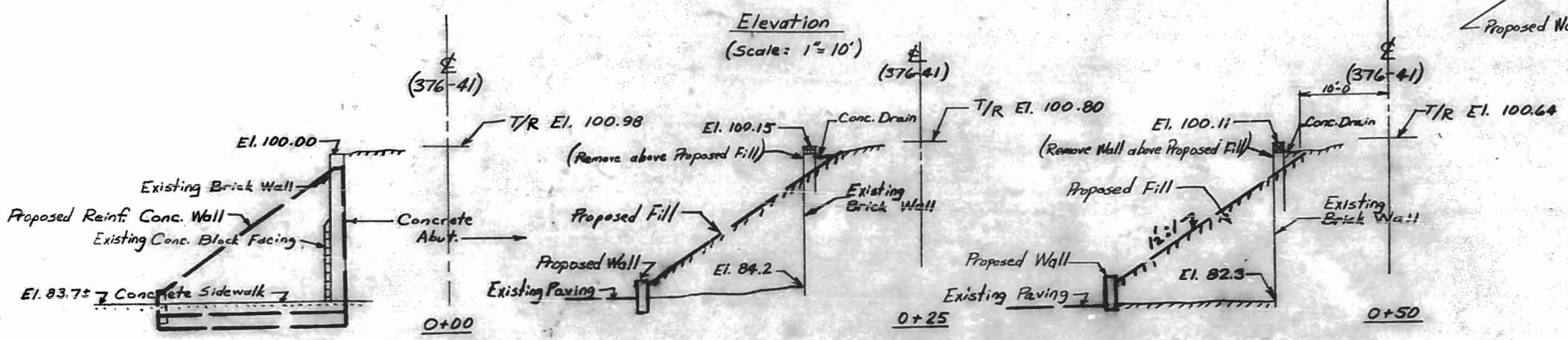
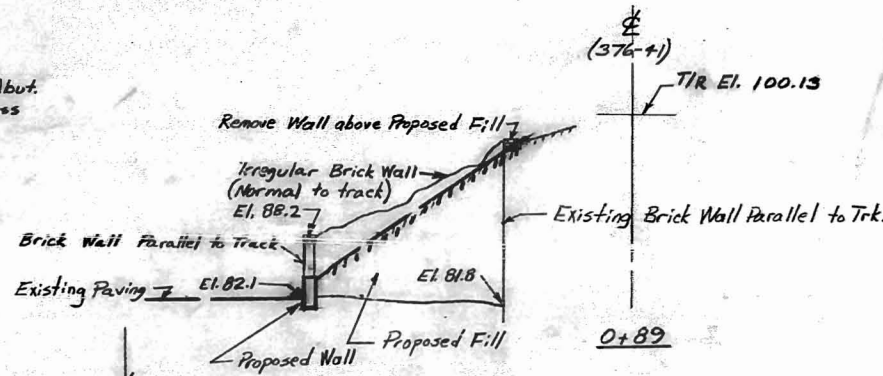
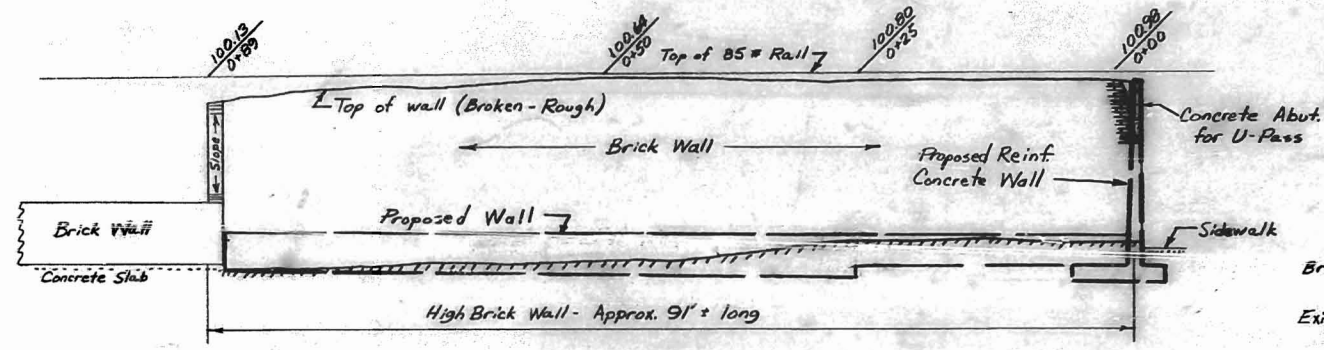


Note: Sou. Ry. R/W Line is approximately 165' southeast of & Trk. 376-41, extending southwest from Trade Street to Fourth Street.

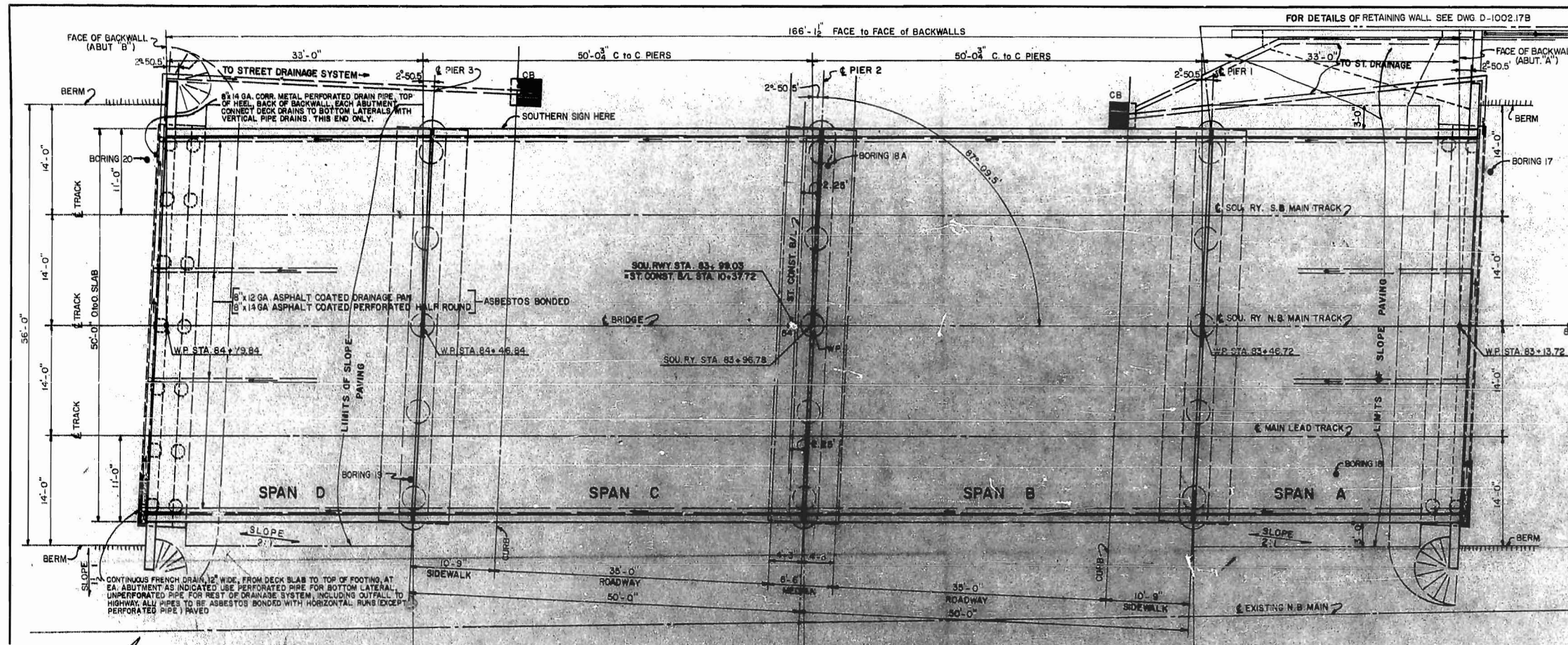


Sections left of Trk. (376-41)
Facing E. Fourth St.
(Scale: 1"=10')

Note Book C-65

MARK	DATE	BY	DESCRIPTION
REVISIONS			
SOUTHERN RAILWAY SYSTEM			
EASTERN LINES			
OFFICE OF CHIEF ENGINEER, M. W. G. S.			CHARLOTTE, N. C.
Existing Brick Wall & Proposed Wall AT EAST TRADE ST. UNDERPASS			
CHARLOTTE, N. C.			
DES. J. B. S.	M. P.	SCALE 3/8"=1'	FILE NO. M 2355
TR. C. G. R.	VAL. SEC. 9	DATE 8-5-63	DWG. NO. 9742-A
CH. A. C. S.			

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN



- ### GENERAL NOTES
- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, NORTH CAROLINA STATE HIGHWAY COMMISSION, EXCEPT AS NOTED HEREIN, ELSEWHERE ON THE PLANS OR IN THE SPECIAL PROVISIONS.
 - PRESTRESSED CONCRETE SEE DWG NO. D-1003.7
 - ALUMINUM RAILING SEE DWG NO. D-1003.8
 - REINFORCED CONCRETE: ALL CONCRETE SHALL BE CLASS "A" AIR-ENTRAINED (SEE NOTE 12 FOR AGGREGATE) THROUGHOUT EXCEPT IN PIERS AND BEAMS CONCRETE SHALL BE COMPACTED BY MECHANICAL VIBRATION (SEE N.C. STATE HIGHWAY SPECIFICATIONS) REINFORCING STEEL SHALL BE NEW BILLET STEEL INTERMEDIATE GRADE ACCORDING TO A 3" X 1/4" DESIGNATION "A" IS WITH DEFORMATIONS ACCORDING TO A.S.T.M. DESIGNATION A-805. ALL DIMENSIONS RELATING TO REINFORCING BAR SPACING ARE TO BAR CENTERS, UNLESS NOTED. SURFACE FINISH FOR CONCRETE IS TO BE IN ACCORDANCE WITH THE "SPECIFICATIONS" EXPOSED SURFACES ARE TO HAVE CLASS 1 FINISH. SEE DWGS. D-1003.6 & D-1003.5 FOR "ADDITIONAL CONCRETE NOTES".
 - EXPANSION JOINT MATERIAL TO BE BITUMINOUS FIBER OR CORK, CONFORMING WITH AASHTO SPECIFICATIONS M-153.52, EXCEPT AS SHOWN ON THE PLANS OR IN THE "SPECIAL PROVISIONS". CELLULAR AND BULB TYPE WATERSTOPS, AND RUBBER JOINT COMPOUNDS SHALL BE AS SHOWN ON THE PLANS AND IN THE "SPECIAL PROVISIONS".
 - ALL CONSTRUCTION JOINTS SHOWN ON THESE PLANS SHALL BE REQUIRED UNLESS SHOWN OPTIONAL. CONSTRUCTION JOINTS SHALL NOT BE PERMITTED EXCEPT AS SHOWN ON THE PLANS.
 - WATERPROOFING: TOPS OF PIER FOOTINGS AND COLUMNS TO GROUND LINE, TOGETHER WITH ABUTMENT HEEL AND BACKS OF BACKWALL AND WINGS SHALL BE DAMPROOFED WITH METHOD "A" DAMPROOFING USING TWO COATS OF R.C. 2. IN ADDITION ALL CONSTRUCTION JOINTS AND ANY SHRINKAGE CRACKS WHICH WILL BE COVERED BY FILL SHALL BE WATERPROOFED WITH METHOD "A" WATERPROOFING STRIPS OF FABRIC SHALL BE TWO FEET WIDE PLACED SYMMETRICALLY OVER JOINTS OF CRACKS.
 - CORRUGATED METAL DRAINS SHALL BE PROVIDED ON EACH END OF THE STRUCTURE AND IN BALLAST TROUGHS OF BRIDGE. GRADERS FOR PIPE DRAINS TO BE SET BY THE ENGINEER. DETAILS OF DRAINAGE SYSTEM SHALL BE SUBMITTED TO THE CHIEF ENGINEER, M. W. & E. EASTERN LINES, SOUTHERN RAILWAY COMPANY, CHARLOTTE, NORTH CAROLINA, FOR APPROVAL.
 - NON-PAY ITEMS: ONLY ITEMS SHOWN IN THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PAY ITEMS.
 - CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE UNDERPASS SHALL BE PERFORMED UNDER THE SUPERVISION OF, AND SATISFACTORY TO THE CONSULTING ENGINEER AND/OR THE SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING WORK AFFECTING THE SAFETY OF RAILWAY OPERATION MUST BE APPROVED BY THE SOUTHERN RAILWAY COMPANY BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. RAILWAY TRAFFIC SHALL AT ALL TIMES BE MAINTAINED AND PROTECTED THE CONTRACTOR SHALL AT NO TIME DELAY OR INTERFERE WITH RAILWAY OPERATIONS.
 - EXCAVATION AND FOUNDATION DATA: FOUNDATION DATA AND ALL ELEVATIONS OF GROUND LINES GIVEN ARE BELIEVED TO BE CORRECT AND ARE FURNISHED FOR THE CONVENIENCE OF THE BIDDERS, BUT NEITHER THE CONSULTING ENGINEER, THE NORTH CAROLINA HIGHWAY COMMISSION NOR THE SOUTHERN RAILWAY COMPANY GUARANTEES OR WARRANTS THE CORRECTNESS OF THE INFORMATION. COMPENSATION FOR THE ONE-FOOT DEEP EXCAVATION AT THE ABUTMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.
 - COARSE AGGREGATE: USE NO. 3 FOR CONCRETE SLABS, ABUTMENTS AND PIER FOOTINGS. USE NO. 4 COARSE AGGREGATE FOR PIER COLUMNS AND PIER CAPS.
 - ALL STEEL PILING TO BE A7 STEEL WITH NOT LESS THAN 0.20 PER CENT COPPER.

- ### DIVISION OF WORK
- THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIAL AND LABOR NECESSARY TO 1-GRADE TO SUBGRADE FOR DETOUR TRACKS, INCLUDING NECESSARY DRAINAGE AND PLACE SUB-BALLAST FOR DETOUR TRACKS.
 - PLACE COMPACTED EMBANKMENT AT EACH END OF BRIDGE UP TO ONE FOOT ABOVE BOTTOM OF ABUTMENTS PRIOR TO DRIVING PILES.
 - FURNISH AND DRIVE ALL PILES.
 - CONSTRUCT UNDERPASS COMPLETE EXCEPT FOR PLACING BALLAST, TIES AND RAILS.
- THE SOUTHERN RAILWAY COMPANY WILL FURNISH ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO:
- RELOCATE SOUTHERN RAILWAY COMMUNICATION LINES AND SIGNAL LINES AND MAKE NECESSARY SIGNAL CHANGES.
 - BUILD AND REMOVE TEMPORARY DETOUR TRACKS.
 - REMOVE EXISTING TRACKS AS NECESSARY.
 - PLACE BALLAST, TIES AND TRACK ON NEW UNDERPASS AND BRING TRACKS TO FINAL GRADE.

- ### LIST OF DRAWINGS
- | | |
|----------|--|
| D-1003.1 | GENERAL PLAN AND ELEVATION |
| D-1003.2 | DETAIL OF ABUTMENTS A & B |
| D-1003.3 | DETAILS OF PIERS 1, 2 & 3 |
| D-1003.4 | DETAILS FOR CONCRETE DECK SLABS |
| D-1003.5 | DETAILS OF CONCRETE DECK SLABS |
| D-1003.6 | DETAILS OF EXPANSION PLATE & BEARING DETAILS |
| D-1003.7 | DETAILS OF PRESTRESSED CONCRETE BEAMS |
| D-1003.8 | DETAILS OF ALUMINUM HANDRAILING |
| D-1003.9 | DETAILS OF PRESTRESSED CONCRETE PILES AND BRONZE LETTERING |

APPROVED BY: *B.W. Pea* CHIEF ENGR. DATE: 10/31/62
 NORTH CAROLINA STATE HIGHWAY COMMISSION

APPROVED BY: *James* CHIEF ENGR. DATE: AUG 21, 1962
 M.W. & E. EASTERN LINES, SOUTHERN RAILWAY COMPANY

LEGEND FOR SOIL BORINGS

MS (20 B/F)	F - FILL
(60 B/F)	CF - CINDER FILL
MS & DR	CS - CLAYEY SILT
	SS - SANDY SILT
	MS - MICACEOUS SILT
	DR - DECOMPOSED ROCK
	WR - WEATHERED ROCK
	R - ROCK
	WT - WATER TABLE
	B/F - BLOWS PER FOOT (IN STANDARD PENETRATION TEST)
	DR - WASH BORINGS & DIAMOND CORE DRILLINGS MADE BY FROELING & ROBERTSON.

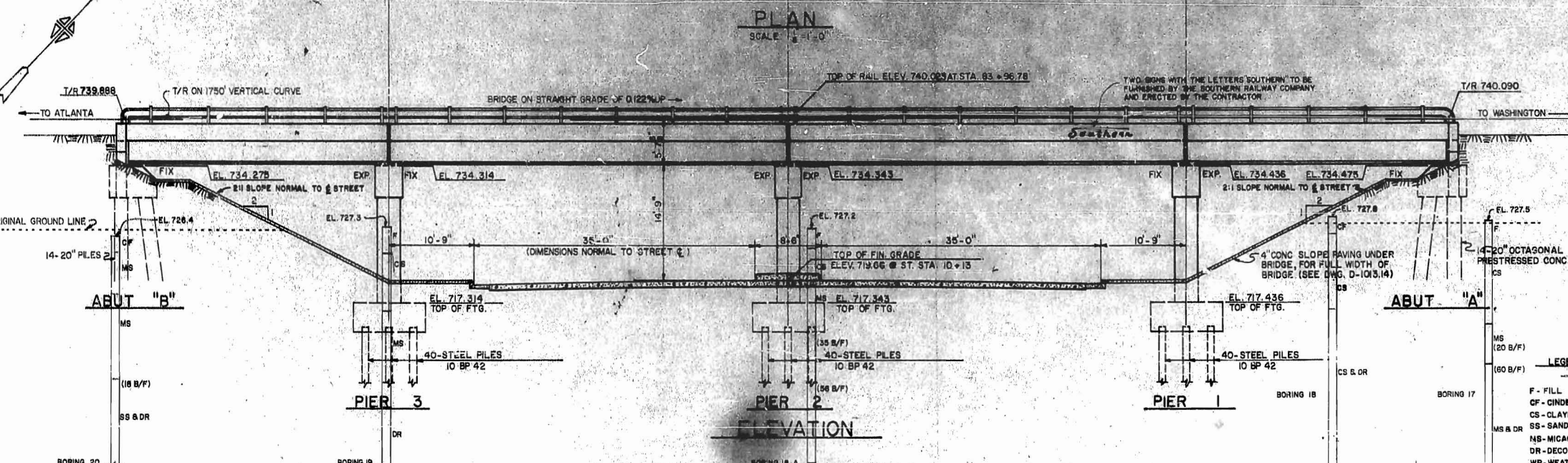
REVISIONS

MARK	DATE	BY	DESCRIPTION
			AS CONSTRUCTED

WHITEHEAD & ZICKEL
 CONSULTING ENGINEERS
 221 SOUTH CHURCH ST.
 CHARLOTTE, NORTH CAROLINA

CITY OF CHARLOTTE
 WEST TRADE STREET UNDERPASS
 GENERAL PLAN AND ELEVATION
 WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.

DES BY M.E.G. SOUTHERN RAILWAY M.P. 377.65 SCALE: AS SHOWN JOB NO. C-132
 DRN BY W.T.J. DATE: 4-1-62 DWG NO. D-1003.1
 CKD BY J.H.B.



SUMMARY OF QUANTITIES (ESTIMATED)

	CONCRETE CLASS A C.Y.	REINFORCING STEEL LBS.	PRESTRESSED CONCRETE BEAMS L.F.	UNCLASSIFIED STRUCTURAL EXCAVATION C.Y.	ALUMINUM RAILING L.F.	DRAINAGE SYSTEM LUMP SUM	WATERPROOFING S.Y.				DAMPENING METH. S.Y.	STEEL PILES		4" CONC. SLOPE PROTECTION S.Y.		
							METH. "A" EXT. LAYER	METH. "A" ASPHALT PLANK	MEMBRANE PROTECTION	NO.		L.F.	NO.		L.F.	
ABUTMENT A	49.1	3,610						32		44	14	490	205			
ABUTMENT B	49.1	3,610						32		44	14	630	203			
PIER 1	105.2	21,910		322				10		106	40	1000				
PIER 2	105.2	21,910		322				10		106	40	1200				
PIER 3	105.2	21,910		322				10		106	40	1200				
SUPERSTRUCTURE	280.0	34,564	4,080.50		334.75			945	177	705						
TOTAL	693.8	107,514	4,080.50	966	334.75	LUMP SUM	30	1,009	177	705	406	28	1,120	120	3400	408

* COST OF EXPANSION PLATES, BEARING PADS & TIE RODS SHOWN ON DWG. D-1003.6 TO BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE.
 THE ABOVE CONCRETE QUANTITY INCLUDES 132.3 C.Y. IN PIER COLUMNS & CAPS WITH NO. 4 COARSE AGGREGATE.

BENCH MARK: U.S.C. & G.S. B.M. D-41 ON S.E. CORNER OF SOUTHERN RAILWAY OFFICE BUILDING. ELEV. 729.083

DESIGN DATA:
 SPECIFICATIONS: AREA (CURRENT)
 LIVE LOAD: COOPERS E 72 WITH DIESEL IMPACT FOR BEAM SPANS AND LIVE FOR CONCRETE SLAB AND PIERS.
 LIVE + DEAD

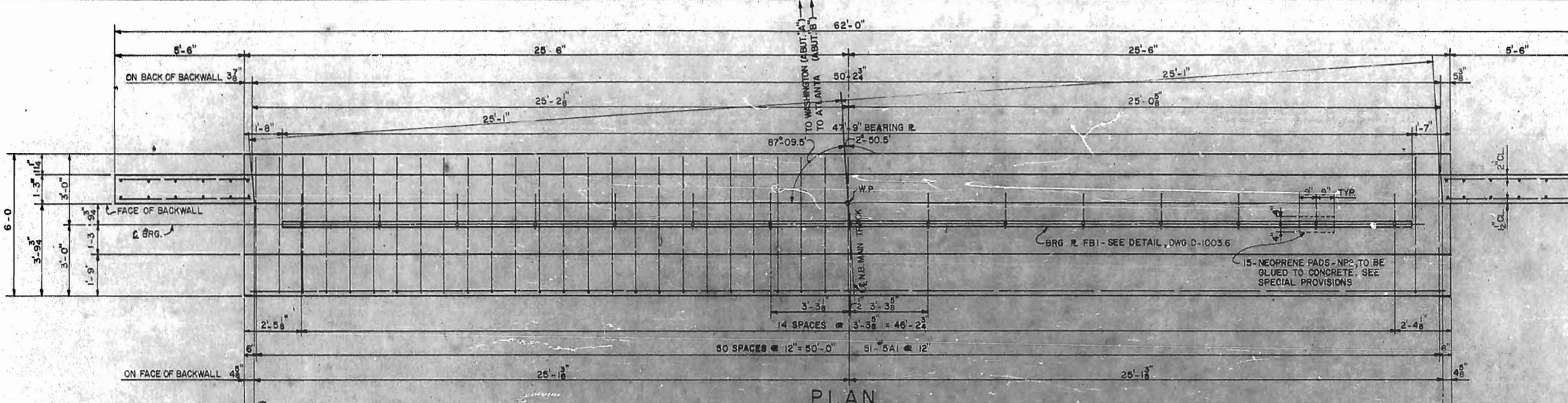
PRESTRESSED CONCRETE: $f_c = 250,000$; $f_{si} = 170,000$ psi
 $f_c = 5500$; $f_{ci} = 4500$ (BEAM SPANS B & C)
 $f_c = 5000$; $f_{ci} = 4000$ (BEAM SPANS A & D) (AND ALL PILES)

REINFORCED CONCRETE: $f_s = 20,000$ INTERMEDIATE GRADE, $n = 10$
 $f_c = 3000$ psi

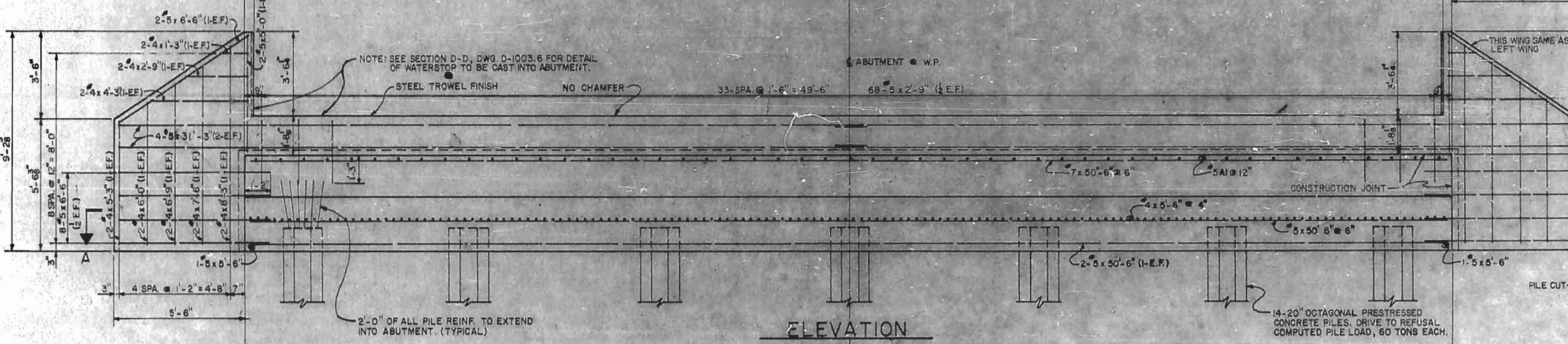
ADDITIONAL CONCRETE NOTES

- FOR GENERAL NOTES SEE DWG. D-1003.1
- CHAMFER ALL EXPOSED CORNERS AND EDGES $\frac{3}{4}$ " EXCEPT AS SHOWN.
- CONCRETE PILES TO BE 20" OCTAGONAL PRESTRESSED PRECAST CONCRETE ACCORDING TO NORTH CAROLINA STATE HIGHWAY DEPARTMENT SPECIFICATIONS. ALL PILES MUST HAVE A MINIMUM PENETRATION OF 15 FEET IN NATURAL GROUND, AND MUST BE DRIVEN TO REFUSAL. THE CONTRACTOR WILL BE REQUIRED TO DRIVE ONE 48 FOOT TEST PILE IN PLACE AT ABUTMENTS A & B. THE TEST PILES TO BE PAID FOR AS LINEAR FEET OF 20" PRESTRESSED CONCRETE PILING. THE ORDER LENGTHS FOR THE REMAINDER OF THE PILES SHALL BE DETERMINED AFTER THE TWO TEST PILES HAVE BEEN DRIVEN.

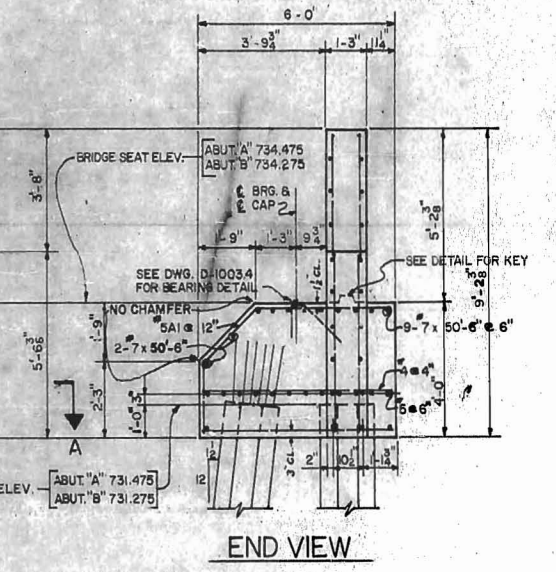
IF THE PILES ARE DRIVEN BELOW THE POINT AT WHICH THE REINFORCING DOES NOT EXTEND APPROXIMATELY 2 FEET INTO ABUTMENT, 8" DOWELS WILL BE SET 2 FEET INTO PILE AND EXTENDED 2 FEET INTO CAP. IF TOP OF PILE IS LESS THAN 6 INCHES ABOVE THE BOTTOM OF ABUTMENT, PILE MUST BE SPLICED. STRIP CONCRETE FROM EXISTING REINFORCING STEEL 80 AS TO EXPOSE 2'-6" OF THE VERTICAL REINFORCING STEEL. PLACE VERTICAL SPLICE BARS AS SHOWN FOR PILE BUILDUP ON DWG. D-1003.9 AND EXTEND APPROXIMATELY 3'-0" ABOVE BOTTOM OF CAP. VERTICAL STEEL IN PILE EXTENSION TO BE WRAPPED AT INTERVALS NOT EXCEEDING 6" CENTERS WITH SAME SIZE WIRE AS THOSE IN THE PILE. PLACE FORM AND POUR PILE TO AN ELEVATION OF APPROXIMATELY 1'-0" ABOVE BOTTOM OF CAP. CONCRETE TO HAVE A MINIMUM STRENGTH OF $f_c = 4000$ LBS. PER SQ. IN.
- DIMENSIONS FOR BENDING REINFORCING BARS ARE OUT TO OUT. FABRICATION TO BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE, A.C.I. 318-51.



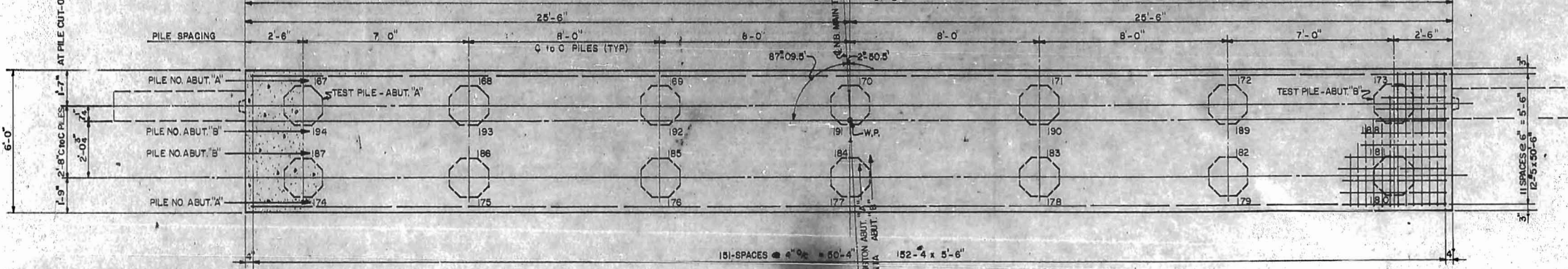
PLAN



ELEVATION



END VIEW

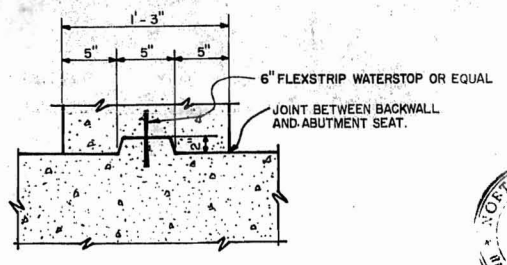
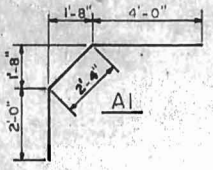


SECTION A-A

ABUTMENTS A&B

SCALE: $\frac{3}{8} = 1'-0$

BILL OF REINFORCING STEEL - ABUTMENTS 'A' & 'B'					
ABUT. A	ABUT. B	TOTAL REQD	SIZE	LENGTH	MARK TYPE
51	51	102	#5	8'-4"	AI BENT
11	11	22	#7	50'-6"	STR.
14	14	28	#5	50'-6"	STR.
8	8	16	#5	31'-3"	
20	20	40	#5	6'-6"	
2	2	4	#5	5'-6"	
4	4	8	#5	5'-0"	
68	68	136	#5	2'-9"	
4	4	8	#4	8'-3"	
4	4	8	#4	7'-6"	
4	4	8	#4	6'-9"	
4	4	8	#4	6'-0"	
152	152	304	#4	5'-6"	
4	4	8	#4	5'-3"	
4	4	8	#4	4'-3"	
4	4	8	#4	2'-9"	
4	4	8	#4	1'-3"	STR.

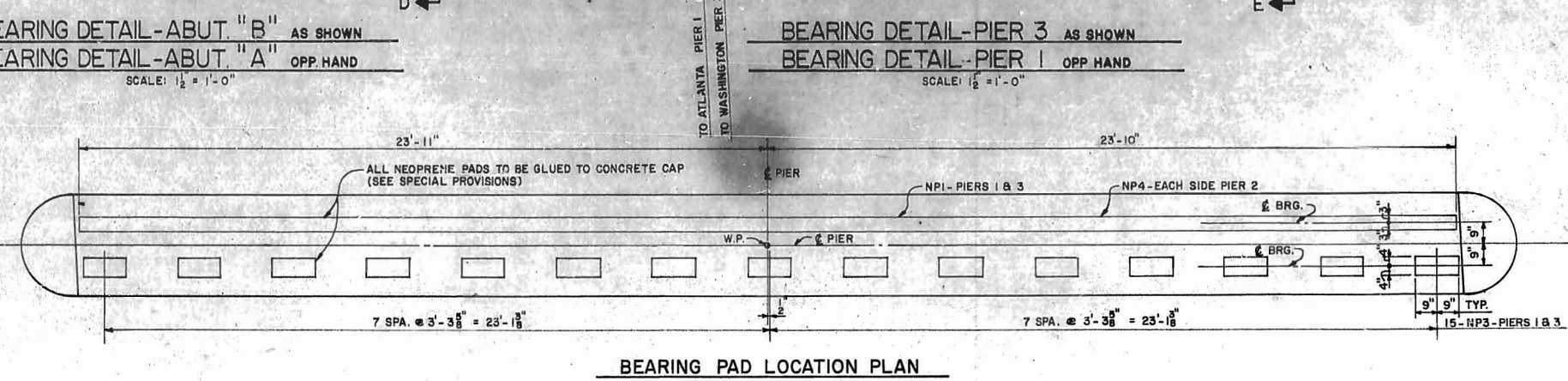
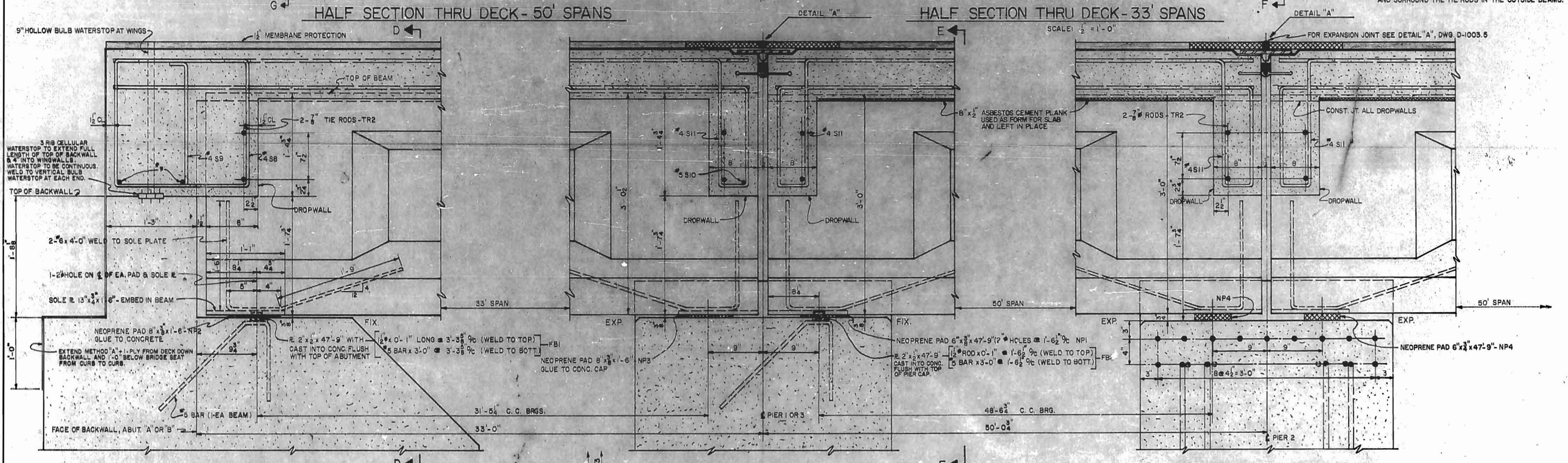
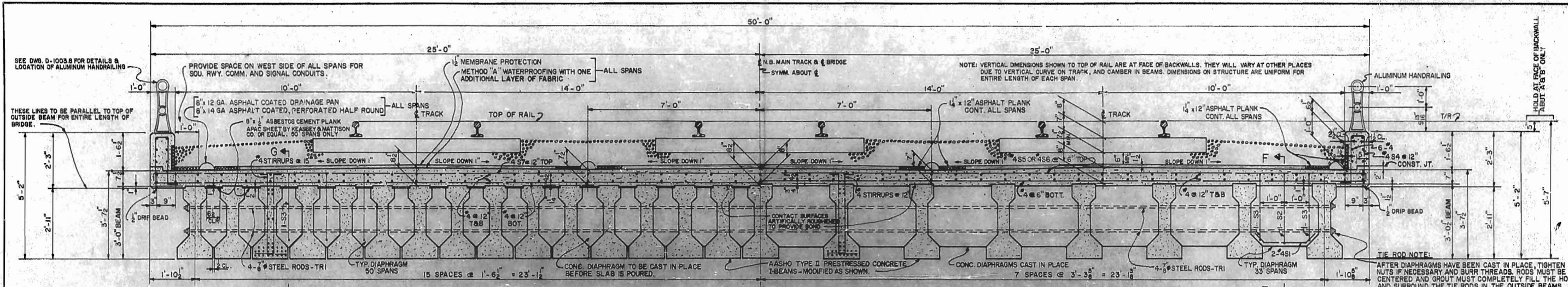


Shear Key At Construction Joint



APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 21, 1962
M.W. S. WHITEHEAD, EASTERN LINES, SOUTHERN RAILWAY COMPANY

AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAIL OF ABUTMENTS "A" & "B" WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY M.E.S.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY W.T.J.	M.P. 377.65	DATE: 4-1-62	DWG NO. D-1003.2
CKD BY J.H.B.			



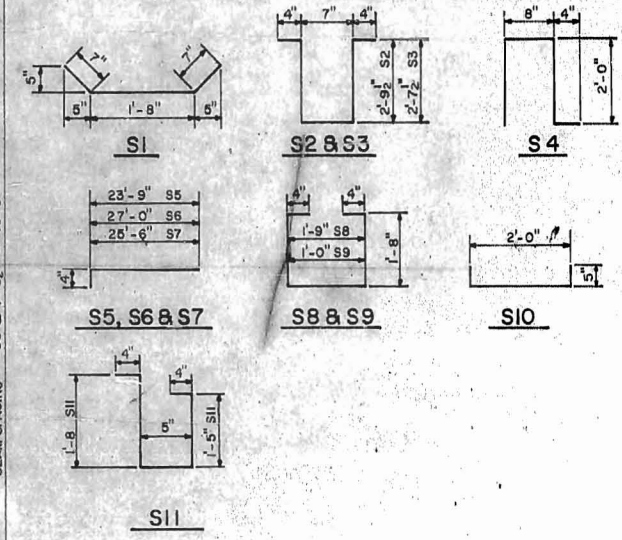
APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 21, 1962
 M.W.B. EASTERN LINES, SOUTHERN RAILWAY COMPANY

MARK	DATE	BY	DESCRIPTION
AS CONSTRUCTED			
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAILS OF CONCRETE DECK SLABS WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY M.E.G.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN. BY W.T.J.	M.P. 377.85	DATE: 4-1-62	DWG NO. D-1003.4
CKD. BY J.H.B.			

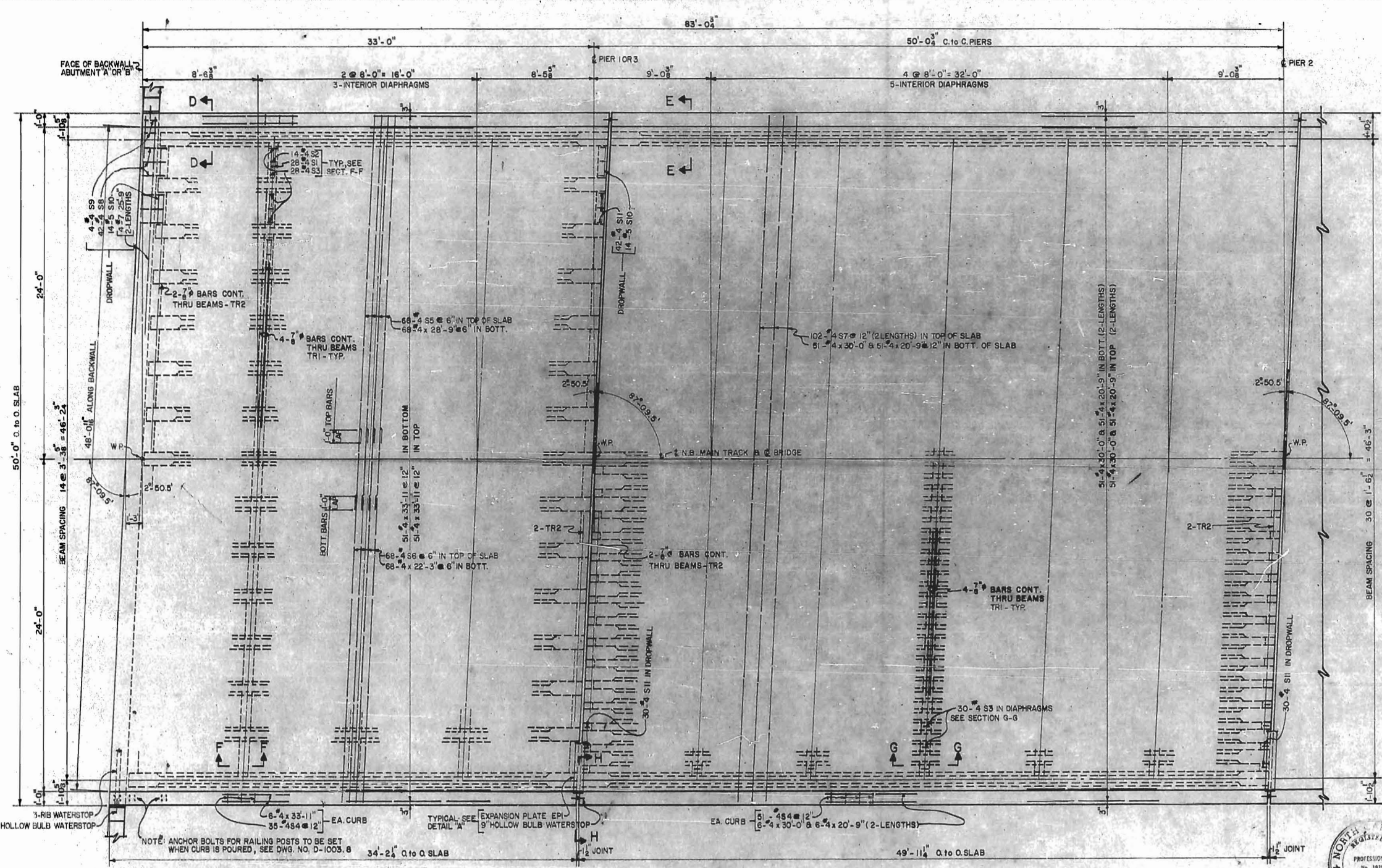


WORK THIS SHEET WITH DWGS. D-1003.5 & D-1003.6

BILL OF REINFORCING STEEL FOR DECK SLABS "A", "B", "C", & "D"												
SPAN "A"		SPAN "B"		SPAN "C"		SPAN "D"		TOTAL	SIZE	LENGTH	MARK	TYPE
84				84				168	#4	2'-10"	S1	BENT
42				42				84	#4	6'-10"	S2	BENT
84	150	150		84				468	#4	6'-6"	S3	BENT
70	102	102		70				344	#4	8'-0"	S4	BENT
68				68				136	#4	24'-1"	S5	BENT
68				68				136	#4	27'-4"	S6	BENT
	102	102						204	#4	25'-10"	S7	BENT
42				42				84	#4	5'-9"	S8	BENT
4				4				8	#4	5'-0"	S9	BENT
28				28				56	#5	2'-10"	S10	BENT
42	60	60		42				204	#4	4'-2"	S11	BENT
								4	#8	25'-9"		STR.
								114	#4	33'-11"		
								165	#4	30'-0"		
								68	#4	28'-9"		
								68	#4	22'-3"		
								165	#4	20'-9"		STR.



- NOTE:**
- FOR GENERAL NOTES SEE DWG. D-1003.1
 - CHAMFER ALL CORNERS AND EDGES
 - DIMENSIONS FOR BENDING REINFORCING BARS ARE OUT TO OUT
 - FABRICATION OF REINFORCING BARS TO BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE, A C 318-51
 - WORK THIS SHEET WITH DWGS. D-1003.4 & D-1003.6



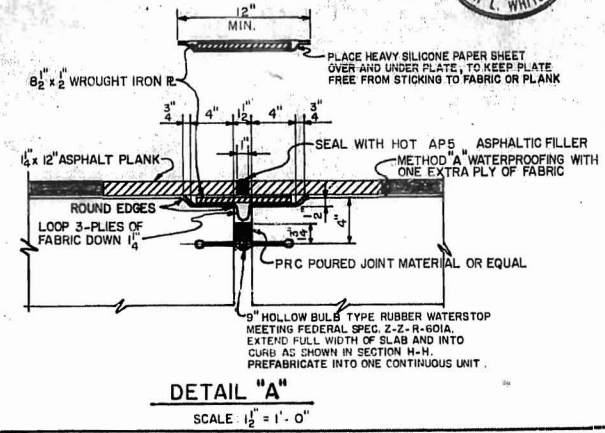
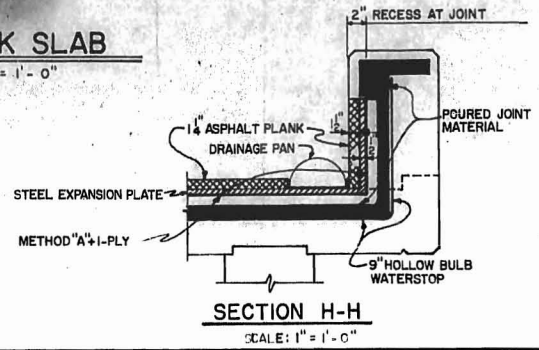
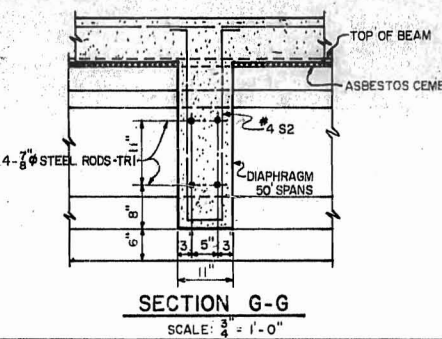
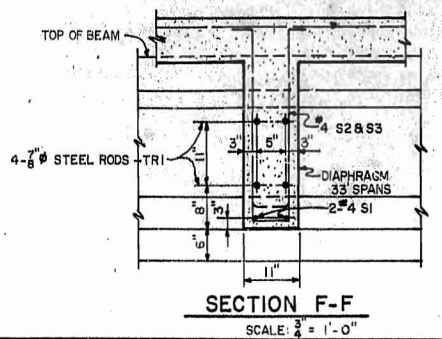
APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 2, 1962
 M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

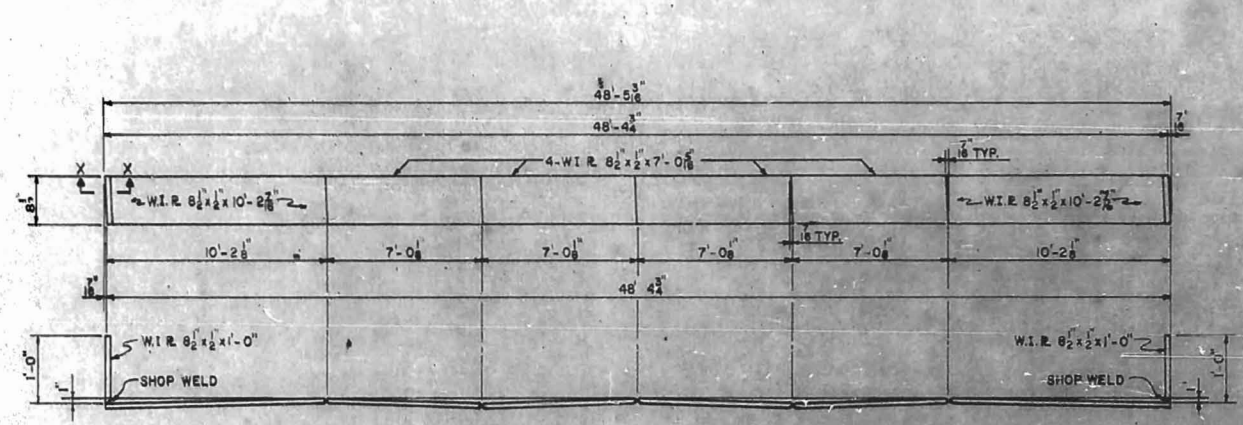
AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAILS OF CONCRETE DECK SLABS WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY M.E.G.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY W.T.J.	M.P. 377.65		
CKD BY J.H.B.		DATE: 4-1-62	DWG NO. D-1003.5

SPAN D - AS SHOWN
SPAN A - OPP. HAND

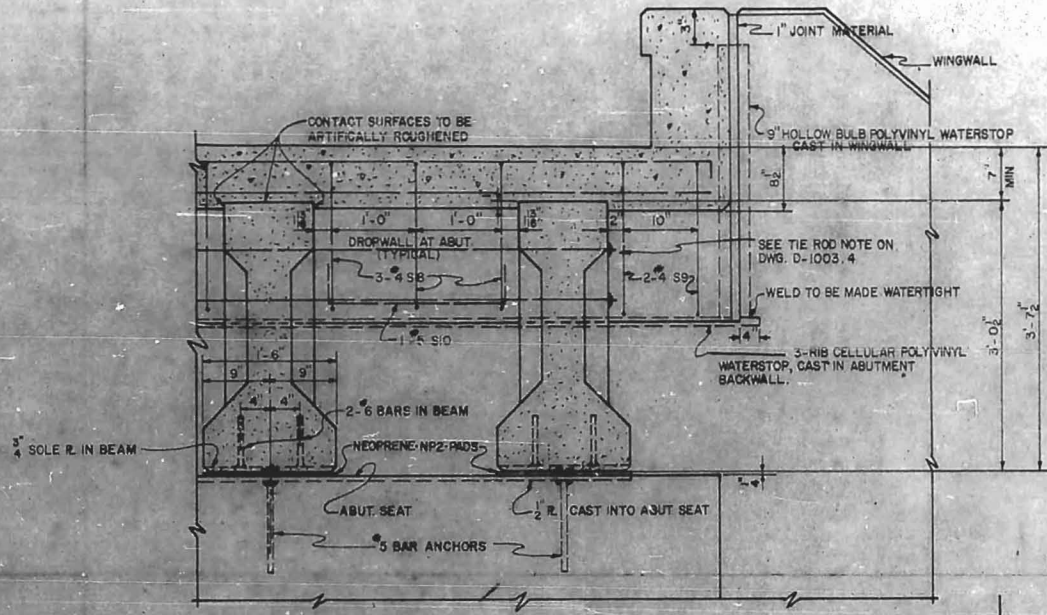
SPAN C - AS SHOWN
SPAN B - SIMILAR

PLAN - DECK SLAB
SCALE: 1/4" = 1'-0"

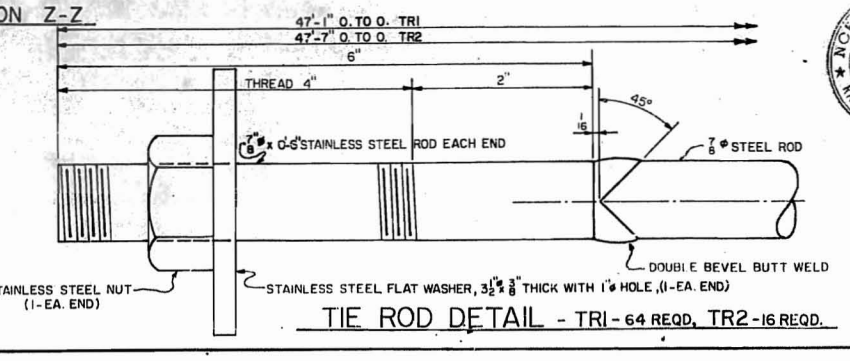
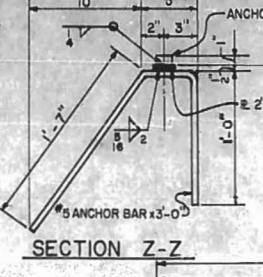
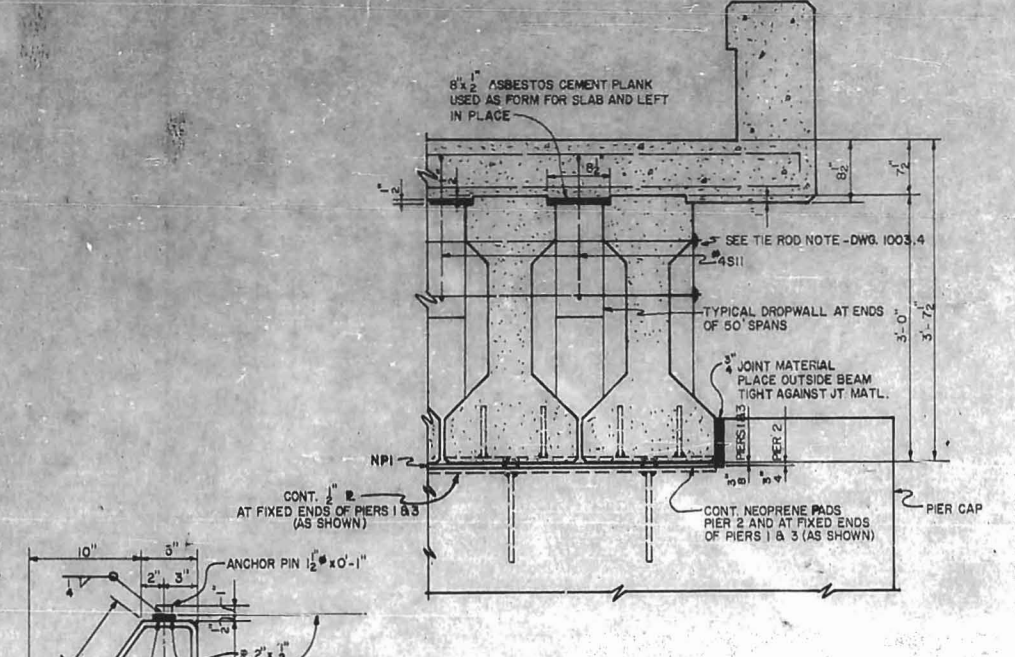
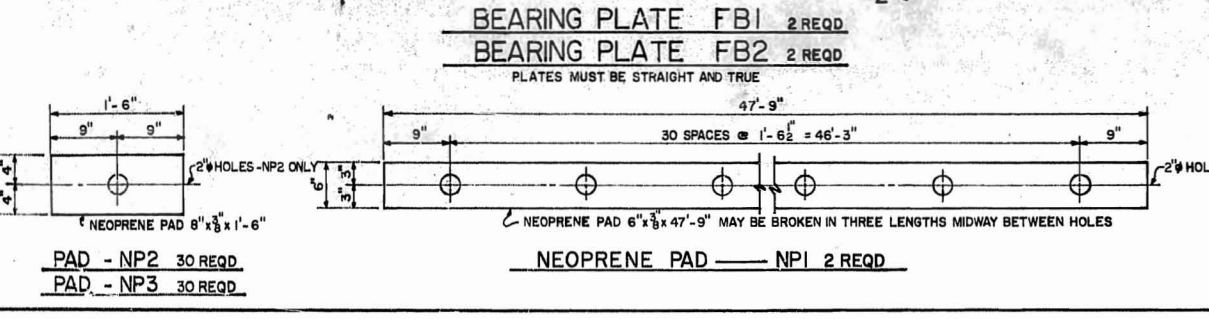
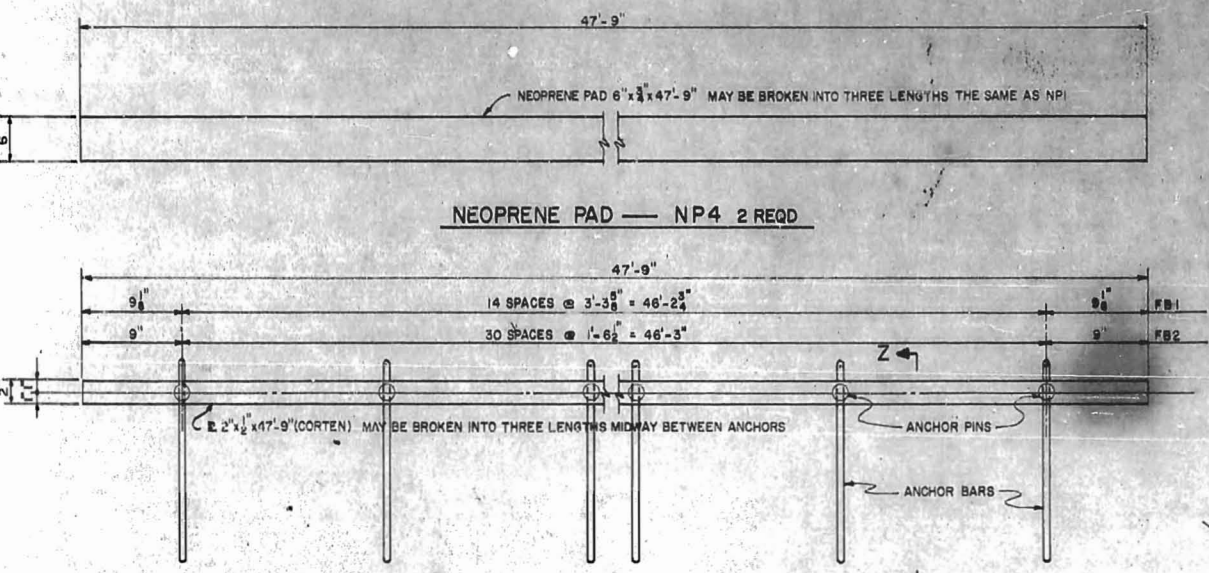
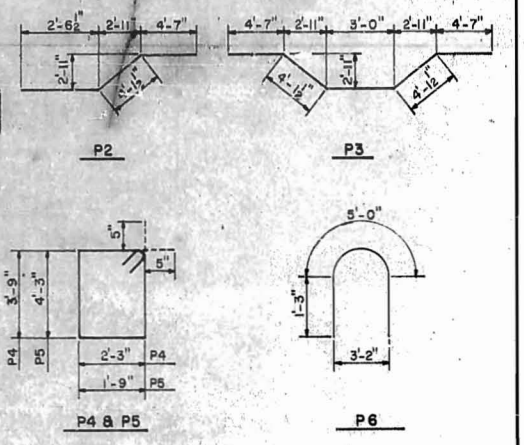




EXPANSION PLATE EPI 3-REQD.
MATERIAL - WROUGHT IRON ASTM A207-39



BILL OF REINFORCING STEEL				PIERS 1, 2 & 3			
NUMBER REQUIRED		TOTAL	SIZE	LENGTH	MARK	TYPE	
PIER 1	PIER 2	PIER 3					
80	80	80	240	#10	5'-8"	P1 BENT	
8	8	8	24	#8	11'-3"	P2	
8	8	8	24	#8	20'-5"	P3	
132	132	132	396	#5	12'-10"	P4	
6	6	6	18	#5	12'-10"	P5	
8	8	8	24	#5	7'-6"	P6	
5	5	5	15	#5	393'-9"	SPRAL BENT	
18	18	18	54	#11	8'-0"	STR.	
14	14	14	42	#10	26'-6"		
10	10	10	30	#10	20'-6"		
80	80	80	240	#10	16'-0"		
5	5	5	15	#10	14'-0"		
18	18	18	54	#9	49'-6"		
8	8	8	24	#8	49'-6"		
12	12	12	36	#8	9'-0"		
100	100	100	300	#6	8'-6"		
4	4	4	12	#4	49'-6"		
8	8	8	24	#4	24'-9"		
51	51	51	153	#4	8'-6"	STR.	
28	28	28	84	#4	3'-3"	STR.	

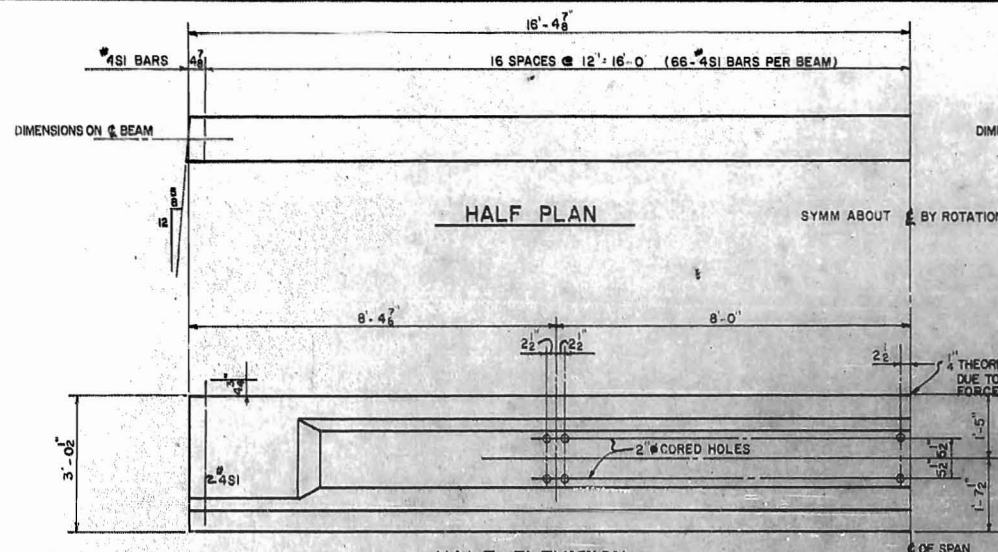


WORK THIS SHEET WITH DWGS. D-1003.4 & D-1003.5

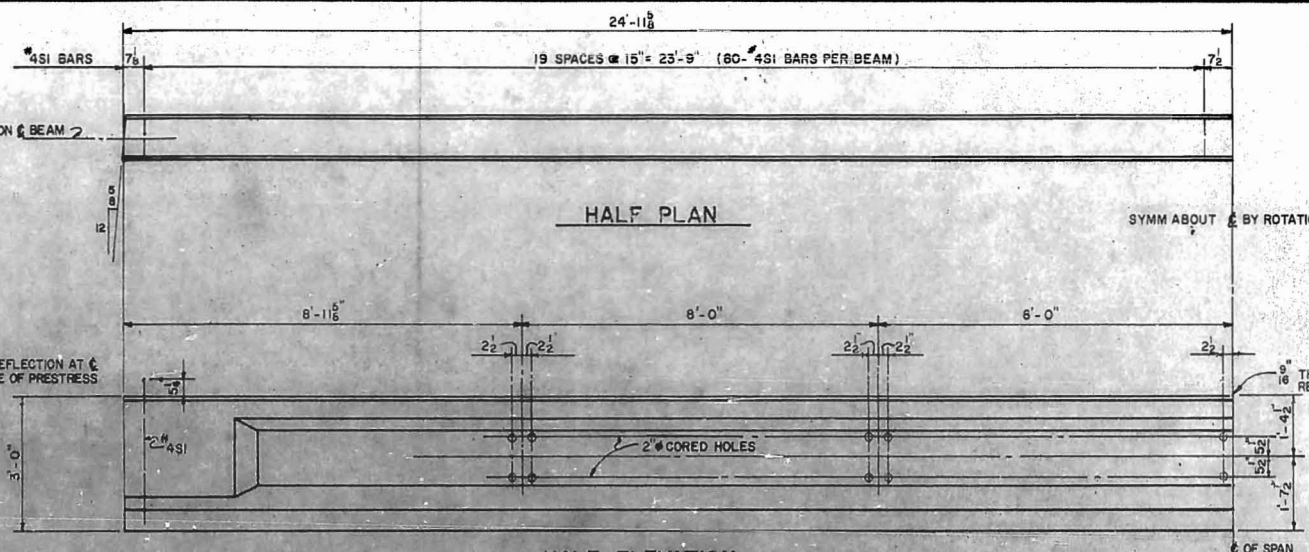
APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 21, 1962
M.W.B.S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAIL OF EXPANSION PLATE & BEARING DETAILS WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY	M.E.B.	SCALE: AS SHOWN	JOB NO. C-132
DRN. BY	W.T.J.	SOUTHERN RAILWAY M.P. 377.65	
CKD. BY	J.H.B.	DATE: 4-1-62	DWG NO. D-1003.6

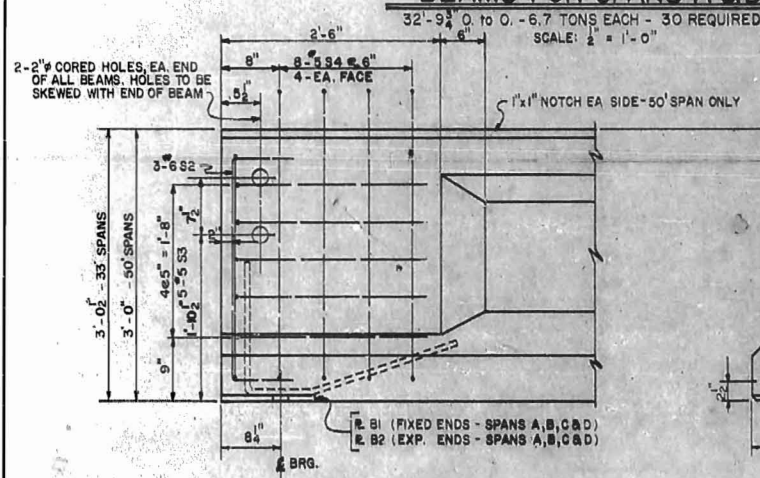




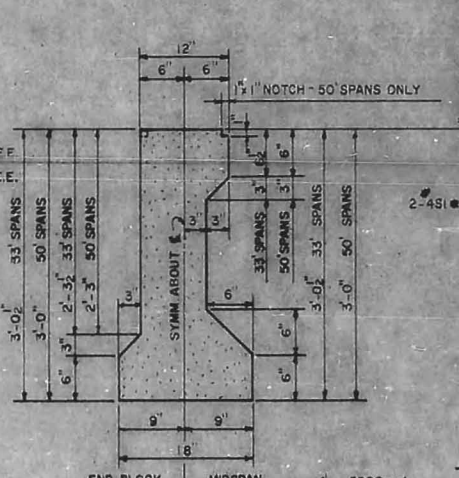
HALF PLAN
HALF ELEVATION
BEAMS FOR SPANS A & D



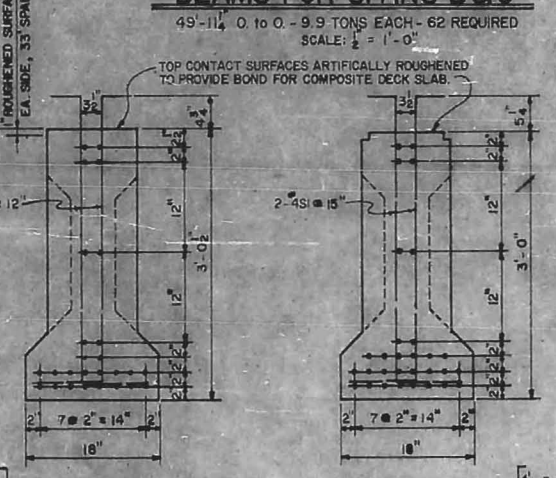
HALF PLAN
HALF ELEVATION
BEAMS FOR SPANS B & C



END BLOCK DETAIL
SCALE: 1" = 1'-0"



BEAM SECTION



PRESTRESSED CABLE LAYOUTS
SCALE: 1" = 1'-0"

NOTES FOR PRESTRESSED CONCRETE BEAMS

PRESTRESSED CONCRETE BEAMS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 207-A, STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, NORTH CAROLINA STATE HIGHWAY COMMISSION, EXCEPT AS NOTED HEREIN, ELSEWHERE ON THE PLANS, OR IN THE "SPECIAL PROVISIONS".

CONCRETE SHALL BE AIR-ENTRAINED AND SHALL DEVELOPE A MINIMUM COMPRESSIVE STRENGTH OF 5000 psi FOR THE 32'-9 1/4" BEAMS AND 3500 psi FOR THE 49'-11 1/4" BEAMS AT THE AGE OF 28 DAYS WHEN CURED THE SAME AS THE MEMBERS REPRESENTED. THE REQUIRED COMPRESSIVE STRENGTH OF CONCRETE AT TRANSFER OF TENSIONING LOAD SHALL BE NOT LESS THAN 4000 psi FOR THE 32'-9 1/4" BEAMS AND 4500 psi FOR THE 49'-11 1/4" BEAMS. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE USED.

PRESTRESSING STRANDS SHALL BE UNCOATED, STRESS RELIEVED, 7/16" - 7 WIRE CABLE STRANDS. EACH CABLE SHALL BE PRESTRESSED TO 18,500 lbs. (170,000 psi) PRIOR TO PLACING THE CONCRETE. CABLES SHALL BE CUT OFF 4" INSIDE OF CONCRETE, THE ENDS SHALL BE COATED WITH ASPHALTIC MATERIAL, AND THE RECESS COVERED WITH MORTAR.

EXPOSED FACES OF OUTSIDE GIRDSERS SHALL BE CAREFULLY CLEANED OF DRIPPINGS AND OTHER DISCOLORATIONS.

BEAMS MUST BE MAINTAINED IN AN UPRIGHT POSITION AT ALL TIMES AND MUST BE TRANSPORTED AND STORED SO AS TO BE SUPPORTED ONLY AT THE ENDS. USE OF DAMAGED BEAMS IN CONSTRUCTION WILL NOT BE PERMITTED.

INSPECTION: THE SOUTHERN RAILWAY COMPANY RESERVES THE RIGHT TO PLACE A DULY AUTHORIZED INSPECTOR IN THE PLANT DURING THE MANUFACTURE OF THESE BEAMS. THE INSPECTOR OR ENGINEER SHALL HAVE THE AUTHORITY TO REJECT ANY OR ALL MEMBERS NOT MANUFACTURED IN ACCORDANCE WITH THESE SPECIFICATIONS.

SHOP DRAWINGS, IF REQUIRED, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL BEFORE THE WORK IS BEGUN.

TOLERANCES: HORIZONTAL ALIGNMENT OF BEAMS SHALL NOT EXCEED 1/4" VARIATION FROM A STRAIGHT LINE DRAWN BETWEEN THE ENDS. BEAM LENGTHS SHALL NOT VARY MORE THAN 1/4" FROM THAT SHOWN ON THE PLANS.

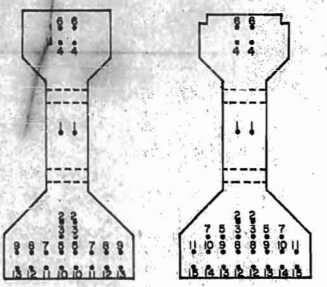
BEAMS REQUIRED

30	32'-9 1/4" LENGTH	984'-4 1/2" L.F.
62	49'-11 1/4" LENGTH	3,096'-1 1/2" L.F.

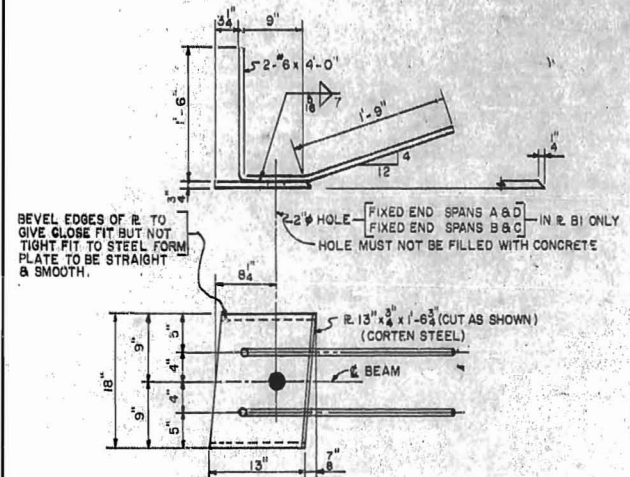
Reinforcing Steel for One (1) Beam

BEAM	SIZE	MARK	LENGTH	TYPE
66	#4	S1	4'-4"	BENT
6	#6	S2	4'-3"	
10	#5	S3	4'-11"	
16	#5	S4	4'-7"	BENT

NOTE: EACH PAIR OF CABLES SHALL BE BURNED AT ENDS OF BED AND BETWEEN ALL ORDERS BEFORE BURNING NEXT PAIR.



PATTERN FOR BURNING CABLES

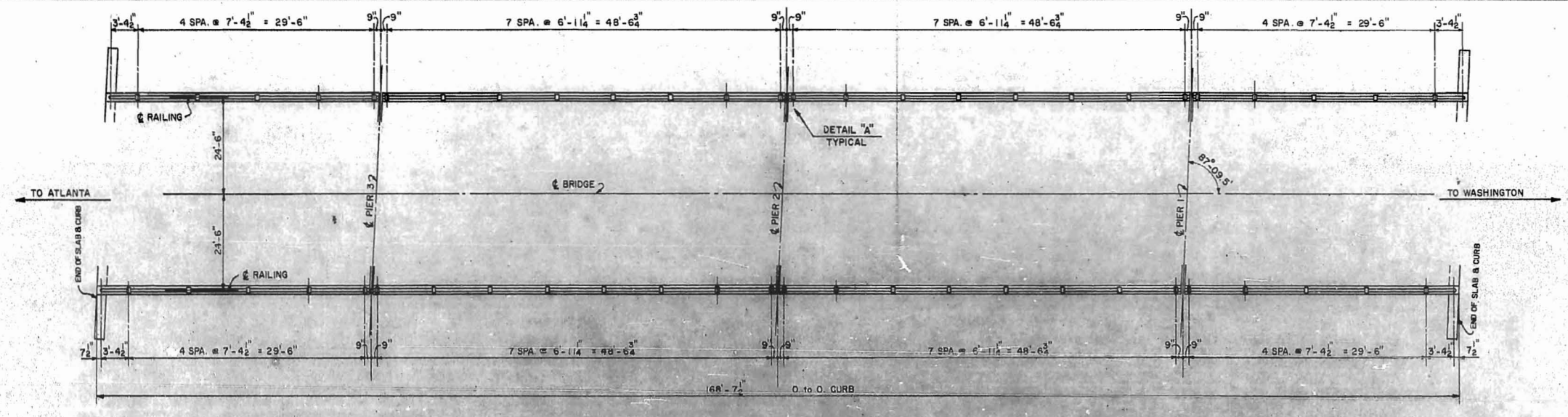


EMBEDDED R. B1 AS SHOWN
EMBEDDED R. B2 AS NOTED
SCALE: 1" = 1'-0"

APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 21, 1962
M.W.B. & ZICKEL, SOUTHERN RAILWAY COMPANY

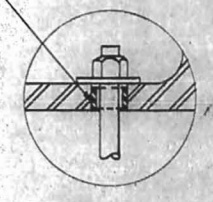
AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAIL OF PRESTRESSED CONCRETE BEAMS WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY M.E.G.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY W.T.J.	M.P. 377.65	DATE: 4-1-62	DWG NO. D-1003.7
CKD BY J.H.B.			



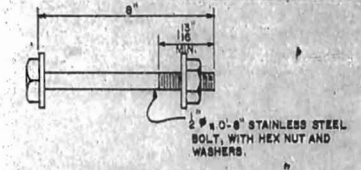


ERECTION PLAN FOR ALUMINUM RAILING

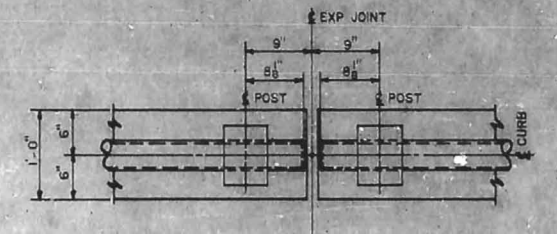
STAINLESS STEEL RING SLIGHTLY SMALLER THAN HOLE IN POST BASE AND SLIGHTLY THINNER THAN THICKNESS OF POST BASE TO BE FURNISHED FOR EACH ANCHOR BOLT.



INSERT "B"



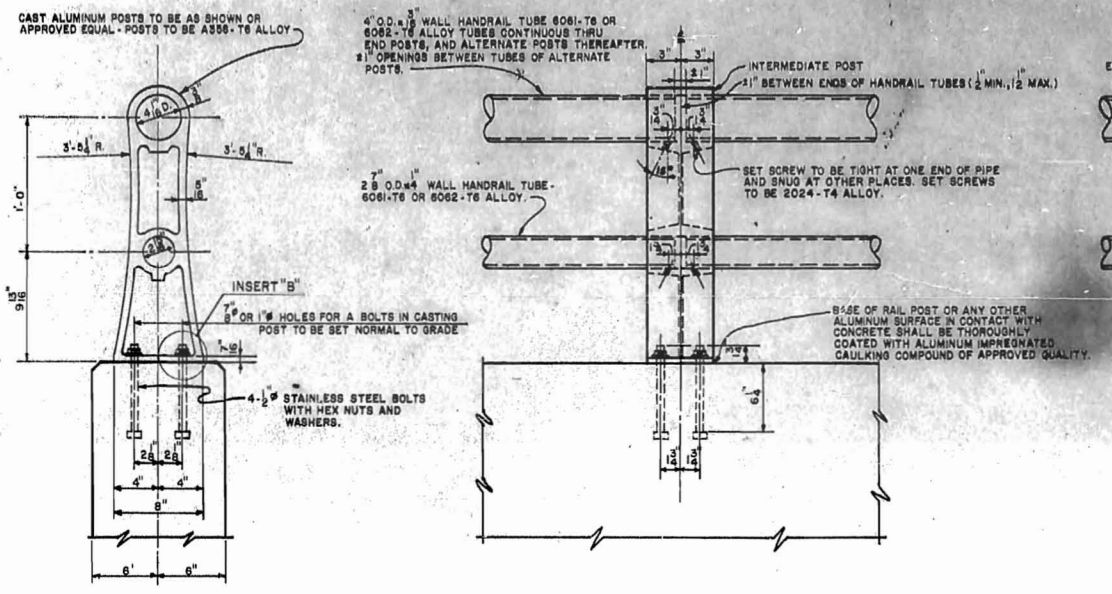
ANCHOR BOLT DETAIL



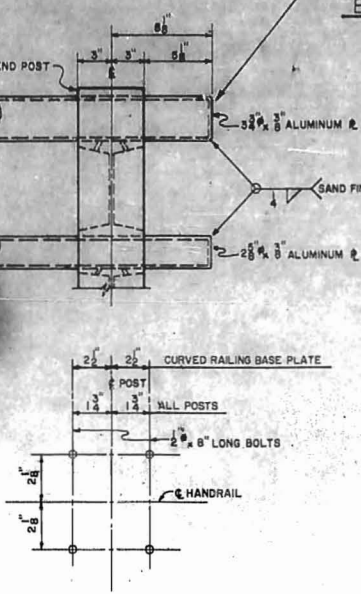
DETAIL "A"



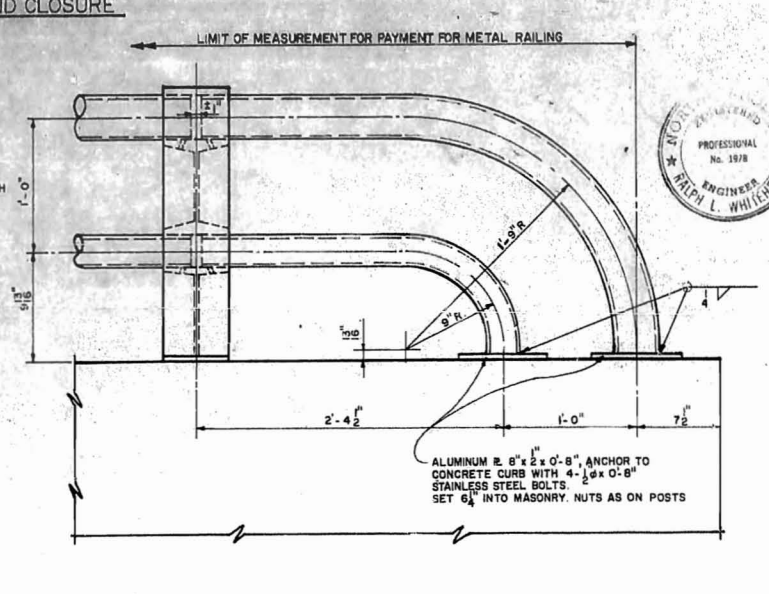
DETAIL END CLOSURE



ALUMINUM HANDRAIL AND POSTS



LOCATION SKETCH FOR ANCHOR BOLTS



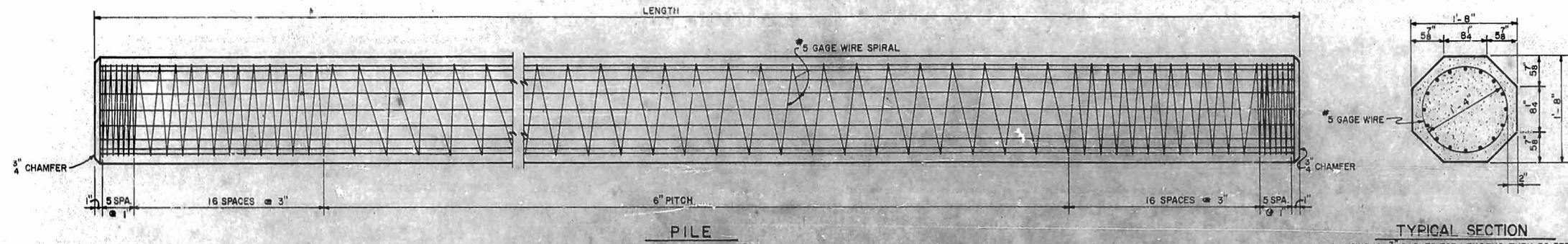
CURVED RAILING DETAIL

- NOTES FOR RAILING:**
1. ROUND TUBULAR RAIL TO BE OF SIZE AND WALL THICKNESS INDICATED.
 2. THE LENGTH OF RAIL SECTION TO BE TWO PANELS.
 3. CAST ALUMINUM POSTS TO BE AS SHOWN OR AN APPROVED EQUAL.
 4. CERTIFIED MILL REPORTS FOR RAILS AND POSTS ARE REQUIRED.
 5. METHOD OF MEASUREMENT FOR ALUMINUM RAILS: UNLESS OTHERWISE STATED, THE LENGTH OF ALUMINUM RAILS TO BE PAID FOR SHALL BE THE CONTINUOUS LENGTH MEASURED FROM END TO END OF RAIL, BUT WITHOUT DEDUCTIONS FOR SPACES BETWEEN RAIL SECTIONS.
- TOTAL LENGTH OF DOUBLE BAR RAILING = 334.75 LIN. FT.



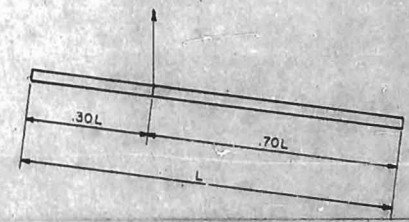
APPROVED BY: *[Signature]* CHIEF ENGR DATE: AUG 21, 1962
M.W.B.S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL			
CONSULTING ENGINEERS			
221 SOUTH CHURCH ST.			
CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE			
WEST TRADE STREET UNDERPASS			
DETAIL OF ALUMINUM RAILING			
WEST SIDE GRADE CROSSING ELIMINATION		CHARLOTTE, N.C.	
DES. BY M.F.G.	SOUTHERN RAILWAY	SCALE: NONE	JOB NO. C-132
DRN. BY W.T.J.	M.P. 377.65		
CHKD. BY J.H.B.	DATE: 4-1-62	DWG NO. D-1003.B	

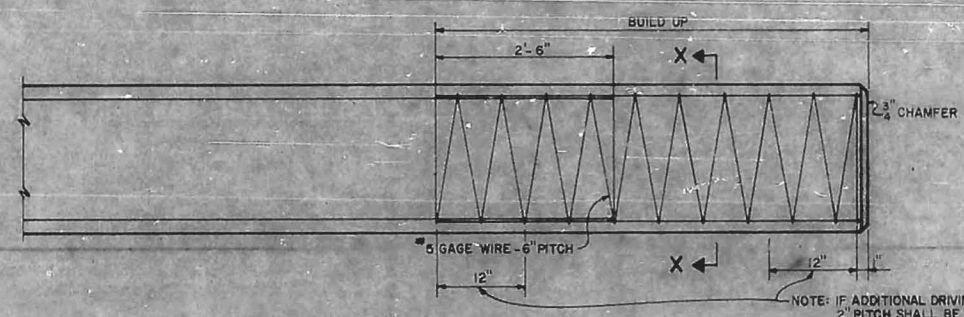


PILES REQUIRED				
LOCATION	NO.	SIZE	LENGTH	LINEAL FT.
ABUT. "A"	14	20"	35'	490
ABUT. "B"	14	20"	45'	630
TOTAL				1120

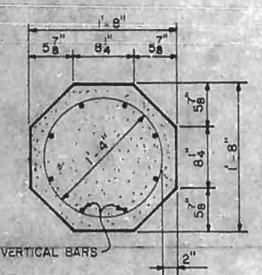
NOTE: LENGTH OF PILES ESTIMATED FOR BIDDING PURPOSES ONLY
SEE PILE LOG FOR ORDER LENGTHS & PENETRATION OF PILES.



METHOD OF PICKING UP PILES UP TO 55 FEET
1 - PICK UP POINT



PILE BUILD-UP

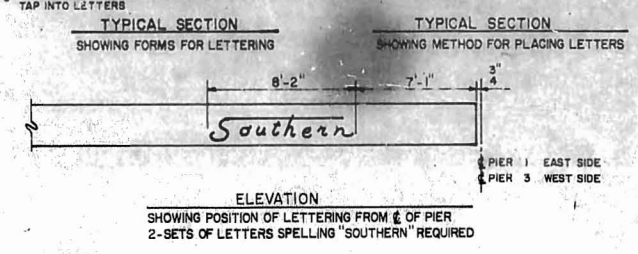
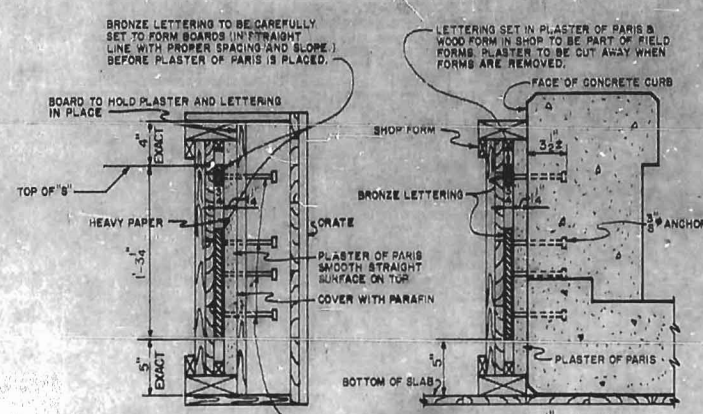


SECTION X-X

DESIGN DATA:
CONCRETE: $f'_c = 5000$ LBS. PER SQ. INCH (AIR-ENTRAINED)
 $f'_c = 2000$ LBS. PER SQ. INCH.
TENSION = NONE
CABLES: TENSILE (ULTIMATE) = 250,000 LBS. PER SQ. INCH.
(APPLIED) = 175,000 LBS. PER SQ. INCH.
(DESIGN) = 140,000 LBS. PER SQ. INCH.
IMPACT IN HANDLING = 100%

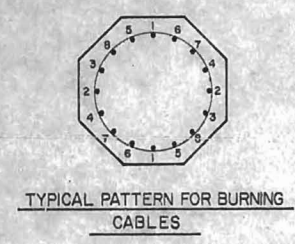
NOTES FOR PRESTRESSED PILES

IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED, WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED.
BUILD-UP, WHERE NECESSARY, SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS, EXCEPT THAT THE REINFORCING STEEL REQUIRED IN THE BUILD-UPS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER FOOT FOR THE PILE AND WILL NOT BE PAID FOR AS REINFORCING STEEL.
ALL MATERIAL AND WORKMANSHIP AS PER THE SPECIFICATIONS OF THE NORTH CAROLINA STATE HIGHWAY COMMISSION AND THE SPECIAL PROVISIONS.
DEVICES FOR THE LIFTING OF THE PILES FROM THE CASTING BEDS SHALL BE APPROVED BY THE ENGINEER. THESE DEVICES SHALL CONSIST OF INSERTS SET IN THE PILES TO RECEIVE THREADED EYE-BOLTS, OR SIMILAR APPROVED DEVICES. THE USE OF LOOPS OF CABLE CAST IN THE PILES FOR USE AS LIFTING DEVICES WILL NOT BE PERMITTED. THE USE OF SATISFACTORY CLAMPS OR SLINGS WILL BE PERMITTED WHERE THIS IS PRACTICABLE WITHOUT THE USE OF LIFTING DEVICES CAST IN THE PILES. AFTER EYE-BOLTS OR OTHER ATTACHMENTS HAVE BEEN REMOVED THE OPENINGS SHALL BE REPAIRED IN A SATISFACTORY MANNER BEFORE DELIVERY TO THE BRIDGE SITE IN ORDER TO OBTAIN A UNIFORM APPEARANCE.
IF CABLE STRESS IS RELIEVED BY BURNING, THE CABLES SHALL BE BURNED IN OPPOSITE PAIRS AS INDICATED IN THE TYPICAL PATTERN SHOWN. FOR ANY NUMBER OF CABLES BURN IN OPPOSITE PAIRS AND SYMMETRICAL ABOUT BOTH VERTICAL AND HORIZONTAL AXIS. CABLES 1-1 SHALL BE BURNED BEFORE 2-2, ETC. NOT MORE THAN 4 CABLES MAY BE BURNED AT ANY ONE SECTION BEFORE THESE SAME PAIRS OF CABLES ARE BURNED AT BOTH ENDS OF THE BED AND BETWEEN EACH PAIR OF PILES IN THE BED.



NOTES FOR BRONZE LETTERING:
1- SET OF LETTERS TO BE SECURELY CRATED SO THAT IT WILL NOT MOVE DURING SHIPMENT.
2- THE SET OF LETTERING SPELLING THE WORD "SOUTHERN" SHALL BE OF RECTANGULAR SECTION 3/4" THICK, AND OF CAST BRONZE IN DARK STATUARY BROWN COLOR WITH SAND TEXTURE.
3- LETTERS SHALL BE FREE FROM WARPS AND OTHER DEFECTS, CORNERS TO BE SHARP, LINES STRAIGHT, AND CURVES FAIR.
4- THE STYLE OF LETTERING SHALL BE IN GENERAL AS SHOWN AND LOCATED IN "ELEVATION" ON THIS SHEET.
5- LETTERING TO BE FURNISHED BY THE SOUTHERN RAILWAY COMPANY AND PLACED BY THE STRUCTURAL CONTRACTOR.

DETAILS FOR BRONZE LETTERING

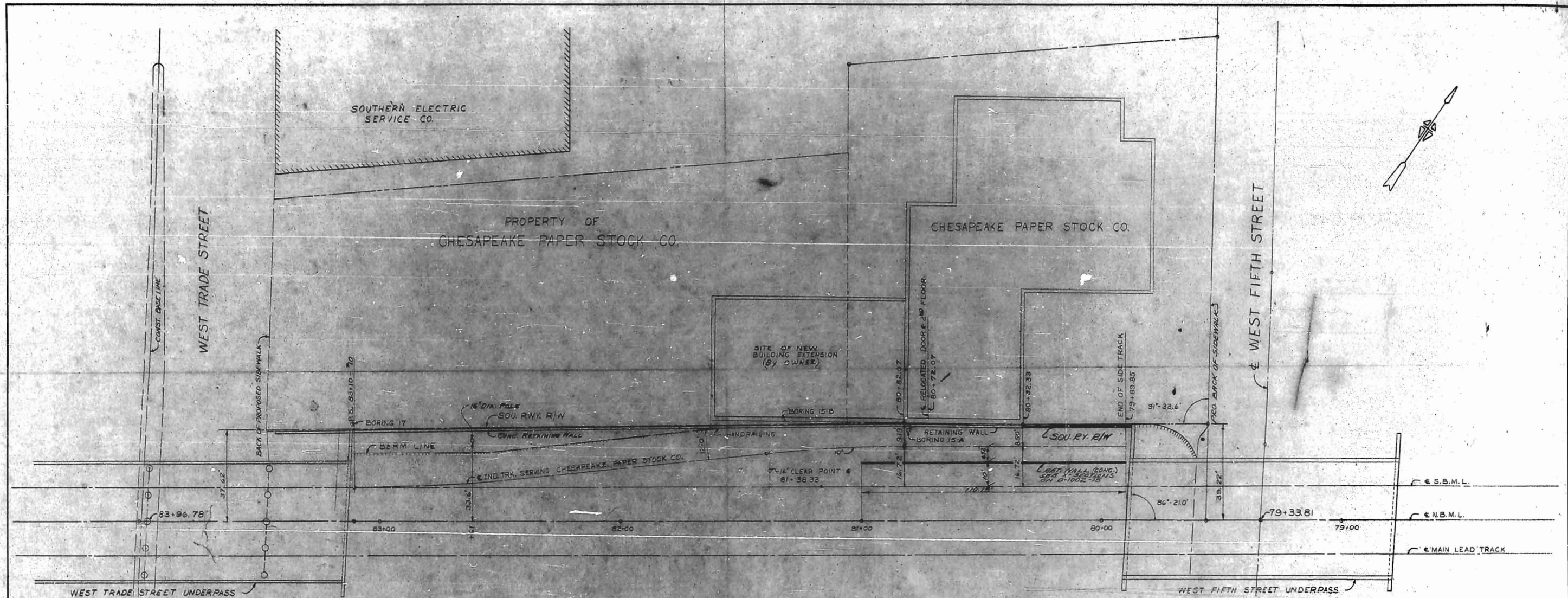


TYPICAL PATTERN FOR BURNING CABLES

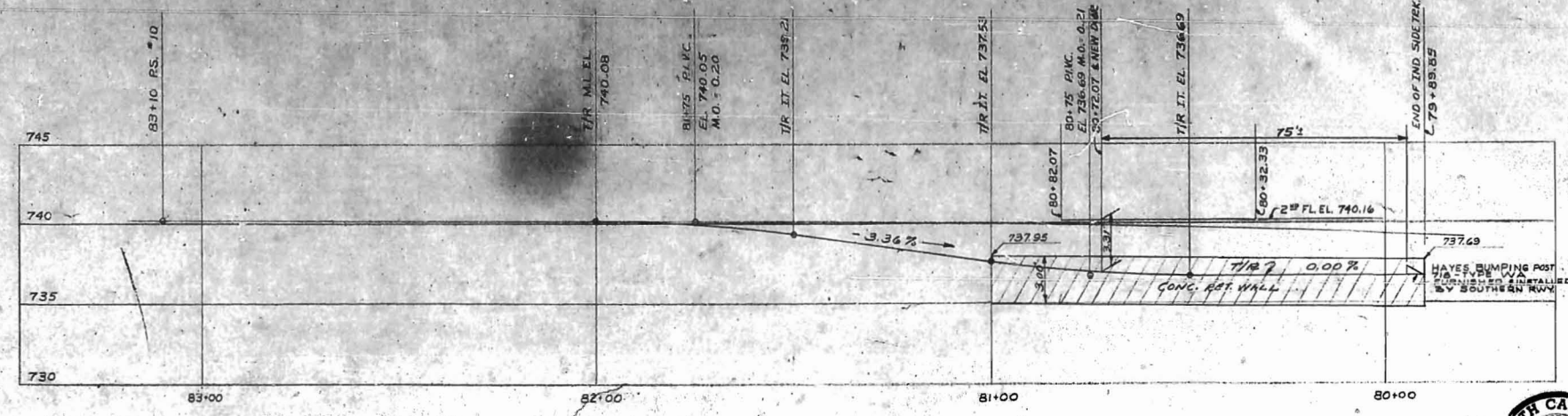
APPROVED BY: *[Signature]* CHIEF ENGR. DATE: AUG. 21, 1962
M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

MARK	DATE	BY	DESCRIPTION
			AS CONSTRUCTED
REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET UNDERPASS DETAILS OF PRESTRESSED CONCRETE PILES & BRONZE LETTERING WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES BY M.E.G.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY W.T.J.	M.P. 377.63		
CKD BY J.H.B.		DATE: 4-1-62	DWG NO. D-1003.9





PLAN
SCALE: 1" = 20'



PROFILE OF INDUSTRIAL TRACK SERVING CHESAPEAKE PAPER CO.
SCALE: 1" = 20' HOR.
1" = 5' VERT.

