

INDEX OF SHEETS

01-17-2025 LETTING ITEM 121

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
LOCAL AGENCY IMPROVEMENT
FAU 9300 - COUNTY HIGHWAY 6 BLUFF ROAD
SECTION 16-00043-01-BR
PROJECT NO. J1VE(822)
BLUFF ROAD BRIDGE OVER CARR CREEK
MONROE COUNTY
STP - BR AND ISBP

| RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------|----------------|----------|--------------------|-----------|
| FAU 9300 | 16-00043-01-BR | MONROE | 27 | 1 |
| | | ILLINOIS | CONTRACT NO. 97850 | |



LOCATION OF SECTION INDICATED THUS:

HIGHWAY STANDARDS

| | |
|----------------------|---|
| STANDARD SYMBOLS | 000001-08 001001-02 001006 |
| BRIDGES AND CULVERTS | 515001-04 |
| GUARDRAIL | 630001-13 643001-03 |
| TRAFFIC CONTROL | 701201-05 701321-19 701901-10 704001-08 782006-01 |
| LOCAL ROADS | 27-1 21-9 |

STRUCTURE NUMBERS

EXISTING 067-3148
PROPOSED 067-3190

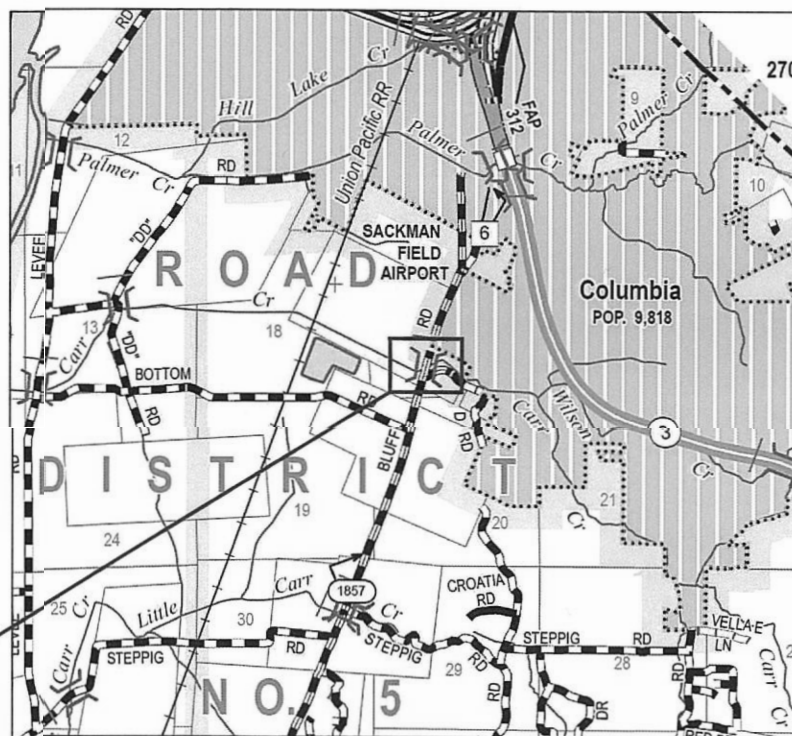
DESIGN CLASSIFICATION

ROAD CLASSIFICATION = RURAL MAJOR COLLECTOR
2019 ADT = 4100 VPD
DESIGN SPEED 55 MPH
POSTED SPEED 45 MPH
BRIDGE CLASS HL-93 LOADING
DESIGN ADT 2040 = 4630 VPD

UTILITIES

CALL J.U.L.I.E. BEFORE YOU DIG
800-892-0123

R10W



PROJECT LOCATION

STA. 86+10.92 TO STA. 88+09.08

LOCATION MAP

GROSS LENGTH OF PROJECT = 198.16 FEET = 0.038 MILES
TOTAL LENGTH = 198.16 FEET = 0.038 MILES

T1S

NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED October 25 2024

Monroe County Engineer
Monroe County Highway Department

Passed October 28 2024

District 8 Engineer
Local Roads and Streets

Released for Bid Based on Limited Review October 28 2024

Region 5 Engineer

DRAWN BY CASEY L CARNAHAN DATE 08/13/2024

CHECKED BY MAARON V METZGER DATE 08/15/2024

These plans were prepared by me or a full time member of my staff under my personal supervision.
County Engineer Date 10/25/24
Illinois Registered Professional Engineer No. 055382
Expiration Date: 11/30/25

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

| SUMMARY OF QUANTITIES | | | |
|-----------------------|--|-------|----------|
| CODE | ITEM | UNIT | QUANTITY |
| 20300100 | CHANNEL EXCAVATION | CU YD | 417 |
| 28100109 | STONE RIPRAP CLASS A5 | SQ YD | 1247 |
| 28200200 | FILTER FABRIC | SQ YD | 1247 |
| 40604062 | HMA SURFACE COURSE, IL-9.5, MIX 'D' N70 | TON | 6 |
| 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | 1 |
| 50200100 | STRUCTURE EXCAVATION | CU YD | 220 |
| 50200300 | COFFERDAM EXCAVATION | CU YD | 37 |
| 50201101 | COFFERDAM (TYPE 1) (LOCATION -1) | EACH | 1 |
| 50300225 | CONCRETE STRUCTURES | CU YD | 167.3 |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 229 |
| 50300260 | BRIDGE DECK GROOVING | SQ YD | 733 |
| 50300300 | PROTECTIVE COAT | SQ YD | 776 |
| 50500105 | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | 1 |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 2900 |
| 50800205 | REINFORCEMENT BARS EPOXY COATED | LB | 84960 |
| 50800515 | BAR SPLICERS | EACH | 798 |
| * 50900205 | STEEL RAILING, TYPE S1 | FT | 388 |
| 51200963 | FURNISHING METAL SHELL PILES, 16" X 0.375" | FT | 1253 |
| 51202305 | DRIVING PILES | FT | 1253 |
| 51203200 | TEST PILE METAL SHELLS | EACH | 3 |
| 51500100 | NAMES PLATES | EACH | 1 |

| SUMMARY OF QUANTITIES | | | |
|-----------------------|---|-------|----------|
| CODE | ITEM | UNIT | QUANTITY |
| 52100520 | ANCHOR BOLTS, 1' | EACH | 30 |
| 52200010 | TEMPORARY SHEET PILING | SQ FT | 229 |
| * 63000001 | STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS | FT | 400 |
| * 63100075 | TRAFFIC BARRIER TERMINAL, TYPE 5A | EACH | 4 |
| 63200310 | GUARDRAIL REMOVAL | FT | 400 |
| 67100100 | MOBILIZATION | L SUM | 1 |
| 70100405 | TRAFFIC CONTROL AND PROTECTION STANDARD 701321 | EACH | 1 |
| 70100450 | TRAFFIC CONTROL AND PROTECTION STANDARD 701201 | L SUM | 1 |
| 70106500 | TEMPORARY BRIDGE TRAFFIC SIGNALS | EACH | 3 |
| 70106700 | TEMPORARY RUMBLE STRIP | EACH | 9 |
| 70300221 | TEMPORARY PAV'T MKG-LINE 4'-PAINT | FT | 1000 |
| 70400100 | TEMPORARY CONCRETE BARRIER | FT | 350 |
| 70400200 | RELOCATE TEMPORARY CONCRETE BARRIER | FT | 350 |
| 70600240 | IMPACT ATTENUATORS TEMPORARY, (NON-REDIRECTIVE), TEST LEVEL 2 | EACH | 2 |
| 70600340 | IMPACT ATTENUATORS RELOCATE, (NON-REDIRECTIVE), TEST LEVEL 2 | EACH | 2 |
| * 78200011 | BARRIER WALL REFLECTORS TYPE C | EACH | 28 |
| | CEMENT AGGREGATE MIXTURE | CU YD | 44 |
| Z0013798 | CONSTRUCTION LAYOUT | L SUM | 1 |
| Z0016702 | DETOUR SIGNING | L SUM | 1 |
| # Z0076600 | TRAINEES | HOUR | 1000 |
| # Z0076604 | TRAINEES TRAINING PROGRAM GRADUATE | HOUR | 1000 |

* SPECIALTY ITEM # 0042

GENERAL NOTES

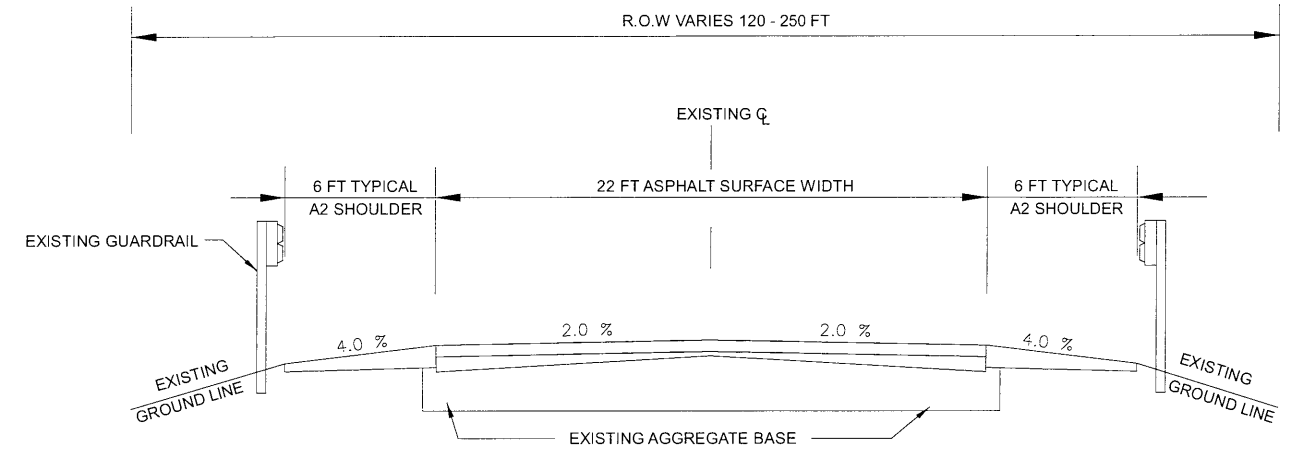
1. TRAFFIC CONTROL AND PROTECTION AND PROPER BARRICADES SHALL BE MAINTAINED BY THE CONTRACTOR.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE MONROE COUNTY HIGHWAY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES OR WORK REQUIRING INSPECTION OR APPROVAL.
3. USE ALL FLORESCENT ORANGE 48" CONSTRUCTION SIGNS.
4. BRIDGE SHALL BE BUILT IN TWO STAGES:
 STAGE 1
 PERFORM STAGE 1 CONSTRUCTION (EAST SIDE BRIDGE).

 STAGE 2
 PERFORM STAGE 2 CONSTRUCTION (WEST SIDE BRIDGE).
5. THERE SHOULD NOT BE ANY UTILITY CONFLICTS.
6. ALL SEEDING SHALL BE PERFORMED BY LOCAL AGENCY.
7. PERMANENT PAVEMENT MARKINGS BY LOCAL AGENCY.

COMMITMENTS

THE BRIDGE BAT ASSESSMENT EXPIRES 8-1-2026

| HOT-MIX ASPHALT MIXTURE REQUIREMENTS | |
|---|---------------------|
| LOCATIONS | ALL |
| MIXTURE USE | SURFACE |
| AC/PG | PG 64-22 |
| RAP % (MAX) | SEE ARTICLE 1031.06 |
| DESIGN AIR VOIDS | 4.0% @ Ndes= 70 |
| MIXTURE COMPOSITION (GRADATION MIXTURE) | IL 9.5 |
| FRICTION AGGREGATE | MIXTURE D |
| MIXTURE WEIGHT | 112.0 LB/SQ YD/IN |
| QUALITY MANAGEMENT PROGRAM | QC/QA |
| SUBLOT SIZE | N/A |
| MATERIAL TRANSFER DEVICE | NO |

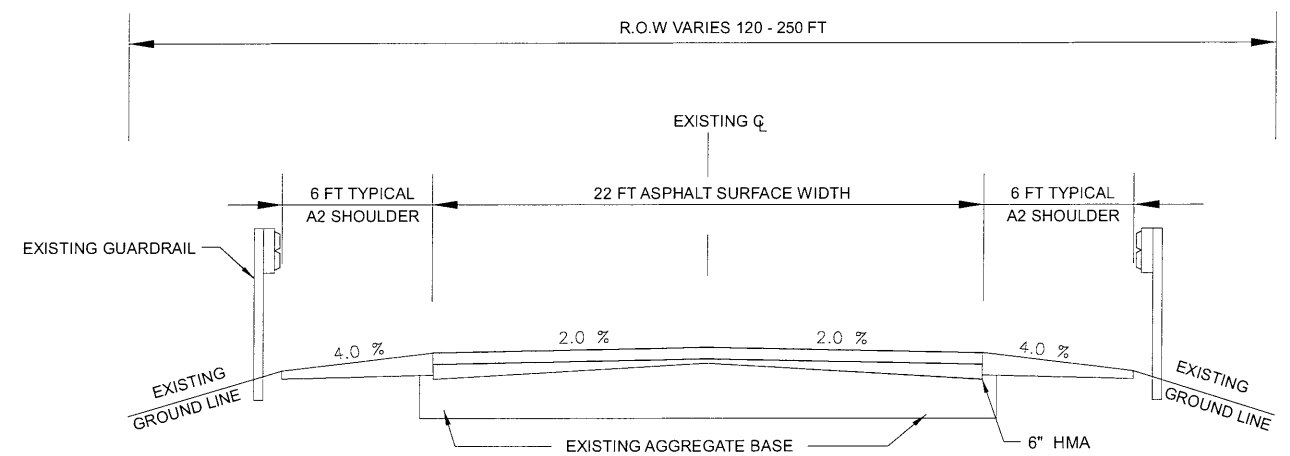


EXISTING ROADWAY TYPICAL SECTION

STA 86+10.92 TO STA 88+09.08

EXISTING BRIDGE

STA 86+19.16 TO STA 88+00.09



PROPOSED ROADWAY TYPICAL SECTION

STA 86+10.92 TO STA 88+09.08

PROPOSED BRIDGE

STA 86+13.05 TO STA 88+06.95

**MONROE COUNTY
HIGHWAY DEPARTMENT**

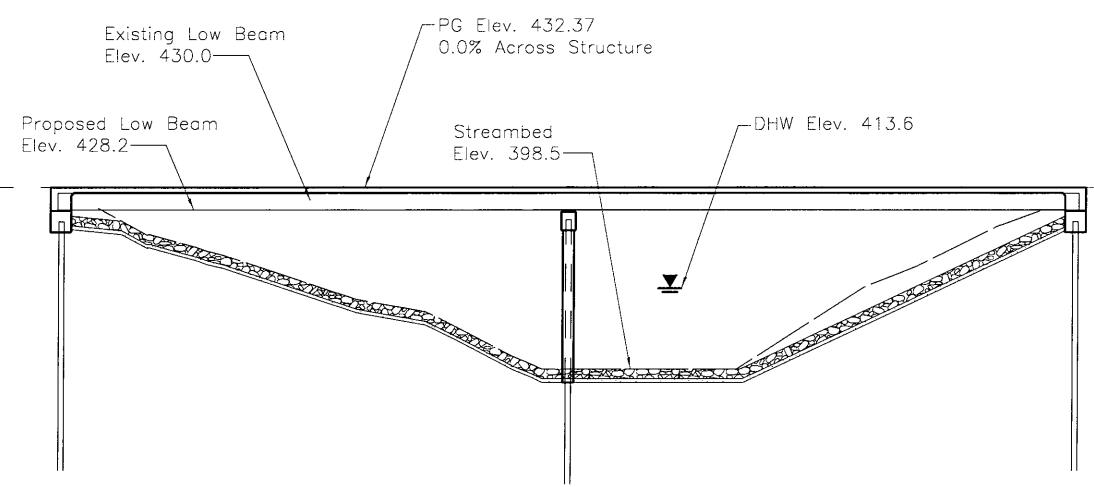
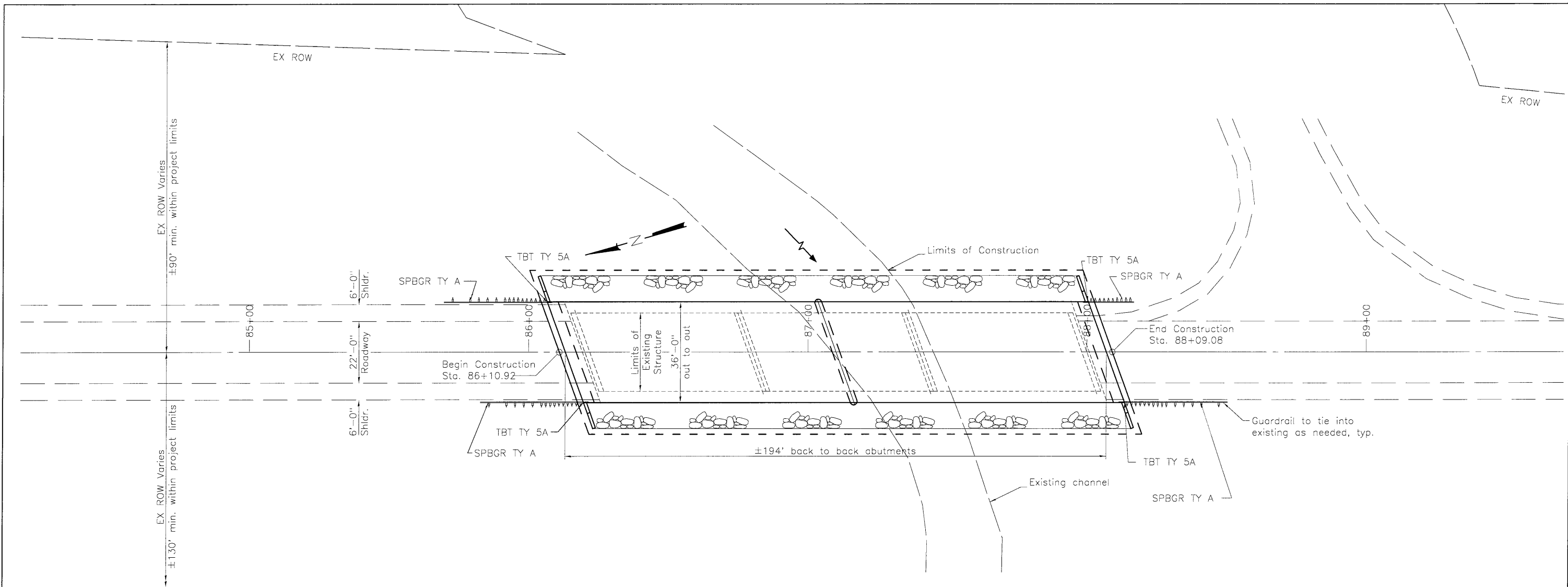
**TYPICAL SECTION, GENERAL NOTES
AND COMMITMENTS**

SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

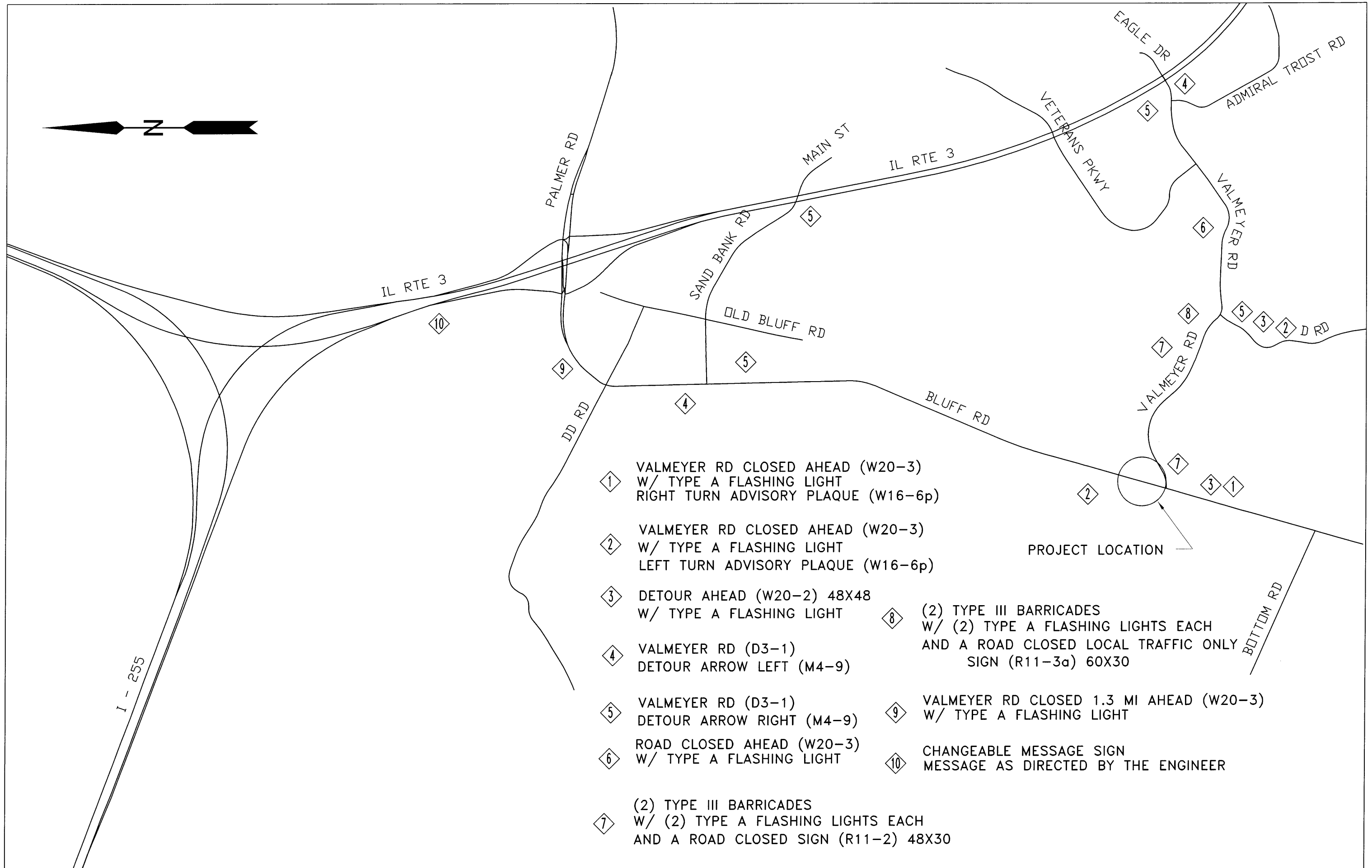
| C.H. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------------|----------------|--------|--------------|-----------|
| 6 | 16-00043-01-BR | MONROE | 27 | 3 |
| CONTRACT NO. 97850 | | | | |
| ILLINOIS FED AID PROJECT | | | | |

