01-17-2020 LETTING ITEM 147

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
441	08-00103-00-BR	McDONOUGH	20	1
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2D5L(964)		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR
PROPOSED LOCAL AGENCY IMPROVEMENT
SURFACE TRANSPORTATION RURAL - BRIDGE

INDEX OF SHEETS

LIST OF STANDARDS

280001-07	TEMPORARY EROSION CONTROL DEVICES
515001-04	NAME PLATE FOR BRIDGES
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPL) GUARDRAIL TERMINALS
631032-09	TRAFFIC BARRIER TERMINAL, TYPE 6A
666001-01	RIGHT OF WAY MARKERS
701001-02	OFF ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF ROAD OPERATIONS, 2L, 2W, 15' TO 24' FROM PAVEMENT EDGE
701011-04	OFF ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701301-04	LANE CLOSURE 2L, 2W, SHORT TERM OPERATIONS
701306-04	LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS > 45 MPH
701901-08	TRAFFIC CONTROL DEVICES
BLR21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SCALES

PLAN ---------- 50' 0 50'

HORIZONTAL PROFILE ---------- 50' 0 50'

VERTICAL PROFILE ---------- 5' 0 5'

VERT CROSS SECTIONS ---------- 5' 0 5'

HORIZ CROSS SECTIONS --------- 10' 0 10'

CATALOG NO. 035677-00D
CONTRACT NO. 89753
JOB NO. C-94-016-19

CALL JULIE TOLL FREE
1-(800)-892-0123 or 811
OPERATES 24 HOURS A DAY 365 DAYS A YEAR
48 HOURS BEFORE YOU DIG

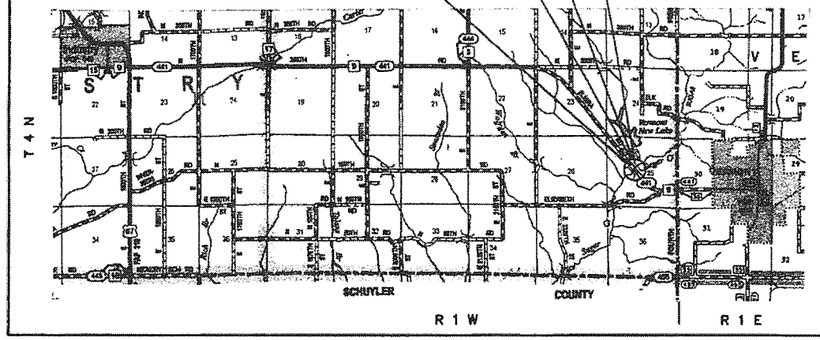
McDONOUGH COUNTY
F.A.S. ROUTE 441 (CH 9) OVER SUGAR CREEK
SECTION 08-00103-00-BR
JOB NO. C-94-016-19
PROJECT NO. 2D5L(964)
PROPOSED STRUCTURE NO. 055-3066

EXISTING STRUCTURE #055-3015 IS A THREE SPAN STEEL BEAM BRIDGE, 130'-3½" BACK TO BACK OF REINFORCED CONCRETE SPILLTHROUGH ABUTMENTS, 24'-0" FACE TO FACE OF CONCRETE CURBS, ON EXPOSED TIMBER PILES AT A 23½° R.H.F. SKEW, WITH CONCRETE SLOPE WALLS, IS TO BE REMOVED.

PROPOSED STRUCTURE #055-3066 IS A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM STRUCTURE, 182'-0" BACK TO BACK OF SPILLTHROUGH CONCRETE ABUTMENTS, 32'-0" OUT TO OUT ON CONCRETE ENCASED STEEL PILES DRIVEN TO REFUSAL ON A 20° R.H.F. SKEW AT STATION 174+50.50 WITH APPROACH WORK AND OTHER INCIDENTAL WORK TO BE INCLUDED.

PROPOSED IMPROVEMENT BEGINS AT STATION 169+50.00

PROPOSED IMPROVEMENT ENDS AT STATION 178+50.00



LOCATION MAP

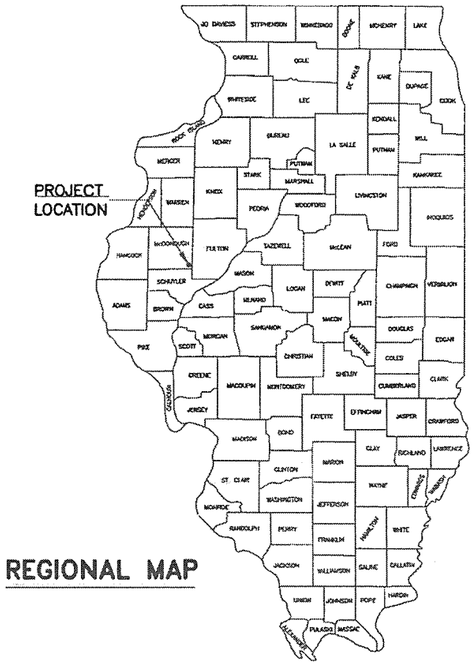
APPROXIMATE SCALE: 1 0.5 0 1 MILE

TOTAL & NET LENGTH OF PROJECT: 900.0 FT. = 0.1705 MI.

ROADWAY CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN) ADT = 555 (2039)

DESIGN GUIDELINES: RURAL

DESIGN SPEED = 40 M.P.H.



REGIONAL MAP

BENJAMIN A. NEBEL 58767 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

BENJAMIN A. NEBEL
P.E. No. 062-058767
EXPIRES NOVEMBER 30, 2019

10/7/19
DATE

~~PLANS PREPARED BY THE~~
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

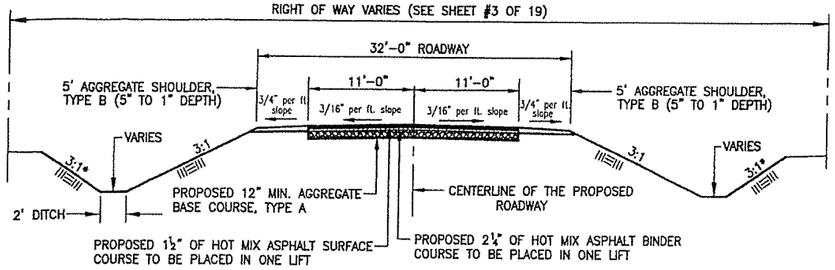
APPROVED Oct 10 20 19
McDONOUGH COUNTY ENGINEER

PASSED oct. 25 20 19
DISTRICT 4 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW October 28 20 19
REGION 3 ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

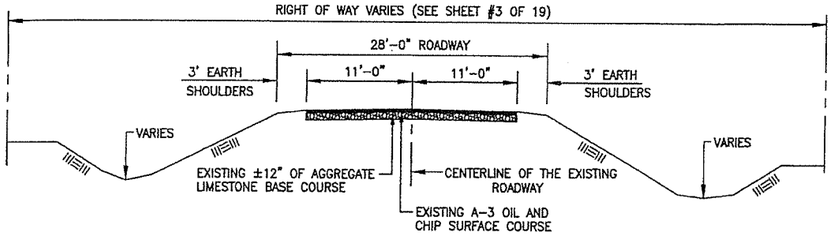
F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	20	2
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJ. NO. 205(864)		



* NOTE: UNLESS OTHERWISE NOTED ON CROSS SECTIONS

TYPICAL SECTION THROUGH THE PROPOSED ROADWAY
FROM STA 169+50.00 TO STA 173+59.50 AND FROM STA 175+41.50 TO STA 178+50.00

NO SCALE



TYPICAL SECTION THROUGH THE EXISTING ROADWAY
FROM STA 169+50.00 TO STA 173+81.58 AND FROM STA 175+11.87 TO STA 178+50.00

NO SCALE

QUANTITIES NOT OTHERWISE SHOWN ON THE PLANS

20100500: TREE REMOVAL, ACRES

STA 174+50.50 RT. TO STATION 178+50.00 RT. = 0.3 ACRE

TOTAL = 0.3 ACRE

48101200: AGGREGATE SHOULDERS, TYPE B (@2.0 TONS PER CU YD)

STATION 169+50.00 TO STATION 173+59.50 = 76.0 TONS
STATION 175+41.50 TO STATION 178+50.00 = 57.0 TONS

TOTAL = 133.0 TONS

40600275: BITUMINOUS MATERIALS (PRIME COAT)
(USE 0.25 LBS PER SQ. FT.)

STATION 169+50.00 TO STATION 173+59.50 = 2342.0 POUNDS
STATION 175+41.50 TO STATION 178+50.00 = 1764.0 POUNDS

TOTAL = 4106.0 POUNDS

44000100: PAVEMENT REMOVAL

STATION 169+50.00 TO STATION 173+81.58 = 1055.0 SQ YDS
STATION 175+11.87 TO STATION 178+50.00 = 827.0 SQ YDS

TOTAL = 1882.0 SQ YDS

40600290: BITUMINOUS MATERIALS (TACK COAT)
(USE 0.025 LBS PER SQ. FT.)

STATION 169+50.00 TO STATION 173+59.50 = 228.0 POUNDS
STATION 175+41.50 TO STATION 178+50.00 = 172.0 POUNDS

TOTAL = 400.0 POUNDS

35100100: AGGREGATE BASE COURSE, TYPE A (@ 2.0 TONS PER CU YD)
(USE AVERAGE DEPTH OF 12" AND WIDTH OF 23')

STATION 169+50.00 TO STATION 173+59.50 = 698.0 TONS
STATION 175+41.50 TO STATION 178+50.00 = 526.0 TONS
(ADD 10% FOR RUTTING) = 122.0 TONS

TOTAL = 1346.0 TONS

40603080: HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50
(USE 112.0 LB/SQ YD/INCH)

STATION 169+50.00 TO STATION 173+59.50 = 129.0 TONS
STATION 175+41.50 TO STATION 178+50.00 = 97.0 TONS
(ADD 10% FOR RUTTING) = 23.0 TONS

TOTAL = 249.0 TONS

40604050: HOT MIX ASPHALT SURFACE COURSE, IL-9.5, MIX C, N50

STATION 169+50.00 TO STATION 173+59.50 = 168.0 TONS
STATION 175+41.50 TO STATION 178+50.00 = 127.0 TONS
BRIDGE DECK = 92.0 TONS

TOTAL = 387.0 TONS

78007120: PERMANENT PAVEMENT MARKING - LINE 5"

STA 169+50.00 TO STA 178+50.00
SKIP-DASH (900' x .25' PER FOOT OF PAINT) = 225.0 FOOT
STA 172+95.00 RT. TO STA 178+50.00 RT.
NO PASSING ZONE = 555.0 FOOT

TOTAL = 780.0 FOOT

GENERAL NOTES

1. ALL PROFILE GRADES ARE TO THE TOP OF THE FINISHED HOT MIX ASPHALT SURFACE COURSE.

2. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL CAREFULLY PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

3. THE COST OF REMOVING ANY EXISTING ENTRANCES, CROSS ROAD CULVERTS, OR DITCH CULVERTS IS TO BE CONSIDERED INCIDENTAL TO THE COST PER CUBIC YARD FOR EARTH EXCAVATION.

4. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER IN REGARD TO THE AMOUNT OF RIPRAP AND BEDDING MATERIAL REQUIRED PRIOR TO ORDERING THESE ITEMS.

5. THE NECESSARY REMOVAL OF ANY EXISTING FENCES ARE TO BE DONE BY THE COUNTY PRIOR TO THE BEGINNING OF CONSTRUCTION WITH THE COST TO BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT.

6. THE EXISTING RIGHT OF WAY DIMENSIONS SHOWN ON THE PLAN/PROFILE AND CROSS SECTION SHEETS ARE ONLY APPROXIMATE.

7. THE CONTRACTOR WILL NOT BE ALLOWED TO BURY THE EXISTING STRUCTURES OR TREES NEAR THE JOBSITE. THIS MATERIAL IS TO BE HAULED OFF THE AREA BY THE CONTRACTOR EXCEPT FOR THOSE MATERIALS DEEMED SALVAGABLE BY THE ENGINEER.

8. THE REMOVAL OF THE EXISTING ROADWAY SURFACE IS TO BE PAID FOR AT THE COST PER SQUARE YARD FOR PAVEMENT REMOVAL. THE COST TO REMOVE THE EXISTING BASE COURSE MATERIAL TO CONSTRUCT THE NEW BRIDGE IS TO BE CONSIDERED INCIDENTAL TO THE COST PER CUBIC YARD FOR EARTH EXCAVATION.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND TO NOTIFY ALL UTILITY COMPANIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THIS SHALL BE INCIDENTAL TO THE CONTRACT.

10. TERMINAL MARKERS ARE TO BE PLACED AT THE END OF EACH TYPE 1 TRAFFIC BARRIER TERMINAL WITH THIS WORK BEING DONE BY OTHERS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAWCUTTING BUTT JOINTS IN THE EXISTING BITUMINOUS PAVEMENT AT EACH END OF THE PROJECT LIMITS PRIOR TO REMOVING THE SURFACE AS DIRECTED BY THE ENGINEER. THIS WORK IS TO BE CONSIDERED INCIDENTAL TO THE COST PER SQUARE YARD FOR PAVEMENT REMOVAL.

12. HOT-MIX ASPHALT REQUIREMENTS:

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT.

LOCATION(S): STA 169+50.00 TO STA 178+50.00		
MIXTURE USE(S):	SURFACE COURSE	BINDER COURSE
PG:	64-22	64-22
DESIGN AIR VOIDS:	4.0% @Ndes = 50	4.0% @Ndes = 50
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	Mixture C (dolomite or 1/4")	N/A
MIXTURE WEIGHT:	112 lb./sq yd/inch	112 lb./sq yd/inch
QUALITY MGMT. PROGRAM.:	QCQA	QCQA
SUBLOT SIZE:	N/A	N/A
NUMBER OF ROLLER PASSES	7	7

13. COMMITMENTS:

COMMITMENTS ARE NOT TO BE ALTERED WITHOUT THE WRITTEN APPROVAL OF ALL PARTIES TO WHICH THE COMMITMENT WAS MADE.

THERE ARE THREE COMMITMENTS TOWARDS THIS PROJECT WHICH TWO ARE BASED ON THE BIOLOGICAL RESOURCES AND NATURAL RESOURCES REVIEW LETTER AND ONE ON THE PROPOSED DETOUR ROUTE.

A. TREE CLEARING RESTRICTION. TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT ARE NOT TO BE CLEARED BETWEEN APRIL 1 AND SEPTEMBER 30.

B. BRIDGE BAT ASSESSMENT MUST BE CONDUCTED PRIOR TO CONSTRUCTION. THE STRUCTURE WAS SURVEYED FOR SIGNS OF BATS AND THIS ASSESSMENT IS VALID FOR TWO YEARS. IF THE ASSESSMENT EXPIRES, A NEW BRIDGE BAT SURVEY/ASSESSMENT WILL BE CONDUCTED PRIOR TO CONSTRUCTION. THE CURRENT ASSESSMENT WAS MADE ON 10/31/2018 AND IS VALID FOR TWO YEARS.

C. McDONOUGH COUNTY IS REQUIRED TO CONTACT THE THREE PROPERTY OWNERS THAT LIVE ALONG THIS ROAD IN FULTON COUNTY THAT ARE BETWEEN THE McDONOUGH COUNTY LINE AND THE VILLAGE OF VERMONT, IL. TO KEEP THEM NOTIFIED OF THE UPCOMING CONSTRUCTION AND TIME LINE OF WORK, AS PER THE FULTON COUNTY HIGHWAY DEPARTMENT DETOUR APPROVAL LETTER.

SUMMARY OF QUANTITIES

20100500	TREE REMOVAL, ACRES	ACRE	0.3
20200100	EARTH EXCAVATION	CU YD	1382.0
20300100	CHANNEL EXCAVATION	CU YD	1825.0
20400800	FURNISHED EXCAVATION	CU YD	4432.0
25000200	SEEDING CLASS 2	ACRE	0.8
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	72.0
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	72.0
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	72.0
25100115	MULCH, METHOD 2	ACRE	0.8
28000400	PERIMETER EROSION BARRIER	FOOT	400.0
28000315	AGGREGATE DITCH CHECKS	TON	96.0
28100227	STONE RIPRAP, CLASS B4	TON	1230.0
28200200	FILTER FABRIC	SQ YD	1515.0
28300400	AGGREGATE DITCH	TON	1590.0
35100100	AGGREGATE BASE COURSE, TYPE A	TON	1346.0
44000100	PAVEMENT REMOVAL	SQ YD	1882.0
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	4106.0
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	400.0
40603080	HMA BINDER COURSE, IL-19.0, N50	TON	249.0
40604050	HMA SURFACE COURSE, IL-9.5, MIX C, N50	TON	387.0
48101200	AGGREGATE SHOULDERS, TYPE B	TON	133.0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.0
50104650	SLOPE WALL REMOVAL	SQ YD	440.0
50200100	STRUCTURE EXCAVATION	CU YD	60.0
50200300	COFFERDAM EXCAVATION	CU YD	310.0
50201101	COFFERDAM (TYPE 1) (LOCATION - 1)	EACH	1.0
50201102	COFFERDAM (TYPE 1) (LOCATION - 2)	EACH	1.0
50300225	CONCRETE STRUCTURES	CU YD	219.9
50300280	CONCRETE ENCASEMENT	CU YD	4.2
50400505	PP CONCRETE DECK BEAMS, (27" DP.)	SQ FT	5757.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	19490.0
Δ 50901050	STEEL RAILING, TYPE SM	FOOT	364.0
51201600	FURNISHING STEEL PILES HP12x53	FOOT	630.0
51201610	FURNISHING STEEL PILES HP12x63	FOOT	882.0
51202305	DRIVING PILES	FOOT	1512.0
51203600	TEST PILE STEEL HP12x53	EACH	2.0
51203610	TEST PILE STEEL HP12x63	EACH	2.0
51204650	PILE SHOES	EACH	28.0
51500100	NAME PLATES	EACH	1.0
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	640.0
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	315.0
Δ 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4.0
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPL) TANGENT	EACH	4.0
66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	8.0
67100100	MOBILIZATION	L SUM	1.0
Δ 72501000	TERMINAL MARKERS - DIRECT APPLIED	EACH	4.0
Δ 78007120	PERMANENT PAVEMENT MARKING - LINE 5"	FOOT	780.0
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1.0
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.0
20076600	TRAINEES	HOUR	1,000
20076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	1,000

Δ SPECIALTY ITEMS

BENCHMARKS

NO. 1 - HORIZONTAL SPIKE IN TELEPHONE POLE
STATION 171+13, 42' RT.
ELEVATION = 565.65 FEET

NO. 2 - TOP OF CURB ON BRIDGE DECK AT THE NORTHEAST CORNER
STATION 173+76, 13' LT.
ELEVATION = 572.53 FEET

NO. 3 - TOP OF CURB ON BRIDGE DECK AT THE SOUTHWEST CORNER
STATION 175+17, 12' RT.
ELEVATION = 578.32 FEET

NO. 4 - HORIZONTAL SPIKE IN CORNERPOST
STATION 177+36, 39' RT.
ELEVATION = 599.01 FEET

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	3
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2051(964)		

EROSION CONTROL PLAN AND RIGHT OF WAY LAYOUT

FURNISHING AND ERECTING RIGHT OF WAY MARKER LOCATIONS

STATION 171+00, 50.6' RT. = 1.0 EACH
STATION 173+50, 80.0' RT. = 1.0 EACH
STATION 175+50, 80.0' RT. = 1.0 EACH
STATION 177+35, 39.3' RT. = 1.0 EACH

