

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 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

PLAN INDEX	
SH. NO.	DESCRIPTION
1	TITLE SHEET
2	EXISTING GENERAL PLAN OF SITE
3-6	PROPOSED GENERAL PLAN OF STRUCTURE
7-10	REMOVAL DETAILS
11-12	EXISTING STRUCTURAL STEEL DETAILS
13-14	PROPOSED STRUCTURAL STEEL DETAILS
15-24	SUPERSTRUCTURE DETAILS
25	EXPANSION JOINT DETAILS
26-27	SLAB & SCREED DETAILS
28	STEEL REINFORCEMENT DETAILS

MICHIGAN
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

MICHIGAN PROJECT

CONTROL SECTION 29011

JOB NUMBER 56772A

US-127

BETHANY TOWNSHIP

GRATIOT COUNTY

GENERAL NOTES

THE REHABILITATION DESIGN IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20-44 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF LENGTH AND 1/375 CANTILEVER ARM. THE LOAD FACTOR METHOD OF DESIGN WAS USED FOR THIS DESIGN. THE ORIGINAL STRUCTURE WAS DESIGNED FOR HS20 LOADING.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2003 EDITION.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

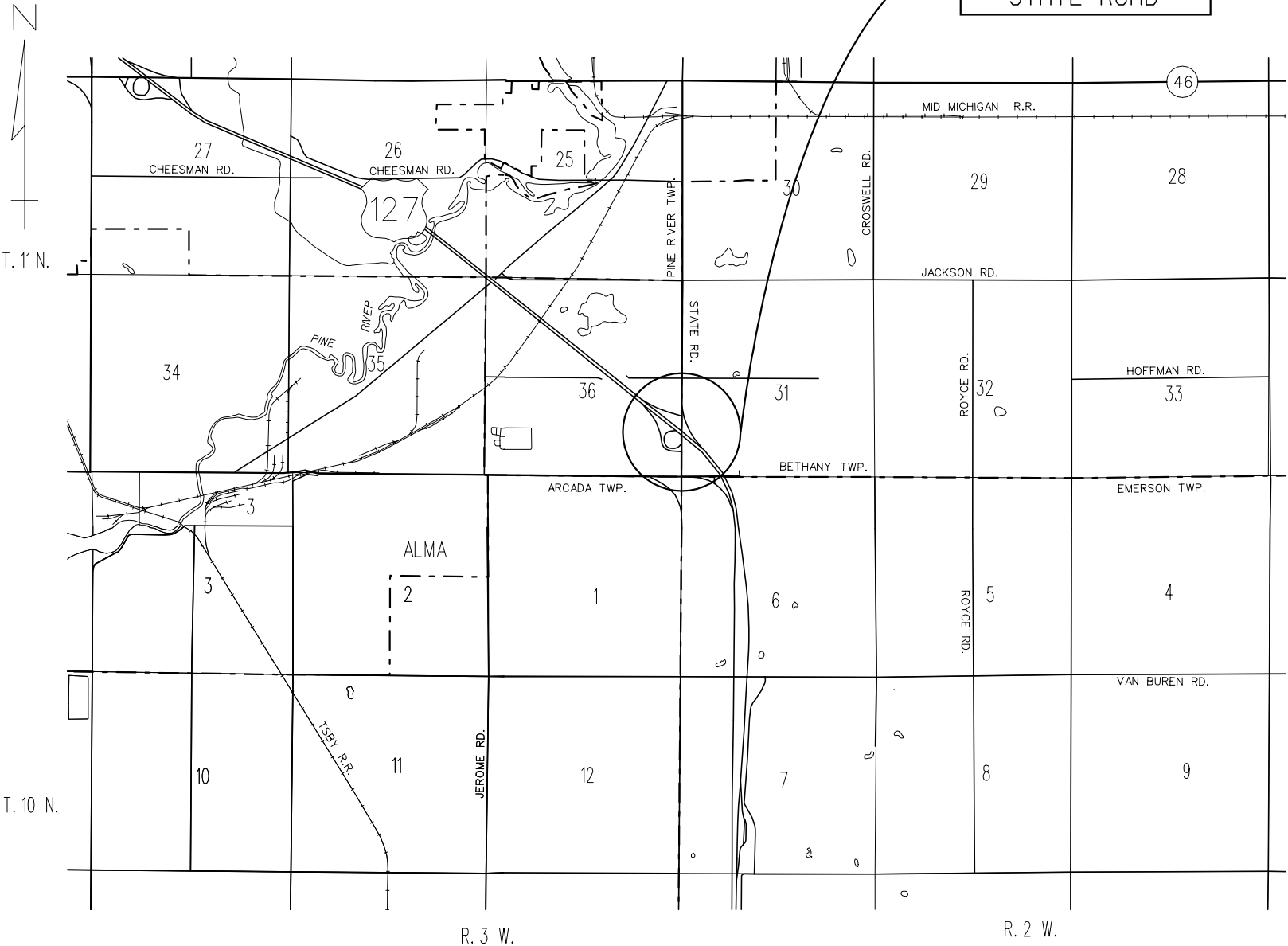
CONCRETE: GRADE S2	f'c = 3,000 psi
CONCRETE: GRADE D	f'c = 4,000 psi
STEEL REINFORCEMENT	fy = 60,000 psi
STRUCTURAL STEEL:	
AASHTO M270 GRADE 50	Fy = 50,000 psi

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

STANDARD PLANS
WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

BRIDGE BARRIER RAILING, TYPE 4 B-17-C

MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS B-103-C



THE REGULATED WASTE ACTIVITY IDENTIFICATION NUMBERS FOR THIS PROJECT ARE AS FOLLOWS:

