

UTILITIES

06-11-2021 LETTING ITEM 133

AT&T
1000 COMMERCE DRIVE
OAKBROOK, IL 60523
MITCH CULLEN
(630) 573-5450

COMED
2 LINCOLN CENTER
OAKBROOK TERRACE, IL 60181
KYLE ISEK
(630) 576-7094



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM**
COUNTY HIGHWAY CH 41 (FAS 272)
(GRAND RIDGE ROAD OVER MURRAY SLOUGH)
SECTION 19-00172-00-BR
GRUNDY COUNTY

FEDERAL PROJECT: MKCT (416)
C-93-007-21



LOCATION OF SECTION INDICATED THUS:

INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
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- 6 TRAFFIC CONTROL PLAN
- 7 TEMPORARY INFORMATION SIGNING
- 8 EROSION CONTROL PLAN
- 9 GENERAL PLAN AND ELEVATION
- 10-26 STRUCTURE DETAILS
- 27-31 SOIL BORINGS
- 32-37 EXISTING PLANS

BENCHMARKS

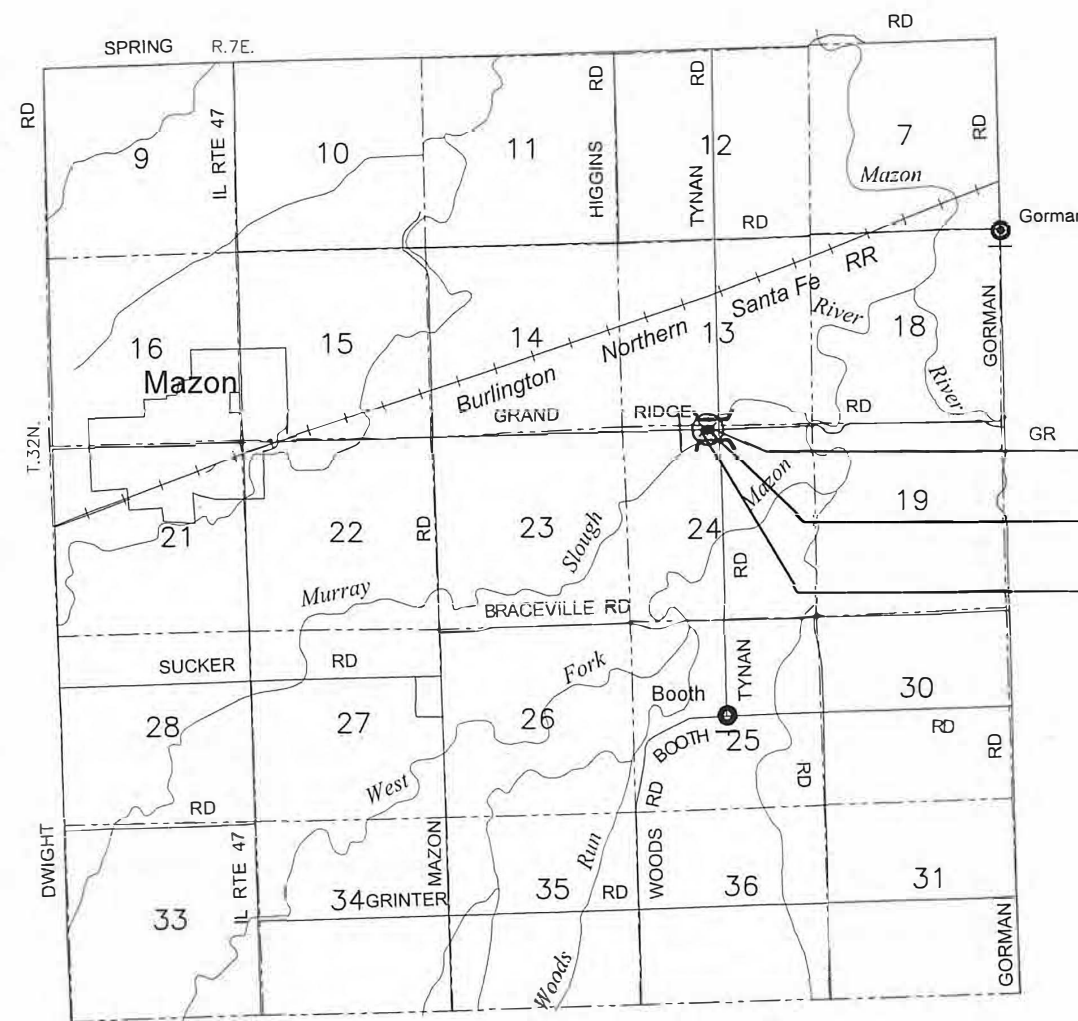
- BM-1
RAILROAD SPIKE IN POWER POLE AT SOUTHEAST
CORNER OF GRAND RIDGE ROAD AND TYNAN ROAD
ELEV. 562.70
- BM-2
RAILROAD SPIKE IN POWER POLE SOUTH SIDE OF
GRAND RIDGE ROAD AT CONTROL POINT #4
3RD POWER POLE WEST OF TYNAN ROAD
ELEV. 560.76

FUNCTIONAL CLASSIFICATION

MAJOR COLLECTOR: 750 TO 2000 ADT
DESIGN TRAFFIC: 950 (2015)
DESIGN SPEED: 55 MPH

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 420001-09 PAVEMENT JOINTS
- 420406 PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
- 515001-04 NAME PLATE FOR BRIDGES
- 601101-02 CONCRETE HEADWALL FOR PIPE UNDERDRAINS
- 630001-12 STEEL PLATE BEAM GUARDRAIL
- 630301-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631011-10 Traffic Barrier Terminal Type 2
- 631032-09 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 701901-08 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO WAY RURAL TRAFFIC)
- BLR 22-7 TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (ROAD CLOSED TO THRU TRAFFIC)
- BLR23-4 Traffic Barrier Terminal Type 1



LOCATION SKETCH
NOT TO SCALE

GROSS LENGTH= 290.00 FT (0.055 MI) NET LENGTH= 290.00 FT (0.055 MI)

END PROJECT STA. 76+50
S.N. 032-3220 (EXISTING)
S.N. 032-3221 (PROPOSED)
BEGIN PROJECT STA. 79+40



PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-001717



PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

DRAWN BY: KED	CAD: 001-COVER	REVISIONS	SCALE: AS NOTED	SHEET 1
CHECKED BY: CJM	DATE: 02/2021	DATE BY	FILE NO.: 111360.00Y-	OF 37

CONTRACT NO. 87741

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED April 01 2021

PASSED APRIL 8 2021

APRIL 8 2021

Releasing for Bid Based on Limited Review

DISTRICT THREE ENGINEER FOR LOCAL ROADS & STREETS

REGION TWO ENGINEER

CHAMLIN & ASSOCIATES, INC. © 2021
 Drawing Name: R:\USERS\DAH\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\02-NOTES.dwg Last Modified: Thursday, April 1, 2021 3:46:40 PM Plotted On: Friday, April 2, 2021 1:32:28 PM by Collin Kontio

General Notes

1. The thickness of HMA shown on the plans is the nominal thickness. Deviations from the nominal thickness will be permitted when such deviations occur due to irregularities in the existing surface or base on which the HMA is placed.
2. Except as noted on plans, pavement grades shown are at the top of pavement surfaces.
3. The Engineer will be the sole judge concerning curing time for the various HMA lifts.
4. For stabilization, all Type III barricades will require a minimum of four (4) sandbags per barricade.
5. Seeding will not be permitted at any time when the ground is frozen, wet, or in an unillable condition. Locations to be seeded will be determined by the Engineer.
6. All elevations referring to U.S.G.S. Mean Sea Level Datum.
7. Abandoned underground utilities that conflict with construction shall be disposed of outside the limits of the Right of Way according to Article 202.03 of the Standard Specifications and as directed by the Engineer. This work will be not be paid for separately, but will be included in the cost of Earth Excavation.
8. Any reference to a Standard in these Plans shall be interpreted to mean the Edition as indicated by the subnumber shown in the list of Standards or the copy included in these Plans.
9. The following rates of application have been used in calculating plan quantities:

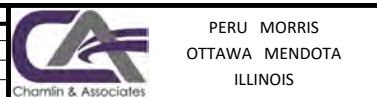
Granular Materials	2.05	tons/cu yd
HMA Surfacing	112	lbs/sq yd/in
Short Term Pavement Marking	10	ft/100 ft of application
10. Members of J.U.L.I.E. known to be within the limits of the improvements are:
ComEd
AT&T
11. The Contractor shall contact J.U.L.I.E. at least 48 hours prior to excavation to determine which utilities are in the area.

SUMMARY OF COMMITMENTS

Trees 3" or greater in diameter at breast height
 will not be cleared April 1 through
 September 30.

CONTRACT NO. 87741

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CHECKED BY: CJM	LEVEL	BY	DATE	DESCRIPTION
DATE: 02/2021				



GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

GENERAL NOTES

CURRENT AS OF: 04/02/2021		
SCALE: AS NOTED	SHEET 2	
FILE NO.: 111360.00 Y-	OF 37	

SUMMARY OF QUANTITIES

CODE NO.	ITEM	STP-Br FED 80%/ LOCAL 20% 0010	
		UNIT	TOTAL QUANTITY
20300100	CHANNEL EXCAVATION	CU YD	300
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	475
21101515	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	5750
25000210	SEEDING, CLASS 2A	ACRE	0.15
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	18
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	18
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	18
25100630	EROSION CONTROL BLANKET	SQ YD	5750
28000305	TEMPORARY DITCH CHECKS	FOOT	20
28000400	PERIMETER EROSION BARRIER	FOOT	500
28000500	INLET AND PIPE PROTECTION	EACH	1
28100107	STONE RIPRAP, CLASS A4	SQ YD	350
28200200	FILTER FABRIC	SQ YD	350
30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	450
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	200
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	95
40603060	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	160
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	60
42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	105
44000100	PAVEMENT REMOVAL	SQ YD	650
48101600	AGGREGATE SHOULDERS, TYPE B 8"	SQ YD	200
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	240
50200300	COFFERDAM EXCAVATION	CU YD	230
50201101	COFFERDAM (TYPE 1) (LOCATION - 1)	EACH	2
50300225	CONCRETE STRUCTURES	CU YD	88

SUMMARY OF QUANTITIES

CODE NO.	ITEM	STP-Br FED 80%/ LOCAL 20% 0010	
		UNIT	TOTAL QUANTITY
50300280	CONCRETE ENCASEMENT	CU YD	4
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	73
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2435
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	43598
Δ 50901050	STEEL RAILING, TYPE SM	FOOT	178
51200959	FURNISHING METAL SHELL PILES 14" X0.312"	FOOT	284
51201400	FURNISHING STEEL PILES HP10x42	FOOT	149
51202305	DRIVING PILES	FOOT	149
51203400	TEST PILE STEEL HP10x42	EACH	1
51204650	PILE SHOES	EACH	10
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	444
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	720
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	38
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	32
Δ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	85
Δ 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
Δ 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
67100100	MOBILIZATION	L SUM	1
Δ 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	653
Δ LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	1
* X7010216	TRAFFIC CONTROL AND PROTECTION, SPECIAL	L SUM	1
* Z0013798	CONSTRUCTION LAYOUT	L SUM	1
* Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	104
* Z0065002	DRILLING AND SETTING PILES (IN ROCK)	CU FT	528

Δ SPECIALTY ITEMS

CONTRACT NO. 87741

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 CHECKED BY: CJM
 DATE: 02/2021
 PERU MORRIS
 OTTAWA MENDOTA
 ILLINOIS
 GRAND RIDGE ROAD
 SECTION 19-00172-00-BR
 GRUNDY COUNTY
 SUMMARY OF QUANTITIES
 CURRENT AS OF: 04/02/2021
 SCALE: AS NOTED
 FILE NO.: 111360.00 Y-
 SHEET 3 OF 37

LEVEL	BY	DATE	REVISIONS	
			DESCRIPTION	



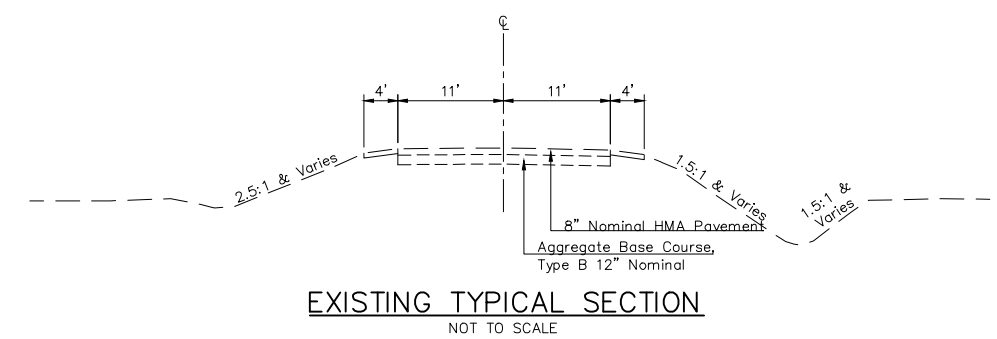
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GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

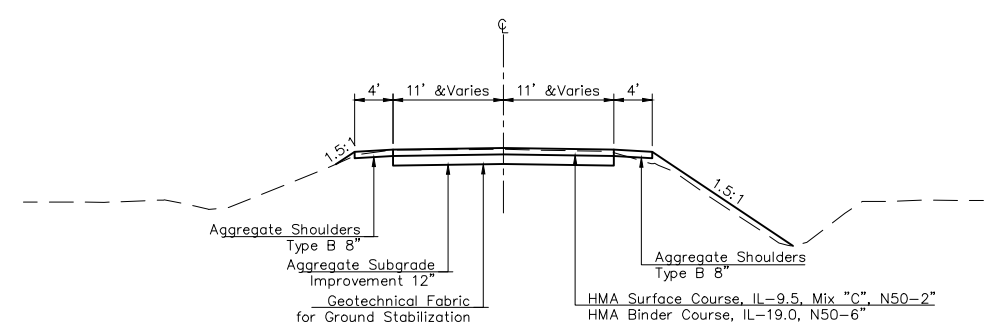
SUMMARY OF QUANTITIES

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 3
FILE NO.: 111360.00 Y-	OF 37

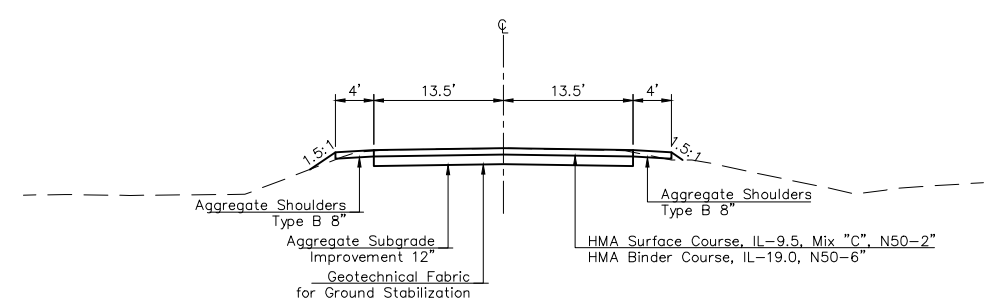
CHAMLIN & ASSOCIATES, INC. © 2021
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 by: Collin Konio



EXISTING TYPICAL SECTION
NOT TO SCALE



TYPICAL SECTION - WEST
NOT TO SCALE
(Sta. 76+50 to Sta. 77+17.88)



TYPICAL SECTION - EAST
NOT TO SCALE
(Sta. 78+81.45 to Sta. 79+40)

HMA MIXTURE REQUIREMENT TABLE		
LOCATIONS:	ENTIRE PROJECT	ENTIRE PROJECT
MIXTURE USE(S):	HMA SURFACE	HMA BINDER
BINDER GRADE (PG):	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION: (MIXTURE GRADATION)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	
MIXTURE WEIGHT:	112.0 LB/SY/IN	112.0 LB/SY/IN
QUALITY MANAGEMENT PROGRAM:	QCQA	QCQA
SUBLOT SIZE:	NA	NA
DENSITY TEST METHOD:	CORES/NUCLEAR	CORES/NUCLEAR

87741
CH 41 - GRAND RIDGE RD OVER MURRAY SLOUGH

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CHECKED BY: CJM				
DATE: 02/2021				

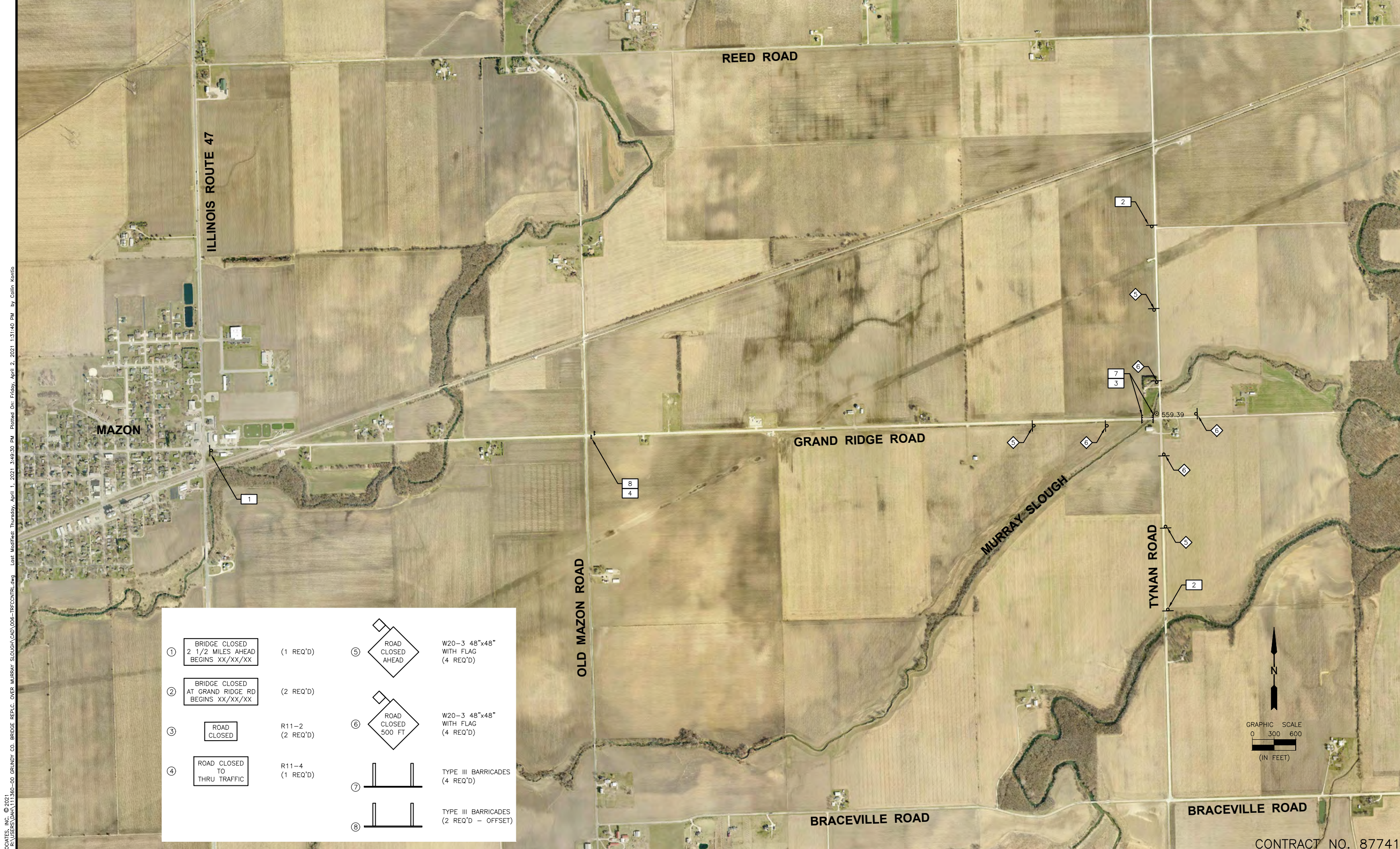

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GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

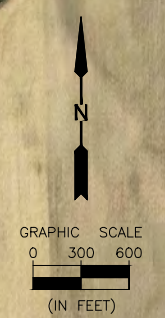
TYPICAL SECTIONS

CURRENT AS OF: 04/02/2021		
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CONTRACT NO. 87741



①	BRIDGE CLOSED 2 1/2 MILES AHEAD BEGINS XX/XX/XX	(1 REQ'D)	⑤	ROAD CLOSED AHEAD	W20-3 48"x48" WITH FLAG (4 REQ'D)
②	BRIDGE CLOSED AT GRAND RIDGE RD BEGINS XX/XX/XX	(2 REQ'D)	⑥	ROAD CLOSED 500 FT	W20-3 48"x48" WITH FLAG (4 REQ'D)
③	ROAD CLOSED	R11-2 (2 REQ'D)	⑦	TYPE III BARRICADES (4 REQ'D)	
④	ROAD CLOSED TO THRU TRAFFIC	R11-4 (1 REQ'D)	⑧	TYPE III BARRICADES (2 REQ'D - OFFSET)	



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CHECKED BY: CJM					
DATE: 02/2021					

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ILLINOIS

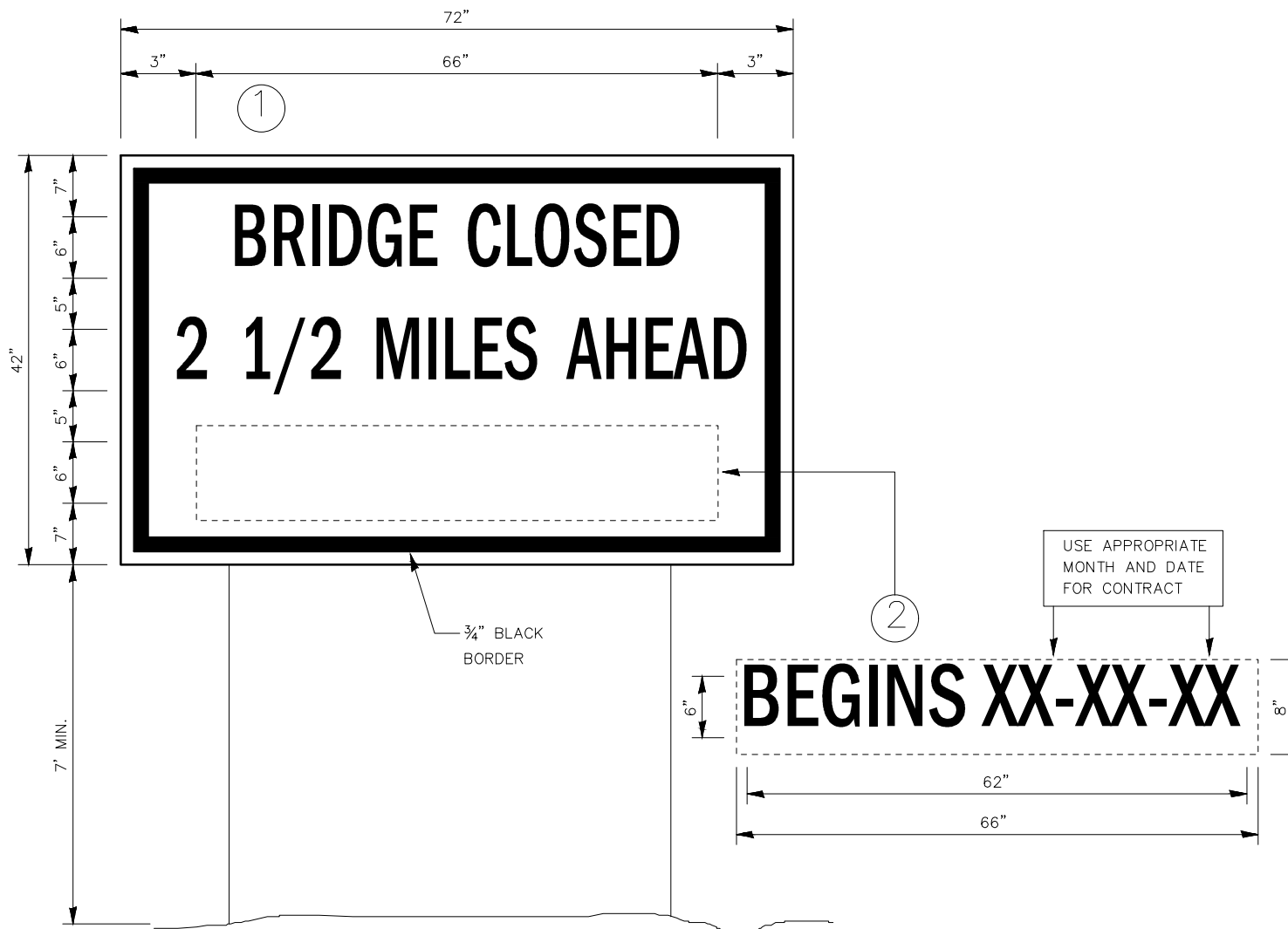
**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

TRAFFIC CONTROL PLAN

CONTRACT NO. 87741	
CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 6
FILE NO.: 111360.00 Y-	OF 37

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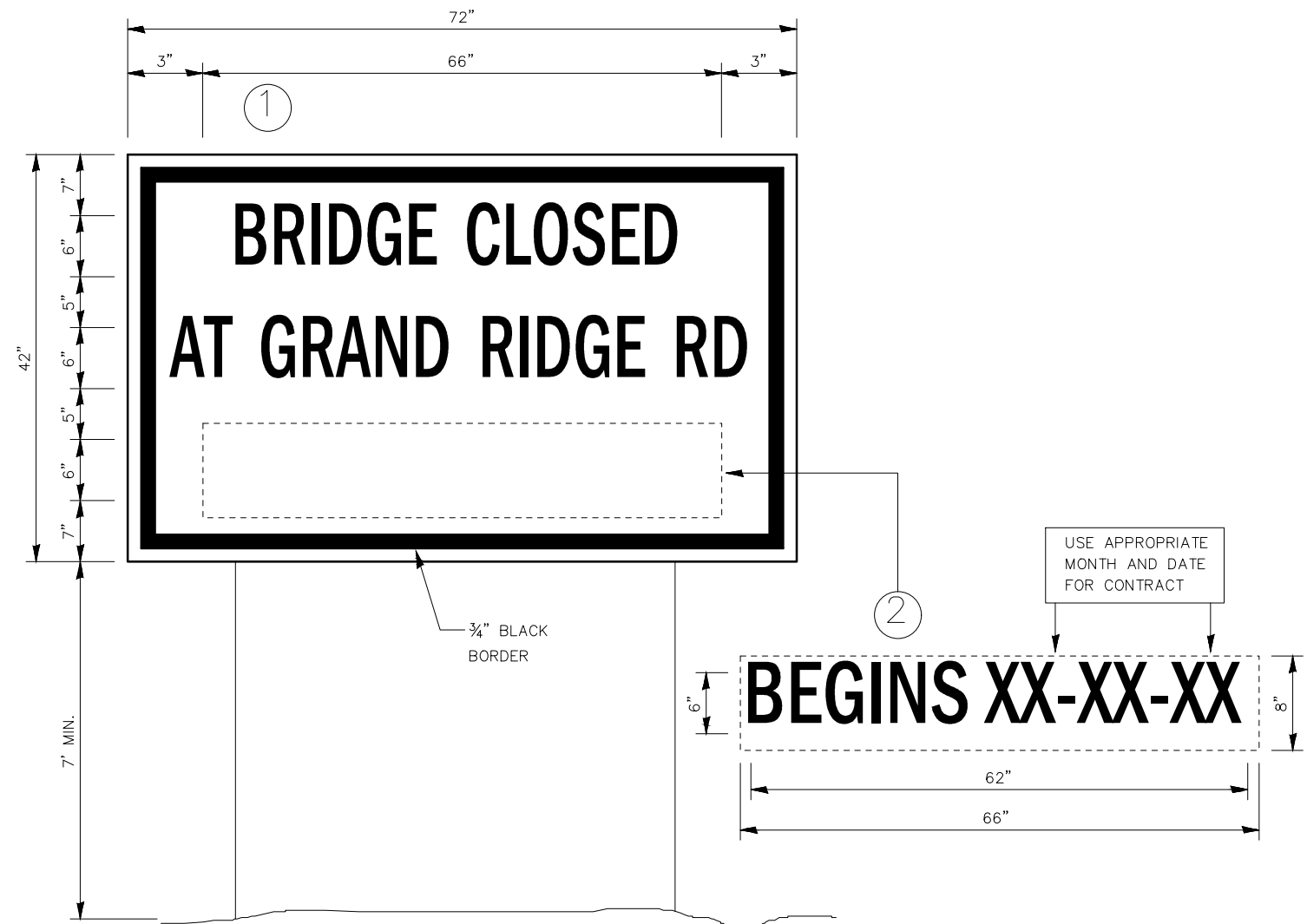
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TEMPORARY INFORMATION SIGNING

NOTES:

1. USE 6" D BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND.
2. ERECT SIGNS AT LOCATIONS IN ADVANCE OF THE "ROAD CONSTRUCTION AHEAD" SIGNS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN 1 WITH INSTALLED PANEL 2 A MINIMUM OF ONE WEEK PRIOR TO THE START OF THE ROAD CLOSURE.
4. REMOVE PANEL 2 ON THAT DATE.
5. SEE SPECIAL PROVISION "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. WILL BE PAID FOR PER SQ FT AS "TEMPORARY INFORMATION SIGNING". EACH SIGN = 21 SQ FT AND THE DATE PANEL 2 WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.