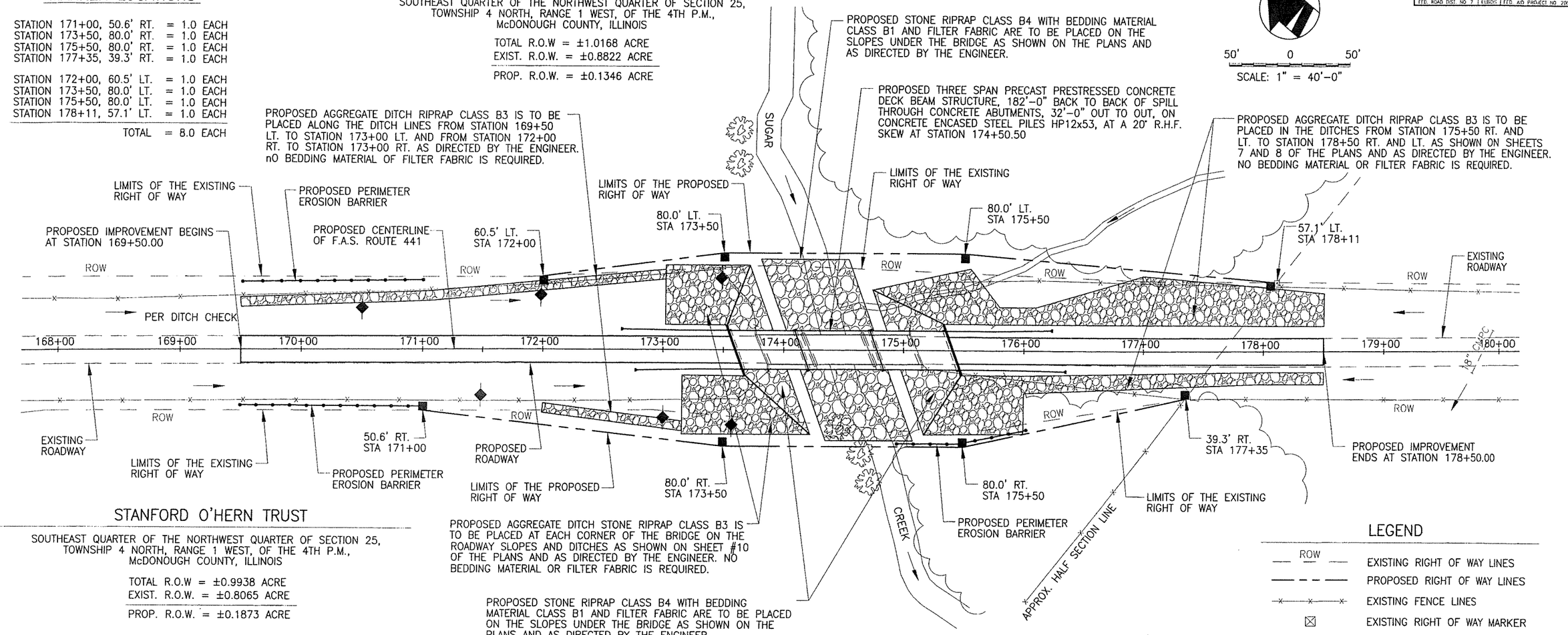
STATION 172+00, 60.5' LT. = 1.0 EACH
STATION 173+50, 80.0' LT. = 1.0 EACH
STATION 175+50, 80.0' LT. = 1.0 EACH
STATION 178+11, 57.1' LT. = 1.0 EACH

TOTAL = 8.0 EACH

STANFORD O'HERN TRUST

SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 4 NORTH, RANGE 1 WEST, OF THE 4TH P.M., McDONOUGH COUNTY, ILLINOIS

TOTAL R.O.W = ±1.0168 ACRE
EXIST. R.O.W. = ±0.8822 ACRE
PROP. R.O.W. = ±0.1346 ACRE



STANFORD O'HERN TRUST

SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 4 NORTH, RANGE 1 WEST, OF THE 4TH P.M., McDONOUGH COUNTY, ILLINOIS

TOTAL R.O.W = ±0.9938 ACRE
EXIST. R.O.W. = ±0.8065 ACRE
PROP. R.O.W. = ±0.1873 ACRE

AGGREGATE DITCH CHECKS

(USE 2.0 TON OF RR3, B QUALITY RIPRAP PER AGGREGATE DITCH CHECK)

STATION 170+50 LT.	STATION 171+50 RT.
STATION 172+00 LT.	STATION 173+00 RT.
STATION 173+50 LT.	STATION 173+50 RT.
STATION 175+50 LT.	STATION 176+00 RT.
STATION 175+56 LT.	STATION 176+07 RT.
STATION 175+62 LT.	STATION 176+14 RT.
STATION 175+68 LT.	STATION 176+21 RT.
STATION 175+73 LT.	STATION 176+28 RT.
STATION 175+79 LT.	STATION 176+35 RT.
STATION 175+85 LT.	STATION 176+42 RT.
STATION 175+91 LT.	STATION 176+49 RT.
STATION 175+97 LT.	STATION 176+56 RT.
STATION 176+16 LT.	STATION 176+63 RT.
STATION 176+53 LT.	STATION 176+70 RT.
STATION 176+89 LT.	STATION 176+77 RT.
STATION 177+14 LT.	STATION 176+84 RT.
STATION 177+33 LT.	STATION 176+91 RT.
STATION 177+52 LT.	STATION 176+98 RT.
STATION 177+71 LT.	STATION 177+14 RT.
STATION 177+90 LT.	STATION 177+33 RT.
STATION 178+09 LT.	STATION 177+53 RT.
STATION 178+28 LT.	STATION 177+72 RT.
STATION 178+47 LT.	STATION 177+92 RT.
	STATION 178+12 RT.
	STATION 178+33 RT.

48 DITCH CHECK LOCATIONS @ 2 TON EACH = 96.0 TON

PERIMETER EROSION BARRIER LOCATIONS

STATION 169+50 LT. TO STATION 171+00 LT. = 150.0 FOOT
STATION 169+50 RT. TO STATION 171+00 RT. = 150.0 FOOT
STATION 175+00 RT. TO STATION 176+00 RT. = 100.0 FOOT

TOTAL = 400.0 FOOT

SEEDING, CLASS 2 AND MULCH METHOD 2

STATION 169+50 RT TO STATION 171+60 RT = 0.25 ACRE
STATION 169+50 LT TO STATION 171+60 LT = 0.25 ACRE
STATION 176+12 LT TO STATION 178+50 LT = 0.20 ACRE
STATION 176+00 RT TO STATION 178+50 RT = 0.10 ACRE

TOTAL = 0.80 ACRE

FERTILIZER NUTRIENTS

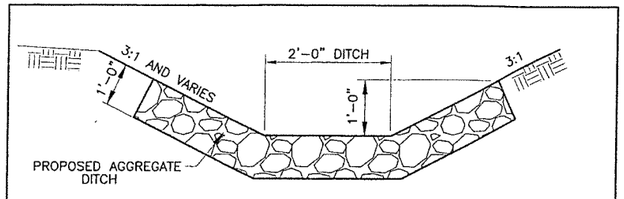
(EACH NUTRIENT TO BE APPLIED AT A RATE OF 90 LBS PER ACRE)

NITROGEN FERTILIZER NUTRIENT: 0.8 ACRE x 90.0 = 72.0 LBS.
PHOSPHORUS FERTILIZER NUTRIENT: 0.8 ACRE x 90.0 = 72.0 LBS.
POTASSIUM FERTILIZER NUTRIENT: 0.8 ACRE x 90.0 = 72.0 LBS.

LEGEND

- EXISTING RIGHT OF WAY LINES
- PROPOSED RIGHT OF WAY LINES
- EXISTING FENCE LINES
- EXISTING RIGHT OF WAY MARKER
- PROPOSED RIGHT OF WAY MARKER
- PROPOSED RR3 OR RR4 RIPRAP
- PROPOSED PERIMETER EROSION BARRIER
- PROPOSED AGGREGATE DITCH CHECK

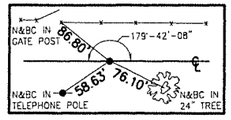
NOTE: THE PROPOSED TEMPORARY DITCH CHECK SYMBOLS WERE OMITTED ON THE PLAN VIEW FROM THE BRIDGE TO THE END OF THE PROJECT FOR CLARITY PURPOSES.



DETAIL OF DITCH PROTECTION

NO SCALE

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	4
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2D5L(964)		



P.I. STATION 166+64.55
(1381.89 N, 674.59 E)

STANFORD B. O'HERN TRUST

SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 4 NORTH, RANGE 1 WEST, OF THE 4TH P.M., McDONOUGH COUNTY, ILLINOIS

TOTAL R.O.W = ±1.0168 ACRE
EXIST. R.O.W. = ±0.8822 ACRE
PROP. R.O.W. = ±0.1346 ACRE

50' TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY

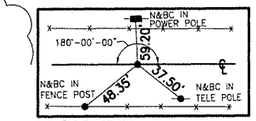
PROPOSED STONE RIPRAP CLASS B4 WITH BEDDING MATERIAL CLASS B1 AND FILTER FABRIC ARE TO BE PLACED ON THE SLOPES UNDER THE BRIDGE AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

PROPOSED AGGREGATE DITCH STONE RIPRAP CLASS B3 IS TO BE PLACED ON THE FORESLOPES AT EACH CORNER OF THE BRIDGE AND IN THE DITCHES FROM STATION 175+50 RT. AND LT. TO STATION 178+50 RT. AND LT. AS SHOWN ON SHEET 3 OF THE PLANS AND AS DIRECTED BY THE ENGINEER.

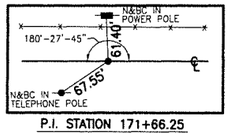
50' 0 50'
SCALE: 1" = 50'-0"

PROPOSED TRAFFIC BARRIER TERMINALS, TYPE 1, (SPECIAL) TANGENT AND TRAFFIC BARRIER TERMINALS, TYPE 6A ARE TO BE INSTALLED AT EACH END OF THE PROPOSED STEEL RAILING TYPE SM IN ACCORDANCE WITH STANDARD 630301-09 AND STANDARD 631032-09 IN THE PLANS

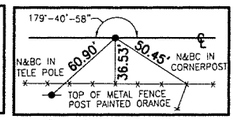
PASTURE
SUGAR CREEK
TIMBER
EXISTING ROADWAY
EXISTING EARTH SHOULDER
LIMITS OF THE EXISTING RIGHT OF WAY
PROPOSED IMPROVEMENT BEGINS AT STATION 169+50.00
PROPOSED CENTERLINE OF F.A.S. ROUTE 441
PROPOSED 5' AGGREGATE SHOULDERS, TYPE B
PROPOSED AGGREGATE DITCH
LIMITS OF THE PROPOSED CONSTRUCTION
LIMITS OF THE PROPOSED RIGHT OF WAY
60.5' LT. STA 172+00
80.0' LT. STA 173+50
80.0' LT. STA 175+50
57.1' LT. STA 178+11
APPROX. HALF SECTION LINE
PROPOSED IMPROVEMENT ENDS AT STATION 178+50.00
50.6' RT. STA 171+00
80.0' RT. STA 173+50
39.3' RT. STA 177+35
80.0' RT. STA 175+50
PROPOSED ROADWAY
EXISTING THREE SPAN STEEL BEAM BRIDGE, 130'-3½" BACK TO BACK OF REINFORCED CONCRETE ABUTMENTS, 24'-0" FACE TO FACE OF CONCRETE CURBS ON EXPOSED TIMBER PILES AT A 23½° R.H.F. SKEW, WITH CONCRETE SLOPE WALLS IS TO BE REMOVED.
PROPOSED THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM STRUCTURE, 182'-0" BACK TO BACK OF SPILL THROUGH CONCRETE ABUTMENTS, 32'-0" OUT TO OUT, ON CONCRETE ENCASED STEEL PILES, AT A 20° R.H.F. SKEW AT STATION 174+50.50



P.O.T. STATION 180+94.70
(290.08 N, 1598.18 E)



P.I. STATION 171+66.25
(1000.00 N, 1000.00 E)

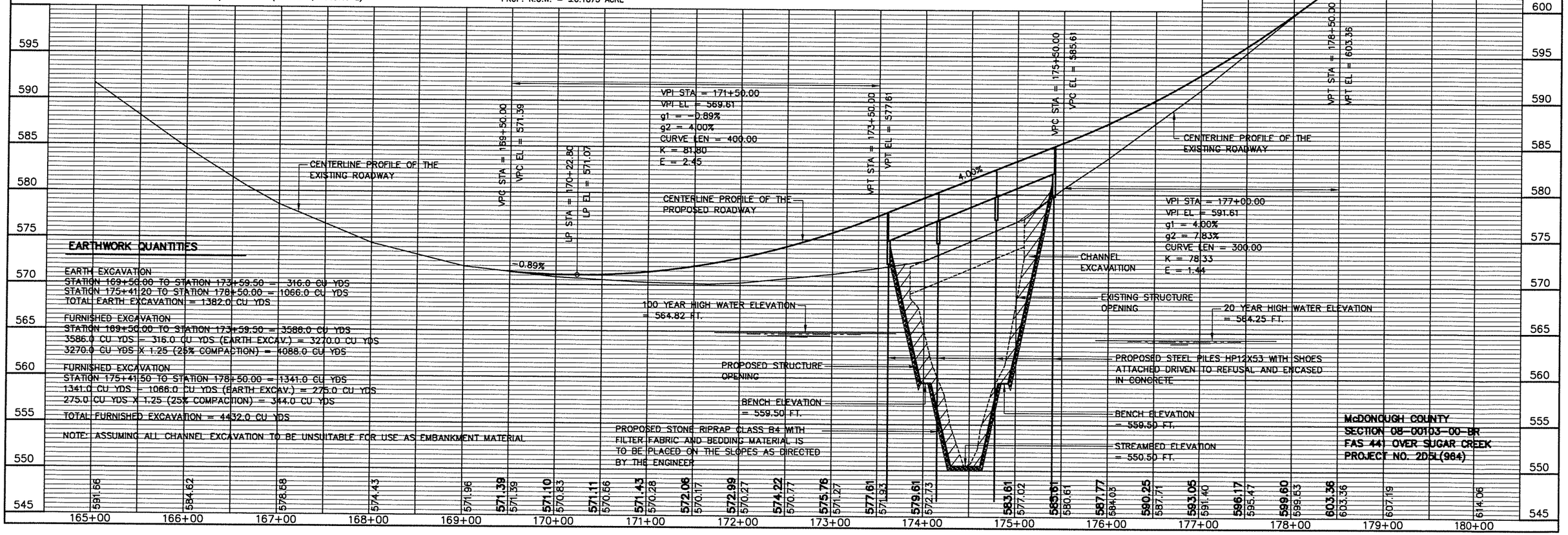


P.I. STATION 177+03.89
(588.12 N, 1345.49 E)

STANFORD B. O'HERN TRUST

SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 4 NORTH, RANGE 1 WEST, OF THE 4TH P.M., McDONOUGH COUNTY, ILLINOIS

TOTAL R.O.W = ±0.9938 ACRE
EXIST. R.O.W. = ±0.8065 ACRE
PROP. R.O.W. = ±0.1873 ACRE



EARTHWORK QUANTITIES

EARTH EXCAVATION
STATION 169+50.00 TO STATION 173+59.50 = 316.0 CU YDS
STATION 175+41.20 TO STATION 178+50.00 = 1066.0 CU YDS
TOTAL EARTH EXCAVATION = 1382.0 CU YDS

FURNISHED EXCAVATION
STATION 169+50.00 TO STATION 173+59.50 = 3586.0 CU YDS
3586.0 CU YDS - 316.0 CU YDS (EARTH EXCAV.) = 3270.0 CU YDS
3270.0 CU YDS X 1.25 (25% COMPACTION) = 4088.0 CU YDS

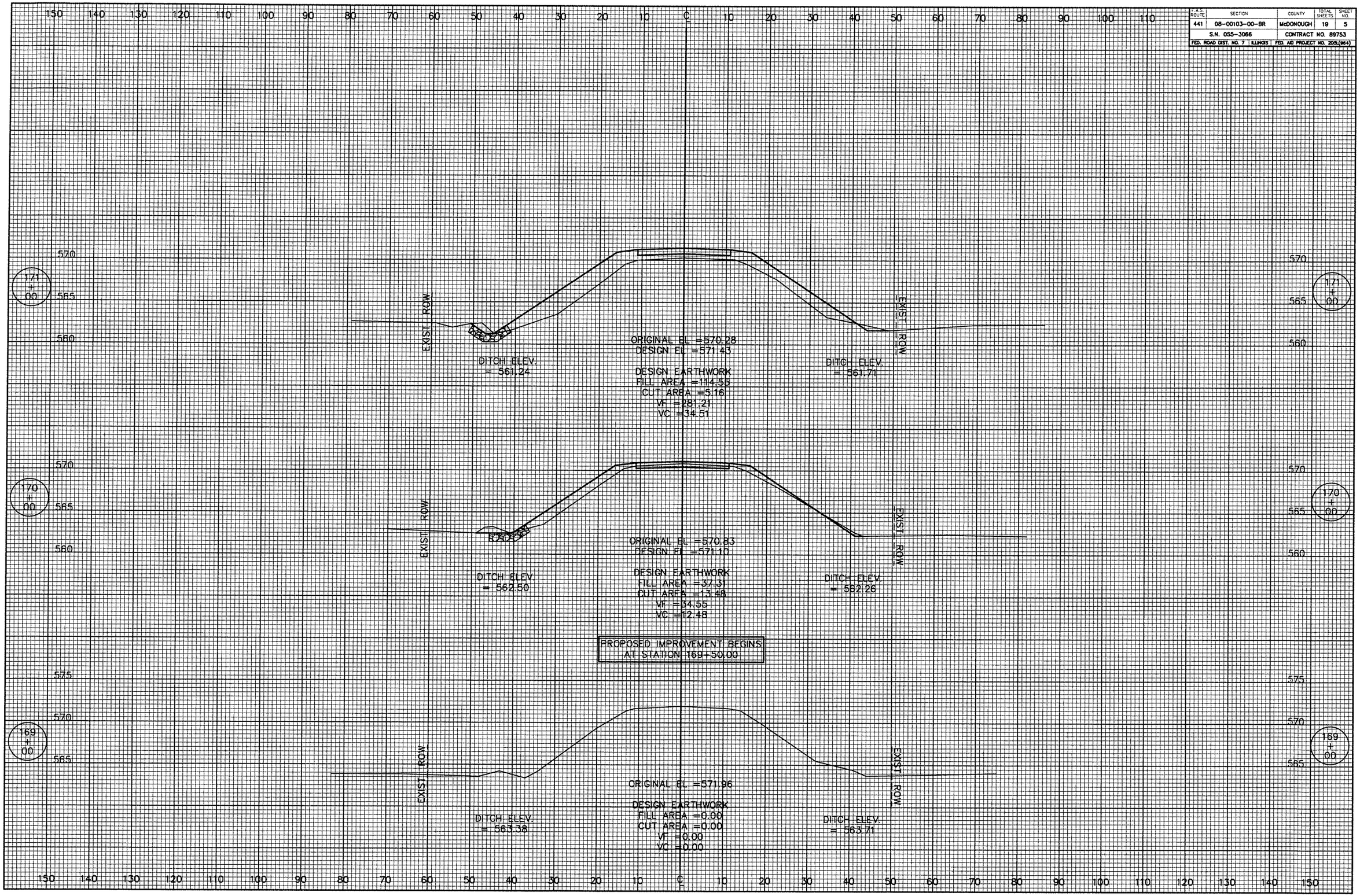
FURNISHED EXCAVATION
STATION 175+41.50 TO STATION 178+50.00 = 1341.0 CU YDS
1341.0 CU YDS - 1066.0 CU YDS (EARTH EXCAV.) = 275.0 CU YDS
275.0 CU YDS X 1.25 (25% COMPACTION) = 344.0 CU YDS

TOTAL FURNISHED EXCAVATION = 4432.0 CU YDS

NOTE: ASSUMING ALL CHANNEL EXCAVATION TO BE UNSUITABLE FOR USE AS EMBANKMENT MATERIAL

McDONOUGH COUNTY
SECTION 08-00103-00-BR
FAS 441 OVER SUGAR CREEK
PROJECT NO. 2D5L(964)