CONTROL SECTION NUMBER
S04 OF 29011 MID982070344

CONTRACT FOR: MISCELLANEOUS REHABILITATION AND DECK REPLACEMENT

APPROVALS

RECOMMENDED FOR APPROVAL	PROJECT MANAGER	DATE
RECOMMENDED FOR APPROVAL	DELIVERY ENGINEER	DATE

MICHIGAN
DEPARTMENT OF TRANSPORTATION
KIRK T. STEUDLE - DIRECTOR

APPROVED BY ENGINEER OF DEVELOPMENT DATE



OCCHIUTO
DESIGN UNIT

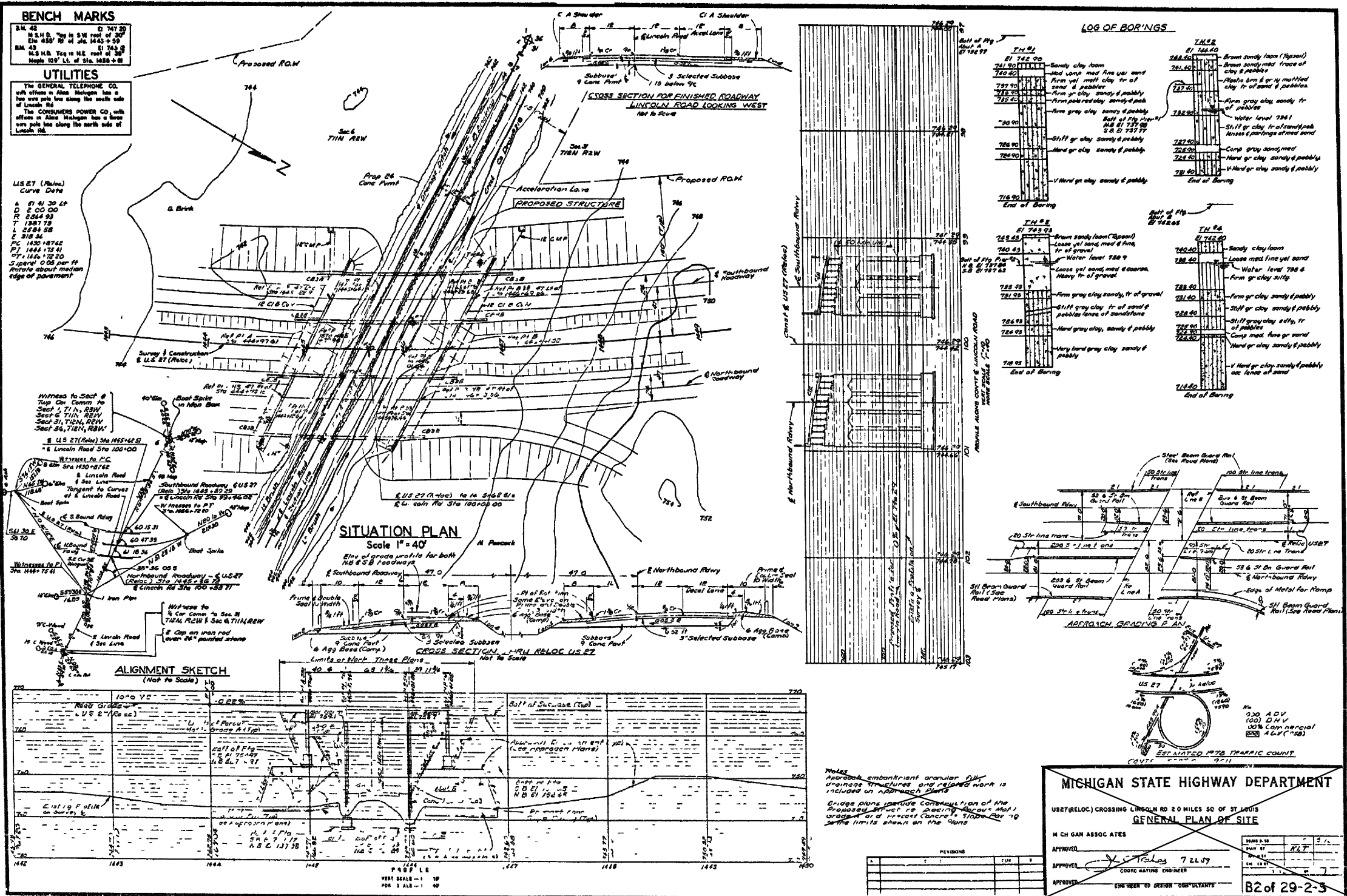
CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS		SHEET NO.
		PROJECT	ITEM	
S04 OF 29011	56772A			1

TITLE SHEET LEGEND

PROPOSED BRIDGE PROJECT	
EXISTING ROADS	
CITY STREET	
COUNTY	
STATE ROUTES	
FEDERAL DIVIDED ROUTES	
FEDERAL DIVIDED INTERSTATE ROUTES	
HOT MIX ASPHALT	
GRAVEL	
SECTION LINE	
CITY, VILLAGE OR TOWNSHIP LIMITS	
RAILROADS	

