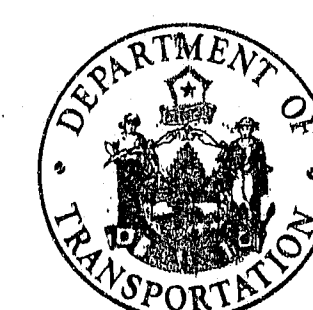


STATE OF MAINE DEPARTMENT OF TRANSPORTATION



PLANS

WARREN - THOMASTON KNOX COUNTY

PROJECT NO. BR - 026 - 1 (61) SOUTH WARREN BRIDGE CARRYING RTE NO.1 OVER THE ST. GEORGE RIVER

PROJECT LENGTH 0.530 MILES

CONVENTIONAL SIGNS

| | | | |
|---------------------------------|-------|-----------------------------------|-------|
| COUNTY LINES | --- | TRAVELLED WAY - PROPOSED | ===== |
| TOWN LINES | ---- | UNDERGROUND UTILITIES - EXISTING | ---- |
| PROPERTY LINES | ----- | UNDERGROUND UTILITIES - PROPOSED | ---- |
| R/W LINES-EXISTING | ===== | RAILROAD - SINGLE TRACK | ===== |
| R/W LINES-NEW-ACCESS CONTROL | ===== | RAILROAD - DOUBLE TRACK | ===== |
| R/W LINES-NEW-NO ACCESS CONTROL | ===== | UTILITY POLE-EXISTING | ===== |
| CULVERT-EXISTING | ===== | UTILITY POLE-JOINT OCCUPANCY | ===== |
| CULVERT-PROPOSED | ===== | PROPOSED UTILITY POLE - TEMPORARY | ===== |
| CURBING-EXISTING | ===== | PROPOSED UTILITY POLE - PERMANENT | ===== |
| CURBING-PROPOSED | ===== | TREES | ===== |
| TRAVELLED WAY - EXISTING | ===== | WOODS | ===== |

SPECIFICATIONS

Design : Load Factor Design per AASHTO
Standard Specifications for Highway
Bridges 1983 and Interim Specifications
thru 1987.

Contract : State of Maine, Department of
Transportation, Standard Specifications,
Highway and Bridges, Revision of
July 1988.

DESIGN LOADING

Live Load : HS25
Stress Cycle : 500,000

MATERIALS

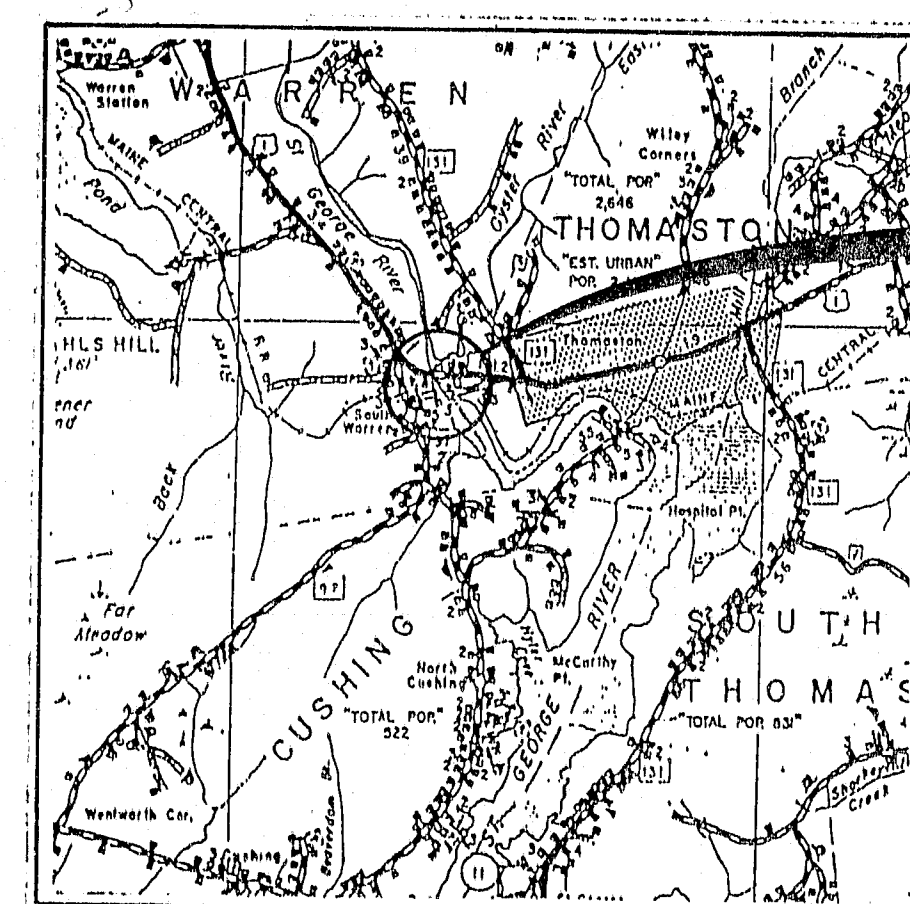
Concrete : Pile Class S
All Other Class A
Reinforcing Steel : ASTM A615 Grade 60 Epoxy Coated
Structural Steel : Stringers ASTM A572
All Others (Unless Noted) ASTM A36
H.S. Bolts ASTM A325, Type 1
Pipe Piles : ASTM A252, Grade 2

BASIC DESIGN STRESSES

Concrete : $F'_c = 3,000$ psi
Reinforcing Steel : $F_y = 60,000$ psi
Structural Steel : ASTM A572 $F_y = 50,000$ psi
ASTM A36 $F_y = 36,000$ psi
ASTM A325 $F_y = 25,000$ psi
Pipe Piles : ASTM A252 $F_y = 35,000$ psi

HYDROLOGIC DATA

Drainage Area = 224.3 square miles.
Design Discharge (Q50) = 7600 cfs.
Check Discharge (Q100) = 8700 cfs.
Mean Low Water = Elevation -4.7
Mean Sea Level = Elevation 0.0
Mean High Water = Elevation +4.7
+984 Predicted High Tide = Elevation +6.9



SCALE: 1" = 1 MILE

LOCATION MAP

TRAFFIC DATA

| | |
|-------------|--------|
| A.D.T. 1983 | 5650 |
| A.D.T. 2003 | 6780 |
| D.H.V. | 949 |
| T. (%) | 6 (%) |
| D. (%) | 55 (%) |
| V. | 50 MPH |
| P.S.D. (%) | |
| 18 KIPS | 306 |

NOTE

All work contemplated under this contract to be governed
by and in conformity with the STANDARD SPECIFICATIONS
(revision of July 1988) and supplementals thereto, except as
modified on the plans and in the special provisions.

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|-----------|---------------------------------|
| 1 | TITLE SHEET |
| 2 | ESTIMATED QUANTITIES |
| 3 - 5 | BRIDGE DETAILS |
| 6 | GENERAL PLAN |
| 7 | PILING PLAN |
| 8 | ABUTMENT NO. 1 |
| 9 | PIER |
| 10 | ABUTMENT NO. 2 |
| 11 | STRUCTURAL STEEL |
| 12 | DETAILS 1 |
| 13 | SUPERSUBSTRUCTURE |
| 14 | DETAILS 2 |
| 15 - 16 | REINFORCING STEEL SCHEDULE |
| 17 - 24 | BRIDGE STANDARD DETAIL SHEETS |
| 25 - 29 | RIGHT OF WAY PLANS |
| 30 | KEY PLAN/GENERAL NOTES |
| 31 | TYPICAL SECTIONS |
| 32 - 40 | HIGHWAY STANDARD DETAIL SHEETS |
| 41 | CONSTRUCTION STAGING PLAN |
| 42 | EMBANKMENT STABILIZATION PLAN 1 |
| 43 | CONSTRUCTION PLAN 1 |
| 44 | CONSTRUCTION PLAN 2 |
| 45 | CONSTRUCTION PLAN 3 |
| 46 | CONSTRUCTION PLAN 4 |
| 47 | CONSTRUCTION PLAN 5 |
| 48 | PROFILE STA 396+50 - STA 396+50 |
| 49 | PROFILE STA 396+50 - STA 409+50 |
| 50 | PROFILE STA 409+50 - STA 416+00 |
| 51 | CROSS SECTIONS |
| 52 - 73 | CROSS SECTIONS |

U.S. COAST GUARD PERMIT NO.

4-89-1

107-416

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

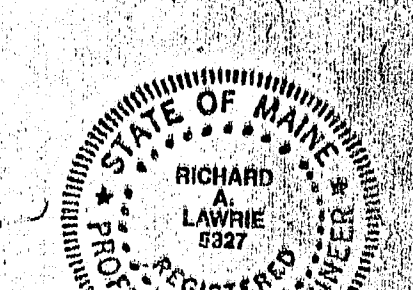
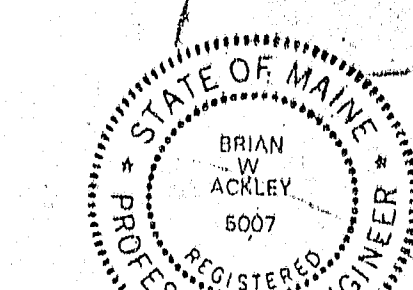
Richard A. Casanova
COMMISSIONER

Richard A. Casanova
CHIEF ENGINEER

DATE

3/29/89

3/29/89



Brian Kelly
Richard A. Casanova

As Built Rep. 1990 180

TYIN NORTH-BALLW
INTERNATIONAL ASSOCIATES
FALMOUTH, MAINE

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ADMINISTRATOR DATE

| F.R.N.A. REV. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-028-1161 | 2 | 73 |

ESTIMATED QUANTITIES

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
|-----------|--|----------|--------|
| 201.23 | REMOVING SINGLE TREES, TOP ONLY | 9 | EA |
| 201.24 | REMOVING STUMP | 9 | EA |
| 202.19 | REMOVE EXISTING BRIDGE | 1 | LS |
| 203.20 | COMMON EXCAVATION | 25000 | CY |
| 203.24*** | COMMON BORROW | 23000 | CY |
| 203.25 | GRANULAR BORROW | 596.0 | CY |
| 203.26 | GRAVEL BORROW | 800 | CY |
| 203.30 | LIGHTWEIGHT BORROW | 1400 | CY |
| 206.082 | STRUCTURAL EARTH EXCAVATION-MAJOR STRUCT | 40 | CY |
| 208.29 | VERTICAL DRAINAGE WICKS | 7000 | LF |
| 210.31 | CRUSHED STONE WINDROWS | 200 | LF |
| 211.45 | SAND BLANKET | 750 | CY |
| 301.09 | PLANT MIX BIT. BASE COURSE - GRADING B | 1300 | TON |
| 304.10 | AGGREGATE SUBBASE COURSE - GRAVEL | 12000 | CY |
| 403.07 | HOT BITUMINOUS PAVEMENT, GRADING B | 1400 | TON |
| 403.08 | HOT BITUMINOUS PAVEMENT, GRADING C | 1180 | TON |
| 403.101 | HOT BITUMINOUS PAVEMENT, GRADING D | 75 | TON |
| 403.121 | HOT BITUMINOUS PAVEMENT, GRADING E | 60 | TON |
| 409.15 | BITUMINOUS TACK COAT | 200 | GALLON |
| 501.214 | STEEL H-BEAM PILES 53 LB/FT | 1450 | LF |
| 501.24 | STEEL PIPE PILES | 370 | LF |
| 501.253 | PILE PROTECTIVE COATING | 1 | LS |
| 502.21 | STRUCTURAL CONCRETE, ABUTMENTS & RETAINING WALLS | 175 | CY |
| 502.23 | STRUCTURAL CONCRETE, PIER | 35 | CY |
| 502.26 | STRUCTURAL CONCRETE ROADWAY & SW SLABS ON STL. BRIDGES | 1 | LS |
| 502.31 | STRUCTURAL CONCRETE APPROACH SLABS | 1 | LS |
| 502.4111 | SILICA FUME ADDITIVE | 1 | LS |
| 503.14 | EPOX. COATED REINFORCING STEEL, FABRICATED & DELIVERED | 100800 | LB |
| 503.15 | EPOX. COATED REINFORCING STEEL, PLACING | 100800 | LB |
| 504.70 | STRUCTURAL STEEL FABRICATED AND DELIVERED | 1 | LS |
| 504.71 | STRUCTURAL STEEL ERECTION | 1 | LS |
| 505.08 | SHEAR CONNECTORS | 1 | LS |
| 506.30 | SHOP COATING OF STRUCTURAL STEEL | 1 | LS |
| 506.31 | FIELD REPAIR OF DAMAGED COATING | 1 | LS |
| 507.092 | ALUMINUM BRIDGE RAILING, 2-BAR | 487 | LF |
| 508.13 | MEMBRANE WATERPROOFING | 1 | LS |
| 513.22 | CRUSHED STONE SLOPE PROTECTION | 130 | SY |
| 514.06 | CURING BOX FOR CONCRETE CYLINDERS | 1 | LS |
| 515.21 | PROTECTIVE COATING FOR CONCRETE SURFACES | 1 | LS |
| 520.22 | EXPANSION DEVICE - COMPRESSION SEAL | 1 | EA |
| 522.06 | MODULAR EXPANSION DEVICES | 1 | EA |
| 603.16 | 15 INCH CULVERT PIPE OPTION I | 38 | LF |
| 603.17 | 18 INCH CULVERT PIPE OPTION I | 104 | LF |
| 603.179 | 18 INCH CULVERT PIPE OPTION III | 80 | LF |
| 603.43 | 36 INCH RCP CLASS IV | 150 | LF |
| 605.09 | 6 INCH UNDERDRAIN TYPE B | 455 | LF |
| 605.095 | 6 INCH UNDERDRAIN TYPE B - PIPE ONLY | 60 | LF |
| 605.10 | 6 INCH UNDERDRAIN OUTLET | 17 | LF |
| 606.17 | GUARD RAIL TYPE 3B-SINGLE RAIL | 1100 | LF |
| 606.35 | GUARD RAIL DELINEATOR POST | 5 | EA |
| 606.369 | GUARD RAIL REMOVED AND STACKED | 786 | LF |
| 606.47 | SINGLE WOOD POST | 2 | EA |
| 606.77 | BREAKAWAY CABLE TERMINAL | 4 | EA |
| 609.31 | CURB TYPE 3 | 328 | LF |
| 610.08 | PLAIN RIP RAP | 2200 | CY |
| 610.18 | STONE DITCH PROTECTION | 60 | CY |

ESTIMATED QUANTITIES

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
|---------------------------------|--|----------|----------|
| 612.06 | BITUMINOUS SEALING - BLACK | 50 | SY |
| 613.329 | EXTENDED USE EROSION CONTROL BLANKET | 600 | SY |
| 615.07 | LOAM | 1500 | CY |
| 616.08 | SODDING | 950 | SY |
| | | 600 | SY |
| 618.14 | SEEDING METHOD NO. 2 | 240 | UNIT |
| 618.15 | TEMPORARY SEEDING | 200 | LBS |
| 619.12 | MULCH | 240 | UNIT |
| 620.54 | STABILIZATION GEOTEXTILE | 700 | SY |
| 627.61 | 4 INCH SOLID WHITE PAVEMENT MARKING LINE | 5600 | LF |
| 627.63 | 4 INCH SOLID YELLOW PAVEMENT MARKING LINE | 4500 | LF |
| 627.641 | 4 INCH BROKEN YELLOW PAVEMENT MARKING LINE | 1500 | LF |
| 627.67 | REMOVING PAVEMENT MARKINGS | 100 | SF |
| 627.68 | TEMP. 4 INCH PAINTED PVMT. MARKING LINE, WHITE OR YELLOW | 33,000 | LF |
| 637.07 | SPRINKLING | 120 | MG |
| 637.08 | CALCIUM CHLORIDE | 11 | TON |
| 639.18 | FIELD OFFICE TYPE A | 1 | EA |
| 639.21 | TESTING FACILITIES SOILS | 1 | LS |
| 639.22 | TESTING FACILITIES BITUMINOUS MIXES | 1 | LS |
| 639.23 | TESTING FACILITIES CONCRETE | 1 | LS |
| 648.11 | SETTLEMENT PLATFORM, TYPE C | 3 | EA |
| 652.31 | TYPE I BARRICADE | 40 | EA |
| 652.311 | TYPE II BARRICADE | 20 | EA |
| 652.33 | DRUM | 30 | EA |
| 652.34 | CONE | 40 | EA |
| 652.35 | CONSTRUCTION SIGNS | 400 | SF |
| 652.361 | MAINTENANCE OF TRAFFIC CONTROL DEVICES | 1 | LS |
| 652.37 | WARNING LIGHTS | 1 | LS |
| 652.38 | FLAGGER | 3000 | GROUP MH |
| 656.50 | BALED HAY, IN PLACE | 60 | EA |
| 656.51 | SAND BAGS, IN PLACE | 60 | EA |
| 656.60 | TEMPORARY BERMS | 11000 | LF |
| 656.63 | TEMPORARY SILT FENCE | 1530 | LF |
| 657.24 | SEEDING PITS | 90 | UNIT |
| 659.10 | MOBILIZATION | 1 | LS |
| 660.21 | ON THE JOB TRAINING (BID) | 3000 | MH |
| ESTIMATE OF LUMP SUM QUANTITIES | | | |
| 502.26 | STRUCTURAL CONCRETE ROADWAY & SW SLABS ON STL. BRIDGES | 356 | CY |
| 502.31 | STRUCTURAL CONCRETE APPROACH SLABS | 33 | CY |
| 504.70 | STRUCTURAL STEEL FABRICATED AND DELIVERED | 424000 | LBS |
| 504.71 | STRUCTURAL STEEL ERECTION | 424000 | LBS |
| 505.08 | SHEAR CONNECTORS | 2532 | LBS |
| 506.30 | SHOP COATING OF STRUCTURAL STEEL | 424000 | LBS |

COMMON EXCAVATION FOR ESTIMATE

| | |
|---|-----------|
| COMMON EXCAVATION (FROM CROSS SECTION) | 19,131 CY |
| (INCLUDES CULVERT INLET AND OUTLET DITCHES) | |
| EMBANKMENT STABILIZATION STAGING | 1,315 CY |
| GRUBBING IN FILL | 1,181 CY |
| MUCK EXCAVATION | 962 CY |
| TOTAL COMMON EXCAVATION | 22,569 CY |

FILL FOR BORROW EXCAVATIONS

| | |
|-------------------------------------|-----------|
| COMMON FILL (FROM CROSS SECTIONS) | 16,069 CY |
| EMBANKMENT STABILIZATION STAGING | 1,835 CY |
| GRUBBING IN FILL | 1,181 CY |
| MUCK EXCAVATION | 962 CY |
| TOTAL FILL (NOT INCL. GRAN. BORROW) | 20,027 CY |

AVAILABLE COMMON EXCAVATION FOR BORROW CALCULATIONS

| | |
|---|-----------|
| (1) TOTAL COMMON EXCAVATION DEDUCTIONS | 22,569 CY |
| GRUBBING IN CUT | 1,923 CY |
| GRUBBING IN FILL | 1,181 CY |
| MUCK EXCAVATION | 962 CY |
| PAVEMENT SALVAGE | 1,100 CY |
| (2) TOTAL DEDUCTIONS | 5,146 CY |
| TOTAL AVAILABLE COMMON EXCAVATION (1) MINUS (2) | 17,423 CY |
| TOTAL AVAILABLE STRUCT. EXCAVATION (6' U.D.) | 61 CY |
| TOTAL AVAILABLE NON-ROCK EXCAVATION | 17,484 CY |

COMPUTATION OF WASTE STORAGE

| | |
|--|----------|
| TOTAL AVAILABLE WASTE STORAGE AREA (FROM CROSS SECTIONS) | 1,923 CY |
| GRUBBING IN CUT | 1,923 CY |
| GRUBBING IN FILL | 1,181 CY |
| MUCK EXCAVATION | 962 CY |
| TOTAL WASTE MATERIAL | 4,046 CY |

COMPUTATION OF COMMON BORROW FOR ESTIMATE

| | |
|---|---------------|
| TOTAL FILL (NOT INCL. GRANULAR BORROW) | 20,027 CY |
| TOTAL AVAILABLE NON-ROCK EXCAV. 17,484' X 0.85 = 14,861 | |
| AVAILABLE WASTE MATERIAL | 4,046 CY |
| TOTAL AVAILABLE EXCAVATION | 18,907 CY *** |
| TOTAL FILL MINUS TOTAL AVAILABLE EXCAVATION | 20,027 CY *** |
| GRANULAR BORROW IN LOW WET AREAS | 4,650 CY |
| GRANULAR BORROW TO MAINTAIN TRAFFIC | 300 CY |

COMPUTATION OF GRANULAR BORROW FOR ESTIMATE

| | |
|-------------------------------------|-------------------------|
| GRANULAR BORROW TO REPLACE MUCK | 480 CY |
| GRANULAR BORROW IN LOW WET AREAS | 4,350 CY |
| GRANULAR BORROW TO MAINTAIN TRAFFIC | 300 CY |
| GRANULAR BORROW BENEATH SLOPE PROT | 50 CY |
| GRANULAR BORROW | 5,180 x 1.15 = 5,957 CY |

COMPUTATION OF GRAVEL BORROW FOR ESTIMATE

| | |
|--------------------------------------|---------------------|
| GRAVEL BORROW BENEATH RIPRAP | 590 CY |
| GRAVEL BORROW BENEATH APPROACH SLABS | 100 CY |
| GRAVEL BORROW | 690 x 1.15 = 794 CY |

*** DUE TO CONSTRUCTION STAGING AND MAINTENANCE OF TRAFFIC REQUIREMENTS, SOME FILL REQUIRED FOR EMBANKMENT CONSTRUCTION WILL LIKELY NOT BE AVAILABLE FROM COMMON EXCAVATION. SINCE CONTRACTOR OPTIONS FOR EXCAVATION AND EMBANKMENT CONSTRUCTION FROM MATERIALS WITHIN PROJECT LIMITS ARE VARIED, NO ATTEMPT HAS BEEN MADE ON THE SUMMARY OF QUANTITIES TO REFLECT BALANCING CUT AND FILL QUANTITIES. THE ITEMS LIST INDICATES TOTAL COMMON BORROW WITH NO REDUCTION FOR MATERIAL AVAILABLE FROM EXCAVATION.

107-417

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

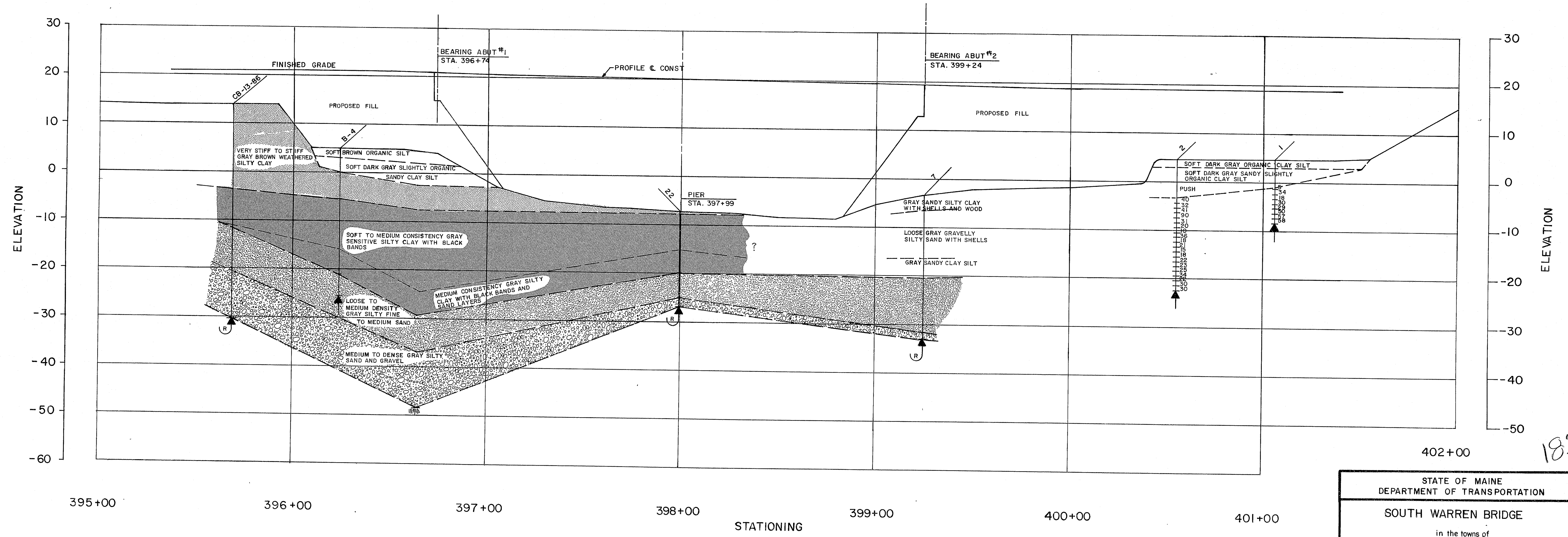
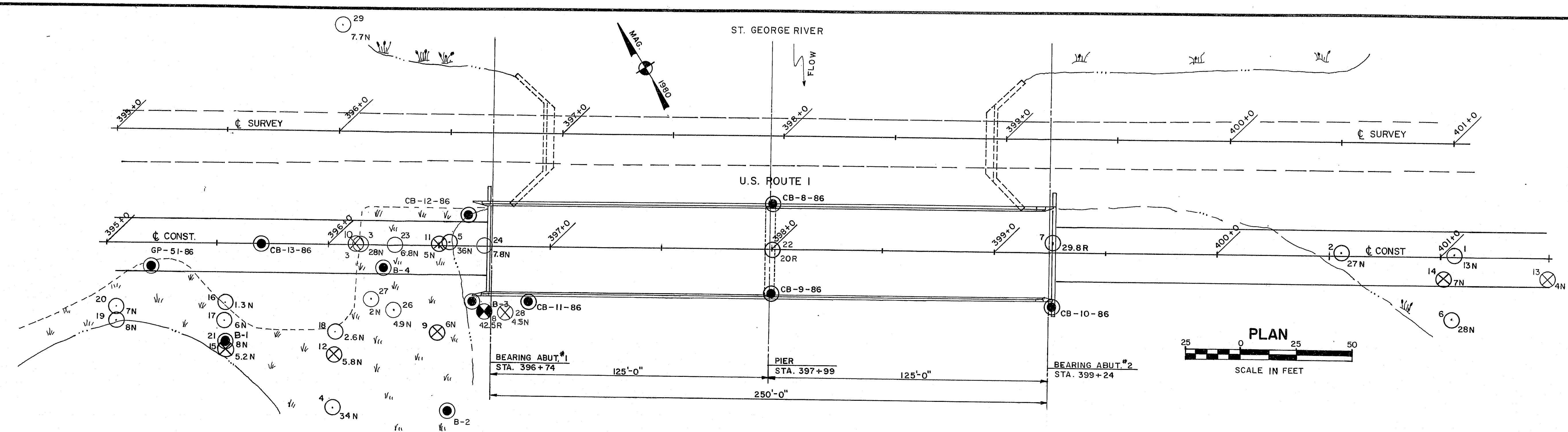
ESTIMATED QUANTITIES

SHEET OF AUGUSTA, MAINE

PROJECT DESIGN ENGINEER
BY DATE
PLANS
DESIGN
CHECKED
REVISIONS
FIELD CHANGES

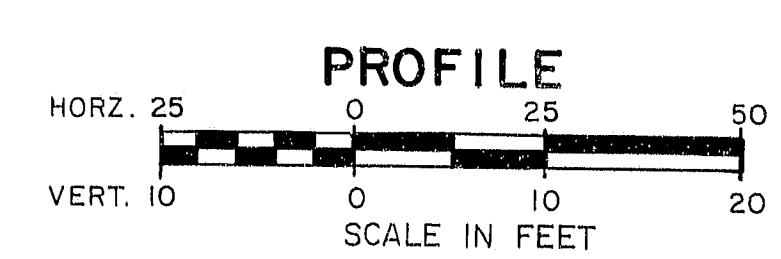
PROFESSIONAL GRAPHICS, 10000

| F.R.W.A. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|-----------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BA-826-1(67) | 3 | 73 |



