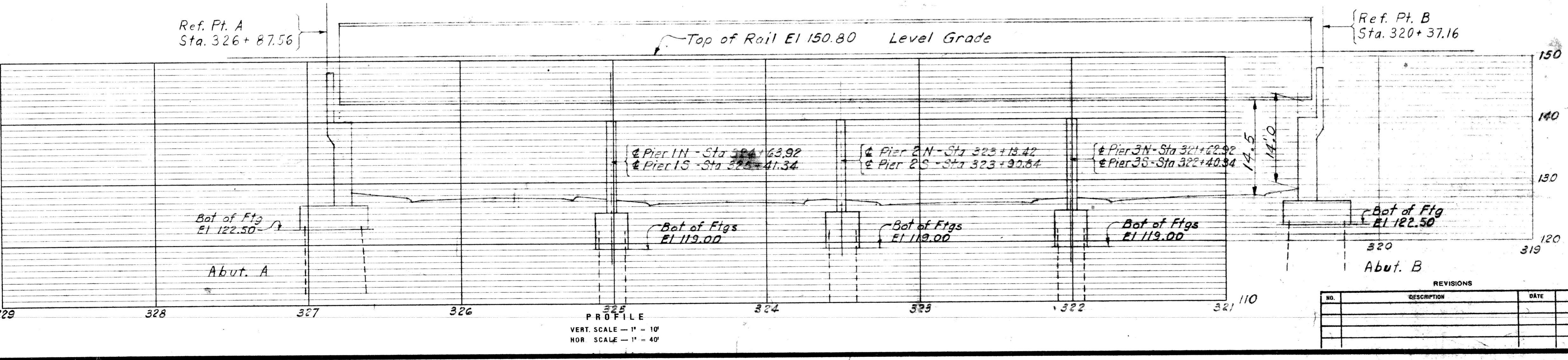
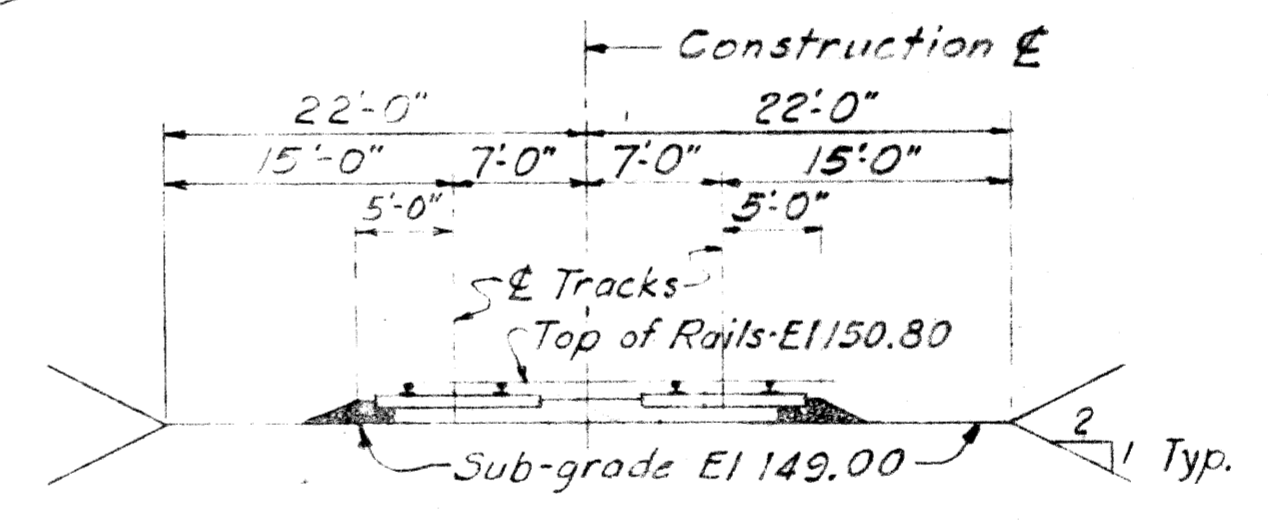


BENCH MARKS
BM #16 Elev 150.99 Arrow on Hydrant - N.E. Corner of Fullerton and Terry - 87' Right of Survey & Sta. 326+53
BM #17 Elev 150.63 Arrow on Hydrant - N.E. Corner of Fullerton and Marlowe - 90' Right of Survey & Sta. 321+04
BM #18 Elev 147.36 City of Detroit BM # 83-252 B N.E. Corner of Fullerton and Hubbell - 96' Right of Survey & Sta. 318+39

UTILITIES
Detroit Edison Co. Underground Conduit and Aerial Lines
Consumer Power Co. Gas Mains
City of Detroit Water Sewers and Street Lights

Note: The railroad will furnish all ties, ballast, rails and all necessary materials and labor for all track work on a force account basis. Approximately 100 per cent of the cost of this structure represents a hazard to railroad operations



Notes: The work covered by these plans includes the construction of the proposed bridge and retaining walls. All other work is included in the Road Plans which are a part of this contract.

The existing main line tracks shall remain in place and be used as a temporary run-around until the proposed bridge and Retaining Wall A are completed and traffic is diverted to the permanent relocation. Minor relocations of existing tracks may be required at the end of Abutment A and Abutment B to provide working clearance. Railroad traffic shall be maintained at all times.

Retaining Walls B & C cannot be completed until the railroad traffic has been placed on the final location over the proposed bridge.

Stage I - Construction of proposed bridge and Retaining Wall A.

Stage II - Construction of Retaining Walls B and C. Daily maximum rail traffic consists of 30 Union Belt of Detroit R.R. freights and 2 C.&O. R.R. freights all at 10 MPH. Rail traffic is reduced on Sat. & Sun. The information concerning train movement and the speed there of does not represent a commitment by the U.D.R.R. or C.&O.R.R. to continue them unchanged inasmuch as they are subject to change without notice. The contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed. Temporary sheeting and bracing details to be approved by C.&O.R.R.

PRELIMINARY PLAN A 3-5-68 LETTING DATE 9-1-71

MICHIGAN STATE HIGHWAY DEPARTMENT
I-96 (JEFFERIES FREEWAY) CROSSING C.&O.R.R. IN THE CITY OF DETROIT
GENERAL PLAN OF SITE

HAZELET & ERDAL CONSULTING ENGINEERS - FILE NO. 409

APPROVED	J.P. Cook	3-19-68	DESIGN SUPERVISING ENGINEER
APPROVED	London J. Wilbur	3-19-68	ENGINEER OF DESIGN

NO.	DESCRIPTION	DATE	BY

REVISIONS

SHOWN 1 OF 7
X06 of 82123D

Test Hole #1
Sta. 328+10
27' Rt.

Test Hole #2
Sta. 326+70
27' Rt.

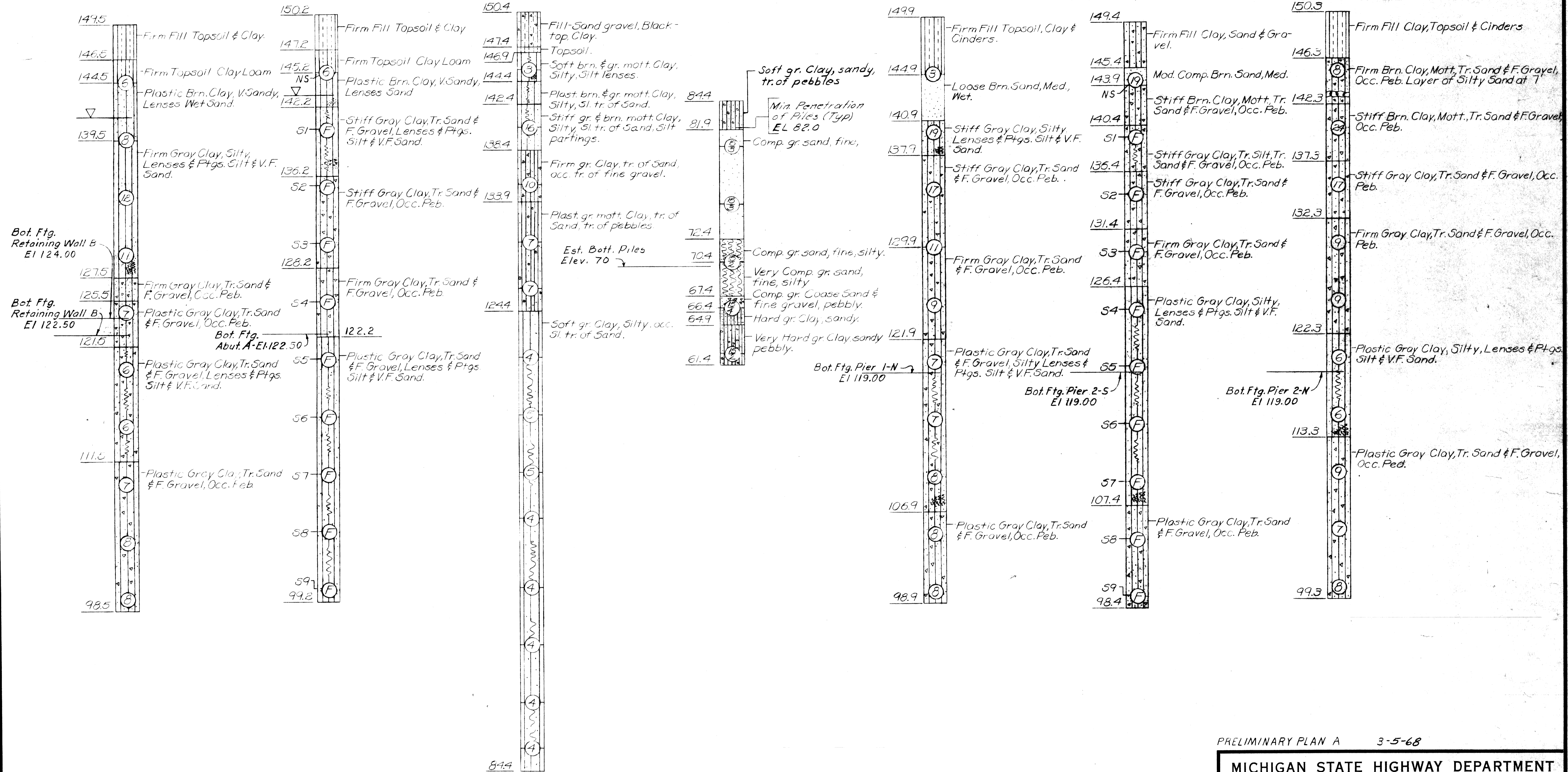
Test Hole #3
Sta. 325+41
15' Rt.

