PROJECT: 8.1347406 STRUCTURES

SEE SHEET 1-A FOR INDEX OF SHEETS

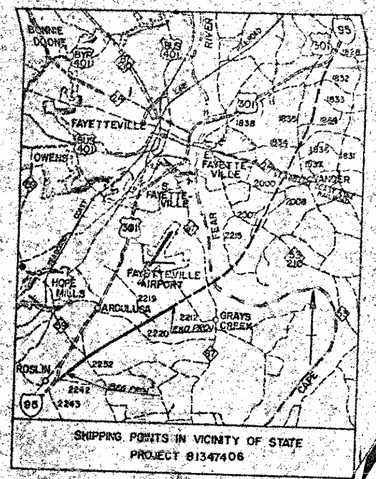
STATE OF NORTH CAROLINA
BOARD OF TRANSPORTATION
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
CUMBERLAND COUNTY

LOCATION: I-95 FROM S.R. 2284 NORTHEASTERLY TO 0.68 MI. WEST OF SR 2212

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES, AND PAVING -Y- LINES

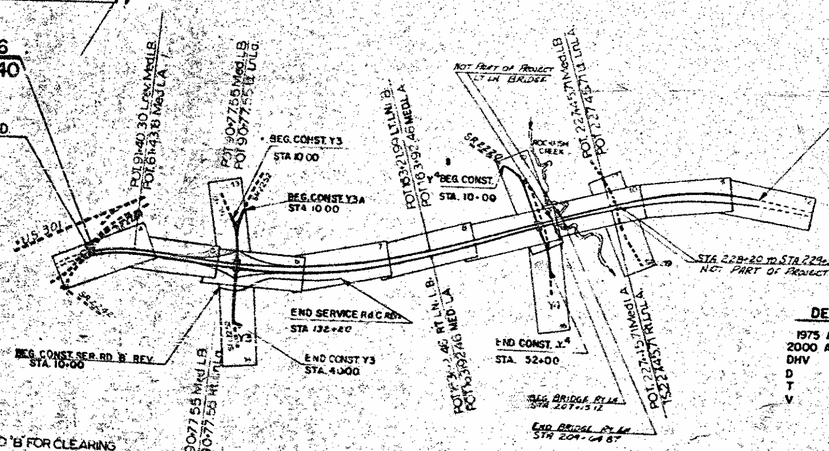
STATE	STATE PROJECT REFERENCE NO.	SHEET NO	TOTAL SHEETS
N.C.	8.1347406	52A	79

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
8.1347401	I-95-2(42)32	PE
8.1347402	I-95-2(59)39	R/W
8.1347403	I-95-2(89)39	UT
8.1347406	I-95-2(42)40	CONST.



BEG. STATE PROJ. 8.1347406
BEG. F.A. PROJ. I-95-2(42)40
STA. 75+00 MED.

BEG. CONST. -L- MED.
STA. 72+50



END STATE PROJ. 8.1347406
END F.A. PROJ. I-95-2(42)40
LT. LN. STA. 275+00

USE METHOD 'B' FOR CLEARING
STD. 200.01, 200.02

PLANS PREPARED BY: R.V. BENNETT, PROJECT ENGINEER
G.M. WHITE, PLANS

LETTING DATE: JUNE 28, 1977

ALL WORK TO BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS

THIS PROJECT HAS CONTROLLED ACCESS, SEE PLANS FOR LOCATIONS.

THE RIGHT OF WAY ON THIS PROJECT IS VARIABLE. SEE PLANS

CONVENTIONAL SIGNS

- County Line
- City or Town Line
- Exist. Right of Way Line
- Right of Way Line
- Survey Line
- Property Line
- Exist. Fence
- Proposed Road
- Existing Road
- Railroad
- Control of Access Line
- Slope Stake Line
- Bridge
- Culvert
- Woods
- Telephone or Telegraph Pole (EXISTING) (PROPOSED)
- Tower Pole and Line
- Power Pole (EXISTING) (PROPOSED)
- Proposed Right of Way Marker
- Existing Right of Way Marker
- Guard Rail
- Sanitary Sewer Line
- Water Line
- Gas Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Permanent Drainage Easement
- Temporary Construction Easement
- Temporary Silt Fence
- Silt Basin, Type 'A'
- Median Uncleared Woods
- BRUSH BARRIER
- SPECIAL SILT FENCE

DESIGN DATA

1975 ADT	17,100
2000 ADT	29,300
DHV	12 %
D	60 %
T	23 %
V	70 M.P.H.

GRAPHIC SCALES

PLAN: 100 0 100 200
PROFILE (HORIZ.): 100 0 100 200
PROFILE (VERT.): 10 0 10 20

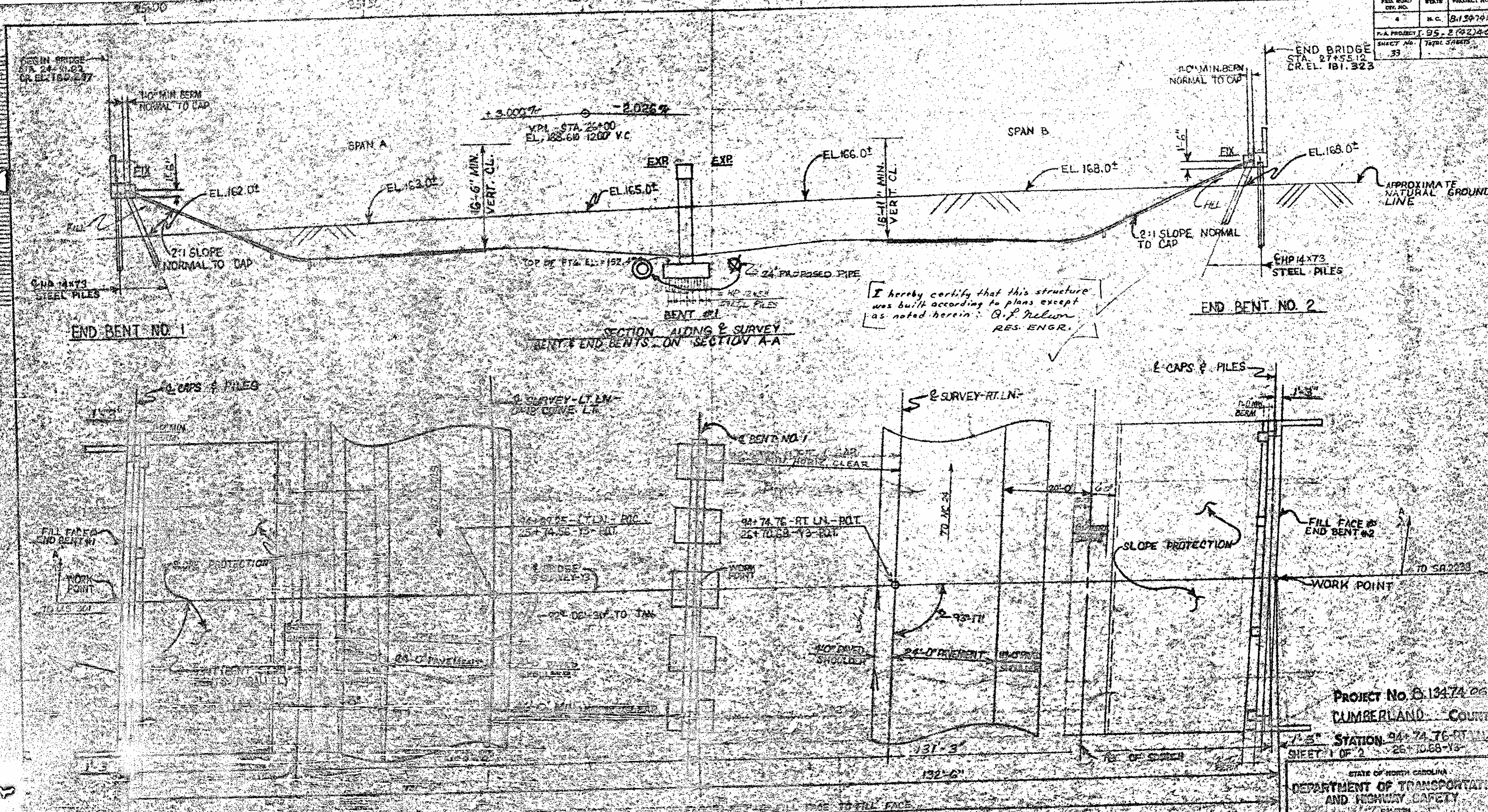
LENGTH OF ROADWAY F.A. PROJ. I-95-2(42)40 = 4.269 MI.
LENGTH OF STRUCTURES F.A. PROJ. I-95-2(42)40 = 0.047 "
TOTAL LENGTH OF STATE PROJ. 8.1347406 = 4.316 MI.

NORTH CAROLINA REGISTERED SEAL 3653 ENGINEER GEORGE E. WELLS

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
APPROVED: George E. Wells P.E.
MANAGER - HIGHWAY DESIGN BRANCH
APPROVED:
CHIEF ENGINEER - OPERATIONS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ADMINISTRATOR — DATE 5/6/77

PREPARED IN THE DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY, DIVISION OF HIGHWAYS, RALEIGH, N.C.



BEGIN BRIDGE STA. 24+91.82 CR. EL. 180.247
1'-0" MIN. BERM NORMAL TO CAP
+ 3.000 % -2.026 %
V.P.I. STA. 25+00 EL. 188.610 1200' V.C.
SPAN A
SPAN B
FIX
EXP
EXP
FIX
EL. 162.0±
EL. 163.0±
EL. 165.0±
EL. 166.0±
EL. 168.0±
EL. 168.0±
16'-6" MIN. VERT. CL.
16'-11" MIN. VERT. CL.
2:1 SLOPE NORMAL TO CAP
2:1 SLOPE NORMAL TO CAP
HP 14x73 STEEL PILES
HP 14x73 STEEL PILES
24" PROPOSED PIPE
BENT #1
END BENT NO. 1
END BENT NO. 2
END BRIDGE STA. 27+55.12 CR. EL. 181.323
1'-0" MIN. BERM NORMAL TO CAP
APPROXIMATE NATURAL GROUND LINE
SECTION ALONG ℄ SURVEY
BENT & END BENTS ON SECTION A-A
I hereby certify that this structure was built according to plans except as noted herein. Q. L. Nelson RES. ENGR.
℄ CAPS & PILES
℄ SURVEY-LT. LN.
℄ SURVEY-RT. LN.
℄ BENT NO. 1
FILL FACE @ END BENT #1
FILL FACE @ END BENT #2
WORK POINT
WORK POINT
SLOPE PROTECTION
SLOPE PROTECTION
94+74.76-RT. LN.-POT. 26+10.68-Y3-POT.
TO NC 24
TO SR 2238
TO U.S. 301
24'-0" PAVEMENT
10'-0" PAVED SHOULDER
20'-0"
93°
131'-3"
132'-6"

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1347406
F.A. PROJECT	I-95-2(42)40	
SHEET NO. 33	TOTAL SHEETS	

PROJECT No. 8.134 74 06

CUMBERLAND COUNTY

STATION 94+74.76-RT. LN. 26+10.68-Y3-

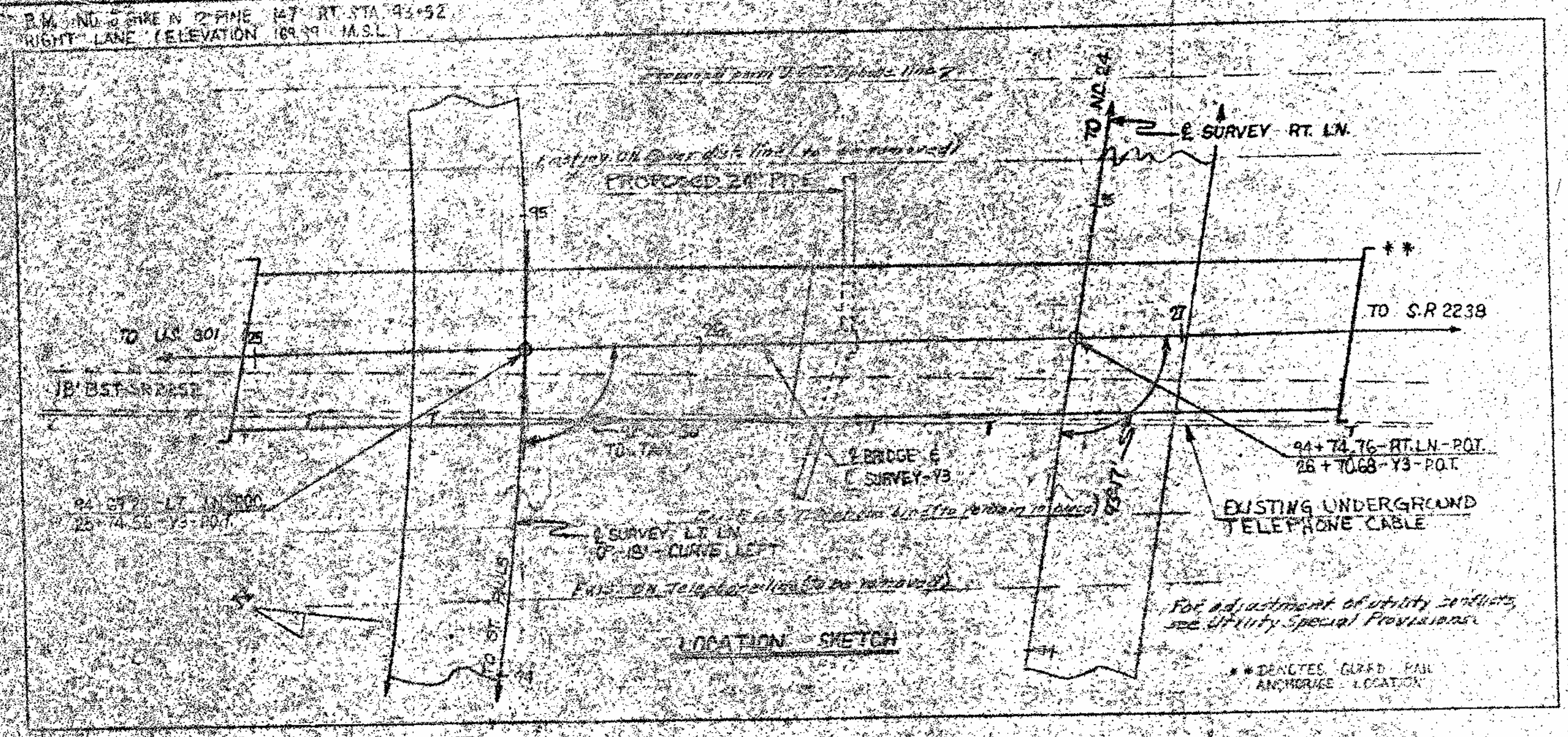
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

GENERAL DRAWING FOR BRIDGE OVER I-95 ON SR 2252 BETW. US 301 AND ...

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8134706
F.A. PROJECT	I-95-2(52)40	
SHEET NO. 34	TOTAL SHEETS	

B.M. NO. 8 SPIKE IN 12" PINE 147' RT. STA. 93+52 RIGHT LANE (ELEVATION 169.99 M.S.L.)



