TO:

SUPERSEDED BY EI 77-031
EFFECTIVE 5/1/1977

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: STANDARD DETAILS FOR HIGHWAY BRIDGES, REVISION TO

Subject Code: 7.35-1

Sup 77-30

Distribution: ☐ Main Office ☐ Regions ☒ Special

Code: EI 75-27

Date: 4/10/75

Supersedes:

APPROVED: R. M. Lamy

Deputy Chief Engineer (Structures)

The attached pages are to be inserted under Guideline Drawings in the Manual.

GLD-G4 - Revised - Continuous Welded Plate Girder - Haunch Table - Camber Diagram and Pouring Sequence - Added

GLD-G3 - Added - Welded Plate Girder Details - Straight Girder

GLD-G6 - Added - Framing Plan and Bottom Lateral Connectors - Curved Girder

GLD-G7 - Added - Welded Plate Girder Details - Curved Girder

GLD-MB1 - Added - Curved Bridge Layout and Open Wingwall Elevation

GLD-S3 - Added - Framing Plan and Slab Reinforcement - Skews over 30^{o}

GLD-S4 - Added - Transverse Section and Slab Reinforcement - Curved Structure.

FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	NEW YORK			
CAPITAL PROJECT IDENTIFICATION NO.				

Designer/Detailer: Actual location of Inflection Points to be determined by design.

HAUNCH TABLE		℄ BRGS. ABUTMENT	0.1L_1	0.2L_1	0.3L_1	0.4L_1	0.5L_1	0.6L_1	D.L. INFL. POINT	0.7L_1	0.8L_1	0.9L_1	℄ BRGS. PIER	0.1L_2	0.2L_2	0.3L_2	D.L. INFL. POINT	0.4L_2	0.5L_2	0.6L_2	0.7L_2	0.8L_2	0.9L_2	℄ BRGS ABUTMENT
Girder 1	Ⓐ Req'd bottom of Slab Elevation																							
	Ⓑ Top of Steel Elev. (Field Meas.)																							
	Ⓒ = Ⓐ − Ⓑ																							
	Ⓓ Concrete + S.D.L. Deflection																							
	Ⓔ Depth of Haunch required = Ⓒ + Ⓓ (ft)																							
Girder 2	Ⓐ Req'd bottom of Slab Elevation																							
	Ⓑ Top of Steel Elev. (Field Meas.)																							
	Ⓒ = Ⓐ − Ⓑ																							
	Ⓓ Concrete + S.D.L. Deflection																							
	Ⓔ Depth of Haunch required = Ⓒ + Ⓓ (ft)																							
Girder 3	Ⓐ Req'd bottom of Slab Elevation																							
	Ⓑ Top of Steel Elev. (Field Meas.)																							
	Ⓒ = Ⓐ − Ⓑ																							
	Ⓓ Concrete + S.D.L. Deflection																							
	Ⓔ Depth of Haunch required = Ⓒ + Ⓓ (ft)																							
Girder 4	Ⓐ Req'd bottom of Slab Elevation																							
	Ⓑ Top of Steel Elev. (Field Meas.)																							
	Ⓒ = Ⓐ − Ⓑ																							
	Ⓓ Concrete + S.D.L. Deflection																							
	Ⓔ Depth of Haunch required = Ⓒ + Ⓓ (ft)																							

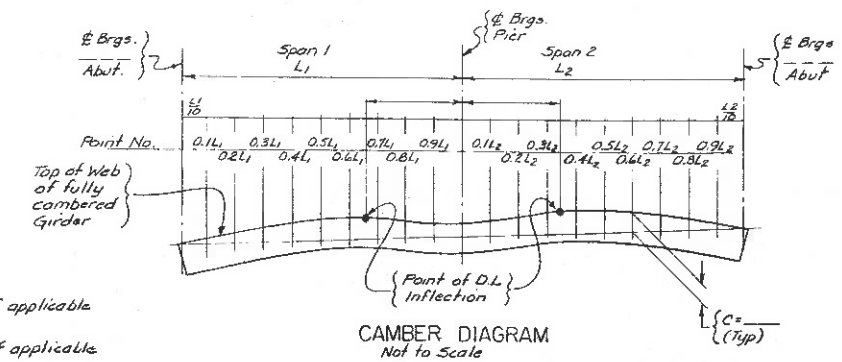
¼" or ⅜" Typ.

Designer:
The table above is shown for 2 span continuous girders. The table may be expanded for 3 span & 4 span continuous girders.

