

**STATE OF INDIANA'S MINIMUM
ARCHITECTURAL DOCUMENTATION
OF BRIDGE OVER SALT FORK CREEK
ON SR 1
BRIDGE #001-15-01683A
DEARBORN COUNTY, INDIANA**

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INDOT DES. NO. 0100343

- Location:** State Route 1, crossing Salt Fork Creek
NW of Lawrenceburg, Indiana
Dearborn County
- Present Owner:** Indiana Department of Transportation
- Date of Construction:** June 1941-May, 1942
- Present Use:** Highway Bridge
- Date of Construction:** 1941. The bridge deck and railing were replaced in 1976. Other replacements at that time included repairs to and replacements of several bent piles.
- Designer:** J.V. Smythe, Engineer of Bridge Design, State Highway Commission of Indiana; Project Engineer, K.K. Dargitz
- Fabricator:** Steinkamp Construction Company of Batesville, Indiana
- Significance:** One of three remaining steel deck truss bridges in state ownership. The SR1/SR 56 bridge over Salt Fork Creek was built as part of a raising and re-grading of 56 after the Ohio River flood of 1937.¹
- Project Information:** The recordation of SR 1 Bridge over Salt Fork Creek in Dearborn County was sponsored by the Indiana Department of Transportation's Office of Environmental Services, as stipulated by the terms of the 2005 Memorandum of Agreement regarding the bridge's replacement. Historical documentation was completed by Susan Branigin, Architectural Historian, INDOT Office of Environmental Services, Cultural Resources Section.

¹ The Lawrenceburg Register, "Ohio River Receding; Crest of 58.6: Stream Rose 41.6 Feet in 2 Weeks Time; Damage Slight," February 9, 1939.

Description: The Salt Fork Creek Bridge is oriented east-to-west and is located on SR 1 in Miller Township, Dearborn County, Indiana, northwest of the county seat of Lawrenceburg. Approximately 3.35 miles north of US 50, the bridge was constructed between the unincorporated Lawrenceburg Township village of Homestead (now a part of Greendale, which is a suburb of Lawrenceburg) and the Miller Township community of Guilford. In the project area, State Road 1 runs east-west, although the road cuts northeast/southwest through the eastern portion of Dearborn County. When the subject bridge was constructed, the road was known as State Road 56. Some time in the 1940s, after the bridge's completion, the state changed the road's name to SR 1.²

The area topography is rural and rolling-to-hilly and numerous valleys are present. The many small-and-mid-size streams that cross the area drain into the nearby Ohio River. Salt Fork Creek flows into Tanners Creek, a larger stream, southeast of the SR 1 bridge. Historically, both Tanners and Salt Fork creeks have filled with backwater during periods of high water and flood on the Ohio River. Sheet No. 3 of the 1941 bridge plans indicates that the Salt Fork Creek drainage area was "approx. 12.5 sq. mi. (8,000 acres) of hilly, sandy, clay soil."³

The 1941 Salt Fork Creek Bridge on SR 56 (now SR 1) was built on the same location as an earlier bridge, a steel Pratt pony truss that had stone abutments. According to the plans for the 1941 bridge, which included a sketch of the first structure, the first bridge weighed approximately two tons and had a plank floor. On the plans, flow-line elevation on Salt Fork Creek was indicated at 206.7, while the low-water (and water level at time of measurement) elevation was 207.2. The maximum headwater elevation was listed as 231.0, which placed the water level up over the bridge deck. The maximum high-water elevation was listed as having occurred in the flood of 1884 which, with a level of 239.8, completely submerged the bridge.⁴ The 1941 bridge seat elevation of the bottom chord is 246.227 feet.⁵

Major work was conducted on the bridge in 1976, including the replacement of the deck and railing, as well as repairs to and replacement of several support piers. The stone abutments from the bridge that preceded the subject structure remain in place on the east and west banks of Salt Fork Creek, directly beneath the current bridge.

The Salt Fork Creek Bridge's main span is a riveted metal Warren deck truss with verticals, each of which measures fifteen feet in length. The entire deck truss of twelve panels measures 180 feet and is flanked by five concrete approach slabs on the western (Guilford) end of the bridge and three on the eastern (Homestead/Greendale) end. Total bridge length is 418 feet, and its width is twenty-six feet. The bridge has a concrete deck and a 1.6-foot wide walkway on each side. A three-bar metal railing runs the length of each side.

The Salt Fork Creek bridge's superstructure is supported by the underground substructure of pile bents with caps located within its approach embankments. The approach spans have fixed and expansion ends, although they do not alternate regularly, as indicated on the bridge plans.⁶ Treated timber piles, steel columns, and steel footings driven to depths appropriate for bearing provide the bents' support. The approach spans are joined to the truss span by expansion joints that are atop bents. The bridge deck is supported by six I-beam stringers.

² "Indiana Highway Ends" website: <http://www.illi-indi.com/IndianaHighwayList.ph>, Accessed October 26, 2006.

³ "Bridge Plans for Spans over 20 Feet on State Road No. 56, Section T," State of Indiana Highway Commission, March 24, 1941, Sheet 3.

⁴ Ibid, 4.

⁵ Ibid.

⁶ Ibid., Sheet 5-E

The truss span rests upon two capped concrete piers located at its east and west ends, respectively. These support piers were driven behind the back edge of the stone abutments of the original bridge in an attempt to prevent further movement of fill, a problem that plagued the bridge's construction process.⁷ Plans indicate that the west pier is fixed while the east pier is in expansion. Two cantilevered I-beams extend from the piers to the abutments at both ends and are connected to each other by means of two horizontal beams and web/diaphragm (lateral) cross-bracing. On the underside of the truss span, the support system supplied by diaphragm (lateral) cross-bracing, diagonal members, and beams is attached to the truss' lower chord by riveted gussets. Gusset plates are riveted at each panel point of the truss span. The bridge rails correspond with the location of the floor beams, and are riveted to the cross-bracing system.

Dearborn County: Indiana Governor William Henry Harrison organized Dearborn County in 1803, and named the county after Thomas Jefferson's Secretary of War, General Henry Dearborn. The county is Indiana's third-oldest, and the town of Lawrenceburg was made county seat at the time of the 1803 organization. Between 1836 and 1844, the county seat was changed to and located within the town of Wilmington. Lawrenceburg re-assumed the title in 1844. Dearborn County's present boundaries were established in 1845, due to the fact that all or part of six surrounding counties were taken from Dearborn as it was laid out in 1803. The county's fourteen townships were organized in the 1830s-1840s.⁸

The Ohio River flows for more than fifty miles along Dearborn County's eastern and southern borders, and the Whitewater River runs through the county's northeastern portion to its confluence with the Great Miami River in Ohio. Dearborn County is crisscrossed by the many streams and creeks that are part of the Ohio River watershed, and is also the location of many hills and valleys cut by the streams. Among the larger of the tributary streams is Tanners Creek, which empties into the Ohio south of Lawrenceburg. The subject bridge crosses Salt Fork Creek northwest of Lawrenceburg, just above the place where Salt Fork flows into Tanners Creek.

During the period 1820-1870, many Europeans settled in Dearborn County, and the names of many towns reflect that heritage. German Catholics founded the communities of St. Leon and New Alsace, while English and Irish settlers located in places they called Dover, Guilford, and Yorkville.⁹ The subject bridge is located in Miller Township, with the nearest community being the small village of Guilford, which was founded in a valley at the forks of Tanners Creek.

Miller Township: The township was organized in March, 1834, created from a portion of Lawrenceburg Township. Logan and Harrison townships are to the north of Miller Township, while Kelso, York and Manchester townships are on its western boundary. Lawrenceburg Township forms the southern boundary, and the State of Ohio is to the east of Miller Township.

Guilford: Miller Township's main settlement was the small town of Guilford, which was laid out north of Lawrenceburg at the forks of Tanners Creek in 1850 by Charles K. Allen and Josiah Campbell. Additions to the town were made soon after its founding, and again in 1870. The town was a freight stop on the Big Four Railroad for farm goods like hay, corn, and wheat. When the Big Four line was purchased by New York Central Railroad (NYCRR) in the 1920s, NYCRR constructed two large concrete railroad bridges on the north and west sides of Guilford.¹⁰

⁷ The Lawrenceburg Register, "Design Changed for Salt Fork Bridge: Will Delay the Completion Approximately Six Months: 176 Feet Added to Length," October 23, 1941.

⁸ Dearborn County Interim Report: Historic Sites and Structures Inventory, (Indianapolis: Historic Landmarks Foundation of Indiana, 1983), xv.

⁹ *Ibid.*, xvi.

¹⁰ *Ibid.*, 28.

Names of prominent Guilford/Tanners Creek-area citizens of English origin include Jacob Blasdel and John Jackson. Blasdel settled southeast of Tanners Creek in an area that came to be known locally as “Cambridge,” and successfully operated saw and grist mills.¹¹ His home, identified as number 029-283-25044 in the Dearborn County Interim Report, (1983) is near the subject bridge.

Settler John Jackson was the father of Enoch Jackson, who represented Dearborn County in the state legislature for a time in the mid-nineteenth century. According to the 1885 history of Dearborn County, Enoch Jackson was the basis for “the hero of the local election” in a book written by author Edward Eggleston. The book, entitled Roxy, was centered in the Jackson family’s Miller Township neighborhood, which was known locally as “Georgetown.”¹²

Greendale: North of Lawrenceburg, Greendale was founded in Lawrenceburg Township by Stephen Ludlow in 1852; however, the town plat was not recorded until 1883. Subdivisions were made to the town in the 1860s and 1870s. Greendale was the location of the following major companies in the early twentieth century: Cook Well Company, W.P. Squibb Distilling Company, Greendale Distilling Company and the James Walsh Distilling Company. Greendale was a prosperous community and was the chosen location for the private residences of many prominent Lawrenceburg-area businessmen and their families.¹³

History of the Bridge: As previously mentioned, the 1941 bridge over Salt Fork Creek was built as part of a systematic improvement program for local roads, and was a component of the overall State Highway Commission plan for the Lawrenceburg area of Dearborn County¹⁴. The Ohio River flood of January/February, 1937 affected many communities in southern and southeastern Indiana and inundated the town of Lawrenceburg. The flood caused significant loss of life as well as high property losses. For some residents, escape was not possible because routes that might have taken to flee the quickly rising waters of the Ohio River were themselves already closed by high backwater on the feeder streams.

The Lawrenceburg Register reported on May 11, 1939 that the Indiana Highway Commission (ISHC) would accept bids for the resurfacing of 180 miles of state highway. Roads 50 near Aurora and 56 near Greendale in Dearborn County were among the sections to receive treatment.¹⁵ The inclusion of “seven miles of roadway on 56 from Greendale north” in the list of projects for bid would be a necessary prerequisite to the 1941 construction of the SR 1 bridge over Salt Fork Creek.

As previously mentioned, Salt Fork Creek, which flows into the larger Tanners Creek southeast of the subject bridge, is part of the Ohio River tributary system. High water and flooding at times backed up these feeder creeks, occasionally causing them to cover roadways, inundate bridges and to render travel routes impassable. Flooding was a seasonal and expected part of life in the area, and its impacts on local travel were a regular concern for residents. But it was the devastating flood of 1937 and its effects that led to preemptive transportation improvements and the implementation of flood-control measures.

Called the “Superflood” of January-February, 1937 in a U.S. Army Corps of Engineers report of the history of Ohio River Valley flood control measures,¹⁶ the flood was also termed the “greatest flood of

¹¹ History of Dearborn and Ohio Counties, Indiana, From Their Earliest Settlement, No author, Chicago: F. E. Weakley & Co., Publishers, 1885), 464-465/

¹² Ibid., 459-465.

¹³ Dearborn County Interim Report: Historic Sites and Structures Inventory, 54.

¹⁴ The Lawrenceburg Register, “Resurfacing 180 Miles of Indiana State Highways: Sections on Road 50 and Road 56 are Included in the Letting Set for May 23,” May 11, 1939.

¹⁵ Ibid.

¹⁶ “Origins of Ohio River Flood Control,” U.S. Army Corps of Engineers article, 203. Accessed October 20, 2006 at <http://www.usace.army.mil/publications/misc/un22/c-12.pdf>.

record on the Lower Ohio,” and its effects upon Lawrenceburg and environs were termed “prodigious.”¹⁷ Due to the waters’ sudden rise, many residents were trapped without escape routes, as most roads were already closed due to the high water. When the Ohio flooded again in February of 1939, the local paper stated in an article that “the need for an improved and higher Road 56 to the north from Lawrenceburg again was brought forcibly to the minds of our people.”¹⁸

Multiple transportation improvements were undertaken in Lawrenceburg and Dearborn County in the late 1930s and early 1940s. Most had been in the planning stages prior to the 1937 flood, as part of the Indiana State Highway Commission’s comprehensive plan to improve the state’s road system. The plan’s development was also related to Indiana’s deteriorated road system and the dangerous use of those roads by increased traffic volumes composed of ever-heavier vehicles. The ISHC constructed stages of “new” highway 46 between Lawrenceburg and Batesville and was developing another route for Highway 50 in the area.¹⁹ Another project contemporaneous to the 1941 Salt Fork Creek Bridge was the 1939 construction of a new bridge over Tanners Creek on Lawrenceburg’s west side. It was intended to

“...replace the old structure no longer adequate to carry the heavy traffic. The new steel and concrete bridge will be much higher in elevation and will give an outlet to Ludlow Hill until the river reaches a very high stage...”²⁰

As if to underscore the need for a better bridge in this particular location, work on the Tanners Creek Bridge project had to be postponed several times due to heavy rain, high backwater on the creek, landslides, and related concrete movement.²¹

The local paper reported in January of 1941 that “road contracts totaled \$3,421,299.75 for December,” and added that the twenty-nine awarded projects were “part of the construction and improvement work included in the 1941 program for modernization of the state highway system.”²² The Salt Fork Creek Bridge on SR 1, Miller Township, Dearborn County, was one of those contracts, and the local paper reported on March 27, 1941, that bids would be accepted for the project on April 15, 1941:

...The structure will be a dock [sic] truss consisting of three spans with total length of 240 feet, a 26-foot roadway and pedestrian walls. The minimum wage scale will be 75c, 60c, and 50c. A temporary bridge was built over the creek last fall and is all ready for use. It is north of the present bridge, which has carried traffic for many years, but was usually under water during floods in the Ohio river [sic], thus closing the road to traffic. In the 1937 flood the bridge was completely submerged. The new structure will be higher and conform to the new grade on 56. Much of the dirt-moving has been done and work will be resumed when weather conditions are favorable.

¹⁷ Ibid., 203.

¹⁸ The Lawrenceburg Register, “Ohio Receding: Crest of 59.6; Stream Rose 41.6 Feet in 2 Weeks’ Time, Damage Slight,” February 9, 1939.

¹⁹ The Lawrenceburg Register, “Dedication of Highway 46 Saturday: Another Link in Indiana’s Fine System Completed: Crosses Dearborn County,” December 9, 1939.

²⁰ The Lawrenceburg Register, “Ohio Receding: Crest of 59.6; Stream Rose 41.6 Feet in 2 Week’ Time, Damage Slight,” February 9, 1939. .

²¹ The Lawrenceburg Register, “Slide on New Road Moves Concrete Pavement,” March 9, 1939.

²² The Lawrenceburg Register, “Road Contracts Total \$3, 421,299.75 for December,” January 30, 1941.

The O'Conner Construction Company, which is doing the grading and culvert work has been on a large contract at the Proving Ground in Jefferson and Ripley counties since the early part of the winter.²³

Steinkamp Construction Company of Batesville was the low-bidder in April, 1941 on the Salt Fork Bridge project, with a bid of \$47,288.40.²⁴ Prior to Steinkamp's commencement of the bridge project, the J.C. Connor [sic] Construction Company worked to finish the re-grading and surfacing of Road 56. The company "took a furlough" from its work at the Jefferson Proving Ground to move its equipment to the 56 project.²⁵ Public input at meetings of the Indiana State Highway Commission continued to emphasize the importance of the "continued improvement of state highway 56 from Homestead to Guilford..."²⁶

While work on the Salt Fork Creek Bridge project began in June of 1941, problems that stopped construction were encountered almost immediately. The difficulties necessitated major site improvements as well as significant design changes, all of which put the project six months behind schedule. The requisite changes also explain the retention below the new bridge of the prior bridge's stone abutments.

An October 23, 1941 newspaper article contains specifics about the site and design problems encountered by project engineers, and describes the resultant project changes. The information on the particular site/soil issues might prove relevant in the construction of a future bridge on this site:

...The change was necessary due to the condition of the subsoil in and around the creek bed. After the high fill had been made on each side of the buttments of the old bridge, it was discovered that underneath was a muck, which caused the fill to give way. Especially was this true on the west or Guilford side of the creek. The muck was encountered when the excavation was made for the first concrete pier. With this discovery the project was put under observation and the engineers watched for developments. A large crack across the fill showed that the dirt was moving.

The next step was to design a much longer structure and change the course of Salt Fork Creek. Before the excavation in the creek bed started the temporary wooden bridge was moved from north of the bridge to the south.

While the course of the creek was undergoing changes, another excavation was in progress. A large amount of the fill that was put in on the west side of the creek was again moved to the side of the fill facing Salt Fork Creek, where the crack had occurred. This was done to bolster up the fill and keep it from slipping further toward the creek. The fill slope also changed to a 4 to 1.

The bridge as originally designed was to be 240 feet long but when completed under new plans it will be more than 400 feet in length. The structure proper, or the steel part will be 240 feet and will be steel beams and truss combined.

Three spans were added on the east or Lawrenceburg side, making a total of 66 feet. On the west side, 5 spans or 110 feet was added. The change in design was made last August. Work on the contract was started in June.

²³ The Lawrenceburg Register, "To Receive Bids on Salt Fork Bridge," March 27, 1941.

²⁴ The Lawrenceburg Register, "Batesville Firm Low-Bidder on New Bridge," April 17, 1941.

²⁵ The Lawrenceburg Register, "Third and Walnut Corner to Open Soon," May 1, 1941.

²⁶ The Lawrenceburg Register, "Work Starting on Levee Contract; Autoclub Behind Program," October 9, 1941.

On each end of the new bridge proper the extension will have a concrete slab top. The new structure will be much higher than the old bridge, which was often covered with backwater from the Ohio river.[sic] The buttments of the old bridge will be left standing, as they may help to prevent additional slides and also will help prevent washing away of the bank.

Quite a bit of concrete work has been completed and if weather is favorable the contractor expects to do the rest of it this fall and early winter. If this can be accomplished, the steel work can go on through the winter months. Completion date was set for this month but with the additional work it will likely be about next May, much depending on the weather, the engineer in charge said. The job was shut down for about two months, while the change in design was being made and the fill under observation.

...The foreman on the job is C. H. Warrick of New Albany. The dirt-moving job was sub-let to Ralph Landry of Muncie. He is living in a trailer at the Albert Fox home on Guilford road. The engineer in charge of the project is K. K. Dargitz, who is living at Wrights Corner. Mr. Dargitz has been on the job since it started.

The steel for the job is expected to arrive soon. It was ordered last April. When this bridge is completed and road 56 from Homestead to Guilford rebuilt, Lawrenceburg will have an outlet in time of high water, which has been badly needed for years. This situation was brought closely to the attention of this community in the flood of 1937. Had the Guilford road been rebuilt and the low places raised at that time, Lawrenceburg would not have been isolated. A good modern highway from Homestead to new state highway 46 near St. Leon will give this community an outlet to the east and west at all times.²⁷

The SR 1 bridge over Salt Fork Creek was completed and opened to traffic some time in early May of 1942, although the Lawrenceburg newspaper commented that, at the time, some work remained to be done on the project. The paper also observed that the bridge was “one of the longest bridges in the state over a small stream.”²⁸

When the Ohio River flooded again in January, 1943, The Lawrenceburg Register reported that the “rebuilding of Road 56...since the 1937 flood has given Lawrenceburg a good high-water outlet. This road is well above the flood stage. The new Salt Fork Bridge is also high, while the old bridge was always one of the first spots to be inundated in flood time...”²⁹

Primary Contractor: Steinkamp Construction Company of Batesville, Indiana began as the Batesville Lumber Company, which was a branch of Service Coal and Concrete Products, Co., of Batesville. In 1922, Service Coal and Concrete Products, Company warehouses and loading station were located at East Pearl Street and Western Avenue in Batesville.³⁰

Engineering Technology: The rise and proliferation of metal bridges in Indiana, according to one leading authority on the subject, was tied to that of the national rail road companies. Indiana’s rail system had begun in the mid-nineteenth century as a series of small lines across the state owned by private companies and groups of individuals. The beginnings of the railroad in the state occurred at the same time as Indiana’s mid-century craze for canal and road-building. Soon, however, the

²⁷ The Lawrenceburg Register, “Design Changed for Salt Fork Bridge,” October 23, 1941.

²⁸ The Lawrenceburg Register, “Merchants Favor Widening Walnut Street,” May 14, 1942.

²⁹ The Lawrenceburg Register, “Ohio Reaches Crest; Now Receding,” January 7, 1943.

³⁰ Batesville Memorial Public Library website, <http://www.bmpl.cnz.com/bpix.html>. Accessed October 30, 2006.

railroads, with their speed and the increasing numbers of connected routes that were owned by larger and larger companies, dominated the other modes of travel.

Innovations brought about by the large railroad companies were not confined to improvements in the number of available rail routes, decreased travel times or to construction innovations like railroad depots, roundhouses and repair shops. Changes also came in the conveyances that carried the trains themselves.

Timber truss bridges could not withstand the increasing weight of the train cars, and they were also vulnerable to fires started by the errant sparks that flew from steam engines. These factors necessitated new, stronger construction in the bridges that would carry the rail lines, which in turn led to the proliferation of metal bridge construction in the state. Around the end of the 1880s, metal became the standard construction material for bridges in Indiana.³¹

Some railroad companies, such as the Baltimore and Pennsylvania, designed their own patented bridge designs that were implemented on their lines, while other patented truss designs carried the names of their engineer-inventors. Examples of these truss types are Pratt, Warren and Whipple. Engineering science became the rule in bridge design. Trusses were first connected by metal pins and later by rivets.³²

The American industrial age coincided and had a symbiotic relationship with the growth of the railroad systems across the nation. Increased need for the production of iron and steel and the introduction of standardized bridge designs and parts gave rise to production of bridge members at foundries and roller mills. They could be shipped to the construction site and assembled. Additionally, the widespread production and use of metals such as iron and steel decreased their price and made metal bridges more affordable for the local communities that had them constructed.³³

Warren truss design (without verticals), was first patented in 1848 by Englishmen James Warren and Willoughby Monzani. American Squire Whipple was unaware of the Englishmen's patented design when he created his own Warren truss in 1849. Despite the design's efficiency at carrying loads, the early connection method provided by metal pins did not reduce the Warren truss' vulnerability to forces at diagonal points, due to lack of verticals. Until rivets replaced pins at panel points, Warrens were not used in widespread fashion. The first pinned Warren through truss in Indiana is believed to have been Hendricks #216, constructed in 1886.³⁴

According to one bridge expert, even though Warren deck truss design was underused in Indiana, some designers felt that it was advantageous due to the fact that the "riding surface rests on the top chords," allowing the designers to incorporate more than two trusses and to integrate internal bracing.³⁵ Deck trusses have always been more susceptible to deterioration, though, because all of the structural members come into contact with corrosive road salts.³⁶

³¹ Cooper, James L., Iron Monuments to Posterity, Indiana's Metal Bridges, 1870-1930, (Indianapolis: DePauw University, et. al, 1987), 6.

³² Ibid., 4.

³³ Ibid., 45.

³⁴ Cooper, Iron Monuments to Posterity, 84.

³⁵ Ibid., 88-89

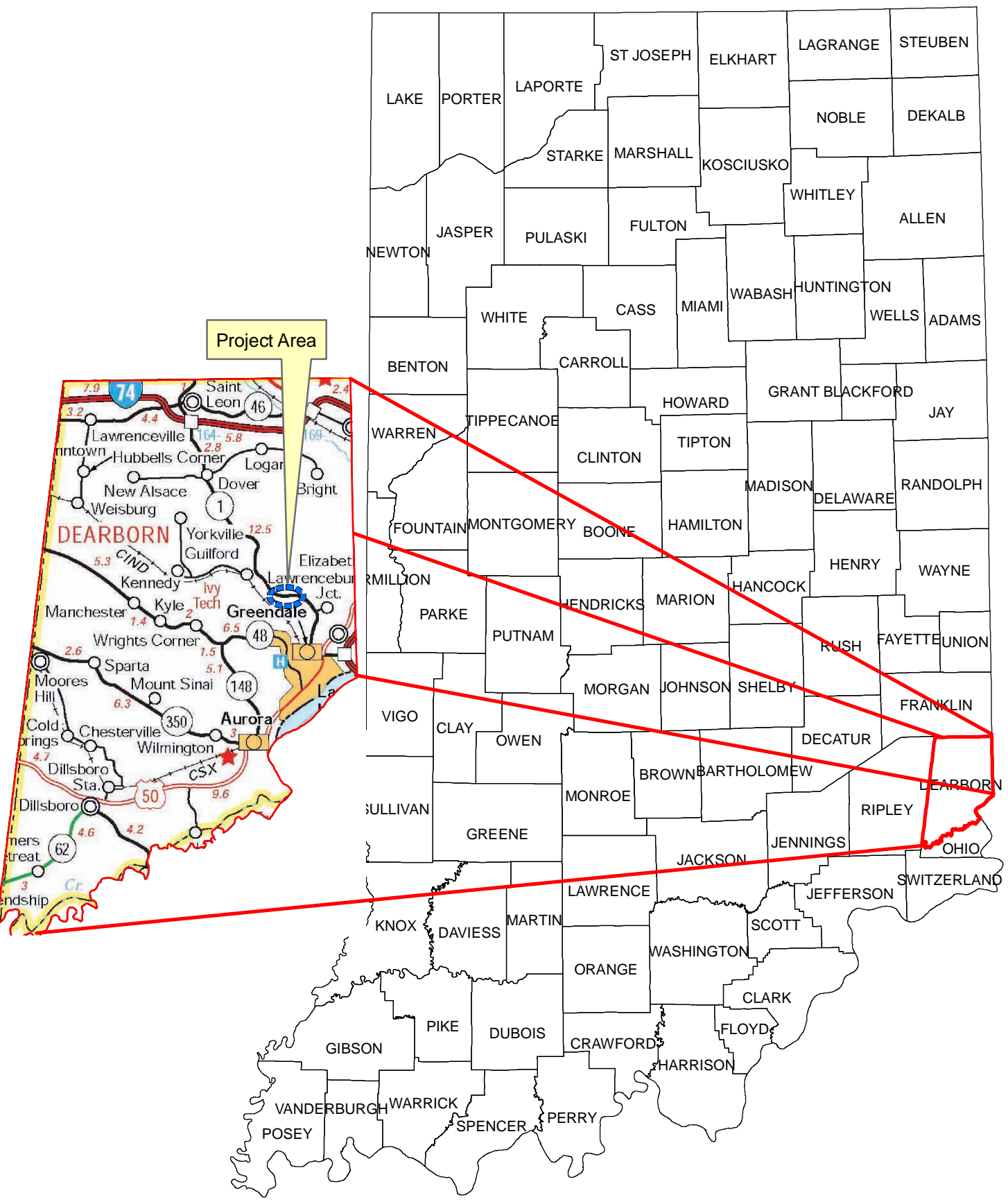
³⁶ INDOT internal document, "Assessment and Alternative Analysis—S.R. 1 over Salt Fork Creek," no date.

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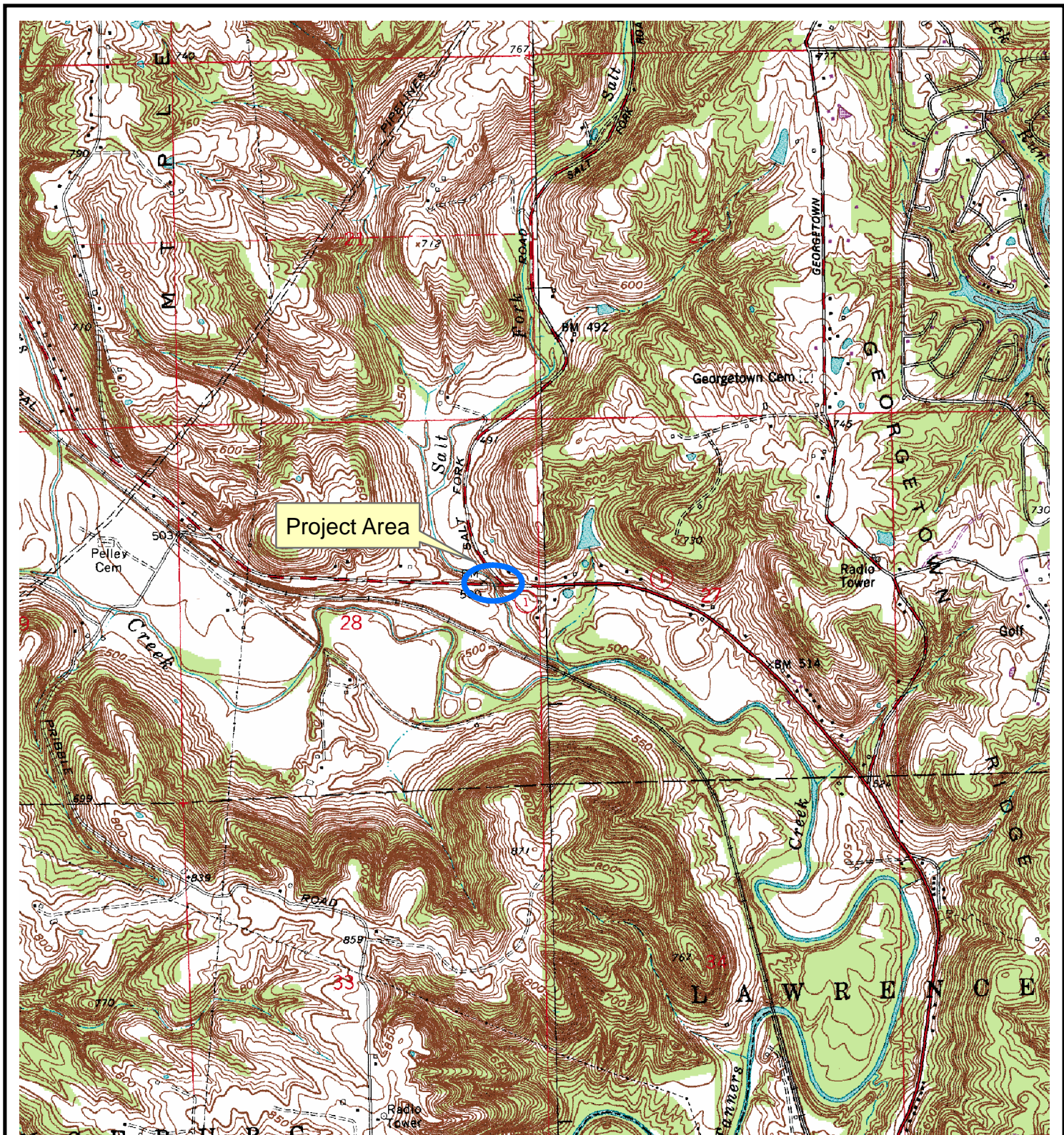
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General Location
Des. No. 0100343
SR 1 Bridge No. 1-15-01683A over Salt Fork Creek
Dearborn County, Indiana



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Dearborn County

Portion of the USGS 7.5' series Guilford, Indiana
topographic quadrangle showing the location of the project area

0 700 1,400 2,800 4,200 5,600
Feet

DIGITAL PHOTO LOG

Bridge 001-15-01683A
 SR 1 over Salt Fork Creek
 Miller Township, Dearborn County, Indiana
 Des No. 0100343

All photographs were taken by Susan Branigin in December, 2006. A copy of the CD of photographs in original digital format is in the possession of the Indiana Department of Transportation (INDOT), Office of Environmental Services, 100 N. Senate Avenue, Rm. 642, Indianapolis, IN 46204. The digital file names for each photo are included below.

Photo #	Image File #	Description
1	IN_DearbCo_Bridge 001-15-01683A1.tif	Looking east/northeast at bridge
2	IN_DearbCo_Bridge 001-15-01683A2.tif	Looking east at west end of bridge
3	IN_DearbCo_Bridge 001-15-01683A3.tif	Looking southeast at north side
4	IN_DearbCo_Bridge 001-15-01683A4.tif	Looking north/northeast from west bank at deck truss and stone abutments from previous bridge
5	IN_DearbCo_Bridge 001-15-01683A5.tif	Looking north/northeast from west bank at west stone abutment
6	IN_DearbCo_Bridge 001-15-01683A6.tif	Looking northeast from west bank at east stone abutments
7	IN_DearbCo_Bridge 001-15-01683A7.tif	Looking west/southeast at north side
8	IN_DearbCo_Bridge 001-15-01683A8.tif	USGS marker on northeast side
9	IN_DearbCo_Bridge 001-15-01683A9.tif	Looking west from east bank at truss underside/webbing
10	IN_DearbCo_Bridge 001-15-01683A10.tif	Looking northwest at south side of bridge and at west-side stone abutments
11	IN_DearbCo_Bridge 001-15-01683A11.tif	Looking northwest from east bank at south elevation
12	IN_DearbCo_Bridge 001-15-01683A12.tif	Looking west/northwest at deck



IN_DearbCo_Bridge 001-15-01683A1.tif



IN_DearbCo_Bridge 001-15-01683A2.tif



IN_DearbCo_Bridge 001-15-01683A3.tif



IN_DearbCo_Bridge 001-15-01683A4.tif



IN_DearbCo_Bridge 001-15-01683A5.tif



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IN_DearbCo_Bridge 001-15-01683A7.tif



IN_DearbCo_Bridge 001-15-01683A8.tif



IN_DearbCo_Bridge 001-15-01683A9.tif



IN_DearbCo_Bridge 001-15-01683A10.tif



IN_DearbCo_Bridge 001-15-01683A11.tif



IN_DearbCo_Bridge 001-15-01683A12.tif

SHEET NUMBER	SECTION	STRUCTURE					DRAWING NUMBER	SUBJECT	BRIDGE CONTRACT NO.
		NO.	TYPE	SPAN	OVER	STATION			
1							INDEX & TITLE SHEET		
2						4	ROAD PLAN & PROFILE RD. PROJ. 290-C		
3	T	1683	R.C. SLAB & STR. STEEL	50'			LAYOUT		
4							GENERAL PLAN		
5							BENTS NO. 1, 2 & 12 DETAILS		
6							PIERS NO. 1 & 2 DETAILS		
7							STRESS SHEET		
8							TIE-UP SHEET		
9							ERECTION PLAN		
10							TRUSS DETAILS		
11									
12							FLOOR BEAMS & STRINGERS		
13							STRUTS & LATERALS		
14							END SPAN DETAILS		
15							GUARD RAILS & ANCHORS		
16							SHOES & BRACKETS		
17							BILL OF MATERIAL STR. STEEL		
18							FLOOR PLAN		
19							FLOOR SECTIONS		
20									
21							FL. DRAINS, BEND. DIAGS. & BILL OF MAT'L.S.		
22							SCREEDS		
23							THICKENED P.V.M.T. DET'L.S. (REV. 4-15-41)		
24							THICK. P.V.M.T. DET'L.S. & LOC. TOE SL. (REV. 6-18-41)		
25							THICK. P.V.M.T. DET'L.S. & LOC. TOE SL. (REV. 6-18-41)		
26									
27							CROSS SECTIONS C-II-FS (NOV. 14 1940)		
28									
29									
30							MISC. STDS. SHEET J (REV. 2-27-41)		
31							FLEX. STEEL PLATE GD. RAIL (JAN. 1938)		
32							DETOUR SIGNS, SHEET A (REV. 12-10-40)		
33							DETOUR SIGNS, SHEET B (REV. 12-10-40)		
34							LAYOUT OF REVISED EARTHWORK		
4A							GENERAL PLAN		
4B							GENERAL PLAN		
5A							BENTS NO. 1, 2 & 12 DETAILS		
5B							" " " 3 & 11 "		
5C							" " " 4, 5 & 10 "		
5D							" " " 6 & 9 "		
5E							R.C. SLAB DETAILS		
5F							BILL OF MATERIALS		
20A							FLOOR SECTIONS		
22A							CONCRETE HANDRAIL DET'L.S. (REV. 4-15-41)		
22B							MISCELLANEOUS DET'L.S. (APRIL 15, 1941)		
26B							SHEET SUMMARY		
27A							MISC. APPROACH DET'L.S. (REV. 9-4-41)		

STATE OF INDIANA
 STATE HIGHWAY COMMISSION

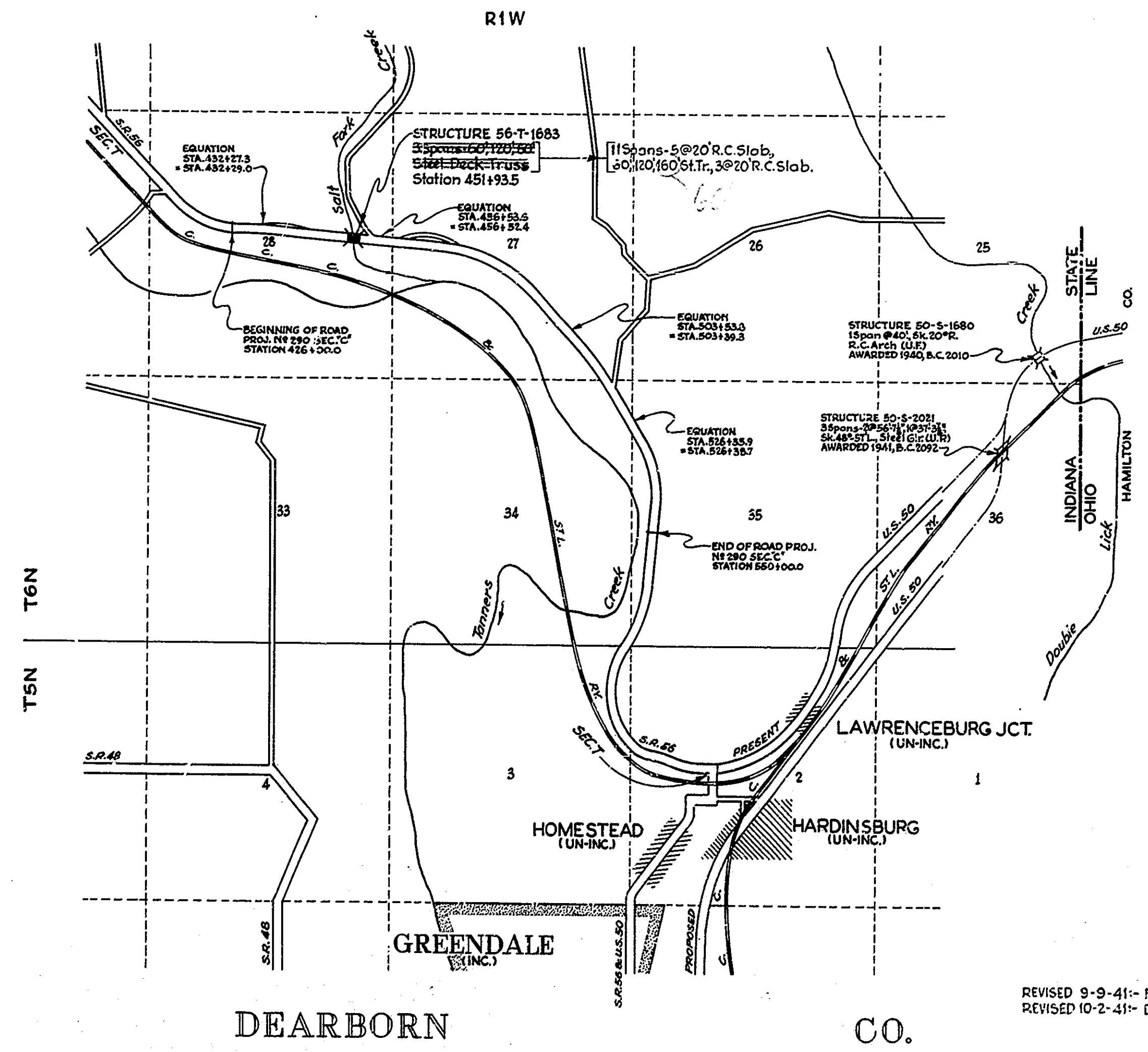
BRIDGE PLANS

FOR SPANS OVER 20 FEET

ON

STATE ROAD NO. 56 SECTION T

LAWRENCEBURG- CEDAR GROVE ROAD
 DESCRIPTION OF ROAD PROJ. N^o. 290 SEC. C (1941):--
 BEGINNING AT A POINT ON S.R. N^o. 56 APPROXIMATELY 3277.5 FEET WEST OF THE EAST LINE OF SECTION 28-T6N-R1W, AND RUNNING IN AN EASTERLY, AND SOUTHEASTERLY DIRECTION TO A POINT ON S.R. N^o. 56 APPROXIMATELY 2312.0 FEET SOUTHEAST OF THE WEST LINE OF SECTION 35-T6N-R1W, IN DEARBORN CO.



REVISED 9-9-41- FOR ADDITIONAL SPANS
 REVISED 10-2-41- DETAILS FOR ADDITIONAL SPANS

APPROVED AND ADOPTED 3/24/41
 BY STATE HIGHWAY COMMISSION OF INDIANA

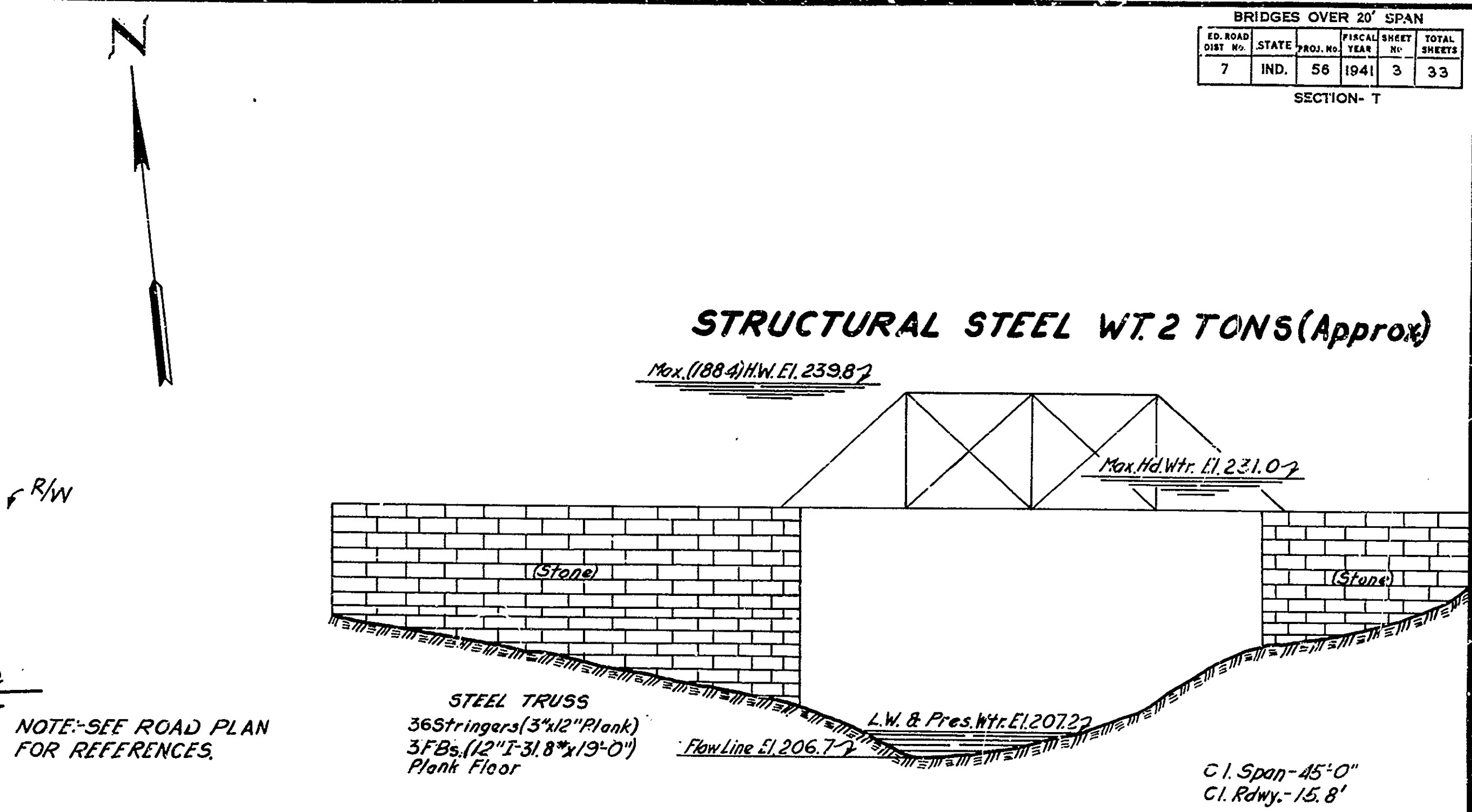
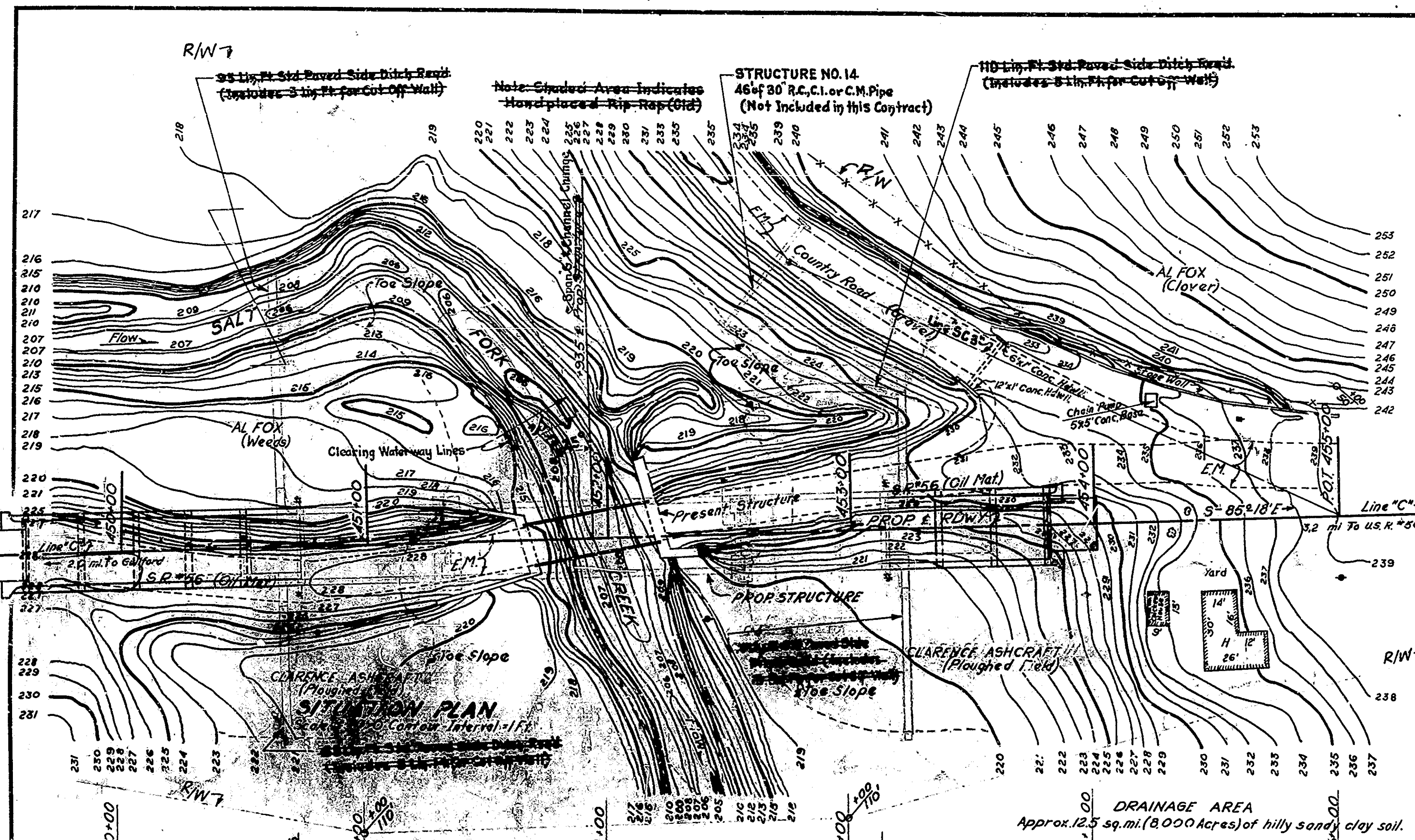
James D. Adams
 CHAIRMAN, STATE HIGHWAY COMMISSION OF INDIANA

APPROVED 3/24/41
Earl B. Lockridge
 CHIEF ENGINEER, STATE HIGHWAY COMMISSION OF INDIANA

STATE HIGHWAY COMMISSION STANDARD
 BRIDGE SPECIFICATIONS DATED NOVEMBER 1939
 TO BE USED WITH THESE PLANS

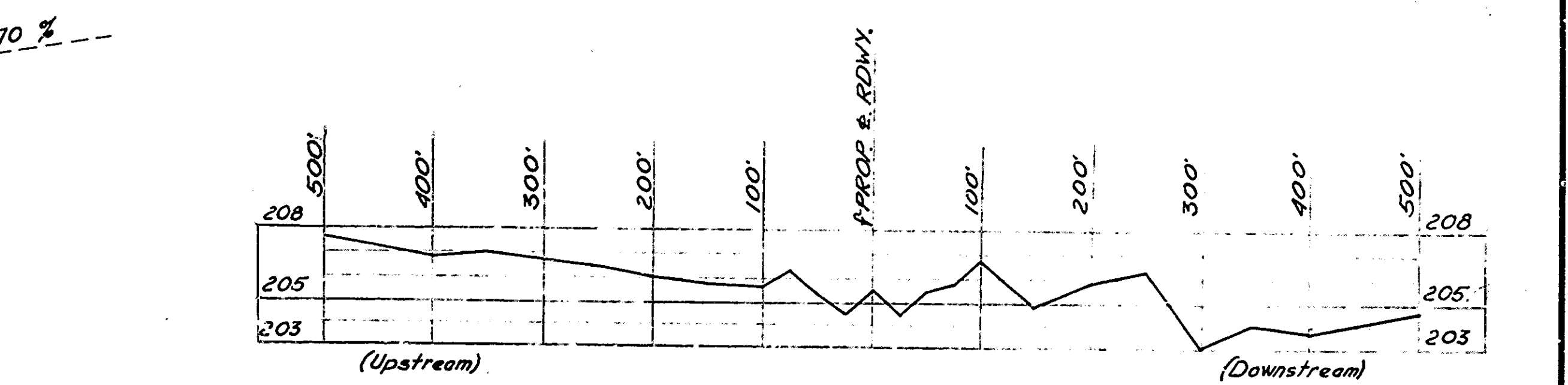
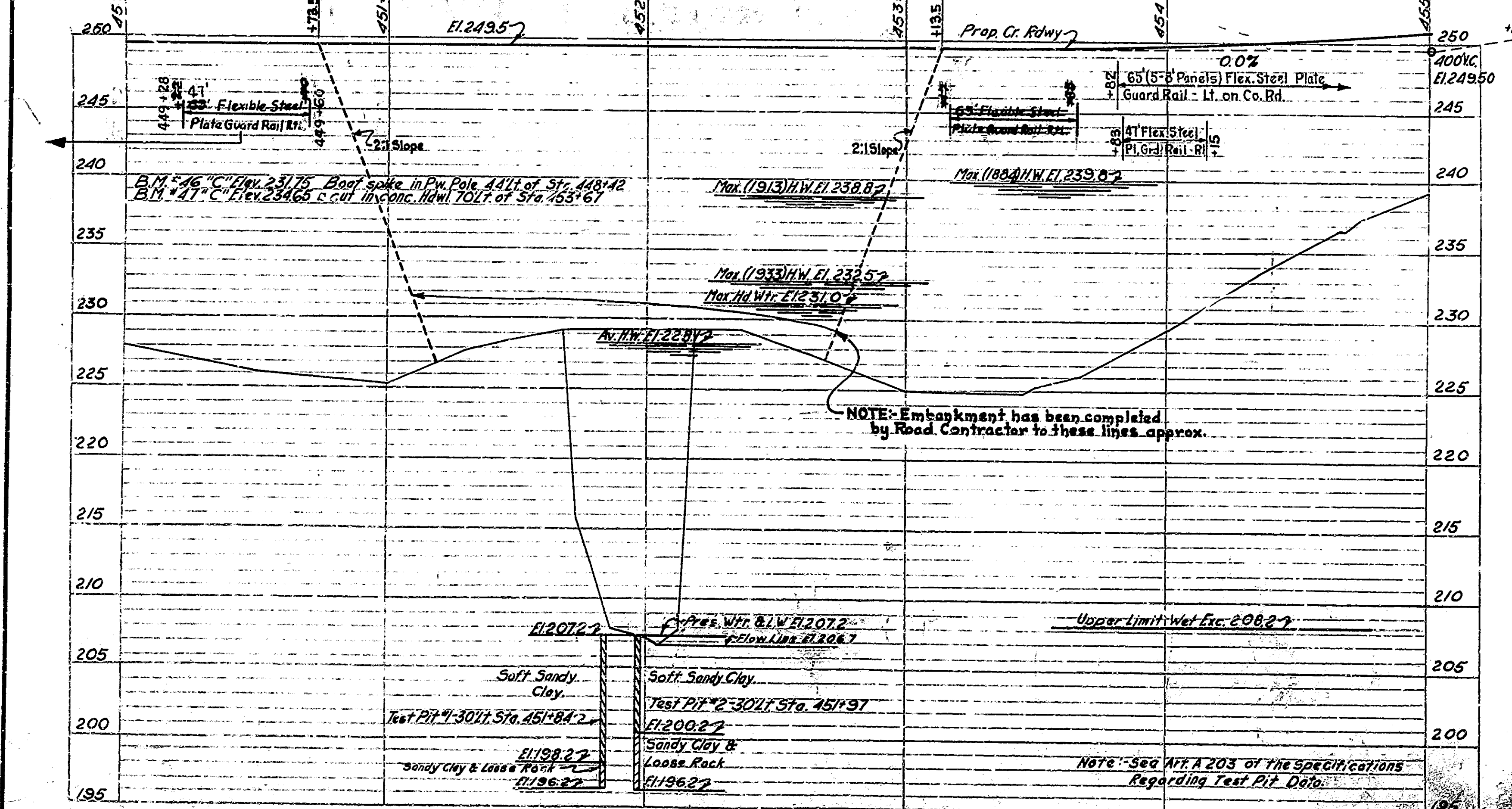
BRIDGES OVER 20' SPAN					
ED. ROAD DIST. NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	56	1941	3	33

SECTION - T



NOTE: Waterway to be cleared to lines shown on this sheet to El. 205.0 and sloped back on West Slopes. Clearing to match Channel Change as constructed by Road Contractor. See Special Drawings.

NOTE: For Channel Change, revised Toe Slopes, Approach Details, and Right-of-Way, see Drwg. S1A "LAYOUT OF REVISED EARTHWORK".



NOTE: Embankment has been completed by Road Contractor to these lines approx.

Note: This is Structure No. 1 on Road Project No. 290, Sec. C. See Sheet No. 4 of Road Plans for Bench Mark, Grade Line, and Reference.

LAYOUT
R.C. SLAB & STEEL TRUSS BRIDGE
 11 SPANS - SEE DRWGS. S2a & S2b 1'-6" SDWKS 28'-0" ROADWAY OVER SALT FORK CREEK ON STATE ROAD - 56-T
STATE HIGHWAY COMMISSION OF INDIANA
DEARBORN COUNTY
 SCALE - AS NOTED MARCH 12, 1941
 RECOMMENDED FOR APPROVAL: [Signature]
 PROJECT - 56 STATION - 451+835
 SECTION - T STRUCTURE NO. 1683
 DRAWING - S1 OF 20 BRIDGE CONTRACT NO. 2146

DESIGNED: [Signature]
 DRAWN: [Signature]
 TRACED: [Signature]

PROFILE ON PROPOSED ROADWAY
 Scale: Hor. 1" = 30'-0" Vert. 1" = 6'-0"

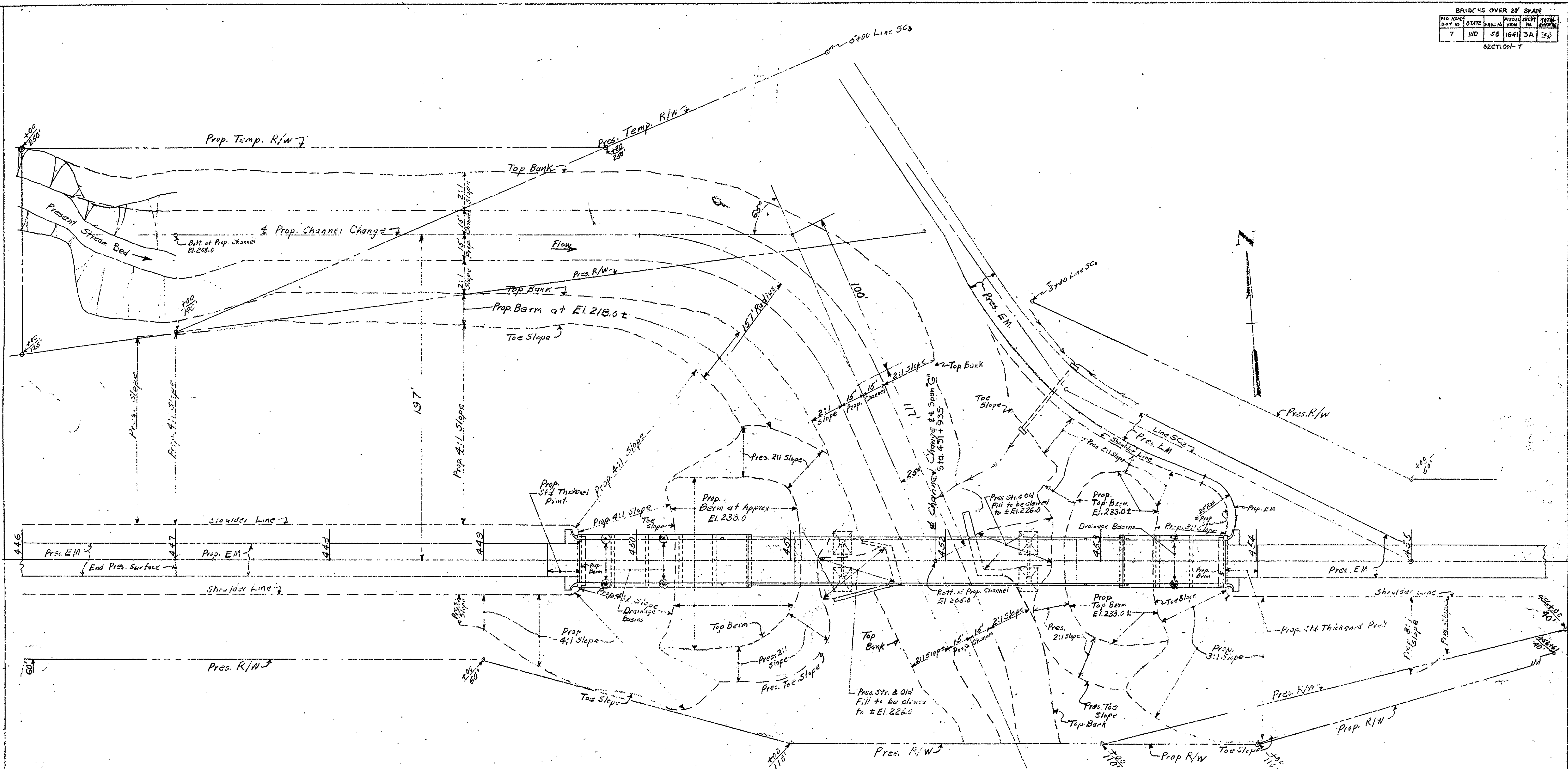
NOTE: FIELD NOTES: Book BR #678 pp. 1-37

Rev. 9-9-41: For Additional Spans

FILE AS 1-15-1683

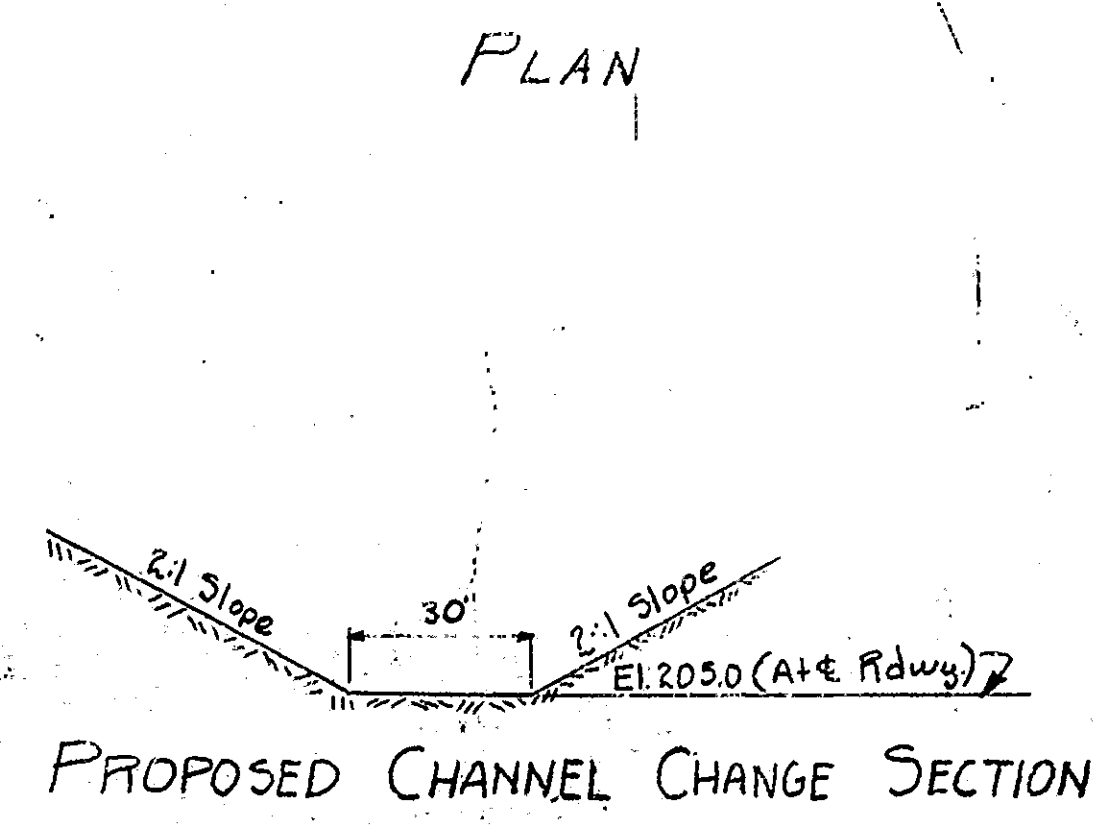
BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJECT YEAR	SHEET NO.	TOTAL SHEETS	
7	IND	58 1941	3A	33	

SECTION-7



NOTES

Prop. Channel Change to be built to a -0.5% Grade and to elevs. as shown on PLAN.
 Drainage Basins to be built under drainage outlets where located on PLAN and to be built with hand-placed riprap as directed by the Engineer.
 County Road intersection to be adjusted to fit end of structure as shown on PLAN or as directed by Engineer.
 Prop. Berms at approx. El. 233.0 to be adjusted in field to balance earthwork. Berms to be slightly sloped for proper drainage.
 Temporary bridge and runaround to be constructed adjacent to south R/W line as directed by Engineer.



LAYOUT OF REVISED EARTHWORK
STATE HIGHWAY COMMISSION OF INDIANA
 DEARBORN COUNTY

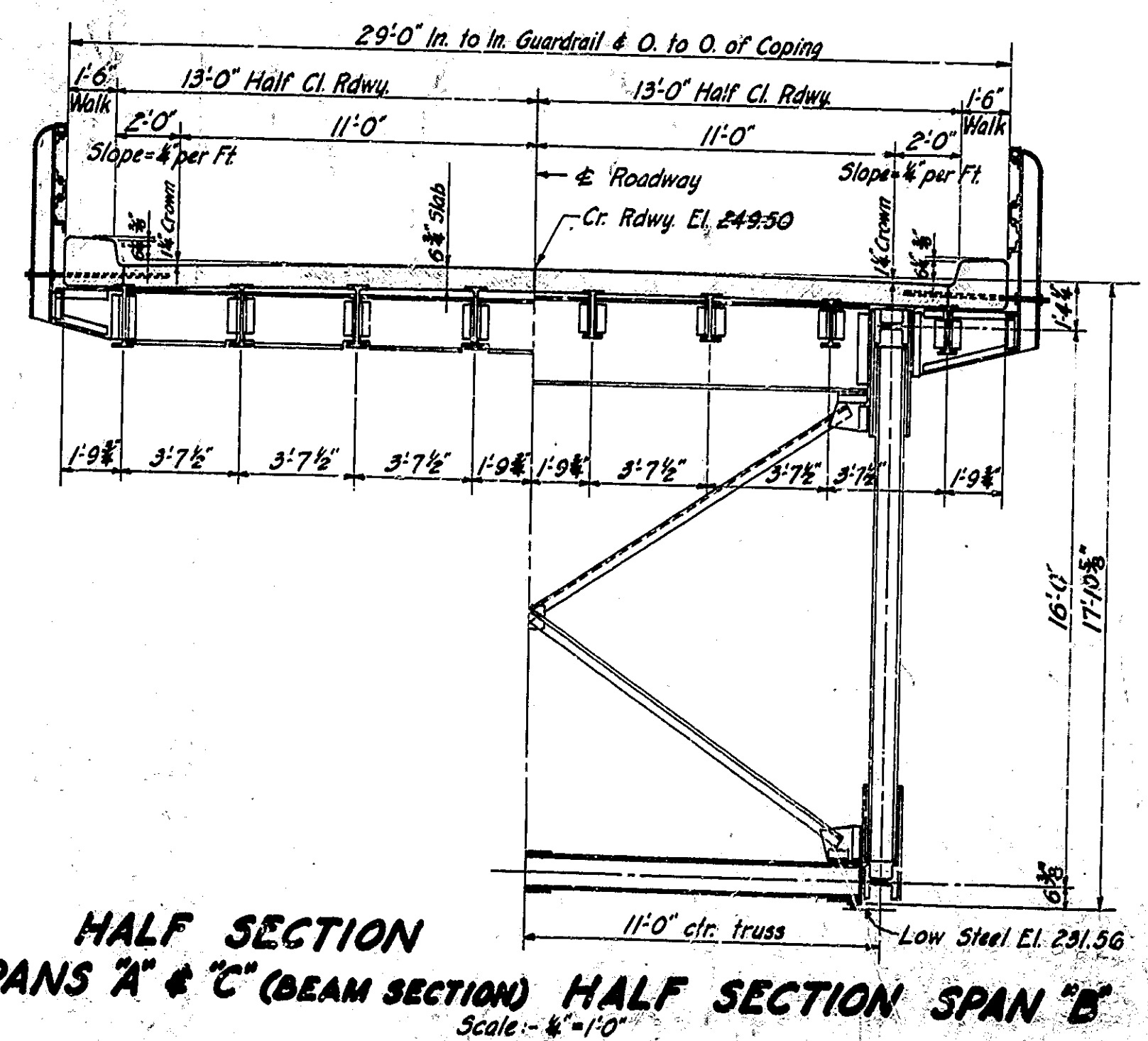
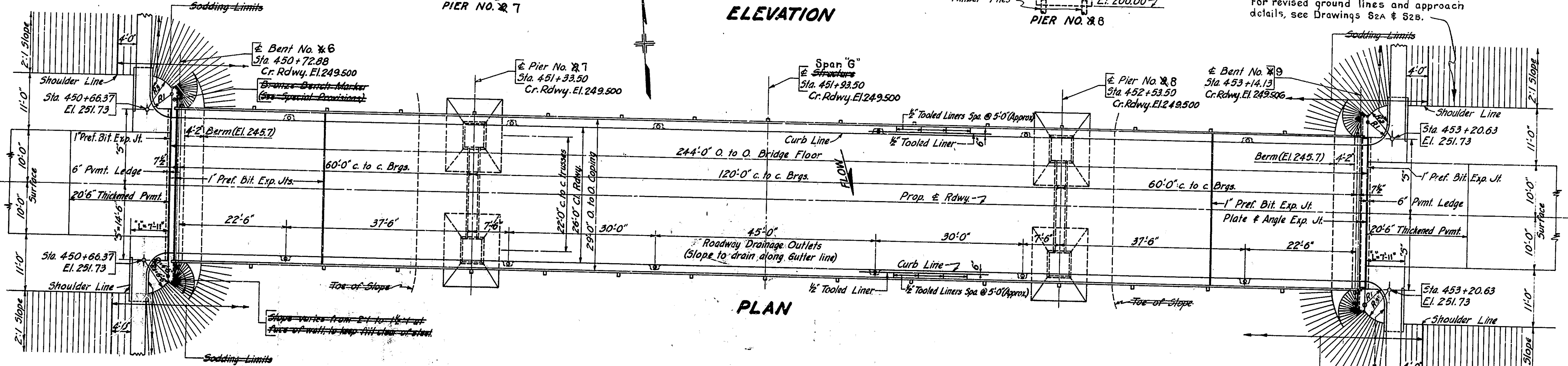
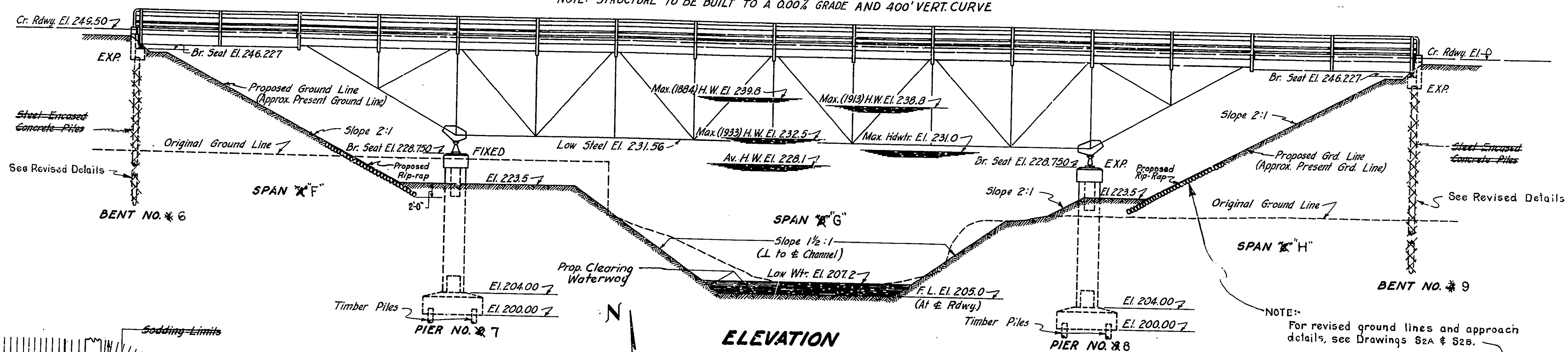
SCALE: 1" = 30'-0"
 RECOMMENDED FOR APPROVAL: *[Signature]* SEPT 9, 1941
 PROJECT: 58 STATION: 451+99.5
 SECTION: 7 STRUCTURE NO. 1683
 DRAWING: 51A OF 10 BRIDGE CONTRACT NO. 2146



BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	56	1941	4	33

SECTION - T

NOTE:- STRUCTURE TO BE BUILT TO A 0.00% GRADE AND 400' VERT. CURVE



GENERAL NOTES

- Slopes to be rip-rapped.
- Depth of footings to be extended if found necessary. See Art. B 202 of Specifications.
- Timber Piles shall have bearing value shown on Detail Drawings.
- Determine pile lengths by Arts. D.101 and 104 of Specifications.
- Steel Encased Concrete Piles shall have bearing value shown on Detail Drawings. Determine pile lengths by Arts. D.101 and 104 of Specifications.
- Reinforcing steel covering shall be 1" in floor slabs, 3" in footings, 2" in all other parts unless noted.
- All Dimensions on Details and Bending Diagrams for Reinforcing Bars are measured on centerlines of Bars.
- Concrete in footings to be Class "C".
- Concrete in piers, bents, floor slab & sidewalks to be Class "D".
- Continuous concrete pours shall be required between construction joints as shown on detail plans.
- Bevel forms 1/4" under copings; and chamfer exposed edges 1/4" unless noted.
- 2.2 #2 - Roadway Drainage Outlets to be placed as shown above on Drawings S2A & S2B. Shop and field paint to be procured from the State. See Art. J.202 of Specifications.
- Tolerance in position of pile head maximum 2" 1/2". Bents No. 1, 2 & 12 only. See Special Provisions for items included in this contract.

STANDARD C-11-FS SECTION

(See Br. Std. "Ks")
NOTE:- Crushed Gravel surface to be constructed.

Treated Piles shall have bearing value shown on Detail Drawings. Determine pile lengths by Arts. D.214 and 206 of Specifications. (Bents No. 1, 2 & 12 only.)

STANDARD DRAWINGS

Use Standard Concrete Material Details, Br. Std. A, dated March 27, 1935, rev. 4-15-41.
Use Standard Miscellaneous Details, Br. Std. C2, dated April 15, 1941.

NOTES:-
Crown of Approach Surface to be adjusted to match end of Conc. Pymt. Lt. 2.5'.
For locating Toe of Slope around Ends of Structure, see Br. Std. H.1 & Dwg. 514.
For typical method of construction and payment of Thickened Pavement and Integral Curb-Walk, see Br. Std. H.6.
For Std. Thickened Pavement, see Br. Std. G.
For Roadway Walkway, see Br. Std. C.11-FS Section.
For Miscellaneous Approach Details, see Br. Std. M.

NOTE:- For revised General Plan see Drawings S2A & S2B

GENERAL PLAN
R.C. SLAB & STEEL TRUSS BRIDGE
11 SPANS: 30'-0" 30'-0" 30'-0" SEE DWGS. S2A & S2B 1'-6" SDWKS. 26'-0" ROADWAY OVER SALT FORK CREEK ON STATE ROAD: 56-T

STATE HIGHWAY COMMISSION OF INDIANA
DEARBORN COUNTY

SCALE: 3/32" = 1'-0" UNLESS NOTED MARCH 12, 1941

RECOMMENDED FOR APPROVAL: *[Signature]*

PROJECT: 56
SECTION: T
DRAWING: S2 OF 20
STATION: 451+93.5
STRUCTURE NO. 1683

BRIDGE CONTRACT NO. 2146

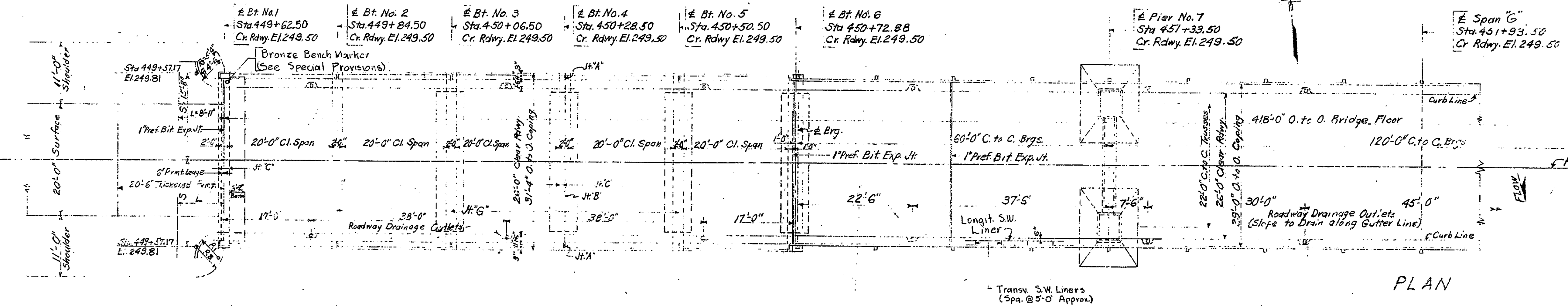
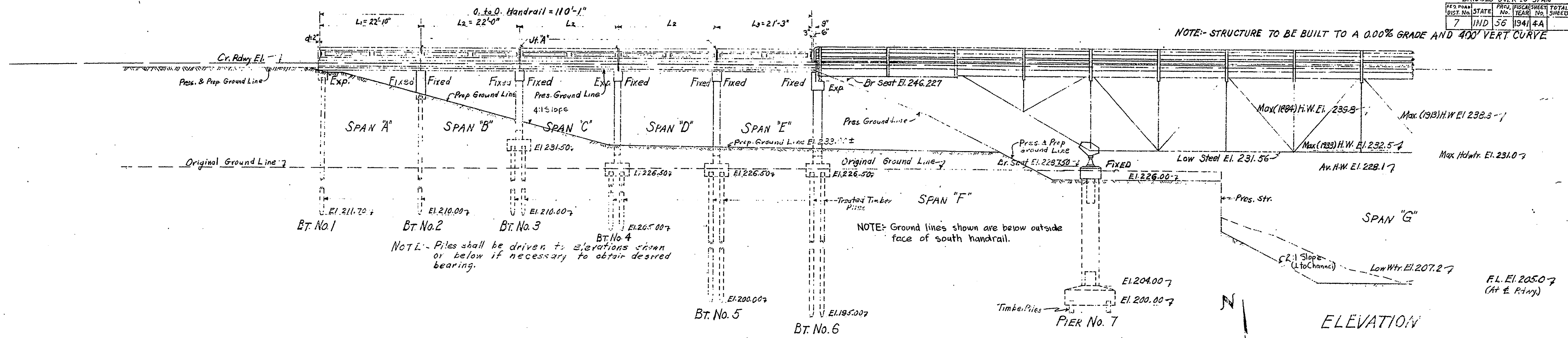
FILE NO. 1-15-1683

DESIGNED: C.W. ...
DRAWN: M.D. 1-29-41 ...
CHECKED: C.W. 2-3-41 ...
TRACED: C.W. 2-7-41 ...

Rev. 9-9-41 For Additional Spans

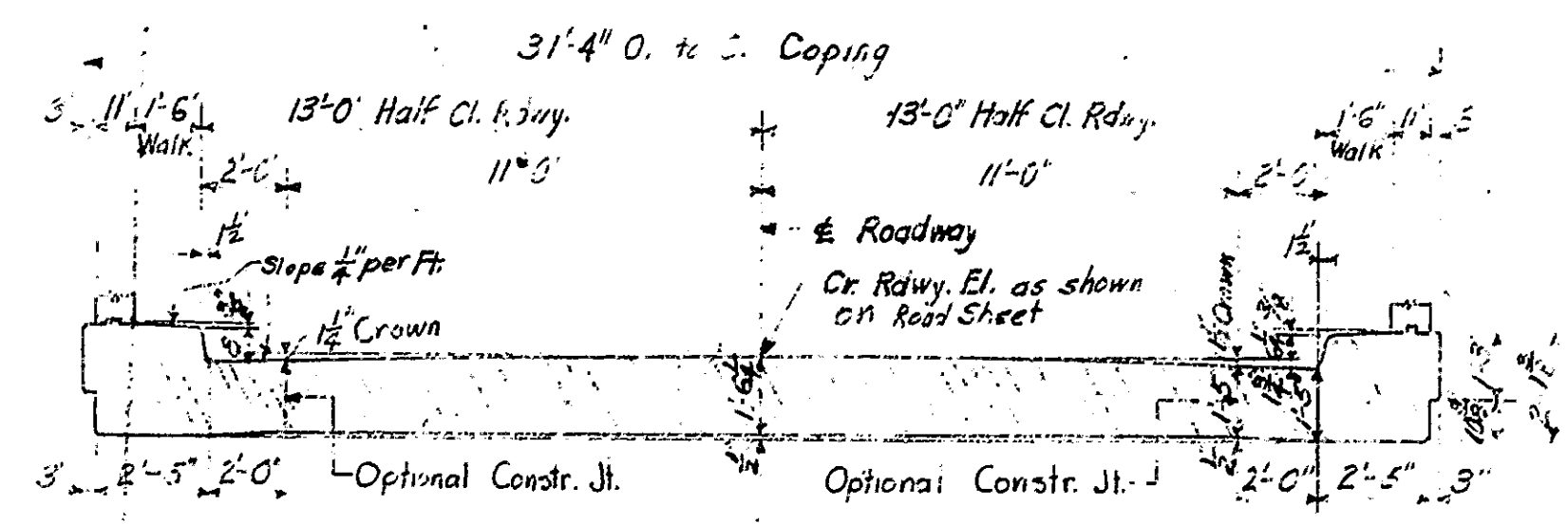
BRIDGES OVER 20' SPAN			
PROJ. NO.	STATE	YEAR	TOTAL SHEETS
7	IND	56	1941 4A

NOTE: STRUCTURE TO BE BUILT TO A 0.00% GRADE AND 400' VERT CURVE



NOTE: Shoulders and Side Slopes to be Seeded and Sodded as Directed by Engineer.

NOTE: For "General Notes" & Misc. approach notes see Dwg. S₂. For "Joint Legend" see Dwg. S_{3E}.



GENERAL PLAN
STEEL TRUSS & R.C. SLAB BRIDGE
 11 SPANS AS NOTED ON DWGS. S_{2A} & S_{2B} 1'-6" SDNKS, 26'-0" ROADWAY
 OVER SALT FORK CREEK ON STATE ROAD 56-T

STATE HIGHWAY COMMISSION OF INDIANA
DEARBORN COUNTY

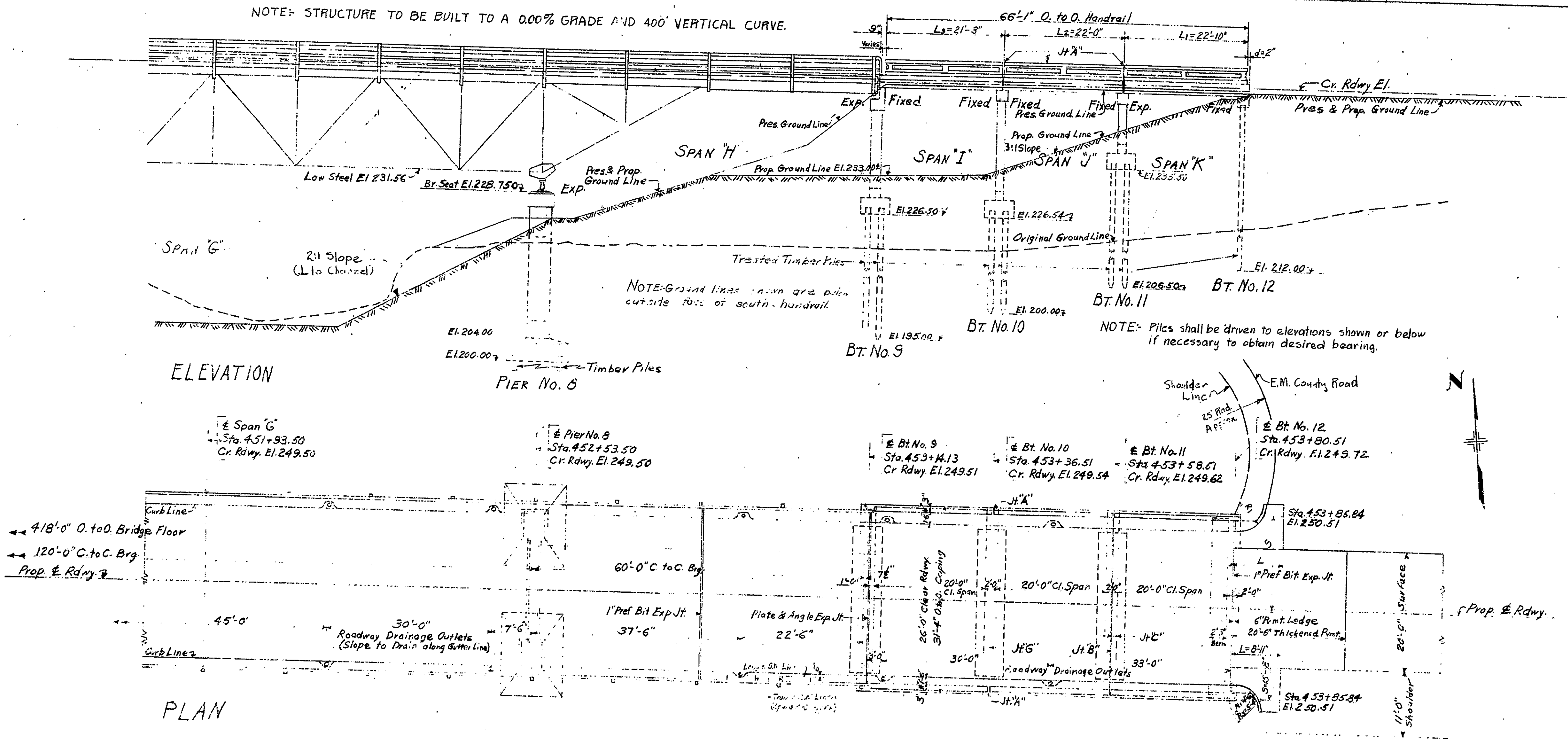
SCALE: 3/32" = 1'-0" UNLESS NOTED
 RECOMMENDED FOR APPROVAL: _____
 PROJECT: 56 SECTION: 56 STATION: 451+33.5
 DRAWING: S_{2A} OF 20 STRUCTURE NO: 1633

SEPT 9 1941
 BRIDGE CONTRACT NO. 2146

NOTE: STRUCTURE TO BE BUILT TO A 0.00% GRADE AND 400' VERTICAL CURVE.

BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
7	IND.	56	1941	48

SECTION - 7



NOTE: Ground lines shown are only outside face of south-handrail.

NOTE: Piles shall be driven to elevations shown or below if necessary to obtain desired bearing.

NOTE: Shoulders and Side Slopes to be Seeded and Sodded as Directed by the Engineer.

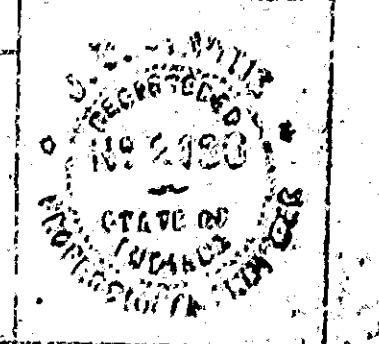
NOTE: For General Notes & Misc. approval notes see Dwg. S2.
For Joint Legend see Dwg. S5E.

GENERAL PLAN
STEEL TRUSS & R.C. SLAB BRIDGE
 11 SPANS - AS NOTED ON DWGS. S2A & S2B 14'-6" SDWKS., 26'-0" ROADWAY
 OVER SALT FORK CREEK ON STATE ROAD 56-T

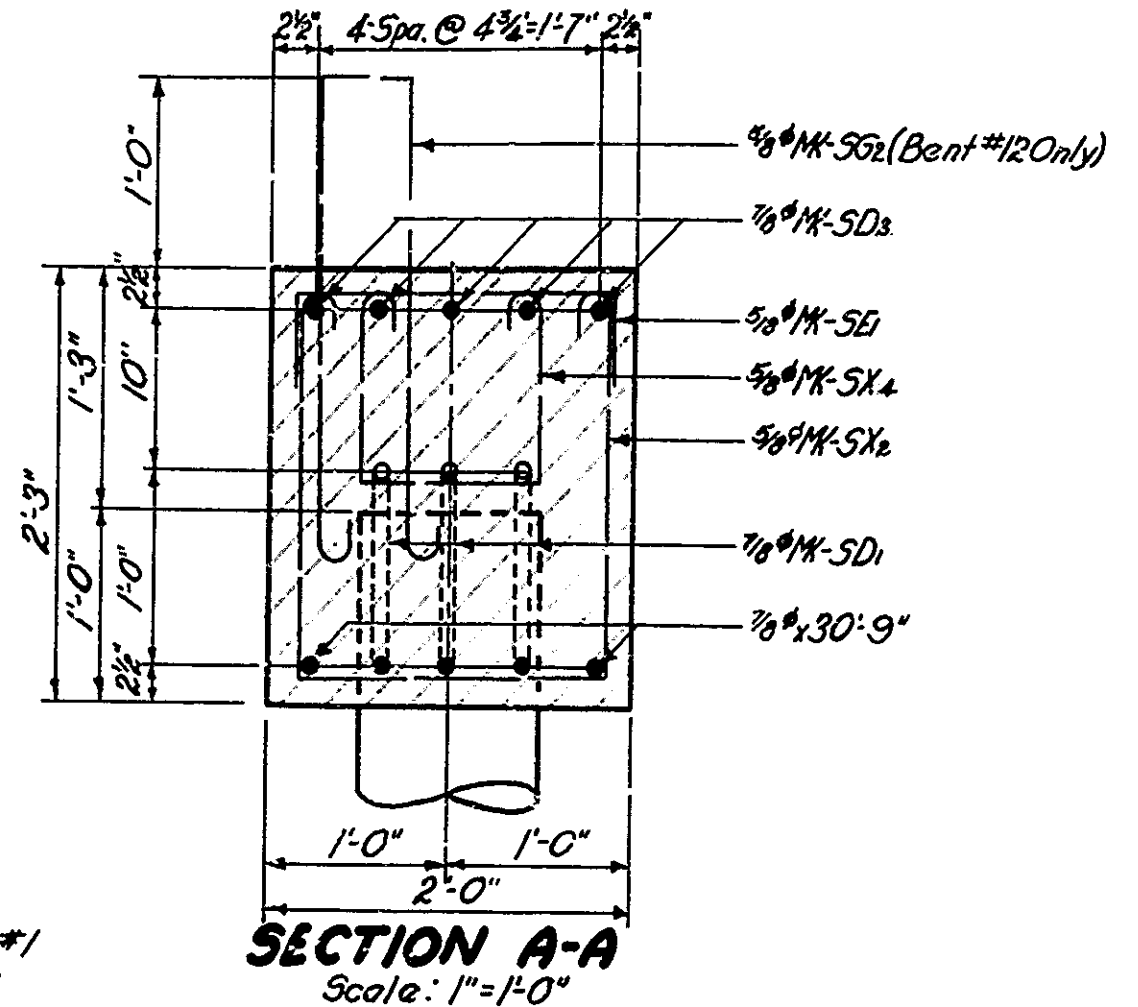
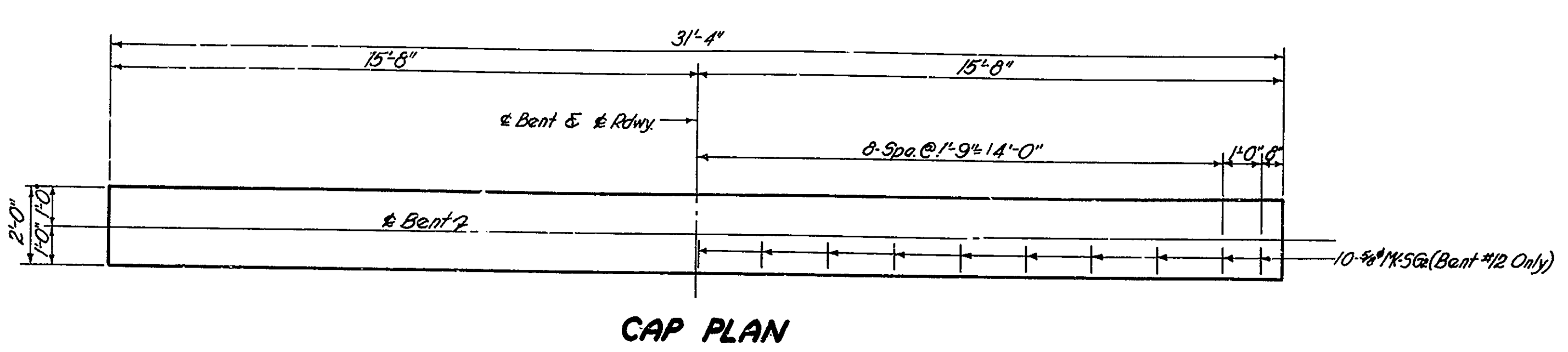
STATE HIGHWAY COMMISSION OF INDIANA
DEARBORN COUNTY

SCALE: 3/32" = 1'-0" UNLESS NOTED SEPT. 9, 1941

RECOMMENDED FOR APPROVAL: [Signature]
 PROJECT: 56 STATION: 451+93.5
 SECTION: 7 STRUCTURE NO. 1683

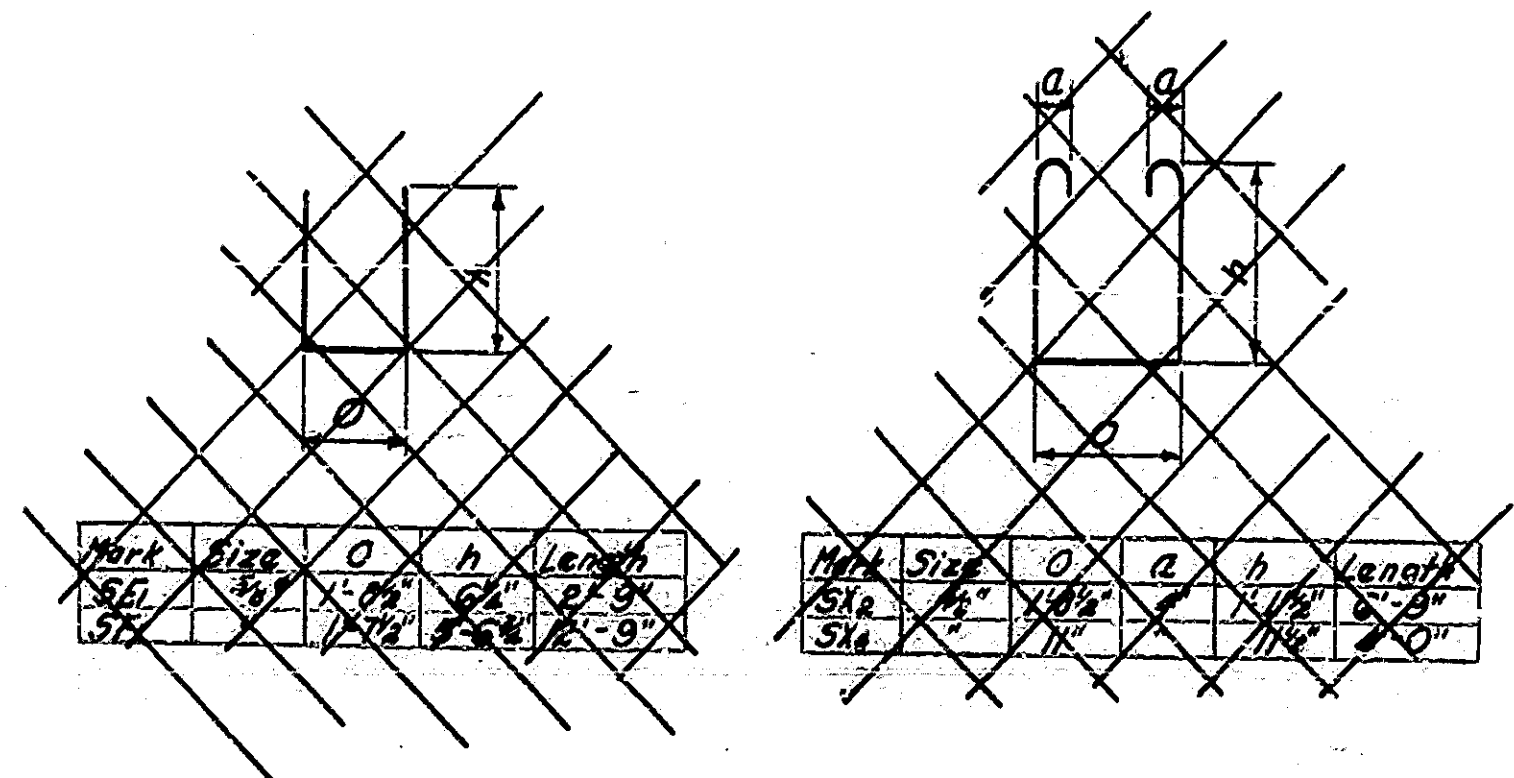
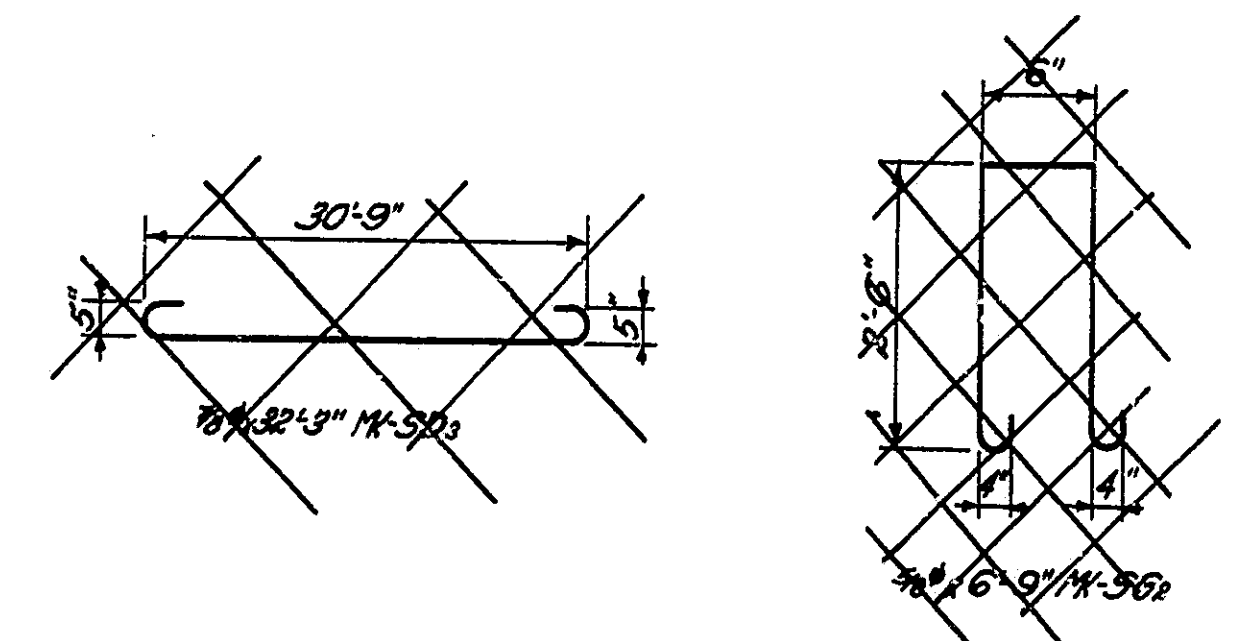
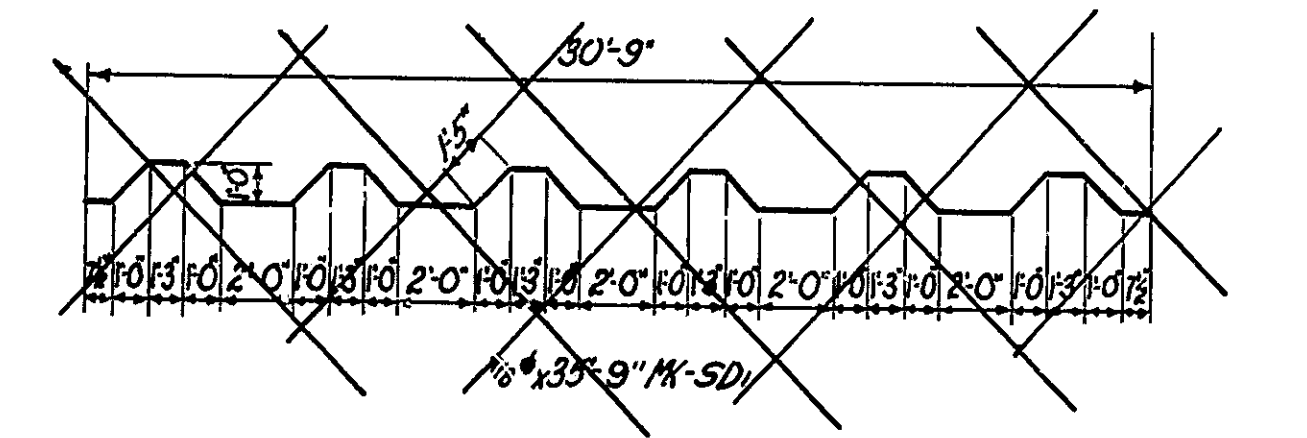
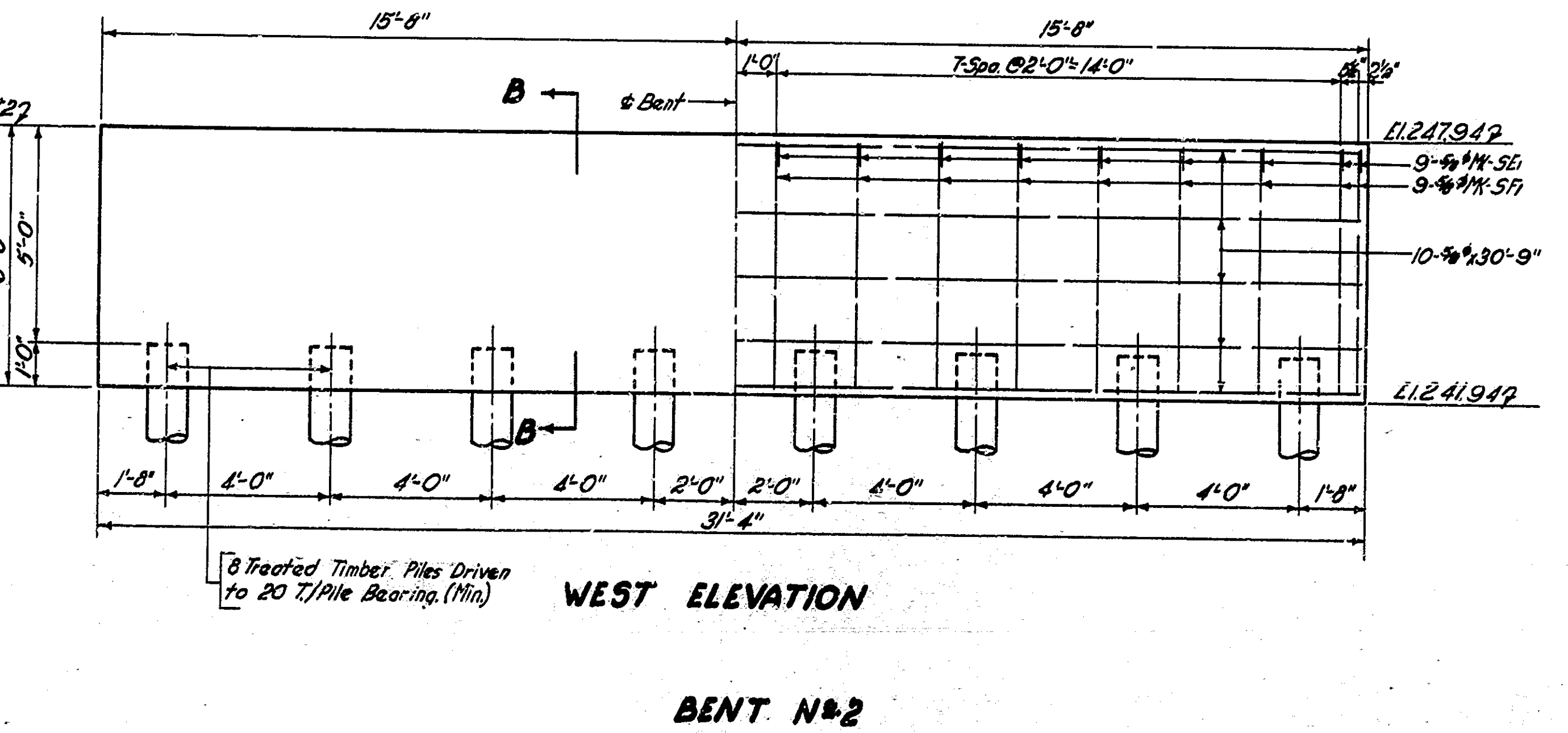
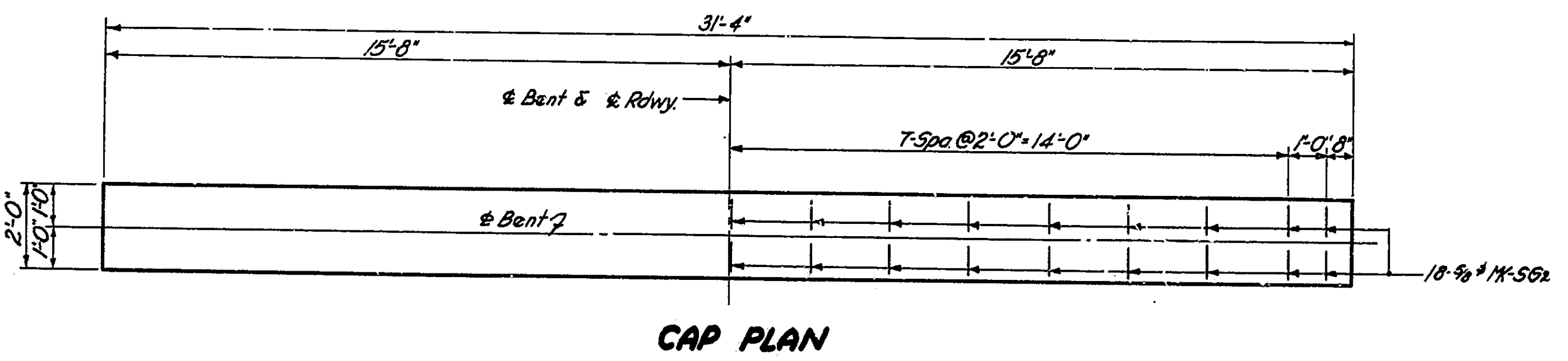
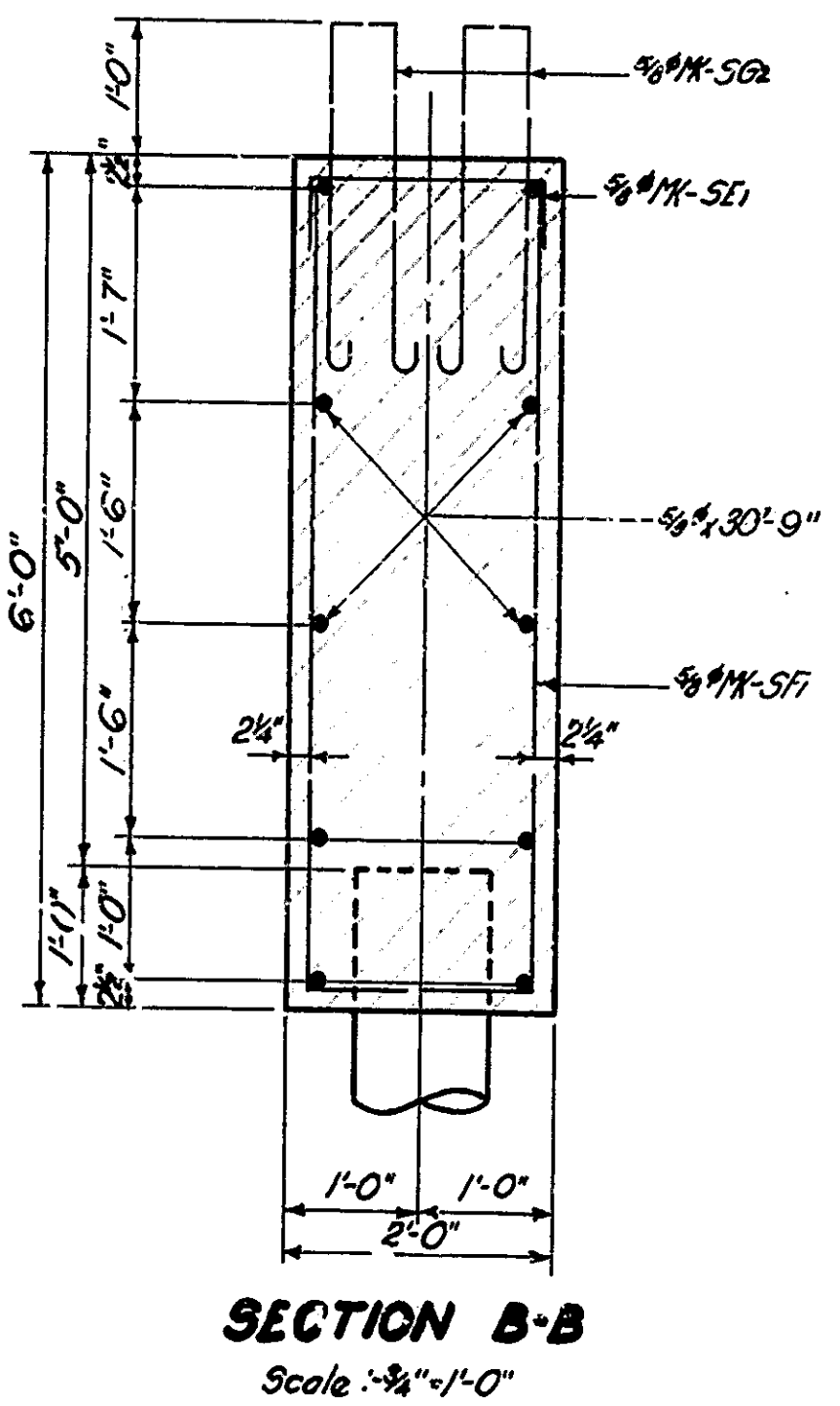
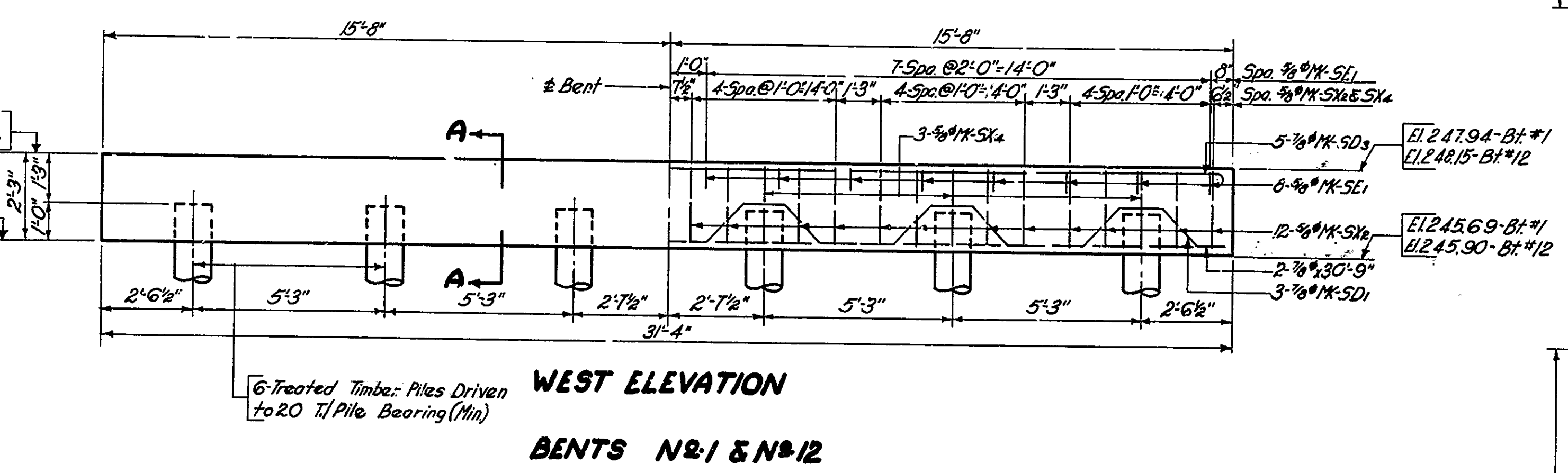


BRIDGE CONTRACT NO. 2146



BILL OF MATERIALS BENTS NOS. 1, 2 & 12

REINFORCING STEEL					
MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
S11	6	#8	35'-8"	Longit. Cap. Bents #1 & #2 (Bent #1)	214'-6"
S21	10	"	32'-3"	" #1 & #2 (Top)	323'-6"
S22	4	"	30'-9"	" #1 & #2 (Bot.)	123'-0"
				Total #8	660'-0" 1349#
S51	50	#8	2'-9"	Cap. Ties - Bents #1 & #2	137'-6"
S52	18	"	12'-9"	Vert. Cap. Bent #2	229'-6"
S53	33	"	6'-9"	Super. Ties - Bents #1 & #2	357'-9"
S54	16	"	6'-9"	Cap. Stirrups - Bents #1 & #2	324'-0"
S55	12	"	4'-8"	" #1 & #2	48'-0"
S56	10	"	30'-9"	Longit. Cap. Bent #2	307'-6"
				Total #8	1404'-3" 1485#
				Total Steel	2812#
CONCRETE					
				Bent #1	52 Cyd.
				Bent #2	19 Cyd.
				Bent #12	52 Cyd.
				Total	123 Cyd.
MISCELLANEOUS					
20 Treated Timber Piles (25'-0" Approx.) @ 6" Cts. (15' x 12" = 3Bt. = 2) = 100 Lin. Ft.					
Note: See Summary Sheet for Bill of Substructure Splice Bars.					

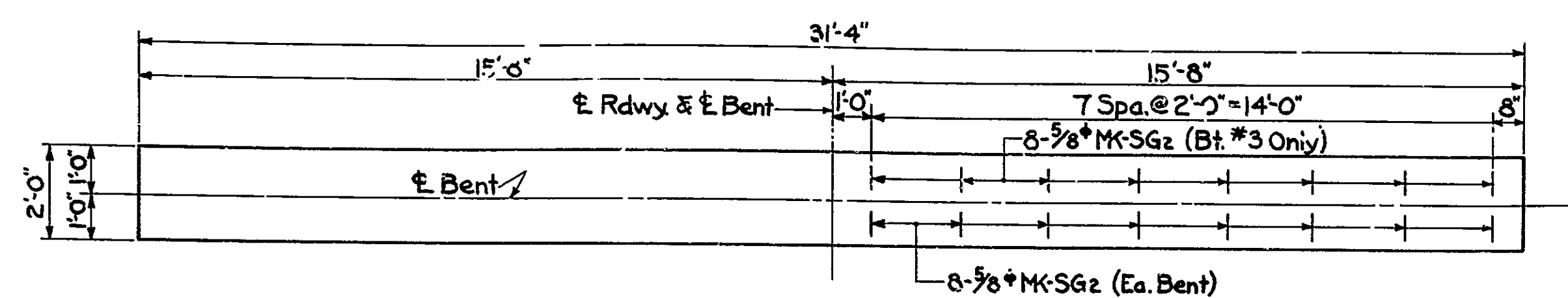


BENTS NO. 1, 2 & 12 DETAILS
 STATE HIGHWAY COMMISSION OF INDIANA

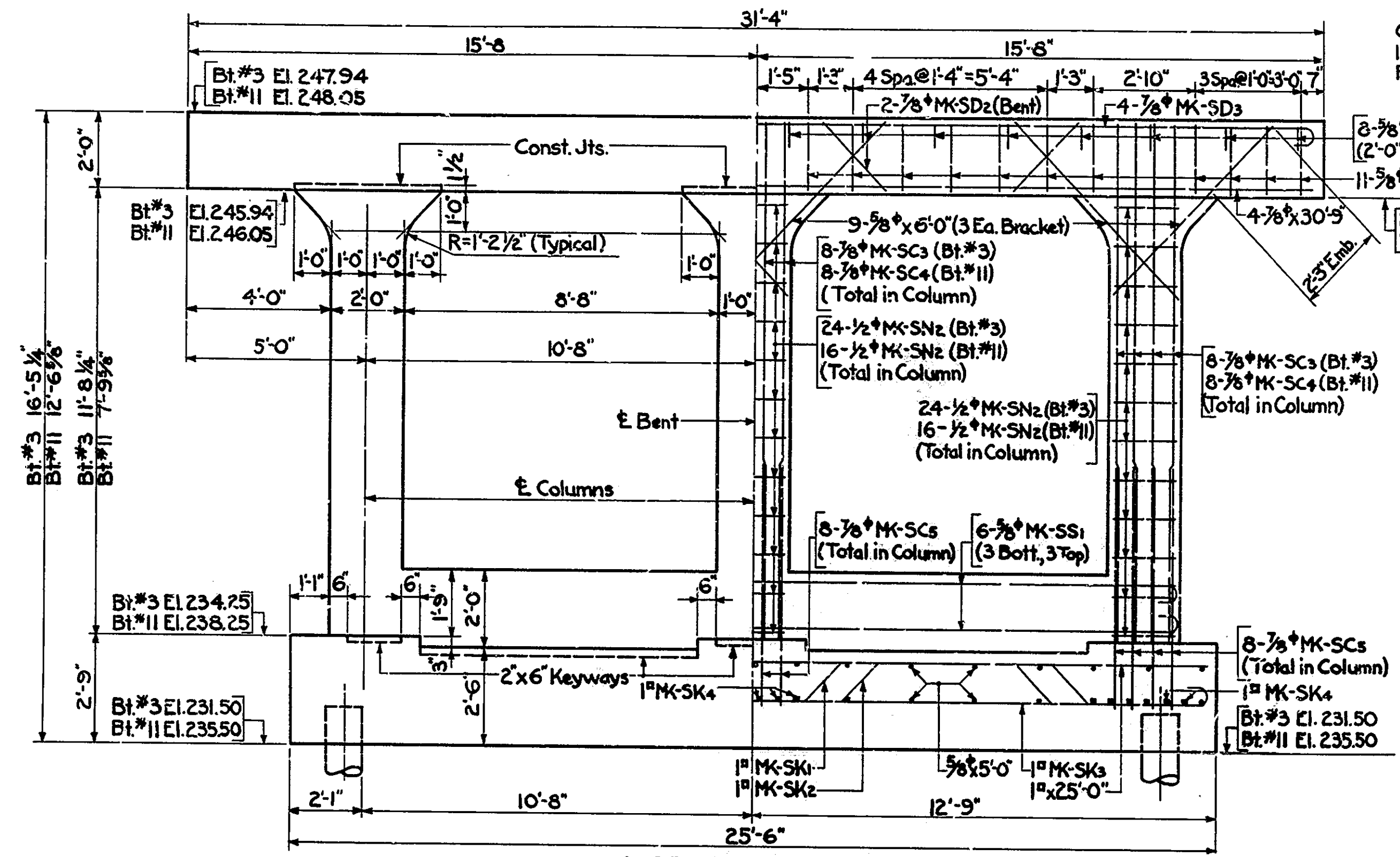
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 OCTOBER 2, 1941
 RECOMMENDED FOR APPROVAL: *J. S. Smith*
 PROJECT: 56 STATION: 451 + 93.5
 SECTION: T STRUCTURE NO. 1683
 DRAWING: S3A OF 20 BRIDGE CONTRACT NO. 2146

BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
7	IND.	56	1941	5 B

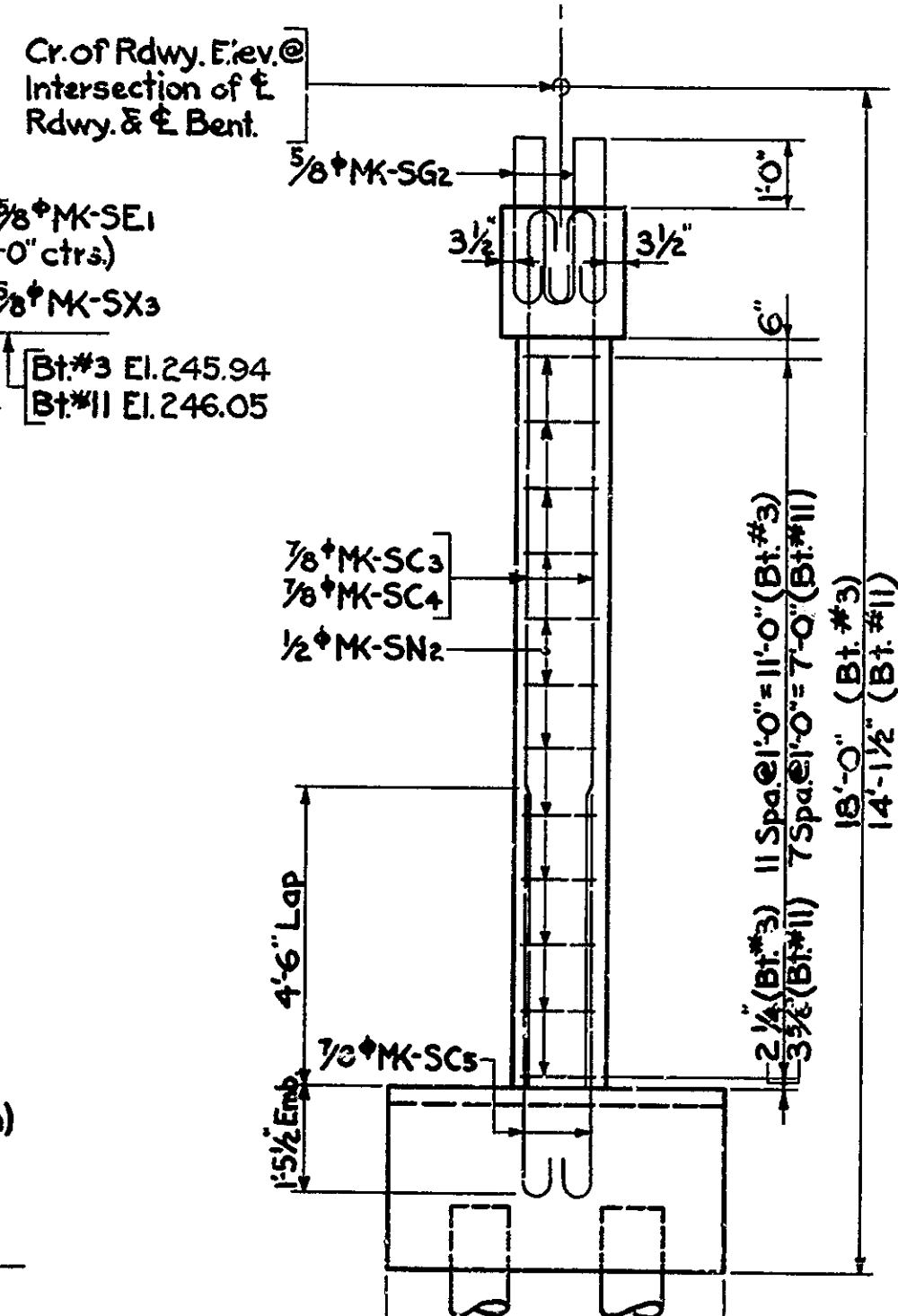
SECTION - T



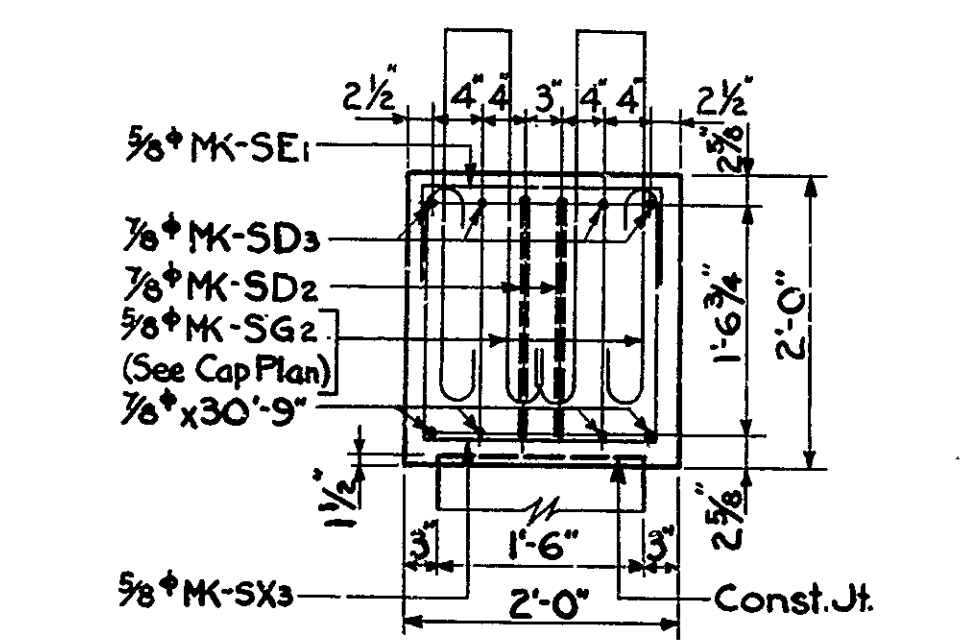
CAP PLAN



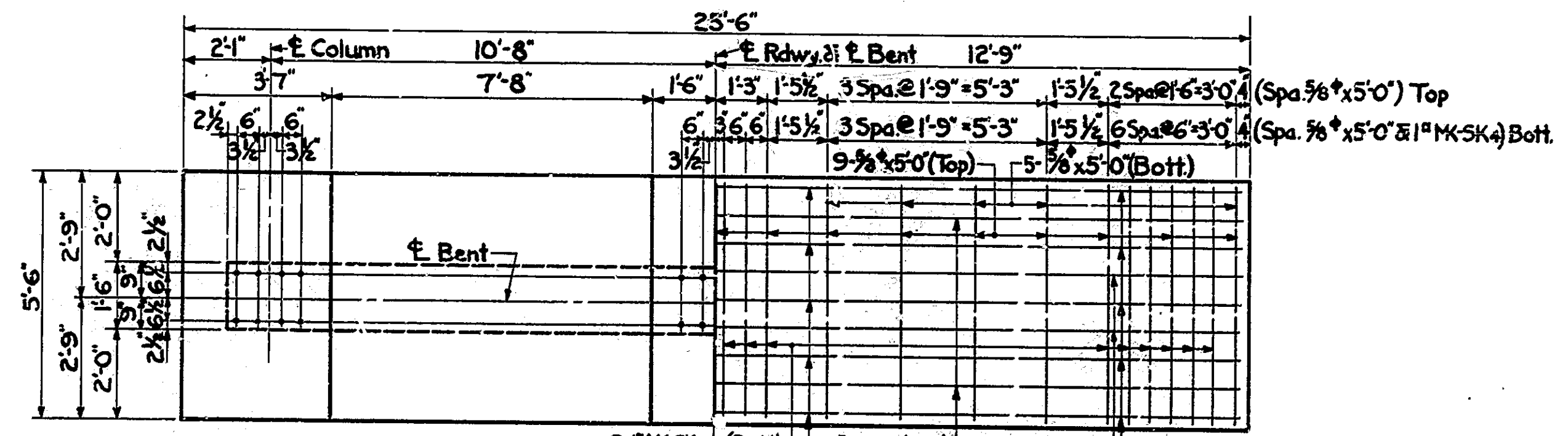
WEST ELEVATION



END ELEVATION
Max. Soil Pressure (Without Piles) = 1.5 1/2'

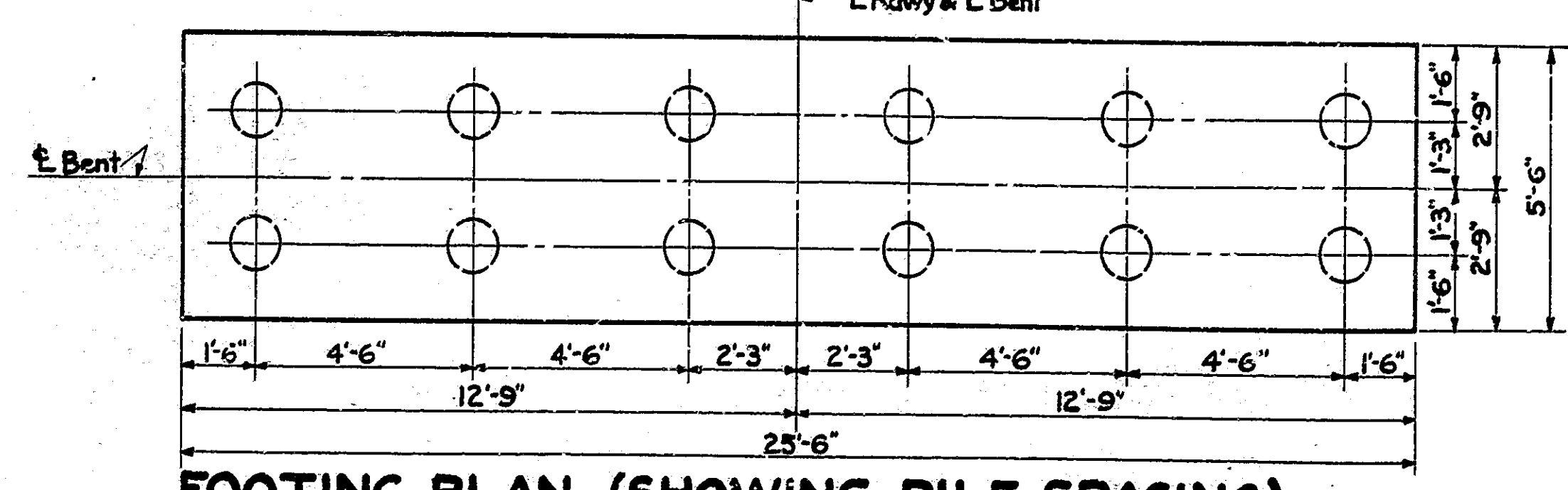


TYPICAL CAP SECTION
Scale: 3/4" = 1'-0"



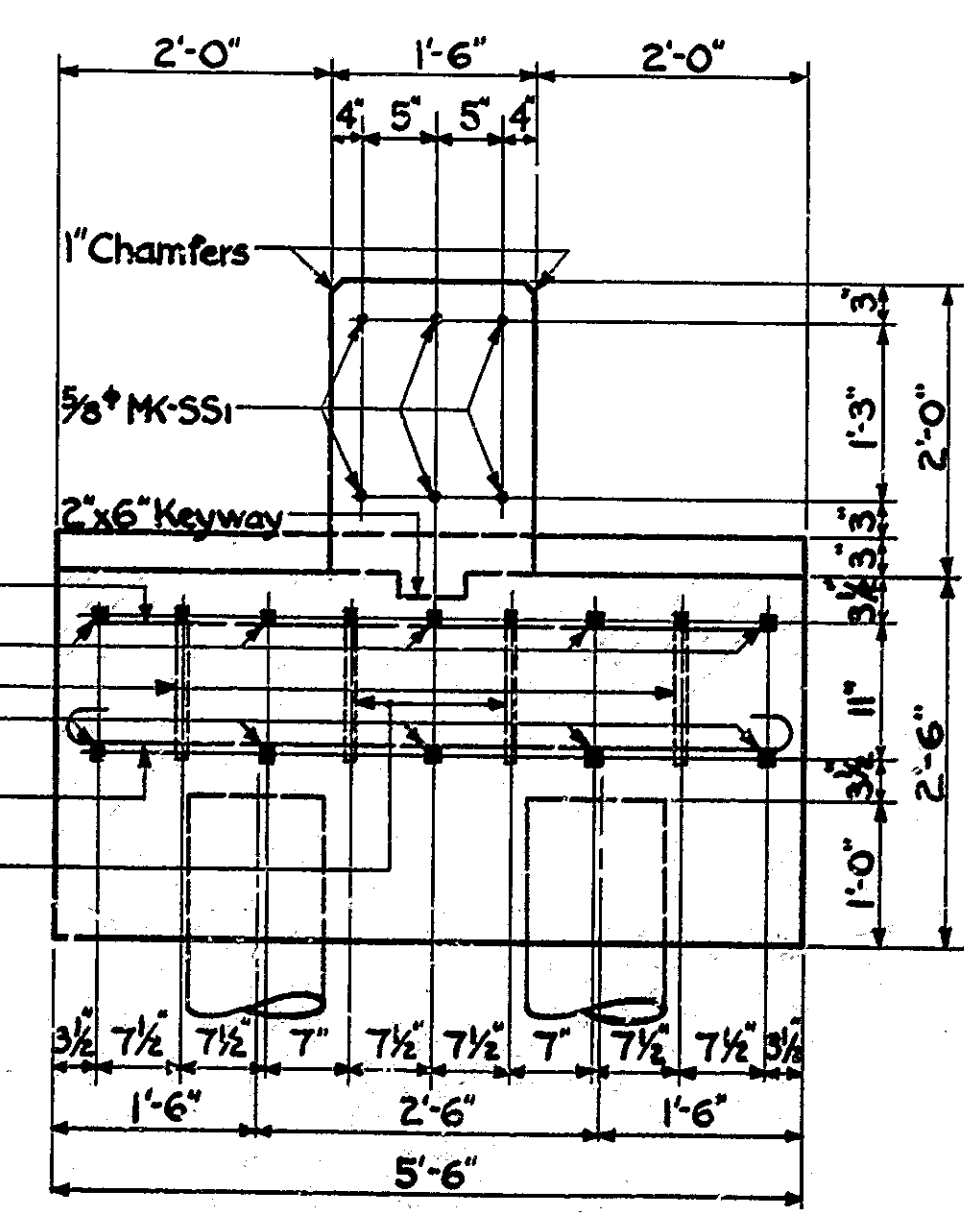
FOOTING PLAN

NOTE: All Column Steel extending into Footing is 7/8" MK-SCs
 LEFT HALF SHOWING NEAT LINES & VERT. STEEL EXTENDING INTO FTG. RIGHT HALF SHOWING FTG. STEEL

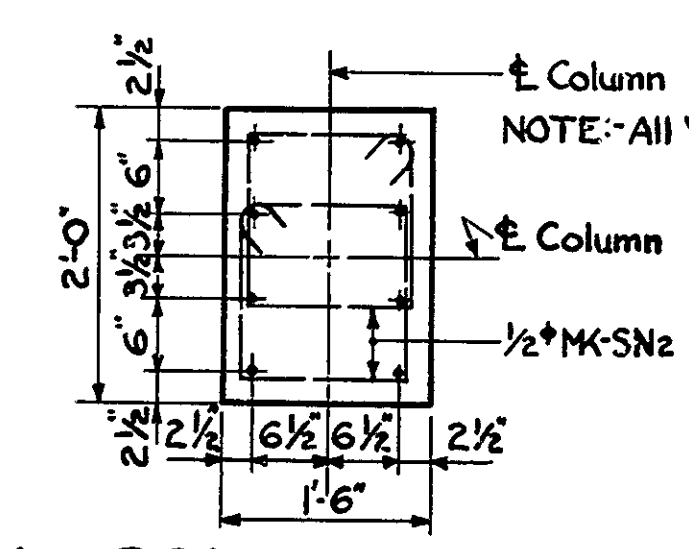


FOOTING PLAN (SHOWING PILE SPACING)

NOTE: 12 Treated Timber Piles required for each Foundation. All Piles to be Driven to 20 Ton Bearing (Min.)



TYPICAL FOOTING SECTION
Scale: 3/4" = 1'-0"



TYPICAL COLUMN SECTION
Scale: 3/4" = 1'-0"

NOTE: For Bill of Materials see Dwg. S3r.

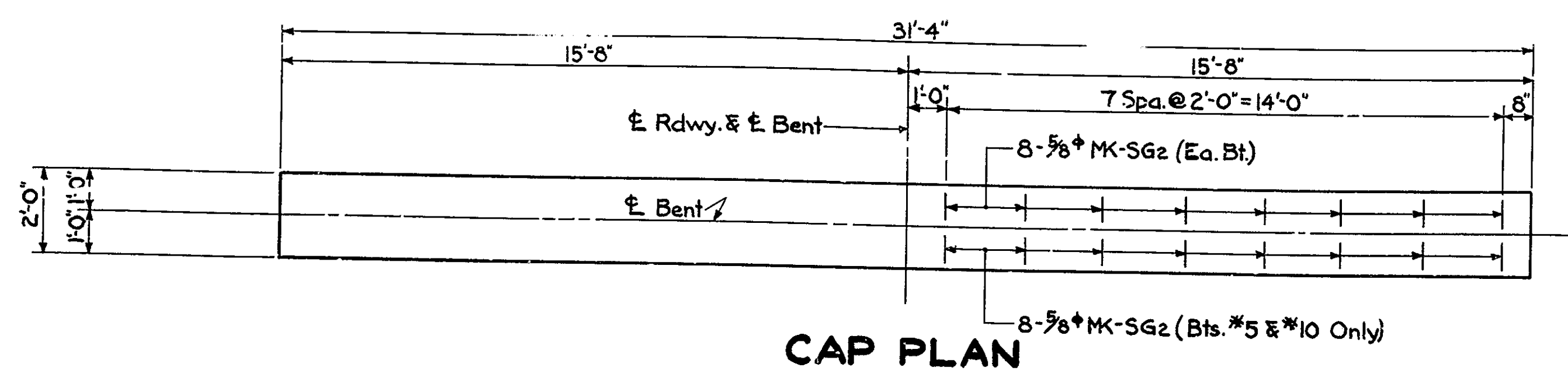
BENTS No. 3 & No. 11 DETAILS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/8" = 1'-0" UNLESS NOTED. OCTOBER 2, 1941
 RECOMMENDED FOR APPROVAL: *J. S. Smith*
 PROJECT: 56 STATION: 451+93.5
 SECTION: T STRUCTURE NO. 1683
 DRAWING: S3B OF 20
 BRIDGE CONTRACT NO. 2146

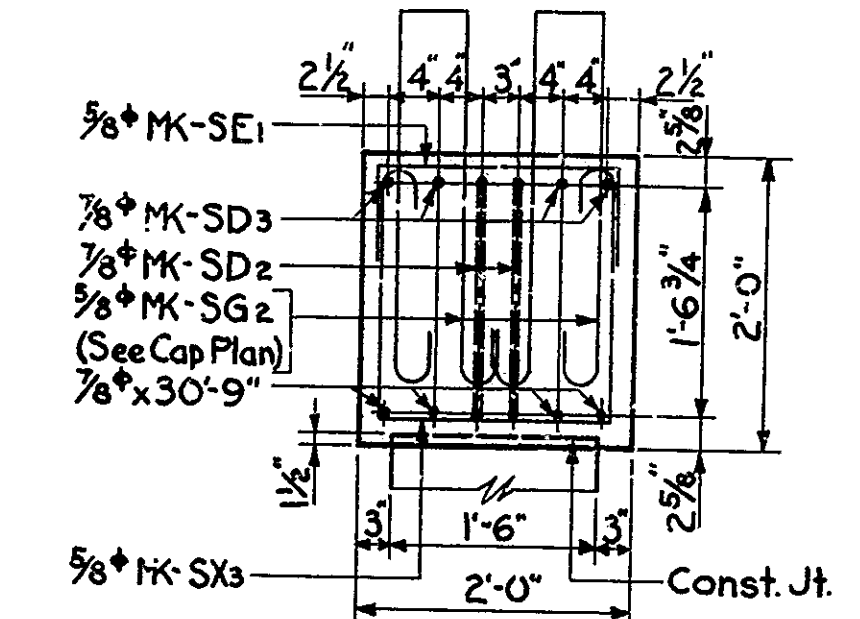
DESIGNED: A.G.L. 8-26-41
 DRAWN: R.M.S. 9-4-41
 CHECKED: W.H.S. 9-9-41
 TRACED: A.A.S. 9-10-41

BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO. TOTAL SHEETS
7	IND.	58	1941	5C

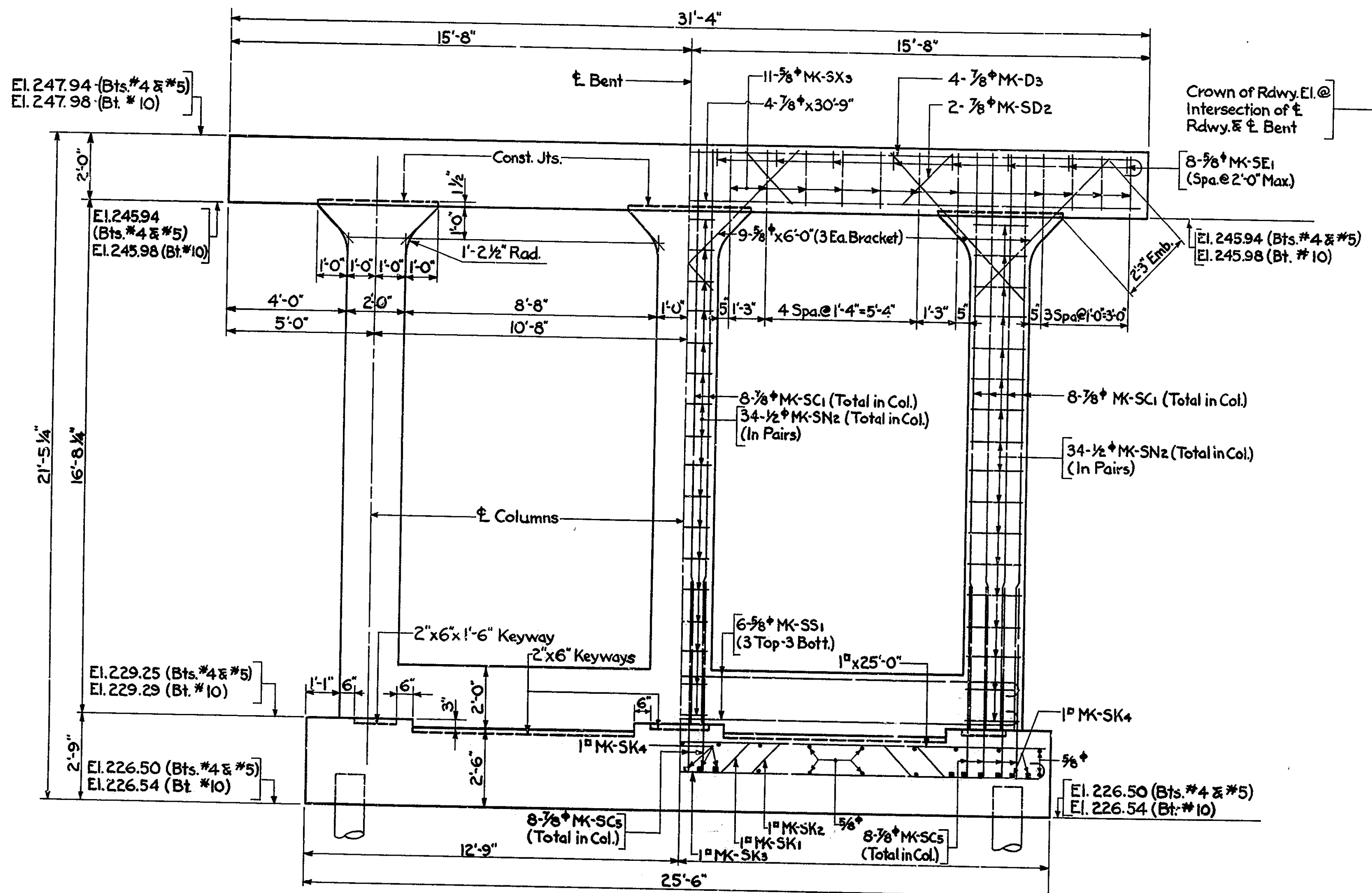
SECTION - T



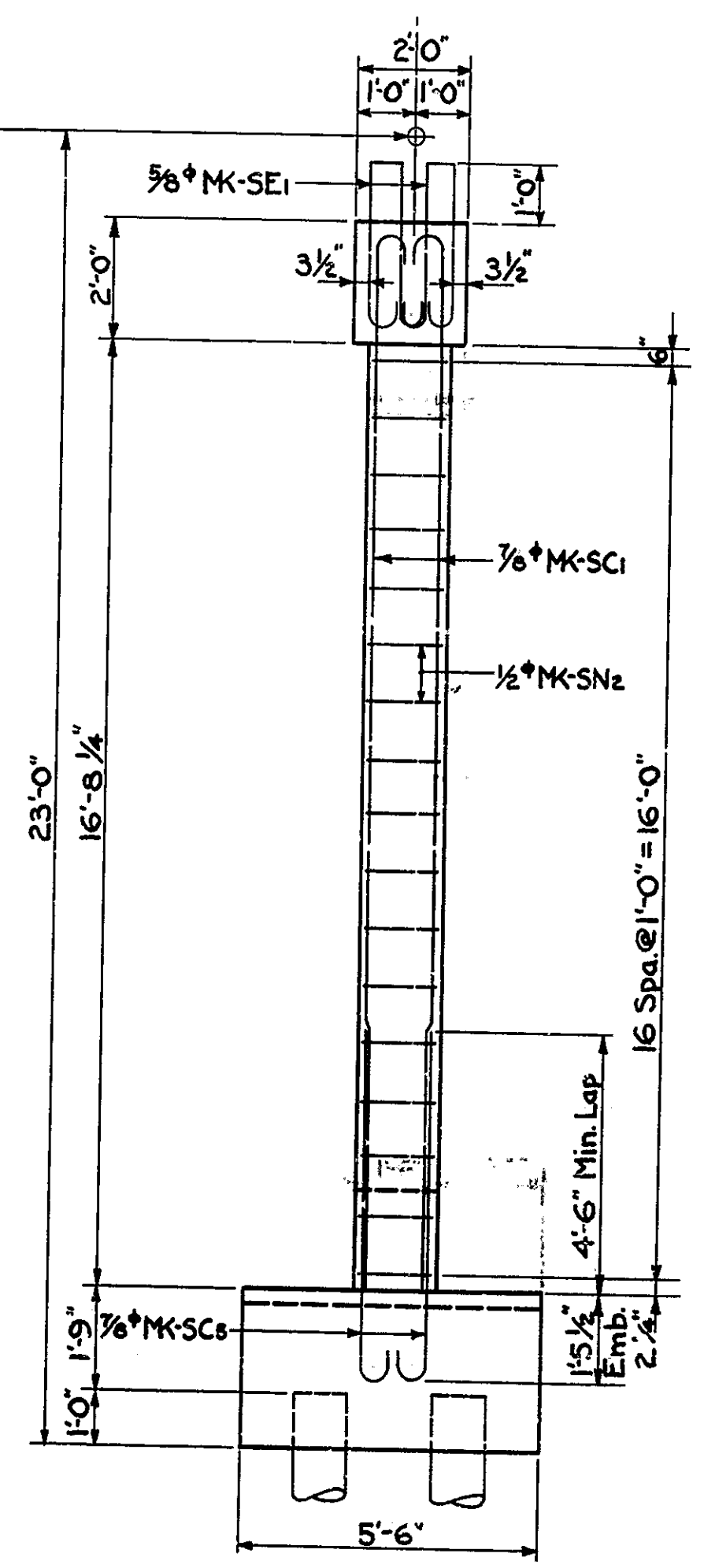
CAP PLAN



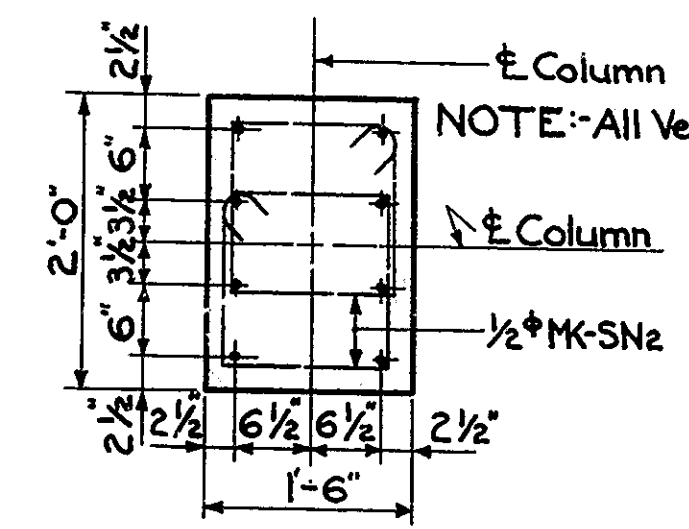
TYPICAL CAP SECTION
Scale: 3/4" = 1'-0"



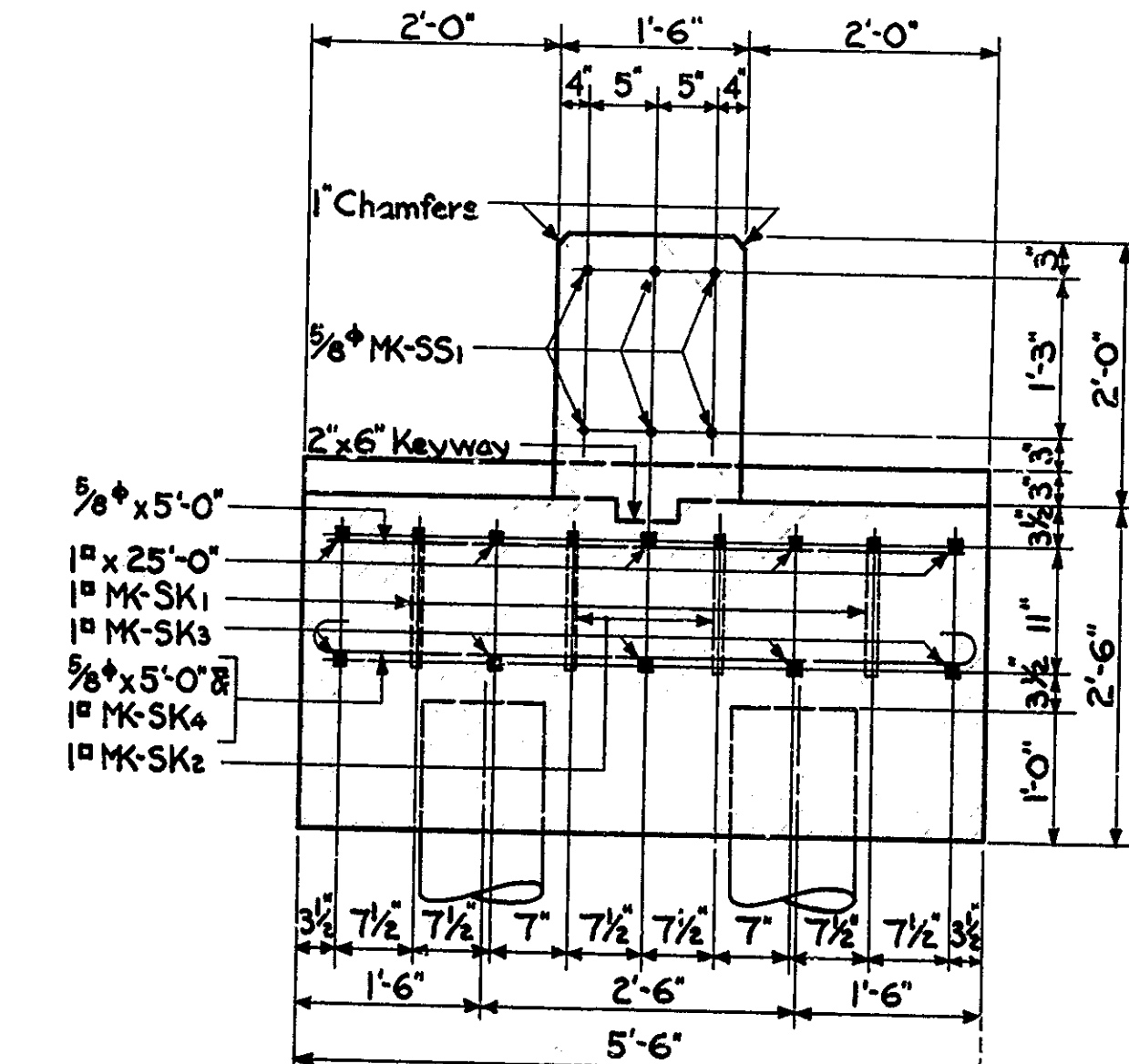
WEST ELEVATION



END ELEVATION
Max. Soil Pressure (Without Piles) = 1.5 3/4



TYPICAL COLUMN SECTION
Scale: 3/4" = 1'-0"



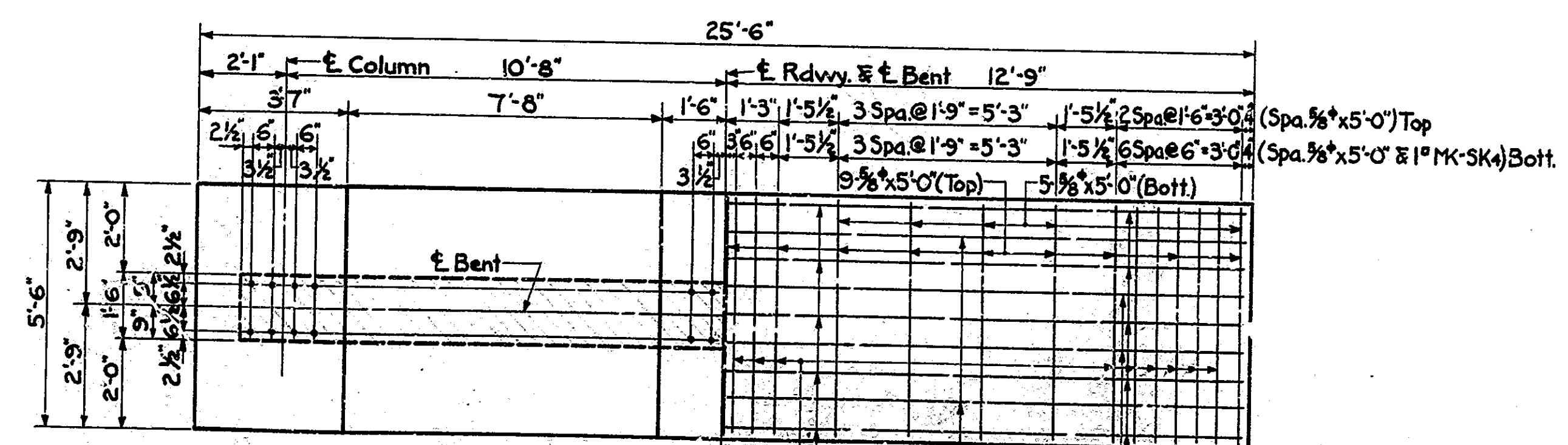
TYPICAL FOOTING SECTION
Scale: 3/8" = 1'-0"

NOTE: For Bill of Materials, see Dwg. Ssf.

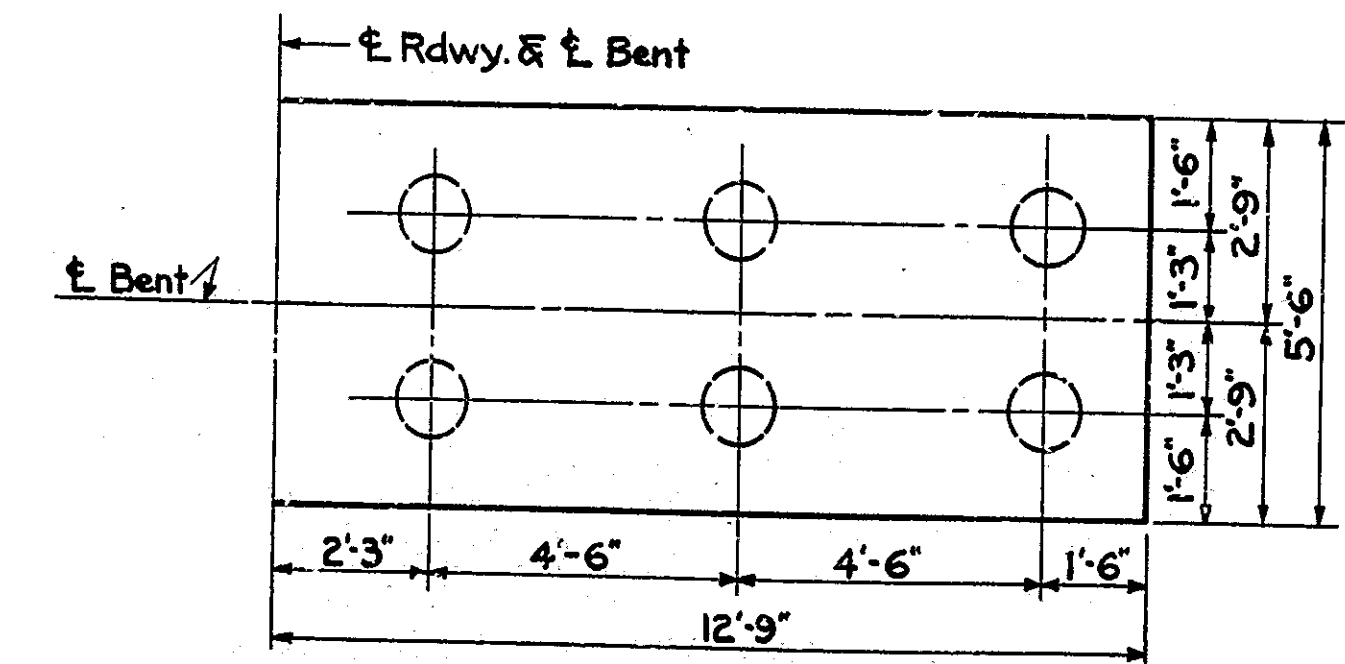
BENTS NO. 4, NO. 5 & NO. 10 DETAILS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/8" = 1'-0" UNLESS NOTED OCTOBER 2, 1941

RECOMMENDED FOR APPROVAL: *[Signature]*
PROJECT: 56 STATION: 451+93.5
SECTION: T STRUCTURE NO. 1683
DRAWING: S3C OF 20 BRIDGE CONTRACT NO. 2146



FOOTING PLAN



HALF FOOTING PLAN (SHOWING PILE SPACING)

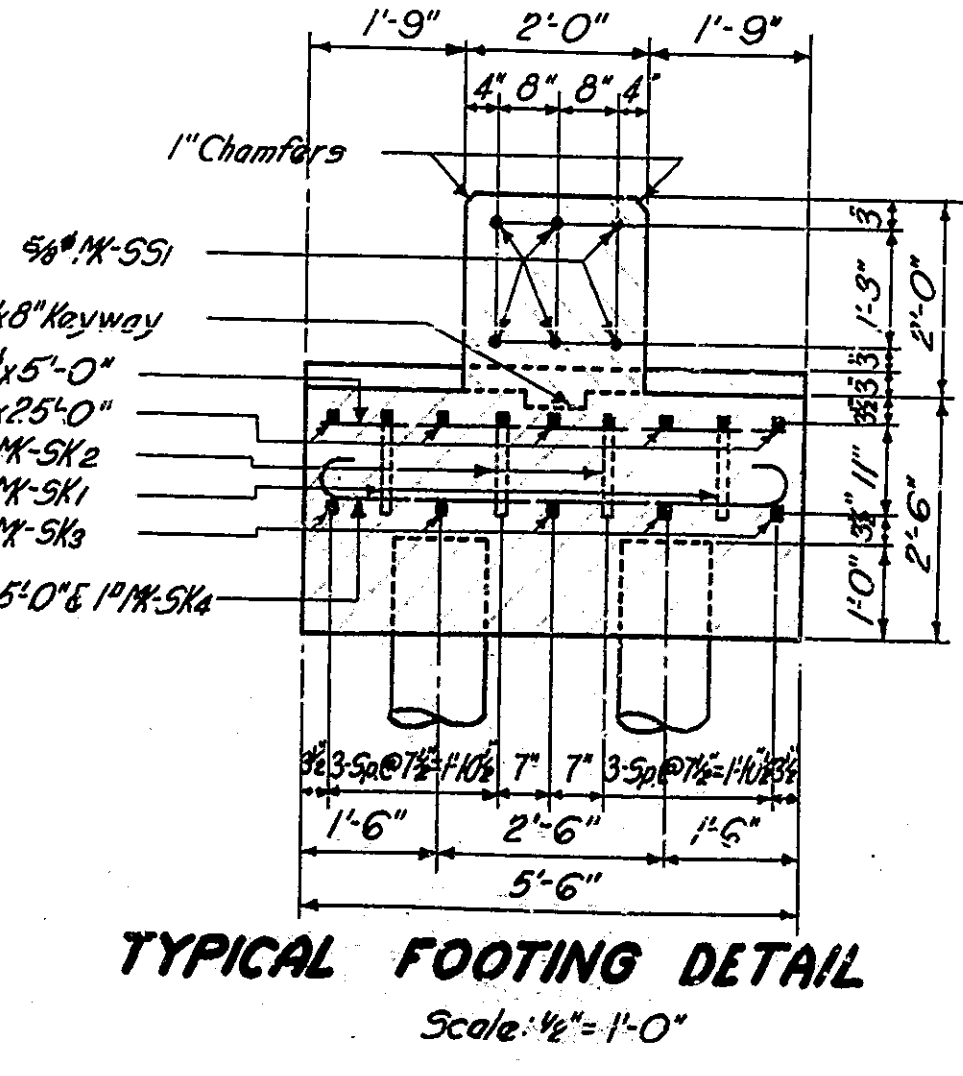
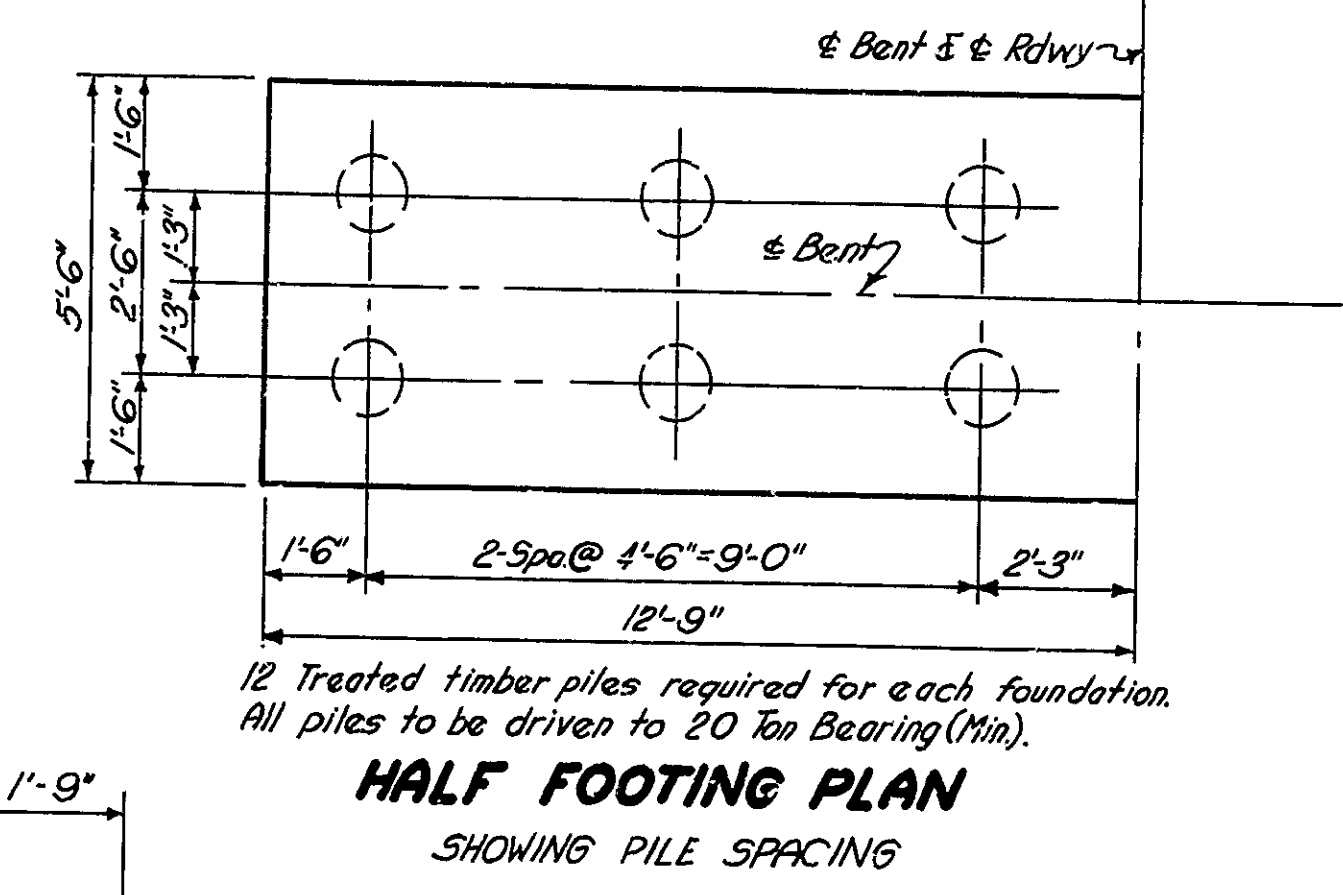
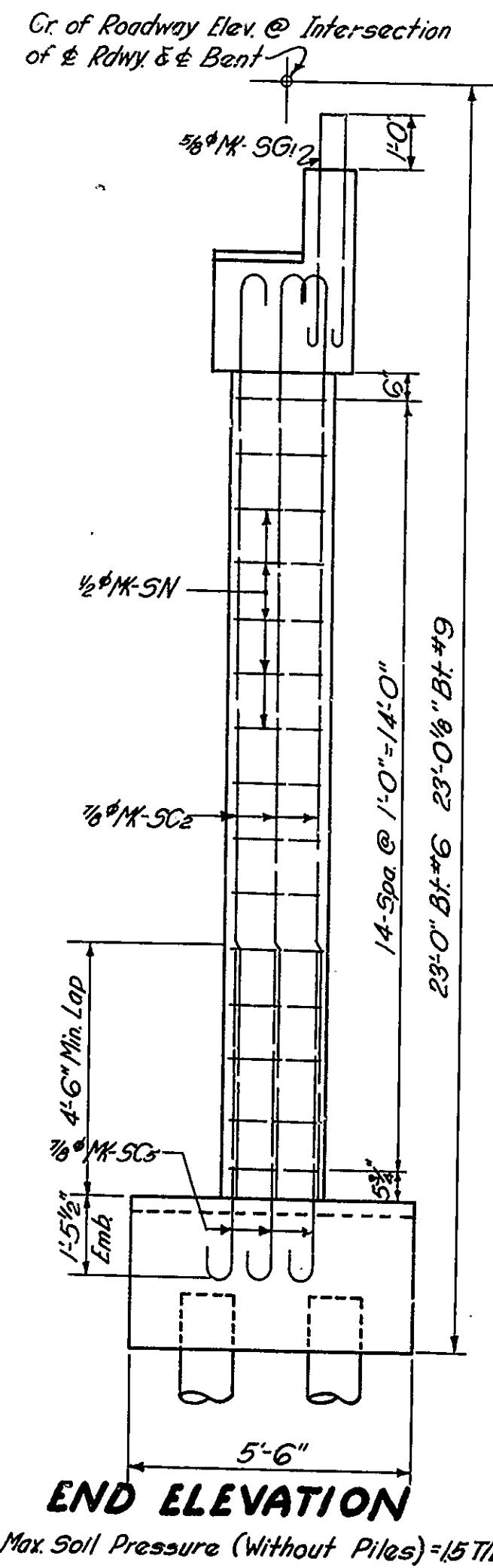
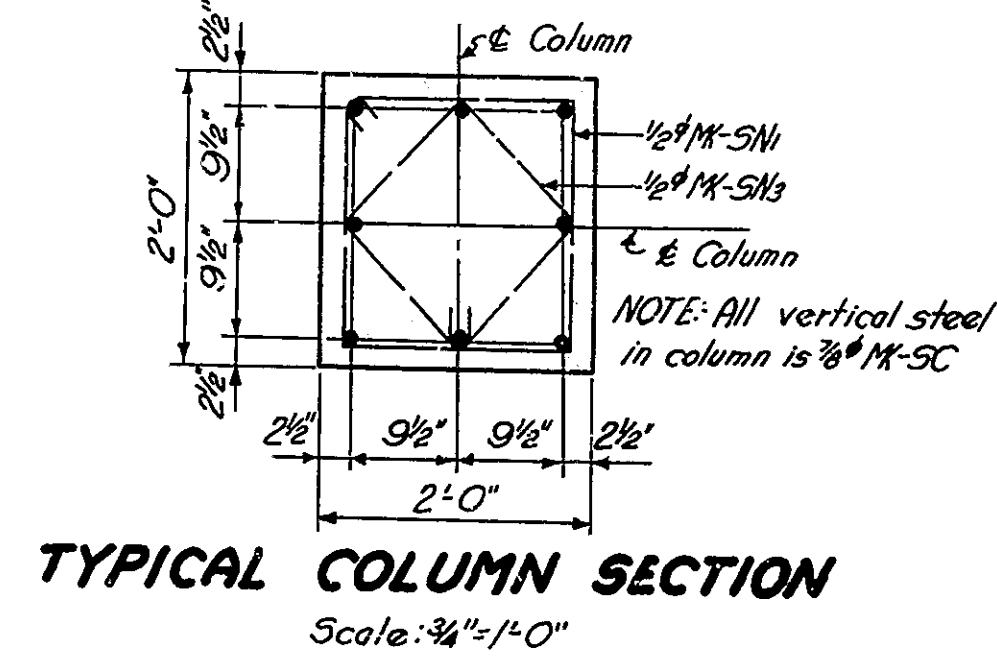
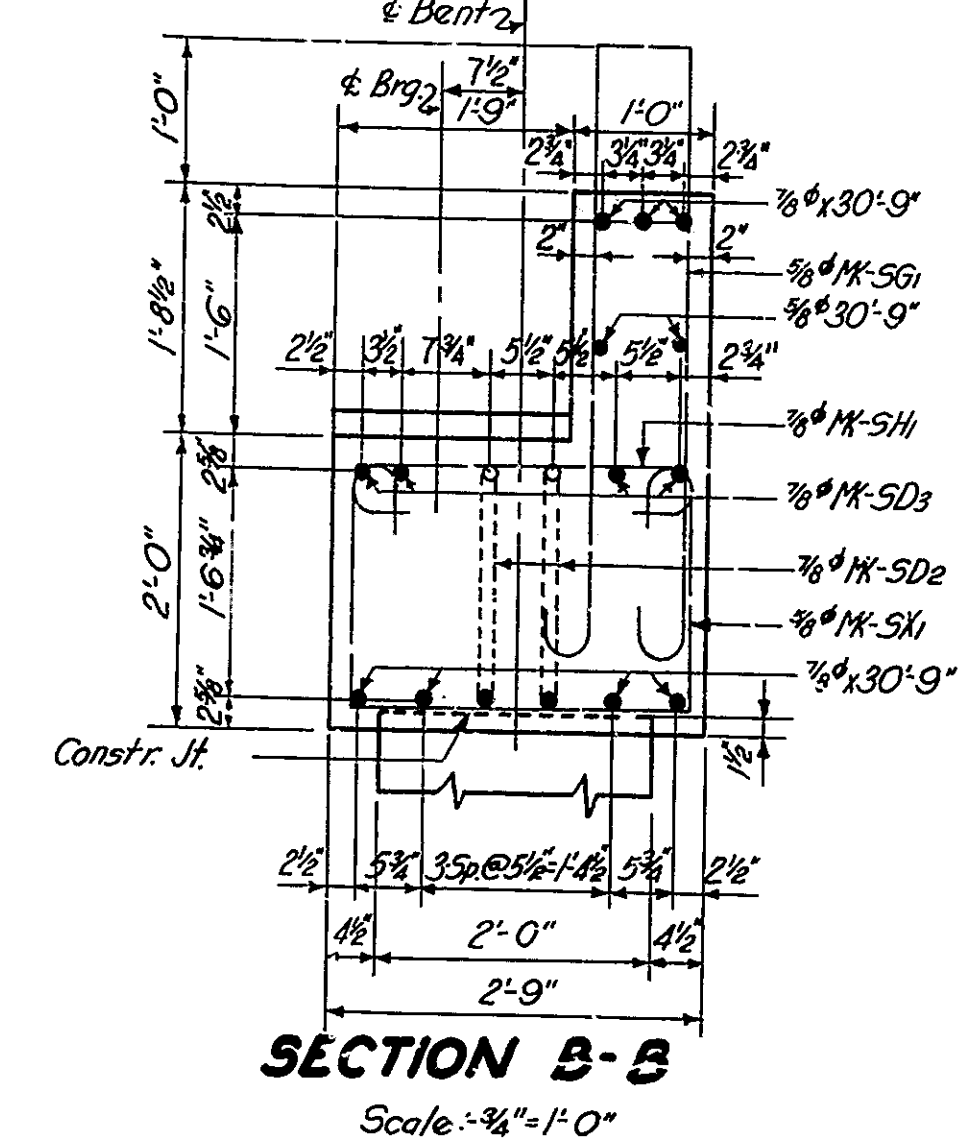
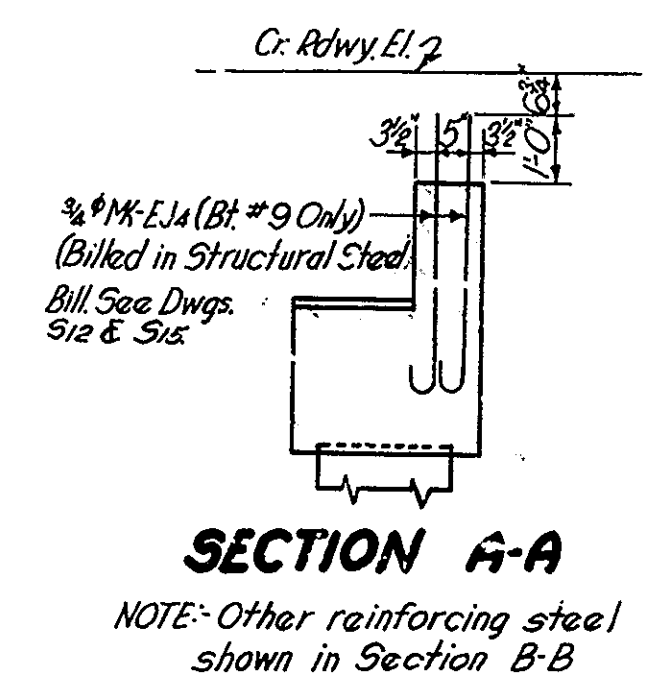
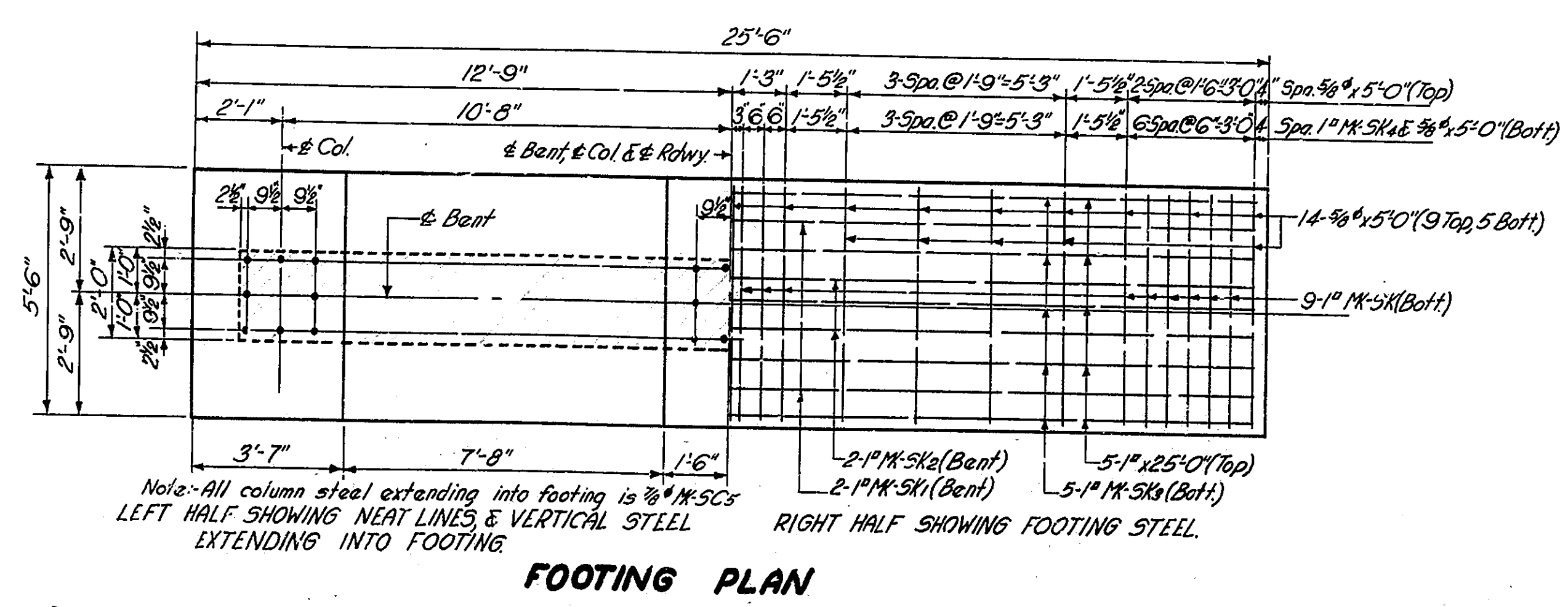
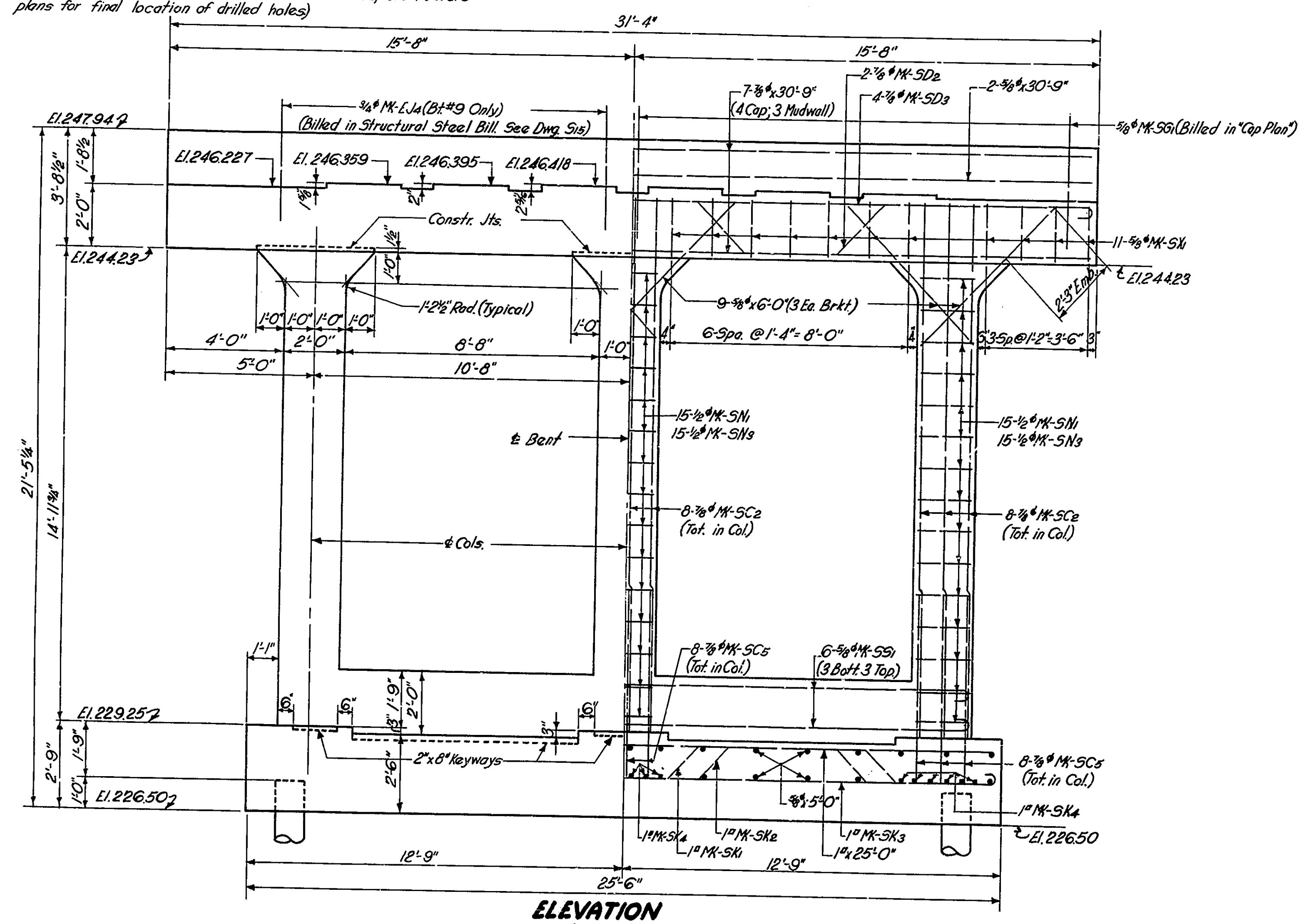
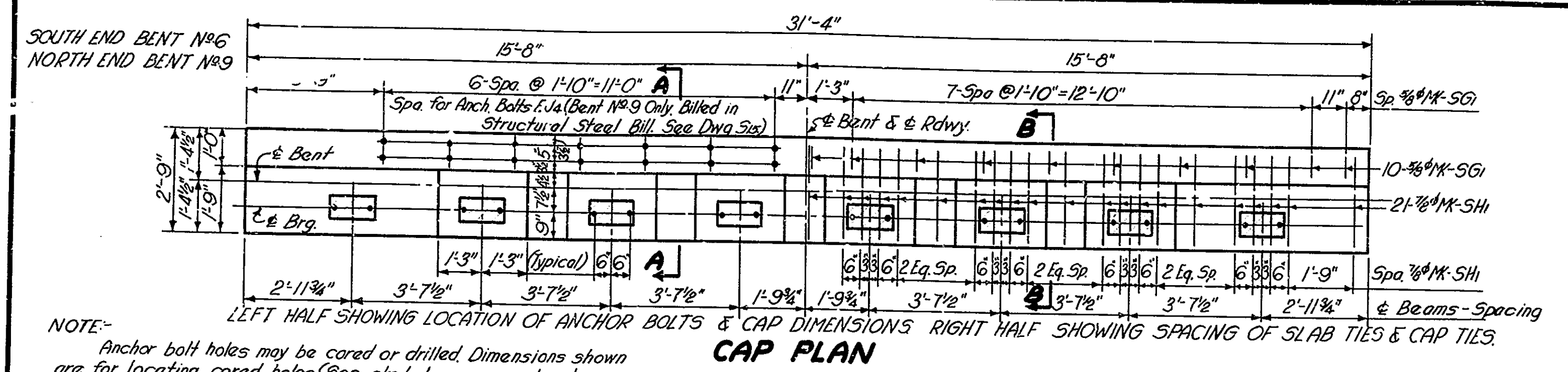
NOTE: 12 Treated Timber Piles required for each Foundation. All Piles to be Driven to 20 Ton Bearing (Min).

NOTE: All Column Steel extending into Footing is 7/8" MK-SCs
LEFT HALF SHOWING NEAT LINES & VERTICAL STEEL EXTENDING INTO FTG. RIGHT HALF SHOWING FTG. STEEL

DESIGNED: A.G.L. 8-26-41
DRAWN: C.E.G. 9-4-41
CHECKED: A.A.S. 9-12-41

BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	56	1941	5 D	

SECTION - T



Note: For "Bill of Materials" See Dwg. 531.

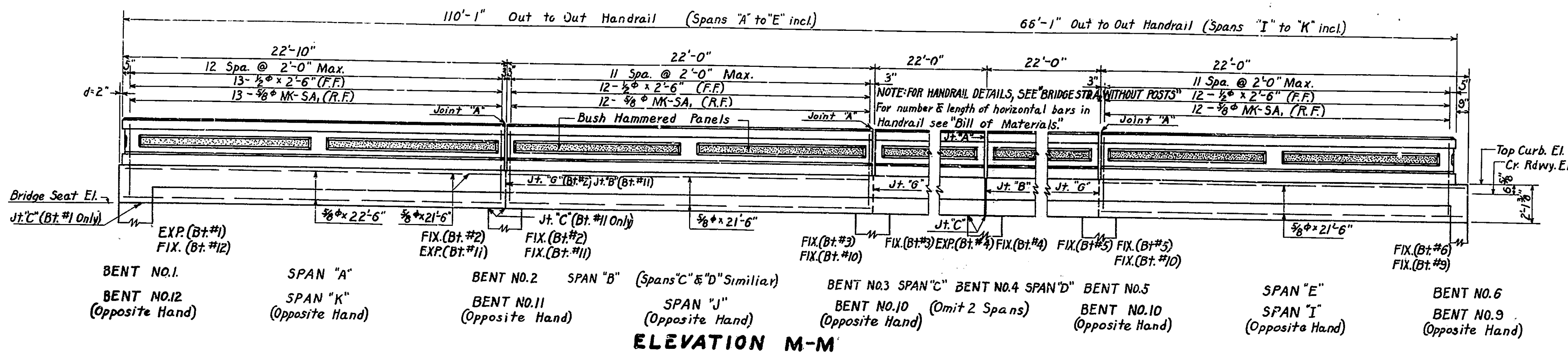
BENTS NO. 6 & NO. 9 DETAILS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: $\frac{3}{8}$ " = 1'-0" UNLESS NOTED. OCTOBER 2, 1941
RECOMMENDED FOR APPROVAL: *[Signature]*
PROJECT: 56 STATION: 461 + 93.5
SECTION: T STRUCTURE NO. 1683
DRAWING: S3D OF 20 BRIDGE CONTRACT NO. 2146

DESIGNED W.M.B. 20-41 C.K.W. 9-24
DRAWN W.B. 9-3-41 C.K.W. 9-24
TRACED P.T.Y. 9-17-41 C.K.W. 9-24

BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	56	1941	5 E	

SECTION - T



TEST BAR-SAMPLES

Cut one test sample for each splice bar and replacement bar provided in "Bill of Materials". For bent bars use any bars that have a straight portion longer than 120 diameters plus 4'-0" and make cuts 60 diameters plus 6" and 60 diameters plus 3'-6" from same bend or hooked end. For straight bars make cut 3'-0" from end. For stirrups or similar shapes cut samples from group for which replacement bars are provided in "Bill of Materials". Splice bars to lap, with bars from which test samples are cut, making laps 60 diameters at each cut end.

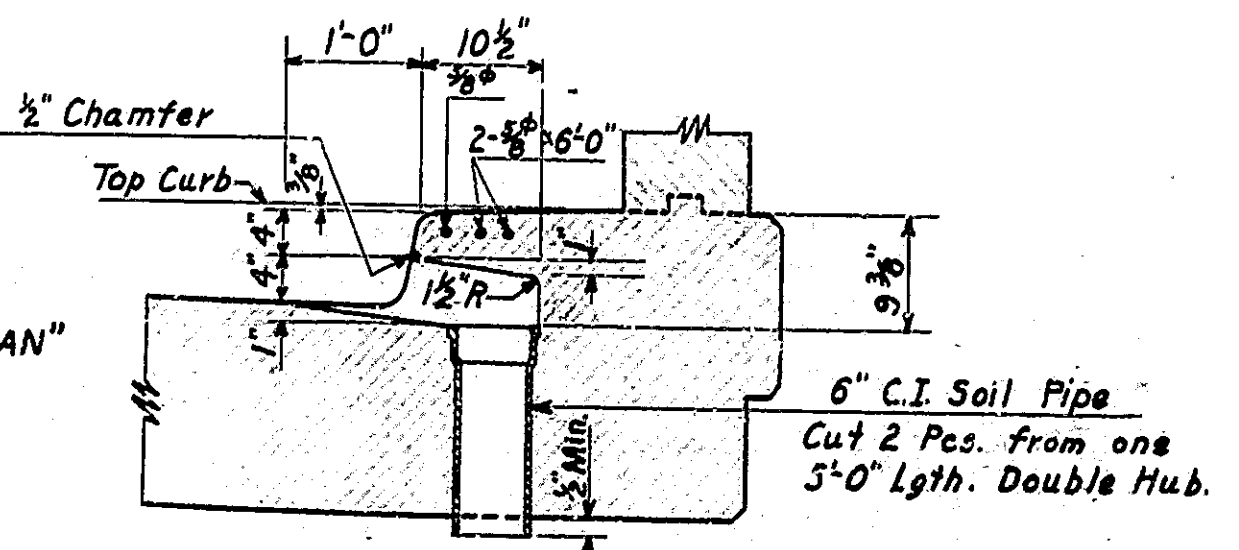
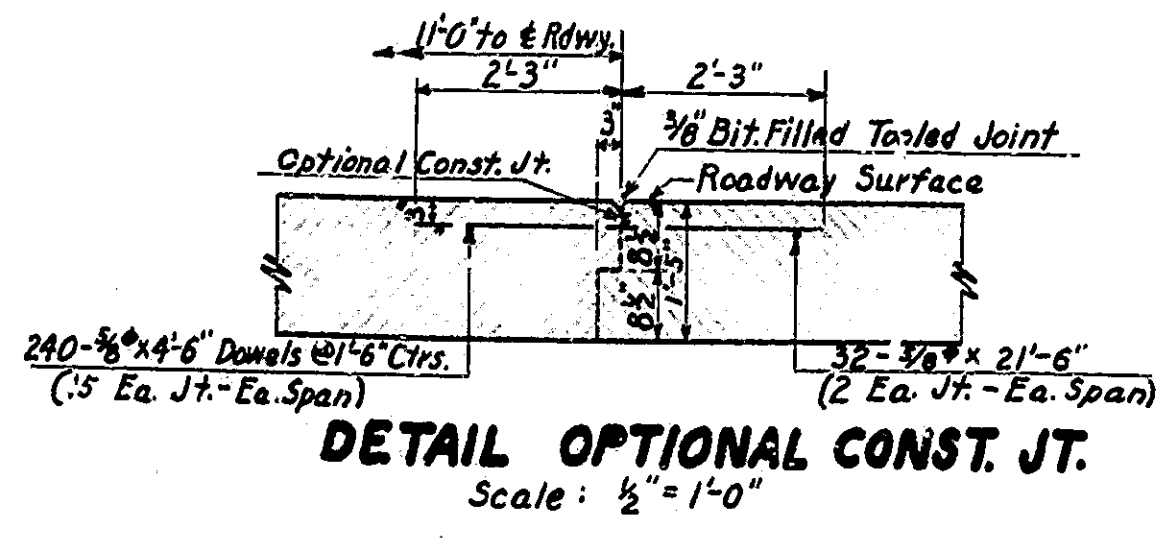
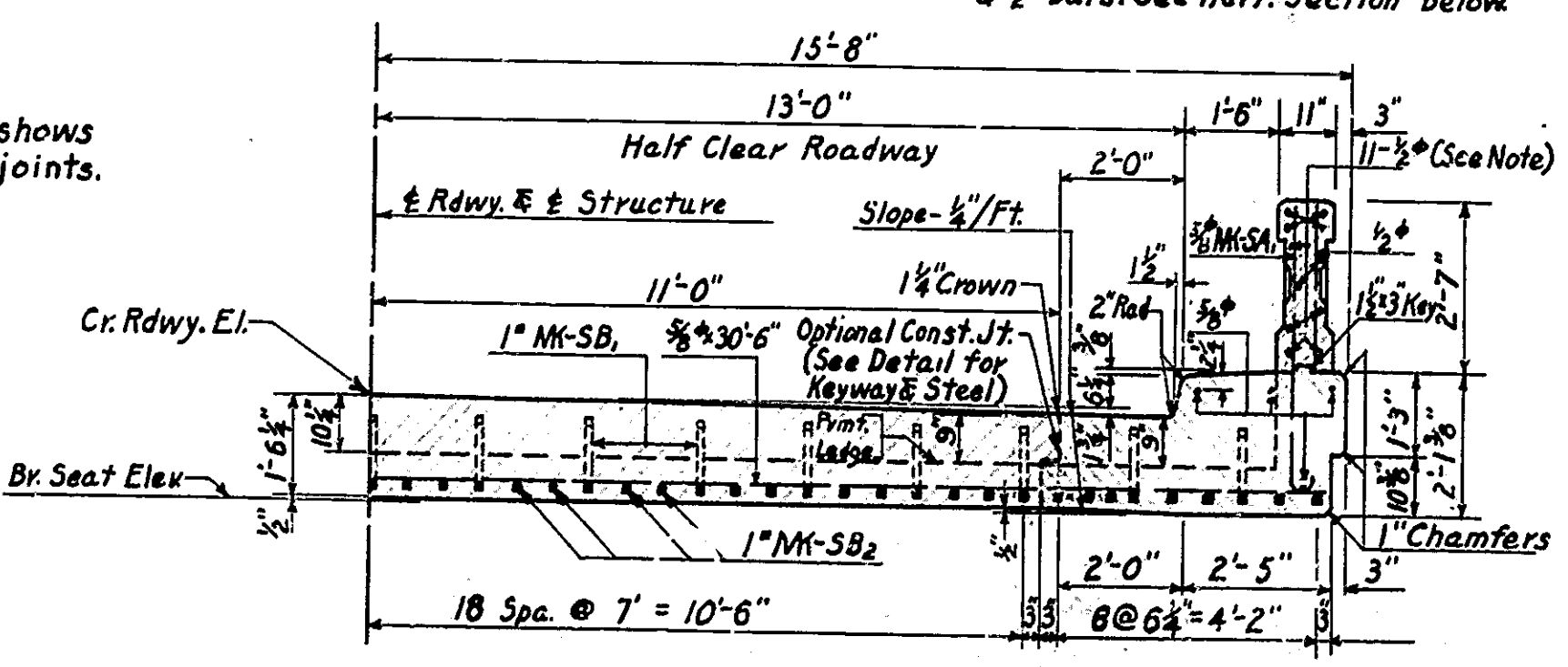
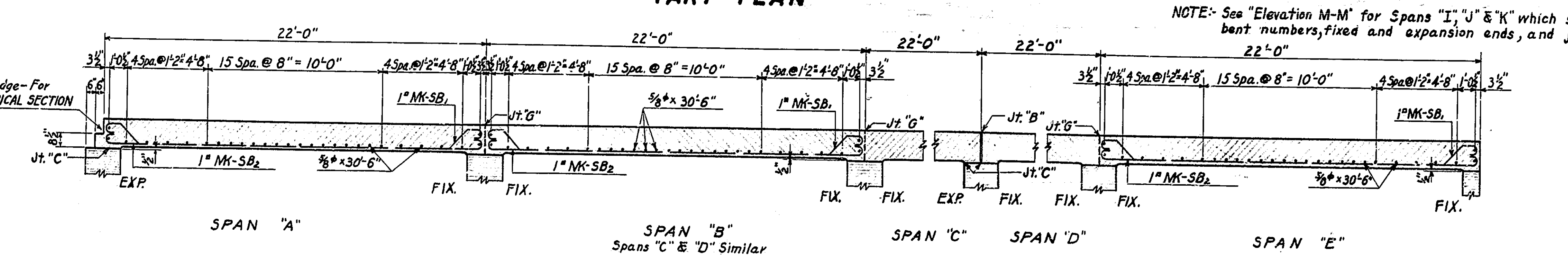
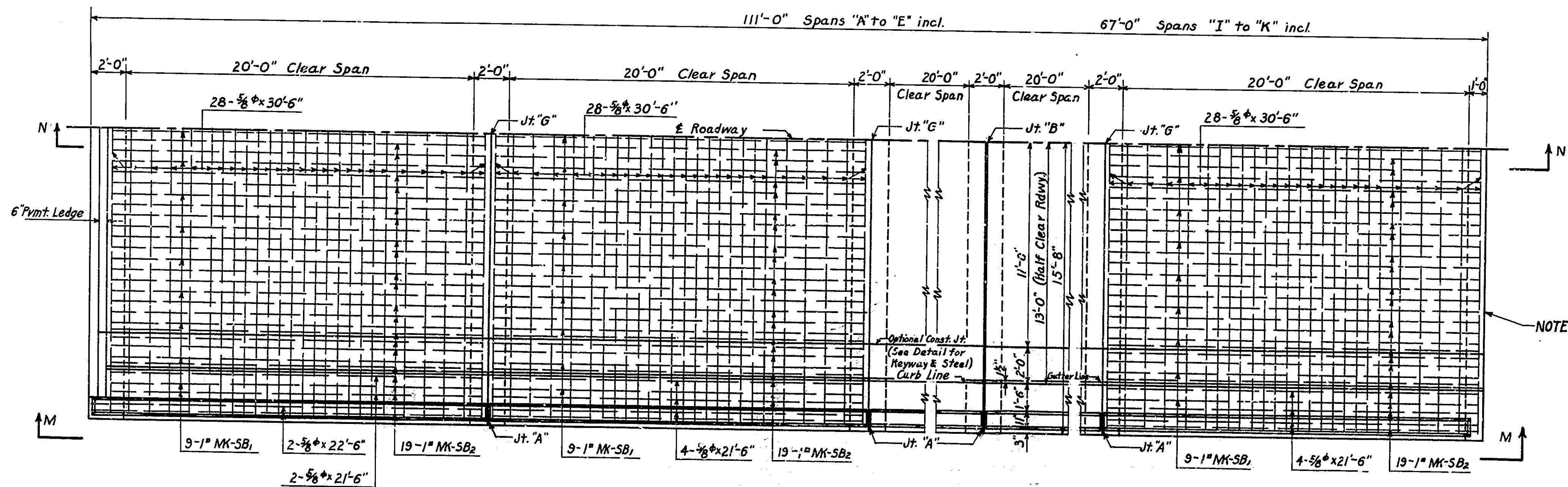
DESIGN DATA

Unit Stresses:- $f_s = 18,000 \text{ psi}$; $f_c = 900 \text{ psi}$.

Live Load H20 with impact, with distribution of loads in accordance with 1935 A.A.S.H.O. Specifications. Dead Load increased 15% per sq. ft. of roadway to provide for future wearing surface. Slab designed with $\frac{1}{2}$ " wearing surface.

JOINT LEGEND

Joint "A" indicates vertical $\frac{3}{8}$ " open joint in Handrail only. Joint "B" indicates vertical $\frac{1}{2}$ " preformed bituminous expansion joint extending from surface of Roadway and Sidewalk slabs and top of coping down to top of bent cap at Bents No. 4 & 11. Joint "C" indicates one horizontal layer of roofing felt, medium weight, under entire superstructure bearing area at expansion ends only. Joint "G" indicates bituminous filled $\frac{3}{8}$ " tooled joint in surface of roadway and sidewalk slabs and top of coping with vertical construction joint extending down from tooled joint to top of bent cap; at Bents No. 2, 3, 5 & 10.



For location, see "GENERAL PLAN" For additional details, see "BRIDGE STD. C2".

R.C. SLAB DETAILS STATE HIGHWAY COMMISSION OF INDIANA

SCALE: $\frac{1}{4}$ " = 1'-0" UNLESS NOTED, OCTOBER 2, 1941

RECOMMENDED FOR APPROVAL: *J. S. Smith*

PROJECT: 56 STATION: 451 + 93.5

SECTION: T STRUCTURE NO. 1683

DRAWING: 5E OF 20 BRIDGE CONTRACT NO. 2146

BILLS OF MATERIALS

BRIDGES OVER 20' SPAN					
ED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	IND.	56	1941	5F	

SECTION: T

BENTS Nos. 1, 2 & 12

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SD1	6	1/2"	352.9'	Longit. Cap Bents #1 & #2 (Bent)	2131.0'
V	SD2	10	"	322.3'	" #1 & #2 (Top)	322.3'
V	SD3	4	"	302.9'	" #1 & #2 (Both)	1231.0'
Total #8's						660.0'
V	SE1	50	3/8"	21.9'	Cap Ties - Bents #1 & #2	1391.0'
V	SF1	18	"	12.9'	Vert. Cap. Bent #2	229.6'
V	SG2	53	"	6.9'	Superstr. Ties - Bents #2 & #12	357.9'
V	SX2	48	"	6.9'	Cap Stirrups - Bents #1 & #2	324.0'
V	SX4	12	"	4.0'	" #1 & #2	48.0'
V	SX4	10	"	30.9'	Longit. Cap - Bent #2	307.6'
Total #8's						1,404.3'
TOTAL STEEL						2,814.3'

CONCRETE			
Class	Volume	BENT NO.	TOTAL
Class 'D' - Caps	5.2 Cu. Yd.	13.9 Cu. Yd.	24.3 Cu. Yd.

MISCELLANEOUS	
20 Treated Timber Piles (35'-0" Approx.) @ 6 ea. Bents #1 & #2 @ 8 Bents #2	700 Lin. Ft.

BENTS Nos. 4, 5 & 10

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SK1	6	1"	281.3'	Longit. Flg. (Bent)	1694.0'
V	SK2	6	"	281.3'	" (Both)	1694.0'
V	SK3	15	"	261.9'	" (Both)	4011.3'
V	SK4	54	"	6.9'	Transv. " Girder (Both)	374.0'
V	SK4	15	"	25.0'	Longit. " (Top)	375.0'
Total #8's						1,479.9'
V	SG1	72	3/8"	19.0'	Vert. Col.	1,368.0'
V	SG2	72	"	6.9'	" Stubs	496.8'
V	SD2	6	"	34.9'	Longit. Cap. (Bent)	209.4'
V	SD2	12	"	32.9'	" (Top)	394.8'
V	SD2	12	"	30.9'	" (Both)	370.8'
Total #8's						2,818.4'
V	SE1	48	3/8"	21.9'	Cap Ties	1,320.0'
V	SG2	80	"	6.9'	Superstr. Ties	544.0'
V	SS1	18	"	24.0'	Longit. Strut (Top & Both)	432.0'
V	SX3	66	"	6.9'	Cap Stirrups	455.4'
V	SX4	54	"	6.0'	Col. Brkts.	324.0'
V	SX4	81	"	5.0'	Transv. Flg. (Top & Both)	405.0'
Total #8's						2,245.6'
V	SNE	306	1/4"	52.9'	Col. Ties	1,759.6'
TOTAL STEEL						14,309.4'

CONCRETE			
Class	Volume	BENT NO.	TOTAL
Class 'E' - Footing	13.5 Cu. Yd.	13.5 Cu. Yd.	40.5 Cu. Yd.
Class 'D' - Above Flg. to Both Cap	7.6 Cu. Yd.	7.6 Cu. Yd.	22.8 Cu. Yd.
" - Caps	4.6 "	4.6 "	13.8 Cu. Yd.
Total Class 'D' - Above Flg.	12.2 Cu. Yd.	12.2 Cu. Yd.	36.6 Cu. Yd.

MISCELLANEOUS	
12 Treated Timber Piles (Approx. 25'-0") (Bent No. 4)	300 Lin. Ft.
24 Treated Timber Piles (Approx. 30'-0") (12 ea. Bents Nos. 5 & 10 @ 2 ea.)	720 Lin. Ft.
Total Piles	1,020 Lin. Ft.

BENTS Nos. 6 & 9

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SK1	4	1"	281.3'	Longit. Flg. (Bent)	1131.0'
V	SK2	4	"	281.3'	" (Both)	1131.0'
V	SK3	10	"	261.9'	" (Both)	2619.0'
V	SK4	36	"	6.9'	Transv. " (Top)	243.0'
V	SK4	10	"	25.0'	Longit. " (Top)	250.0'
Total #8's						986.0'
V	SG2	48	3/8"	17.0'	Vert. Col.	816.0'
V	SG2	48	"	6.9'	" Stubs	331.2'
V	SD2	4	"	34.9'	Longit. Cap. (Bent)	139.6'
V	SD2	8	"	32.9'	" (Top)	263.2'
V	SD2	8	"	30.9'	" (Both)	247.2'
V	SX1	12	"	4.0'	Cap Ties	48.0'
V	SX1	12	"	30.9'	Longit. Cap. (Both) Longit. Mainwall (Top)	370.8'
Total #8's						2,319.6'
V	SE1	36	3/8"	21.9'	Cap Ties	788.4'
V	SG2	48	"	6.9'	Superstr. Ties	331.2'
V	SS1	12	"	24.0'	Longit. Strut	288.0'
V	SX1	44	"	6.0'	Cap Stirrups	264.0'
V	SX1	4	"	30.9'	Longit. Mainwall	123.6'
V	SX3	36	"	6.0'	Diagonal Brkts.	216.0'
V	SX4	54	"	5.0'	Transv. Flg. (Top & Both)	270.0'
Total #8's						1,594.6'
V	SNI	90	1/4"	7.9'	Col. Ties	697.8'
V	SNI	90	"	5.9'	"	517.8'
TOTAL STEEL						10,570.8'

CONCRETE			
Class	Volume	BENT NO.	TOTAL
Class 'E' - Footings	13.5 Cu. Yd.	13.5 Cu. Yd.	27.0 Cu. Yd.
Class 'D' - Top Flgs. to Both Caps	9.4 Cu. Yd.	9.4 Cu. Yd.	27.0 Cu. Yd.
" - Caps	17.9 Cu. Yd.	17.9 Cu. Yd.	35.8 Cu. Yd.

MISCELLANEOUS	
24 Treated Timber Piles (2 ea. Bents @ 35'-0" Approx.)	840 Lin. Ft.

R.C. SLAB - SUPERSTRUCTURE

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SF1	136	1"	24.0'	Longit. Slab (Bent)	3264.0'
V	SF2	304	"	23.9'	" (Both)	7269.6'
V	SF3	1	"	13.0'	To splice 1" cut for test	13.0'
Total #8's						10,546.6'
V	SX1	196	3/8"	4.9'	Vert. (RF) Handrail	970.4'
V	SX2	224	"	30.6'	Transv. Slab	6852.0'
V	SX3	8	"	22.6'	Longit. Casing	180.8'
V	SX4	56	"	21.6'	Sidewalk	1209.6'
V	SX5	20	"	6.0'	Over Drains	120.0'
V	SX6	3	"	9.6'	To splice 3/8" cut for test	28.8'
Total #8's						9,290.6'
V	SX7	44	1/4"	22.3'	Longit. Handrail - Spans 4/8" x 1/2"	979.2'
V	SX8	88	"	21.6'	" Spans 2/8" x 1/2"	1,891.2'
V	SX9	44	"	20.9'	" Spans 2/8" x 1/2"	915.6'
V	SX10	196	"	24.0'	Vert. (RF) " Spans 2/8" x 1/2"	4704.0'
V	SX11	3	"	24.0'	To splice 1/2" cut for test	72.0'
TOTAL STEEL						42,980.0'

CONCRETE			
Class	Volume	BENT NO.	TOTAL
Class 'D' - Superstructure	26.8 Cu. Yd.	13.7 Cu. Yd.	40.5 Cu. Yd.
Span 'A'	26.5 "	13.5 "	40.0 "
" 'B'	26.5 "	13.5 "	40.0 "
" 'C'	26.5 "	13.5 "	40.0 "
" 'D'	26.5 "	13.5 "	40.0 "
" 'E'	26.5 "	13.5 "	40.0 "
" 'F'	26.5 "	13.5 "	40.0 "
" 'G'	26.5 "	13.5 "	40.0 "
" 'H'	26.5 "	13.5 "	40.0 "
" 'I'	26.5 "	13.5 "	40.0 "
Total	212.6 Cu. Yd.	108.8 Cu. Yd.	321.4 Cu. Yd.

MISCELLANEOUS	
5 Pcs - 6" C.I. Soil Pipe (5'-0" length - Double Hold) @ 100'	500 Lbs.

BENTS Nos. 3 & 11

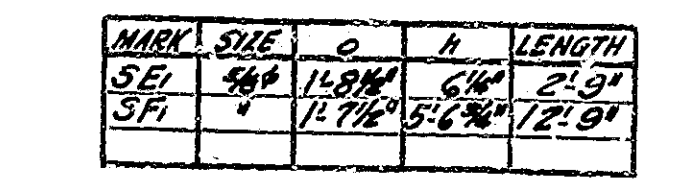
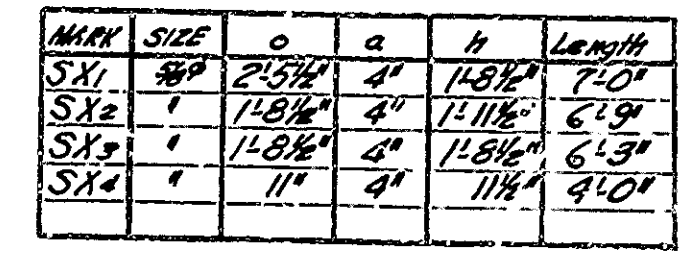
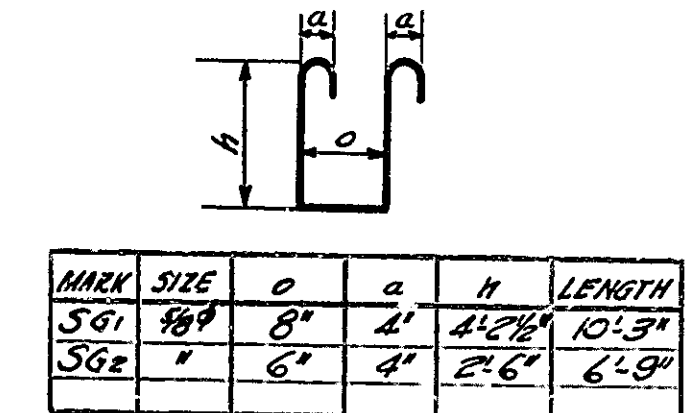
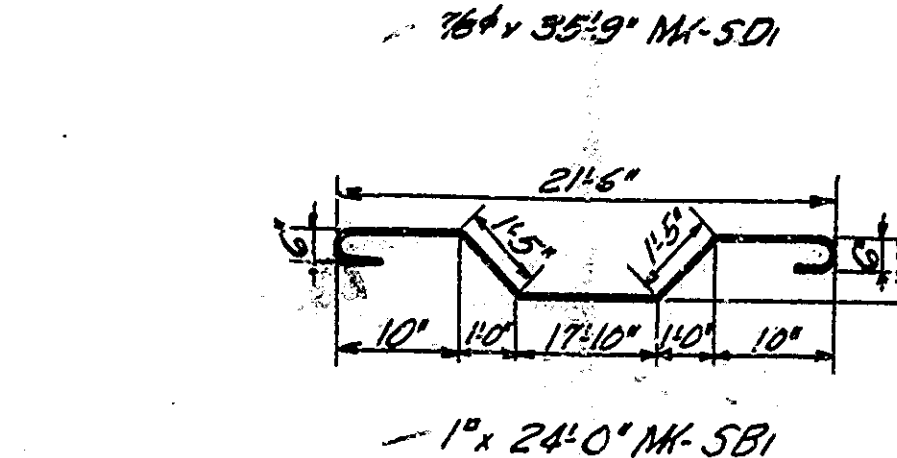
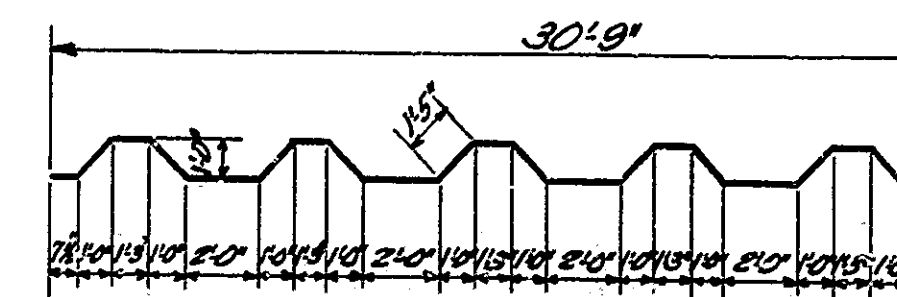
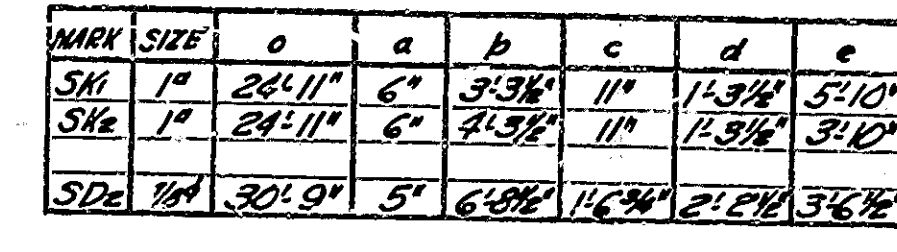
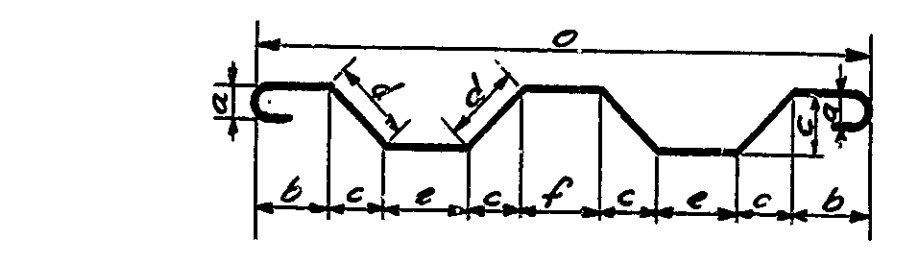
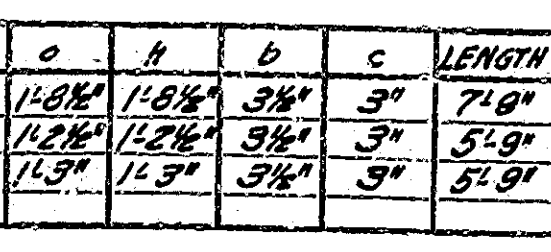
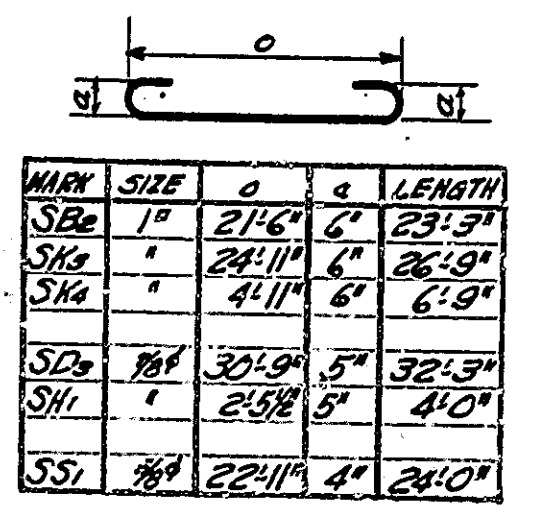
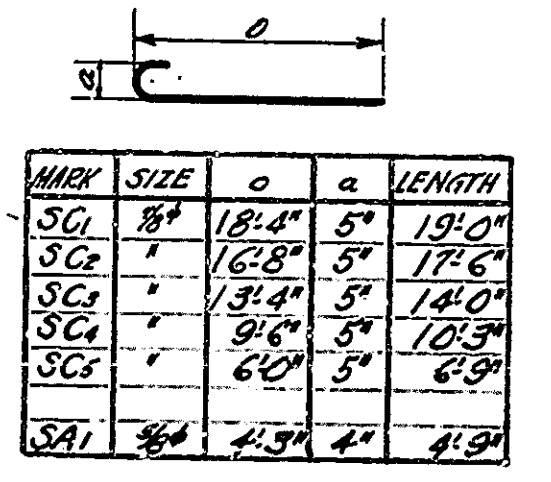
REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SK1	4	1"	281.3'	Longit. Flg. (Bent)	1131.0'
V	SK2	4	"	281.3'	" (Both)	1131.0'
V	SK3	10	"	261.9'	" (Both)	2619.0'
V	SK4	36	"	6.9'	Transv. " (Top)	243.0'
V	SK4	10	"	25.0'	Longit. " (Top)	250.0'
Total #8's						986.0'
V	SG2	24	3/8"	14.0'	Vert. Col. Bars	336.0'
V	SG2	24	"	12.3'	" Stubs	295.2'
V	SD2	4	"	34.9'	Longit. Cap. (Bent)	139.6'
V	SD2	8	"	32.9'	" (Top)	263.2'
V	SD2	8	"	30.9'	" (Both)	247.2'
Total #8's						1,549.0'
V	SE1	32	3/8"	21.9'	Cap Ties	700.8'
V	SG2	48	"	6.9'	Superstr. Ties	331.2'
V	SS1	12	"	24.0'	Longit. Strut	288.0'
V	SX3	44	"	6.9'	Cap Stirrups	303.6'
V	SX4	36	"	6.0'	Col. Brkts.	216.0'
V	SX4	54	"	5.0'	Transv. Flg. (Top & Both)	270.0'
V	SNE	120	1/4"	5.9'	Col. Ties	708.0'
TOTAL STEEL						8,508.4'

CONCRETE			
Class	Volume	BENT NO.	TOTAL
Class 'E' - Footing	13.5 Cu. Yd.	13.5 Cu. Yd.	27.0 Cu. Yd.
Class 'D' - Top Flg. to Both Cap	6.0 Cu. Yd.	4.7 Cu. Yd.	19.9 Cu. Yd.
" - Cap	4.6 "	4.6 "	13.8 Cu. Yd.
Total Class 'D' - Above Flg.	10.6 Cu. Yd.	9.3 Cu. Yd.	19.9 Cu. Yd.

MISCELLANEOUS	
12 Treated Timber Piles (Approx. 30'-0") Bents #3 & 11	360 Lin. Ft.
12 Treated Timber Piles (Approx. 25'-0") Bents #3	300 Lin. Ft.
Total Piles	660 Lin. Ft.

ADDITIONAL BILL OF SUBSTRUCTURE SPLICE BARS

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	SN1	1	1"	13.0'	To splice bars cut for test	13.0'
V	SN2	1	"	12.0'	"	12.0'
V	SN3	3	3/4"	8.0'	Supplied for test	24.0'
TOTAL STEEL						49.0'



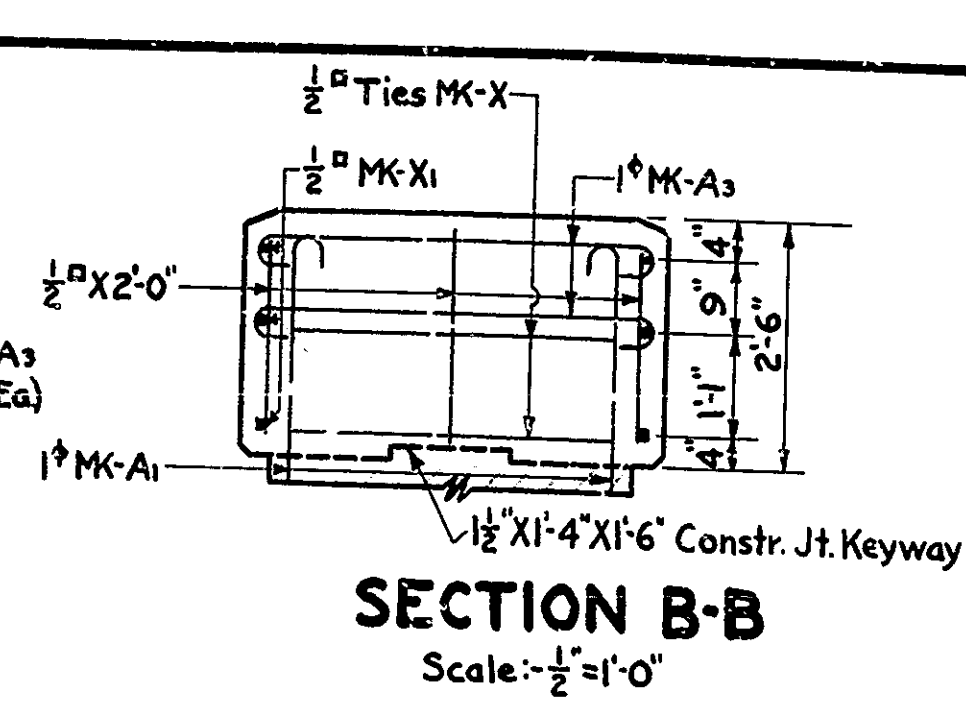
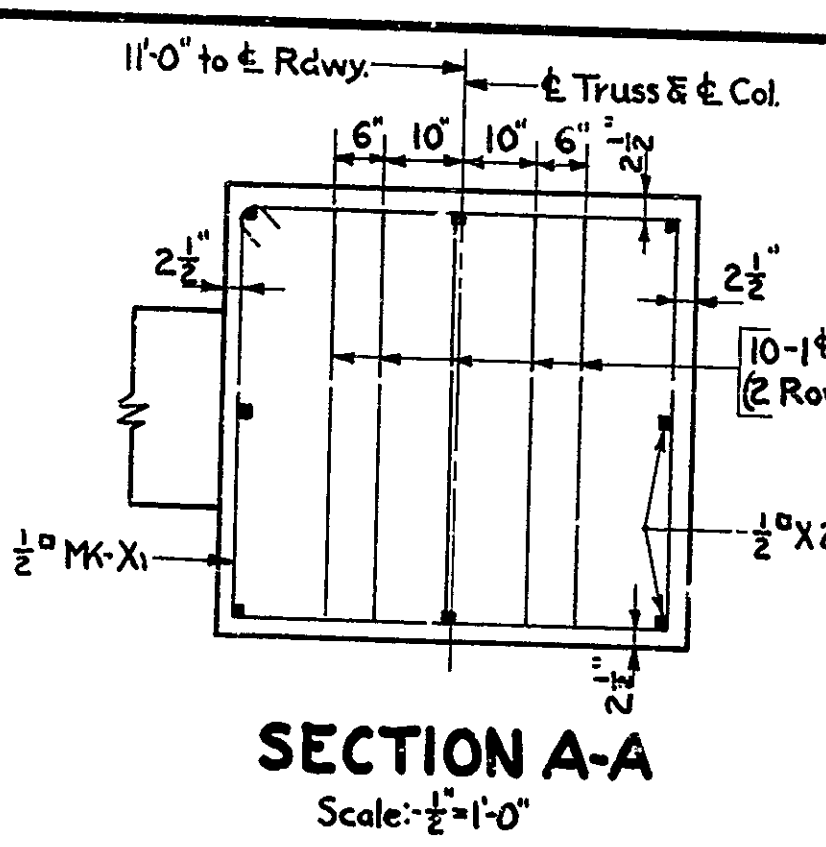
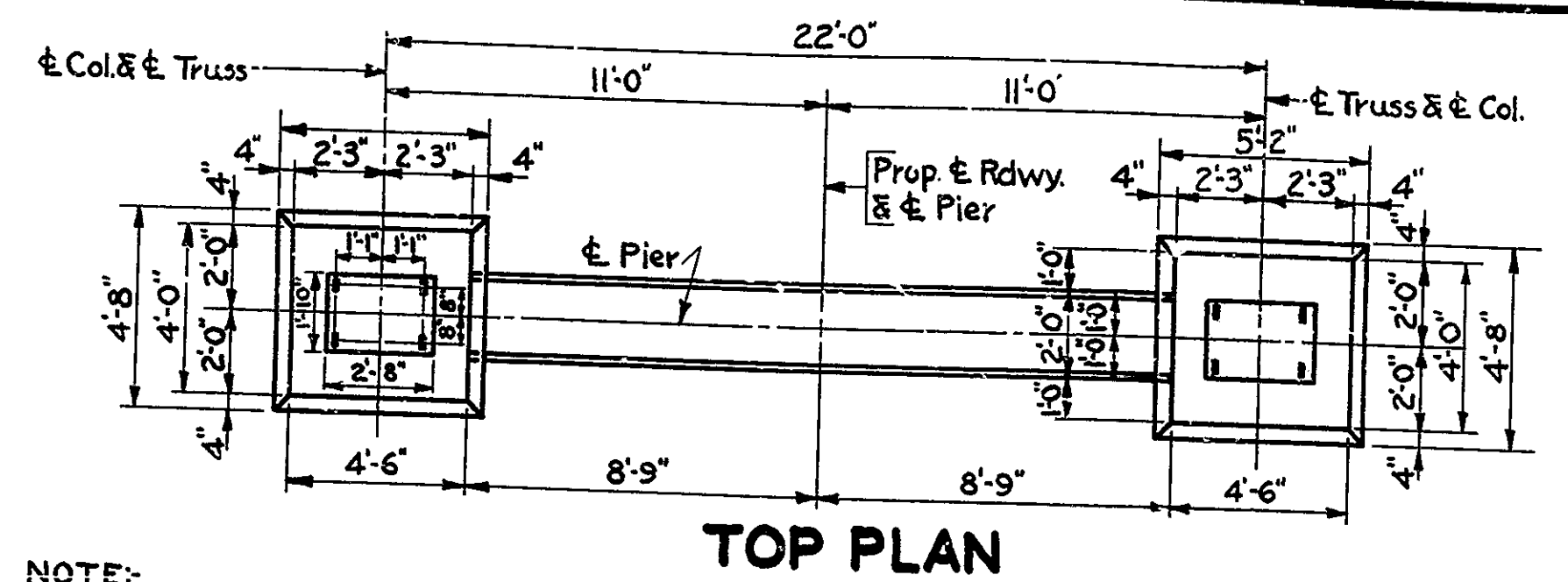
*ADDITIONAL R.C. SLAB - SUPERSTRUCTURE

REINFORCING STEEL						
BENT STRAIGHT	MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH WEIGHT
V	PA0	32	3/8"	4.6'	Optional Const. Jt. - Details	1472.0'
V	SF1	32	"	21.6'	Longit. @ Const. Jt.	691.2'
Total #8's						1,663.2'

*Additional steel reqd. if Optional Const. Jts. are used.

BILL OF MATERIALS STATE HIGHWAY COMMISSION OF INDIANA

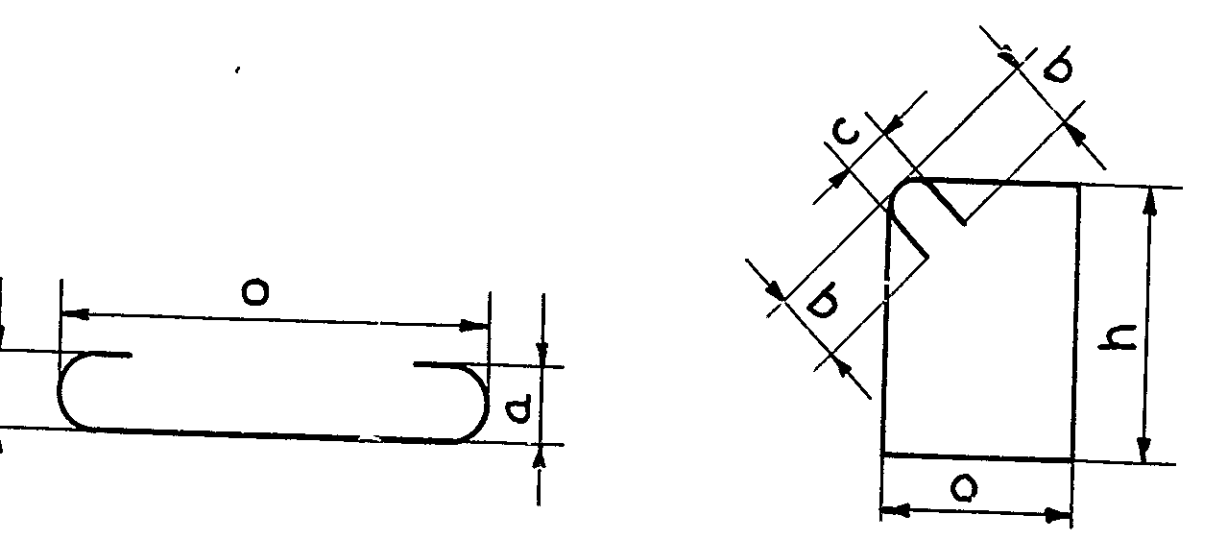
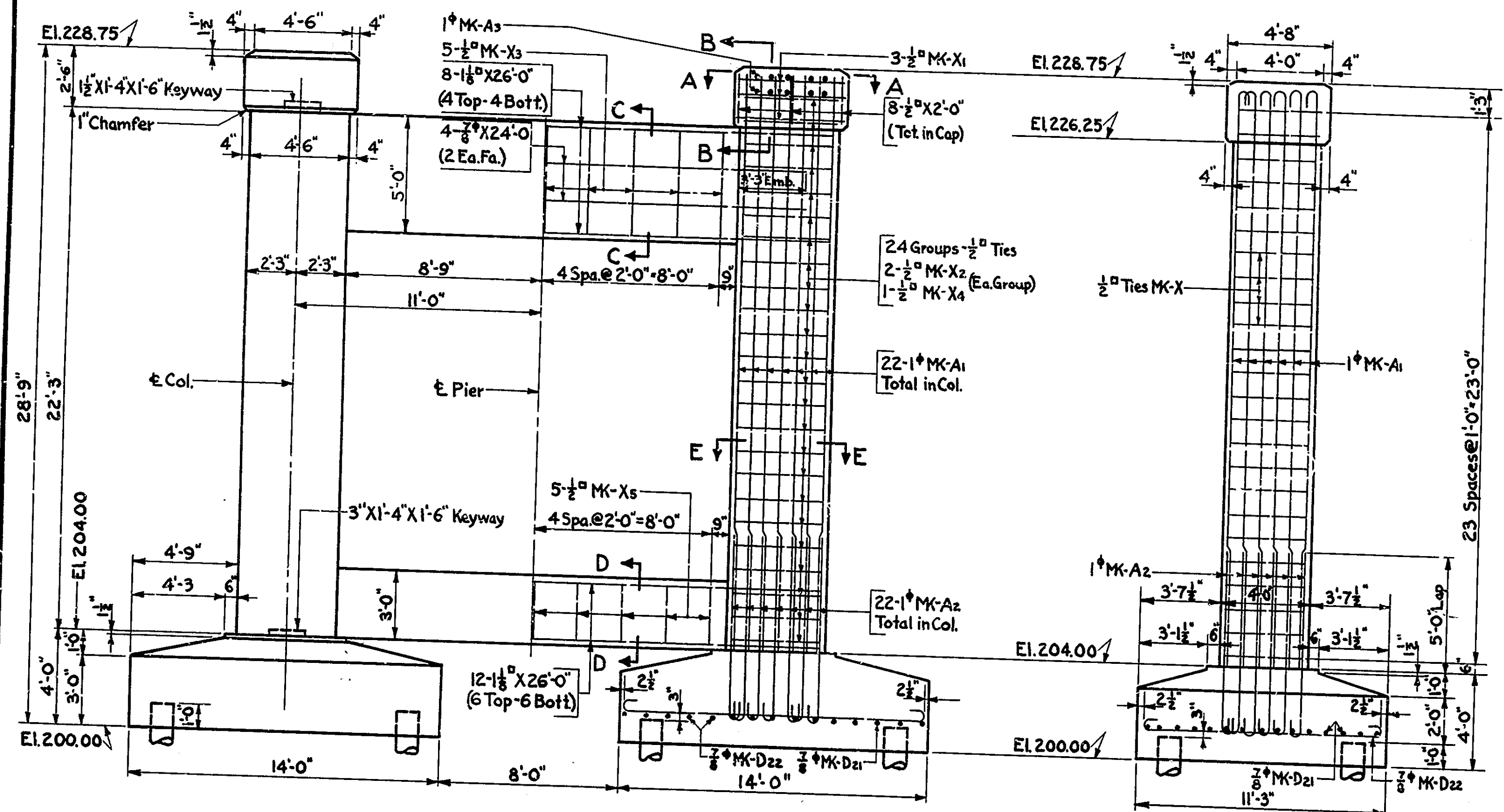
SCALE: NONE
 RECOMMENDED FOR APPROVAL: *J. E. Smith*
 PROJECT: 56
 SECTION: T
 DRAWING: 53F OF 20
 OCTOBER 2, 1941
 STATION: 451+93.5
 STRUCTURE NO. 1683
 BRIDGE CONTRACT NO. 2146



NOTE:-
 Anchor bolt holes may be cored or drilled.
 Dimensions shown are for locating cored holes.
 (See sketch on superstructure plans for final location of drilled holes.)

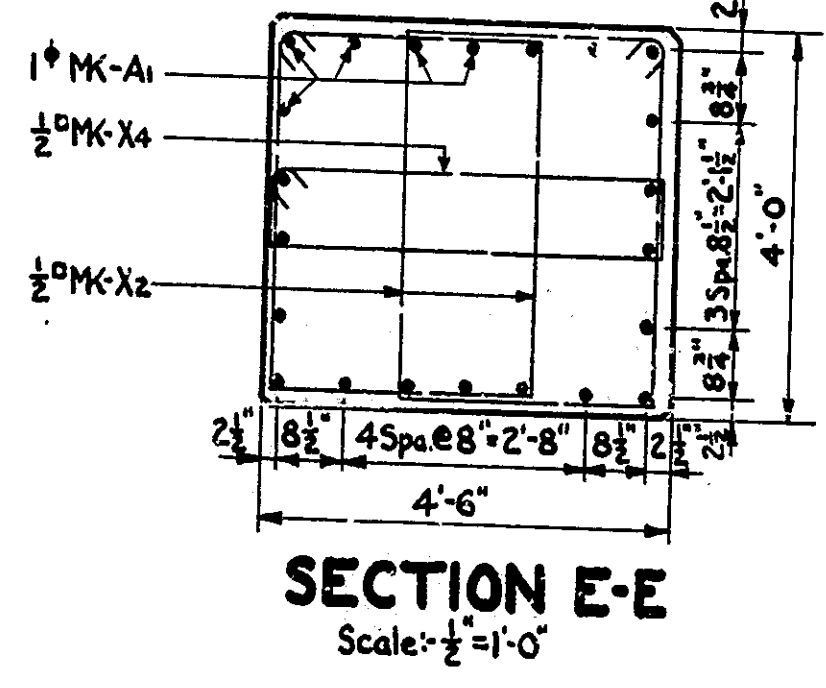
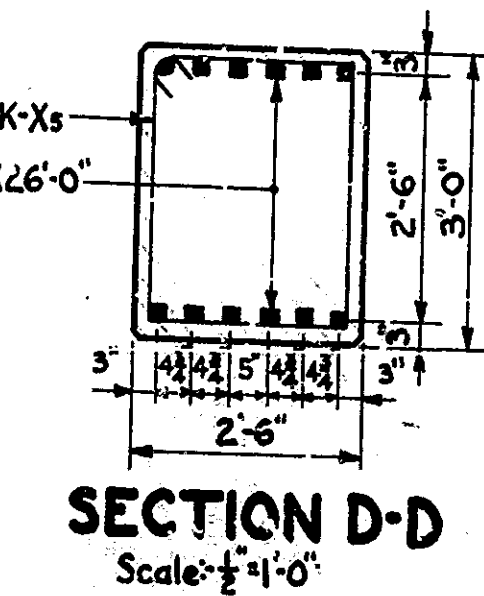
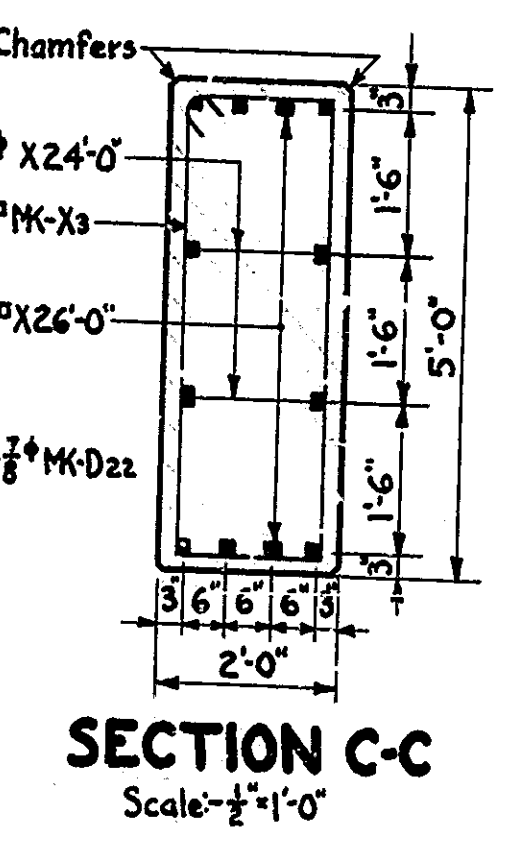
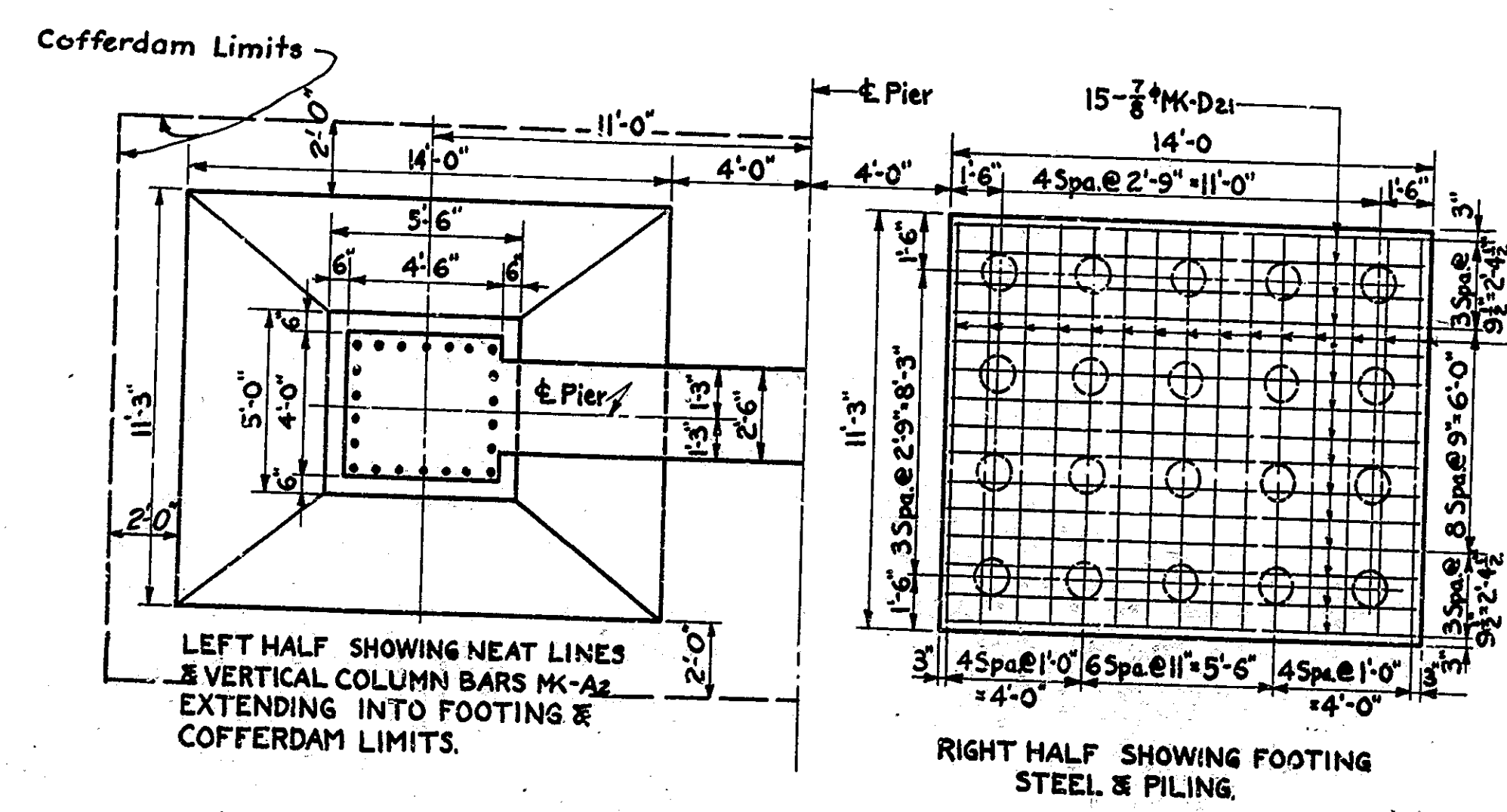
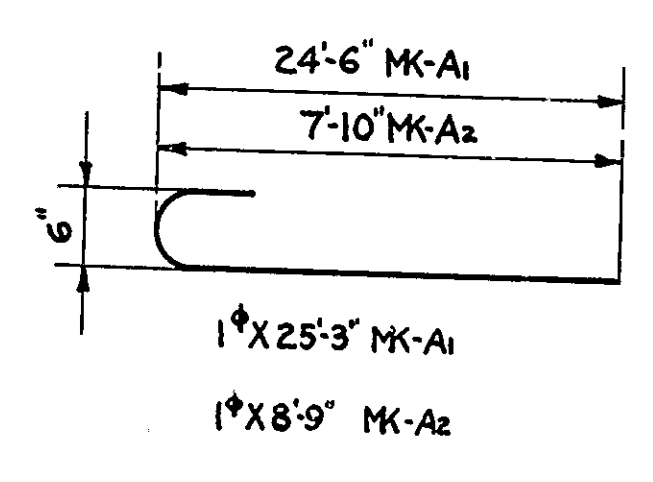
BILL OF MATERIALS (PIERS 2 & 3)

REINFORCING STEEL							
MARK	NO. PIECES	SIZE	LENGTH	LOCATION	TOTAL LENGTH	WEIGHT	
A1	40	1 1/2"	26'-0"	Longt Beams (20 Ea. Pier)	1040'-0"	4475 #	
A2	88	1"	25'-3"	Vert. Cols. (44 Ea. Pier)	2222'-0"		
A3	88	"	8'-9"	Col. Stubs (44 " ")	770'-0"		
A4	40	"	6'-0"	Horiz. Caps (20 " ")	240'-0"		
Total 1"					3232'-0"	8630 #	
D21	60	3/8"	15'-0"	Horiz. Ftg. (30 Ea. Pier)	900'-0"		
D22	60	"	12'-3"	" " " (30 " ")	735'-0"		
D23	8	"	24'-0"	Longt. Beams (4 " ")	192'-0"		
Total 3/8"					1827'-0"	3754 #	
X1	12	1/2"	18'-9"	Cap Ties (6 Ea. Pier)	225'-0"		
X2	192	"	14'-0"	Col. " (96 " ")	2688'-0"		
X3	"	"	13'-6"	Top Beam Ties (9 " ")	243'-0"		
X4	96	"	11'-0"	Col. Ties (48 " ")	1056'-0"		
X5	18	"	10'-6"	Bot. Beam Ties (9 " ")	189'-0"		
X6	32	"	2'-0"	Vert. Caps (16 " ")	64'-0"		
Total 1/2"					4465'-0"	3795 #	
Total Steel						20634 #	



Mark	Size	o	d	Length
A3	1"	4'-4 1/2"	6"	6'-0"
D21	3/8"	13'-7"	5"	15'-0"
D22	"	10'-10"	5"	12'-3"

Mark	Size	o	h	b	c	Length
X1	1/2"	4'-9"	4'-3"	3 1/2"	3"	18'-9"
X2	"	2'-10"	3'-8 1/2"	"	"	14'-0"
X3	"	1'-7 1/2"	4'-7 1/2"	"	"	13'-6"
X4	"	0'-10"	4'-2 1/2"	"	"	11'-0"
X5	"	2'-1 1/2"	2'-7 1/2"	"	"	10'-6"



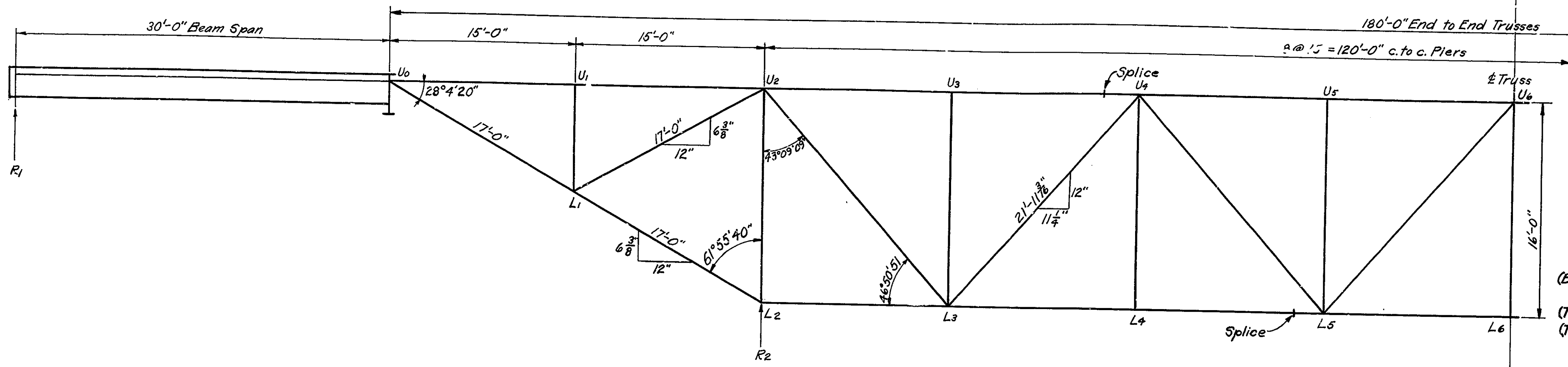
DESIGNED W.M.B. 1-14-41
 DRAWN F.H.R. 1-30-41
 CHECKED A.A.S. 2-17-41

NOTE:- 20 Timber Piles Each Footing. All piles to be driven to 24 Ton bearing.

7 & 8
 PIERS No. 7 & 8 DETAILS
 STATE HIGHWAY COMMISSION OF INDIA

SCALE: 1/4" = 1'-0" UNLESS NOTED
 RECOMMENDED FOR APPROVAL: [Signature]
 PROJECT: 56
 SECTION: T
 DRAWING: S4 OF 20
 STATION: 451+93.5
 STRUCTURE NO. 1683
 BRIDGE CONTRACT NO. 2146
 MARCH 12, 1941

BRIDGES OVER 20' SPAN						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
7	IND.	56	1941	7	33	
SECTION - T						



DATA USED FOR DESIGN & DETAILS

Live Load - H-20 truck loading with impact and distribution of loads in accordance with 1935 A.A.S.H.O. Specifications. In addition, when the stress due to truck live load (including impact) exceeds the stress due to dead load plus side walk live load, the truck live load stresses are doubled and the member designed for a unit stress 50% greater than for single live load.

Dead Load - Actual weight plus 15# per square foot of roadway to provide for future wearing surface.

Slab - Designed for single live load with impact and with 1/2" monolithic wearing surface.

Unit Stresses - For single live load.

(Beam) Structural Steel Bending (Tension)	18,000 #/sq"
(Spans) Structural Steel Bending (Compression)	(18,000 - 5/2) #/sq"
(Trusses) Structural Steel (Tension)	18,000 #/sq"
(Trusses) Structural Steel (Compression)	15,000 - 1/2 (2) #/sq"
Shear on Rivets	12,000 #/sq"
Structural Steel Bearing (Including Rivets)	24,000 #/sq"
Bearing Steel on Concrete (Including Overturning and Eccentric Loading)	900 #/sq"
Reinforcing Steel (Tension)	18,000 #/sq"
Concrete (Compression)	900 #/sq"

NOTE TO FABRICATOR

If fabricator uses these drawings for shop plans he shall check same and assume full responsibility for the accuracy of the details. The fabricator shall contact the nearest District Engineer of the State Highway Commission of Indiana in regard to inspection.

TRUSS SPAN

END FLOOR BEAM	INTERIOR FLOOR BEAM
MAX. MOM. MAX. SHEAR	MAX. MOM. MAX. SHEAR
DEAD LOAD 168,160 49,000	DEAD LOAD 107,000 19,190
LIVE LOAD *441,530 *96,100	LIVE LOAD *396,260 *82,800
IMPACT *150,110 *31,300	IMPACT *134,740 *28,150
TOTAL *759,800 *176,400	TOTAL *638,000 *130,140
30 W 124 1/2 = 3546	30 W 108 1/2 = 2992
SHOE REACTION	INTERIOR STRINGER
TOTAL DEAD LOAD 246,150	MAX. MOM. MAX. SHEAR
RDWY. LIVE LOAD 144,600	TOTAL D.L. 11,300 6,020
IMPACT 21,800	L.L. *96,800 *32,530
TOTAL 412,500	IMP *34,600 *11,600
	TOTAL *142,700 *50,150
	16 W 40 1/2 = 644
OUTSIDE STRINGER	
MAX. MOM. MAX. SHEAR	
DEAD LOAD 17,400 3,280	
LIVE LOAD *69,700 *18,820	
IMPACT *22,800 *6,200	
TOTAL *109,900 *34,300	
* Includes (L.L. & SWLL) 16 W 36	
* Denotes Double Live Load 1/2 = 56.3	

MEMBER	STRESSES IN KIPS (1000#)				TENSION -COMPRESSION	CONNECTION STRESS	SECTION	PROPERTIES			AREA REQ'D	UNIT STRESS	AREA GIVEN								
	D.L.	SWLL	RDWY.L.L.	IMPACT				L (in)	Least (in)	T			CENTER	ENDS	ALLOW.	MAX. ACTUAL	GROSS	HOLES OUT		NET	
																		CENTER	ENDS	CENTER	ENDS
U0-U2	+92.0	+7.1	+86.5	+27.9	*+327.9	*330.3	12" WF 53# D=12" F=10"	180	2.48	72.5	-	12.0	25.0	22.6	15.59	0	2.30	15.59	13.29		
U2-U4	+9.5	+6.8	+88.9	+18.1	*+230.3	*371.3	12" WF 53# D=12" F=10"	180	2.48	72.5	-	12.0	25.0	22.6	15.59	0	2.30	15.59	13.29		
U4-U6	+124.5	+6.8	+88.9	+25.8	*+441.1	*574.8	12" WF 92# D=12 3/8" F=12 1/2"	180	3.08	58.5	25.5	-	19.88	18.8	27.06	0	3.42	27.06	23.64		
U0-L1	-104.0	-8.1	-98.1	-31.6	*-371.5	*417.2	12" WF 79# D=12 3/8" F=12 1/2"	204	3.05	67.	18.7 (@L1)	-	19.93	16.0	23.22						
L1-L2	-191.6	-10.3	-98.0	-35.0	-284.9	293.4	12" WF 79# D=12 3/8" F=12 1/2"	204	3.05	67.	21.9 (@L1)	-	13.00	12.3	23.22						
L2-L3	-125.6	-9.1	-88.7	-23.9	-247.3	250.1	12" WF 65# D=12 1/2" F=12"	180	3.02	59.6	18.7	-	13.23	12.9	19.11						
L3-L4	+74.5	+10.1	+101.0	+20.6	*+327.8	*496.5	12" WF 65# D=12 1/2" F=12"	180	3.02	59.6	-	15.7	26.2	24.7	19.11	0	2.42	19.11	16.69		
L4-L5	+141.0	+13.4	+134.6	+27.5	*+478.6	*600.7	12" WF 85# D=12 3/8" F=12 1/2"	180	3.07	58.5	-	20.6	26.2	24.7	24.98	0	3.18	24.98	21.80		
L5-L6	+98.7	+6.8	-88.9	-18.1	*-122.1	*600.7	12" WF 85# D=12 3/8" F=12 1/2"	180	3.07	58.5	-	20.6	26.2	24.7	24.98	0	3.18	24.98	21.80		
L1-U2	+37.8	+2.7	+44.0	+15.7	*+159.9	*160.6	12" WF 25# D=11 3/8" F=6 1/2"				-	5.92	27.0	26.8	7.39	0	1.42	7.39	5.97		
U2-L2	+170.3	+8.4	+106.8	+18.4	+303.9	309.4	12" WF 65# D=12 1/2" F=12"				-	16.9	18.0	18.0	19.11	0	2.24	19.11	16.87		
L3-U4	-122.0	-7.0	-86.4	-15.7	-231.1	238.5	12" WF 72# D=12 1/2" F=12"	263	3.04	87	19.9	-	11.62	10.9	21.16						
U4-L5	+73.0	+5.5	+68.2	+13.1	*241.1	*256.4	12" WF 40# D=12" F=8"	233	1.94	120	-	9.23	27.0	25.6	11.77	0	2.06	11.77	9.71		
L5-U6	-25.0	-4.3	-52.0	-10.6	*-154.5	*232.8	12" WF 50# D=12 1/4" F=8 1/2"	222	1.96	113	14.2	-	13.64	13.2	14.71	0	2.56	14.71	12.15		
U1-L1	-35.5	-2.5	-41.4	-14.8	*-150.4	*186.0	12" WF 40# D=12" F=8"	96	1.94	50	7.0	-	21.56	12.8	11.77						
U2-L2	-177.2	-8.5	-100.3	-16.4	-302.4	313.9	12" WF 79# D=12 3/8" F=12 1/2"	192	3.05	63	21.6	-	14.0	13.0	23.22						
U3-L3	-35.5	-2.5	-41.4	-14.8	*-150.4	*186.0	12" WF 40# D=12" F=8"	192	1.94	99	8.0	-	18.83	12.8	11.77						
U4-L4	0	0	0	0	0	57.8	12" WF 25# D=11 3/8" F=6 1/2"	192	1.40	137	0	-	18.00	0	7.39	0	1.42	7.39	5.97		

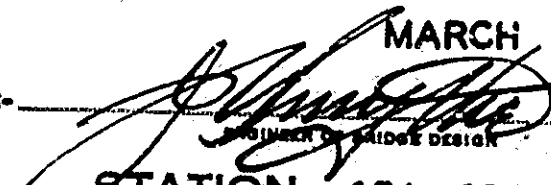
* Denotes double live load

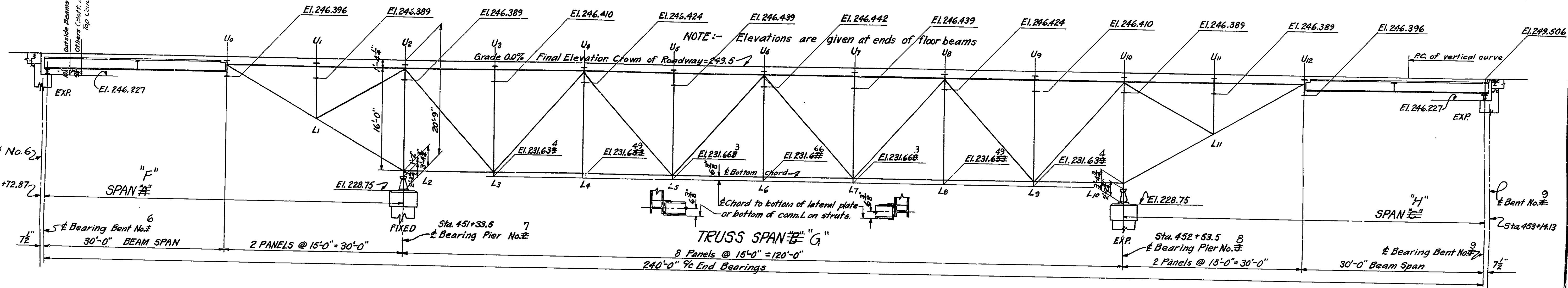
30 FT. BEAM SPAN

	Outside Beam		Next To Outside Beam		Interior Beam	
	R (lbs)	M (ft-lbs)	R (lbs)	M (ft-lbs)	R (lbs)	M (ft-lbs)
DEAD LOAD	12,300	89,000	6,880	49,400	6,880	49,400
LIVE LOAD	12,700	87,600	*36,800	*149,400	*36,800	*149,400
IMPACT	3,200	21,200	*11,800	*48,200	*11,800	*48,200
TOTAL	28,200	197,800	*55,480	*247,000	*55,480	*247,000
Beam Size	21" WF 68# 1/2 = 132.9		21" WF 59# 1/2 = 119.3		21" WF 68# 1/2 = 132.9	

+ Includes L.L. & SWLL.
* Denotes Double Live Load

**STRESS SHEET
STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: NONE
RECOMMENDED FOR APPROVAL: 
PROJECT: 56
SECTION: T
DRAWING: S5 OF 20
BRIDGE CONTRACT NO. 2146
MARCH 12, 1941
STATION: 451+93.5
STRUCTURE NO. 1683
FILE AS 1-15-16A3



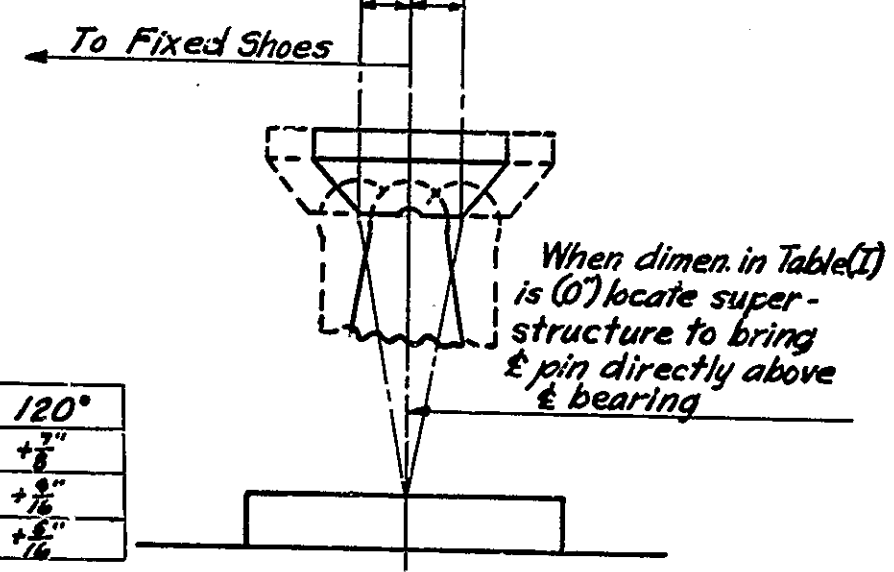
SIDE ELEVATION
(SHOWING BOTTOM OF FLOOR BEAMS AND BOTTOM CHORD ON FALSEWORK)
Scale: 1/4" = 1'-0"

PROCEDURE FOR ERECTION AND SETTING OF SUPERSTRUCTURE

- Locate ϵ of Bearings on Pier No. 7, 6'-0" from face of Mudwall at Bent No. 8.
- Erect trusses
(a) So that bottom of lateral plates or bottom of connection L's on struts are at the elevations shown along bottom chord of truss in "SIDE ELEVATION."
(b) So that the ϵ of Top Shoes at Pier No. 9 is set as indicated by "SKETCH I" and "TABLE I" in accordance with prevailing air temperature.
- Erect Beam Spans "F" and "H".
- After all structural steel is bolted in place, bring the bottom of the floor beams at their ends, to the elevations shown in "SIDE ELEVATION."
- After Truss Span has been swung, adjust the location of entire superstructure longitudinally so that distance "A" shown in "SKETCH III" for Bent No. 9 equals distance "A" of TABLE III for prevailing air temperature.
- Attach Fixed Shoes and set Anchor Bolts at Pier No. 7.
- After position of superstructure is fixed in this manner adjust Rocker Shoes and Expansion Plates at Bent No. 8, Pier No. 8 and Bent No. 9 as shown in "TABLE I" & "SKETCH I" for prevailing air temperature.
- Set Anchor Bolts for Bent No. 8, Pier No. 8 & Bent No. 9.
- Set Expansion Joints EU1, EU2 & EU3 to elevations shown in "SKETCH II" on lines "X" & "Y". Make vertical adjustment for EU1 by use of variable fills under joint. Make vertical adjustment for EU2 & EU3 by use of double nuts on Rods EU4. Make longitudinal adjustment for EU1 by setting distance "b" as shown in "TABLE II" and "SKETCH II" for prevailing air temperature.
- No concrete is to be poured in the floor until the above operations are completed.

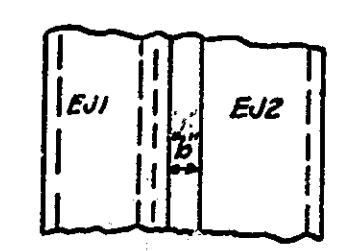
See Drwg. 57 for notes regarding use of these drawings for shop plans and regarding inspection.

When dimen. in Table I is (-) locate superstructure so ϵ pin is on side of ϵ bearing toward Fixed Shoes
When dimen. in Table I is (+) locate superstructure so ϵ pin is on side of ϵ bearing away from Fixed shoes



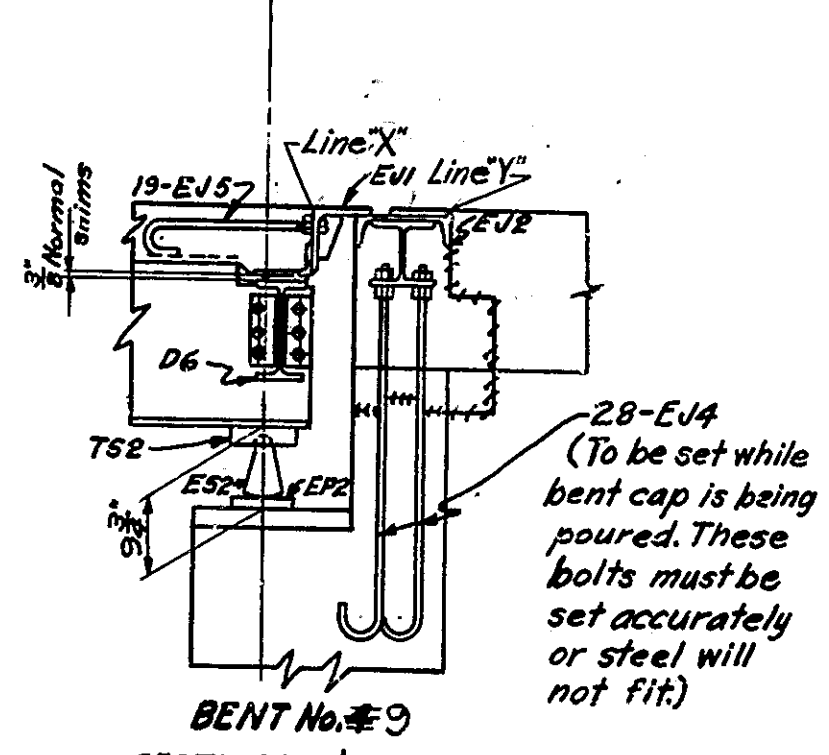
SKETCH I (AT PIER No. 8)

	0°	20°	40°	60°	80°	100°	120°
Bent No. 8	-1/8"	-1/8"	-1/8"	0"	+1/8"	+1/8"	+1/8"
Pier No. 8	-1/8"	-1/8"	-1/8"	0"	+1/8"	+1/8"	+1/8"
Bent No. 9	-1/8"	-1/8"	-1/8"	0"	+1/8"	+1/8"	+1/8"

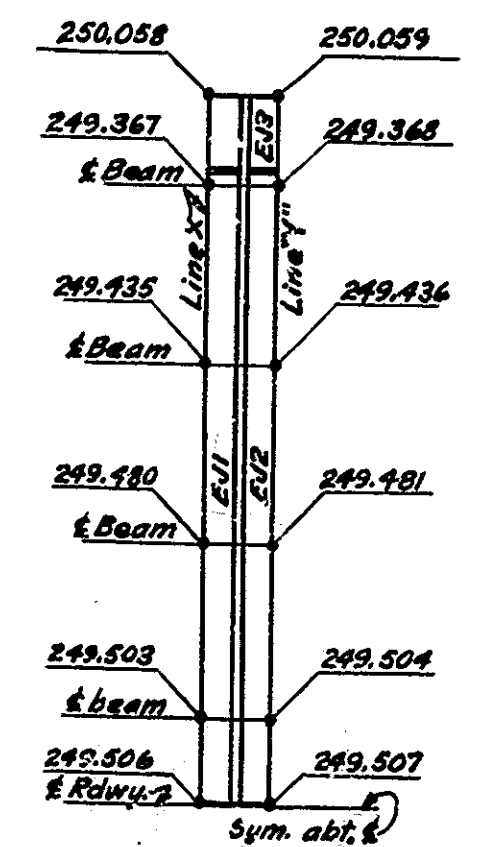


SKETCH II

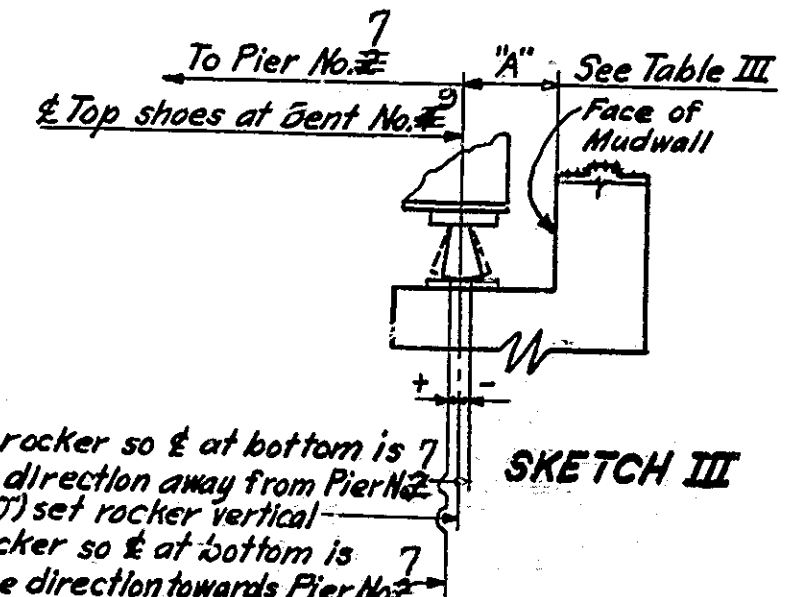
Distance "b" for setting EU1 longitudinally for prevailing temperature of Air							
0°	20°	40°	60°	80°	100°	120°	
2 3/8"	2 3/8"	2 3/8"	2"	1 7/8"	1 7/8"	1 7/8"	1 7/8"



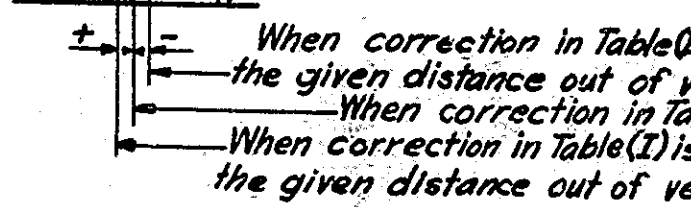
SECTION ON ϵ ROADWAY LOOKING NORTH
Scale: 1/4" = 1'-0"



Elevations top of slab for Expansion Joint.
SKETCH II



Distance "A" for Top Shoes at Bent No. 9							
0°	20°	40°	60°	80°	100°	120°	
1'-0 3/8"	1'-0 3/8"	1'-0 3/8"	1'-0"	11 1/2"	11 1/2"	11 1/2"	11 1/2"

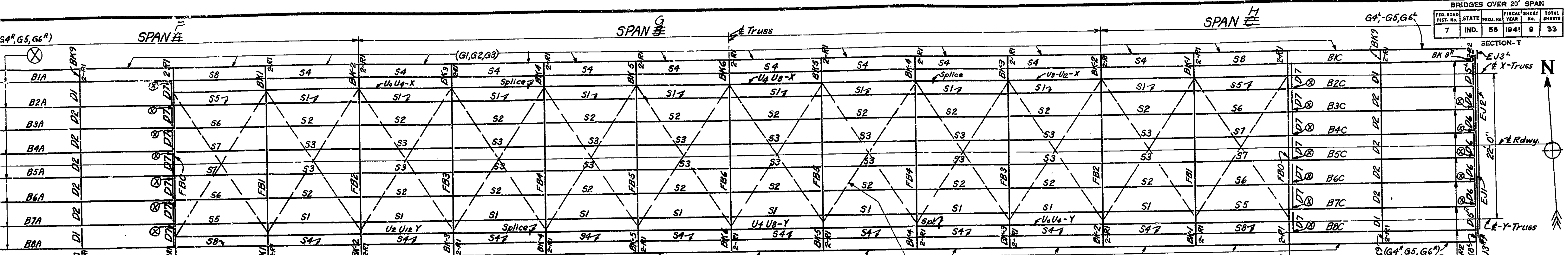


SKETCH I-E

TIE-UP SHEET
STATE HIGHWAY COMMISSION OF INDIANA

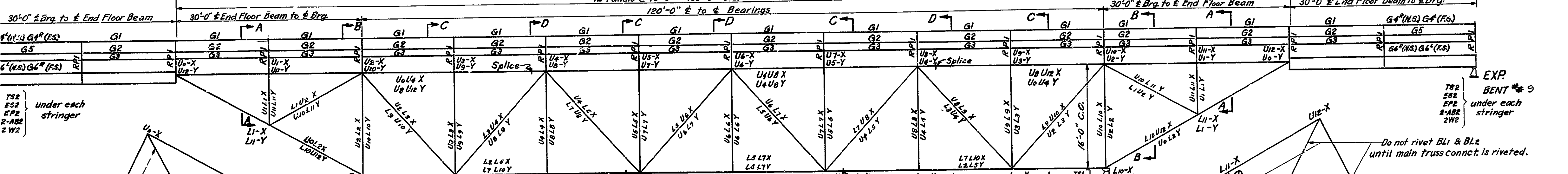
SCALE: AS NOTED
RECOMMENDED FOR APPROVAL:
PROJECT: 56
SECTION: T
DRAWING: S-6 OF 20
MARCH 12, 1941
STATION: 451+93.5
STRUCTURE NO. 1683
BRIDGE CONTRACT NO. 2146

BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	YEAR	TOTAL SHEETS
7	IND.	56	1941	33

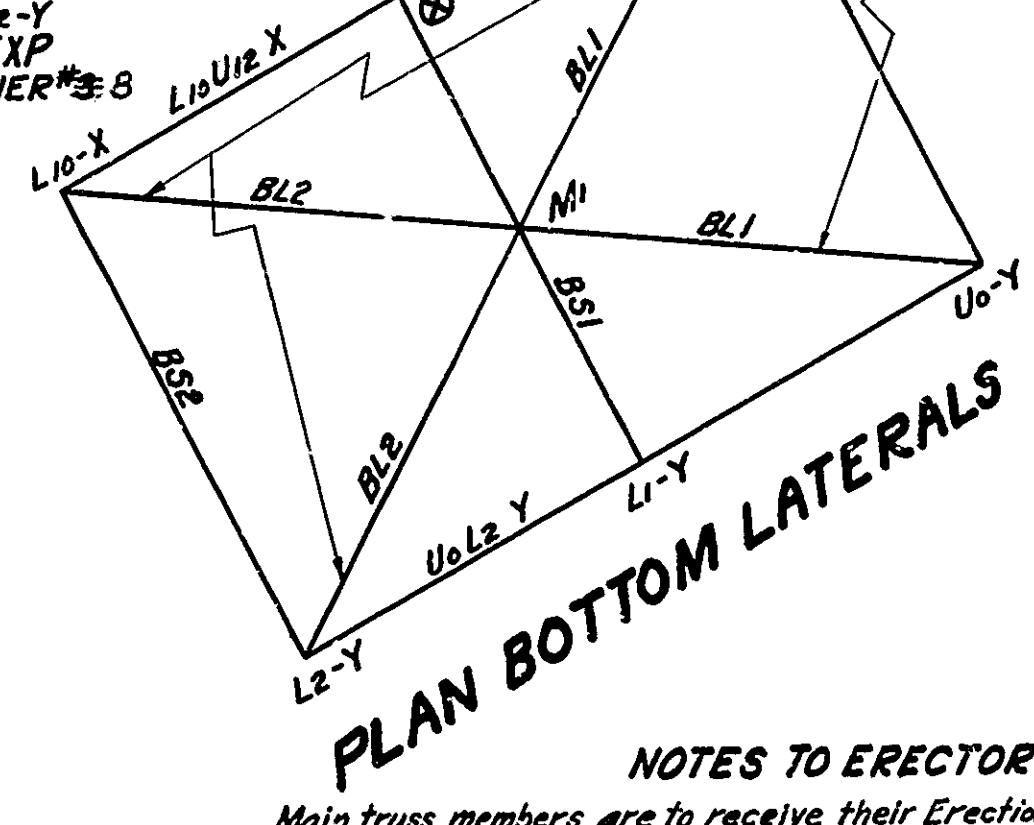
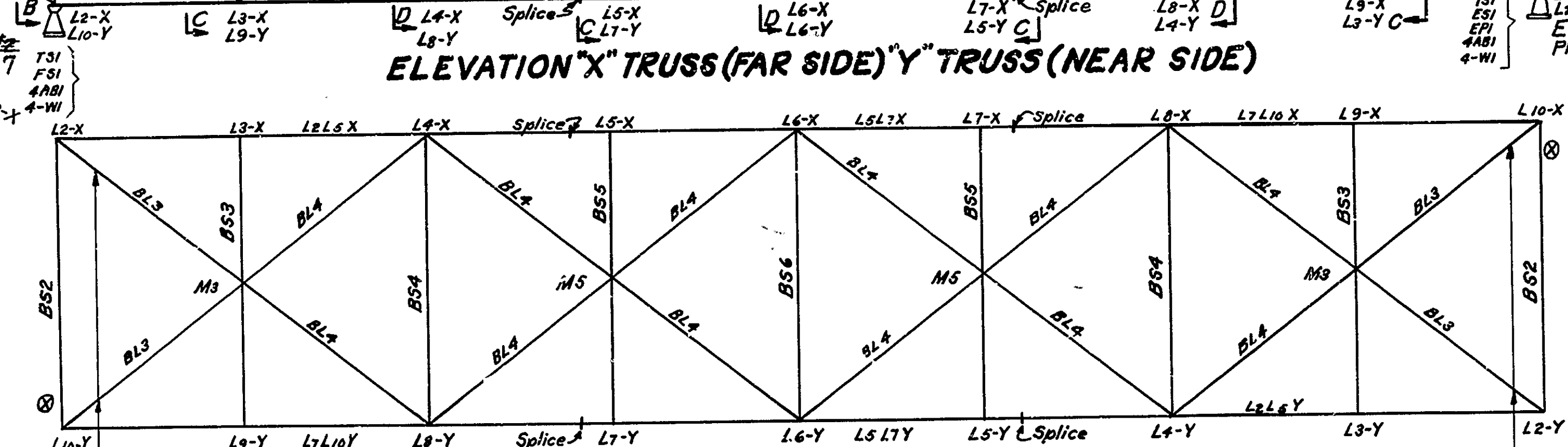
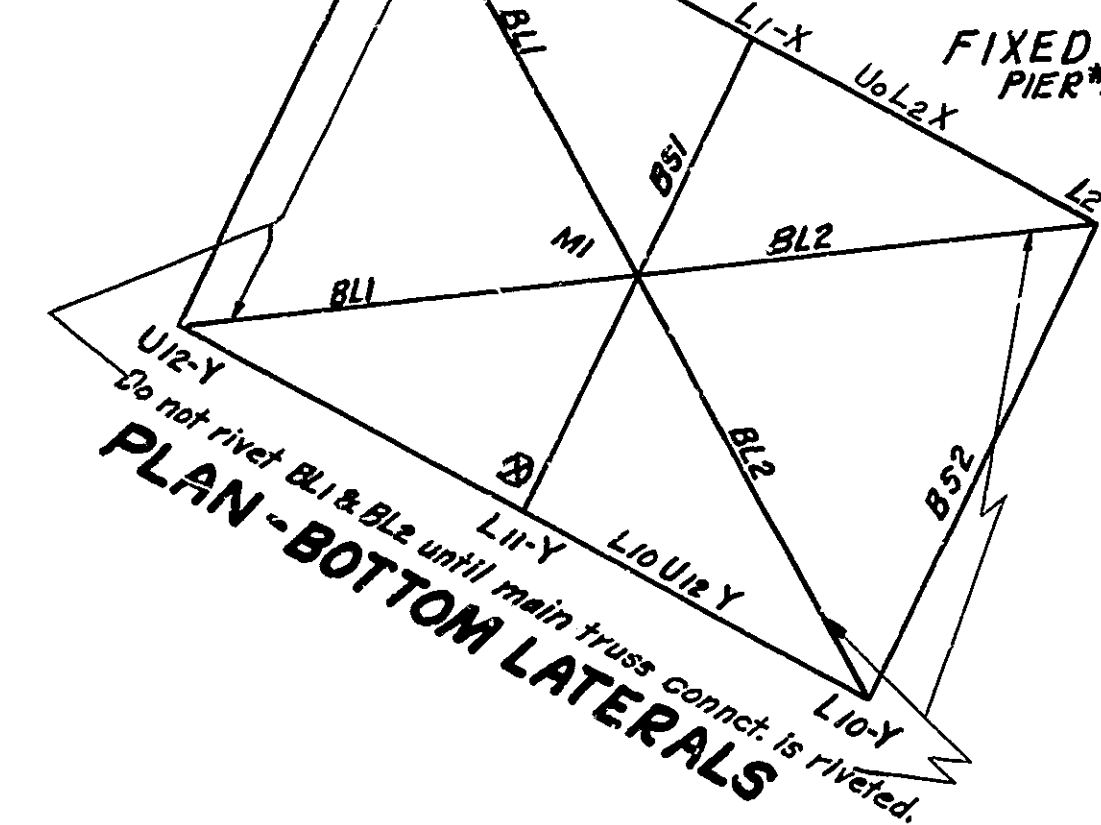


PLAN FLOOR SYSTEM
12 Panels @ 15'-0" = 180'-0" c.c. End Floor Beams
120'-0" E to Bearings

DASHED LINES SHOW TEMPORARY TOP LATERALS. "SEE SPECIAL PROVISIONS"



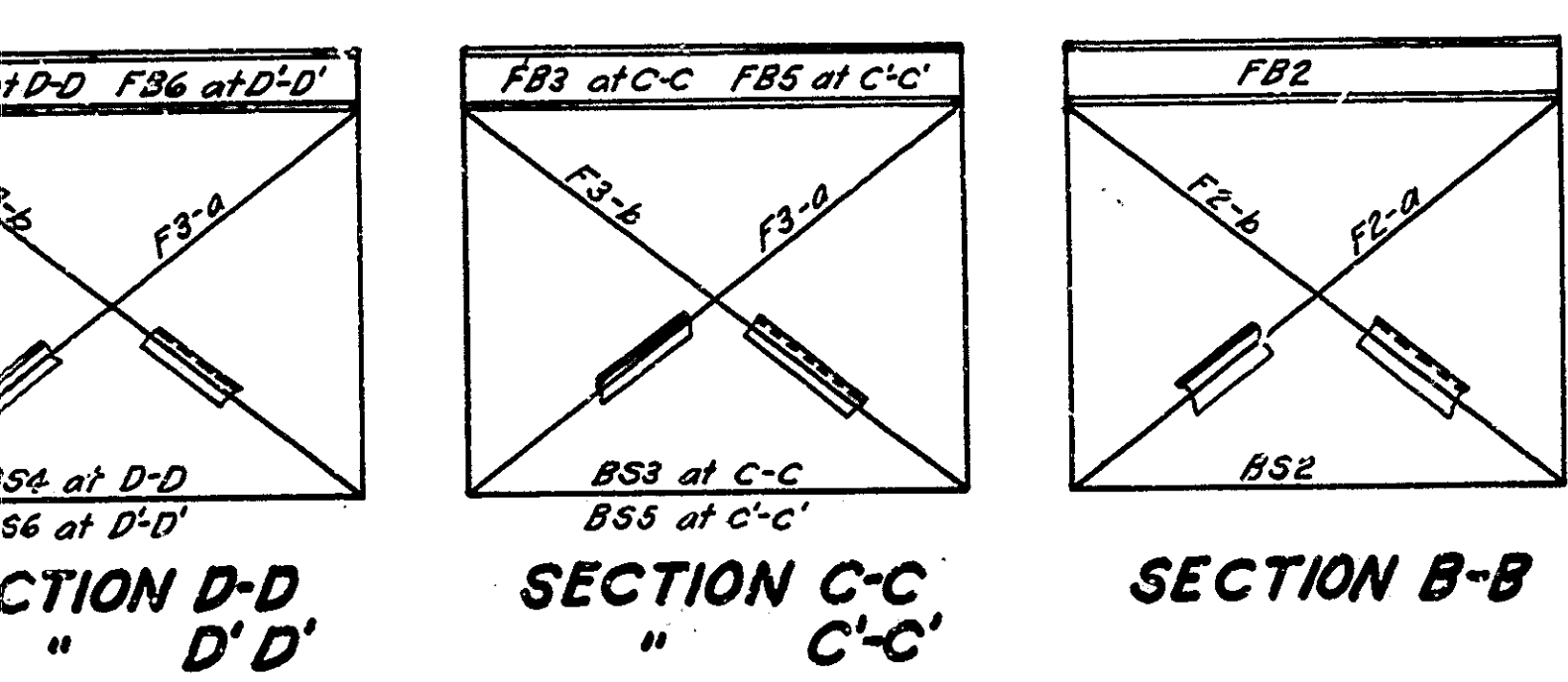
ELEVATION "X" TRUSS (FAR SIDE) "Y" TRUSS (NEAR SIDE)



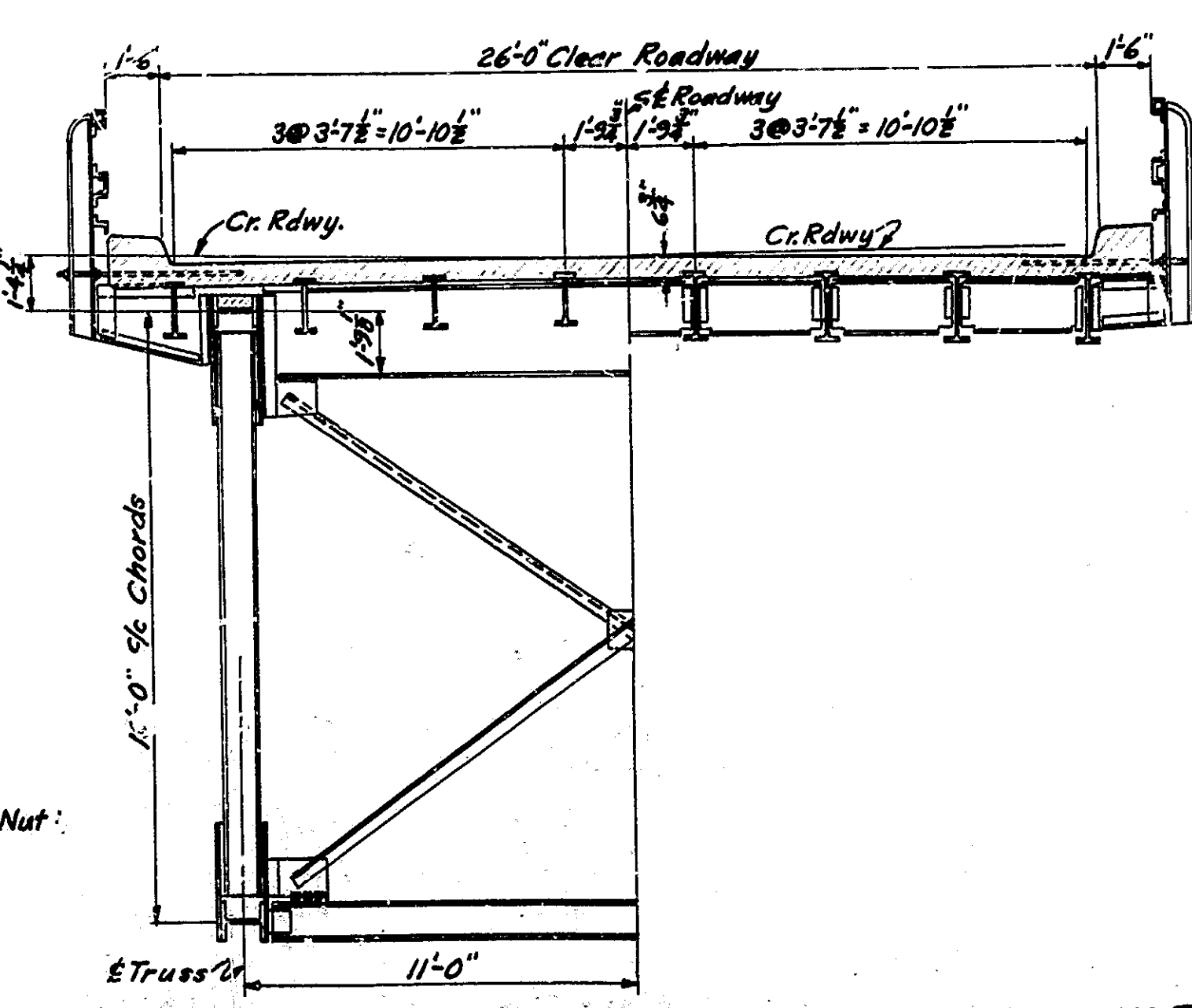
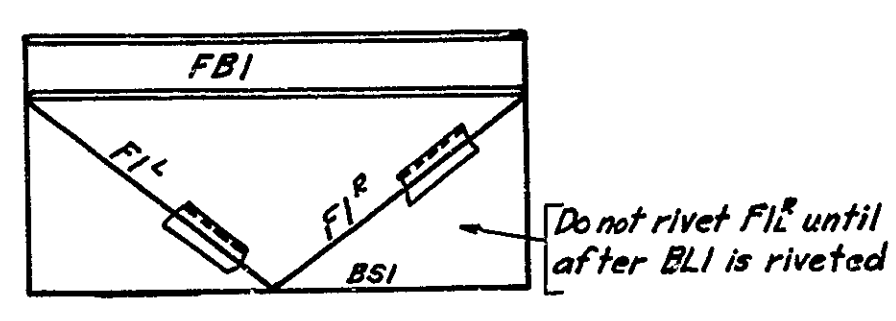
PLAN-BOTTOM LATERALS

NOTES TO ERECTOR

Main truss members are to receive their Erection Marks on the Roadway side while the truss is assembled in the shop and are to be erected in the same position in the field.
All main truss joints are to be riveted before span is swung. Stringers and Bottom Laterals to be riveted after span is swung. Sway frames may be riveted either before or after span is swung.
The 3/4" Rods shown on "PLAN FLOOR SYSTEM" are temporary top laterals which must be used if required by the Engineer or which the contractor may elect to use. See "SPECIAL PROVISIONS".
See Drwg. #513 for notes regarding erection of Guardrail.
See Drwg. #513 " " field painting.
Ribbed bolts may be substituted for field rivets, subject to approval of the engineer, where good rivets cannot be driven.
If Fabricator uses these drawings for shop plans he shall check same and assume full responsibility for the accuracy of the details. The Fabricator shall contact the nearest District Engineer of the State Highway Commission of Indiana in regard to inspection.
See Drwg. #56 for Section thru Exp. Joint and Location of anchor bolts EJ4 & EJ5.



SECTION A-A



HALF SECTION THRU TRUSS HALF SECTION THRU BEAM SPAN

(Scale: 1/4" = 1'-0")

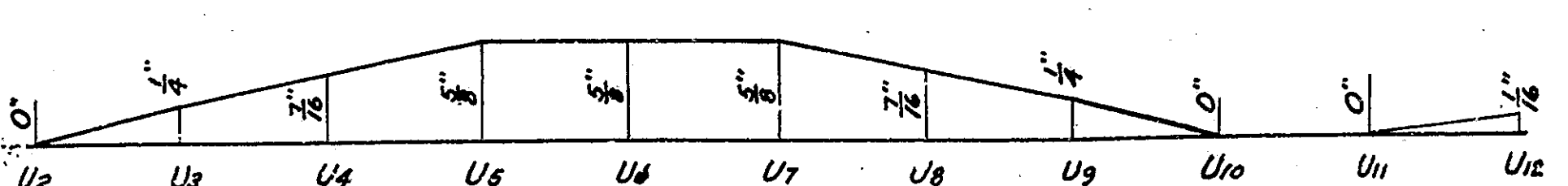
REV. 10-2-41 FOR FOUNDATION NUMBERS

**ERECTION PLAN
STATE HIGHWAY COMMISSION OF INDIANA**

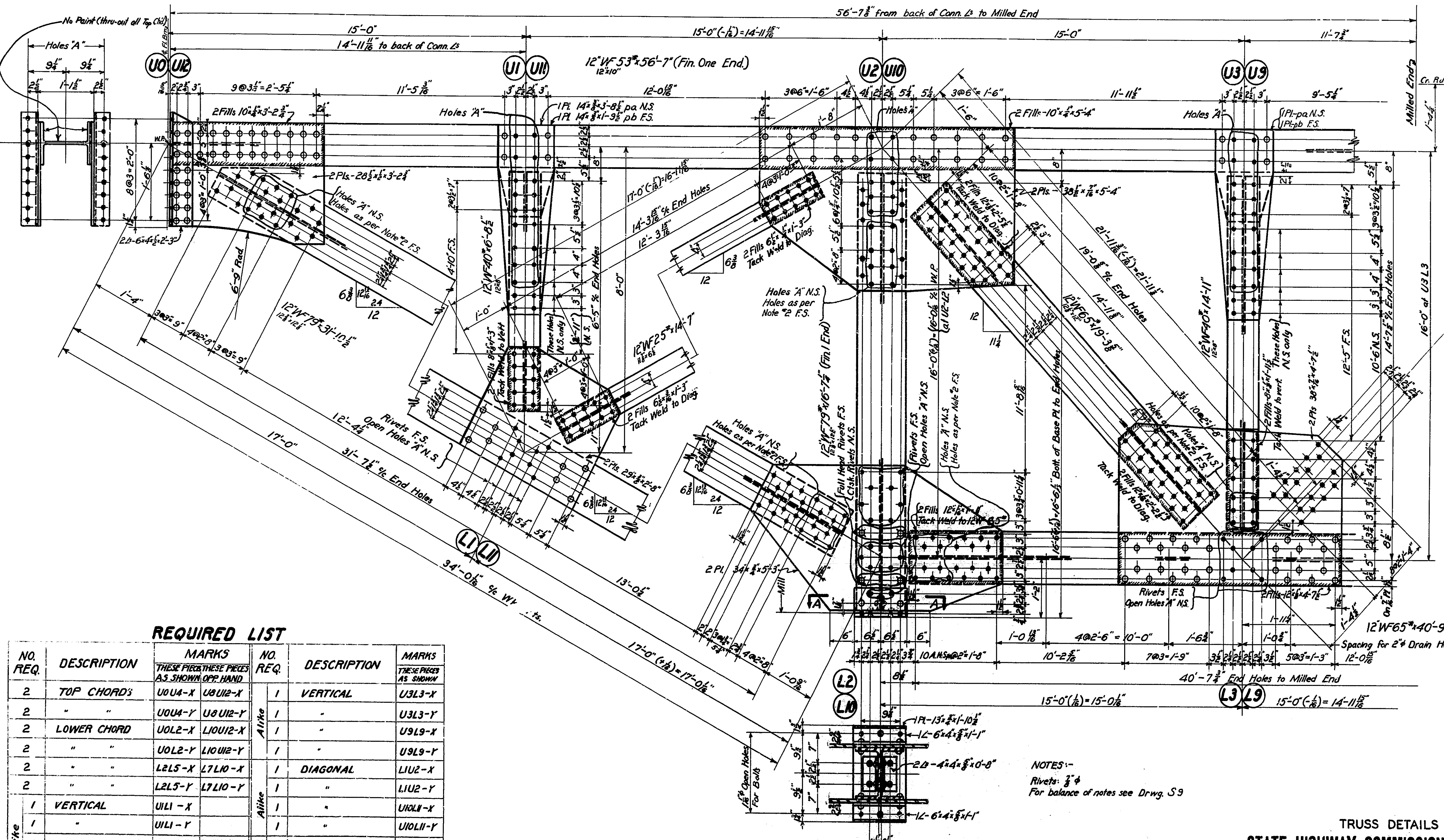
SCALE: 1/8" = 1'-0" UNLESS NOTED
RECOMMENDED FOR APPROVAL: [Signature]
PROJECT: 56
SECTION: T
DRAWING: 57 OF 20
STATION: 451+93.5
STRUCTURE NO. 1683
BRIDGE CONTRACT NO. 2146

FILE A6 1-15-1683

**CAMBER DIAGRAM
FOR SHOP ASSEMBLY OF TRUSSES**



W.C.M. 11-16-40
B.L. 2-15-41
B.L. 2-21-41



U4-On Drwg. # 59
 U8-On Drwg. # 59

Details are continued on Drawing - 59

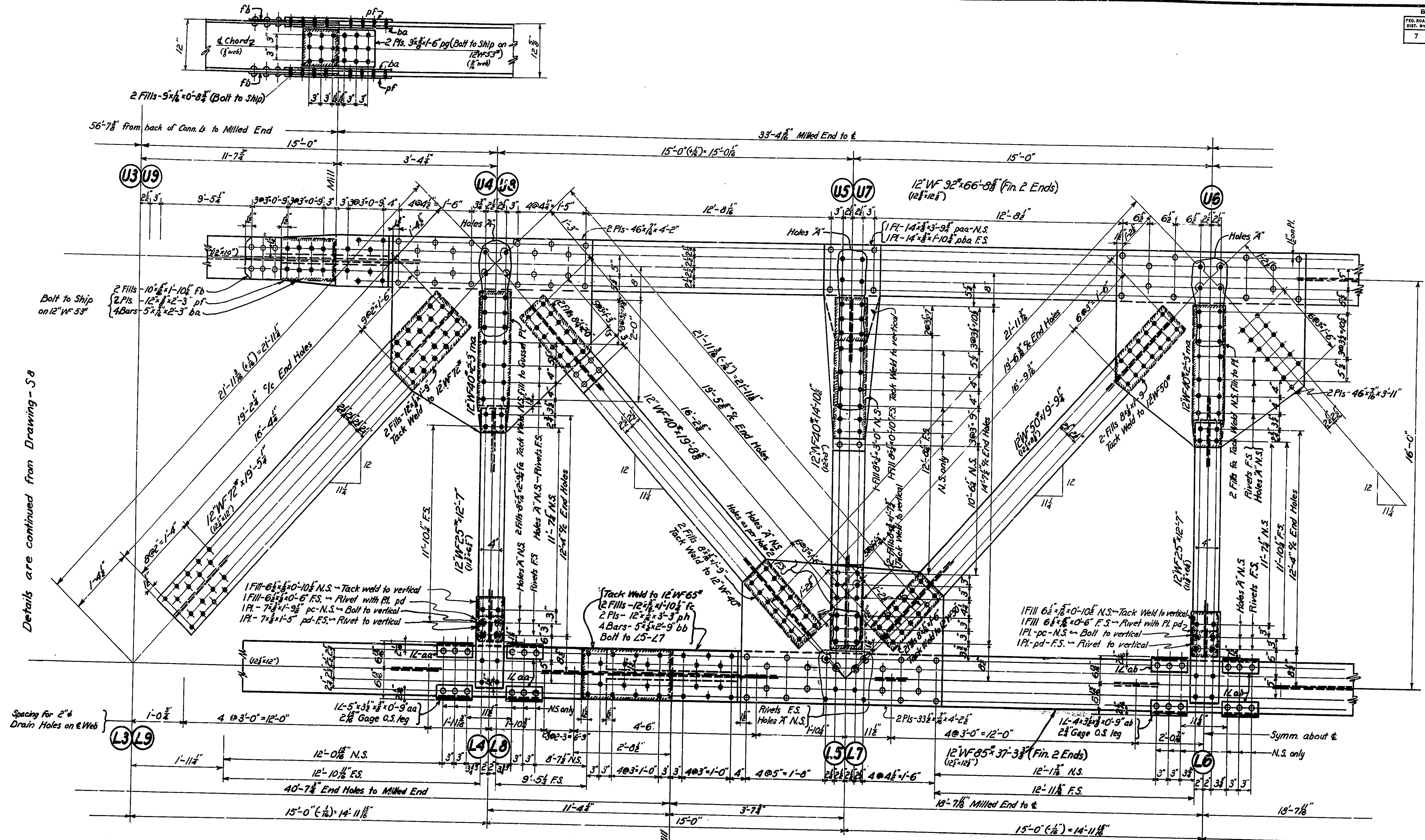
REQUIRED LIST

NO. REQ.	DESCRIPTION	MARKS		NO. REQ.	DESCRIPTION	MARKS	
		THESE PIECES AS SHOWN OPP. HAND	THESE PIECES AS SHOWN			THESE PIECES AS SHOWN OPP. HAND	THESE PIECES AS SHOWN
2	TOP CHORDS	U0U4-X	U8U12-X	1	VERTICAL	U3L3-X	
2	"	U0U4-Y	U8U12-Y	1	"	U3L3-Y	
2	LOWER CHORD	U0L2-X	L10U12-X	1	"	U9L9-X	
2	"	U0L2-Y	L10U12-Y	1	"	U9L9-Y	
2	"	L2L5-X	L7L10-X	1	DIAGONAL	L1U2-X	
2	"	L2L5-Y	L7L10-Y	1	"	L1U2-Y	
1	VERTICAL	U1L1-X		1	"	U10L1-X	
1	"	U1L1-Y		1	"	U10L1-Y	
1	"	U1L11-X		1	"	U2L3-X	
1	"	U1L11-Y		1	"	U2L3-Y	
2	VERTICALS	U2L2-X	U10L10-X	1	"	L9U10-X	
2	"	U2L2-Y	U10L10-Y	1	"	L9U10-Y	

NOTES:-
 Rivets: 3/8"
 For balance of notes see Drwg. 59

TRUSS DETAILS
 STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1"=1'-0"
 RECOMMENDED FOR APPROVAL: [Signature]
 PROJECT: 56
 SECTION: T
 DRAWING: S8 OF 20
 BRIDGE CONTRACT NO. 2146
 STATION: 451+93.5
 STRUCTURE NO. 1683
 MARCH 12, 1941

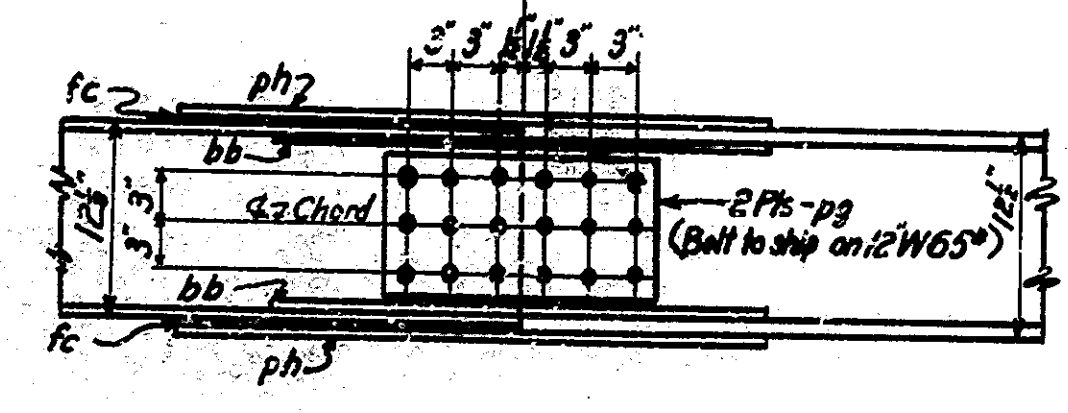


Details are continued from Drawing - 58

REQUIRED LIST

NO. REQ.	DESCRIPTION	MARK	NO. REQ.	DESCRIPTION	MARK	NO. REQ.	DESCRIPTION	MARK
1	TOP CHORD	U4 U8 - X	1	DIAGONAL	U4 L4 - X	1	VERTICAL	U4 L4 - X
1	"	U4 U8 - Y	1	"	U4 L4 - Y	1	"	U4 L4 - Y
1	LOWER	L5 L7 - X	1	"	L7 U8 - X	1	"	U8 L9 - X
1	"	L5 L7 - Y	1	"	L7 U8 - Y	1	"	U8 L9 - Y
1	DIAGONAL	L3 U4 - X	1	"	L5 U6 - X	1	"	U5 L5 - X
1	"	L3 U4 - Y	1	"	L5 U6 - Y	1	"	U5 L5 - Y
1	"	U8 L9 - X	1	"	U6 L7 - X	1	"	U7 L7 - X
1	"	U8 L9 - Y	1	"	U6 L7 - Y	1	"	U7 L7 - Y
1	"		1	"		1	"	U6 L6 - X
1	"		1	"		1	"	U6 L6 - Y

NOTE: ALL PIECES ARE AS SHOWN.



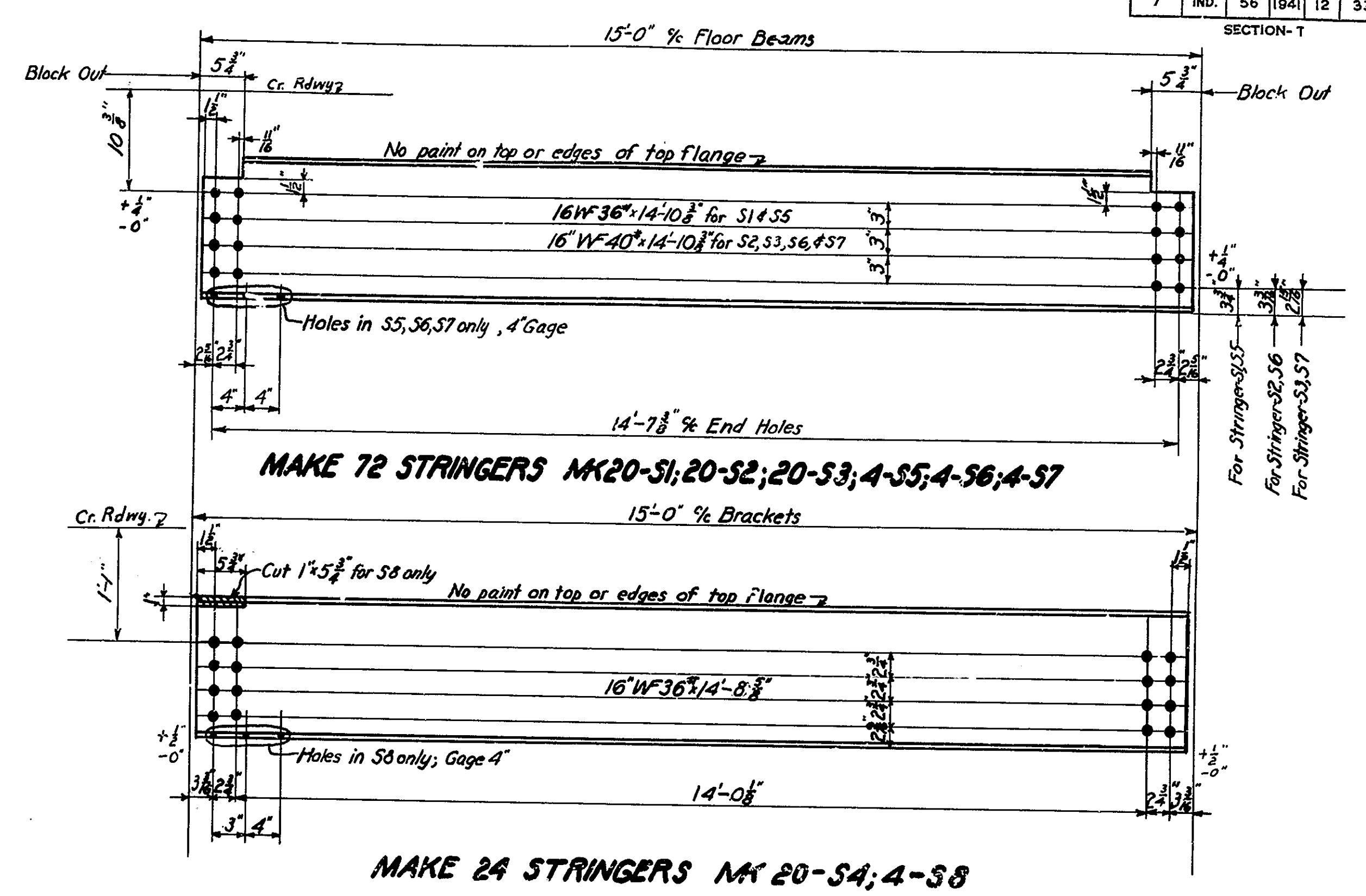
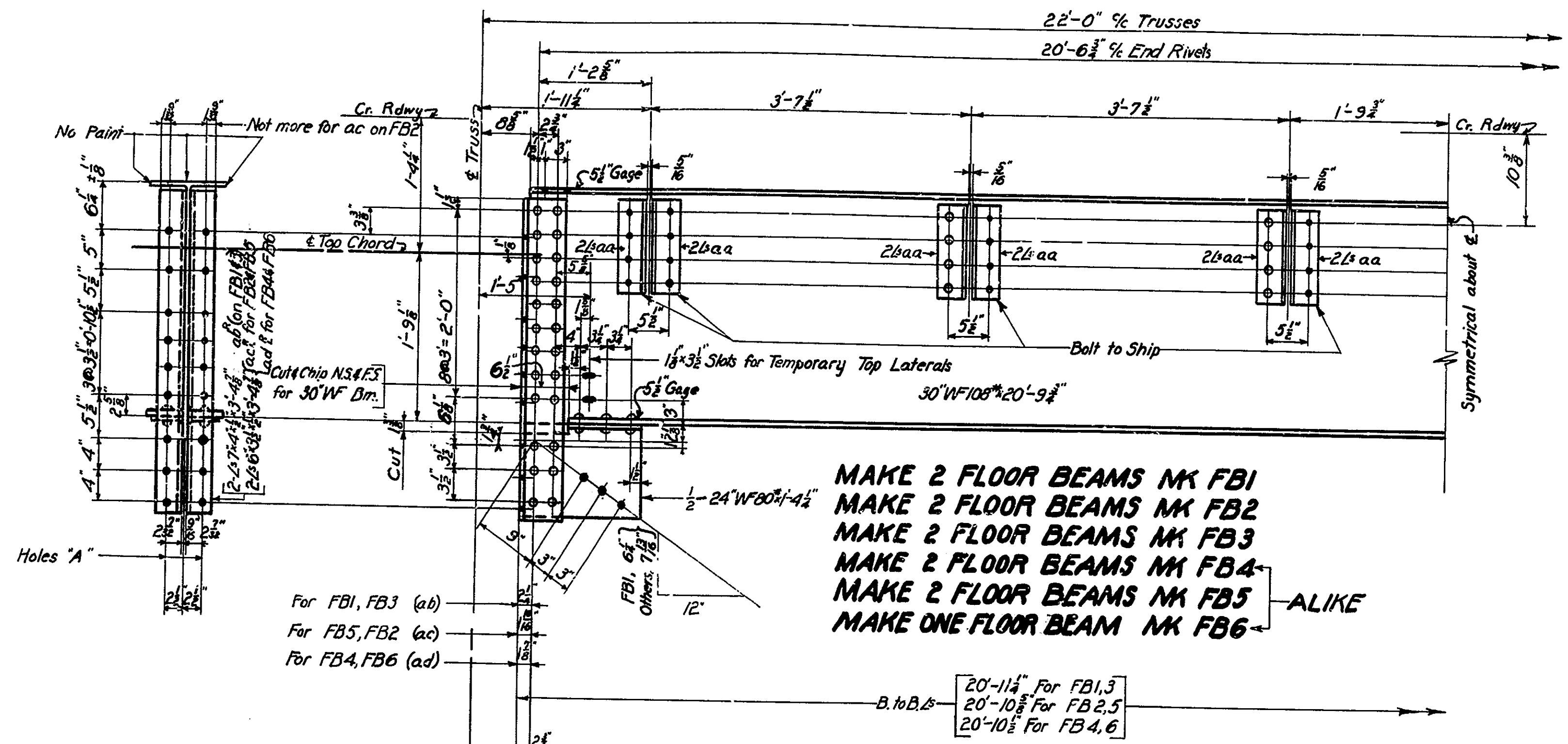
NOTES:
 1. Shop Rivets 5/8". Holes for shop rivets may be subpunched (or subdrilled) 1/8" and reamed to 5/8" after assembly, or punched full sized.
 2. Holes for field connections of truss members shall be subpunched or subdrilled 1/8" and reamed to 5/8" while the truss is assembled in the shop. Holes in laterial angles may be punched 1/8" and reamed to 5/8" through a metal template while truss is assembled in the shop.
 3. Holes A shall be subpunched or subdrilled 1/8" and reamed to 5/8" through a metal template while truss is assembled in the shop.
 4. All shop rivets must be driven before or while truss members are assembled in the shop. No shop rivets are to be driven after field holes are reamed.
 5. Fabricator is to make adjustment to correspond to any mill variation in depth of rolled sections, subject to approval of engineer.
 6. See Drwg. 57 for notes regarding use of these drawings for shop plans and regarding inspection.

**TRUSS DETAILS
 STATE HIGHWAY COMMISSION OF INDIANA**

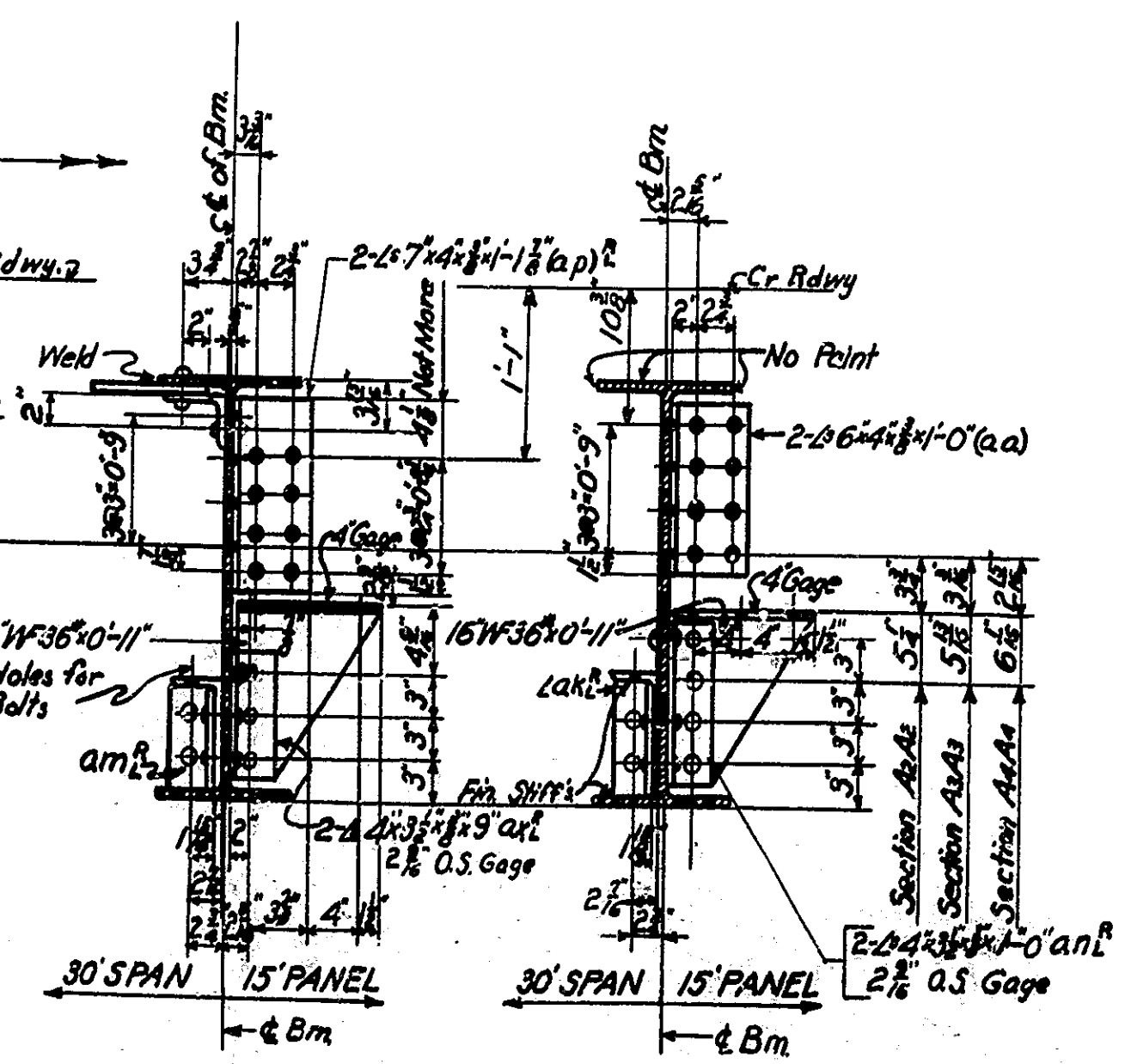
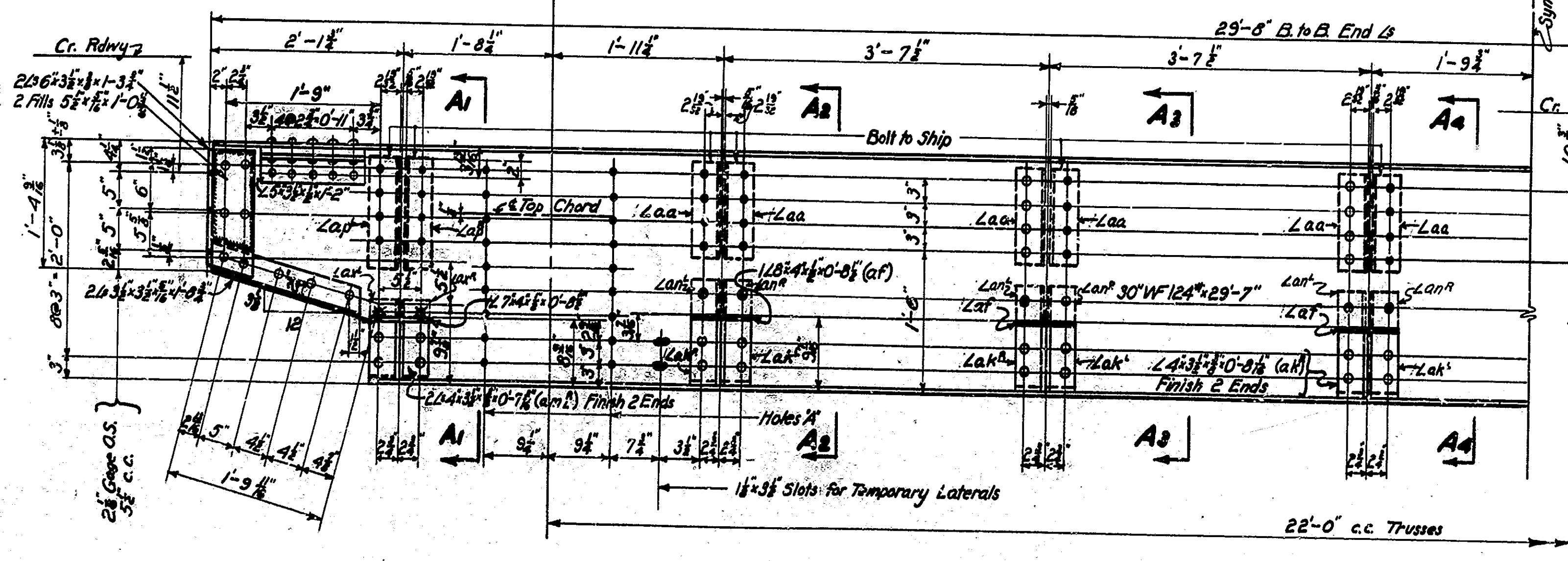
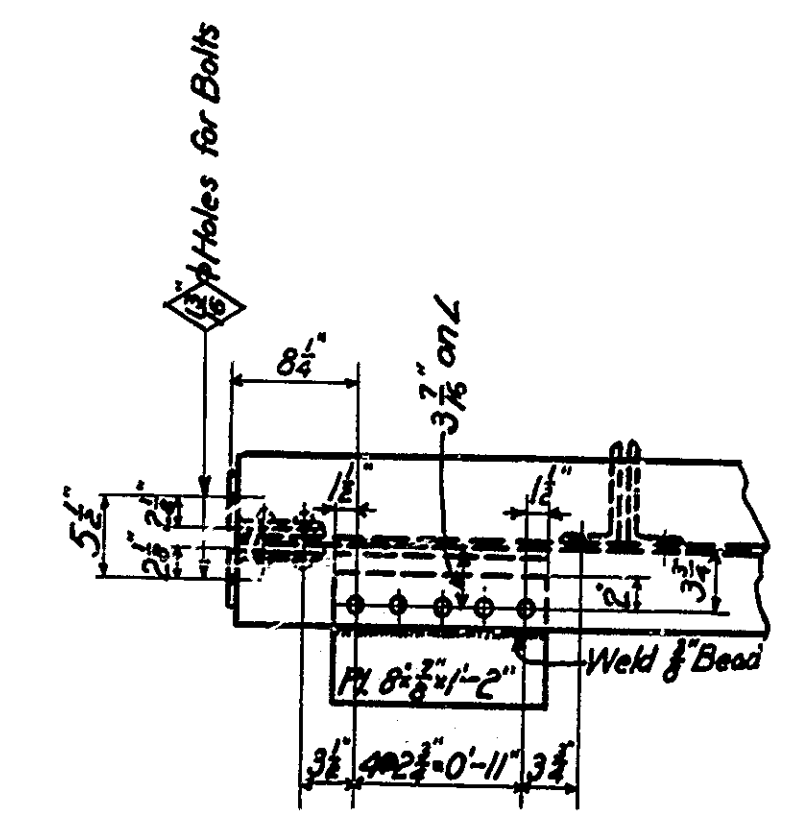
SCALE: 1" = 1'-0"
 RECOMMENDED FOR APPROVAL: *[Signature]* MARCH 12, 1941
 PROJECT: 56 STATION: 451+93.5
 SECTION: T STRUCTURE NO. 1683
 DRAWING: 59 OF 20 BRIDGE CONTRACT NO. 2148

DESIGNED: B.L. 12-9-40
 DRAWN: W.A. 1-22-41
 CHECKED: B.L. 2-3-41
 TRACED: L.B. 2-7-41

BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SPEC. SHEET NO.	TOTAL SHEETS	
7	IND.	56	1941	12	33



DETAIL FOR FB2
DIMENSIONS NOT SHOWN AS ABOVE

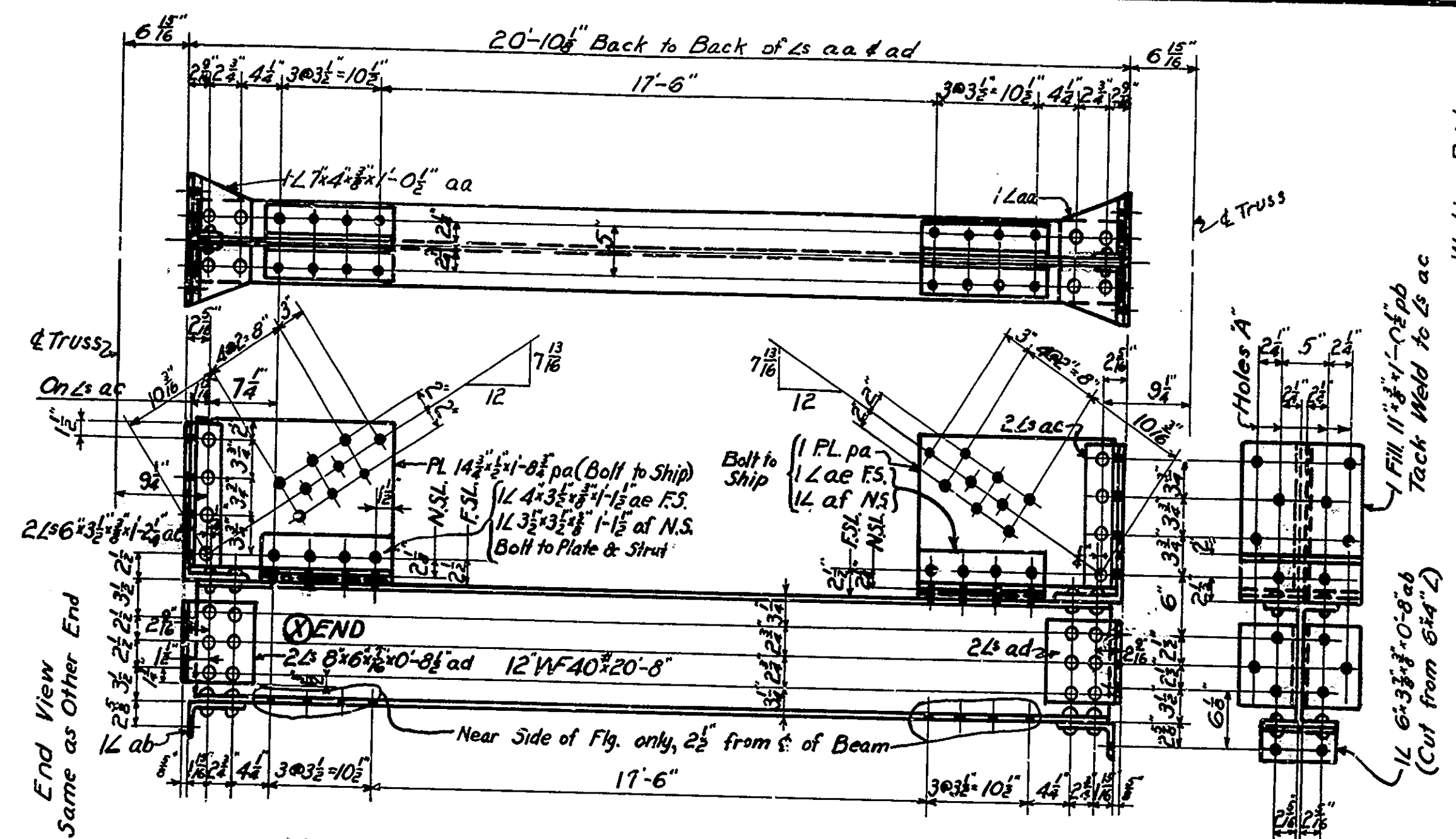


NOTES:-
Rivets 3/8" Holes 1/8" unless noted.
Holes "A" are to be sub-punched 1/8" and reamed to 1/8" through a steel template.
See Drawg. S 7 for notes regarding use of these drawings for shop plans and regarding inspection.

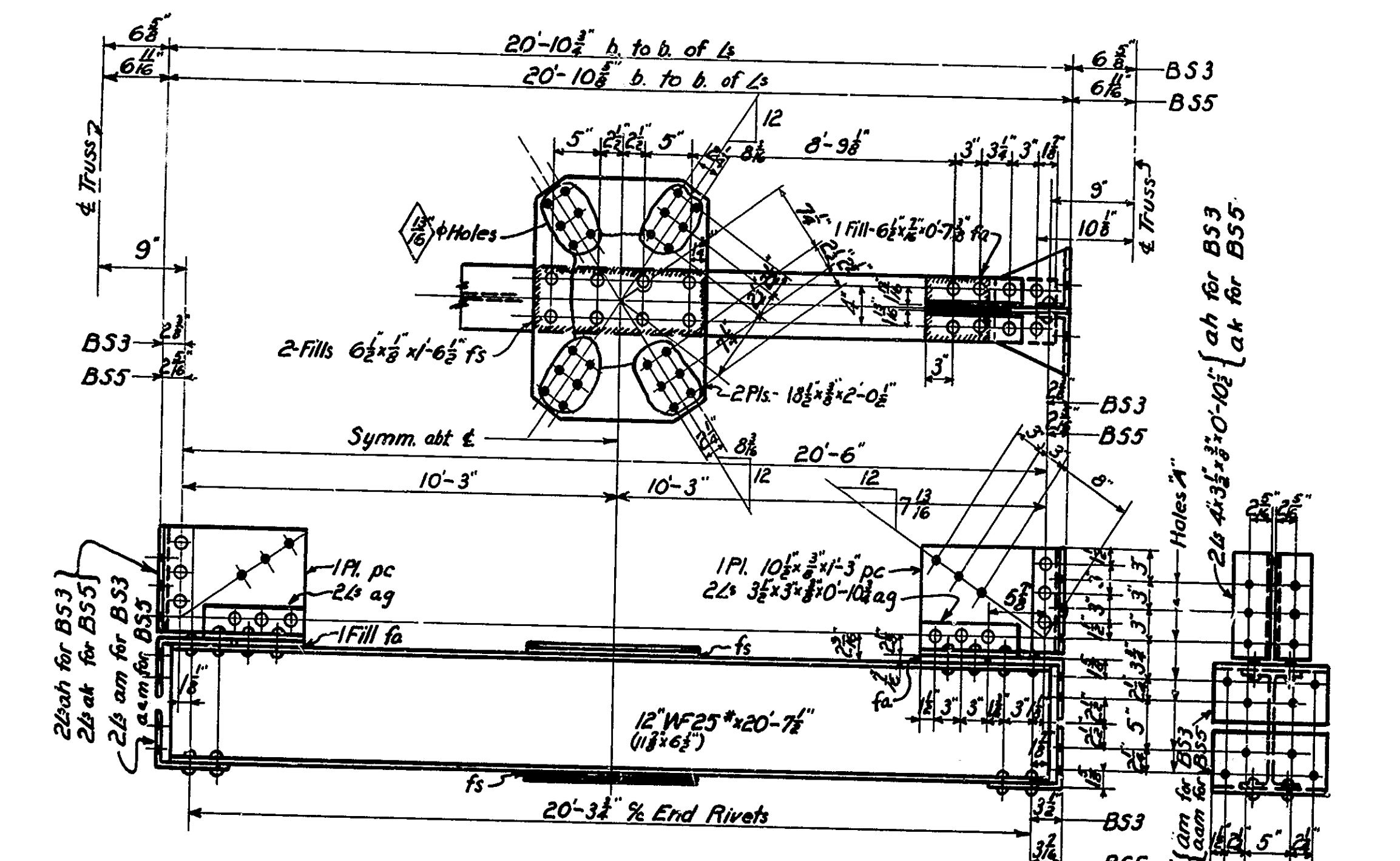
FLOOR BEAMS AND STRINGERS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1" = 1'-0"
RECOMMENDED FOR APPROVAL: [Signature]
PROJECT: 56
SECTION: T
DRAWING: S10 OF 20
BRIDGE CONTRACT NO. 2146
STATION: 451+93.5
STRUCTURE NO. 1683
MARCH 12, 1941

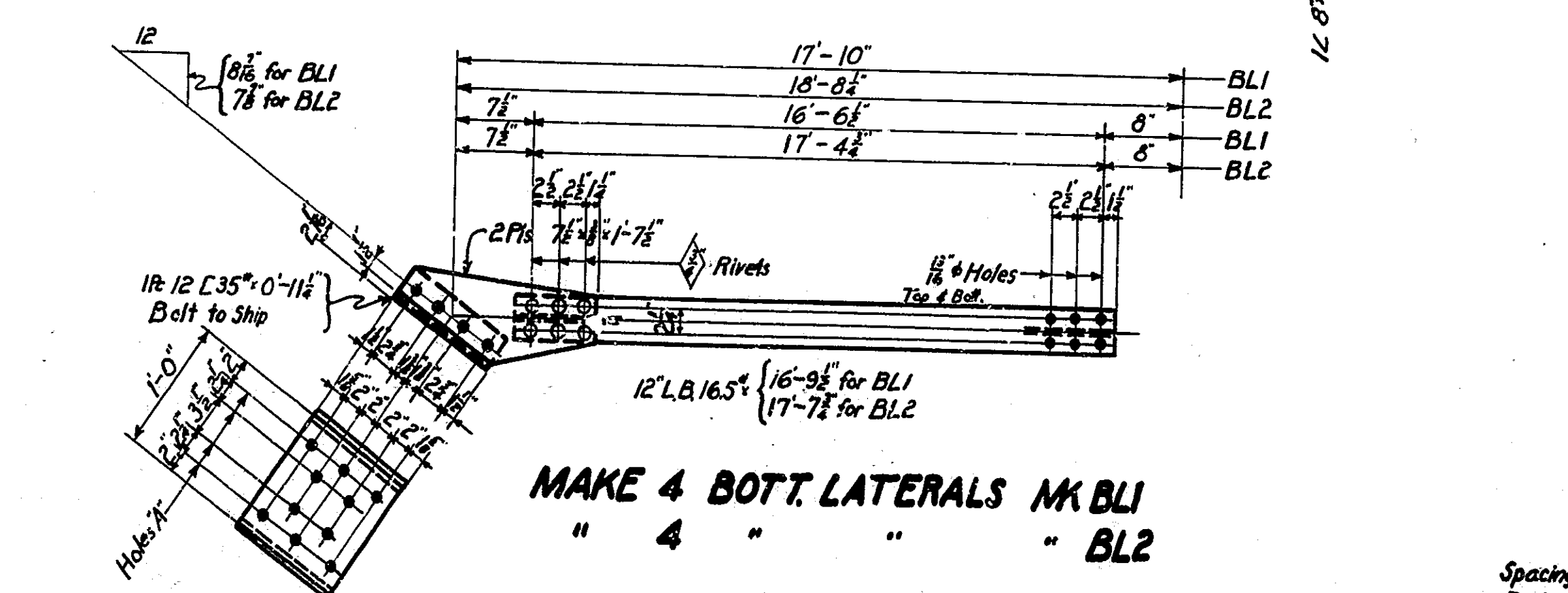
DESIGNED: M.C.M. 10-2-40
DRAWN: L.H. 1-18-41
CHECKED: A.B.L. 2-4-41
TRACES: R.G. 2-4-41
C.R.D. 2-5-41



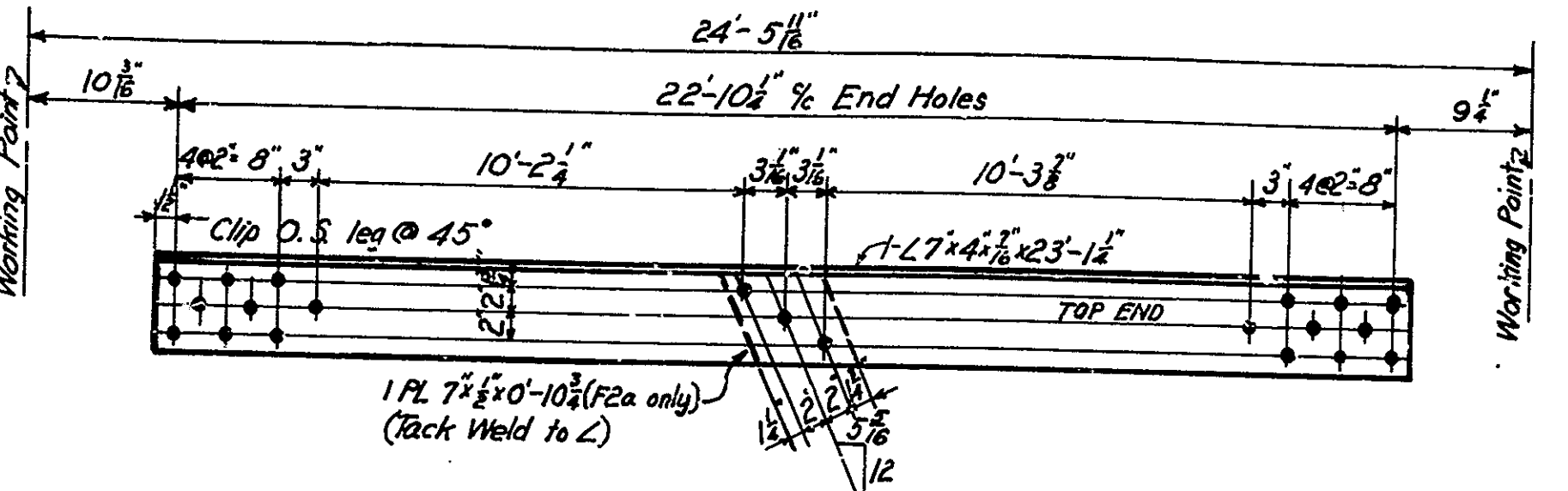
MAKE 2 BOTTOM STRUTS - MK BS2



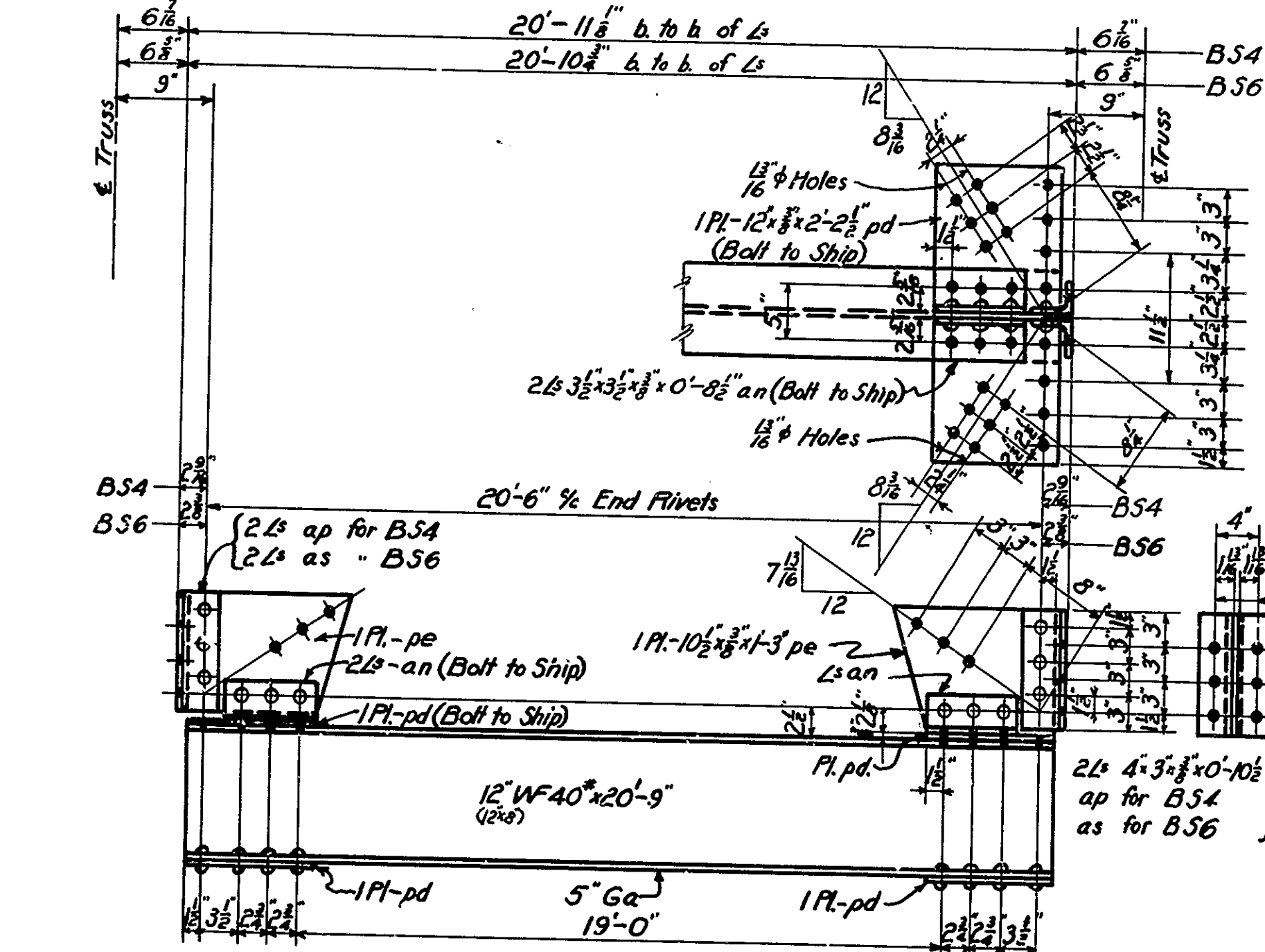
MAKE 2 BOTTOM STRUTS MK BS3
 " 2 " " BS5



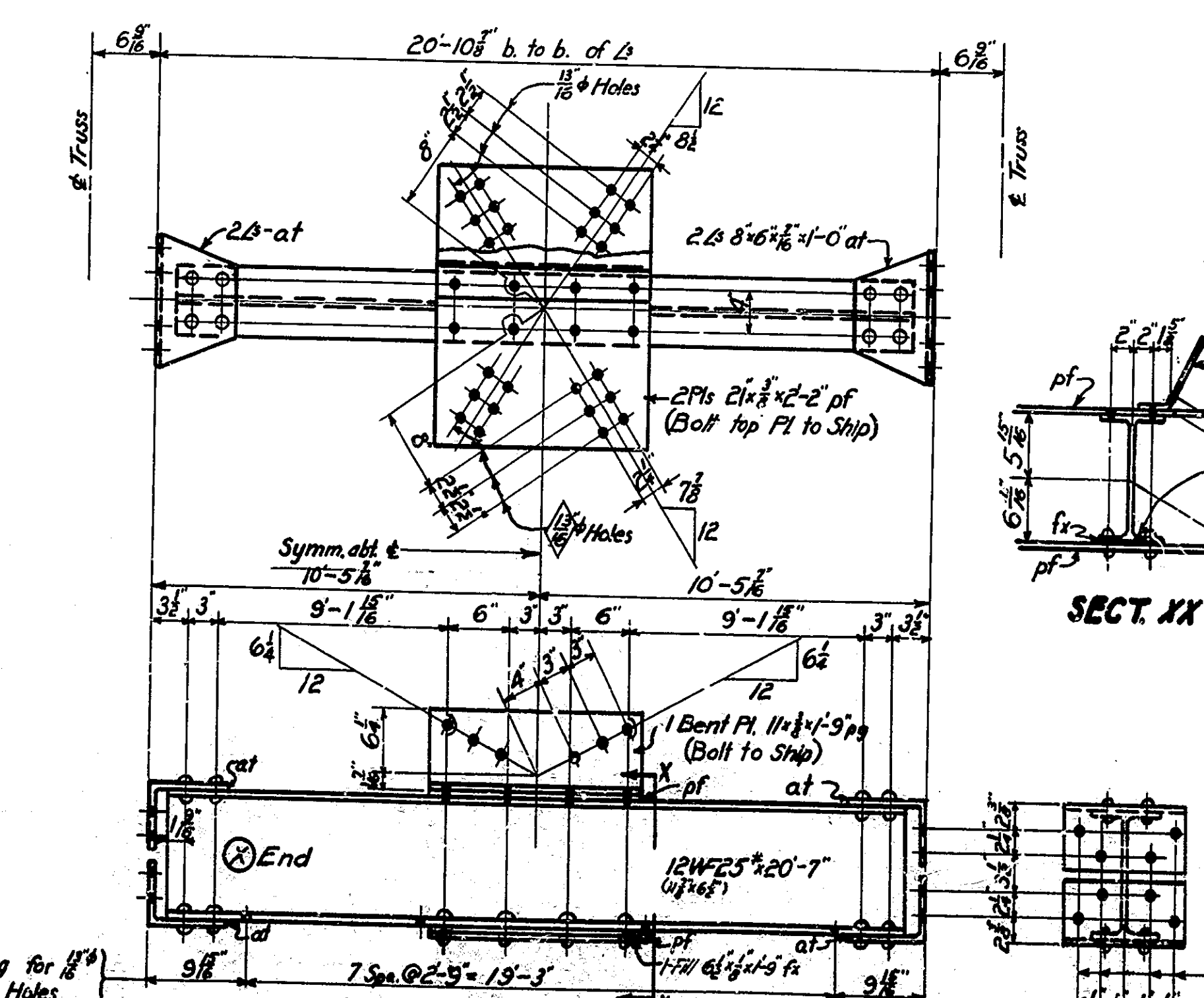
MAKE 4 BOTT. LATERALS MK BL1
 " 4 " " BL2



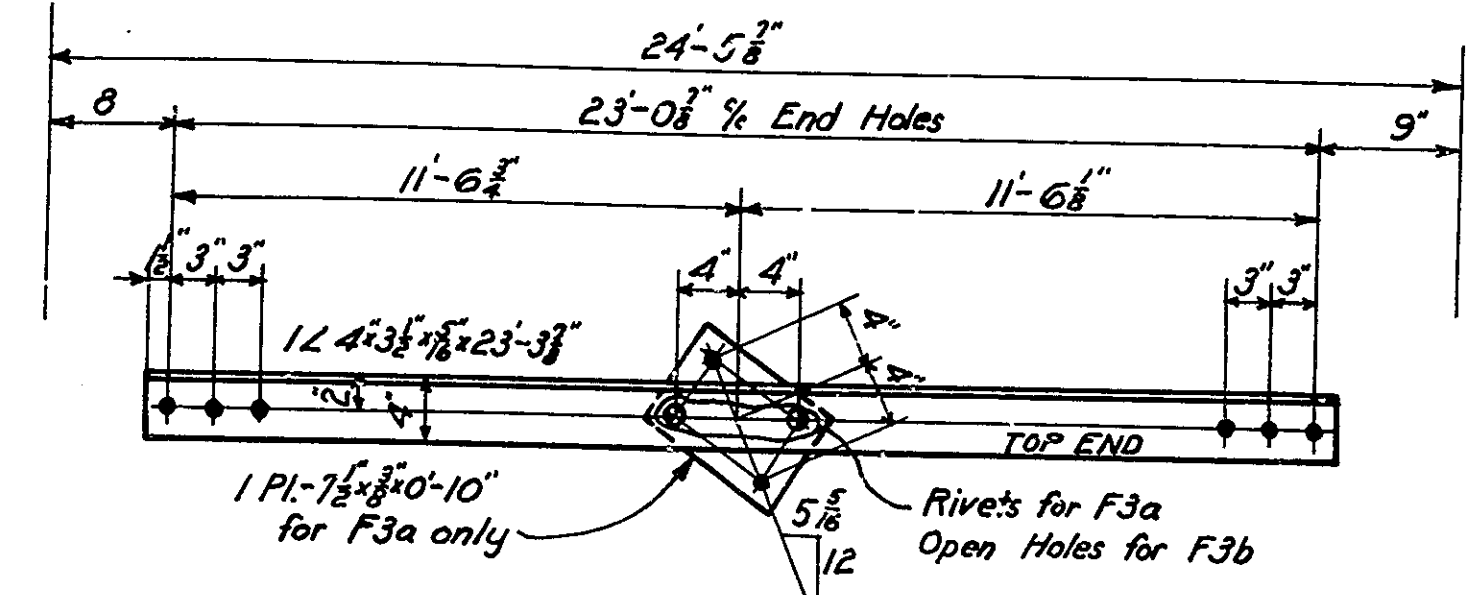
MAKE 2 SWAY BRACES - MK F2a
 MAKE 2 SWAY BRACES - MK F2b



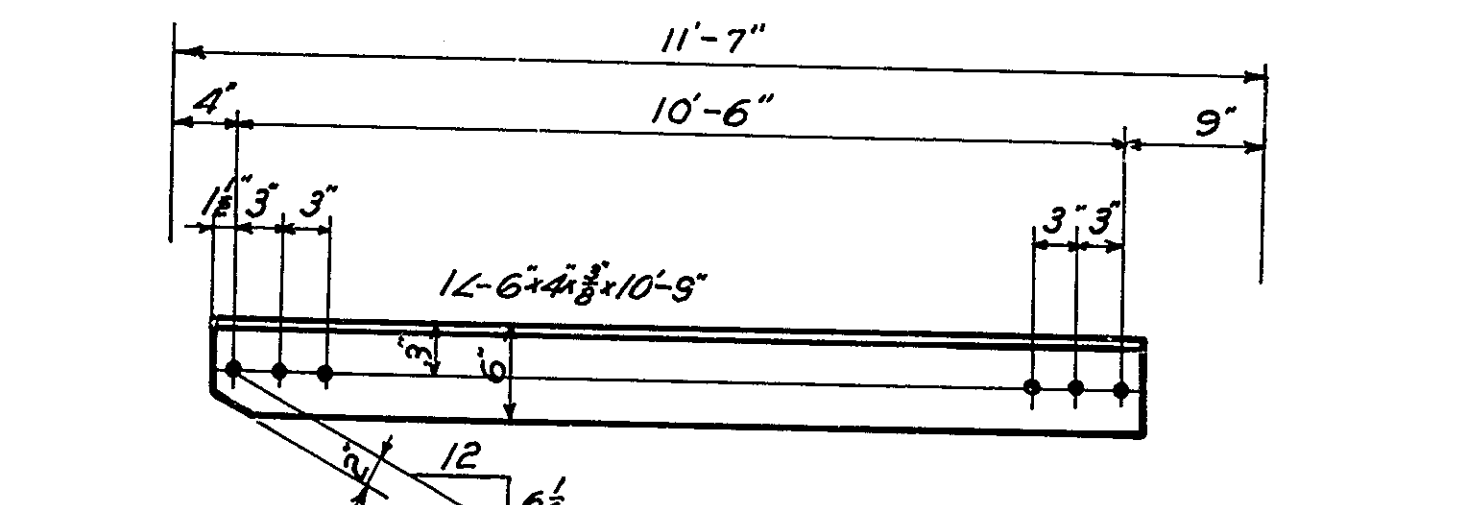
MAKE 2 BOTTOM STRUTS MK BS4
 " ONE " STRUT " BS6



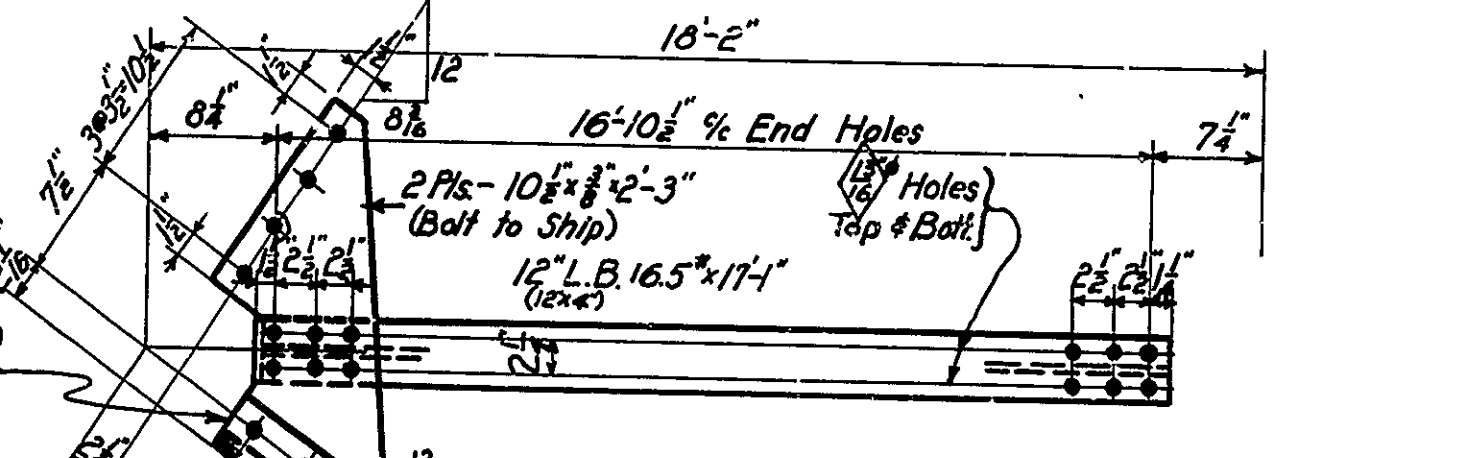
MAKE 2 BOTTOM STRUTS MK BS1



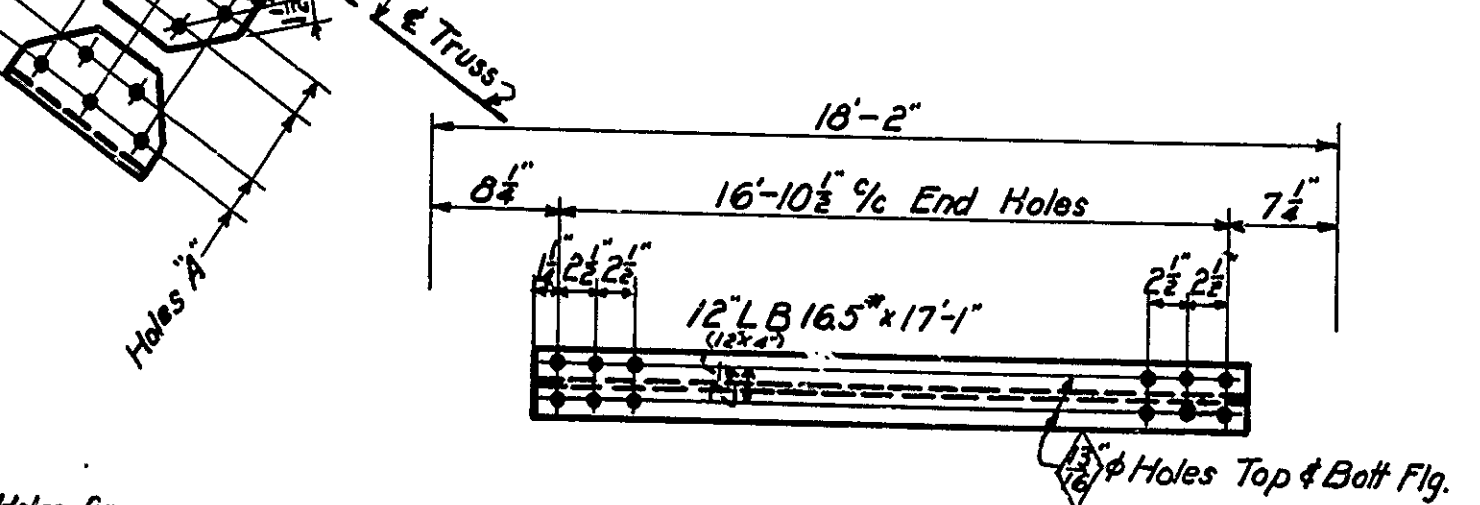
MAKE 7 SWAY BRACES MK F3a
 " 7 " " F3b



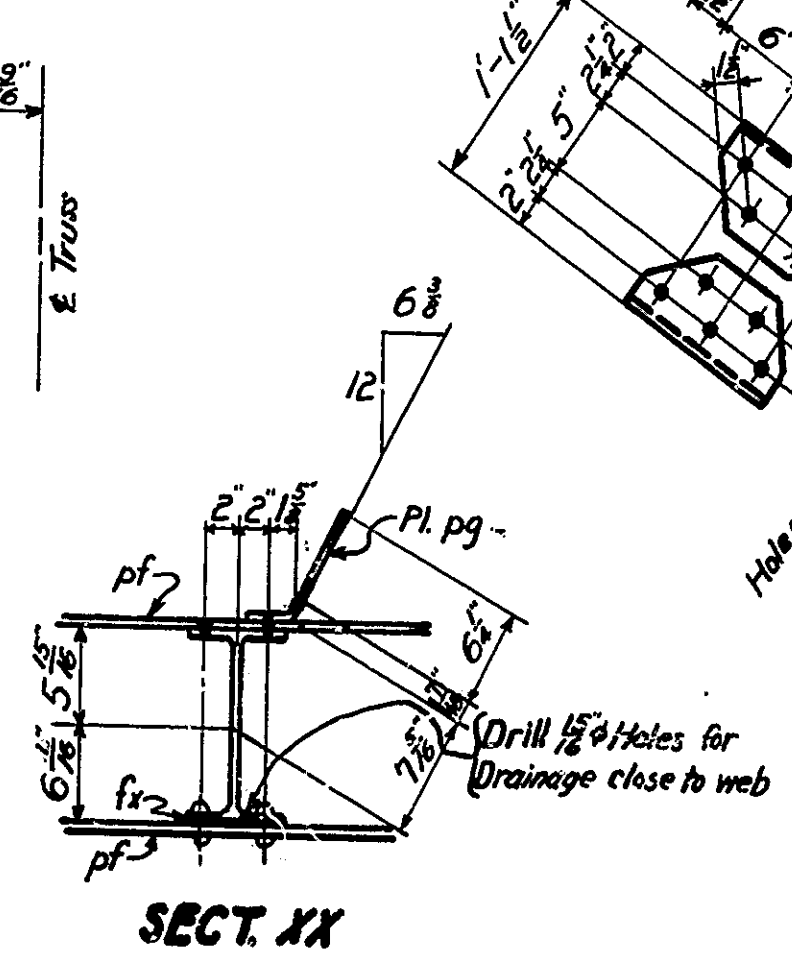
MAKE 2 SWAY BRACES AS SHOWN MK FIR
 " 2 " " OPP HAND " FIL



MAKE 4 BOTT LATERALS MK BL3



MAKE 12 BOTT LATERALS MK BL4



SECT XX

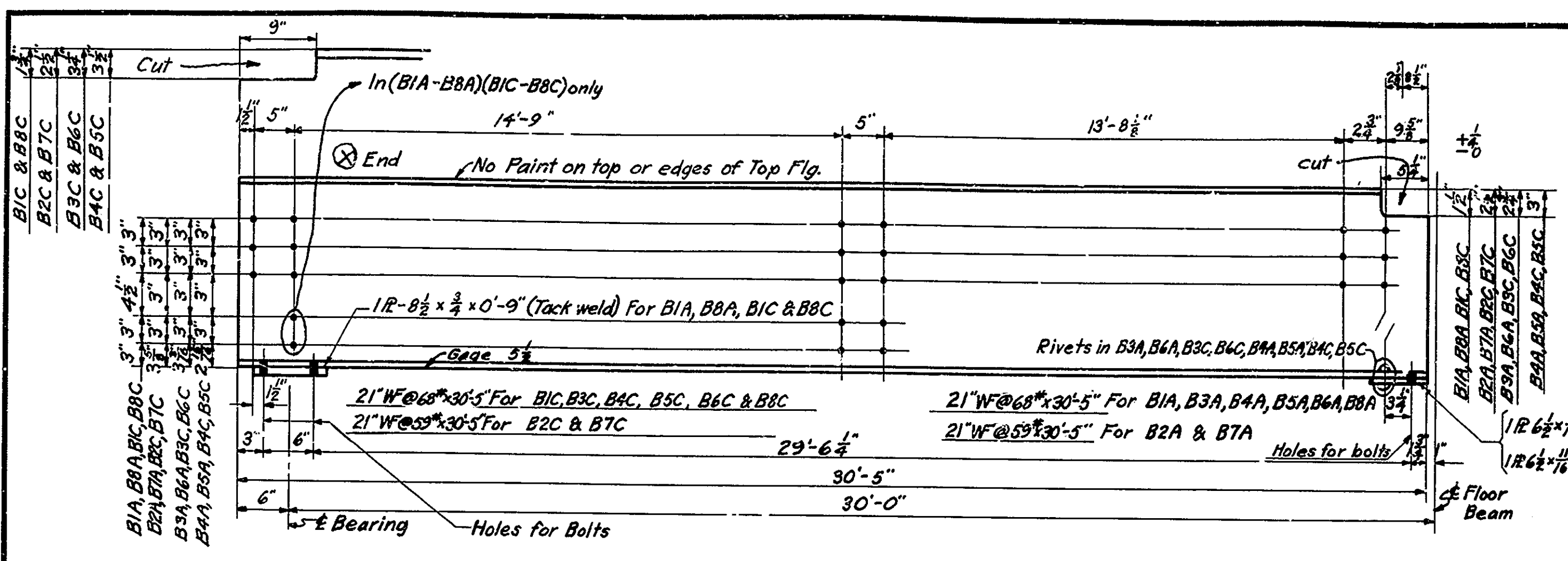
NOTES: 3/4" Rivets, 1/2" Holes unless noted.
 Holes A shall be sub-punched 1/4" & reamed 1/8" thru a metal template.
 See Drawg. 57 for notes regarding use of these drawings for shop plans and regarding inspection.

STRUTS & LATERALS
 STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1"=10'
 RECOMMENDED FOR APPROVAL: _____ MARCH 12, 1941
 PROJECT: 56 SECTION: T STATION: 451+93.5
 DRAWING: Sit OF 20 STRUCTURE NO. 1683
 BRIDGE CONTRACT NO. 2146

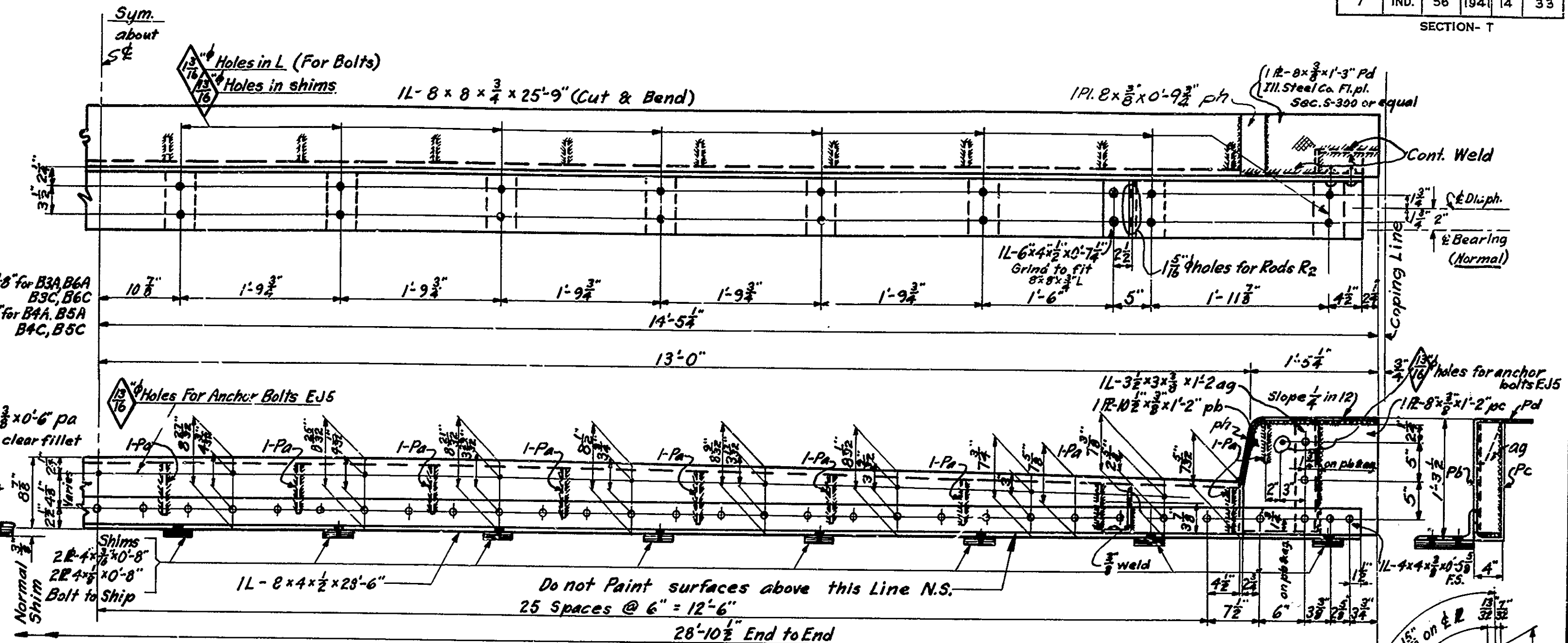
BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
7	IND.	56	14	33	

SECTION - T

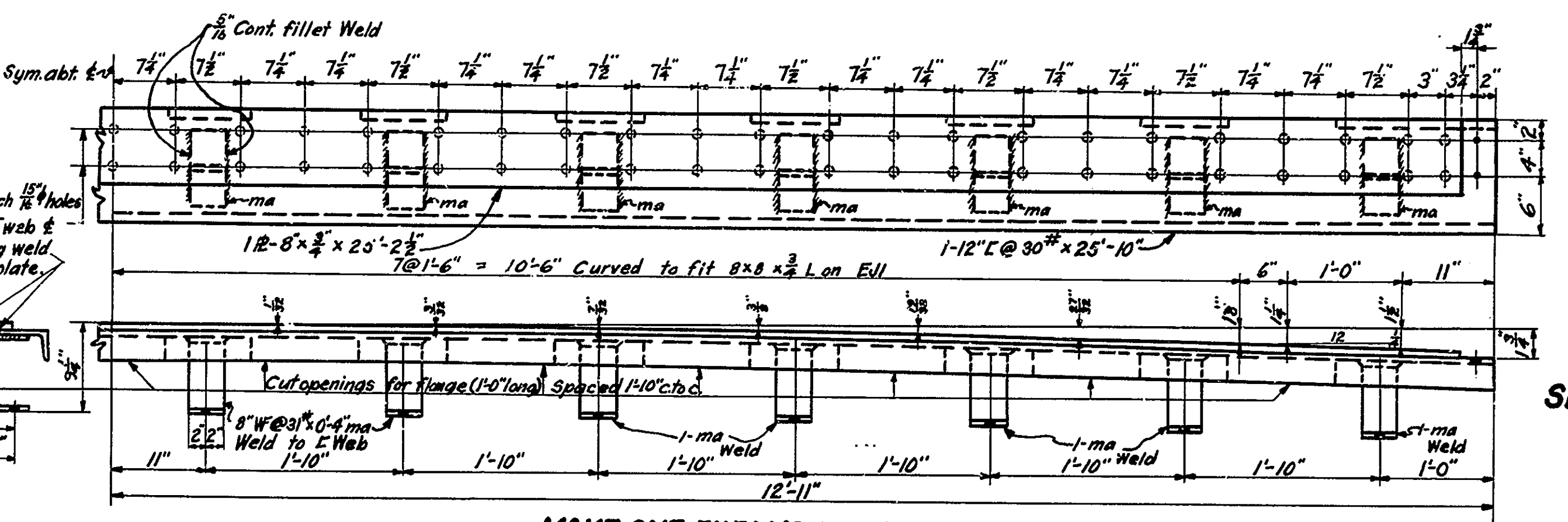


CAMBER: Beams shall be inspected for camber before punching; Beams having camber shall be punched so that any curvature will be upward. Web punching to be on horizontal lines.

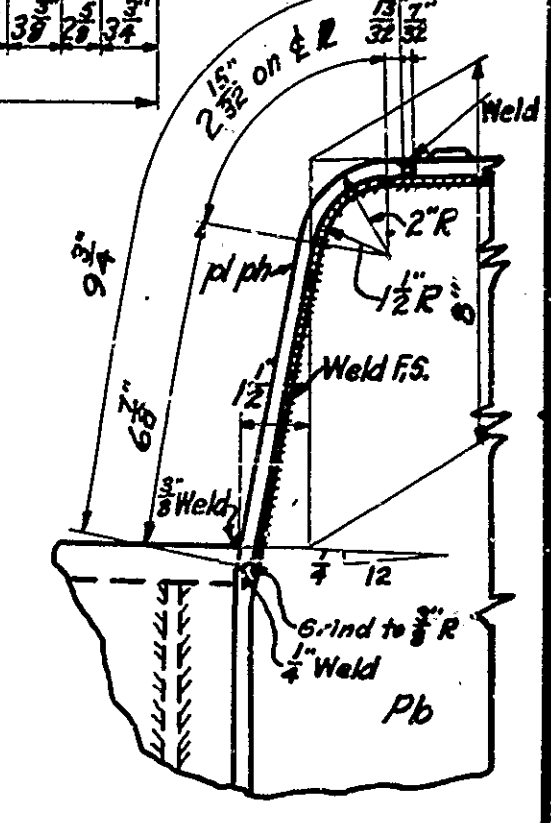
MAKE 8 BEAMS - ONE B1A - ONE B2A - ONE B3A - ONE B4A - ONE B5A - ONE B6A - ONE B7A - ONE B8A
MAKE 8 BEAMS - ONE B1C - ONE B2C - ONE B3C - ONE B4C - ONE B5C - ONE B6C - ONE B7C - ONE B8C



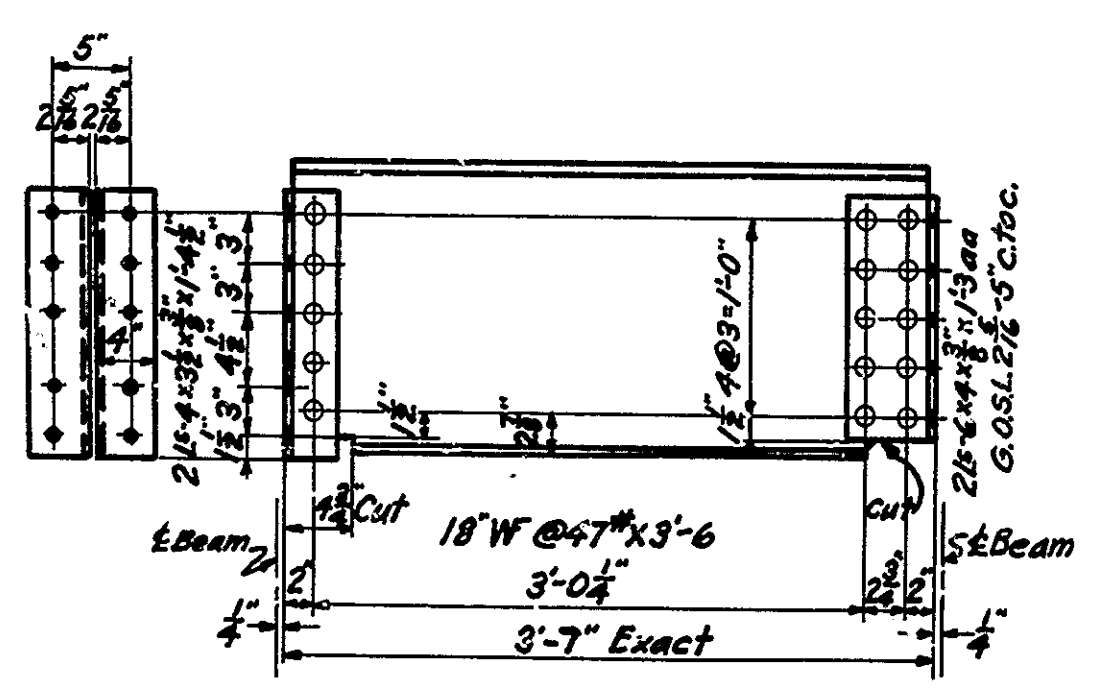
MAKE ONE EXPANSION JOINT MARK EJ1



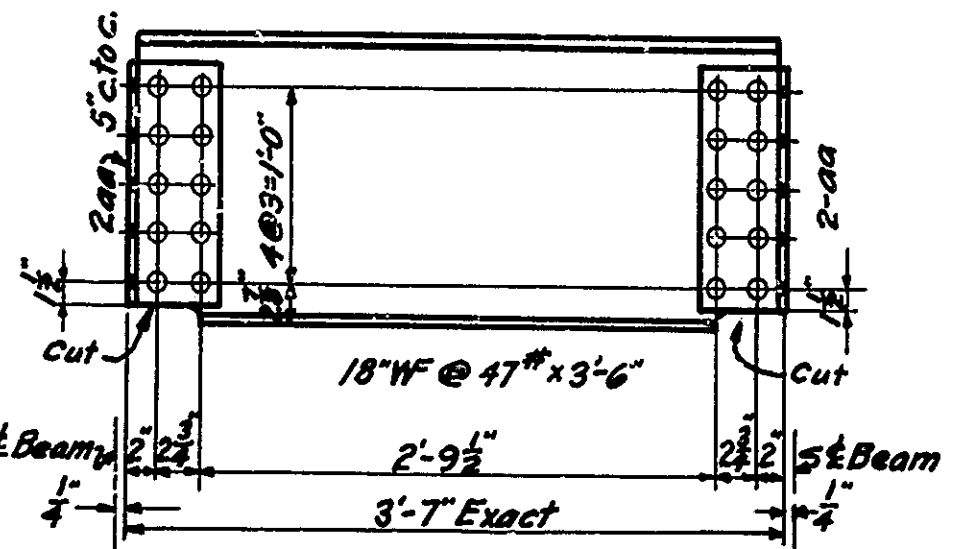
MAKE ONE EXPANSION JOINT MARK EJ2



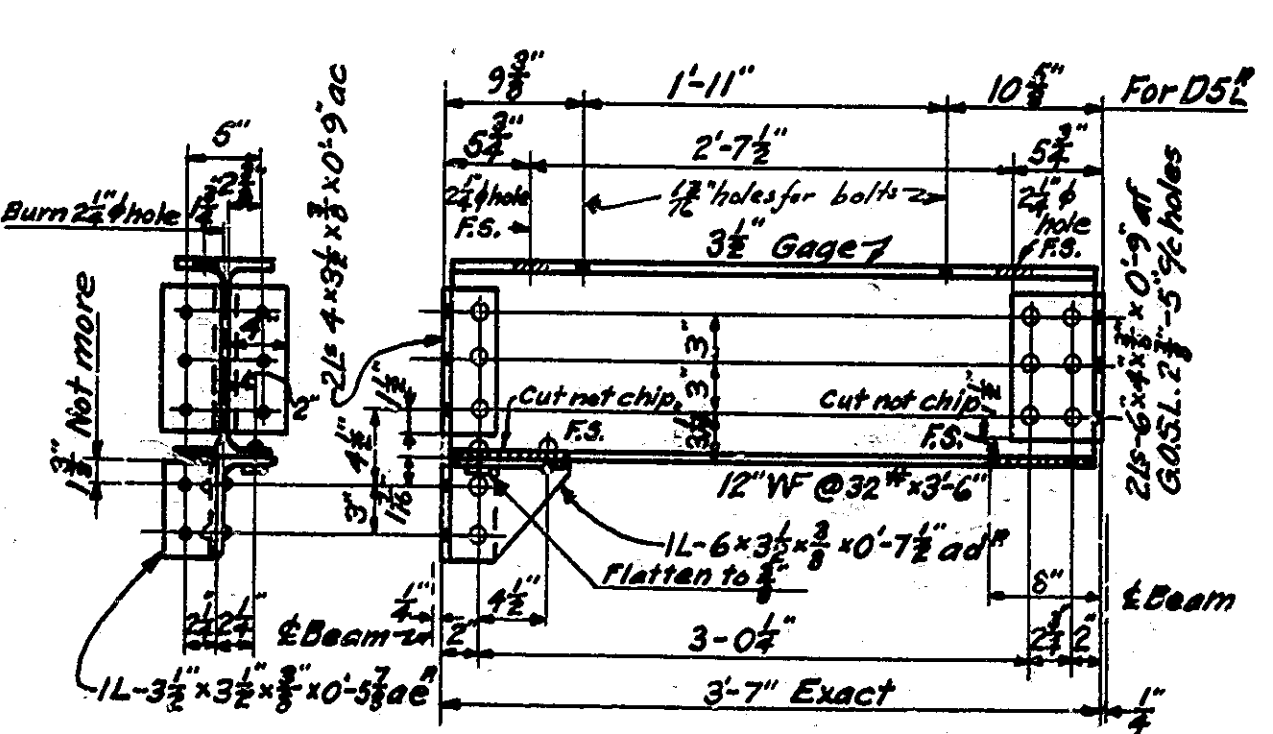
SECT. THRU CURB Rph
Scale: 3" = 1'-0"



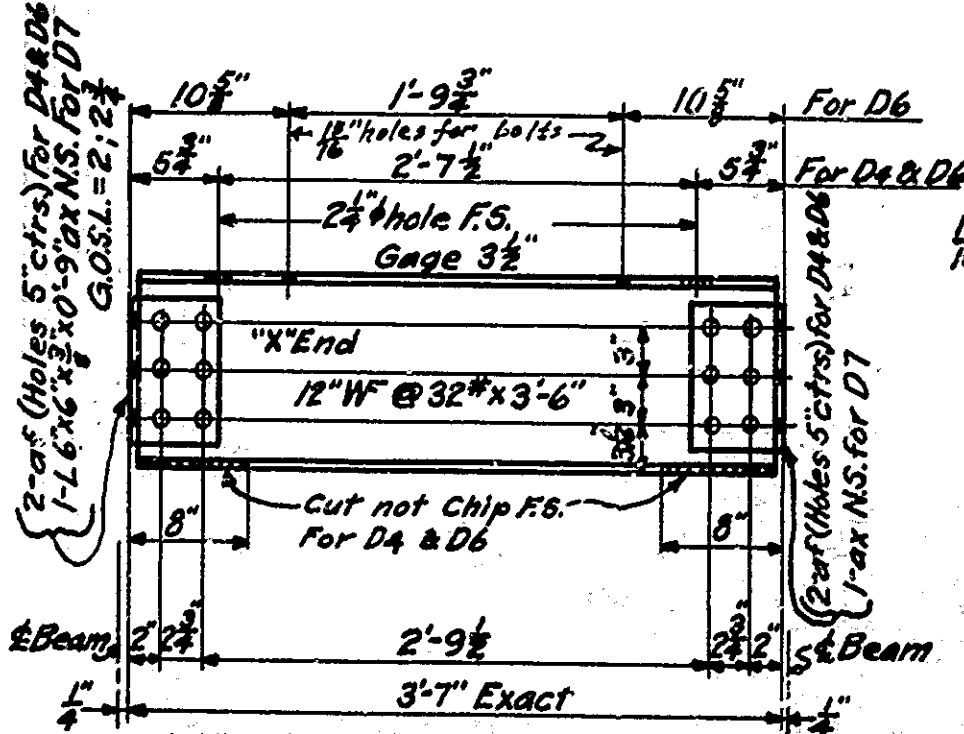
MAKE 4 DIAPHRAGMS MK D1



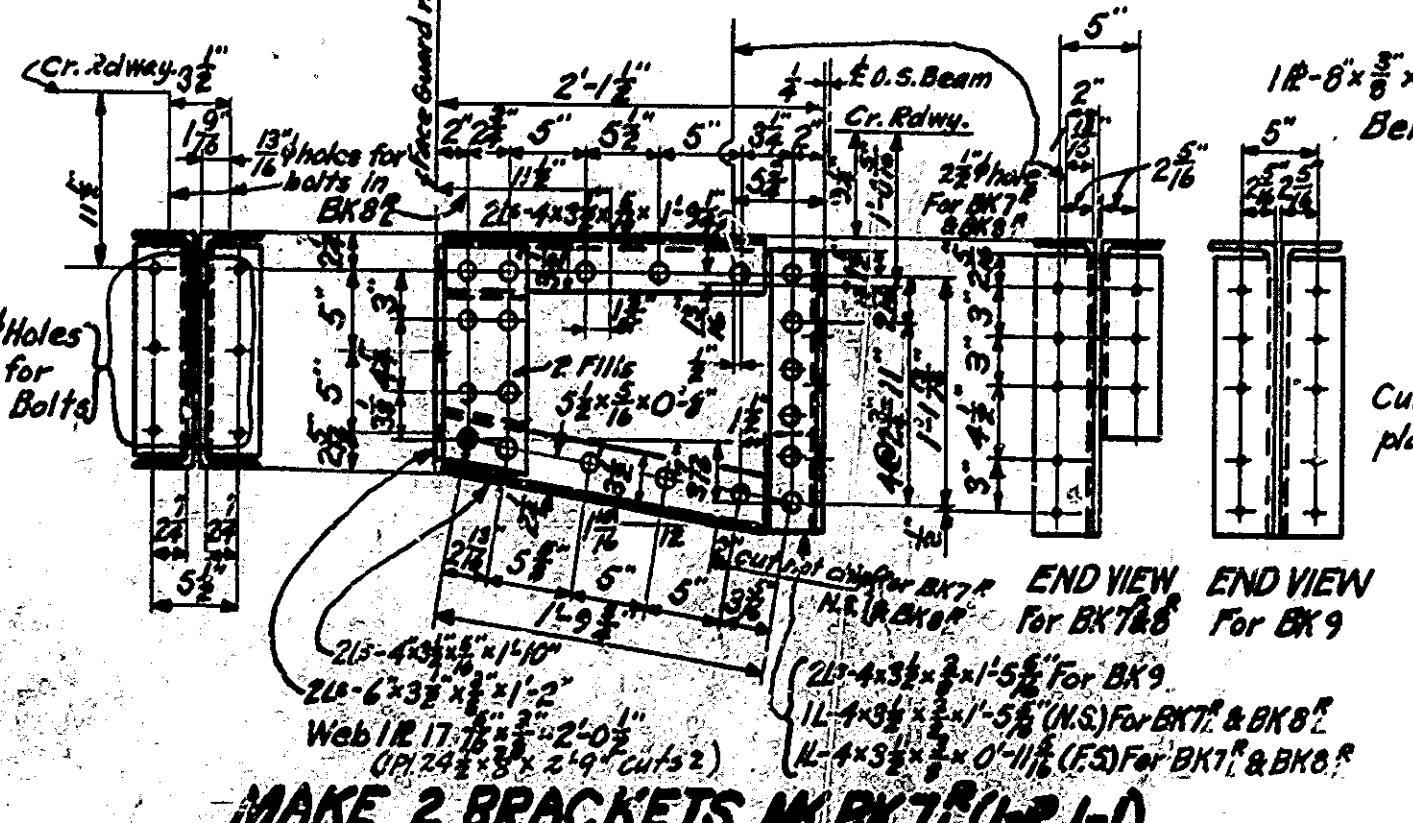
MAKE 10 DIAPHRAGMS MK D2



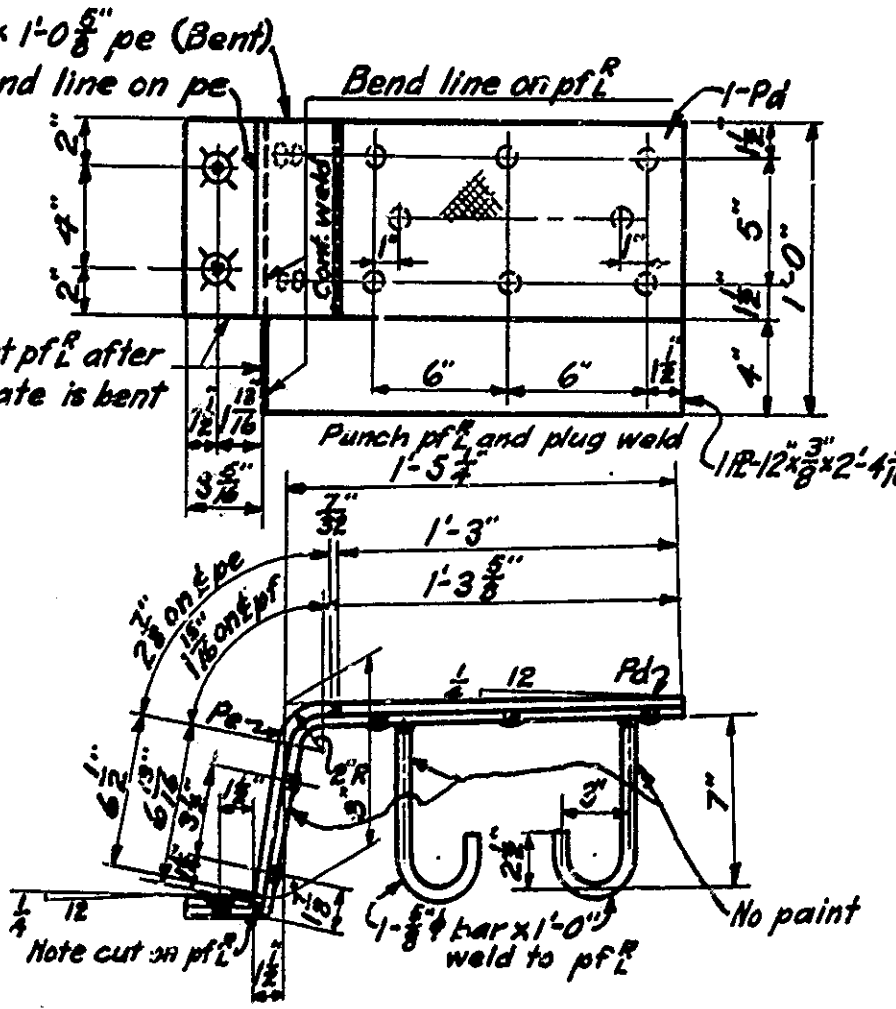
MAKE ONE DIAPHRAGM MK D3^R
MAKE ONE OPP. MK D3^L
MAKE ONE DIAPHRAGM MK D5^R
MAKE ONE OPP. MK D5^L



MAKE 5 DIAPHRAGMS MK D4
MAKE 5 DIAPHRAGMS MK D6
MAKE 14 DIAPHRAGMS MK D7



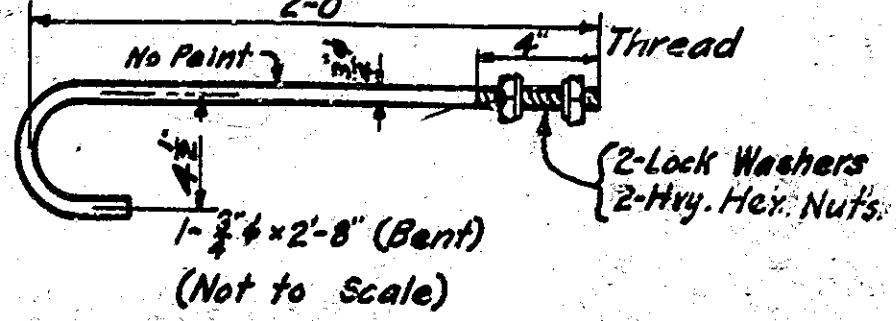
MAKE 2 BRACKETS MK BK7E (I-R, I-L)
MAKE 2 " MK BK8 (I-R, I-L)
MAKE 4 " MK BK9



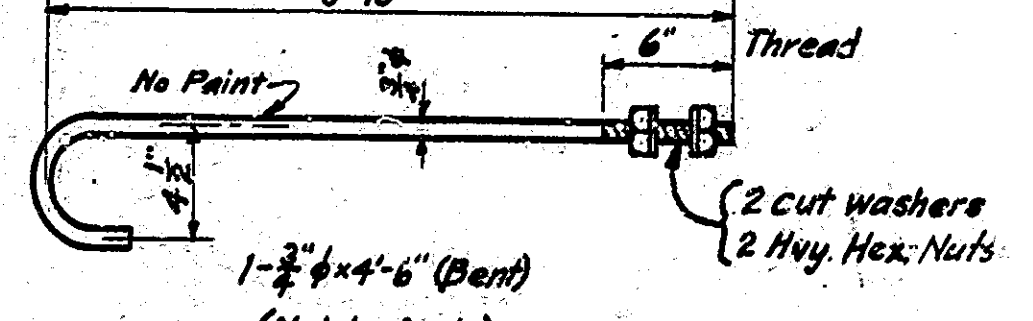
MAKE ONE EXP. JOINT MK EJ3^R
MAKE ONE OPP. MK EJ3^L

NOTES:

Rivets: $\frac{3}{8}$ " Holes: $\frac{15}{16}$ " Unless noted
 Expansion joints EJ1, EJ2, EJ3 are to be assembled in the shop in their relative erection positions and inspected for fit. See Dwg. S7 for notes regarding use of these drawings for shop plans and regarding inspection. If holes in plates and angles are flame cut they shall be ground smooth. See Dwg. S6 for Section thru Exp. Jt. at Bent #4.



MAKE 19 EXPANSION JOINT ANCHORS MK EJ5



MAKE 28 EXP. JOINT ANCHORS MK EJ4

END SPAN DETAILS
 STATE HIGHWAY COMMISSION OF INDIA

SCALE: 1" = 1'-0" UNLESS NOTED

MARCH 12, 1941

RECOMMENDED FOR APPROVAL:

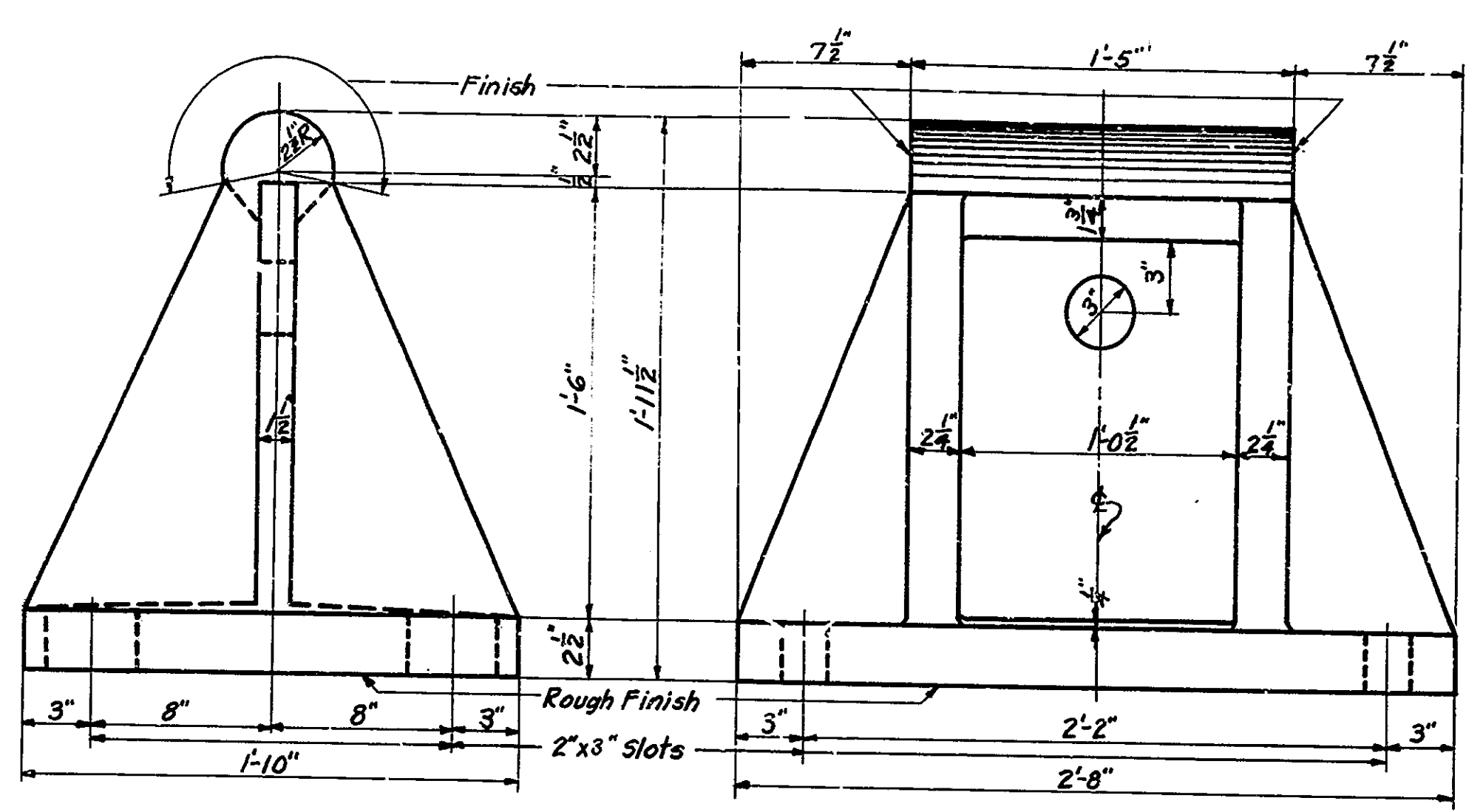
PROJECT: 56
 SECTION: T
 DRAWING: S12 OF 20

STATION: 451+93.5
 STRUCTURE NO. 1683

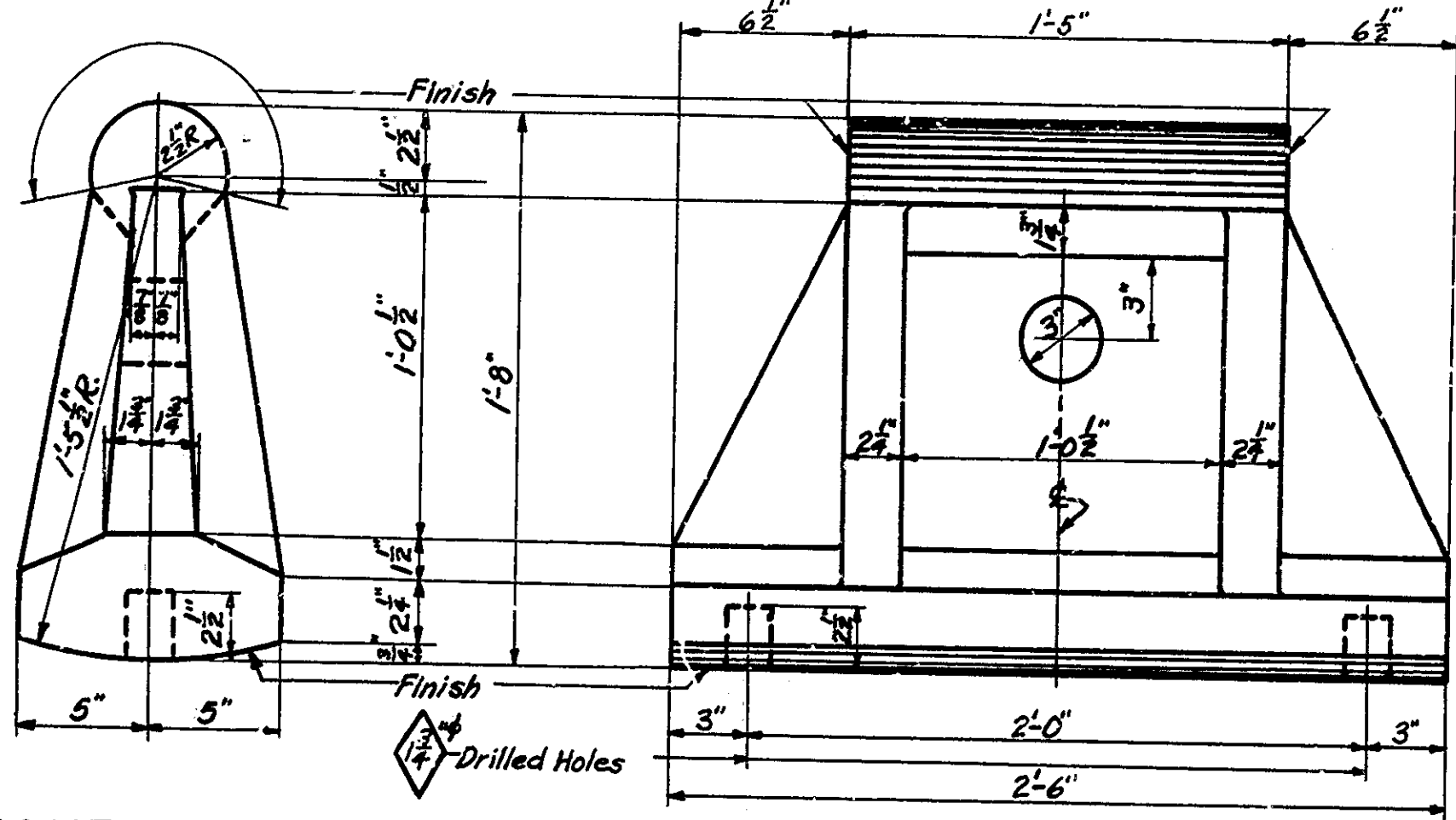
BRIDGE CONTRACT NO. 2146

FILE AS 1-15-1683

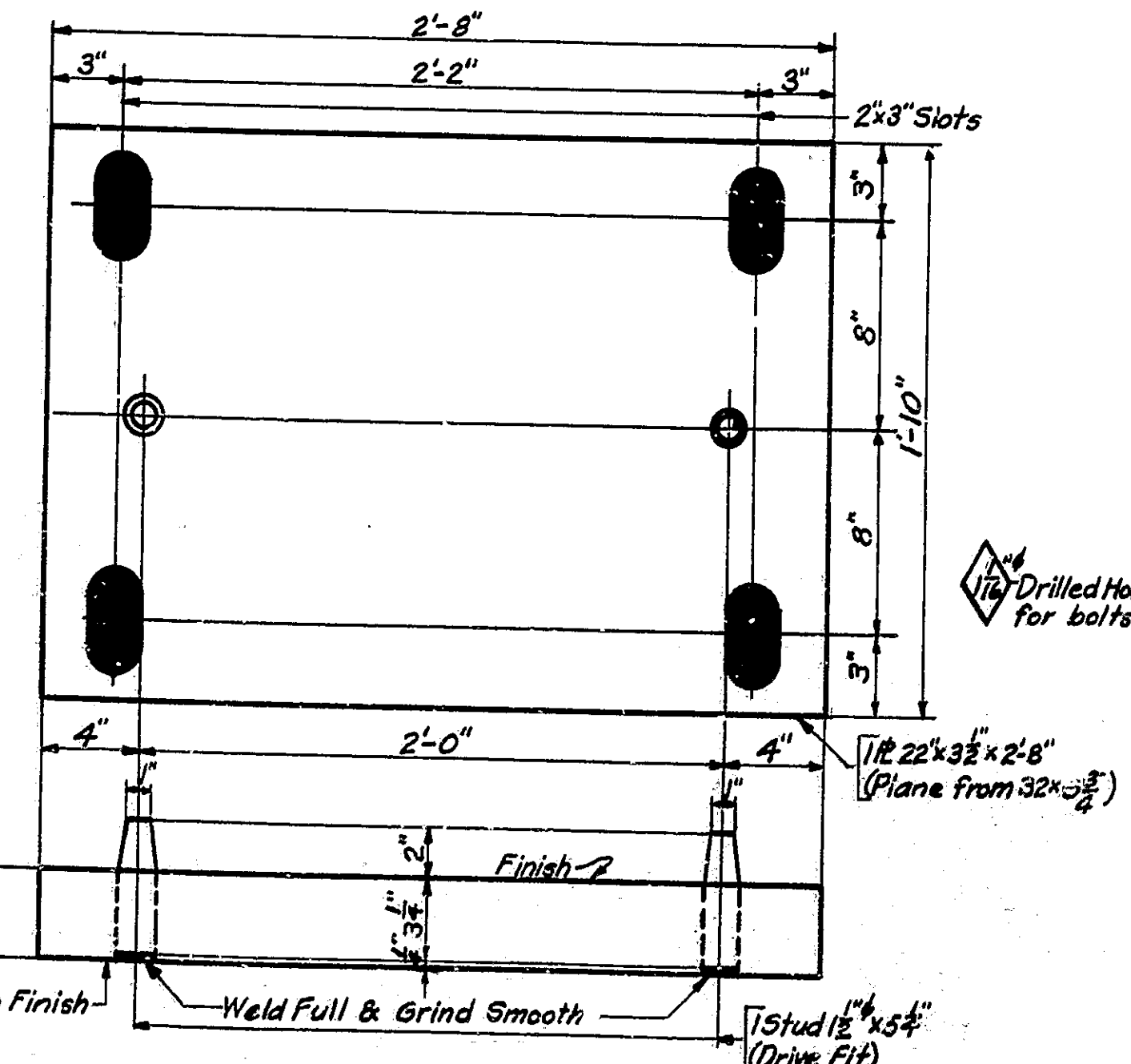
DESIGNED: L.K. 12-20-40 C.W.B. BFL. 12-25-40
 DRAWN: L.K. 1-18-41 C.W.B. W.M. E.S.-81
 TRACKED: W.B. 2-19-41 C.W.B. G.S. 2-17-41



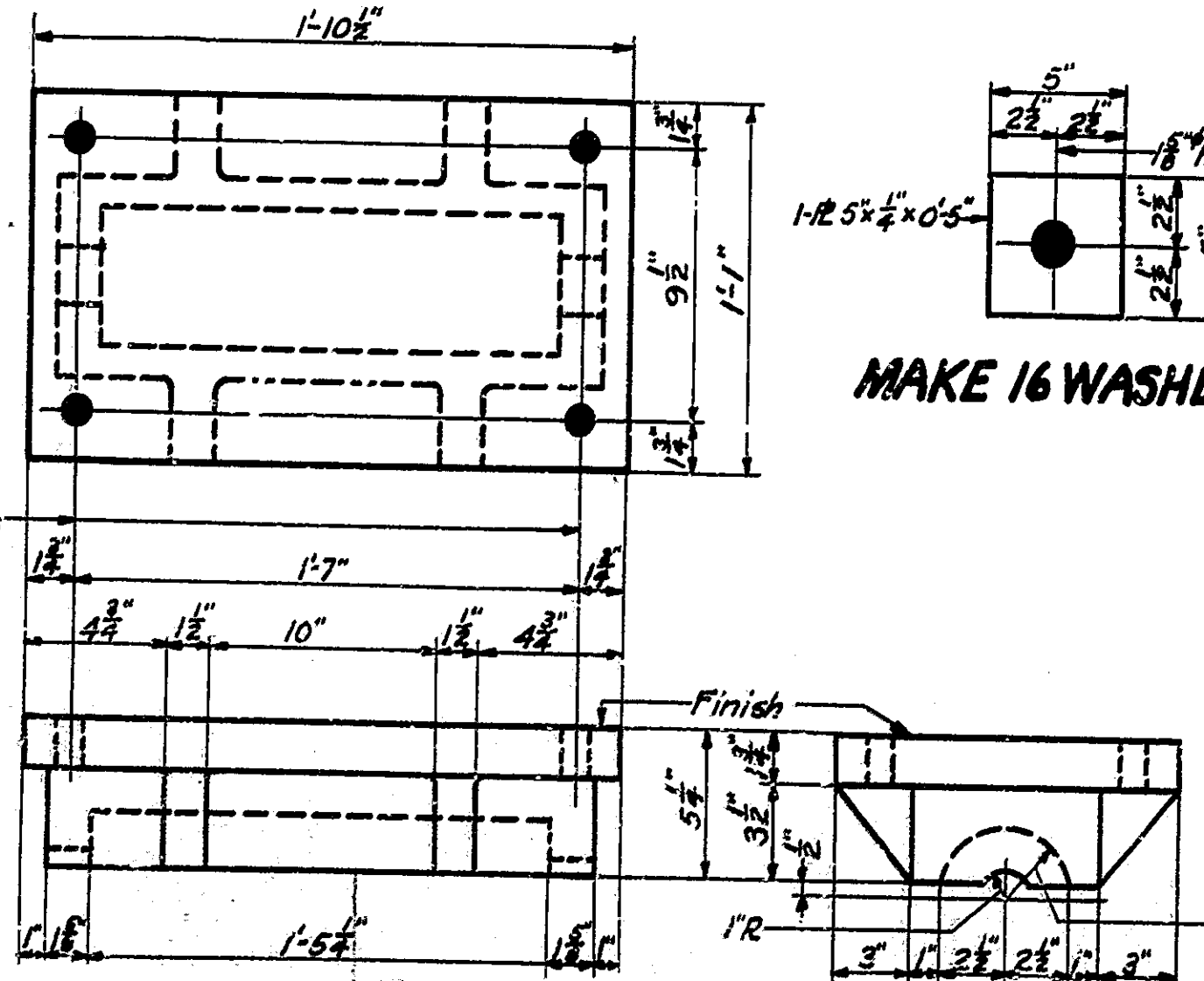
MAKE 2 FIXED SHOES -MK FSI- (CAST STEEL)



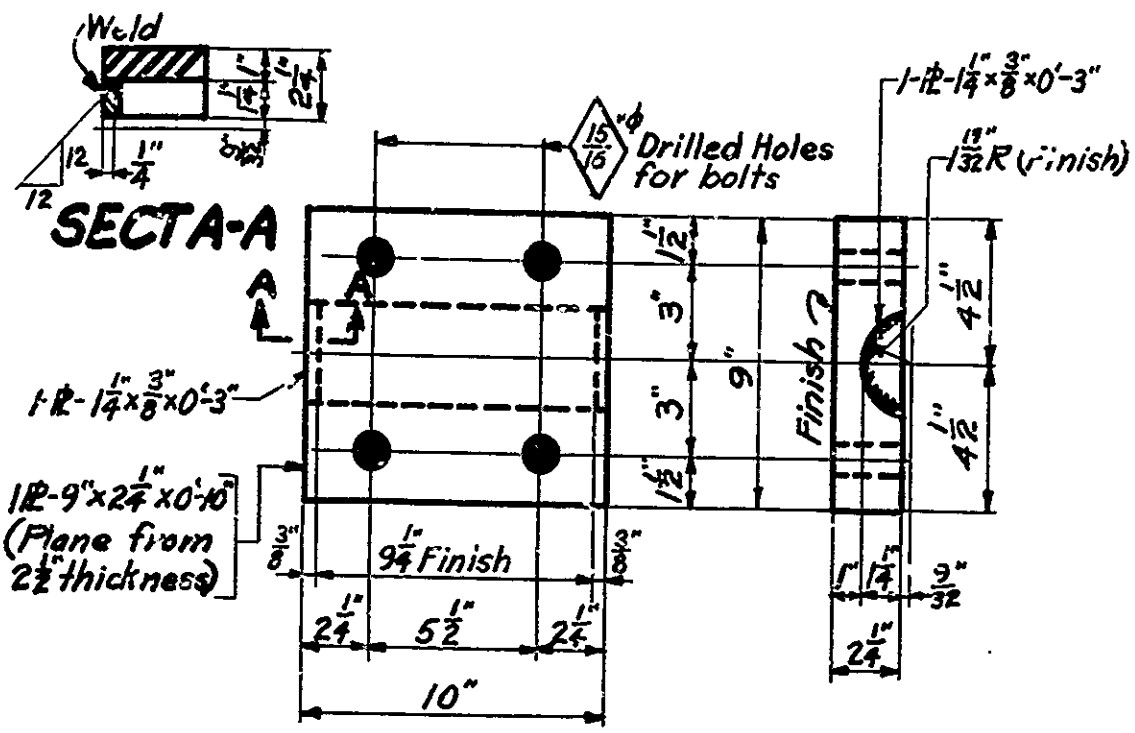
MAKE 2 EXPANSION ROCKERS-MK ESI-(CAST STEEL)



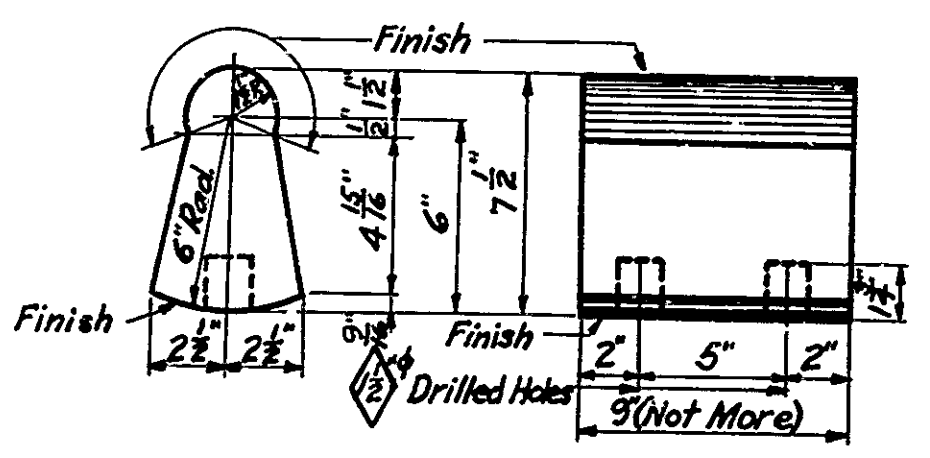
MAKE 2 EXPANSION PLATES-MK-EPI



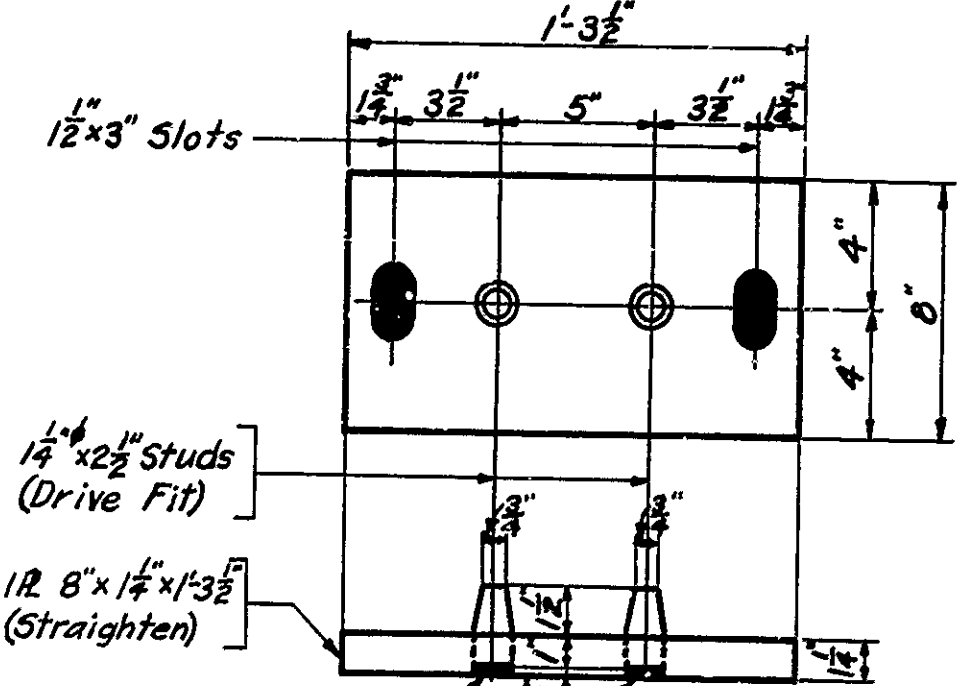
MAKE 4 TOP SHOES-MK TSI (CAST STEEL)



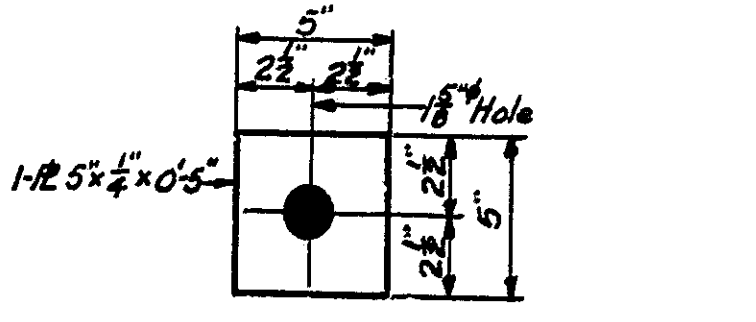
MAKE-16-TOP SHOES MK-TS 2



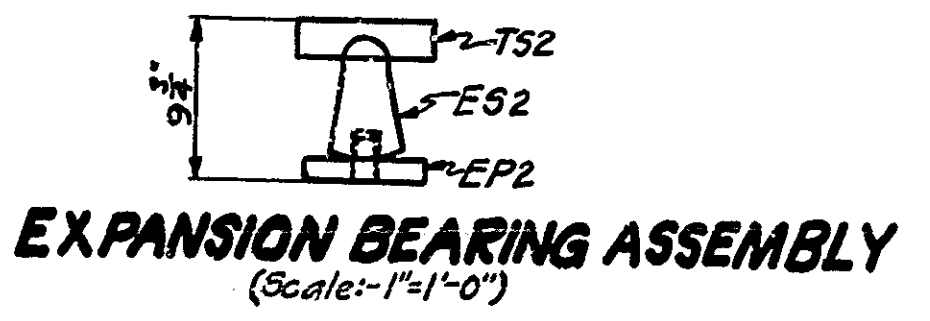
MAKE 16 EXP. ROCKERS MK-ES2 CAST STEEL



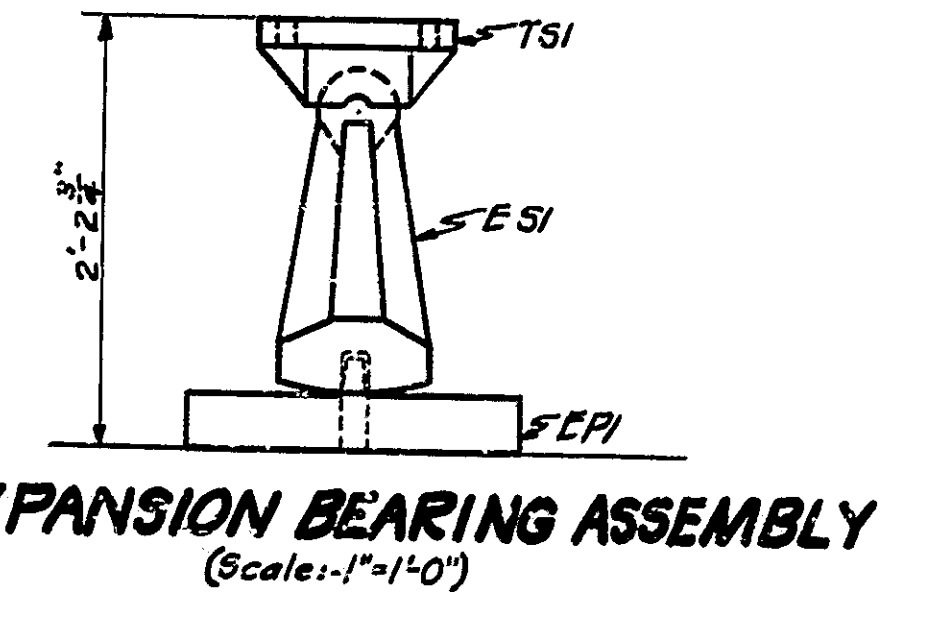
MAKE 16 EXP. PLATES MK-EP2



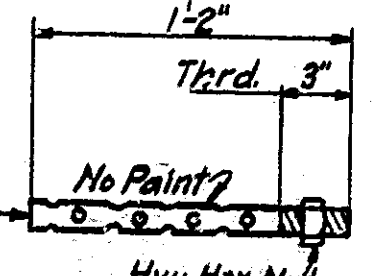
MAKE 16 WASHERS MK-W1



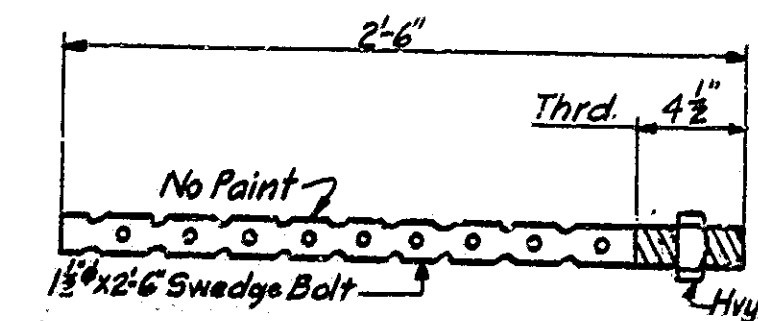
EXPANSION BEARING ASSEMBLY (Scale: 1"=1'-0")



EXPANSION BEARING ASSEMBLY (Scale: 1"=1'-0")

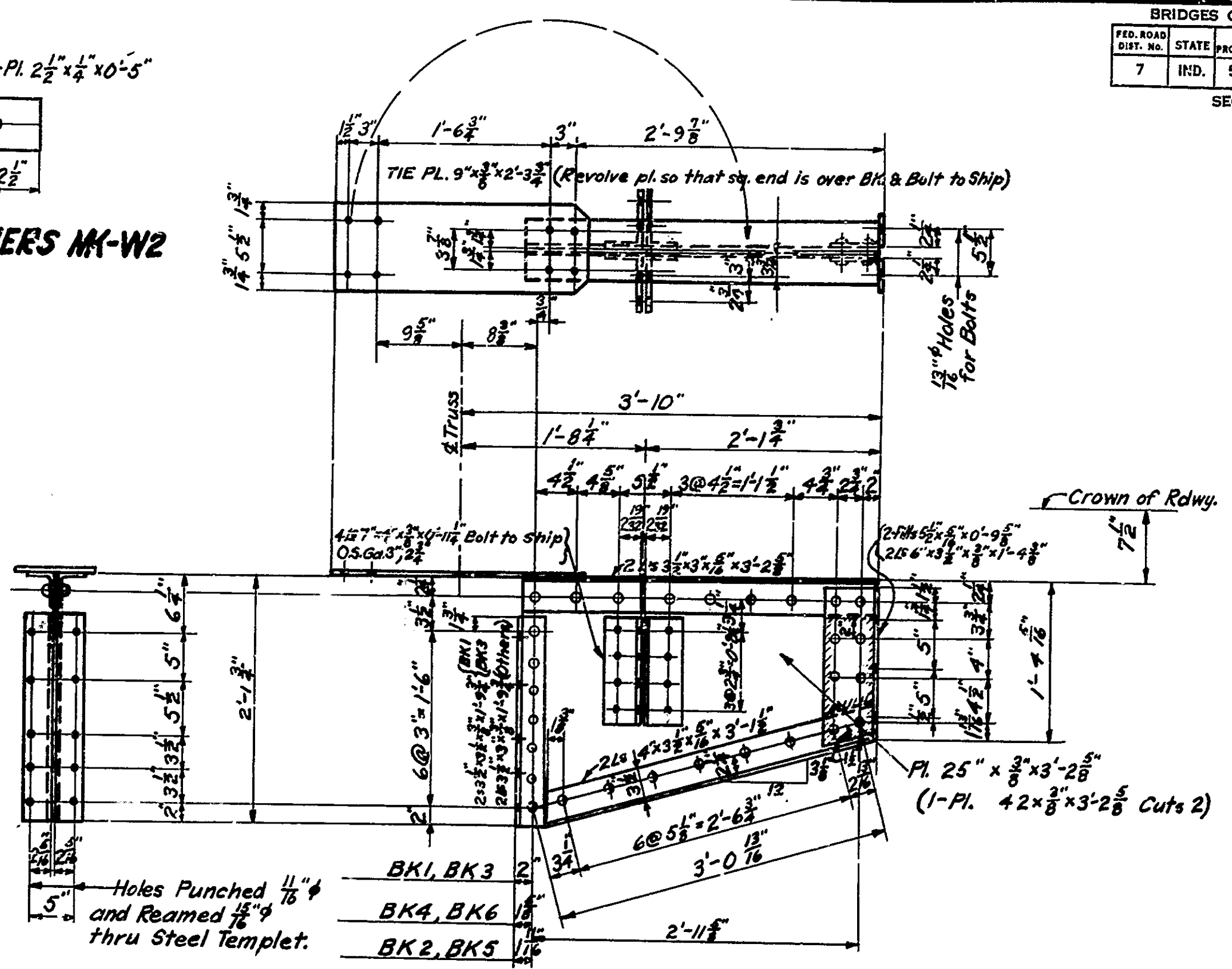


MAKE 32 ANCHOR BOLTS MK-AB2 (Scale: 1 1/2"=1'-0")



MAKE 16 ANCHOR BOLTS MK-AB1 (Scale: 1 1/2"=1'-0")

NOTE: Anchor Bolt Holes may be Cored or Drilled.



MAKE 22 BRACKETS (Scale: 1"=1'-0")
 MK4-BK1 } Alike
 MK4-BK3 }
 MK4-BK4 } Alike
 MK2-BK6 }
 MK4-BK2 } Alike
 MK4-BK5 }

NOTES:-
 Rivets 7/8" Holes 1/8" unless Noted.
 See Drwg. S7 for notes regarding use of these drawings for shop plans and regarding inspection.

NOTES FOR STEEL CASTINGS
 Edges of castings to be rounded to 1/4" radius and corners to have fillets of 1/4" radius except as noted.
 Structural steel may be substituted for cast steel at no increase in pay weight due to such substitution.

SHOES AND BRACKETS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 2"=1'-0" UNLESS NOTED
 MARCH 12, 1941
 RECOMMENDED FOR APPROVAL: [Signature]
 PROJECT: 56
 SECTION: T
 STATION: 451+93.5
 STRUCTURE NO. 1683
 DRAWING: S14 OF 20
 BRIDGE CONTRACT NO. 2146

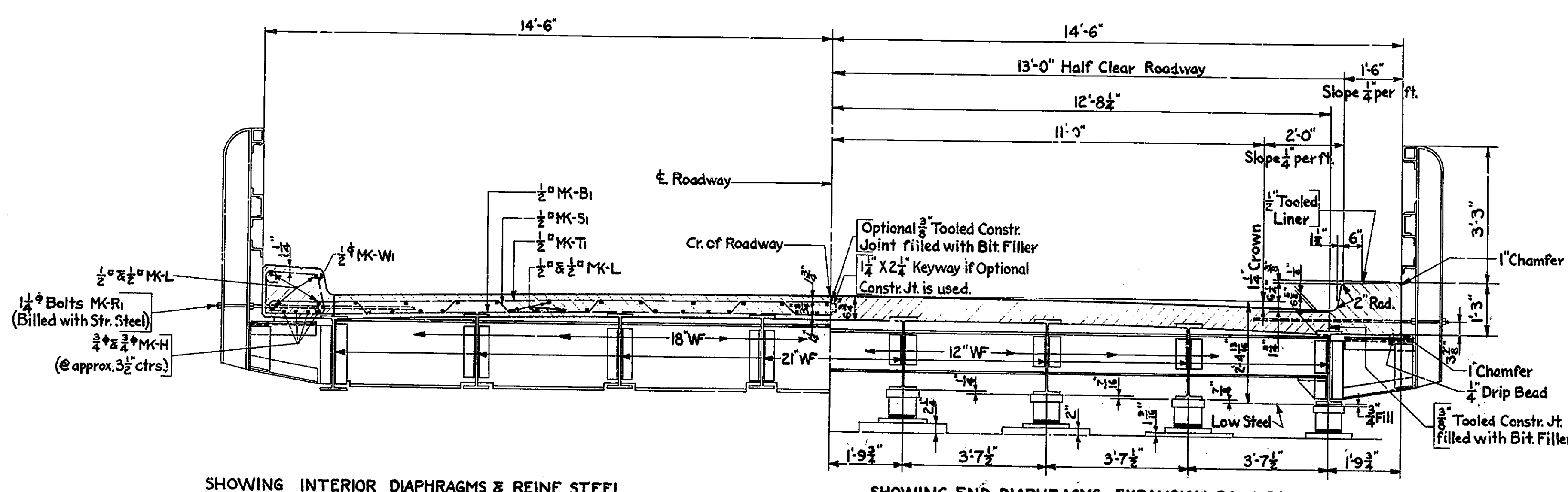
No. PIECES	SECTION	LENGTH	LOCATION	WEIGHT	TOTAL WEIGHT
4	12" WF 53"	56'-1"	4 TOP CHORDS - UoU4-X, UoU4-Y, UoU2-X, UoU2-Y	11995	
8	16 1/2" x 4 1/2"	2'-3"	Fin. 1 End	292	
8	Pls. 2 1/2" x 1/2"	3'-2 1/2"		1251	
8	Pls. 3 1/2" x 1/2"	5'-4"		2444	
16	Bars 5" x 1/2"	2'-3"		688	
8	Pls. 14" x 3/8"	3'-8 1/2"	pa	530	
8	Pls. 14" x 3/8"	1'-9 1/2"	pb	256	
8	Pls. 12" x 3/8"	2'-9"	pc	275	
8	Pls. 9" x 3/8"	1'-6"	pd	138	
8	Fills. 10" x 3/8"	1'-10 1/2"	pe	158	
8	" 10" x 3/8"	5'-4"	pf	363	
8	" 10" x 3/8"	3'-2 1/2"	pg	220	
8	" 9" x 3/8"	0'-8 1/2"	ph	11	
544	1/8" Shop Rivets			261	
TOTAL WEIGHT - FOUR PIECES					18,462
2 TOP CHORDS UoU4-X, UoU4-Y					
2	12" WF 52"	66'-8 1/2"	Fin. 2 Ends	12216	
6	12" WF 40"	2'-4"	ma	540	
8	Pls. 4 1/2" x 1/2"	4'-2"	Uo	2281	
4	Pls. 4 1/2" x 1/2"	3'-11"	Uo	1072	
4	Pls. 14" x 3/8"	3'-9 1/2"	UoU4	272	
4	Pls. 14" x 3/8"	1'-10 1/2"	UoU4	135	
12	Fills. 8" x 3/8"	2'-9 1/2"	fa	283	
288	1/8" Shop Rivets			138	
TOTAL WEIGHT - TWO PIECES					16,997
4 LOWER CHORDS UoL2-X, UoL2-Y, LioU2-X, LioU2-Y					
4	12" WF 49"	31'-10 1/2"		10073	
8	Pls. 2 1/2" x 1/2"	2'-8"		189	
96	1/8" Shop Rivets			46	
TOTAL WEIGHT - FOUR PIECES					10,908
4 LOWER CHORDS LsL2-X, LsL2-Y, LsLio-X, LsLio-Y					
4	12" WF 65"	40'-9 1/2"	Fin. 1 End	10600	
16	16 1/2" x 3 1/2"	0'-9"	aa	125	
8	Pls. 3 1/2" x 1/2"	4'-7"	Ls, Ls	2092	
8	Pls. 9" x 1/2"	4'-1"	Ls	138	
8	Fills. 12" x 3/8"	1'-10 1/2"	Ls, Lio	113	
8	Fills. 12" x 3/8"	4'-7 1/2"	Ls, Ls	189	
8	Fills. 12" x 3/8"	1'-11"	Ls, Lio	39	
304	1/8" Shop Rivets			146	
TOTAL WEIGHT - FOUR PIECES					13,442
2 LOWER CHORDS LsL2-X, LsL2-Y					
2	12" WF 65"	31'-9 1/2"	Fin. 2 Ends	6338	
8	16 1/2" x 3 1/2"	0'-9"	ab	55	
16	Bars 5" x 1/2"	2'-9"	bb	374	
8	Pls. 3 1/2" x 1/2"	4'-2 1/2"	cc	1678	
8	Pls. 12" x 3/8"	3'-9"	ph	464	
184	1/8" Shop Rivets			88	
TOTAL WEIGHT - TWO PIECES					8997
4 VERTICALS UoL1-X, UoL1-Y, UoLio-X, UoLio-Y					
4	12" WF 40"	6'-8 1/2"		1073	
6	Fills. 8" x 3/8"	1'-3"		34	
TOTAL WEIGHT - FOUR PIECES					1107
4 VERTICALS UoL2-X, UoL2-Y, UoLio-X, UoLio-Y					
4	12" WF 70"	18'-1 1/2"	Fin. 1 End	5247	
8	16 1/2" x 3 1/2"	0'-8"		84	
8	Pls. 6" x 1/2"	1'-1"		175	
8	Pls. 9" x 1/2"	5'-3"		3641	
4	Pls. 15" x 1/2"	1'-10 1/2"		249	
144	1/8" Shop Rivets			69	
TOTAL WEIGHT - FOUR PIECES					9463
4 VERTICALS UoL3-X, UoL3-Y, UoLio-X, UoLio-Y					
4	12" WF 25"	12'-7"		1258	
4	Pls. 1" x 1/2"	1'-9 1/2"	pc	64	
4	Pls. 1" x 1/2"	1'-5"	pd	51	
4	Fills. 6 1/2" x 3/8"	0'-10 1/2"		10	
4	Fills. 6 1/2" x 3/8"	0'-6"		6	
16	1/8" Shop Rivets			9	
TOTAL WEIGHT - FOUR PIECES					1397
4 VERTICALS UoL4-X, UoL4-Y, UoLio-X, UoLio-Y					
4	12" WF 40"	14'-10 1/2"		2380	
4	Fills. 8" x 3/8"	3'-0"		82	
4	Fills. 8" x 3/8"	0'-10"		28	
8	Fills. 8" x 3/8"	1'-1 1/2"		67	
8	1/8" Shop Rivets			4	
TOTAL WEIGHT - FOUR PIECES					2556

No. PIECES	SECTION	LENGTH	LOCATION	WEIGHT	TOTAL WEIGHT
2	12" WF 25"	12'-7"	UoL4-X, UoL4-Y	629	
2	Pls. 1" x 1/2"	1'-9 1/2"	pc	92	
2	Pls. 1" x 1/2"	1'-5"	pd	25	
2	Fills. 6 1/2" x 3/8"	0'-10 1/2"		12	
2	Fills. 6 1/2" x 3/8"	0'-6"		7	
8	1/8" Shop Rivets			4	
TOTAL WEIGHT - TWO PIECES					709
4 DIAGONALS UoL1-X, UoL1-Y, UoLio-X, UoLio-Y					
4	12" WF 25"	14'-7"		1458	
4	Fills. 6 1/2" x 3/8"	1'-5"		55	
8	Fills. 6 1/2" x 3/8"	1'-3"		41	
TOTAL WEIGHT - FOUR PIECES					1554
4 DIAGONALS UoL2-X, UoL2-Y, UoLio-X, UoLio-Y					
4	12" WF 65"	19'-3 1/2"		5019	
8	Fills. 12" x 3/8"	2'-5 1/2"		100	
8	Fills. 12" x 3/8"	2'-2 1/2"		45	
TOTAL WEIGHT - FOUR PIECES					5164
4 DIAGONALS LsU2-X, LsU2-Y, LsUio-X, LsUio-Y					
4	12" WF 72"	19'-5 1/2"		5598	
8	Fills. 12" x 3/8"	1'-3"		71	
TOTAL WEIGHT - FOUR PIECES					5669
4 DIAGONALS UoL3-X, UoL3-Y, LioU2-X, LioU2-Y					
4	12" WF 40"	19'-8 1/2"		3155	
8	Fills. 8" x 3/8"	2'-0"		109	
8	Fills. 8" x 3/8"	1'-9"		71	
32	1/8" Shop Rivets			15	
TOTAL WEIGHT - FOUR PIECES					3350
4 DIAGONALS LsU2-X, LsU2-Y, UoL2-X, UoL2-Y					
4	12" WF 50"	19'-9 1/2"		3954	
8	Fills. 8" x 3/8"	1'-9"		46	
8	Fills. 8" x 3/8"	1'-6"		20	
TOTAL WEIGHT - FOUR PIECES					4022
2 FLOOR BEAMS - FBO					
2	30" WF 124"	29'-7"		7997	
16	16 1/2" x 3 1/2"	0'-11"	(1-16" WF 36" x 1-1/2" Cuts 2 Pcs.)	324	
8	Pls. 3 1/2" x 1/2"	0'-8 1/2"		100	
4	Pls. 7" x 1/2"	0'-8 1/2"	af	167	
8	Pls. 7" x 1/2"	0'-8 1/2"	ap	51	
24	16 1/2" x 3 1/2"	1'-0"	aa	126	
8	Pls. 6" x 3/8"	1'-9 1/2"	ab	295	
8	Pls. 6" x 3/8"	1'-9 1/2"	bb	123	
4	Pls. 5" x 3/8"	1'-2"		64	
24	16 1/2" x 3 1/2"	1'-0"	ac	218	
8	Pls. 4" x 3/8"	0'-9"	ad	55	
24	16 1/2" x 3 1/2"	0'-8 1/2"	Fin. 2 Ends at f	147	
8	Pls. 4" x 3/8"	0'-8 1/2"	Fin. 2 Ends at f	44	
4	Pls. 6" x 3/8"	1'-2"		111	
8	Fills. 5" x 3/8"	1'-0 1/2"		48	
296	1/8" Shop Rivets			142	
TOTAL WEIGHT - TWO PIECES					9352
4 FLOOR BEAMS - 2FB1, 2FB3					
4	30" WF 108"	20'-9 1/2"		8991	
8	1/2" WF 80"	1'-4 1/2"	1-24" WF 80" x 1-4 1/2" Cuts 2	433	
16	16 1/2" x 3 1/2"	3'-4 1/2"	ab	976	
96	1/8" Shop Rivets		aa	1181	
304	1/8" Shop Rivets			146	
TOTAL WEIGHT - FOUR PIECES					11,727
2 FLOOR BEAMS FB2					
2	30" WF 108"	20'-9 1/2"		4496	
4	1/2" WF 80"	1'-8 1/2"	1-30" WF 80" x 1-8 1/2" Cuts 2	365	
8	16 1/2" x 3 1/2"	3'-4 1/2"	ac	417	
48	1/8" Shop Rivets		aa	591	
160	1/8" Shop Rivets			77	
TOTAL WEIGHT - TWO PIECES					5946
5 FLOOR BEAMS 2FB4, 2FB5, 1FB6					
5	30" WF 108"	20'-9 1/2"		11240	
10	1/2" WF 80"	1'-4 1/2"	1-24" WF 80" x 1-4 1/2" Cuts 2	542	
20	16 1/2" x 3 1/2"	3'-4 1/2"		1042	
120	1/8" Shop Rivets			1275	
380	1/8" Shop Rivets			182	
TOTAL WEIGHT - FIVE PIECES					14,481
STRINGERS ON TRUSSES					
20	16" WF 30"	14'-10 1/2"	Stringers S1	10702	
20	16" WF 24"	14'-10 1/2"	" S2	11892	
20	16" WF 40"	14'-10 1/2"	" S3	11892	
4	16" WF 36"	14'-10 1/2"	" S4	2141	
4	16" WF 40"	14'-10 1/2"	" S5	2978	
4	16" WF 40"	14'-10 1/2"	" S6	2978	
20	16" WF 30"	14'-8 1/2"	" S7	10597	
4	16" WF 36"	13'-8 1/2"	" S8	2120	
TOTAL WEIGHT					54,100

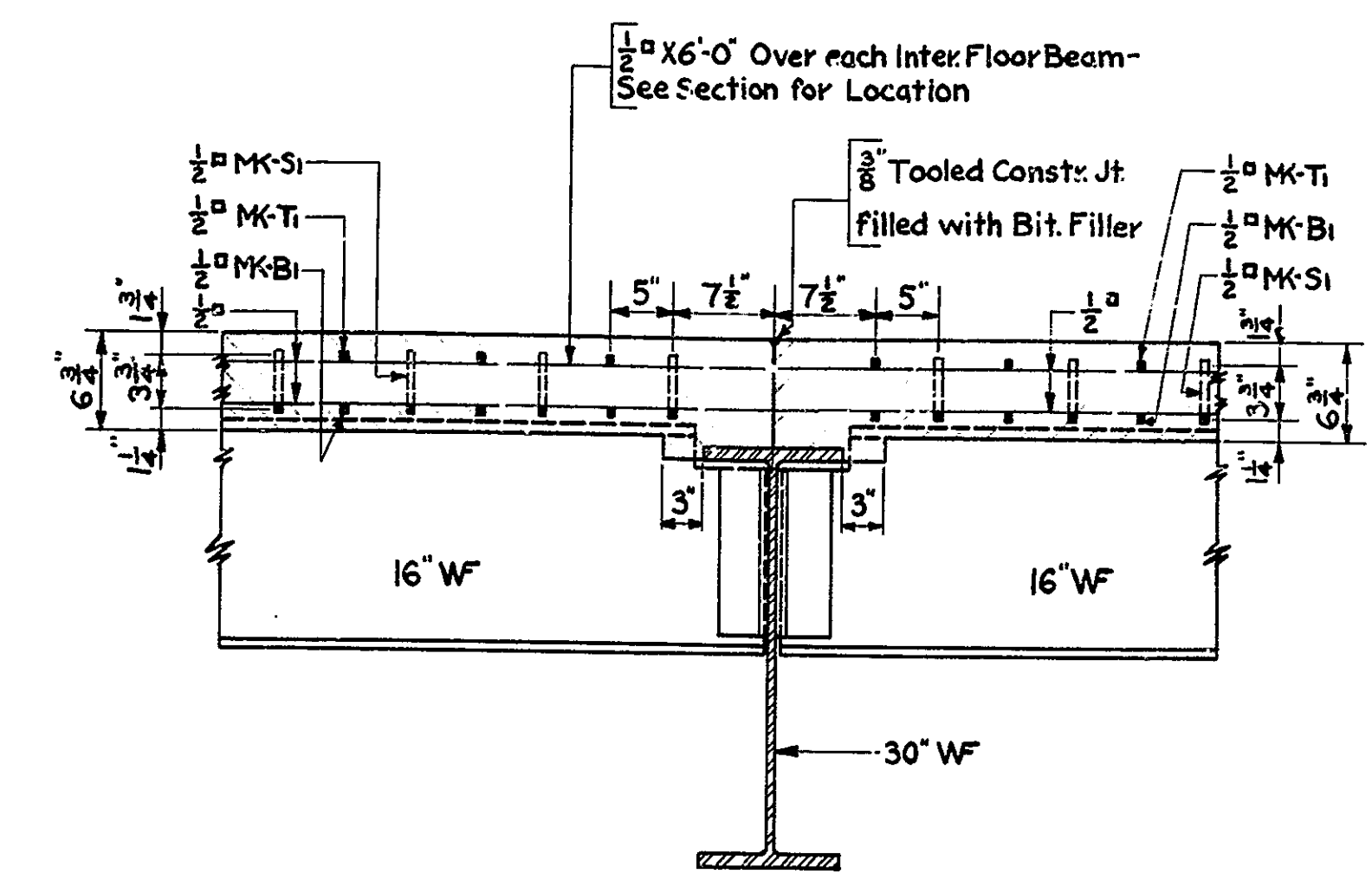
No. PIECES	SECTION	LENGTH	LOCATION	WEIGHT	TOTAL WEIGHT
16	22 BRACKETS - 4BK1, 4BK2, 4BK3, 4BK4, 4BK5, 2BK6		4BK1, 4BK3	247	
88	16 1/2" x 3 1/2"	1'-9 1/2"		1122	
44	16 1/2" x 3 1/2"	1'-4 1/2"		702	
44	16 1/2" x 3 1/2"	3'-1 1/2"		1059	
28	16 1/2" x 3 1/2"	1'-9 1/2"	8 Ea. Brkt. 2, 4, 5 - 4 Brkt 6	401	
44	16 1/2" x 3 1/2"	3'-2 1/2"		935	
22	Pls. 2 1/2" x 1/2"	3'-2 1/2"	(1 Pl. 4 1/2" x 3/8" x 3'-2 1/2" Cuts 2)	1896	
22	Pls. 9" x 3/8"	2'-3 1/2"		574	
44	Pls. 5 1/2" x 3/8"	0'-9 1/2"		506	
616	1/8" Shop Rivets			296	
TOTAL WEIGHT - TWENTY-TWO PIECES					1448
2 BOTTOM STRUTS - BS1					
2	12" WF 25"	20'-7"		1029	
8	16 1/2" x 3 1/2"	1'-0"	af	162	
4	Pls. 2 1/2" x 1/2"	2'-2"		232	
2	Pls. 1 1/2" x 1/2"	1'-9"		49	
48	1/8" Shop Rivets			23	
2	Fills. 6 1/2" x 3/8"	1'-9"	fa	10	
TOTAL WEIGHT - TWO PIECES					1505
2 BOTTOM STRUTS - BS2					
2	12" WF 40"	23'-8"		1653	
4	16 1/2" x 3 1/2"	1'-1 1/2"	af	98	
8	16 1/2" x 3 1/2"	0'-8 1/2"	ad	115	
4	16 1/2" x 3 1/2"	1'-0 1/2"	aa	57	
8	16 1/2" x 3 1/2"	1'-2 1/2"	ab	111	
4	16 1/2" x 3 1/2"	1'-1 1/2"	ab (Cut from 6" x 4" x 3/8")	93	
4	16 1/2" x 3 1/2"	1'-1 1/2"	ae	41	
4	Pls. 14" x 3/8"	1'-0 1/2"	pa	173	
4	Pls. 11" x 3/8"	1'-0 1/2"	pb	59	
72	1/8" Shop Rivets			35	
TOTAL WEIGHT - TWO PIECES					2315
4 BOTTOM STRUTS - 2BS3, 2BS5					
4	12" WF 25"	20'-7 1/2"		2063	
16	16 1/2" x 3 1/2"	1'-0 1/2"		337	
16	16 1/2" x 3 1/2"	0'-10 1/2"		127	
16	16 1/2" x 3 1/2"	0'-10 1/2"		113	
8	Pls. 10 1/2" x 3/8"	2'-0 1/2"		385	
8	Pls. 10 1/2" x 3/8"	1'-3"		134	
8	Fills. 6 1/2" x 3/8"	0'-8 1/2"		48	
8	Fills. 6 1/2" x 3/8"	1'-6 1/2"		34	
208	1/8" Shop Rivets			100	
TOTAL WEIGHT - FOUR PIECES					3341
3 BOTTOM STRUTS - 2BS4, 1BS6					
3	12" WF 40"	20'-9"		2490	
12	16 1/2" x 3 1/2"	0'-8 1/2"		72	
12	16 1/2" x 3 1/2"	0'-10 1/2"		89	
12	Pls. 12" x 3/8"	2'-2 1/2"		406	
6	Pls. 10 1/2" x 3/8"	1'-9"			

BRIDGES OVER 20' SPAN				
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
7	IND.	56	1941	33

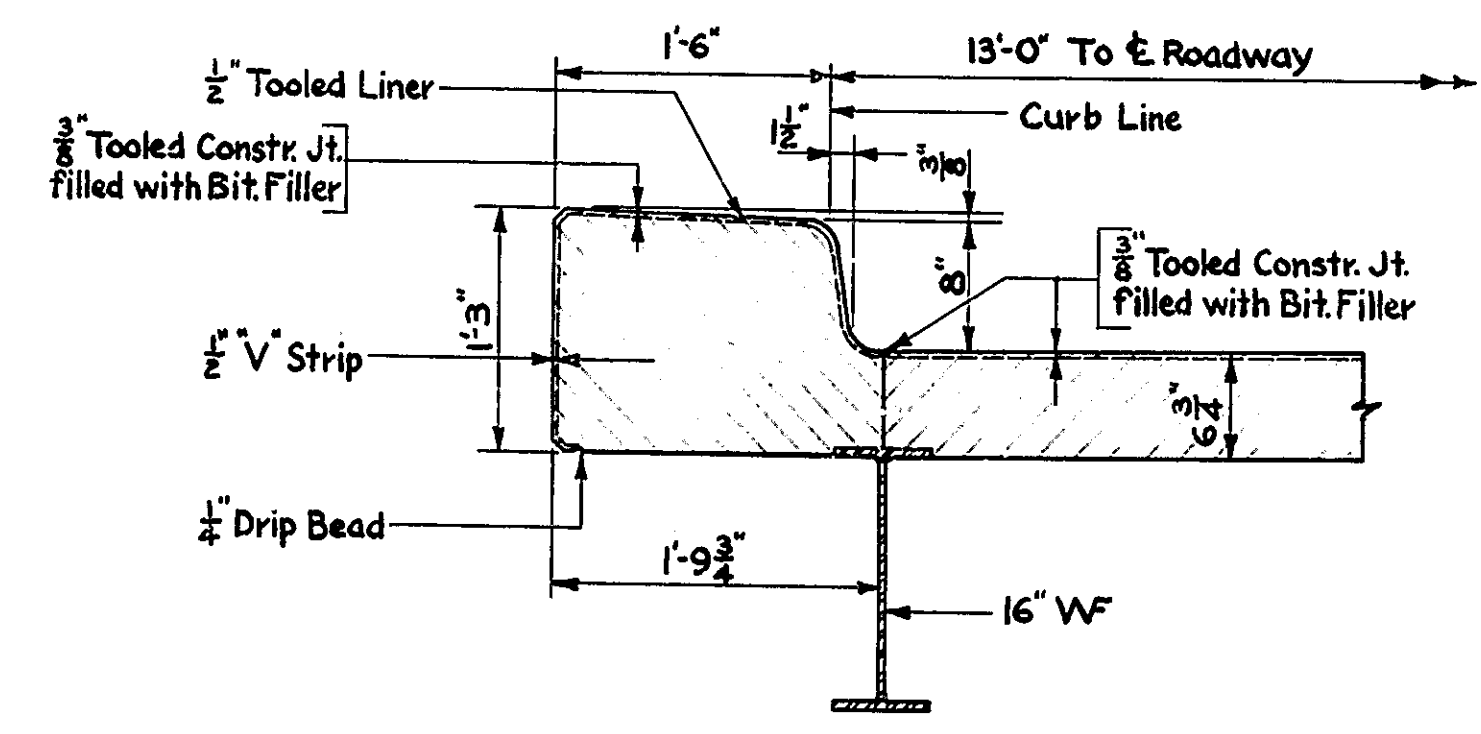
SECTION - T



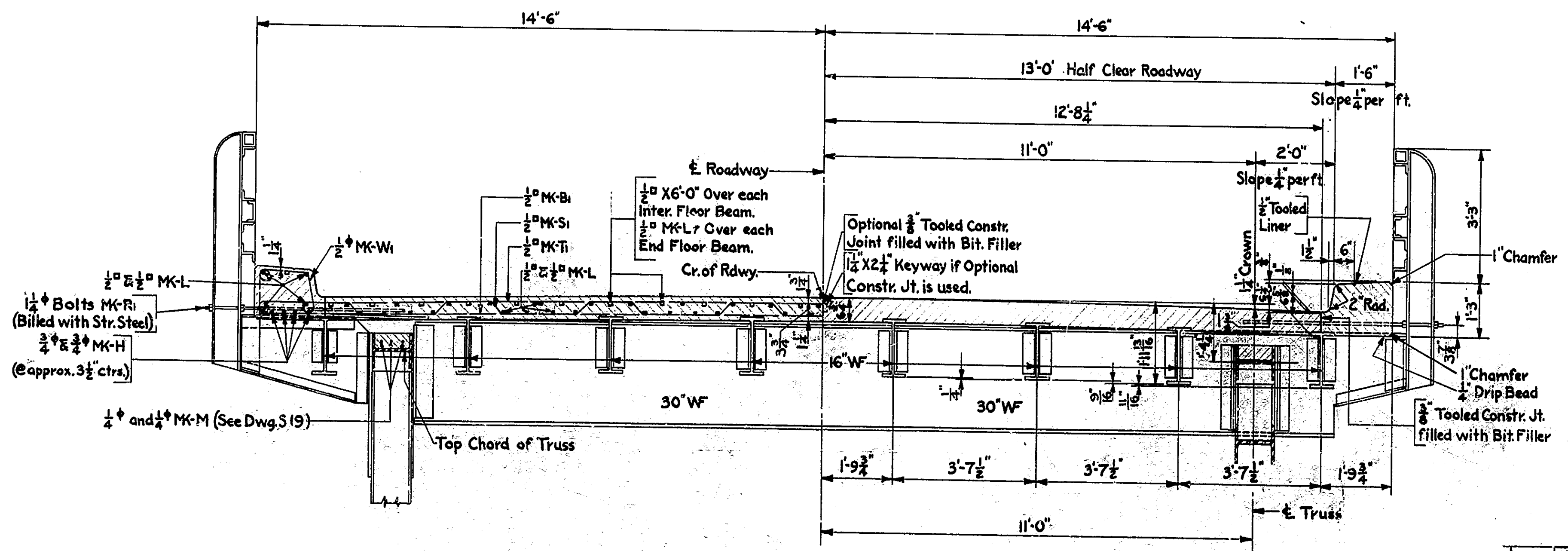
SECTION I TO E ROADWAY (BEAM SPAN)
SCALE: 1/2" = 1'-0"



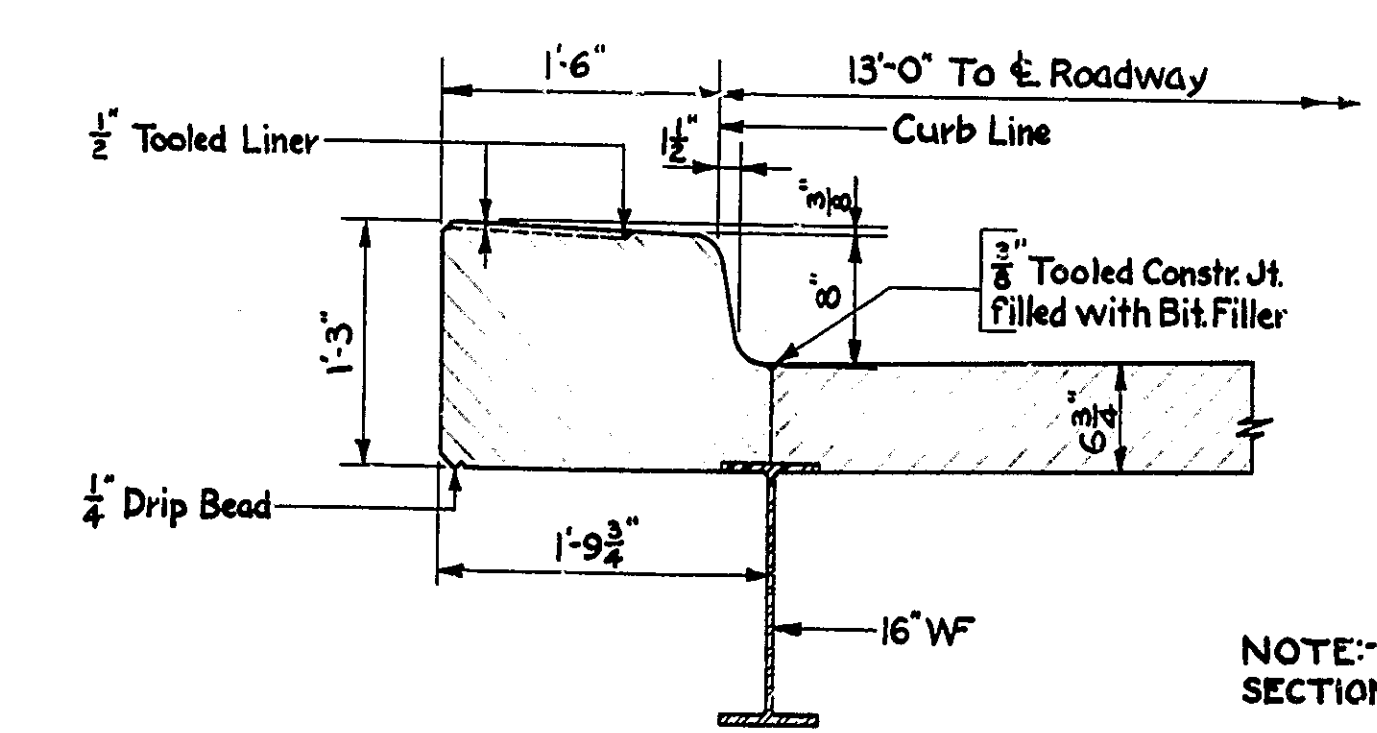
SECTION H-H
SCALE: 1" = 1'-0"



SECTION J-J
(REIN. & HANDRAIL BRACKET NOT SHOWN)
SCALE: 1" = 1'-0"

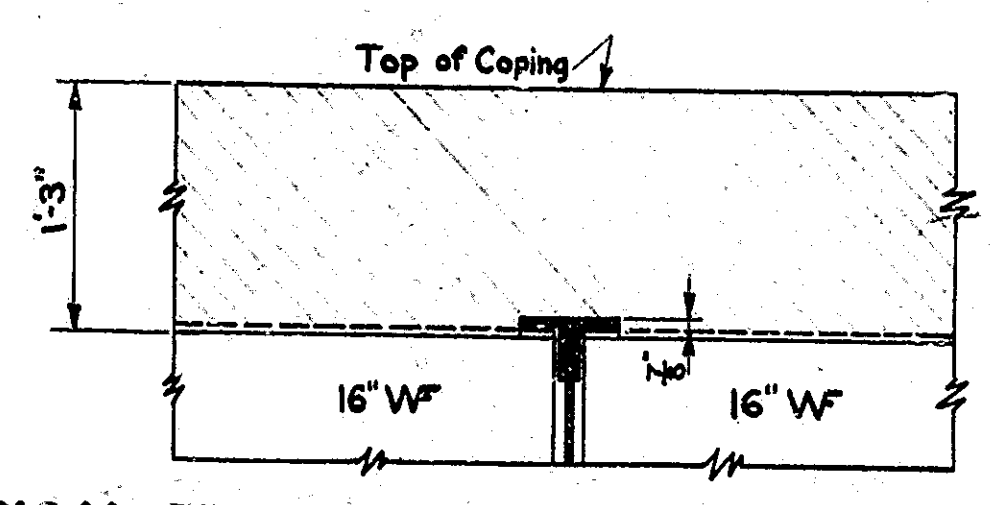


SECTION I TO E ROADWAY (TRUSS SPAN)
SCALE: 1/2" = 1'-0"



SECTION K-K
(REIN. & HANDRAIL BRACKET NOT SHOWN)
SCALE: 1" = 1'-0"

NOTE: SECTIONS TAKEN ON DWG. S 16



TYPICAL SECTION THRU TRUSS BRACKET
(REIN. STEEL NOT SHOWN)
SCALE: 1" = 1'-0"

FLOOR SECTIONS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1" = 1'-0"

RECOMMENDED FOR APPROVAL:

MARCH 12, 1941

PROJECT: 56

STATION: .451 +93.5

SECTION: T

STRUCTURE NO. 1683

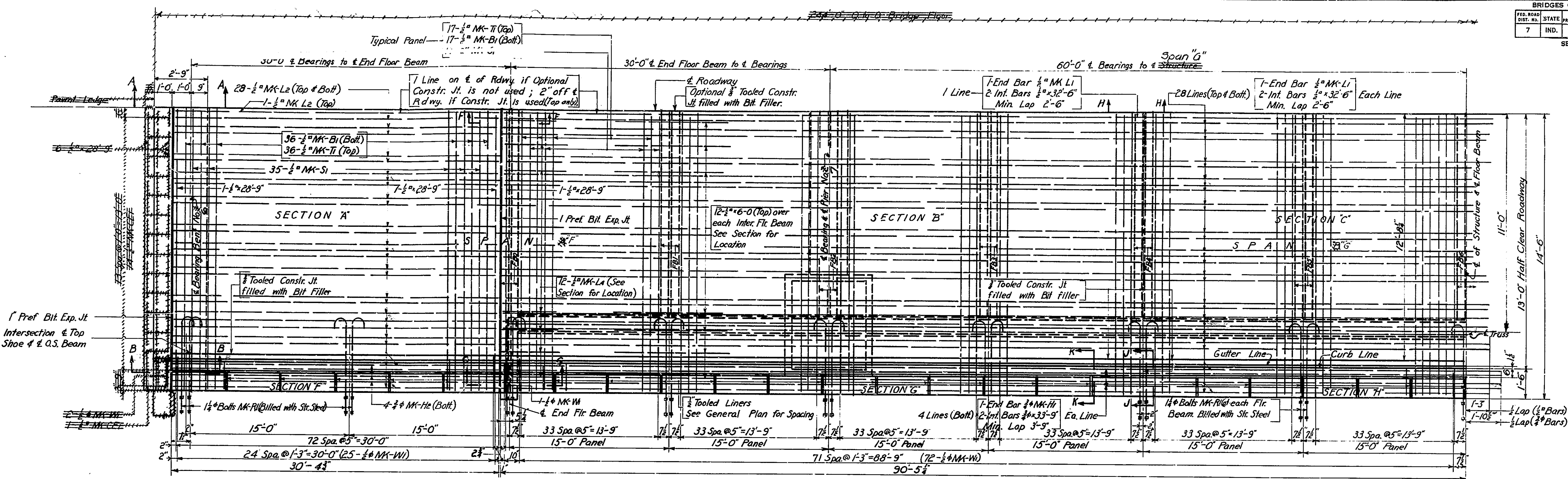
DRAWING: S 17 OF 20

BRIDGE CONTRACT NO. 2146

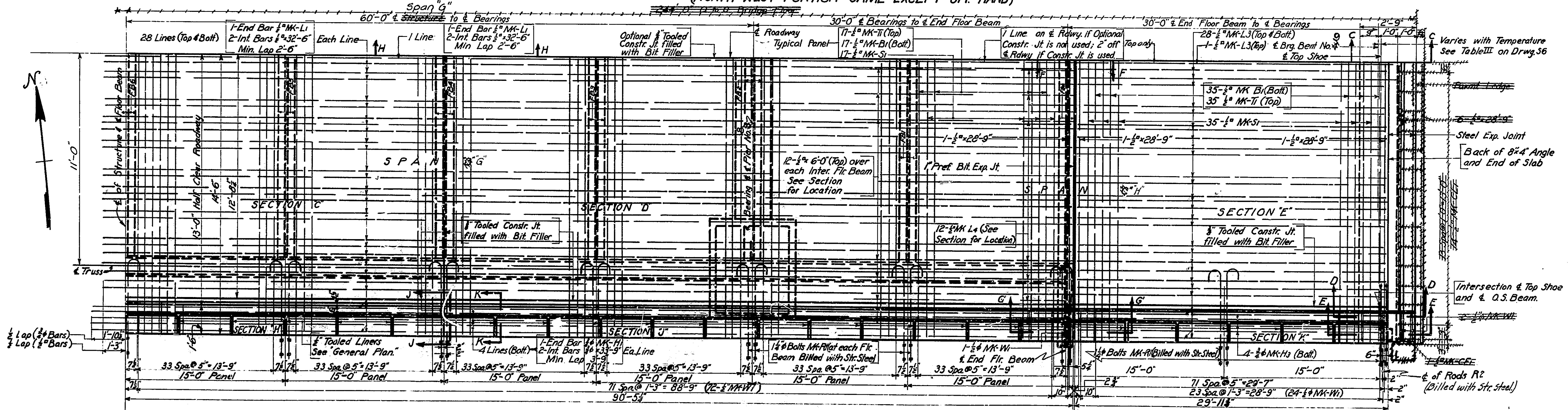
DESIGNED: L.W.S. 12-25-40
DRAWN: L.W.S. 1-3-41
CHECKED: A.A.S. 2-25-41

BRIDGES OVER 20' SPAN				
DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
7	IND.	56	1941	18
				33

SECTION - T



PART PLAN (SOUTH-WEST PORTION)
(NORTH-WEST PORTION SAME EXCEPT OPP HAND)



PART PLAN (SOUTH-EAST PORTION)
(NORTH-EAST PORTION SAME EXCEPT OPP HAND)

FLOOR PLAN
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/8" = 1'-0"

RECOMMENDED FOR APPROVAL:

MARCH 12, 1941

 STRUCTURE NO. 1683

PROJECT: 56
 SECTION: T
 DRAWING: S16 OF 20

BRIDGE CONTRACT NO. 2146

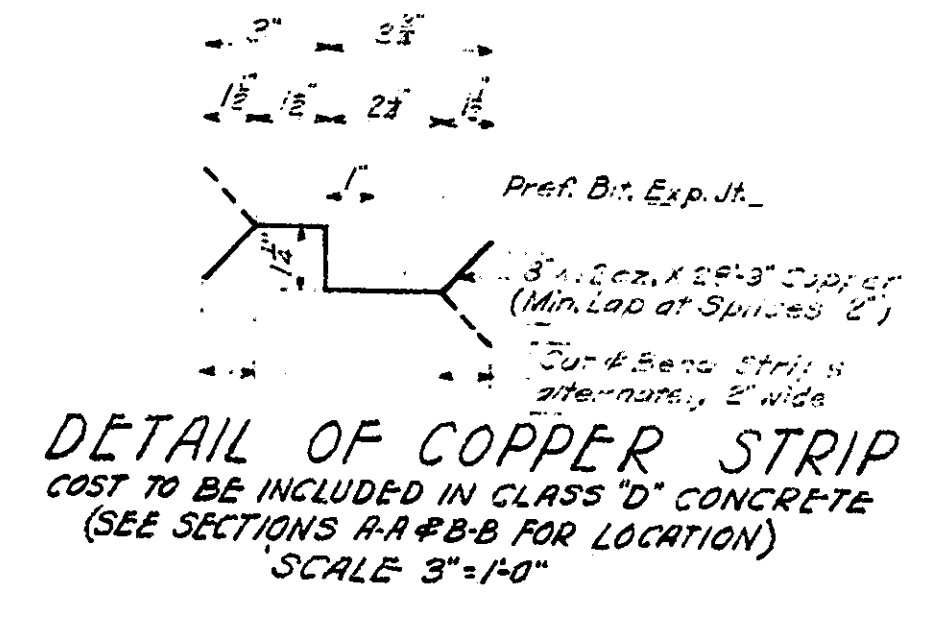
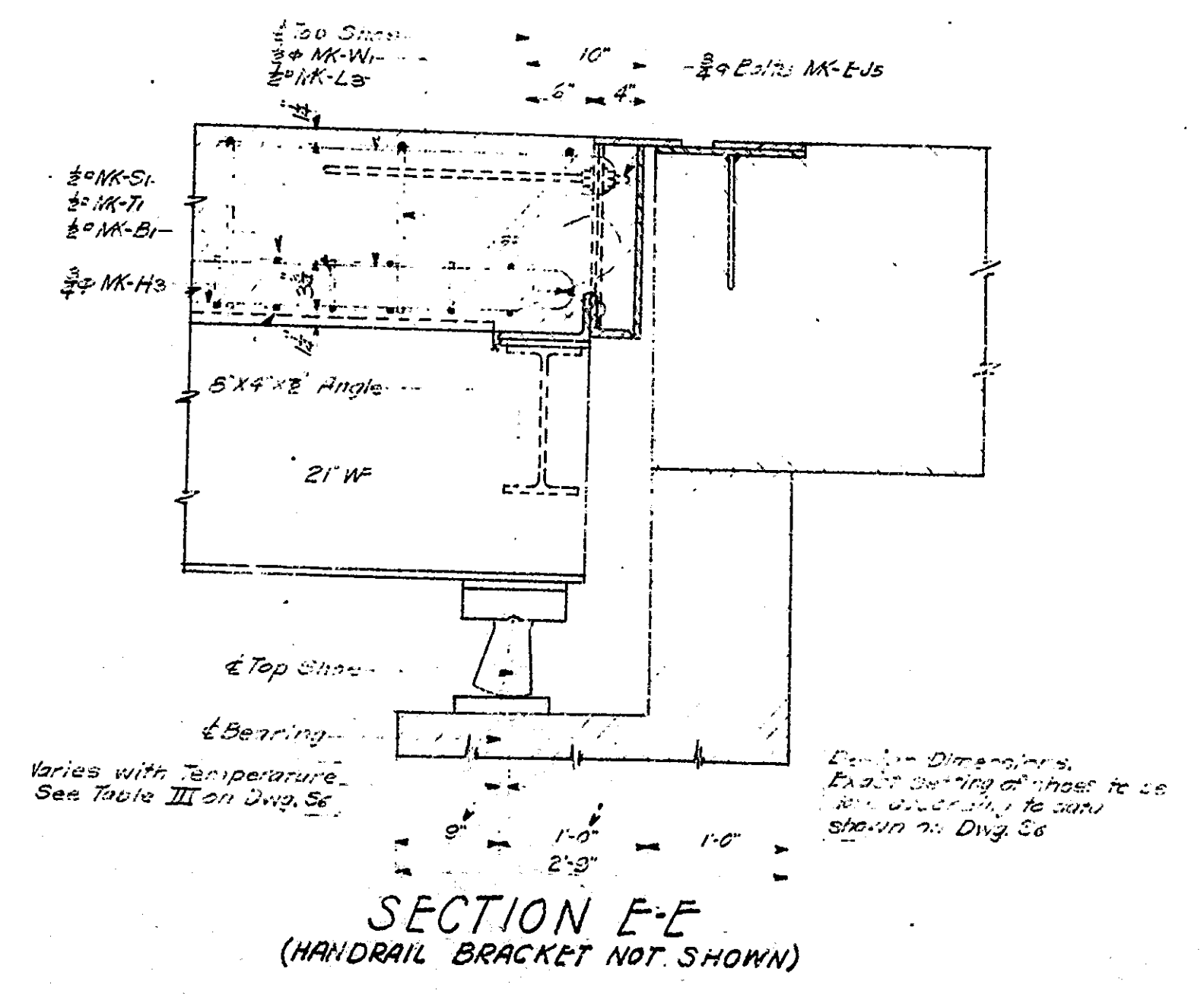
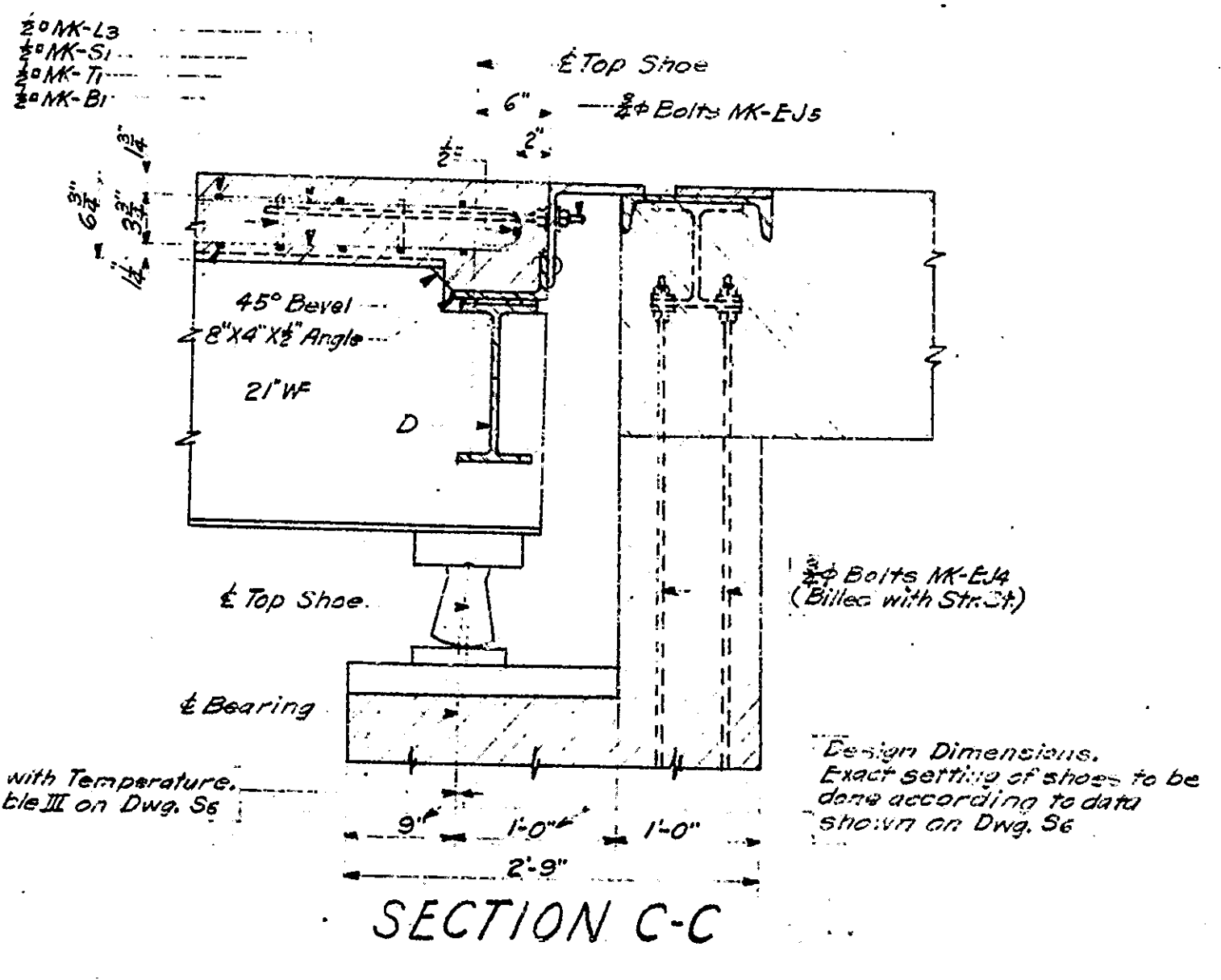
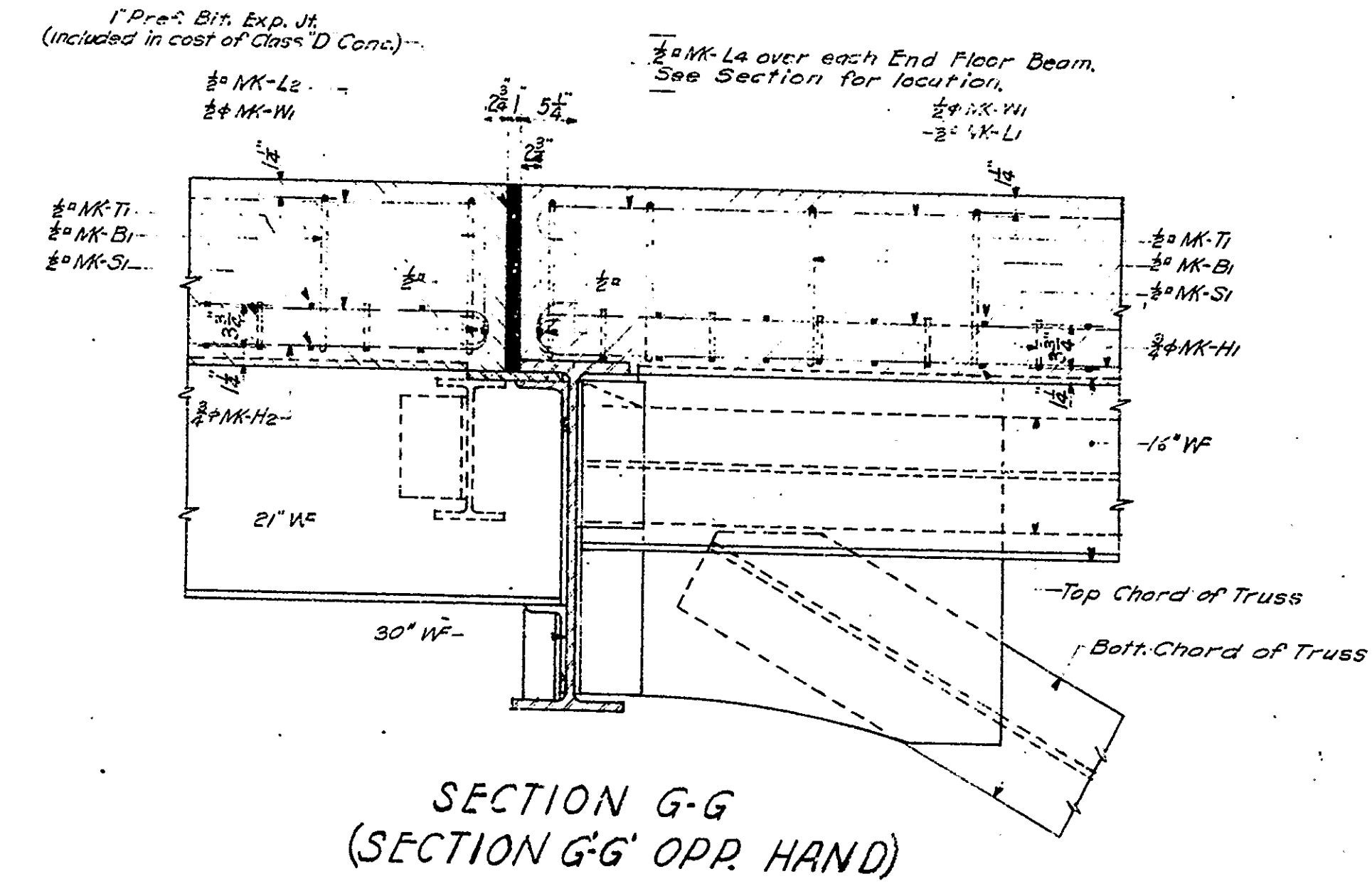
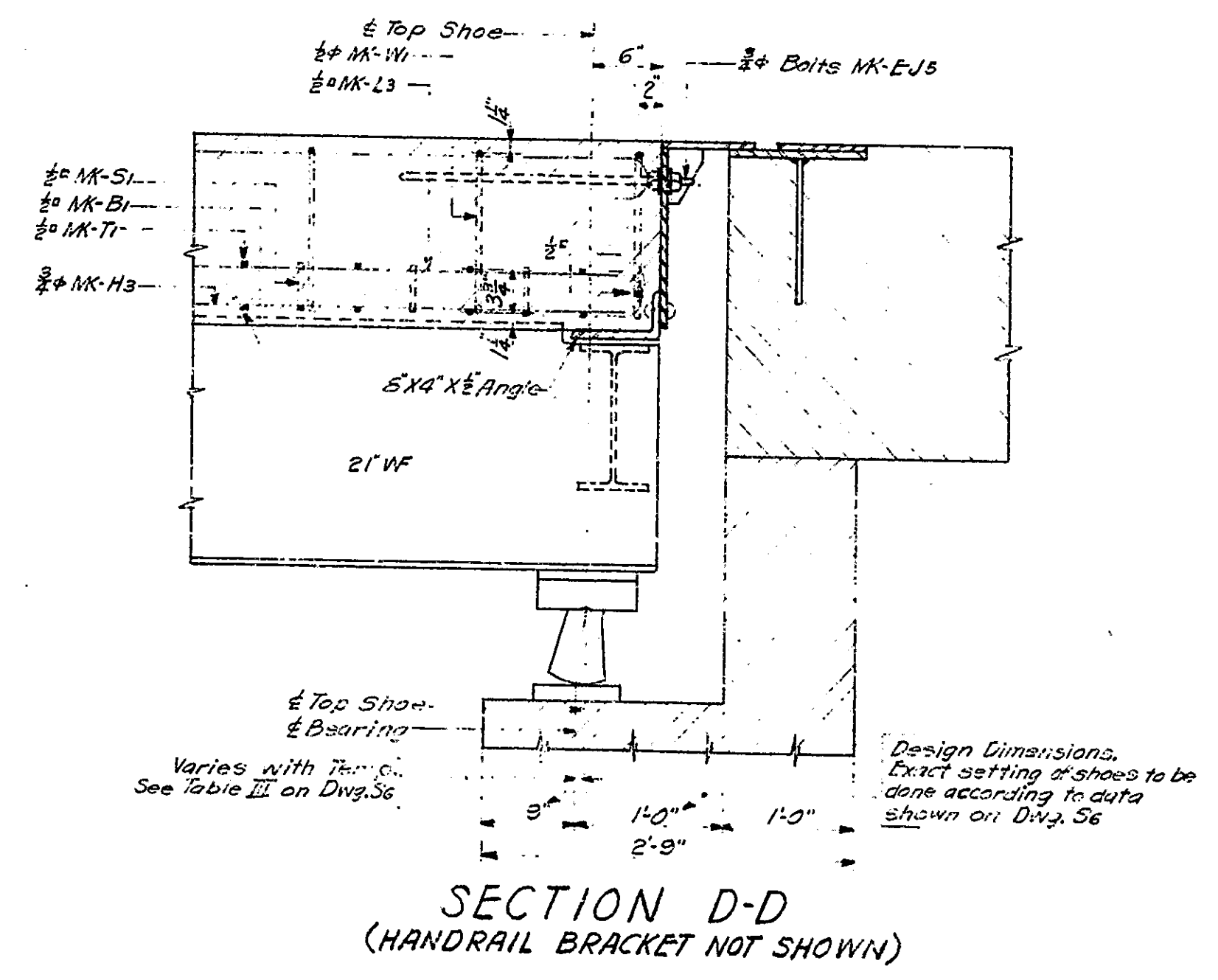
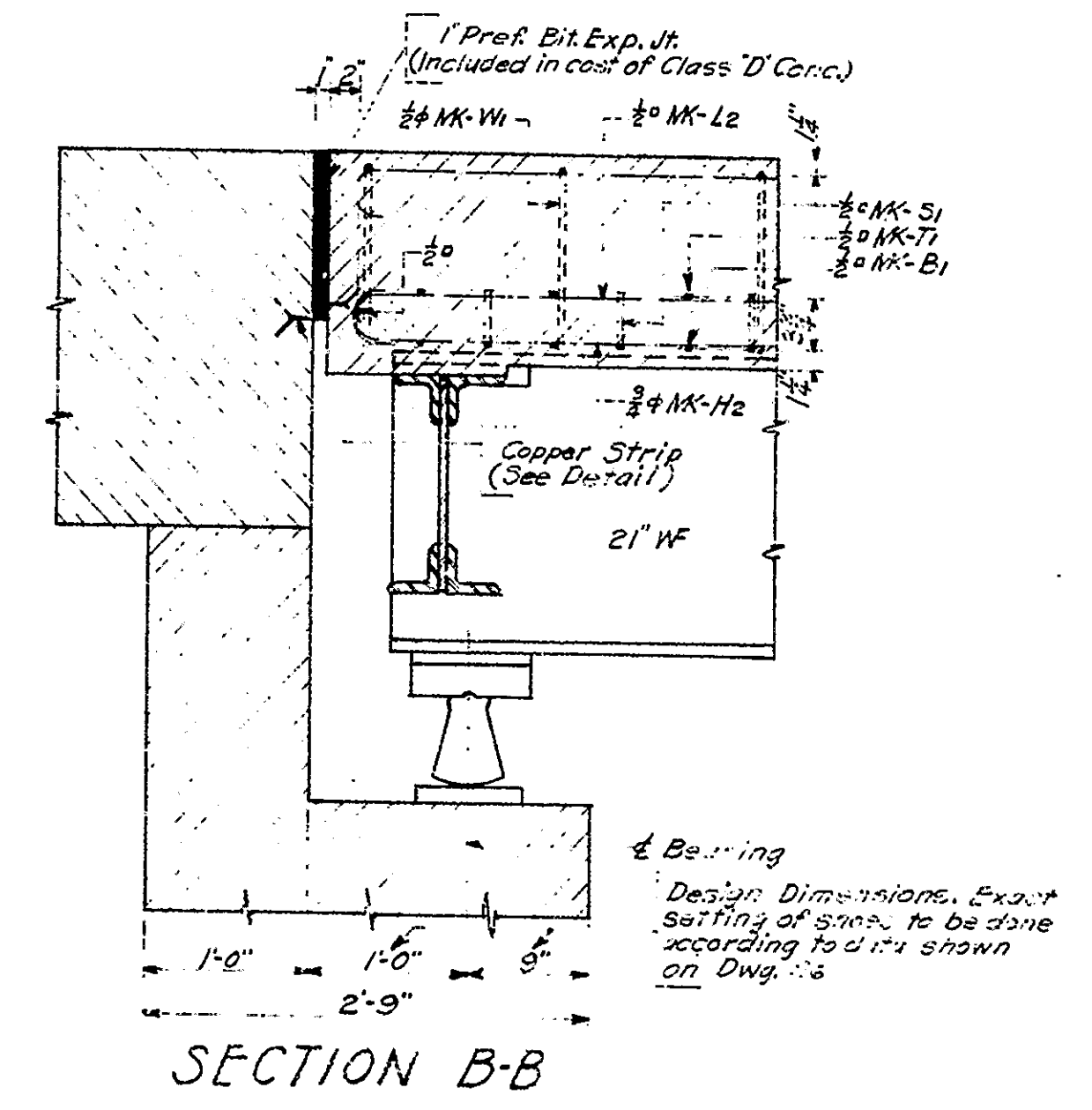
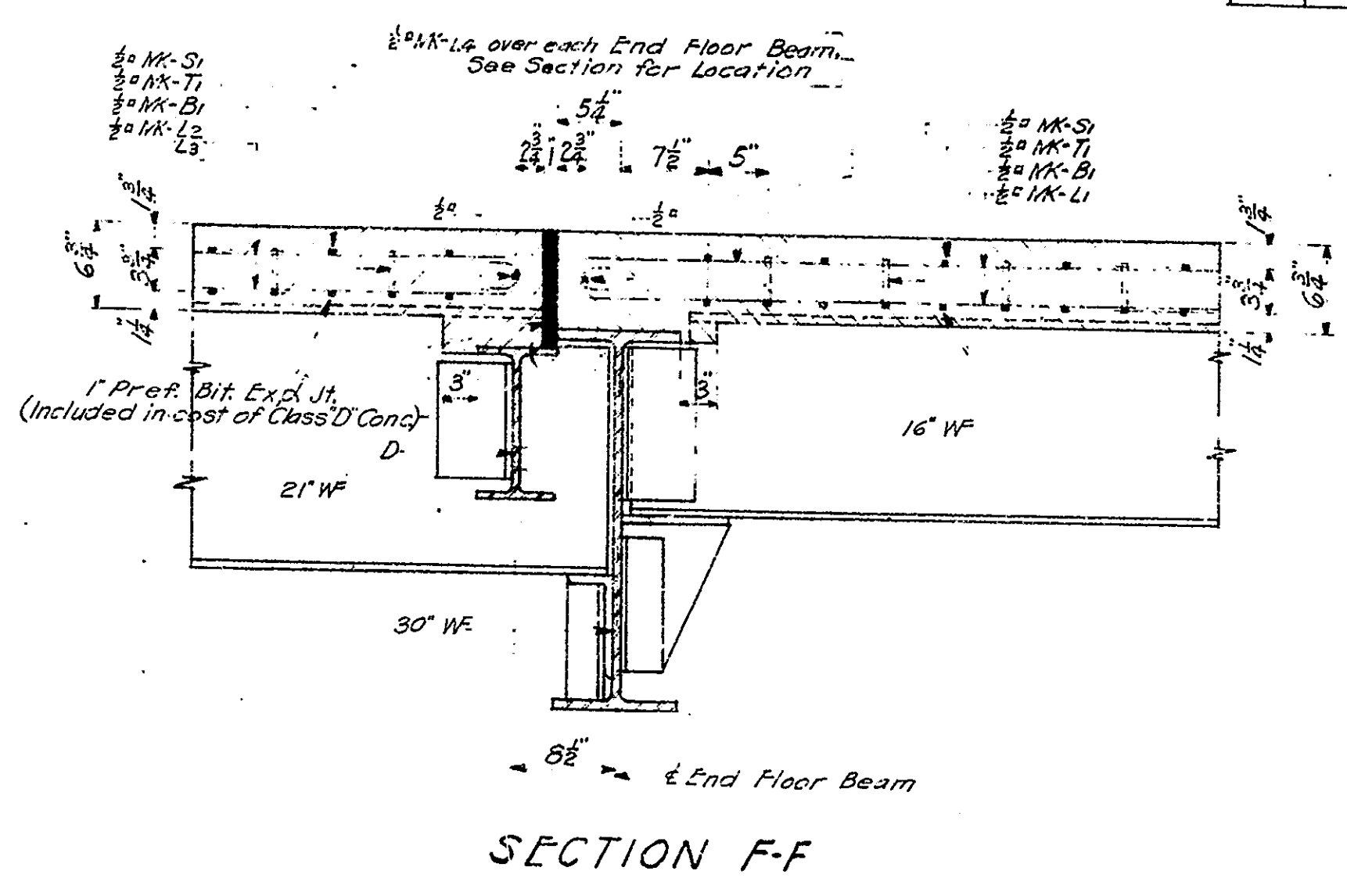
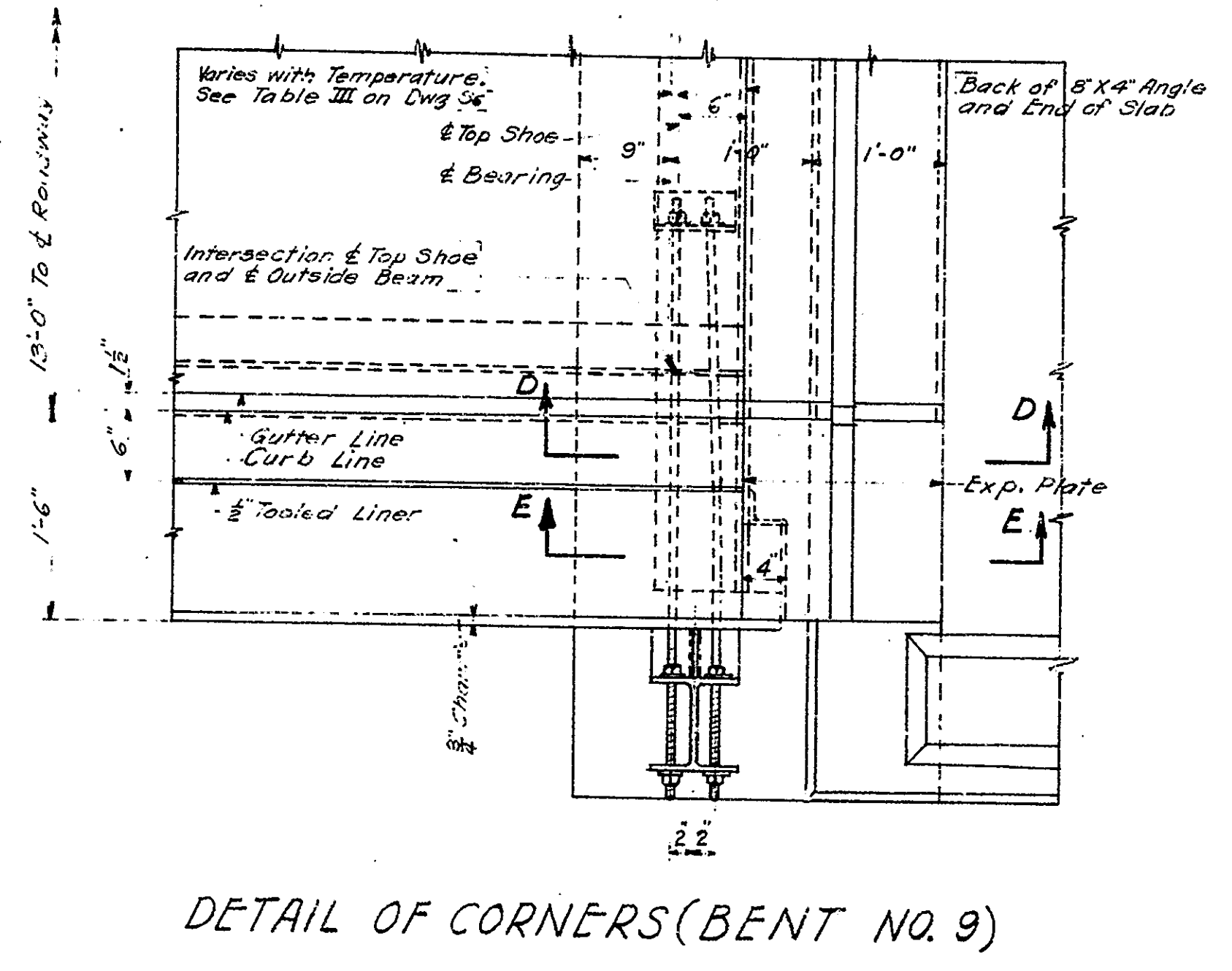
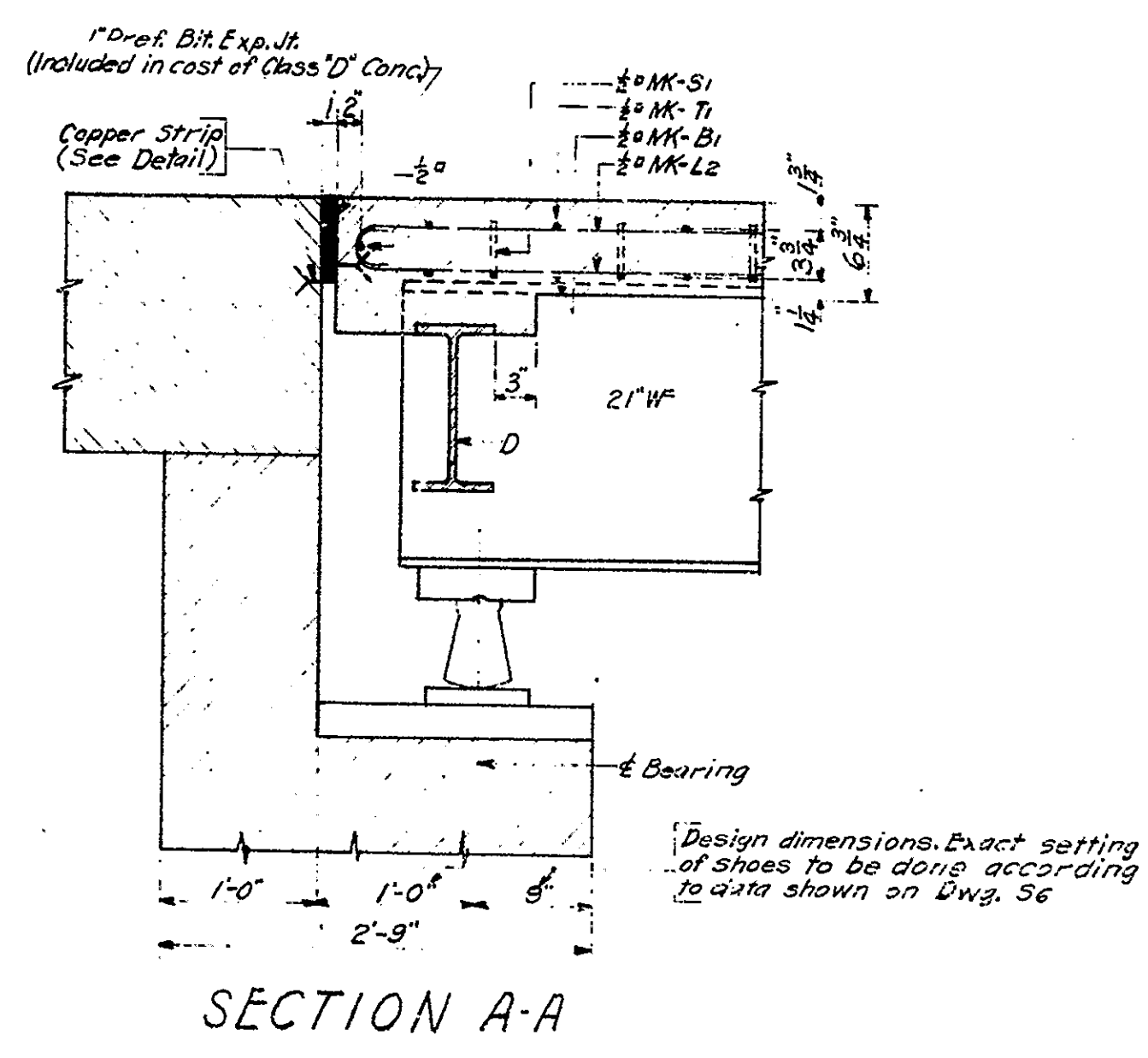
NOTE:-
 For Sections A-A; B-B; C-C; D-D; E-E; F-F; G-G;
 and G'-G' see Drwg. S18
 For Sections H-H; J-J; and K-K see Drwg. S17

REV. 10-2-41 BENT CAPS & FOUNDATION NUMBERS

FILE AS 1-15-1683

DESIGNED: L.W.S. 12-25-40
 DRAWN: L.W.S. 12-27-40
 CHECKED: L.E.G. 2-21-41

BRIDGES OVER 20' SPAN				
NO. ROAD DIST. NO.	STATE	PROJ. NO.	YEAR	TOTAL SHEETS
7	III	56	1941	26A



NOTE: ALL SECTIONS TAKEN ON DWG. 516

FLOOR SECTIONS
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1" = 1'-0" UNLESS NOTED

RECOMMENDED FOR APPROVAL: *J. Smyth* (SEAL)

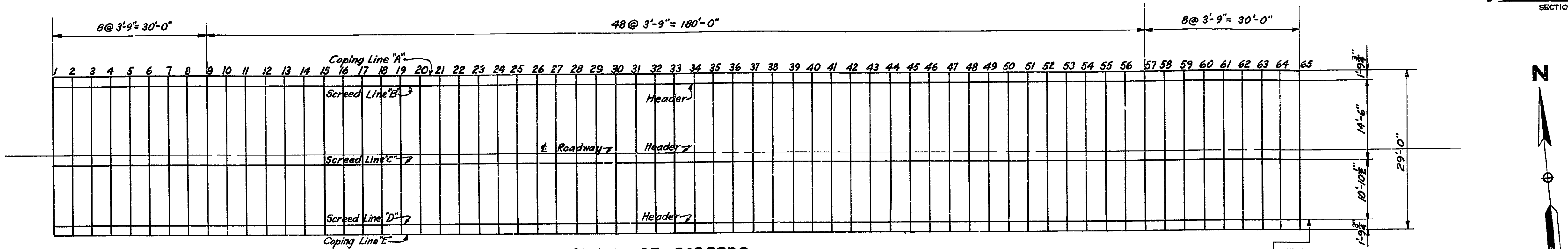
PROJECT: 50 STATION: 451+93.5

SECTION: 7 STRUCTURE NO. 1683

DRAWING: 516A OF 20 BRIDGE CONTRACT NO. 2146

OCTOBER 2, 1941

NOTE: THIS DWG. SUPERSEDES DWG. 516



PLAN OF SCREEDS
 Scale: 3/8" = 1'-0"

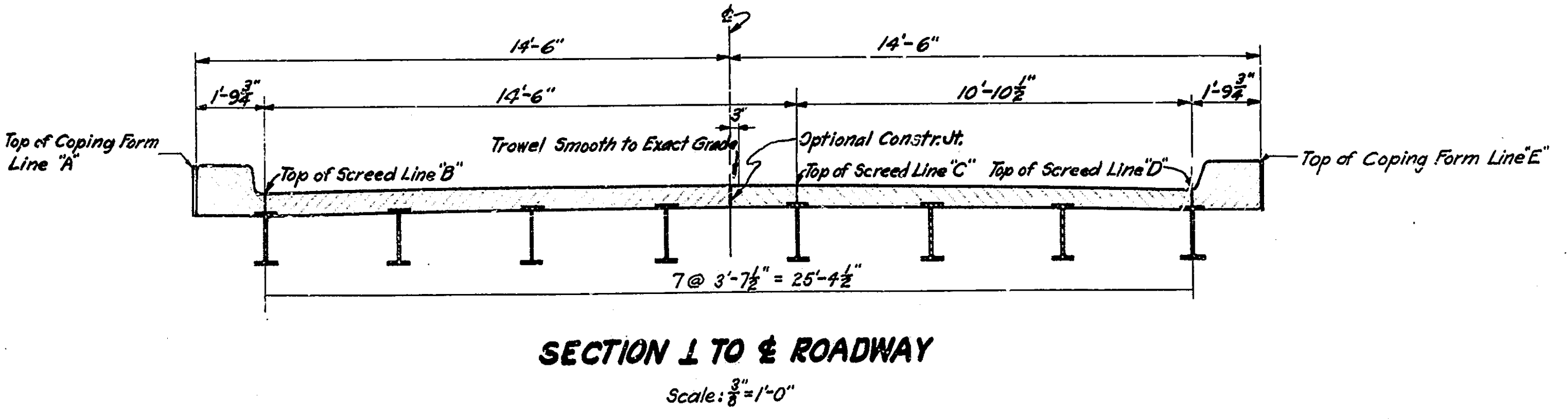
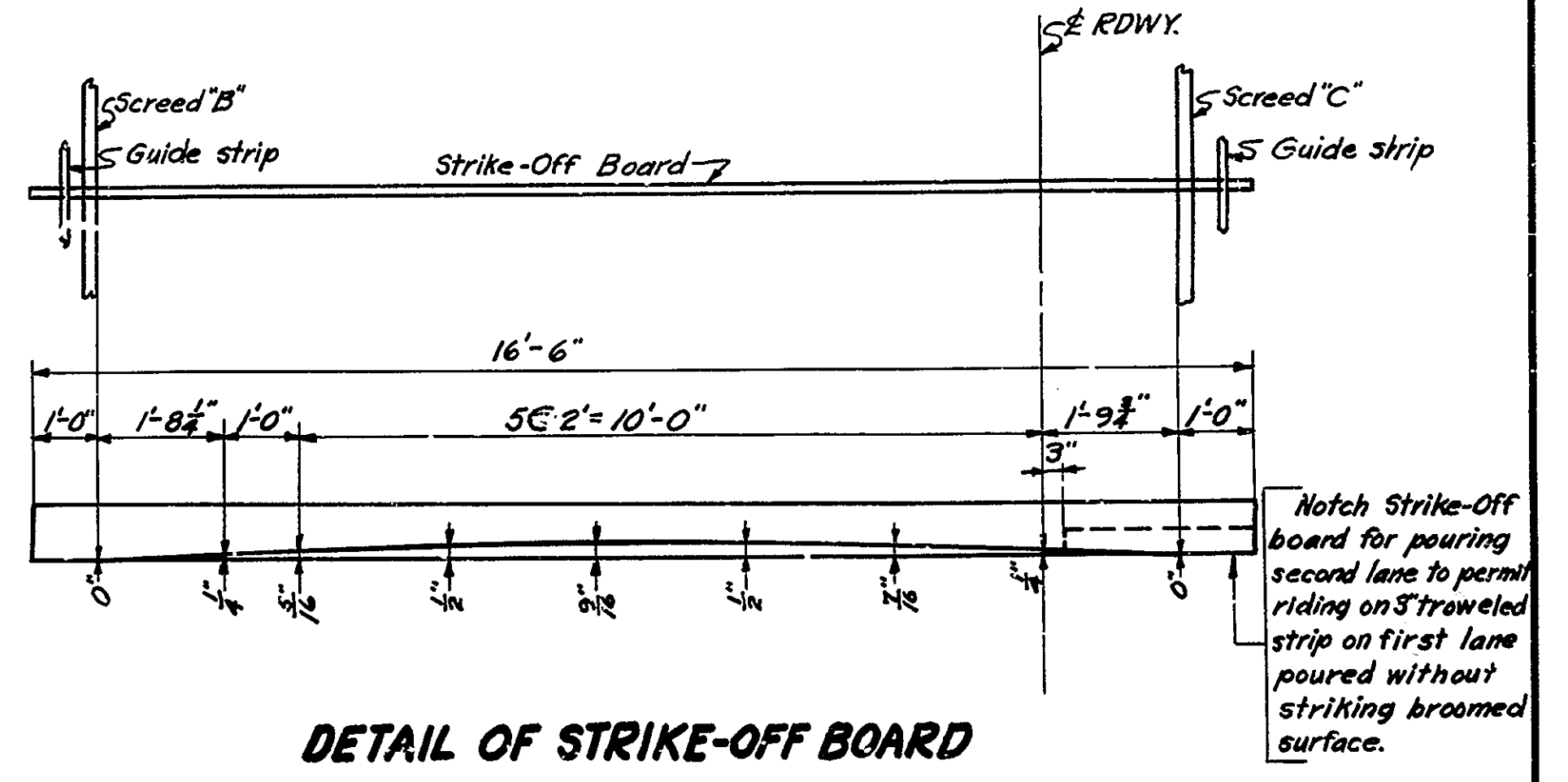
See Drwg. S6 for elevations for setting Expansion Joint.

TABLE OF ELEVATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46						
A Elev. Top of Coping Form	250,052	250,058	250,063	250,066	250,068	250,068	250,066	250,063	250,058	250,060	250,060	250,058	250,054	250,057	250,058	250,057	250,055	250,061	250,065	250,067	250,072	250,076	250,077	250,077	250,082	250,085	250,096	250,086	250,089	250,090	250,090	250,088	250,090	250,090	250,089	250,086	250,086	250,085	250,082	250,077	250,076	250,072	250,067	250,067	250,067							
A Elev. Top of Beam Line "B"																																																				
A Dist. Top of Beam to Top of Coping																																																				
B Elev. Top of Screed	249,361	249,367	249,372	249,375	249,377	249,377	249,375	249,372	249,367	249,369	249,369	249,367	249,363	249,366	249,367	249,366	249,364	249,370	249,374	249,374	249,376	249,376	249,381	249,385	249,386	249,386	249,391	249,394	249,395	249,395	249,398	249,399	249,399	249,399	249,397	249,399	249,399	249,396	249,395	249,395	249,394	249,391	249,386	249,386	249,381	249,376	249,376					
B Elev. Top of Beam Line "B"																																																				
B Dist. Top of Beam to Top of Screed																																																				
C Elev. Top of Screed	249,497	249,504	249,509	249,513	249,516	249,516	249,515	249,512	249,509	249,508	249,508	249,506	249,503	249,504	249,505	249,505	249,504	249,508	249,512	249,515	249,517	249,520	249,523	249,525	249,526	249,529	249,532	249,534	249,535	249,537	249,538	249,538	249,537	249,538	249,538	249,537	249,535	249,534	249,532	249,529	249,526	249,525	249,520	249,517	249,515	249,515						
C Elev. Top of Beam Line "C"																																																				
C Dist. Top of Beam to Top of Screed																																																				
D Elev. Top of Screed	249,351	249,367	249,372	249,375	249,377	249,377	249,375	249,372	249,367	249,369	249,369	249,367	249,363	249,366	249,367	249,366	249,364	249,370	249,374	249,374	249,376	249,376	249,381	249,385	249,386	249,386	249,391	249,394	249,395	249,395	249,398	249,399	249,399	249,399	249,397	249,399	249,399	249,396	249,395	249,395	249,394	249,391	249,386	249,386	249,381	249,376	249,376					
D Elev. Top of Beam Line "D"																																																				
D Dist. Top of Beam to Top of Screed																																																				
E Elev. Top of Coping Form	250,052	250,058	250,063	250,066	250,068	250,068	250,066	250,063	250,058	250,060	250,060	250,058	250,054	250,057	250,058	250,057	250,055	250,061	250,065	250,067	250,072	250,076	250,077	250,077	250,082	250,085	250,096	250,086	250,089	250,090	250,090	250,088	250,090	250,090	250,089	250,086	250,086	250,085	250,082	250,077	250,076	250,072	250,067	250,067	250,067							
E Elev. Top of Beam Line "D"																																																				
E Dist. Top of Beam to Top of Coping																																																				

	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	
A Elev. Top of Coping Form	250,065	250,061	250,055	250,057	250,058	250,057	250,054	250,058	250,060	250,060	250,058	250,063	250,064	250,068	250,066	250,064	250,061	250,058	250,058	
A Elev. Top of Beam Line "B"																				
A Dist. Top of Beam to Top of Coping																				
B Elev. Top of Screed	249,374	249,370	249,364	249,366	249,367	249,364	249,363	249,367	249,369	249,369	249,367	249,372	249,375	249,377	249,377	249,375	249,373	249,370	249,367	
B Elev. Top of Beam Line "B"																				
B Dist. Top of Beam to Top of Screed																				
C Elev. Top of Screed	249,512	249,508	249,504	249,505	249,505	249,504	249,503	249,506	249,508	249,508	249,509	249,512	249,515	249,516	249,516	249,513	249,510	249,507	249,503	
C Elev. Top of Beam Line "C"																				
C Dist. Top of Beam to Top of Screed																				
D Elev. Top of Screed	249,374	249,370	249,364	249,366	249,367	249,364	249,363	249,367	249,369	249,369	249,367	249,372	249,375	249,377	249,377	249,375	249,373	249,370	249,367	
D Elev. Top of Beam Line "D"																				
D Dist. Top of Beam to Top of Screed																				
E Elev. Top of Coping Form	250,065	250,061	250,055	250,057	250,058	250,057	250,054	250,058	250,060	250,060	250,058	250,063	250,064	250,068	250,066	250,064	250,061	250,058	250,058	
E Elev. Top of Beam Line "D"																				
E Dist. Top of Beam to Top of Coping																				

NOTES:-
 The purpose of this drawing is to provide a means for setting the proper height for top of screed or form while pouring concrete, so that the surface of slab or coping is at the final grade shown on "LAYOUT" after all concrete has been poured.
 The "PLAN" indicates position of points listed in "TABLE OF ELEVATIONS"
 The "TABLE OF ELEVATIONS" shows an elevation at each point. Each elevation includes the theoretical deflection due to the weight of the concrete and the steel handrails.
 PROCEDURE
 After all riveting is completed, the guard rail posts bolted in place and the structure carrying only the weight of the structural steel, elevations are to be taken on top of steel at all numbered points on lines "B" "C" and "D" and entered in the "TABLE OF ELEVATIONS."
 Subtract the elevation at each point from the tabulated elevation and use the resulting dimension for setting the screed at that point. These dimensions remain constant regardless of how much or in what order the concrete is poured. Do not attempt to set screeds by leveling.
 Coping forms A & E are set by measuring up and leveling out from the same points as are used for setting screed forms on lines "B" and "D" respectively.
 Use care in setting the header boards so they are true to line and grade.
 Before the concrete is poured adjacent to the expansion joint the top of the joint shall be adjusted to the elevations shown on Drwg. S6
 If the strike-off board is used as shown care must be used in setting header board at 1/2 of Roadway and troweling the surface, as the finished concrete will be used as a screed for pouring the second half of the roadway. The optional construction joint shown on 1/2 Roadway, may be omitted and concrete poured over the 25'-4 1/2" width.



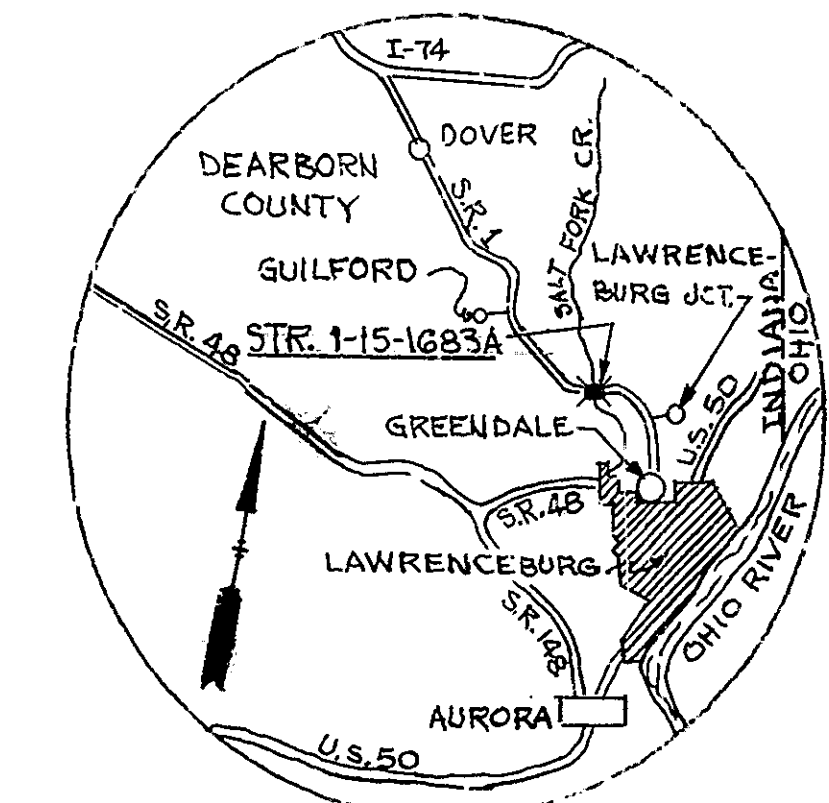
SECTION 1 TO 1/2 ROADWAY

Scale: 3/8" = 1'-0"

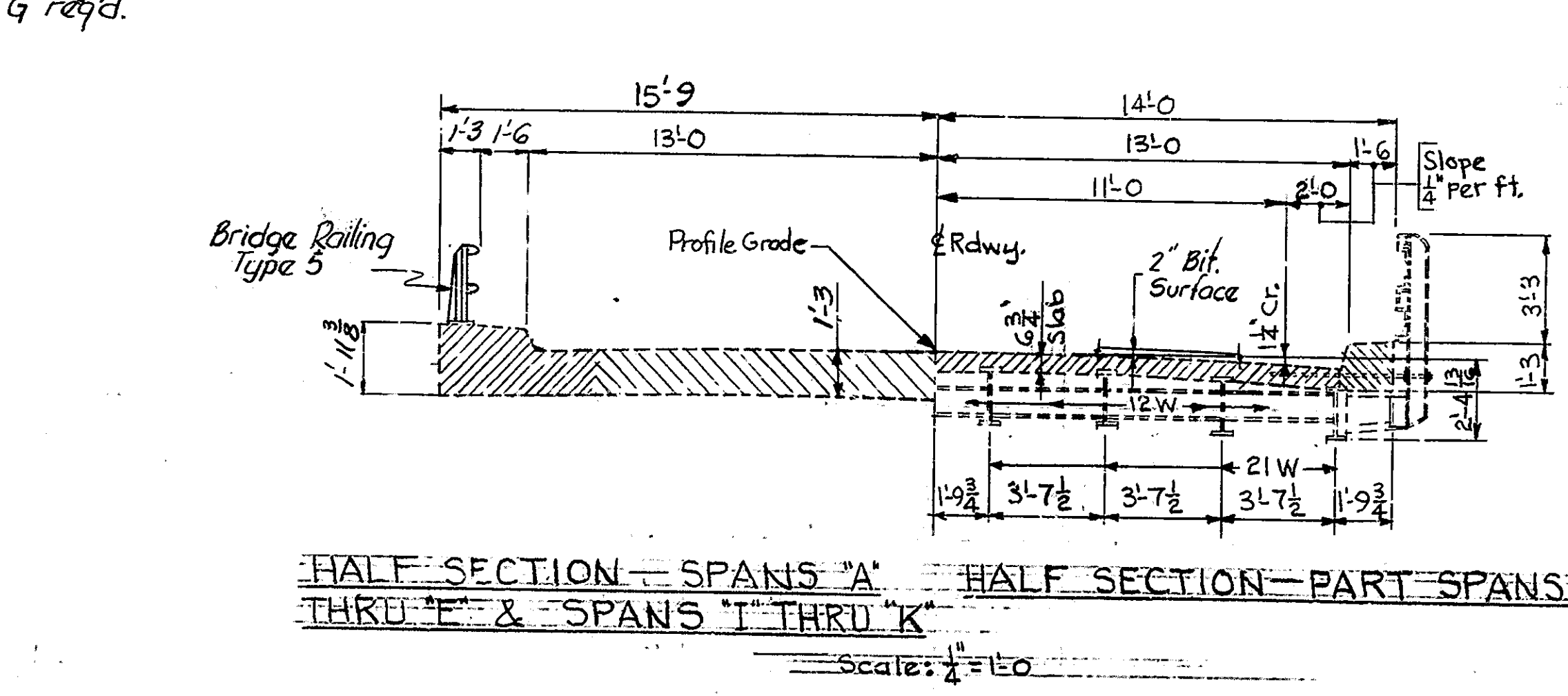
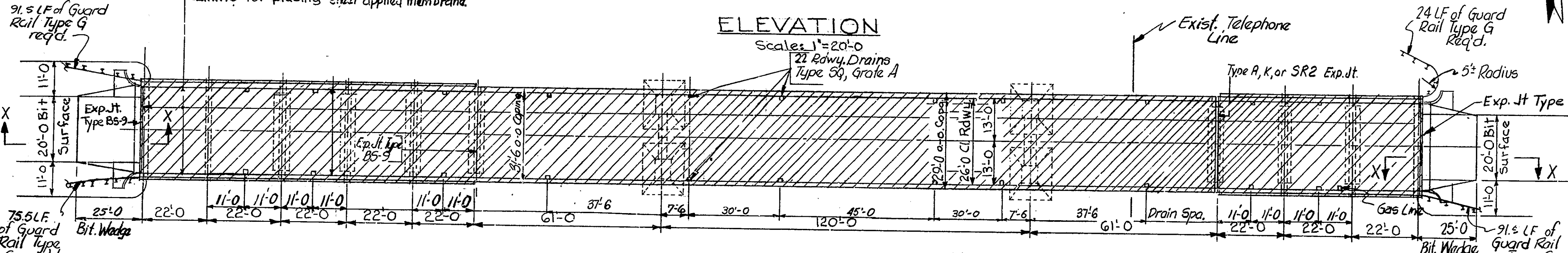
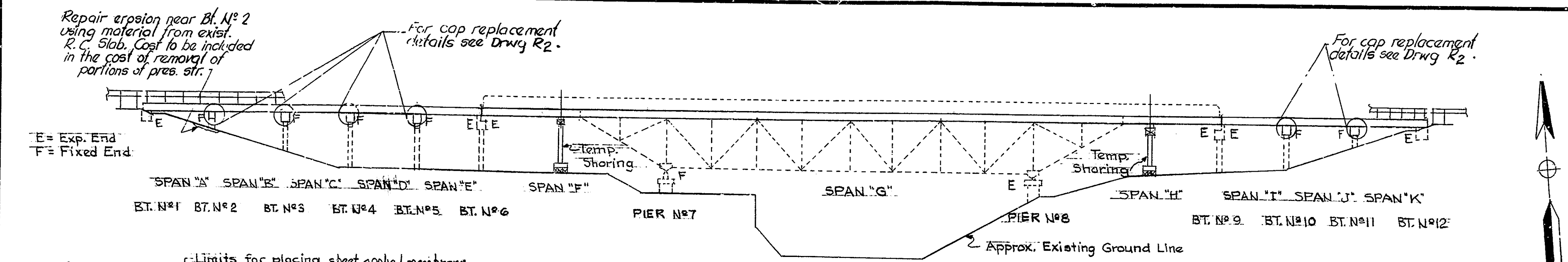
SCREEDS
 STATE HIGHWAY COMMISSION OF INDIANA

SCALE:- NONE
 RECOMMENDED FOR APPROVAL:-
 PROJECT:- 56
 SECTION:- T
 DRAWING:- S20 OF S20
 BRIDGE CONTRACT NO. 2146
 MARCH 12, 1941
 STATION:- 451+93.5
 STRUCTURE NO. 1683

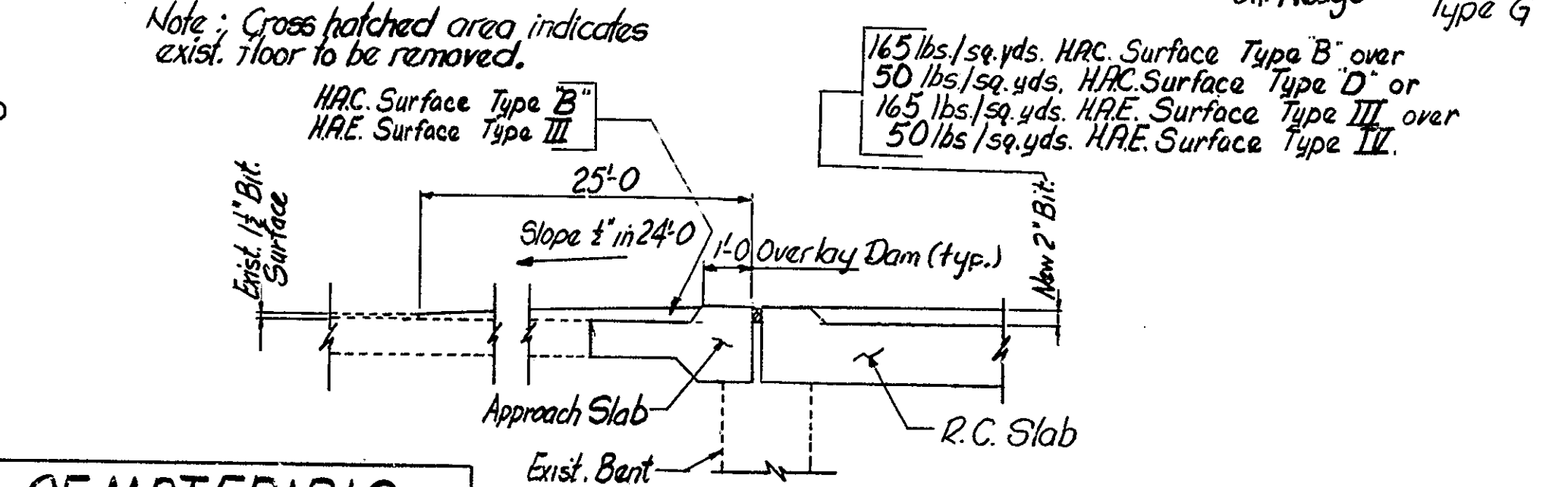
Utility Owners - Public Service Indiana
 United Tele. Co. of Indiana, Inc.
 Southern Gas and Electric Co.
 Northern Indiana Water Corp.



SITUATION PLAN



PLAN
 Scale: 1" = 20'-0"



SECTION X-X
 No Scale

BILL OF MATERIALS
R.C. BRIDGE APPROACH

SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT
#4	6	31'-0"	124 lbs.
10" R.C. Pavement			21.0 sys.
Removal of Pavement			17.2 sys.
Bit. Mix. for Approaches			11.8 tons

CONSTRUCTION PROCEDURE

1. Close bridge to traffic and remove the existing floor slab, conc. railing, existing steel joint, a portion of the approach slab at each end and bent caps at Bent Nos. 2, 3, 4, 5, 10, and 11 as indicated in Plans. Steps should be taken to protect the telephone line and gas line shown above.
 2. Erect temporary shoring in Spans F and H; remove and replace diaphragms and deteriorated ends of stringers indicated in Plans.
 3. Repair bent columns with "Repointing Masonry in Structures" as shown in Plans. Repair erosion near Bt. No. 2 using material from exist. R.C. Slab.
 4. Reconstruct bent caps, conc. floor and approach slab, respectively.
 5. Paint steel portion of structure.
 6. Install bridge seal Type BS-9 at Bt. Nos. 1, 6, 12 and expansion joint Type A, K, or SR2 at Bt. No. 9.
 7. Apply "Sheet Applied Membrane" to the bridge floor (See special provisions). Place new bituminous surface. Care shall be exercised in placing the bituminous surface to slope gutter lines from a high point between roadway drainage outlets to a low point at the outlet for positive higher floor drainage.
 8. Erect bridge railing Type 5 in the continuous R.C. Slab spans and guard rail Type G.
 9. Seal the faces and tops of curbs and walks above overlay and the tops of overlay dams.
 10. When all work is completed, open bridge to traffic. It need not be posted.
- Note: The numbers do not necessarily indicate the sequence of operations. Pneumatic hammers 30 lbs. maximum weight to be used for removals.

INDEX

SHT.	DESIGNATION	SUBJECT	Date of Std. Adoption or Revision
1	R1	TITLE SHEET & GENERAL PLAN	
2	R2	BENT REPAIR & BILL OF MATERIALS	
3	R3	ERECTION PLAN & STEEL DETAILS	
4	R4	FLOOR DETAILS - STEEL SPANS	
5	R5	FLOOR DETAILS & BILL OF MATERIALS - STEEL SPANS	
6	R6	FLOOR DETAILS - SLAB SPANS	
7	R7	FLOOR DETAILS & BILL OF MATERIALS - SLAB SPANS	
8	R8	TYPE A EXPANSION JOINT DETAILS	
9	R9	TYPE K EXPANSION JOINT DETAILS	
10	R10	TYPE SR 2 EXPANSION JOINT DETAILS	
11		SUMMARY	
12	BR.STD.C1	MISCELLANEOUS DETAILS	R-6-1-72
13	BR.STD.BR1	ALUMINUM BRIDGE RAILING	R-9-1-73
14	BR.STD.BR2	ALUMINUM BRIDGE RAILING DETAILS	R-9-1-73
15	RD.STD.GR4	GUARD RAILING CLASS GA or G6T	A-FEB 1971
16	RD.STD.GR6	GUARD RAIL	R-1-2-74
17	SHEET 1	STANDARD DETOUR SIGNS	R-4-2-73
18	SHEET 2	STANDARD DETOUR SIGNS	R-1-2-74
19	SHEET 3	STANDARD DETOUR SIGNS	R-4-2-73
20	SHEET 4	STANDARD DETOUR SIGNS	R-4-2-73
21	SHEET 5	SIGN DESIGN DETAILS	R-4-2-73
22	RD.STD.	SPECIAL SIGNS	R-2-1-73

GENERAL NOTES:

- Reinforcing steel covering shall be 1/2 inches in top (steel spans), 2 1/2 inches in top (R.C. slab spans) and 1 inch minimum in bottom of floor slab, 1/2 inches in curbs and 2 inches in all other parts unless noted.
- Bevel forms 1/4" under copings and chamfer exposed edges 1" unless noted. Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of new parts to old.
- Plans of the existing structure are on file in the Central Office under Bridge File 1-15-1683.
- See Special Provisions for items included in this contract.
- Steel plates used as temporary floor slab repair to become the property of the State.
- Concrete in superstructure to be Class "C".
- Concrete in bent caps to be Class "A".
- The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect, and construct all parts of the work in conformity with the Engineer's drawings and specifications and shall submit four (4) copies of these to the Engineer. See Article 711.04 of the Specifications.
- All bituminous material required in this contract to be included in pay item Bituminous Mixture for Approaches unless noted.
- Only the top of Bt. Nos. 1, 6, 9 & 12, and front face of mudwalls to be sealed in accordance with Article 702.00 of the Specifications.
- All structural steel shall be painted in accordance with the Specifications. Estimated weight - 162 Tons.

APPROVED: 1-25-72
 [Signature]
 CHIEF HIGHWAY ENGINEER
 INDIANA STATE HIGHWAY COMMISSION

TITLE SHEET & GENERAL PLAN
 REPAIRS TO
 STEEL TRUSS & R.C. SLAB BRIDGE
 11 SPANS AS NOTED, 1'-6" CURBS, 26'-0" CL. RDWY.
 SQUARE, ONE S.R. 1, OVER SALT FORK CREEK
INDIANA STATE HIGHWAY COMMISSION
 DEARBORN COUNTY

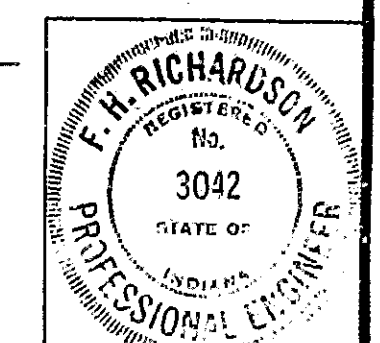
SCALE: AS NOTED NOVEMBER 19 1974
 RECOMMENDED FOR APPROVAL: [Signature]
 DRAWING: R1 OF 10 SHEET 1 OF 22
 PROJECT: ST-290H
 BRIDGE CONTRACT NO. B-9871
 BRIDGE FILE: 1-15-1683A

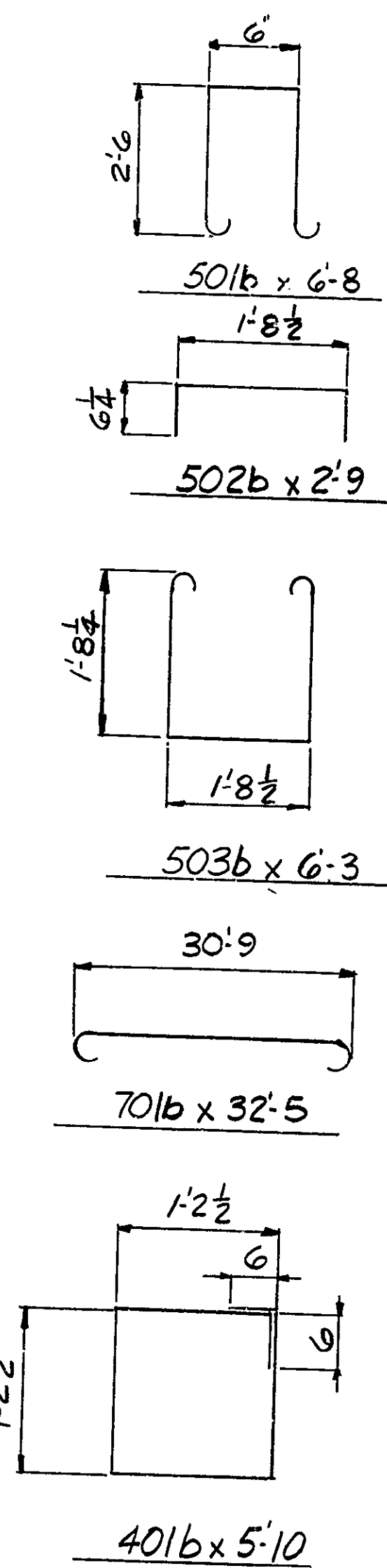
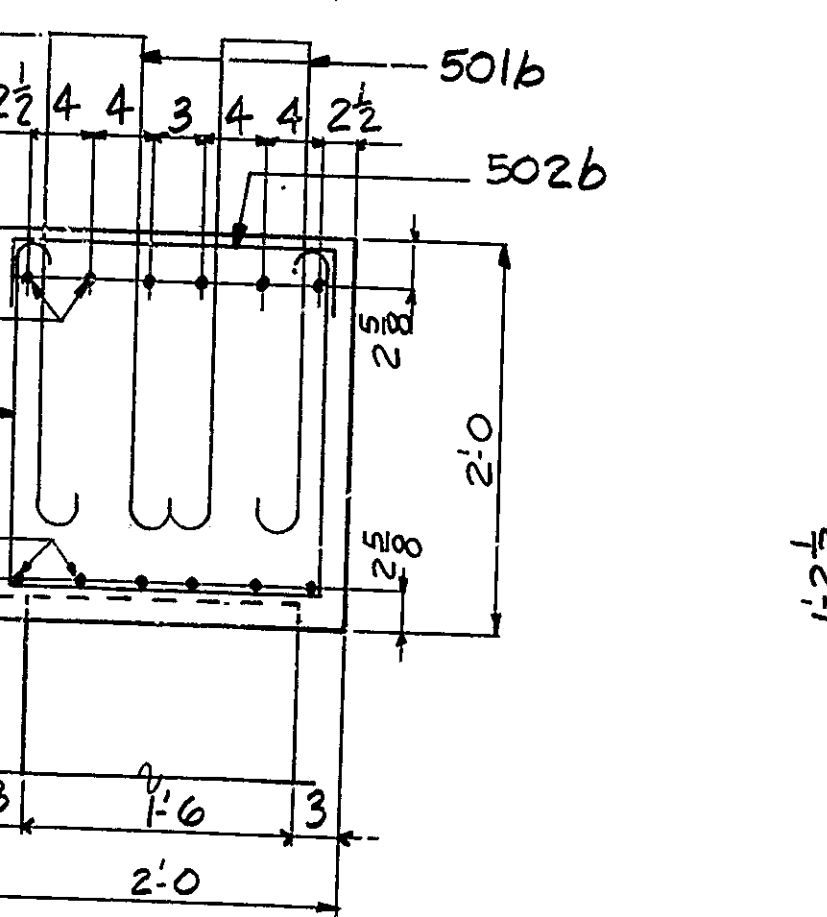
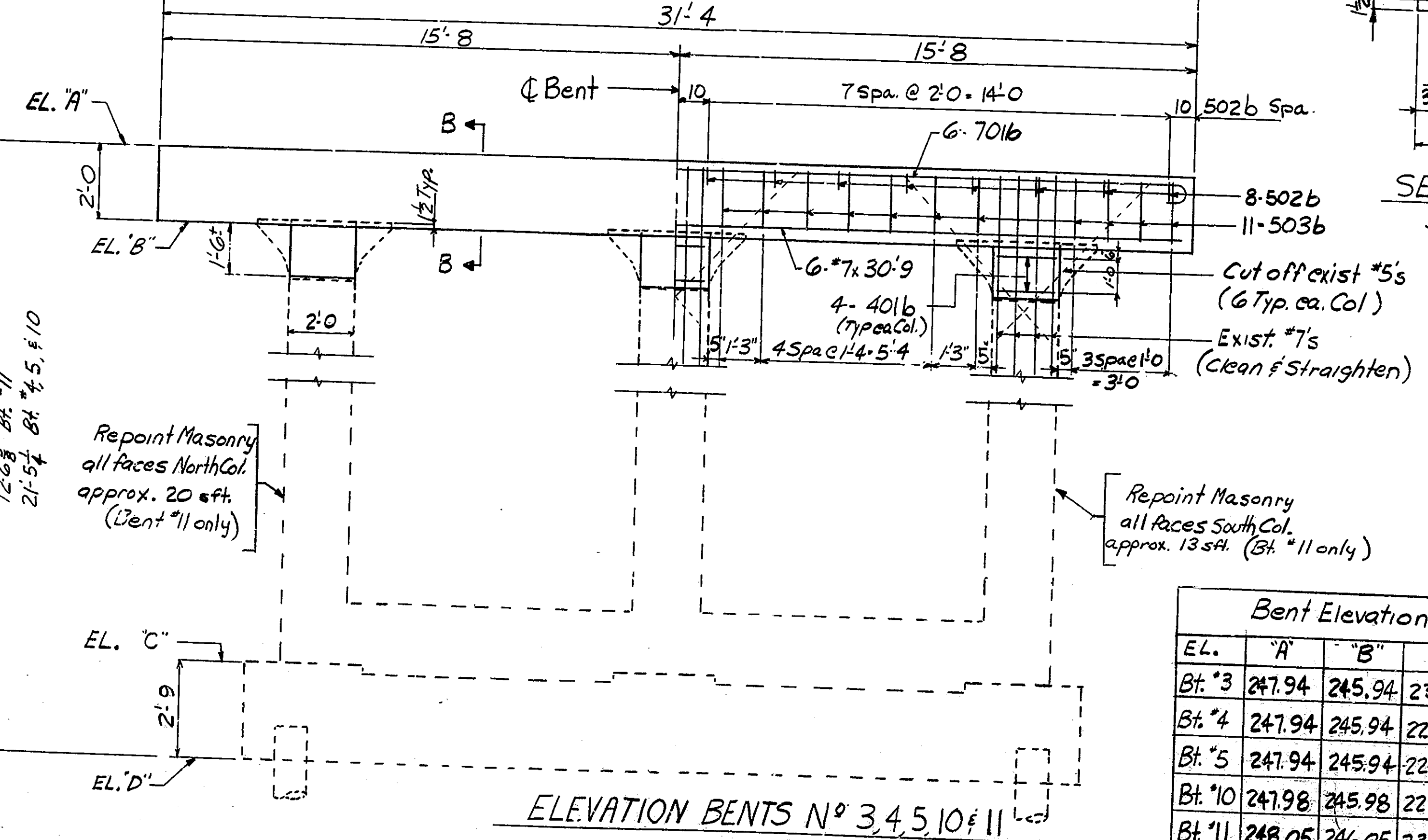
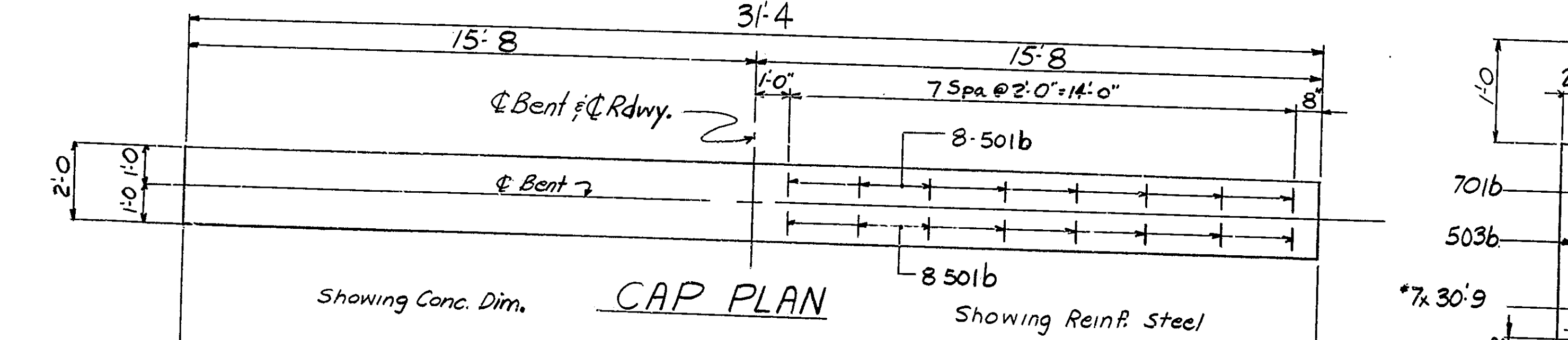
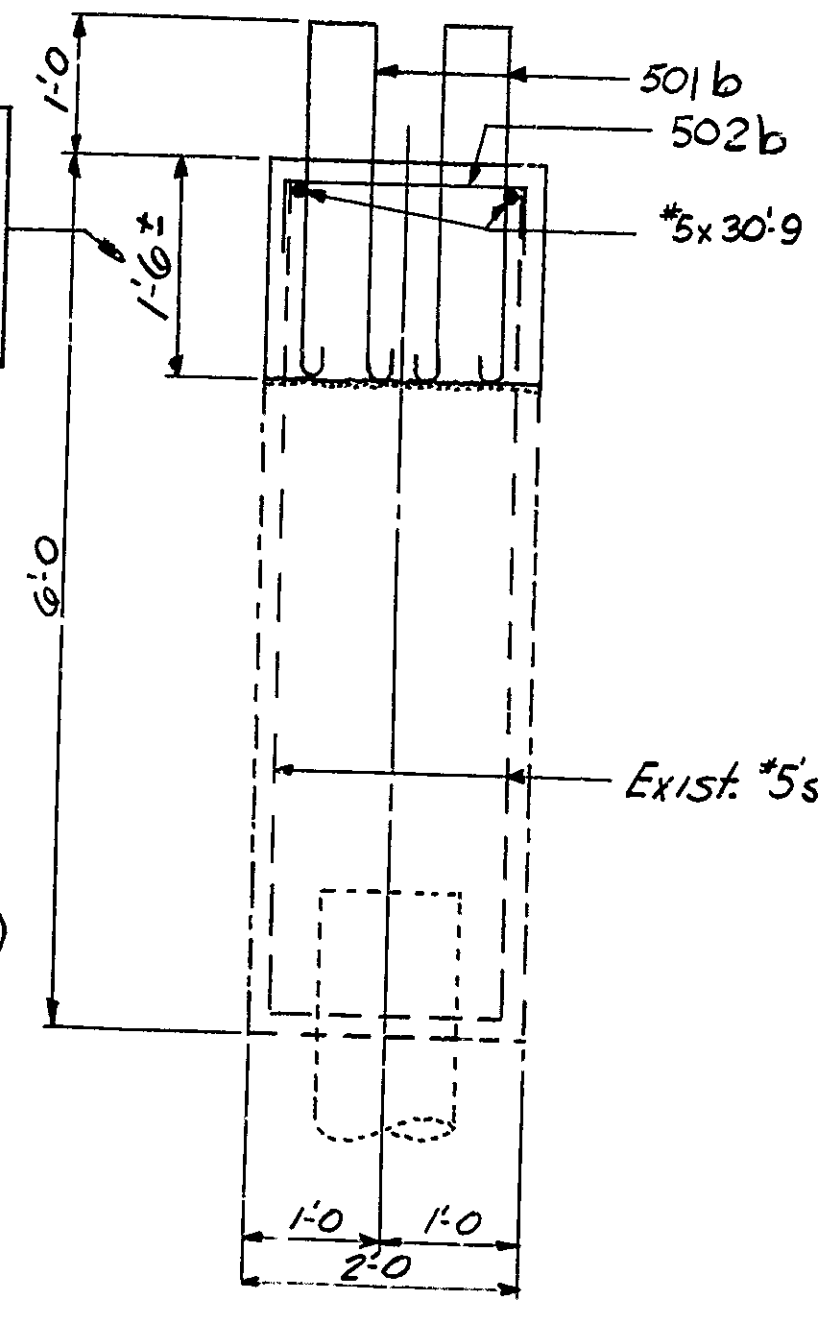
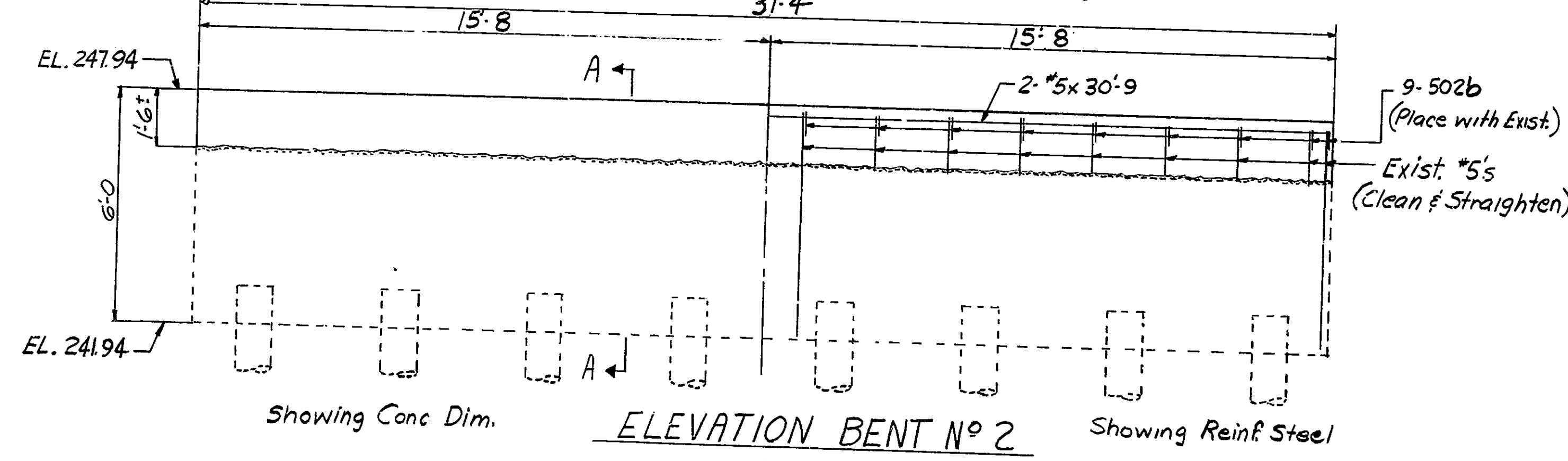
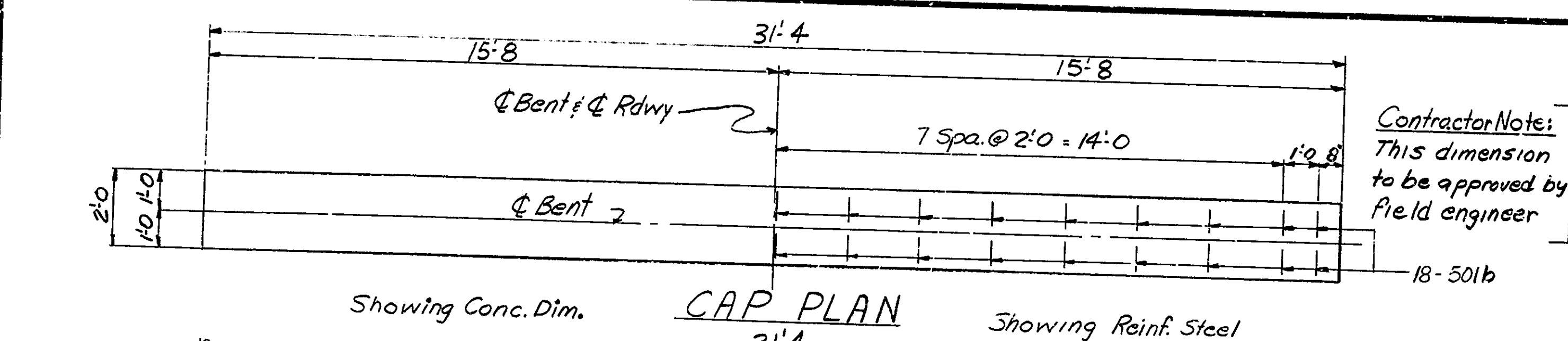
REVISIONS

DATE	SHEET NO.	DESCRIPTION
11-14-72	SHTS. 1-44 revised, SHTS. 5-5, 11 deleted, SHTS. 34 & 114 added.	
8-1-74	SHTS. 1, 2, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.	

INDIANA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS DATED 1974 TO BE USED WITH THESE PLANS

- DESIGNED: CKD
- DRAWN: DM, B-271, CKD, F.H. 8-20-71
- TRACED: CKD
- Rev. 9-20-74 Index, Plan, Elevation, Notes & Construction Procedure
- Rev. 8-1-74 Index, Plan
- Rev. 11-14-72 Index, Const. Procedure, Plan, Elevation, Deck Surfacing Detail





Bent Elevations				
EL.	"A"	"B"	"C"	"D"
Bt. #3	247.94	245.94	234.25	231.50
Bt. #4	247.94	245.94	229.25	226.50
Bt. #5	247.94	245.94	229.25	226.50
Bt. #10	247.98	245.98	229.29	226.54
Bt. #11	248.05	246.05	238.25	235.50

BILL OF MATERIALS BENT #2

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT LBS.
501b	36	6'-8"	
502b	18	2'-9"	
#5	2	30'-9"	
Total Reinforcing Steel			366

BILL OF MATERIALS BENT #3
(Bents 4, 5, 10 & 11 Same except as noted)

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT LBS.
701b	6	32'-5"	
#7	6	30'-9"	
Total #7			775

CONCRETE

Class A in Substr.	3.5	501b	32	6'-8"
Total Conc.	3.5	502b	16	2'-9"
		503b	22	6'-3"

CONCRETE

Total #5		412
401b	12	5'-10"
Total #4		47
Total Reinf. Steel		1234

CONCRETE

Class A in Substr.	5.1
--------------------	-----

MISCELLANEOUS

* Repointing Masonry in Str.	33 sqft
------------------------------	---------

NOTES:
For Reinforcing Bar Notes, see Br. Std. C1.

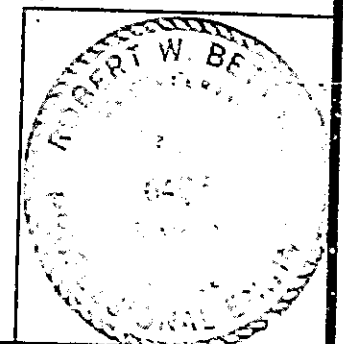
BENT REPAIR & BILL OF MATERIALS

INDIANA STATE HIGHWAY COMMISSION

SCALE: 3/8" = 1'-0" UNLESS NOTED DATE: SEPTEMBER 20, 1974

Robert W. Petteg
REGISTERED ENGINEER OF BRIDGE CONSTRUCTION

DRAWING: R2 OF 10 SHEET: 2 OF 22
PROJECT: ST-290 H
CONTRACT NO. 8-9871
BRIDGE FILE: 1-15-1683-A



DESIGNED: C.K.D.
DRAWN: J.W.B. 9-17-74
TRACED: C.K.D.

16'-5" Bt. #3
12'-6" Bt. #11
21'-5" Bt. #4, #5, #10

Repoint Masonry
all faces North Col.
approx. 20 sqft.
(Bent #11 only)

Repoint Masonry
all faces South Col.
approx. 13 sqft. (Bt. #11 only)

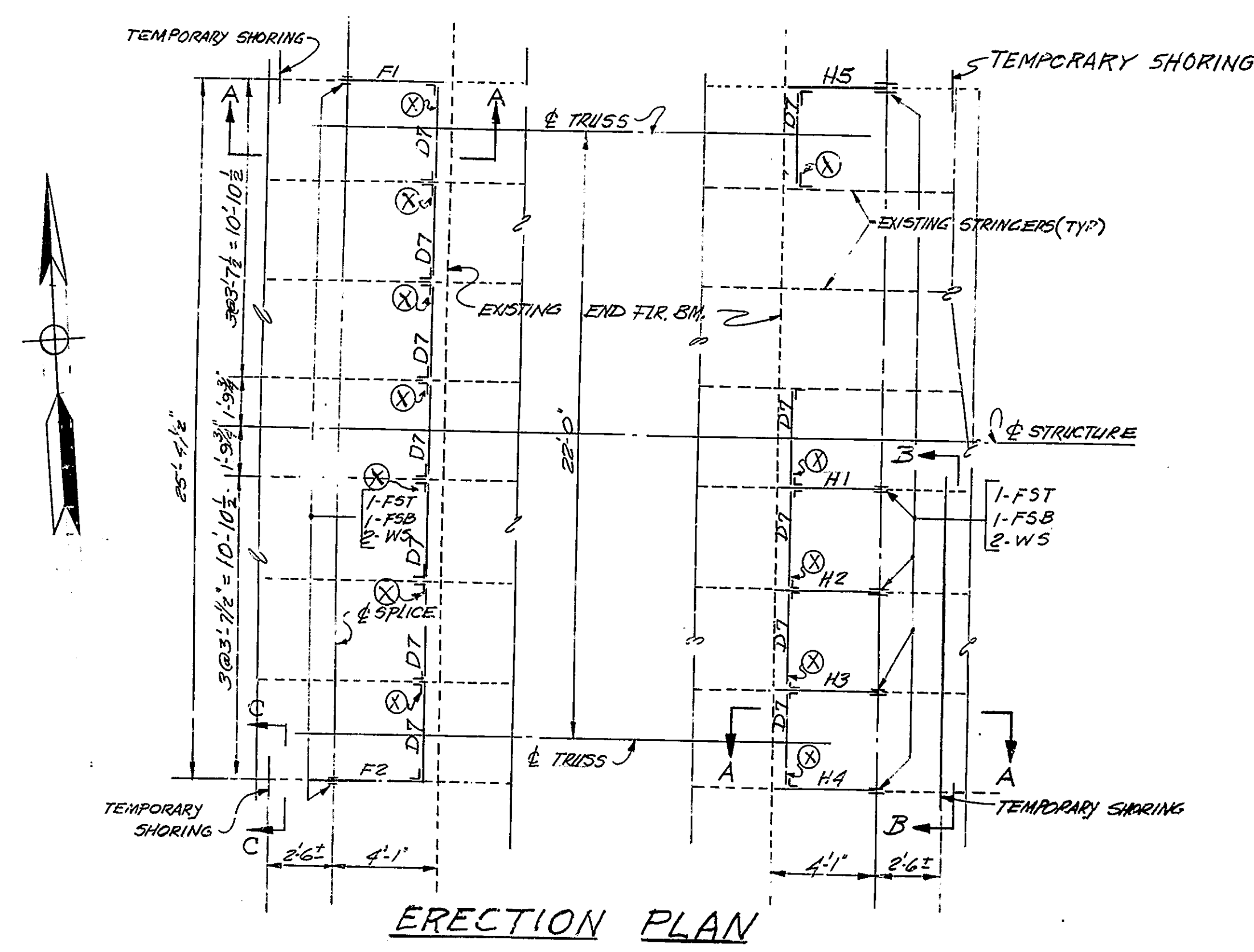
Exist. #5s & #6s
To be cut off &
ground down flush
with cap.

Contractor Note:
This dimension
to be approved by
field engineer

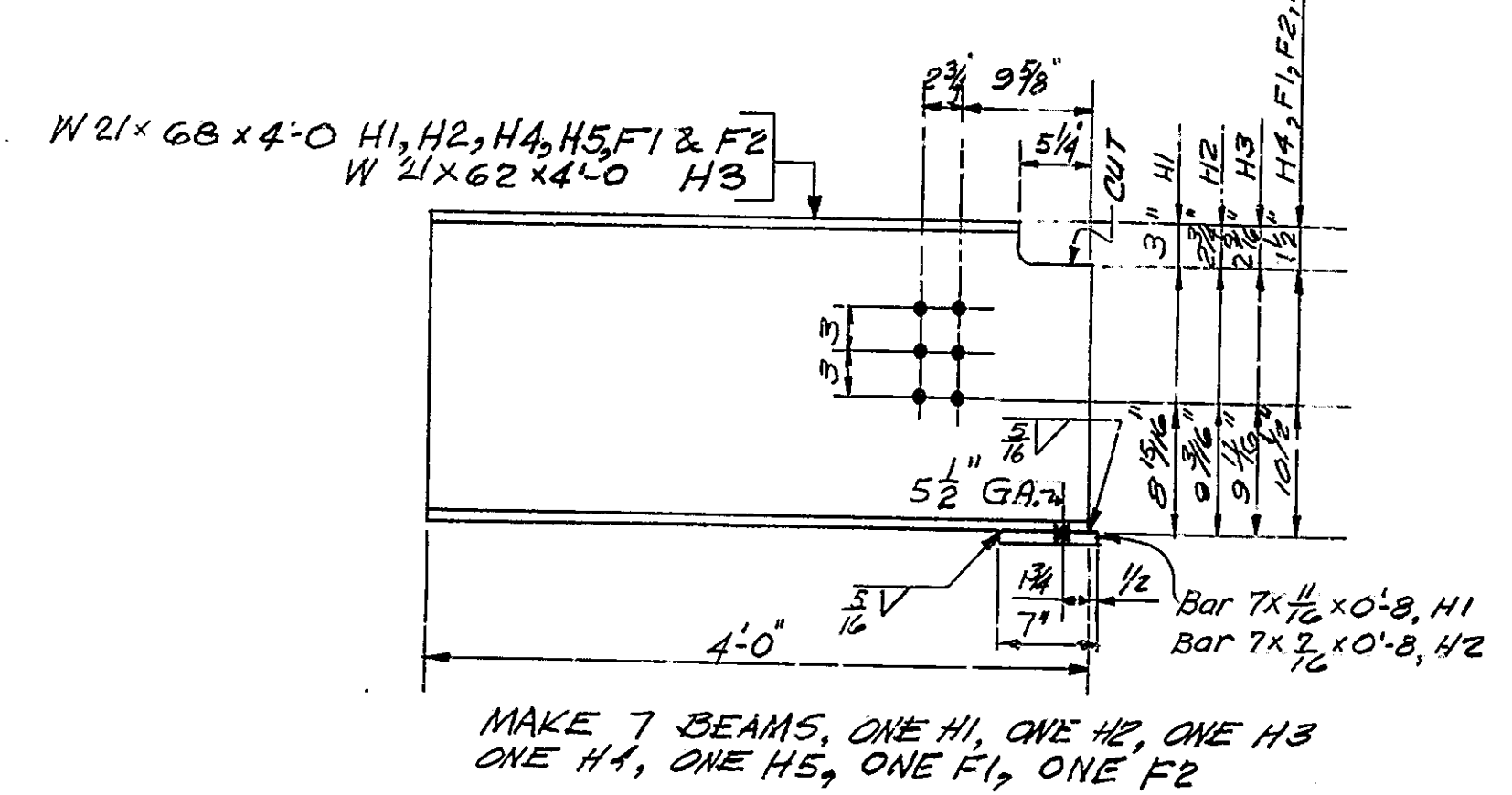
9-502b
(Place with Exist.)
Exist. #5s
(Clean & Straighten)

Cut off exist #5s
(6 Typ. ea. Col.)
Exist. #7s
(Clean & Straighten)

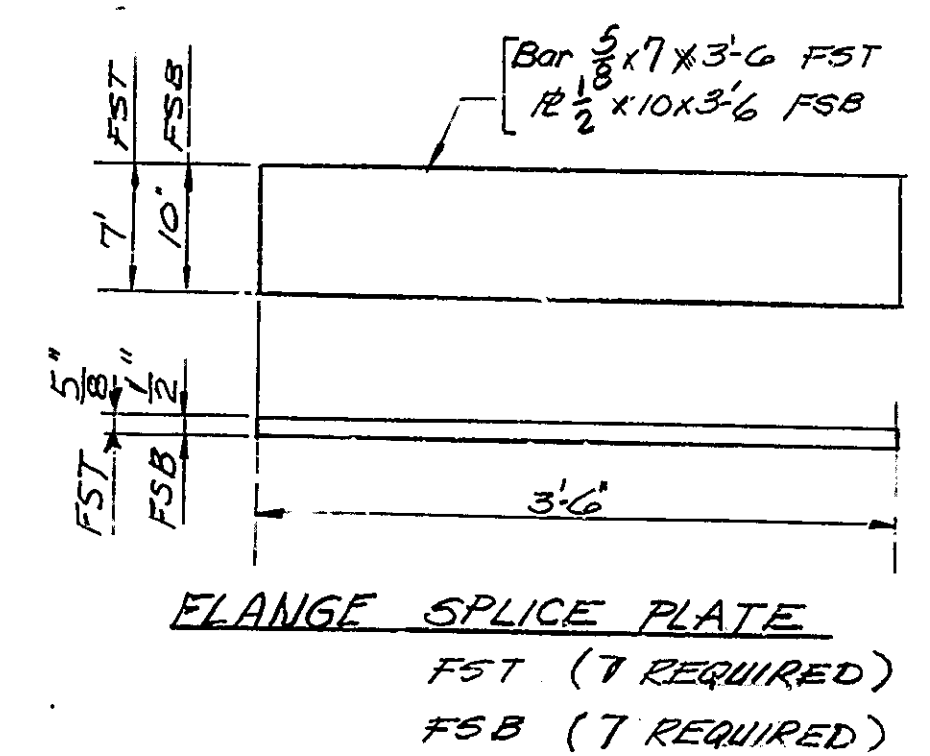
BRIDGES OVER 20' SPAN				
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	TOTAL SHEETS
4	IND.		1973	2
				13



ERECTION PLAN

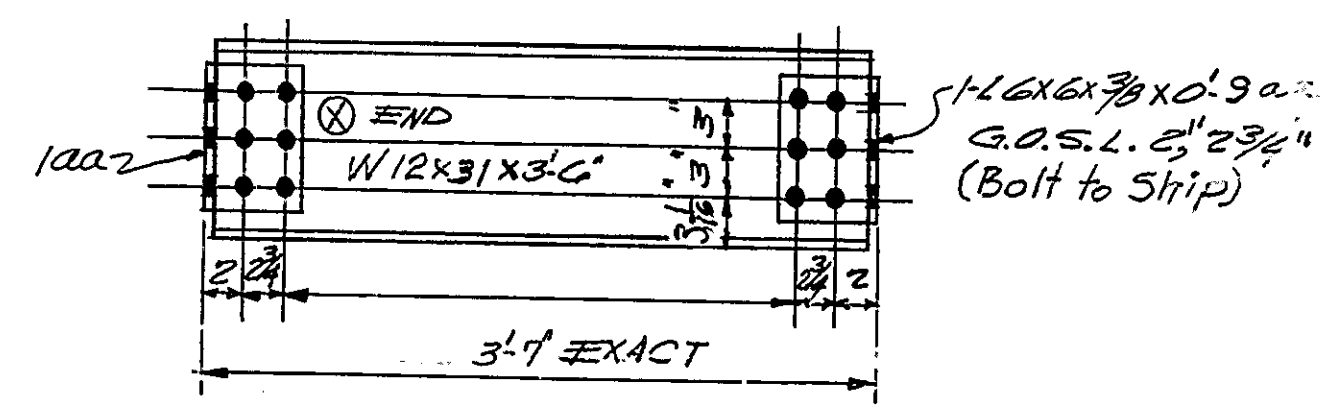


MAKE 7 BEAMS, ONE H1, ONE H2, ONE H3, ONE H4, ONE H5, ONE F1, ONE F2

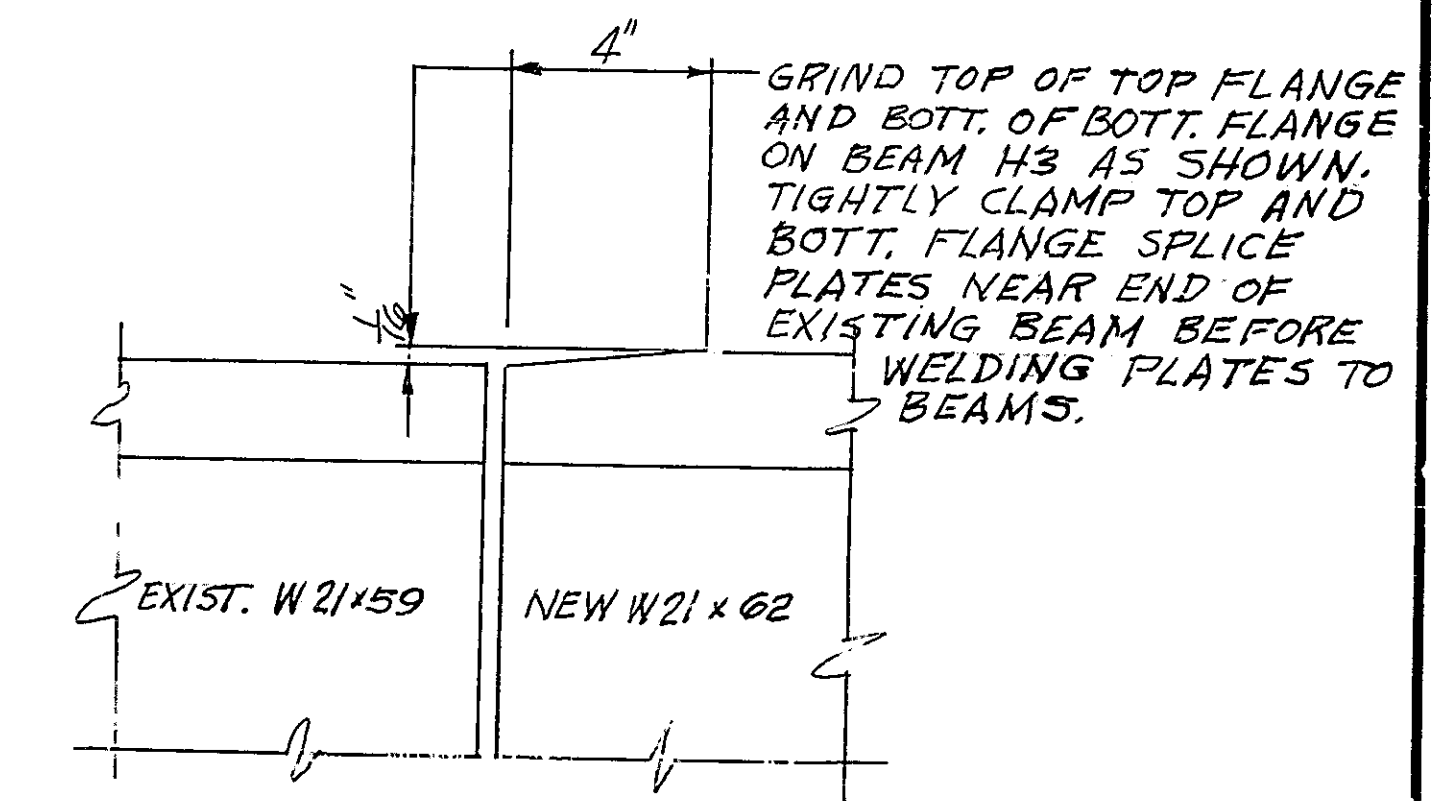


FLANGE SPLICE PLATE
FST (7 REQUIRED)
FSB (7 REQUIRED)

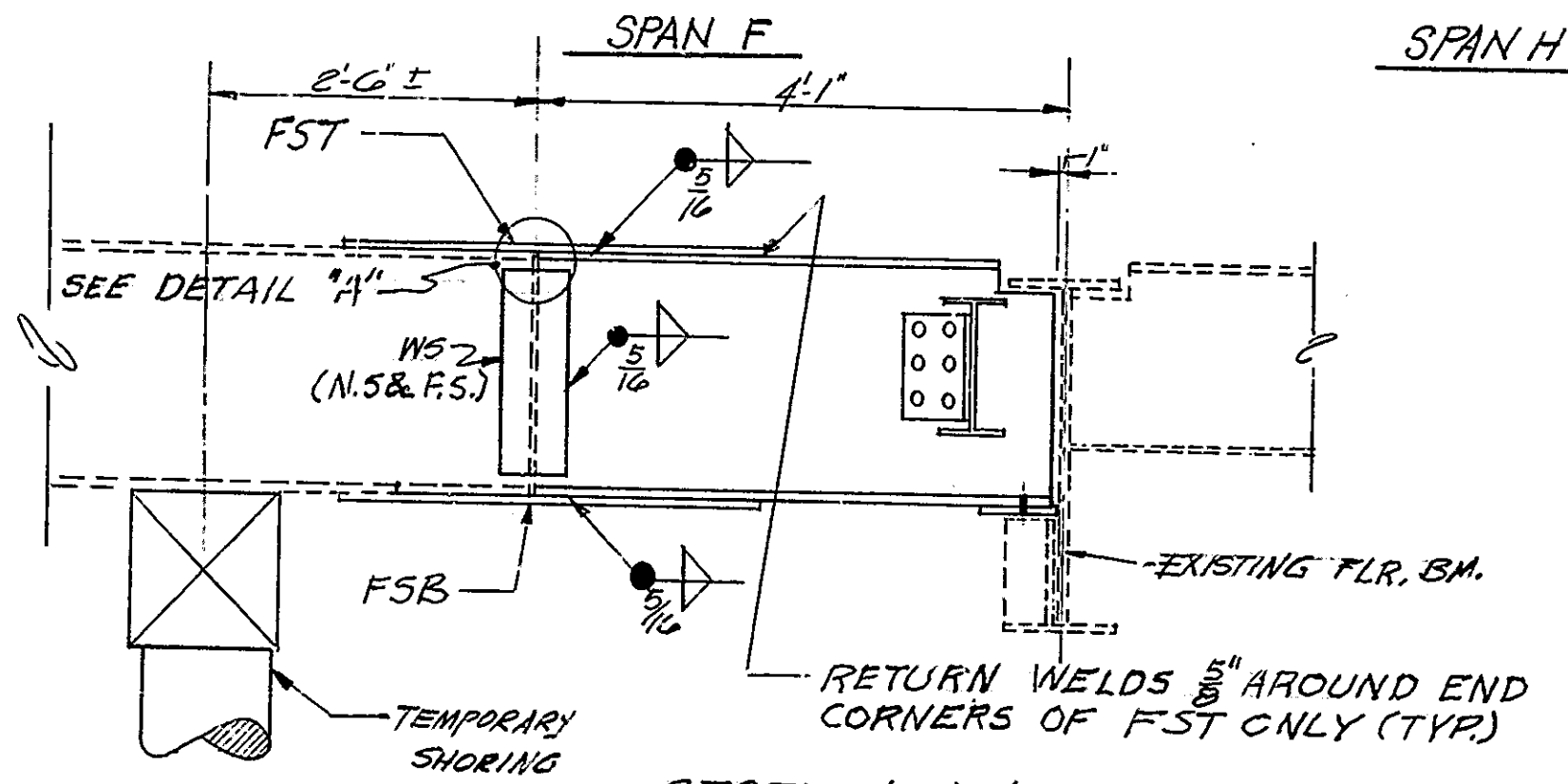
WEB SPLICE PLATE
WS (14 REQUIRED)



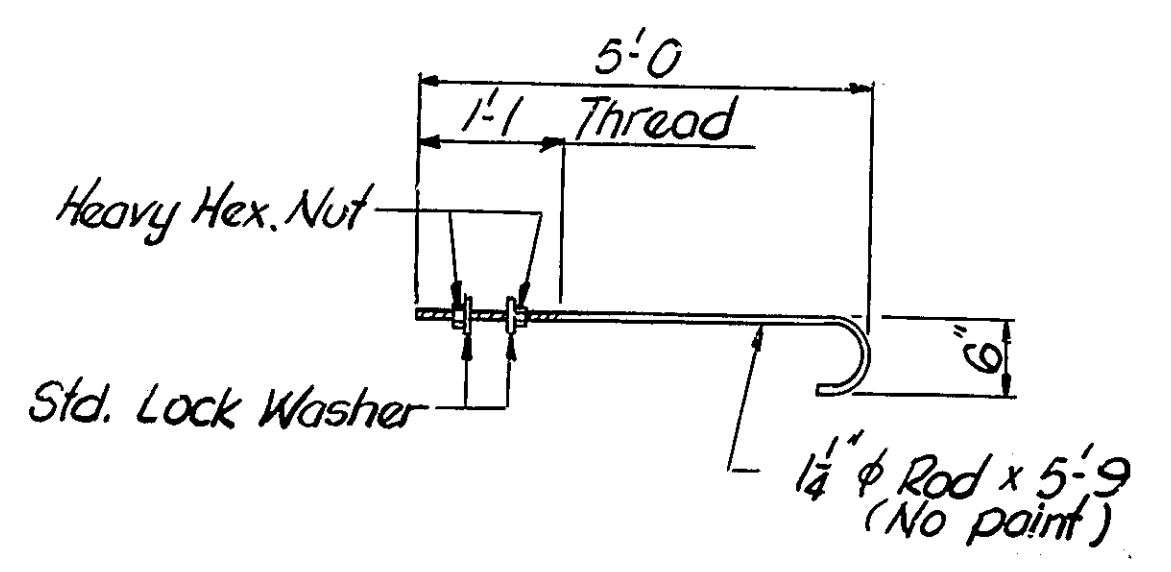
DIAPHRAGM D-1
(12 REQUIRED)



DETAIL "A"
NO SCALE



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



ANCHOR ROD AR-1
(64 Req'd)
No Scale

STRUCTURAL STEEL
BILL OF MATERIALS

NO. PIECES	SECTION	LENGTH	LOCATION	TOTAL WEIGHT
6	W21x68	4'-0"	H1, H2, H4, H5, F1, F2.	1632
1	W21x62	4'-0"	H3	248
12	W12x31	3'-6"	D7	1302
24	L6x6x3/8	0'-9"	aa for D7	268
1	Bar 7x7/16	0'-8"	for H1	11
7	Bar 7x5/8	3'-6"	FST	365
7	1/2" x 10	3'-6"	FSB	417
1	Bar 7x7/16	0'-8"	for H2	7
14	Bar 6x3/8	1'-6"	WS	161
64	Rod 1/4"	5'-9"	Anchor Rod AR-1	1535
Total Str. Steel				5946 LB.

NOTES:

H5 BOLTS 1/2" OPEN HOLES, 1 1/2" UNLESS NOTED.
ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36.
ALL PAINT SHALL BE IN ACCORDANCE WITH CURRENT STATE HIGHWAY SPECIFICATIONS. SHOP PAINT; FIELD PAINT; BASIC LEAD SILICO CHROMATE.
IF THE CONTRACTOR USES THESE STEEL DETAILS FOR THE SHOP PLANS, HE SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY AND THE FIT OF ALL MEMBERS FABRICATED THEREFROM.
HIGH STRENGTH BOLTS SHALL BE USED IN THE ASSEMBLY OF STRUCTURAL STEEL EXCEPT AS NOTED.
ESTIMATED WEIGHT OF STRUCTURAL STEEL 5946 LBS.
ESTIMATED AREA OF STRUCTURAL STEEL CUTTING 148 SQ. IN.
ESTIMATED NUMBER OF FIVETS TO BE REMOVED: 62 EACH
ESTIMATED LENGTH OF FIELD FILLET WELD (2") 141.4 LIN. FT.
THE WEIGHT OF HIGH STRENGTH BOLTS IS NOT INCLUDED IN THE WEIGHT OF STRUCTURAL STEEL. THE COST OF THESE BOLTS SHALL BE INCLUDED IN THE COST OF STRUCTURAL STEEL.
AS SOON AS THE ENGINEER HAS APPROVED THE FIELD WELDS ALL WELDS AND ANY SURFACE FROM WHICH THE PAINT HAS BEEN OMITTED OR BECOMES WORN OFF OR HAS OTHERWISE BECOME DEFECTIVE SHALL BE THOROUGHLY CLEANED OF ALL CHARRED PAINT OR ANY FOREIGN MATTER AND COMPLETELY RECOVERED WITH PAINT ACCORDING TO THE SPECIFICATIONS.

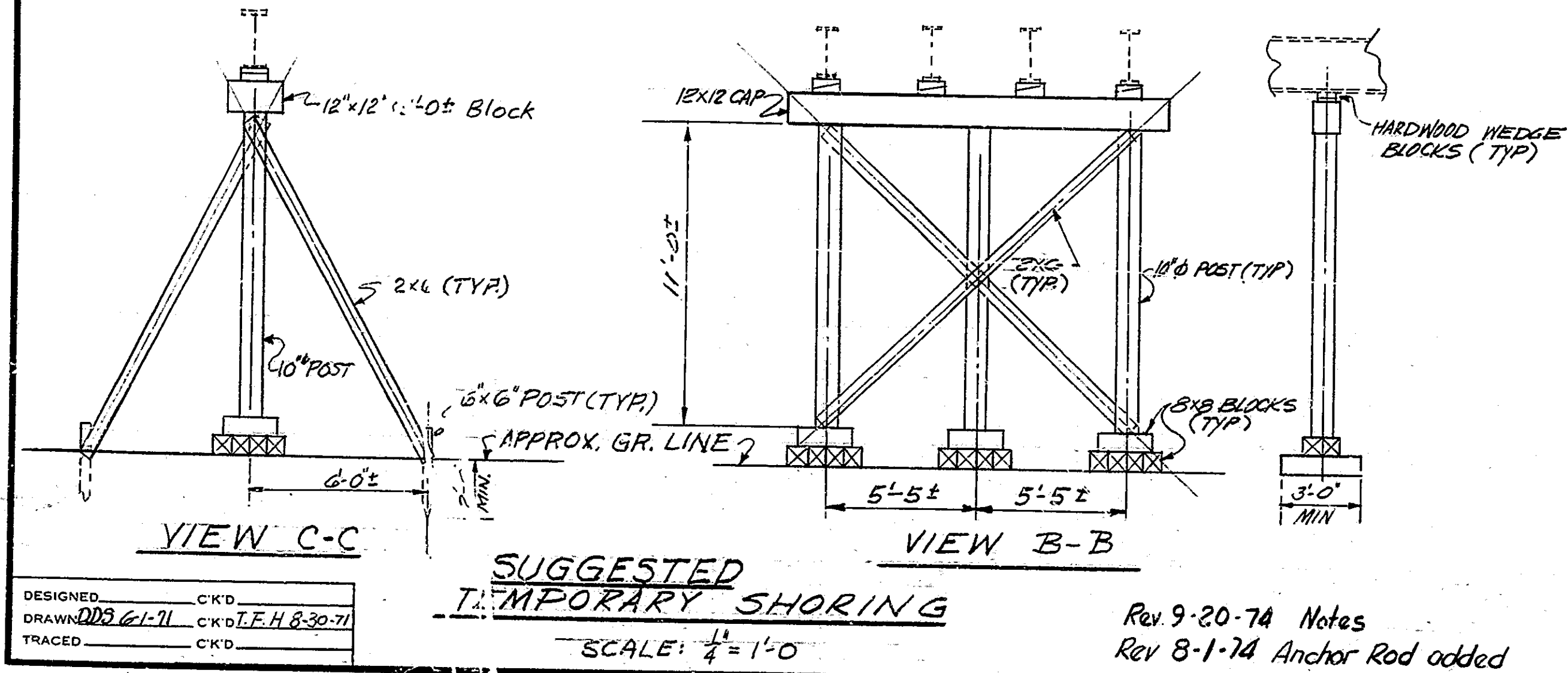
Note:
For location of Anchor Rods AR-1, see Drwg. R4.

ERECTION PLAN & STEEL DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE: 1" = 1'-0" UNLESS NOTED DATE: NOVEMBER 19, 1971

RECOMMENDED FOR APPROVAL: Robert W. Butler
ASSISTANT ENGINEER OF BRIDGE DESIGN

DRAWING: R3 OF 10 SHEET 3 OF 22
PROJECT: ST-290H
CONTRACT NO. B-9871
BRIDGE FILE: 1-15-1683A

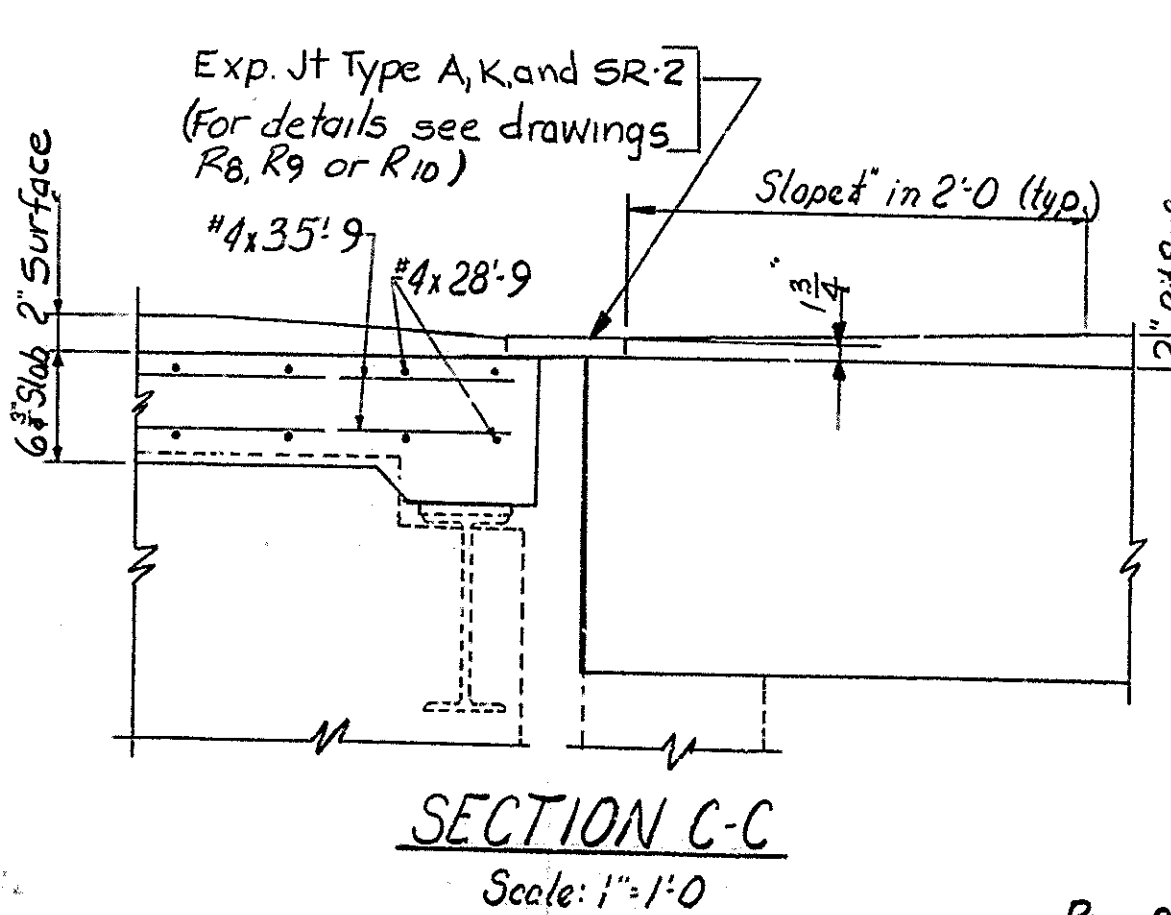
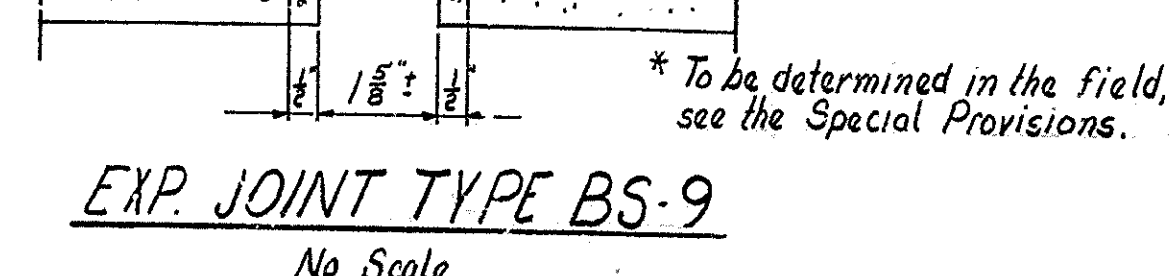
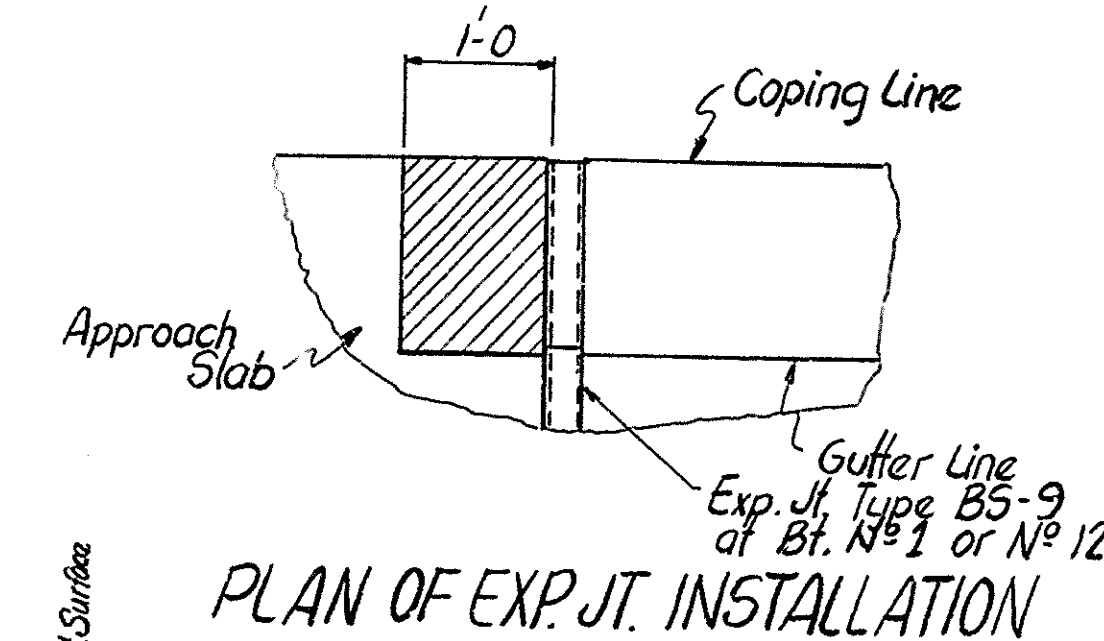
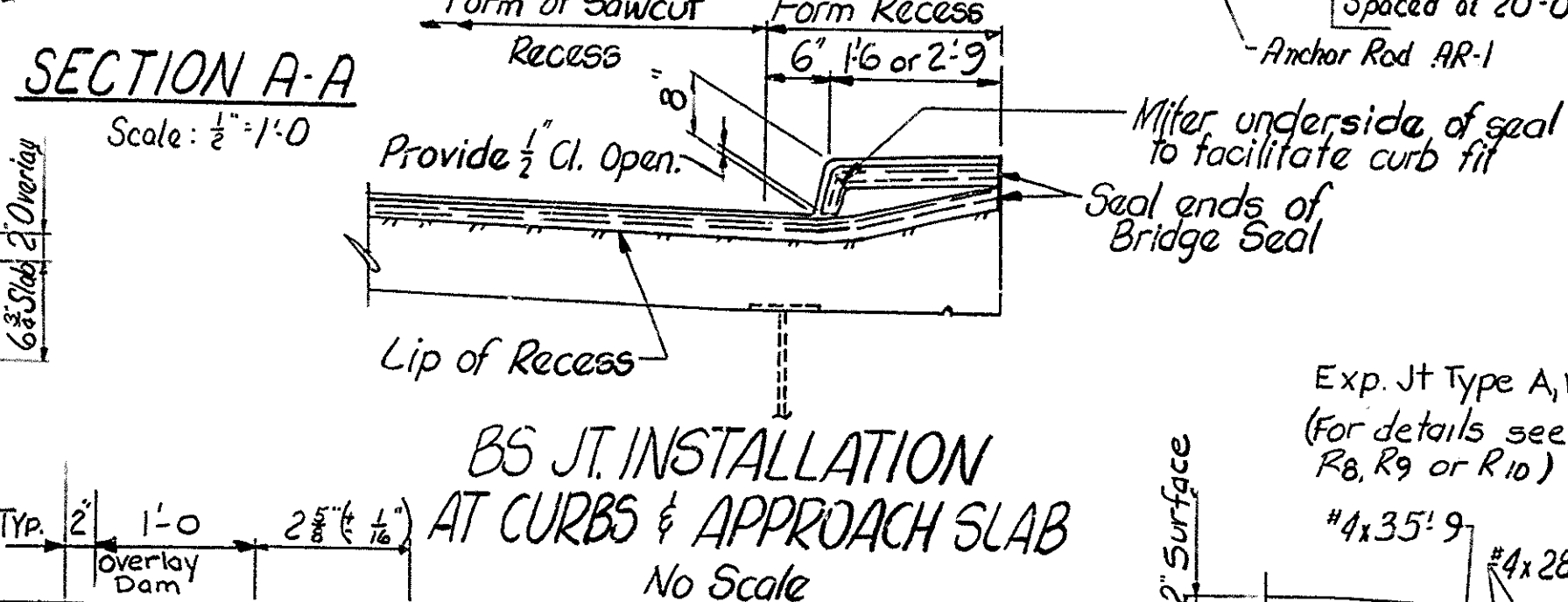
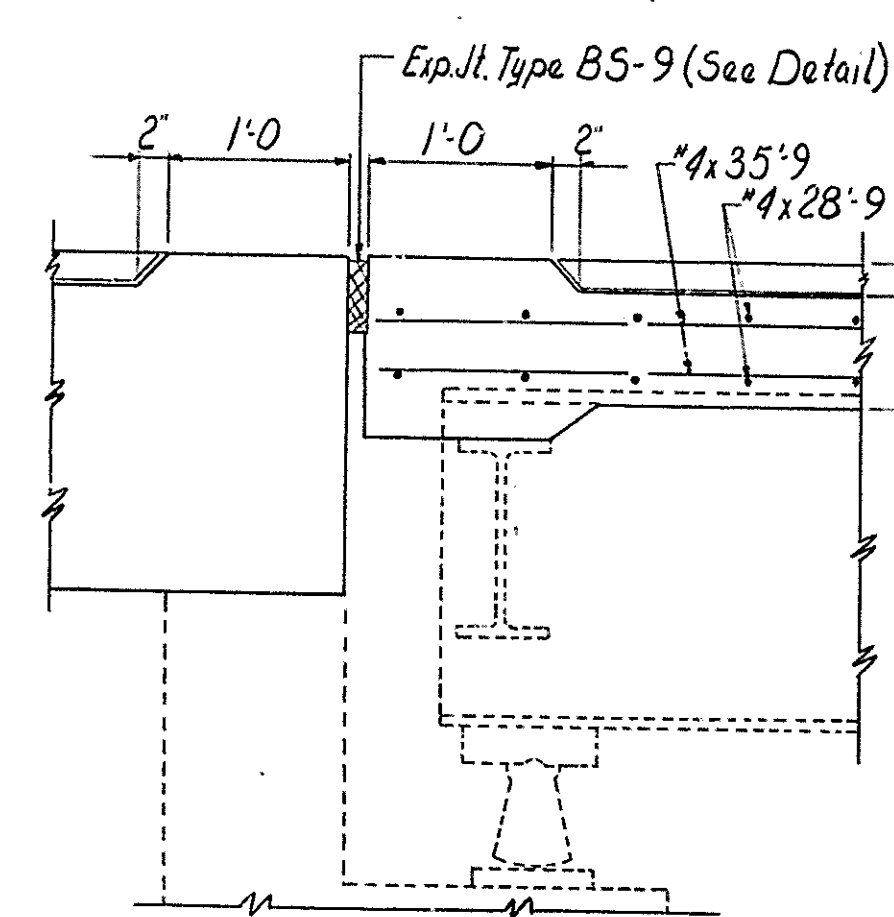
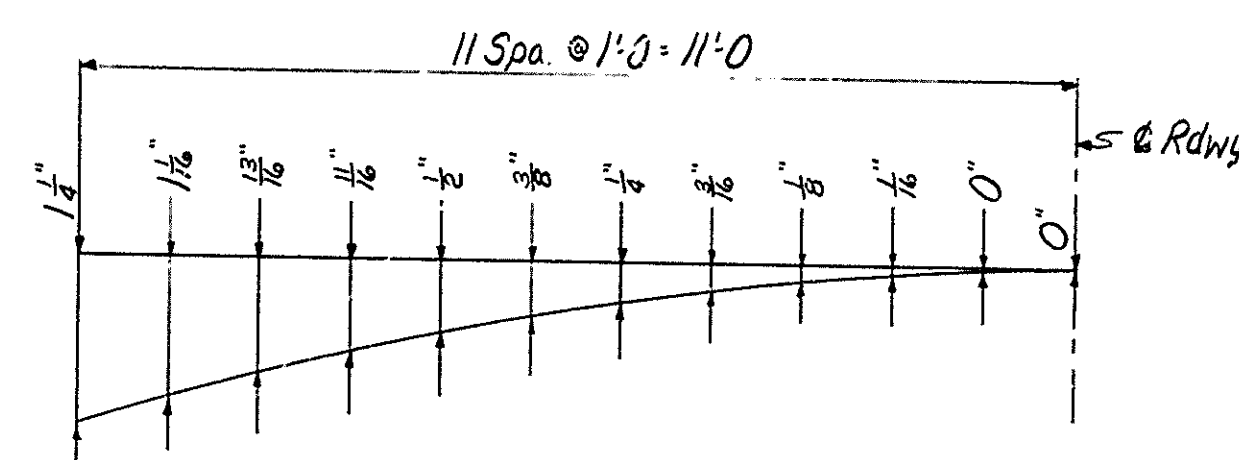
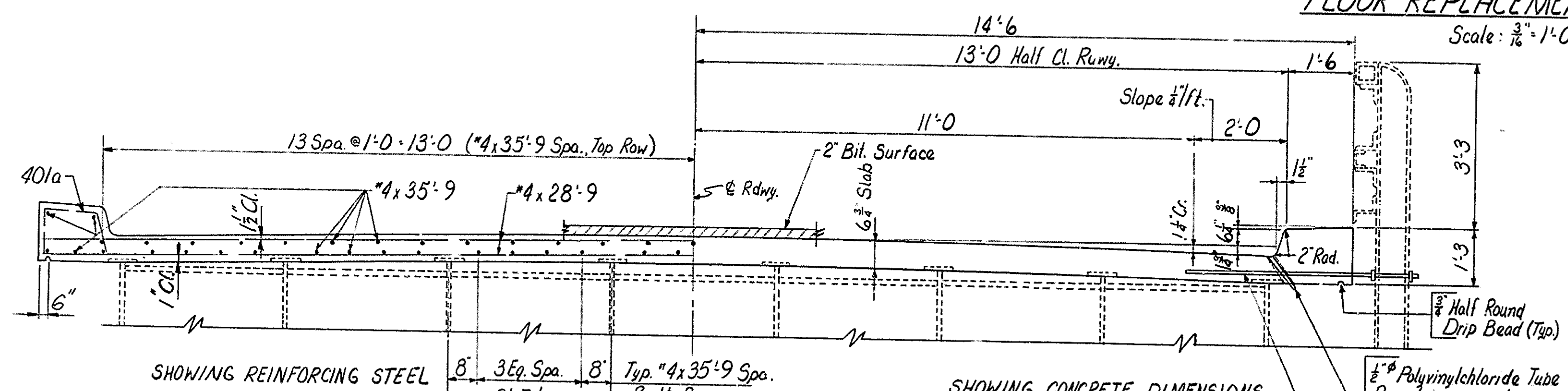
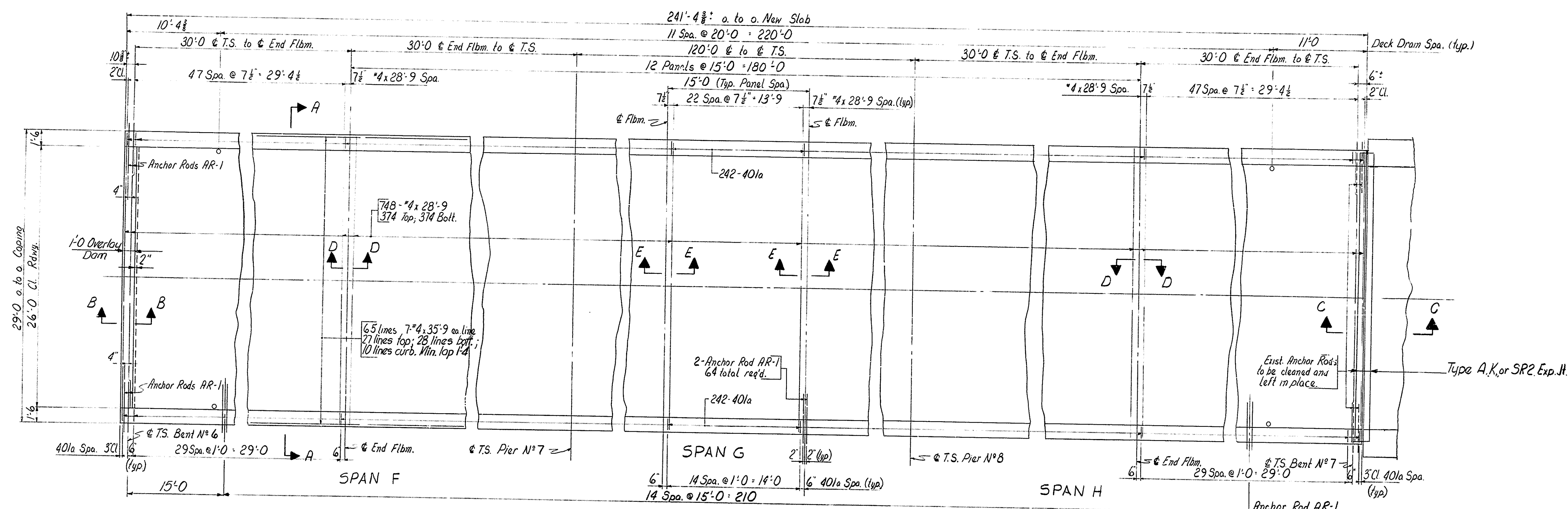


SUGGESTED
TEMPORARY SHORING

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

Rev 9-20-74 Notes
Rev 8-1-74 Anchor Rod added

DESIGNED: CKD
DRAWN: W.B. 6-1-71 CKD L.F.H. 8-30-71
TRACED: CKD

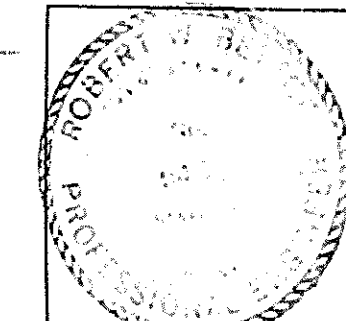


Notes:
 For Anchor Rod AR-1 detail, see Drwg. R3.
 For Type A, K, or SR2 Exp. Jt., see Drwgs. R8, R9 or R10.
 For Reinf. Bar Notes, see Br. Std. C.

FLOOR DETAILS - STEEL SPANS
INDIANA STATE HIGHWAY COMMISSION

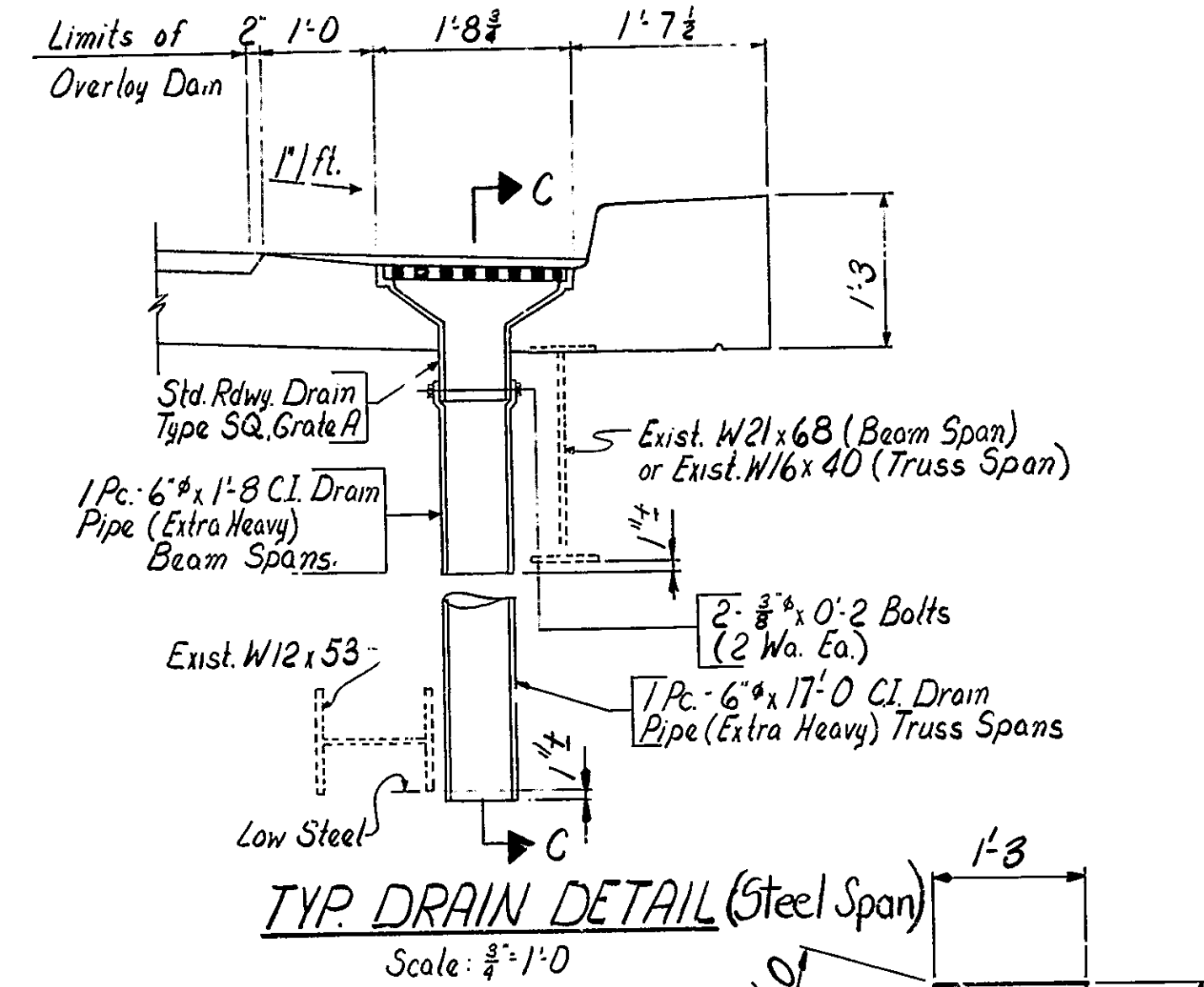
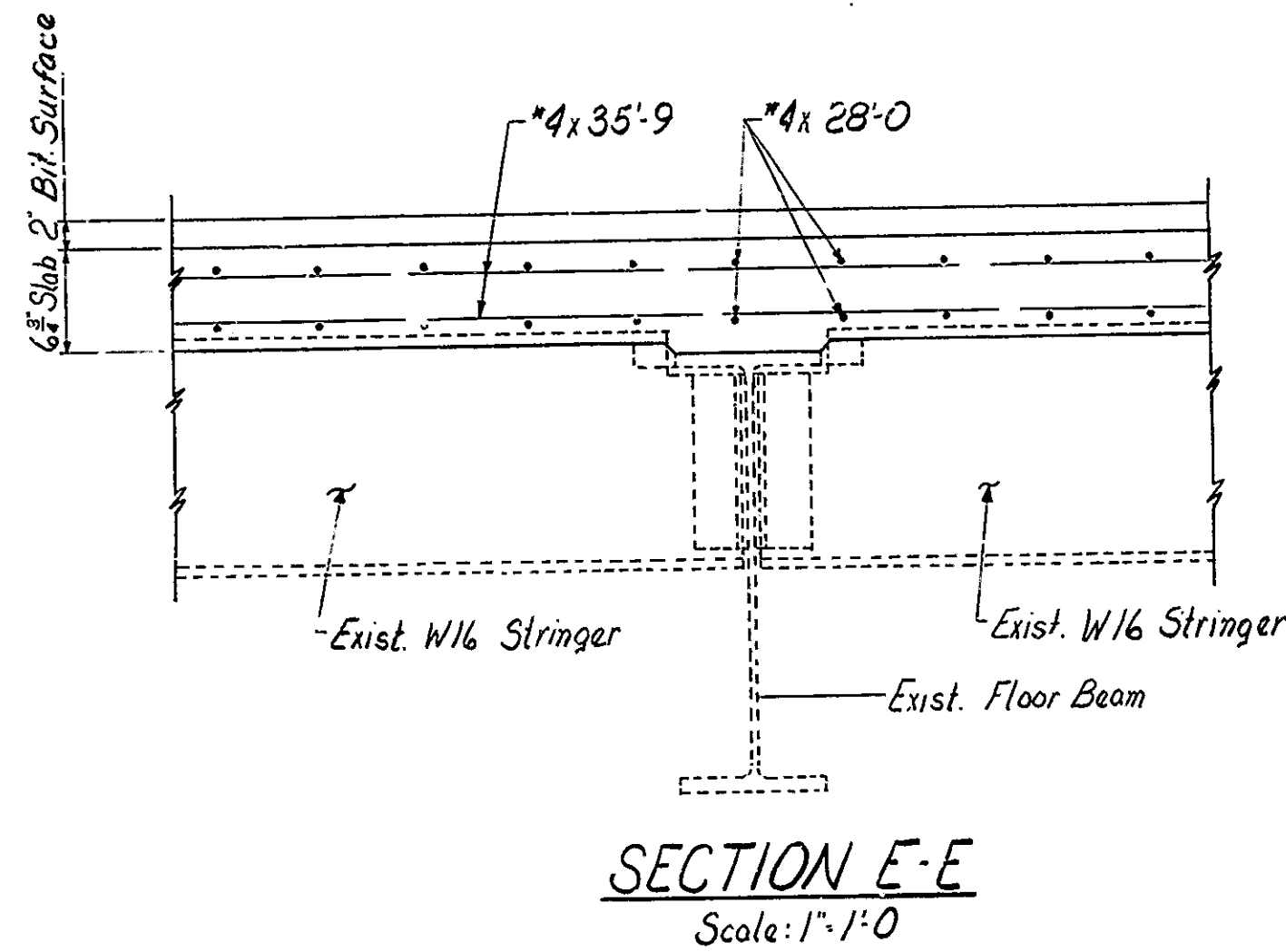
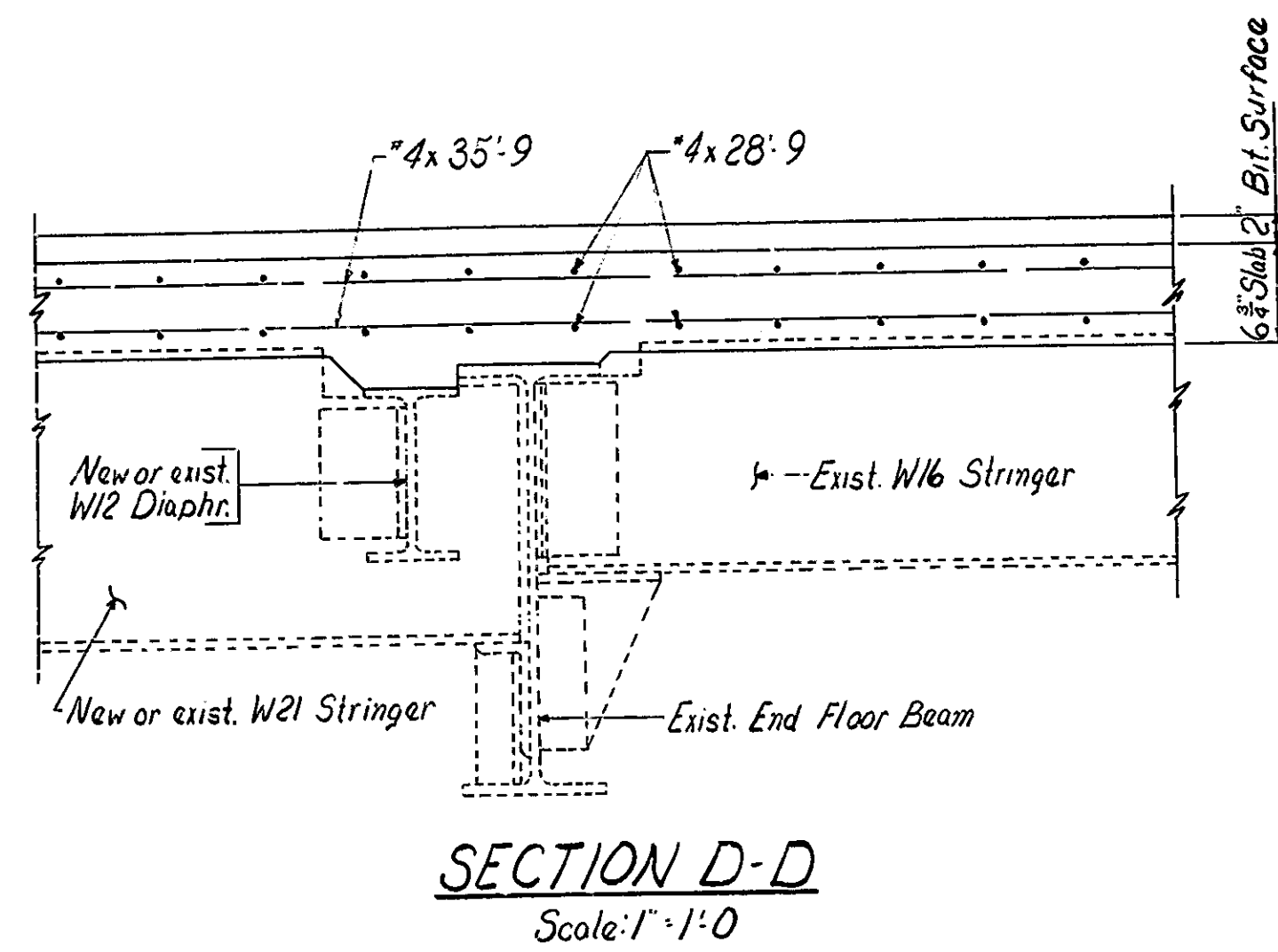
SCALE: AS NOTED
 DATE: August 1, 1974
 Robert W. Betz
 ASSISTANT ENGINEER OF BRIDGE DESIGN

DRAWING: R4 OF 10 SHEET: 4 OF 22
 PROJECT: ST-290 H
 CONTRACT NO. B-9871
 BRIDGE FILE: 1-15-1683 A

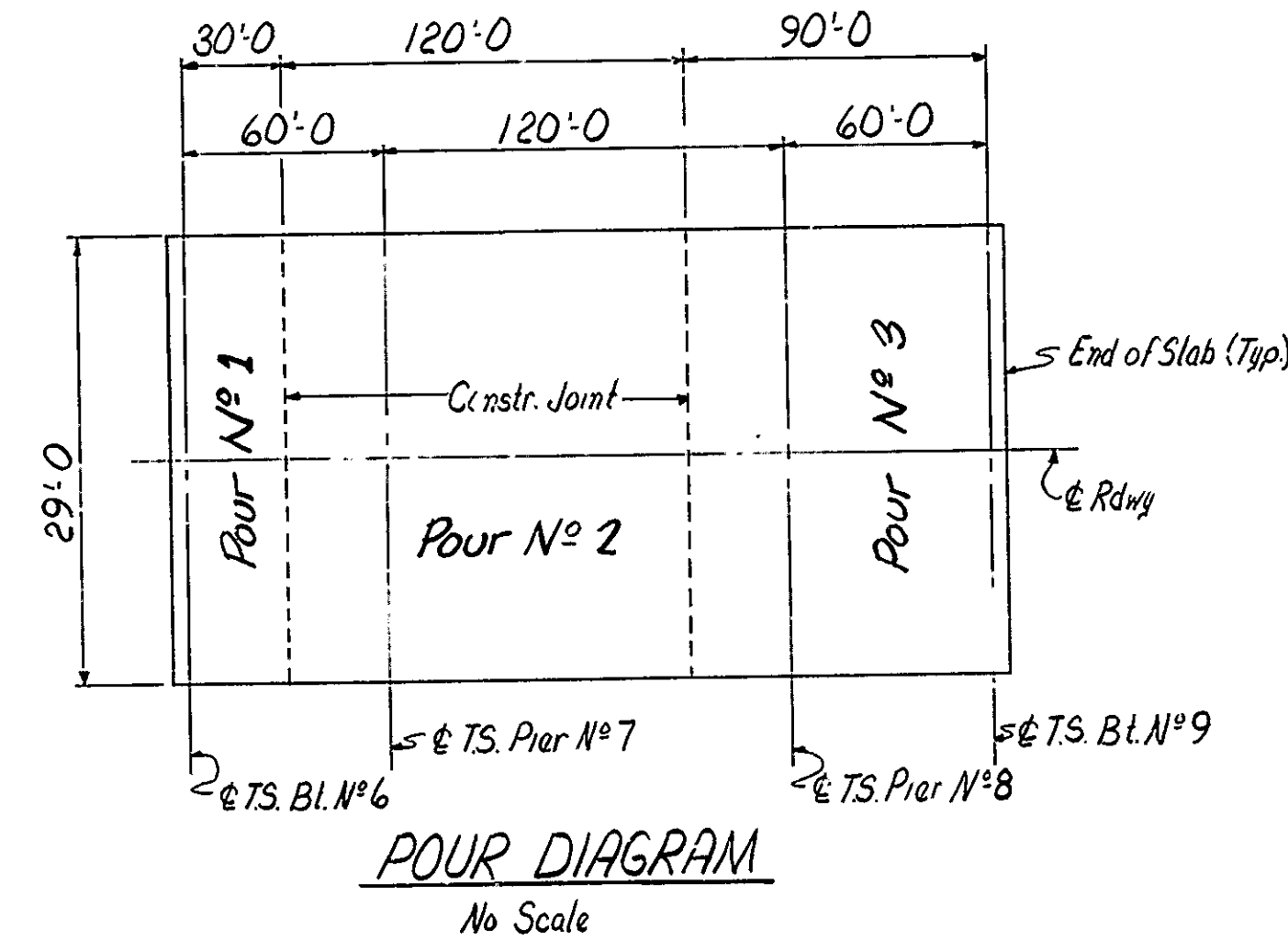
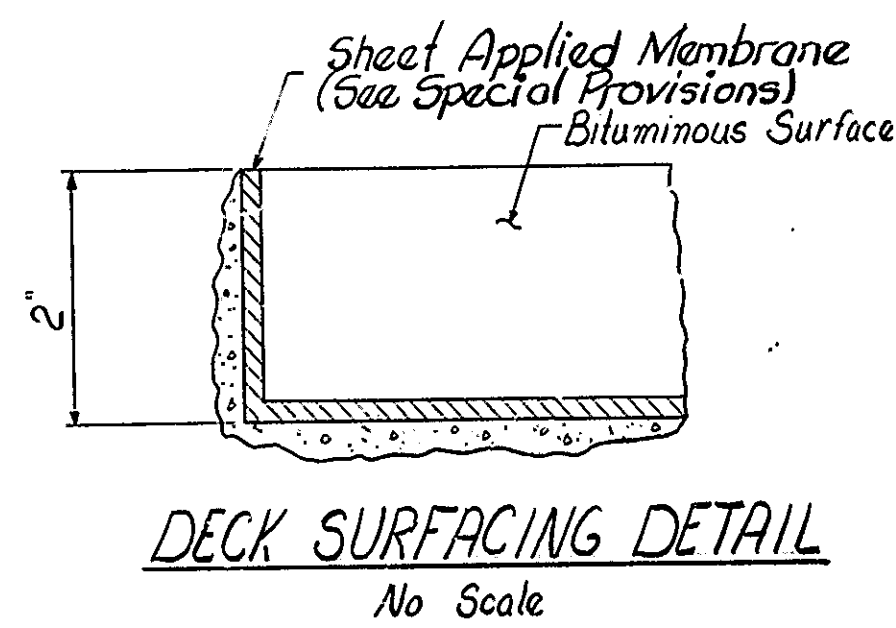
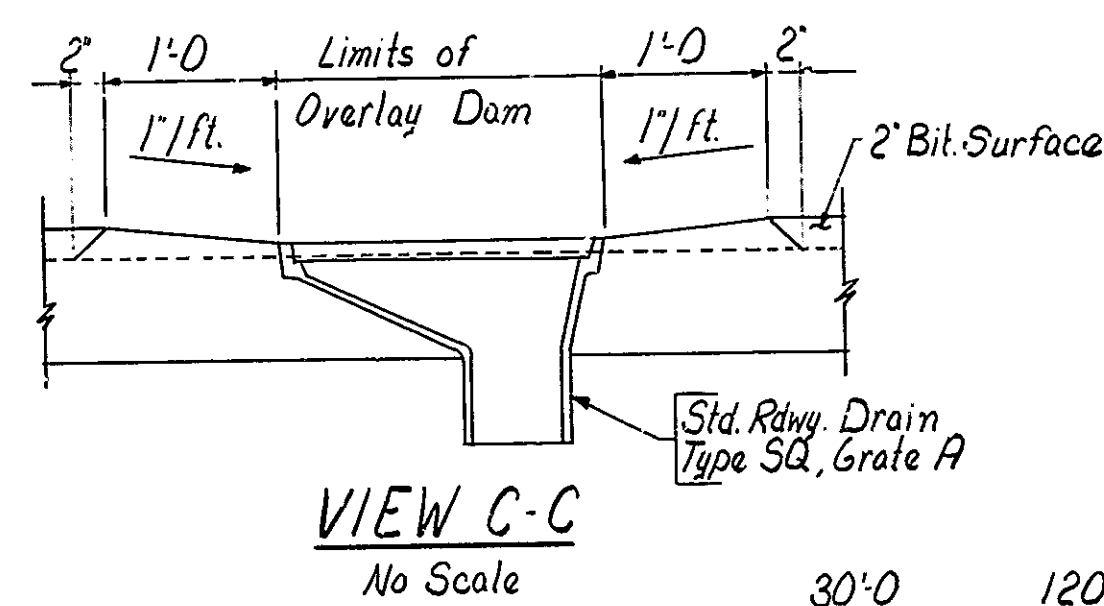
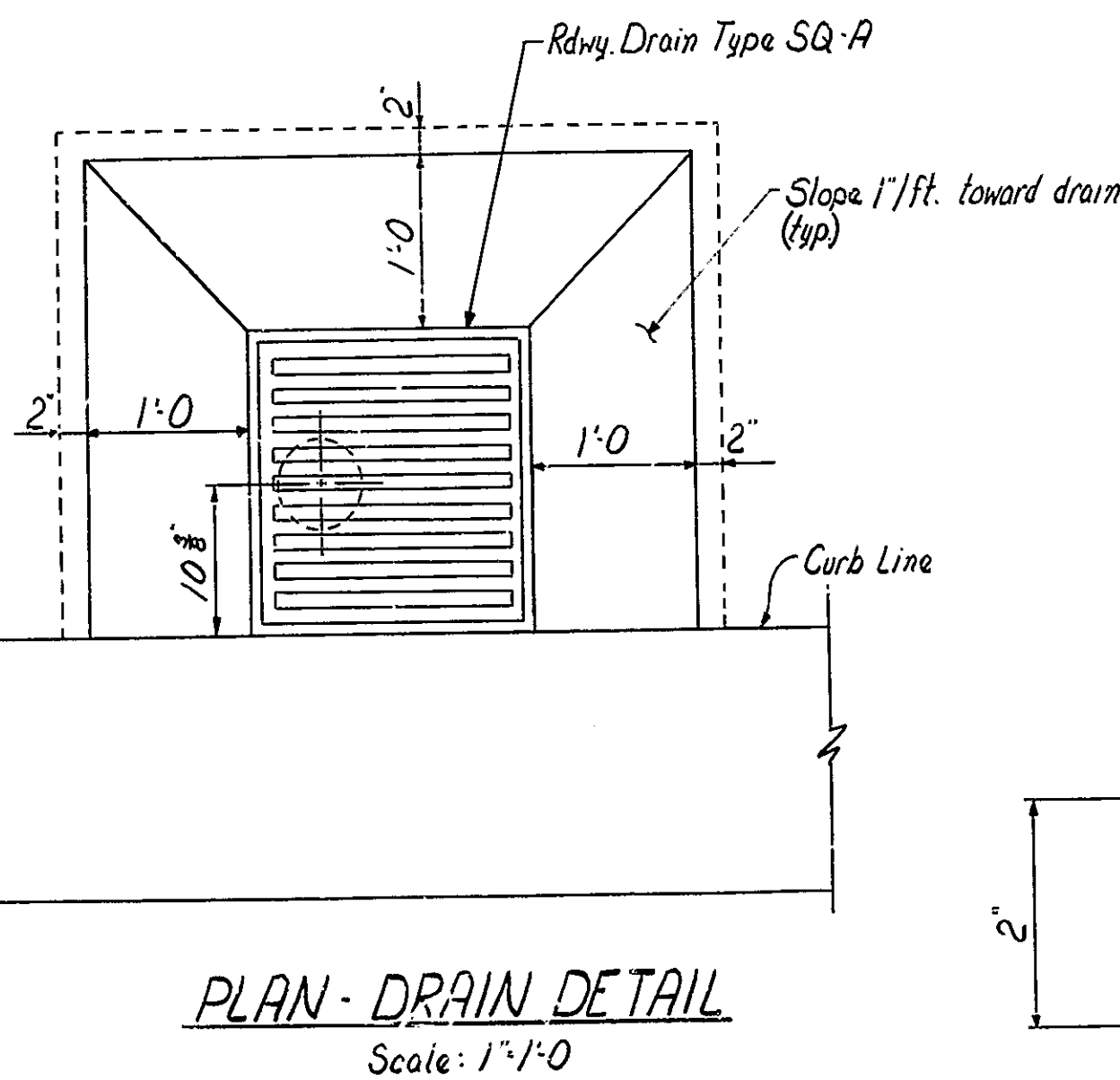
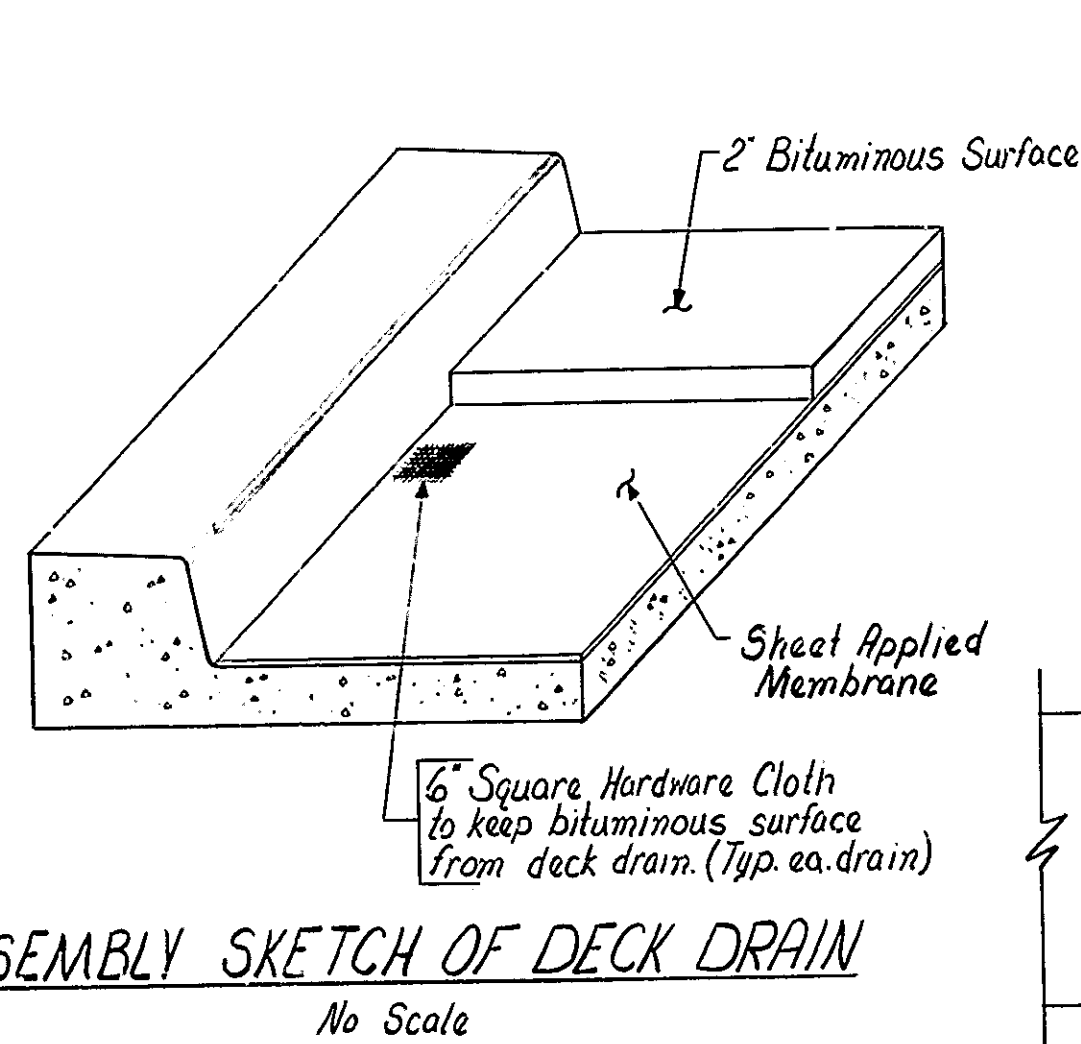


DESIGNED: C.K.D.
 DRAWN: DAM 4-22-74 C.K.D. & C. B. 74
 TRACED: C.K.D.

Rev. 9-20-74 Section B-B Exp. Jt. BS-9, Appr. Slab

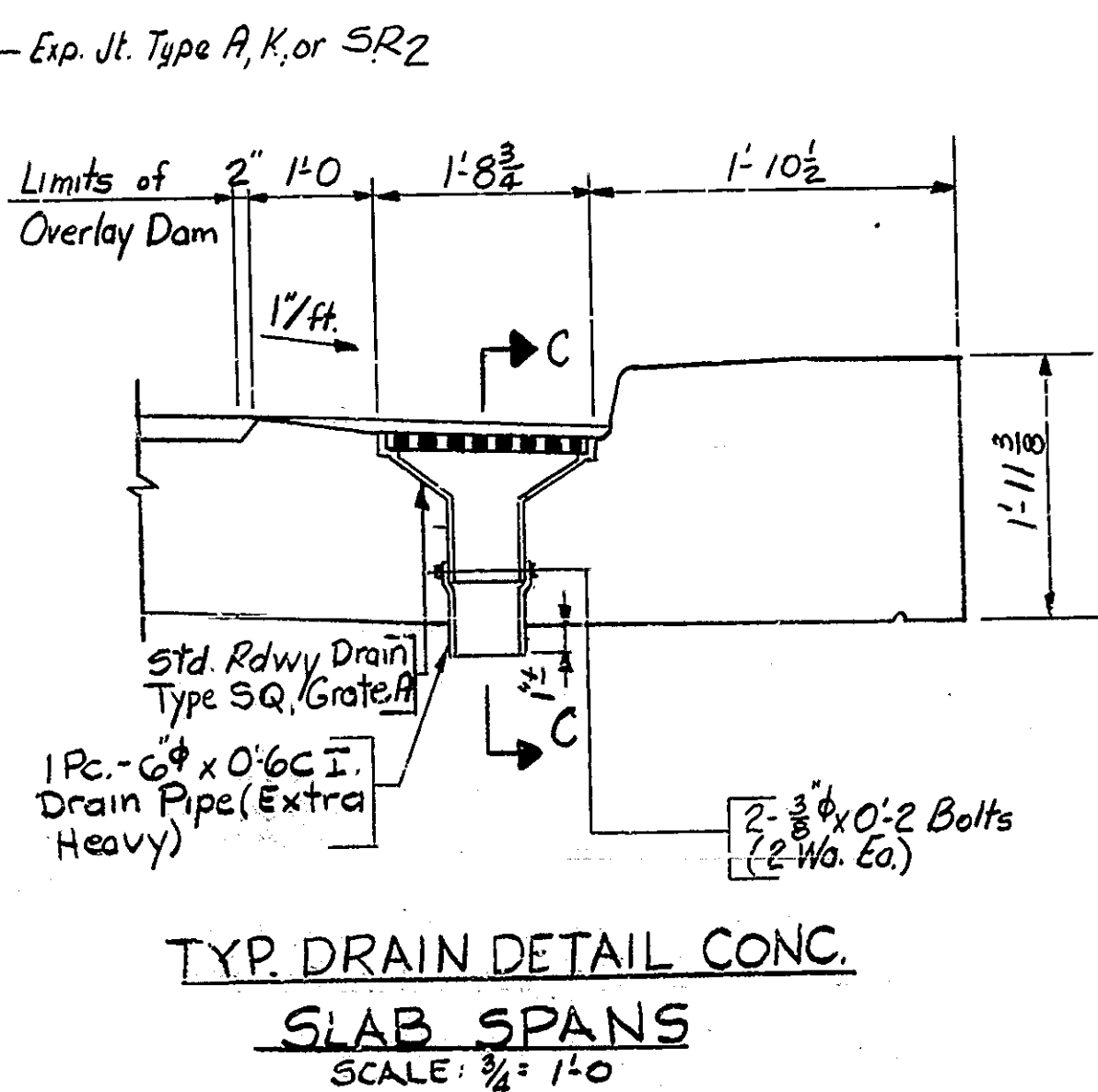
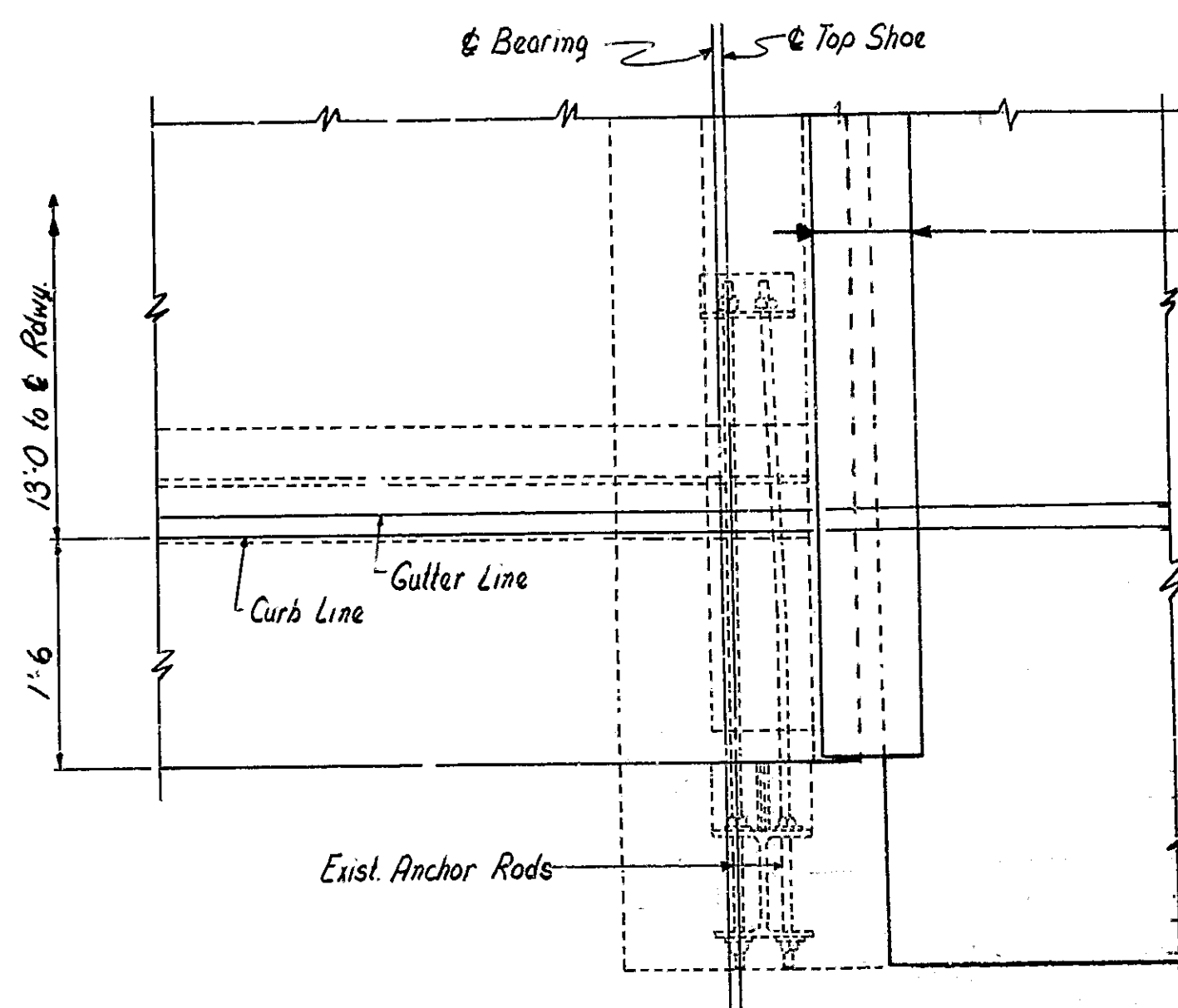


BILL OF MATERIALS			
REINFORCING STEEL			
SIZE & MARK	N ^o BARS	LENGTH	WEIGHT
401a	484	3'-3	
#4	455	35'-9	
#4	748	28'-9	
Total Reinf. Steel			26282LB.
CONCRETE			
Class "C" in Superstr.		CU. YD.	
Pour N ^o 1		21.0	
Pour N ^o 2		80.9	
Pour N ^o 3		40.8	
Total		142.7	
MISCELLANEOUS			
Deck drains		24 Ea.	
Sheet Applied Membrane		6150Sft.	
Bit. Mix. for Approaches		73.3Ton	
Type A, K, or SR2 Exp. Jt.		30.3Lft.	
Exp. Jt. Type BS-9		328Lft.	
Surface Seal		1079Sft.	
C.I. Grates, Basins & Fittings			
12 Std. Rdwy Drain Type SQ-Grate A @ 192 lb. ea.		2304 LB.	
C.I. Drain Pipe 4 pcs-6"			
x 1'-8" @ 31 lb. ea.; 8 pcs-6"			
x 17'-0" @ 307 lb. ea.		2580 LB.	



Surface Seal - The top and roadway face of curbs overlay dams and the top of walks above overlay shall be sealed. See Special Provisions.

Notes:
For Reinf. Bar Notes, see Br. Std. C.I.
For Type A, K, or SR2 Exp. Jt., see Drngs. R8, R9 or R10.
For location of rdwy. drains, see Drng. R1.

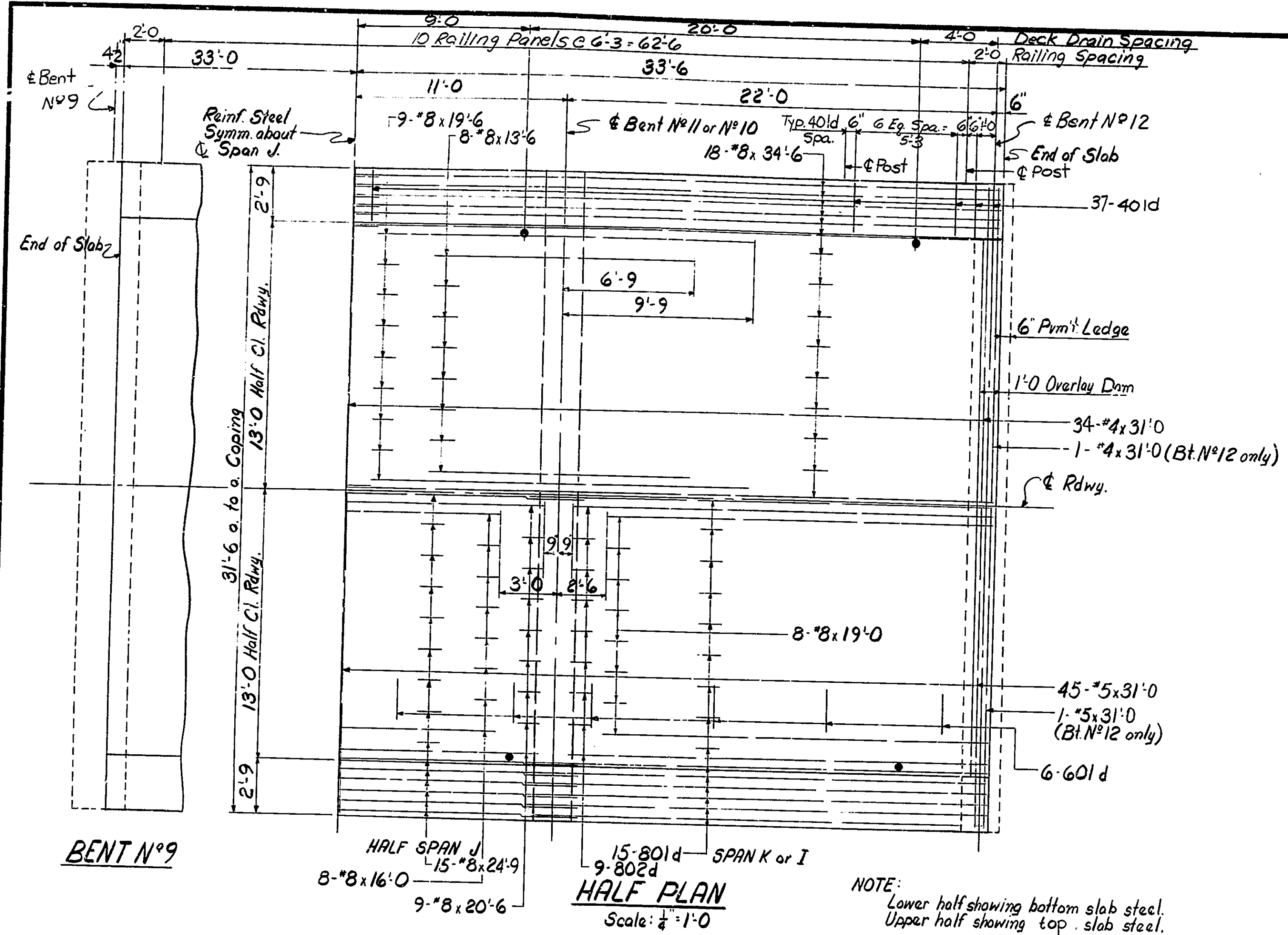


FLOOR DETAILS & BILL OF MATERIALS - STEEL SPANS
INDIANA STATE HIGHWAY COMMISSION

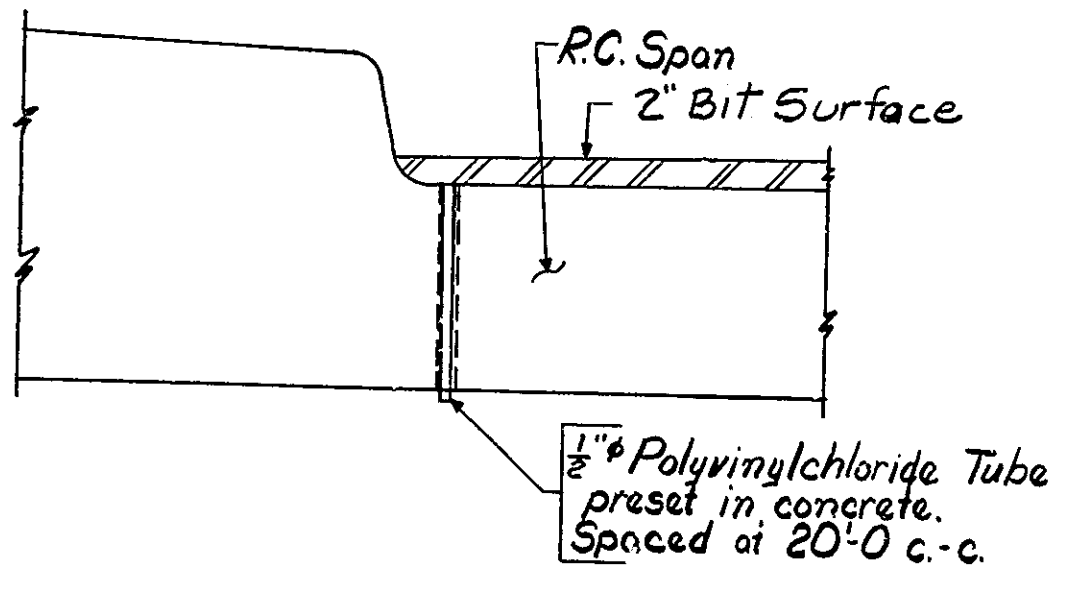
SCALE: - AS NOTED
DATE: - August 1, 1974
DRAWING: R5 OF 10 SHEET: 5 OF 22
PROJECT: - ST-290 H
CONTRACT NO. B-9871
BRIDGE FILE: - 1-15-1683 A

Robert W. Bettge
RESIDENT ENGINEER OF BRIDGE DESIGN
PROFESSIONAL ENGINEER

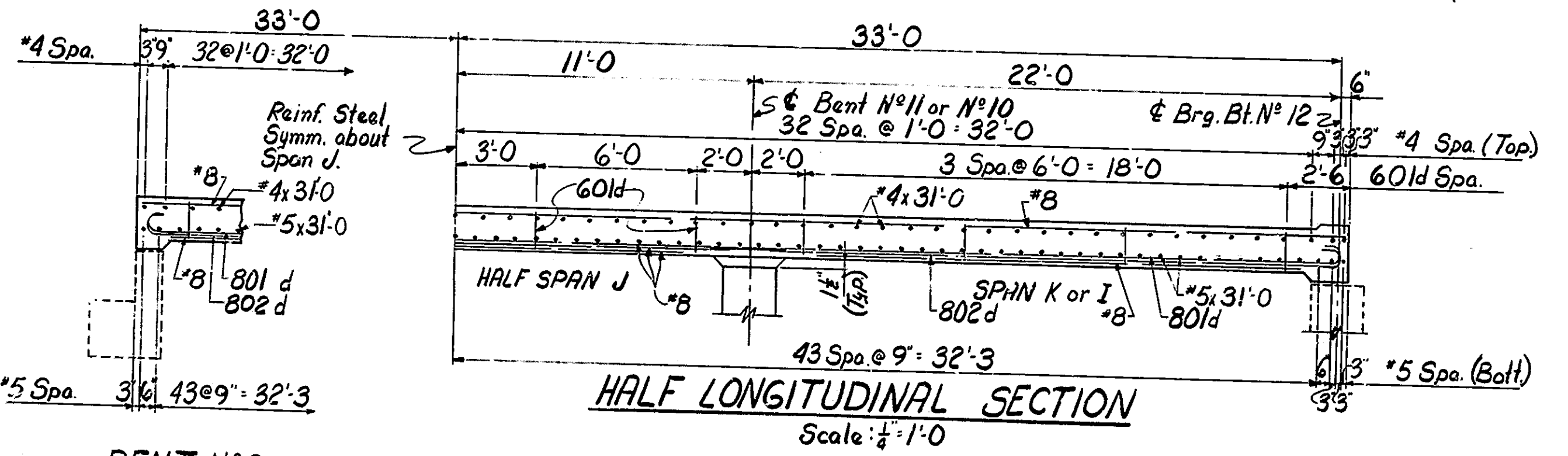
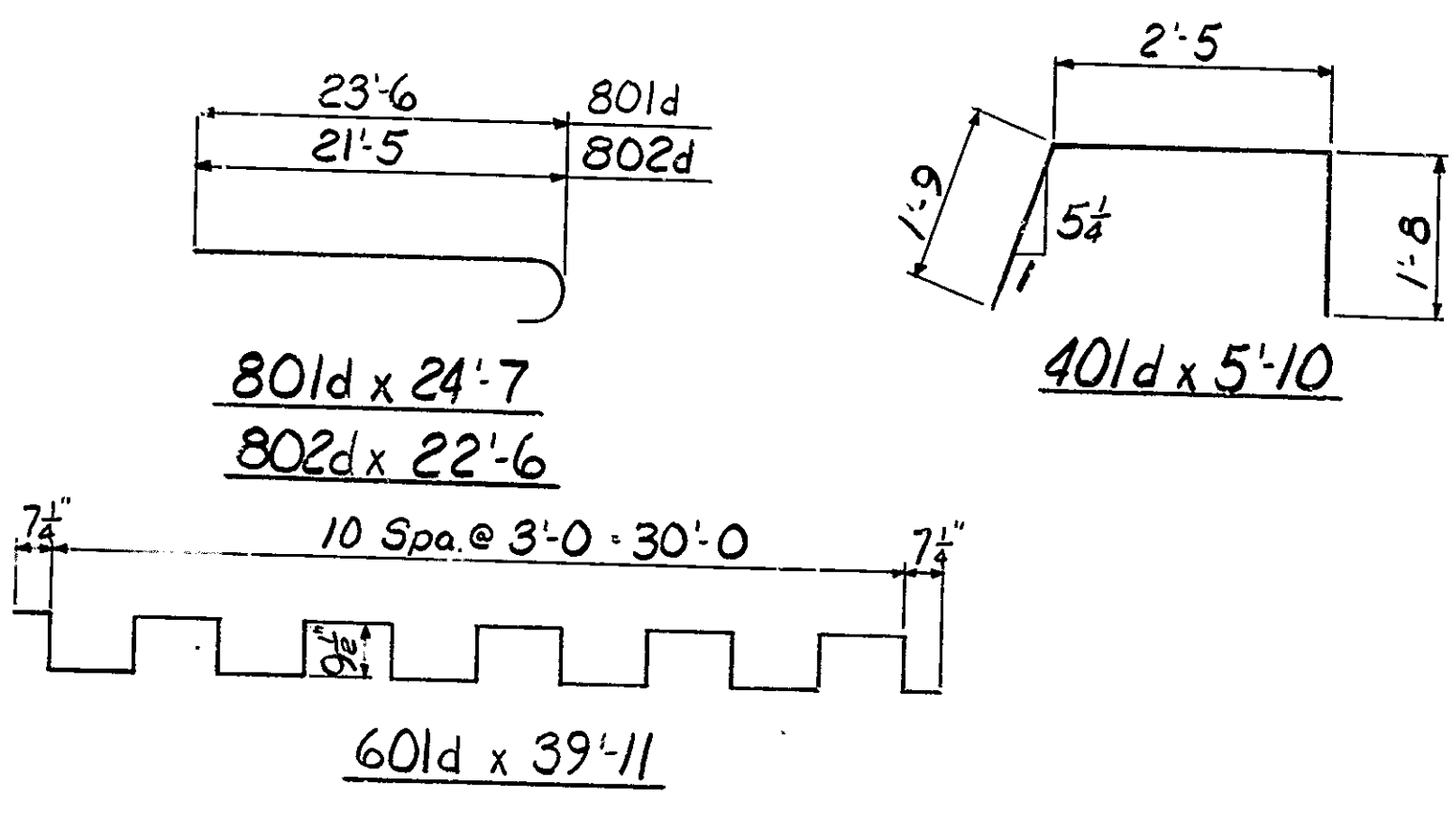
DESIGNED: CKD
DRAWING: CK 6-28-74
TRACED: CKD



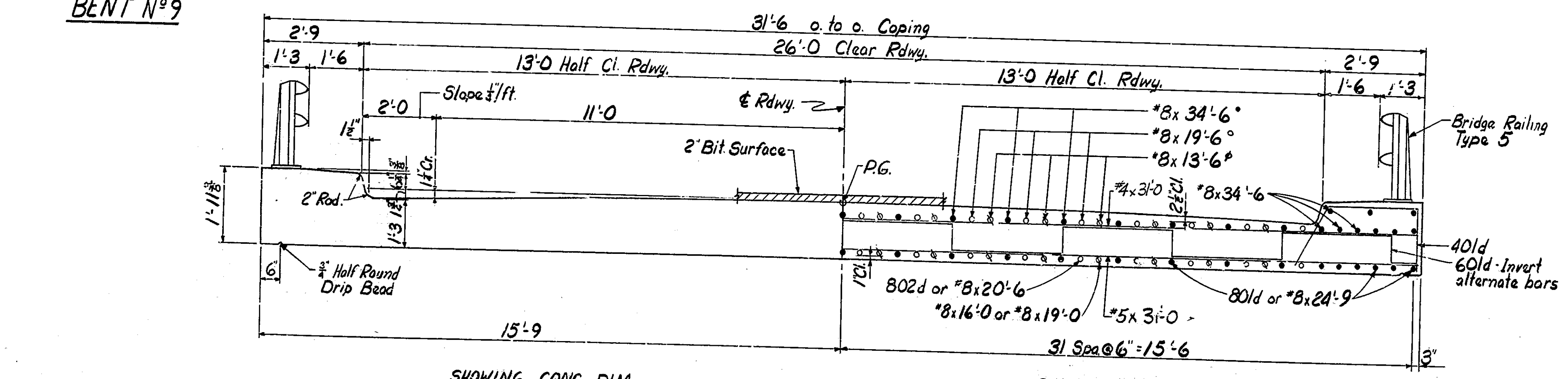
DESIGN DATA
 Unit Stresses: $f_s = 20,000 \text{ psi}$, $f_c = 1200 \text{ psi}$
 Live Load: HS 20-44 plus impact and distribution of load in accordance with 1973 A.A.S.H.O. Specifications
 Dead Load: Increased 35% of roadway for future wearing surface. Slab designed with 1" wearing surface.
 Maximum Dead Load Deflections:
 Span K or I = $\frac{3}{16}$ "
 Span J = 0
 Span A or E = $\frac{3}{16}$ "
 Span B or D = $\frac{1}{16}$ "
 Span C = $\frac{3}{32}$ "



DECK DRAIN DETAIL IN R.C. SLAB SPANS
 No Scale



HALF LONGITUDINAL SECTION
 Scale: $\frac{1}{4} = 1'-0"$



TYPICAL SECTION
 Scale: $\frac{1}{2} = 1'-0"$
 SHOWING CONC. DIM. SHOWING REINF. STEEL

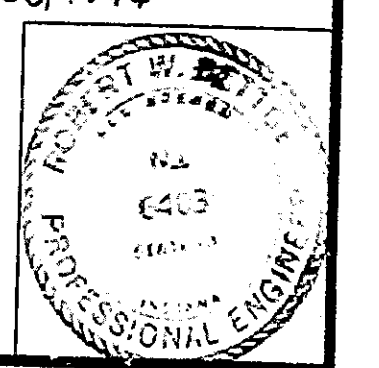
BILL OF MATERIALS SPANS A, B, C, D & E				BILL OF MATERIALS SPANS I, J & K			
REINFORCING STEEL				REINFORCING STEEL			
SIZE & MARK	N° of BARS	LENGTH	WEIGHT	SIZE & MARK	N° of BARS	LENGTH	WEIGHT
801c	58	24'-7"		801d	58	24'-7"	
802c	36	22'-6"		*8	36	22'-6"	
*8	35	46'-9"		*8	70	34'-6"	
*8	70	34'-9"		*8	30	24'-9"	
*8	87	24'-9"		*8	18	20'-6"	
*8	54	20'-6"		*8	36	19'-6"	
*8	72	19'-6"		*8	32	19'-0"	
*8	32	19'-0"		*8	16	16'-0"	
*8	48	16'-0"		*8	32	13'-6"	
*8	64	13'-6"		Total *8			20,720 lbs
Total *8				35,268 lbs			
601c	20	39'-11"	1199 lbs.	601d	12	39'-11"	719 lbs.
*5	148	31'-0"	4785 lbs.	*5	90	31'-0"	2910 lbs.
401c	246	5'-10"					
*4	112	31'-0"					
Total *4				3278 lbs.			
Total Reinf. Steel				44,530 lbs.			
CONCRETE				CONCRETE			
Total Class 'C' Conc. in Superstr.				180.6 cys.			
MISCELLANEOUS				MISCELLANEOUS			
Surface Seal				850 sft.			
Sheet Applied Membrane				2792 sft.			
Bit. Mix. for Approaches				32.6 tons			
Exp. Jt. Type BS-9				38.3 Lft.			
Bridge Railing Type 5				219.8 Lft.			
Deck Drains				14 Ea.			
C.I. Grates, Basins & Fittings				515 sft.			
6 Std. Rdwy. Drains Type SQ-Grate A @ 192 lbs. ea.				1152 lbs.			
C.I. Drain Pipe - 6 Pcs. 6" x 0'-6" @ 9.5 lbs. ea.				57 lbs.			
Sheet Applied Membrane				1675 sft.			
Bit. Mix. for Approaches				19.6 tons			
Exp. Jt. Type BS-9				383 Lft.			
Bridge Railing Type 5				132.0 Lft.			
Deck Drains				8 Ea.			
C.I. Grates, Basins & Fittings				768 lbs.			
4 Std. Rdwy. Drains Type SQ-Grate A @ 192 lbs. ea.				768 lbs.			
C.I. Drain Pipe 4 Pcs. 6" x 0'-6" @ 9.5 lbs. ea.				38 lbs.			

NOTES:
 The top reinforcing in the deck shall be securely tied down to the deck forms and/or the beams to prevent lifting during concrete placement.
 For Reinforcing Bar Notes, see Br. Std. C1.
 Surface Seal - The top and roadway face of curbs, overlay dams and the top of walks above overlay shall be sealed.
 See Special Provisions.

FLOOR DETAILS & BILL OF MATERIALS - SLAB SPANS
INDIANA STATE HIGHWAY COMMISSION

SCALE: - AS NOTED DATE: - SEPTEMBER 20, 1974

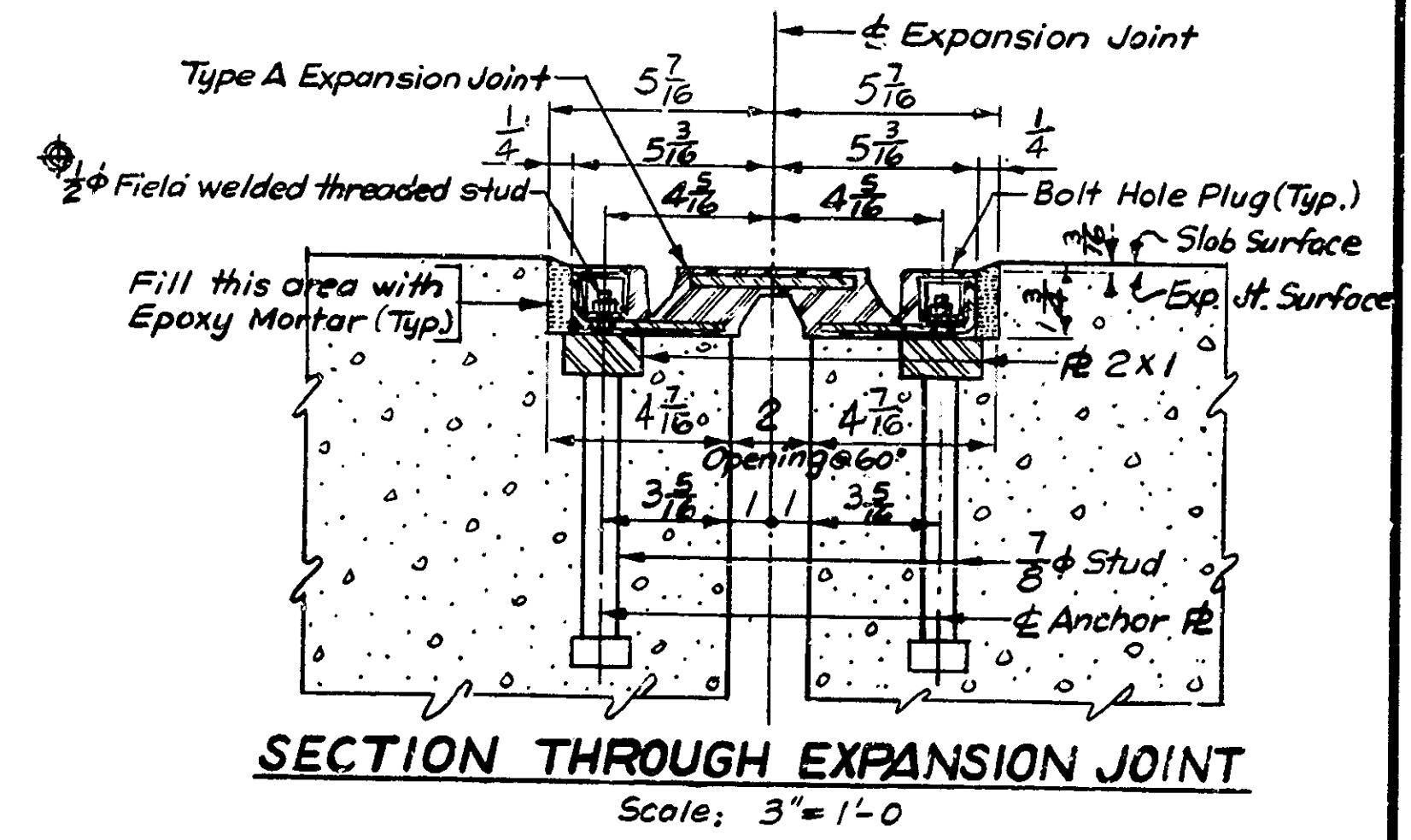
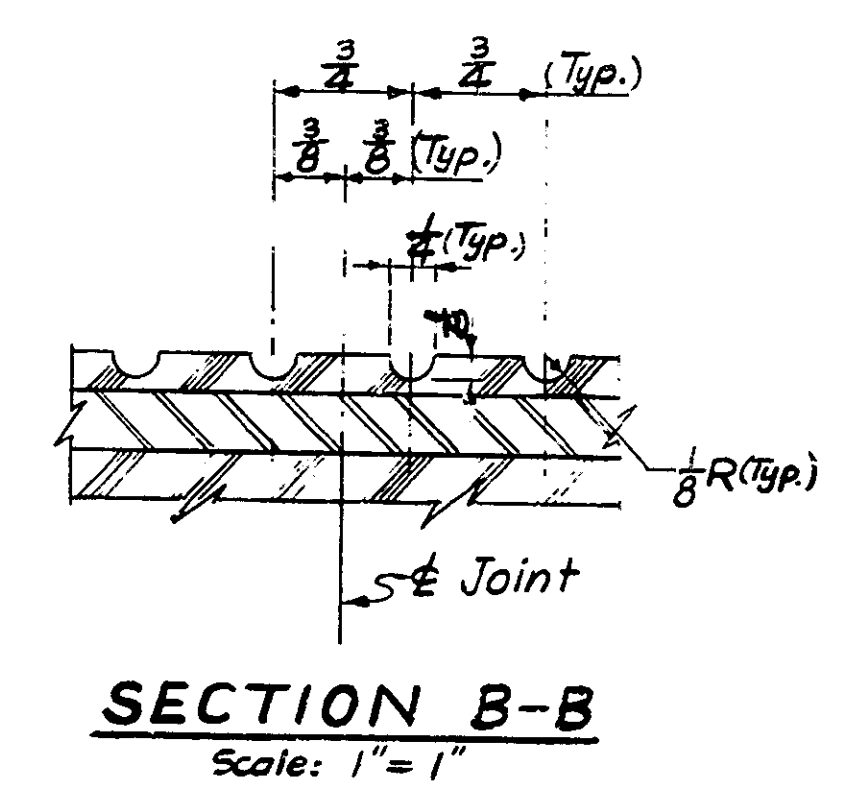
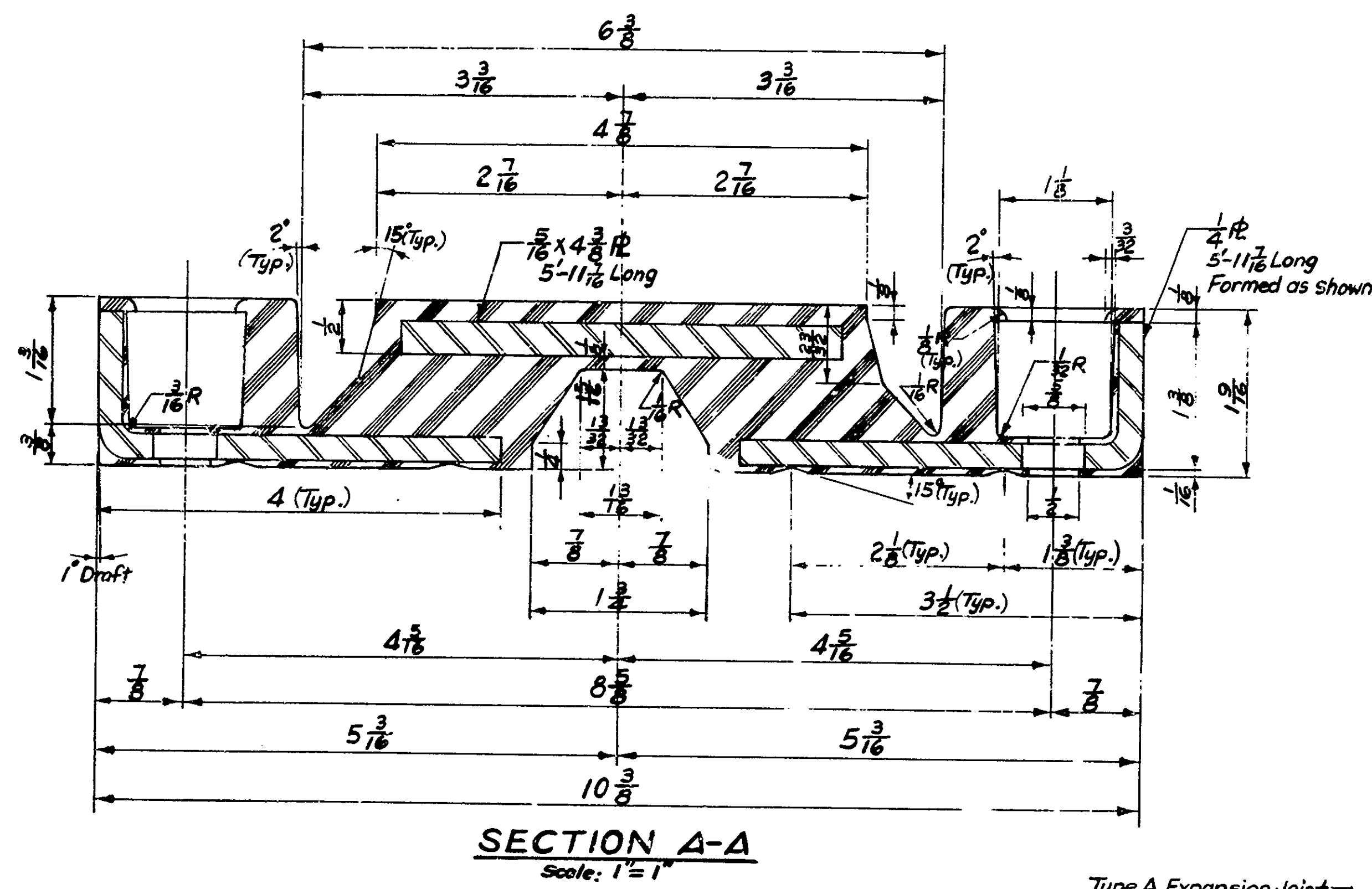
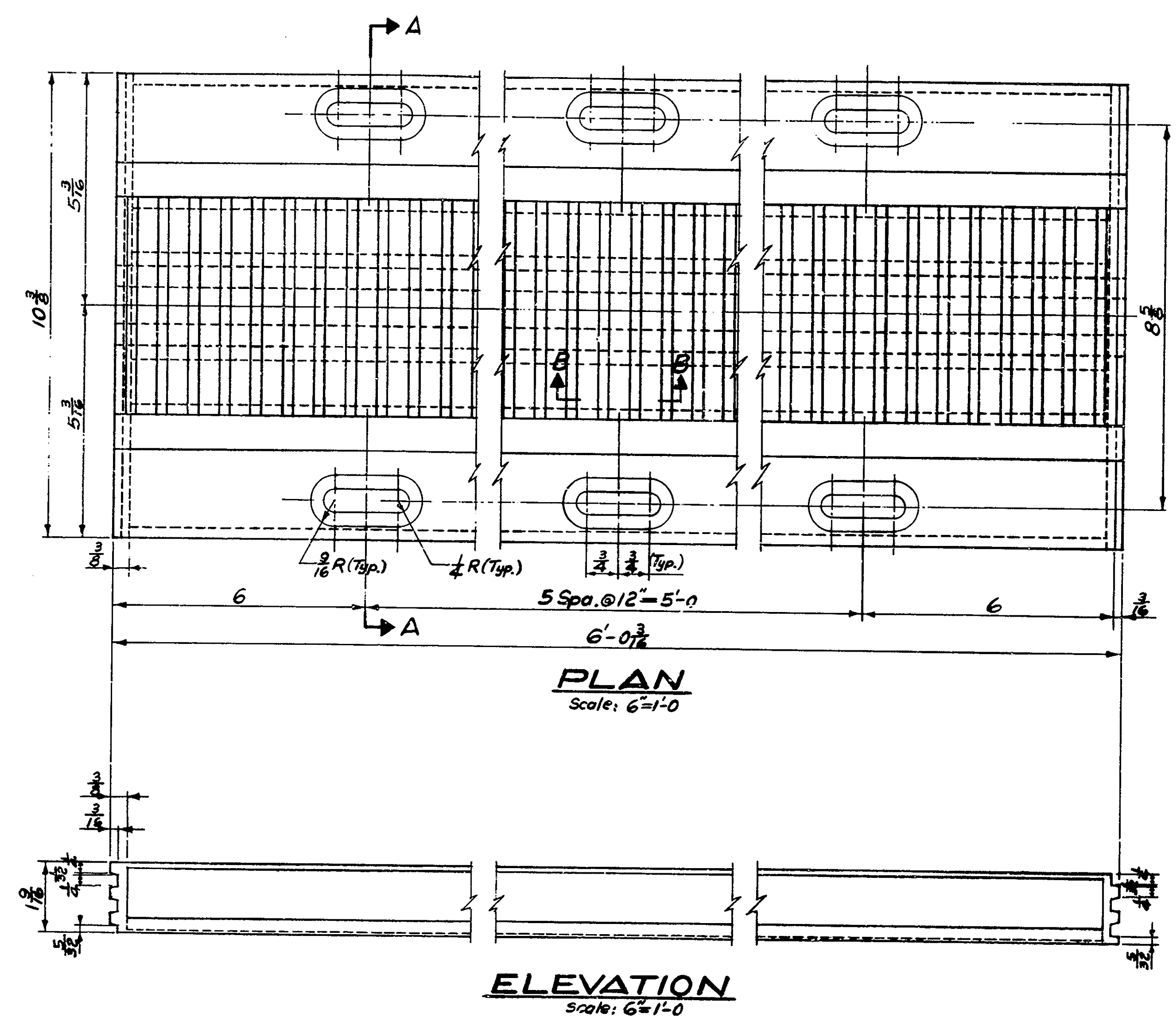
Robert W. Butze
 ASSISTANT CHIEF OF BRIDGE DESIGN



DRAWING: - R7 OF 10 SHEET: - 7 OF 22
 PROJECT: - ST-290 H
 CONTRACT NO. B-9871
 BRIDGE FILE: - 1-15-1683A

DESIGNED: C.K.D.
 DRAWN: DAM 9-19-74 C.K.D. RJS 9-19-74
 TRACED: C.K.D.

BRIDGES OVER 20' SPAN				
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	TOTAL SHEETS
4	IND.			



NOTES

Refer to Special Provisions for physical properties of materials and construction methods.

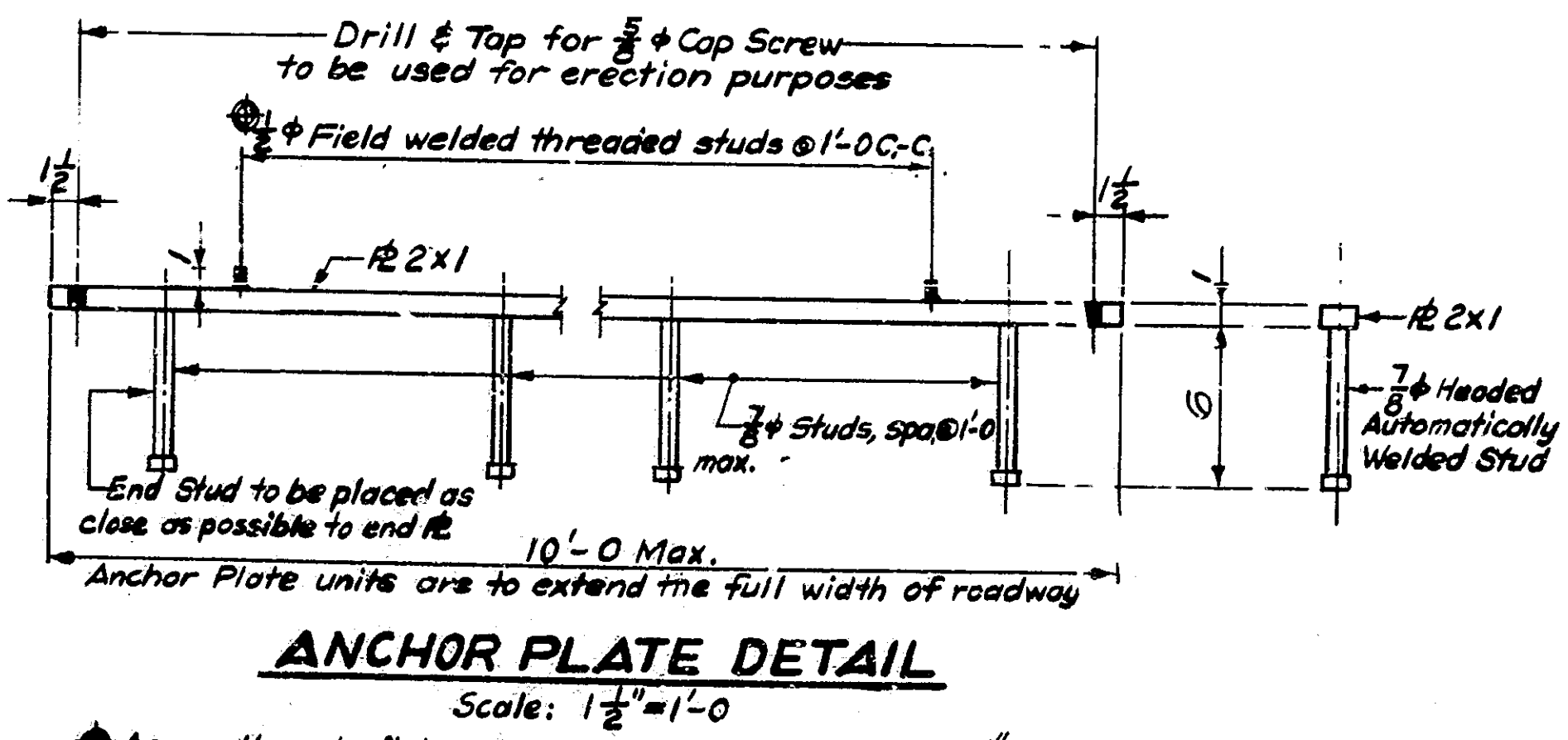
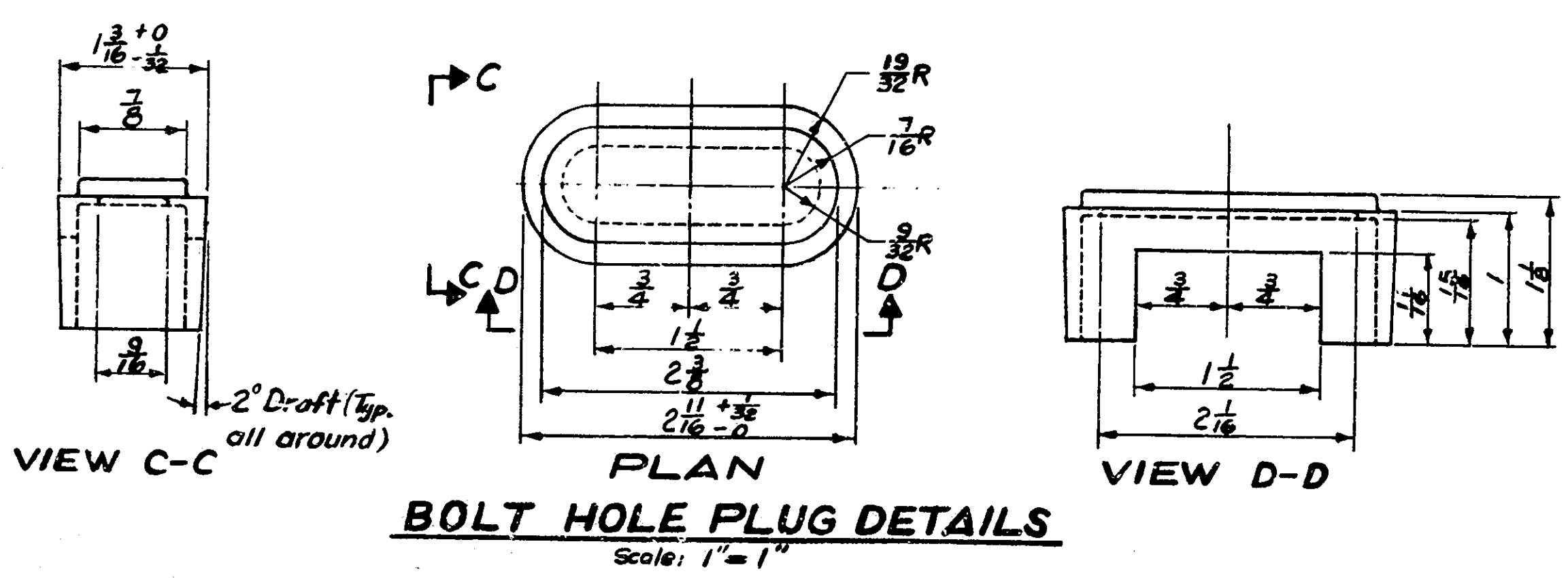
The cost of the Anchor Plates, Threaded Studs, Concrete Anchors, Bolt Hole Plugs and all materials needed to erect the expansion joint shall be included in the cost of the pay item "Type A Expansion Joint".

Tighten nuts on 1/2" threaded studs to 50±5 ft-lbs torque.

An alternate anchor system may be used with the approval of the Engineer.

TYPE A EXPANSION JOINT DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE: AS NOTED
 DATE: September 20, 1974
 RECOMMENDED FOR APPROVAL: *Robert W. Betty*
 DRAWING: R8 OF 10 SHEET 8 of 22
 PROJECT: ST-290 H
 CONTRACT NO. B-9871
 BRIDGE FILE: 1-15-1683A



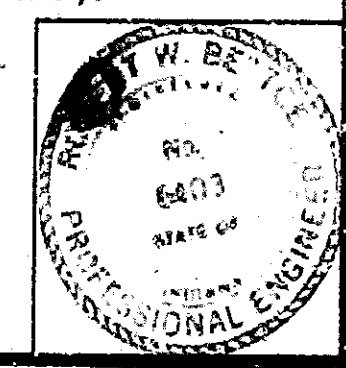
Note:
 The bed for the joint shall be formed as near to a true plane as possible. The bed shall then be smoothed to a true plane with a neat portland cement grout which shall be cured before the joint is set. The manufacturer's recommendations for joint installation, proper bolt torque, sealant application, bolt protection etc. shall be followed.

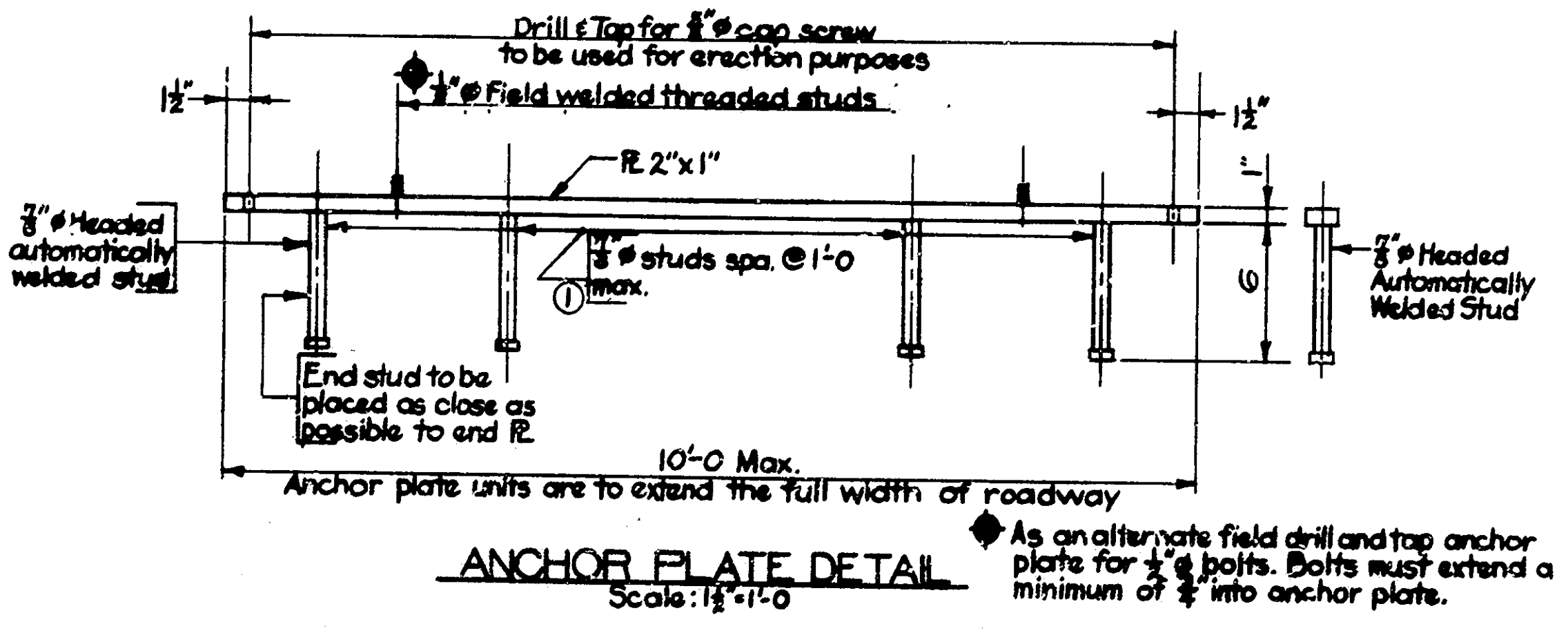
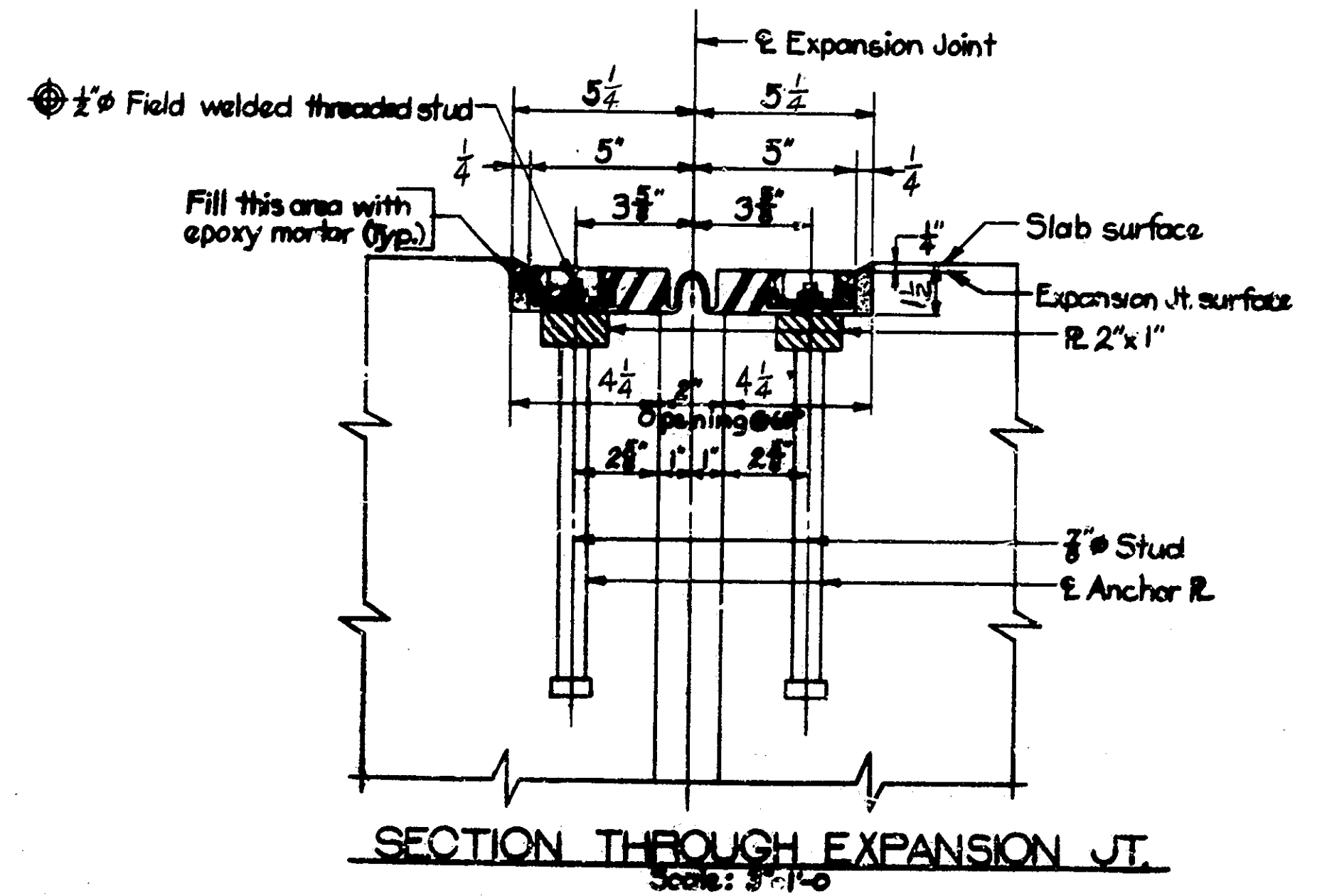
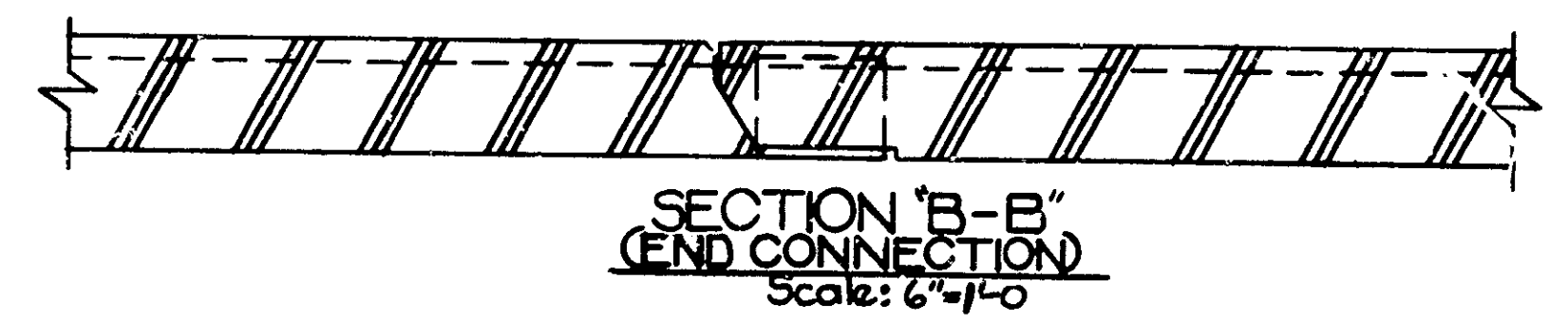
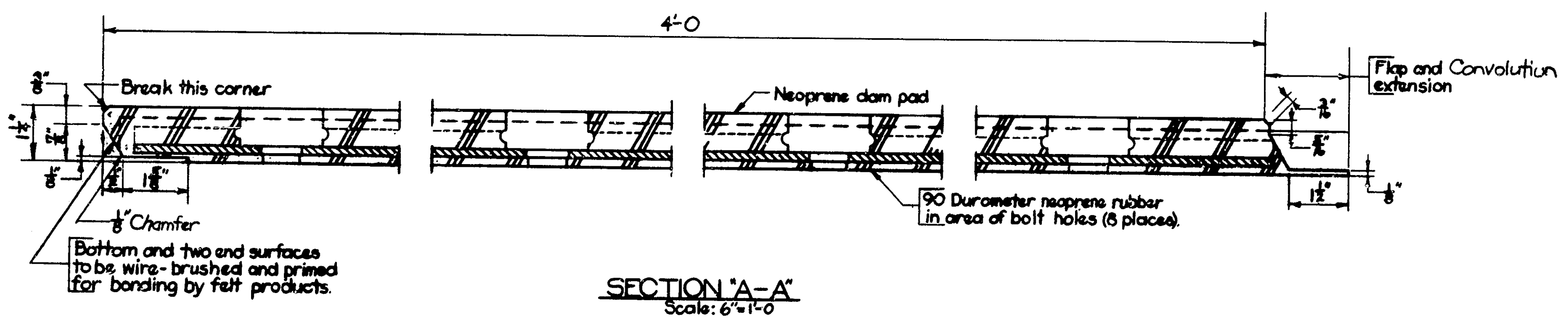
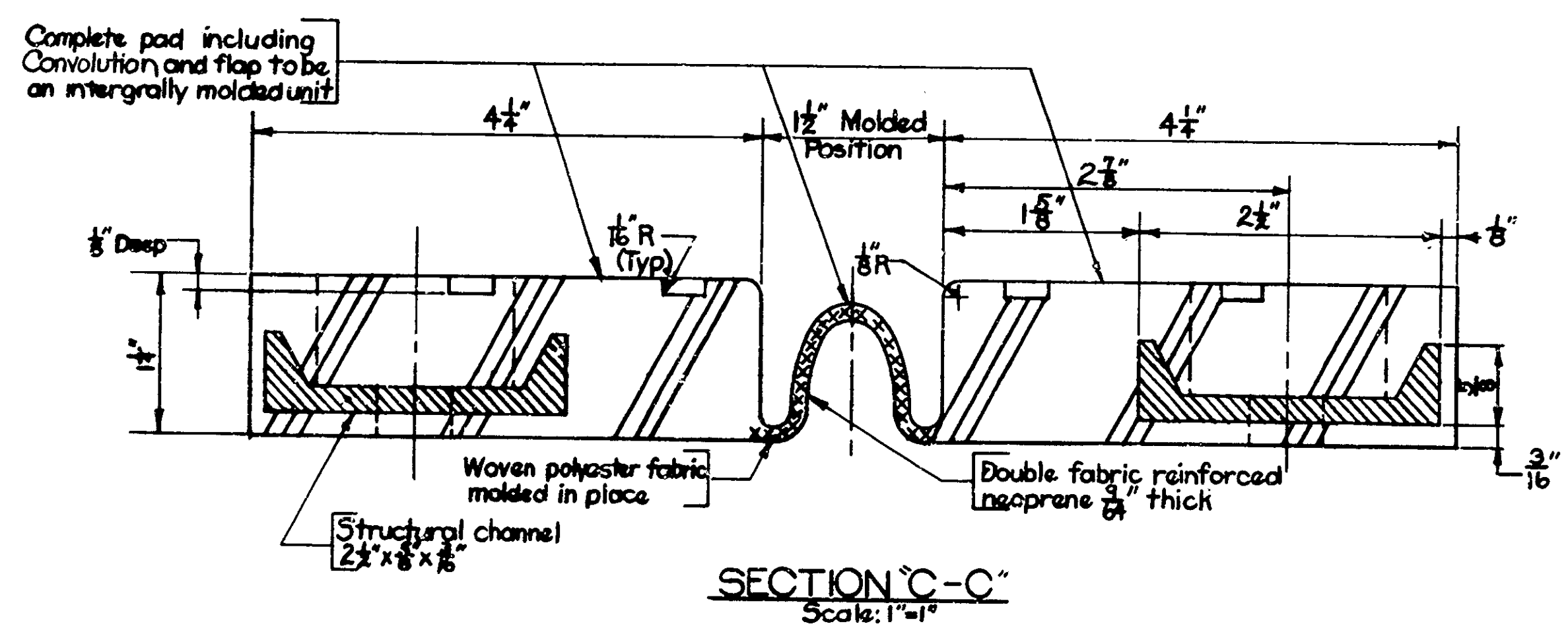
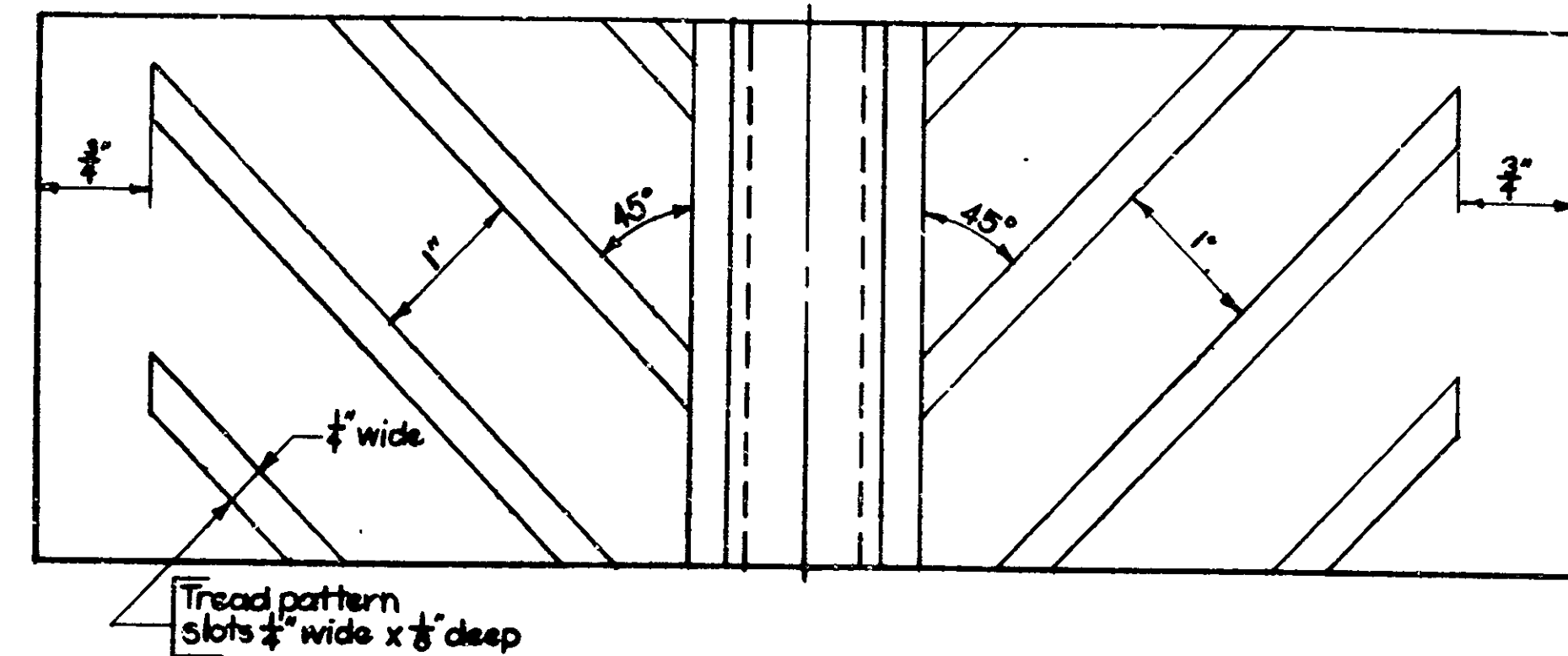
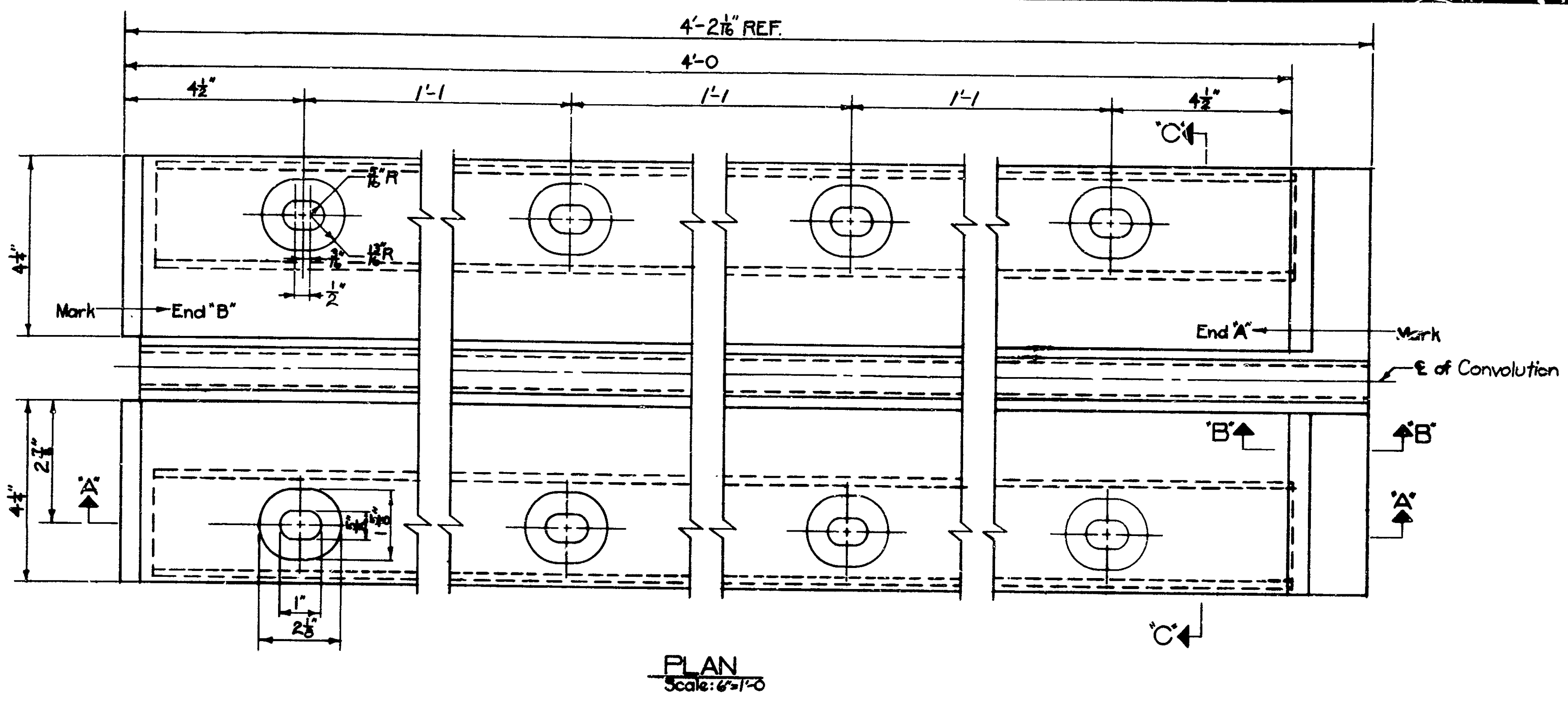
Steel for Anchor Plates and Joint to be ASTM A36, A570, or Merchant Quality 1010, 1020.

① Maximum of 2 Studs in 10'-0 length may be cut off to length to clear I-Beam or Girder Flanges.

Curb Section detail to be as determined by the fabricator.

DESIGNED	CKD
DRAWN	TCC 11/26/69
TRACED	CKD





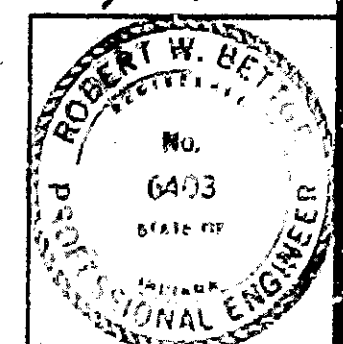
Refer to Special Provisions for physical properties of materials and construction methods.
 The cost of the Anchor Plates, Threaded Studs, Concrete Anchors and all materials needed to erect the expansion joint shall be included in the cost of the pay item.
 Tighten nuts on 1/2" threaded studs to 50[±] 5 ft-lb torque.
 An alternate anchor system may be used with the approval of the Engineer.
 See Drawing R₄ for additional Notes & Details.

Notes:
 The contractor's attention is called to the fact that the neoprene dam may require cutting or sawing into shorter length in order to fit at curbing, expansion devices, or other locations.
 Steel for Anchor R's and Joints to be ASTM A-36, A-570 or Merchant Quality 1010, 1020

Notes:
 The bed for the joint shall be formed as near to a true plane as possible. The bed shall then be smoothed to a true plane with a neat portland cement grout which shall be cured before the joint is set. The manufacturer's recommendations for joint installation, proper bolt torque, sealant application, bolt protection etc. shall be followed.
 Flush with top of anchor plate when used.
 Maximum of 2-Studs in 10'-0 length may be cut off to length to clear I-Beams or Girder Flanges, Curb Section detail to be determined by fabricator.

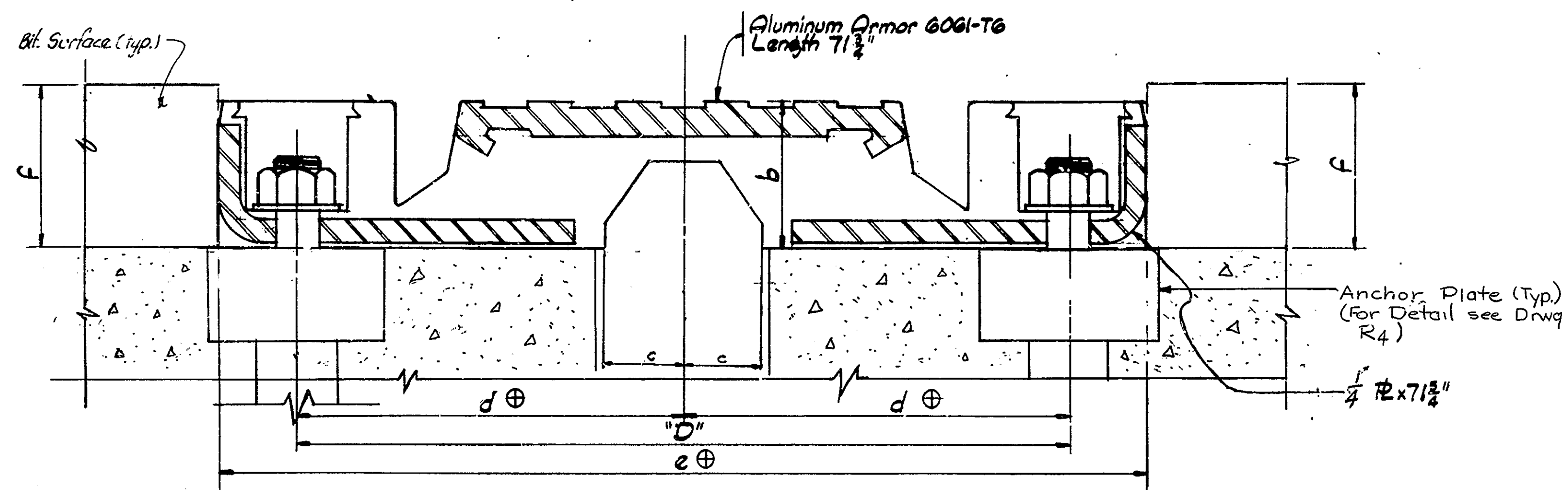
TYPE K
 EXPANSION JOINT DETAILS
 INDIANA STATE HIGHWAY COMMISSION

SCALE: - AS NOTED
 DATE: September 20, 1974
 Robert W. Bettger
 REGISTERED PROFESSIONAL ENGINEER
 No. 6493
 STATE OF INDIANA
 DRAWING: R₉ OF 10 SHEET: 9 OF 22
 PROJECT: ST- 290H
 CONTRACT NO. B-9871
 BRIDGE FILE: 1-15-1683A



DESIGNED: CKD
 DRAWN: 12-12-75, CWD, TCC, 12-12-75
 TRACED: CWD

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.				



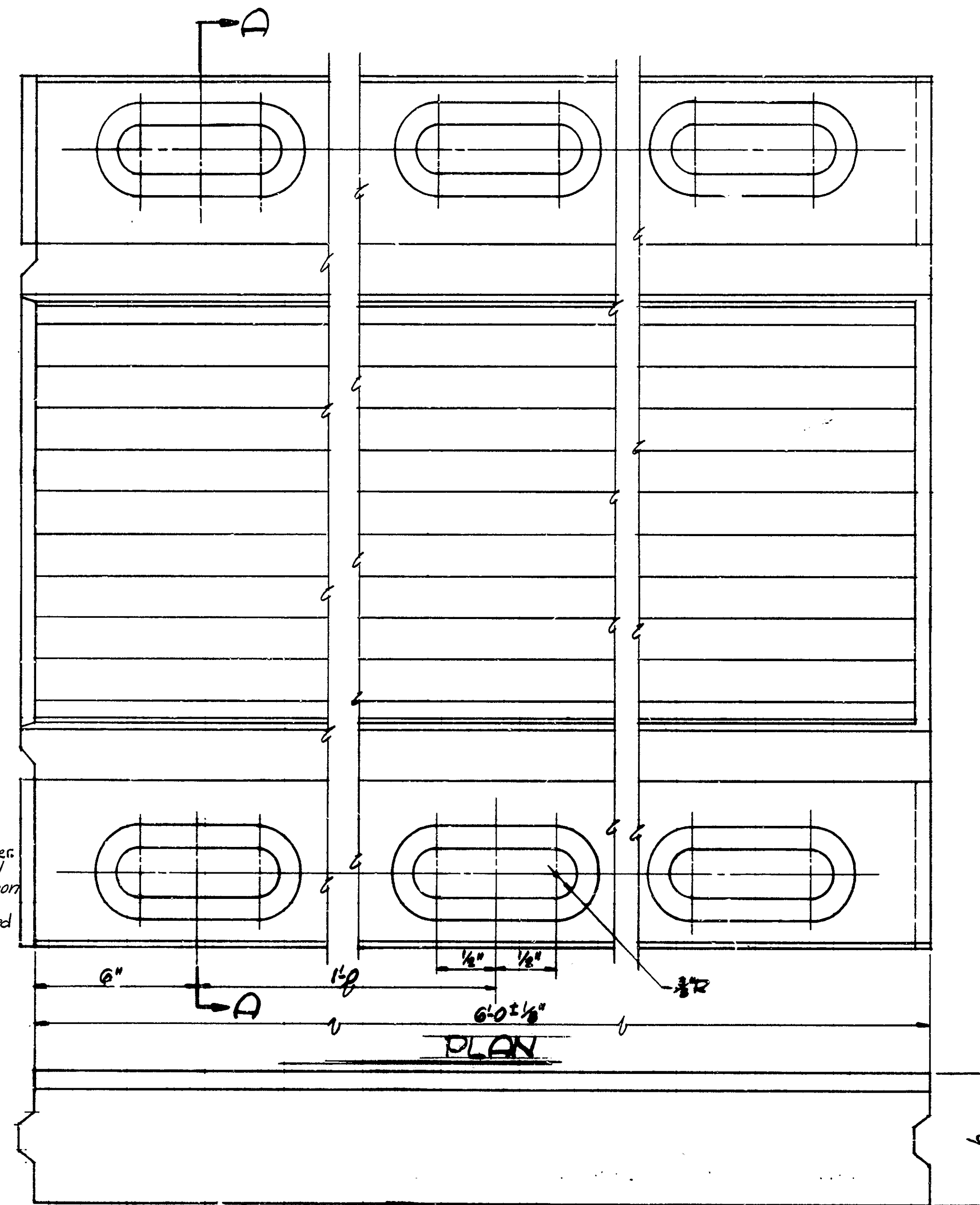
SECTION A-A

⊕ Dimension when temperature is 40°F

Temperature at time studs are set.	Dimension "D"	
	Type SR2	
100°F	7 3/8"	
90°F	7 7/8"	
80°F	7 1/2"	
70°F	8"	
60°F	8 1/2"	
50°F	8 3/4"	
40°F	8 1/2"	

Pt.	Type SR2
b	1 3/16"
c	7/8"
d	4 5/16"
e	10 3/8"
f	1 3/4"

NOTES:
 See Drawing R4 for additional Notes & Details.
 Steel - ASTM A 36, A 570 or Merchant Quality 1010 - 1020
 Tighten nuts on 1/2" threaded studs to 50 ± 5 ft-lbs torque.
 An alternate anchor system may be used with the approval of the Engineer.
 Refer to Special Provisions for physical properties of materials and construction methods.
 Curb Section detail to be as determined by the fabricator.



ELEVATION

TYPE SR2
 EXPANSION JOINT DETAILS
 INDIANA STATE HIGHWAY COMMISSION

SCALE: - NONE

DATE: - August 1, 1974

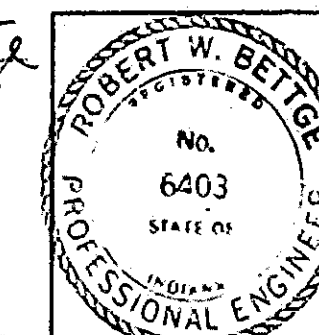
RECOMMENDED FOR APPROVAL: *Robert W. Betge*

DRAWING: R10 OF 10 SHEET 10 OF 22

PROJECT: - ST-290 H

CONTRACT NO. B-7871

BRIDGE FILE: - 1-15-1683 A



DESIGNED	CKD
DRAWN	208/2074 CKD
TRACED	CKD