THE ROADWAY

FOR PORTLAND CEMENT CONCRETE, SEE SPECIAL PROVISIONS.

REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SPLICE LENGTH
# 4	[illegible]
# 5	[illegible]
# 6	[illegible]
# 7	[illegible]
# 8	[illegible]
# 9	[illegible]
# 10	[illegible]
# 11	[illegible]

TOTAL BILL OF MATERIAL

	CLASS A CONCRETE CU. YDS.	CLASS AA CONCRETE CU. YDS.	REINF'G STEEL LBS.	STRUCT'L STEEL	CONCRETE BARRIER RAIL LIN. FT.	LINSEED OIL CONC. PROTECTION GALS.	BRIDGE APPROACH SLAB LUMP SUM	4" SLOPE PROTECTION SQ. YDS.	FOUNDATION EXCAVATION CU. YDS.	HP 14x73 STEEL PILES NO.	HP 14x73 STEEL PILES LIN. FT.	HP 12x53 STEEL PILES NO.	HP 12x53 STEEL PILES LIN. FT.	EXPANSION JOINT SEAL LUMP SUM
SUPERSTRUCTURE		510.0	[illegible]	[illegible]	[illegible]	[illegible]		308.51			581.42			LUMP SUM
END BENT NO. 1	28.6		5,953		570.45	90	L.S.	[illegible]	123.98	22	[illegible]	56	3,534.81	
BENT NO. 1	93.0		15,066					337.26			1,536.89			
END BENT NO. 2	28.6		5,953				L.S.	[illegible]		22	[illegible]			
CURVED END BLOCKS		2.5	208											
TOTAL								628.77	123.98	44	2,965	55	3,534.81	LUMP SUM

PROJECT No. 8.1347406

CUMBERLAND COUNTY

STATION: 94+74.76-RT. LN. 26+70.68-Y3

SHEET 2 OF 2

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

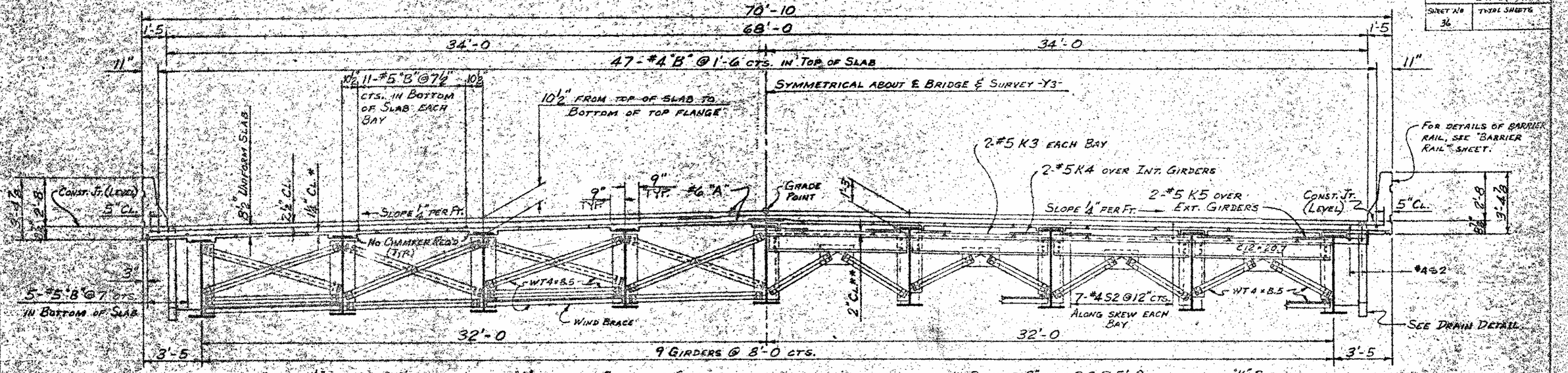
GENERAL DRAWING

FOR BRIDGE OVER [illegible] BETWEEN U.S. 301 AND S.R. 2238

OCTOBER 1974

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

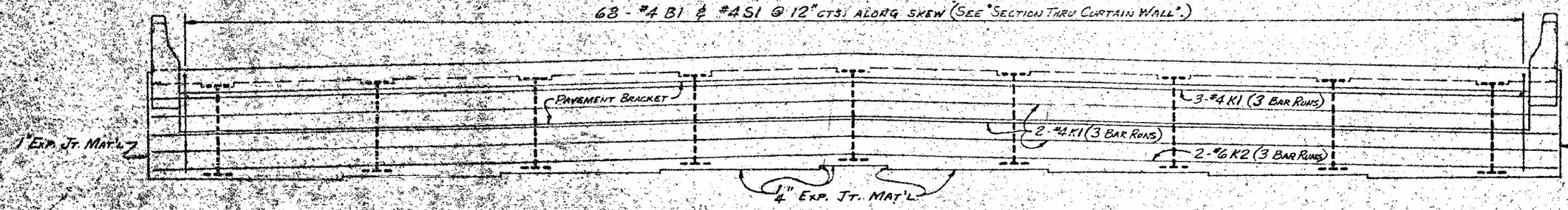
FED. ROAD DIV. NO.	STATE	PROJECT NO.
8	N. C.	B-1347406
F. A. PROJECT		295-2(42)60
SHEET NO. 36	TOTAL SHEETS	



* PROVIDE 1½" HIGH B.B. @ 4'-0 CTS. FOR "A" BARS IN BOTTOM OF SLAB. SHOWING INTERMEDIATE DIAPHRAGMS (D2)

** PROVIDE 2" HIGH B.B. @ 5'-0 CTS. FOR "K" BARS. SHOWING DIAPHRAGMS (D1) @ BENT #1

TYPICAL SECTION



END ELEVATION

PROJECT NO. B-1347406

CUMBERLAND COUNTY

STATION: 94+74.76 -L-

SHEET 1 OF 2

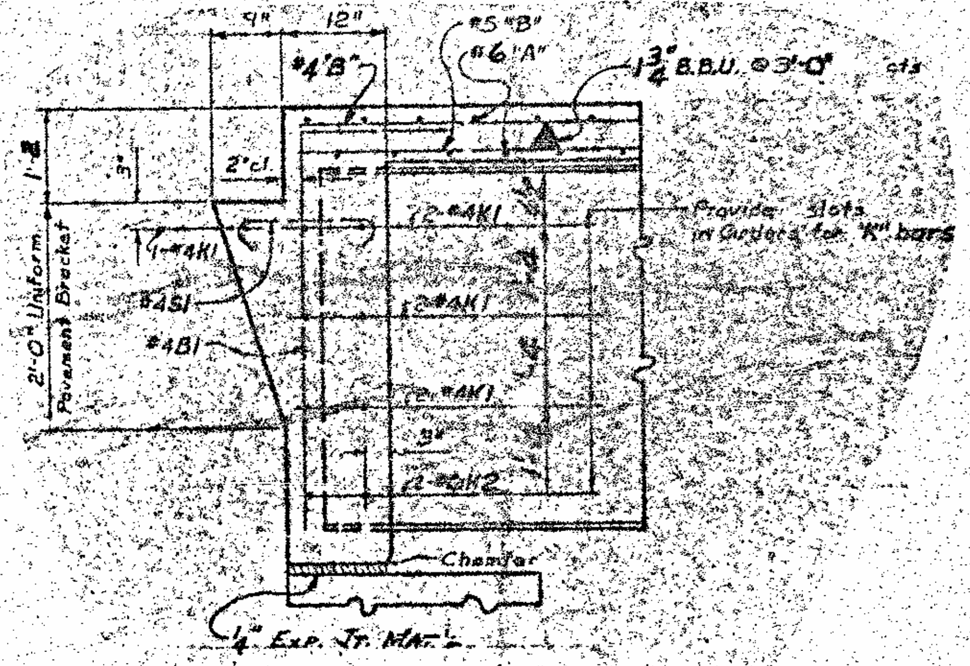
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION

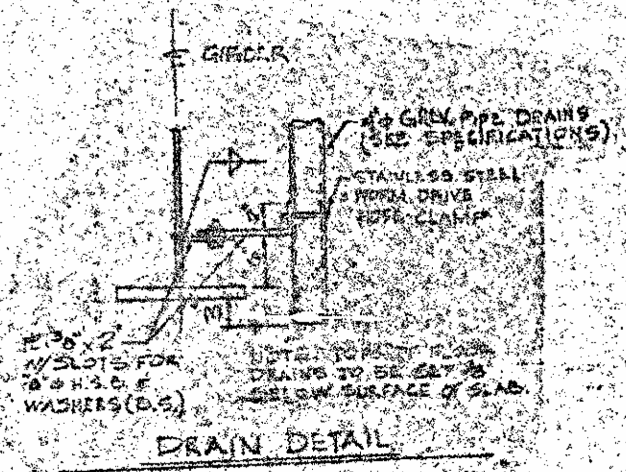
JUNE 1974

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			54

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1347406
F.A. PROJECT	I-95-2 (48) 40	
SHEET No 37	TOTAL SHEETS	

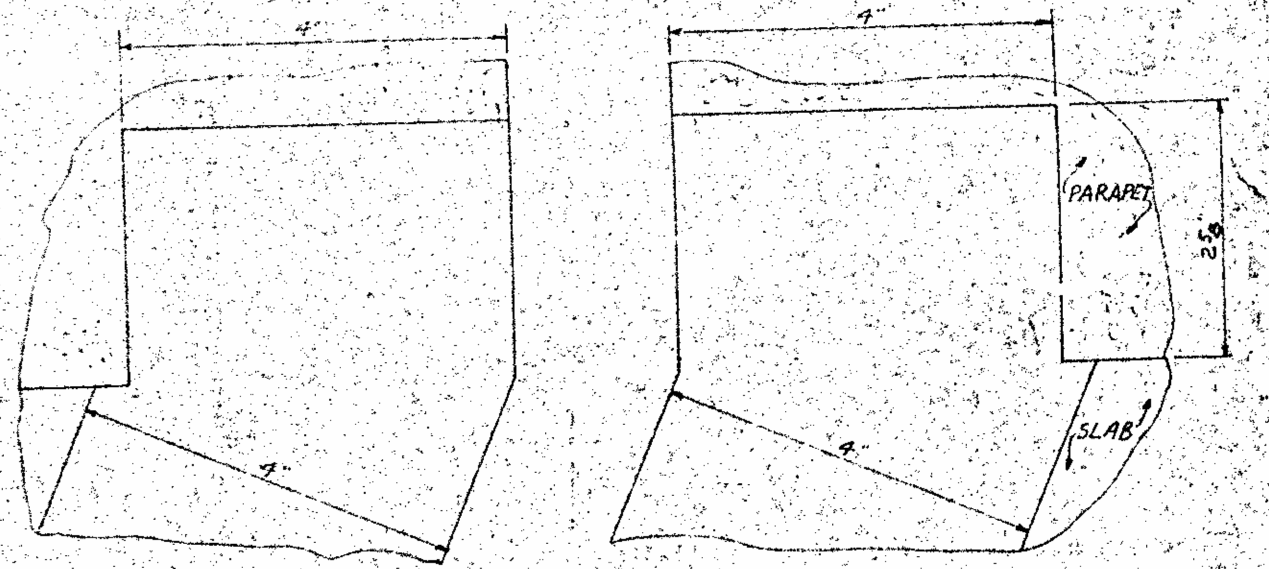


SECTION THRU CURTAIN WALL

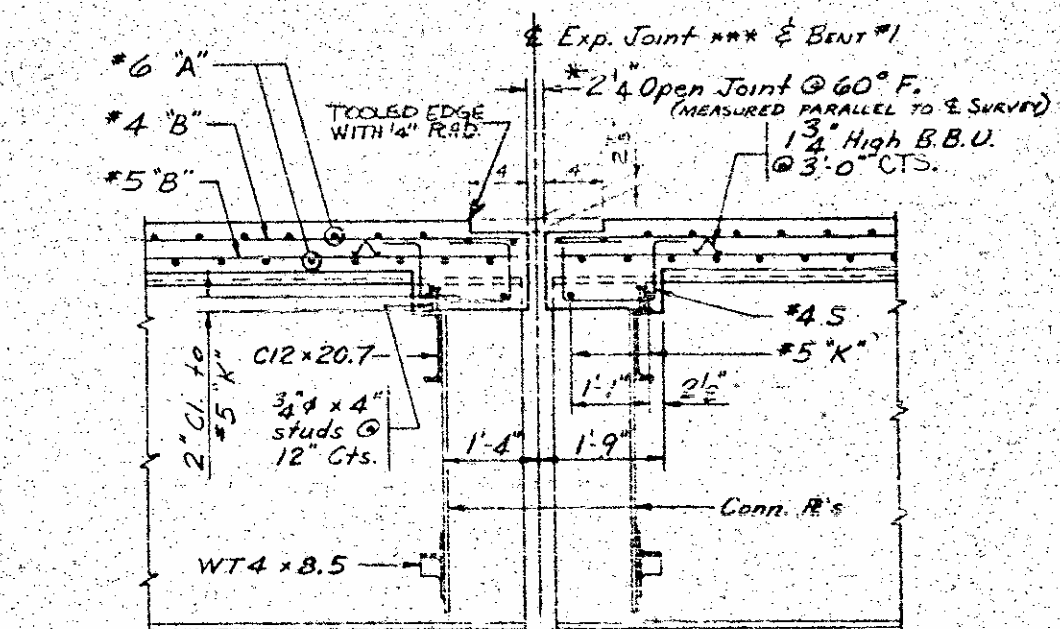


DRAIN DETAIL

For painting pipe drains, see Special Prov.



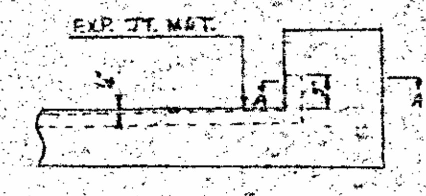
SECTION A-A



*** THE EXP. JT. SEAL SHALL BE CAPABLE OF HANDLING A TOTAL THERMAL MOVEMENT (MEASURED PARALLEL TO CENTERLINE ROADWAY) OF $2\frac{1}{2}$" ($1\frac{1}{4}$" EXP. & $1\frac{1}{4}$" CONT. FROM MID-POINT TEMP. OF 60° F.). SEE SPECIAL PROVISIONS.

NOTE: For location of Brg. stiffeners, see Structural Steel Details.

SECTION THRU BENT DIAPHRAGM



LIMITS OF EXPANSION JT. SEAL

* WIDTH OF OPEN JOINT	
@ 30° F	$2\frac{3}{8}$"
@ 60° F	$2\frac{1}{4}$"
@ 90° F	$1\frac{5}{8}$"

NOTE: EXPANSION JOINT SEAL SHALL BE SET A MINIMUM OF $\frac{1}{4}$" BELOW TOP OF SLAB.

