BRIDGE PROTECTION SYSTEMS ATTACHMENT

MDTA 2023 Main BIN Biennial Inspection Report

Baltimore, MD

DCA24MM031

(104 pages)

MARYLAND TRANSPORTATION AUTHORITY

FSK-Francis Scott Key Bridge

2023 MAIN BIN BIENNIAL INSPECTION REPORT

FOR

STRUCTURE No. BCZ472001

MD 695 OVER PATAPSCO RIVER

Firm Performing the inspection:	WBCM		
Inspection Team Leader	John Paul Devereaux (TL)	ASIR E-Signature	45518
QC Engineer:	Nicholas Ward (QC)	ASIR E-Signature	43464
	Name	Signature	PE Number

Reports denoted with an "ASIR E-Signature" in the signature column have been reviewed and approved by the Inspection Team Leader and QC Engineer denoted in the name column.

LOCATION MAP
STRUCTURE No. BCZ472001
LOCATION: I-695 OVER PATAPSCO RIVER

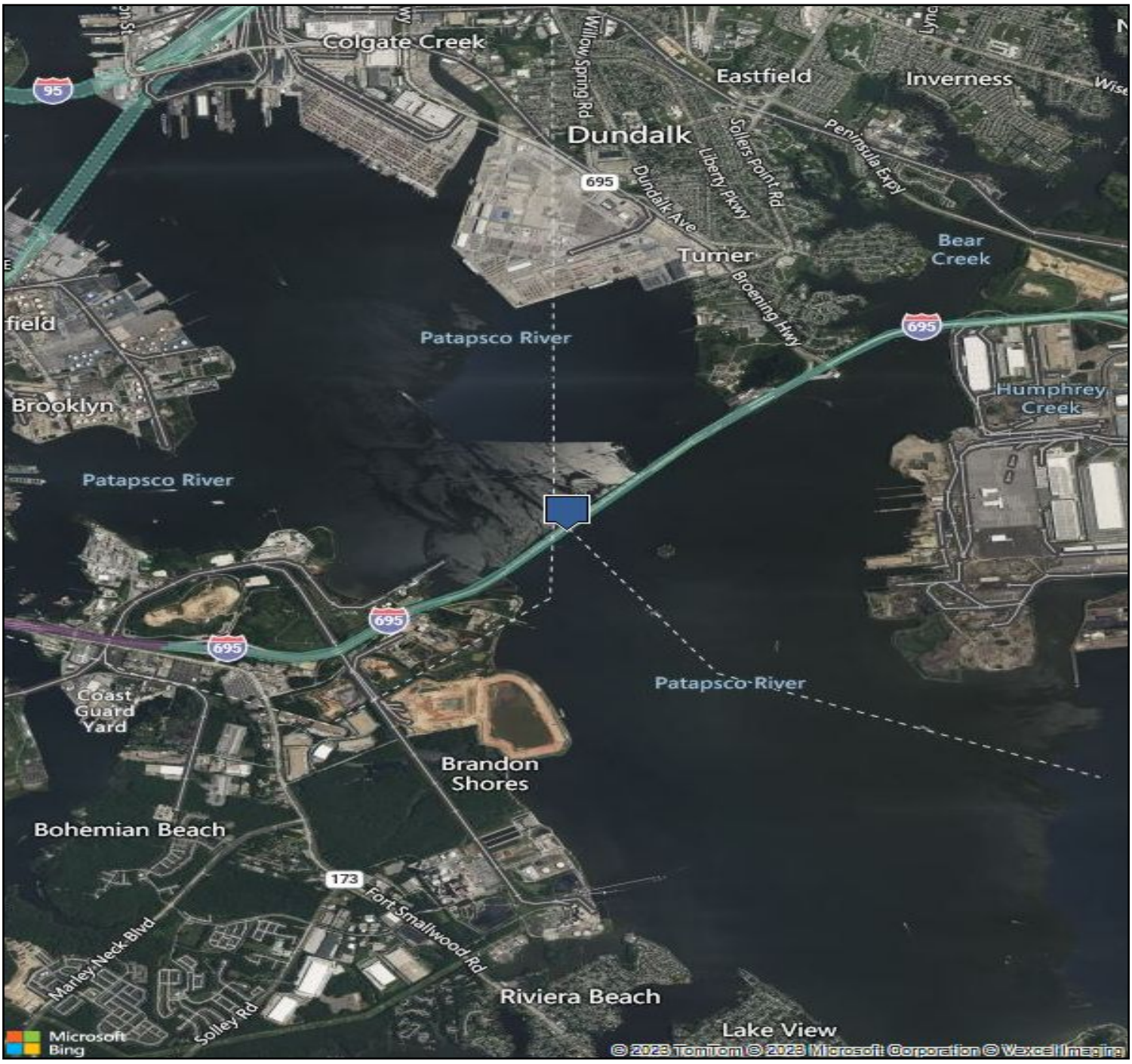


TABLE OF CONTENTS

2023 MAIN BIN BIENNIAL INSPECTION REPORT
STRUCTURE No. BCZ472001
FOR
MD 695 OVER PATAPSCO RIVER

GENERAL INFORMATION

3. **General Information**
   a. General Notes
   b. Executive Summary
   c. Bridge Description
   d. Inventory
   e. Studies and Recommendations
   f. General Plan and Elevation
   g. Identification of Fracture Critical Members and Fatigue Sensitive Details

GENERAL NOTES

MDTA Priority Repair Codes:

E - Emergency: Items in this category represent conditions that affect either the integrity of the structure or public safety. MDTA is to be notified immediately upon finding the defect. Follow-up is required immediately after notification by the inspection team to determine course of action. Items of this category will be addressed immediately. Subsequently, they will be reclassified to another repair code prior to report completion.

1 - First Priority: Items in this category are structural deficiencies on primary, load carrying members and safety deficiencies on other members that are not emergencies but require prompt attention. These defects should be among the first items to receive follow-up. First Priority items typically receive engineering evaluation with consideration for repairs within one year of reporting.

2 - High Priority: Items in this category are moderate deficiencies that do not pose any immediate concerns. These are nonstructural deficiencies on primary, load carrying members or structural deficiencies on secondary members and that do not present safety concerns. Typically, these deficiencies are repaired by system preservation contracts to avoid worsening to First Priority or the development of other First Priority deficiencies but may be deferred depending on available funding. Defects should be monitored and verified for condition during future inspections.

3 - Medium Priority: Items in this category are not serious deficiencies. These defects are primarily serviceability-related issues that are less likely to worsen significantly during the next several inspection cycles. Typically, these deficiencies are repaired by system preservation contracts, but may be deferred depending on available funding. Follow-up should be made after the high priority items and should be monitored in future inspections.

Condition Rating Definitions:

The following is the NBI general condition rating scale for Items 58, 59, and 60. This scale shall be used as a guide in conjunction with direction included in Chapter 4.1 of the MDTA Facilities Inspection Manual:

N - Not Applicable

9 - Excellent Condition

8 - Very Good Condition - no problems noted.

7 - Good Condition - some minor problems.

6 - Satisfactory Condition - structural elements show some minor deterioration.

5 - Fair Condition - all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.

4 - Poor Condition - advanced section loss, deterioration, spalling, or scour.

3 - Serious Condition - loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.

2 - Critical Condition - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.

1 - "Imminent" Failure Condition - major deterioration or section loss present in critical structural components, or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put bridge back in light service.

0 - Failed Condition - out of service; beyond corrective action.

EXECUTIVE SUMMARY

BCZ472001, I-695 over Patapsco River, is in satisfactory condition overall.

The 2023 Biennial Inspection was performed over 31 days between January 9 to May 10, 2023.

SI&A Item 58 – Deck: The reinforced concrete deck is in overall satisfactory condition (Item 58 Rating = 6). There are numerous spalls and delaminations throughout the concrete wearing surface, parapets, fascias, and median. There are numerous concrete repair patches throughout the concrete wearing surface and fascia. Repairs were performed since the previous inspection; spalls and delaminations in the wearing surface, and parapets were patched and sealed. The following six (6) Priority 1 repair defects exist in the deck: Repair ID 2023-BCZ472001(S01-S16)-00003 in Span S01 for loose anchor bolt nuts at the west low level light pole base plate connection. Repair ID 2023-BCZ472001(S01-S16)-00005 in Span S03 for a loose anchor bolt nut at the west low level light pole base plate connection. Repair ID 2023-BCZ472001(S01-S16)-00006 in Span S04 for loose anchor bolt nuts on the "NO STOPPING ON BRIDGE" sign on the east parapet. Repair ID 2023-BCZ472001(S01-S16)-00015 in Span S07 for a loose anchor bolt nut at the west low level light pole base plate connection. Repair ID 2023-BCZ472001(S17-S19)-00076 in the Span S18 deck for a deck spall in the Northbound Right Lane, 15'-0" north of PP38. Repair ID 2023-BCZ472001(S20-S37)-00091 for loose top anchor bolt nut and washer at the west low level light pole connection to the parapet in Span S23.

SI&A Item 59 – Superstructure: The superstructure is in overall satisfactory condition (Item 58 Rating = 6). Throughout the girder spans there are random areas of section loss in the girders, crossframes, and bearings, and pack rust at splices. There is minor pack rust and loss of bearing at several expansion and fixed bearings. Throughout the steel truss, there are numerous areas of minor corrosion, pack rust, and painted over section loss. There is moderate corrosion and pack rust at the stringer bearings and gusset plates. The stringer bearings and bottom chord field splice plates are deformed due to pack rust throughout. Several repairs were performed since the previous inspection; areas have been spot cleaned and painted, and one (1) Priority repair for differential settlement at the PP41 Joint (ID 2021-BCZ472001 (S17-S19)-00341) was repaired. The following six (6) Priority 1 repair defects exist in the superstructure: Repair ID 2023-BCZ472001(S17-S19)-00386 in Span S18 for a crack in the first diaphragm north of Floorbeam 29 in Bay 2. Repair ID 2021-BCZ472001(S20-S37)-00005 in Span S26 for a crack in the weld at Girder 7, Crossframe 3. Repair ID 2021-BCZ472001(S20-S37)-00080 in Span S34 for a crack in the weld at the Girder 7 bottom longitudinal stiffener at the field splice. Repair ID 2021-BCZ472001(S20-S37)-00081 in Span S34 for a crack in the weld at the Girder 7 bottom longitudinal stiffener north of the field splice. Repair ID 2022-BCZ472001(S20-S37)-00001 in Span S34 for a crack in the weld at the Girder 7 bottom longitudinal stiffener south of the field splice. Repair ID 2023-BCZ472001 (S20-S37)-00072 in Span S34 for the cracked Bearing 2 bearing plate at Pier 34.

SI&A Item 60 – Substructure: The concrete piers are in overall satisfactory condition (Item 58 Rating = 6). Throughout the concrete pier columns, pier caps, and struts there are cracks, spalls, and areas of delamination. These delaminations are at the edges of the pier caps and on the outboard faces of the columns, beneath the bearings. A few repairs were performed since the previous inspection; delaminations in the concrete have been patched. There are no new Priority 1 repairs in the Substructure.

The Low-Level Lights are now completed in the Survey 123 database and were not inspected as part of this biennial inspection; however, the portion below the parapet were inspected during this inspection.

There are no LOC's included in this report. There are no components with a condition rating of 4 or less for this bridge.

There are no flammable or stockpiled materials stored on or under this structure.

A hydrographic survey was completed during this inspection cycle and is included in the BCZ472001(S17-S19) asset documents. The 2023 Hydrographic Survey Report indicates similar underwater topography throughout with minor channel bottom fluctuations, mostly adjacent to the piers. The largest channel bottom changes are in the navigation channel (Span 18), east of the bridge due to apparent dredging/widening since the previous cycle. Channel elevations are approximately 5' to 6' deeper in areas. Refer to the 2023 Hydrographic Survey Report for additional information.

Non-destructive (Ultrasonic) Testing was performed on 32 pins in accordance with the developed pin testing schedule. In addition the steel wind hear pin at PP61 in Span 18 was tested. The pin testing schedule is located in the 2022 Ultrasonic Testing Report. There were no abnormal or defect indications found on any of the pins tested. Refer to the 2022 Ultrasonic Testing Report, included at the end of this report, for additional information.

Refer to the Studies and Recommendations Summary for further details on special inspections.

BRIDGE DESCRIPTION

Bridge No. BCZ472001 (Francis Scott Key Bridge) carriers Interstate 695 (Inner Loop and Outer Loop) over the Patapsco River. The bridge has an overall length of approximately 9,087 feet from center-to-center bearings between the North and South Abutments. The bridge has an out-to-out width of 61'-2" +/-. The curb-to-curb width (not including a 2'-0" median barrier) is 56'-0" and carries four (4) lanes of traffic, two (2) lanes in each direction.

Bridge No. BCZ472001 (S01-S16) (South Approach Spans) has an overall length of approximately 2,847 feet from center-to-center of bearings between the South Abutment and the Pier 16, Span 16 bearings. The South Approach Spans consist of seven (7) continuous painted steel girders, with thirteen (13) shorter/shallower spans over land and three (3) longer/deeper spans over water. The span arrangement consists of one 4-span unit, and four 3-span units. The deck consists of reinforced concrete with stay-in-place forms present in all spans. The substructure consists of 16 two-column rigid frame reinforced concrete piers and one (1) reinforced concrete abutment. All piers have solid concrete caps with 0 to 2 intermediate concrete struts depending on the height of the pier. The bridge is not posted for any special load restrictions. The controlling (minimum) parapet height is 2'-8", which is at the East Parapet of the South Approach.

Bridge No. BCZ472001(S17-S19) (Main Spans) has an overall length of approximately 2,640 feet from center-to-center bearings between Pier 16 and Pier 19. The Main Spans are comprised of the three (3) through-truss spans that cross the primary navigation channel of the Patapsco River. The two (2) side spans (Spans 17 and 19) are 720-foot long through-truss spans measured from center-to-center bearings while the main span (Span 18, over the navigation channel) consists of a 1200-foot long suspended deck arch truss span measured from center-to-center bearings. The deck consists of reinforced concrete with stay-in-place forms present in all spans. The substructure consists of two (2) Potomac-type rigid frame piers (Piers 17 and 18) and one (1) two-column rigid frame reinforced concrete pier (Pier 19). Pier 19 has a concrete cap with two (2) intermediate concrete. There are fenders at Piers 17 and 18.

Bridge No. BCZ472001(S20-S37) (End Approach Spans) has an overall length of approximately 3,596 feet from centerto-center of bearings between Pier 19. The End Approach Spans consist of seven (7) continuous girders, with twelve (12) shorter/shallower spans over land and six (6) longer/deeper spans over water. The span arrangement consists of six 3-span units. The deck consists of reinforced concrete with stay-in-place forms present in all spans. The substructure consists of fifteen (15) two-column rigid frame reinforced concrete piers, three (3) solid wall piers and one (1) reinforced concrete abutment. All two-column piers have solid concrete caps with 0 to 2 intermediate concrete struts depending on the height of the pier. The bridge went under construction in 1972 and opened to the public in 1977. No major rehabilitation has occurred since opening to the public. At the time of inspection, the controlling vertical under clearance along Authority Drive is 15'-6". The advanced warning signs at Northwest approach indicate 15'-6"; however, it is posted on the bridge for 15'-3". The minimum vertical under clearance along Authority Drive is located in Span 35, beneath Girder 7.

INVENTORY

For purposes of this report, defect locations are reported in the following manner:

Superstructure Members are numbered from West to East and Substructure Units and Spans are numbered from South to North. Directions are based on I-695 running North and South (i.e. north = northbound outer loop, south = southbound inner loop). The word "panel" is defined as the distance between consecutive cross frames or floorbeams and are numbered from South to North. The word "bay" is defined as the distance between consecutive girders or stringers and are numbered from West to East. Truss panel points are numbered from PP01 to PP89 with Span 17 from PP01-PP25 (PP25 at Pier 17), Span 18 from PP25-PP65 (PP65 at Pier 18), and Span 19 from PP65-PP89 (PP89 at Pier 19). Pier 16 from the base of the pedestals down is incorporated in the South Approach Spans, BCZ472001(S01-S16), report.

Parapet height measurements obtained during the 2022 inspection are as follows:

- Begin Approach, East Parapet (NB): 2'-8"

- Begin Approach, Median Parapet: 2'-9"

- Begin Approach, West Parapet (SB): 2'-9"

- End Approach, East Parapet (NB): 2'-9"

- End Approach, Median Parapet: 2'-9"

- End Approach, West Parapet (SB): 2'-9"

There were no inaccessible locations due to stockpiles of materials or ongoing construction projects during 2023 inspection.

The Main Spans (S17-S19) cross the Patapsco River. The Patapsco River runs from West to East.

The Low-Level Lights are now completed in the Survey 123 database and were not inspected as part of this biennial inspection; however, the portion below the parapet were inspected during this inspection.

Right lane closures of the Outer (northbound) Loop and Inner (southbound) Loop were used to complete the inspection. The left lane topside in both directions was visually inspected from the right lane.

For Spans S01-S16: The substructure and superstructure of Spans S01-S13 were inspected using a 120' man-lift. The superstructure of Spans S14-S16 were inspected using an A62 snooper. The substructure of Spans S14-S16 were inspected using a 80' manlift on a barge with a safety boat. Coordination with MDTA is required to access the fenced in area under the bridge. Contact FSK Operations at 410-537-7677.

For Spans S17-S19: The upper truss members and suspender cables were inspected using 135' and 80' manlifts and rope access with SPRAT certified climbers. The deck underside, stringers, floorbeams, and lower truss members were inspected with a 32' and 62' snoopers deployed from the right lanes in both directions. A barge-mounted 125' manlift was used to inspect the substructure. A boat was used to inspect the fenders and dolphins.

For Spans S20-S37: The structure was inspected using an 80' manlift to inspect the underside of Spans 26-34, a 60'-0" snooper deployed from the right lanes for the underside of Spans 20-25, a ladder for the underside of 35-37, and a barge and 125' manlift to inspect the substructure of Spans 20-25. The area under Spans 1-13 and 26-33 is gated. Inspectors can request access from Facility Operations at 410-537-7677.

STUDIES AND RECOMMENDATIONS

Overall, BCZ472001 is in satisfactory condition.

A hydrographic survey was completed during this inspection cycle and is included at the end of this report. The 2023 Hydrographic Survey Report indicates similar underwater topography throughout with minor channel bottom fluctuations, mostly adjacent to the piers. The largest channel bottom changes are in the navigation channel (Span 18), east of the bridge due to apparent dredging/widening since the previous cycle. Channel elevations are approximately 5' to 6' deepe r in areas. Refer to the 2023 Hydrographic Survey Report for more information.

Non-destructive (Ultrasonic) Testing was performed on 32 pins in accordance with the developed pin testing schedule. In addition the steel wind hear pin at PP61 in Span 18 was tested. The pin testing schedule is located in the 2022 Ultrasonic Testing Report. There were no abnormal or defect indications found on any of the pins tested. Refer to the 2022 Ultrasonic Testing Report, included at the end of this report, for additional information.

BCZ472001(S17-S19) is in similar condition compared to the previous inspection. There are no recommendations to improve or maintain the bridge condition based on holistic evaluation.

The following is a list of repairs have been performed since the previous inspection:

- Spalls, and delaminations have been patched in the wearing surface, parapets and substructure units.

- Select areas of moderate corrosion, and section loss have been painted over in the steel truss members.

The following is a list of recommended repairs that are not tracked using individual repairs in ASIR, but should be addressed as part of the MDTA Operations' Preventative Maintenance Plan:

- Clean out the joint seals, joint troughs and scuppers.

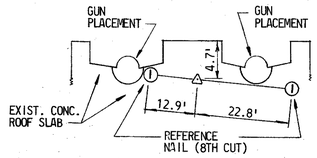
- Seal the deck wearing surface.

- Replace damaged or missing parapet delineators.

- Clean and paint areas of minor corrosion.

- Replace missing screws on utility box covers.

- Remove debris accumulation from lateral connection plates.

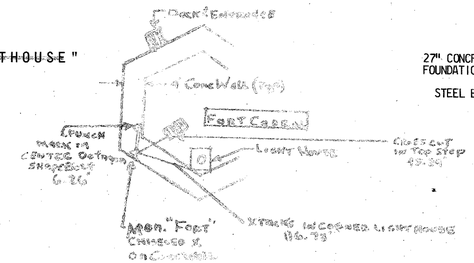


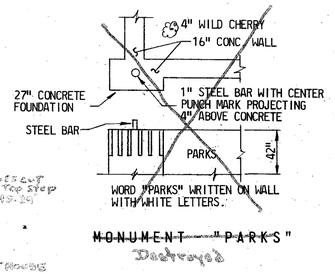
MONUMENT - "HARP"

~~CENTER OF SHARP SPIRE OF LIGHTHOUSE LOCATED ON FORT CARROLL~~

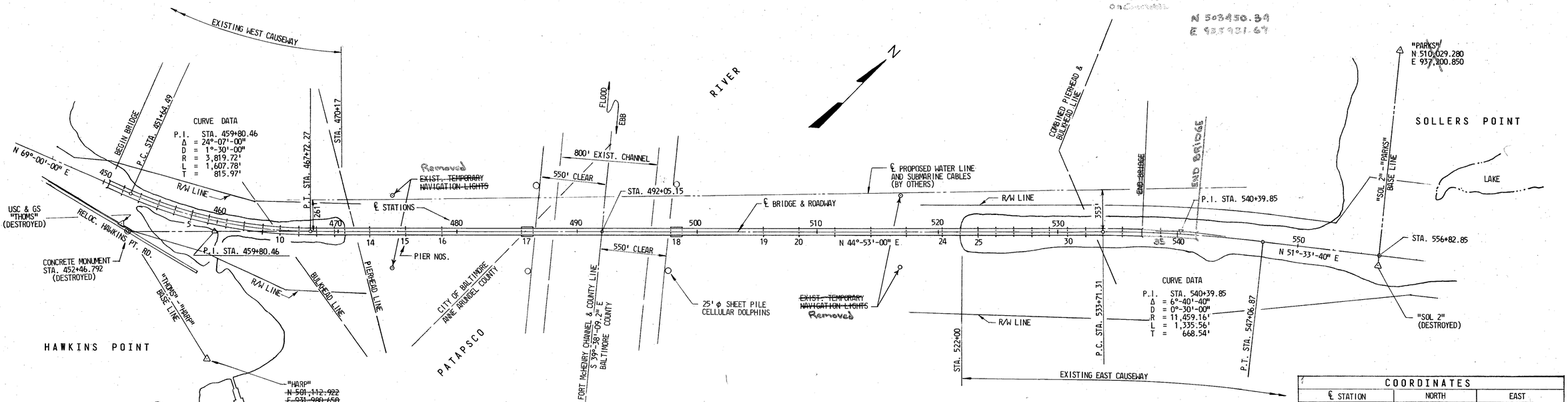
~~N 503,330.15~~
~~E 935,949.17~~

~~MONUMENT - "FORT CARROLL LIGHTHOUSE"~~





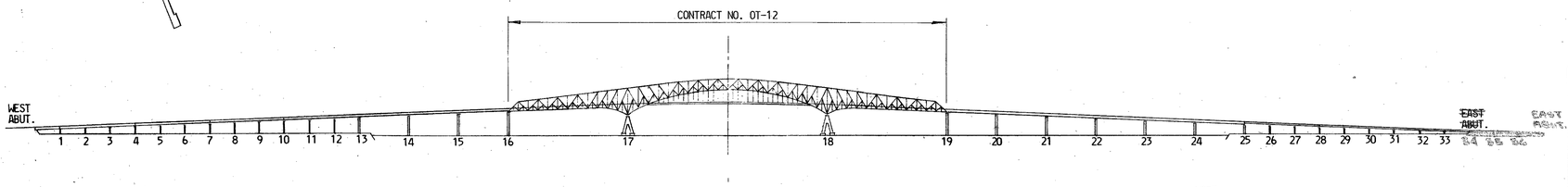
~~MONUMENT - "PARKS"~~
Destroyed



PLAN

HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM.

℄ STATION	COORDINATES NORTH	EAST
P.C. 451+64.49	501,629.275	930,514.035
P.I. 459+80.46	501,921.694	931,275.811
P.T. 467+72.27	502,499.847	931,851.614
P.O.T. 492+05.15	504,223.654	933,568.415
P.C. 533+71.31	507,175.567	936,508.332
P.I. 540+39.85	507,649.254	936,980.094
P.T. 547+06.87	508,064.869	937,503.739



ELEVATION

NOTE:
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

GENERAL PROJECT PLAN

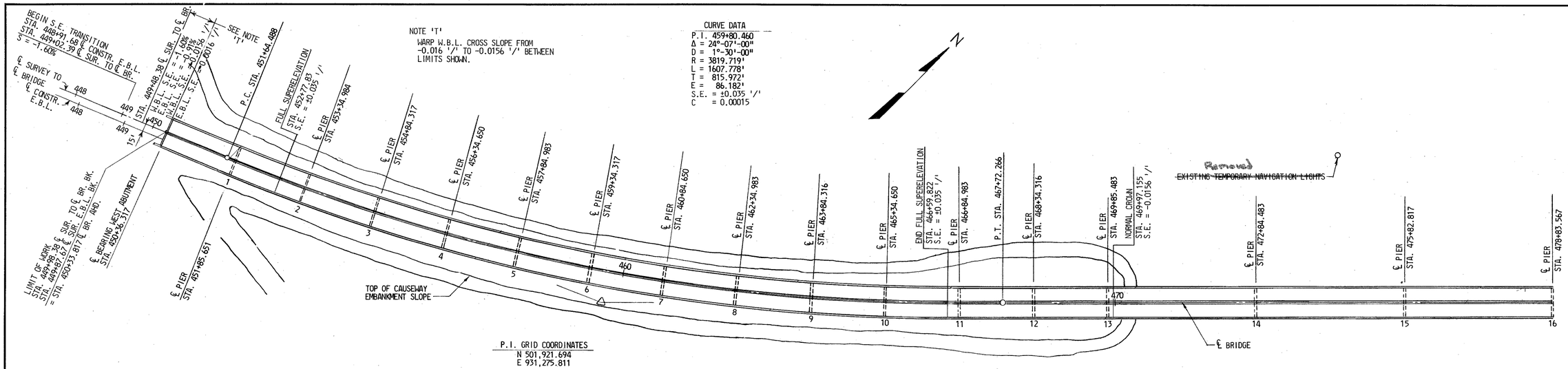
SCALE 1" = 400' DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY S.J.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-3
SHEET NO. 3 OF 79
INDEXED

File No.____ Pocket No.____ Folder No.____



VERTICAL CURVE DATA

P.V.I. STA. 445+36.27 BK. = (STA. 445+82.42 AH.)
ELEV. = 32.09 (ON ℄ BRIDGE EXTENDED)
V.C. = 1000'
CORR. = +6.825'
GRADES -1.46%
+4.00%

NOTES:

ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.

FOR GENERAL NOTES SEE DWG. NO. A-2.

All elevations this sheet subject to Note 15 Dwg. A-2 Contract OT-12.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

GENERAL PLAN AND ELEVATION - I

SCALE 1" = 100' DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A.
TRACED BY C.E.S.
CHECKED BY S.J.S. & J.W.H.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-4
SHEET NO. 4 OF 79

INDEXED

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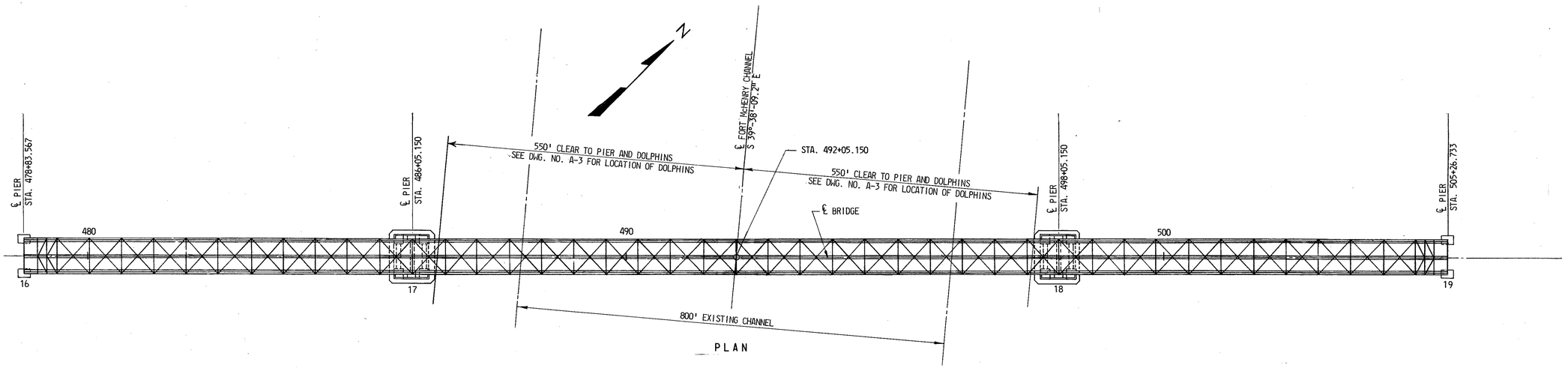
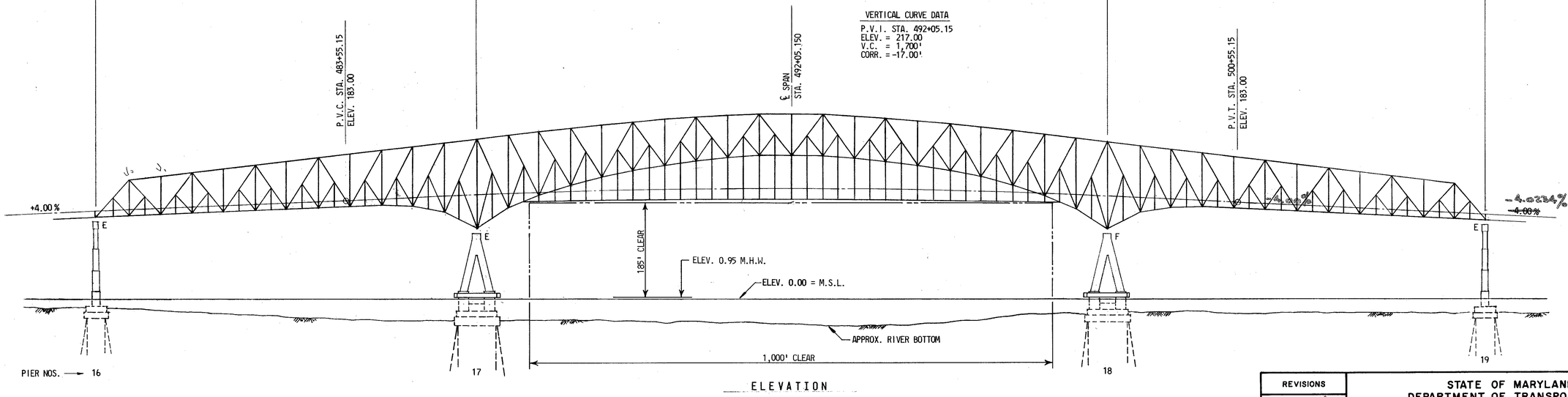


PLAN

~~8,636.333'~~ 8,626.333' C.C. BEARINGS OF ABUTMENTS

CONTINUOUS THROUGH TRUSS SPANS

C.C. PIERS SPAN LENGTHS	721.583' SPAN 17 - 720.000'	1,200.000' SPAN 18 - 1,200.000'	721.583' SPAN 19 - 720.000'



ELEVATION

NOTES:

ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.

FOR GENERAL NOTES SEE DWG. NO. A-2.

All elevations this sheet subject to Note 15 Dwg A-2 Contract OT-12.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

GENERAL PLAN AND ELEVATION - II

SCALE 1" = 100' DATE JAN., 1972 CONTRACT OT-12

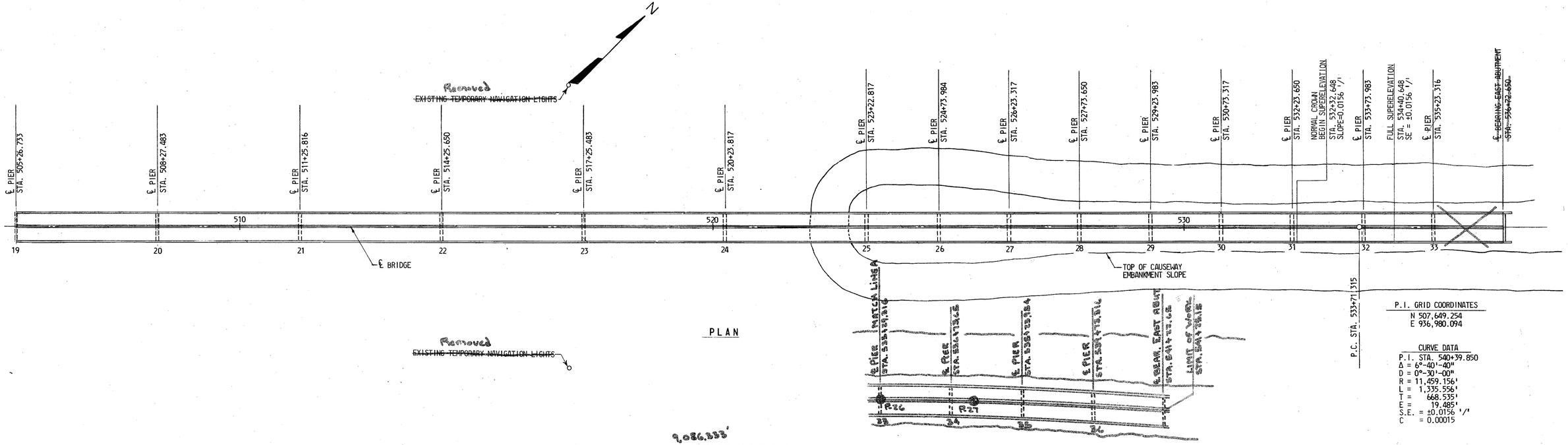
MADE BY E.R.A.
TRACED BY C.E.S.
CHECKED BY S.J.S. & J.W.H.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-5
SHEET NO. 5 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____



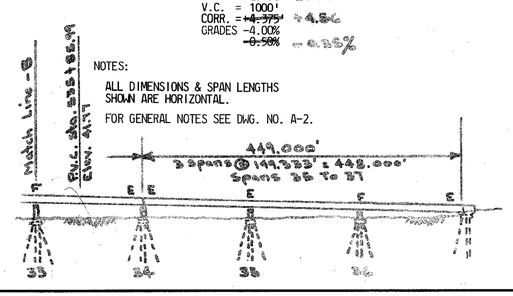
ELEVATION

All elevations this sheet subject to Note 15 Dwg. A-2 Contract OT-12.

P.I. GRID COORDINATES
N 507,649.254
E 936,980.094

CURVE DATA
P.I. STA. 540+39.850
Δ = 6°-40'-40"
D = 0°-30'-00"
R = 11,459.156'
L = 1,335.556'
T = 668.535'
E = 19.485'
S.E. = ±0.0156 '/'
C = 0.00015

VERTICAL CURVE DATA
P.V.I. STA. ~~539+36.17~~ 540+85.99
ELEV. = ~~27.76~~ 21.77
V.C. = 1000'
CORR. = ~~-4.375'~~ +4.5'
GRADES ~~-4.00%~~ -4.45%
~~-0.50%~~ -0.05%



NOTES:
ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

GENERAL PLAN AND ELEVATION - III

SCALE 1" = 100' DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A.
TRACED BY C.E.S.
CHECKED BY S.J.S. & J.W.H.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-6
SHEET NO. 6 OF 79
INDEXED

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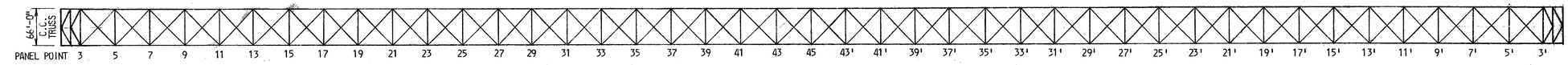
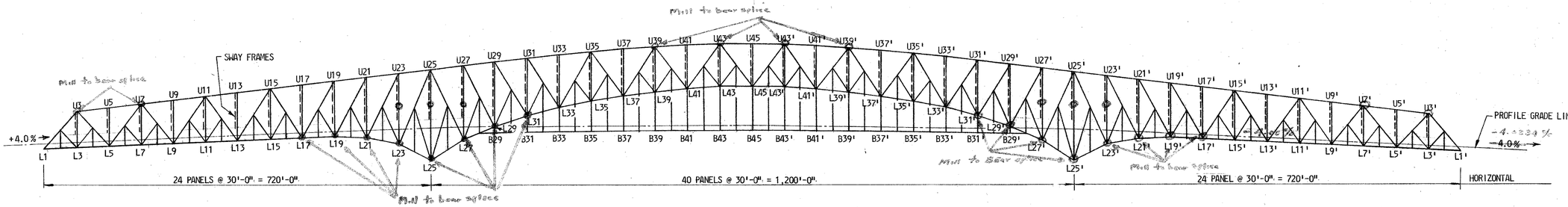
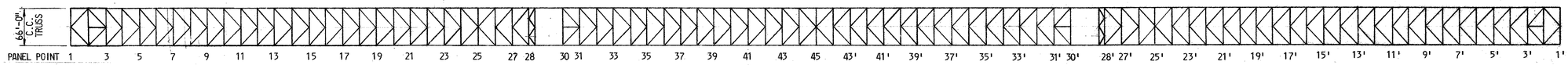


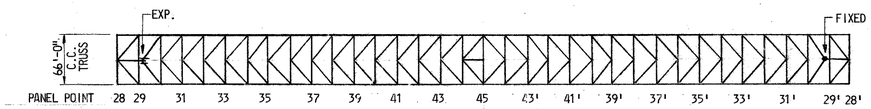
TOP LATERAL BRACING



ELEVATION



BOTTOM LATERAL BRACING



SUSPENDED ROADWAY LATERAL BRACING

ELEVATIONS											
PANEL POINT	PROFILE GRADE	UPPER CHORD	SUBDIVIDED POINTS	LOWER CHORD	SUSPENDED ROADWAY POINTS	PANEL POINT	PROFILE GRADE	UPPER CHORD	SUBDIVIDED POINTS	LOWER CHORD	SUSPENDED ROADWAY POINTS
1	164.200	-	-	152.500	-	26	192.355	-	237.470	151.720	-
2	165.400	-	187.200	153.700	-	27	193.139	311.800	-	170.540	-
3	166.600	221.900	-	154.900	-	28	193.880	-	257.090	186.460	186.460
4	167.800	-	189.600	156.100	-	29	194.579	318.900	-	202.380	187.159
5	169.000	229.400	-	157.300	-	30	195.235	-	270.640	212.380	187.815
6	170.200	-	197.100	158.500	-	31	195.849	325.900	-	222.380	188.429
7	171.400	236.900	-	159.700	-	32	196.421	-	281.160	229.400	189.001
8	172.600	-	199.500	160.900	-	33	196.951	332.600	-	236.420	189.531
9	173.800	244.400	-	162.100	-	34	197.438	-	287.860	241.465	190.018
10	175.00	-	207.000	163.300	-	35	197.882	339.300	-	246.510	190.462
11	176.200	251.900	-	164.500	-	36	198.285	-	297.950	251.555	190.865
12	177.400	-	209.400	165.700	-	37	198.645	344.800	-	256.600	191.225
13	178.600	259.400	-	166.900	-	38	198.962	-	303.450	260.050	191.542
14	179.800	-	216.900	168.100	-	39	199.238	350.300	-	263.500	191.818
15	181.000	266.900	-	169.300	-	40	199.471	-	310.350	266.950	192.051
16	182.200	-	219.300	170.500	-	41	199.661	354.200	-	270.400	192.241
17	183.398	274.400	-	171.700	-	42	199.809	-	314.250	272.350	192.389
18	184.562	-	226.800	172.865	-	43	199.915	358.100	-	274.300	192.495
19	185.685	281.900	-	174.030	-	44	199.979	-	316.200	274.300	192.559
20	186.765	-	231.715	173.165	-	45	200.000	358.100	-	274.300	192.580
21	187.802	289.400	-	172.300	-						
22	188.798	-	234.600	166.700	-						
23	189.751	296.900	-	161.100	-						
24	190.661	-	232.750	147.000	-						
25	191.529	304.400	-	132.900							

Shim Retainer - Detail - Milled Joints

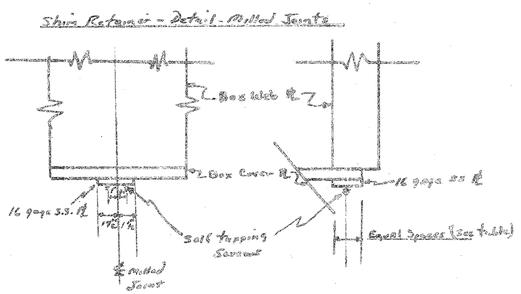


Table of Retainer Widths

Milled Joint	Retainer Width	Milled Joint	Retainer Width
U7	1"	L29	3½"
L17	2½"	L31	2½"
L19	3"	L33	2½"
L21	3½"	U34	2"
L23	3½"	U40	2½"
L25	3½"		

Connectors: 18-8 Self Tapping Stainless Steel Sheet metal Screws w/washers.
Dia: 0.243 ϕ
Length: ¾"
Ma Master-Carr Cat No. 91644313

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.
All Elevations this sheet Subject to Note 15 Dwg A-2 Cont. 07-12

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

TRUSS FRAMING AND
PANEL POINT ELEVATIONS

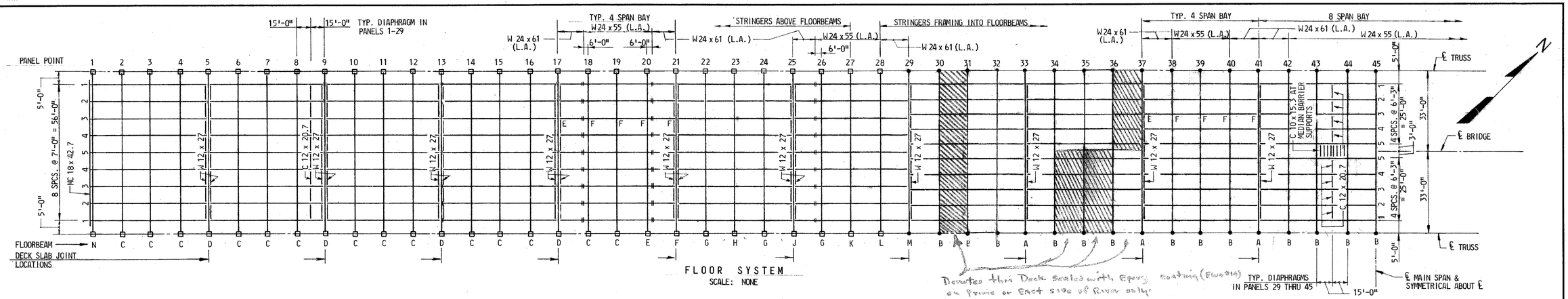
SCALE: NONE DATE JAN., 1972 CONTRACT 07-12

MADE BY E.R.A.
TRACED BY E.R.A
CHECKED BY C.P.G.

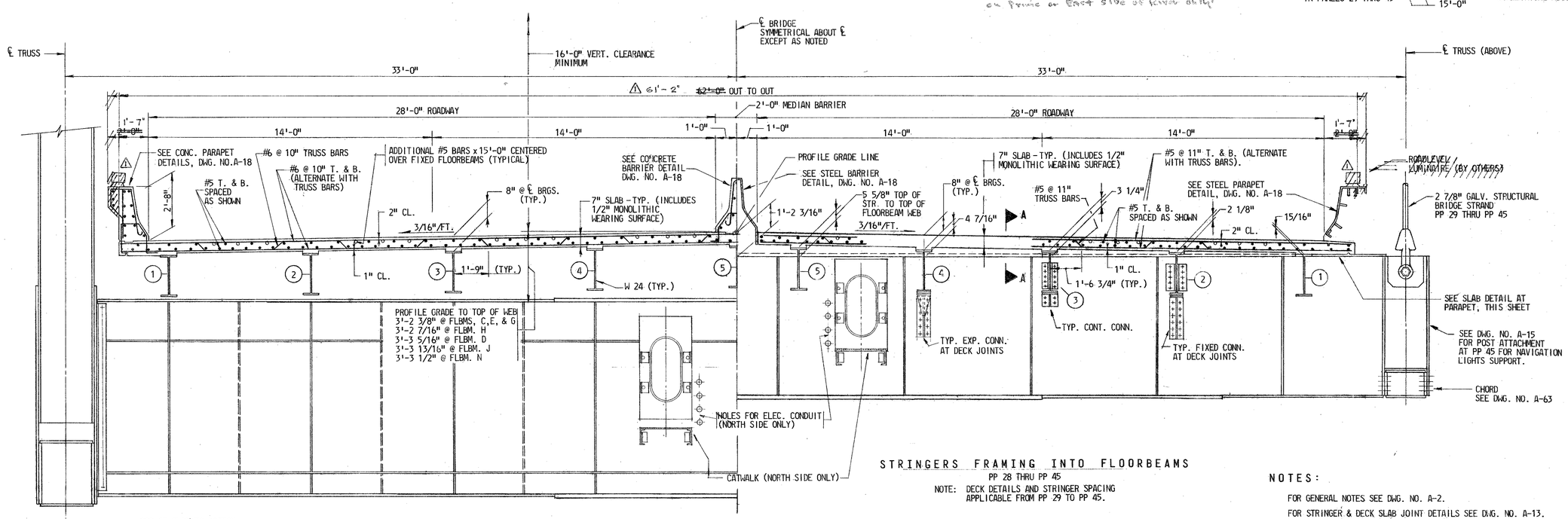
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

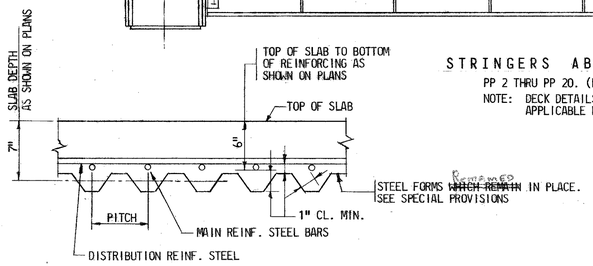
DRAWING NO. A-7
SHEET NO. 7 OF 79
INDEXED

File No. Pocket No. Folder No.



FLOOR SYSTEM
SCALE: NONE





NOTE: OTHER SLAB STEEL NOT SHOWN.

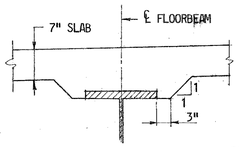
NOTE: NO WELDING OF THESE FORMS TO STRUCTURAL MEMBERS WILL BE PERMITTED. THESE FORMS SHALL BE VERTICALLY ADJUSTED TO ATTAIN LINE AND GRADE REQUIRED BY THE PLANS. ANY ADDITIONAL CONCRETE REQUIRED DUE TO THE USE OF S.I.P. FORMS WILL NOT BE MEASURED FOR PAYMENT.

~~OPTIONAL~~ STAY IN PLACE FORMS
SCALE: 1 1/2" = 1'-0"

STRINGERS ABOVE FLOORBEAMS
PP 2 THRU PP 20. (PP 22 THRU PP 26 SIMILAR)

NOTE: DECK DETAILS AND STRINGER SPACING APPLICABLE FROM PP 1 TO PP 29.

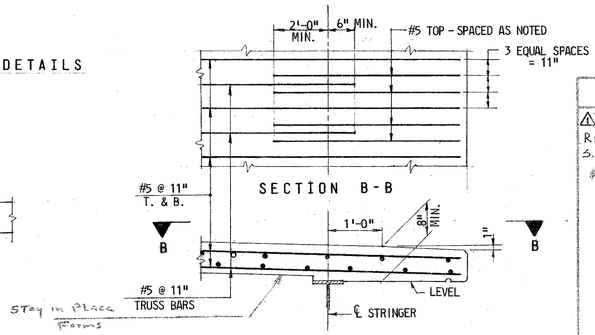
TYPICAL SECTION - DECK DETAILS
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 3/4" = 1'-0"

STRINGERS FRAMING INTO FLOORBEAMS
PP 28 THRU PP 45

NOTE: DECK DETAILS AND STRINGER SPACING APPLICABLE FROM PP 29 TO PP 45.



SECTION B-B

SLAB DETAIL AT PARAPET
SCALE: 3/4" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR STRINGER & DECK SLAB JOINT DETAILS SEE DWG. NO. A-13.

FOR FLOORBEAM DETAILS SEE DWG. NOS. A-14, A15 & A-16.

REVISIONS
⚠ PARAPET REVISION 4-15-74 S.J.S. As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

FLOOR SYSTEM & DECK DETAILS

SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT-12

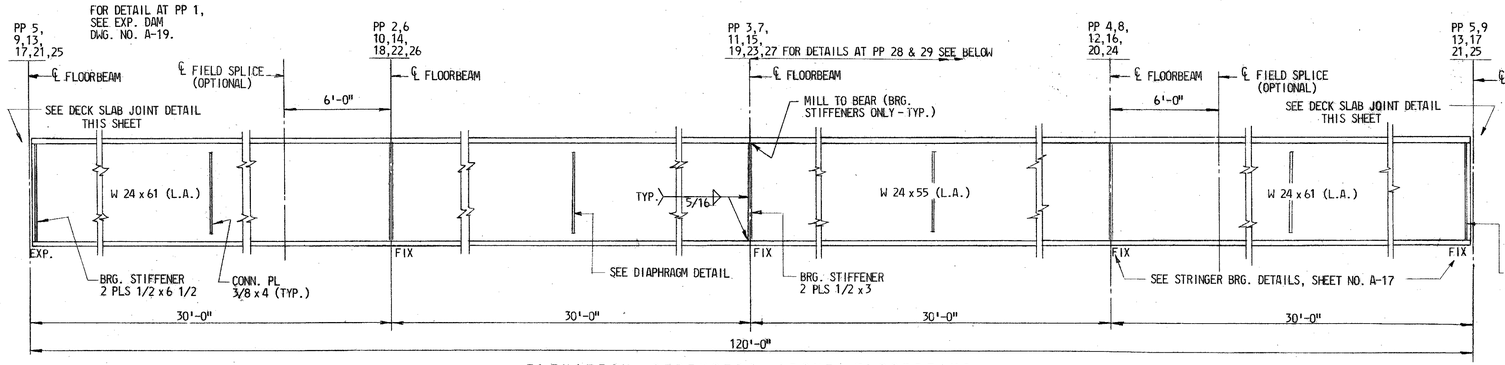
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY C.R.

J. C. GHEINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

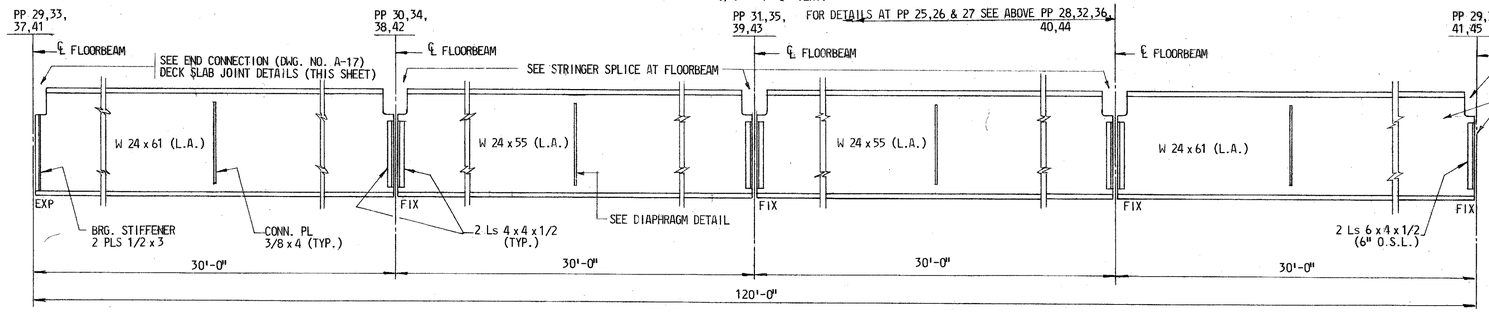
DRAWING NO. A-12
SHEET NO. 12 OF 79

INDEXED

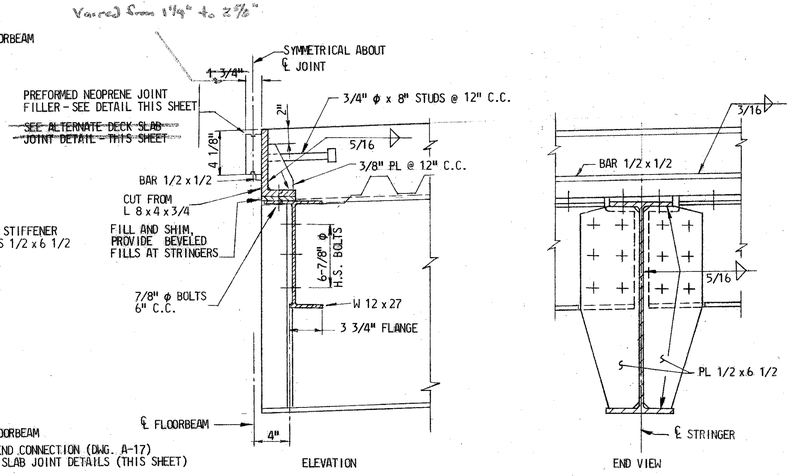
File No. Pocket No. Folder No.



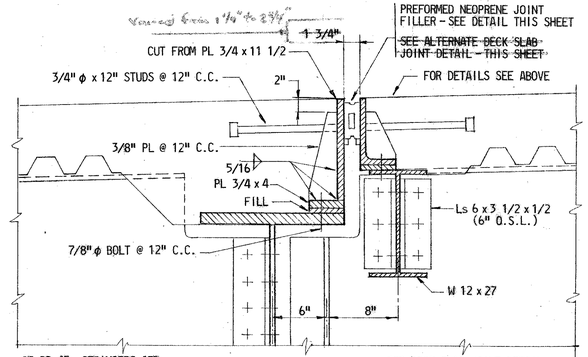
ELEVATION - STRINGERS ABOVE FLOORBEAMS
PP 1 THRU 27
SCALE: 1/4" = 1'-0" HORIZ.
3/4" = 1'-0" VERT.



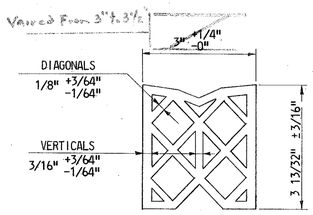
ELEVATION - STRINGERS FRAMING INTO FLOORBEAMS
PP 28 THRU 45
SCALE: 1/4" = 1'-0" HORIZ.
3/4" = 1'-0" VERT.



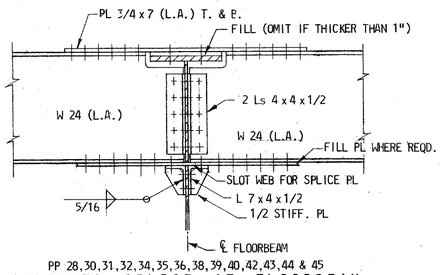
DECK SLAB JOINT DETAIL
PP 5. 9. 13. 17. 21. 25
SCALE: 1 1/2" = 1'-0"



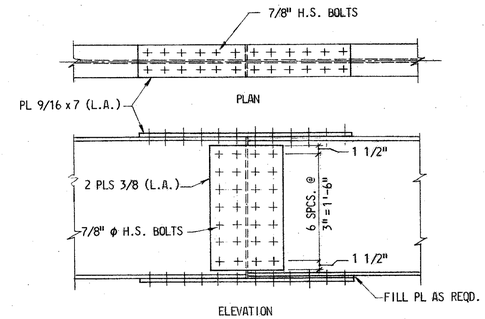
DECK SLAB JOINT DETAIL
PP 33. 37. 41 & 29'
SCALE: 1 1/2" = 1'-0" .



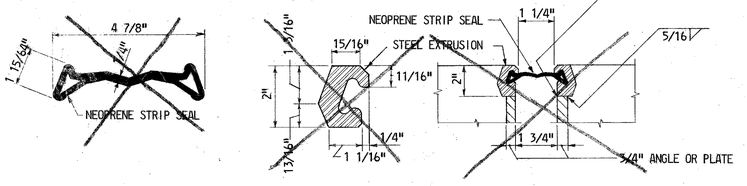
PREFORMED NEOPRENE JOINT FILLER
NO SCALE



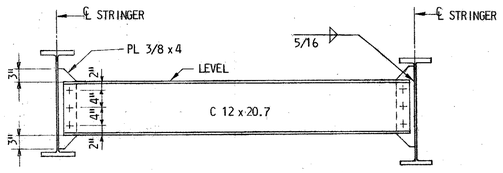
PP 28,30,31,32,34,35,36,38,39,40,42,43,44 & 45
STRINGER SPLICE AT FLOORBEAM
SCALE: 3/4" = 1'-0"



FIELD SPLICE
SCALE: 1" = 1'-0"

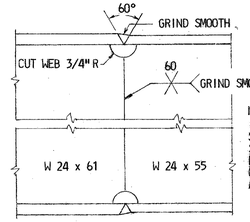


ALTERNATE DECK SLAB JOINT DETAIL (Not Utilized)
NO SCALE



DIAPHRAGM DETAIL
SCALE: 3/4" = 1'-0"

ALL DIAGRAMS SHALL BE COMPLETELY CONNECTED TO STRINGERS BEFORE DECK SLAB IS POURED.



NOTE:
IF OPTIONAL BUTT WELDED SHOP SPLICE IS USED, THE CONTRACTOR SHALL ADJUST THICKNESS OF BEARINGS AND THICKNESS OF CONCRETE HAUNCH AS NECESSARY AT STRINGERS W 24 x 55.

OPTIONAL BUTT WELDED SHOP SPLICE
SCALE: 3" = 1'-0"

NOTES:
1. FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

STRINGER & DECK SLAB JOINT DETAILS

SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT-12

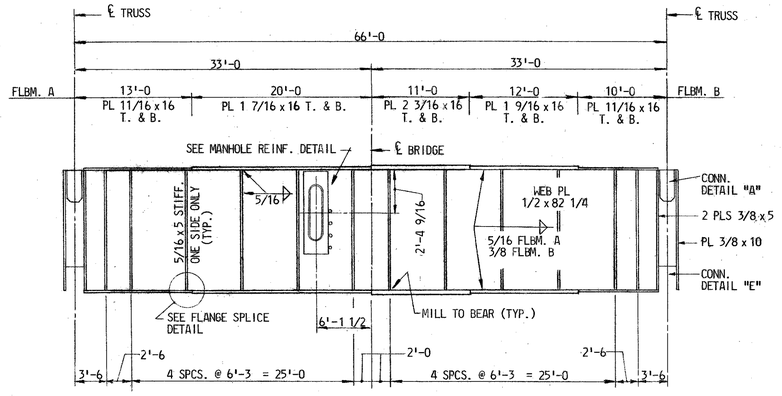
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY C.R.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-13
SHEET NO. 13 OF 79

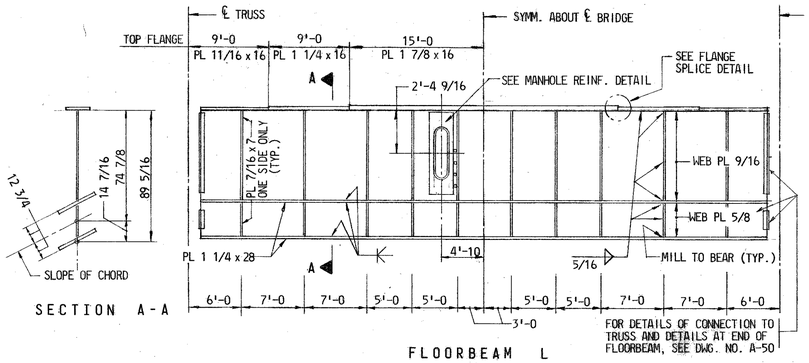
File No. Pocket No. Folder No.

INDEXED



FLOORBEAMS A & B

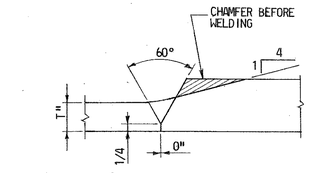
PP 30 THRU 45



SECTION A-A

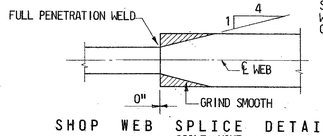
FLOORBEAM L

PP 28



SHOP FLANGE SPLICE DETAIL

SCALE: NONE

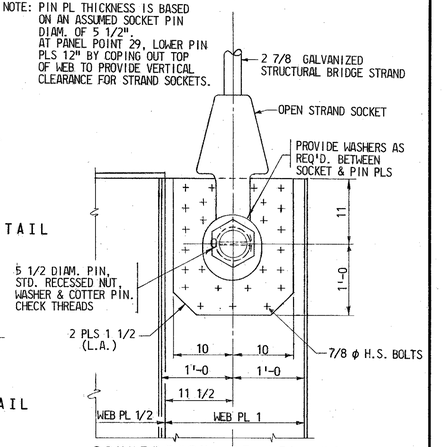


SHOP WEB SPLICE DETAIL

SCALE: NONE

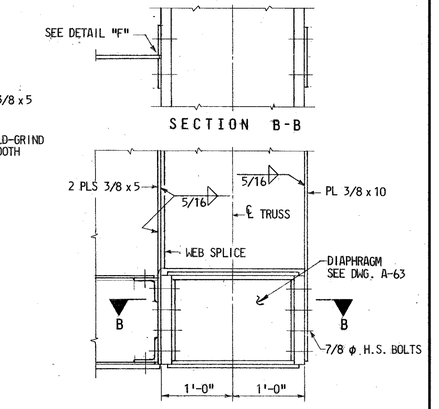
NOTE: WELDS SHALL BE BACK GOUGED AND WELDED AFTER WELDING FAR SIDE. BUTT WELDS ON GIRDER FLANGE AND WEB PLATES SHALL BE GROUND FLUSH. THE FINISH GRINDING BEING PARALLEL TO THE DIRECTION OF STRESS.

NOTE: PIN PL THICKNESS IS BASED ON AN ASSUMED SOCKET PIN DIAM. OF 5 1/2". AT PANEL POINT 29, LOWER PIN PLS 12" BY COPING OUT TOP OF WEB TO PROVIDE VERTICAL CLEARANCE FOR STRAND SOCKETS.