DRAWING FILE: S:\COUNTY PROJECTS\OLD 156 BRIDGE\TYPICAL SECTION

| | | | |
|------------------------|-------------------|----------------------|--|
| USER NAME * | DESIGNED - BAF | REVISED - 10/12/2022 | |
| | DRAWN - BAF | REVISED - | |
| PLOT SCALE = 50 | CHECKED - AWM | REVISED - | |
| PLOT DATE = 10/12/2022 | DATE - 08/16/2022 | REVISED - | |



| | | | | | | | | | | | | |
|--------------|------------|-----------|-------------------------------------|-------------------------------------|--|--|--|--------------------|----------------|--------|--------------|-----------|
| USER NAME = | DESIGNED - | REVISED - | MONROE COUNTY HIGHWAY DEPARTMENT | PLAN & PROFILE | | | | C.H. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| PLOT SCALE = | DRAWN - | REVISED - | | | | | | 6 | 16-00043-01-BR | MONROE | 27 | 4 |
| PLOT DATE = | CHECKED - | REVISED - | | SCALE: SHEET OF SHEETS STA. TO STA. | | | | CONTRACT NO. 97850 | | | | |
| | DATE - | REVISED - | | ILLINOIS FED. AID PROJECT | | | | | | | | |



- ① VALMEYER RD CLOSED AHEAD (W20-3)
W/ TYPE A FLASHING LIGHT
RIGHT TURN ADVISORY PLAQUE (W16-6p)
- ② VALMEYER RD CLOSED AHEAD (W20-3)
W/ TYPE A FLASHING LIGHT
LEFT TURN ADVISORY PLAQUE (W16-6p)
- ③ DETOUR AHEAD (W20-2) 48X48
W/ TYPE A FLASHING LIGHT
- ④ VALMEYER RD (D3-1)
DETOUR ARROW LEFT (M4-9)
- ⑤ VALMEYER RD (D3-1)
DETOUR ARROW RIGHT (M4-9)
- ⑥ ROAD CLOSED AHEAD (W20-3)
W/ TYPE A FLASHING LIGHT
- ⑦ (2) TYPE III BARRICADES
W/ (2) TYPE A FLASHING LIGHTS EACH
AND A ROAD CLOSED SIGN (R11-2) 48X30
- ⑧ (2) TYPE III BARRICADES
W/ (2) TYPE A FLASHING LIGHTS EACH
AND A ROAD CLOSED LOCAL TRAFFIC ONLY
SIGN (R11-3a) 60X30
- ⑨ VALMEYER RD CLOSED 1.3 MI AHEAD (W20-3)
W/ TYPE A FLASHING LIGHT
- ⑩ CHANGEABLE MESSAGE SIGN
MESSAGE AS DIRECTED BY THE ENGINEER

PROJECT LOCATION

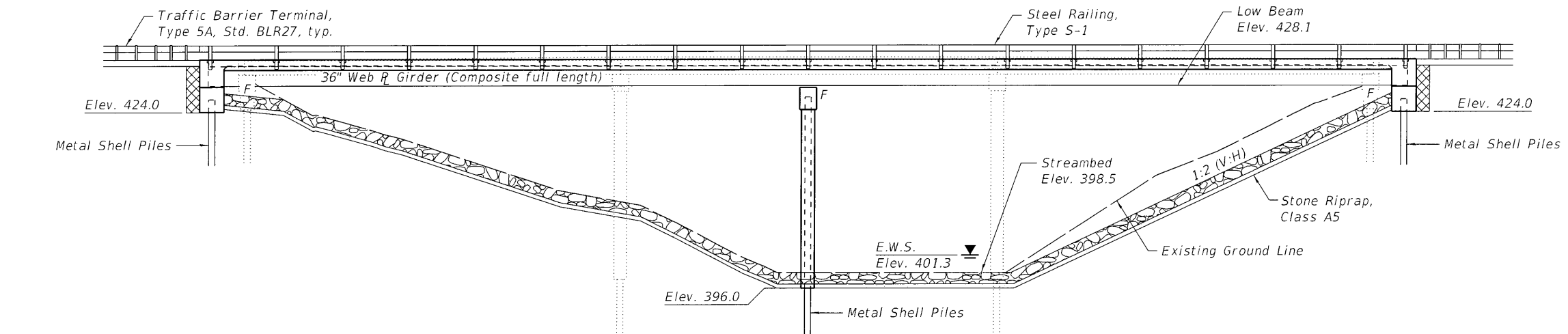
I - 255

| | | | | | | | | | | | | |
|---------------|------------|-----------|-------------------------------------|----------------------------------|-------|----|--------|--------------------|----------------|--------|---------------------------|-----------|
| USER NAME = | DESIGNED - | REVISED - | MONROE COUNTY HIGHWAY DEPARTMENT | STAGE 1 - DETOUR SIGNING DETAILS | | | | C.H. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| PLLOT SCALE = | DRAWN - | REVISED - | | | | | | 6 | 16-00043-01-BR | MONROE | 27 | 5 |
| PLLOT DATE = | CHECKED - | REVISED - | | | | | | CONTRACT NO. 97850 | | | | |
| | DATE - | REVISED - | | SCALE: | SHEET | OF | SHEETS | STA. | TO | STA. | ILLINOIS FED. AID PROJECT | |

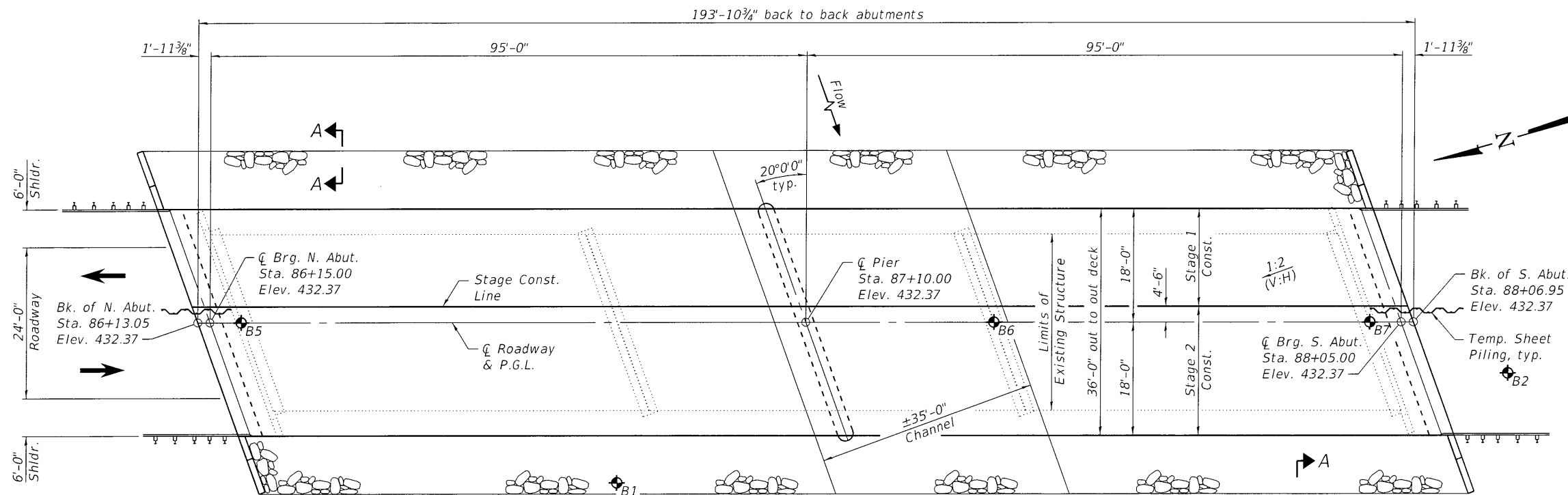
Existing Structure: S.N. 067-3148 was originally built in 1995 and consists of three spans of precast prestressed concrete deck beams supported by pile bent abutments founded on metal shell piles and pile bent piers founded on individually encased metal shell piles. The back to back abutment length is 181'-8". The out to out width is 28'-0". Structure to be removed and replaced.

Traffic Control: One lane of traffic will be maintained by utilizing staged construction.

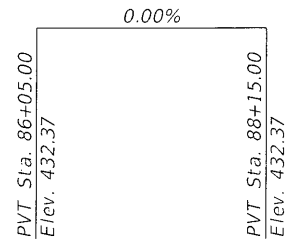
Salvage: None



ELEVATION



PLAN



PROFILE GRADE
(along \bar{C} roadway)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.364
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.790
Soil Site Class = E

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

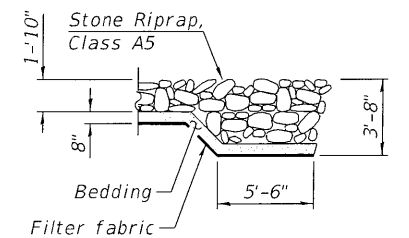
DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

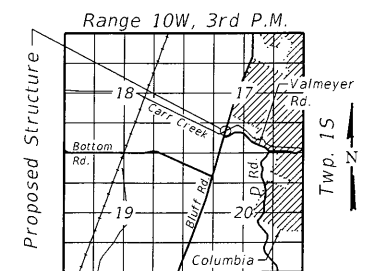
DESIGN STRESSES

FIELD UNITS

f'_c = 5,000 psi (Superstructure)
 f'_c = 3,500 psi (Substructure)
 f_y = 60,000 psi (Reinforcement)
 f_y = 50,000 psi (M270 Grade 50W)



SECTION A-A



LOCATION SKETCH

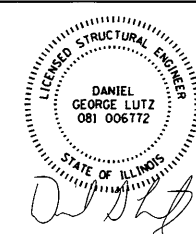
CARR CREEK
BUILT 20__ BY
MONROE COUNTY
SEC. 16-00043-01-BR
F.A.U. RT. 9300 STA. 87+10
STR. NO. 067-3190
LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN SCOUR ELEVATION TABLE

| Event / Limit State | Design Scour Elevations (ft.) | | | Item 113 |
|---------------------|-------------------------------|-------|----------|----------|
| | N. Abut. | Pier | S. Abut. | |
| Q100 | 424.0 | 383.5 | 424.0 | 5 |
| Q200 | 424.0 | 381.5 | 424.0 | |
| Design | 424.0 | 383.5 | 424.0 | |
| Check | 424.0 | 381.5 | 424.0 | |

I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown. The design is an economical one for the style of structure and complies with the requirements of the current AASHTO LRFD Bridge Design Specifications.



DATE: 10/23/2024
EXPIRATION: 11/30/2024

GENERAL PLAN & ELEVATION
BLUFF ROAD OVER CARR CREEK
F.A.U. 9300 - SEC. 16-00043-01-BR
MONROE COUNTY
STA. 87+10.00
STRUCTURE NO. 067-3190

FILE NAME: H:\P\17129\Bridges\Final Plans\Microstation\0673109-001-General Plan & Elevation.dgn



| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 067-3190

SHEET 1 OF 22 SHEETS

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|----------------|--------|--------------|-----------|
| 9300 | 16-00043-01-BR | MONROE | 27 | 6 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas.
 Fasteners shall be ASTM F3125 Grade A325 Type 3 weathering steel bolts in unpainted areas.
 Bolts 7/8 in. diameter, holes 1 1/16 in. diameter, unless otherwise noted.

Calculated weight of Structural Steel: AASHTO M 270 Grade 50W = 195,720 pounds

All structural steel shall be AASHTO M270 Grade 50W

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

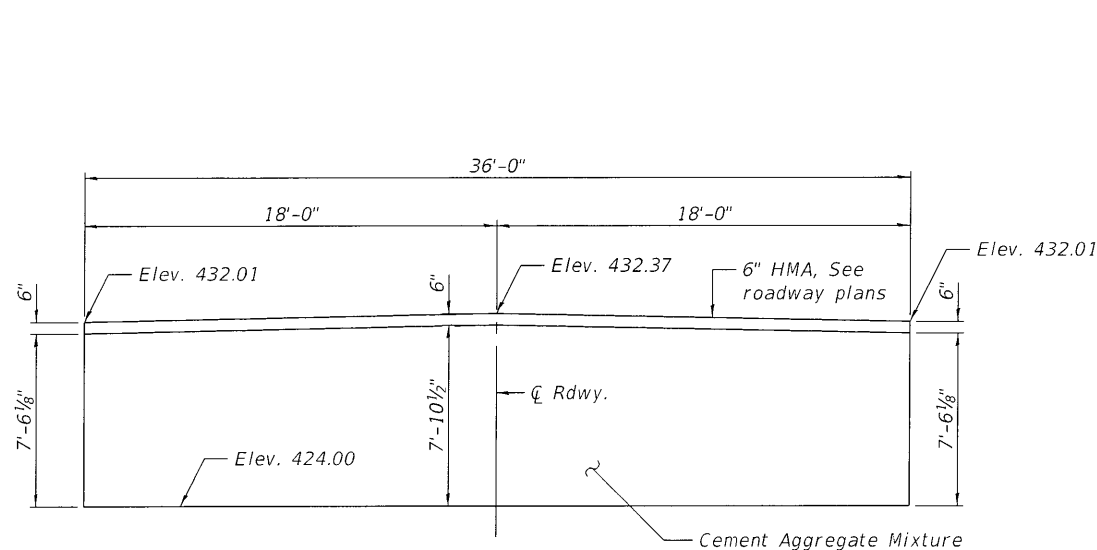
Cement Aggregate Mixture shall be 2'-0" wide and placed to the dimensions shown on the Typical Section for Cement Aggregate Mixture. The remaining 6" shall be HMA. Anything outside of the 2'-0" wide will not be paid for.

Structural steel shall be painted for a distance equal to the depth of the embedment into the concrete cap plus 18 in. Painted areas shall be primed in the shop with a Department-approved zinc rich primer. Field painting will not be required.

After completion of Stage 1 Construction, Contractor shall complete a Fracture Critical Member Inspection in accordance with IDOT Structural Service Manual Section 3. Documentation of the inspection shall be provided to and approved by the County Engineer before Stage 1 Construction can be opened to Stage 2 Traffic.

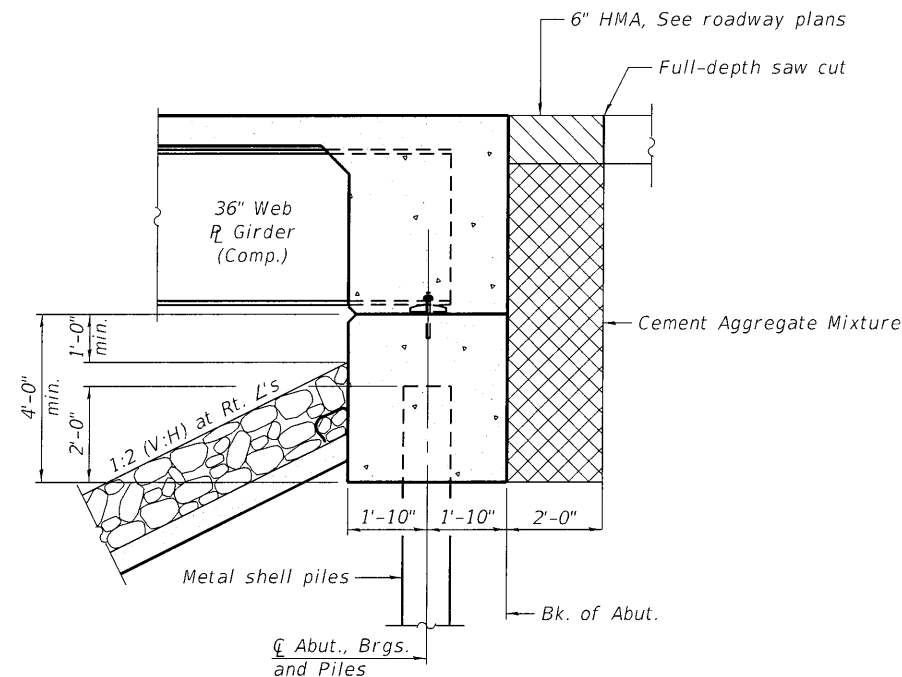
INDEX OF SHEETS

| Sheet No. | Description |
|-----------|---|
| 1 | General Plan & Elevation |
| 2 | General Data |
| 3 | Stage Construction Details |
| 4 | Temporary Concrete Barrier |
| 5-6 | Top of Slab Elevations |
| 7 | Superstructure |
| 8 | Superstructure Details |
| 9 | Abutment Diaphragm Details |
| 10 | Steel Railing, Type S-1 |
| 11 | Framing Plan |
| 12 | Girder Details |
| 13 | Bearing Details |
| 14 | North Abutment |
| 15 | South Abutment |
| 16 | Pier |
| 17 | Metal Shell Pile Details |
| 18 | Bar Splicer Assembly and Mechanical Splicer Details |
| 19-22 | Soil Boring Logs |



TYPICAL SECTION FOR CEMENT AGGREGATE MIXTURE

(See Special Provisions)
 (Horiz. dim. at Rt. L's to C Rdwy.)



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. at Rt. L's)

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---------|--------|--------|--------|
| Channel Excavation | Cu. Yd. | - | 417 | 417 |
| Stone Riprap, Class A5 | Sq. Yd. | - | 1,247 | 1,247 |
| Filter Fabric | Sq. Yd. | - | 1,247 | 1,247 |
| Removal of Existing Structures | Each | - | - | 1 |
| Structure Excavation | Cu. Yd. | - | 220 | 220 |
| Cofferdam (Type 1) (Location - 1) | Each | - | 1 | 1 |
| Cofferdam Excavation | Cu. Yd. | - | 37 | 37 |
| Concrete Structures | Cu. Yd. | - | 167.3 | 167.3 |
| Concrete Superstructure | Cu. Yd. | 229.0 | - | 229.0 |
| Bridge Deck Grooving | Sq. Yd. | 733 | - | 733 |
| Protective Coat | Sq. Yd. | 776 | - | 776 |
| Furnishing and Erecting Structural Steel | L. Sum | 1 | - | 1 |
| Stud Shear Connectors | Each | 2,900 | - | 2,900 |
| Reinforcement Bars, Epoxy Coated | Pound | 65,340 | 19,620 | 84,960 |
| Bar Splicers | Each | 700 | 98 | 798 |
| Steel Railing, Type S-1 | Foot | 388 | - | 388 |
| Furnishing Metal Shell Piles 16" X 0.375" | Foot | - | 1,253 | 1,253 |
| Driving Piles | Foot | - | 1,253 | 1,253 |
| Test Pile Metal Shells | Each | - | 3 | 3 |
| Name Plates | Each | 1 | - | 1 |
| Anchor Bolts, 1" | Each | - | 30 | 30 |
| Temporary Sheet Piling | Sq. Ft. | - | 229 | 229 |
| Cement Aggregate Mixture | Cu. Yd. | - | 44 | 44 |

FILE NAME: I:\P1719\Bridges\Final Plans\Misc\station\0673109-002-General Data.dgn

OATES ASSOCIATES
 www.oatesassociates.com
 ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

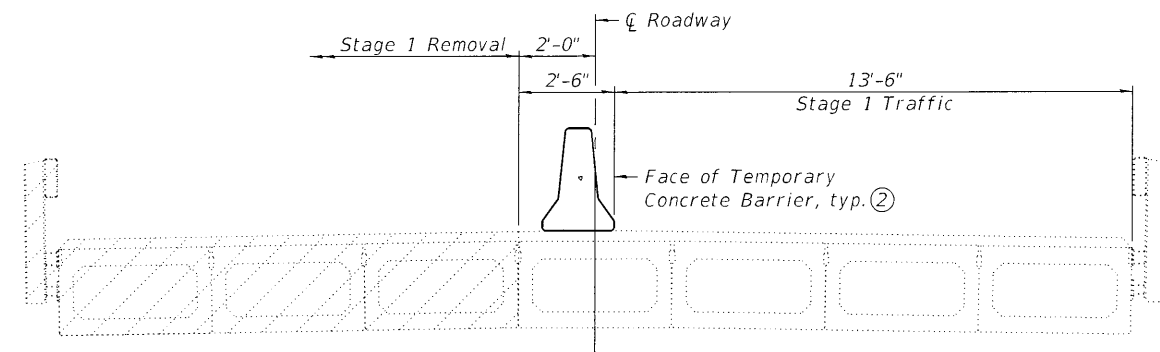
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|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISOR - |
| PLOT SCALE = | CHECKED - | REVISOR - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISOR - |
| | CHECKED - | REVISOR - |

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

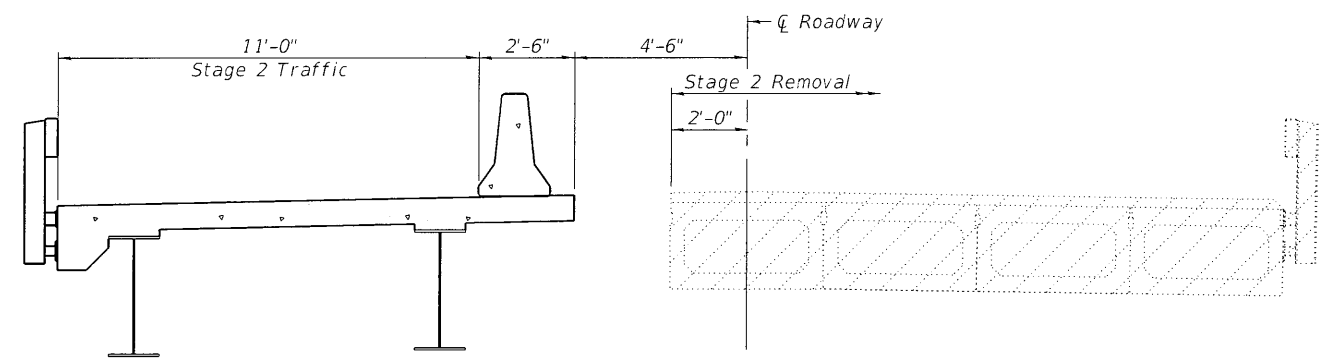
**GENERAL DATA
 STRUCTURE NO. 067-3190**

SHEET 2 OF 22 SHEETS

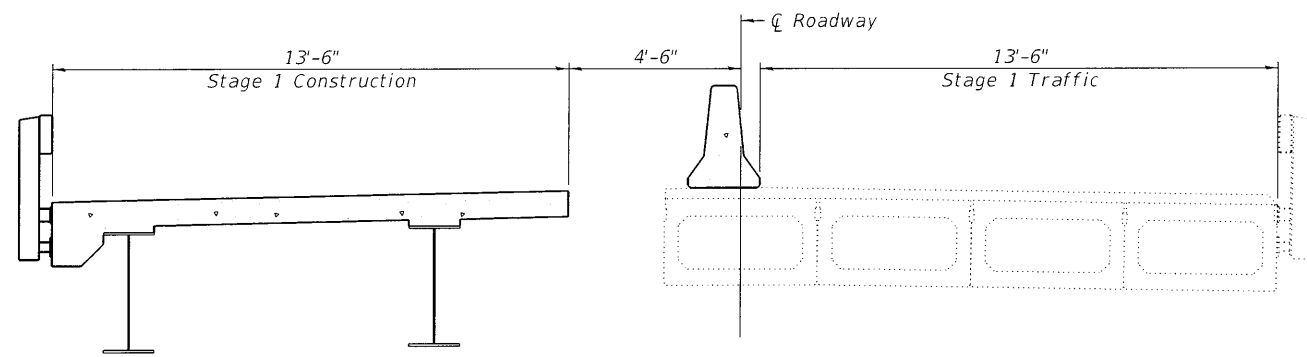
| | | | | |
|--|------------------------|---------------|-----------------|-------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 7 |
| CONTRACT NO. ILLINOIS FED. AID PROJECT | | | | |



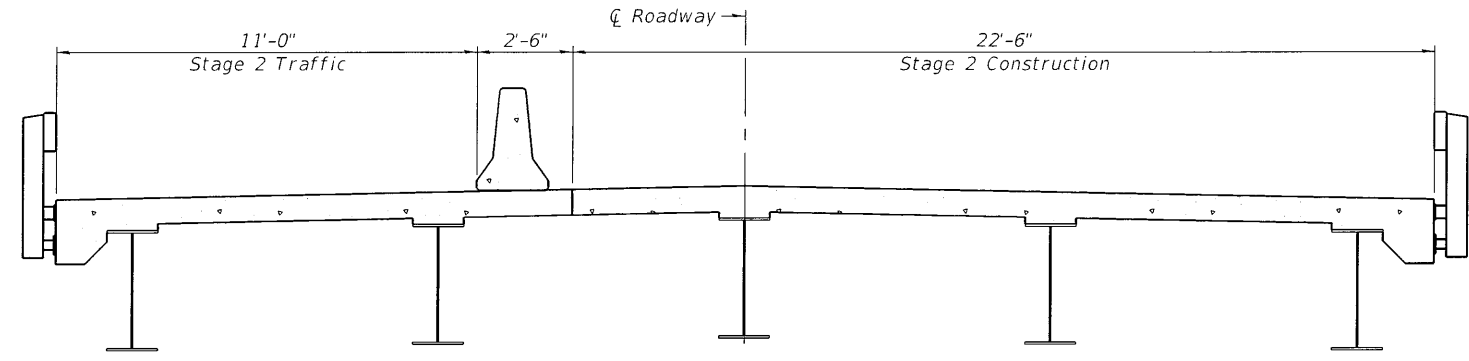
STAGE 1 REMOVAL



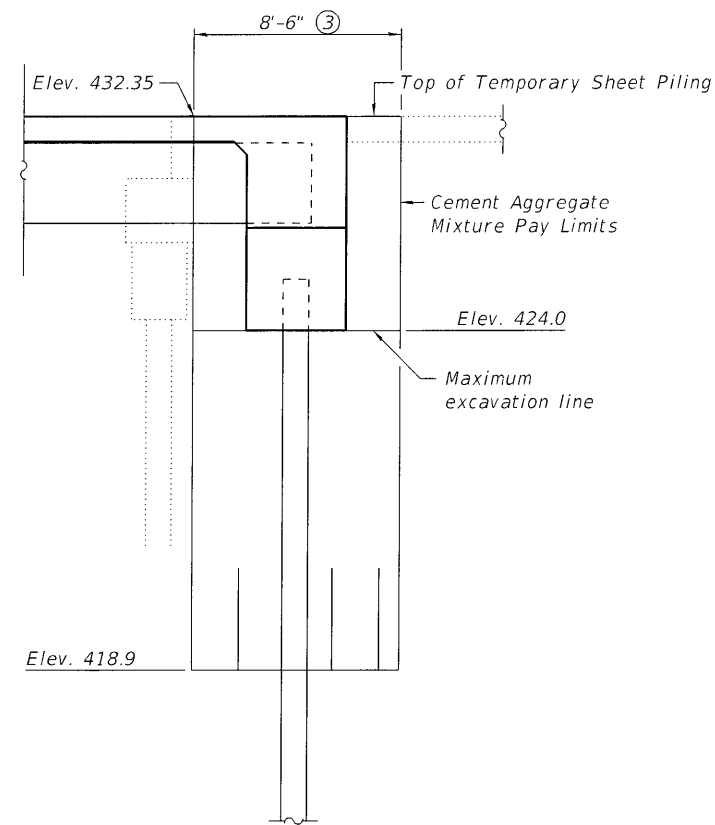
STAGE 2 REMOVAL



STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION



NORTH & SOUTH ABUTMENTS ①
(Minimum Section Modulus = 10 in³/ft)

- Notes:
- ① If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
 - ② For details of Temporary Concrete Barrier, see sheet 4 of 22. For quantity of Temporary Concrete Barrier and related traffic control, see roadway plans.
 - ③ Temporary Sheet Piling is detailed to the Pay Limits for Cement Aggregate Mixture. Temporary Sheet Piling required beyond the Pay Limits will not be paid for.

FILE NAME: I:\P\17129\Bridges\Final Plans\Microstation\0673109-003-Stage Construction Details.dgn

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ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

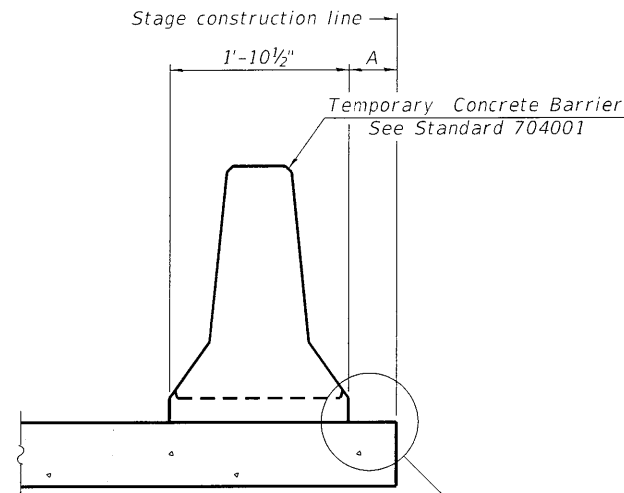
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| USER NAME = | DESIGNED - | REVISED - |
| | CHECKED - | REVISED - |
| PLOT SCALE = | DRAWN - | REVISED - |
| PLOT DATE = 10/23/2024 | CHECKED - | REVISED - |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 067-3190**

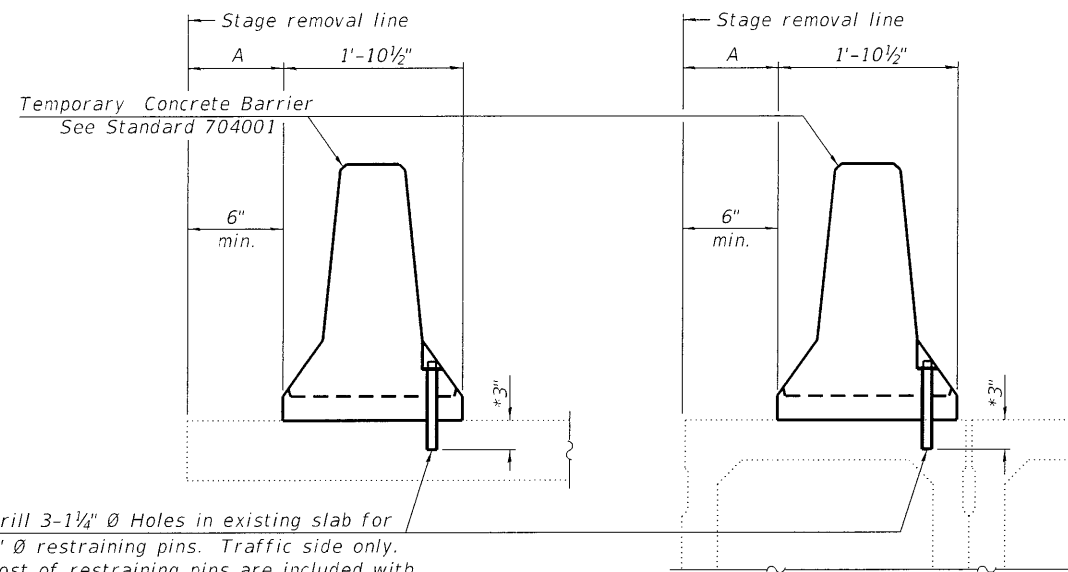
SHEET 3 OF 22 SHEETS

| | | | | |
|---------------------------|----------------|--------|--------------|-----------|
| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 9300 | 16-00043-01-BR | MONROE | 27 | 8 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

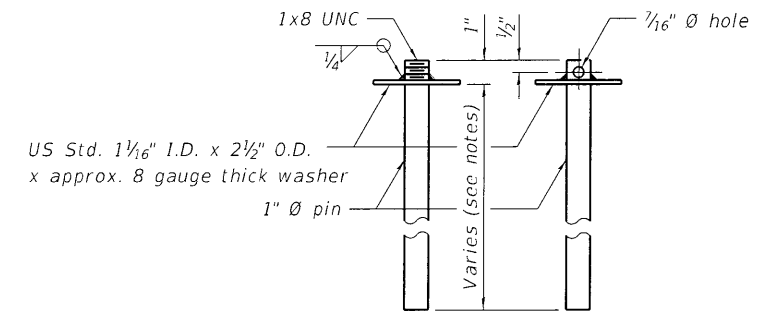


Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

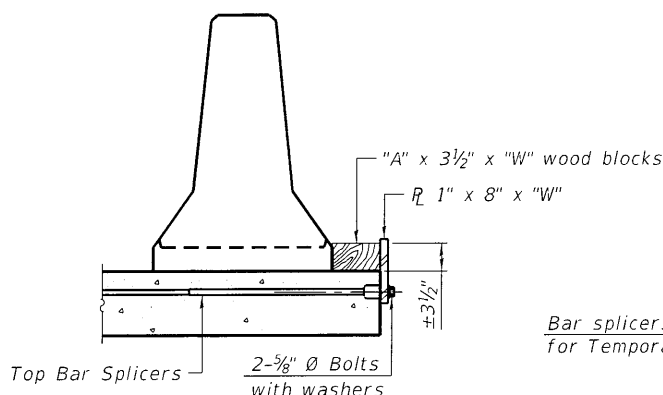
EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

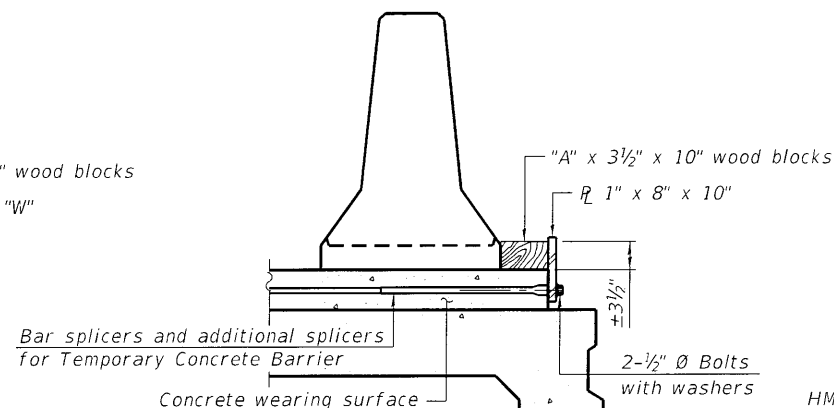


RESTRAINING PIN

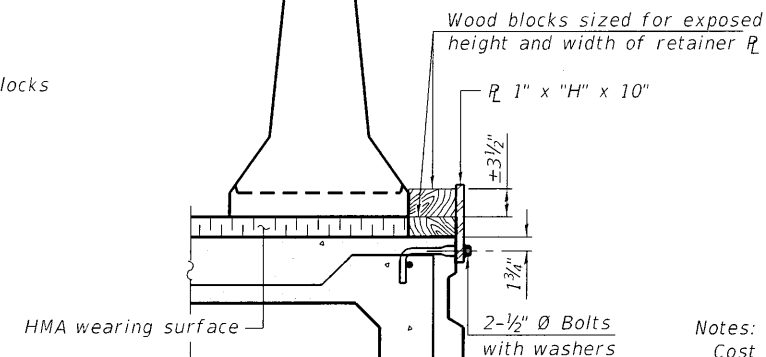
US Std. 1 1/16" I.D. x 2 1/2" O.D. x approx. 8 gauge thick washer



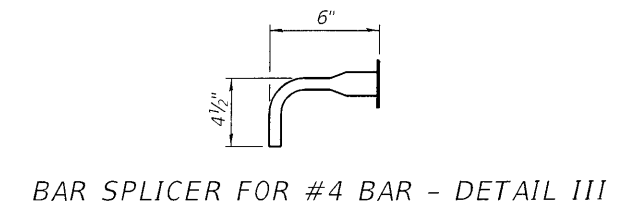
DETAIL I



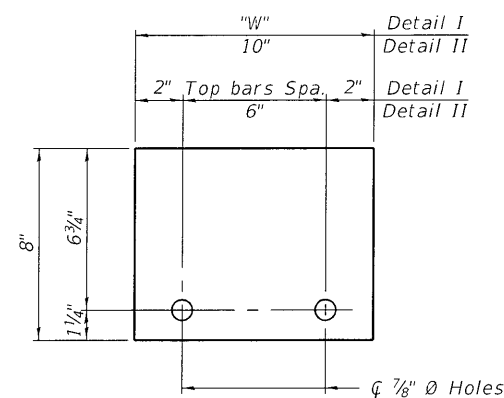
DETAIL II



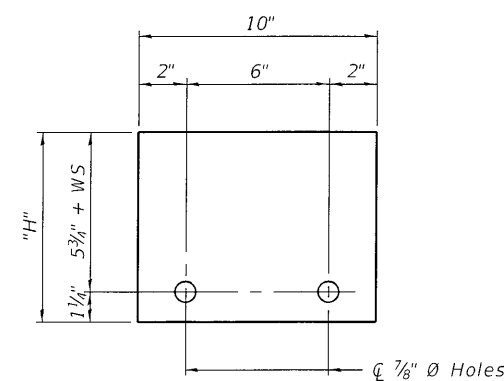
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W" (Detail I and II)



STEEL RETAINER R 1" x "H" x 10" (Detail III)

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate \bar{C} of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

| | |
|----------------------|-----|
| NCHRP 350 Test Level | 3 |
| Railing Weight (plf) | 440 |

R-27 10-12-2021

FILE NAME: I:\P17129\Bridges\Final Plans\Microstation\06731095-004-Temporary Concrete Barrier.dgn



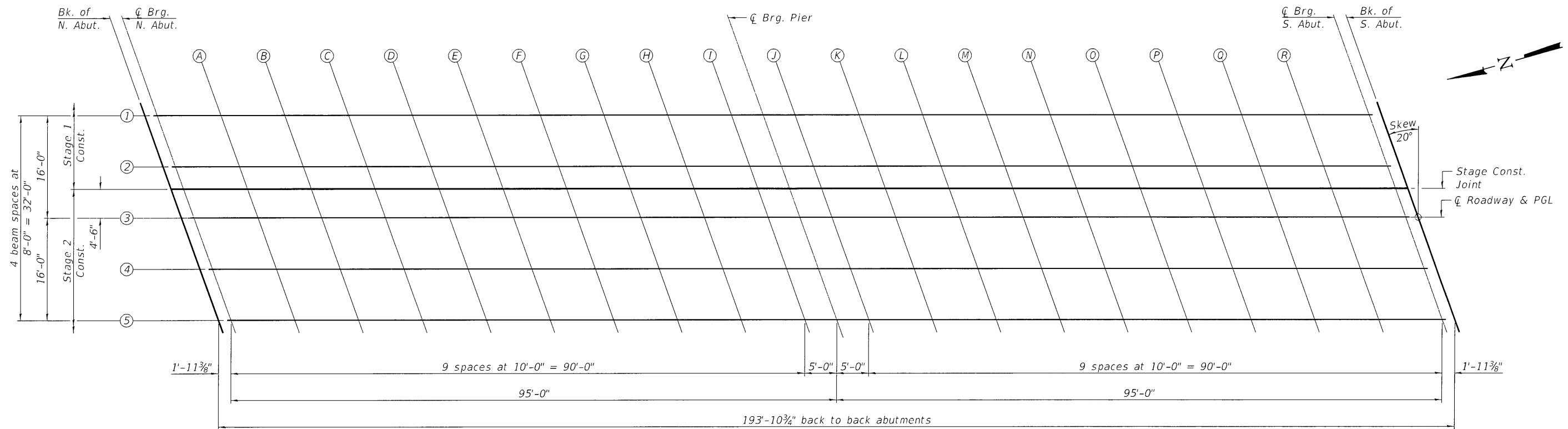
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|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| CHECKED - | CHECKED - | REVISED - |
| PLOT SCALE = | DRAWN - | REVISED - |
| PLOT DATE = 10/23/2024 | CHECKED - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 067-3190

SHEET 4 OF 22 SHEETS

| | | | | |
|------------------|------------------------|---------------|---------------------------|-------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 9 |
| CONTRACT NO. | | | ILLINOIS FED. AID PROJECT | |

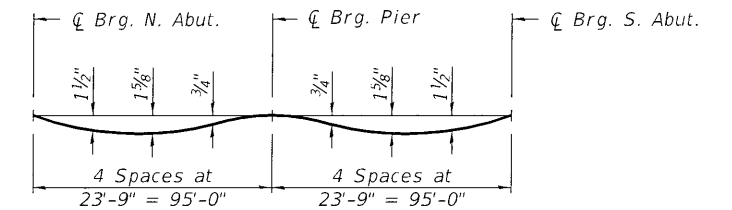


GIRDER 1

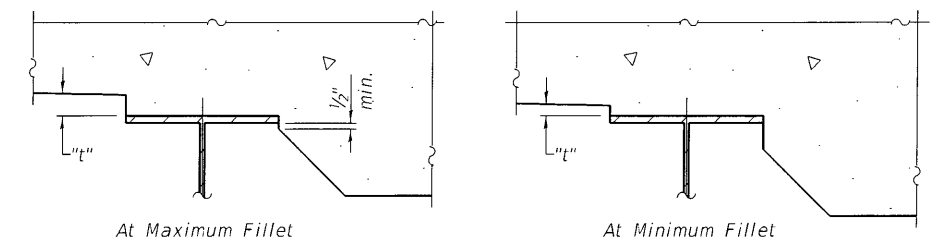
| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+07.23 | -16.00 | 432.05 | 432.05 |
| ☐ Brg. N. Abut. | 86+09.18 | -16.00 | 432.05 | 432.05 |
| A | 86+19.18 | -16.00 | 432.05 | 432.11 |
| B | 86+29.18 | -16.00 | 432.05 | 432.16 |
| C | 86+39.18 | -16.00 | 432.05 | 432.19 |
| D | 86+49.18 | -16.00 | 432.05 | 432.20 |
| E | 86+59.18 | -16.00 | 432.05 | 432.18 |
| F | 86+69.18 | -16.00 | 432.05 | 432.15 |
| G | 86+79.18 | -16.00 | 432.05 | 432.11 |
| H | 86+89.18 | -16.00 | 432.05 | 432.08 |
| I | 86+99.18 | -16.00 | 432.05 | 432.05 |
| ☐ Brg. Pier | 87+04.18 | -16.00 | 432.05 | 432.05 |
| J | 87+09.18 | -16.00 | 432.05 | 432.05 |
| K | 87+19.18 | -16.00 | 432.05 | 432.08 |
| L | 87+29.18 | -16.00 | 432.05 | 432.11 |
| M | 87+39.18 | -16.00 | 432.05 | 432.15 |
| N | 87+49.18 | -16.00 | 432.05 | 432.18 |
| O | 87+59.18 | -16.00 | 432.05 | 432.20 |
| P | 87+69.18 | -16.00 | 432.05 | 432.19 |
| Q | 87+79.18 | -16.00 | 432.05 | 432.16 |
| R | 87+89.18 | -16.00 | 432.05 | 432.11 |
| ☐ Brg. S. Abut. | 87+99.18 | -16.00 | 432.05 | 432.05 |
| Bk of S. Abut. | 88+01.13 | -16.00 | 432.05 | 432.05 |

GIRDER 2

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+10.14 | -8.00 | 432.21 | 432.21 |
| ☐ Brg. N. Abut. | 86+12.09 | -8.00 | 432.21 | 432.21 |
| A | 86+22.09 | -8.00 | 432.21 | 432.27 |
| B | 86+32.09 | -8.00 | 432.21 | 432.32 |
| C | 86+42.09 | -8.00 | 432.21 | 432.35 |
| D | 86+52.09 | -8.00 | 432.21 | 432.36 |
| E | 86+62.09 | -8.00 | 432.21 | 432.34 |
| F | 86+72.09 | -8.00 | 432.21 | 432.31 |
| G | 86+82.09 | -8.00 | 432.21 | 432.27 |
| H | 86+92.09 | -8.00 | 432.21 | 432.24 |
| I | 87+02.09 | -8.00 | 432.21 | 432.21 |
| ☐ Brg. Pier | 87+07.09 | -8.00 | 432.21 | 432.21 |
| J | 87+12.09 | -8.00 | 432.21 | 432.21 |
| K | 87+22.09 | -8.00 | 432.21 | 432.24 |
| L | 87+32.09 | -8.00 | 432.21 | 432.27 |
| M | 87+42.09 | -8.00 | 432.21 | 432.31 |
| N | 87+52.09 | -8.00 | 432.21 | 432.34 |
| O | 87+62.09 | -8.00 | 432.21 | 432.36 |
| P | 87+72.09 | -8.00 | 432.21 | 432.35 |
| Q | 87+82.09 | -8.00 | 432.21 | 432.32 |
| R | 87+92.09 | -8.00 | 432.21 | 432.27 |
| ☐ Brg. S. Abut. | 88+02.09 | -8.00 | 432.21 | 432.21 |
| Bk of S. Abut. | 88+04.04 | -8.00 | 432.21 | 432.21 |



DEAD LOAD DEFLECTION DIAGRAM ②
(Includes weight of concrete only.)



FILLET HEIGHTS

- Notes:
- To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 5 thru 6 of 22, minus slab thickness, equals the fillet heights "t" above top flange of beams.
 - The deflections are not to be used in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted For Dead Load Deflections" as shown on sheets 5 thru 6 of 22.

FILE NAME: I:\P\17129\Bridges\Final_Plans\Microstation\0673109-005-Top of Slab Elevation.dgn



| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATION
STRUCTURE NO. 067-3190**

SHEET 5 OF 22 SHEETS

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|----------------|--------|--------------|-----------|
| 9300 | 16-00043-01-BR | MONROE | 27 | 10 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

STAGE CONST. JOINT

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+11.41 | -4.50 | 432.28 | 432.28 |
| ☐ Brg. N. Abut. | 86+13.36 | -4.50 | 432.28 | 432.28 |
| A | 86+23.36 | -4.50 | 432.28 | 432.34 |
| B | 86+33.36 | -4.50 | 432.28 | 432.39 |
| C | 86+43.36 | -4.50 | 432.28 | 432.42 |
| D | 86+53.36 | -4.50 | 432.28 | 432.43 |
| E | 86+63.36 | -4.50 | 432.28 | 432.41 |
| F | 86+73.36 | -4.50 | 432.28 | 432.38 |
| G | 86+83.36 | -4.50 | 432.28 | 432.34 |
| H | 86+93.36 | -4.50 | 432.28 | 432.31 |
| I | 87+03.36 | -4.50 | 432.28 | 432.28 |
| ☐ Brg. Pier | 87+08.36 | -4.50 | 432.28 | 432.28 |
| J | 87+13.36 | -4.50 | 432.28 | 432.28 |
| K | 87+23.36 | -4.50 | 432.28 | 432.31 |
| L | 87+33.36 | -4.50 | 432.28 | 432.34 |
| M | 87+43.36 | -4.50 | 432.28 | 432.38 |
| N | 87+53.36 | -4.50 | 432.28 | 432.41 |
| O | 87+63.36 | -4.50 | 432.28 | 432.43 |
| P | 87+73.36 | -4.50 | 432.28 | 432.42 |
| Q | 87+83.36 | -4.50 | 432.28 | 432.39 |
| R | 87+93.36 | -4.50 | 432.28 | 432.34 |
| ☐ Brg. S. Abut. | 88+03.36 | -4.50 | 432.28 | 432.28 |
| Bk of S. Abut. | 88+05.31 | -4.50 | 432.28 | 432.28 |

GIRDER 3, ☐ ROADWAY, & P.G.L.

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+13.05 | 0.00 | 432.37 | 432.37 |
| ☐ Brg. N. Abut. | 86+15.00 | 0.00 | 432.37 | 432.37 |
| A | 86+25.00 | 0.00 | 432.37 | 432.43 |
| B | 86+35.00 | 0.00 | 432.37 | 432.48 |
| C | 86+45.00 | 0.00 | 432.37 | 432.51 |
| D | 86+55.00 | 0.00 | 432.37 | 432.52 |
| E | 86+65.00 | 0.00 | 432.37 | 432.50 |
| F | 86+75.00 | 0.00 | 432.37 | 432.47 |
| G | 86+85.00 | 0.00 | 432.37 | 432.43 |
| H | 86+95.00 | 0.00 | 432.37 | 432.40 |
| I | 87+05.00 | 0.00 | 432.37 | 432.37 |
| ☐ Brg. Pier | 87+10.00 | 0.00 | 432.37 | 432.37 |
| J | 87+15.00 | 0.00 | 432.37 | 432.37 |
| K | 87+25.00 | 0.00 | 432.37 | 432.40 |
| L | 87+35.00 | 0.00 | 432.37 | 432.43 |
| M | 87+45.00 | 0.00 | 432.37 | 432.47 |
| N | 87+55.00 | 0.00 | 432.37 | 432.50 |
| O | 87+65.00 | 0.00 | 432.37 | 432.52 |
| P | 87+75.00 | 0.00 | 432.37 | 432.51 |
| Q | 87+85.00 | 0.00 | 432.37 | 432.48 |
| R | 87+95.00 | 0.00 | 432.37 | 432.43 |
| ☐ Brg. S. Abut. | 88+05.00 | 0.00 | 432.37 | 432.37 |
| Bk of S. Abut. | 88+06.95 | 0.00 | 432.37 | 432.37 |

GIRDER 4

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+15.96 | 8.00 | 432.21 | 432.21 |
| ☐ Brg. N. Abut. | 86+17.91 | 8.00 | 432.21 | 432.21 |
| A | 86+27.91 | 8.00 | 432.21 | 432.27 |
| B | 86+37.91 | 8.00 | 432.21 | 432.32 |
| C | 86+47.91 | 8.00 | 432.21 | 432.35 |
| D | 86+57.91 | 8.00 | 432.21 | 432.36 |
| E | 86+67.91 | 8.00 | 432.21 | 432.34 |
| F | 86+77.91 | 8.00 | 432.21 | 432.31 |
| G | 86+87.91 | 8.00 | 432.21 | 432.27 |
| H | 86+97.91 | 8.00 | 432.21 | 432.24 |
| I | 87+07.91 | 8.00 | 432.21 | 432.21 |
| ☐ Brg. Pier | 87+12.91 | 8.00 | 432.21 | 432.21 |
| J | 87+17.91 | 8.00 | 432.21 | 432.21 |
| K | 87+27.91 | 8.00 | 432.21 | 432.24 |
| L | 87+37.91 | 8.00 | 432.21 | 432.27 |
| M | 87+47.91 | 8.00 | 432.21 | 432.31 |
| N | 87+57.91 | 8.00 | 432.21 | 432.34 |
| O | 87+67.91 | 8.00 | 432.21 | 432.36 |
| P | 87+77.91 | 8.00 | 432.21 | 432.35 |
| Q | 87+87.91 | 8.00 | 432.21 | 432.32 |
| R | 87+97.91 | 8.00 | 432.21 | 432.27 |
| ☐ Brg. S. Abut. | 88+07.91 | 8.00 | 432.21 | 432.21 |
| Bk of S. Abut. | 88+09.86 | 8.00 | 432.21 | 432.21 |

GIRDER 5

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|----------|--------|------------------------------|--|
| Bk of N. Abut. | 86+18.87 | 16.00 | 432.05 | 432.05 |
| ☐ Brg. N. Abut. | 86+20.82 | 16.00 | 432.05 | 432.05 |
| A | 86+30.82 | 16.00 | 432.05 | 432.11 |
| B | 86+40.82 | 16.00 | 432.05 | 432.16 |
| C | 86+50.82 | 16.00 | 432.05 | 432.19 |
| D | 86+60.82 | 16.00 | 432.05 | 432.20 |
| E | 86+70.82 | 16.00 | 432.05 | 432.18 |
| F | 86+80.82 | 16.00 | 432.05 | 432.15 |
| G | 86+90.82 | 16.00 | 432.05 | 432.11 |
| H | 87+00.82 | 16.00 | 432.05 | 432.08 |
| I | 87+10.82 | 16.00 | 432.05 | 432.05 |
| ☐ Brg. Pier | 87+15.82 | 16.00 | 432.05 | 432.05 |
| J | 87+20.82 | 16.00 | 432.05 | 432.05 |
| K | 87+30.82 | 16.00 | 432.05 | 432.08 |
| L | 87+40.82 | 16.00 | 432.05 | 432.11 |
| M | 87+50.82 | 16.00 | 432.05 | 432.15 |
| N | 87+60.82 | 16.00 | 432.05 | 432.18 |
| O | 87+70.82 | 16.00 | 432.05 | 432.20 |
| P | 87+80.82 | 16.00 | 432.05 | 432.19 |
| Q | 87+90.82 | 16.00 | 432.05 | 432.16 |
| R | 88+00.82 | 16.00 | 432.05 | 432.11 |
| ☐ Brg. S. Abut. | 88+10.82 | 16.00 | 432.05 | 432.05 |
| Bk of S. Abut. | 88+12.77 | 16.00 | 432.05 | 432.05 |

FILE NAME: I:\P17129\Bridges\Final Plans\Microstation\0673109-006-Top of Slab Elevation.dgn



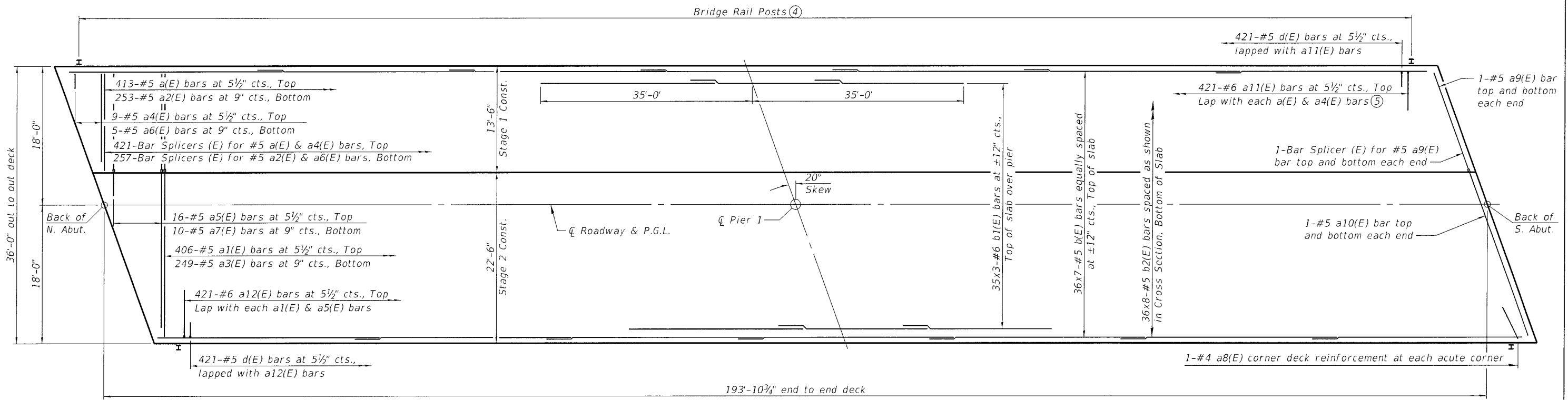
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| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

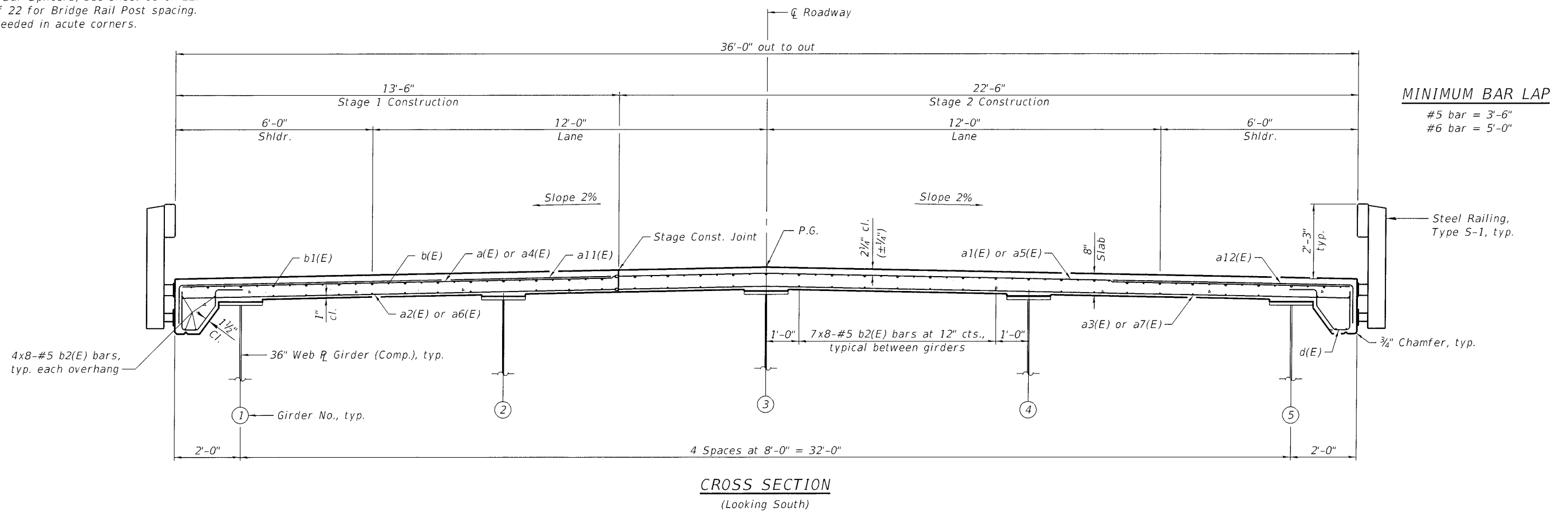
TOP OF SLAB ELEVATION
STRUCTURE NO. 067-3190

SHEET 6 OF 22 SHEETS

| | | | | |
|------------------|------------------------|---------------|-----------------|---------------------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 11 |
| CONTRACT NO. | | | | ILLINOIS FED. AID PROJECT |



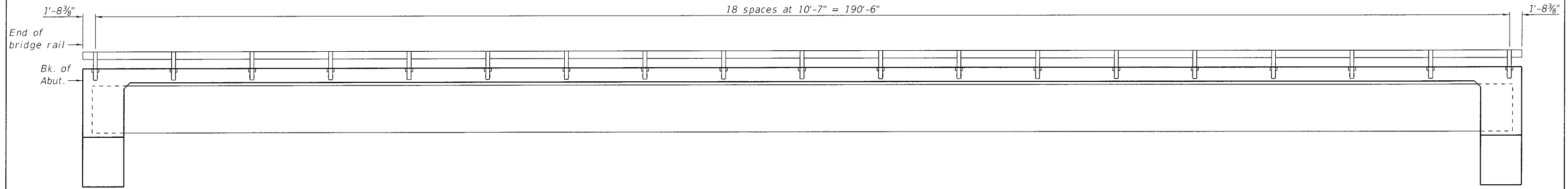
- Notes:
- See sheet 8 of 22 for Superstructure Details and Bill of Material.
 - Bars indicate thus 36x7-#5 etc. indicates 36 lines of bars with 7 lengths per line.
 - For details of Bar Splicers, see sheet 18 of 22.
 - See sheet 8 of 22 for Bridge Rail Post spacing.
 - Cut to fit as needed in acute corners.



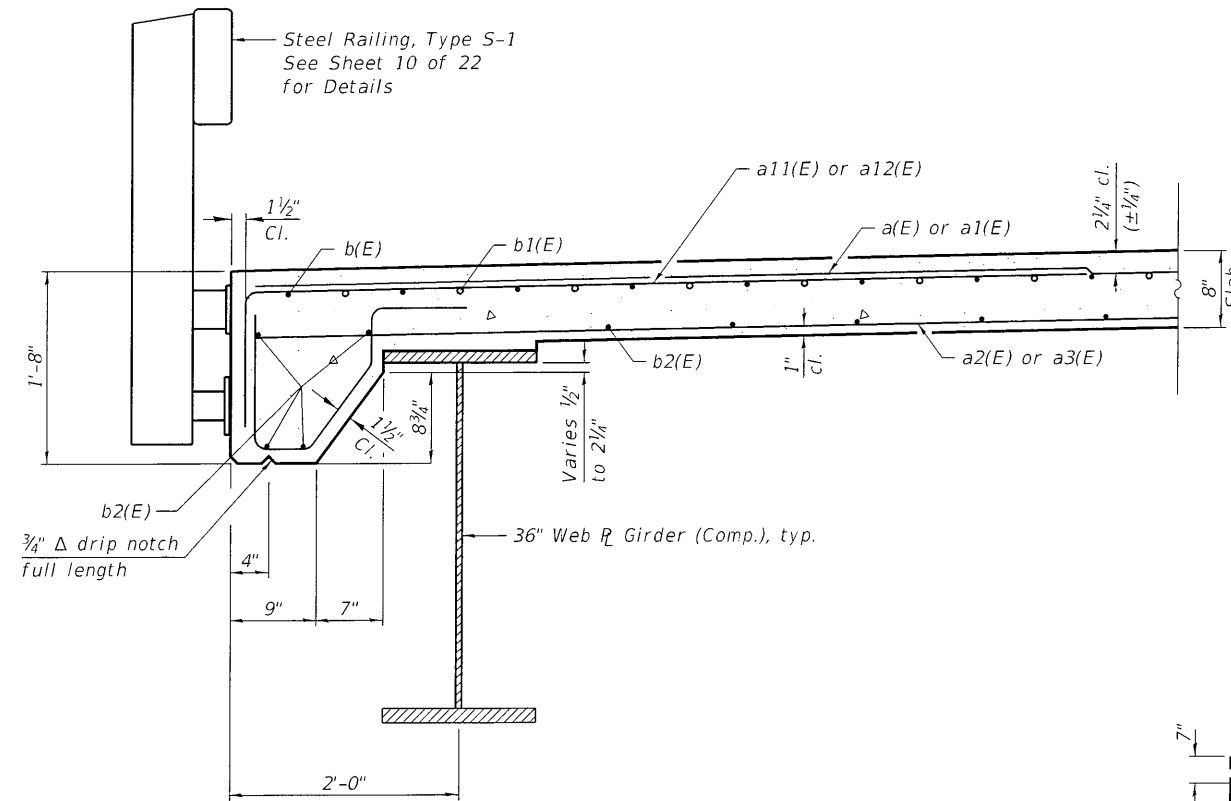
CROSS SECTION
(Looking South)

FILE NAME: H:\P17129\Bridges\Final Plans\Microstation\0673109-007-Superstructure.dgn

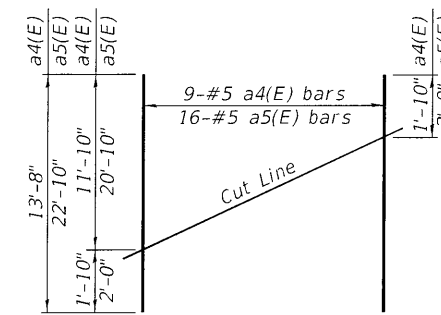
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|--|------------------------|------------|-----------|---|--|----------------------|---------------------------|------------------|---------------------------|-----------------|
| <p>OATES ASSOCIATES www.oatesassociates.com ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115</p> | USER NAME = | DESIGNED - | REVISED - | <p>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</p> | <p>SUPERSTRUCTURE STRUCTURE NO. 067-3190</p> | F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 12 |
| | PLOT SCALE = | CHECKED - | REVISED - | | | SHEET 7 OF 22 SHEETS | CONTRACT NO. | | ILLINOIS FED. AID PROJECT | |
| | PLOT DATE = 10/23/2024 | DRAWN - | REVISED - | | | | | | | |
| | | CHECKED - | REVISED - | | | | | | | |



ELEVATION OF BRIDGE RAIL

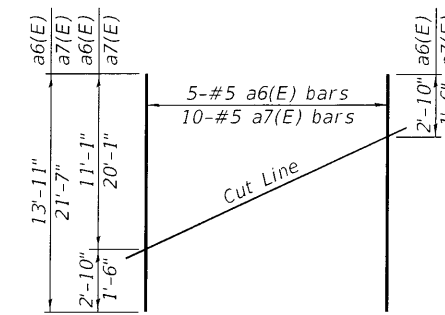


SECTION THRU EDGE OF DECK ①



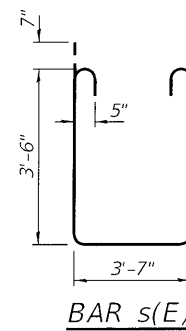
FIELD CUTTING DIAGRAM

Order a4(E) and a5(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.

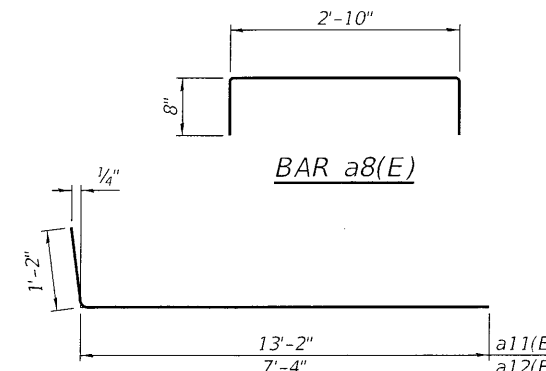


FIELD CUTTING DIAGRAM

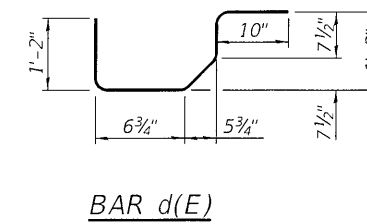
Order a6(E) and a7(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.



BAR s(E)



BARS a11(E) & a12(E)



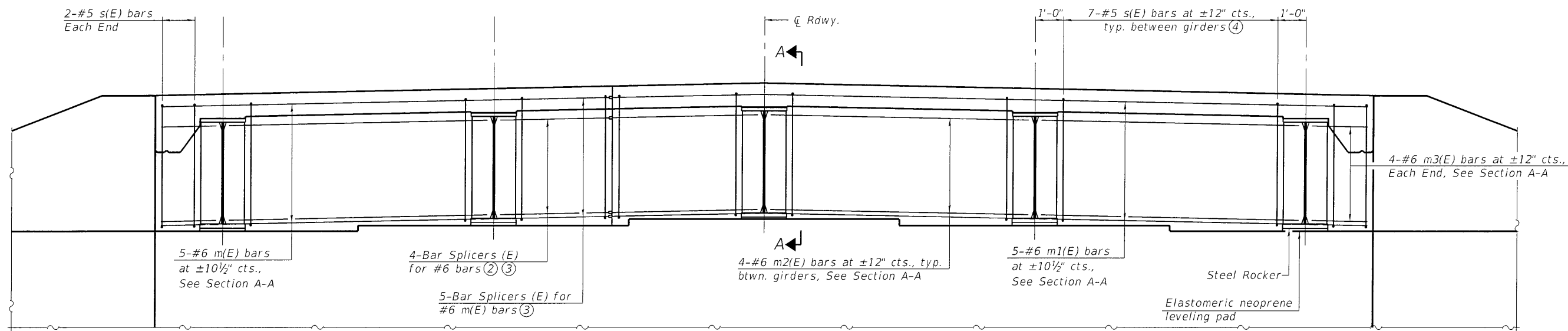
BAR d(E)

Notes:
① All Edges shall have 3/4" chamfers.

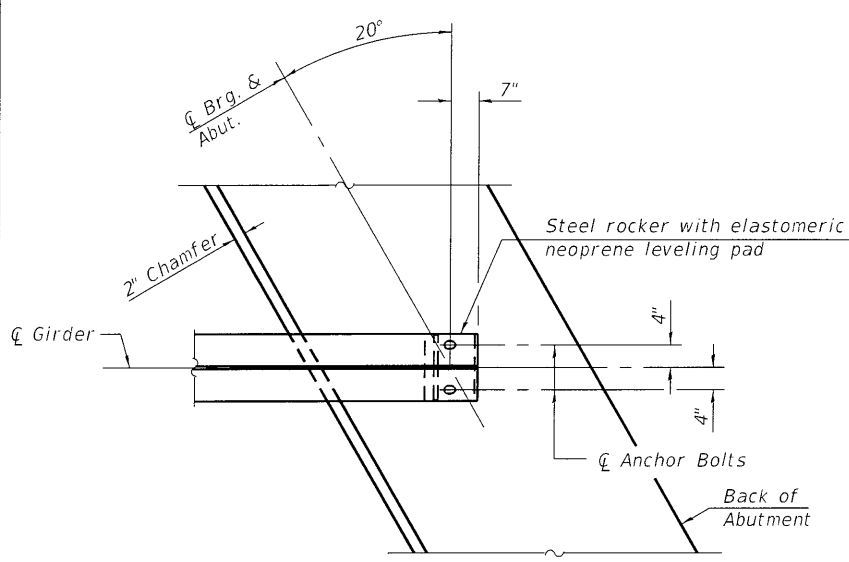
SUPERSTRUCTURE
BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|----------|---------|-------|
| a(E) | 413 | #5 | 13'-2" | — |
| a1(E) | 406 | #5 | 22'-2" | — |
| a2(E) | 253 | #5 | 13'-2" | — |
| a3(E) | 249 | #5 | 22'-2" | — |
| a4(E) | 9 | #5 | 13'-8" | — |
| a5(E) | 16 | #5 | 22'-10" | — |
| a6(E) | 5 | #5 | 13'-11" | — |
| a7(E) | 10 | #5 | 21'-7" | — |
| a8(E) | 2 | #4 | 4'-2" | U |
| a9(E) | 4 | #5 | 14'-0" | — |
| a10(E) | 4 | #5 | 23'-7" | — |
| a11(E) | 421 | #6 | 14'-4" | L |
| a12(E) | 421 | #6 | 8'-6" | L |
| b(E) | 252 | #5 | 30'-8" | — |
| b1(E) | 105 | #6 | 26'-8" | — |
| b2(E) | 288 | #5 | 27'-3" | — |
| d(E) | 842 | #5 | 4'-0" | U |
| m(E) | 10 | #6 | 14'-0" | — |
| m1(E) | 10 | #6 | 23'-7" | — |
| m2(E) | 24 | #6 | 8'-1" | — |
| m3(E) | 16 | #6 | 1'-9" | — |
| s(E) | 64 | #5 | 11'-9" | U |
| Reinforcement Bars, Epoxy Coated | | Lbs. | 65,340 | |
| Concrete Superstructure | | Cu. Yds. | 229.0 | |

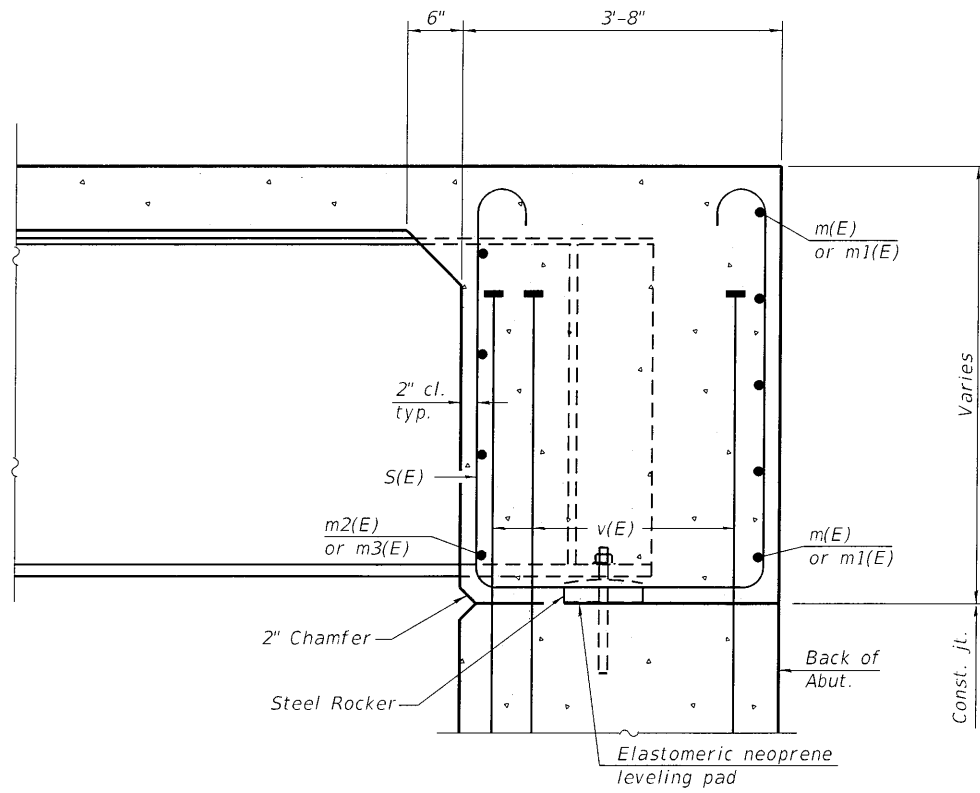
FILE NAME: I:\P1719\Bridges\Final Plans\Microstation\0673109-008-Superstructure_Details.dgn



DIAPHRAGM AT ABUTMENT



PLAN AT ABUTMENT
(Showing bottom flange of girder)



SECTION A-A
(at Rt. L's)

- Notes:
- ① See sheet 8 of 22 for Superstructure details and Bill of Material.
 - ② Use Bar Splicers in place of m2(E) bars between girder and stage construction joint. Cut Bar Splicers as required to provide adequate clearance to girder.
 - ③ For details of Bar Splicers, see sheet 18 of 22.
 - ④ The s(E) bars shall be placed parallel to the girders. Spacing for these bars shall be at right angles to the girders.
 - ⑤ For bearing details, see sheet 13 of 22.

FILE NAME: I:\P17129\Bridges\Final Plans\Microstation\0673105-009-Abutment Diaphragm Details.dgn

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| | CHECKED - | REVISED - |
| PLOT SCALE = | DRAWN - | REVISED - |
| PLOT DATE = 10/23/2024 | CHECKED - | REVISED - |

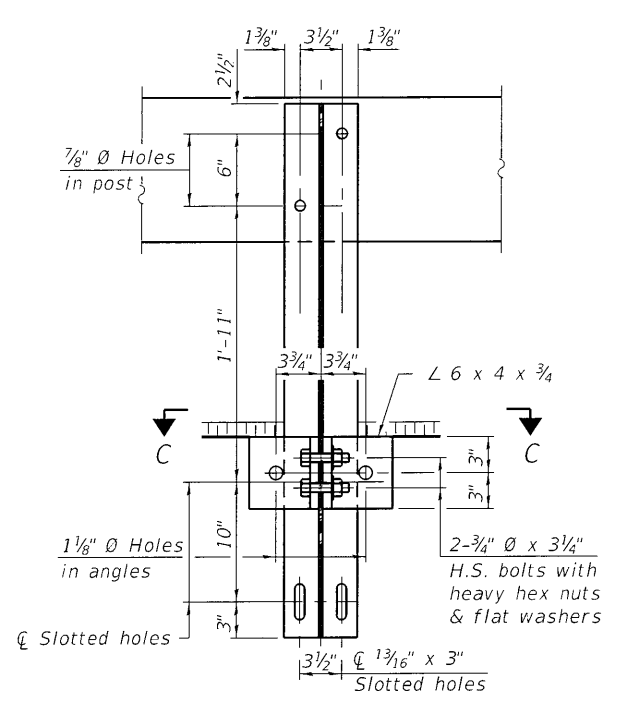
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DIAPHRAGM DETAILS
STRUCTURE NO. 067-3190

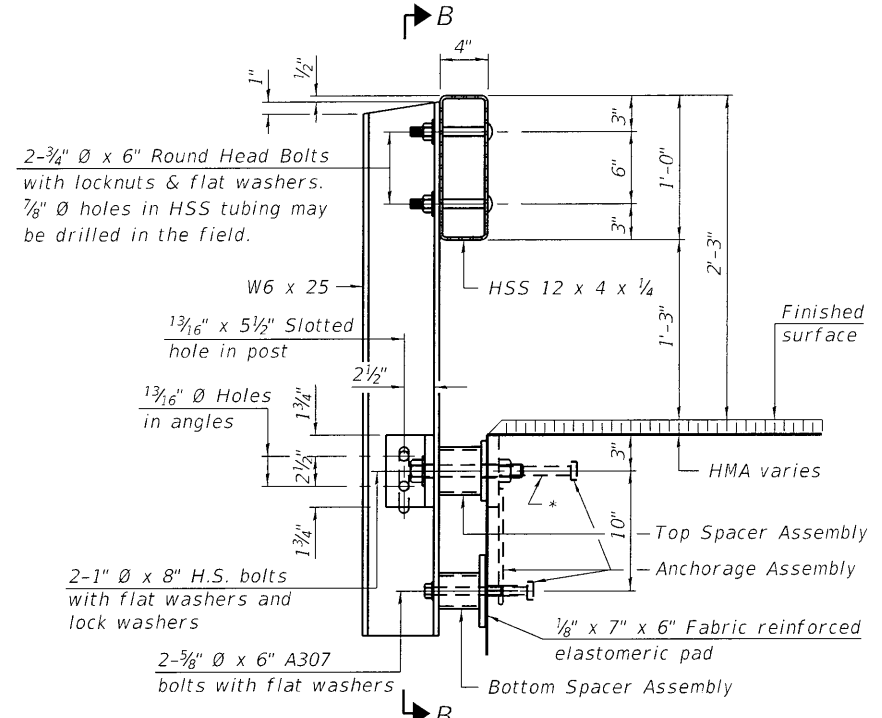
SHEET 9 OF 22 SHEETS

| | | | | |
|---------------------------|----------------|--------|--------------|-----------|
| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 9300 | 16-00043-01-BR | MONROE | 27 | 14 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

Notes:
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.
 All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.
 All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.
 Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate splice inserts shown, provided the outside dimensions are matched.
 All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.

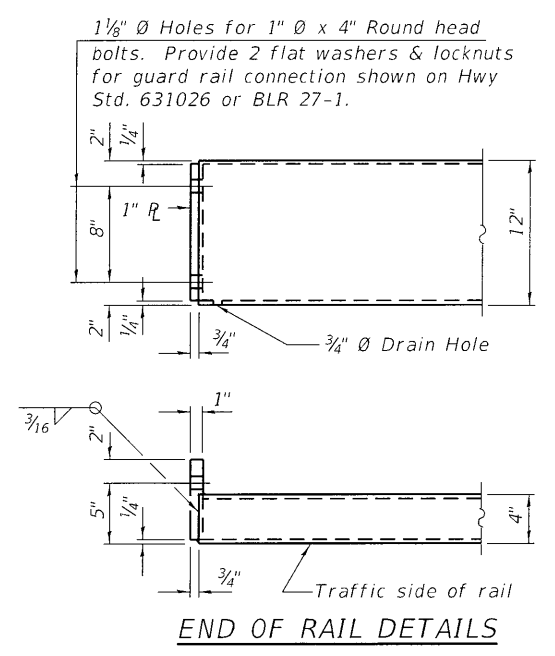


SECTION B-B

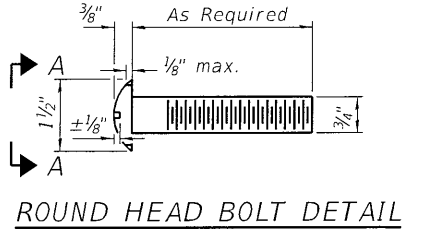


SECTION AT RAILING POST

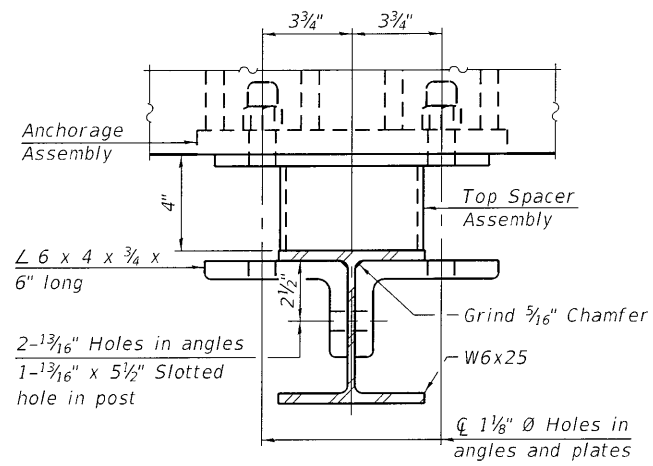
* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



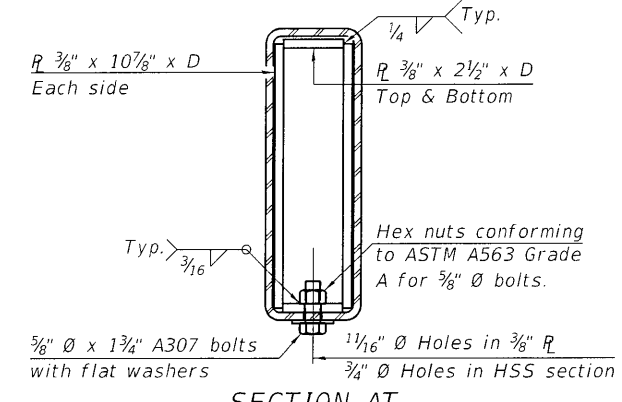
END OF RAIL DETAILS



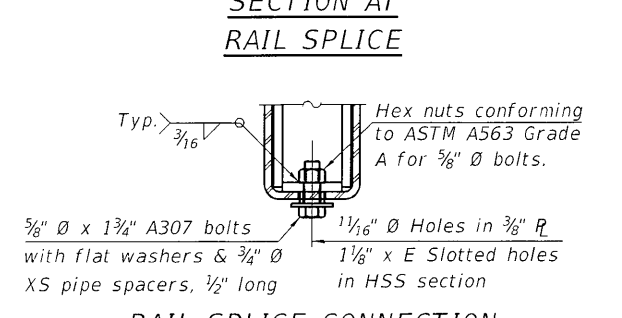
ROUND HEAD BOLT DETAIL



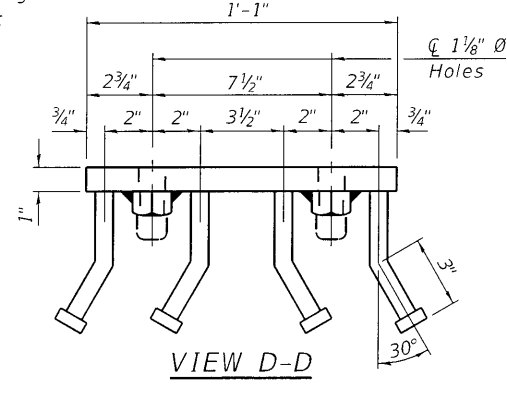
SECTION C-C



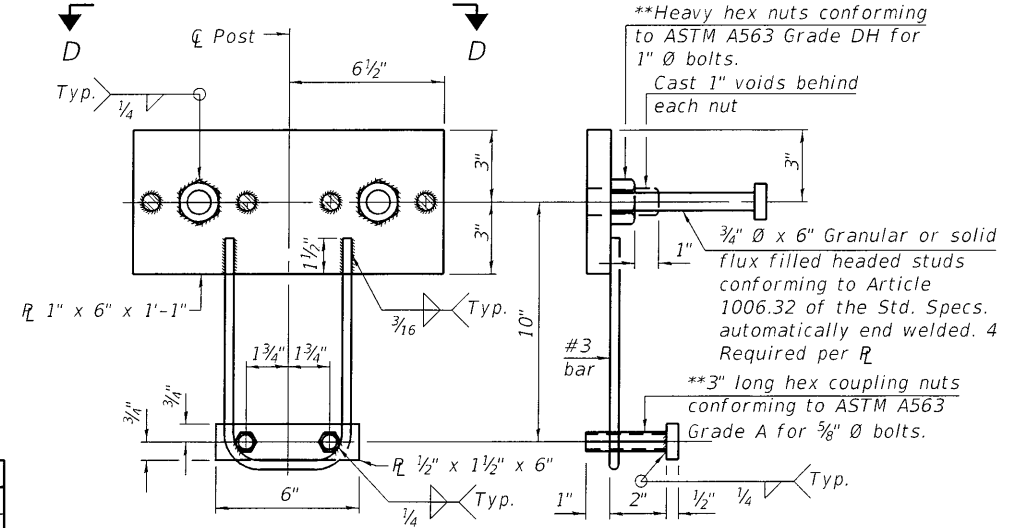
SECTION AT RAIL SPLICE



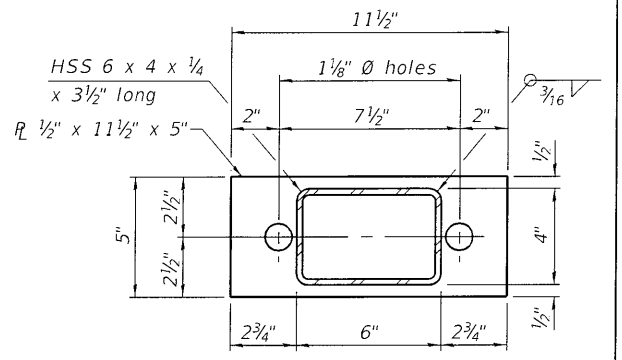
RAIL SPLICE CONNECTION AT EXPANSION JT.



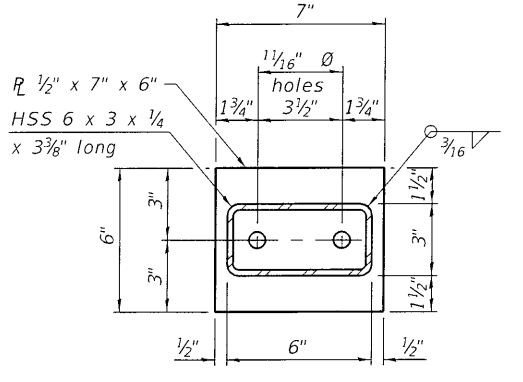
VIEW D-D



ANCHORAGE ASSEMBLY



TOP SPACER ASSEMBLY



BOTTOM SPACER ASSEMBLY

RAILING CRITERIA

| | |
|--------------------------|-----------------|
| NCHRP 350 Test Level | 2 |
| Railing Weight (plf) | 50 |
| Max Post Spacing | 10'-9" |
| HMA thickness range (in) | 1 1/4" - 3 3/8" |

SPLICE DIMENSIONS

| Location | T | A | B | C | D | E |
|------------------------------|---------|--------|---------|--------|-----------|---------|
| All locs. not over exp. jts. | 0 | 1/4" | 4" | 4" | 1'-8" | - |
| Over Strip Seal Jt. | ≤4" | 2 1/2" | 4 3/8" | 4 3/8" | 1'-10" | 3 1/16" |
| Over Finger or Modular Jt. | ≤9 1/2" | 5 1/2" | 7 3/8" | 7 1/4" | 2'-9 1/4" | 5 1/16" |
| Over Finger or Modular Jt. | ≤15" | 8 1/4" | 10 1/8" | 10" | 3'-8 1/4" | 8 9/16" |

T = ; total movement along centerline of roadway at expansion joint.

FILE NAME: I:\P17129\Bridges\Final Plans\Microstation\0673109-010-Steel Railing_Type S-1.dgn



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 DRAWN -
 PLOT DATE = 10/23/2024

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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

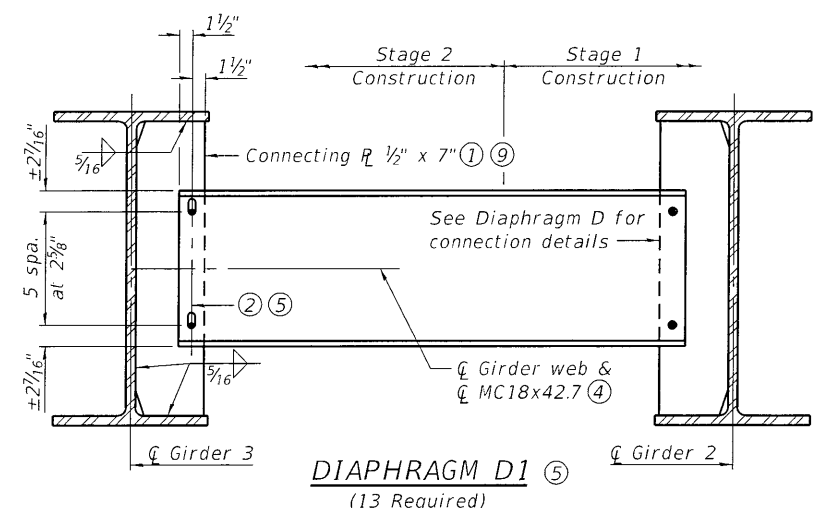
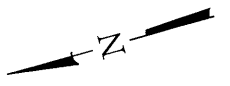
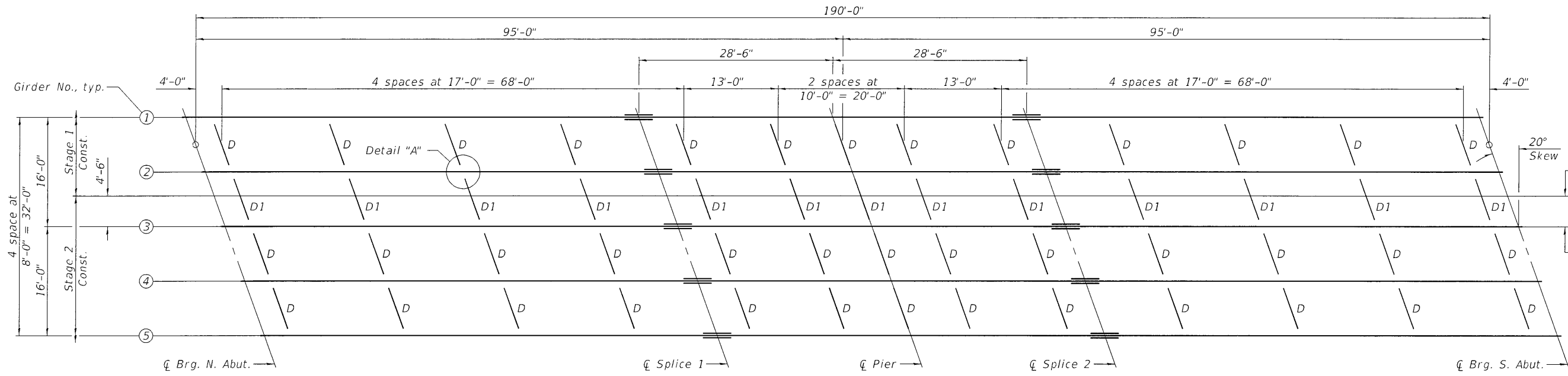
STEEL RAILING, TYPE S-1
 STRUCTURE NO. 067-3190

SHEET 10 OF 22 SHEETS

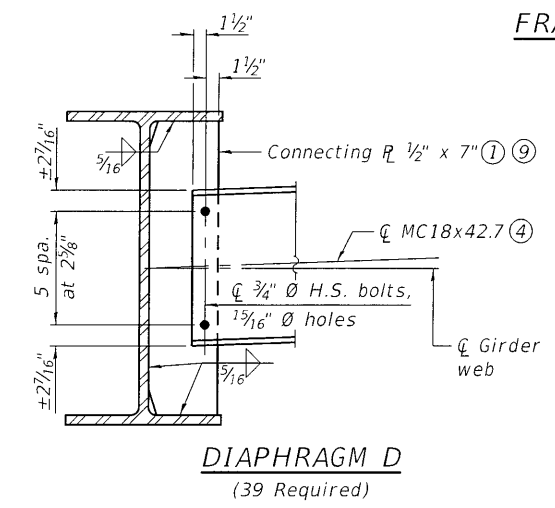
| Item | Unit | Quantity |
|------------------------|------|----------|
| Steel Railing, Type S1 | Foot | 388 |

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|----------------|--------|--------------|-----------|
| 9300 | 16-00043-01-BR | MONROE | 27 | 15 |

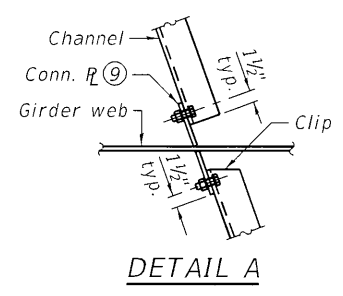
CONTRACT NO.
 ILLINOIS FED. AID PROJECT



DIAPHRAGM D1 (13 Required)



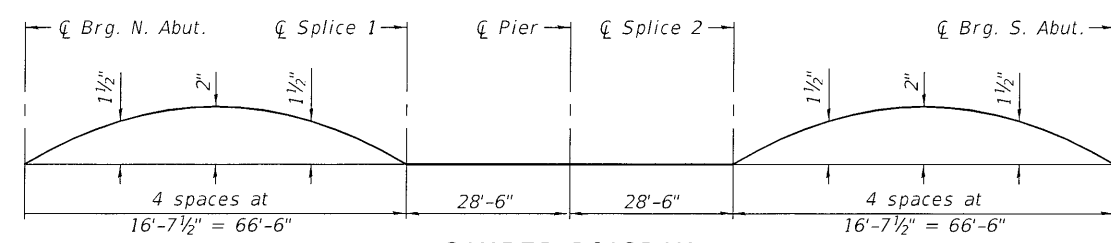
DIAPHRAGM D (39 Required)



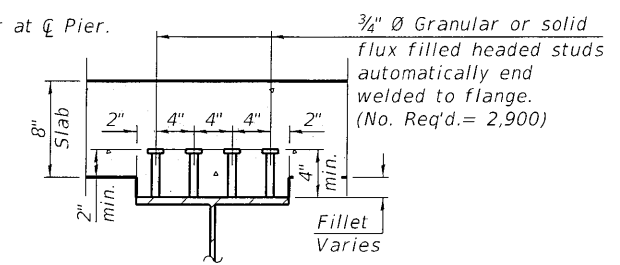
DETAIL A

Notes:

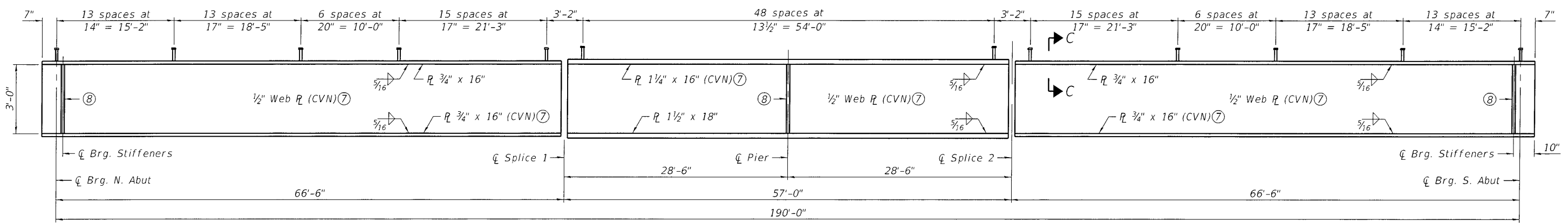
- ① Do not provide connecting plate on exterior face of fascia girders. Provide Bearing Stiffener on exterior face of fascia girders.
- ② $\frac{3}{4}$ " H.S. bolts, $\frac{13}{16}$ " holes in connecting plate, and $\frac{13}{16}$ " x $\frac{17}{8}$ " vertical slotted holes in channel. Two $\frac{3}{16}$ " structural plate washers required for each set of slotted holes.
- ③ Two hardened washers required for each set of oversized holes.
- ④ Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized, shall be provided at no additional cost to the County.
- ⑤ The Fabricator shall detail slotted hole locations on channel to allow for differential deflection during Stage 2 deck and parapet pour. The bolts shall be finger tight until the Stage 2 deck and parapet concrete is poured, allowing the Stage 2 beams to deflect vertically without stressing the diaphragm or Stage 1 beams. The diaphragm connection shall be detailed so that the centerline of beam web and centerline of diaphragm channel align in their final position.
- ⑥ All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at support may be temporarily disconnected to install bearing anchor rods.
- ⑦ "CVN" denotes Charpy-V-Notch impact energy requirements, zone 2. During Stage II Traffic, Girders 1 & 2 are considered Fracture-Critical members.
- ⑧ Bearing Stiffener, PL 1" x 7" (One each side).
- ⑨ Connect diaphragm to 1" x 7" Bearing Stiffener at \bar{C} Pier.



CAMBER DIAGRAM



SECTION C-C



GIRDER ELEVATION (5 Required)

FILE NAME: I:\PA17129\Bridges\Final Plans\Microsoft\0673109-011-Framing Plan.dgn

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| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 067-3190
SHEET 11 OF 22 SHEETS

| | | | | |
|--|------------------------|---------------|-----------------|--------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 16 |
| CONTRACT NO. ILLINOIS FED. AID PROJECT | | | | |

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
 M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
 $M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
 $M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s ($\ell + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
 $M_{\ell + IM} / S_c(n)$ or $M_{\ell + IM} / S_c(cr)$ as applicable.

$f_s + f_t/2$ (Service II): Sum of stresses as computed below (ksi).
 f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s ($\ell + IM$) + $f_t/2$

Service II Resistance: Composite (0.95 $R_h F_{yf}$) or noncomposite (0.80 $R_h F_{yf}$) stress capacity according to Article 6.10.4.2 (ksi).

$f_s + f_t/3$ (Strength I): Sum of stresses as computed below on non-compact sections (ksi).
1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s ($\ell + IM$) + $f_t/3$

$\phi_r F_n$: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).

V_r : Maximum factored shear range in span computed according to Article 6.10.10.

R_{DC1} : Un-factored reaction due to non-composite dead load (kip).
 R_{DC2} : Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).

R_{DW} : Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).

R_{ℓ} : Un-factored live load reaction (kip).
 R_{IM} : Un-factored dynamic load allowance (impact) (kip).

R_{Total} (Strength I/Impact): Strength I load combination of factored design reactions (kip).
1.25 ($R_{DC1} + R_{DC2}$) + 1.5 R_{DW} + 1.75 ($R_{\ell} + R_{IM}$)

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in^4 and in^3).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in^4 and in^3).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in^4 and in^3).

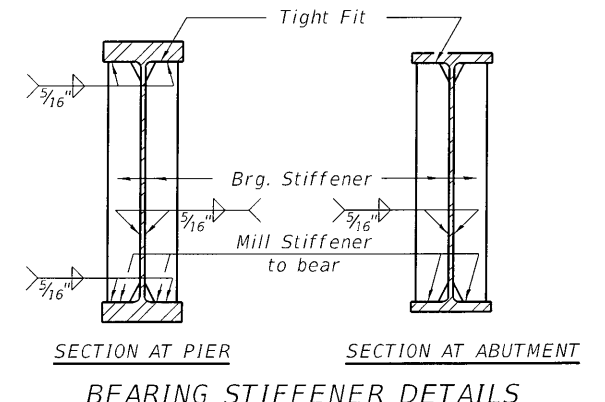
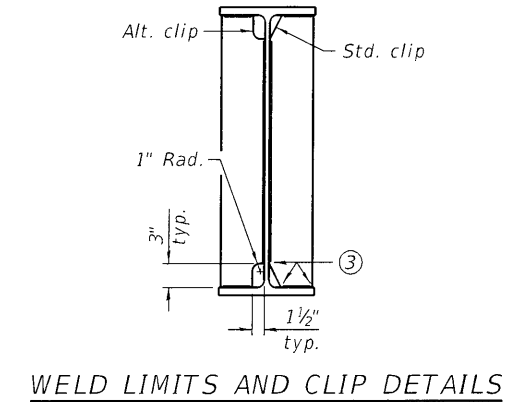
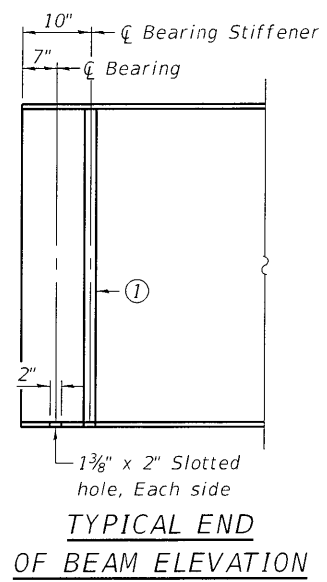
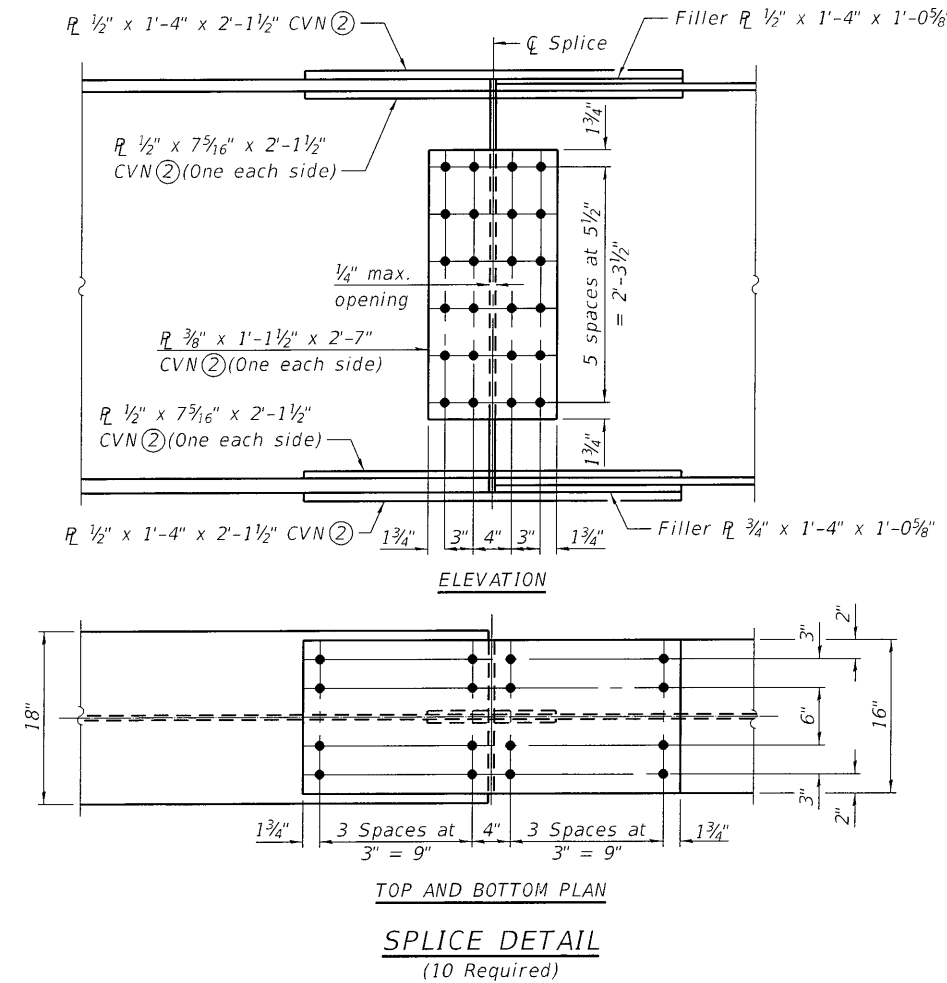
$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in^4 and in^3).

S_x : Section modulus about the major axis of a section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in^3).

DC1: Un-factored non-composite dead load (kips/ft.).
 M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
 M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
 M_{DW} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.
 $M_{\ell + IM}$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
 M_u : Strength I load combination of factored design moments (kip-ft.).
1.25 ($M_{DC1} + M_{DC2}$) + 1.5 M_{DW} + 1.75 $M_{\ell + IM}$
 f_t : Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).
 $\phi_r M_n$: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).

| INTERIOR GIRDER MOMENT TABLE | | | | |
|------------------------------|-------------|-----------|--------|-----------|
| | | 0.4 Sp. 1 | Pier | 0.6 Sp. 2 |
| I_s | (in^4) | 10049 | 18106 | 10049 |
| $I_c(n)$ | (in^4) | 27596 | 46832 | 27596 |
| $I_c(3n)$ | (in^4) | 21285 | 34642 | 21285 |
| $I_c(cr)$ | (in^4) | - | 22994 | - |
| S_s | (in^3) | 536 | 1038 | 536 |
| $S_c(n)$ | (in^3) | 768 | 1375 | 768 |
| $S_c(3n)$ | (in^3) | 711 | 1278 | 711 |
| $S_c(cr)$ | (in^3) | - | 1131 | - |
| S_x | (in^3) | 692 | 467 | 692 |
| DC1 | ($k/ft.$) | 0.978 | 1.068 | 0.978 |
| M_{DC1} | (k) | 535.4 | 1346.1 | 535.4 |
| DC2 | ($k/ft.$) | 0.048 | 0.048 | 0.048 |
| M_{DC2} | (k) | 26.9 | 62.8 | 26.9 |
| DW | ($k/ft.$) | 0.360 | 0.360 | 0.360 |
| M_{DW} | (k) | 201.5 | 470.9 | 201.5 |
| LLDF | | 0.575 | 0.607 | 0.575 |
| $M_{\ell + IM}$ | (k) | 1148.7 | 1548.5 | 1148.7 |
| f_t (Strength I) | (ksi) | 0.00 | 0.00 | 0.00 |
| $M_u + 1/3 f_t S_x$ | (k) | 3015.4 | 5177.1 | 3015.4 |
| $\phi_r M_n$ | (k) | 3748.4 | 5232.9 | 3748.4 |
| f_s DC1 | (ksi) | 11.99 | 15.56 | 11.99 |
| f_s DC2 | (ksi) | 0.45 | 0.67 | 0.45 |
| f_s DW | (ksi) | 3.40 | 5.00 | 3.40 |
| f_s ($\ell + IM$) | (ksi) | 17.95 | 16.43 | 17.95 |
| f_t (Service II) | (ksi) | 0.00 | 0.00 | 0.00 |
| $f_s + f_t/2$ (Service II) | (ksi) | 39.18 | 42.59 | 39.18 |
| 0.95 $R_h F_{yf}$ | (ksi) | 47.50 | 47.50 | 47.50 |
| 0.8 $R_h F_{yf}$ | (ksi) | - | - | - |
| $\phi_r F_n$ | (ksi) | - | - | - |
| V_r | (k) | 31.1 | 35.7 | 31.1 |

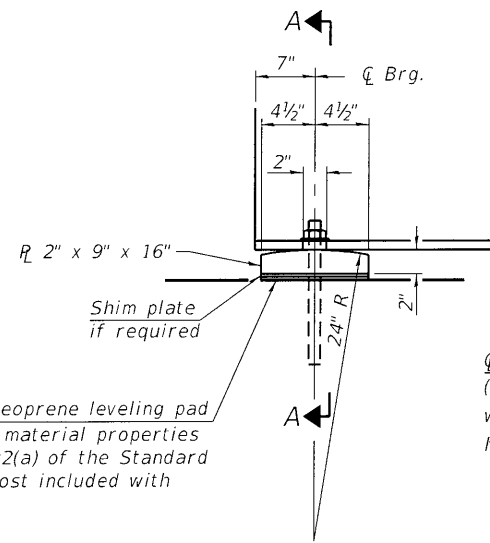
| GIRDER REACTION TABLE | | | | |
|---------------------------------|---------|---------|-------|---------|
| | | Abut. 1 | Pier | Abut. 2 |
| LLDF | | 0.814 | 0.814 | 0.814 |
| R_{DC1} | (k) | 32.7 | 127.5 | 32.7 |
| R_{DC2} | (k) | 1.6 | 5.9 | 1.6 |
| R_{DW} | (k) | 12.1 | 44.1 | 12.1 |
| R_{ℓ} | (k) | 103.1 | 175.7 | 103.1 |
| R_{IM} | (k) | 25.5 | 33.9 | 25.5 |
| R_{Total} (Strength I/Impact) | (k) | 175.0 | 387.1 | 175.0 |



Notes:
① Bearing Stiffeners, R 1" x 7" (One each side).
② "CVN" denotes Charpy-V-Notch impact energy requirements, zone 2. During Stage II Traffic, Girders 1 & 2 are considered Fracture-Critical members.
③ Stop welds $1/4$ " ($\pm 1/8$ ") from edges as shown, typical.
④ M_{ℓ} and R_{ℓ} include the effects of centrifugal force and superelevation.
⑤ For fabrication only.

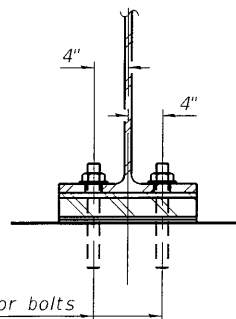
| TOP OF WEB ELEVATIONS ⑤ | | | | | |
|-------------------------|--------|--------|--------|--------|--------|
| | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 5 |
| \bar{c} Brg. N. Abut. | 431.26 | 431.42 | 431.58 | 431.42 | 431.26 |
| \bar{c} Splice 1 | 431.21 | 431.37 | 431.53 | 431.37 | 431.21 |
| \bar{c} Pier 1 | 431.21 | 431.37 | 431.53 | 431.37 | 431.21 |
| \bar{c} Splice 2 | 431.21 | 431.37 | 431.53 | 431.37 | 431.21 |
| \bar{c} Brg. S. Abut. | 431.26 | 431.42 | 431.58 | 431.42 | 431.26 |

FILE NAME: I:\P1\1729\Bridges\Final Plans\Microstation\0673109-012-Girder Details.dgn



1/8" Elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

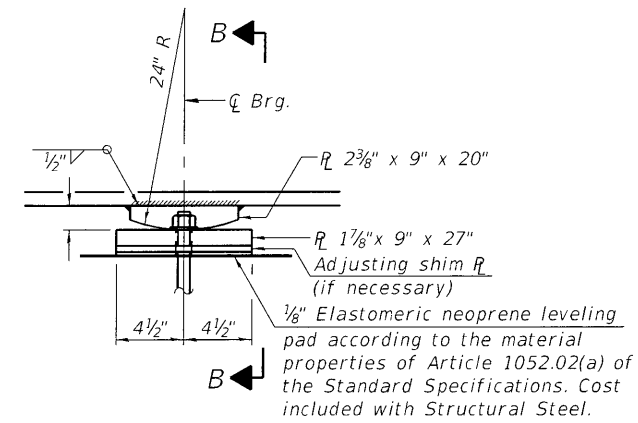
ELEVATION AT ABUTMENT



1" \varnothing x 12" All-thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 5/16" R washer under nut. 1 3/8" x 2" slotted hole in flange. 1 1/2" \varnothing Holes in bearing plate.

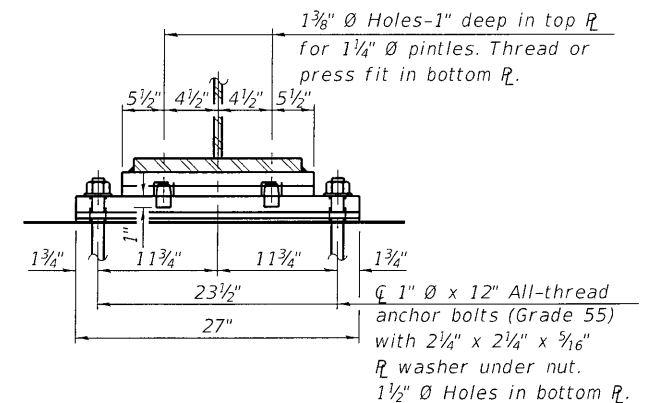
SECTION A-A

FIXED BEARING



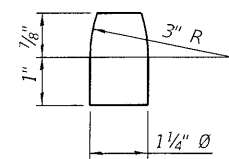
ELEVATION AT PIER

FIXED BEARING



SECTION B-B

1" \varnothing x 12" All-thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 5/16" R washer under nut. 1 1/2" \varnothing Holes in bottom R.



PINTLE

BILL OF MATERIAL

| Item | Unit | Total |
|------------------|------|-------|
| Anchor Bolts, 1" | Each | 30 |

Notes:

- Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

FILE NAME: I:\P117129\Brdge\Final Plans\Microstation\0673109-013-Rearing Details.dgn



| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

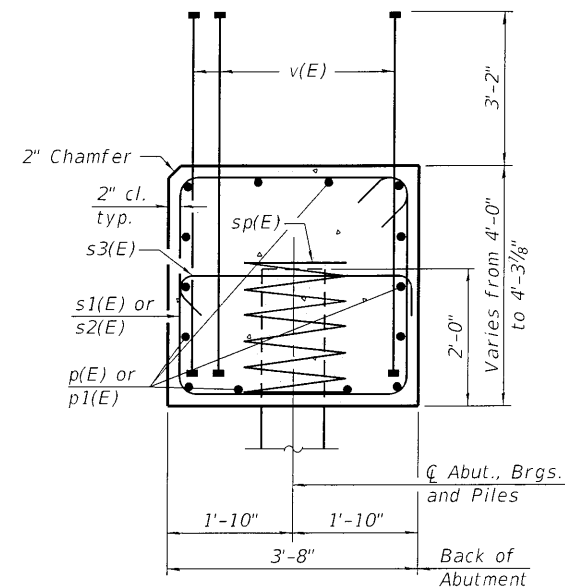
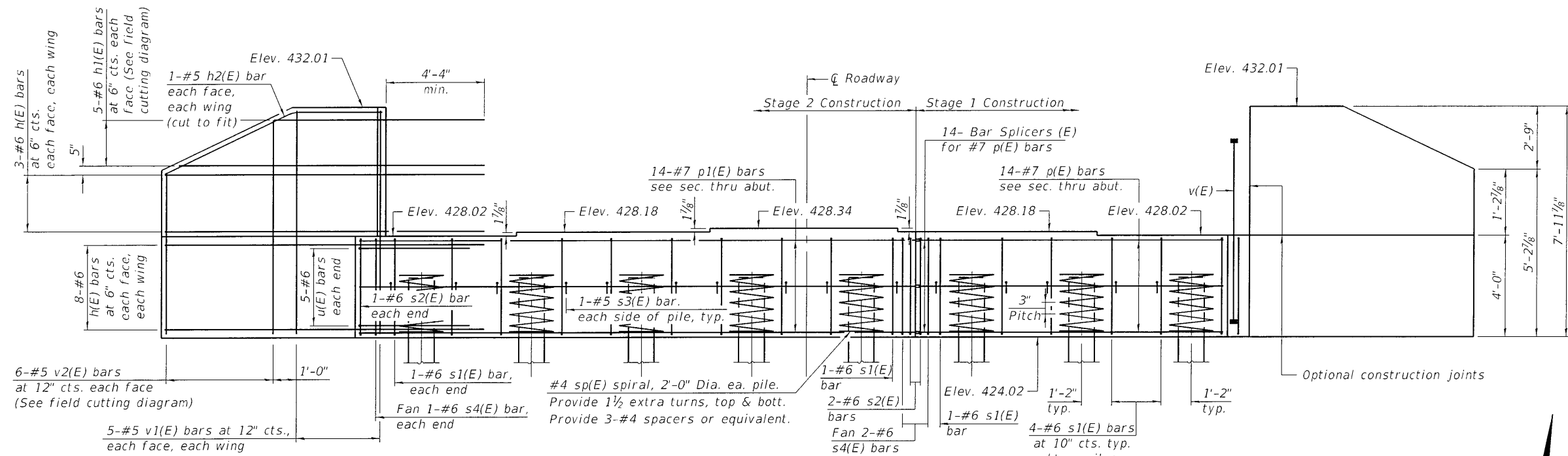
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 067-3190

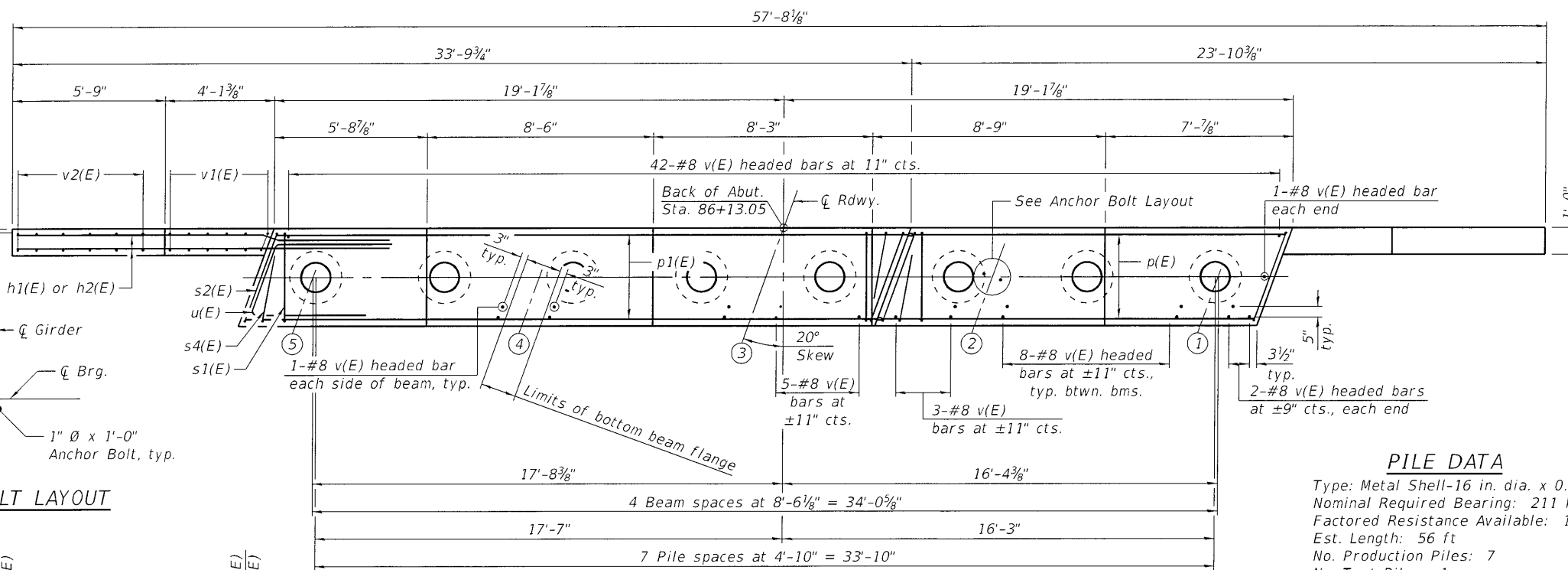
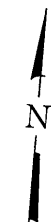
SHEET 13 OF 22 SHEETS

| | | | | |
|------------------|------------------------|---------------|---------------------------|--------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 18 |
| CONTRACT NO. | | | ILLINOIS FED. AID PROJECT | |

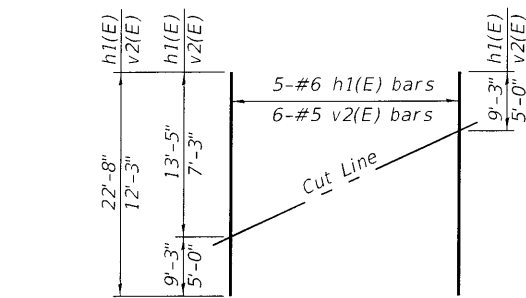
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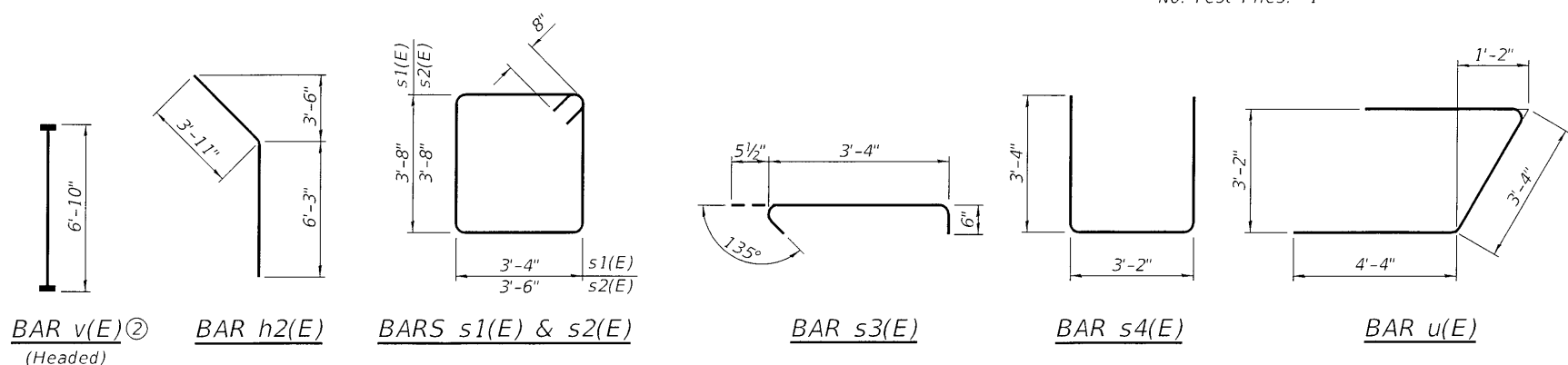
SEC. THRU ABUT.
Dimensions at right angles to abutment.



ANCHOR BOLT LAYOUT



FIELD CUTTING DIAGRAM
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.



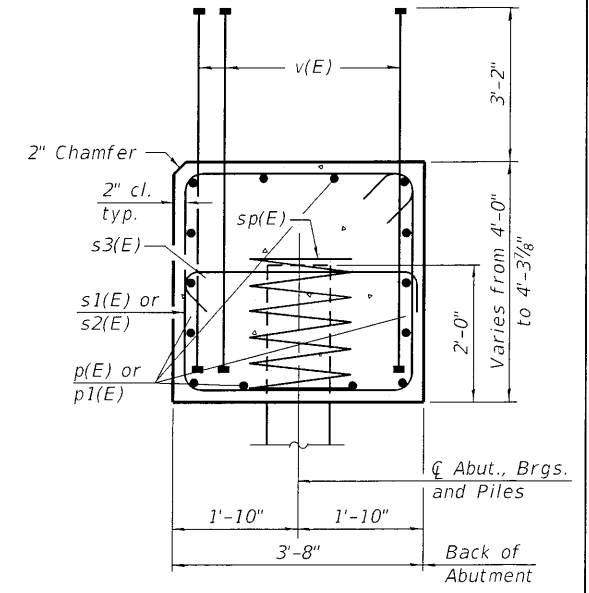
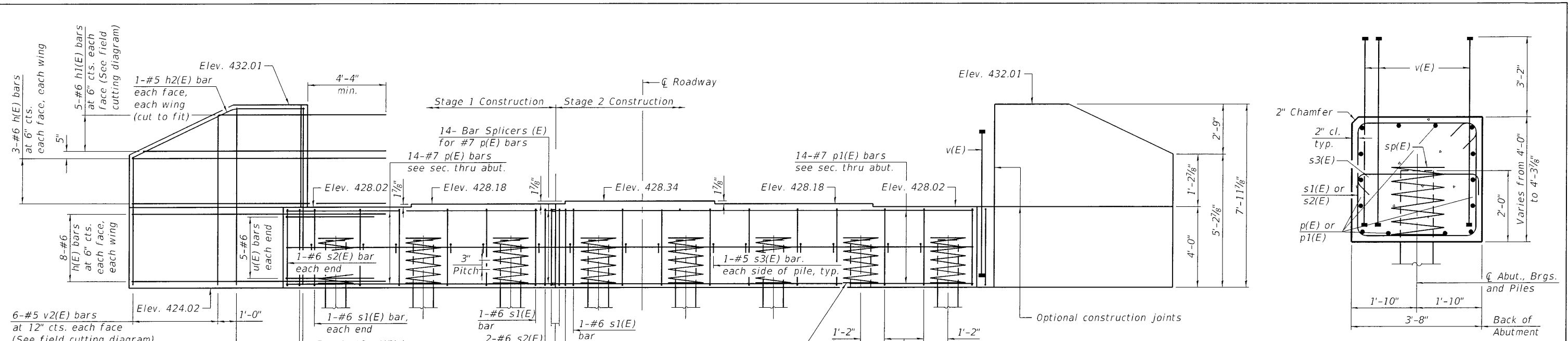
BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|-----|------|---------|-------|
| h(E) | 44 | #6 | 14'-0" | — |
| h1(E) | 10 | #6 | 22'-8" | — |
| h2(E) | 4 | #5 | 10'-1" | — |
| p(E) | 14 | #7 | 14'-0" | — |
| p1(E) | 14 | #7 | 23'-7" | — |
| s1(E) | 28 | #6 | 15'-4" | □ |
| s2(E) | 4 | #6 | 15'-8" | □ |
| s3(E) | 16 | #5 | 4'-4" | □ |
| s4(E) | 4 | #6 | 9'-10" | □ |
| sp(E) | 8 | #4 | 2'-0" | ⊘ |
| u(E) | 10 | #6 | 12'-0" | — |
| v(E) | 90 | #8 | 6'-10" | — |
| v1(E) | 20 | #5 | 7'-8" | — |
| v2(E) | 12 | #5 | 12'-3" | — |
| Structure Excavation | | | Cu. Yd. | 110 |
| Concrete Structures | | | Cu. Yd. | 26.9 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 5,800 |
| Furnishing Metal Shell Piles 16" X 0.375" | | | Foot | 392 |
| Driving Piles | | | Foot | 392 |
| Test Pile Metal Shells | | | Each | 1 |

PILE DATA

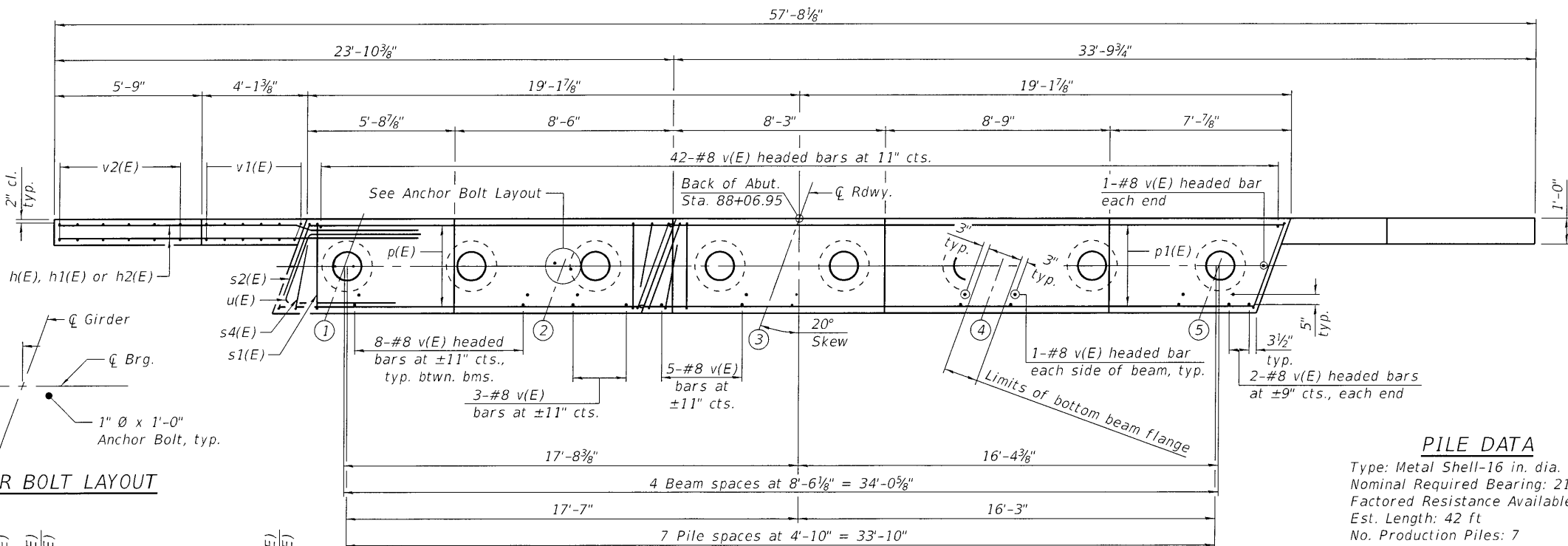
Type: Metal Shell-16 in. dia. x 0.375 in. walls
Nominal Required Bearing: 211 kips
Factored Resistance Available: 116 kips
Est. Length: 56 ft
No. Production Piles: 7
No. Test Piles: 1

- Notes:
- Pour steps monolithically with cap.
 - Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 - For details of piles see sheet 17 of 22.
 - Length is height of spiral.

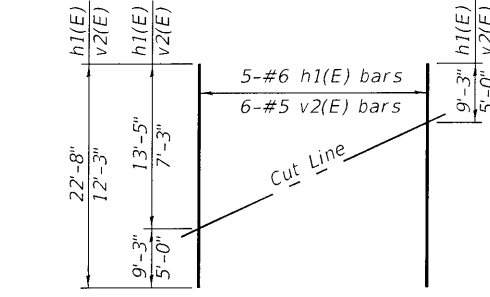
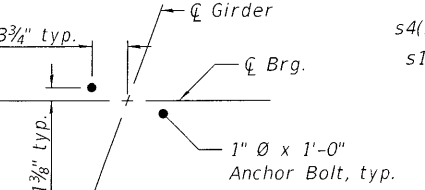


SEC. THRU ABUT.

Dimensions at right angles to abutment.

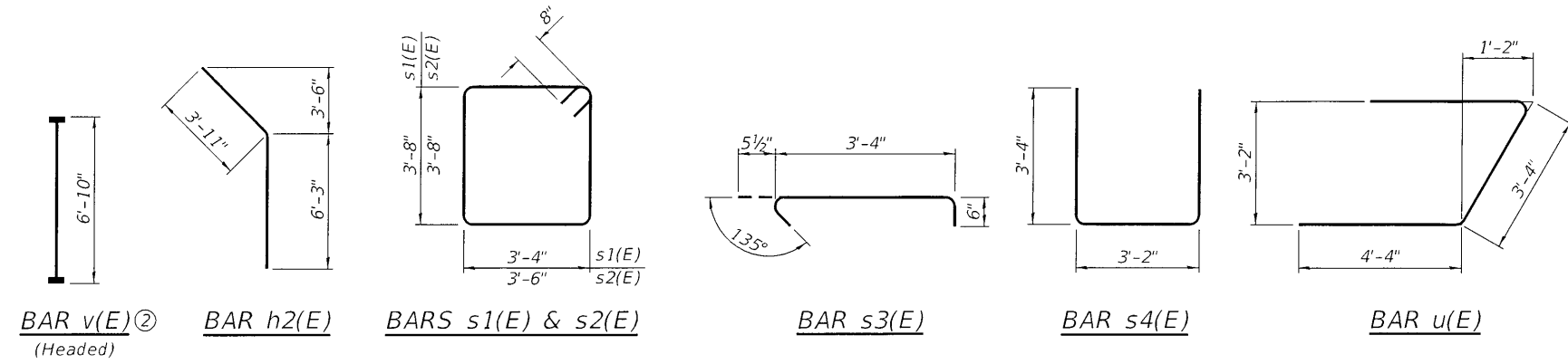


ANCHOR BOLT LAYOUT



FIELD CUTTING DIAGRAM

Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.



PILE DATA

Type: Metal Shell-16 in. dia. x 0.375 in. walls
Nominal Required Bearing: 211 kips
Factored Resistance Available: 116 kips
Est. Length: 42 ft
No. Production Piles: 7
No. Test Piles: 1

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|-----|---------|--------|-------|
| h(E) | 44 | #6 | 14'-0" | — |
| h1(E) | 10 | #6 | 22'-8" | — |
| h2(E) | 4 | #5 | 10'-1" | — |
| p(E) | 14 | #7 | 14'-0" | — |
| p1(E) | 14 | #7 | 23'-7" | — |
| s1(E) | 28 | #6 | 15'-4" | □ |
| s2(E) | 4 | #6 | 15'-8" | □ |
| s3(E) | 16 | #5 | 4'-4" | ⌋ |
| s4(E) | 4 | #6 | 9'-10" | ⌋ |
| sp(E) | 8 | #4 | 2'-0" | ⌘ |
| u(E) | 10 | #6 | 12'-0" | ⌋ |
| v(E) | 90 | #8 | 6'-10" | — |
| v1(E) | 20 | #5 | 7'-8" | — |
| v2(E) | 12 | #5 | 12'-3" | — |
| Structure Excavation | | Cu. Yd. | 110 | |
| Concrete Structures | | Cu. Yd. | 26.9 | |
| Reinforcement Bars, Epoxy Coated | | Pound | 5,800 | |
| Furnishing Metal Shell Piles 16" X 0.375" | | Foot | 294 | |
| Driving Piles | | Foot | 294 | |
| Test Pile Metal Shells | | Each | 1 | |

Notes:

- ① Pour steps monolithically with cap.
- ② Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
- ③ For details of piles see sheet 17 of 22.
- ④ Length is height of spiral.

FILE NAME: H:\P1729\Bridges\Final Plans\Microstation\0673109-015-South Abutment_Details.dgn



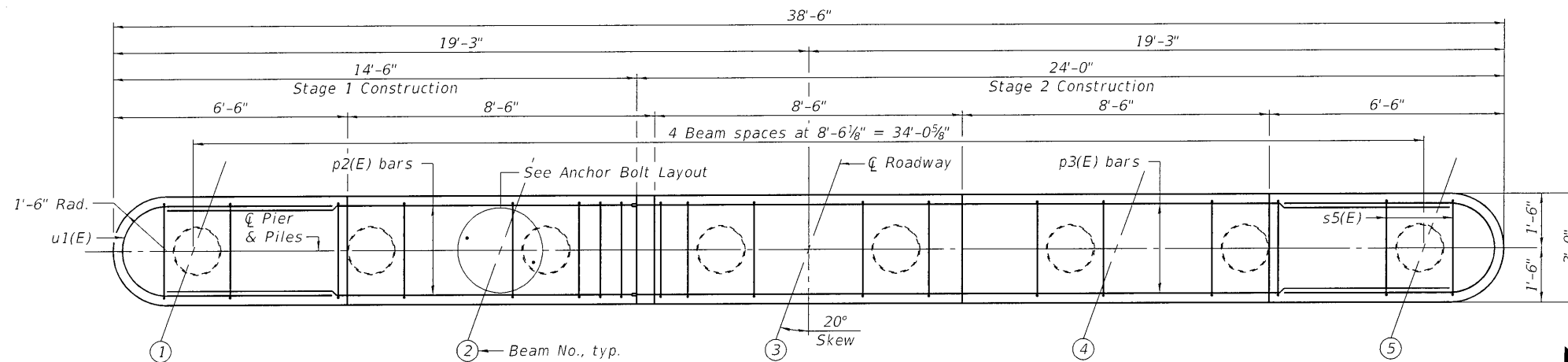
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|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

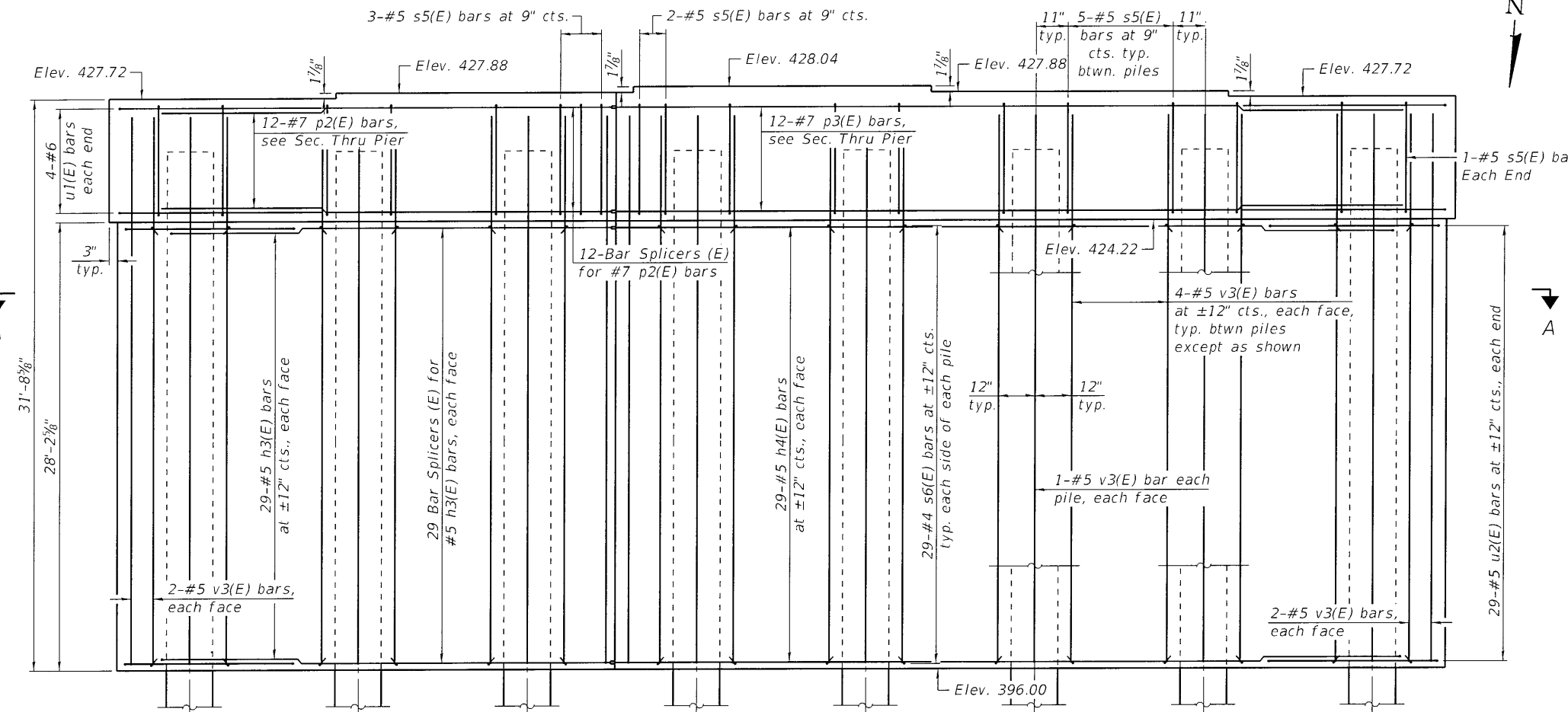
**SOUTH ABUTMENT
STRUCTURE NO. 067-3190**

SHEET 15 OF 22 SHEETS

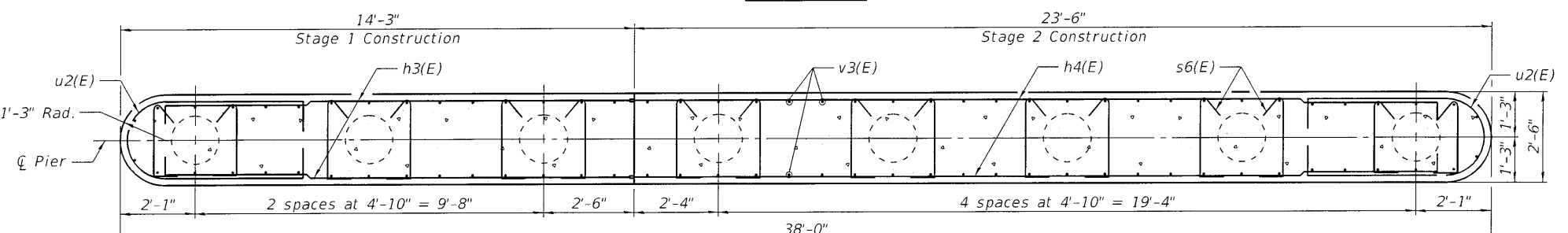
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| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 20 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



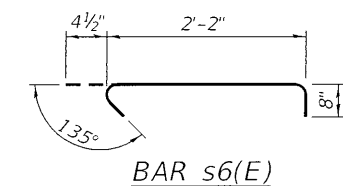
TOP PLAN



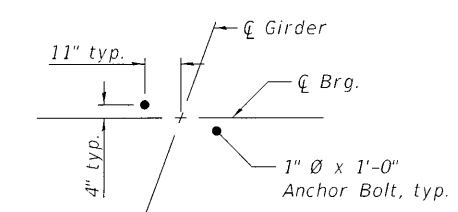
ELEVATION



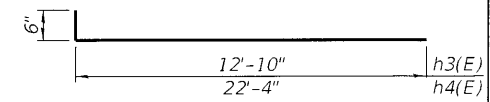
SECTION A-A



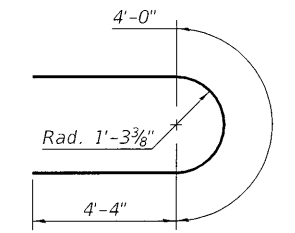
BAR s6(E)



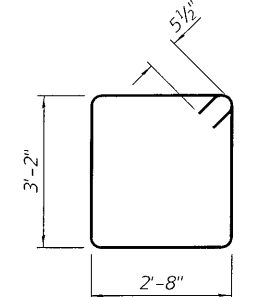
ANCHOR BOLT LAYOUT



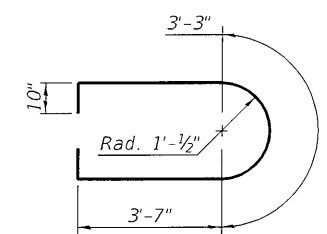
BARS h3(E) & h4(E)



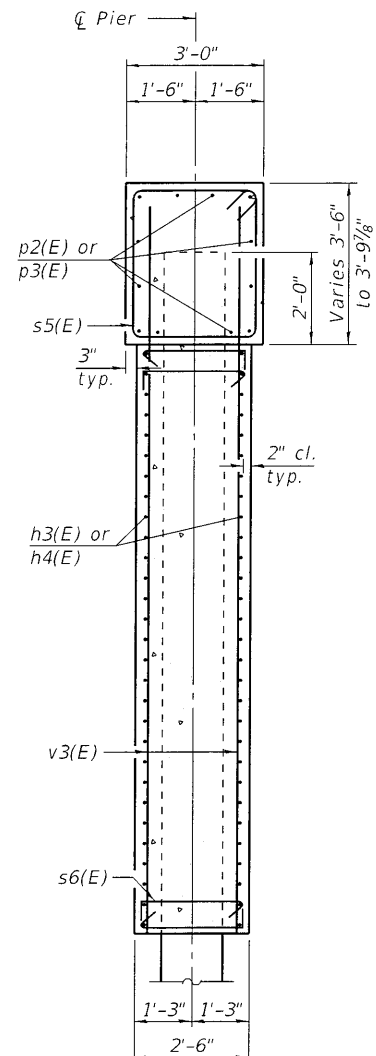
BAR u1(E)



BAR s5(E)



BAR u2(E)



SECTION THRU PIER

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|-----|---------|---------|-------|
| h3(E) | 58 | #5 | 13'-4" | |
| h4(E) | 58 | #5 | 22'-10" | |
| p2(E) | 12 | #7 | 12'-10" | |
| p3(E) | 12 | #7 | 22'-4" | |
| s5(E) | 37 | #5 | 12'-7" | |
| s6(E) | 464 | #4 | 3'-3" | |
| u1(E) | 8 | #6 | 12'-8" | |
| u2(E) | 58 | #5 | 12'-1" | |
| v3(E) | 80 | #5 | 31'-1" | |
| Cofferdam Excavation | | Cu. Yd. | | 37 |
| Cofferdam (Type 1) (Location - 1) | | Each | | 1 |
| Concrete Structures | | Cu. Yd. | | 113.5 |
| Reinforcement Bars, Epoxy Coated | | Pound | | 8,020 |
| Furnishing Metal Shell Piles 16" x 0.375" | | Foot | | 567 |
| Driving Piles | | Foot | | 567 |
| Test Pile Metal Shells | | Each | | 1 |

PILE DATA

Type: Metal Shell-16 in. dia. x 0.375 in. walls
 Nominal Required Bearing: 531 kips
 Factored Resistance Available: 292 kips
 Est. Length: 81 ft
 No. Production Piles: 7
 No. Test Piles: 1

- Notes:
- ① Pour steps monolithically with cap.
 - ② For bar splicer details, see sheet 18 of 22.
 - ③ For details of piles and Concrete Encasement, see sheet 17 of 22.

FILE NAME: I:\P17129\Bridges\Final Plans\Misc\station\0673109-016-Pier Details.dgn

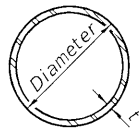


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| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

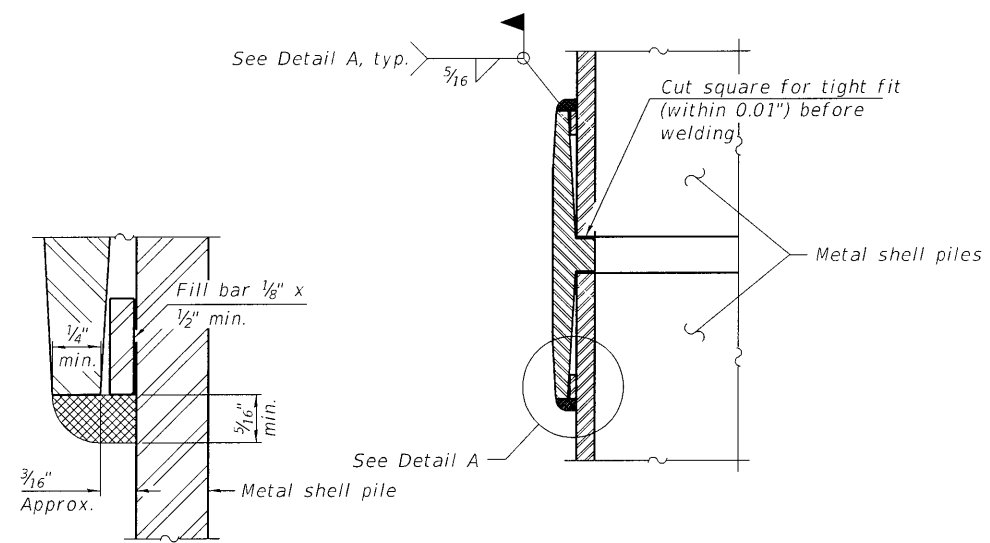
PIER DETAILS
 STRUCTURE NO. 067-3190
 SHEET 16 OF 22 SHEETS

| | | | | |
|---------------------------|------------------------|---------------|-----------------|--------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 21 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

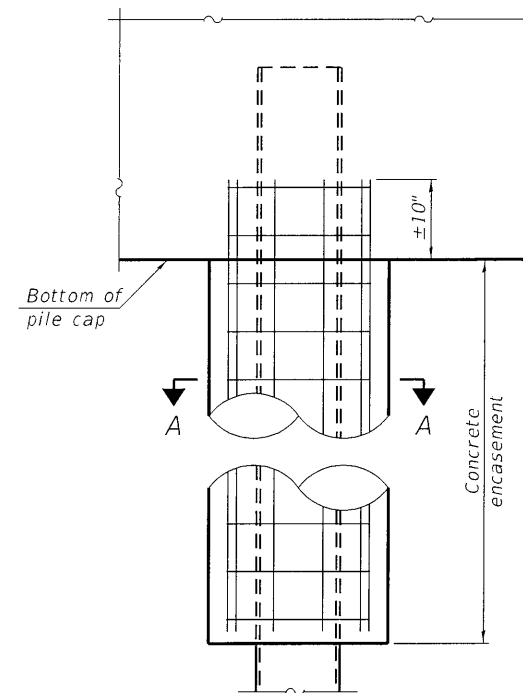


METAL SHELL PILE TABLE

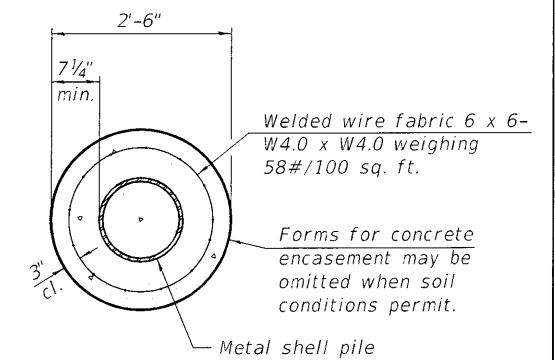
| Designation and outside diameter | Wall thickness t | Weight per foot (Lbs./ft.) | Inside volume (yd. ³ /ft.) |
|----------------------------------|------------------|----------------------------|---------------------------------------|
| PP12 | 0.250" | 31.40 | 0.0267 |
| PP14 | 0.250" | 36.75 | 0.0368 |
| PP14 | 0.312" | 45.65 | 0.0361 |
| PP16 | 0.312" | 52.32 | 0.0478 |
| PP16 | 0.375" | 62.64 | 0.0470 |



DETAIL A

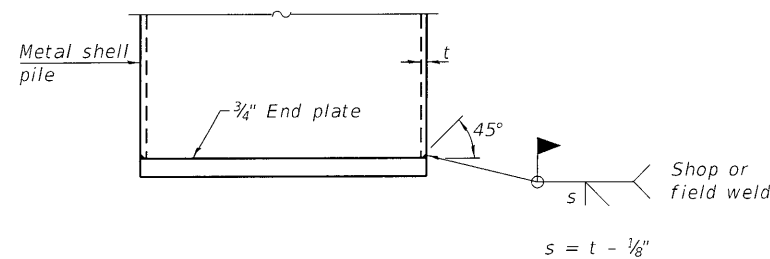


ELEVATION



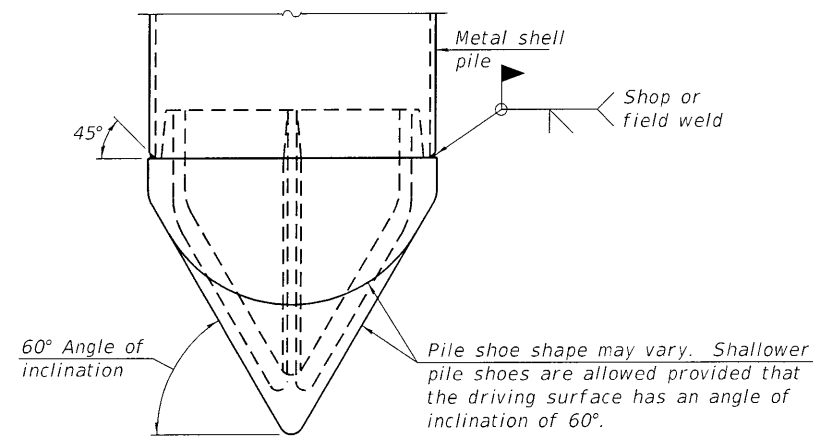
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT
(When specified)



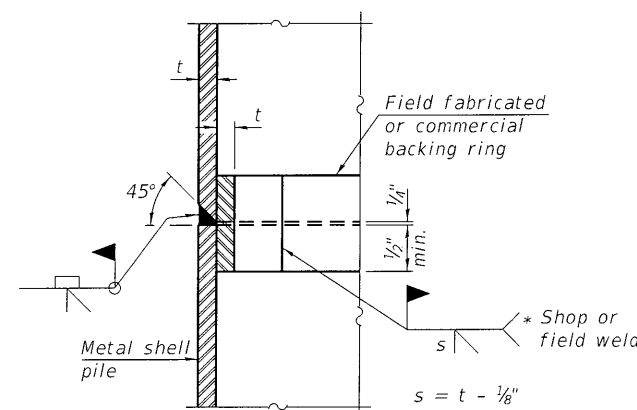
END PLATE ATTACHMENT

WELDED COMMERCIAL SPLICE
Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

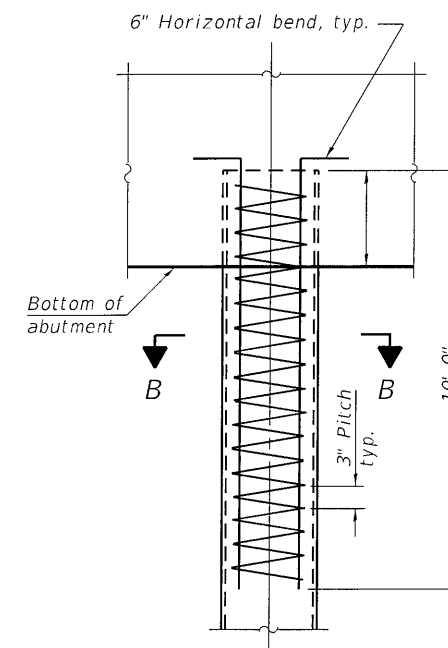


PILE SHOE ATTACHMENT

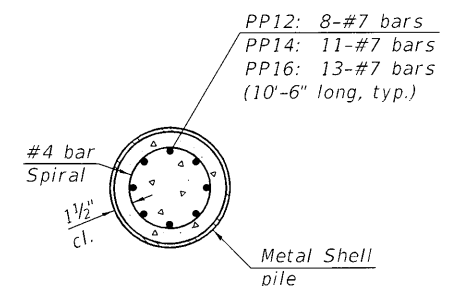
(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



COMPLETE PENETRATION WELD SPLICE
* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS
(Omit when concrete encasement is specified)

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

FILE NAME: I:\P17129\Bridges\Plans\Miscstation\0673109-017-MP Piles Details.dgn

F-MS

2-1-2023



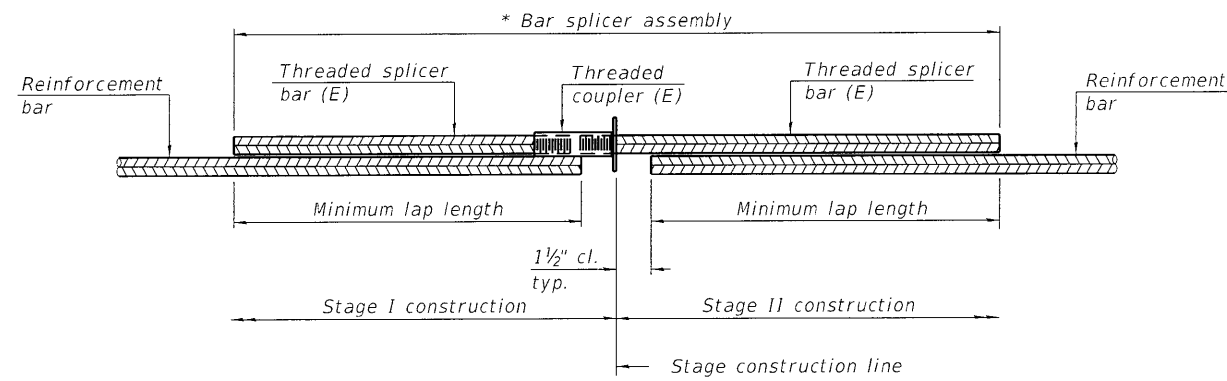
| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILE DETAILS
STRUCTURE NO. 067-3109**

SHEET 17 OF 22 SHEETS

| | | | | |
|---------------------------|------------------------|---------------|-----------------|--------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 22 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



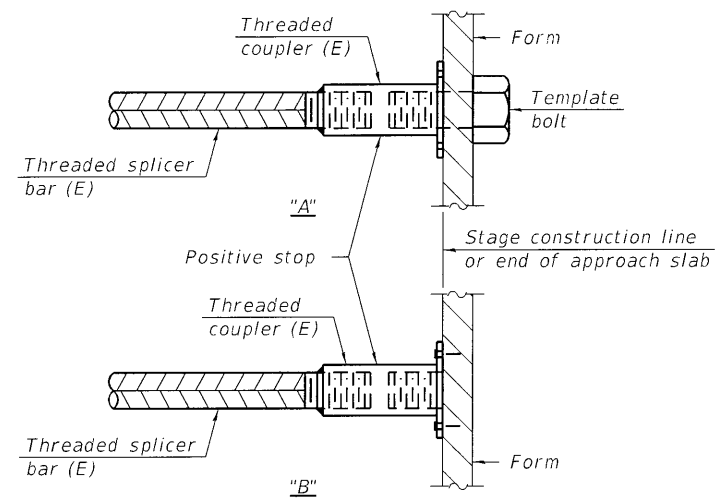
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

| Location | Bar size | No. assemblies required | Minimum lap length |
|---------------------------------|----------|-------------------------|----------------------------------|
| Abutment Cap | #7 | 28 | 5'-0" |
| Deck | #5 | 682 | 3'-6" |
| Integral Diaphragms, Back Face | #6 | 10 | 4'-0" |
| Integral Diaphragms, Front Face | #6 | 8 | See Diaphragm Bar Splicer Detail |
| Pier Cap | #7 | 12 | 5'-0" |
| Pier Stem | #5 | 58 | 3'-6" |

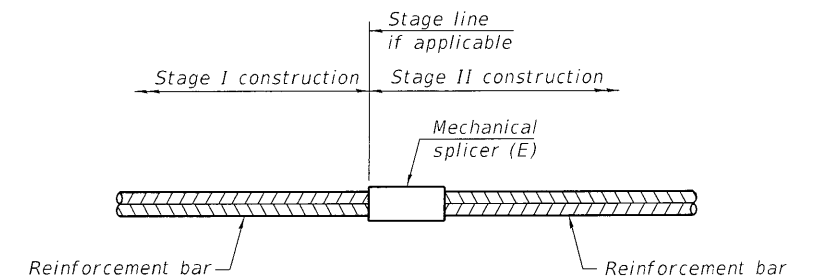


INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.

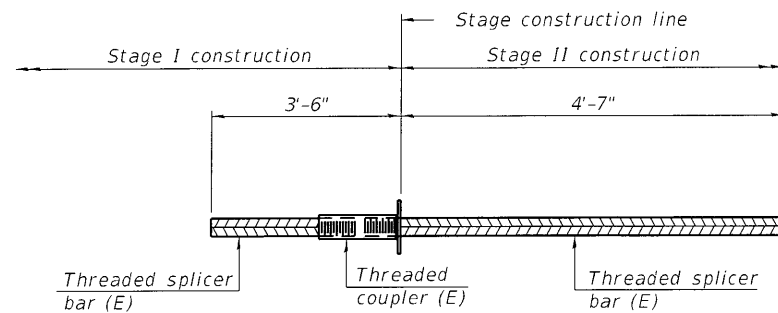
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
| | | |
| | | |
| | | |
| | | |



DIAPHRAGM BAR SPLICER DETAIL

Notes:

- ① Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
- ② All reinforcement shall be lapped and tied to the splicer bars.
- ③ Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
- ④ See approved list of bar splicer assemblies and mechanical splicers for alternatives.

FILE NAME: H:\P17129\Bridges\Final Plans\Microstation\0673109-018- Bar Splicer and Mechanical Splicer Details.dgn

BSD-1

5-15-2023



| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 067-3109

SHEET 18 OF 22 SHEETS

| | | | | |
|---------------------|---------------------------|------------------|--------------------|---------------------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 23 |
| CONTRACT NO. | | | | ILLINOIS FED. AID PROJECT |

HOLCOMB FOUNDATION ENGINEERING CO.

WOOD ROAD P.O. BOX 3344 618-457-8991
 CARBONDALE, ILLINOIS 62902 618-528-5282

Sh. 1 of 2 Sh.

BRIDGE FOUNDATION BORING LOG

PROJECT H-91169 BRIDGE Over Carr Creek Date 10-9-91
 ROUTE FAS 1857 Bored By J. Carter
 SEC. 90-00043-00-BR STA. Checked By T. Holcomb
 COUNTY Monroe

| Elevation | N | Qu t/s.f. | w (%) | Surface Water El. | Elevation | N | Qu t/s.f. | w (%) |
|-------------------------------|----|-----------|-------|------------------------|-----------|---|-----------|-------|
| Ground Surface 412.31 | | | | | | | | |
| | | | | Loam Cont. | 388.81 | | | |
| Brown to Gray Silt Loam (A-4) | 9 | - | 11 | Gray Fine Sand (A-2-4) | -25 | | | |
| | 12 | - | 11 | | 13 | - | 28 | |
| | 10 | 2.18 | 23 | | 15 | - | 30 | |
| | 7 | 0.78 | 28 | | 5 | - | 31 | |
| | 6 | - | 27 | | 9 | - | 30 | |
| | 2 | - | 35 | | 23 | - | 27 | |
| | 8 | - | 33 | | 15 | - | 28 | |
| | 9 | - | 29 | | | | | |
| Brown Silt Loam (A-4) | 3 | - | 39 | | 20 | - | 22 | |

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
 Qu - Unconfined Compressive Strength - t/sf
 w - Water Content - percentage of oven dry weight - %
 Type failure:
 B - Bulge Failure
 S - Shear Failure
 E - Estimated Value
 P - Penetrometer

HOLCOMB FOUNDATION ENGINEERING CO.

Sh. 2 of 2 Sh.

Over Carr Creek
 Sec. 90-00043-00-BR
 FAS 1857

| Elevation | N | Qu t/s.f. | w (%) | Elevation | N | Qu t/s.f. | w (%) | |
|-------------------------|-----|-----------|-------|---------------------------------|-----|-----------|-------|----|
| Sand Cont. | | | | Sand Cont. | | | | |
| | | | | 338.81 | | | | |
| | 36 | - | 24 | Brown to Gray Fine Sand (A-2-4) | -75 | 49 | - | 22 |
| | | | | | | | | |
| | 22 | - | 27 | 332.31 | -80 | 117 | - | 12 |
| | | | | End of Boring @ -80' | | | | |
| | | | | | | | | |
| | 25 | - | 26 | | -85 | | | |
| | | | | | | | | |
| 347.31 | -65 | 12 | - | 28 | | | | |
| Brown Fine Sand (A-2-4) | | | | | | | | |
| | | | | | | | | |
| | 41 | - | 24 | | -95 | | | |

BD 137 (Rev 4-78)

FILE NAME: H:\P17129\Bridges\Final Plans\Microstation\0673109-022-Soil Boring Log.dgn



| | | |
|------------------------|------------|-----------|
| USER NAME = | DESIGNED - | REVISED - |
| PLOT SCALE = | CHECKED - | REVISED - |
| PLOT DATE = 10/23/2024 | DRAWN - | REVISED - |
| | CHECKED - | REVISED - |

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
 STRUCTURE NO. 067-3190

SHEET 22 OF 22 SHEETS

| | | | | |
|---------------------------|------------------------|---------------|-----------------|--------------|
| F.A.U. RTE. 9300 | SECTION 16-00043-01-BR | COUNTY MONROE | TOTAL SHEETS 27 | SHEET NO. 27 |
| CONTRACT NO. | | | | |
| ILLINOIS FED. AID PROJECT | | | | |