TEMPORARY INFORMATION SIGNING

NOTES:

1. USE 6" D BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND.
2. ERECT SIGNS AT LOCATIONS IN ADVANCE OF THE "ROAD CONSTRUCTION AHEAD" SIGNS AS DIRECTED BY THE ENGINEER.
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CONTRACT NO. 87741

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CHECKED BY: CJM	LEVEL	BY	DATE	DESCRIPTION
DATE: 02/2021				

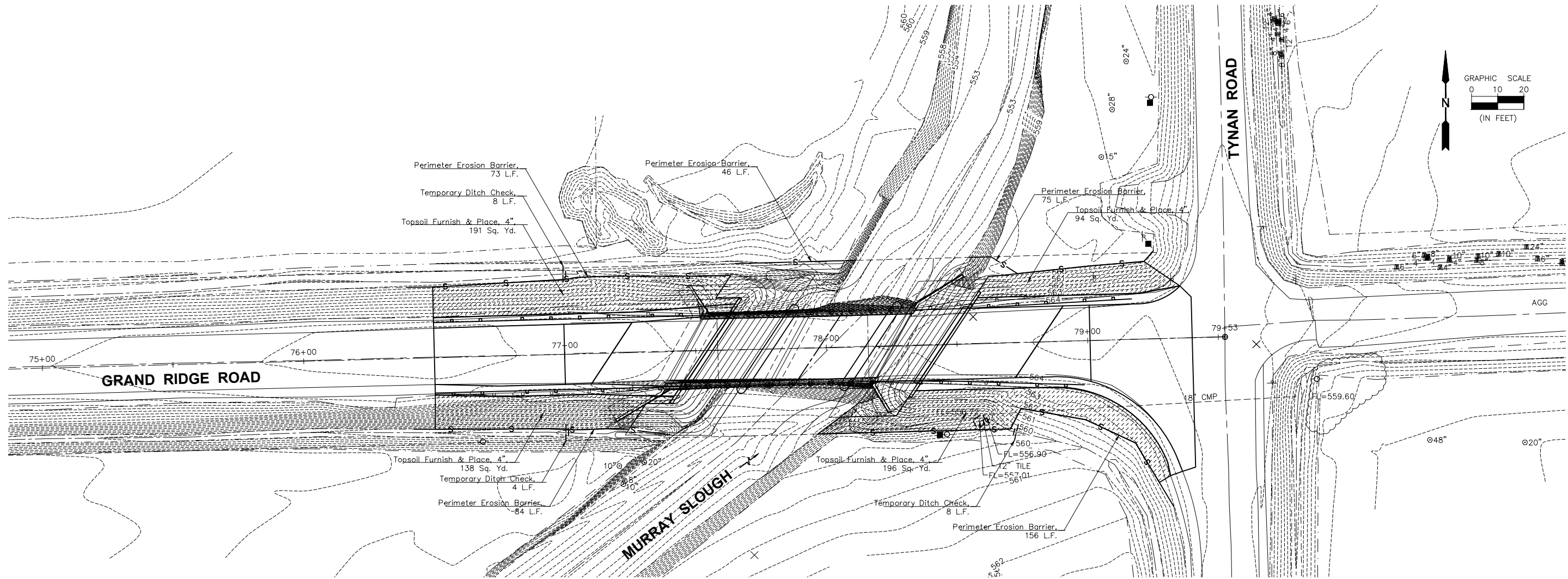

 PERU MORRIS
 OTTAWA MENDOTA
 ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

TEMPORARY INFORMATION SIGNING

CURRENT AS OF: 04/02/2021	
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FILE NO.: 111360.00 Y-	OF 37

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 Last Modified: Thursday, April 1, 2021 3:53:28 PM
 Plotted On: Friday, April 2, 2021 1:40:23 PM
 by Collin Kontio



LEGEND

- Topsoil Furnish & Place - 4" Seeding, Class 2A
- Perimeter Erosion Barrier
- Ditch Check
- Inlet Protection

CONTRACT NO. 87741

DRAWN BY: KED	REVISIONS			
LEVEL	BY	DATE	DESCRIPTION	

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 OTTAWA MENDOTA
 ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

EROSION CONTROL PLAN

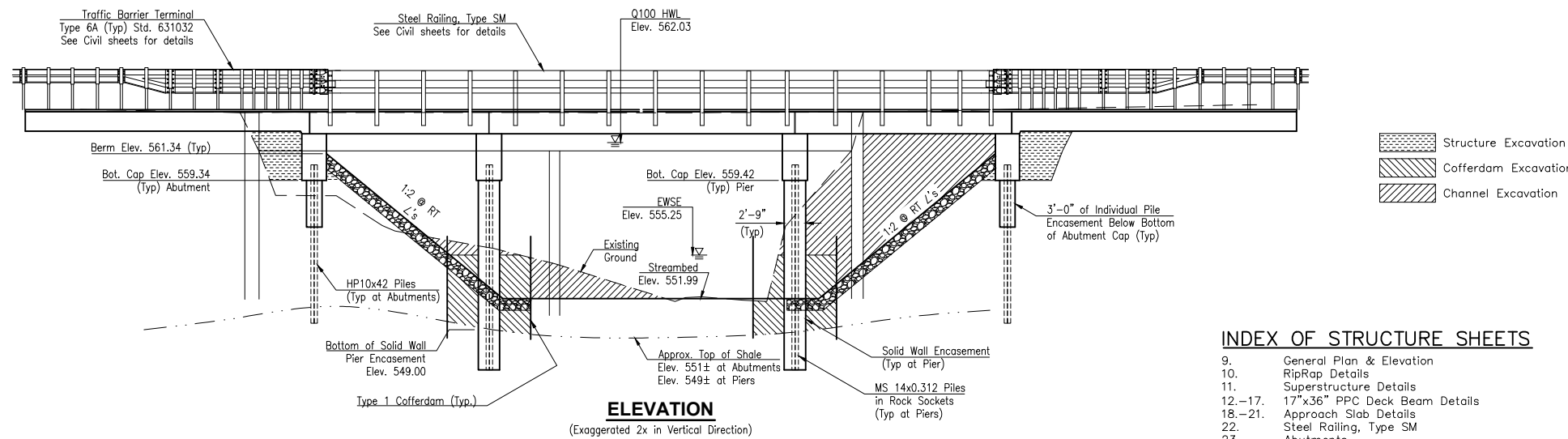
CURRENT AS OF: 04/02/2021	
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FILE NO.: 111360.00 Y-	OF 37

EXISTING STRUCTURE NO. 032-3220

Sta. 77+86 - Two span concrete deck slab bridge on timber pile closed abutments and timber pile pier footing solid wall pier.

Structure closed to traffic during construction.

No Salvage.



ELEVATION
(Exaggerated 2x in Vertical Direction)

- Structure Excavation
- Cofferdam Excavation
- Channel Excavation

INDEX OF STRUCTURE SHEETS

- 9. General Plan & Elevation
- 10. RipRap Details
- 11. Superstructure Details
- 12.-17. 17"x36" PPC Deck Beam Details
- 18.-21. Approach Slab Details
- 22. Steel Railing, Type SM
- 23. Abutments
- 24. Piers
- 25.-26. Pile Details
- 27.-31. Borings
- 32.-37. Existing Plans

GENERAL NOTES

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

The Contractor shall drive test pile to 110% of the nominal required bearing specified in production locations at West Abutment or approved by the Engineer before ordering the remainder of piles.

All bars to be epoxy coated.

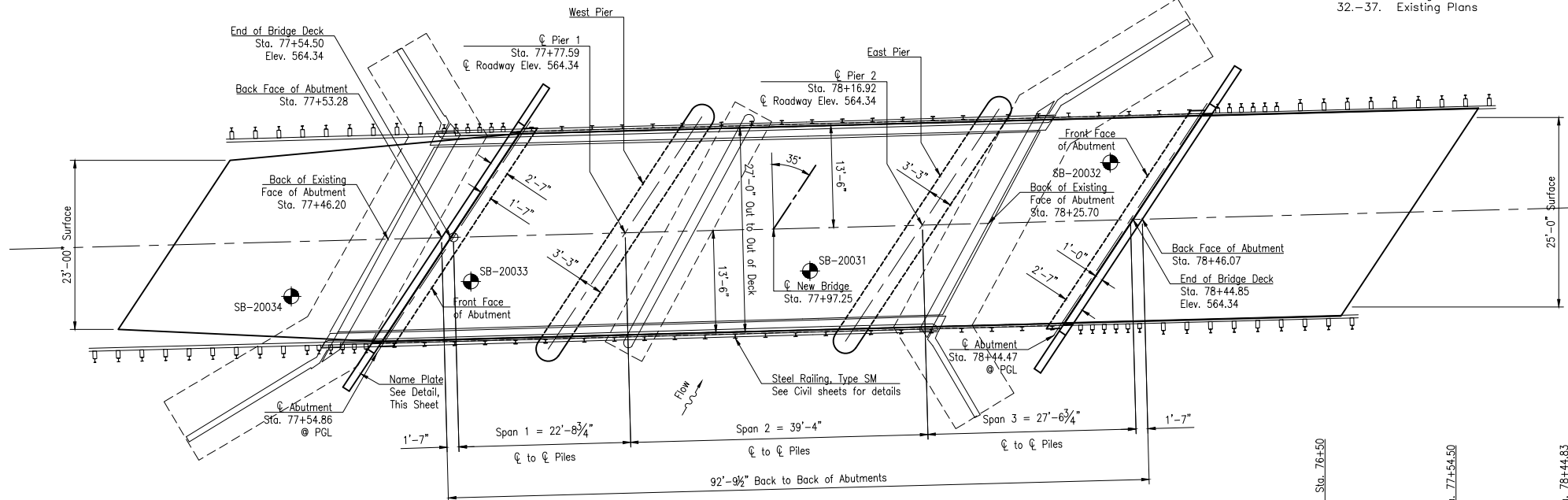
All proposed construction activities shall be in accordance with Statewide Permit 12 of the Illinois DNR Office of Water Resources and Nationwide Permit 3 of the U.S. Army Corps of Engineers.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to abutment construction.

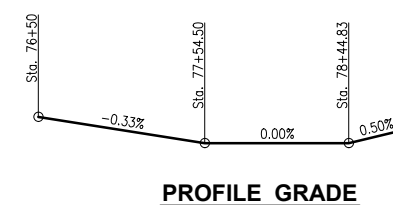
Excavation behind existing walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
STONE RIPRAP CLASS A4	SQ YD		350	350
FILTER FABRIC	SQ YD		250	250
STRUCTURE EXCAVATION	CU YD	240		240
COFFERDAM EXCAVATION	CU YD	230		230
EXISTING CHANNEL PROTECTION	LINEAL FT	2		2
CONCRETE STRUCTURES	CU YD	85		85
CONCRETE ENCASEMENT	CU YD	4		4
CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD		73	73
PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SC FT		2435	2435
REINFORCEMENT BARS EPOXY COATED	POUND	26700	16998	43698
STEEL RAILING TYPE SM	FOOT		176	176
FINISHING MATERIAL (14" X 14" X 0.312")	FOOT	294		294
FURNISHED STEEL PILES HP 10x42	FOOT	149		148.5
DRIVING PILES	FOOT	149		148.5
TEST PILE STEEL HP 10x42	EACH	1		1
PILE SHOES	KG	10		10
NAME PLATES		1		1
WATERPROOFING MEMBRANE SYSTEM	444		444	444
FORM AND CLIMATE CONTROL LINING	770		770	720
GRANULAR BACKFILL FOR STRUCTURES	38	38		38
GEOCOMPOSITE WALL DRAIN	32	32		32
PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	104		104



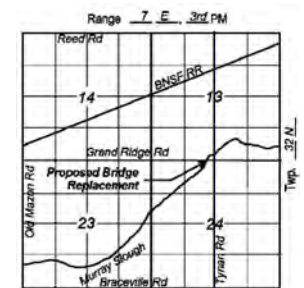
PLAN



PROFILE GRADE

MURRAY SLOUGH
BUILT 20__ BY
GRUNDY COUNTY
SEC 19-00172-00-BR
F.A.S. RTE. 272 STA 77+97.25
STR. NO. 032-3221 LOADING HL93

NAME PLATE
See Std. 515001



LOCATION SKETCH

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_D) = 0.073g
Design Spectral Acceleration at 0.2 sec. ($S_{0.2}$) = 0.122g
Soil Site Class = C

LOADING HL-93

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

DESIGN SPECIFICATIONS

2020 ASHTO LRFD Bridge Design Specifications, 9th Edition, no Interims.

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 (1/2" low lax. strands)
 f_{pb} = 201,960 psi (1/2" low lax. strands)
 f_y = 60,000 psi (Reinforcement)

WATERWAY INFORMATION TABLE

Drainage Area = 26.25 SQ MI		Overtopping Elev.=563.61'/563.61' (Exist/Prop.) @ STA 73+53											
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.			Nat. Head - Ft. Headwater EL.							
			Exist.	Prop.	Total	Exist.	Prop.	Exist.					
	10	1130	386.5	0	386.5	391.4	0	391.4	560.7	0.0	0.02	560.56	560.72
Design	25	1440	420.0	0	420.0	427.7	0	427.7	561.1	0.0	0.19	561.08	561.29
Base	100	1900	463.5	0	463.5	475.7	0	475.7	561.6	0.16	0.43	561.76	562.03
Overtopping													
Max. Calc.	500	2430	486.9	0	486.9	494.0	0	494.0	562.2	0.31	0.65	562.51	562.85

Exist. 10 Year Velocity: 0.97 (ft./sec.)

Prop. 10 Year Velocity: 0.87 (ft./sec.)

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)				Item 113
	W. Abut.	Pier 1	Pier 2	E. Abut.	
Q100	Not Computed	548.16	548.16	Not Computed	8
Q200	Not Computed	548.00	548.00	Not Computed	
Design	559.00	548.16	548.16	559.00	
Check	559.00	548.00	548.00	559.00	

Design and check elevations for abutments taken as bottom of cap. Design and check elevations for pile bent piers taken as Q100 and Q200, respectively. Abutment scour elevations not computed since abutments will be protected with riprap.



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 "ASHTO LRFD Bridge Design Specifications".

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	LEVEL	BY	DATE	DESCRIPTION
CHECKED BY: JKC				
DATE: 02/2021				

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OTTAWA MENDOTA
ILLINOIS

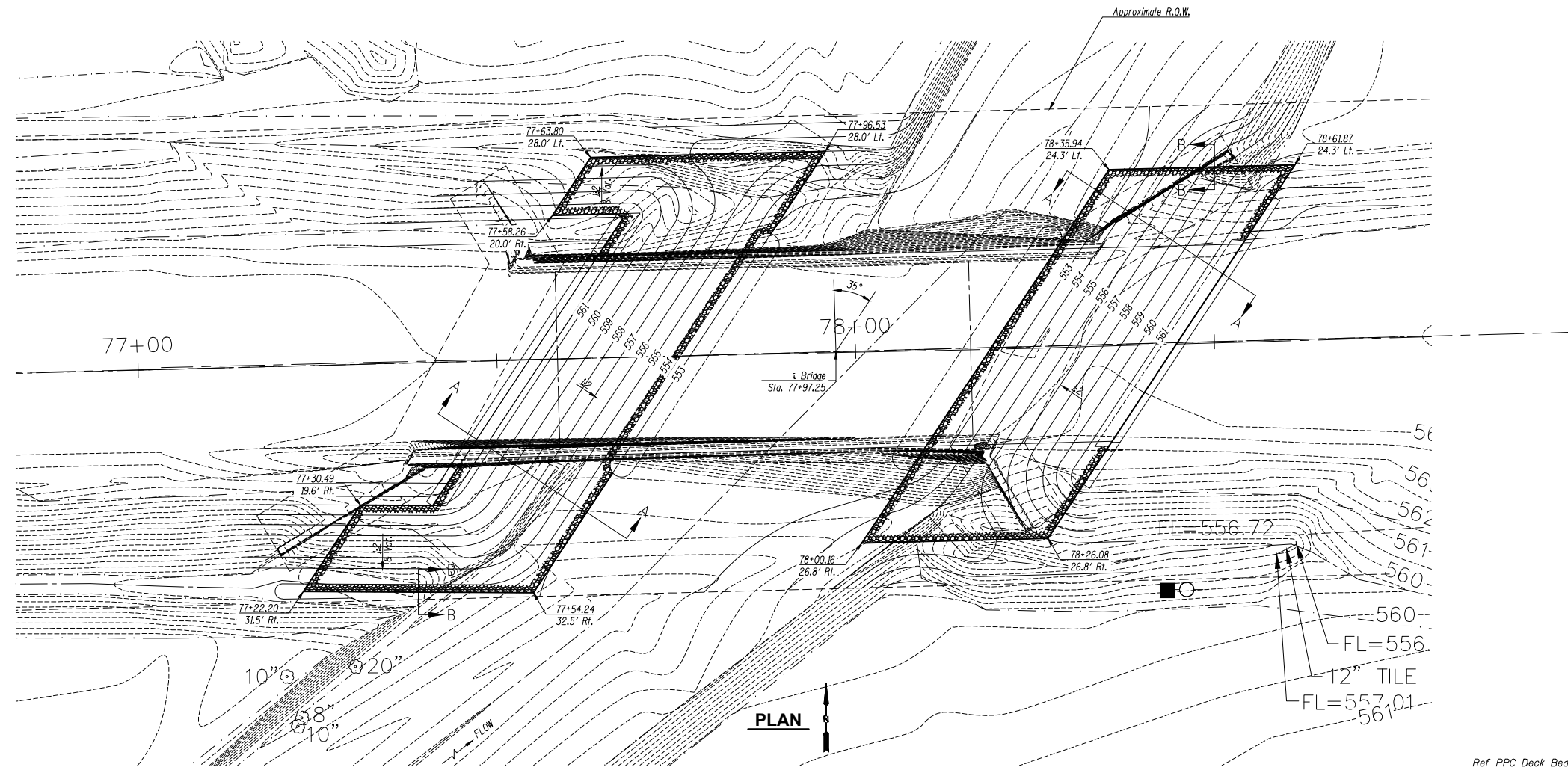
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

GENERAL PLAN AND ELEVATION

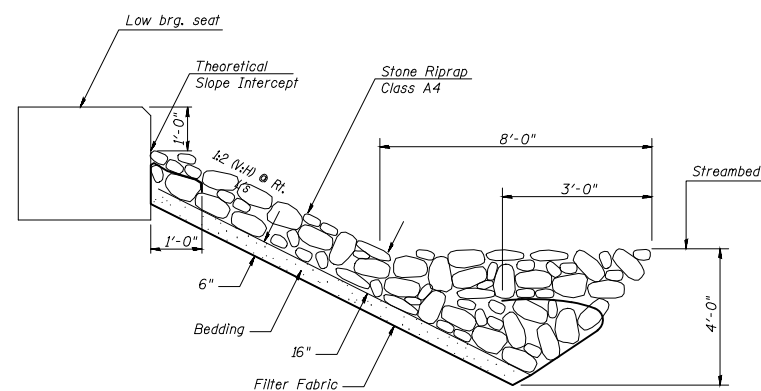
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SCALE: AS NOTED	SHEET 9
FILE NO.: 111360.00 Y-	OF 37

CONTRACT NO. 87741

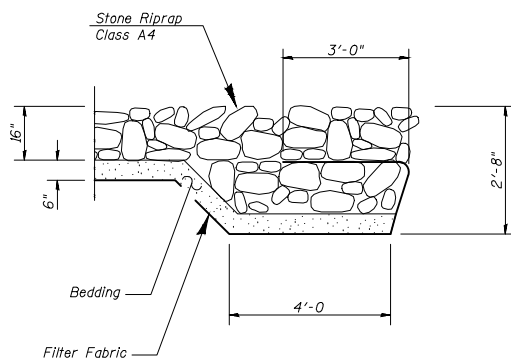
CHAMLIN & ASSOCIATES, INC. © 2021
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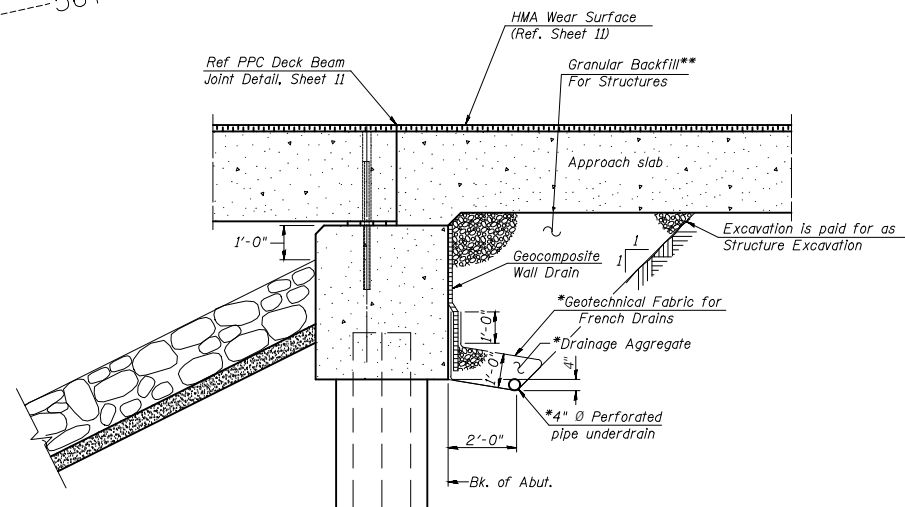
PLAN



SECTION A-A



SECTION B-B



SECTION THRU ABUTMENT
(Horiz. dim. in Rt. L's)

*Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)
 **Granular backfill behind the abutments shall be compacted according to Article 205.06 of the Standard Specifications.

Note:
 All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

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DATE: 02/2021			
			DESCRIPTION

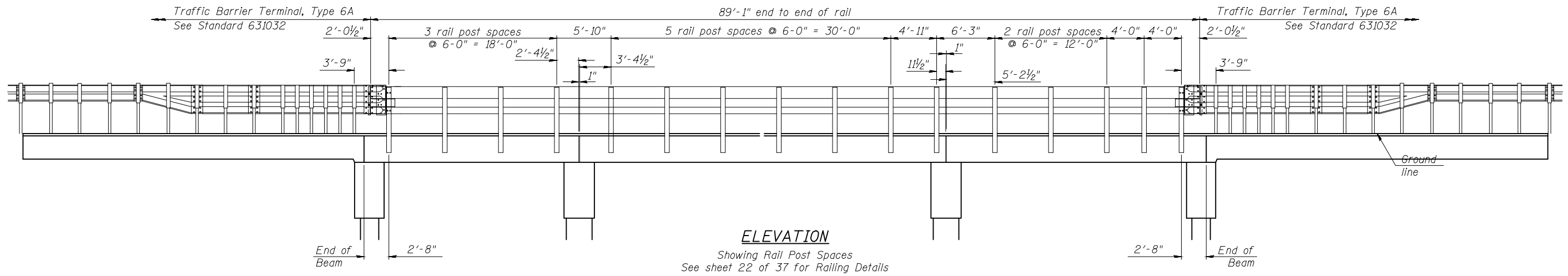


GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

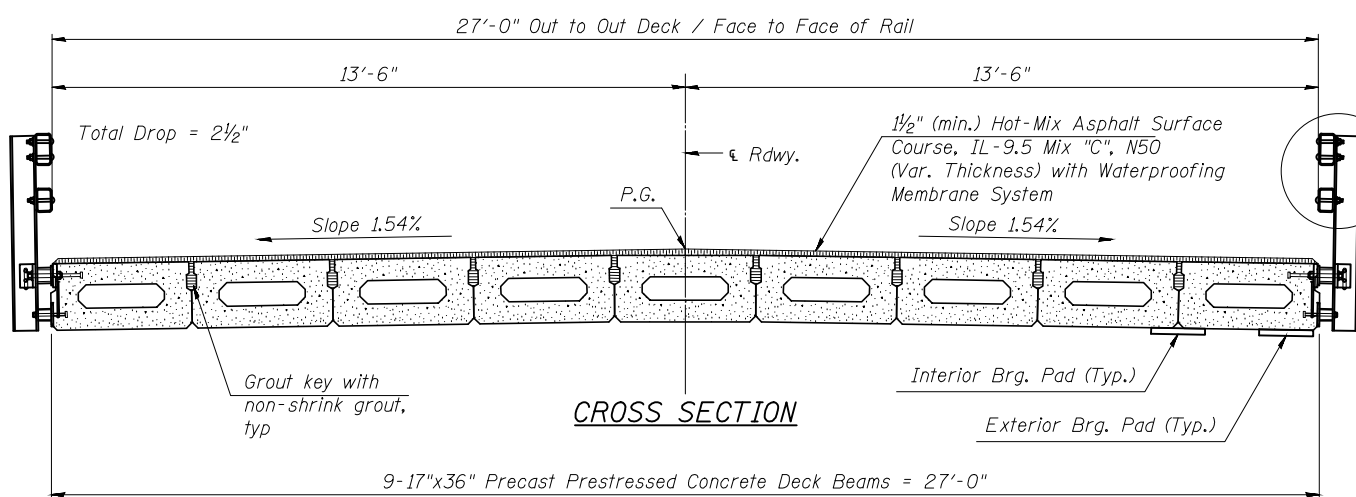
RIPRAP DETAILS

CONTRACT NO. 87741	CURRENT AS OF: 04/02/2021
SCALE: AS NOTED	SHEET 10
FILE NO.: 111360.00 Y-	OF 37

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 Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\011-SUPERSTRUCTURE.dwg
 Last Modified: Friday, April 2, 2021 9:28:26 AM
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 By: Kurt Dickler

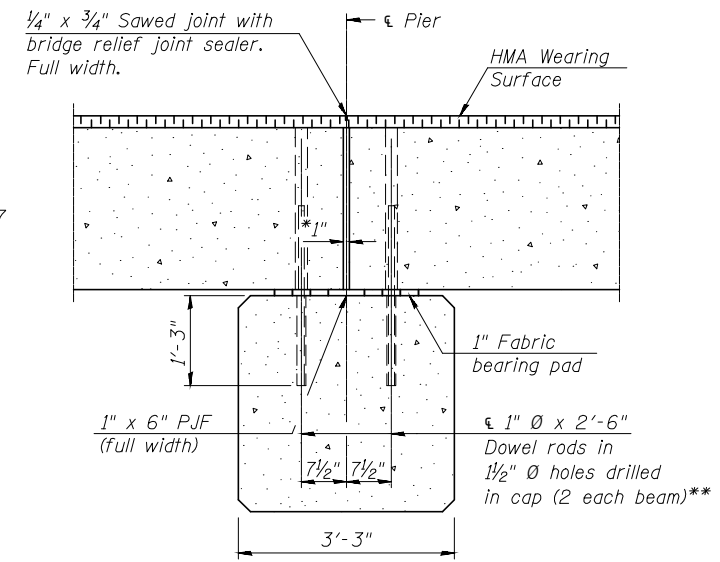


ELEVATION
 Showing Rail Post Spaces
 See sheet 22 of 37 for Railing Details



CROSS SECTION

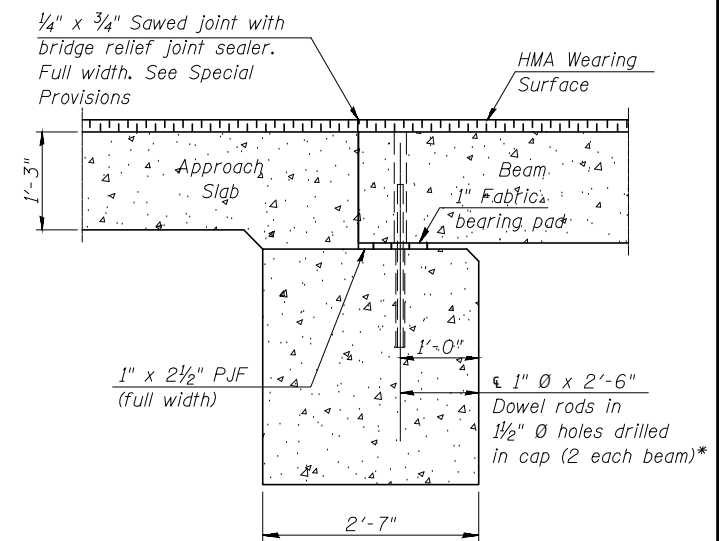
See sheet 22 of 37 for complete rail details.



SECTION @ PIERS
 (Dimensions are at Rt. L's)

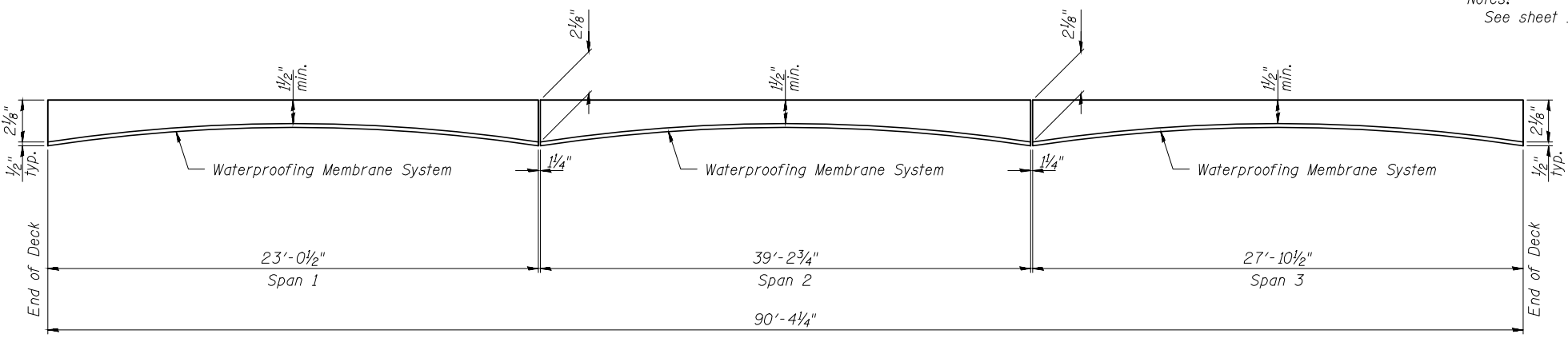
*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.
 **Rods to be grouted and allowed to cure (Min. 24 hrs) prior to grouting shear keys.

Notes:
 See sheet 13 of 37 for fabric bearing pad details.



SECTION @ ABUTMENTS
 (Dimensions are at Rt. L's)

*Rods to be grouted and allowed to cure (Min. 24 hrs) prior to grouting shear keys.