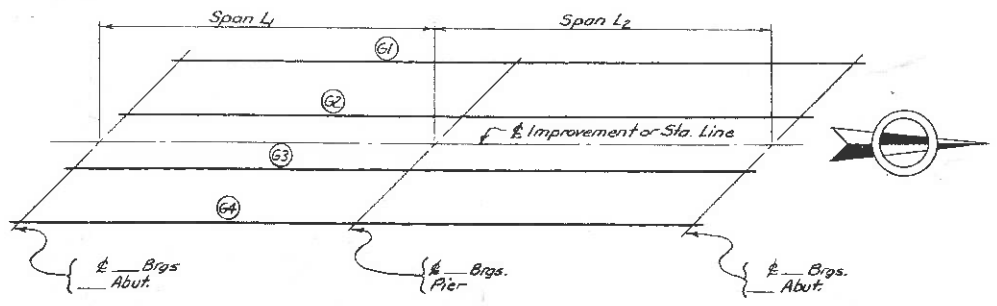
DESIGN LOAD TABLE / GIRDER			
	UNIT	LOAD/FT	
D.L.	Slab	____ K/ft.	
	Haunch	____ K/ft.	
	Girder	____ K/ft.	
	S.I.P. Forms	____ K/ft.	← If applicable
	Diaphragms	____ K/ft.	
	Utilities	____ K/ft.	← If applicable
	Total	____ K/ft.	
S.D.L.	Safety or Sidewalks	____ K/ft.	
	Railing or Parapet	____ K/ft.	
	Future W.S.	____ K/ft.	
	Total	____ K/ft.	

Designer/Detailer: This table shall be given to the nearest one-thousandth of a Kip.

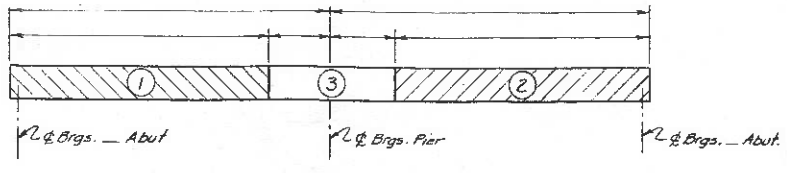
Assumed Live Load – (use applicable loading, i.e. H320-44)



CAMBER DIAGRAM
Not to Scale



GIRDER LAYOUT PLAN
Not to Scale



SUGGESTED POURING SEQUENCE
Not to Scale

Notes:
For additional tables see GLD-G5

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SAMPLE DETAIL – SUPERSTRUCTURE

HAUNCH TABLE
WELDED ℄ GIRDER

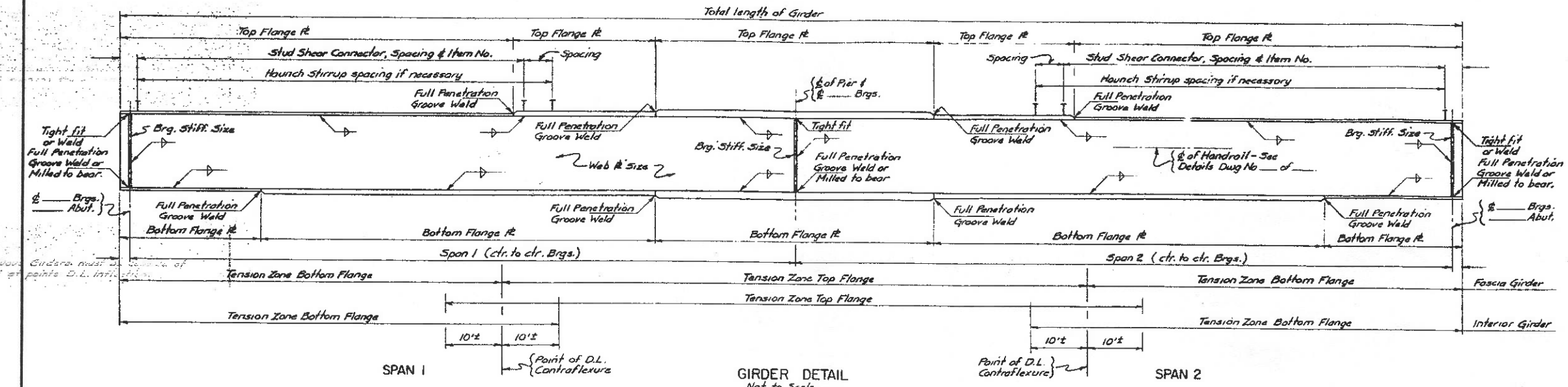
CONTINUOUS SPANS

DRAWING NO. GLD-G4

REVISED APRIL 1975

FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	NEW YORK			

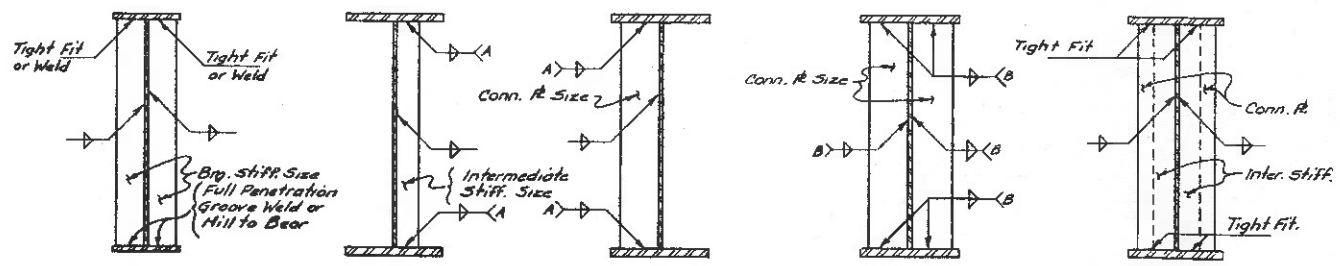
CAPITAL PROJECT IDENTIFICATION NO.



GIRDER DETAIL
Not to Scale

Detailer:
If the stud spacing is different for each Girder a table such as the one shown on GLD-G1 may be used.
If the stud spacing is similar for each Girder the spacing may be shown on Girder Detail as indicated.
Always indicate the size of fillet weld to be used.
Consult "New York State Steel Construction Manual" and "Standard Details for Highway Bridges" for weld size to plate thickness tables, types of welds and their appropriate location.
Always indicate type(s) of steel to be used.

Designer:
Continuous Girders must be capable of being spliced at points D.L. inflection.



BRG. STIFF. | INTERMEDIATE STIFF. | CONN. ℄ - FASCIA GIRDER | CONN. ℄ - INTERIOR GIRDER | AT POINT OF D.L. CONTRAFLEXURE

GIRDER SECTIONS
Not to Scale

Welding Note "A"
No welding of stiffeners or connection plates to tension flanges. Plates shall be "tight fit."
Welding Note "B"
All connection plates used in pairs shall be welded to the web and be placed paint light against both flanges. This may be accomplished by cutting the connection plates 3/4" short and then placing the connection plate tightly against the tension flange and welding the opposite end to the compression flange. Fitted connection plates shall not be driven in place with sufficient force to distort the flange, web or connection plates

Notes:
For Handrail Details see GLD-M51
For Stud Shear Connector Details see GLD-M51.
For Girder Tables see GLD-G4 & GLD-G5
For Schematic Girder Layout see GLD-G4
For details of Flange Width and Thickness Transition see GLD-M51.

Detailer:
Include this note.

Note to the Contractor:
Within the tension zones delineated, there shall be no welding permitted other than what is detailed on the plans. Welding for the attachment of forms, ties, etc. shall not be permitted.

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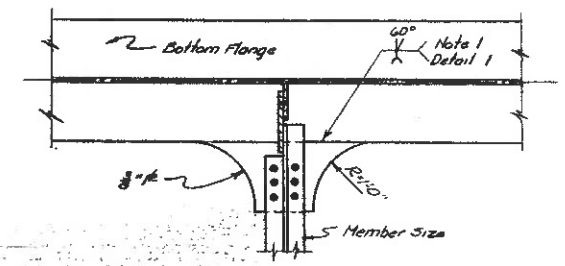
SAMPLE DETAIL — SUPERSTRUCTURE

WELDED ℄ GIRDER DETAILS
STRAIGHT GIRDER

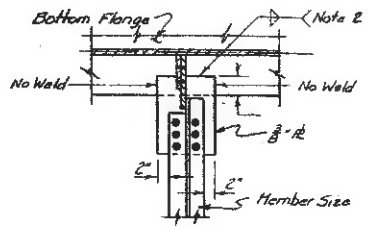
CONTINUOUS SPANS — DRAWING NO. GLD-G3

ADDED APRIL 1975

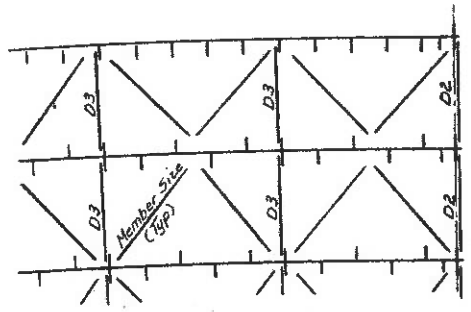
FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	NEW YORK			
CAPITAL PROJECT IDENTIFICATION NO.				



