APPROVED

FEB 01 2002

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

AS A BASIS FOR PREPARATION OF DETAILED PLANS

Conditionally Approved

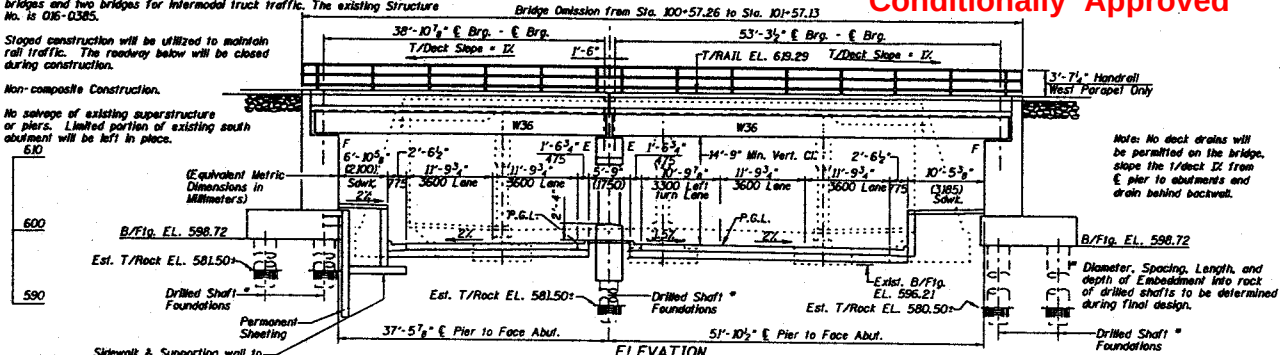
B.M. #53 - "X" cut on the Southeasterly corner of the Railroad bridge pier in the centerline of 159th Street at the east face of the bridge approximately 98 feet West of Center Street. Elev. 603.25.

Existing structure is a 307'± wide combination railroad and intermodal yard grade separation structure over 159th Street (U.S. 6). The structure consists of 4 cast-in-place reinforced concrete slab spans supported by gravity abutments, and three reinforced concrete piers. This structure will be replaced by two separate railroad bridges and two bridges for intermodal truck traffic. The existing Structure No. is 016-0385.

Staged construction will be utilized to maintain rail traffic. The roadway below will be closed during construction.

Non-composite Construction.

No salvage of existing superstructure or piers. Limited portion of existing south abutment will be left in place.



ELEVATION
(Looking East)

Note: No deck drains will be permitted on the bridge, slope the 1/deck 1% from ℄ pier to abutments and drain behind backwall.

* Diameter, Spacing, Length, and depth of Embedment into rock of drilled shafts to be determined during final design.

Stage Construction Notes:

Stage I:

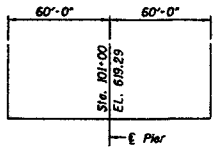
1. Construct temporary run-around track.
2. Shift rail traffic to run-around track.
3. Remove exist. track, ties & ballast.
4. Remove Stage 1 superstructure, median and sidewalk piers.
5. Drive temporary sheet piling.
6. Excavate behind existing abutments and install waters and struts to brace sheet piling as necessary.
7. Auger & cast drilled shafts.
8. Construct entire north abutment & median pier & Stage 1 of south abutment.
9. Perform Stage 1 substructure removal.
10. Erect Stage 1 beams and construct Stage 1 deck.
11. Place ballast, ties & rails on new bridge and shift rail traffic onto new bridge.

Stage II:

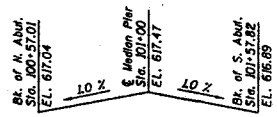
12. Drive remainder of temporary sheet piling.
13. Remove Stage 2 Superstructure.
14. Excavate behind remainder of existing south abutment and install waters and struts to brace sheet piling.
15. Remove Stage 2 portion of S. Abutment.
16. Construct remainder of south abutment, erect Stage 2 beams, construct Stage 2 deck and place remainder of ballast on deck.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	327TR	COOK		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

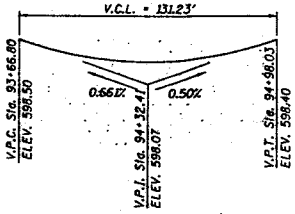
SHEET NO. 1
2 SHEETS



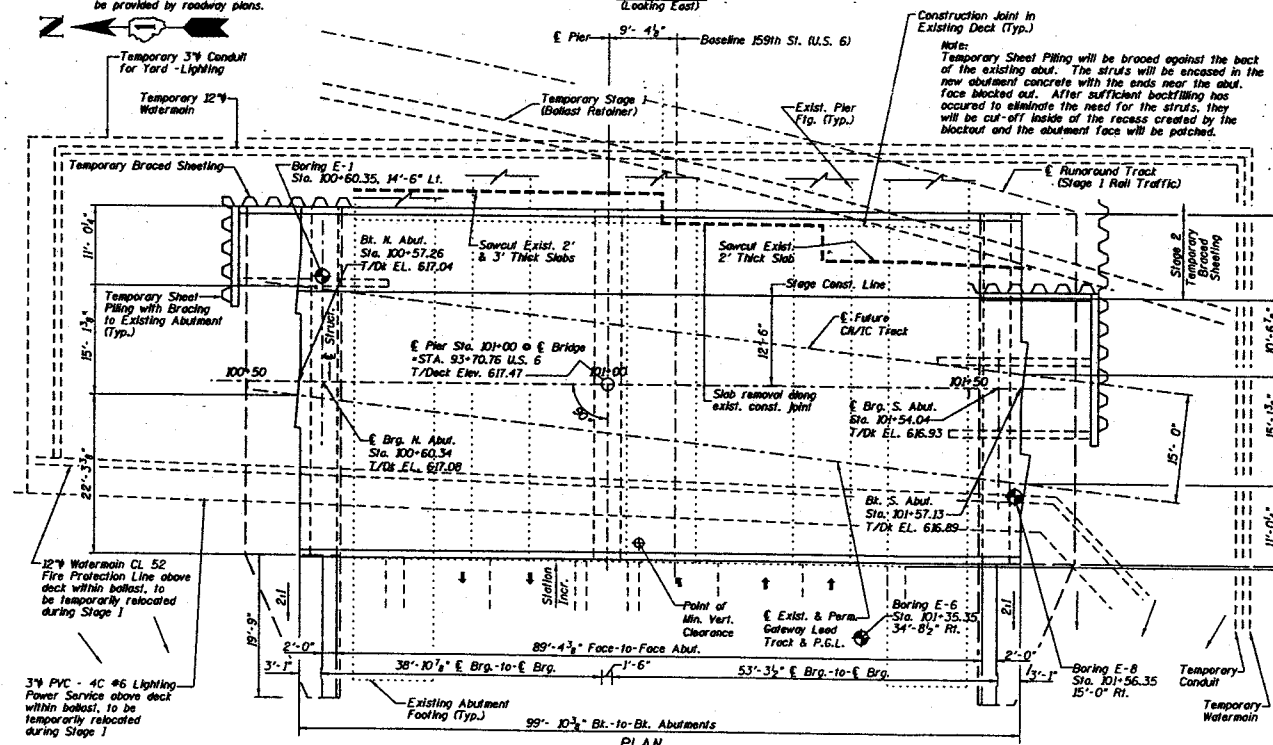
TOP OF RAIL ELEVATIONS



TOP OF BRIDGE DECK ELEVATIONS



PROFILE GRADE 159th STREET (U.S. 6)



PLAN

CLASSIFICATION

CN/IC on Bridge - Intermodal Yard Lead for Class I Railroad

HIGHWAY CLASSIFICATION

U.S. Rte. 6
ADT: 23800 (1995) 32000 (2020)
Functional Class: Other Principal Arterial
Design Speed: 45 mph
Posted Speed: 30 mph

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coeff. (A) = 0.04g
Site Coefficient (S) = 1.0

DESIGN SPECIFICATIONS

American Railway Engineering & Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, 2001

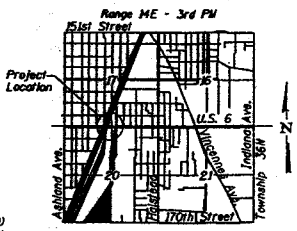
LOADING COOPER E-80

Cooper E80 plus impact for equipment with hammer blow. Service Lead Design

Allow for future addition of 12" ballast.

DESIGN STRESSES

CAST-IN-PLACE CONCRETE
f'c = 3,500 P.S.I.
fy = 60 K.S.I. (Reinforcement)
fy = 50,000 P.S.I. (Struct.) (M270 Grade 50)
fy = 36,000 P.S.I. (Struct.) (M270 Grade 36)



LOCATION SKETCH

GENERAL PLAN

Date	Designed JPB
Revisions	Drawn JPB
	Checked DEY
	Approved

CN/IC GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. 6 (159TH STREET)
F.A.P. RTE. 351 SECTION 327TR
COOK COUNTY
STATION 93+71.98
STRUCTURE NO. 016-2819

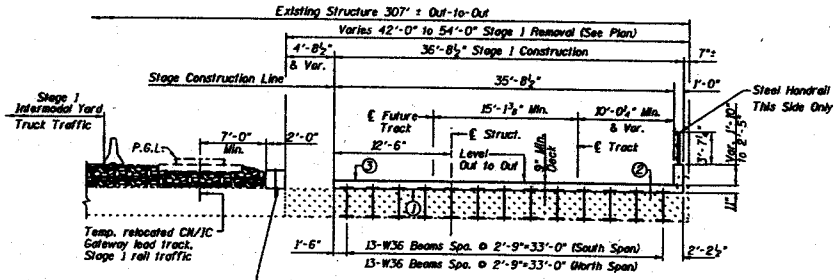
Sheet No. 1 of 2

BRW Job No. 17049-069

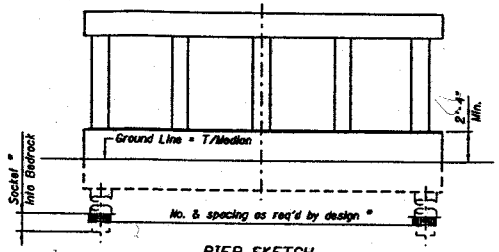
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	3277R	COOK		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5 SHEETS

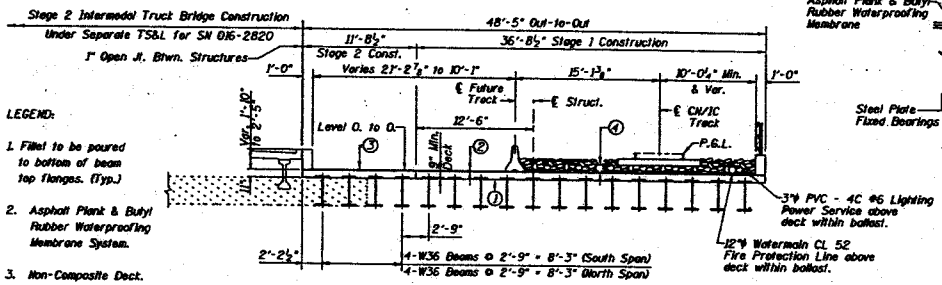


TYPICAL SECTION - STAGE 1
(Looking South)



PIER SKETCH
(Looking North)

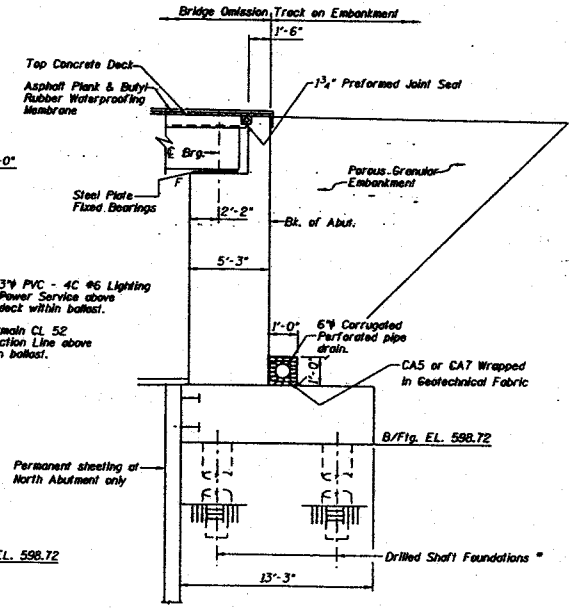
* Number, diameter, spacing, and depth of embeddment into rock to be determined during design.



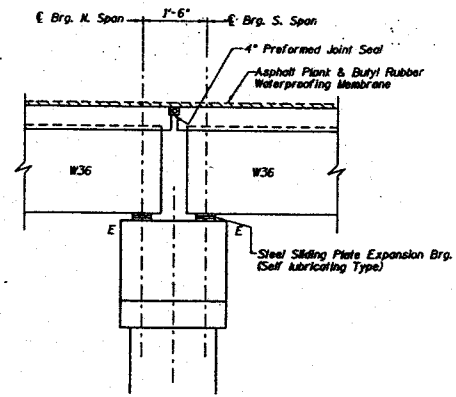
LEGEND:

1. Fillet to be poured to bottom of beam top flanges. (Typ.)
2. Asphalt Plank & Butyl Rubber Waterproofing Membrane System.
3. Non-Composite Deck.
4. 6" Min. Ballast below ties over pier, 9" min. over remainder of deck.

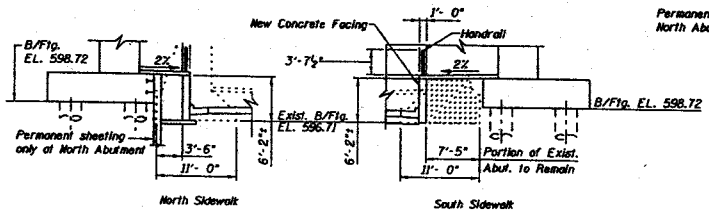
TYPICAL SECTION - STAGE 2
(Looking South)



TYPICAL ABUTMENT SECTION



PARTIAL PIER SECTION
(Looking East)



SIDEWALK DETAILS
(Sidewalk, supporting wall, and limits of removal shown for information only. See roadway plans for details)

DETAILS

Date		
Revisions	Designed	JPB
	Drawn	JPB
	Checked	DEY
	Approved	

CN/IC GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. 6 (159TH STREET)
F.A.P. RTE. 351 SECTION 3277R
COOK COUNTY
STATION 93+71.98
STRUCTURE NO. 016-2819

Sheet No. 2 of 5

BRW Job No. 17049-069