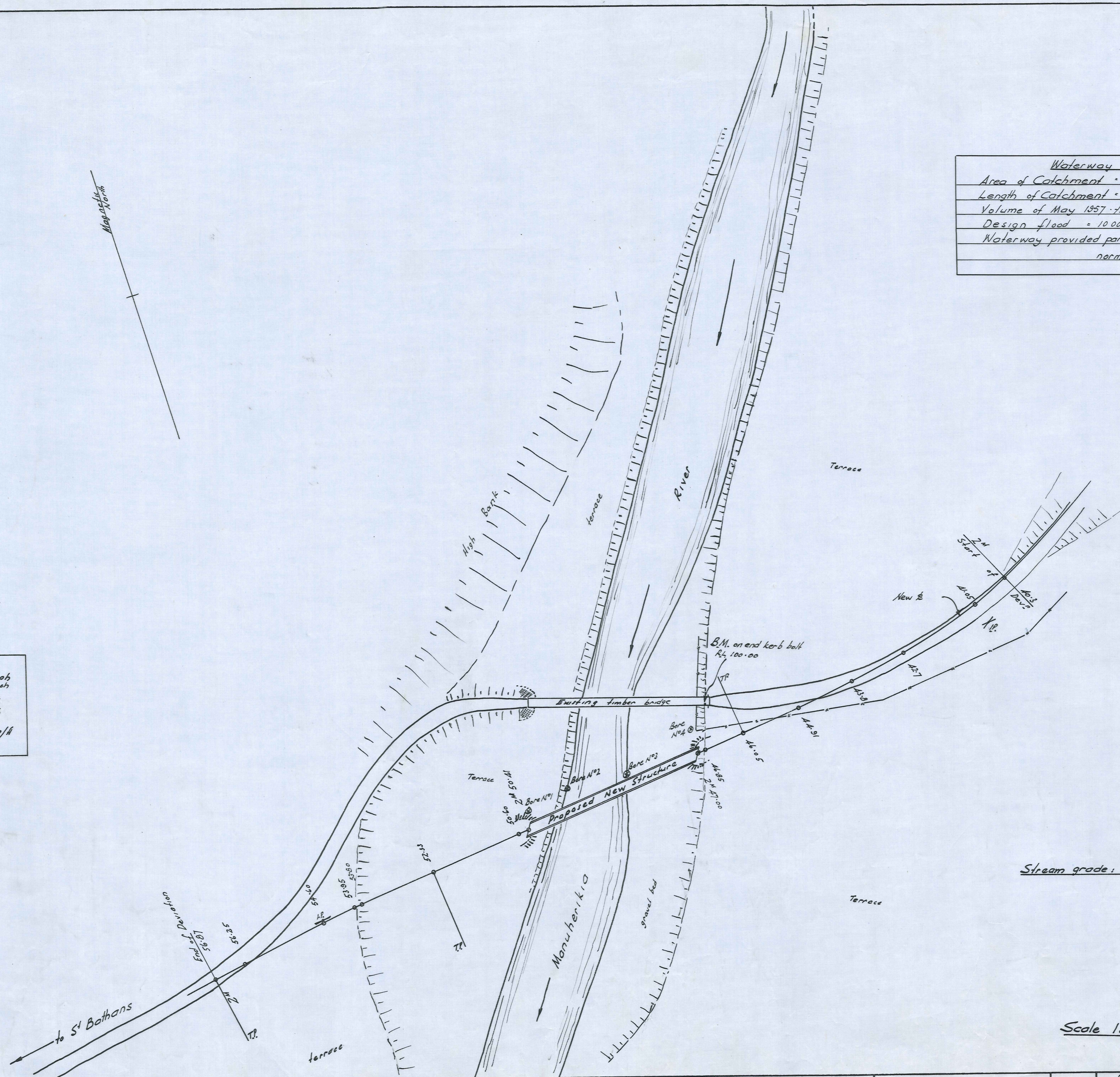


Mag. N. North

Waterway Data	
Area of Catchment	155 sq. mi. = 39,000 ac
Length of Catchment	28 mi. Grade at bridge = 0.051
Volume of May 1957 flood	8000 cusecs
Design flood	10000 cusecs $v = 9.5$ ft/sec
Waterway provided parallel to skew	1370 sq. ft.
normal to stream	1050 sq. ft.