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	5
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 205(964)		



F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	6
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED AID PROJECT NO. 205L(964)		

BRIDGE OMISSION
STATION 173+59.50 TO STATION 175+41.50

173 + 50

PROP. ROW
EXIST. ROW
DITCH ELEV. = 559.75
ORIGINAL EL. =571.93
DESIGN EL. =577.61
DESIGN EARTHWORK
FILL AREA =640.20
CUT AREA =63.03
VF =1031.80
VC =99.00
EXIST. ROW
PROP. ROW
DITCH ELEV. = 559.75

173 + 00

PROP. ROW
EXIST. ROW
DITCH ELEV. = 560.00
ORIGINAL EL. =571.27
DESIGN FIL =575.76
DESIGN EARTHWORK
FILL AREA =474.15
CUT AREA =43.90
VF =1339.48
VC =110.03
EXIST. ROW
PROP. ROW
DITCH ELEV. = 560.25

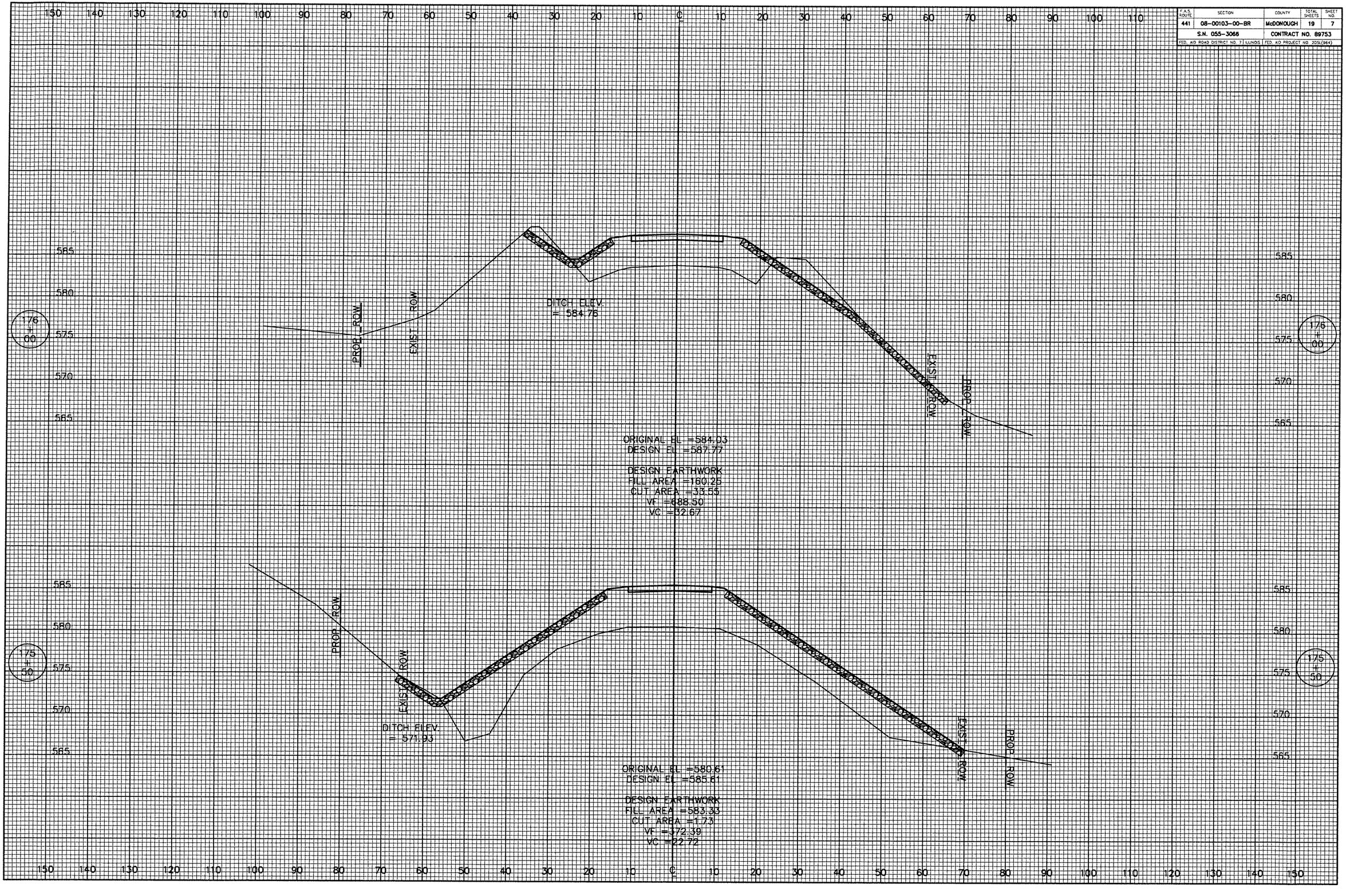
172 + 00

EXIST. ROW
DITCH ELEV. = 560.50
ORIGINAL EL. =570.27
DESIGN FIL =572.99
DESIGN EARTHWORK
FILL AREA =249.17
CUT AREA =15.52
VF =673.56
VC =38.30
EXIST. ROW
PROP. ROW
DITCH ELEV. = 561.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

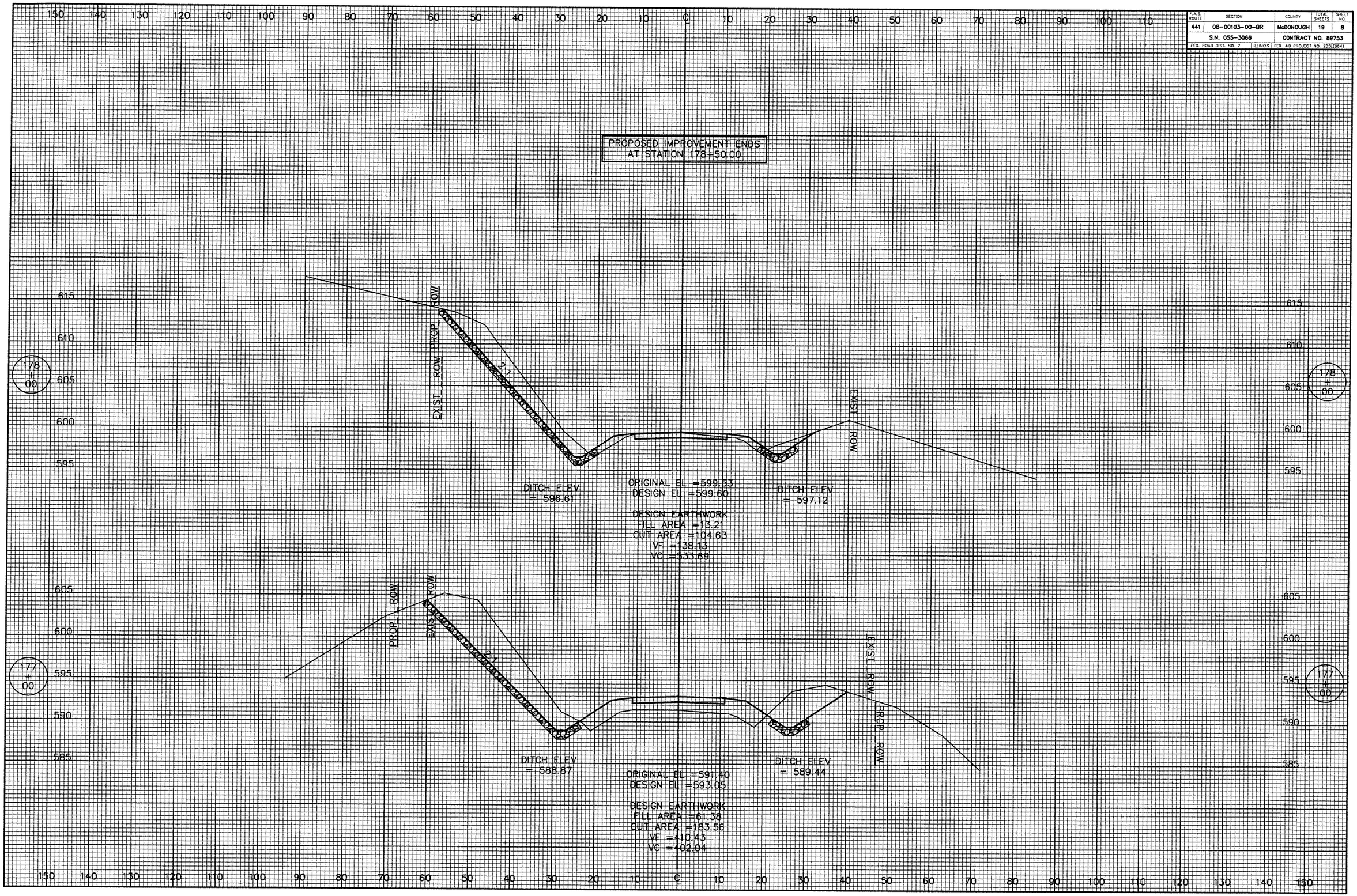
575 570 565 560

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	7
	S.N. 055-3066	CONTRACT NO. 89753		
FED. AID ROAD DISTRICT NO. 7 ILLINOIS		FED. AID PROJECT NO. 205(964)		

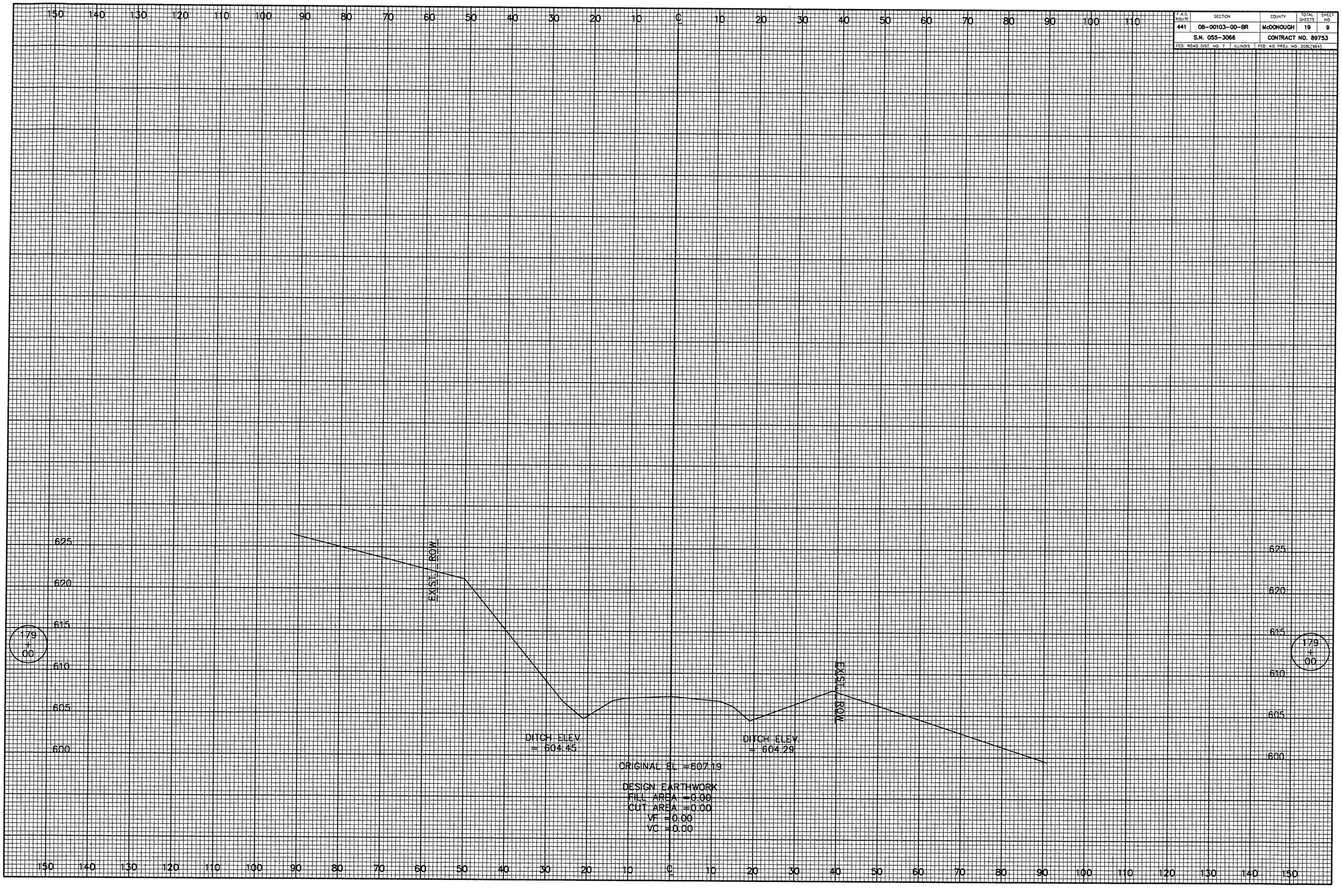


F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	8
	S.N. 055-3066		CONTRACT NO. 89753	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2D5L(964)		

PROPOSED IMPROVEMENT ENDS
AT STATION 178+50.00



F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	9
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJ. NO. 205L(984)		

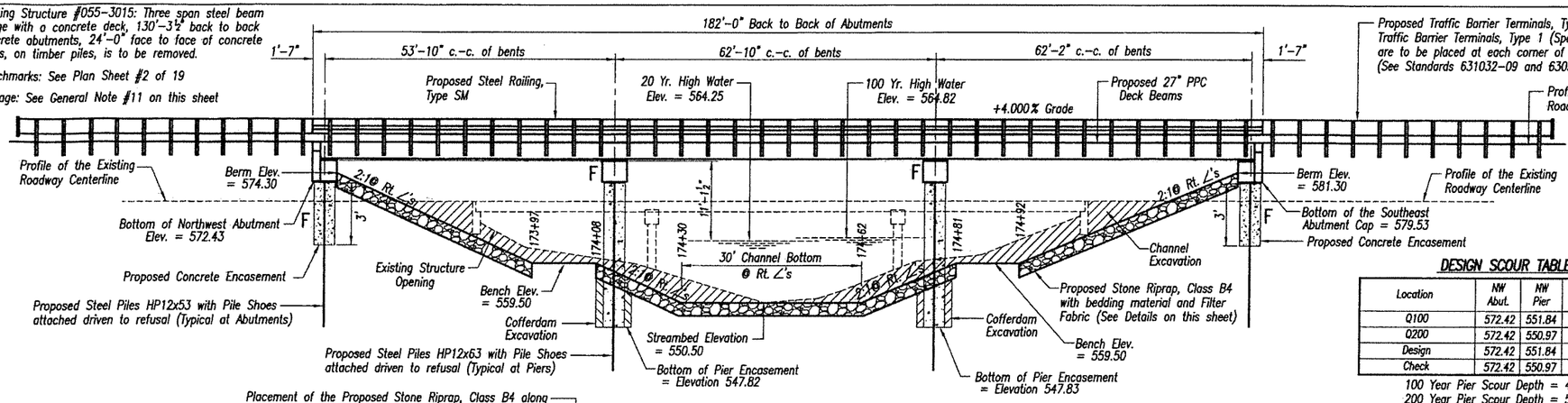


F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	10
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 205L(964)		

Existing Structure #055-3015: Three span steel beam bridge with a concrete deck, 130'-3½" back to back concrete abutments, 24'-0" face to face of concrete curbs, on timber piles, is to be removed.

Benchmarks: See Plan Sheet #2 of 19

Salvage: See General Note #11 on this sheet



ELEVATION

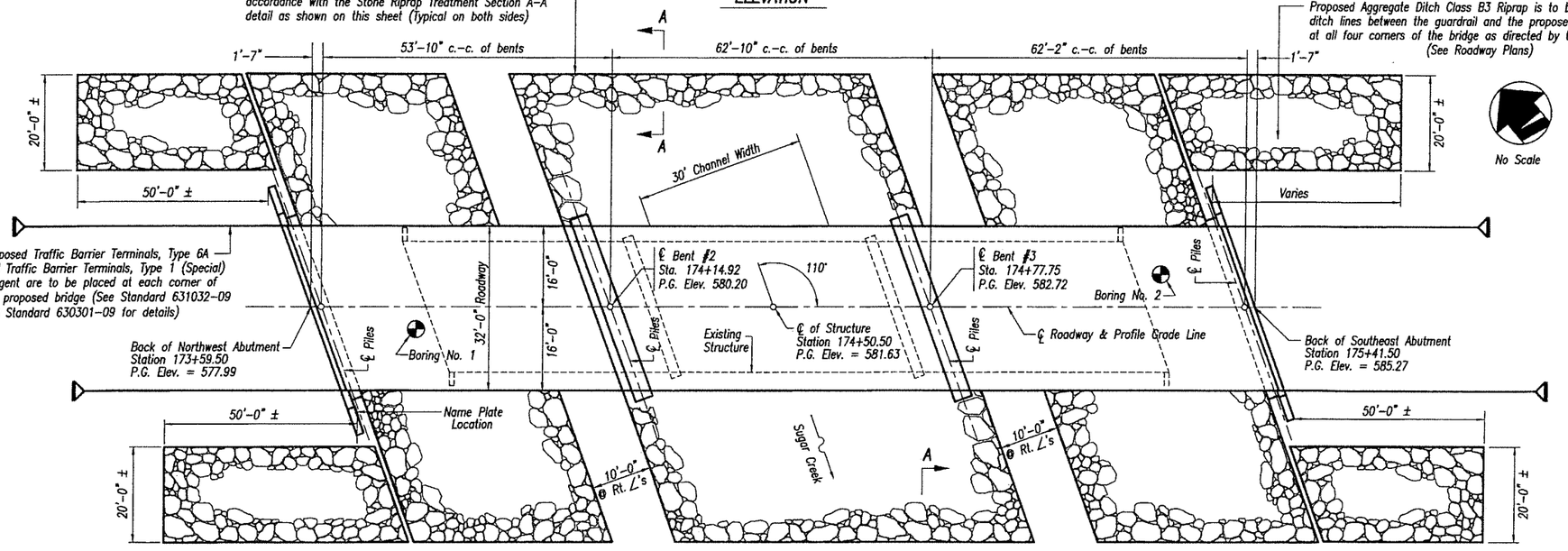
DESIGN SCOUR TABLE

Location	NW Abut.	NW Pier	SE Pier	SE Abut.
Q100	572.42	551.84	553.11	579.53
Q200	572.42	550.97	552.24	579.53
Design	572.42	551.84	553.11	579.53
Check	572.42	550.97	552.24	579.53

100 Year Pier Scour Depth = 4.80'
200 Year Pier Scour Depth = 5.67'

Placement of the Proposed Stone Riprap, Class B4 along the outer edges through the streambed shall be placed in accordance with the Stone Riprap Treatment Section A-A detail as shown on this sheet (Typical on both sides)

Proposed Aggregate Ditch Class B3 Riprap is to be placed along the ditch lines between the guardrail and the proposed right of way lines at all four corners of the bridge as directed by the Engineer. (See Roadway Plans)



PLAN

No Scale

GENERAL NOTES

1. The Contractor shall drive 1 test pile to 110% of the nominal required bearing specified in production locations at the substructure specified or approved by the Engineer before ordering the remainder of the piles.
2. For soil boring logs, see special provisions.
3. A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specifications.
4. Reinforcement Bars shall conform to the requirements of ASTM A706, Grade 60. All Reinforcement Bars in the Abutment Caps are to be Epoxy Coated.
5. Reinforcement Bars designated (E) shall be epoxy coated.
6. Layout and Placement of the Proposed Stone Dumped Riprap, Class B4 and Aggregate Ditches for slope protection may be varied to best meet the existing field condistions, as directed by the Engineer.
7. The top surface of the beams shall be finished according to the IDOT manual for Fabrication of Precast Prestressed Concrete Products.
8. Any existing field tiles located within the project limits are to be maintained by the Contractor during the construction period at his expense and to the satisfaction of the Engineer.
9. All piling cutoffs shall become the property of McDonough County and shall be carefully stockpiled at a location designated by the Engineer within the limits of the right of way.
10. The contractor will be allowed to close the road to through traffic during the construction of the project in accordance with the special provisions.
11. All steel superstructure members shall be salvaged by the Engineer and shall be carefully removed and placed by the Contractor at a location as directed by the Engineer. All unsalvaged material shall become the property of the Contractor and is to be removed from the jobsite. The contractor will be responsible for loading all salvaged materials onto truck and trailers provided by the County.
12. The existing structural steel coating contains lead. The Contractor shall take appropriate precaustions to deal with the presence of lead on this project.

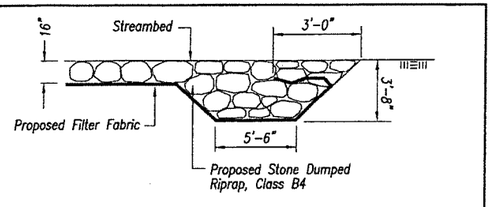
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	Each	—	—	—	1
Slope Wall Removal	Sq. Yds.	—	—	—	440
Hot Mix Asphalt Surface Course, IL-9.5, Mix C, N50	Ton	92	—	—	92
Concrete Structures	Cu. Yds.	—	187.1	32.8	219.9
Precast Prestressed Concrete Deck Beams (27" dp.)	Sq. Ft.	5757	—	—	5757
Steel Railing, Type SM	Foot	364	—	—	364
Reinforcement Bars, Epoxy Coated	Lbs.	—	15190	4300	19490
Furnishing Steel Piles HP12x53	Foot	—	—	630	630
Furnishing Steel Piles HP12x63	Foot	—	882	—	882
Driving Piles	Foot	—	882	630	1512
Test Pile Steel HP12x53	Each	—	—	2	2
Test Pile Steel HP12x63	Each	—	2	—	2
Pile Shoes	Each	—	16	12	28
Name Plates	Each	—	—	—	1
Channel Excavation	Cu. Yds.	—	—	—	1825
Stone Riprap, Class B4	Tons	—	—	—	1230
Filter Fabric	Sq. Yds.	—	—	—	1515
Structure Excavation	Cu. Yds.	—	—	60	60
Concrete Encasement	Cu. Yds.	—	—	4.2	4.2
Waterproofing Membrane System	Sq. Yds.	640	—	—	640
PC Mortar Fairing Course	Foot	315	—	—	315
Traffic Barrier Terminal, Type 1, Special, Tangent	Each	4	—	—	4
Traffic Barrier Terminal, Type 6A	Each	4	—	—	4
Cofferdam (Type 1) Location - 1)	Each	—	1	—	1
Cofferdam (Type 1) (Location - 2)	Each	—	1	—	1
Cofferdam Excavation	Cu. Yds.	—	310	—	310

I certify that to the best of my 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 the requirements of the current AASHTO Standard Specifications for Highway Bridges.
This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of Highway Bridges.

Benjamin A. Nebel — Date 10/7/19
Illinois Structural No. 081-006527
Expires 11/30/2020

BENJAMIN A. NEBEL 081-006527 STRUCTURAL ENGINEER OF ILLINOIS — 10/7/19 — License Exp. 11/30/20



STONE RIPRAP TREATMENT SECTION A-A

PILE DATA (2-ABUTMENTS & 2-PIERS)

Type ..... Steel HP12x53 Piles with Pile Shoes at Abutments
Steel HP12x63 Piles with Pile Shoes at Piers
Capacity ..... HP12x53 Nominal Required Bearing = 419 kips
HP12x53 Factored Resistance Available = 230 kips
HP12x63 Nominal Required Bearing = 497 kips
HP12x63 Factored Resistance Available = 273 kips
Estimated Length ..... 68' at the Northwest Abutment and Northwest Pier
58' at the Southeast Abutment and Southeast Pier
Number Required ..... 12 - HP12x53 Piles (Includes 1 Test Pile to be driven at each Abutment.)
16 - HP12x63 Piles (Includes 1 Test Pile to be driven at each Pier.)

BRIDGE DESIGN SPECIFICATIONS

2017 AASHTO (LRFD), 8th Edition

DESIGN STRESSES

(FIELD UNITS)
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Rein.)

(PRECAST PRESTRESSED UNITS)
f'c = 6,000 p.s.i.
f'ci = 5,000 p.s.i.
f's = 270,000 p.s.i. (½" Strands)
f'si = 201,960 p.s.i. (½" Strands)

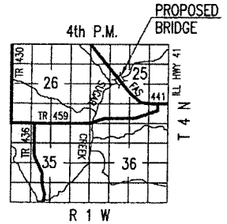
LOADING HL-93

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

F.A.S. ROUTE 441 - STA 174+50.50
SUGAR CREEK
SEC 08-00103-00-BR BUILT 2020
PROJECT NO. 2D5L (964)
McDONOUGH COUNTY
LOADING HL-93
STRUCTURE NO. 055-3066

LETTERING FOR NAME PLATE

Locate Name Plate at the Northwest Corner of Bridge (See Standard 515001)



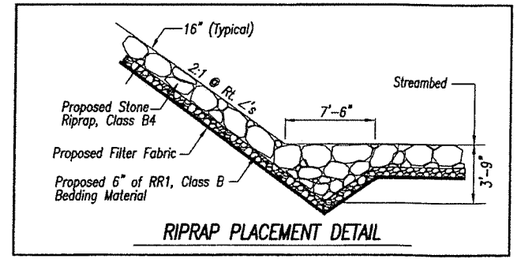
LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 20.72 Sq. Mi. Low Grade Elev. = 571.07 At Sta. 170+23.14

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	3172	620	868	564.25	0.86	0.85	565.11	565.10
Base	100	4560	671	947	564.82	1.54	1.41	566.36	566.23
Overtopping									
Max. Calc.	200								

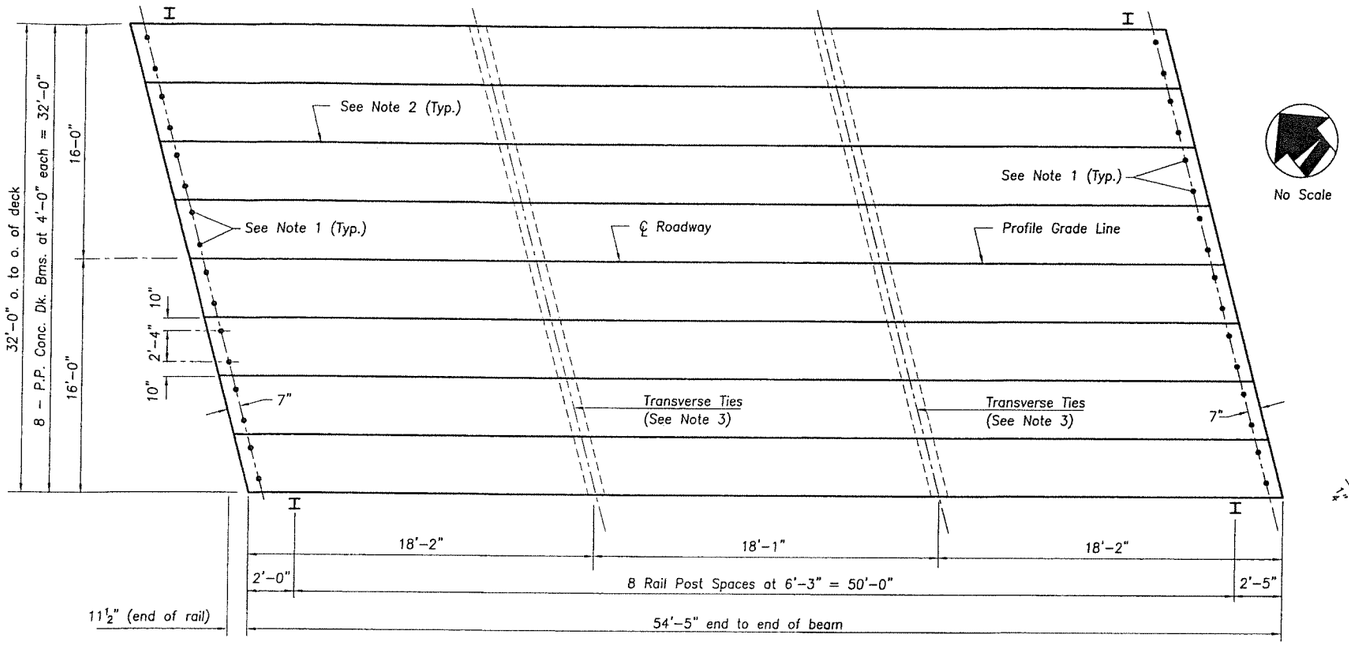
Note: Construction of this project complies with IDNR, Office of Water Resources Statewide Permit No. 2



RIPRAP PLACEMENT DETAIL

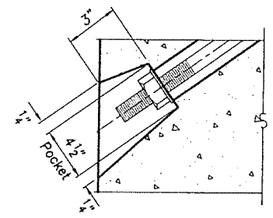
GENERAL BRIDGE PLAN & ELEVATION
F.A.S. ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY
STATION 174+50.50

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	11
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 (ILLINOIS)		FED. AID PROJECT NO. 2D5L(964)		

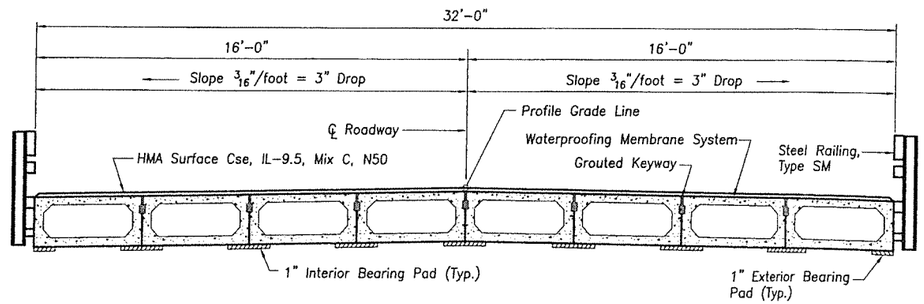


PLAN

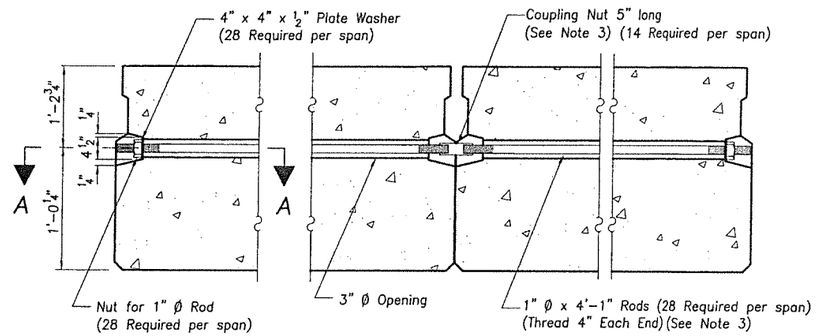
No Scale



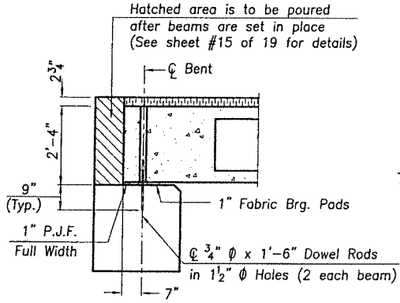
SECTION A-A



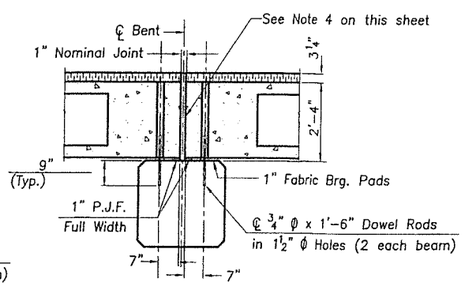
CROSS SECTION



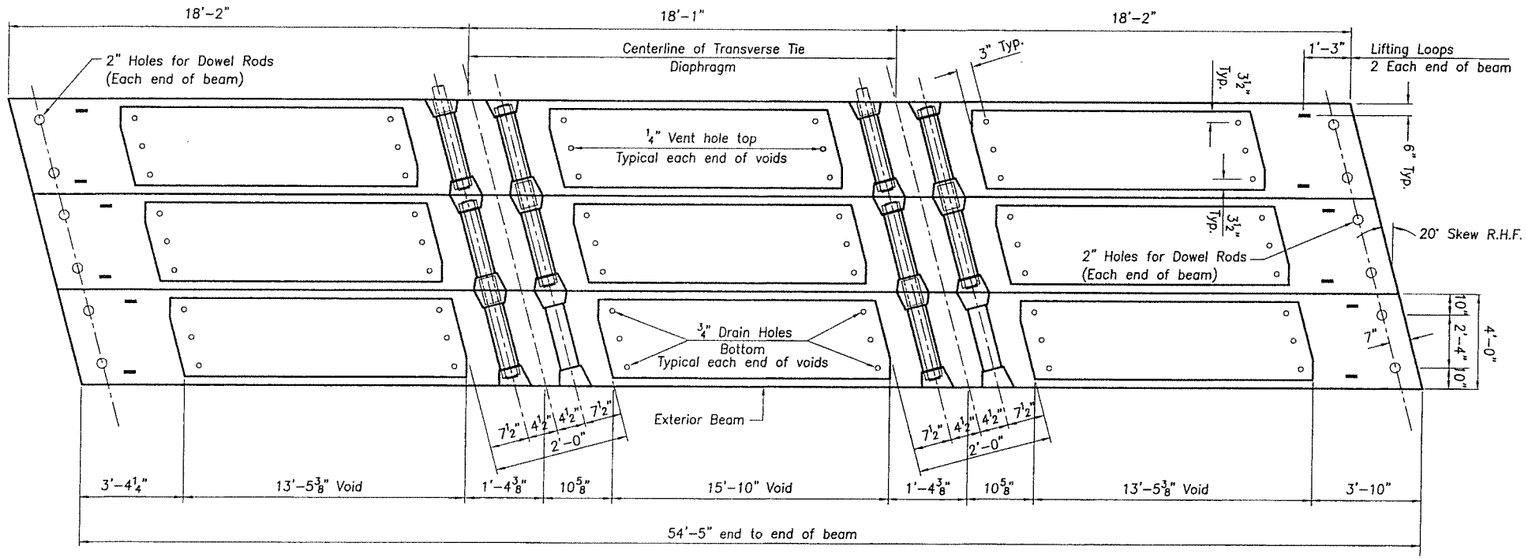
SECTION ALONG TRANSVERSE TIE ASSEMBLY



SECTION AT ABUTMENTS
(At Right Angles)



SECTION AT PIERS
(At Right Angles)



PLAN VIEW OF TRANSVERSE TIE ASSEMBLY

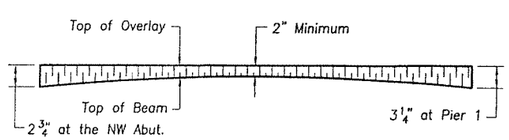
Note: Connect beams in pairs with the transverse tie configuration shown.
Note: Length of Voids between Transverse Tie Assemblies are Symmetrical around Center of Beam

QUANTITIES FOR ONE SPAN

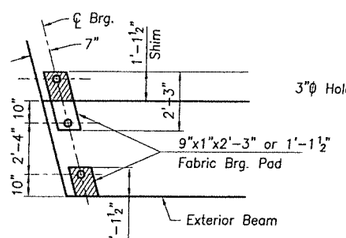
P.P. Concrete Deck Beams, 27" dp.	1741.0 Sq. Ft.
Hot-Mix Asphalt Surf. Cse., IL-9.5, MixC, N50	26.0 Tons
Waterproofing Membrane System	194.0 Sq. Yds.

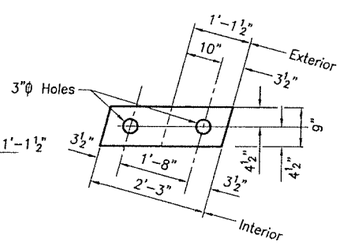
NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Longitudinal keys shall be grouted.
3. The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.
4. Nominal 1" joint over piers shall be filled with non-shrink grout.



PROFILE OF OVERLAY



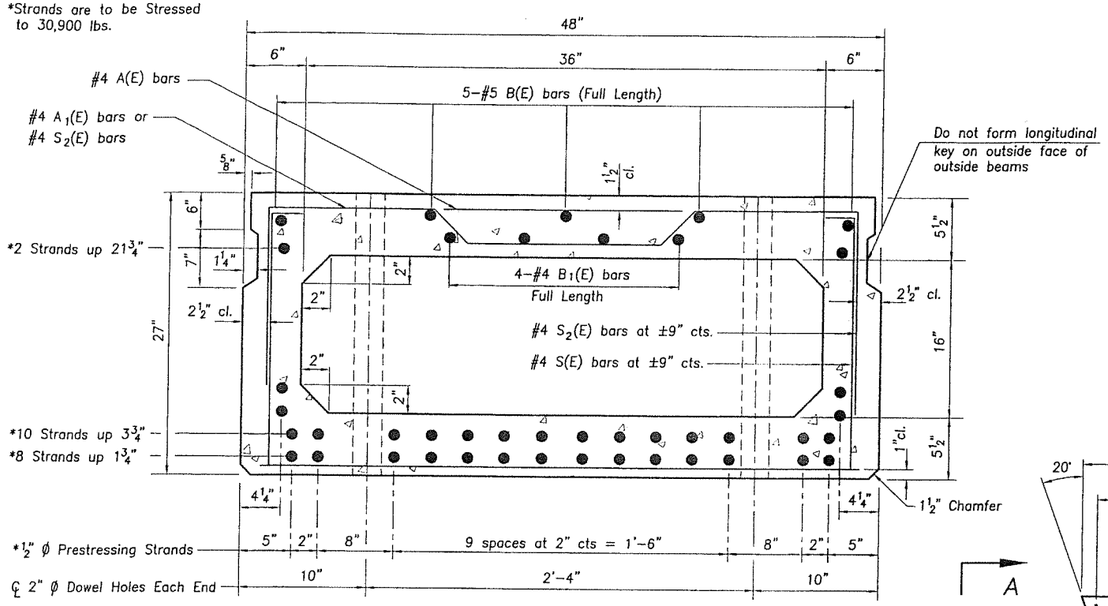


1" FABRIC BEARING PAD DETAILS
Provide two ⅛" Fabric Shim Pads for each bearing location.

P.P.C. DECK BEAM SUPERSTRUCTURE DETAILS
SPAN 1
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

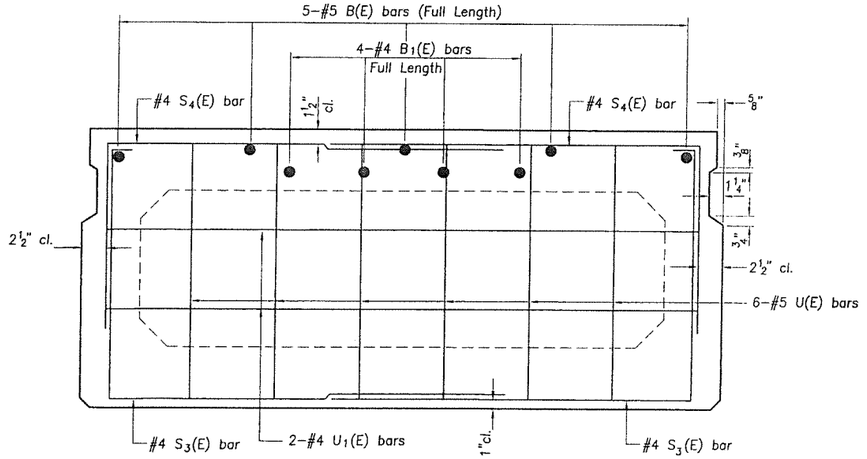
F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	12
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 2D5L(964)		

*Strands are to be Stressed to 30,900 lbs.

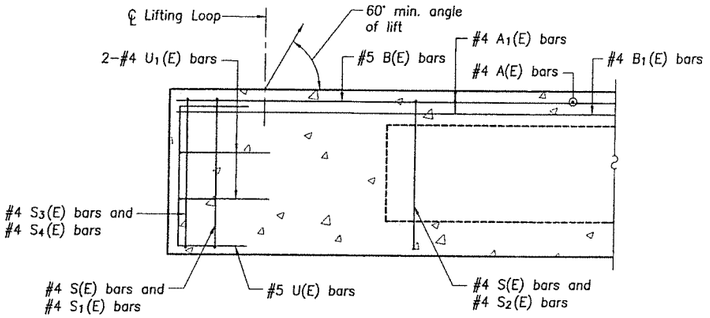


CROSS SECTION

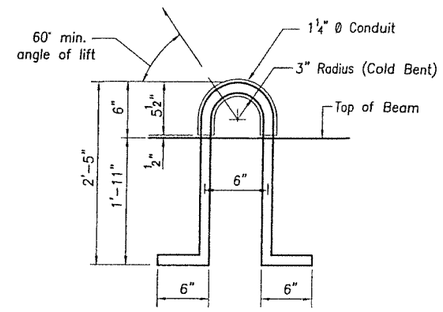
Note: Place the number of strands specified in each row symmetrically about the centerline of the beam in the permissible strand locations shown.



VIEW A–A

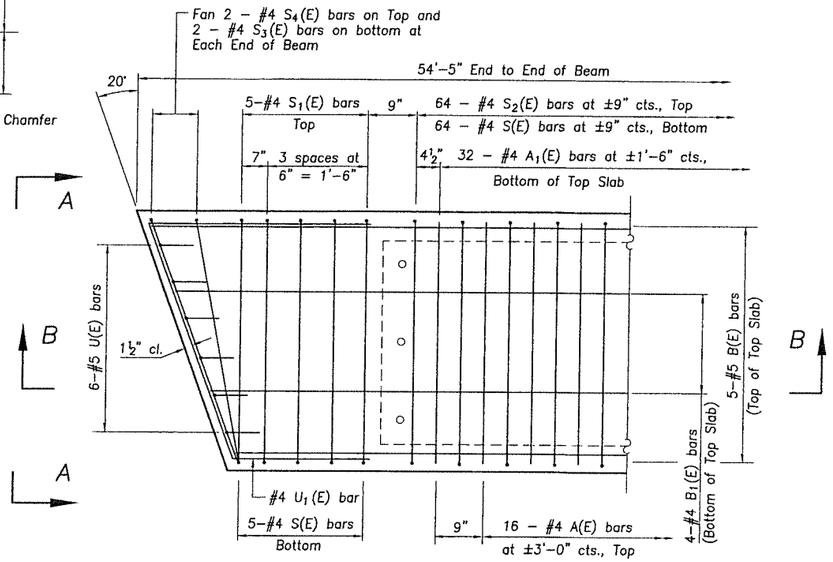


SECTION B–B



LIFTING LOOP DETAIL

Lifting loops shall be 3, ½" ∅–270 ksi strands, as shown.



END REINFORCEMENT

Note: Spacing of the S(E) and S_2(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.

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 7–wire strand, Grade 270.
2. The nominal diameter shall be ½" and the nominal cross–sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
4. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. The top surface of the beams shall be finished in accordance witht the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.
6. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after the transverse tie assembly is in place.
7. Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
8. A minimum 2½" lifting pin shall be used to engage the lifting loops during handling.
9. Corrosion inhibitor, per Article 1020.05(b)(10) and Article 1021.07 of the Standard Specifications, shall be used in the concrete for the precast prestressed concrete deck beams.

MINIMUM BAR LAP

#4 bars = 1'–11"
#5 bars = 2'–6"

DESIGN STRESSES

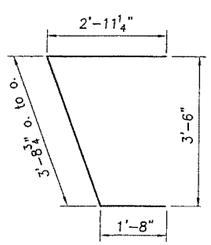
f'c = 6,000 psi
f'ci = 5,000 psi

BAR LIST FOR ONE BEAM ONLY

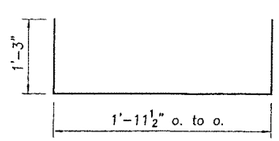
(For Information Only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	3'–7"	
A_1(E)	32	#4	3'–10"	
B(E)	5	#5	54'–2"	
B_1(E)	4	#4	54'–2"	
S(E)	74	#4	8'–5"	
S_1(E)	10	#4	6'–11"	
S_2(E)	64	#4	7'–2"	
S_3(E)	8	#4	6'–2"	
S_4(E)	8	#4	5'–3"	
U(E)	12	#5	4'–6"	
U_1(E)	4	#4	8'–4"	

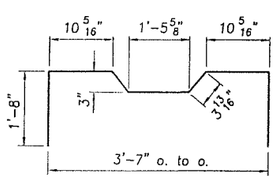
Note: Lengths shown for B and B_1 bars as listed is the total length and does not include any splices. Additional length will need to be added for any laps in the bars at splices.



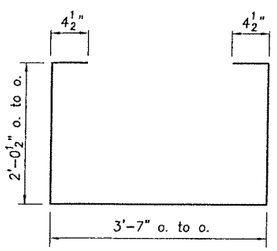
BAR U_1(E)



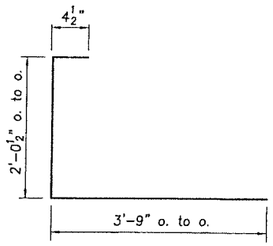
BAR U(E)



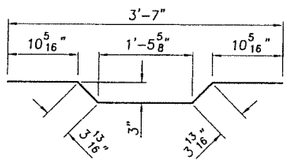
BAR S_2(E)



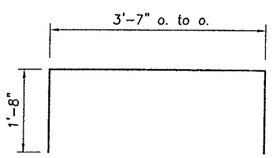
BAR S(E)



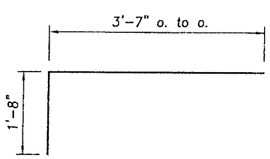
BAR S_3(E)



BAR A_1(E)



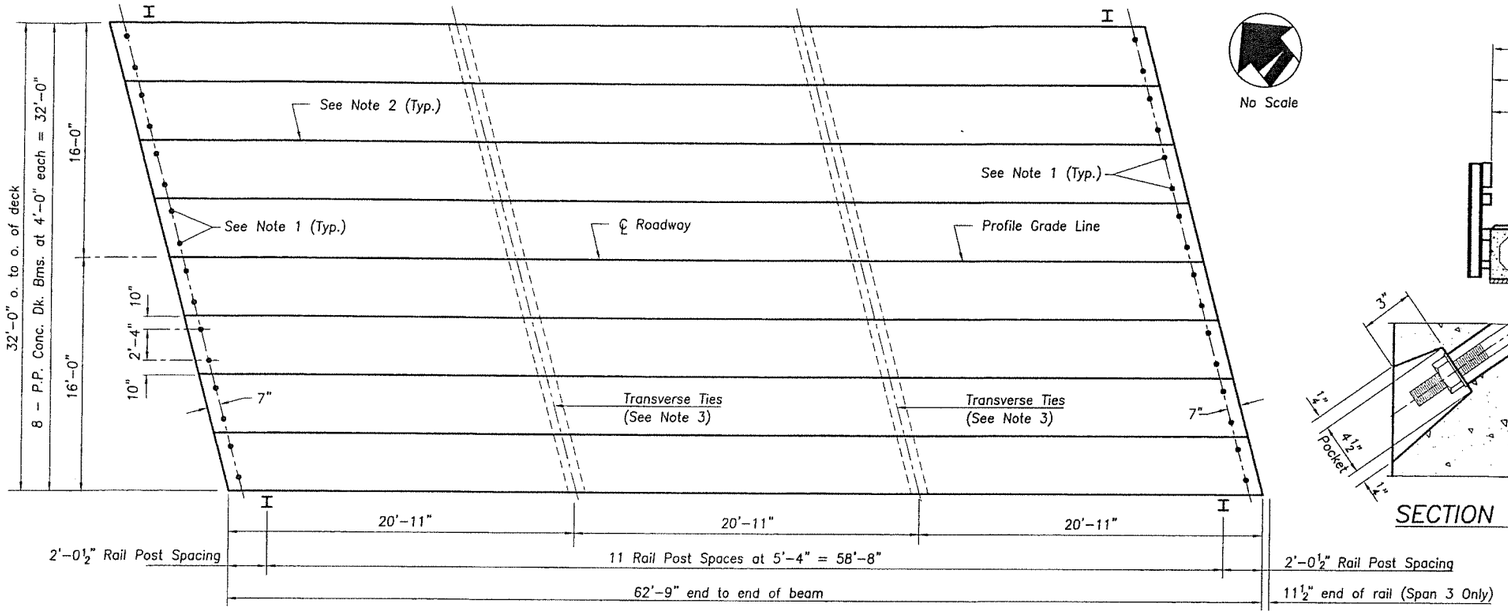
BAR S_1(E)



BAR S_4(E)

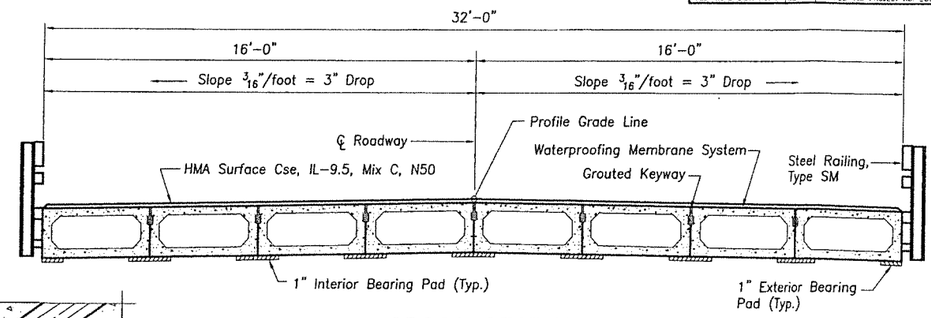
P.P.C. DECK BEAM DETAILS – SPAN 1
F.A.S. ROUTE 441 OVER SUGAR CREEK
SECTION 08–00103–00–BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	13
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 2D5L(964)		



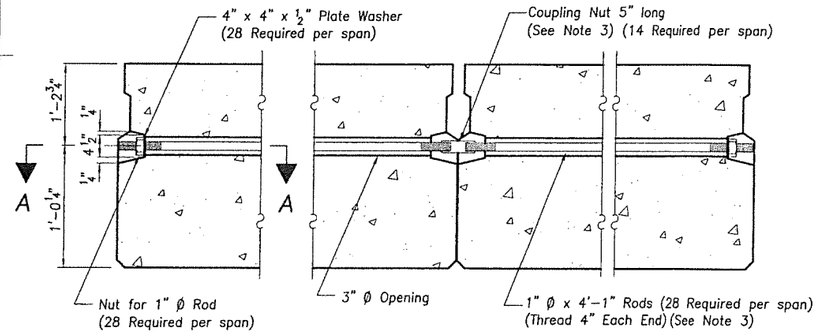
No Scale

PLAN

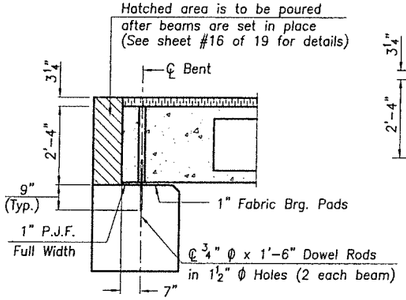


CROSS SECTION

SECTION A-A

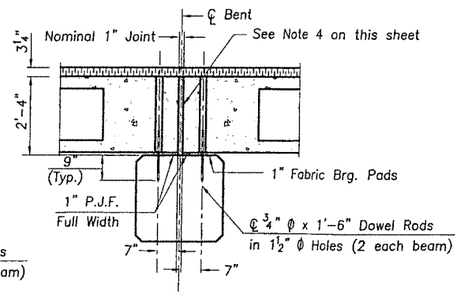


SECTION ALONG TRANSVERSE TIE ASSEMBLY



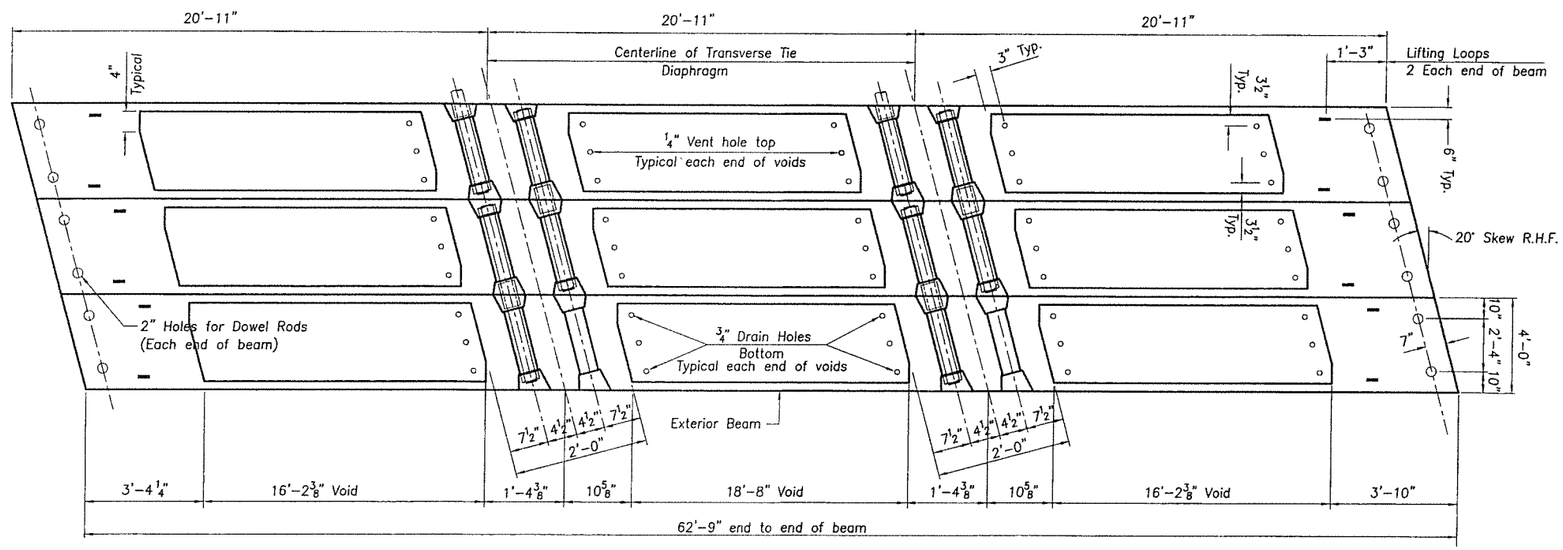
SECTION AT ABUTMENTS

(At Right Angles)



SECTION AT PIERS

(At Right Angles)



PLAN OF TRANSVERSE TIE ASSEMBLY

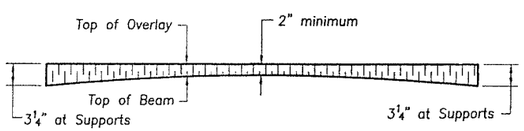
Note: Connect beams in pairs with the transverse tie configuration shown.
Note: Length of Voids between Transverse Tie Assemblies are Symmetrical around Center of Beam

QUANTITIES FOR TWO SPANS

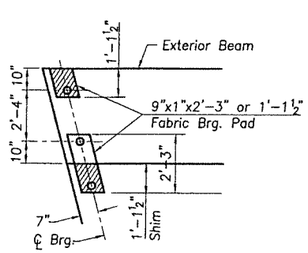
P.P. Concrete Deck Beams, 27" dp.	4016.0 Sq. Ft.
Hot-Mix Asphalt Surf. Cse., IL-9.5, MixC, N50	66.0 Tons
Waterproofing Membrane System	446.0 Sq. Yds.

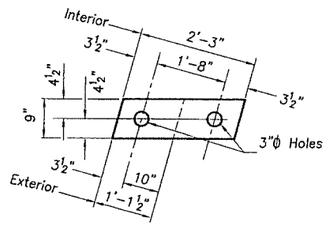
NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Longitudinal keys shall be grouted.
3. The 1" ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.
4. Norninal 1" joint over piers shall be filled with non-shrink grout.



PROFILE OF OVERLAY





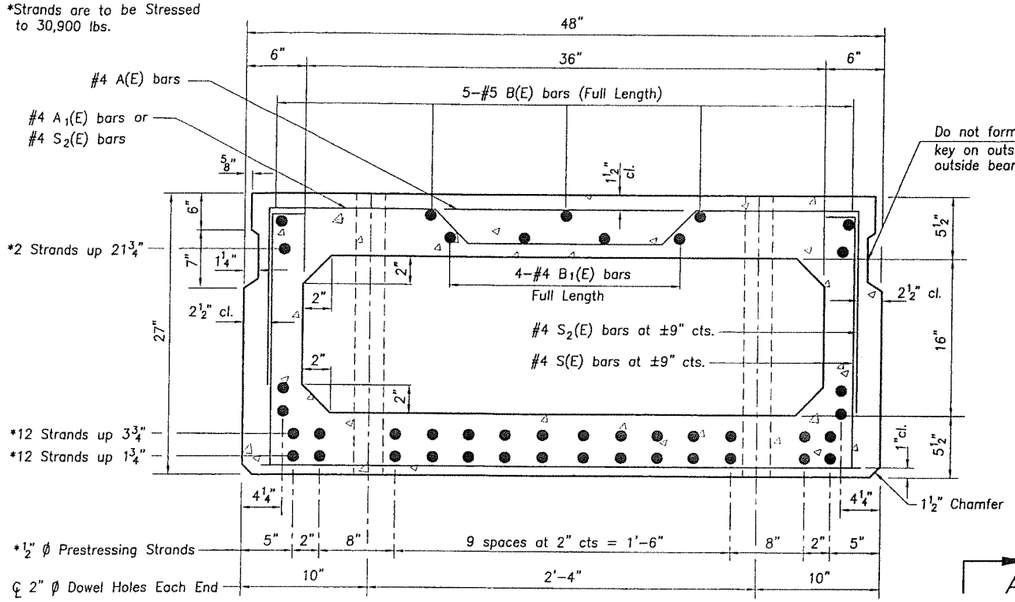
1" FABRIC BEARING PAD DETAILS

Provide two ⅛" Fabric Shim Pads for each bearing location

P.P.C. DECK BEAM SUPERSTRUCTURE DETAILS
SPANS 2 & 3
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

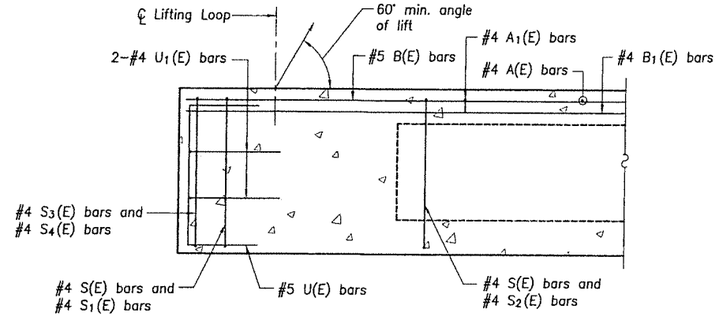
F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	14
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT NO. 2D5L(964)			

*Strands are to be Stressed to 30,900 lbs.

