

INDEX OF SHEETS

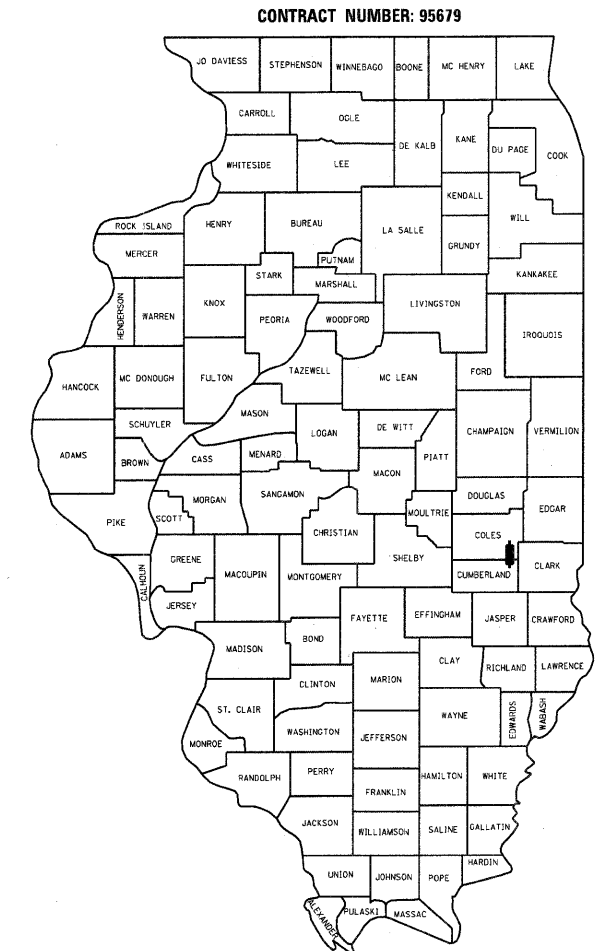
- 1 COVER SHEET
- 2 GENERAL NOTES, HIGHWAY STANDARDS, & TYPICAL SECTION
- 3 SUMMARY OF QUANTITIES & QUANTITY SCHEDULES
- 4 PLAN AND PROFILE
- 5-11 BRIDGE PLANS
- 12-13 CROSS SECTIONS
- IDOT STANDARDS - SEE SHEET 2

ENGINEERING PLANS FOR TR 282 BRIDGE REPLACEMENT

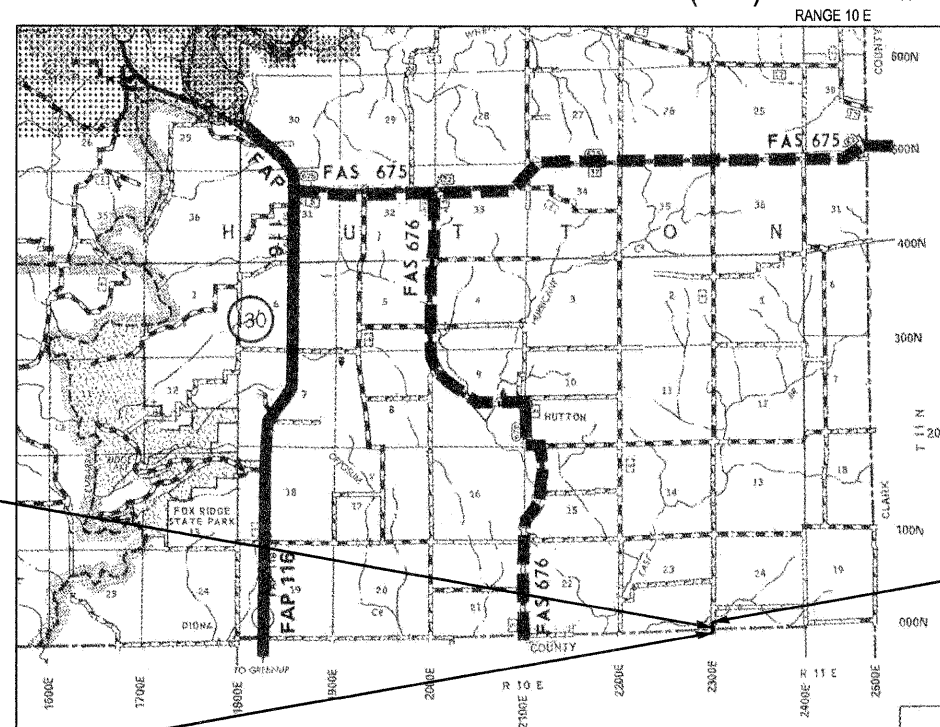
HIGHWAY BRIDGE PROGRAM

COLES COUNTY
HUTTON TOWNSHIP
ILLINOIS

JOB NUMBER : C-97-046-12
SECTION NUMBER : 07-05136-00-BR
PROJECT NUMBER : BROS-029(293)



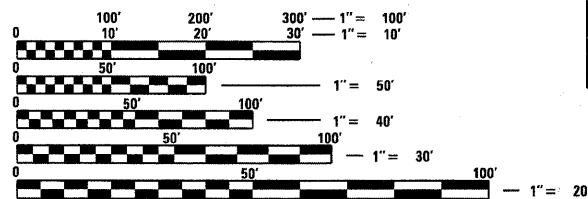
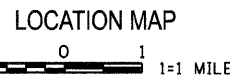
LOCATION OF SECTION INDICATED THUS: - [black rectangle]



STRUCTURE REPLACMENT
OVER CREEK
DISTRICT 7
STATION 6+00.00
EXISTING SN: 015-3170
PROPOSED SN: 015-3427

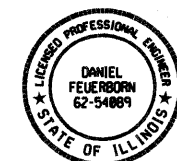
PROJECT ENDS
STA 7+80.00

PROJECT BEGINS
STA 4+80.00



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

| | |
|---|---|
| APPROVED | 02/22 2012 |
| | <i>Richard A. Johnson</i> COUNTY ENGINEER |
| APPROVED | 2/24 2012 |
| | <i>Ray W. Wainwright</i> ROAD COMMISSIONER |
| PASSED | 2-28 2012 |
| | <i>Maureen East</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS |
| Releasing For Bid Based on Limited Review | 2/28 2012 |
| | <i>Daniel Feuerborn</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION |



Daniel Feuerborn
Date
License Expires 11-30-2012

LENGTH = 300.00 FT = 0.057 MILE
FUNCTIONAL CLASSIFICATION = LOCAL ROAD
ADT = 50
DESIGN SPEED = 50 MPH

ESI ESI CONSULTANTS, LTD
253 WINDSOR ROAD
CHARLESTON, IL 61920
(217) 348-1500
WWW.ESICONSULTANTS.LTD.COM

ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003685
** THIS DOCUMENT IS THE PROPERTY OF ESI CONSULTANTS, LTD. AND NO PART HEREIN SHALL BE USED **
EXCEPT FOR THIS SPECIFIC PROJECT WITHOUT THE WRITTEN CONSENT OF ESI CONSULTANTS, LTD.

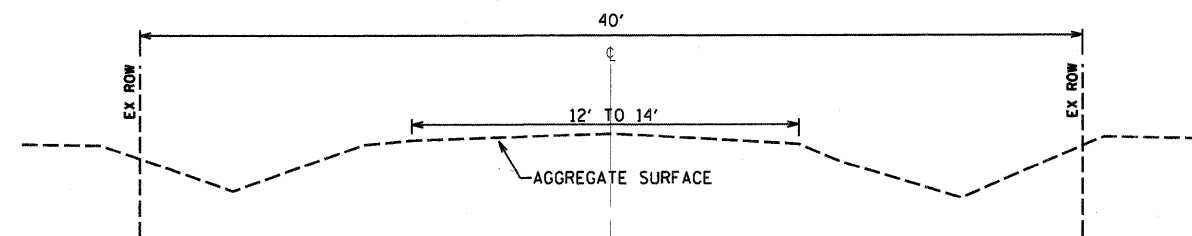


PROJECT ENGINEER: ADAM GROVES

GENERAL NOTES

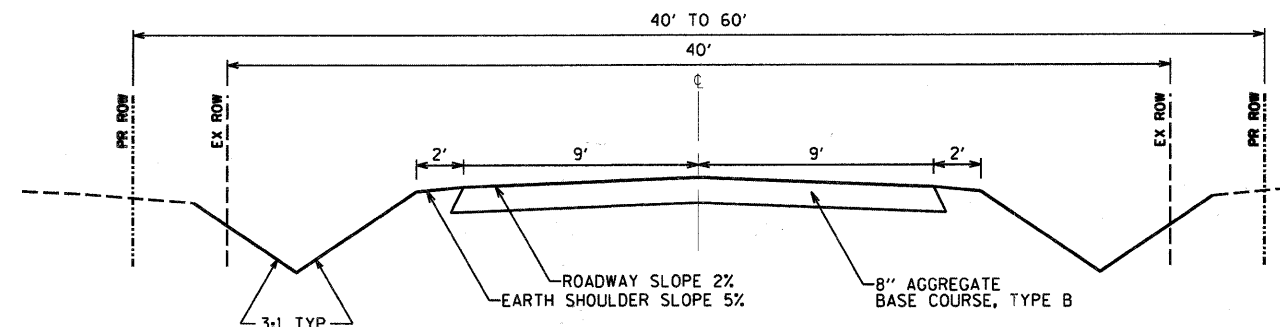
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2012," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH ALL UTILITIES WITHIN THE PROJECT LIMITS. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT ARE NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THEIR EXACT LOCATIONS FROM THE UTILITY COMPANIES AND BY FIELD INSPECTION. THE CONTRACTOR IS REQUIRED TO CONTACT J.U.L.I.E. AT, 1-800-892-0123, PRIOR TO PROCEEDING WITH ANY EXCAVATION AND WORK ON THE PROJECT.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES...
 AGGREGATE SURFACE COURSE, TYPE B - 1.8 TON/CU YD
 MULCH METHOD - 2.0 TON/ACRE
 TEMPORARY SEEDING - 100LB/ACRE

TYPICALS



EXISTING TYPICAL CROSS SECTION

NTS
 STA 4+80.00 TO STA 5+76.62
 BRIDGE OMISSION
 STA 6+23.38 TO STA 7+80



PROPOSED TYPICAL CROSS SECTION

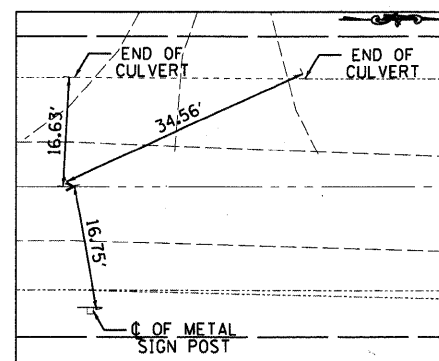
NTS
 STA 4+80.00 TO STA 5+76.62
 BRIDGE OMISSION
 STA 6+23.38 TO STA 7+80

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

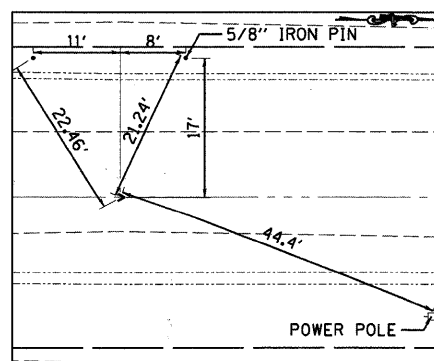
STANDARD NO. DESCRIPTION

| | |
|-----------|--|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS |
| 280001-06 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001-03 | NAME PLATE FOR BRIDGES |
| 601101-01 | CONCRETE HEADWALL FOR PIPE DRAIN |
| 635006-03 | REFLECTOR AND TERMINAL MARKER PLACEMENT |
| 701901-02 | TRAFFIC CONTROL DEVICES |
| BLR-21-9 | TYP APP OF TRAFFIC CONTROL DEVICES, CONSTRUCTION ON RURAL LOCAL HIGHWAYS |