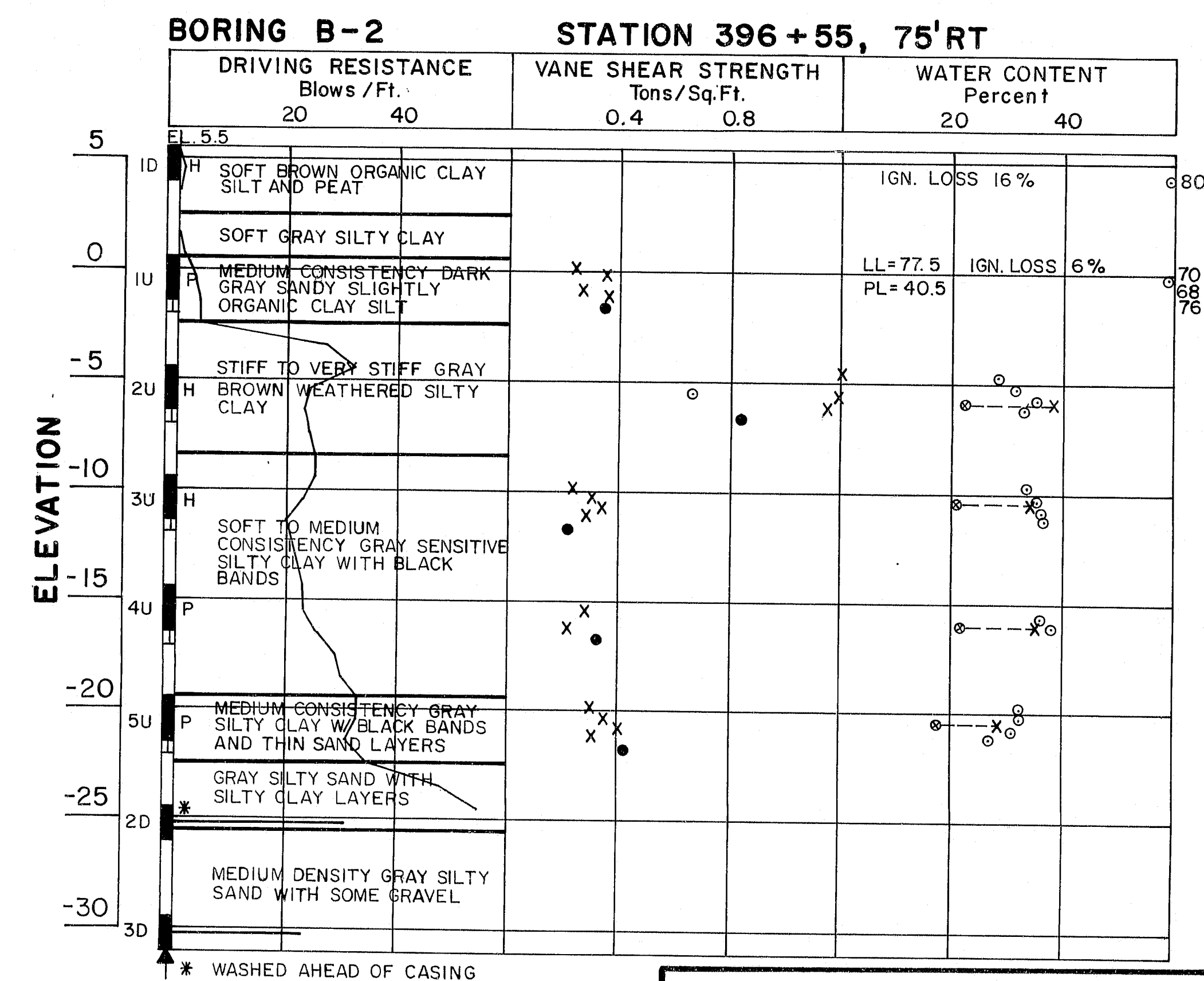
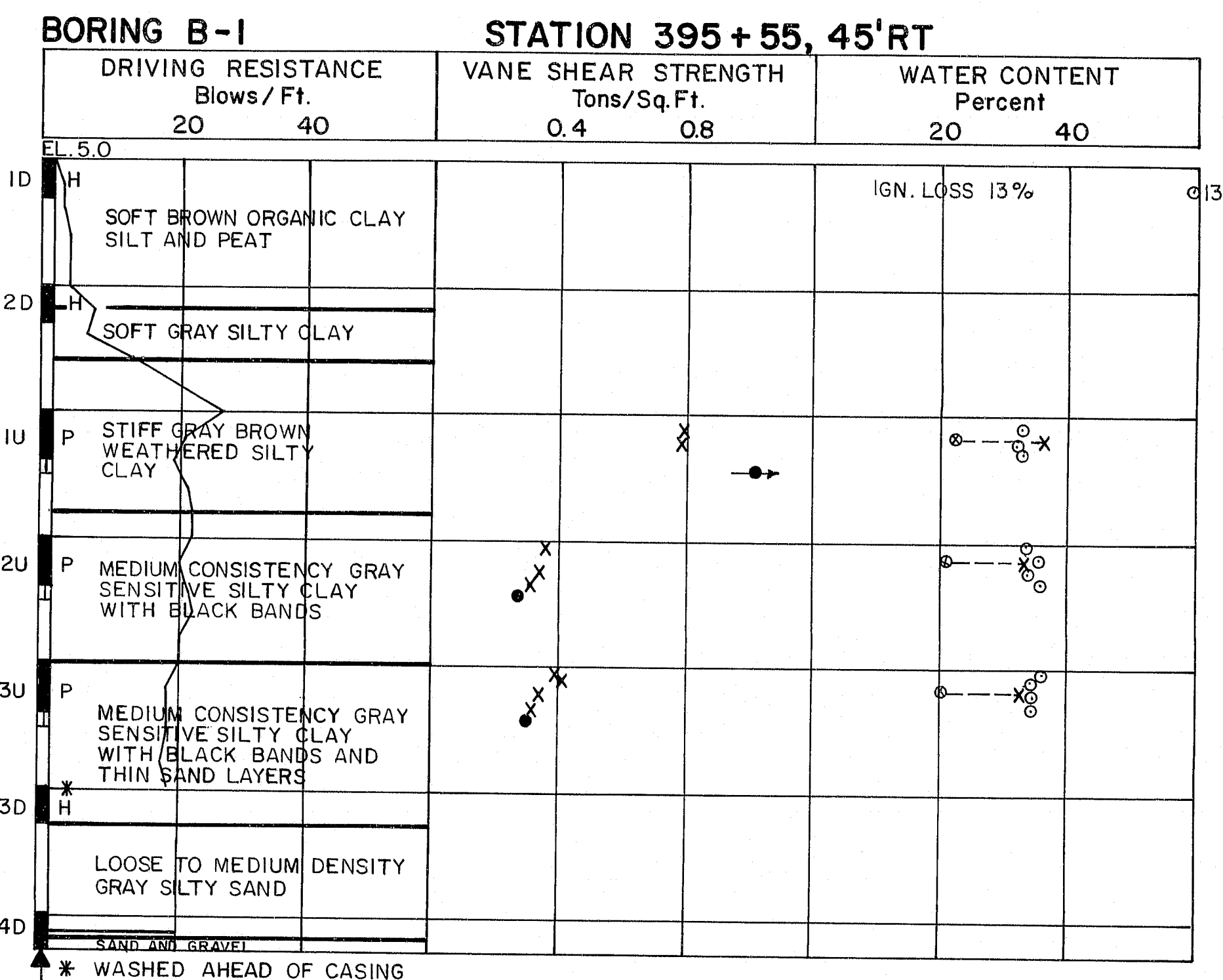
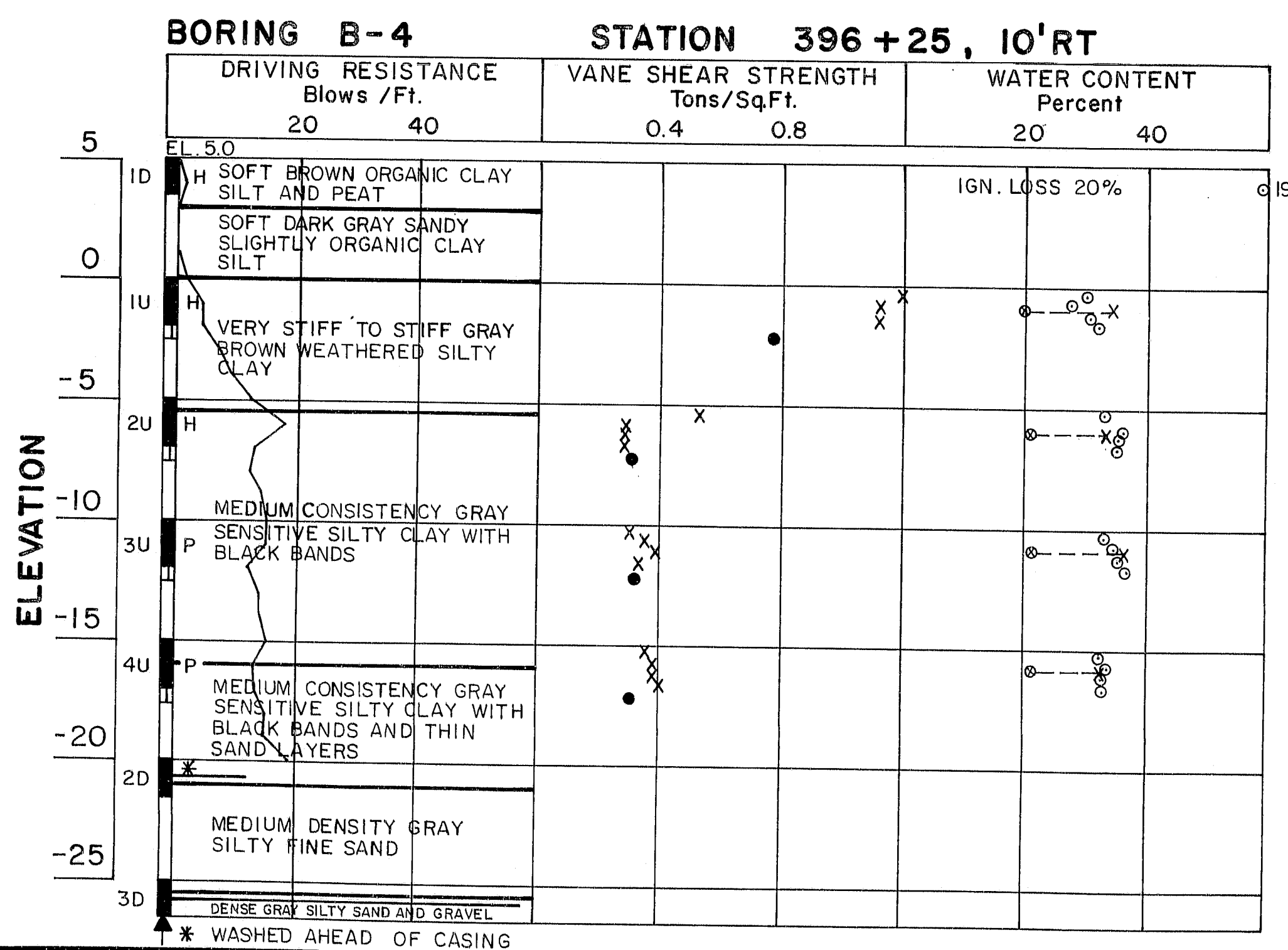
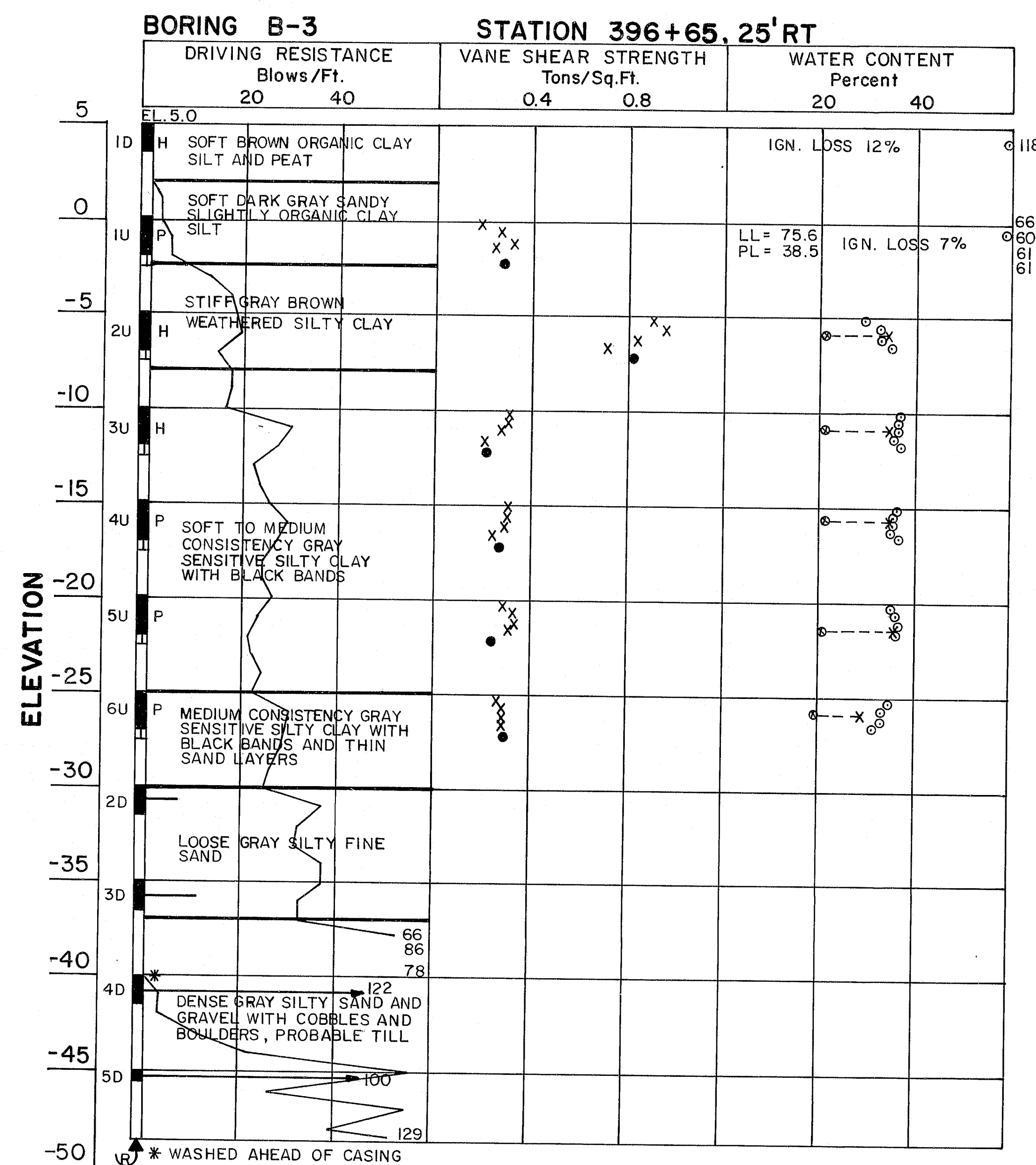
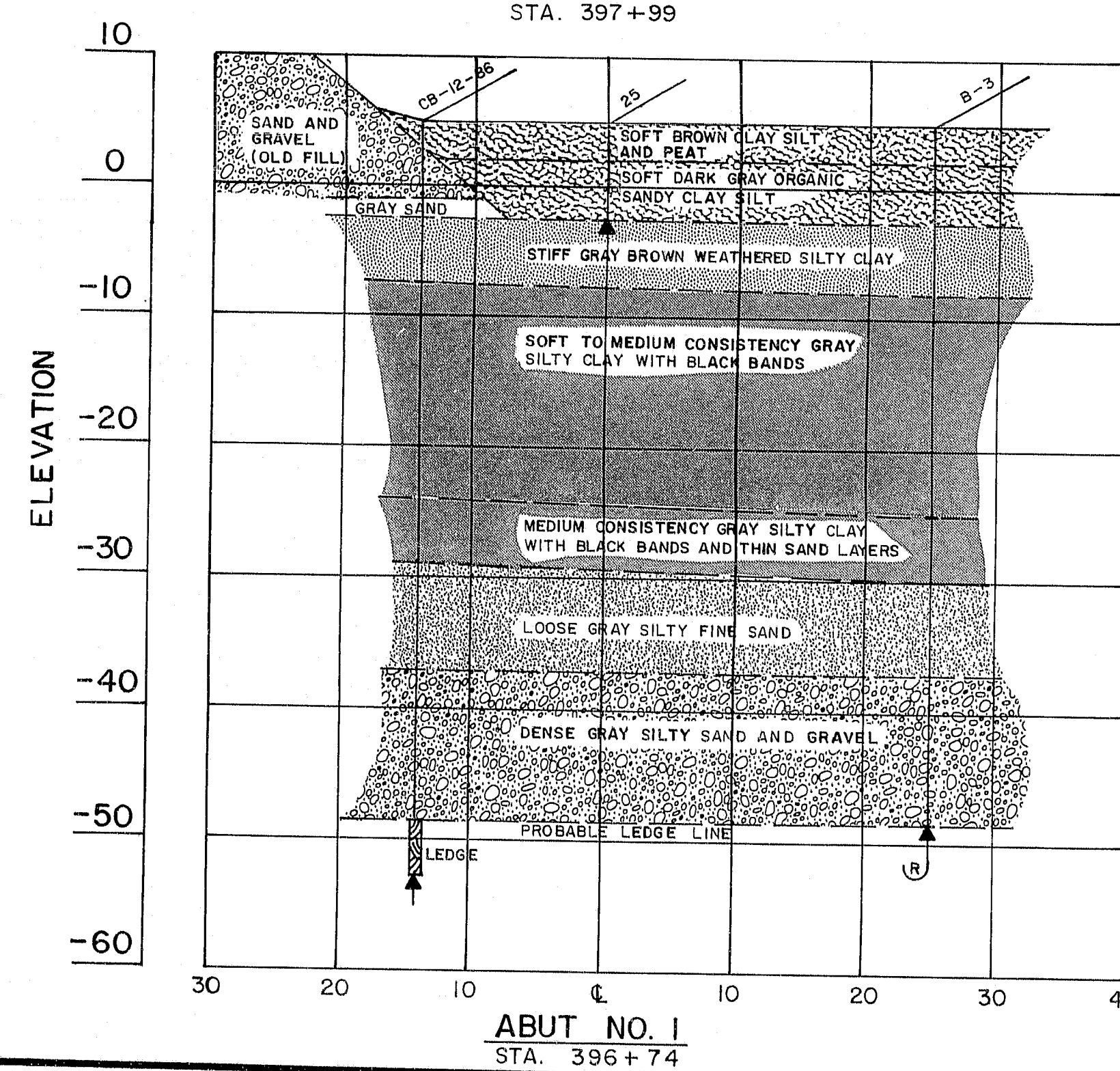
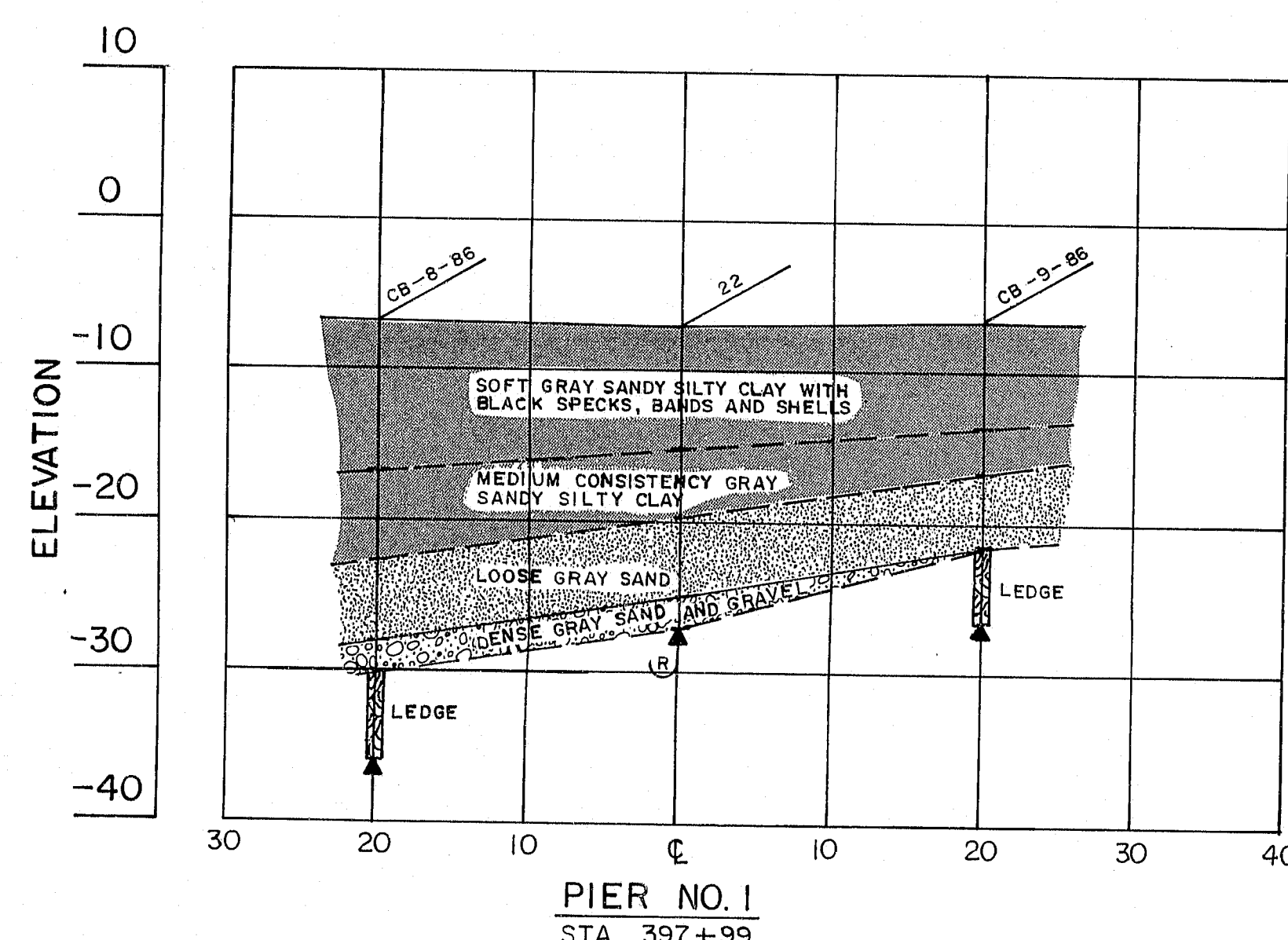
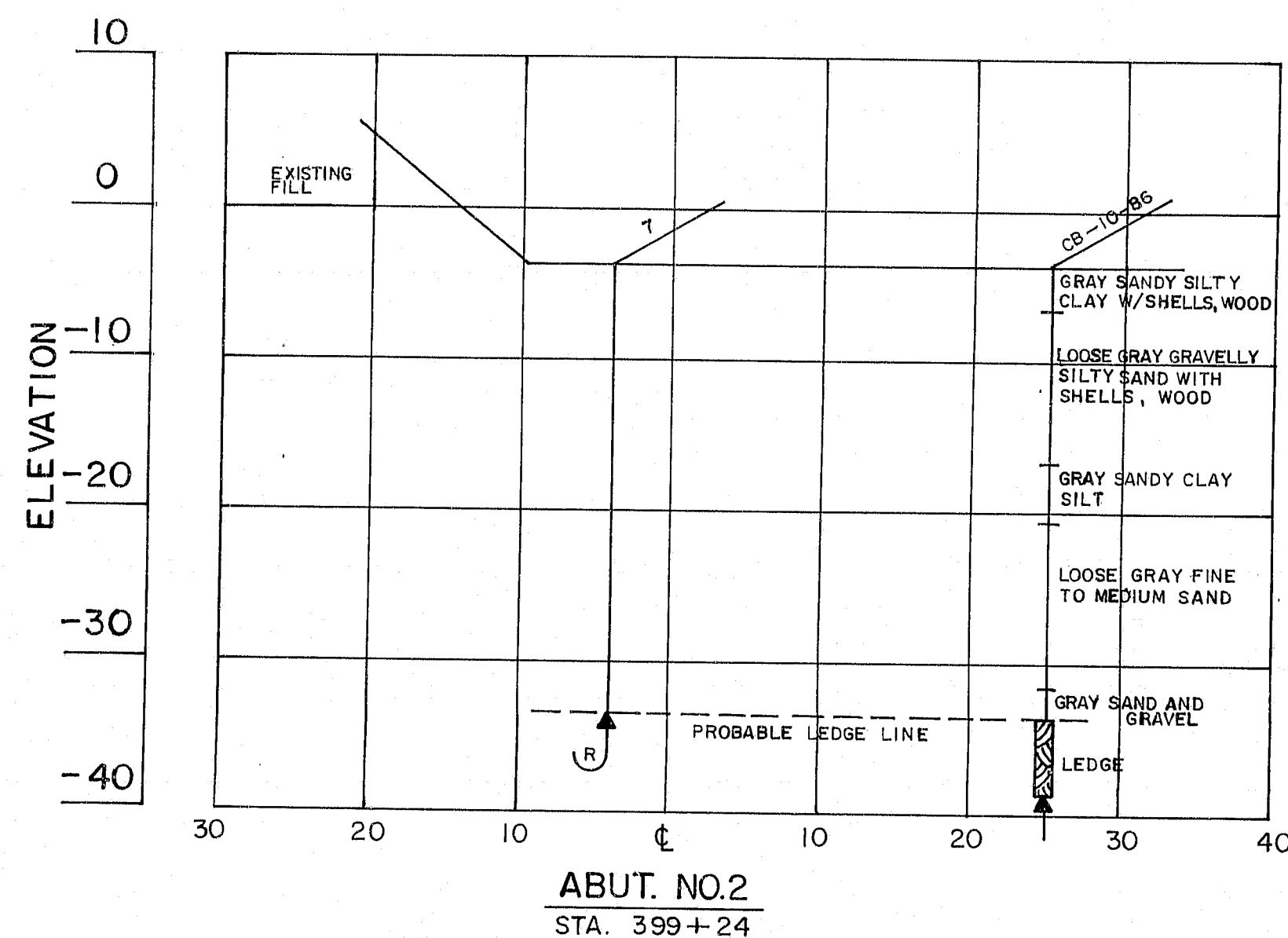
| PROJECT DESIGN ENGINEER | BY | DATE |
|-------------------------|----|------|
| DESIGN - DETAILED | | |
| CHECKED | | |
| REVISIONS | | |
| FIELD CHANGES | | |

BRUNING 44-32-45710-1



107-418

| | |
|---|-------------------|
| STATE OF MAINE DEPARTMENT OF TRANSPORTATION | |
| SOUTH WARREN BRIDGE in the towns of WARREN & THOMASTON KNOX COUNTY FOUNDATION SURVEY | |
| SHEET | OF AUGUSTA, MAINE |



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE
in the towns of
WARREN & THOMASTON

KNOX COUNTY
BORING DETAILS
TRANSVERSE SECTIONS

SHEET OF AUGUSTA, MAINE

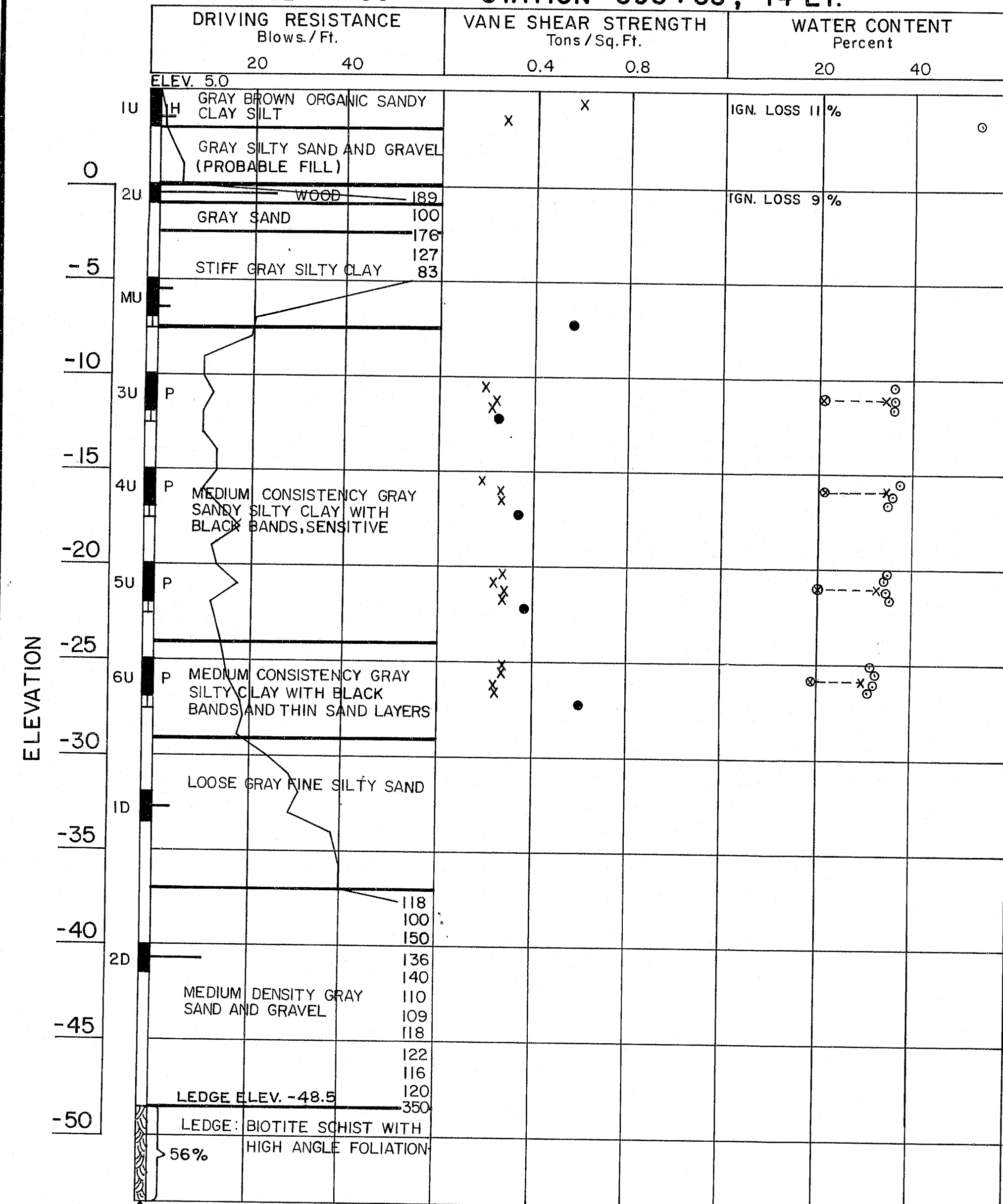
107-419

PROJECT DESIGN ENGINEER
DESIGN - DETAILED
CHECKED
REVISIONS
FIELD CHANGES

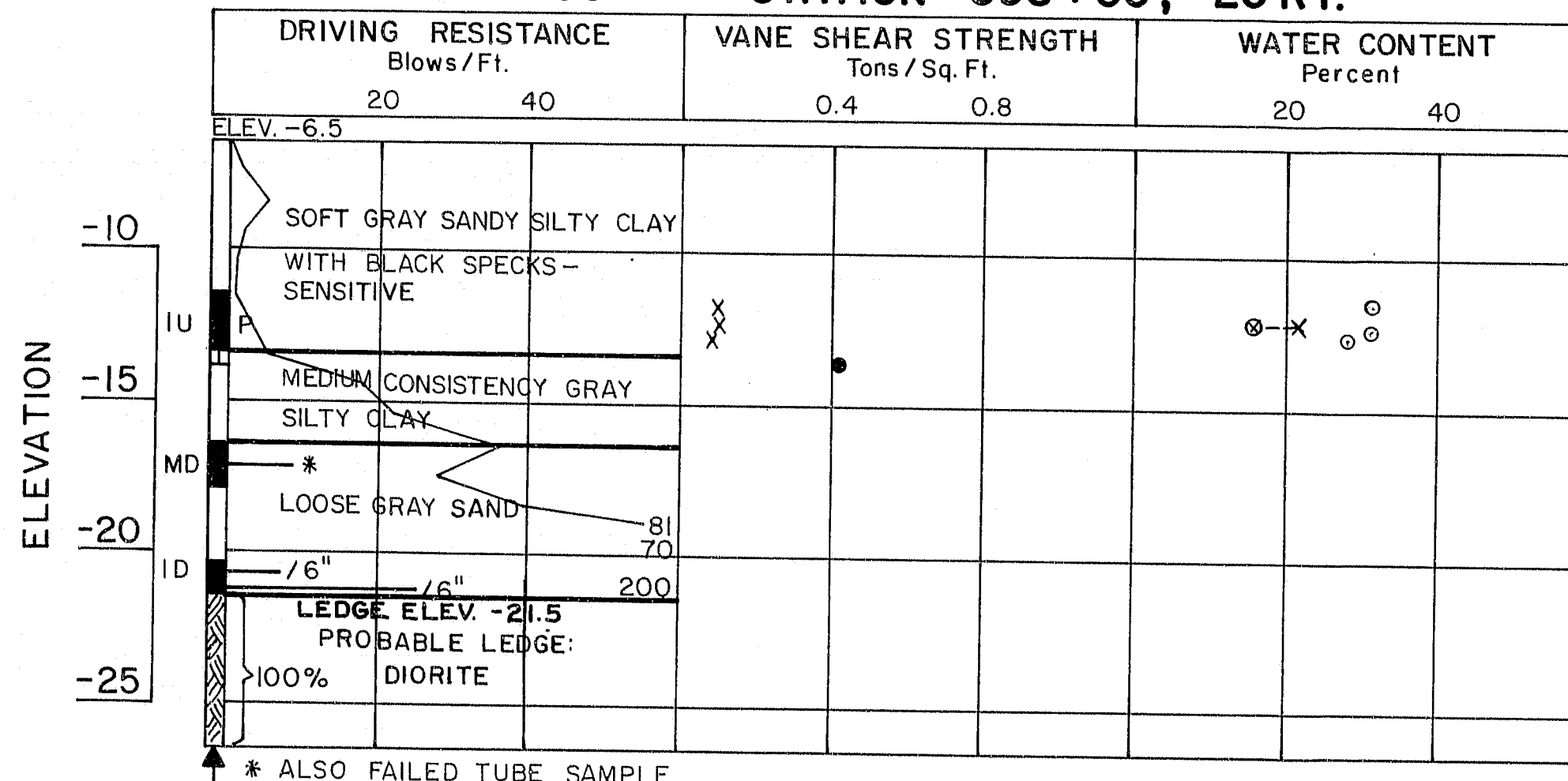
PLANS

BORING 44-132-457101

BORING CB-12-86 STATION 396+63, 14' LT.



BORING CB-9-86 STATION 398+00, 20' RT.



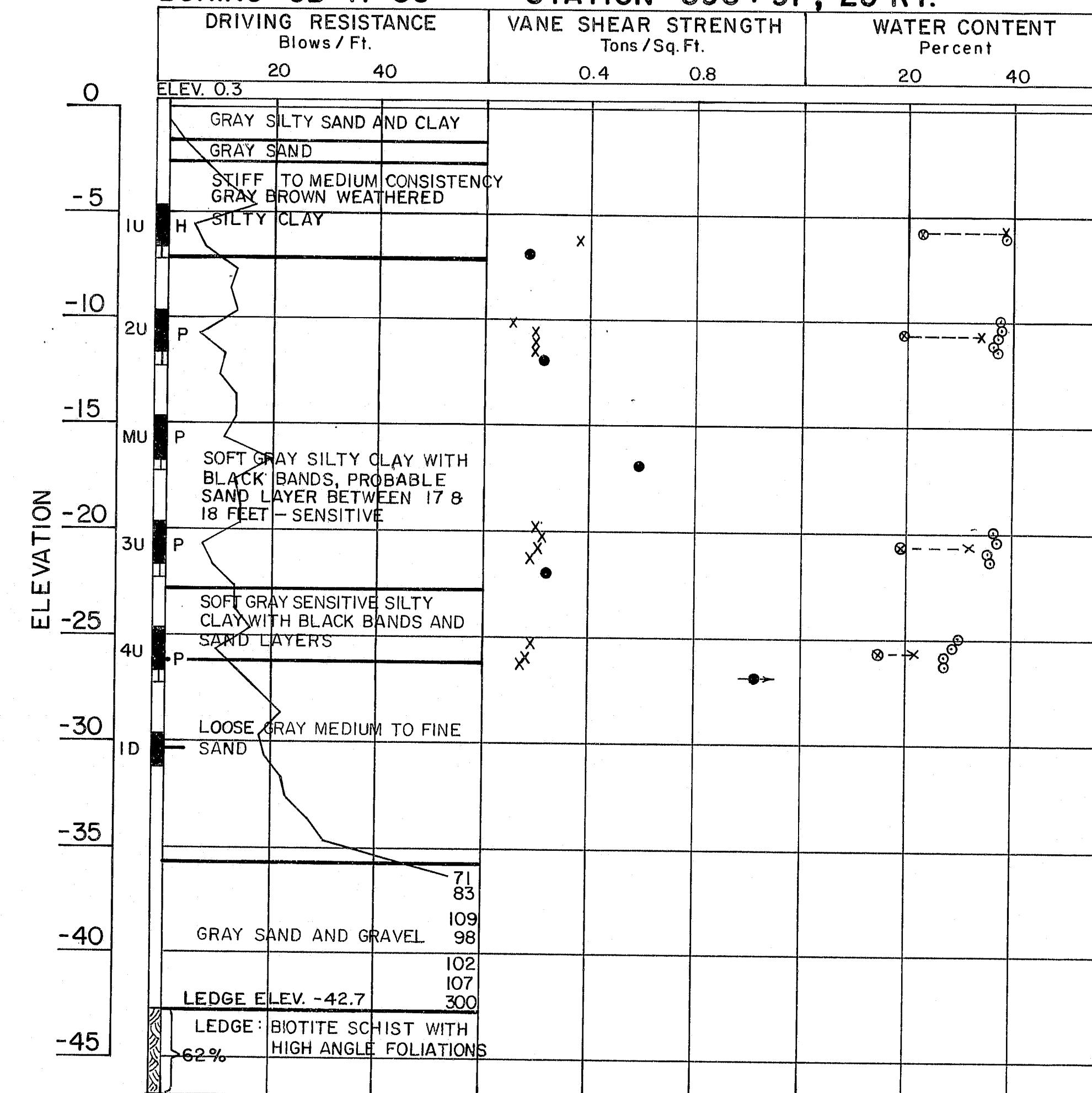
SHEAR NOTES:

- FIELD VANE SHEAR STRENGTHS
- x LABORATORY VANE SHEAR STRENGTHS
- SHEAR STRENGTHS IN EXCESS OF CAPACITY OF EQUIPMENT

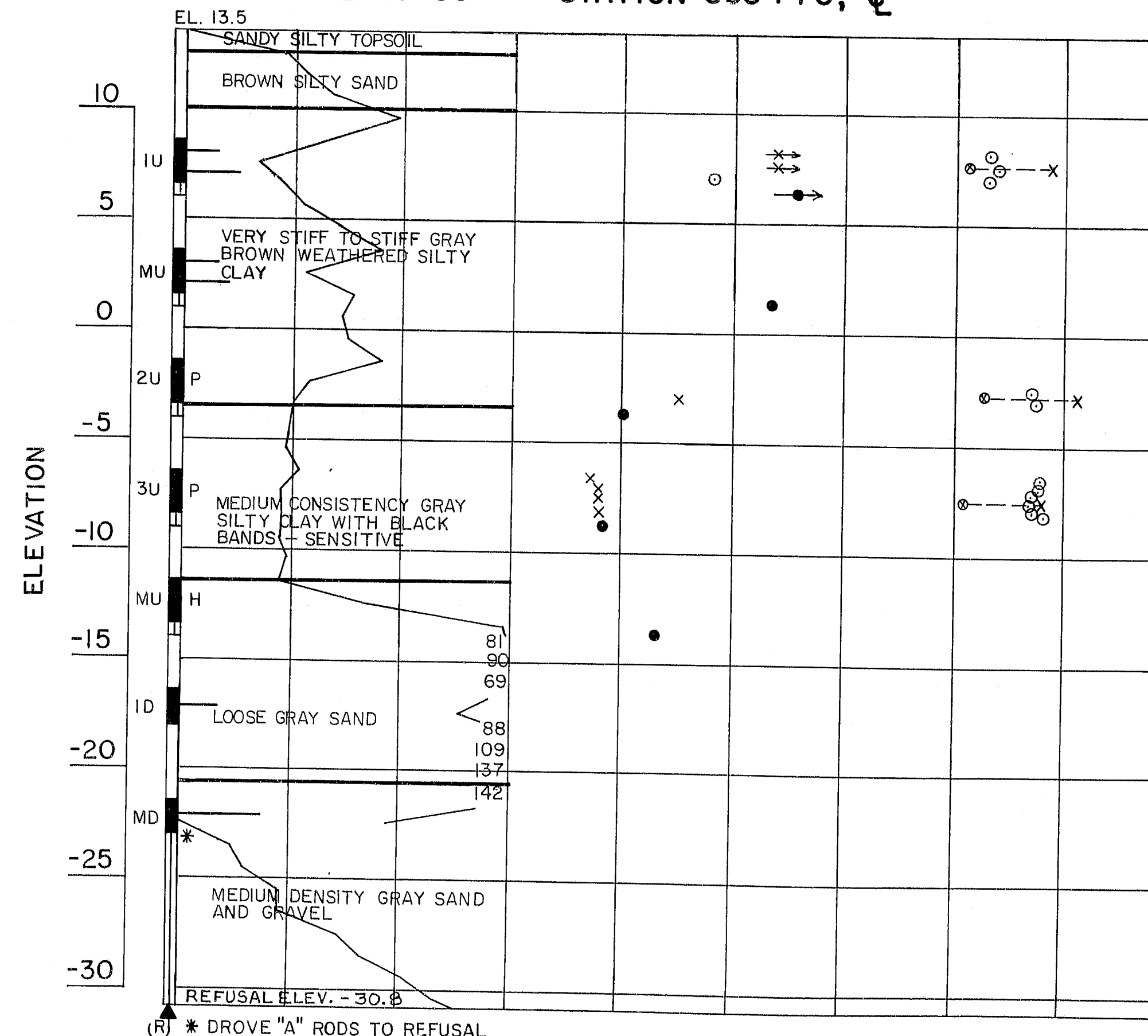
WATER CONTENT NOTES:

- NATURAL WATER CONTENTS, GIVEN AS PER CENT OF DRY WEIGHT
- ⊗ PLASTIC AND LIQUID LIMITS
- IGNITION LOSSES ARE GIVEN AS PERCENT OF DRY WEIGHT

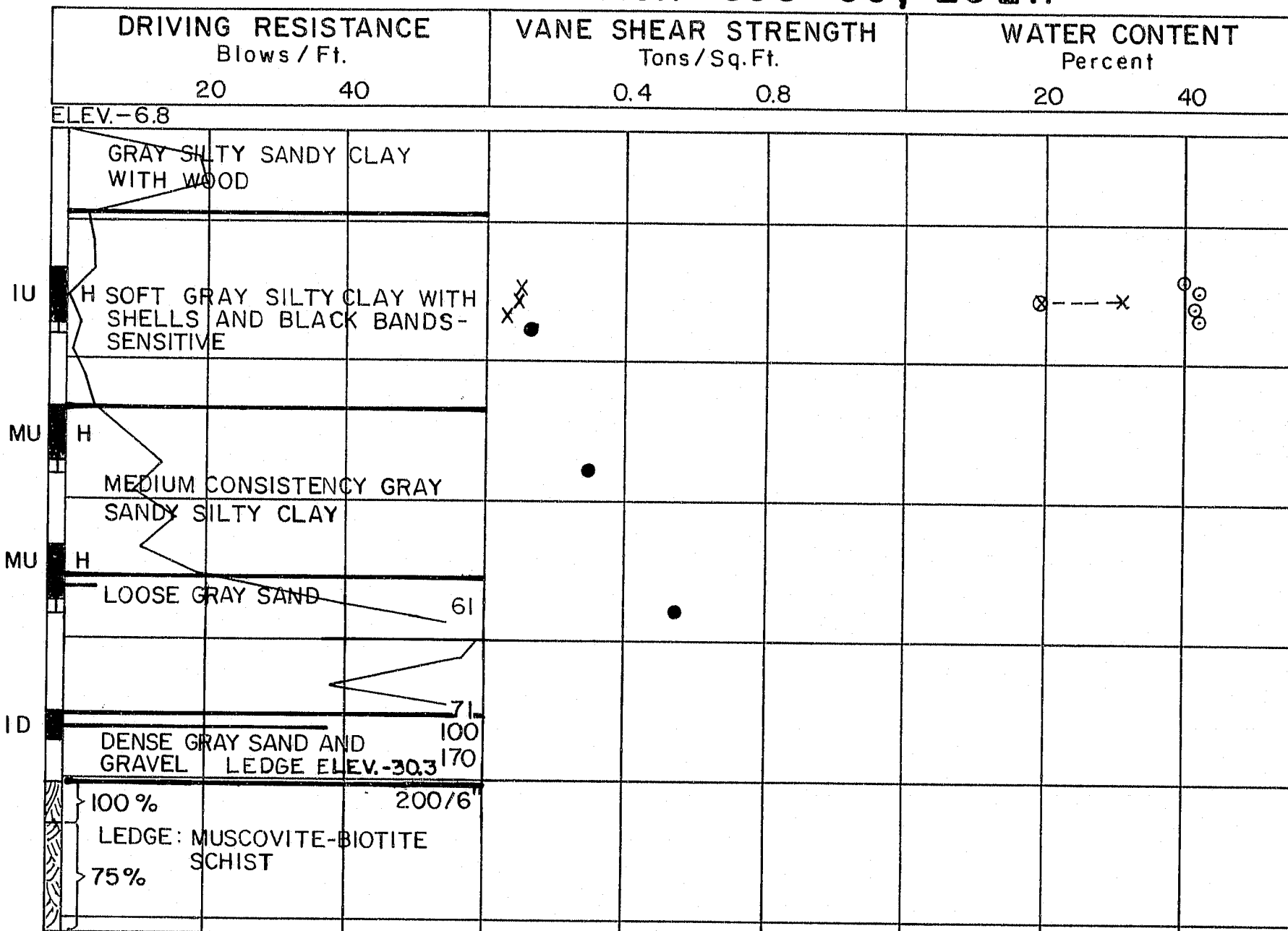
BORING CB-11-86 STATION 396+91, 25' RT.



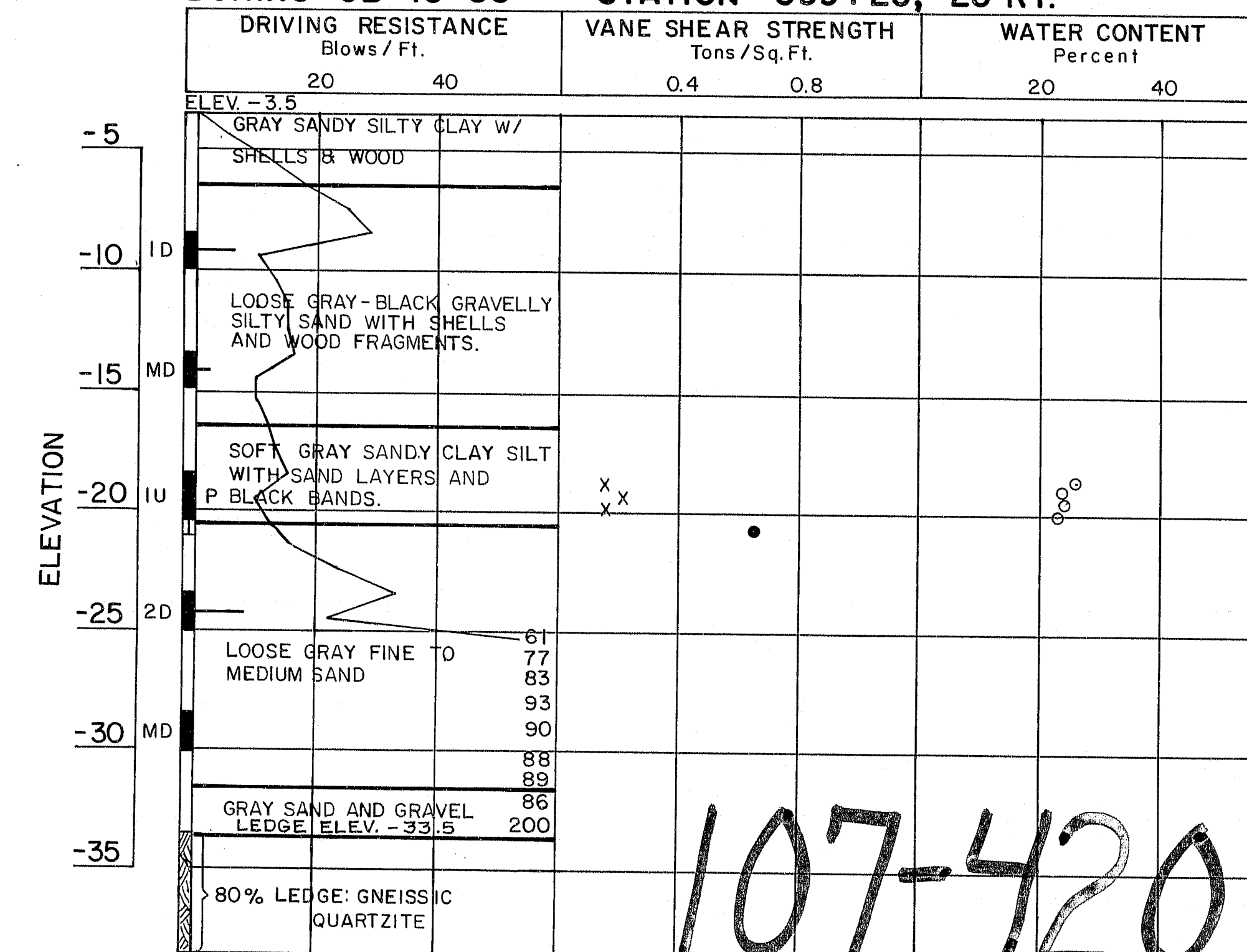
BORING CB-13-86 STATION 395+70, 0



BORING CB-8-86 STATION 398+00, 20' LT.



BORING CB-10-86 STATION 399+25, 25' RT.



BORING NOTES:

- CASING SIZE 4" - ALL SAMPLES AND VANES ARE MADE AHEAD OF CASING
- N - NUMBER OF BLOWS REQUIRED TO DRIVE EXTRA HEAVY CASING ONE FOOT WITH 400 FT. LBS. OF ENERGY PER BLOW.
- LOCATION OF SAMPLE OR SAMPLE ATTEMPT.
- NUMBER AND TYPE OF DRY SAMPLE
- ID - S & H SAMPLES 1290'S.
- IU - 3/2" O.D. 16 GA. SEAMLESS TUBING.
- MD - UNSUCCESSFUL SAMPLE ATTEMPT AND TYPE OF SAMPLE.
- NUMBER OF BLOWS REQUIRED TO DRIVE SPOON OR TUBING ONE FOOT WITH 350 FT. LBS. OF ENERGY PER BLOW.
- H - SAMPLE SPOON OR SEAMLESS TUBING DRIVEN BY STATIC WEIGHT OF DRILL RODS AND HAMMER.
- P - PISTON SAMPLE
- FIELD VANE TEST
- BOTTOM OF BORING (MAY NOT BE BOTTOM OF SOIL STRATA).
- REFUSAL OF DRILL RODS OR CASING (MAY NOT BE LEDGE).
- 100% - LOCATION CORED BY DIAMOND BIT AND PERCENT RECOVERY OF ROCK

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE

In the towns of

WARREN & THOMASTON

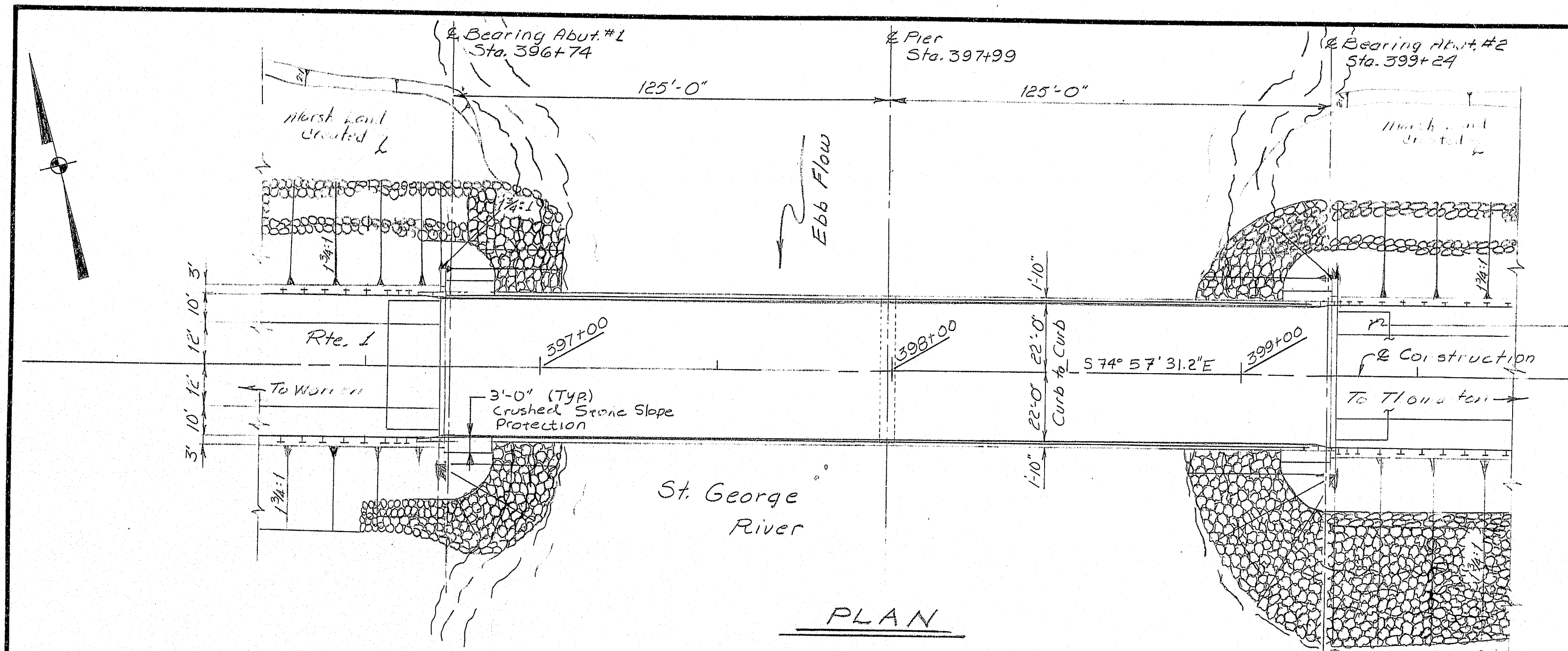
KNOX COUNTY

BORING DETAILS

SHEET OF AUGUSTA, MAINE

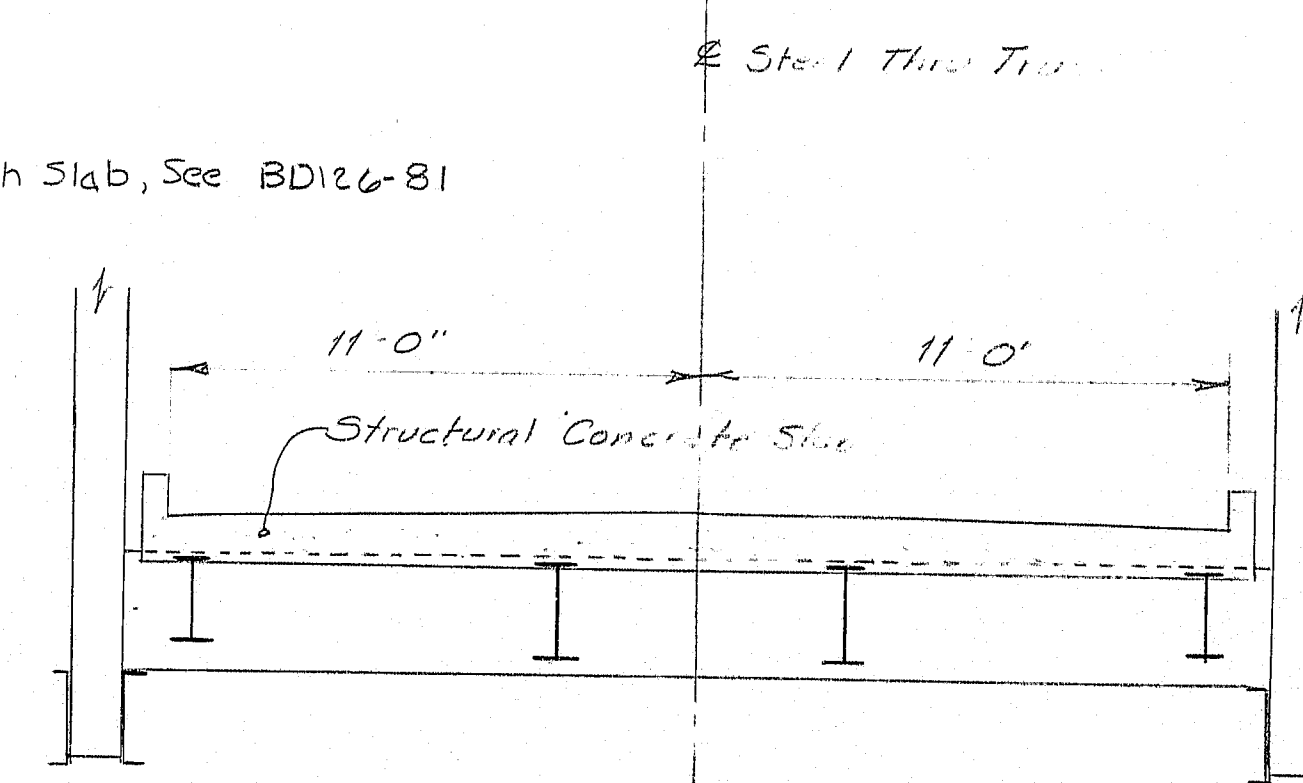
107-420

| F.S.W.A. REG. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-026-1(61) | 6 | 73 |

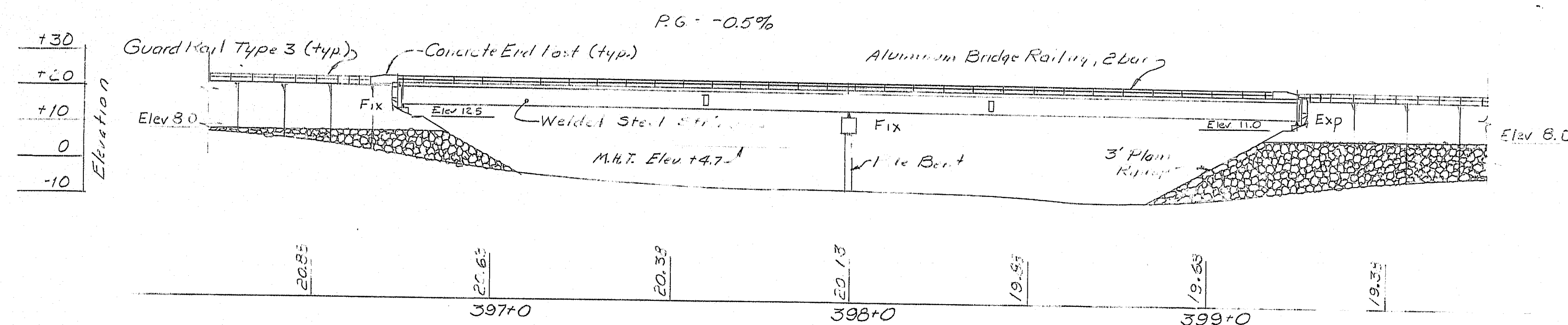


PLAN

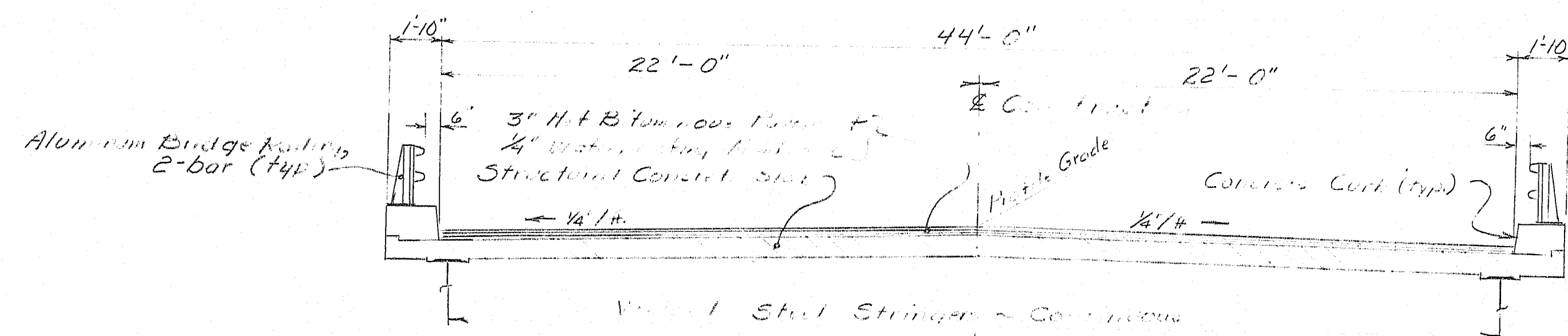
Scale in Feet



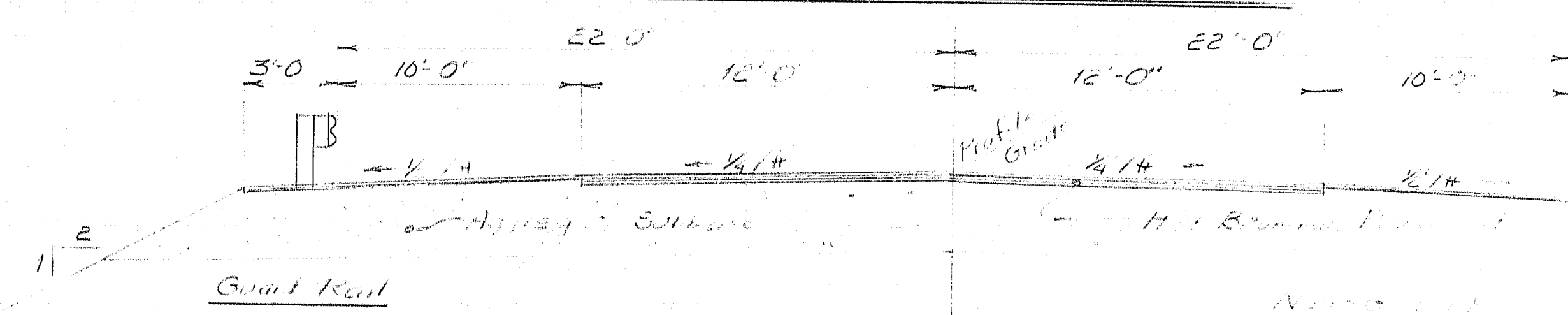
EXISTING BRIDGE SECTION



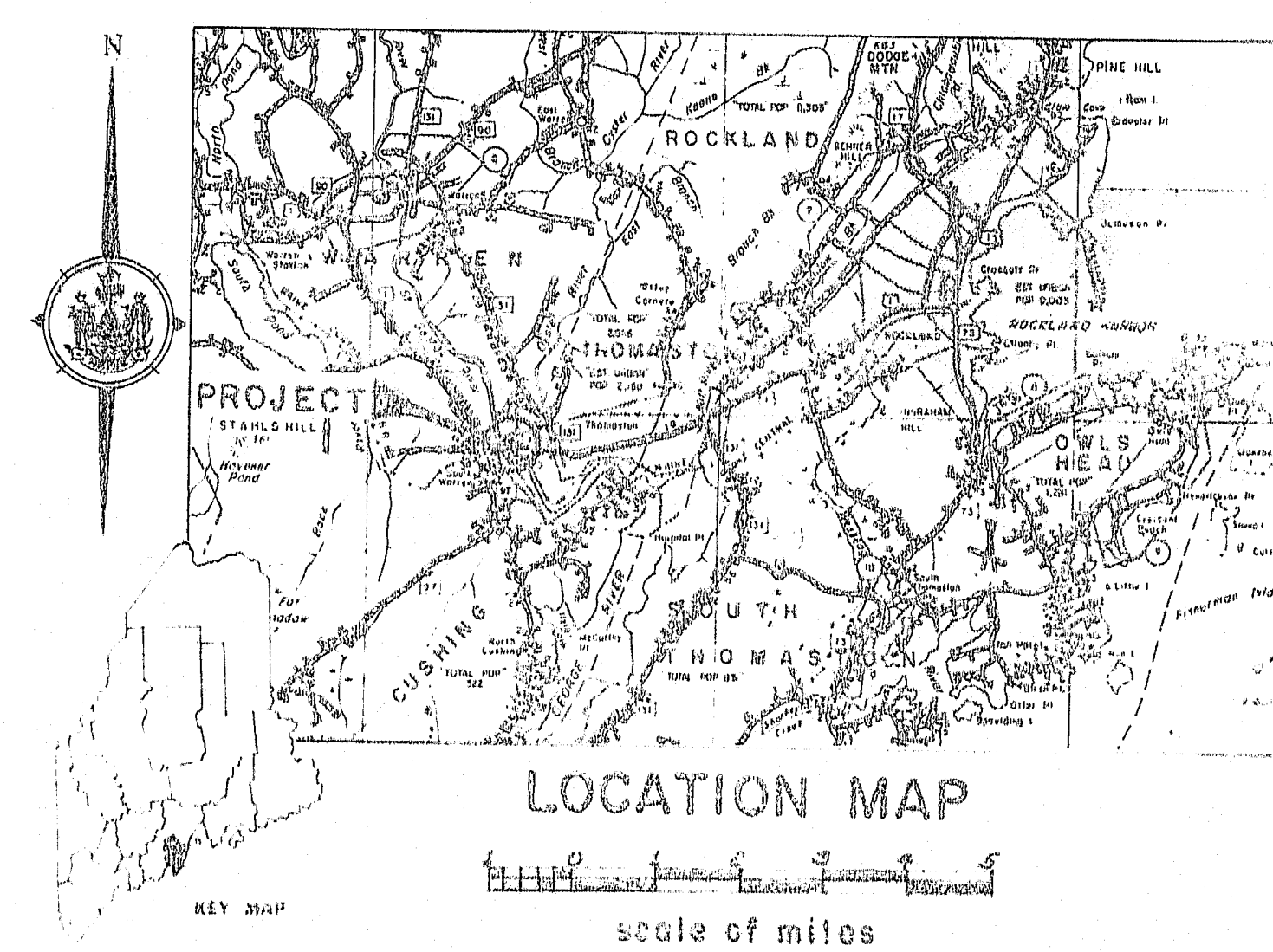
ELEVATION & PROFILE GRADE



PROPOSED BRIDGE SECTION



PROPOSED APPROACH SECTION



LOCATION MAP

TRAFFIC DATA

| | | |
|-----------|---|-------|
| AADT 1983 | = | 5,650 |
| AADT 2003 | = | 6,750 |
| DHV | = | 949 |
| T% | = | 6 |
| D% | = | 55 |
| Y | = | 50 |
| 18 Kips | = | 300 |

107-421

As built R_p

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE 185
OVER

THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

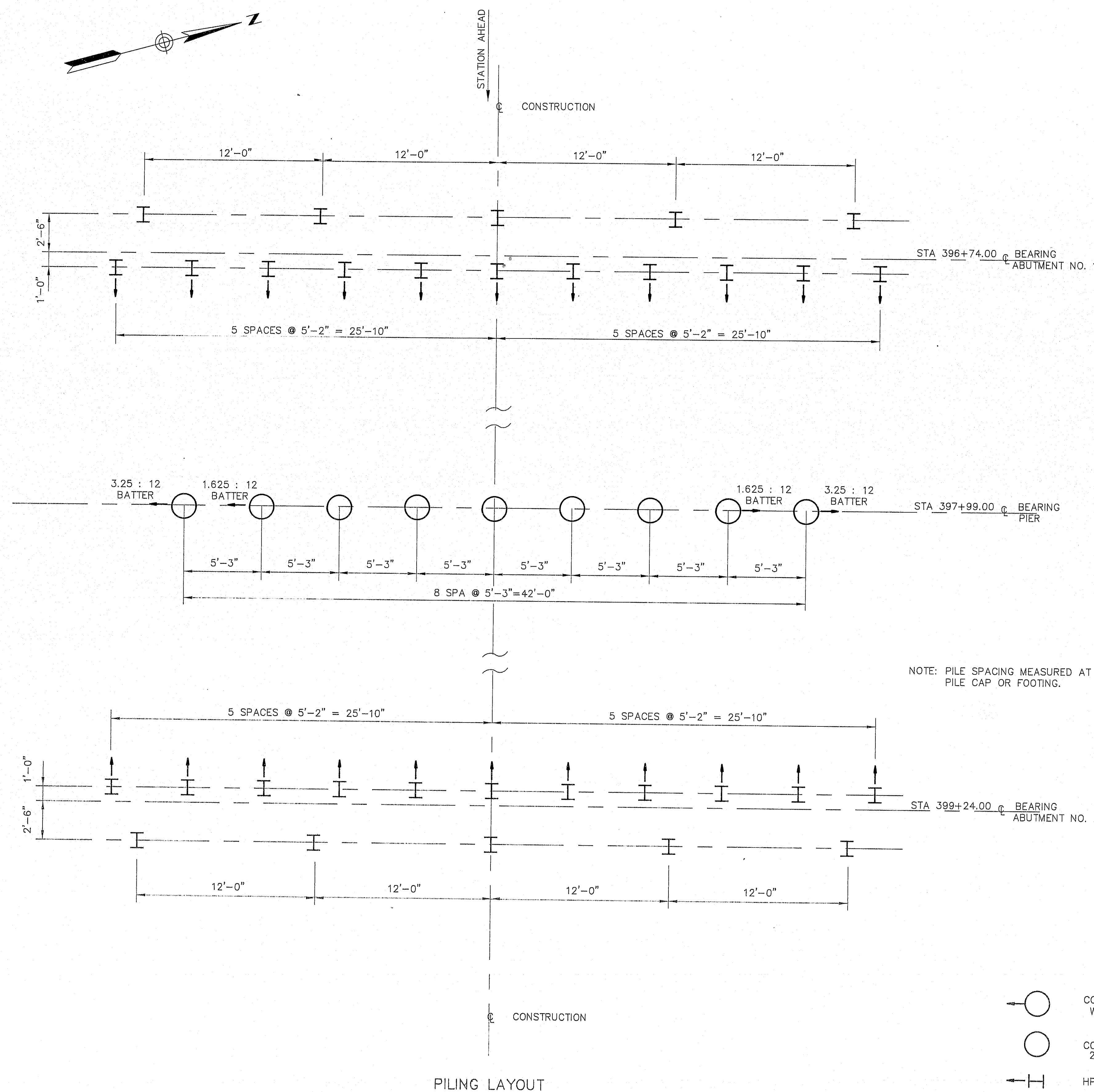
GENERAL PLAN

SHEET 1 OF 11 AUGUSTA, MAINE

| PROJECT DESIGN ENGINEER | BY | DATE |
|-------------------------|----|--------|
| DESIGN - DETAILED | | 7-9-04 |
| CHECKED | | |
| REVISIONS | | |
| FIELD CHANGES | | |

BRUNING 44-132-45704

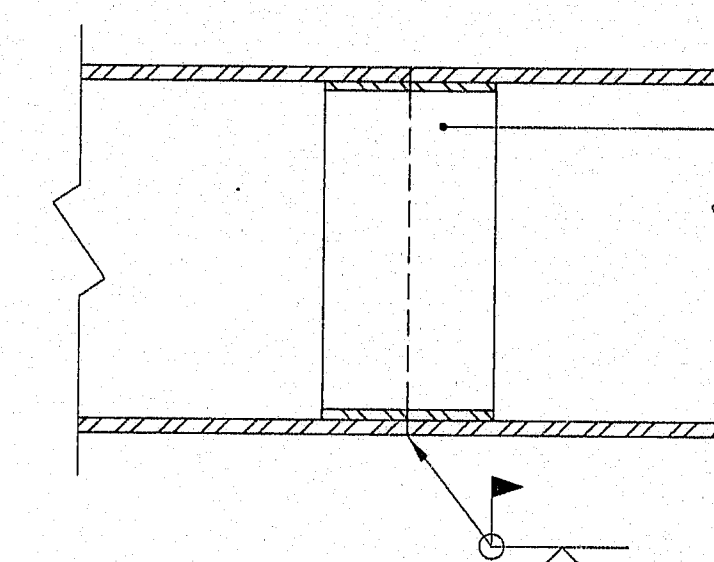
| F.W.A. REG. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|--------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-026-1(61) | 7 | 75 |



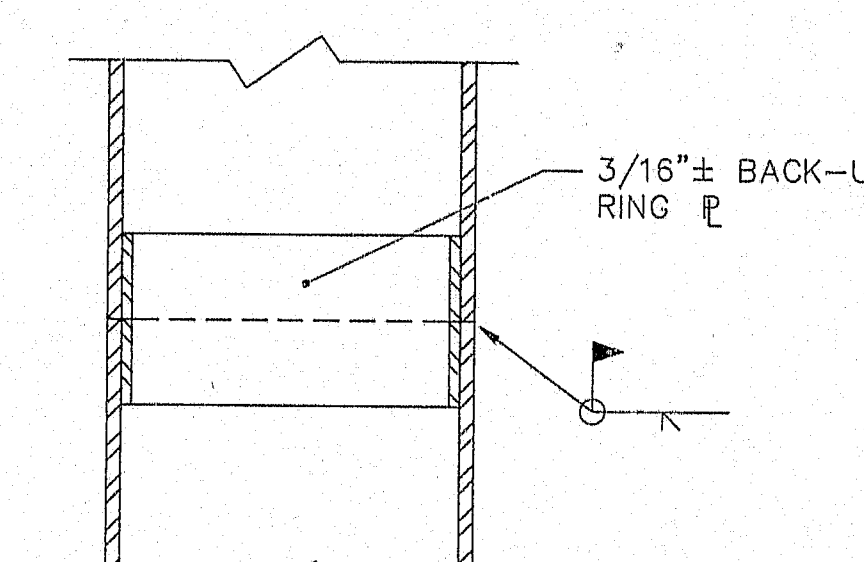
NOTE: PILE SPACING MEASURED AT BOTTOM OF PILE CAP OR FOOTING.

NOTES:

- PILES MARKED THUS \rightarrow SHALL BE BATTERED 3 INCH PER FOOT IN THE DIRECTION OF THE ARROW. SEE LEGEND.
- MAXIMUM CALCULATED H PILE LOADS: 93 TONS (INCLUDING 48 TONS ALLOWED FOR NEGATIVE SKIN FRICTION.)
- MAXIMUM CALCULATED PIPE PILE LOADS - 144 TONS.
- ESTIMATE OF PILES REQUIRED:
 ABUTMENT NUMBER 1 16 - HP 12 X 53 @ 48 FEET
 ABUTMENT NUMBER 2 16 - HP 12 X 53 @ 42 FEET
 PIER 9 20" CONCRETE @ 41 FEET
 FILLED PILES
- PIPE PILES SHALL BE ASTM A252 WITH 20" O.D. AND 0.375" WALL THICKNESS. PILES SHALL BE COATED WITH A FUSION BONDED EPOXY COATING AS DESCRIBED IN SPECIAL PROVISION SECTION 501 - FOUNDATION PILES (PILE PROTECTIVE COATING). THE COATING SHALL BE APPLIED TO ALL EXTERIOR SURFACES OF THE PILES EXCEPT FOR THE AREA WITHIN ONE FOOT OF THE BOTTOM. THIS IS TO FACILITATE WELDING OF THE PILE POINT.
- USE PILE POINTS FOR BOTH STEEL PIPE PILES AND STEEL H - PILES.
- PIPE PILE POINTS SHALL BE APPROVED MANUFACTURED CAST STEEL W/ 60° CONICAL POINTS AND INTERNAL FLANGES SUITABLE FOR WELDING TO PIPE PILES.
- PILE SPLICES IN THE PIER PILES WILL NOT BE ALLOWED IN THE UPPER ONE THIRD OF PILE.
- THE TOP 24" OF CONCRETE IN THE PIPE PILES MAY BE CLASS A CONCRETE.
- FOR POINTED REINFORCED H-PILE TIP AND H-PILE SPLICE, SEE BD 127-81.

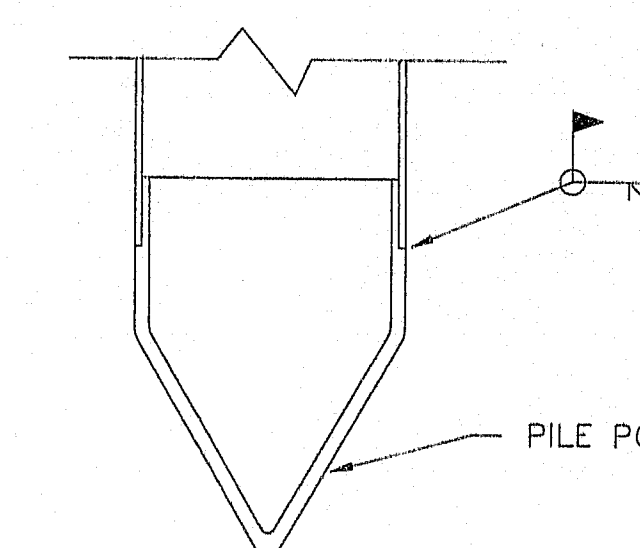


HORIZONTAL POSITION



VERTICAL POSITION

SECTION AT PIPE PILE SPLICE



REINFORCED PILE POINT

LEGEND

- \rightarrow CONCRETE FILLED STEEL PIPE PILE 20" Ø 0.375" WALL - BATTERED.
- \circ CONCRETE FILLED STEEL PIPE PILE - VERTICAL 20" Ø 0.375" WALL
- \rightarrow HP 12X53 STEEL PILES - BATTERED AT 3.00 ON 12.00
- \rightarrow HP 12X53 STEEL PILES - VERTICAL

107-422
As built

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

PILING PLAN

SHEET 2 OF 11 AUGUSTA, MAINE

| PROJECT DESIGN ENGINEER | BY | DATE |
|-------------------------|-----|-------|
| DESIGN - DETAILED | MG | 8/87 |
| CHECKED | JES | 9/87 |
| REVISIONS | RAL | 11/87 |
| FIELD CHANGES | RAL | |

PLANS

RES. NO. 1 DATE 10/1/01 PROJECT NO. BR-026-1(61)

SEE NOTE NO. 5

ROUGHEN TOP SURFACE OF APPROACH SLAB SEAT.

FINISH GRADE

1'-3" OPTIONAL CONSTRUCTION JOINT

12" WATER MAIN (BY OTHERS)

2'-9"

3'-0"

SLOPE AT 1"/FT.

ELEV. 12.5

6" - CRUSHED STONE SLOPE PROTECTION

ELEV. 8.00 FINAL POSITION

3' - PLAIN RIP RAP

SECTION A - A

4'-0"

2'-6"

6" 6" 1'-6" 1'-6" 1'-6" 1'-6" 1'-0"

3'-3"

27'-9"

23'-4"

8'-4"

8'-4"

4'-2"

4'-2"

8'-4"

8'-4"

GIRDER S-6

GIRDER S-5

GIRDER S-4

GIRDER S-3

GIRDER S-2

GIRDER S-1

90°

16'-8"

21'-6"

22'-0"

25'-0"

CL CONSTRUCTION

CL WATER MAIN

0'-6"

0'-6"

1'-6"

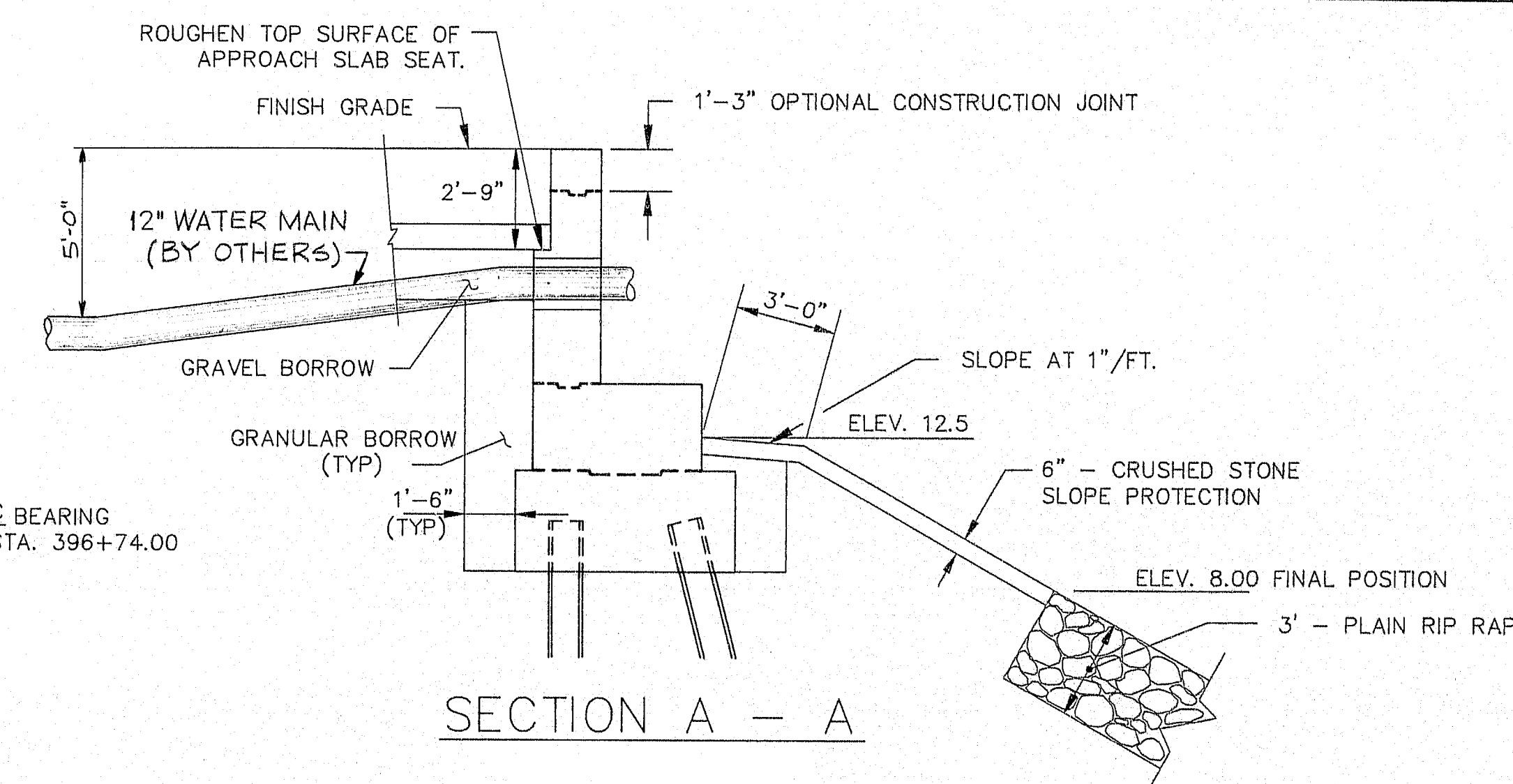
1'-6"

1'-6"

1'-0"

CL BEARING STA. 396+74.00

NOTE: ELEVATION OF ϕ OF 18" ϕ BLOCK-OUT
TO BE DETERMINED BY THE
ENGINEER.



Technical drawing of a pile cap cross-section showing various reinforcement details and dimensions. The drawing includes the following labels and dimensions:

- Dimensions:**
 - Overall width: 4'-0"
 - Overall height: 3'-0"
 - Top horizontal segments: 6'-6", 1'-6", 1'-6", 1'-6", 1'-0"
 - Vertical segments on the left: 5 SPA @ 1'-6", 1'-6", 1'-6"
 - Vertical segment on the right: VARIES
 - Bottom horizontal segments: 1'-6", 3'-6", 1'-6"
 - Overall bottom width: 6'-6"
 - Internal vertical spacing: 1'-9" (MIN), 1'-3"
 - Internal horizontal spacing: 1'-6", 1'-6"
- Reinforcement Details:**
 - A505 OR A505A
 - A506 OR A506A
 - ROUGHEN SURFACE
 - A501 OR A501A
 - A502
 - A503
 - A513
 - A504
 - A507 OR A507A
 - A600
 - TOP OF PILES
 - A601
 - A602
- Other Labels:**
 - ⊙ BEARING
 - 12
 - 3
 - 2' ⌀

107-423
As built 1990 Ring

SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

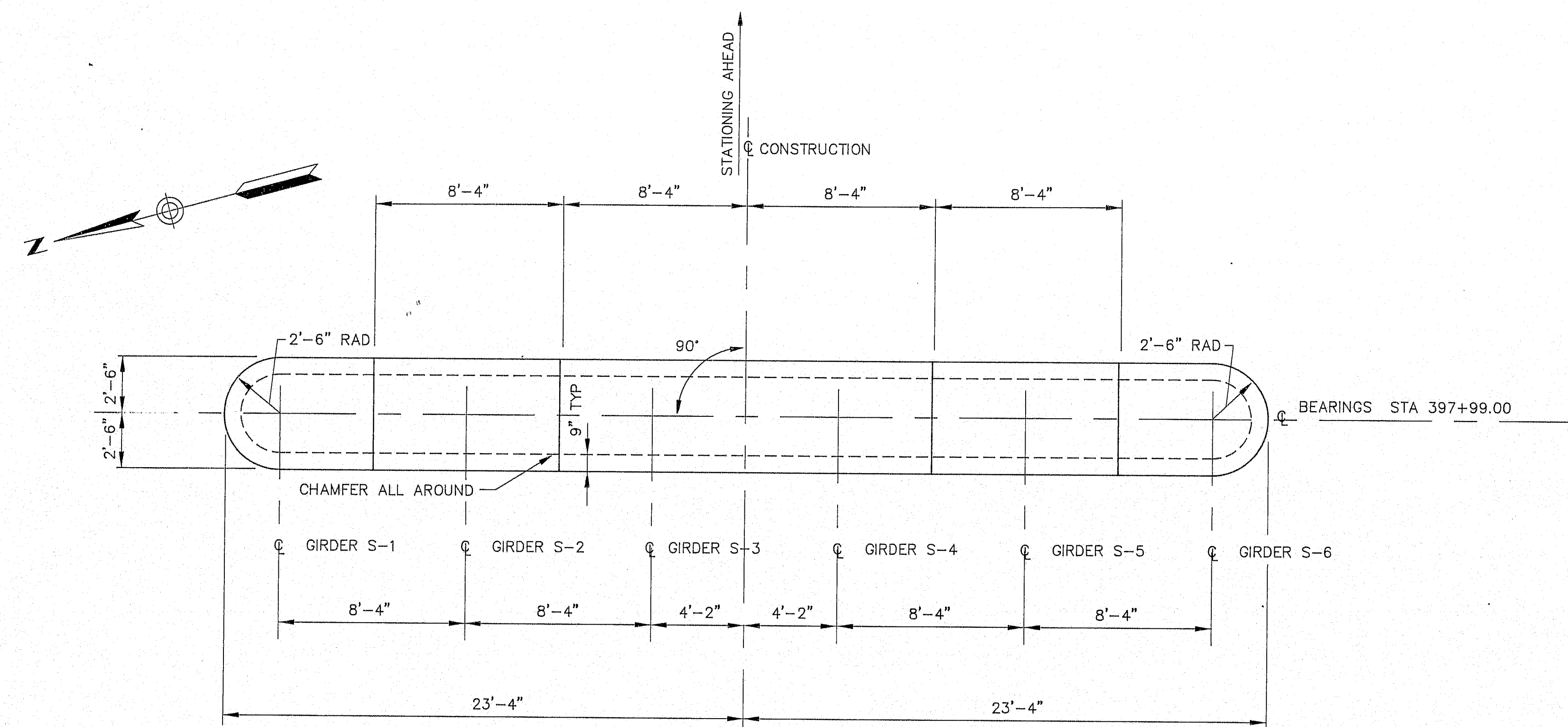
SHEET 3 OF 11 AUGUSTA, MAINE

NOTES:

1. REINFORCING STEEL SHALL HAVE 2 INCHES COVER UNLESS OTHERWISE INDICATED.
2. COVER CONTRACTION JOINTS ON THE BACK WITH TWO LAYERS OF HEAVY ROOFING. SEE BD 127 FOR DETAIL.
3. ALL REINFORCING STEEL TO BE EPOXY COATED.
4. PROTECTIVE COATING FOR CONCRETE SURFACES SHALL BE APPLIED TO THE FOLLOWING AREAS:
TOP OF CONCRETE CURBS.
TOP OF ABUTMENT BACKWALLS AND 1' BELOW TOP OF BACKWALLS ON THE BACK SIDE.
5. EXISTING EMBANKMENT SHALL BE PROTECTED WITH SHEETING, SHORING AND BRACING AS REQUIRED DURING CONSTRUCTION OF WINGWALLS. ALL SUCH SHEETING, SHORING AND BRACING SHALL BE INCIDENTAL TO ITEM 206.082 STRUCTURAL EXCAVATION - MAJOR STRUCTURES.
6. AT ABUT. NO. 1 EXCAVATION ABOVE ELEVATION 10.00 SHALL BE CONSIDERED AS COMMON EXCAVATION, ANY EXCAVATION BELOW ELEVATION 10.00 SHALL BE CONSIDERED STRUCTURAL EXCAVATION.
7. FOR ANCHOR BOLT LOCATION, SEE BD-100-86.

EF - EACH FACE
NF - NEAR FACE
FF - FAR FACE

| F.R.W.D. REG. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-026-1(61) | 9 | 73 |



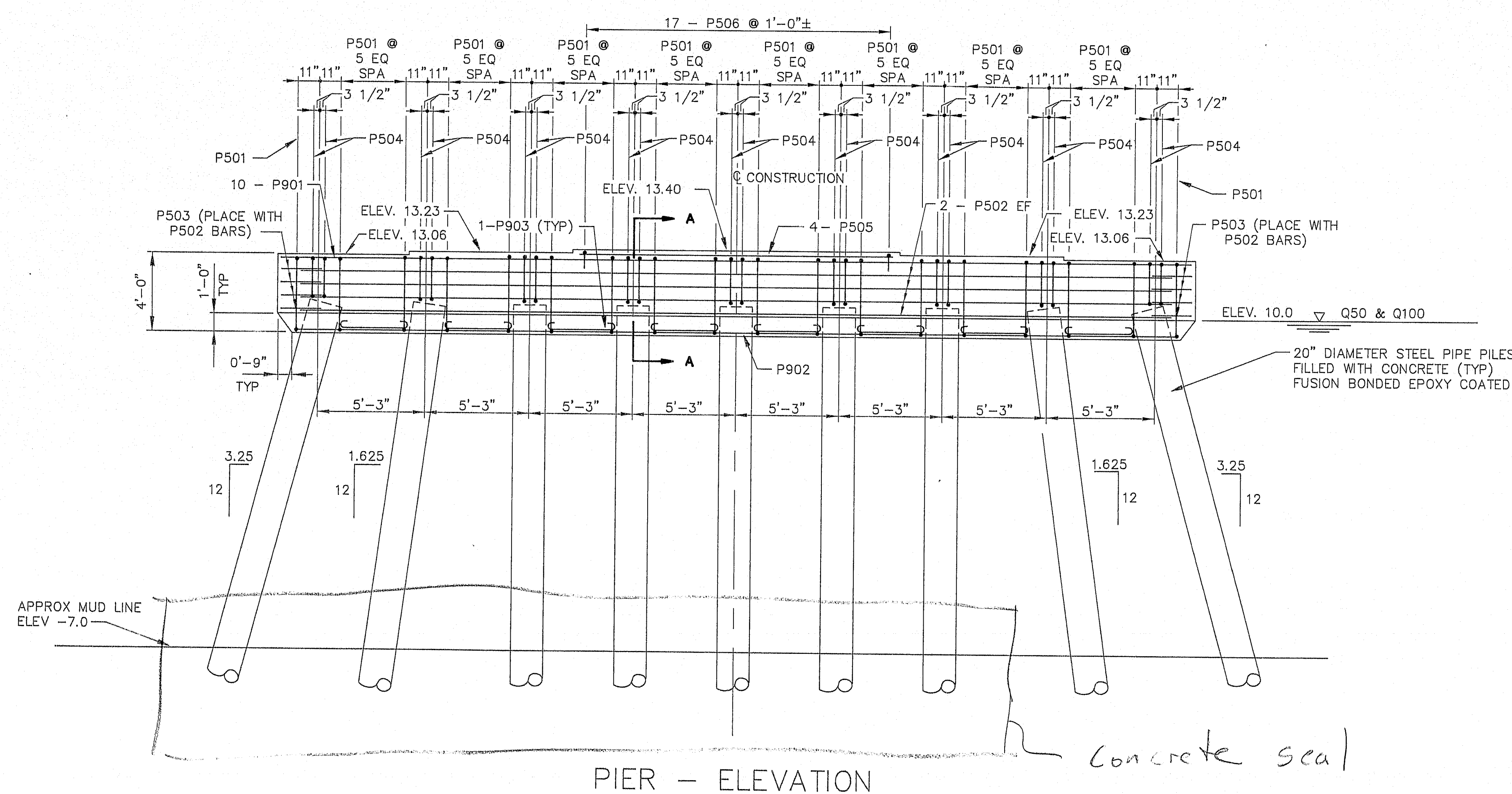
PIER - PLAN VIEW

NOTE:

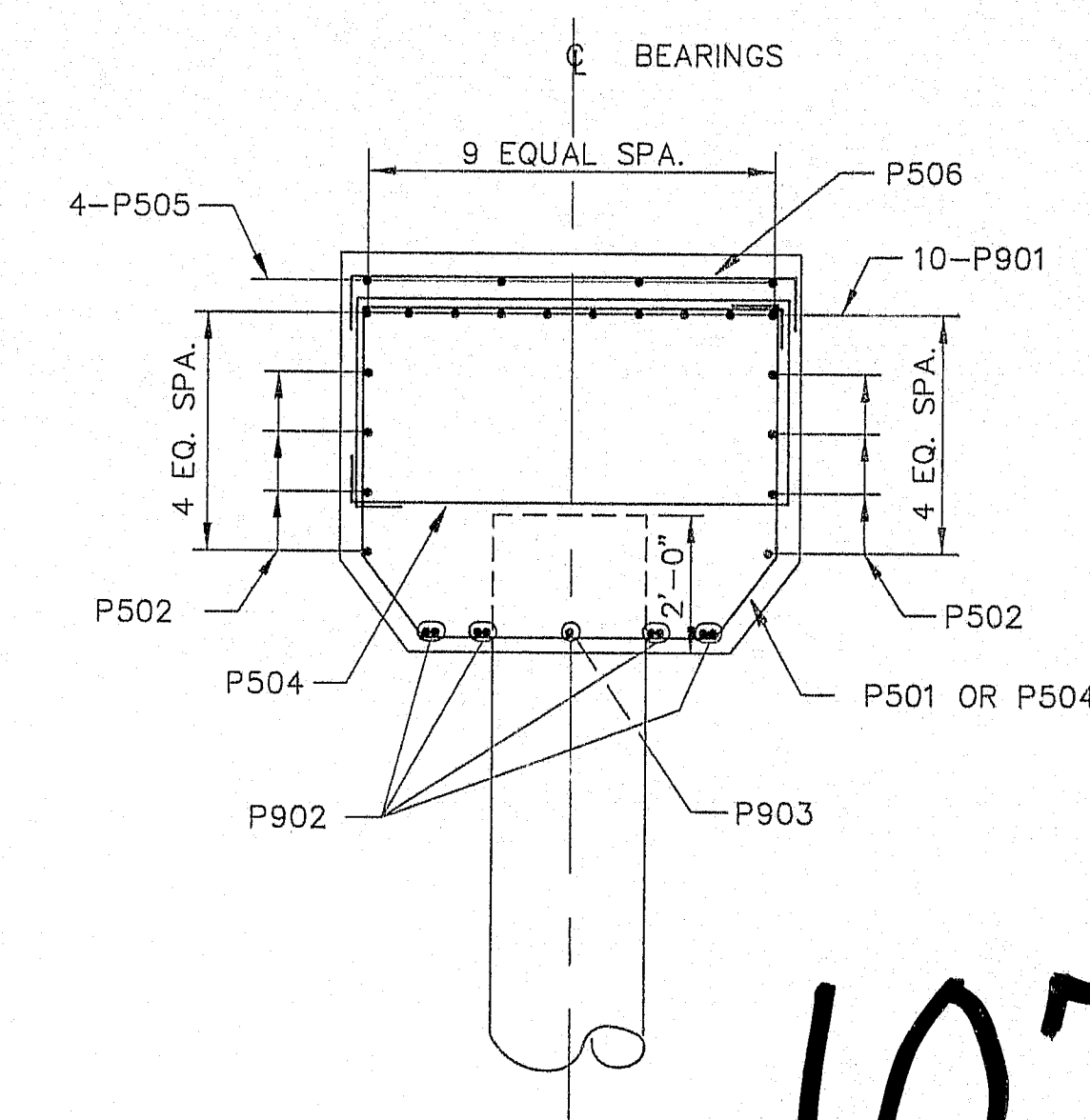
1. REINFORCING STEEL SHALL BE EPOXY COATED AND HAVE A MINIMUM OF 2" COVER.
2. PIER SHALL NOT BE EXPOSED TO ICE LOADING PRIOR TO COMPLETION OF SUPERSTRUCTURE.

DESIGN CRITERIA:

1. CRITICAL AASHTO LOADING - GROUP IX.
2. BUOYANCY - WATER ASSUMED AT ELEVATION 10.00.
3. STREAM FLOW - VELOCITY OF 5.36 PER SECOND AT 0' SKEW TO LONGITUDINAL CENTERLINE OF PIER.
4. WIND - 50 PSF.
5. ICE - THICKNESS 18", PRESSURE 100 PSI AT ELEVATION 10.00. 30 PERCENT OF NOSE FORCE APPLIED TRANSVERSE TO PIER.



PIER - ELEVATION



SECTION A-A

107-424

As built 1990 RP

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

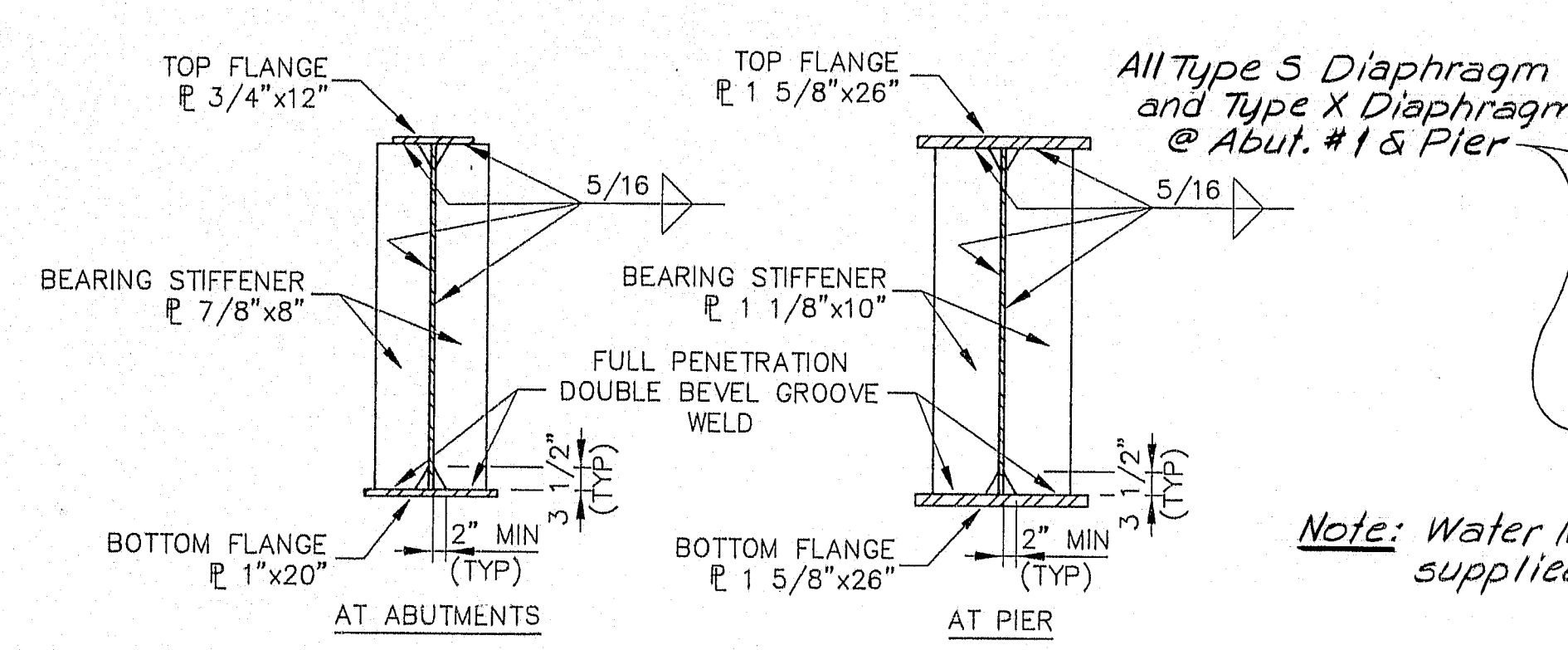
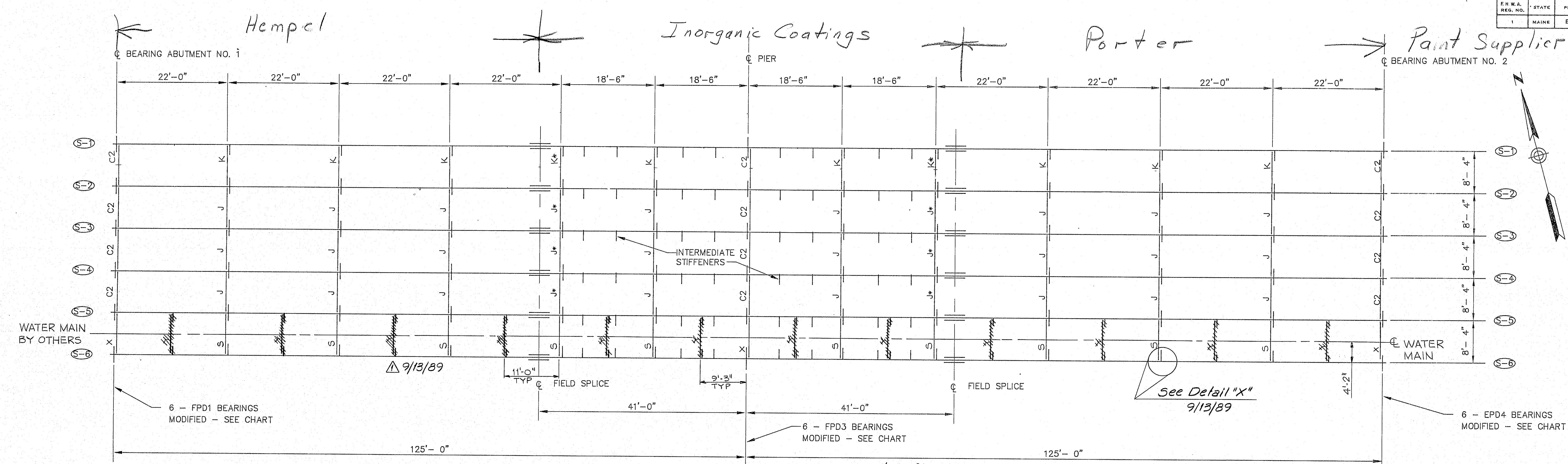
PIER

SHEET 4 OF 11 AUGUSTA, MAINE

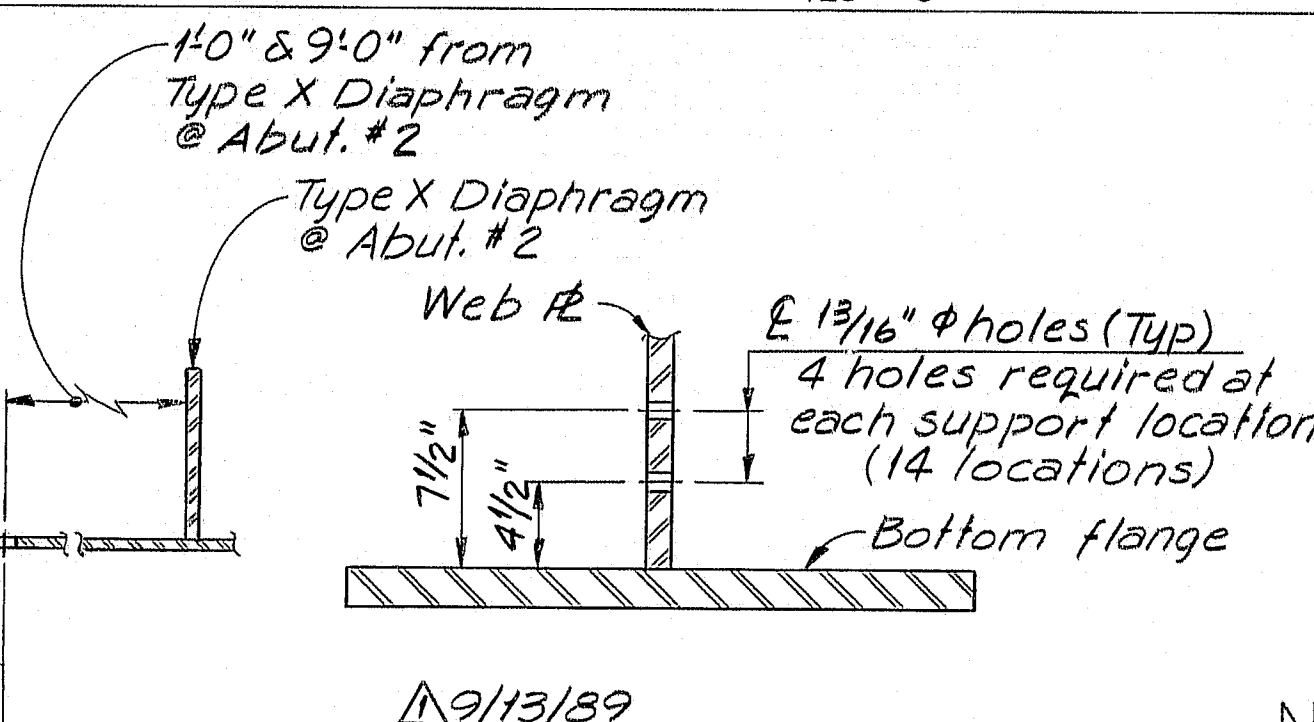
| PROJECT DESIGN ENGINEER | BY | DATE |
|-------------------------|-----|-------|
| DESIGN - DETAIL | MG | 9/87 |
| CHECKED | RAL | 9/87 |
| REVISIONS | RAL | 11/87 |
| FIELD CHANGES | | |

PLANS

| FR. W.A. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------|-------|----------------|-----------|--------------|
| 1 | MAINE | BR-026-1(61) | 11 | 73 |



FRAMING PLAN



DETAIL "X"

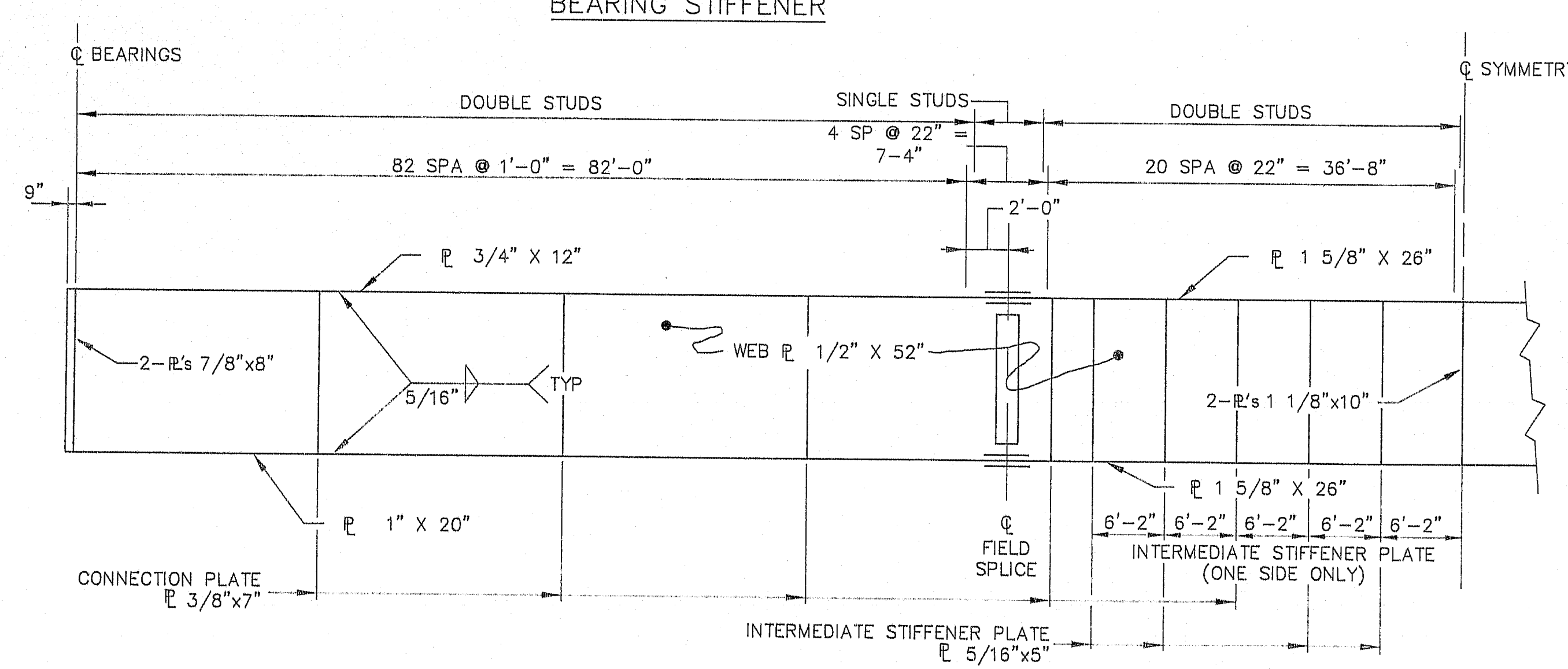
BEARING ADJUSTMENT CHART

MODIFY BEARING DIMENSIONS SHOWN ON BD 100-86 AS SHOWN BELOW

| BEARING | DIMENSION "C" | DIMENSION "D" | DIMENSION "H" |
|---------|---------------|---------------|---------------|
| FPD1 | 1'-5" | 2'-3" | 11 1/4" |
| FPD3 | 1'-9" | 2'-7" | 1'-1 1/4" |
| EPD4 | 1'-5" | 2'-3" | 8 1/2" |

NOTES:

- CAMBER ORDINATES, AS SHOWN, ARE COMPUTED TO COMPENSATE FOR ALL DEAD LOAD DEFLECTIONS.
- NO TRANSVERSE BUTT-WELD SPICES WILL BE ALLOWED IN THE FLANGE PLATES OR WEB PLATES WITHIN 10 FEET OR 10 PERCENT OF THE SPAN LENGTH (WHICHEVER IS GREATER) FROM THE POINTS OF MAXIMUM NEGATIVE MOMENT OR MAXIMUM POSITIVE MOMENT. BUTT-WELD SPICES IN FLANGES SHALL BE NOT LESS THAN THREE FEET FROM TRANSVERSE BUTT-WELDS IN THE WEB PLATES AND NO TRANSVERSE WEB OR FLANGE BUTT-WELDS SHALL BE LOCATED WITHIN THREE FEET OF OTHER TRANSVERSE WELDS (E.G. CONNECTION PLATES TO WEB WELDS) ON EITHER FLANGE OR WEB. NO TRANSVERSE BUTT-WELD SPICES WILL BE ALLOWED IN AREAS OF STRESS REVERSAL.
- SECTIONS OF FLANGE PLATES OR WEB PLATES BETWEEN TRANSVERSE SHOP SPICES OR BETWEEN A TRANSVERSE SHOP SPICE AND FIELD SPICE SHALL BE NOT LESS THAN 20 FEET IN LENGTH UNLESS OTHERWISE SHOWN ON THE PLANS.
- BEARING STIFFENERS SHALL BE PLUMB AFTER ERECTION AND DEAD LOADING OF THE STRUCTURE. INTERMEDIATE WEB STIFFENERS MAY BE EITHER PLUMB OR NORMAL TO THE TOP FLANGE.
- CROSS-FRAME OR DIAPHRAGM CONNECTION PLATES MAY BE EITHER PLUMB OR NORMAL TO THE TOP FLANGE.
- FILLER PLATES MAY BE STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A36 AND MILL TESTS WILL NOT BE REQUIRED FOR FILLER PLATES.
- THE BEARING SETTING CHART INDICATES THE REQUIRED FINAL POSITION OF THE BEARINGS. IT IS ANTICIPATED THAT THE BEARINGS AT ABUTMENT 2 WILL MOVE 3/16 INCH AWAY FROM THE FIXED BEARINGS DUE TO THE PLACEMENT OF THE SUPERSTRUCTURE CONCRETE. NO SEPARATE PAYMENT WILL BE MADE FOR RESETTING BEARINGS TO THE FINAL POSITION IF AN ADJUSTMENT IS REQUIRED.
- AT LOCATIONS MARKED WITH AN ASTERISK (*) THE DESIGNATED DIAPHRAGMS SHALL BE CHANGED TO A TYPE C-2 DIAPHRAGM AS REQUIRED TO ACCOMMODATE THE CONTRACTOR'S DECK PLACEMENT SEQUENCE. NO EXTRA COMPENSATION WILL BE ALLOWED FOR ANY DIAPHRAGMS SO SUBSTITUTED, AND ANY ADDITIONAL COSTS WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT ITEMS.
- STRUCTURAL STEEL : ASTM A572
: ASTM A36
: ASTM A325
STRUCTURAL STEEL : STRINGERS
ALL OTHERS (UNLESS NOTED)
HIGH STRENGTH BOLTS
F_y = 50,000 psi
F_y = 36,000 psi
F_v = 25,000 psi
ASTM A572 (PAINTED)
ASTM A36 (PAINTED)
ASTM A325 TYPE 1
- TYPE X - DIAPHRAGM TO BE IDENTICAL TO TYPE D DIAPHRAGM WITH A SUBSTITUTION FOR THE W12x30 W16x26 9/13/89
- CONTRACTOR TO COORDINATE HOLES FOR PIPE HANGERS IN DIAPHRAGM MEMBERS.
- ALL STEEL TO BE SHOP COATED, SEE SPECIAL PROVISION SECTION 506.



PARTIAL GIRDER ELEVATION

| PROJECT DESIGN ENGINEER | DATE |
|-------------------------|------|
| BY | 9/87 |
| CHECKED | 9/87 |
| REVISIONS | 9/87 |
| FIELD CHANGES | 9/87 |

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

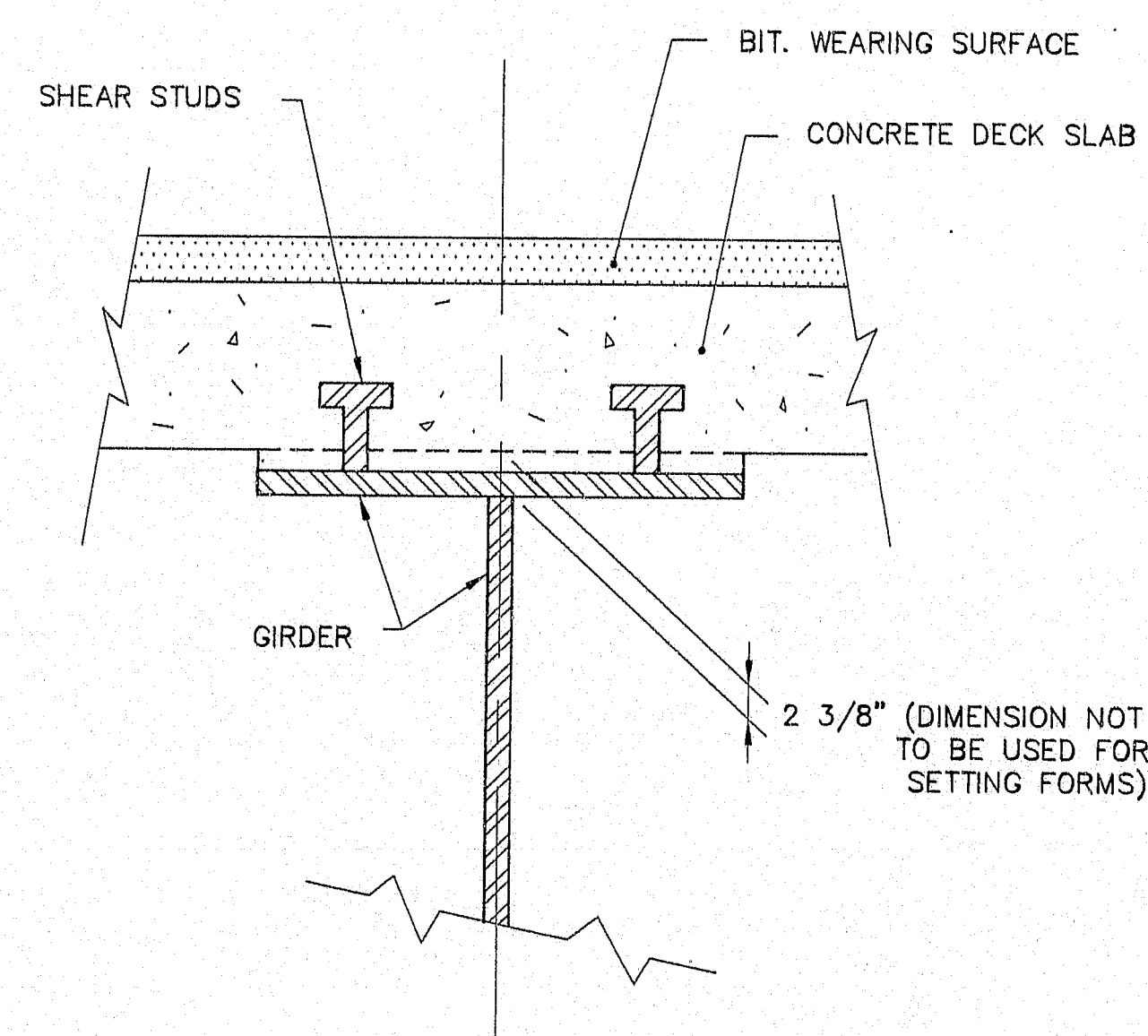
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

STRUCTURAL STEEL

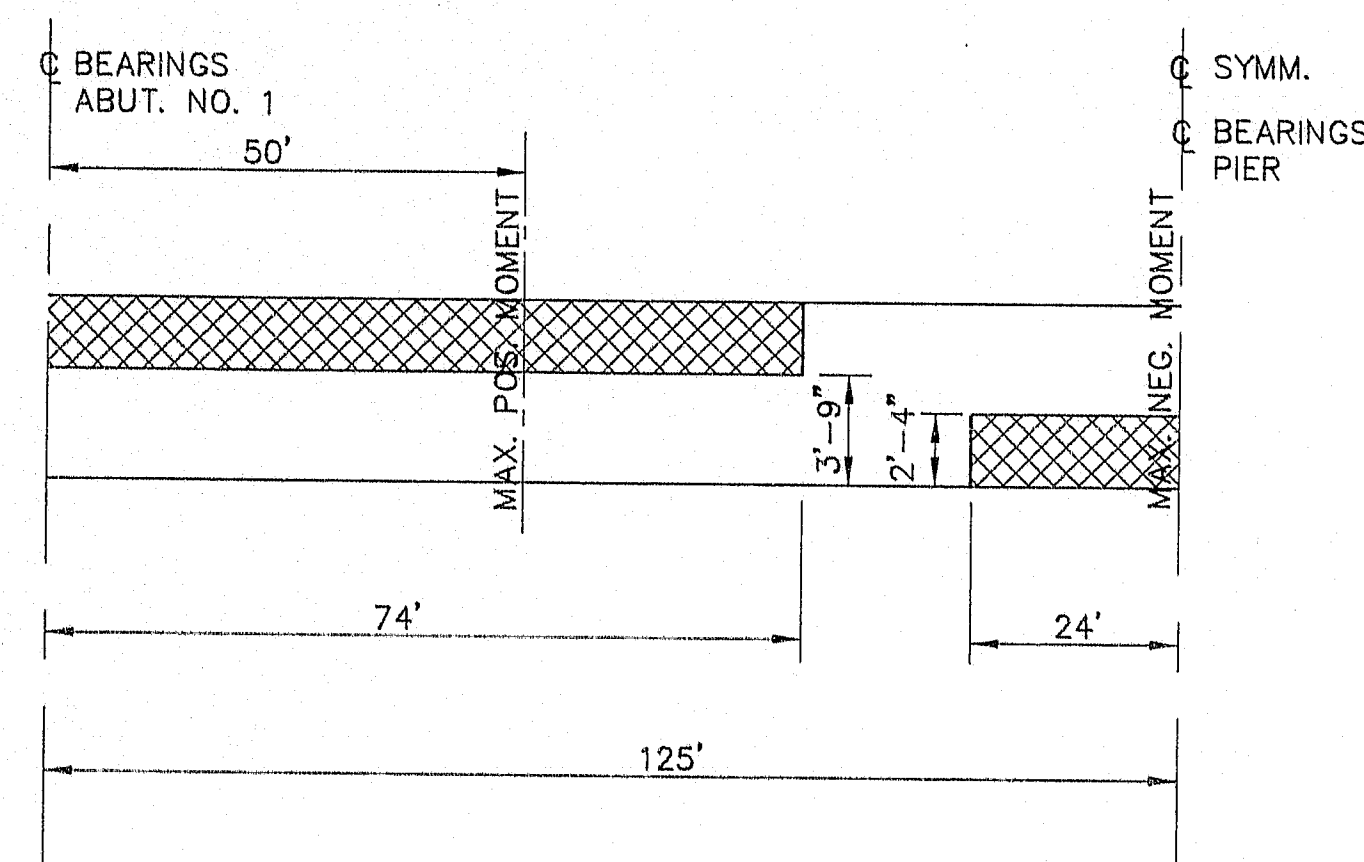
107-426

SHEET 6 OF 11 AUGUSTA, MAINE

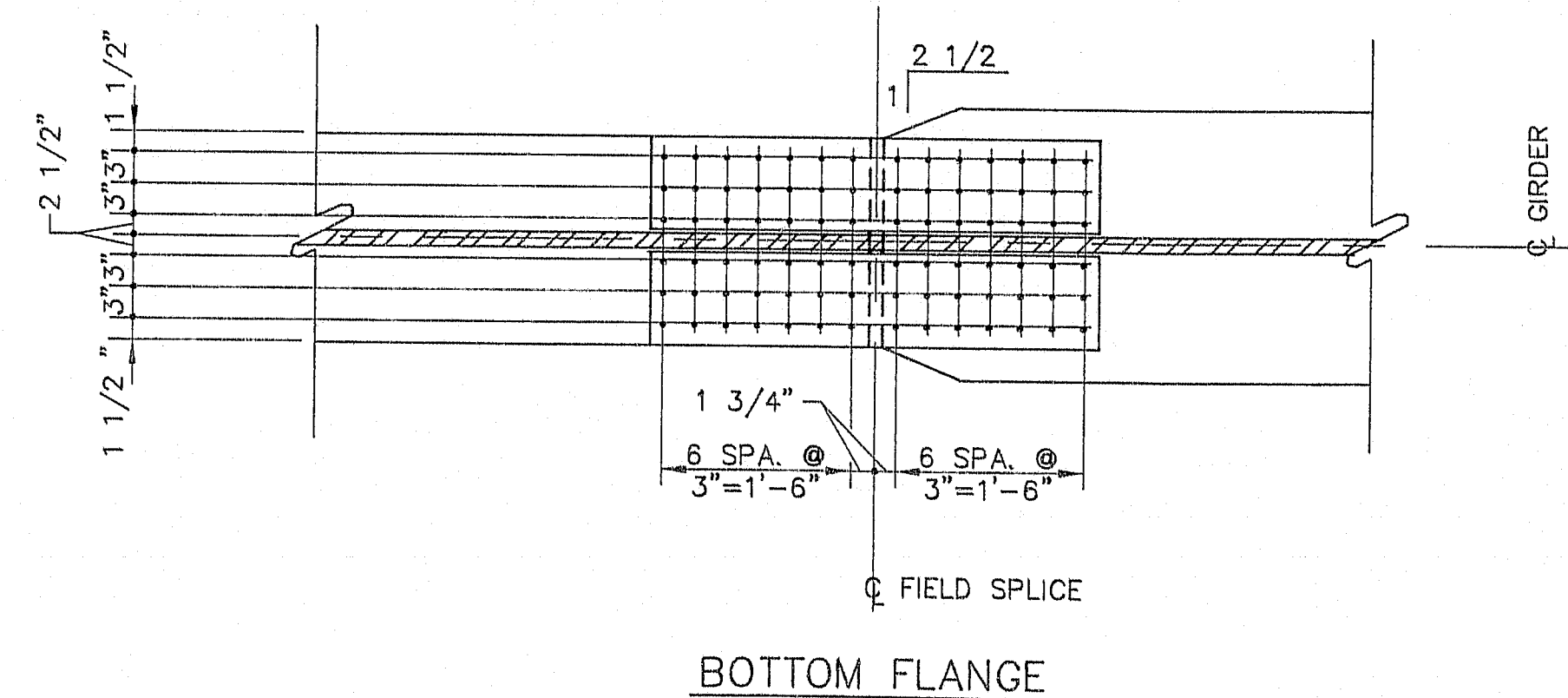
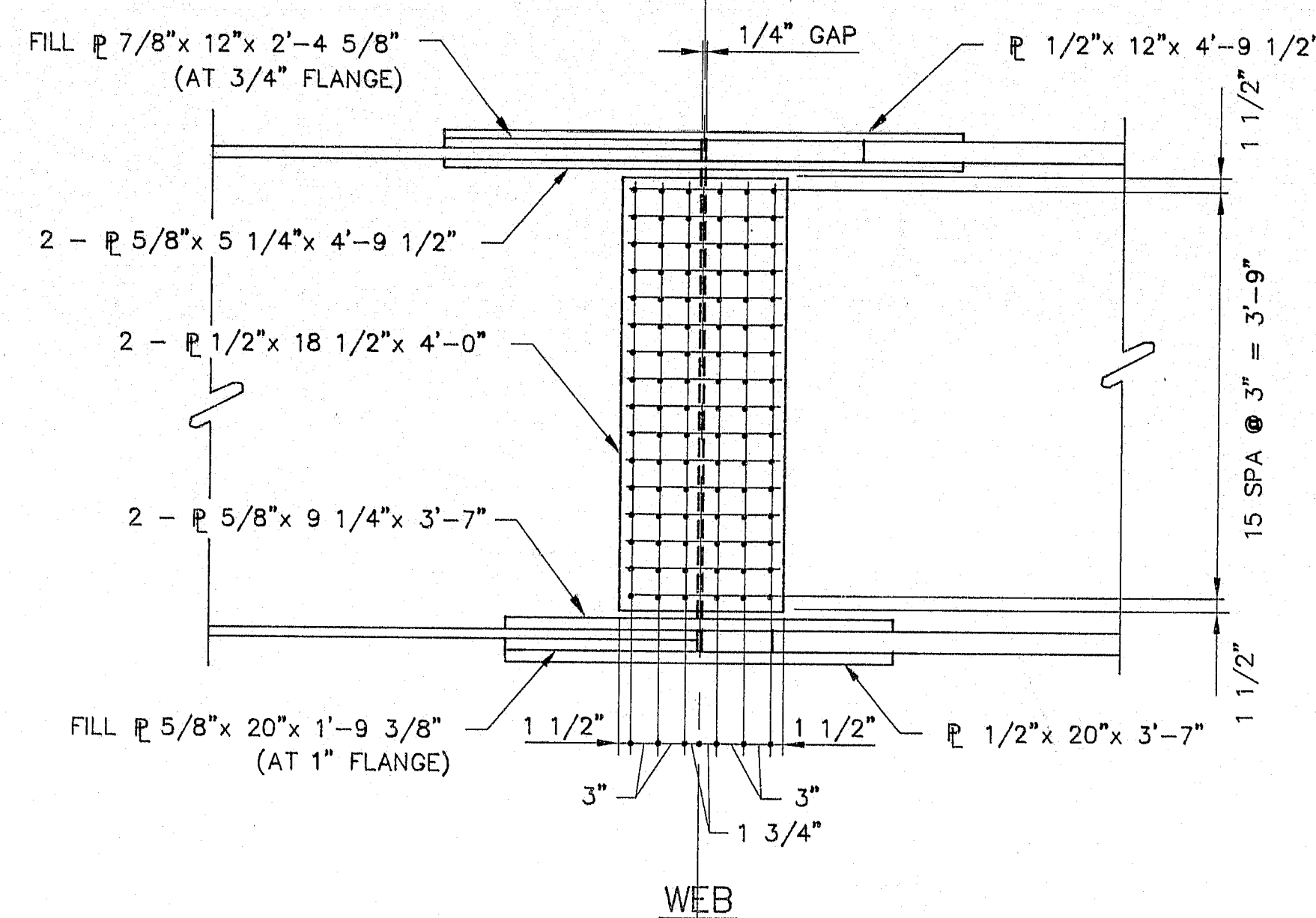
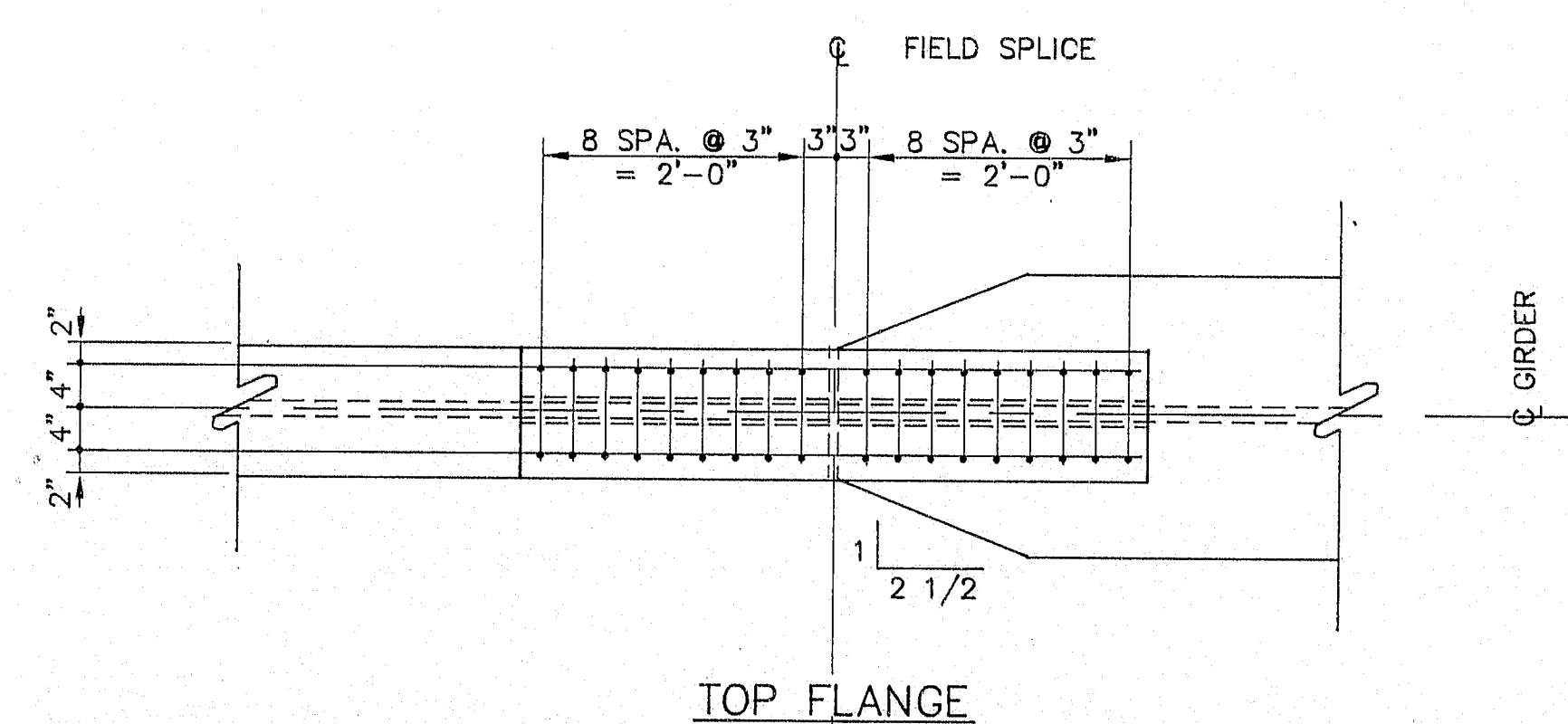
| F.R.W.A. REG. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-026-1(61) | 12 | 75 |



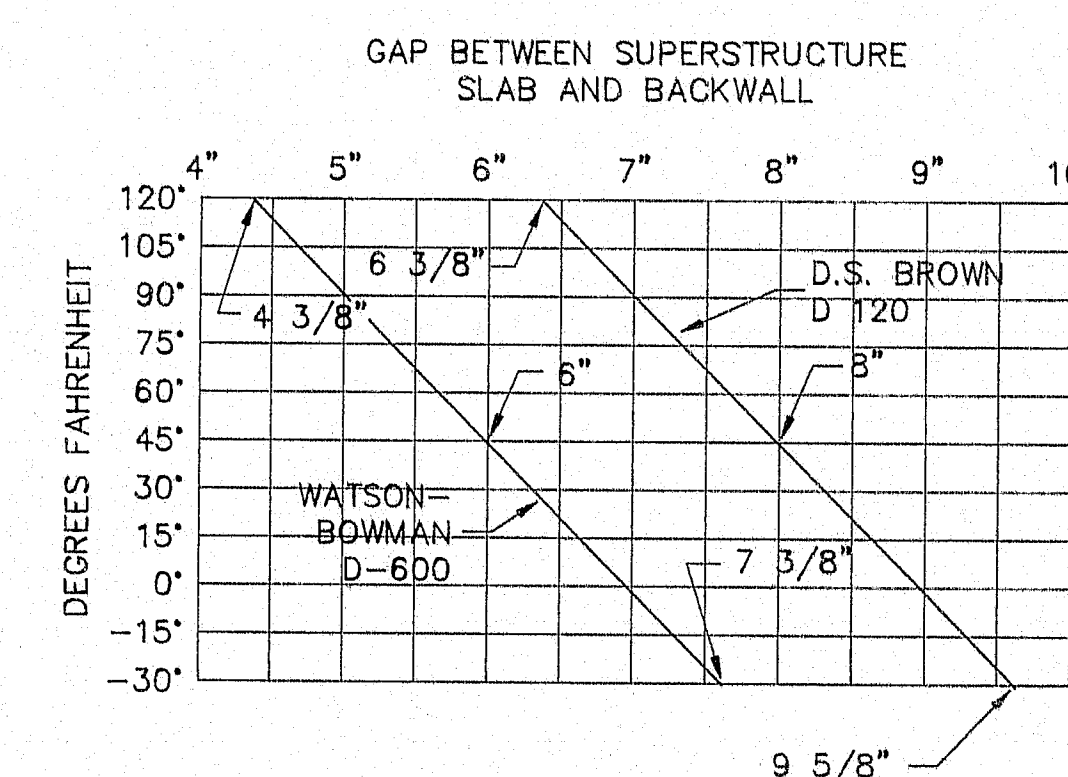
BLOCKING DETAIL
NOT TO SCALE



GIRDER STRESS DIAGRAM
NOT TO SCALE



FIELD SPLICE DETAIL
NOT TO SCALE



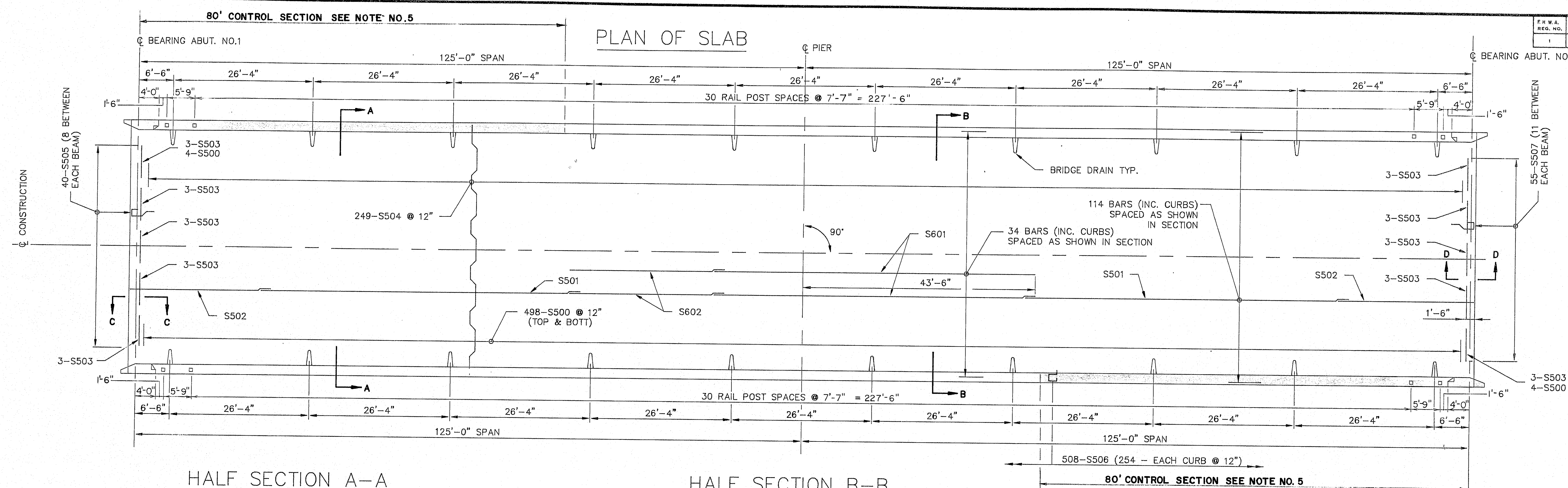
MODULAR JOINT ADJUSTMENT CHART

NOTES:

1. THE SEALS TO BE FURNISHED SHALL HAVE A MINIMUM MOVEMENT RATING OF:
ABUTMENT NO. 1 = 1/2"
2. THE SEAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION OF THE JOINT ARMOR.
3. THE JOINT OPENING WILL VARY DEPENDING ON THE DIMENSIONS OF THE SEAL SELECTED BY THE CONTRACTOR. THE JOINT OPENING SHALL BE SET ACCORDING TO THE OPENING SHOWN ON THE APPROVED SHOP DETAIL DRAWINGS.
4. IT IS ANTICIPATED THAT THE SLAB AND BACKWALL CONCRETE WILL BE IN PLACE BEFORE THE FINAL ADJUSTMENT TO THE JOINTS IS MADE AND NO ALLOWANCE FOR MOVEMENT DUE TO DEAD LOAD DEFLECTIONS IS NEEDED.
5. THE COMPRESSION SEAL ADJUSTMENT CHART SHOWS THE ADJUSTMENT NECESSARY TO ADJUST THE JOINT OPENING SHOWN ON THE SHOP DETAIL DRAWINGS FOR TEMPERATURES OTHER THAN 45°F. ADJUSTMENT IS TO BE MEASURED PARALLEL TO THE CENTERLINE OF CONSTRUCTION.

107-427
As built 1990 Rep

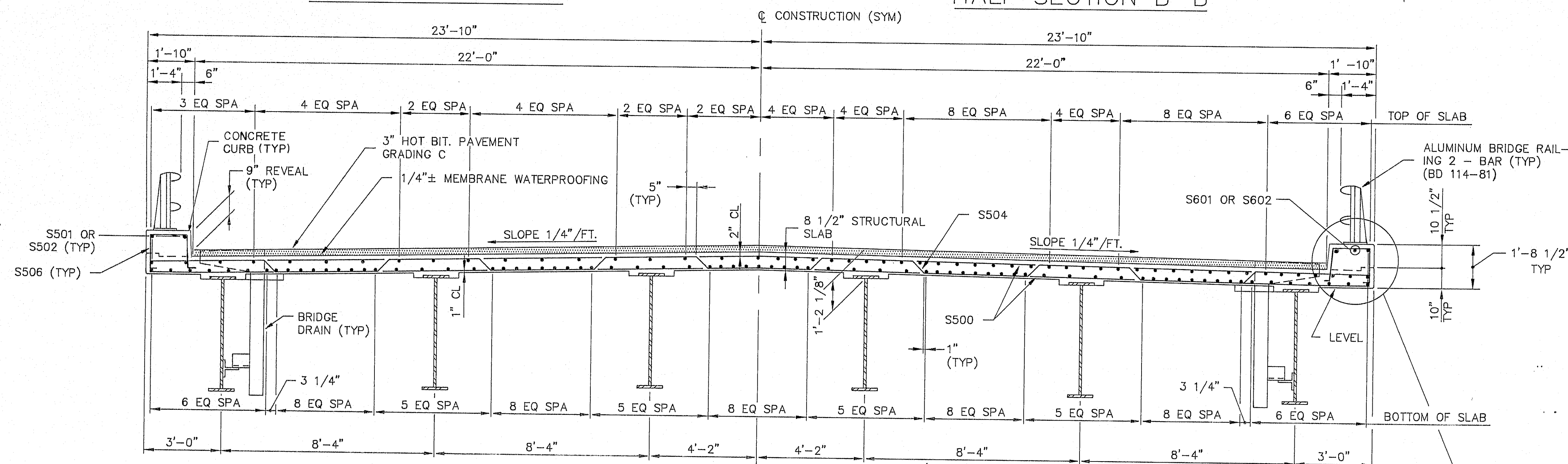
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON
DETAILS 1

[illegible]

PLAN OF SLAB

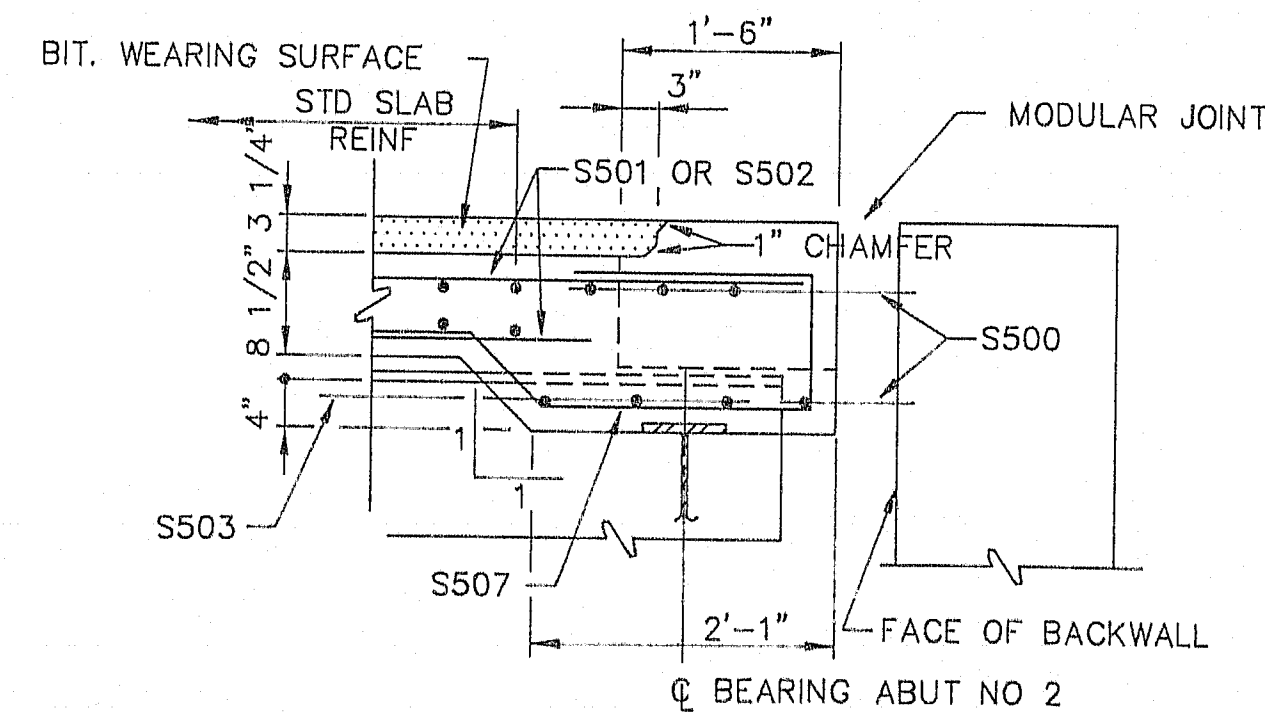
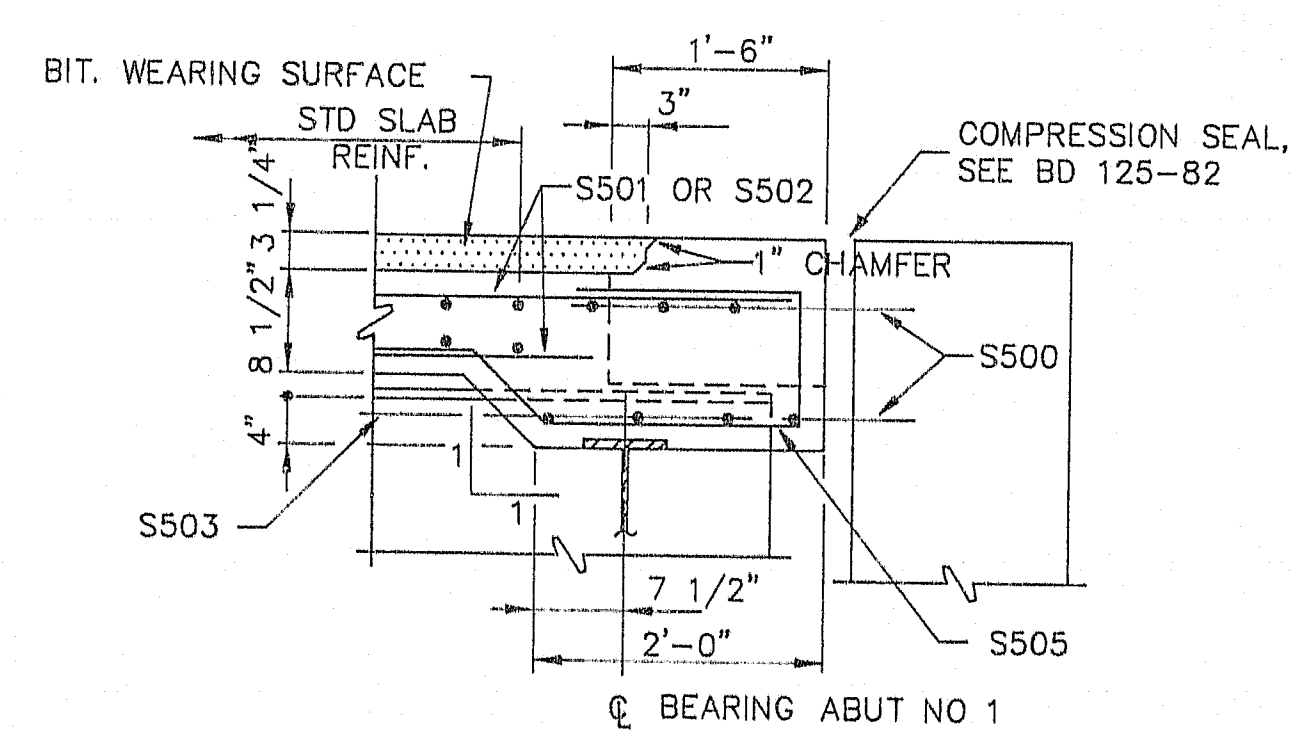
HALF SECTION A-A

HALF SECTION B-B



SECTION C-C

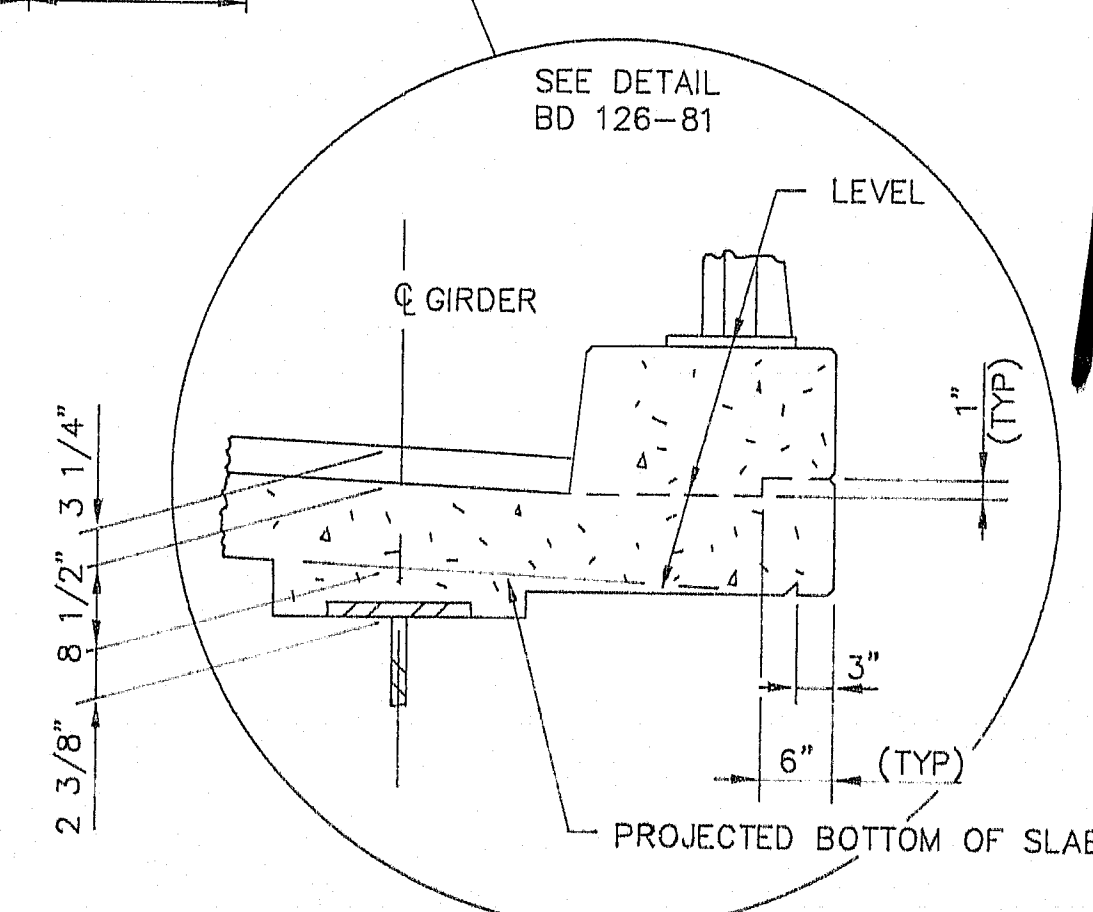
SECTION D-D



NOTES:

1. FORM 1" V-GROOVE ON THE FASCIAS AT THE HORIZONTAL JOINT BETWEEN THE CURB AND SLAB.
2. REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" UNLESS OTHERWISE INDICATED.
3. ADJUST REINFORCING STEEL TO FIT AROUND THE DRAINS IN A MANNER APPROVED BY THE ENGINEER. DO NOT CUT TRANSVERSE REINFORCING BARS.
4. UNLESS THE SUPERSTRUCTURE SLAB CONCRETE IS PLACED IN ONE CONTINUOUS OPERATION, THE INITIAL PLACEMENT SHALL START AT A SIMPLY SUPPORTED END OF THE DECK SLAB AND SHALL TERMINATE AT THE COMPLETION OF A POSITIVE MOMENT SECTION. SUCCESSIVE PLACEMENTS SHALL PROCEED FROM THE END OF THE PREVIOUS PLACEMENT, TERMINATE AT THE COMPLETION OF THE OTHER SPAN. THE PLACEMENT SEQUENCE OF THE SUPERSTRUCTURE SLAB CONCRETE SHALL BE APPROVED BY THE ENGINEER. CONCRETE IN A PLACEMENT SHALL BE KEPT PLACED ONE COMPLETE SPAN BEHIND THE SPAN BEING PLACED. A MINIMUM OF FIVE DAYS SHALL ELAPSE BETWEEN SUCCESSIVE PARTIAL PLACEMENTS.
5. SILICA FUME SHALL BE ADDED TO THE CURB AND END POST CONCRETE AS SPECIFIED UNDER SECTION 502, EXCEPT IN THE TWO 80' CONTROL SECTIONS AS DETAILED ON THE PLAN OF SLAB VIEW.
6. PROTECTIVE COATING FOR CONCRETE SURFACES SHALL BE APPLIED TO THE FOLLOWING AREAS:
 - TOP OF CONCRETE CURBS.
 - FASCIA DOWN TO THE DRIP NOTCH.
 - ALL EXPOSED SURFACES OF CONCRETE END POSTS.
7. MODULAR JOINT AT ABUTMENT #2 SHALL BE A MAURER TYPE AS MANUFACTURED BY D.S. BROWN COMPANY, MODEL D-120 OR BY WATSON-BOWMAN MODEL D-600, OR APPROVED EQUAL.
8. ALL REINFORCING STEEL TO BE EPOXY COATED.

SEE DETAIL
BD 126-81



107-428

As built 1990 *RCS*

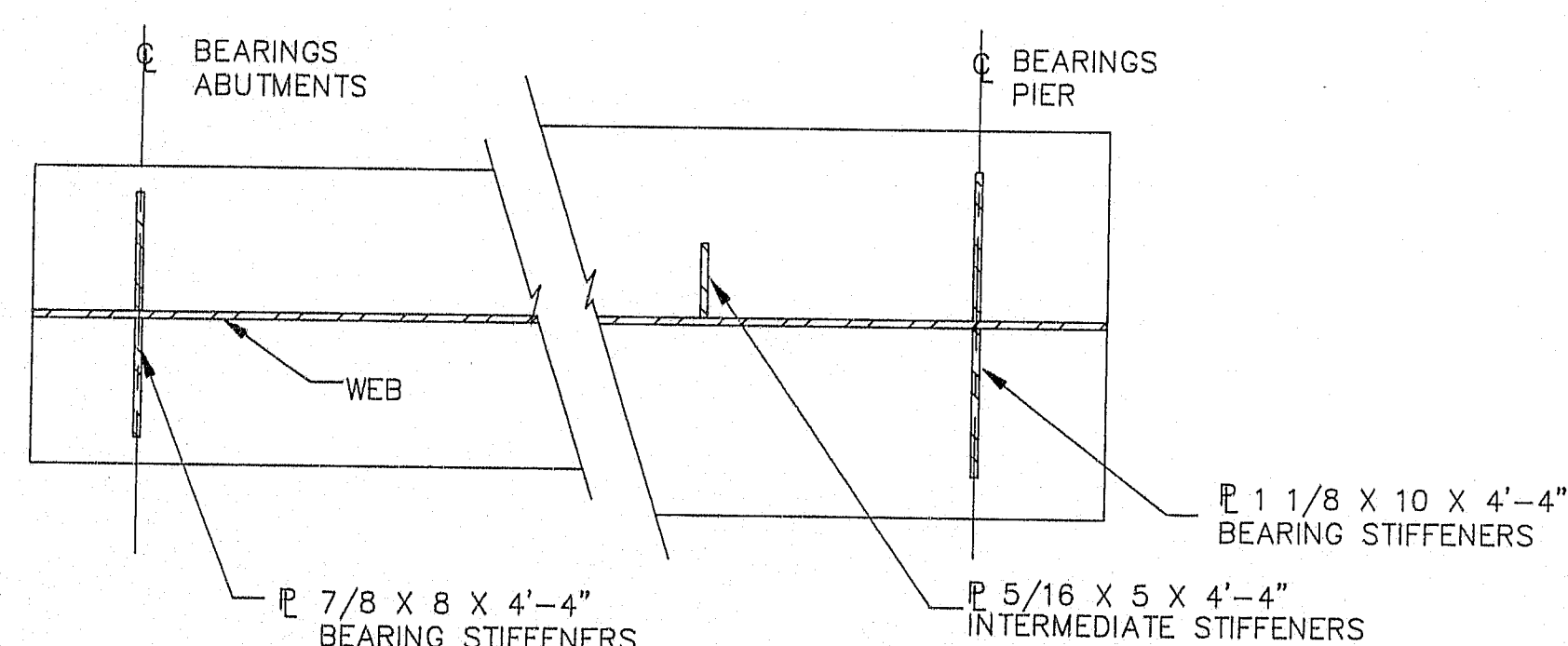
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

SUPERSTRUCTURE

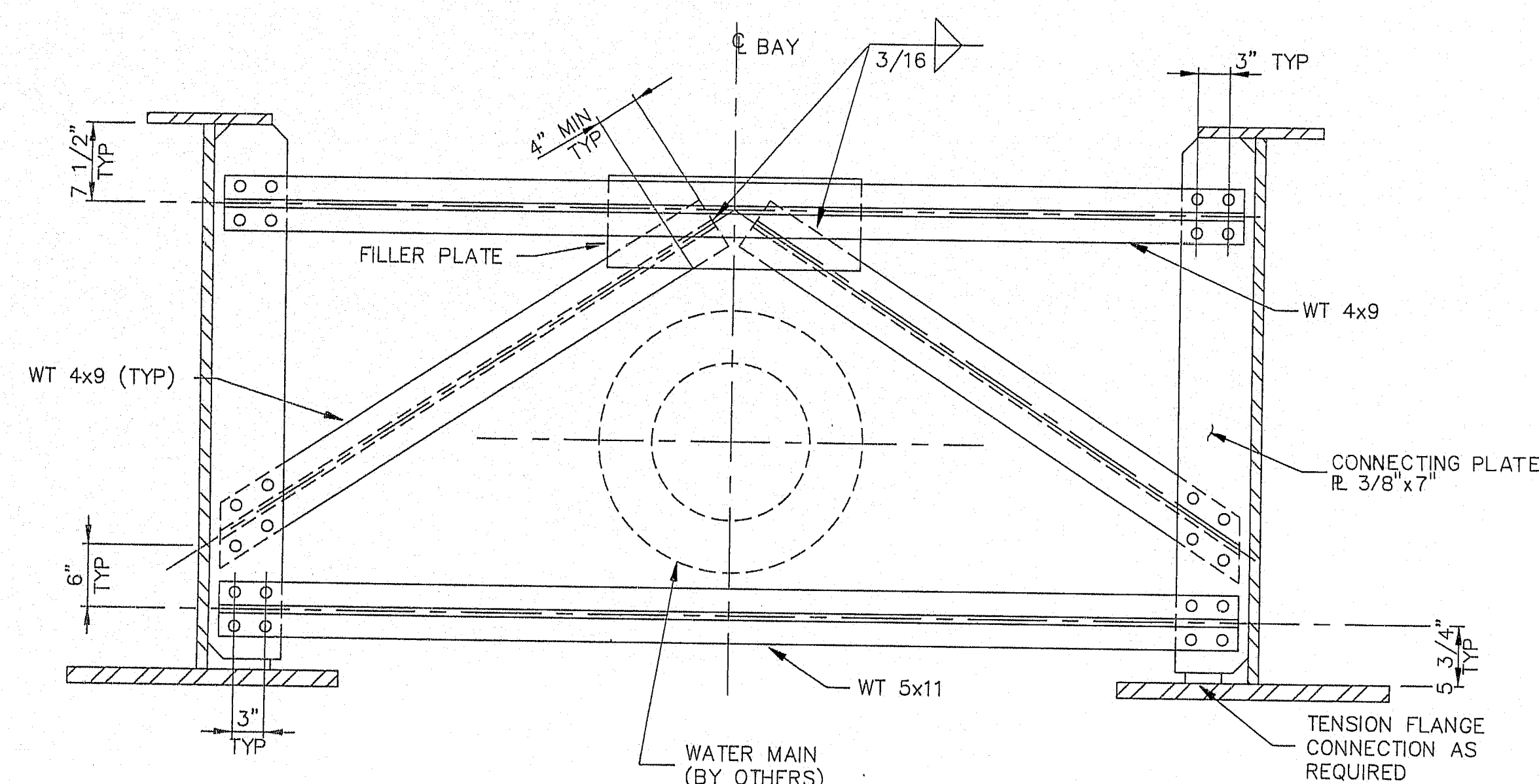
SHEET 8 OF 11 AUGUSTA, MAINE

| F.R.W.A. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------|-------|----------------|-----------|--------------|
| 1 | MAINE | BR-026-1(61) | 14 | 75 |



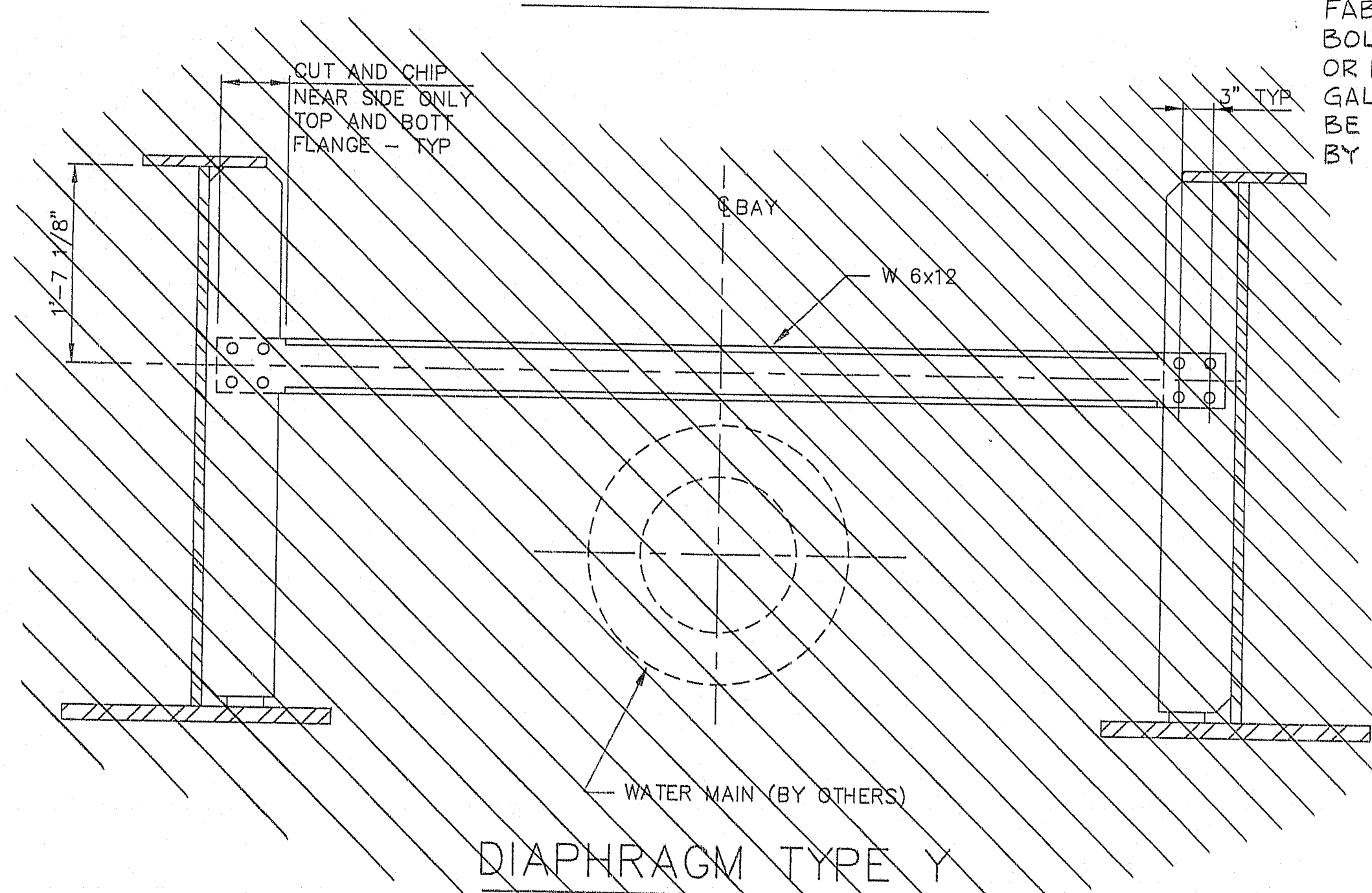
SEE NOTES - BD113-B5

WEB PLATE DETAIL
1" = 1'-0"



DIAPHRAGM TYPE S

NOTE: EXACT ELEVATION OF WATER MAIN AND SUPPORT DETAILS WILL BE SUPPLIED PRIOR TO FABRICATION. ALL NECESSARY BOLT HOLES SHALL BE DRILLED OR PUNCHED PRIOR TO GALVANIZING. SUPPORTS TO BE SUPPLIED AND INSTALLED BY OTHERS.

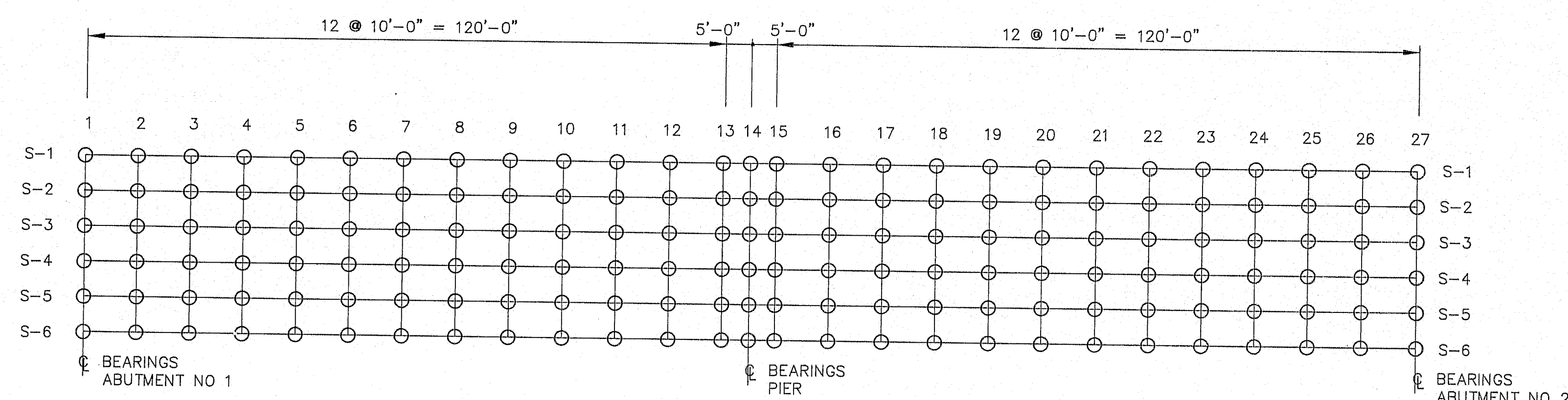


DIAPHRAGM TYPE Y

9/13/39

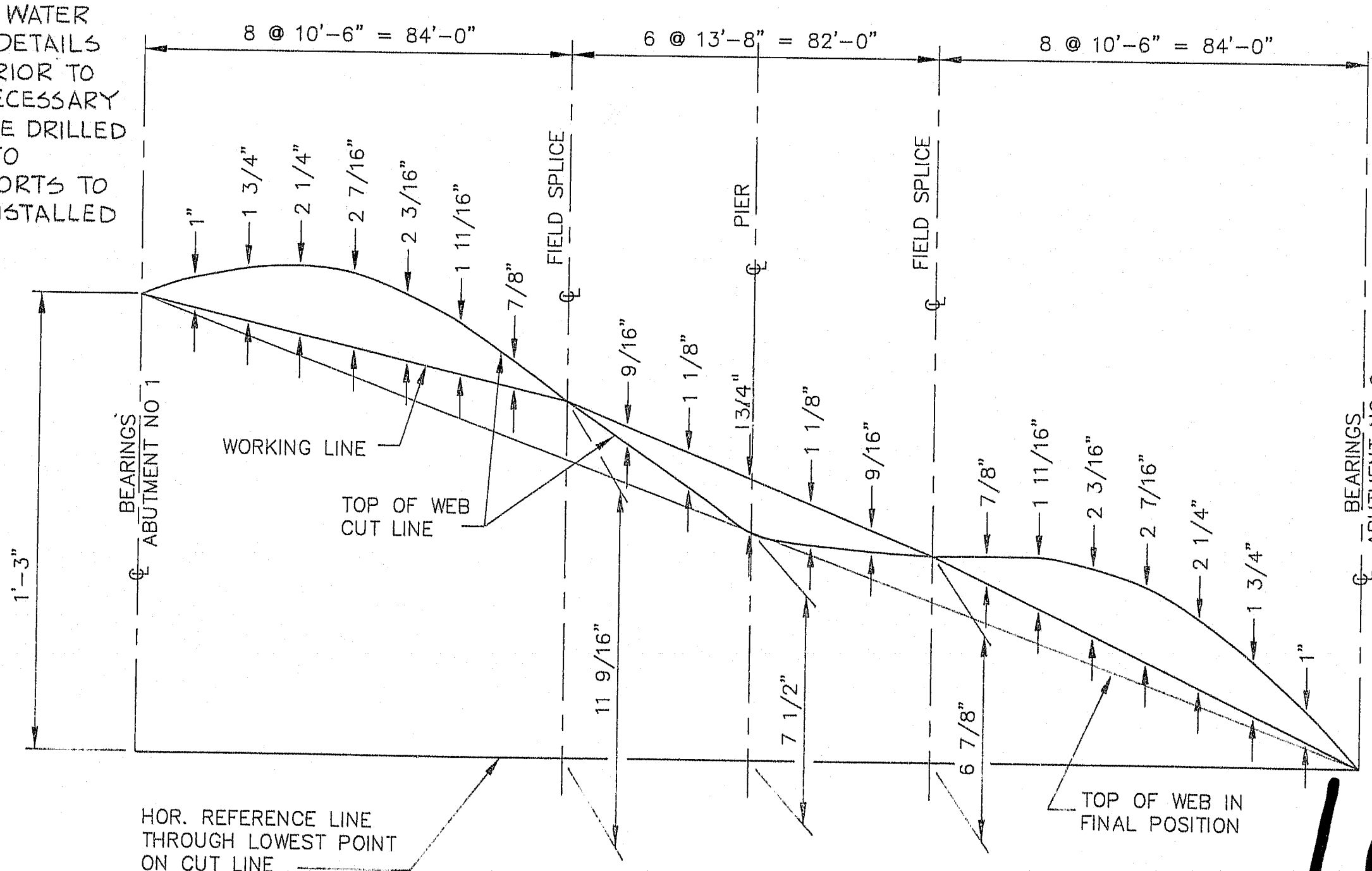
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| S-1 | 19.35 | 19.37 | 19.38 | 19.38 | 19.36 | 19.31 | 19.25 | 19.18 | 19.09 | 18.99 | 18.90 | 18.82 | 18.75 | 18.72 | 18.70 | 18.67 | 18.65 | 18.64 | 18.64 | 18.63 | 18.60 | 18.56 | 18.51 | 18.43 | 18.33 | 18.22 | 18.10 | S-1 |
| S-2 | 19.52 | 19.54 | 19.55 | 19.55 | 19.53 | 19.49 | 19.43 | 19.35 | 19.26 | 19.17 | 19.08 | 18.99 | 18.92 | 18.90 | 18.87 | 18.84 | 18.83 | 18.82 | 18.81 | 18.80 | 18.78 | 18.74 | 18.69 | 18.60 | 18.50 | 18.39 | 18.27 | S-2 |
| S-3 | 19.69 | 19.71 | 19.73 | 19.72 | 19.70 | 19.66 | 19.60 | 19.52 | 19.43 | 19.34 | 19.25 | 19.17 | 19.10 | 19.07 | 19.05 | 19.02 | 19.00 | 18.99 | 18.98 | 18.97 | 18.95 | 18.91 | 18.85 | 18.77 | 18.68 | 18.56 | 18.44 | S-3 |
| S-4 | 19.69 | 19.71 | 19.73 | 19.72 | 19.70 | 19.66 | 19.60 | 19.52 | 19.43 | 19.34 | 19.25 | 19.17 | 19.10 | 19.07 | 19.05 | 19.02 | 19.00 | 18.99 | 18.98 | 18.97 | 18.95 | 18.91 | 18.85 | 18.77 | 18.68 | 18.56 | 18.44 | S-4 |
| S-5 | 19.52 | 19.54 | 19.55 | 19.55 | 19.53 | 19.49 | 19.43 | 19.35 | 19.26 | 19.17 | 19.08 | 18.99 | 18.92 | 18.90 | 18.87 | 18.84 | 18.83 | 18.82 | 18.81 | 18.80 | 18.78 | 18.74 | 18.69 | 18.60 | 18.50 | 18.39 | 18.27 | S-5 |
| S-6 | 19.35 | 19.37 | 19.38 | 19.38 | 19.36 | 19.31 | 19.25 | 19.18 | 19.09 | 18.99 | 18.90 | 18.82 | 18.75 | 18.72 | 18.70 | 18.67 | 18.65 | 18.64 | 18.64 | 18.63 | 18.60 | 18.56 | 18.51 | 18.43 | 18.33 | 18.22 | 18.10 | S-6 |

BOTTOM OF SLAB ELEVATIONS
FOR ERECTION OF SLAB FORMS



BLOCKING LAYOUT

NOTE: ATTACHMENT OF CONNECTION PLATES, SEE SHT NO.6.



CAMBER DIAGRAM

NOTE: WORK THIS SHEET WITH SHEET NO.6.

BEARINGS ABUT NO 2

| TEMP | "X" |
|------|---------|
| 120° | -1 5/8 |
| 105° | -1 5/16 |
| 90° | -1 |
| 75° | -5/8 |
| 60° | -5/16 |
| 45° | 0 |
| 30° | +5/16 |
| 15° | +5/8 |
| 0° | +1 |
| -15° | +1 5/16 |
| -30° | +1 5/8 |

BEARING ADJUSTMENT CHART

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON

DETAILS 2

SHEET 9 OF 11 AUGUSTA, MAINE

107-429

| | |
|-----------------|------|
| DATE | 8/87 |
| BY | TFB |
| DESIGN - DETAIL | MG |
| CHECKED | RAL |
| REVISIONS | RAL |
| FIELD CHANGES | RAL |
| PLANS | |

| REINFORCING STEEL SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-----|--------|------------|------|-----|--------|----------|------|-----|--------|----------|-------|----------------|----------------------|------|-------|-------|-----------------------|-----------------------|-------|-------|---|----------------------|--------|---|------------|----------|
| STRAIGHT BARS | | | | | | | | | | | | | BENT BARS | | | | | | | | | | | | | | |
| MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | TYPE | A | B | C | D | E | F | G | H | O | R | LOCATION | |
| SUPERSTRUCTURE | | | | | | | | | | | | | SUPERSTRUCTURE | | | | | | | | | | | | | | |
| SS00 | 506 | 47'-4" | HORIZONTAL | | | | | | | | | SS04 | 249 | 49'-2" | B | — | 4'-7" | 0'-7 $\frac{3}{4}$ " | 3'-11" | 3'-6" | 4'-7" | — | 0'-5 $\frac{1}{2}$ " | 47'-4" | — | HORIZONTAL | |
| SS01 | 218 | 60'-0" | HORIZONTAL | | | | | | | | | SS05 | 40 | 6'-3 $\frac{3}{4}$ " | SU | 1'-8" | 0'-7" | 1'-11 $\frac{3}{4}$ " | 0'-10 $\frac{1}{2}$ " | 1'-3" | — | — | 0'-5" | — | — | HORIZONTAL | |
| SS02 | 218 | 26'-3" | HORIZONTAL | | | | | | | | | SS06 | 508 | 4'-6" | SR | 0'-3" | 1'-5" | 1'-6" | 1'-2" | — | — | — | 0'-3" | — | — | — | VERTICAL |
| SS03 | 30 | 7'-0" | HORIZONTAL | | | | | | | | | SS07 | 55 | 6'-2 $\frac{3}{4}$ " | SU | 1'-8" | 0'-7" | 1'-10 $\frac{1}{2}$ " | 0'-10 $\frac{1}{2}$ " | 1'-3" | — | — | 0'-5" | — | — | VERTICAL | |
| SS01 | 150 | 60'-0" | HORIZONTAL | | | | | | | | | | | | | | | | | | | | | | | | |
| SS02 | 150 | 23'-3" | HORIZONTAL | | | | | | | | | | | | | | | | | | | | | | | | |
| END POST | | | | | | | | | | | | | END POST | | | | | | | | | | | | | | |
| EP400 | 24 | 2'-0" | END POST | | | | | | | | | EP401 | 16 | 4'-11" | S | 0 | 2'-0" | 0'-11" | 2'-0" | — | — | 0 | — | — | — | — | END POST |
| EP405 | 16 | 1'-10" | END POST | | | | | | | | | EP402 | 8 | 4'-6" | S | 0 | 2'-0" | 0'-6" | 2'-0" | — | — | 0 | — | — | — | — | END POST |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|-----------------|----------------|--------------------------------|-----------------|--------------------|
| FWA REV. NO. | STATE MAINE | PROJECT NUMBER BR-026-1(81) | SHEET NO. 15 | TOTAL SHEETS 75 |
|-----------------|----------------|--------------------------------|-----------------|--------------------|

TYPE-BENDING DIAGRAMS

All dimensions are out to out of reinf. bar.
Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 318. Δ
Reinforcing Bar: A57M A615 Grade 60

GENERAL NOTES

- First digit(s) following the letter of the Mark indicates size of reinf. bar.
Mark (A502) bar size - #5
Mark (P1001) bar size - #10
Mark (S603) bar size - #6
- Each truss bar, Type B, may be replaced by two (2) straight bars (one top & one bottom) of the same bar size as the truss bar. Payment in either case shall be based on truss bars as scheduled on plans.

| | |
|-------------------------------|---------|
| Δ New Bent Bar Type SJ | 9-12-83 |
| Δ Revised ACI Standard | 5-12-83 |
| REVISIONS | DATE |

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON
REINFORCING STEEL
SCHEDULE

SHEET 10 OF 11 AUGUSTA, MAINE

107-430

| REINFORCING STEEL SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-----|---------------|------------|------|-----|-------------------|------------------------------|-------|-----|---------------|------------|------|-----|---------|------|-------|--------|-------|---------------|-------|-------|----|----|-------|-------|------------|------------|
| STRAIGHT BARS | | | | | | | | | | | BENT BARS | | | | | | | | | | | | | | | | |
| MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | LOCATION | MARK | NO. | LENGTH | TYPE | A | B | C | D | E | F | G | H | O | R | LOCATION | |
| | | ABUTMENT NO.1 | | | | PIER | | | | ABUTMENT NO.2 | | | | | | | | | ABUTMENT NO.1 | | | | | | | | |
| A501 | 8 | 30'-9" | HORIZONTAL | P502 | 8 | 41'-8" | HORIZONTAL | A501 | 60 | 6'-10" | VERTICAL | A503 | 36 | 7'-10" | L | 7'-0" | 10" | | | | | | | | | | VERTICAL |
| A501A | 8 | 32'-5" | HORIZONTAL | P505 | 4 | 16'-4" | HORIZONTAL | A502 | 2 | 27'-2" | HORIZONTAL | A504 | 32 | 11'-6" | S | 0 | 3'-8" | 4'-2" | 3'-8" | | | | 0 | | | | VERTICAL |
| A502 | 60 | 6'-4" | VERTICAL | | | | | A503 | 2 | 29'-9" | | | | | | | | | | | | | | | | | |
| A505 | 2 | 26'-8" | HORIZONTAL | | | | | A504 | 8 | 31'-3" | | A520 | 4 | 4'-10" | L | 2'-5" | 2'-5" | | | | | | | | | | VERTICAL |
| A505A | 2 | 28'-4" | | P901 | 10 | 44'-8" TO 46'-4" | HORIZONTAL (VARY 2 EA BY 4") | A505 | 2 | 29'-3" | | | | | | | | | | | | | | | | | |
| A506 | 2 | 28'-11" | | P902 | 8 | 43'-11" TO 45'-7" | HORIZONTAL (VARY 2 EA BY 4") | A506 | 2 | 32'-2" | | A602 | 56 | 8'-2" | SL | 0 | 1'-0" | 6'-2" | 1'-0" | | | | 0 | | | | HORIZONTAL |
| A506A | 2 | 30'-7" | | | | | | A507 | 8 | 33'-11" | | | | | | | | | | | | | | | | | |
| A507 | 5 | 23'-1" | | | | | | A508 | 5 | 23'-1" | | | | | | | | | PIER | | | | | | | | |
| A507A | 5 | 24'-9" | HORIZONTAL | | | | | A508A | 5 | 24'-9" | HORIZONTAL | | | | | | | | | | | | | | | | |
| A508 | 8 | 9'-4" | VERTICAL | | | | | A509 | 8 | 9'-7" | VERTICAL | P501 | 50 | 16'-10" | PS | 6" | 2'-10" | 3'-4" | 2'-10" | 4'-8" | 1'-1" | 6" | 8" | 3'-8" | | VERTICAL | |
| A509 | 4 | 8'-5" | | | | | | A510 | 2 | 8'-9" | | P503 | 8 | 12'-2" | PR | 2'-5" | 7'-4" | 2'-5" | | | | | | 4'-8" | 2'-4" | HORIZONTAL | |
| A510 | 4 | 7'-4" | | | | | | A511 | 2 | 7'-10" | | P504 | 18 | 13'-8" | HB | 6" | 1'-8" | 4'-8" | 1'-8" | 4'-8" | | 6" | | | | VERTICAL | |
| A511 | 4 | 6'-4" | | | | | | A512 | 2 | 6'-11" | | P506 | 17 | 6'-4" | S | 0 | 10" | 4'-8" | 10" | | | | 0 | | | | HORIZONTAL |
| A512 | 4 | 5'-4" | | | | | | A513 | 2 | 6'-11" | | | | | | | | | | | | | | | | | |
| A513 | 36 | 3'-3" | VERTICAL | | | | | A514 | 2 | 8'-11" | | P903 | 8 | 4'-7" | C | 7" | 3'-5" | | | | | | 7" | | | | HORIZONTAL |
| A514 | 4 | 8'-11" | HORIZONTAL | | | | | A515 | 2 | 8'-11" | | | | | | | | | | | | | | | | | |
| A514A | 4 | 9'-9" | HORIZONTAL | | | | | A516 | 2 | 7'-3" | | | | | | | | | ABUTMENT NO.2 | | | | | | | | |
| | | | | | | | | A517 | 2 | 6'-6" | | | | | | | | | | | | | | | | | |
| A600 | 56 | 6'-2" | HORIZONTAL | | | | | A518 | 2 | 5'-9" | VERTICAL | A519 | 30 | 11'-0" | S | 0 | 3'-5" | 4'-2" | 3'-5" | | | | 0 | | | | VERTICAL |
| A601 | 14 | 55'-2" | HORIZONTAL | | | | | A521 | 4 | 8'-11" | HORIZONTAL | A520 | 36 | 7'-7" | L | 6'-9" | 10" | | | | | | | | | | VERTICAL |
| | | | | | | | | A521A | 4 | 9'-9" | HORIZONTAL | | | | | | | | | | | | | | | | |
| | | | | | | | | A522 | 36 | 3'-3" | VERTICAL | A530 | 4 | 4'-10" | L | 2'-5" | 2'-5" | | | | | | | | | | VERTICAL |
| | | | | | | | | | | | | A603 | 56 | 8'-2" | SL | 0 | 1'-0" | 6'-2" | 1 | | | | | | | | |

Figure 1 displays 18 diagrams illustrating various types of bending for reinforcement bars, labeled B through PS. Each diagram shows a cross-section of the bar with specific dimensions and bending angles indicated.

- B**: A long bar with multiple bends. Dimensions include O , $D1$, $H1$, $D2$, $D3$, and $etc.$. Bending angles are 90° and 180° .
- HB**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- H**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- S**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- SL**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- SB**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- L**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- V**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- B**: A long bar with multiple bends. Dimensions include O , $D1$, $H1$, $D2$, $D3$, and $etc.$. Bending angles are 90° and 180° .
- M**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- PA**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- EP**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- PR**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- J**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- W**: A long bar with multiple bends. Dimensions include O , $D1$, $H1$, $D2$, $D3$, and $etc.$. Bending angles are 90° and 180° .
- C**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- SJ**: A U-shaped bar with dimensions O and H . Bending angle is 90° .
- PS**: A U-shaped bar with dimensions O and H . Bending angle is 90° .

GENERAL NOTES

1. First digit(s) following the letter of the Mark indicates size of reinf bar.
Mark (A 502) bar size - #5
Mark (P 101) bar size - #10
Mark (S 603) bar size - #6
2. Each truss bar, Type B, may be replaced by two (2) straight bars (one top & one bottom) of the same bar size as the truss bar. Payment in either case shall be based on truss bars as scheduled on plans.

| | | |
|--|-----------|------|
| | REVISIONS | DATE |
|--|-----------|------|

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

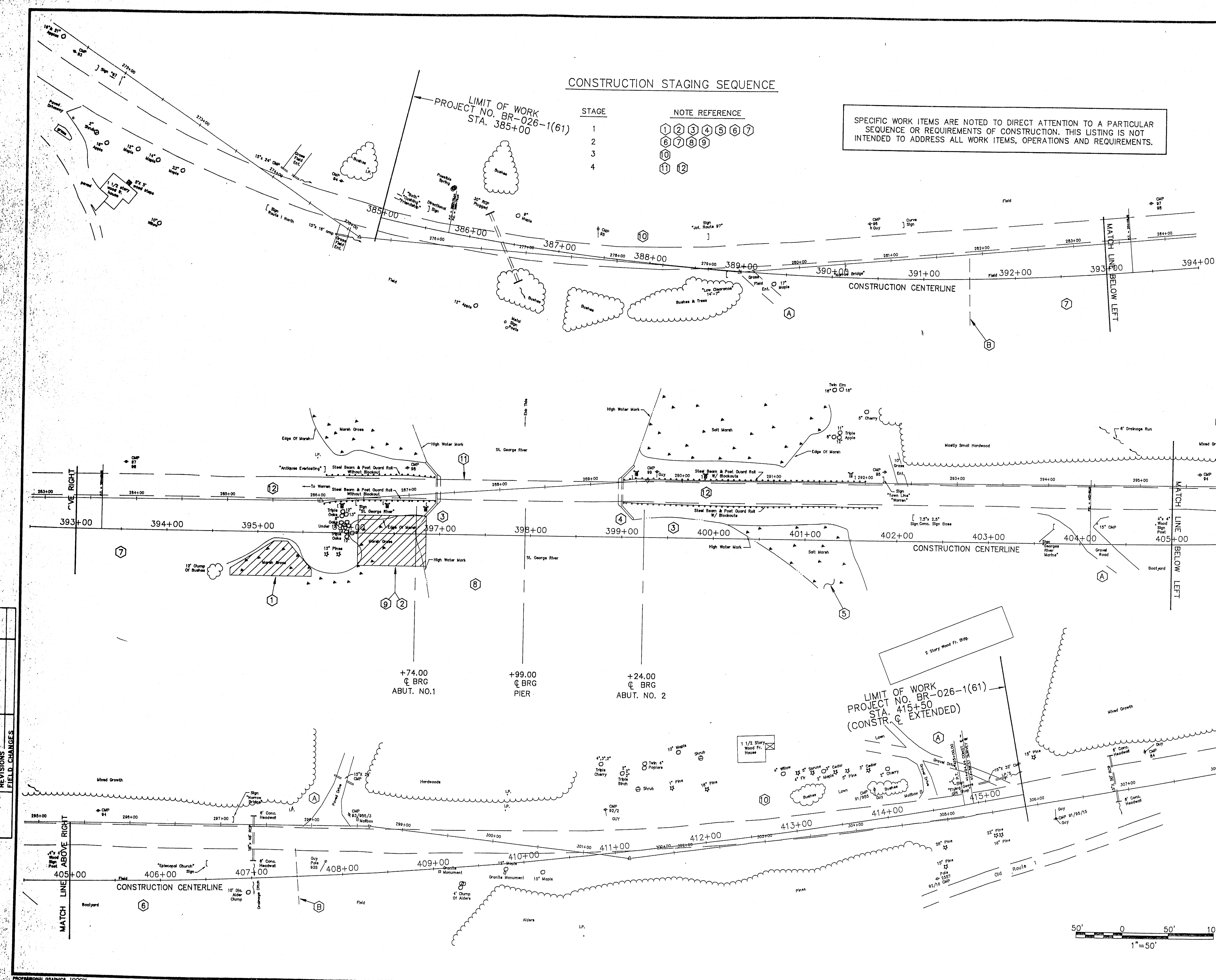
**SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON
REINFORCING STEEL
SCHEDULE**

SHEET 11 OF 11 AUGUSTA, MAINE

107-431

| DESIGN - DETAIL | BY | DATE |
|-----------------|-----|-------|
| CHECKED | MG | 8/87 |
| REVISIONS | RAL | 9/87 |
| FIELD CHANGES | RAL | 11/87 |

| F.R.W.A. SHEET NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|-----------------------|-------|----------------|-----------|--------------|
| 1 | MAINE | BR-026-1(61) | 41 | 73 |



CONSTRUCTION STAGING SEQUENCE

| STAGE | NOTE REFERENCE |
|-------|----------------|
| 1 | 1 2 3 4 5 6 7 |
| 2 | 8 7 8 9 |
| 3 | 10 |
| 4 | 11 12 |

SPECIFIC WORK ITEMS ARE NOTED TO DIRECT ATTENTION TO A PARTICULAR SEQUENCE OR REQUIREMENTS OF CONSTRUCTION. THIS LISTING IS NOT INTENDED TO ADDRESS ALL WORK ITEMS, OPERATIONS AND REQUIREMENTS.

CONSTRUCTION STAGING NOTES

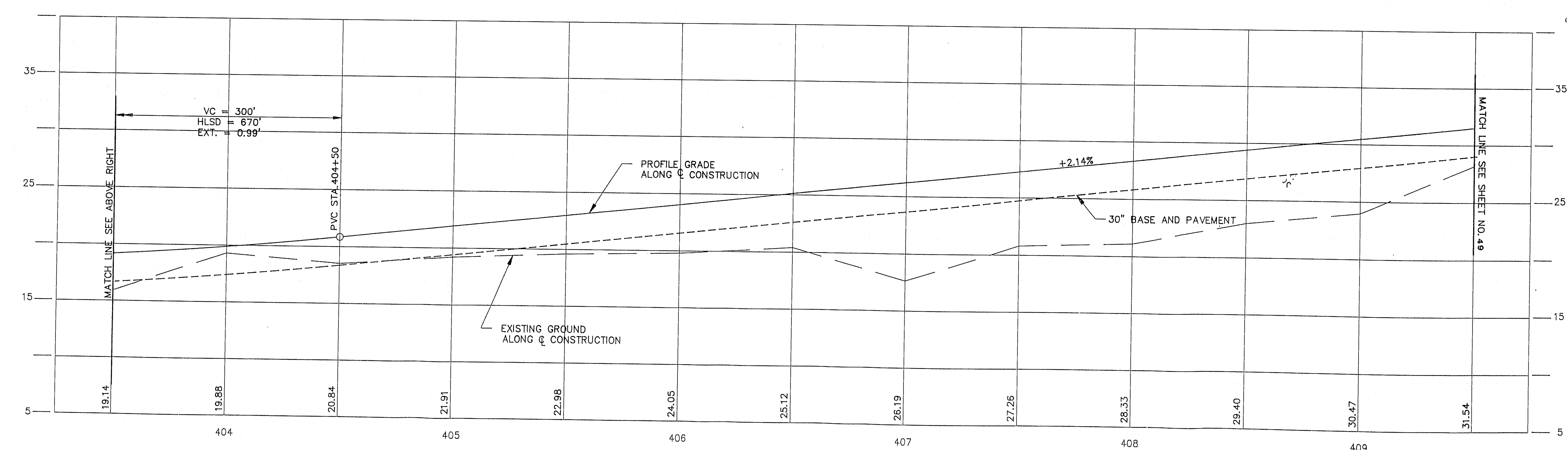
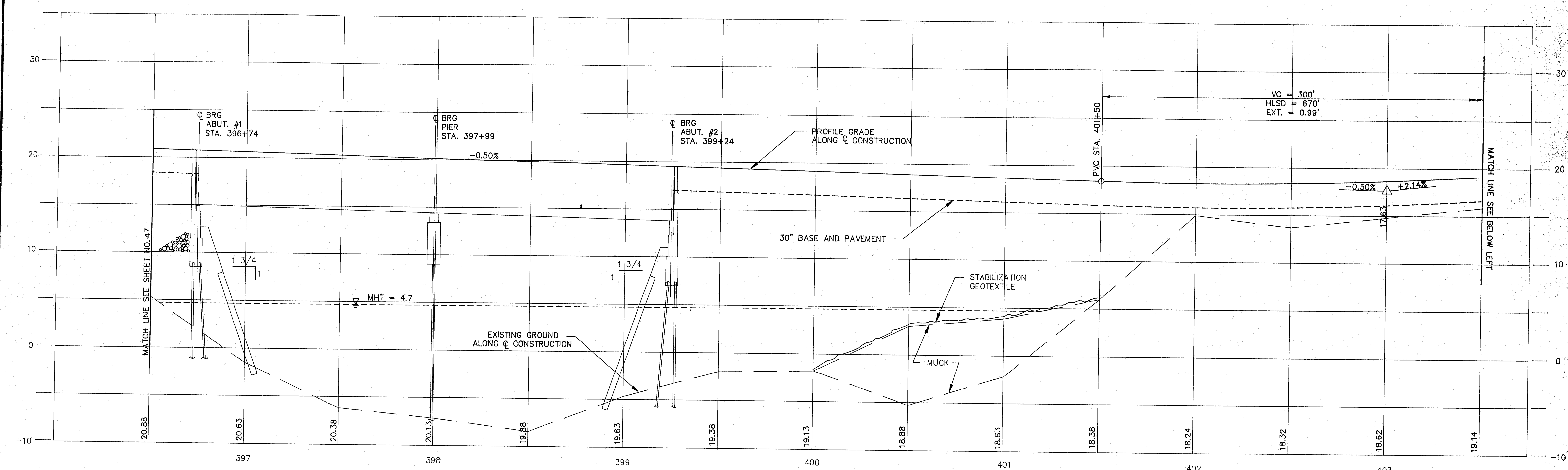
- (A) THE CONTRACTOR SHALL PROVIDE FOR CONTINUOUS DRIVEWAY CONNECTIONS TO ROUTE 1.
- (B) APPROXIMATE LIMIT WHERE NEW CONSTRUCTION ENCROACHES INTO THE EXISTING ROADWAY. ACTUAL LIMIT SHALL BE ESTABLISHED BY THE ENGINEER DURING CONSTRUCTION.
- (1) REMOVE MUCK AND CONSTRUCT EMBANKMENT. SEE EMBANKMENT STABILIZATION PLANS FOR SPECIAL DETAILS AND SEQUENCE OF CONSTRUCTION.
- (2) CONSTRUCT WICK DRAINS AND EMBANKMENTS. SEE EMBANKMENT STABILIZATION PLANS FOR SPECIAL DETAILS AND SEQUENCE OF CONSTRUCTION.
- (3) STA. 400+00 TO STA. 401+50, PLACE STABILIZATION GEOTEXTILE ON EXISTING GROUND TO THE LIMITS INDICATED ON CROSS SECTIONS. CONSTRUCT EMBANKMENT TO SUBBASE ELEVATION AS SOON AS PRACTICABLE AFTER PROJECT WORK COMMENCES FOR ALLOWANCE FOR SETTLEMENT. CONSTRUCT ABUTMENT NO. 2. RIP RAP SHALL BE PLACED AT THE FACE OF ABUTMENT TO FINISHED ELEVATIONS AND DETAILS.
- (4) REMOVE PORTIONS OF WINGWALL TO 1' BELOW BOTTOM OF PROPOSED RIP RAP EXCEPT WHERE WALL MUST REMAIN TO RETAIN EXISTING APPROACH UNDER TRAFFIC. EXISTING BRIDGE ABUTMENT MUST THEN BE REMOVED AT A LATER CONSTRUCTION STAGE, AS DESCRIBED UNDER (11).
- (5) CONSTRUCT EMBANKMENT AND APPROACH. PROVIDE TRAFFIC BARRIER FOR PROTECTION AND MAINTENANCE OF TRAFFIC ON EXISTING ROADWAY.
- (6) CONSTRUCT ROADWAY TO THE EXTENT POSSIBLE WITHOUT ENCROACHMENT OR COMPROMISE OF SAFETY TO ROUTE 1 TRAFFIC.
- (8) AFTER SETTLEMENT PERIOD AND WHEN AUTHORIZED COMPLETE BRIDGE CONSTRUCTION.
- (9) AFTER SETTLEMENT PERIOD AND WHEN AUTHORIZED REMOVE PORTIONS OF PREVIOUSLY PLACED EMBANKMENT AND CONSTRUCT LIGHTWEIGHT BORROW. SEE PROFILE FOR DETAIL.
- (10) PROVIDE TRAFFIC CONTROL FOR MAINTENANCE OF ROUTE 1 TRAFFIC. COMPLETE PROPOSED CONSTRUCTION TO MATCH WITH THE EXISTING ROADWAY AND SHIFT TRAFFIC TO NEW ALIGNMENT.
- (11) THE EXISTING BRIDGE SHALL BE REMOVED AS FOLLOWS:
A) THE SUPERSTRUCTURE IN ITS ENTIRETY.
B) THE ABUTMENTS TO 1' BELOW THE BOTTOM OF RIP RAP OR 2' BELOW GROUND IN AREAS WHERE THE RIP RAP DOES NOT COVER THE OLD ABUTMENTS. PAYMENT WILL BE MADE UNDER ITEM 202.19, REMOVE EXISTING BRIDGE.
- (12) REMOVE EXISTING ROADWAY SURFACE AND EMBANKMENT AS DETAILED IN THE PLANS.

107-432

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON
CONSTRUCTION
STAGING PLAN
SHEET OF AUGUSTA, MAINE

| PROJECT DESIGN ENGINEER | DATE |
|-------------------------|------|
| BY | |
| DESIGN-DETAILED | |
| CHECKED | |
| REVISIONS | |
| FIELD CHANGES | |

| F.R.W.A. REG. NO. | STATE | PROJECT NUMBER | SHEET NO. | TOTAL SHEETS |
|----------------------|-------|----------------|--------------|-----------------|
| 1 | MAINE | BR-028-11(11) | 50 | 75 |



| PROJECT DESIGN ENGINEER | BY | DATE |
|-------------------------|-----|------|
| DESIGN - DETAILED | BWA | 2/77 |
| CHECKED | BWA | 2/77 |
| FIELD CHANGES | BWA | 2/77 |

PLANS

107-433

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
SOUTH WARREN BRIDGE
OVER
THE ST GEORGE RIVER
BETWEEN THE TOWNS OF
WARREN AND THOMASTON
PROFILE
STA 396+50-STA 409+50
SHEET OF AUGUSTA, MAINE