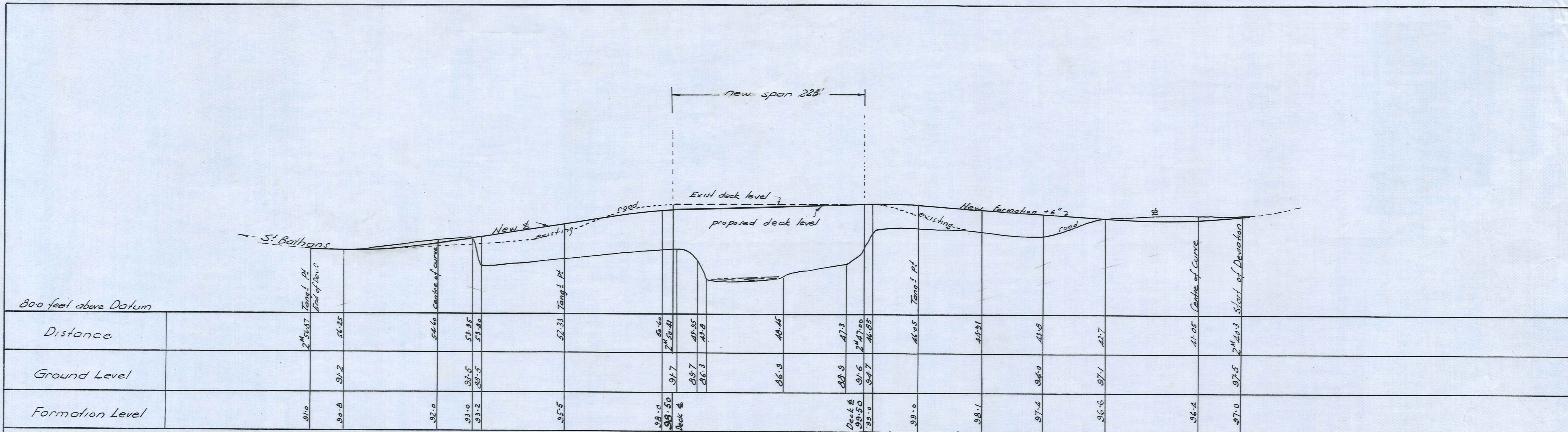
$\Delta = 5^\circ$
SV = 50 mph
AO = 2.27 ch
AX = 3.3 k
R = 26 ch
SE = 0.6 m/ft
EW = -

$\Delta = 30^\circ$
SV = 45 mph
AO = 5.00 ch
AX = 4.43 k
R = 9.2 ch
SE = 1.3 m/ft
EW = 2 ft

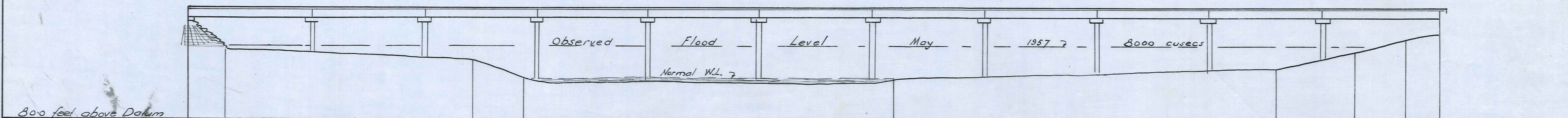


Stream grade: 5.1 ft per 1000 ft

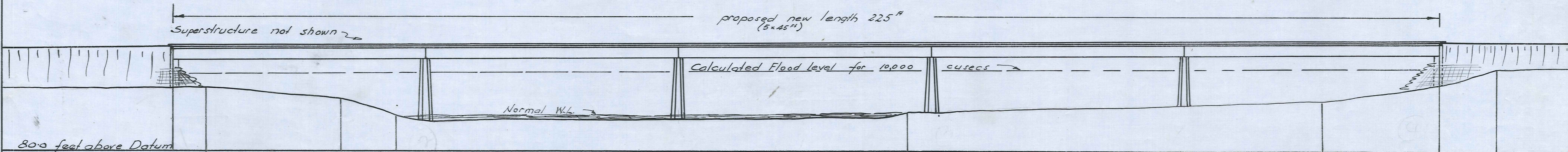
Scale 1 ch to 1"0



Long^t Section of Bridge & Approaches
 Scales: Horiz 1^{ch} to 1ⁱⁿ Vert 10^{ft} to 1ⁱⁿ

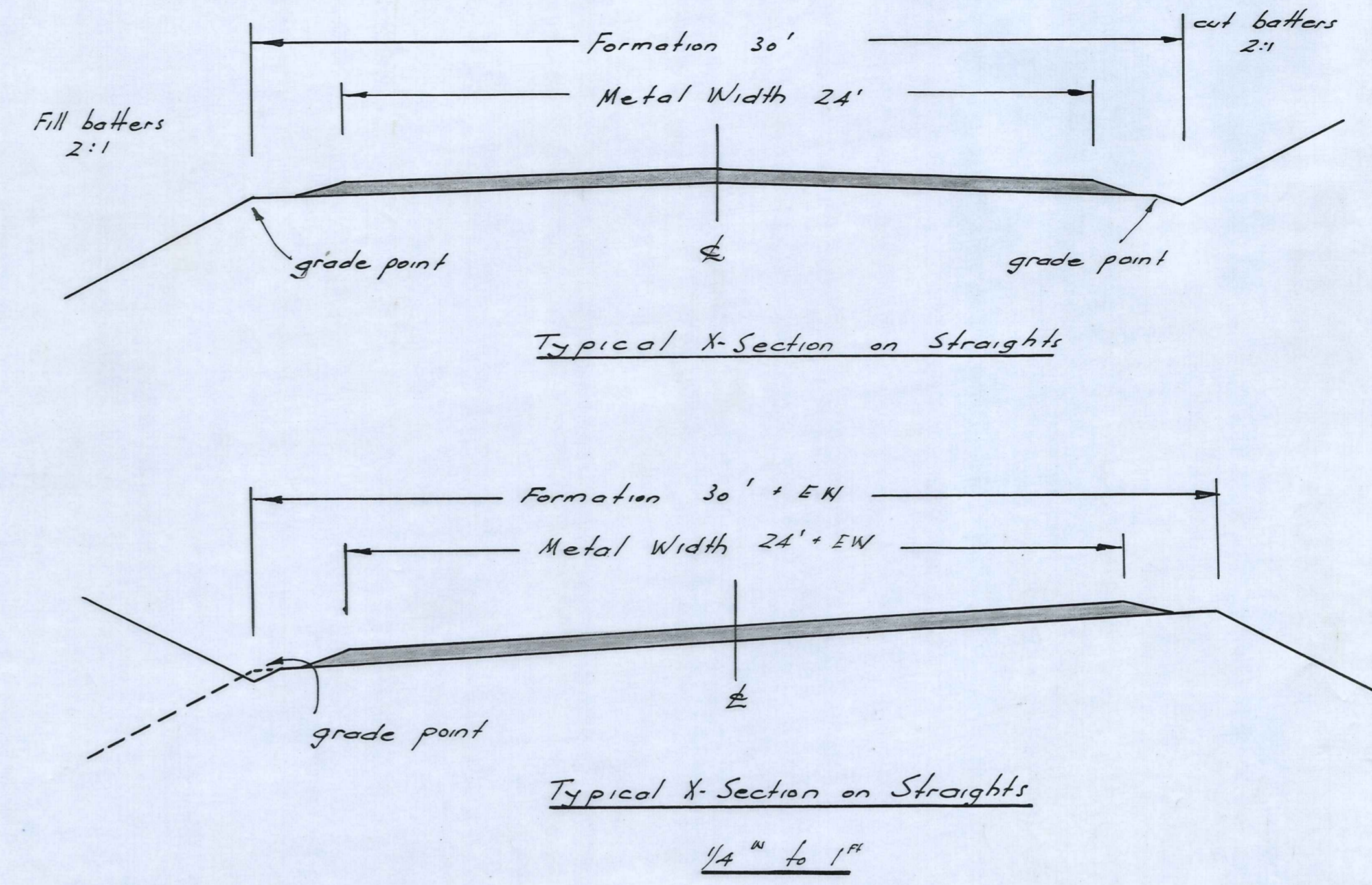
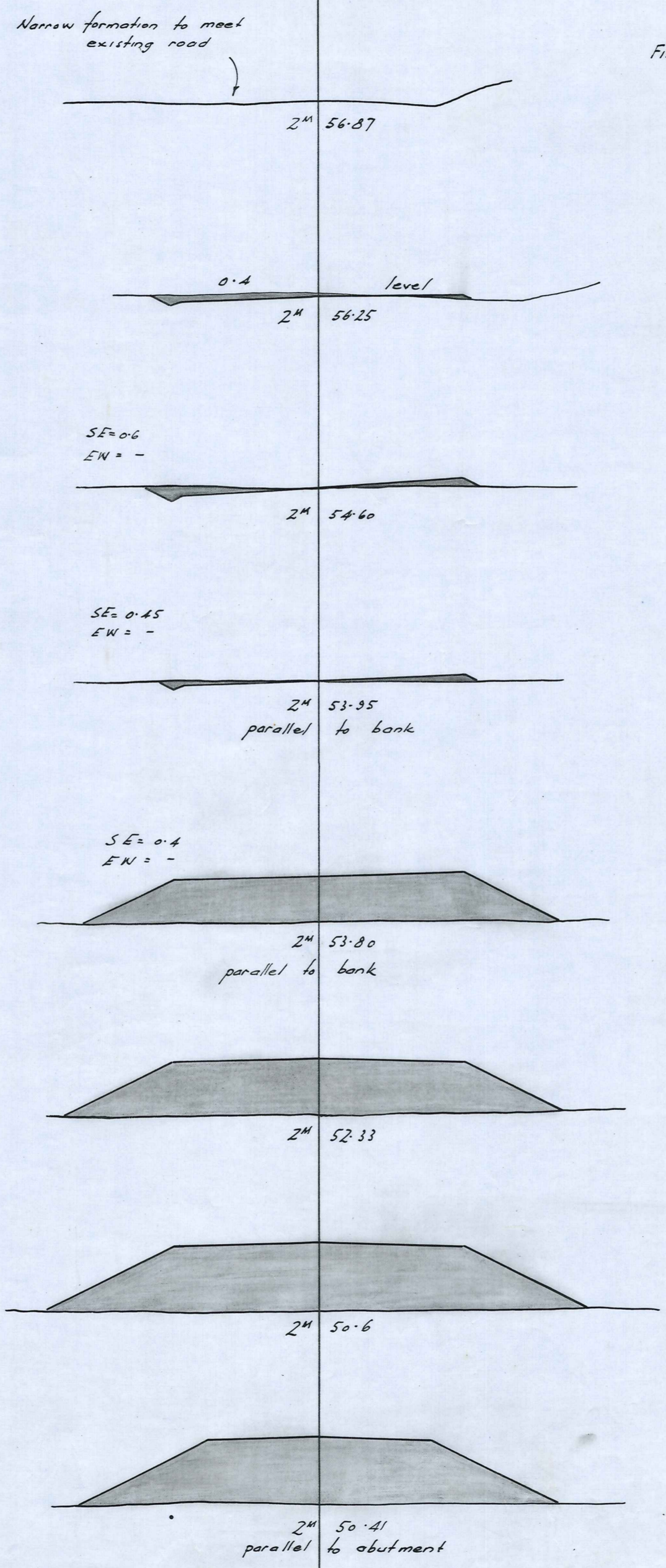
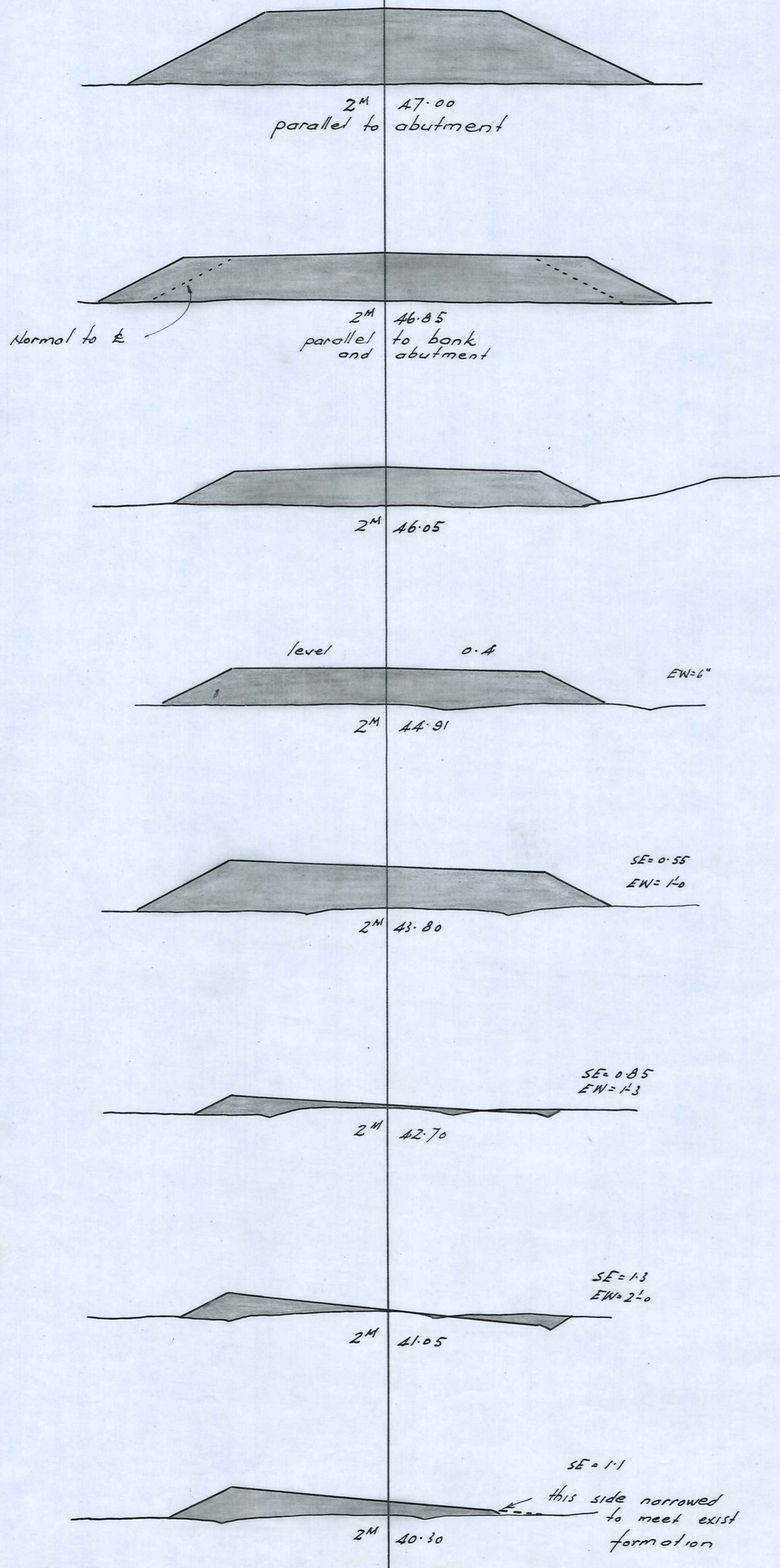


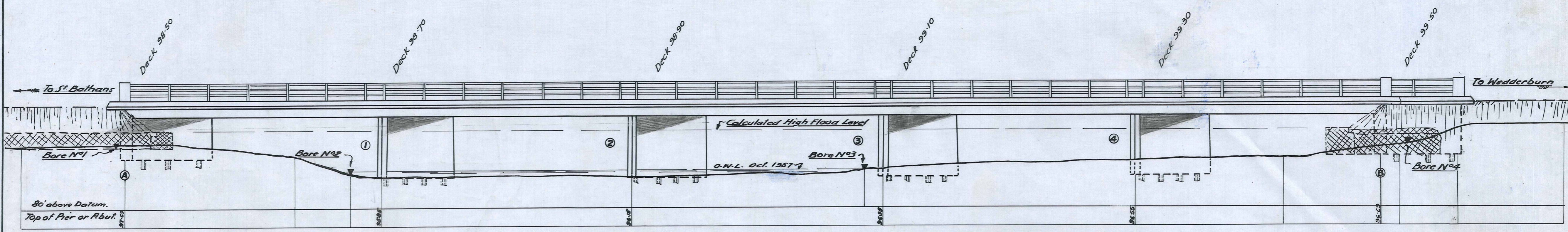
Natural Section of Existing Bridge
 Skew 15°



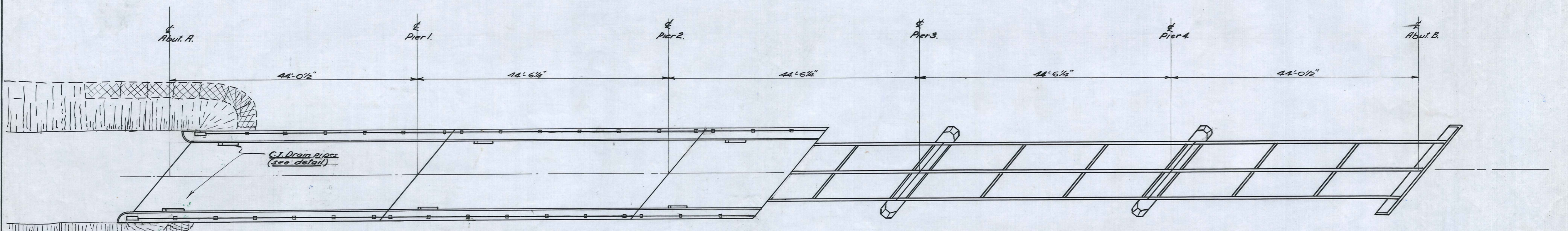
Natural Section of Proposed Site (Normal to new structure)
 Skew 40°

Scale 10^{ft} to 1ⁱⁿ Horiz & Vert.



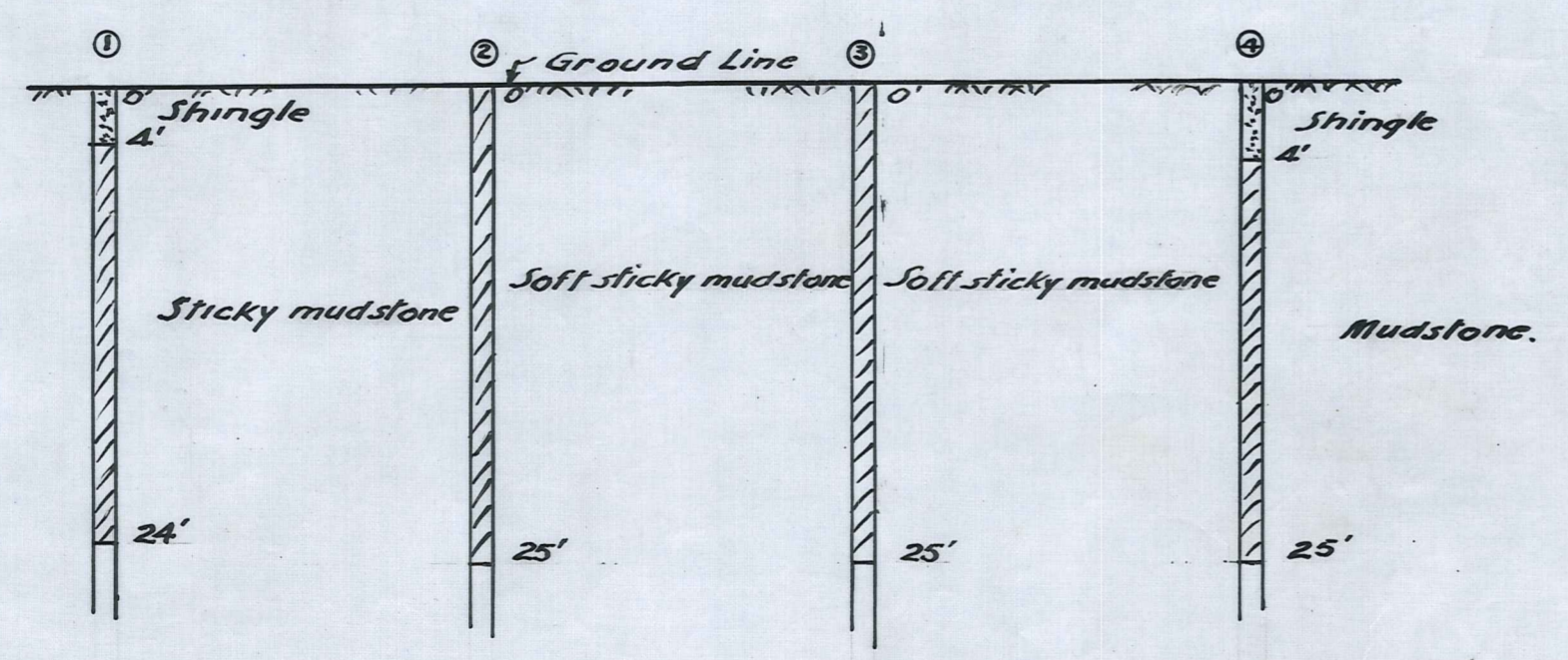


— DOWNSTREAM ELEVATION OF BRIDGE —

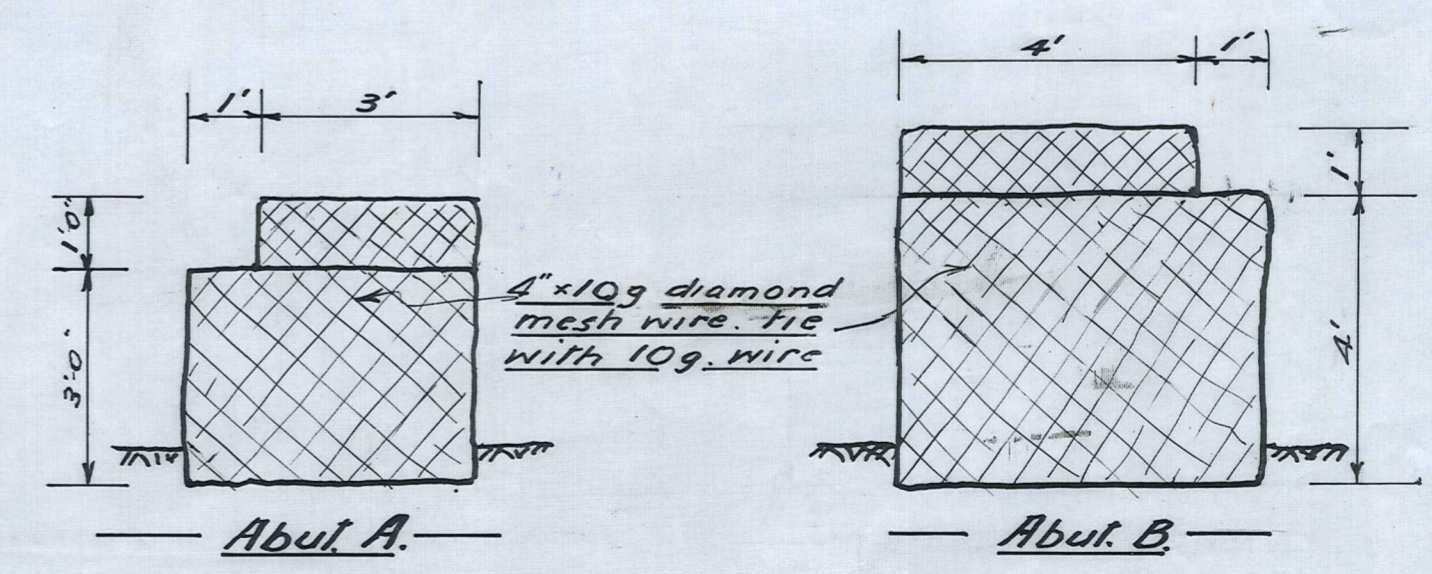


— HALF PLAN OF DECK —

— HALF PLAN - DECK REMOVED —



— BORE LOG —
Recorded Oct. 1957 - Taylor Drilling Co.

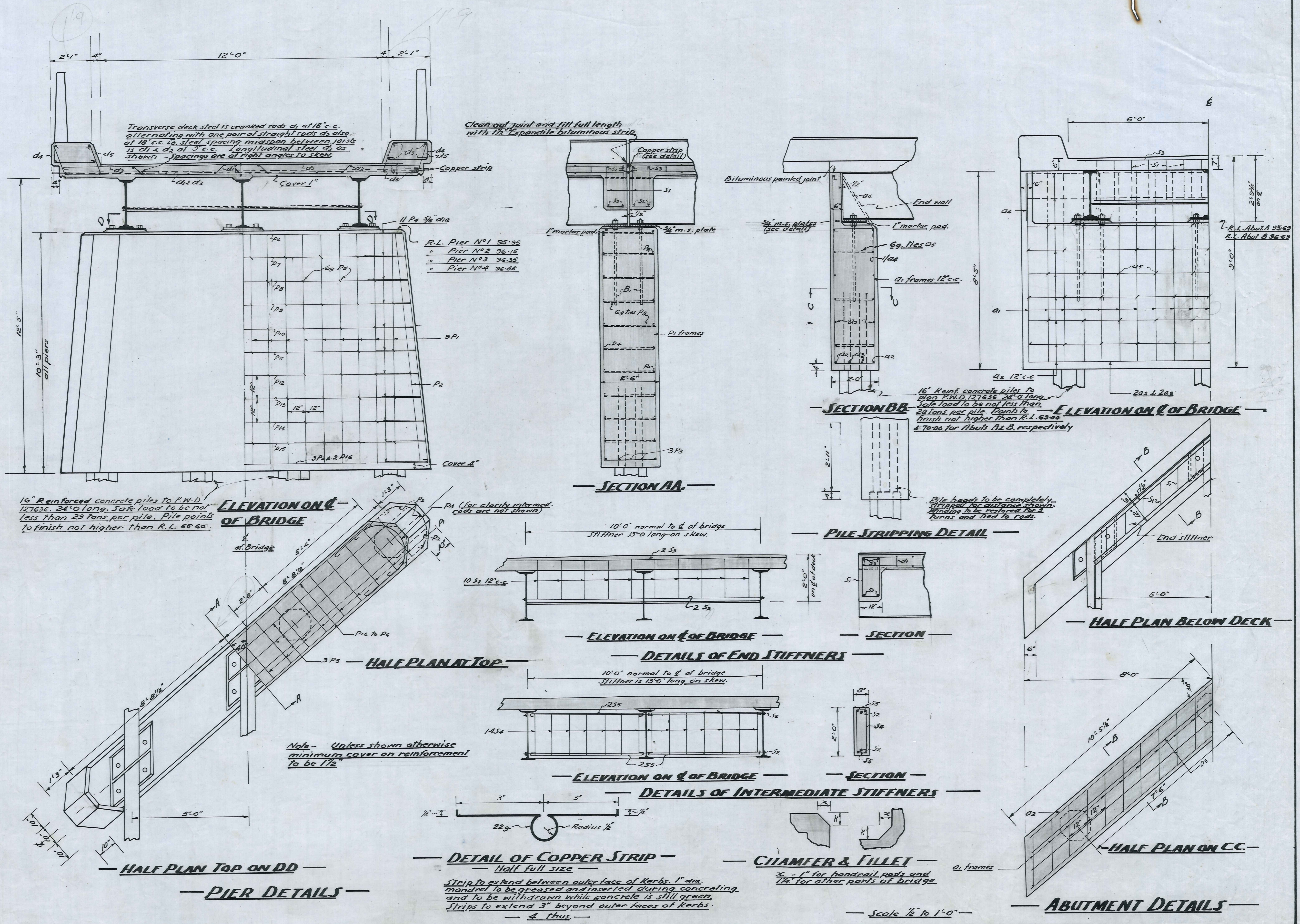


— STONE BOLSTER DETAIL —

Stone bolstering to be carried back along approach fills 20 feet from each corner of abutments.