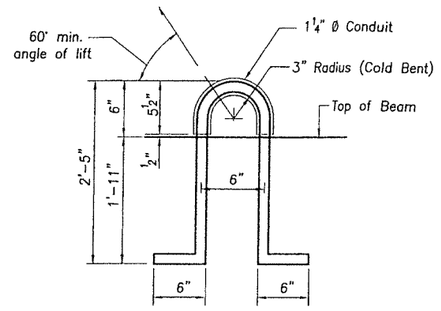


CROSS SECTION

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

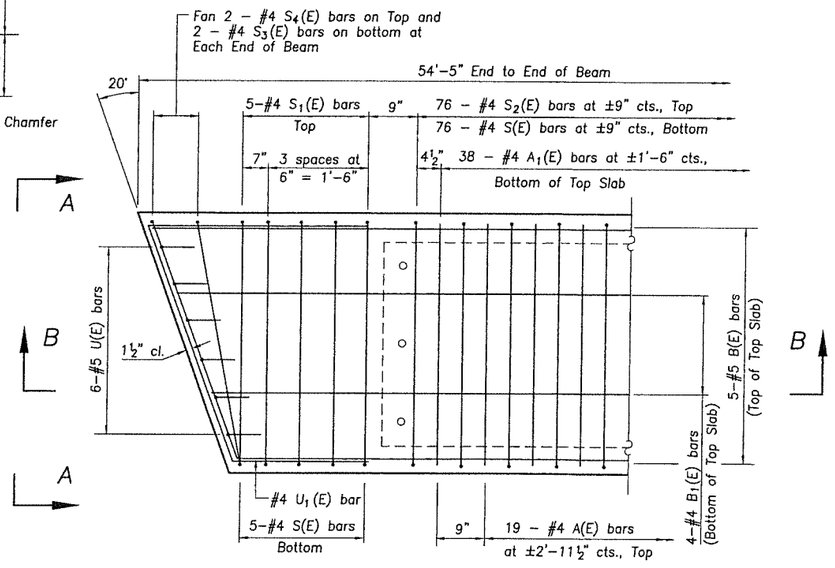


SECTION B–B



LIFTING LOOP DETAIL

Lifting loops shall be 3, ½" Ø–270 ksi strands, as shown.

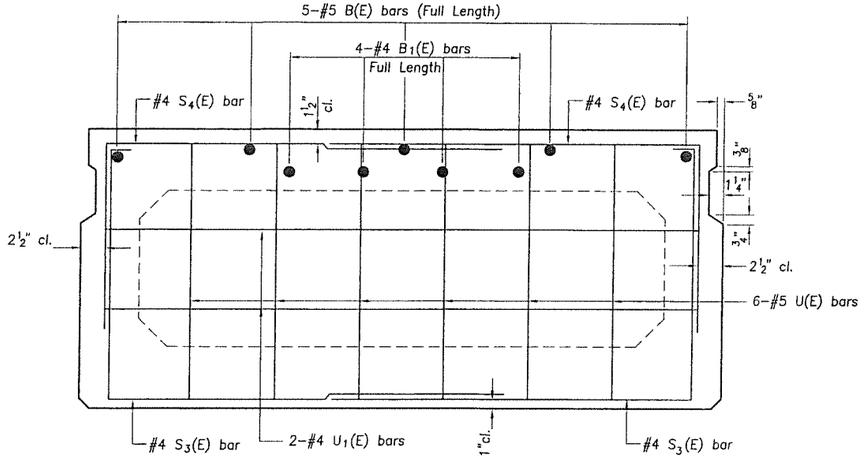


END REINFORCEMENT

Note: Spacing of the 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.

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 7–wire strand, Grade 270.
2. The nominal diameter shall be ½" and the nominal cross–sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to ASTM A 706, Grade 60.
4. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. The top surface of the beams shall be finished in accordance witht the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.
6. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after the transverse tie assembly is in place.
7. Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
8. A minimum 2½" lifting pin shall be used to engage the lifting loops during handling.
9. Corrosion inhibitor, per Article 1020.05(b)(10) and Article 1021.07 of the Standard Specifications, shall be used in the concrete for the precast prestressed concrete deck beams.



VIEW A–A

MINIMUM BAR LAP

#4 bars = 1'–11"
#5 bars = 2'–6"

DESIGN STRESSES

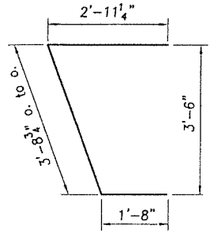
f'c = 6,000 psi
f'ci = 5,000 psi

BAR LIST FOR ONE BEAM ONLY

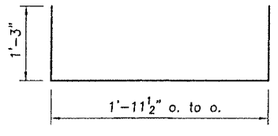
(For Information Only)

Bar	No.	Size	Length	Shape
A(E)	19	#4	3'–7"	
A1(E)	38	#4	3'–10"	
B(E)	5	#5	62'–6"	
B1(E)	4	#4	62'–6"	
S(E)	86	#4	8'–5"	
S1(E)	10	#4	6'–11"	
S2(E)	76	#4	7'–2"	
S3(E)	8	#4	6'–2"	
S4(E)	8	#4	5'–3"	
U(E)	12	#5	4'–6"	
U1(E)	4	#4	8'–4"	

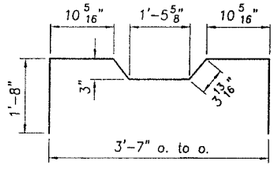
Note: Lengths shown for B and B1 bars as listed is the total length and does not include any splices. Additional length will need to be added for any laps in the bars at splices.



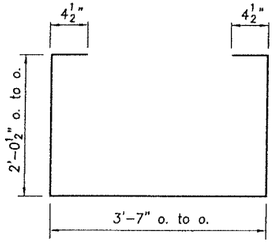
BAR U1(E)



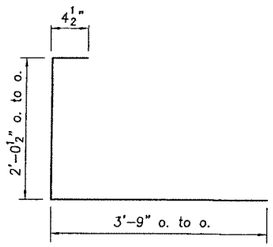
BAR U(E)



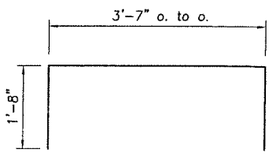
BAR S2(E)



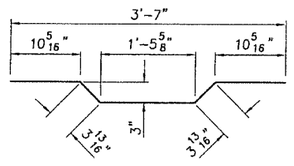
BAR S(E)



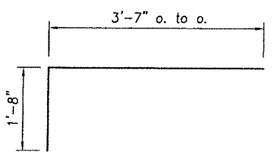
BAR S3(E)



BAR S1(E)



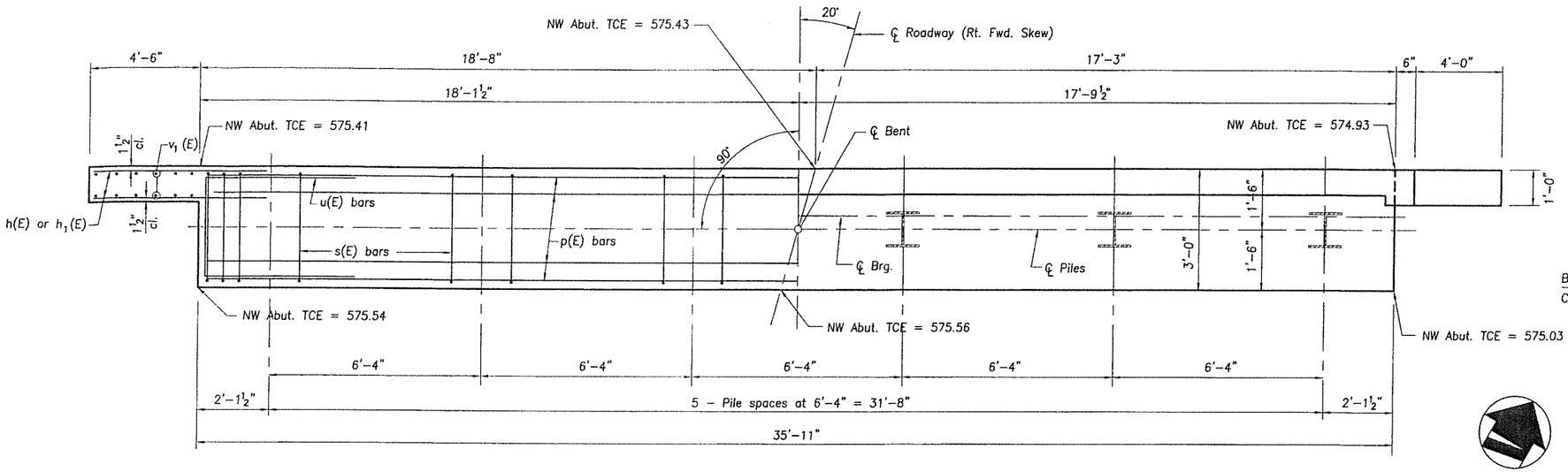
BAR A1(E)



BAR S4(E)

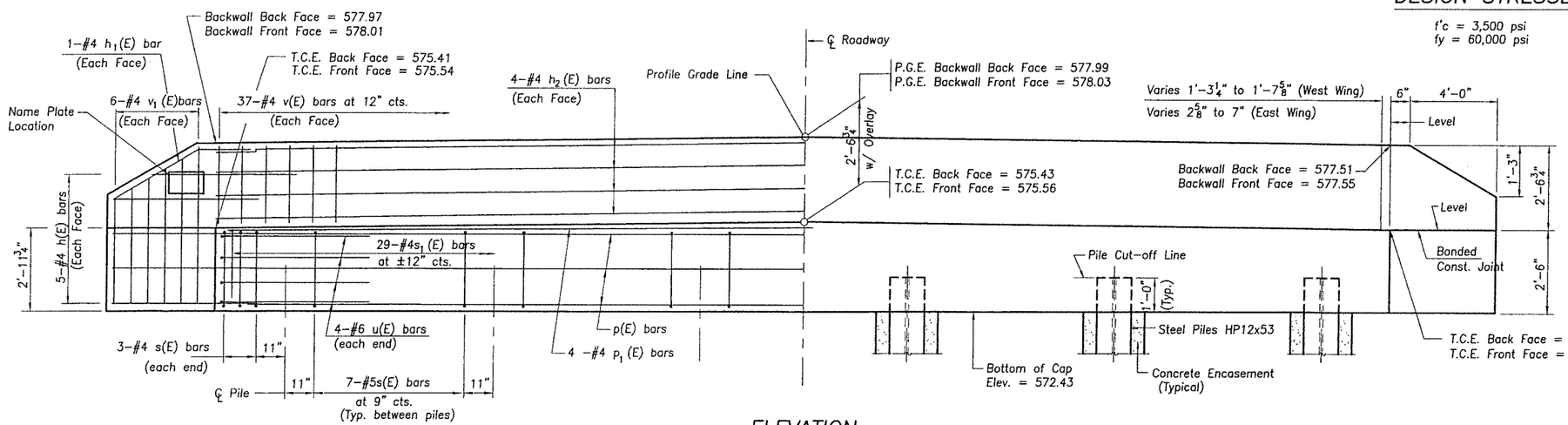
P.P.C. DECK BEAM DETAILS – SPANS 2 & 3
F.A.S. ROUTE 441 OVER SUGAR CREEK
SECTION 08–00103–00–BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	15
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED.AID PROJECT NO. 2D5L(964)		

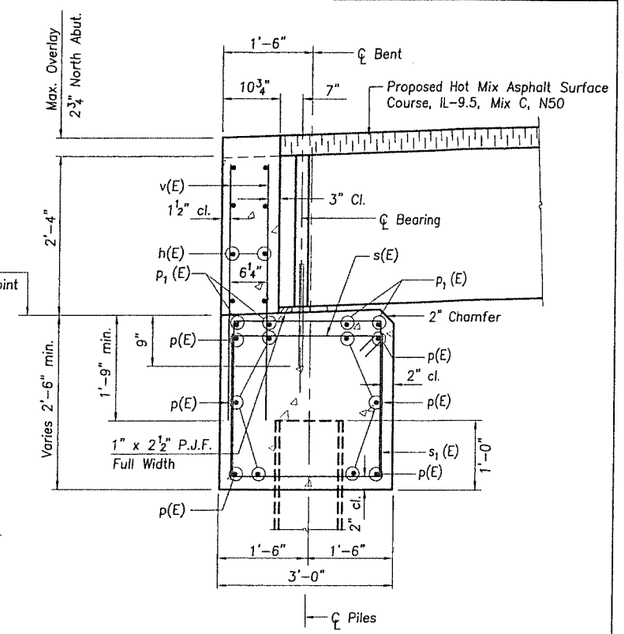


PLAN

Note: #4 $v_1(E)$ bars are to be cut in the field to fit in the wingwalls



ELEVATION



SECTION THRU ABUTMENT

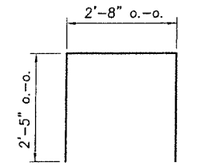
(At Right Angles)

DESIGN STRESSES

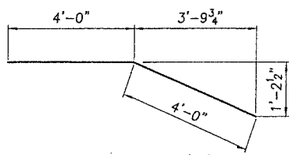
f'c = 3,500 psi
fy = 60,000 psi

BILL OF MATERIAL FOR NORTHWEST ABUTMENT

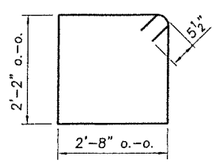
Bar	No.	Size	Length	Shape
h(E)	8	#4	35'-7"	
h1(E)	4	#4	8'-0"	
h2(E)	20	#4	8'-0"	
p(E)	10	#7	35'-7"	
p1 (E)	4	#4	28'-0"	
s(E)	41	#5	10'-7"	
s1 (E)	29	#4	7'-6"	
u(E)	8	#6	11'-7"	
v(E)	74	#4	4'-3"	
v1 (E)	24	#4	5'-4"	
Structure Excavation			30.0 Cu. Yds.	
Concrete Structures			16.4 Cu. Yds.	
Reinforcement Bars Epoxy Coated			2150.0 Lbs.	
Furnishing Steel Piles HP12x53			340.0 Foot	
Test Pile Steel Piles HP12x53			1.0 Each	
Pile Shoes			6.0 Each	
Concrete Encasement			2.1 Cu. Yds.	



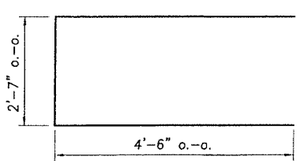
BAR s_1 (E)



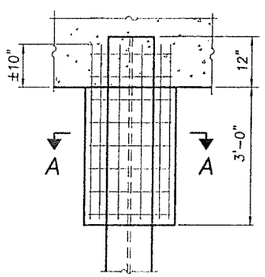
BAR h_1 (E)



BAR s(E)

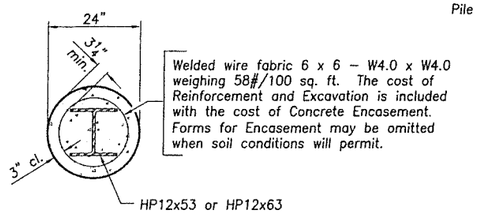


BAR u(E)



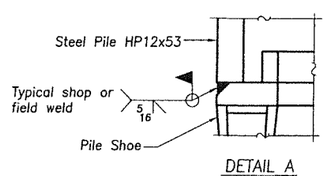
PILE ENCASEMENT DETAILS

(Typical for all Piles)

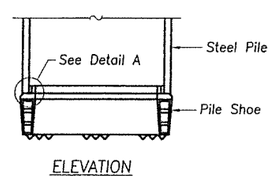


Welded wire fabric 6 x 6 - W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement and Excavation is included with the cost of Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION A-A



DETAIL A



ELEVATION

H-PILE SHOE ATTACHMENT

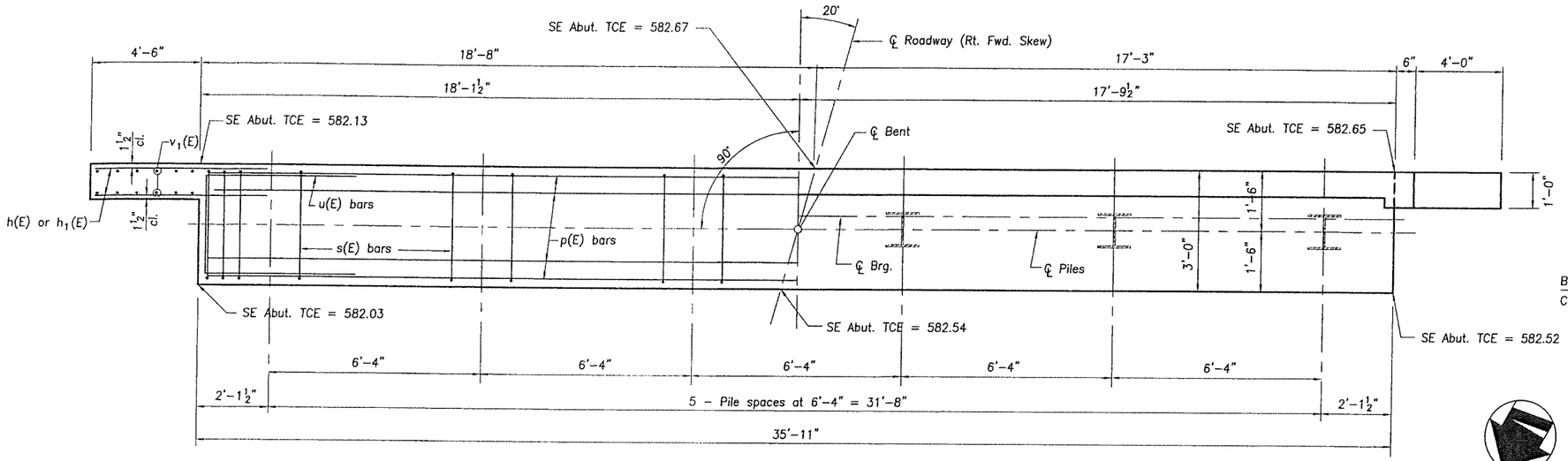
(Typical for all Piles)

NOTES

1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. All Reinforcement Bars in the abutments are to be Epoxy Coated and shall conform to ASTM A706, Grade 60.
3. Space reinforcement bars in cap to miss Dowel Bars.