DATE: CORRECTED BY: DATE: CHECKED BY: 29011-56772A CONTROL SECTION — JOB NUMBER DATE: DRAWN BY: FILE NAME: 29011.ts

REVISIONS			
NO.	DESCRIPTION	DATE	BY



EXISTING

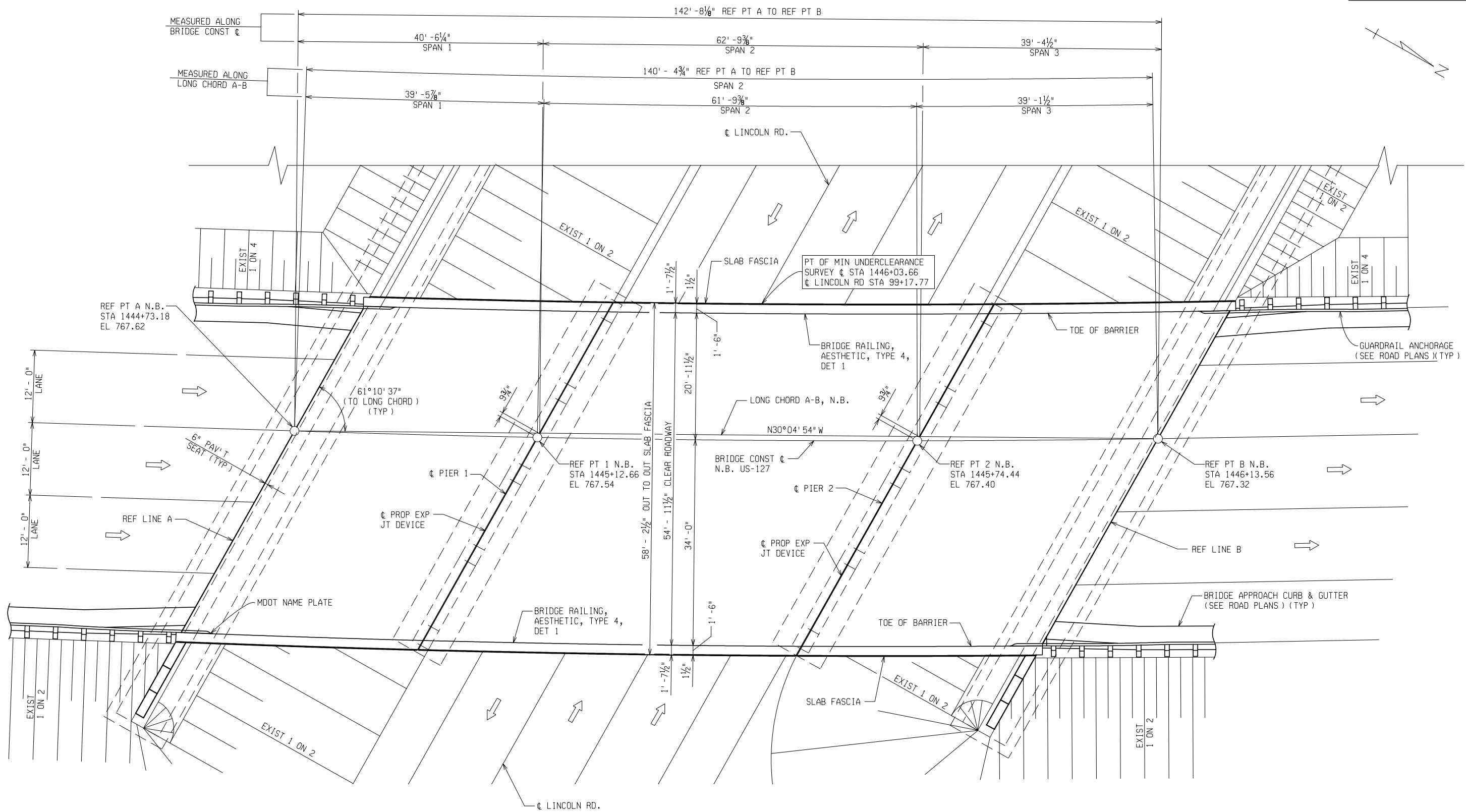
FOR INFORMATION ONLY
DO NOT WORK FROM THIS SHEET.
THE INFORMATION SHOWN HERE IS FOR
REFERENCE ONLY.
NO PAY ITEMS ARE SHOWN.



EXISTING GENERAL PLAN OF SITE

DATE: 7 22 07
CONT. SEC.: S04 OF 29011
JOB NO.: 56772A
DESIGN UNIT:
SHEET: 2 OF 28

REVISIONS			
NO.	DESCRIPTION	DATE	BY



PLAN OF NORTHBOUND



GENERAL PLAN OF STRUCTURE

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
	S04 OF 29011	56772A		3 OF 28

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 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

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DATE:

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DATE:

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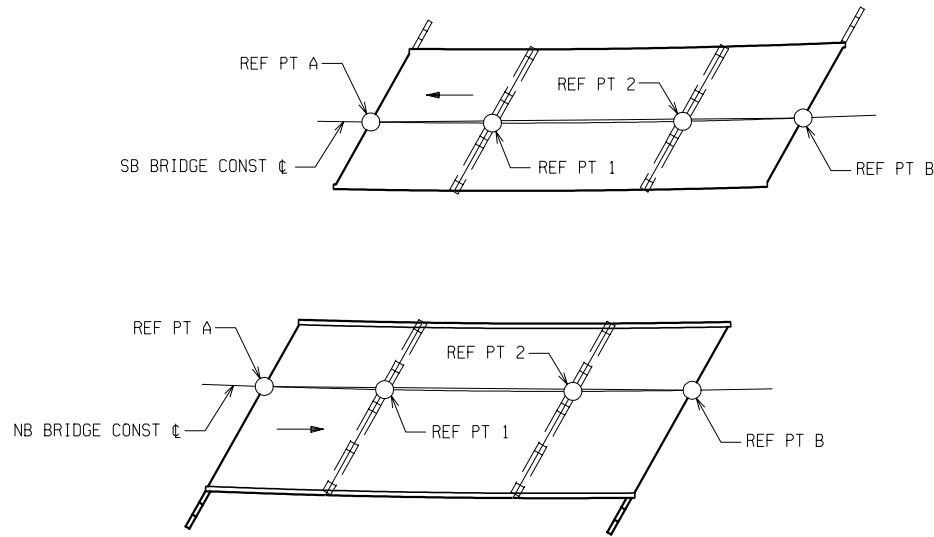
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FILE NAME: s0429011.st

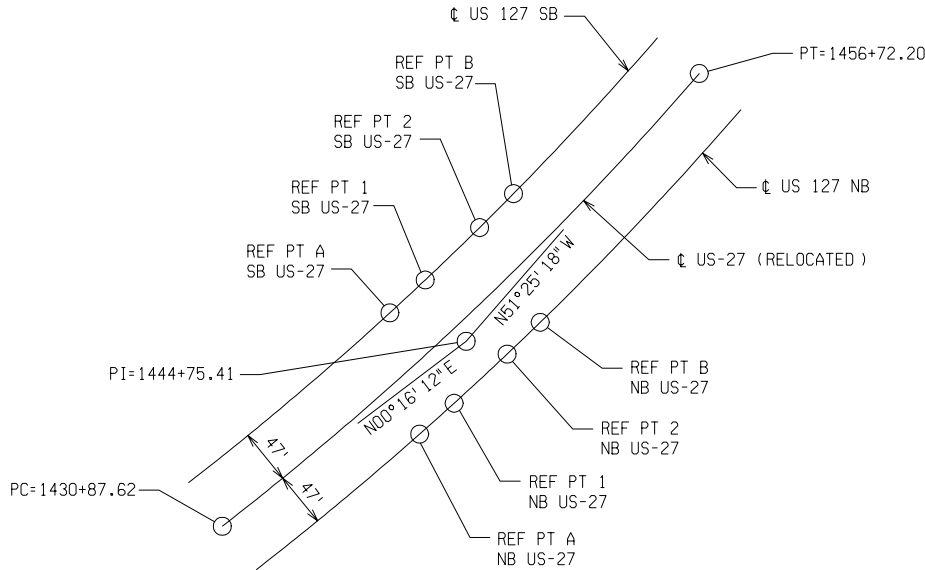
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2025 ESTIMATED TRAFFIC DISTRIBUTION