— LOADING H.20.S16.44. —

Scale 10 feet to inch



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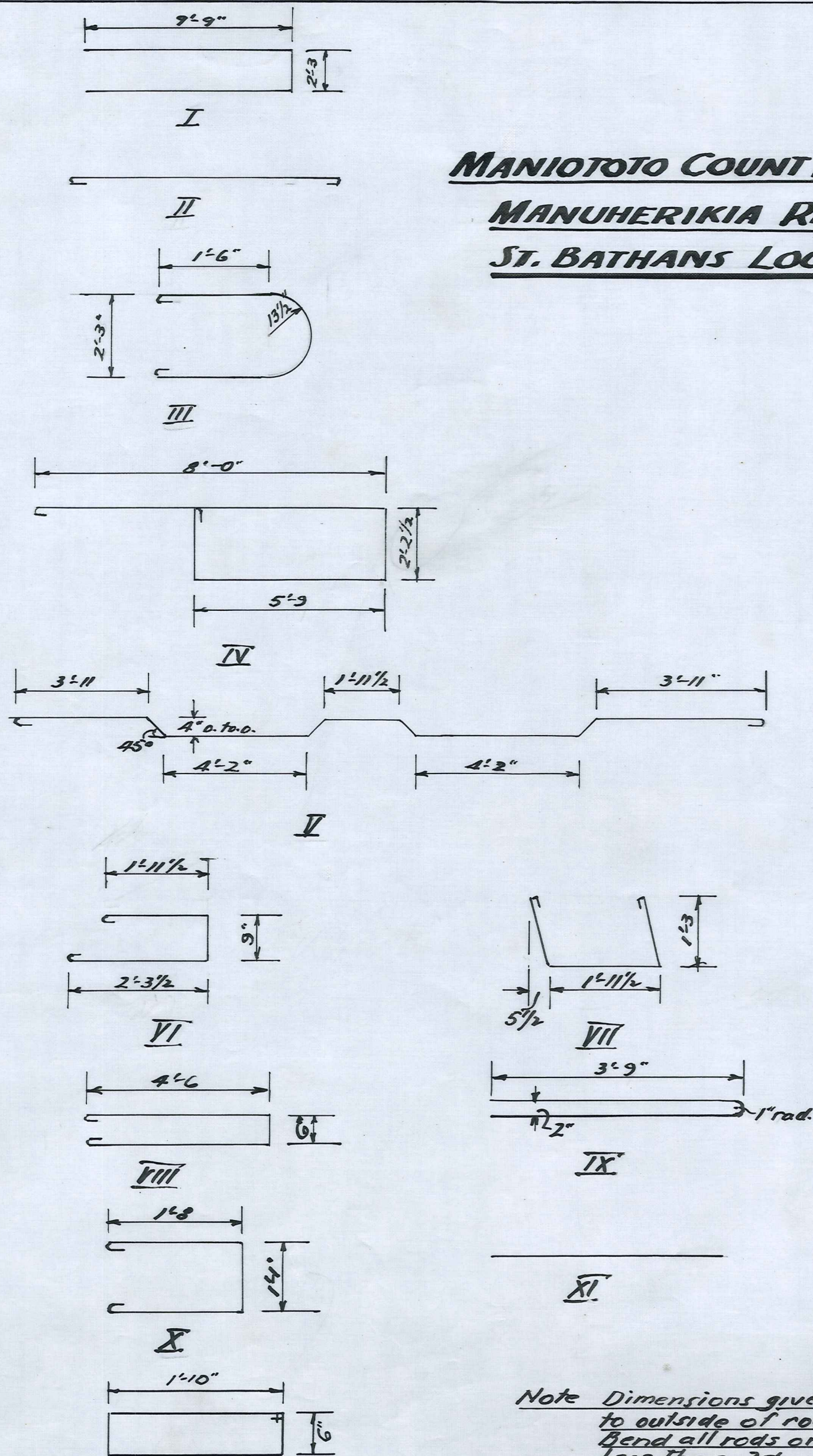
MANUHEREKIA RIVER BRIDGE
ST BATHANS LOOP MH 226

DUFFILL, WATTS & KING		NAME	DATE	JOB NO.
DESIGNED BY	L.R. Fairman	1.2.1937		2790/5
CHECKED BY	W. Duffill			
CONTRACT NO.				
CIVIL ENGINEERS AND SURVEYORS DUNEDIN and INVERCARGILL		DATE	FILE NO.	
		1.2.1937	F.B.K.	5/6/38

SCHEDULE OF REINFORCEMENT

Rod	Dia.	No	Cut Length	Shape	Location
P ₁	5/8	72	21'-9"	I	Piers
P ₂	5/8	24	10'-9"	II	"
P ₃	1/8	12	20'-8"	II	"
P ₄	1/2	88	7'-3"	III	"
P ₅	6/9	304	4'-9"	XI	Bend on site
P ₆	1/2"	8	16'-3"	II	"
P ₇	"	8	16'-6"	"	"
P ₈	"	8	16'-9"	"	"
P ₉	"	8	17'-0"	"	"
P ₁₀	"	8	17'-3"	"	"
P ₁₁	"	8	17'-6"	"	"
P ₁₂	"	8	17'-9"	"	"
P ₁₃	"	8	18'-0"	"	"
P ₁₄	"	8	18'-3"	"	"
P ₁₅	"	8	18'-6"	"	"
P ₁₆	"	8	18'-9"	"	"
B ₁	1/8"	60	4'-4"	detail	H.D. bolts
A ₁	5/8"	42	19'-2"	IV	Abutments
A ₂	1/2"	30	21'-0"	II	"
A ₃	1/8"	4	21'-9"	II	"
A ₄	1/2"	4	5'-0"	II	"
A ₅	6/9	132	5'-0"	XI	"
d ₁	5/8"	112	21'-0"	V	Deck
d ₂	"	234	20'-7"	II	"
d ₃	"	240	24'-6"	II	"
d ₄	3/8	464	5'-7"	VI	"
d ₅	2/8	460	5'-1"	VII	"
H ₁	5/8	8	10'-6"	VIII	Posts
H ₂	6/9	28	5'-2"	II	" bend on site
H ₃	3/8	132	7'-9"	IX	"
S ₁	1/2	100	5'-2"	X	Stiffners
S ₂	7/8	40	13'-6"	XI	Screw down 3" each end & provide 7/16 hex nuts and two level washers per rod. To suit 40° skew.
S ₃	1/2	20	13'-6"	XI	Stiffners
S ₄	3/8	140	5'-3"	XIII	"
S ₅	1/2	80	6'-6"	II	"

Shape Diagrams



MANIOTOTO COUNTY COUNCIL
MANUHERIKIA RIVER BRIDGE
ST. BATHANS LOOP M.H. 226

Note Dimensions given are outside to outside of rods
 Bend all rods on mandrel of not less than 3d.
 Diagrams above are not to scale

2790/7