ANTICIPATED HMA WEARING SURFACE PROFILE
 (For information only - beam camber may vary in field)

CONTRACT NO. 87741

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DATE: 02/2021					

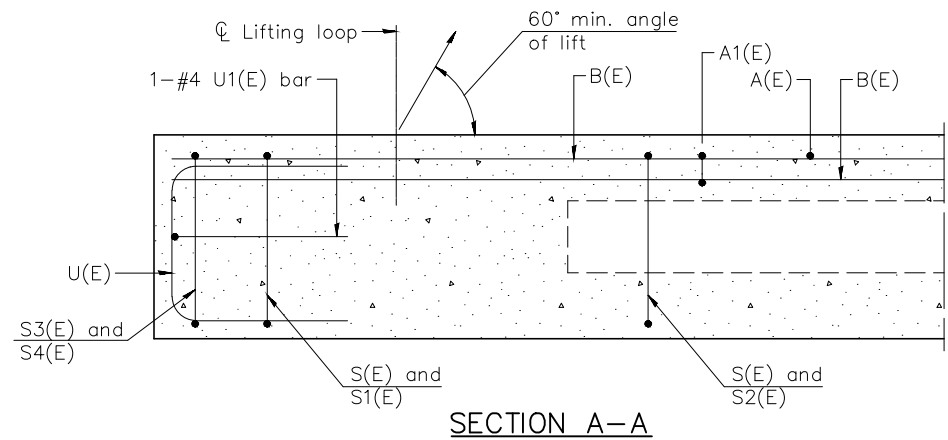

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 ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

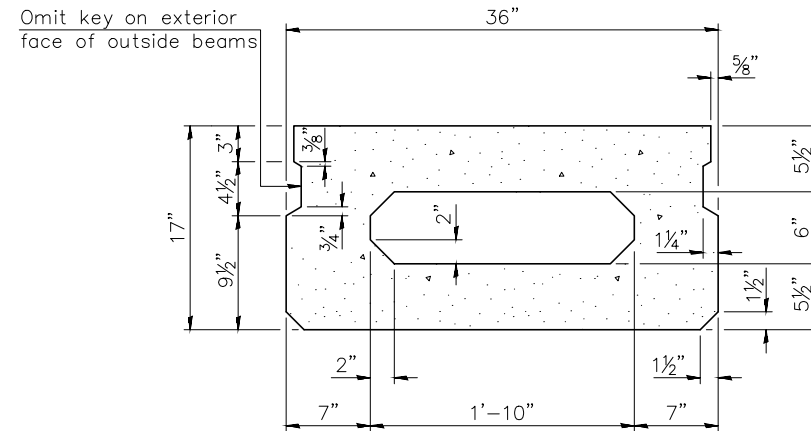
SUPERSTRUCTURE

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 11
FILE NO.: 111360.00 Y-	OF 37

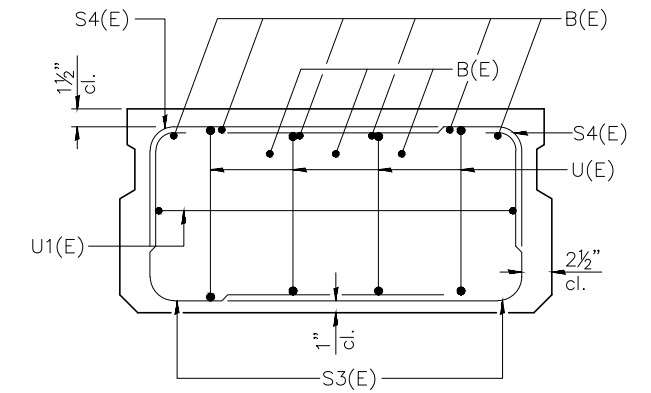
CHAMLIN & ASSOCIATES, INC. © 2021
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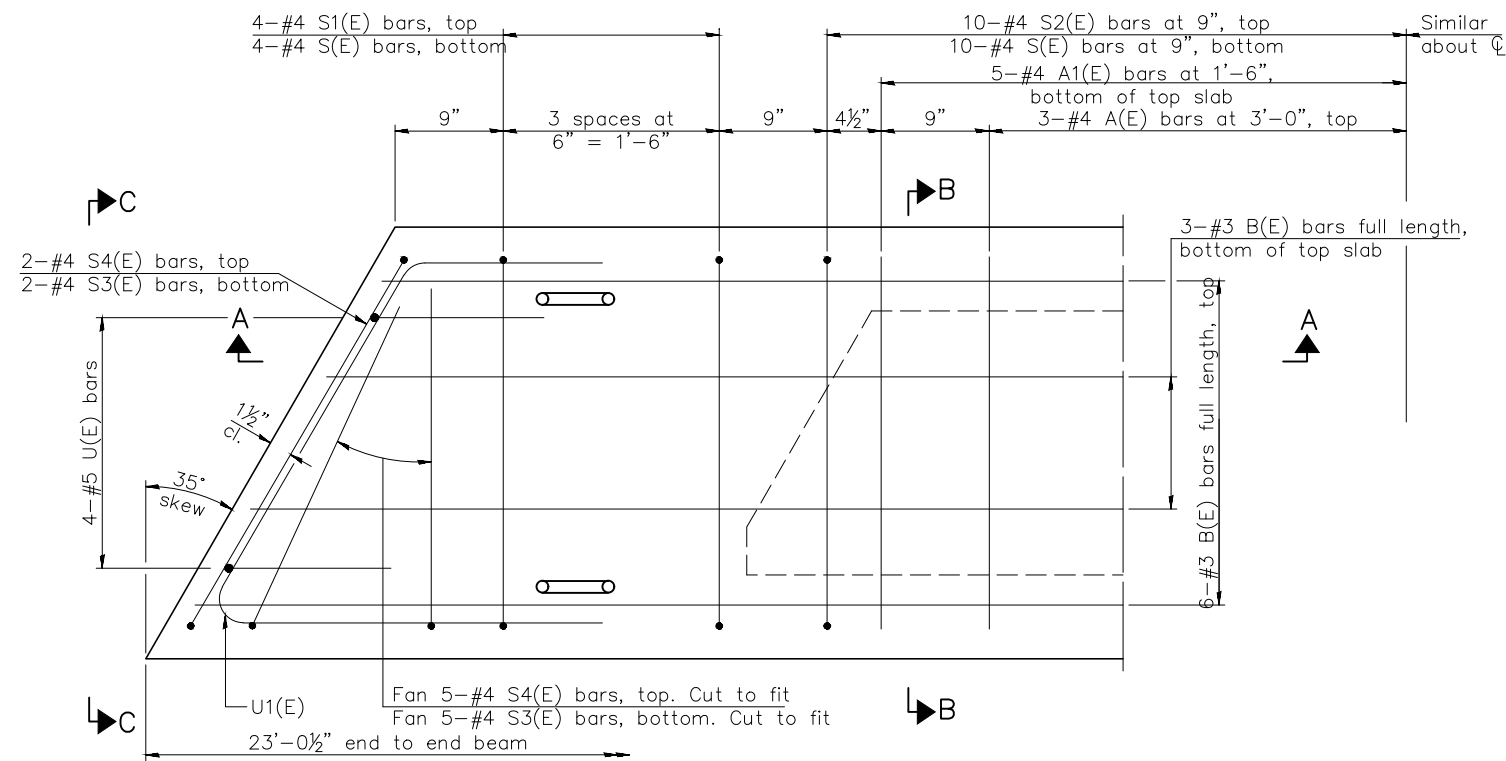
SECTION A-A



SECTION B-B
(Showing dimensions)

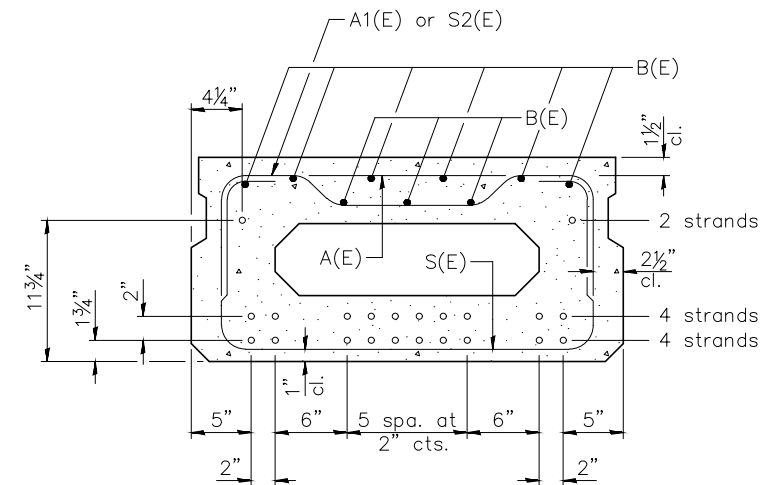


VIEW C-C



PLAN VIEW

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.



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.

MINIMUM BAR LAP

#3 bar = 1'-6"
 #4 bar = 2'-0"


BAR LIST
 ONE BEAM ONLY
 (For information only)

Bar	No.	Size	Length	Shape
A(E)	3	#4	2'-7"	—
A1(E)	5	#4	2'-10"	~
B(E)	9	#3	22'-9 1/2"	—
S(E)	10	#4	5'-9"	⌋
S1(E)	8	#4	4'-3"	⌋
S2(E)	10	#4	4'-6"	⌋
S3(E)	12	#4	4'-7"	⌋
S4(E)	12	#4	3'-10"	⌋
U(E)	8	#5	3'-8"	⌋
U1(E)	2	#4	7'-3 1/2"	⌋

Note:
 See sheet 13 of 37 for additional details and Bill of Material.

CONTRACT NO. 87741

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DATE: 02/2021				

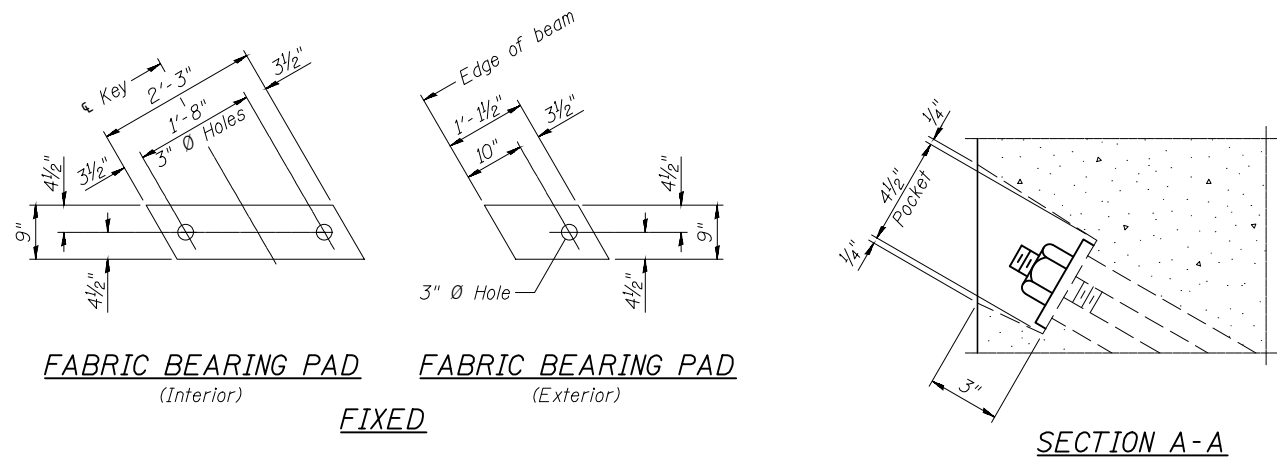

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GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

17" x 36" PPC DECK BEAM
SPAN 1

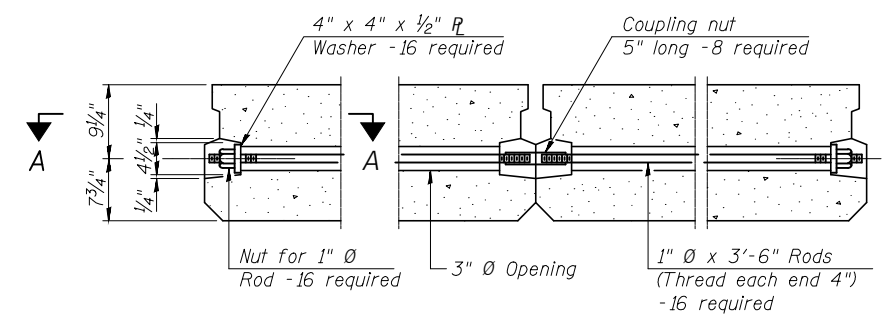
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SCALE: AS NOTED	SHEET 12
FILE NO.: 111360.00 Y-	OF 37

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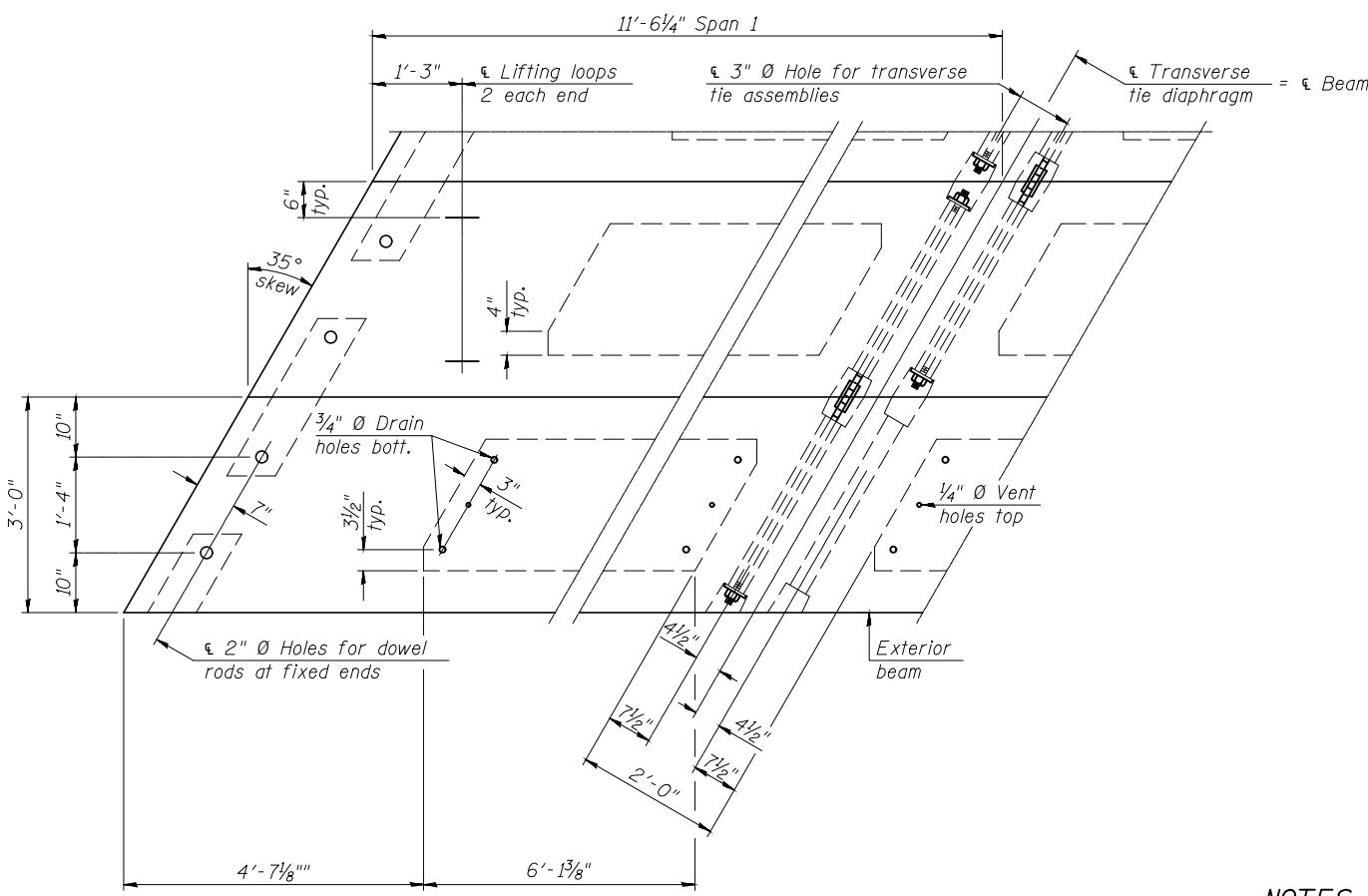
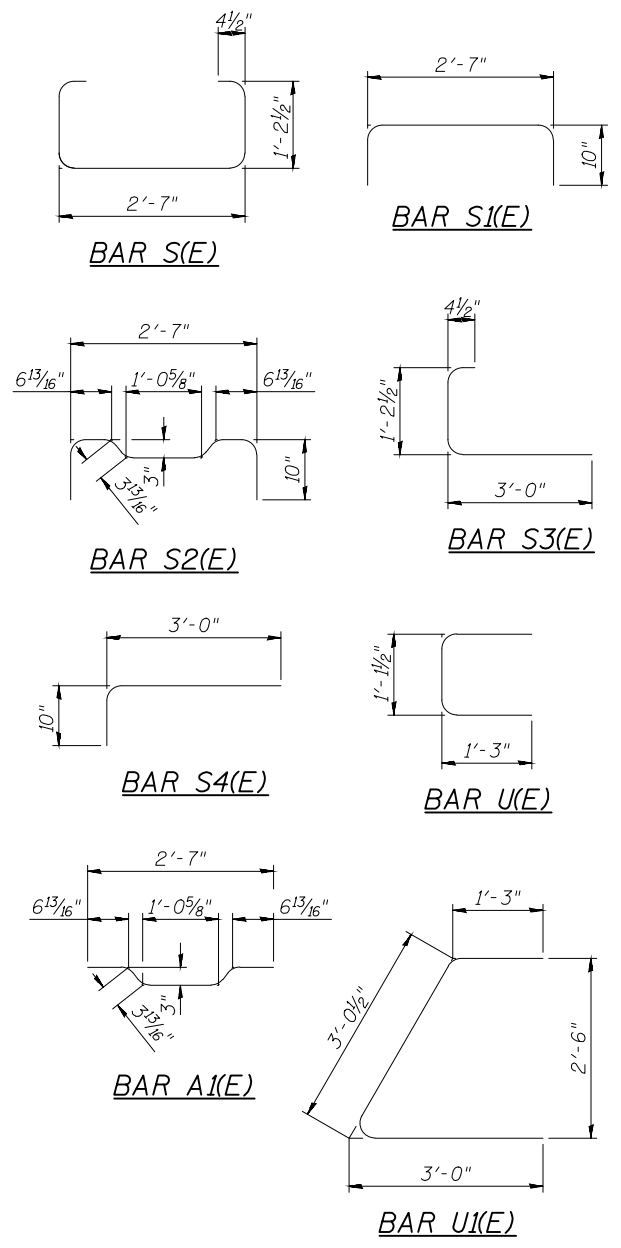


FABRIC BEARING PAD
(Interior) **FIXED**
FABRIC BEARING PAD
(Exterior)

Notes:
 All bearing pads shall be 1" thick.



TYPICAL TRANSVERSE TIE ASSEMBLY

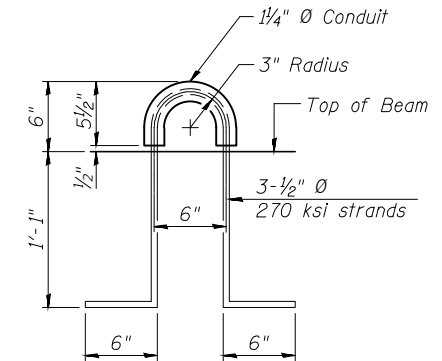


PLAN VIEW

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

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" Ø 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. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 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.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	622.3
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DATE: 02/2021				

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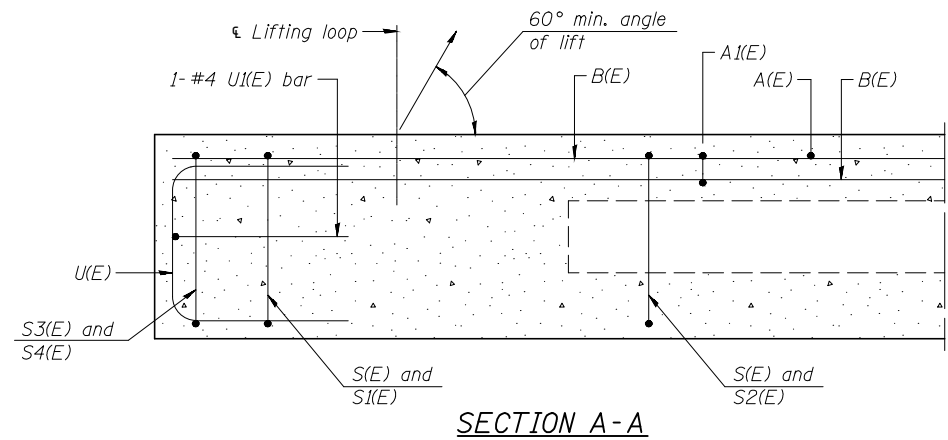
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

17" x 36" PPC DECK BEAM DETAILS
SPAN 1

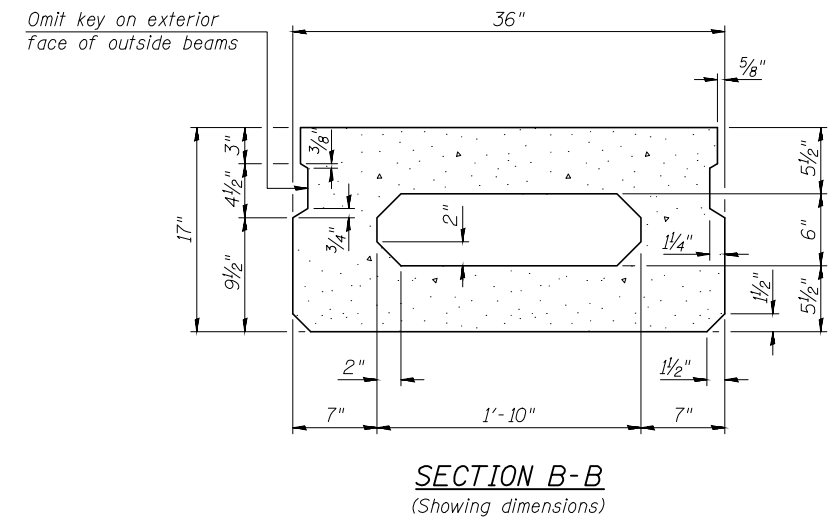
CONTRACT NO. 87741

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 13
FILE NO.: 111360.00 Y-	OF 37

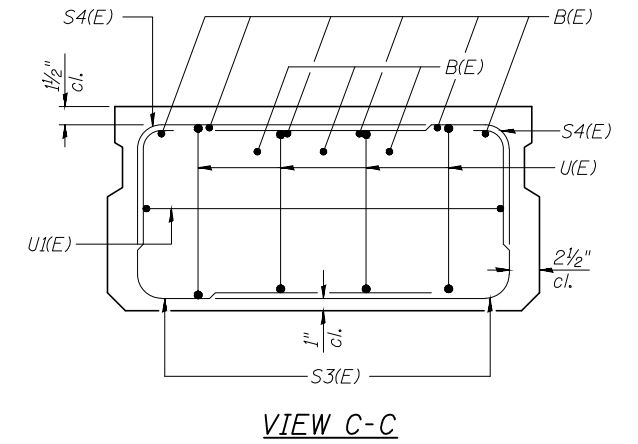
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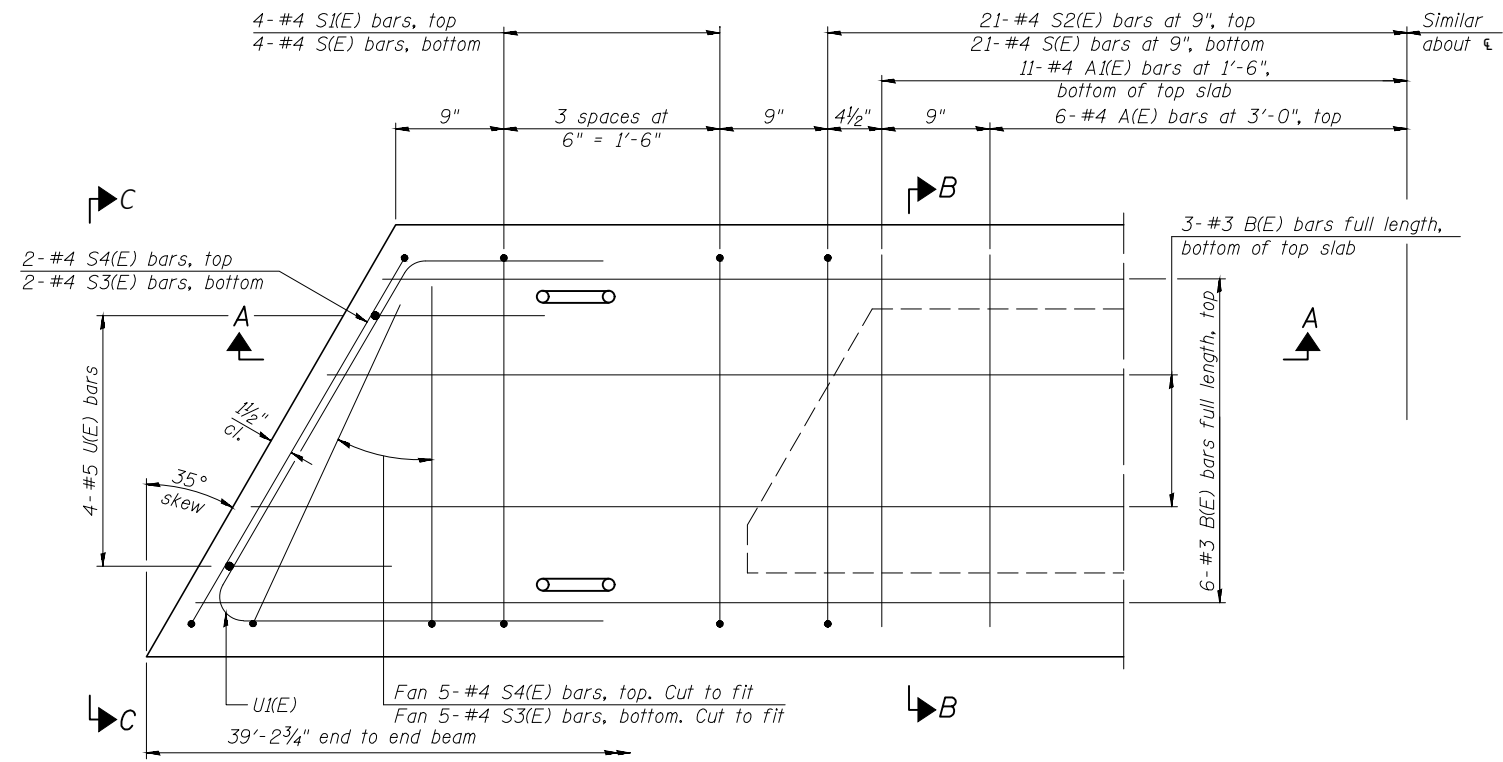
SECTION A-A



SECTION B-B
(Showing dimensions)

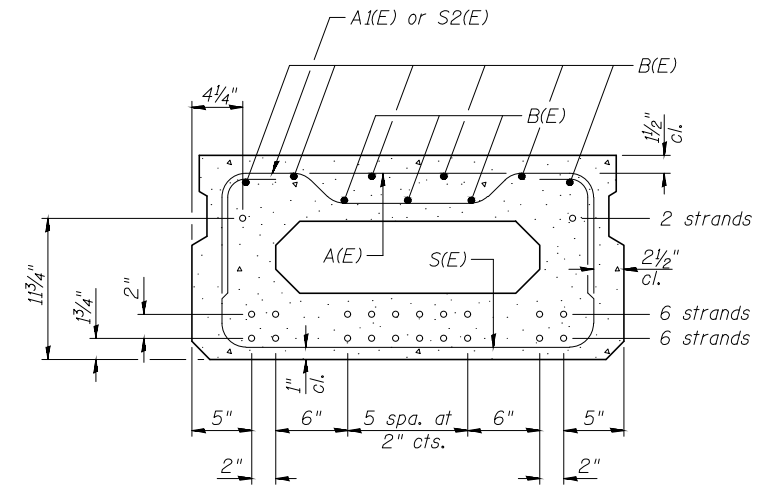


VIEW C-C



PLAN VIEW

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.



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)	6	#4	2'-7"	—
A1(E)	11	#4	2'-10"	~
B(E)	9	#3	39'-0"	—
S(E)	21	#4	5'-9"	⌋
S1(E)	8	#4	4'-3"	⌋
S2(E)	21	#4	4'-6"	⌋
S3(E)	12	#4	4'-7"	⌋
S4(E)	12	#4	3'-10"	⌋
U(E)	8	#5	3'-8"	⌋
U1(E)	2	#4	7'-3 1/2"	⌋

Note:
 See sheet 15 of 37 for additional details and Bill of Material.