25,600	AVERAGE DAILY TRAFFIC
12,800	DIRECTIONAL AVERAGE DAILY TRAFFIC
9-10%	COMMERCIAL DURING ADT
7%	COMMERCIAL DURING DESIGN HOURLY VOLUME



ALIGNMENT DIAGRAM

BENCH MARKS

B.M. #1	ELEV. 760.77
TOP OF SB PIER #1 (NO BOLSTER)	
B.M. #2	ELEV. 760.63
TOP OF SB PIER #2 (NO BOLSTER)	
B.M. #3	ELEV. 764.51
TOP OF NB PIER #1 (NO BOLSTER)	
B.M. #4	ELEV. 764.37
TOP OF NB PIER #2 (NO BOLSTER)	

CURVE DATA

US-27 RELOCATED
CURVE DATA
Δ=51°51'30"LT
D=2°0'0"
R=2864.93'
T=1387.79'
L=2584.58'
E=318.36'
PC =1430+87.62
PI =1444+75.41
PT =1456+72.20
-0.22% SLOPE

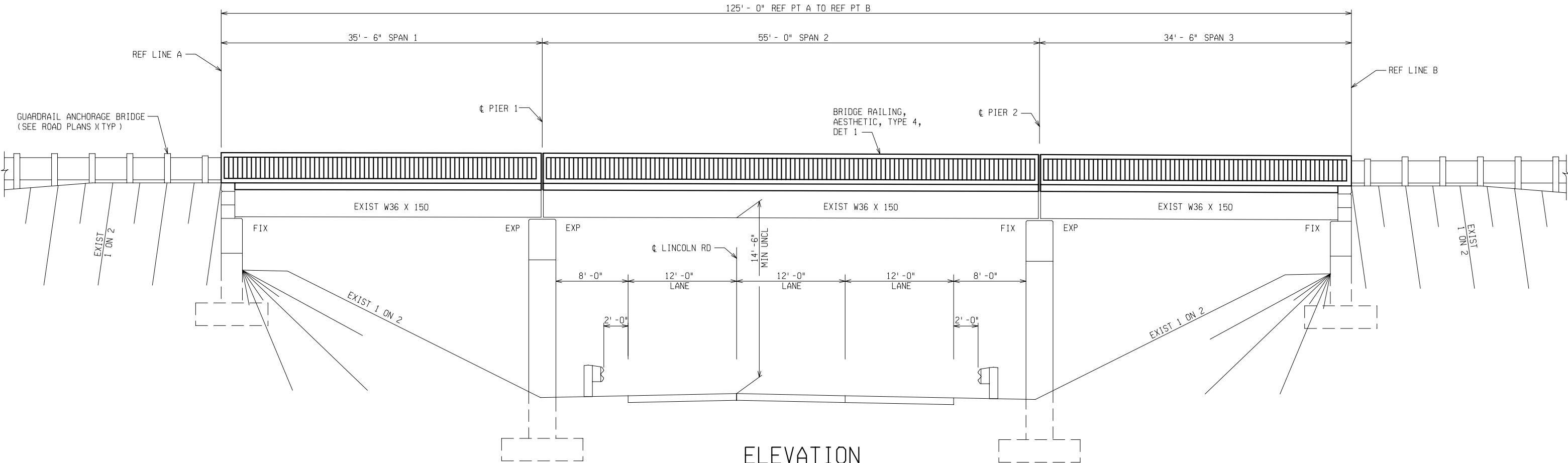
UTILITIES

CONSUMERS ENERGY
ATTN: MARCIA JANSON-WILSON
2400 WEISS STREET
SAGINAW, MI 48602
PHONE: (989) 791-5869

CONSUMERS ENERGY
ATTN: NADENE CLARK
1325 WRIGHT AVENUE
ALMA, MI 48801
PHONE: (989) 466-4265
PAGER: (989) 920-7022
EMAIL: NSCLARK@CMSEnergy.com

WOLVERINE PIPELINE COMPANY
ATTN: FRED HIPSHEAR
8105 VALLEY WOOD LANE
PORTAGE, MI 49024
PHONE: (269) 323-2491 EXT. 24

GRATIOT COUNTY DRAIN COMMISSION
ATTN: BRIAN DENMAN
214 E. CENTER STREET
ITHACA, MI 48847
PHONE: (989) 875-5207



ELEVATION

VIEWED NORMAL TO SUBSTRUCTURE UNITS
TYPICAL NORTHBOUND & SOUTHBOUND

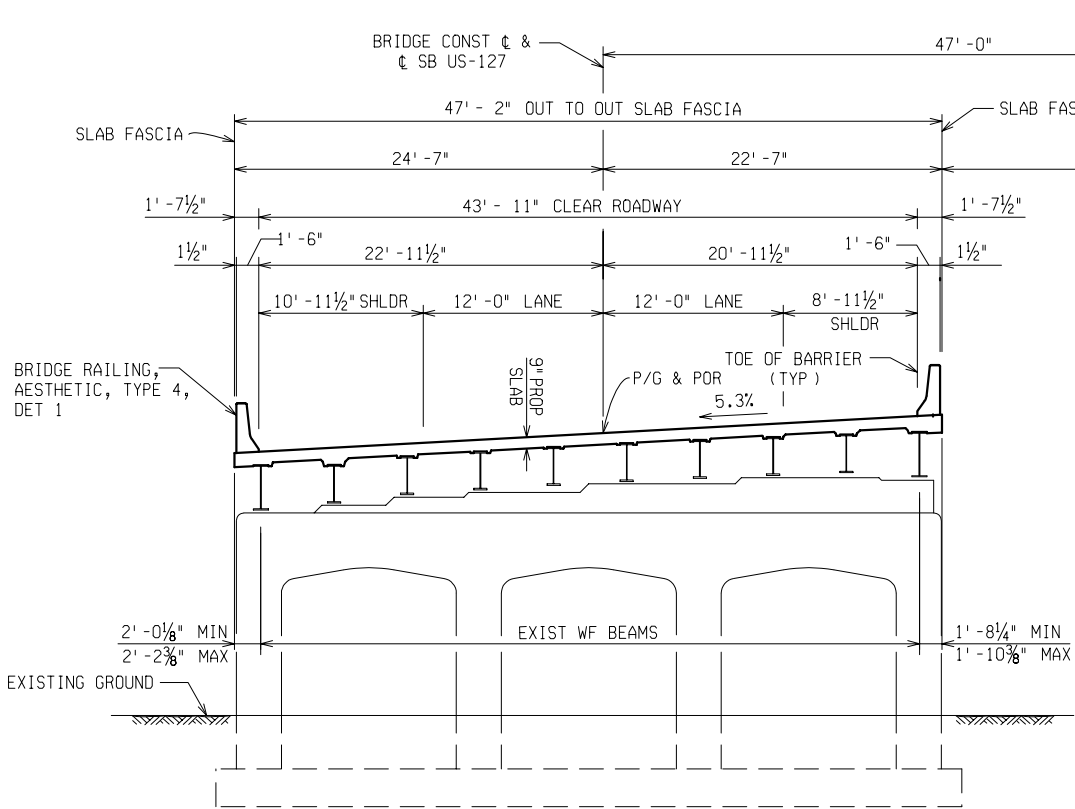


GENERAL PLAN OF STRUCTURE

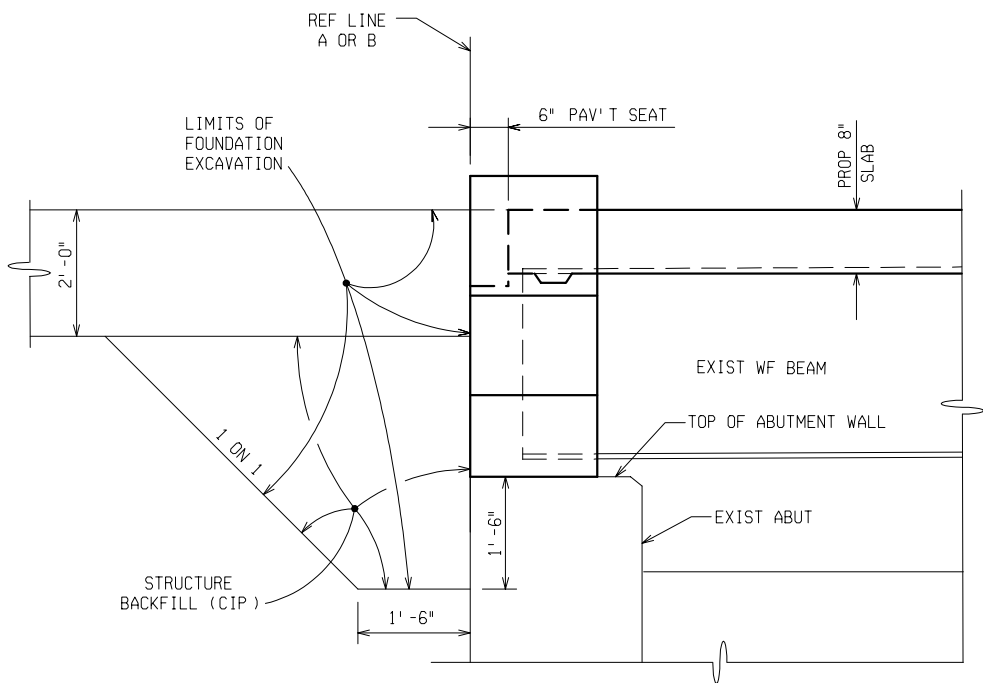
DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
	S04 OF 29011	56772A		5 OF 28

DATE: CORRECTED BY: CHECKED BY: DRAWN BY: FILE NAME: s0429011.st

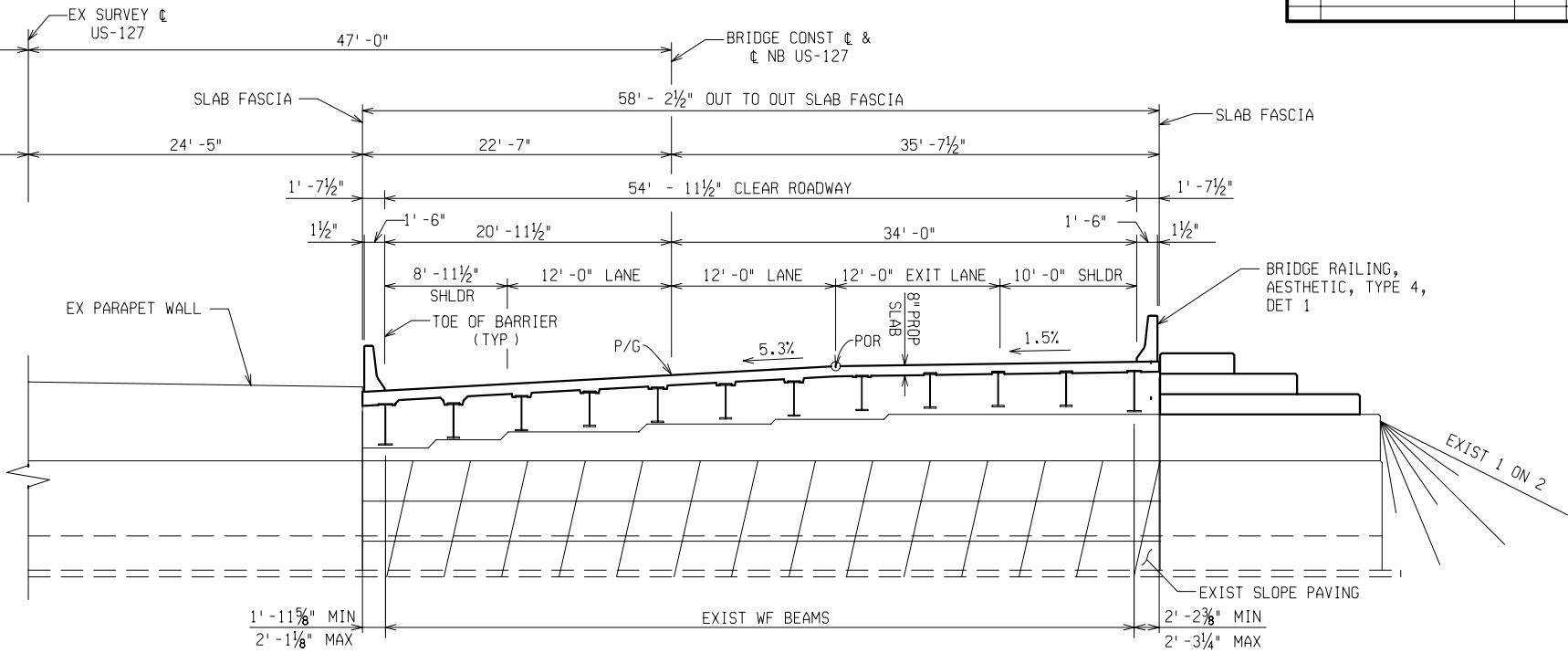
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62



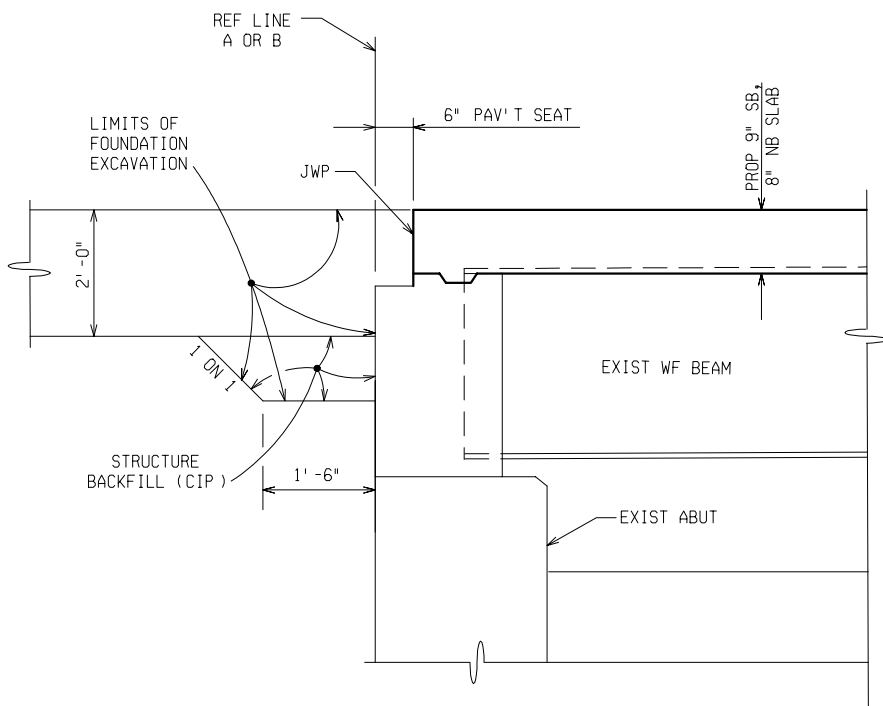
TYPICAL DECK SECTION SOUTHBOUND
(LOOKING UP STATION - SOUTHBOUND)



TYPICAL SLOEWALL SECTION
(NORTHBOUND EAST SIDE ONLY)



TYPICAL DECK SECTION NORTHBOUND
(LOOKING UP STATION - NORTHBOUND)



TYPICAL BACKWALL
SECTION

MISCELLANEOUS QUANTITIES

1 LS	Structures, Rehabilitation, Rem Portions (S04-1 OF 29011)
1 LS	Structures, Rehabilitation, Rem Portions (S04-2 OF 29011)
12800 Sft	False Decking
203 Cyd	Excavation, Fdn
155 Cyd	Backfill, Structure, CIP

NOTES:

- FOR NAME PLATE LOCATION, SEE GENERAL PLAN OF STRUCTURE SHEETS 3 & 4.
- THE WORK COVERED BY THESE PLANS INCLUDES DECK REPLACEMENT, CLEANING & COATING OF STRUCTURAL STEEL, AND MAINTAINING TRAFFIC. ALL OTHER WORK INCLUDED IN THE ROAD PLANS THAT ARE A PART OF THIS CONTRACT.
- US-127 TRAFFIC SHALL BE DETOURED BY USING CROSSOVER WHEN OPPOSITE BOUND IS BEING CONSTRUCTED. TYPICAL BOTH BOUNDS.
- THE RECONSTRUCTION DESIGN IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20-44 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE LOAD FACTOR METHOD WAS USED FOR THIS DESIGN. THE ORIGINAL STRUCTURE WAS DESIGNED FOR HS20 LOADING.
- FALSE DECKING FOR SOUTHBOUND SHALL INCLUDE THE AREA BOUNDED BY REFERENCE LINES 1 & 2 AND OUTSIDE FLANGE FASCIAS OF BEAMS 2B1 & 2B10. THE ESTIMATED AREA FOR SOUTHBOUND IS 2900 SQUARE FEET DURING REMOVAL AND 2900 SQUARE FEET DURING PROPOSED CONSTRUCTION
- FALSE DECKING FOR NORTHBOUND SHALL INCLUDE THE AREA BOUNDED BY REFERENCE LINES 1 & 2 AND OUTSIDE FLANGE FASCIAS OF BEAMS 2B11 & 2B22. THE ESTIMATED AREA FOR NORTHBOUND IS 3500 SQUARE FEET DURING REMOVAL AND 3500 SQUARE FEET DURING PROPOSED CONSTRUCTION
- NO FORM WORK SHALL ENCROACH ON THE EXISTING UNDERCLEARANCE.
- THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE.



GENERAL PLAN OF STRUCTURE

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
	S04 OF 29011	56772A		6 OF 28

FILE NAME: s0429011.st

DATE:

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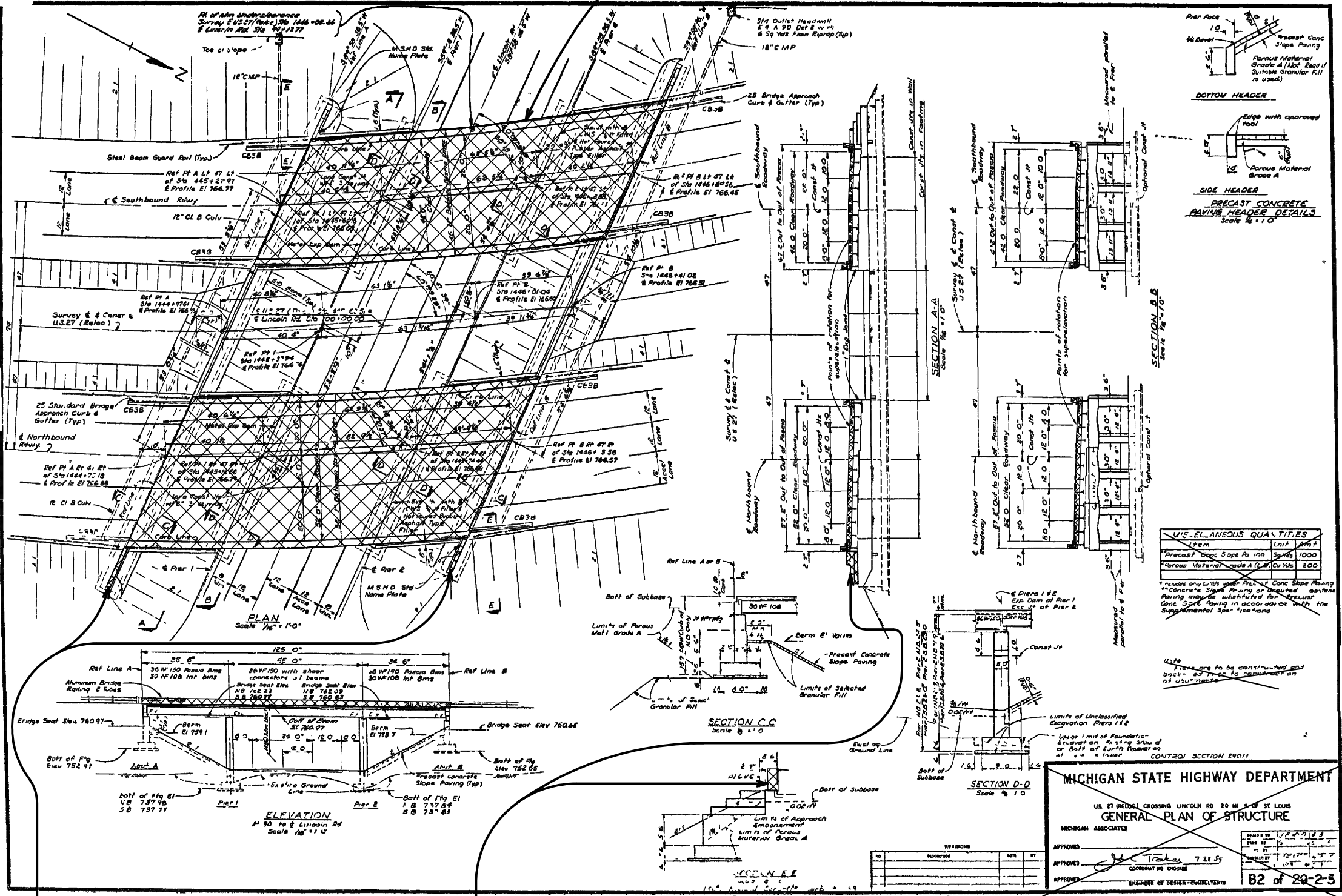
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

REVISIONS			
NO.	DESCRIPTION	DATE	BY

JOB NUMBER 56772A

REMOVE EXISTING DECK TO THE LIMITS SHOWN AND REMOVE EXISTING SHEAR DEVELOPERS. INCLUDED IN THE BID ITEM "Structures, Rehabilitation, Rem Portions (S04-2 of 29011)"



JOB NUMBER 56772A

REMOVE THE EAST SIDE ABUTMENT SLOPEWALLS DOWN TO TOP OF ABUTMENT WALL AND REMOVE EXISTING SHEAR DEVELOPERS. SALVAGE AND BLAST CLEAN VERTICAL REINFORCEMENT TO BE RE-EMBEDDED. INCLUDED IN THE BID ITEM "Structures, Rehabilitation, Rem Portions (S04-1 of 29011)"

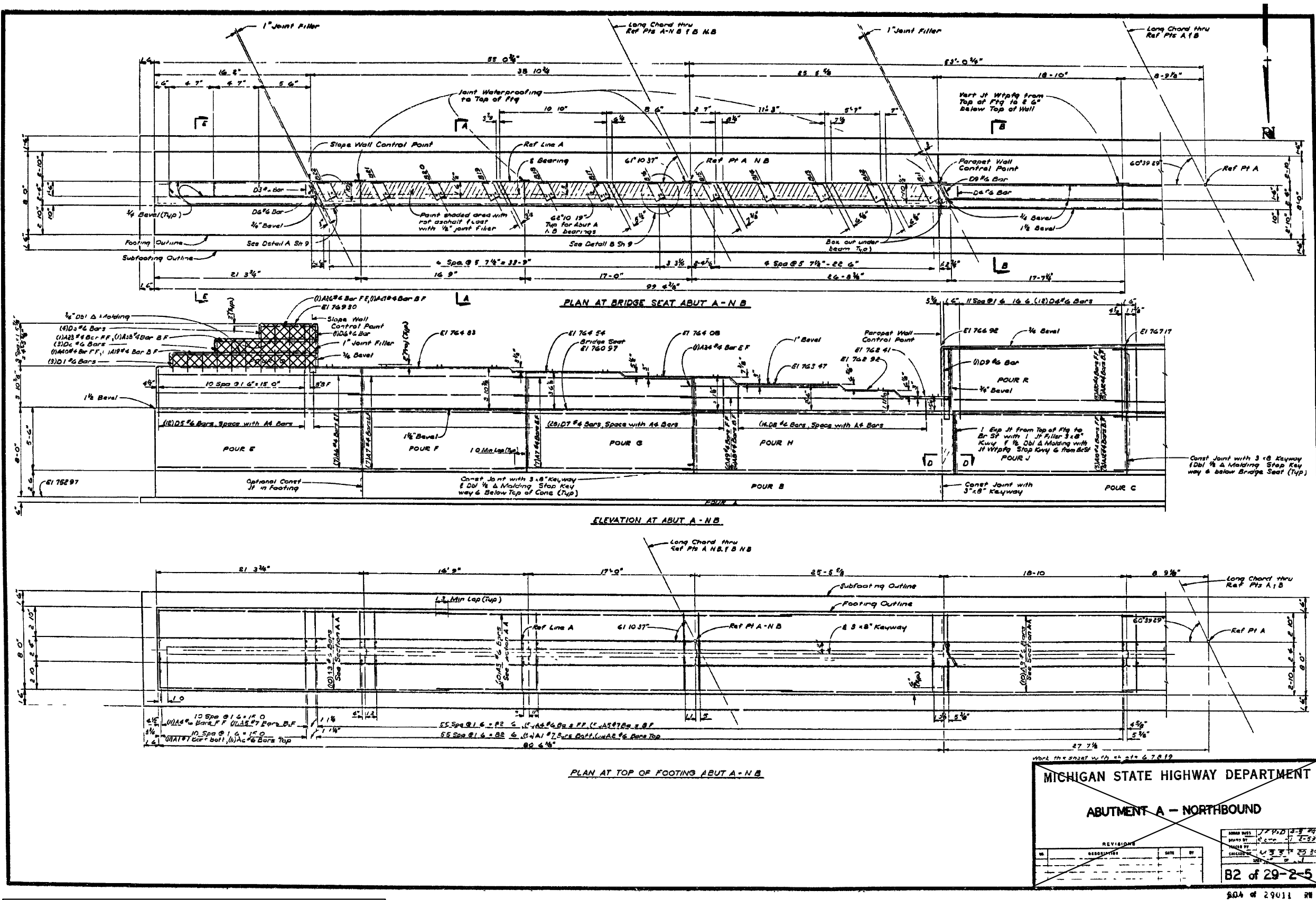


REMOVAL DETAILS

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET

FILE NAME: s0429011.rem

REVISIONS			
NO.	DESCRIPTION	DATE	BY



JOB NUMBER 56772A

REMOVE THE EAST SIDE ABUTMENT SLOPEWALL DOWN TO TOP OF ABUTMENT WALL INCLUDED IN THE BID ITEM " Structures, Rem Portions" (S04-1 OF 29011)

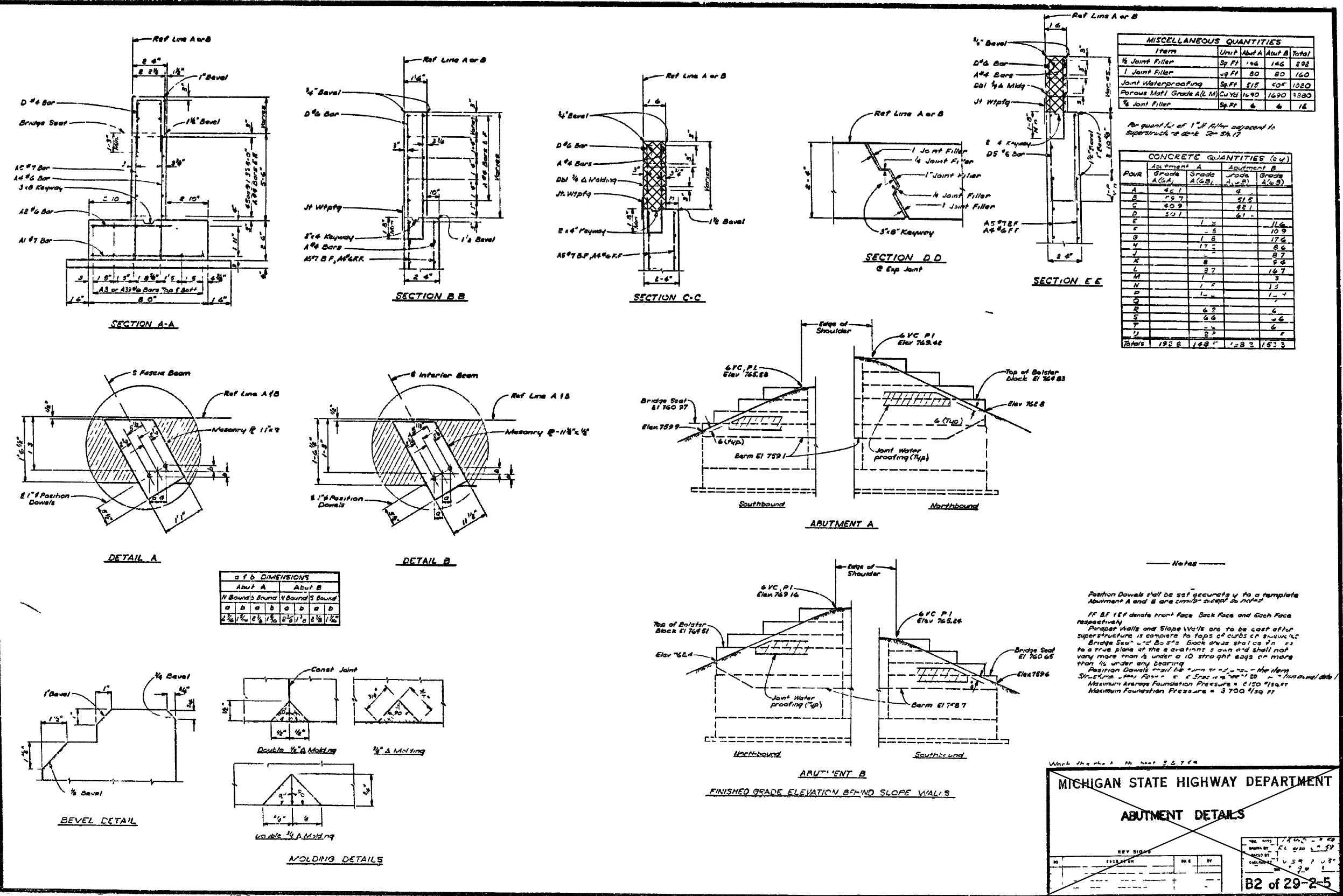


REMOVAL DETAILS

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
	S04 OF 29011	56772A		8 OF 28

FILE NAME: s0429011.f10

REVISIONS			
NO.	DESCRIPTION	DATE	BY



JOB NUMBER 56772A

REMOVE THE EAST SIDE ABUTMENT SLOPEWALL DOWN TO TOP OF ABUTMENT WALL INCLUDED IN THE BID ITEM " Structures, Rem Portions" (S04-1 OF 29011)

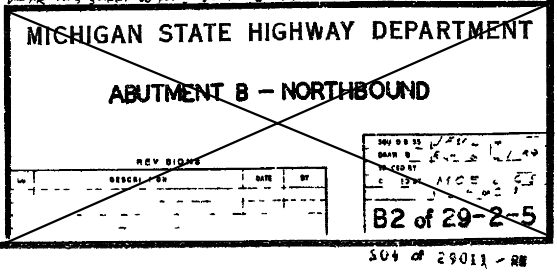


REMOVAL DETAILS

DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
02/18/04	S04 OF 29011	56772A		9 OF 28

FILE NAME: s0429011.f10

DRAWN BY: DATE: CHECKED BY: DATE: CORRECTED BY: DATE:



DATE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET
	S04 OF 29011	56772A		10 OF 28

FILE NAME: s0429011.flr

DATE: _____
CORRECTED BY: _____

DATE: