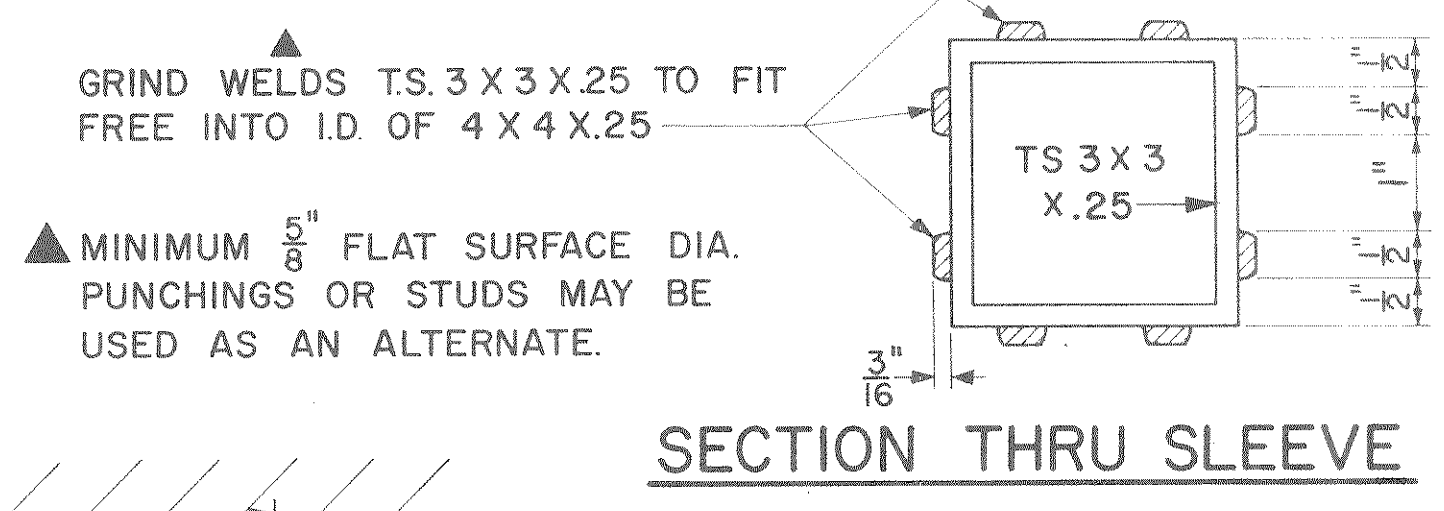


NOTE: BEAM GUARD RAIL ATTACHMENT TO BE INCLUDED IN BID ITEM FOR RAILINGS.

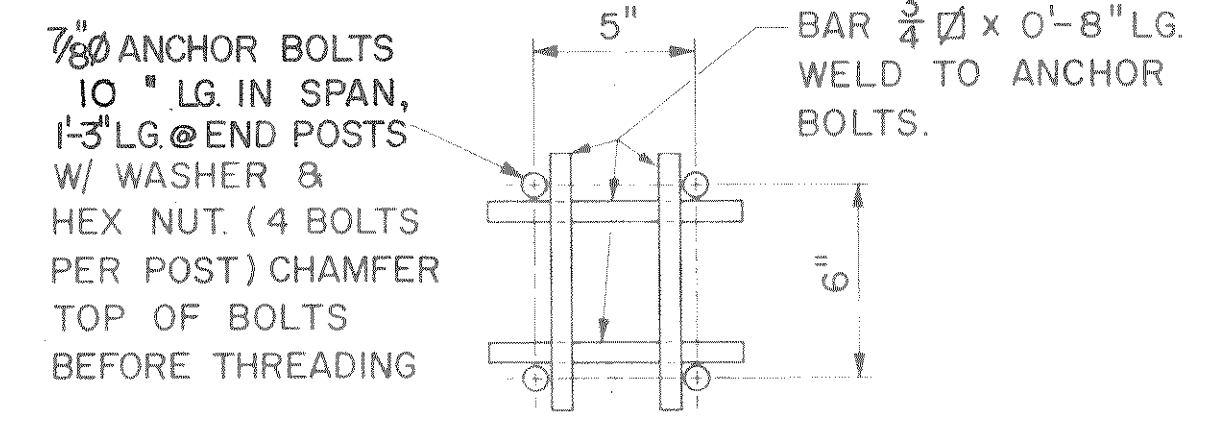


SHOP RAIL SPLICE DETAIL

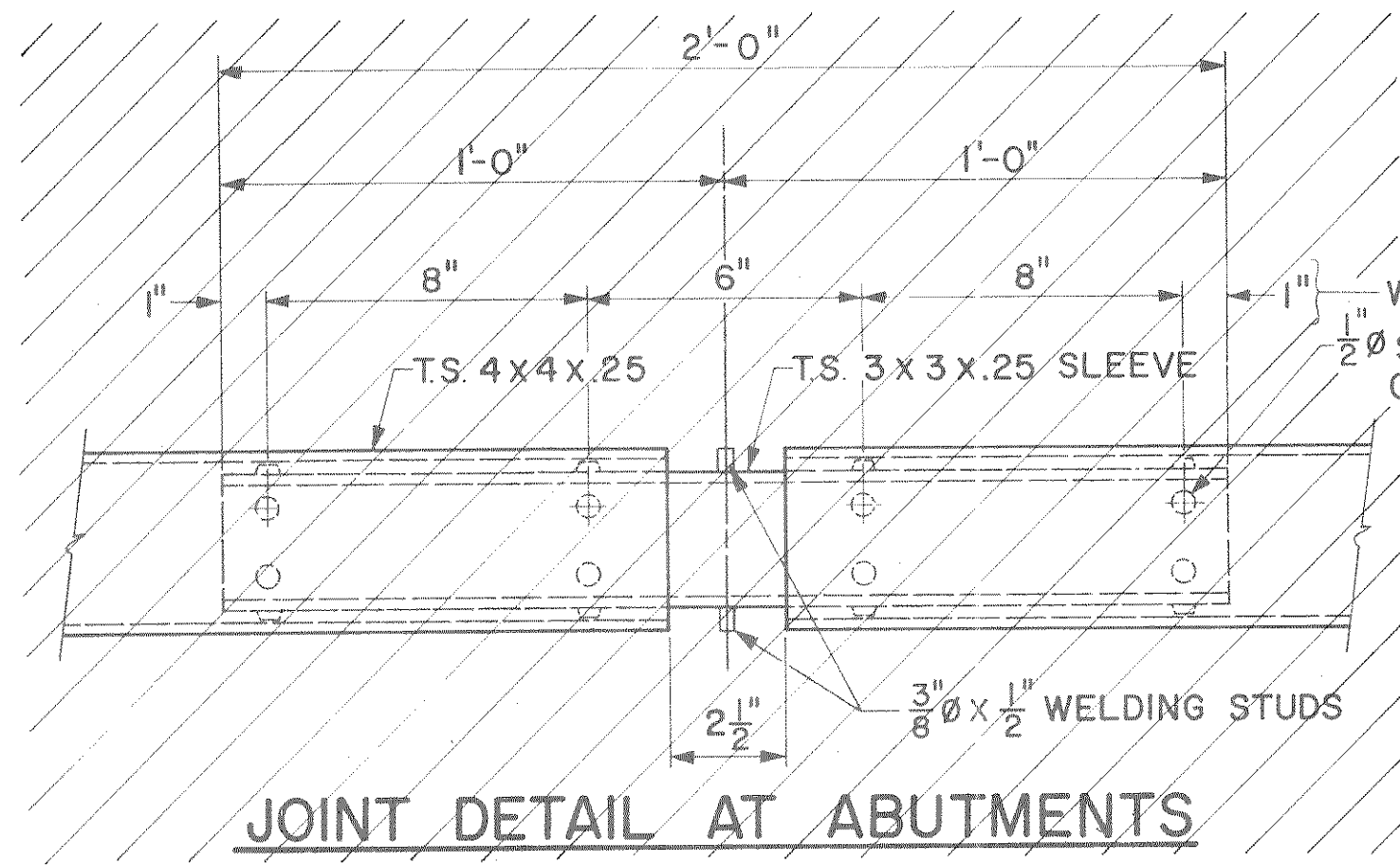
LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS



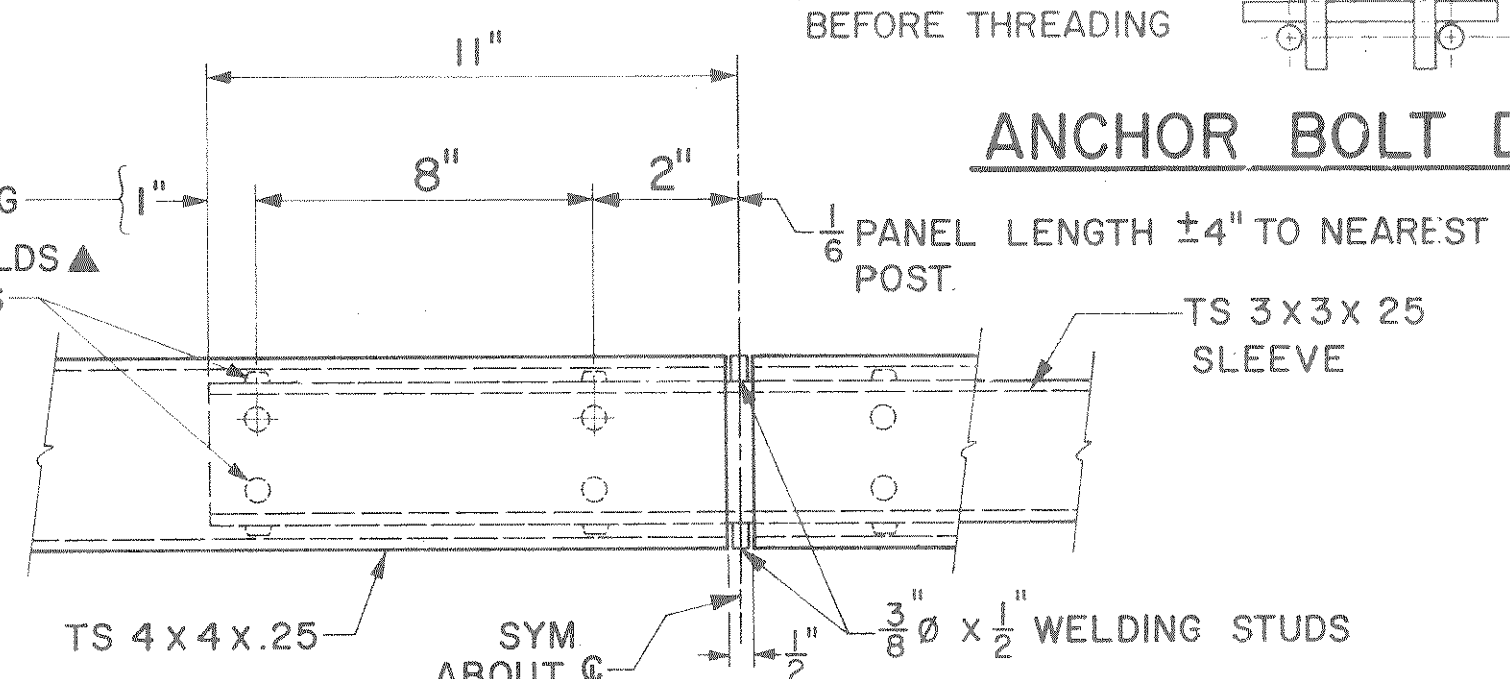
SECTION THRU SLEEVE



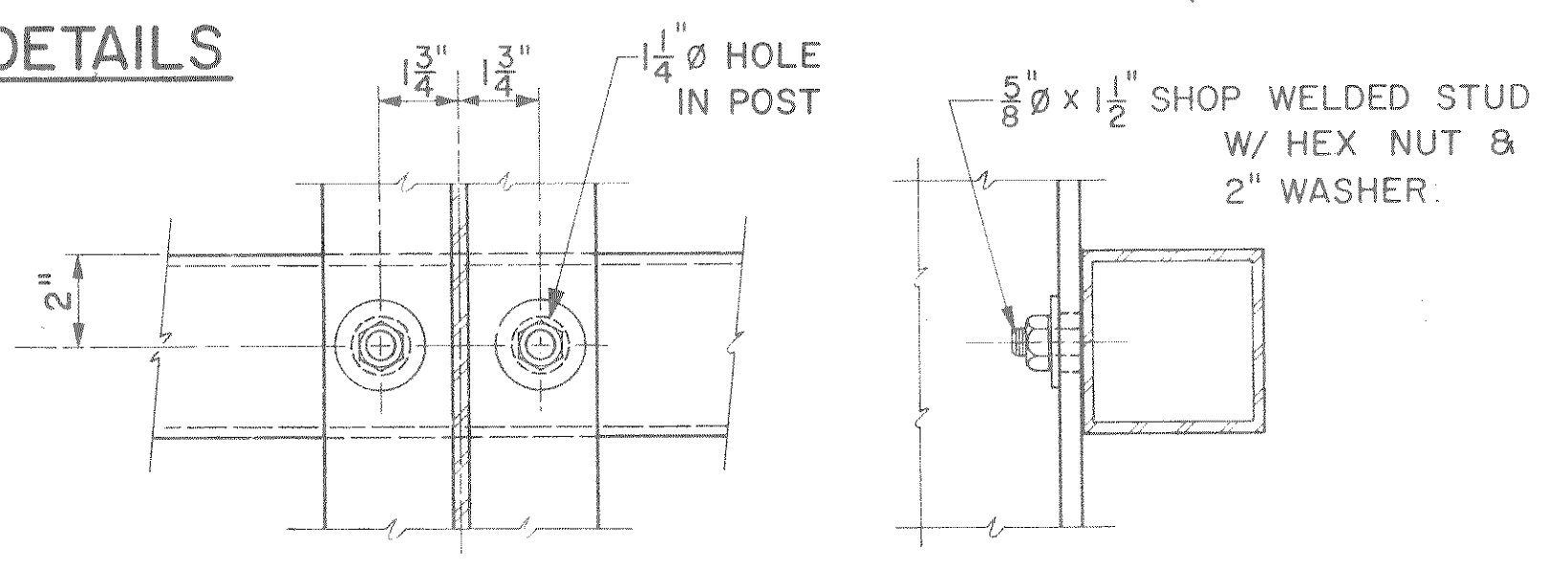
ANCHOR BOLT DETAILS



JOINT DETAIL AT ABUTMENTS



FIELD ERECTION JOINT DETAIL



DETAIL "A"

| No. | Date | Revision | By |
|--|----------|---------------|---------------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS | | | |
| STRUCTURE B-35-89 | | | |
| Const. Spec. | WIS. '81 | Drawn By | S.R.L. |
| | | Plans Checked | L.M.D. |
| TUBULAR RAILING TYPE "F" | | | SHEET 6 OF 6 |
| | | | X77536 |