MINIMUM BAR LAP
 #3 bar = 1'-6"
 #4 bar = 2'-0"

CONTRACT NO. 87741

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DATE: 02/2021				

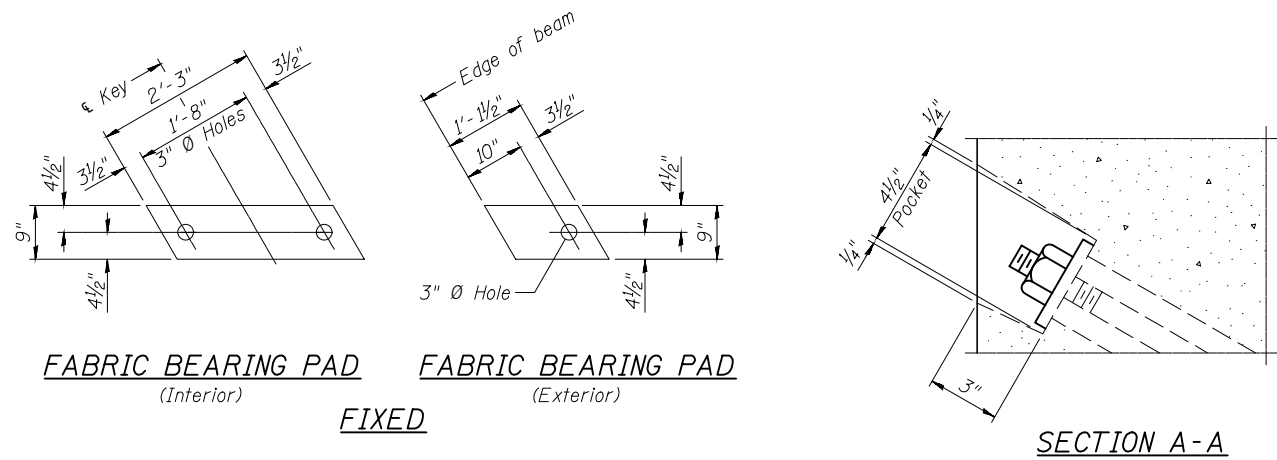
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GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

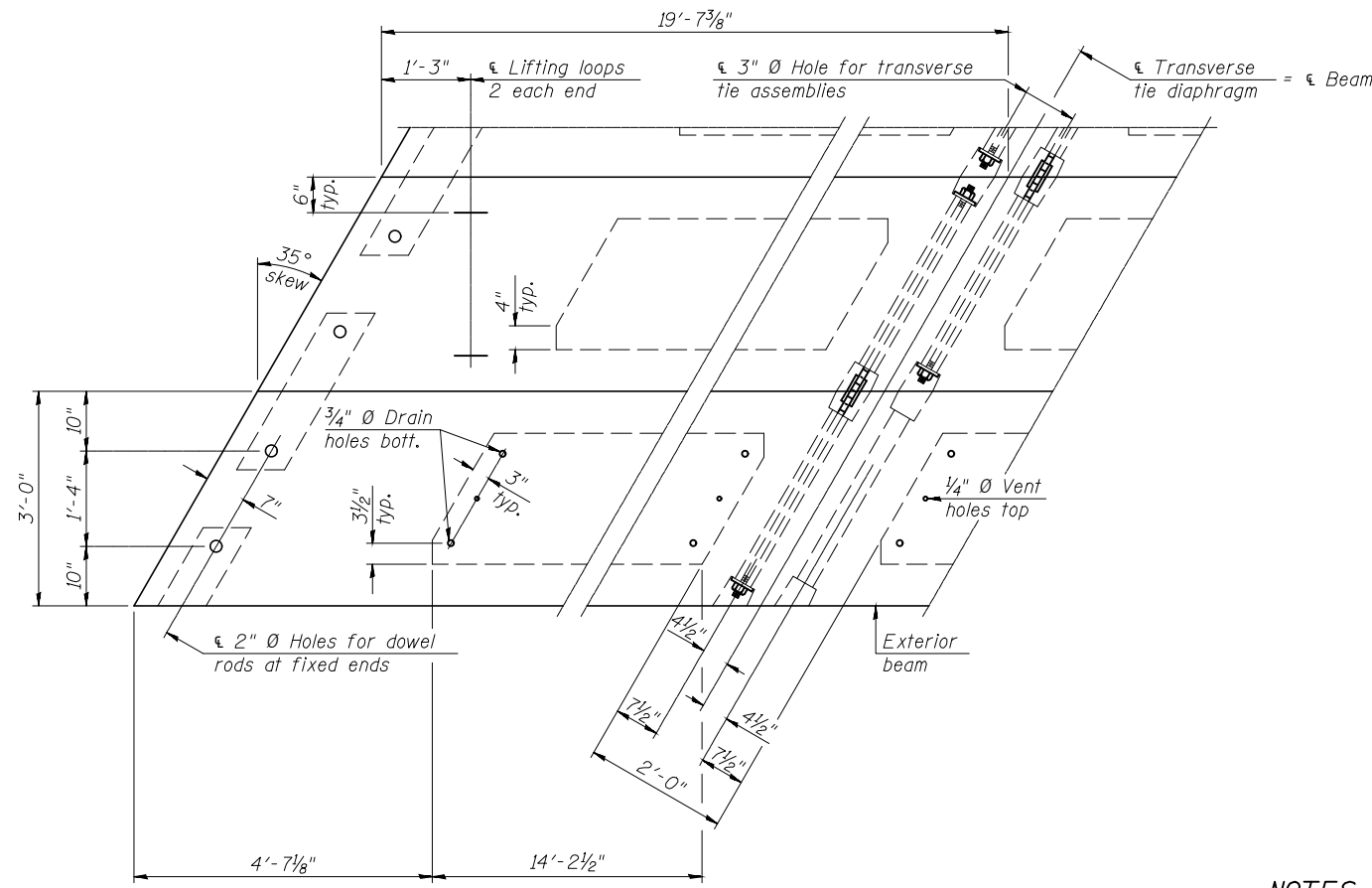
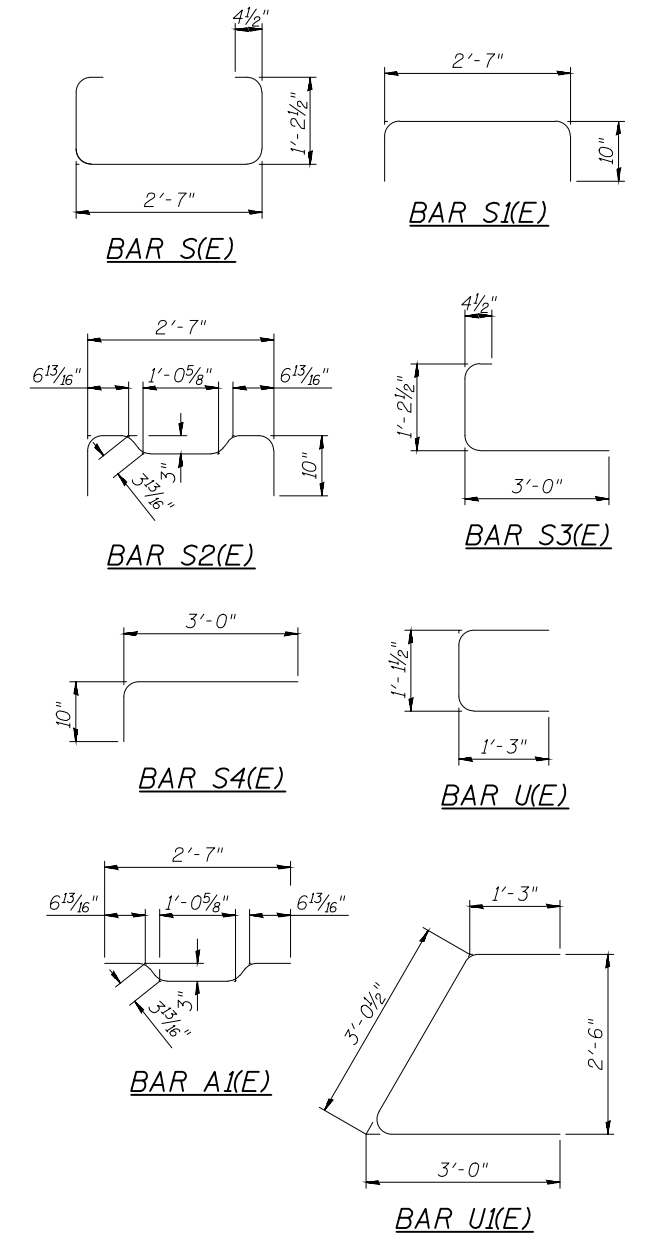
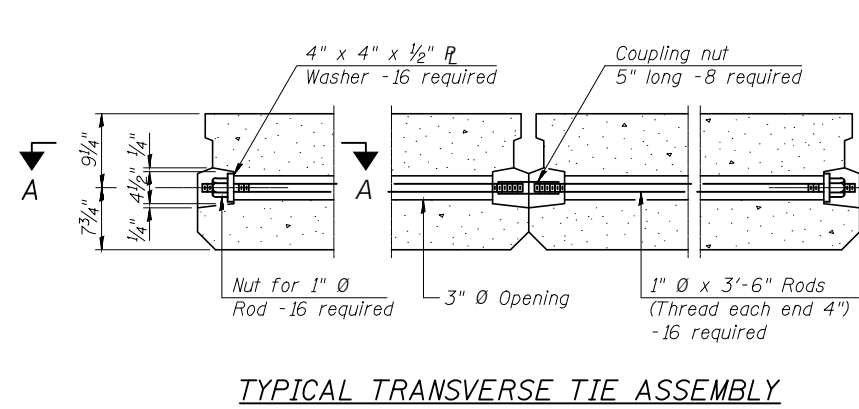
17" x 36" PPC DECK BEAM
SPAN 2

CURRENT AS OF: 04/02/2021	
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FILE NO.: 111360.00 Y-	OF 37

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 by Kurt Decker



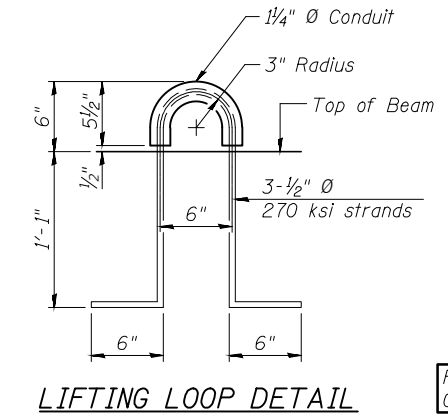
Notes:
 All bearing pads shall be 1" thick.



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

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" diameter 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. Two 1/8" 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)(10) and 1021.07 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. (17" depth)	Sq. Ft.	1059.4
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DATE: 02/2021				

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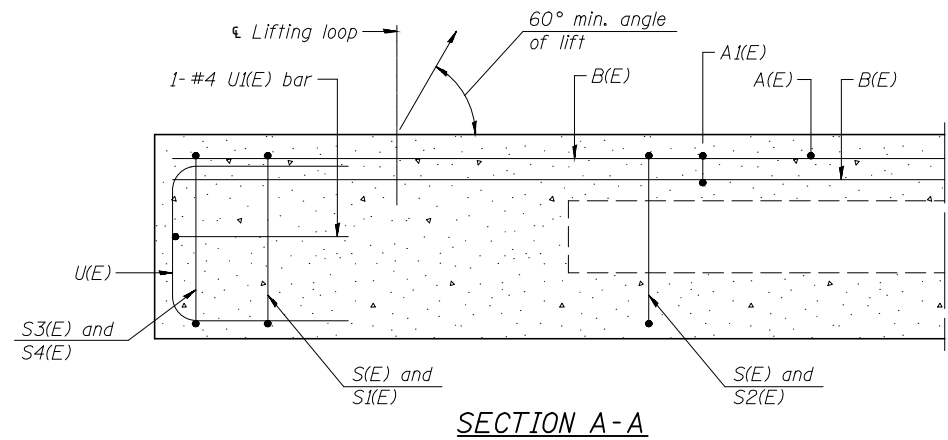
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

17" x 36" PPC DECK BEAM DETAILS
SPAN 2

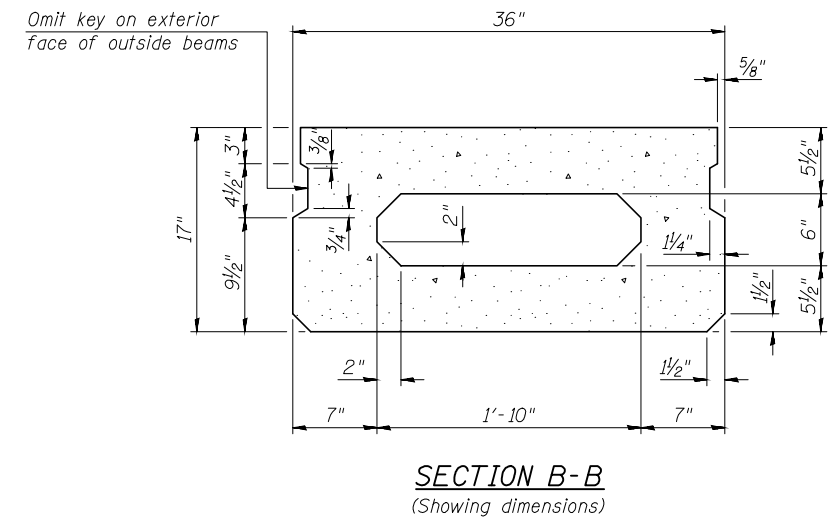
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FILE NO.: 111360.00 Y-	OF 37

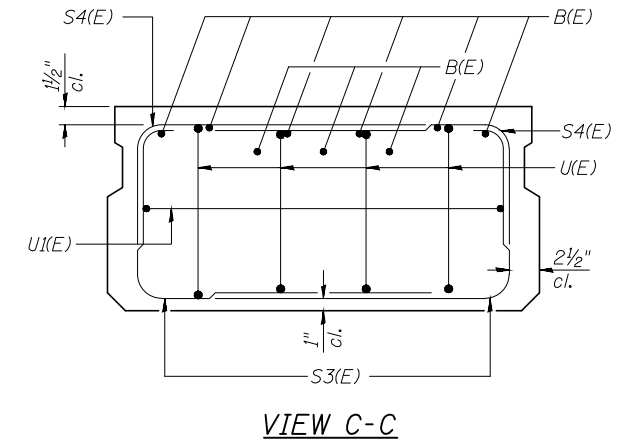
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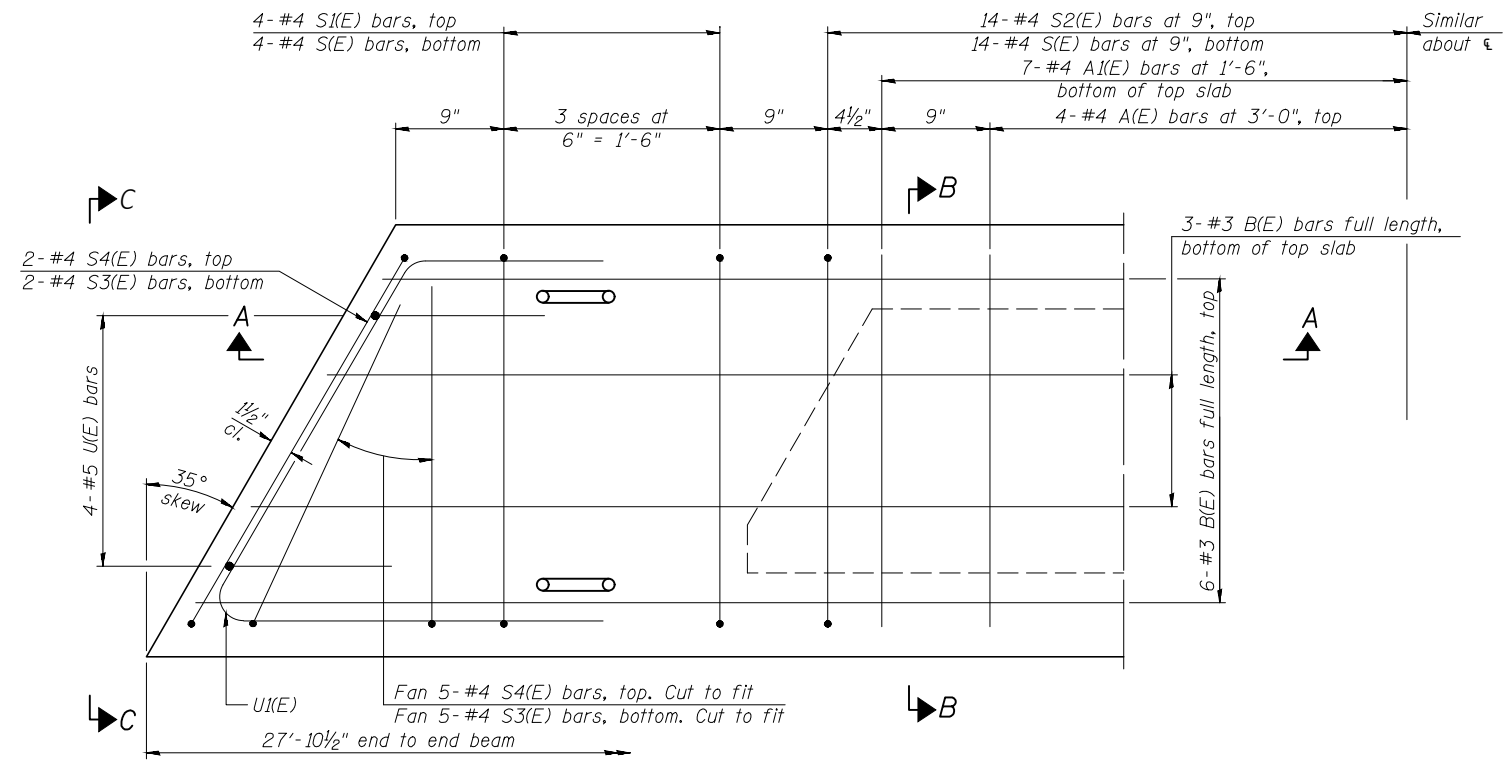
SECTION A-A



SECTION B-B
(Showing dimensions)

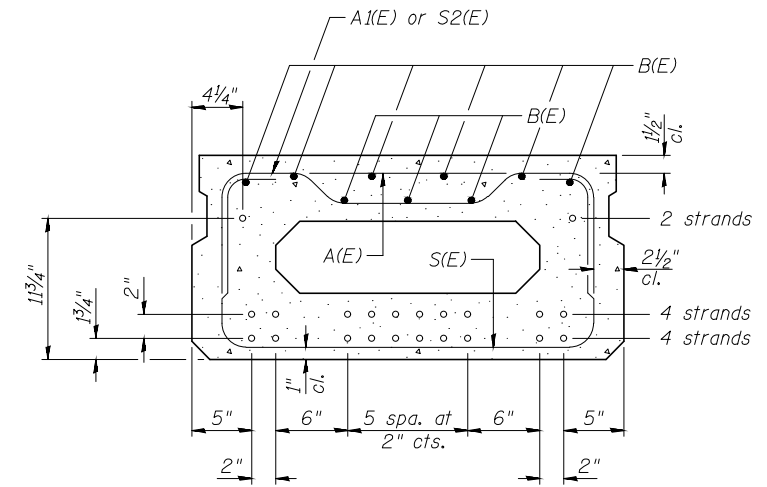


VIEW C-C



PLAN VIEW

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.



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)	4	#4	2'-7"	—
A1(E)	7	#4	2'-10"	—
B(E)	9	#3	27'-7 1/2"	—
S(E)	14	#4	5'-9"	⌋
S1(E)	8	#4	4'-3"	⌋
S2(E)	14	#4	4'-6"	⌋
S3(E)	12	#4	4'-7"	⌋
S4(E)	12	#4	3'-10"	⌋
U(E)	8	#5	3'-8"	⌋
U1(E)	2	#4	7'-3 1/2"	⌋

Note:
 See sheet 17 of 37 for additional details and Bill of Material.

MINIMUM BAR LAP
 #3 bar = 1'-6"
 #4 bar = 2'-0"

CONTRACT NO. 87741

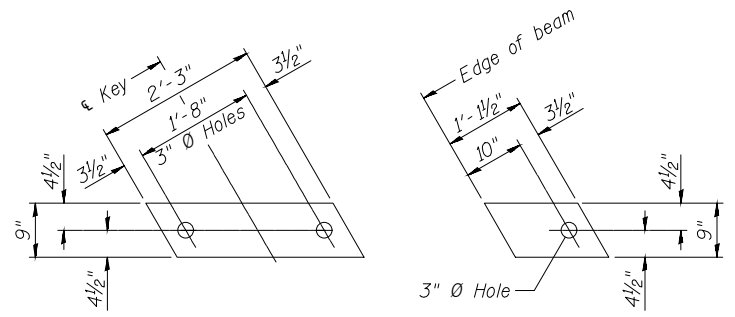
REVISIONS	LEVEL	BY	DATE	DESCRIPTION

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 OTTAWA MENDOTA
 ILLINOIS

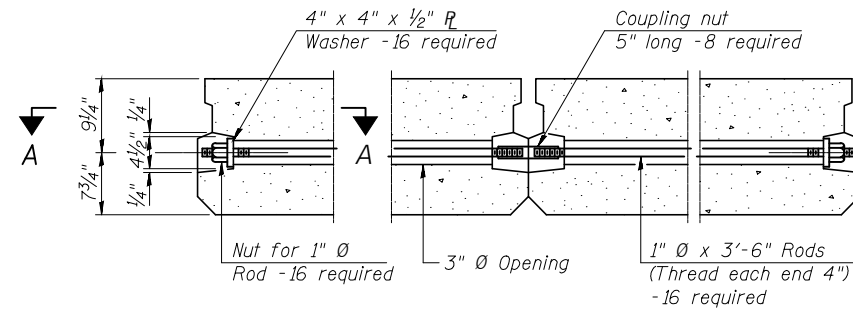
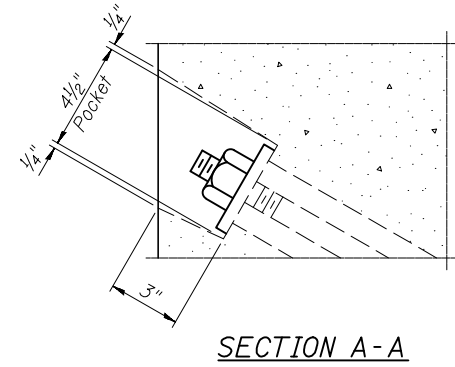
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

17" x 36" PPC DECK BEAM
SPANS 3

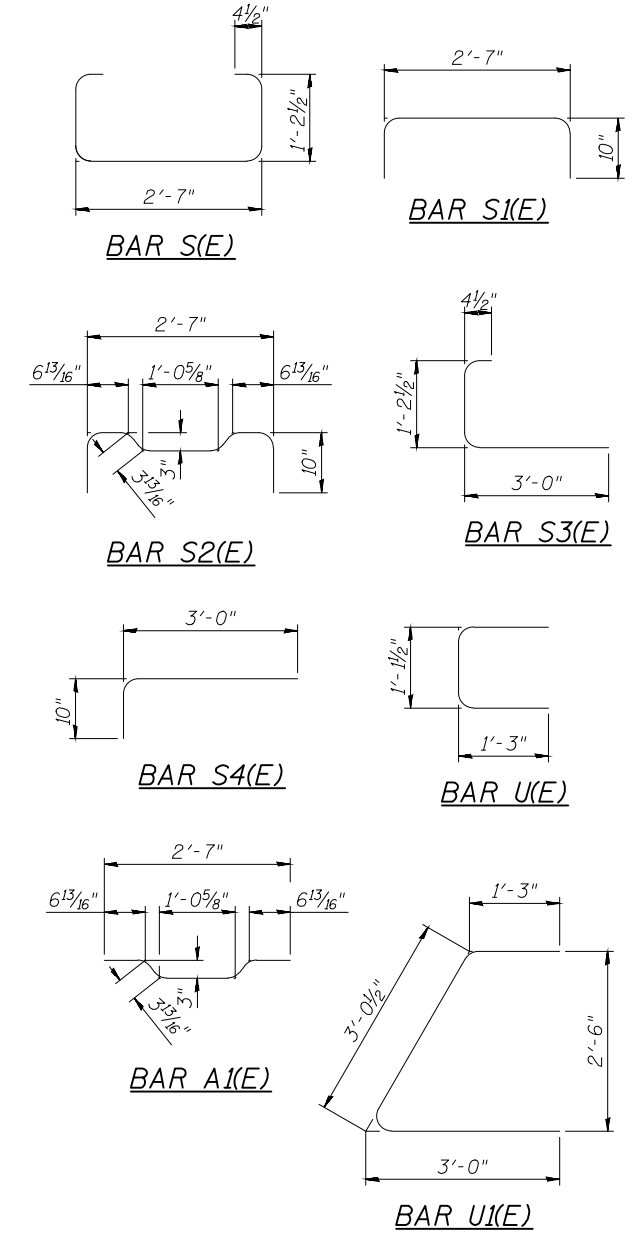
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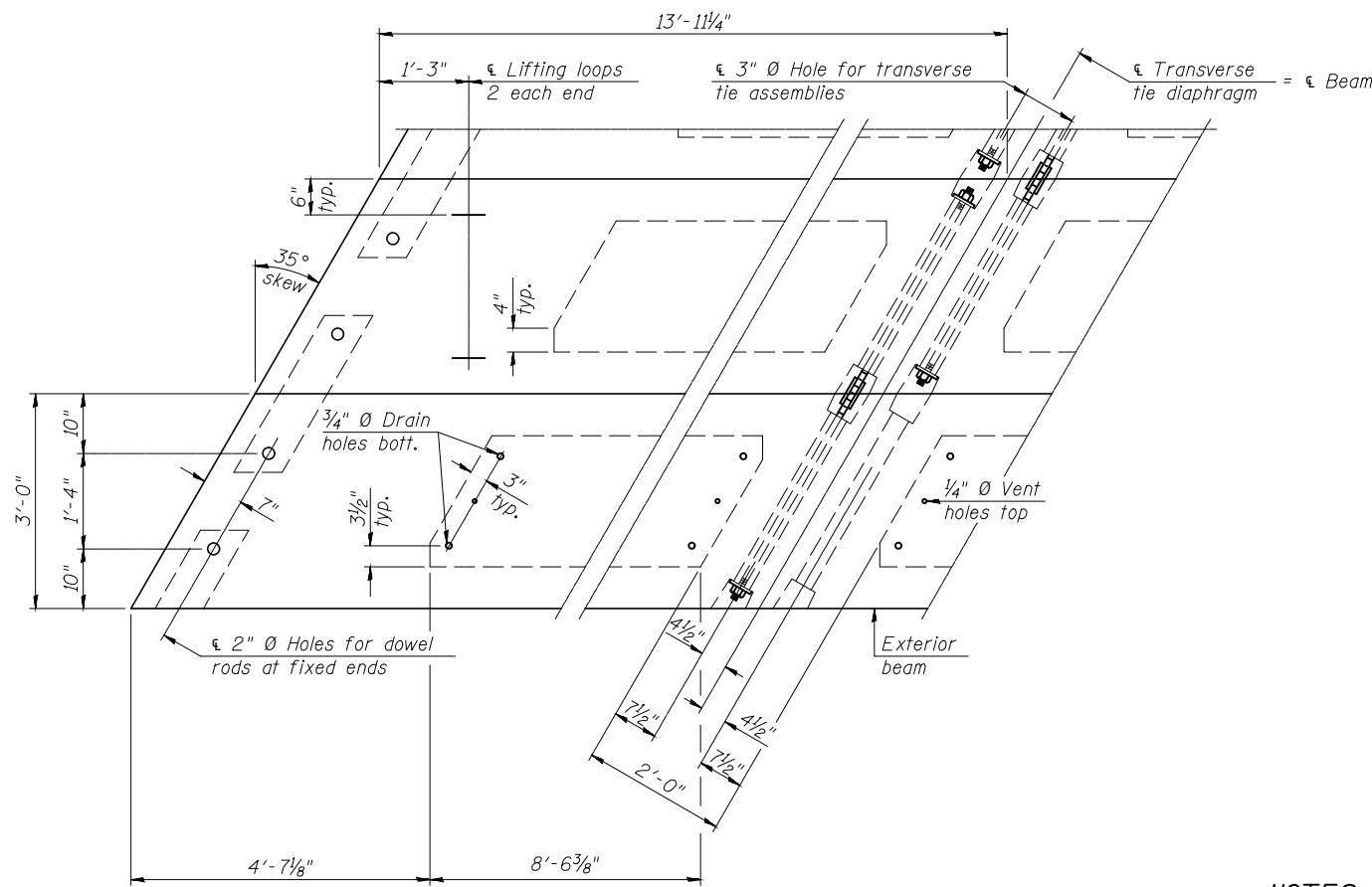
FABRIC BEARING PAD
(Interior) **FIXED**
FABRIC BEARING PAD
(Exterior)



TYPICAL TRANSVERSE TIE ASSEMBLY



Notes:
All bearing pads shall be 1" thick.

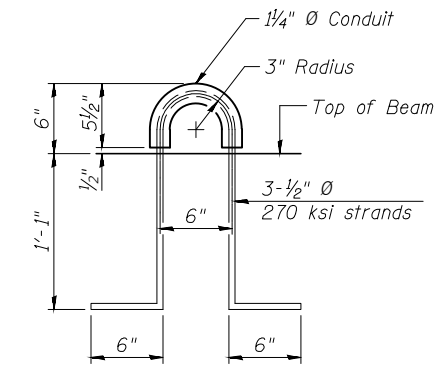


PLAN VIEW

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

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" Ø 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. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 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.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	752.8
---	---------	-------

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DATE: 02/2021				

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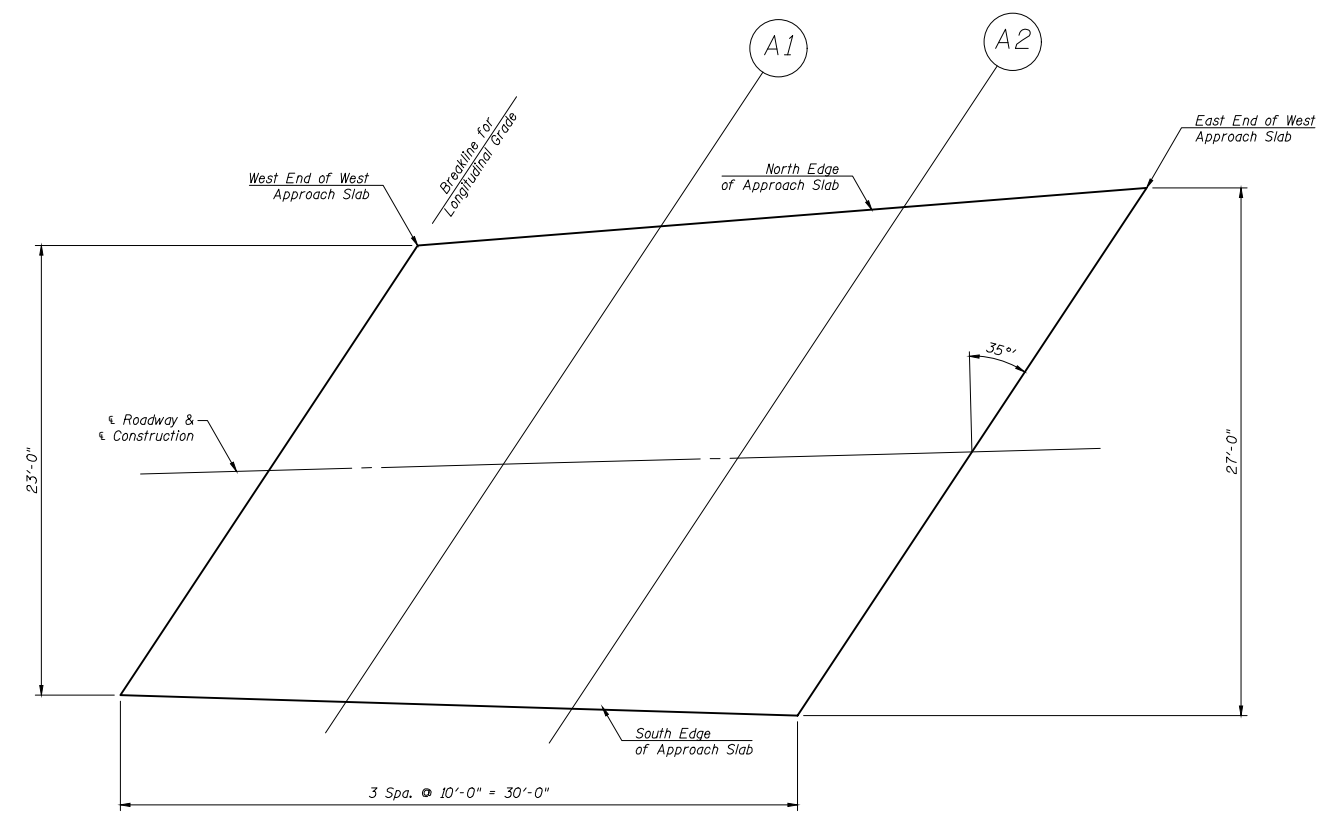
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

17" x 36" PPC DECK BEAM DETAILS
SPAN 3

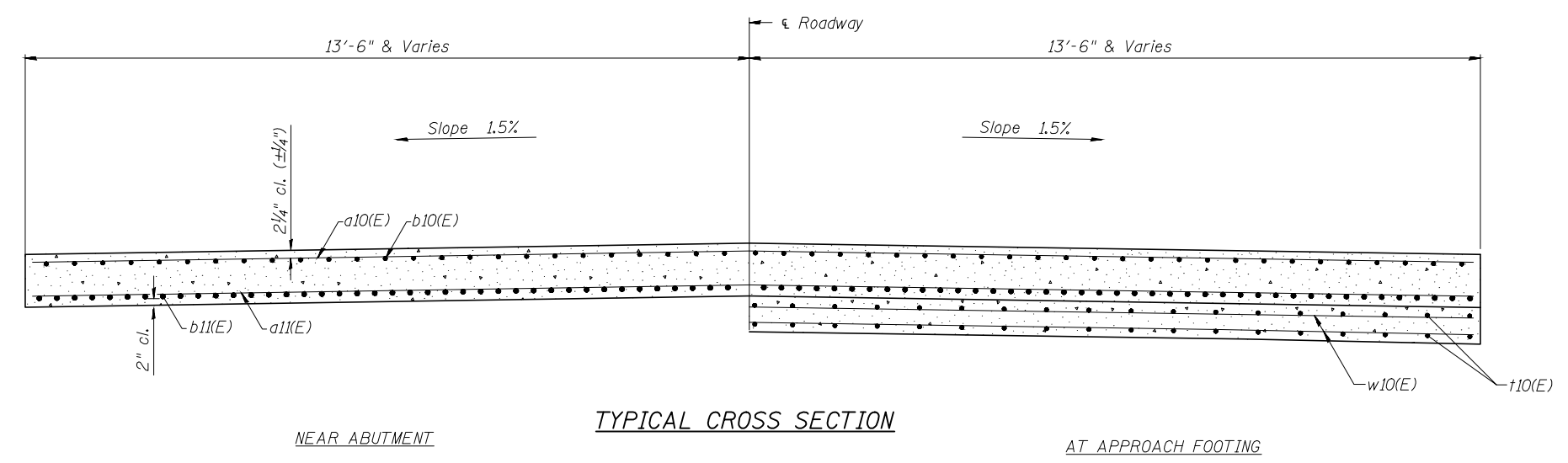
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FILE NO.: 111360.00 Y-	OF 37