APPROVED BY: *[Signature]* CHIEF ENGR. DATE: OCT. 26, 1962
M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

MARK	DATE	BY	DESCRIPTION
6-10-64 N.M.			LOWERING INDUSTRIAL TRACK
3-11-64 M.E.G.			CHANGED CRIB WALL TO RETAINING WALL AS CONSTRUCTED

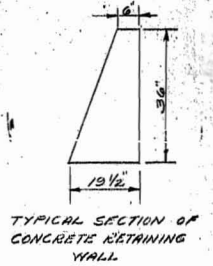
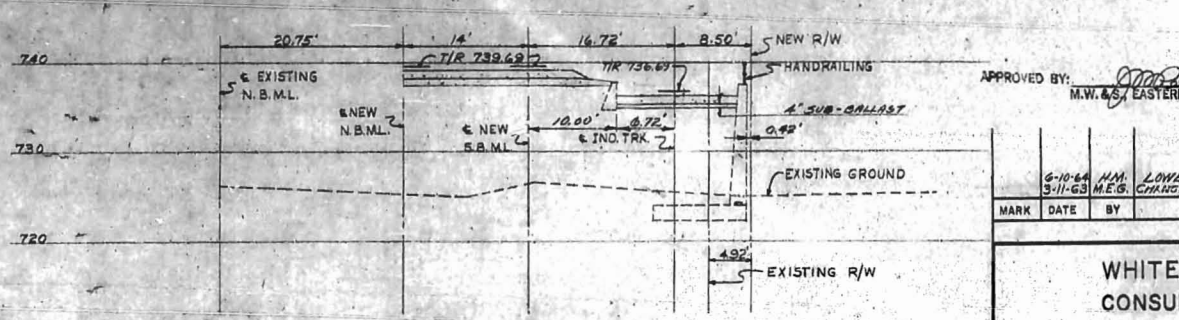
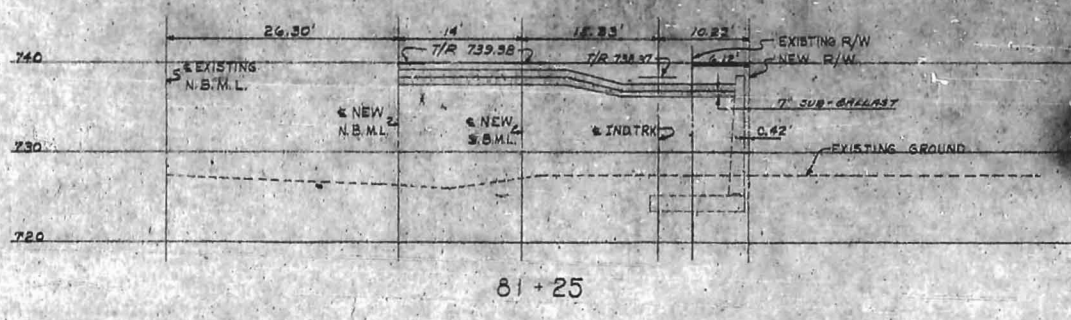
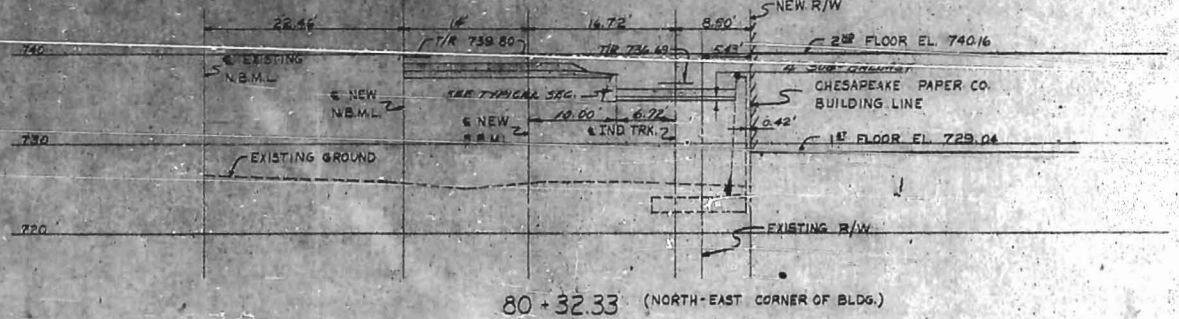
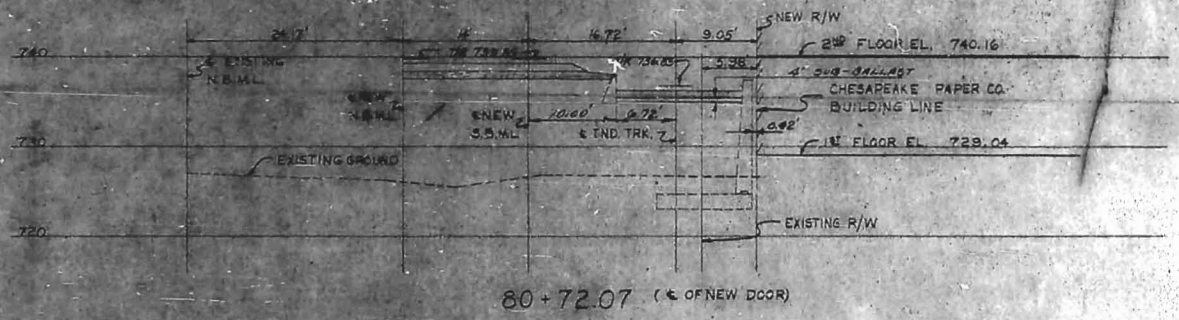
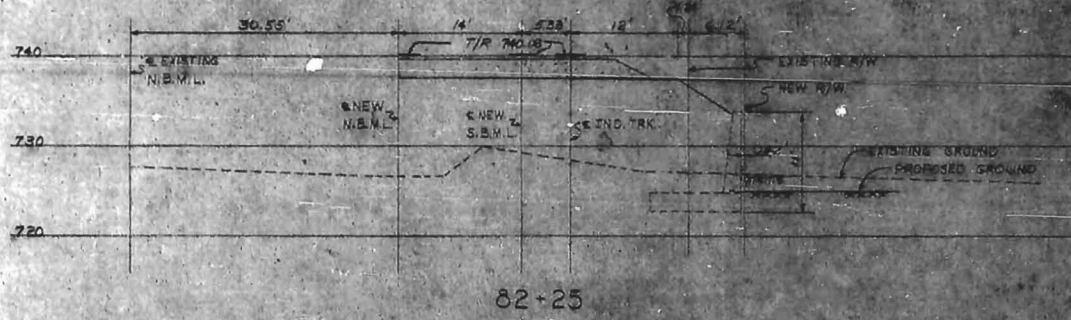
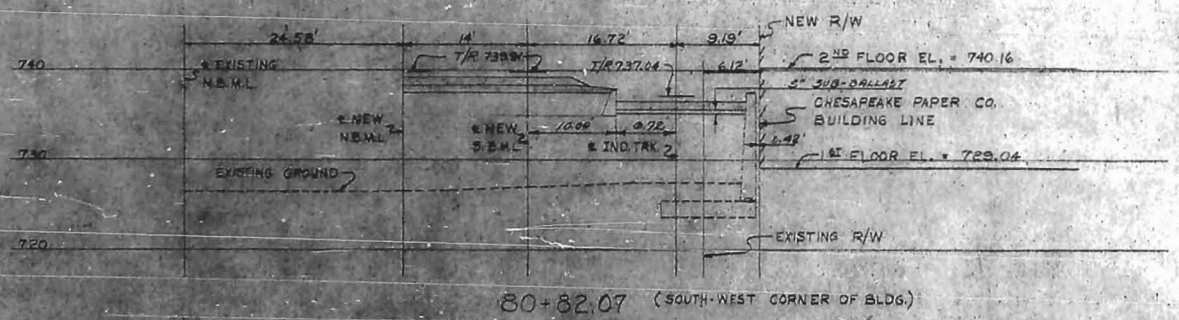
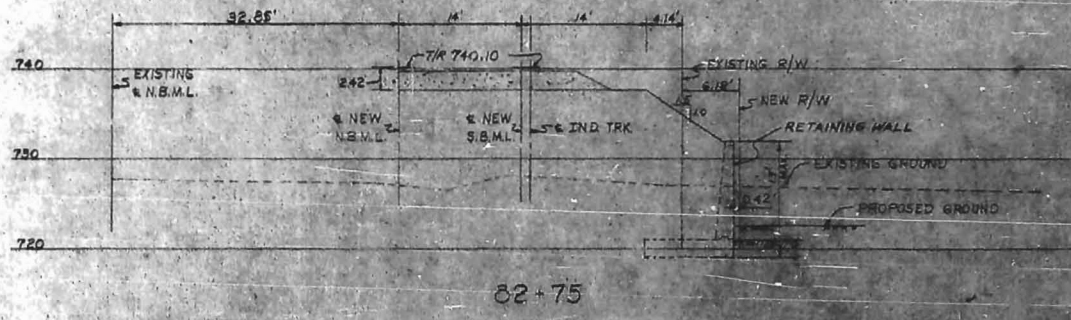
REVISIONS

WHITEHEAD & ZICKEL
CONSULTING ENGINEERS
221 SOUTH CHURCH ST.
CHARLOTTE, NORTH CAROLINA

CITY OF CHARLOTTE
WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO.
INDUSTRIAL TRACK & RETAINING WALL - PLAN & PROFILE
WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.

DES. BY L.G.E.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY L.G.E.	M.P. 377.85	DATE: JUNE 1, 1962	DWG NO. D-1002.14
CKD. BY J.H.B.			





APPROVED BY: *[Signature]* CHIEF ENGR. DATE: OCT. 26, 1962
 M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

MARK	DATE	BY	DESCRIPTION
6-10-64	H.M.		LOWERING INDUSTRIAL TRACK
3-11-63	M.E.G.		CHANGED CURB WALL TO RETAINING WALL AS CONSTRUCTED

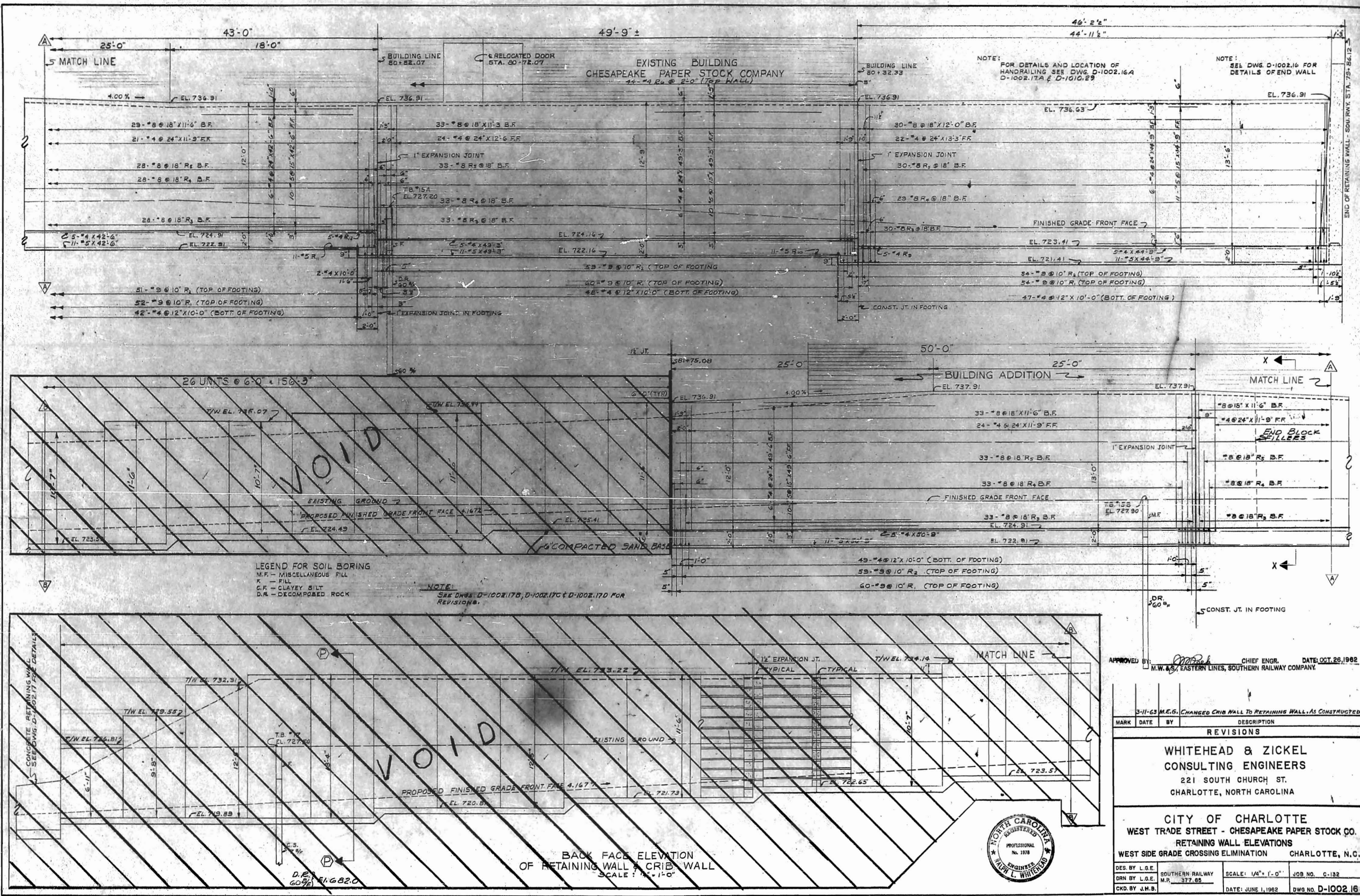
REVISIONS

WHITEHEAD & ZICKEL
 CONSULTING ENGINEERS
 221 SOUTH CHURCH ST.
 CHARLOTTE, NORTH CAROLINA

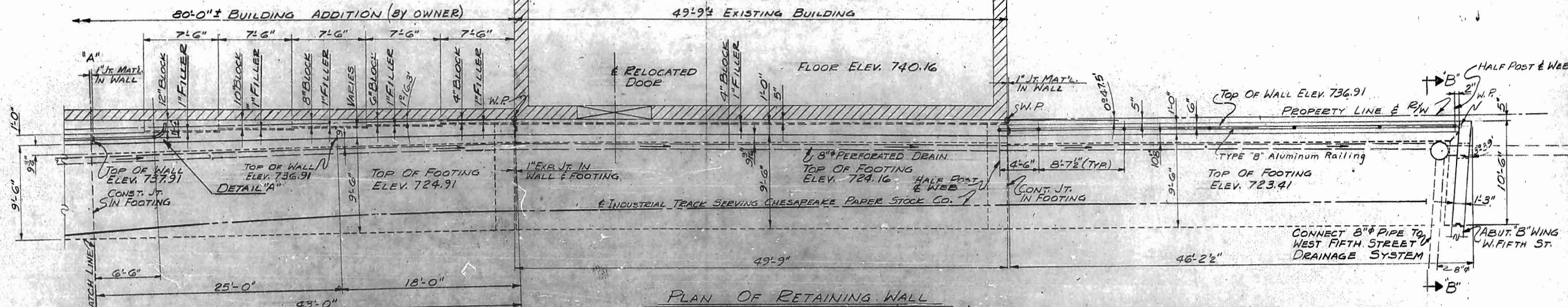
CITY OF CHARLOTTE
 WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO.
 INDUSTRIAL TRACK CROSS SECTIONS
 WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.

DES. BY L.G.E. SOUTHERN RAILWAY SCALE: AS SHOWN JOB NO. C-132
 DRN. BY L.G.E. M.P. 377.65
 CKD. BY J.H.B. DATE: JUNE 1, 1962 DWG NO. D-1002 15

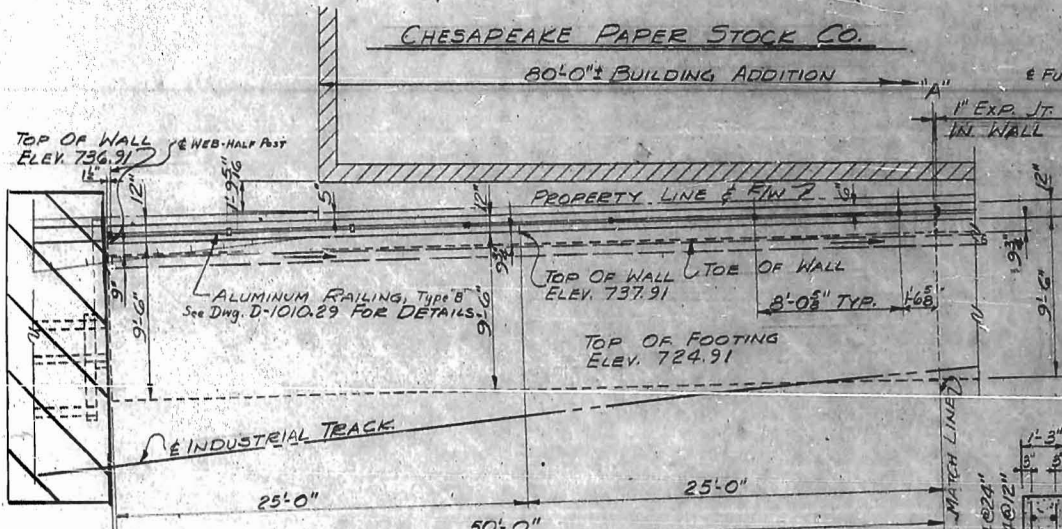




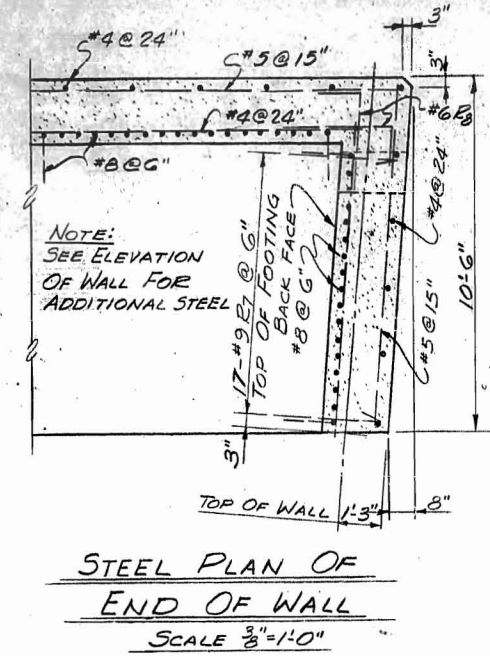
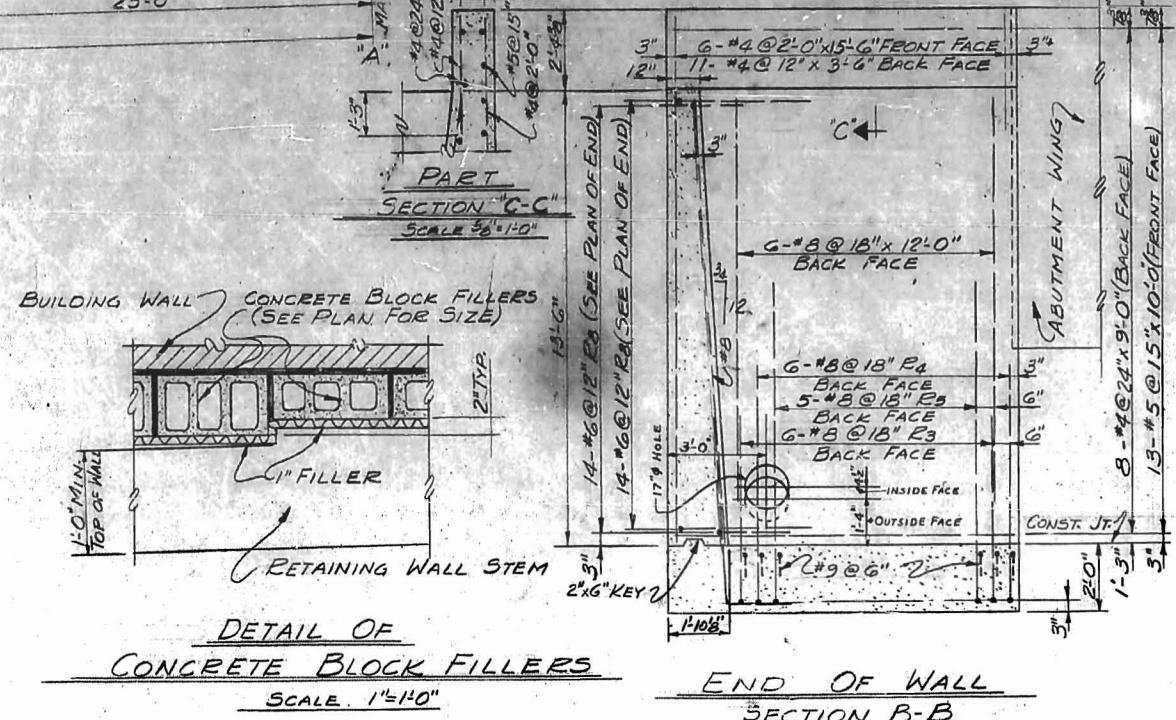
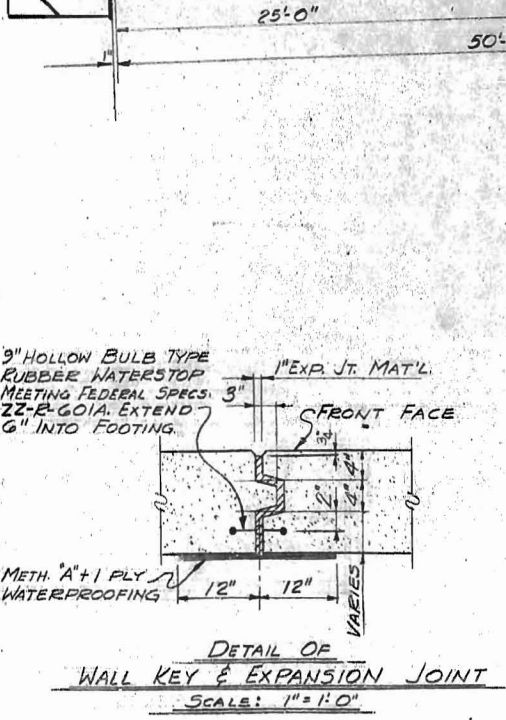
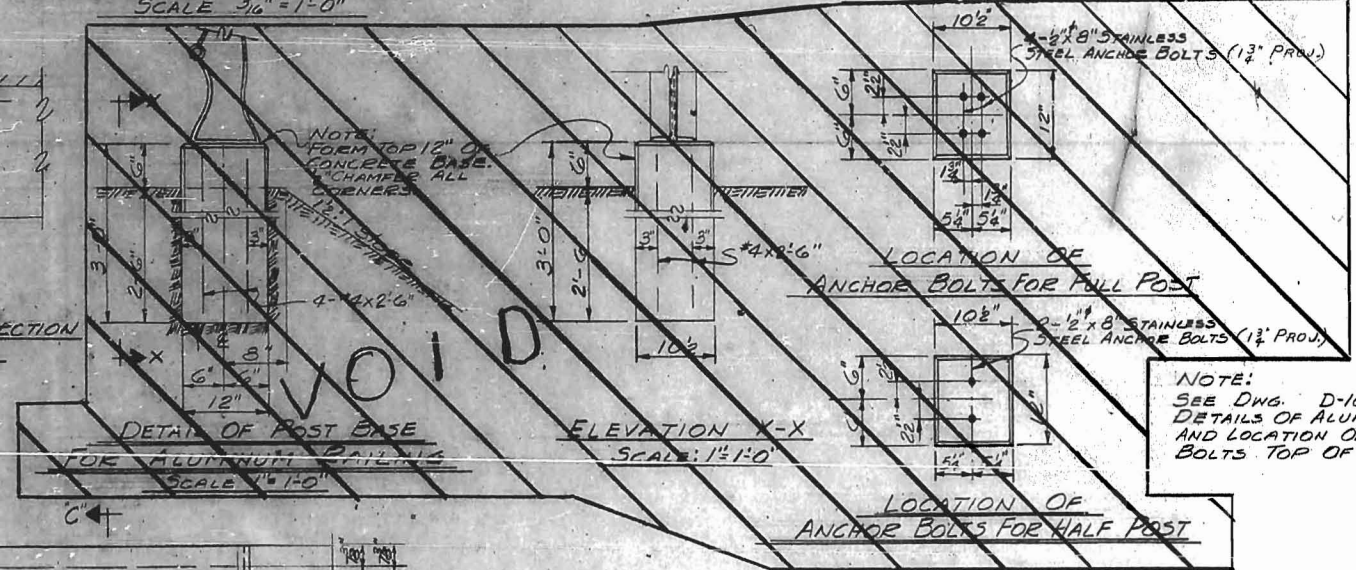
CHESAPEAKE PAPER STOCK CO.



PLAN OF RETAINING WALL
 SCALE 3/16" = 1'-0"



DETAIL "A"
 SHOWING CURVED SECTION
 SCALE: 3/8" = 1'-0"



NOTE: SEE ELEVATION OF WALL FOR ADDITIONAL STEEL



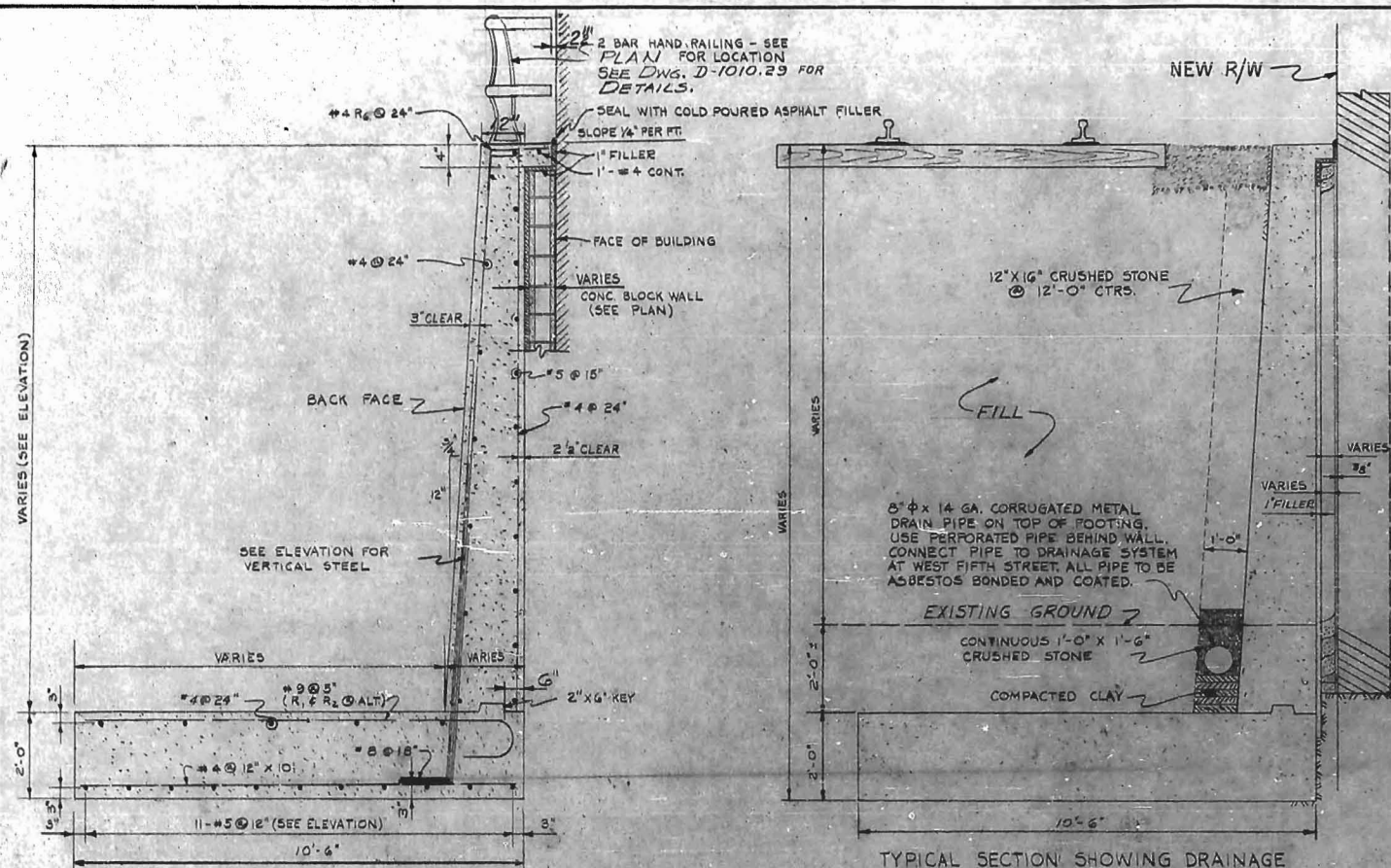
APPROVED BY: [Signature] CHIEF ENGR. DATE: OCT 26, 1962
 M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY

MARK	DATE	BY	DESCRIPTION
3-7-63	M.E.G.		Changed Crib Wall to Retaining Wall with Wall on top. As Constructed.
6-3-63	M.E.G.		17" HOLE IN END WALL

WHITEHEAD & ZICKEL
 CONSULTING ENGINEERS
 221 SOUTH CHURCH ST.
 CHARLOTTE, NORTH CAROLINA

CITY OF CHARLOTTE
 WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO.
 PLAN & DETAILS - RETAINING WALL
 WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.

DES. BY L.O.E.	SOUTHERN RAILWAY M.P. 377.89	SCALE: AS SHOWN	JOB NO. C-132
DRN BY J.H.B.			
CRD. BY L.O.E.		DATE: JUNE 1, 1962	DWG NO. D-1002.16A



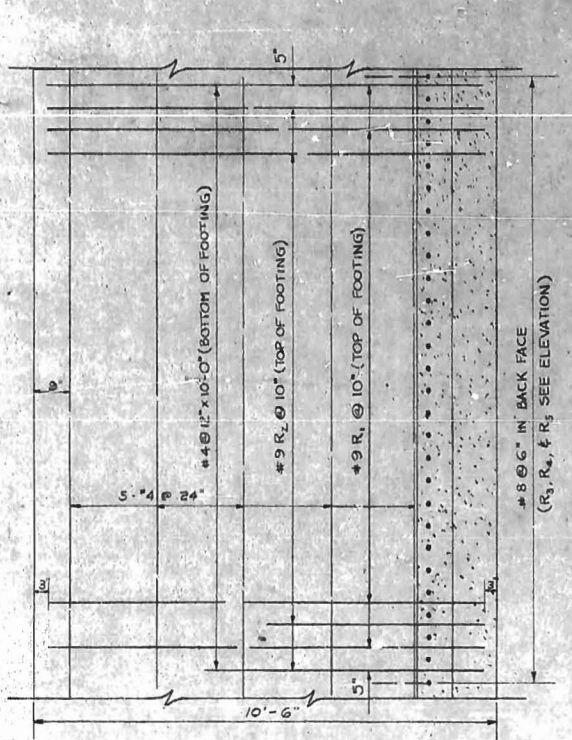
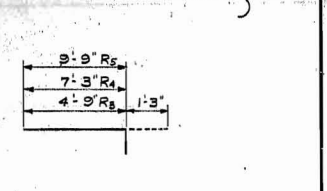
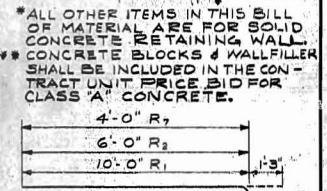
TYPICAL SECTION THRU WALL
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

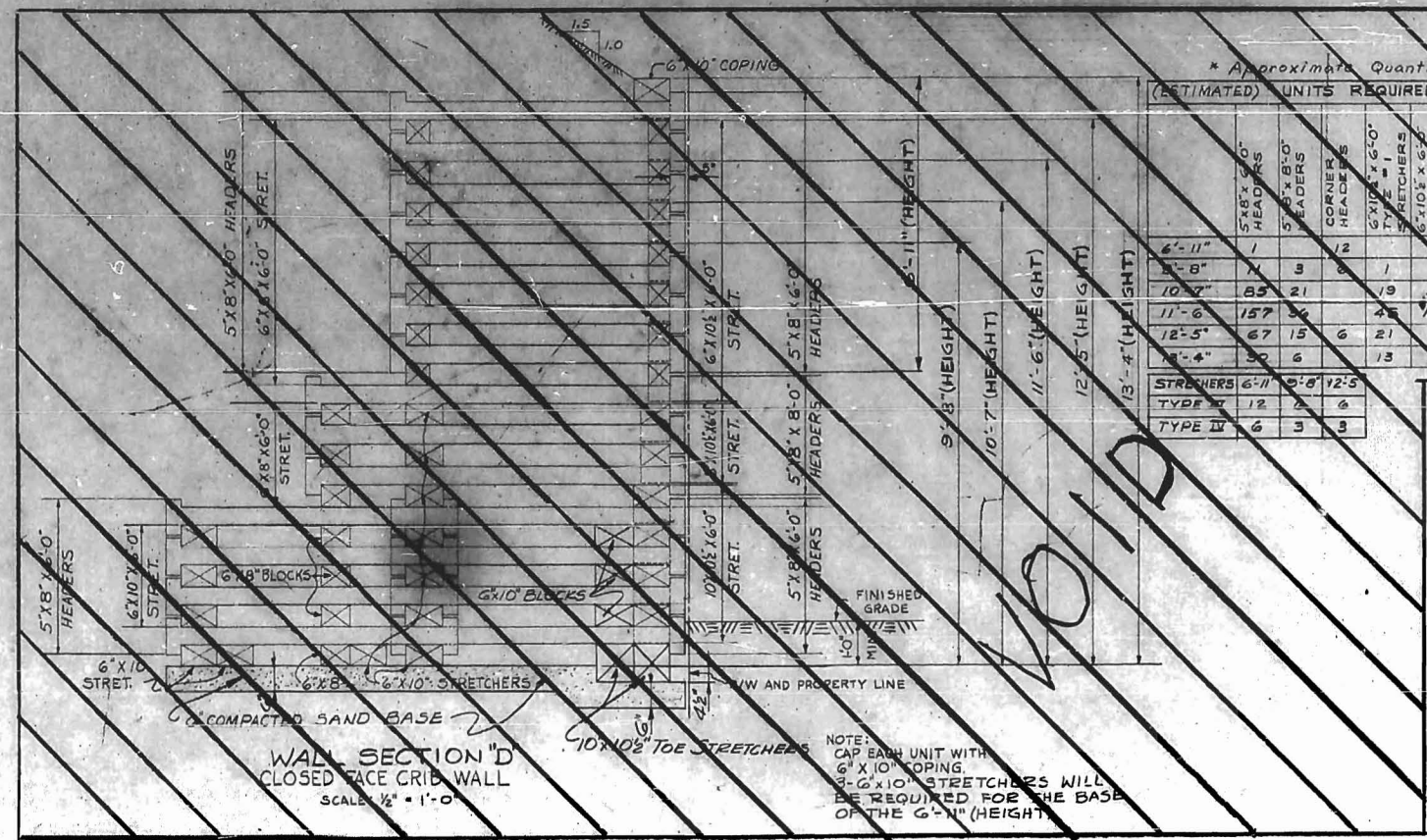
- 1- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, NORTH CAROLINA STATE HIGHWAY COMMISSION, EXCEPT AS NOTED HEREIN, ELSEWHERE ON THE PLANS, OR IN THE "SPECIAL PROVISIONS."
- 2- ALUMINUM RAILING: SEE DWG. NO. D-1002.16A & D-1010.29
- 3- REINFORCED CONCRETE: ALL CONCRETE SHALL BE CLASS "A" AIR-ENTRAINED THROUGHOUT. CONCRETE SHALL BE COMPACTED BY MECHANICAL VIBRATION (SEE N.C. STATE HIGHWAY SPECIFICATIONS). REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ACCORDING TO A.S.T.M. DESIGNATION A-15 WITH DEFORMATIONS, ACCORDING TO A.S.T.M. DESIGNATION A-305. ALL DIMENSIONS RELATING TO REINFORCING BAR SPACING ARE TO BAR CENTERS; UNLESS NOTED, SURFACE FINISH FOR CONCRETE IS TO BE IN ACCORDANCE WITH THE "SPECIFICATIONS." EXPOSED SURFACES ARE TO HAVE CLASS 1 FINISH.
- 4- EXPANSION JOINT MATERIAL: TO BE EITHER BITUMINOUS FIBER OR CORK CONFORMING WITH AASHTO SPECIFICATIONS M-153-52, EXCEPT AS SHOWN ON PLANS OR IN THE "SPECIAL PROVISIONS." BULB TYPE WATERSTOPS AND RUBBER JOINT COMPOUNDS SHALL BE AS SHOWN ON THE PLANS AND IN THE "SPECIAL PROVISIONS."
- 5- CORRUGATE METAL DRAINS SHALL BE PROVIDED AS SHOWN ON PLANS. DETAILS OF DRAINAGE SYSTEM SHALL BE SUBMITTED TO THE CONSULTING ENGINEER.
- 6- NON-PAY ITEMS: ONLY ITEMS SHOWN IN THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PAY ITEMS.
- 7- CONTROL OF WORK: ALL WORK INVOLVED IN THE CONSTRUCTION OF THE WALL SHALL BE PERFORMED UNDER THE SUPERVISION OF, AND SATISFACTORY TO THE CONSULTING ENGINEER AND/OR THE SOUTHERN RAILWAY COMPANY. ALL METHODS OF HANDLING WORK AFFECTING THE SAFETY OF RAILWAY OPERATION MUST BE APPROVED BY THE SOUTHERN RAILWAY COMPANY BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. RAILWAY TRAFFIC SHALL, AT ALL TIMES, BE MAINTAINED AND PROTECTED. THE CONTRACTOR SHALL AT NO TIME DELAY OR INTERFERE WITH RAILWAY OPERATIONS.
- 8- ALL CONSTRUCTION JOINTS SHOWN ON THESE PLANS SHALL BE REQUIRED UNLESS SHOWN OTHERWISE. CONSTRUCTION JOINTS SHALL NOT BE PERMITTED, EXCEPT AS SHOWN ON THE PLANS.
- 9- EXCAVATION AND FOUNDATION DATA: FOUNDATION DATA AND ALL ELEVATIONS OF GROUND LINES GIVEN ARE BELIEVED TO BE CORRECT AND ARE FURNISHED FOR THE CONVENIENCE OF THE BIDDERS, BUT NEITHER THE CONSULTING ENGINEER NOR THE SOUTHERN RAILWAY COMPANY GUARANTEES AS CORRECT ANY OF THE INFORMATION GIVEN.
- 10- WATERPROOFING: TOP OF WALL FOOTING AND STEM OF WALL SHALL BE DAMPROOFED WITH METHOD "E" DAMPROOFING, USING TWO COATS OF RC-2 IN ADDITION ALL CONSTRUCTION JOINTS AND ANY SHRINKAGE CRACKS WHICH WILL BE COVERED BY FILL SHALL BE WATERPROOFED WITH METHOD "A" WATERPROOFING STRIPS OF FABRIC SHALL BE TWO FEET WIDE PLACED SYMMETRICALLY OVER JOINTS OR CRACKS.
- 11- DIMENSIONS FOR BENDING REINFORCING BARS ARE OUT TO OUT, FABRICATION TO BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE ACT 315-51
- 12- CONCRETE CRIB WALL: SEE SPECIAL PROVISIONS.
- 13- WALL FILLER: TO BE "ETHAFOAM" AS MADE BY DOW CHEMICAL COMPANY OR EQUAL
- 14- SEE SPECIAL PROVISIONS FOR MAINTENANCE BOND ON EXISTING CHESAPEAKE PAPER COMPANY BUILDING.
- 15- CHAMFER EXPOSED EDGES OF SOLID RETAINING WALL 3/4"
- 16- FOR ADHESION OF WALL FILLER TO CONCRETE BLOCKS, CUT 2" x 12" x 9/16" SHEETS INTO 1" THICKNESSES AND PLACE POROUS SIDE TO BLOCKS WITH ADHESIVE "SARALOX 400" OR EQUAL.

BILL OF REINFORCING STEEL				
NO.	REQ'D	SIZE	LENGTH	MARK TYPE
226		#9	11'-3"	R ₁ BENT
228		#9	7'-3"	R ₂
130		#8	6'-0"	R ₃
129		#8	8'-6"	R ₄
129		#8	11'-0"	R ₅
44		#4	1'-10"	R ₆
17		#9	5'-3"	R ₇
28		#6	4'-10"	R ₈
5		#4	5'-9"	R ₉
11		#5	5'-9"	R ₁₀
11		#5	3'-9"	R ₁₁
5		#4	5'-6"	R ₁₂
36		#8	12'-0"	STR.
62		#8	11'-6"	
33		#8	11'-3"	
11		#5	50'-9"	
10		#5	49'-6"	
21		#5	49'-3"	
22		#5	44'-9"	
21		#5	42'-6"	
5		#4	50'-9"	
6		#4	49'-6"	
11		#4	49'-3"	
11		#4	44'-9"	
2		#4	44'-6"	
11		#4	42'-6"	
6		#4	15'-6"	
22		#4	13'-3"	
24		#4	12'-6"	
45		#4	11'-9"	
187		#4	10'-0"	
11		#4	3'-6"	STR.

BILL OF MATERIAL	
CLASS "A" CONCRETE	289.7 CY
REINFORCING STEEL	35,524 LBS
CRIB WALL: 3'-4" HEIGHT	12 L.F.
12'-5" HEIGHT	24 L.F.
1'-6" HEIGHT	60 L.F.
10'-7" HEIGHT	60 L.F.
9'-8" HEIGHT	6 L.F.
6'-1" HEIGHT	6 L.F.
CONCRETE BLOCK - 4'x8'x16"	303 EA.
4'x8'x16"	126 EA.
8'x8'x16"	126 EA.
10'x8'x16"	126 EA.
12'x8'x16"	126 EA.
HANDRAILING TYPE "B"	249.16 FT
WATERPROOFING (2-PLY)	62 SY.
DAMP PROOFING - METHIE	503 SY.
UNCLASSIFIED EXCAVATION	62.5 CY.
DRAINAGE SYSTEM	LUMP SUM



PART PLAN FOR STEEL DETAILS
(SECTION OF WALL AT TOP FOOTING)
SCALE: 1/2" = 1'-0"



WALL SECTION "D"
CLOSED FACE CRIB WALL
SCALE: 1/2" = 1'-0"

* Approximate Quantities (Bidders shall verify)
(ESTIMATED) UNITS REQUIRED FOR CRIB WALL (RWY STA. 81+75.00 TO 83+31.35)

HEIGHT	5'x8'x10' HEADERS	5'x8'x8' HEADERS	CORNER HEADERS	5'x10'x10' TYPE I	5'x10'x10' TYPE II	5'x10'x10' TYPE III	5'x10'x10' TYPE IV	5'x10'x10' TYPE V	5'x10'x10' TYPE VI	5'x10'x10' TYPE VII	5'x10'x10' TYPE VIII	5'x10'x10' TYPE IX	5'x10'x10' TYPE X	5'x10'x10' TYPE XI	5'x10'x10' TYPE XII	5'x10'x10' TYPE XIII	5'x10'x10' TYPE XIV	5'x10'x10' TYPE XV	5'x10'x10' TYPE XVI	5'x10'x10' TYPE XVII	5'x10'x10' TYPE XVIII	5'x10'x10' TYPE XIX	5'x10'x10' TYPE XX
6'-11"	1	3	2	1	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
6'-8"	1	3	2	1	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
10'-7"	85	21	19	5	10	2	13	5	24	44	12	21	21	21	21	21	21	21	21	21	21	21	
11'-6"	157	36	42	13	20	4	37	11	58	108	24	36	36	36	36	36	36	36	36	36	36	36	
12'-5"	67	15	6	21	8	16	21	16	21	16	56	10	15	15	15	15	15	15	15	15	15	15	
8'-4"	20	6	13	4	7	1	4	5	28	4	6	6	6	6	6	6	6	6	6	6	6	6	



APPROVED BY: *[Signature]* CHIEF ENGR. DATE: OCT. 26, 1962
M.W. B.S., EASTERN LINES, SOUTHERN RAILWAY COMPANY

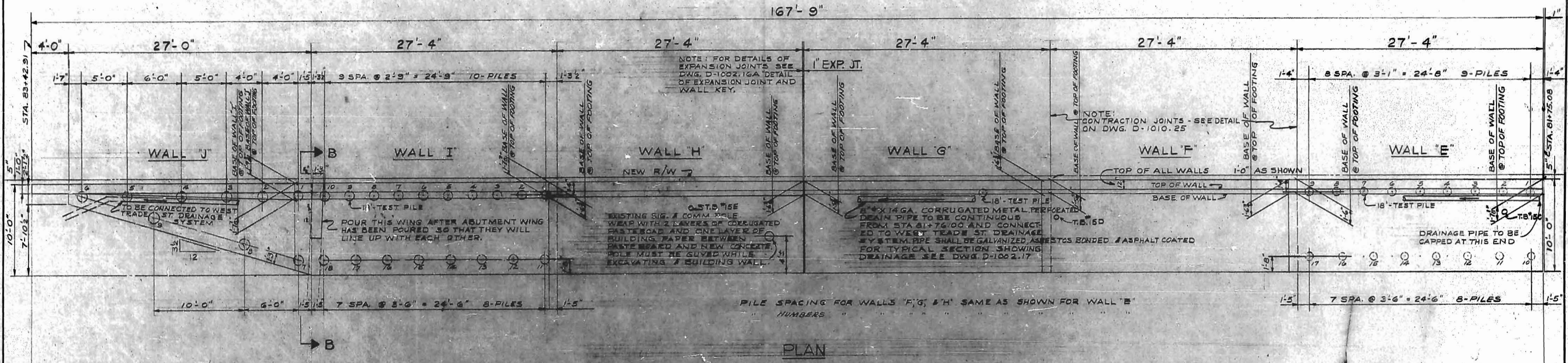
3-11-63 M.E.G. Changed Crib Wall to Retaining Wall As Constructed

MARK	DATE	BY	DESCRIPTION
REVISIONS			

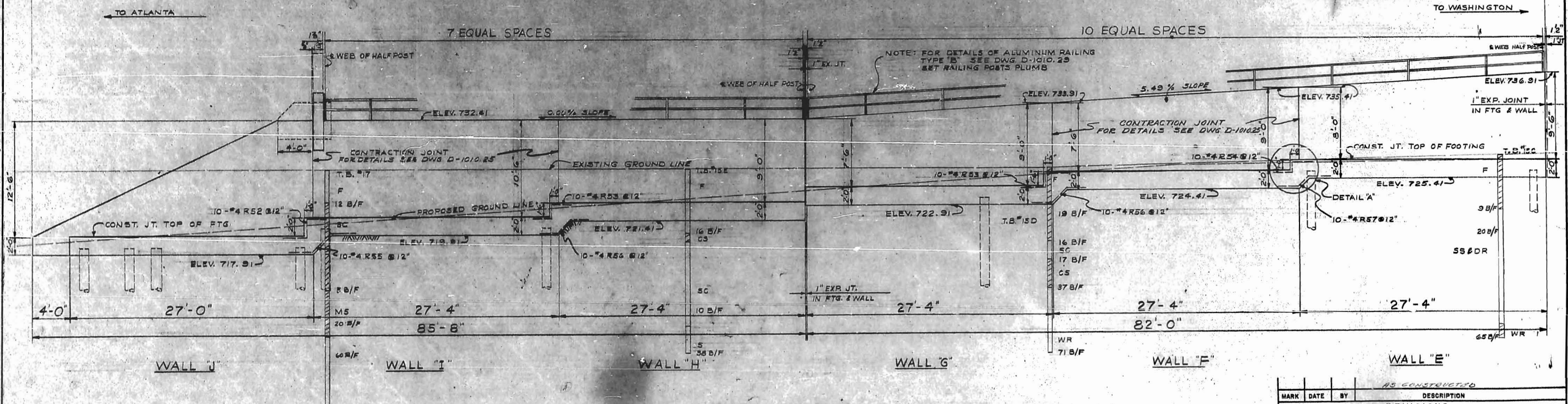
WHITEHEAD & ZICKEL
CONSULTING ENGINEERS
221 SOUTH CHURCH ST.
CHARLOTTE, NORTH CAROLINA

CITY OF CHARLOTTE
WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO
RETAINING WALL SECTIONS AND DETAILS
WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.

DES. BY L.G.E.	SOUTHERN RAILWAY	SCALE: AS SHOWN	JOB NO. C-132
DRN BY L.G.E.	M.P. 377.85		
CKD. BY J.H.B.		DATE: JUNE 1, 1962	DWG. NO. D-1002.17



PLAN



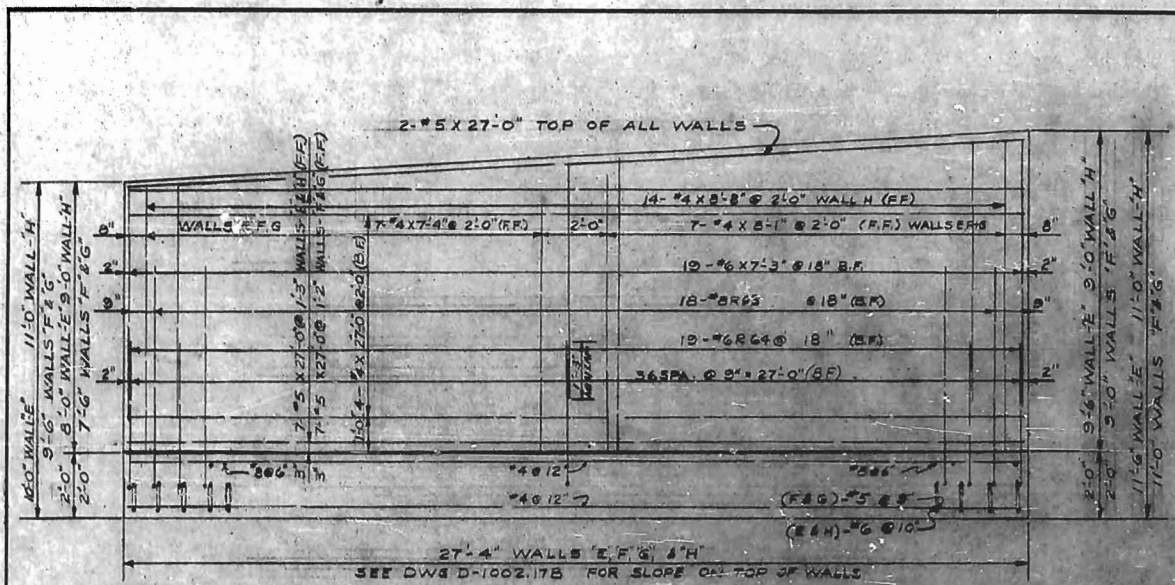
BACK ELEVATION

NOTE: COMPUTED PILE LOAD 20 TONS EACH. IF LESS THAN 15 FEET OF PILE PENETRATION IS OBTAINED OR IF THE MATERIAL PENETRATED IS NOT CONSIDERED ADEQUATE TO PROVIDE THE REQUIRED HORIZONTAL RESISTANCE A SHEAR KEY IS TO BE ADDED AT BACK OF FOOTING AS INDICATED ON DWG. D-1002-17D.

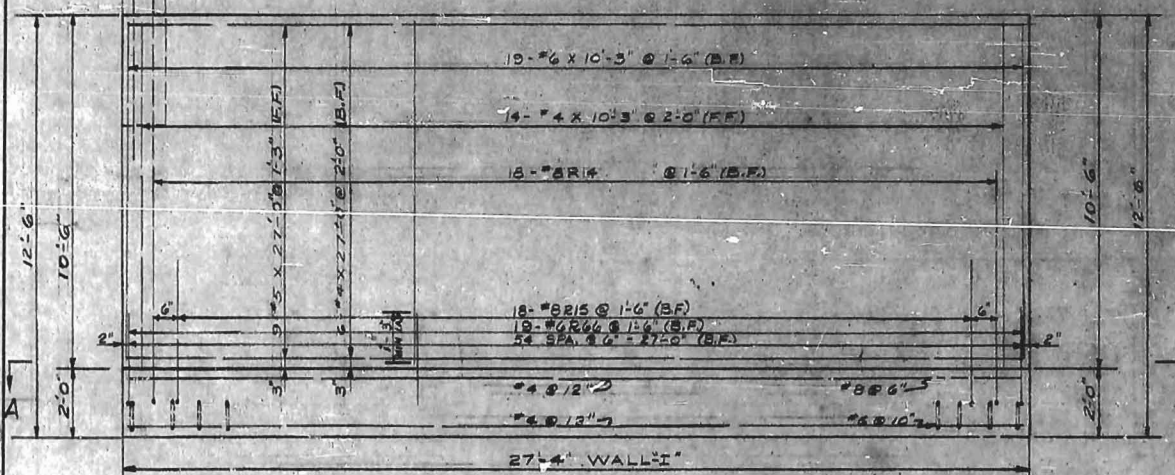
SEE DWG. D-1002.17 FOR GENERAL NOTES.

MARK	DATE	BY	DESCRIPTION
NO CONSTRUCTION REVISIONS			
WHITEHEAD & ZICKEL CONSULTING ENGINEERS 221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO. PLAN & ELEVATION - RETAINING WALLS "E" THRU "J" WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY	L.G.E.	SCALE: 3/8" = 1'-0"	
DRN. BY	L.G.E.	M.P. 377.65	JOB NO. C-132
CHKD. BY	MEG	DATE: MAR. 11, 1963	DWG. NO. D-1002.17B

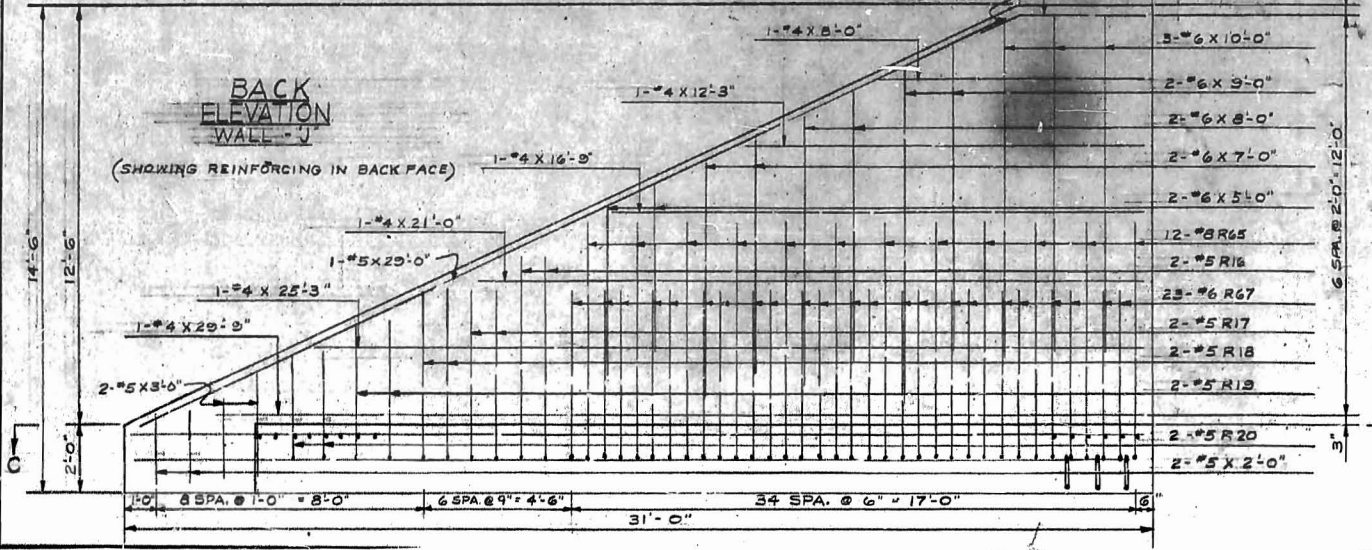
APPROVED BY: *[Signature]* CHIEF ENGR. DATE: 4-9-63
 M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY



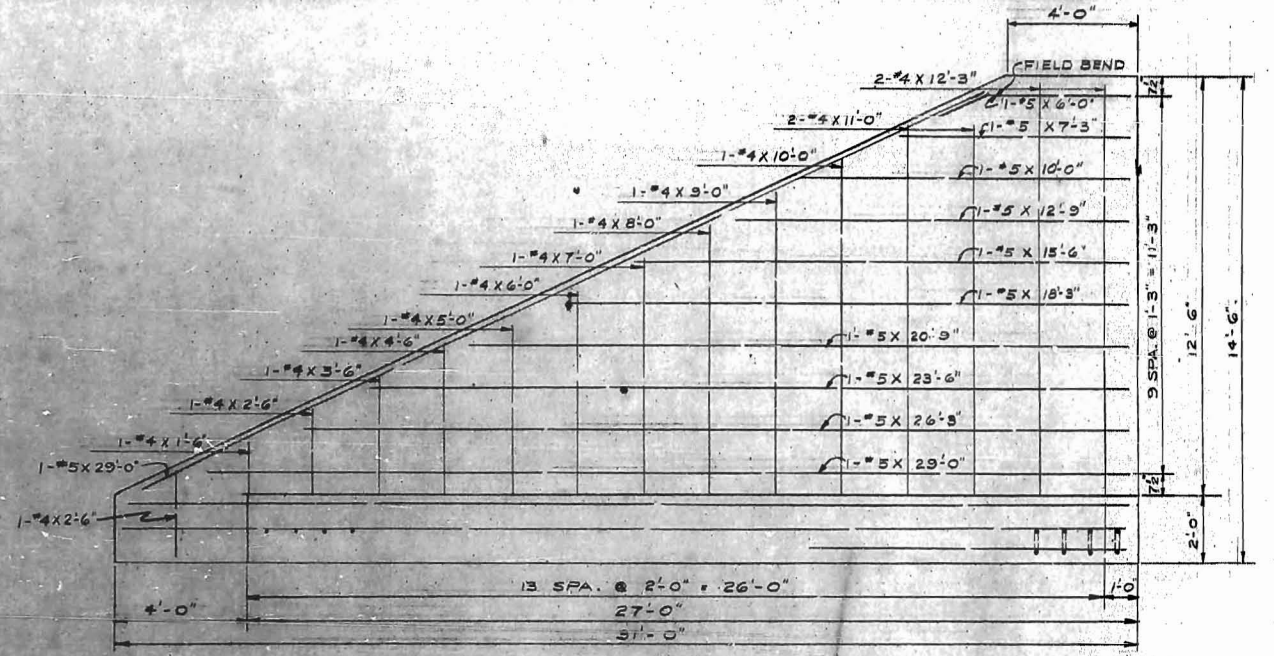
BACK ELEVATION
WALLS E-F-G & H



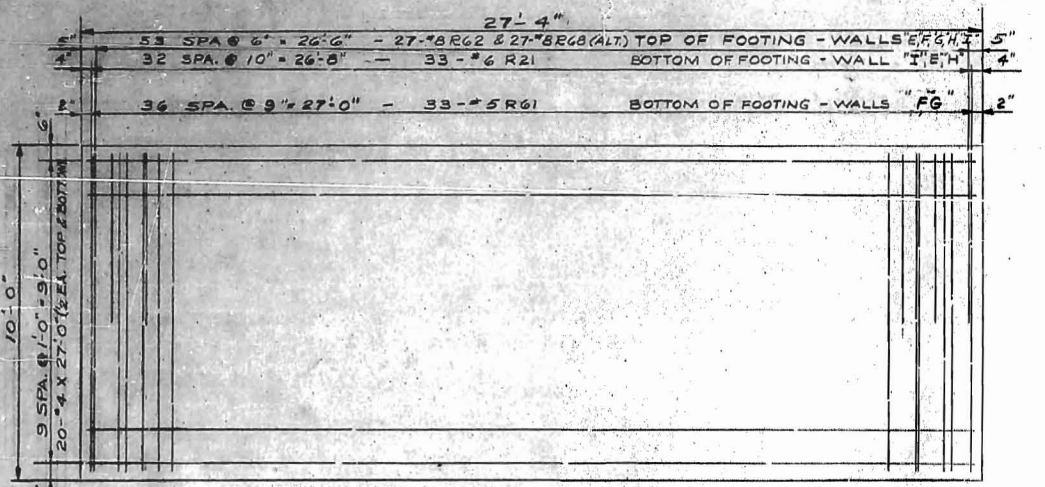
BACK ELEVATION
WALL-I



BACK ELEVATION
WALL-J
(SHOWING REINFORCING IN BACK FACE)

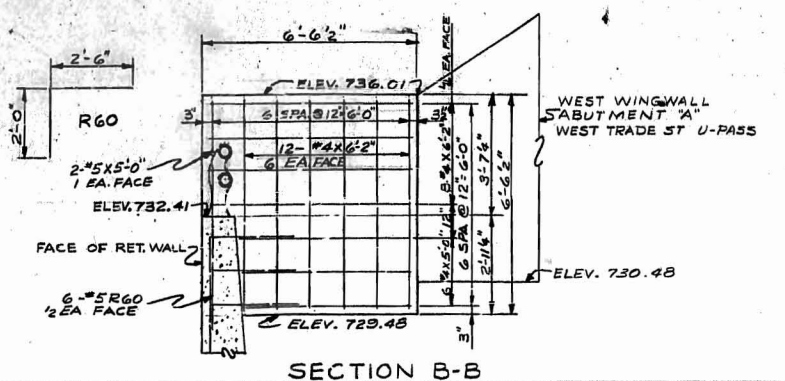


BACK ELEVATION
WALL-J
(SHOWING REINFORCING IN FRONT FACE)



SEC. - "A-A"
WALLS E-F-G-H & I
FOOTING

APPROVED BY: *J. Mack* CHIEF ENGR. DATE: 7-9-63
M.W. & S. EASTERN LINES, SOUTHERN RAILWAY COMPANY



SECTION B-B

AS CONSTRUCTED			
MARK	DATE	BY	DESCRIPTION
REVISIONS			
WHITEHEAD & ZICKEL			
CONSULTING ENGINEERS			
221 SOUTH CHURCH ST. CHARLOTTE, NORTH CAROLINA			
CITY OF CHARLOTTE			
WEST TRADE STREET - CHESAPEAKE PAPER STOCK CO.			
ELEVATIONS WALLS "E" THRU "J" & FOOTING DETAILS-WALLS "E" TO "I"			
WEST SIDE GRADE CROSSING ELIMINATION CHARLOTTE, N.C.			
DES. BY L.G.E.	SOUTHERN RAILWAY	SCALE: 1" = 1'-0"	JOB NO. C-152
DRN BY L.G.E.	M.P. 377.85	DATE: MAR. 11, 1963	DWG NO. D-1002.17C
CKD. BY MEG			

Material Req.	
8" 14 Ga. AZC CMP FAC Perf 2 pcs @ 6', 3 pcs @ 10', 1 pc @ 12', 2 pcs @ 14'	102'
8" 14 Ga. AZC CMP FAC PVD 2 pcs @ 9', 4 @ 10', 2 pc @ 17'	92'
8" 14 Ga. AZC CMP FAC 2 std 90° Elbows 2 special 20° elbows 4 special Tees (see plans for various dimensions) 2 special 10° elbows	
12 Ga Standard Deck Pans FAC, Galv. Perf 60 Pans @ 10' 4 Pans @ 10' with end cap one end each 4 Pans @ 10' with end cap f' stub B' one end	600 40 40
8" Dia. 14 Ga. AZC CMP FAC 1/2 Round Deck Pan Covers 332 pcs @ 2' 8 pcs @ 2' with end cap one end each	664' 16'
28 Connecting Bands FAC	
Elevations & Grade shall be set in field by Engineer	

CMP = Corrugated Metal Pipe AZC = Asbestos Zinc Clad
 FAC = Fully Asphalt Coated U.P. = Unperforated
 All pipe is perforated unless otherwise noted.
 Unperforated pipe is paved unless otherwise noted.
 CMP is 8" 14 ga FAC AZC unless otherwise noted.
 Connecting Bands are FAC.
 CMP shall conform to specs of AASHTO M136 f NC
 State Hwy Comm 412-5.1(a).
 Paving shall form a smooth invert and shall have a
 min. thickness of 6" above the crests of the
 corrugations.
 Lay pipe on 1" to grade or more with perforations
 down.
 Perforations must not be filled with asphalt.
 For details of Pans & Round covers see Standard
 Deck Drain drawing.

NO.	REVISED	BY	DATE
1	11/21/63	TSC	

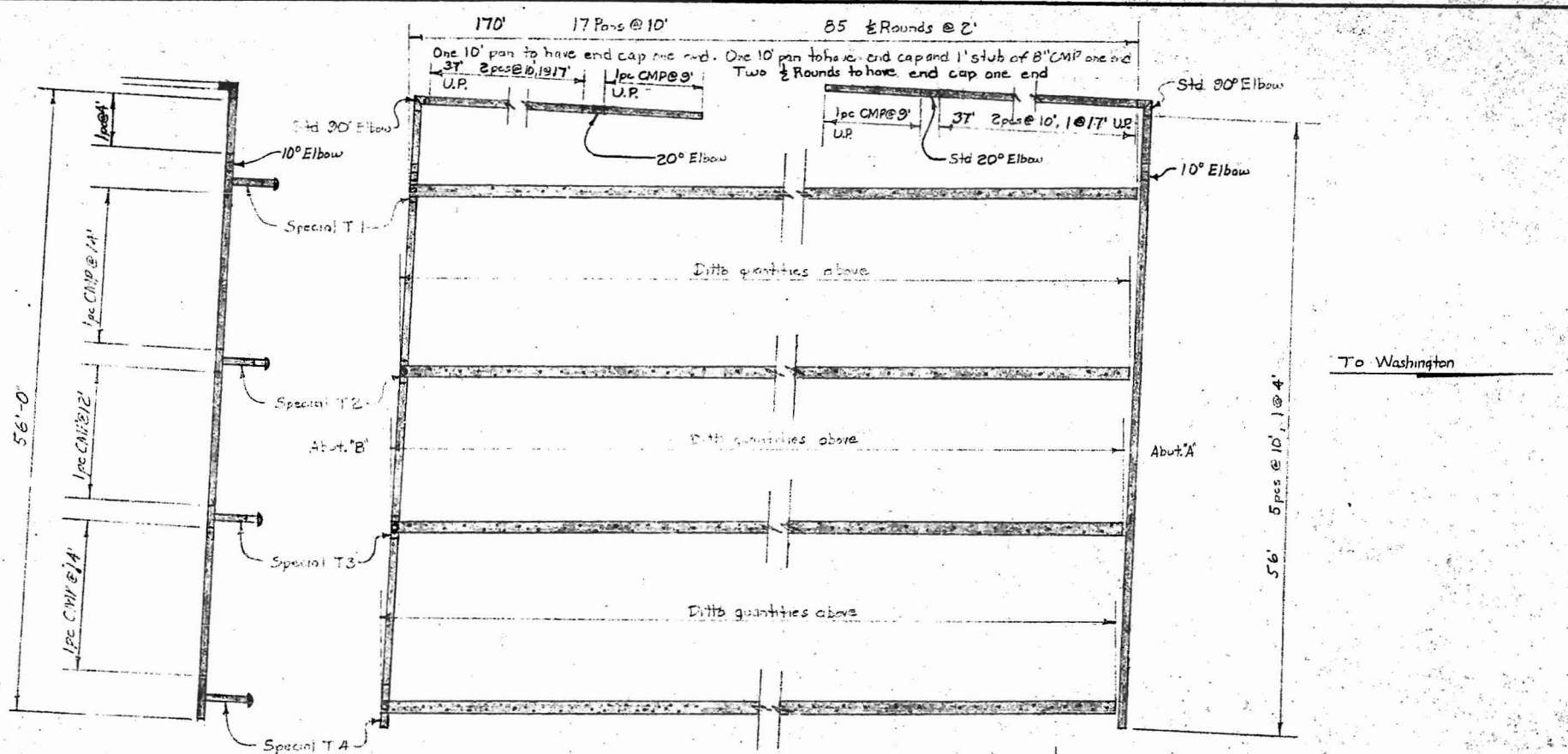
APPROVED
 NOT APPROVED
 APPROVED AS CORRECTED
 REVISE AND RESUBMIT

Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication process or to techniques of construction; and for coordination of the work of all trades.

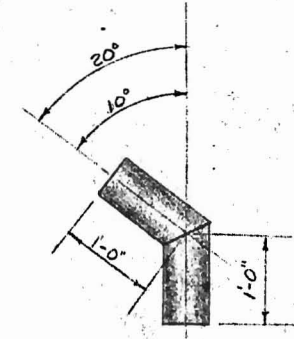
BY M.E.S.
 DATE 11-26-63
 RALPH WHITHEAD & ASSOCIATES
 CONSULTING ENGINEERS
 CHARLOTTE, NORTH CAROLINA

ORDER NO. 09-6721 R/L2
 REPUBLIC STEEL CORPORATION
 CULVERT DIVISION
 West Side Grade Crossing Elimination CMP
 Drainage Layout of:
 Abutment A & B W. Trade St. Bridge

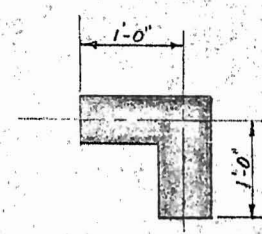
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 APPROVED: [blank]



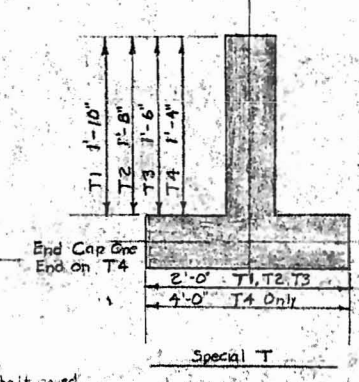
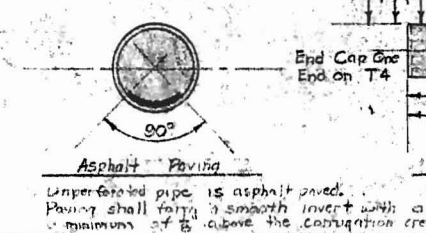
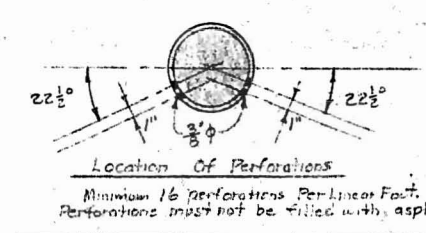
Elevation _____ Plan _____
 Abutment A & B CMP Drainage Layout of W. Trade St. Bridge
 (See Proj D-1003.1)



2 Each - Special Elbows



2 Req. - Standard 90° Elbow



Special T

APPROVED NOT APPROVED
 APPROVED AS CORRECTED
 REVISE AND RESUBMIT

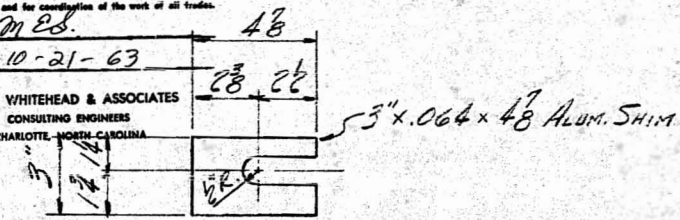
SHT. 51
 JOB No. 5139

SHIM DETAILS

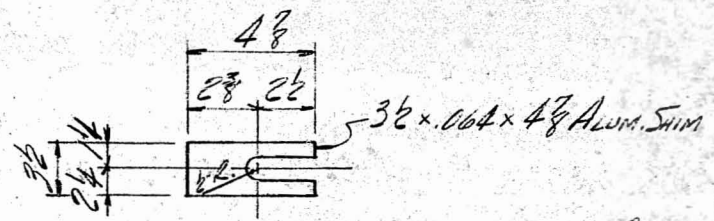
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BY M.E.B.
 DATE 10-21-63

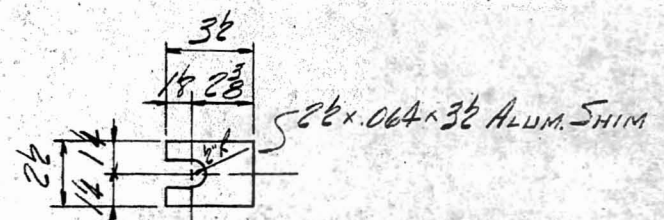
RALPH WHITEHEAD & ASSOCIATES
 CONSULTING ENGINEERS
 CHARLOTTE, NORTH CAROLINA



SHIMS REQ'D THUS (FOR FULL POST)



SHIMS REQ'D THUS (FOR HALF POST)



SHIMS REQ'D THUS (FOR FULL & HALF POST)

APPROVED NOT APPROVED
 APPROVED AS CORRECTED
 REVISE AND RESUBMIT

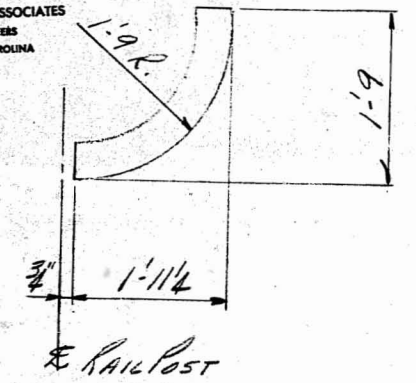
SHT. BR-1
 JOB No. 5139

CURVED RAIL DETAILS

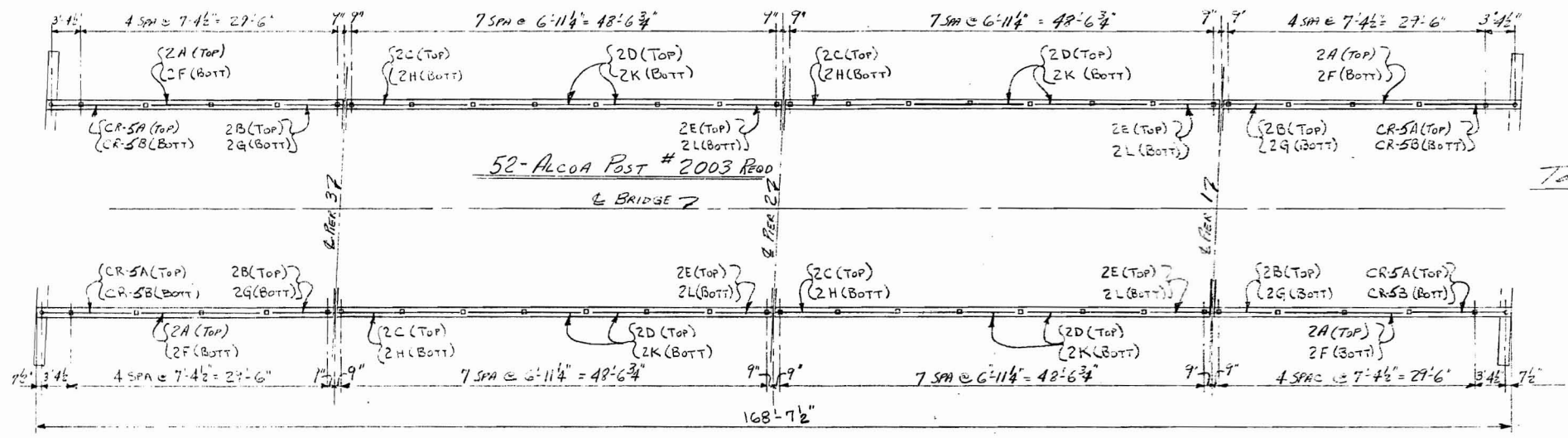
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BY M.E.B.
 DATE 10-21-63

RALPH WHITEHEAD & ASSOCIATES
 CONSULTING ENGINEERS
 CHARLOTTE, NORTH CAROLINA



ONE - 4" O.D. x 3/16" RAIL REQ'D THUS
ONE - 3 1/2" O.D. x 8" RAIL REQ'D THUS



PLAN
POST TO BE SET NORMAL TO GRADE

To Washington

MATERIAL LIST

- 4 R-4'0D x 3/16 WALL TUBE x 14'-8 MK 2A
- 4 R-4'0D x 3/16 WALL TUBE x 7'-11 3/4 MK 2B
- 4 R-4'0D x 3/16 WALL TUBE x 14'-5 3/4 MK 2C
- 8 R-4'0D x 3/16 WALL TUBE x 13'-9 1/2 MK 2D
- 4 R-4'0D x 3/16 WALL TUBE x 7'-6 1/2 MK 2E

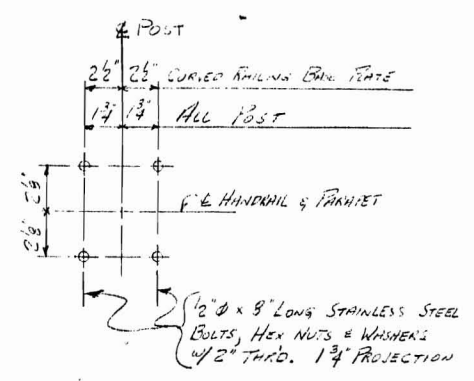
- 4 R-2 1/8 OD x 1/4 WALL TUBE x 14'-8 MK 2F
- 4 R-2 1/8 OD x 1/4 WALL TUBE x 7'-11 3/4 MK 2G
- 4 R-2 1/8 OD x 1/4 WALL TUBE x 14'-5 3/4 MK 2H
- 8 R-2 1/8 OD x 1/4 WALL TUBE x 13'-9 1/2 MK 2K
- 4 R-2 1/8 OD x 1/4 WALL TUBE x 7'-6 1/2 MK 2L

- 52-ALCOA Post # 2003
- 12-3 3/4 φ x 3/8 ALUM PL. END CAPS
- 12-2 5/8 φ x 3/8 ALUM PL. END CAPS
- 240-1/2 φ x 8" STAINLESS STEEL BOLTS, HEX NUTS, & WASHERS. 1/2" THREADED
- 209-STAINLESS STEEL INSERTS (SEE DETAIL)

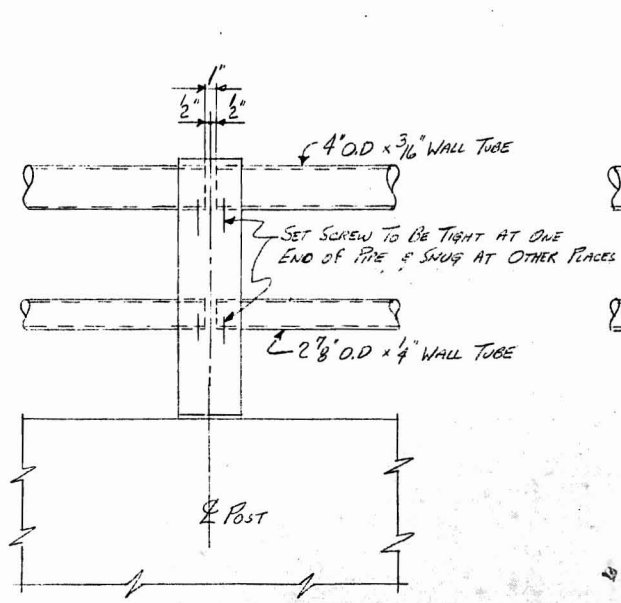
APPROVED NOT APPROVED
 REVISED AND RESUBMIT
 Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and coordinated at the job site for information that pertains solely to the fabrication process or to techniques of construction, and for coordination of the work of all trades.
 BY: *M. B. B.*
 DATE: 10-21-63
 RALPH WHITEHEAD & ASSOCIATES
 CONSULTING ENGINEERS
 CHARLOTTE, NORTH CAROLINA

NOTES:

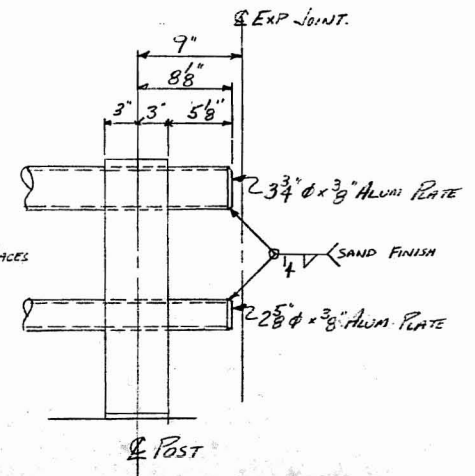
1. FOR GENERAL NOTES SEE DETAIL SH1 (5/31/64)
2. FOR CURVED RAILING SEE SH1, CR-5



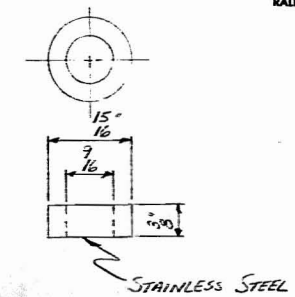
ANCHOR BOLT LOCATION DETAIL



TYPICAL SECTION AT RAIL JOINT

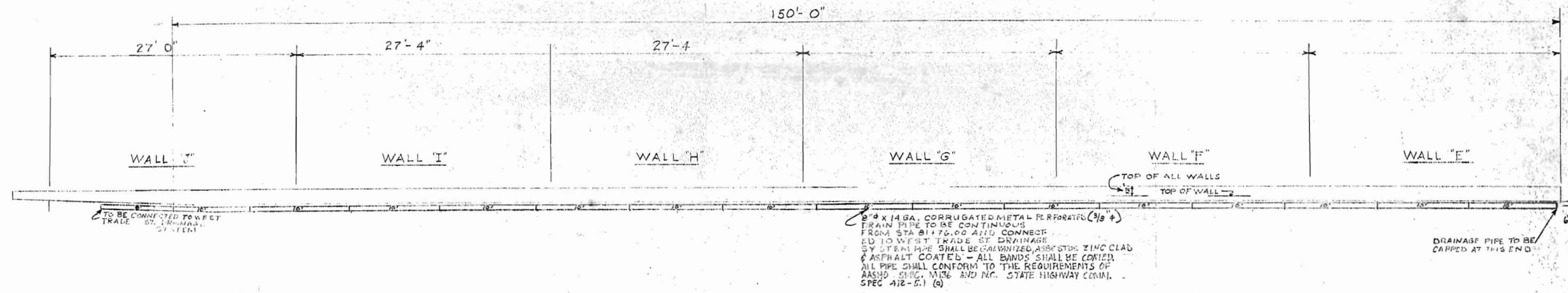


TYPICAL POST AT EXP JOINT

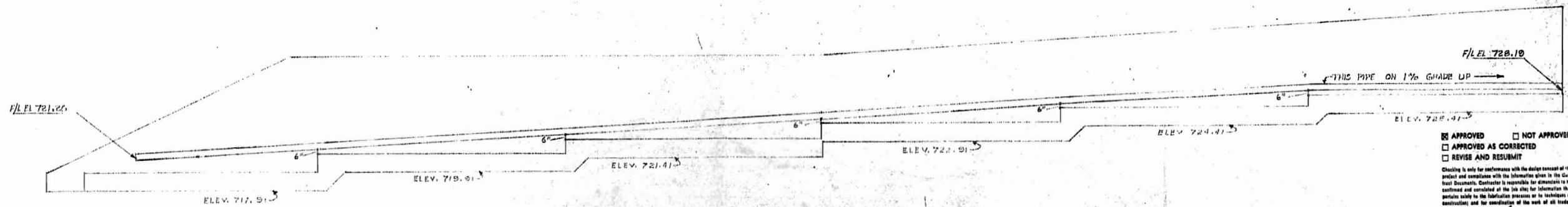
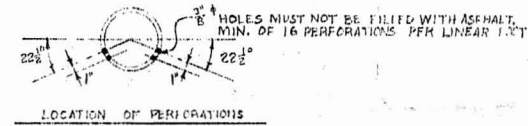


POST ANCHOR BOLT HOLE INSET

CITY OF CHARLOTTE, N.C. WEST TRADE STREET UNDERPASS		
SCALE: 7/63	APPROVED BY:	DRAWN BY: RWH
DATE: 7-63	REVISIONS:	REVISIONS:
SAUNDERS OIL COMPANY 1301 SCHOLC ST. - RICHMOND, VA		
JOB: SAUNDERS OIL CO. No. 5137A		DRAWING NUMBER: 2 of 3



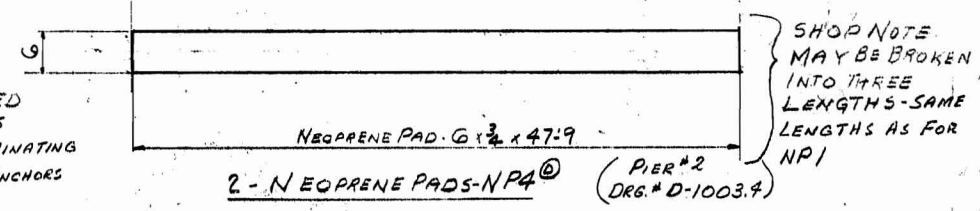
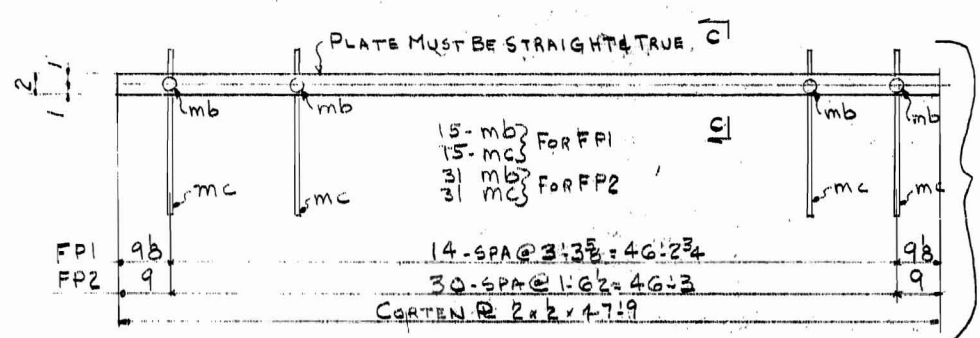
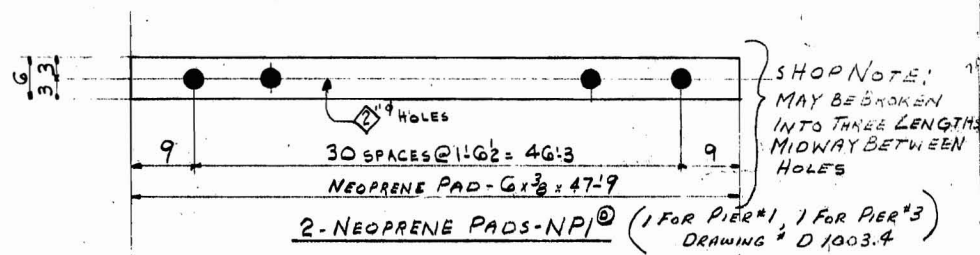
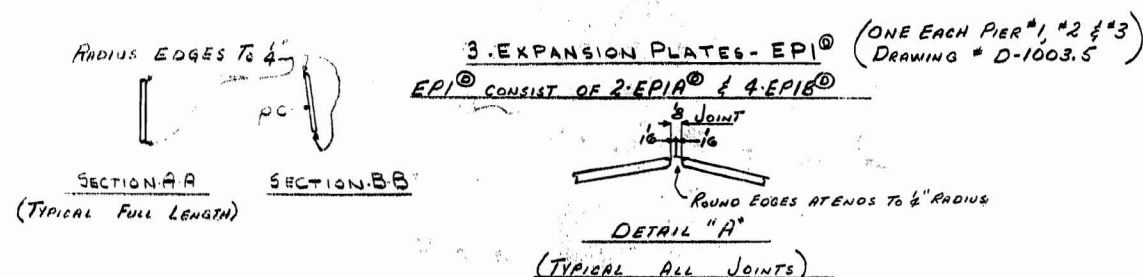
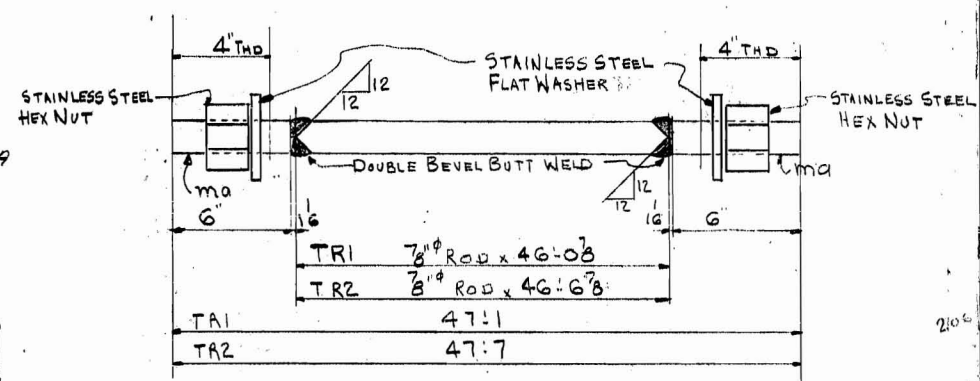
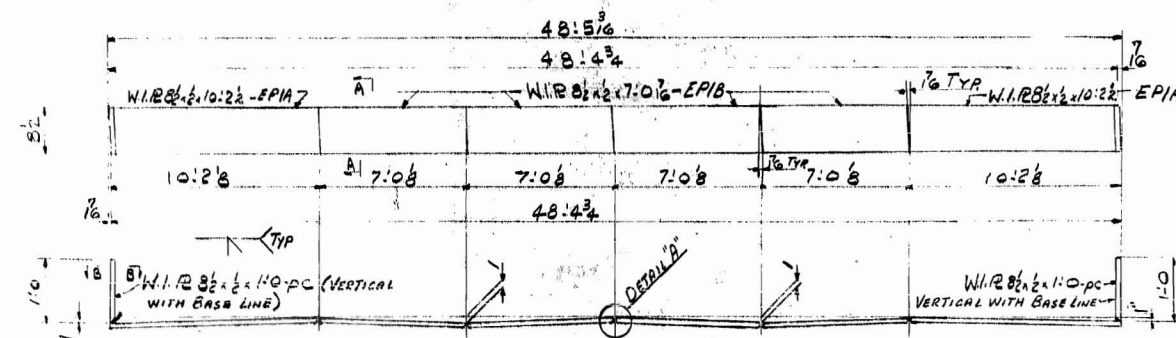
PLAN



BACK ELEVATION

APPROVED NOT APPROVED
 APPROVED AS CORRECTED
 REVISE AND RESUBMIT
 Checking is only for conformance with the design concept of the project and compliance with the information given in the General Documents. Contractor is responsible for dimensions to be furnished and completed of the job site for fabrication and erection prior to the fabrication process or to techniques of construction; and for coordination of the work of all trades.
 BY W.P.B.
 DATE 6-12-63
 WHITEHEAD & ZICKEL
 CONSULTING ENGINEERS
 CHARLOTTE, NORTH CAROLINA

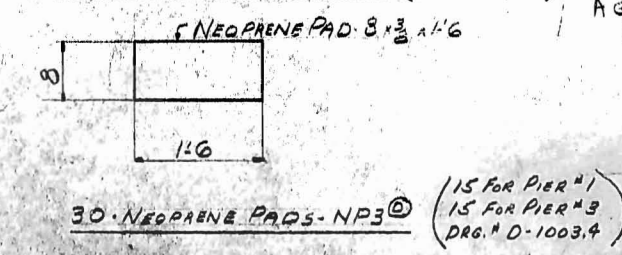
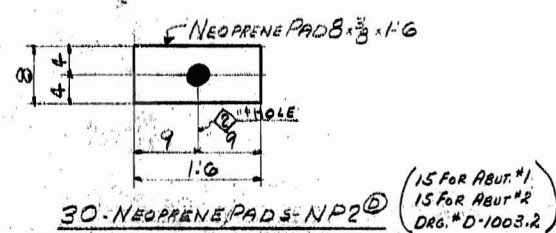
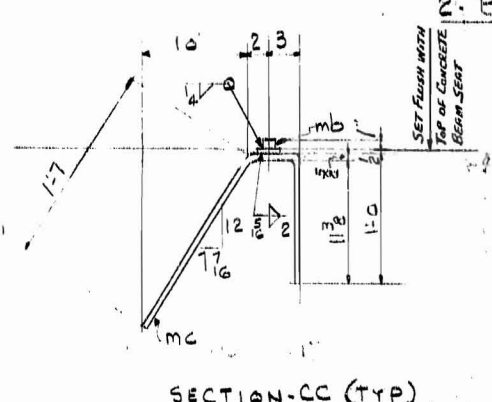
B.M. NO.		ORDER NO. 09-8381	
REVISION		REPUBLIC STEEL CORPORATION	
NO.	DATE	CULVERTY DIVISION	
1		CITY OF CHARLOTTE	
2		WEST TRADE STREET-CHESAPEAKE PAPER CO.	
3		DRAINAGE FOR RETAINING WALLS THROUGH	
4		WEST SIDE GRADE CROSSING ELIMINATION	
5		DRAINAGE	
6		DRAINAGE	
7		DRAINAGE	
8		DRAINAGE	
9		DRAINAGE	
10		DRAINAGE	



2 - BEARING PLATES - FP1 (1 FOR ABUT. A, 1 FOR ABUT. B) DRAWING # D-1003.2
2 - BEARING PLATES - FP2 (1 FOR PIER #1, 1 FOR PIER #3) DRAWING # D-1003.3

NOTE: NEOPRENE ELASTOMERIC BEARING PADS
THE MATERIAL SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF AA SHO SPECIFICATION T2-58. ALL BEARING PADS SHALL BE MOLDED OR CUT FROM A SHEET MOLDED OF HIGH GRADE NEW NEOPRENE SYNTHETIC RUBBER COMPOUND HAVING THE FOLLOWING PHYSICAL PROPERTIES:

HARDNESS (INDENTATION) ASTM D676-55T 70 ± 5
TENSILE STRENGTH ASTM D412-51T 2700 PSI (MIN.)
MODULUS AT 100% ASTM D412-51T 475 PSI (MIN.)
ELONGATION ASTM D412-51T 325% (MIN.)
TEAR STRENGTH ASTM D624-54 (DIE B) 275 LBS. PER INCH OF THICKNESS (MIN.)
COMPRESSIVE SET ASTM D395-55 35% (MAX.)
METHOD B: 22 HRS @ 158° F
CHANGE OF HARDNESS (INDENTATION) AGED 70 HRS @ 212° F +15 (MAX.)



APPROVED [] NOT APPROVED []
APPROVED AS CORRECTED []
REVISE AND RESUBMIT []
Checked by R.J. Whitehead
DATE April 19, 1963
WHITEHEAD & ZICKEL
CONSULTING ENGINEERS
CHARLOTTE, NORTH CAROLINA

PRINTS				JOB	LOCATION	CONTRACTOR	ARCHITECT
BY	APPROVAL	ERECTION	SHOP				
			4/16/63	NEST TOWER STREET IN DENVER	CHARLOTTE, N.C.	BLITHE BROTHERS CO.	WHITEHEAD & ZICKEL
HOLDERS NOTED UNLESS NOTED				FIELD CONNECTIONS			
SHOP PAINT: None				INSPECTION BY:			
DATE				REVISIONS			
NO.				DESCRIPTION			
DATE				DESCRIPTION			

MADE BY TRANKS
CHECKED BY REV DATE
CONTRACT 62-387 SHEET 51 D OF 51 D

62-387		S1 D						
NO. PCB	MATERIAL	LENGTH FT. IN.	MARK	NOTES	ITEM	CUT FROM	STUB	WEIGHT
3	EXPANSION PLATES - EPI (CONSIST OF 6-EPIA & 12-EPIB)							
12	W.I.R.B. #2 7:0 6 EPIA							12:5 12:45
6	W.I.R.B. #2 10:2 1/2 EPIA							11:0
6	W.I.R.B. #2 1:0 pc							25
64	3/8" RODS 46:0 3							6:0 14
16	3/8" RODS 46:6 3							1:11
160	3" STAINLESS STEEL PADS 16" x 16"							1:65
160	STAINLESS STEEL HEX NUT 1 1/2" x 1 1/2"							2:0
160	STAINLESS STEEL WASHER 3/4" x 1 1/2"							4:1
2	CORTEX 2 x 2 47:9							4:12
2	CORTEX 2 x 2 47:9							4:11
92	1/2" CORTEX 1 mb							4:4
92	#5 RODS 3:0 mb							2:7
2	PADS G 1/2 47:9							2:4
2	PADS G 1/2 47:9							2:10
30	PADS 8 x 3 1:6							2:11
30	PADS 8 x 3 1:6							2:11

SHOP INSPECTION REQUIRED
DO NOT PAINT NEOPRENE PADS.

Prints rec'd with letter 4-19-63
Correspondence File No. B-13-B-6

SHOP DRAWING BY [] CHECKED BY []

REF DWG NO. D-1003.1 THRU D-1003.9