DRAWN BY J. C. "Chuck" C[illegible] [illegible] 1974
CHECKED BY T HAMES DATE [illegible]

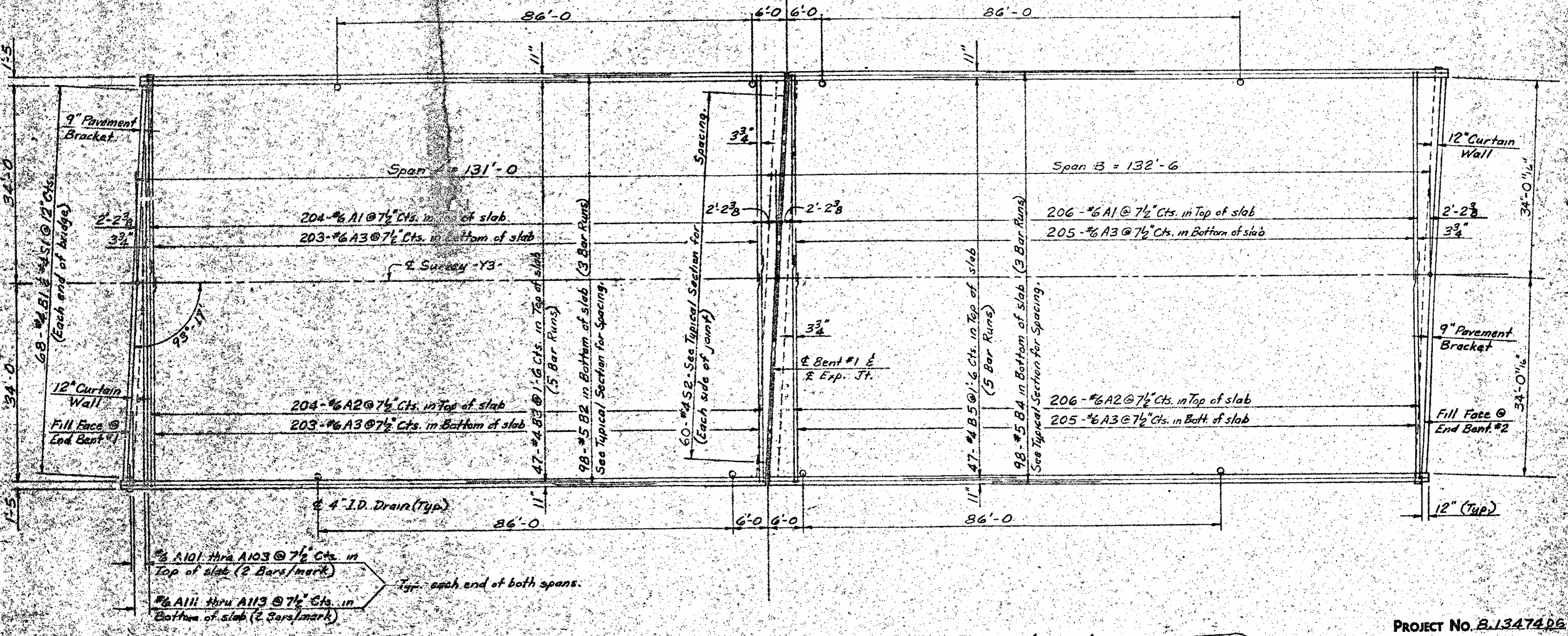
Rev. #1: Detail Exp. Jt. - 4 CEP

PROJECT No. 8.1347406
CUMBERLAND COUNTY
STATION: 94+74.76 -L- Rt. Ln.
Sheet 2 of 2

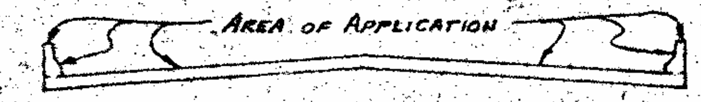
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION
JUNE 1974

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-5
1	B.N.	10-14-77	3			TOTAL SHEETS
2			4			64

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	B.1347406
F. A. PROJECT I-95-2(42)48		
SHEET NO 38	TOTAL SHEETS	



PLAN



LINSEED OIL CONCRETE PROTECTION

PROJECT NO. B.1347406
CUMBERLAND **COUNTY**
STATION: 94+74.76-L-Rt.Ln.
Sheet 1 of 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUPERSTRUCTURE
SPANS A & B

JULY 1974

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-6
1			3			TOTAL SHEETS
2			4			51

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1347406
F.A. PROJECT		
SHEET NO. 34	TOTAL SHEETS	

BILL OF MATERIAL

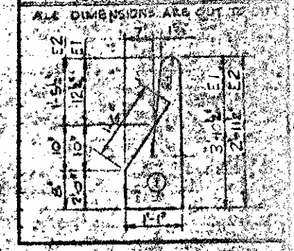
FOR BARRIER RAIL ONLY

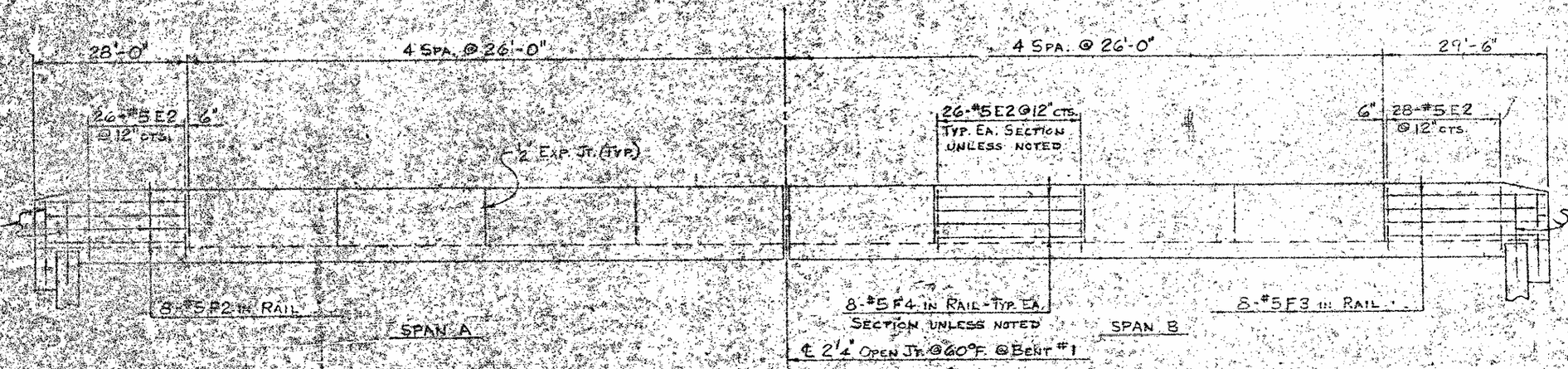
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
E1	8	#5		10'-5"	86
E2	54	#5		3'-5"	200
F1	16	#5	STR.	4'-0"	67
F2	16	#5	STR.	27'-5"	462
F3	16	#5	STR.	29'-2"	487
F4	128	#5	STR.	25'-8"	3427

REINF. STEEL LBS. / C.Y. CONC. = 9129 / 47.8

BAR TYPE

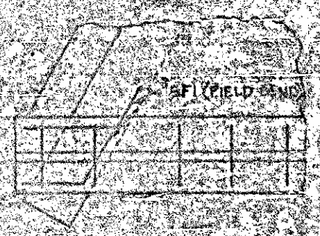
ALL DIMENSIONS ARE OUT TO OUT

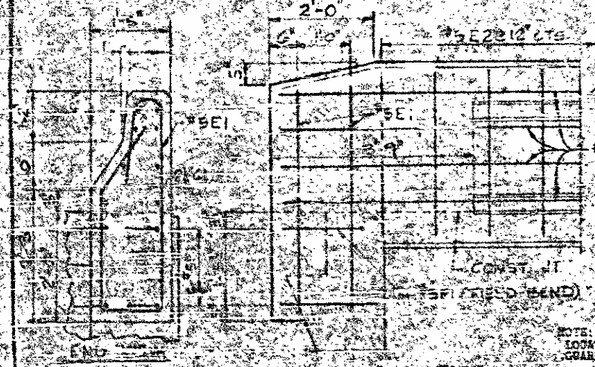


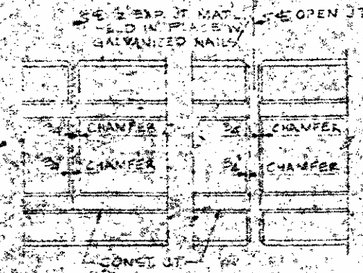


PLAN OF RAIL - NEAR SIDE (FAR SIDE SIMILAR)

"FOR CONCRETE BARRIER RAIL, SEE SPECIAL PROVISIONS"

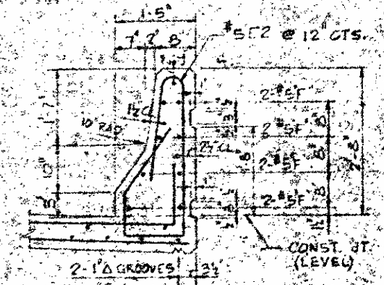






NOTE: SEE STANDARD GUARD RAIL ANCHORAGE SHEET FOR LOCATION OF "L" SLAB FOR CURVED END BLOCKS AND GUARD RAIL ANCHOR ASSEMBLY.

NOTE: SEE LOCATION SKETCH ON GENERAL DRAWING FOR GUARD RAIL ANCHORAGE LOCATION.



SECTION THRU BARRIER RAIL

PROJECT NO. 8.1347406

CUMBERLAND COUNTY

STATION: 94+74.76-PRL-

SHEET 2 OF 2

STATE OF NORTH CAROLINA

STATE HIGHWAY COMMISSION

RALEIGH

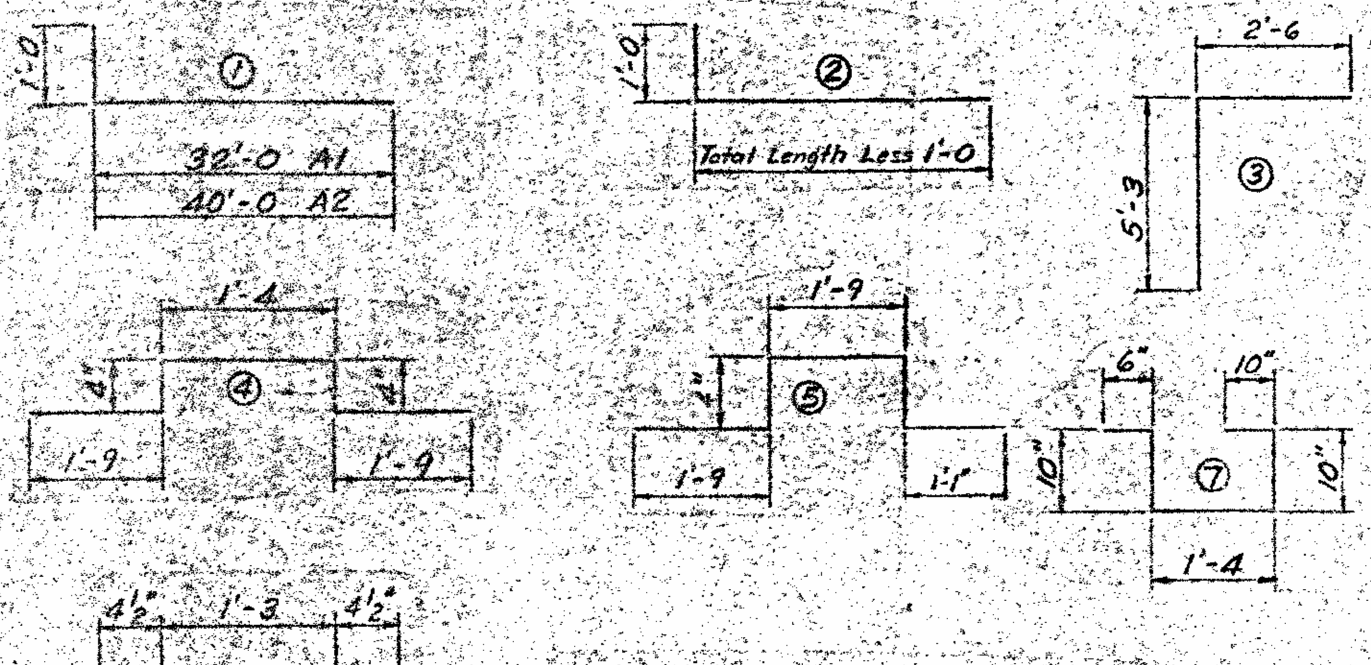
— SUPERSTRUCTURE —

BARRIER RAIL

JUNE

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1347406
F. A. PROJECT	J-95-2 (42) 40	
SHEET No. 40	TOTAL SHEETS	



BAR TYPES
All dimensions are out to out.

REINFORCING SCHEDULE

SPAN A

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	204	#6	1	33'-0	10,111
A2	204	#6	1	41'-0	12,563
A3	406	#6	Str.	36'-3	22,106
A101	4	#6	2	51'-10	311
A102	4	#6	2	30'-0	180
A103	4	#6	2	8'-3	50
A111	4	#6	Str.	56'-6	339
A112	4	#6	Str.	34'-8	208
A113	4	#6	Str.	12'-11	78
B1	68	#4	3	7'-9	352
B2	294	#5	Str.	44'-9	13,722
B3	235	#4	Str.	27'-2	4,265
K1	27	#4	Str.	24'-6	442
K2	6	#6	Str.	25'-0	225
K3	16	#5	Str.	7'-9	129
K4	14	#5	4	5'-6	80
K5	4	#5	5	5'-3	22
S1	68	#4	6	2'-0	91
S2	60	#4	7	4'-4	174
Total for Span A = 65,448					

SPAN B

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	206	#6	1	33'-0	10,211
A2	206	#6	1	41'-0	12,686
A3	410	#6	Str.	36'-3	22,323
A101	4	#6	2	51'-10	311
A102	4	#6	2	30'-0	180
A103	4	#6	2	8'-3	50
A111	4	#6	Str.	56'-6	339
A112	4	#6	Str.	34'-8	208
A113	4	#6	Str.	12'-11	78
B1	68	#4	3	7'-9	352
B4	294	#5	Str.	45'-3	13,87[illegible]
B5	235	#4	Str.	27'-6	4,31[illegible]
K1	27	#4	Str.	24'-6	442
K2	6	#6	Str.	25'-0	225
K3	16	#5	Str.	7'-9	129
K4	14	#5	4	5'-6	80
K5	4	#5	5	5'-3	22
S1	68	#4	6	2'-0	91
S2	60	#4	7	4'-4	174
Total for Span B = 66,0[illegible]					

CONCRETE BREAKDOWN IN CU. YDS.

	SPAN A	SPAN B
SLAB	268.6	271.4

BILL OF MATERIAL FOR SUPERSTRUCTURE

Reinforcing Steel - Lbs.	131,542	
Class AA Concrete - Cu. Yds.	540.0	
Structural Steel - Approx. Lbs.	607,400	
Concrete Barrier Rail - Lin. Ft.	~~531.00~~	530.45
Linseed Oil Concrete Protection - Gal.	~~45~~	50
EXPANSION JOINT SEAL -	LUMP SUM	

PROJECT NO. 8.1347406
CUMBERLAND COUNTY
STATION: 94+74.76-L-RL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

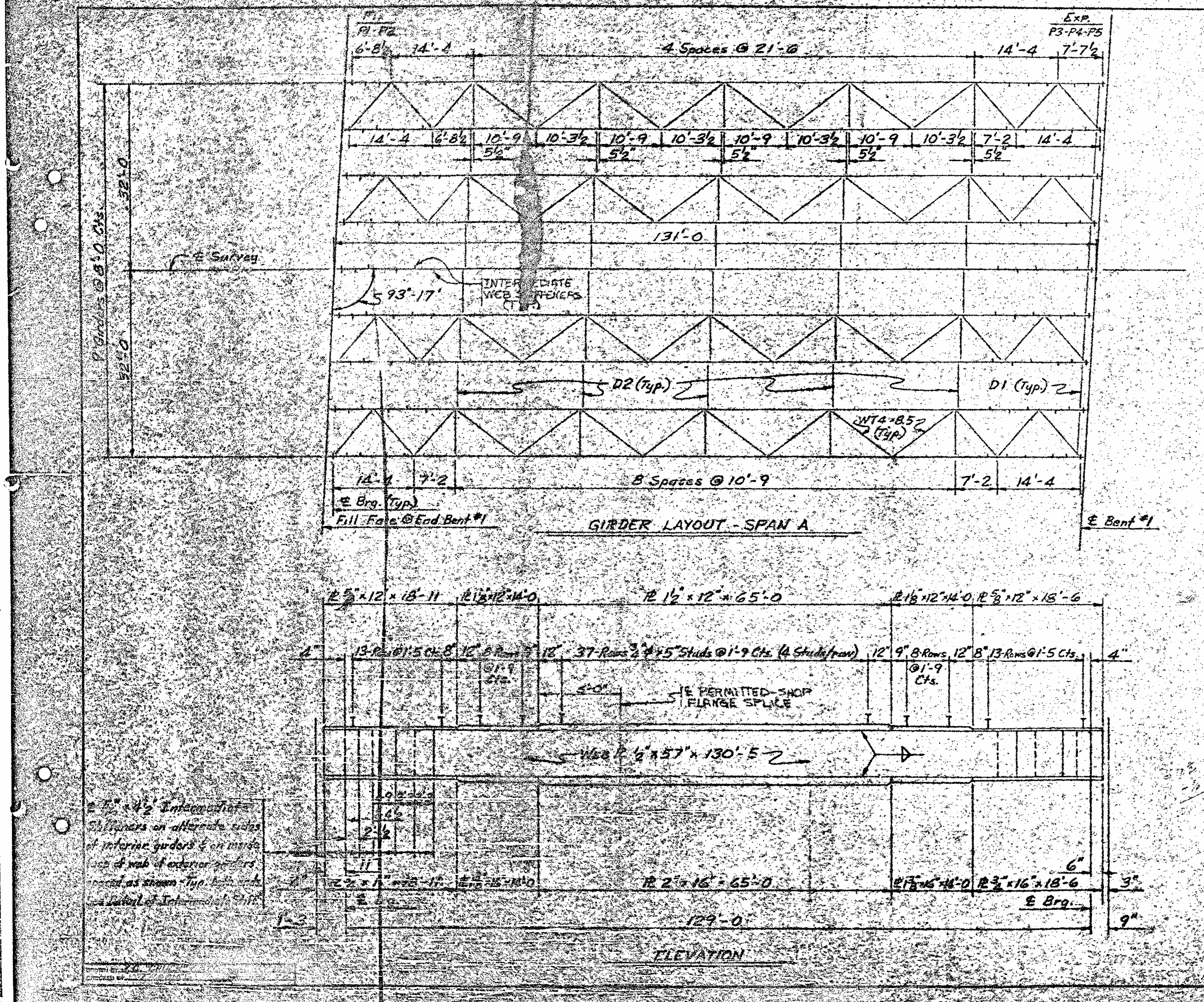
SUPERSTRUCTURE BILL OF MATERIAL

JULY 1974

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. S-[illegible]

FED. ROAD DIV. NO.	STATE	PROJECT NO.
1	N.C.	8.1347406
F.A. PROJECT	I-95-2(42)40	
SHEET NO. 21	TOTAL SHEETS	



NOTES

FOR LOCATIONS OF HOLES IN BEAMS TO ACCOMMODATE "T" BARS SEE SUPERSTRUCTURE SECTIONS AND DETAILS.

CAMBERED GIRDER LENGTHS SHALL BE ADJUSTED AND BEARINGS ARE TO BE PLACED ON THE CAMBERED GIRDER SO AS TO BE ALIGNED WITH THE ANCHORS AFTER THE DEAD LOAD DEFLECTION HAS OCCURRED. SHOP PLANS SHALL BE PREPARED ACCORDINGLY.

CLIP THE CORNERS OF BEARING STIFFENERS 1" AT THE JUNCTIONS OF THE WEB AND FLANGES.

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

ALL BEARING ASSEMBLIES SHALL BE GALVANIZED EXCEPT SELF-LUBRICATING PLATES.

ALL BEARING SURFACES THAT ARE NOT REQUIRED TO BE FINISHED SHALL BE SMOOTH AND STRAIGHT.

ALL FIELD CONNECTIONS TO BE 7/8" Ø HIGH STRENGTH BOLTS.

ALL SHOP SPLICES IN FLANGE AND WEB PLATES SHALL BE MADE PRIOR TO WELDING FLANGE PLATES TO WEB PLATES. NO SPLICE OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED IN THE FLANGE PLATES; HOWEVER, TWO ADDITIONAL SHOP WEB SPLICES WILL BE ALLOWED AT APPROXIMATE ONE-THIRD POINTS.

SHIPPING DETAILS

SHIPPING DETAILS FOR GIRDERS SHALL BE SUBMITTED FOR APPROVAL, INDICATING THE TOP FLANGE LOCATION DURING SHIPMENT, AND IN ALL CASES SHOWING THE WEB VERTICAL. THE METHOD OF SHIPMENT, POSITION ON THE VEHICLE, AND ATTACHMENTS TO THE GIRDERS OF ANY SHIPPING RESTRAINTS SHALL BE CLEARLY DETAILED.

ALL STRUCTURAL STEEL TO BE UNPAINTED ASTM A-588 (INCLUDING BEARING PLATES) WITH A MINIMUM YIELD STRENGTH OF 50,000 P.S.I. EXCEPT ANCHOR BOLTS, NUTS & WASHERS, WHICH SHALL BE IN ACCORDANCE WITH SPECIFICATIONS. ALL BEARING PLATES EXCEPT SELF-LUBRICATING PLATES, SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATIONS.

A CHARPY V-NOTCH TEST IS REQUIRED ON ALL GIRDER WEB AND BOTTOM FLANGE PLATES, SEE SPECIAL PROVISIONS.

THE ATMOSPHERIC CORROSION RESISTANCE AND COLORING CHARACTERISTICS OF ASTM A-588 STEEL IS REQUIRED FOR THE WELD METAL.

HIGH STRENGTH BOLTS, NUTS & WASHERS SHALL MEET THE REQUIREMENTS FOR ASTM A-325 FOR TYPE 3 BOLTS.

IN REGARD TO ELECTRO-SLAG WELDING, SEE SPECIAL PROVISIONS.

PROJECT NO. 8.1347406

CUMBERLAND COUNTY

STATION: 94+74.76 -L-

Sheet 1 of 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

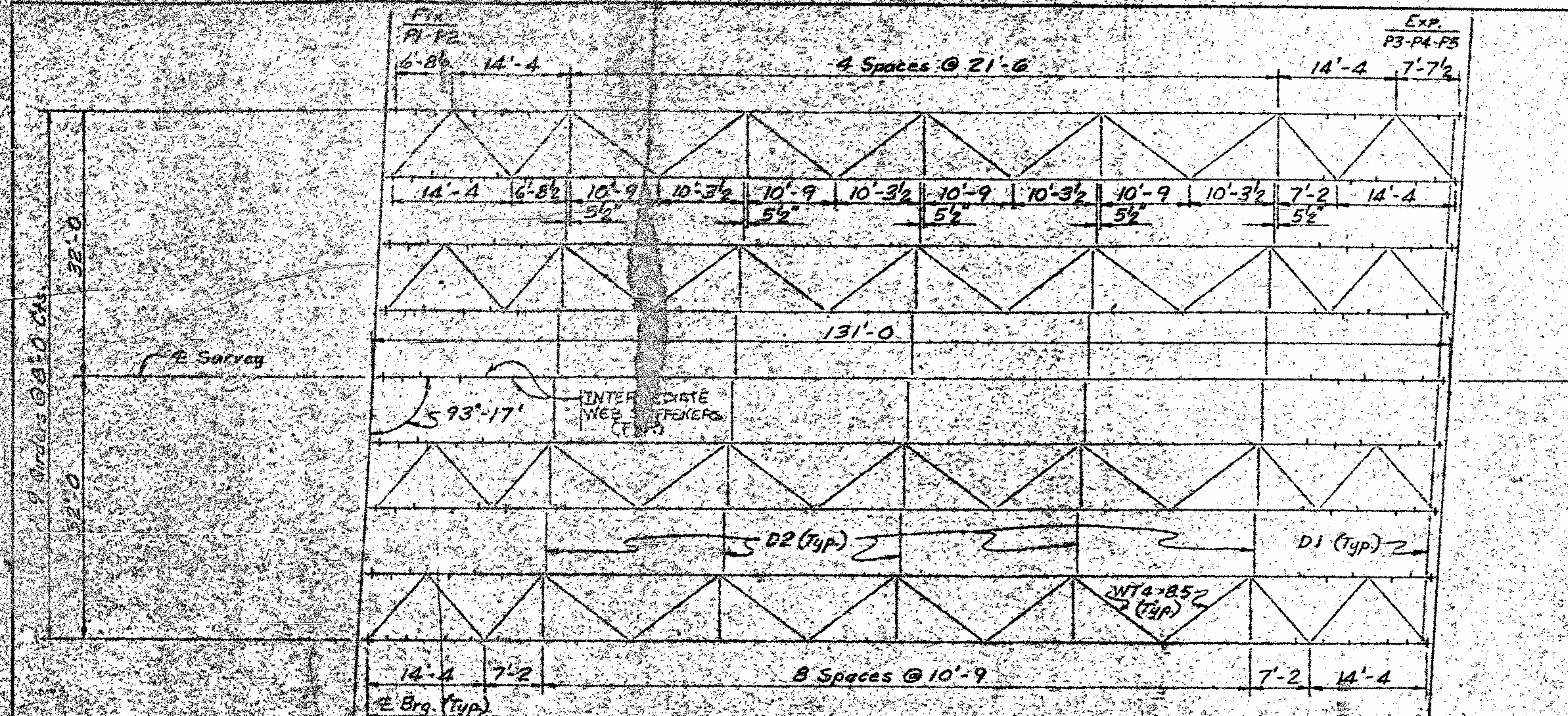
SUPERSTRUCTURE
STRUCTURAL STEEL DETAILS

JULY

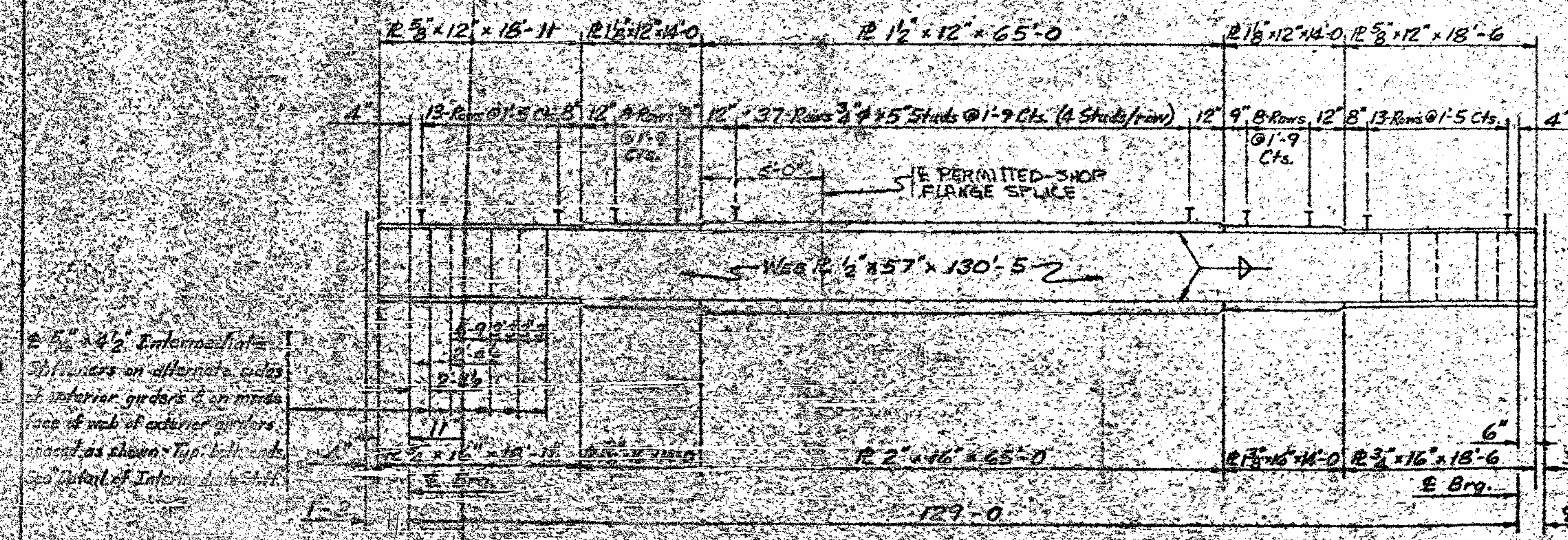
REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

FED. ROAD DIV. NO.	STATE	PROJECT NO.
9	N.C.	8.1347406
F.A. PROJECT	I-95-2(47)46	
SHEET NO.	TOTAL SHEETS	
21		



GIRDER LAYOUT - SPAN A



ELEVATION

NOTES

FOR LOCATIONS OF HOLES IN BEAMS TO ACCOMMODATE "K" BARS SEE SUPERSTRUCTURE SECTIONS AND DETAILS.

CAMBERED GIRDER LENGTHS SHALL BE ADJUSTED AND BEARINGS ARE TO BE PLACED ON THE CAMBERED GIRDER SO AS TO BE ALIGNED WITH THE ANCHORS AFTER THE DEAD LOAD DEFLECTION HAS OCCURRED. SHOP PLANS SHALL BE PREPARED ACCORDINGLY.

CLIP THE CORNERS OF BEARING STIFFENERS 1" AT THE JUNCTIONS OF THE WEB AND FLANGES.

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGERTIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

ALL BEARING ASSEMBLIES SHALL BE GALVANIZED EXCEPT SELF-LUBRICATING PLATES.

ALL BEARING SURFACES THAT ARE NOT REQUIRED TO BE FINISHED SHALL BE SMOOTH AND STRAIGHT.

ALL FIELD CONNECTIONS TO BE 7/8" φ HIGH STRENGTH BOLTS.

ALL SHOP SPLICES IN FLANGE AND WEB PLATES SHALL BE MADE PRIOR TO WELDING FLANGE PLATES TO WEB PLATES. NO SPLICE OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED IN THE FLANGE PLATES; HOWEVER, TWO ADDITIONAL SHOP WEB SPLICES WILL BE ALLOWED AT APPROXIMATE ONE-THIRD POINTS.

SHIPPING DETAILS

SHIPPING DETAILS FOR GIRDERS SHALL BE SUBMITTED FOR APPROVAL, INDICATING THE TOP FLANGE LOCATION DURING SHIPMENT, AND IN ALL CASES SHOWING THE WEB VERTICAL. THE METHOD OF SHIPMENT, POSITION ON THE VEHICLE, AND ATTACHMENTS TO THE GIRDERS OF ANY SHIPPING RESTRAINTS SHALL BE CLEARLY DETAILED.

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A CHARPY V-NOTCH TEST IS REQUIRED ON ALL GIRDER WEB AND BOTTOM FLANGE PLATES. SEE SPECIAL PROVISIONS.

THE ATMOSPHERIC CORROSION RESISTANCE AND COLORING CHARACTERISTICS OF ASTM A-588 STEEL IS REQUIRED FOR THE WELD METAL.

HIGH STRENGTH BOLTS, NUTS & WASHERS SHALL MEET THE REQUIREMENTS FOR ASTM A-325 FOR TYPE 3 BOLTS.

IN REGARD TO ELECTRO-SLAG WELDING, SEE SPECIAL PROVISIONS.

PROJECT NO. 8.13474[illegible]

CUMBERLAND COUNTY

STATION: 94+74.76 [illegible]

Sheet 1 of 5

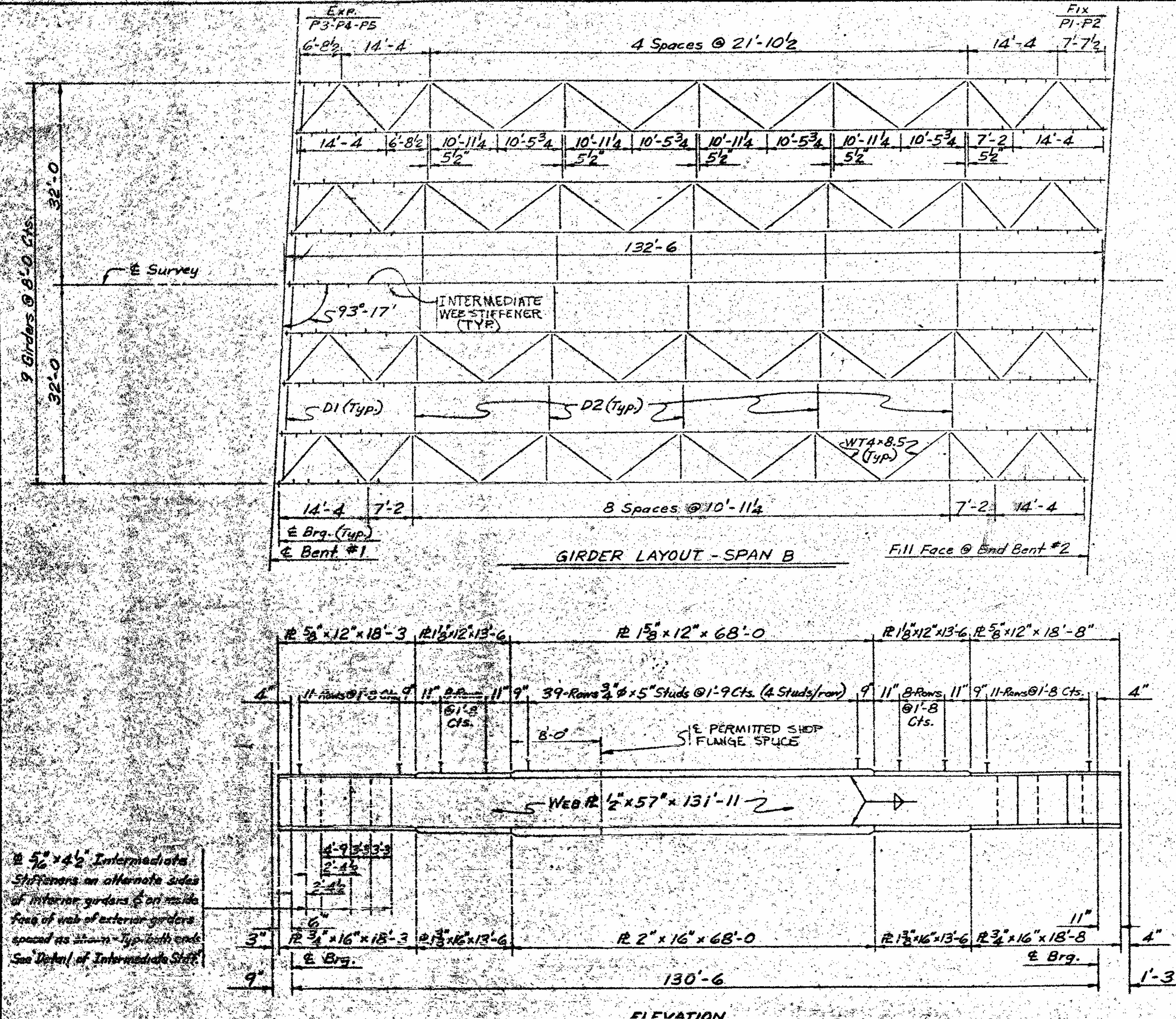
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUPERSTRUCTURE STRUCTURAL STEEL DETAILS

JULY

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		



F.A. PROJECT I-95-2(...)

SHEET NO. 42 | TOTAL SHEETS

PROJECT No. 8.1347406

CUMBERLAND COUNTY

STATION: 94+74.76-Rt. Ln.

Sheet 2 of 5

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY

RALEIGH

SUPERSTRUCTURE

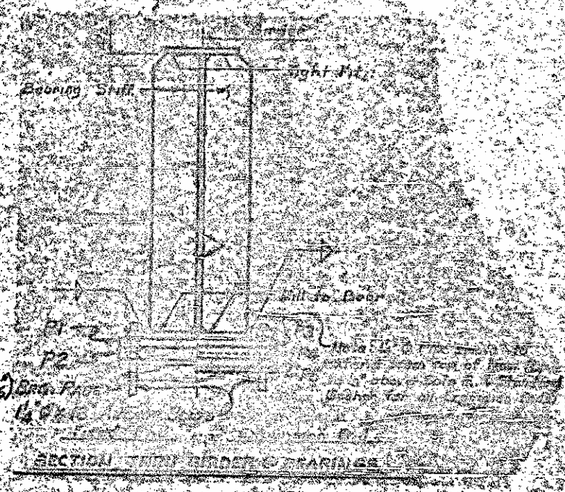
STRUCTURAL STEEL DETAILS

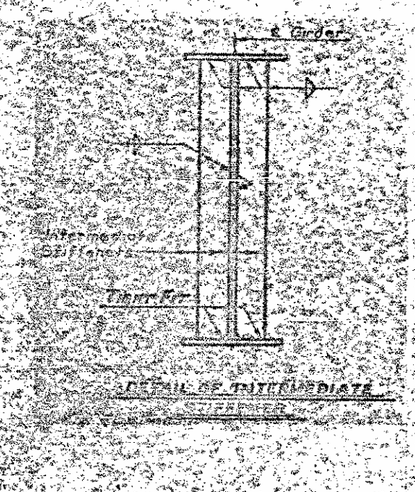
JULY 197[illegible]

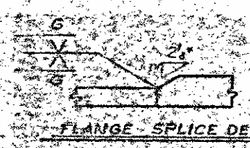
SHEET NO. S-10

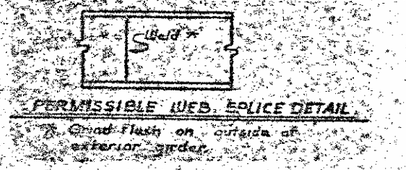
TOTAL SHEETS 54

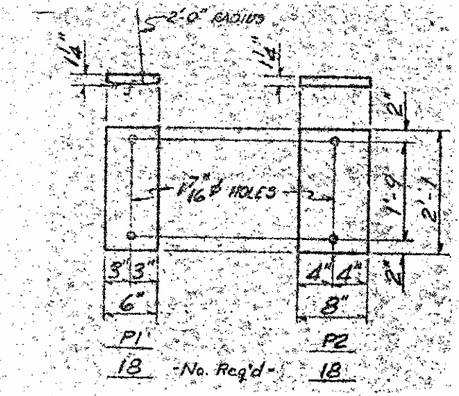
FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N. C.	8.1347406
F. A. PROJECT		I-95-2 (42) 4o
SHEET NO.	TOTAL SHEETS	
43		

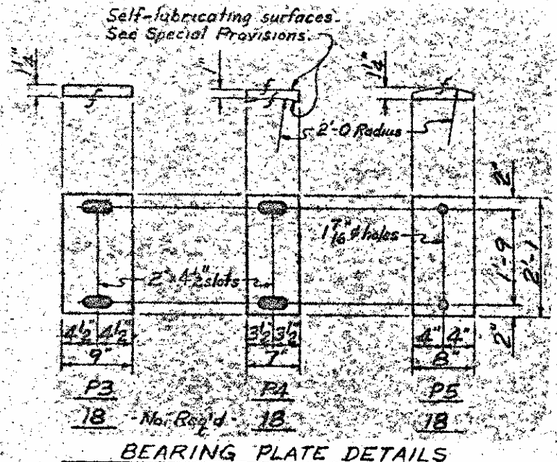






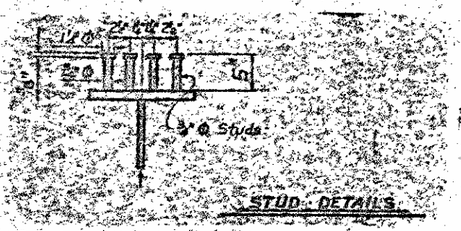


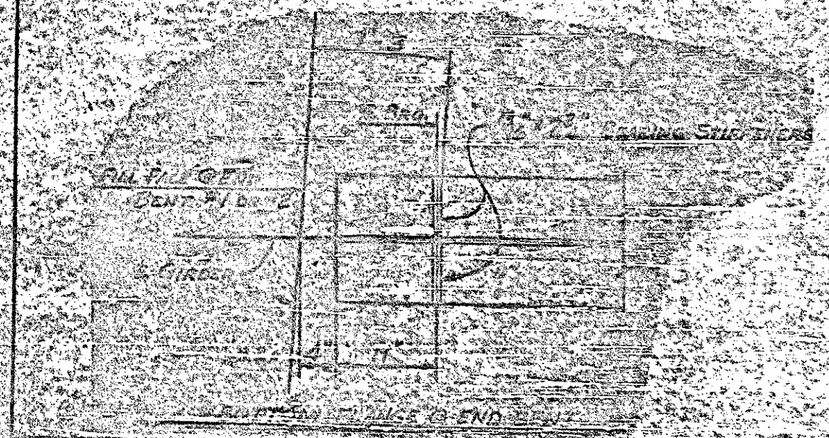


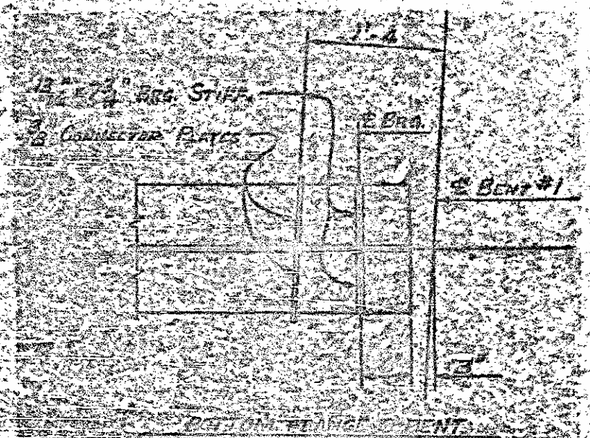


BEARING PLATE DETAILS

SELF-LUBRICATING PLATE SHALL NOT BE GALVANIZED.