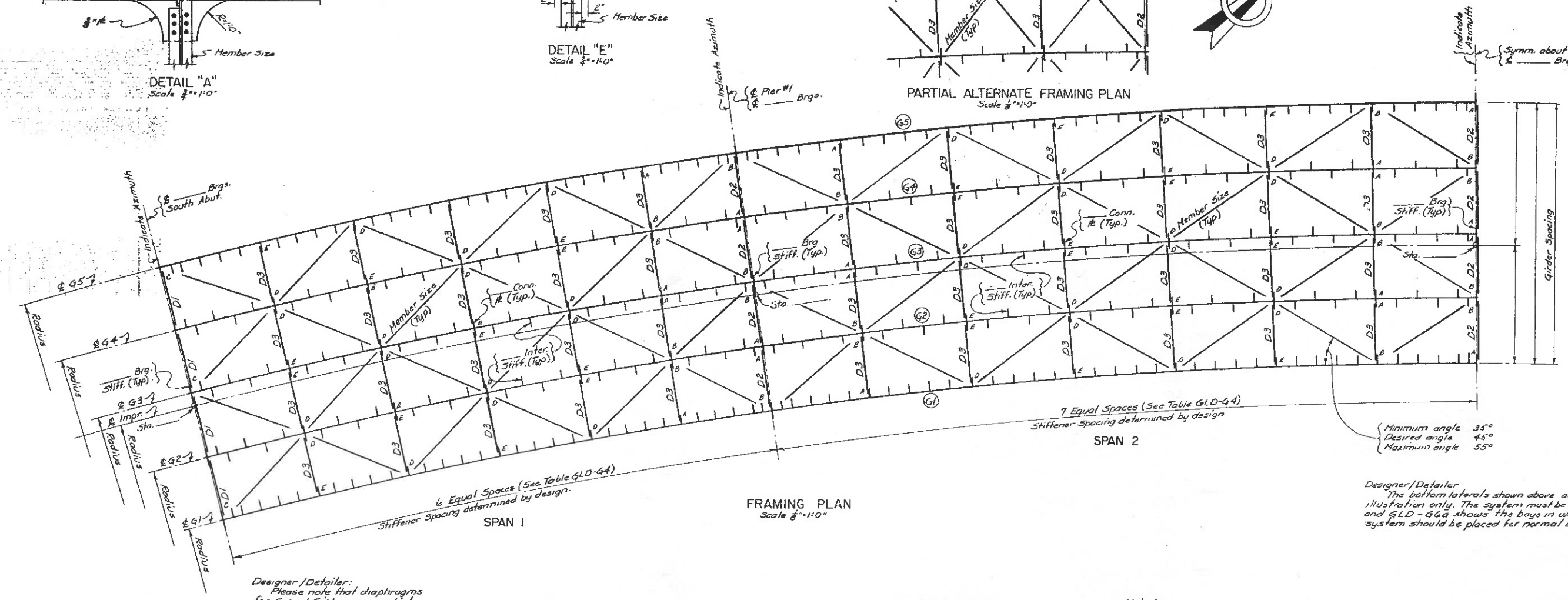
DETAIL "A"
Scale $\frac{3}{8}$"=1'-0"



DETAIL "E"
Scale $\frac{3}{8}$"=1'-0"



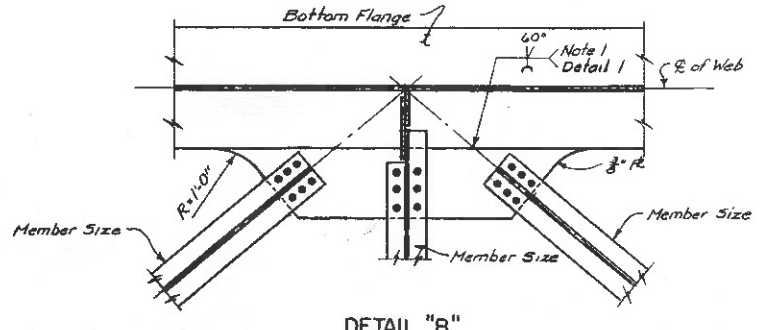
PARTIAL ALTERNATE FRAMING PLAN
Scale $\frac{1}{8}$"=1'-0"



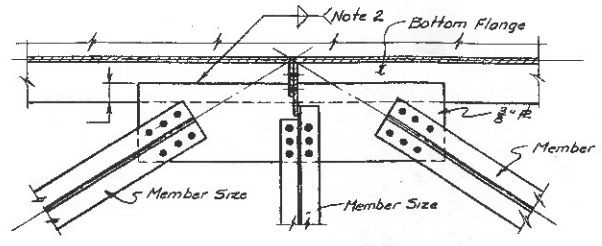
FRAMING PLAN
Scale $\frac{1}{8}$"=1'-0"

Designer/Detailer:
Please note that diaphragms for curved Girders are radial.

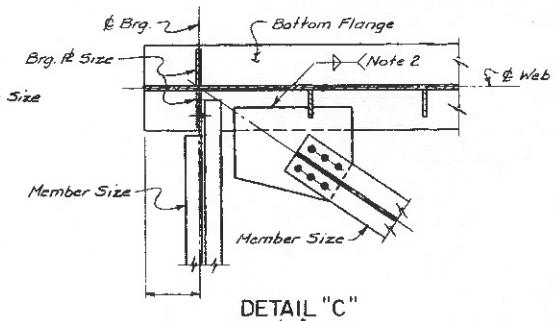
Designer/Detailer
The bottom laterals shown above are for illustration only. The system must be designed and GLD-G6a shows the bays in which the system should be placed for normal conditions



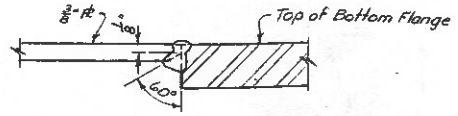
DETAIL "B"
Scale $\frac{3}{8}$"=1'-0"



DETAIL "D"
Scale $\frac{3}{8}$"=1'-0"



DETAIL "C"
Scale $\frac{3}{8}$"=1'-0"



DETAIL "1"
Not to Scale

Note 1:
The Gusset ℄ shall be prepared and welded as a single bevel groove weld as shown on Detail "1". It shall be then Air-Carbon-Arc gouged from the second side into sound weld metal and then welded as detailed. All welding shall be in the flat or downhand position using 250° minimum preheat and interpass temperatures.

Note 2:
Care shall be taken when welding lapped gusset plates to the flanges of the plate girders, espacially at the start and end of fillet welds to insure complete fusion at the root and that weld craters are properly filled. All welding shall be performed using 250° minimum preheat and interpass temperatures

Designer/Detailer
The type of lateral connection plates indicated are descriptive and the use of them is predicated upon the design.