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PLAN



NORTH EDGE OF APPROACH SLAB

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of W. Approach Slab	77+25.93	-11.50	564.08	564.26
A1	77+38.60	-12.17	564.04	564.22
A2	77+51.28	-12.83	564.00	564.18
E. End of W. Approach Slab	77+63.95	-13.50	563.96	564.14

ROADWAY

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of W. Approach Slab	77+17.88	0.00	564.28	564.46
A1	77+30.08	0.00	564.24	564.42
A2	77+42.29	0.00	564.20	564.38
E. End of W. Approach Slab	77+54.50	0.00	564.16	564.34

SOUTH EDGE OF APPROACH SLAB

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of W. Approach Slab	77+09.82	11.50	564.14	564.32
A1	77+21.57	12.17	564.08	564.26
A2	77+33.31	12.83	564.02	564.20
E. End of W. Approach Slab	77+45.05	13.50	563.96	564.14

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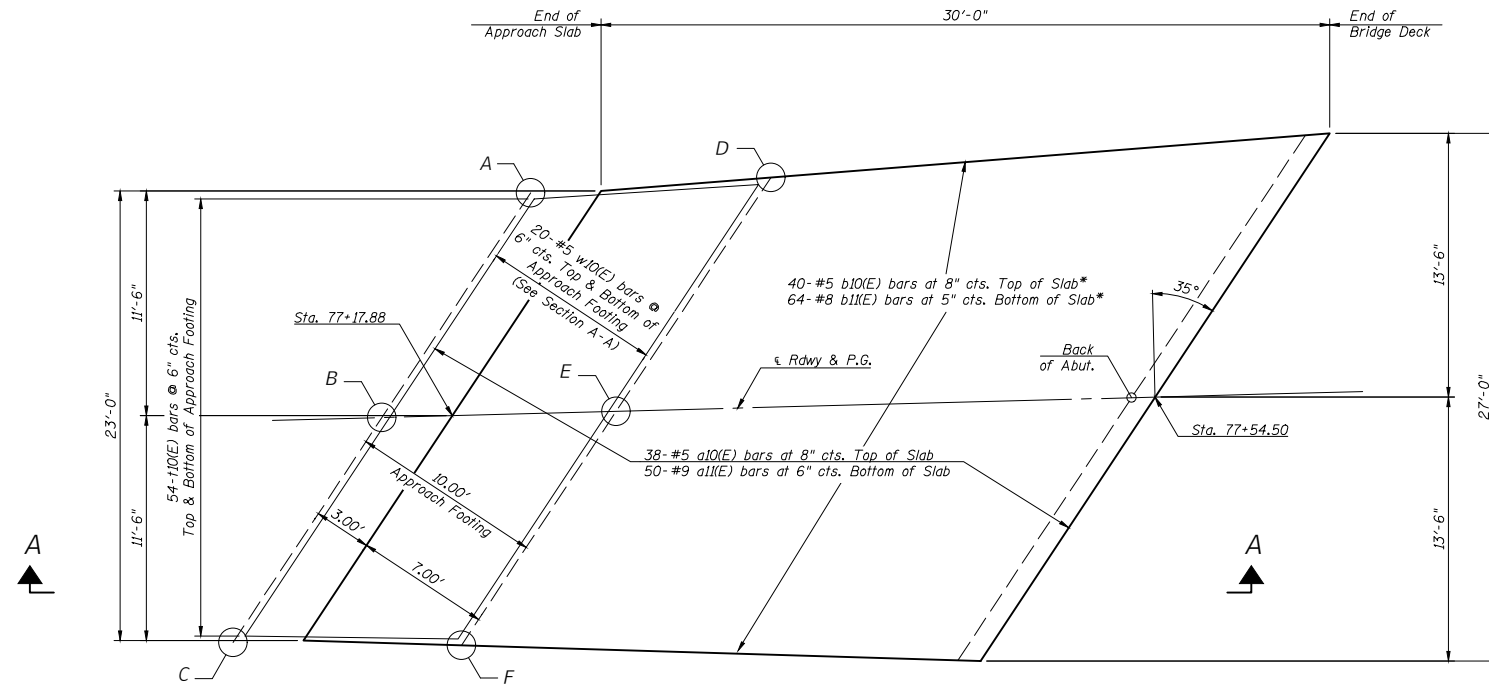
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TOP OF SLAB ELEVATIONS
WEST APPROACH SLAB

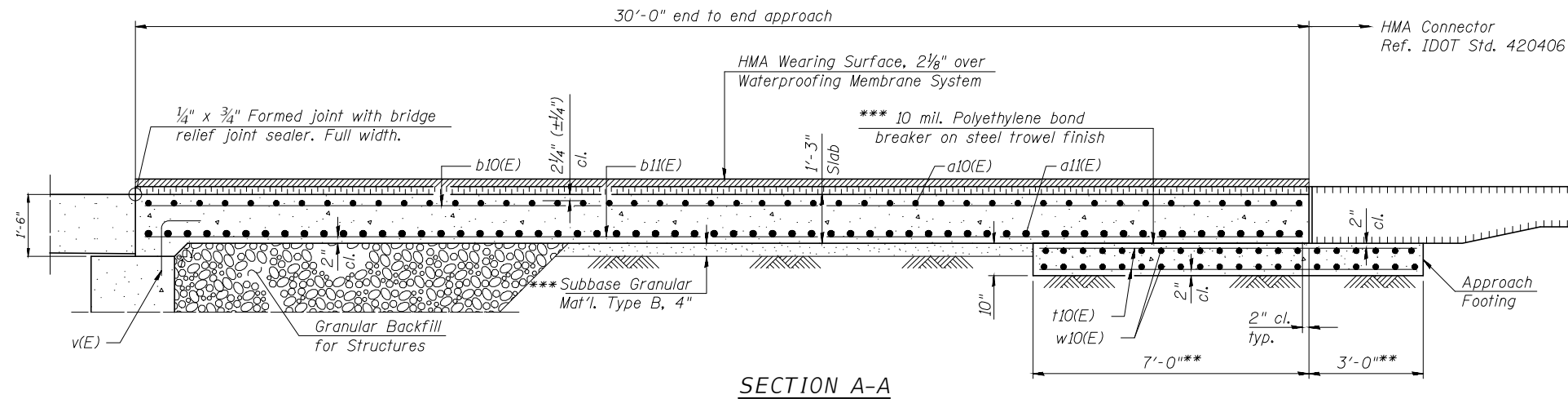
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*Space evenly at each end

WEST APPROACH SLAB PLAN



SECTION A-A

**Perpendicular to skew
 *** Cost included with Concrete Superstructures (Approach Slab)

Notes:
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 Cost of excavation for approach slab and footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 10 of 37.

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	West Approach	
	Top	Bottom
A	562.84	562.01
B	563.04	562.21
C	562.91	562.08
D	562.80	561.97
E	563.00	562.17
F	562.84	562.02

BILL OF MATERIAL (1 Approach)

Bar	No.	Size	Length	Shape	
a10(E)	38	#5	****	—	
a11(E)	50	#8	****	—	
b10(E)	40	#5	29'-8"	—	
b11(E)	64	#9	29'-8"	—	
t10(E)	108	#4	9'-8"	—	
w10(E)	40	#5	27'-8"	—	
Concrete Superstructure (Approach Slab)				Cu. Yd.	35.0
Concrete Structures				Cu. Yd.	9.0
Reinforcement Bars, Epoxy Coated				Pound	13820.0
Waterproofing Membrane System				Sq. Yd.	83.3

**** Length varies from 32'-8" to 27'-8".
 Order 32'-8" length and trim to fit.

CONTRACT NO. 87741

REVISIONS	LEVEL	BY	DATE	DESCRIPTION

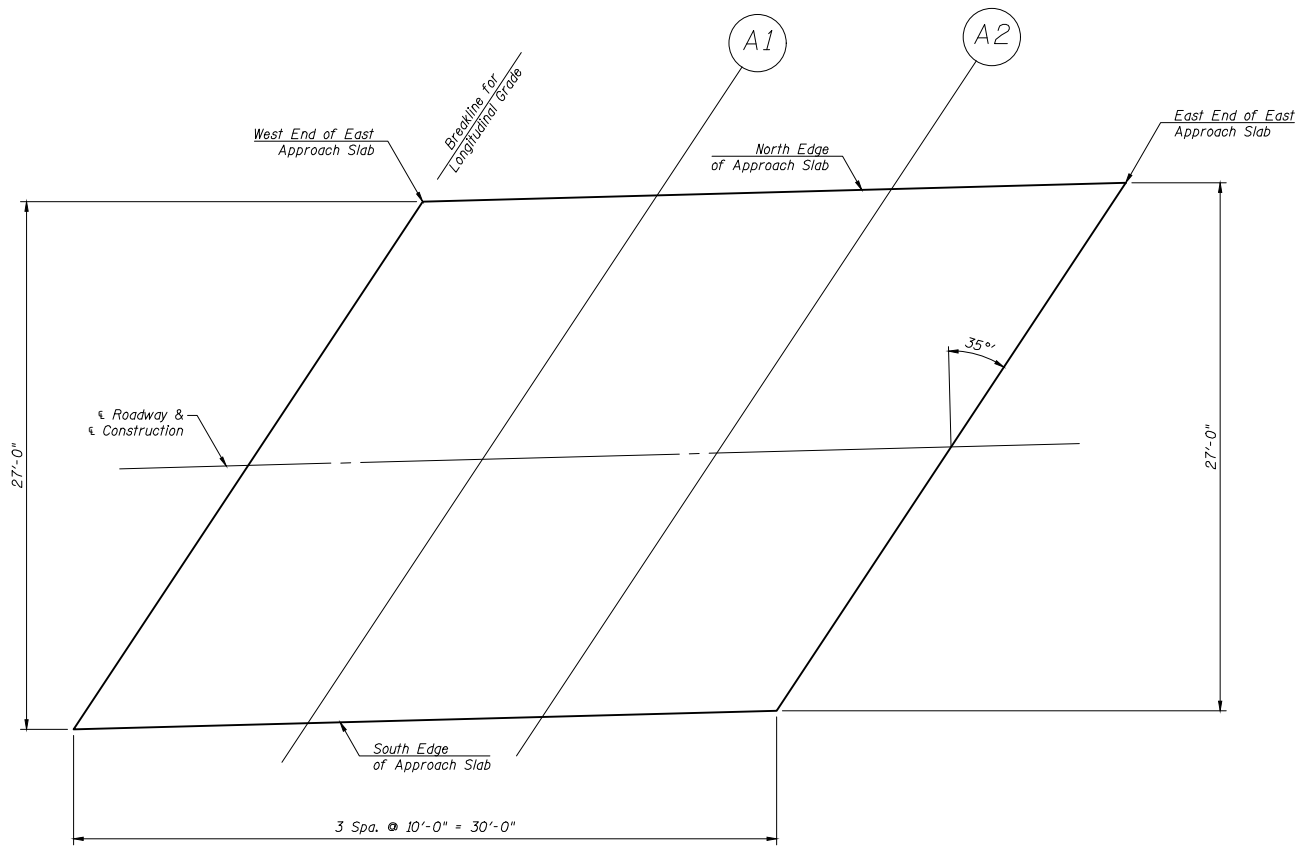

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BRIDGE APPROACH SLAB DETAILS
WEST APPROACH SLAB

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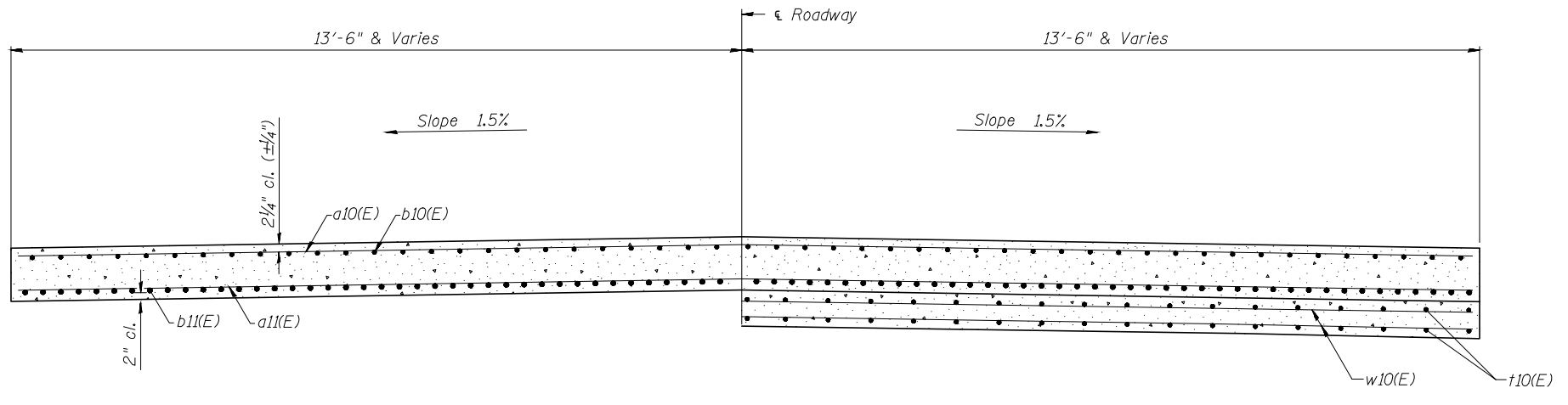
PLAN

NORTH EDGE OF APPROACH SLAB

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of E. Approach Slab	78+54.28	-13.50	563.96	564.14
A1	78+66.49	-13.50	564.05	564.23
A2	78+78.70	-13.50	564.14	564.32
E. End of E. Approach Slab	78+90.91	-13.50	564.23	564.41

ROADWAY

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of E. Approach Slab	78+44.83	0.00	564.16	564.34
A1	78+57.04	0.00	564.22	564.40
A2	78+69.25	0.00	564.28	564.46
E. End of E. Approach Slab	78+81.45	0.00	564.34	564.52



NEAR ABUTMENT

TYPICAL CROSS SECTION

AT APPROACH FOOTING

SOUTH EDGE OF APPROACH SLAB

Location	Station	Offset	Top of Concrete Elevations	Theoretical Top of Asphalt Elevations
W. End of E. Approach Slab	78+35.38	13.50	563.96	564.14
A1	78+47.58	13.50	564.00	564.18
A2	78+59.79	13.50	564.05	564.23
E. End of E. Approach Slab	78+72.00	13.50	564.09	564.27

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LEVEL	BY	DATE	REVISIONS	DESCRIPTION


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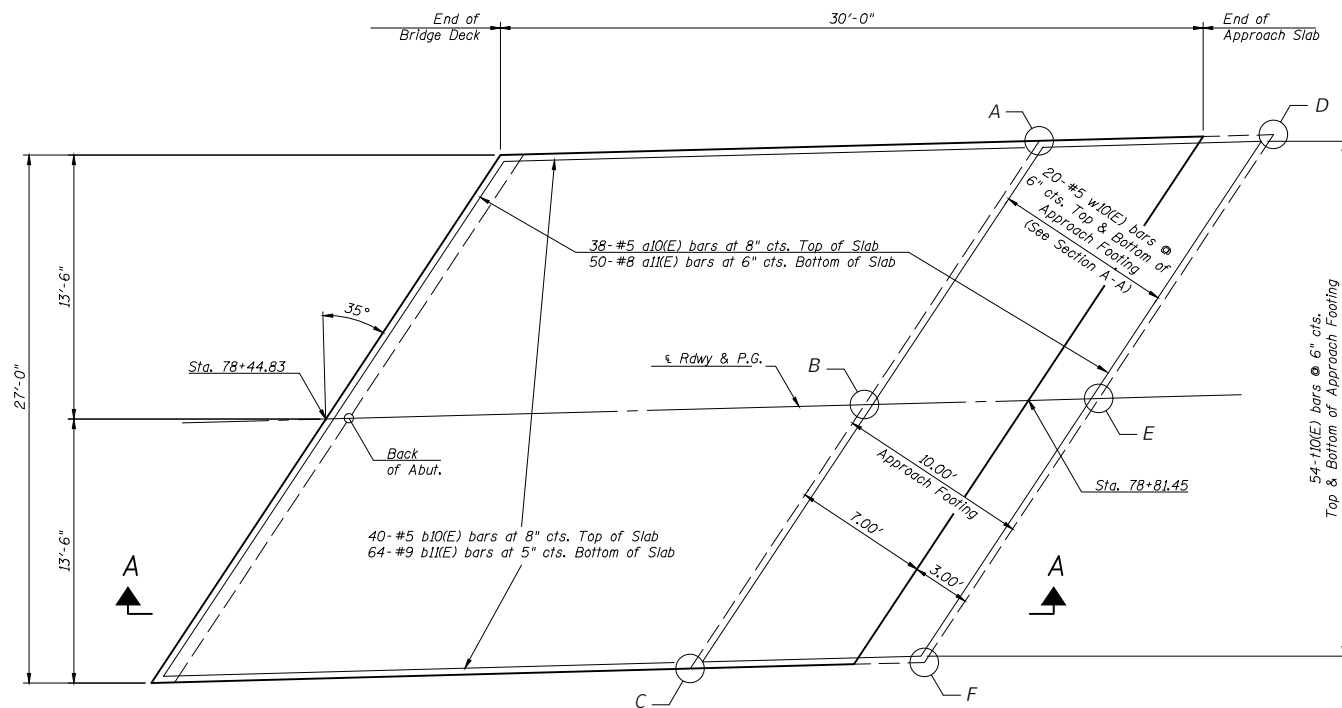
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**TOP OF SLAB ELEVATIONS
EAST APPROACH SLAB**

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 20
FILE NO.: 111360.00 Y-	OF 37

**TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING**

West Approach		
Point	Top	Bottom
A	562.92	562.09
B	563.05	562.22
C	562.81	561.98
D	563.01	562.18
E	563.11	562.28
F	562.85	562.02

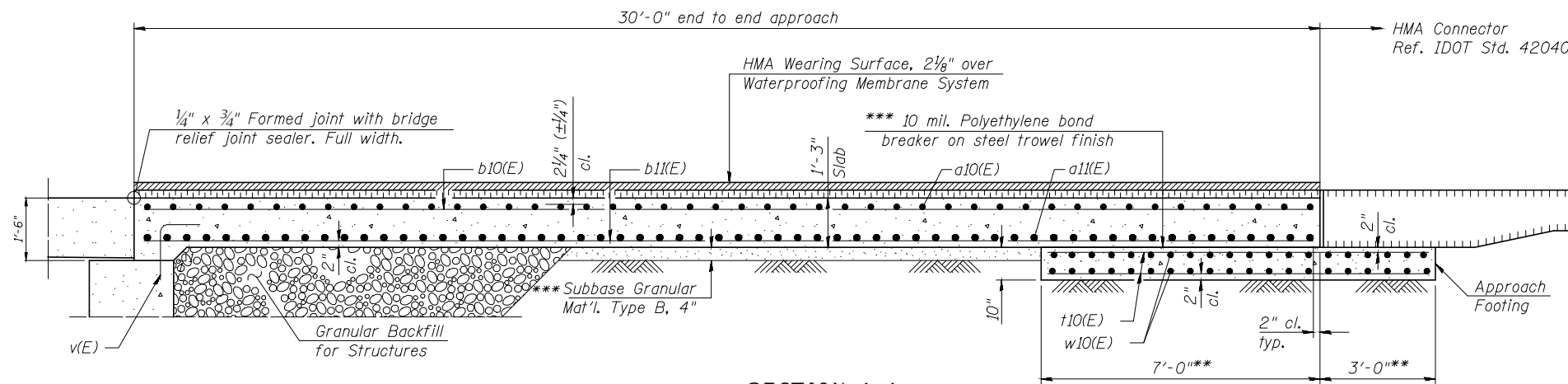


EAST APPROACH SLAB PLAN

Notes:
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 Cost of excavation for approach slab and footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 10 of 37.

BILL OF MATERIAL
(1 Approach)

Bar	No.	Size	Length	Shape
a10(E)	38	#5	32'-8"	————
a11(E)	50	#8	32'-8"	————
b10(E)	40	#5	29'-8"	————
b11(E)	64	#9	29'-8"	————
t10(E)	108	#4	9'-8"	————
w10(E)	40	#5	27'-8"	————
Concrete Superstructure (Approach Slab)			Cu. Yd.	37.5
Concrete Structures			Cu. Yd.	10.3
Reinforcement Bars, Epoxy Coated			Pound	13820.0
Waterproofing Membrane System			Sq. Yd.	90.0



SECTION A-A

**Perpendicular to skew
 *** Cost included with Concrete Superstructures (Approach Slab)

CONTRACT NO. 87741

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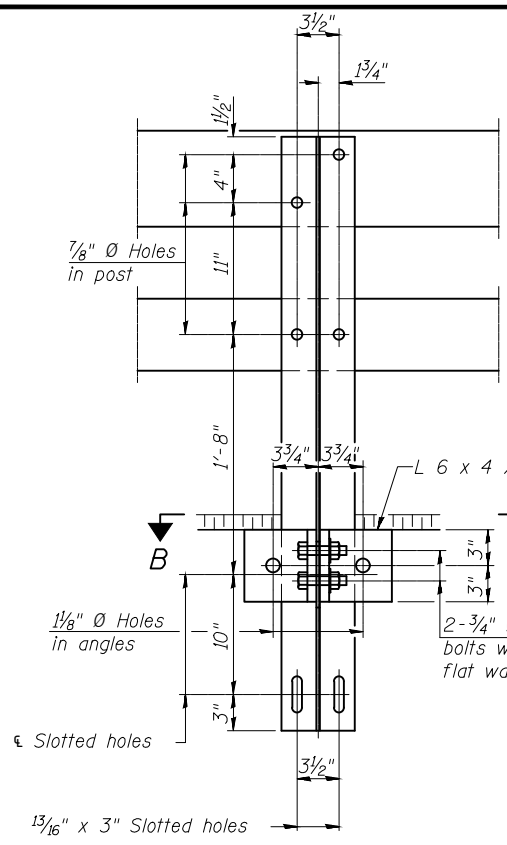
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 SECTION 19-00172-00-BR
 GRUNDY COUNTY**

**BRIDGE APPROACH SLAB DETAILS
 EAST APPROACH SLAB**

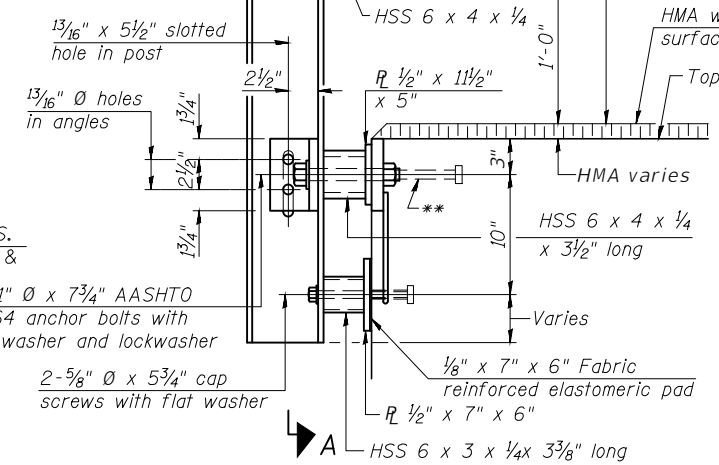
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FILE NO.: 111360.00 Y-	OF 37

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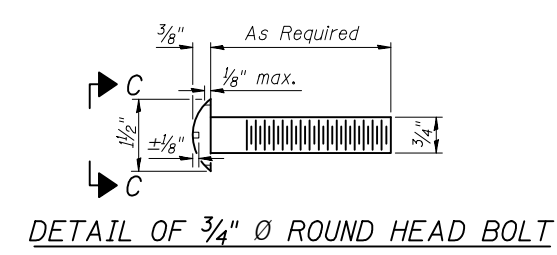


SECTION A-A

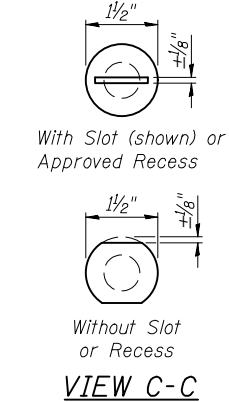
4-3/4" \varnothing x 6" Round Head Bolts with locknut & flat washer.
 7/8" \varnothing holes in hollow structural section may be drilled in the field.



SECTION AT RAIL POST

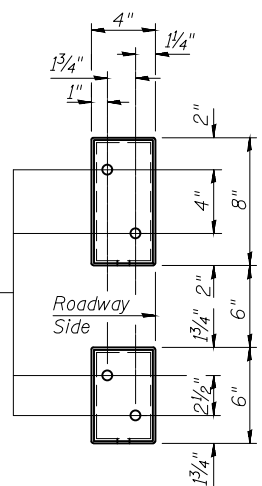


DETAIL OF 3/4" \varnothing ROUND HEAD BOLT

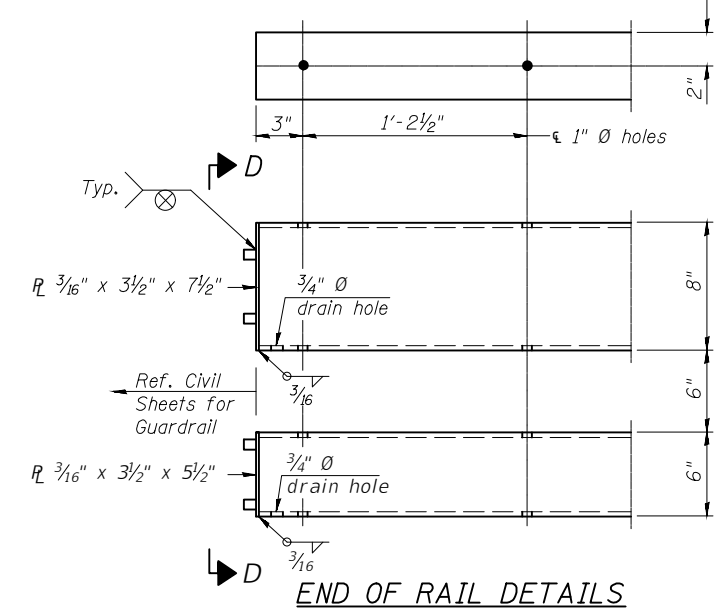


VIEW C-C

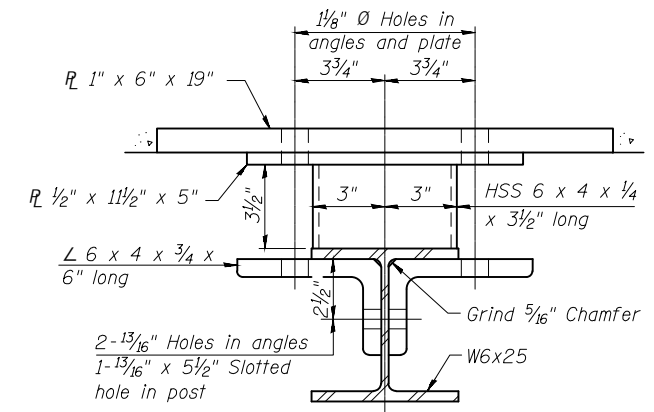
ϵ -5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



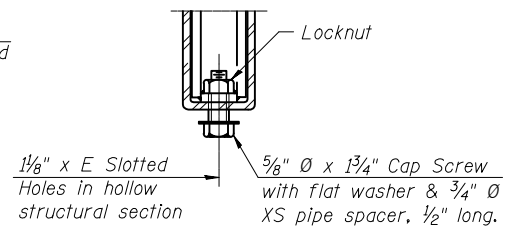
VIEW D-D



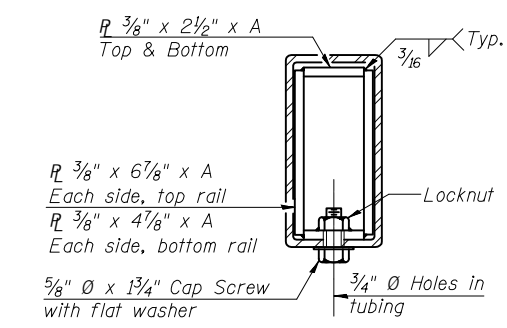
END OF RAIL DETAILS



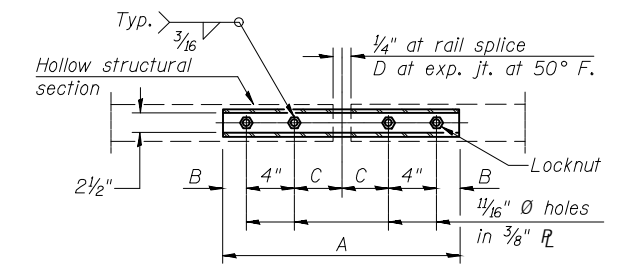
SECTION B-B



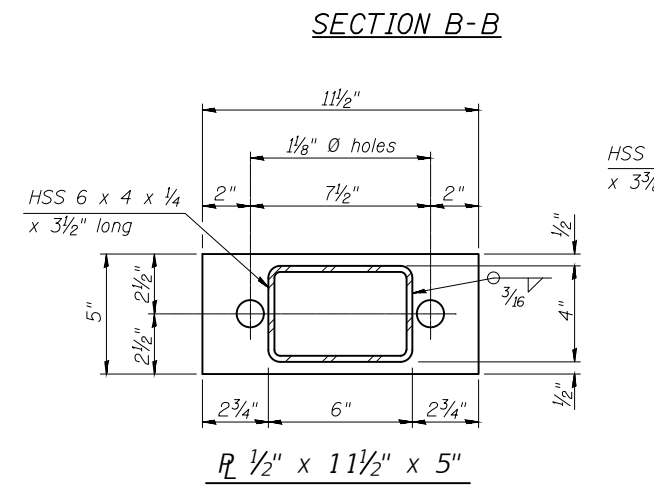
RAIL SPLICE CONNECTION AT EXPANSION JT.



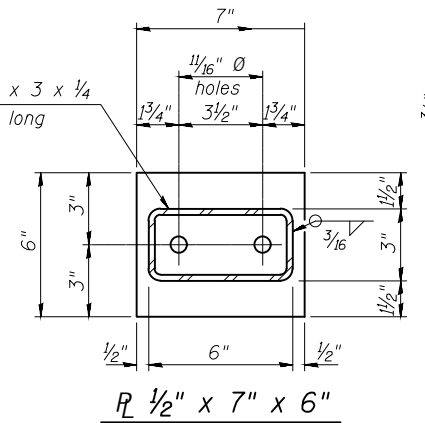
SECTION AT RAIL SPLICE



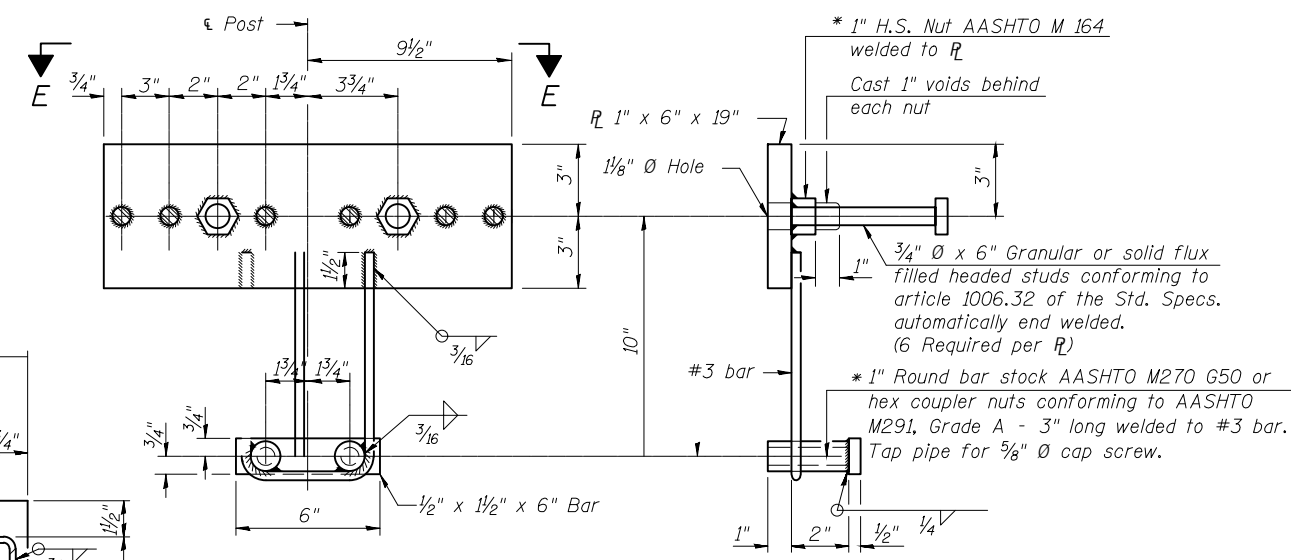
PLAN-BOTT. SPLICE R TYPICAL



1 1/2" x 11 1/2" x 5"



1 1/2" x 7" x 6"



ANCHOR DEVICE

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

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

Notes:
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
 All steel rail members 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. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	178.2

(6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum HMA thickness)

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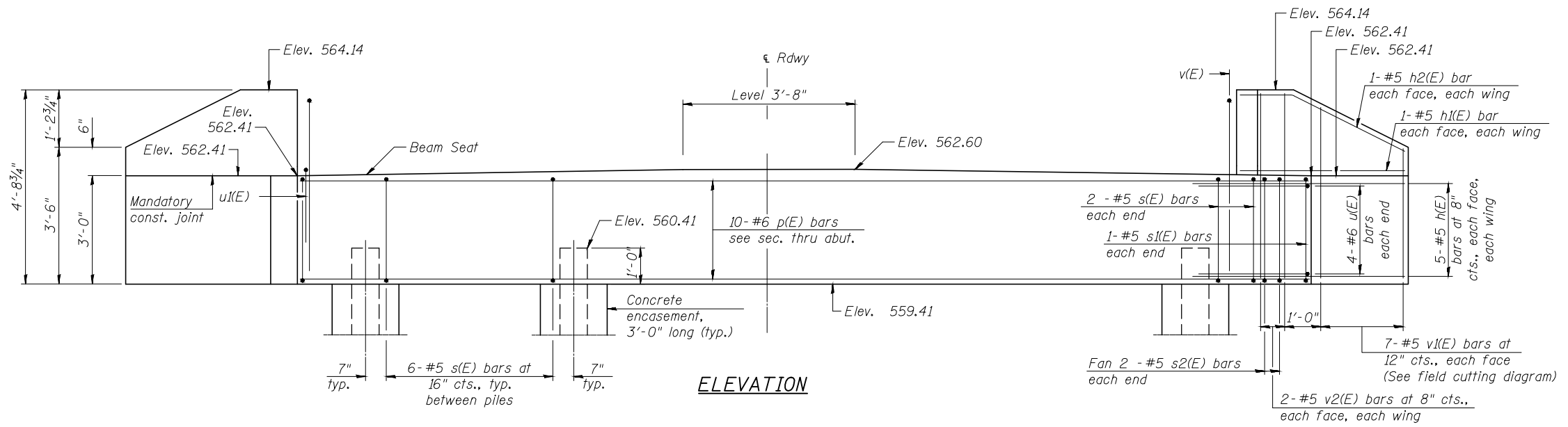
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SECTION 19-00172-00-BR
GRUNDY COUNTY

STEEL RAILING, TYPE SM WITH
HOT-MIX ASPHALT WEARING SURFACE

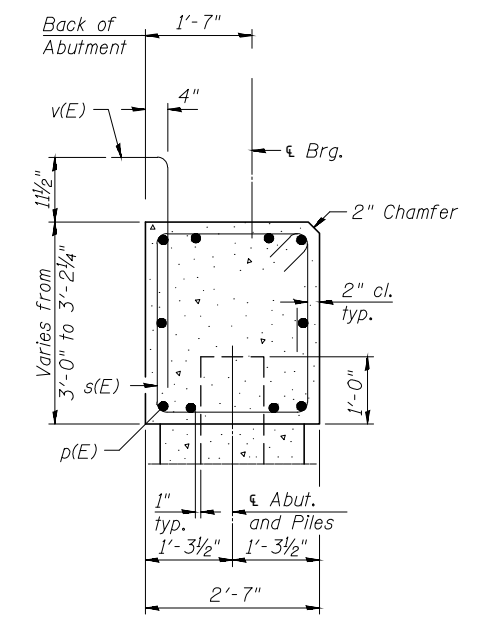
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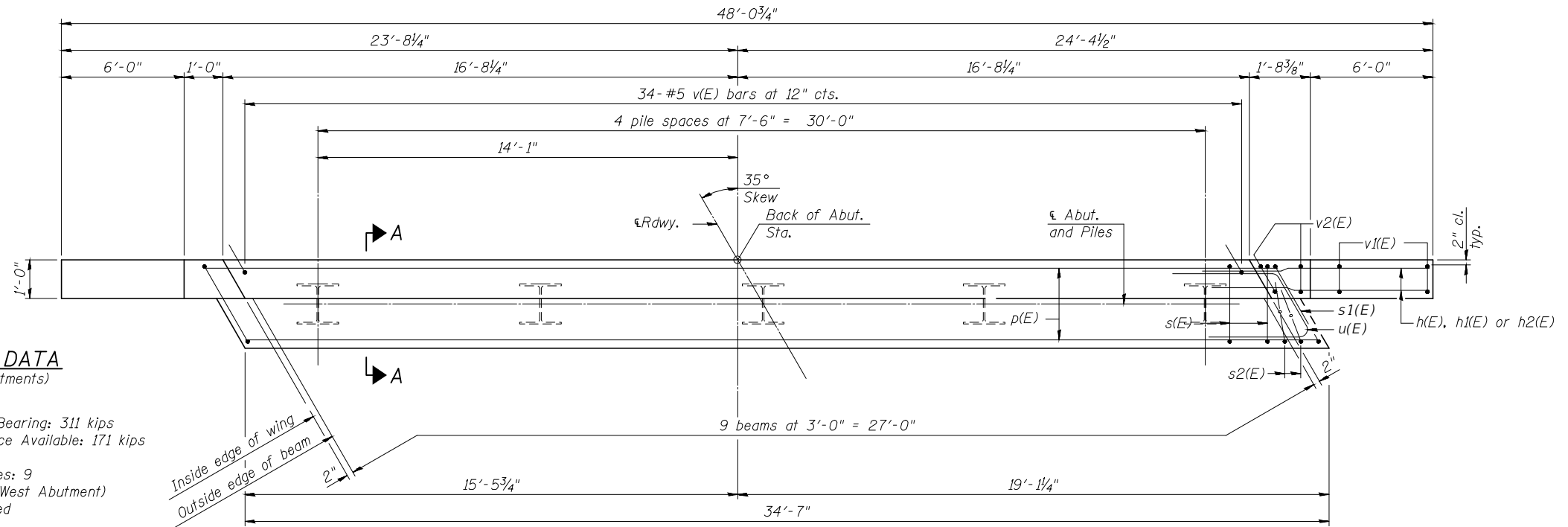
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ELEVATION



SECTION A-A
(Dimensions are at right angles to abutment)



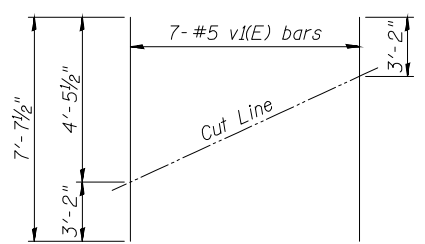
PLAN

PILE DATA
(2 Abutments)

Type: HP10x42
 Nominal Required Bearing: 311 kips
 Factored Resistance Available: 171 kips
 Est. Length: 16.5'
 No. Production Piles: 9
 No. Test Piles: 1 (West Abutment)
 Pile Shoes Required

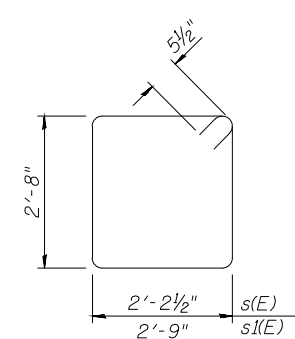
BILL OF MATERIAL
(For 2 Abutments)

Bar	No.	Size	Length	Shape
h(E)	40	#5	8'-6"	—
h1(E)	8	#5	6'-8"	—
h2(E)	8	#5	6'-9"	—
p(E)	20	#6	34'-3"	—
s(E)	56	#5	10'-10"	□
s1(E)	4	#5	11'-9"	□
s2(E)	8	#5	8'-0"	□
u(E)	16	#6	10'-9"	∇
v(E)	68	#5	4'-3"	—
v1(E)	28	#5	7'-7 1/2"	—
v2(E)	16	#5	4'-5"	—
Structure Excavation			Cu. Yd.	240.0
Concrete Structures			Cu. Yd.	26.0
Reinforcement Bars, Epoxy Coated			Pound	3460.0
Furnishing Steel Piles, HP10x42			Foot	148.5
Driving Piles			Foot	148.5
Test Pile, Steel HP10x42 (West Abut.)			Each	1
Concrete Encasement			Cu. Yd.	4.4

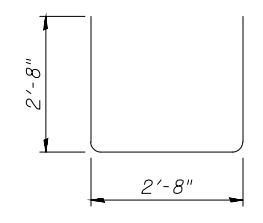


FIELD CUTTING DIAGRAM

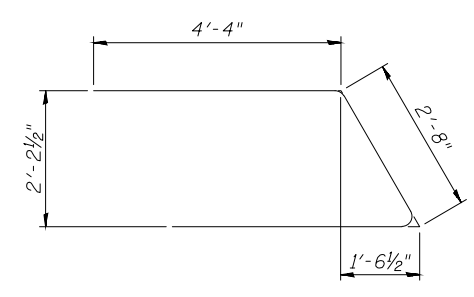
Order v1(E) bars full length. Cut as shown and use remainder of bars in opposite wing.



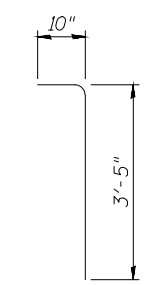
BARS s(E) & s1(E)



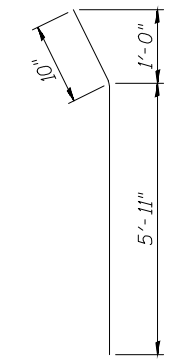
BAR s2(E)



BAR u(E)



BAR v(E)



BAR h2(E)

Notes:
 For details of piles and Concrete Encasement, see sheet 25 of 37.
 Cast tops of wingwalls after beams have been erected.

CONTRACT NO. 87741

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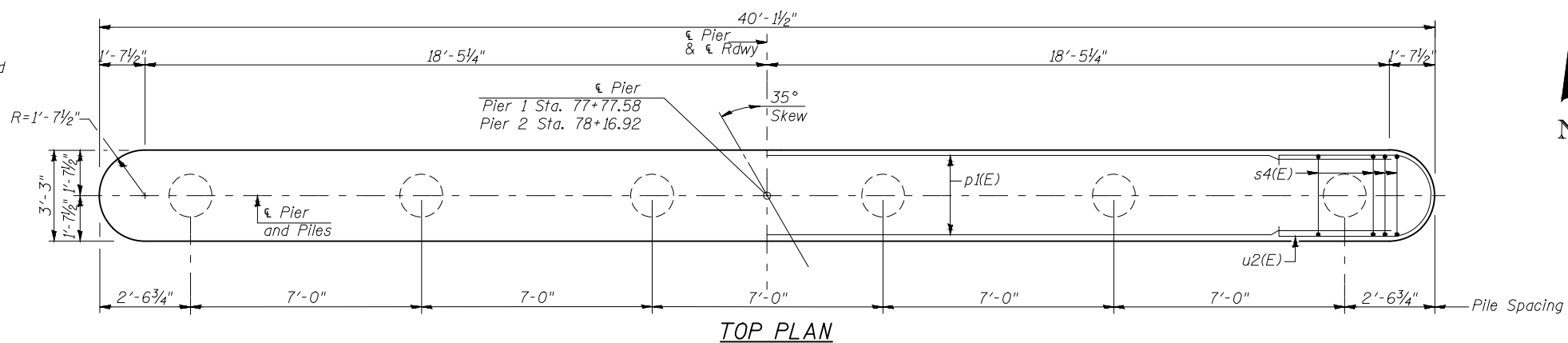
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SECTION 19-00172-00-BR
GRUNDY COUNTY

ABUTMENTS

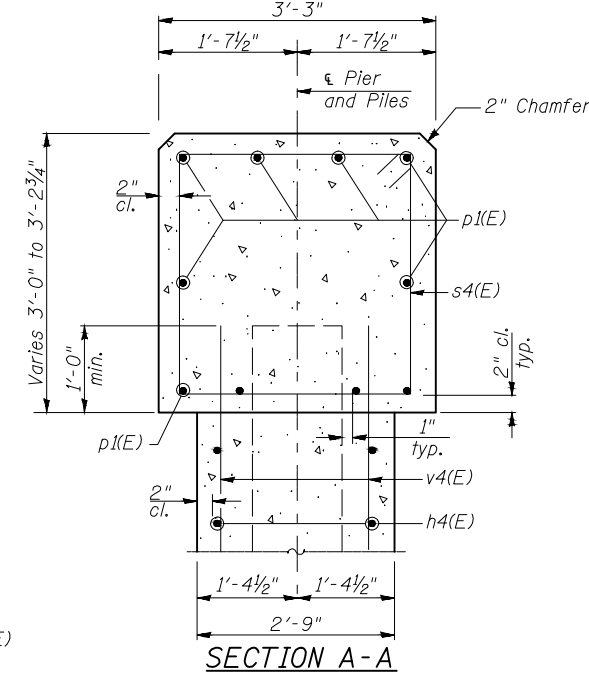
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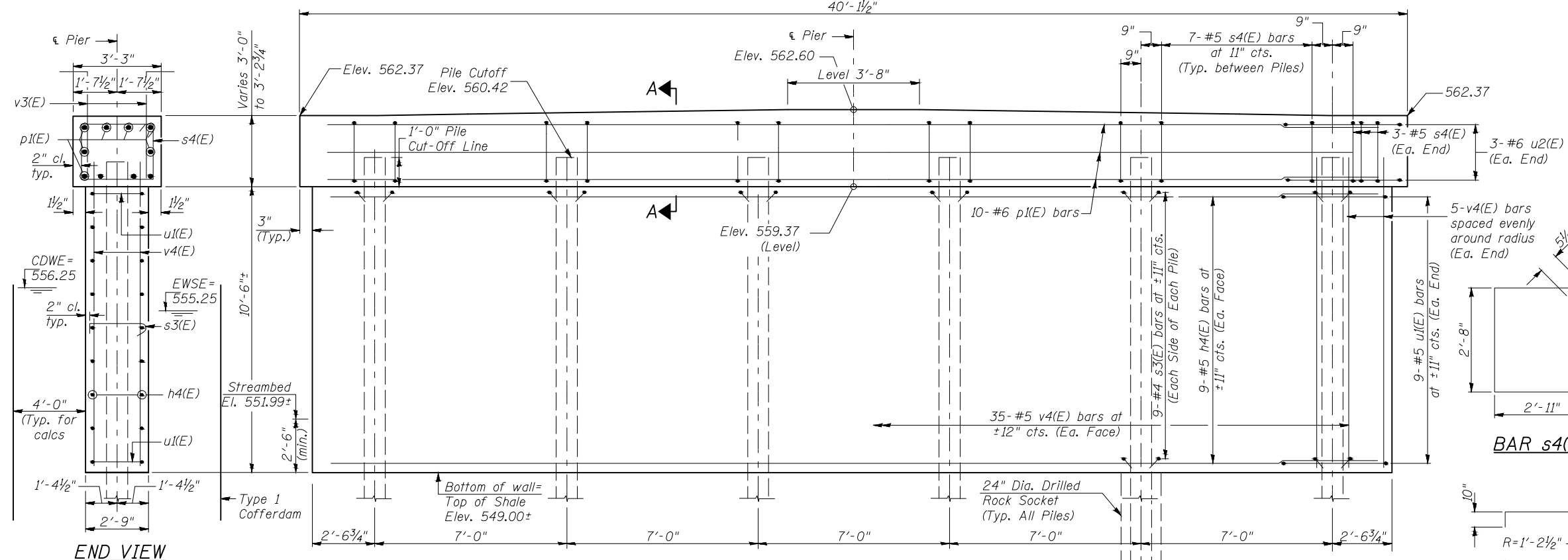
See Sheet 26 of 37 for Pile Details.
See Special Provisions for Pile Socketed in Rock.



TOP PLAN



SECTION A-A



ELEVATION

END VIEW

PILE DATA - 2 Piers

Type & size: Metal Shell 14"x0.312" Socketed in Rock
Nominal Required Bearing: 379 kips
Factored Resistance Available: 209 kips
Length: 24.5'
No. Req'd.: 12

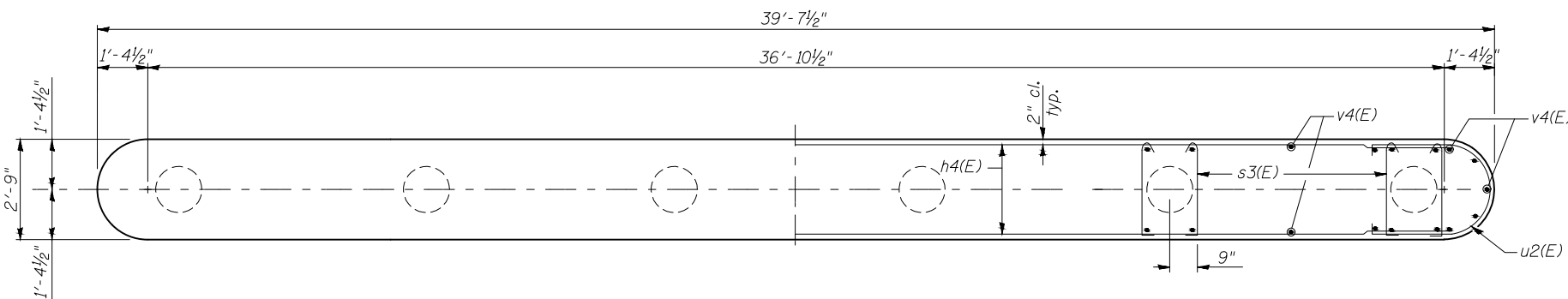
BILL OF MATERIAL
(For 2 Piers)

BAR	NO.	SIZE	LENGTH	SHAPE
h4(E)	36	#5	34'-3"	—
p1(E)	20	#6	34'-3"	—
s3(E)	216	#4	3'-6"	⌋
s4(E)	38	#5	12'-0"	⌋
u1(E)	36	#5	10'-2"	⌋
u2(E)	12	#6	12'-0"	⌋
v4(E)	160	#5	37'-0"	—
Concrete Structures		CU YD	111.6	
Cofferdam Excavation		CU YD	230.0	
Reinforcement Bars, Epoxy Coated		POUND	10444.0	
Furnishing Steel Piles MS14x0.312		FOOT	294.0	
Drilling and Setting Piles in Rock		CU FT	528.0	
Cofferdam (Type 1)		EACH	2	

BAR s4(E)

BAR u1(E)

BAR s3(E)



WALL ENCASEMENT PLAN

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\024-PIER.dwg Last Modified: Thursday, April 1, 2021 4:48:24 PM Plotted On: Friday, April 2, 2021 1:22:35 PM by Kurt Drecker

REVISIONS	LEVEL	BY	DATE	DESCRIPTION

CA
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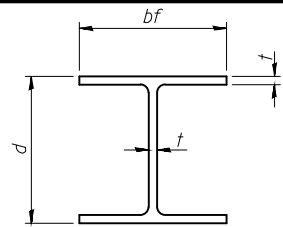
PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

PIERS

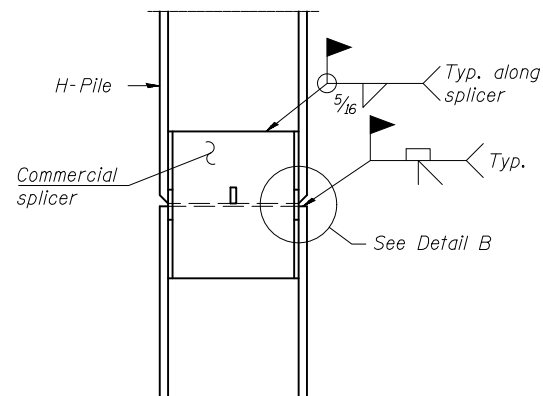
CURRENT AS OF: 04/02/2021	SHEET 24
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	

CONTRACT NO. 87741

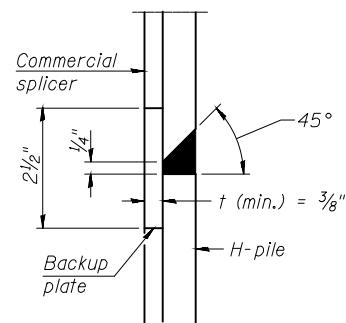


STEEL PILE TABLE

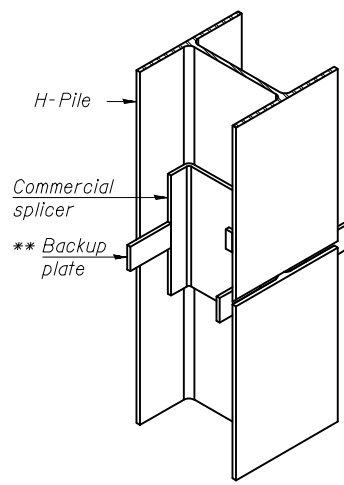
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
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

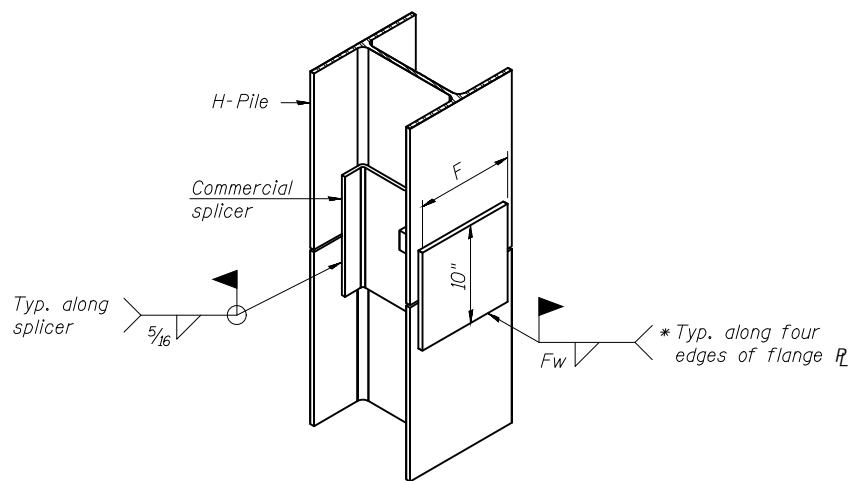


DETAIL "B"



ISOMETRIC VIEW

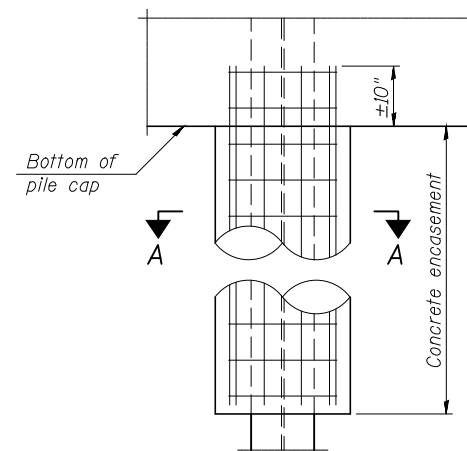
WELDED COMMERCIAL SPLICE



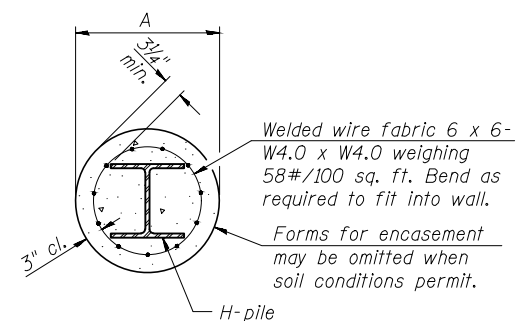
ISOMETRIC VIEW

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.).

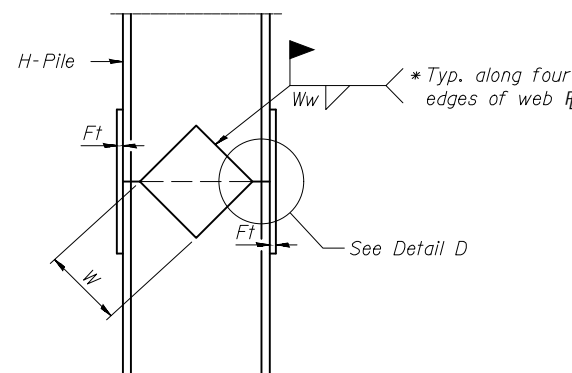


ELEVATION

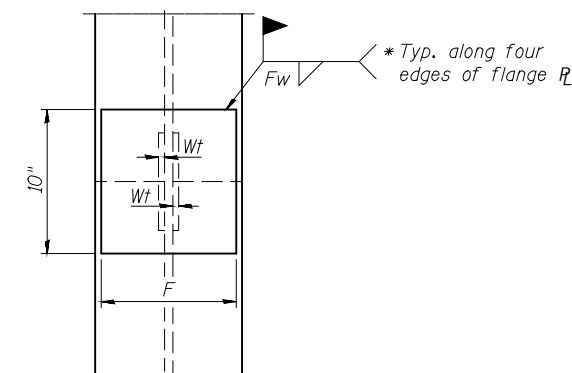


SECTION A-A

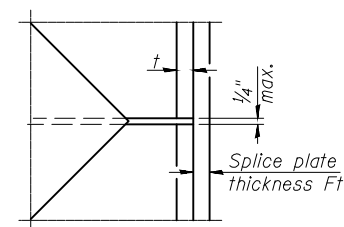
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(when specified)



ELEVATION



END VIEW

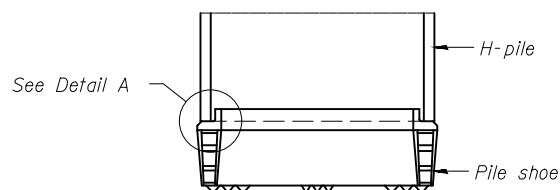


DETAIL D

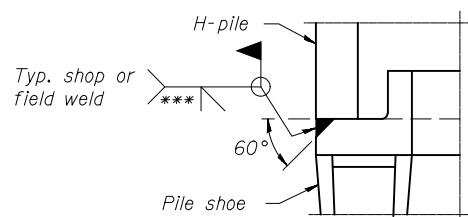
WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
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 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 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 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"

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



ELEVATION



DETAIL A

SHOE ATTACHMENT

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DRAWN BY: KED	REVISIONS			
	LEVEL	BY	DATE	DESCRIPTION
CHECKED BY: JKC				
DATE: 02/2021				

CA
CHAMLIN & ASSOCIATES

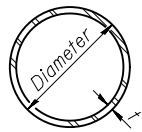
PERU MORRIS
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ILLINOIS

**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

**HP PILE DETAILS
(ABUTMENTS ONLY)**

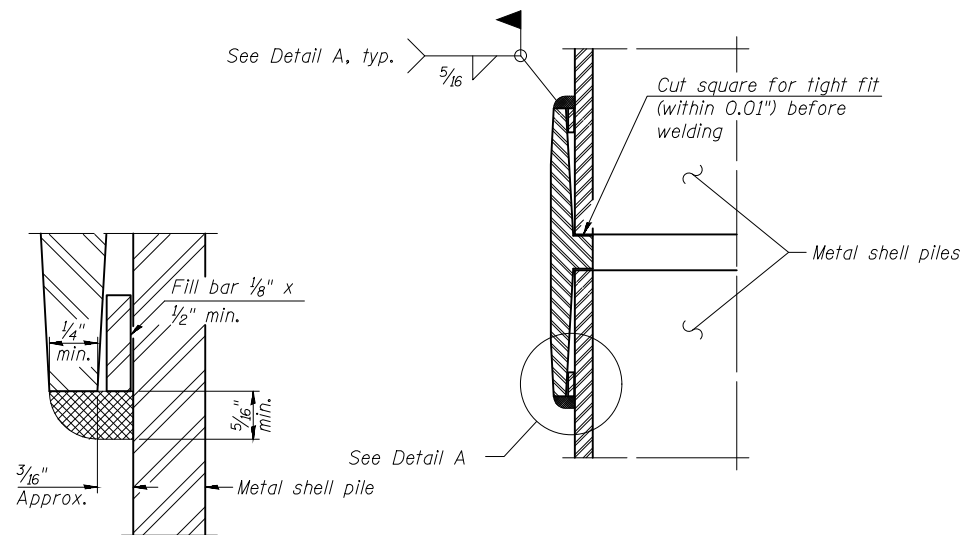
CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 25
FILE NO.: 111360.00 Y-	OF 37

CONTRACT NO. 87741

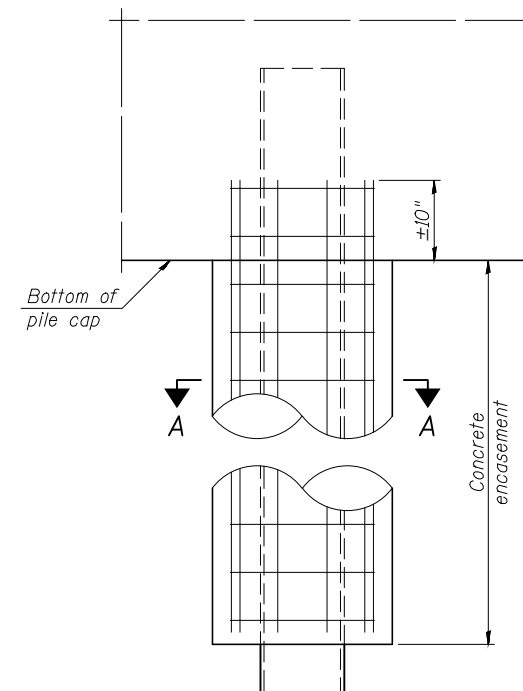


METAL SHELL PILE TABLE

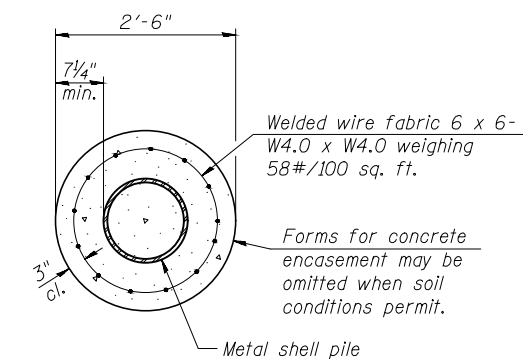
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

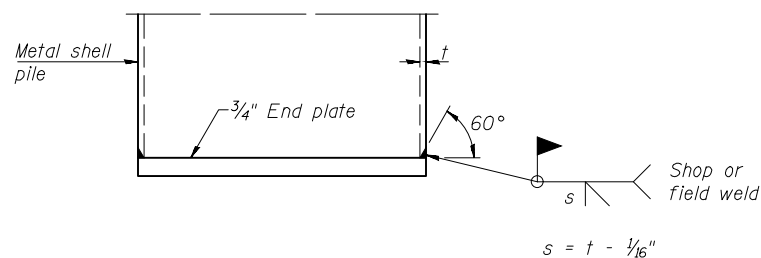


ELEVATION



SECTION A-A

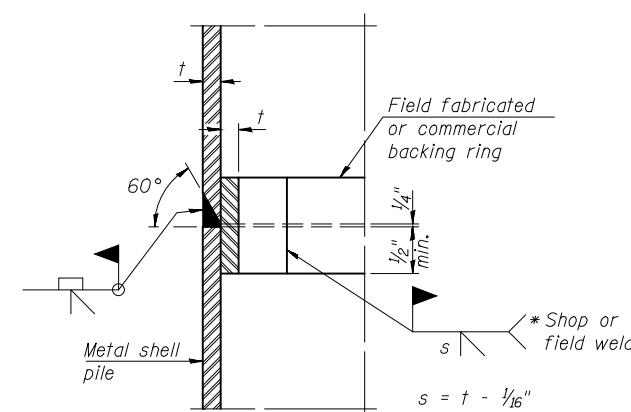
INDIVIDUAL PILE CONCRETE ENCASEMENT
(When specified)



BOTTOM END PLATE ATTACHMENT

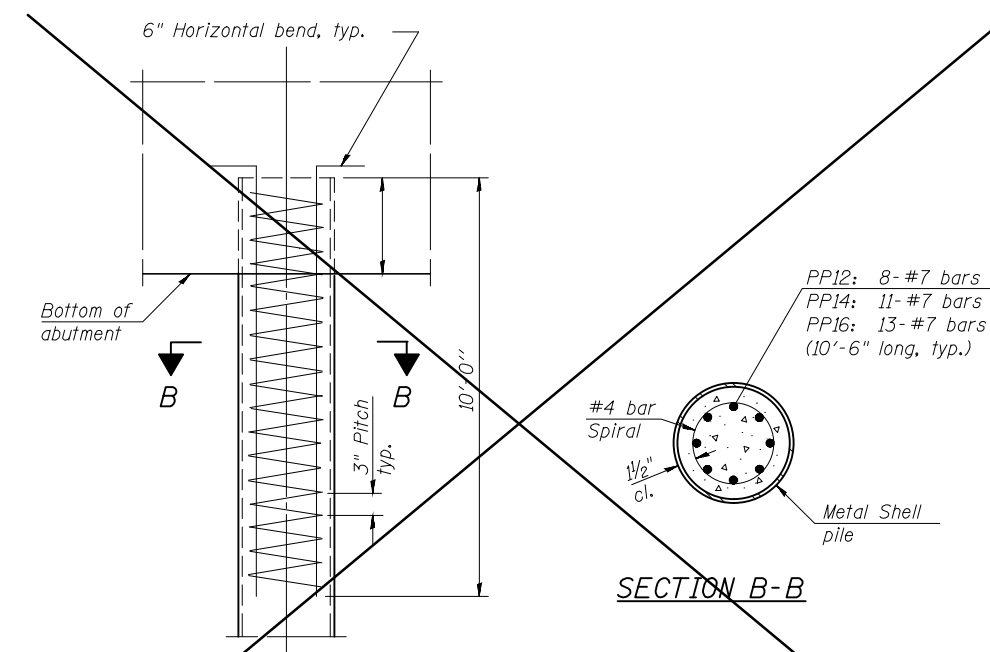
WELDED COMMERCIAL SPLICE

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.



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.

CONTRACT NO. 87741

CHAMLIN & ASSOCIATES, INC. © 2021. Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\026-SHELL PILE DETAILS.dwg. Last Modified: Thursday, April 1, 2021 4:17:07 PM. Plotted On: Friday, April 2, 2021 1:25:28 PM. By: Kurt Decker

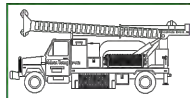
DRAWN BY: KED	REVISIONS			
	LEVEL	BY	DATE	DESCRIPTION
CHECKED BY: JKC				
DATE: 02/2021				

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SECTION 19-00172-00-BR
GRUNDY COUNTY

METAL SHELL PILE DETAILS
(PIERS ONLY)

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 26
FILE NO.: 111360.00 Y-	OF 37



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 1 of 2

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

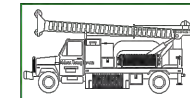
Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20031
~~SB-20033~~
Surface Elev. 563.94
Auger Depth 41.00 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: East Pier Station: 15+49.34 5.75' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
563.94											
562.94	2.5" Asphalt over 16" Reinforced Concrete		1								
561.94			2								
560.94			3								
559.94			4								
558.94			5								
557.94	Gap Below Bridge Deck		6								
556.94			7								
555.94			8								
554.94			9								
553.94			10								
552.94			11								
551.94	Very Stiff Cobbles and Silty Clay		12	1	SS	---	21	---	18		Top of Water in Slough
550.94			13								Streambed
549.94			14								
548.94	Hard Gray Very Sandy Weathered Shale		15	2	SS	---	43	---	14		
547.94			16								
546.94			17								
545.94			18	3	SS	---	60	---	12		
544.94			19								
543.94	Very Hard Gray Very Sandy Weathered Shale		20	4	SS	14.9*	120*	12"	---	12	

Groundwater Data: Static water level after auger removal; Elevation 551.94
Comments: *Modified SPT as per IDOT



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 2 of 2

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20031
~~SB-20033~~
Surface Elev. 563.94
Auger Depth 41.00 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: East Pier Station: 15+49.34 5.75' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
542.94											
541.94			22								
540.94			23	5	SS	14.9*	120*	12"	---	12	
539.94			24								
538.94			25								
537.94			26	6	SS	20.3*	210*	12"	---	11	
536.94	Very Hard Gray Very Sandy Weathered Shale		27								
535.94			28	7	SS	20.3*	210*	12"	---	11	
534.94			29								
533.94			30								
532.94			31	8	SS	28.4*	245*	12"	---	11	
531.94			32								
530.94			33	9	SS	39.4*	300*	12"	---	11	
529.94			34								
528.94			35	10	SS	39.4*	300*	12"	---	11	
527.94			36								
526.94			37								
525.94	Very Hard Gray Very Sandy Weathered Shale with concretions		38	11	SS	85.6*	960*	12"	---	11	
524.94			39								
523.94			40								
522.94			41	12	SS	85.6*	960*	12"	---	11	Auger Refusal Boring Terminated

Groundwater Data: Static water level after auger removal; Elevation 551.94
Comments: *Modified SPT as per IDOT

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\02-BORINGS-1.dwg Last Modified: Thursday, April 1, 2021 4:18:20 PM Plotted On: Friday, April 2, 2021 1:26:23 PM By Kurt Decker

CONTRACT NO. 87741

DRAWN BY: KED	REVISIONS		
CHECKED BY: JKC	LEVEL	BY	DATE
DATE: 02/2021			

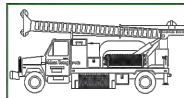


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**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

SOIL BORINGS

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 27
FILE NO.: 111360.00 Y-	OF 37



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Peru, IL 61354

BORING LOG

Sheet 1 of 2

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

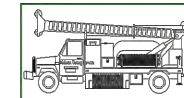
Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20032
Surface Elev. 564.25
Auger Depth 41.00 Rotary Depth NA
Start Date 10/03/20 Finish Date 10/03/20

Location: East Abutment Station: 15+89.44 7.56' LT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
564.25											
563.25	8" Asphalt over 10" Aggregate		1								
562.25			2								
561.25	Medium Stiff Black/Brown Silty Clay Fill		3	1	SS	1.0	6	B	20		
560.25			4								
559.25			5								
558.25			6	2	SS	1.0	7	B	19		
557.25	Stiff Dark Gray Silty Clay		7								
556.25			8	3	SS	1.2	9	B	22		
555.25			9								
554.25	Stiff Gray/Brown Silty Clay		10	4	SS	1.2	10	B	21		
553.25			11								
552.25			12								
551.25			13	5	SS	---	22	---	12		
550.25			14								
549.25	Hard Gray Very Sandy Weathered Shale		15	6	SS	---	54	---	12		
548.25			16								
547.25			17								
546.25	Very Hard Gray Very Sandy Weathered Shale		18	7	SS	23.2*	230*	---	11		
545.25			19								
544.25			20	8	SS	23.8*	240*	---	11		

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT



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Peru, IL 61354

BORING LOG

Sheet 2 of 2

Phone: 815-223-6696
Fax: 815-223-6659
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Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20032
Surface Elev. 564.25
Auger Depth 41.00 Rotary Depth NA
Start Date 10/03/20 Finish Date 10/03/20

Location: East Abutment Station: 15+89.44 7.56' LT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
543.25											
542.25			22								
541.25			23	9	SS	23.8*	240*	---	11		
540.25			24								
539.25			25	10	SS	20.3*	210*	---	11		
538.25			26								
537.25	Very Hard Gray Very Sandy Weathered Shale		27								
536.25			28	11	SS	28.4*	245*	---	11		
535.25			29								
534.25			30	12	SS	28.4*	245*	---	11		
533.25			31								
532.25			32								
531.25			33	13	SS	40.2*	440*	---	11		
530.25			34								
529.25			35	14	SS	40.2*	440*	---	11		
528.25			36								
527.25			37								
526.25			38	15	SS	85.6*	960*	---	11		
525.25	Very Hard Gray Very Sandy Weathered Shale with concretions		39								
524.25			40								
523.25			41	16	SS	85.6*	960*	---	11		

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT

Auger Refusal Boring Terminated

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\028-BORINGS-2.dwg Last Modified: Thursday, April 1, 2021 4:19:00 PM Plotted On: Friday, April 2, 2021 1:28:51 PM By: Kurt Decker

CONTRACT NO. 87741

LEVEL	BY	DATE	REVISIONS	DESCRIPTION

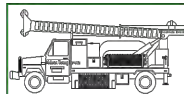


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ILLINOIS

**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

SOIL BORINGS

CURRENT AS OF: 04/02/2021	SHEET 28
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	



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3705 Progress Blvd.
Peru, IL 61354

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Sheet 1 of 2

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

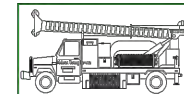
Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20033
Surface Elev. 564.10
Auger Depth 41.00 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: West Pier Station: 15+04.47 6.04' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
564.10											
563.10	3" Asphalt over 16" Reinforced Concrete		1								
562.10			2								
561.10			3								
560.10			4								
559.10	Gap Below Bridge Deck		5								
558.10			6								
557.10			7								
556.10			8								
555.10			9								
554.10	Soft Gray/Brown Silty Clay		10	1	SS	0.4	3	B	24		
553.10			11								
552.10			12								
551.10			13	2	SS	---	53	---	14		
550.10			14								
549.10	Hard Gray Very Sandy Weathered Shale		15								
548.10			16	3	SS	---	60	---	12		
547.10			17								
546.10			18	4	SS	---	65	---	12		
545.10			19								
544.10	Very Hard Gray Very Sandy Weathered Shale		20	5	SS	14.9*	120*	---	12		

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT



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3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 2 of 2

Phone: 815-223-6696
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e-mail: mts37@comcast.net

Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20033
Surface Elev. 564.10
Auger Depth 41.00 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: West Pier Station: 15+04.47 6.04' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
543.10											
542.10			22								
541.10			23	6	SS	20.3*	210*	---	11		
540.10			24								
539.10			25								
538.10			26	7	SS	20.3*	210*	---	11		
537.10	Very Hard Gray Very Sandy Weathered Shale		27								
536.10			28	8	SS	28.4*	245*	---	11		
535.10			29								
534.10			30	9	SS	39.4*	300*	---	11		
533.10			31								
532.10			32								
531.10			33	10	SS	40.2*	440*	---	11		
530.10			34								
529.10			35								
528.10			36	11	SS	40.2*	440*	---	11		
527.10			37								
526.10	Very Hard Gray Very Sandy Weathered Shale with concretions		38	12	SS	85.6*	960*	---	11		
525.10			39								
524.10			40								
523.10			41	13	SS	85.6*	960*	---	11		

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\029-BORINGS-3.dwg Last Modified: Thursday, April 1, 2021 4:19:28 PM Plotted On: Friday, April 2, 2021 1:32:38 PM By Kurt Decker

DRAWN BY: KED	REVISIONS			
CHECKED BY: JKC	LEVEL	BY	DATE	DESCRIPTION
DATE: 02/2021				



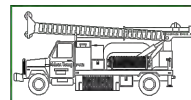
PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

SOIL BORINGS

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 29
FILE NO.: 111360.00 Y-	OF 37

CONTRACT NO. 87741



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 1 of 3

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

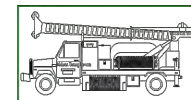
Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20034
Surface Elev. 564.11
Auger Depth 43.50 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: West Abutment Station: 14+80.65 7.38' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
564.11											
563.11	7.5" Asphalt over 11" Aggregate		1								
562.11			2								
561.11			3	1	SS	1.0	8	B	21		
560.11			4								
559.11	Medium Stiff Black/Brown/Gray Silty Clay Fill		5	2	SS	0.9	6	B	20		
558.11			6								
557.11			7								
556.11			8	3	SS	1.2	9	B	22		
555.11			9								
554.11			10	4	SS	1.2	10	B	19		
553.11	Stiff Gray/Brown Silty Clay		11								
552.11			12								
551.11			13	5	SS	1.5	12	B	18		
550.11			14								
549.11	Hard Gray Very Sandy Weathered Shale		15	6	SS	--	45	--	12		
548.11			16								
547.11			17								
546.11	Very Hard Gray Very Sandy Weathered Shale		18	7	SS	14.9*	120*	--	11		
545.11			19								
544.11			20	8	SS	19.5*	195*	--	11		

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT



Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

BORING LOG

Sheet 2 of 3

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

Client: Chamlin & Associates
Project Name: SN 032-3220
Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20034
Surface Elev. 564.11
Auger Depth 43.50 Rotary Depth NA
Start Date 10/24/20 Finish Date 10/24/20

Location: West Abutment Station: 14+80.65 7.38' RT

(DEPTH) *ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)/KSF*	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
543.11											
542.11			22								
541.11			23	9	SS	23.8*	240*	12"	--	11	
540.11			24								
539.11			25	10	SS	20.3*	210*	12"	--	11	
538.11			26								
537.11	Very Hard Gray Very Sandy Weathered Shale		27								
536.11			28	11	SS	28.4*	245*	12"	--	11	
535.11			29								
534.11			30	12	SS	28.4*	245*	12"	--	11	
533.11			31								
532.11			32								
531.11			33	13	SS	39.4*	300*	12"	--	11	
530.11			34								
529.11			35	14	SS	40.2*	440*	12"	--	11	
528.11			36								
527.11			37								
526.11			38	15	SS	85.6*	960*	12"	--	11	
525.11	Very Hard Gray Very Sandy Weathered Shale with concretions		39								
524.11			40								
523.11			41	16	SS	85.6*	960*	12"	--	11	

Groundwater Data: Static water level after auger removal; Elevation 553.25
Comments: *Modified SPT as per IDOT

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\030-BORINGS-4.dwg Last Modified: Thursday, April 1, 2021 4:19:53 PM Plotted On: Friday, April 2, 2021 1:33:24 PM By Kurt Decker

CONTRACT NO. 87741

LEVEL	BY	DATE	REVISIONS	DESCRIPTION



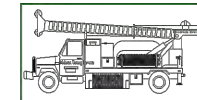
PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

SOIL BORINGS

CURRENT AS OF: 04/02/2021	SHEET 30
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	

CHAMLIN & ASSOCIATES, INC. © 2021
 Drawing Name: R:\USERS\DAH\111360-00 GRUNDY CO. BRIDGE REFLC. OVER MURRAY SLOUGH\CAD\031-BORINGS-5.dwg - Last Modified: Thursday, April 1, 2021 4:20:37 PM - Plotted On: Friday, April 2, 2021 1:34:04 PM - by Kurt Decker



Midwest Testing Services, Inc.
 3705 Progress Blvd.
 Peru, IL 61354

BORING LOG

Sheet 3 of 3

Phone: 815-223-6696
 Fax: 815-223-6659
 e-mail: mts37@comcast.net

Client: Chamlin & Associates
 Project Name: SN 032-3220
 Project Site: CH 41 Bridge over Murray Slough
Grundy Co., IL

Boring No. SB-20034
 Surface Elev. 564.11
 Auger Depth 43.50 Rotary Depth NA
 Start Date 10/24/20 Finish Date 10/24/20

Location: West Abutment Station: 14+80.65 7.38' RT

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES					Dry Density (PCF)	DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (KSF*)	N Value (Blows)	Bulge / Shear		Moisture (%)	
543.11											
521.11	Very Hard Gray Very Sandy Weathered Shale with concretions		43	17	SS	85.6	960* 12"	--	11		
520.11	Boring Terminated Auger Refusal		44								
519.11			45								
518.11			46								
517.11			47								
516.11			48								
515.11			49								
514.11			50								
513.11			51								
512.11			52								
511.11			53								
510.11			54								
509.11			55								
508.11		56									
507.11		57									
506.11		58									
505.11		59									
504.11		60									
503.11		61									
502.11		62									

Groundwater Data: Static water level after auger removal; Elevation 553.25
 Comments: *Modified SPT as per IDOT

CONTRACT NO. 87741

LEVEL	BY	DATE	REVISIONS	DESCRIPTION



**GRAND RIDGE ROAD
 SECTION 19-00172-00-BR
 GRUNDY COUNTY**

SOIL BORINGS

CURRENT AS OF: 04/02/2021	SHEET 31
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	

F.A.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
272	35B	GRUNDY	7	1
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT S-34 (8)				

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL-AID SECONDARY PROJECT**

INDEX OF SHEETS

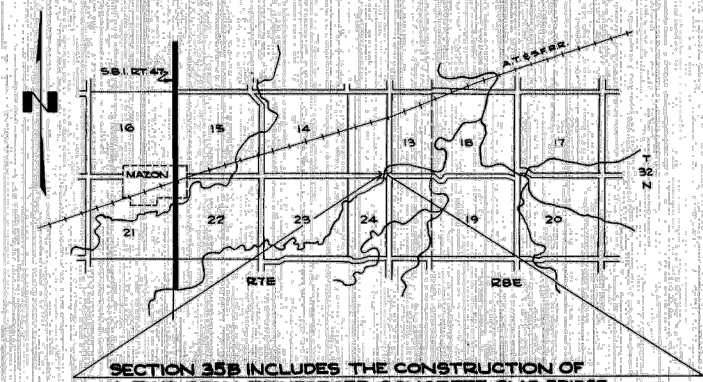
SHEET NO.1 TITLE SHEET, SUMMARY OF QUANTITIES
SHEET NO.2 STD. 2070RB, STD. 2113
SHEET NO.3 PLAN & PROFILE STATION 68+00 TO STATION 85+00
SHEETS NO. 4 TO 7 INCLUSIVE SPECIAL BRIDGE DESIGN STATION 77+86

PLAN 1 INCH = 100 FEET
PROFILE HOR. 1 INCH = 100 FEET
PROFILE VERT. 1 INCH = 10 FEET
CROSS SECTIONS 1 INCH = 5 FEET

SUMMARY OF QUANTITIES

1 EACH REMOVAL OF EXISTING STRUCTURE 5
460 CU. YDS. CLASS A EXCAVATION FOR STRUCTURES
334 CU. YDS. CLASS B EXCAVATION FOR STRUCTURES
2625 LIN. FT. FURNISHING UNTREATED PILES (UP TO 30 FT.)
3 EACH TEST PILES
334.1 CU. YDS. CLASS X CONCRETE
40520 LBS. REINFORCEMENT BARS
3375 LBS. STRUCTURAL STEEL
339 CU. YDS. HANDRAIL CONCRETE
1 EACH NAME PLATES
263 CU. YDS. CHANNEL EXCAVATION
2625 LIN. FT. DRIVING TIMBER PILES

F.A.S. ROUTE 272 SECTION 35B GRUNDY COUNTY
PROJECT S-34 (8)



SECTION 35B INCLUDES THE CONSTRUCTION OF
A TWO SPAN REINFORCED CONCRETE SLAB BRIDGE
STATION 77+44.96 TO STATION 78+27.04

LAYOUT
APPROXIMATE SCALE 1"=1 MILE
NET LENGTH 82.08 LIN. FT. 0.016 MILES

STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	
SUBMITTED	<i>Feb 1 1955</i>
PASSED	<i>Feb 1 1955</i>
APPROVED	<i>Feb 4 1955</i>
APPROVED	<i>Feb 4 1955</i>

John P. ...
DISTRICT ENGINEER
Wm. M. Santello
ENGINEER OF LOCAL ROADS AND STREETS
R. P. Bartelme
CHIEF HIGHWAY ENGINEER
Carl K. ...
DIRECTOR

Plans Examined *Mar 1 1955*
V. M. ...
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	
APPROVED	DATE
DISTRICT ENGINEER	

CHAMLIN & ASSOCIATES, INC. © 2021
Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\032-EXISTING 01.dwg Last Modified: Thursday, April 1, 2021 4:21:17 PM Plotted On: Friday, April 2, 2021 1:34:47 PM by Kurt Decker

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CHECKED BY: JKC					
DATE: 02/2021					

CA
Chamlin & Associates

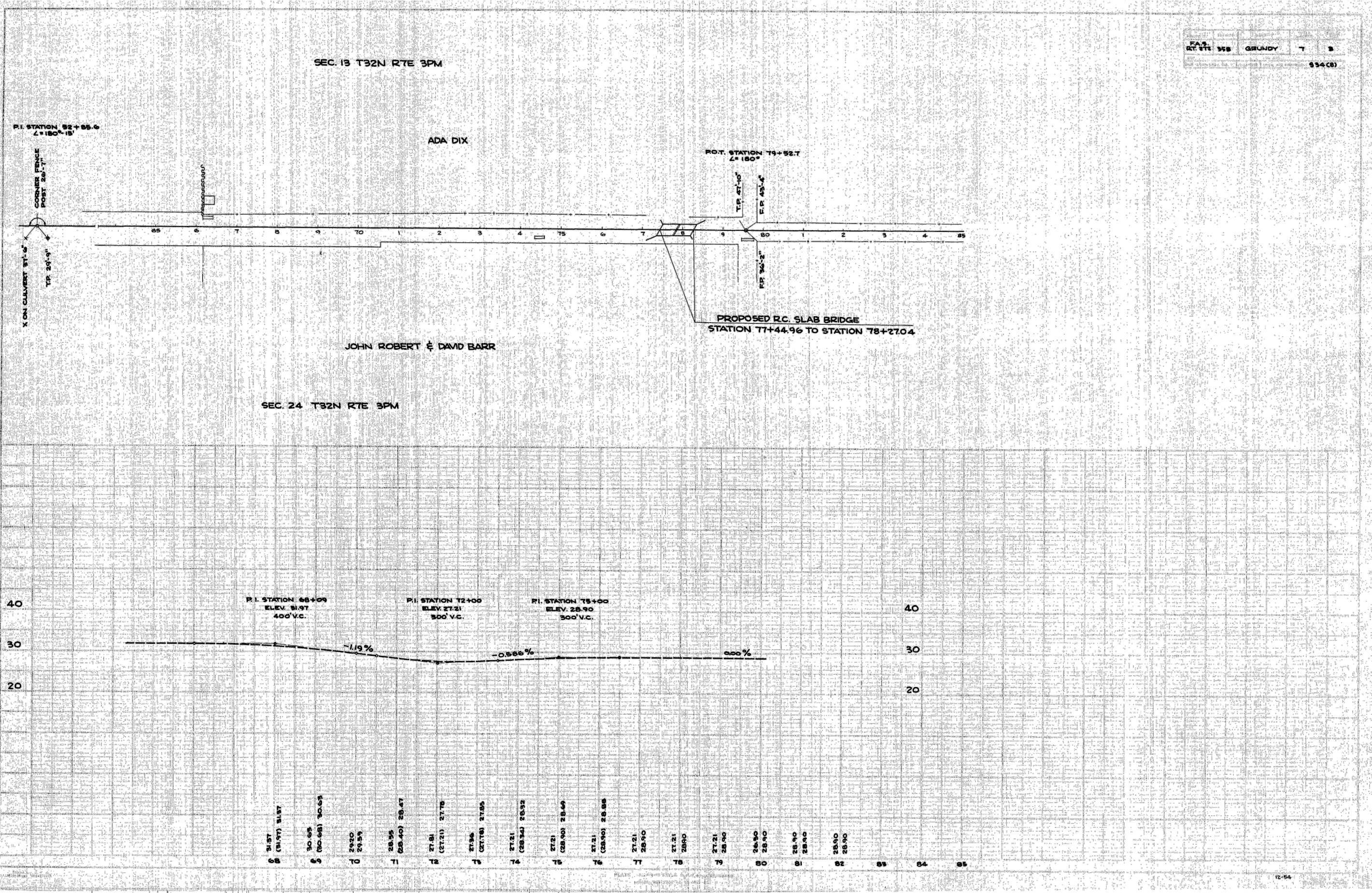
PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

**GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY**

EXISTING PLANS

CONTRACT NO. 87741	
CURRENT AS OF: 04/02/2021	SHEET 32
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	

PA'S	REV	DATE	BY
	1		GRUNDY
	2		T
	3		B



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 Drawing Name: R:\USERS\DAV\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\03-EXISTING 02.dwg
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 Plotted On: Friday, April 2, 2021 1:35:38 PM
 by Kurt Decker

DRAWN BY: KED	LEVEL	BY	DATE	REVISIONS	DESCRIPTION
CHECKED BY: JKC					
DATE: 02/2021					


 PERU MORRIS
 OTTAWA MENDOTA
 ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

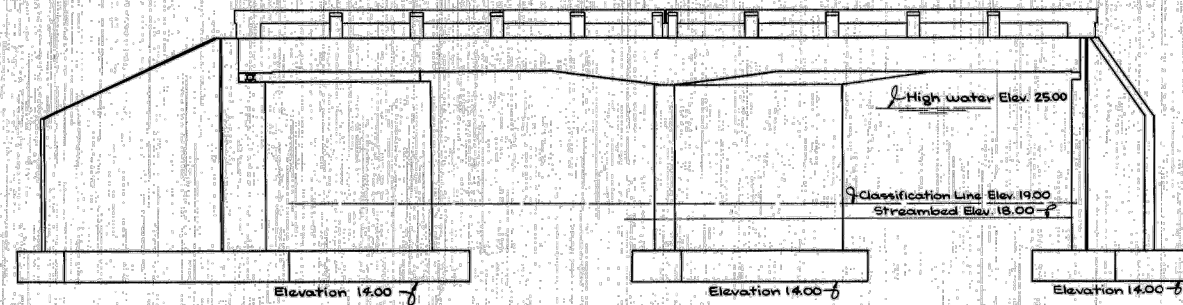
EXISTING PLANS

CONTRACT NO. 87741	CURRENT AS OF: 04/02/2021	SHEET 33
SCALE: AS NOTED	FILE NO.: 111360.00 Y-	OF 37

F.A.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
272	35B	GRUNDY	7	4
FED ROAD DIST NO 7 ILLINOIS PROJECT			S-34(B)	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

Bench Mark Top of SW corner of SW wingwall of Township road bridge 331 north of station 79+52.1 Elev. 25.09
Existing structure is a one span steel truss bridge with concrete floor on masonry abutments.
Existing structure consists of two stone abutments, the superstructure has been removed. The existing abutments shall be removed by the bridge contractor. This work shall be paid for as removal of existing structure.



ELEVATION
NO SCALE

WATERWAY DATA

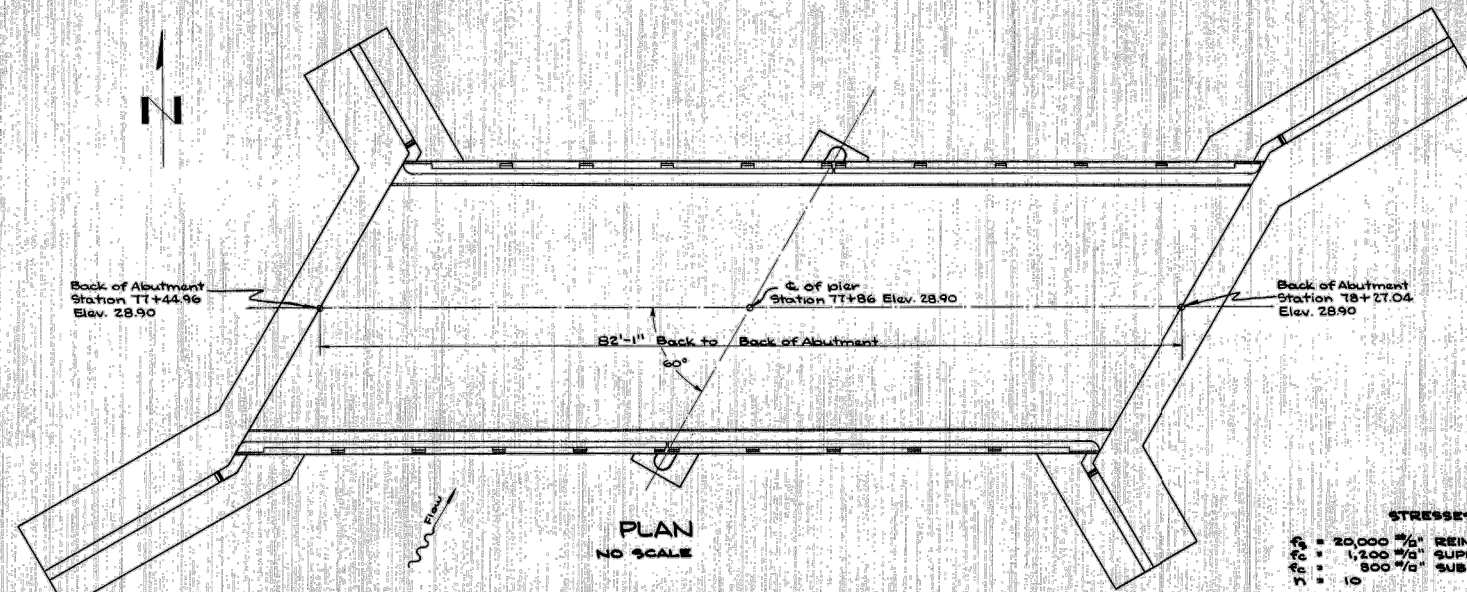
DRAINAGE AREA 16,400 ACRES
CHARACTER LEVEL, ROLLING, CLAY, CULTIVATED
OPENING REQUIRED (0.1% 2100) 430 38 FT.
OPENING PROVIDED 430 90 FT.