PROJECT NO. 8.1347406

CUMBERLAND COUNTY

STATION 94+74.76-PL-1A

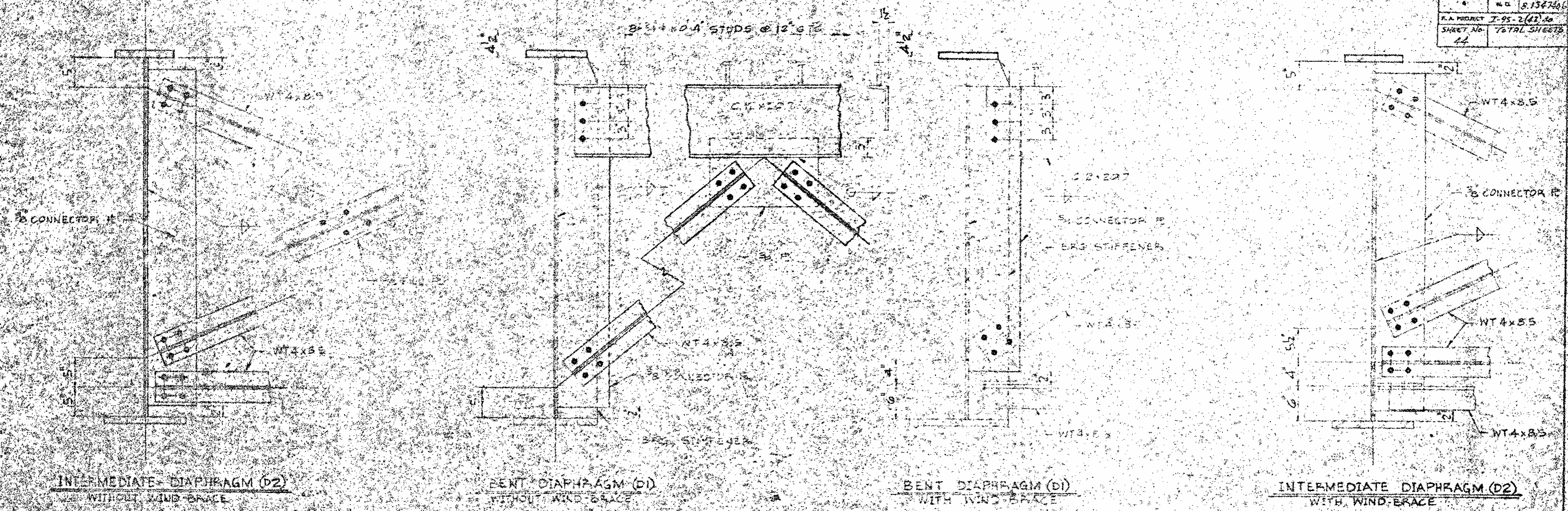
Sheet 3 of 5

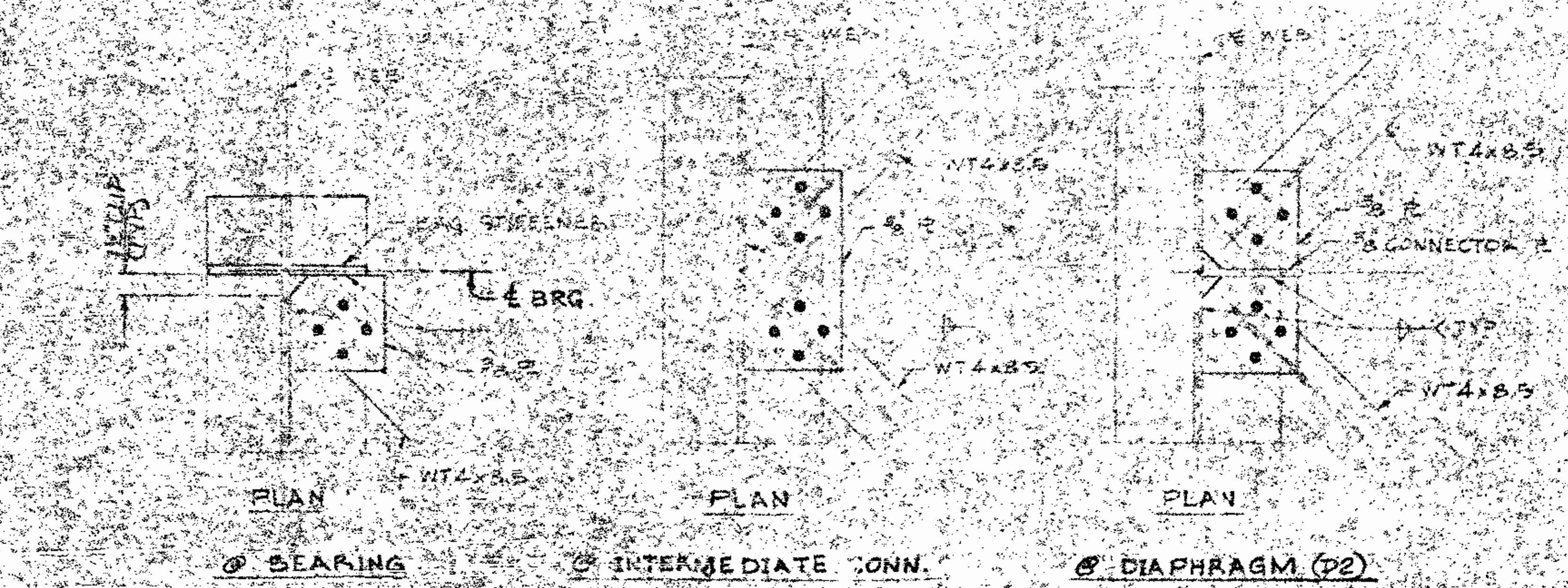
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL DETAILS
AUGUST 197

REVISIONS						SEAL
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

CO. ROAD DIS. NO.	STATE	PROJECT NO.
6	N.C.	8.134706
F.A. PROJECT I-95-2(41)40		
SHEET No. 44	TOTAL SHEETS	





DETAILS OF WIND-BRACE CONNECTIONS

PROJECT NO. 8.134706
CUMBERLAND COUNTY
STATION: 94+74.76-Rt.Ln.
Sheet 4 of 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
AND HIGHWAY SAFETY
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL DETAIL

AUG.

REVISIONS

Fed. Road Div. No.	State	Project No.
4	S.C.	8.134740B
F.A. Project	I-95-2(43)46	
Sheet No. 45	Total Sheets	

DEAD LOAD DEFLECTION TABLE FOR BEAMS

DEAD LOAD DEFLECTION TABLE FOR BEAMS	Span A		Span B	
	EXT.	INT.	EXT.	INT.
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

SPAN A

	INTERIOR									EXTERIOR								
TENTH POINT	.1	.2	.3	.4	.5	.6	.7	.8	.9	.1	.2	.3	.4	.5	.6	.7	.8	.9
DEFLECTION DUE TO WEIGHT OF BEAM	.038	.070	.093	.107	.112	.107	.093	.070	.038	.037	.067	.090	.104	.108	.104	.090	.067	.037
DEFLECTION DUE TO WEIGHT OF SLAB	.116	.212	.283	.328	.343	.328	.283	.212	.116	.108	.197	.263	.304	.319	.304	.263	.197	.108
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL AND FUTURE WEARING SURFACE	.021	.039	.053	.061	.064	.061	.053	.039	.021	.022	.040	.054	.063	.066	.063	.054	.040	.022
TOTAL DEAD LOAD DEFLECTION	.175	.321	.429	.496	.519	.496	.429	.321	.175	.167	.304	.407	.471	.493	.471	.407	.304	.167
VERTICAL CURVE ORDINATE (CREST)	.031	.056	.073	.084	.087	.084	.073	.056	.031	.031	.056	.073	.084	.087	.084	.073	.056	.031
~~[illegible]~~																		
REQUIRED BEAM CAMBER	.206	.377	.502	.580	.606	.580	.502	.377	.206	.198	.360	.480	.555	.580	.555	.480	.360	.198

SPAN B

	INTERIOR									EXTERIOR								
TENTH POINT	.1	.2	.3	.4	.5	.6	.7	.8	.9	.1	.2	.3	.4	.5	.6	.7	.8	.9
DEFLECTION DUE TO WEIGHT OF BEAM	.040	.072	.096	.111	.116	.111	.096	.072	.040	.038	.070	.093	.107	.112	.107	.093	.070	.038
DEFLECTION DUE TO WEIGHT OF SLAB	.119	.217	.288	.333	.348	.333	.288	.217	.119	.110	.201	.267	.309	.324	.309	.267	.201	.110
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL AND FUTURE WEARING SURFACE	.022	.041	.055	.064	.067	.064	.055	.041	.022	.023	.042	.056	.065	.068	.065	.056	.042	.023
TOTAL DEAD LOAD DEFLECTION	.181	.330	.439	.508	.531	.508	.439	.330	.181	.171	.313	.416	.481	.504	.481	.416	.313	.171
VERTICAL CURVE ORDINATE (CREST)	.032	.057	.075	.086	.089	.086	.075	.057	.032	.032	.057	.075	.086	.089	.086	.075	.057	.032
~~[illegible]~~																		
REQUIRED BEAM CAMBER	.213	.387	.514	.594	.620	.594	.514	.387	.213	.203	.370	.491	.567	.593	.567	.491	.370	.203

NOTE: DEFLECTIONS ARE GIVEN IN DECIMALS OF A FOOT.

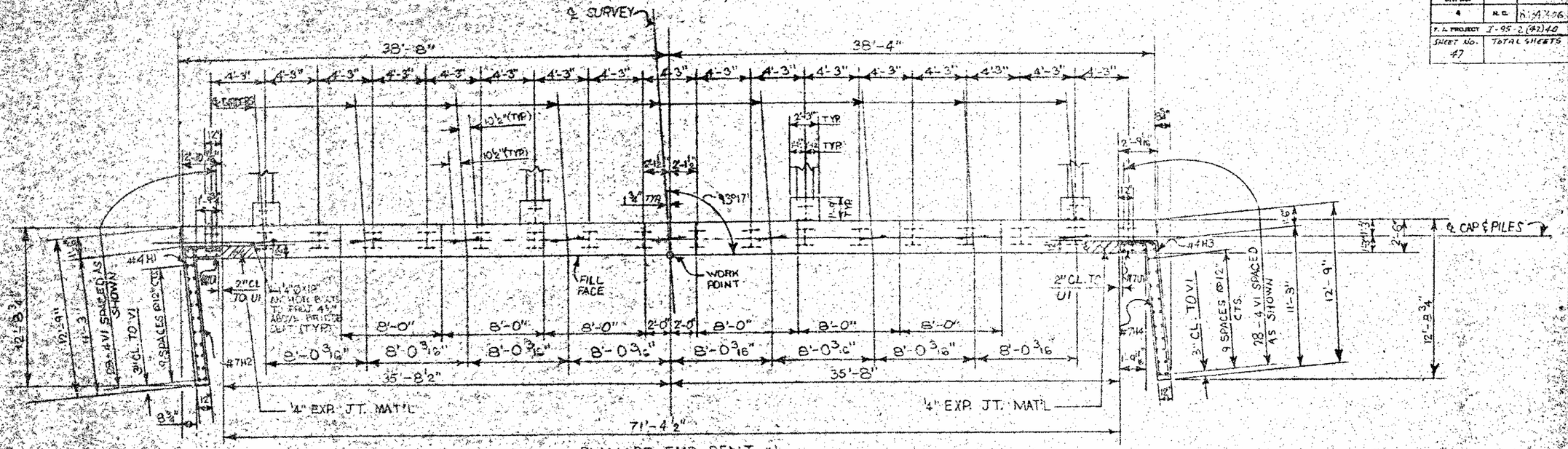
PROJECT [illegible]
CUMBERLAND [illegible]
STATION [illegible]
Sheet 5 of [illegible]

STATE HIGHWAY [illegible]

SUPERSTRUCTURE [illegible]
STRUCTURAL [illegible]

AUGUST [illegible]

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.13474.06
F. A. PROJECT	I-95-2(42)40	
SHEET NO. 47	TOTAL SHEETS	



PROJECT NO. 8.13474.06

CUMBERLAND COUNTY

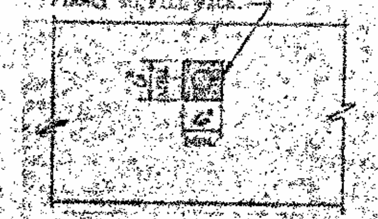
STATION: 94+74.76-RALN-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUBSTRUCTURE
END BENT #1 & 2

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		
1			3				TOTAL SHEETS
2			4				

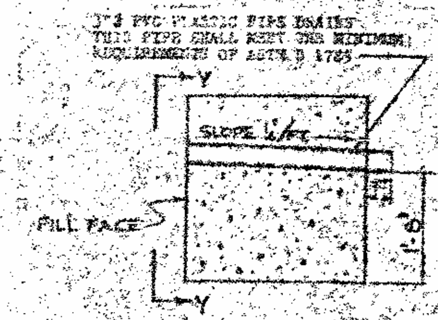


VIEW Y-Y

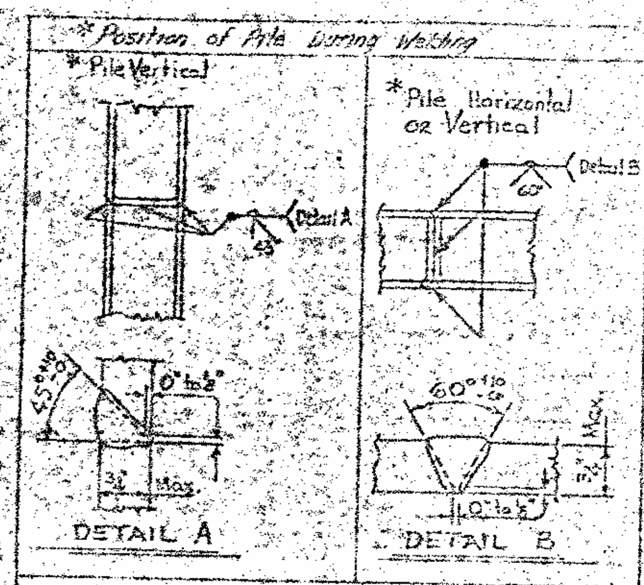
PIPE DRAIN DETAILS

NOTE: PIPE DRAINS MAY BE SHIFTED FROM POSITIONS SHOWN TO CLEAR REINFORCING STEEL AND ANCHOR BOLTS.

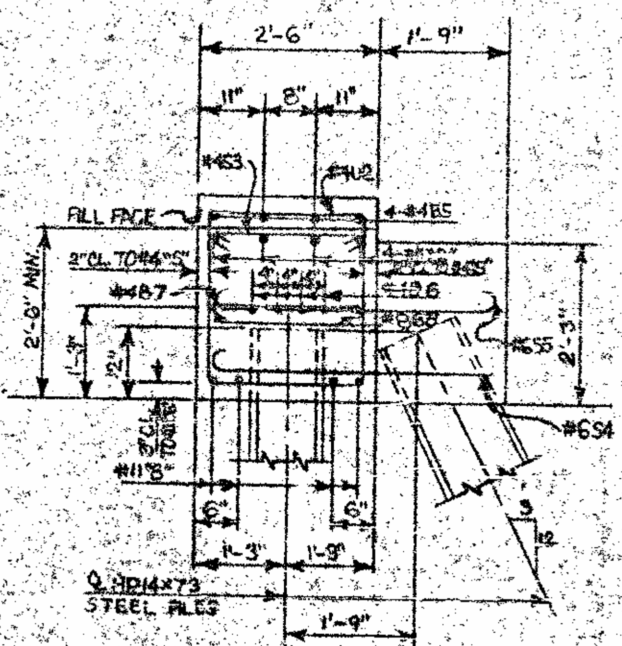
NOTE: NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



SECTION THRU CAP



PILE SPLICE DETAILS



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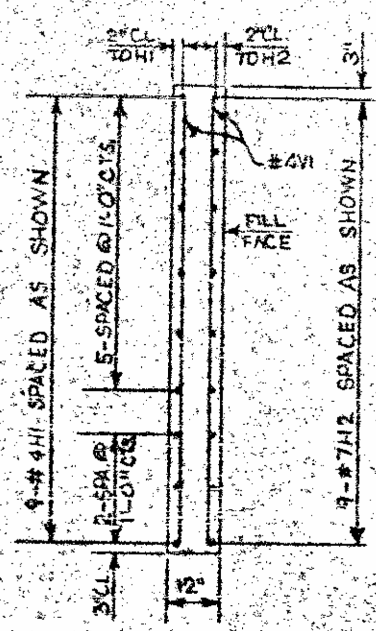
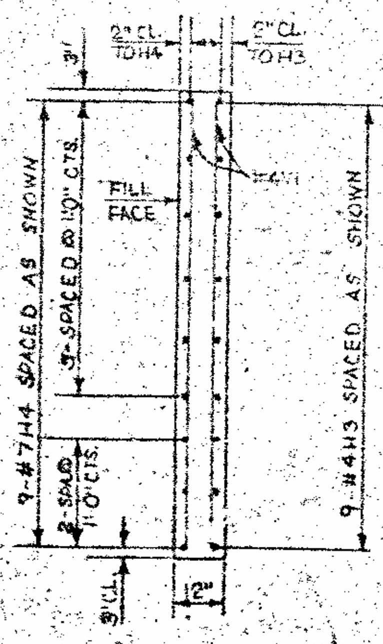


SECTION THRU LEFT WING



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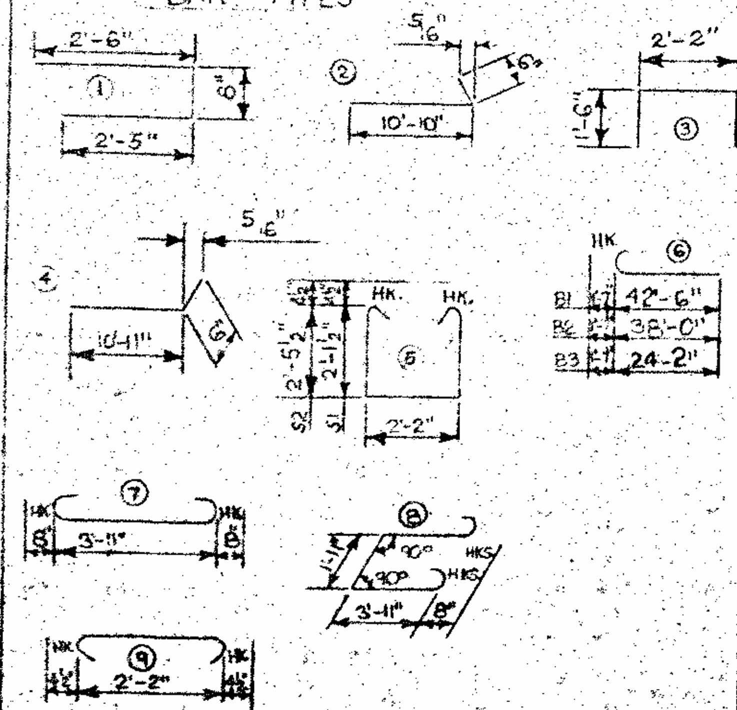


BAR TYPES

NOTE: ALL BAR DIMENSIONS ARE OUT-TO-OUT

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.134 74 06
F.A. PROJECT	I-95-2 (42) 40	
SHEET NO. 48	TOTAL SHEETS	

BILL OF MATERIAL

FOR 1 END BENT - 2 REQ'D

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	11	6	44'-1"	937
B2	4	11	6	39'-7"	841
B3	8	11	6	25'-9"	1,094
B4	4	11	STR.	35'-8"	758
B5	4	4	STR.	[illegible]-8"	10
B6	12	4	STR.	26'-5"	212
B7	20	4	STR.	2'-2"	29
B8	4	8	STR.	39'-7"	423
H1	9	4	2	11'-4"	68
H2	9	7	2	11'-4"	208
H3	9	4	4	11'-5"	69
H4	9	7	4	11'-5"	210
S1	36	4	5	7'-2"	172
S2	34	4	5	7'-10"	178
S3	[illegible]	4	9	2'-11"	136
S4	4	6	8	11'-1"	67
S5	12	6	7	5'-3"	95
U1	12	7	1	5'-7"	137
U2	3	4	3	5'-2"	10
V1	56	4	STR.	2'-0"	299

REINF. STEEL - LBS. = 5,953
CLASS A CONC. - CY = 28.6
HP14×73 STEEL PILES
(HW) NO. 22, L.F. 1581.44
(EB #2) NO. = 22, L.F. = 1594.89

PROJECT NO. 8.134 74 06
CUMBERLAND COUNTY
STATION: 94+74.76 -RT- LN-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH

SUBSTRUCTURE SECTIONS
END BENT #1 & 2

REVISIONS						SHEET NO. 3-16
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS 54
1			3			
2			4			

DRAWN BY CINDY D. CORBIN DATE 6-25-74
CHECKED BY [illegible] DATE July 1974

FED. ROAD DIV. NO.	STATE	PROJECT NO.
9	N. C.	B-1347406
F. A. PROJECT		2-95-2(42)40
SHEET NO. 49	TOTAL SHEETS	

BILL OF MATERIAL
FOR BENT NO. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#11	STR	35'-7	3025
B2	16	#11	1	29'-1	2472
B3	8	#11	STR.	19'-8	836
B4	6	#4	STR.	23'-5	94
M1	40	#11	1	7'-1	1505
S1	36	#4	2	3'-7	87
S2	95	#4	3	9'-8	613
S3	140	#5	4	7'-11	1156
S4	32	#5	4	9'-11	299
T1	75	#7	5	8'-4	1877
T2	60	#8	5	11'-4	1816
V1	40	#11	1	23'-0	4882

REINFORCING STEEL - LBS. 18,016
CLASS A CONCRETE - CU. YDS. 90.0
HP 12 X 53 STEEL PILES 1035 L.F. = 3300 3,934.81

CONCRETE BREAKDOWN IN CU. YDS.
POUR #1 (FOOTINGS) ... 38.9
POUR #2 (COLS.) ... 24.9
POUR #3 (CAP) ... 26.2
90.0

FOUND. EXCAV. = 123.78 C.Y.

PROJECT NO. B-1347406
CUMBERLAND COUNTY
STATION: 94+78.76 -RT. LINE-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH
SUBSTRUCTURE
BENT NO. 1
SEPTEMBER 1974

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		S-49
1			4				TOTAL SHEETS
2							54
3							

PLAN

ELEVATION

END ELEVATION

PIPE SLEEVE DETAIL

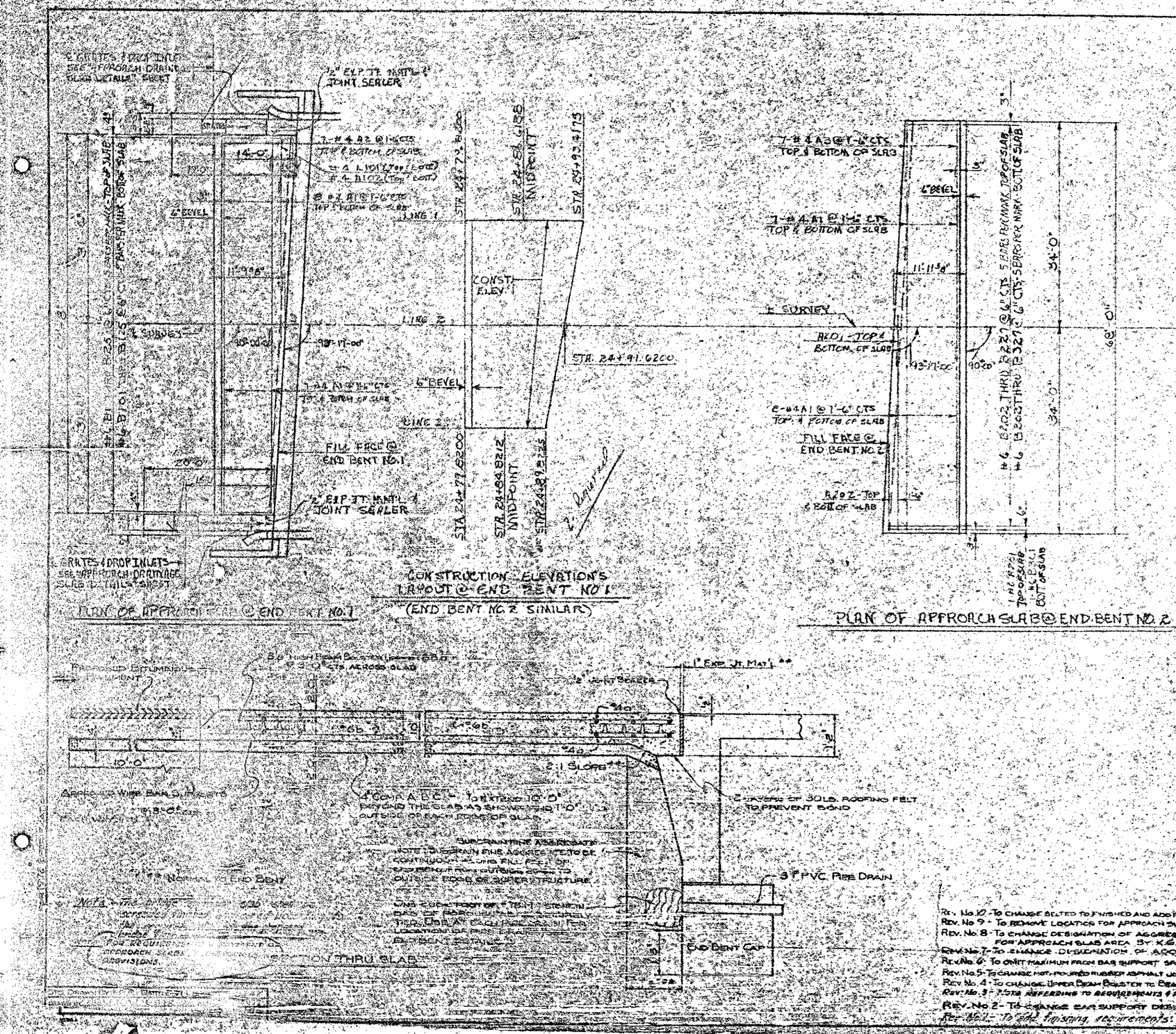
AFTER ANCHOR BOLTS HAVE BEEN FINALLY POSITIONED, PIPES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT. GROUT SHALL MEET APPROVAL OF ENGINEER.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

SECTION THRU CAP

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	B-1364-06
F.A. PROJECT	I-95-2(42)40	
SHEET NO. 52	TOTAL SHEETS	



BILL OF MATERIRL — APPROACH SLAB NO. 1

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	30	6	STR	30'-0"	901
S2	14	4	STR	4'-10"	45
A101	2	4	STR	7'-5"	10
A102	2	4	STR	14'-9"	19
B1	5	6	STR	29'-7"	95
B2	5	6	STR	12'-5"	93
B3	5	6	STR	12'-3"	92
B4	5	6	STR	12'-1"	91
B5	5	6	STR	12'-0"	90
B6	5	6	STR	11'-10"	89
B7	5	6	STR	11'-8"	88
B8	5	6	STR	11'-6"	86
B9	5	6	STR	11'-5"	86
B10	5	6	STR	11'-3"	84
B11	5	6	STR	11'-1"	83
B12	5	6	STR	10'-11"	82
B13	5	6	STR	10'-10"	81
B14	5	6	STR	10'-8"	80
B15	5	6	STR	10'-6"	79
B16	5	6	STR	10'-4"	78
B17	5	6	STR	10'-3"	77
B18	5	6	STR	10'-1"	76
B19	5	6	STR	9'-11"	75
B20	5	6	STR	9'-9"	75
B21	5	6	STR	9'-8"	73
B22	5	6	STR	9'-6"	71
B23	5	6	STR	9'-4"	70
B24	5	6	STR	9'-2"	69
B25	5	6	STR	9'-1"	68
B101	5	6	STR	13'-1"	98
B102	5	6	STR	12'-11"	97
B103	5	6	STR	12'-9"	96
B104	5	6	STR	12'-7"	95
B105	5	6	STR	12'-6"	94
B106	5	6	STR	12'-4"	93
B107	5	6	STR	12'-2"	91
B108	5	6	STR	12'-0"	90
B109	5	6	STR	11'-11"	90
B110	5	6	STR	11'-9"	88
B111	5	6	STR	11'-7"	87
B112	5	6	STR	11'-5"	86
B113	5	6	STR	11'-4"	85
B114	5	6	STR	11'-2"	84
B115	5	6	STR	11'-0"	83
B116	5	6	STR	10'-10"	81
B117	5	6	STR	10'-9"	81
B118	5	6	STR	10'-7"	79
B119	5	6	STR	10'-5"	78
B120	5	6	STR	10'-3"	77
B121	5	6	STR	10'-2"	76
B122	5	6	STR	10'-0"	75
B123	5	6	STR	9'-10"	74
B124	5	6	STR	9'-8"	73
B125	5	6	STR	9'-7"	72
			GRAND TOTAL		4,819

REINF'G. ST'L. - TOTAL 4819

CLASS "AA" CONC. CU. YDS. 23.4

CLASS "A" CONC. FOR APPROACH DRAINAGE SLAB CU. YDS. 8.0

BILL OF MATERIAL — APPROACH SLAB NO. 2

BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
A1	30	6	STR	30'-0"	901
A2	14	4	STR	4'-10"	45
A101	2	4	STR	7'-5"	10
A102	2	4	STR	14'-9"	19
B201	5	6	STR	13'-1"	98
B202	5	6	STR	12'-11"	97
B203	5	6	STR	12'-9"	96
B204	5	6	STR	12'-7"	95
B205	5	6	STR	12'-6"	94
B206	5	6	STR	12'-4"	93
B207	5	6	STR	12'-2"	91
B208	5	6	STR	12'-0"	90
B209	5	6	STR	11'-11"	90
B210	5	6	STR	11'-9"	88
B211	5	6	STR	11'-7"	87
B212	5	6	STR	11'-5"	86
B213	5	6	STR	11'-4"	85
B214	5	6	STR	11'-2"	84
B215	5	6	STR	11'-0"	83
B216	5	6	STR	10'-11"	82
B217	5	6	STR	10'-9"	81
B218	5	6	STR	10'-7"	79
B219	5	6	STR	10'-5"	78
B220	5	6	STR	10'-4"	78
B221	5	6	STR	10'-2"	76
B222	5	6	STR	10'-0"	75
B223	5	6	STR	9'-10"	74
B224	5	6	STR	9'-8"	73
B225	5	6	STR	9'-7"	72
B226	5	6	STR	9'-5"	71
B227	5	6	STR	9'-3"	70
B301	5	6	STR	13'-1"	98
B302	5	6	STR	12'-11"	97
B303	5	6	STR	12'-9"	96
B304	5	6	STR	12'-7"	95
B305	5	6	STR	12'-6"	94
B306	5	6	STR	12'-4"	93
B307	5	6	STR	12'-2"	91
B308	5	6	STR	12'-0"	90
B309	5	6	STR	11'-11"	90
B310	5	6	STR	11'-9"	88
B311	5	6	STR	11'-7"	87
B312	5	6	STR	11'-5"	86
B313	5	6	STR	11'-4"	85
B314	5	6	STR	11'-2"	84
B315	5	6	STR	11'-0"	83
B316	5	6	STR	10'-11"	82
B317	5	6	STR	10'-9"	81
B318	5	6	STR	10'-7"	79
B319	5	6	STR	10'-5"	78
B320	5	6	STR	10'-4"	78
B321	5	6	STR	10'-2"	76
B322	5	6	STR	10'-0"	75
B323	5	6	STR	9'-10"	74
B324	5	6	STR	9'-8"	73
B325	5	6	STR	9'-7"	72
B326	5	6	STR	9'-5"	71
B327	5	6	STR	9'-3"	70

REINF'G. ST'L. - TOTAL 5160

CLASS "AA" CONC. CU. YDS. 25.6

Rev. No. 10 - To change belted to finished and add proposed in finish note. By: K.G.P. - By: NMS 5-2-76
Rev. No. 9 - To remove location for approach slab area. By: K.G.P. - By: [illegible] 5-15-76
Rev. No. 8 - To change designation of aggregate size and to provide location for approach slab area. By: K.G.P. - By: NMS 1-9-76
Rev. No. 7 - To change designation of aggregate size. By: CCM for W.J.R. 5-7-75
Rev. No. 6 - To omit maximum from bar support spacing. By: K.G.P. - NMS 7-18-73
Rev. No. 5 - To change hot poured rubber asphalt joint sealer to joint sealer. By: K.G.P. - [illegible] 5-15-74
Rev. No. 4 - To change upper beam bolster to beam bolster upper. By: K.G.P. - NMS 11-20-73
Rev. No. 3 - Note referring to requirements & payment of approach slabs. By: RCM - By: D.W.R. 10/1/73
Rev. No. 2 - To change bar support designation. By: K.G.P. - [illegible]
Rev. No. 1 - To add finishing requirements. By: J.A.P. - By: D.W.H. [illegible]

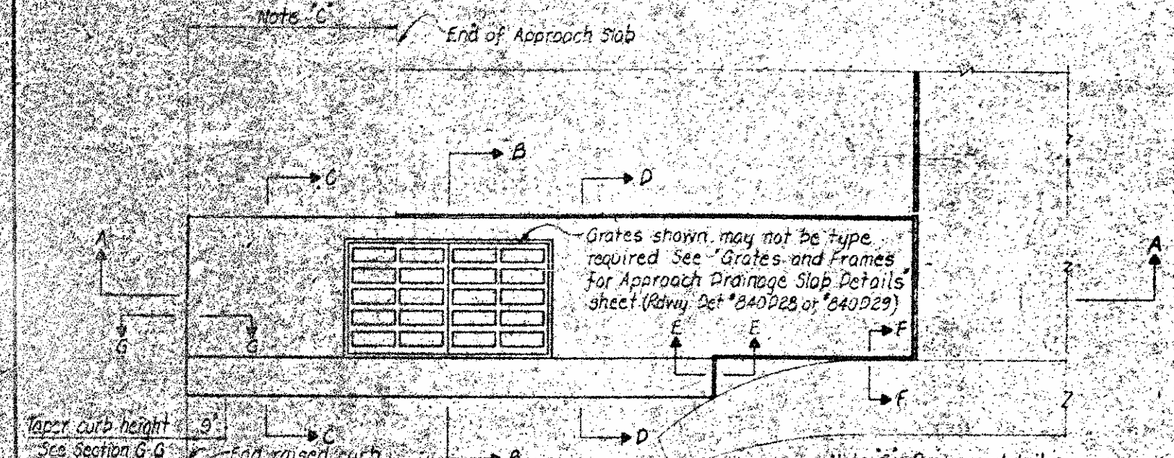
PROJECT NO. B-1364-06
CUMBERLAND COUNTY
STATION: 24+74.76-RT. LN.

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

BRIDGE APPROACH SLABS FOR FLEXIBLE PAVEMENT @ END BENTS NO. 1 & NO. 2

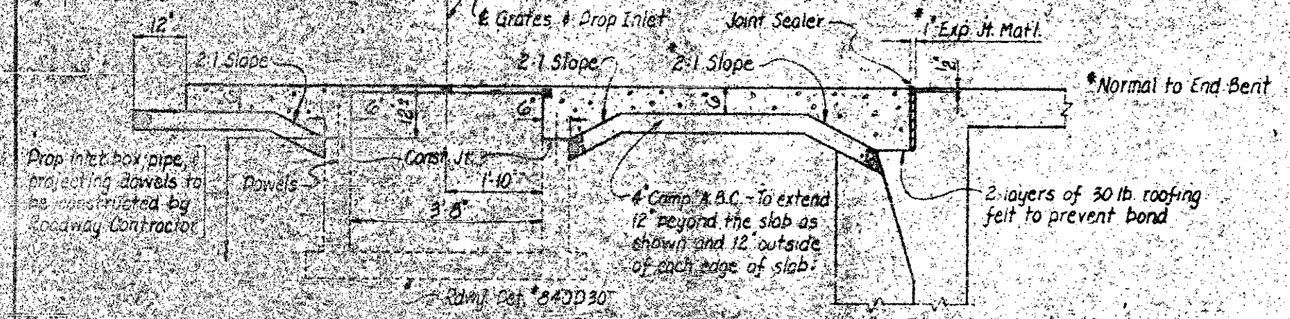
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	64
1			6			
2			7			
3			8			
4			9			
5			10			

FED. ROAD STATE PROJ. NO.	STATE	PROJECT NO.
9	N. C.	B-1347406
F. A. PROJECT	I-95-2(42)40	
SHEET NO. 53	TOTAL SHEETS	

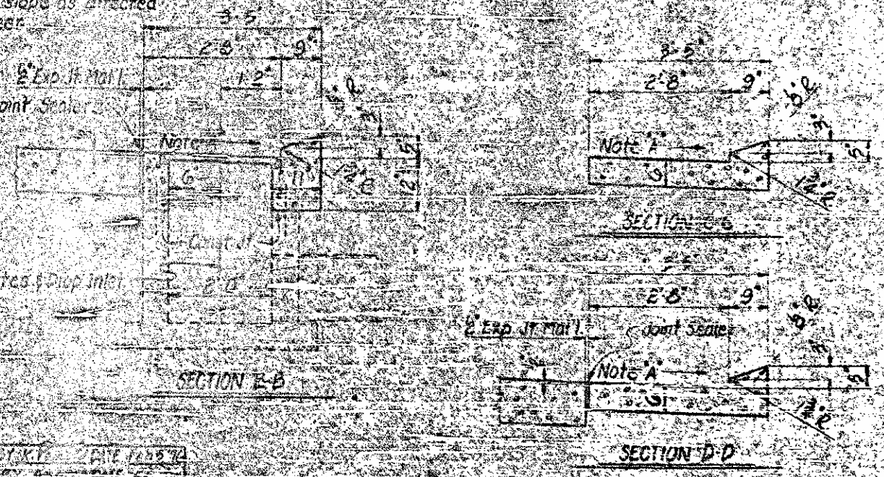


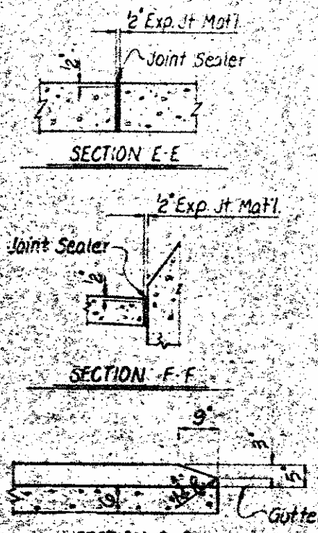
Note "C" - Drainage details may or may not project beyond end of approach slab See Plan of Approach Slab.

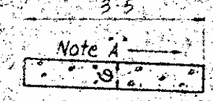
Note "B" - Slab may or may not project beyond end of raised curb. See Plan of Approach Slab



Note "A" - Match slope of adjacent sidewalk (if present) or slope as directed by the Engineer.







NOTES

For requirements and payment for Approach Drainage Slab Details, see Special Provisions for Bridge Approach Slabs

½" Expansion joint material shall be used in Approach Drainage Slab to limit the length of pours to a maximum of 35 feet. The location of joints, where required, shall be approved by the Engineer. The expansion joint shall be sealed with joint sealer as shown in Section E-E

The Engineer will be responsible for establishing the elevations for the Approach Drainage Slab.

PROJECT No. B-1347406
CUMBERLAND COUNTY
STATION: 94+74.76 RT & LT

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH DRAINAGE SLAB DETAILS

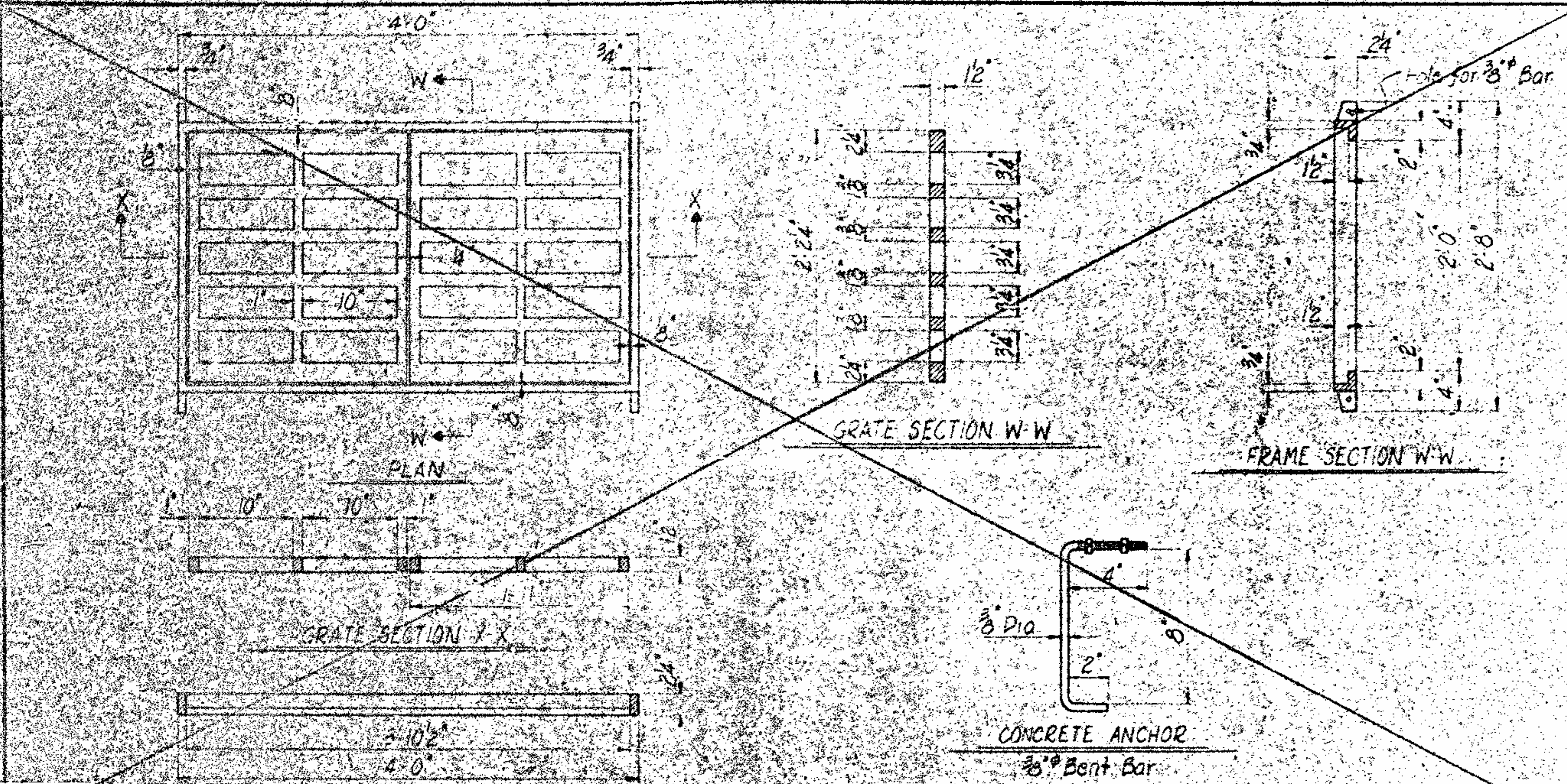
REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		5-21
1	JCP	8-12-76	3				TOTAL SHEETS
2			4				54

STD. NO. BAS3

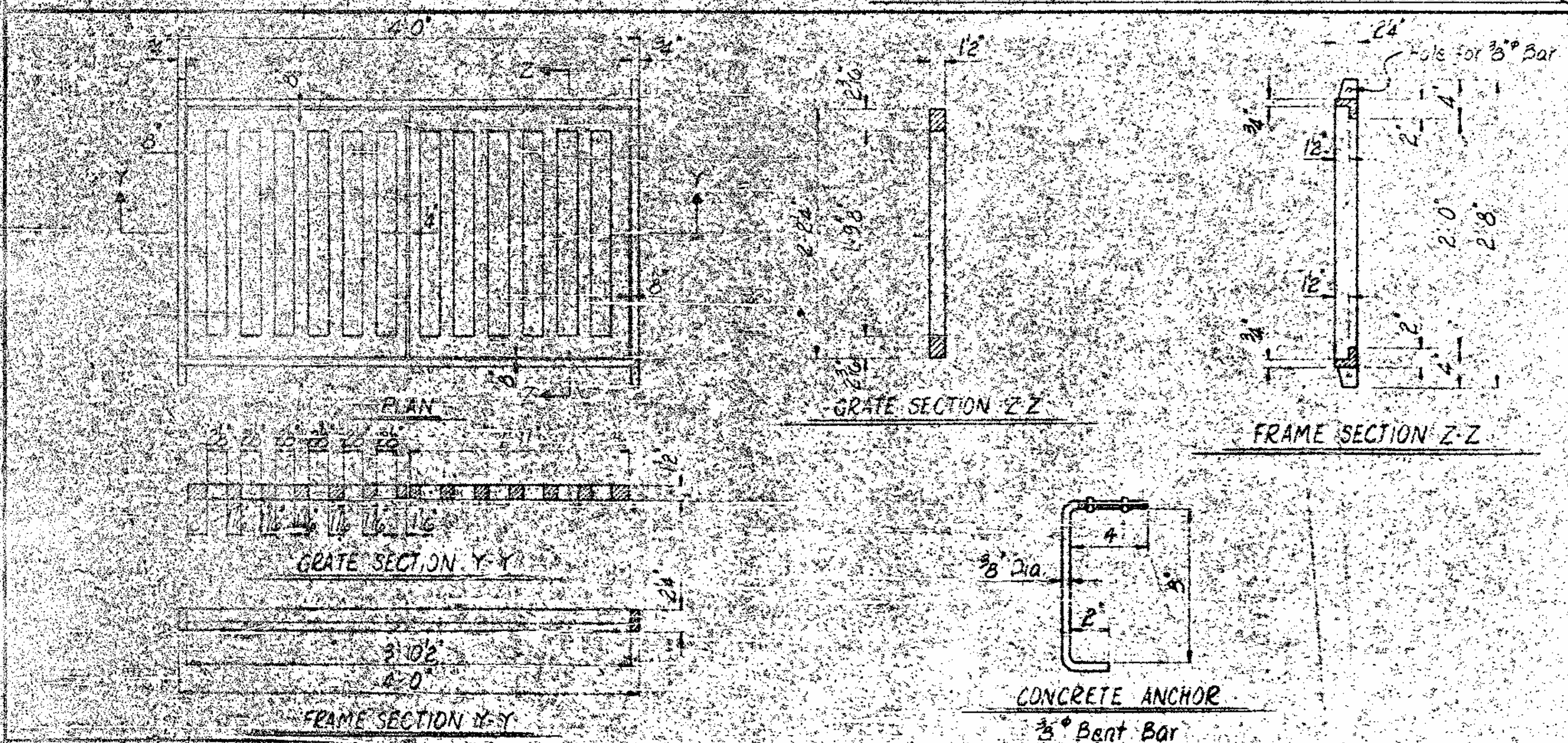
Rev. "1": Revised to change Rdwy. Det. "840D27 to "840D30 by JKP 8-12-76 by JCP

DRAWN BY KT DATE Feb 5 '76
CHECKED BY DATE

FED. ROAD DIV. NO.	STATE	PROJECT NO.
4	N.C.	8.1347406
F.A. PROJECT	I-95-2(42)40	
SHEET No 54	TOTAL SHEETS	



STANDARD FLAT GRATES AND FRAME (RDWY DET #840D28)



NARROW SLOT FLAT GRATES AND FRAME (RDWY DET #840D29)

STD DRAWN BY R. Vencil 2-19-76 BY: K.G.P.
DRAWN BY GLEN W. SO... DATE FEB 1977
CHECKED BY W.S.P. DATE FEB 77

PROJECT NO. 8.1347406
CUMBERLAND COUNTY
STATION 94+74.76 RT. LN.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GRATES AND FRAMES FOR
APPROACH DRAINAGE SLAB

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-22
1			3			TOTAL SHEETS
2			4			54

STD. NO. BAS4