Test Hole #3
Sta. 325+41
15' Rt.
(Continued)

Test Hole #4
Sta. 324+64
27' Rt.

Test Hole #5
Sta. 323+91
27' Rt.

Test Hole #6
Sta. 323+13
27' Rt.



LOG OF BORINGS
Vert. Scale: 1" = 4'

PRELIMINARY PLAN A 3-5-68

MICHIGAN STATE HIGHWAY DEPARTMENT
I-96 (JEFFRIES FREEWAY) CROSSING C. & O. R.R.
IN THE CITY OF DETROIT

LOG OF BORINGS

HAZELET & ERDAL CONSULTING ENGINEERS - FILE NO. 409

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	
DRAWN BY	M.K.
TRACED BY	
CHECKED BY	R.L.K. 7-22-67
SHEET	2 OF 7
X06 OF B2123D	

Test Hole #7
Sta. 322+40
27' Rt.

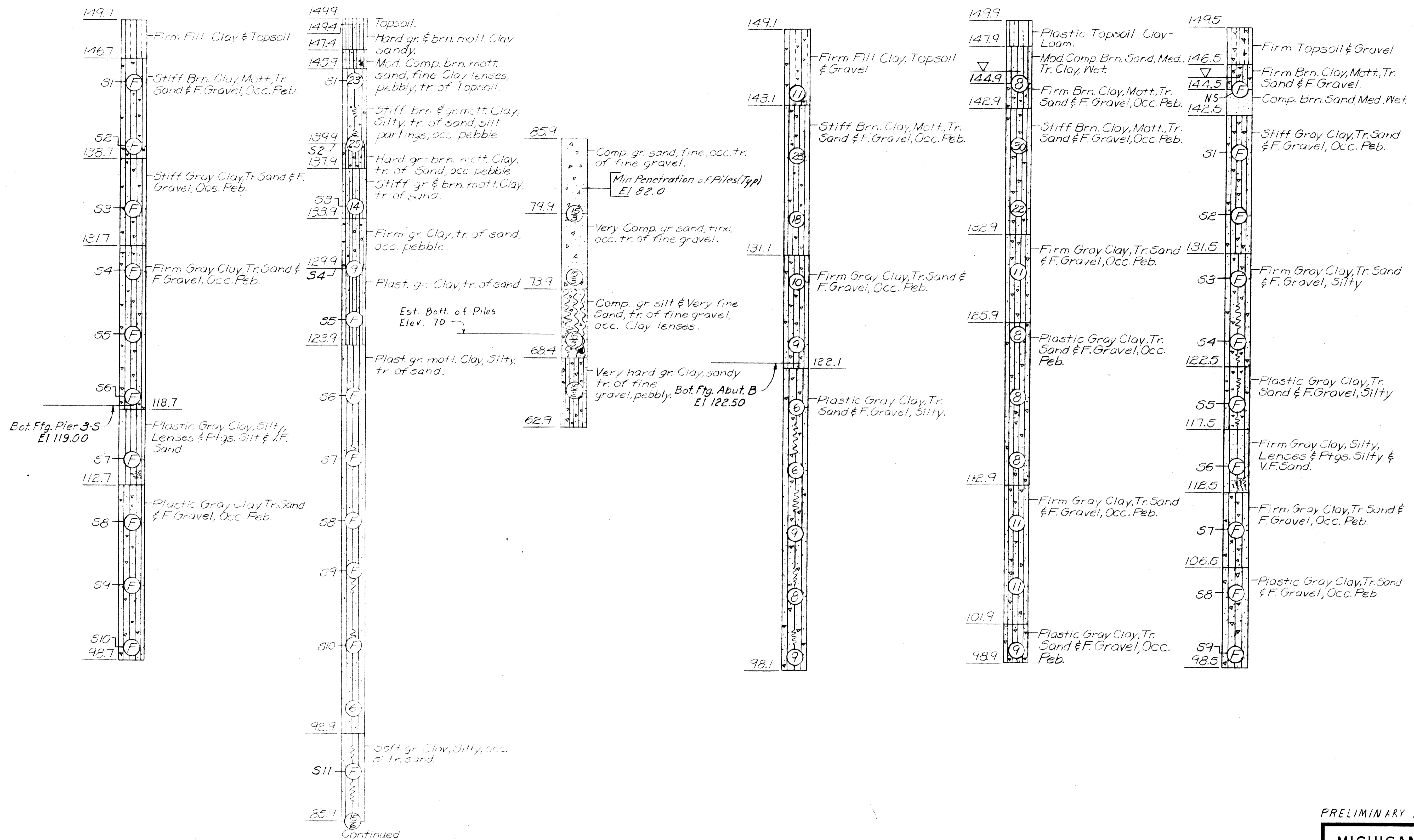
Test Hole #8
Sta. 321+63
31' Rt.

Test Hole #8
Sta. 321+63
31' Rt.
(Continued)

Test Hole #9
Sta. 320+46
30' Rt.

Test Hole #10
Sta. 322+15
40' Lt.

Test Hole #11
Sta. 323+85
118' Lt.



Notes
Number in circle denotes number of blows required to drive a 2" O.D. x 1 1/2" I.D. split spoon sampler 12" using a 140 lb. hammer falling 30".
Soil samples were obtained by a 1 3/4" O.D. x 1 3/8" I.D. sampler.
Consistency determined by inspection of samples and by soil resistance to penetration by jet rod and casing or auger.

Legend
S = Sample number
NS = No sample
F indicates that soil samples were obtained by a hydraulically forced sampler.
Ⓛ = Number of blows
Ⓜ = No of blows Dist. driven (in.)
▽ = Water level 24 hours after completion.

LOG OF BORINGS
Vert. Scale: 1" = 4'

PRELIMINARY PLAN A 3-5-68

MICHIGAN STATE HIGHWAY DEPARTMENT
I-96 (JEFFRIES FREEWAY) CROSSING C.&O.R.R.
IN THE CITY OF DETROIT

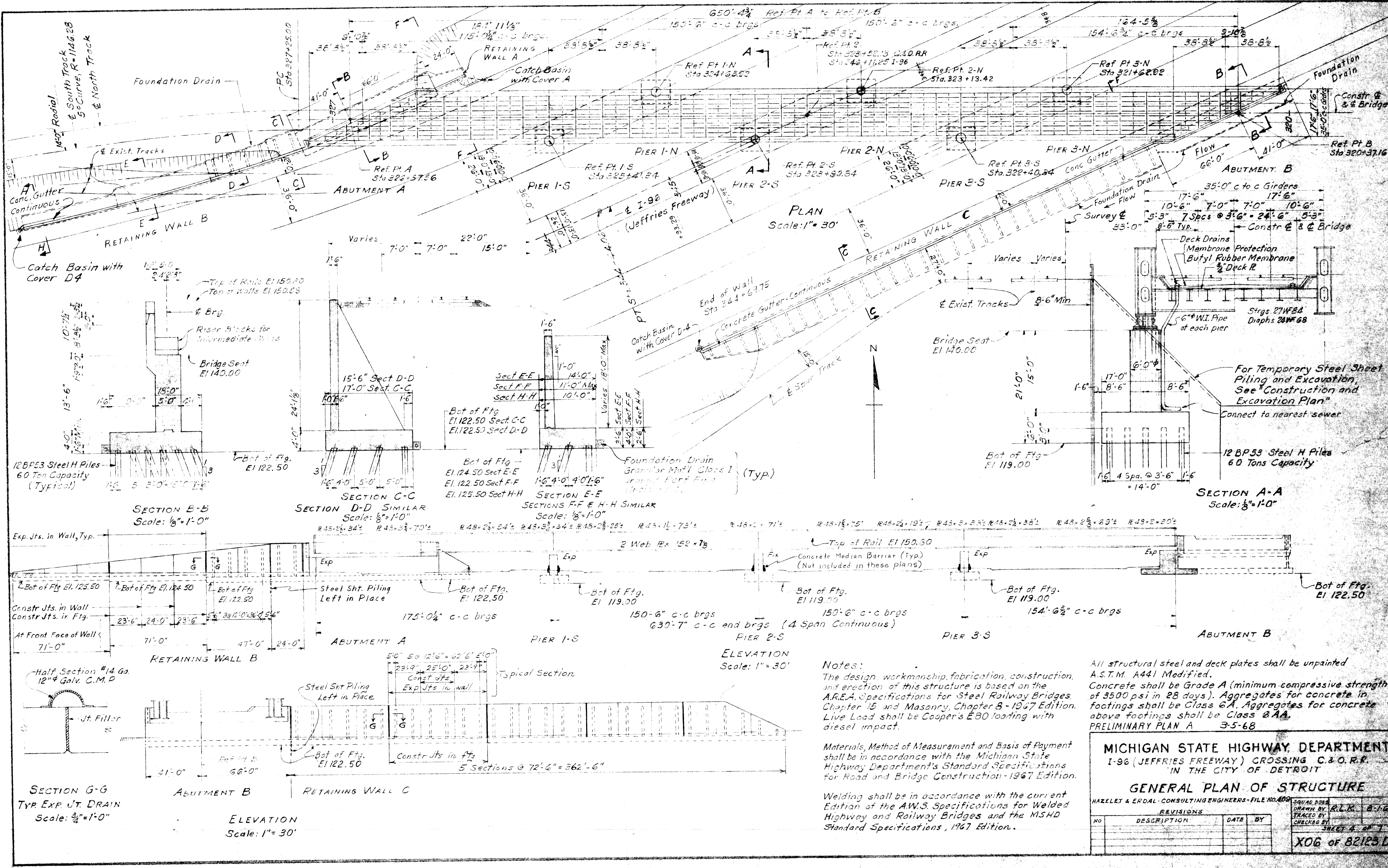
LOG OF BORINGS

HAZLET & ERDAL CONSULTING ENGINEERS - FILE NO. 409

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SOBAD BOSS	
DRAWN BY	M.K.
CHECKED BY	C.E.B. 8-3-67
SHEET	3 OF 7

X06 OF 82123 D



PLAN
Scale: 1" = 30'

ELEVATION
Scale: 1" = 30'

Notes:
The design, workmanship, fabrication, construction, and erection of this structure is based on the A.R.E.A. Specifications for Steel Railway Bridges, Chapter 15 and Masonry, Chapter 8 - 1967 Edition. Live Load shall be Cooper's E80 loading with diesel impact.

Materials, Method of Measurement and Basis of Payment shall be in accordance with the Michigan State Highway Department's Standard Specifications for Road and Bridge Construction - 1967 Edition.

Welding shall be in accordance with the current Edition of the A.W.S. Specifications for Welded Highway and Railway Bridges and the MSRD Standard Specifications, 1967 Edition.

All structural steel and deck plates shall be unpainted A.S.T.M. A441 Modified. Concrete shall be Grade A (minimum compressive strength of 3500 psi in 28 days). Aggregates for concrete in footings shall be Class G.A. Aggregates for concrete above footings shall be Class B.A.A. PRELIMINARY PLAN A 3-5-68

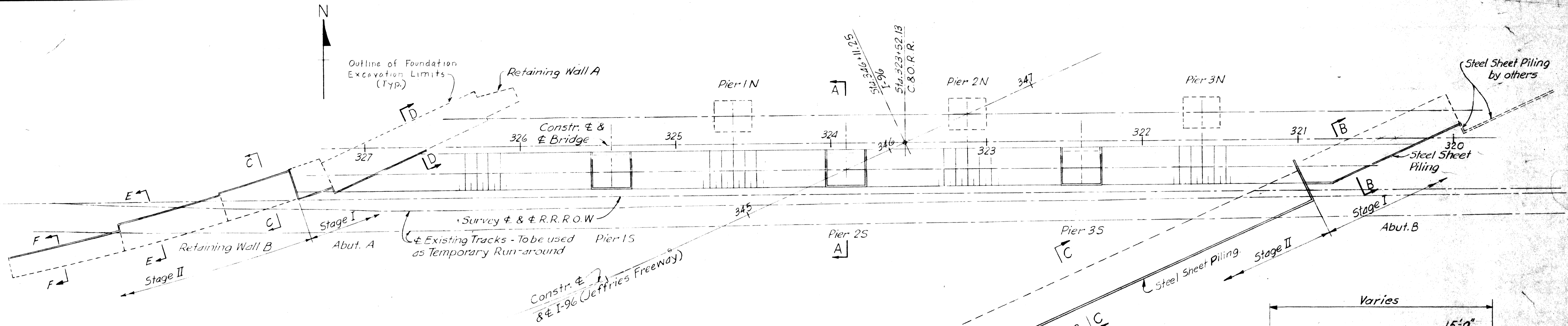
MICHIGAN STATE HIGHWAY DEPARTMENT
I-96 (JEFFRIES FREEWAY) CROSSING C.&O.R.R. IN THE CITY OF DETROIT

GENERAL PLAN OF STRUCTURE

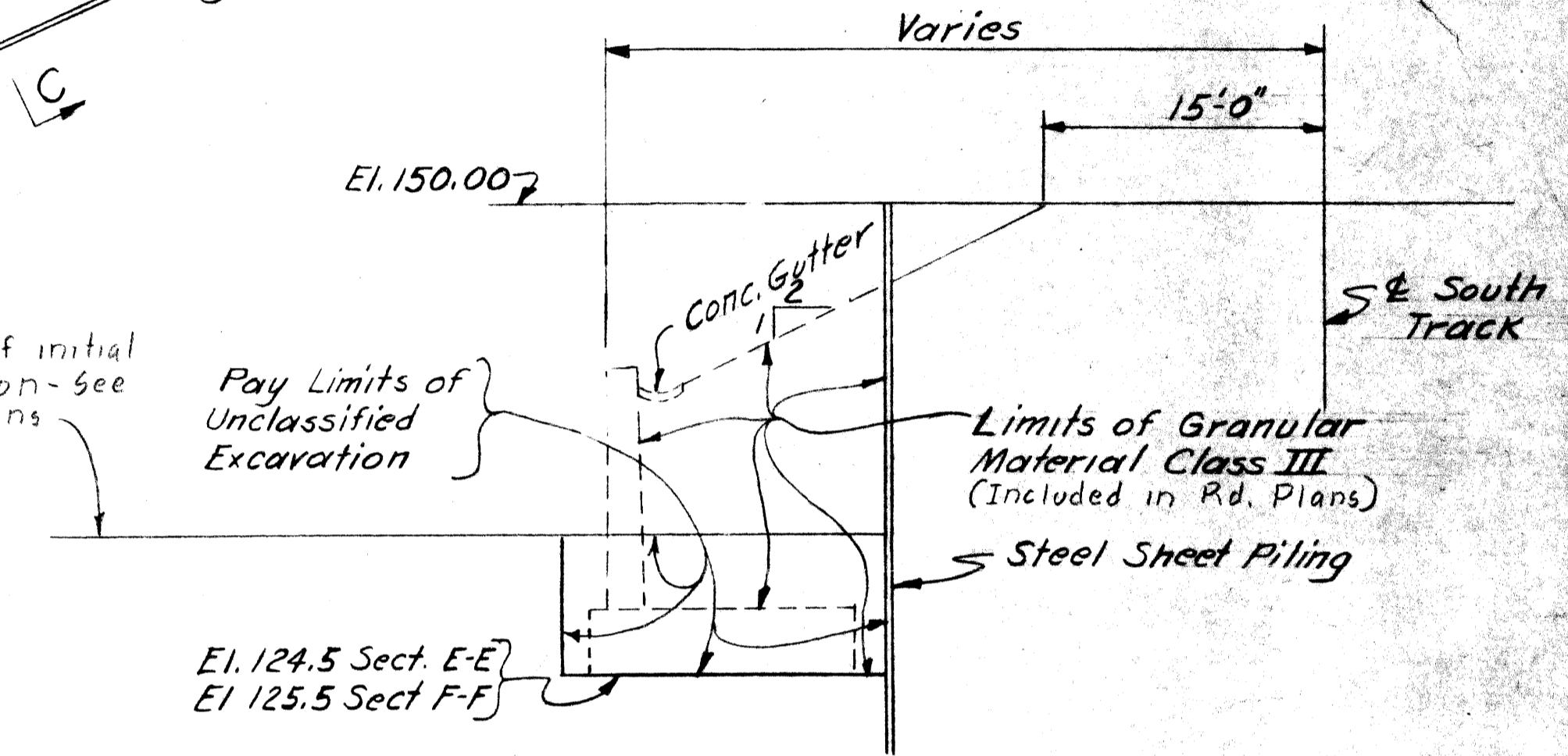
HAZELET & ERDAL CONSULTING ENGINEERS - FILE NO. 409

REVISIONS				DATE	BY
NO.	DESCRIPTION	DATE	BY		

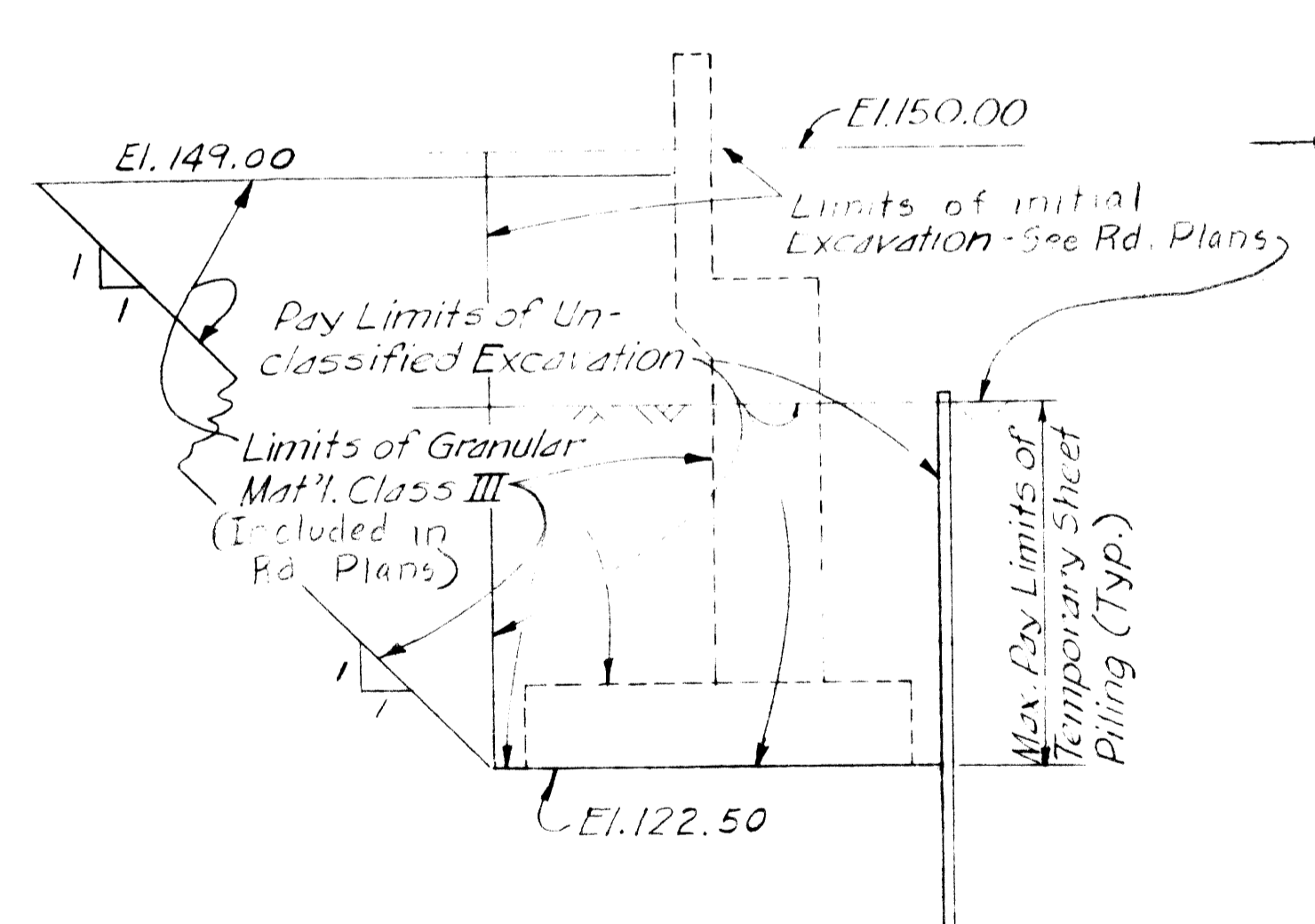
DRAWN BY: R.L.K. 8-7-67
CHECKED BY: [Signature]
SHEET 4 OF 7
X06 OF 82123 D



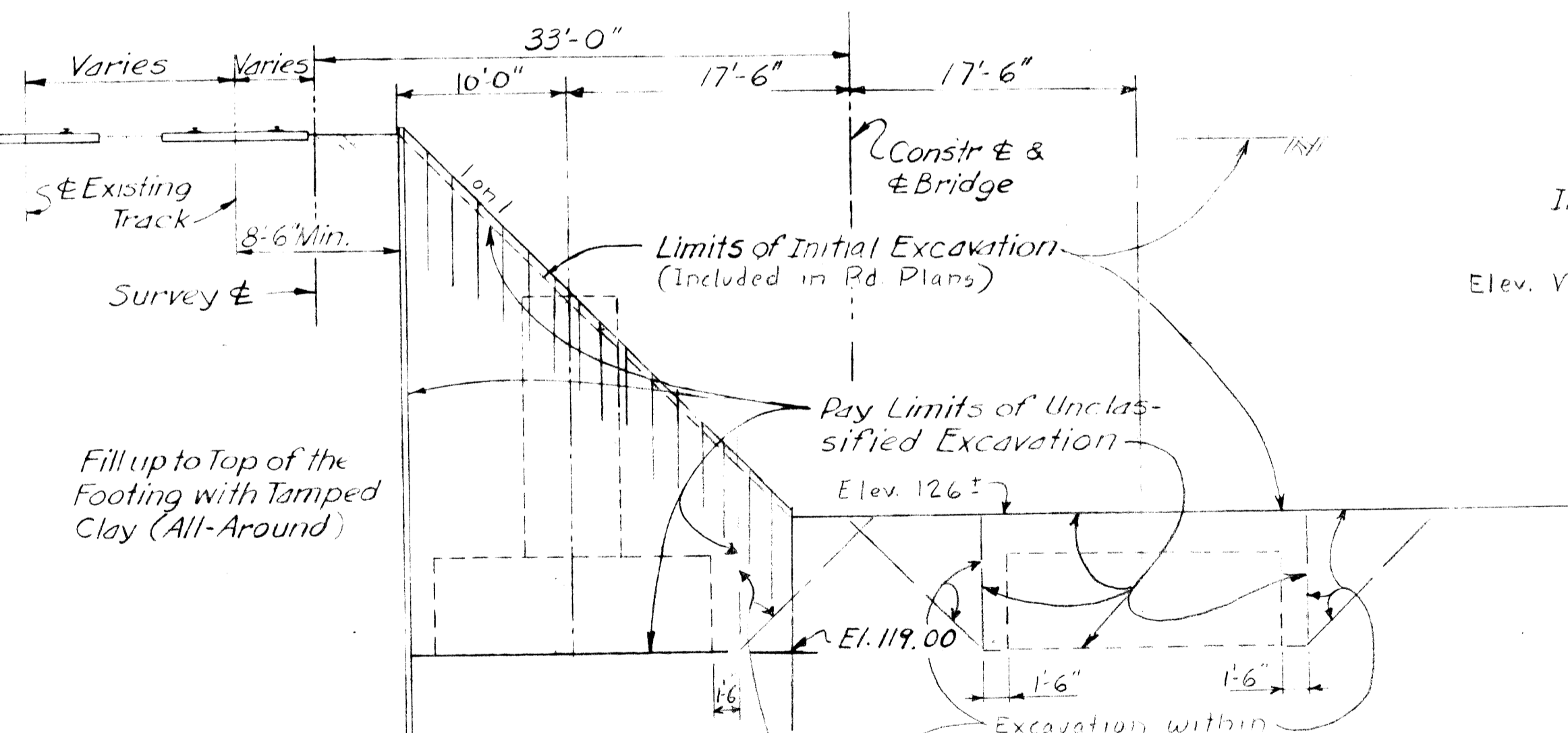
PLAN OF EXCAVATION



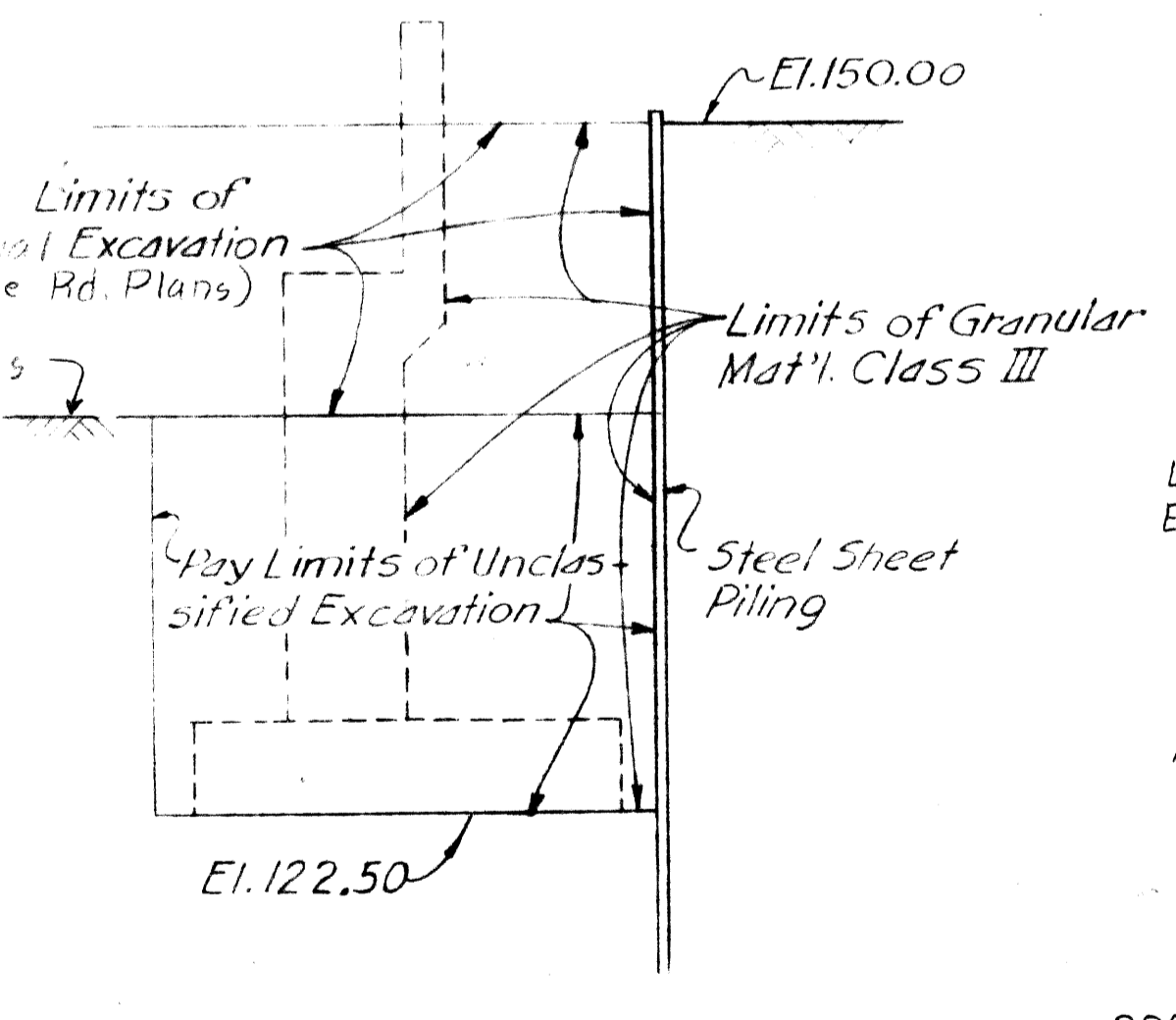
SECTION E-E & F-F



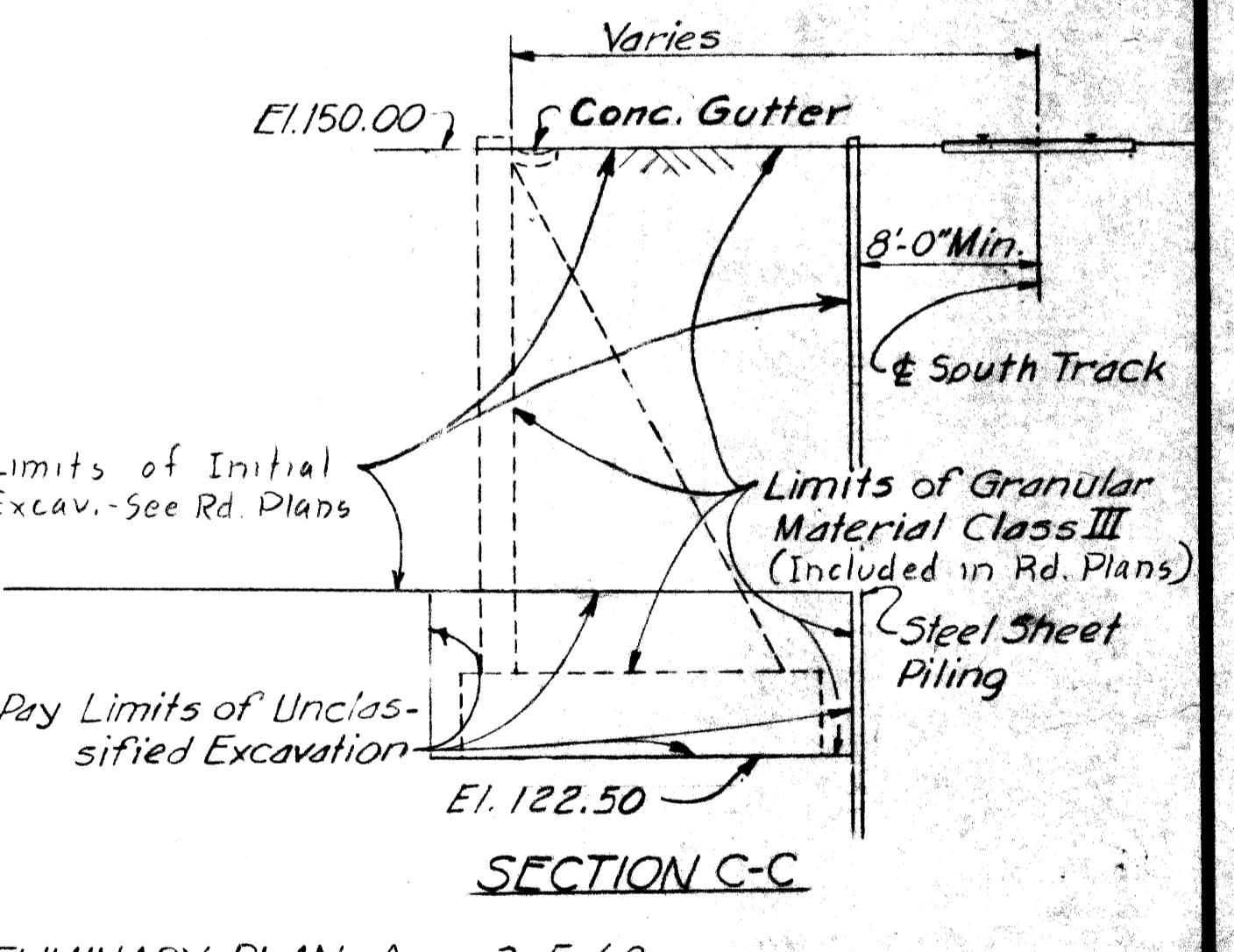
SECTION D-D



SECTION A-A



SECTION B-B



SECTION C-C

PRELIMINARY PLAN A 3-5-68

MICHIGAN STATE HIGHWAY DEPARTMENT
 I-96 (JEFFRIES FREEWAY) CROSSING C. & O.R.R.
 IN THE CITY OF DETROIT

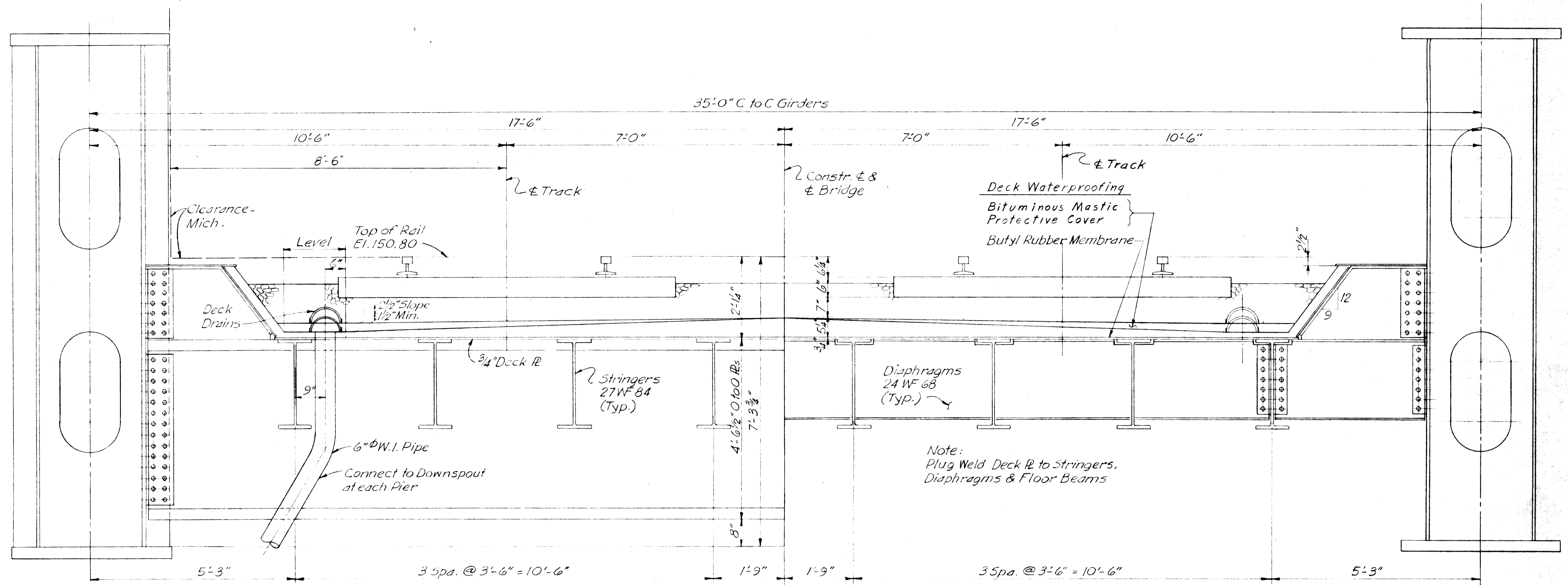
CONSTRUCTION & EXCAVATION PLAN

HAZELET & ERDAL - CONSULTING ENGINEERS - FILE NO. 400

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWN BY	WJ	8-7-67
CHECKED BY	CEB	8-7-67
SHEET	5	7

X06 of 82123 D



HALF CROSS SECTION
SHOWING FLOOR BEAM

HALF CROSS SECTION
SHOWING DIAPHRAGMS

PRELIMINARY PLAN A 3-5-68

MICHIGAN STATE HIGHWAY DEPARTMENT
I-96 (JEFFRIES FREEWAY) CROSSING C.&O.R.R.
IN THE CITY OF DETROIT

SUPERSTRUCTURE DETAILS

HAZELET & ERDAL-CONSULTING ENGINEERS-FILE NO. 409

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SQUAD BOSS	JK	7-31-67
DRAWN BY	JK	7-31-67
TRACED BY	RLK	8-1-67
CHECKED BY	RLK	8-1-67
SHEET	6	OF 7

X06 of 82123D

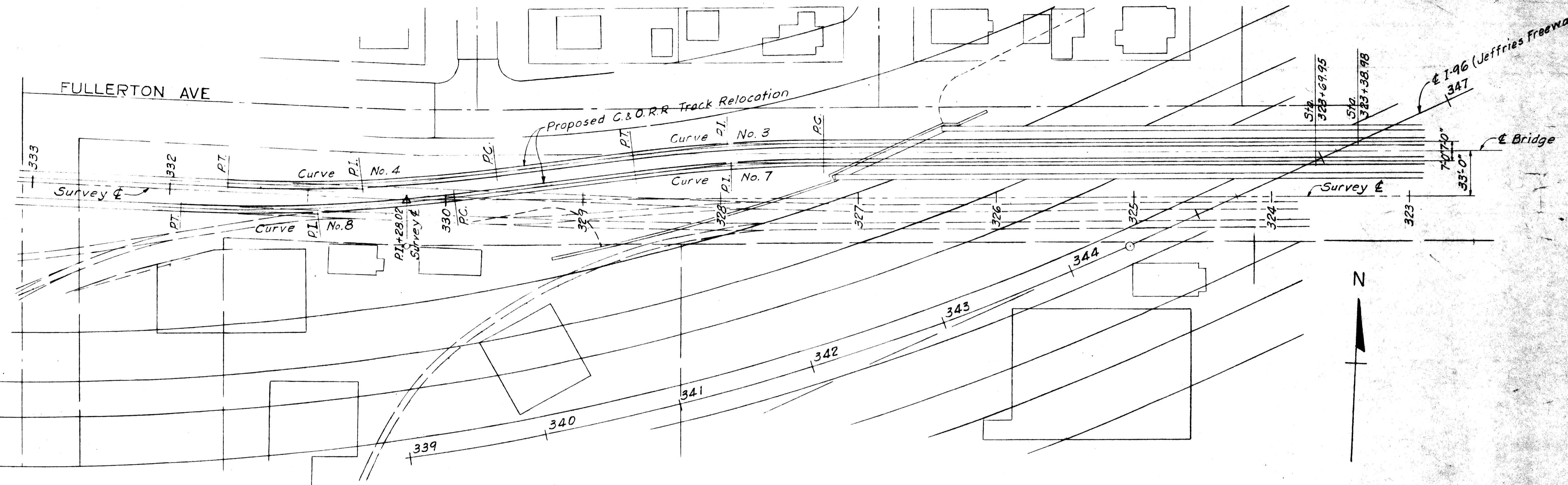
Curve Data on E Track

North Track
 Curve No. 3
 $\Delta = 6^{\circ}50'06''$ Lt.
 $R = 1160.28$
 $D = 4^{\circ}56'23''$
 $T = 69.29$
 $L(\text{arc}) = 138.41$
 Chord = 138.33
 PC Sta. 327+27.33
 PI Sta. 327+96.62
 PT Sta. 328+65.74

South Track
 Curve No. 7
 $\Delta = 6^{\circ}50'06''$ Lt.
 $R = 1146.28$
 $D = 5^{\circ}$
 $T = 68.45$
 $L(\text{arc}) = 136.74$
 Chord = 136.66
 PC Sta. 327+27.33
 PI Sta. 327+95.78
 PT Sta. 328+64.07

Curve No. 4
 $\Delta = 9^{\circ}44'37''$ Rt.
 $R = 1146.28$
 $D = 5^{\circ}$
 $T = 97.70$
 $L(\text{arc}) = 194.93$
 Chord = 194.70
 PC Sta. 329+65.74
 PI Sta. 330+63.44
 PT Sta. 331+60.67
 Sta. 331+57.46
 (Survey E)

Curve No. 8
 $\Delta = 9^{\circ}49'47''$ Rt.
 $R = 1160.28$
 $D = 4^{\circ}56'23''$
 $T = 99.77$
 $L(\text{arc}) = 199.06$
 Chord = 198.81
 PC Sta. 329+96.60
 PI Sta. 330+96.37
 PT Sta. 331+95.66
 Sta. 331+91.26
 (Survey E)



Curve Data on E Track

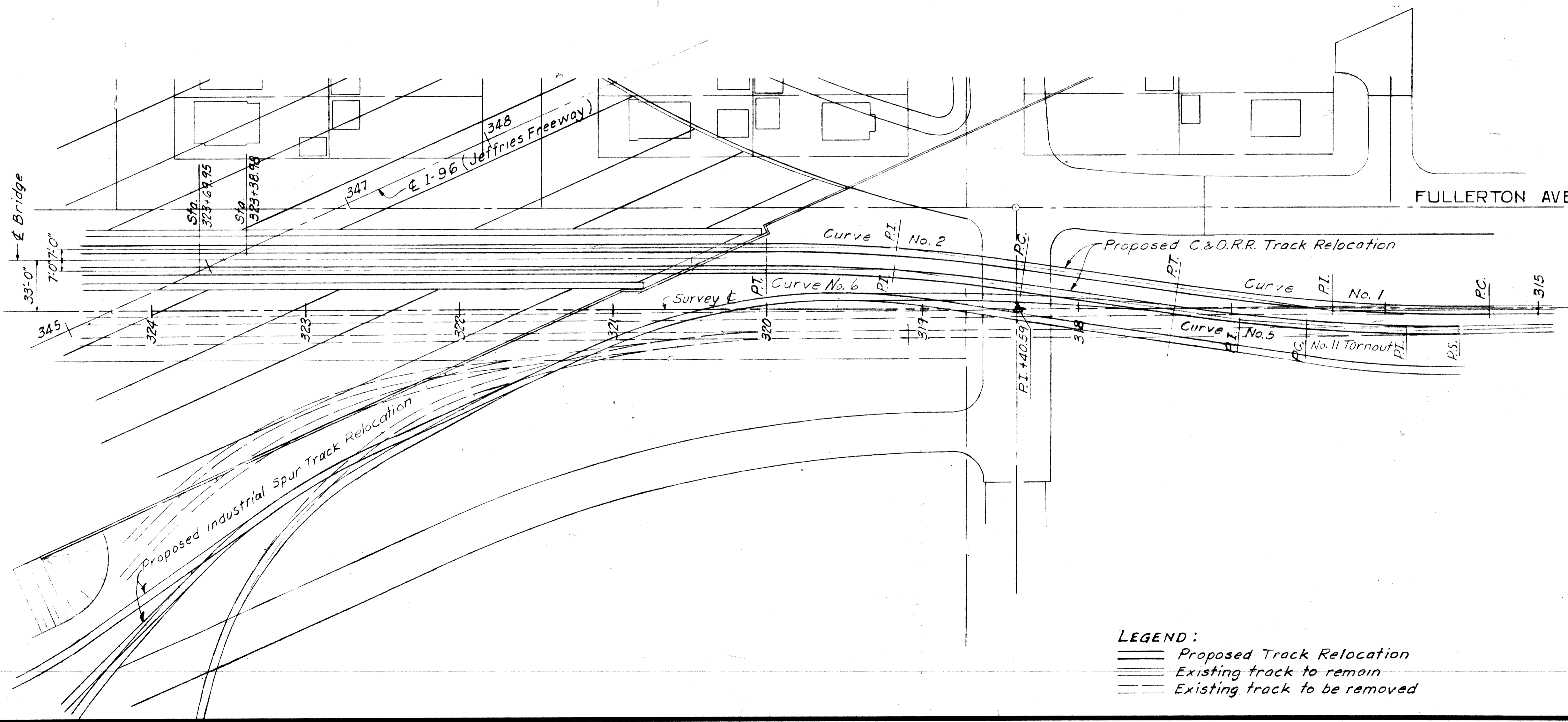
North Track
 Curve No. 1
 $\Delta = 8^{\circ}33'22''$ Rt.
 $R = 1360.52$
 $D = 4^{\circ}12'44''$
 $T = 101.77$
 $L(\text{arc}) = 203.17$
 Chord = 202.98
 PC Sta. 315+31.08
 (Survey E)
 PI Sta. 316+32.85
 PT Sta. 317+34.25

South Track
 No. 11 Turnout
 $\Delta = 5^{\circ}12'18''$ Rt.
 PI Sta. 315+85.03
 (Survey E)

Curve No. 2
 $\Delta = 8^{\circ}17'59''$ Lt.
 $R = 1160.28$
 $D = 4^{\circ}56'23''$
 $T = 84.19$
 $L(\text{arc}) = 168.08$
 Chord = 167.93
 PC Sta. 318+34.25
 PI Sta. 319+18.44
 PT Sta. 320+02.33

Curve No. 5
 $\Delta = 4^{\circ}17'46''$ Rt.
 $R = 1160.28$
 $D = 4^{\circ}56'23''$
 $T = 43.52$
 $L(\text{arc}) = 87.00$
 Chord = 86.98
 PC Sta. 316+49.28
 PI Sta. 316+92.80
 PT Sta. 317+36.28

Curve No. 6
 $\Delta = 8^{\circ}17'59''$ Lt.
 $R = 1146.28$
 $D = 5^{\circ}$
 $T = 83.17$
 $L(\text{arc}) = 166.05$
 Chord = 165.90
 PC Sta. 316+36.28
 PI Sta. 319+19.45
 PT Sta. 320+02.33

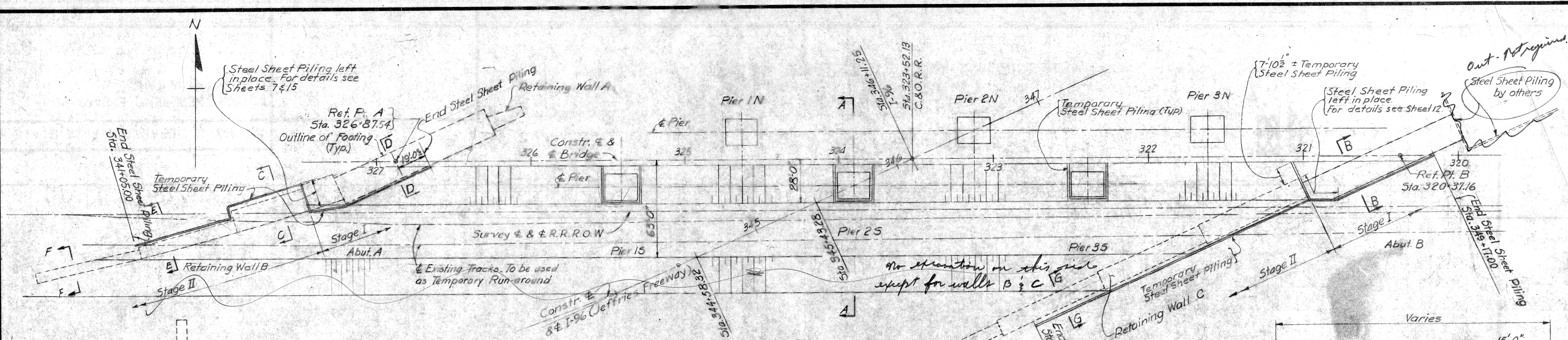


LEGEND:
 - - - Proposed Track Relocation
 = = = Existing track to remain
 - - - Existing track to be removed

PRELIMINARY PLAN A 3-5-68

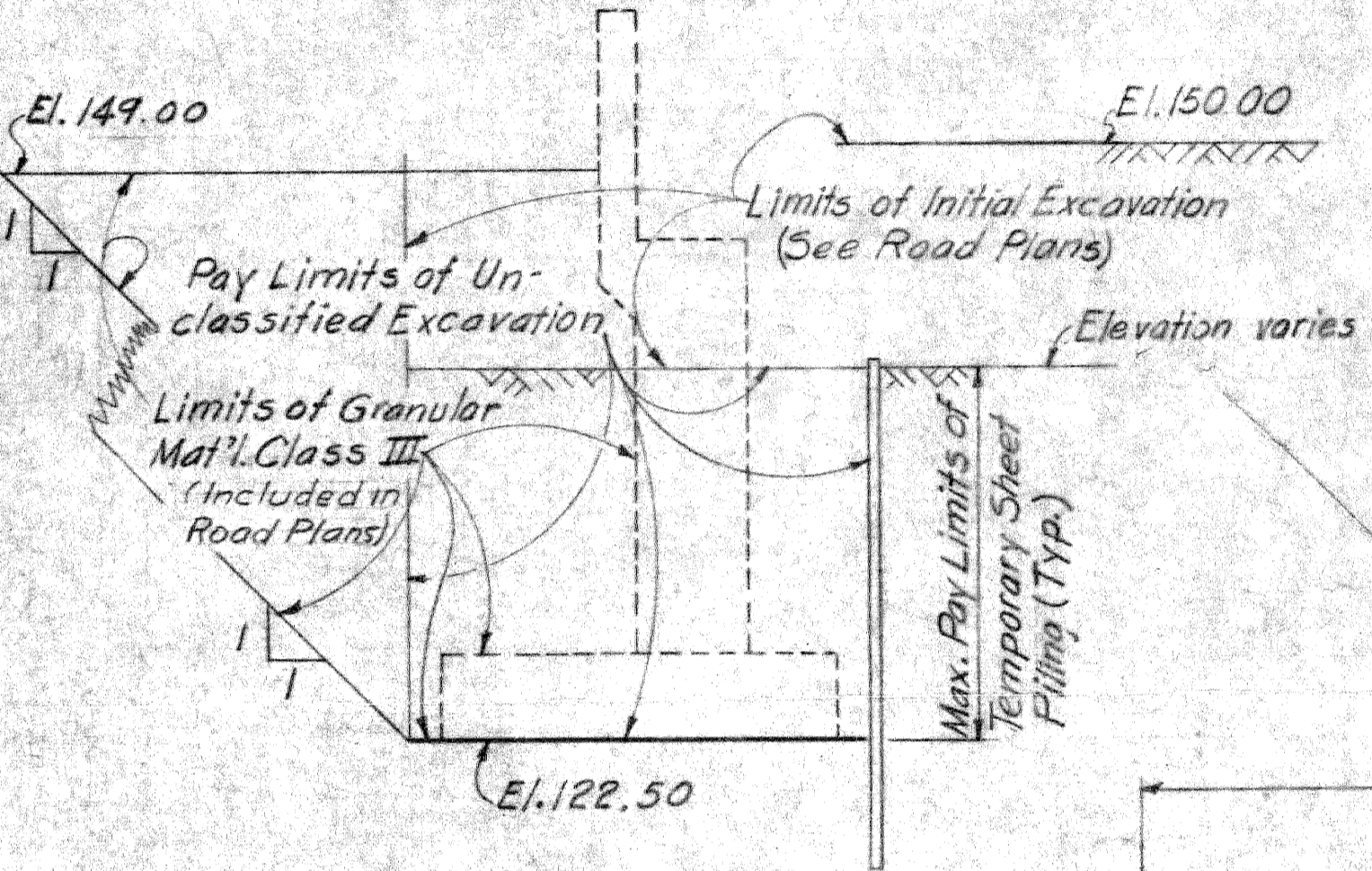
MICHIGAN STATE HIGHWAY DEPARTMENT
 I-96 (JEFFRIES FREEWAY) CROSSING C.&O.R.R.
 IN THE CITY OF DETROIT
 TRACK RELOCATION

HAZELT & ERDAL CONSULTING ENGINEERS - FILE NO. 409				ROAD BOSS
REVISIONS				DRAWN BY R.L.K. 10-18-67
NO.	DESCRIPTION	DATE	BY	TRACED BY
SHEET 7 OF 7				X06 OF 82123D

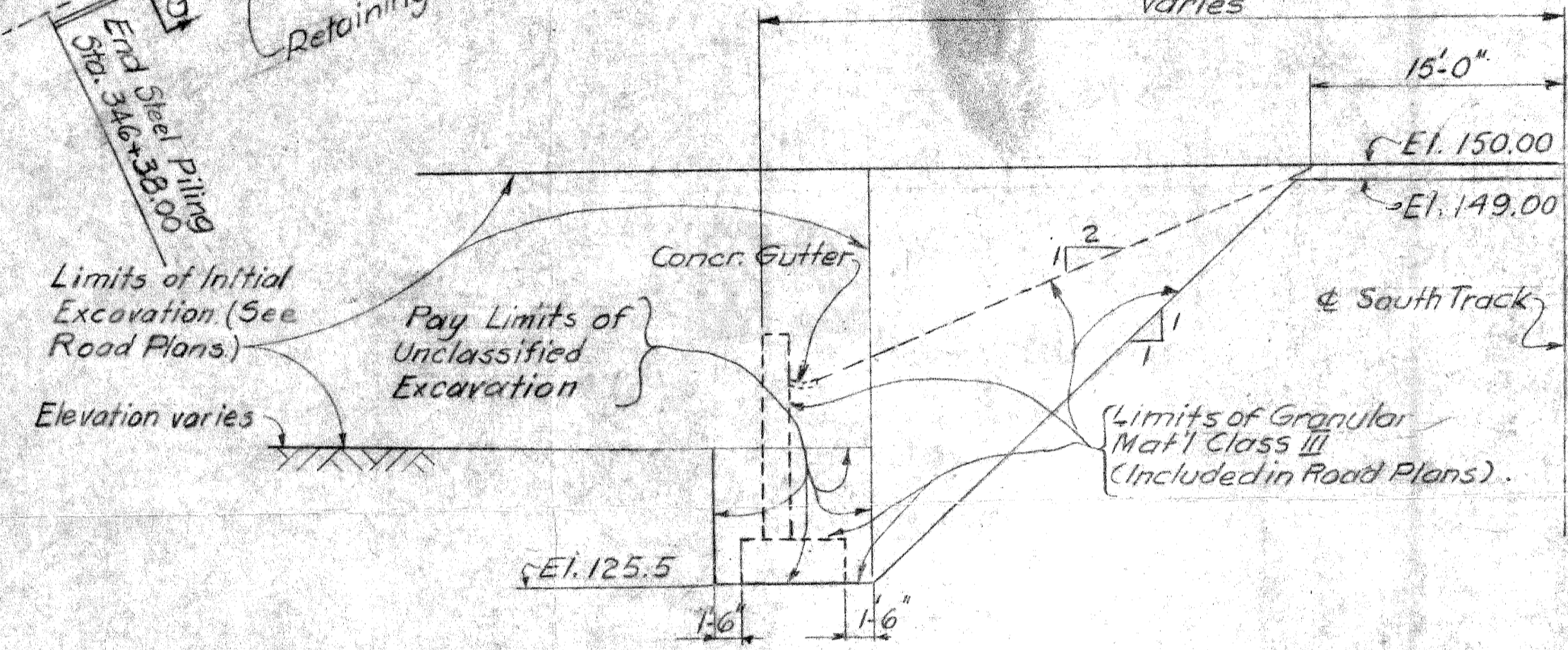


PLAN OF EXCAVATION

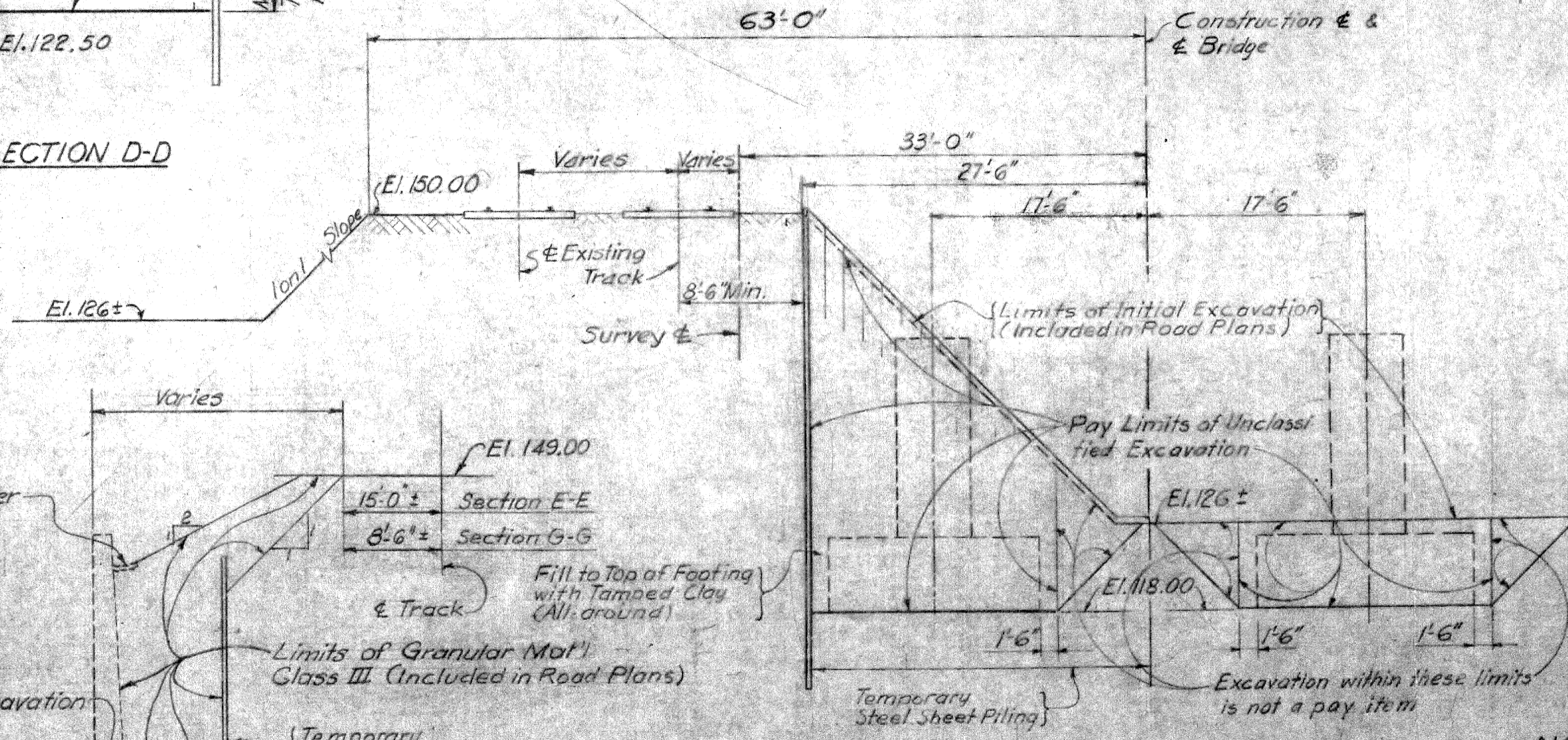
QUANTITIES		
ITEM	UNIT	AMOUNT
Temporary Steel Sheet Piling	Sq. Ft.	12,620
Steel Sheet Piling Left-in-Place	Sq. Ft.	1,170



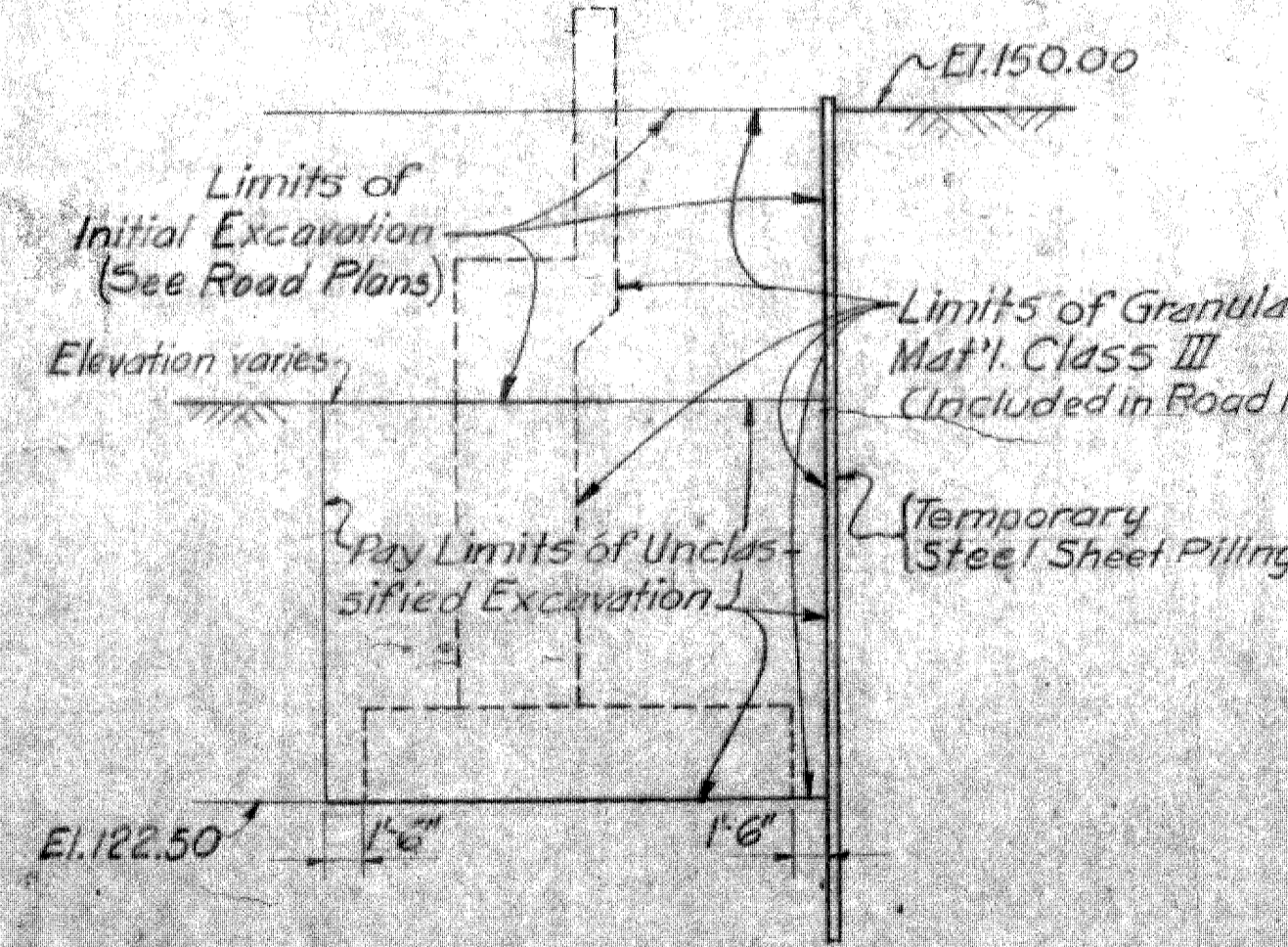
SECTION D-D



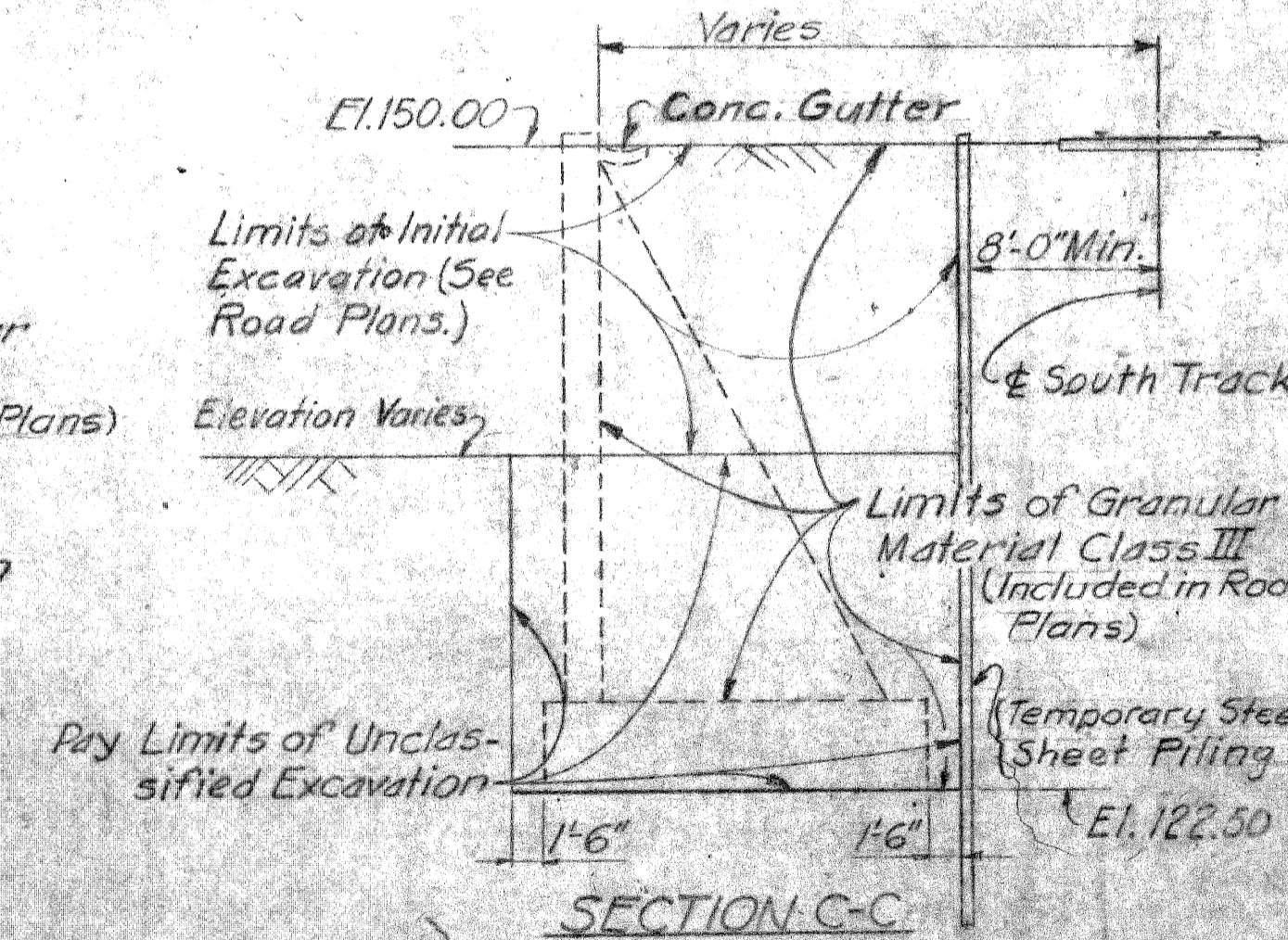
SECTION F-F



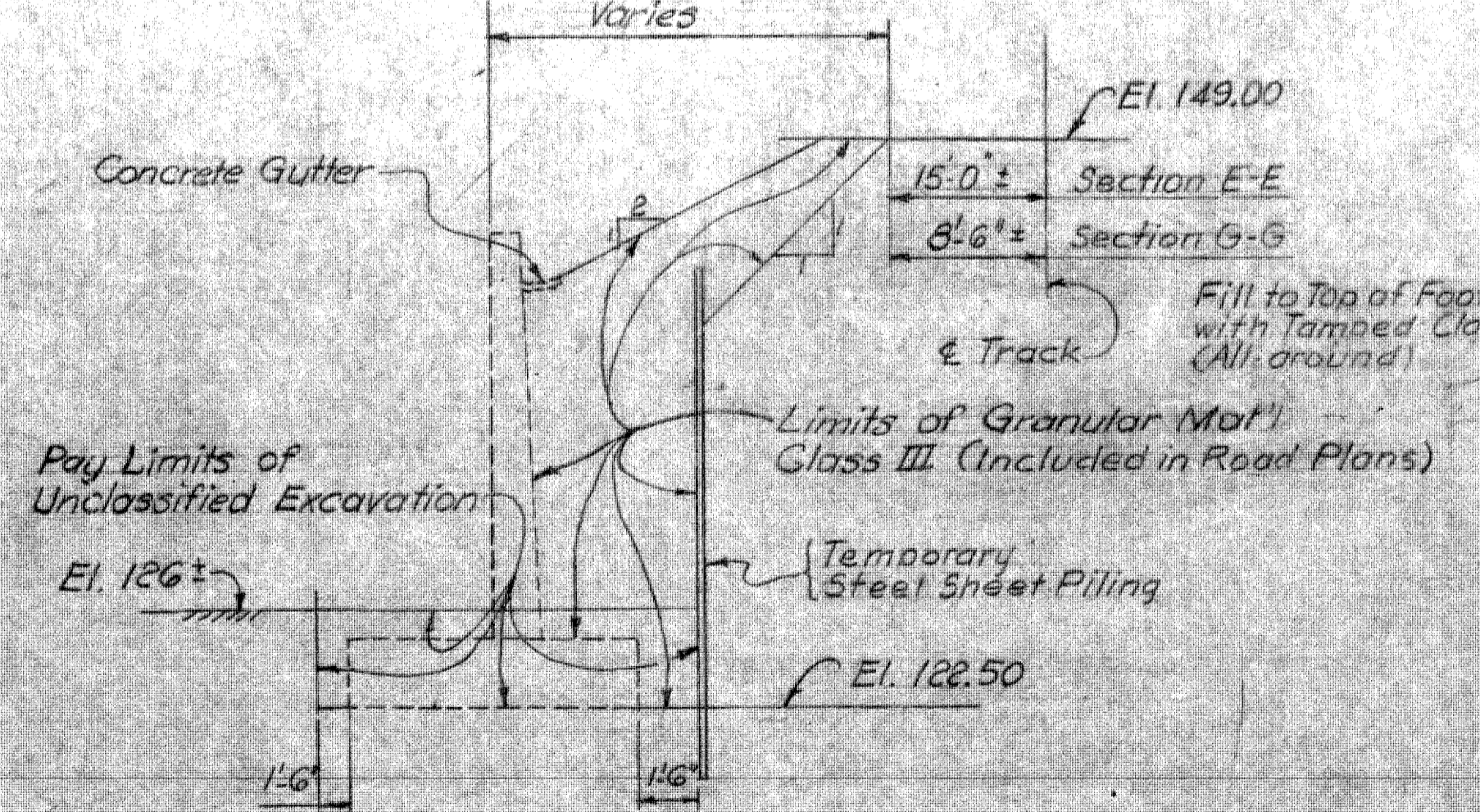
SECTION A-A



SECTION B-B



SECTION C-C



SECTION E-E

SECTION G-G

NOTE:
Temporary steel sheet piling is to be adequately supported to prevent bowing and tipping. The contractor shall submit details of his proposed temporary sheeting and bracing plans for railroad approval.

MICHIGAN STATE HIGHWAY DEPARTMENT
C. & O. RY. DESIGNATION BRIDGE WD 6.0
CONSTRUCTION AND EXCAVATION PLAN

HAZELT B. ERDAL - CONSULTING ENGINEERS - FILE NO. 409

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWN BY: R.L.K. 4-30-69
 CHECKED BY: CGH 4-21-69
 SHEET 6 OF 15
 X06 of 82123D