Notes:
Field welding to the lateral gusset plates will not be permitted.
The gusset plate may be of any shape that will provide after welding, cutting and finish grinding a smooth transition from the flange edge at a minimum radius of 12 inches.
For additional information and details consult appropriate BDD Sheet.

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SAMPLE DETAIL — SUPERSTRUCTURE

FRAMING PLAN & BOTTOM LATERAL CONNECTIONS CURVED GIRDER

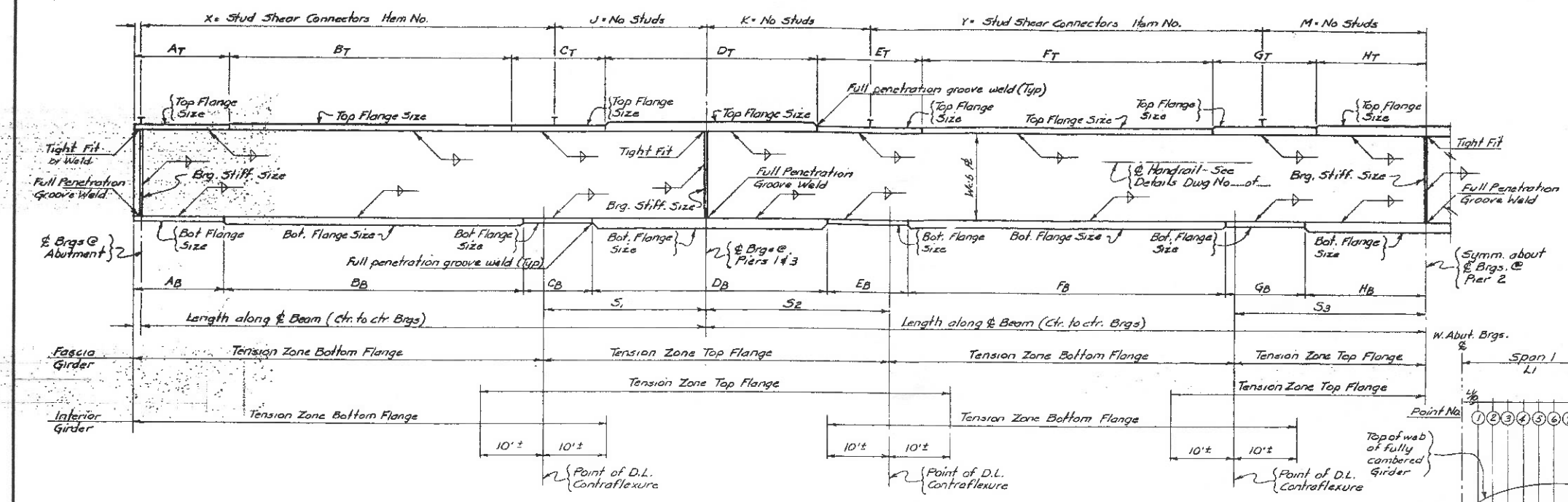
CONTINUOUS SPANS — DRAWING NO. GLD-G6

ADDED APRIL 1975

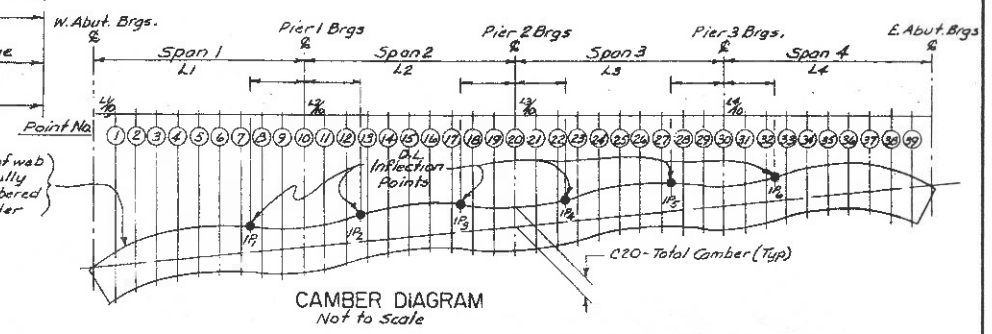
FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	NEW YORK			

CAPITAL PROJECT IDENTIFICATION NO.

Designer:
Continuous Girders must be capable of being spliced at points of D.L. Inflection.