ALIGNMENT AND TIES



PK NAIL W/ BOTTLE CAP
 N: 987375.5432
 E: 1065655.2917
 STA: 0+99.58
 OFFSET: 0.88 LT



5/8" IRON PIN
 N: 988375.5352
 E: 1065659.1587
 STA: 10+99.58
 OFFSET: 0.92 RT

POT Sta 3+00.00
 N: 987575.9617
 E: 1065656.9394

POT Sta 4+00.00
 N: 987675.9610
 E: 1065657.3207

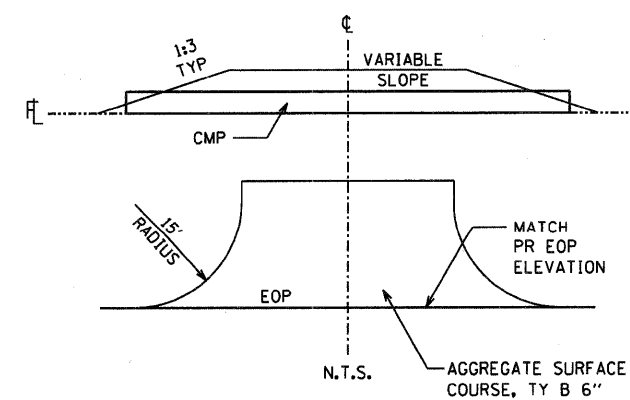
POT Sta 5+00.00
 N: 987775.9598
 E: 1065656.8293

POT Sta 7+00.00
 N: 987975.9583
 E: 1065657.5918

POT Sta 8+00.00
 N: 988075.9571
 E: 1065657.1004

POT Sta 9+00.00
 N: 988175.9564
 E: 1065657.4816

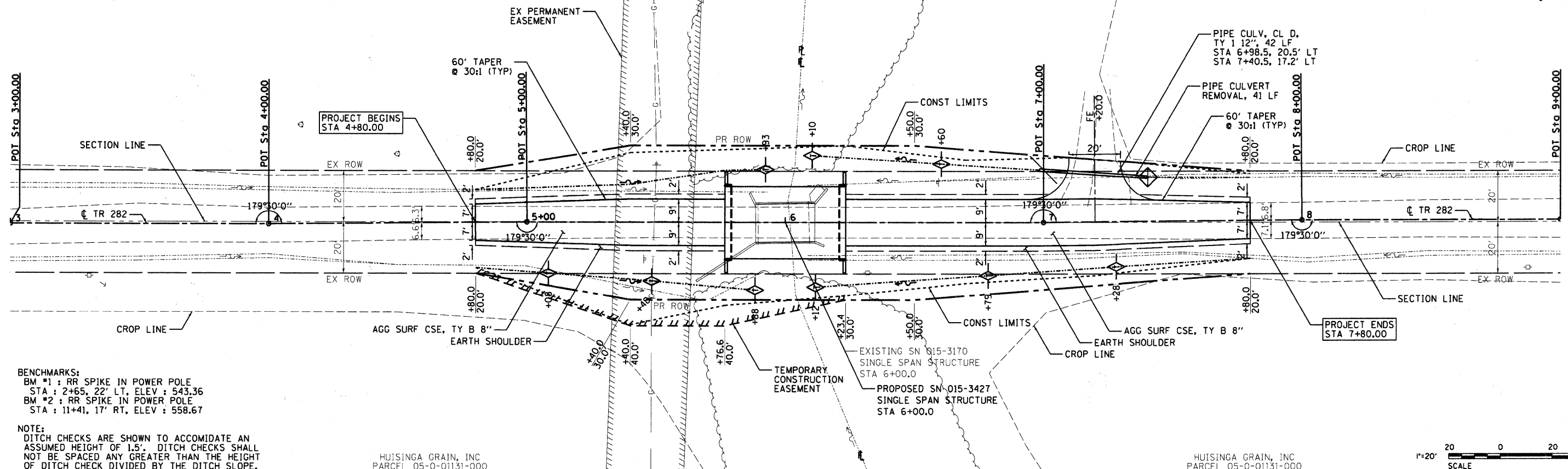
TYP ENTRANCE DETAIL



| NO. | DATE | DESCRIPTION OF REVISIONS | NO. | DATE | DESCRIPTION OF REVISIONS |
|-----|------|--------------------------|-----|------|--------------------------|
| | | | | | |
| | | | | | |
| | | | | | |

BRANDON M. WADDELL
PARCEL 05-0-01096-001

DANIEL F. LEE
PARCEL 05-0-01096-000

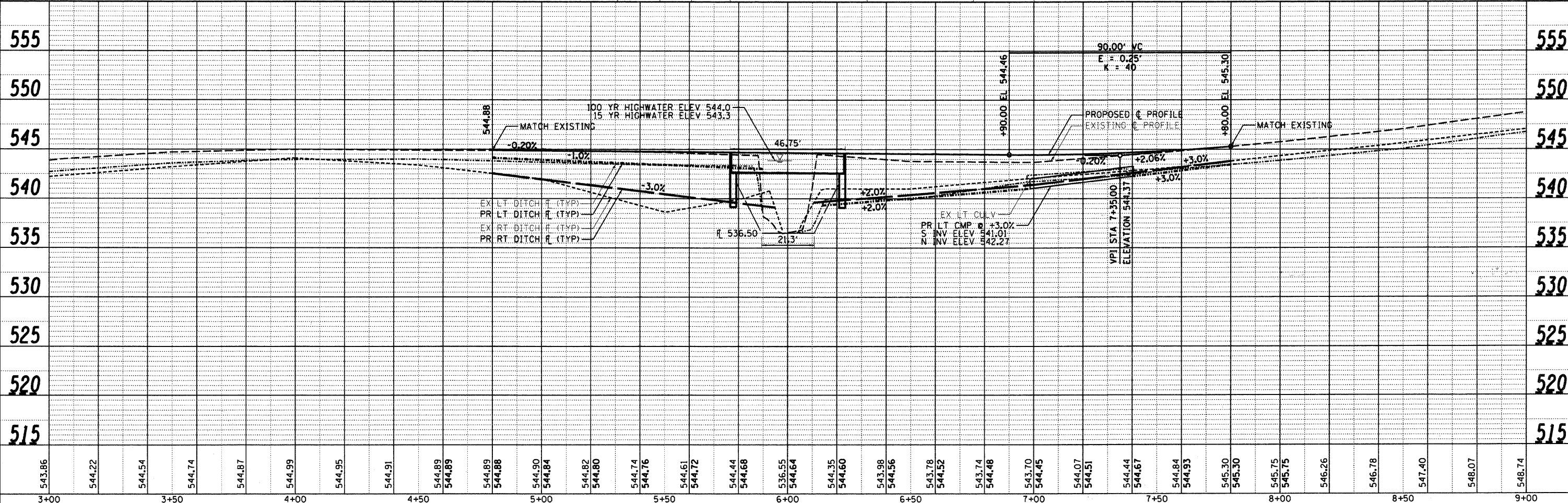
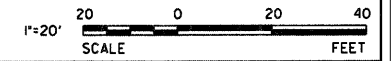


BENCHMARKS:
 BM #1 : RR SPIKE IN POWER POLE
 STA : 2+65, 22' LT, ELEV : 543.36
 BM #2 : RR SPIKE IN POWER POLE
 STA : 11+41, 17' RT, ELEV : 558.67

NOTE:
 DITCH CHECKS ARE SHOWN TO ACCOMMODATE AN ASSUMED HEIGHT OF 1.5'. DITCH CHECKS SHALL NOT BE SPACED ANY GREATER THAN THE HEIGHT OF DITCH CHECK DIVIDED BY THE DITCH SLOPE.

HUISINGA GRAIN, INC
PARCEL 05-0-01131-000

HUISINGA GRAIN, INC
PARCEL 05-0-01131-000



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| 543.86 | 544.22 | 544.54 | 544.74 | 544.87 | 544.99 | 544.95 | 544.91 | 544.89 | 544.89 | 544.89 | 544.88 | 544.90 | 544.84 | 544.82 | 544.80 | 544.74 | 544.76 | 544.61 | 544.72 | 544.44 | 544.68 | 536.55 | 544.64 | 544.35 | 544.60 | 543.98 | 544.56 | 543.78 | 544.52 | 543.74 | 544.48 | 543.70 | 544.45 | 544.07 | 544.51 | 544.44 | 544.67 | 544.84 | 544.93 | 545.30 | 545.30 | 545.75 | 545.75 | 546.26 | 546.78 | 547.40 | 548.07 | 548.74 | |
| 3+00 | 3+50 | 4+00 | 4+50 | 5+00 | 5+50 | 6+00 | 6+50 | 7+00 | 7+50 | 8+00 | 8+50 | 9+00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #164-003885

**COLES COUNTY
HIGHWAY DEPARTMENT**

| NO. | DATE | DESCRIPTION OF REVISIONS | NO. | DATE | DESCRIPTION OF REVISIONS |
|-----|------|--------------------------|-----|------|--------------------------|
| | | | | | |

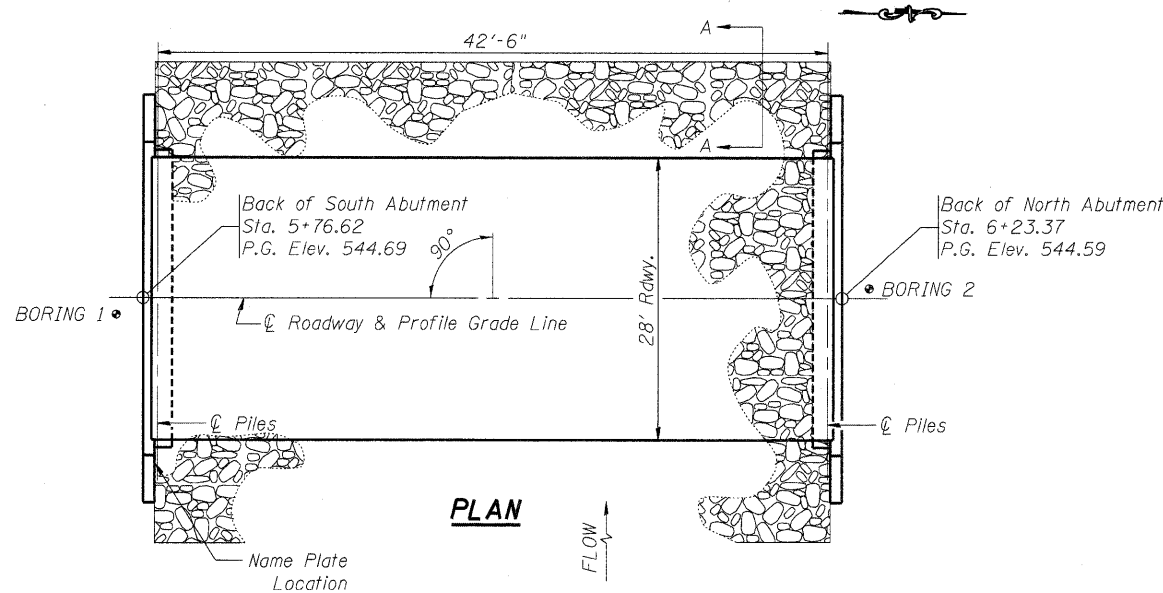
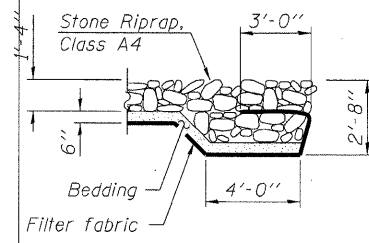
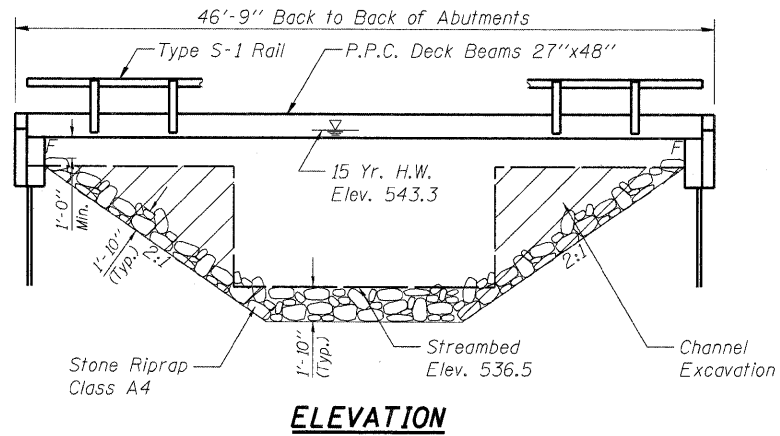
ESI PROJECT NO: 10.355
 ENGR: ADG
 FILE: 04_TR 282_PinPr.f
 DRAWN BY: ADG
 DATE: 02-21-2012
 QCQA:

**TR 282
COLES COUNTY**

PLAN AND PROFILE
 STA 4+80.00 TO STA 7+80.00
 SHEET 1 OF 1
DRAWING NO. 04
 OF 13

B.M. #1 : Sta. 2+65, 22' Left, RR Spike in Power Pole, Elev. 543.36
 B.M. #2 : Sta. 11+41, 17' Right, RR Spike in Power Pole, Elev. 558.67

Existing Structure: Structure 015-3170 consists of a single span reinforced concrete deck on steel I-beams on closed concrete abutments. The bk. to bk. of abutments length is 22' and the out-to-out width is 20.4'. The existing structure shall be completely replaced. Road closure shall be used during construction.



GENERAL NOTES

1. The Contractor shall drive 1 test pile at each abutment, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. Concrete sealer shall be applied to exterior face of each fascia beam.
3. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

TOTAL BILL OF MATERIAL

| Item | Unit | Super | Sub. Abuts. | Total |
|---|---------|-------|-------------|-------|
| Removal of Existing Structures | Each | - | - | 1 |
| Concrete Structures | Cu. Yd. | - | 22.4 | 22.4 |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 1253 | - | 1253 |
| Steel Bridge Railing, Type S-1 | Foot | 92 | - | 92 |
| Reinforcement Bars, Epoxy Coated | Pound | - | 3970 | 3970 |
| Furnishing Steel Piles HP 10x42 | Foot | - | 160 | 160 |
| Driving Piles | Foot | - | 160 | 160 |
| Test Pile Steel HP 10x42 | Each | - | 2 | 2 |
| Name Plates | Each | 1 | - | 1 |
| Structure Excavation | Cu. Yd. | - | 120 | 120 |
| Stone Riprap Class A4 | Sq. Yd. | - | 300 | 300 |
| Channel Excavation | Cu. Yd. | - | 230 | 230 |
| Controlled Low-Strength Material | Cu. Yd. | - | 36.3 | 36.3 |
| Concrete Encasement | Cu. Yd. | - | 3.5 | 3.5 |

INDEX OF SHEETS

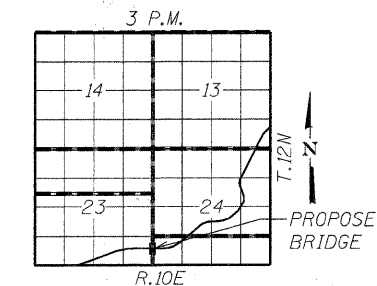
1. General Plan & Elevation
2. Superstructure
3. Superstructure Details
4. Steel Railing
5. Abutment Details
6. Pile Details
7. Boring Logs



Daniel Feuerborn
 Daniel Feuerborn
 License Expires 11-30-2012
 4/22/2012 Date

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

GENERAL PLAN & ELEVATION
TOWNSHIP ROUTE 282 OVER CREEK
SEC. 07-05136-00-BR
COLES COUNTY
STATION 6+00.00
STRUCTURE NO. 015-3427



LOCATION SKETCH

BUILT 2011 BY
 COLES COUNTY
 SEC. 07-05136-00-BR
 PROJECT NO. BROS-029(293)
 TR 282 STA. 6+00
 STR. NO. 015-3427 LOADING HL-93

LETTERING FOR NAME PLATE

Locate Name Plate on the outside face of the Southeast Wingwall.

WATERWAY INFORMATION

Drainage Area = 3.39 SQ MI Low Grade Elev. = @ Sta. +

| Flood | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. | | Nat. H.W.E. | | Head - Ft. | | Headwater El. | |
|-------------|-----------|----------|-----------------|-------|-------------|-------|------------|-------|---------------|-------|
| | | | Exist. | Prop. | Exist. | Prop. | Exist. | Prop. | Exist. | Prop. |
| Design | 15 | 704 | 115 | 202 | 543.3 | 0.2 | 0.0 | 543.5 | 543.3 | |
| Base | 100 | 1163 | 115 | 202 | 544.0 | 1.0 | 0.5 | 545.0 | 544.5 | |
| Overtopping | | | | | | | | | | |
| Max. Calc. | | | | | | | | | | |

-0.20% Grade

| | | |
|----------------------------|----------------------------|----------------------------|
| STA 4+80.00 ELEV 544.88 | STA 6+00.00 ELEV 544.64 | STA 7+35.00 ELEV 544.37 |
|----------------------------|----------------------------|----------------------------|

PROFILE GRADE

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $F_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " low relax. strands)
 $f_{bot} = 201,960$ psi ($\frac{1}{2}$ " low relax. strands)

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications - 4th ed.

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.181
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.381
 Site Soil Class = D

PRINTED DATE: 2/21/2012
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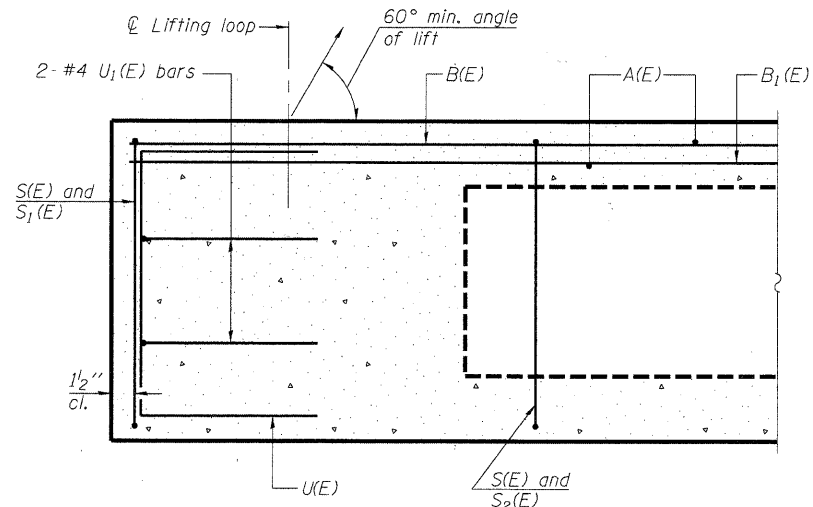
| | | |
|----------|---|-----|
| DESIGNED | - | DF |
| CHECKED | - | |
| DRAWN | - | ADG |
| CHECKED | - | |

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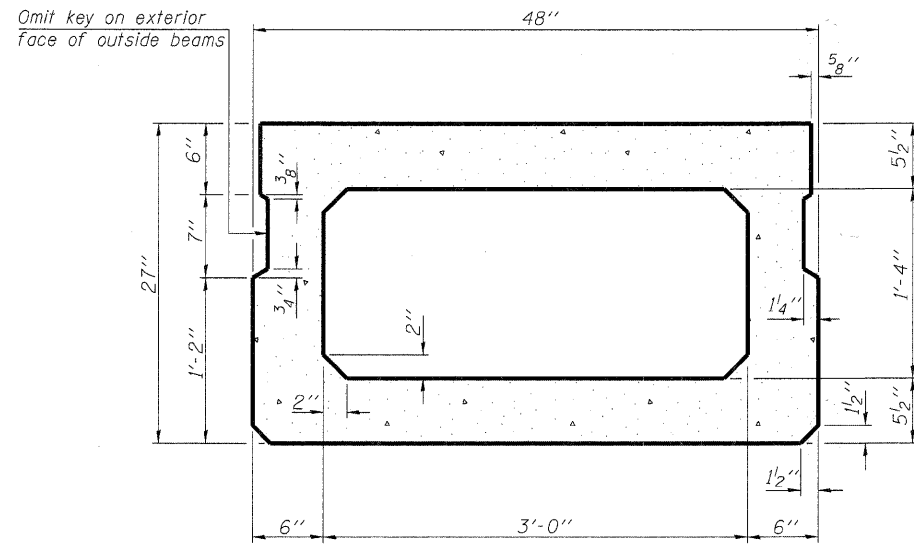
TR 282
COLES COUNTY

SHEET NO. 1 OF 7 SHEETS

| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
|------------------------------|----------------|--------|--------------|----------|
| 282 | 07-05136-00-BR | COLES | 13 | 05 |
| CONTRACT NO | | | ----- | |
| ILLINOIS FEDERAL AID PROJECT | | | | |

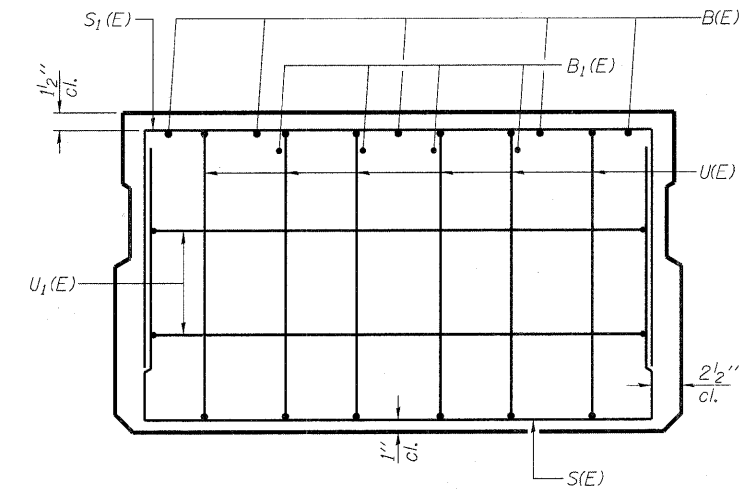


SECTION A-A

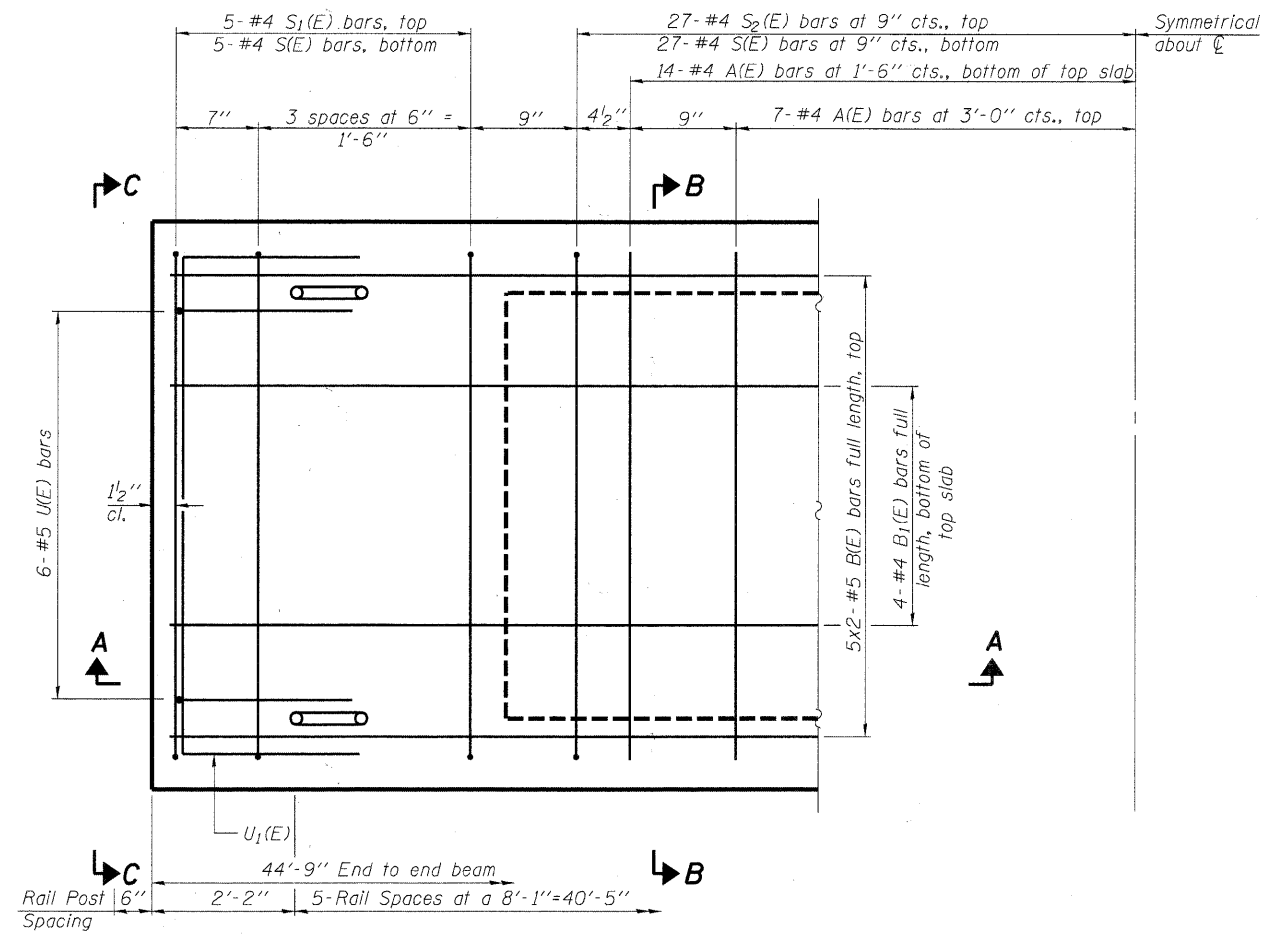


SECTION B-B

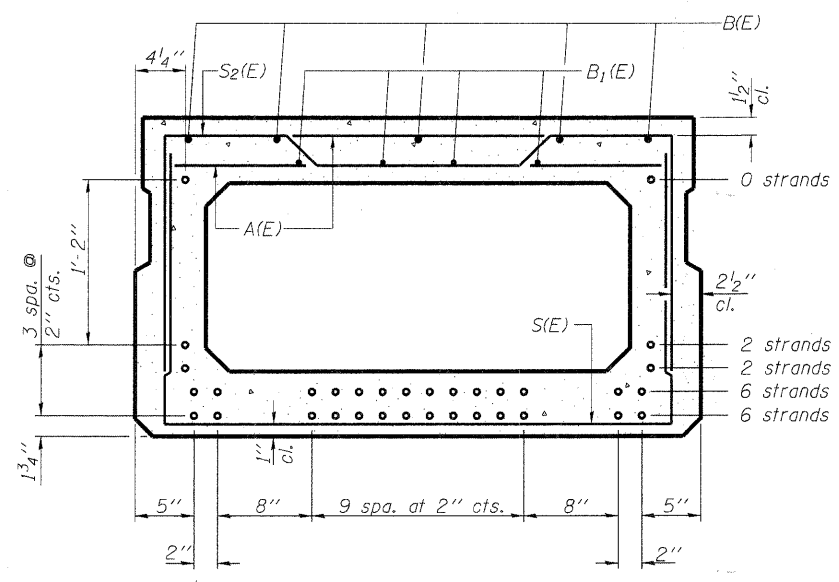
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY

(For information only)

| Bar | No. | Size | Length | Shape |
|-------|-----|------|--------|-------|
| A(E) | 14 | #4 | 3'-7" | — |
| B(E) | 10 | #5 | 23'-6" | — |
| B1(E) | 12 | #4 | 16'-2" | — |
| S(E) | 64 | #4 | 7'-5" | — |
| S1(E) | 10 | #4 | 6'-11" | — |
| S2(E) | 54 | #4 | 7'-2" | — |
| U(E) | 12 | #5 | 4'-6" | — |
| U1(E) | 4 | #4 | 6'-0" | — |

Note: See sheet 1 of 7 for additional details and Bill of Material.

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

MINIMUM BAR LAP

#4 bar = 2'-0"
 #5 bar = 2'-6"

PRINTED DATE: 7/7/2012
 FILE NAME: \\syr-jp01a\volles\en_highway_dept\tr_282\road\dr\avg\sh\sheet\06_365_Super.dgn

PD-2748-0

7-1-10

| | |
|----------|-----|
| DESIGNED | DF |
| CHECKED | |
| DRAWN | ADG |
| CHECKED | |

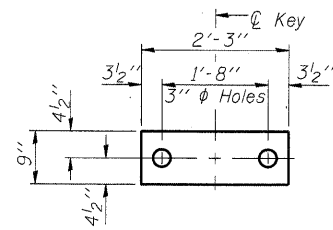
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 753 WINDSOR ROAD
 CHARLESTON, IL 61920
 (217) 346-1300
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 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003685

TR 282
COLES COUNTY

27" x 48" PPC DECK BEAM
STRUCTURE NO. 015-3427

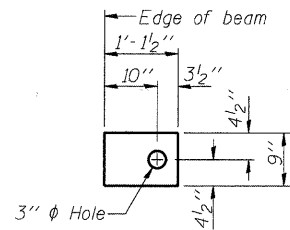
SHEET NO 2 OF 7 SHEETS

| | | | | |
|------------------------------|----------------|--------|--------------|----------|
| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
| 282 | 07-05136-00-BR | COLES | 13 | 06 |
| CONTRACT NO | | | | |
| ILLINOIS FEDERAL AID PROJECT | | | | |



FABRIC BEARING PAD

(Interior)



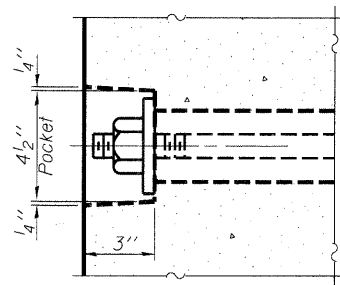
FABRIC BEARING PAD

(Exterior)

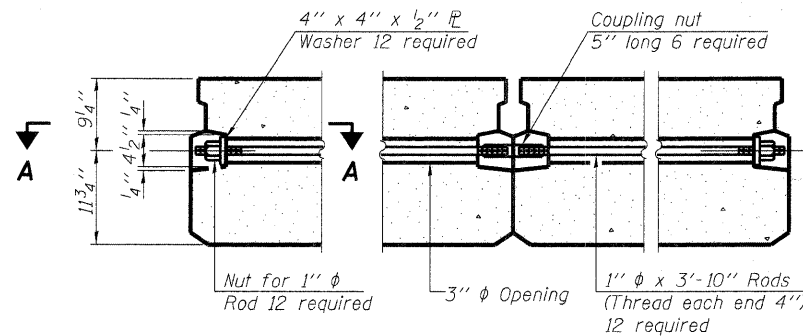
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Notes:

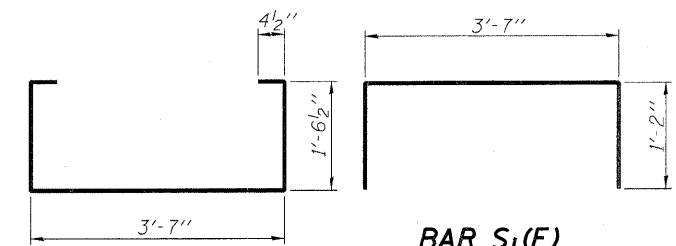
All bearing pads shall be 1/2" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



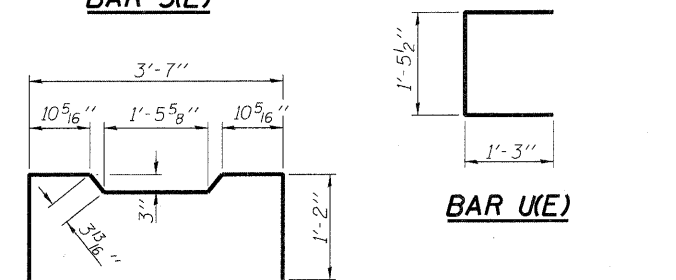
SECTION A-A



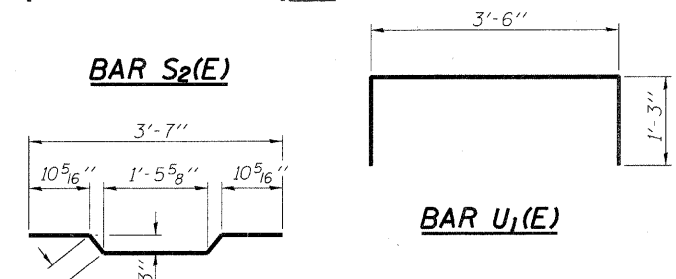
TYPICAL TRANSVERSE TIE ASSEMBLY



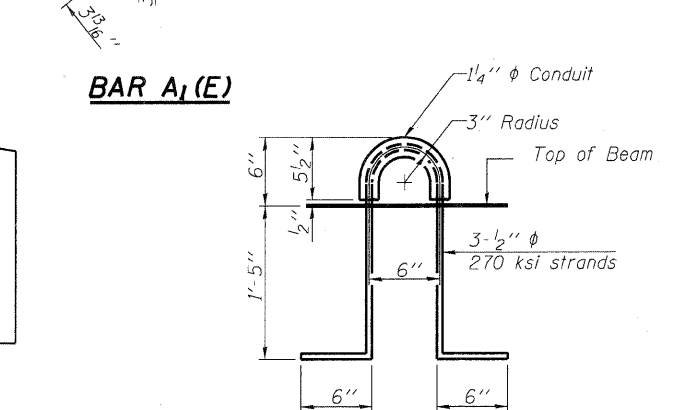
BAR S1(E)



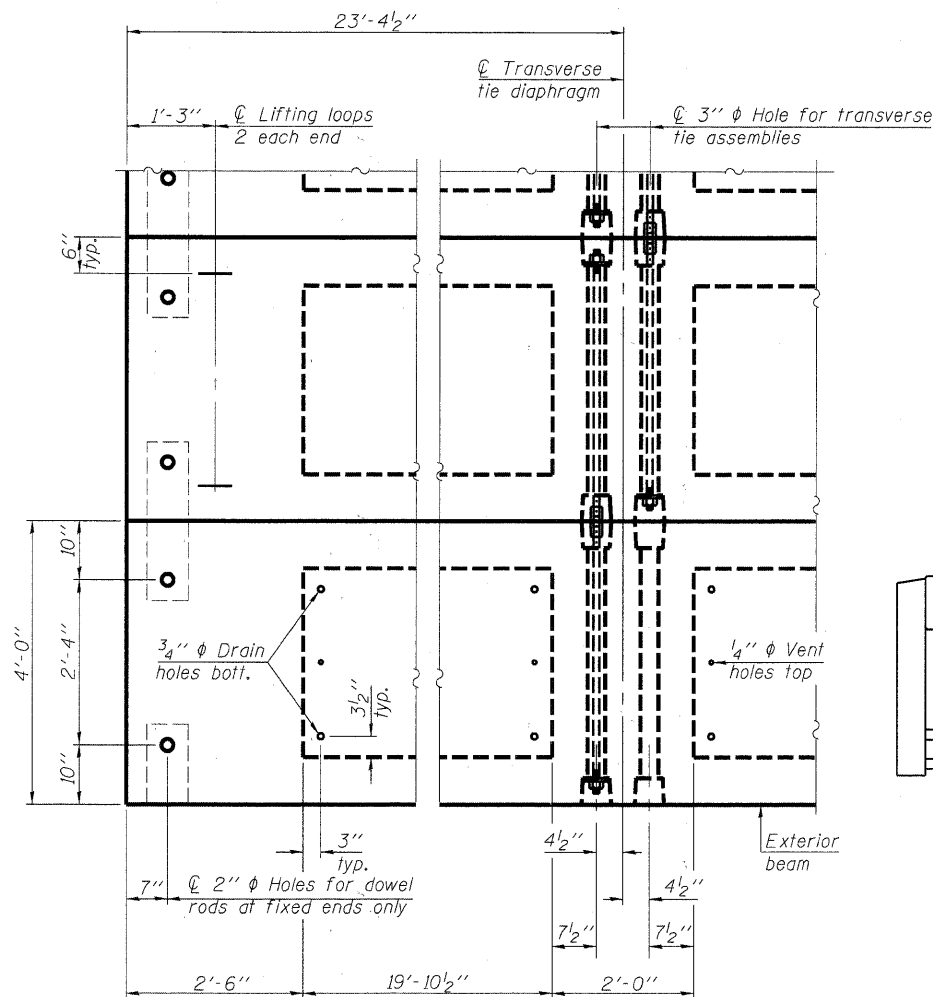
BAR S2(E)



BAR A1(E)

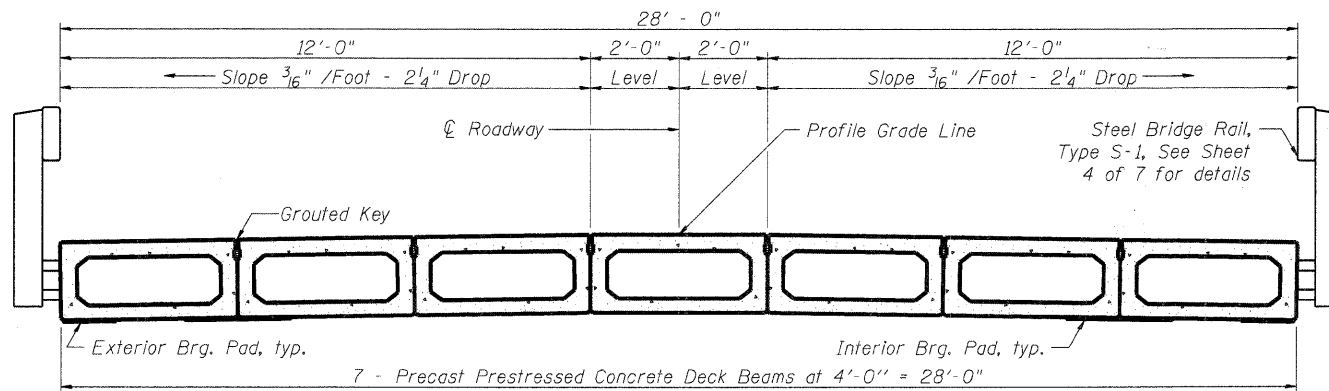


LIFTING LOOP DETAIL



PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.



CROSS SECTION

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

| | | |
|---|---------|------|
| Precast Prestressed Conc. Deck Bms. (21" depth) | Sq. Ft. | 1253 |
|---|---------|------|

PD-2148-OD 7-1-10

| | |
|----------|-----|
| DESIGNED | DF |
| CHECKED | |
| DRAWN | ADG |
| CHECKED | |

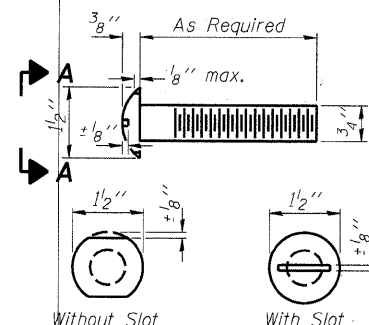
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TR 282
COLES COUNTY

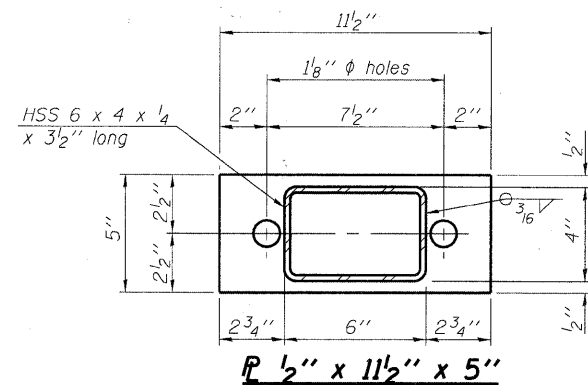
21" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 015-3427

SHEET NO 3 OF 7 SHEETS

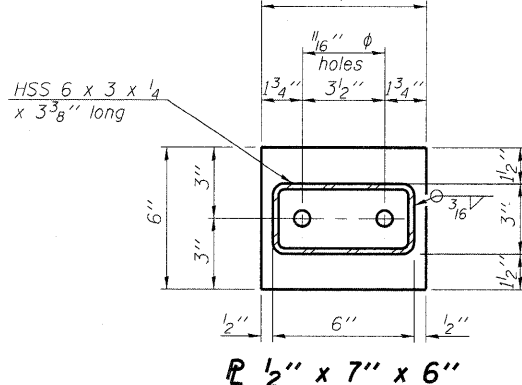
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| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
| 282 | 07-05136-00-BR | COLES | 13 | 07 |
| CONTRACT NO | | | | |
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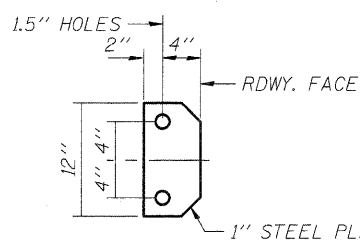
**VIEW A-A
ROUND HEAD BOLT**



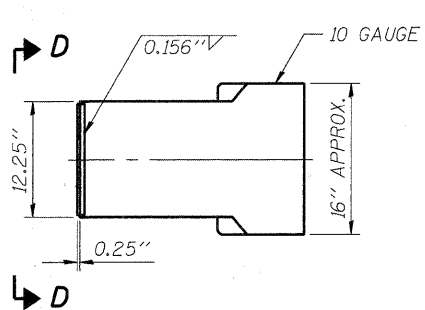
**SECTION B-B
P 1/2" x 11 1/2" x 5"**



**SECTION AT RAILING POST
P 1/2" x 7" x 6"**

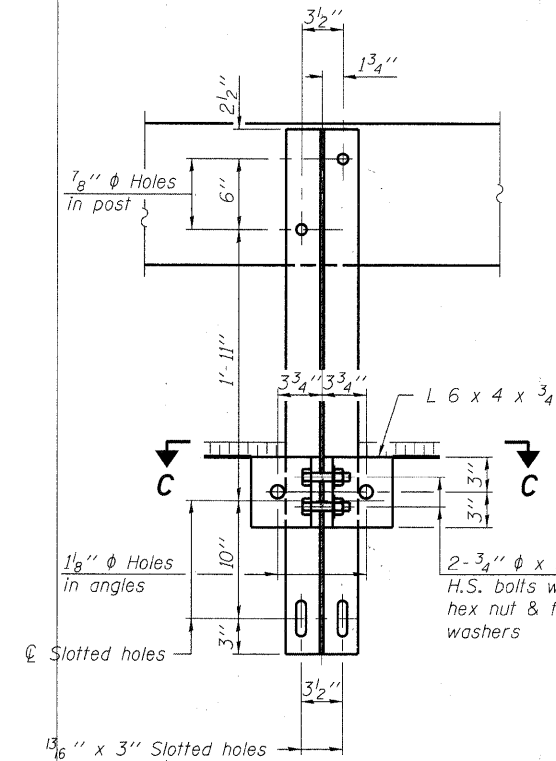
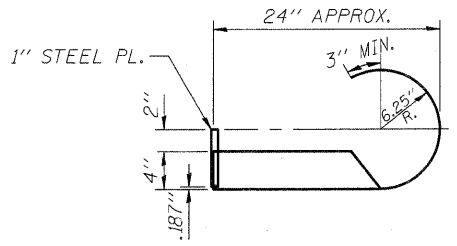


VIEW D-D

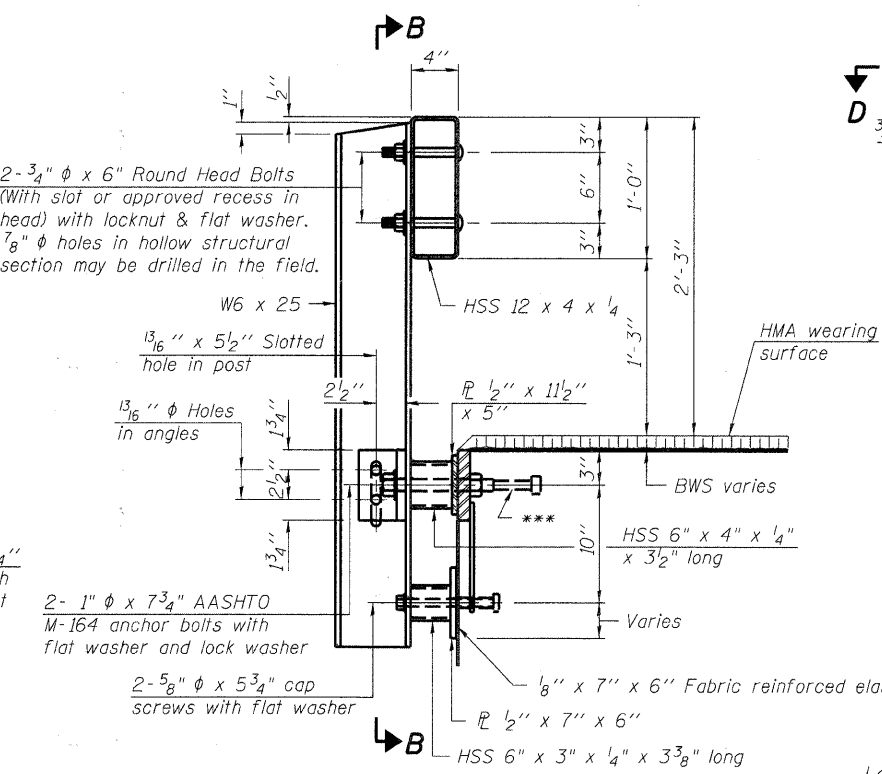


CURLED END SECTION DETAILS

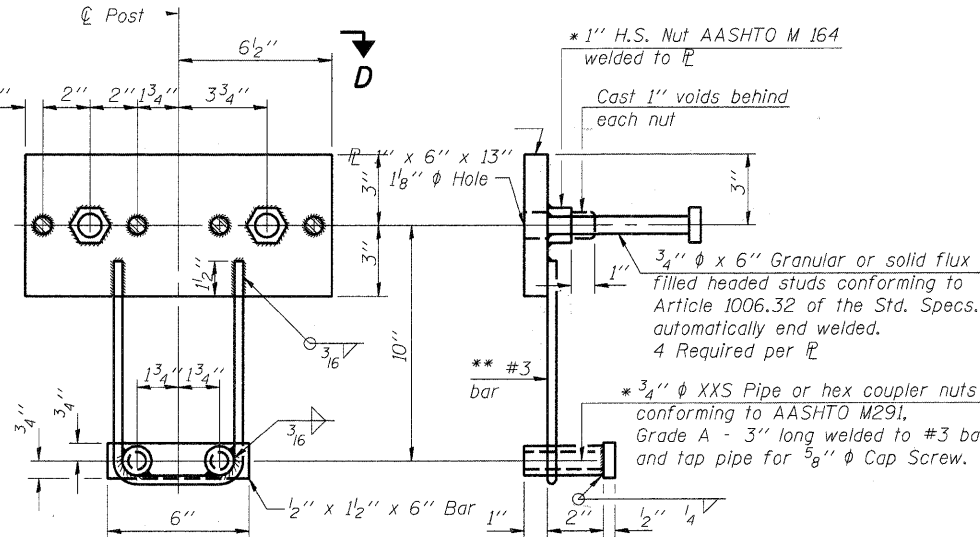
4 REQUIRED - COST INCLUDED IN "STEEL RAILING, TYPE S-1"



SECTION C-C



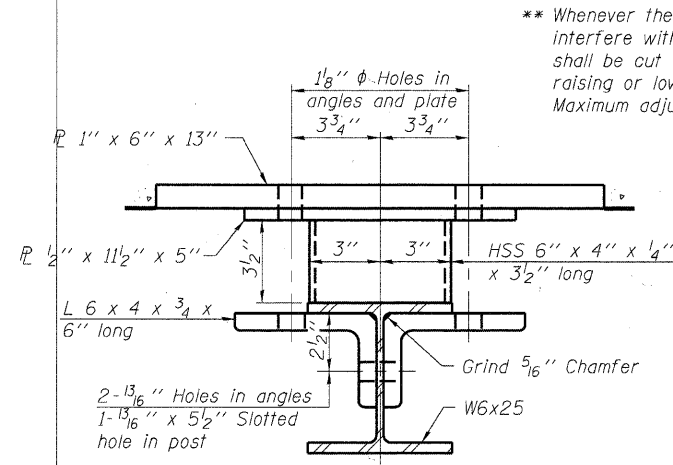
SECTION AT RAILING POST



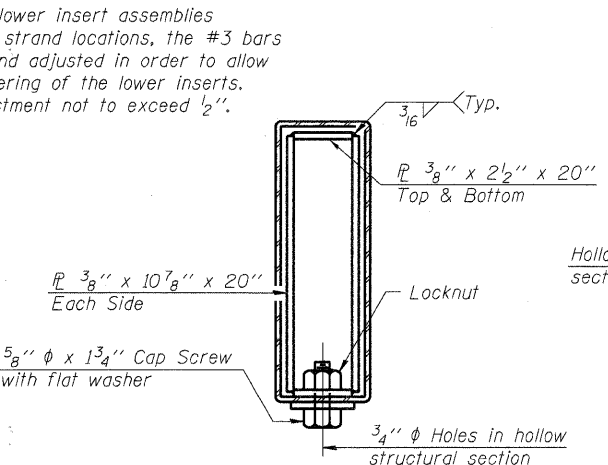
ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.

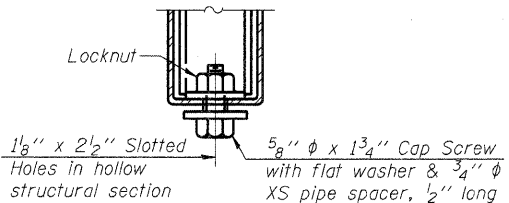
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection. For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



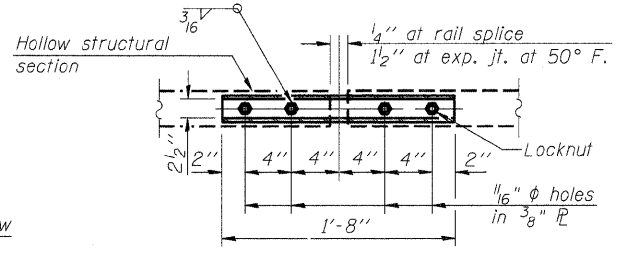
SECTION C-C



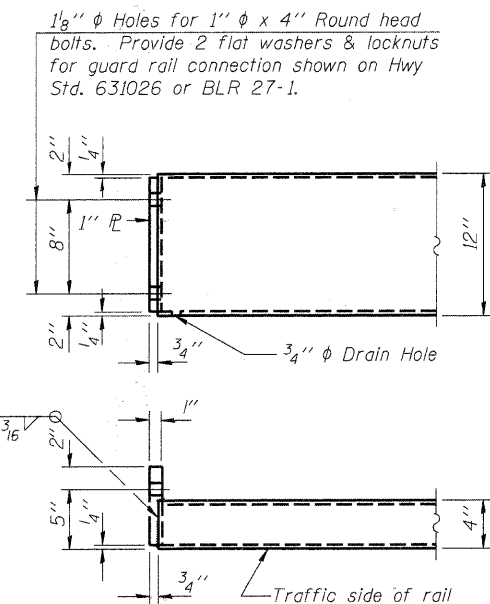
SECTIONS AT RAIL SPLICE



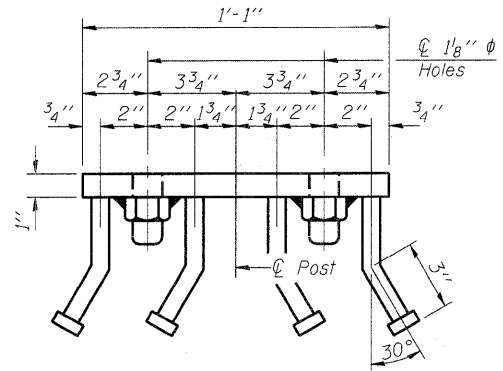
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE P TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

| Item | Unit | Quantity |
|-------------------------|------|----------|
| Steel Railing, Type S-1 | Foot | 92 |

R-23A 7-1-10 (10'-9" Maximum Post Spacing)

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TR 282
COLES COUNTY

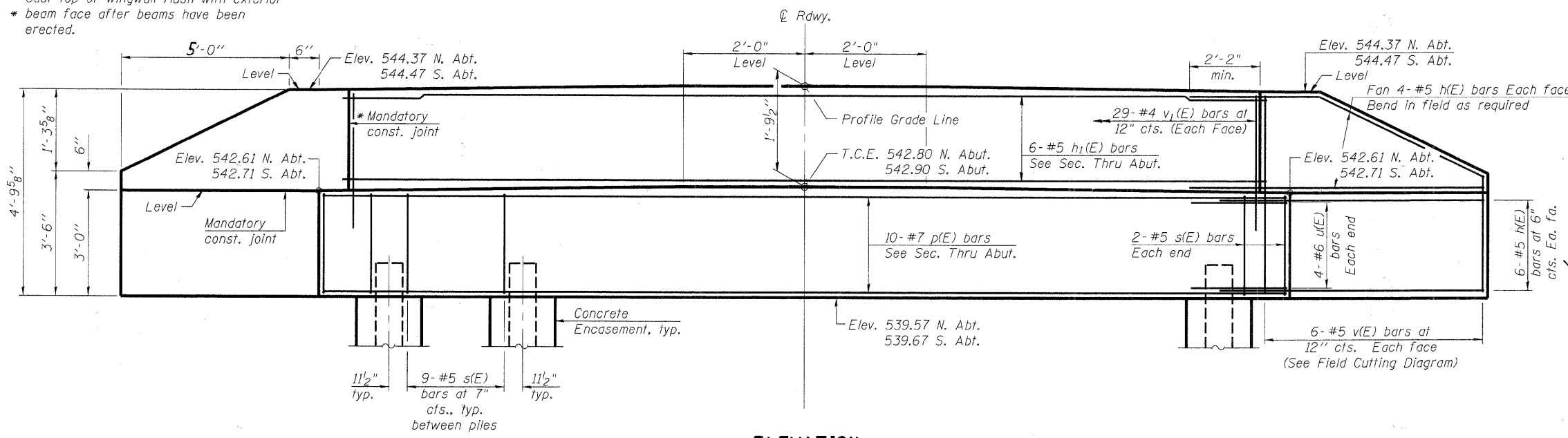
STEEL RAILING, TYPE S-1
STRUCTURE NO. 015-3427

SHEET NO 4 OF 7 SHEETS

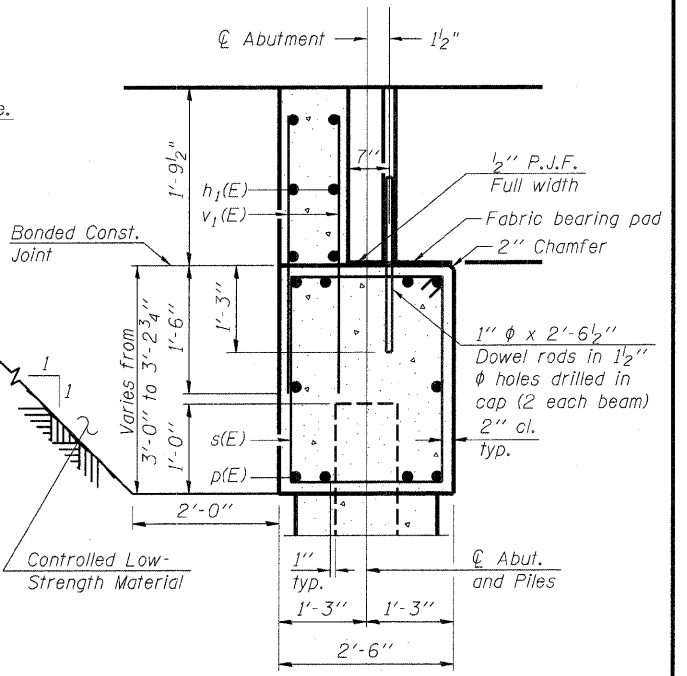
| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
|------------------------------|----------------|--------|--------------|----------|
| RTE 282 | 07-05136-00-BR | COLES | 13 | 08 |
| CONTRACT NO | | | | |
| ILLINOIS FEDERAL AID PROJECT | | | | |

PRINTED DATE: 2/7/2012 FILE NAME: C:\projects\vailes\co highway_dept\tr 282\road\drawings\Sheets\08_385_Rail.dwg

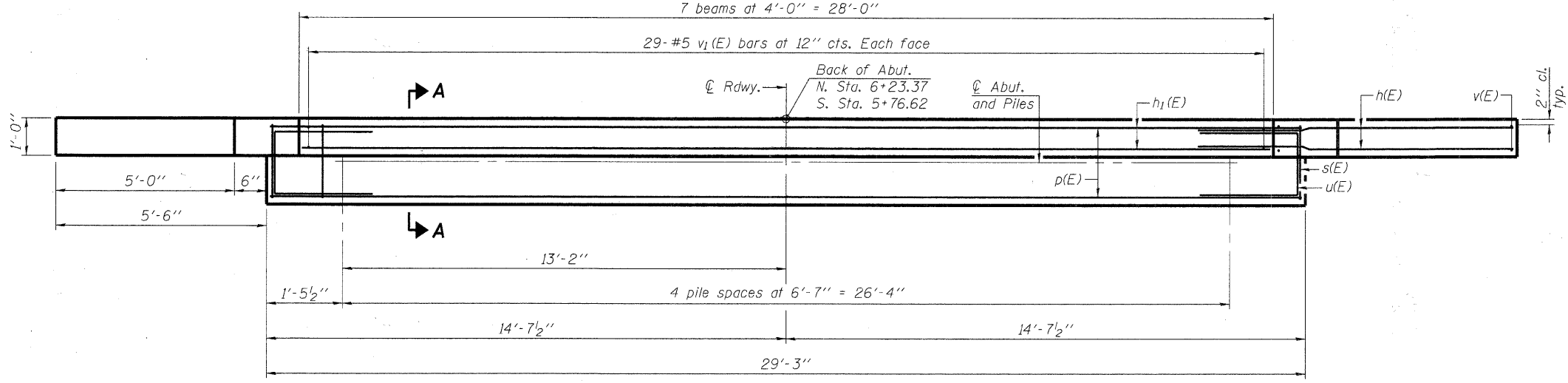
Cast top of wingwall flush with exterior beam face after beams have been erected.



ELEVATION



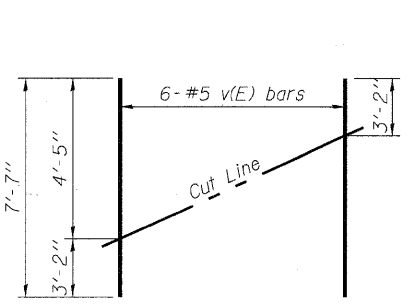
SECTION A-A



PLAN

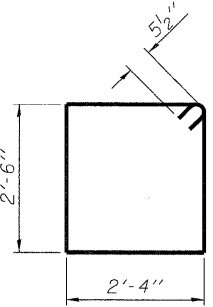
PILE DATA

Type: Steel HP 10x42
 Nominal Required Bearing: 271 kips S. Abut.
 280 kips N. Abut.
 Factored Resistance Available: 145 kips S. Abut.
 154 kips N. Abut.
 Est. Length: 20'
 No. Production Piles: 8
 No. Test Piles: 2

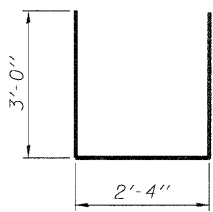


FIELD CUTTING DIAGRAM

Order v(E) bars full length. Cut as shown and use remainder of bars in opposite face.



BAR s(E)



BAR u(E)

BILL OF MATERIAL

Two Abutments

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| h(E) | 80 | #5 | 6'-5" | — |
| h1(E) | 12 | #5 | 27'-9" | — |
| p(E) | 20 | #7 | 29'-0" | — |
| s(E) | 80 | #5 | 10'-7" | □ |
| u(E) | 16 | #6 | 8'-4" | U |
| v(E) | 48 | #5 | 7'-7" | — |
| v1(E) | 116 | #5 | 3'-7" | — |
| Structure Excavation | | Cu. Yd. | 120 | |
| Concrete Structures | | Cu. Yd. | 22.4 | |
| Reinforcement Bars, Epoxy Coated | | Pound | 3970 | |
| Furnishing Steel Piles HP 10x42 | | Foot | 160 | |
| Driving Piles | | Foot | 160 | |
| Test Pile, Steel HP 10x42 | | Each | 2 | |
| Concrete Encasement | | Cu. Yd. | 3.5 | |

Notes:
 For details of piles and Concrete Encasement, see sheet 6 of 7.
 Cast backwall after beams and concrete wearing surface, if applicable, have been erected.

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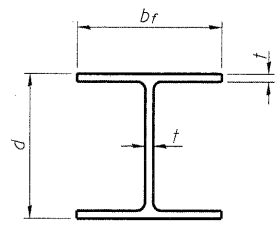
| | |
|------------|-----|
| DESIGNED - | DF |
| CHECKED - | |
| DRAWN - | ADC |
| CHECKED - | |

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TR 282
COLES COUNTY

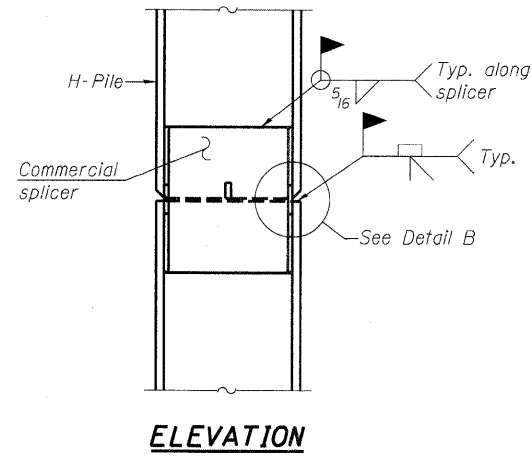
ABUTMENTS
STRUCTURE NO. 015-3427
 SHEET NO 5 OF 7 SHEETS

| | | | | |
|------------------------------|----------------|--------|--------------|----------|
| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
| 282 | 07-05136-00-BR | COLES | 13 | 09 |
| CONTRACT NO | | | | |
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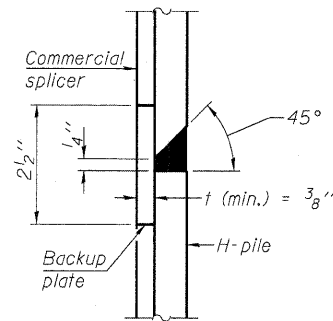


STEEL PILE TABLE

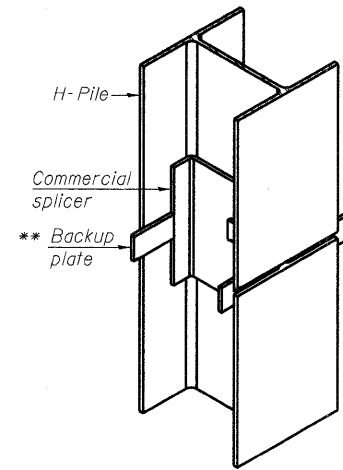
| Designation | Depth d | Flange width br | Web and Flange thickness t | Encasement diameter A |
|-------------|---------|-----------------|----------------------------|-----------------------|
| HP 14x117 | 14 1/4" | 14 7/8" | 1 3/16" | 30" |
| x102 | 14" | 14 3/4" | 1 1/16" | 30" |
| x89 | 13 7/8" | 14 3/4" | 5/8" | 30" |
| x73 | 13 5/8" | 14 5/8" | 1/2" | 30" |
| HP 12x84 | 12 1/4" | 12 1/4" | 1 1/16" | 24" |
| x74 | 12 1/8" | 12 1/4" | 5/8" | 24" |
| x63 | 12" | 12 1/8" | 1/2" | 24" |
| x53 | 11 3/4" | 12" | 7/16" | 24" |
| HP 10x57 | 10" | 10 1/4" | 9/16" | 24" |
| x42 | 9 3/4" | 10 1/8" | 7/16" | 24" |
| HP 8x36 | 8" | 8 1/8" | 7/16" | 18" |



ELEVATION

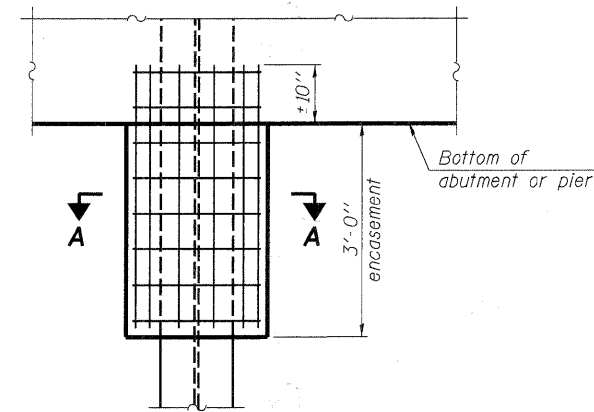


DETAIL "B"

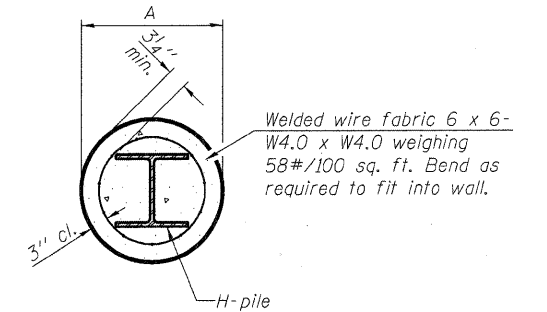


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

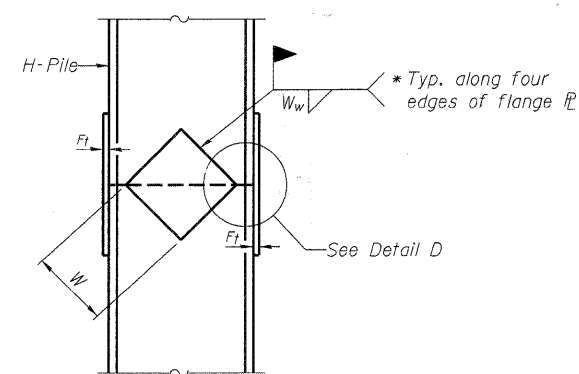


ELEVATION

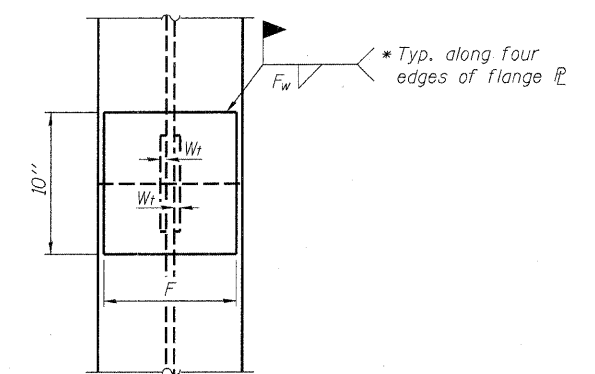


SECTION A-A

PILE ENCASEMENT

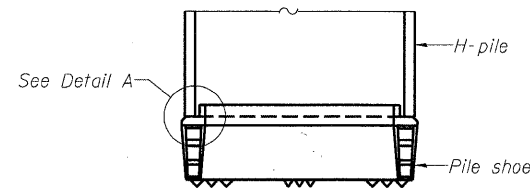


ELEVATION

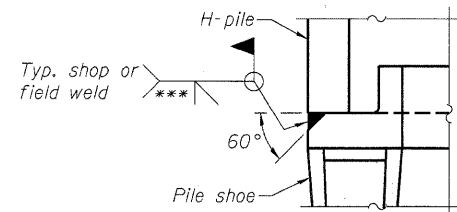


END VIEW

WELDED PLATE FIELD SPLICE

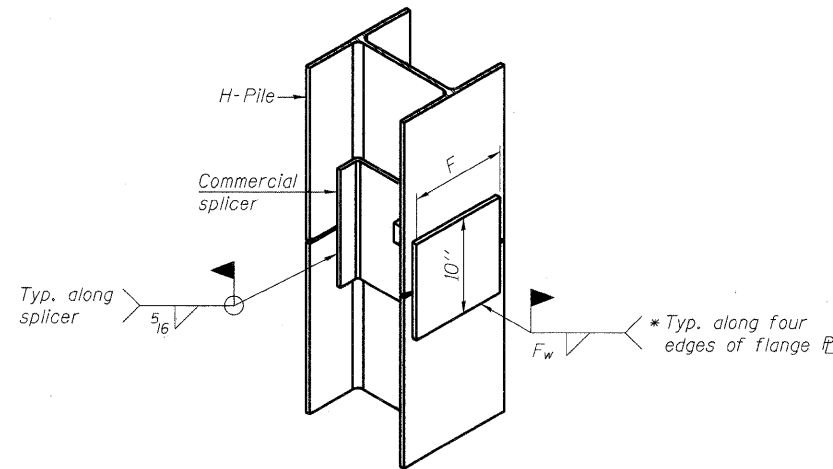


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



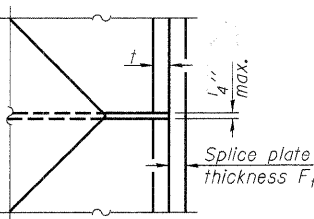
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

| Designation | F | F _t | F _w | W | W _t | W _w |
|-------------|---------|----------------|----------------|--------|----------------|----------------|
| HP 14x117 | 12 1/2" | 1" | 7/8" | 7 3/4" | 5/8" | 1/2" |
| x102 | 12 1/2" | 7/8" | 3/4" | 7 3/4" | 5/8" | 1/2" |
| x89 | 12 1/2" | 3/4" | 1/16" | 7 3/4" | 5/8" | 1/2" |
| x73 | 12 1/2" | 5/8" | 9/16" | 7 3/4" | 5/8" | 1/2" |
| HP 12x84 | 10" | 7/8" | 1/16" | 6 1/2" | 5/8" | 1/2" |
| x74 | 10" | 7/8" | 1/16" | 6 1/2" | 5/8" | 1/2" |
| x63 | 10" | 5/8" | 1/2" | 6 1/2" | 1/2" | 3/8" |
| x53 | 10" | 5/8" | 1/2" | 6 1/2" | 1/2" | 3/8" |
| HP 10x57 | 8" | 3/4" | 9/16" | 5 1/4" | 1/2" | 3/8" |
| x42 | 8" | 5/8" | 9/16" | 5 1/4" | 1/2" | 3/8" |
| HP 8x36 | 7" | 5/8" | 7/16" | 4 1/4" | 1/2" | 3/8" |



DETAIL D

WELDED PLATE FIELD SPLICE

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F-HP 7-1-10

| | |
|----------|-----|
| DESIGNED | DF |
| CHECKED | |
| DRAWN | ADG |
| CHECKED | |

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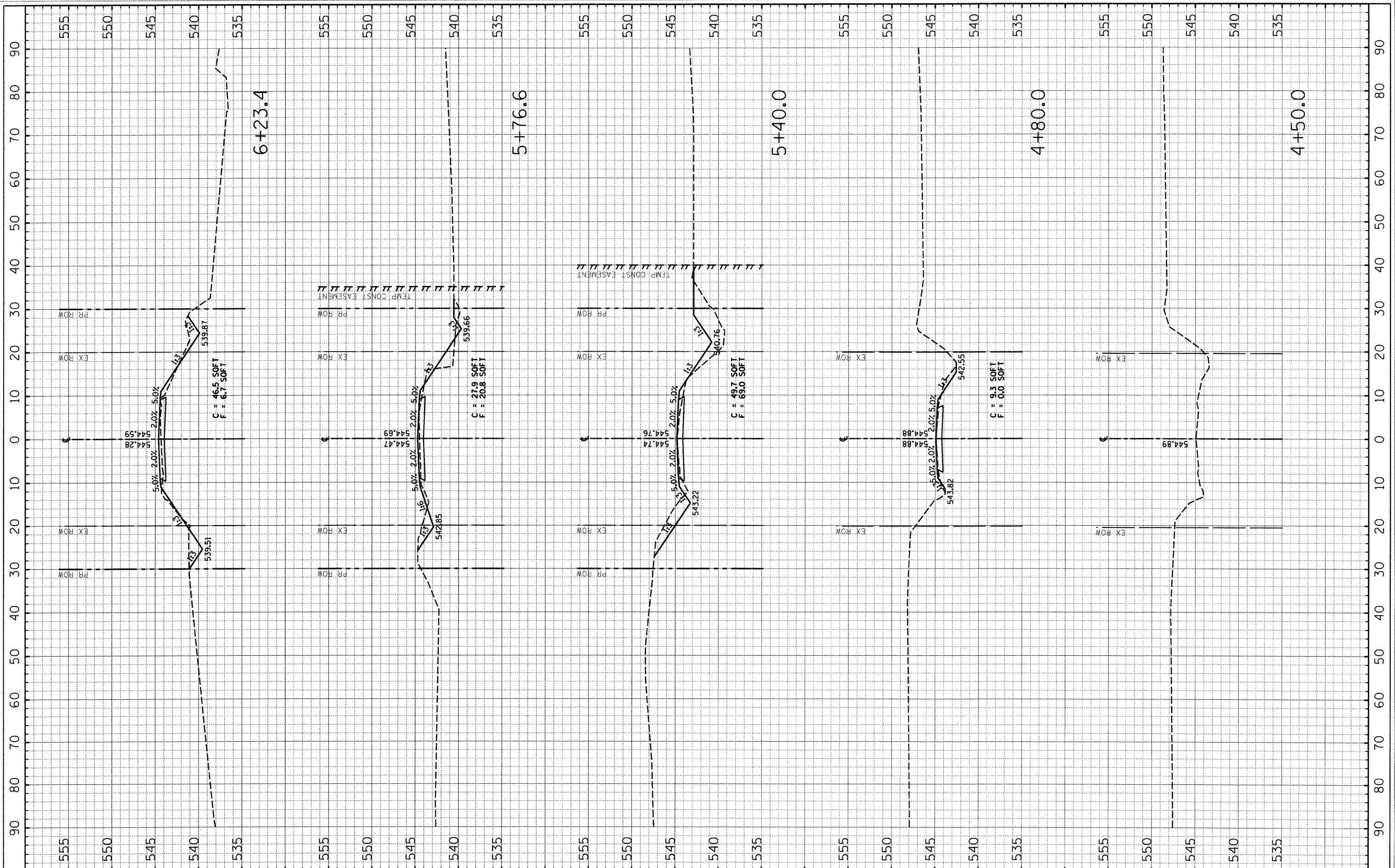
TR 282
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HP PILE DETAILS
STRUCTURE NO. 015-3427

SHEET NO 6 OF 7 SHEETS

| | | | | |
|------------------------------|----------------|--------|--------------|----------|
| TWP | SECTION | COUNTY | TOTAL SHEETS | SHEET NO |
| 282 | 07-05136-00-BR | COLES | 13 | 10 |
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COLES COUNTY
 HIGHWAY DEPARTMENT

| NO. | DATE | DESCRIPTION OF REVISIONS | NO. | DATE | DESCRIPTION OF REVISIONS |
|-----|------|--------------------------|-----|------|--------------------------|
| | | | | | |
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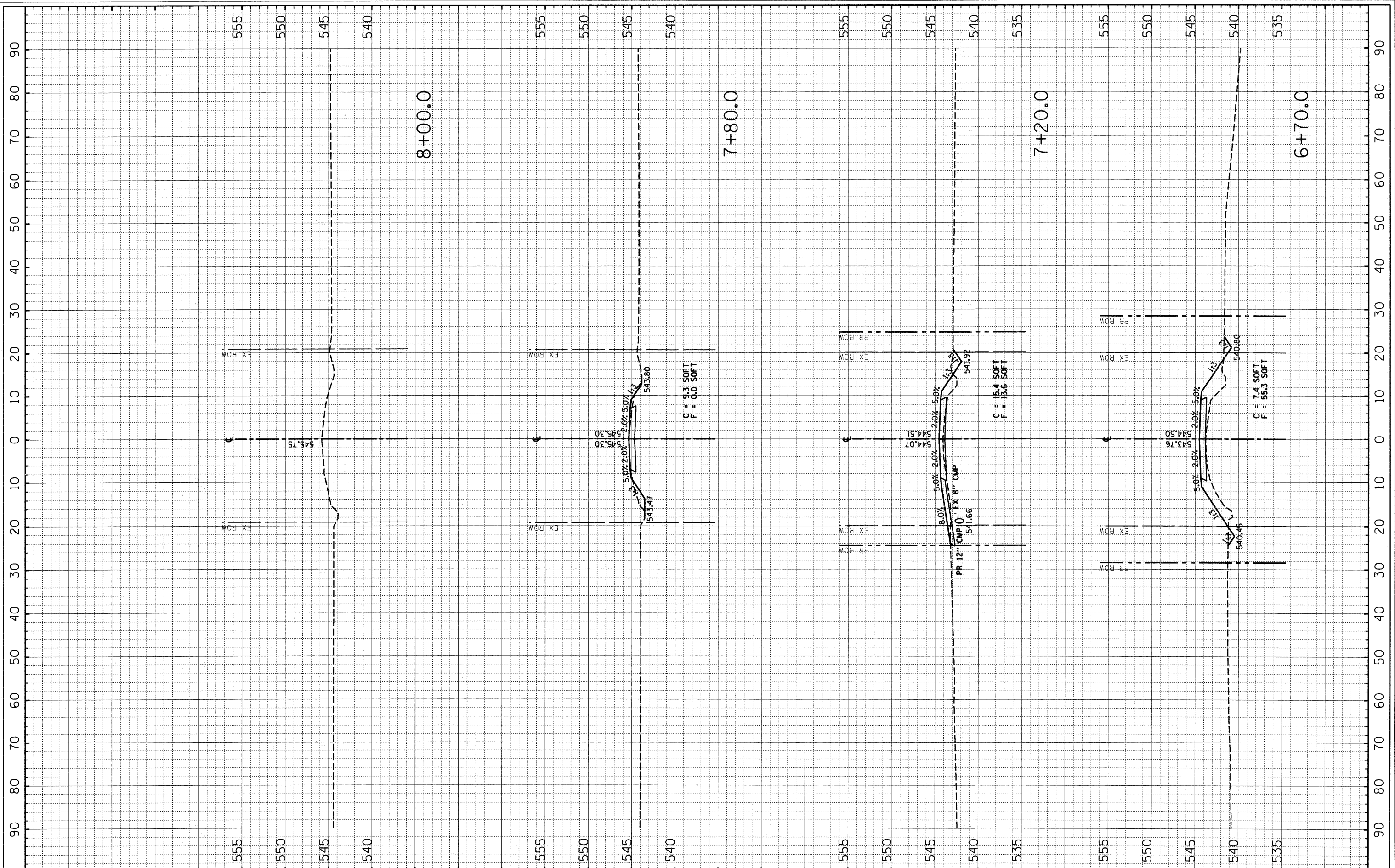
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CROSS SECTIONS
 STA 4+50.0 TO STA 6+23.4

SHEET 1 OF 2
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|-----|------|--------------------------|-----|------|--------------------------|
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 FILE: 12_TR 282.XS
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 QCQA:

**TR 282
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CROSS SECTIONS
 STA 6+70.0 TO STA 8+00.0

SHEET 2 OF 2
 DRAWING NO
13
 OF 13