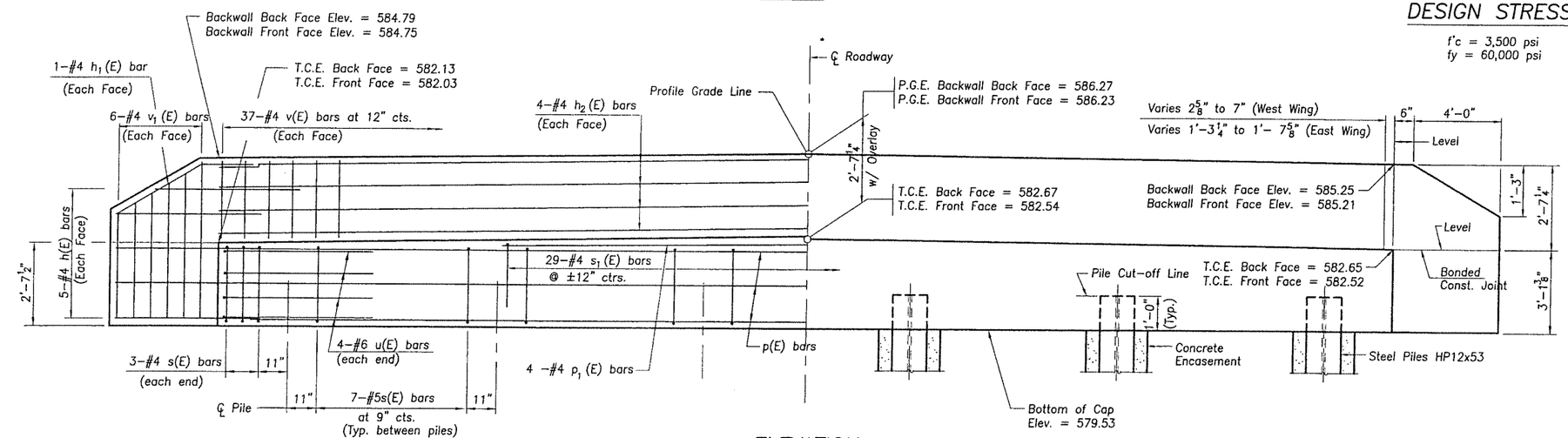
PILE BENT NORTHWEST ABUTMENT DETAILS
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	16
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED.AID PROJECT NO. 2D5L(964)		



Note: #4 $v_1(E)$ bars are to be cut in the field to fit in the wingwalls

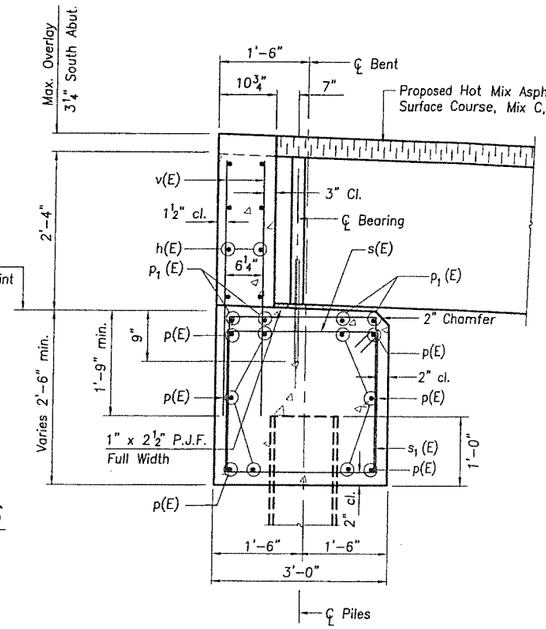
PLAN



ELEVATION

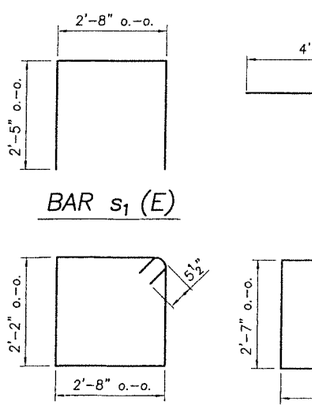
DESIGN STRESSES

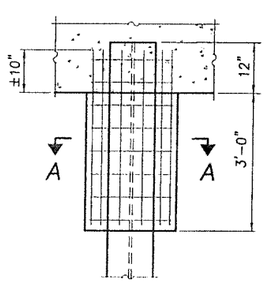
f'c = 3,500 psi
fy = 60,000 psi



SECTION THRU ABUTMENT

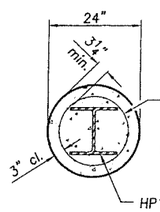
(At Right Angles)





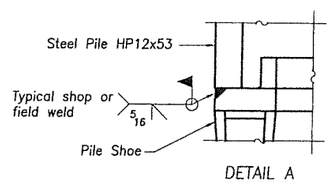
PILE ENCASEMENT DETAILS

(Typical for all Piles)



Welded wire fabric 6 x 6 - W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement and Excavation is included with the cost of Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION A-A



DETAIL A ELEVATION

H-PILE SHOE ATTACHMENT

(Typical for all Piles)

NOTES

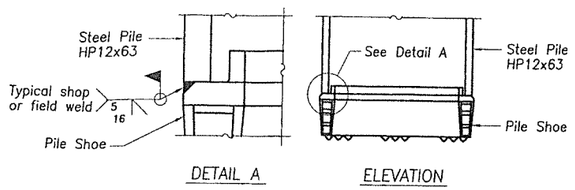
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. All Reinforcement Bars in the abutments are to be Epoxy Coated and shall conform to ASTM A706, Grade 60.
3. Space reinforcement bars in cap to miss Dowel Bars.

BILL OF MATERIAL FOR SOUTHEAST ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	8	#4	35'-7"	
h1(E)	4	#4	8'-0"	
h2(E)	20	#4	8'-0"	
p(E)	10	#7	35'-7"	
p1(E)	4	#4	28'-0"	
s(E)	41	#5	10'-7"	
s1(E)	29	#4	7'-6"	
u(E)	8	#6	11'-7"	
v(E)	74	#4	4'-3"	
v1(E)	24	#4	5'-4"	
Structure Excavation			30.0 Cu. Yds.	
Concrete Structures			16.4 Cu. Yds.	
Reinforcement Bars Epoxy Coated			2150.0 Lbs.	
Furnishing Steel Piles HP12x53			290.0 Foot	
Test Pile Steel Piles HP12x53			1.0 Each	
Pile Shoes			6.0 Each	
Concrete Encasement			2.1 Cu. Yds.	

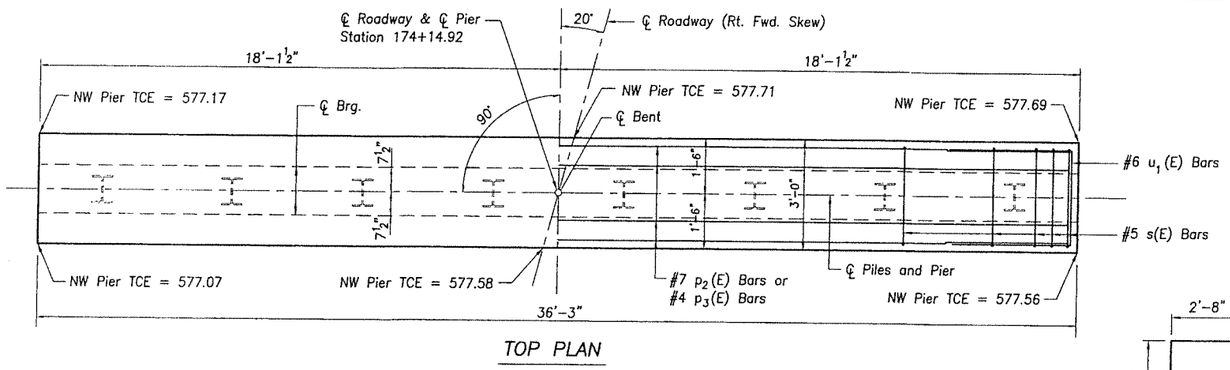
PILE BENT SOUTHEAST ABUTMENT DETAILS
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	17
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. 2D5L(964)		

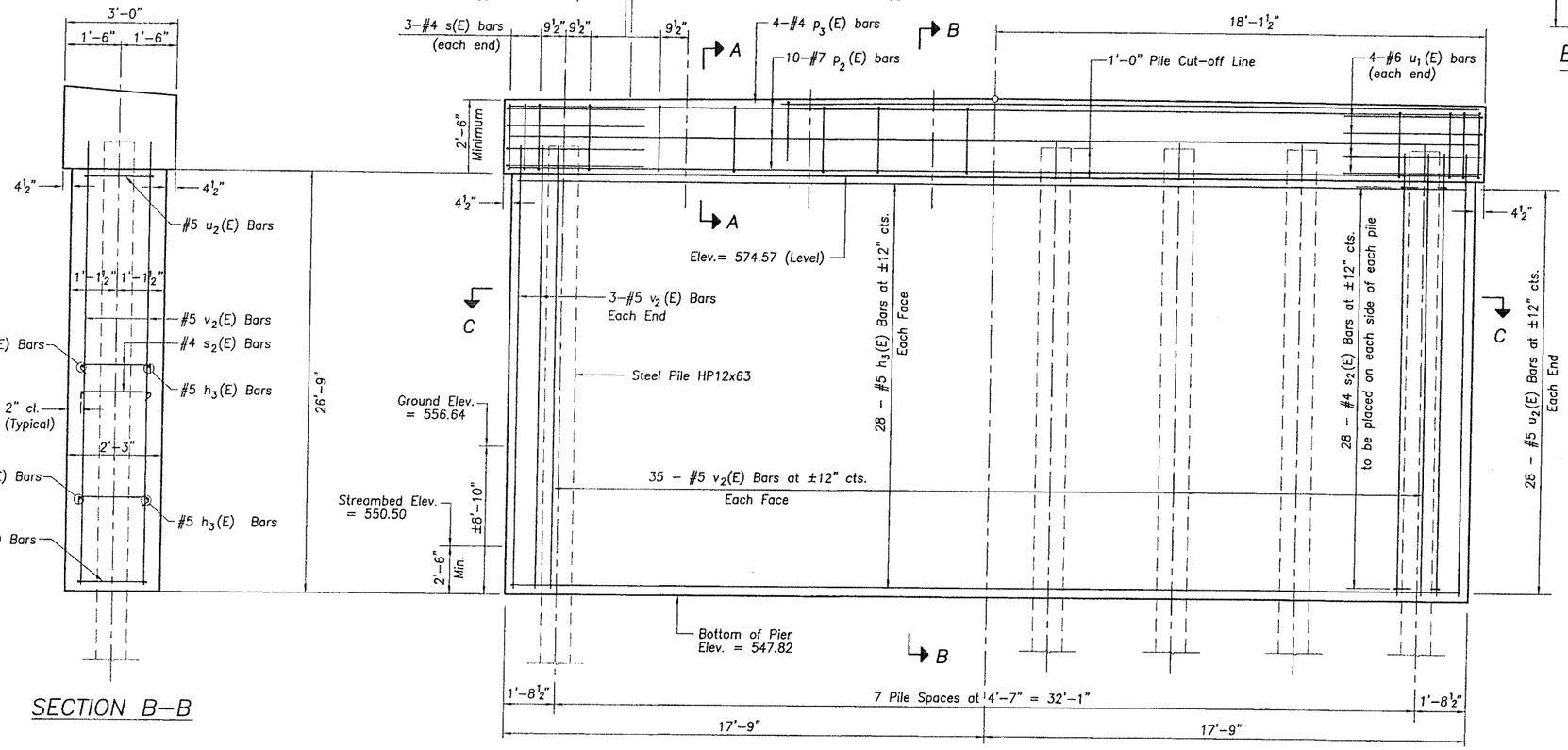


H-PILE SHOE ATTACHMENT

(Typical for all Piles)



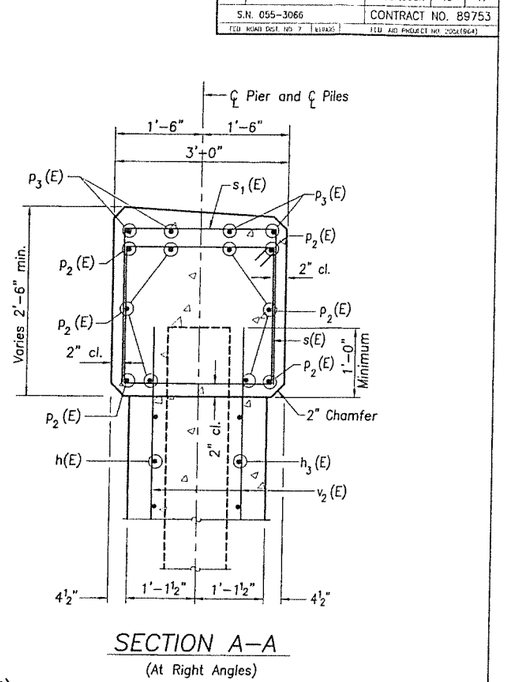
TOP PLAN



ELEVATION

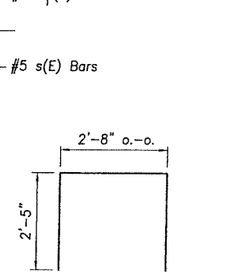
(Looking Southeast)

SECTION B-B

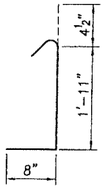


SECTION A-A

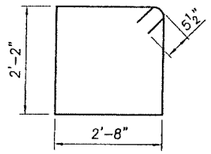
(At Right Angles)



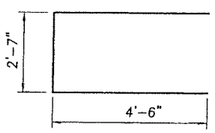
BAR s_1 (E)



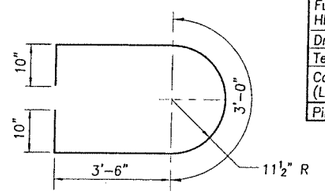
BAR s_2 (E)



BAR s(E)



BAR u_1 (E)



BAR u_2 (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h3(E)	56	#5	33'-3"	
p2(E)	10	#7	35'-11"	
p3(E)	4	#4	28'-3"	
s(E)	55	#5	10'-7"	
s1(E)	29	#4	7'-6"	
s2(E)	448	#4	3'-0"	
u1(E)	8	#6	11'-7"	
u2(E)	56	#5	11'-8"	
v2(E)	76	#5	27'-7"	

Concrete Structures	89.9 Cu. Yds.
Reinforcement Bars, Epoxy Coated	7410.0 Pound
Cofferdam Excavation	145.0 Cu. Yds.
Furnishing Steel Piles HP12x63	476.0 Foot
Driving Piles	476.0 Foot
Test Pile Steel HP12x63	1.0 Each
Cofferdam (Type 1) (Location 1)	1.0 Each
Pile Shoes	8.0 Each

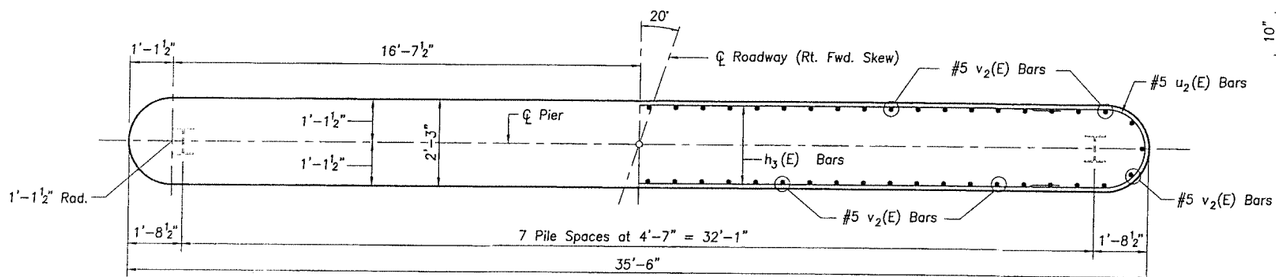
NOTES

1. Reinforcement bars shall conform to ASTM A706, Grade 60.
2. Space reinforcement in cap to miss Dowel Bars.
3. All edges shall be standard ¾" chamfer, unless noted otherwise.

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

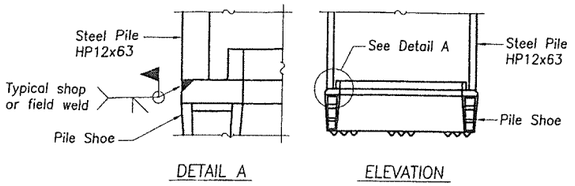
If a portion of the pier wall is under water, reinforcement may be placed underwater in forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" aboave the water level at the time of construction.



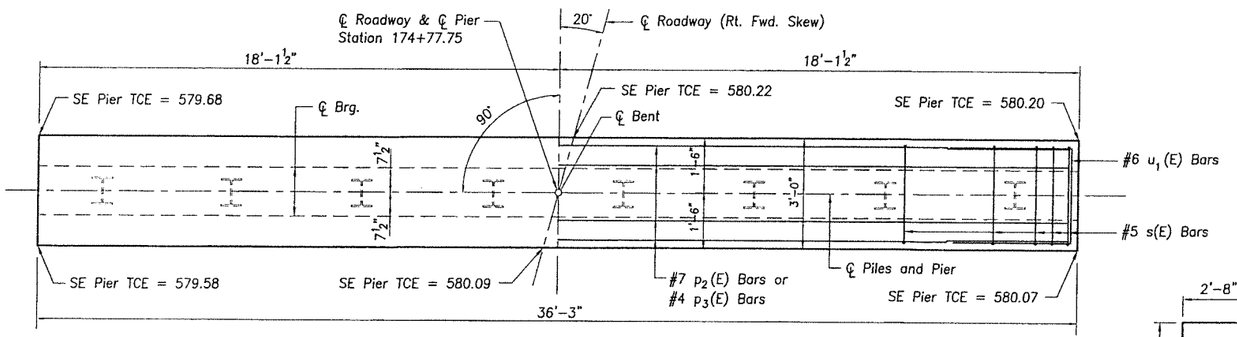
SECTION C-C

NORTHWEST PIER DETAILS
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

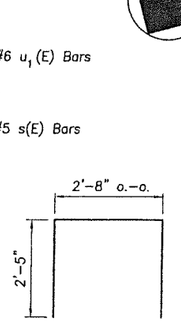
F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	19	18
S.N. 055-3066		CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2D5L(964)		



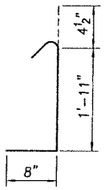
H-PILE SHOE ATTACHMENT



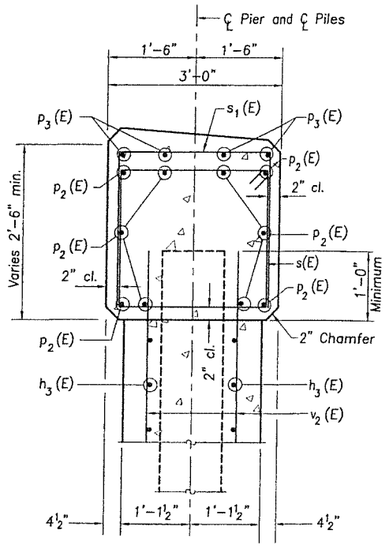
TOP PLAN



BAR s_1 (E)

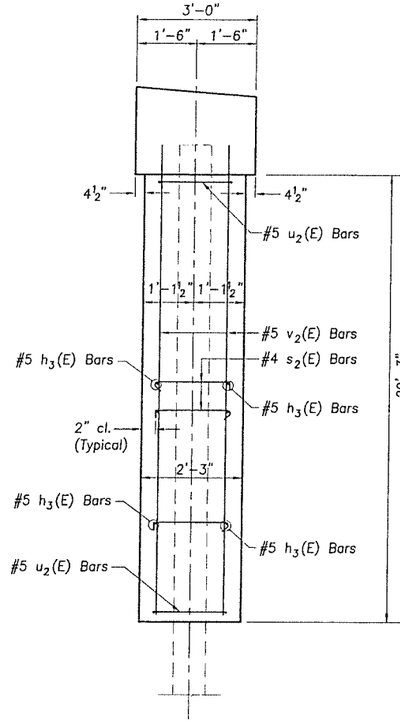


BAR s_2 (E)

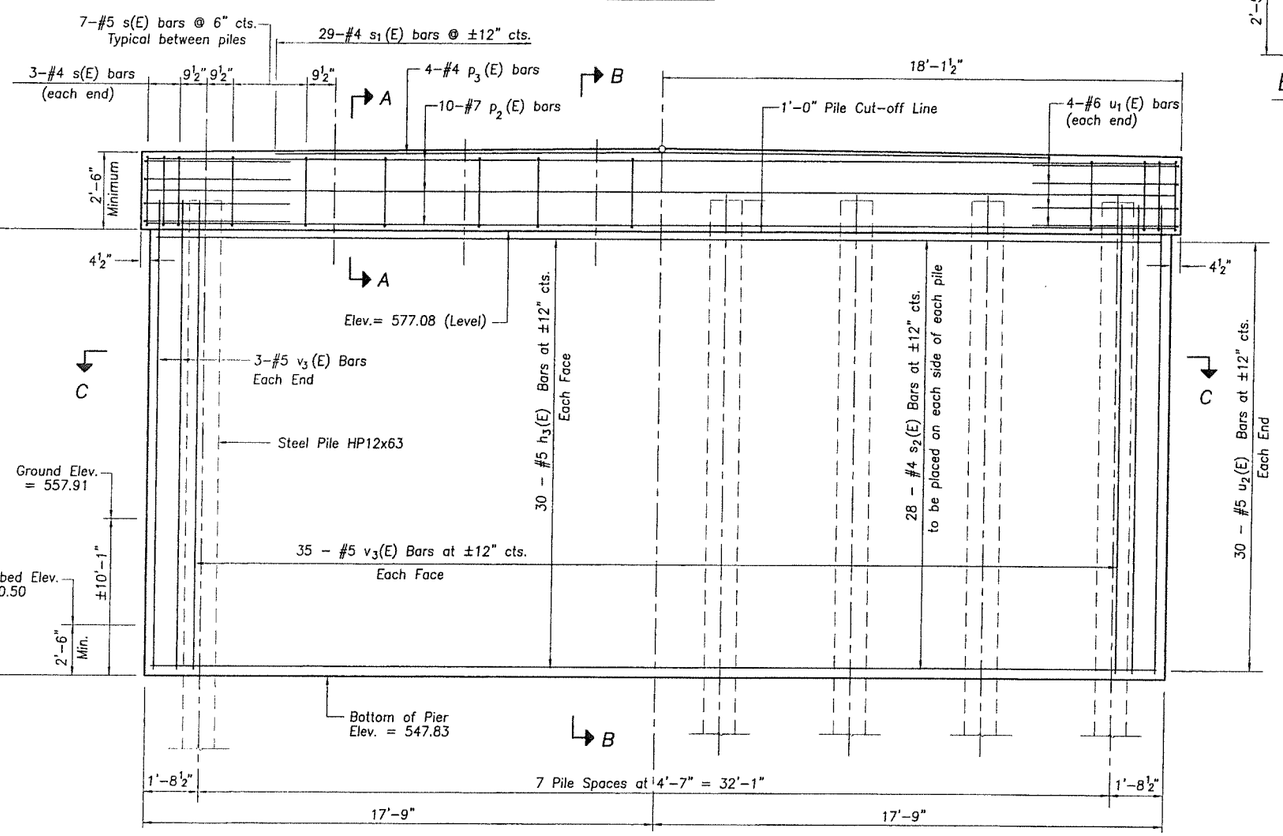


SECTION A-A

(At Right Angles)

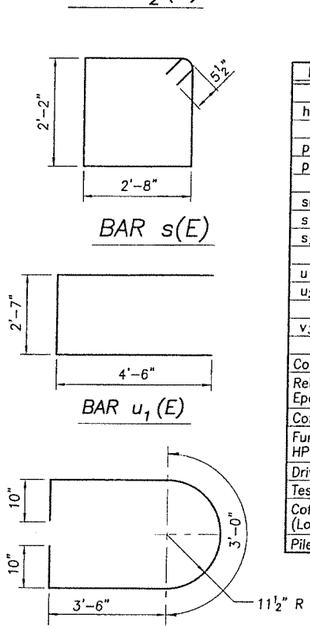


SECTION B-B



ELEVATION

(Looking Southeast)



BAR u_2 (E)

BAR s(E)

BAR u_1 (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h3(E)	60	#5	33'-3"	
p2(E)	10	#7	35'-11"	
p3(E)	4	#4	28'-3"	
s(E)	55	#5	10'-7"	
s1(E)	29	#4	7'-6"	
s2(E)	448	#4	3'-0"	
u1(E)	8	#6	11'-7"	
u2(E)	60	#5	11'-8"	
v3(E)	76	#5	30'-1"	

Concrete Structures	97.2 Cu. Yds.
Reinforcement Bars, Epoxy Coated	7780.0 Pound
Cofferdam Excavation	165.0 Cu. Yds.
Furnishing Steel Piles HP12x63	406.0 Foot
Driving Piles	406.0 Foot
Test Pile Steel HP12x63	1.0 Each
Cofferdam (Type 1) (Location 2)	1.0 Each
Pile Shoes	8.0 Each

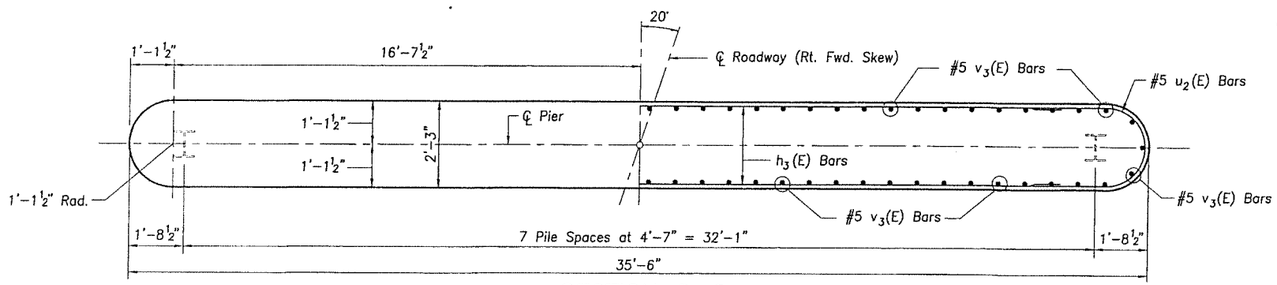
NOTES

1. Reinforcement bars shall conform to ASTM A706, Grade 60.
2. Space reinforcement in cap to miss Dowel Bars.
3. All edges shall be standard ¾" chamfer, unless noted otherwise.

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

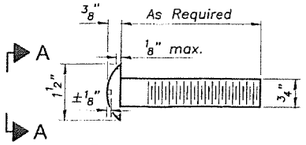
If a portion of the pier wall is under water, reinforcement may be placed underwater in forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" aboave the water level at the time of construction.



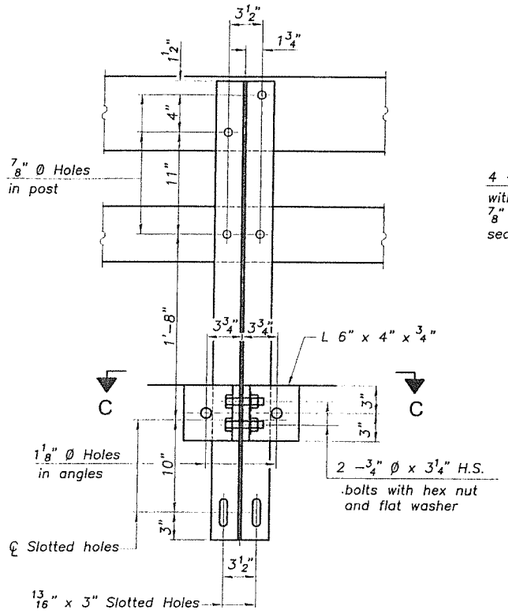
SECTION C-C

SOUTHEAST PIER DETAILS
FAS ROUTE 441 OVER SUGAR CREEK
SECTION 08-00103-00-BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

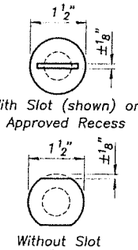
F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDONOUGH	10	10
	S.N. 055-3066	CONTRACT NO. 89753		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. 2D5L(964)		



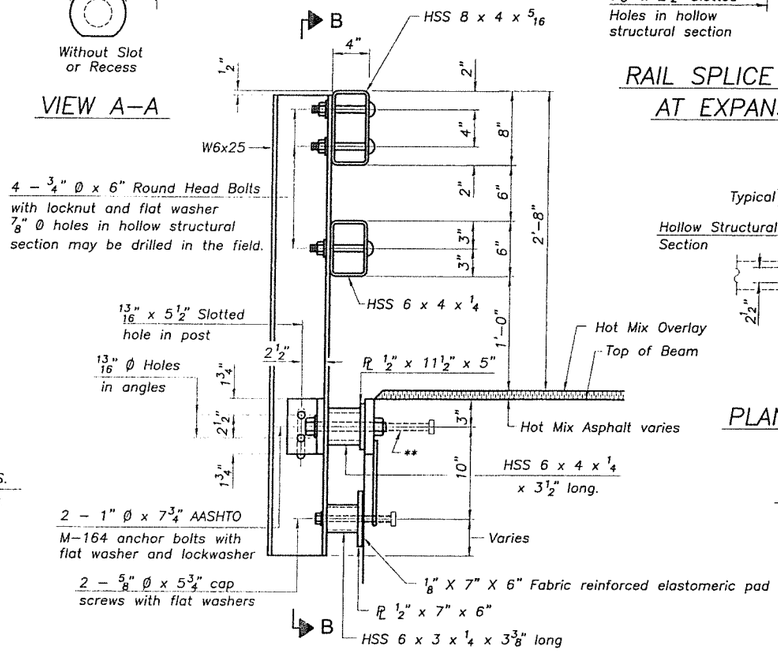
DETAIL OF 3/4" Ø ROUND HEAD BOLT



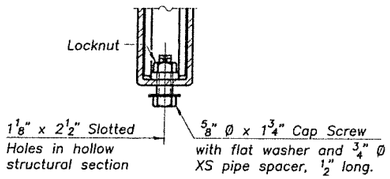
SECTION B–B



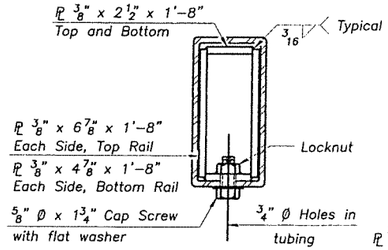
VIEW A–A



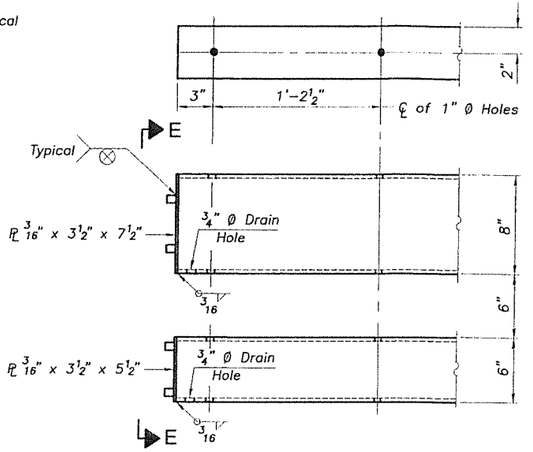
SECTION AT RAIL POST



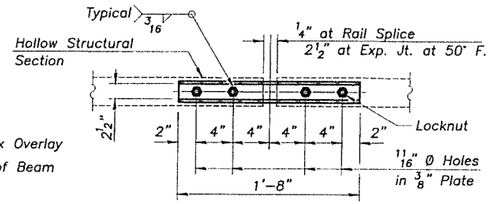
RAIL SPLICE CONNECTION AT EXPANSION JOINT



SECTION AT RAIL SPLICE

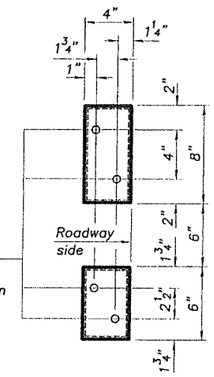


END OF RAIL DETAILS

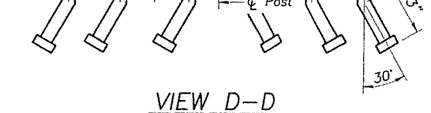


PLAN – BOTT. SPLICE PLATE TYPICAL

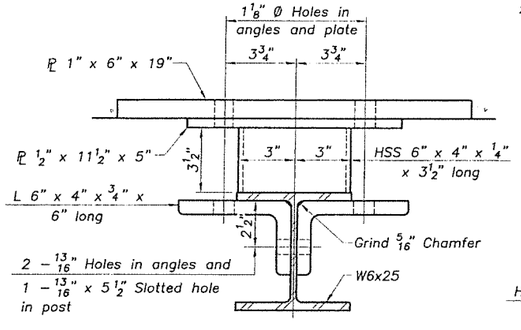
℄ – 5/8" reduced base welded studs. Provide 4 – 5/8" washers and self–locking nuts or nuts and jam nuts for guardrail connection shown on on Standard 631032



VIEW E–E



VIEW D–D



SECTION C–C

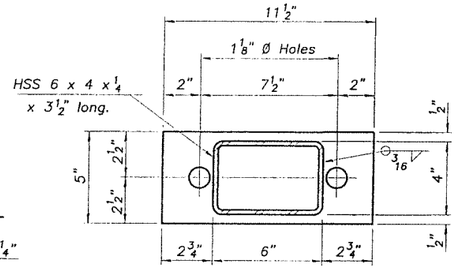


PLATE 1/2" x 11 1/2" x 5"

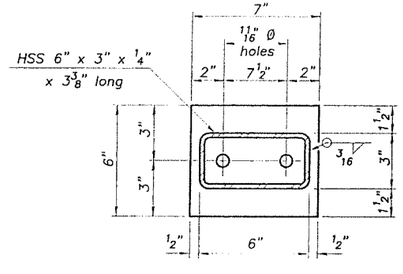
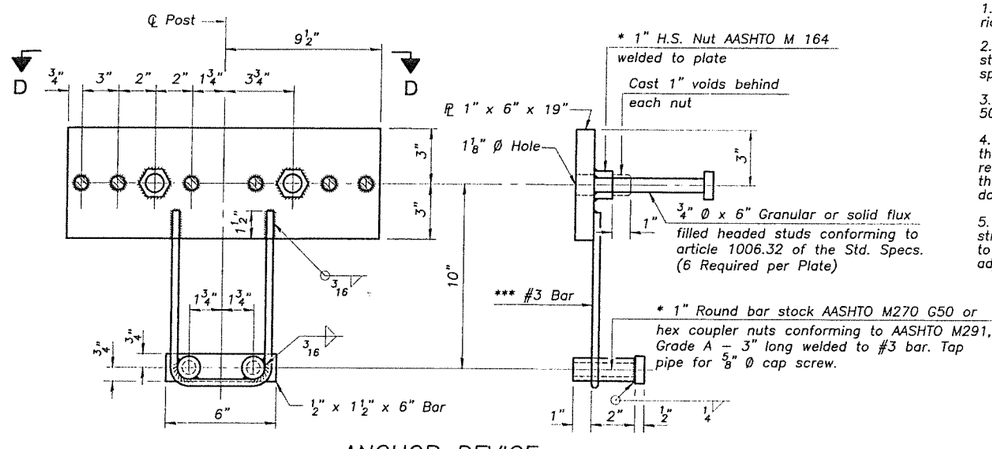


PLATE 1/2" x 7" x 6"



ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during pouring of the deck. Galvanized after fabrication.

Notes:

1. *All field drilled holes shall be coated with an approved zinc rich paint before erection.*
2. *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 to be included with Steel Railing, Type SM.*
3. *All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.*
4. *** 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.*
5. *** Whenever the lower insert assemblies interfere with the strand locations, the #3 bars shall be cut and adjusted in order to allow raising and lowering of the lower inserts. Maximum adjustment is not to exceed 1/2".*

BILL OF MATERIAL

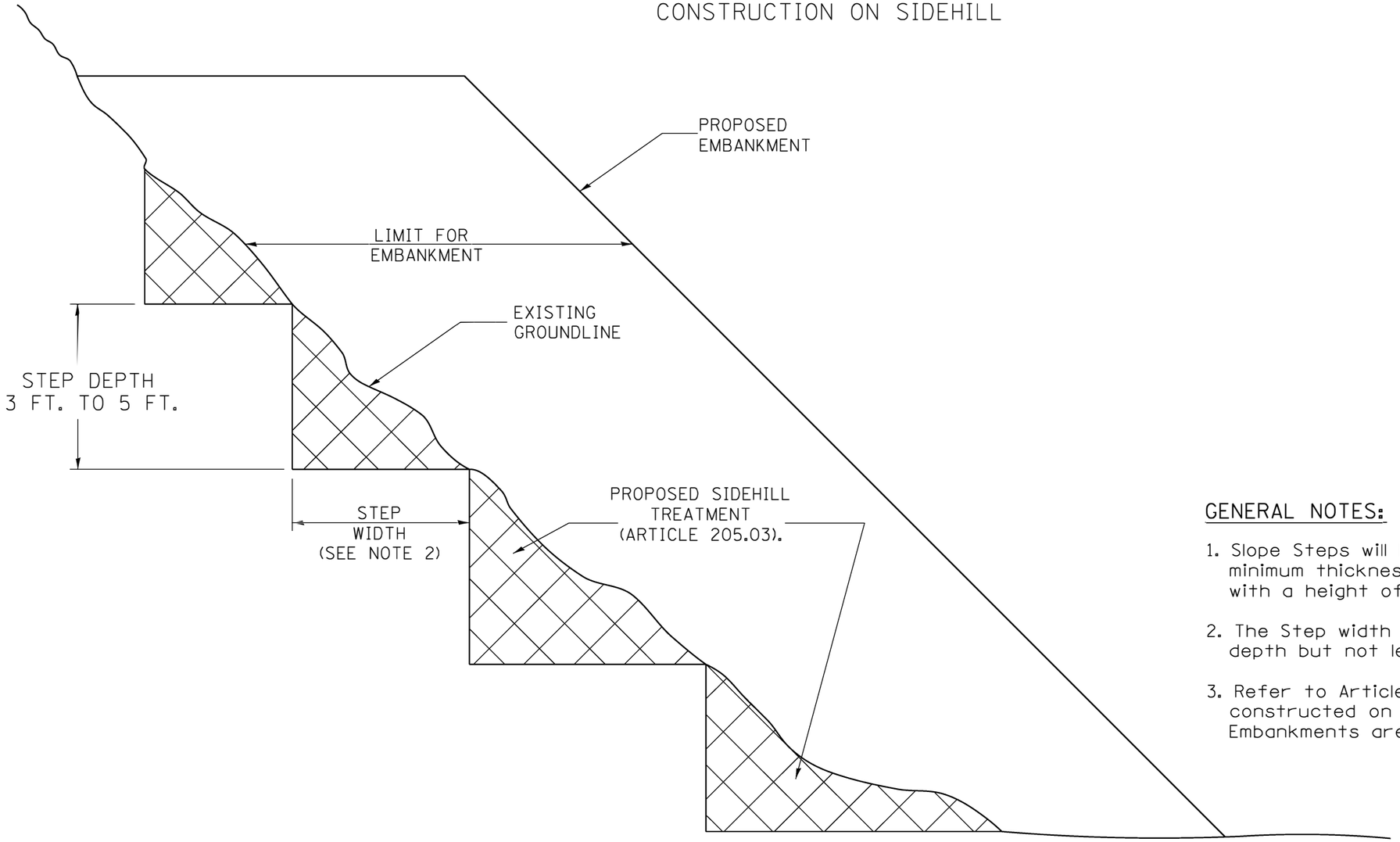
Steel Railing, Type SM	364.0 Foot

STEEL RAILING, TYPE SM DETAILS
F.A.S. ROUTE 441 OVER SUGAR CREEK
SECTION 08–00103–00–BR
PROJECT NO. 2D5L(964)
McDONOUGH COUNTY

DESIGNER NOTE:
1. EACH PROJECT SHOULD BE REVIEWED INDEPENDENTLY FOR TREATMENT REQUIRED.
2. REFER TO THIS DETAIL WITH NOTE ON APPLICABLE TYPICAL SECTIONS.

SLOPE STEPS DETAIL

TYPICAL CROSS-SECTION EMBANKMENT CONSTRUCTION ON SIDEHILL



GENERAL NOTES:

1. Slope Steps will be required for all 12(300) minimum thickness "sliver fills" and on all fills with a height of 10 feet or greater.

2. The Step width shall be twice the Step depth but not less than 6 feet.

3. Refer to Article 205.03 for Embankment to be constructed on Hillside or Slopes, or if existing Embankments are to be widened.

REPLACEMENT MATERIAL:

STANDARD EMBANKMENT (IN ACCORDANCE WITH 205 OF THE STANDARD SPECIFACATION).

All dimensions are in inches (millimeters) unless otherwise noted.

1-1-97	RENUM. L-5.03, NEW REVISION BOX, REVISED TITLE	T.P.									
	BOX, REVISED GENERAL NOTES.										
10-16-06	REVISED TO 2007 SPEC.	M.A.									
5-30-18	MINOR CORRECTION	R.D.									

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE STEPS DETAIL

NOT TO SCALE

CADD STD. 205001-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
441	08-00103-00-BR	McDonough	20	20
		CONTRACT NO. 89753		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		