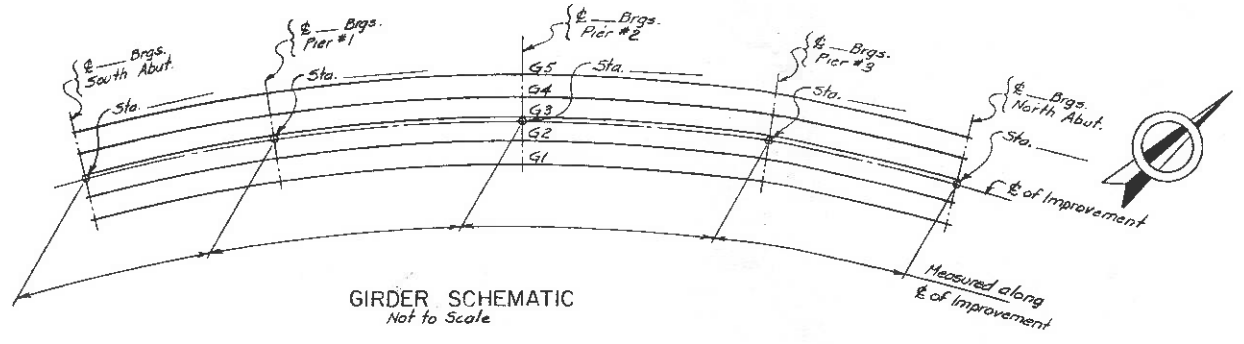
GIRDER DETAIL
Not to Scale



CAMBER DIAGRAM
Not to Scale

GIRDER SCHEDULE

MARK	RADIUS OF CURVATURE	SPANS 1 & 4		SPANS 2 & 3		TOTALS OF FOUR SPANS	DL. PT. OF CONTRAFLEXURE			SHEAR CONNECTORS - LENGTH					TOP FLANGE LENGTH								BOTTOM FLANGE LENGTH							
		LGTH.	DIA. SPNG.	LGTH.	DIA. SPNG.		S_1	S_2	S_3	X	J	K	Y	M	A_T	B_T	C_T	D_T	E_T	F_T	G_T	H_T	A_B	B_B	C_B	D_B	E_B	F_B	G_B	H_B
G1																													
G2																													
G3																													
G4																													
G5																													



GIRDER SCHEMATIC
Not to Scale

Notes:
For Handrail details see GLD-M51.
For Stud Shear Connector Details see GLD-M51
For Slab Haunch Table see GLD-M52.
For Girder Sections see GLD-G3
For details of Flange Width and Thickness Transition see GLD-M51
For DESIGN LOAD TABLE / GIRDER see GLD-G4

Detailer:
Include this note.

Note to the Contractor:
Within the tension zones delineated, there shall be no welding permitted other than what is detailed on the plans. Welding for the attachment of forms, ties, etc. shall not be permitted.

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DETAIL CHECKED BY.....

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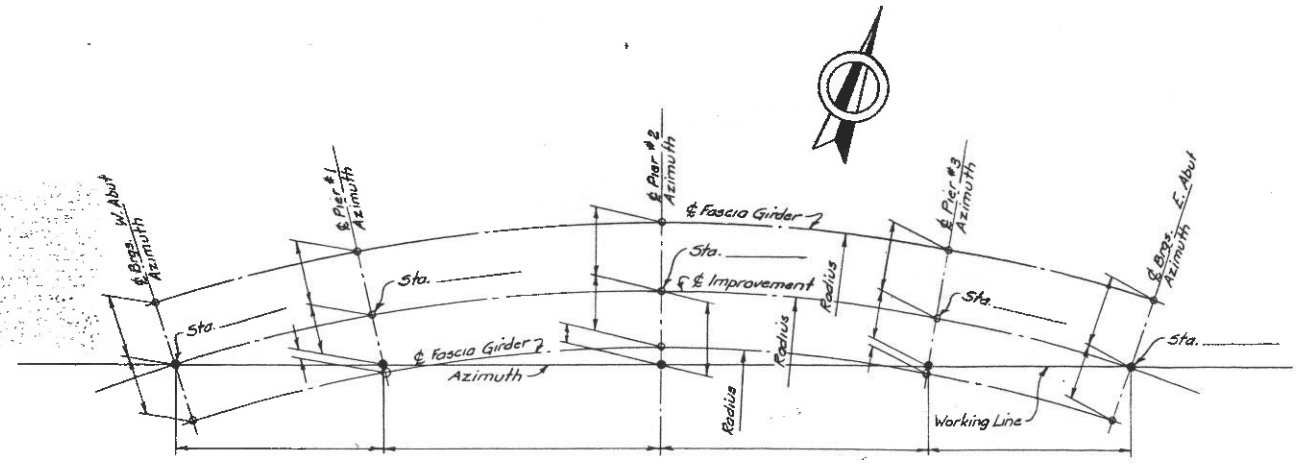
SAMPLE DETAIL — SUPERSTRUCTURE