CONNECTION DETAIL "A"

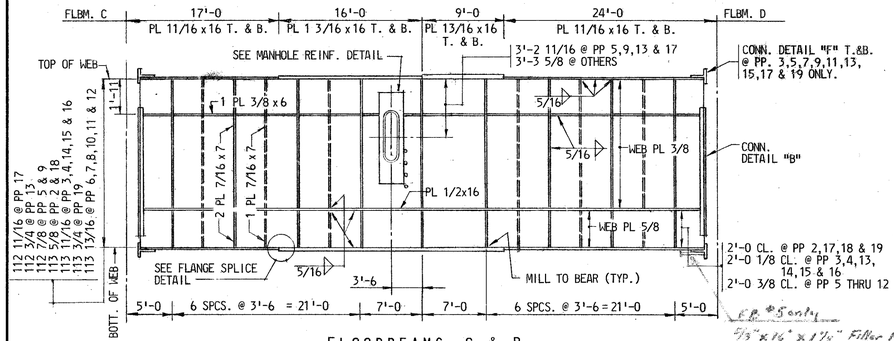
SCALE: 1" = 1'-0"



SECTION B-B

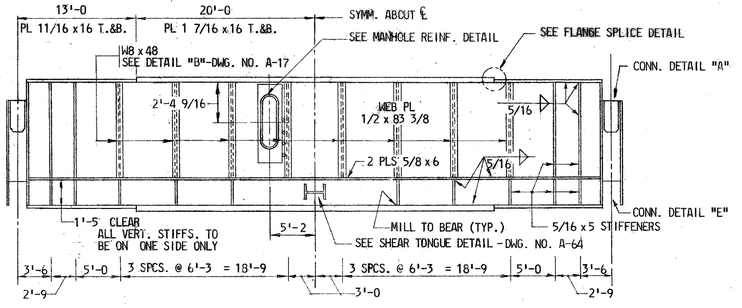
CONNECTION DETAIL "E"

SCALE: 1" = 1'-0"



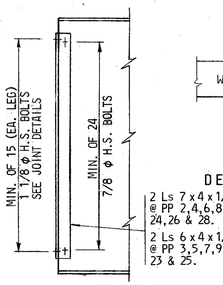
FLOORBEAMS C & D

PP 2 THRU 19



FLOORBEAM M

PP 29



DETAIL "F"

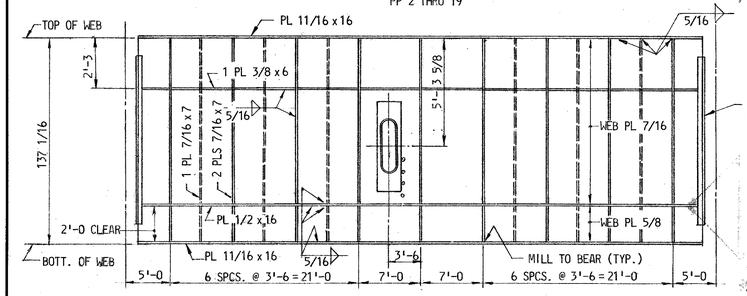
2 Ls 7 x 4 x 1/2 (5 1/4 GA. O.S.L.) @ PP 2,4,6,8,10,12,14,16,18,22, 24,26 & 28.

2 Ls 6 x 4 x 1/2 (6 O.S.L.) @ PP 3,5,7,9,11,13,15,17,19, 23 & 25.

WHERE IT IS NECESSARY TO BREAK CONNECTION INTO TWO SEGMENTS, THE NUMBER OF 1 1/8" BOLTS IN EACH SEGMENT SHALL BE SUFFICIENT TO DEVELOP THE 7/8" BOLTS IN THAT SEGMENT.

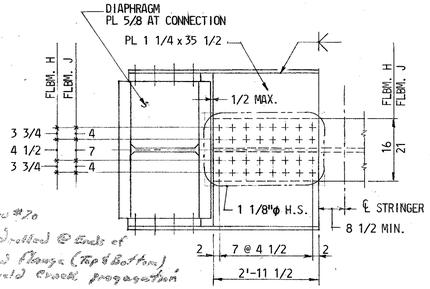
CONNECTION DETAIL "B"

SCALE: 1/2" = 1'-0"

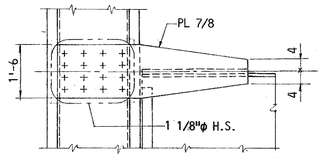


FLOORBEAM E

PP 20



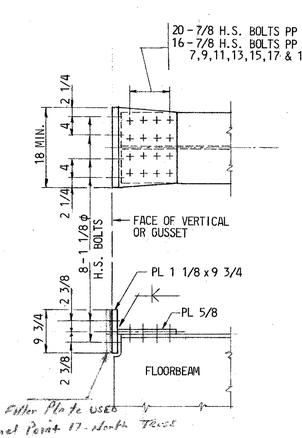
PLAN



ELEVATION

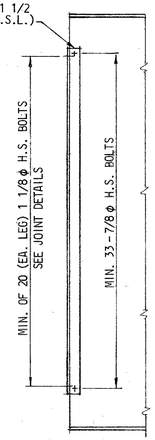
CONNECTION DETAIL "D"

SCALE: 1/2" = 1'-0"



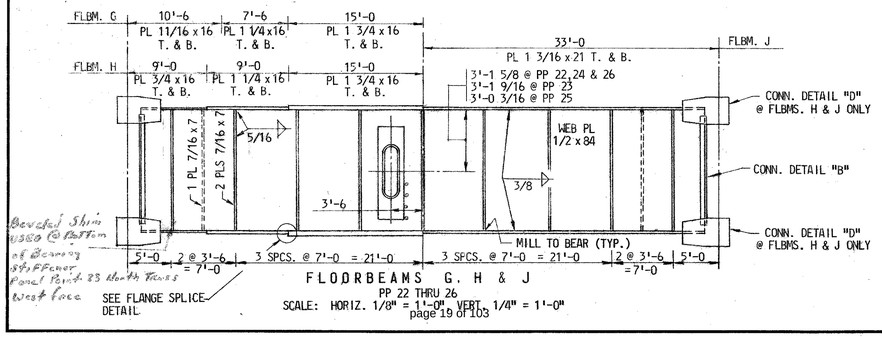
CONNECTION DETAIL "F"

SCALE: 3/4" = 1'-0"



CONNECTION DETAIL "C"

SCALE: 1/2" = 1'-0"



FLOORBEAMS G, H & J

PP 22 THRU 26

SCALE: HORIZ. 1/8" = 1'-0" VERT. 1/4" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR FLOORBEAM LOCATIONS SEE DWG. NO. A-12.

FOR FLOORBEAM DETAILS AT PP 1 & 21 AND MANHOLE REINFORCING SEE DWG. NO. A-15.

FOR FLOORBEAM DETAILS AT PP 27 SEE DWG. NO. A-16.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

FLOORBEAM DETAILS

SCALE AS SHOWN DATE JAN., 1972 CONTRACT OT-12

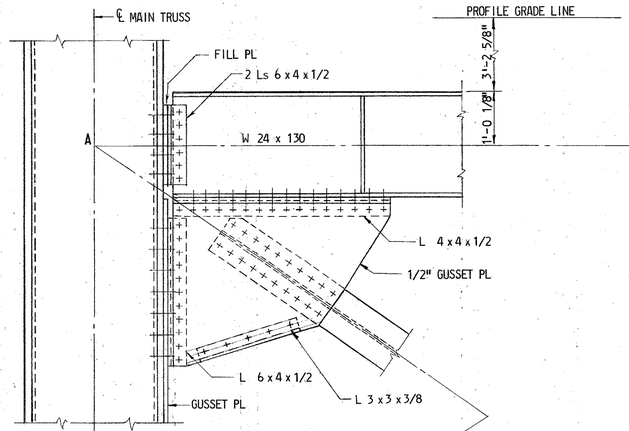
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY C.R.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-14
SHEET NO. 14 OF 79

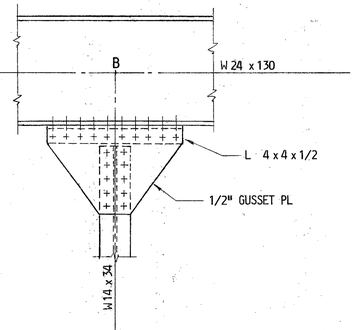
INDEXED

File No. Pocket No. Folder No.

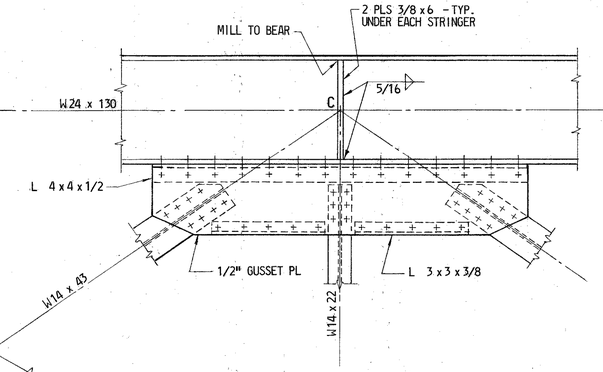


NOTE: BOLTS TO MAIN TRUSS TO BE 1 1/8" ϕ H.S. BOLTS. ALL OTHERS TO BE 7/8" ϕ H.S. BOLTS.

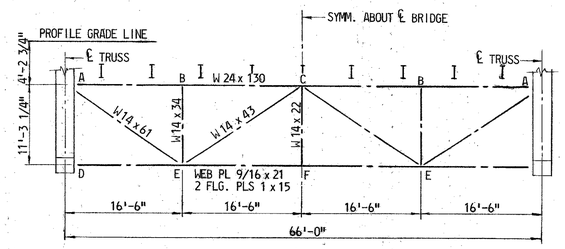
JOINT A



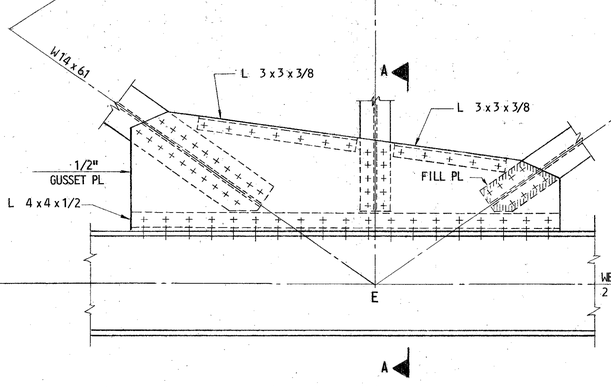
JOINT B



JOINT C



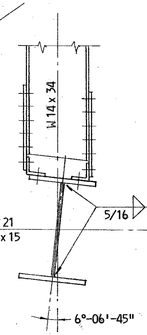
FLOORBEAM F (PP 21)
NOT TO SCALE



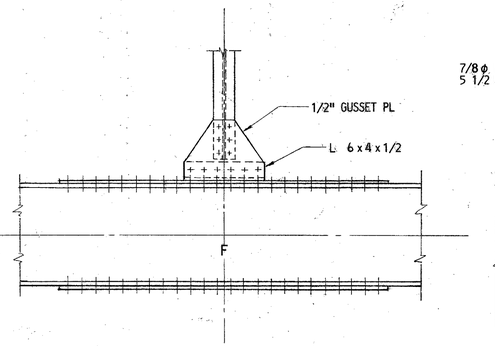
JOINT D

FOR CONNECTIONS AT JOINT D SEE JOINT DETAILS - L21 DWG. NO. A-45

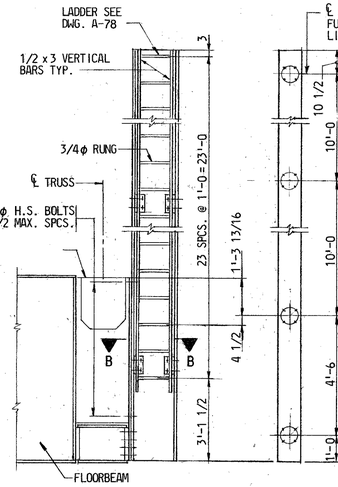
JOINT E



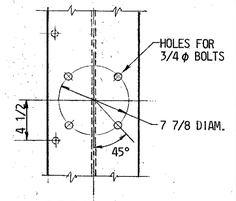
SECTION A-A
SCALE: 3/4" = 1'-0"



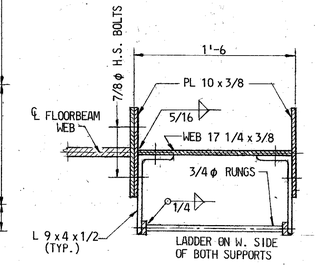
JOINT F



ELEVATION END VIEW
SCALE: 3/8" = 1'-0"

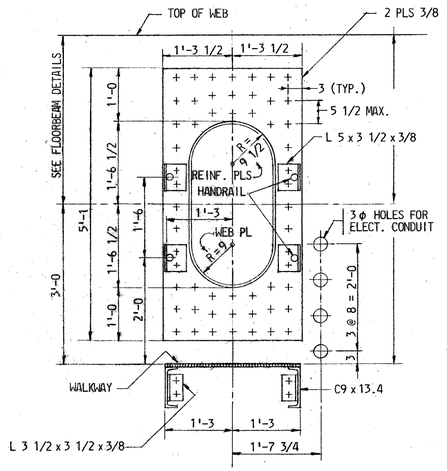


DETAIL B

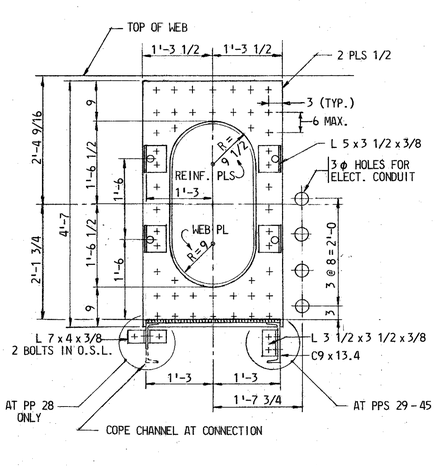


SECTION B-B
SCALE: 1 1/2" = 1'-0"

SUPPORT FOR NAVIGATION LIGHTS
BOTH SIDES OF BRIDGE AT PP 45

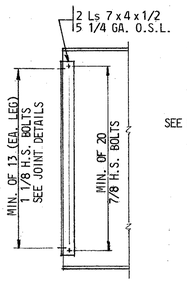


PP 2 THRU 20 & 22 THRU 26

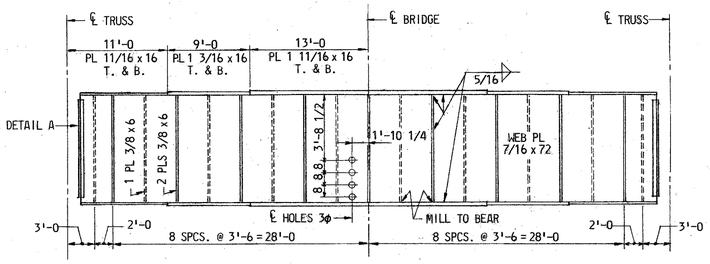


PP 28 THRU 45

MANHOLE REINFORCING DETAILS
SCALE: 3/4" = 1'-0"



DETAIL A
SCALE: 1/2" = 1'-0"



FLOORBEAM N (PP 1)
SCALE: HORIZ. 1/8" = 1'-0"
VERT. 1/4" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR TYPICAL LADDER DETAILS SEE DWG. NO. A-78.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

FLOORBEAM 'F' (PP 21)
FLOORBEAM 'N' (PP 1)

SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT-12

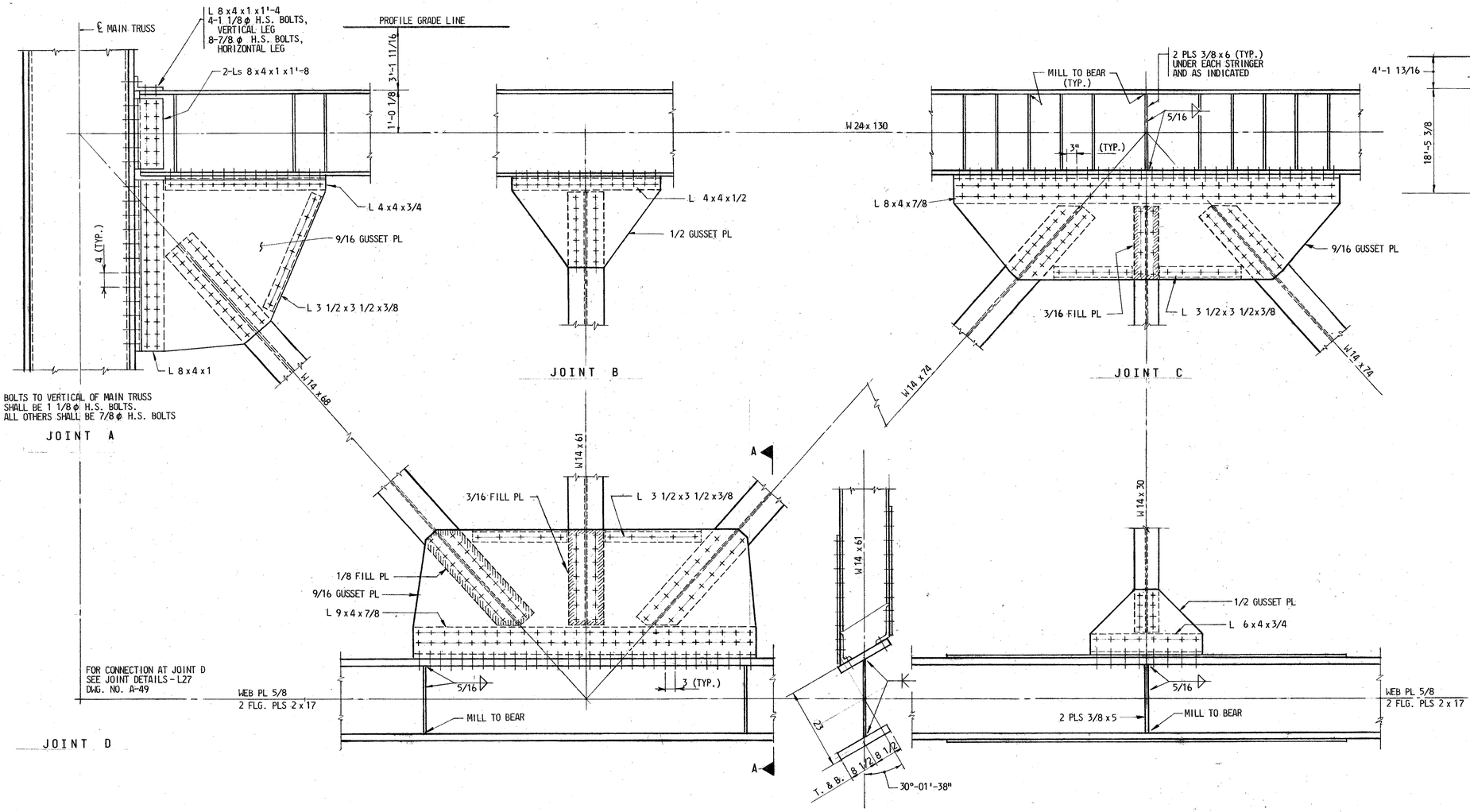
MADE BY E.R.A.
TRACED BY C.E.S.
CHECKED BY C.R.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-15
SHEET NO. 15 OF 79

INDEXED

File No. Pocket No. Folder No.



REVISIONS

Re-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

FLOORBEAM 'K' (PP 27)

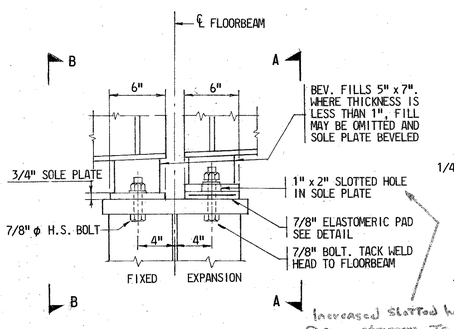
SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY C.E.S.
TRACED BY C.E.S.
CHECKED BY C.R.

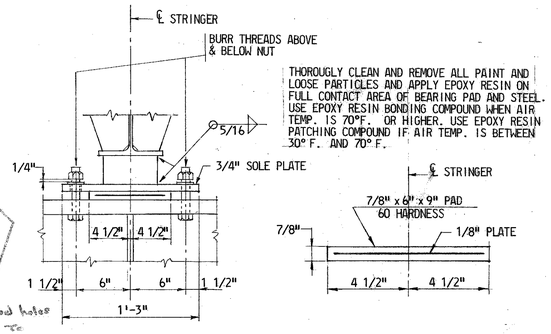
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-16
SHEET NO. 16 OF 79
INDEXED

File No. Pocket No. Folder No.



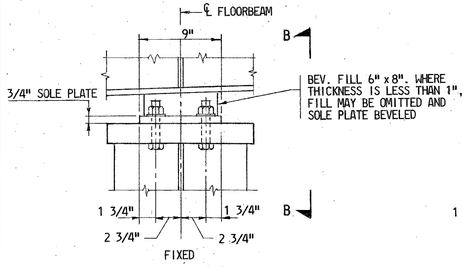
PP 5, 9, 13, 17, 21 & 25



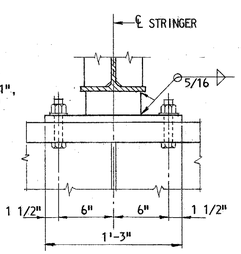
SECTION A-A

THOROUGLY CLEAN AND REMOVE ALL PAINT AND LOOSE PARTICLES AND APPLY EPOXY RESIN ON FULL CONTACT AREA OF BEARING PAD AND STEEL. USE EPOXY RESIN BONDING COMPOUND WHEN AIR TEMP. IS 70°F. OR HIGHER. USE EPOXY RESIN PATCHING COMPOUND IF AIR TEMP. IS BETWEEN 30° F. AND 70° F.

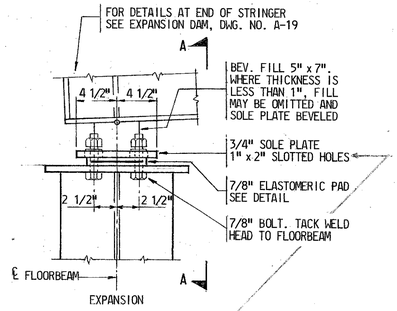
ELASTOMERIC PAD DETAIL



PP 2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 23, 24, 26 & 27



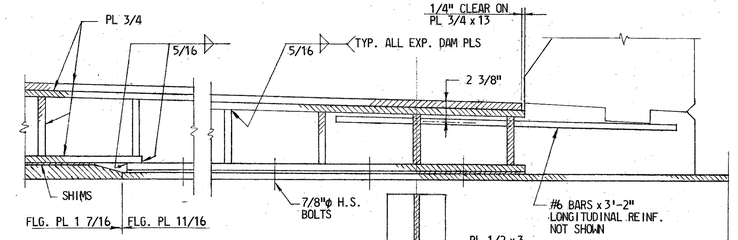
SECTION B-B

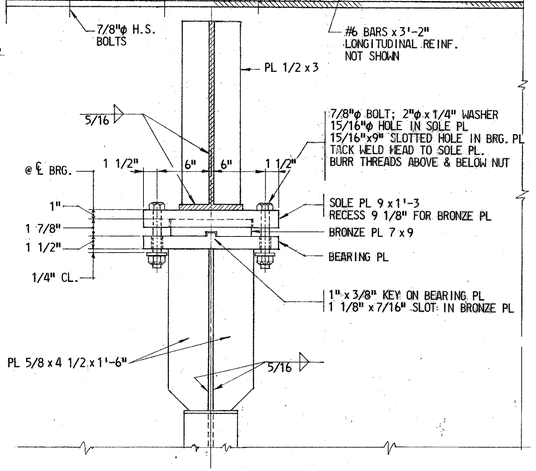


PP1

STRINGER BEARING DETAILS - STRINGERS ABOVE FLOORBEAMS

SCALE: 1 1/2" = 1'-0"



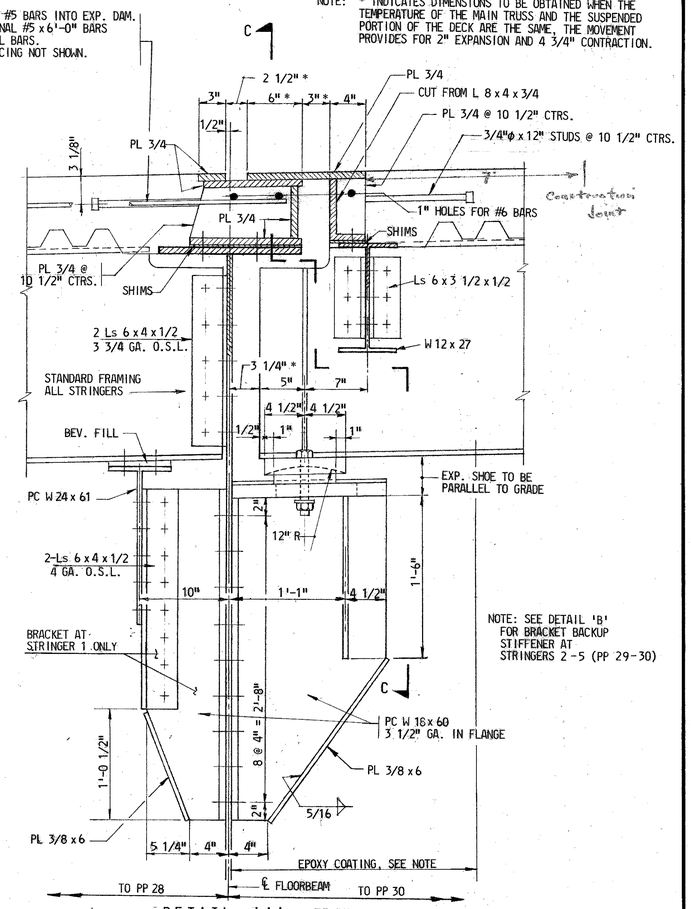


SECTION C-C

SCALE: 1 1/2" = 1'-0"

EXTEND NORMAL #5 BARS INTO EXP. DAM. PLACE ADDITIONAL #5 x 6'-0" BARS BETWEEN NORMAL BARS. OTHER REINFORCING NOT SHOWN.

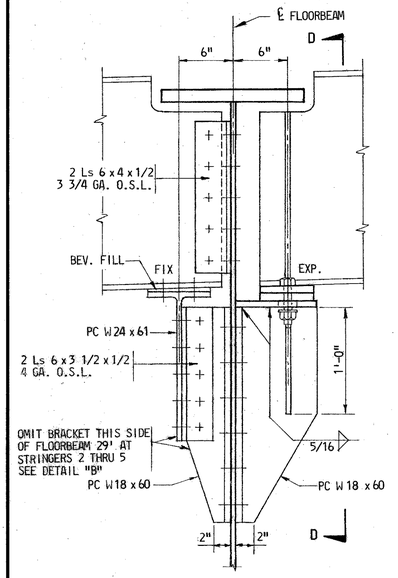
NOTE: * INDICATES DIMENSIONS TO BE OBTAINED WHEN THE TEMPERATURE OF THE MAIN TRUSS AND THE SUSPENDED PORTION OF THE DECK ARE THE SAME, THE MOVEMENT PROVIDES FOR 2" EXPANSION AND 4 3/4" CONTRACTION.

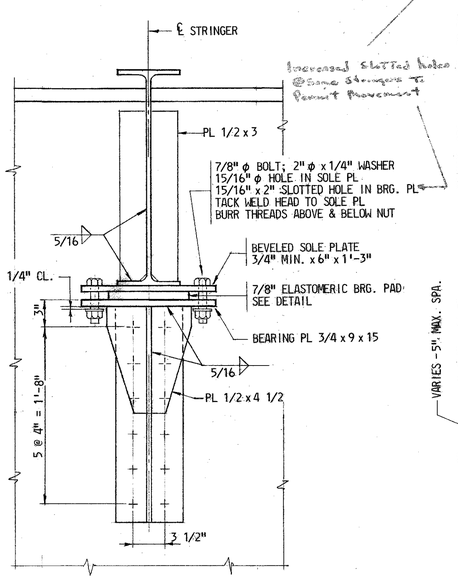


DETAIL 'A'

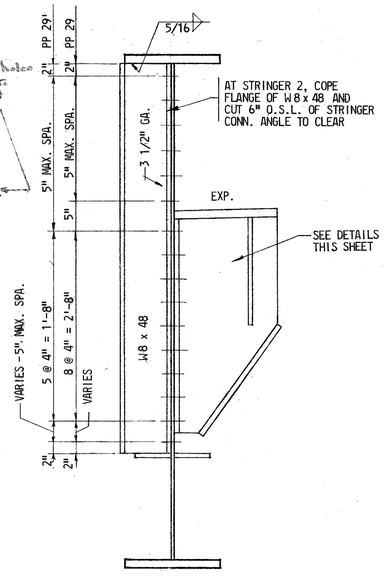
EXPANSION JOINT DETAIL PP 29

SCALE: 1 1/2" = 1'-0"





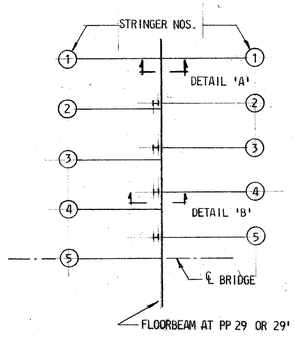
SECTION D-D



DETAIL "B"

PP 29 & 29' - STRINGERS 2 TO 5

SCALE: 1" = 1'-0"



KEY DIAGRAM PP 29 & 29'

STRINGER BEARING DETAILS - PP 33, 37, 41 & 29'

SCALE: 1 1/2" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

BEARING DETAILS AND EXPANSION JOINT DETAILS ARE SYMMETRICAL ABOUT ℄ BRIDGE EXCEPT AT PP 29, WHERE SEPARATE DETAILS ARE SHOWN FOR PP 29'.

AT PP 29 UNDER OPEN EXPANSION DAM COAT STEEL WITH EPOXY COATING TO BOTTOM OF FLOORBEAM AND TWO (2) FEET OF END OF STRINGERS.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

STRINGER BEARINGS AND CONNECTIONS

SCALE: 1 1/2" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

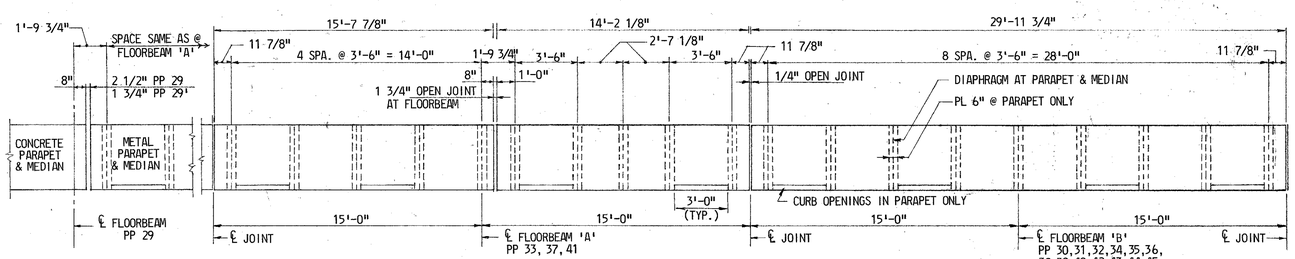
MADE BY C.E.S.
TRACED BY C.E.S.
CHECKED BY C.R.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-17
SHEET NO. 17 OF 79

File No. Pocket No. Folder No.

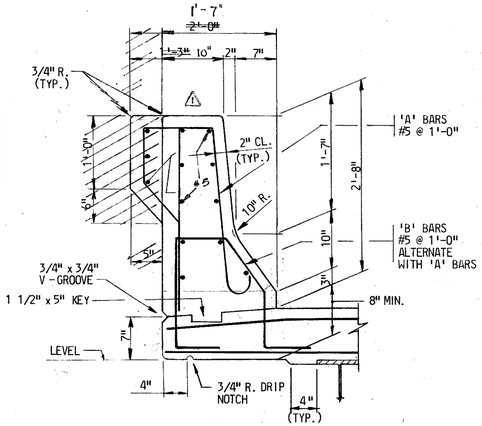
INDEXED



TYPICAL METAL PARAPET AND MEDIAN ELEVATION

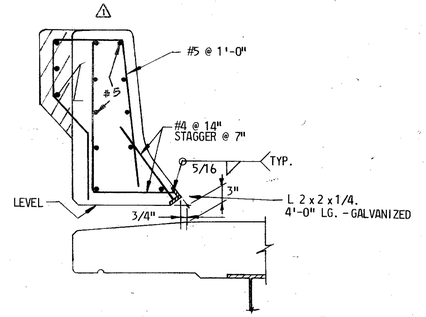
SCALE: 1/4" = 1'-0"

NOTE: ALL JOINTS ARE TO BE VERTICAL



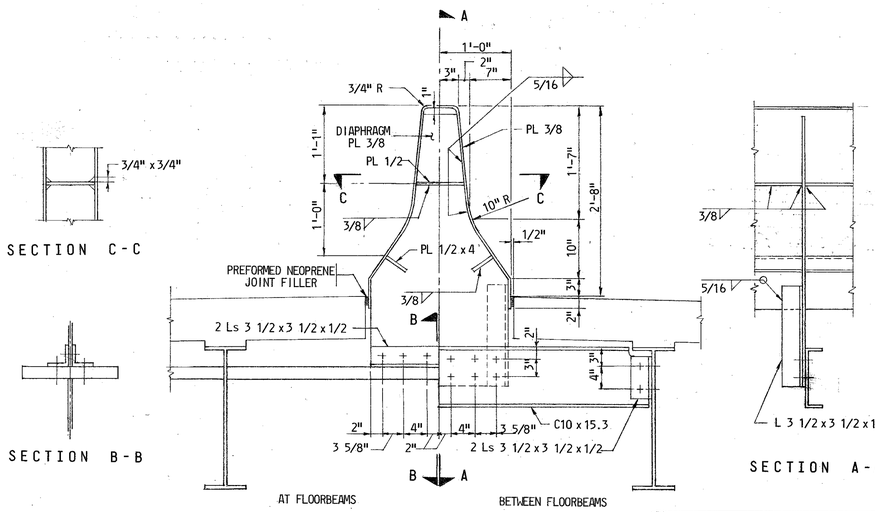
CONCRETE PARAPET DETAIL

SCALE: 1" = 1'-0"



SECTION THRU CURB OPENING

SCALE: 1" = 1'-0"



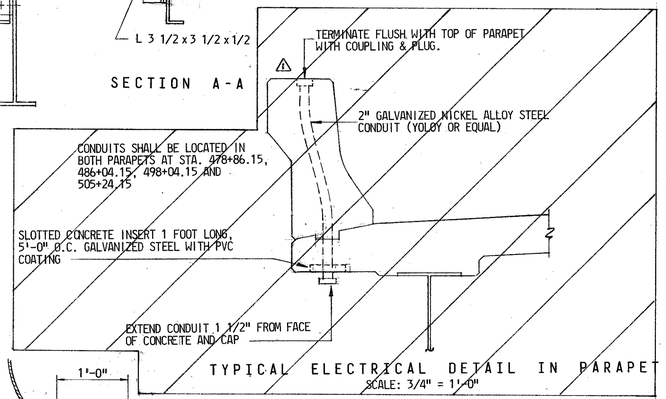
METAL MEDIAN BARRIER DETAILS

SCALE: 1" = 1'-0"

SECTION C-C

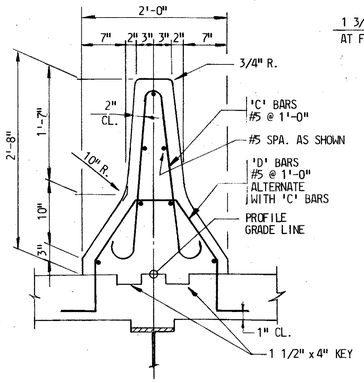
SECTION B-B

SECTION A-A



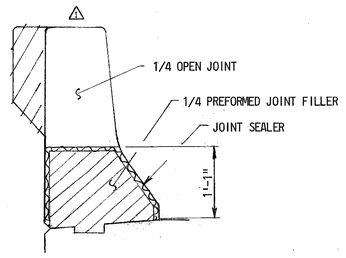
TYPICAL ELECTRICAL DETAIL IN PARAPET

SCALE: 3/4" = 1'-0"



CONCRETE MEDIAN BARRIER DETAIL

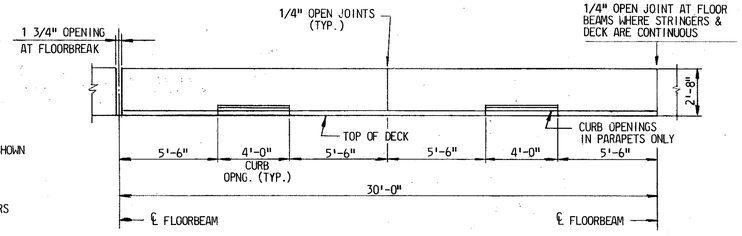
SCALE: 1" = 1'-0"



DETAIL AT 1/4" OPEN JOINTS

MEDIAN BARRIER SIMILAR

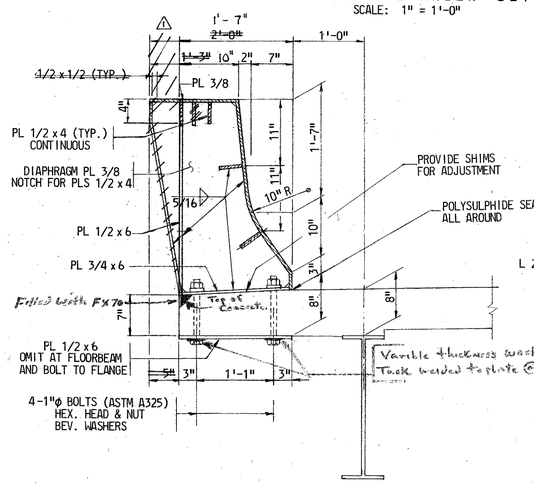
SCALE: 1" = 1'-0"



TYPICAL CONCRETE PARAPET AND MEDIAN ELEVATION

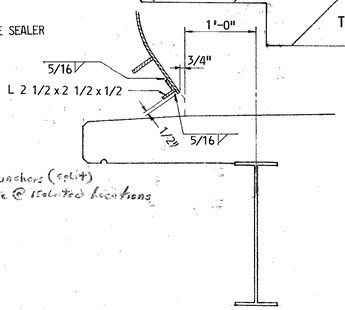
SCALE: 1/4" = 1'-0"

NOTE:
ALL JOINTS SHALL BE VERTICAL AND SHALL BE FORMED BY POURING ALTERNATE SECTIONS. ADJACENT SECTIONS SHALL HAVE A 2 DAY DELAY BETWEEN POURS. NO REINF. SHALL PASS THRU JOINTS.



METAL PARAPET DETAIL

SCALE: 1" = 1'-0"



SECTION THRU CURB OPENING

SCALE: 1" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. NO. A-2.
2. CONCRETE PARAPET AND MEDIAN BARRIER FROM PP 1 TO PP 29. METAL PARAPET AND MEDIAN BARRIER FROM PP 29 TO PP 45. Concrete.
3. THE TOP AND ROADWAY FACES OF PARAPETS AND MEDIAN BARRIER TO RECEIVE TWO COATS OF EPOXY PROTECTIVE COATING.
4. PROVIDE 2" CONDUIT FITTINGS AND CONCRETE INSERTS FOR FUTURE ROADWAY LIGHTING AS SHOWN. COST TO BE INCLUDED IN THE UNIT PRICE FOR LIGHTWEIGHT CONCRETE PARAPETS.
5. The Top and Roadway Faces of Metal Parapets and Median Barrier to Receive three coats of Zinc Rich Paint

REVISIONS
⚠ PARAPET REVISION 4-15-74 S.J.S.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PARAPETS AND MEDIAN BARRIER

SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT-12

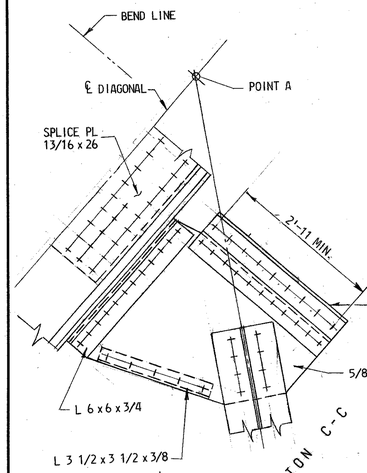
MADE BY E.R.A.
TRACED BY C.E.S.
CHECKED BY C.R.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

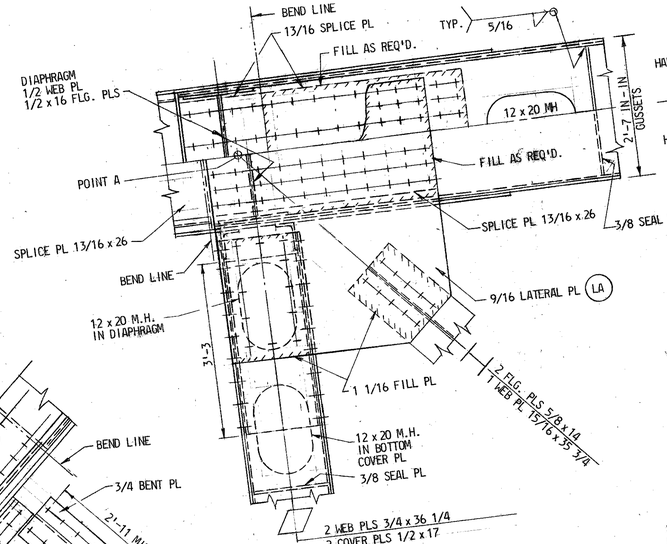
DRAWING NO. A-18
SHEET NO. 18 OF 79

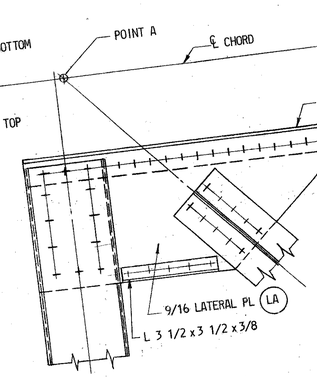
INDEXED

File No.____ Pocket No.____ Folder No.____

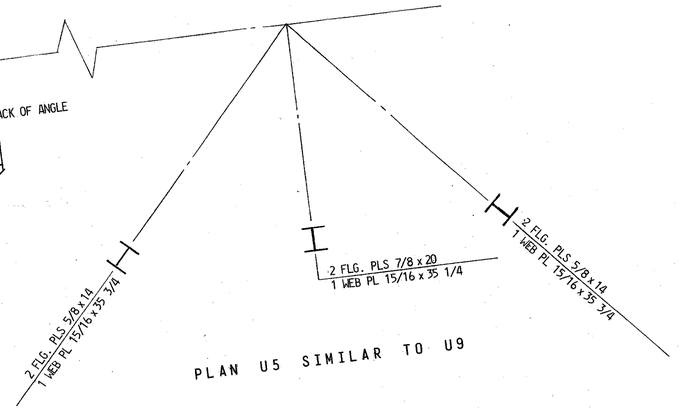


SECTION C-C

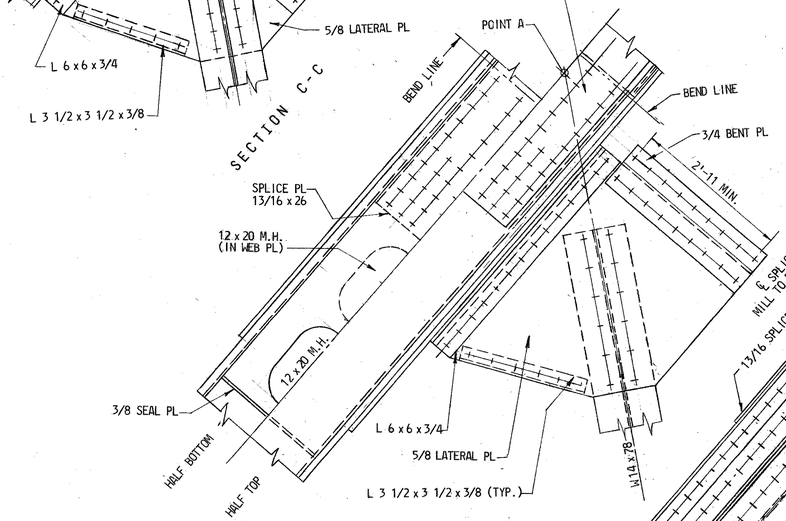


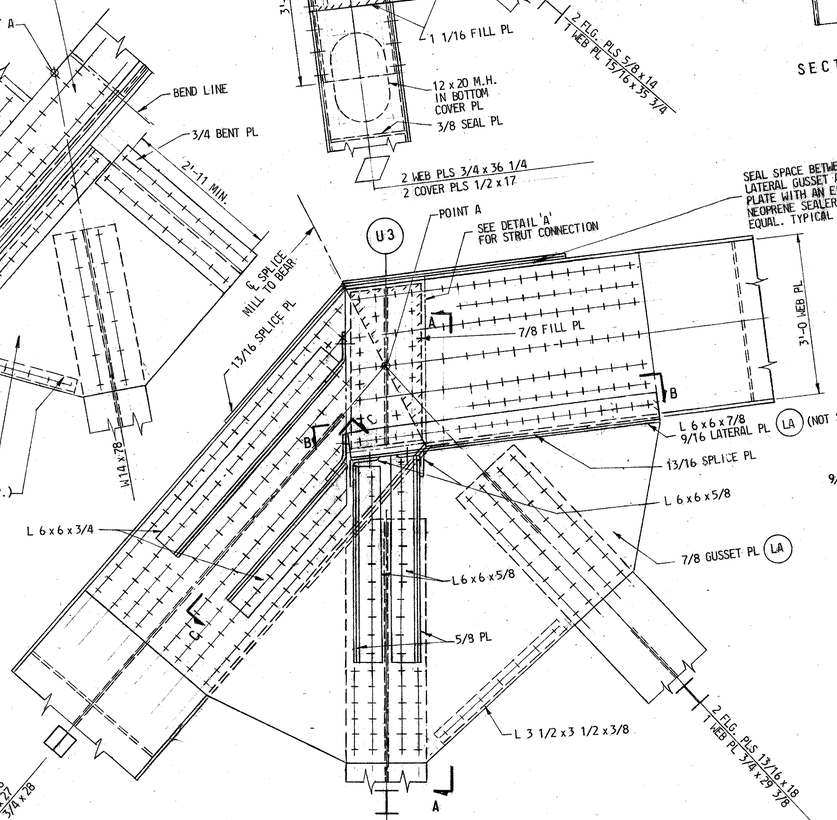


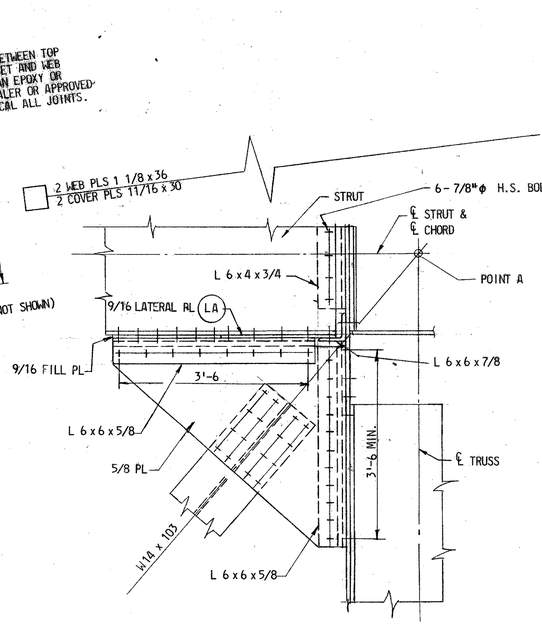
SECTION B-B



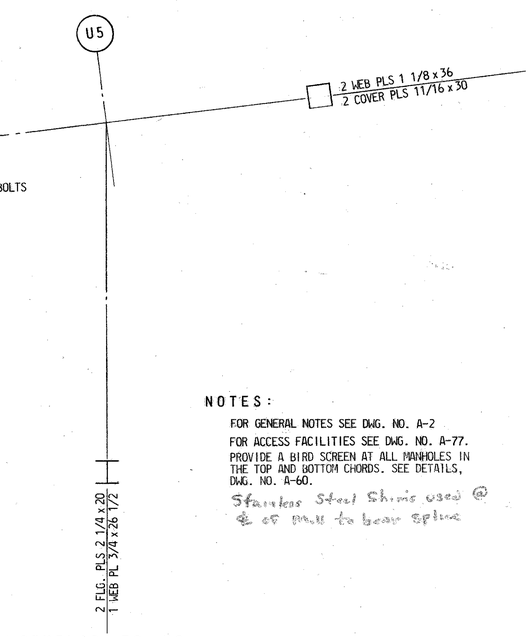
PLAN U5 SIMILAR TO U9







SECTION A-A



SIMILAR TO U9
(DWG. NO. A-22)

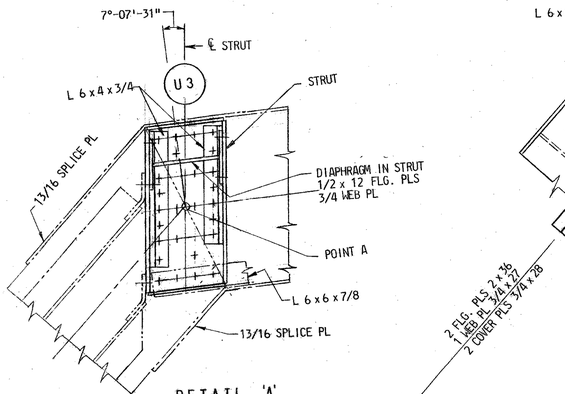
NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2

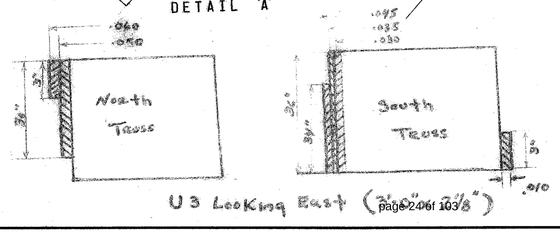
FOR ACCESS FACILITIES SEE DWG. NO. A-77.

PROVIDE A BIRD SCREEN AT ALL MANHOLES IN THE TOP AND BOTTOM CHORDS. SEE DETAILS, DWG. NO. A-60.

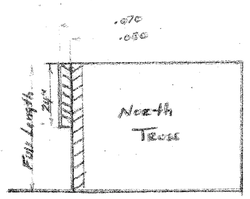
Stainless steel shims used @ ℄ of pad to bear spline

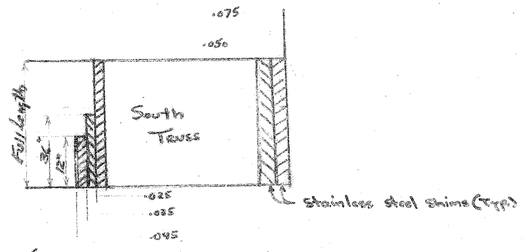


DETAIL 'A'



U3 Looking East (3'-6" x 2 1/8")





U3 Looking East (3'-0" x 2 1/8")

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U3 & U5

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

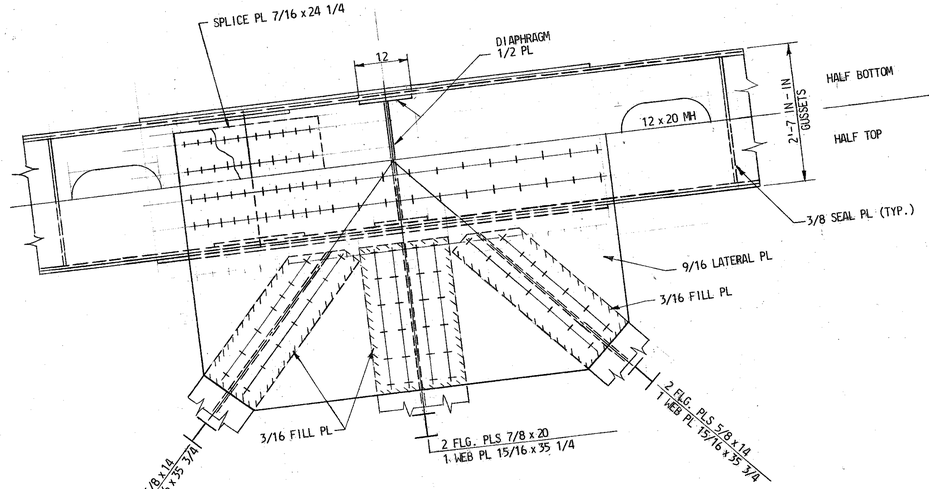
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

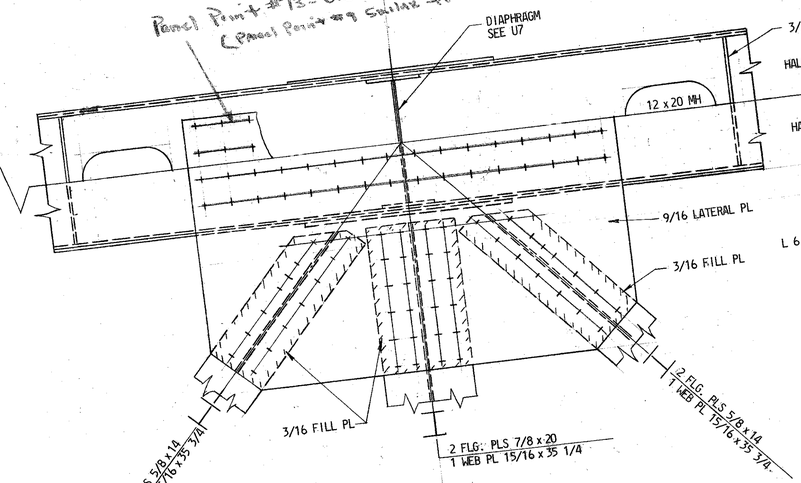
DRAWING NO. A-21
SHEET NO. 21 OF 79

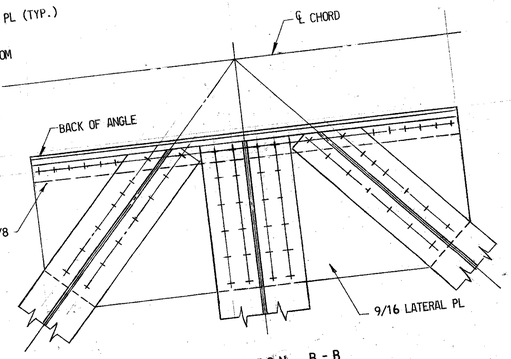
INDEXED

File No. Pocket No. Folder No.

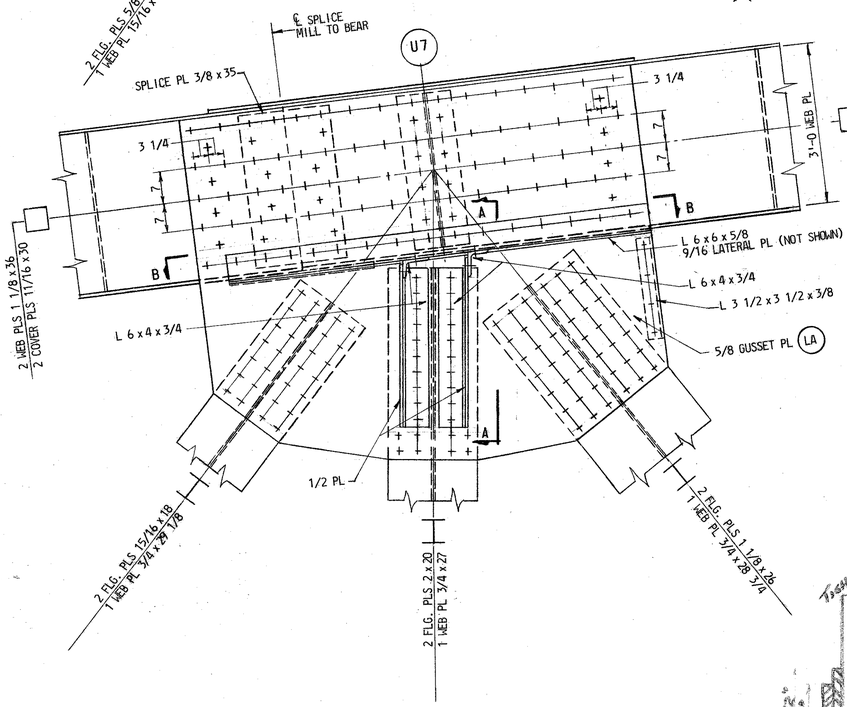
Panel Point #13 - Used 44 7/8" ϕ bolts @ North Truss Only
(Panel Points 9 Similar to #13)

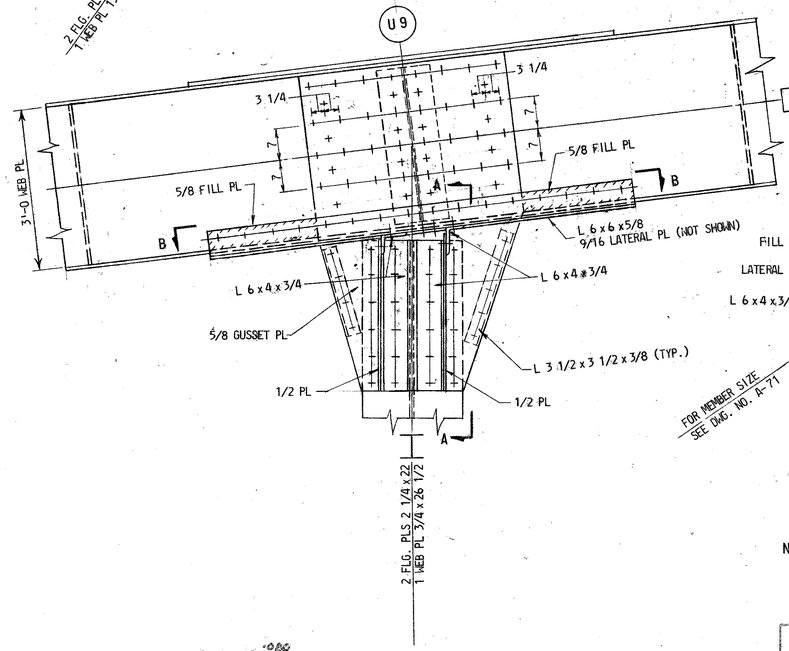


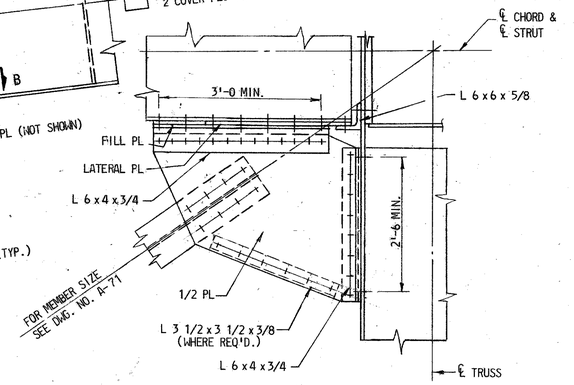




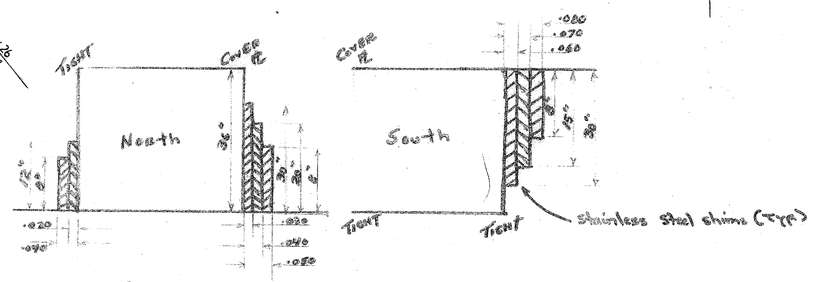
SECTION B-B







SECTION A-A



U7 Looking East 3'-0" x 1/8"

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.
Stainless Steel Shims used @ ℄ of Mill to Bear Splice

REVISIONS
No. - Date

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U7 & U9

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

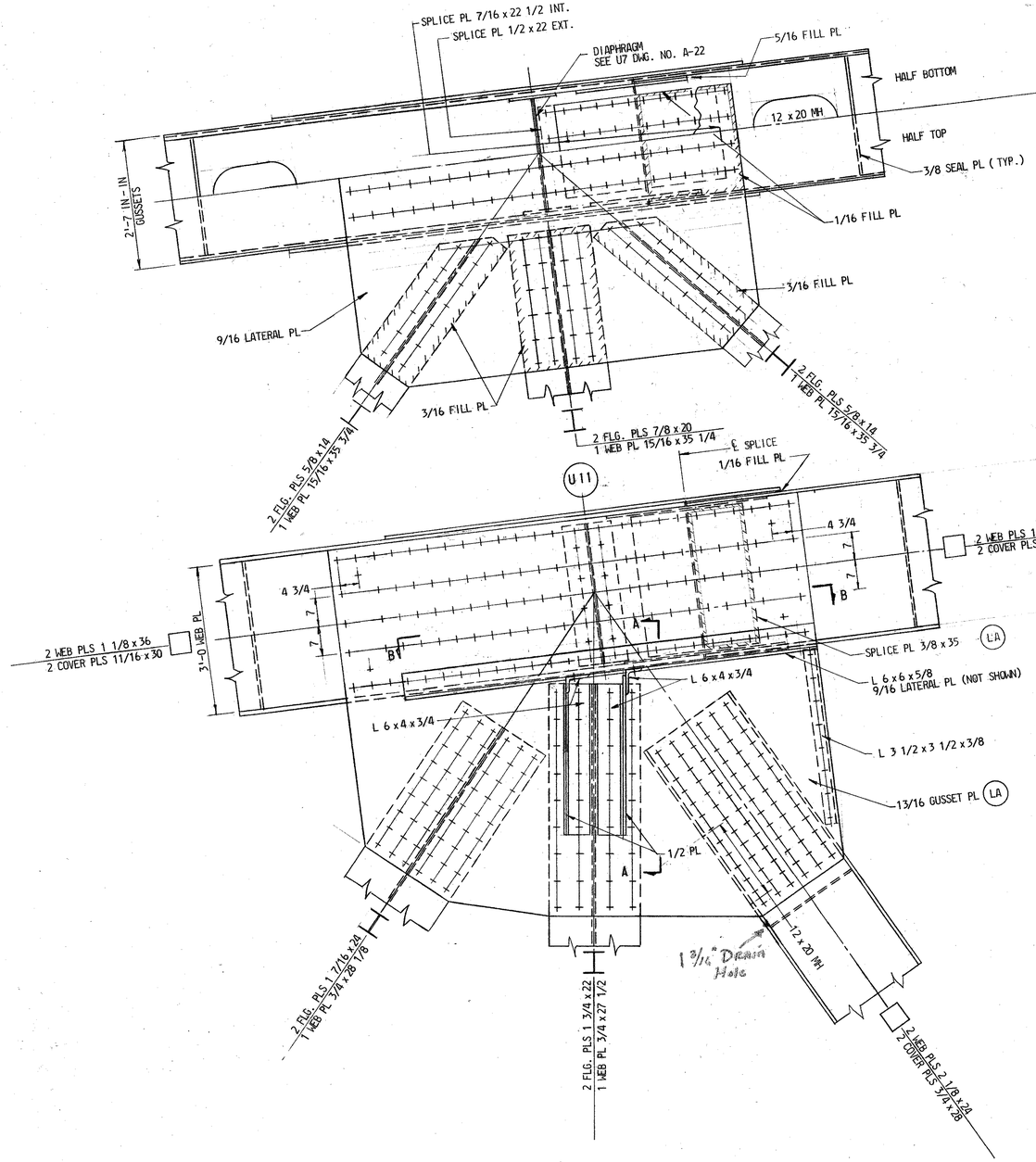
DRAWING NO. A-22
SHEET NO. 22 OF 79

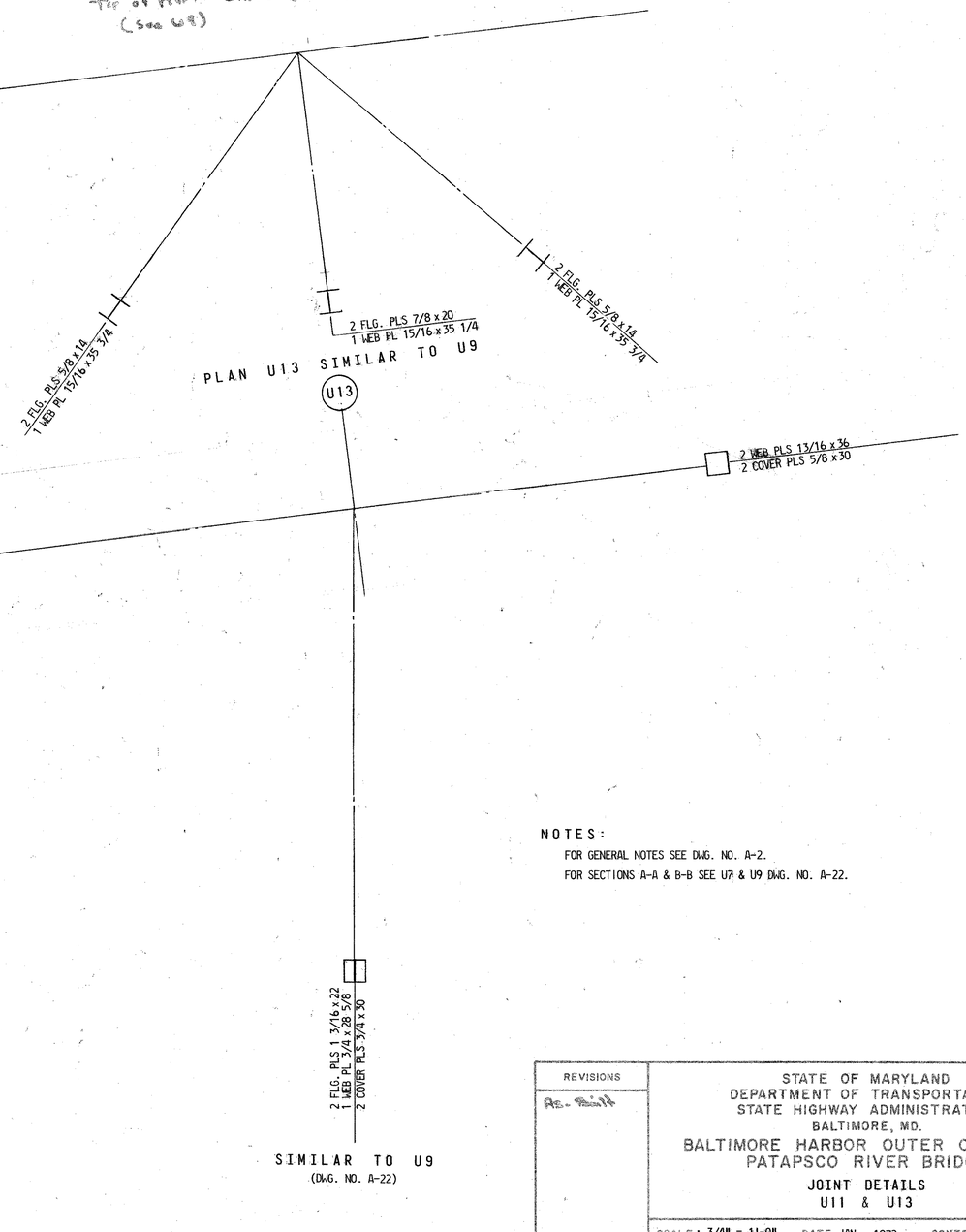
INDEXED

File No.____ Pocket No.____ Folder No.____

U7 U9 U7 U9

Note:
Used 64- 1" ϕ bolts @
Top horizontal gusset on
Top of North Chord (PP-13).
(See U9)





SIMILAR TO U9
(DWG. NO. A-22)

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.
FOR SECTIONS A-A & B-B SEE U7 & U9 DWG. NO. A-22.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U11 & U13

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

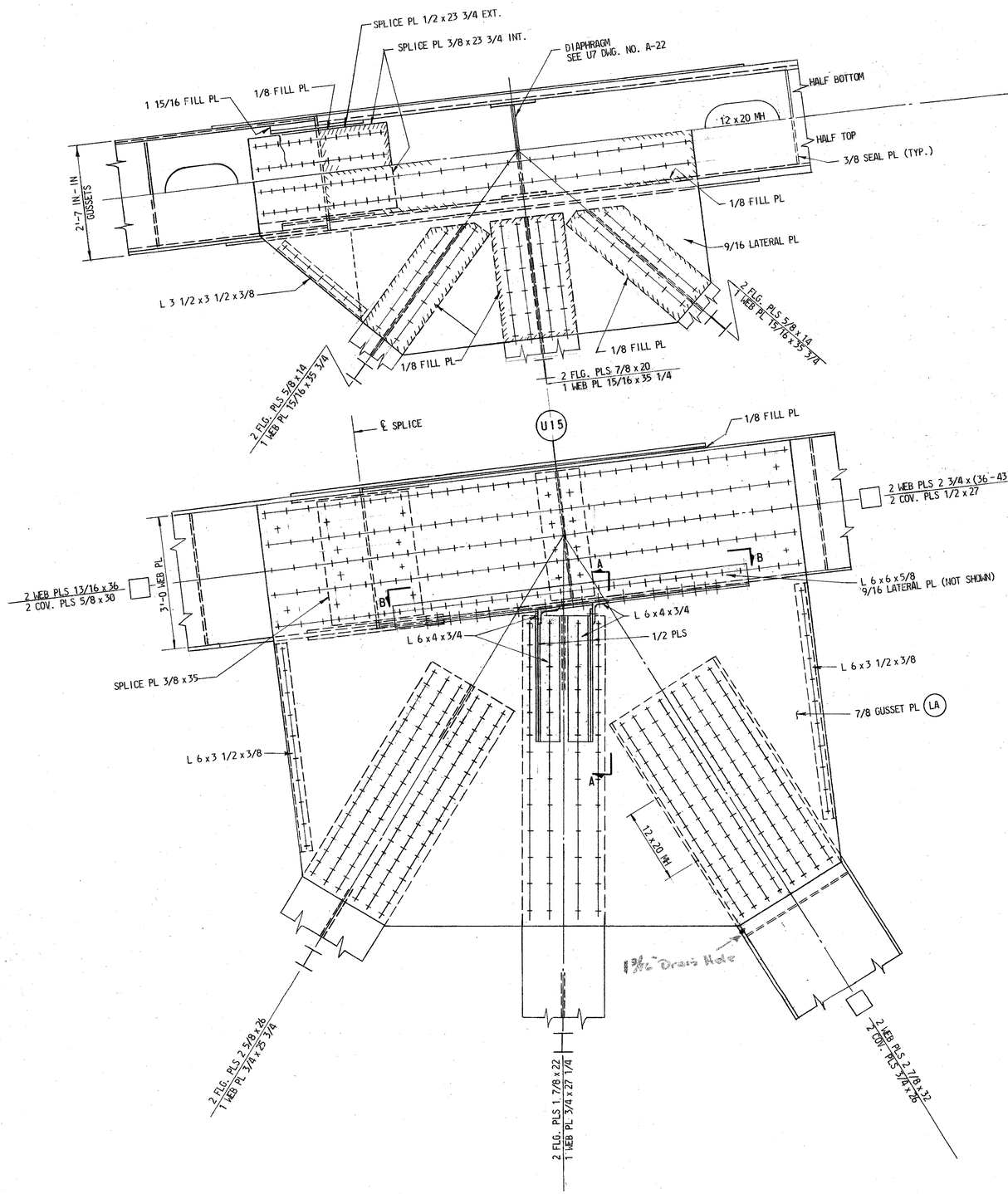
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

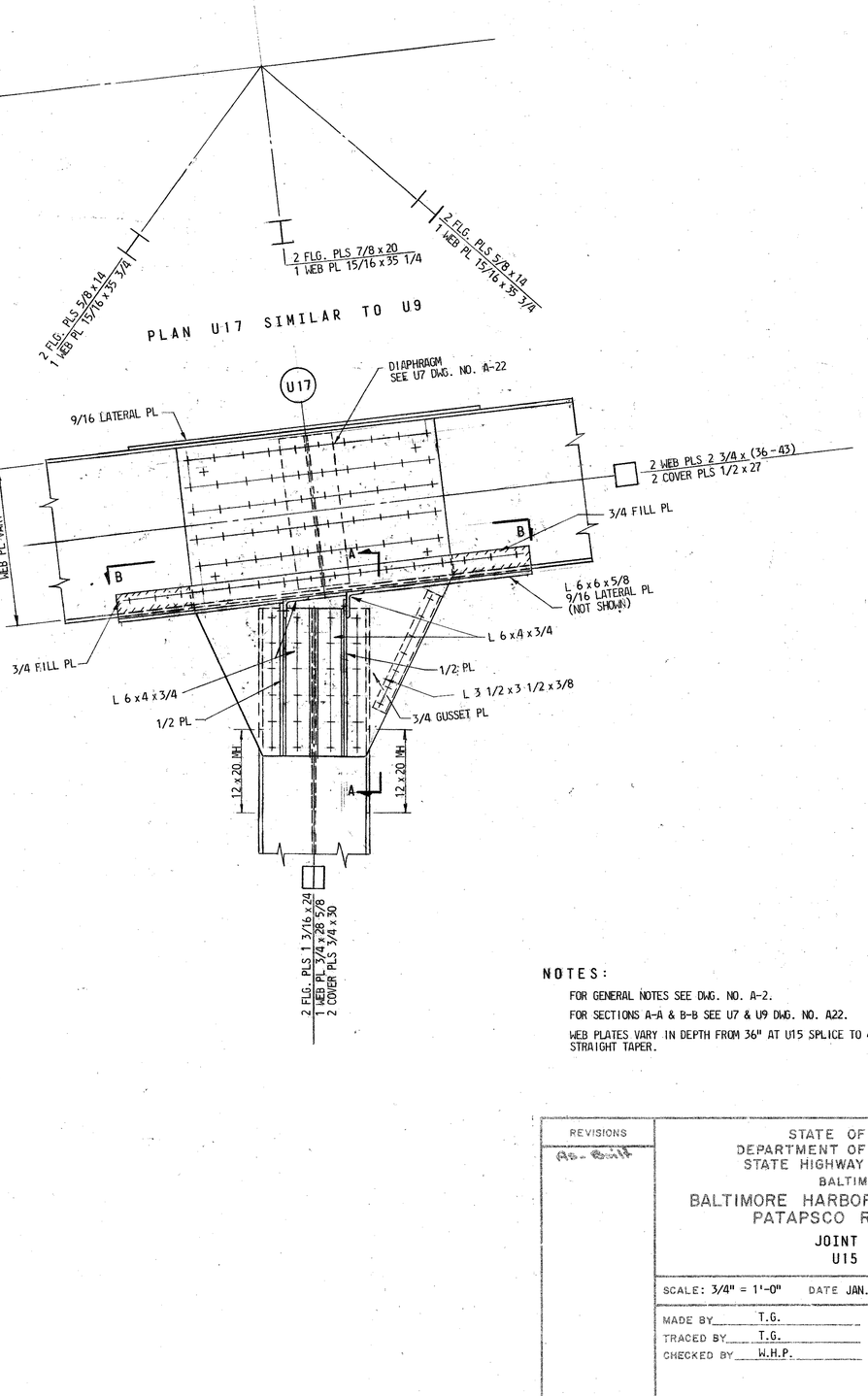
DRAWING NO. A-23
SHEET NO. 23 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____

U11 U13





NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR SECTIONS A-A & B-B SEE U7 & U9 DWG. NO. A22.

WEB PLATES VARY IN DEPTH FROM 36" AT U15 SPLICE TO 43" AT U19 SPLICE ON A STRAIGHT TAPER.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U15 & U17

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

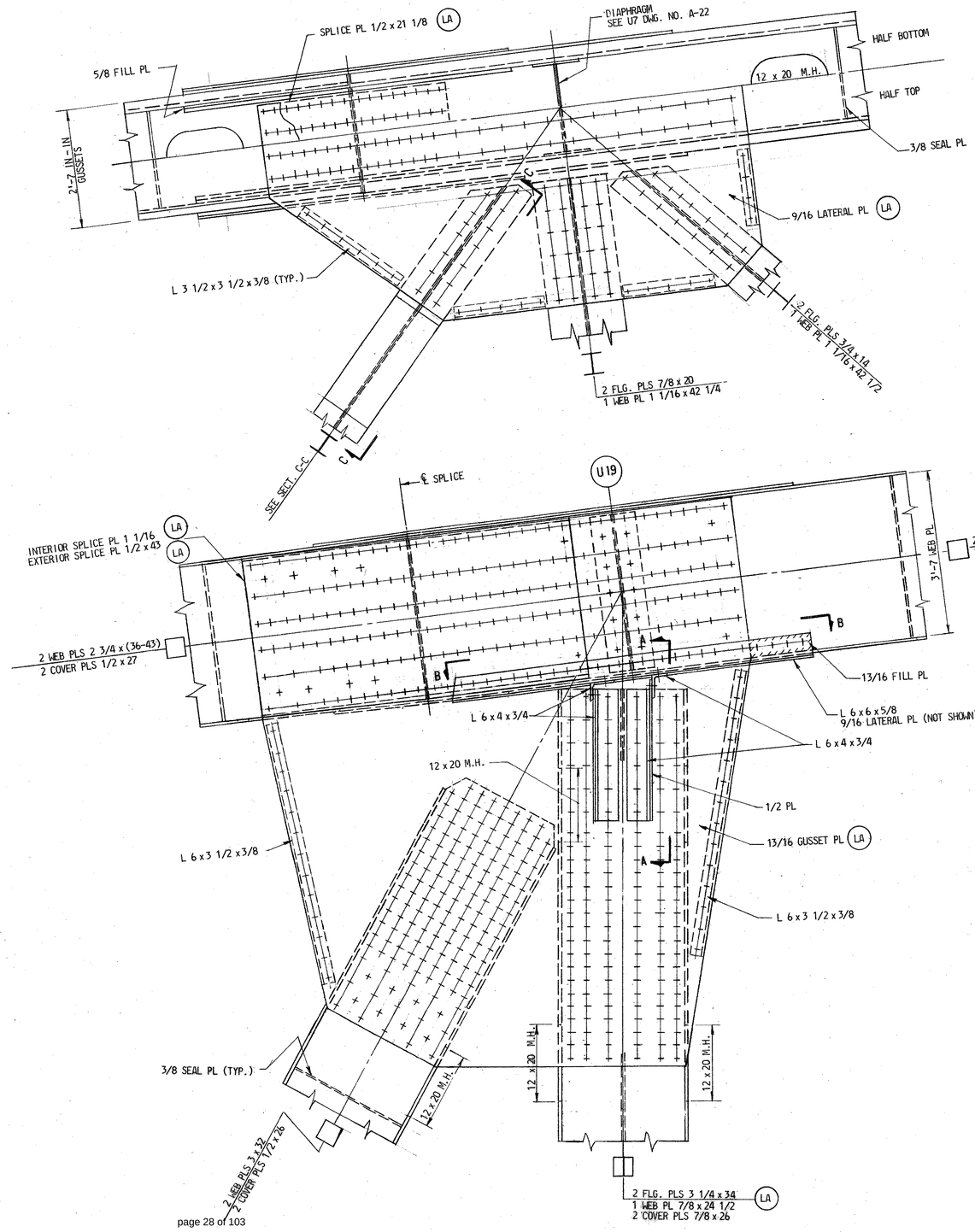
MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

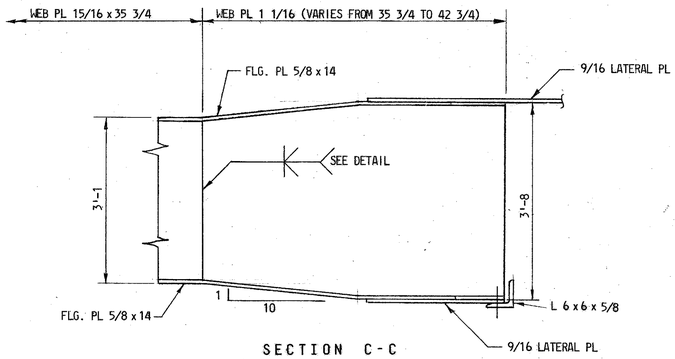
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-24
SHEET NO. 24 OF 79

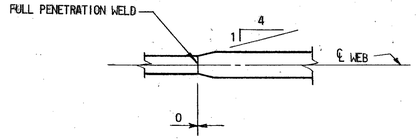
INDEXED

File No.____ Pocket No.____ Folder No.____





SECTION C-C



SHOP WEB SPLICE DETAIL
SCALE: 3" = 1'-0"

NOTE:
WELD TO BE GROUND FLUSH, FINISHING GRINDING TO BE IN THE DIRECTION OF STRESS.

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2

FOR SECTION A-A & B-B SEE U7 & U9 DWG. NO. A-22.

REVISIONS
Re-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U19

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

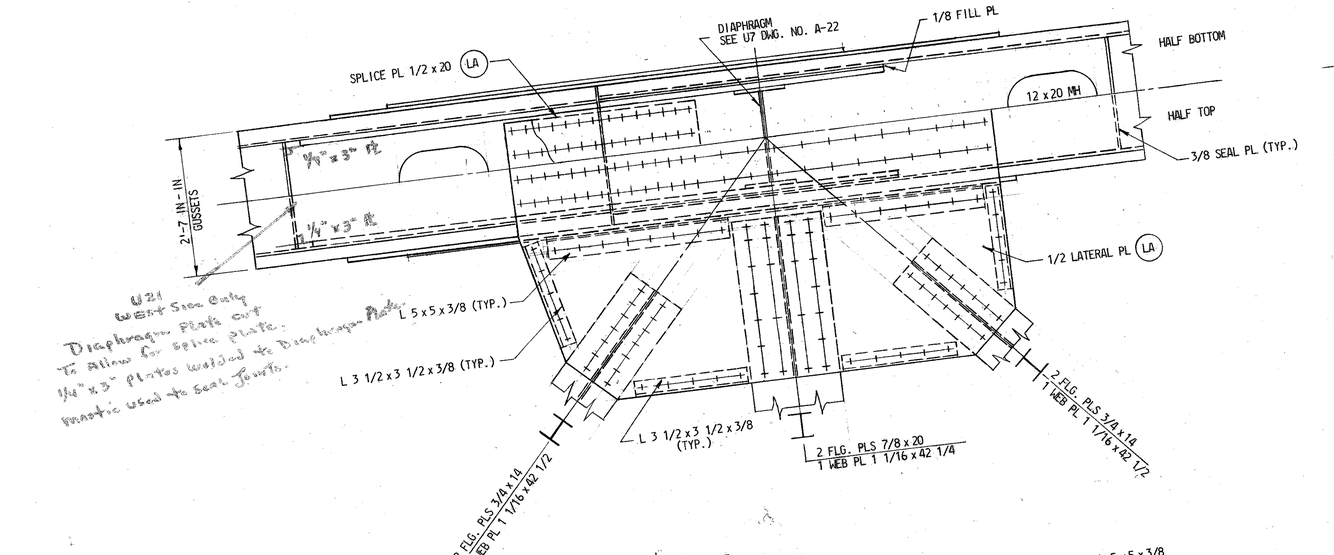
MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

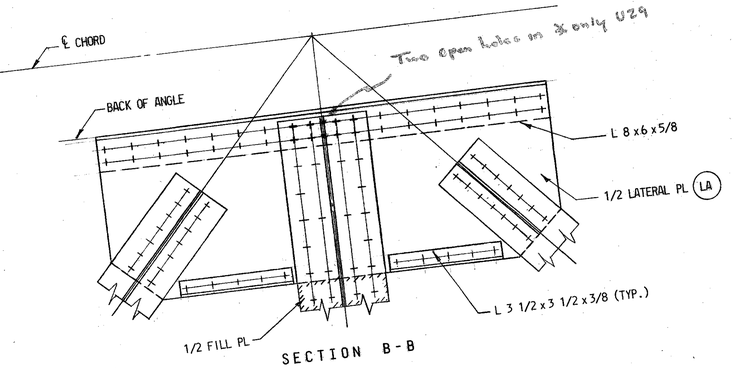
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-25
SHEET NO. 25 OF 79

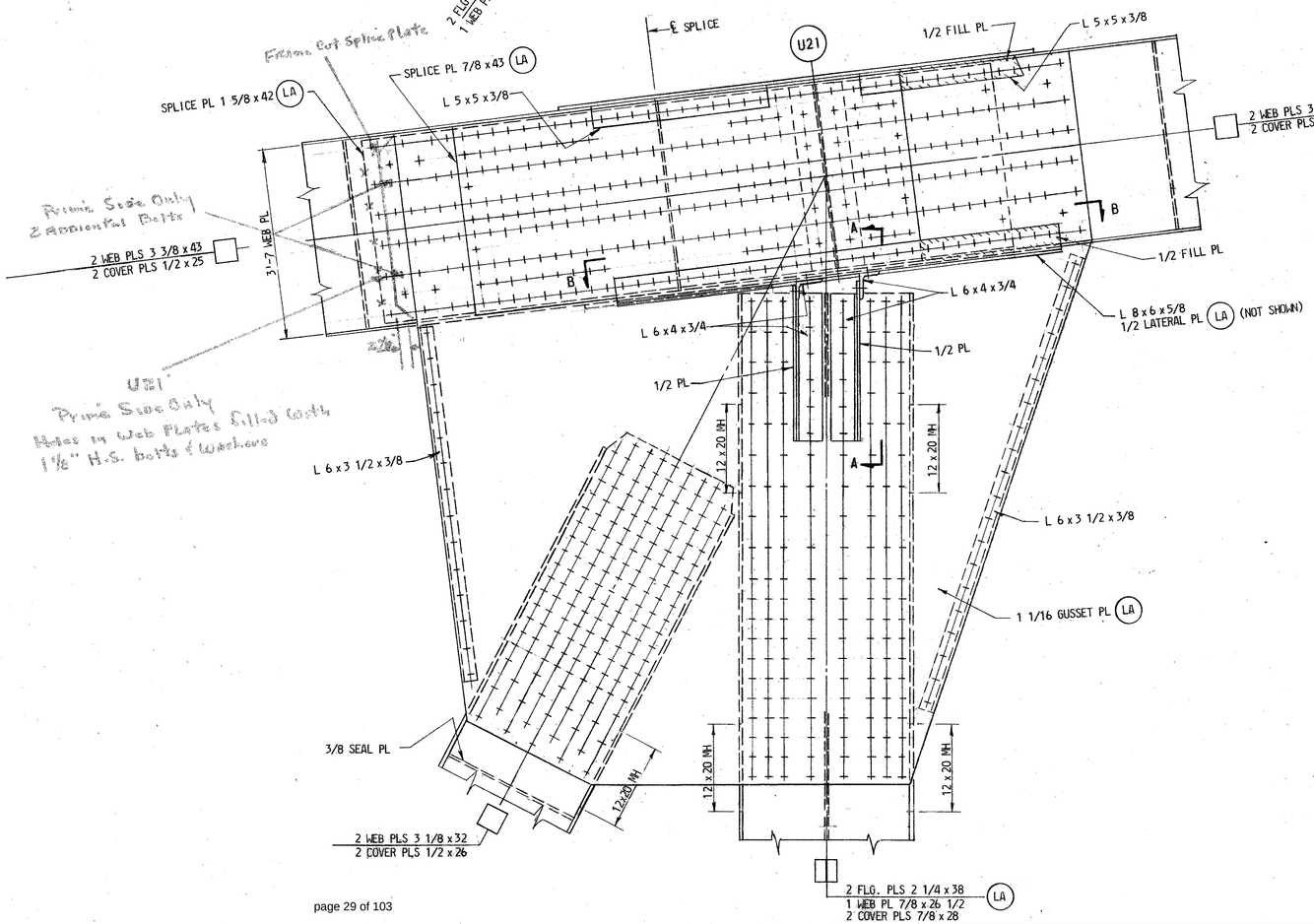
File No.____ Pocket No.____ Foider No.____

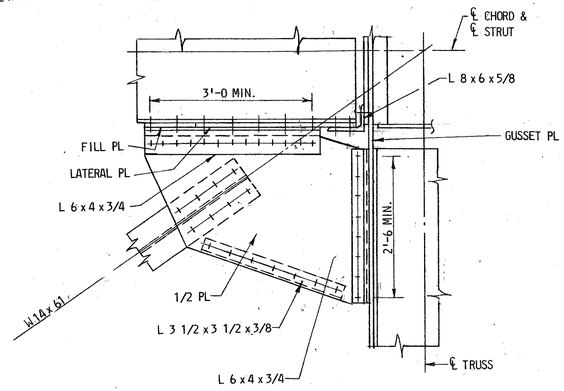
INDEXED





SECTION B-B





SECTION A-A

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U21

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

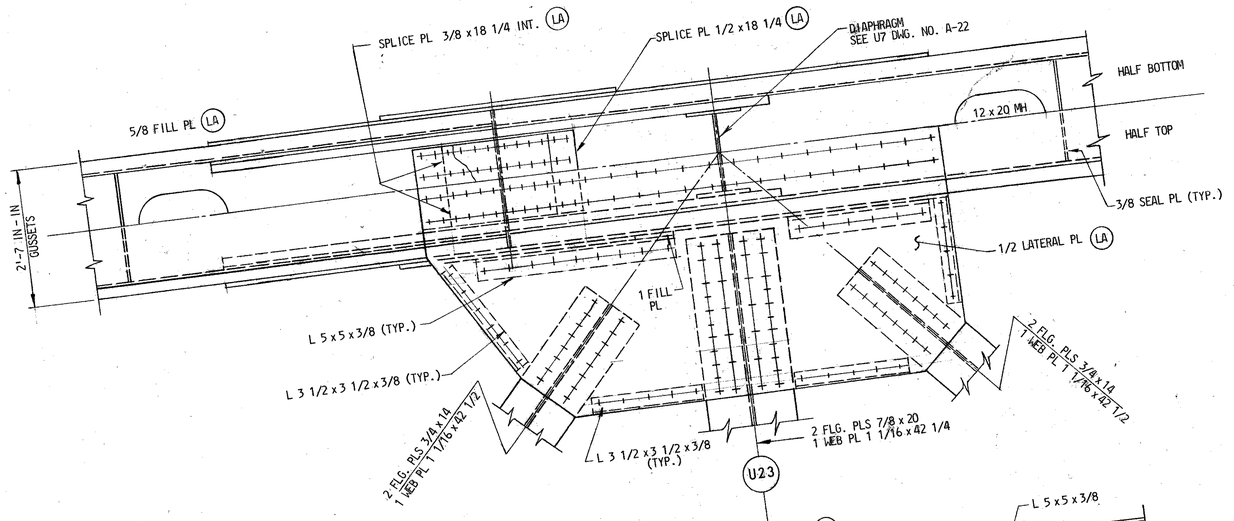
MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

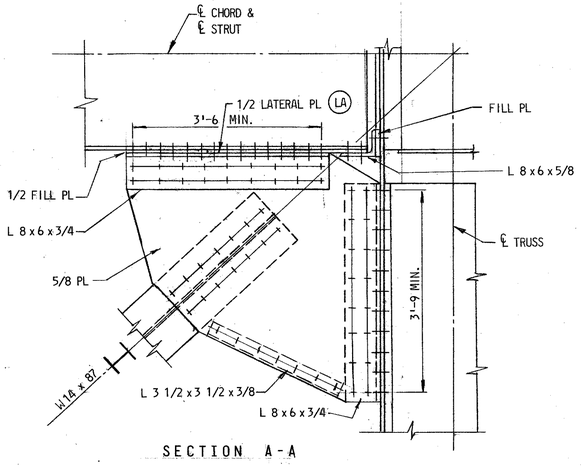
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-26
SHEET NO. 26 OF 79

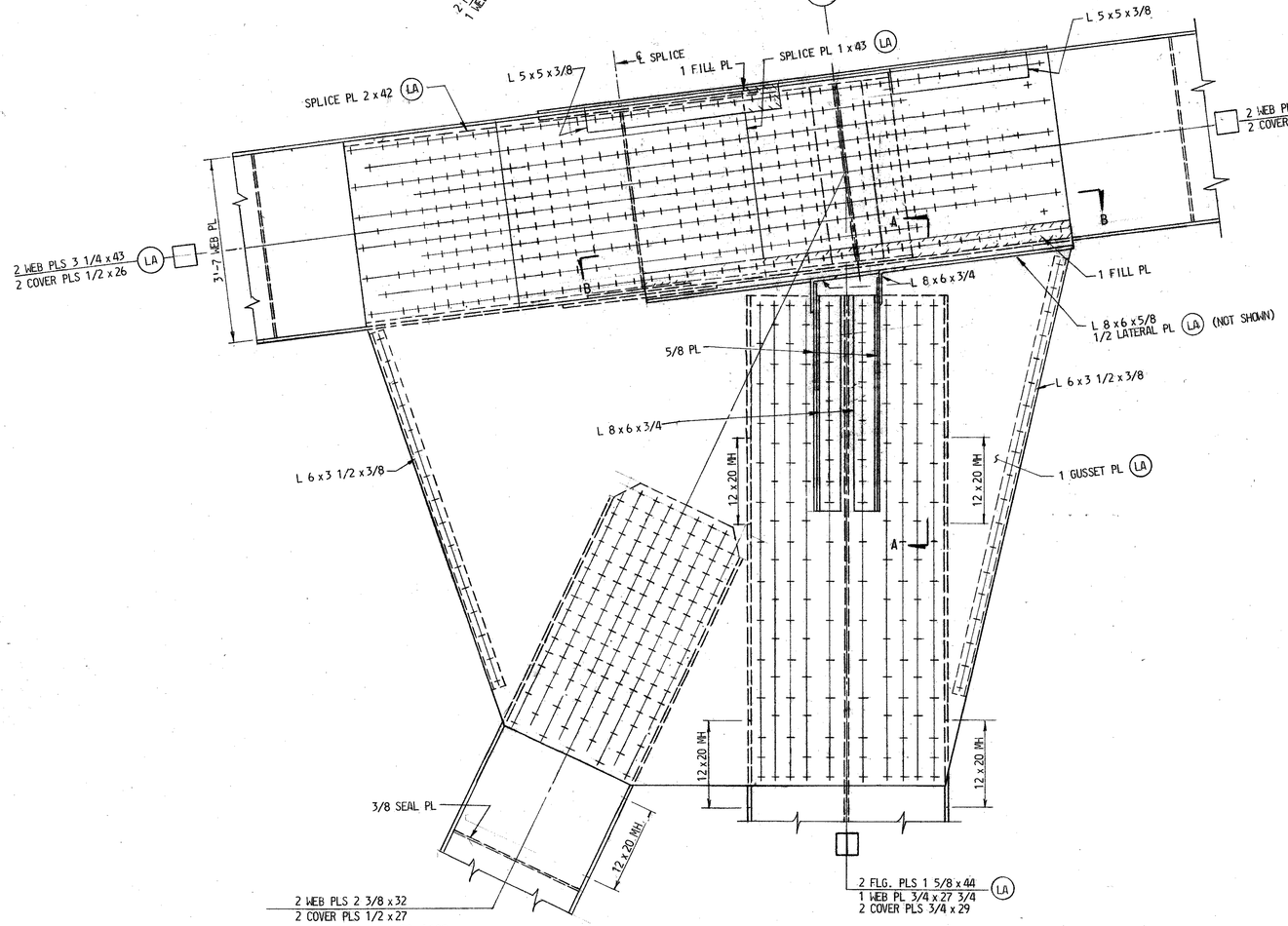
INDEXED

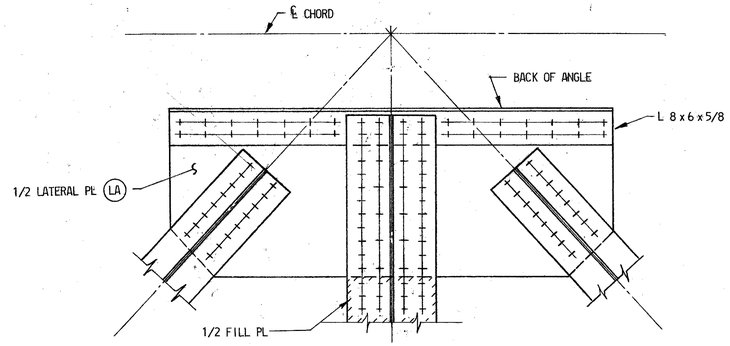
File No.____ Pocket No.____ Folder No.____





SECTION A-A





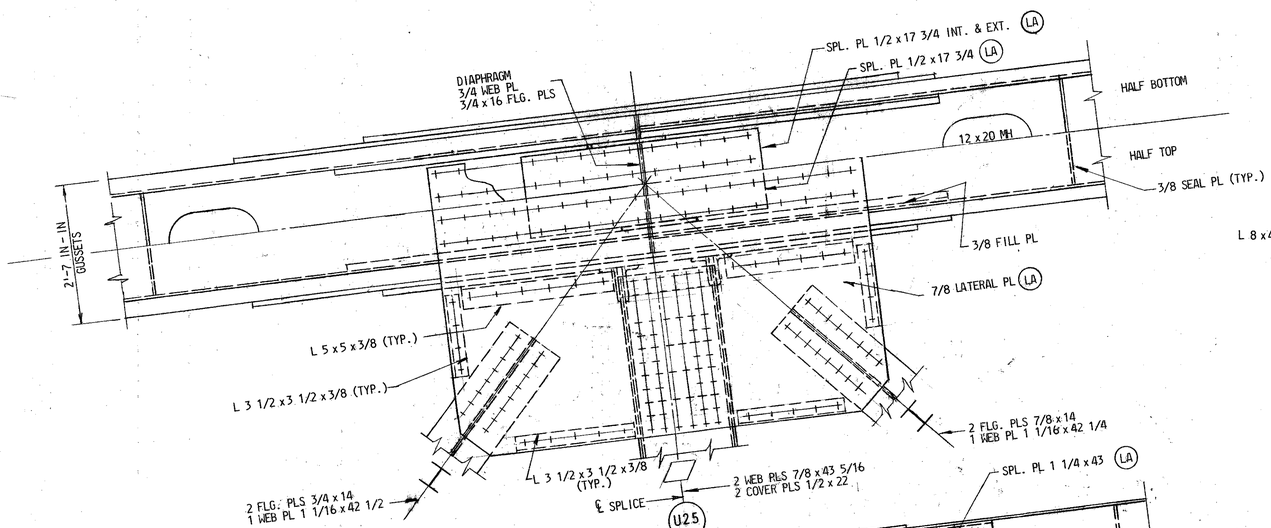
SECTION B-B

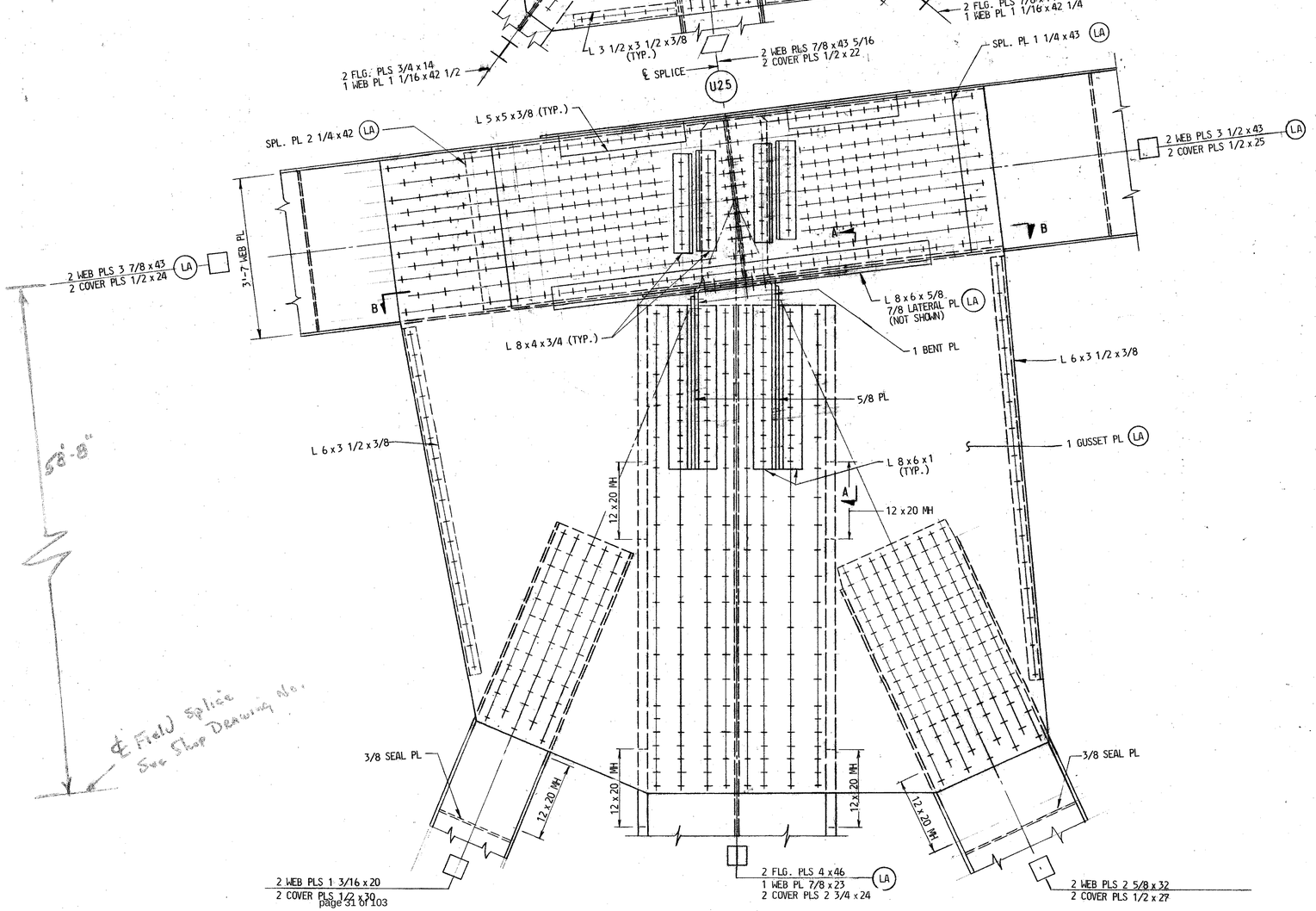
NOTES:

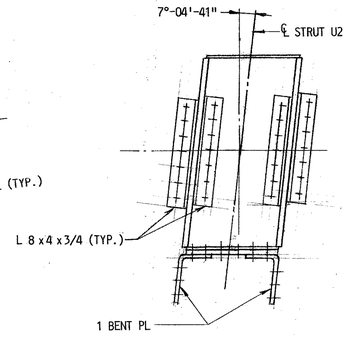
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE JOINT DETAILS U23
As-Built	SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12 MADE BY E.R.A. TRACED BY E.R.A. CHECKED BY W.H.P. J. E. GREINER COMPANY, INC. CONSULTING ENGINEERS BALTIMORE, MARYLAND
	DRAWING NO. A-27 SHEET NO. 27 OF 79 INDEXED

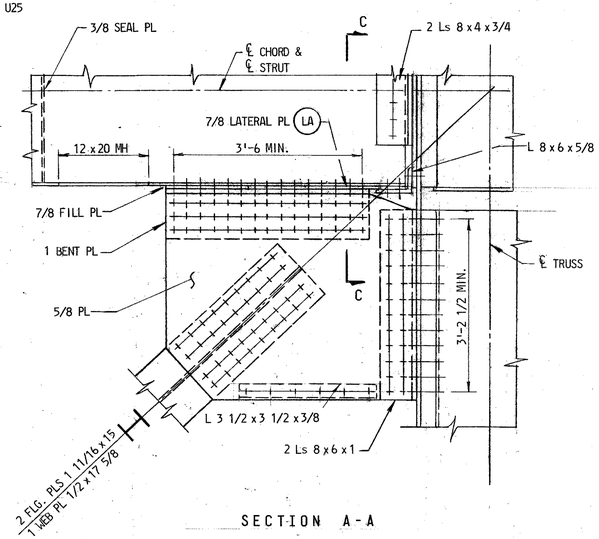
File No. Pocket No. Folder No.



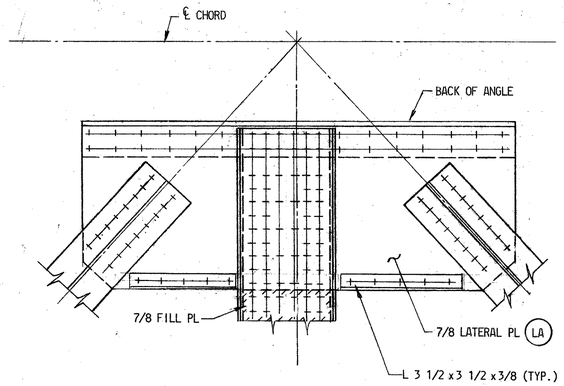




SECTION C-C



SECTION A-A



SECTION B-B

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR ACCESS FACILITIES SEE DWG. NO. A-79.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U25

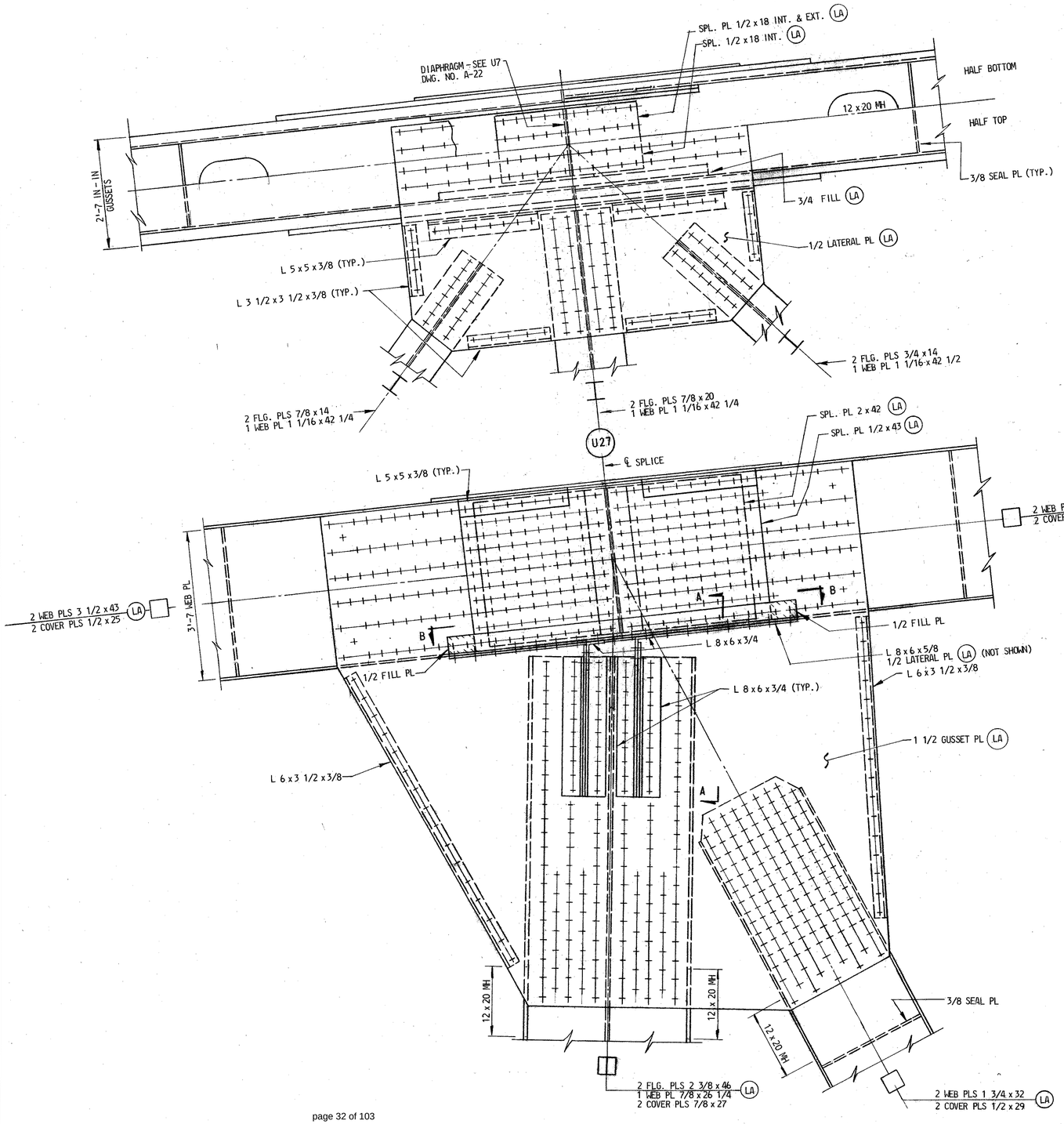
SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

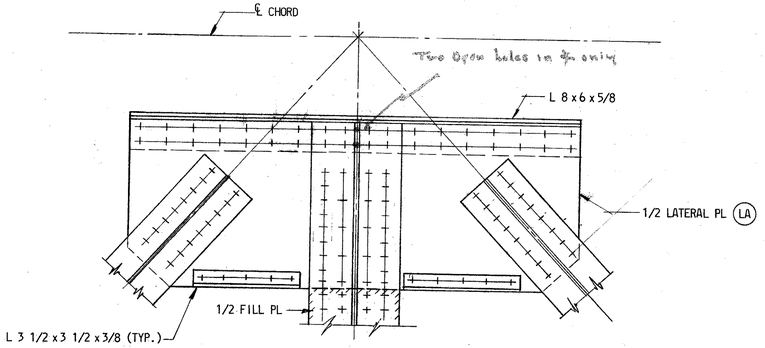
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY W.H.P.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

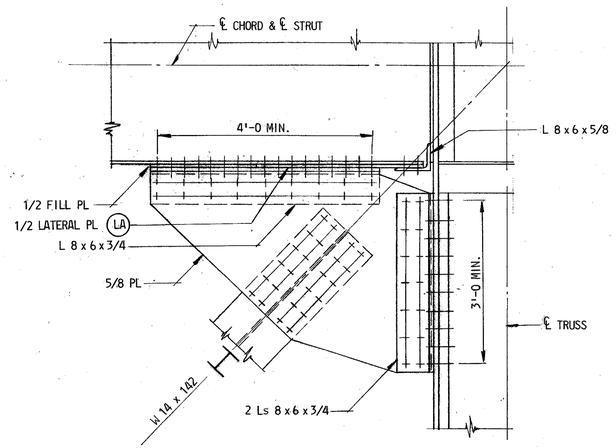
DRAWING NO. A-28
SHEET NO. 28 OF 79
INDEXED

File No.___ Pocket No.___ Folder No.___





SECTION B-B



SECTION A-A

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAIL
U27

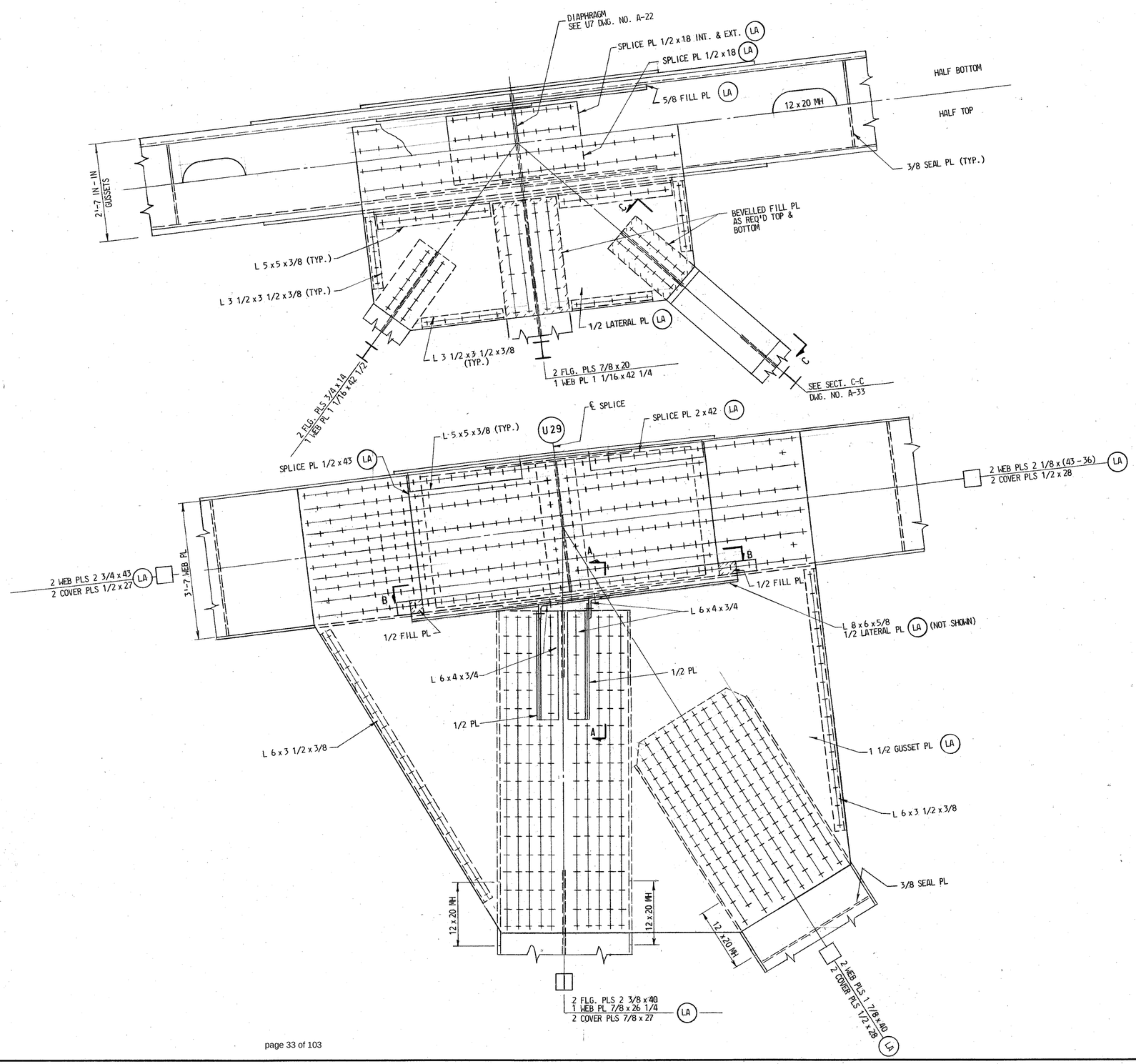
SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY W.H.P.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-29
SHEET NO. 29 OF 79
INDEXED

File No.____ Pocket No.____ Folder No.____



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR SECTIONS A-A & B-B SEE U21 DWG. NO. A-26.

FOR SECTION C-C SEE U39 DWG. NO. A-33.

WEB PLATES VARY IN DEPTH FROM 43" AT U29 TO 36 AT U31 ON A STRAIGHT TAPER.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U29

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

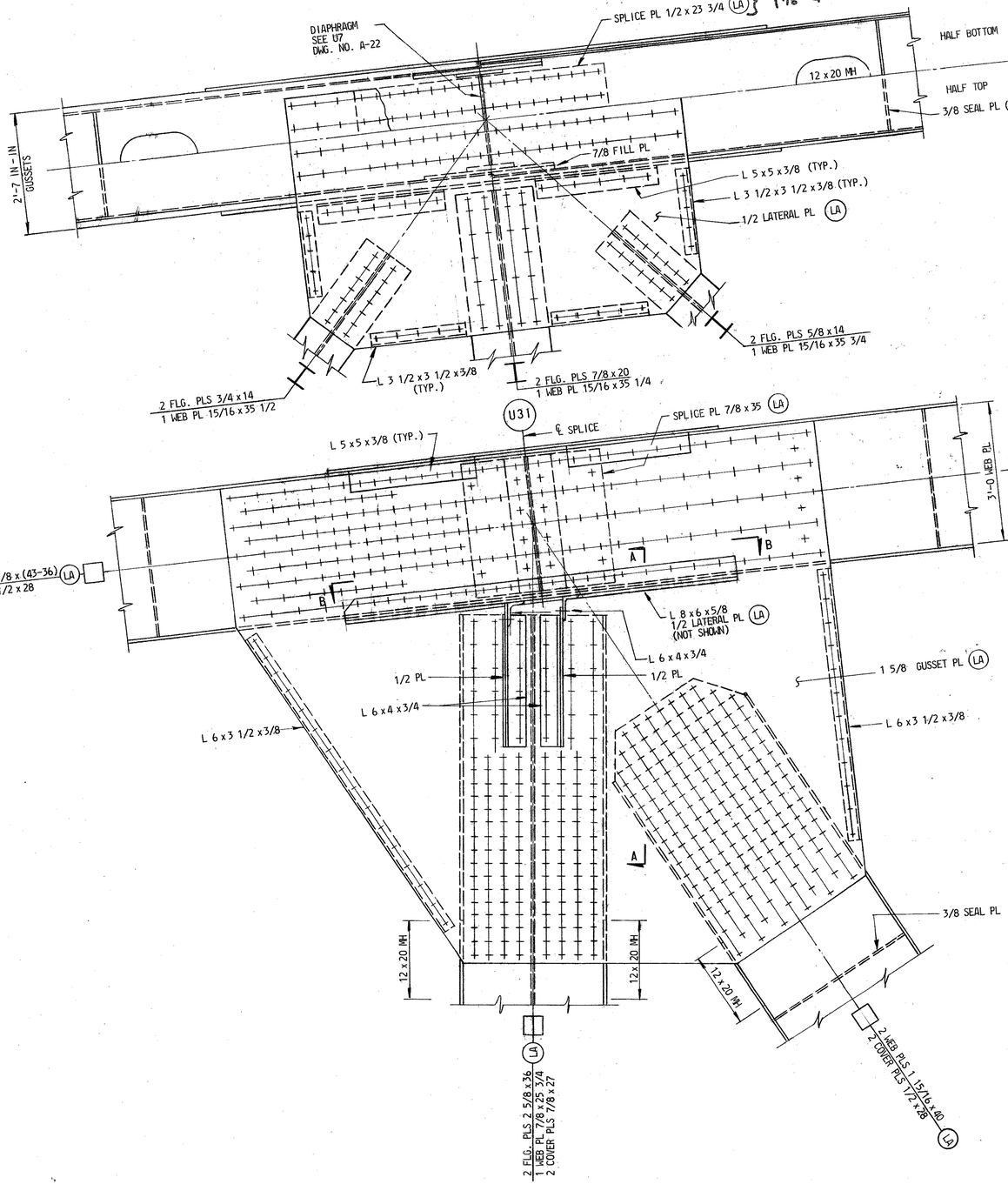
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

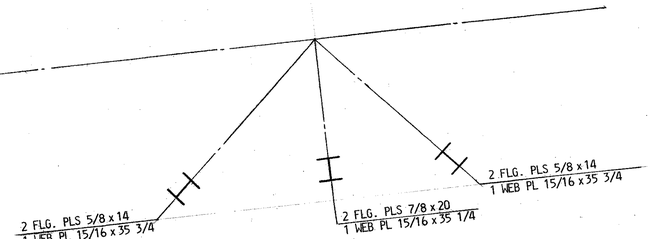
DRAWING NO. A-30
SHEET NO. 30 OF 79

INDEXED

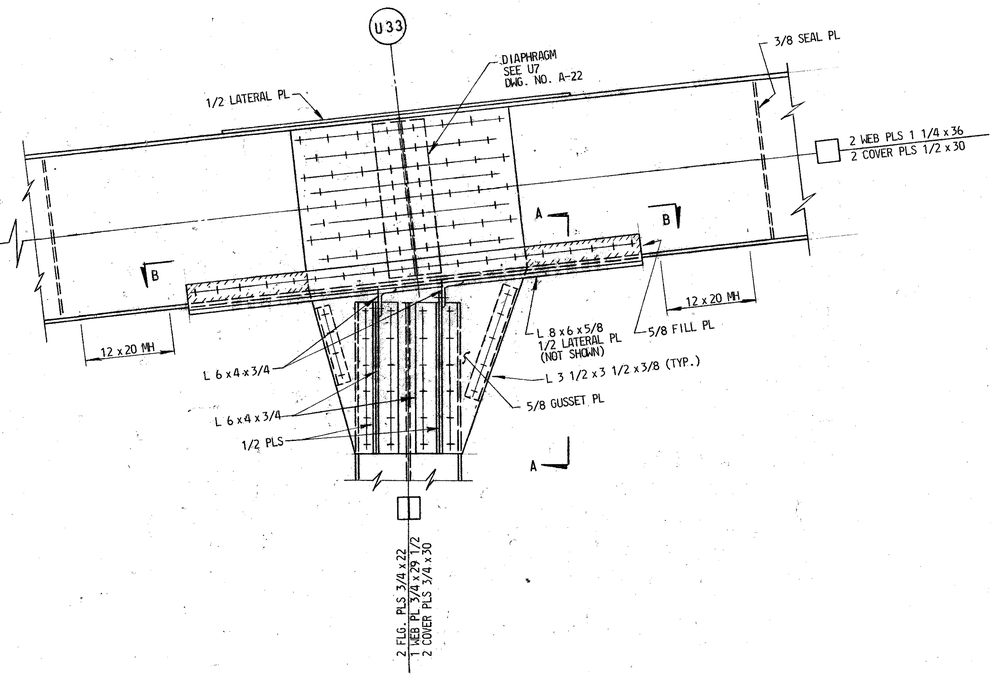
File No.____ Pocket No.____ Folder No.____

All holes in splice plate shop drilled to 1 9/16" ϕ
1 1/8" ϕ bolts used @ U31 North Taxes only





PLAN SIMILAR TO U31



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR SECTIONS A-A & B-B SEE U21 DWG. NO. A-26.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U31 & U33

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

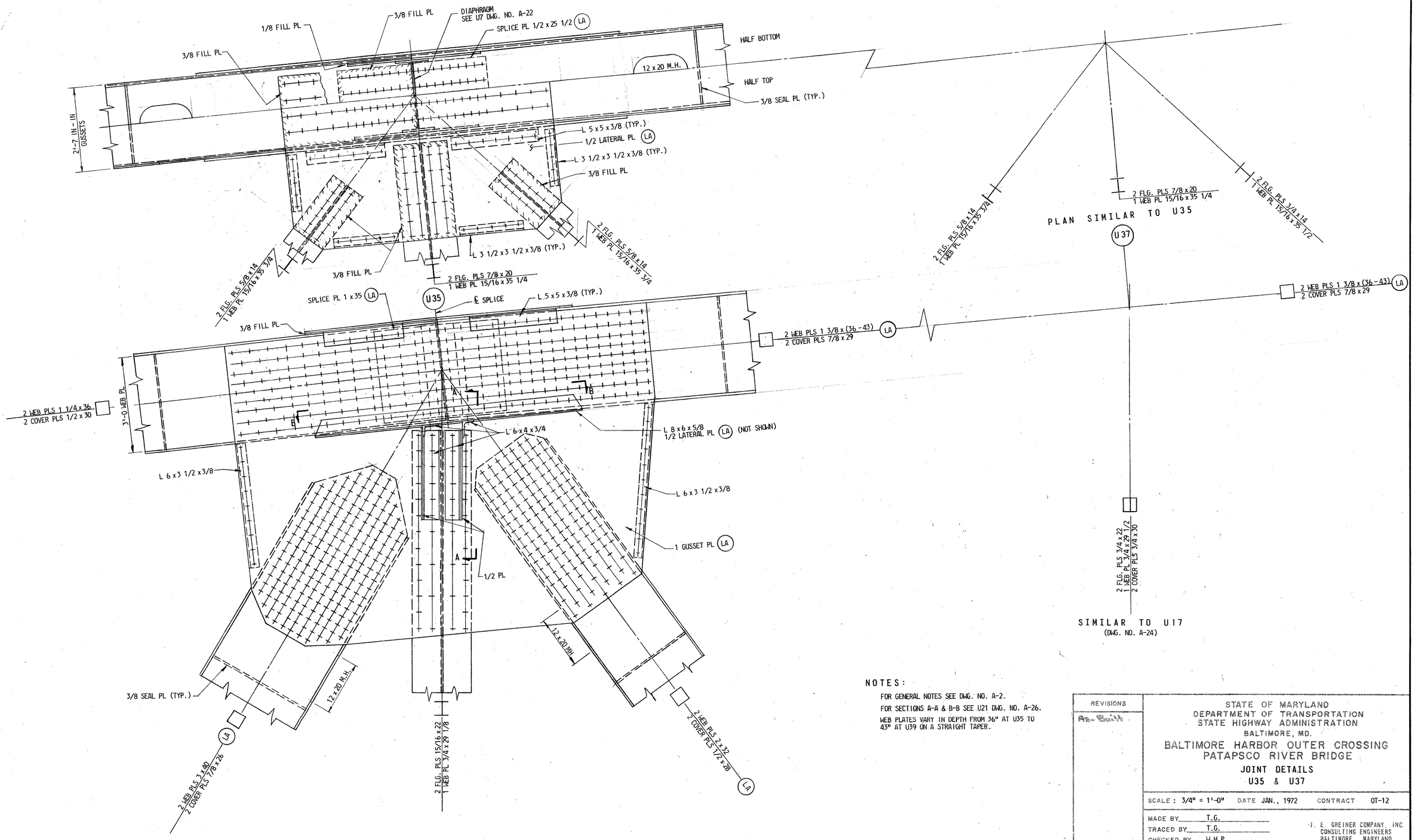
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY W.H.P.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-31
SHEET NO. 31 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

FOR SECTIONS A-A & B-B SEE U21 DWG. NO. A-26.

WEB PLATES VARY IN DEPTH FROM 36" AT U35 TO 43" AT U39 ON A STRAIGHT TAPER.

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
U35 & U37

SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

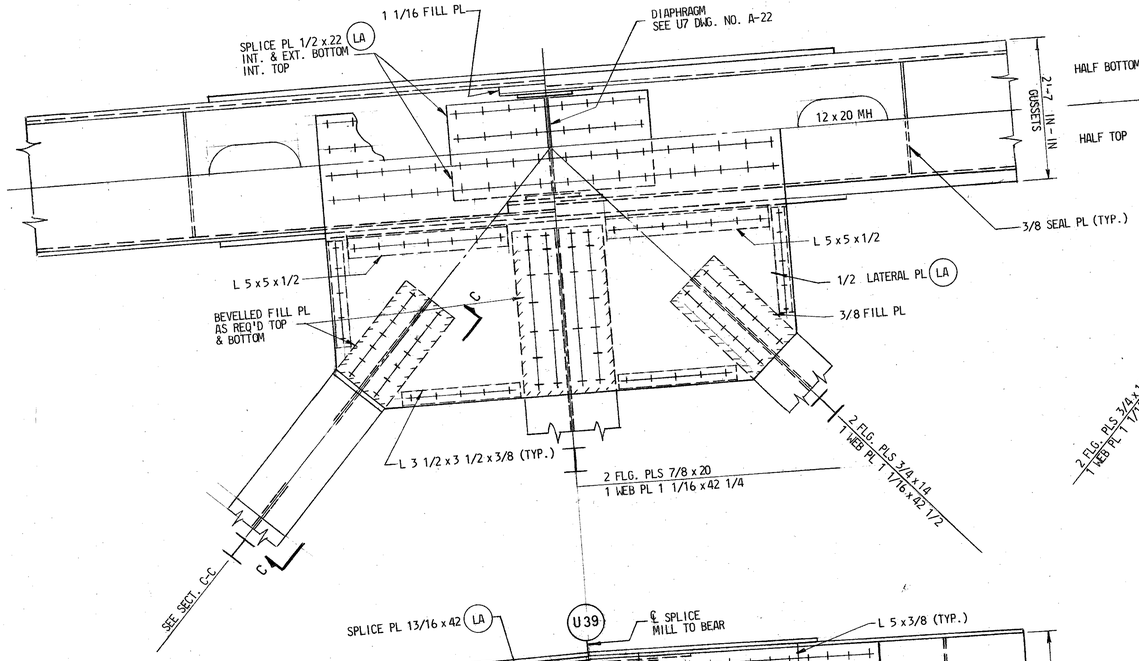
MADE BY T.G.
TRACED BY T.G.
CHECKED BY W.H.P.

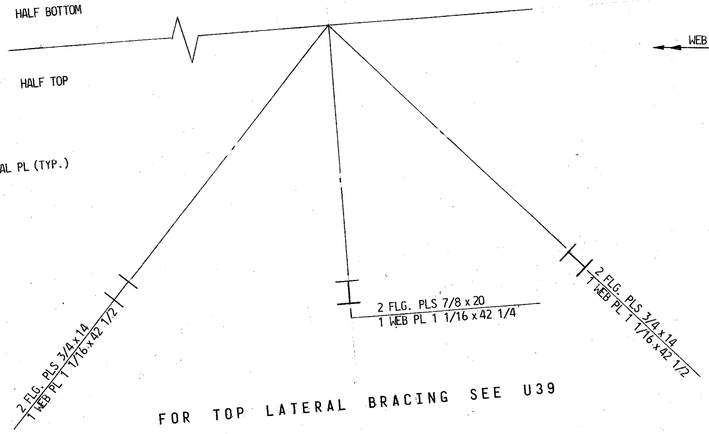
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-32
SHEET NO. 32 OF 79

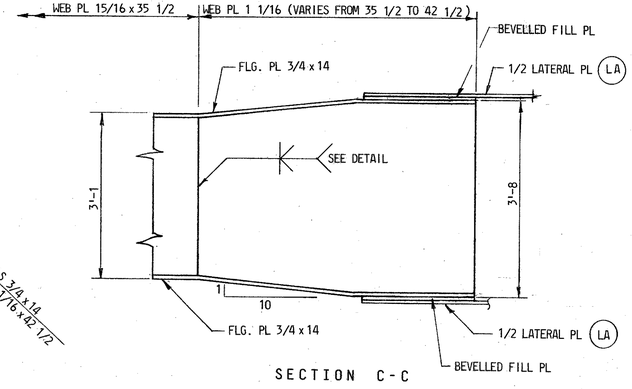
INDEXED

File No.____ Pocket No.____ Folder No.____





FOR TOP LATERAL BRACING SEE U39



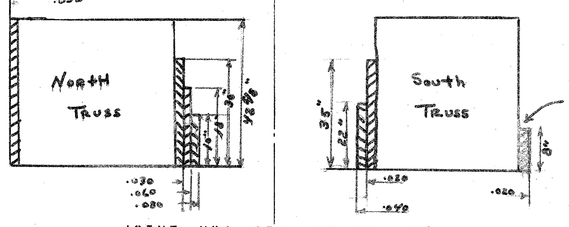
SECTION C-C

U41

2 WEB PLS 2 7/16 x 43
2 COVER PLS 7/8 x 27
LA

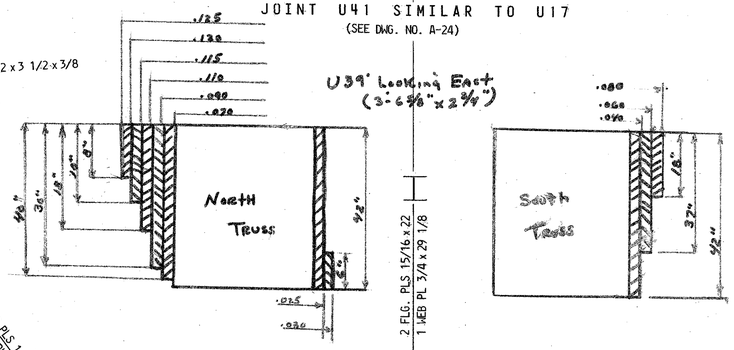
2 WEB PLS 2 7/16 x 43
2 COVER PLS 7/8 x 27
LA

U39 Looking East (3'-6⅝" x 2⅝")

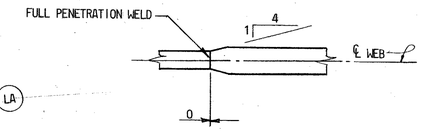


JOINT U41 SIMILAR TO U17
(SEE DWG. NO. A-24)

U39 Looking East (3'-6⅝" x 2⅝")



2 FLG. PLS 15/16 x 22
1 WEB PL 3/4 x 29 1/8



SHOP WEB SPLICE DETAIL
SCALE: 3" = 1'-0"

NOTE:
WELD TO BE GROUND FLUSH,
GRINDING TO BE IN THE DIRECTION
OF STRESS.

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.
FOR SECTION A-A & B-B SEE U21 DWG. NO. A-26.
Stainless Steel Shims used @ ℄ of mill to bear splice

REVISIONS
As-Built

.STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
JOINT DETAILS
U39 & U41

SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

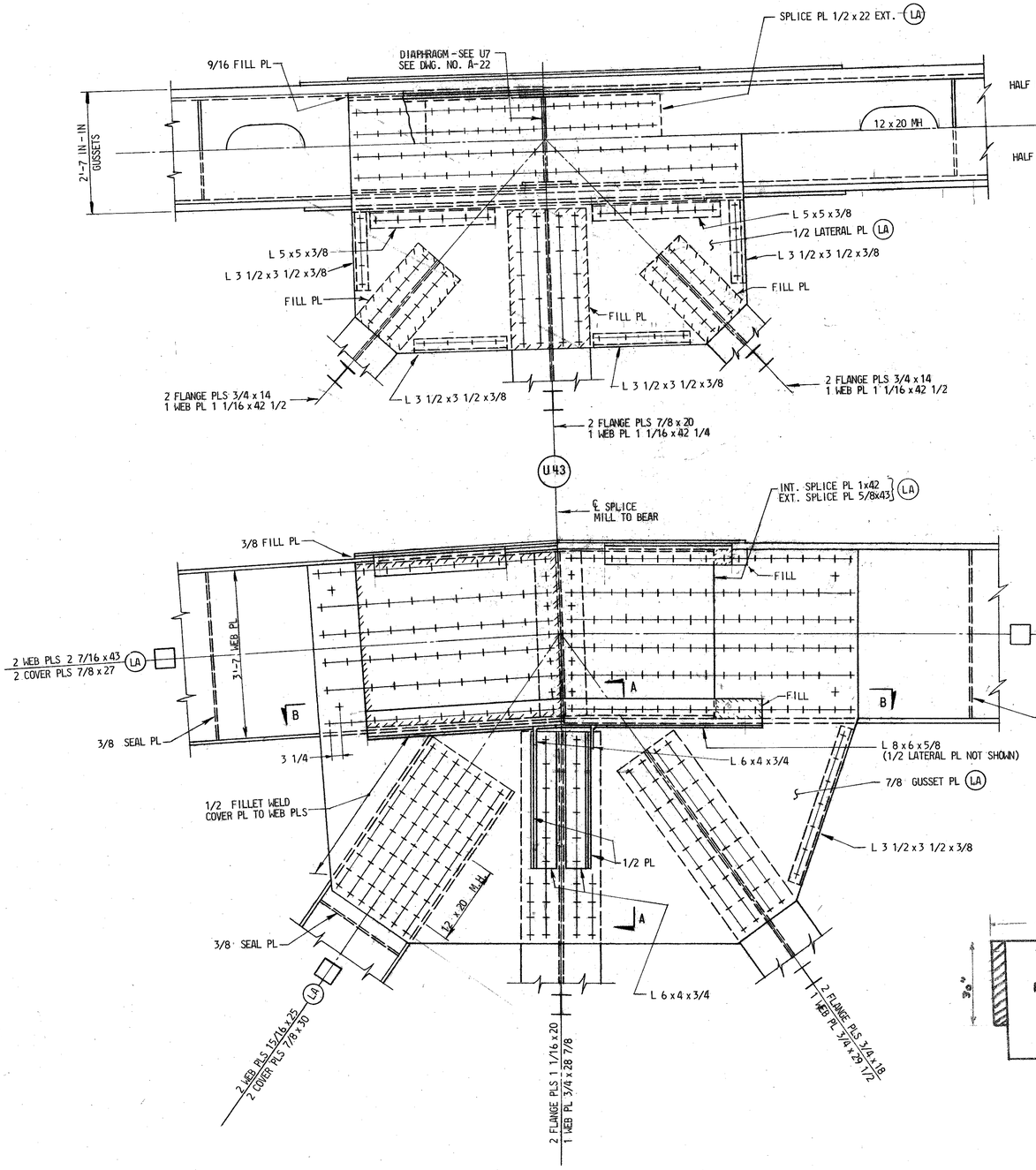
MADE BY T.G.
TRACED BY T.G.
CHECKED BY J.M.M.

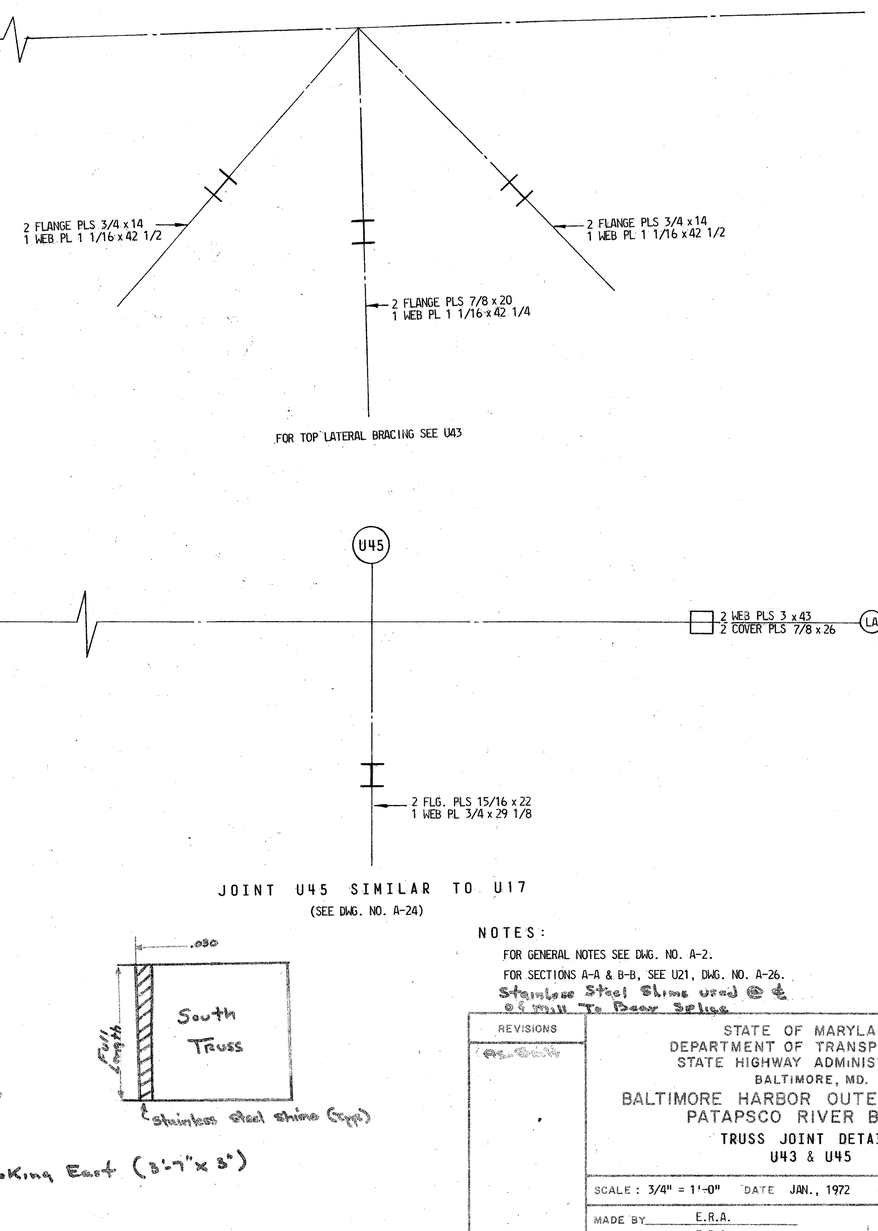
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-33
SHEET NO. 33 OF 79

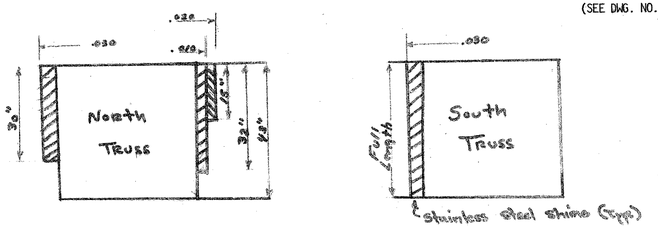
INDEXED

File No. Pocket No. Folder No.





JOINT U45 SIMILAR TO U17
(SEE DWG. NO. A-24)



U43 Looking East (3'-7" x 3")

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.
FOR SECTIONS A-A & B-B, SEE U21, DWG. NO. A-26.
Stainless Steel Shims used @ ℄ of Web To Bear Splice

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
TRUSS JOINT DETAILS
U43 & U45

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

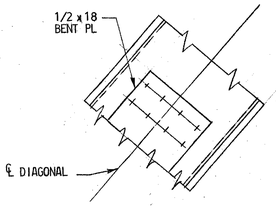
MADE BY E.R.A.
TRACED BY E.R.A
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

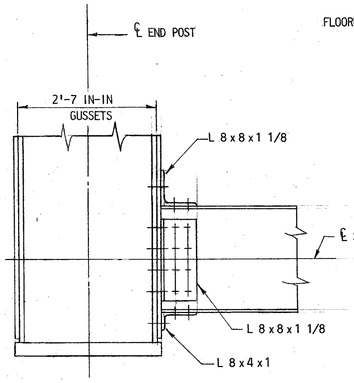
DRAWING NO. A-34
SHEET NO. 34 OF 79

INDEXED

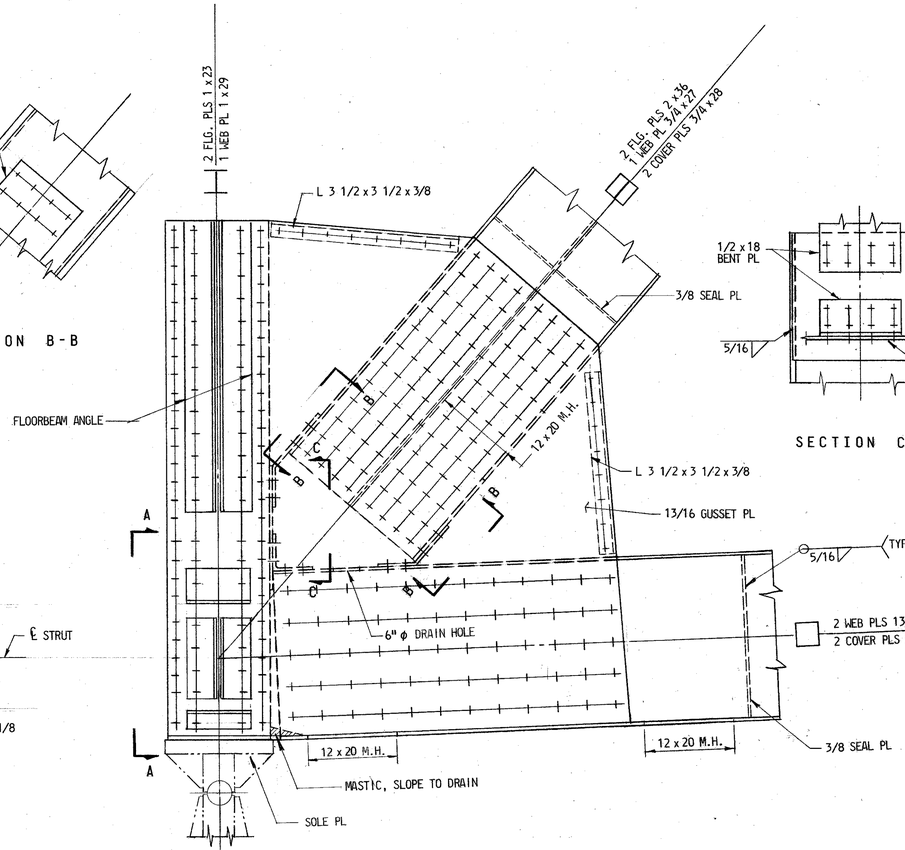
File No. Pocket No. Folder No.

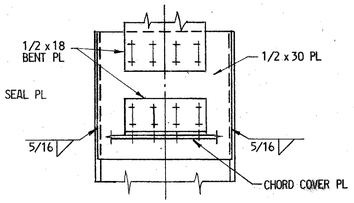


SECTION B-B

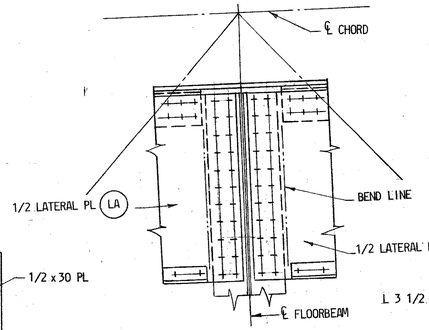


SECTION A-A

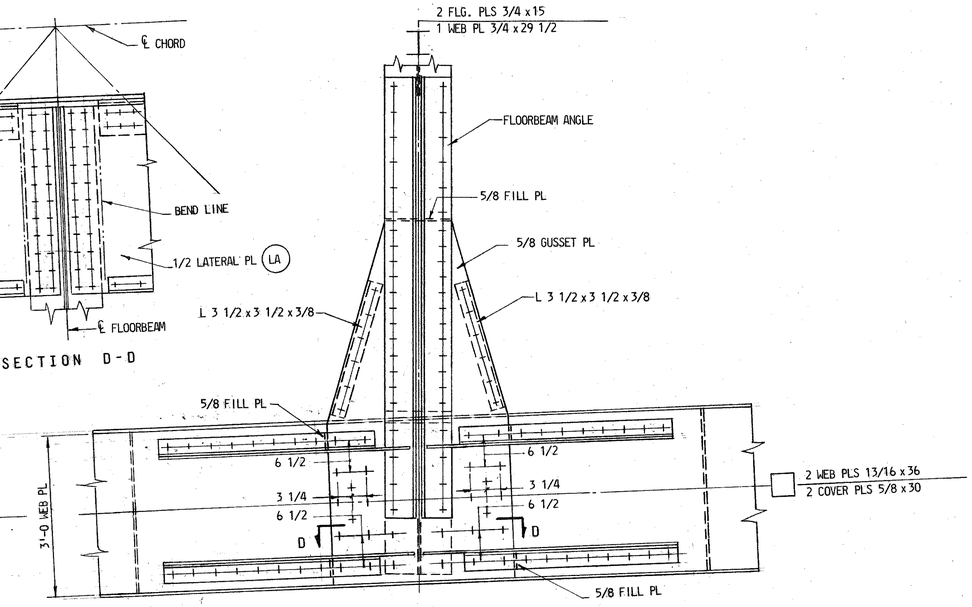


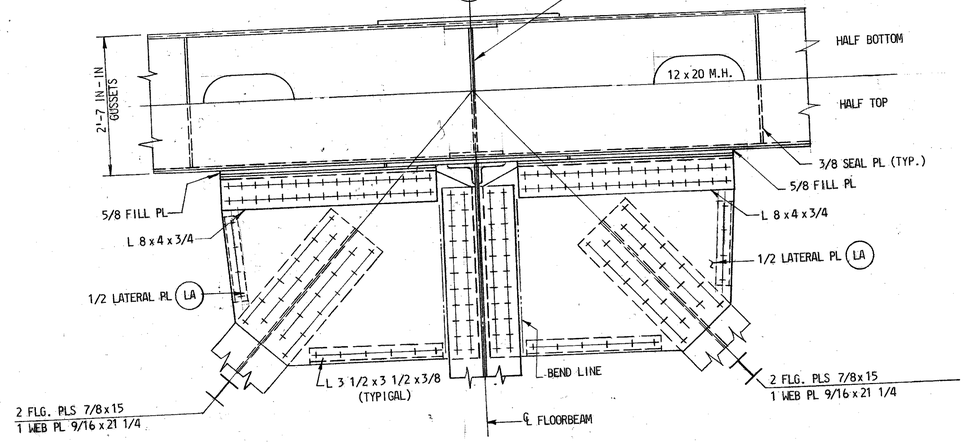


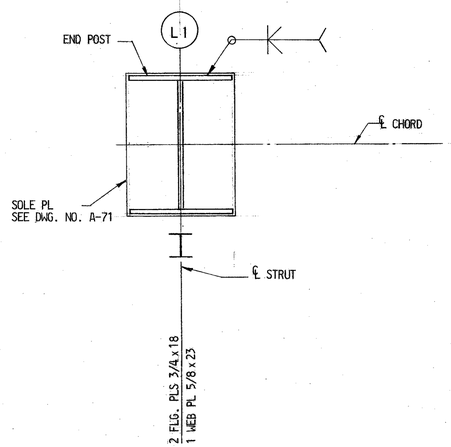
SECTION C-C



SECTION D-D







NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2

PROVIDE A BIRD SCREEN AT ALL MANHOLES IN THE TOP AND BOTTOM CHORDS. SEE DETAILS, DWG. NO. A-60.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L1 & L2

SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY T.G.
TRACED BY T.G.
CHECKED BY J.M.M.

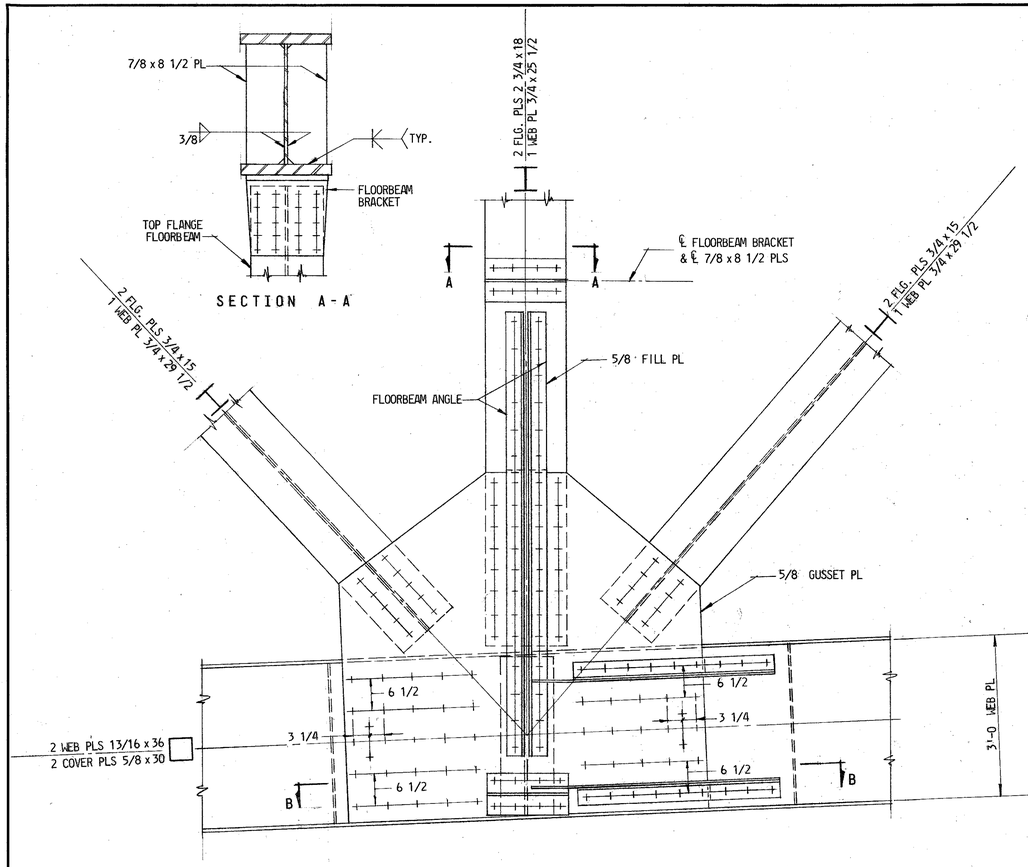
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

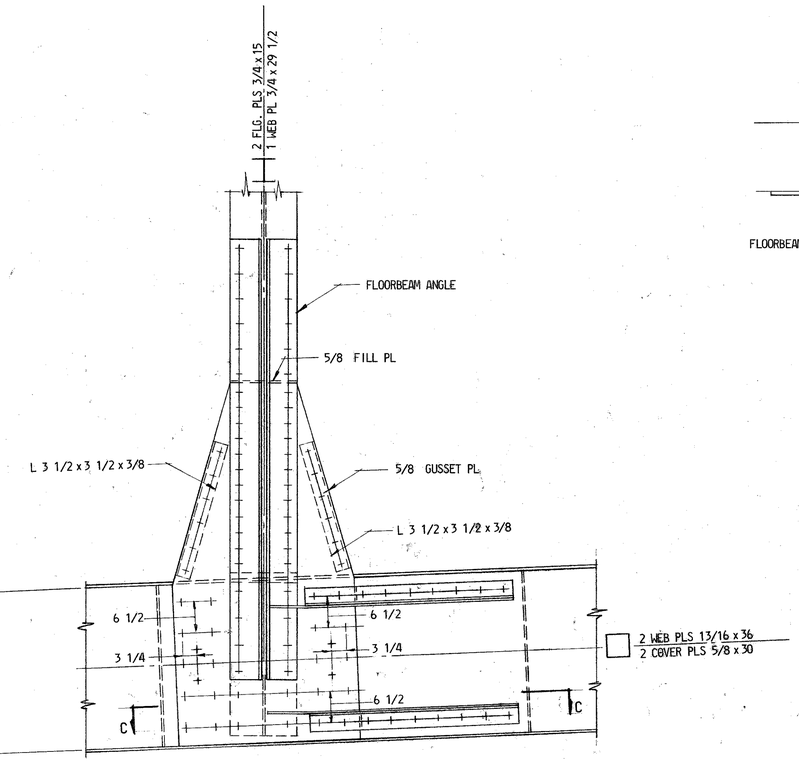
DRAWING NO. A-35
SHEET NO. 35 OF 79

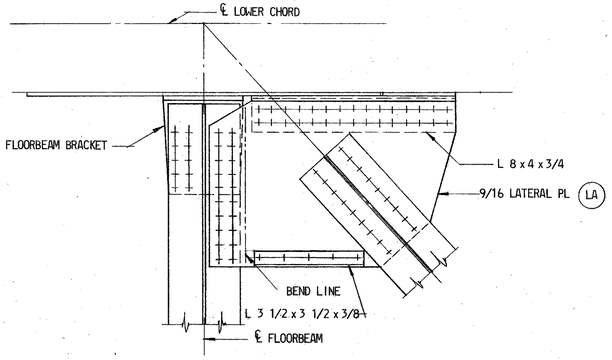
INDEXED

File No.____ Pocket No.____ Folder No.____

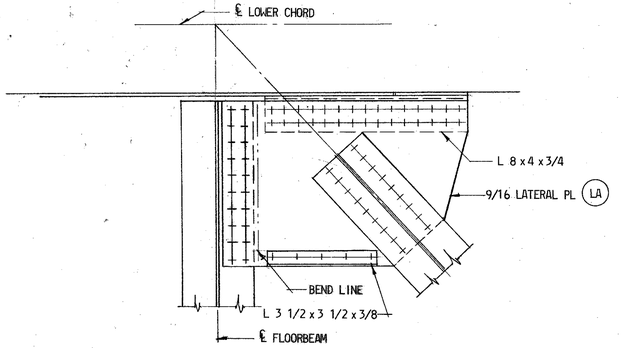
SECTION A-A



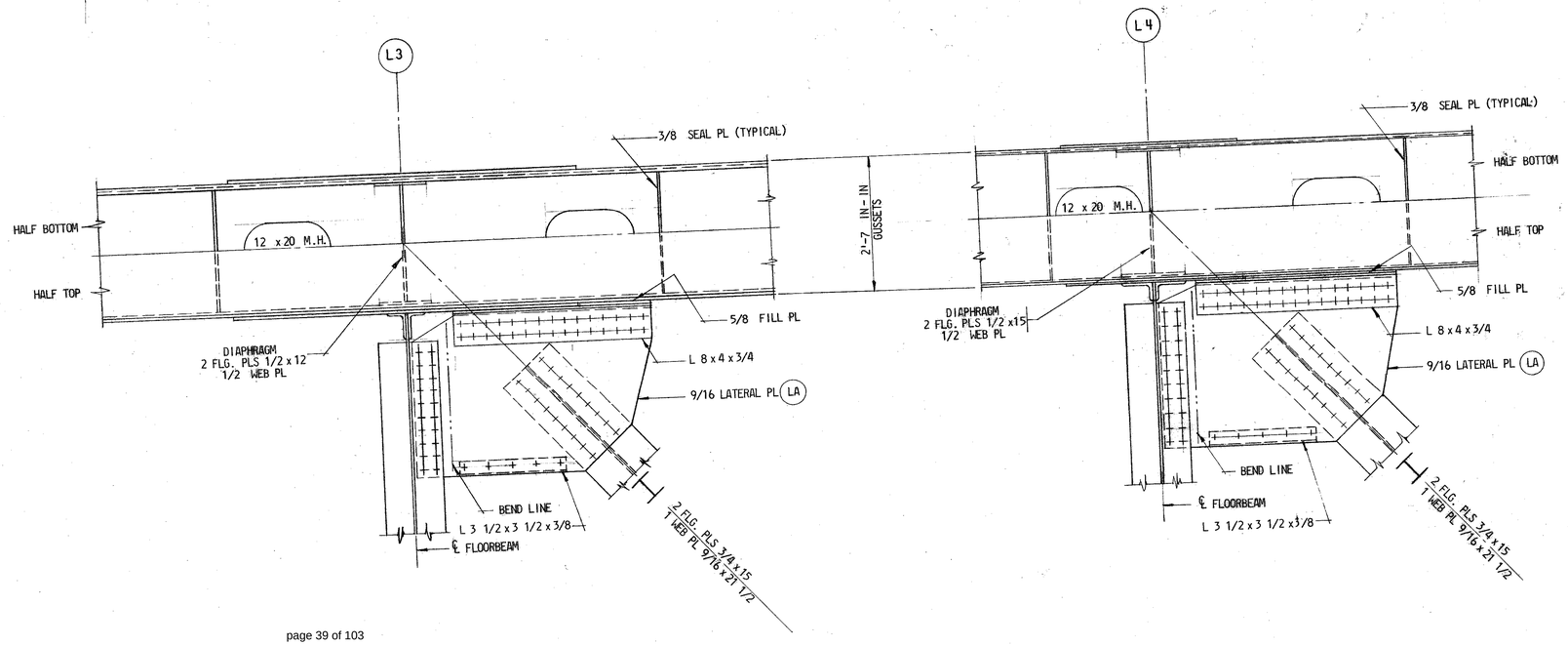




SECTION B-B



SECTION C-C



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
JOINT DETAILS
L3 & L4

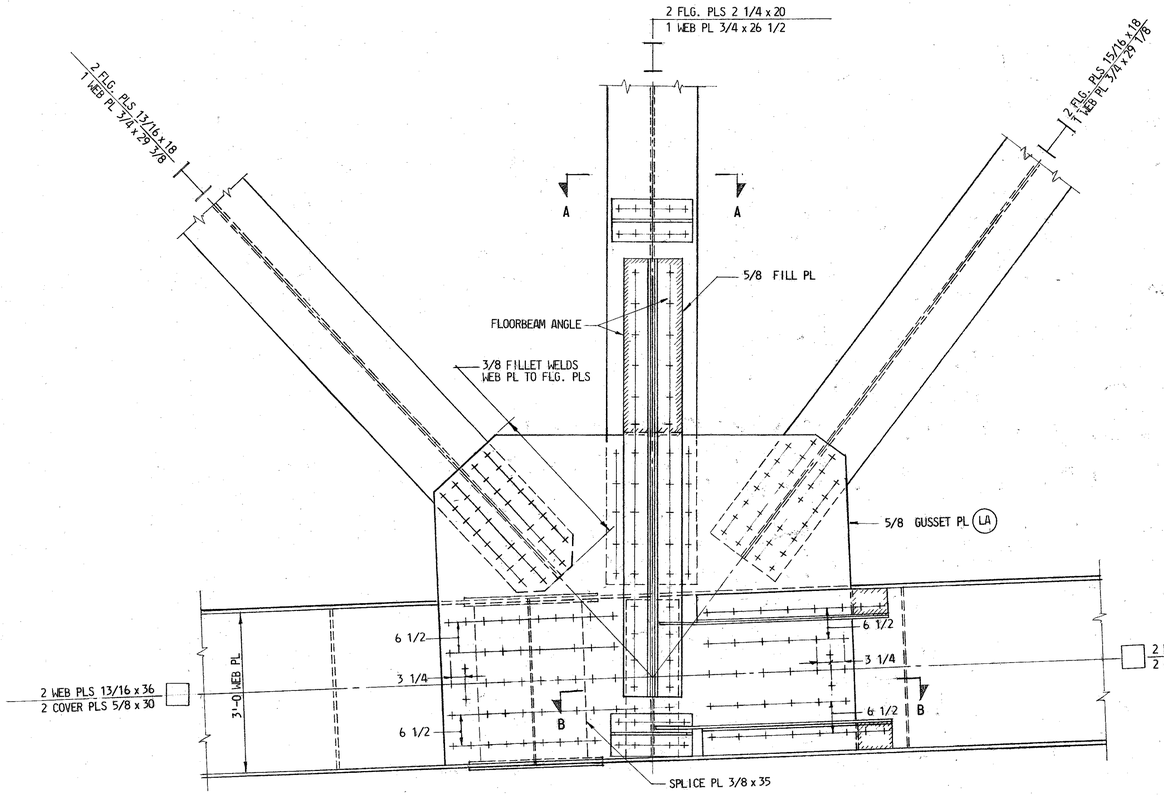
SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

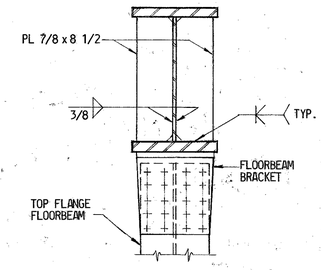
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

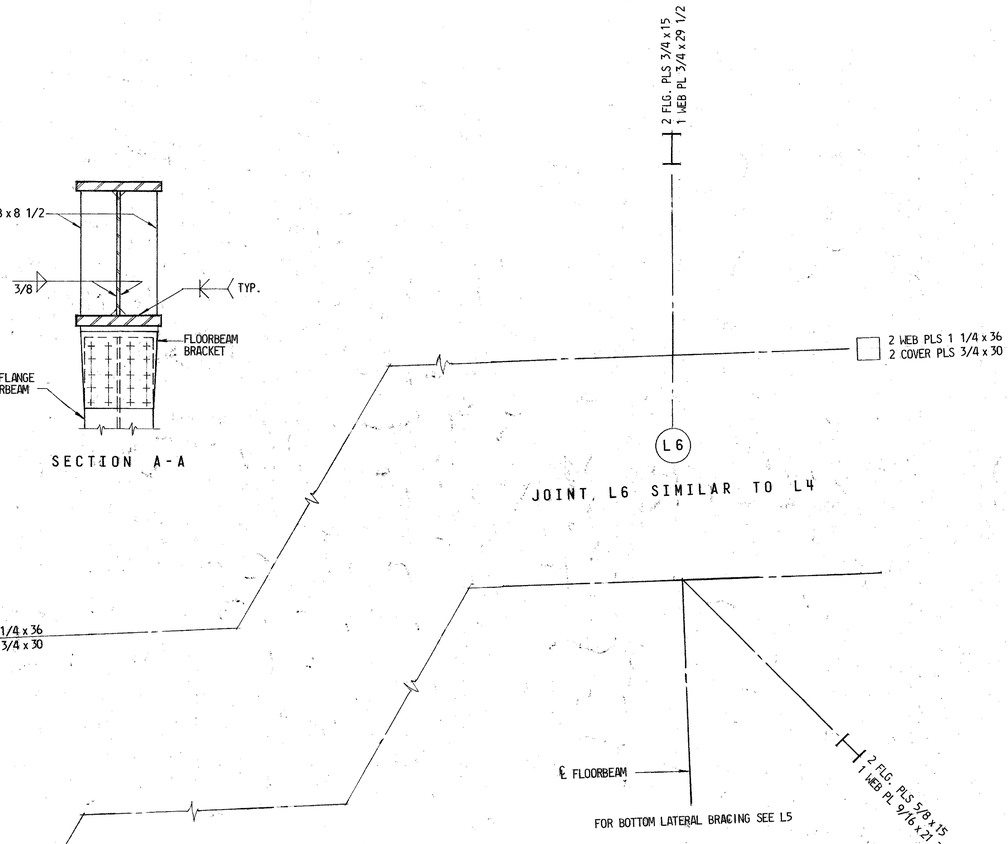
DRAWING NO. A-36
SHEET NO. 36 OF 79
INDEXED

File No.____ Pocket No.____ Folder No.____

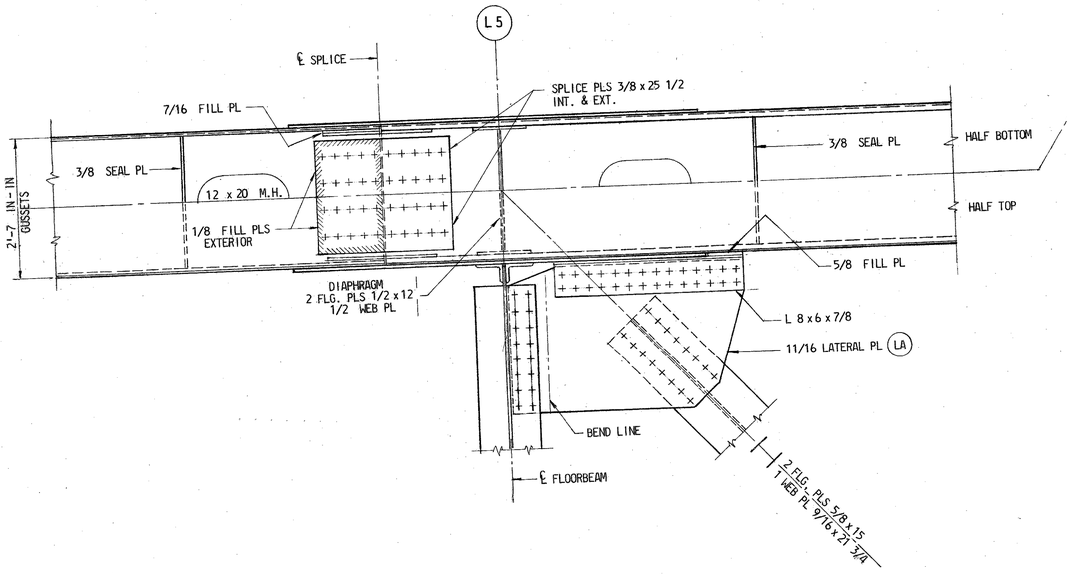


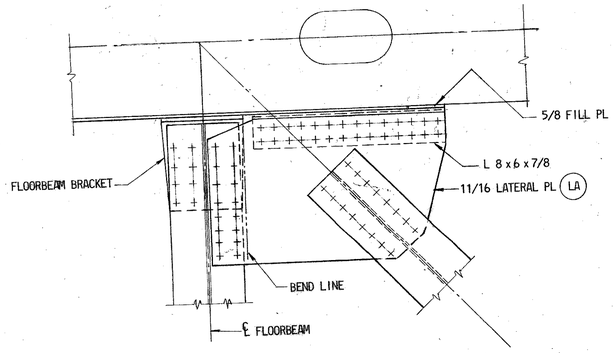


SECTION A-A



JOINT L6 SIMILAR TO L4





SECTION B-B

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L5 & L6

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

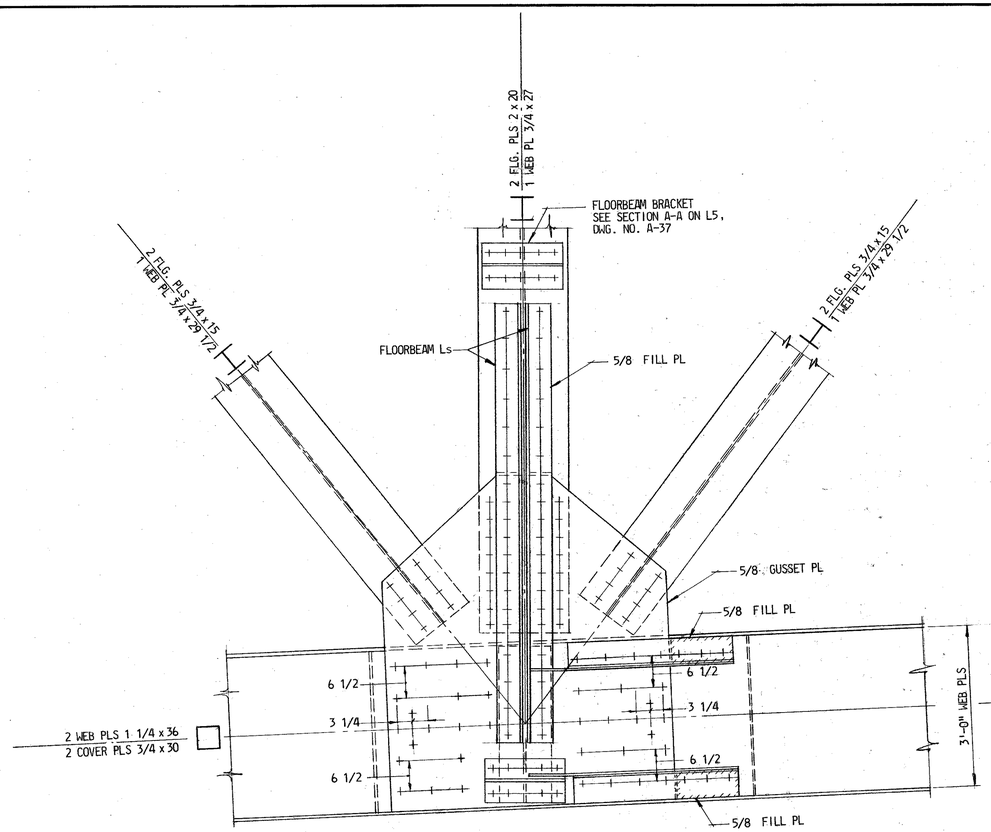
MADE BY A.J.S.
TRACED BY C.E.S.
CHECKED BY J.M.M.

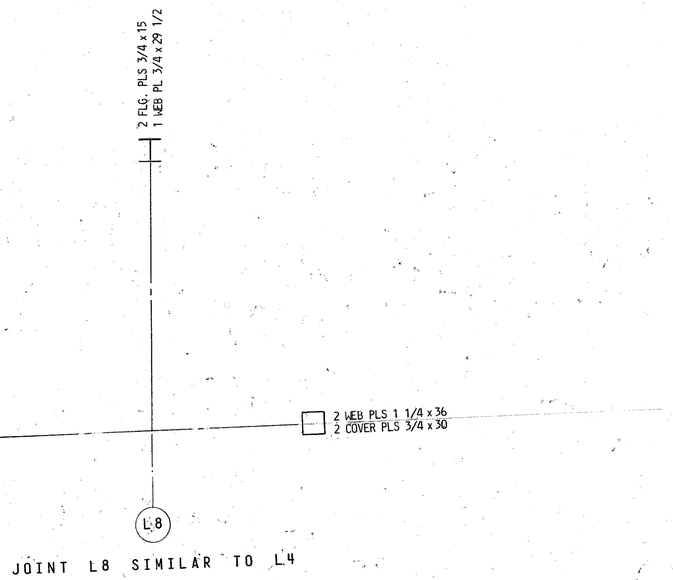
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-37
SHEET NO. 37 OF 79

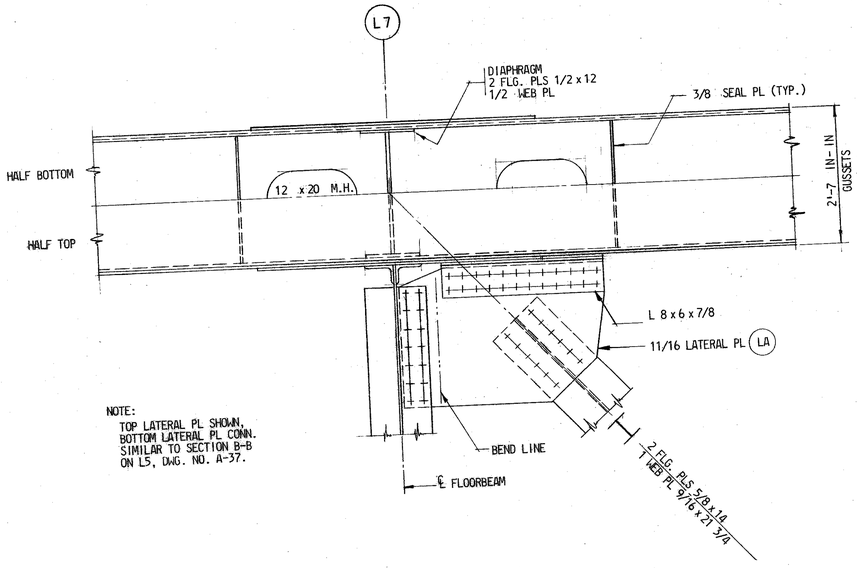
INDEXED

File No.____ Pocket No.____ Folder No.____

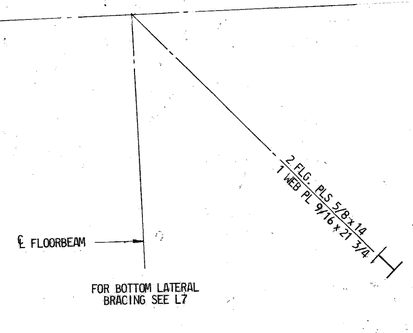




JOINT L8 SIMILAR TO L4



NOTE:
TOP LATERAL PL SHOWN,
BOTTOM LATERAL PL CONN.
SIMILAR TO SECTION B-B
ON L5, DWG. NO. A-37.



FOR BOTTOM LATERAL
BRACING SEE L7

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
Re-Drill

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L7 & L8

SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

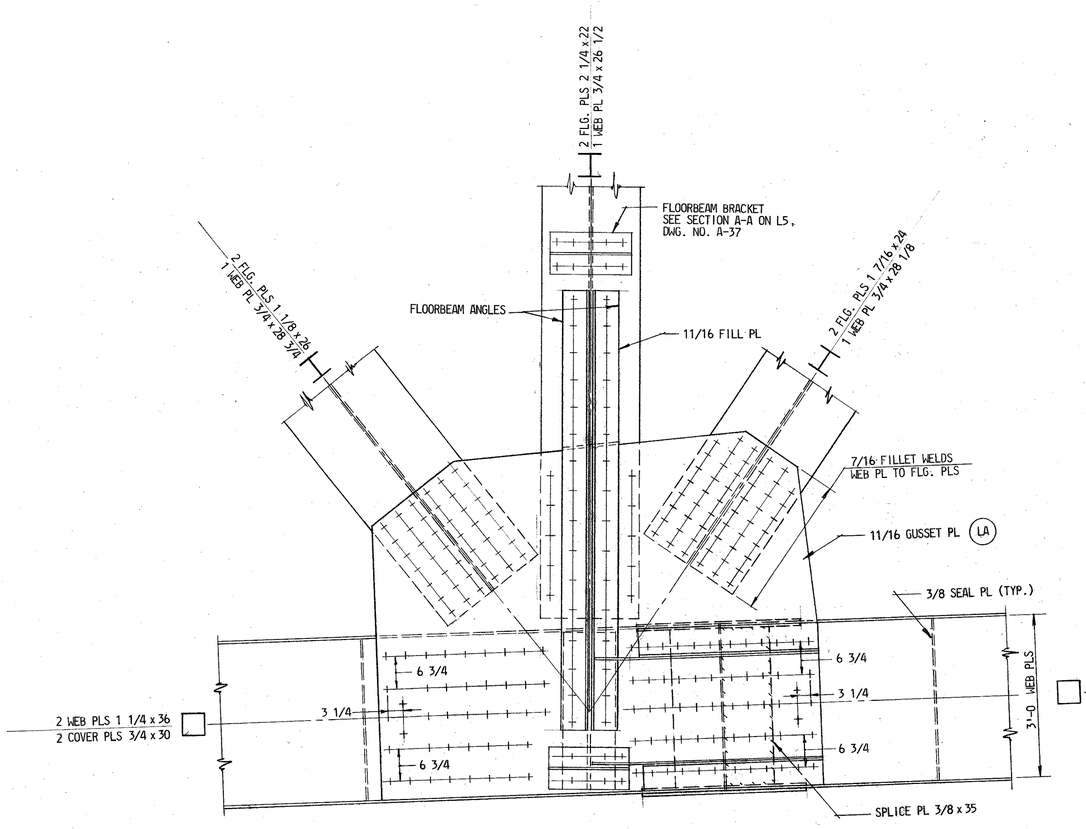
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

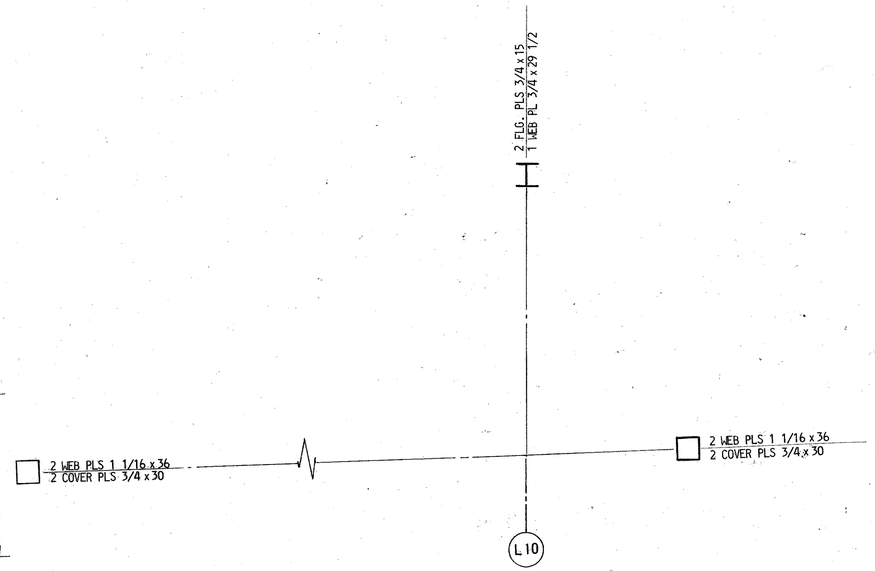
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-38
SHEET NO. 38 OF 79

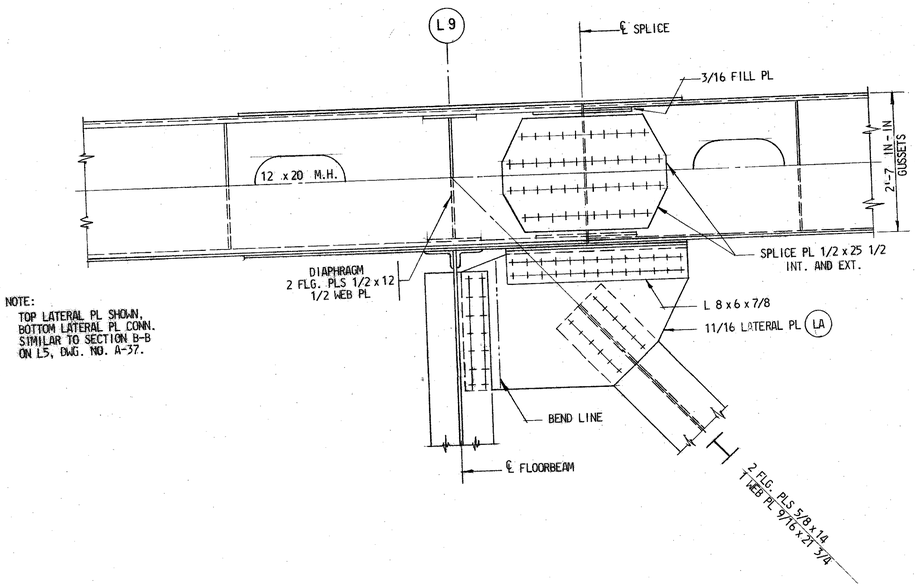
INDEXED

File No.____ Pocket No.____ Folder No.____

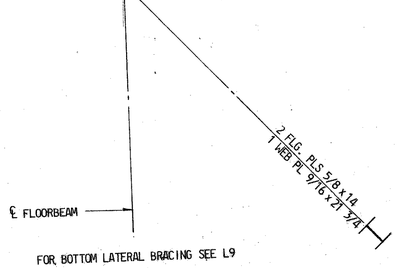




JOINT L10 SIMILAR TO L4



NOTE:
TOP LATERAL PL SHOWN,
BOTTOM LATERAL PL CONN.
SIMILAR TO SECTION B-B
ON L5, DWG. NO. A-37.



FOR BOTTOM LATERAL BRACING SEE L9

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

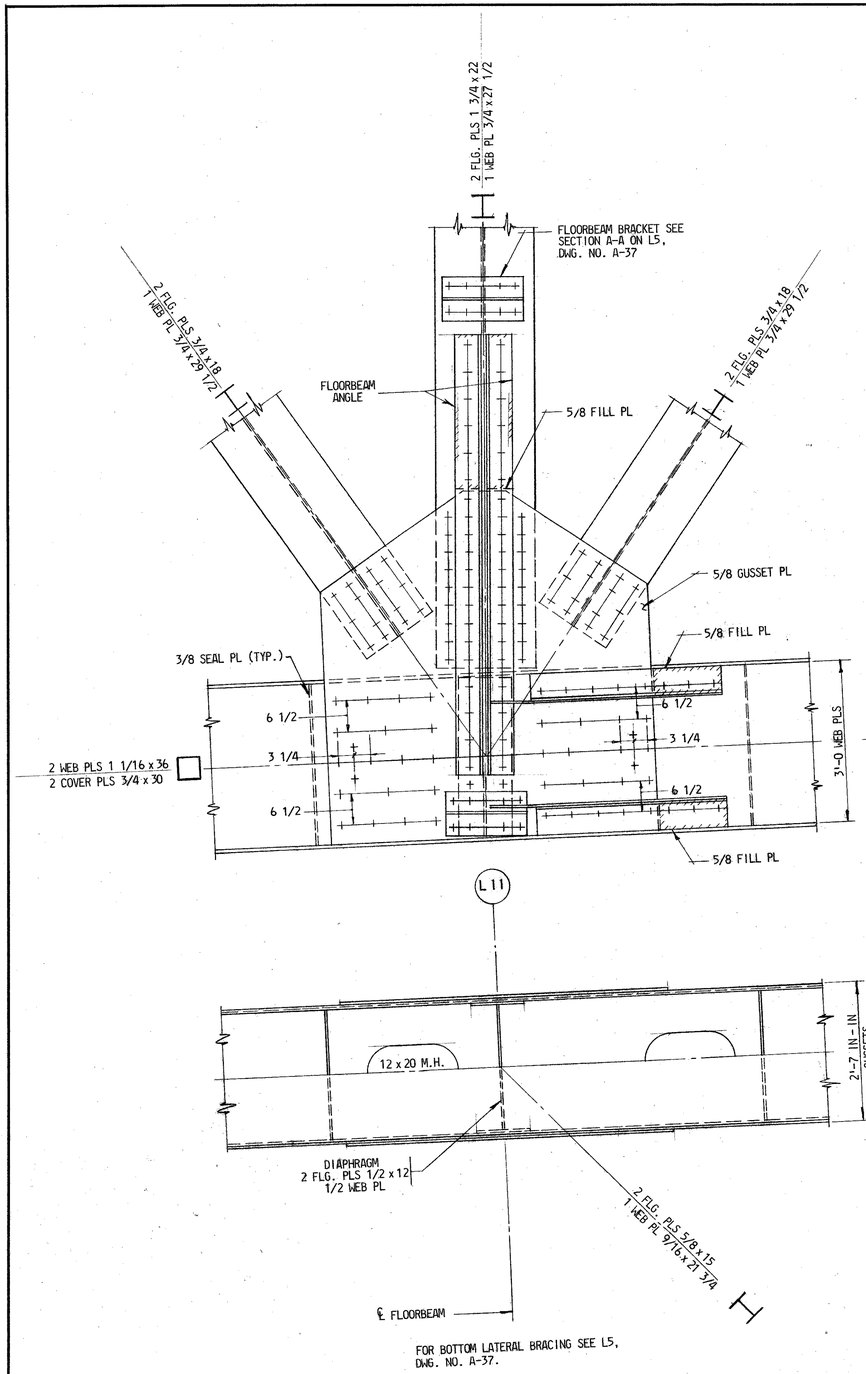
JOINT DETAILS
L9 & L10

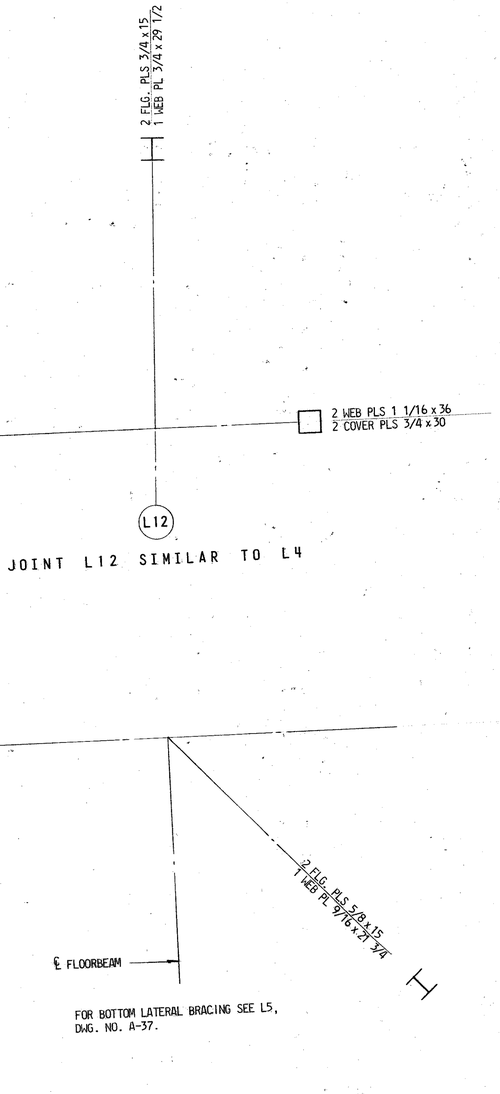
SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-39
SHEET NO. 39 OF 79
INDEXED





NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L11 & L12

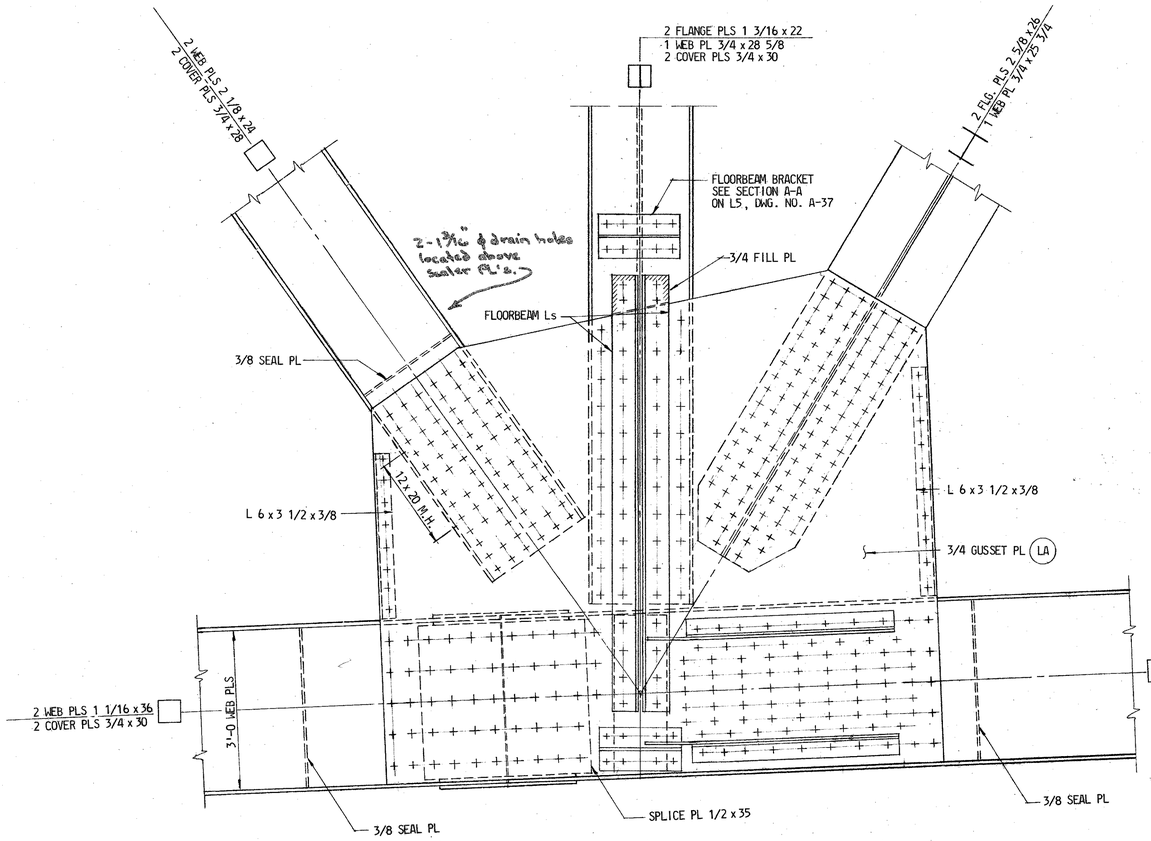
SCALE : 3/4"=1'-0" DATE JAN., 1972 CONTRACT 0T-12

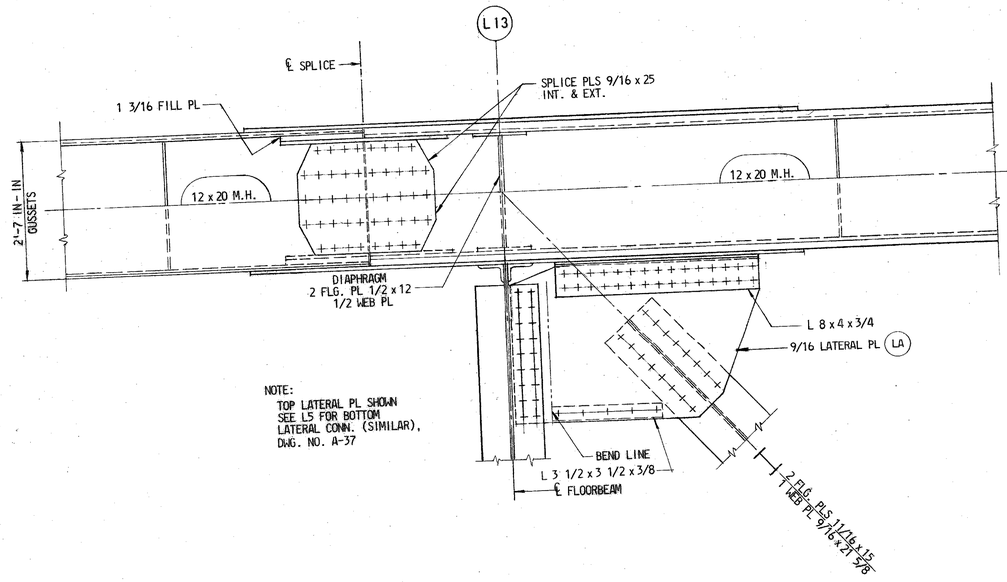
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

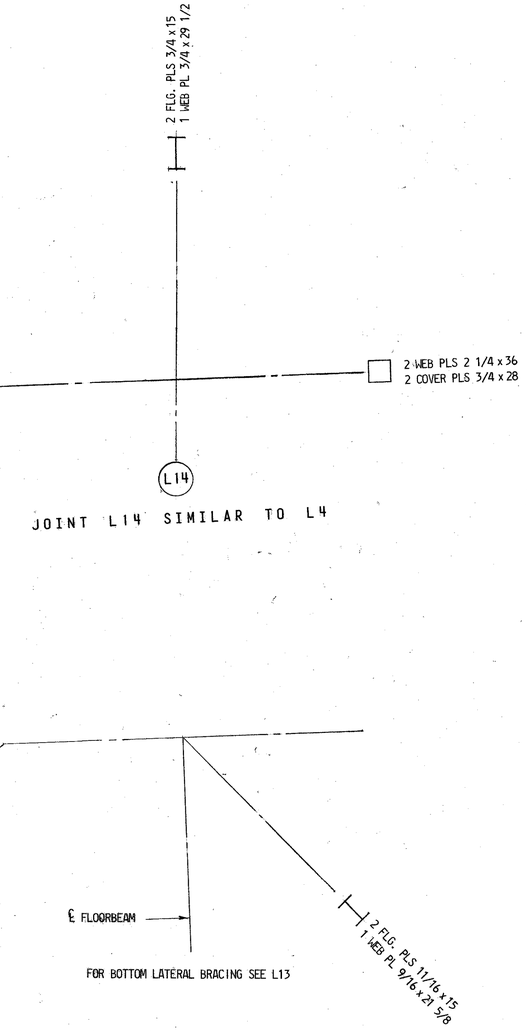
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-40
SHEET NO. 40 OF 79

File No.____Pocket No.____Folder No.____
INDEXED







NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L13 & L14

SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

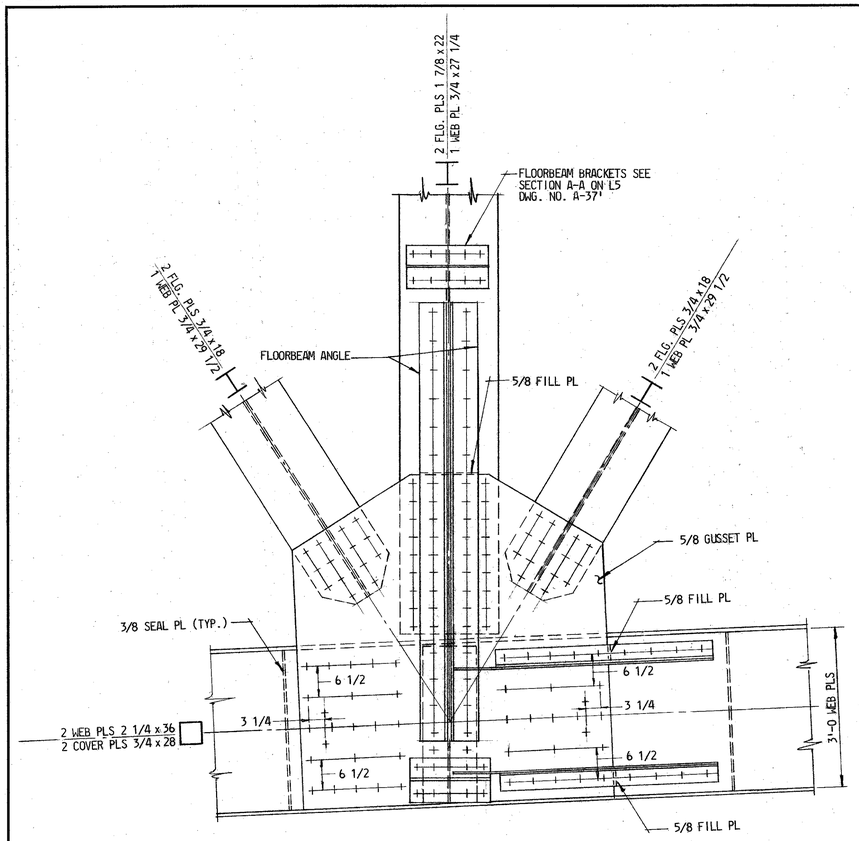
MADE BY A.J.S.
TRACED BY C.E.S.
CHECKED BY J.M.M.

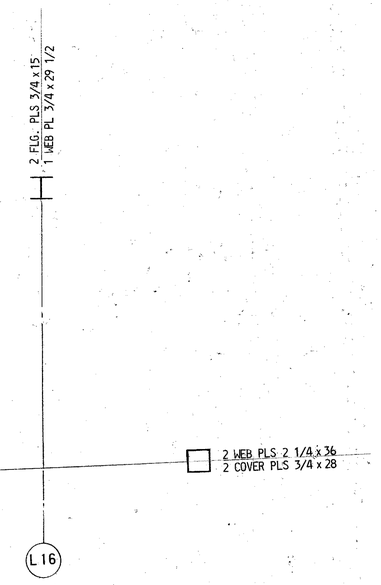
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-41
SHEET NO. 41 OF 79

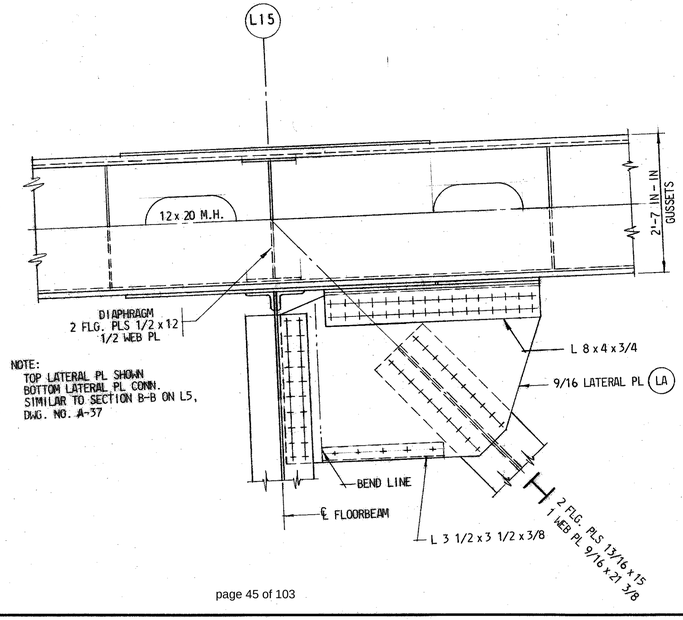
File No.____ Pocket No.____ Folder No.____

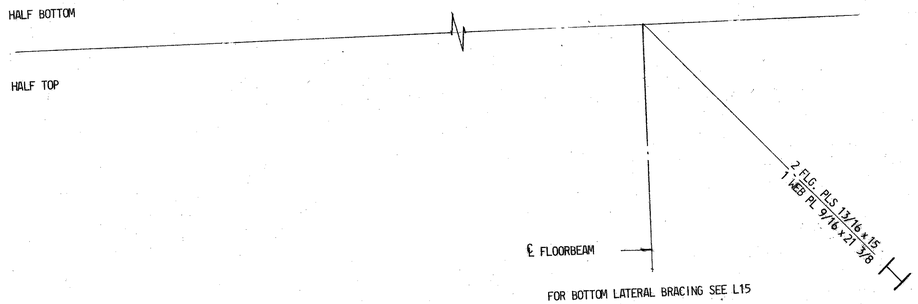
INDEXED





JOINT L16 SIMILAR TO L4





NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L15 & L16

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

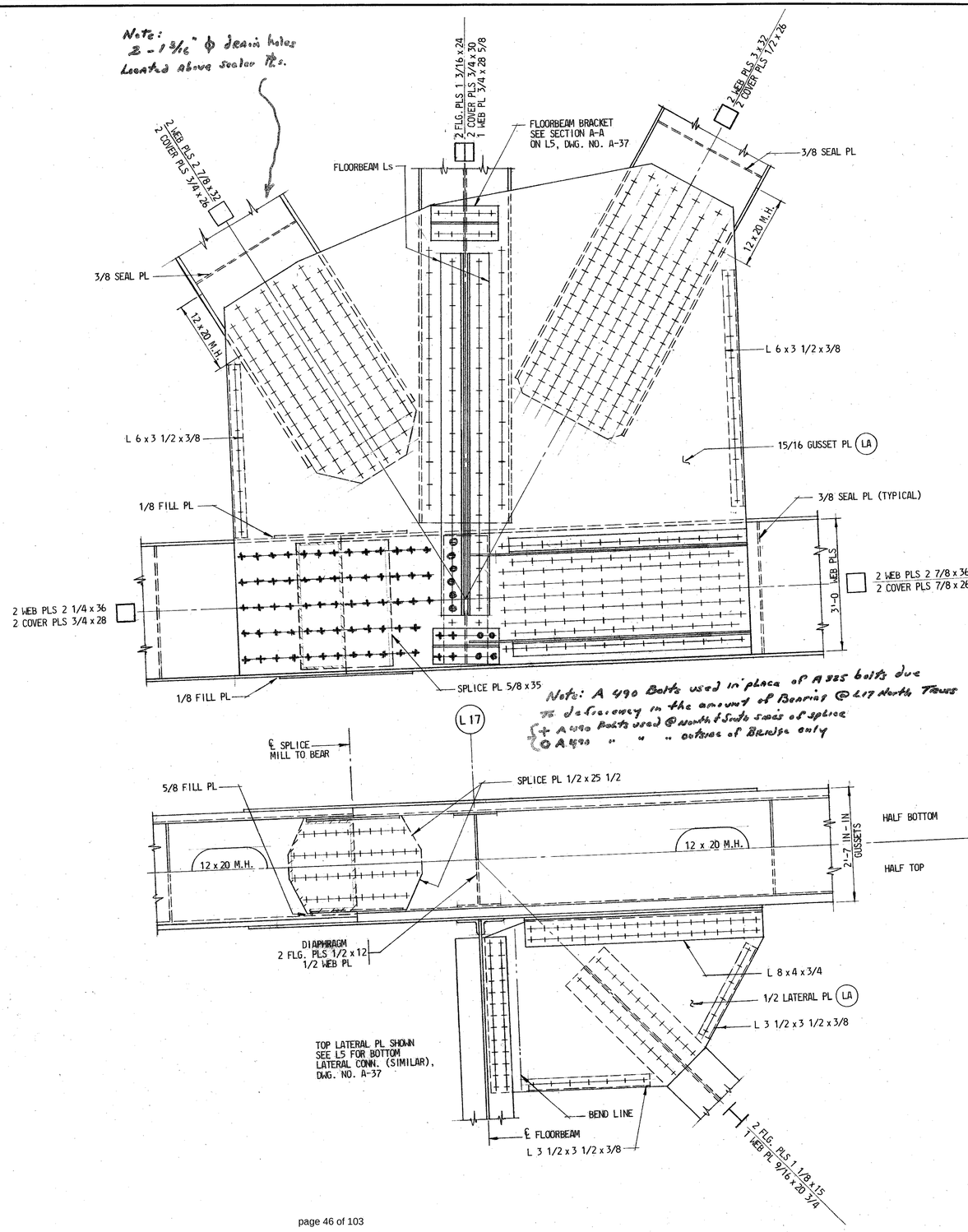
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-42
SHEET NO. 42 OF 79

File No.____ Pocket No.____ Folder No.____

INDEXED



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

Stainless Steel Shims used @ Mill to Bear Splice

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L17 & L18

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-43
SHEET NO. 43 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____

NOTES:

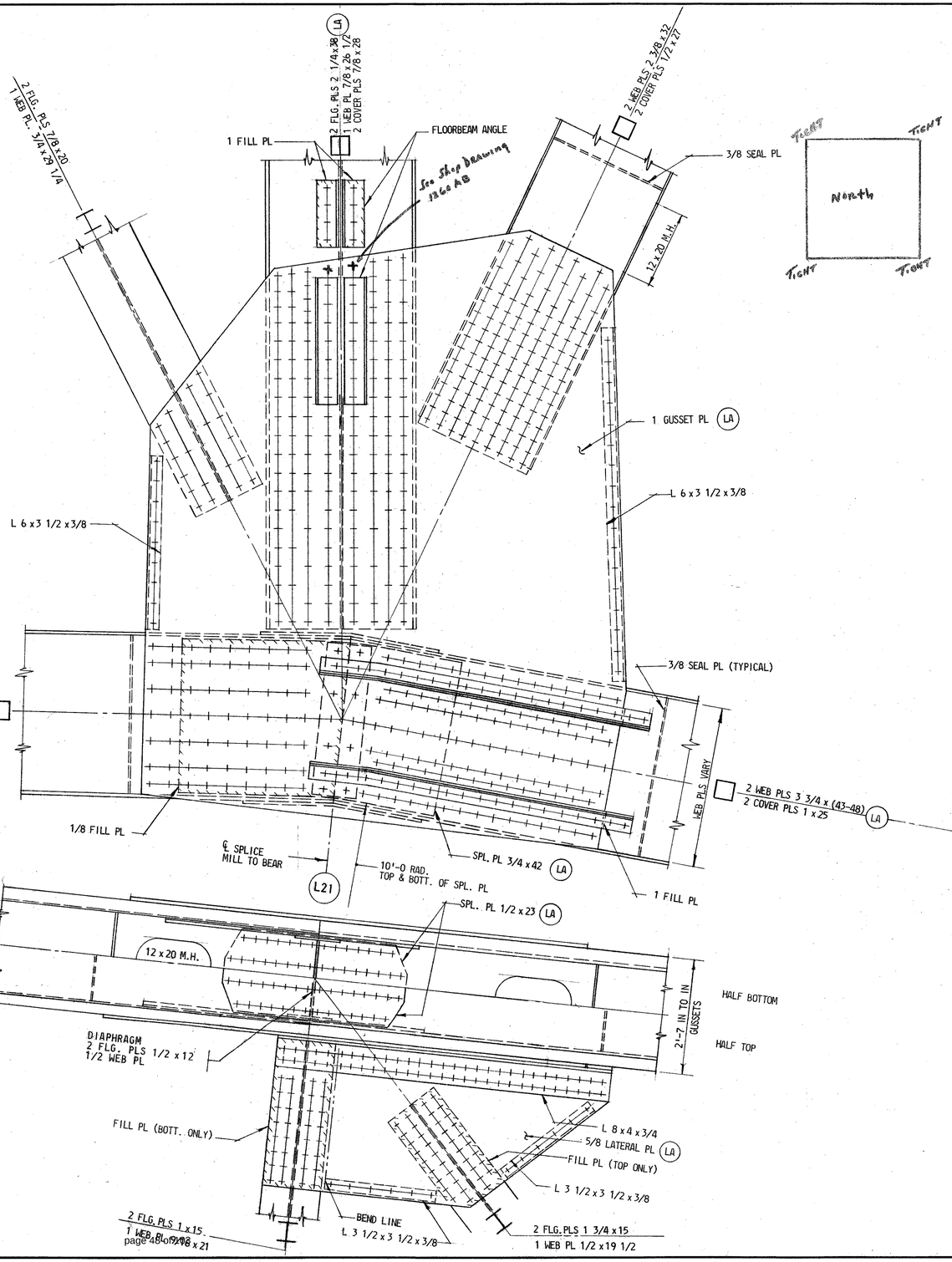
FOR GENERAL NOTES SEE DWG. NO. A-2.

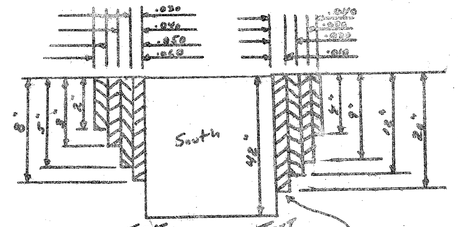
WEB PLATES VARY IN DEPTH FROM 36" AT L19 TO 43" AT L21 ON A STRAIGHT TAPER.

Stainless Steel Shim used @ ℄ mill to bear splice

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD.
As-Built	BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE JOINT DETAILS L19 & L20
	SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12
	MADE BY A.J.S. TRACED BY A.J.S. CHECKED BY J.M.M.
	J. E. GREINER COMPANY, INC. CONSULTING ENGINEERS BALTIMORE, MARYLAND
	DRAWING NO. A-44 SHEET NO. 44 OF 79
	INDEXED

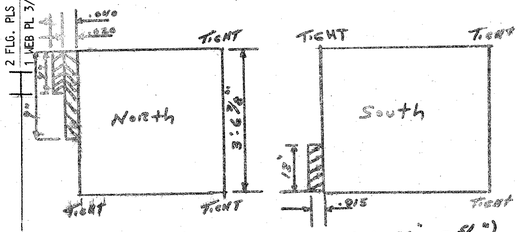
File No.____ Pocket No.____ Folder No.____





L-21 Looking East (3'-6" x 3 5/8")

stainless steel shim (typ)



L21' Looking East (3'-6 7/8" x 3 5/8")

2 WEB PLS 3 3/4 x (43-48)
2 COVER PL 1 x 25
LA

L22

JOINT L22 SIMILAR TO L20
(USE 7 LINES OF BOLTS IN CHORD WITH 3/4 GUSSET PL)

FOR BOTTOM LATERAL BRACING SEE L21

2 FLG. PLS 1 x 15
1 WEB PL 9/16 x 21

2 FLG. PLS 1 3/4 x 15
1 WEB PL 1/2 x 19 1/2

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

WEB PLATES VARY IN DEPTH FROM 43" AT L21 TO 48" AT L23 ON A STRAIGHT TAPER.

Stainless Steel Shims Used @ ℄ Mill to Bear Splices

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

JOINT DETAILS L21 & L22

SCALE 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

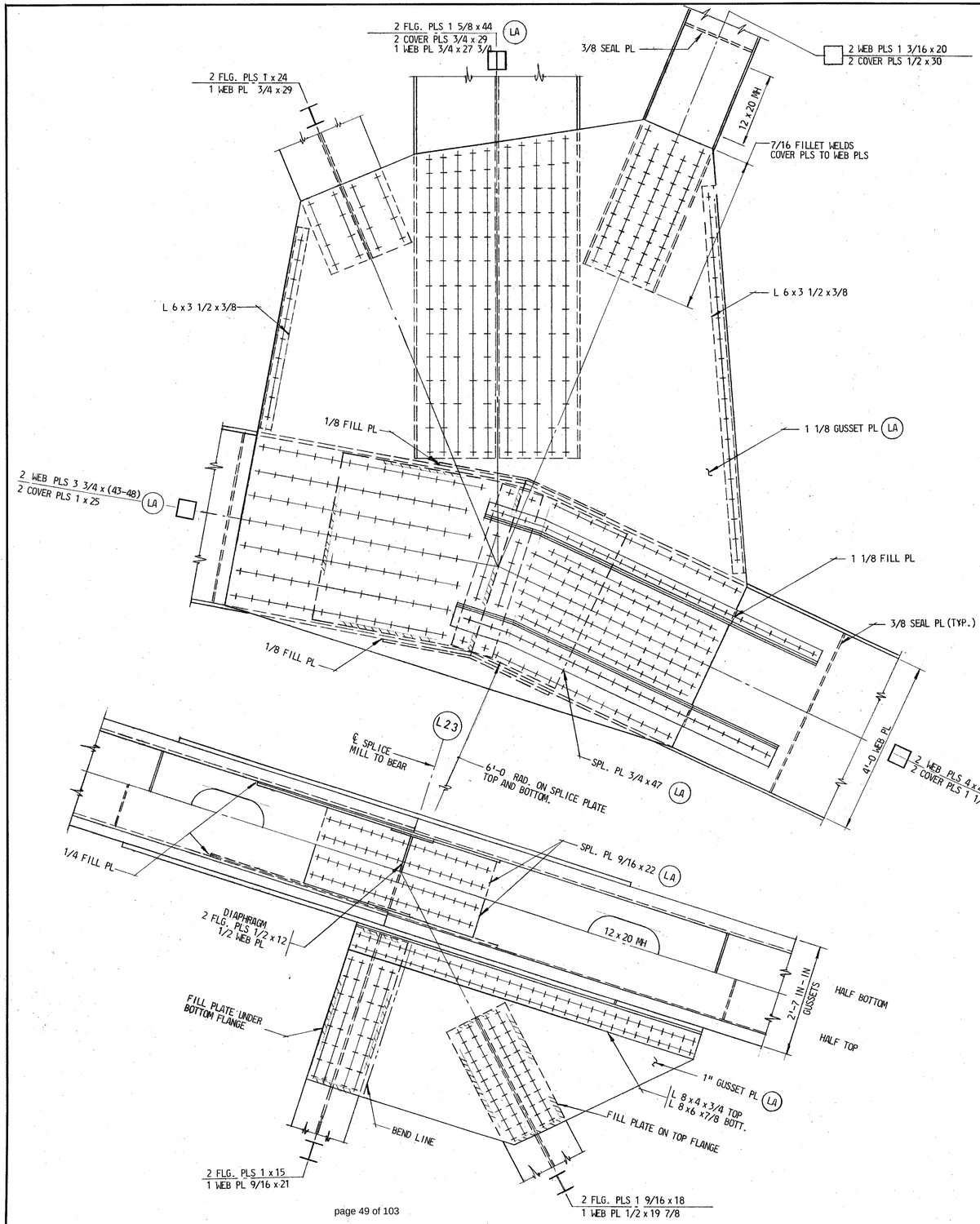
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY J.M.M.

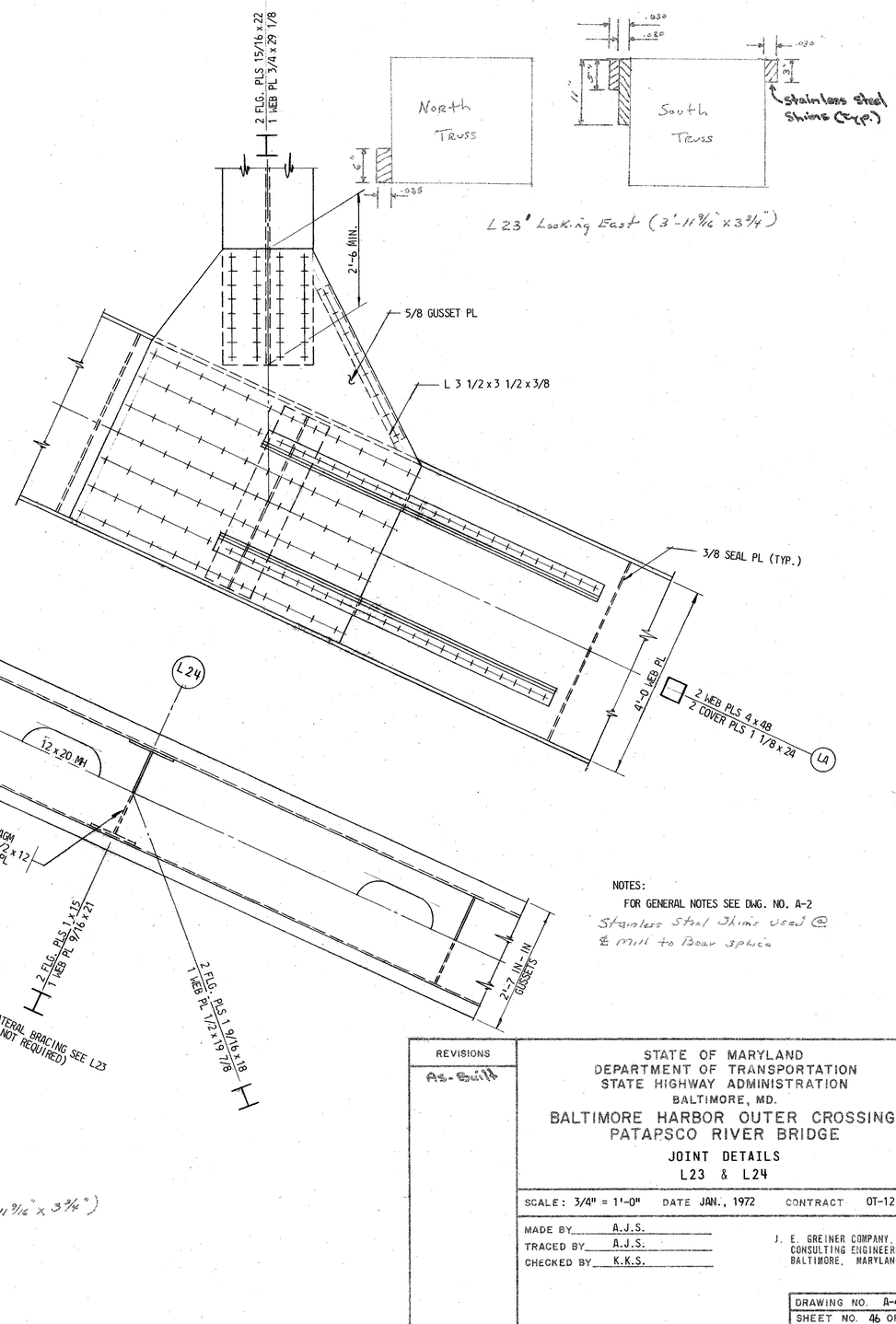
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-45
SHEET NO. 45 OF 79

INDEXED

File No.___ Pocket No.___ Folder No.___





NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2
Stainless Steel Shims used @ ℄ Mill to Bear splice

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L23 & L24

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

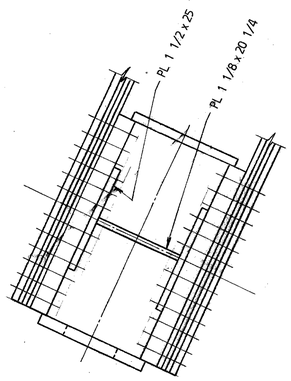
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY K.K.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

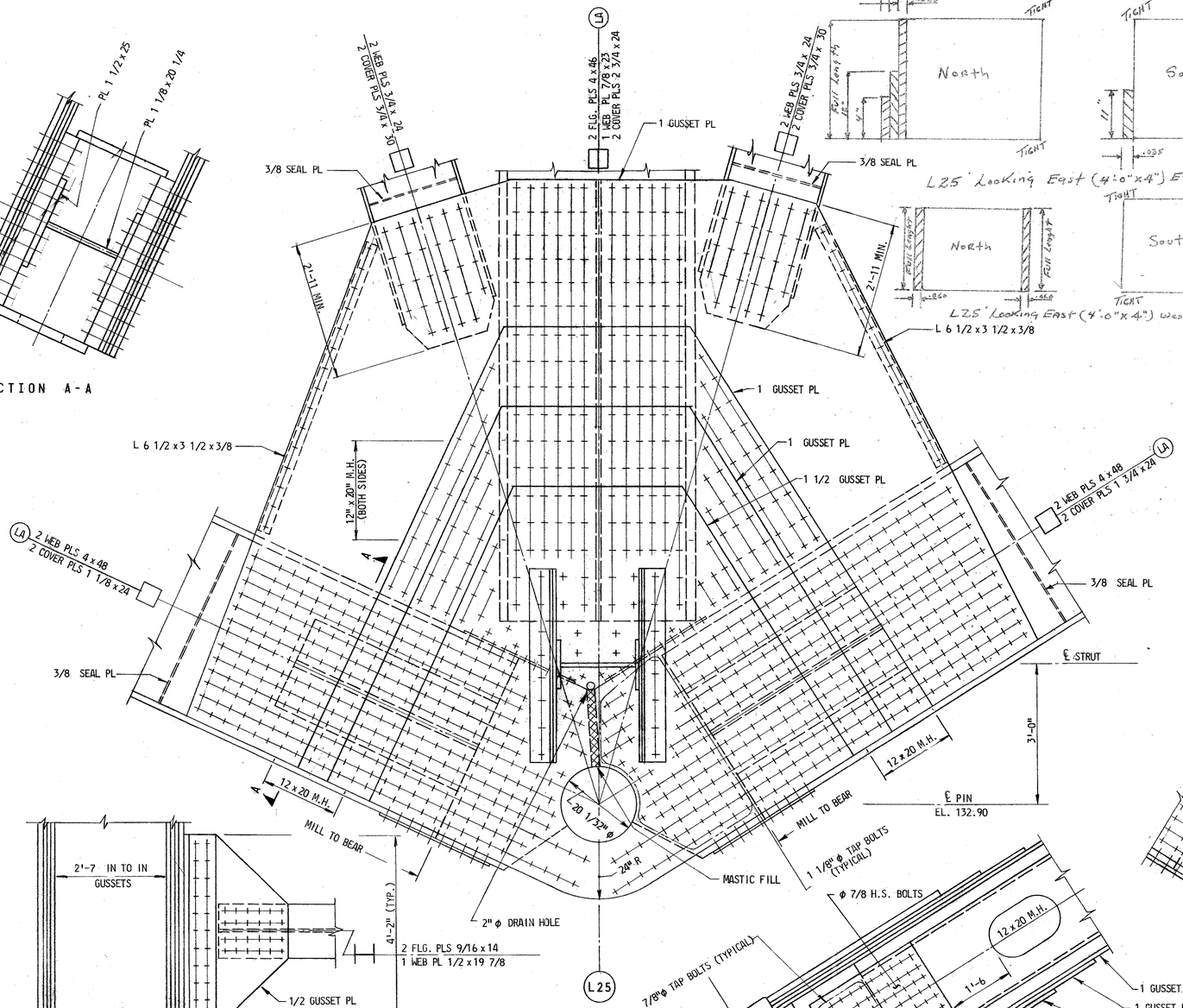
DRAWING NO. A-46
SHEET NO. 46 OF 79

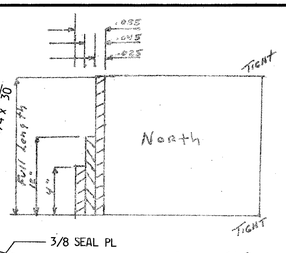
File No.____ Pocket No.____ Folder No.____

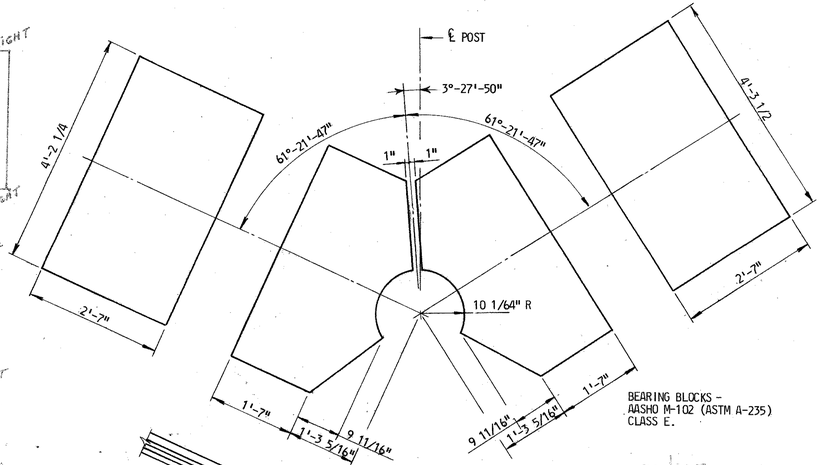
INDEXED

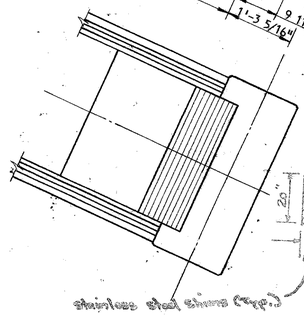


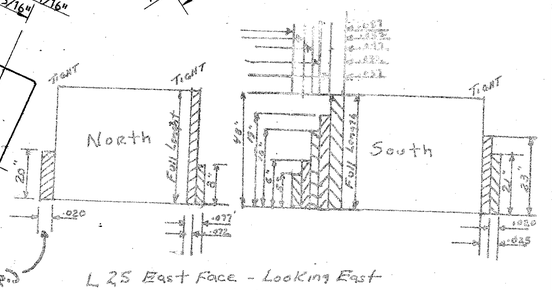
SECTION A-A





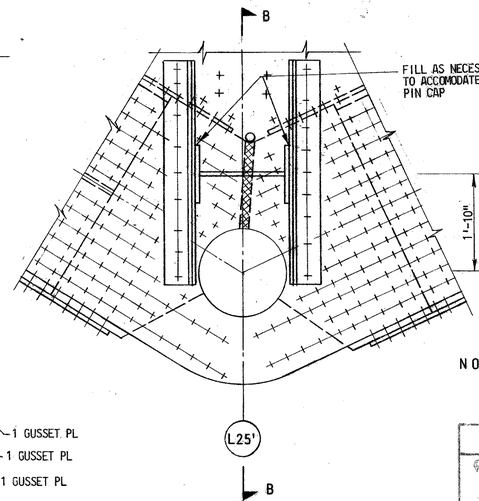


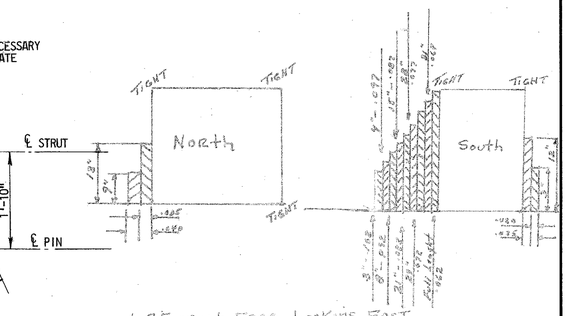




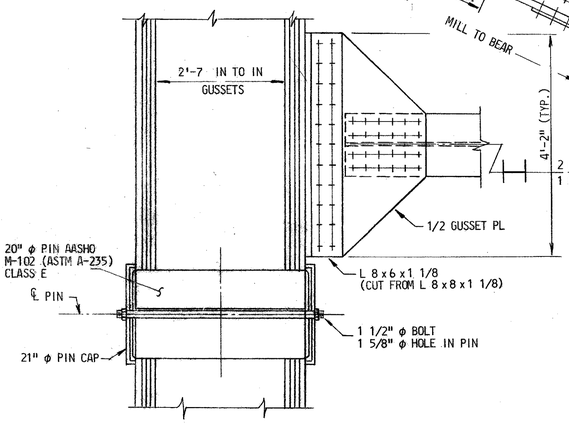
L25 East Face - Looking East (4'-0"x4")

BEARING BLOCKS



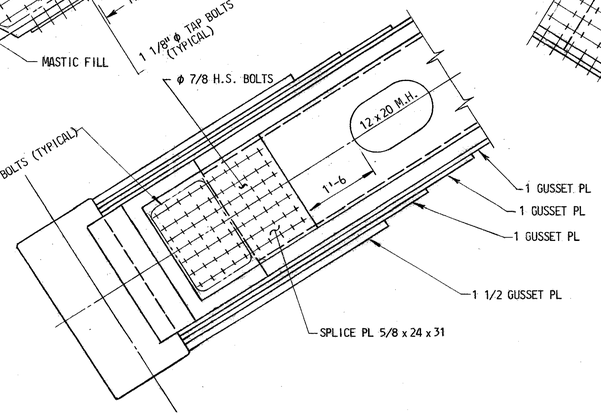


L25 West Face Looking East (4'-0"x4")



PIN DETAIL

SECTION B-B



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

Stainless Steel Shims used @ ℄ mill to Bear splices

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L25

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

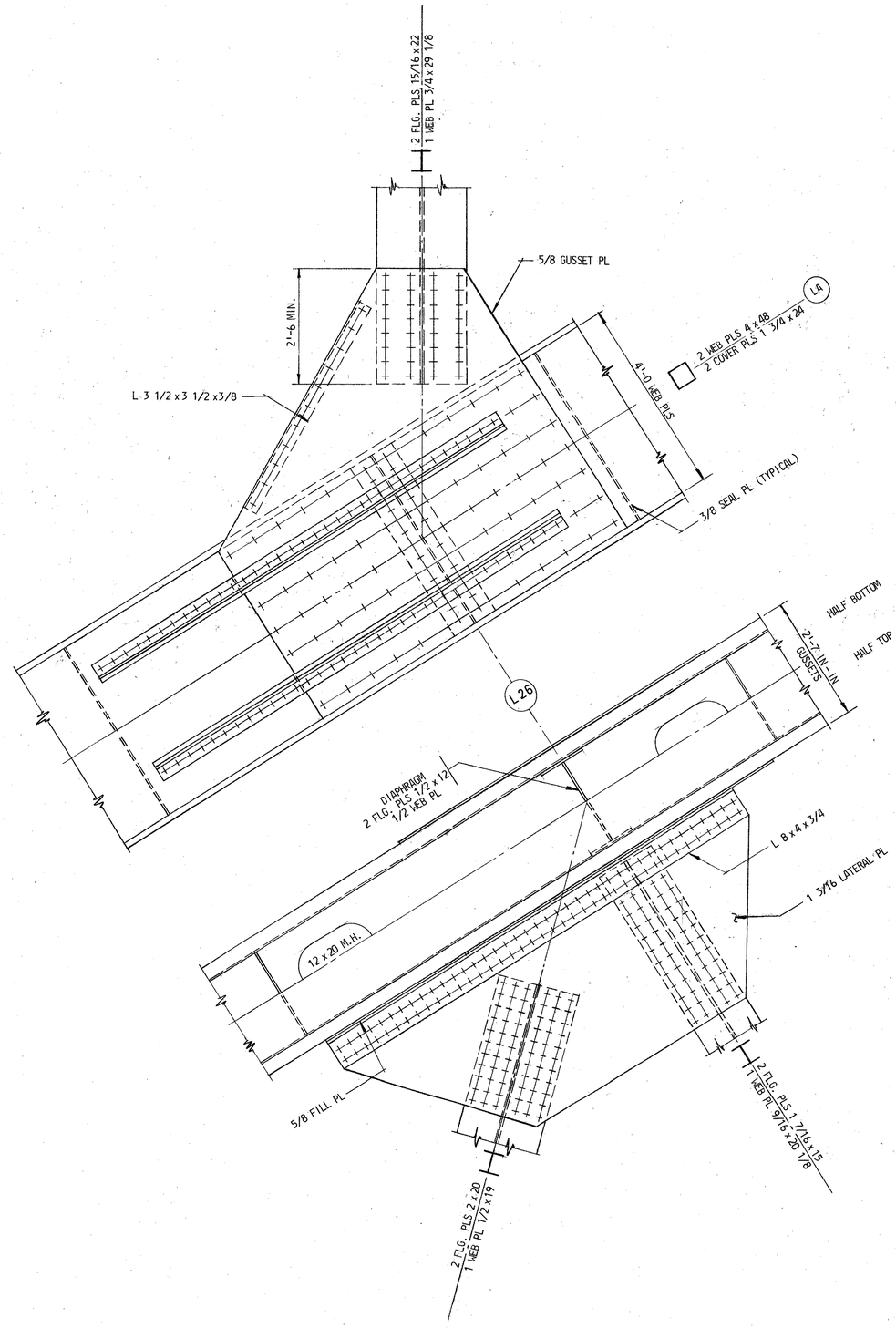
MADE BY F.P.
TRACED BY E.R.A.
CHECKED BY F.P.

J. E. GREINER COMPANY INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-47
SHEET NO. 47 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAIL
L26

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT 0T-12

MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY C.H.

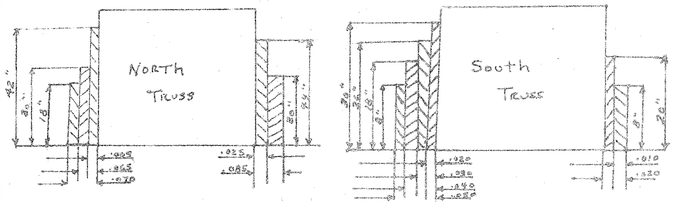
J. E. GREINER COMPANY, INC
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-48
SHEET NO. 48 OF 79

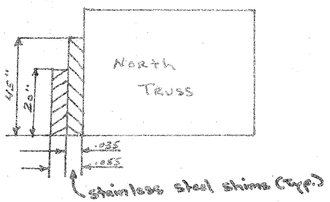
File No.____ Pocket No.____ Folder No.____

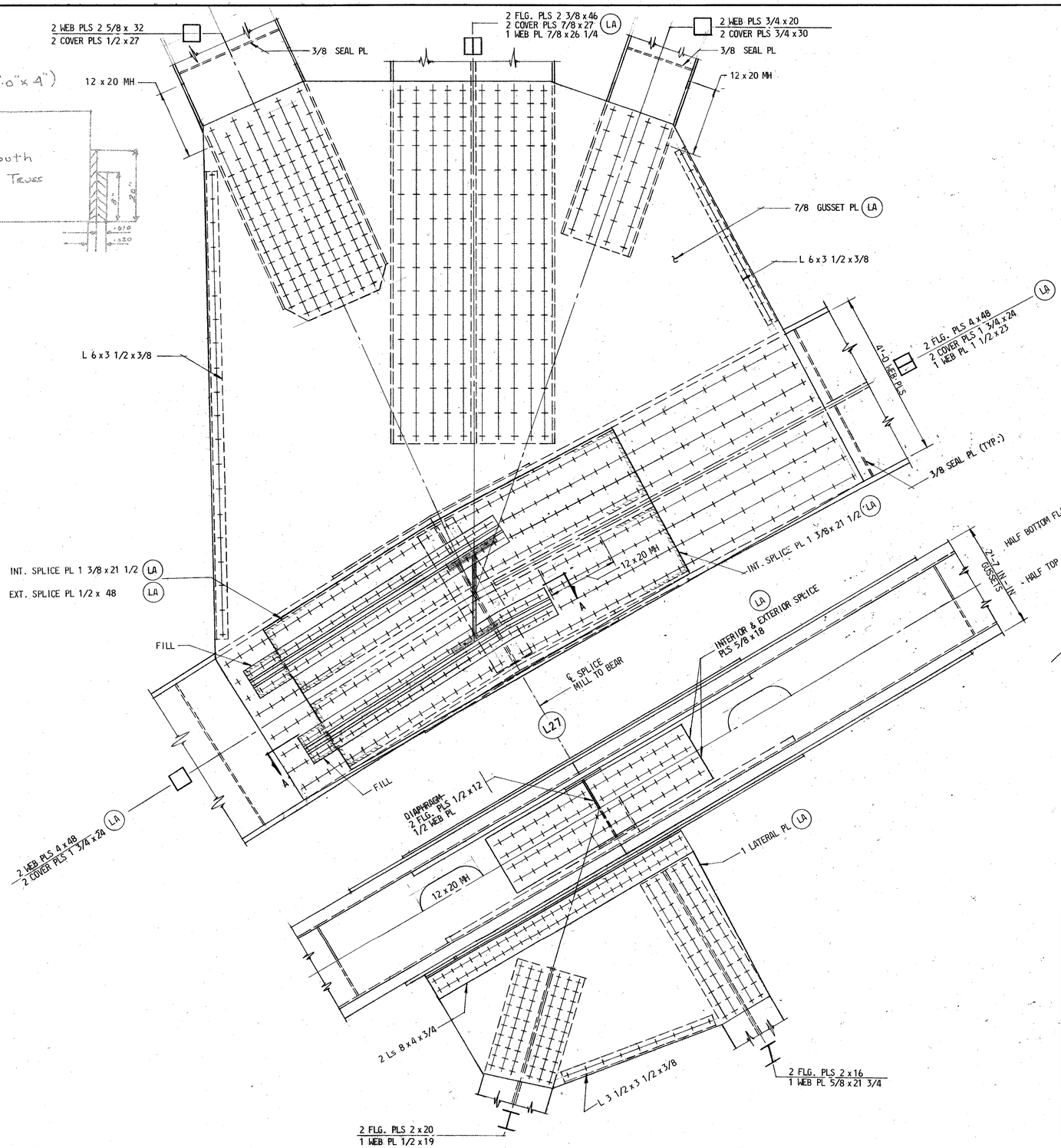
INDEXED

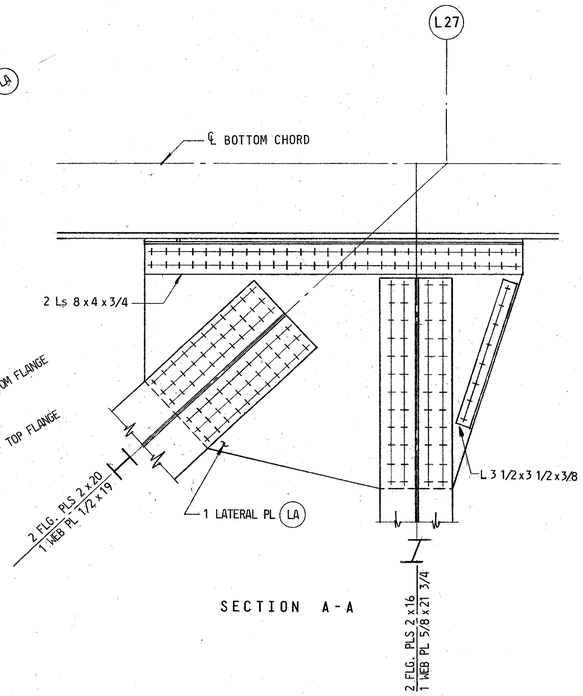
L 27 Looking East (4'-0" x 4")



L 27 Looking East (4'-0" x 4")







SECTION A-A

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

Stainless Steel Shims used @ ℄ Mill to Bear splice

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAIL
L27

SCALE 3/4" = 1'-0" DATE JAN., 1972 CONTRACT 0T-12

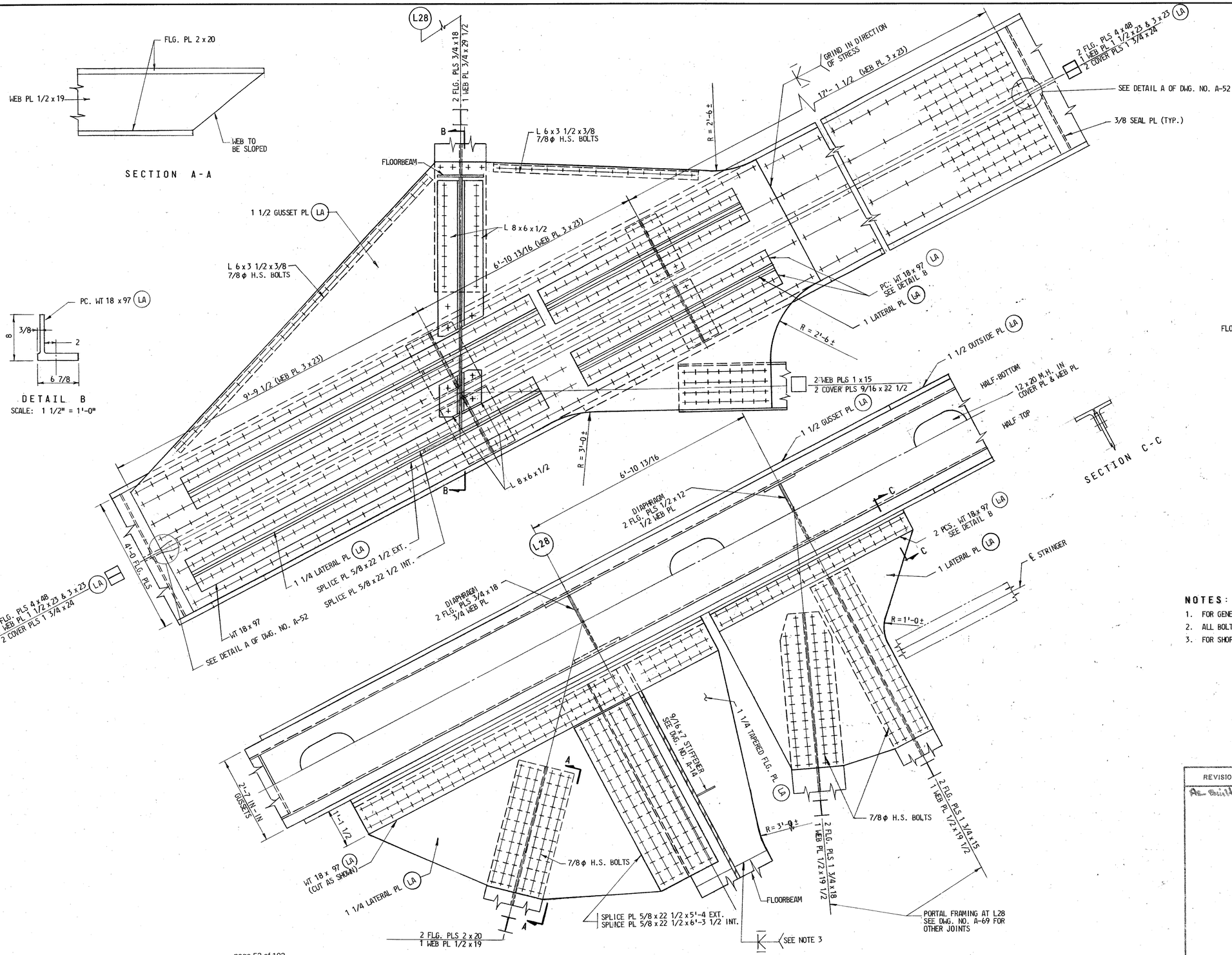
MADE BY E.R.A.
TRACED BY A.J.S.
CHECKED BY F.P.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-49
SHEET NO. 49 OF 79

File No. Pocket No. Folder No.

INDEXED



NOTES:

1. FOR GENERAL NOTES SEE DWG. NO. A-2.
2. ALL BOLTS SHOWN ARE TO BE 1 1/8φ H.S. BOLTS EXCEPT AS NOTED.
3. FOR SHOP FLANGE SPLICE DETAIL, SEE DWG. NO. A-14.

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L28

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

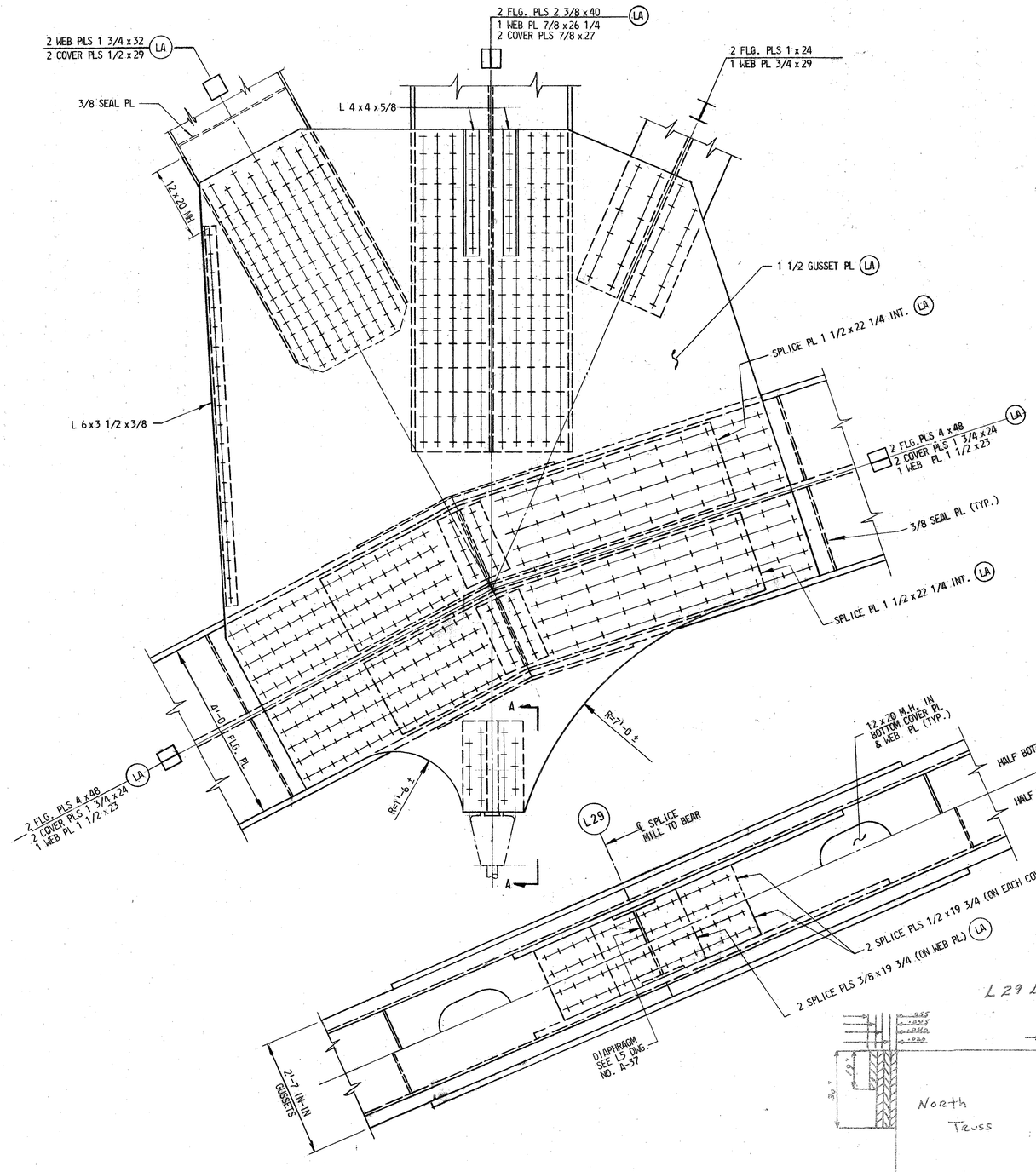
MADE BY R.I.S.
TRACED BY T.G.
CHECKED BY C.H.

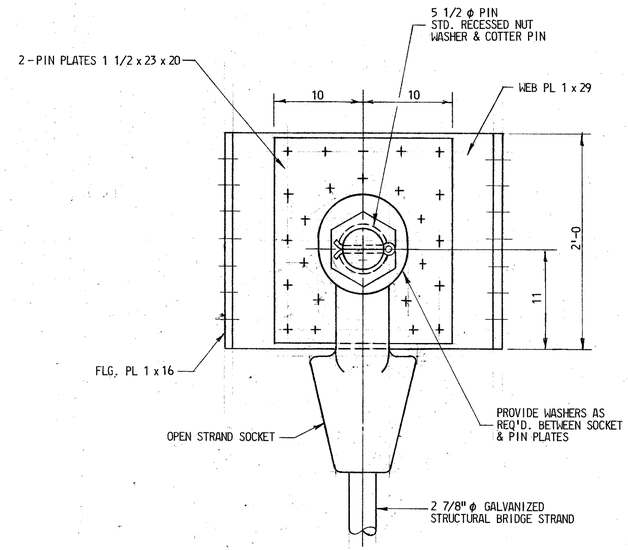
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-50
SHEET NO. 50 OF 79

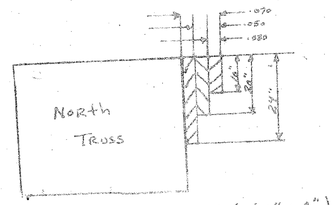
INDEXED

File No.____ Pocket No.____ Folder No.____



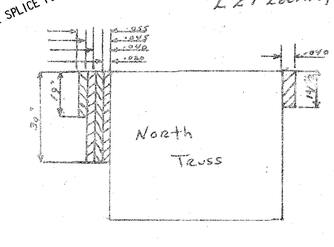


SECTION A-A
SCALE: 1 1/2" = 1'-0"

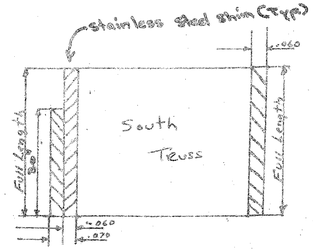


L29 Looking East (4'-0" x 4")

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.
Stainless Steel Shims used @ ℄ Mill to bear Splice



L29 Looking East (4'-0" x 4")



REVISIONS
83-Draft

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L29

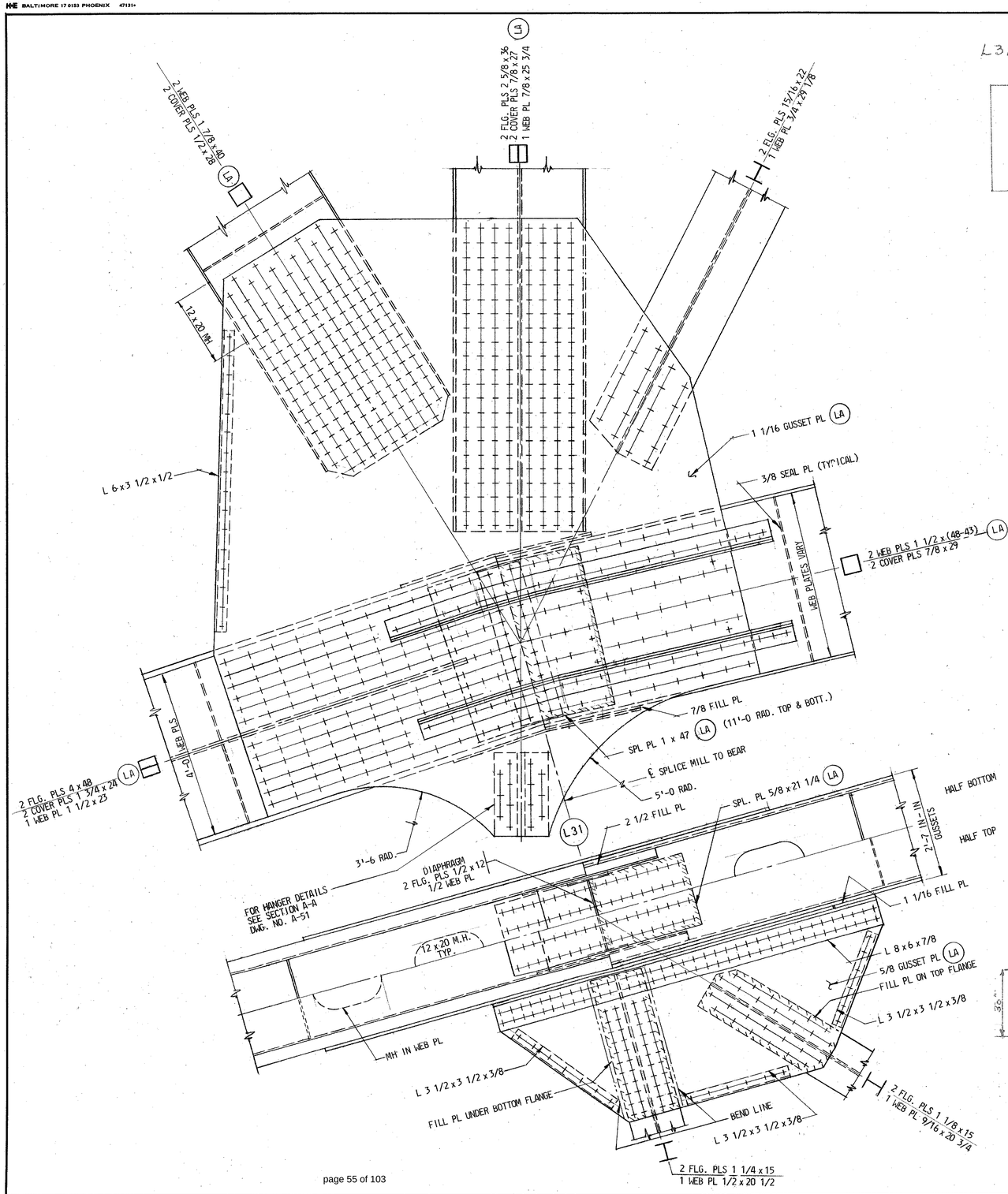
SCALE 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

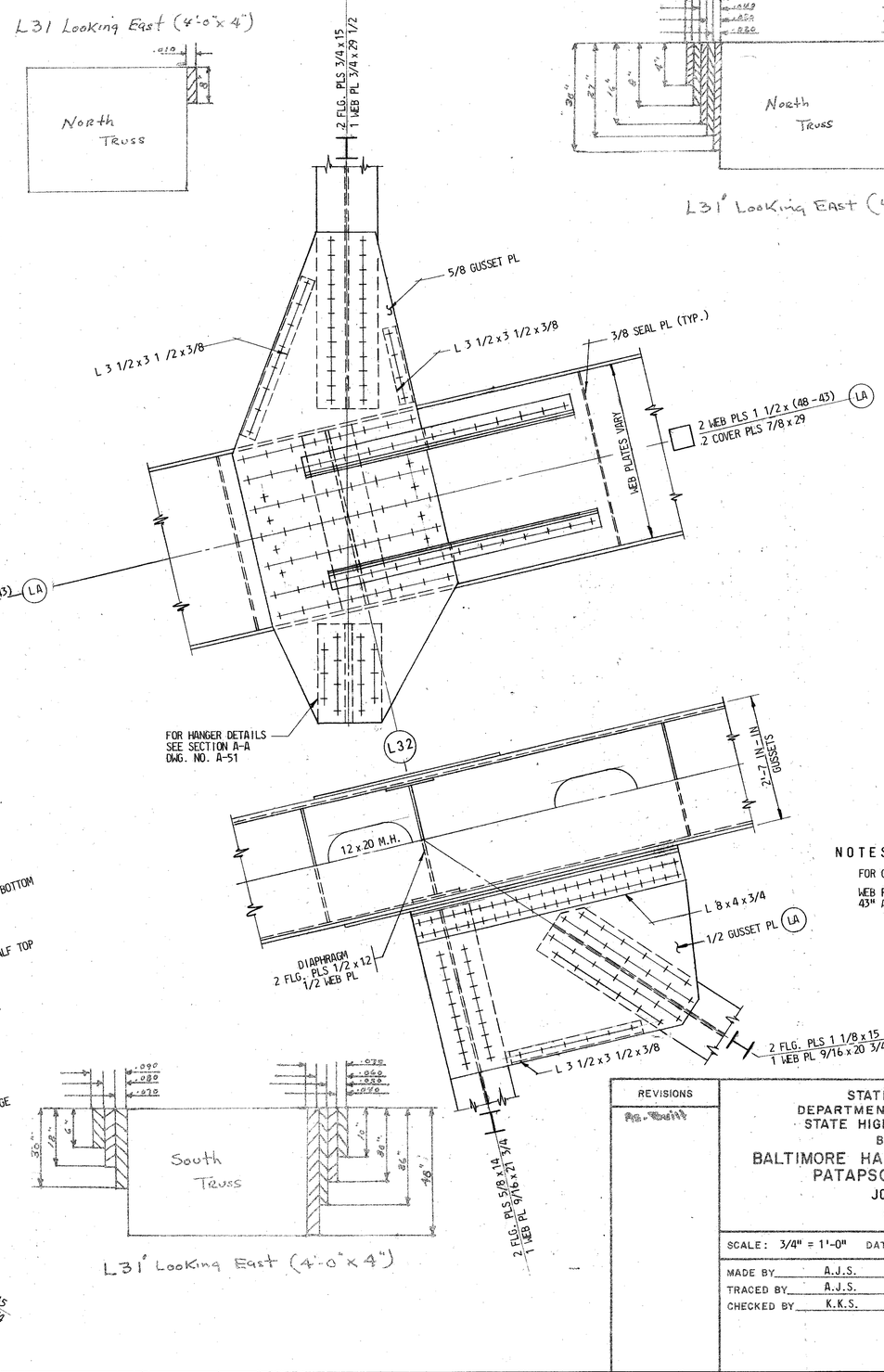
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY C.H.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-51
SHEET NO. 51 OF 79
INDEXED

File No. Pocket No. Folder No.





NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

WEB PLATES VARY IN DEPTH FROM 48" AT L31 TO 43" AT L33 ON A STRAIGHT TAPER.

REVISIONS

No. Date

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L31 & L32

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

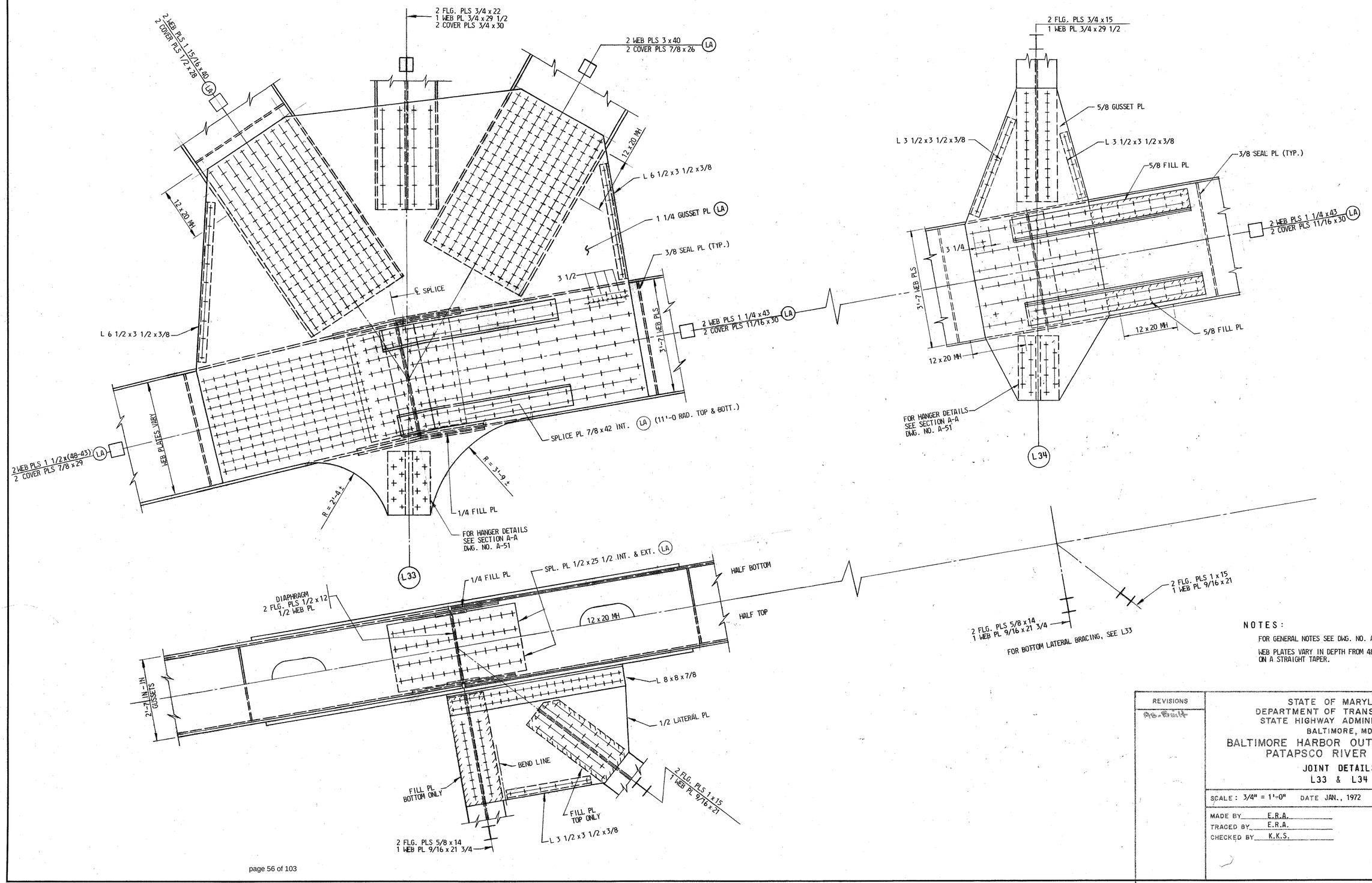
MADE BY A.J.S.
TRACED BY A.J.S.
CHECKED BY K.K.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-53
SHEET NO. 53 OF 79

INDEXED

File No. Pocket No. Folder No.



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

WEB PLATES VARY IN DEPTH FROM 48" AT L31 TO 43" AT L33 ON A STRAIGHT TAPER.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L33 & L34

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

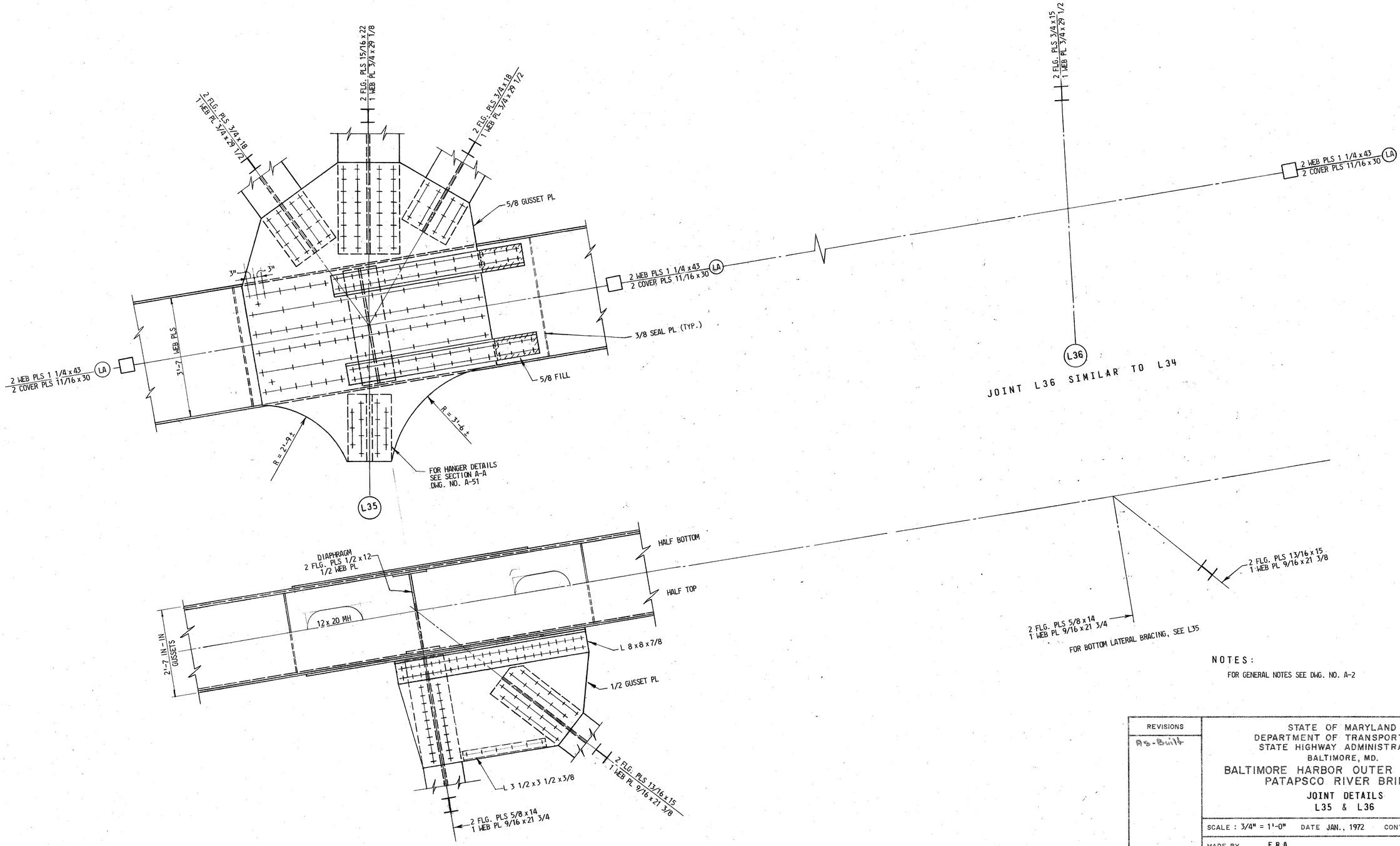
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY K.K.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-54
SHEET NO. 54 OF 79

File No. Pocket No. Folder No.

INDEXED



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L35 & L36

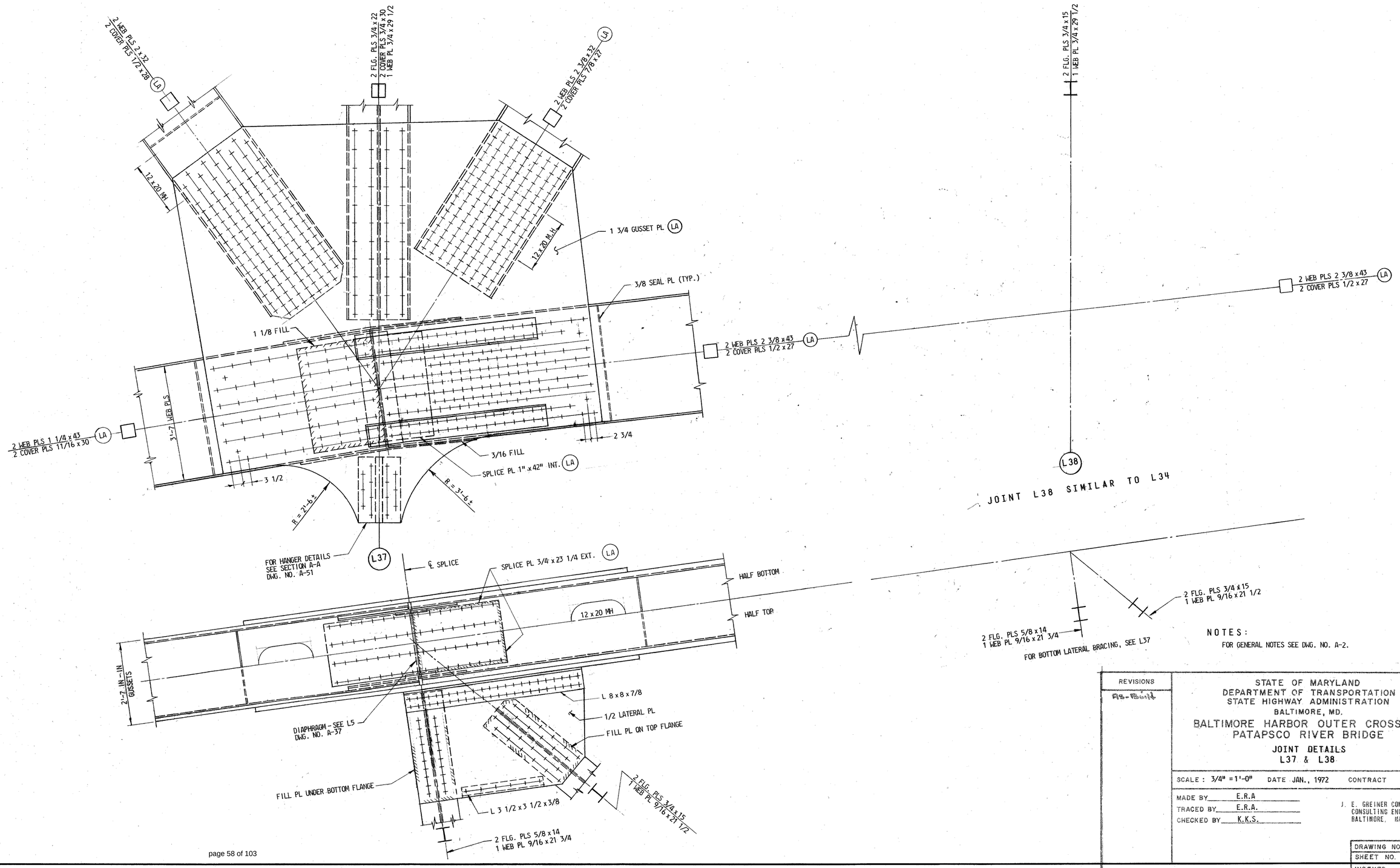
SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A
TRACED BY E.R.A.
CHECKED BY K.K.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-55
SHEET NO. 55 OF 79

File No.____ Pocket No.____ Folder No.____
INDEXED



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS
AS-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L37 & L38

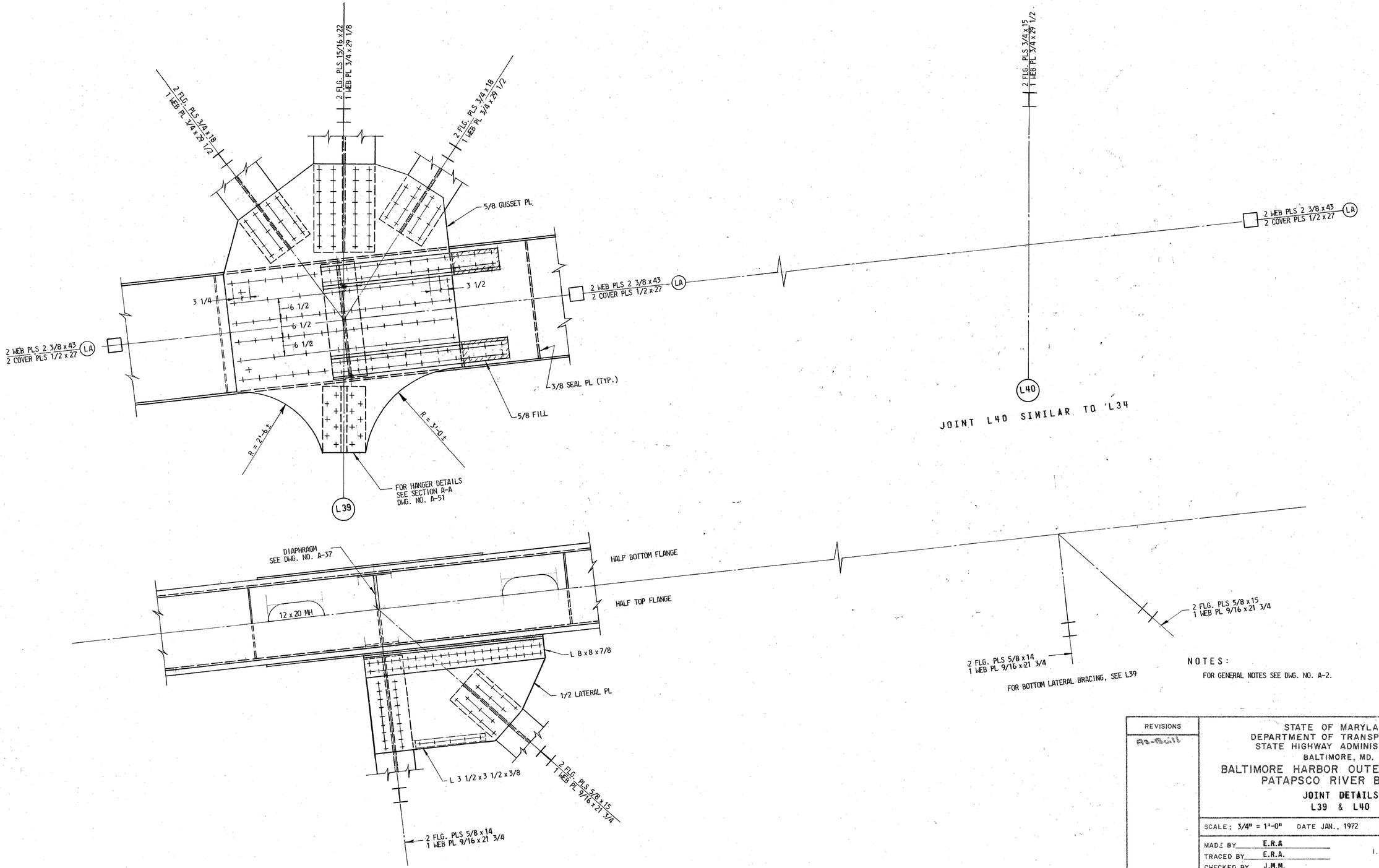
SCALE : 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

MADE BY E.R.A
TRACED BY E.R.A.
CHECKED BY K.K.S.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-56
SHEET NO. 56 OF 79
INDEXED

File No.____ Pocket No.____ Folder No.____

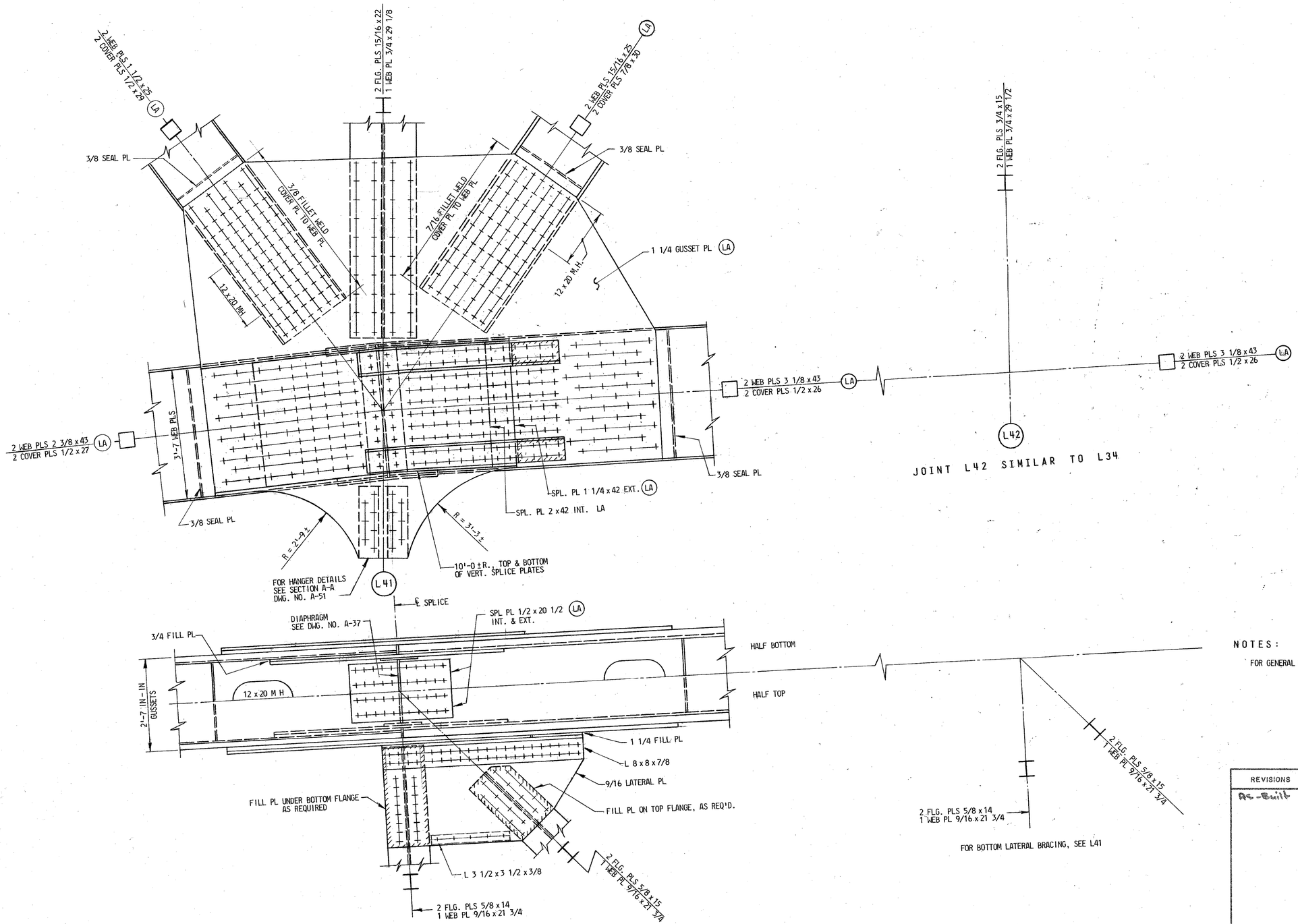


NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD.
43-8411	BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE **JOINT DETAILS** **L39 & L40**
	SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12
	MADE BY E.R.A TRACED BY E.R.A. CHECKED BY J.M.M.
	J. E. GREINER COMPANY, INC. CONSULTING ENGINEERS BALTIMORE, MARYLAND
	DRAWING NO. A-57 SHEET NO. 57 OF 79
	INDEXED

File No.____ Pocket No.____ Folder No.____



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS

As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

JOINT DETAILS L41 & L42

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

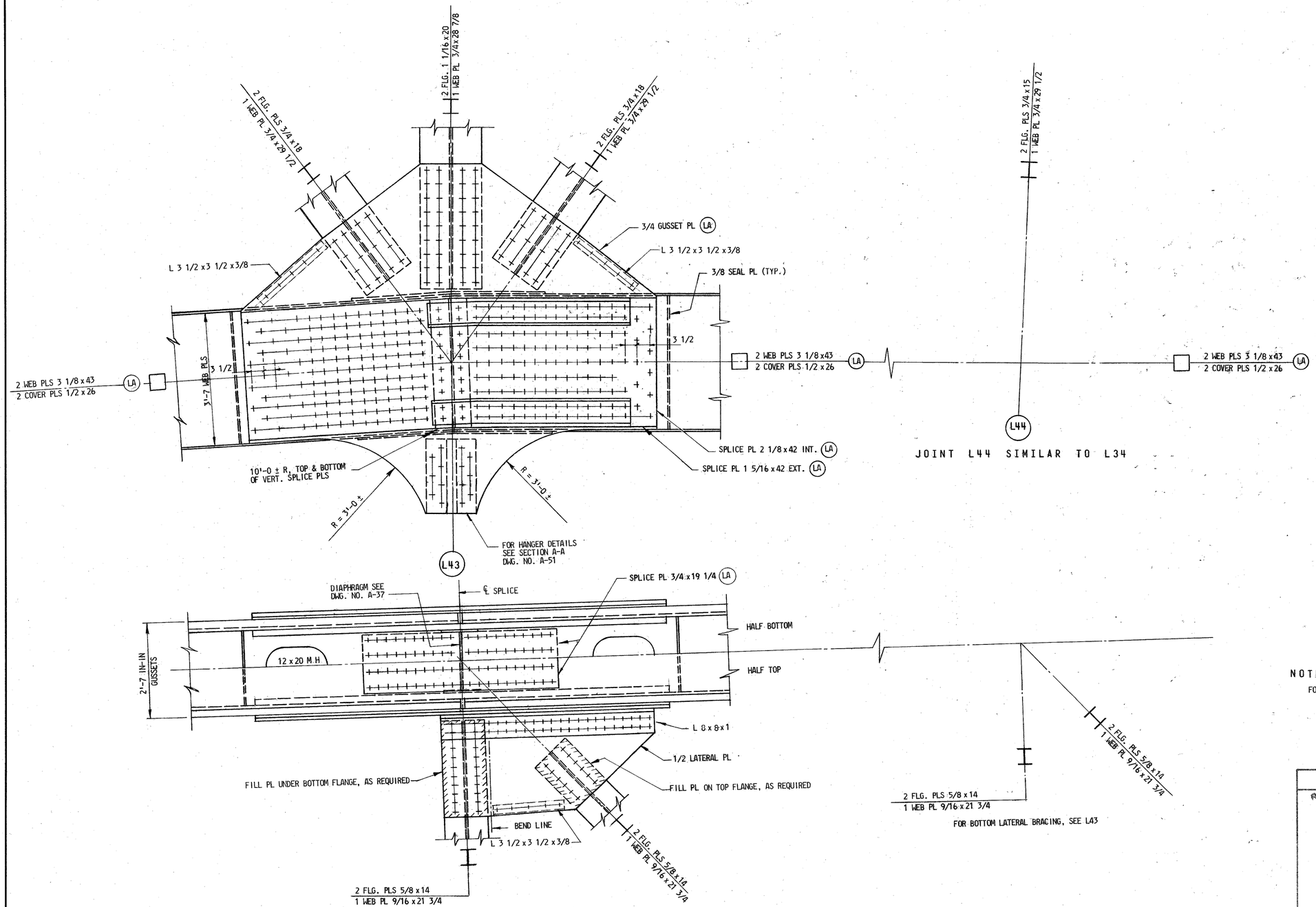
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY J.M.M.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-58
SHEET NO. 58 OF 79

File No.____ Pocket No.____ Folder No.____

INDEXED



NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L43 & L44

SCALE 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

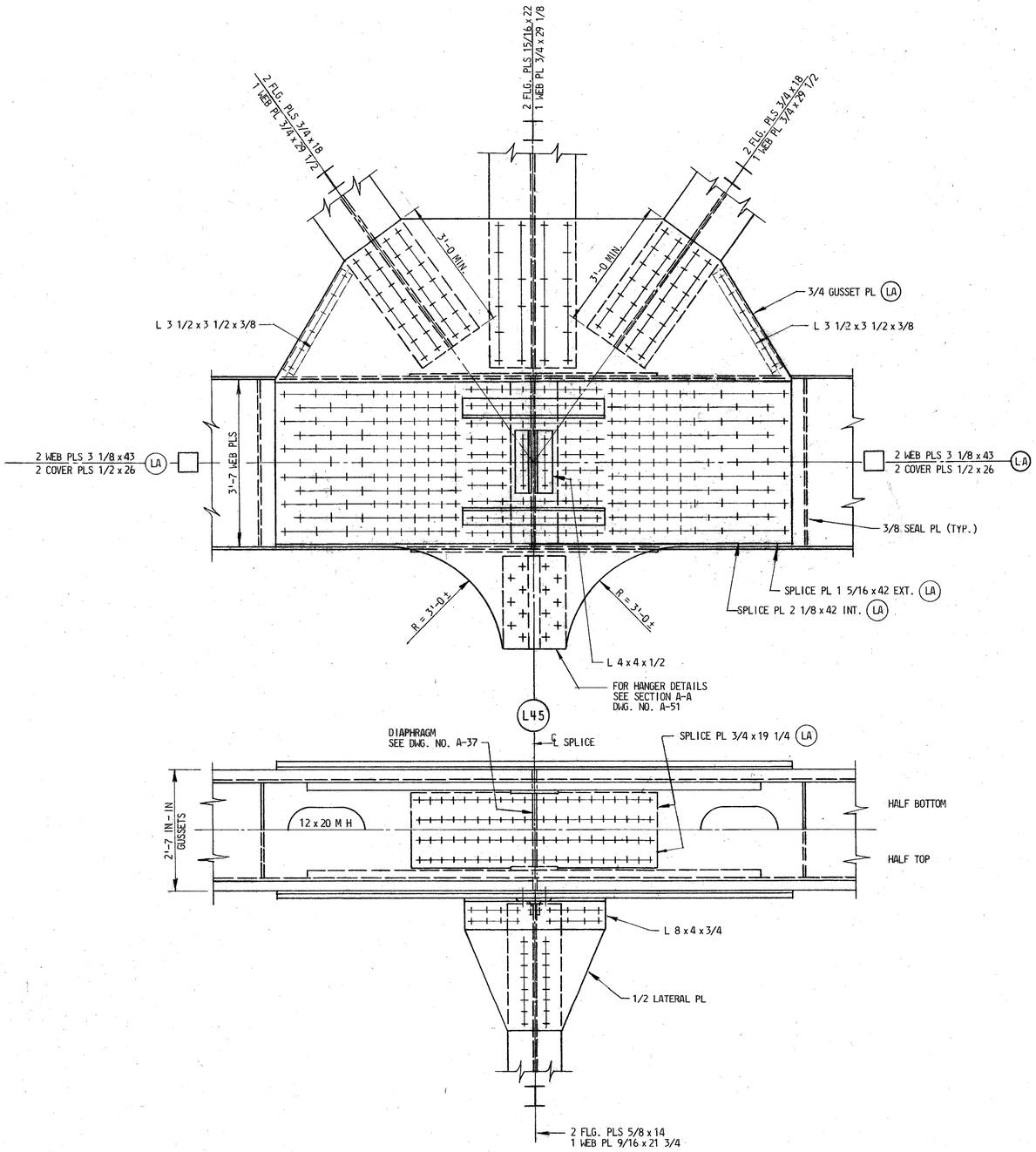
MADE BY C.E.S.
TRACED BY E.R.A.
CHECKED BY J.M.M.

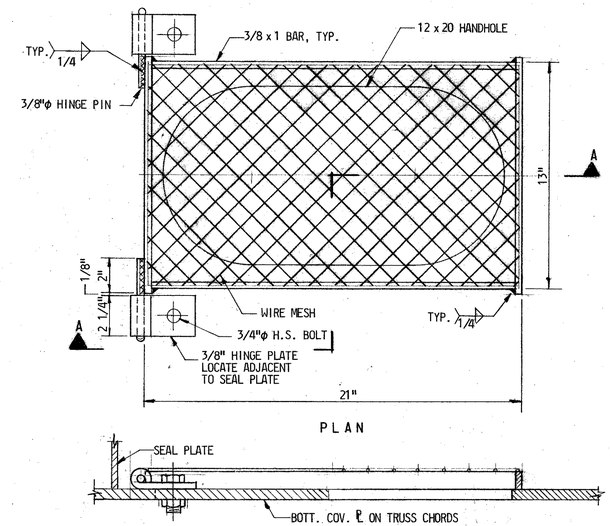
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-59
SHEET NO. 59 OF 79

INDEXED

File No.____ Pocket No.____ Folder No.____





PLAN

SECTION A-A

NOTE:
WELDED WIRE MESH SHALL BE #10 GAUGE
SPACED 1" ON CENTERS AND WELDED TO FRAME @ EVERY 5". (Notes From Shop Drawing #1283)
ENTIRE ASSEMBLY TO BE HOT-DIPPED GALVANIZED
AFTER FABRICATION. Including Hinges.

DETAIL BIRD SCREEN
SCALE: 3" = 1'-0"

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-2.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

JOINT DETAILS
L45

SCALE: 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

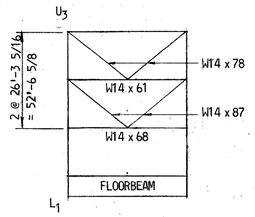
MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY J.M.M.

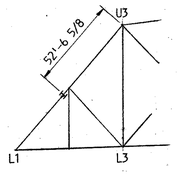
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-60
SHEET NO. 60 OF 79

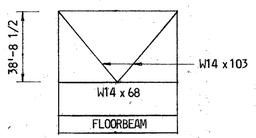
INDEXED

File No.____ Pocket No.____ Folder No.____

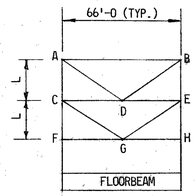




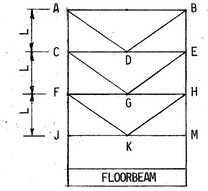
END PORTAL: L1 - U3



P.P. 3

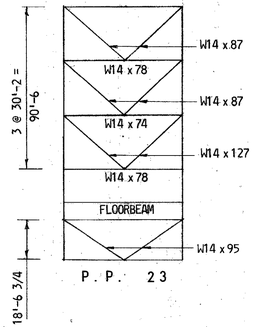


P.P. 5.7.9.11 & 13

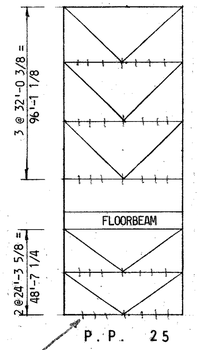


P.P. 15.17.19 & 21

NOTE: P.P. 21 FLOORBEAM TRUSS SEE DRAWING A-15

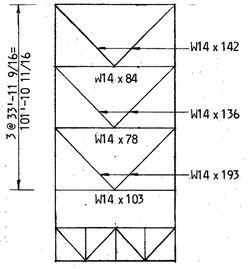


P.P. 23



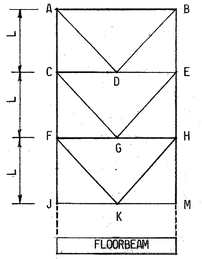
P.P. 25

Note: 7-1 3/16" ϕ drain holes 9'-0" c. to c. in all horizontal Level Sway Frame Struts (Typical)



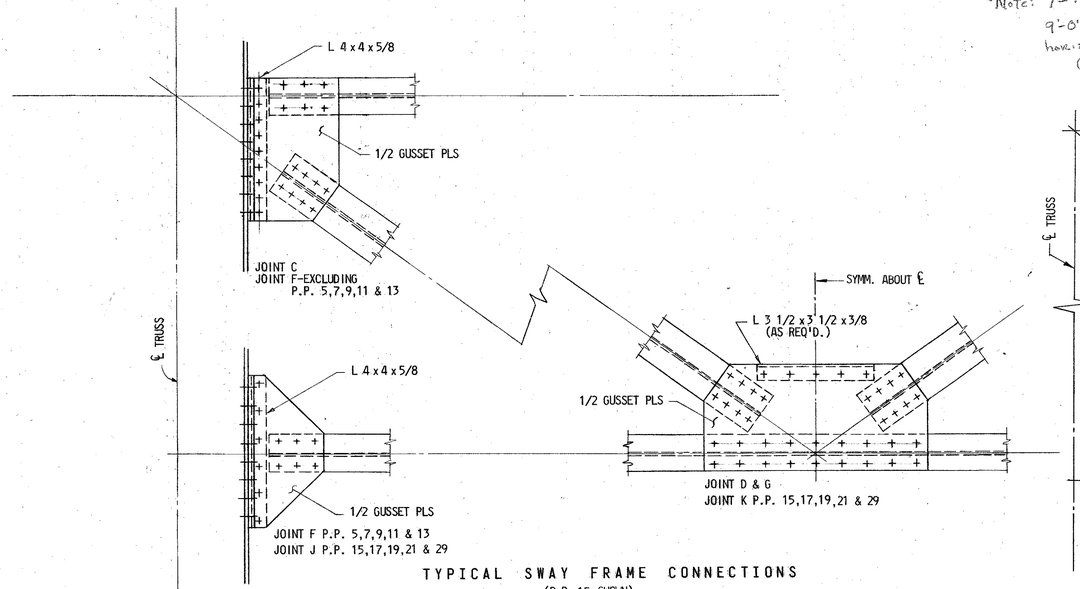
P.P. 27

NOTE: P.P. 27 FLOORBEAM TRUSS SEE DWG. A-16

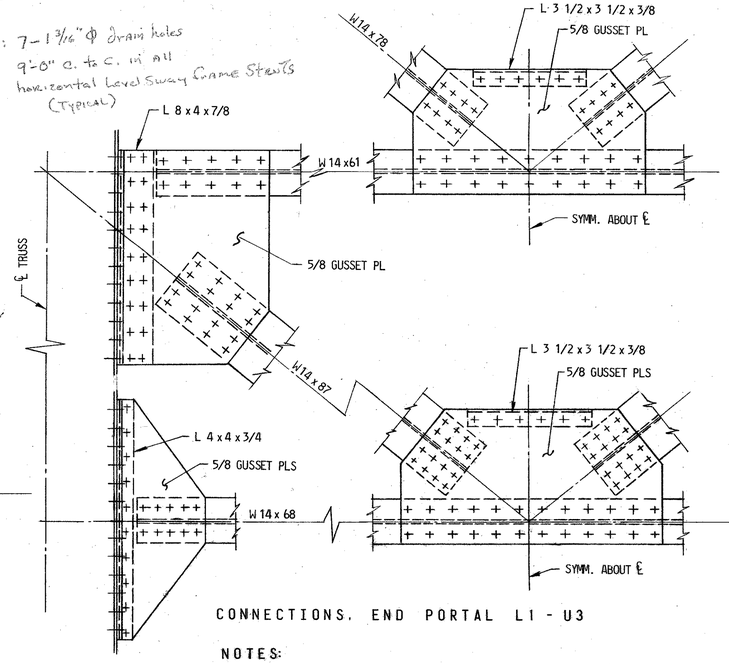


P.P. 29.31.33.35.37. 39.41.43 & 45

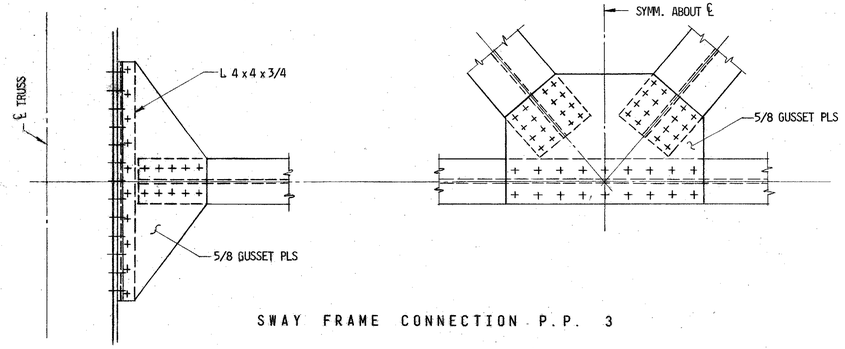
P.P.	L	MEMBER					
		AD, BD	CE	CG, EG	FH	FK, HK	JM
5	21'-11 1/2	W14 x 43	W14 x 34	W14 x 61	W14 x 43	-	-
7	24'-6 1/8	W14 x 61	W14 x 43	W14 x 61	W14 x 43	-	-
9	27'-0 11/16	W14 x 61	W14 x 34	W14 x 61	W14 x 43	-	-
11	29'-7 5/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	-	-
13	32'-1 7/8	W14 x 61	W14 x 34	W14 x 61	W14 x 43	-	-
15	23'-1 11/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	W14 x 48
17	24'-10 1/16	W14 x 61	W14 x 43	W14 x 61	W14 x 34	W14 x 61	W14 x 43
19	26'-6 15/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	W14 x 43
21	28'-4 7/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	W14 x 43
29	35'-11 3/8	W14 x 78	W14 x 43	W14 x 78	W14 x 43	W14 x 78	W14 x 43
31	34'-6 1/8	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	-
33	32'-0 3/4	W14 x 61	W14 x 38	W14 x 61	W14 x 38	W14 x 61	-
35	30'-11 3/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	-
37	29'-4 13/16	W14 x 61	W14 x 38	W14 x 61	W14 x 38	W14 x 61	-
39	28'-11 3/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	-
41	27'-11 3/16	W14 x 61	W14 x 38	W14 x 61	W14 x 38	W14 x 61	-
43	27'-11 3/16	W14 x 61	W14 x 43	W14 x 61	W14 x 43	W14 x 61	-
45	27'-11 3/16	W14 x 61	W14 x 38	W14 x 61	W14 x 38	W14 x 61	-



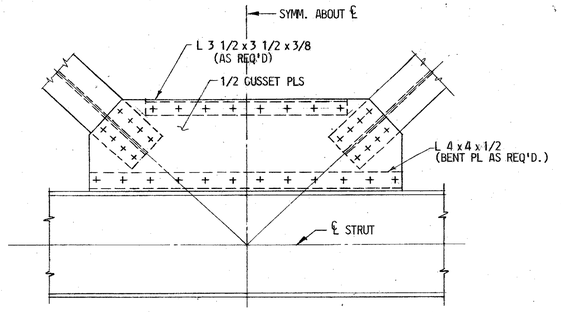
TYPICAL SWAY FRAME CONNECTIONS
(P.P. 15 SHOWN)



CONNECTIONS. END PORTAL L1 - U3



SWAY FRAME CONNECTION P.P. 3



JOINT K P.P. 31.33.35.37.39.41.43 & 45
(P.P. 35 SHOWN)

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.
ALL BOLTS TO BE 7/8" ϕ H.S. BOLTS.
FOR CONNECTIONS TO UPPER CHORD & LOWER CHORD SEE TRUSS JOINT DETAILS.
CONNECTIONS TO BOTTOM STRUT TO BE CENTERED ON TOP FLANGE.
FOR P.P. 23,25, & 27 SEE DWGS. A-72 & A-73

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

SWAY FRAMES

SCALE 3/4" = 1'-0" DATE JAN., 1972 CONTRACT OT-12

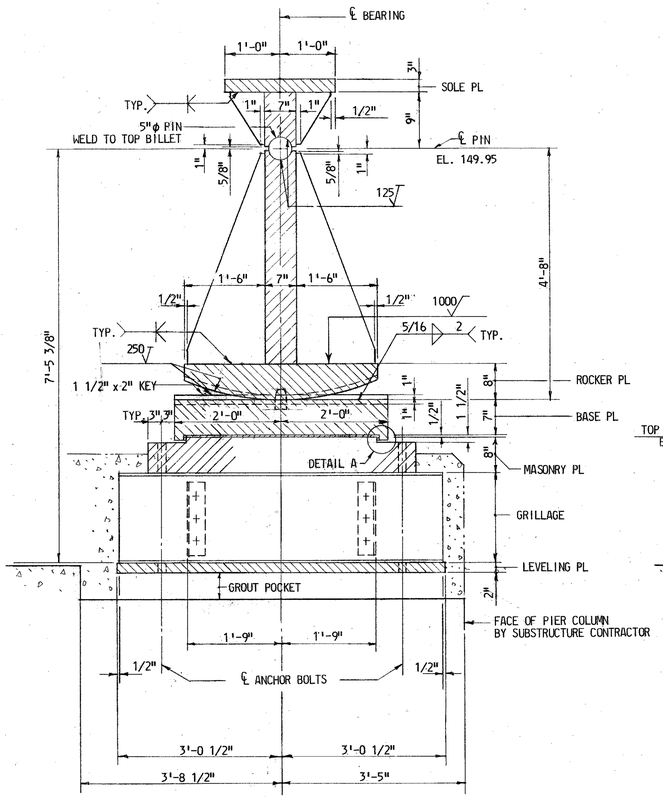
MADE BY S.P.S.
TRACED BY E.H.M.
CHECKED BY J.W.A.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

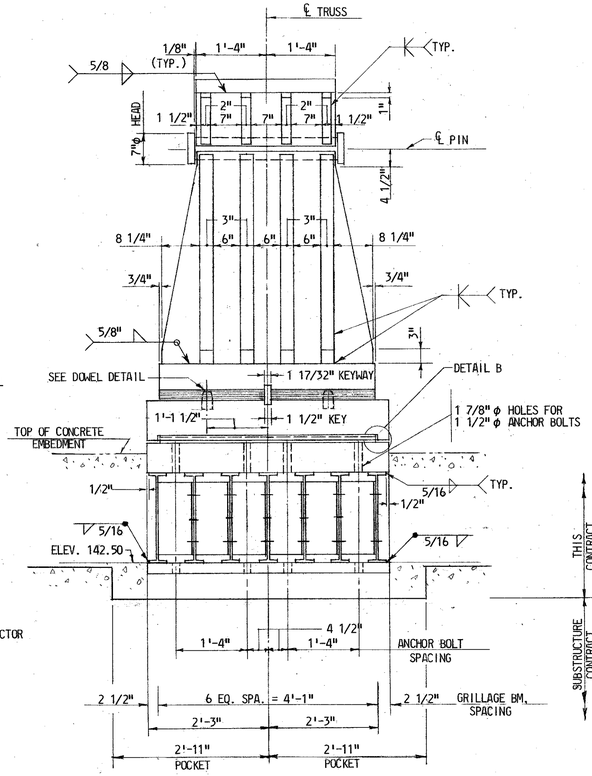
DRAWING NO A-71
SHEET NO. 71 OF 79

INDEXED

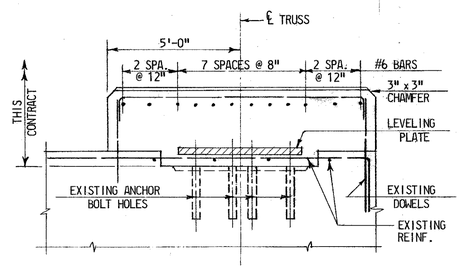
File No.____ Pocket No.____ Folder No.____



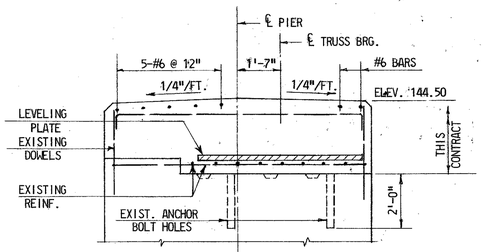
SECTION ON ℄ TRUSS



FRONT ELEVATION



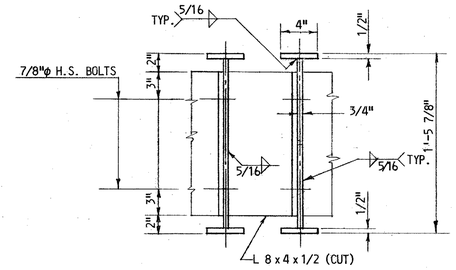
FRONT ELEVATION



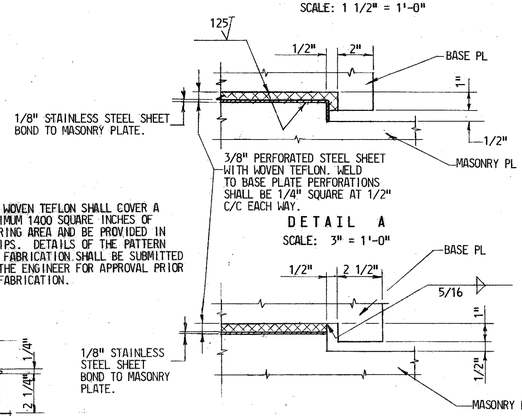
SIDE ELEVATION

SHOE ENCASEMENT DETAIL
SCALE: 3/8" = 1'-0"

THE WOVEN TEFLON SHALL COVER A MINIMUM 1400 SQUARE INCHES OF BEARING AREA AND BE PROVIDED IN STRIPS. DETAILS OF THE PATTERN AND FABRICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

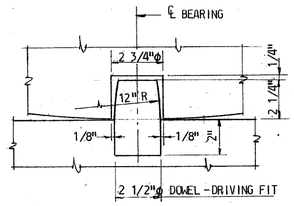


GRILLAGE BEAM DETAIL
SCALE: 1 1/2" = 1'-0"

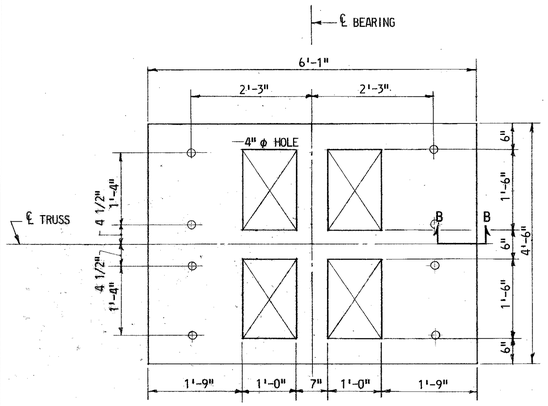


DETAIL A
SCALE: 3" = 1'-0"

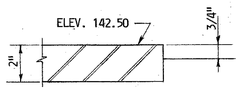
DETAIL B
SCALE: 3" = 1'-0"



DOWEL DETAIL
SCALE: 3" = 1'-0"

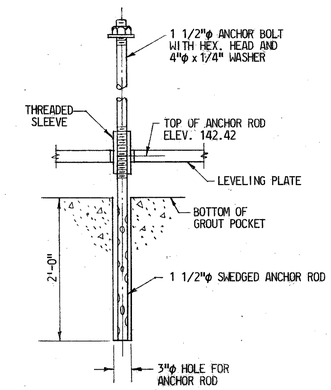


LEVELING PLATE - PLAN



SECTION B-B
SCALE: 3" = 1'-0"

NOTE: THE ANNULAR SPACE BETWEEN THE LEVELING PLATE AND THE ANCHOR ROD SHALL BE KEPT CLEAR SO THAT THE THREADED SLEEVE MAY BE ADDED AND THE ANCHOR ROD EXTENDED AFTER THE PERMANENT SHOE IS ERECTED.



ANCHOR BOLT DETAIL
SCALE: 1" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-2.

ALL STEEL FOR THIS SHOE SHALL BE STRUCTURAL CARBON - ASTM-A36 EXCEPT AS FOLLOWS:
5" ϕ PIN - ASTM-A108
ANCHOR BOLT ASSEMBLY - ASTM-A307.

THE SUPERSTRUCTURE CONTRACTOR SHALL REMOVE PLUGS FROM ANCHOR BOLT HOLES AND CLEAN THE HOLES. THE SWEDGED RODS SHALL THEN BE GROUTED INTO PLACE.

THE LEVELING PLATE SHALL BE SET, LEVELED AND THE GROUT POCKET FILLED BY THE SUPERSTRUCTURE CONTRACTOR.

All Elevations this sheet Subject to Note 15 Dwg. A-2
Cont. OT-12

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

TRUSS SHOES
PIERS 16 AND 19

SCALE: 3/4" = 1'-0" AND AS NOTED
DATE JAN., 1972
CONTRACT OT-12

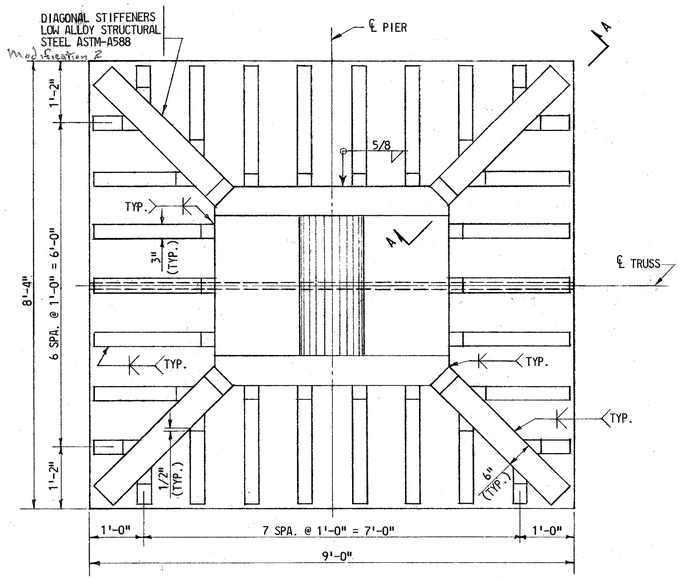
MADE BY J.I.K.
TRACED BY E.H.M.
CHECKED BY H.E.K.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

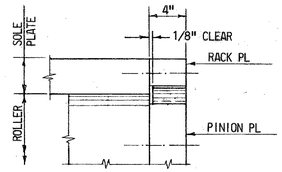
DRAWING NO. A-74
SHEET NO. 74 OF 79

INDEXED

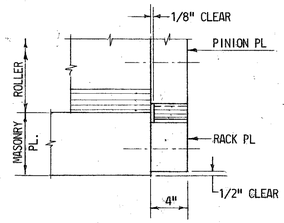
File No.____ Pocket No.____ Folder No.____



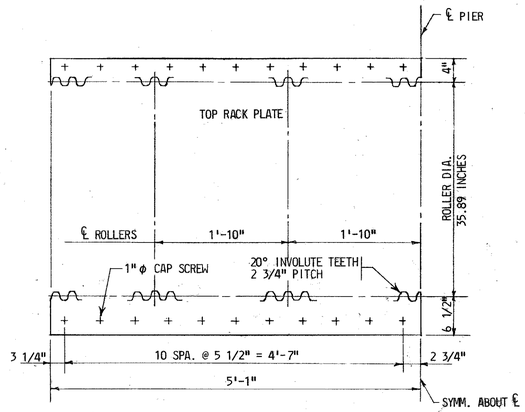
PLAN
SCALE: 3/4" = 1'-0"



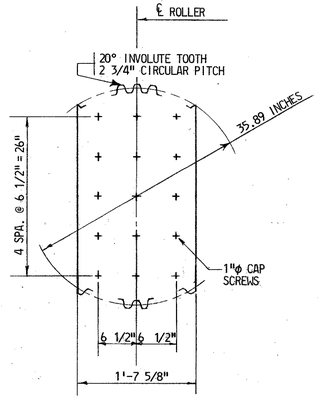
DETAIL X
SCALE: 1 1/2" = 1'-0"



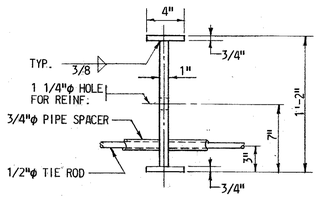
DETAIL Y
SCALE: 1 1/2" = 1'-0"



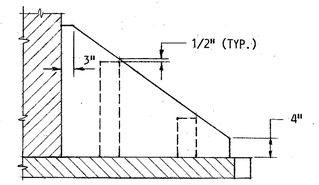
BOTTOM RACK PLATE
SCALE: 1" = 1'-0"



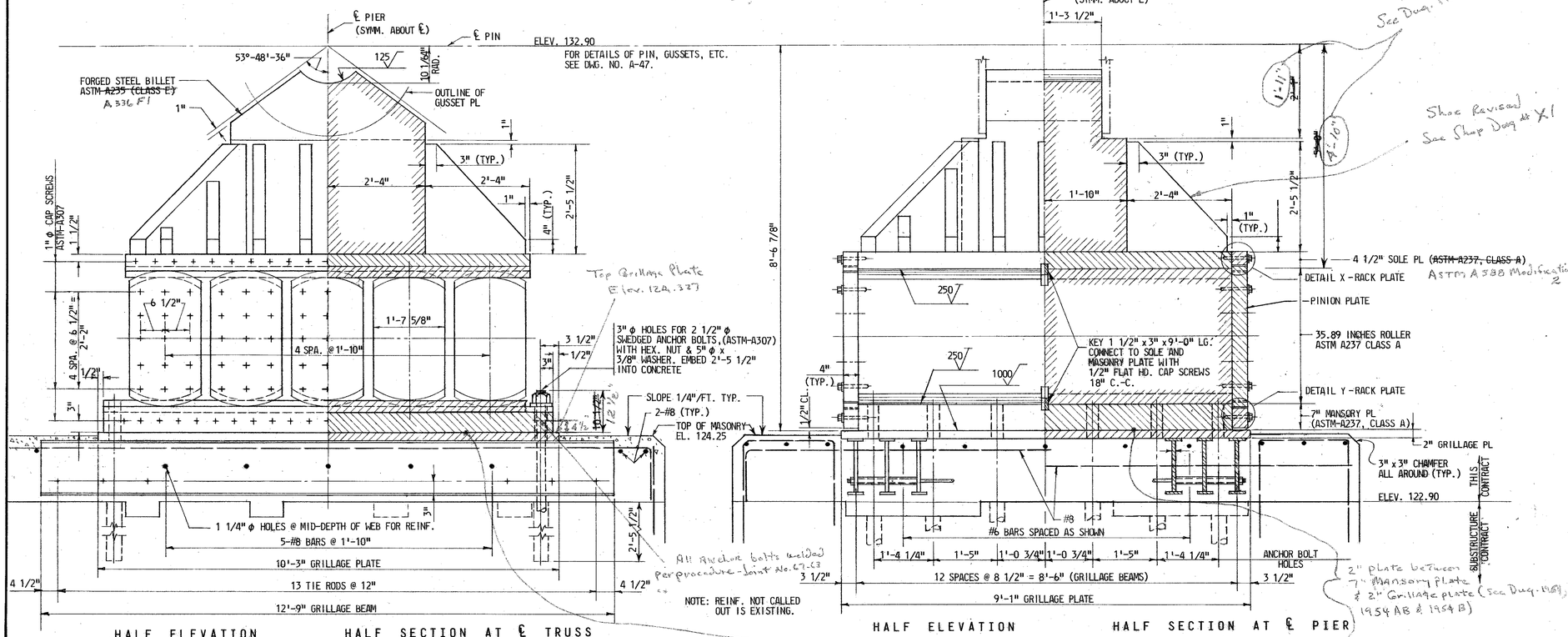
PINION PLATE
SCALE: 1" = 1'-0"



GRILLAGE BEAM DETAIL
SCALE: 1 1/2" = 1'-0"



SECTION A-A
SCALE: 3/4" = 1'-0"



Top Bearing Plate
Elev. 124.337

All Elevations this sheet subject to Note 15 Dwg. A-2.
Cont. OT-12

NOTES:
ALL MATERIAL SHALL BE STRUCTURAL CARBON STEEL, ASTM-A36 UNLESS OTHERWISE NOTED.
FOR GENERAL NOTES, SEE DWG. NO. A-2.
FOR DETAILS OF THE CONSTRUCTION METHOD, SEE SPECIAL PROVISIONS.
ELECTROSLAG WELD MAY BE USED IN PLACE OF GROOVE WELDS SHOWN FOR RIBS OF SHOES.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

TRUSS SHOES
PIER 17

THIS CONTRACT
SUBSTRUCTURE CONTRACT

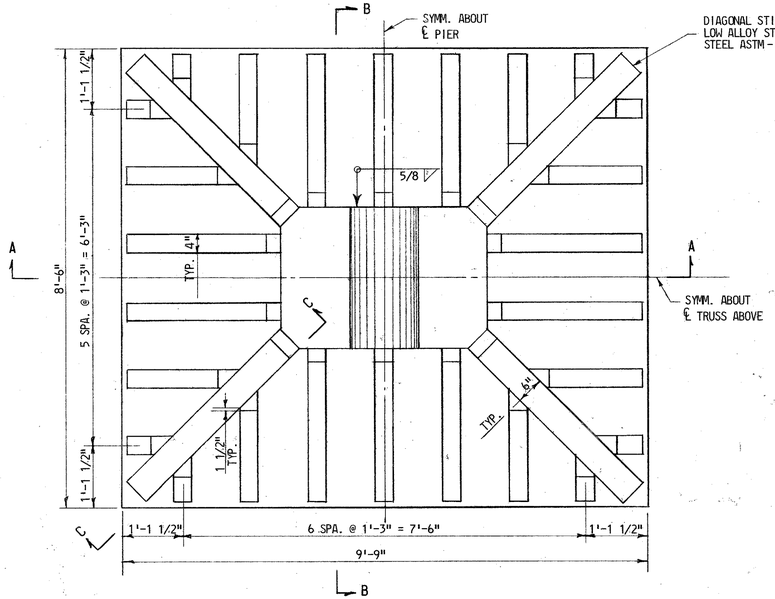
SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT-12

MADE BY J.J.K.
TRACED BY E.J.M.
CHECKED BY H.E.K.

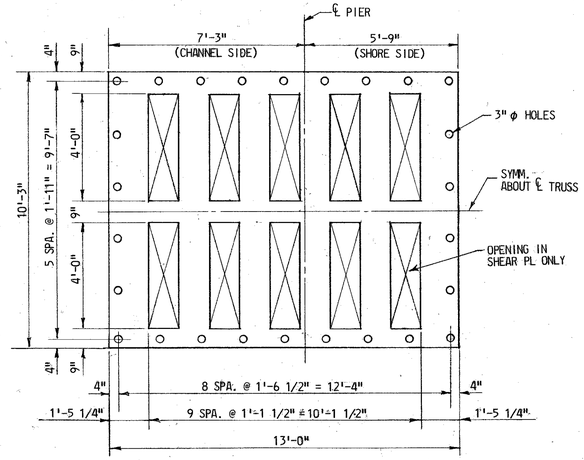
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-75
SHEET NO. 75 OF 79

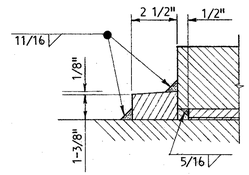
File No. Pocket No. Folder No.
INDEXED



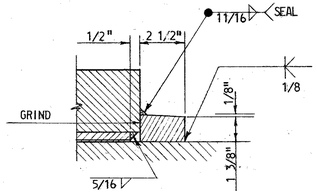
PLAN
SCALE: 3/4" = 1'-0"



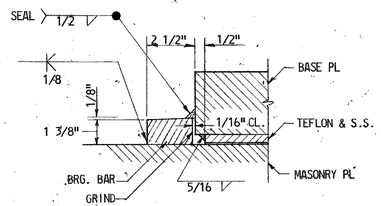
MASONRY PLATE - AS SHOWN
SHEAR PLATE - AS SHOWN
SCALE: 3/8" = 1'-0"



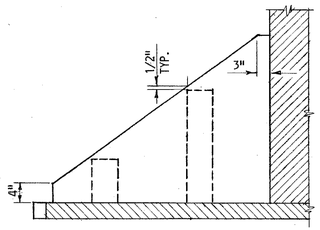
DETAIL X
SCALE: 3" = 1'-0"



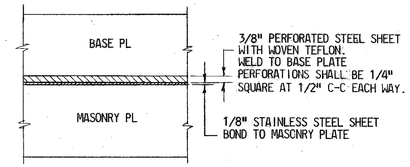
DETAIL Y
SCALE: 3" = 1'-0"



DETAIL Z
SCALE: 3" = 1'-0"

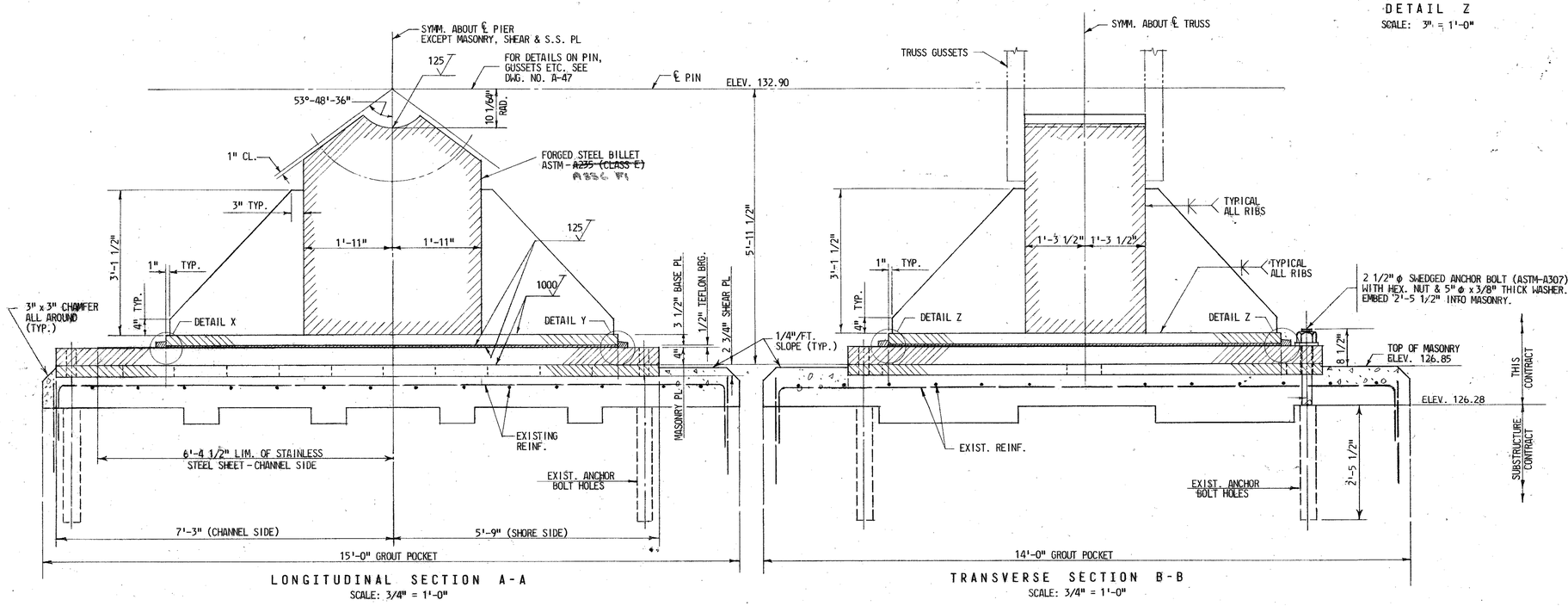


SECTION C-C
SCALE: 3/4" = 1'-0"



TEFLON BEARING DETAIL
SCALE: 3" = 1'-0"

THE WOVEN TEFLON SHALL COVER A MINIMUM OF 4500 SQUARE INCHES OF BEARING AREA AND BE PROVIDED IN STRIPS. DETAILS OF THE PATTERN AND FABRICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.



LONGITUDINAL SECTION A-A
SCALE: 3/4" = 1'-0"

TRANSVERSE SECTION B-B
SCALE: 3/4" = 1'-0"

NOTES:

THE SHEAR PLATE AND MASONRY PLATE ARE SHOWN LONGER THAN REQUIRED SO THAT SHOE MAY BE SET OFF ℄ OF PIER FOR ERECTION OF TRUSS, AND JACKED TO ℄ OF PIER IN FINAL POSITION. DETAILS TO BE ALTERED TO SUIT THE CONTRACTOR'S METHOD OF TRUSS ERECTION.

AFTER THE SHOE IS IN FINAL POSITION, THE STAINLESS STEEL SHEET SHALL BE CUT BACK TO THE DIMENSIONS SHOWN IN SECTION A-A.

ALL MATERIAL SHALL BE STRUCTURAL CARBON STEEL ASTM-A36 UNLESS OTHERWISE NOTED.

FOR GENERAL NOTES, SEE DWG. NO. A-2.

ELECTROSLAG WELD MAY BE USED IN PLACE OF GROOVE WELDS SHOWN FOR RIBS OF SHOES.

All elevations this sheet subject to Note 15 Dwg A-2 Cont. OT-12

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

TRUSS SHOES
PIER 18

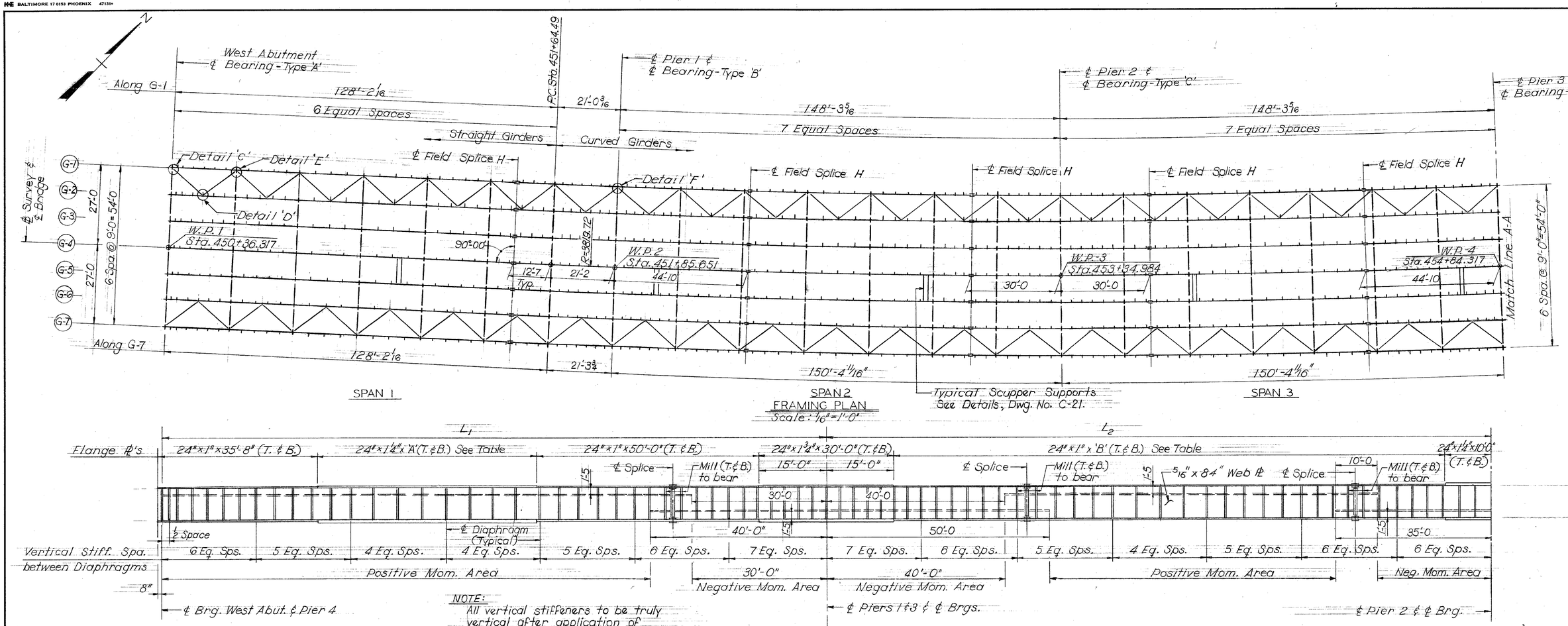
SCALE: AS NOTED DATE JAN., 1972 CONTRACT OT 12

MADE BY J.I.K.
TRACED BY E.H.M.
CHECKED BY H.E.K.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-76
SHEET NO. 76 OF 79
INDEXED

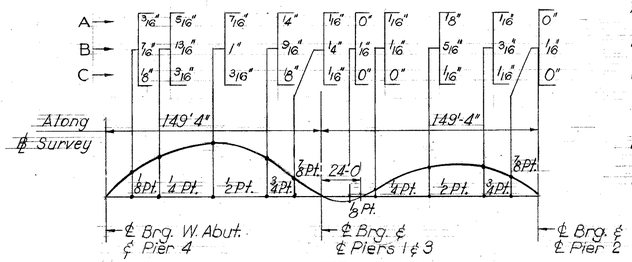
File No.____Pocket No.____Folder No.____



NOTE:
All vertical stiffeners to be truly vertical after application of dead load.

TYPICAL GIRDER ELEVATION
Scale: Horiz. 3/32" = 1'-0" Vert. No Scale

	Span 1		Span 2 & 3		Span 4	
	L_1	'A'	L_2	'B'	L_1	'A'
G-1	149'-2 1/4	49'-2 1/4	148'-3 5/16	123'-3 5/16	148'-3 5/16	48'-3 5/16
G-2	149'-2 13/16	49'-2 13/16	148'-7 7/16	123'-7 7/16	148'-7 9/16	48'-7 9/16
G-3	149'-3 1/16	49'-3 7/16	148'-11 3/4	123'-11 3/4	148'-11 3/4	48'-11 3/4
G-4	149'-4	49'-4	149'-4	124'-4	149'-4	49'-4
G-5	149'-4 5/8	49'-4 5/8	149'-8 1/4	124'-8 1/4	149'-8 1/4	49'-8 1/4
G-6	149'-5 3/16	49'-5 3/16	150'-0 1/16	125'-0 1/16	150'-0 1/16	50'-0 1/16
G-7	149'-5 13/16	49'-5 13/16	150'-4 1/16	125'-4 1/16	150'-4 11/16	50'-4 11/16



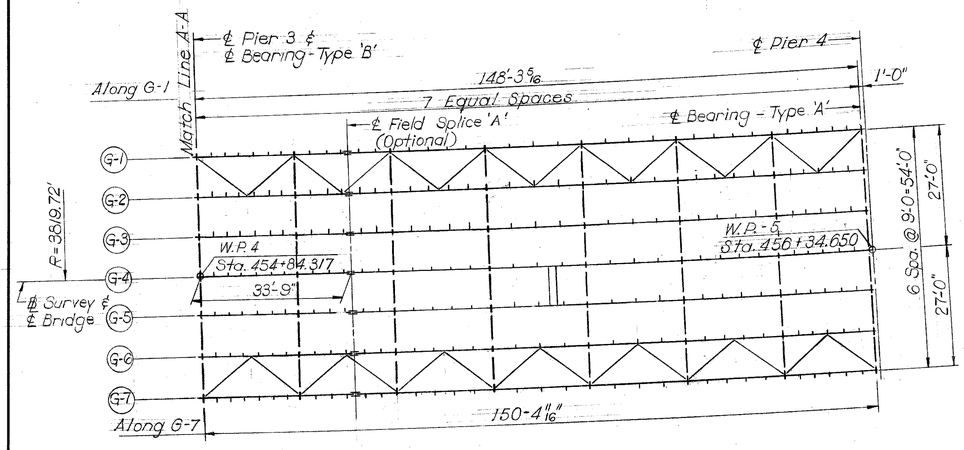
CAMBER DIAGRAM
No Scale

NOTE:
All dimensions shown are horizontal.
All Elevations this sheet Subject to Note 15 Dwg. A-2 Cont. OT-12

NOTE:
A - Deflection due to weight of girders.
B - Deflection due to weight of slab.
C - Deflection due to parapet and median. Provide dead load camber in all spans.

For camber correction due to vertical curve see Paving Elevations, Drawing No. C-24.

NOTES:
1. For Diaphragm connection details, see Drawing No. C-14.
2. For Vertical and Horizontal Stiffener Details, see Dwg. No. C-14.
3. For Wind Bracing and Splice Details, see Drawing No. C-14.
4. All Field splices shown are radial except as noted.
5. All diaphrams are radial except as shown.
6. For flange to web weld, see Drawing No. C-14.
7. For bearing details, see Drawing No. C-20.



SPAN 4

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As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
WEST ABUTMENT THRU PIER 4 — WEST APPROACH

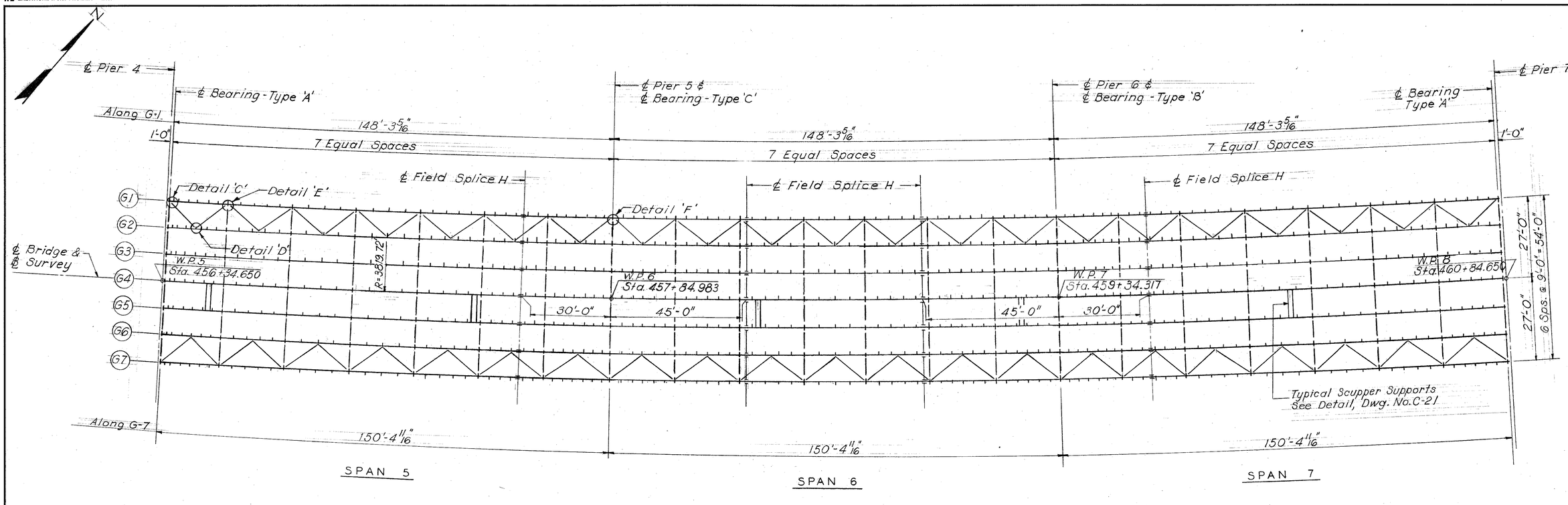
SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY R.D.
TRACED BY R.D.
CHECKED BY K.B.S.

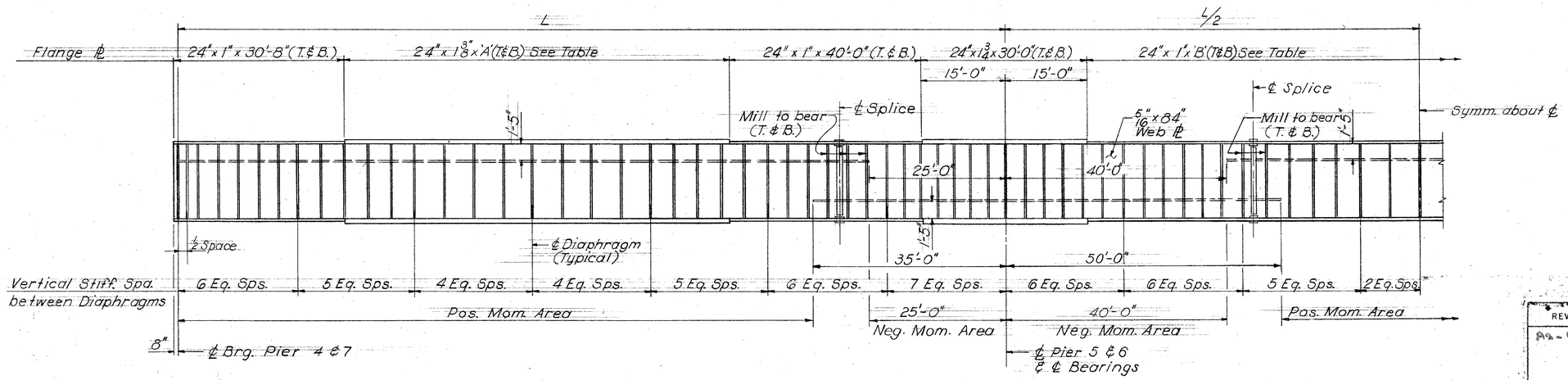
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-6
SHEET NO. 7 OF 36
INDEXED

File No. Pocket No. Folder No.



FRAMING PLAN
Scale : 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale : Horiz. 3/32" = 1'-0" ; Vert : None

	L	'A'	'B'
G1	148'-3 5/16"	63'-3 5/16"	118'-3 5/16"
G2	148'-7 9/16"	63'-7 9/16"	118'-7 9/16"
G3	148'-11 3/4"	63'-11 3/4"	118'-11 3/4"
G4	149'-4"	64'-4"	119'-4"
G5	149'-8 1/4"	64'-8 1/4"	119'-8 1/4"
G6	150'-0 7/16"	65'-0 7/16"	120'-0 7/16"
G7	150'-4 11/16"	65'-4 11/16"	120'-4 11/16"

Note: All dimensions shown are horizontal.
All Elevations This Sheet Subject to Note 15 Dwg A-2 Cont. OT-12

Note:
All vertical stiffeners to be truly vertical after application of dead load.

NOTES
1. For Diaphragm connection details, see Drawing No. C-14
2. For vertical & horizontal stiffener details, see Drawing No. C-14
3. For wind bracing & splice details, see Drawing No. C-14
4. All diaphragms & splices are radial.
5. For bearing details, see Drawing No. 20
6. For Deflection diagram, see Drawing No. C-14
7. For flange to web weld, see Drawing No. C-14

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 4 THRU 7 — WEST APPROACH

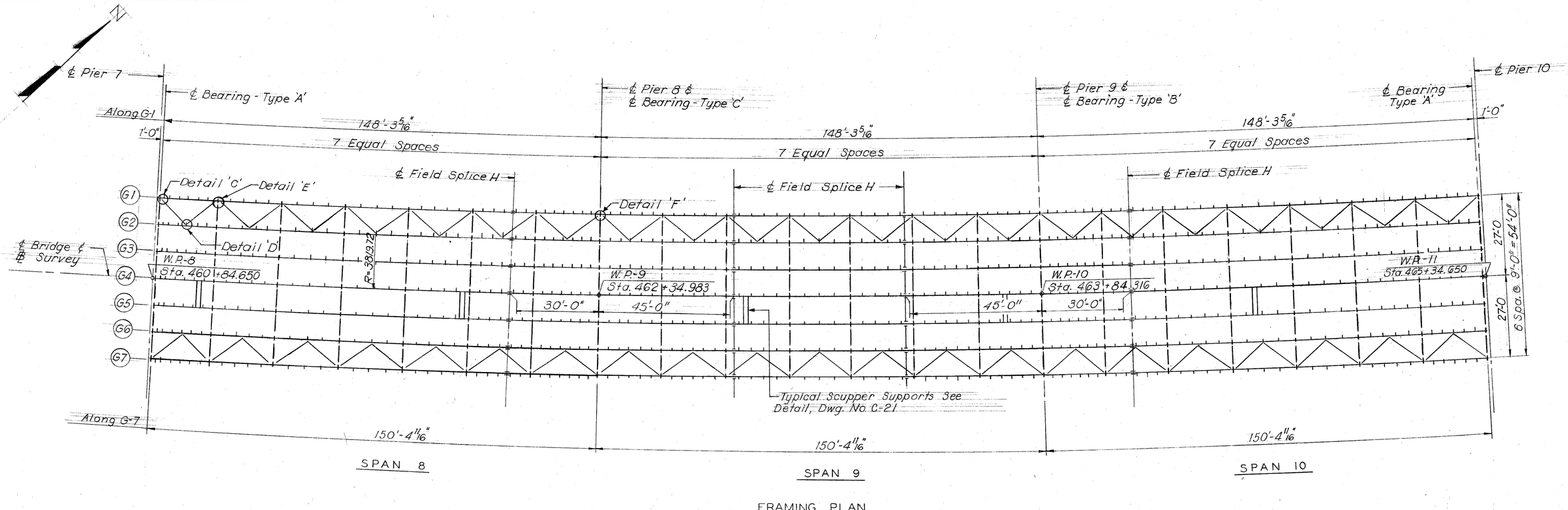
SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY J.A.B.
TRACED BY J.A.B.
CHECKED BY K.B.S.

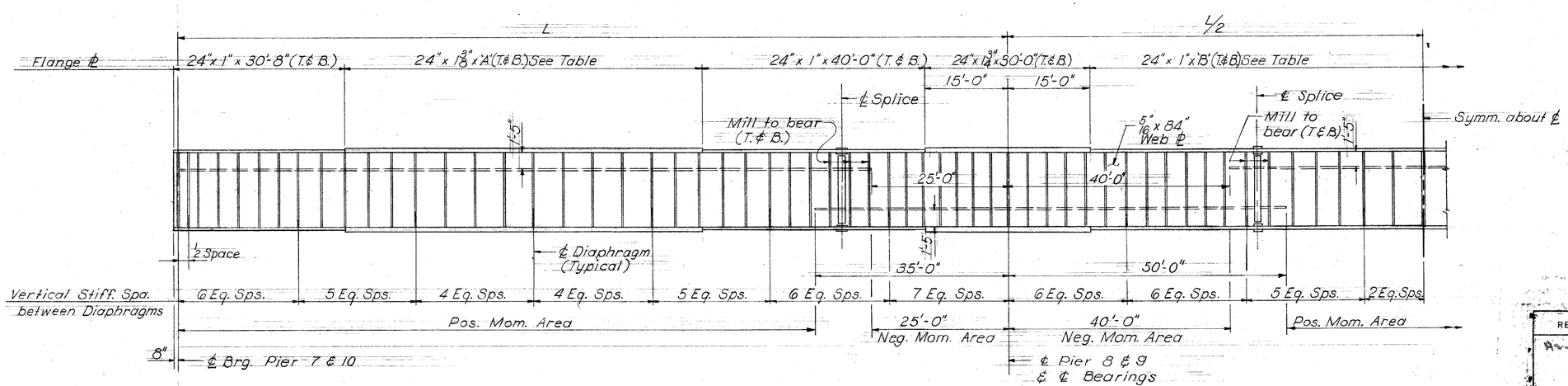
ZOLLMAN ASSOC. INC.
AND
SINGSTAD, KEHART NOVEMBER AND HURKA
A JOINT VENTURE
Baltimore, Md.

DRAWING NO. C-7
SHEET NO. 8 OF 36
INDEXED

File No: Pocket No. Folder No.



FRAMING PLAN
Scale : 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale : Horiz. 3/32" = 1'-0"; Vert : None

	L	'A'	'B'
G1	148'-3 5/16"	63'-3 5/16"	118'-3 5/16"
G2	148'-7 9/16"	63'-7 9/16"	118'-7 9/16"
G3	148'-11 3/4"	63'-11 3/4"	118'-11 3/4"
G4	149'-4"	64'-4"	119'-4"
G5	149'-8 1/4"	64'-8 1/4"	119'-8 1/4"
G6	150'-0 7/16"	65'-0 7/16"	120'-0 7/16"
G7	150'-4 11/16"	65'-4 11/16"	120'-4 11/16"

Note: All dimensions shown are horizontal.
All Elevations this Sheet Subject To Note 15 Dwg A-2 Cont. OT-12

Note:
All vertical stiffeners to be truly vertical after application of dead load.

NOTES

1. For Diaphragm connection details, see Drawing No. C-14
2. For vertical & horizontal stiffener details, see Dwg. No. C-14
3. For wind bracing & splice details, see Drawing No. C-14
4. All diaphragms & splices are radial.
5. For bearing details, see Drawing No. C-20
6. For Deflection diagram, see Drawing No. C-14
7. For flange to web weld, see Drawing No. C-14

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 7 THRU 10 — WEST APPROACH

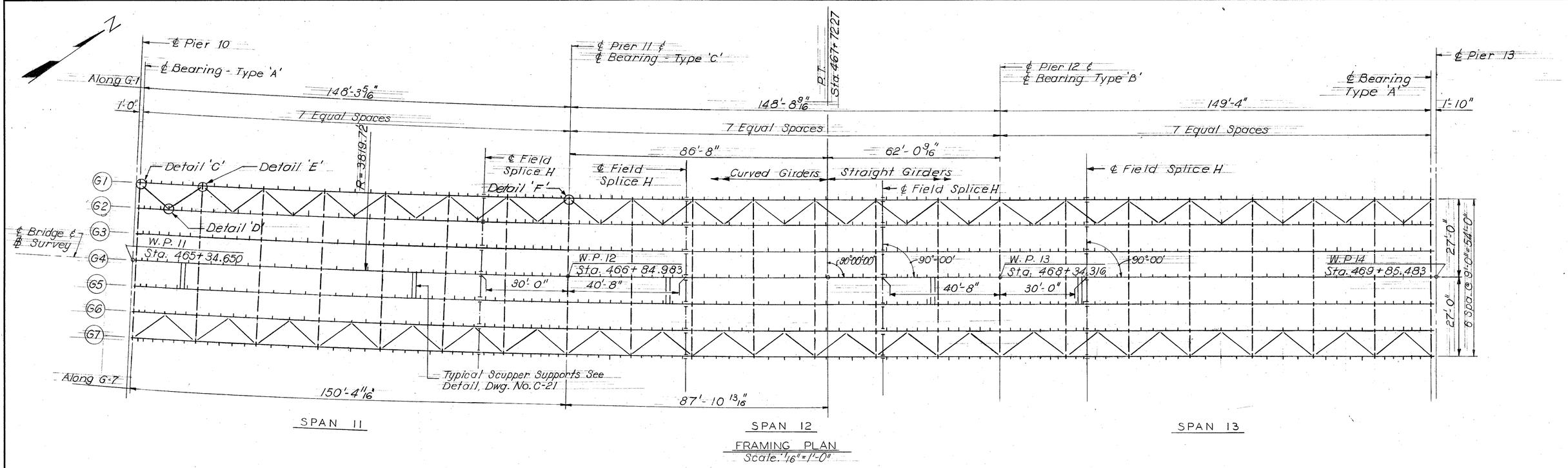
SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY J.A.B.
TRACED BY J.A.B.
CHECKED BY K.B.S.

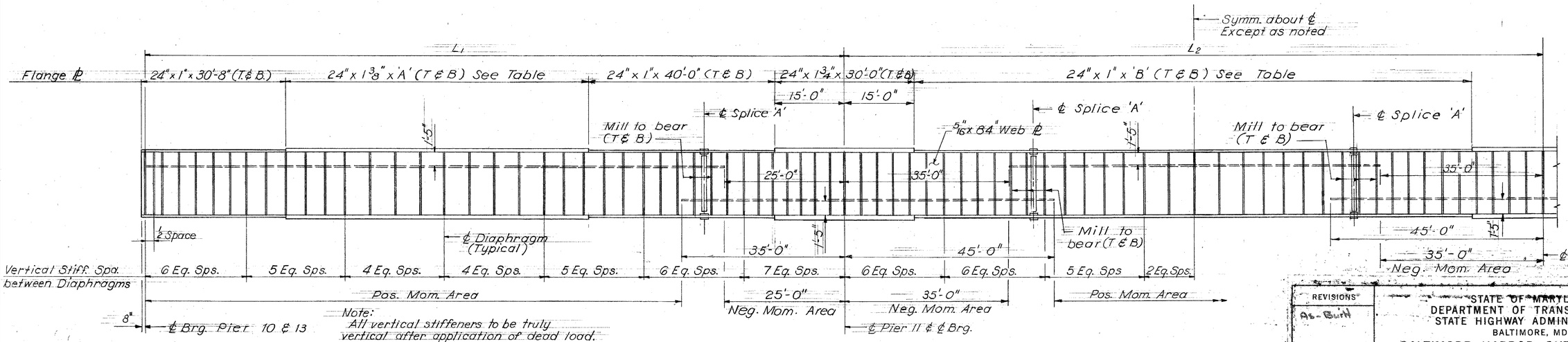
ZOLLMAN ASSOC. INC.
AND
SINGSTAD, KEHART NOVEMBER AND HURKA
A JOINT VENTURE
Baltimore, Md.

DRAWING NO. C-8
SHEET NO. 9 OF 36
INDEXED

File No. Pocket No. Folder No.



FRAMING PLAN
Scale: 1/16" = 1'-0"



Note:
All vertical stiffeners to be truly vertical after application of dead load.

TYPICAL GIRDER ELEVATION
Scale: Horiz: 3/32" = 1'-0"; Vert: None

	L_1		L_2	'A'		'B'
	Span 11	Span 13		Span 11	Span 13	
G1	148'-3 5/16	149'-4"	148'-8 9/16	63'-3 5/16	64'-4"	118'-8 9/16
G2	148'-7 9/16		148'-11 1/16	63'-7 9/16		118'-11 1/16
G3	148'-11 3/4		149'-1 1/2	63'-11 3/4		119'-1 1/2
G4	149'-4		149'-4	64'-4		119'-4
G5	149'-8 1/4		149'-6 7/16	64'-8 1/4		119'-6 7/16
G6	150'-0 7/16		149'-8 15/16	65'-0 7/16		119'-8 15/16
G7	150'-4 11/16		149'-11 3/8	65'-4 11/16		119'-11 3/8

Note:
All dimensions shown are horizontal.
~~All Elevations This Sheet Subject To Note 15 Dwg. A-2 Cont. OT-12~~

Notes:
1. For Diaphragm Connection details, See Dwg. No. C-14
2. For Vertical & Horizontal Stiffener details, See Drawing No. C-14
3. For Wind bracing & Splice details, See Dwg. No. C-14
4. For Bearing details, See Drawing No. C-20
5. For Deflection diagram, See Drawing No. C-14
6. All Field Splices & Diaphragms are radial except as noted.
7. For Flange to Web weld, See Drawing No. C-14

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 10 THRU 13 — WEST APPROACH

SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY JAB
TRACED BY J.A.B.
CHECKED BY K.B.S.

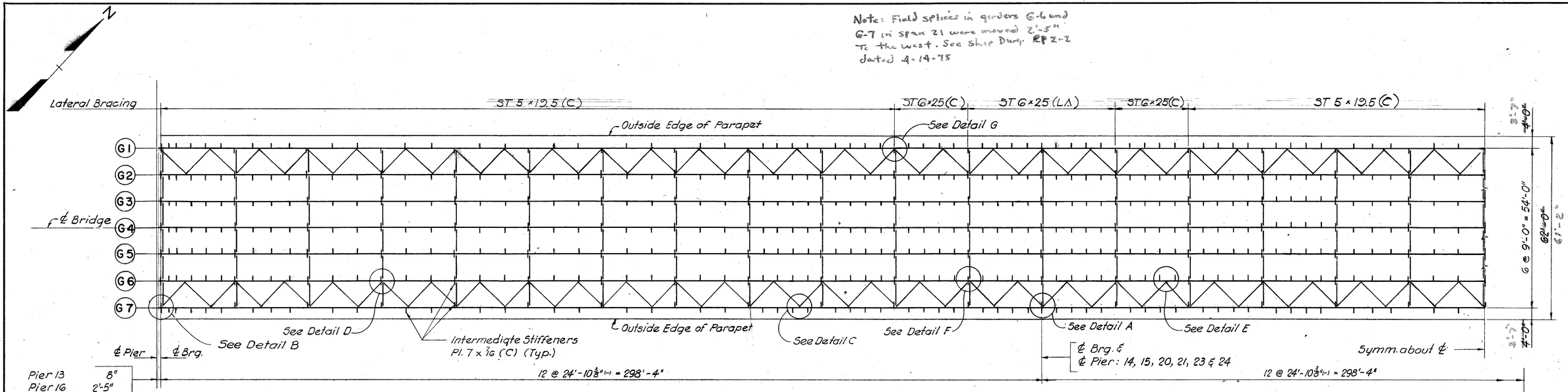
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART, NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-9
SHEET NO. 10 OF 36

INDEXED

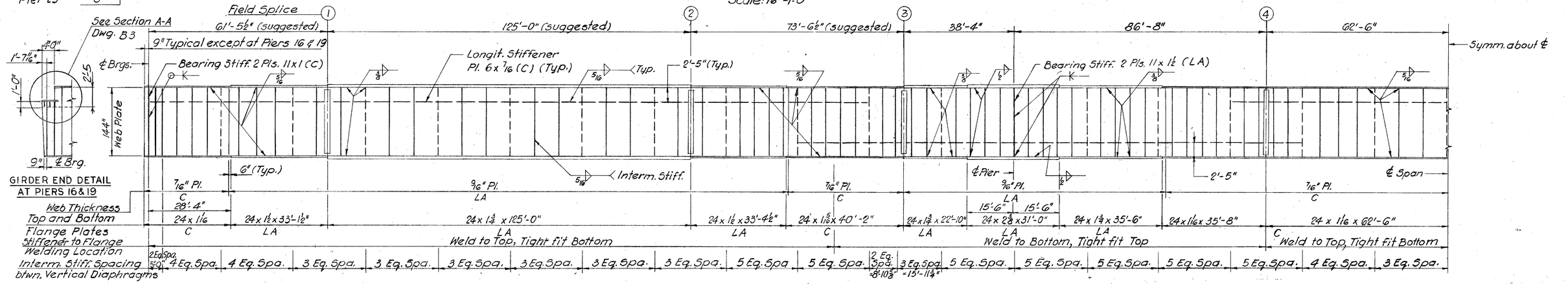
File No. Pocket No. Folder No.

Note: Field splices in girders G-6 and G-7 in span 21 were moved 2'-5" to the west. See Shop Dwg. RP 2-2 dated 4-14-78

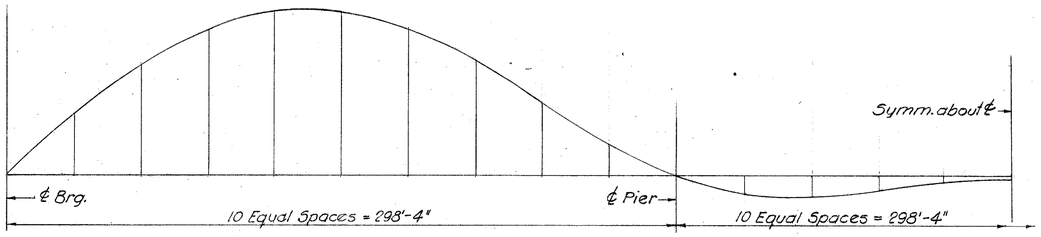


Pier 13	8"
Pier 16	2'-5"
Pier 19	2'-5"
Pier 22	1'-6"
Pier 25	8"

FRAMING PLAN
Scale: 1/16" = 1'-0"



Total D.L. Camber	0"	3/4"	5 3/8"	7 3/4"	8 3/4"	8 11/16"	7 3/4"	6 1/16"	3 3/8"	1 5/8"	0"	-1/16"	-1/8"	-11/16"	-5/16"	-1/8"
Superimposed D.L.	0"	1/2"	7/8"	1 3/8"	1 1/4"	1 1/4"	1 1/8"	1"	9/16"	4/16"	0"	-1/8"	-1/8"	-1/8"	-1/16"	0"
Slab	0"	1 1/2"	2 3/4"	3 5/8"	4 1/8"	4 1/16"	3 5/8"	2 7/8"	1 13/16"	3/4"	0"	-3/8"	-1/4"	-5/16"	-1/8"	-1/16"
Steel	0"	1 1/4"	2 1/4"	3"	3 3/8"	3 3/8"	3"	2 5/16"	1 1/2"	5/8"	0"	-5/16"	-3/8"	-1/4"	-1/8"	-1/16"



DEAD LOAD CAMBER DIAGRAM
Not to Scale

GIRDER ELEVATION
Scale: Horiz. 1/16" = 1'-0"
Vert. 1/8" = 1'-0"

NOTES:
1. For General Notes see Dwg. B-1
2. Dimensions shown are measured horizontally between bearings @ 68° F. All Bearings and Intermediate Stiffeners and end of girders, except as shown on the plans, are vertical after application of full dead load.
3. Girders shall be cambered for dead load deflections.
4. For additional steel details see Dwgs. B-3 & B-4
5. Location of field splices marked "suggested" on Girder Elevation will be permitted to be modified by the contractor subject to the Engineer's approval.
6. Bearing pedestal shall be truly level and thoroughly cleaned of all loose particles before setting preformed fabric pad.

REVISIONS
No. Date

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

FRAMING PLAN AND STEEL DETAILS
SPANS 14 - 16 AND 20 - 25

SCALE As Shown DATE May 1972 CONTRACT OT - 13

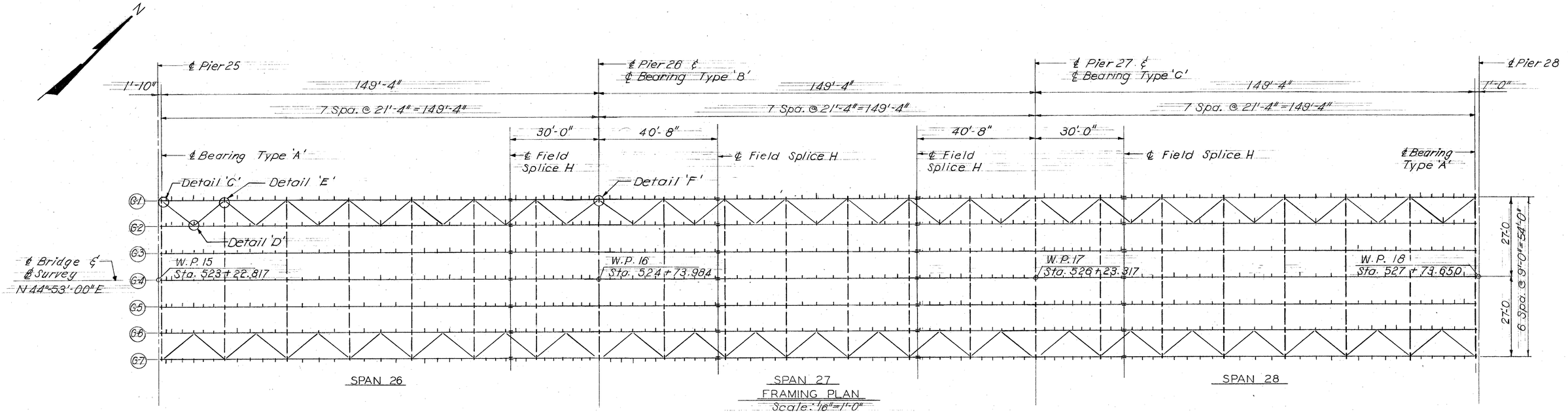
MADE BY K.L.C.
TRACED BY J.D.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART, NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

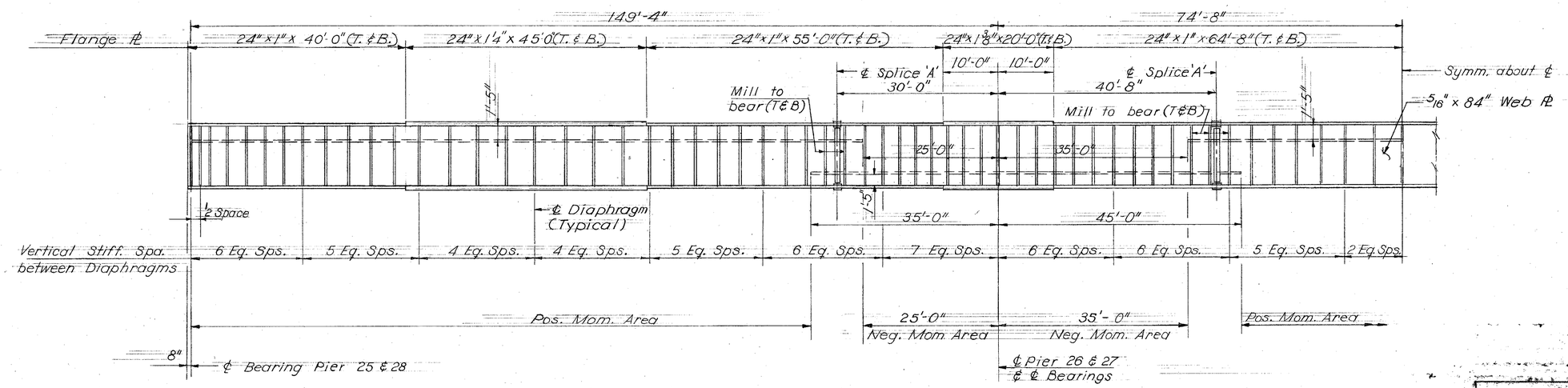
DRAWING NO. B-2
SHEET NO. 29 OF 36

INDEXED

File No. ___ Pocket No. ___ Folder No. ___



FRAMING PLAN
Scale: 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale: Horiz. 3/32" = 1'-0", Vert. None

NOTES:
All vertical stiffeners to be truly vertical after application of dead load.
All dimensions shown are horizontal.

Notes :-
1. For Diaphragm connection details, See Drawing No. C-14.
2. For Vertical ℄ Horizontal Stiffener details, See Dwg. No. C-14.
3. For Wind bracing ℄ Splice details, See Drawing No. C-14.
4. For Bearing details, See Drawing No. C-20.
5. For Deflection diagram, See Drawing No. C-14.
6. For Flange to web weld, See Drawing No. C-14.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 25 THRU 28 — EAST APPROACH

SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

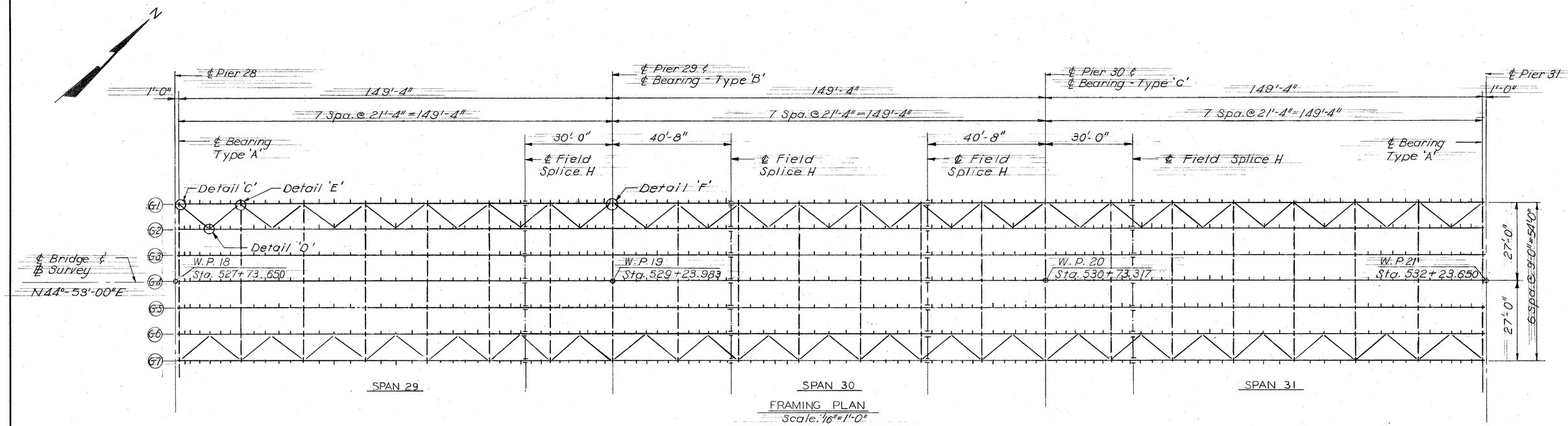
MADE BY J.K.
TRACED BY J.K.
CHECKED BY K.B.S.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

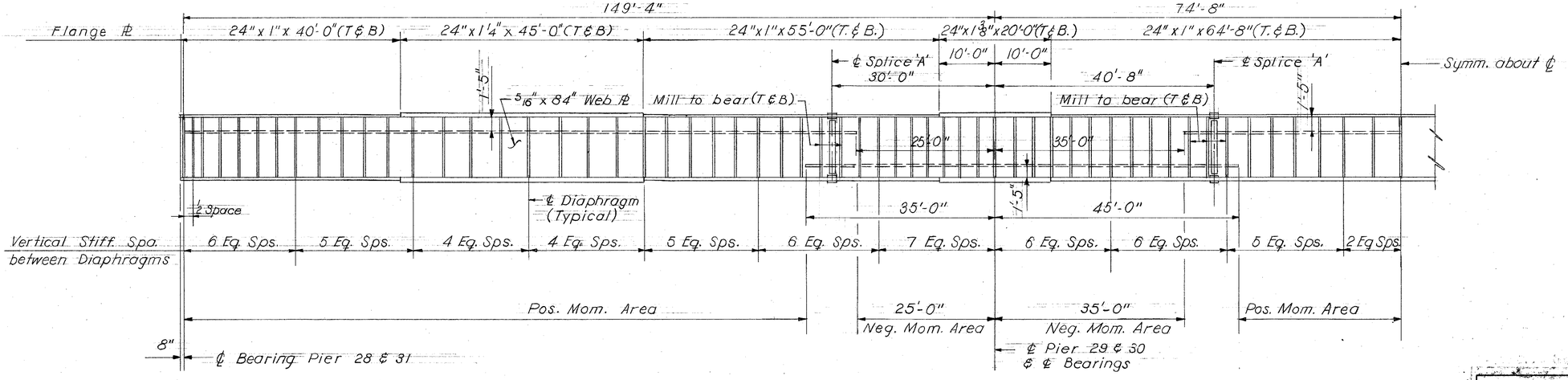
DRAWING NO. C-10
SHEET NO. 11 OF 36

INDEXED

File No. Pocket No. Folder No.



FRAMING PLAN
Scale: 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale: Horiz. 3/32" = 1'-0"
Vert. None

NOTES:
All vertical stiffeners to be truly vertical after application of dead load.
All dimensions shown are horizontal.

Notes:-
1. For Diaphragm Connection details, See Dwg. No. C-14.
2. For Vertical & Horizontal Stiffener details, see Dwg. No. C-14.
3. For Wind bracing & Splice details, See Dwg. No. C-14.
4. For Bearing details, See Drawing No. C-20.
5. For Deflection diagram, See Drawing No. C-14.
6. For Flange to Web weld, See Drawing No. C-14.

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 28 THRU 31 — EAST APPROACH

SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

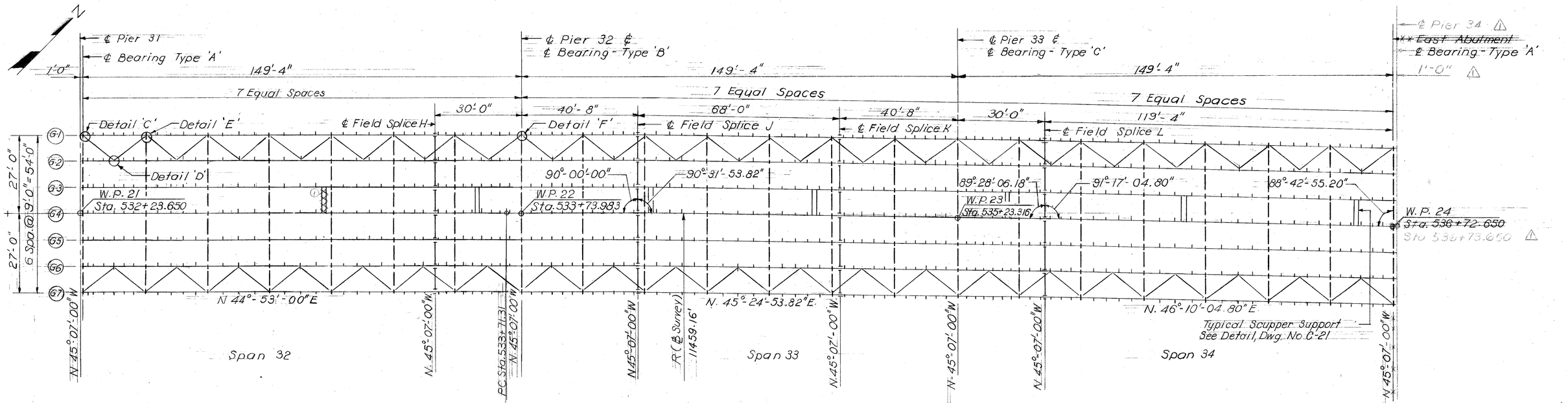
MADE BY J.K.
TRACED BY J.K.
CHECKED BY K.B.S.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

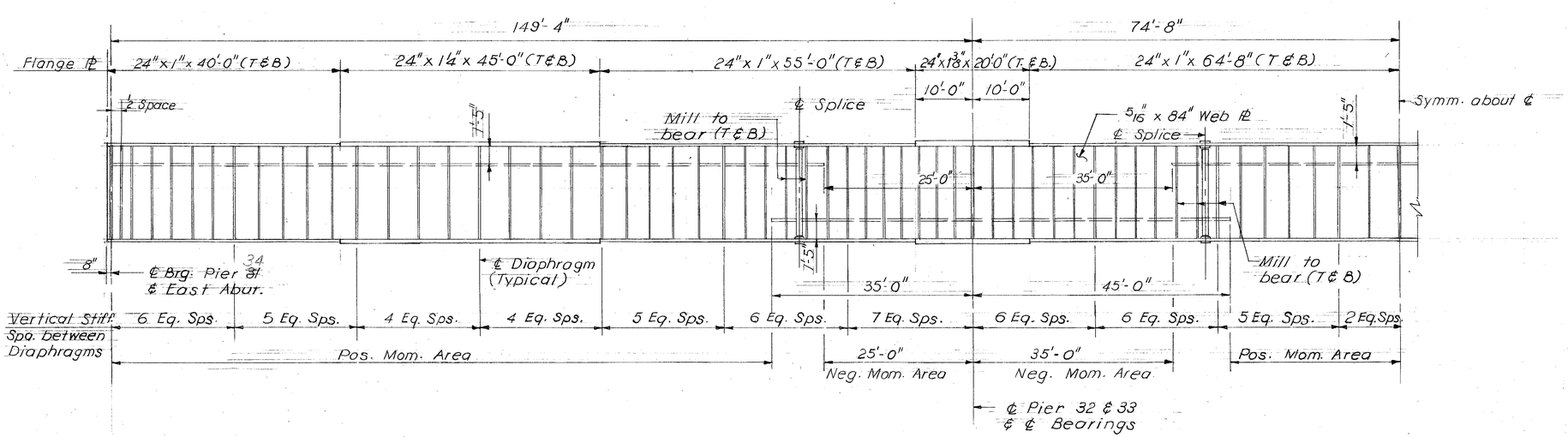
DRAWING NO. C-11
SHEET NO. 12 OF 36

INDEXED

File No. Pocket No. Folder No.



FRAMING PLAN
Scale : 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale : Horz. 3/32" = 1'-0" ; Vert. None

Note:
All vertical stiffeners to be truly vertical after application of dead load.

Notes :-
1. For Diaphragm connection details, See Drawing No. C-14
2. For Vertical & Horizontal stiffener details, See Dwg. No. C-14
3. For Wind bracing & Splice details, See Drawing No. C-14
4. For Bearing details, See Drawing No. C-20
5. For Deflection diagram, See Drawing No. C-14
6. All Field Splices & Diaphragms are parallel to Piers
7. For Flange to web weld, See Drawing No. C-14

Note:
All dimensions shown are horizontal.

REVISIONS
⚠ GPM 10-5-73
① See Dwg C-21
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 31 THRU ~~EAST ABUTMENT~~ PIER 34 EAST APPROACH

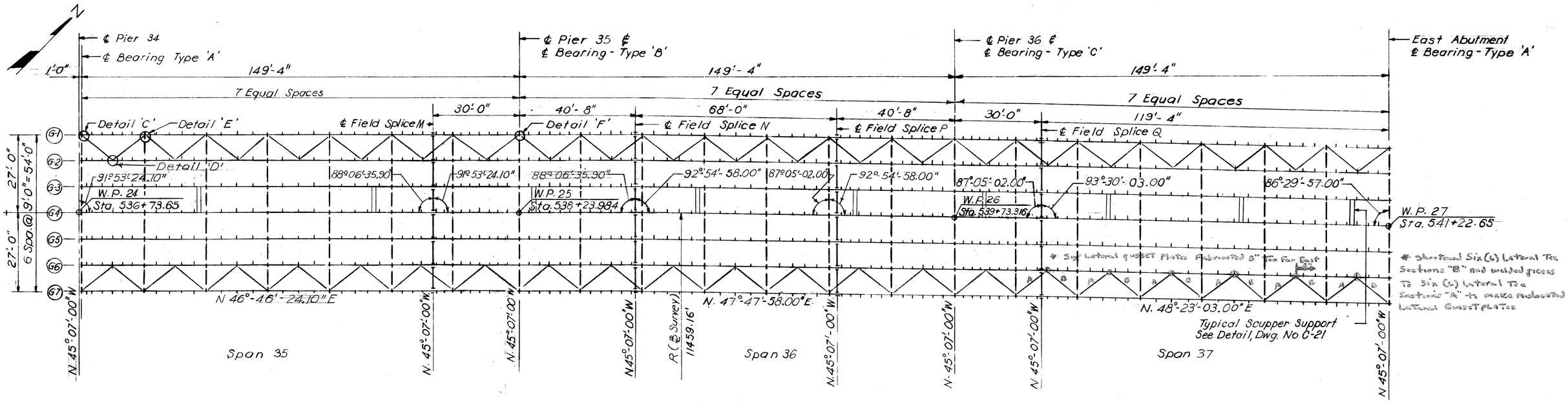
SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY J.K.
TRACED BY J.K.
CHECKED BY K.B.S.

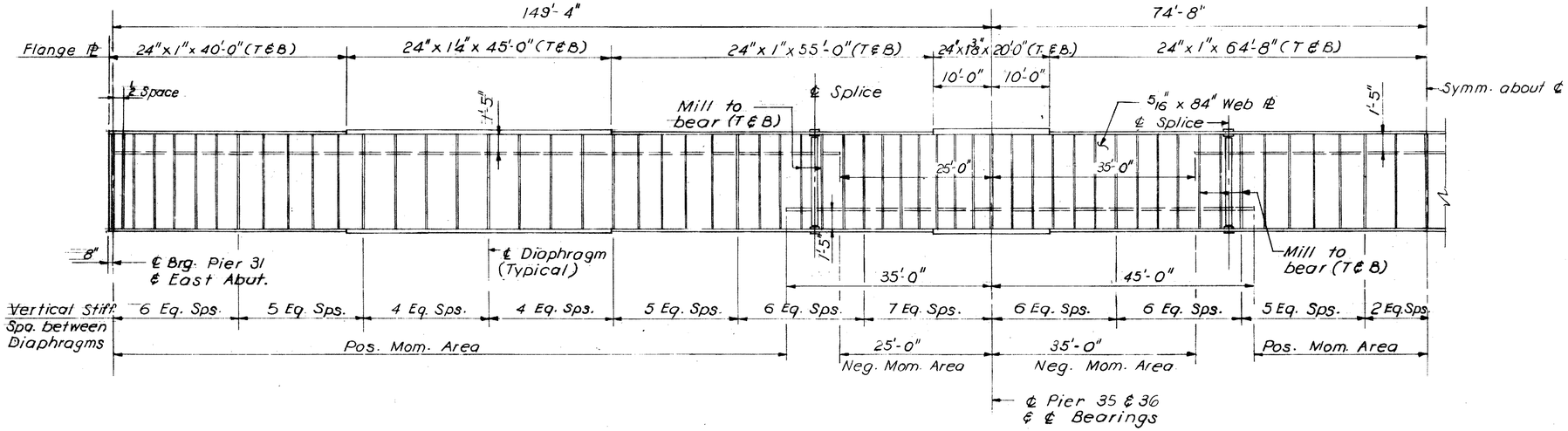
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-12
SHEET NO. 13 OF 36
INDEXED.

File No. Pocket No. Folder No.



FRAMING PLAN
Scale : 1/16" = 1'-0"



TYPICAL GIRDER ELEVATION
Scale : Horz. 3/32" = 1'-0" ; Vert. None

Note:
All dimensions shown are horizontal.

Note:
All vertical stiffeners to be truly vertical after application of dead load.

Notes :-
1. For Diaphragm connection details, See Drawing No. C-14
2. For Vertical & Horizontal stiffener details, See Dwg No. C-14
3. For Wind bracing & Splice details, See Drawing No. C-14
4. For Bearing details, See Drawing No. C-20
5. For Deflection diagram, See Drawing No. C-14
6. All Field Splices & Diaphragms are parallel to Piers
7. For Flange to web weld, See Drawing No. C-14

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
FRAMING PLAN
PIER 34 THRU EAST ABUTMENT - EAST APPROACH

SCALE AS SHOWN DATE OCT, 1972 CONTRACT OT-13

MADE BY FDL
TRACED BY FDL
CHECKED BY GPM

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-28
SHEET NO. 29 OF 36
INDEXED

File No. Pocket No. Folder No.

61'-2" out to out of Parapet
28'-0" Curb to Curb
2'-0"
28'-0" Curb to Curb
For Expansion Dam Details in Parapet See Dwg. B-5
4" Expansion Dam Plate For Details See Dwg. B-5
1'-0" Typ. except at Pier 13 see Schedule Dwg. B-8
P.G.L.
7½" R.C. Slab
Limits of Conc. Haunch at Piers 13 & 25
W 18×64
MC 18×42.7
End Brg. Stiffener Pl. 11×1 (Typ.)
WT 7×24
Intermediate Stiffeners Pl. 7×7/16 (Typ.)
L5×5×3/8
Min. Length 15"
L6×4×5/8
Bearing Stiffener
2-WT 5×19.5
Fill Pl. 4×3/8
7/8"φ H.S. Bolts (Typical)
MC 12×35
6 Spaces @ 9'-0" = 54'-0"
G1
G2
G3
G4
G5
G6
G7
TYPICAL END DIAPHRAGMS PIER 22
TYPICAL INTERMEDIATE DIAPHRAGMS Scale ½"=1'-0"
TYPICAL END DIAPHRAGM PIERS 13 & 25
TYPICAL DIAPHRAGM AT INTERIOR SUPPORT PIERS 14,15,20,21,23 & 24
Slot Holes in 5/8" Pl. in vertical direction for final adjustment provide 7/8"φ Standard H.S. Bolts & Washers (Typical)
NOTE: Roadway Exp. Dam by Cont. OT-12
SECTION D-D
TYPICAL END DIAPHRAGM PIER 16 & 19 Scale ½"=1'-0"
SECTION A-A Scale 1"=1'-0"
SECTION B-B Scale 1"=1'-0"
SECTION C-C Scale 1"=1'-0"
SECTION E-E

NOTES:

1. For General Notes see Dwg. B-1
2. For location of Diaphragms see Dwg. B-2
3. For Details H & J see Dwg. B-4

REVISIONS: As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

CROSS SECTION AND STEEL DETAILS
SPANS 14-16 AND 20-25

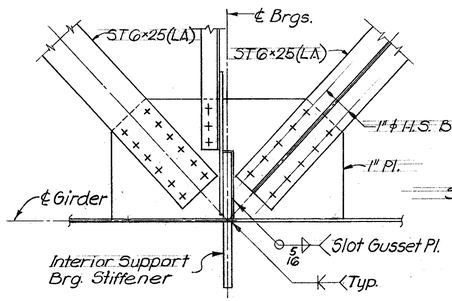
SCALE As Shown DATE May 1972 CONTRACT OT-13

MADE BY I.M.
TRACED BY O.S.
CHECKED BY C.C.Y.

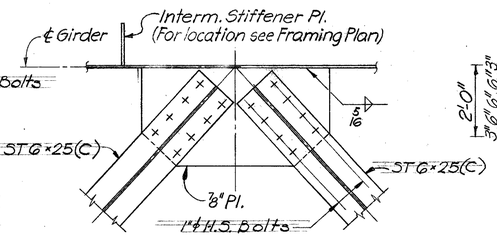
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. B-3
SHEET NO. 30 OF 36
INDEXED

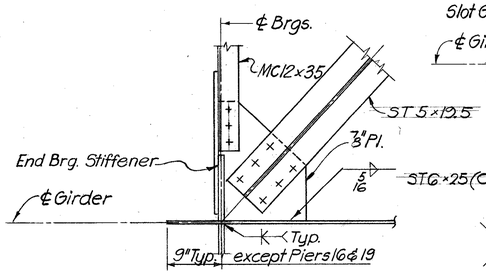
File No. ___ Pocket No. ___ Folder No. ___



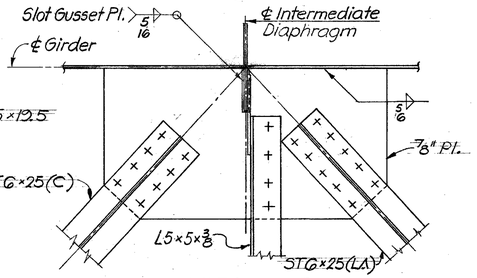
DETAIL A
Scale 1"=1'-0"



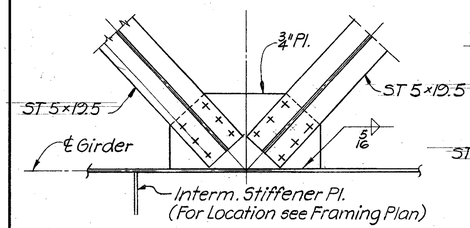
DETAIL E
Scale 1"=1'-0"



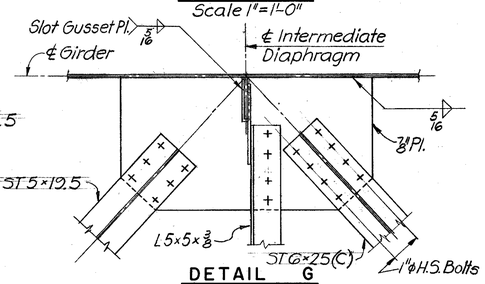
DETAIL B
Scale 1"=1'-0"



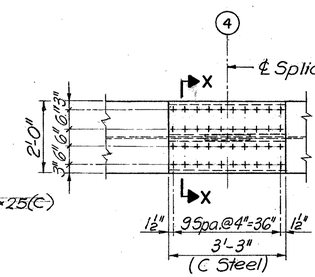
DETAIL F
Scale 1"=1'-0"

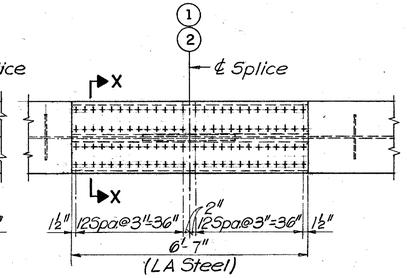


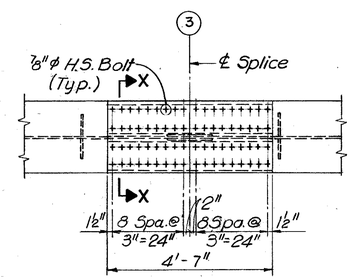
DETAIL C
Scale 1"=1'-0"



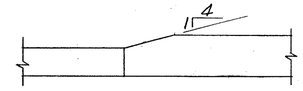
DETAIL G
Scale 1"=1'-0"



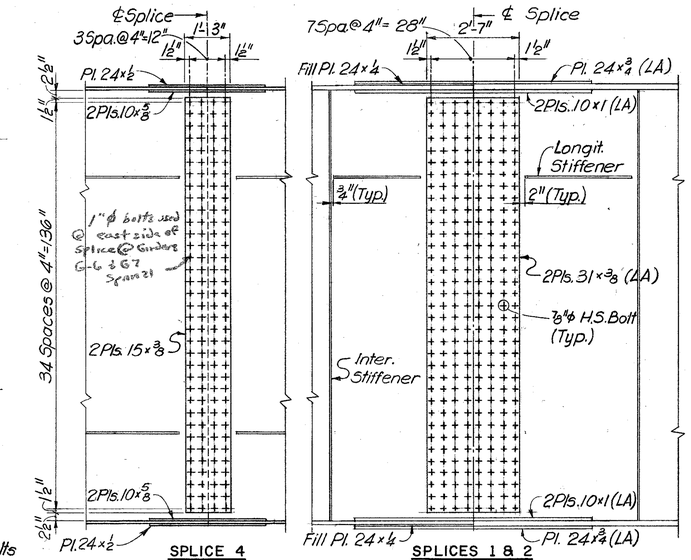




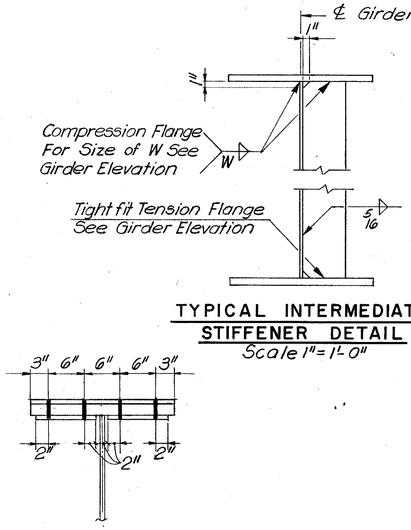
All flange butt welds to be A.W.S. B-L3-S, except if either of the plates is over 1½", in which case a B-U7-S shall be used.



TYPICAL FLANGE BUTT WELD
No Scale

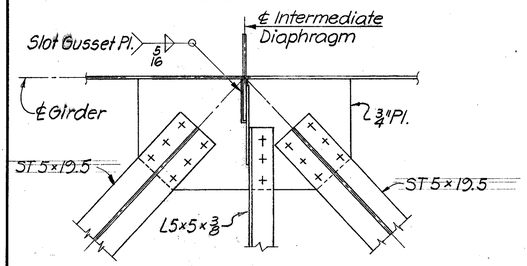


TYPICAL FIELD SPLICE DETAILS
Scale: ½"=1'-0"

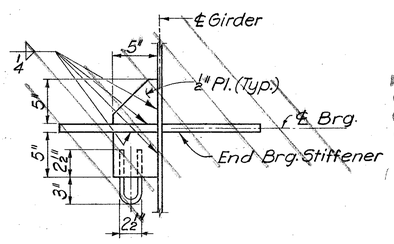


TYPICAL INTERMEDIATE STIFFENER DETAIL
Scale 1"=1'-0"

SECTION X-X
No Scale

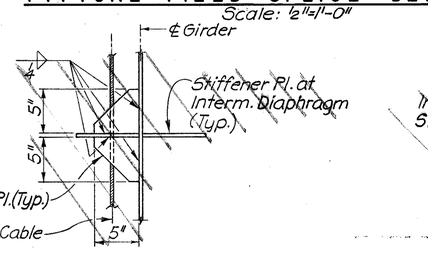


DETAIL D
Scale 1"=1'-0"

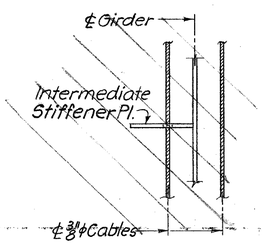


Note: Inspection cable not used. A ¾" dia. Rod welded @ vertical ST. Runt and Girder web was used in place of the ¾" dia. Cable.

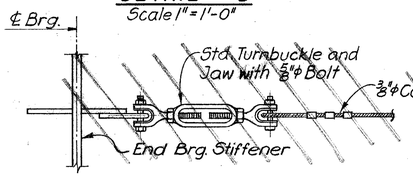
PLAN
Scale 1½"=1'-0"



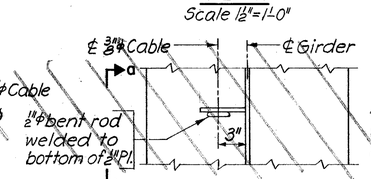
PLAN
Scale 1½"=1'-0"



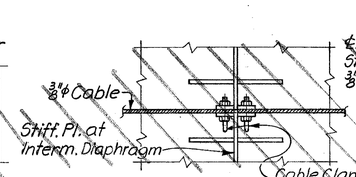
PLAN
Scale 1½"=1'-0"



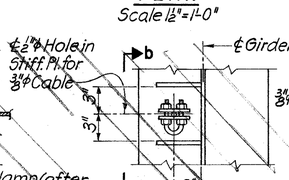
SECTION a-a
Scale 1½"=1'-0"



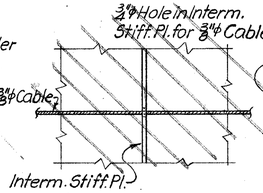
DETAIL H
Scale 1½"=1'-0"



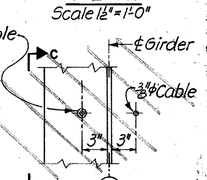
SECTION b-b
Scale 1½"=1'-0"



DETAIL J
Scale 1½"=1'-0"



SECTION c-c
Scale 1½"=1'-0"



DETAIL K
Scale 1½"=1'-0"

NOTES:

1. For General Notes see Dwg. B-1
2. For location of Details A-G and Girder Elevation see Dwg. B-2
3. For location of Cable Details see Dwg. B-3

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

MISCELLANEOUS STEEL DETAILS
SPANS 14 - 16 AND 20 - 25

SCALE As Shown DATE May 1972 CONTRACT OT-13

MADE BY K.L.C.
TRACED BY O.S.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA
A JOINT VENTURE
Baltimore, Md.

DRAWING NO. B-4
SHEET NO. 31 OF 36
INDEXED

File No. ____ Pocket No. ____ Folder No. ____

62'-0" 61'-2"
2'-0" 28'-0" 2'-0" 28'-0" 2'-0"
L 4 x 3½ x ⅜
MC18x42.7
⅜ ℙ
⅞" H.S. Bolts (Typ.)
L4x3½x⅜
Level (Typ.)
4" Min. Typ.
⅜ ℙ (Typ.)
See Detail 'X'
6" Min. Typ.
Level (Typ.)
AT END DIAPHRAGMS
AT INTERMEDIATE DIAPHRAGMS
TYPICAL NORMAL SECTION
Scale: ¼"=1'-0"
Note: See typical Normal Section for sizes of members & welds.
See Detail 'Y'
⅜" Gusset ℙ for wind bracing
6 Spa. @ 9'-0" - Except Spans 33 & 34 (See Framing Plan)
AT END DIAPHRAGMS
AT INTERMEDIATE DIAPHRAGMS
TYPICAL SUPERELEVATED SECTION
Scale: ¼"=1'-0"
⅜" ℙ
MC18x42.7
⅜" Fill ℙ
L4x3½x⅜ (Typ.)
DETAIL 'Y'
Scale: ¾"=1'-0"
Splice H & J 90°-00'-00"
Splice K & L 89°-28'-06.18"
Splice M & N 88°-06'-35.90"
Splice P & Q 87°-05'-02.00
90°-00'-00" Splice H
90°-31'-53.82" Splice J & K
91°-17'-04.80" Splice K L
91°-53'-24.10" Splice M
92°-54'-58.00" Splice N & P
℄ Girder
93°-30'-03.00" Splice Q
PLAN - Sta. Ahead
Note: All Bolts ⅞" H.S.
℄ Splice
ℙ ½" x 24" x 2'-6½"
ℙ ½" x 11" x 2'-6½" (N.S. & F.S.)
ℙ 5/16" x 12½" x 82" (N.S. & F.S.) (Bent for Splice 'B' & 'C')
5/16" x 84" Web ℙ
Symm. about ℄
10 Spa @ 3" = 3'-1½"
ELEVATION
℄ Girder
ℙ ½" x 24"
ℙ ½" x 11"
ℙ 5/16" x 12½"
SECTION A-A
FIELD SPLICE DETAILS
Scale: ¾"=1'-0"
ℙ ½" x 6"
℄ Girder
⅜ ℙ
L4x3½x⅜
⅜ Gusset ℙ (For Wind Bracing)
DETAIL 'X'
Scale: ¾"=1'-0"
℄ Brg.
Bot. Flange
Brg. Stiff. ℙ 1" x 11"
⅜ Gusset ℙ
℄ Girder
WT5x10.5
DETAIL 'C'
Shortened Six (6) Lateral tee Sections "B" and welded pieces to Six (6) lateral tee Sections "A" (see dwg C-28)
WT5x10.5
Bot. Flange
℄ Girder
½" x 6" Stiff. ℙ
See Framing Plans for locations
⅜" Gusset ℙ cut for vertical stiffeners where neccessary. Gusset not cut at locations where bracing intersects between vertical stiffeners.
DETAIL 'D'
½" x 6" Stiff. ℙ
Bot. Flange
℄ Girder
⅜" x 4" Longit. Stiffener
⅜ Gusset ℙ
½" x 6" Conn. ℙ
WT5x10.5
DETAIL 'E'
WIND BRACING DETAILS
Scale: ¾"=1'-0"
A B C
¼ ⅝ ⅛ | ⅜ 1⅛ ¼ | 9/16 1 5/16 ¼ | ¼ ¾ 3/16 | ⅜ 5/16 1/16 | 0" ⅛ 0" | 0" ⅛ 0" | 0" ⅛ 0"
⅛ Pt. ¼ Pt. ½ Pt. ¾ Pt. ⅞ Pt. ⅛ Pt. ¼ Pt.
48'-6"
149'-4"
74'-8"
Symm. about ℄
Along ℄ Survey
℄ Brg.
CAMBER DIAGRAM (3-Continuous Spans)
No Scale
NOTE:
A-Deflection due to weight of girders.
B-Deflection due to weight of Slab.
C-Deflection due to weight of parapet & median. Provide dead load camber in all spans.
For camber correction due to vert. curve, See Paving Elevations, Drawing No. C-27.
⅜" x 4" Longit. Stiffener
Bot. Flange
℄ Girder
⅜" Gusset ℙ
WT5x10.5
Brg. Stiff. ℙ 1" x 11"
DETAIL 'F'
WIND BRACING DETAIL
Scale: ¾"=1'-0
ℙ ⅜" x 4"
ℙ ½" x 6"
POSITIVE MOMENT AREA
Mill to bear
ℙ ½" x 6"
ℙ ⅜" x 4"
NEGATIVE MOMENT AREA
AT SPLICE
Tight Fit
ℙ 1" x 11"
AT BEARINGS
STIFFENER DETAILS
Scale: ⅜"=1'-0
WELDING NOTES
All flange to web welds to be 5/16 fillet welds, except flanges over 1½" thick, which will have a ⅜ fillet weld.
All flange butt welds to be A.W.S. B-L3-S, except if either of the plates is over 1½", in which case a B-U7-S shall be used.
TYPICAL FLANGE BUTT WELD
No Scale

REVISIONS
G.F.M. 10-5-73 As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

DIAPHRAGM & CONNECTION PLATE DETAILS

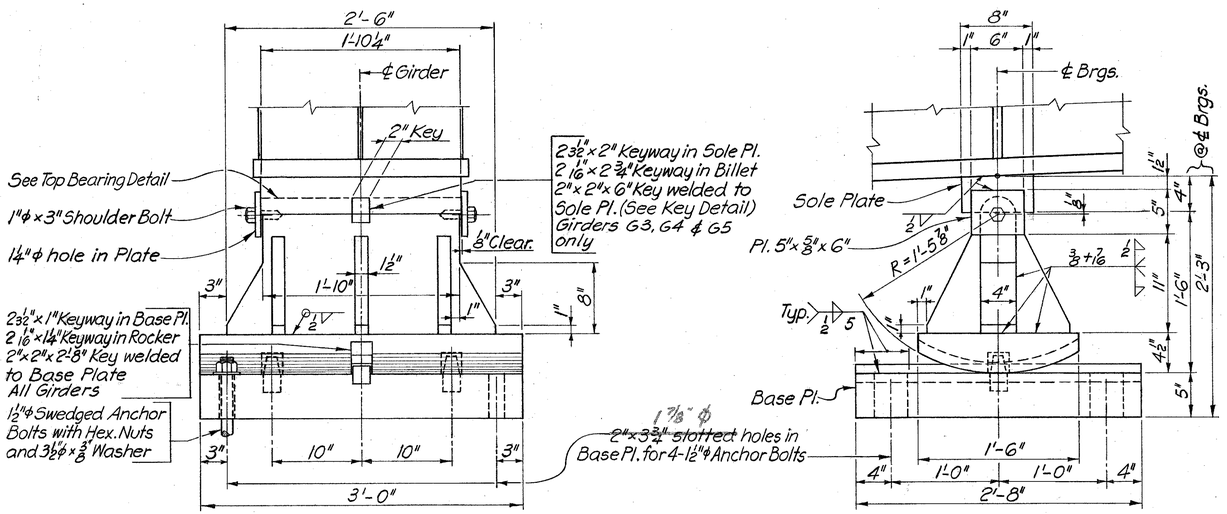
SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY J.A.B.
TRACED BY J.A.B.
CHECKED BY K.B.S.

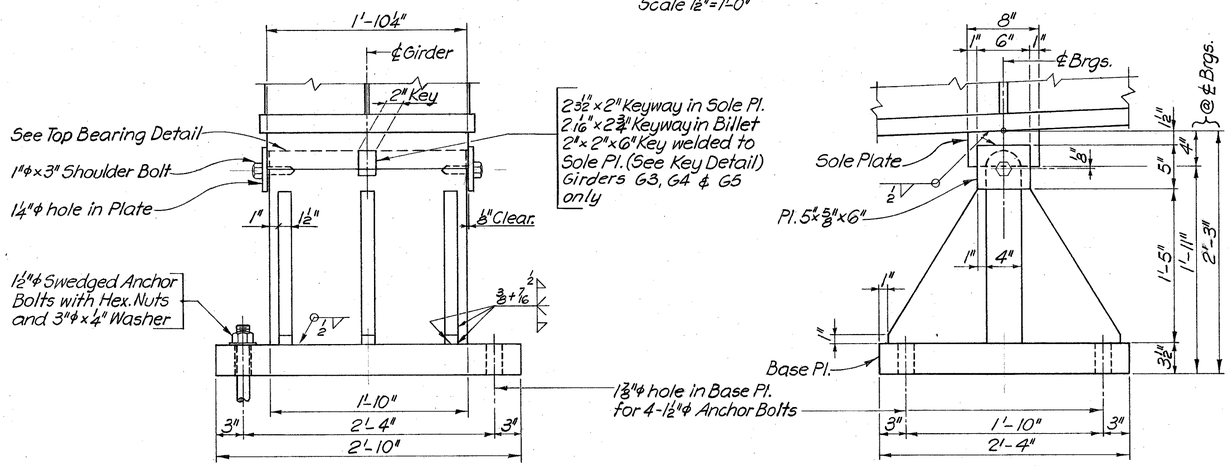
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-14
SHEET NO. 15 OF 36
INDEXED

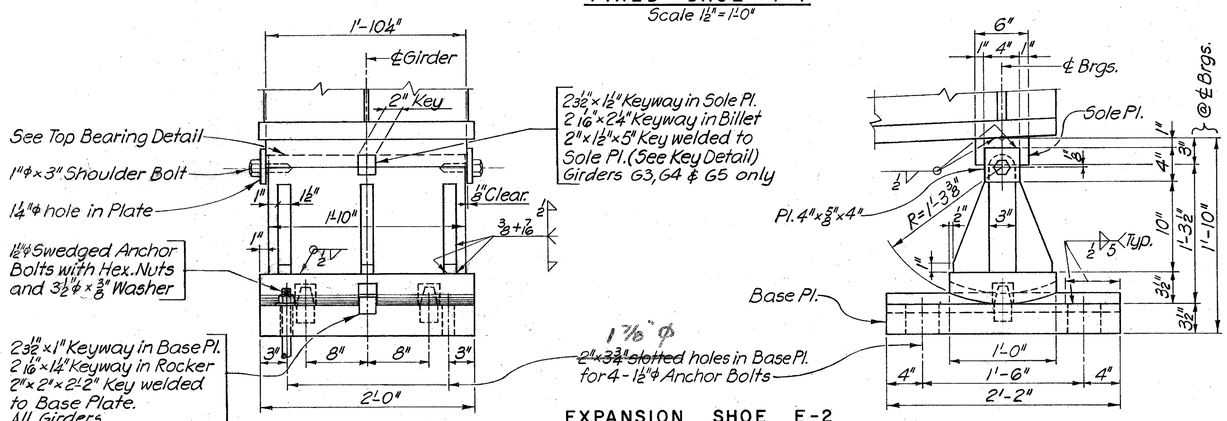
File No. ____ Pocket No. ____ Folder No. ____



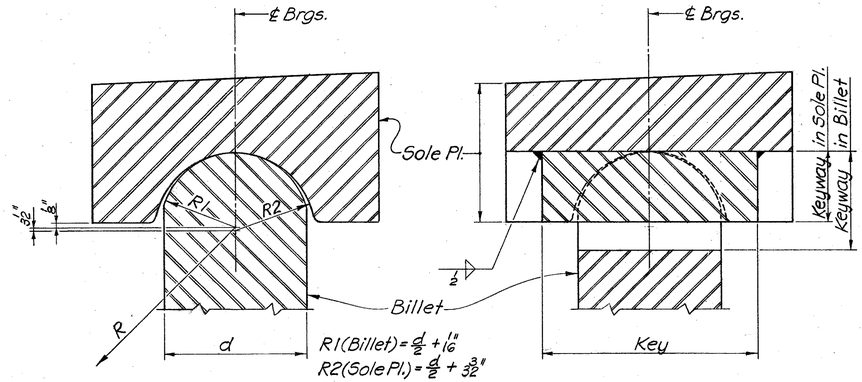
EXPANSION SHOE E-1
Scale 1½"=1'-0"



FIXED SHOE F-1
Scale 1½"=1'-0"

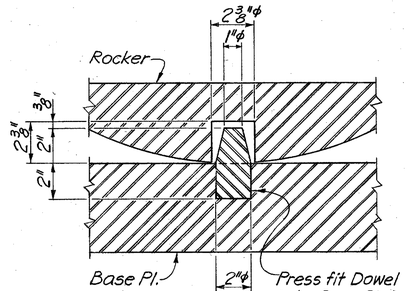


EXPANSION SHOE E-2
Scale 1½"=1'-0"



TOP BEARING DETAIL
No Scale

KEY DETAIL
No Scale



DOWEL DETAIL
Scale 3"=1'-0"

NOTES:

1. For General Notes see Sh. No. B-1
2. All steel except bolts shall meet the requirements of A5TM A588.
3. Shoulder bolts and anchor bolts shall meet the requirements of A5TM A307.
4. Bearing shall be set so that the axis of all shoes shall be vertical under full dead load at temperature of 68° Fahrenheit.
5. All shoes shall be stress relieved after welding in accordance with the procedure of the American Welding Society.
6. Anchor Bolts shall be swedged type and shall be embedded a minimum of 2'-0" into preformed holes and grouted with a non-shrink mortar. - See Substructure Plans.
7. ~~Fill slotted holes in base plates with molten lead after expansion rockers have been finally positioned.~~

TABLE OF SHOE LOCATIONS

PIER NO.	SPAN NO.	TYPE OF SHOE
13	14	E-2
14		F-1
15		E-1
16	16	E-2
19	20	E-2
20		E-1
21		F-1
22	22	E-2
22	23	E-2
23		E-1
24		F-1
25	25	E-2

REVISIONS
As Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

BEARING SHOE DETAILS
SPANS 14 - 16 AND 20 - 25

SCALE As Shown DATE May 1972 CONTRACT OT-13

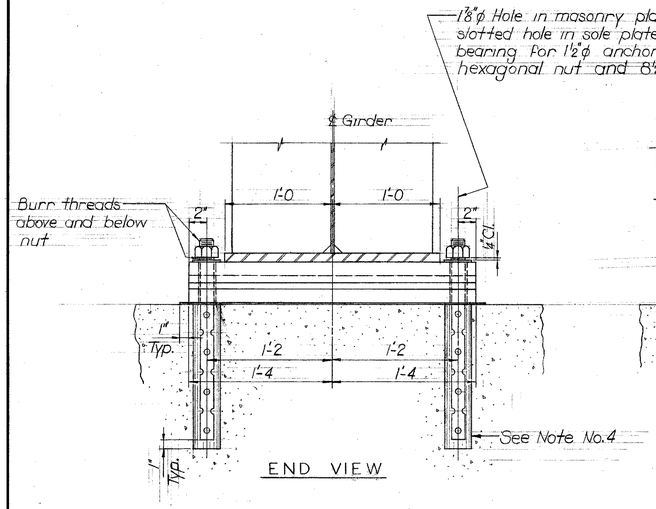
MADE BY C.C.Y.
TRACED BY O.S.
CHECKED BY I.M.

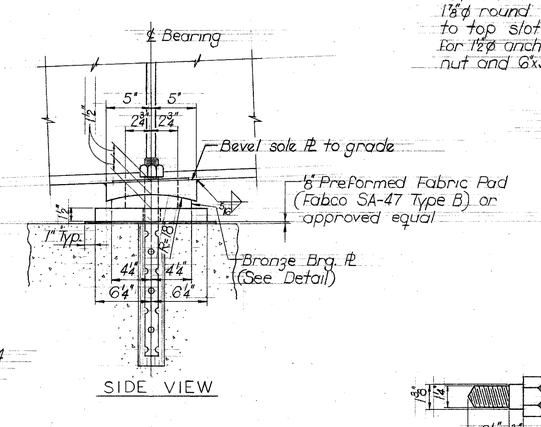
ZOLLMAN ASSOC. INC.
AND
SINGSTAD, KEHART NOVEMBER AND HURKA
A JOINT VENTURE
Baltimore, Md.

DRAWING NO. B-6
SHEET NO. 33 OF 36

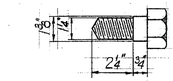
INDEXED

File No. Pocket No. Folder No.



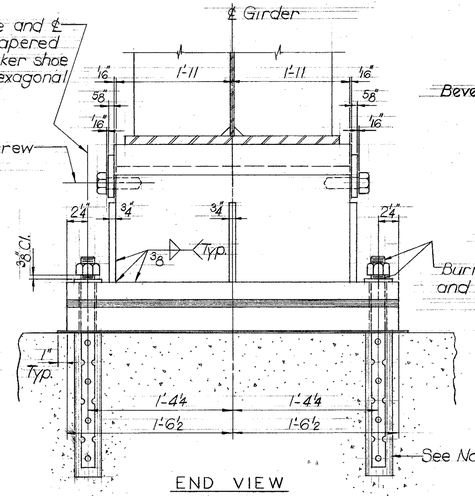


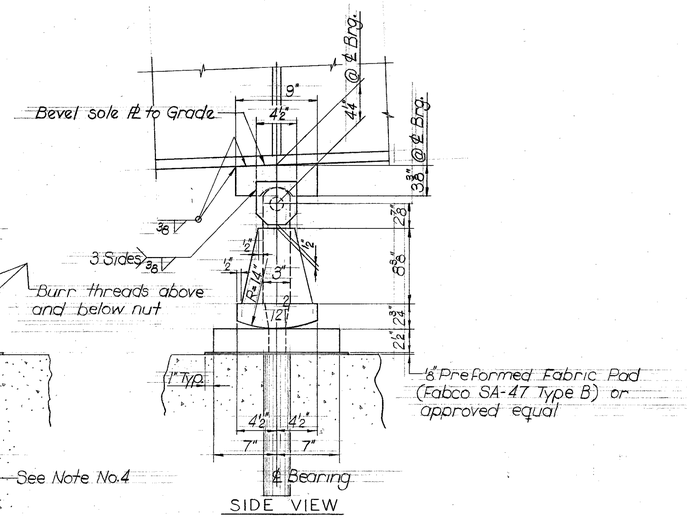
EXPANSION BEARING TYPE 'A'
Scale: 1½"=1'-0



CAP SCREW DETAIL
Scale: 3"=1'-0

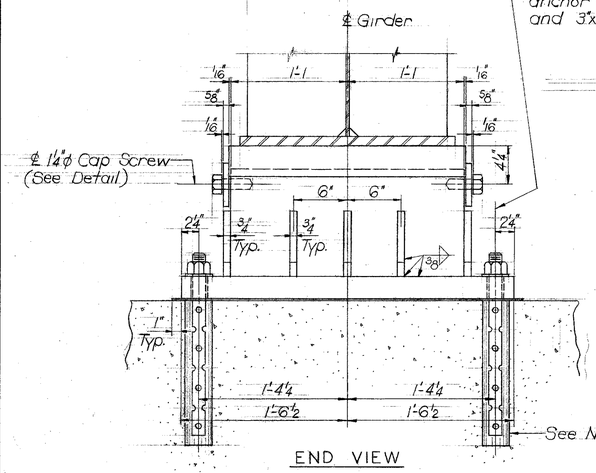
1⅞"ø Hole in masonry plate and ℄ 1⅜"ø round bottom hole tapered to top slotted hole in rocker shoe for 1½ø anchor bolt with hexagonal nut and 6"x3"x⅜" washer

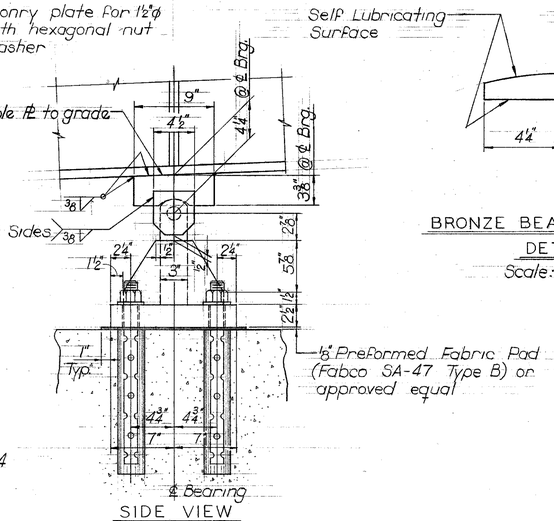


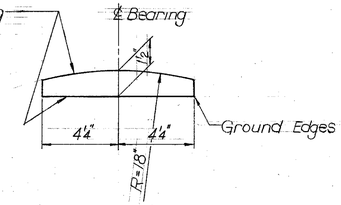


EXPANSION BEARING TYPE 'B'
Scale: 1½"=1'-0

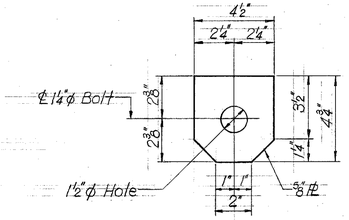
1⅞"ø Hole in masonry plate for 1½ø anchor bolt with hexagonal nut and 3"x3"x⅜" washer



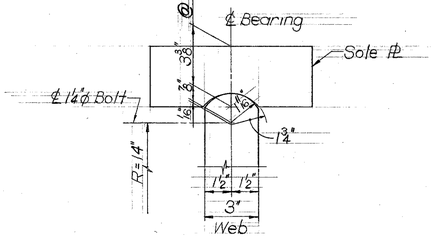




BRONZE BEARING PLATE DETAIL
Scale: 3"=1'-0



KEEPER PLATE DETAIL
Scale: 3"=1'-0



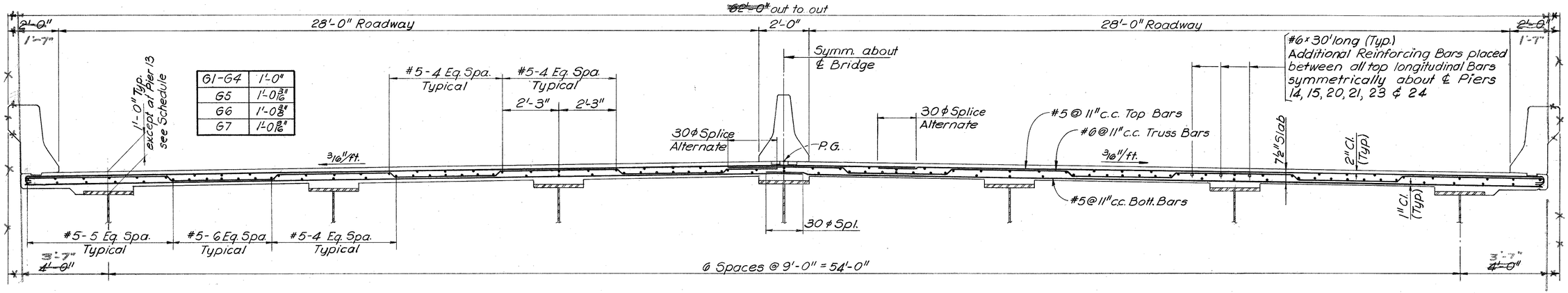
WEB DETAIL
Scale: 3"=1'-0

FIXED BEARING - TYPE 'C'
Scale: 1½"=1'-0

GENERAL NOTES:

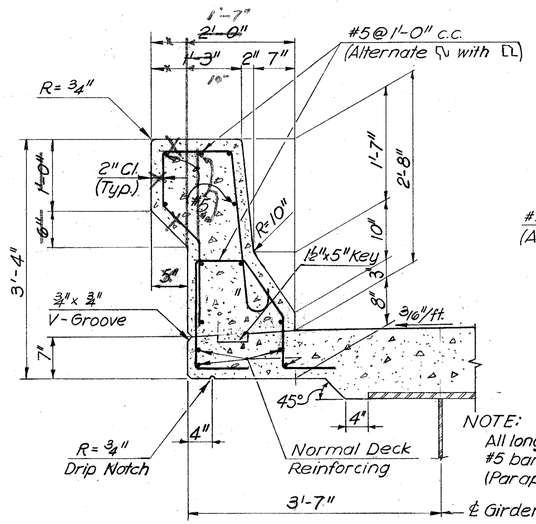
1. All steel shall conform to A.S.T.M. Designation A-36 except as noted.
2. Bronze bearing plates shall conform to the Specification for "Bronze Castings for Bridges and Turntables" A.A.S.H.O. M-107 (A.S.T.M. B-22) Alloy B.
3. Bearing pedestal shall be trully level and throughly cleaned of all loose particles before setting preformed fabric pad.
4. Anchor bolts shall be swedged type and shall be embedded a minimum of 1'-3 into preformed holes and grouted with non-shrink mortar - See Substructure Plans.
5. For Bearing pad elevations see Drawing C-27.
6. For location of Bearing Type, See Framing Plans.

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD.
As-Built	BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE
	BEARING SHOE DETAILS
	SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13
	MADE BY E. H. TRACED BY E.H. CHECKED BY J.W.G.
	ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.
	DRAWING NO. C-20 SHEET NO. 21 OF 36 INDEXED

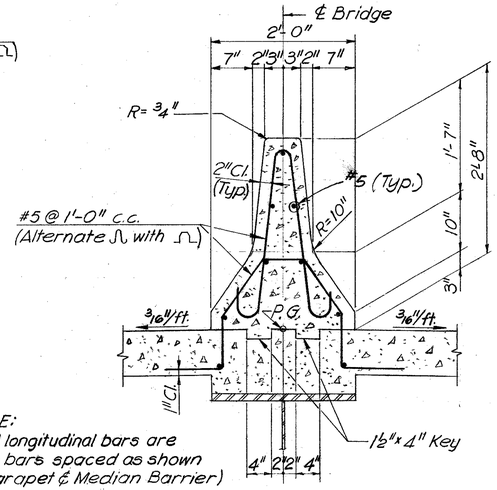


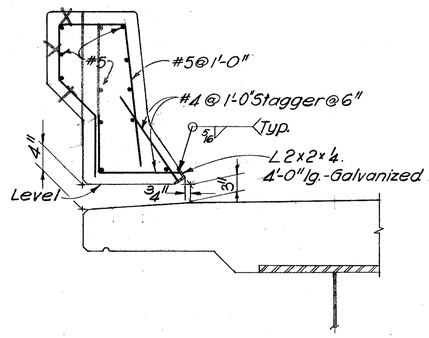
TYPICAL CROSS SECTION

Scale: 1/2" = 1'-0"



NOTE:
All longitudinal bars are #5 bars spaced as shown (Parapet & Median Barrier)





NOTES:

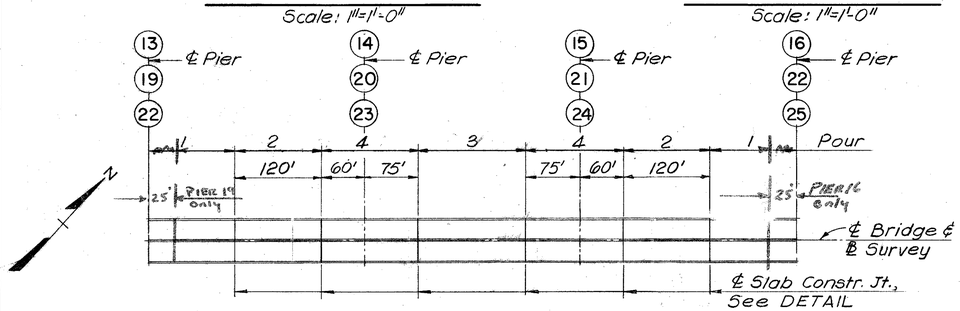
1. For General Notes See Dwg. B-1
2. For Deck Plan and location of Curb Openings See Dwg. B-7

TYPICAL PARAPET SECTION

Scale: 1" = 1'-0"

TYPICAL MEDIAN BARRIER

Scale: 1" = 1'-0"

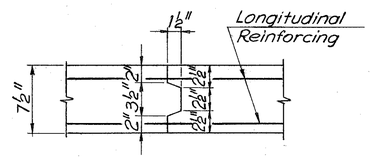


DECK POURING SEQUENCE

Scale: 1" = 100'

SECTION THRU CURB OPENING

Scale: 1" = 1'-0"



TYPICAL DECK CONSTRUCTION JOINT DETAIL

No to Scale

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
DECK DETAILS
SPANS 14 - 16 AND 20 - 25

SCALE As Shown DATE May 1972 CONTRACT OT-13

MADE BY B.P.
TRACED BY R.R.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

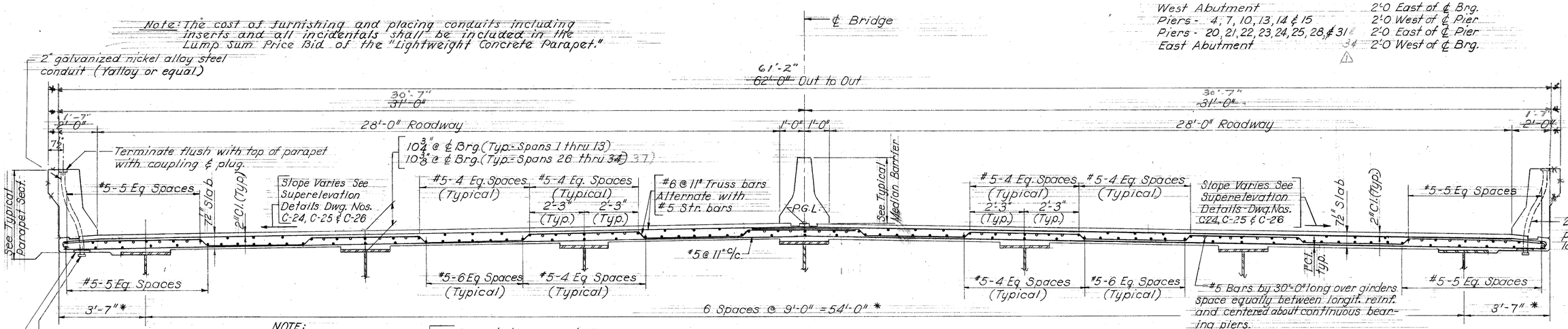
DRAWING NO. B-8
SHEET NO. 35 OF 30
INDEXED

File No. Pocket No. Folder No.

Note: The cost of furnishing and placing conduits including inserts and all incidentals shall be included in the Lump Sum Price Bid of the "Lightweight Concrete Parapet."

Parapet Conduit Locations - Each Side

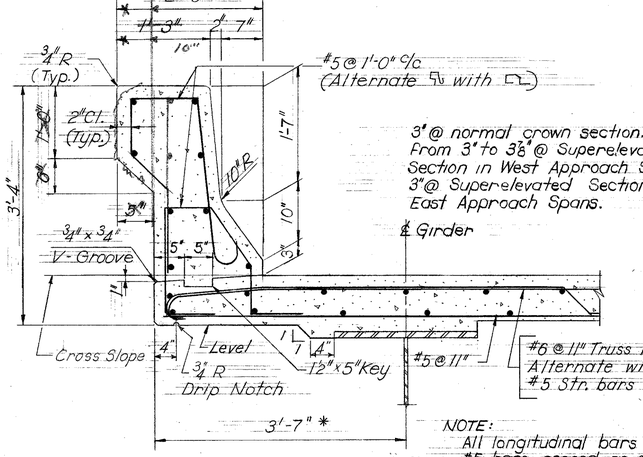
West Abutment	2'-0 East of ℄ Brg.
Piers - 4, 7, 10, 13, 14 & 15	2'-0 West of ℄ Pier
Piers - 20, 21, 22, 23, 24, 25, 28, & 31	2'-0 East of ℄ Pier
East Abutment	2'-0 West of ℄ Brg.



NOTE: Where necessary, locate transverse bar splices
Top bars - between girders
Bottom bars - over girder
Truss bars - @ ℄ of Bridge as shown

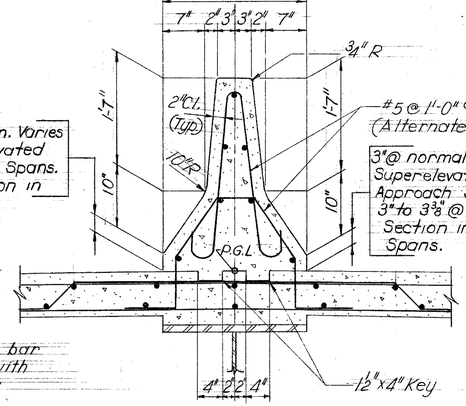
TYPICAL CROSS SECTION
Scale: 1/2" = 1'-0"

Joints in parapet and median shall be vertical and shall be formed by pouring alternate sections. The pours of adjacent sections shall have a two (2) day (48 hour) delay between pours. No reinforcing shall pass through joint. For joint spacing see Dwg. Nos. C-24 & C-26

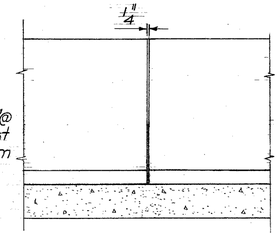


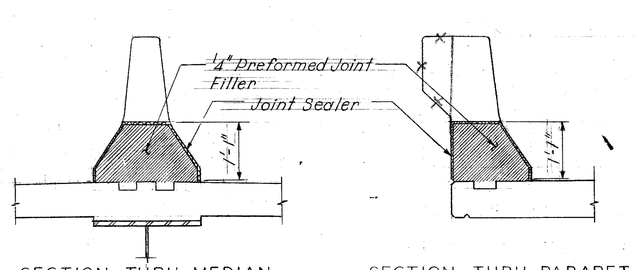
TYPICAL PARAPET SECTION
Scale: 1" = 1'-0"

NOTE: All longitudinal bars are #5 bars spaced as shown (Parapet & Median Barrier)



TYPICAL MEDIAN BARRIER
(Looking Stations Ahd.)
Scale: 1" = 1'-0"





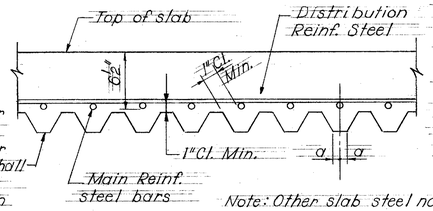
PARAPET & MEDIAN CONTRACTION JOINT DETAILS
Scale: ¾" = 1'-0"

Notes:-

35, 36 & 37 ⚠

1. * Except Spans 33 & 34A See Framing plan Drawing No. C-12
2. Transverse slab Reinforcement shall be radial. Bar spacing shown is maximum allowed spacing.
3. The top and roadway faces of parapets and median barrier to receive two coats of epoxy protective coating.
4. Provide inserts in top of concrete parapets for future roadway lighting. Size and location of inserts will be furnished at a later date.

Note: Steel forms which remain in place. Steel forms shall be the proper gauge to support within specified deflections, the specified weights for the particular span involved and shall be zinc coated (galvanized) in accordance with A.S.T.M. Specification A446 Coating Class 2.00. Note also that no form less than 20 gauge thick. will be accepted due to desired durability.



DETAIL OF STAY-IN-PLACE STEEL FORMS
Scale: 1½" = 1'-0"

Note: No welding of these forms to parts carrying tension will be permitted. These forms shall be vertically adjusted to attain line and grade required by the Plans.

REVISIONS
⚠ G.F.M. 10-5-73 As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

DECK DETAILS

SCALE AS SHOWN DATE MAY, 1972 CONTRACT OT-13

MADE BY R.D.
TRACED BY R.D.
CHECKED BY W.H.H.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. C-13
SHEET NO. 14 OF 36
INDEXED

File No. Pocket No. Folder No.

INSPECTION FINDINGS

5. **Inspection Findings**
    a. Load Rating Summary and Requirement
    b. Major Rehabilitation/ System Preservation Recommendation Summary
    c. Condition Rating Summary
    d. Element Data

2023 MAIN BIN BIENNIAL INSPECTION REPORT

FOR

STRUCTURE No. BCZ472001

LOAD RATINGS SUMMARY

		RATING METHOD	
		LRFR	LRFR
Vehicle Type	**Vehicle Weight (Tons)**	**Inventory**	**Operating**
HL-93	-	0.80	1.02
H15 - Vehicle	15	17.0	24.0
HS Vehicle	36	29.5	45.0
Type 3S2 Modified Vehicle	40	28.0	54.0
Type 4 Vehicle	35	27.5	43.5
150 Kip Vehicle	75	58.0	84.0

Load rating required:

Major Rehabilitation/System Preservation Recommendation Summary

Major Rehab/Sys. Preservation candidate for evaluation/Testing: **NO**

If Yes, which component(s): Deck (58): ☐ Superstructure (59): ☐ Substructure (60): ☐

MARYLAND TRANSPORTATION AUTHORITY

2023 MAIN BIN BIENNIAL INSPECTION REPORT

Bridge No: BCZ472001 Bridge Name: BCZ427001 Date: Ma/r /29 2

Carries: MD 695

Crossing: PATAPSCO RIVE

Bridge Type: D-Steel Continuous

County: 510-BALTIMORE CITY

No. of Spans: 0037

Year Built: 1976 City/Town: Baltimore City

Inspection Type: Bridge - Biennial Signature Main BIN

Inspection Crew:

ITEM	58	DECK

MAIN BIN SI&A	
2023	2021
6	6

MARYLAND TRANSPORTATION AUTHORITY
2023 MAIN BIN BIENNIAL INSPECTION REPORT

Bridge No: BCZ472001 Bridge Name: BCZ427001 Date: Ma/r /29 2

Carries: MD 695 Crossing: PATAPSCO RIVE

Bridge Type: D-Steel Continuous County: 510-BALTIMORE CITY

No. of Spans: 0037 Year Built: 1976 City/Town: Baltimore City

Inspection Type: Bridge - Biennial Signature Main BIN

Inspection Crew:

ITEM	59	SUPERSTRUCTURE

MAIN BIN SI&A	
2023	2021
6	6

MARYLAND TRANSPORTATION AUTHORITY

2023 MAIN BIN BIENNIAL INSPECTION REPORT

Bridge No: BCZ472001 Bridge Name: BCZ427001 Date: Ma/r /29 2

Carries: MD 695

Crossing: PATAPSCO RIVE

Bridge Type: D-Steel Continuous

County: 510-BALTIMORE CITY

No. of Spans: 0037

Year Built: 1976 City/Town: Baltimore City

Inspection Type: Bridge - Biennial Signature Main BIN

Inspection Crew:

ITEM	60	SUBSTRUCTURE

MAIN BIN SI&A	
2023	2021
6	6

MARYLAND TRANSPORTATION AUTHORITY

2023 MAIN BIN BIENNIAL INSPECTION REPORT

Bridge No: BCZ472001 Bridge Name: BCZ427001 Date: Ma/r /29 2

Carries: MD 695
Crossing: PATAPSCO RIVE
Bridge Type: D-Steel Continuous
County: 510-BALTIMORE CITY
No. of Spans: 0037
Year Built: 1976 City/Town: Baltimore City
Inspection Type: Bridge - Biennial Signature Main BIN

Inspection Crew:

ITEM	61	CHANNEL

MAIN BIN SI&A	
2023	2021
7	7

ITEM	62	CULVERTS

MAIN BIN SI&A	
2023	2021
N	N

BRIDGE ELEMENT DATA

Span: ALL								
Element Number	Element Description	Unit of Measure	Element Parent Number	Total Quantity	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12	Reinforced Concrete Deck (SF)	SF	-	553364	309365	234393	9606	0
107	Steel Girder/Beam (LF)	LF	-	45039	35543	6621	3194	56
515	Steel Protective Coating (SF)	SF	107	1105578	1034369	70322	886	1
113	Steel Stringer (LF)	LF	-	24730	24518	212	0	0
515	Steel Protective Coating (SF)	SF	113	137988	137799	170	19	0
120	Steel Truss (LF)	LF	-	5280	4512	576	192	0
515	Steel Protective Coating (SF)	SF	120	428608	416081	2239	10019	269
8121	Steel Bottom Chord of Through Truss (LF)	LF	120	5280	4968	186	126	0
8126	Steel Through Truss, Excluding Bottom Chord (LF)	LF	120	5280	4745	461	74	0
148	Steel Cable-Secondary (EA)	EA	-	66	52	14	0	0
515	Steel Protective Coating (SF)	SF	148	2926	2644	35	247	0
152	Steel Floor Beam (LF)	LF	-	5644	4752	515	377	0
515	Steel Protective Coating (SF)	SF	152	121850	119713	336	1801	0
161	Steel Pin, Pin and Hanger Assembly, or Both (EA)	EA	-	132	116	14	2	0
515	Steel Protective Coating (SF)	SF	161	290	256	15	19	0
162	Steel Gusset Plate (EA)	EA	-	352	244	60	48	0
515	Steel Protective Coating (SF)	SF	162	53342	53151	34	156	1
205	Reinforced Concrete Column (EA)	EA	-	70	13	40	17	0
210	Reinforced Concrete Pier Wall (LF)	LF	-	560	394	166	0	0
215	Reinforced Concrete Abutment (LF)	LF	-	208	195	9	4	0

Span: ALL								
220	Reinforced Pile Cap/Footing (LF)	LF	-	928	790	104	34	0
234	Reinforced Concrete Pier Cap (LF)	LF	-	1994	1294	531	169	0
302	Compression Joint Seal (LF)	LF	-	1223	783	0	440	0
305	Assembly Joint without Seal (LF)	LF	-	854	253	538	63	0
311	Movable Bearing (roller, sliding, etc.) (EA)	EA	-	244	82	95	67	0
515	Steel Protective Coating (SF)	SF	311	3417	2478	534	405	0
313	Fixed Bearing (EA)	EA	-	79	65	11	3	0
515	Steel Protective Coating (SF)	SF	313	1425	1273	102	50	0
330	Metal Bridge Rail (LF)	LF	-	2880	2776	104	0	0
515	Steel Protective Coating (SF)	SF	330	24570	20884	1229	2457	0
331	Reinforced Concrete Bridge Rail (LF)	LF	-	24260	18994	4695	571	0
8070	Reinforced Concrete Median (LF)	LF	-	1680	1003	657	20	0
8257	Reinforced Concrete Abutment Backwall (LF)	LF	-	122	104	18	0	0
8260	Protected Slope (EA)	EA	-	2	1	0	1	0
8271	Steel Dolphin (EA)	EA	-	4	0	0	4	0
8274	Timber Fender (LF)	LF	-	706	646	50	10	0
8307	Neoprene or Fiberglass Joint Trough (LF)	LF	-	793	415	254	124	0
8322	Roadway Approach Transition (EA)	EA	-	2	2	0	0	0
9205	UWI Reinforced Concrete Column (EA)	EA	-	26	0	0	0	0
9210	UWI Reinforced Concrete Pier Wall (LF)	LF	-	420	0	0	0	0
9220	UWI Reinforced Concrete Pile Cap/Footing (LF)	LF	-	792	0	0	0	0
9271	UWI Steel Dolphin (EA)	EA	-	4	0	0	0	0
9274	UWI Timber Fender (LF)	LF	-	706	0	0	0	0

INSPECTION DOCUMENTS

6. **Inspection Documents**
   a. Hydrographic Survey (if applicable)
   b. Sounding Current Data
   c. Sounding Base-year Data
   d. Monitoring Data
   e. Test Results
   f. Miscellaneous Sketches
   g. Other

INVENTORY

TOLL FACILITY
STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER:	BCZ472001

IDENTIFICATION

FORM 1 OF 11

(8) STRUCTURE NUMBER	3	00000	BC	Z472	01	Major Structure > 20' 0"	0	Single Structure

(8) FHWA NUMBER:	300000BCZ472010
(7) FACILITY CARRIED:	MD 695
(6) FEATURE INTERSECTED:	PATAPSCO RIVER
(255) FEDERAL SUBMITTAL INDICATOR:	Y
(262) NAME OF STRUCTURE:	BCZ427001

(27) YEAR BUILT:	1976	(106) YEAR RECONSTR:	0000
(263) ADDITIONAL RECONSTRUCTION YEARS:	N	N	
(1) STATE CODE:	243	(2) DISTRICT CODE:	04 Baltimore, Harford, Baltimore City
(3) COUNTY CODE:	510	(4) PLACE CODE:	04000 Baltimore City

(5) INVENTORY ROUTE:	1 Route carried "on" the structure	1 Interstate	1 Mainline	00695	0
		Route prefix	Level Of Service	Number	Direction

(9) LOCATION:	I-695 OVER PATAPSCO RIVER
(11) MILE POINT:	0138100
(12) BASE HIGHWAY NETWORK:	1 Inventory Route IS on Base Network
(266) GIS ROUTE ID:	B-000IS00695BU1NN
(267) GIS MILEPOINT:	000042700
(268) SCENIC ROUTE:	N
(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:	

(16) LATITUDE:	(A)	39123508	(B)	39133519	(C)	39133559	(D) 39123564
(17) LONGITUDE:	(A)	076322211	(B)	076305703	(C)	076305757	(D) 076322234

(28) LANES ON:	04	LANES UNDER:	00
(42) TYPE OF SERVICE ON:	1 Highway	TYPE OF SERVICE UNDER:	5 Waterway
(98) BORDER STATE:		BORDER STATE's SHARE (%):	
(99) BORDER STATE NUMBER:			

CLASSIFICATION

FORM 2 OF 11

(104) HWY SYSTEM:	Y	Structure/Route is on NHS	(103) TEMPORARY STRUCTURE:		
(105) FEDERAL LANDS HWYS:	0	Not Applicable	(110) NAT'L NTWK:	Y	Inventory route on National Truck Network
(26) FUNCTION CLASS:	12	Urban Principal Arterial - Other Freeway or Expressway	(20) TOLL:	1	Toll Bridge
(100) DEFENSE HWY:	1	Is a defense highway	(21) MAINTENANCE:	31	State Toll Authority
(101) PARALLEL STRUCT:	N	No parallel structure	(22) OWNER:	31	State Toll Authority
(102) DIRECTION:	2	2-way traffic	(37) HISTORICAL:	5	Not eligible

TRAFFIC

FORM 3 OF 11

(19) DETOUR:	25	(109) TRUCK ADT %:	10
(29) ADT:	030767	(30) ADT YEAR:	2019
(114) FUTURE ADT:	032863	(115) FUTURE ADT YEAR:	2041

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 11

(43) STRUCT TYPE:	D	Steel Continuous	10	Truss - Thru		
(44) STRUCT TYPE-APPR:	D	Steel Continuous	02	Stringer/Multibeam or Girder		
(232) BOX CULVERT ON PILES:						
(208) STRUCT TYPE-WIDENED/EXTENDED:	N		N		N	
(219) SLOPE PROTECTION:	4	Heavy stone				
(228) FOOTING-ABUTMENT:	1	Concrete	2	Steel H Pile	0	Entire Structure
(229) SUBSTRUCT ABUTMENT:	1	Concrete	1	Pedestal	0	Entire Structure
(230) FOOTING-PIER:	1	Concrete	Timber Pile	Timber Pile	0	Entire Structure
(231) SUBSTRUCTURE PIER:	1	Concrete	5	Non-definable	0	Predominant Feature
(242) BEARING TYPE:	B	Steel plates	C	Steel curved plates	D	Steel rollers
(108) WEARING SURFACE:	1	Concrete	8	Unknown	8	Unknown
(243) JOINT TYPE:	B	Preformed Seal	C	Sliding Plate Joint	D	Finger Joint
(206) SUPPL TYPE-MAIN:			(207) SUPPL APPROACH:			No Scour Protection
(257) SCOUR PROTECTION:		No Scour Protection	(270) CONC. DECK SPECIAL TYPE:	N		Not Applicable
(221) STRUCTURAL STEEL:	05	A 588	(233) DECK - COMP/NON-COMP:	0		Non- Composite
(107) DECK STRUCTURE TYPE:	1	Concrete Cast-in-Place	(259) STAY-IN-PLACE FORMS:	Y		Yes
(235) PARAPET:	01	Jersey/F-Shape				
(236) RAILING:	2	Concrete	9	Other	3 Steel	9 Other
(237) FENCING:	0	None	0	None		

(278) PAINT SYSTEM:	99	Other	99	Other		
(344) PAINT COLOR/NUMBER:	10	Light Grey				
(345) YEARS PAINTED:	1976	N				

GEOMETRICS

FORM 5 OF 11

(112) NBIS BRIDGE LENGTH:	Y	(49) STRUCTURE LENGTH:	0090910
(210) NUMBER OF SPANS:	0037	(45) # SPANS IN MAIN UNIT:	003
(46) # APPROACH SPANS:	0034	(209) # CONTINUOUS SPANS:	Y
(48) LENGTH MAX SPAN:	1200	(238) # STRINGER-ORIGINAL:	07
(240) SPACING-ORIGINAL:	8	(239) # STRINGERS-WIDENED:	00
(241) SPACING-WIDENED:	0	(33) BRIDGE MEDIAN:	3
(50) CURB/SIDEWALK WIDTHS:	000 / 000	(205) MEDIAN WIDTH:	003
(51) DECK CURB-CURB WIDTHS:	0560	(32) APPROACH ROAD WIDTH:	02 / 52 / 02
(52) DECK OUT-OUT WIDTH:	0612	(10) INVENT ROUTE, MIN VERT CLEAR:	1506
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	1506	(47) INVEN ROUTE, TOTAL HORIZ CLEAR:	280
(54) MIN VERTICAL UNDERCLEARANCE:	H	Highway beneath structure	1506
(55) MIN LATERAL UNDERCLEARANCE (RIGHT):	H	Feature not a highway or a railroad	000
(56) MIN LATERAL UNDERCLEARANCE (LEFT):	000	(342) HORIZ CLEARANCE (ON):	02800 / 02800
(34) SKEW, IN DEGREES:	00	(280) HORIZ CLEARANCE (UNDER):	
(35) STRUCTURE FLARED:	N	(253) NUMBER OF CELLS:	N
(256) SPAN OF CELLS:	N	(254) RISE:	N
		(258) EARTHFILL:	N
		(343) CENTERLINE LENGTH (Culverts/Pipes):	N

(223) SHOULDER WIDTHS:	0200	0200		
(264) TYPE AND SPAN:	TST 722, 1200, 722			

LOAD RATINGS AND POSTINGS

(41) STATUS:	A	Open	(224) WEIGHT POSTED, KIPS:	N	
(31) DESIGN LOAD:	5	HS 20			
(398) PEDESTRIAN LOADING:	N				
(399) RAILROAD LOADING:	N				
(70) POSTING:	5	Equal to or above legal loads	(400) DATE OF RATING:	06	2017

(65) METHOD USED TO DETERMINE INVENTORY RATING:	3	Load and resistance factor rating (LRFR)
(63) METHOD USED TO DETERMINE OPERATING RATING:	3	Load and Resistance Factor Rating (LRFR)

	INVENTORY RATING	OPERATING RATING
HL-93 VEHICLE	(402)080	(401)102
H-15 VEHICLE	(404)170	(403)240
T4 REDUCED LIFT AXLE VEHICLE	(408)275	(407)435
HS VEHICLE	(410)295	(428)450
3S2 VEHICLE	(412)280	(411)540
150K VEHICLE	(414)580	(413)840
90K PERMIT COMBINATION VEHICLE	(416)370	(415)585
90K MOBILE CRANE VEHICLE	(418)335	(417)495
90K CARGO VEHICLE	(420)365	(419)510
80K CARGO VEHICLE	(422)345	(421)540
120K VEHICLE	(424)460	(423)675
108K MOBILE CRANE VEHICLE	(426)360	(425)520
120K MOBILE CRANE VEHICLE	(428)390	(427)580

(225) SPEED LIMIT ON STRUCTURE:	55	
(226) MIN VERT CLEARANCE OVER ROADWAY POSTED:	X	Posting signs not required
(227) MIN VERT UNDERCLEARANCE POSTED:	Y	Yes, all signs in place

LOAD RATER	
LOAD RATING PROGRAM	
RATING CONDITION (AS-BUILT OR AS INSPECTED)	

CONDITION INSPECTION

	INSPECTION MONTH	(91) FREQUENCY	(90) INSPECTION DATE	(290) INSPECTION REPORT COMPLETION DATE
ROUTINE INSPECTION	5	24		

CRITICAL FEATURE INSPECTIONS	(291) INSPECTION MONTH	(92) FREQUENCY	(93) CRITICAL FEATURE INSPECTION DATE
(A) FRACTURE CRITICAL MEMBERS	06	Y24	05/31/2023
(B) UNDERWATER INSPECTION	02	Y48	03/29/2021
(C) SPECIAL INSPECTION		N	
(D) HANDS-ON RAILROAD		N	
(E) CONFINED SPACE		N	
(F) ULTRASONIC TESTING (UT) PIN	02	Y96	03/06/2023
(G) ULTRASONIC TESTING (UT) ANCHOR		N	
(H) POST TENSIONING BAR		N	
(I) CATHODIC PROTECTION		N	11/13/2013
(J) CONSULTANT	11	N	
(K) MOVABLE BRIDGE		N	
(L) SUSPENSION BRIDGE		N	
(M) CABLE		N	
(N) MONITOR		N	
(P) FLOOD			
(Q) DAMAGES			
(R) INQUIRES			

(58) DECK: 6 Satisfactory condition

(59) SUPERSTUCTURE: 6 Satisfactory condition

(60) SUBSTRUCTURE: 6 Satisfactory condition

(61) CHANNEL: 7 Bank protection in need of minor repairs

(62) CULVERT: N Not applicable

(310) INSPECTION DATA UPDATE DATE:

(311 a) INSPECTION TEAM - CONSULTANT INSPECTION: Y

(311 b) INSPECTION TEAM - TEAM/CONSULTANT: WBCM

(312) LEAD INSPECTOR: John Paul Devereaux, PE

(313) BRIDGE INSPECTOR: Nicholas R. Ward, PE

(314) HOURS TO INSPECT: 900

(316) DECK PLANKING %: 00

(315) DECK PUNCTURES %: 00

(317) DECK PATCHING %: 05

(318) BLOCKING: 00

(319) POWER WASHING: N

(320) IDENTIFICATION NO.: N

(321) INVENTORY DIRECTION: NORTH

(323) PERMIT: Y

(324) NIGHT WORK: N

(325) WEEKEND WORK: N

(322) LOOKING TOWARD: DUNDALK

(326) MAINTENANCE OF TRAFFIC STANDARDS:

(327) MOT COMMENTS:

(328) LOCATION OF MIN. VERT. UNDERCLEARANCE: Span 35, Underside of Girder 7

(329A) CRITICAL FINDINGS: N

(329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: X Posting signs not required

(340) INSPECTION EQUIPMENT:

B	Boat			T	Bucket Truck
D	Diver	S	Snooper		

(333) MHOI:

(334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION: Y

(336) ADVANCED NOTIFICATION COMMENTS:

APPRAISAL

FORM 8 OF 11

(67) STRUCTURAL EVALUATION:	5		(68) DECK GEOMETRY:	4
(69) UNDERCLEARANCE:	N		(72) APPROACH ALIGNMENT:	8
(71) WATERWAY ADEQUACY:	9			
(36) TRAFFIC SAFETY FEATURES — RAILINGS:	1	Meets Standards		
TRANSTIONS:	1	Meets Standards		
APPROACH BARRIER:	1	Meets Standards		
APPROACH BARRIER ENDS:	1	Meets Standards		
(113) SCOUR EVALUATION:	8L	Bridge foundations determined to be stable for the assessed or calculated scour condition.		
(DT) DEDUCT CODE:				
(STAT) STATUS:				

NAVIGATION

FORM 9 OF 11

(38) NAVIGATION CONTROL:	1	(39) NAV VERT CLEARANCE:	185
(40) NAV HORIZONTAL CLEARANCE:	1100		
(111) PIER/ABUTMENT PROTECTION:	2		
(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:			
(247) DESIGN YEAR STORM:	100	(248) RUN-OFF Q:	000000
(249) DRAINAGE AREA:	000000	(250) STRUCTURE IN TIDAL AREA:	1
(251) HIGH WATER ELEVATION:	0000		
(252) YEAR HIGH WATER ELEVATION-LATEST:			

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 11

(201) CONTRACT NUMBERS:	OT12			
(203) SHA SPEC-YEAR:	1968000000000000			
(204) AASHTO SPEC-YEAR:	1969000000000000			

(75) TYPE OF WORK:

(94) BRIDGE IMPROVE COST:

(96) TOTAL PROJECT COST:

(76) LENGTH OF IMPROVEMENT:

(95) ROADWAY IMPROVE COST:

(97) YEAR OF IMPROVEMENT:

MISCELLANEOUS

FORM 11 OF 11

(244) SIGNS ON STRUCTURE: Y Yes

(245) BRIDGE ROADWAY LIGHTING: Y Yes

(246) ROADWAY LIGHTING: Y Yes

(260) UTILITIES - ON:		(261) UTILITIES - UNDER:	
E	Electric	0	None
X	Others	0	None
0	None	0	None
0	None	0	None
0	None	0	None

REMARKS: