

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Seventh Edition 2014 with Interim Revisions through 2016.

DESIGN LOADING

Live Load.....HL - 93 Modified for Strength I

TRAFFIC DATA

Current (2018) AADT1,410
Future (2038) AADT1,690
DHV - % of AADT12%
Design Hour Volume203
Heavy Trucks (% of AADT)18%
Heavy Trucks (% of DHV)12%
Directional Distribution (% of DHV)60%
18 kip Equivalent P 2.0175
18 kip Equivalent P 2.5167
Design Speed (mph)50

HYDROLOGIC DATA

Drainage Area25.0 sq mi
Design Discharge (Q50)3,540 cfs
Check Discharge (Q100)4,124 cfs
Headwater Elevation (Q50)927.7 ft
Headwater Elevation (Q100)928.2 ft
Discharge Velocity (Q50)6.7 fps
Discharge Velocity (Q100)7.2 fps
Headwater Elevation (Q1.1)923.9 ft
Discharge Velocity (Q1.1)2.2 fps
Headwater Elevation (Q25)927.2 ft

MATERIALS

Concrete:
Curbs & Transition BarriersClass "LP"
Fill "Fill"
All OtherClass "A"
Reinforcing Steel:
PlainASTM A 615/A 615M, Grade 60
Stainless SteelASTM A 955/A 955M, Grade 75

Structural Steel:
All Material (except as noted)ASTM A 709, Grade 50W (unpainted)
High Strength BoltsASTM F 3125, Grade A325, Type 3
H-PilesASTM A572/A572M, Grade 50
Rub PlatesASTM 276, Type 316

BASIC DESIGN STRESSES

Concrete:
Class "LP"f 'c = 5,000 psi
Class "A"f 'c = 4,000 psi
Class "F"f 'c = 3,000 psi
Reinforcing Steel:
ASTM A 615/A 615M, Grade 60f y = 60,000 psi
ASTM A 955/A 955M, Grade 75f y = 75,000 psi
Structural Steel:
ASTM A 709, Grade 50WF y = 50,000 psi
ASTM F 3125, Grade A325F u = 120,000 psi

MADRID
FRANKLIN COUNTY
WEYMOUTH BRIDGE
OVER
SANDY RIVER
ROUTE 4
FEDERAL AID PROJECT NO. STP-2261(500)
PROJECT LENGTH 0.10 mi.
BRIDGE NO. 2934

UTILITIES

Central Maine Power
FairPoint
TDS Telephone

MAINTENANCE OF TRAFFIC

Maintain alternating one-way traffic on temporary detour bridge with temporary traffic signals.

LIST OF DRAWINGS

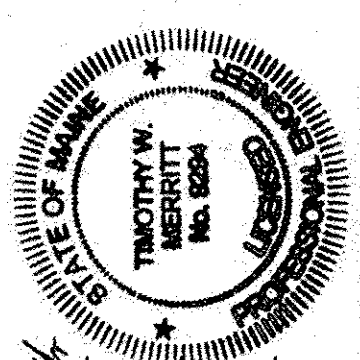
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| | |
|-------------------|---|
| PROJECT LOCATION: | In the Town of Madrid, 1.75 miles east of Madrid Twp-Township E Town Line, carrying Route 4 over the Sandy River. Lat./Long. 44°51'28" N, 70°29'08" W |
| PROGRAM AREA: | Bridge |
| OUTLINE OF WORK: | Bridge replacement with 442' of approach work and reinforced concrete T-beam superstructure & substructure demolition. |

STP-2261(500) WIN 22615.00

MADRID
WEYMOUTH BRIDGE

| | | |
|--|--------------------|--------|
| STATE OF MAINE DEPARTMENT OF TRANSPORTATION | APPROVED | DATE |
| COMMISSIONER: <i>[Signature]</i> | <i>[Signature]</i> | 3-1-19 |
| CHIEF ENGINEER: <i>[Signature]</i> | <i>[Signature]</i> | 3-1-19 |



| | |
|--------------------|-------------|
| <i>[Signature]</i> | SIGNATURE |
| 9294 | P.E. NUMBER |
| 2-8-19 | DATE |

| | |
|-------------------------|-----------------|
| PROJECT INFORMATION | BRIDGE PROGRAM |
| PROGRAM | PROJECT MANAGER |
| DESIGNER | T. MERRITT |
| CONSULTANT | STANTEC |
| PROJECT RESIDENT | |
| CONTRACTOR | |
| PROJECT COMPLETION DATE | |

TITLE SHEET

SHEET NUMBER

412
OF 532



Date:2/7/2019

Username: knight

Division: BRIDGE

Filename: \\00\BRIDGE\MSTA\412_Title.dgn

| ESTIMATED QUANTITIES | | | |
|----------------------|--|----------|------|
| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
| 201.23 | REMOVING SINGLE TREE TOP ONLY | 8 | EA |
| 201.24 | REMOVING STUMP | 8 | EA |
| | | | |
| 202.19 | REMOVING EXISTING BRIDGE (250 CY) | 1 | LS |
| | | | |
| 203.20 | COMMON EXCAVATION | 1200 | CY |
| 203.21 | ROCK EXCAVATION | 50 | CY |
| 203.25 | GRANULAR BORROW | 510 | CY |
| 203.33 | SPECIAL FILL | 140 | CY |
| | | | |
| 206.082 | STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES, PLAN QUANTITY | 830 | CY |
| 206.092 | STRUCTURAL ROCK EXCAVATION - MAJOR STRUCTURES | 10 | CY |
| | | | |
| 304.10 | AGGREGATE SUBBASE COURSE - GRAVEL | 1800 | CY |
| | | | |
| 403.2081 | HOT MIX ASPHALT - 12.5 MM (POLYMER MODIFIED) | 150 | T |
| 403.209 | HOT MIX ASPHALT, 9.5 MM (SIDEWALKS, DRIVES, ISLANDS, & INCIDENTALS) | 10 | T |
| 403.213 | HOT MIX ASPHALT - 12.5 MM (BASE AND INTERMEDIATE COURSE) | 350 | T |
| | | | |
| 409.15 | BITUMINOUS TACK COAT - APPLIED | 75 | G |
| | | | |
| 461.131 | TEMPORARY PAVEMENT | 261 | T |
| | | | |
| 501.502 | ROCK-SOCKETED H-PILES 117 LB/FT, IN PLACE | 147 | LF |
| 501.54 | STEEL H-BEAM PILES 117 LB/FT, DELIVERED | 147 | LF |
| 501.804 | DRILLING EQUIPMENT MOBILIZATION, ROCK-SOCKETED H-PILE | 1 | LS |
| 501.91 | PILE SPLICES | 7 | EA |
| | | | |
| 502.21 | STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS | 380 | CY |
| 502.26 | STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLAB ON STEEL BRIDGES (170 CY) | 1 | LS |
| 502.291 | SAW CUT GROOVING (3450 SF) | 1 | LS |
| 502.31 | STRUCTURAL CONCRETE APPROACH SLAB (23 CY) | 1 | LS |
| 502.49 | STRUCTURAL CONCRETE CURBS AND SIDEWALKS (10 CY) | 1 | LS |
| 502.565 | CONCRETE FILL | 10 | CY |
| | | | |
| 503.12 | REINFORCING STEEL, FABRICATED AND DELIVERED | 34000 | LB |
| 503.13 | REINFORCING STEEL, PLACING | 34000 | LB |
| 503.26 | STAINLESS STEEL REINFORCEMENT, FABRICATED AND DELIVERED | 36600 | LB |
| 503.27 | STAINLESS STEEL REINFORCEMENT, PLACING | 36600 | LB |
| | | | |
| 504.702 | STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED (148600 LB) | 1 | LS |
| 504.71 | STRUCTURAL STEEL ERECTION (148600 LB) | 1 | LS |
| | | | |
| 505.08 | SHEAR CONNECTORS (1650 EA) | 1 | LS |
| | | | |
| 507.0821 | STEEL BRIDGE RAILING, 3 BAR (210 LF) | 1 | LS |
| | | | |
| 510.10 | SPECIAL DETOUR 16'-0" ROADWAY WIDTH VEHICULAR AND PEDESTRIAN TRAFFIC NOT SEPARATED | 1 | LS |
| | | | |
| 511.07 | COFFERDAM: WEYMOUTH BRIDGE ABUTMENT NO. 1 | 1 | LS |
| 511.07 | COFFERDAM: WEYMOUTH BRIDGE ABUTMENT NO. 2 | 1 | LS |
| | | | |
| 512.081 | FRENCH DRAINS (73 LF) | 1 | LS |
| | | | |
| 514.06 | CURING BOX FOR CONCRETE CYLINDERS | 1 | EA |
| | | | |
| 515.21 | PROTECTIVE COATING FOR CONCRETE SURFACES (510 SY) | 1 | LS |
| | | | |
| 520.232 | EXPANSION DEVICE - ASPHALTIC PLUG JOINT | 41 | LF |
| | | | |
| 523.52 | BEARING INSTALLATION | 5 | EA |
| 523.5402 | LAMINATED ELASTOMERIC BEARINGS, EXPANSION | 5 | EA |
| | | | |
| 526.301 | TEMPORARY CONCRETE BARRIER TYPE I (470 LF) | 1 | LS |
| 526.34 | PERMANENT CONCRETE TRANSITION BARRIER | 4 | EA |
| | | | |
| 527.34 | WORK ZONE CRASH CUSHIONS | 4 | UN |
| | | | |
| 606.1301 | 31" W-BM GR, MID-WAY SPLICE-SGL FACED | 192 | LF |
| 606.1303 | 31" W-BM GR, MD-WY SPLC-15' RAD & LESS | 25 | LF |
| 606.1304 | 31" W-BM GR, MD-WY SPLC-OVER 15' RAD | 38 | LF |
| 606.1305 | 31" W-BM GR, MD-WY SPLC FLARED TERM | 1 | EA |
| 606.1307 | BRIDGE TRANSITION (ASYMMETRICAL) TYPE 1 | 4 | EA |
| 606.259 | ANCHORAGE ASSEMBLY | 1 | EA |
| 606.265 | TERMINAL END - SINGLE RAIL | 1 | EA |
| 606.353 | REFLECTORIZED FLEXIBLE GUARDRAIL MARKER | 8 | EA |
| 606.66 | TERMINAL END THRIE BEAM | 1 | EA |
| 606.71 | GUARDRAIL THRIE BEAM-15' RADIUS & LESS | 13 | LF |
| | | | |
| 610.08 | PLAIN RIPRAP | 281 | CY |
| 610.16 | HEAVY RIPRAP | 240 | CY |
| 610.18 | STONE DITCH PROTECTION | 20 | CY |

| ESTIMATED QUANTITIES | | | |
|----------------------|--|----------|------|
| ITEM NO. | DESCRIPTION | QUANTITY | UNIT |
| 613.319 | EROSION CONTROL BLANKET | 350 | SY |
| | | | |
| 615.07 | LOAM | 110 | CY |
| | | | |
| 618.13 | SEEDING METHOD NUMBER 1 | 3 | UN |
| 618.14 | SEEDING METHOD NUMBER 2 | 15 | UN |
| | | | |
| 619.12 | MULCH | 18 | UN |
| 619.14 | EROSION CONTROL MIX | 110 | CY |
| | | | |
| 620.58 | EROSION CONTROL GEOTEXTILE | 465 | SY |
| 620.66 | DRAINAGE GEOCOMPOSITE | 80 | SY |
| | | | |
| 627.733 | 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE | 2600 | LF |
| 627.77 | REMOVING PAVEMENT MARKINGS | 600 | SF |
| 627.78 | TEMPORARY 4" PAINTED PAVEMENT MARKING LINE WHITE OR YELLOW | 5100 | LF |
| | | | |
| 629.05 | HAND LABOR, STRAIGHT TIME | 35 | HR |
| | | | |
| 631.121 | HEAVY DUTY ALL-PURPOSE EXCAVATOR (INCLUDING OPERATOR) | 20 | HR |
| 631.13 | BULLDOZER (INCLUDING OPERATOR) | 20 | HR |
| 631.14 | GRADER (INCLUDING OPERATOR) | 20 | HR |
| 631.15 | ROLLER EARTH BASE COURSE (INCLUDING OPERATOR) | 20 | HR |
| 631.172 | TRUCK - LARGE (INCLUDING OPERATOR) | 20 | HR |
| 631.20 | STUMP CHIPPER (INCLUDING OPERATOR) | 20 | HR |
| | | | |
| 639.18 | FIELD OFFICE TYPE A | 0.33 | EA |
| | | | |
| 643.72 | TEMPORARY TRAFFIC SIGNAL | 1 | LS |
| | | | |
| 645.106 | DEMOUNT REGULATORY, WARNING, CONFIRMATION & ROUTE MARKER ASSEMBLY SIGN | 2 | EA |
| 645.113 | REINSTALL GUIDE SIGN | 1 | EA |
| | | | |
| 652.312 | TYPE III BARRICADE | 4 | EA |
| 652.33 | DRUM | 50 | EA |
| 652.34 | CONE | 100 | EA |
| 652.35 | CONSTRUCTION SIGNS | 300 | SF |
| 652.36 | MAINTENANCE OF TRAFFIC CONTROL DEVICES | 250 | CD |
| 652.38 | FLAGGER | 500 | HR |
| 652.381 | TRAFFIC OFFICER | 25 | HR |
| 652.41 | PORTABLE CHANGEABLE MESSAGE SIGN | 2 | EA |
| | | | |
| 656.75 | TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL | 1 | LS |
| | | | |
| 659.10 | MOBILIZATION | 1 | LS |
| | | | |
| 660.21 | ON-THE-JOB TRAINING | 200 | HR |



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2261(500)

WIN
22615.00
BRIDGE NO. 2934
BRIDGE PLANS

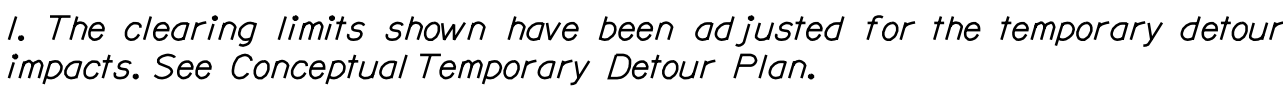
Weymouth Bridge
Sandy River
Franklin County
Madrid

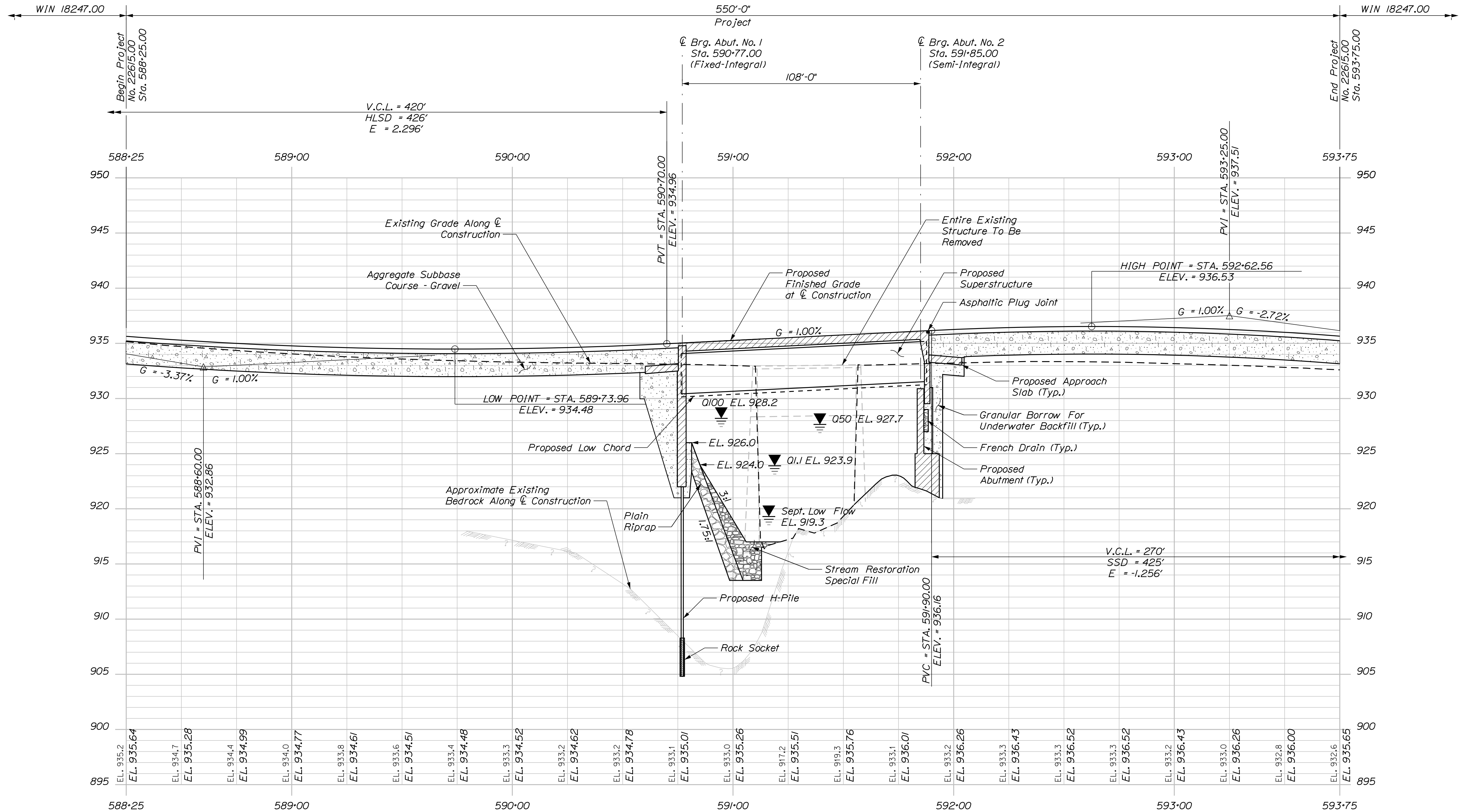
ESTIMATED QUANTITIES

SHEET NUMBER

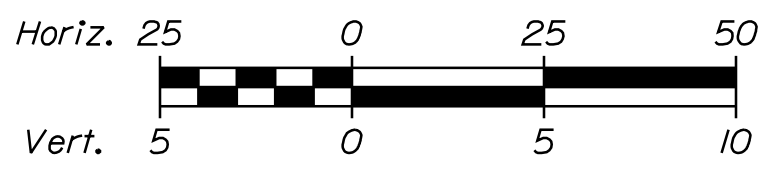
413

OF 532





PROFILE - ROUTE 4



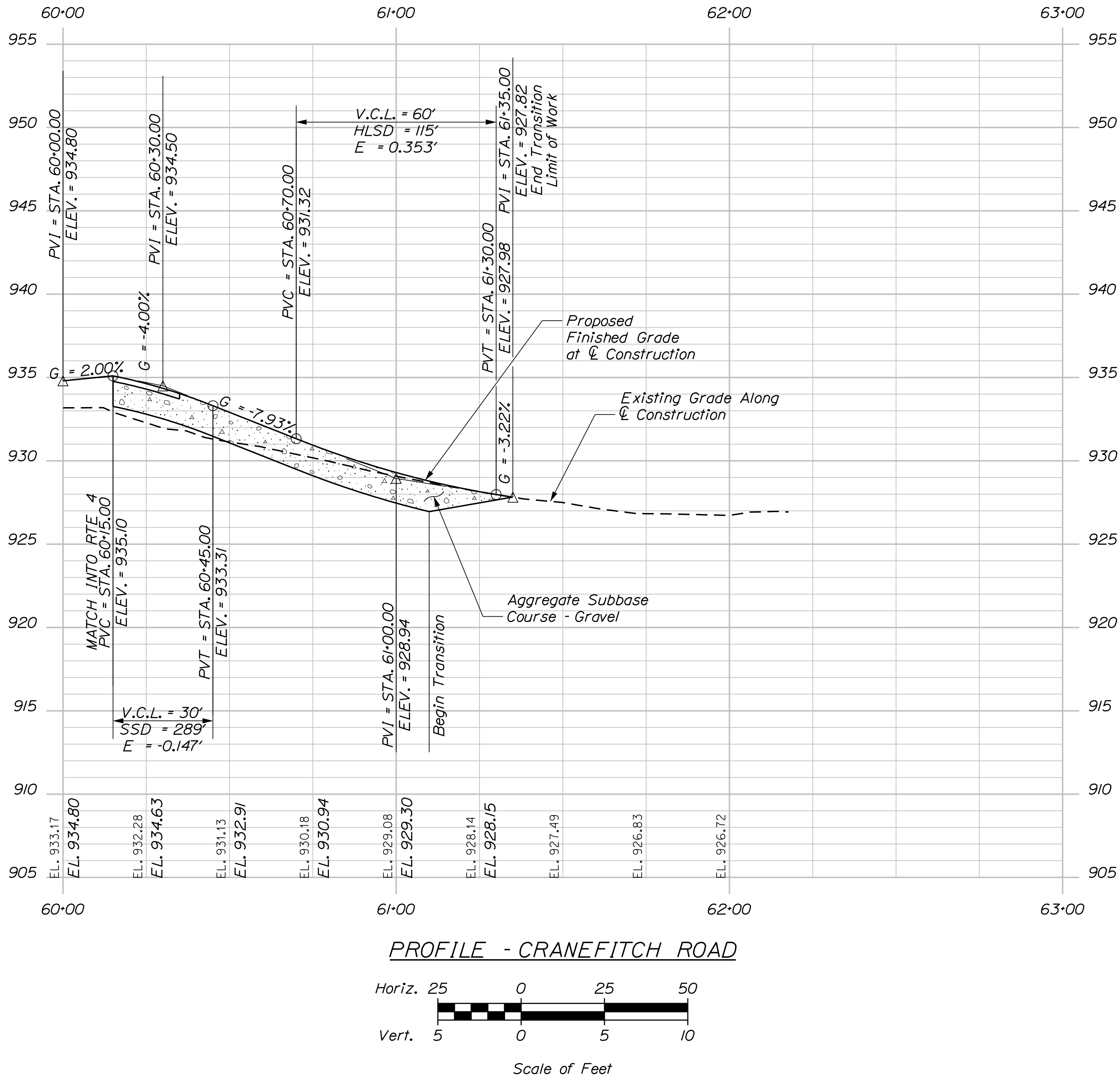
Scale of Feet

NOTES

1. The bedrock surface depicted on this profile was taken from the Interpretive Subsurface Profile provided in this plan set; refer to the notes on that sheet.



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| STATE OF MAINE DEPARTMENT OF TRANSPORTATION | SIGNATURE | | P.E. NUMBER | DATE |
| | SIGNATURE | | | |
| STP-2261(500) | | BRIDGE NO. 2934 | | BRIDGE PLANS |
| WIN 22615.00 | | WIN 22615.00 | | |
| MADRID | | FRANKLIN COUNTY | | ROUTE 4 |
| WEYMOUTH BRIDGE SANDY RIVER | | SHEET NUMBER | | 416 |
| | | | | OF 532 |



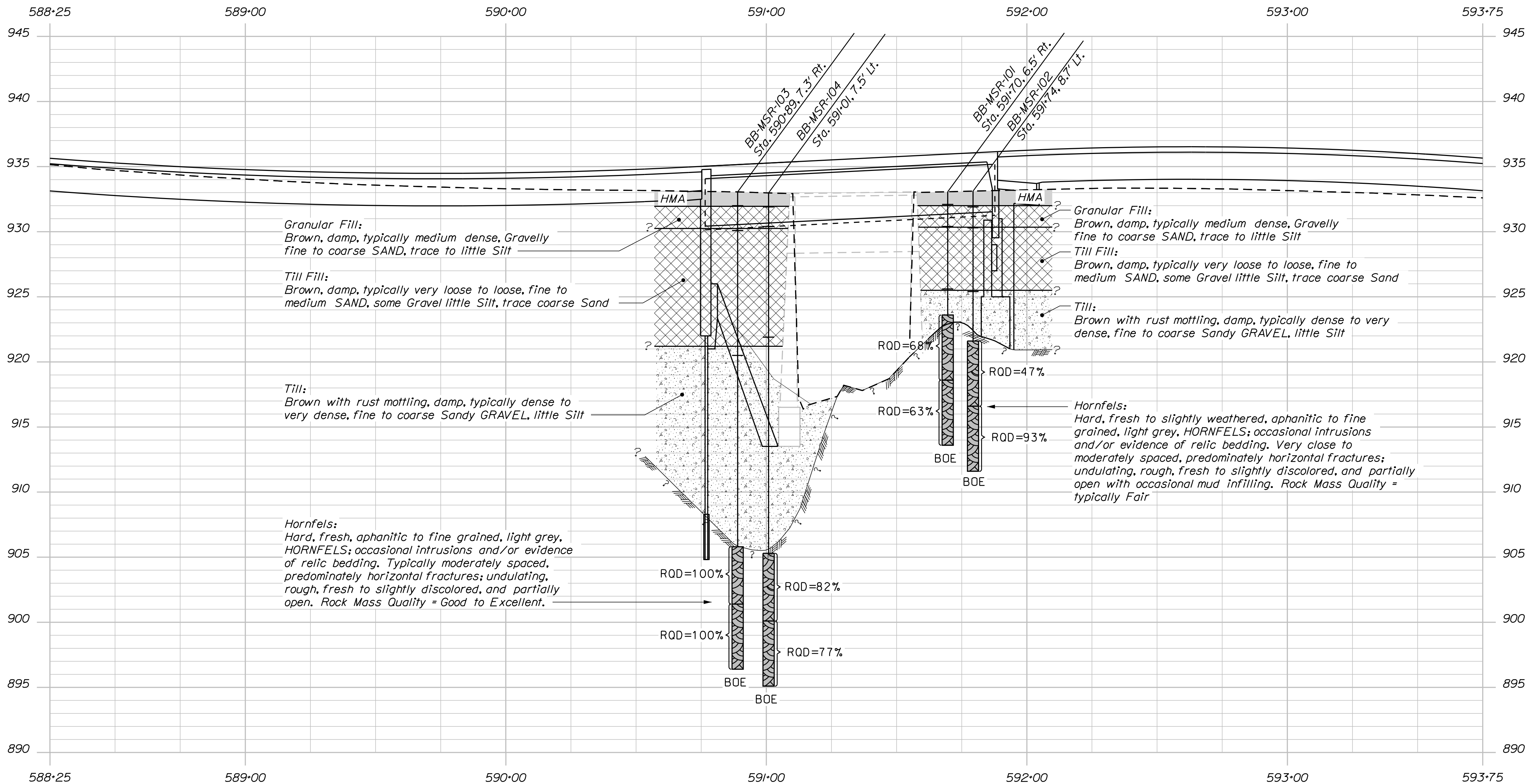
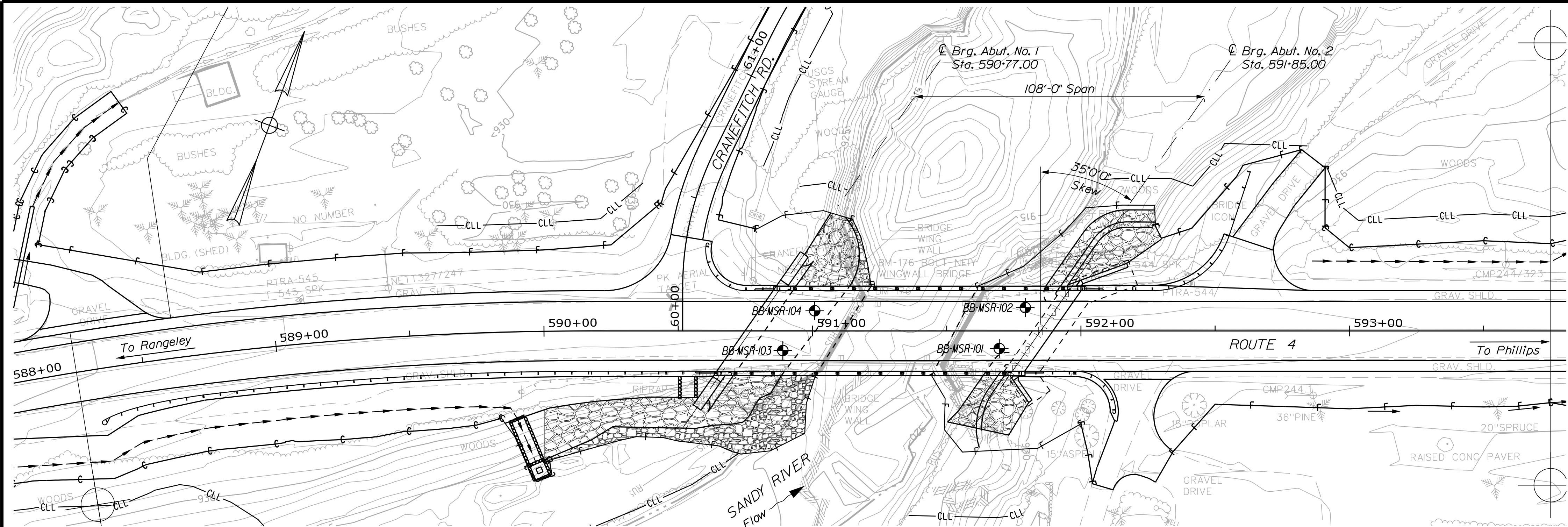
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|--------------------------|--|------------------------------|--|
| Weymouth Bridge | | STATE OF MAINE | |
| Sandy River | | DEPARTMENT OF TRANSPORTATION | |
| Franklin County | | STP-2261(500) | |
| MADRID | | WIN | |
| PROFILE - CRANEFTCH ROAD | | 22615.00 | |
| SHEET NUMBER | | BRIDGE NO. 2934 | |
| 417 | | BRIDGE PLANS | |
| OF 532 | | | |

Date: 2/8/2019

Username: kwight

Division: BRIDGE

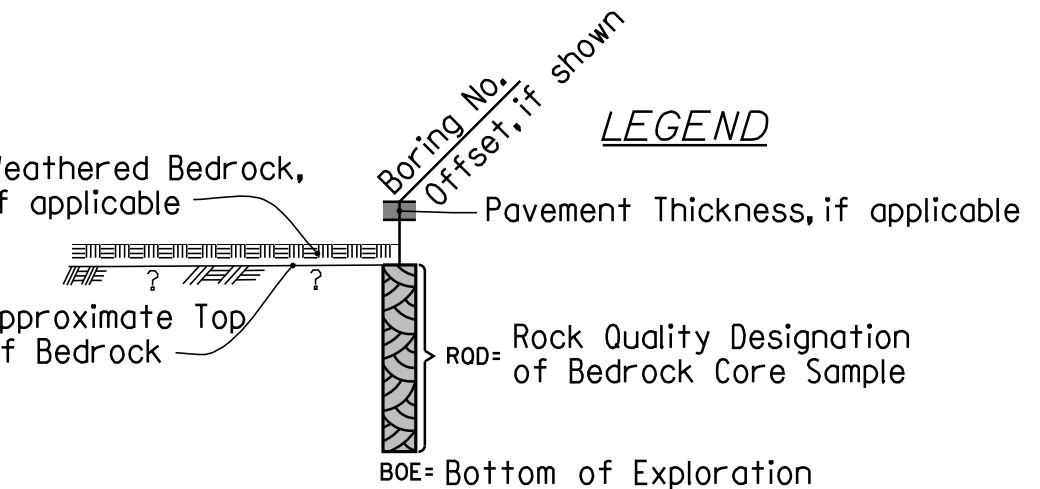
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NOTES:

1. This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

2. The approximate top of bedrock depicted on this Interpretive Subsurface Profile was inferred from subsurface information in widely spaced explorations, as well as the result of a geophysical survey. A copy of the geophysical survey report is included as an appendix to the project geotechnical report.



INTERPRETIVE SUBSURFACE PROFILE

| | | | | | | | | | | | |
|-----------------|--|------------------------------|--|-----------------|--|-----------------|--|--|--|--------------|--|
| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | BRIDGE NO. 2934 | | WIN 22615.00 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE | | SHEET NUMBER | |
| 418 | | OF 532 | | | | | | | | | |

Date:2/8/2019

Username: kwight

Division: BRIDGE

Filename: ... \MSTA\420_LOCS_MAD_02.dgn

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|---|------------|---|--------------------|--|---------|--------------|-----------------|-------------|--|------------------------|
| <div><div><div></div><div></div><div></div><div></div><div></div><div></div></div><div>SCHONEWALD ENGINEERING ASSOCIATES, INC.</div></div> | | PROJECT: Weymouth Bridge Route 4 over Sandy River | | Boring No.: BB-MSR-103 | | | | | | |
| LOCATION: Madrid Township, Maine | | WIN: 22615.00 | | | | | | | | |
| Driller: Maine Test Borings | | Elevation (ft.): 933.0 | | Auger ID/OD: solid stem auger to 9.0 ft. | | | | | | |
| Operator: Enos/Dube | | Datum: NAVD88 | | Sampler: standard split-spoon | | | | | | |
| Logged By: Schonewald | | Rig Type: Mobile Drill B-51 | | Hammer Wt/Fall: rope and cathed, 140#/30" | | | | | | |
| Date Start/Finish: 8/25/14; 1455 / 8/26/14; 1030 | | Drilling Method: cased wash boring | | Core Barrel: NQ2 | | | | | | |
| Boring Location: Sta 590+89, 7.3 RT | | Casing ID/OD: NW (3") - driven | | Water Level*: - | | | | | | |
| IN-SITU SAMPLING AND TESTING: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample attempt V = Insitu Vane Shear Test MV = Unsuccessful Insitu Vane Shear Test attempt | | ADDITIONAL DEFINITIONS: S _u = Insitu Field Vane Shear Strength (psf) R = Rock Core Sample RQD = Rock Quality Designation (%) WCH = weight of 140lb. hammer WOR = weight of rods - = not recorded | | BOREHOLE ADVANCEMENT METHOD: SSA = solid stem auger / RC=roller cone LABORATORY TEST RESULTS: LL=Liquid Limit / PL=Plastic Limit / PI=Plasticity Index WC = water content, percent -4200 = percent fines from grain size analysis UCI qp = peak compressive strength of rock | | | | | | |
| Sample Information | | Visual Description and Remarks | | Lab. Testing Results | | | | | | |
| Depth (ft.) | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-value | Casing Blows | Elevation (ft.) | Graphic Log | | |
| 0 | | | | | | SSA | 932.0 | | 14 inches HMA | |
| 1D | 24/14 | 1.0 - 3.0 | 10-9-7.4 | 16 | | | 930.1 | | 1D: Black changing to brown, damp, m. dense, fine to medium SAND, some Gravel, trace to little Silt, trace coarse Sand (GRANULAR FILL); | 1.0 |
| 2D | 24/14 | 4.0 - 6.0 | 2-1-2-1 | 3 | | | 930.1 | | Changing at 2.9 ft. to brown, damp, fine to medium SAND, little Gravel, little Silt (TILL FILL). 2D: Brown, damp, v. loose, fine to medium SAND, little to some Gravel, little Silt, trace coarse Sand (TILL FILL). | 2.9 |
| 3D | 24/10 | 9.0 - 11.0 | 1-1-3-3 | 4 | 2 | | 920.5 | | 3D: Brown, moist, v. loose, fine to medium SAND, some Gravel, little Silt, trace coarse Sand (TILL FILL). | |
| 4D | 24/7 | 14.5 - 16.5 | 16-22-23-28 | 45 | 18 | | 905.8 | | 4D: Brown, dense, fine to medium Sandy GRAVEL, trace to little Silt, trace coarse Sand (TILL). casing bouncing at 17.3 ft. | 12.5 |
| 5D | 17/11 | 19.0 - 20.4 | 17-34-50/5" | >84 | 91 | | 905.8 | | 5D: Brown, v. dense, fine to coarse Sandy GRAVEL, trace to little Silt (TILL). possible cobble; driller notes drilling like "rotten" rock | 27.2 |
| MR | 60/5 | 20.3 - 25.3 | | | 48 | | 905.8 | | | |
| 6D | 14/5 | 26.0 - 27.2 | 24-28-50/2" | >78 | | | 905.8 | | predominately gravel; variety of rock types 6D: Grey-brown, v. dense, GRAVEL, little fine to coarse Sand, trace Silt. | |
| R1 | 53/53 | 27.2 - 31.6 | RQD = 100% | | | | 905.8 | | R1: Hard, fresh, aphanitic to fine grained, light grey, HORNFELS, with one 1-inch thick, high-angle, fine to medium grained seam that is likely relic bedding. One drill break. Core times: 1:55, 1:20, 1:20, 1:10, -- min.sec/ft. | |
| R2 | 60/60 | 31.6 - 36.6 | RQD = 100% | | | | 905.8 | | R2: same as R1, except minor visible relic bedding and one 1/2-inch thick, low-angle granite intrusions and two 1/16-inch thick, high-angle quartz veins. Two drill breaks and one low angle fracture; planar, rough, slightly discolored and open. Core times: not recorded, 1:15, 1:15, 1:05, 1:05 min.sec/ft. | |
| | | | | | | | 896.4 | | Bottom of Exploration at 36.6 feet below ground surface. | 36.6 |
| Remarks: | | | | | | | | | | |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual. | | | | | | | | | | Page 1 of 1 |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made. | | | | | | | | | | Boring No.: BB-MSR-103 |

| | | | | | | | | | | |
|---|------------|---|--------------------|--|---------|--------------|-----------------|-------------|---|------------------------|
| <div><div><div></div><div></div><div></div><div></div><div></div><div></div></div><div>SCHONEWALD ENGINEERING ASSOCIATES, INC.</div></div> | | PROJECT: Weymouth Bridge Route 4 over Sandy River | | Boring No.: BB-MSR-104 | | | | | | |
| LOCATION: Madrid Township, Maine | | WIN: 22615.00 | | | | | | | | |
| Driller: Maine Test Borings | | Elevation (ft.): 932.9 | | Auger ID/OD: solid stem auger to 14.0 ft. | | | | | | |
| Operator: Enos/Dube | | Datum: NAVD88 | | Sampler: standard split-spoon | | | | | | |
| Logged By: Schonewald | | Rig Type: Mobile Drill B-51 | | Hammer Wt/Fall: rope and cathed, 140#/30" | | | | | | |
| Date Start/Finish: 8/26/14; 1035 / 8/26/14; 1420 | | Drilling Method: cased wash boring | | Core Barrel: NQ2 | | | | | | |
| Boring Location: Sta 591+51, 7.5 LT | | Casing ID/OD: NW (3") - driven | | Water Level*: 13.0 ft. (open hole) | | | | | | |
| IN-SITU SAMPLING AND TESTING: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample attempt V = Insitu Vane Shear Test MV = Unsuccessful Insitu Vane Shear Test attempt | | ADDITIONAL DEFINITIONS: S _u = Insitu Field Vane Shear Strength (psf) R = Rock Core Sample RQD = Rock Quality Designation (%) WCH = weight of 140lb. hammer WOR = weight of rods - = not recorded | | BOREHOLE ADVANCEMENT METHOD: SSA = solid stem auger / RC=roller cone LABORATORY TEST RESULTS: LL=Liquid Limit / PL=Plastic Limit / PI=Plasticity Index WC = water content, percent -4200 = percent fines from grain size analysis UCI qp = peak compressive strength of rock | | | | | | |
| Sample Information | | Visual Description and Remarks | | Lab. Testing Results | | | | | | |
| Depth (ft.) | Sample No. | Pen./Rec. (in.) | Sample Depth (ft.) | Blows (6 in.) Shear Strength (psf) or RQD (%) | N-value | Casing Blows | Elevation (ft.) | Graphic Log | | |
| 0 | | | | | | SSA | 931.9 | | 15 inches HMA | |
| 1D | 24/12 | 1.0 - 3.0 | 24-19-11-8 | 30 | | | 930.4 | | Black, dry, weathered asphalt; | 1.0 |
| 2D | 24/7 | 4.0 - 6.0 | 3-5-5-3 | 10 | | | 930.4 | | Changing at 2.5 ft. to 1D: brown, dry, Gravelly fine to coarse SAND, trace to little Silt (GRANULAR FILL). 2D: Brown, damp, loose, fine to medium SAND, some Gravel, little Silt, trace coarse Sand (TILL FILL). | 2.5 |
| 3D | 24/13 | 9.0 - 11.0 | 2-11-11-6 | 22 | | | 921.9 | | 3D: Brown, damp, m. dense, fine to medium SAND, some Gravel, little Silt, trace coarse Sand with one 5-inch layer grey broken rock at bottom of sample (TILL FILL). Till in tip of spoon. | 11.0 |
| 4D | 24/13 | 14.0 - 16.0 | 7-10-11-11 | 21 | 26 | | 905.3 | | 4D: Brown, wet, m. dense, GRAVEL, some fine to coarse Sand, trace Silt. | |
| 5D | 24/9 | 19.0 - 21.0 | 29-28-28-30 | 56 | 61 | | 905.3 | | 5D: Greyish-brown, v. dense, GRAVEL, some fine to coarse Sand, trace Silt. | |
| 6D | 24/16 | 24.0 - 26.0 | 34-39-55-41 | 94 | -- | | 905.3 | | 6D: Brownish-grey, v. dense, GRAVEL, some fine to coarse Sand, trace Silt. | |
| R1 | 60/58 | 27.8 - 32.8 | RQD = 82% | | | | 905.3 | | R1: Hard, fresh, aphanitic to fine grained, light grey, HORNFELS with one 1/4-inch folded (loop), one 1/2-inch high angle, and one 1/16-inch high angle quartz to granite intrusions; minor evidence of relic bedding. Close, low and high angle fractures, typically undulating, rough, discolored, and open. One vertical fracture from 29.8 to 32.0 ft. Core times: 1:20, 1:05, 1:05, 1:05, 1:05 min.sec/ft. | 27.6 |
| R2 | 60/60 | 32.0 - 32.6 | SAMPLE RQD = 77% | | | | 905.3 | | R2: same as R1, except no intrusions. No fractures from 32.8 to 36.2 ft. and very close to close, predominately horizontal with lesser vertical fractures resulting in a blocky structure to the bottom of the core. Core times: 1:00, 1:05, 1:15, 1:10, 1:15 min.sec/ft. | |
| | | | | | | | 895.1 | | Bottom of Exploration at 37.8 feet below ground surface. | 37.8 |
| Remarks: | | | | | | | | | | |
| Stratification lines represent approximate boundaries between soil types; transitions may be gradual. | | | | | | | | | | Page 1 of 1 |
| * Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made. | | | | | | | | | | Boring No.: BB-MSR-104 |

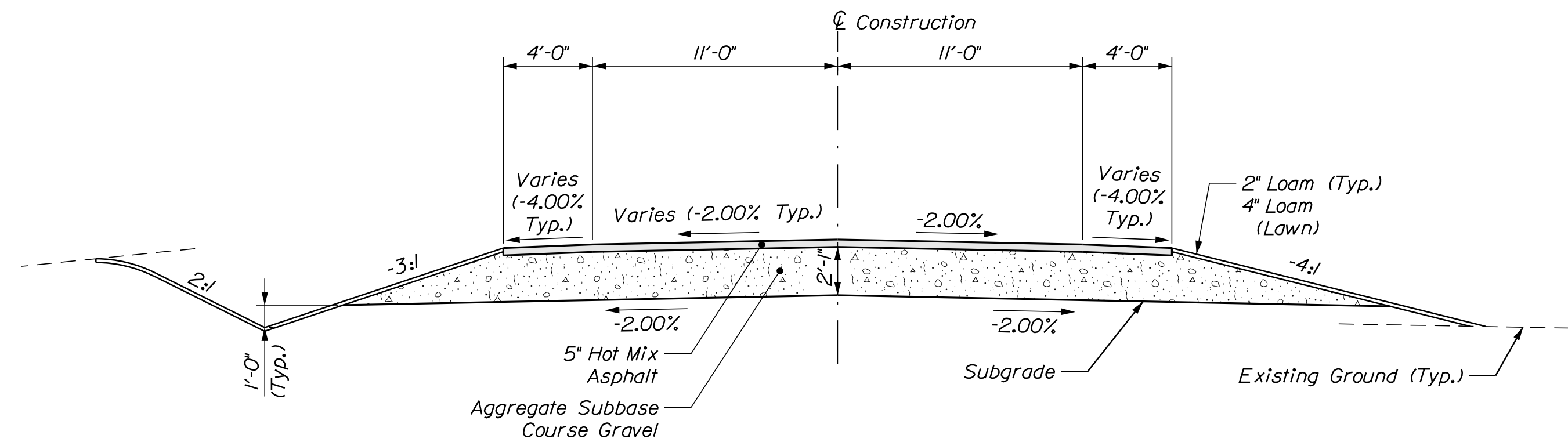
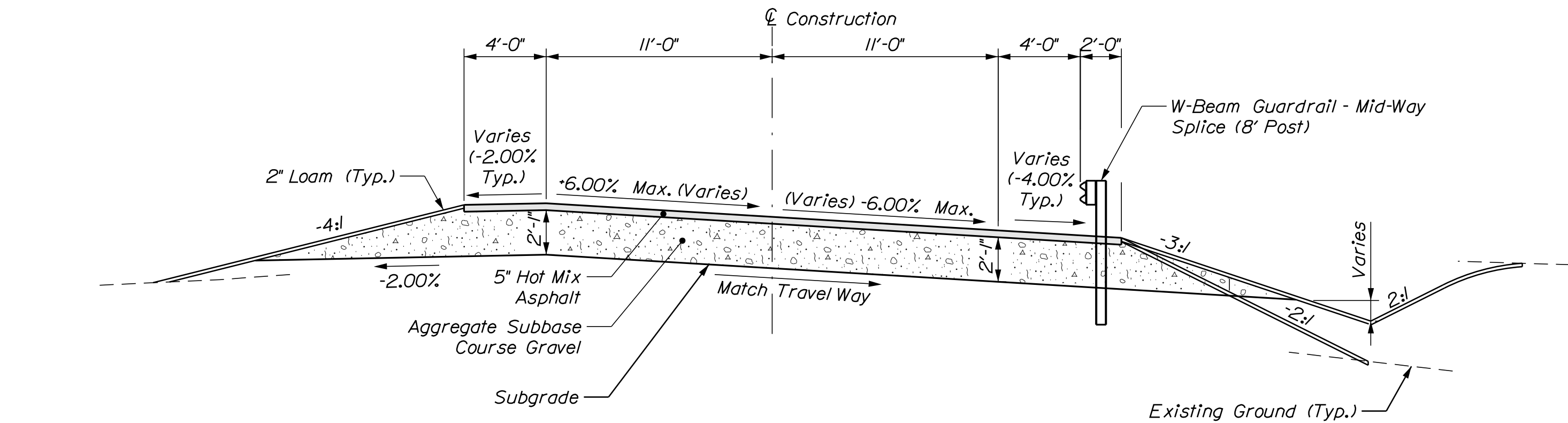
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| STATE OF MAINE DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN 22615.00 | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| Weymouth Bridge Sandy River Madrid | | Franklin County | | BORING LOGS | | SHEET NUMBER 420 OF 532 | | | |
| PROJ. MANAGER | | M. WIGHT | | BY | | DATE | | | |
| DESIGN-DETAILED | | IWS | | DB | | FEB 2019 | | SIGNATURE | |
| CHECKED-REVIEWED | | IWS | | IWS | | FEB 2019 | | P.E. NUMBER | |
| DESIGN-DETAILED | | | | | | | | DATE | |
| REVISIONS 1 | | | | | | | | | |
| REVISIONS 2 | | | | | | | | | |
| REVISIONS 3 | | | | | | | | | |
| REVISIONS 4 | | | | | | | | | |
| FIELD CHANGES | | | | | | | | | |

Date:2/8/2019

Username: kwight

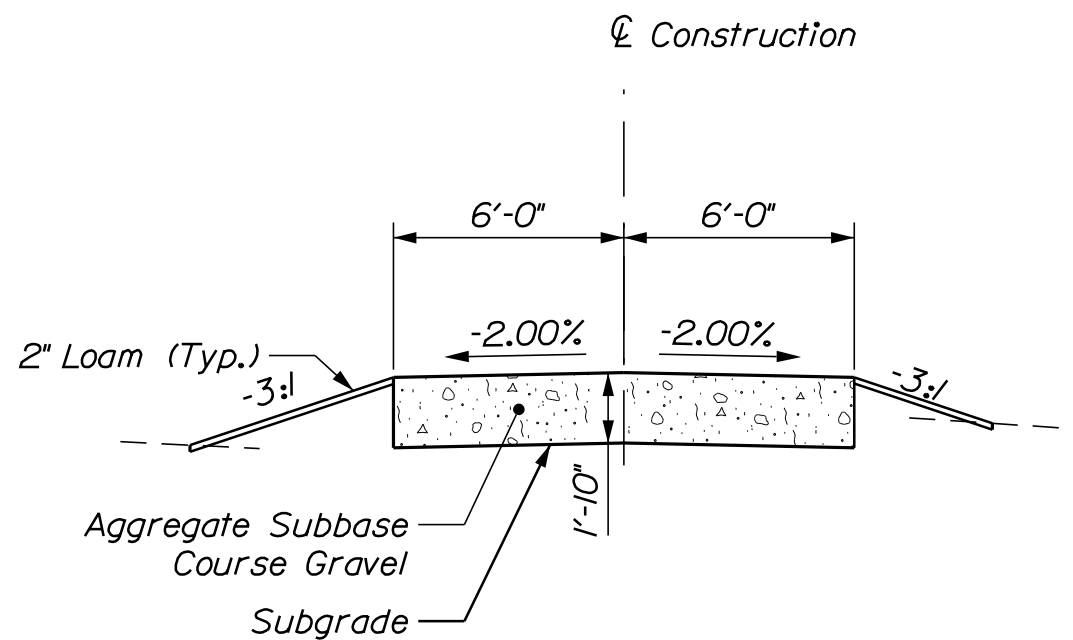
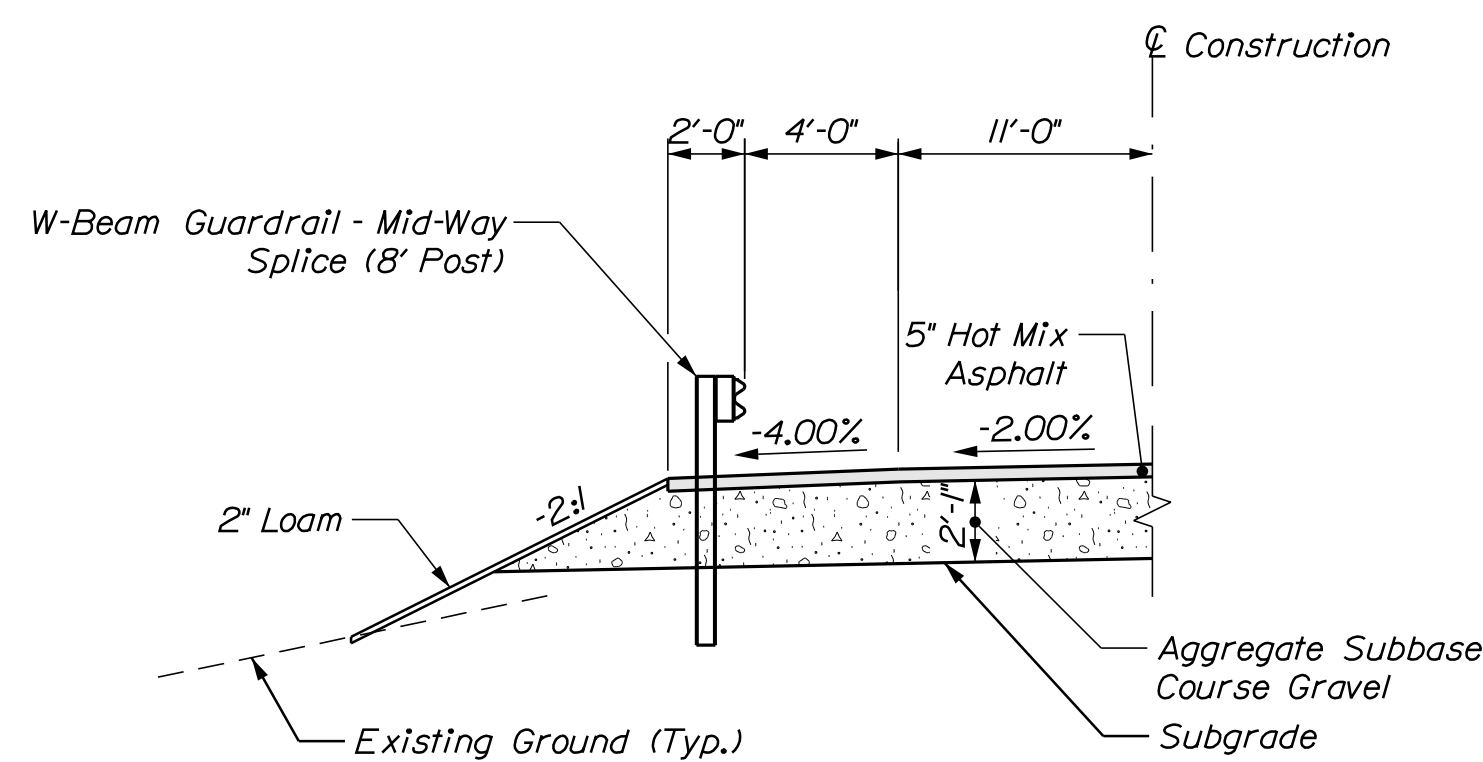
Division: BRIDGE

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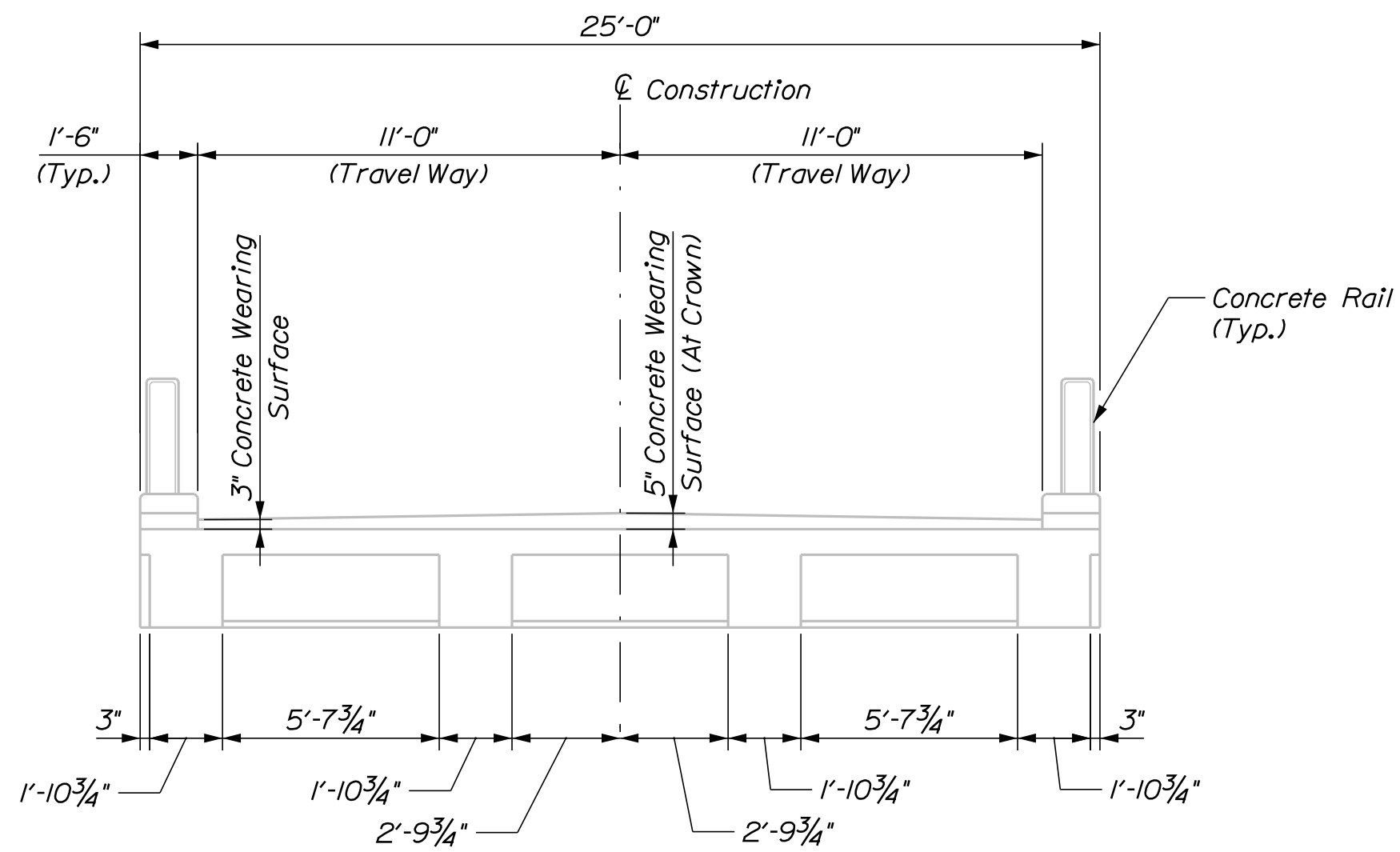


SUPERELEVATION TABLE

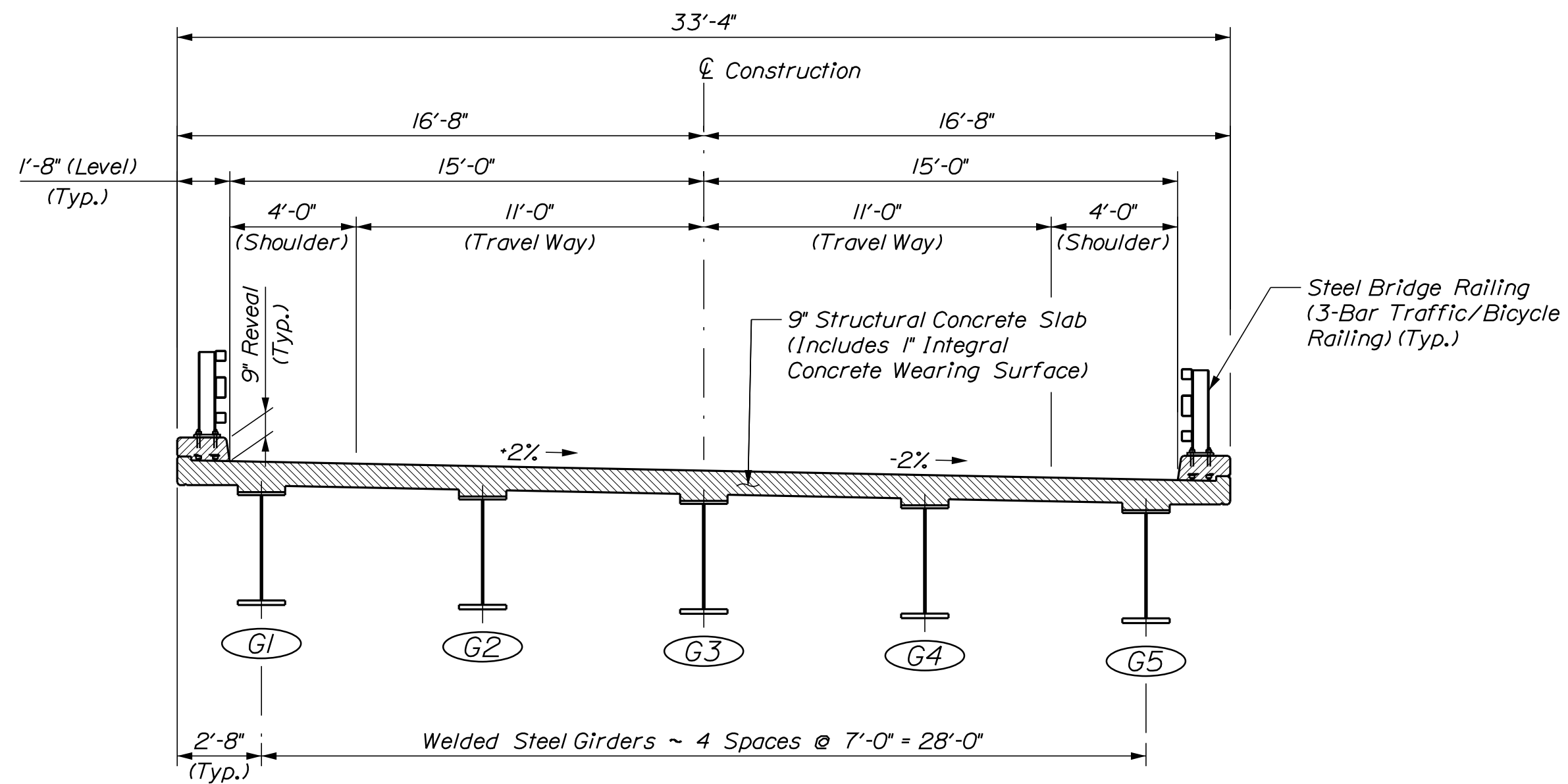
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|---------------------|----------------|-----------|-----------------|----------------|
| -2.0% | 4.8% | 588+25.00 | -4.8% | -4.8% |
| -2.0% | 5.5% | 588+50.00 | -5.5% | -5.5% |
| FULL SUPERELEVATION | | | | |
| -2.0% | 5.5% | 589+50.00 | -5.5% | -5.5% |
| -0.3% | 4.0% | 589+92.86 | -4.0% | -4.0% |
| 0.0% | 3.8% | 590+00.00 | -3.8% | -4.0% |
| 2.0% | 2.0% | 590+50.00 | -2.0% | -2.0% |
| WEYMOUTH BRIDGE | | | | |
| 2.0% | 2.0% | 592+00.00 | -2.0% | -2.0% |
| 0.0% | 0.0% | 592+50.00 | -2.0% | -4.0% |
| -2.0% | -2.0% | 593+00.00 | -2.0% | -4.0% |
| -4.0% | -2.0% | 593+50.00 | -2.0% | -4.0% |
| -4.0% | -2.0% | 593+75.00 | -2.0% | -4.0% |



CRANEFITCH ROAD TYPICAL SECTION
STA. 60+00 - STA. 61+36

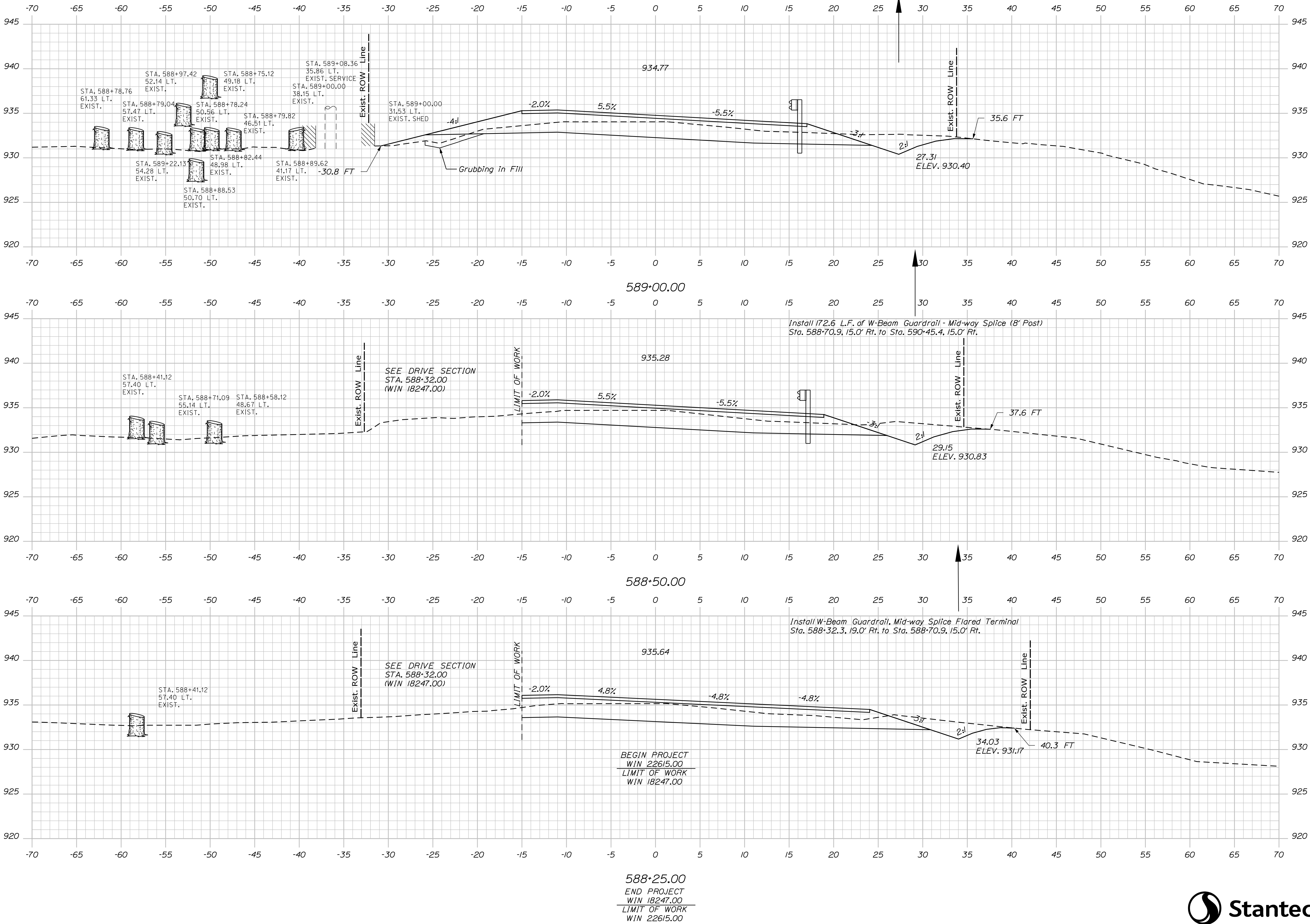


EXISTING BRIDGE SECTION



TRANSVERSE SECTION

| PROJ. MANAGER | DESIGN-DETAILED | CHECKED-REVIEWED | DATE | BY | DATE | SIGNATURE |
|-----------------|-----------------|------------------|----------|-----|----------|-----------|
| JCS | LSF | LSF | FEB 2019 | LSF | FEB 2019 | |
| DESIGN-DETAILED | DESIGN-DETAILED | DESIGN-DETAILED | | | | |
| REVISIONS 1 | REVISIONS 2 | REVISIONS 3 | | | | |
| REVISIONS 4 | REVISIONS 5 | REVISIONS 6 | | | | |
| FIELD CHANGES | | | | | | |



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|-----------------|--|------------------------------|--|-----------------|--|--------------|--|-----------------|--|--------------|--|
| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN 22615.00 | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | Cross Sections | | Sheet Number | |
| 422 | | OF 532 | | Stantec | | Stantec | | Stantec | | Stantec | |

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SHEET NUMBER

423

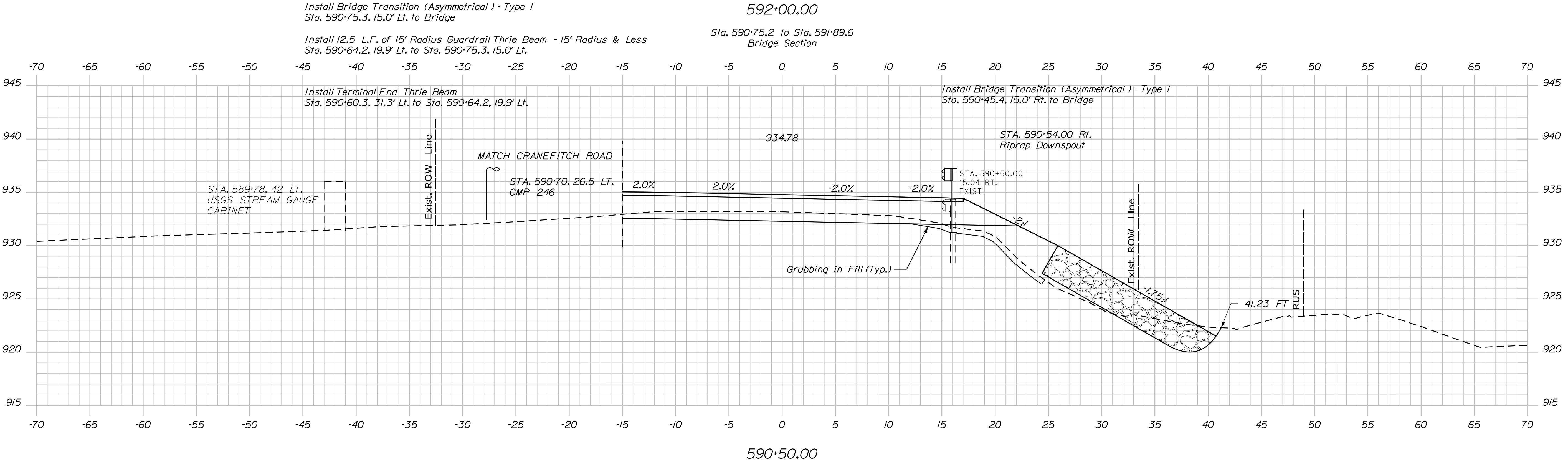
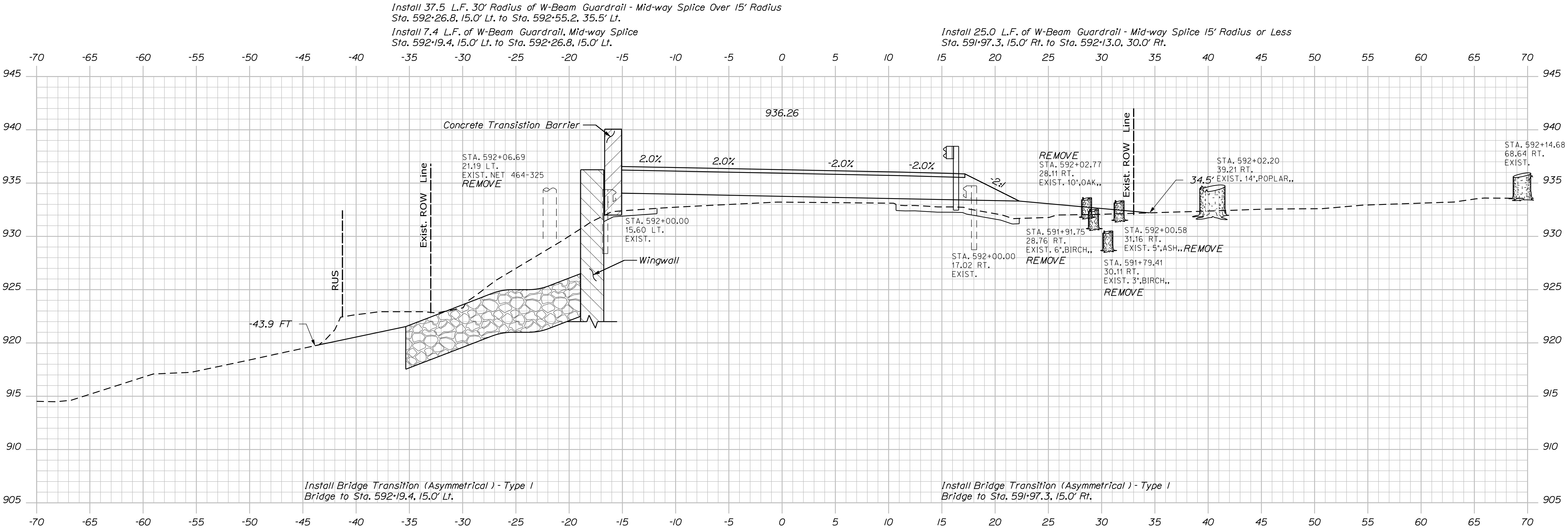
OF 532

Date:2/8/2019

Username: kwight

Division: BRIDGE

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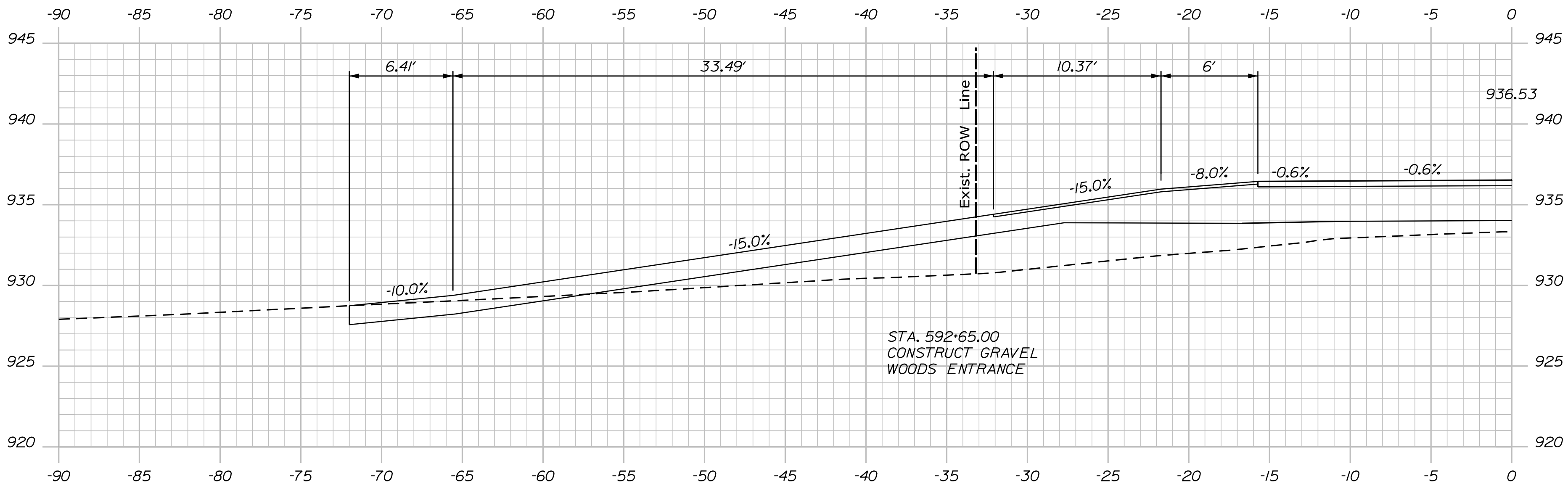
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|---------------|-----------------|------------------|----------|-----|----------|----------|
| | SUB | SUB | FEB 2019 | SUB | | FEB 2019 |
| | DESIGN-DETAILED | DESIGN-DETAILED | | | | |
| | REVISIONS 1 | REVISIONS 2 | | | | |
| | REVISIONS 3 | REVISIONS 4 | | | | |
| | FIELD CHANGES | | | | | |

Date:2/8/2019

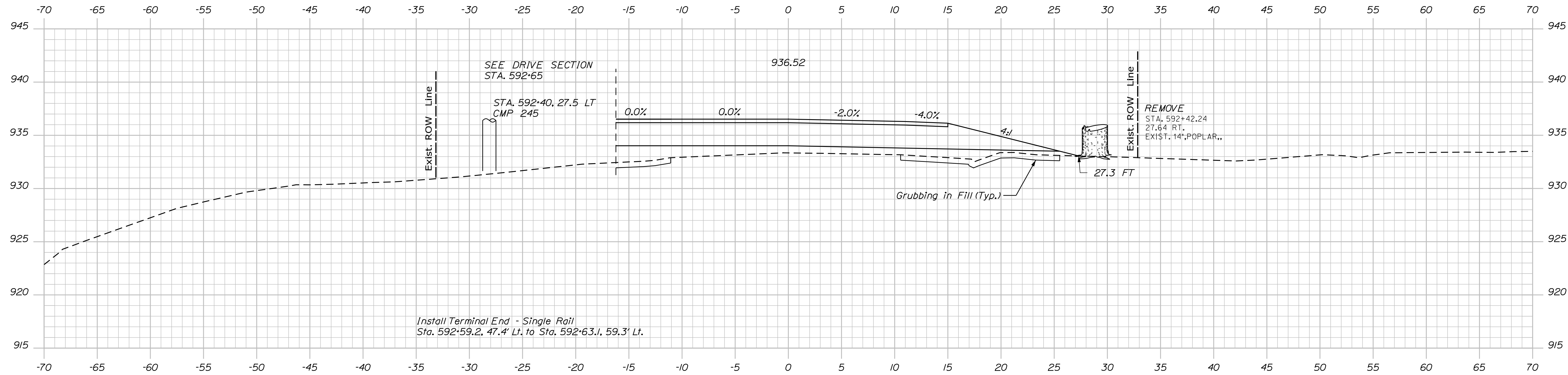
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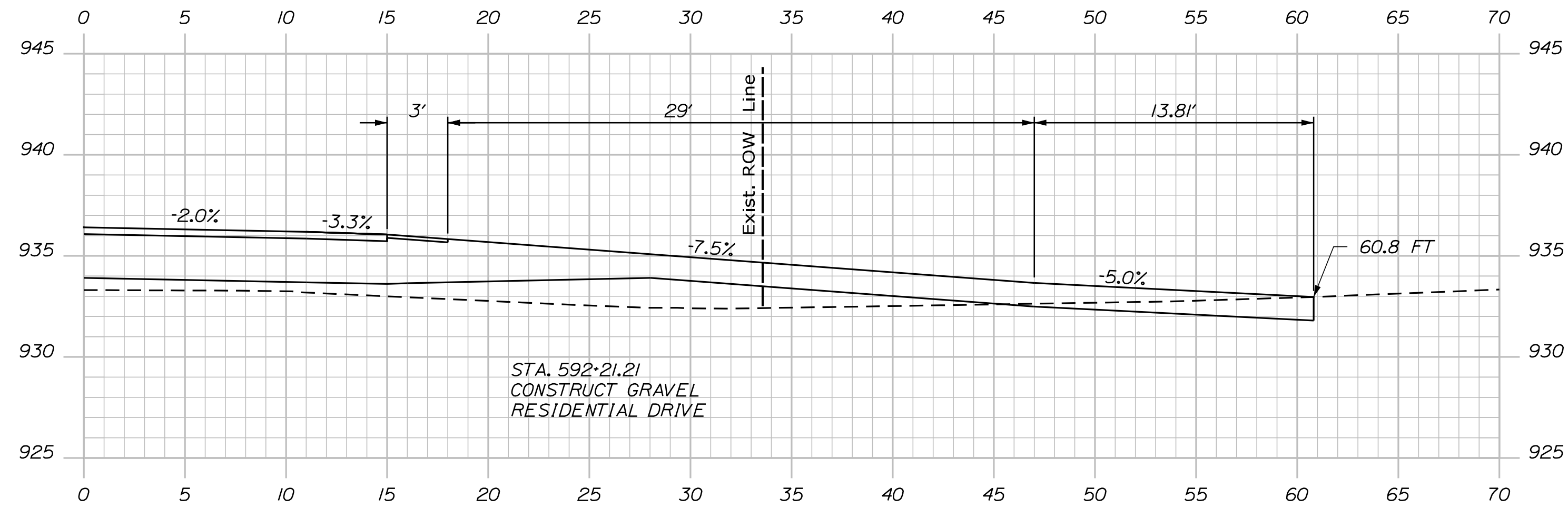
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592+65.00



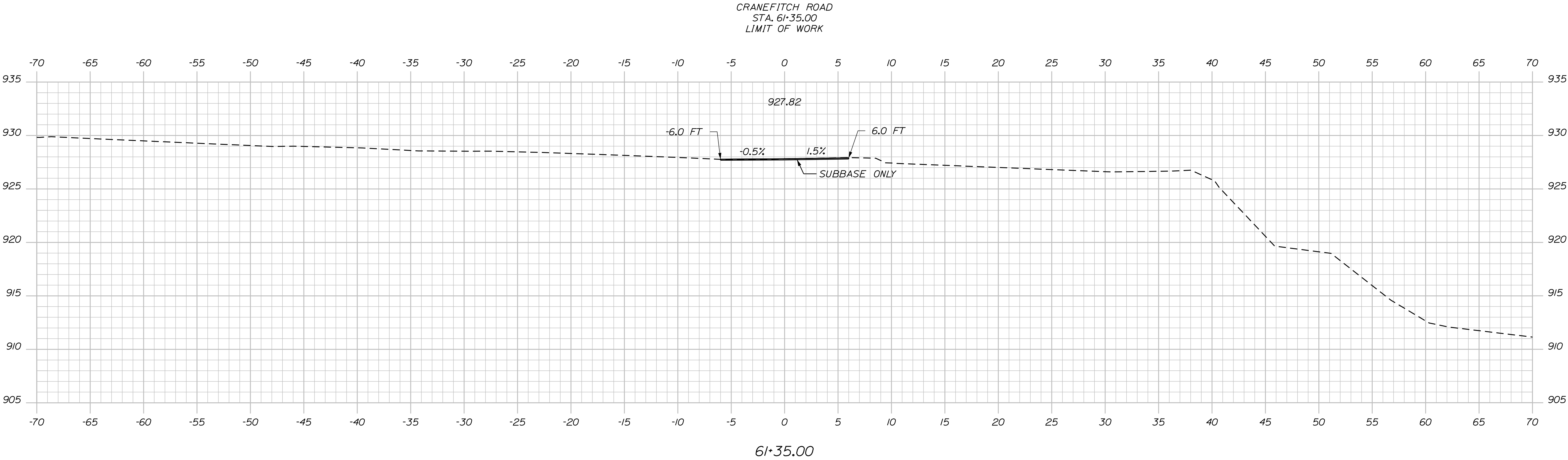
592+50.00



592+21.21



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| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | BRIDGE NO. 2934 | | 22615.00 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | CROSS SECTIONS | | SHEET NUMBER | | 425 | |
| DATE | | BY | | M. WIGHT | | SIGNED | | DATE | | P.E. NUMBER | | DATE | |
| FEB 2019 | | SJB | | SJB | | FEB 2019 | | FEB 2019 | | FEB 2019 | | FEB 2019 | |
| DESIGNED | | CHECKED | | DESIGNED | | CHECKED | | DESIGNED | | CHECKED | | DESIGNED | |
| REVISIONS 1 | | REVISIONS 2 | | REVISIONS 3 | | REVISIONS 4 | | REVISIONS 5 | | REVISIONS 6 | | REVISIONS 7 | |
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61+35.00



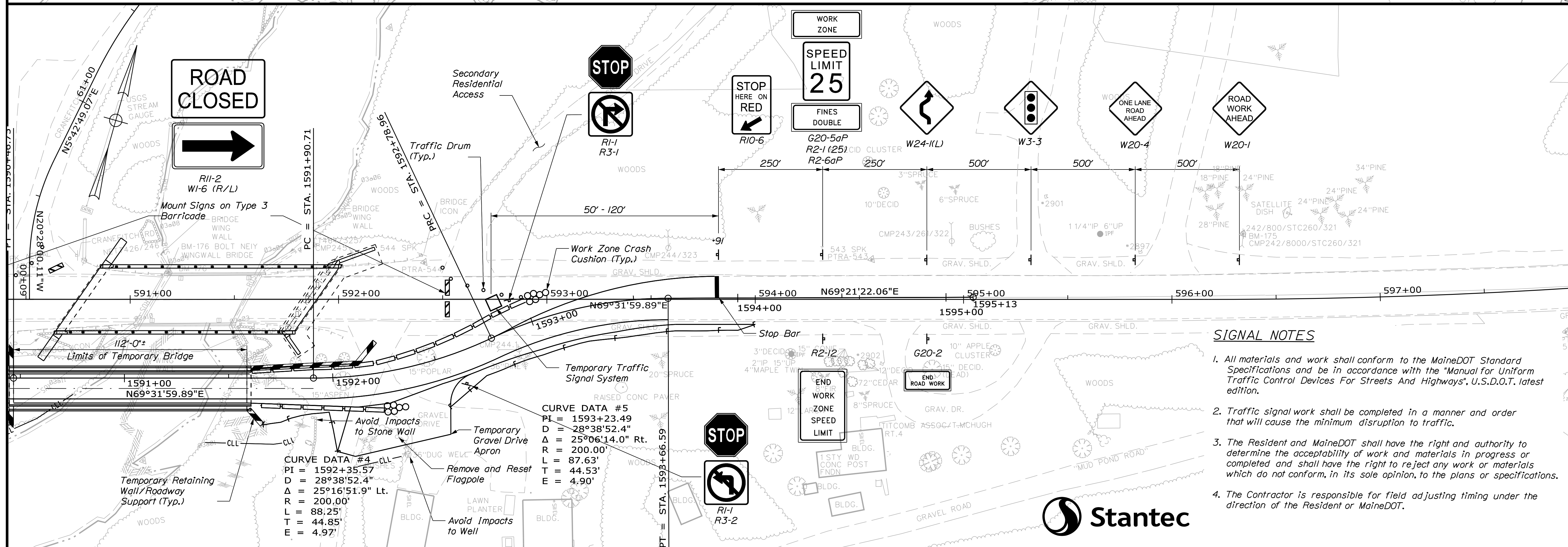
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| STATE OF MAINE |
| DEPARTMENT OF TRANSPORTATION |
| STP-2261(500) |
| WIN |
| BRIDGE NO. 2934 |
| 22615.00 |
| BRIDGE PLANS |

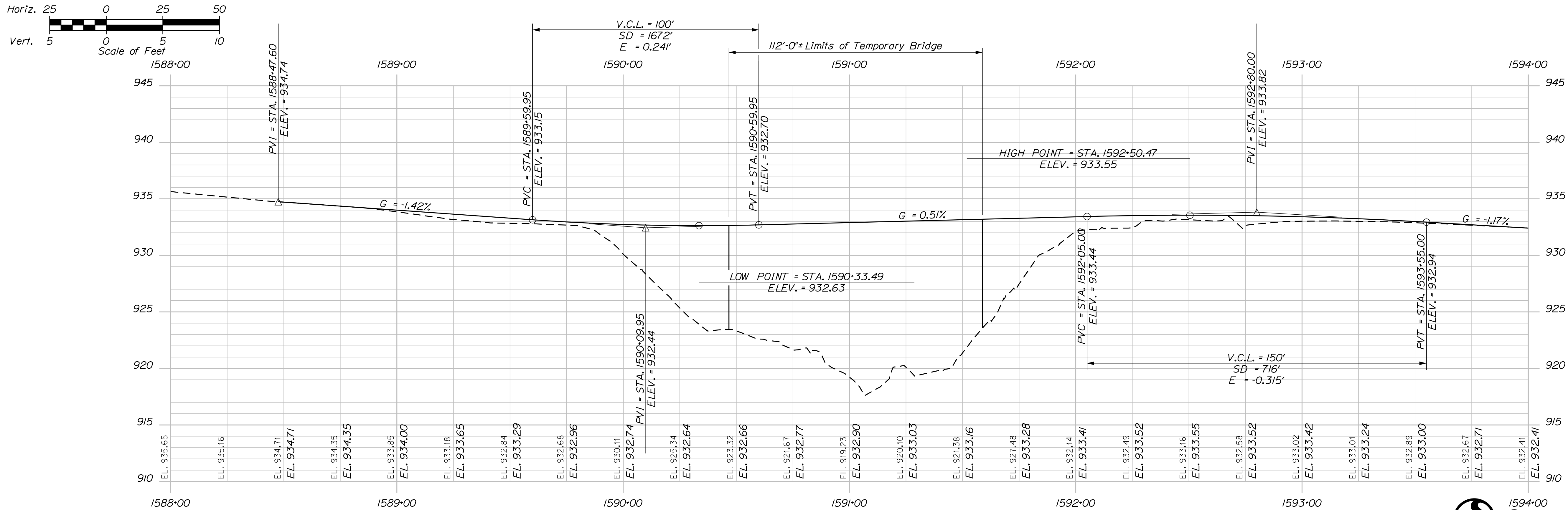
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| PROJ. MANAGER | M. WIGHT | BY | DATE |
| DESIGN-DETAILED | SJB | SJB | FEB 2019 |
| CHECKED-REVIEWED | MUD | MUD | FEB 2019 |
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| FIELD CHANGES | | | |

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| WEYMOUTH BRIDGE | FRANKLIN COUNTY |
| SANDY RIVER | |
| MADRID | |
| CROSS SECTIONS | |

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|--------------|
| SHEET NUMBER |
| 428 |
| OF 532 |

1. Conceptual temporary detour plan does not represent the exact placement of signs and signals. Final design of the detour and signal system is the responsibility of the Contractor.
2. All traffic control shall be in accordance with the "Manual for Uniform Traffic Control Devices For Streets And Highways", U.S.D.Q.T. latest edition.
3. The Contractor shall remove all existing pavement markings that conflict with the proposed markings. This work shall be considered incidental to Item 510 - Special Detour.
4. The Contractor shall cover all existing signing that conflicts with work zone signing and signals. This work shall be considered incidental to Item 510 - Special Detour.
5. See Special Provision Section 652 for additional temporary detour bridge width, paving, and snow removal requirements.
6. No in-water work shall be allowed as part of the temporary detour construction or removal. See Special Provision 105 for more details.
7. The temporary signal location shall be visible to traffic exiting the private drive at Sta. 588+40 Lt.
8. Any necessary temporary earth support needed to construct the temporary detour adjacent to the existing bridge demolition and proposed bridge construction areas shall be incidental to related contract items.





| IDENTIFI- CATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS | | | COLOR | | NUMBER OF SIGNS REQUIRED | SIGN AREA (SQ. FT.) | | REMARKS |
|-------------------------------|--------------|--------|------|---|---------------------|------------------|-----------------|------------------|-----------------------------------|------------------------|---------------|---------|
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | SHIELD/ ARROW | BACK- GROUND | LEGEND BORDER | | NOM. AREA | TOTAL AREA | |
| R1-1 | 30" | 30" | | TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" | | | RED | WHITE | 3 | 6.25 | 18.75 | |
| R2-1 (25) | 24" | 30" | | | | | WHITE | BLACK | 2 | 5.00 | 10.00 | |
| R2-6aP | 24" | 18" | | | | | WHITE | BLACK | 2 | 3.00 | 6.00 | |
| R2-12 | 24" | 30" | | | | | WHITE | BLACK | 2 | 5.00 | 10.00 | |
| R3-1 | 24" | 24" | | | | | WHITE | BLACK | 1 | 4.00 | 4.00 | |
| R3-2 | 24" | 24" | | | | | WHITE | BLACK | 2 | 4.00 | 8.00 | |
| R10-6 | 24" | 36" | | | | | WHITE | BLACK | 2 | 6.00 | 12.00 | |
| R11-2 | 48" | 30" | | | | | WHITE | BLACK | 2 | 10.00 | 20.00 | |

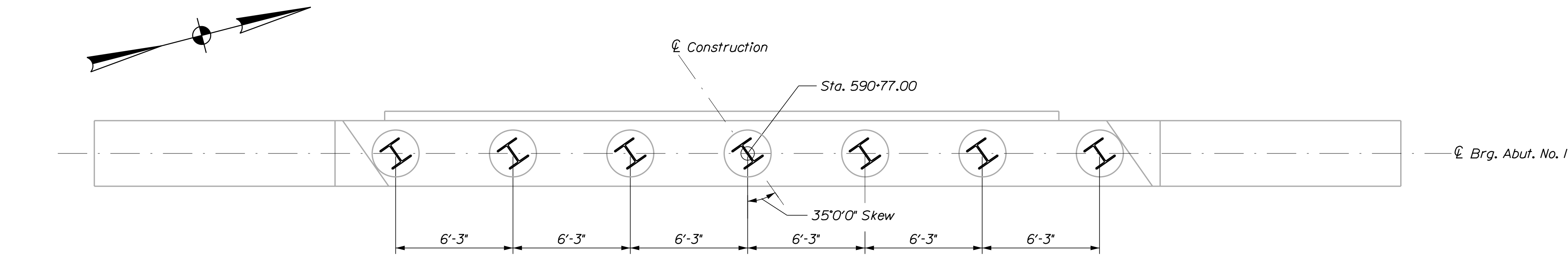
| IDENTIFI- CATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS | | | COLOR | | NUMBER OF SIGNS REQUIRED | SIGN AREA (SQ. FT.) | | REMARKS |
|-------------------------------|--------------|--------|------|---|---------------------|------------------|-----------------|------------------|-----------------------------------|------------------------|---------------|---------|
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | SHIELD/ ARROW | BACK- GROUND | LEGEND BORDER | | NOM. AREA | TOTAL AREA | |
| G20-2 | 36" | 18" | | TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" | | | ORANGE | BLACK | 2 | 4.50 | 9.00 | |
| G20-5aP | 24" | 18" | | | | | ORANGE | BLACK | 2 | 3.00 | 6.00 | |
| W1-6 (R) | 48" | 24" | | | | | ORANGE | BLACK | 1 | 8.00 | 8.00 | |
| W1-6 (L) | 48" | 24" | | | | | ORANGE | BLACK | 1 | 8.00 | 8.00 | |
| W3-3 | 36" | 36" | | | | | ORANGE | BLACK | 2 | 9.00 | 18.00 | |
| W20-1 | 36" | 36" | | | | | ORANGE | BLACK | 2 | 9.00 | 18.00 | |
| W20-4 | 36" | 36" | | | | | ORANGE | BLACK | 2 | 9.00 | 18.00 | |
| W24-1 (R) | 36" | 36" | | | | | ORANGE | BLACK | 1 | 9.00 | 9.00 | |
| W24-1 (L) | 36" | 36" | | | | | ORANGE | BLACK | 1 | 9.00 | 9.00 | |

Date:2/8/2019

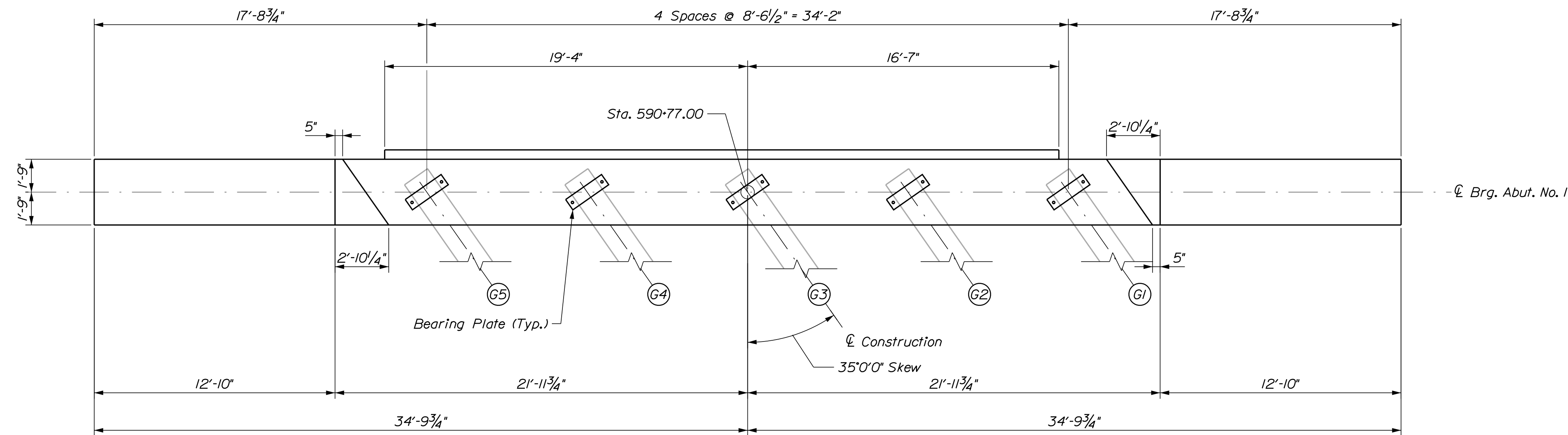
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Division: BRIDGE

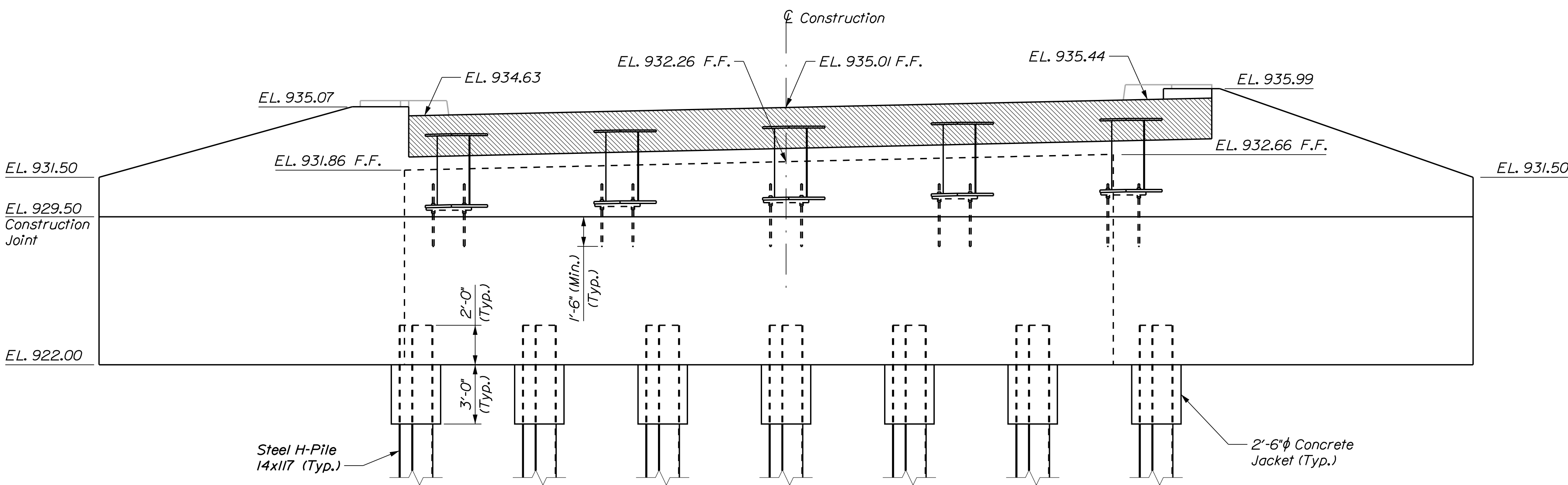
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ABUTMENT NO. 1 PILE PLAN



ABUTMENT NO. 1 PLAN



ABUTMENT NO. 1 ELEVATION

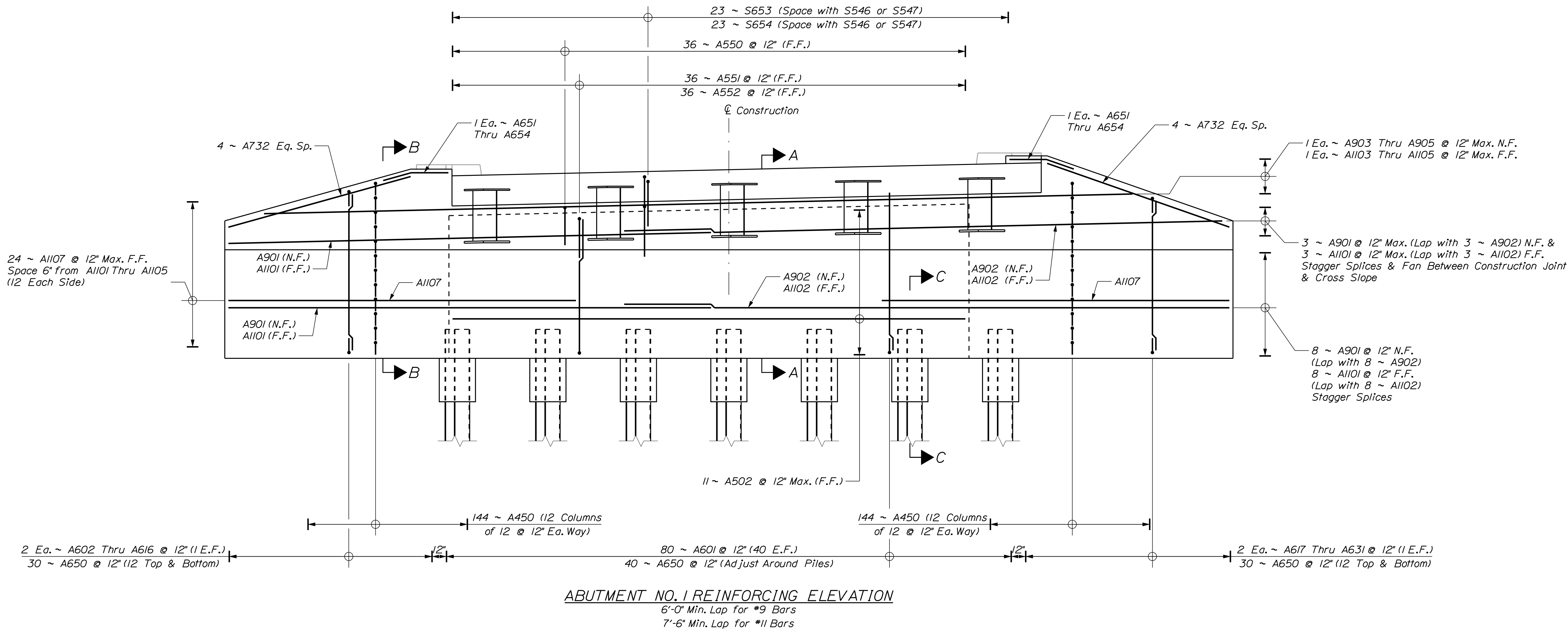
ABUTMENT NO. 1 NOTES

1. Abutment No. 1 shall be founded on piles grouted into rock sockets.
2. Payment for excavation necessary to construct the concrete pile jackets at Abutment No. 1 will be considered incidental to related contract items. No separate payment will be made.
3. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the footings unless otherwise noted.
4. Place 4-in. diameter drains in the breastwall and wingwalls at 10-ft maximum spacing. The exact location will be determined by the Resident.
5. Cover joints where waterstops are not required in accordance with Standard Detail 502(01).
6. Install drainage geocomposite behind Abutment No. 1 and wingwalls up to the approach slab seat elevation and in accordance with Special Provision Section 620 Drainage Geocomposite.
7. Abutments, wingwalls, and their footings shall be backfilled with Granular Borrow. Pay limits for Abutment No. 1 will be the structural excavation limits as shown in the abutment backfill detail.

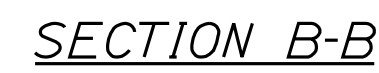
PILE NOTES

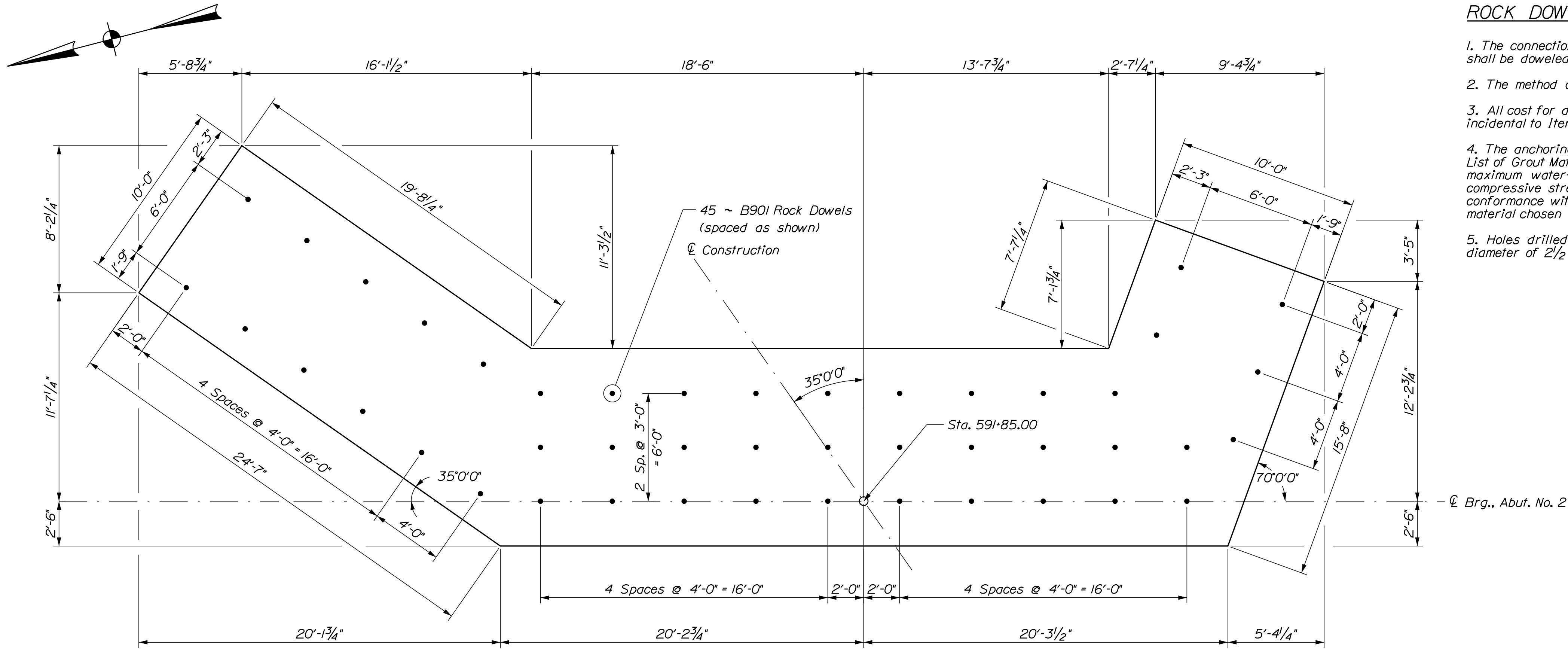
1. The maximum factored pile load is 365 kips (Strength I Limit State).
2. H-pile material shall be ASTM A572, Grade 50.
3. Estimate of piles required:
Abutment No. 1: 7 ~ HP 14x117 @ 21 feet
4. Piles shall be placed in bedrock sockets and grouted in accordance with Special Provision Section 501 (Rock-Socketed H-Pile Foundation) of the contract documents.

| | | | | | | | | | | | |
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| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | Abutment No. 1 | | Plan & Elevation | |
| SHEET NUMBER | | 431 | | OF 532 | | | | | | | |
| PROJ. MANAGER | | DESIGN-DETAILED | | CHECKED-REVIEWED | | DESIGN-DETAILED | | REVISIONS 1 | | REVISIONS 2 | |
| M. WIGHT | | JCS | | LSF/TMM | | | | | | | |
| BY | | DATE | | SIGNATURE | | P.E. NUMBER | | DATE | | | |
| GDM | | FEB 2019 | | | | | | | | | |
| LSF/TMM | | FEB 2019 | | | | | | | | | |
| FIELD CHANGES | | | | | | | | | | | |

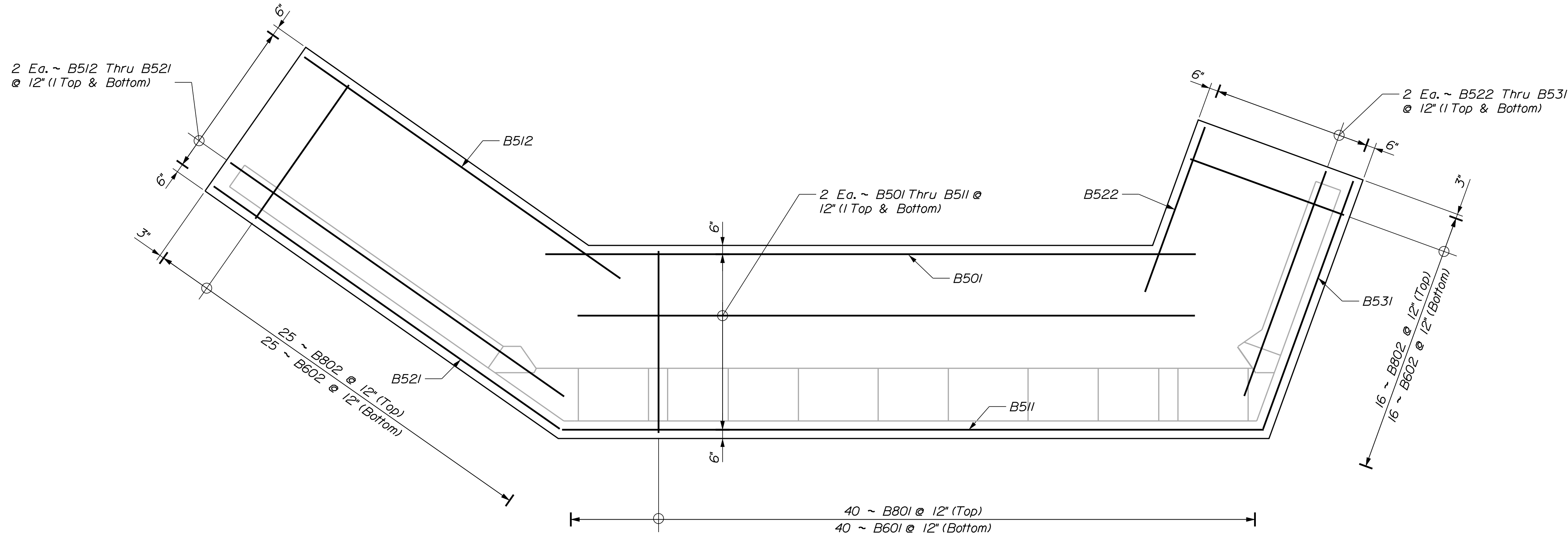


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| STATE OF MAINE DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | BRIDGE NO. 2934 WIN 22615.00 HIGHWAY PLANS | |
| Weymouth Bridge Sandy River Franklin County Madrid | | ABUTMENT NO. 1 REINFORCING ELEVATION | | SHEET NUMBER 432 OF 532 | |
| PROJ. MANAGER | CHECKED-DETAILED | JCS | DATE | SIGNATURE | |
| DESIGNED | REVIEWED | LSF/TMM | FEB 2019 | P.E. NUMBER | |
| DESIGNED | REVIEWED | LSF/TMM | FEB 2019 | DATE | |
| REVISIONS 1 | REVISIONS 2 | REVISIONS 3 | REVISIONS 4 | FIELD CHANGES | |





ABUTMENT NO. 2 FOOTING AND ROCK DOWEL PLAN



ABUTMENT NO. 2 FOOTING REINFORCING PLAN

ROCK DOWEL NOTES

1. The connection between the bearing surface and the abutment footing shall be doweled.
2. The method of installing dowels shall be approved by the Resident.
3. All cost for drilling and anchoring of the anchor dowels shall be incidental to Item No. 503.13 - Reinforcing Steel, Placing.
4. The anchoring material shall be on the MaineDOT Qualified Products List of Grout Materials, be pre-qualified for anchoring, and shall have a maximum water-cement ratio of 0.45 by weight and a minimum unconfined compressive strength of 4 ksi at the time of testing. Installation shall be in conformance with the manufacturer's recommendations. The anchor material chosen shall be submitted to the Resident prior to installation.
5. Holes drilled for the dowel reinforcing steel shall be a minimum diameter of 2 1/2 inches.

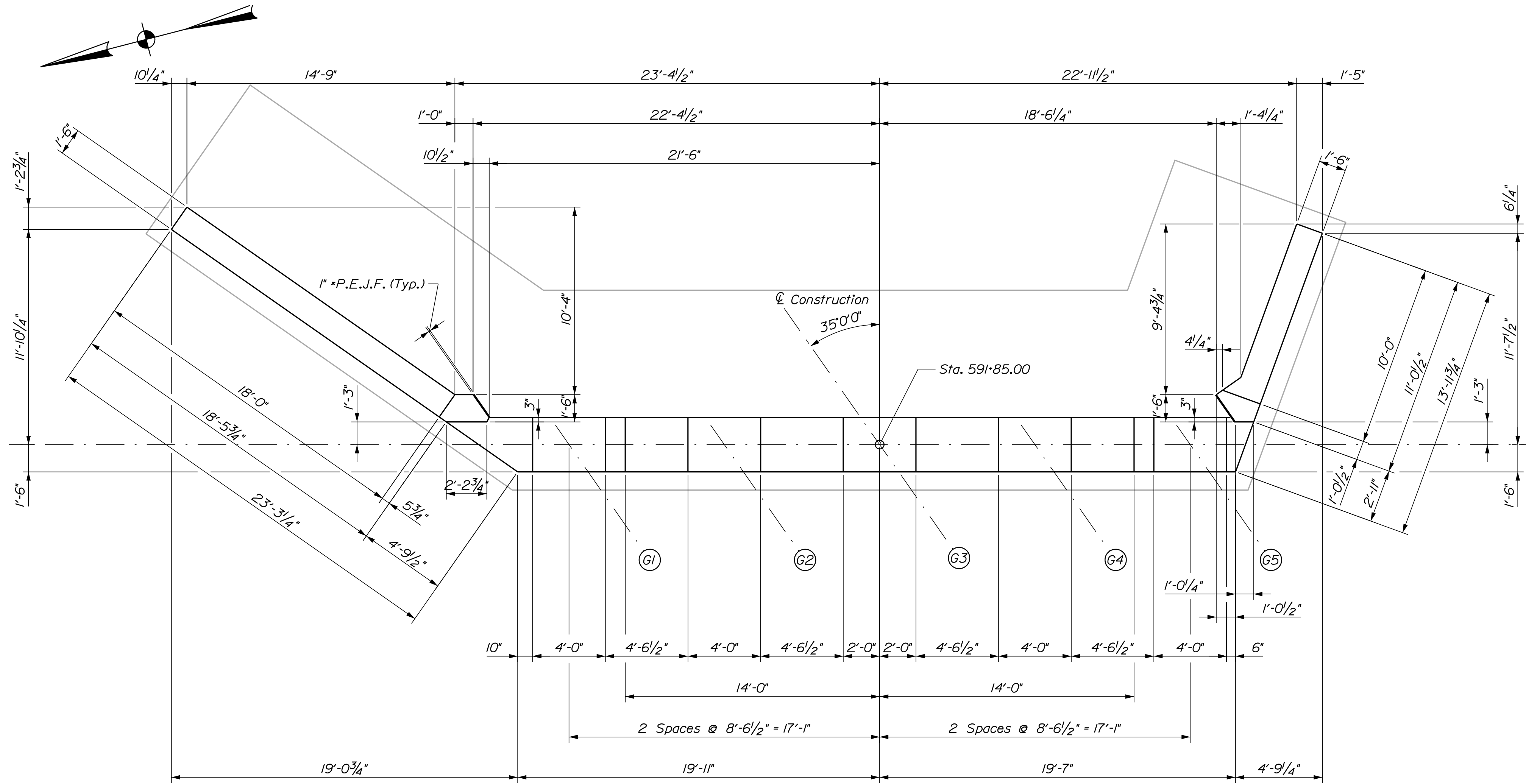
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| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | 22615.00 | | BRIDGE NO. 2034 | | HIGHWAY PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | Abutment No. 2 | | Footing Reinforcing Plan | | SHEET NUMBER | |
| DESIGNED | | CHECKED | | DESIGNED | | CHECKED | | DESIGNED | | CHECKED | | DATE | |
| DATE | | DATE | | DATE | | DATE | | DATE | | DATE | | DATE | |
| BY | | BY | | BY | | BY | | BY | | BY | | BY | |
| DATE | | DATE | | DATE | | DATE | | DATE | | DATE | | DATE | |
| SIGNATURE | | SIGNATURE | | SIGNATURE | | SIGNATURE | | SIGNATURE | | SIGNATURE | | SIGNATURE | |
| P.E. NUMBER | | P.E. NUMBER | | P.E. NUMBER | | P.E. NUMBER | | P.E. NUMBER | | P.E. NUMBER | | P.E. NUMBER | |
| DATE | | DATE | | DATE | | DATE | | DATE | | DATE | | DATE | |
| FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | |
| 435 | | 435 | | 435 | | 435 | | 435 | | 435 | | 435 | |
| OF 532 | | OF 532 | | OF 532 | | OF 532 | | OF 532 | | OF 532 | | OF 532 | |

Date: 2/8/2019

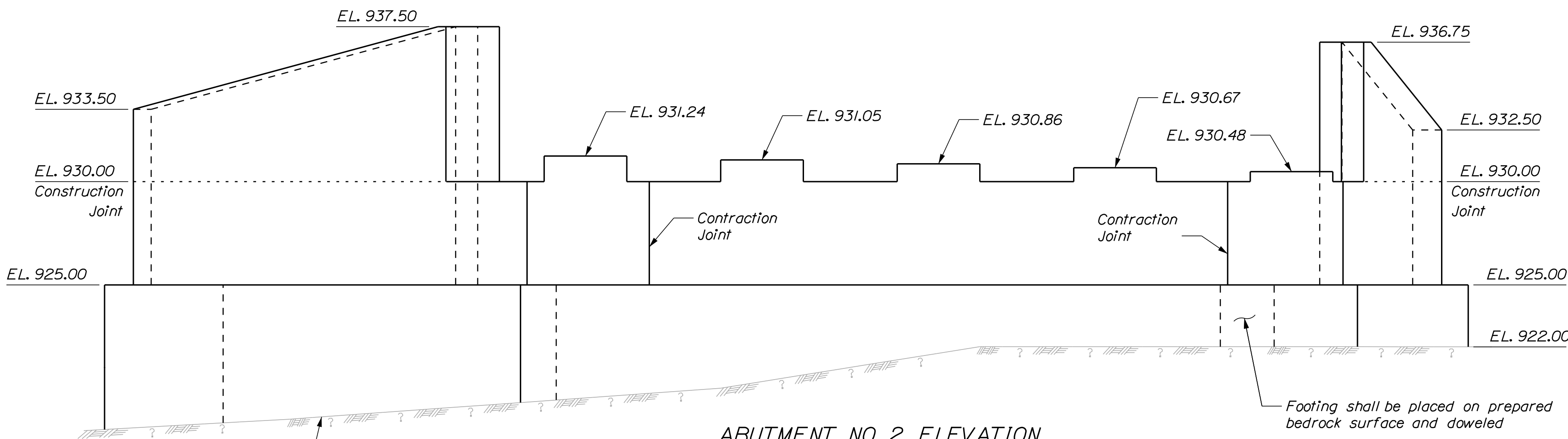
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Division: BRIDGE

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ABUTMENT NO. 2 PLAN
* Preformed Expansion Joint Filler



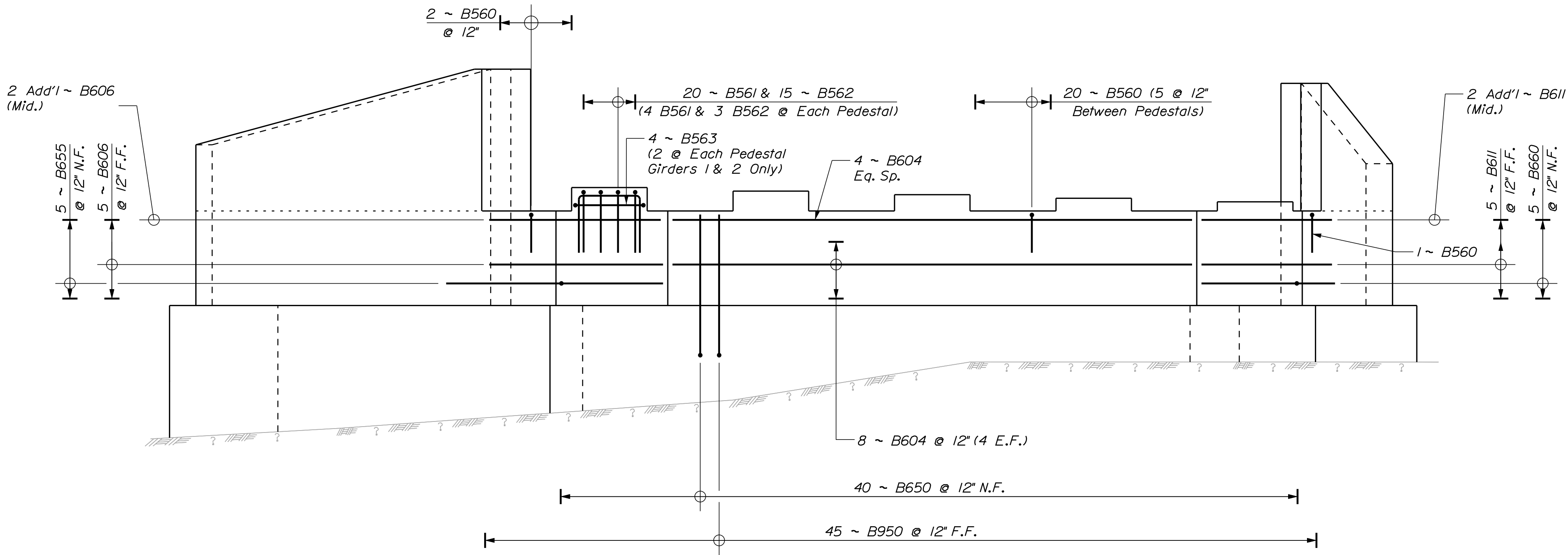
ABUTMENT NO. 2 ELEVATION

Approximate top of bedrock at N.F. of footing, inferred from the results of project geophysical survey

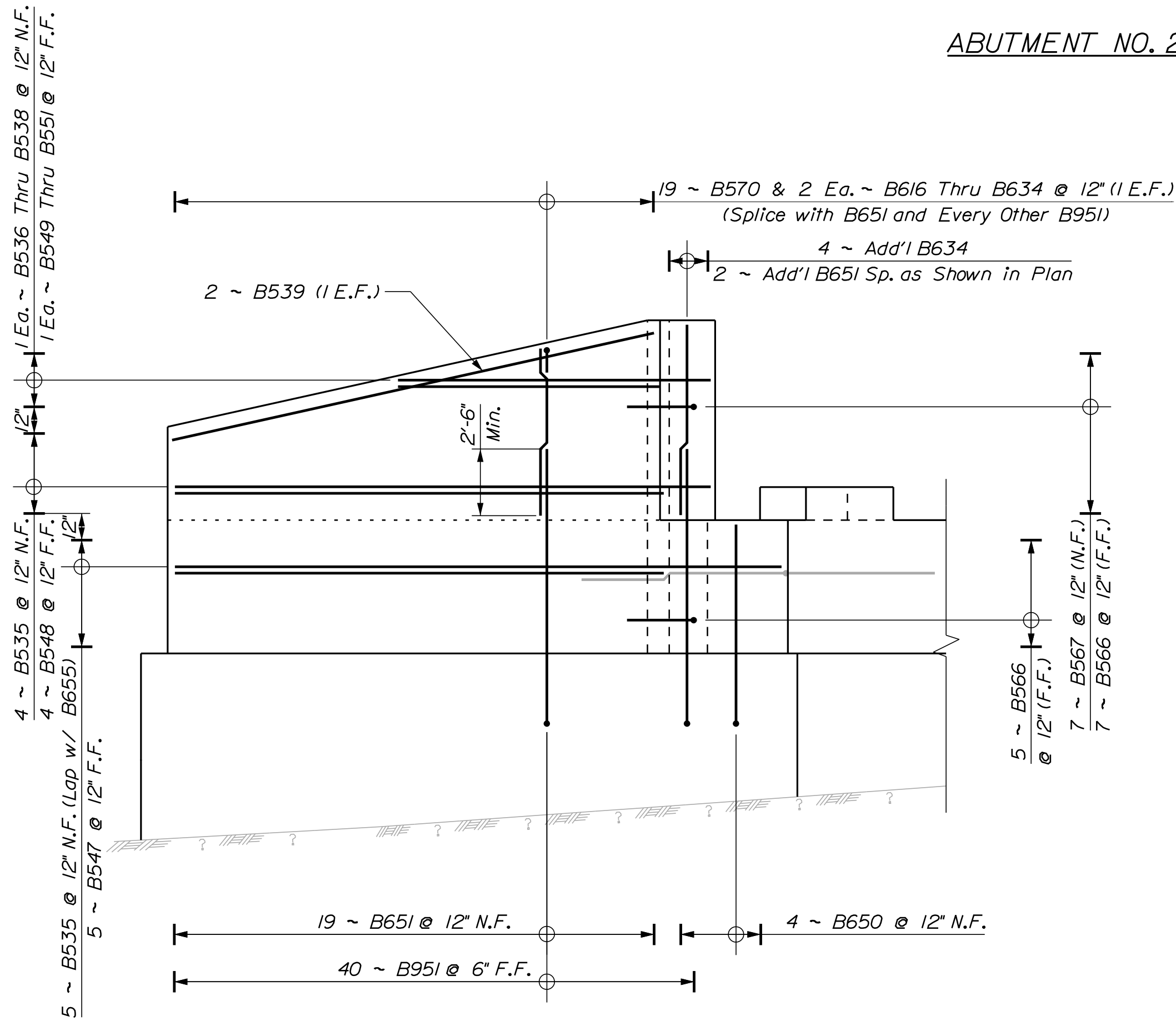
Footing shall be placed on prepared bedrock surface and doweled

ABUTMENT NO. 2 NOTES

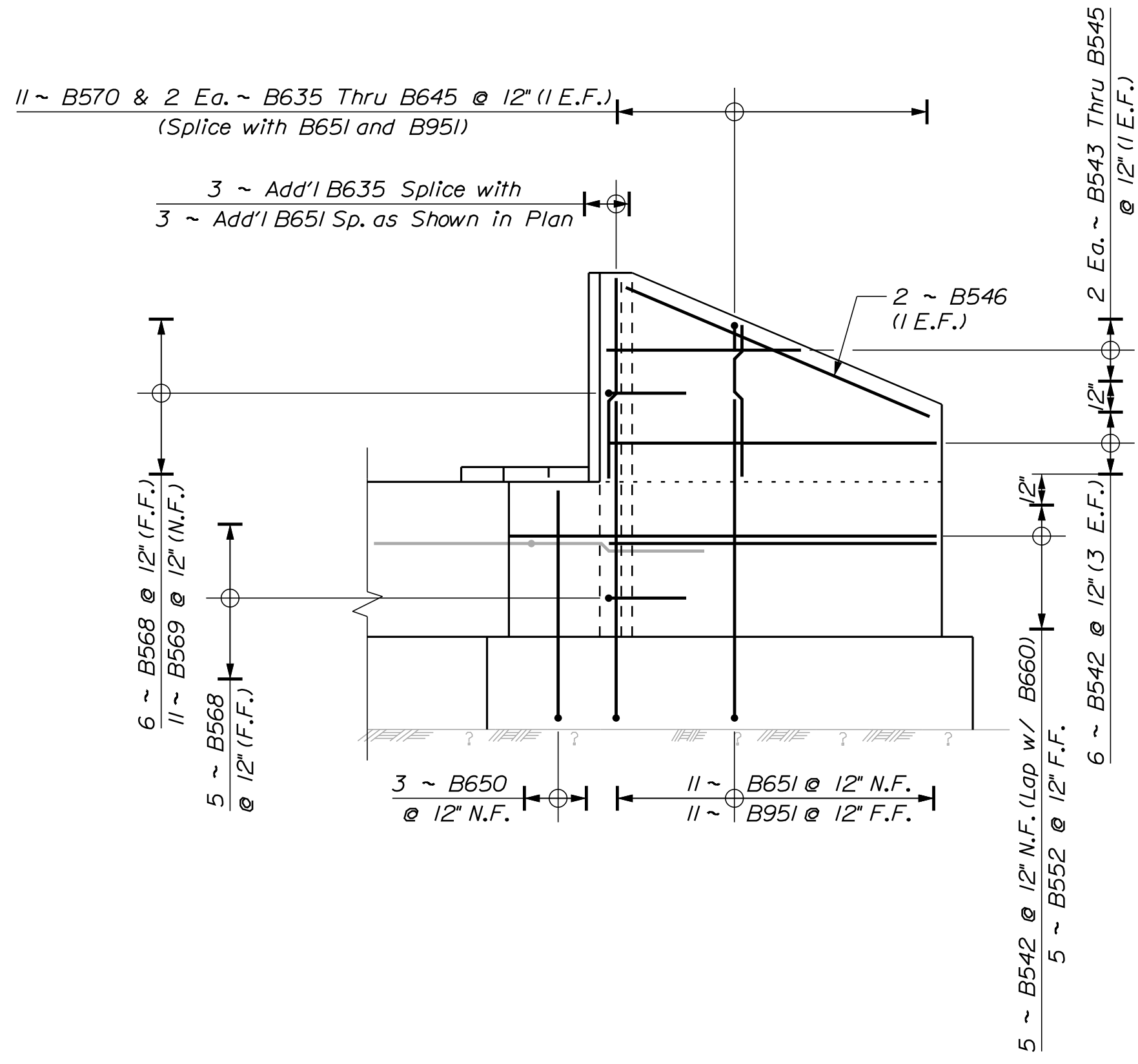
1. Abutment No. 2 shall be founded on a footing bearing on bedrock. The full nature of the bedrock bearing surface will not be evident until the excavation is made. It is the design intent that a mixed subgrade (soil and bedrock) shall not be allowed. The bedrock surface shall be prepared as set forth in these Plans.
2. The maximum factored applied footing pressure at Abutment No. 2 is 20.2 ksf (Strength I Limit State).
3. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the footings unless otherwise noted.
4. Place 4-in. diameter drains in the breastwall and wingwalls at 10-ft maximum spacing. The exact location will be determined by the Resident.
5. Cover joints where waterstops are not required in accordance with Standard Detail 502(0).
6. Construct French Drains behind the abutments and wingwalls in accordance with Standard Specifications Section 512, French Drains.
7. Abutments, wingwalls and their footings shall be backfilled with Granular Borrow. Structural Excavation and Granular Borrow pay limits shall be as shown on Plans.
8. If the bedrock excavations vary from the elevations assumed in the development of the Plans, the abutments and/or wingwalls may need to be modified. The Contractor shall grant the Department seven (7) Days to modify the Plans from the date the Resident accepts the bedrock survey.
9. Foundation concrete shall be placed on sound bedrock cleaned of all weathered or loose fractured rock, soil, and other deleterious matter. Prior to placing the footing, the bearing surface shall be cleaned. Where the bedrock surface slope exceeds 4H:1V, the bedrock surface shall be benched in level steps or made less steep than 4H:1V.
10. Prior to placing the footing, the Contractor shall survey the topography of the prepared bedrock surface and provide the topography to the Resident. Sufficient elevation measurements shall be obtained to demonstrate the prepared surface meets the slope and/or bench requirements. At a minimum, the elevation shall be determined at 20 evenly distributed locations across the footing at a maximum 5-foot spacing.
11. Where the prepared bedrock surface is below the bottom of the footing elevation shown on the Plans concrete fill may be placed to fill the void (low spot) if constructed in the dry. Concrete fill shall be Class A concrete. Alternatively, the footing thickness may be increased up to an additional 1 foot as approved by the Resident. If the footing thickness is increased, the top of footing elevation shall be as shown on the Plans.
12. Where bedrock protrudes above the bottom of the footing, the footing may be raised and vertical reinforcing may be cut in the field with the approval of the Resident. The minimum allowable footing thickness is 3 feet. Payment for adjusting footing depth and adjusting reinforcing steel will be considered incidental to related Contract items. No separate payment will be made.
13. At the option of the Resident, bedrock that protrudes above the bottom of the footing elevation may be removed. Payment for bedrock removal will be made under Item No. 206.092, Structural Rock Excavation - Major Structures. Blasting, if necessary and preapproved by the Resident, shall be conducted in accordance with Standard Specifications Subsection 105.2.7. The Contractor shall conduct pre-and post-blast surveys, as well as blast vibration monitoring, at any nearby structures in accordance with industry standards at the time of the blast.
14. It is intended that footing concrete shall be placed in the dry by controlling/removing water from minor seeps or surface water inflow.



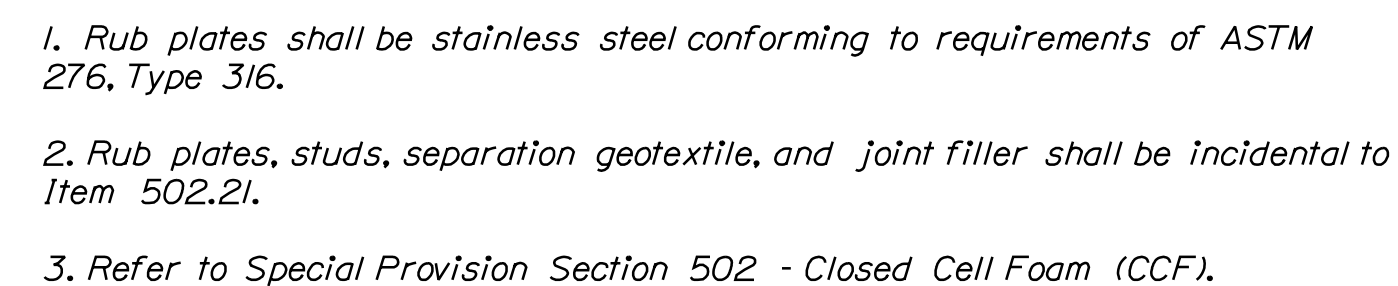
ABUTMENT NO. 2 REINFORCING ELEVATION

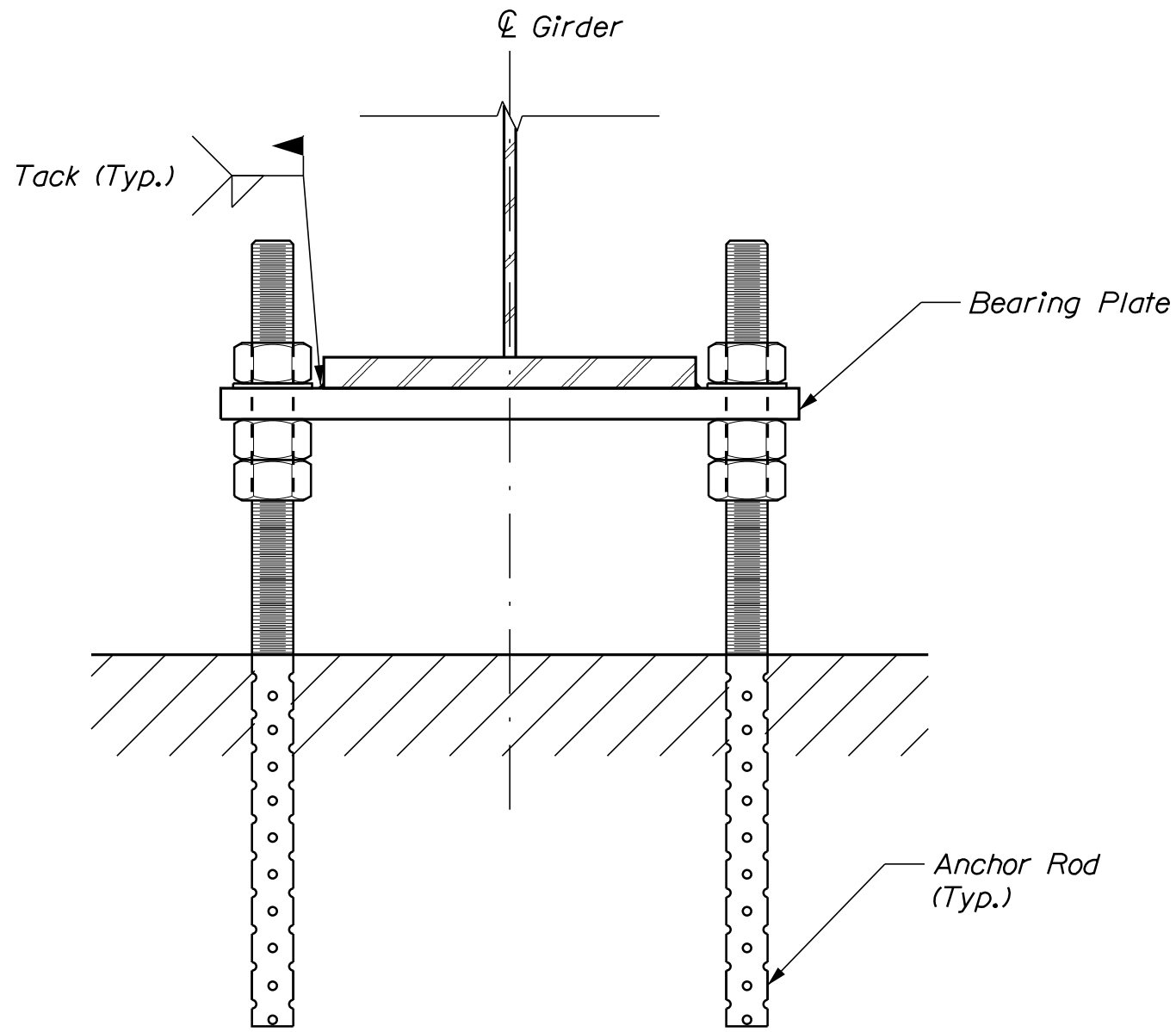


ABUTMENT NO. 2 DOWNSTREAM WINGWALL REINFORCING ELEVATION

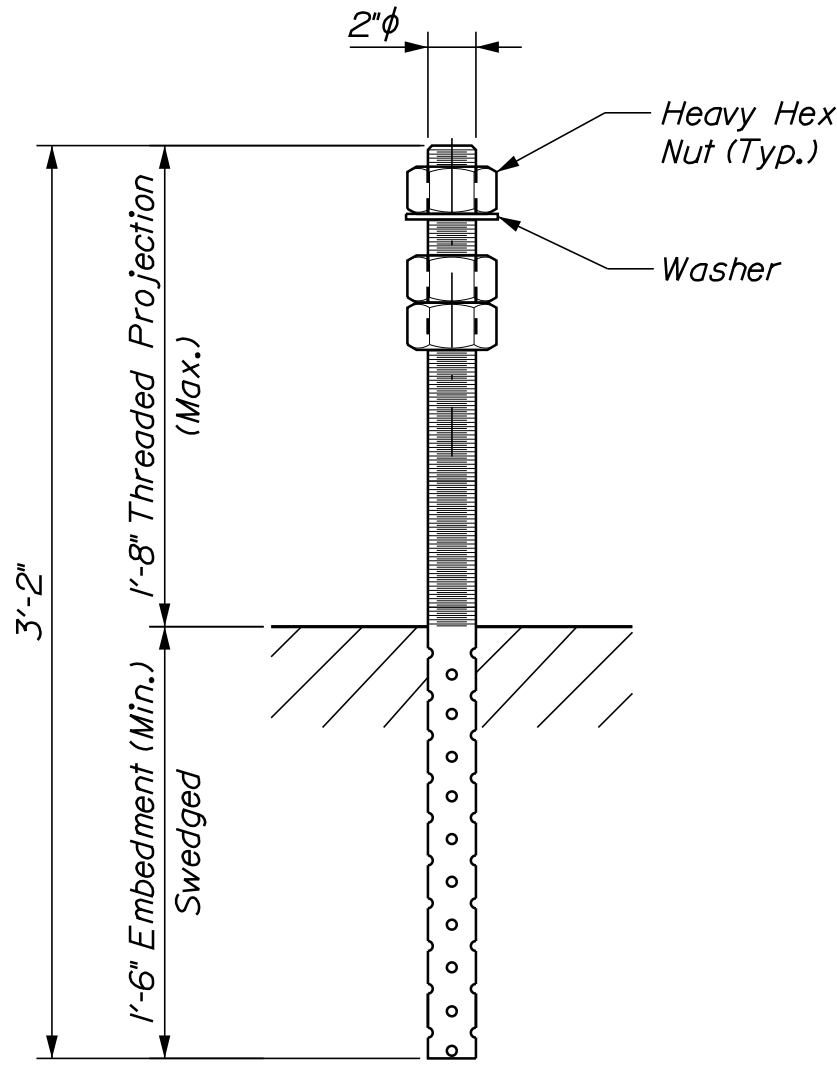


ABUTMENT NO. 2 UPSTREAM WINGWALL REINFORCING ELEVATION

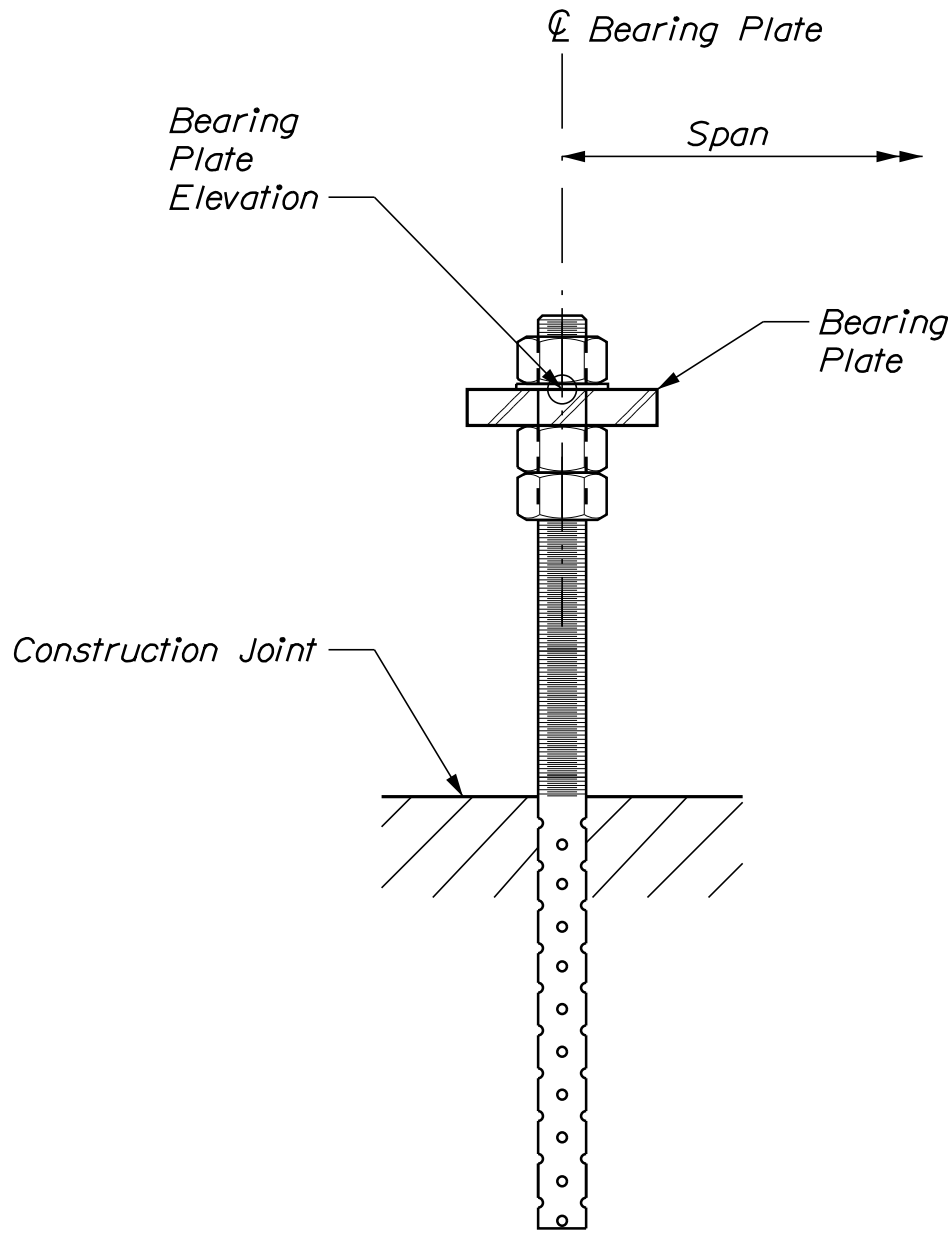




BEARING ASSEMBLY ELEVATION



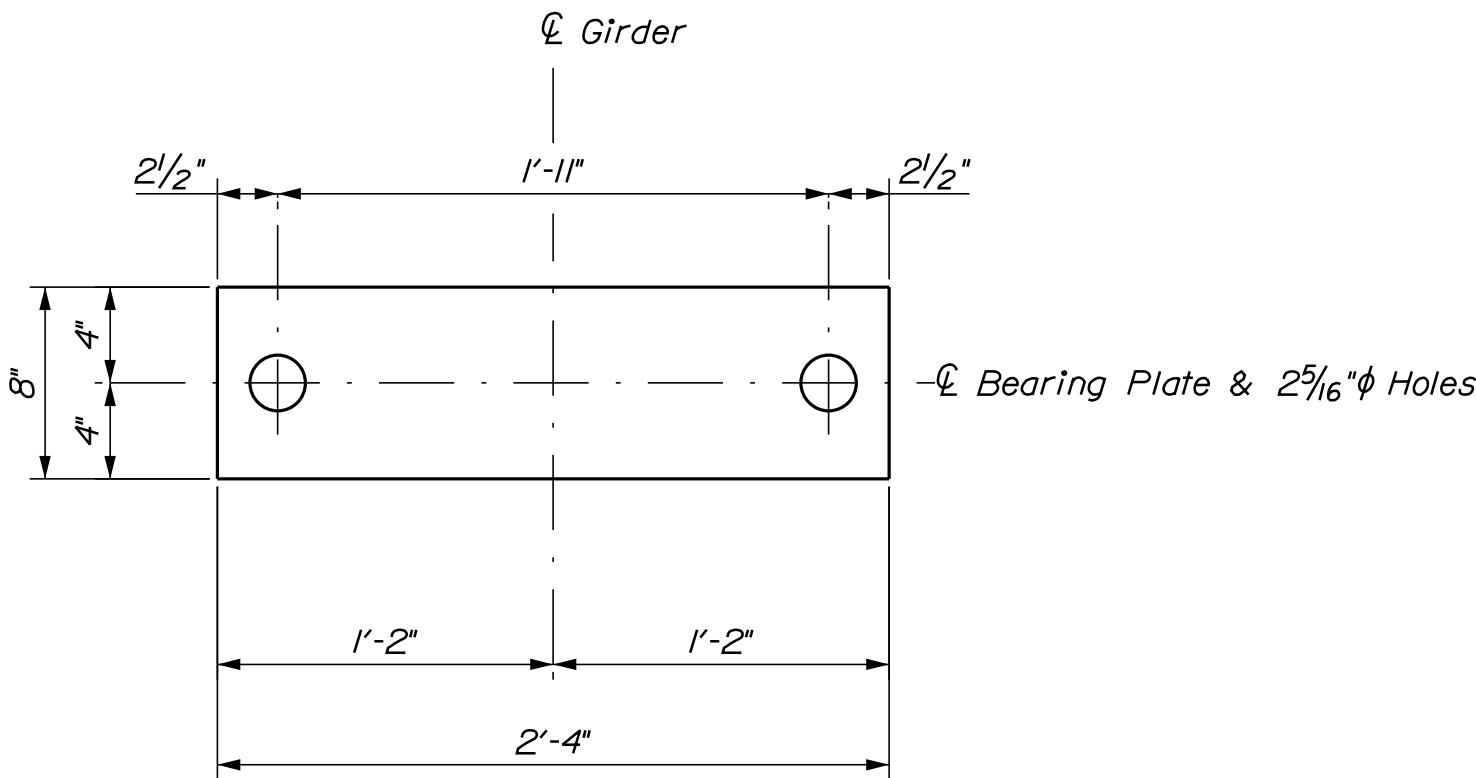
ANCHOR ROD DETAIL



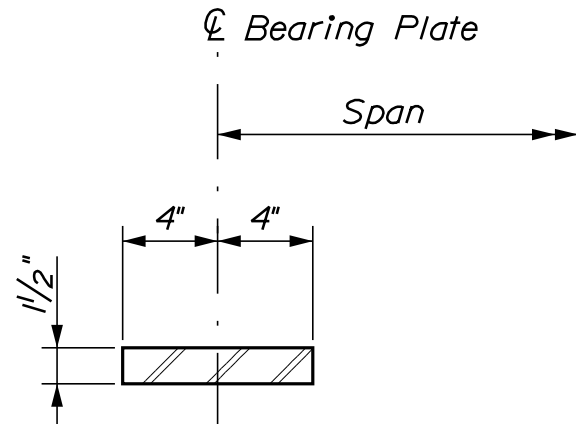
BEARING PLATE INSTALLATION

BEARING PLATE NOTES

1. Payment for fabrication and installation of bearing plate assemblies will be considered incidental to related Contract Items.
2. Anchor rods shall be ASTM F 1554 Grade 55 and shall be swaged on the embedded portion of the rod.
3. Heavy hex nuts for anchor rods shall meet the requirements of ASTM A 563, Grade DH.



BEARING PLATE PLAN



BEARING PLATE SECTION

| BEARING PLATE ELEVATIONS | |
|--------------------------|--------------------|
| Girder | ℄ Brg. Abut. No. 1 |
| G1 | 930.73 |
| G2 | 930.54 |
| G3 | 930.35 |
| G4 | 930.16 |
| G5 | 929.98 |

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2261(500)

WIN
22615.00

BRIDGE NO. 2934

BRIDGE PLANS

Weymouth Bridge
Sandy River
Franklin County

MADRID

ABUT NO. 1 BEARING PLATES

| PROJ. MANAGER | M. WIGHT | BY | DATE |
|------------------|----------|---------|----------|
| DESIGN-DETAILED | JCS | GM | FEB 2019 |
| CHECKED-REVIEWED | LSW | LSF/TMM | FEB 2019 |
| DESIGN-DETAILED | | | |
| REVISIONS 1 | | | |
| REVISIONS 2 | | | |
| REVISIONS 3 | | | |
| REVISIONS 4 | | | |
| FIELD CHANGES | | | |

SIGNATURE
P.E. NUMBER
DATE

SHEET NUMBER

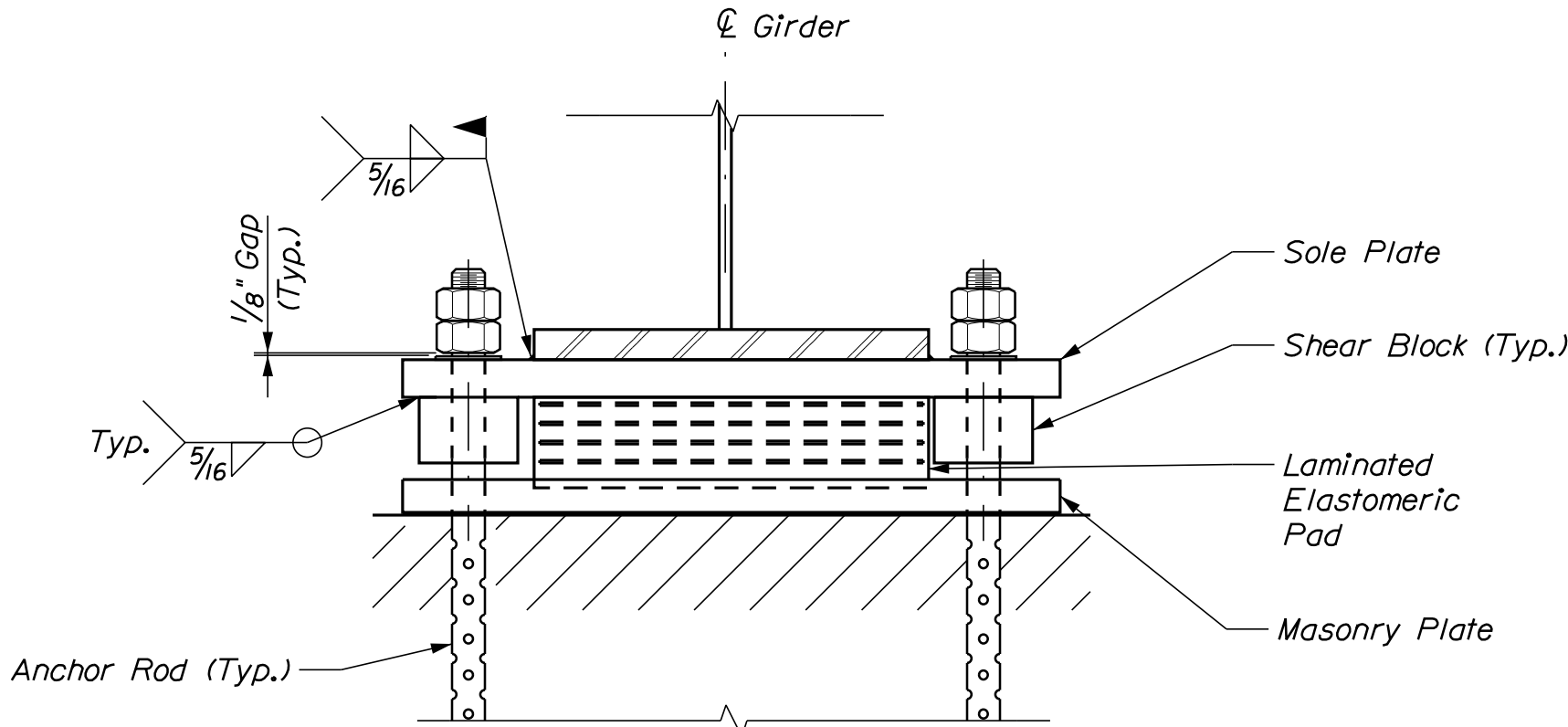
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OF 532

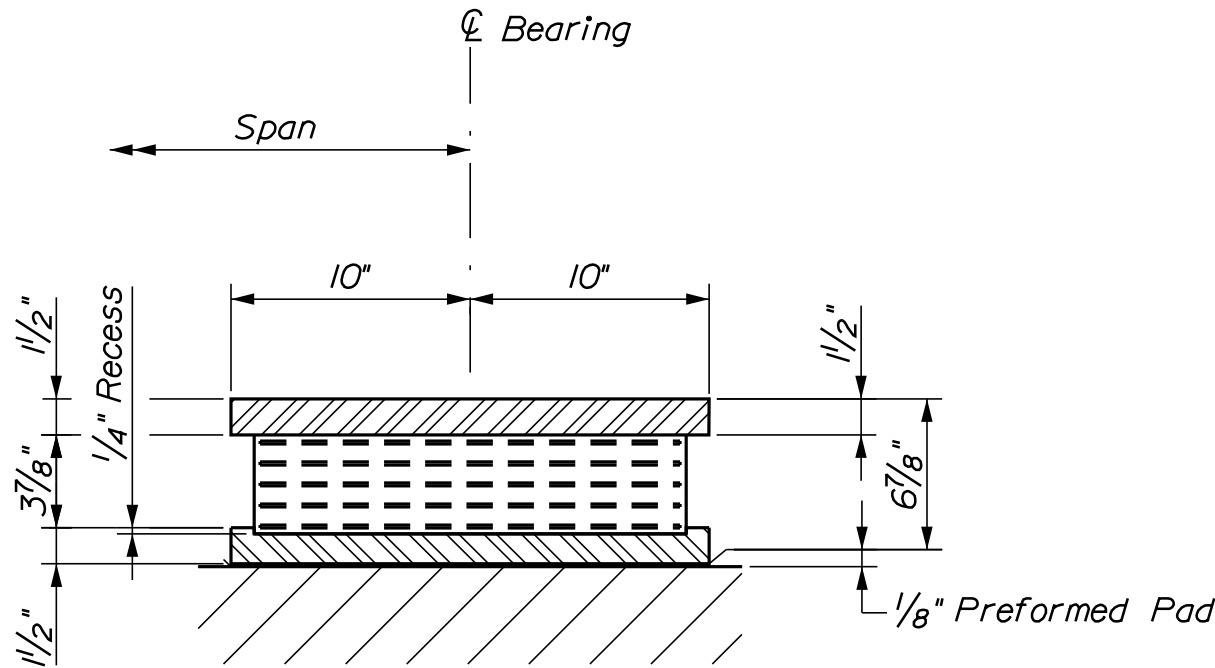
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440

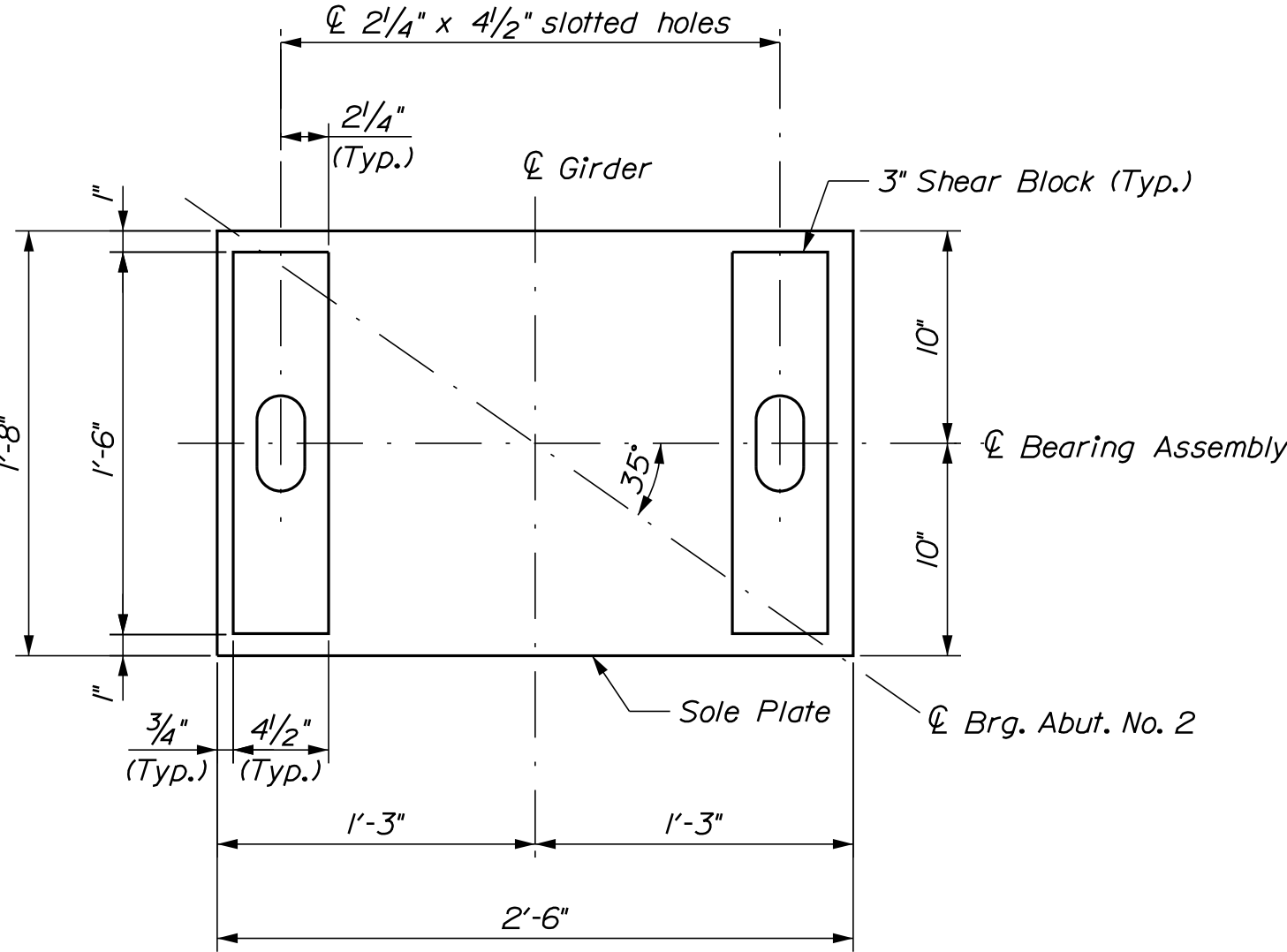
OF 532



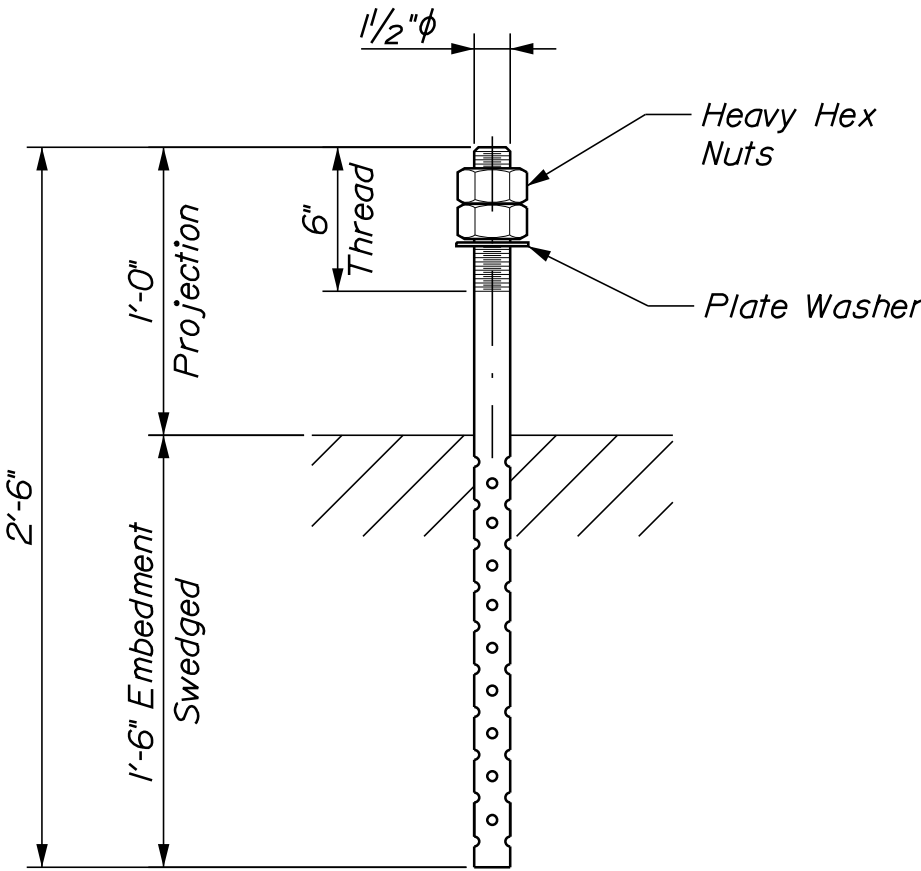
BEARING ELEVATION



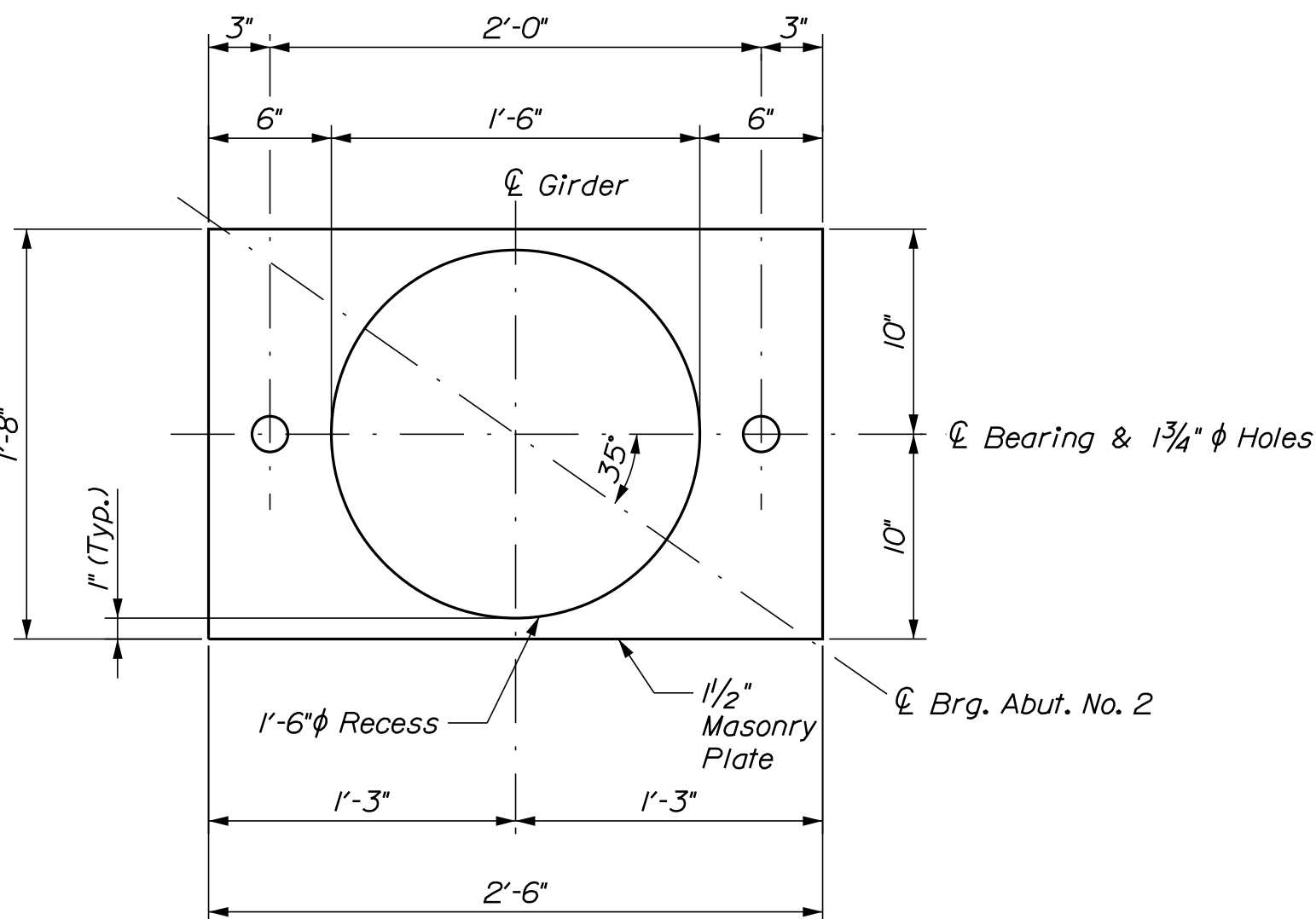
BEARING SECTION



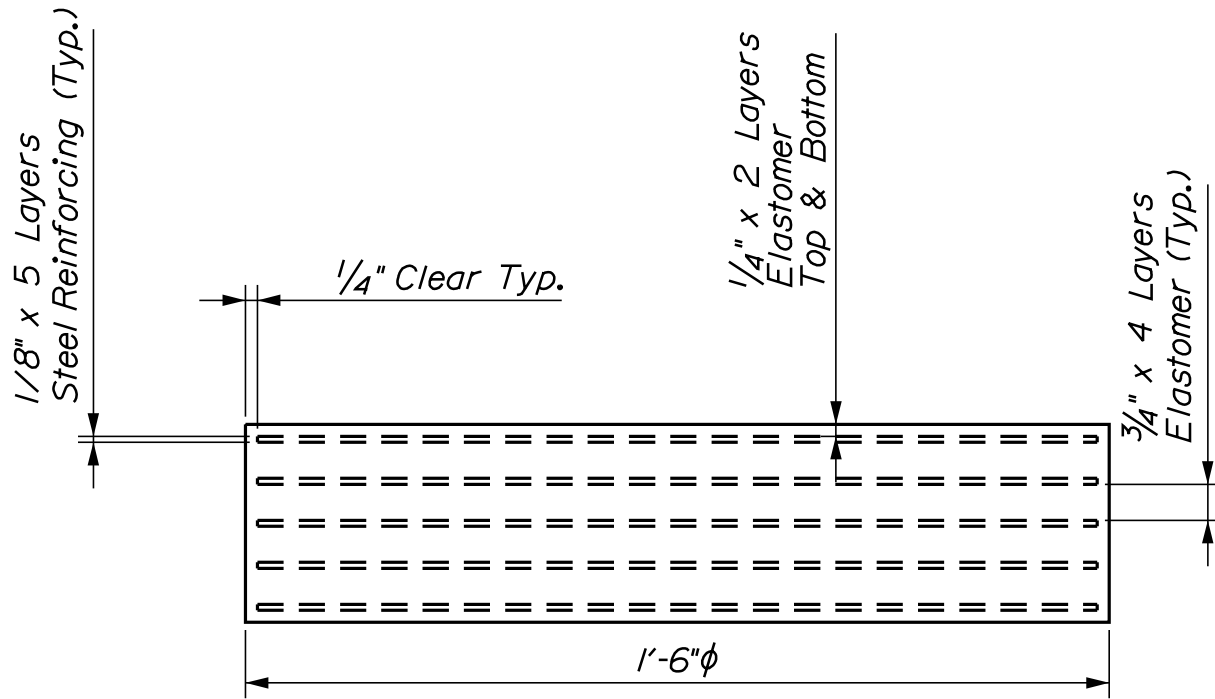
SOLE PLATE PLAN



ANCHOR ROD DETAIL



MASONRY PLATE PLAN



ELASTOMERIC PAD SECTION

ELASTOMERIC BEARING NOTES

1. The shear modulus of the elastomer shall be 130 psi.
2. Sole plates, shear blocks and plate washers shall meet the requirements of ASTM A 709/A 709M, Grade 50W. Masonry plates shall meet the requirements of ASTM A 709/A 709M, Grade 50.
3. Anchor rods shall meet the requirements of ASTM F 1554, Grade 55 and shall be swedged on the embedded portion of the rod.
4. Heavy hex nuts for anchor rods shall meet the requirements of ASTM A 563, Grade DH.
5. Masonry plates shall be galvanized in accordance with Section 506. Sole plates, shear blocks, and plate washers shall be treated in the same manner as the structural steel. Anchor rods, washers, nuts and shear pins shall be galvanized to ASTM A 153 or ASTM B 695, Class 50, Type 1.
6. Vulcanizing of the elastomer to the sole plate shall be done during the primary mold process.
7. All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge and a direction arrow that points upstation. All marks shall be permanent and shall be visible after the bearing is installed.
8. Bearings shall be covered during transit.
9. The bearings are designed so that the superstructure may be erected when the ambient air temperature is within the range of 65°F and 90°F. If the ambient air temperature is outside this range, the bearings shall be reset as directed by the Resident.
10. All necessary precautions shall be taken to protect bearing components from field weld flash and spatter. Heat from welding operations shall be controlled such that steel adjacent to the elastomer does not exceed 200°F. The temperature shall be verified by the use of temperature indicating crayons or other suitable means.
11. After the sole plate has been welded to the structural steel, the shear blocks, the top 6 inches of the anchor rods, the plate washers and the exposed surface of the sole plates, including the anchor bolt holes, shall be treated with a dielectric material as approved by the Resident.
12. Upset the threads on the anchor rods after assembly of the bearing.
13. The "Bearing Design Load" for each bearing, as noted in the Standard Specifications Subsection 523.23, is 166 kips. This is the total load for the Service I load combination without impact.

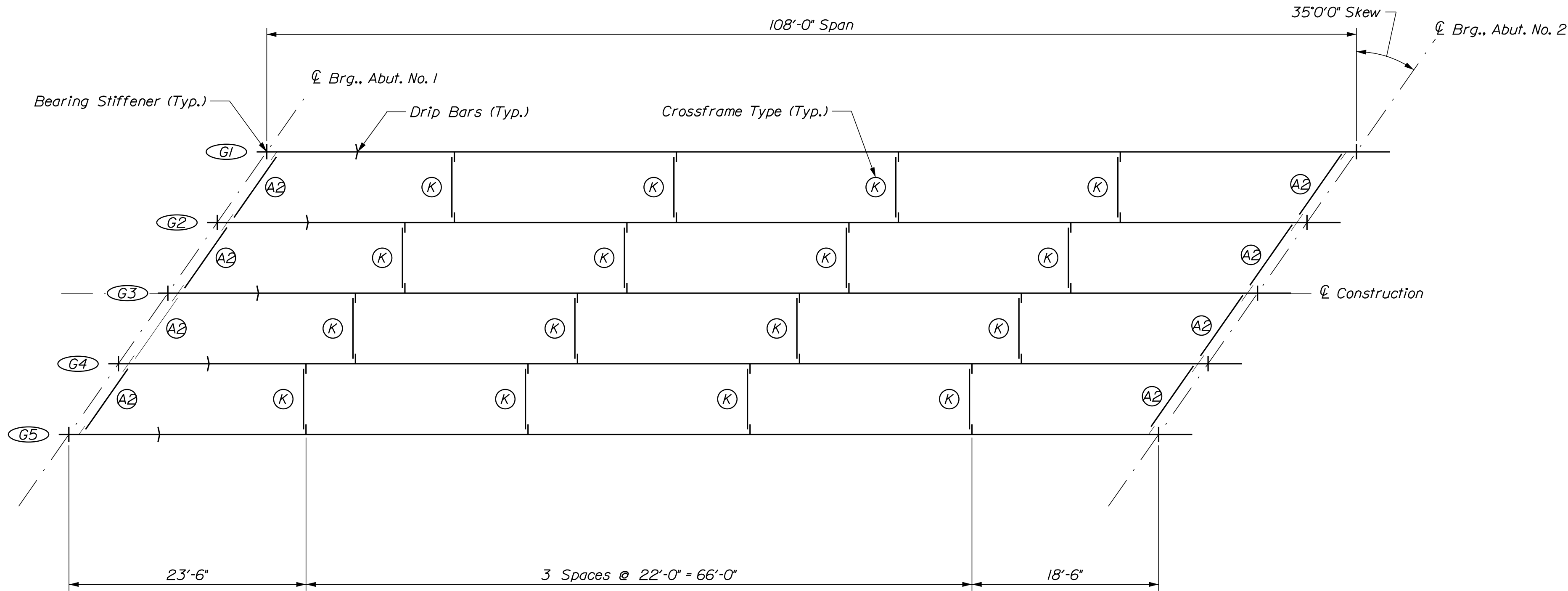
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|-----------------|--|------------------------------|--|------------------|--|-----------------|--|--------------------------------|--|-----------------|--|--------------|--|
| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | 22615.00 | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | About No. 2 Expansion Bearings | | SHEET NUMBER | | 441 | |
| PROJ. MANAGER | | DESIGN-DETAILED | | CHECKED-REVIEWED | | DESIGN-DETAILED | | REVISIONS 1 | | REVISIONS 2 | | REVISIONS 3 | |
| BY | | DATE | | SIGNATURE | | P.E. NUMBER | | DATE | | FIELD CHANGES | | | |
| M. WIGHT | | JCS | | LSF/TMM | | | | | | | | | |
| GCM | | FEB 2019 | | FEB 2019 | | | | | | | | | |
| OF 532 | | | | | | | | | | | | | |

Date:2/8/2019

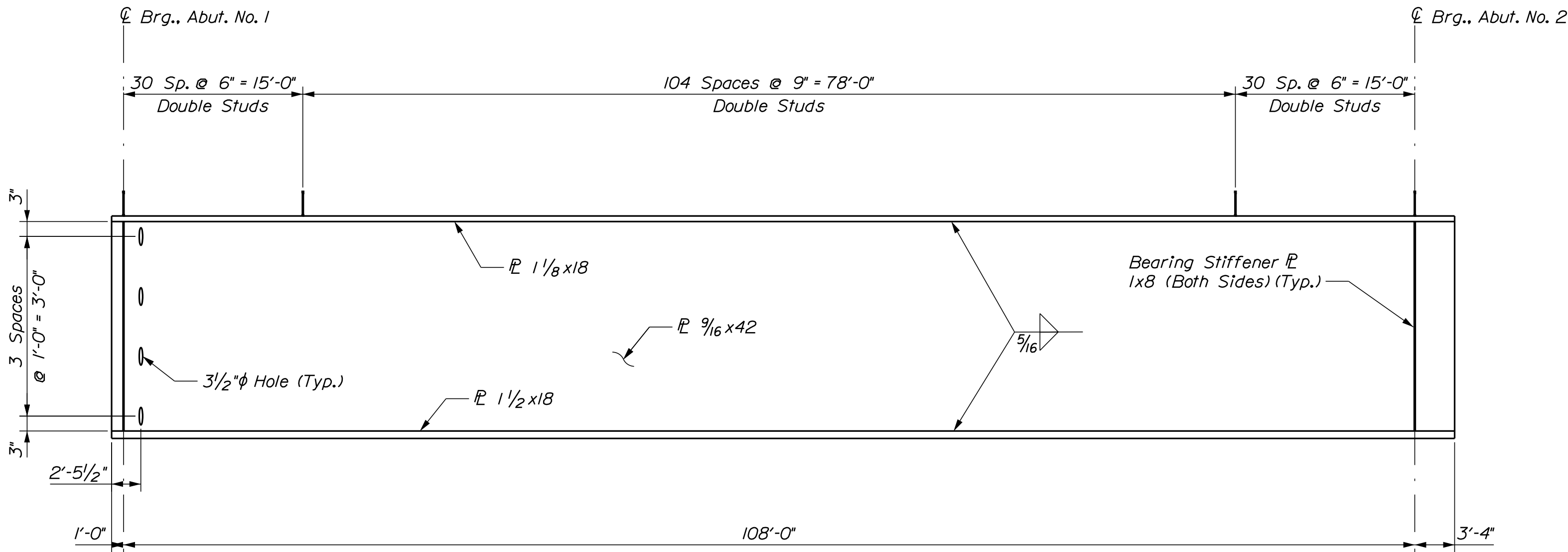
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Division: BRIDGE

Filename: ... \00\BRIDGE\MSTA\442_Framing.dgn



FRAMING PLAN
(Dimensions are Horizontal)

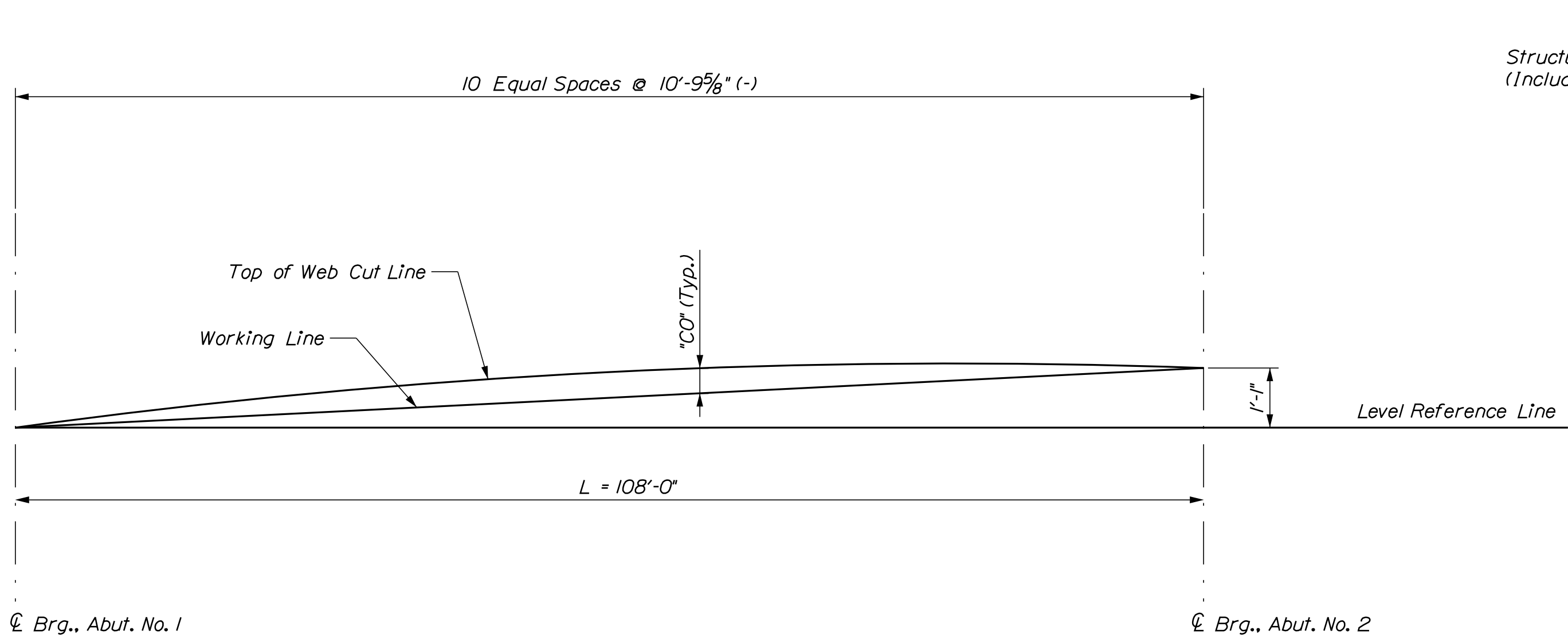


GIRDER ELEVATION AND STUD LAYOUT
(330 Studs Per Girder x 5 Girders = 1650 Studs)

STRUCTURAL STEEL NOTES

1. Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.
2. No transverse butt weld splices 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 splices in flanges shall be not less than one foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within one foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.
3. Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be not less than 20 feet in length unless otherwise shown on the plans.
4. 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.
5. Connection plates for intermediate crossframes shall have a minimum thickness of 1/2-inch.
6. Crossframe or diaphragm connection plates may be either plumb or normal to the top flange.
7. All connection plates and stiffeners shall be welded to the top and bottom flanges using a 5/16-inch weld.
8. The ends of the girders and the Abutment No. 2 end diaphragm shall be coated with a zinc-rich coating system in accordance with Standard Specifications Section 506, Shop Applied Protective Coating - Steel (Zinc Rich Coating System), to a distance of 10 feet from the face of the abutments. All costs related to coating will not be paid for directly but will be considered incidental to related structural steel contract items. Paint color shall meet Federal Color Standard 30045 (Brown).
9. See Standard Detail 514(10) for drip bar details.

| | | | | | | | | | | | |
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| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| Weymouth Bridge | | Sandy River | | Franklin County | | Madrid | | Framing Plan | | SHEET NUMBER | |
| 442 | | OF 532 | | DATE | | P.E. NUMBER | | SIGNATURE | | 22615.00 | |
| BY | | DATE | | DATE | | DATE | | DATE | | DATE | |
| M. WIGHT | | JCS | | JCS | | JCS | | JCS | | JCS | |
| DESIGNED | | CHECKED | | DESIGNED | | CHECKED | | DESIGNED | | CHECKED | |
| REVISIONS 1 | | REVISIONS 2 | | REVISIONS 3 | | REVISIONS 4 | | REVISIONS 5 | | REVISIONS 6 | |
| FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | |

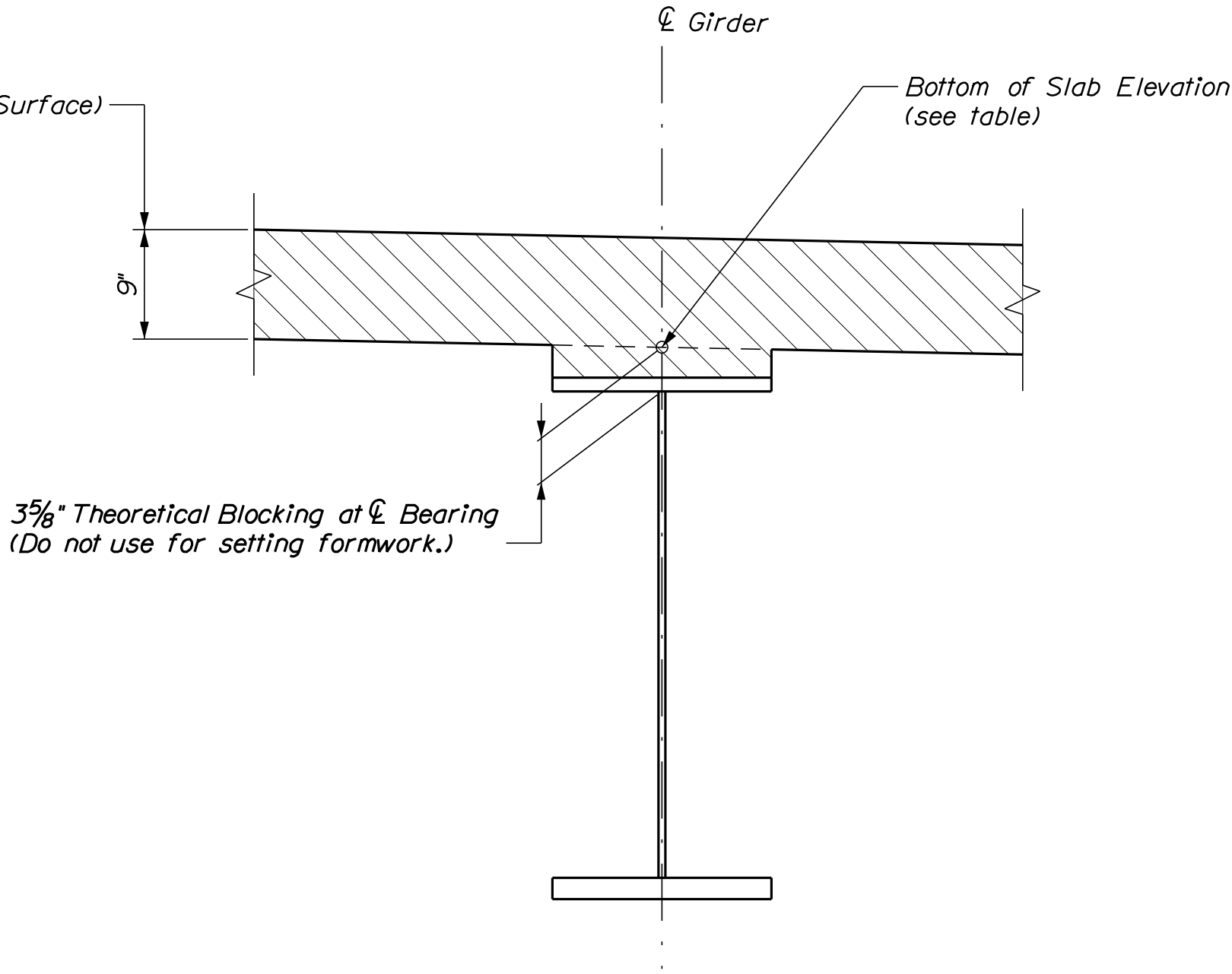


CAMBER DIAGRAM

| TABLE OF CAMBER ORDINATES "CO" (IN) | | | | | | | | | | | | | |
|-------------------------------------|----|----------|--------|---------|----------|----------|----------|---------|--------|----------|----|---------|--|
| Girders | A1 | 0.10L | 0.20L | 0.30L | 0.40L | 0.50L | 0.60L | 0.70L | 0.80L | 0.90L | A2 | Girders | |
| 1 & 5 | 0" | 0 13/16" | 1 5/8" | 2 3/16" | 2 5/8" | 2 3/4" | 2 5/8" | 2 3/16" | 1 5/8" | 0 13/16" | 0" | 1 & 5 | |
| 1 - 5 | 0" | 0 7/8" | 1 5/8" | 2 1/4" | 2 11/16" | 2 13/16" | 2 11/16" | 2 1/4" | 1 5/8" | 0 7/8" | 0" | 1 - 5 | |

| TABLE OF DEFLECTIONS (INCHES) | | | | | | | | | | | | | |
|-------------------------------|------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|
| Girder | | A1 | 0.10L | 0.20L | 0.30L | 0.40L | 0.50L | 0.60L | 0.70L | 0.80L | 0.90L | A2 | Girder |
| 1 & 5 | Steel Dead Load | 0.00 | 0.18 | 0.34 | 0.46 | 0.54 | 0.57 | 0.54 | 0.46 | 0.34 | 0.18 | 0.00 | 1 & 5 |
| | Fluid Dead Load | 0.00 | 0.61 | 1.16 | 1.59 | 1.86 | 1.95 | 1.86 | 1.59 | 1.16 | 0.61 | 0.00 | |
| | Superimposed Dead Load | 0.00 | 0.08 | 0.14 | 0.20 | 0.23 | 0.24 | 0.23 | 0.20 | 0.14 | 0.08 | 0.00 | |
| 2 - 4 | Steel Dead Load | 0.00 | 0.18 | 0.34 | 0.46 | 0.54 | 0.57 | 0.54 | 0.46 | 0.34 | 0.18 | 0.00 | 2 - 4 |
| | Fluid Dead Load | 0.00 | 0.69 | 1.30 | 1.78 | 2.08 | 2.19 | 2.08 | 1.78 | 1.30 | 0.69 | 0.00 | |
| | Superimposed Dead Load | 0.00 | 0.03 | 0.05 | 0.07 | 0.08 | 0.08 | 0.08 | 0.07 | 0.05 | 0.03 | 0.00 | |

| BOTTOM OF SLAB ELEVATIONS | | | | | | | | | | | | |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Girder | A1 | 0.10L | 0.20L | 0.30L | 0.40L | 0.50L | 0.60L | 0.70L | 0.80L | 0.90L | A2 | Girder |
| 1 | 791.34 | 791.49 | 791.66 | 791.82 | 791.98 | 792.13 | 792.28 | 792.43 | 792.57 | 792.71 | 792.86 | 1 |
| 2 | 791.53 | 791.70 | 791.87 | 792.04 | 792.20 | 792.36 | 792.52 | 792.67 | 792.82 | 792.97 | 793.12 | 2 |
| 3 | 791.73 | 791.90 | 792.08 | 792.25 | 792.43 | 792.59 | 792.76 | 792.92 | 793.07 | 793.23 | 793.39 | 3 |
| 4 | 791.93 | 792.11 | 792.29 | 792.47 | 792.65 | 792.83 | 793.00 | 793.16 | 793.33 | 793.49 | 793.66 | 4 |
| 5 | 792.13 | 792.32 | 792.50 | 792.69 | 792.88 | 793.06 | 793.24 | 793.41 | 793.58 | 793.75 | 793.93 | 5 |



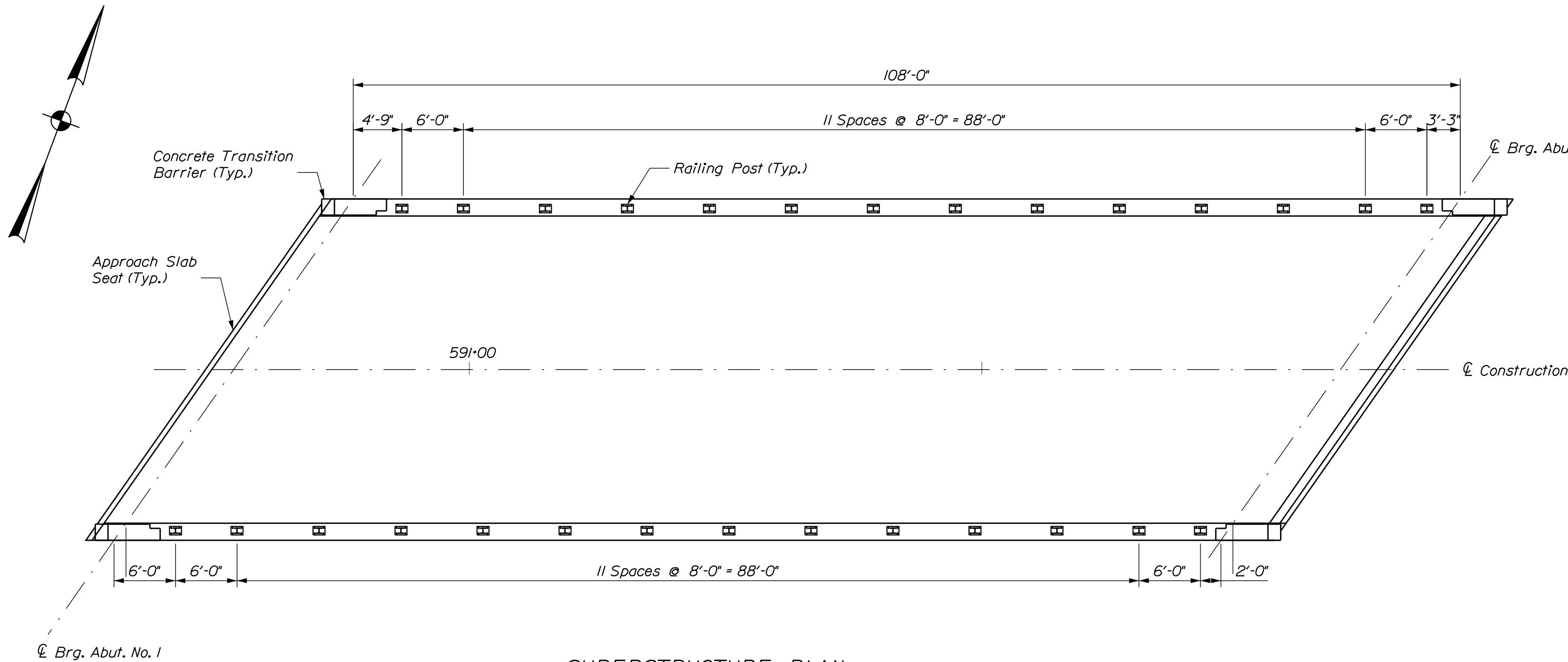
BLOCKING DETAIL

Date:2/8/2019

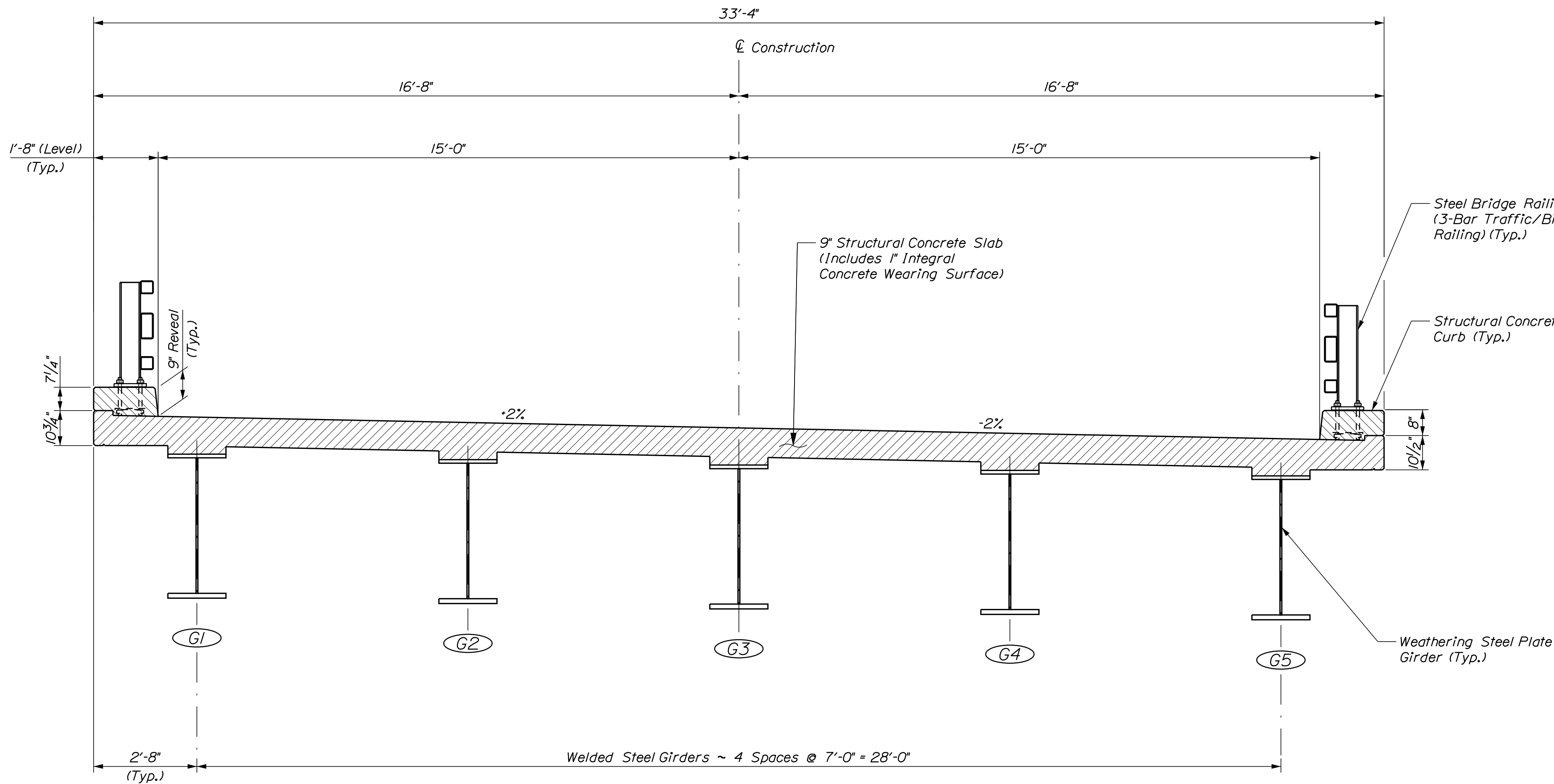
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Division: BRIDGE

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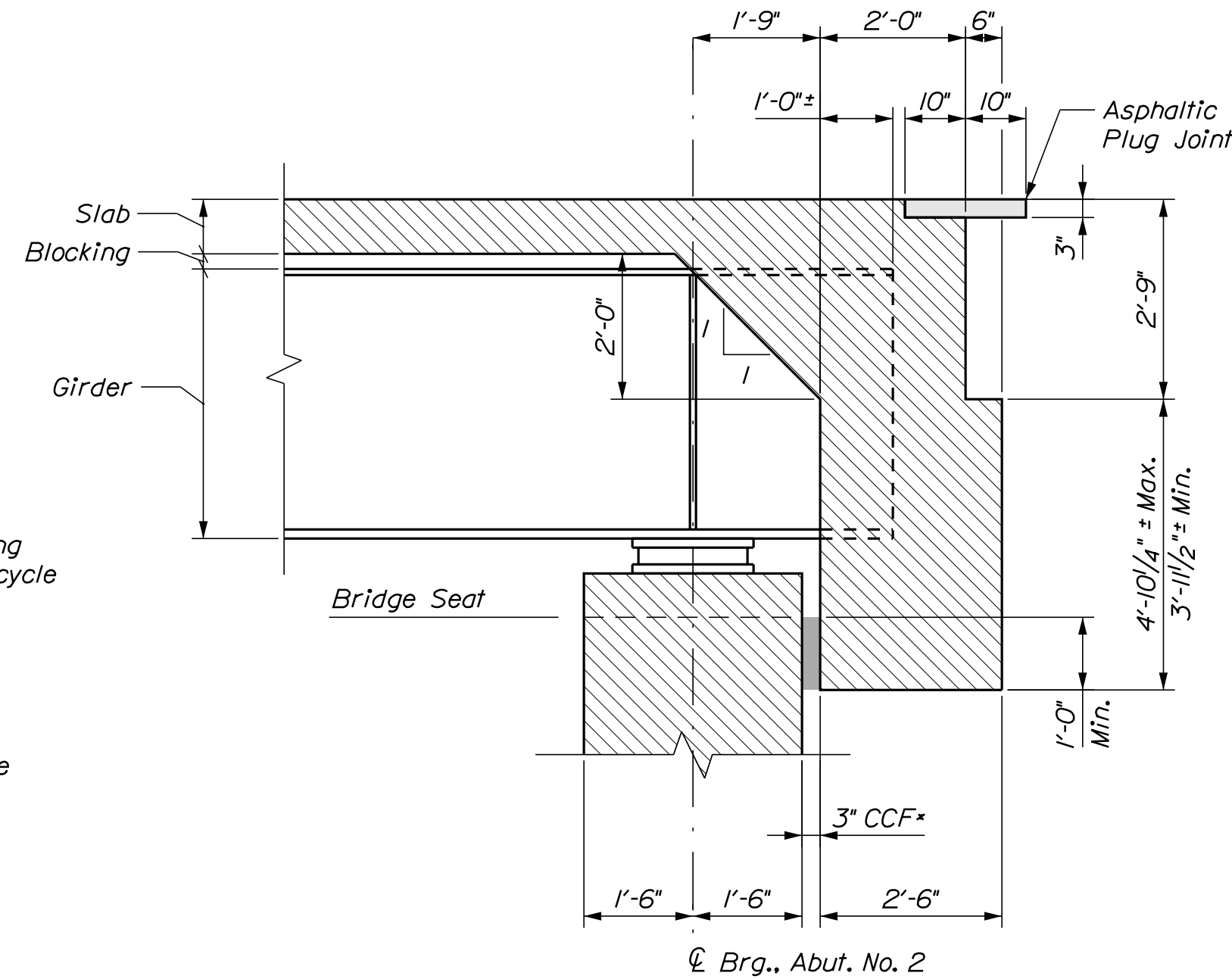
SUPERSTRUCTURE PLAN
(Dimensions are Horizontal)



TRANSVERSE SECTION

SUPERSTRUCTURE NOTES

1. The theoretical blocking used for design of the structure is $3\frac{5}{8}$ inches at the centerline of bearing of the abutments and piers. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
4. The superstructure slab concrete for each span shall be placed continuously and shall be kept plastic until the entire placement has been made.
5. Provide 4 additional stirrups in the curbs at each Transition Barrier location.
6. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb concrete.
7. The use of Precast Deck Panels will not be allowed on this project.
8. The sawcut grooving in the deck shall be longitudinal per Special Provision 502.
9. Reinforcing for transition barriers shall be stainless steel, Bars TB651 and TB652 detailed in Standard Detail 526(37) shall be reduced in height by 3 inches to account for the difference in curb height between a bare deck and one with an HMA overlay. The corrected dimensions are provided on the Reinforcing Schedule sheet.
10. Shortened anchor rods for the steel bridge rail post are required to provide additional clearance between the top of deck and bottom of anchor rod.



LONGITUDINAL SECTION AT ABUTMENT NO. 2
(Horizontal Dimensions Shown are Normal to CL Bearing)
*Refer to Special Provision Section 502 - Closed Cell Foam (CCF)



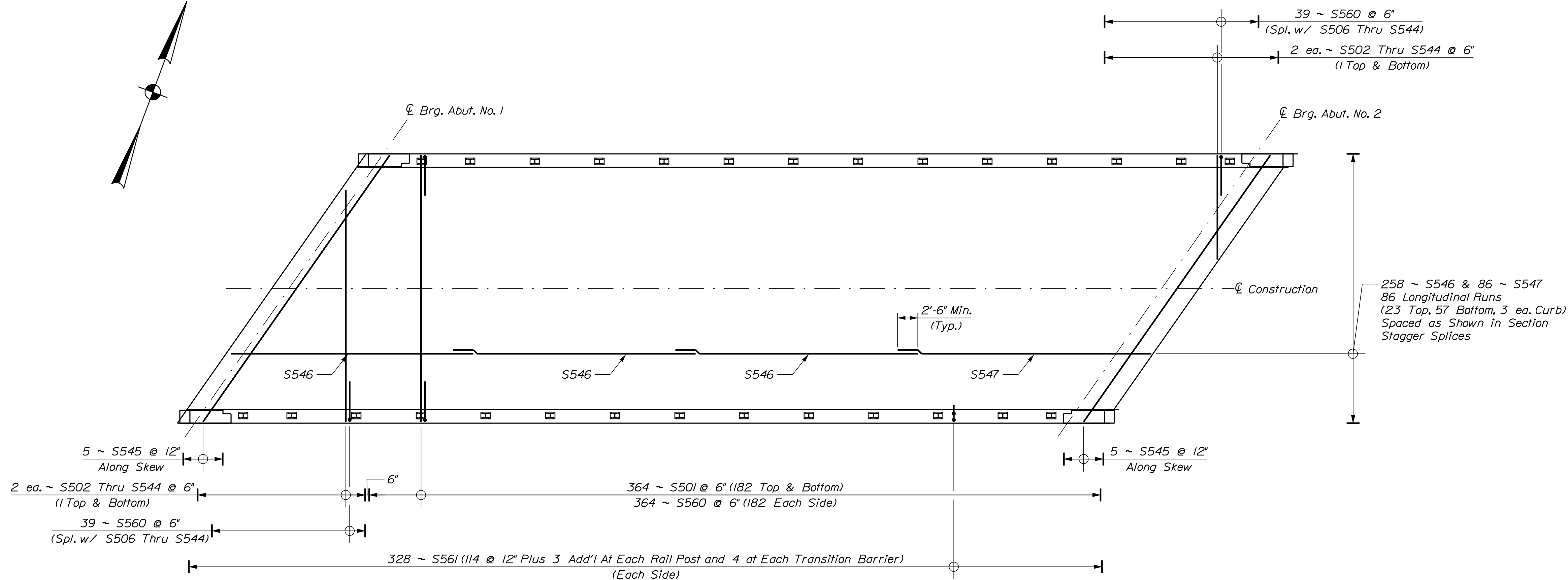
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|------------------|--|------------------------------|--|-----------------|--|---------------|--|-----------------|--|---------------|--|
| STATE OF MAINE | | DEPARTMENT OF TRANSPORTATION | | STP-2261(500) | | WIN | | BRIDGE NO. 2934 | | BRIDGE PLANS | |
| WYOMOUTH BRIDGE | | SANDY RIVER | | FRANKLIN COUNTY | | MADRID | | SUPERSTRUCTURE | | SHEET NUMBER | |
| 444 | | OF 532 | | DATE | | P.E. NUMBER | | SIGNATURE | | DATE | |
| BY | | DATE | | M. WIGHT | | JCS | | FEB 2019 | | FEB 2019 | |
| DESIGN-DETAILED | | JCS | | GCM | | LSF | | FEB 2019 | | FEB 2019 | |
| CHECKED-REVIEWED | | LSF | | LSF | | LSF | | FEB 2019 | | FEB 2019 | |
| DESIGN-DETAILED | | LSF | | LSF | | LSF | | FEB 2019 | | FEB 2019 | |
| REVISIONS 1 | | REVISIONS 1 | | REVISIONS 2 | | REVISIONS 3 | | REVISIONS 4 | | FIELD CHANGES | |
| REVISIONS 2 | | REVISIONS 3 | | REVISIONS 4 | | FIELD CHANGES | | FIELD CHANGES | | FIELD CHANGES | |

Date:2/8/2019

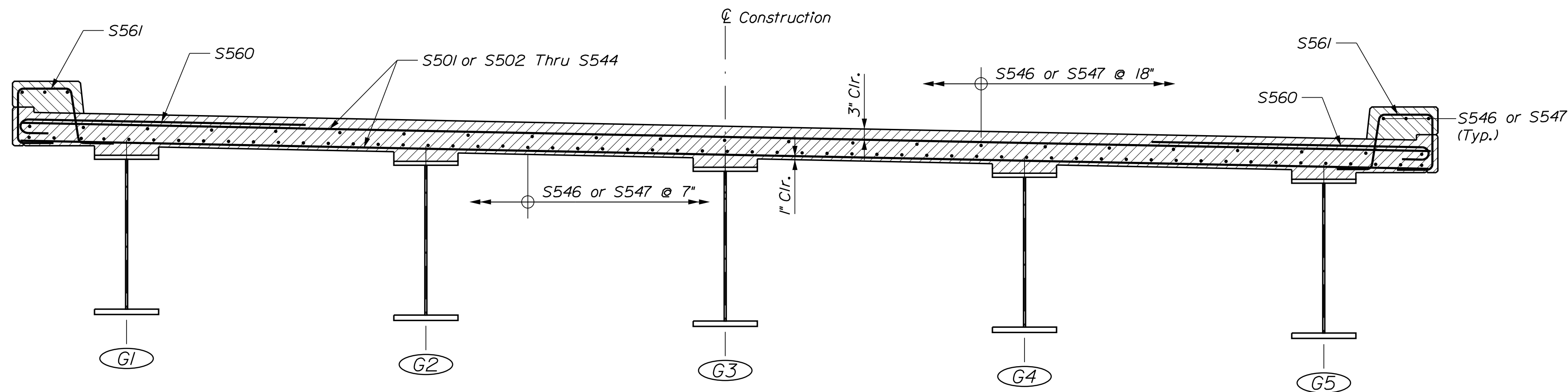
Username: kwight

Division: BRIDGE

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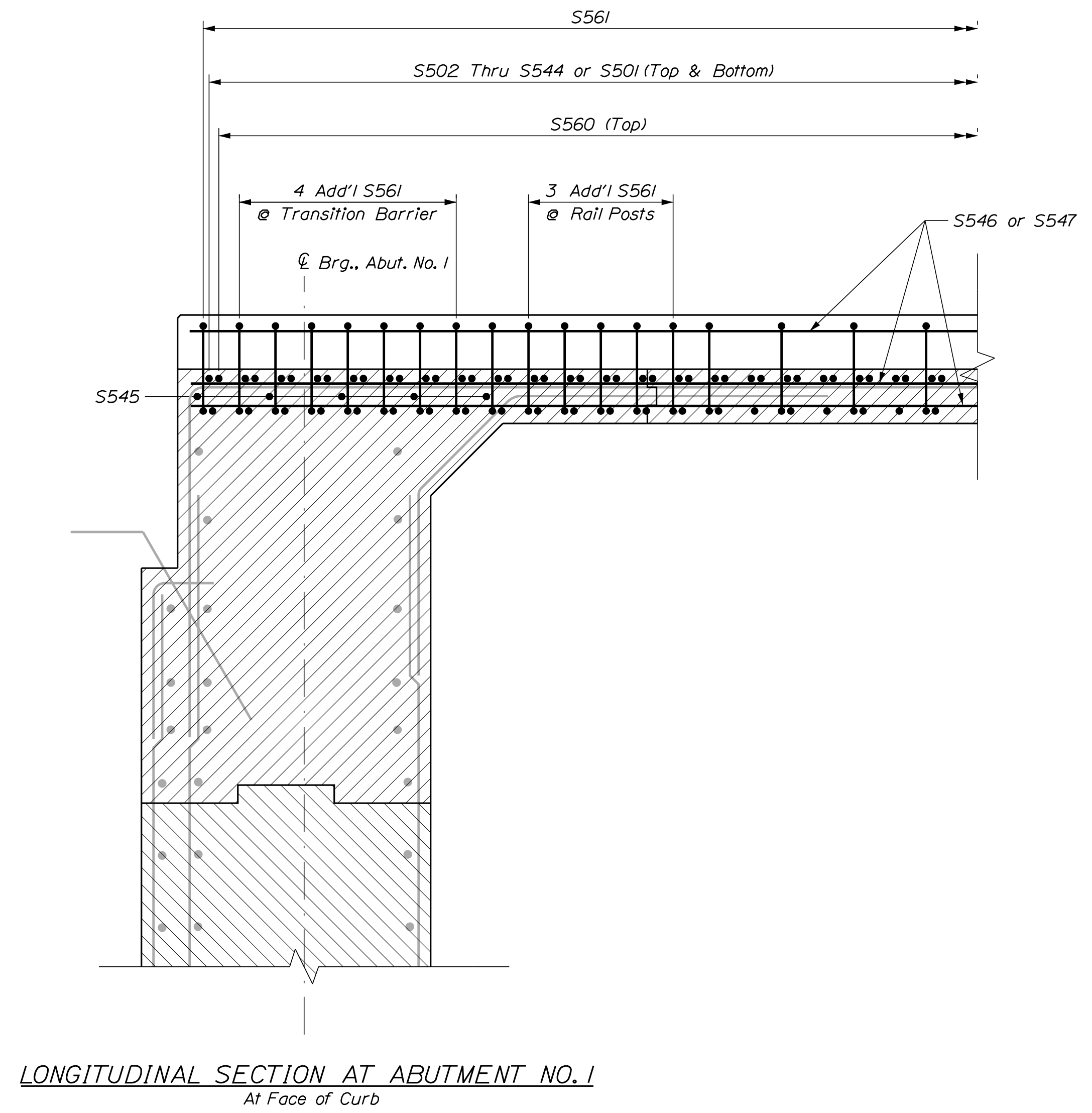


SUPERSTRUCTURE REINFORCING PLAN

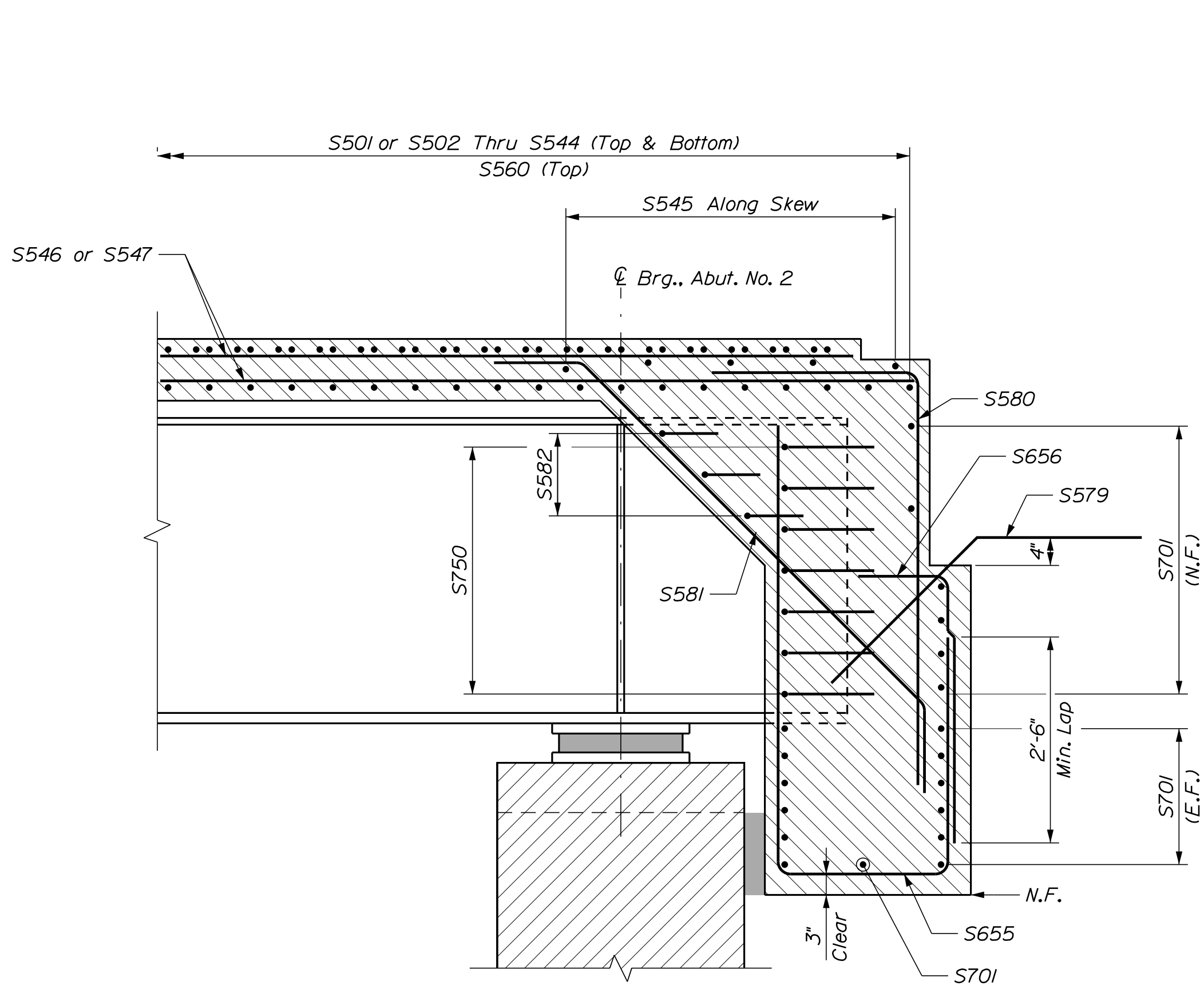
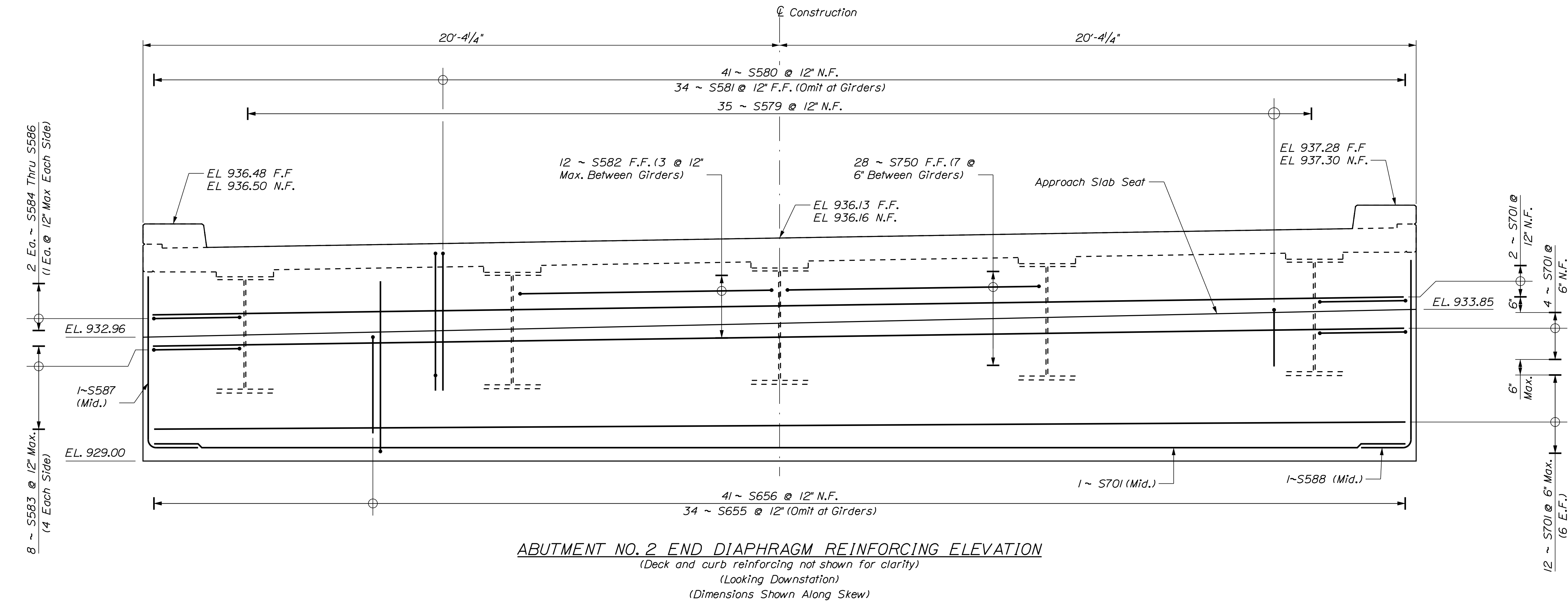


TRANSVERSE REINFORCING SECTION

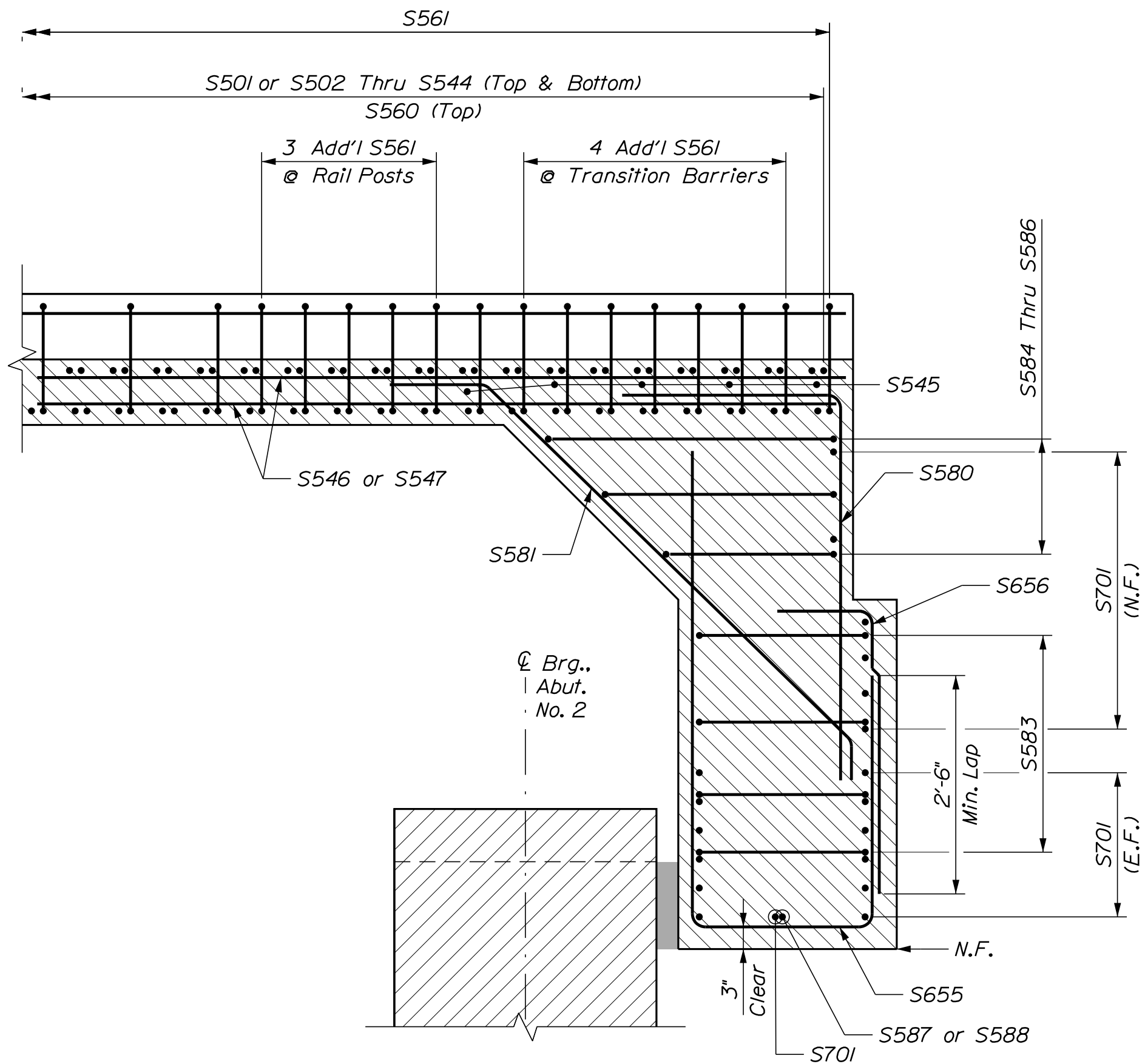
| PROJ. MANAGER | DESIGNED-Detailed | BY | DATE | SIGNATURE |
|-------------------|-------------------|-------------|----------|-----------|
| JCS | JCS | GM | FEB 2019 | |
| LSF/TMM | LSF/TMM | LSF/TMM | FEB 2019 | |
| DESIGNED-Detailed | DESIGNED-Detailed | P.E. NUMBER | DATE | |
| REVISIONS 1 | | | | |
| REVISIONS 2 | | | | |
| REVISIONS 3 | | | | |
| REVISIONS 4 | | | | |
| FIELD CHANGES | | | | |



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| SHEET NUMBER | | | | | | | | | | STATE OF MAINE | | | | | | | |
| 446 | | | | | | | | | | DEPARTMENT OF TRANSPORTATION | | | | | | | |
| | | | | | | | | | | STP-2261(500) | | | | | | | |
| WEYMOUTH BRIDGE SANDY RIVER FRANKLIN COUNTY MADRID | | | | | | | | | | PROJ. MANAGER | | M. WIGHT | BY | DATE | SIGNATURE | | |
| | | | | | | | | | | DESIGN-DETAILD | | JCS | CJM | FEB 2019 | | | |
| | | | | | | | | | | CHECKED-REVIEWED | | SJW | LSP\JJM | FEB 2019 | | | |
| | | | | | | | | | | DESIGN2-DETAILD2 | | | | | | | |
| | | | | | | | | | | DESIGN3-DETAILD3 | | | | | | | |
| SUPERSTRUCTURE REINFORCING | | | | | | | | | | REVSIONS 1 | | | | | P.E. NUMBER | | |
| | | | | | | | | | | REVSIONS 2 | | | | | | | |
| | | | | | | | | | | REVSIONS 3 | | | | | | | |
| | | | | | | | | | | REVSIONS 4 | | | | | | | |
| | | | | | | | | | | FIELD CHANGES | | | | | | | |
| | | | | | | | | | | | | | | | DATE | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | BRIDGE NO. 2934 | | WIN | | 22615.00 | | BRIDGE PLANS | |
| OF 532 | | | | | | | | | | | | | | | | | |



LONGITUDINAL SECTION AT ABUTMENT NO. 2
At Girders



LONGITUDINAL SECTION AT ABUTMENT NO. 2
At Face of Curb