WELDED ℄ GIRDER DETAILS
CURVED GIRDER

CONTINUOUS SPANS DRAWING NO. GLD G7

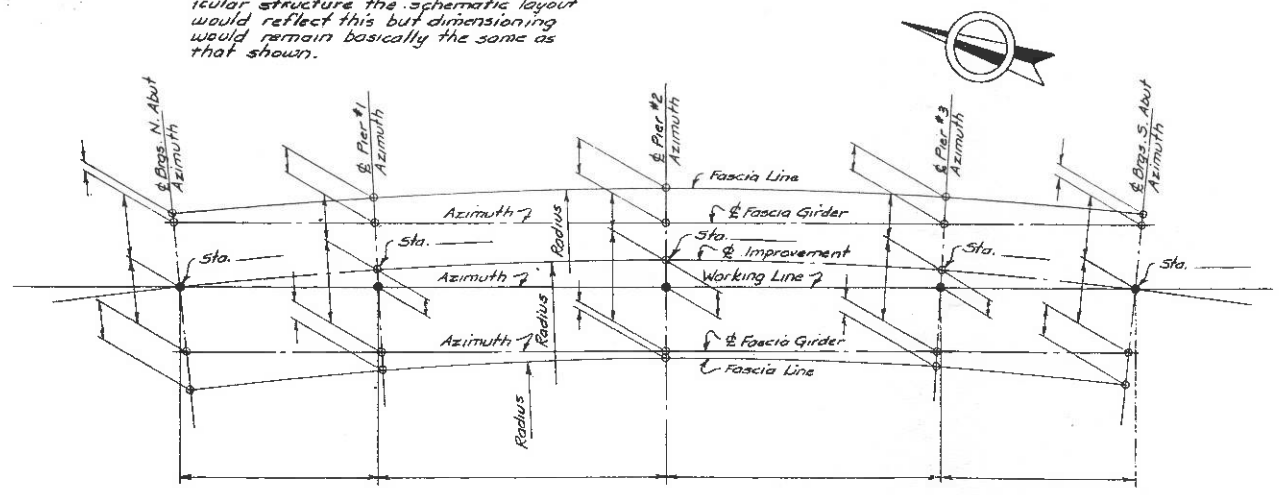
ADDED APRIL 1975

FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
	NEW YORK			
CAPITAL PROJECT IDENTIFICATION NO.				

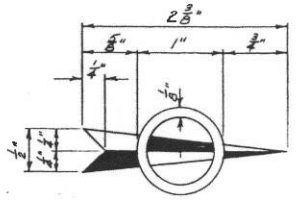


CURVED BRIDGE SCHEMATIC LAYOUT
CURVED GIRDER
Not to Scale

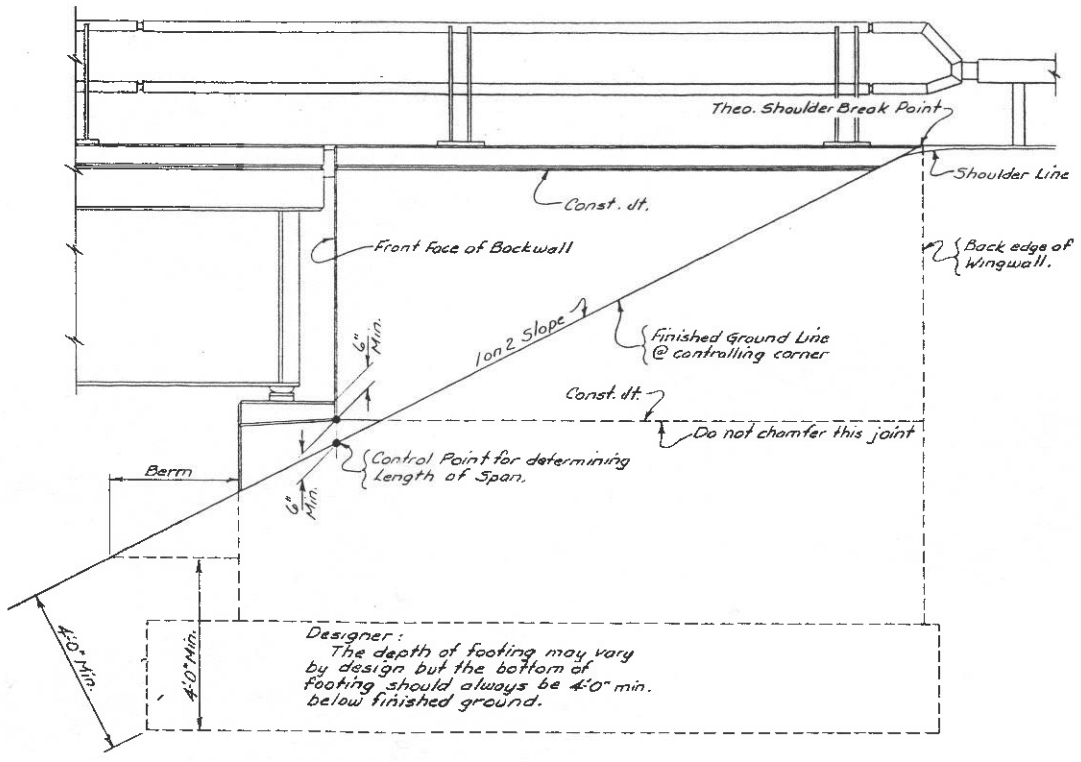
Designer / Detailer
Please note that in both schematic drawings the ℄ of pier is shown radial. If the ℄ of pier is skewed in your particular structure the schematic layout would reflect this but dimensioning would remain basically the same as that shown.



CURVED BRIDGE SCHEMATIC LAYOUT
STRAIGHT GIRDER
Not to Scale



STANDARD NORTH ARROWS
Full Scale



OPEN WINGWALL ELEVATION
Scale ½"=1'-0"

This area reserved for notes

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DETAIL CHECKED BY	

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SAMPLE DETAIL – MISCELLANEOUS

CURVED BRIDGE LAYOUT
& OPEN WINGWALL ELEVATION

CONTINUOUS & SIMPLE SPANS

DRAWING NO. GLD-M81

ADDED APRIL 1975

FED. RD. REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
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CAPITAL PROJECT IDENTIFICATION NO.

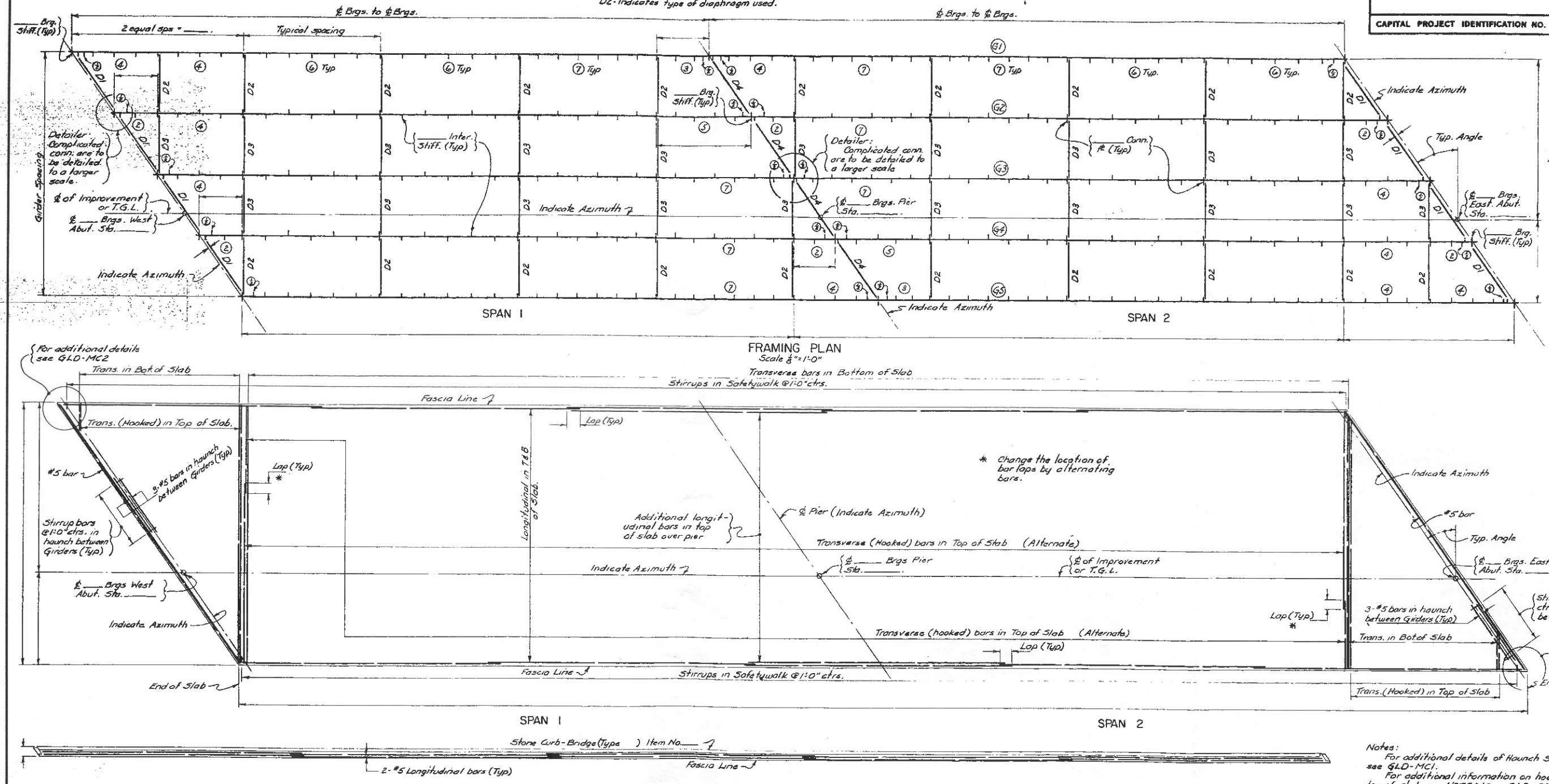
LEGEND

(G4) Indicates Girder Number

(4) Indicates number of equal stiffener spaces per bay

④ Indicates location of extra stiffener at ℄ spacing.

D2 - Indicates type of diaphragm used.



SOUTH SAFETY WALK OVERLAY (NORTH OVERLAY SIMILAR)

SLAB REINFORCEMENT PLAN

Scale ⅛"=1'-0"

Notes:
For additional details of Haunch Stirrups see GLD-MC1.
For additional information on hooked bars in top of slab see NOTE "A" on GLD-52.

DATE MADE ____
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DESIGN CHECKED BY ____
DETAILED BY ____
DETAIL CHECKED BY ____

CONCRETE & REINFORCEMENT TABLE

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
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SAMPLE DETAIL—SUPERSTRUCTURE

FRAMING PLAN & SLAB REINFORCEMENT

FOR SKEWS OVER 30°

CONTINUOUS SPANS

DRAWING NO. GLD-53

ADDED APRIL 1975