Class "X" concrete shall be used throughout except as noted.
Handrail concrete shall be used in handrails.
Concrete floor slab shall be poured in one continuous operation.
Concrete floor slab shall be finished in accordance with Article 51.18a of the Standard Specifications adopted January 2, 1952.

Railings above the top of curb or rail base shall not be placed until after superstructure has been completed and the falsework removed.
Preamolded Joint Filler shall conform to Article 129.4 of the Standard Specifications adopted January 2, 1952.
Structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. All paint shall be furnished by the contractor.
All Rollers, Bearing Plates, and Anchor Bolts shall be furnished, painted and set in accordance with Article 51.14 of the standard Specifications adopted January 2, 1952 and are included for payment as structural steel.

The following surfaces shall be waterproofed: the back of abutments, parapet walls, and wing walls from top of walls to top of footing. Waterproofing shall be in accordance with Article 51.20 of the Standard Specifications adopted January 2, 1952. The cost of waterproofing shall be included in the contract unit price per cubic yard for Class "X" concrete.

Three test piles shall be driven in permanent pile locations, as directed by the engineer before ordering piles.



PLAN
NO SCALE

STRESSES

$f_s = 20,000$ #/sq. IN. REINFORCING STEEL
 $f_c = 4,200$ #/sq. IN. SUPERSTRUCTURE
 $f_c = 800$ #/sq. IN. SUBSTRUCTURE
 $n = 10$

H15-S12 LOADING

TOTAL BILL OF MATERIALS			
ITEM		SUBSTR.	SUPERSTR. TOTAL
REMOVAL OF EXISTING STRUCTURE	EACH		1
CLASS A' EXCAVATION FOR STRUCTURES	CU. YDS.	460	460
CLASS B' EXCAVATION FOR STRUCTURES	CU. YDS.	334	334
UNTREATED TIMBER PILING EST. LEN. 25'	LIN. FT.	2625	2625
TEST PILES	EACH	3	3
CLASS 'X' CONCRETE	CU. YDS.	197.5	196.6 334.1
REINFORCEMENT BARS	LBS.	12480	28040 40520
STRUCTURAL STEEL	LBS.		3375 3375
HANDRAIL CONCRETE	CU. YDS.	3.9	3.9
NAME PLATE	EACH	1	1
CHANNEL EXCAVATION	CU. YDS.		263

STATION 77+86
F.A.S. RT. 272 SEC. 35B
F.A. PROJECT S-34(B)
MAZON TOWNSHIP
GRUNDY COUNTY

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\034-EXISTING 03.dwg Last Modified: Thursday, April 1, 2021 4:22:44 PM Plotted On: Friday, April 2, 2021 1:36:29 PM by Kurt Decker

DRAWN BY: KED	REVISIONS			DESCRIPTION
	LEVEL	BY	DATE	
CHECKED BY: JKC				
DATE: 02/2021				

CA
Chamlin & Associates

PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

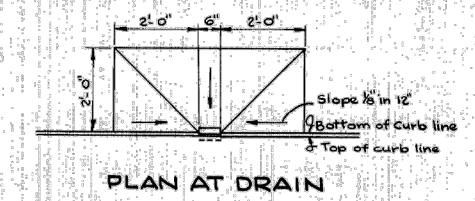
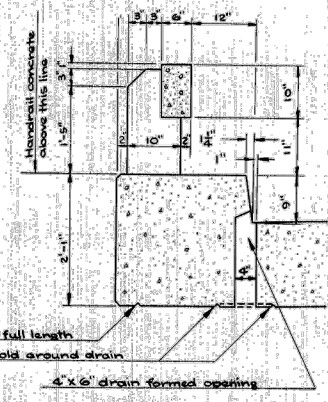
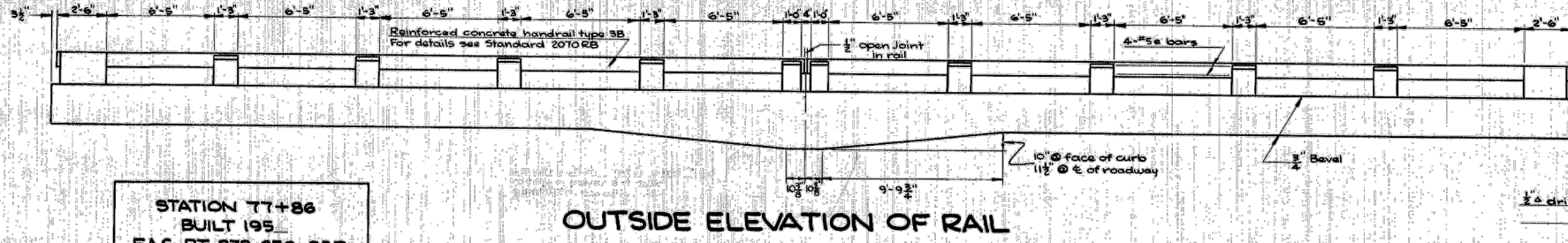
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

EXISTING PLANS

CONTRACT NO. 87741	
CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 34
FILE NO.: 111360.00 Y-	OF 37

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

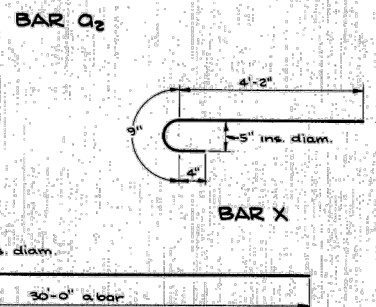
F.A.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
272	35B	GRUNDY	7	5
FED. ROAD DIST. NO. ILLINOIS PROJECT 5-34 (8)				



STATION 77+86
BUILT 195
F.A.S. RT. 272 SEC. 35B
F.A. PROJ. S-34 (8)
LOADING H-15-S12
NAME PLATE STD. 2113

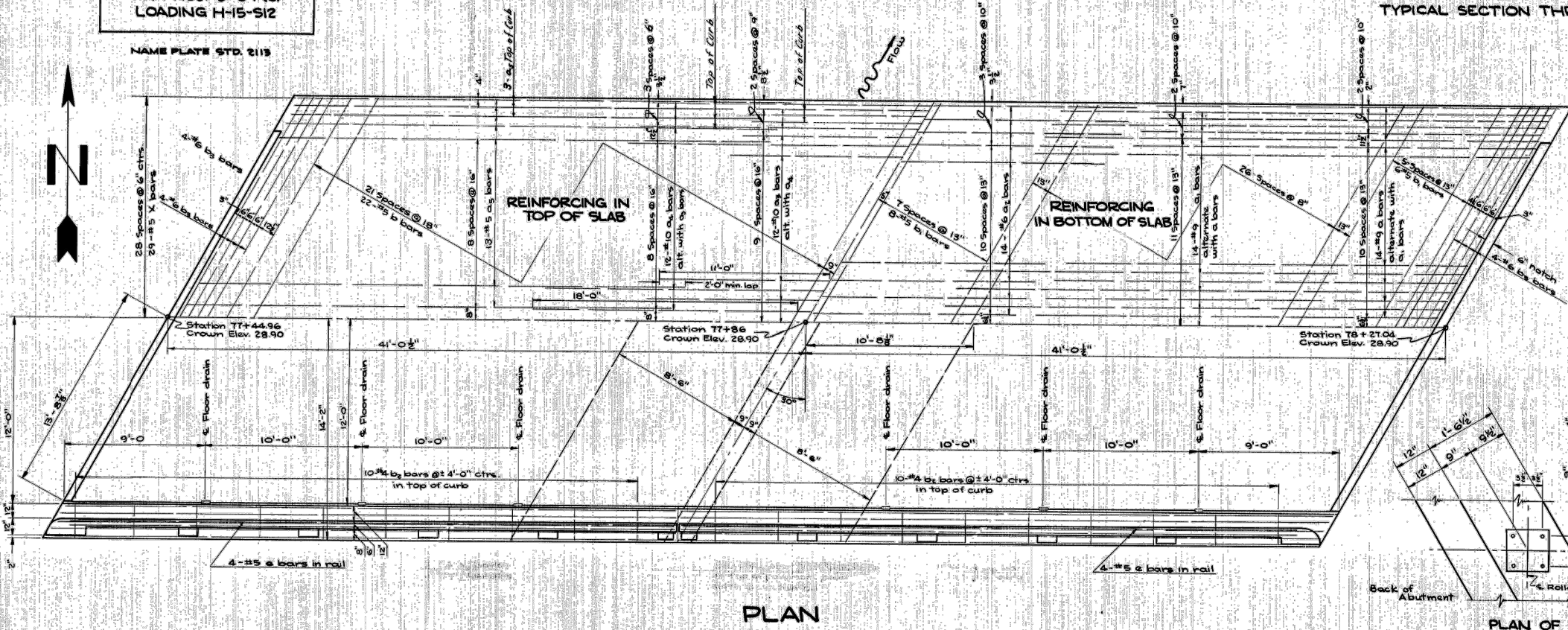
OUTSIDE ELEVATION OF RAIL

TYPICAL SECTION THROUGH RAIL

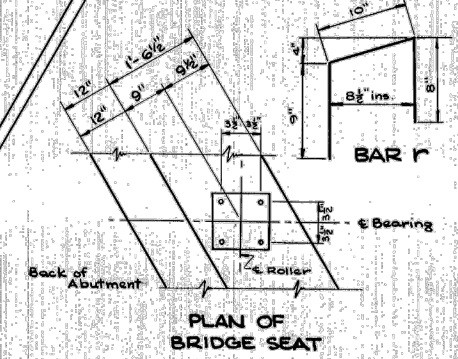


BAR Q & BAR Q1

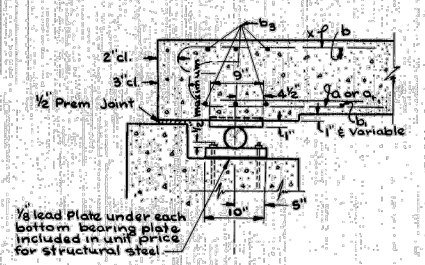
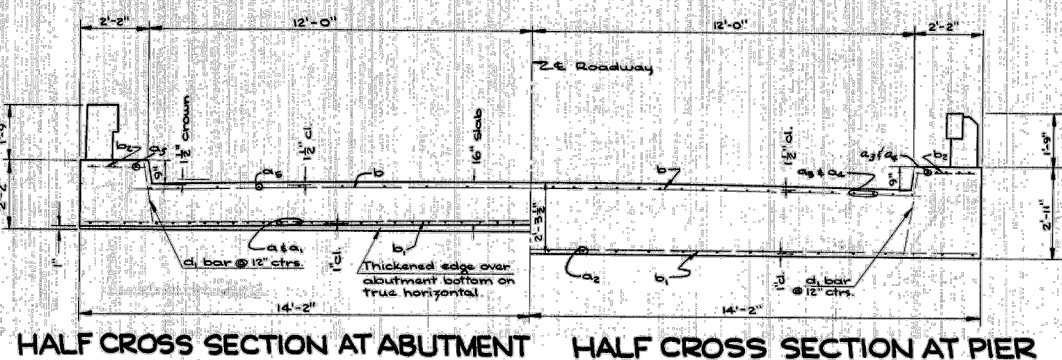
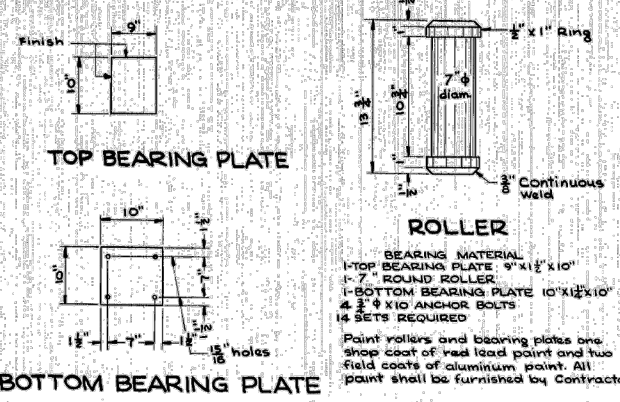
BILL OF MATERIAL SUPERSTRUCTURE				
BAR NO.	SIZE	LENGTH	SHAPE	
Q	#6	31'-9"	U	
Q1	#9	35'-9"	U	
Q2	#6	26'-0"	U	
Q3	#10	22'-0"	U	
Q4	#10	36'-0"	U	
Q5	#5	31'-6"	U	
<hr/>				
B	#5	28'-6"	—	
D	#5	32'-3"	—	
D1	#4	2'-0"	—	
D2	#6	32'-5"	—	
<hr/>				
d	#5	4'-3"	L	
d1	#4	1'-9"	—	
<hr/>				
Q	#5	21'-0"	—	
F	#4	2'-9"	—	
X	#5	5'-3"	—	
<hr/>				
CLASS X CONCRETE		CU. YDS.	136.6	
HANDRAIL CONCRETE		CU. YDS.	3.9	
REINFORCEMENT BARS		LBS.	28060	
STRUCTURAL STEEL		LBS.	3375	
NAME PLATE		EACH	ONE	



PLAN



PLAN OF BRIDGE SEAT



SECTION THROUGH BRIDGE SEAT

STATION 77+86
F.A.S. RT. 272 SEC. 35B
F.A. PROJECT S-34 (8)
MAZON TOWNSHIP
GRUNDY COUNTY

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Drawing Name: R:\USERS\DAV\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\05-EXISTING 04.dwg Last Modified: Thursday, April 1, 2021 4:23:23 PM Plotted On: Friday, April 2, 2021 1:37:20 PM by Kurt Decker

CONTRACT NO. 87741

DRAWN BY: KED CHECKED BY: JKC DATE: 02/2021	REVISIONS				
	LEVEL	BY	DATE	DESCRIPTION	



PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

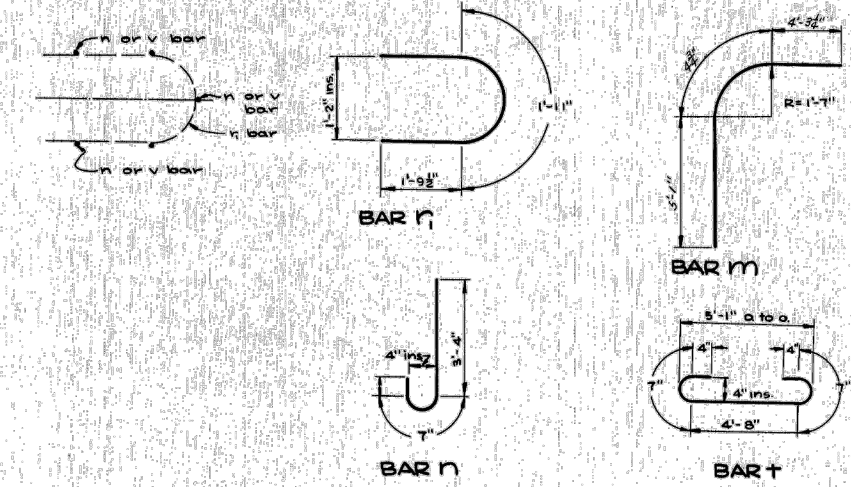
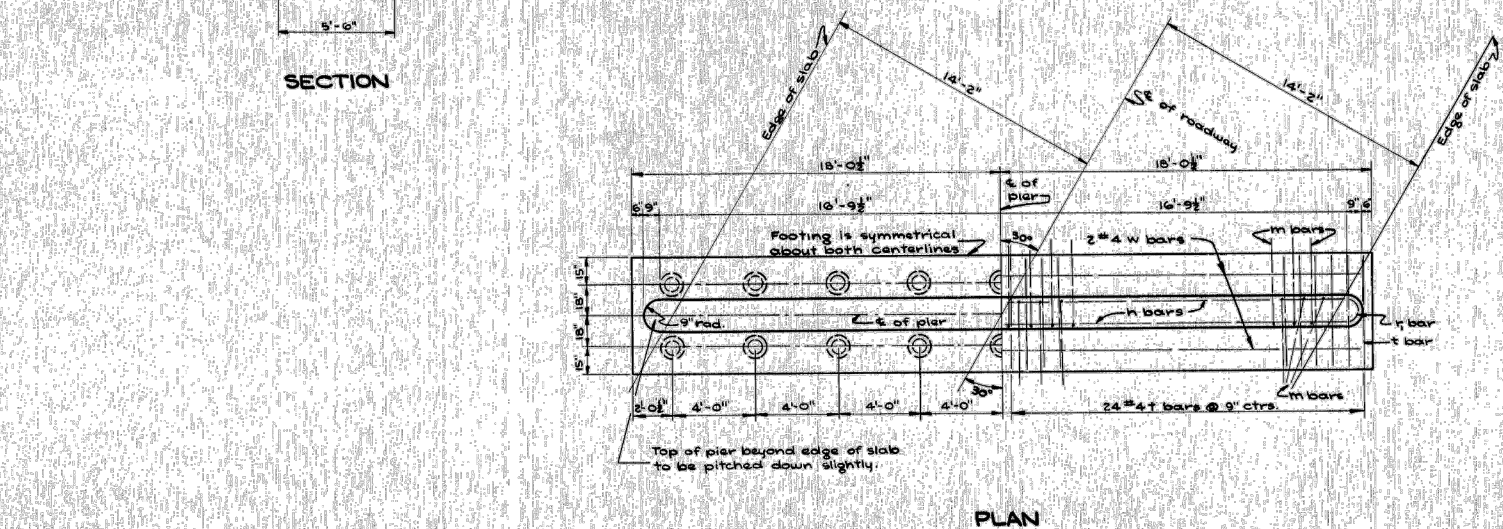
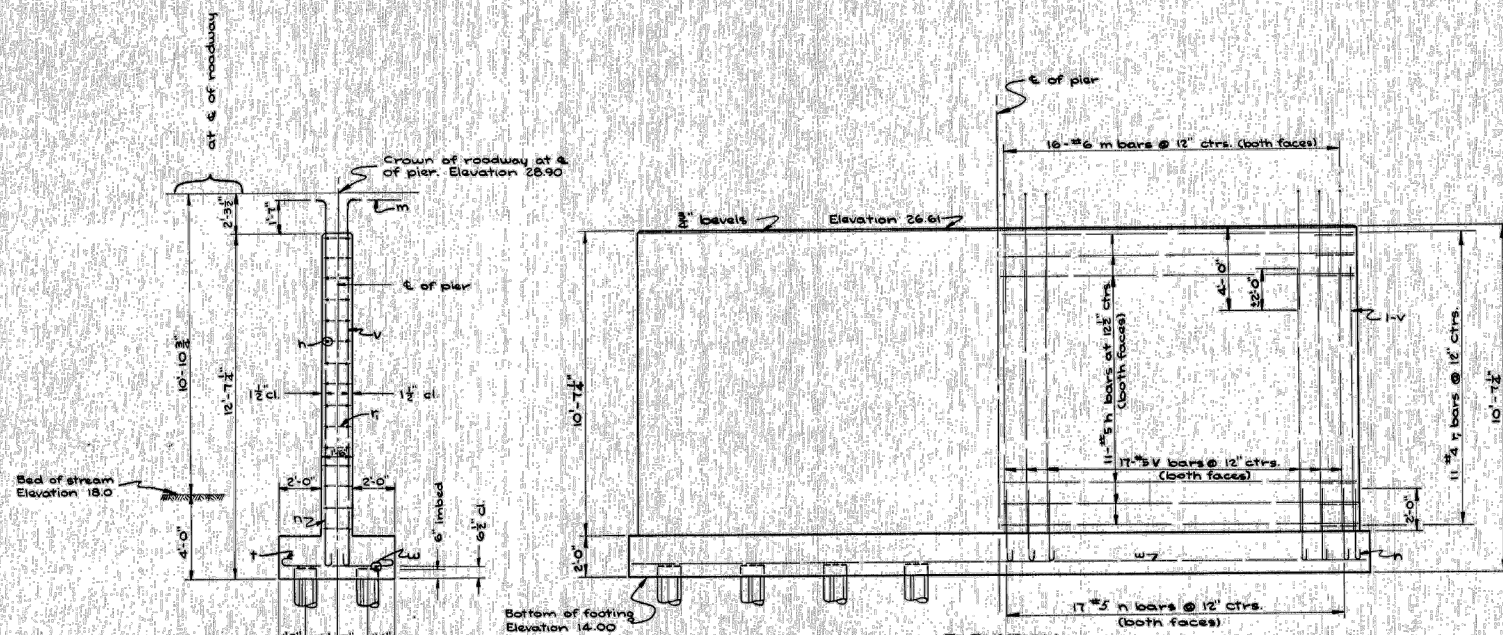
GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

EXISTING PLANS

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 35
FILE NO.: 111360.00 Y-	OF 37

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

F.A.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
272	358	GRUNDY	7	6
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT S-34(8)				



BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h	44	#5	17'-6"	—
r	22	#4	5'-6"	U
m	64	#6	9'-0"	⌋
v	70	#5	8'-6"	—
n	70	#5	4'-3"	U
t	48	#4	6'-6"	—
w	4	#4	18'-6"	—

CLASS X CONCRETE CU.YDS. 34.9
REINFORCEMENT BARS 2940
UNTR. PILING (25' EST. LEN.) LIN. FT. 425
TEST PILE ONE
CLASS B EXCAV FOR STRUCTURES CU.YDS. 54

⊙ 15 Ton Pile, if required
Estimated length 25'-0"

One test pile driven
in permanent location.

STATION 77+86
F.A.S. RT. 272 SEC. 358
FA. PROJECT S-34(8)
MAZON TOWNSHIP
GRUNDY COUNTY

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\036-EXISTING 05.dwg
Last Modified: Thursday, April 1, 2021 4:24:03 PM
Plotted On: Friday, April 2, 2021 1:38:21 PM
by Kurt Decker

DRAWN BY: KED	LEVEL	BY	DATE	REVISIONS	DESCRIPTION
CHECKED BY: JKC					
DATE: 02/2021					

PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

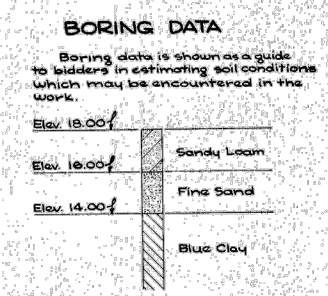
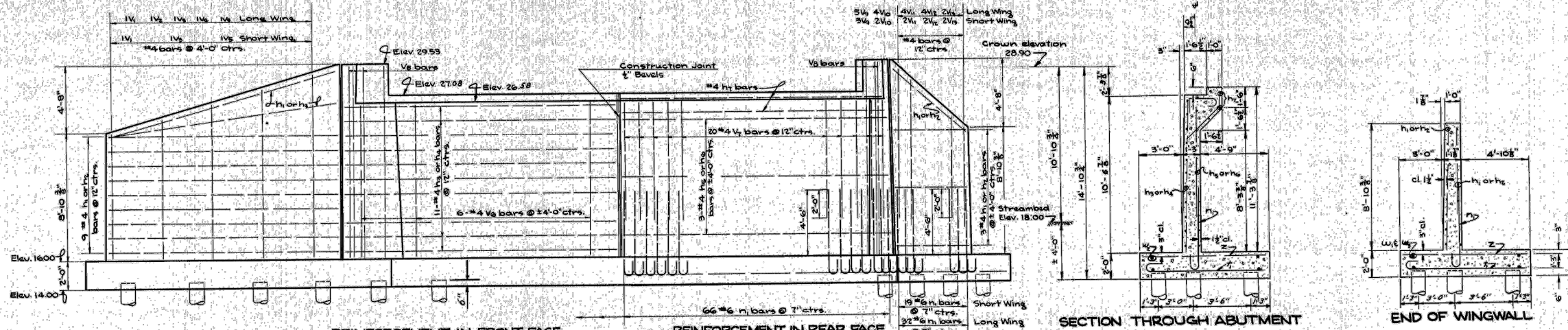
EXISTING PLANS

CURRENT AS OF: 04/02/2021	
SCALE: AS NOTED	SHEET 36
FILE NO.: 111360.00 Y-	OF 37

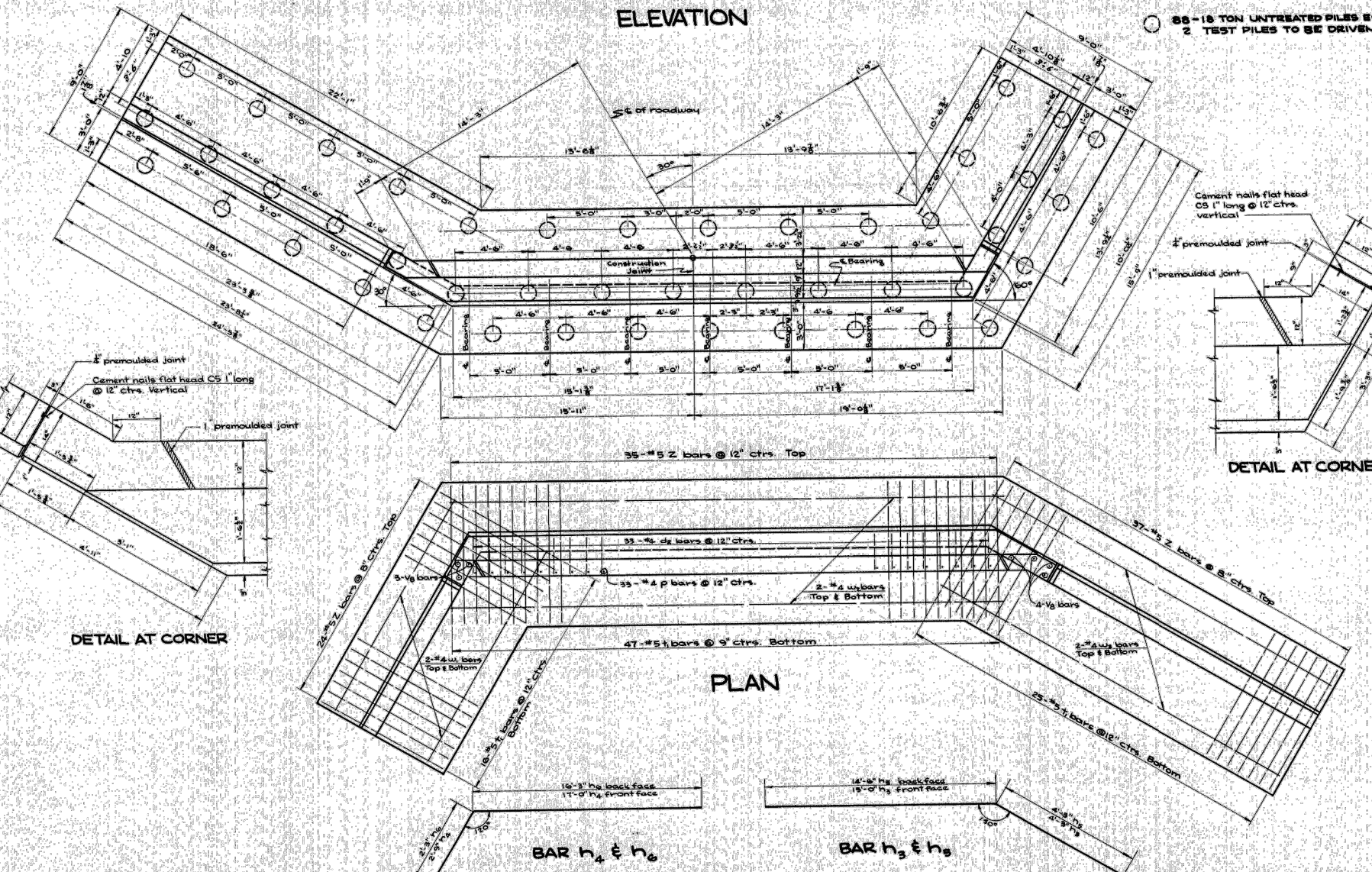
CONTRACT NO. 87741

F.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
272	35B	GRUNDY	7	7
FED. ROAD DIST. NO. ILLINOIS PROJECT			534 (8)	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



66-18 TON UNTREATED PILES ESTIMATED LENGTH 25 FT.
2 TEST PILES TO BE DRIVEN IN PERMANENT LOCATION



BILL OF MATERIALS TWO ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE
d ₂	66	#4	7'-0"	
h ₁	50	#4	18'-0"	
h ₂	50	#4	10'-6"	
h ₃	22	#4	19'-9"	
h ₄	22	#4	19'-9"	
h ₅	8	#4	18'-9"	
h ₆	8	#4	18'-0"	
n ₁	234	#6	7'-0"	
p	66	#4	4'-6"	
v ₁	4	#4	9'-0"	
v ₂	2	#4	10'-0"	
v ₃	4	#4	11'-0"	
v ₄	2	#4	12'-0"	
v ₅	4	#4	13'-0"	
v ₆	24	#4	10'-3"	
v ₇	80	#4	8'-9"	
v ₈	14	#4	13'-5"	
v ₉	16	#4	10'-9"	
v ₁₀	12	#4	9'-5"	
v ₁₁	12	#4	8'-9"	
v ₁₂	12	#4	7'-9"	
v ₁₃	8	#4	6'-9"	
t ₁	176	#5	9'-9"	
w ₁	8	#4	15'-9"	
w ₂	16	#4	18'-6"	
w ₃	8	#4	24'-6"	
z	192	#5	8'-9"	

CLASS "X" CONCRETE CU. YDS. 162.6
REINFORCEMENT BARS 9540
UNTR. PILING EST. LEN. (25') 2200
TEST PILES TWO
CLASS A EXCAV. FOR STRUCTURES CU. YDS. 460
CLASS B EXCAV. FOR STRUCTURES CU. YDS. 280

STATION 77+86
F.A.S. RT. 272 SEC. 35B
F.A. PROJECT S-34(8)
MAZON TOWNSHIP
GRUNDY COUNTY

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Drawing Name: R:\USERS\DAW\111360-00 GRUNDY CO. BRIDGE REPLIC. OVER MURRAY SLOUGH\CAD\037-EXISTING 06.dwg
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REVISIONS	LEVEL	BY	DATE	DESCRIPTION

CA
Chamlin & Associates

PERU MORRIS
OTTAWA MENDOTA
ILLINOIS

GRAND RIDGE ROAD
SECTION 19-00172-00-BR
GRUNDY COUNTY

EXISTING PLANS

CURRENT AS OF: 04/02/2021	SHEET 37
SCALE: AS NOTED	OF 37
FILE NO.: 111360.00 Y-	

CONTRACT NO. 87741