

# STATE OF MICHIGAN DEPARTMENT OF STATE HIGHWAYS

PROJ. BI 82123-008

## PLANS OF PROPOSED

### MICHIGAN PROJECT I-96-4(59)232 STATE PROJECT BI82123-008 JEFFRIES FREEWAY WAYNE COUNTY CITY OF DETROIT

ROUTE	STATE PROJECT NO.	FEDERAL NO.	SHEET NO.	TOTAL SHEETS
I-96	82123-008	I-96-4(59)232	1	

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS CURRENT STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.

**NOTES APPLYING TO STANDARD PLANS**

Where the following items are called for on plans, they are to be constructed according to the Standard Plan given below opposite each item unless otherwise indicated.

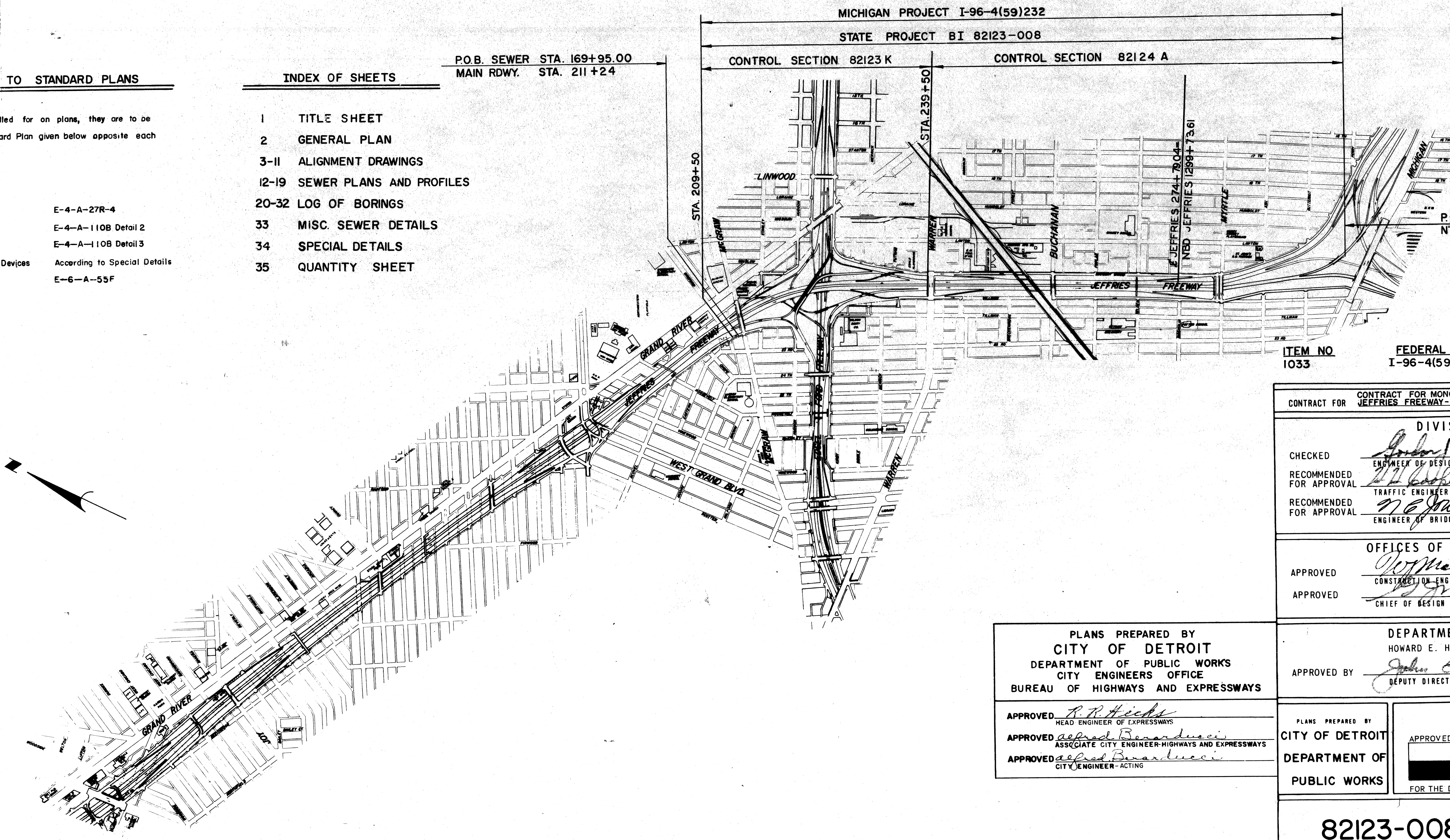
Manhole, Catch Basin, and Inlets	E-4-A-27R-4
4" Concrete Sidewalk	E-4-A-110B Detail 2
7" Concrete Sidewalk	E-4-A-110B Detail 3
Auxiliary Barriers and Channelizing Devices	According to Special Details
Barricade and Project Sign	E-6-A-55F

**INDEX OF SHEETS**

- 1 TITLE SHEET
- 2 GENERAL PLAN
- 3-II ALIGNMENT DRAWINGS
- 12-19 SEWER PLANS AND PROFILES
- 20-32 LOG OF BORINGS
- 33 MISC. SEWER DETAILS
- 34 SPECIAL DETAILS
- 35 QUANTITY SHEET

P.O.B. SEWER STA. 169+95.00  
MAIN RDWY. STA. 211+24

MICHIGAN PROJECT I-96-4(59)232  
STATE PROJECT BI 82123-008  
CONTROL SECTION 82123 K      CONTROL SECTION 82124 A



ITEM NO.	FEDERAL NO.	PROJECT NO.	MILES
1033	I-96-4(59)232	BI 82123-008	1.6 +6

CONTRACT FOR MONOLITHIC CONCRETE TUNNEL SEWER ALONG JEFFRIES FREEWAY FROM WRENFORD AVE. TO MICHIGAN AVE.

DIVISION APPROVAL		
CHECKED	<i>London J. Feltner</i>	6-23-67
RECOMMENDED FOR APPROVAL	<i>W. J. Cochran</i>	6-23-67
RECOMMENDED FOR APPROVAL	<i>M. C. Jones</i>	6-23-67
	ENGINEER OF BRIDGE AND ROAD DESIGN	

OFFICES OF DESIGN & CONSTRUCTION		
APPROVED	<i>W. J. Cochran</i>	6-23-67
APPROVED	<i>W. J. Cochran</i>	6-23-67
	CHIEF OF DESIGN AND TRAFFIC	

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

DEPARTMENT OF STATE HIGHWAYS  
HOWARD E. HILL - STATE HIGHWAY DIRECTOR

APPROVED BY *John E. Meyer* 6-23-67  
DEPUTY DIRECTOR OF ENGINEERING

APPROVED *R. R. Hicks*  
HEAD ENGINEER OF EXPRESSWAYS

APPROVED *Edward Bonarducci*  
ASSOCIATE CITY ENGINEER-HIGHWAYS AND EXPRESSWAYS

APPROVED *Edward Bonarducci*  
CITY ENGINEER - ACTING

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED

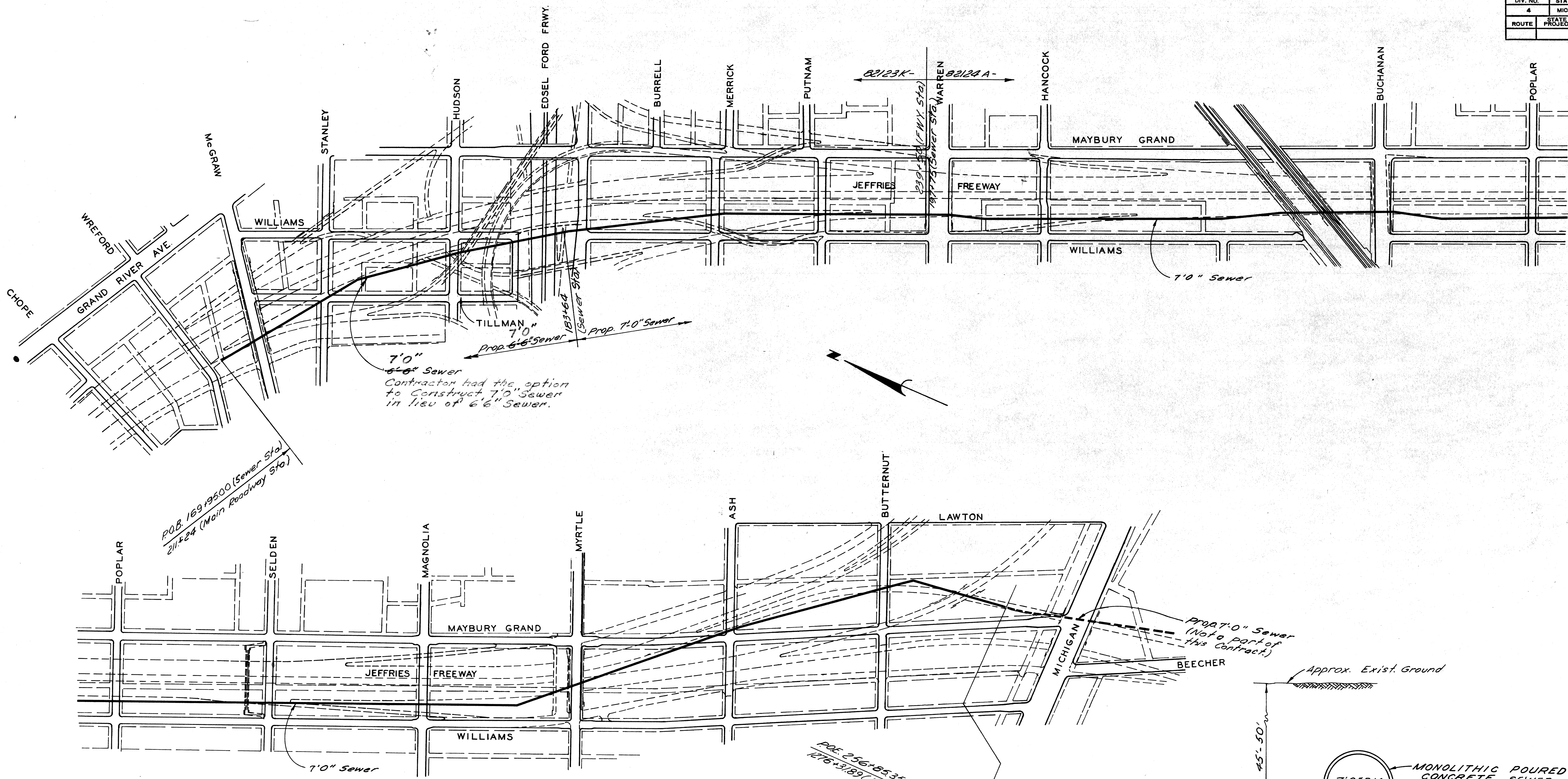
FOR THE DIVISION ENGINEER

82123-008	STATE PROJECT NO. 82123-008	FEDERAL PROJECT NO. I-96-4(59)232	SHEET NO. 1
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STATE PROJECT NO. BI 82123-008



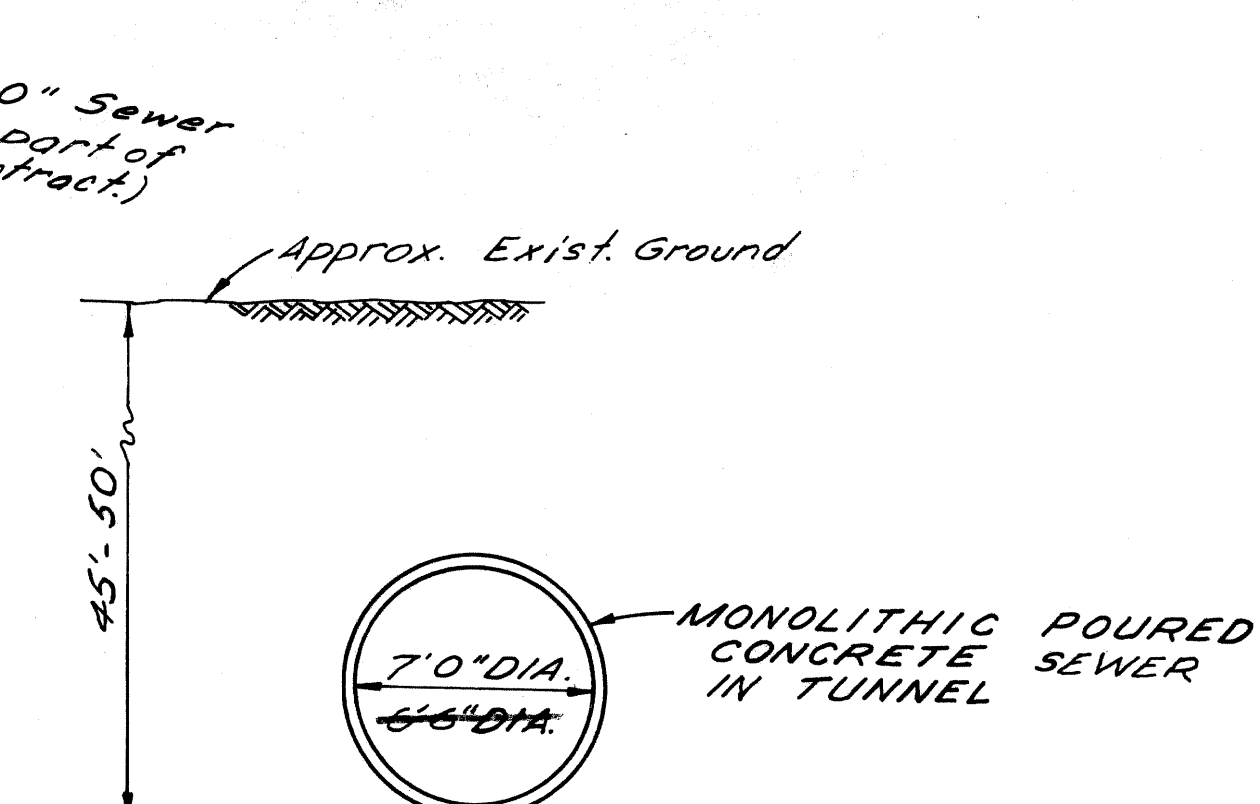
D.P. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
1-96	82123-008	Wayne	Detroit	2	
D.P. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS



7.0" 6'-6" Sewer  
 Contractor had the option to construct 7.0" sewer in lieu of 6'-6" sewer.

POB 16919500 (Sewer Sta) 21+24 (Main Roadway Sta)

POB 256+85.35 (Sewer Sta) 1276+3183 (NBD Roadway Sta)



TYPICAL SEWER SECTION

JEFFRIES FREEWAY  
 PLAN OF PROPOSED CONSTRUCTION CONTRACT  
 MONOLITHIC CONCRETE SEWER  
 WREFORD TO MICHIGAN

PLANS PREPARED BY  
 CITY OF DETROIT  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF CONSTRUCTION AND STRUCTURES  
 BUREAU OF HIGHWAYS AND STRUCTURES

SQUAD LEADER  
 DRAWN BY  
 TRACED BY  
 CHECKED BY  
 APPROVED

6-67  
 4-67  
 4-67  
 Jan 67



C.B.M.#68 Elev. 144.17 Arrow on Hydrant  
N.W. corner Chope Pl. & Grand River Ave.  
C.B.M.#66 Elev. 143.61 Arrow on Hydrant  
W. side Grand River Ave. 180 S. of Chope Pl.  
C.B.M.#67 Elev. 141.30 Arrow on Hydrant  
N.W. corner Chope Place and Eastern Ave.

C.B.M.#65 Elev. 142.67 Arrow on Hydrant  
S.W. corner Wireford Ave. & Grand River Ave.  
C.B.M.#64 Elev. 140.69 Arrow on Hydrant  
S.E. corner Wireford Avenue and 23rd St.

C.B.M.#63 Elev. 143.38 Arrow on Hydrant  
S.W. corner McGraw Ave. & Grand River Ave.  
C.B.M.#62 Elev. 143.78 Arrow on Hydrant  
E. side of Williams 50' S. of McGraw Ave.  
C.B.M.#61 Elev. 139.75 Arrow on Hydrant  
S.W. corner 23rd St. and McGraw Avenue  
R.B.M.#21-253 Elev. 136.07 City of Detroit  
Manu. N.E. corner 23rd St. & Stanley Ave.

S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	3	
S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS

**CURVE DATA FOR SBD TO WBD TURNING RD'WY**

**Curve 1SW**  
 $\Delta = 8^{\circ}53'38''$   
 $D = 3^{\circ}30'00.03''$   
 $R = 1637.02'$   
 $T = 127.31'$   
 $L = 254.11'$   
 $E = 4.94'$   
 $PC = 4+28.72$   
 $PI = 5+56.03$   
 $PT = 6+82.83$

**Curve 2SW**  
 $\Delta = 6^{\circ}20'58''$   
 $D = 1^{\circ}41'12.61''$   
 $R = 3713.72'$   
 $T = 205.99'$   
 $L = 411.55'$   
 $E = 5.71'$   
 $PC = 6+82.83$   
 $PI = 8+88.82$   
 $PT = 10+94.38$

**CURVE DATA FOR NBD TO NBD TURNING RD'WY**

**Curve 3WN**  
 $\Delta = 8^{\circ}14'46''$   
 $D = 1^{\circ}33'04.10''$   
 $R = 3693.79'$   
 $T = 266.27'$   
 $L = 531.62'$   
 $E = 9.59'$   
 $PC = 29+56.37$   
 $PI = 32+22.64$   
 $PT = 34+87.99$

**Curve 4EN**  
 $\Delta = 2^{\circ}30'00''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 41.67'$   
 $L = 83.33'$   
 $E = 0.46'$   
 $PC = 23+60.71$   
 $PI = 24+02.39$   
 $PT = 24+44.05$

**CURVE DATA FOR EBD TO NBD TURNING RD'WY**

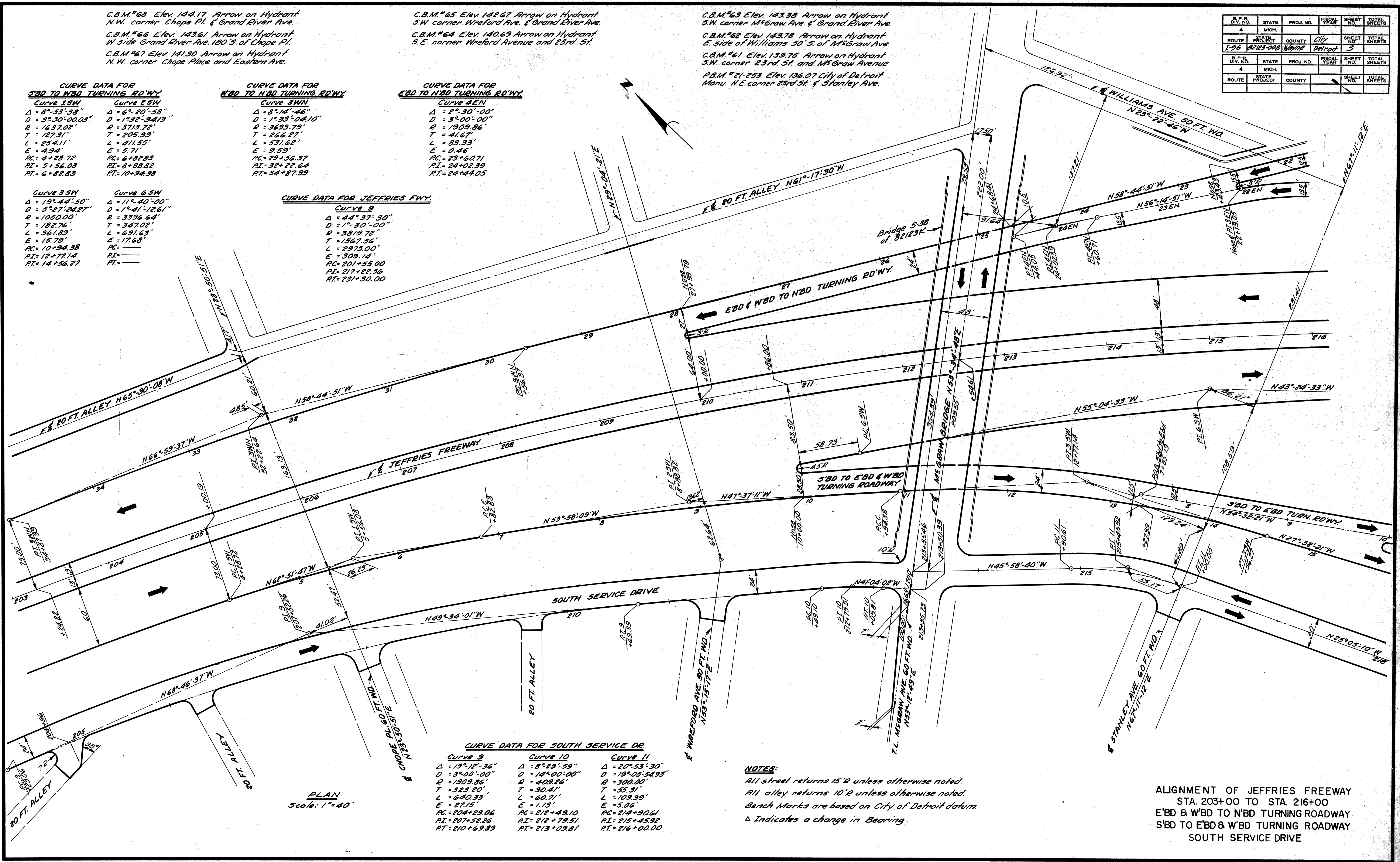
**Curve 5EN**  
 $\Delta = 2^{\circ}30'00''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 41.67'$   
 $L = 83.33'$   
 $E = 0.46'$   
 $PC = 23+60.71$   
 $PI = 24+02.39$   
 $PT = 24+44.05$

**Curve 3SW**  
 $\Delta = 19^{\circ}44'50''$   
 $D = 5^{\circ}27'24.27''$   
 $R = 1050.00'$   
 $T = 182.76'$   
 $L = 361.89'$   
 $E = 15.79'$   
 $PC = 10+94.38$   
 $PI = 12+77.14$   
 $PT = 14+56.27$

**Curve 6SW**  
 $\Delta = 11^{\circ}40'00''$   
 $D = 1^{\circ}41'12.61''$   
 $R = 3396.64'$   
 $T = 347.02'$   
 $L = 691.63'$   
 $E = 17.68'$   
 $PC =$   
 $PI =$   
 $PT =$

**CURVE DATA FOR JEFFRIES FWY**

**Curve 9**  
 $\Delta = 44^{\circ}37'30''$   
 $D = 1^{\circ}30'00''$   
 $R = 3819.76'$   
 $T = 1567.56'$   
 $L = 2975.00'$   
 $E = 309.14'$   
 $PC = 201+55.00$   
 $PI = 217+22.56$   
 $PT = 231+30.00$



**CURVE DATA FOR SOUTH SERVICE DR**

**Curve 9**  
 $\Delta = 19^{\circ}12'36''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 323.20'$   
 $L = 640.33'$   
 $E = 27.15'$   
 $PC = 204+29.06$   
 $PI = 207+52.26$   
 $PT = 210+69.39$

**Curve 10**  
 $\Delta = 8^{\circ}29'59''$   
 $D = 14^{\circ}00'00''$   
 $R = 409.26'$   
 $T = 30.41'$   
 $L = 60.71'$   
 $E = 1.15'$   
 $PC = 212+49.10$   
 $PI = 212+79.51$   
 $PT = 213+09.81$

**Curve 11**  
 $\Delta = 20^{\circ}53'30''$   
 $D = 19^{\circ}05'54.93''$   
 $R = 300.00'$   
 $T = 55.31'$   
 $L = 109.39'$   
 $E = 5.06'$   
 $PC = 214+90.61$   
 $PI = 215+45.92$   
 $PT = 216+00.00$

**NOTES:**  
 All street returns 15'R unless otherwise noted.  
 All alley returns 10'R unless otherwise noted.  
 Bench Marks are based on City of Detroit datum.  
 Δ Indicates a change in Bearing.

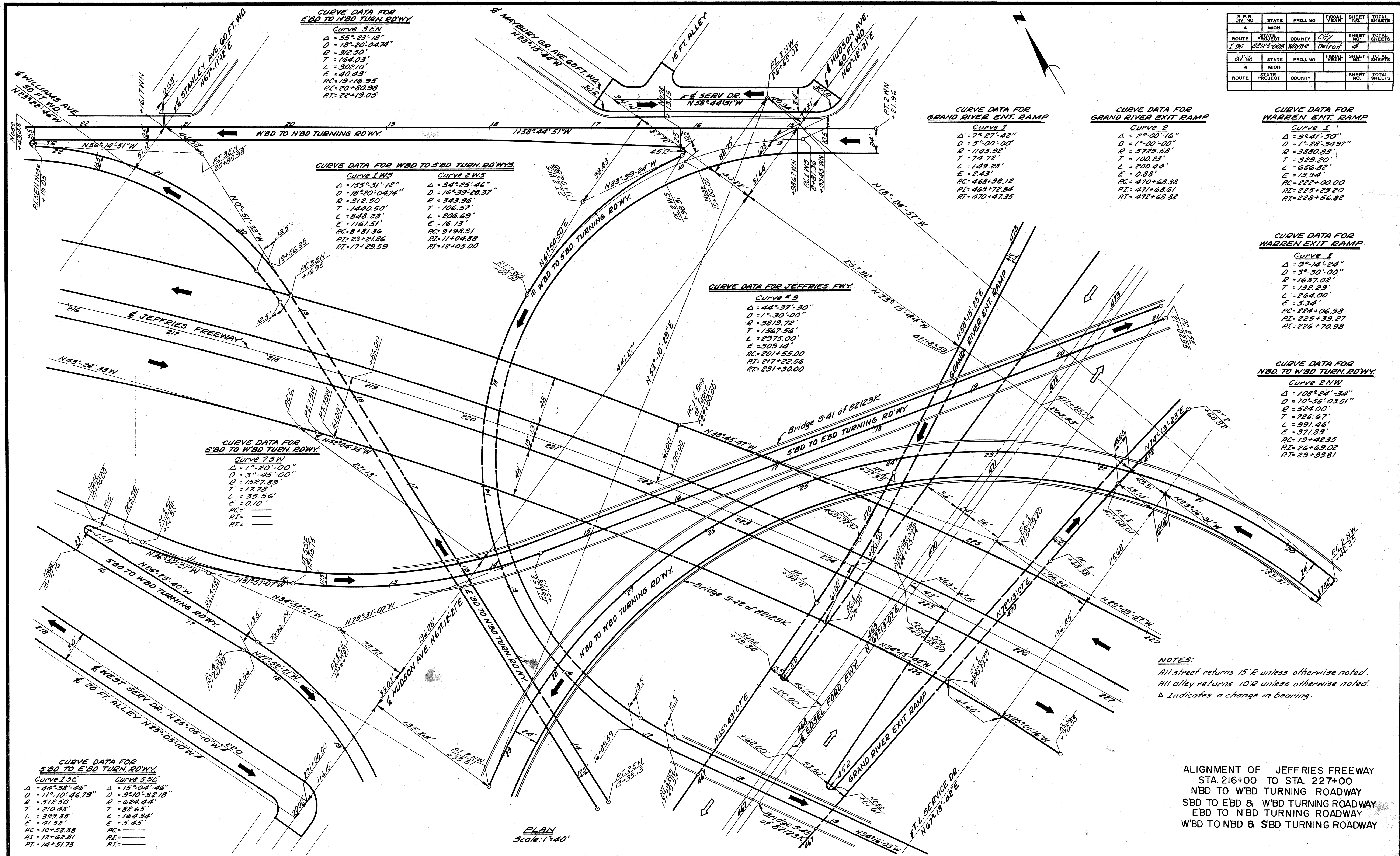
ALIGNMENT OF JEFFRIES FREEWAY  
 STA. 203+00 TO STA. 216+00  
 E'BD & W'BD TO N'BD TURNING ROADWAY  
 S'BD TO E'BD & W'BD TURNING ROADWAY  
 SOUTH SERVICE DRIVE



DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	4	

DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS



**CURVE DATA FOR EBD TO NBD TURN RD'WAY**  
**Curve 3 EN**  
 $\Delta = 55^{\circ}23'18''$   
 $D = 18^{\circ}20'04.74''$   
 $R = 312.50'$   
 $T = 164.03'$   
 $L = 302.10'$   
 $E = 40.43'$   
 $PC = 19+16.95$   
 $PI = 20+80.98$   
 $PT = 22+19.05$

**CURVE DATA FOR WBD TO SBD TURN RD'WAYS**  
**Curve 1 WS**  
 $\Delta = 155^{\circ}31'12''$   
 $D = 18^{\circ}20'04.74''$   
 $R = 312.50'$   
 $T = 1440.50'$   
 $L = 848.23'$   
 $E = 1161.51'$   
 $PC = 8+81.36$   
 $PI = 23+21.86$   
 $PT = 17+29.59$

**Curve 2 WS**  
 $\Delta = 34^{\circ}25'46''$   
 $D = 16^{\circ}39'28.37''$   
 $R = 343.96'$   
 $T = 106.57'$   
 $L = 206.69'$   
 $E = 16.13'$   
 $PC = 9+98.31$   
 $PI = 11+04.88$   
 $PT = 12+05.00$

**CURVE DATA FOR GRAND RIVER ENT. RAMP**  
**Curve 1**  
 $\Delta = 7^{\circ}27'42''$   
 $D = 5^{\circ}00'00''$   
 $R = 1145.92'$   
 $T = 74.72'$   
 $L = 149.23'$   
 $E = 2.43'$   
 $PC = 468+98.12$   
 $PI = 469+72.84$   
 $PT = 470+47.35$

**CURVE DATA FOR GRAND RIVER ENT. RAMP**  
**Curve 2**  
 $\Delta = 2^{\circ}00'16''$   
 $D = 1^{\circ}00'00''$   
 $R = 5729.58'$   
 $T = 100.23'$   
 $L = 200.44'$   
 $E = 0.88'$   
 $PC = 470+68.38$   
 $PI = 471+68.61$   
 $PT = 472+68.82$

**CURVE DATA FOR WARREN ENT. RAMP**  
**Curve 1**  
 $\Delta = 9^{\circ}41'50''$   
 $D = 1^{\circ}28'34.97''$   
 $R = 3880.83'$   
 $T = 329.20'$   
 $L = 656.82'$   
 $E = 13.94'$   
 $PC = 222+00.00$   
 $PI = 471+68.61$   
 $PT = 228+56.82$

**CURVE DATA FOR WARREN ENT. RAMP**  
**Curve 2**  
 $\Delta = 9^{\circ}14'24''$   
 $D = 3^{\circ}30'00''$   
 $R = 1637.02'$   
 $T = 132.29'$   
 $L = 264.00'$   
 $E = 5.34'$   
 $PC = 224+06.98$   
 $PI = 225+39.27$   
 $PT = 226+70.98$

**CURVE DATA FOR JEFFRIES FWY**  
**Curve 4 S**  
 $\Delta = 44^{\circ}37'30''$   
 $D = 1^{\circ}30'00''$   
 $R = 3813.72'$   
 $T = 1567.56'$   
 $L = 2975.00'$   
 $E = 309.14'$   
 $PC = 201+55.00$   
 $PI = 217+22.56$   
 $PT = 231+30.00$

**CURVE DATA FOR SBD TO WBD TURN RD'WAY**  
**Curve 7.5 W**  
 $\Delta = 1^{\circ}20'00''$   
 $D = 3^{\circ}45'00''$   
 $R = 1527.89'$   
 $T = 17.73'$   
 $L = 35.56'$   
 $E = 0.10'$   
 $PC =$   
 $PI =$   
 $PT =$

**CURVE DATA FOR SBD TO EBD TURN RD'WAY**  
**Curve 1 SE**  
 $\Delta = 44^{\circ}38'46''$   
 $D = 11^{\circ}10'46.79''$   
 $R = 512.50'$   
 $T = 210.43'$   
 $L = 399.35'$   
 $E = 41.52'$   
 $PC = 10+52.38$   
 $PI = 12+62.81$   
 $PT = 14+31.73$

**Curve 5 SE**  
 $\Delta = 15^{\circ}04'46''$   
 $D = 9^{\circ}10'32.18''$   
 $R = 624.44'$   
 $T = 82.65'$   
 $L = 164.34'$   
 $E = 5.45'$   
 $PC =$   
 $PI =$   
 $PT =$

**PLAN**  
 Scale: 1"=40'

**NOTES:**  
 All street returns 15'R unless otherwise noted.  
 All alley returns 10'R unless otherwise noted.  
 $\Delta$  Indicates a change in bearing.

ALIGNMENT OF JEFFRIES FREEWAY  
 STA. 216+00 TO STA. 227+00  
 NBD TO WBD TURNING ROADWAY  
 SBD TO EBD & WBD TURNING ROADWAY  
 EBD TO NBD TURNING ROADWAY  
 WBD TO NBD & SBD TURNING ROADWAY



C.B.M. #36 Elev. 136.57 Arrow on Hydrant  
N.W. corner 24th St. and Hudson Ave.  
C.B.M. #55 Elev. 136.31 Arrow on Hydrant  
W. side of 24th St. 130' S. of Hudson Ave.

C.B.M. #34 Elev. 136.07 Arrow on Hydrant  
S.W. corner 24th St. and South Service Dr.  
C.B.M. #27 Elev. 134.11 Arrow on Hydrant  
W. side of 24th St. 540 N. of Merrick Ave.

C.B.M. #57 Elev. 137.72 Arrow on Hydrant  
N.E. corner 23rd St. and Hudson Avenue  
C.B.M. #35 Elev. 134.47 Arrow on Hydrant  
S.E. corner 23rd St. and South Service Dr.

C.B.M. #28 Elev. 133.51 Arrow on Hydrant  
W. side of 23rd St. 310 N. of Merrick Ave.

S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	5	

S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS

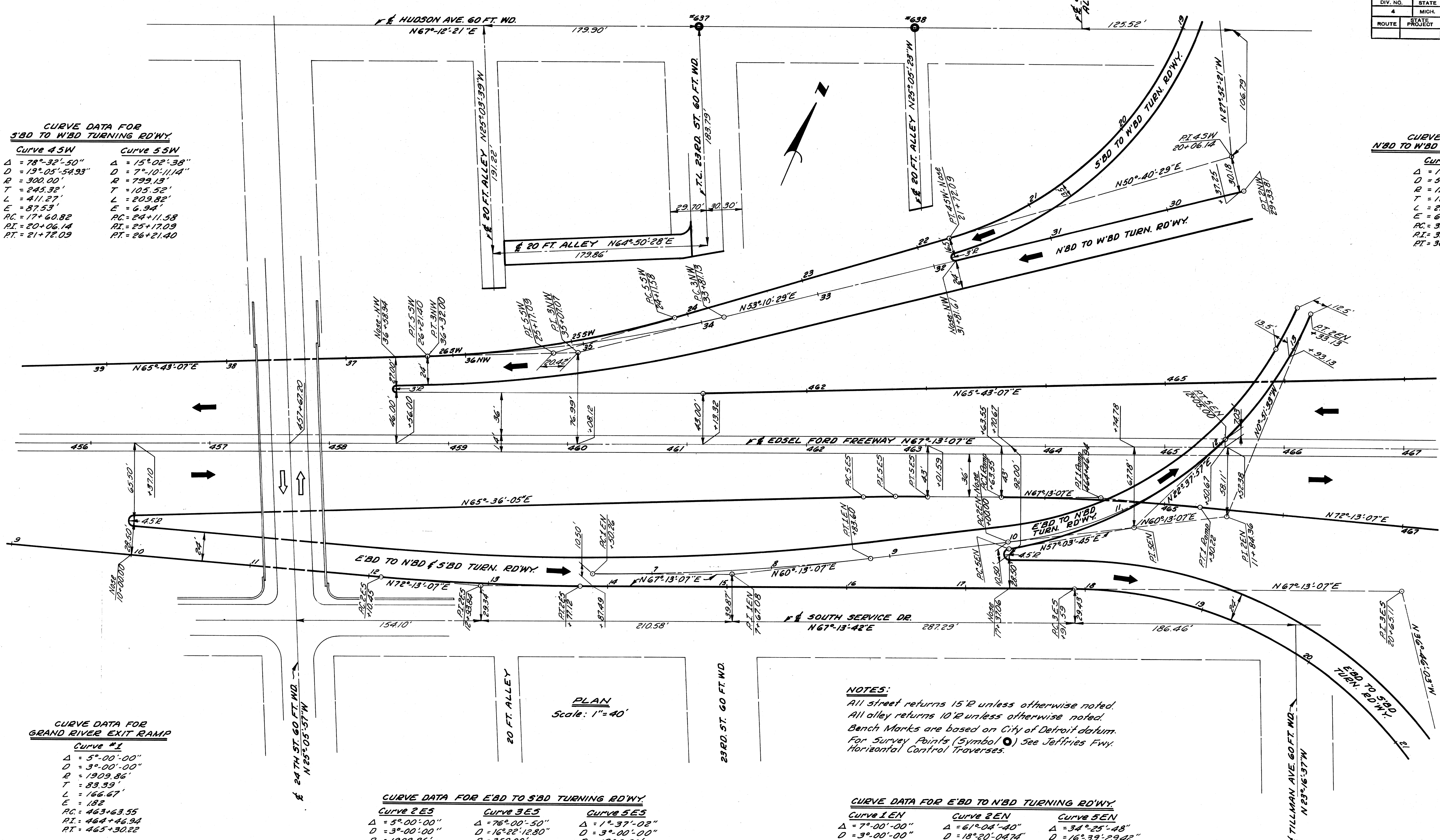
**CURVE DATA FOR S'BD TO W'BD TURNING RD'WY**

<b>Curve 4.5W</b>	<b>Curve 5.5W</b>
Δ = 78°-32'-50"	Δ = 15°-02'-38"
D = 19°-05'-54.93"	D = 7°-10'-11.14"
R = 300.00'	R = 799.13'
T = 245.32'	T = 105.52'
L = 411.27'	L = 209.82'
E = 87.53'	E = 6.94'
PC = 17+60.82	PC = 24+11.58
PI = 20+06.14	PI = 25+17.09
PT = 21+72.09	PT = 26+21.40

**CURVE DATA FOR N'BD TO W'BD TURNING RD'WY**

**Curve 3.1W**

Δ = 12°-32'-38"  
D = 5°-00'-00"  
R = 1145.92'  
T = 125.94'  
L = 250.88'  
E = 6.90'  
PC = 33+81.13  
PI = 35+07.07  
PT = 36+32.00



**CURVE DATA FOR GRAND RIVER EXIT RAMP**

**Curve #1**

Δ = 5°-00'-00"  
D = 3°-00'-00"  
R = 1909.86'  
T = 83.39'  
L = 166.67'  
E = 1.82'  
PC = 463+63.55  
PI = 464+44.94  
PT = 465+30.22

**CURVE DATA FOR E'BD TO S'BD TURNING RD'WY**

<b>Curve 2.E5</b>	<b>Curve 3.E5</b>	<b>Curve 5.E5</b>
Δ = 5°-00'-00"	Δ = 76°-00'-50"	Δ = 1°-37'-02"
D = 3°-00'-00"	D = 16°-22'-12.80"	D = 3°-00'-00"
R = 1909.86'	R = 350.00'	R = 1909.86'
T = 83.39'	T = 273.52'	T = 26.36'
L = 166.67'	L = 464.34'	L = 53.91'
E = 1.82'	E = 94.20'	E = 0.13'
PC = 12+10.45	PC = 17+91.59	PC =
PI = 12+33.84	PI = 20+65.11	PI =
PT = 13+77.12	PT = 22+55.33	PT =

**NOTES:**  
All street returns 15' unless otherwise noted.  
All alley returns 10' unless otherwise noted.  
Bench Marks are based on City of Detroit datum.  
For Survey Points (Symbol ●) See Jeffries Fwy.  
Horizontal Control Traverses.

**CURVE DATA FOR E'BD TO N'BD TURNING RD'WY**

<b>Curve 1.E5</b>	<b>Curve 2.E5</b>	<b>Curve 5.E5</b>
Δ = 7°-00'-00"	Δ = 61°-04'-40"	Δ = 34°-25'-48"
D = 3°-00'-00"	D = 18°-20'-04.74"	D = 16°-39'-29.42"
R = 1909.86'	R = 312.50'	R = 343.95'
T = 116.81'	T = 184.36'	T = 106.57'
L = 233.33'	L = 333.13'	L = 206.69'
E = 3.57'	E = 50.33'	E = 16.13'
PC = 6+50.26	PC = 10+00.00	PC =
PI = 7+67.08	PI = 11+84.36	PI =
PT = 8+83.60	PT = 13+33.13	PT =

ALIGNMENT OF JEFFRIES FREEWAY  
N'BD & S'BD TO W'BD TURNING ROADWAY  
E'BD TO N'BD & S'BD TURNING ROADWAY



CURVE DATA FOR EAST SERVICE DR.

Curve #2  
Δ = 19°20'25"  
D = 9°18'19.66"  
R = 615.72'  
T = 104.92'  
L = 207.84'  
E = 8.88'  
PC = 227+78.30  
PI = 228+83.22  
PT = 229+86.14

CURVE DATA FOR N'BD TO E'BD TURNING RD'WY.

Curve #1 NE  
Δ = 7°00'00"  
D = 3°00'00"  
R = 1909.96'  
T = 116.81'  
L = 233.33'  
E = 3.57'  
PC = 6+59.23  
PI = 7+76.05  
PT = 8+92.57

CURVE DATA FOR E'BD TO S'BD TURNING RD'WY.

Curve #AES  
Δ = 11°51'06"  
D = 4°00'00"  
R = 1432.99'  
T = 148.68'  
L = 296.29'  
E = 7.70'  
PC = 27+95.10  
PI = 29+43.78  
PT = 30+91.39

CURVE DATA FOR JEFFRIES FREEWAY

Curve #9  
Δ = 44°37'30"  
D = 1°30'00"  
R = 3819.72'  
T = 1567.56'  
L = 2975.00'  
E = 309.14'  
PC = 201+55.00  
PI = 217+22.56  
PT = 231+30.00

CURVE DATA FOR WARREN EXIT RAMP

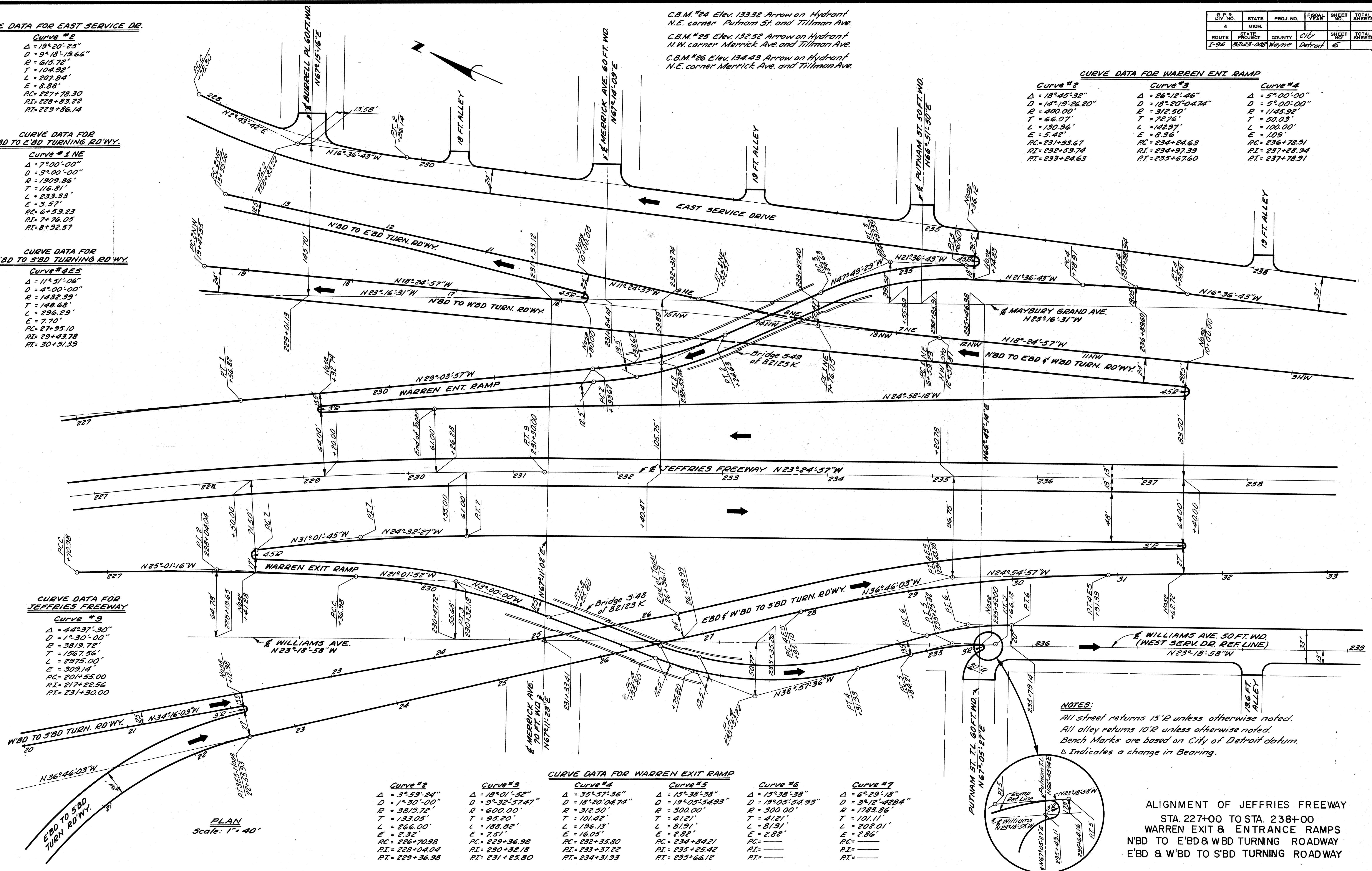
Curve #2 Δ = 3°59'20" D = 1°30'00" R = 3819.72' T = 1567.56' L = 2975.00' E = 309.14' PC = 226+70.98 PI = 228+04.04 PT = 229+36.98  
Curve #3 Δ = 18°01'52" D = 9°32'57.47" R = 600.00' T = 95.20' L = 188.82' E = 2.92' PC = 229+36.98 PI = 230+32.19 PT = 231+25.80  
Curve #4 Δ = 35°57'36" D = 18°20'04.74" R = 312.50' T = 101.42' L = 196.13' E = 16.05' PC = 232+35.80 PI = 233+37.22 PT = 234+31.93  
Curve #5 Δ = 15°38'38" D = 19°05'54.93" R = 300.00' T = 41.21' L = 81.91' E = 2.82' PC = 234+84.21 PI = 235+25.42 PT = 235+66.12  
Curve #6 Δ = 19°38'38" D = 19°05'54.93" R = 300.00' T = 41.21' L = 81.91' E = 2.82' PC = 234+84.21 PI = 235+25.42 PT = 235+66.12  
Curve #7 Δ = 6°29'18" D = 3°12'42.84" R = 1789.86' T = 101.11' L = 202.01' E = 2.86' PC = 234+84.21 PI = 235+25.42 PT = 235+66.12

CURVE DATA FOR WARREN ENT. RAMP

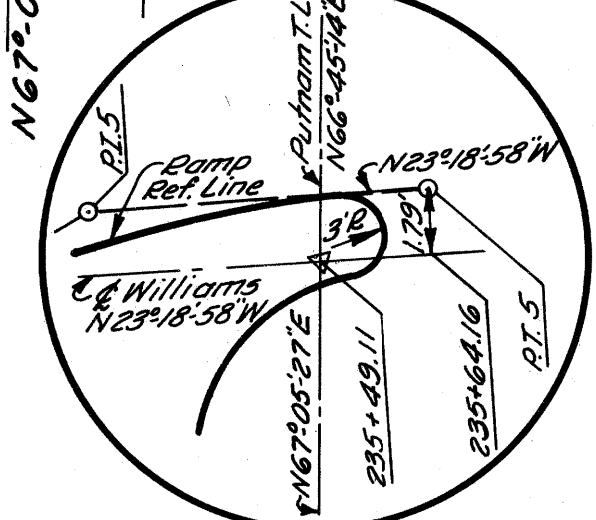
Curve #2 Δ = 18°45'32" D = 12°19'26.20" R = 400.00' T = 66.07' L = 130.96' E = 5.42' PC = 231+93.67 PI = 232+59.74 PT = 233+24.63  
Curve #3 Δ = 26°12'46" D = 18°20'04.74" R = 312.50' T = 142.97' L = 100.00' E = 8.36' PC = 234+24.63 PI = 234+97.39 PT = 235+67.60  
Curve #4 Δ = 5°00'00" D = 5°00'00" R = 1145.92' T = 50.03' L = 100.00' E = 1.09' PC = 236+78.91 PI = 237+28.94 PT = 237+78.91

S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	6	

C.B.M. #24 Elev. 133.32 Arrow on Hydrant N.E. corner Putnam St. and Tillman Ave.  
C.B.M. #25 Elev. 132.52 Arrow on Hydrant N.W. corner Merrick Ave. and Tillman Ave.  
C.B.M. #26 Elev. 134.43 Arrow on Hydrant N.E. corner Merrick Ave. and Tillman Ave.



NOTES:  
All street returns 15'R unless otherwise noted.  
All alley returns 10'R unless otherwise noted.  
Bench Marks are based on City of Detroit datum.  
Δ Indicates a change in Bearing.



ALIGNMENT OF JEFFRIES FREEWAY  
STA. 227+00 TO STA. 238+00  
WARREN EXIT & ENTRANCE RAMP  
N'BD TO E'BD & W'BD TURNING ROADWAY  
E'BD & W'BD TO S'BD TURNING ROADWAY

PLAN  
Scale: 1" = 40'



C.B.M. #23 Elev. 134.29 Arrow on Hydrant  
S.E. corner Warren Ave. & Maybury Grand Ave.  
C.B.M. #22 Elev. 131.78 Arrow on Hydrant  
S.E. corner Tillman Ave. & Warren Ave.

C.B.M. #21 Elev. 132.04 Stem on Top of Hydrant  
E. side Maybury Grand 78' S. of Hancock Ave.  
C.B.M. #20 Elev. 131.82 DET on Flange of Hydrant  
S.W. corner Hancock Ave. & Williams Ave.  
P.B.M. #20-252A Elev. 129.12 City of Detroit  
Monument. N.E. corner of Hancock & Tillman

C.B.M. #18 Elev. 129.26 DET on Flange of Hydrant  
E. side of Maybury Grand 430' S. of Hancock Ave.  
C.B.M. #19 Elev. 128.80 DET on Flange of Hydrant  
E. side of Williams 470' S. of Hancock Ave.

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	7	

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS

**CURVE DATA FOR N'BD. TO W'BD. TURN ROWY**

Curve #1 WNW  
 $\Delta = 5^{\circ}00'00''$   
 $D = 2^{\circ}00'00''$   
 $R = 2864.79'$   
 $T = 125.95'$   
 $L = 250.00'$   
 $E = 2.73'$   
 $PC = 4+28.85$   
 $PI = 5+53.93$   
 $PT = 6+78.85$

**CURVE DATA FOR WARREN EXIT RAMP**

Curve #2	Curve #3	Curve #4
$\Delta = 10^{\circ}09'49''$	$\Delta = 13^{\circ}31'23''$	$\Delta = 11^{\circ}16'31''$
$D = 6^{\circ}00'00''$	$D = 7^{\circ}06'48.55''$	$D = 5^{\circ}21'34.83''$
$R = 954.93'$	$R = 805.45'$	$R = 1069.02'$
$T = 84.92'$	$T = 95.50'$	$T = 105.53'$
$L = 169.39'$	$L = 190.11'$	$L = 210.37'$
$E = 3.77'$	$E = 5.64'$	$E = 5.20'$
$PC = 243+93.25$	$PC = 242+03.14$	$PC = 242+20.06$
$PI = 244+78.17$	$PI = 242+28.64$	$PI = 243+25.59$
$PT = 245+62.64$	$PT = 243+33.25$	$PT = 244+30.43$

**CURVE DATA FOR WARREN ENT. RAMP**

Curve #1	Curve #2
$\Delta = 7^{\circ}00'00''$	$\Delta = 5^{\circ}24'01''$
$D = 5^{\circ}00'00''$	$D = 5^{\circ}00'00''$
$R = 1145.92'$	$R = 1145.92'$
$T = 70.09'$	$T = 54.04'$
$L = 140.00'$	$L = 108.01'$
$E = 2.14'$	$E = 1.27'$
$PC = 240+61.81$	$PC = 245+78.79$
$PI = 241+31.90$	$PI = 246+32.84$
$PT = 242+01.81$	$PT = 246+86.80$

**NOTES:**

All alley returns 10'R unless otherwise noted.  
 All street returns 15'R unless otherwise noted.  
 Bench Marks are based on City of Detroit datum.  
 $\Delta$  Indicates a change in Bearing  
 For Survey Points (Symbol  $\odot$ ) See Jeffries Fwy.  
 Horizontal Control Traverses.

PLAN  
 Scale: 1"=40'

ALIGNMENT OF JEFFRIES FREEWAY  
 STA. 238+00 TO STA. 251+00



C.B.M. #18 Elev. 129.26 DET on Flange of Hydrant  
E. side Maybury Grand, 430' S. of Hancock Ave.  
C.B.M. #19 Elev. 128.80 DET on Flange of Hydrant  
E. side Williams Ave. 470' S. of Hancock Avenue

C.B.M. #17 Elev. 130.29 DET on Flange of Hydrant  
S.E. corner Breckenridge Ave & Williams Avenue  
C.B.M. #16 Elev. 124.71 DET on Flange of Hydrant  
S.W. corner Buchanan Ave. & Williams Avenue.

C.B.M. #15 Elev. 127.68 Arrow on Hydrant  
N.E. corner Poplar St. & Maybury Grand  
C.B.M. #14 Elev. 126.62 DET on Flange of Hydrant  
S.W. corner Poplar St. & Williams Avenue

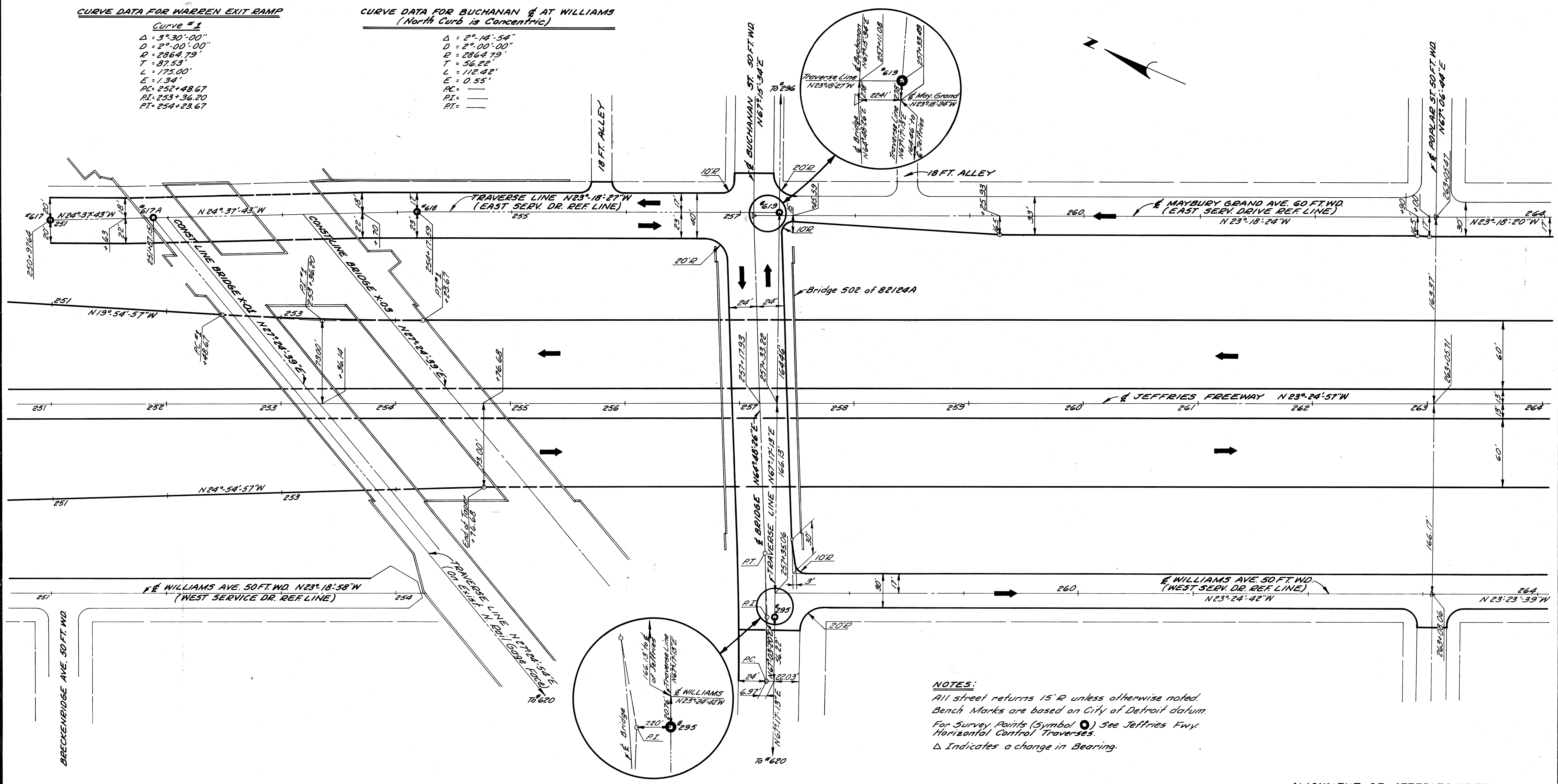
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
F-96	82123-008	Wayne	Detroit	8	
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	SHEET NO.	TOTAL SHEETS	

**CURVE DATA FOR WARREN EXIT RAMP**

Curve #2  
 $\Delta = 3^{\circ}30'00''$   
 $D = 2^{\circ}00'00''$   
 $R = 2864.79'$   
 $T = 87.53'$   
 $L = 175.00'$   
 $E = 1.34'$   
 $PC = 252+48.67$   
 $PI = 253+36.20$   
 $PT = 254+23.67$

**CURVE DATA FOR BUCHANAN & AT WILLIAMS  
(North Curb is Concentric)**

$\Delta = 2^{\circ}14'54''$   
 $D = 2^{\circ}00'00''$   
 $R = 2864.79'$   
 $T = 56.22'$   
 $L = 112.42'$   
 $E = 0.55'$   
 $PC =$   
 $PI =$   
 $PT =$



**NOTES:**  
 All street returns 15' R unless otherwise noted.  
 Bench Marks are based on City of Detroit datum.  
 For Survey Points (Symbol  $\odot$ ) See Jeffries Fwy.  
 Horizontal Control Traverses.  
 $\Delta$  Indicates a change in Bearing.

PLAN  
 Scale: 1" = 40'

ALIGNMENT OF JEFFRIES FREEWAY  
 STA. 251+00 TO STA. 264+00



C.B.M. #13 Elev. 125.65 DET on Flange of Hydrant  
E. Side Maybury Grand 200' S. of Poplar Street  
C.B.M. #12 Elev. 125.62 Arrow on Hydrant  
W. Side of Williams 260' S. of Poplar

C.B.M. #11 Elev. 125.61 DET on Flange of Hydrant  
N.E. corner Selden Ave. & Maybury Grand Ave.  
C.B.M. #10 Elev. 123.45 DET on Flange of Hydrant  
S.W. corner Selden Ave. & Williams Avenue.

P.B.M. #20-253A Elev. 121.78 City of Detroit Manu.  
N.E. corner Selden Ave. and Tillman Avenue

C.B.M. #9 Elev. 122.37 DET on Flange of Hydrant  
N.W. corner Magnolia St. & Maybury Grand Ave.  
C.B.M. #8 Elev. 121.96 DET on Flange of Hydrant  
S.E. corner Magnolia St. & Williams Avenue.

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	9	

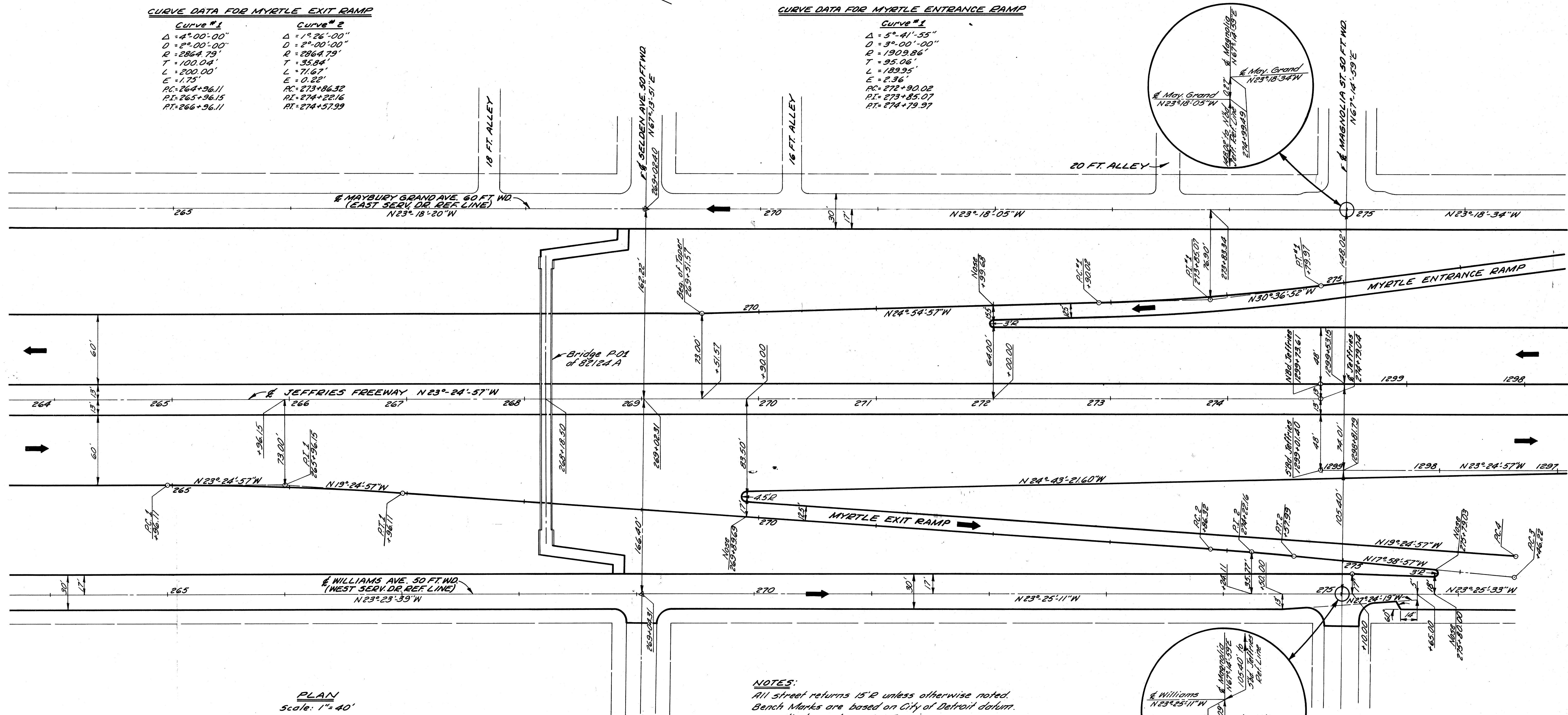
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS

**CURVE DATA FOR MYRTLE EXIT RAMP**

Curve #1	Curve #2
$\Delta = 4^{\circ}00'00''$	$\Delta = 1^{\circ}26'00''$
$D = 2^{\circ}00'00''$	$D = 2^{\circ}00'00''$
$R = 2864.79'$	$R = 2864.79'$
$T = 100.04'$	$T = 35.84'$
$L = 200.00'$	$L = 71.67'$
$E = 1.75'$	$E = 0.22'$
$PC = 264+96.11$	$PC = 273+86.32$
$PI = 265+96.15$	$PI = 274+22.16$
$PT = 266+96.11$	$PT = 274+57.99$

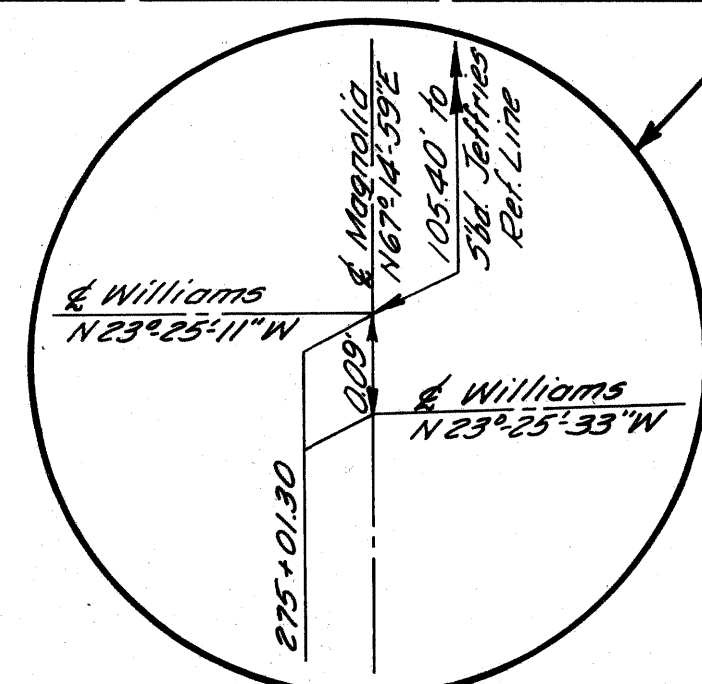
**CURVE DATA FOR MYRTLE ENTRANCE RAMP**

Curve #1
$\Delta = 5^{\circ}41'55''$
$D = 3^{\circ}00'00''$
$R = 1909.86'$
$T = 95.06'$
$L = 189.95'$
$E = 2.36'$
$PC = 272+90.02$
$PI = 273+85.07$
$PT = 274+79.97$



PLAN  
Scale: 1" = 40'

**NOTES:**  
All street returns 15' R unless otherwise noted.  
Bench Marks are based on City of Detroit datum.  
Δ Indicates a change in Bearing.



**ALIGNMENT OF JEFFRIES FREEWAY**  
STA. 264+00 TO STA. 274+79.04  
N.B.D. JEFFRIES STA. 1298+00 TO STA. 1299+73.61  
S.B.D. JEFFRIES STA. 1297+00 TO STA. 1299+01.40



C.B.M. #7 Elev. 121.88 DET. on Flange of Hydrant  
S.W. corner Myrtle St. and Williams Avenue.

C.B.M. #6 Elev. 121.72 DET. on Flange of Hydrant  
S.W. corner Ash St. and Williams Avenue.

S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	10	

**CURVE DATA FOR NBD JEFFRIES**

Curve #2  
 $\Delta = 18^{\circ}27'59''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 310.47'$   
 $L = 615.55'$   
 $E = 25.07'$   
 $PC = 1290+58.06$   
 $PI = 1293+68.53$   
 $PT = 1296+73.61$

**CURVE DATA FOR S'BD JEFFRIES**

Curve #2  
 $\Delta = 7^{\circ}53'52''$   
 $D = 2^{\circ}53'17.06''$   
 $R = 1983.88'$   
 $T = 136.66'$   
 $L = 372.89'$   
 $E = 4.70'$   
 $PC = 1293+28.51$   
 $PI = 1294+65.17$   
 $PT = 1296+01.40$

**CURVE DATA FOR EAST SERVICE DR.**

Curve #1  
 $\Delta = 17^{\circ}45'01''$   
 $D = 8^{\circ}00'00''$   
 $R = 716.20'$   
 $T = 111.84'$   
 $L = 221.88'$   
 $E = 8.70'$   
 $PC = 1259+29.93$   
 $PI = 1260+41.77$   
 $PT = 1261+51.81$

Curve #2  
 $\Delta = 4^{\circ}00'42''$   
 $D = 5^{\circ}00'00''$   
 $R = 1145.92'$   
 $T = 40.13'$   
 $L = 80.23'$   
 $E = 0.70'$   
 $PC = 1267+09.84$   
 $PI = 1267+49.97$   
 $PT = 1267+90.07$

**CURVE DATA FOR WEST SERVICE DR.**

Curve #1  
 $\Delta = 10^{\circ}45'27''$   
 $D = 4^{\circ}22'08.86''$   
 $R = 1311.38'$   
 $T = 123.47'$   
 $L = 246.22'$   
 $E = 5.80'$   
 $PC = 278+67.89$   
 $PI = 279+91.36$   
 $PT = 281+14.10$

Curve #2  
 $\Delta = 7^{\circ}26'00''$   
 $D = 4^{\circ}00'00''$   
 $R = 1432.39'$   
 $T = 93.05'$   
 $L = 185.83'$   
 $E = 3.02'$   
 $PC = 287+75.66$   
 $PI = 288+68.71$   
 $PT = 289+61.50$

**CURVE DATA FOR W'BD FISHER TO NBD JEFFRIES**

Curve #1  
 $\Delta = 2^{\circ}02'36''$   
 $D = 3^{\circ}05'11.62''$   
 $R = 1856.30'$   
 $T = 33.10'$   
 $L = 66.20'$   
 $E = 0.30'$   
 $PC = 0+00.00$   
 $PI = 0+33.10$   
 $PT = 0+66.20$

**CURVE DATA FOR MYRTLE ENT. RAMP**

Curve #2  
 $\Delta = 7^{\circ}18'18''$   
 $D = 6^{\circ}15'00''$   
 $R = 916.73'$   
 $T = 58.52'$   
 $L = 116.88'$   
 $E = 1.87'$   
 $PC = 278+73.42$   
 $PI = 279+31.94$   
 $PT = 279+90.30$

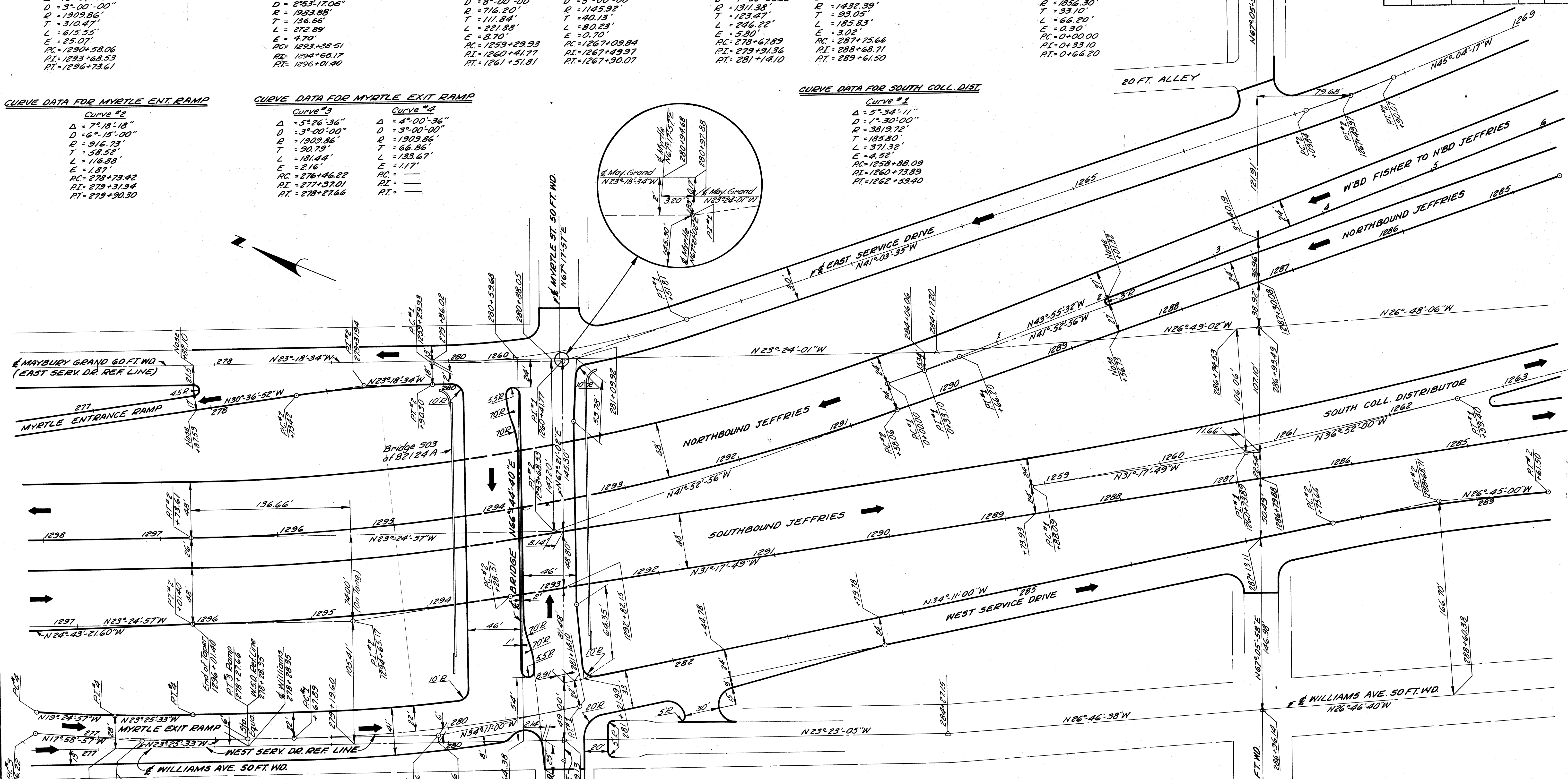
**CURVE DATA FOR MYRTLE EXIT RAMP**

Curve #3  
 $\Delta = 5^{\circ}26'36''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 90.79'$   
 $L = 181.44'$   
 $E = 2.16'$   
 $PC = 276+46.22$   
 $PI = 277+31.01$   
 $PT = 278+21.66$

Curve #4  
 $\Delta = 4^{\circ}00'36''$   
 $D = 3^{\circ}00'00''$   
 $R = 1909.86'$   
 $T = 66.86'$   
 $L = 133.67'$   
 $E = 1.17'$   
 $PC =$   
 $PI =$   
 $PT =$

**CURVE DATA FOR SOUTH COLL. DIST.**

Curve #1  
 $\Delta = 5^{\circ}34'11''$   
 $D = 1^{\circ}30'00''$   
 $R = 3819.72'$   
 $T = 185.80'$   
 $L = 371.32'$   
 $E = 4.52'$   
 $PC = 1258+88.09$   
 $PI = 1260+73.89$   
 $PT = 1262+59.40$



PLAN  
 Scale: 1" = 40'

**NOTES:**  
 All street returns 15'R unless otherwise noted.  
 Bench Marks are based on City of Detroit datum.  
 Δ Indicates a change in Bearing.

ALIGNMENT OF JEFFRIES FREEWAY  
 NBD. JEFFRIES STA. 1285+00 TO STA. 1298+00  
 S'BD. JEFFRIES STA. 1285+00 TO STA. 1297+00  
 W'BD FISHER TO NBD JEFFRIES  
 STA. 0+00 TO STA. 6+00



B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.			11	

ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	11	

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				

ROUTE	STATE PROJECT	COUNTY	SHEET NO.	TOTAL SHEETS

W. LAWTON AVE. 60 FT. WD.  
N 24° 08' 11" W

C.B.M.#1 Elev. 121.75 DET on Flange of Hyd.  
N.E. corner Michigan Ave. & Tillman Ave.

C.B.M.#2 Elev. 121.49 Arrow on Hydrant  
W. side of Williams Ave. 345' S of Butternut St.

C.B.M.#5 Elev. 122.28 DET on Flange of Hyd.  
W. side of Williams Ave. 295' S of Ash St.

CURVE DATA FOR SBD JEFFRIES

Curve #1  
 $\Delta = 21^{\circ} 59' 45''$   
 $D = 2^{\circ} 45' 00''$   
 $R = 2083.48'$   
 $T = 404.91'$   
 $L = 799.85'$   
 $E = 38.98'$   
 $PC = 1271+98.24$   
 $PI = 1276+03.15$   
 $PT = 1279+98.09$

CURVE DATA FOR SOUTH COLL. DIST.

Curve #2  
 $\Delta = 35^{\circ} 00' 00''$   
 $D = 4^{\circ} 00' 00''$   
 $R = 1432.39'$   
 $T = 451.63'$   
 $L = 875.00'$   
 $E = 69.51'$   
 $PC = 1266+39.84$   
 $PI = 1270+91.47$   
 $PT = 1275+14.84$

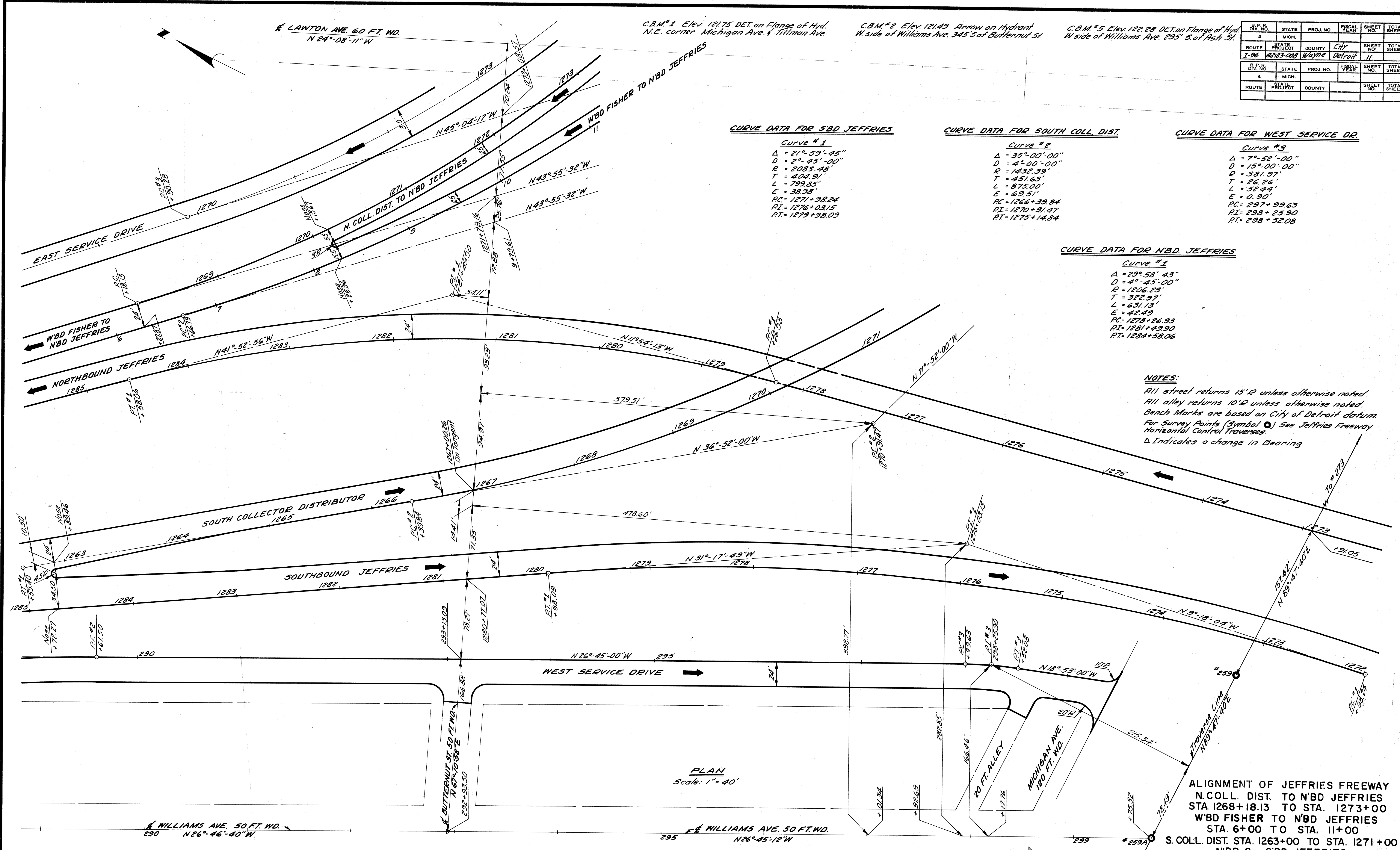
CURVE DATA FOR WEST SERVICE DR.

Curve #3  
 $\Delta = 7^{\circ} 52' 00''$   
 $D = 15^{\circ} 00' 00''$   
 $R = 381.97'$   
 $T = 26.26'$   
 $L = 52.44'$   
 $E = 0.90'$   
 $PC = 297+99.63$   
 $PI = 298+25.90$   
 $PT = 298+52.08$

CURVE DATA FOR NBD JEFFRIES

Curve #1  
 $\Delta = 29^{\circ} 58' 43''$   
 $D = 4^{\circ} 45' 00''$   
 $R = 1206.23'$   
 $T = 322.97'$   
 $L = 631.13'$   
 $E = 42.49'$   
 $PC = 1278+26.93$   
 $PI = 1281+49.90$   
 $PT = 1284+58.06$

**NOTES:**  
 All street returns 15'R unless otherwise noted.  
 All alley returns 10'R unless otherwise noted.  
 Bench Marks are based on a City of Detroit datum.  
 For Survey Points (Symbol  $\odot$ ) See Jeffries Freeway Horizontal Control Traverses.  
 $\Delta$  Indicates a change in Bearing

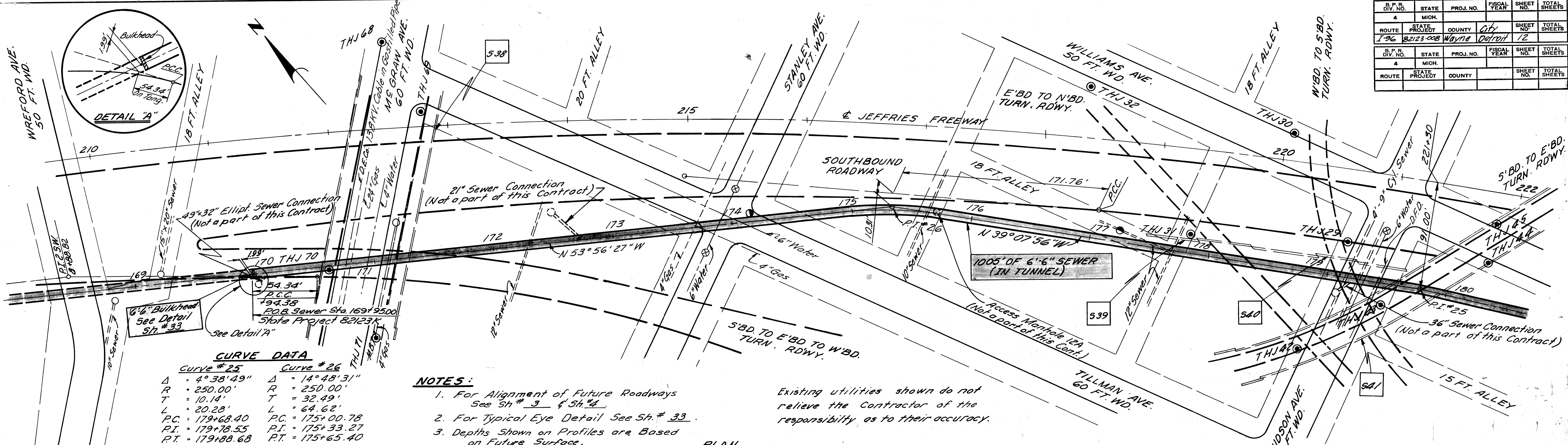


PLAN  
Scale: 1" = 40'

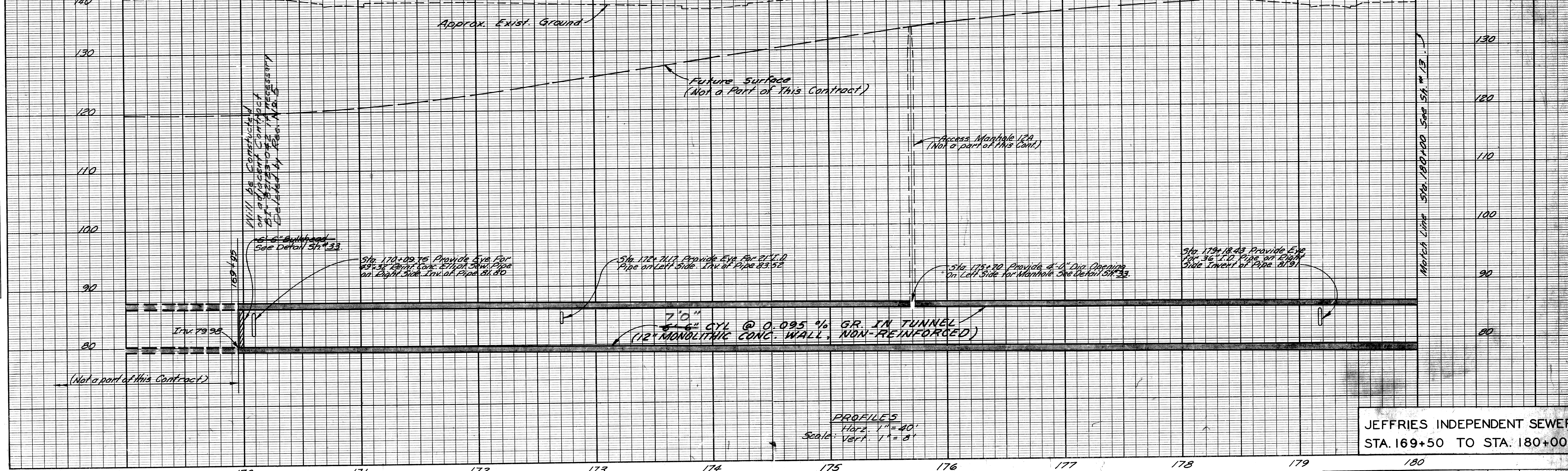
**ALIGNMENT OF JEFFRIES FREEWAY**  
 N. COLL. DIST. TO NBD JEFFRIES  
 STA. 1268+18.13 TO STA. 1273+00  
 WBD FISHER TO NBD JEFFRIES  
 STA. 6+00 TO STA. 11+00  
 S. COLL. DIST. STA. 1263+00 TO STA. 1271+00  
 NBD & SBD JEFFRIES  
 STA. 1272+00 TO STA. 1285+00



R.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
1-96	82123-008	Wayne	Detroit	12	



Station	169.6	170.7	172.9	175.7	178.8	181.8	184.4	186.3	187.5	188.1	188.1	Surface Elev.
Invert Elev.	79.98	79.88	79.79	79.69	79.60	79.50	79.41	79.31	79.22	79.12	79.03	79.03
Depth	39.6	40.8	43.1	46.0	49.2	52.3	55.0	57.0	58.3	59.0	59.1	59.1



JEFFRIES INDEPENDENT SEWER  
STA. 169+50 TO STA. 180+00

OPERATION BY DATE  
 PRELIMINARY R.O.W. CHECKED  
 FINAL DESIGN CHECKED  
 TRACED  
 FINAL R.O.W. CHECK  
 QUANTITIES ESTIMATED CHECKED  
 SOUAD.

PLANS PREPARED BY DATE  
 CITY OF DETROIT  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

OPERATION BY DATE  
 SURVEYS  
 PLAN PLOTTED  
 PLAN CHECKED  
 PROFILE CHECKED  
 PRELIMINARY GRADE  
 GRADE INSPECTION  
 FEDERAL INSPECTOR

N. H. Logan  
 N. La Salle  
 S. Harb. E. Spang



OPERATION: SURVEYED 6-67, PLAN PLOTTED 4-67, FINAL DESIGN CHECKED 6-67, QUANTITIES CHECKED 6-67, FEDERAL INSPECTION 6-67

PLANS PREPARED BY: N. McLean, J. Knox, R. Elbert, Alan E. Payne

OPERATION: PRELIMINARY R.O.W. CHECKED, FINAL DESIGN CHECKED, QUANTITIES CHECKED, FEDERAL INSPECTION

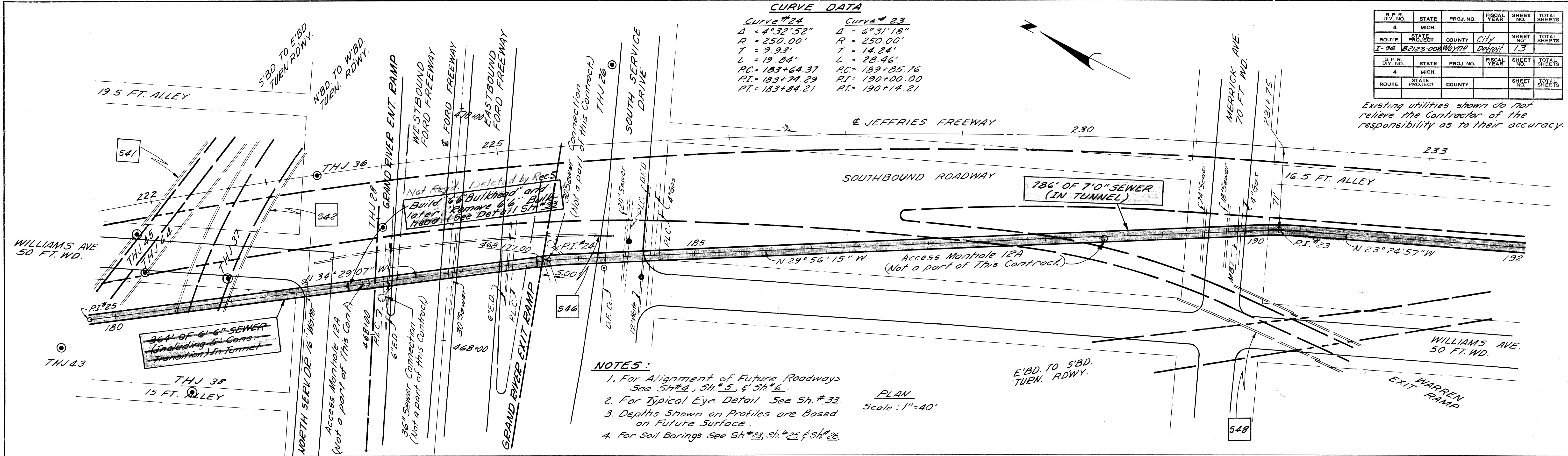
PLANS PREPARED BY: CITY OF DETROIT, DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERS OFFICE, BUREAU OF HIGHWAYS AND EXPRESSWAYS

**CURVE DATA**

Curve #22	Curve #23
$\Delta = 4^{\circ}32'52''$	$\Delta = 6^{\circ}31'18''$
$R = 250.00'$	$R = 250.00'$
$T = 9.93'$	$T = 14.24'$
$L = 19.84'$	$L = 28.46'$
$P.C. = 183+64.37$	$P.C. = 189+85.76$
$P.I. = 183+74.29$	$P.I. = 190+00.00$
$P.T. = 183+84.21$	$P.T. = 190+14.21$

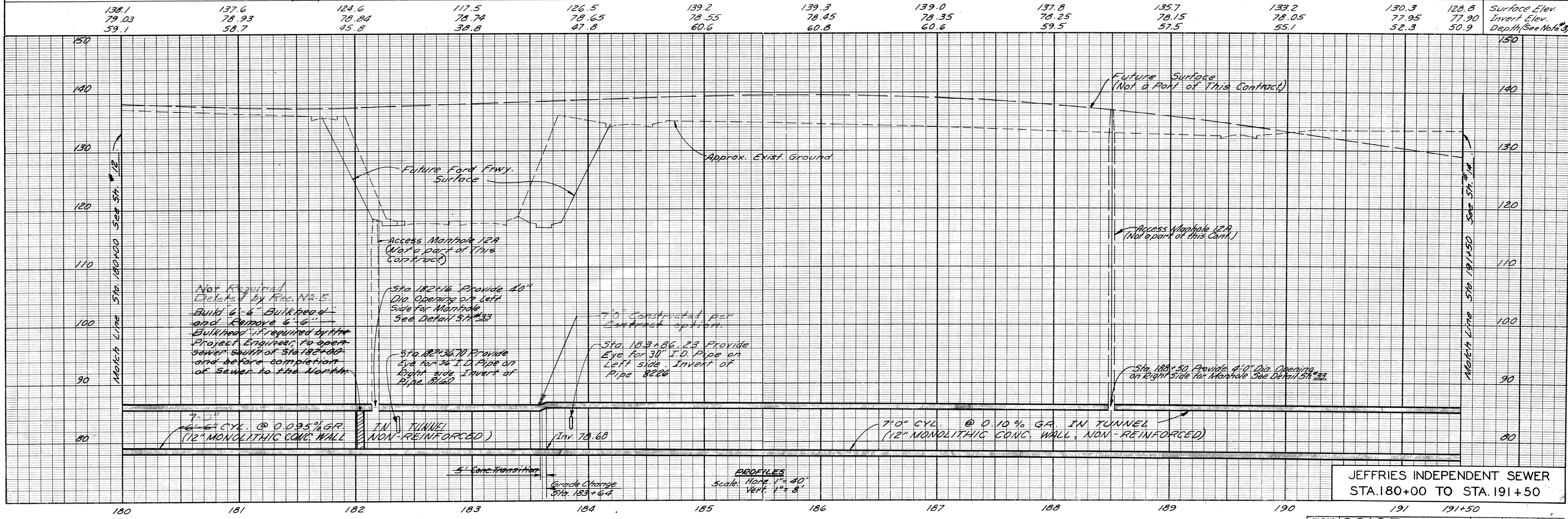
S.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE PROJECT	COUNTY	CITY		SHEET NO.	TOTAL SHEETS
I-96	Wayne	Detroit		13	

Existing utilities shown do not relieve the Contractor of the responsibility as to their accuracy.



- NOTES:**
- For Alignment of Future Roadways See Sh.#4, Sh.#5, & Sh.#6.
  - For Typical Eye Detail See Sh.#33.
  - Depths Shown on Profiles are Based on Future Surface.
  - For Soil Borings See Sh.#23, Sh.#25 & Sh.#26.

PLAN Scale: 1"=40'



JEFFRIES INDEPENDENT SEWER STA. 180+00 TO STA. 191+50



**CURVE DATA**

Curve #21		Curve #22	
Δ = 6°05'19"	Δ = 6°05'19"	Δ = 6°05'19"	Δ = 6°05'19"
R = 250.00'	R = 250.00'	R = 250.00'	R = 250.00'
T = 13.30'	T = 13.30'	T = 13.30'	T = 13.30'
L = 26.57'	L = 26.57'	L = 26.57'	L = 26.57'
PC = 200+12.50	PC = 198+61.67	PC = 198+61.67	PC = 198+61.67
PT = 200+25.80	PT = 198+74.97	PT = 198+74.97	PT = 198+74.97
PI = 200+39.07	PI = 198+88.24	PI = 198+88.24	PI = 198+88.24

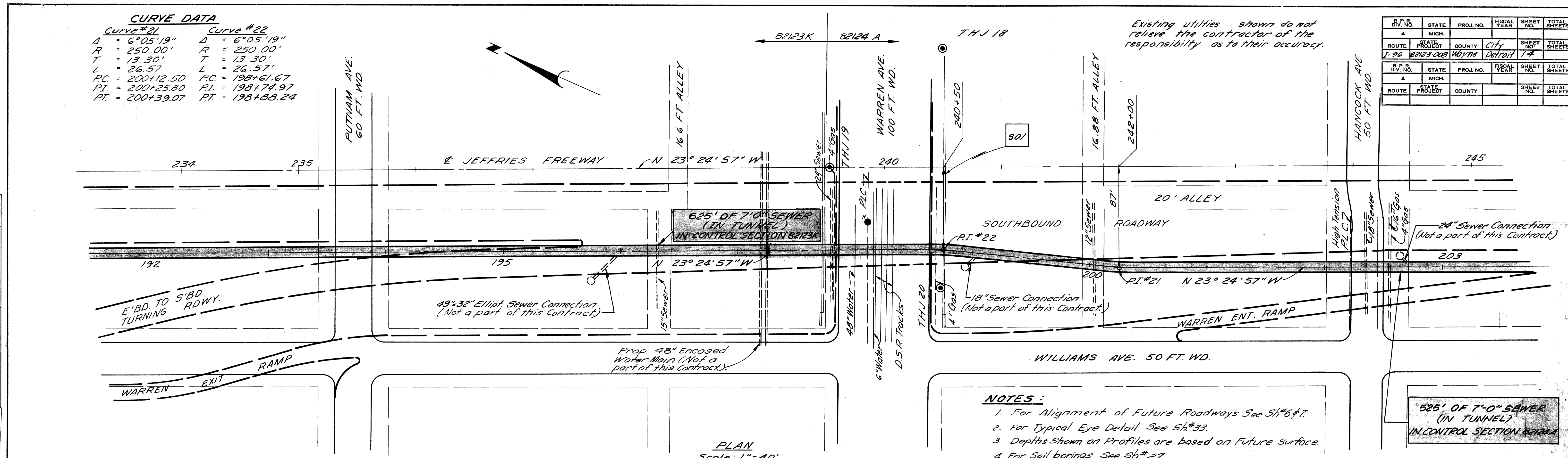
Existing utilities shown do not relieve the contractor of the responsibility as to their accuracy.

S.P. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	14	

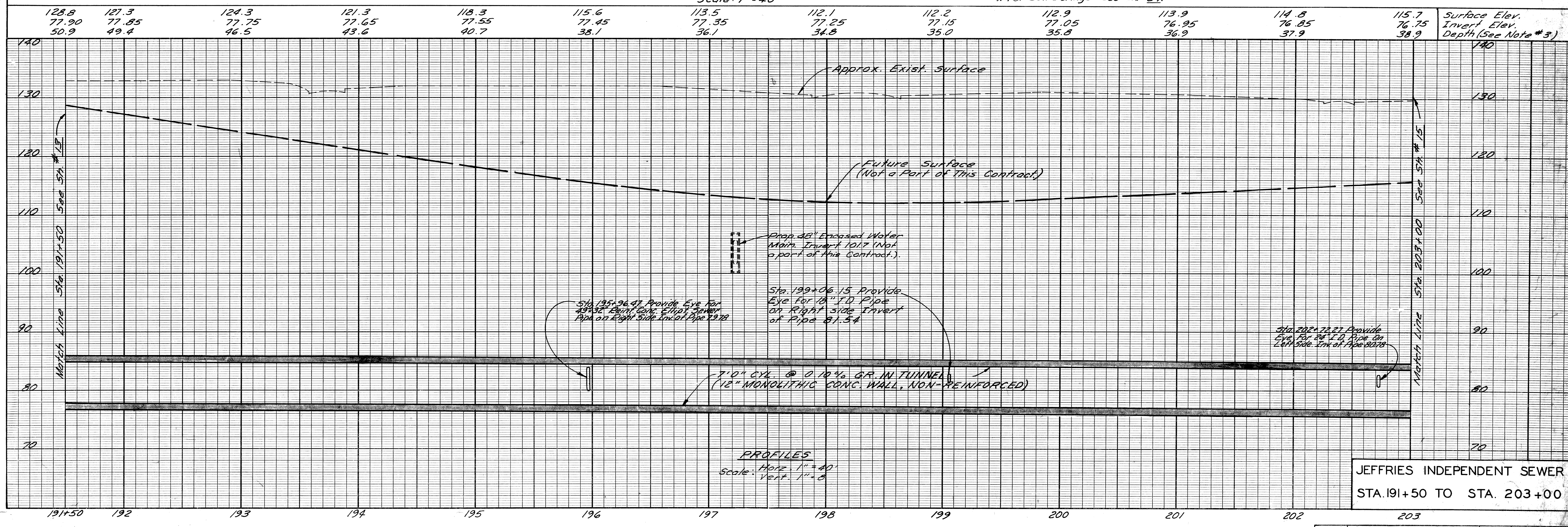
OPERATION	DATE	BY
PRELIMINARY DESIGN CHECKED		
FINAL DESIGN CHECKED		
FINAL R.O.W. CHECKED		
QUANTITIES CHECKED		
SEAL		

OPERATION	DATE	BY
PLANS PREPARED BY		
CITY OF DETROIT		
DEPARTMENT OF PUBLIC WORKS		
CITY ENGINEER'S OFFICE		
BUREAU OF HIGHWAYS AND EXPRESSWAYS		



- NOTES:**
1. For Alignment of Future Roadways See Sh#647.
  2. For Typical Eye Detail See Sh#33.
  3. Depths Shown on Profiles are based on Future Surface.
  4. For Soil borings See Sh#27.



JEFFRIES INDEPENDENT SEWER  
STA. 191+50 TO STA. 203+00



**CURVE DATA**

Curve #19	Curve #20
Δ = 6°22'02"	Δ = 6°22'02"
R = 250.00'	R = 250.00'
T = 13.91'	T = 13.91'
L = 27.78'	L = 27.78'
P.C. = 211+46.28	P.C. = 209+11.87
P.I. = 211+60.19	P.I. = 209+25.77
P.T. = 211+74.07	P.T. = 209+39.65

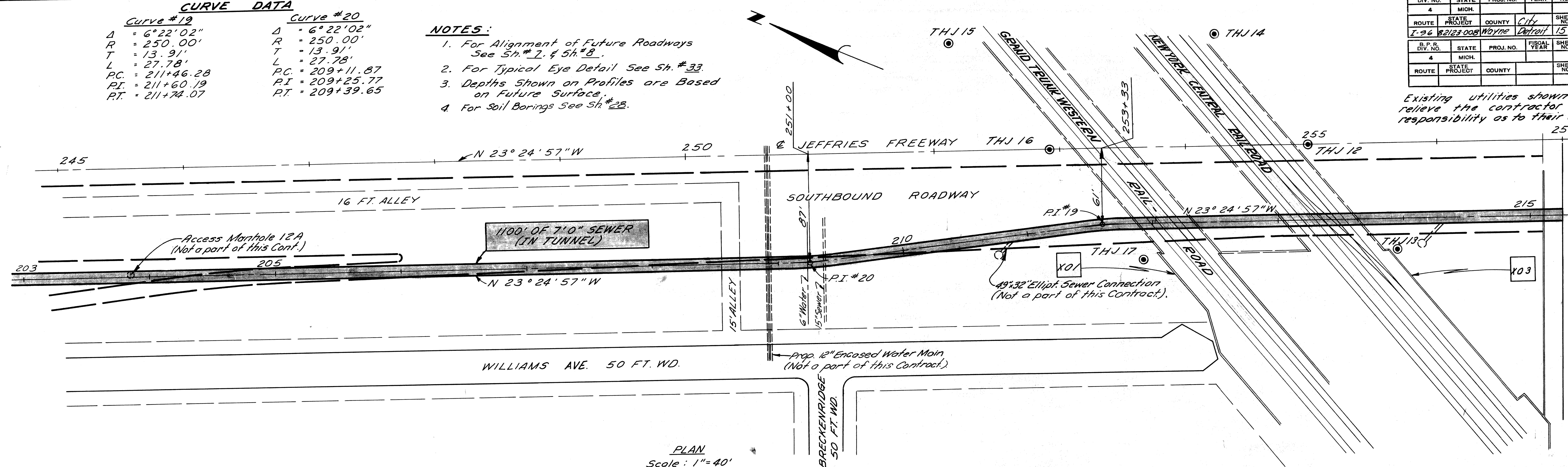
- NOTES:**
1. For Alignment of Future Roadways See Sh. #2 & 5h.#8.
  2. For Typical Eye Detail See Sh. #33.
  3. Depths Shown on Profiles are Based on Future Surface.
  4. For Soil Borings See Sh. #28.

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.			15	15

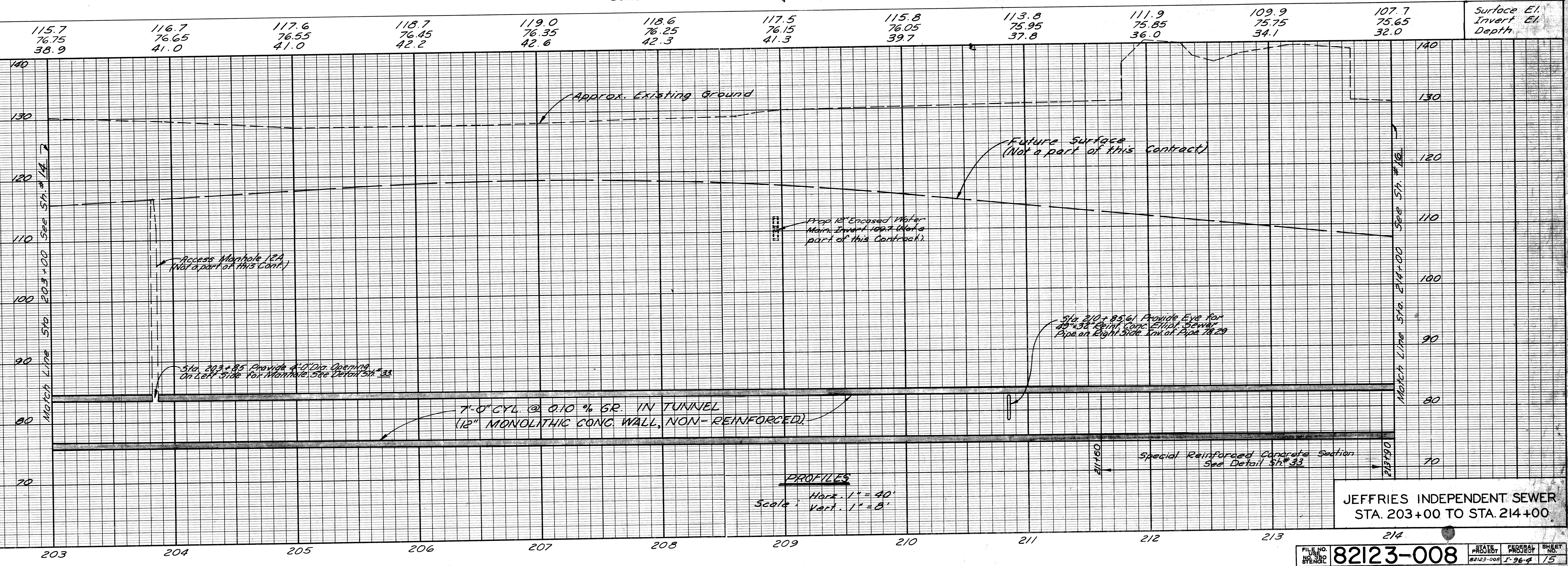
  

B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.			15	15

Existing utilities shown do not relieve the contractor of the responsibility as to their accuracy.



PLAN  
Scale: 1" = 40'



PROFILES  
HORIZ. 1" = 40'  
VERT. 1" = 8'

JEFFRIES INDEPENDENT SEWER  
STA. 203+00 TO STA. 214+00

OPERATION

PRELIMINARY R.O.W. CHECKED
FINAL DESIGN CHECKED
TRADED
FINAL R.O.W. CHECK
QUANTITIES CHECKED
SQUAD

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

OPERATION

SURVEYED
PLAN PLOTTED
PLAN CHECKED
PROFILE CHECKED
PRELIMINARY GRADE
GRADE INSPECTION
FEDERAL INSPECTION

DATE: 5-57  
BY: J. McLean, J. Knox, C. Hott, Alan Payne









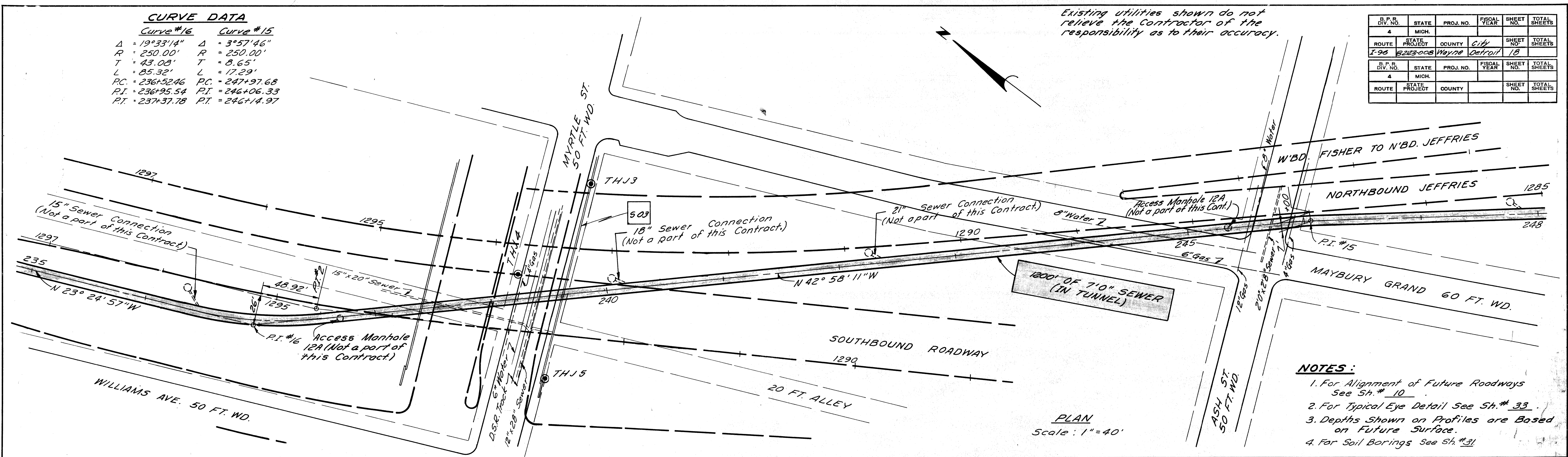


**CURVE DATA**

Curve #16	Curve #15
$\Delta = 19^{\circ}33'14''$	$\Delta = 3^{\circ}57'46''$
$R = 250.00'$	$R = 250.00'$
$T = 43.08'$	$T = 8.65'$
$L = 85.32'$	$L = 17.29'$
$PC = 236+32.46$	$PC = 247+97.68$
$PI = 236+95.54$	$PI = 246+106.33$
$PT = 237+37.78$	$PT = 246+14.97$

Existing utilities shown do not relieve the Contractor of the responsibility as to their accuracy.

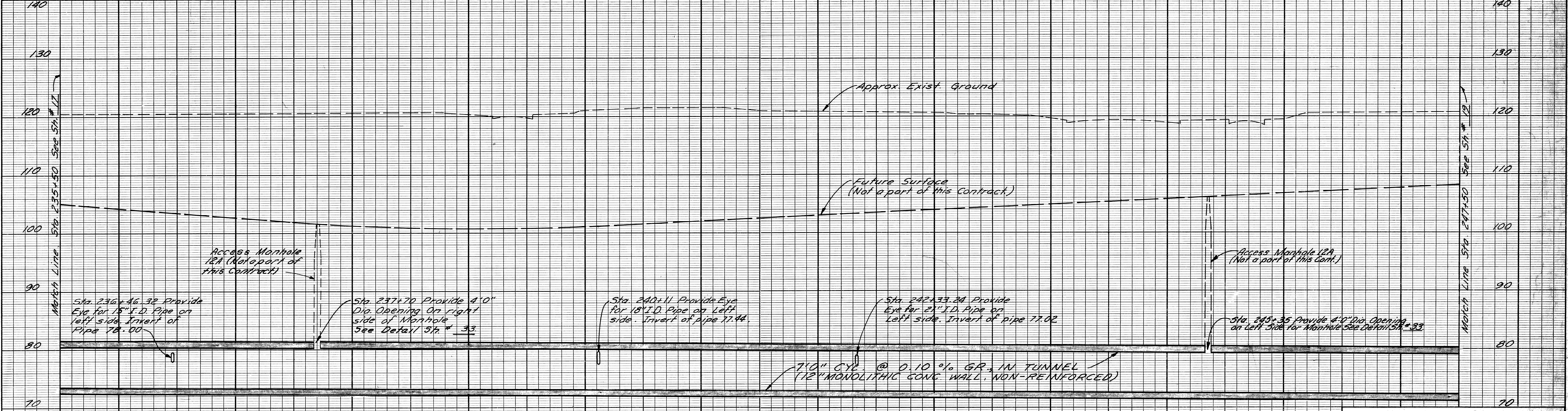
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	8213-008	Wayne	Detroit	18	
B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE	COUNTY		SHEET NO.	TOTAL SHEETS



- NOTES:**
1. For Alignment of Future Roadways See Sh. # 10.
  2. For Typical Eye Detail See Sh. # 33.
  3. Depths Shown on Profiles are Based on Future Surface.
  4. For Soil Borings See Sh. # 31.

PLAN  
Scale: 1"=40'

105.0	104.2	102.6	101.3	100.7	101.0	101.9	102.8	103.8	104.7	105.7	106.6	107.6	108.3	Surface Elev.
73.50	73.45	73.35	73.25	73.15	73.05	72.95	72.85	72.75	72.65	72.55	72.45	72.35	72.30	Invert Elev.
31.5	30.7	29.2	28.0	27.5	27.9	28.9	29.9	31.0	32.0	33.1	34.1	35.2	36.0	Depth (See Note 3)



PROFILES  
Horiz. 1"=40"  
Scale: Vert. 1"=8"

JEFFRIES INDEPENDENT SEWER  
STA. 235+50 TO STA. 247+50

OPERATION	DATE	BY
PRELIMINARY P.O.W. CHECKED		
FINAL DESIGN CHECKED		
FINAL P.O.W. CHECK		
QUANTITIES CHECKED		

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEER'S OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

OPERATION	DATE	BY
SURVEYED		
PLAN CHECKED		
PROFILE PLOTTED		
PROFILE CHECKED		
GRADE INSPECTION		
FEDERAL INSPECTION		

N. McLean  
J. Knox  
S. Harb  
Allen E. Payne



**CURVE DATA**

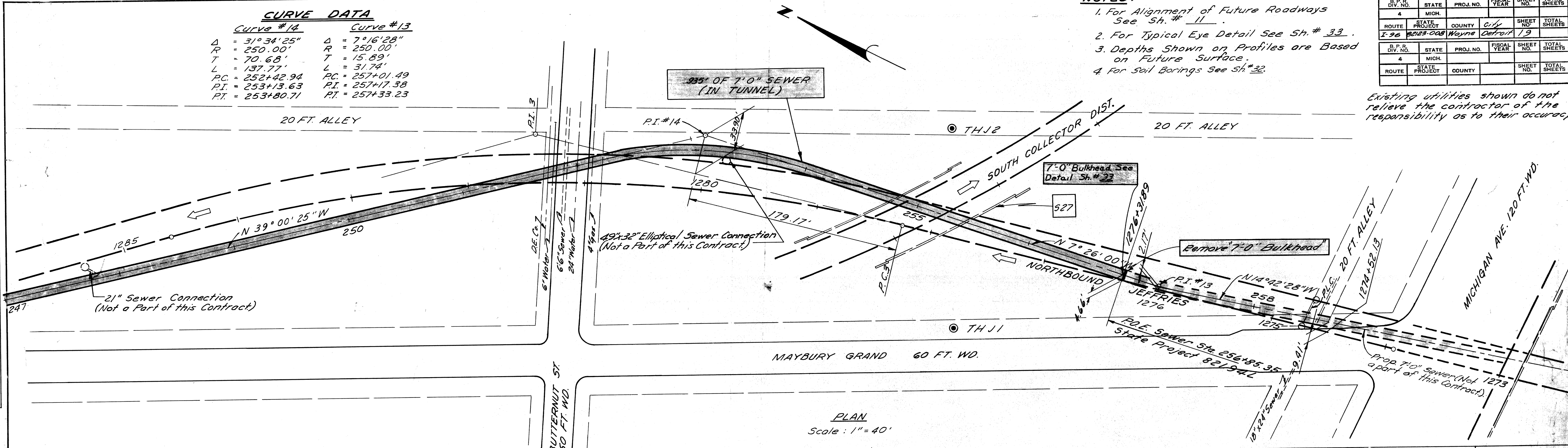
Curve #14		Curve #13	
Δ = 31°34'25"	R = 250.00'	Δ = 7°16'28"	R = 250.00'
T = 70.68'	L = 137.77'	T = 15.89'	L = 31.74'
P.C. = 252+42.94	P.I. = 253+13.63	P.C. = 257+01.49	P.I. = 257+17.38
P.T. = 253+80.71		P.T. = 257+33.23	

**NOTES:**

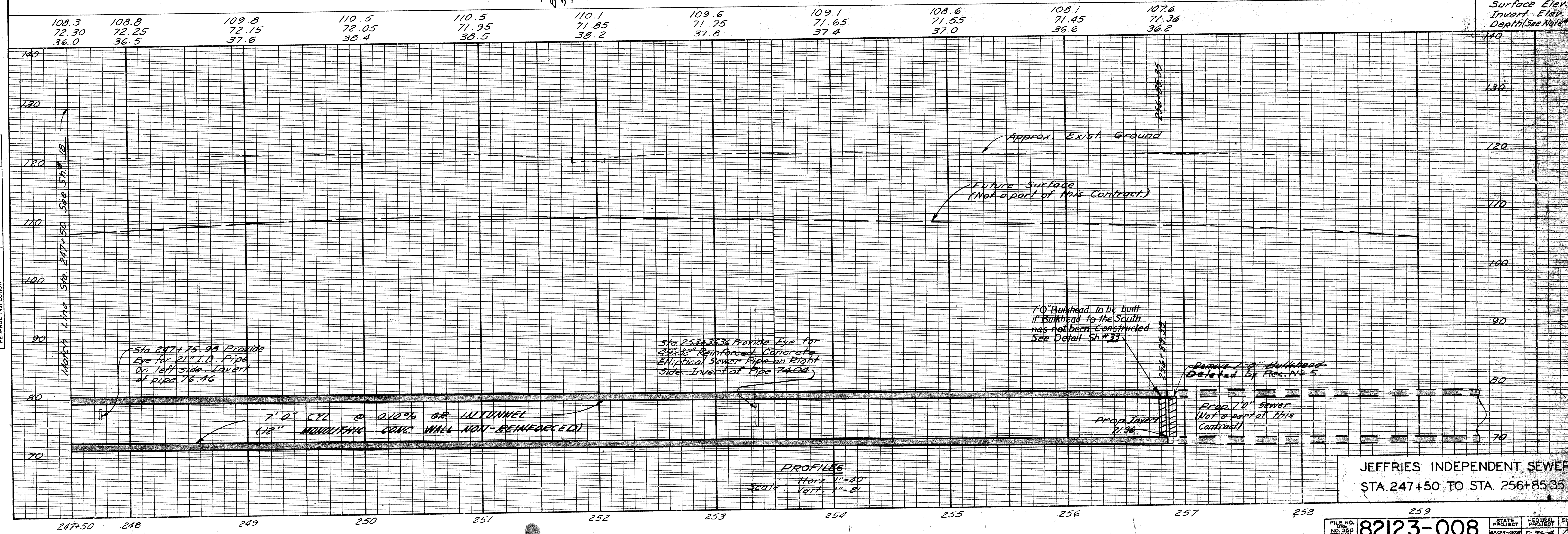
1. For Alignment of Future Roadways See Sh. # 11.
2. For Typical Eye Detail See Sh. # 33.
3. Depths Shown on Profiles are Based on Future Surface.
4. For Soil Borings See Sh. # 32.

D.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	CITY	SHEET NO.	TOTAL SHEETS
I-96	82123-008	Wayne	Detroit	19	

Existing utilities shown do not relieve the contractor of the responsibility as to their accuracy.



PLAN  
Scale: 1" = 40'



PROFILES  
HORIZ. 1" = 40'  
VERT. 1" = 8'

JEFFRIES INDEPENDENT SEWER  
STA. 247+50 TO STA. 256+85.35

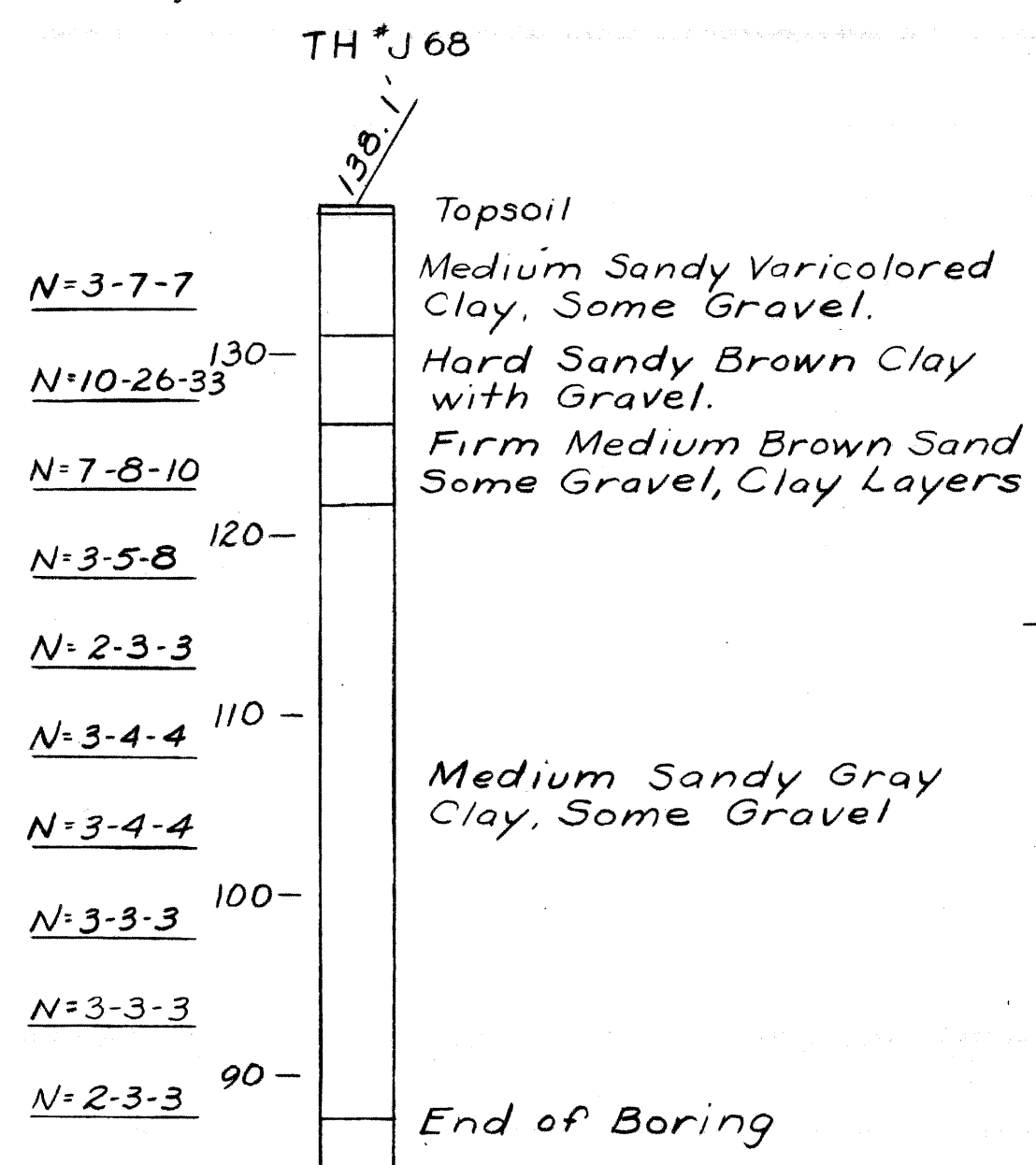
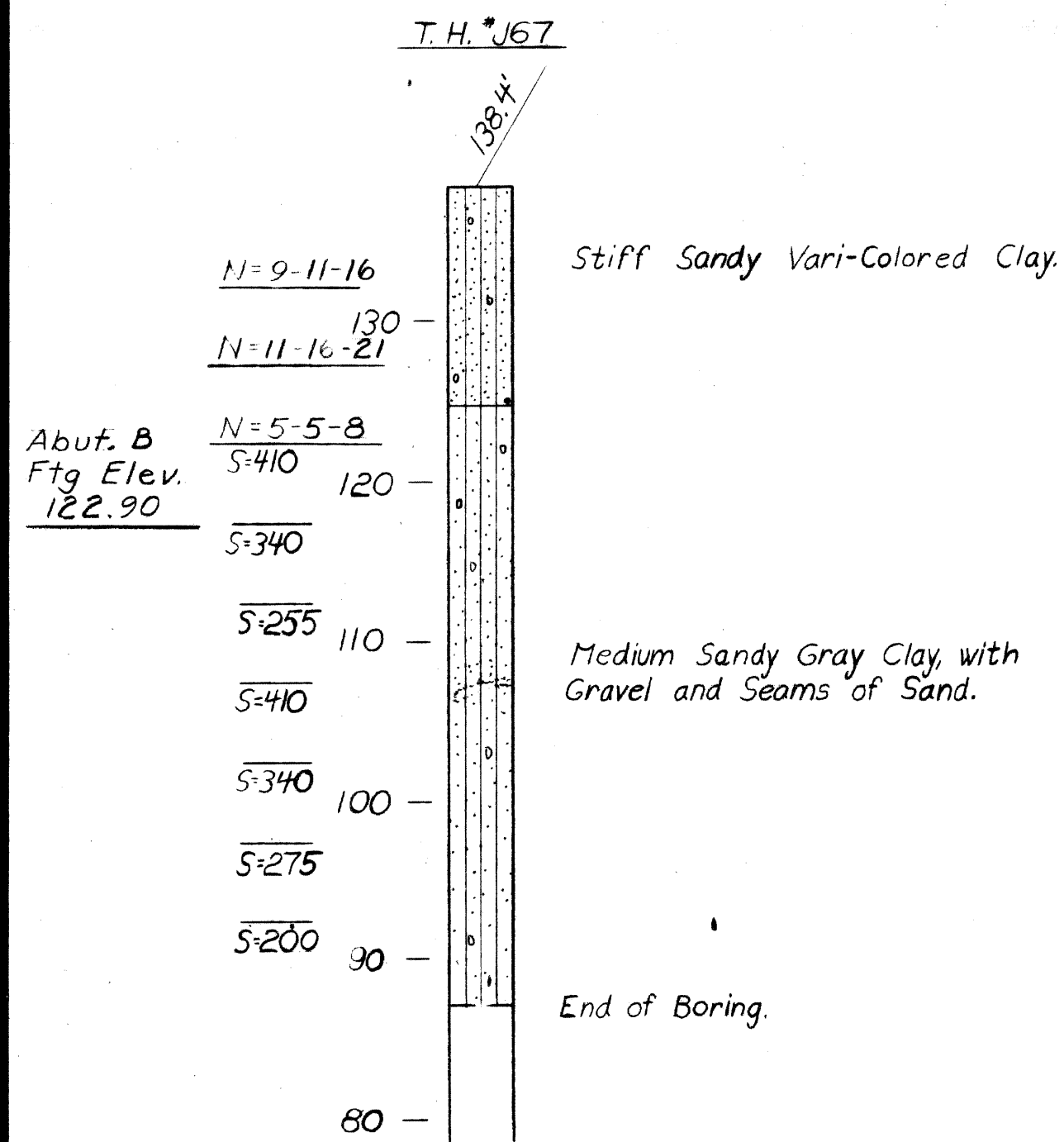
DATE	BY	OPERATION
6-67	N. McLean	SURVEYED
5-67	N. LaSalle	PLAN CHECKED
6-67	R. Kott	PROFILE PLOTTED
6-67	Alan Payne	PROFILE CHECKED
		GRADE INSPECTION
		FEDERAL INSPECTION

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEER'S OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

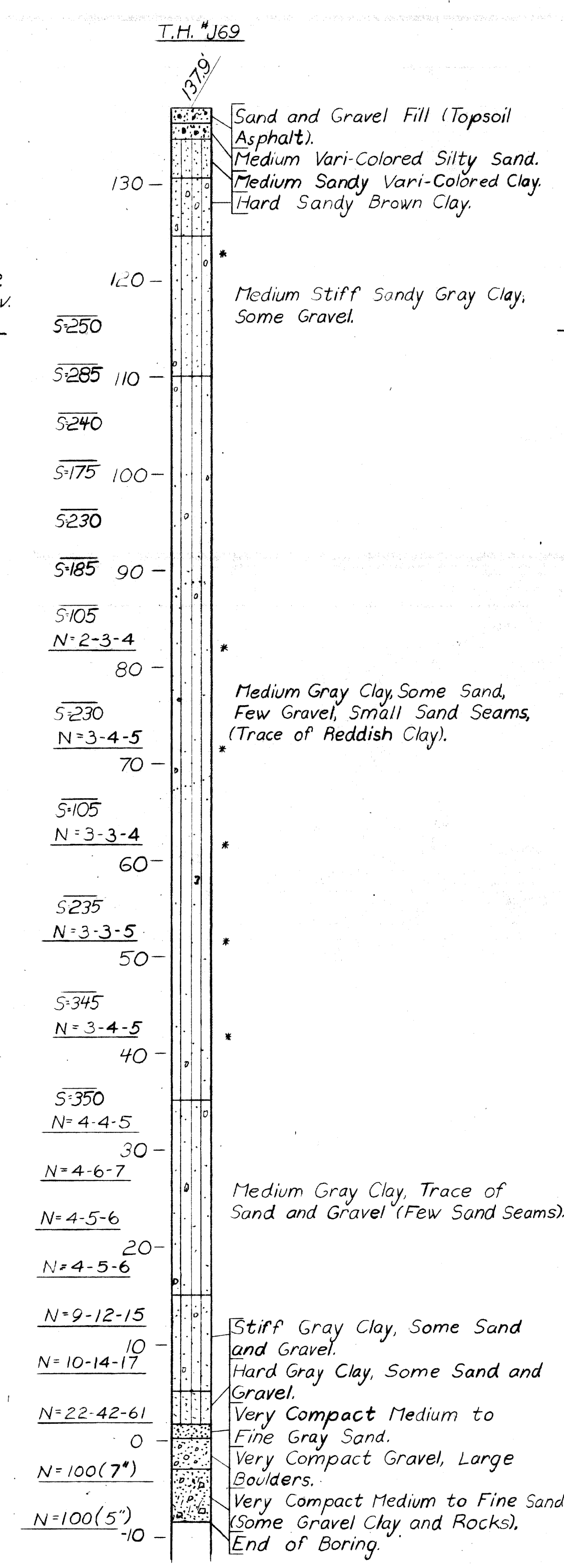
DATE	BY	OPERATION
		PRELIMINARY P.L. CHECKED
		FINAL DESIGN CHECKED
		FINAL P.L. CHECK
		QUANTITIES CHECKED
		SOUND



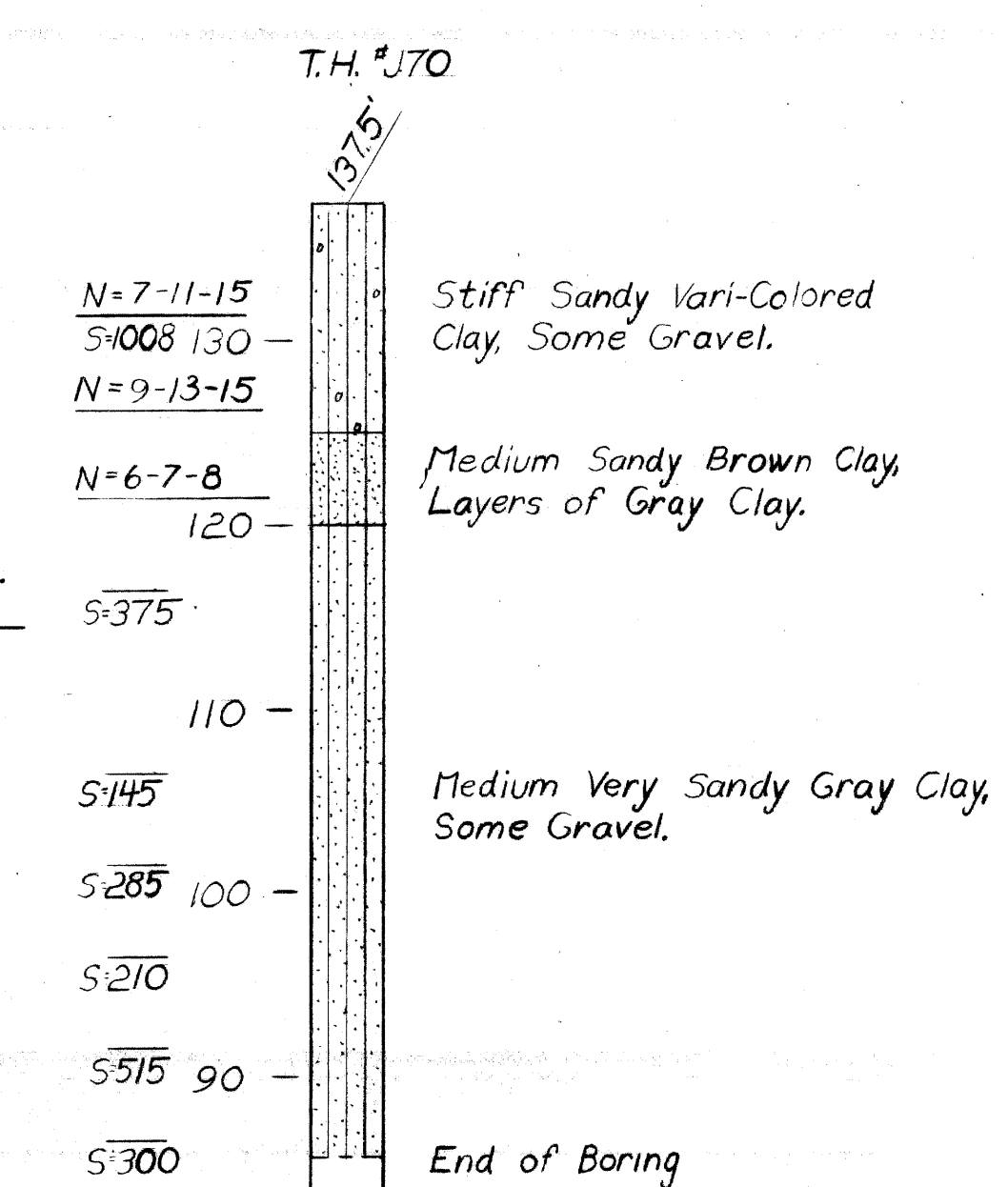
LOG OF SOIL BORINGS



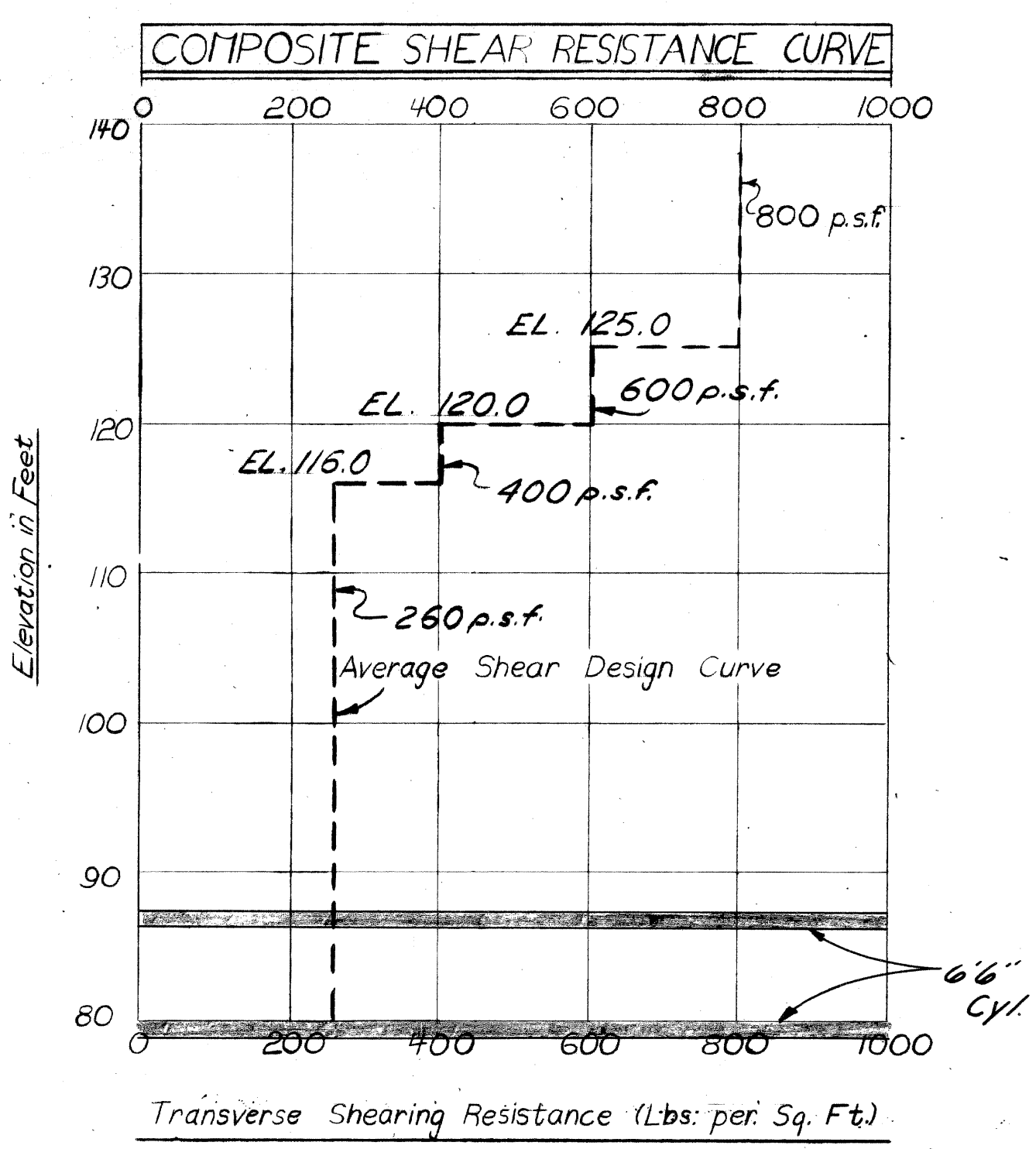
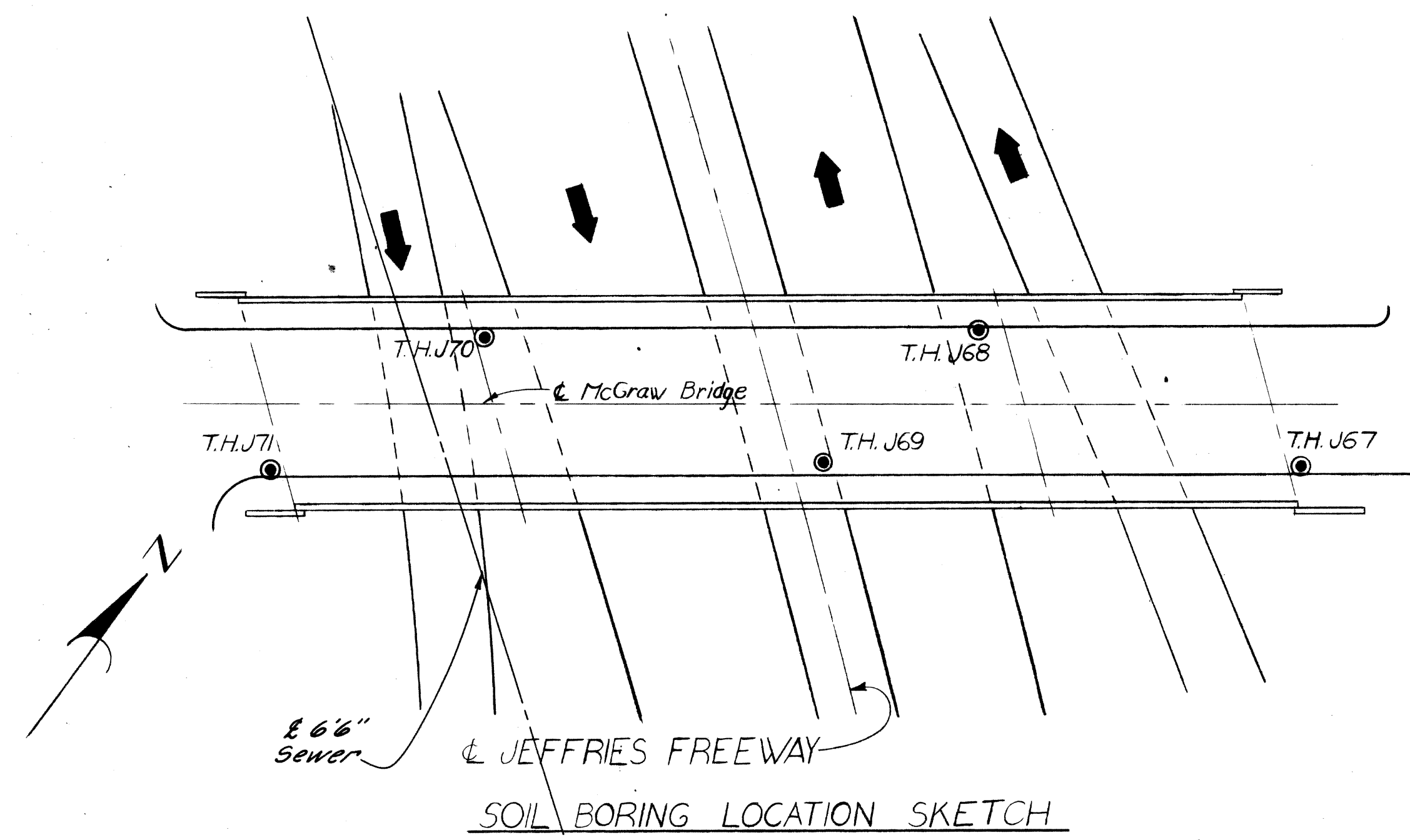
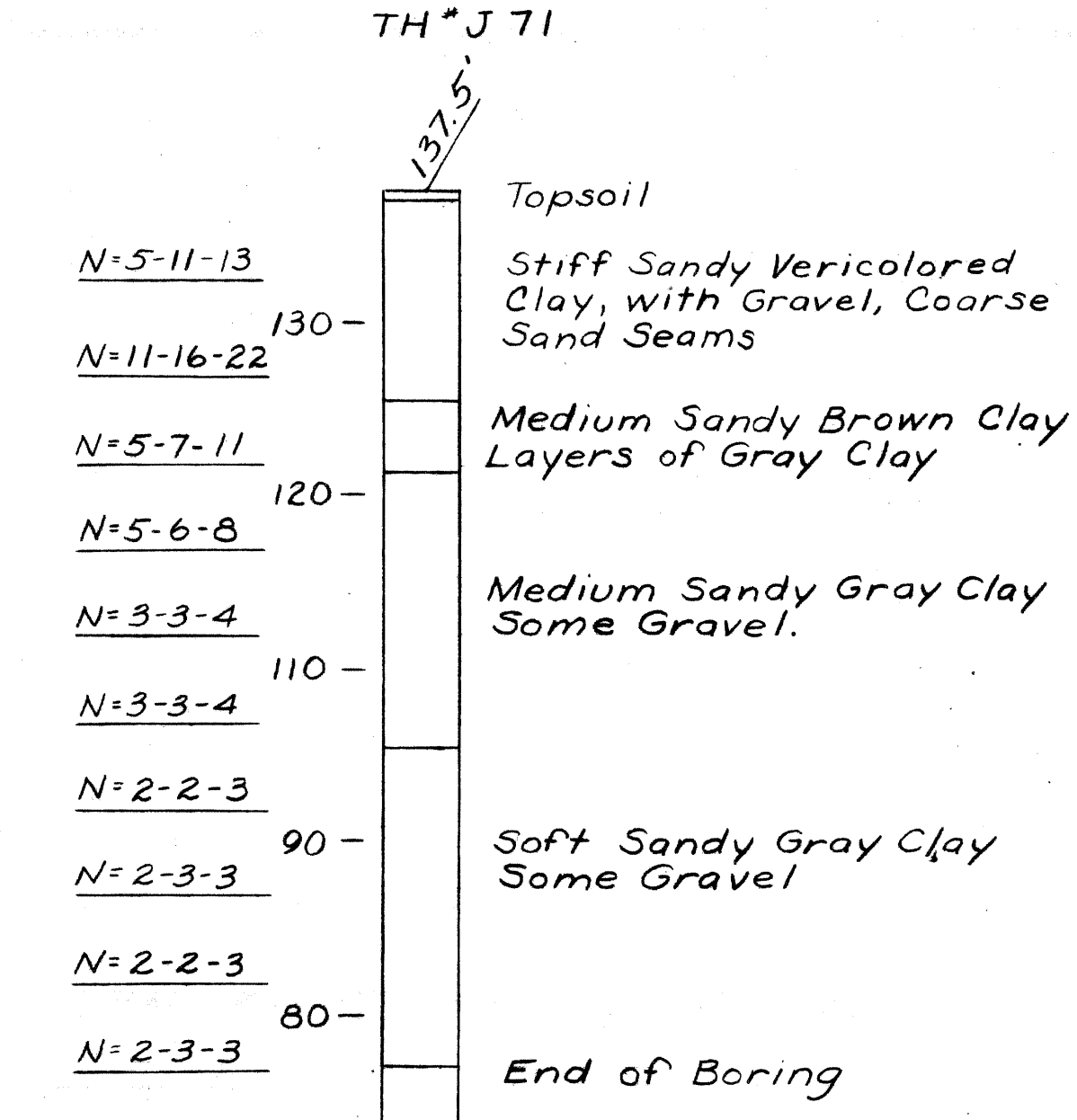
Pier #2  
Ftg. Elev.  
113.40



Pier #1  
Ftg. Elev.  
114.40



Note:  
Water at 11' on completion of boring.



NOTES  
 N Indicates the number of blows required to drive the 1 7/8" Sampler 6" (or as noted) using a 140lb. hammer falling 30". Where blow count is not shown, Sampler was levered, pushed or hand-driven.  
 S Indicates Transverse Shearing Resistance in lbs. per sq. ft. as determined by M.S.H.D. Standard Test.  
 \* Indicates unsuccessful recovery of sample.  
 All elevations are based on City of Detroit Datum.  
 Consistency classification shown on boring logs is by the Raymond Concrete Pile Company.

Note:  
Water Level at 19' One-Fourth Hour after Completion.

PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED \_\_\_\_\_  
 STRUCTURAL ENGINEER

JOB No.  
 PW 990(2)X

NO.	DESCRIPTION	DATE	BY

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 MCGRAW AVE. CROSSING  
 THE JEFFRIES FREEWAY IN DETROIT

**LOG OF SOIL BORINGS**

CITY OF DETROIT

APPROVED \_\_\_\_\_  
 DESIGN SUPERVISING ENGINEER

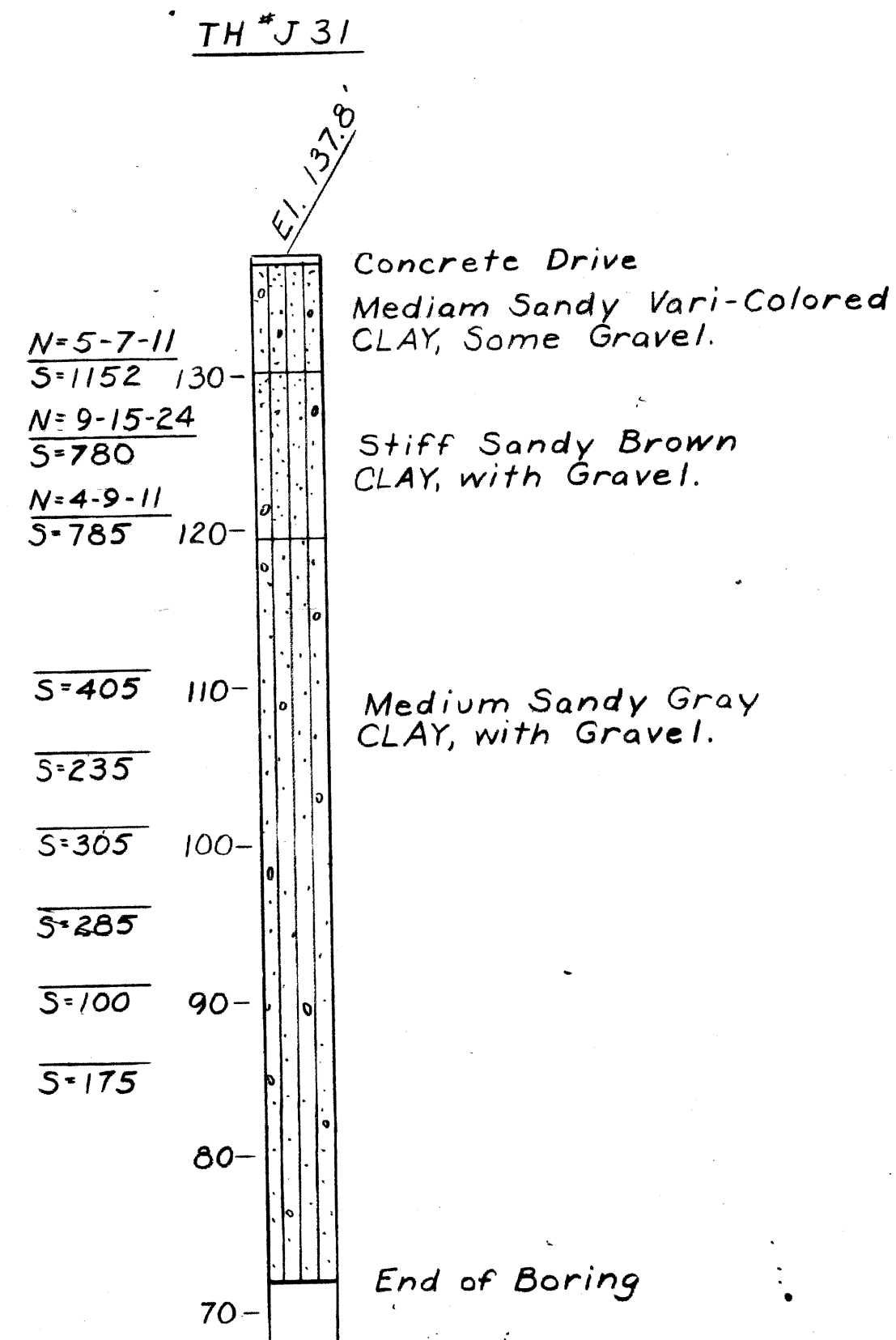
APPROVED \_\_\_\_\_  
 ENGINEER OF DESIGN-CONSULTANTS

SHEET NO.	9/66
DRAWN BY	A.V. Herzberg 8-24-66
CHECKED BY	M. Guira 9/66
SHEET	22

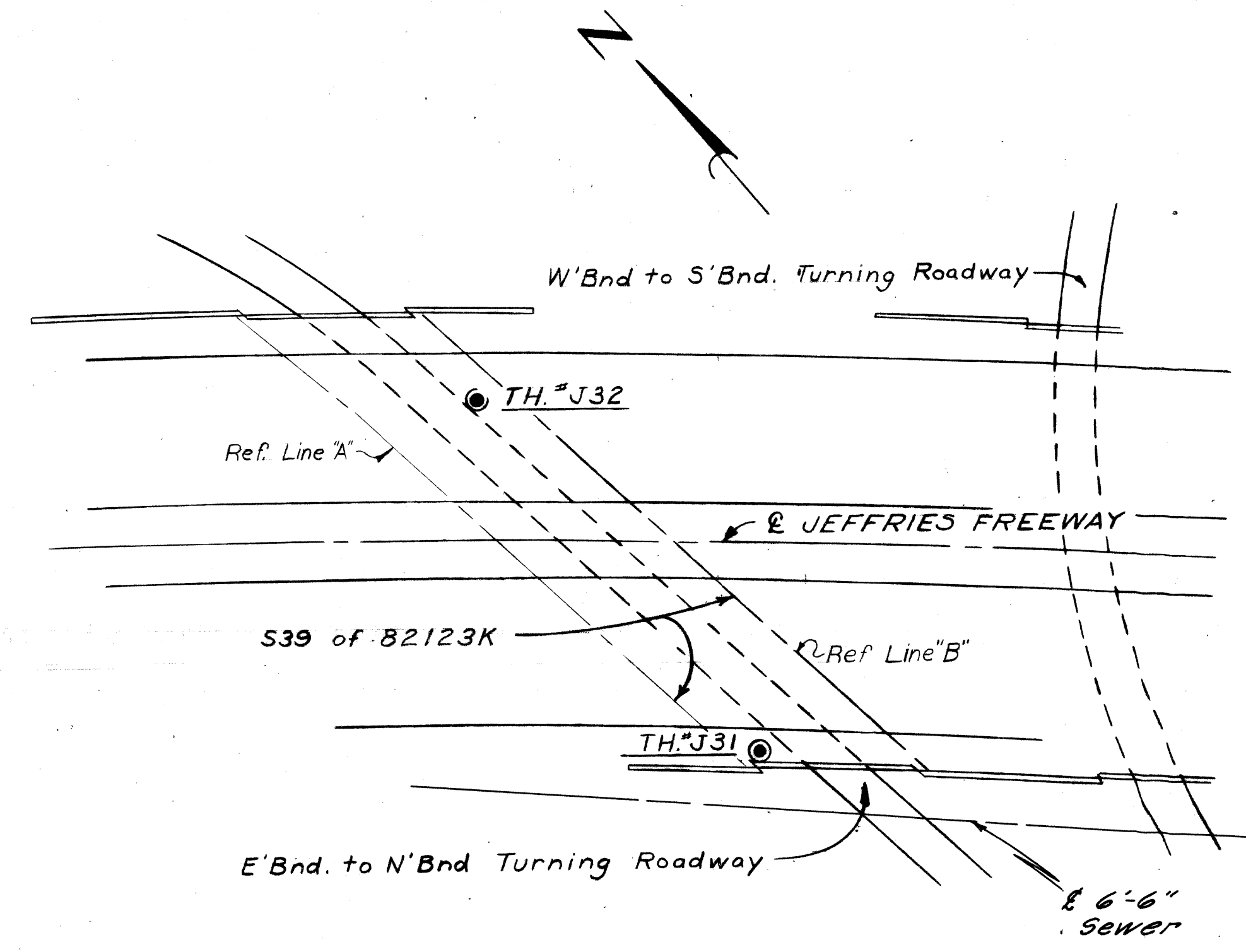
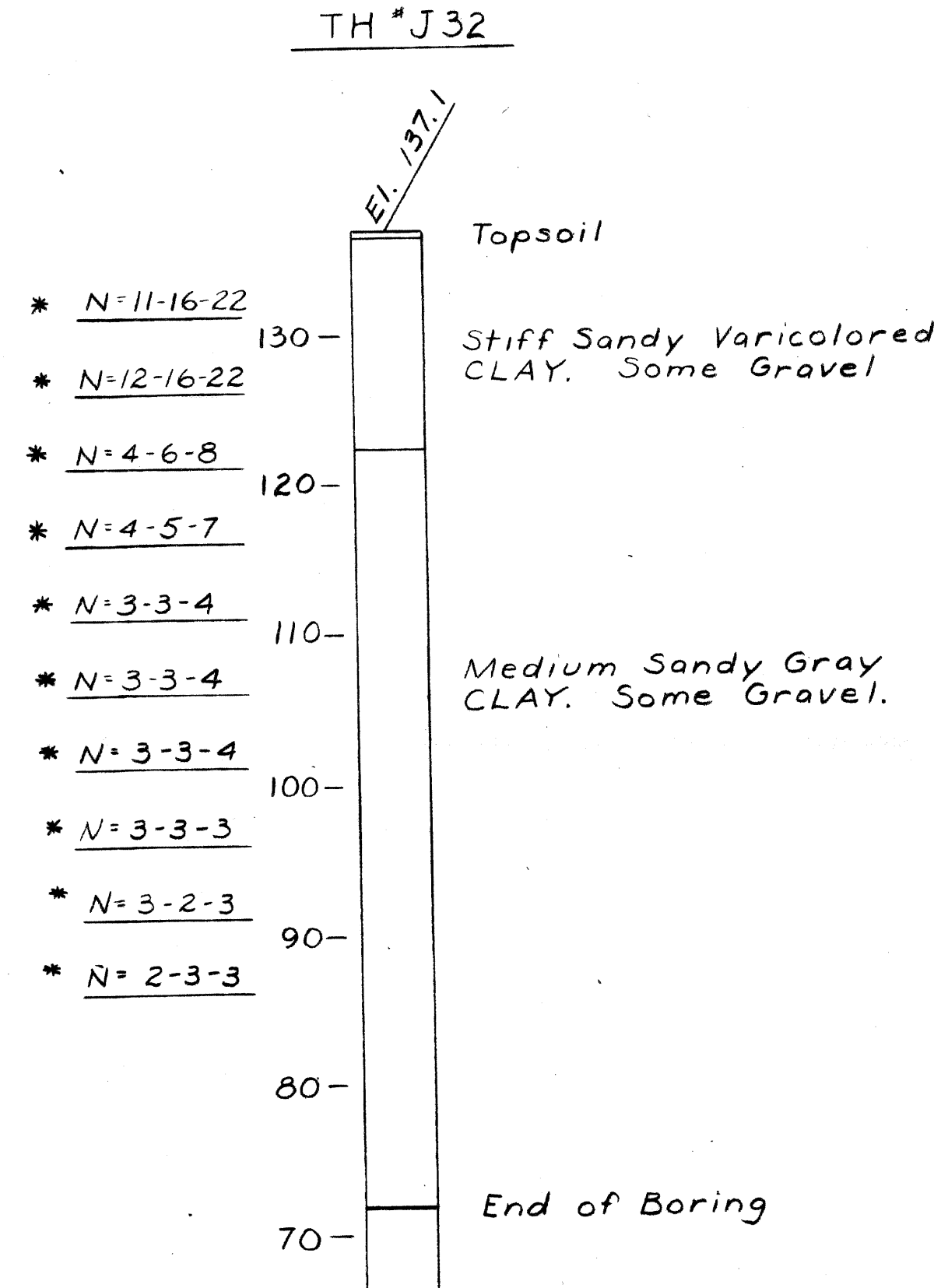
**S38 of 82123K**



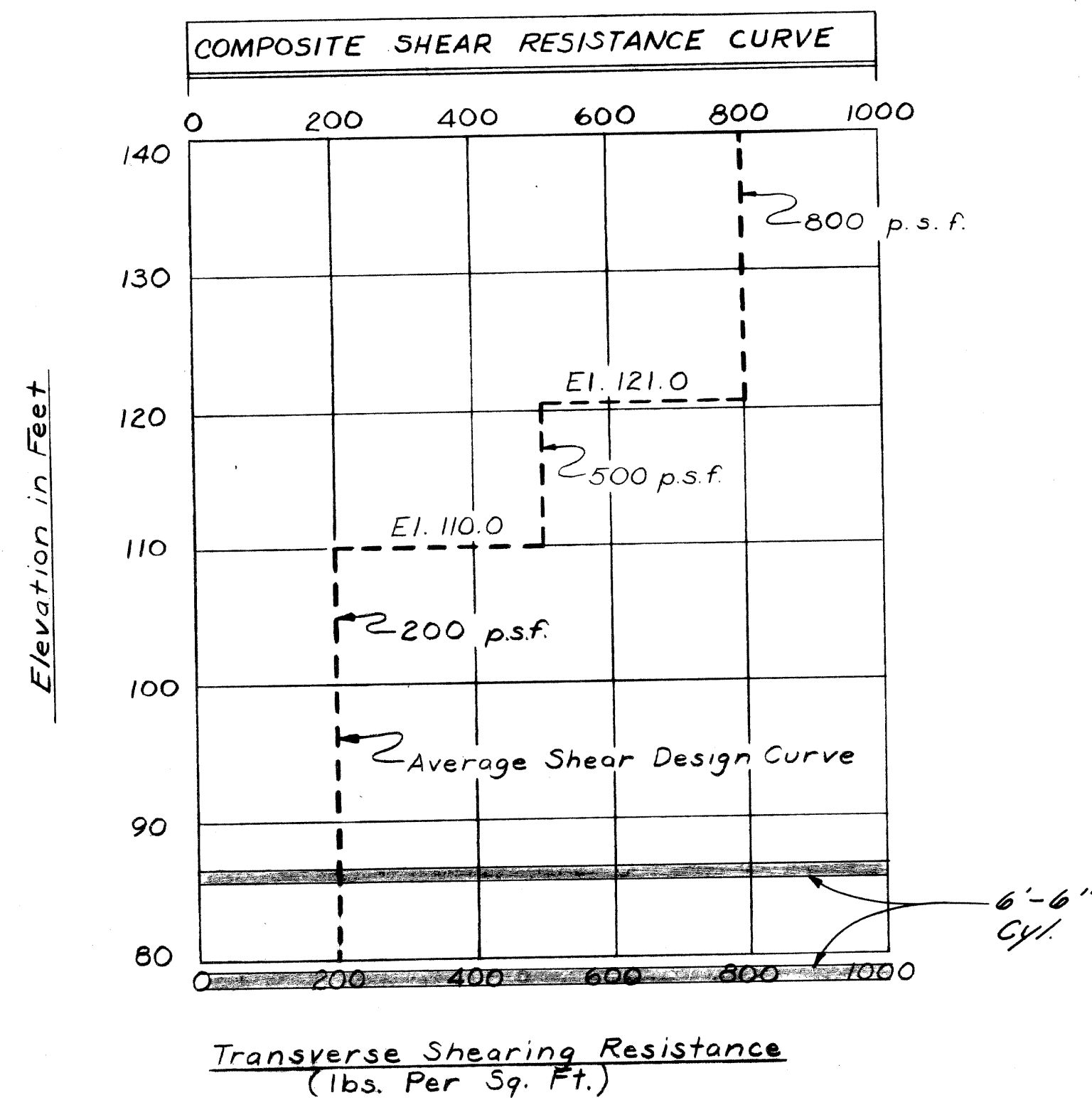
LOG OF SOIL BORINGS



NOTE:  
Water @ 11'-4" on completion of Boring



SOIL BORING LOCATION SKETCH



NOTES:

- N Indicates the number of blows required to drive the 2" # Sampler 6" (or as noted) using a 140 lb. hammer falling 30". Where blow count is not shown, Sampler was levered, pushed or hand-driven.
- S Indicates Transverse Shearing Resistance in lbs. per sq. ft. as determined by M. S. H. D. Standard Test.
- \* Indicates no sample taken.

Boring J-32 is from Field Report only.  
Boring J-31 is from Lab Report.

All elevations are based on City of Detroit Datum.

Consistency classification shown on boring logs is by the Raymond Concrete Pile Company.

PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: \_\_\_\_\_  
STRUCTURAL ENGINEER

JOB No.  
PW99021X

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MICHIGAN DEPARTMENT OF STATE HIGHWAYS  
JEFFRIES - FORD INTERCHANGE  
JEFFRIES FREEWAY CROSSING THE E BND. TO N BND.  
TURNING ROADWAY IN DETROIT

LOG OF SOIL BORINGS

CITY OF DETROIT

SQUAD BOSS	
DRAWN BY	R. G. 9/66
TRACED BY	
CHECKED BY	L.B. Jackson 1/67
	HEET 2/

APPROVED: \_\_\_\_\_  
DESIGN SUPERVISING ENGINEER

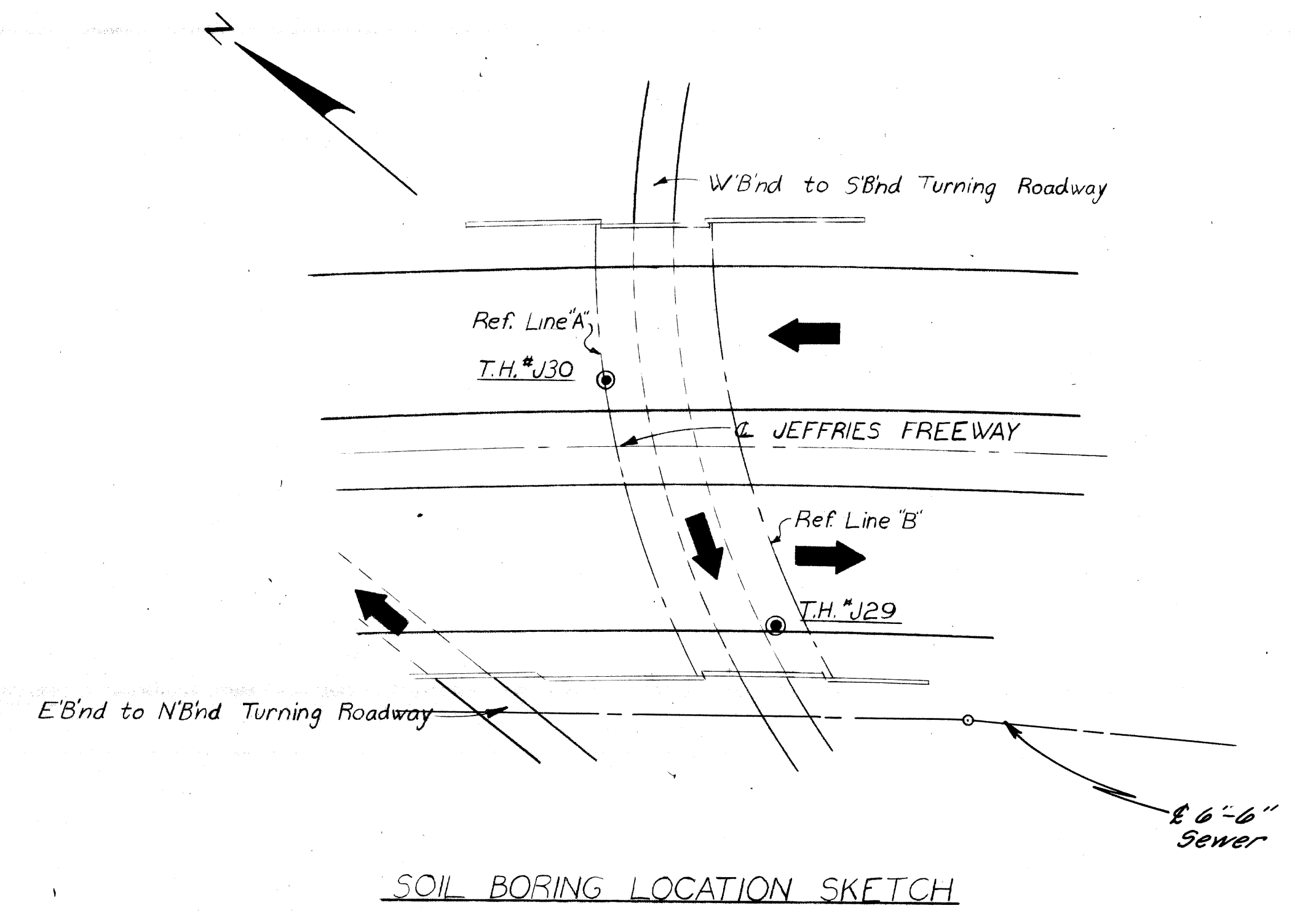
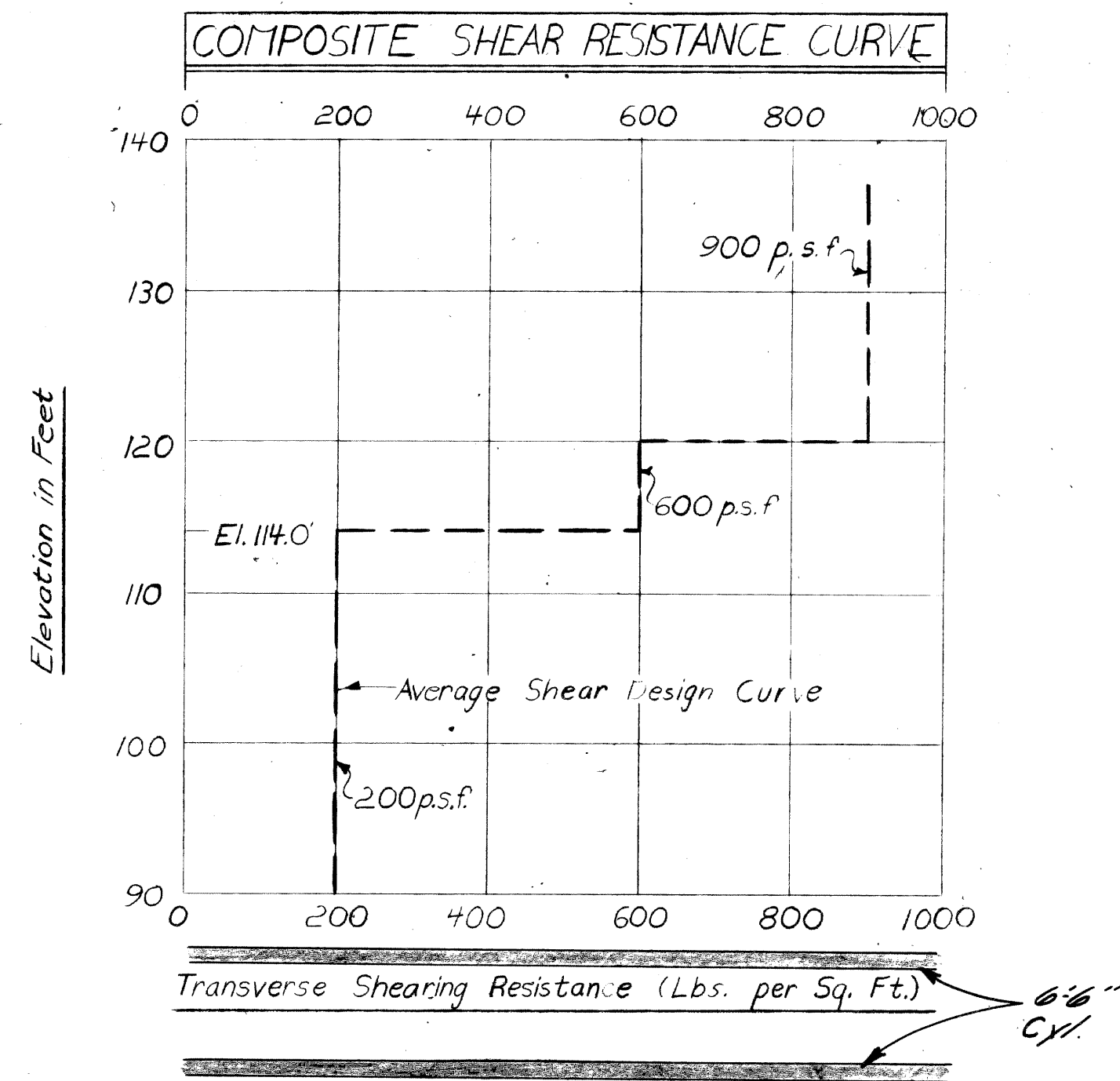
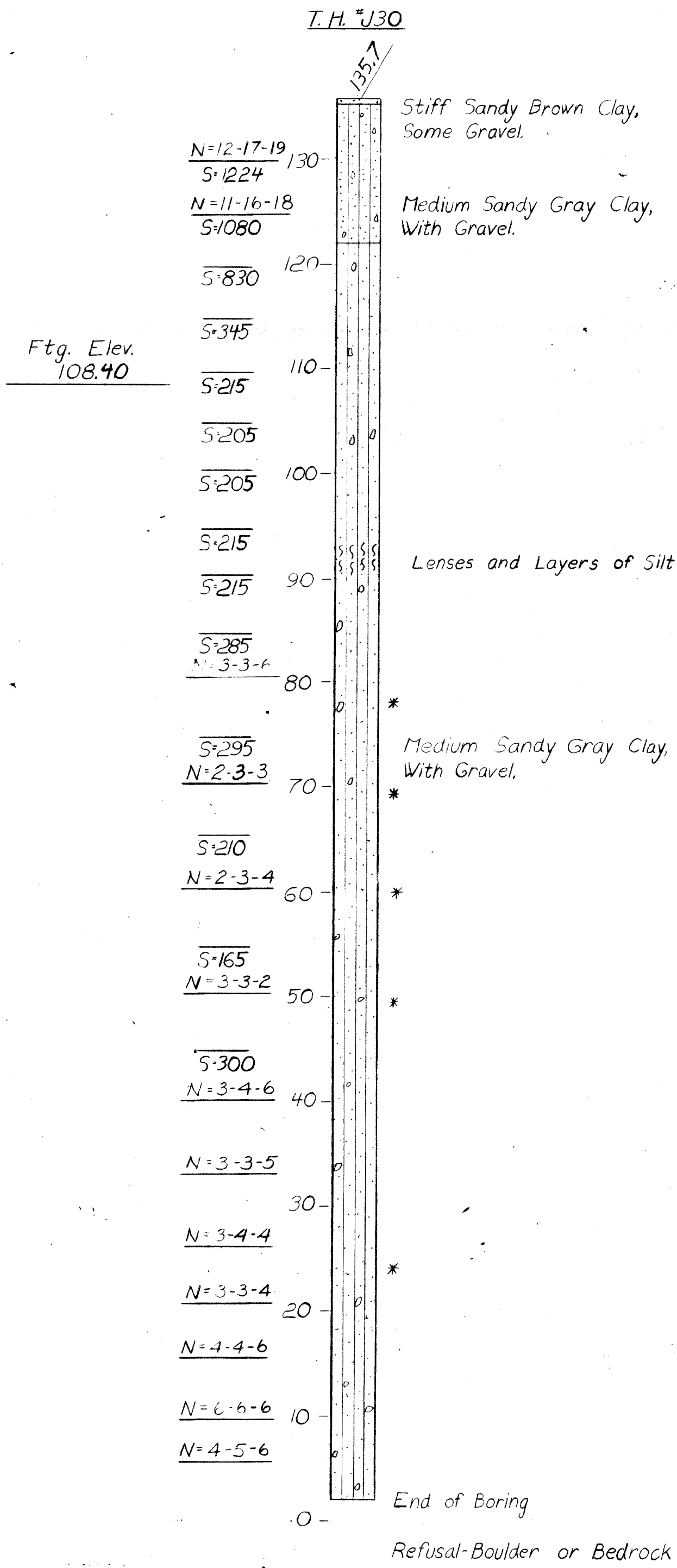
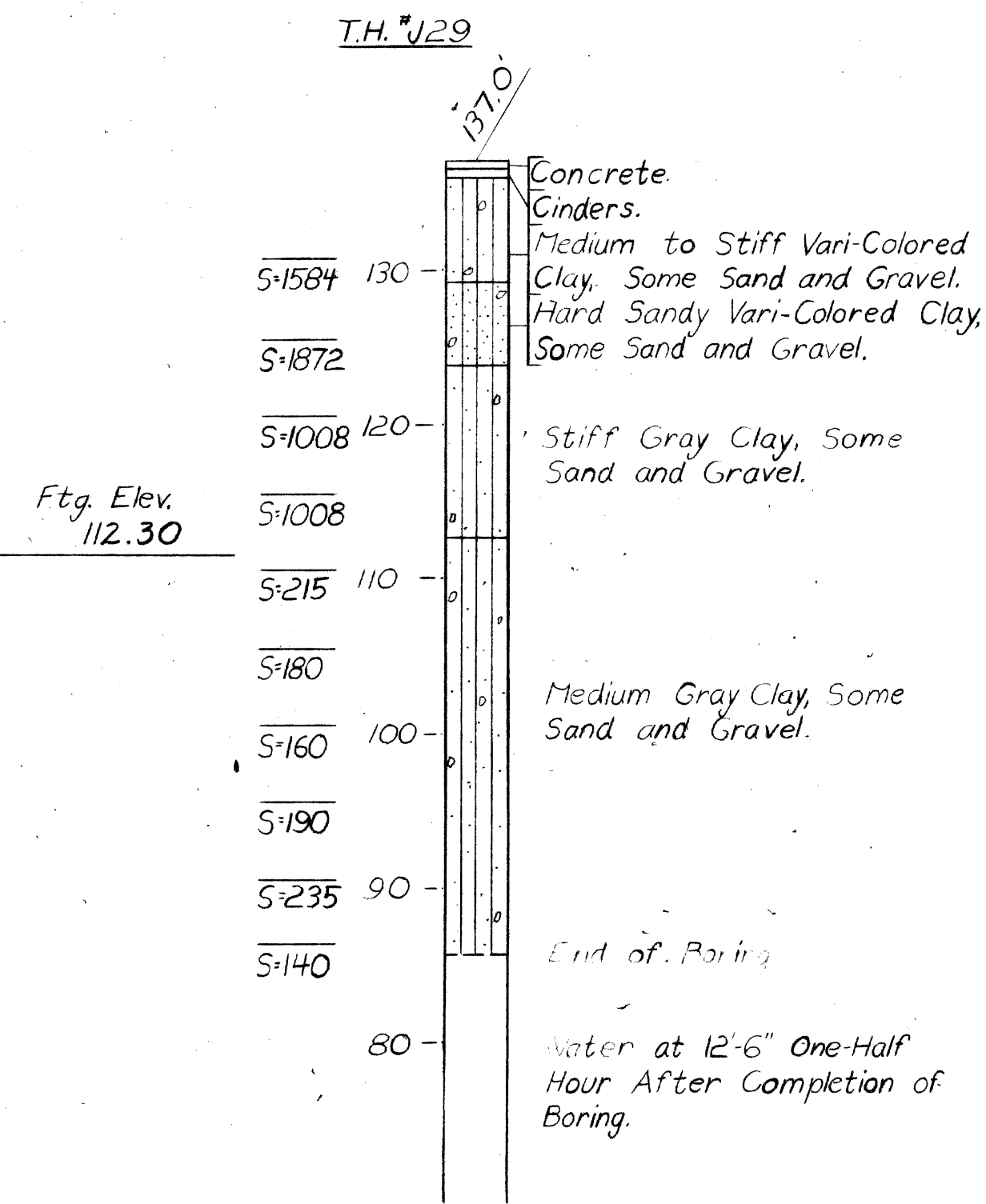
APPROVED: \_\_\_\_\_  
ENGINEER OF DESIGN - CONSULTANTS

S 39 of 82123 K

82123-008



LOG OF SOIL BORINGS

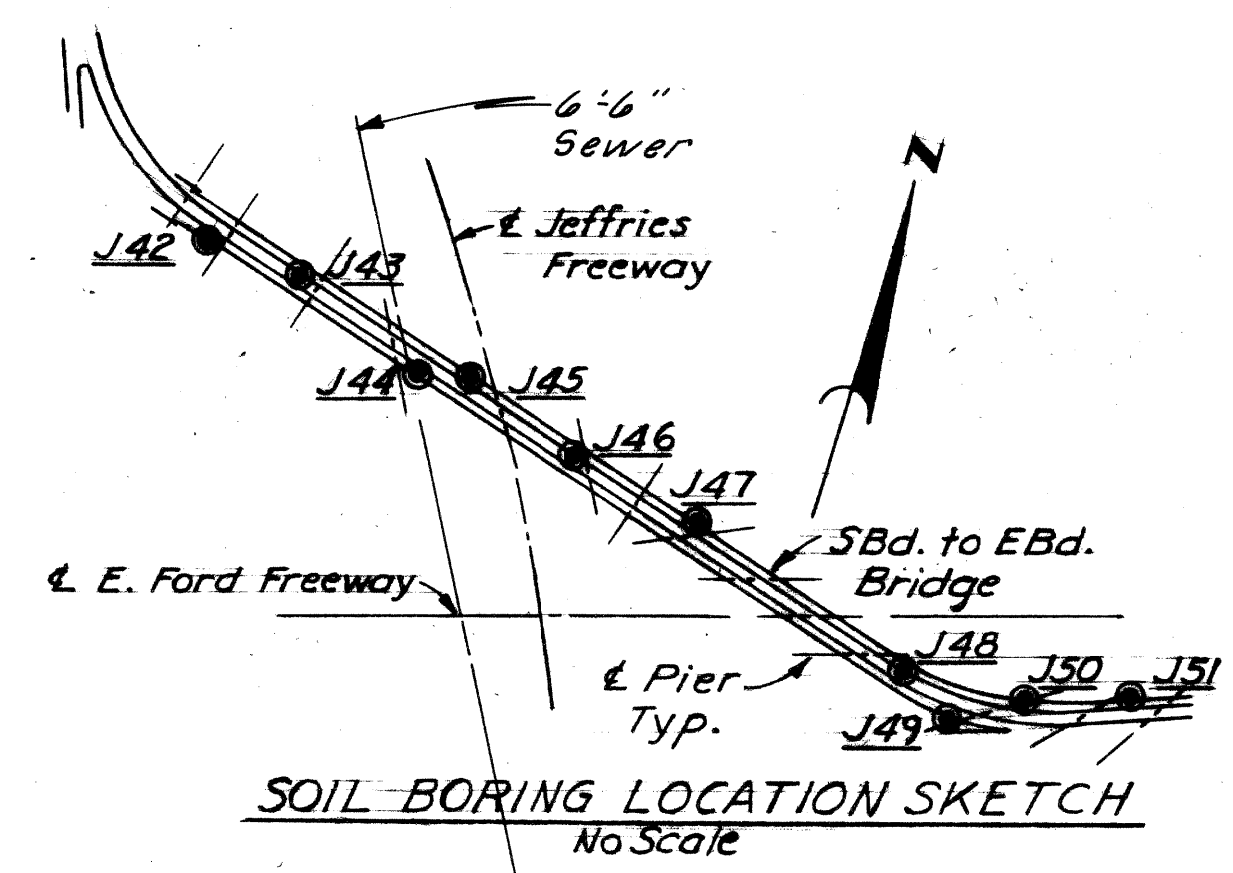
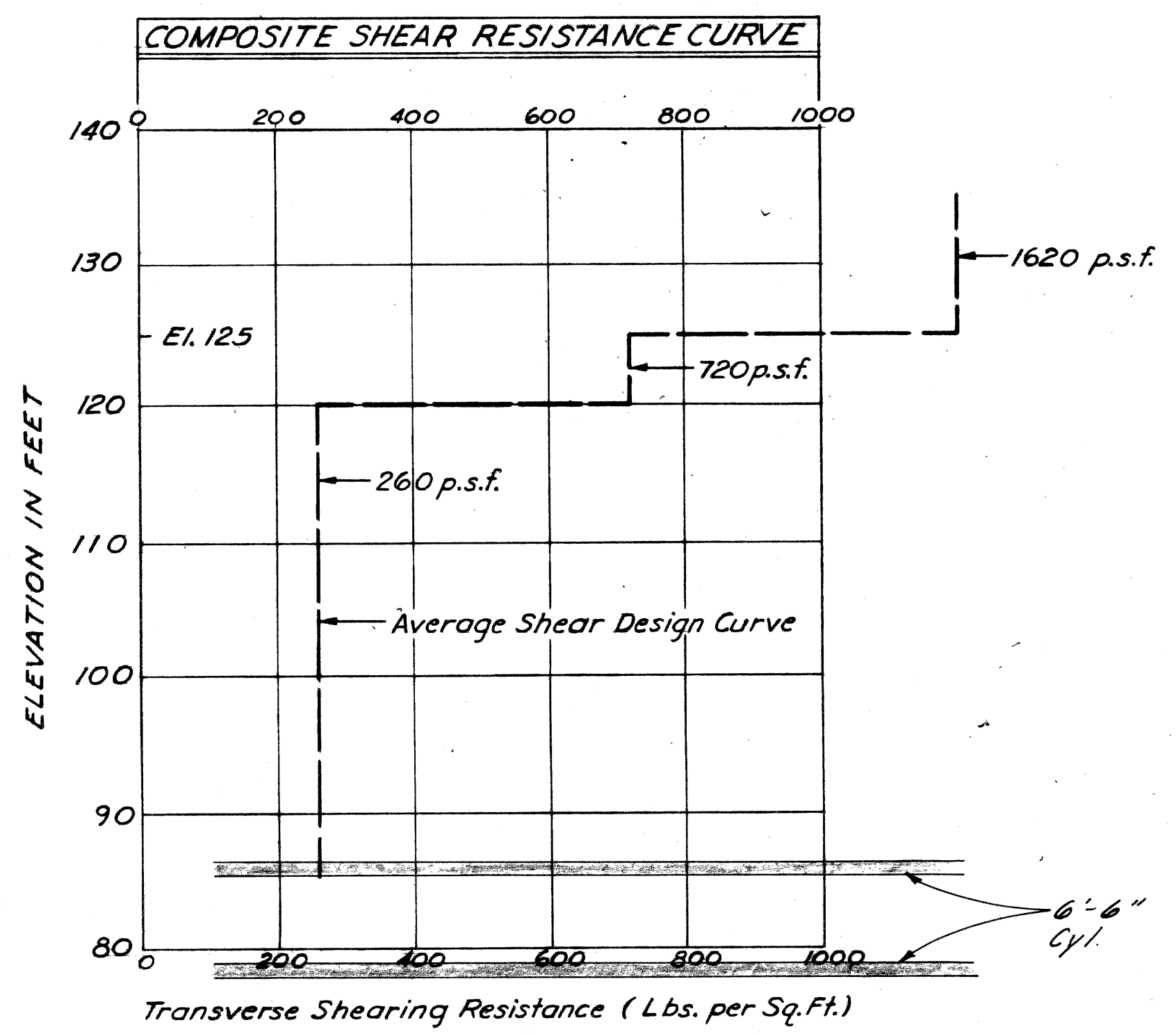
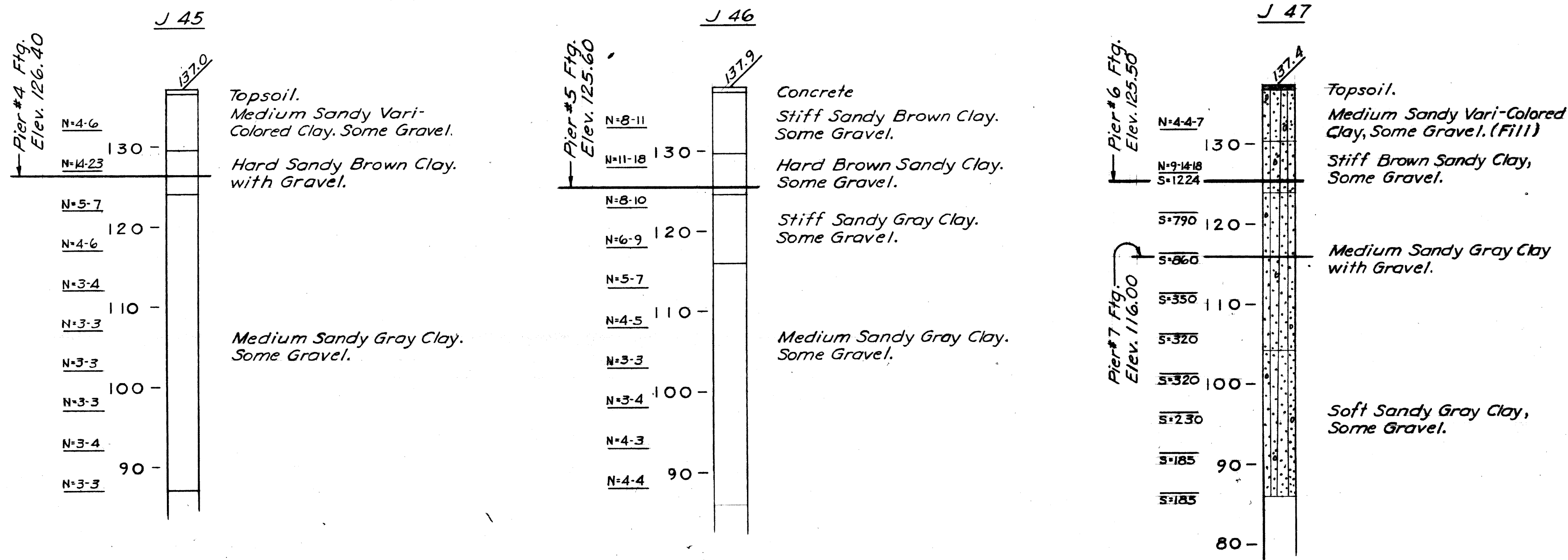
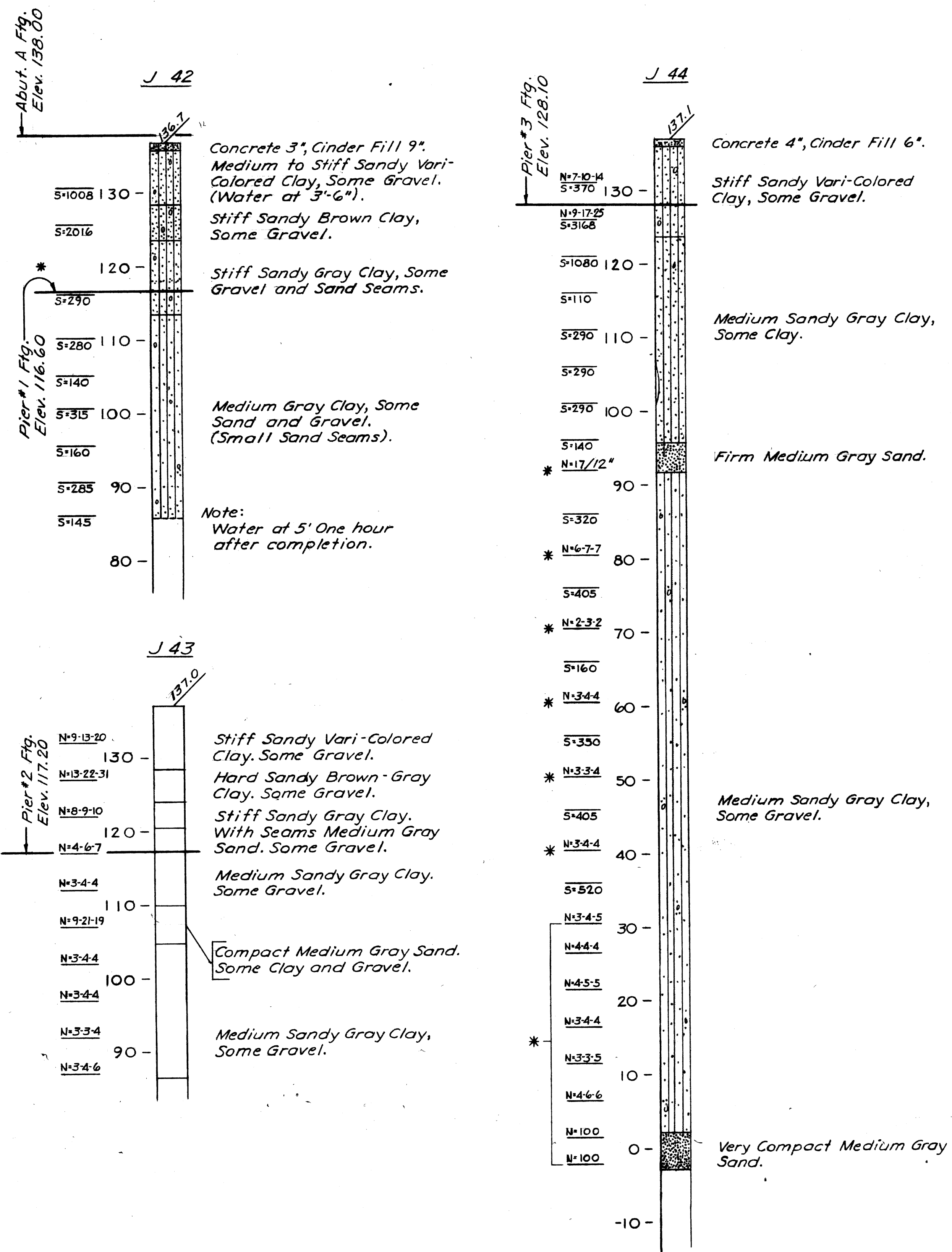


**NOTES**  
 N Indicates the number of blows required to drive the 2" sampler 6" (or as noted) using a 140 lb. hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand-driven.  
 S Indicates Transverse Shearing Resistance in lbs. per sq. ft. as determined by M.S.H.D. Standard Test  
 \* Indicates no sample.  
 All elevations are based on City of Detroit Datum.  
 Consistency classification shown on boring logs is by the Raymond Concrete Pile Company.

PLANS PREPARED BY <b>CITY OF DETROIT</b> DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		<b>MICHIGAN DEPARTMENT OF STATE HIGHWAYS</b> JEFFRIES-FORD INTERCHANGE JEFFRIES FREEWAY CROSSING THE WEST BND. TO SOUTH BND. TURNING ROADWAY IN DETROIT	
APPROVED _____ STRUCTURAL ENGINEER		JOB No. PW 990(2)X	
REVISIONS			
NO.	DESCRIPTION	DATE	BY
APPROVED _____ DESIGN SUPERVISING ENGINEER		CITY OF DETROIT SQUAD BOSS DRAWN BY <i>AV Kerckhove</i> 7-30-66 CHECKED BY <i>McGuire</i> 7/6/66 SHEET 22	
APPROVED _____ ENGINEER OF DESIGN - CONSULTANTS		<b>S40 of 82123K</b>	



LOG OF SOIL BORINGS



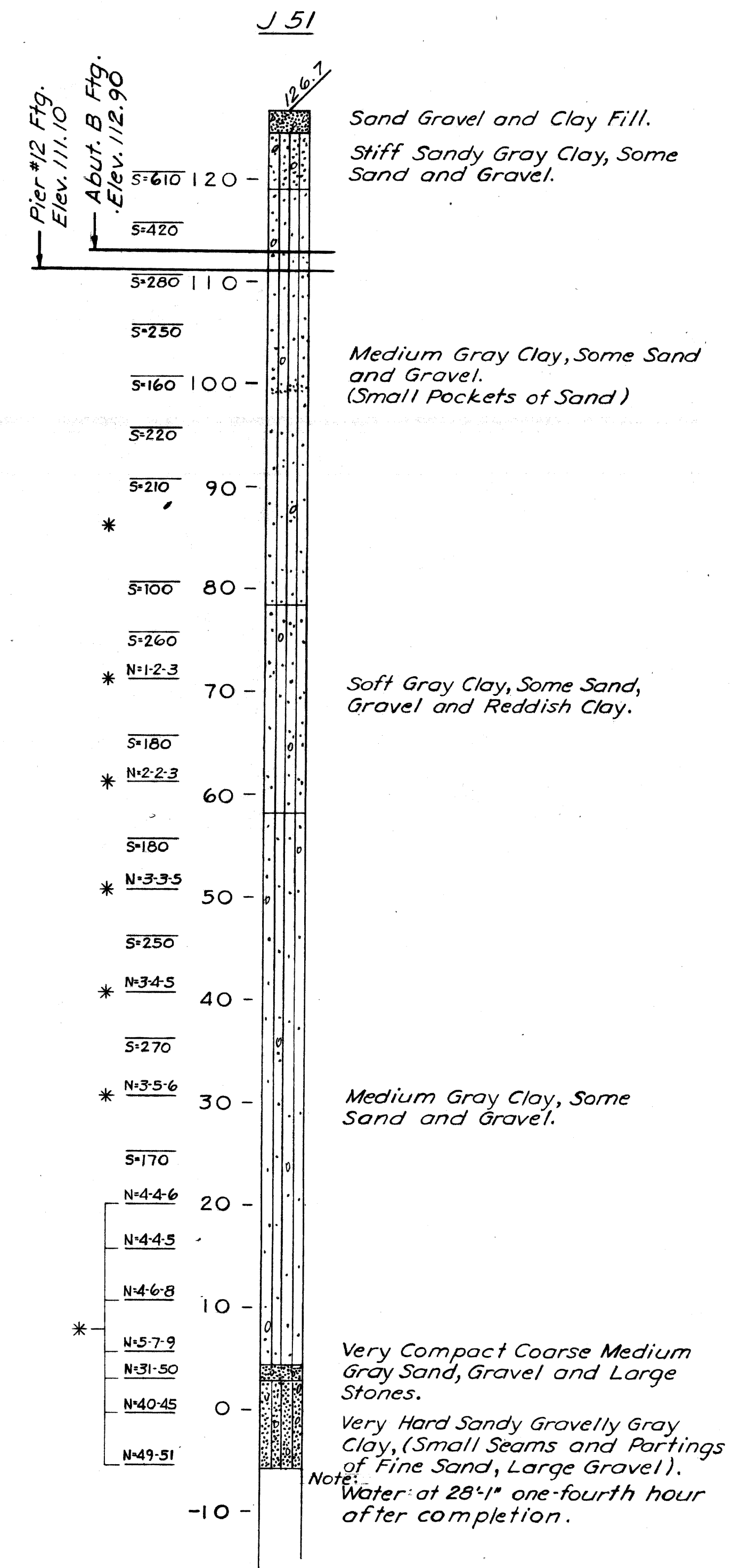
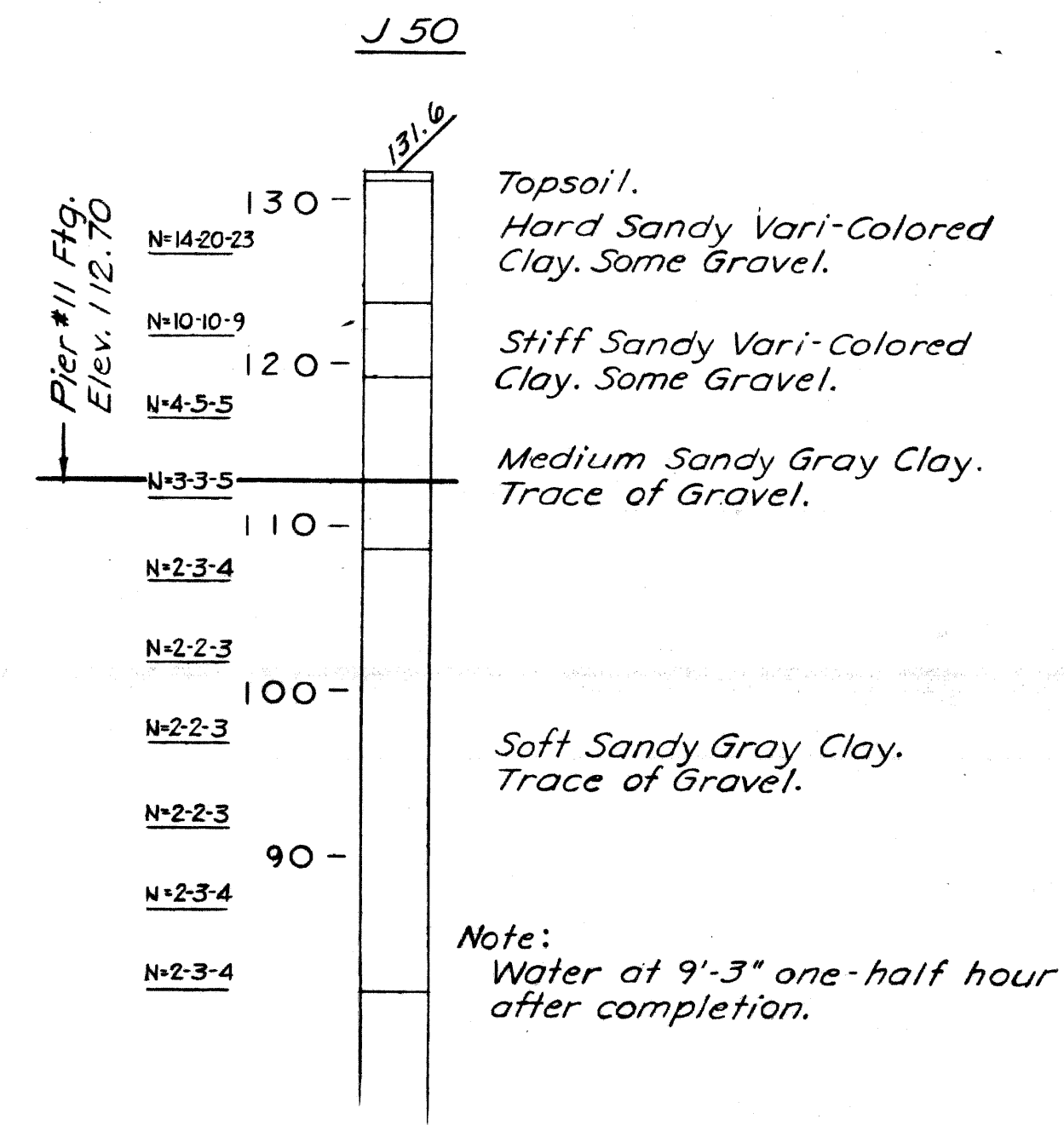
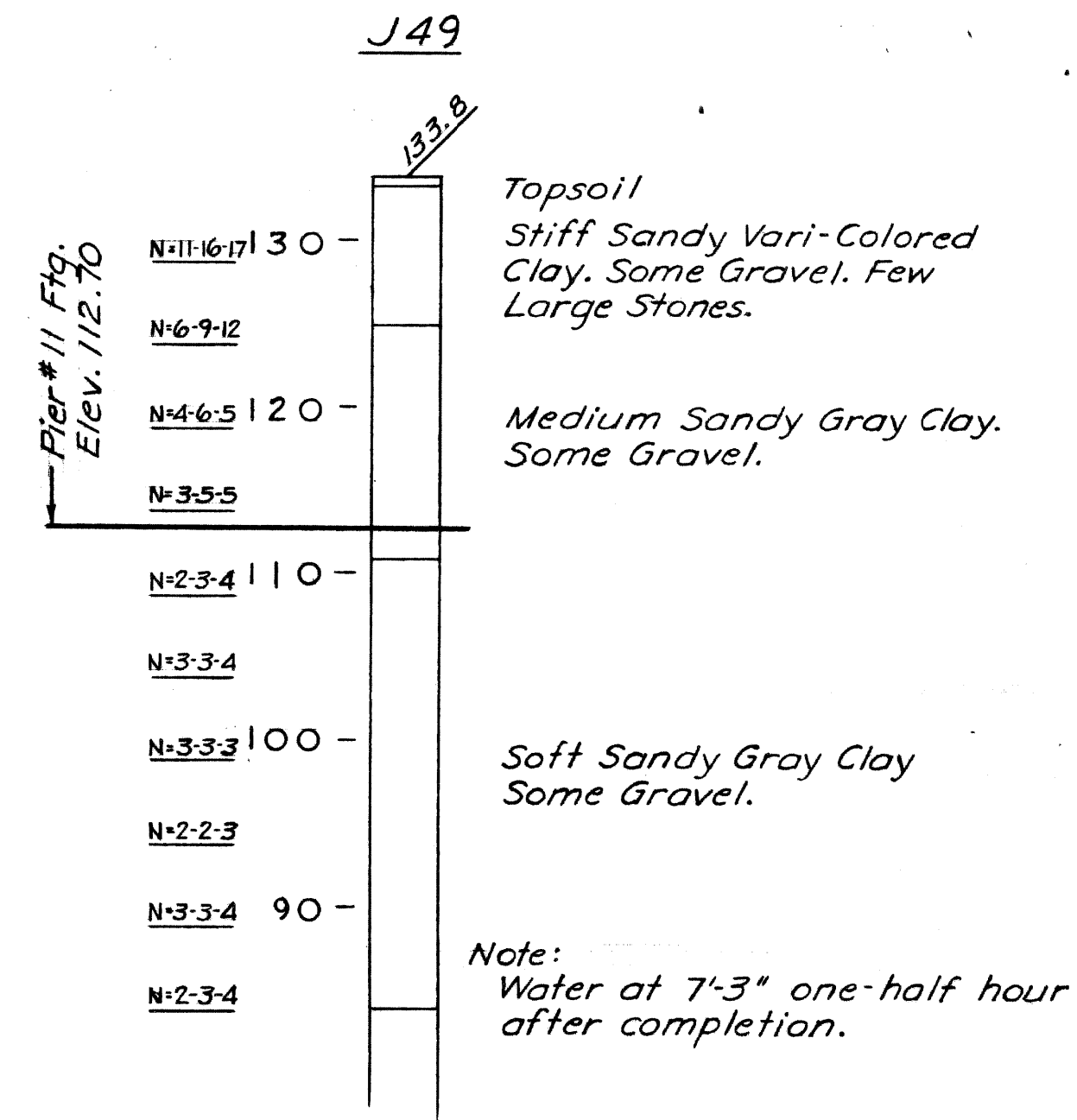
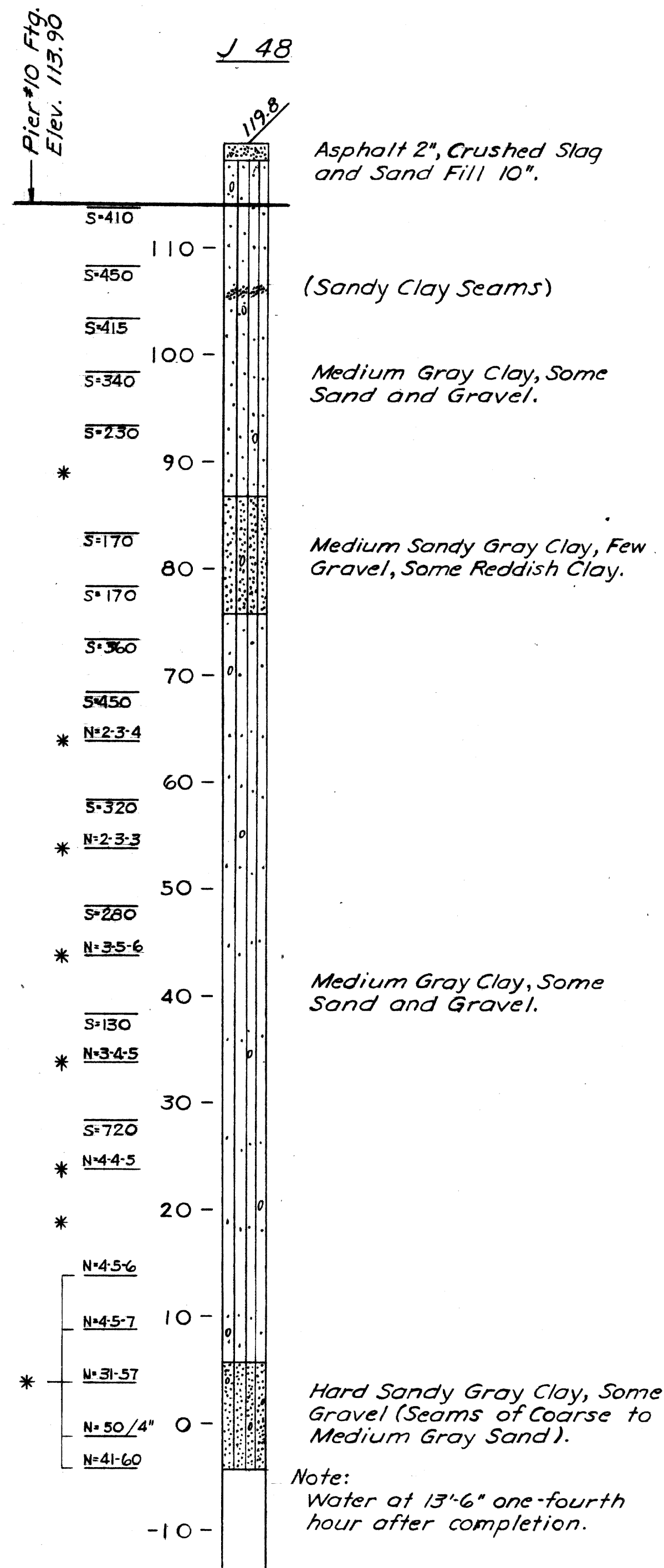
**NOTES**  
 N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140# hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand-driven.  
 S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.S.H.D. Standard Test.  
 \* Indicates no sample.  
 All elevations are based on City of Detroit Datum.  
 Information given on these sheets for Borings J43, J45, J46, J49 and J50 was taken from field reports only.  
 Work this sheet with Sh. #24.

Note:  
 Consistency classification shown on boring logs is by the Raymond Concrete Pile Co.

PLANS PREPARED BY <b>CITY OF DETROIT</b> DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		<b>MICHIGAN DEPARTMENT OF STATE HIGHWAYS</b> JEFFRIES - FORD INTERCHANGE SOUTH BND. TO EAST BND. TURNING ROADWAY CROSSING THE JEFFRIES FREEWAY IN DETROIT	
APPROVED: _____ STRUCTURAL ENGINEER		JOB No. PW990121X	
APPROVED: _____ DESIGN SUPERVISING ENGINEER		APPROVED: _____ ENGINEER OF DESIGN - CONSULTANTS	
REVISIONS NO. DESCRIPTION DATE BY		CITY OF DETROIT SQUAD BOSS: _____ DRAWN BY: _____ TRACED BY: _____ CHECKED BY: _____ SHEET 23	
		S 41 of 82123 K 82123-008	



LOG OF SOIL BORINGS



Note: See NOTES on Sh. # 23

PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED \_\_\_\_\_  
 STRUCTURAL ENGINEER

JOB No.  
 PW990121X

REVISIONS			
NO.	DESCRIPTION	DATE	BY

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

JEFFRIES-FORD INTERCHANGE  
 SOUTH BND. TO EAST BND. TURNING ROADWAY CROSSING THE  
 JEFFRIES FREEWAY IN DETROIT

**LOG OF SOIL BORINGS**

CITY OF DETROIT

SQUAD BOSS	WGH
DRAWN BY	
TRACED BY	F. Morris
CHECKED BY	MC
DATE	1-67
SHEET	22

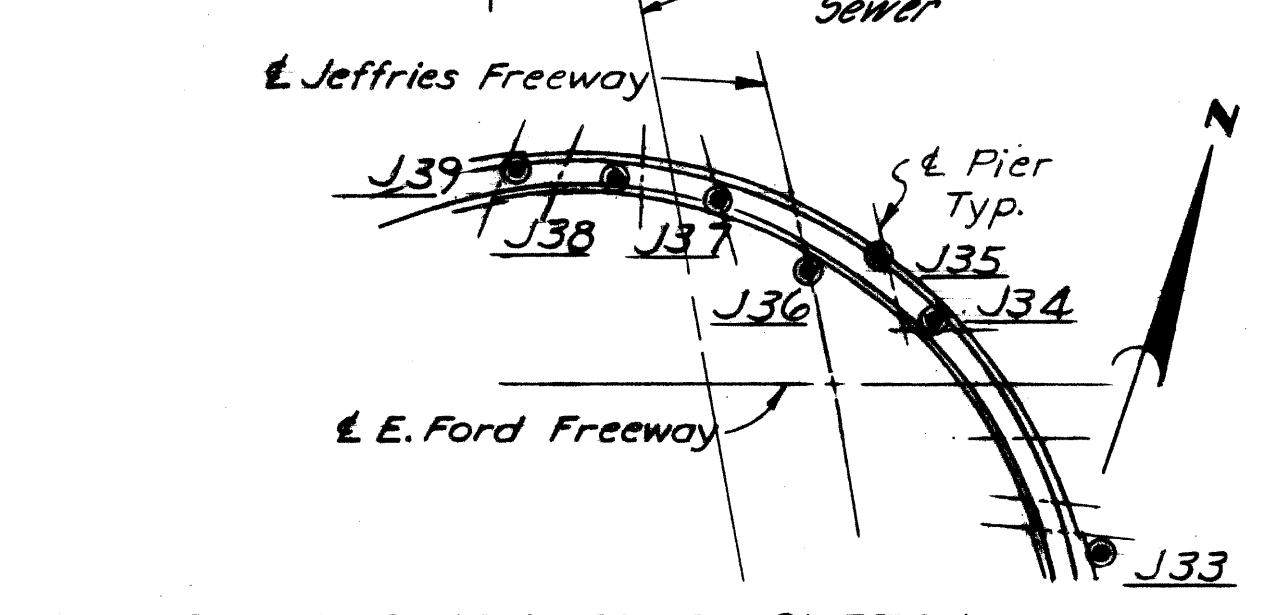
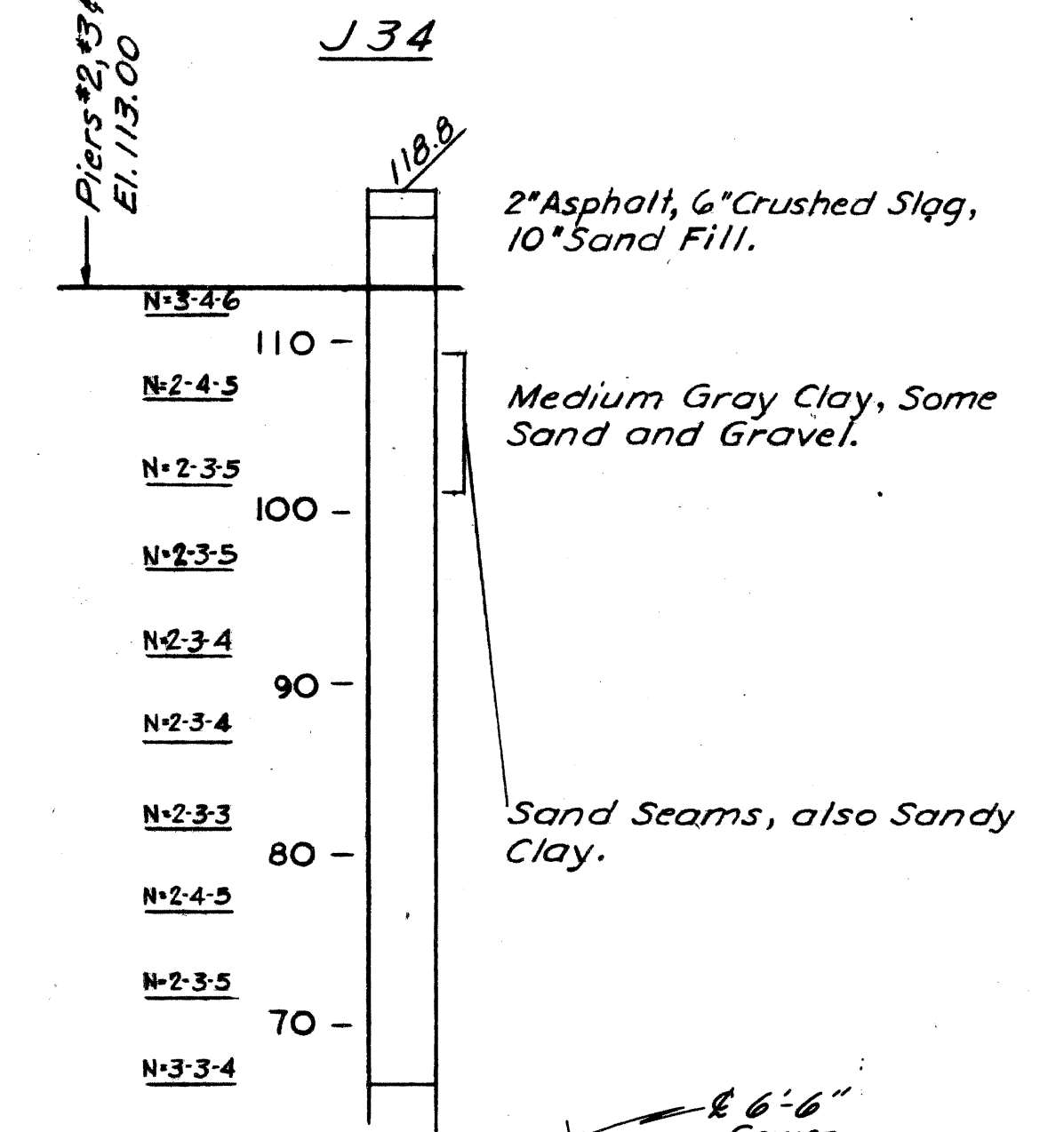
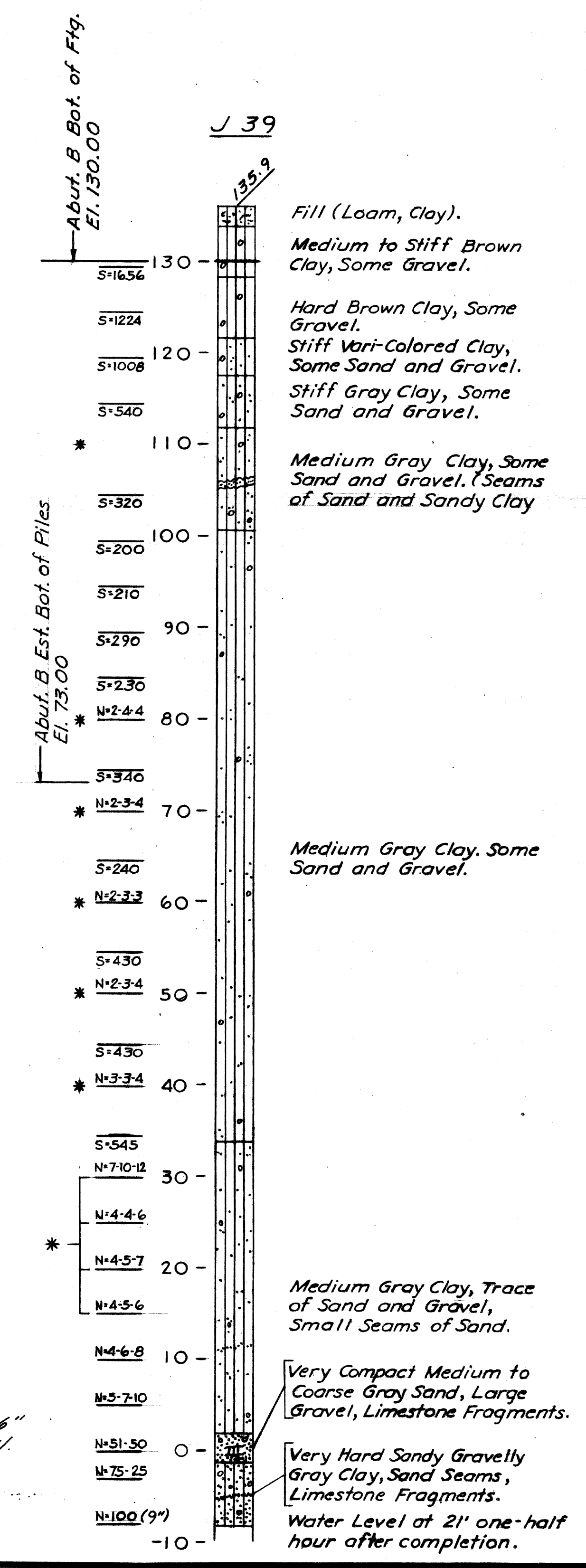
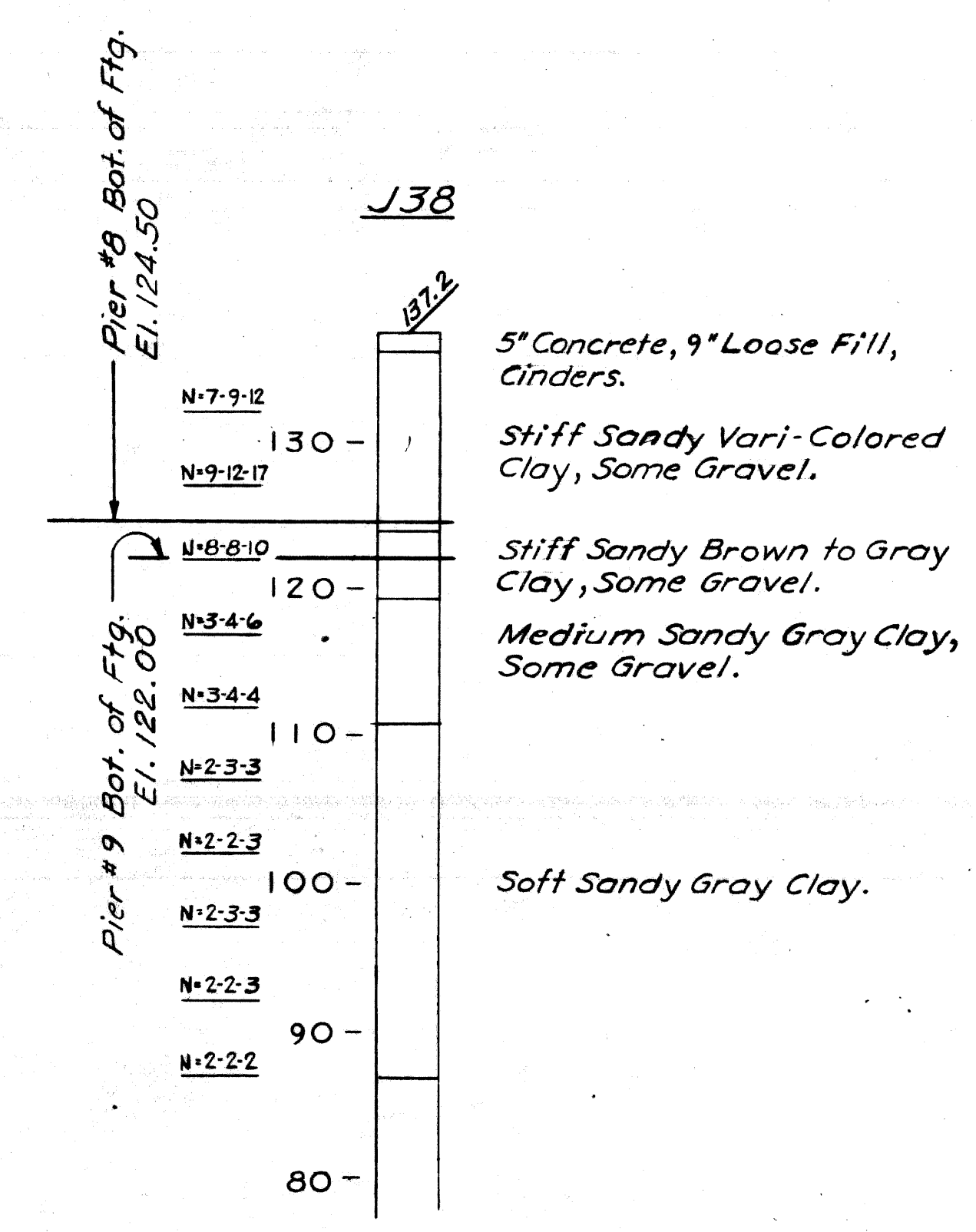
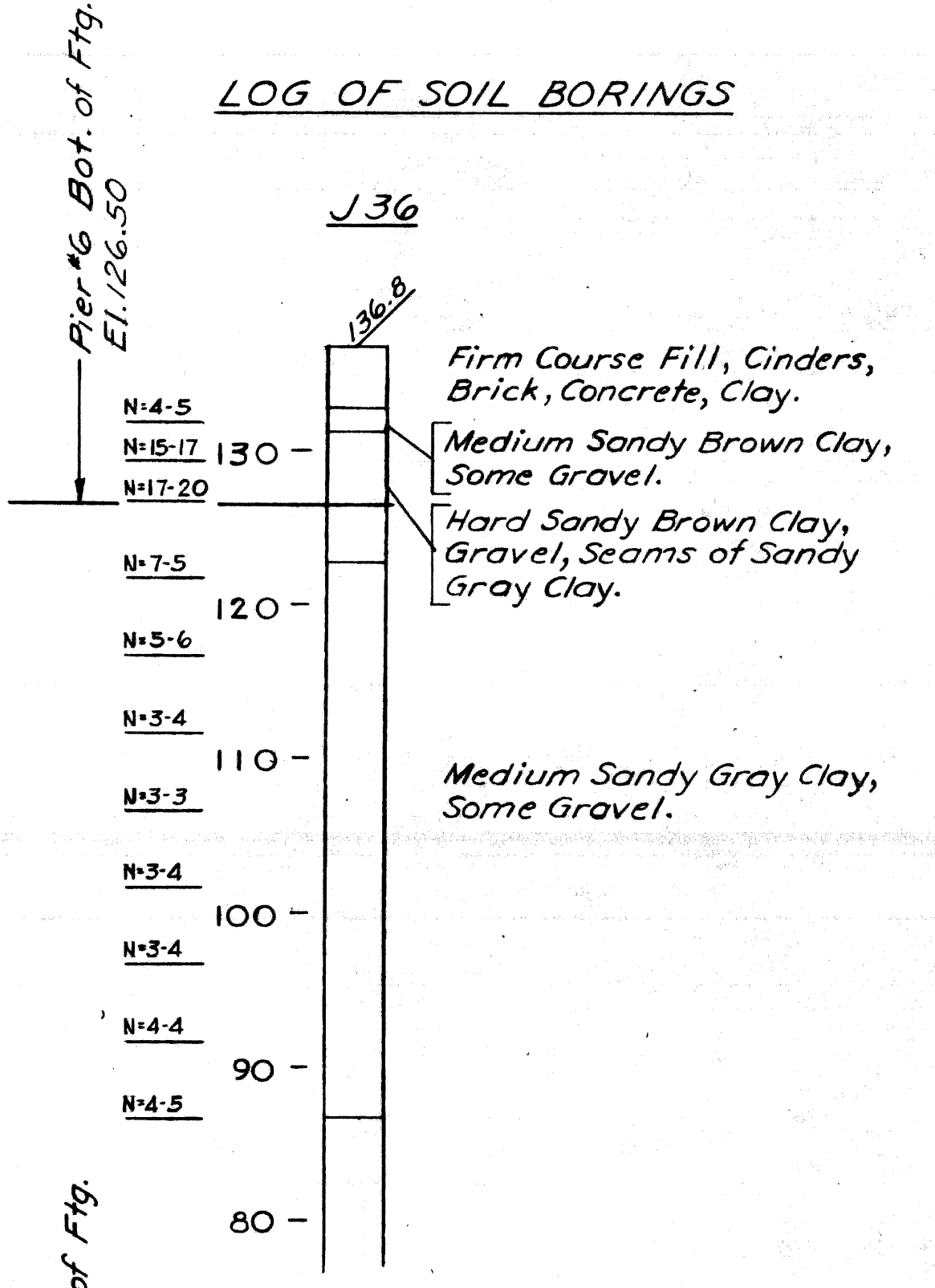
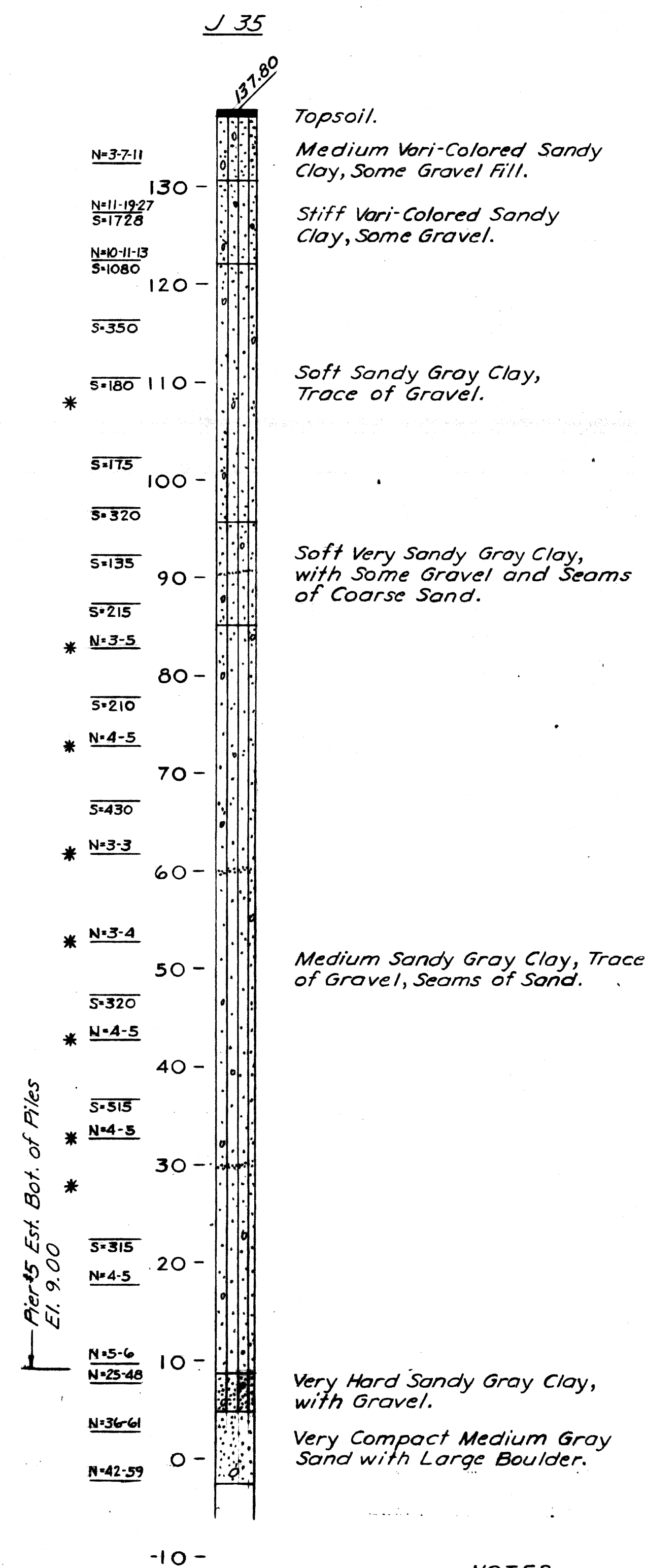
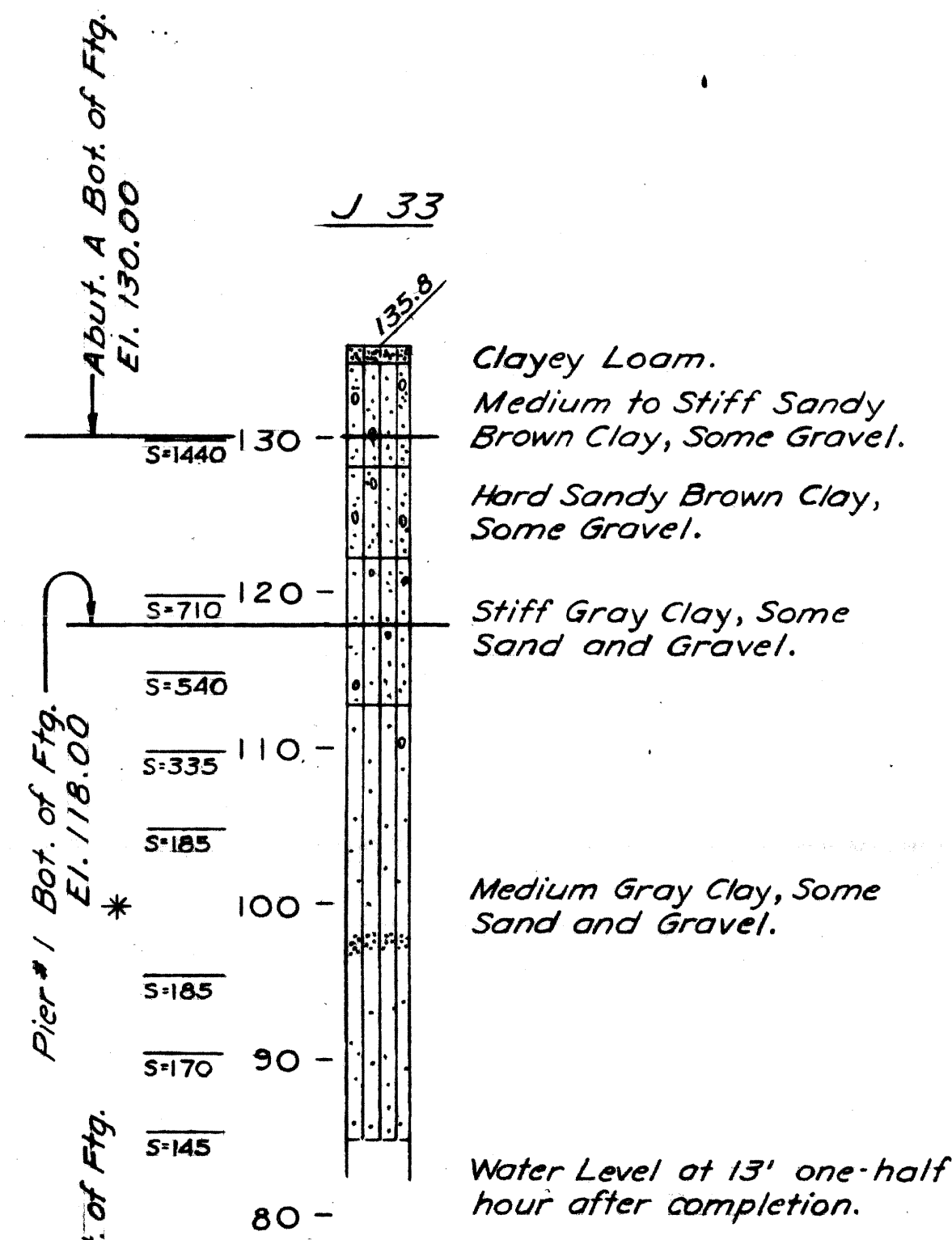
APPROVED \_\_\_\_\_  
 DESIGN SUPERVISING ENGINEER

APPROVED \_\_\_\_\_  
 ENGINEER OF DESIGN-CONSULTANTS

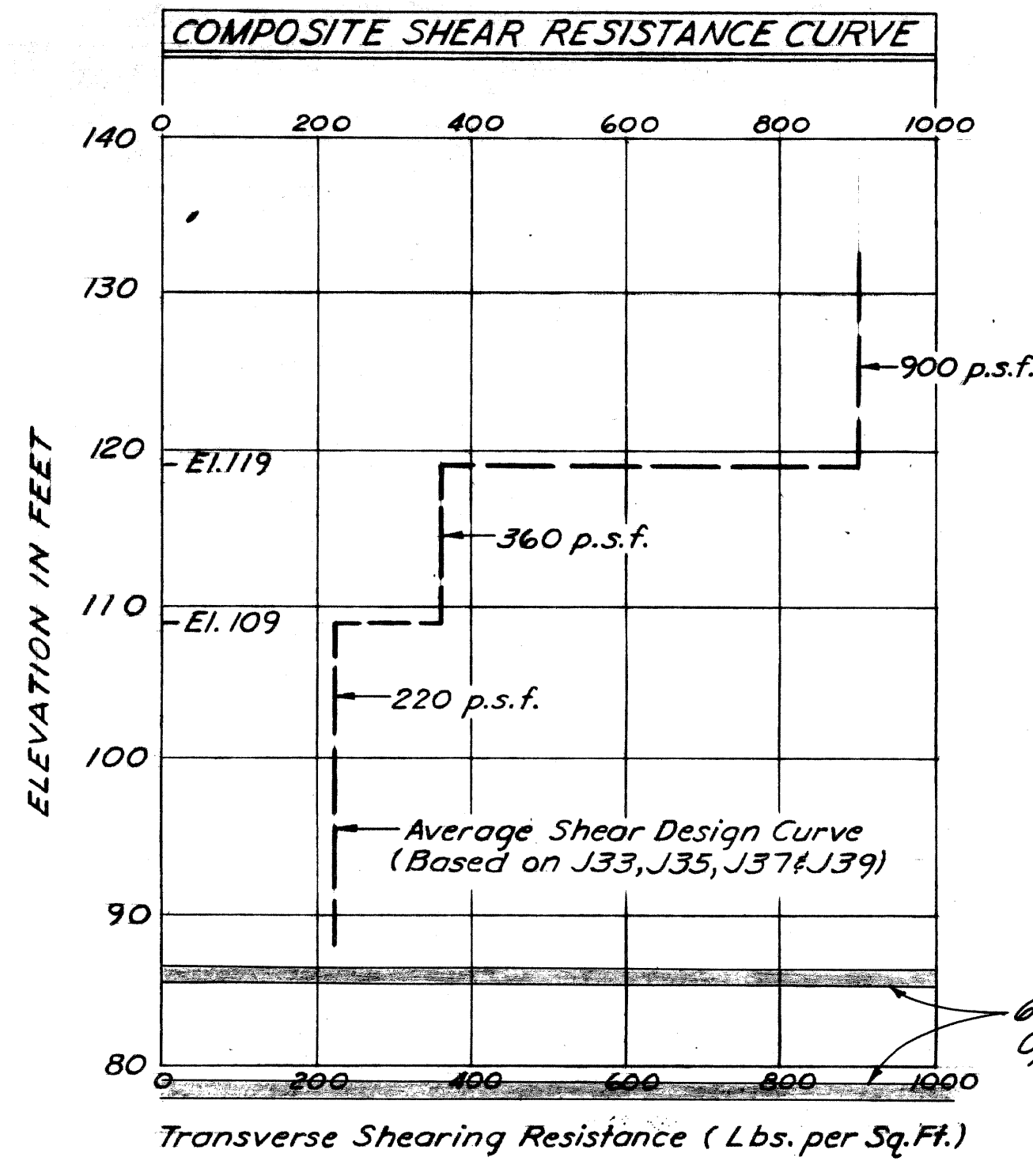
**S 41 of 82123 K**



LOG OF SOIL BORINGS



SOIL BORING LOCATION SKETCH  
No Scale



**NOTES**  
 N Indicates the number of blows required to drive the sampler 6" (or as noted) using a 140# hammer falling 30". Where blow count is not shown, sampler was levered, pushed or hand-driven.  
 S Indicates Transverse Shearing Resistance in Lbs. per Sq. Ft. as determined by M.S.H.D. Standard Test.  
 \* Indicates no sample.  
 All elevations are based on City of Detroit Datum.

Information given on this sheet for Borings J34, J36 and J38 is taken from field reports only.  
 Consistency classification shown on boring logs is by the Raymond Concrete Pile Company.

PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED \_\_\_\_\_  
 STRUCTURAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE	BY

JOB No.  
 PW990121X

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**

JEFFRIES - FORD INTERCHANGE  
 NORTH BND. TO WEST BND. TURNING ROADWAY CROSSING THE  
 JEFFRIES FREEWAY IN DETROIT

**LOG OF SOIL BORINGS**

CITY OF DETROIT

DRAWN BY: *M.H.F.S.*

TRACED BY: *R. Harris B-66*

CHECKED BY: *FDM/JES 1-67*

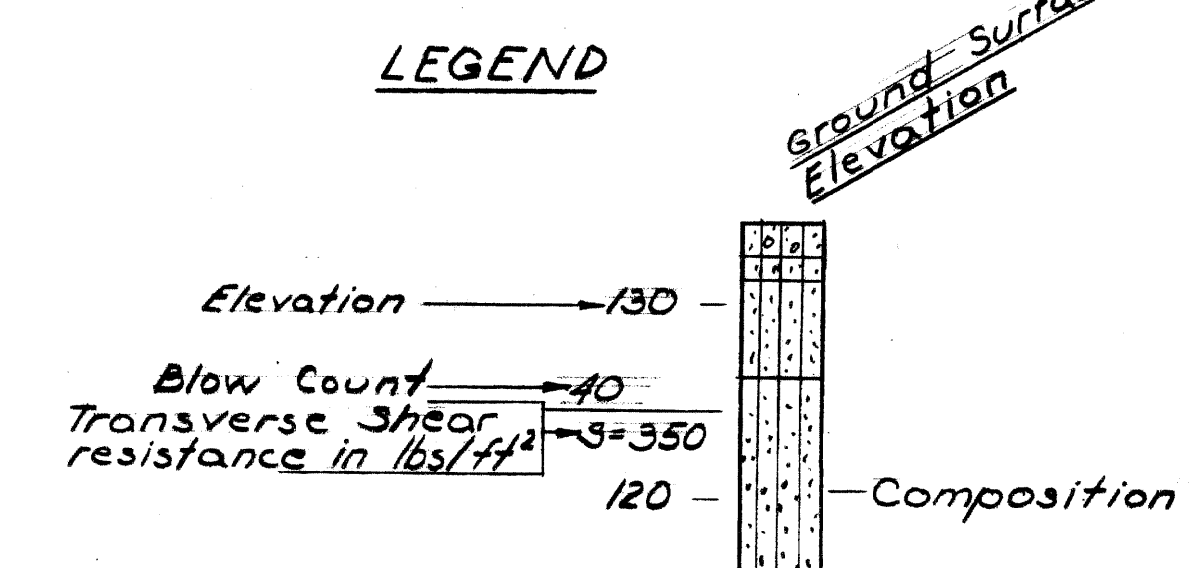
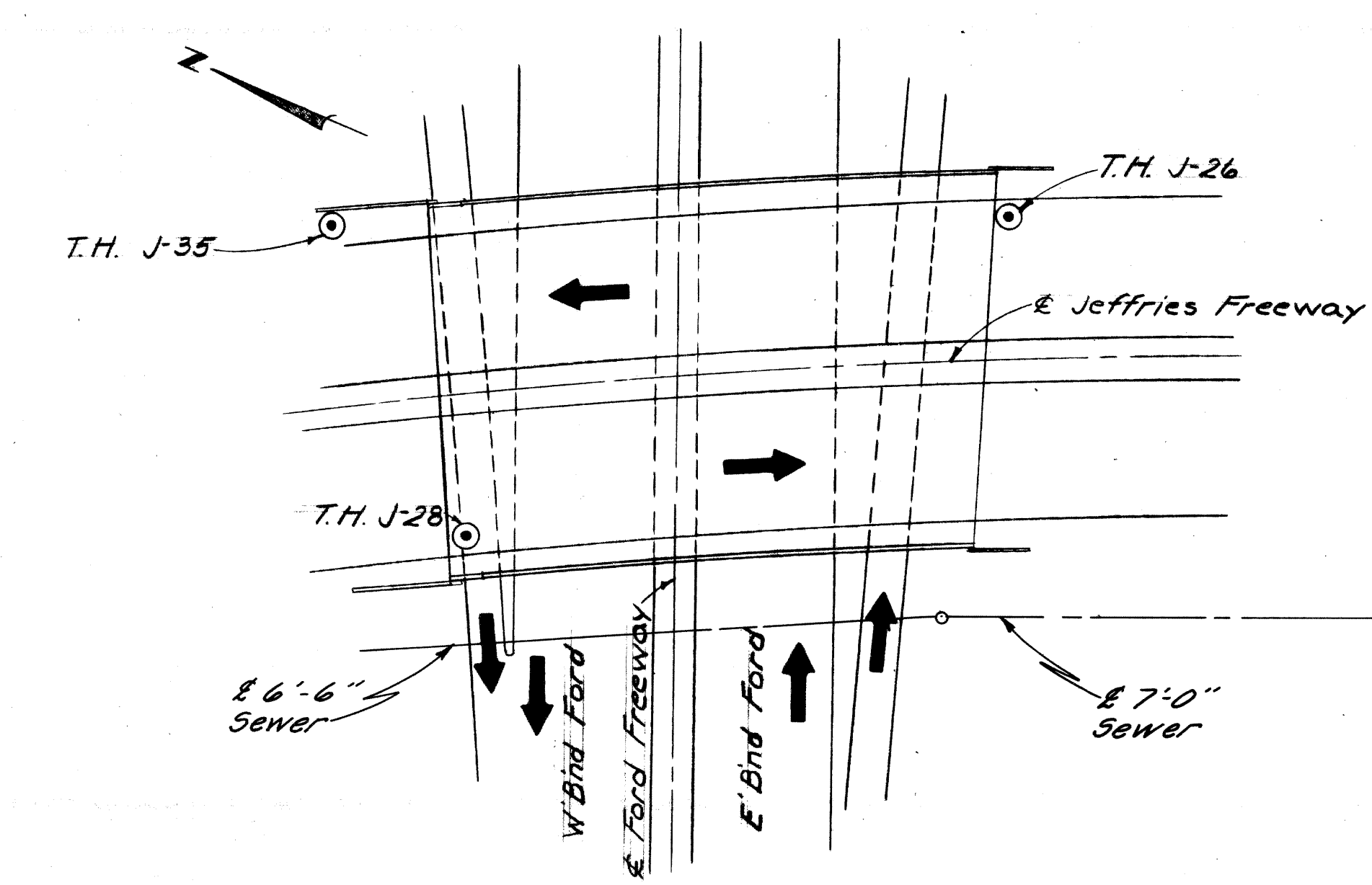
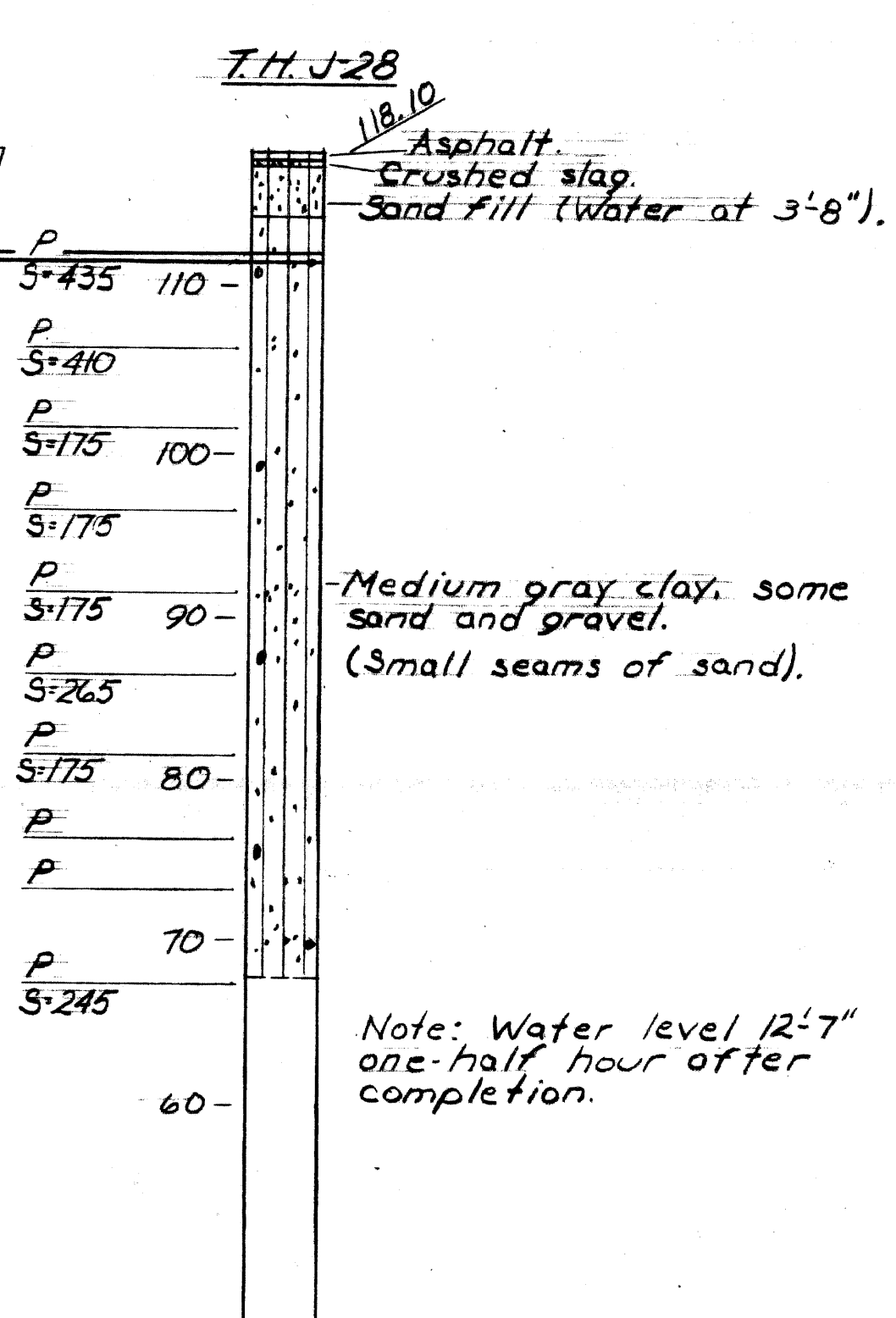
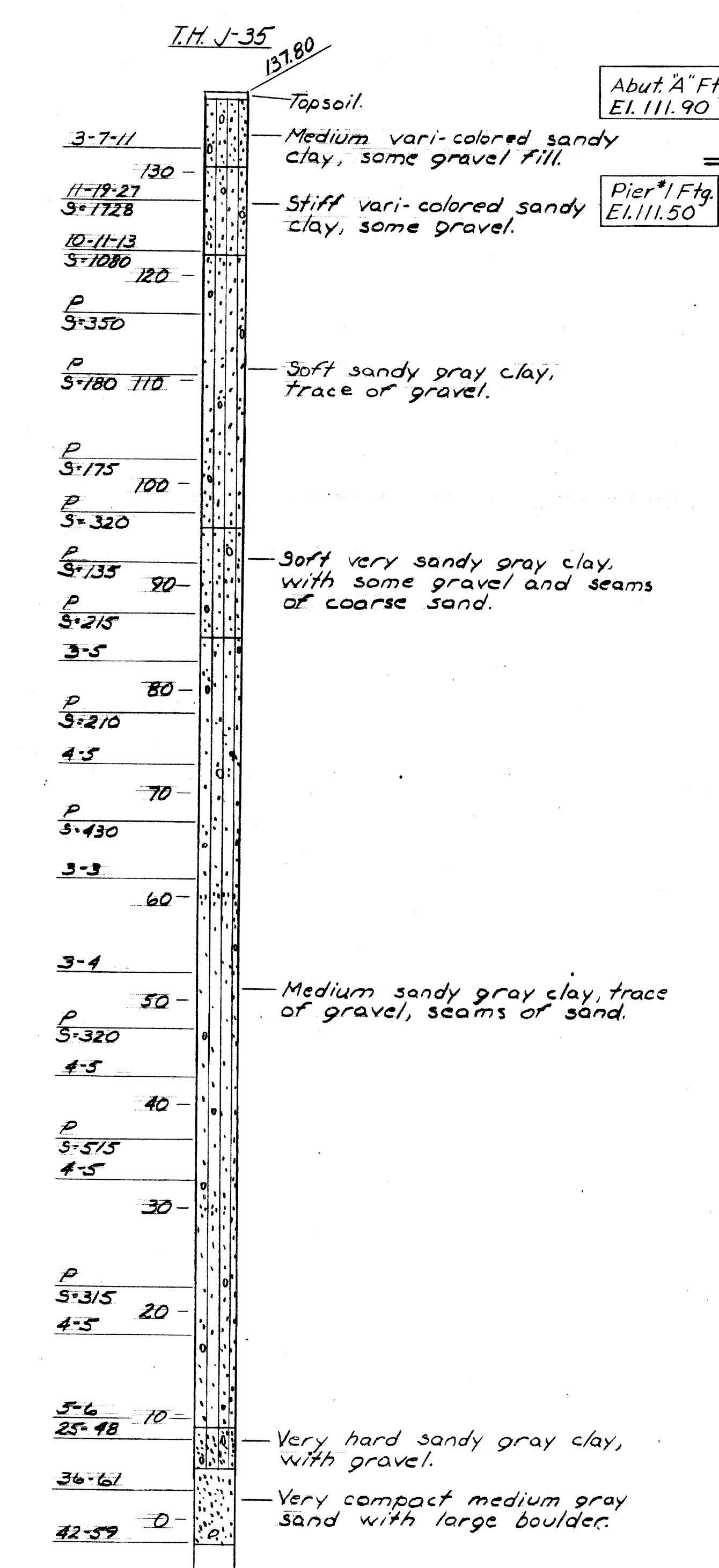
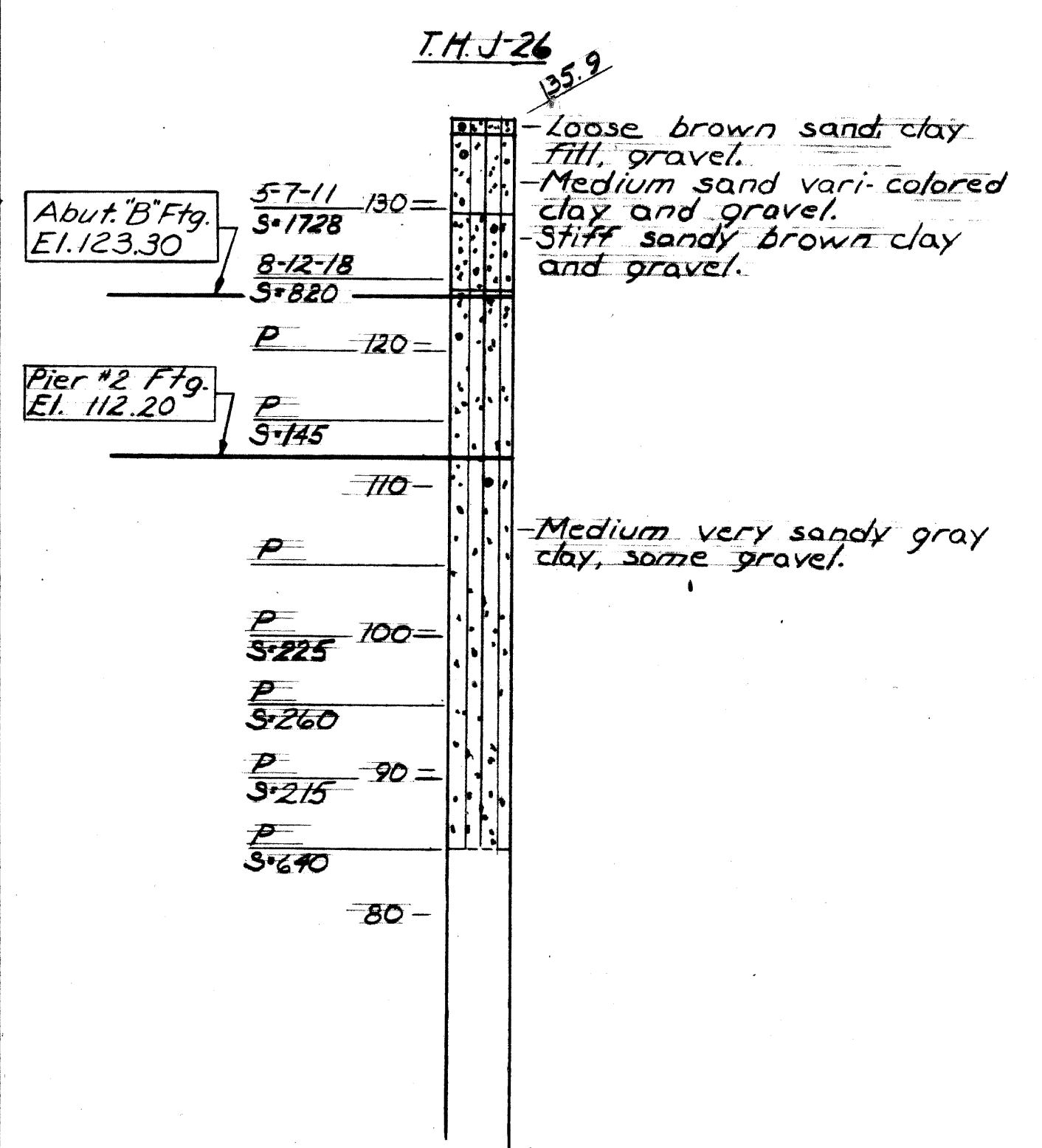
SHEET 25

APPROVED \_\_\_\_\_  
 DESIGN SUPERVISING ENGINEER

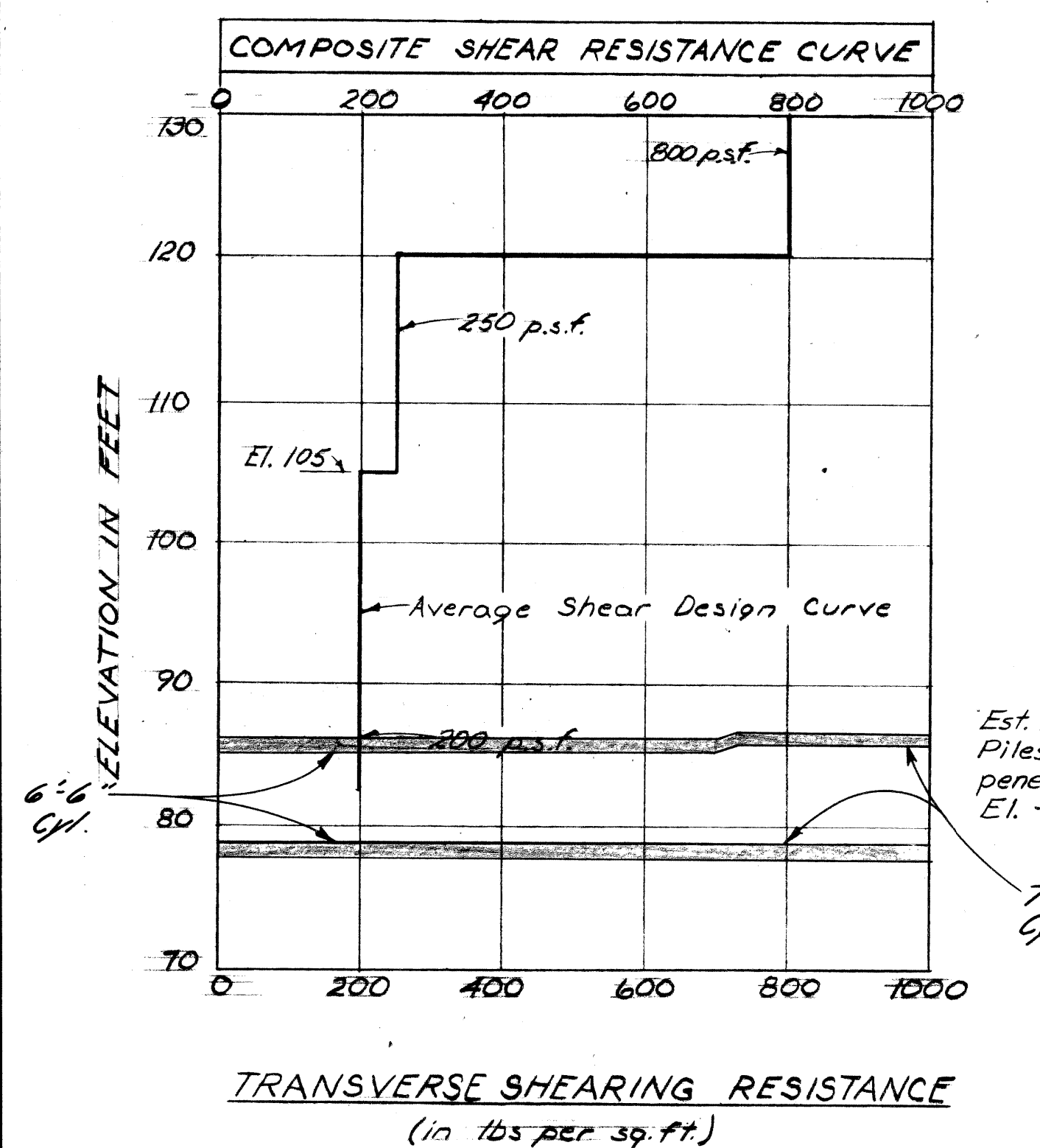
APPROVED \_\_\_\_\_  
 ENGINEER OF DESIGN - CONSULTANTS

**S 42 of 82123 K**





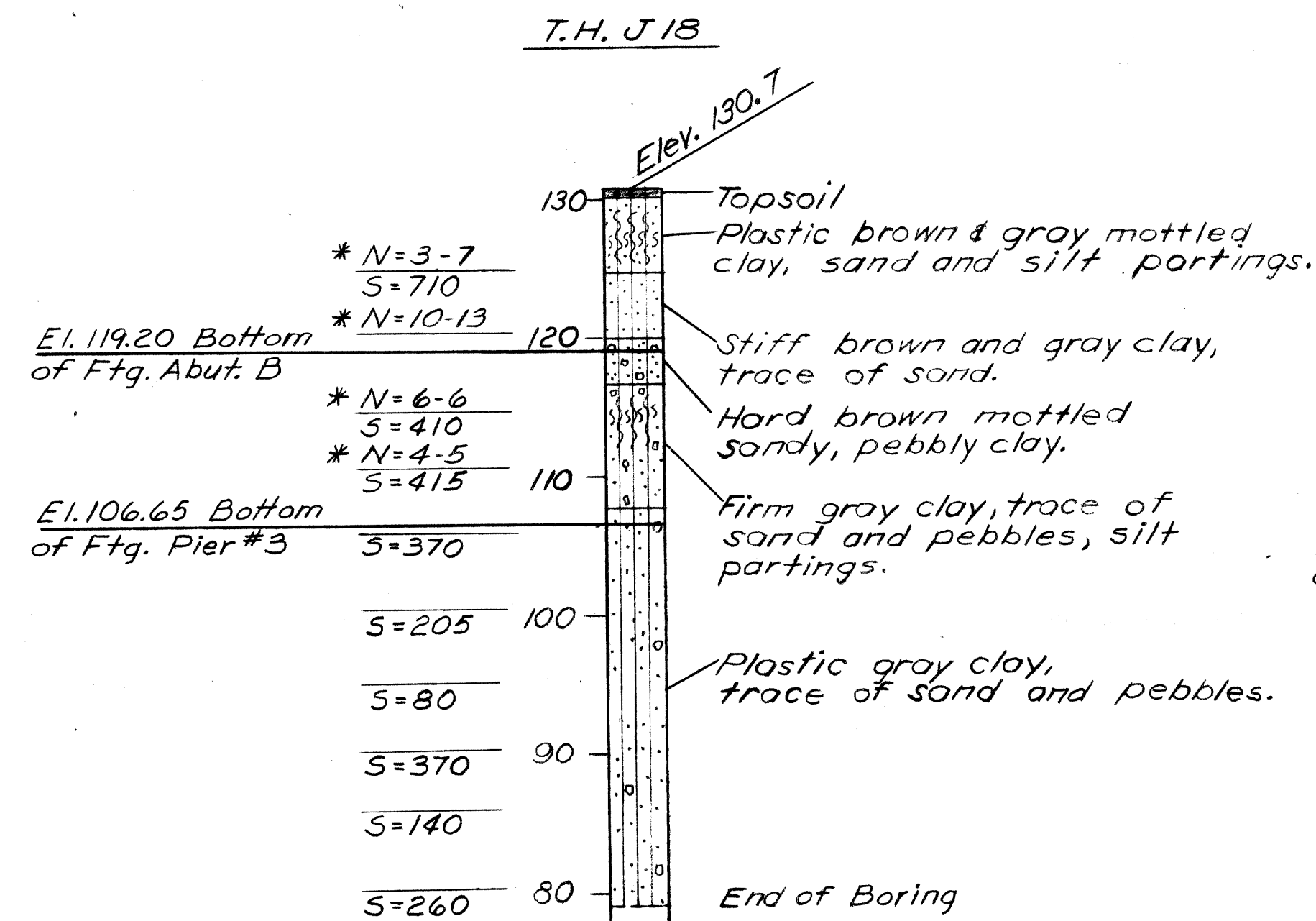
**NOTES:**  
 Blow Count - Indicates number of blows required to drive a sampler 6" (Unless otherwise noted), using a 140# hammer falling 30".  
 P - Indicates sampler was pushed.  
 S - Indicates Transverse Shear Resistance in lbs/sq. ft. as determined by M. S. H. D. Standard test.  
 Soil consistency classification is by the Raymond Concrete Pile Company.



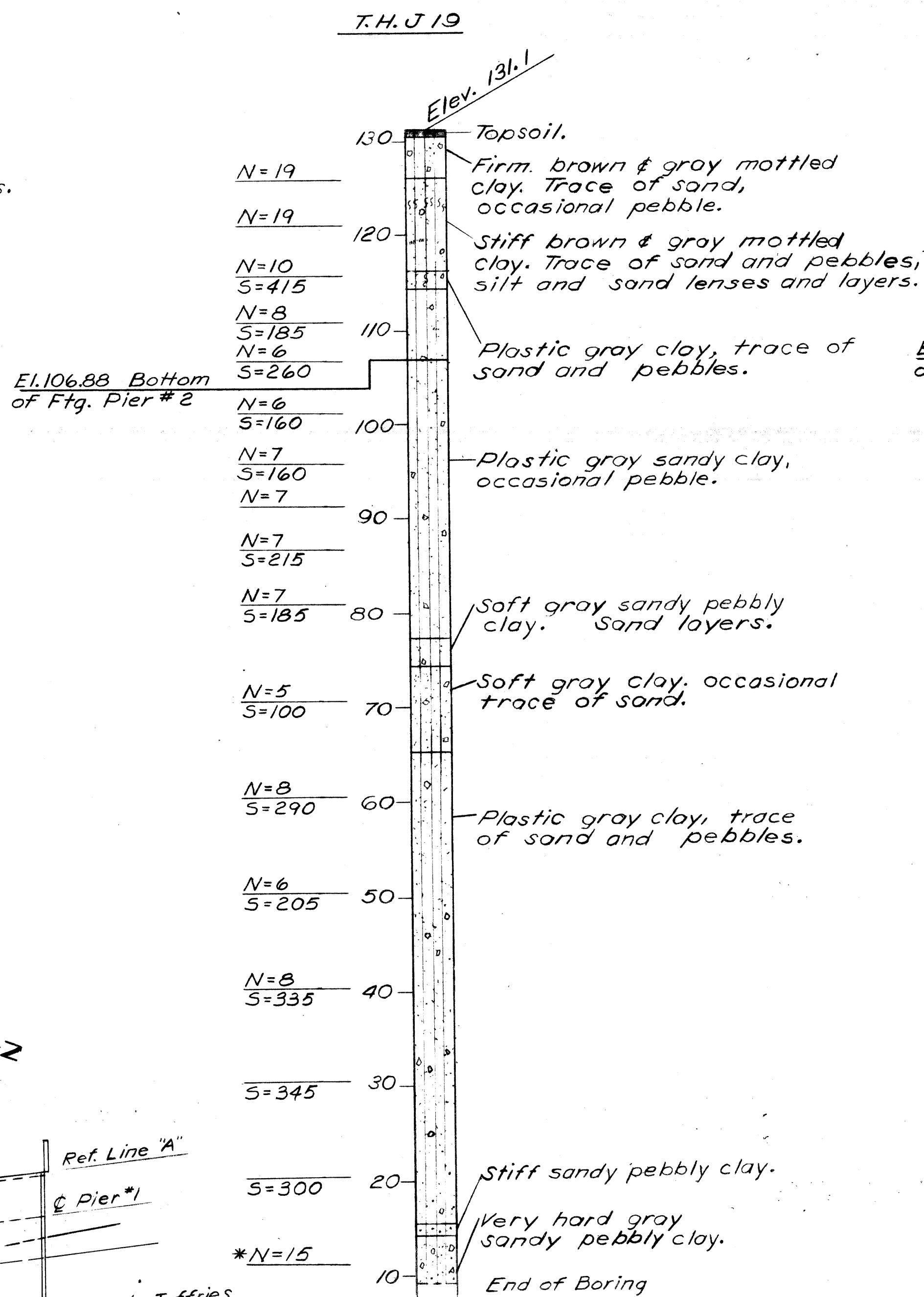
PLANS PREPARED BY <b>CITY OF DETROIT</b> DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		MICHIGAN DEPARTMENT OF STATE HIGHWAYS JEFFRIES-FORD INTERCHANGE JEFFRIES FREEWAY CROSSING THE FORD FREEWAY IN DETROIT	
APPROVED _____ STRUCTURAL ENGINEER		JOB No. PW 990(2)X	
<b>LOG OF SOIL BORINGS</b>			
APPROVED _____ DESIGN SUPERVISING ENGINEER		APPROVED _____ ASST. ENGINEER OF DESIGN	
REVISIONS NO. DESCRIPTION DATE BY		CITY OF DETROIT SQUAD BOSS: A. Freberg 11-66 DRAWN BY: A. G. T. 9-66 TRACED BY: A. Freberg 11-66 CHECKED BY: A. Freberg 11-66 SHEET 26 <b>S46 of 82123K</b>	



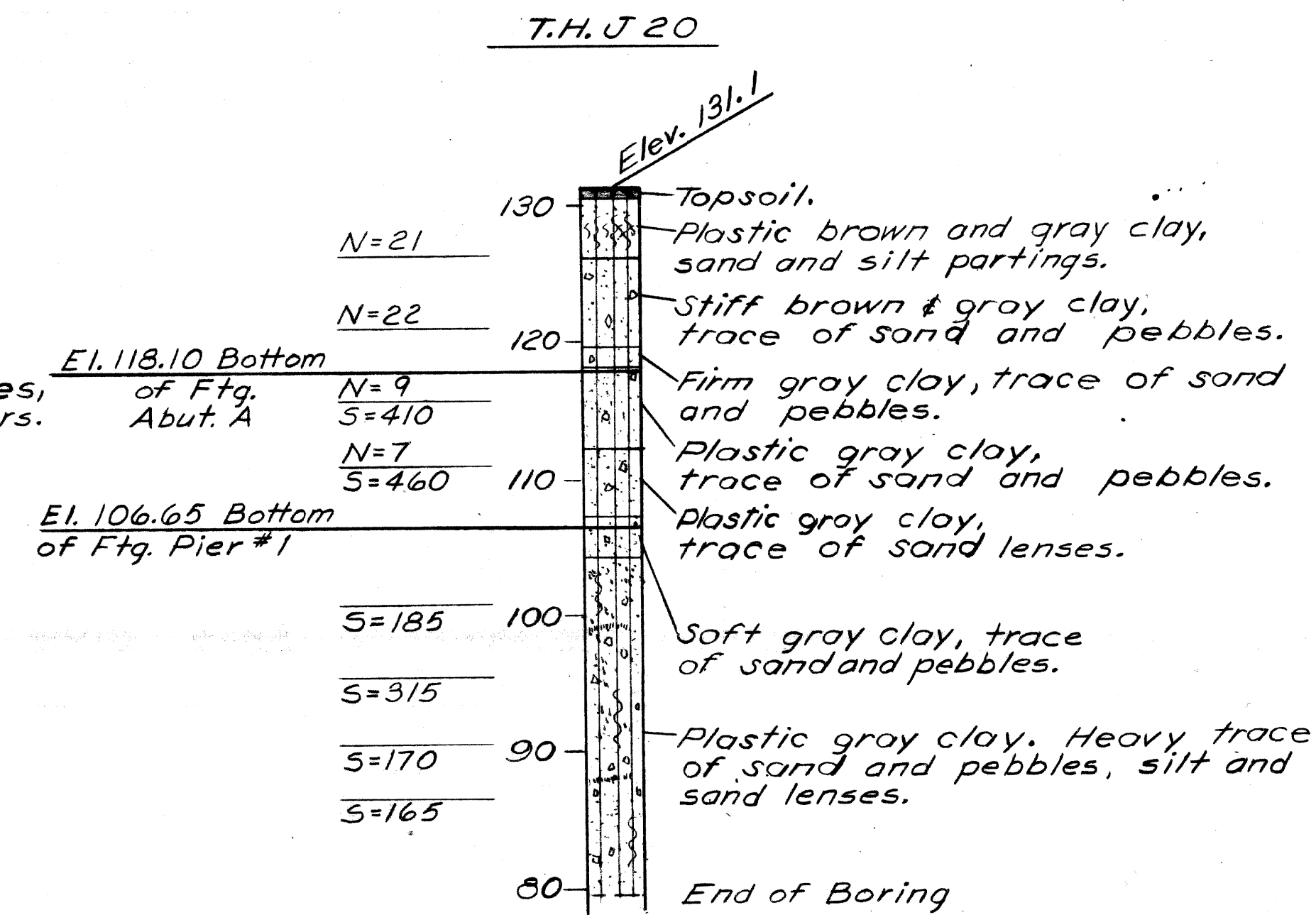
LOG OF SOIL BORINGS



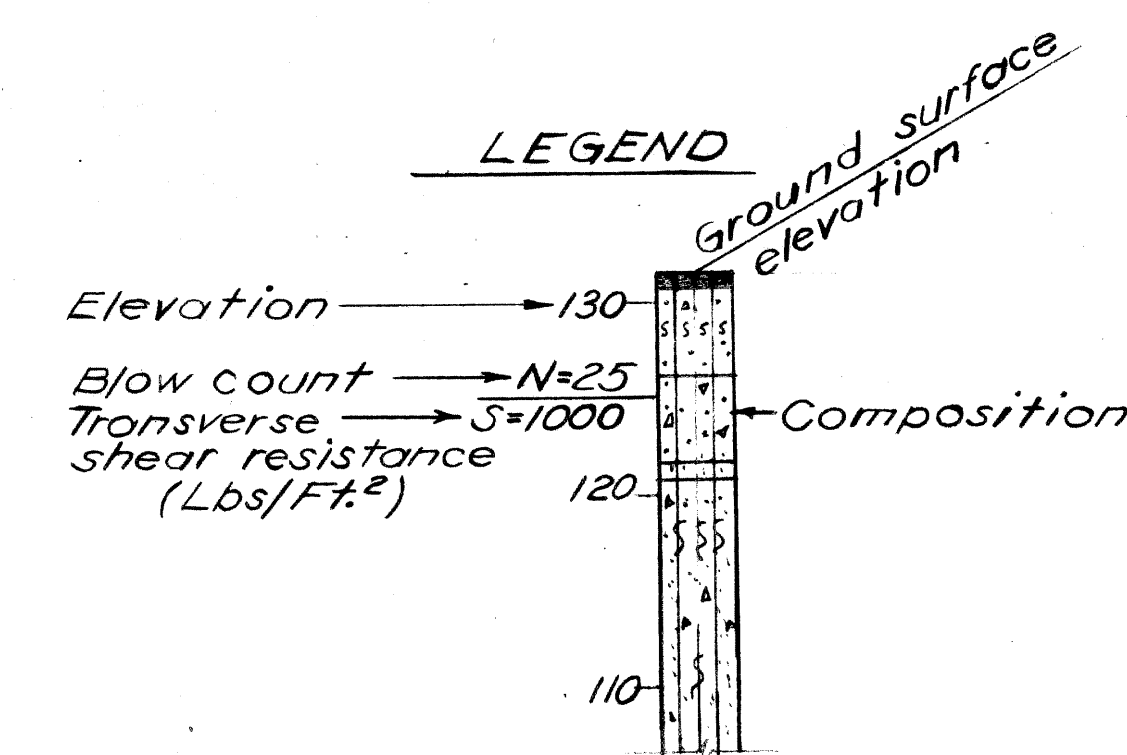
\* Core Sampler driven 6'-6".



\* Core Sampler driven 4".

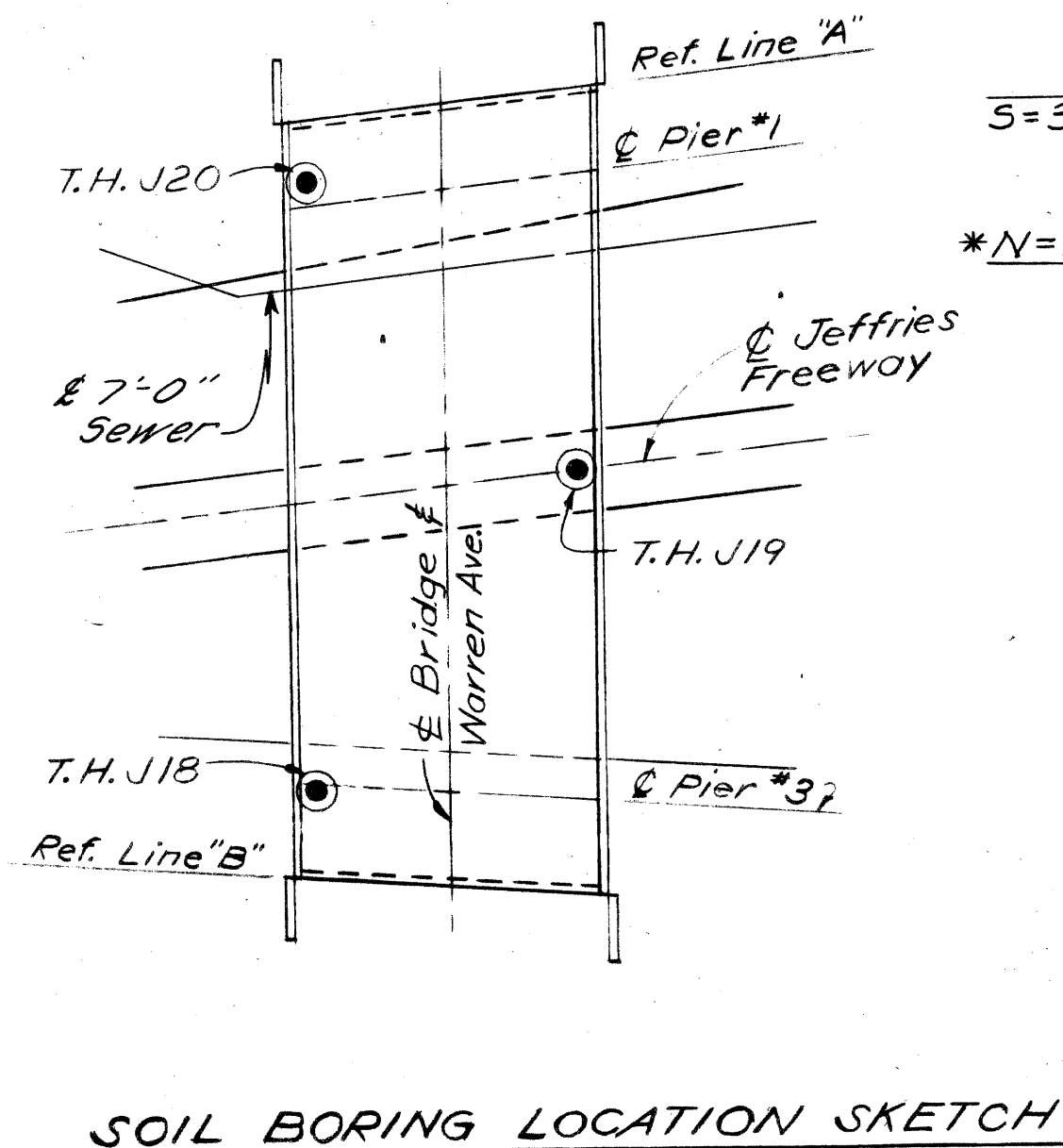
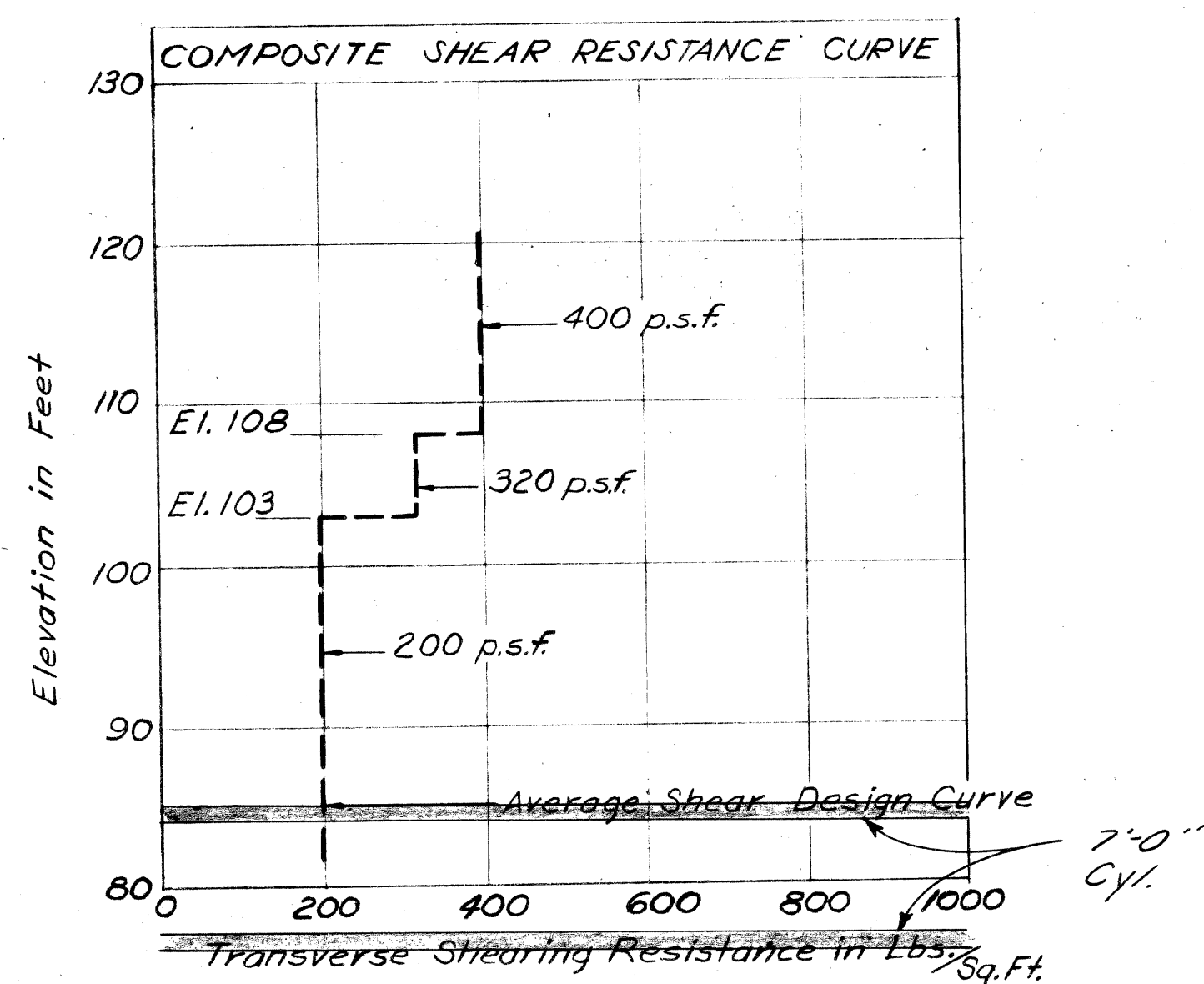


LEGEND



NOTES:

N Indicates the number of blows required to drive a sampler 12" (or as indicated) using a 140# hammer falling 30". Where blow count is not shown sampler was either pushed, hand driven, or levered.  
 S Indicates Transverse Shearing Resistance in Lbs. per sq. ft. as determined by M.S.H.D. Standard Test.  
 All elevations are based on City of Detroit Datum.



PLANS PREPARED BY  
 CITY OF DETROIT  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: \_\_\_\_\_  
 STRUCTURAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

WARREN AVE. CROSSING THE  
 JEFFRIES FREEWAY IN DETROIT

LOG OF SOIL BORINGS

JOB No. FW 950(1)X

APPROVED: \_\_\_\_\_  
 DESIGN SUPERVISING ENGINEER

APPROVED: \_\_\_\_\_  
 ASST. ENGINEER OF DESIGN

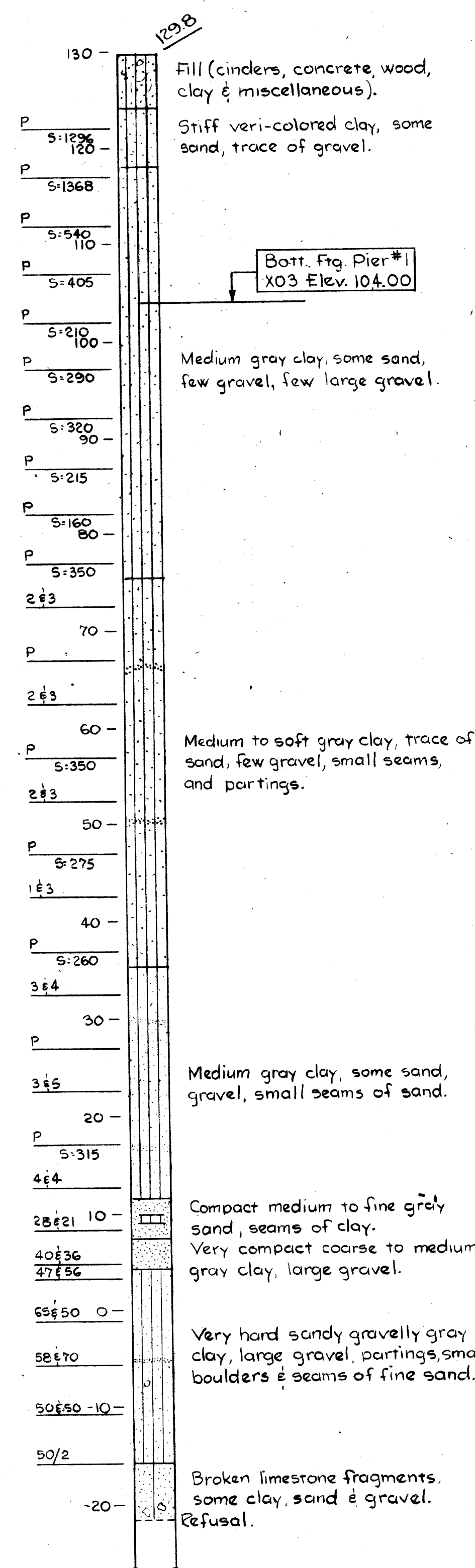
SQUAD BOSS	J. Such	1-66
DRAWN BY	DJR	2-66
TRACED BY	DJR	2-66
CHECKED BY	DJR	2-66
SHEET	27	

SOI of 82124A

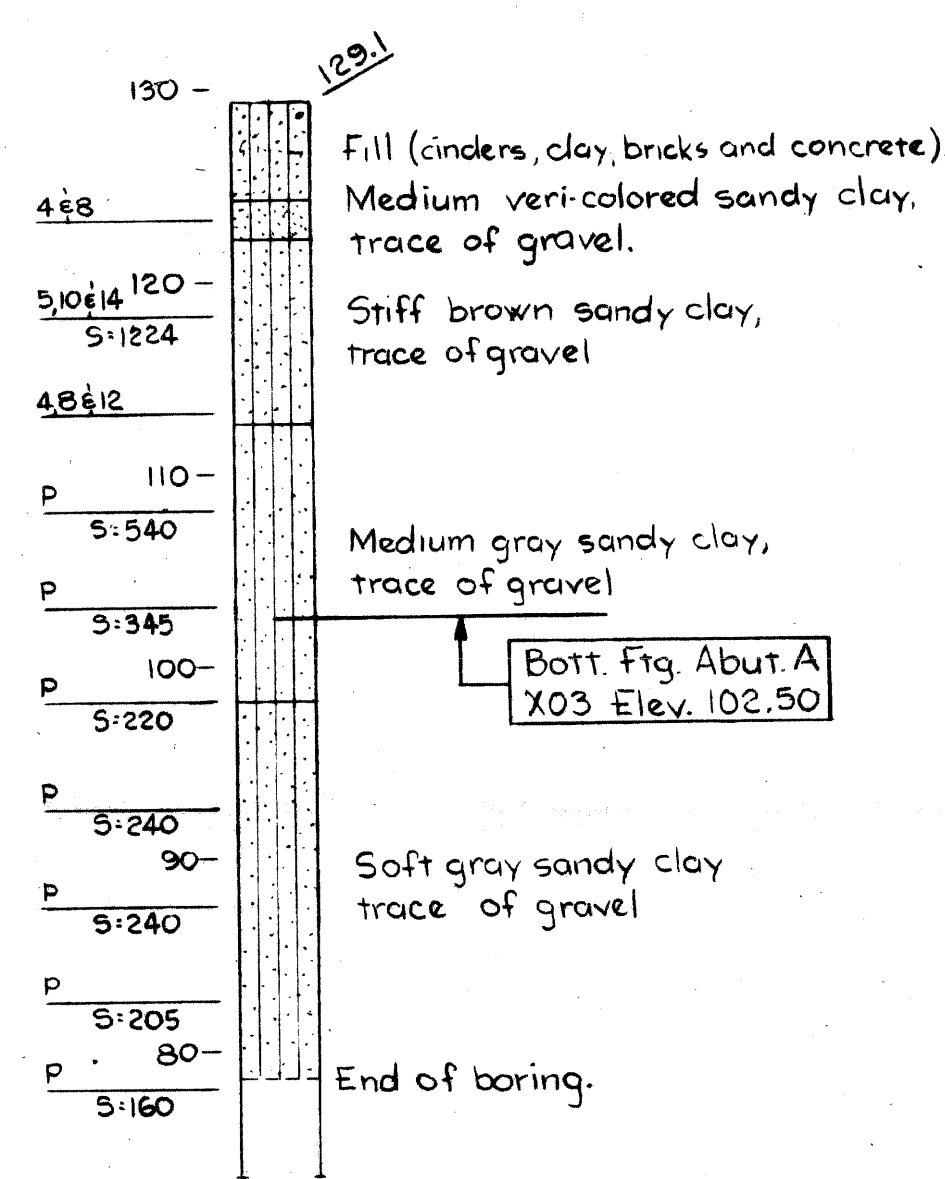


LOG OF SOIL BORINGS

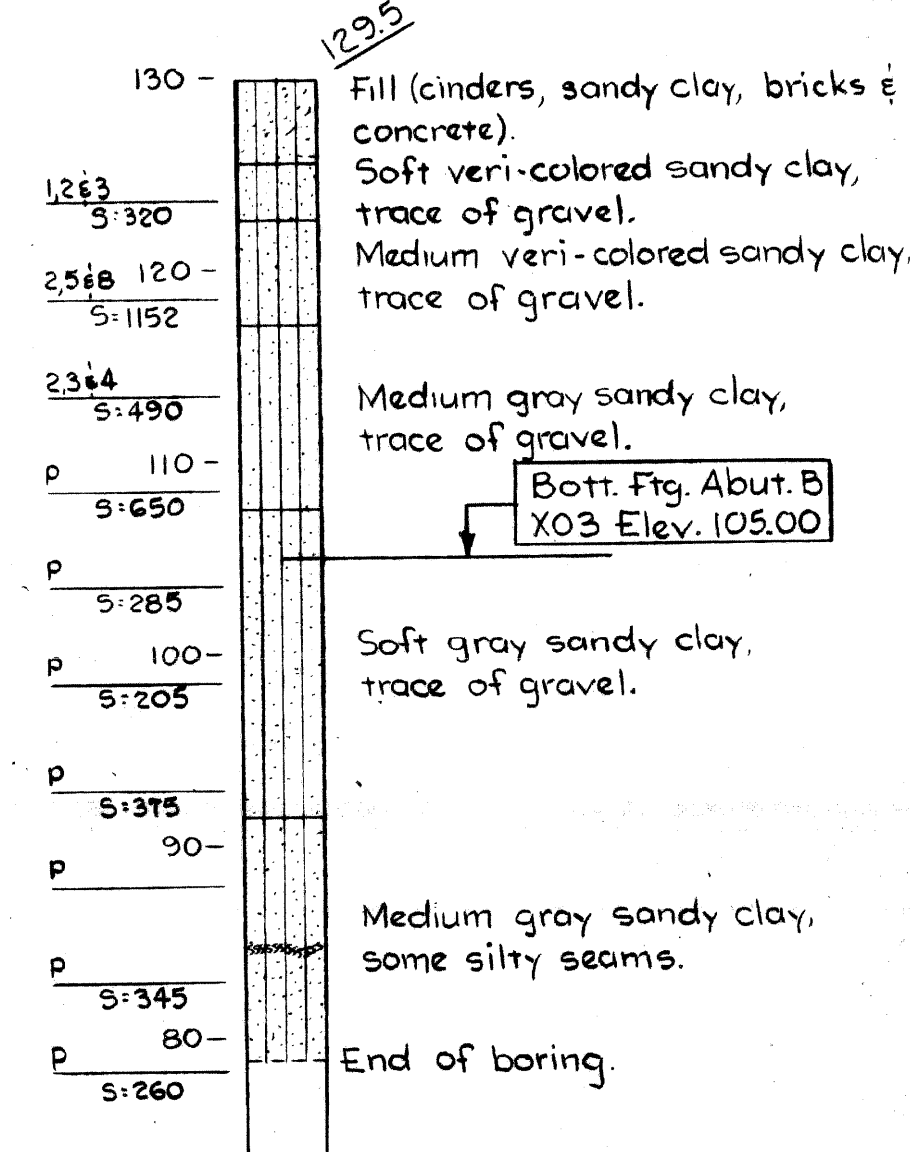
T.H. J-12



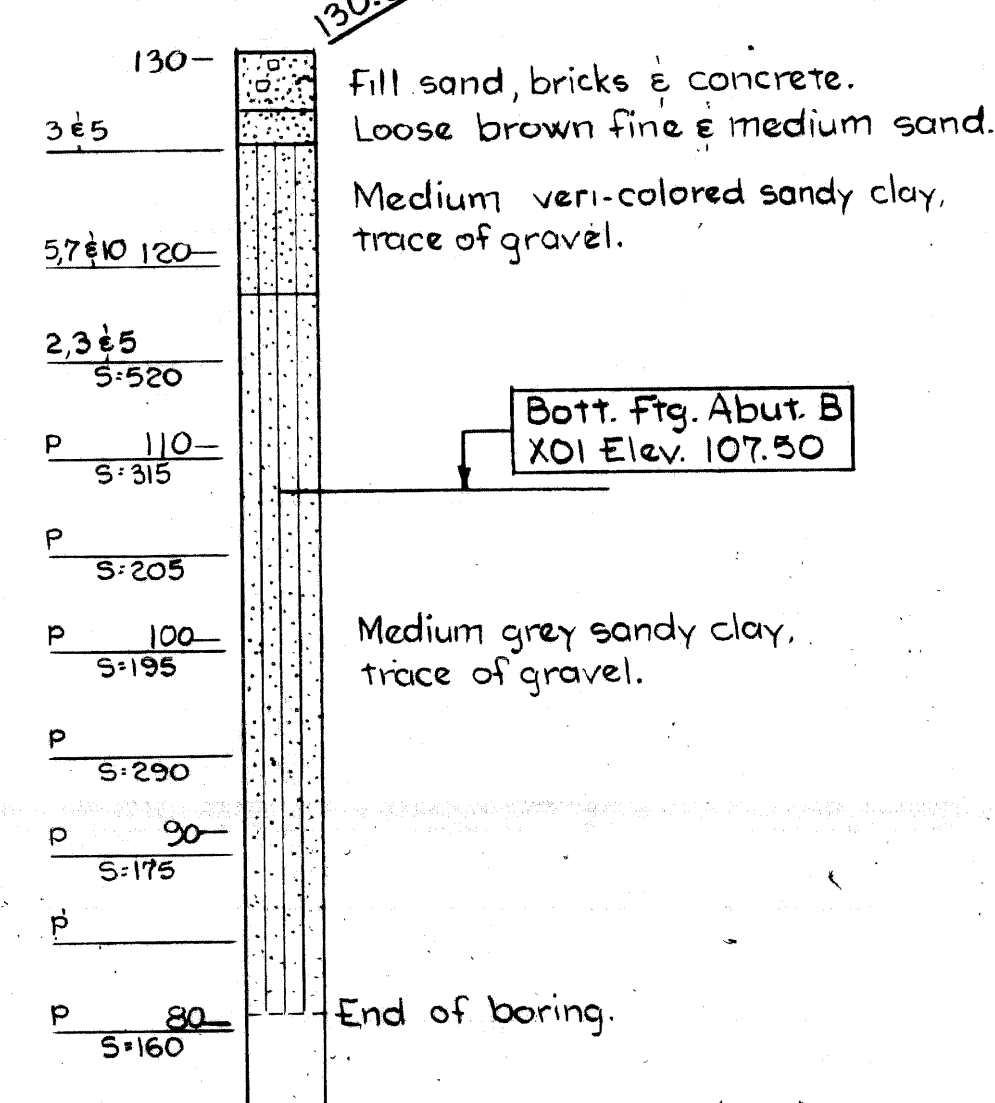
T.H. J-13



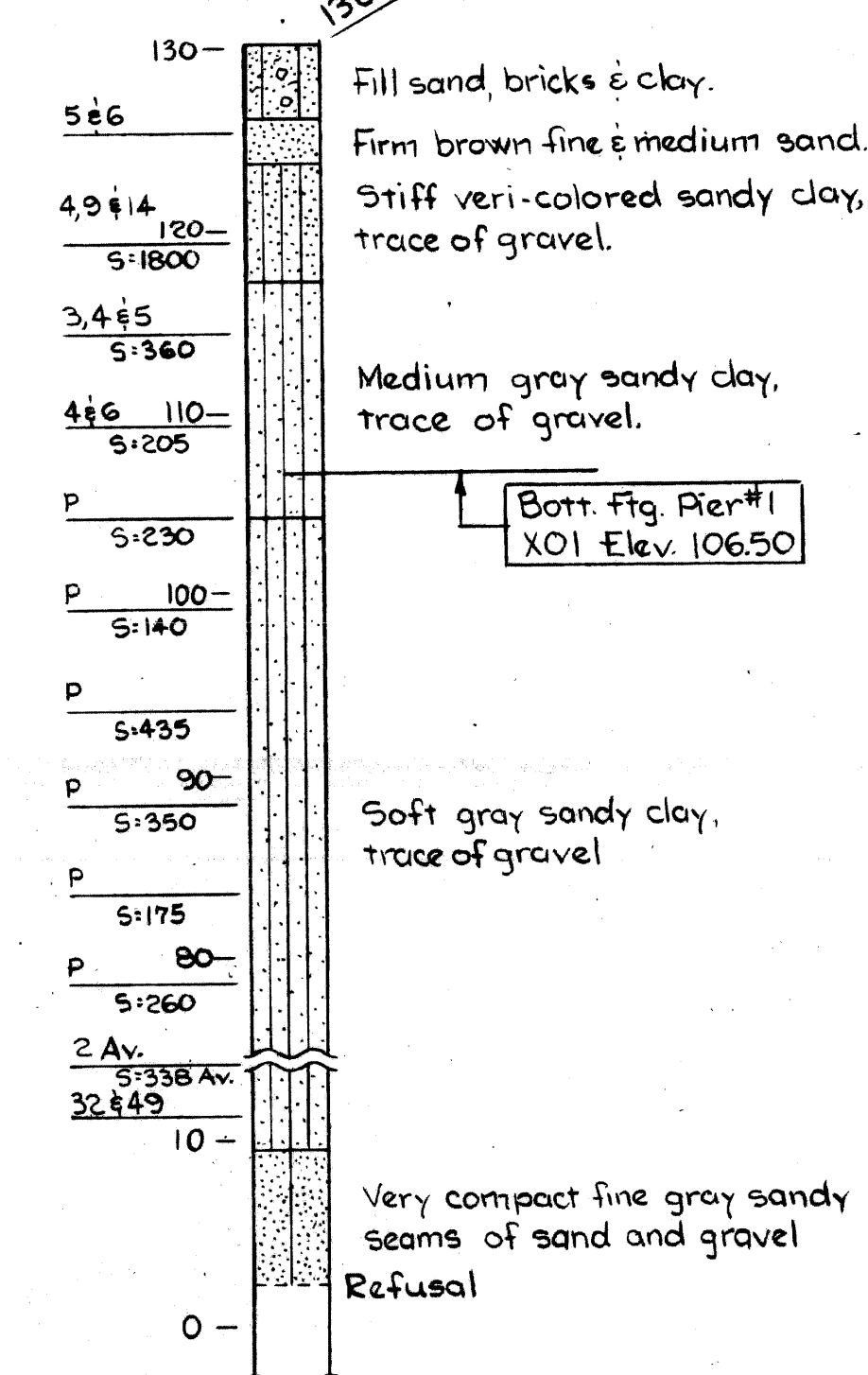
T.H. J-14



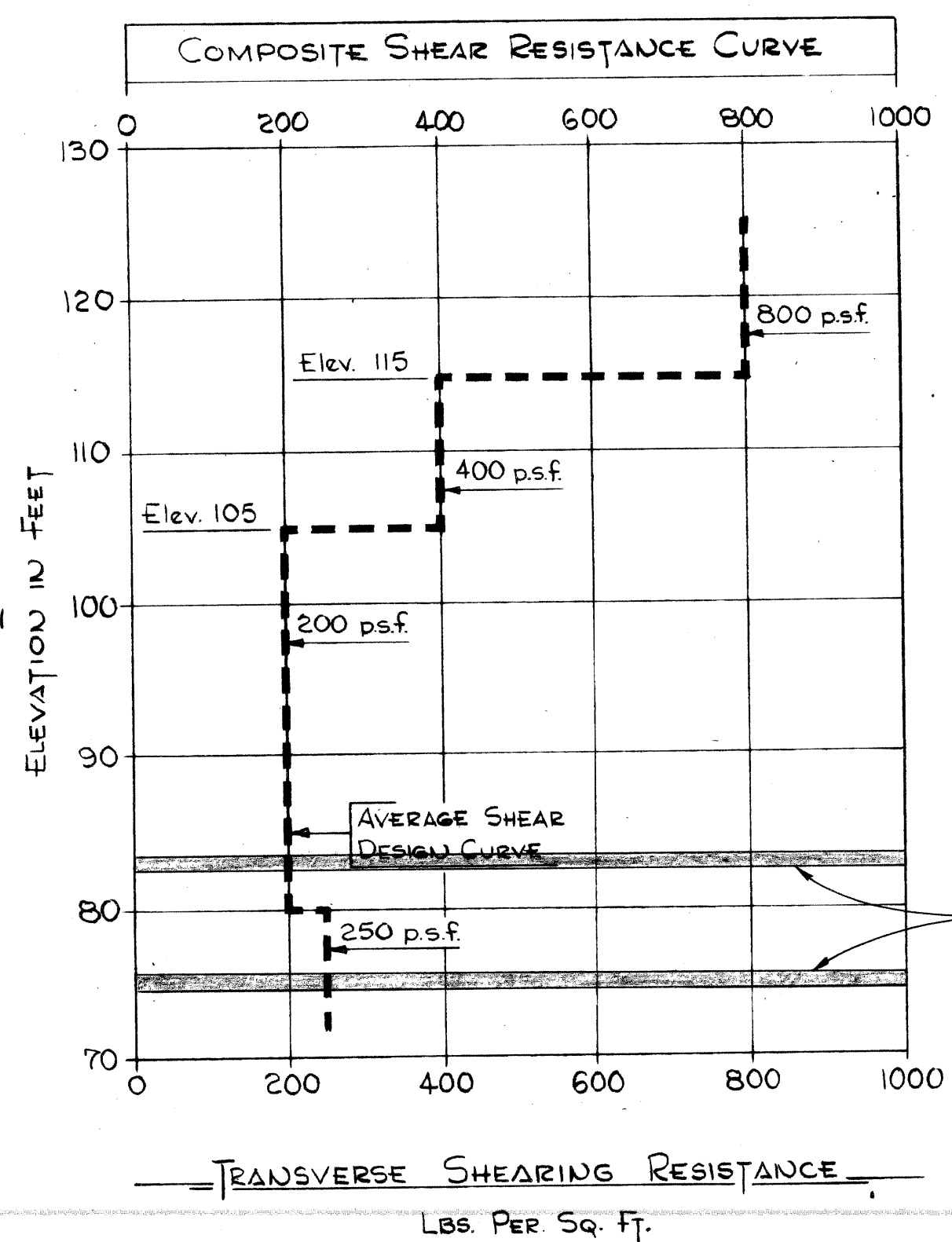
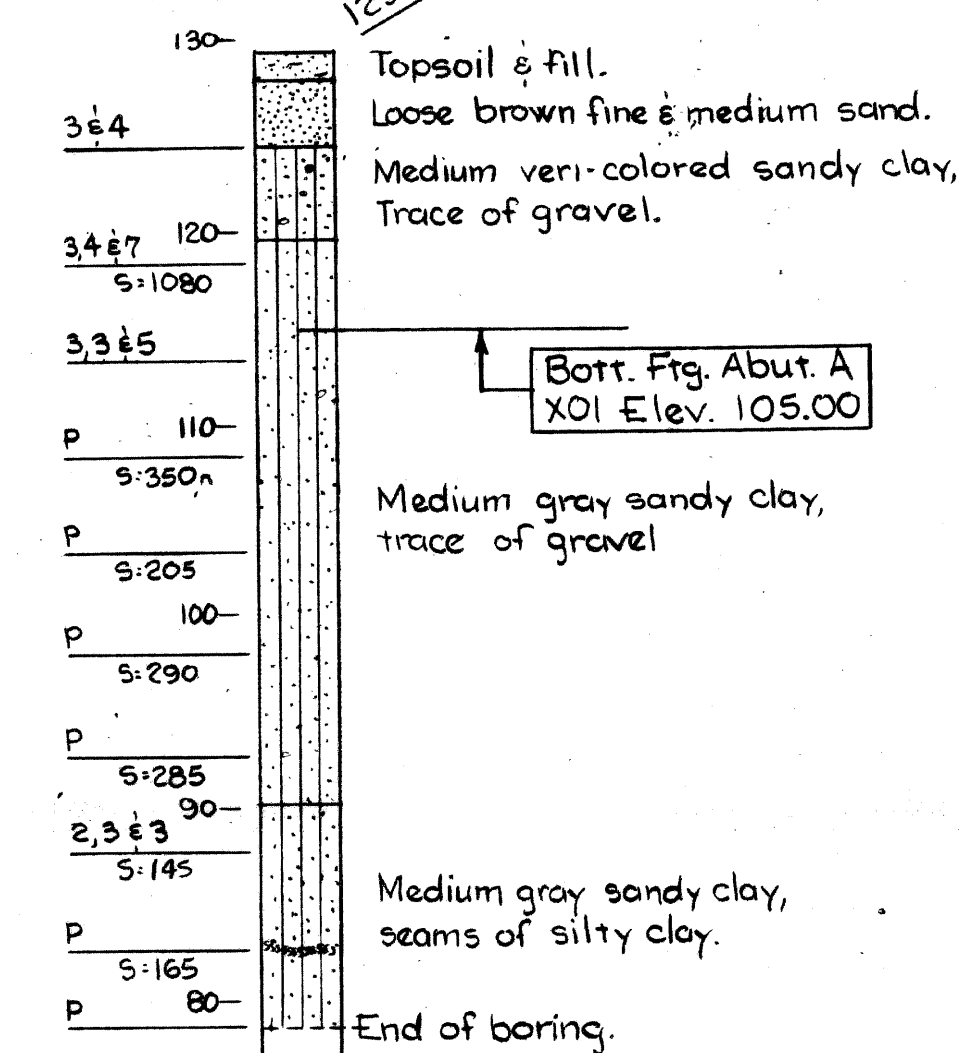
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T.H. J-16

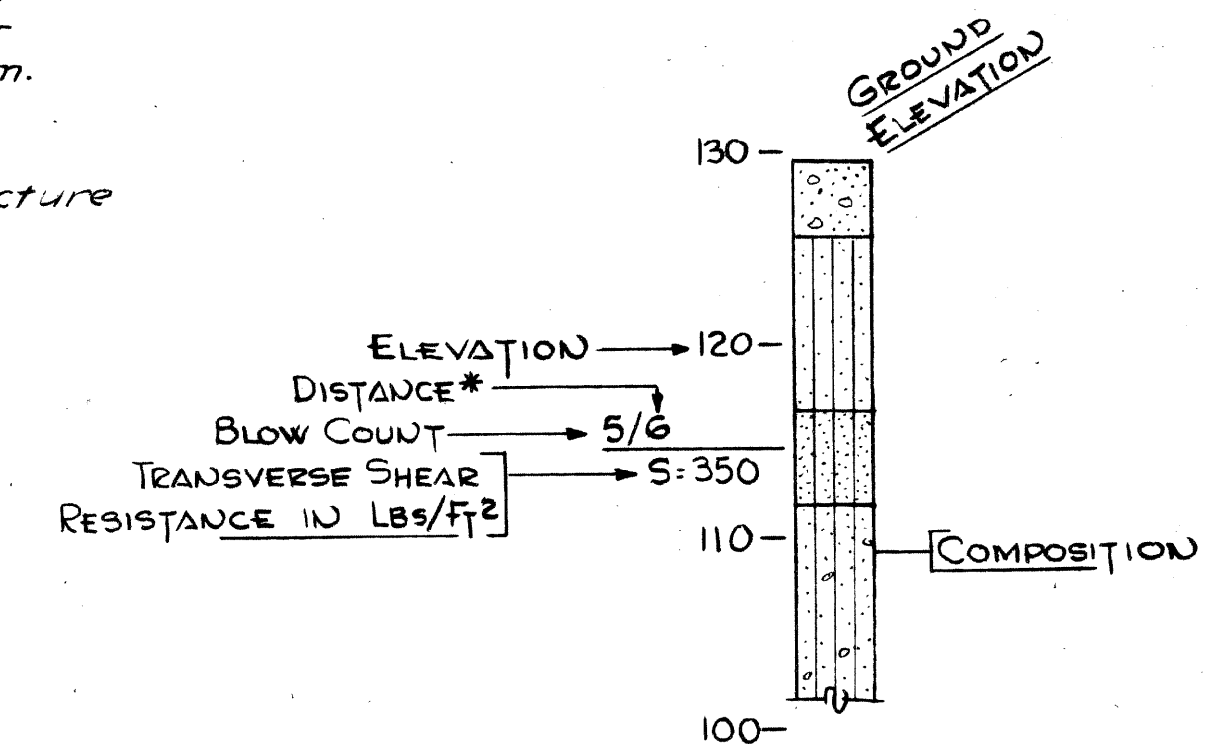


T.H. J-17



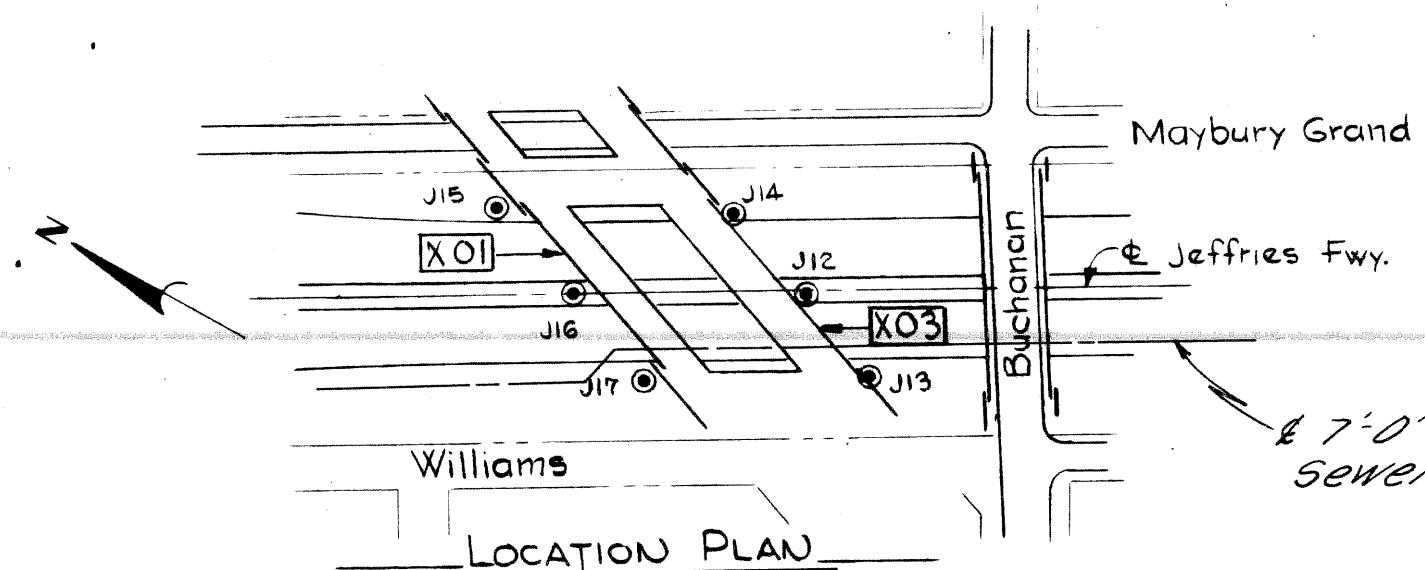
Note: Soil Consistency Classification is by Raymond Concrete Pile Co. The terms "soft and medium" shown here correspond to the soft, plastic and lower firm classifications of the M.D.S.H. system. All piles are to be driven to or below elevation +1'. Estimated bottom of piles, all substructure units, elevation -5.

LEGEND



NOTES: Blow Count - Indicates number of blows required to drive a sampler 6" using a 140# hammer falling 30". P - Indicates sampler was pushed. S - Indicates Transverse Shearing Resistance in lbs/sq-ft. as determined by M.S.H.D. Standard Test.

\* 6" If omitted, otherwise as noted.

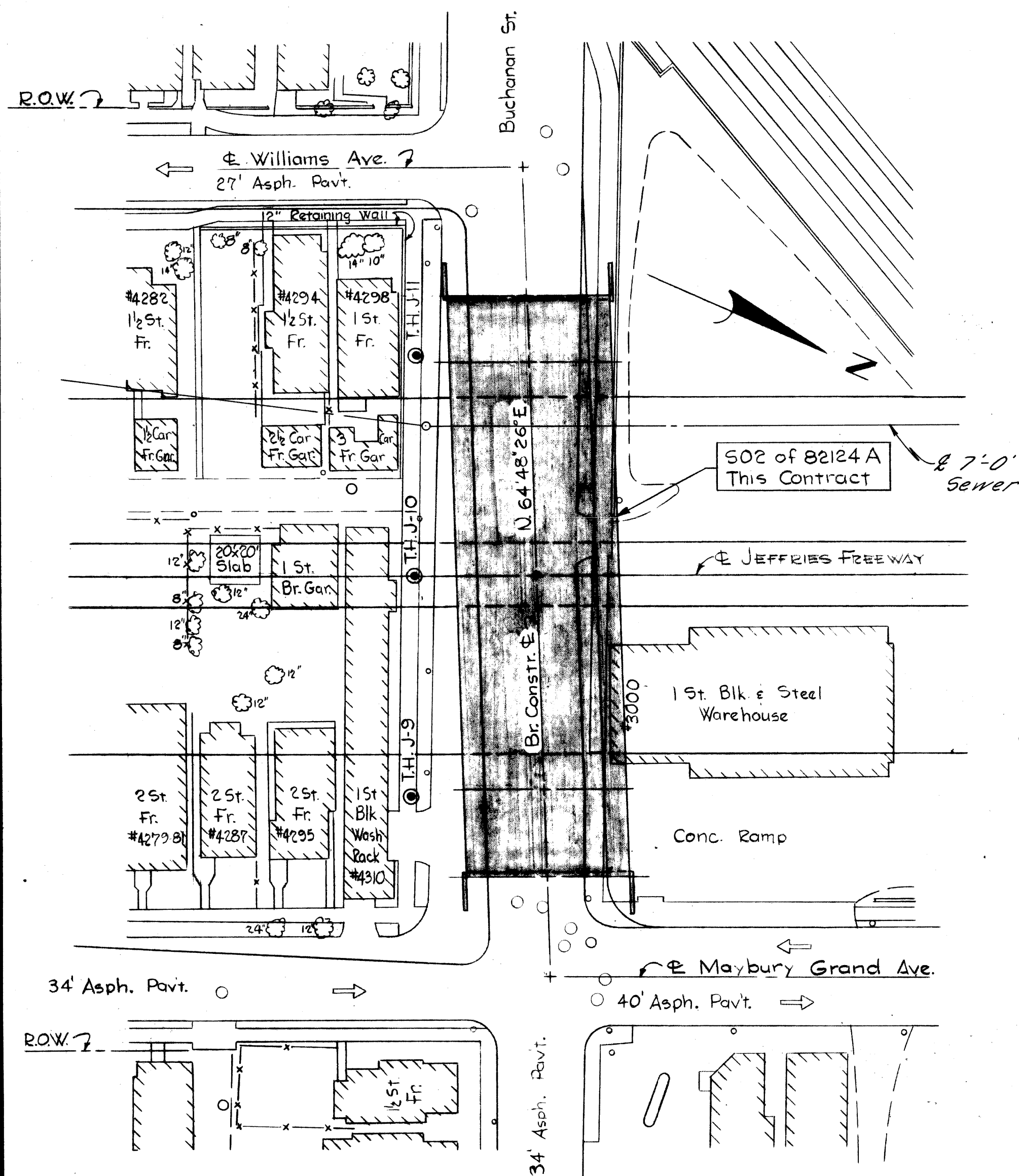


PLANS PREPARED BY CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		JOB No. PW 990(1)X
APPROVED STRUCTURAL ENGINEER		
REVISIONS		
NO.	DESCRIPTION	DATE BY

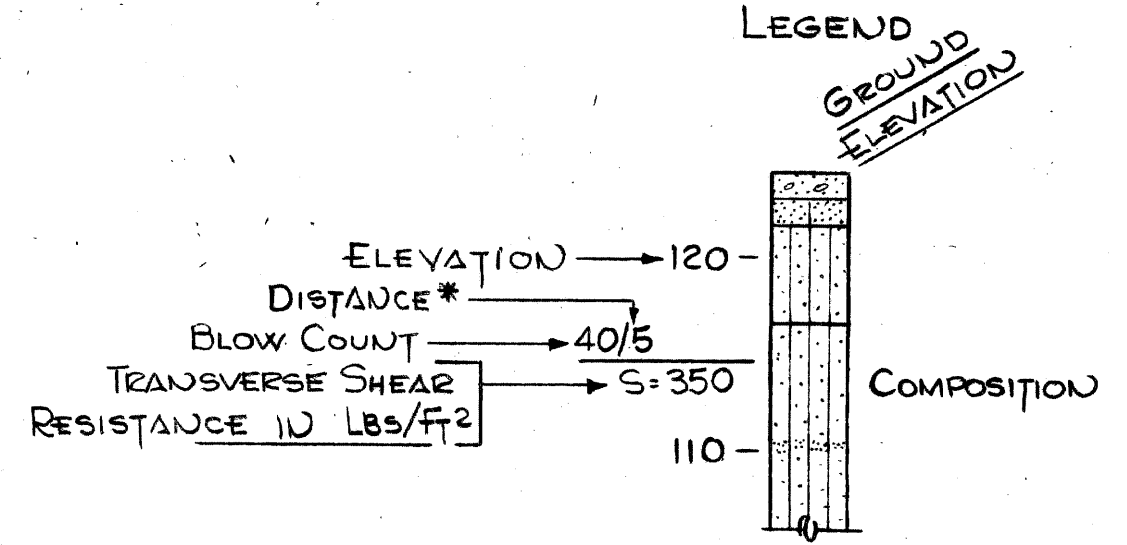
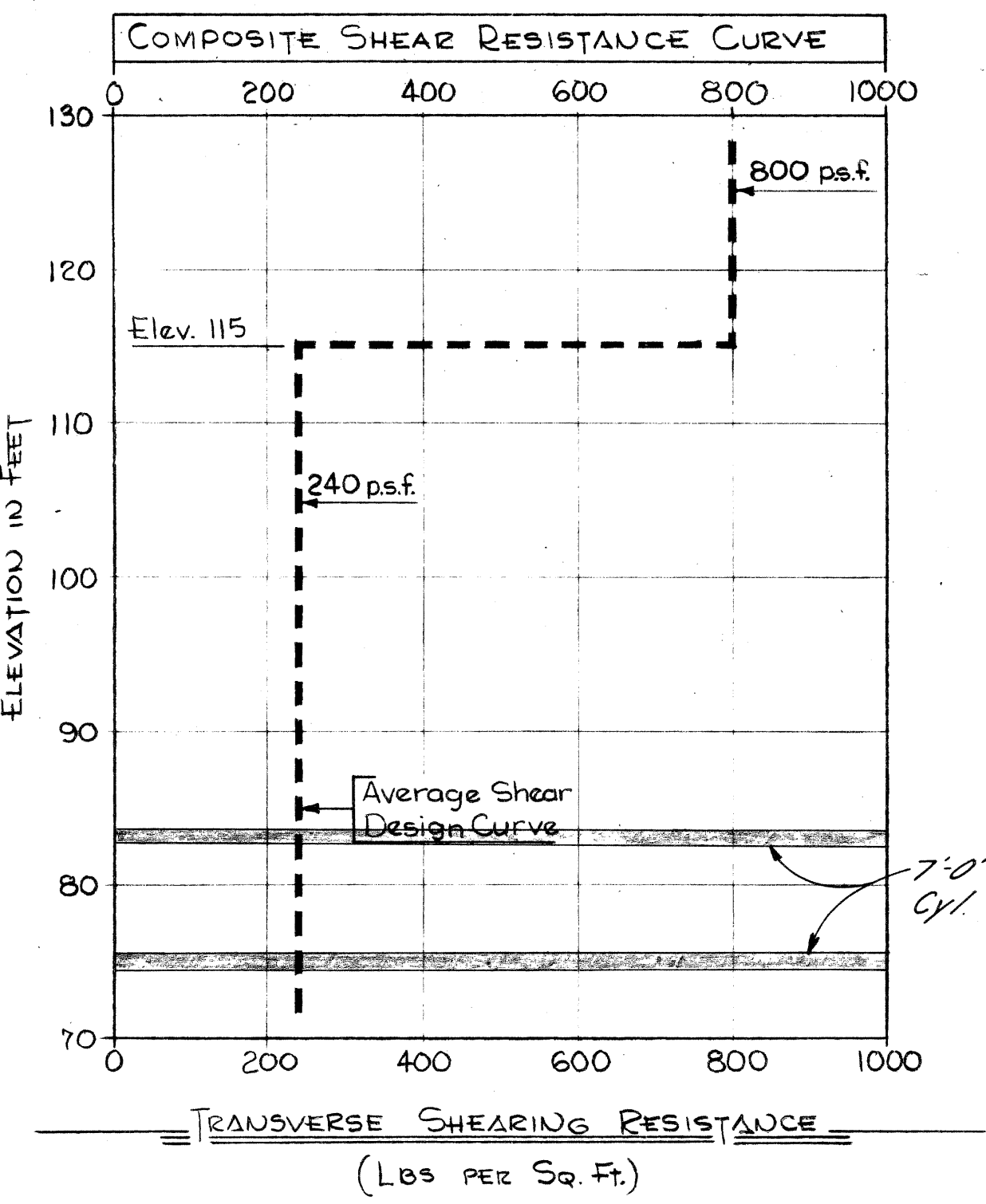
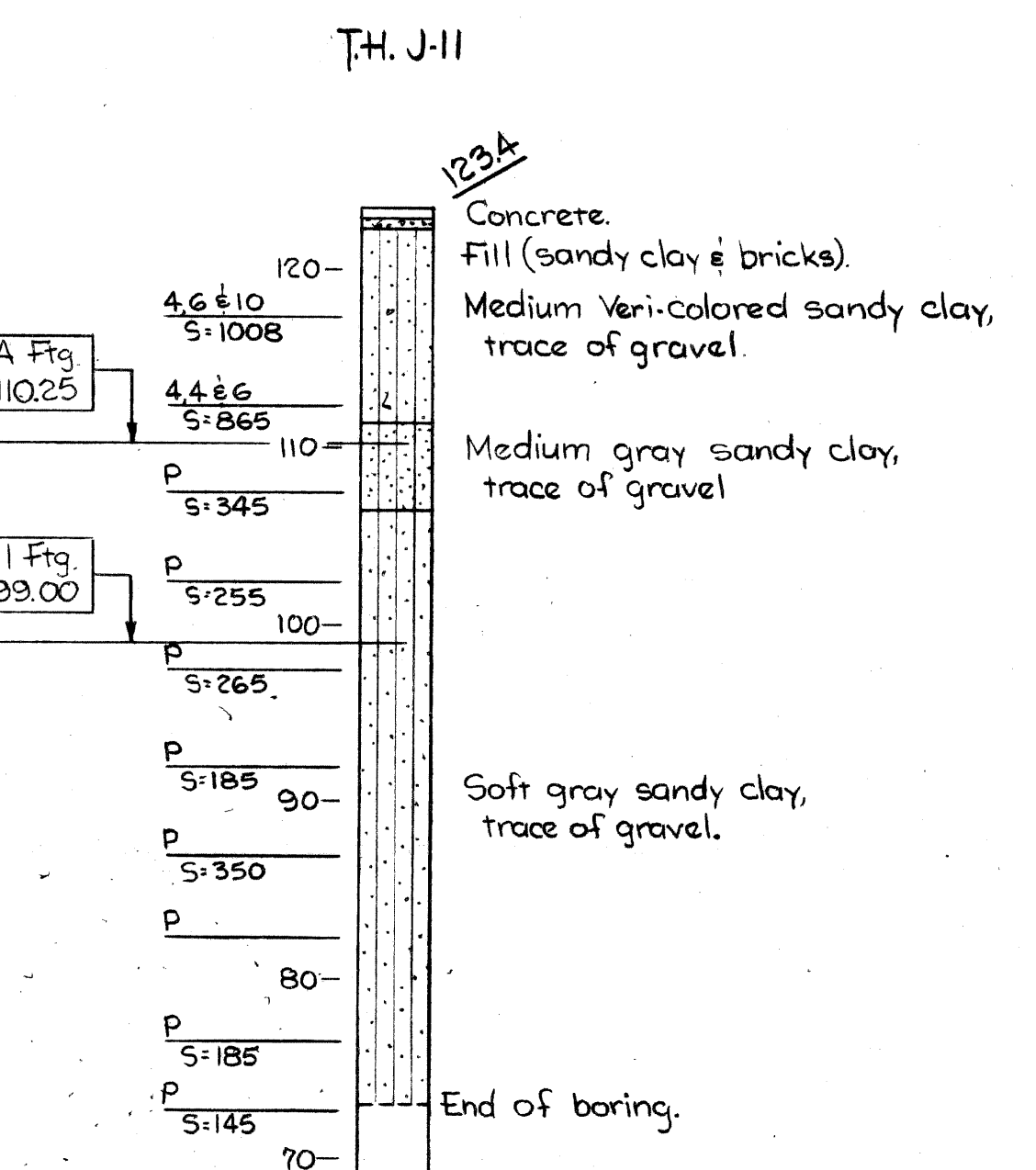
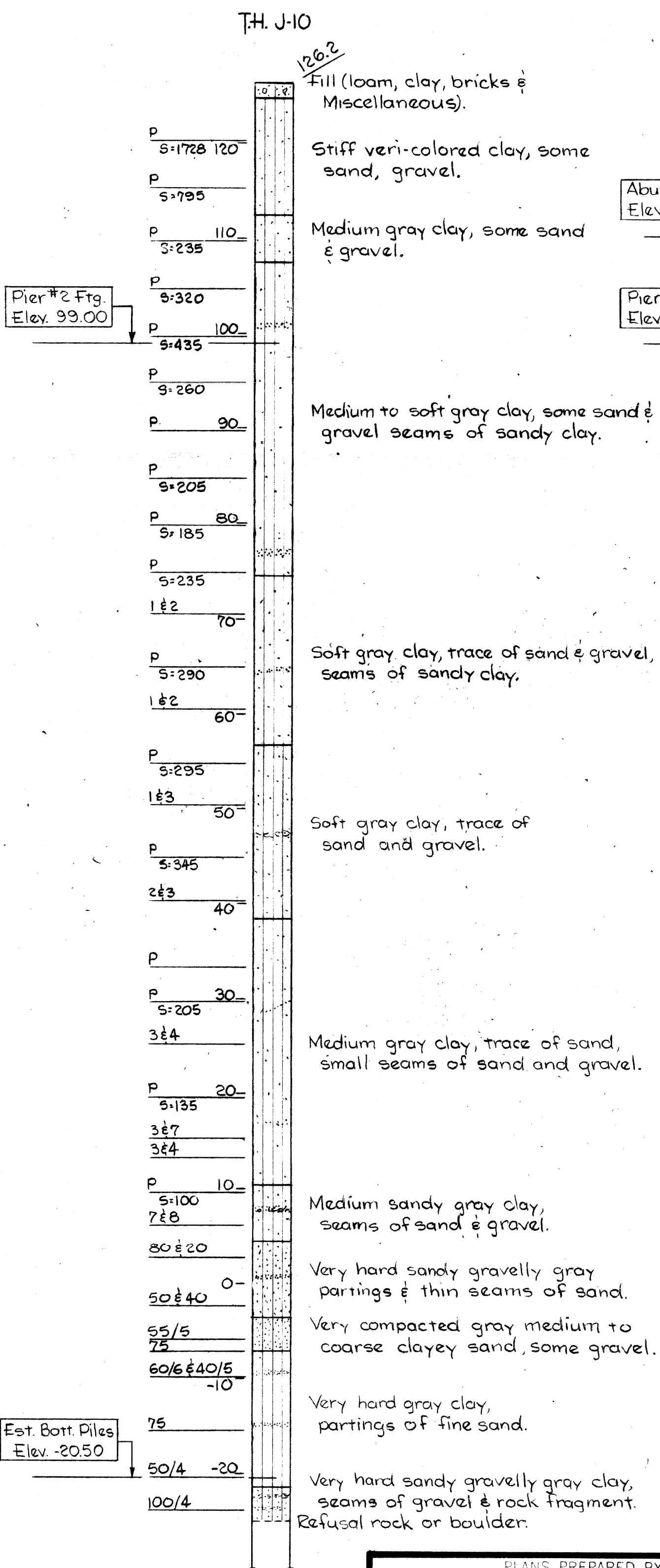
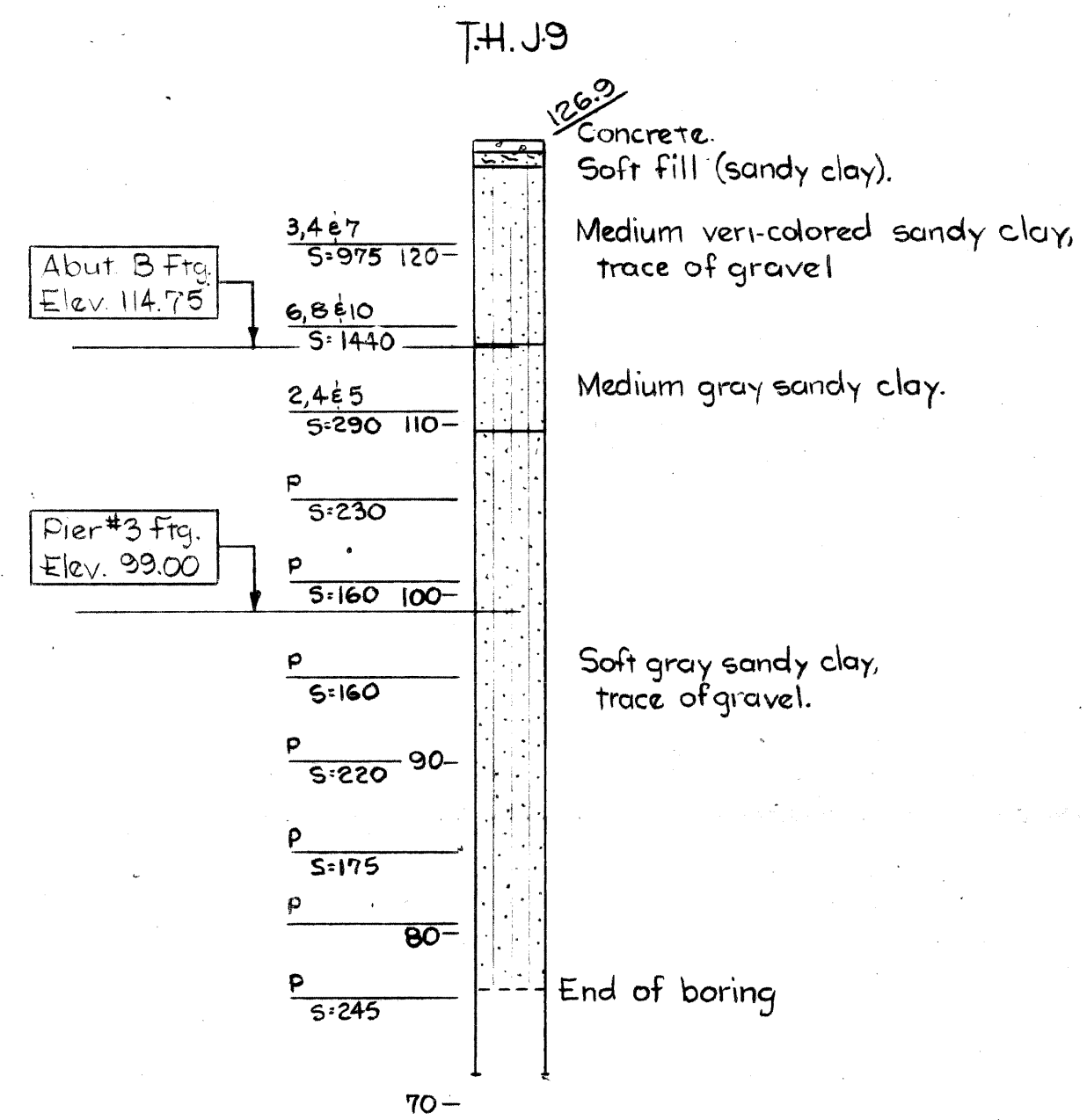
MICHIGAN DEPARTMENT OF STATE HIGHWAYS		CITY OF DETROIT	
GRAND TRUNK WESTERN RAILROAD - MT. CLEMENS SUBDIVISION CROSSING THE JEFFRIES FREEWAY IN DETROIT		SQUAD BOSS DRAWN BY TRACED BY CHECKED BY DATE	
LOG OF SOIL BORINGS		Jun. '66	
APPROVED DESIGN SUPERVISING ENGINEER	APPROVED ENGINEER OF DESIGN - CONSULTANTS		
X01 of 82124A			

82123-008





**SURVEY PLAN**  
Scale: 1"=40'



**NOTES:**  
Blow Count - Indicates number of blows required to drive a sampler 6" (unless otherwise noted), using a 40# hammer falling 30"  
P - Indicates sampler was pushed.  
S - Indicates Transverse Shear Resistance in Lbs/sq.ft. as determined by M.S.H.D. Standard test.

PLANS PREPARED BY  
**CITY OF DETROIT**  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED \_\_\_\_\_  
STRUCTURAL ENGINEER

JOB No.  
PW 990(1)X

NO.	DESCRIPTION	DATE	BY

**MICHIGAN STATE HIGHWAY DEPARTMENT**  
BUCHANAN ST. CROSSING JEFFRIES FREEWAY  
IN DETROIT

**LOG OF SOIL BORINGS**

APPROVED \_\_\_\_\_  
DESIGN SUPERVISING ENGINEER

APPROVED \_\_\_\_\_  
ENGINEER OF DESIGN - CONSULTANTS

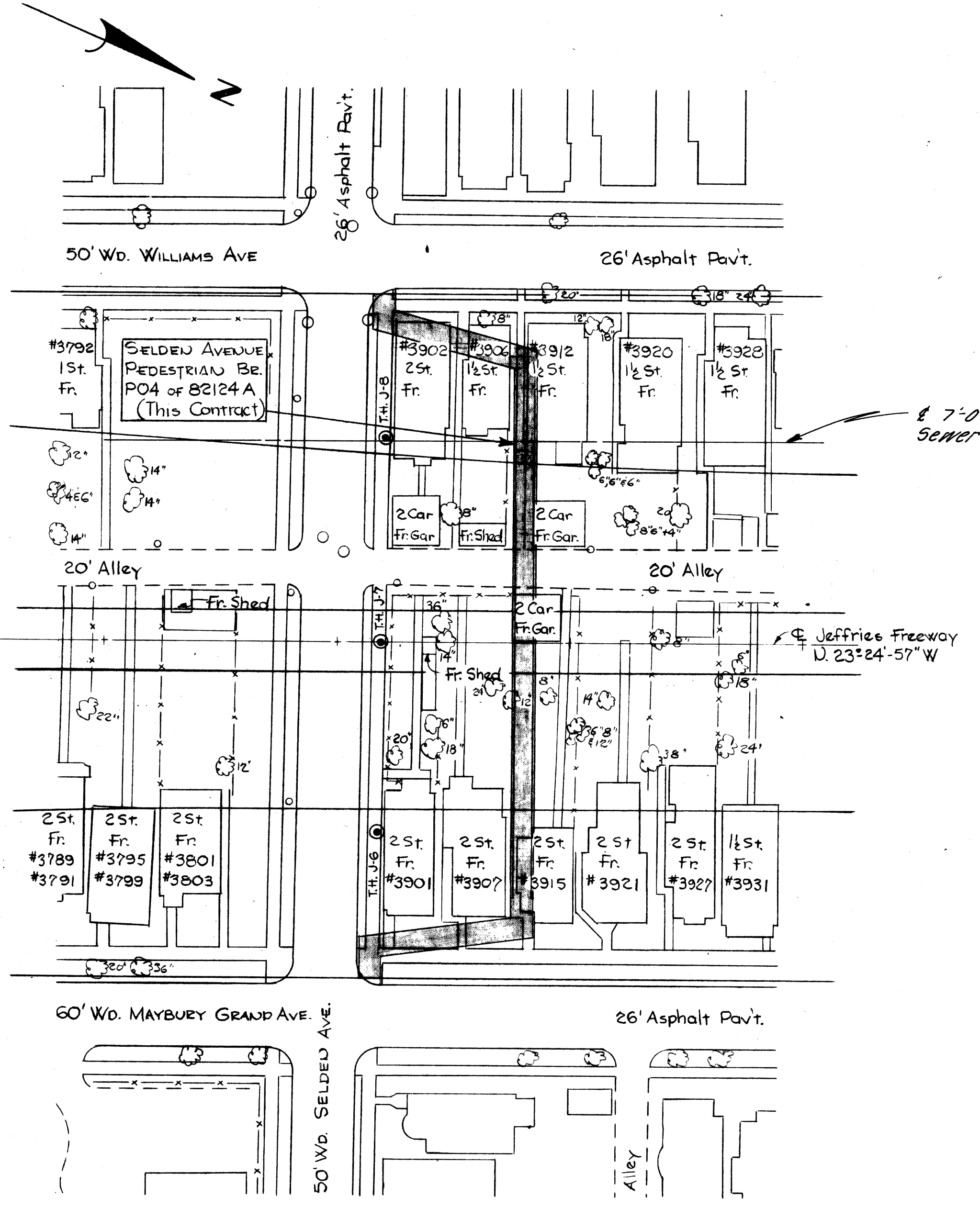
NO.	DESCRIPTION	DATE	BY

CITY OF DETROIT			
SQUAD BOSS	STURM	5-66	
DRAWN BY	ALLENBERG	DEC '65	
TRACED BY			
CHECKED BY	STURM	5-66	
SHEET 29			

S02 of 82124A  
82123-008

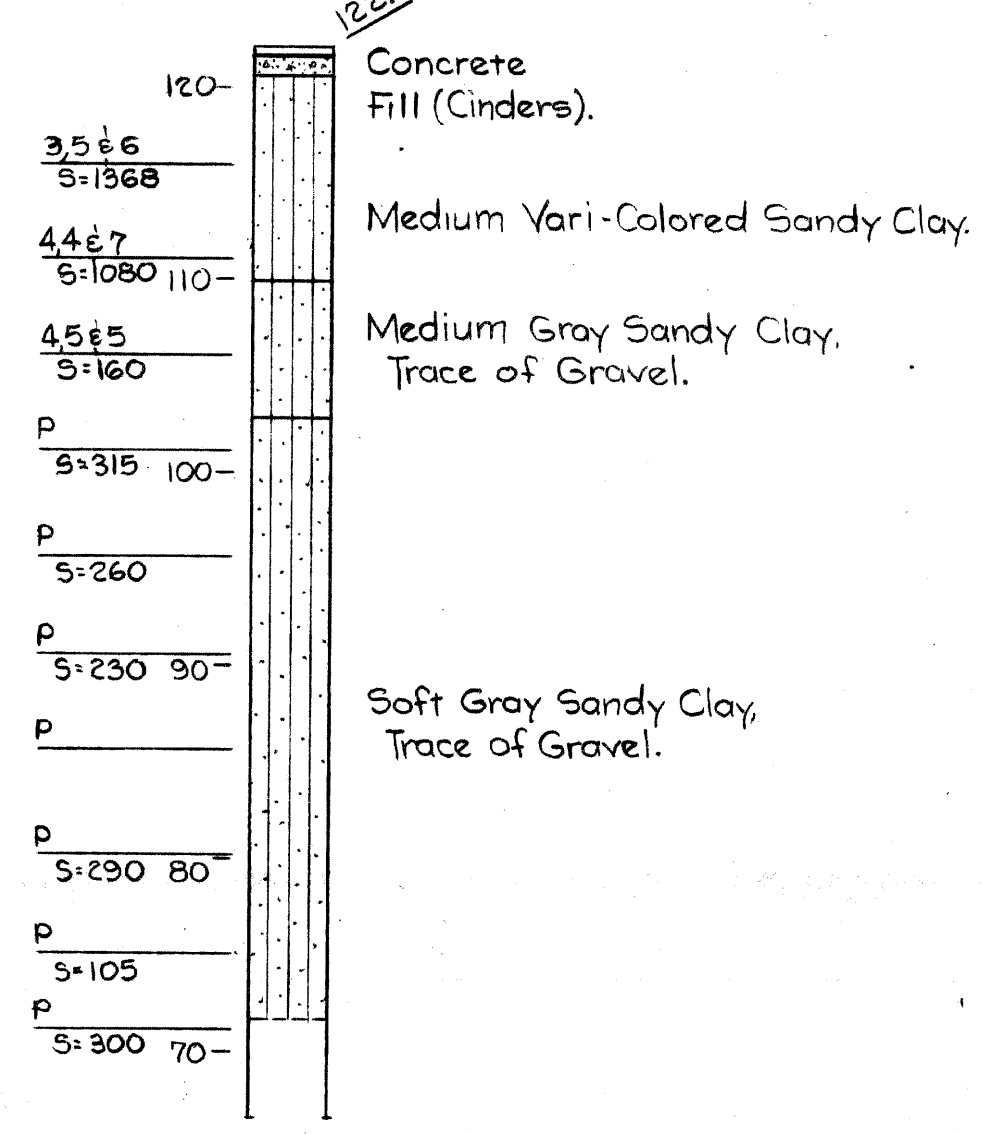


LOG OF SOIL BORINGS

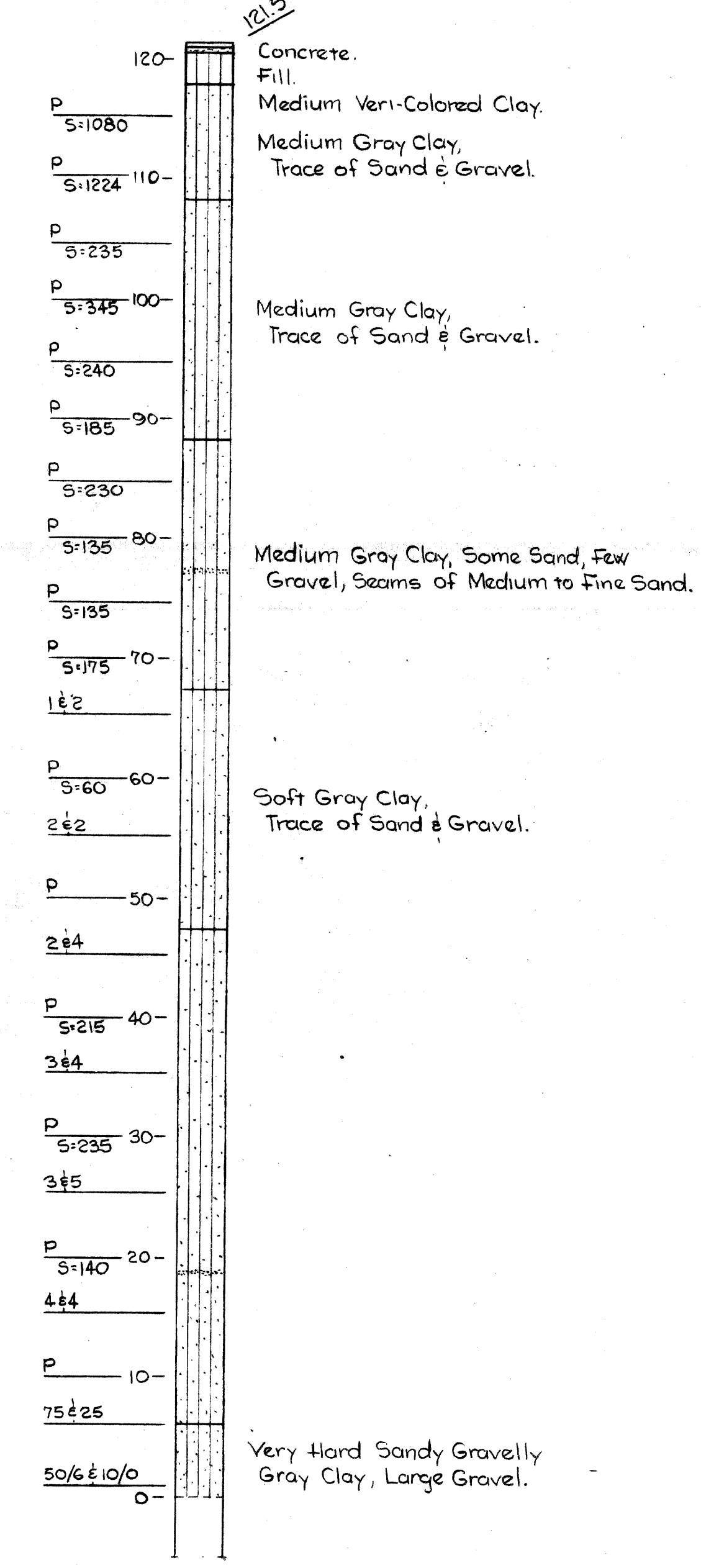


SURVEY PLAN  
Scale: 1"=40'

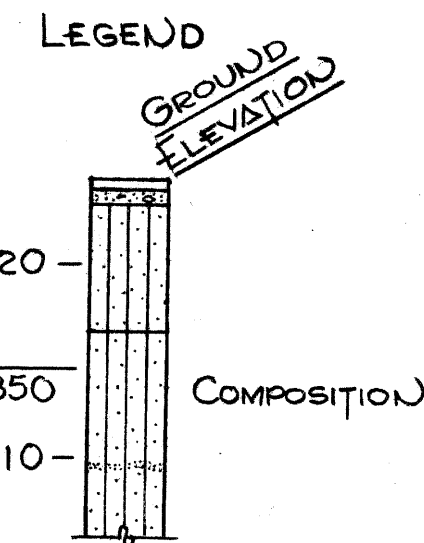
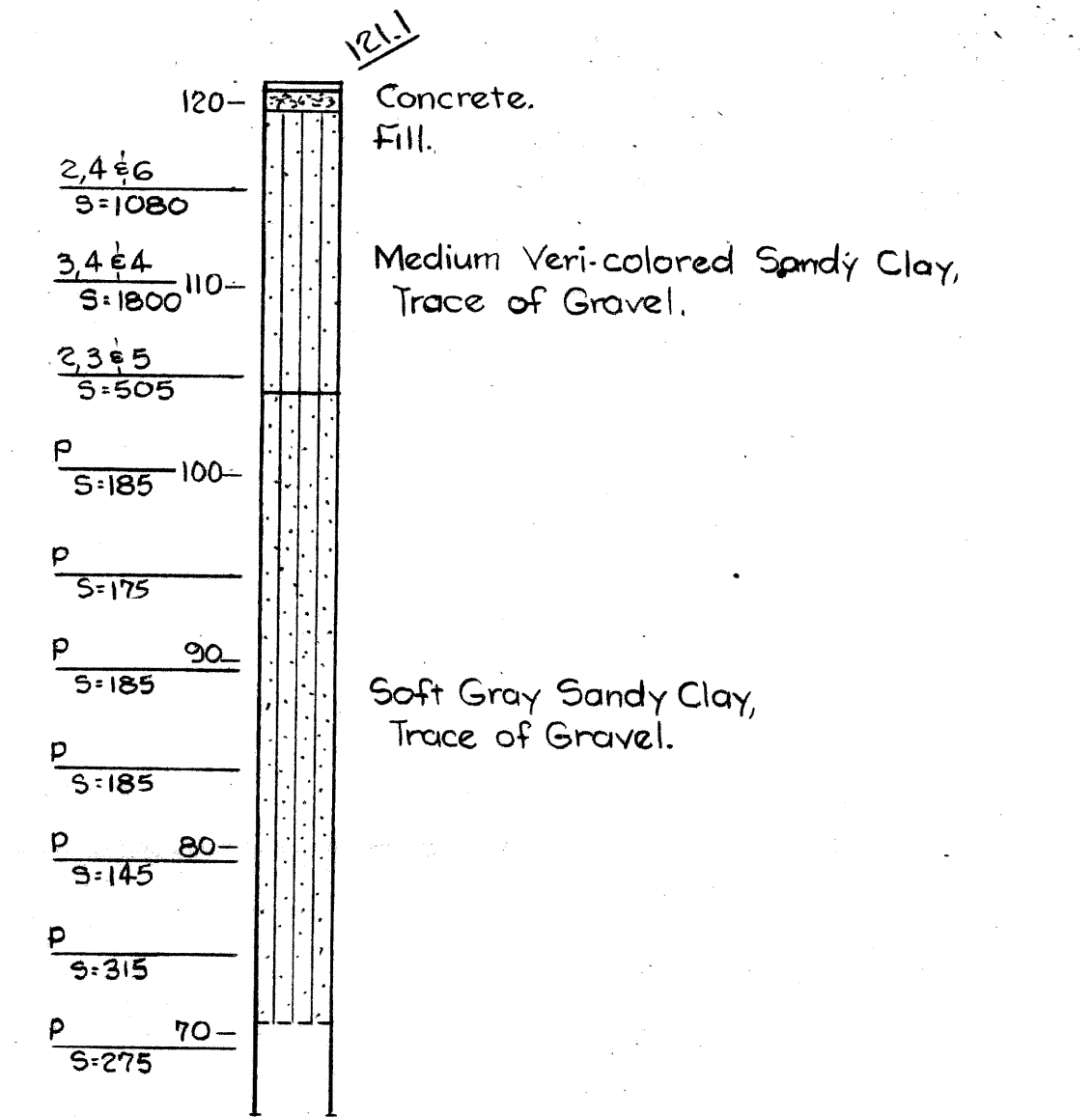
T.H. J-6



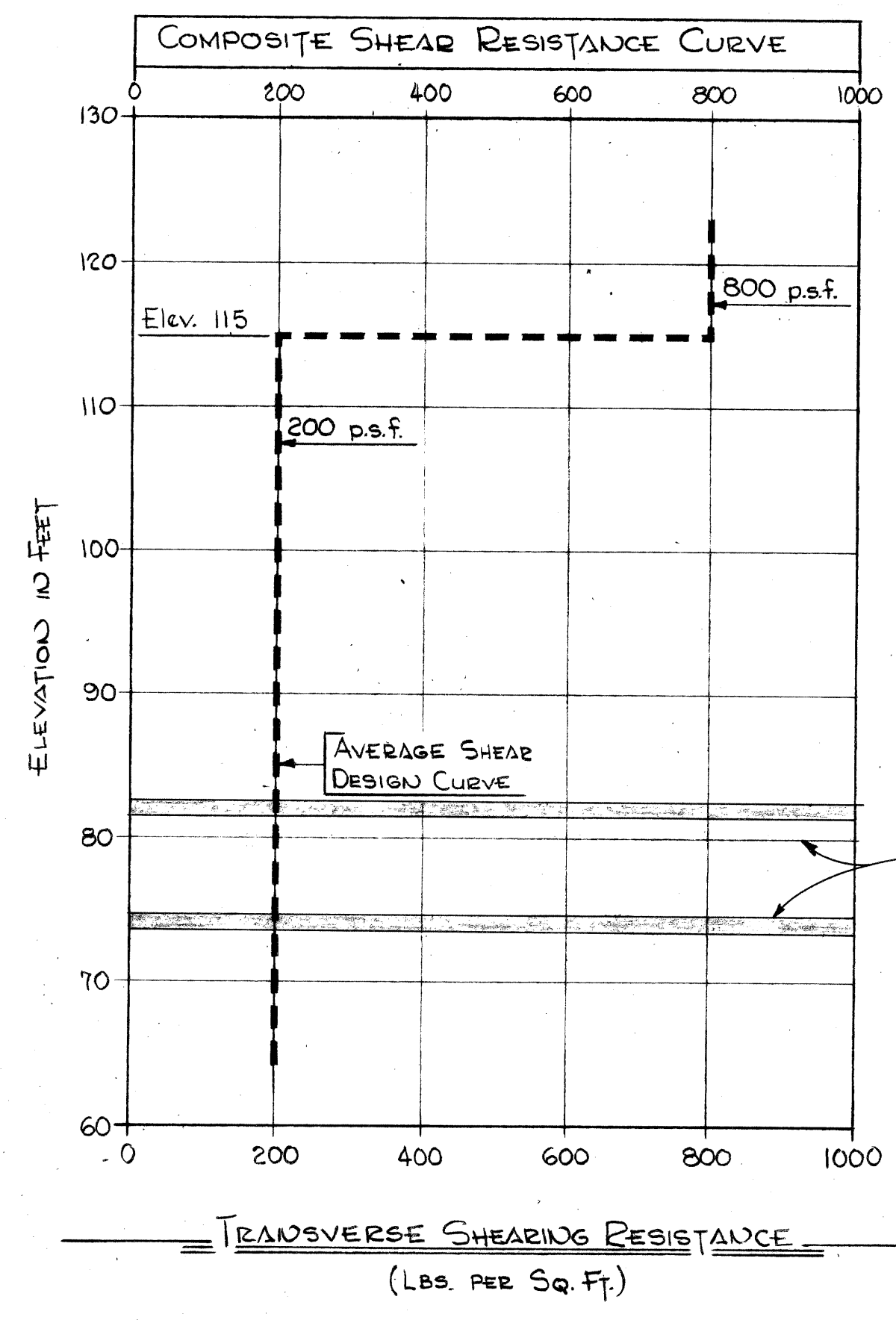
T.H. J-7



T.H. J-8



NOTES:  
Blow Count - Indicates number of blows required to drive a sampler 6" (unless otherwise noted), using a 40# hammer falling 30'.  
P - Indicates sampler was pushed.  
S - Indicates Transverse Shear Resistance in lbs./sq. ft. as determined by M.S.H.D. Standard Test.



PLANS PREPARED BY  
CITY OF DETROIT  
DEPARTMENT OF PUBLIC WORKS  
CITY ENGINEERS OFFICE  
BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED \_\_\_\_\_  
STRUCTURAL ENGINEER

JOB No.  
PW 990(1)X

NO.	DESCRIPTION	DATE	BY

MICHIGAN STATE HIGHWAY DEPARTMENT

SELDEN AVE. PEDESTRIAN BRIDGE  
CROSSING THE JEFFRIES FREEWAY IN DETROIT

LOG OF SOIL BORINGS

CITY OF DETROIT

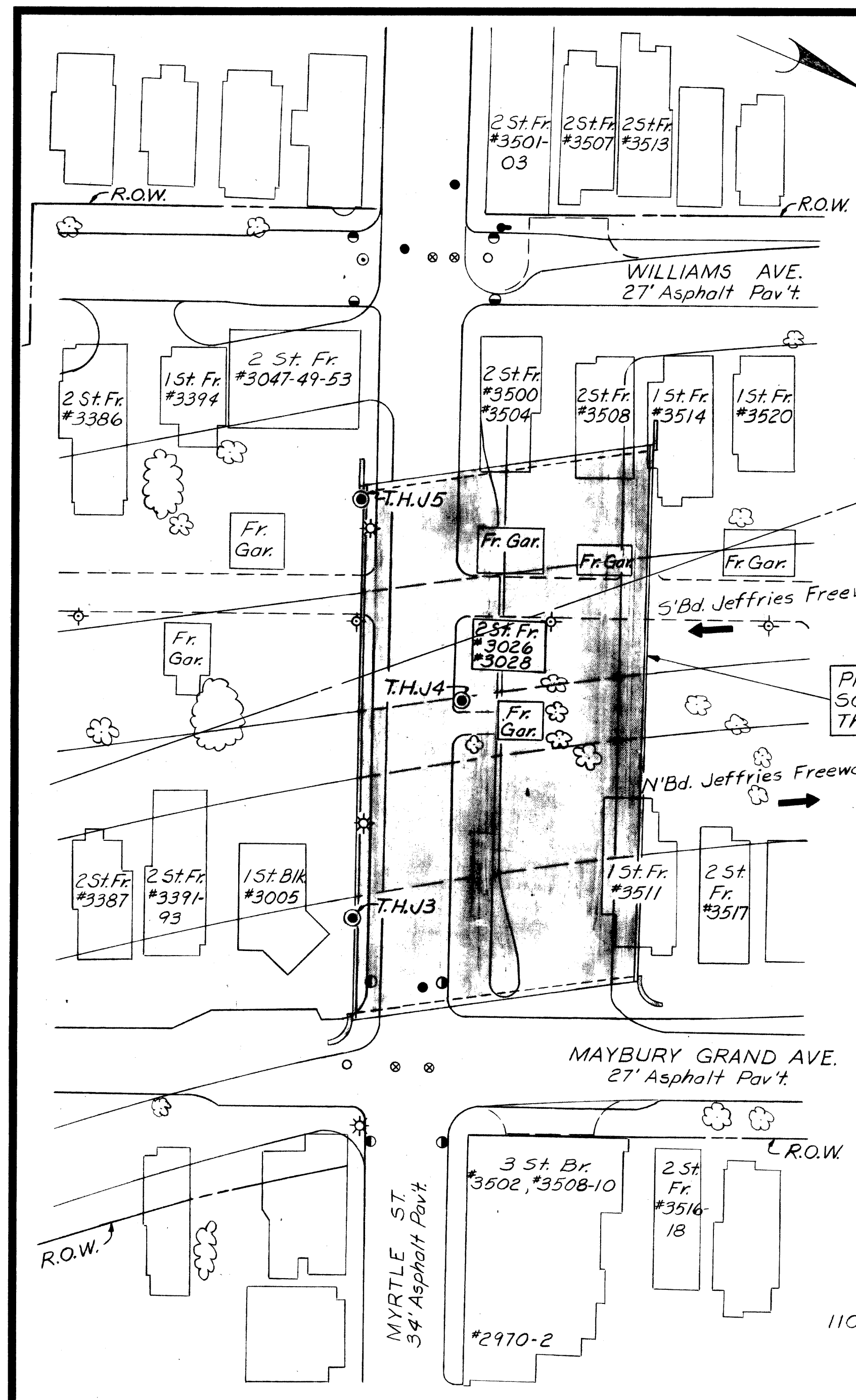
SQUAD NO. 8	STATION 8-66
DRAWN BY ALLENBUSH	DATE MAR. 66
CHECKED BY WVAL	DATE Mar. 66
SHEET 30	

APPROVED \_\_\_\_\_  
DESIGN SUPERVISING ENGINEER

APPROVED \_\_\_\_\_  
ENGINEER OF DESIGN - CONSULTANTS

POI of 82124A

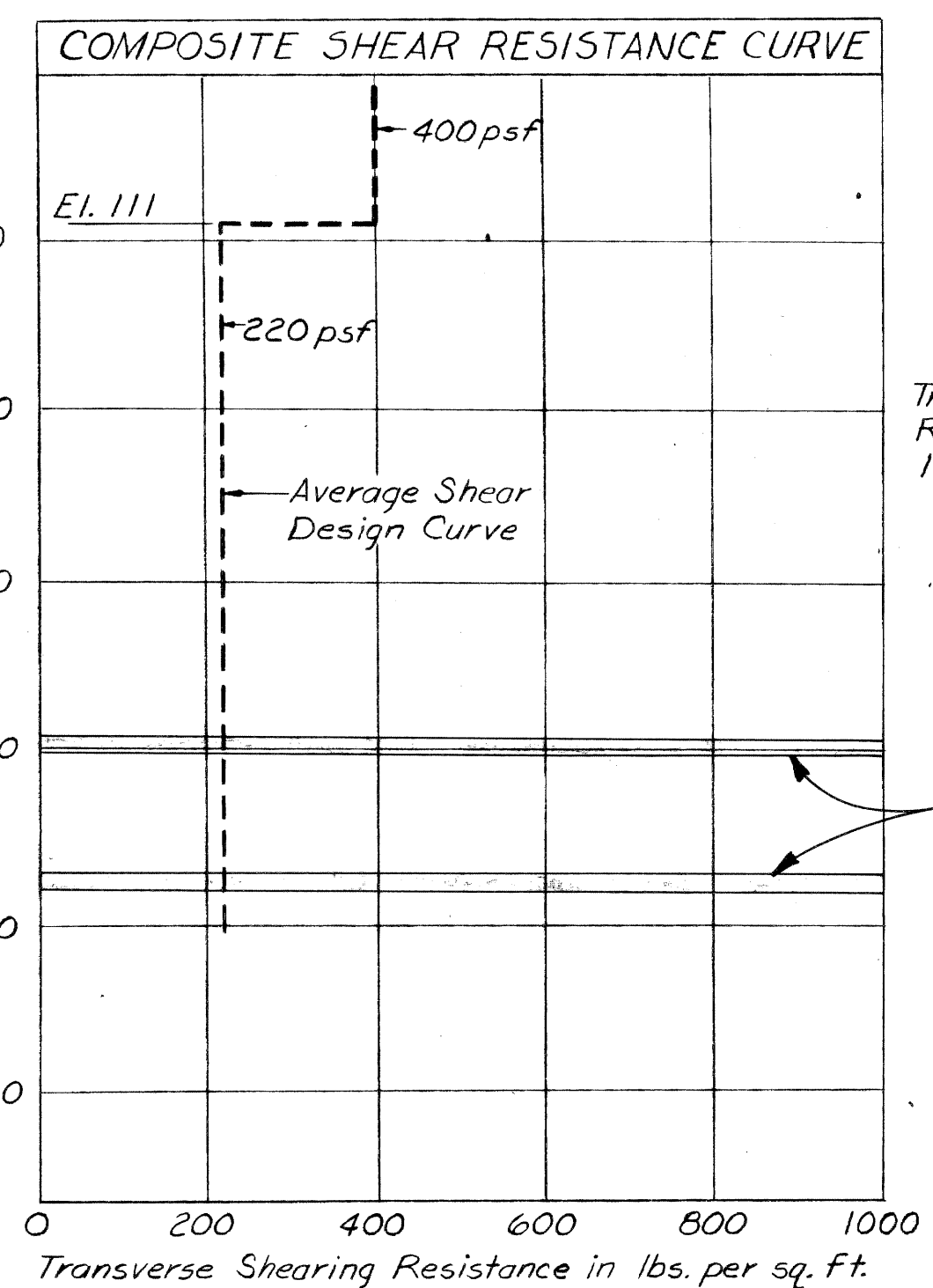




**SURVEY PLAN**  
Scale: 1"=40'

**UTILITY LEGEND**

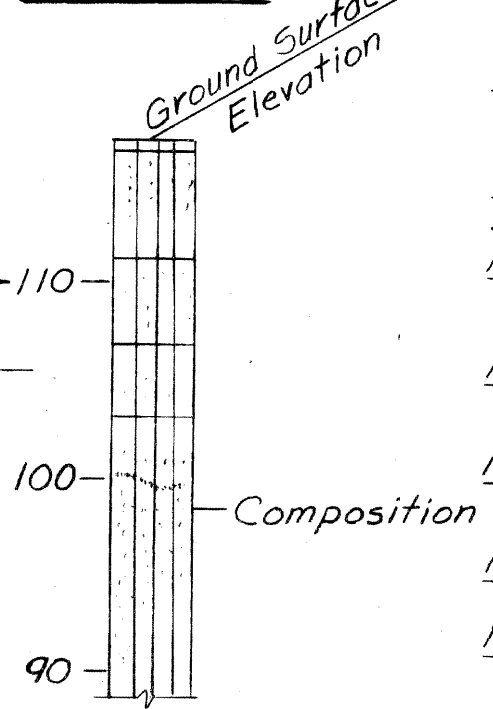
- Sewer Inlet or Catchbasin
- Sewer Manhole
- P.L.C. Manhole
- Detroit Edison Co. Manhole
- Water Gate Well and Valve
- Fire Hydrant
- Detroit Edison Co. Pole
- P.L.C. Lightpole
- Test Hole for Soil Profile
- Tree



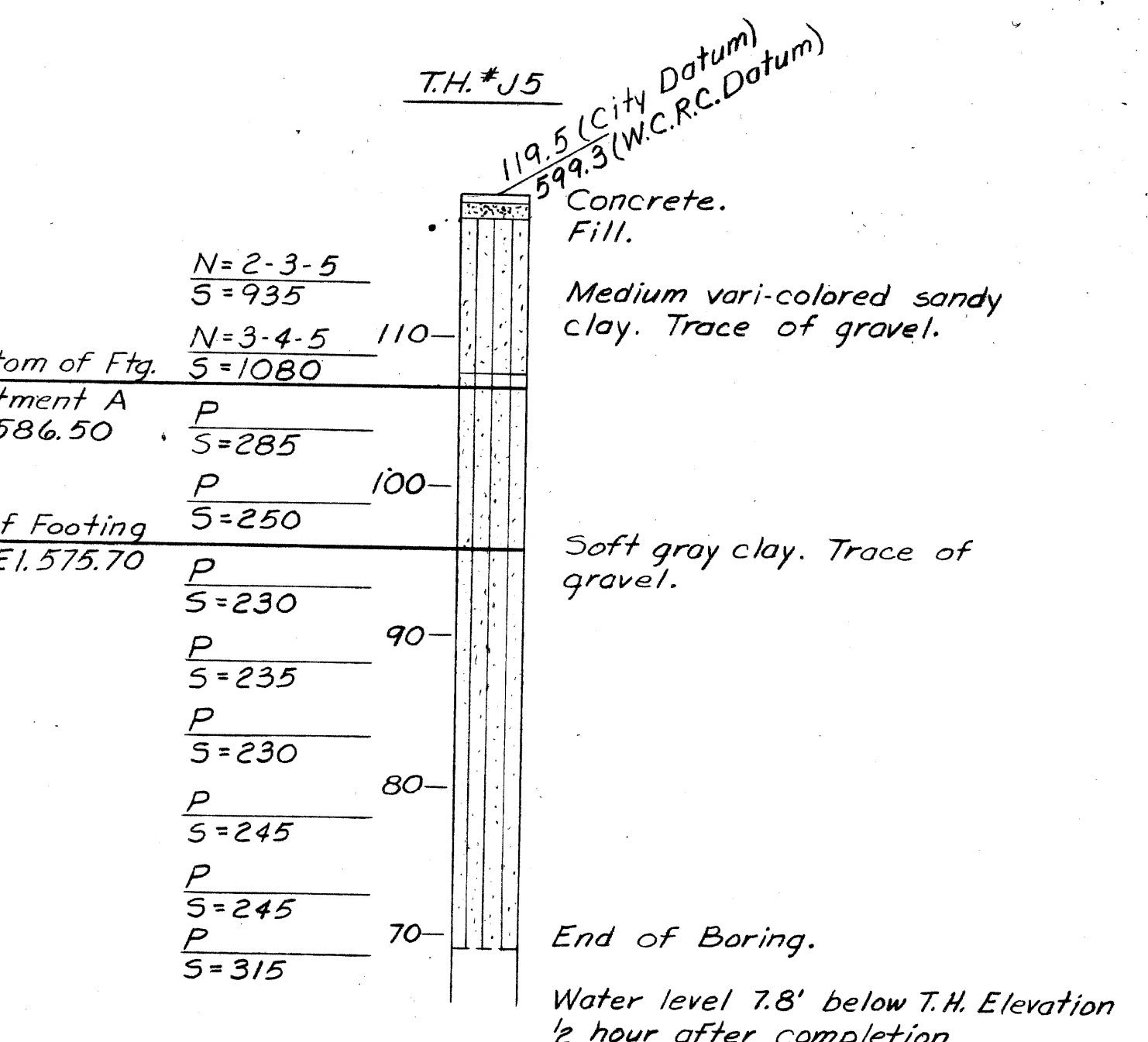
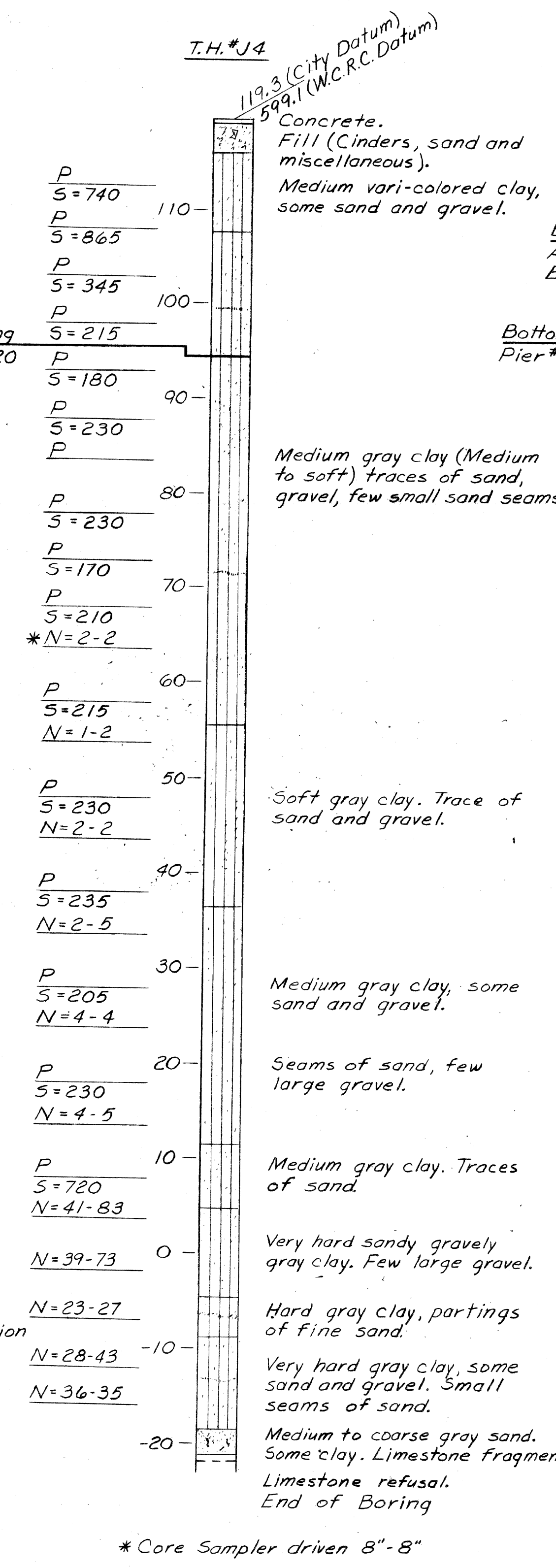
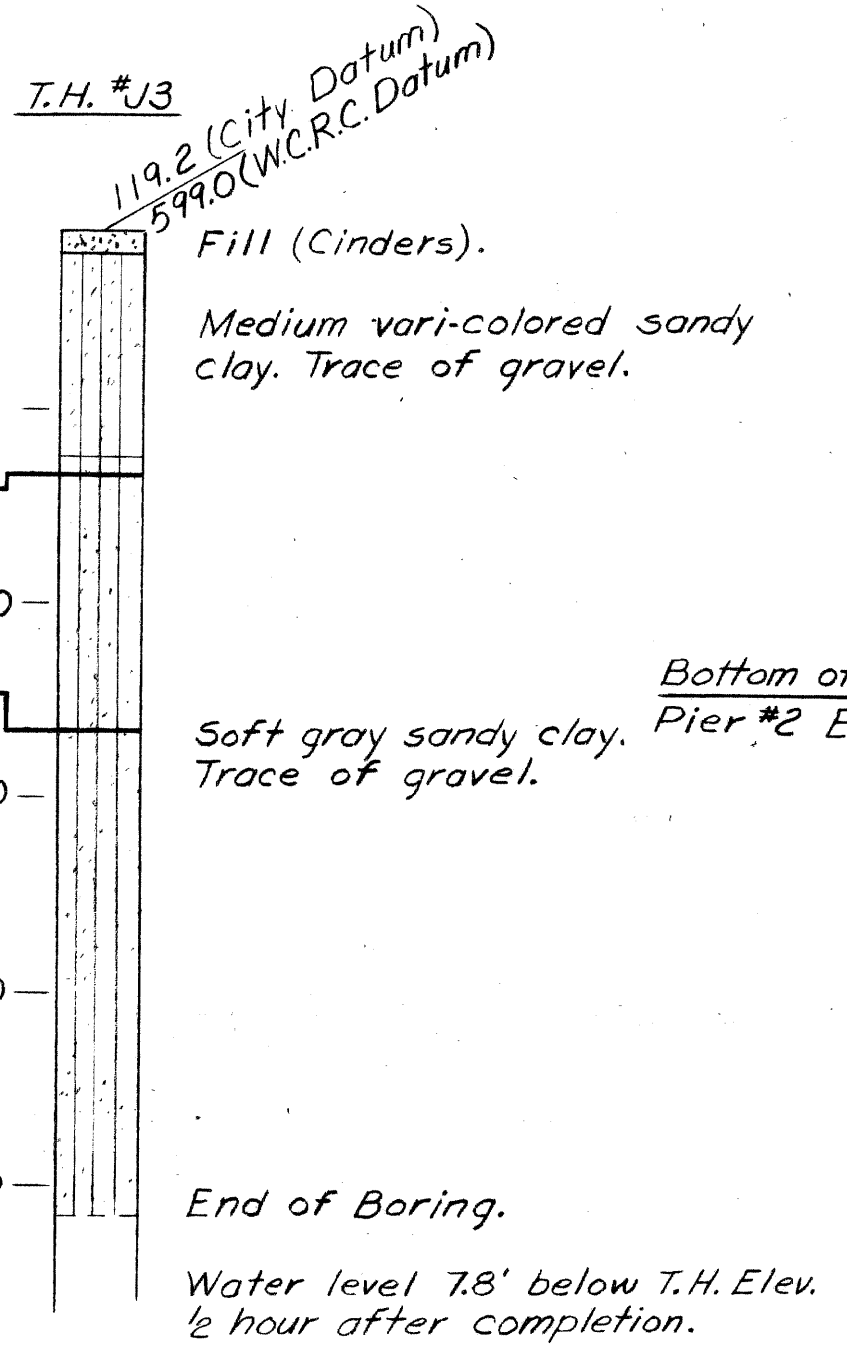
**Notes:**

N Indicates number of blow required to drive a sampler 6" (or as noted) using a 140# hammer falling 30".  
 S Indicates Transverse Shearing Resistance in lbs./ft.<sup>2</sup> as determined by M.S.H.D. Standard Test.  
 P Indicates sampler was pushed.  
 Soil Boring Elevations are based on City of Detroit Datum. All other elevations are based on Wayne County Precise Datum. To convert elevations based on City of Detroit Datum to elevations based on Wayne County Precise Datum, add 479.755'.

**LEGEND**



**LOG OF SOIL BORINGS**



PLANS PREPARED BY  
**CITY OF DETROIT**  
 DEPARTMENT OF PUBLIC WORKS  
 CITY ENGINEERS OFFICE  
 BUREAU OF HIGHWAYS AND EXPRESSWAYS

APPROVED: \_\_\_\_\_  
 STRUCTURAL ENGINEER  
 REVISIONS

JOB No.  
 PW 99011X

NO.	DESCRIPTION	DATE	BY

**MICHIGAN DEPARTMENT OF STATE HIGHWAYS**  
 MYRTLE ST. CROSSING JEFFRIES FREEWAY  
 IN DETROIT

**LOG OF SOIL BORINGS**

APPROVED: \_\_\_\_\_  
 DESIGN SUPERVISING ENGINEER

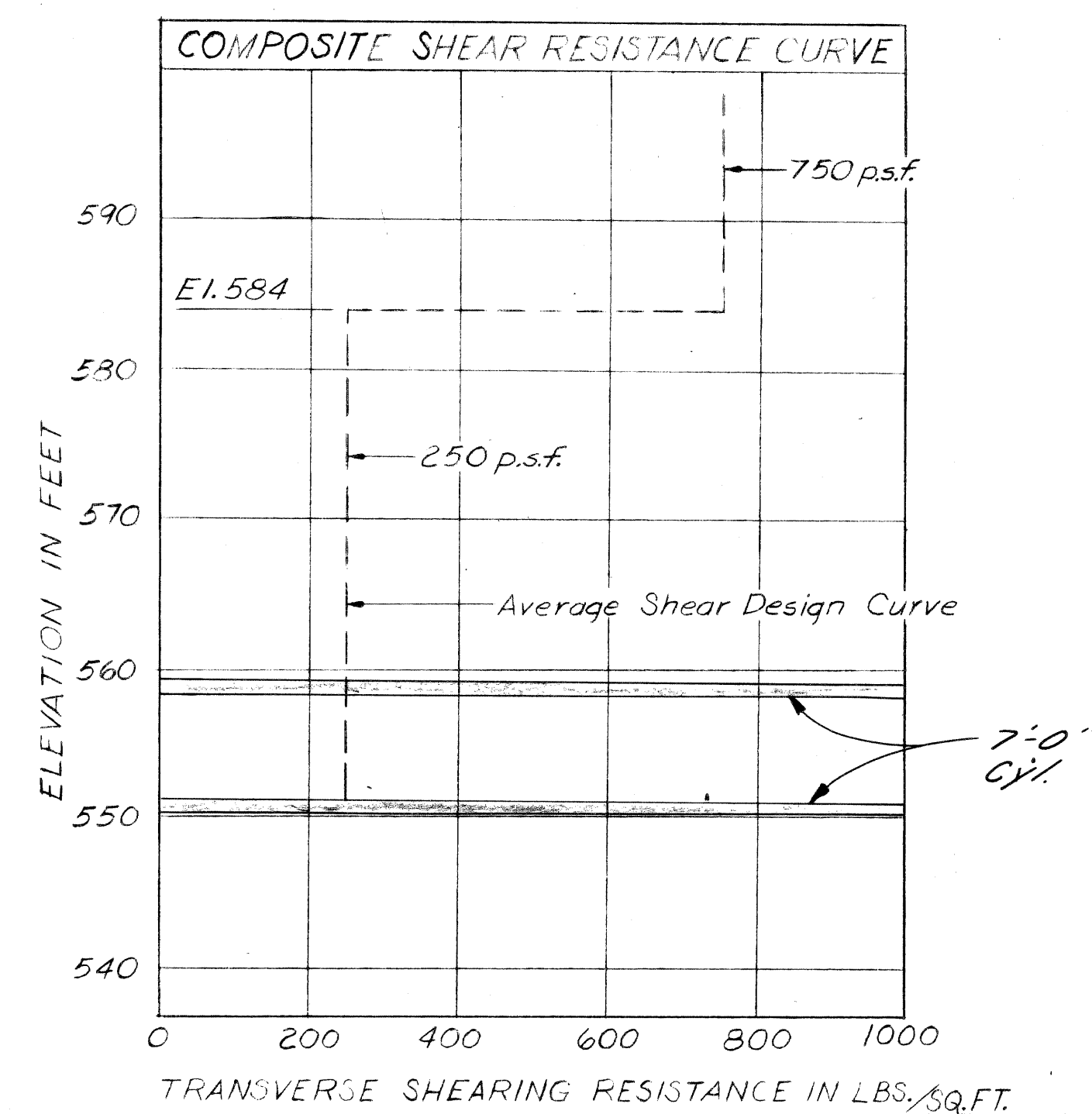
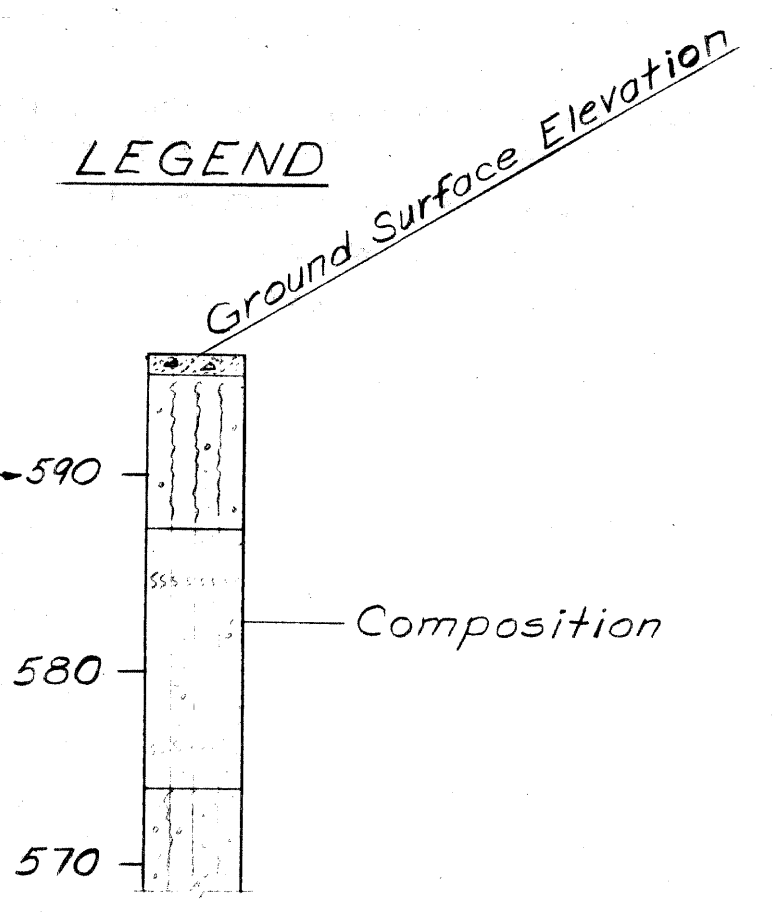
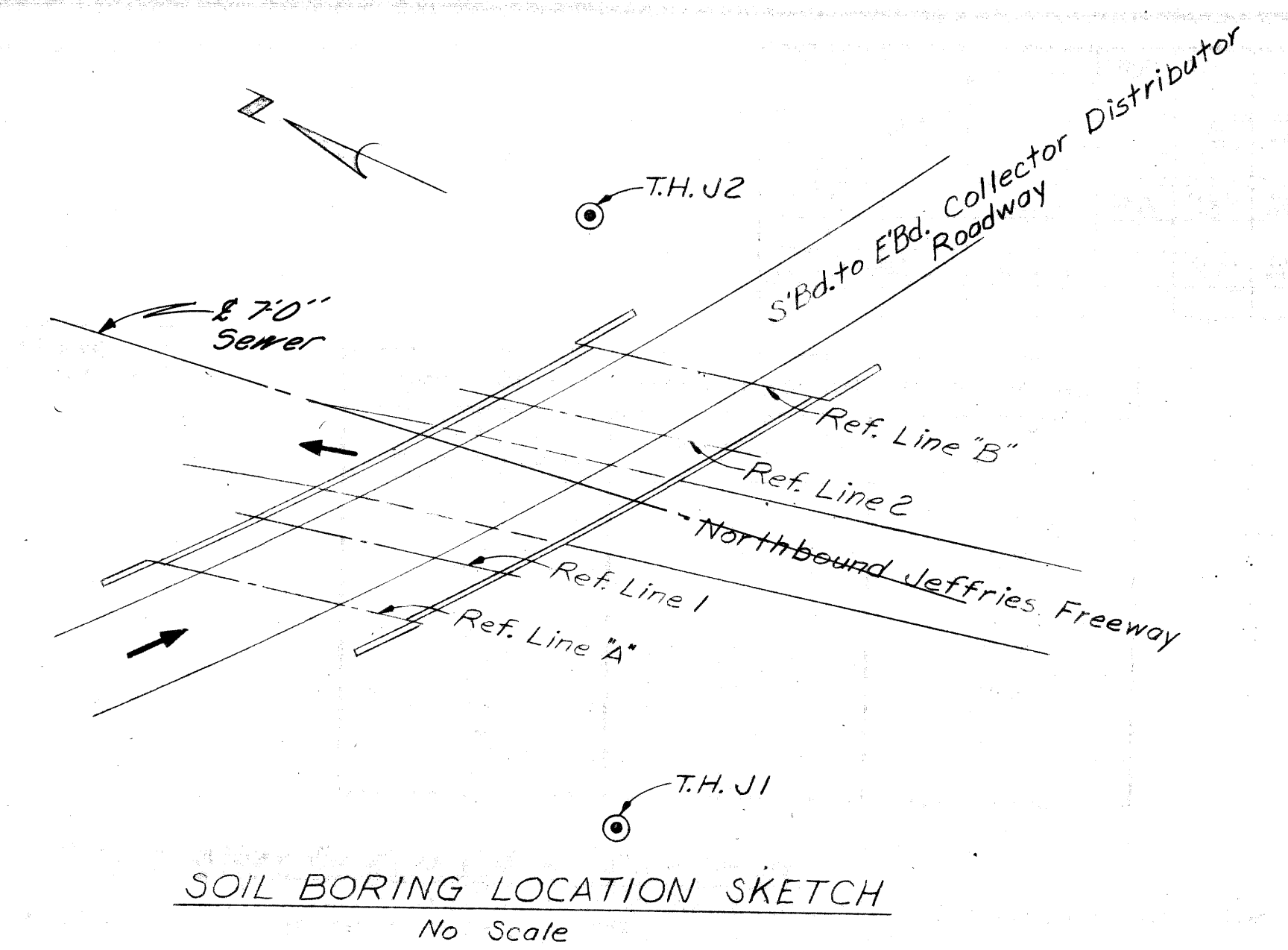
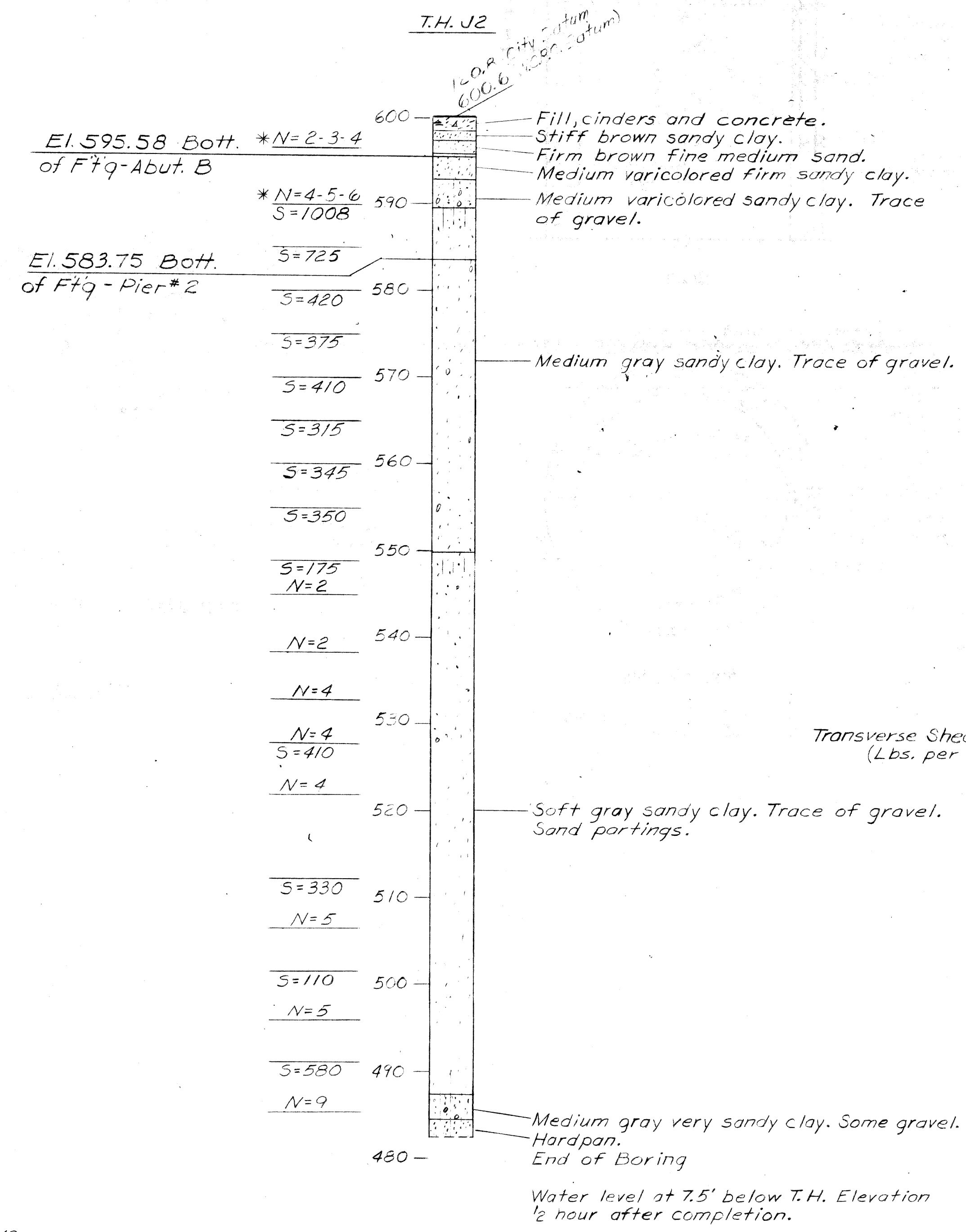
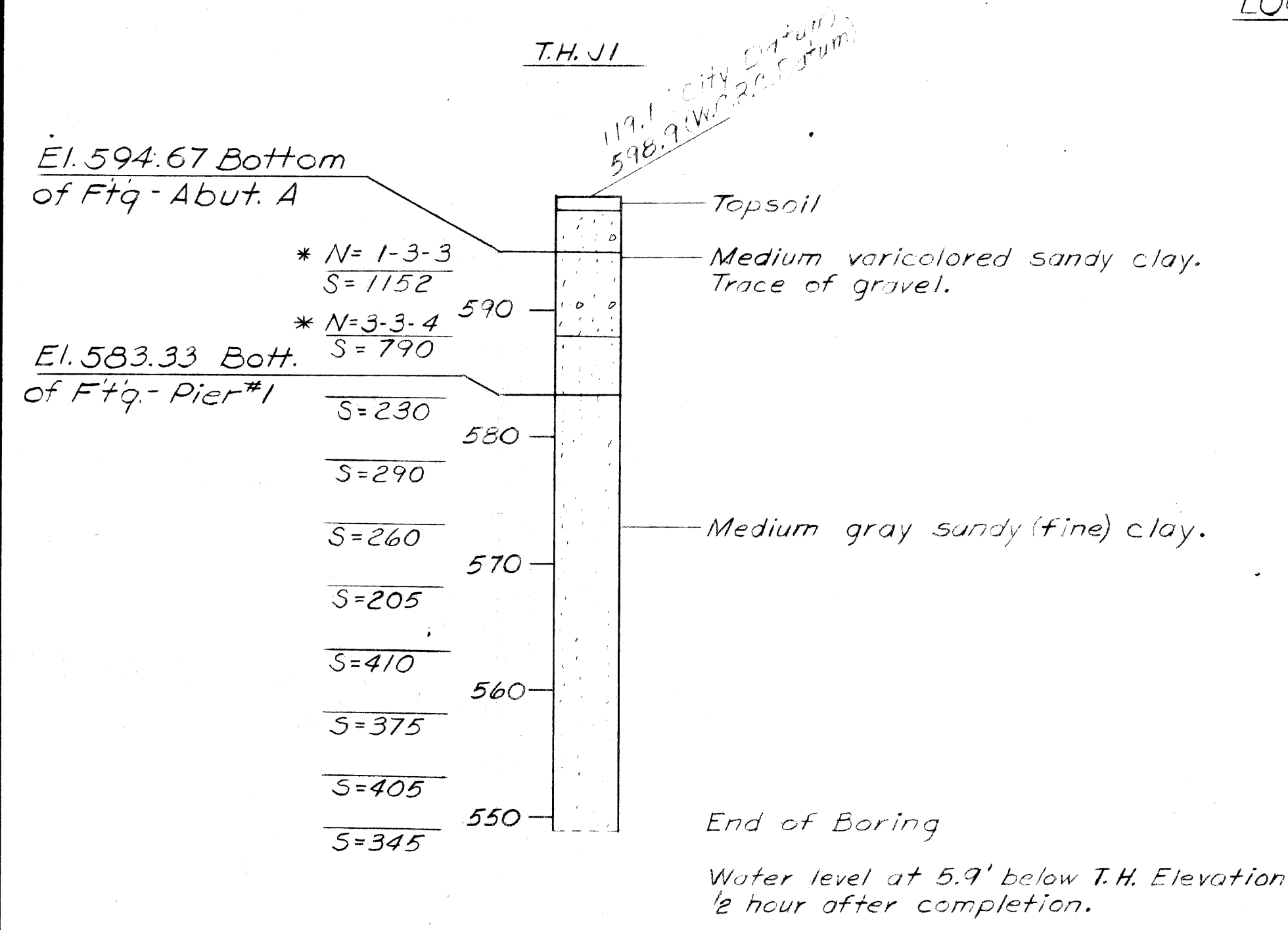
APPROVED: \_\_\_\_\_  
 ASST. ENGINEER OF DESIGN

CITY OF DETROIT  
 SOIAD BOSS: D. Freberg 6-66  
 DRAWN BY: D. Roman 5-66  
 CHECKED BY: A. Freiberg 6-66  
 SHEET 37

S03 of 82124 A



LOG OF SOIL BORINGS



NOTES

Consistency classification shown in the boring logs is by the Raymond Concrete Pile Company.

N Indicates the number of blows required to drive core sampler 12" (or as noted) using a 140 lb. hammer falling 30". Where blow count is not shown, sampler was either pushed, hand driven or levered.

S Indicates Transverse Shearing Resistance in lbs. per sq. ft. as determined by M.S.H.D. Standard Test.

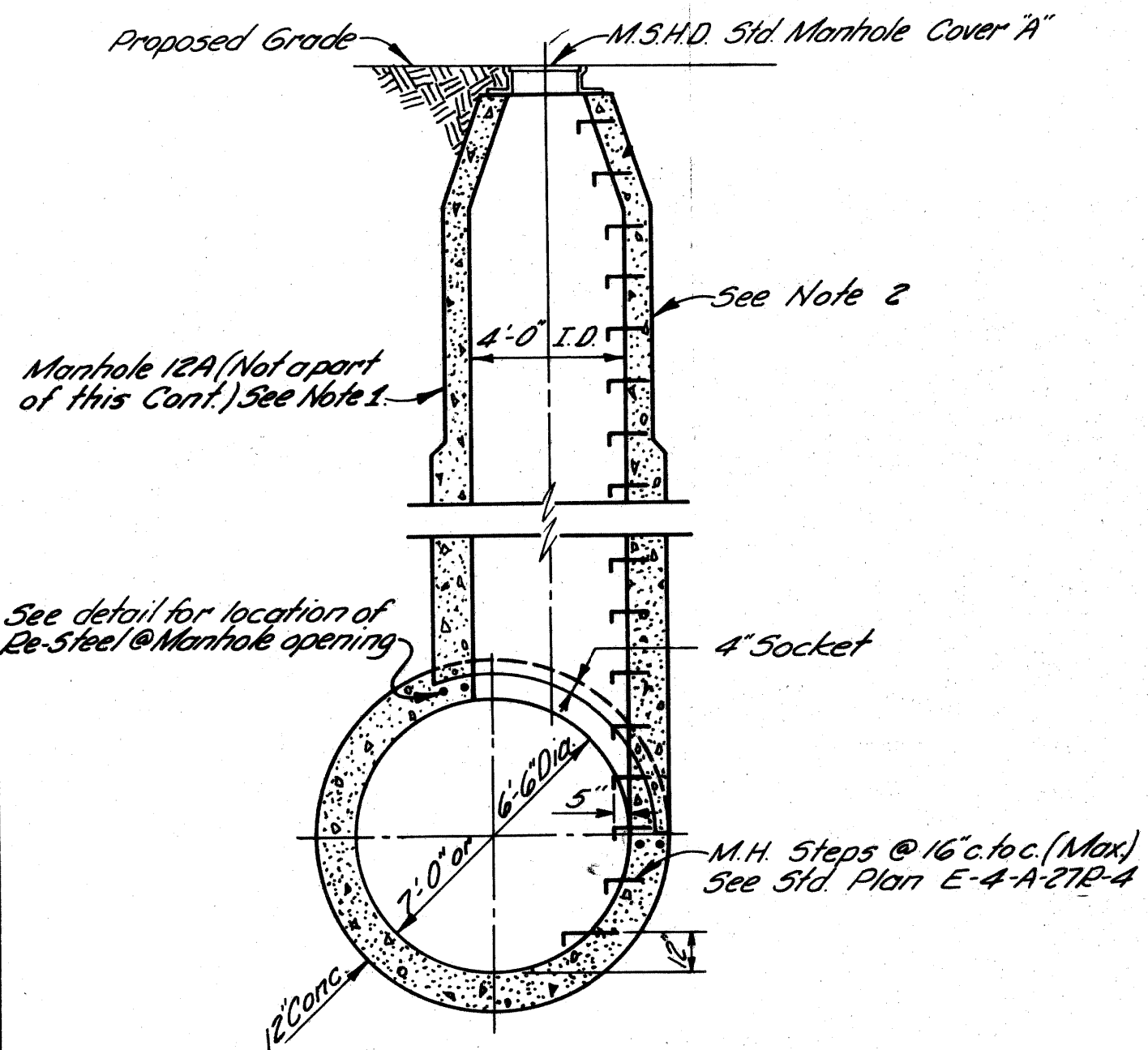
All elevations are based on W.C.R.C. precise datum. To obtain elevations based on City of Detroit Datum subtract 479.76.

PLANS PREPARED BY <b>CITY OF DETROIT</b> DEPARTMENT OF PUBLIC WORKS CITY ENGINEERS OFFICE BUREAU OF HIGHWAYS AND EXPRESSWAYS		<b>MICHIGAN STATE HIGHWAY DEPARTMENT</b> S'BD. TO E'BD. COLLECTOR DISTRIBUTOR CROSSING THE N'BD. JEFFRIES FREEWAY IN DETROIT	
APPROVED _____ STRUCTURAL ENGINEER	JOB No. PW 1002 (4EX)	<b>LOG OF SOIL BORINGS</b>	
REVISIONS NO. DESCRIPTION DATE BY		APPROVED _____ DESIGN SUPERVISING ENGINEER	CITY OF DETROIT SOIL BORING 4-66 DRAWN BY D. Roman 2-66 CHECKED BY A. Freiberg 4-66 SHEET 32
		APPROVED _____ ENGINEER OF DESIGN - CONSULTANTS	S27 of 82194L



**Notes for Access Manhole Opening:**

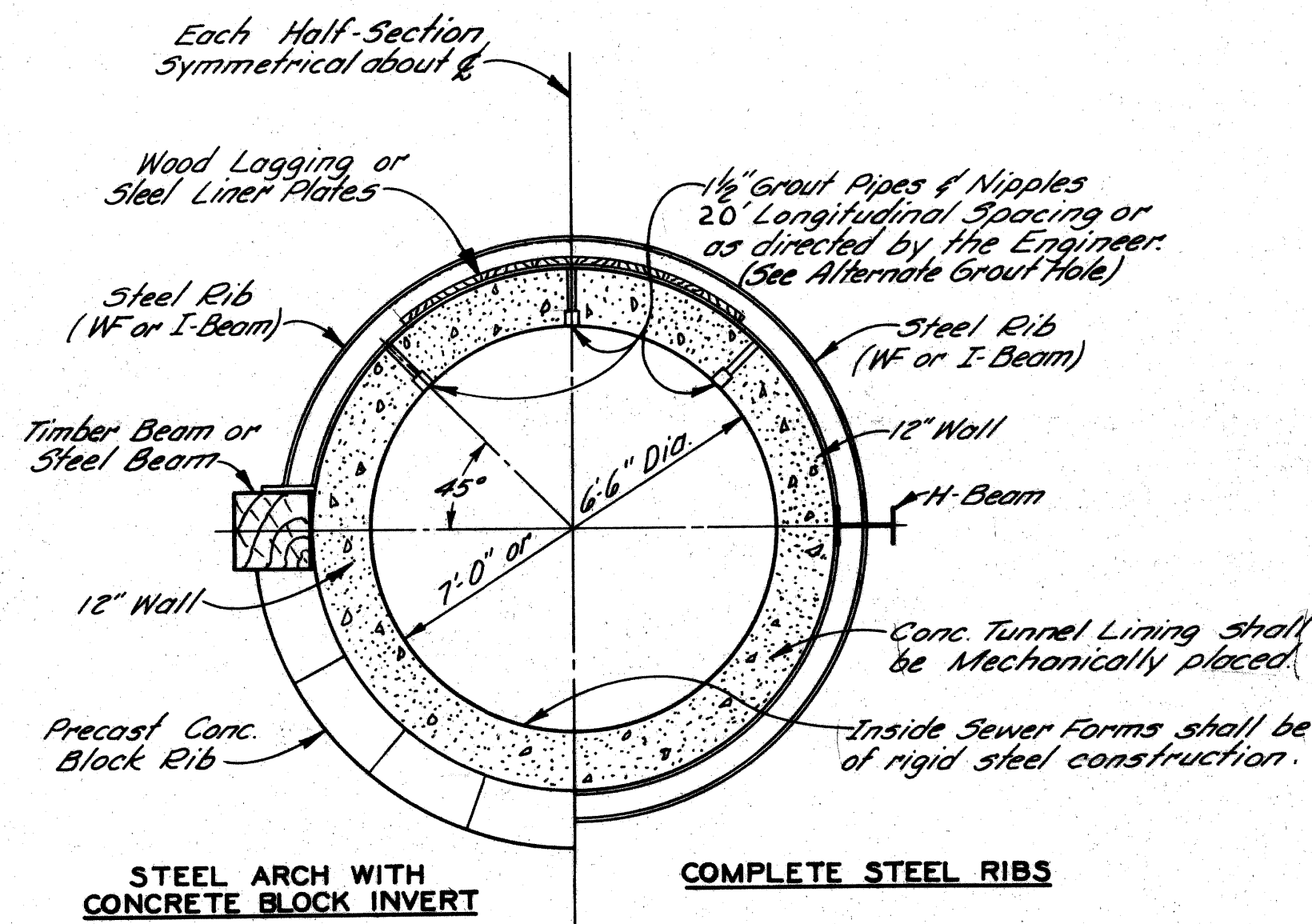
1. Only the 4" socket, the 4'-0" dia. opening thru the sewer wall, the steel reinforcing, and the Manhole Steps in the sewer will be required in this Contract at "Access Manhole 12A" (Not a part of this Contract). All the Primary Lining shall be left tightly in place. All work relative to the above shall be incidental to "Sewer in Tunnel".
2. For details, See M.S.H.D. Std. Plan E-4-A-27R-4 Detail 1. Options for 16'-25' depth may be used for depths over 25'.



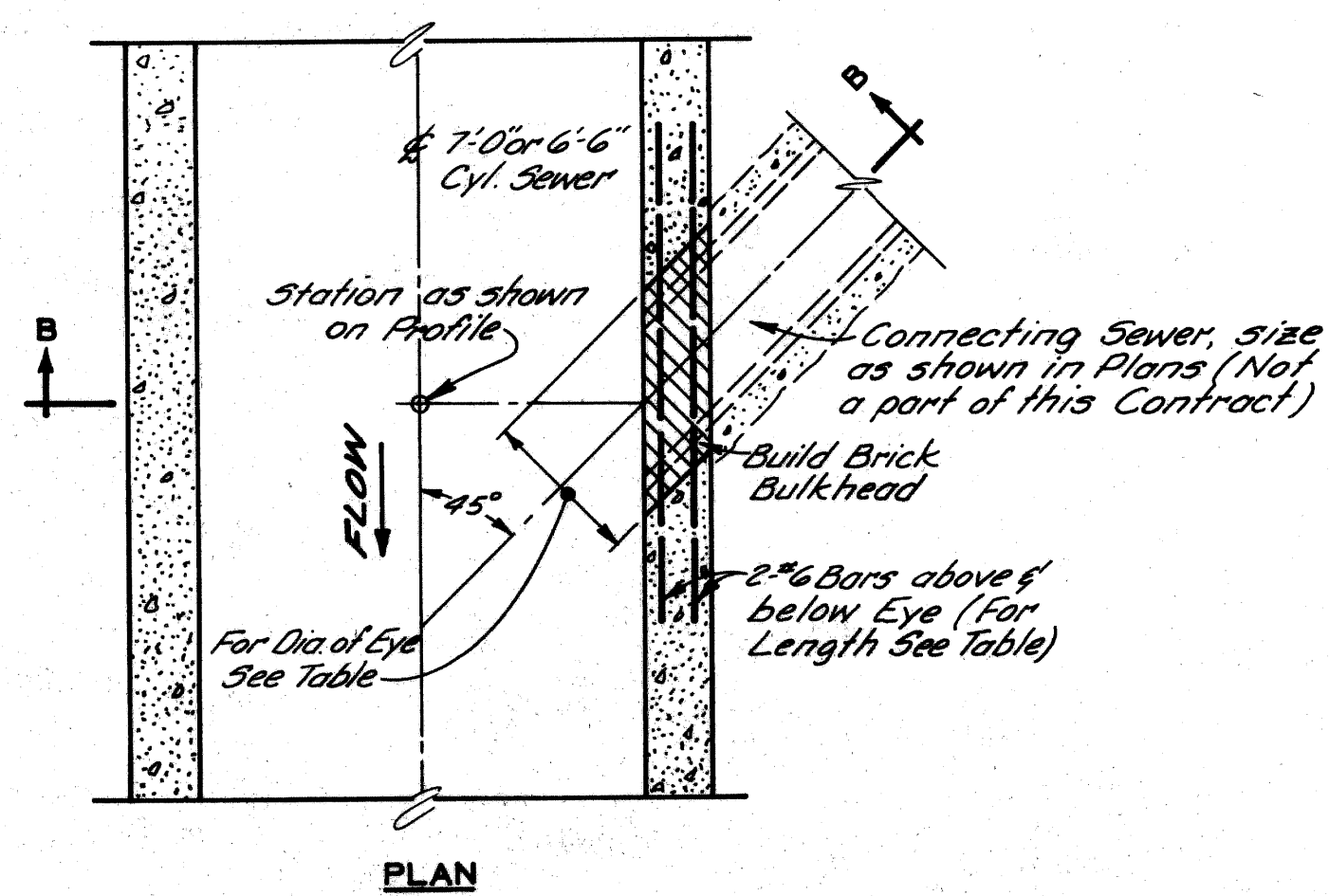
TYPICAL DETAIL OF ACCESS MANHOLE 12A

**Notes for Typical Tunnel Section:**

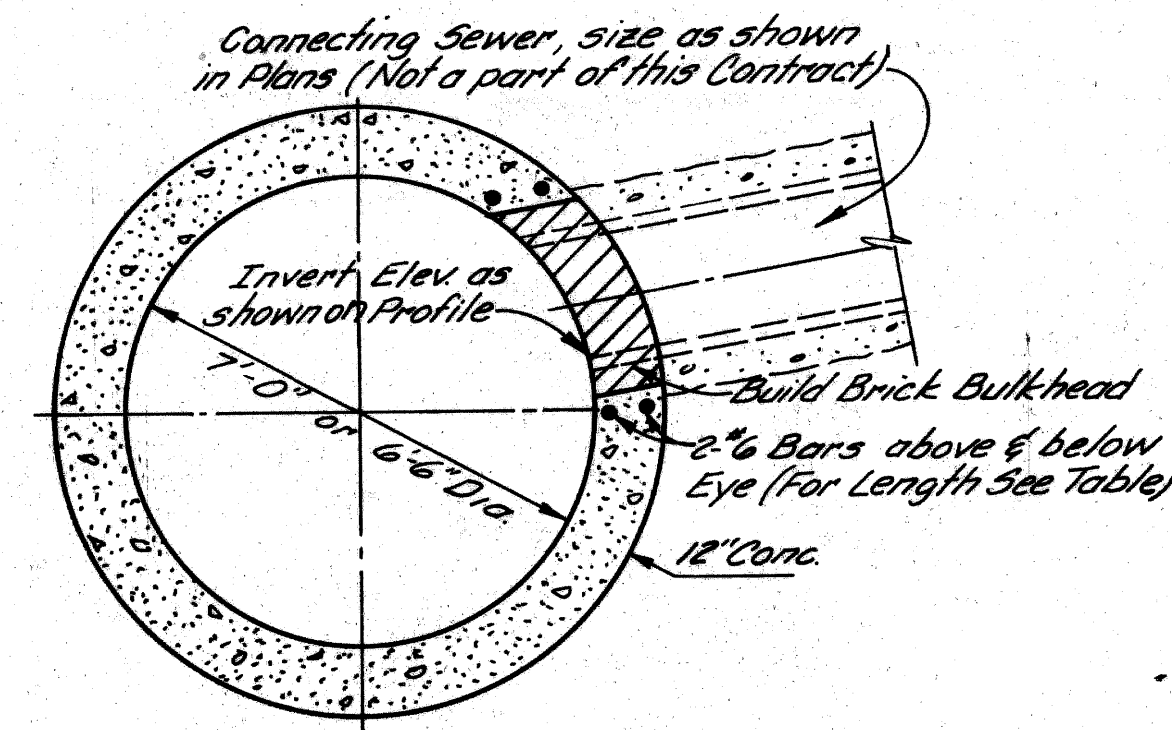
1. Either full ring of steel ribs and lagging or 1/2 ring of steel ribs and lagging and 1/2 ring of concrete block ribs construction method may be used.
2. Protrusion of steel ribs and timber beams into the sewer wall will not be permitted. Protrusion of H-beams into the sewer wall shall not exceed 1".



TYPICAL TUNNEL SECTION



PLAN



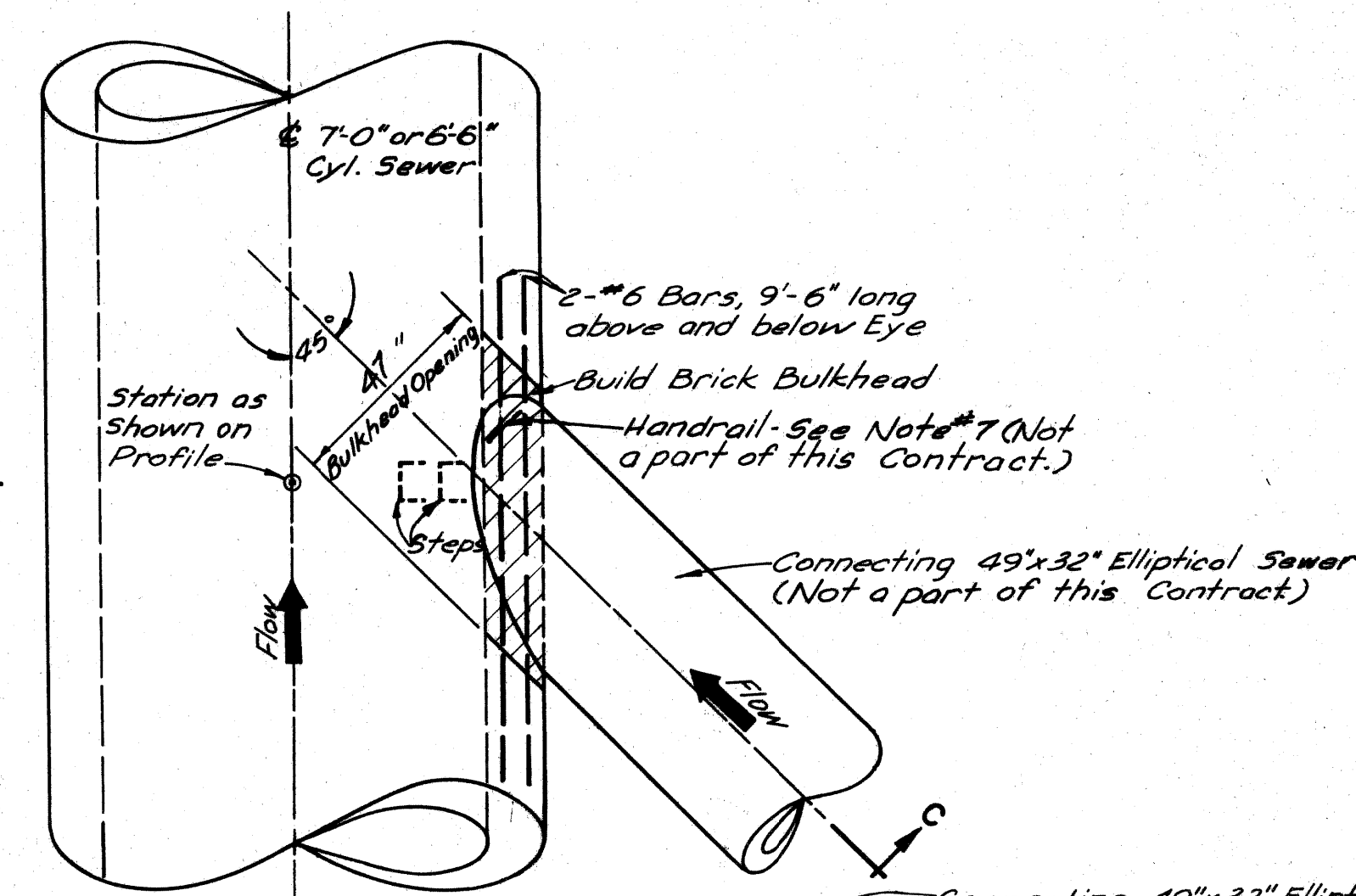
SECTION B-B

TYPICAL EYE DETAIL

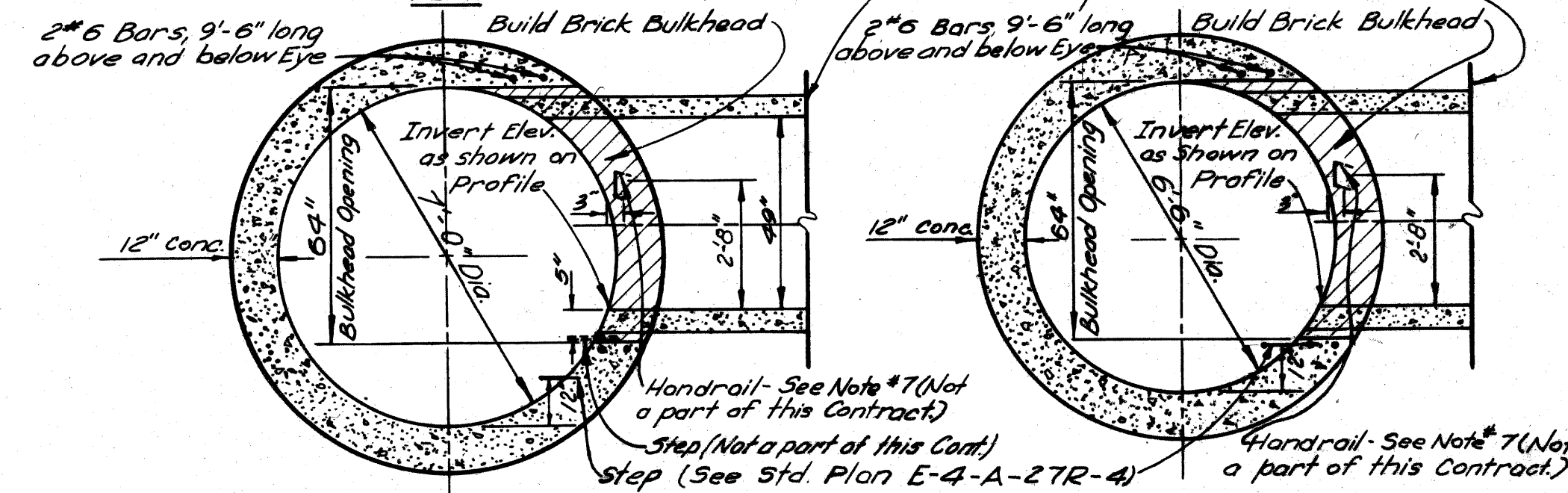
TABLE OF EYE DIAMETERS AND REINFORCING		
Size of Connecting Sewer	Diameter of Eye	Length of #6 Bars Above & Below Eye
12"	21"	6'-6"
18"	28"	7'-4"
21"	32"	7'-9"
24"	37"	8'-4"
30"	44"	9'-2"
36"	51"	10'-0"
15"	25"	7'-0"

**Notes for Eyes & Brick Bulkheads:**

1. A full ring of Mortar 1/2" thick, shall be placed between the Brick Bulkhead & the wall of the eye.
2. The wall of the eye shall be cleaned and wetted before building the Bulkhead.
3. Bulkhead thickness shall be equal to the Sewer Wall thickness and shall be placed to insure a tight seal.
4. No Brick or Brick Fragment shall be in contact with the wall of the eye to be Bulkheaded.
5. Eyes and Brick Bulkheads are incidental to "Sewer in Tunnel".
6. Reinforcement is incidental to "Sewer in Tunnel".
7. For handrail use Step as shown on Std. Plan E-4-A-27R-4.



PLAN



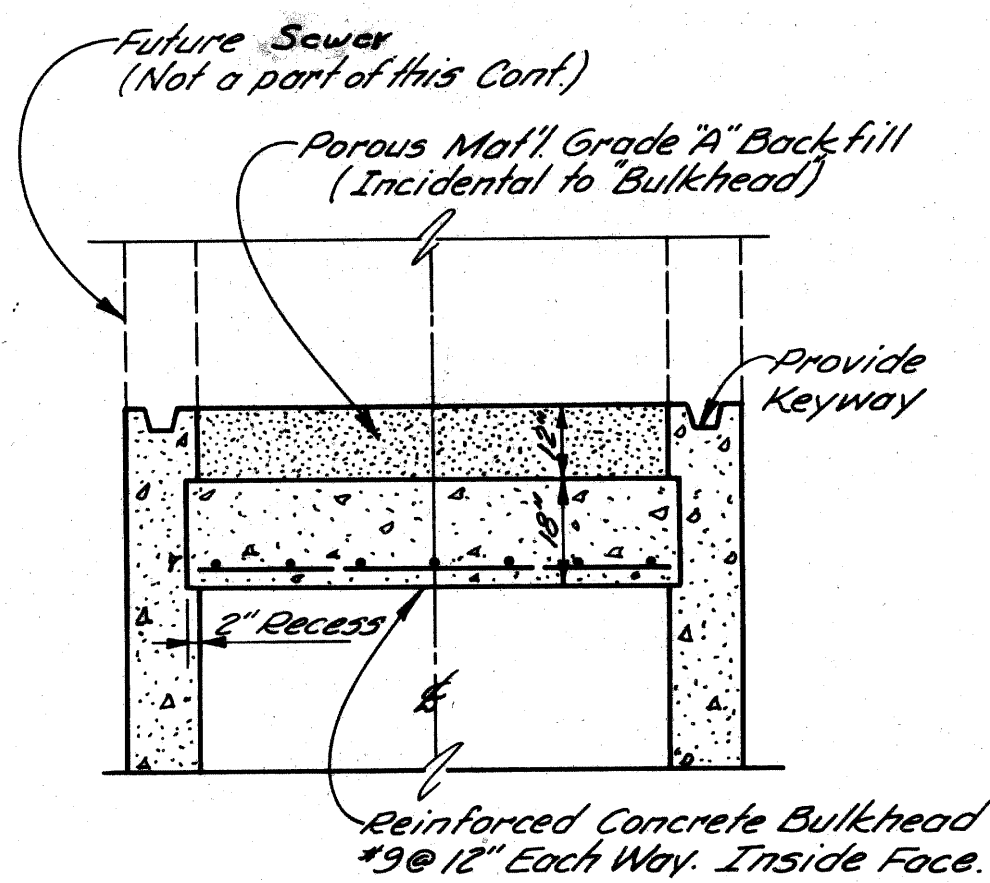
SECTION C-C OF 7'-0" SEWER

SECTION C-C OF 6'-6" SEWER

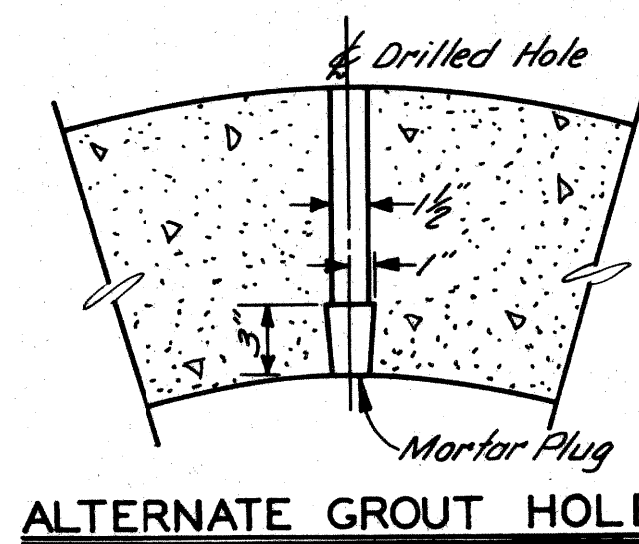
EYE, STEP AND HANDRAIL DETAIL FOR LOCATIONS REQUIRING 49x32" ELLIPTICAL PIPES

FLUTH # 11-16-67

MISCELLANEOUS SEWER DETAILS

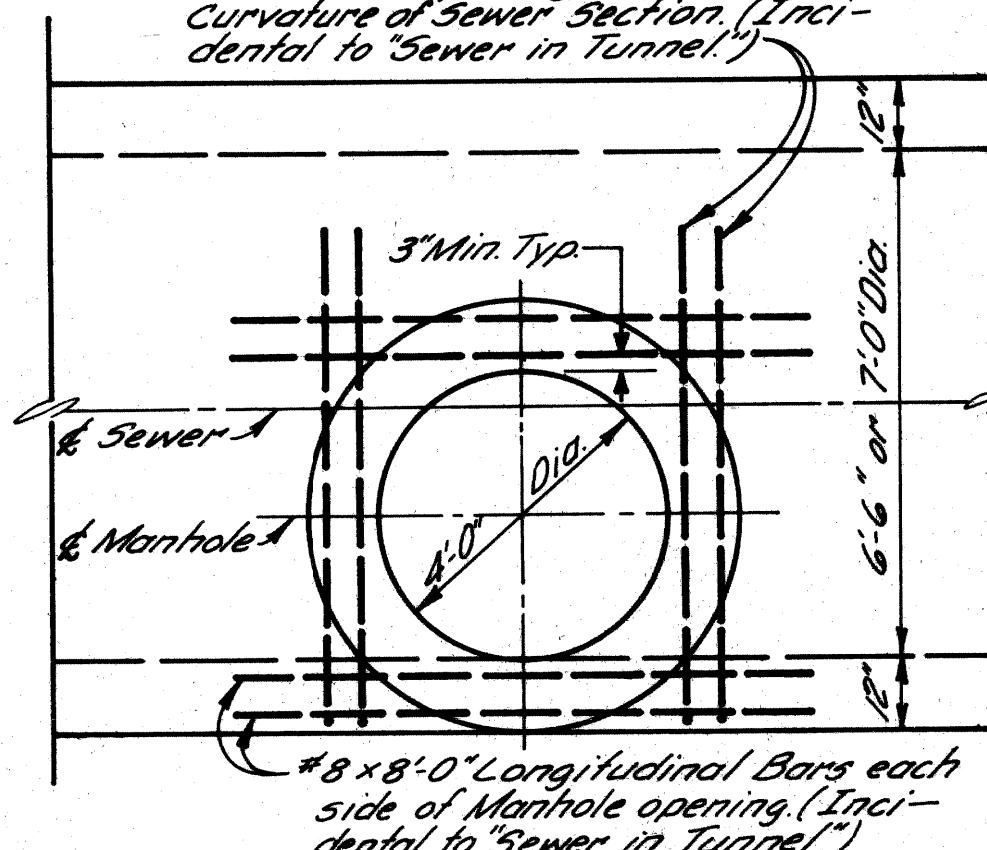


TYPICAL DETAIL OF SEWER BULKHEAD

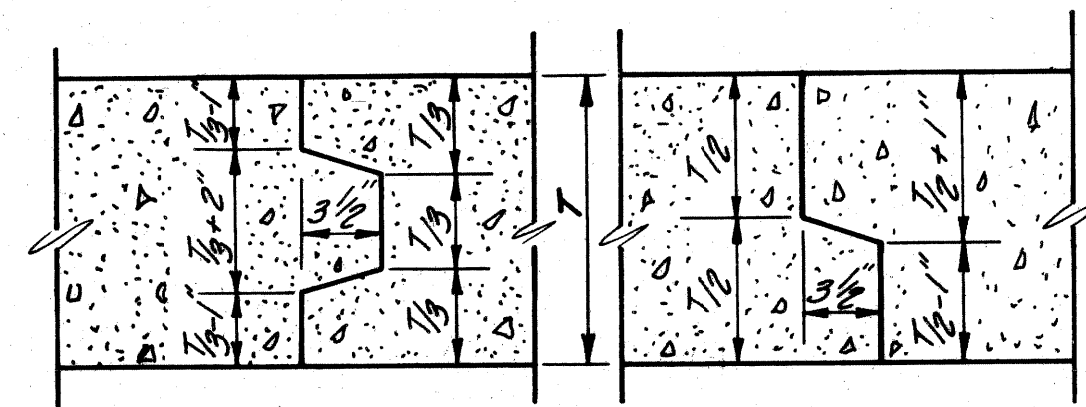


ALTERNATE GROUT HOLE

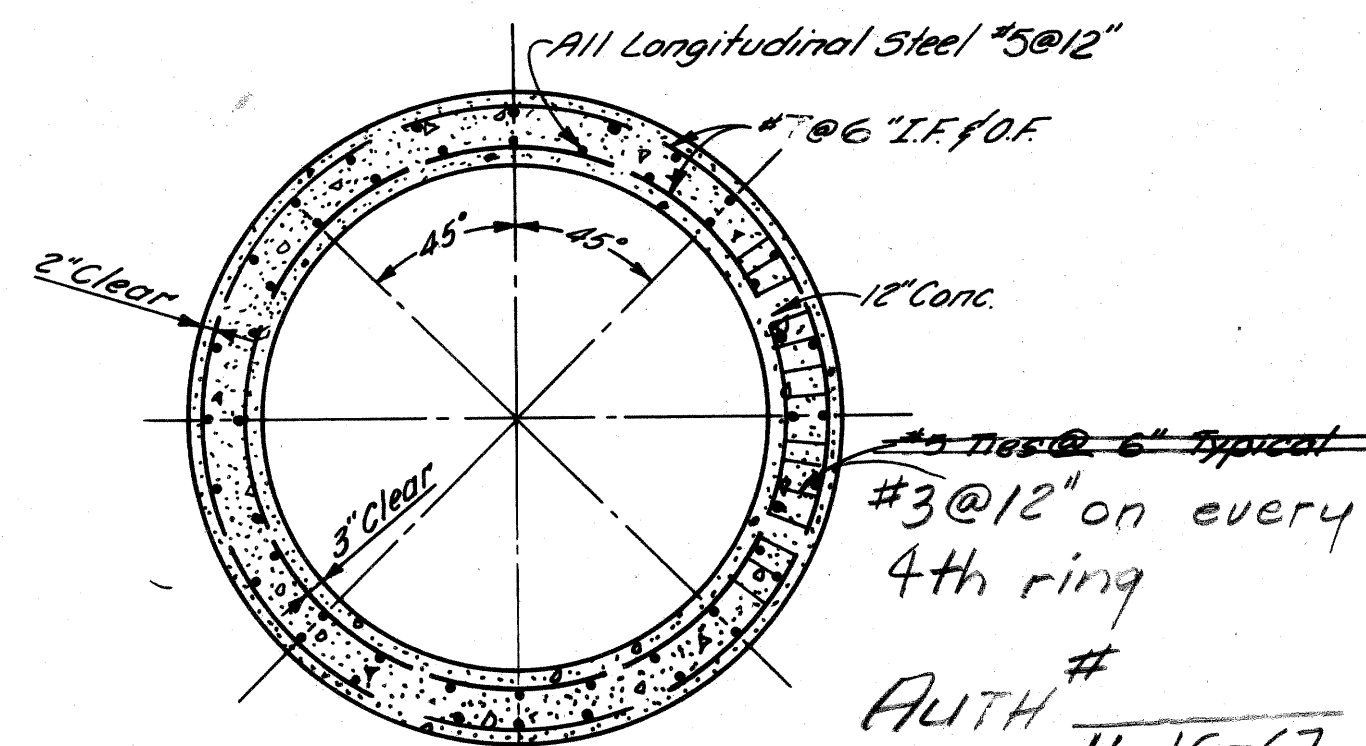
#8 x 8'-0" Transverse Bars each side of Manhole opening. Bend to the Curvature of Sewer Section. (Incidental to "Sewer in Tunnel")



DETAIL OF REINFORCING STEEL AT MANHOLE OPENING



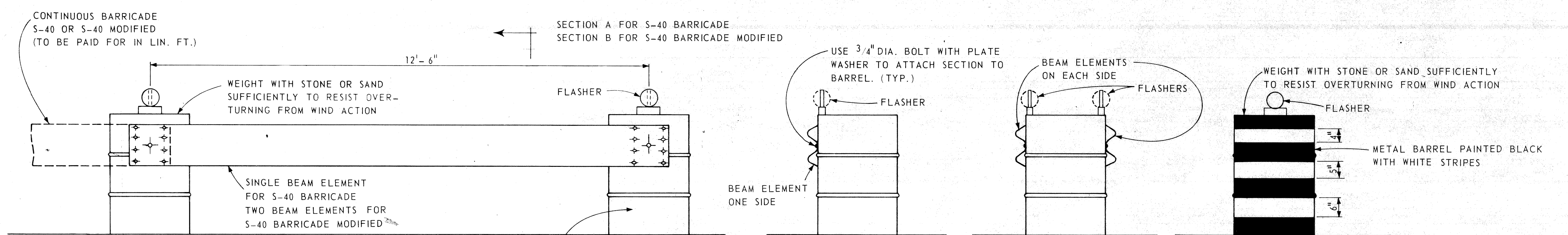
ALTERNATE CONSTRUCTION JOINTS



NOTE: Reinforcement is incidental to "Sewer in Tunnel"

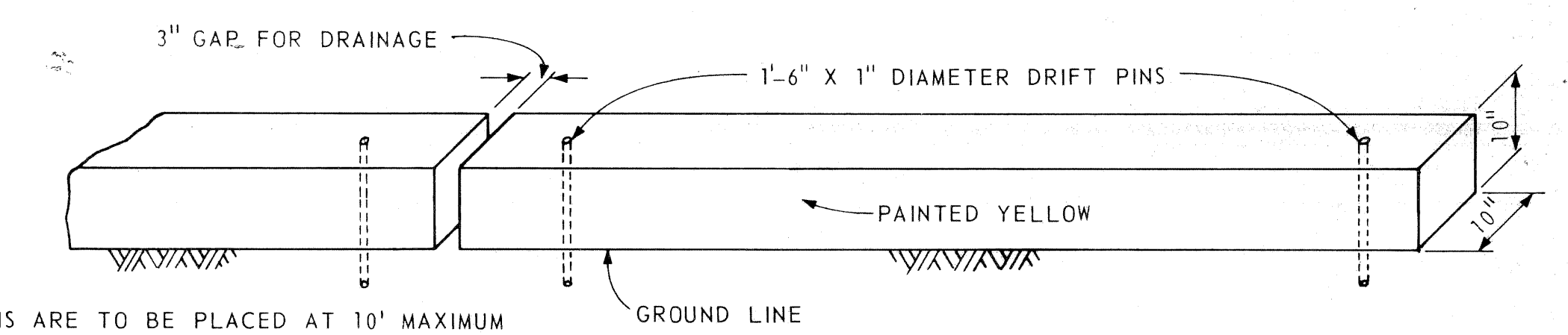
SPECIAL REINFORCEMENT OF 7'-0" CYL. BETWEEN STA. 211+60 TO STA. 213+90 (SEWER STA.)





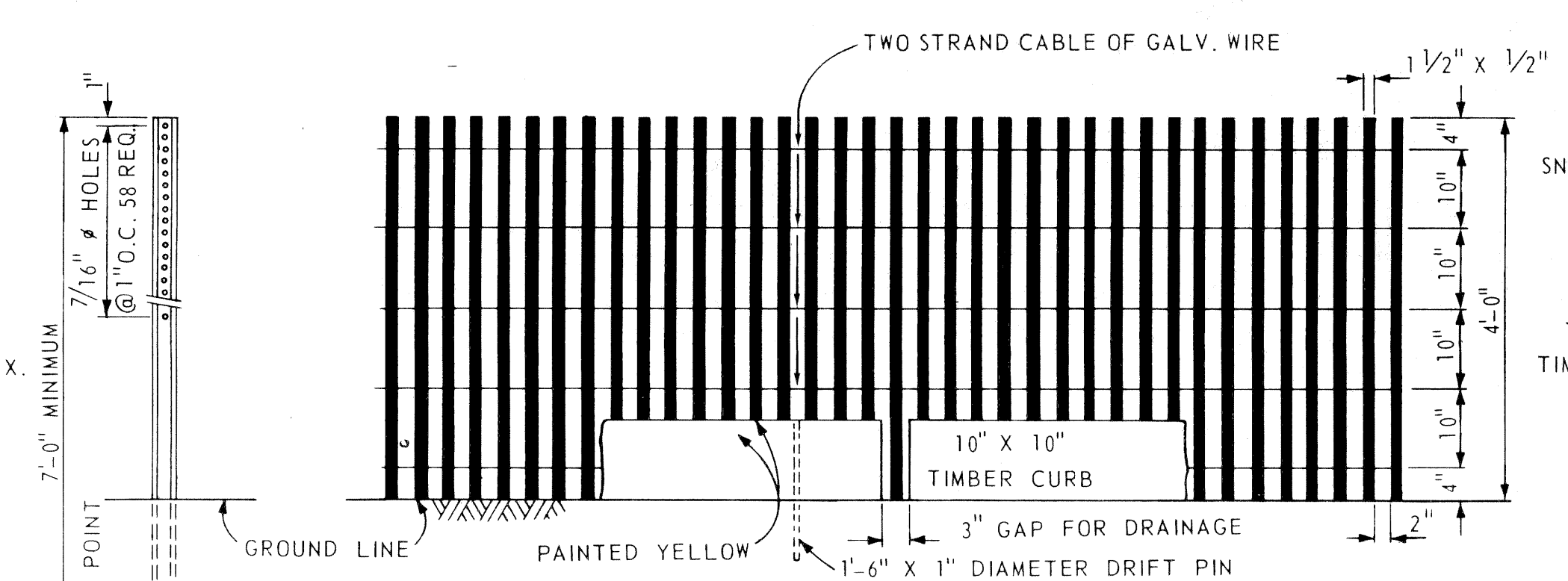
SECTION A S - 40 BARRICADE  
SECTION B S - 40 BARRICADE MODIFIED  
INCIDENTAL BARRICADE

ADJUSTMENTS DUE TO ODD SIZE DRUMS SHOULD BE DIVIDED BETWEEN THE UPPER AND LOWER STRIPES



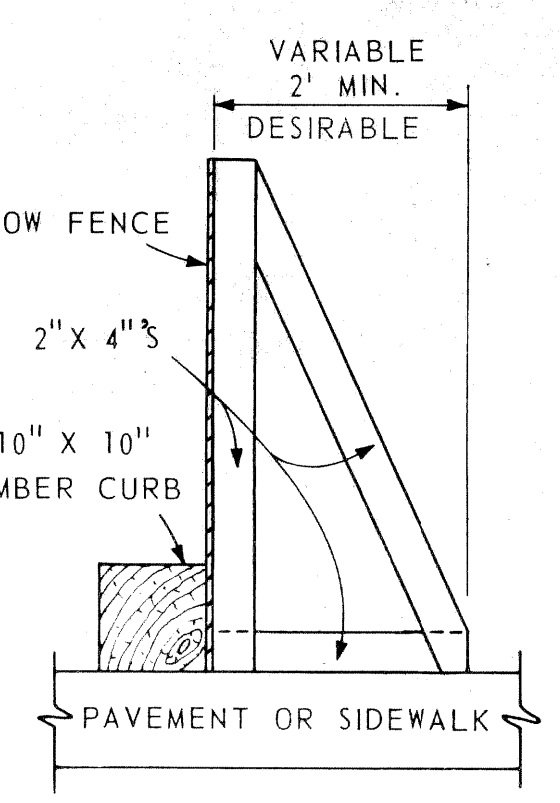
TIMBER CURB

NOTE: DRIFT PINS ARE TO BE PLACED AT 10' MAXIMUM INTERVALS EXCEPT THAT A PIN MUST BE LOCATED 1' FROM EACH END OF TIMBERS.



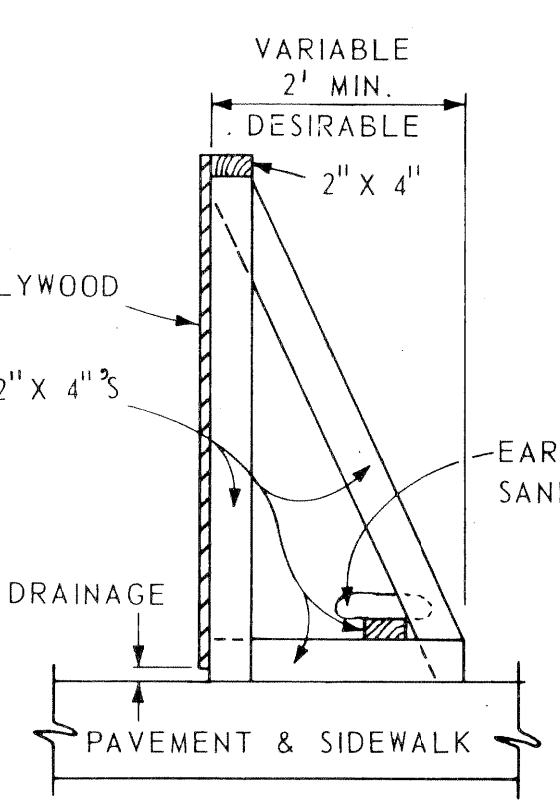
NOTE: SNOW FENCE SHALL BE SECURELY FASTENED TO THE TIMBER CURB AND SNOW FENCE POSTS (APPROX. 16.5' APART) OR TO THE TIMBER CURB AND THE WOODEN SUPPORTS (APPROX. 8' APART) IN A MANNER ACCEPTABLE TO THE ENGINEER.

TIMBER CURB & SNOW FENCE



WOODEN SUPPORT

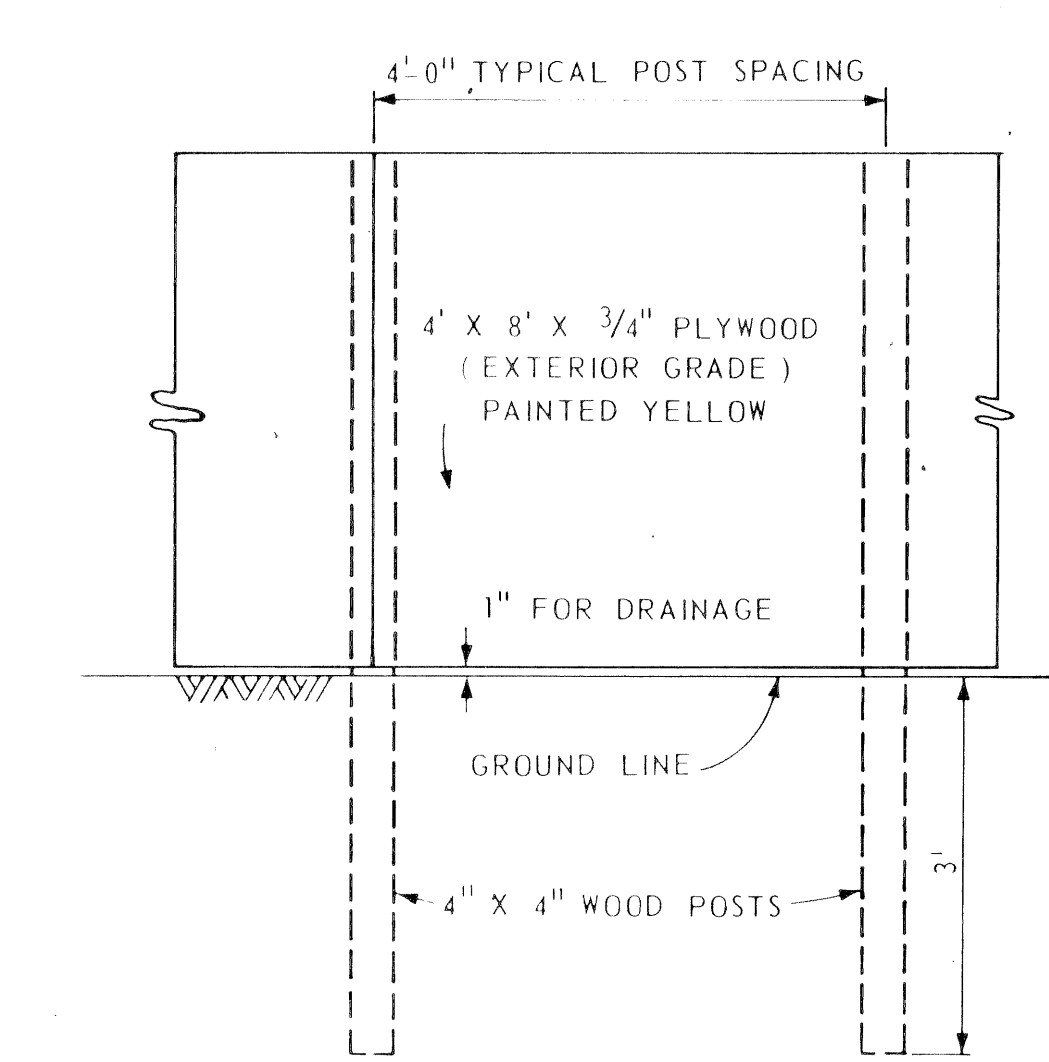
TO APPLY: NEW OR PERMANENT CONCRETE PAVEMENT



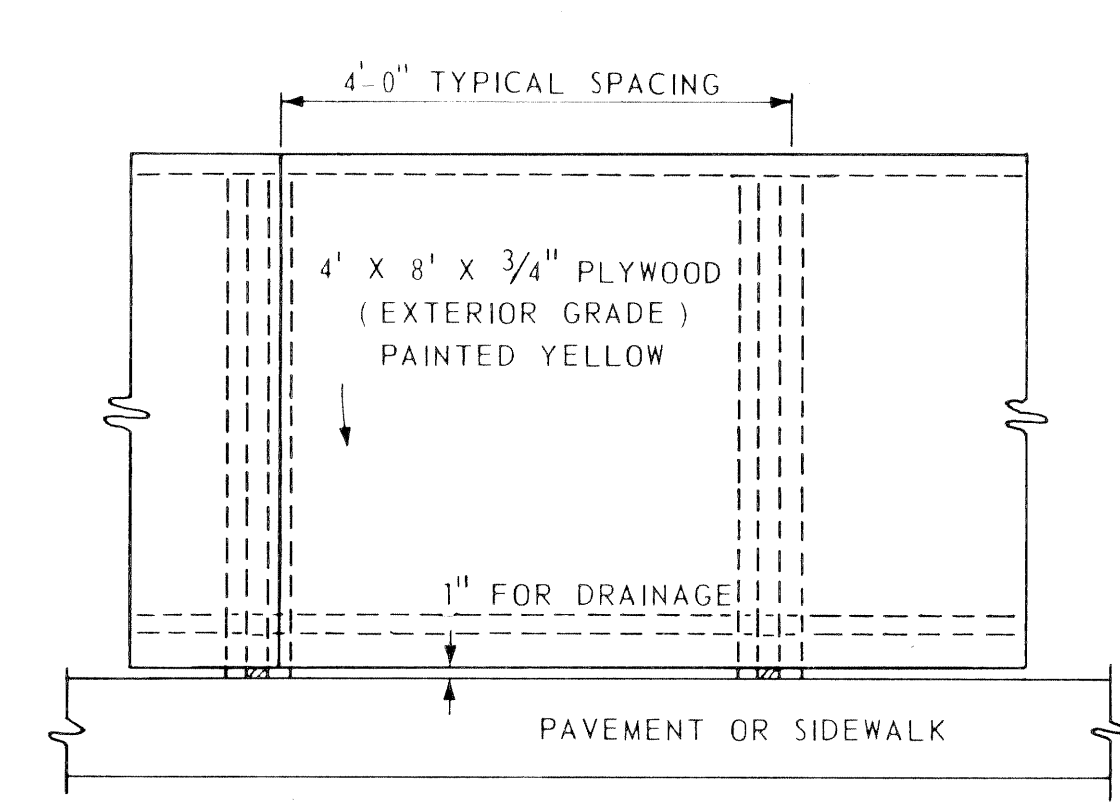
WOODEN SUPPORT

TO APPLY: NEW OR PERMANENT CONCRETE PAVEMENT

WEIGHT 2# / FT. MINIMUM  
SECTION MODULUS X-X 0.193 MINIMUM



SPLASH BOARDS



LEGEND:

- PROPOSED STANDARD BARRICADE - (E-4-A-55 SERIES) [Symbol]
- EXISTING STANDARD BARRICADE [Symbol]
- TEMPORARY BEAM GUARD RAIL [Symbol]
- EXISTING TEMPORARY BEAM GUARD RAIL [Symbol]
- S-40 BARRICADE [Symbol]
- S-40 BARRICADE WITH LIGHTS [Symbol]
- EXISTING S-40 BARRICADE [Symbol]
- S-40 BARRICADE MODIFIED [Symbol]
- S-40 BARRICADE MODIFIED WITH LIGHTS [Symbol]
- EXISTING S-40 BARRICADE MODIFIED [Symbol]
- TIMBER CURB [Symbol]
- EXISTING TIMBER CURB [Symbol]
- TIMBER CURB & SNOW FENCE [Symbol]
- EXISTING TIMBER CURB & SNOW FENCE [Symbol]
- SPLASH BOARDS [Symbol]
- INCIDENTAL BARRICADE [Symbol]
- EXISTING INCIDENTAL BARRICADE [Symbol]

NOTES AND SPECIFICATIONS:

BEAM GUARD RAIL SECTION (BEAM ELEMENT) SHALL CONFORM WITH CURRENT STANDARD SPECIFICATIONS AND CURRENT STANDARD PLAN E-4-A-137 SERIES.

FACE OF GUARD RAIL SHALL BE REFLECTORIZED IN ACCORDANCE WITH EITHER OF THE FOLLOWING REQUIREMENTS:

- a FACE SHALL BE ENTIRELY REFLECTORIZED BY DROPPING GLASS BEADS, WHICH CONFORM WITH DEPARTMENT OF STATE HIGHWAY SPECIFICATIONS, ONTO FRESHLY APPLIED WHITE PAINT OR ACCEPTABLE EQUIVALENT METHOD.
- b FACE SHALL BE PARTIALLY REFLECTORIZED WITH WHITE OR SILVER BEADED SHEET MATERIAL COVERING 25% OF SURFACE AREA PLACED IN THE FORM OF HORIZONTAL (1 1/2"-2" WIDTH) OR VERTICAL (4"-6" WIDTH) STRIPES. REMAINING PORTION SHALL BE PAINTED WHITE.

BARRICADE SUPPORTS SHALL BE 30 - 55 GALLON BARRELS PAINTED SOLID WHITE. (NON-REFLECTORIZED) AND PROVIDED WITH DRAIN HOLES.

WHERE S-40 BARRICADES ARE USED CONTINUOUSLY FOR TRAFFIC CHANNELIZATION, ONLY ONE BARREL WILL BE REQUIRED AT JOINTS IN THE GUARD RAIL.

INCIDENTAL BARRICADES SHALL BE 30 - 55 GALLON BARRELS - CONSPICUOUSLY MARKED WITH AT LEAST TWO HORIZONTAL CIRCUMFERENTIAL REFLECTORIZED WHITE STRIPES 4"-6" WIDE.

WHERE CONTINUOUS BARRICADES ARE REQUIRED FOR THE CHANNELIZATION OF TRAFFIC, THE FLASHERS (YELLOW) ON THE BARRICADE PROTECTING THE WORK AREA ARE TO BE SPACED NO MORE THAN 10 TO 13 FEET APART ON AN ARC OR TAPER ACROSS THE PATH OF THE ONCOMING TRAFFIC AND 25 FEET APART IN THE LONGITUDINAL ROW OR AT NON CONVERGING TRAFFIC LOCATIONS.

FLASHERS (RED) SHALL BE PLACED IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATION FOR BARRICADES USED IN ROAD CLOSURES, ON THE ENDS OF ALL CONTINUOUS BARRICADE, HAZARDOUS LOCATIONS, AND ON INCIDENTAL BARRICADES.

TIMBER CURB, TIMBER CURB AND SNOW FENCE AND SPLASH BOARDS SHALL BE PAINTED WITH TWO COATS OF YELLOW EXTERIOR PAINT OVER THE ENTIRE STRUCTURE.

ALL ITEMS ON THIS SHEET TO BE INCIDENTAL TO THE PROJECT.

AUXILIARY BARRIERS AND CHANNELIZING DEVICES



# QUANTITY SHEET - E

## SEWER CONSTRUCTION

B. P. R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY	City	SHEET NO.	TOTAL SHEETS
1-26	82123-008	Wayne	Detroit	35	

AS PER PLANS

AS CONSTRUCTED

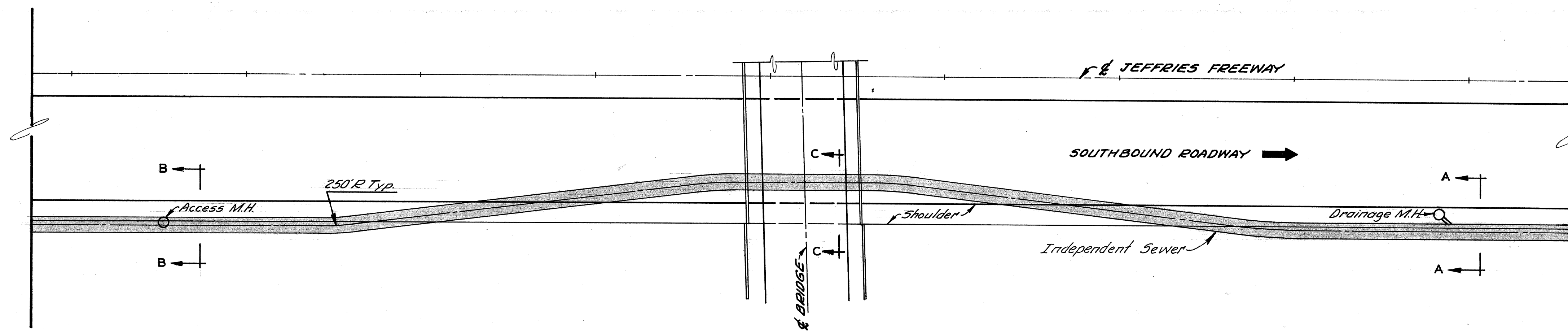
NO.	DESCRIPTION	CONT. SECT.		TOTAL	UNITS	CONT. SECT.		AS CONSTRUCTED	
		82123-K	82124-A			82123-K	82124-A		
1	6'-6" Sewer in Tunnel	1369	-	1369	Lin.ft	-	-		
2	7'-0" Sewer in Tunnel	1411	5911	7322	Lin.ft				
3	6'-6" Sewer Bulkhead	2	-	2	Ea				
4	Removing 7'-0" Sewer Bulkhead	-	-	1	Ea				
5	Removing 6'-6" Sewer Bulkhead	1	-	1	Ea				
6	Field office Concrete Proportioning	1	-	1	Ea				

6-07  
 8-07  
 N. MS Logan  
 N. 20 5816  
 S. Harb  
 Allan S. Logan  
 J. C. C.

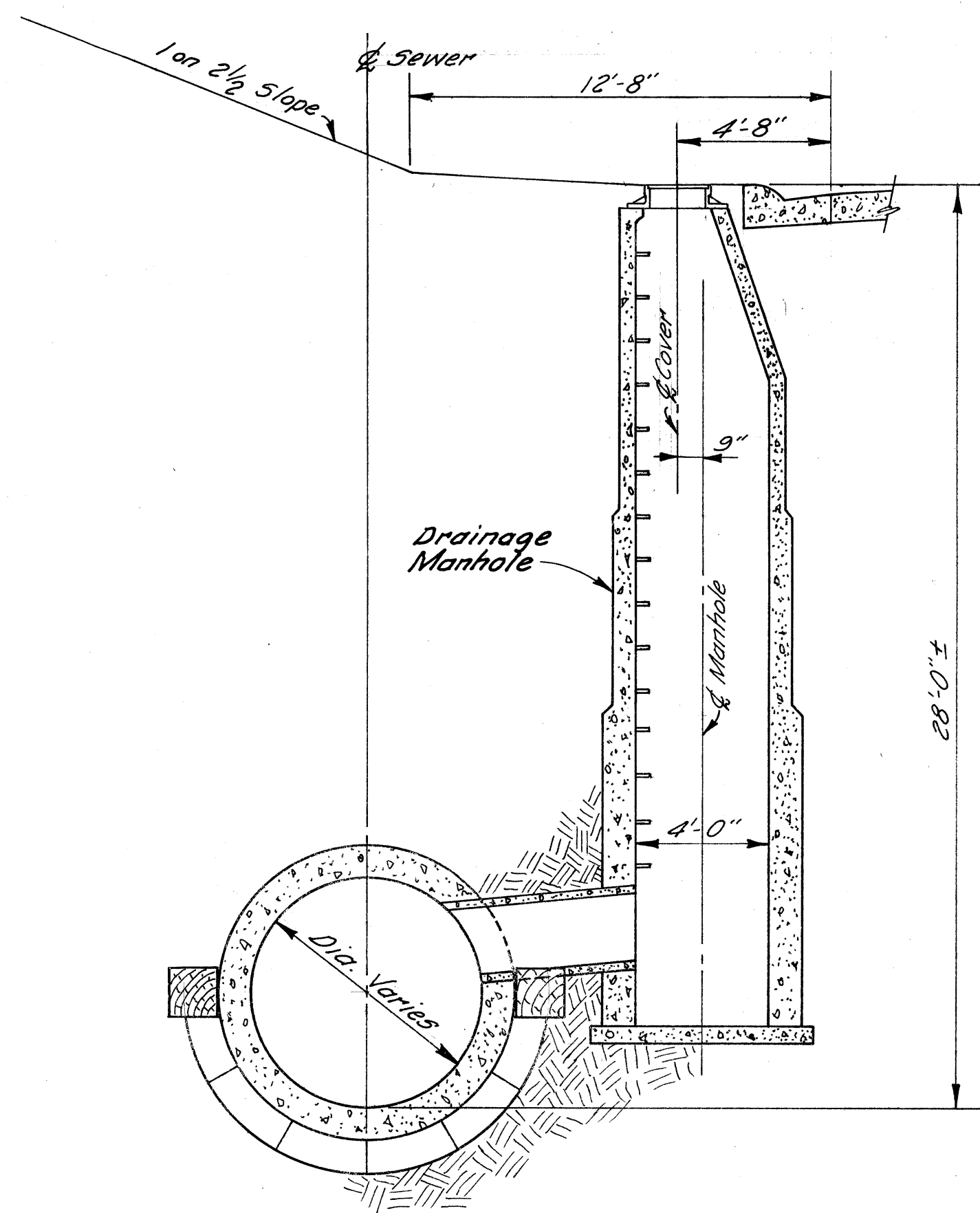
PLAN ESTIMATE BY \_\_\_\_\_ DATE \_\_\_\_\_ CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_ DATA COMPLETED \_\_\_\_\_ DATE \_\_\_\_\_ HISTORY CHECKED ENTERED ON PLANS BY \_\_\_\_\_ DATE \_\_\_\_\_

FILE NO. 82123-008  
 STATE PROJECT 82123-008  
 FEDERAL PROJECT 1-26-8  
 SHEET NO. 35

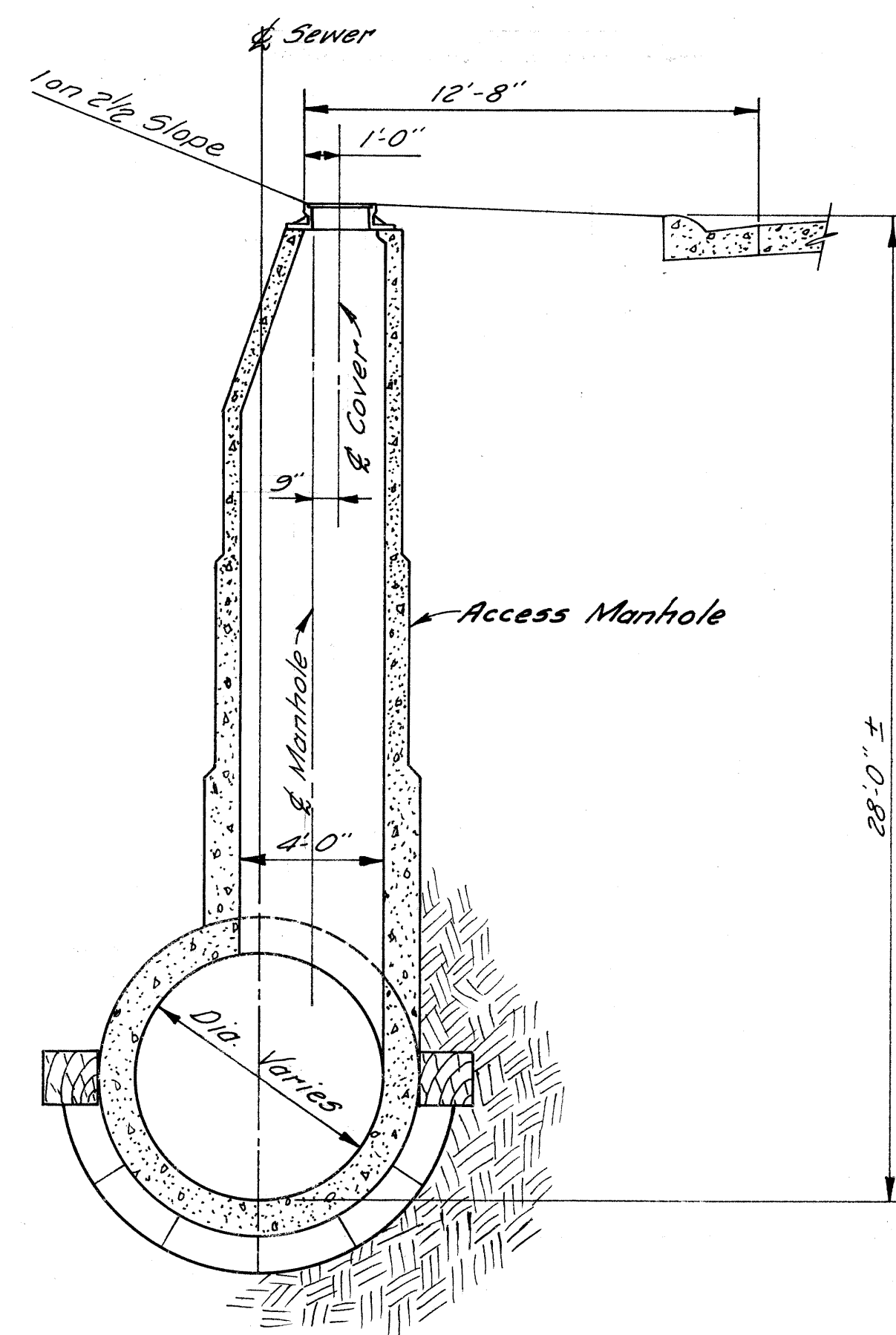




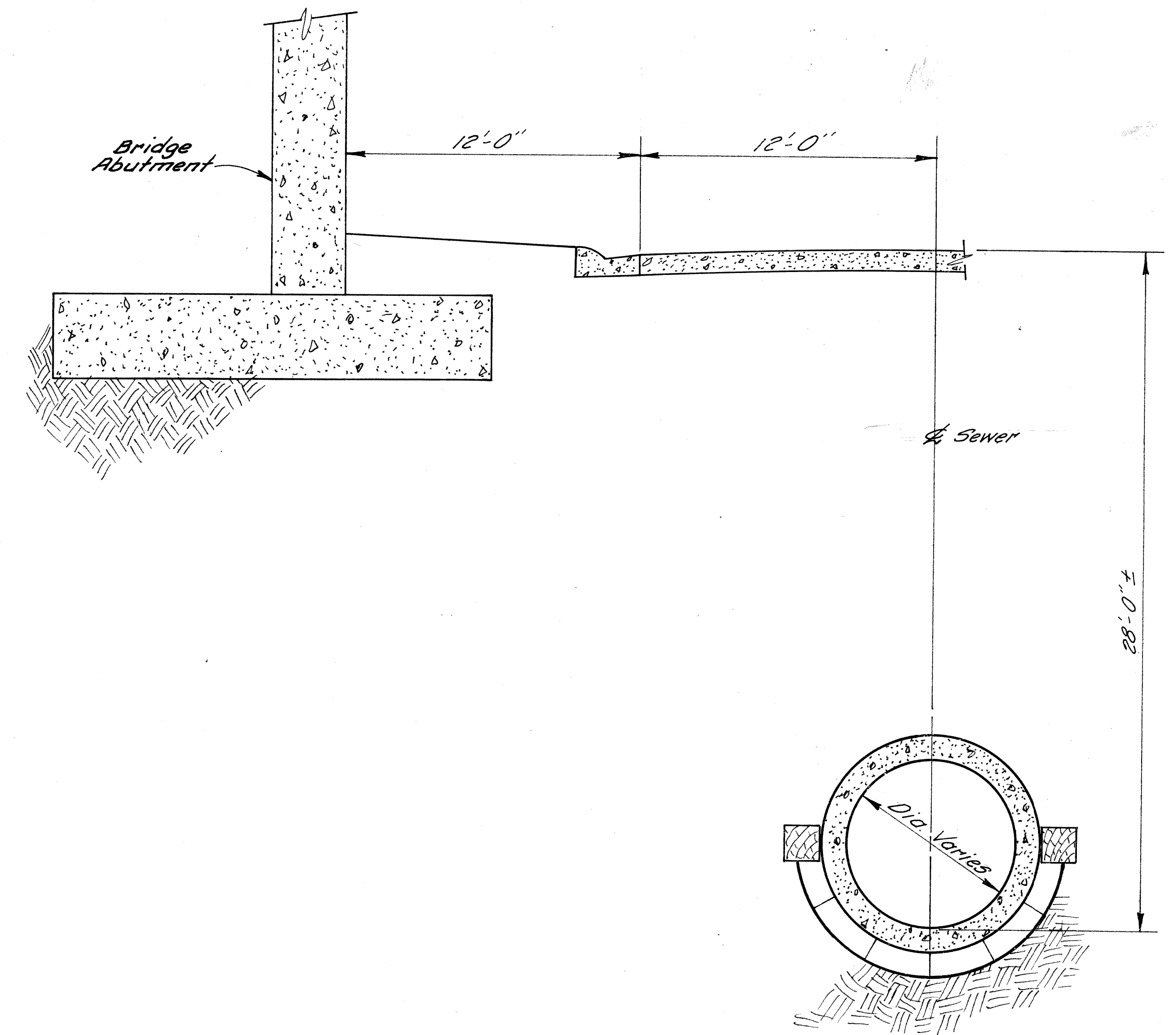
PLAN  
SCALE: 1" = 40'



SECTION A-A  
SCALE: 1" = 4'



SECTION B-B  
SCALE: 1" = 4'



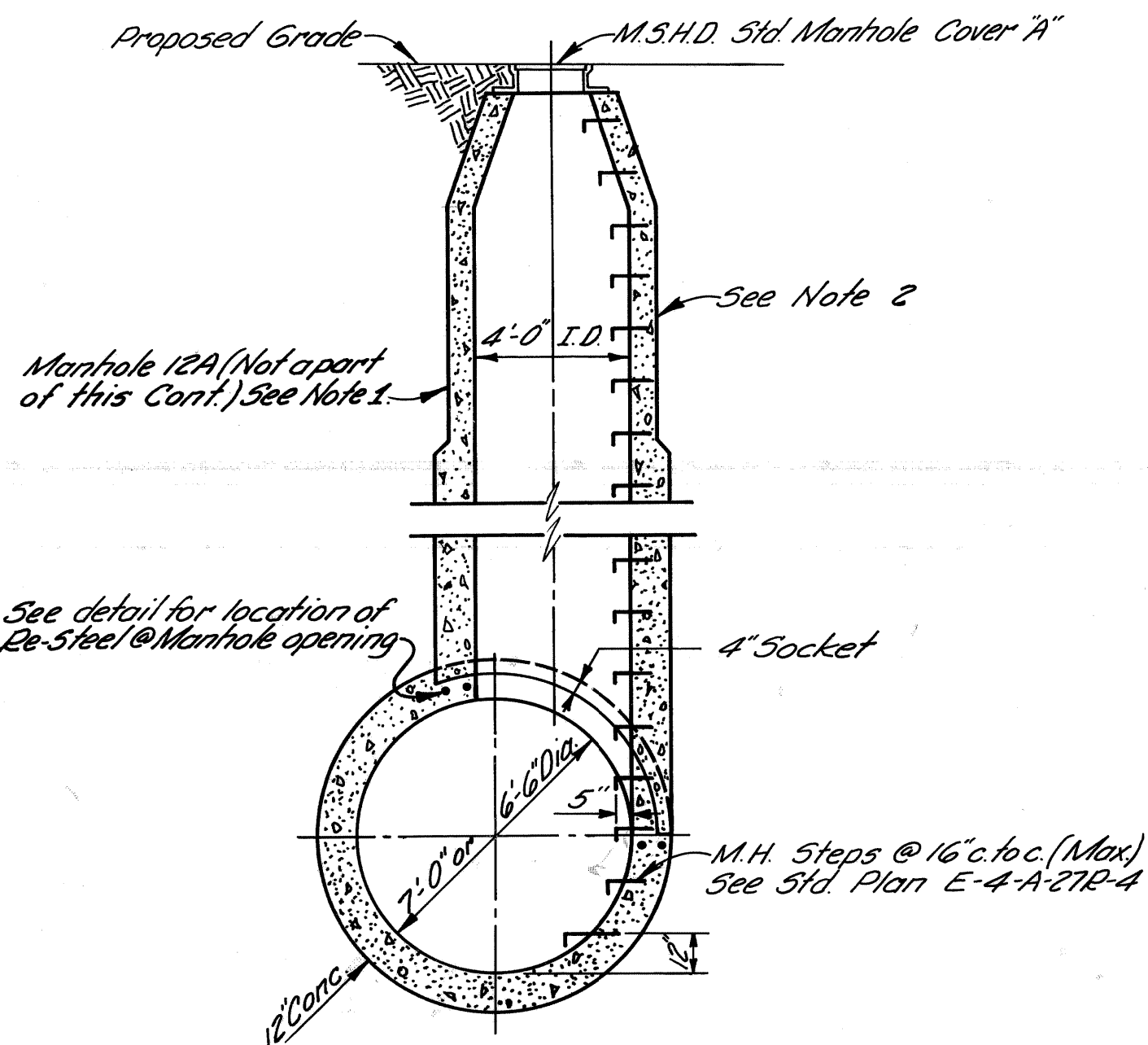
SECTION C-C  
SCALE: 1" = 4'

JEFFRIES FREEWAY  
INDEPENDENT SEWER  
TYPICAL CROSS-SECTIONS



**Notes for Access Manhole Opening:**

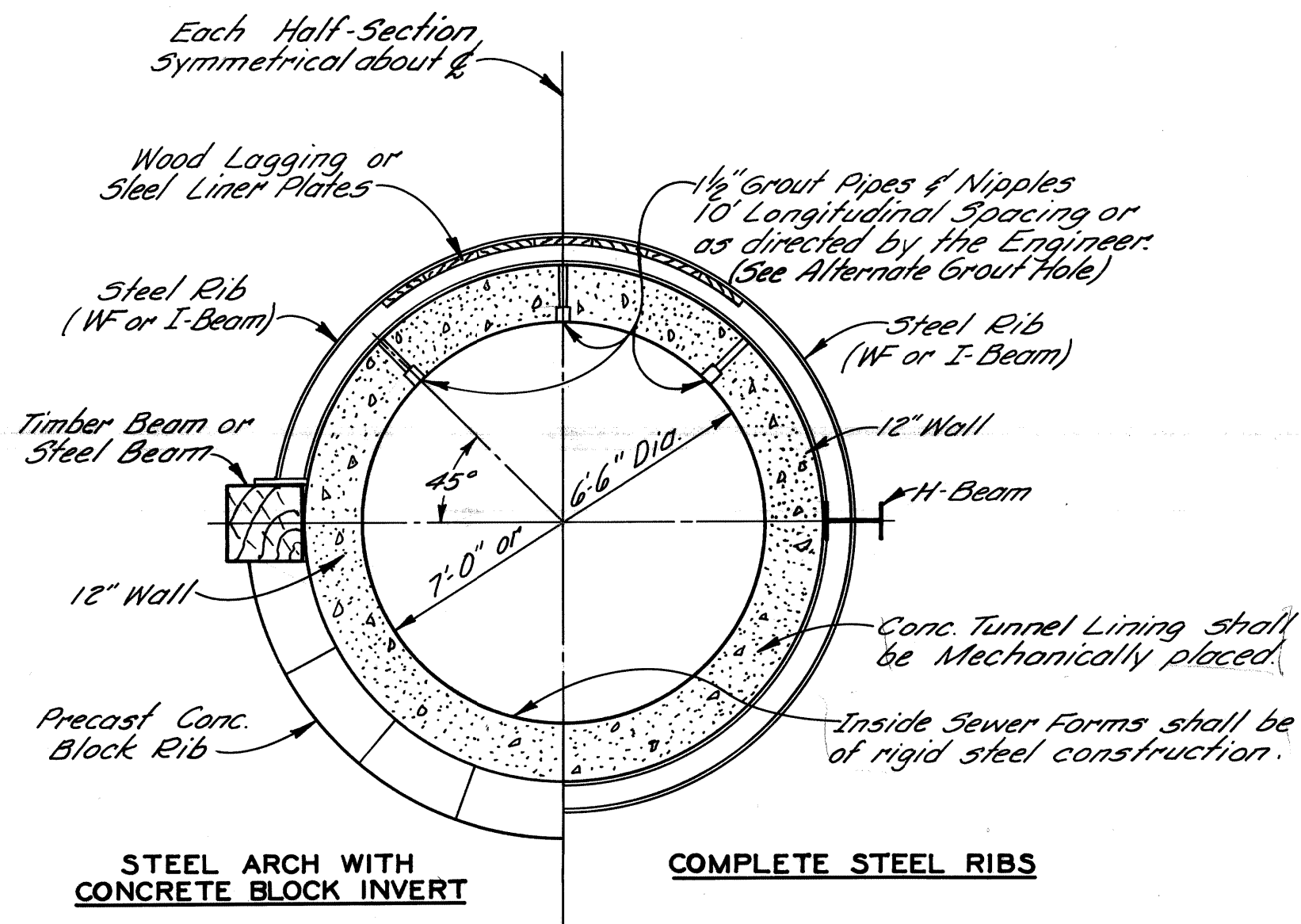
1. Only the 4" socket, the 4'-0" dia opening thru the sewer wall, the steel reinforcing, and the Manhole Steps in the sewer will be required in this contract at Access Manhole 12A (Not a part of this contract). All the Primary Lining shall be left tightly in place. All work relative to the above shall be incidental to "Sewer in Tunnel".
2. For details See M.S.H.D. Std. Plan E-4-A-27R-4 Detail 1. Options for 16'-25" depth may be used for depths over 25'.



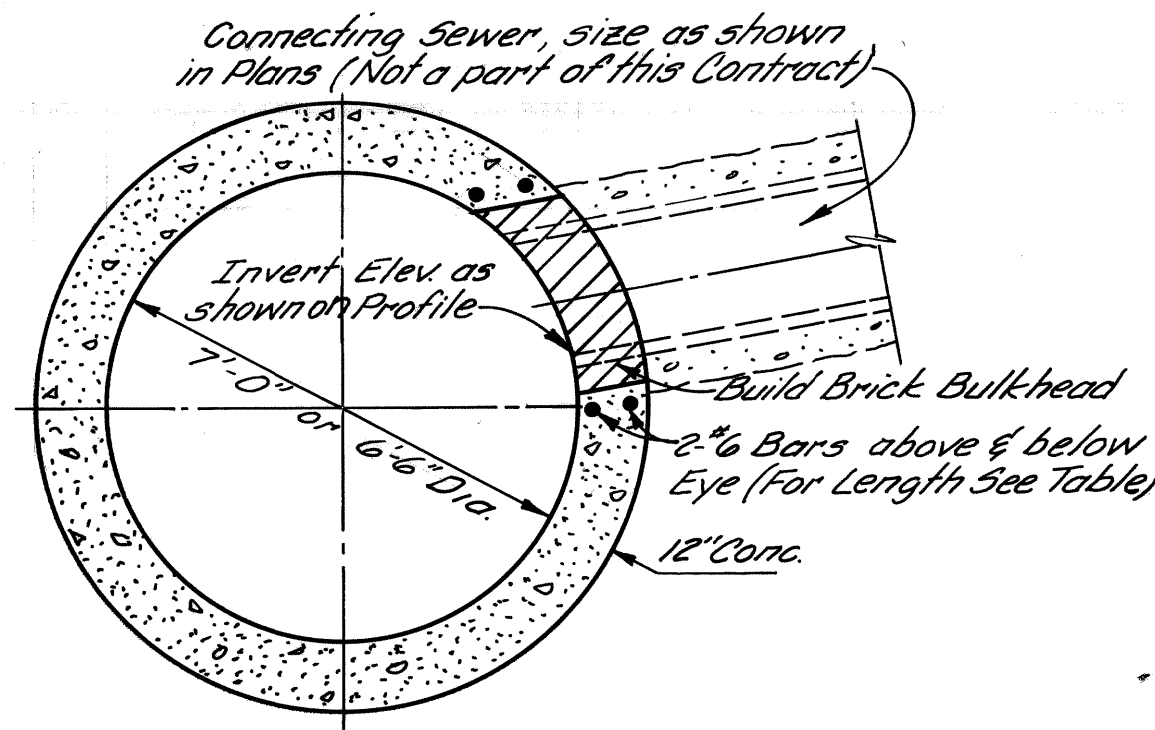
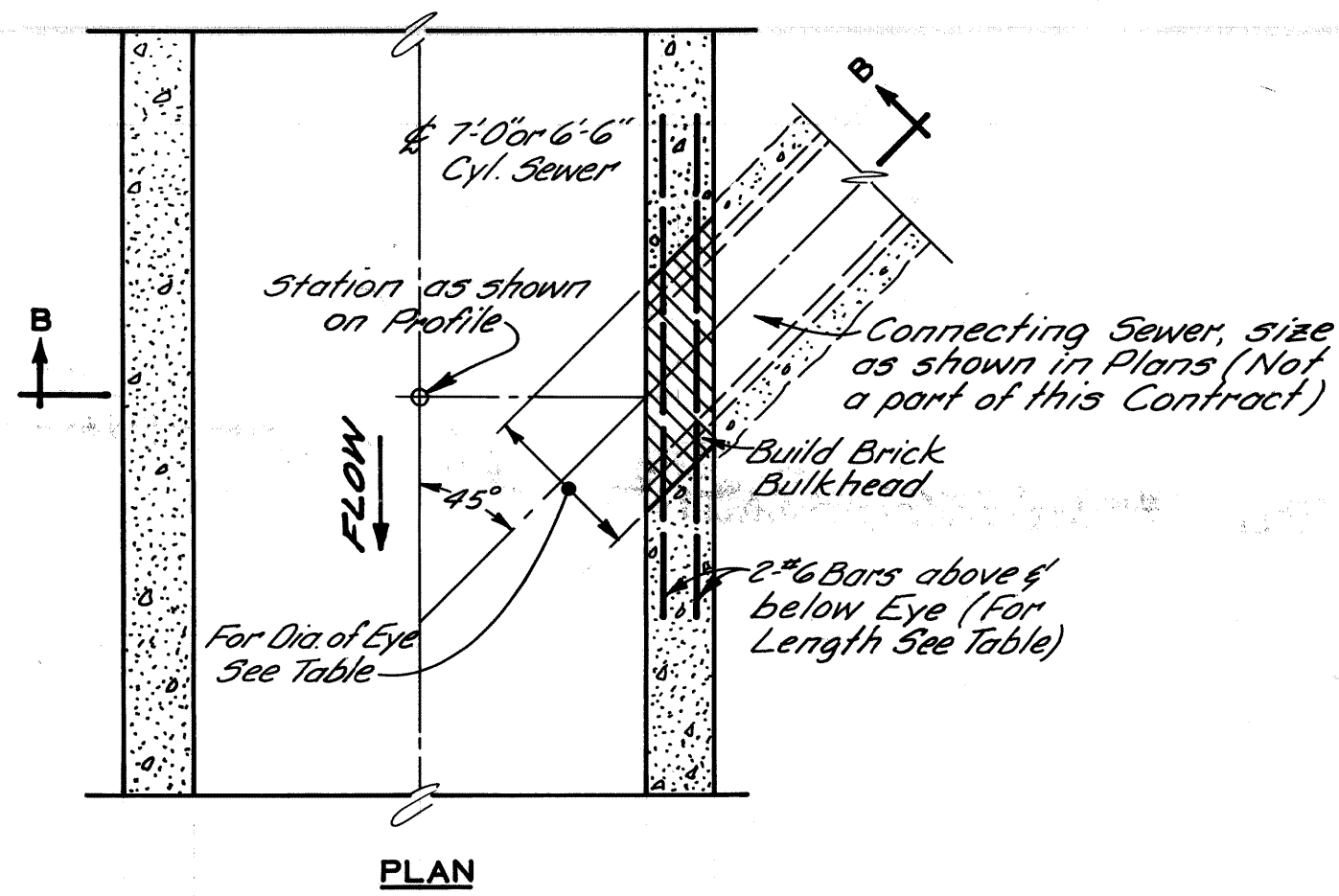
**TYPICAL DETAIL OF ACCESS MANHOLE 12A**

**Notes for Typical Tunnel Section:**

1. Either full ring of steel ribs and lagging or 1/2 ring of steel ribs and lagging and 1/2 ring of concrete block ribs construction method may be used.
2. Protrusion of steel ribs and timber beams into the sewer wall will not be permitted. Protrusion of H-beams into the sewer wall shall not exceed 1".



**TYPICAL TUNNEL SECTION**

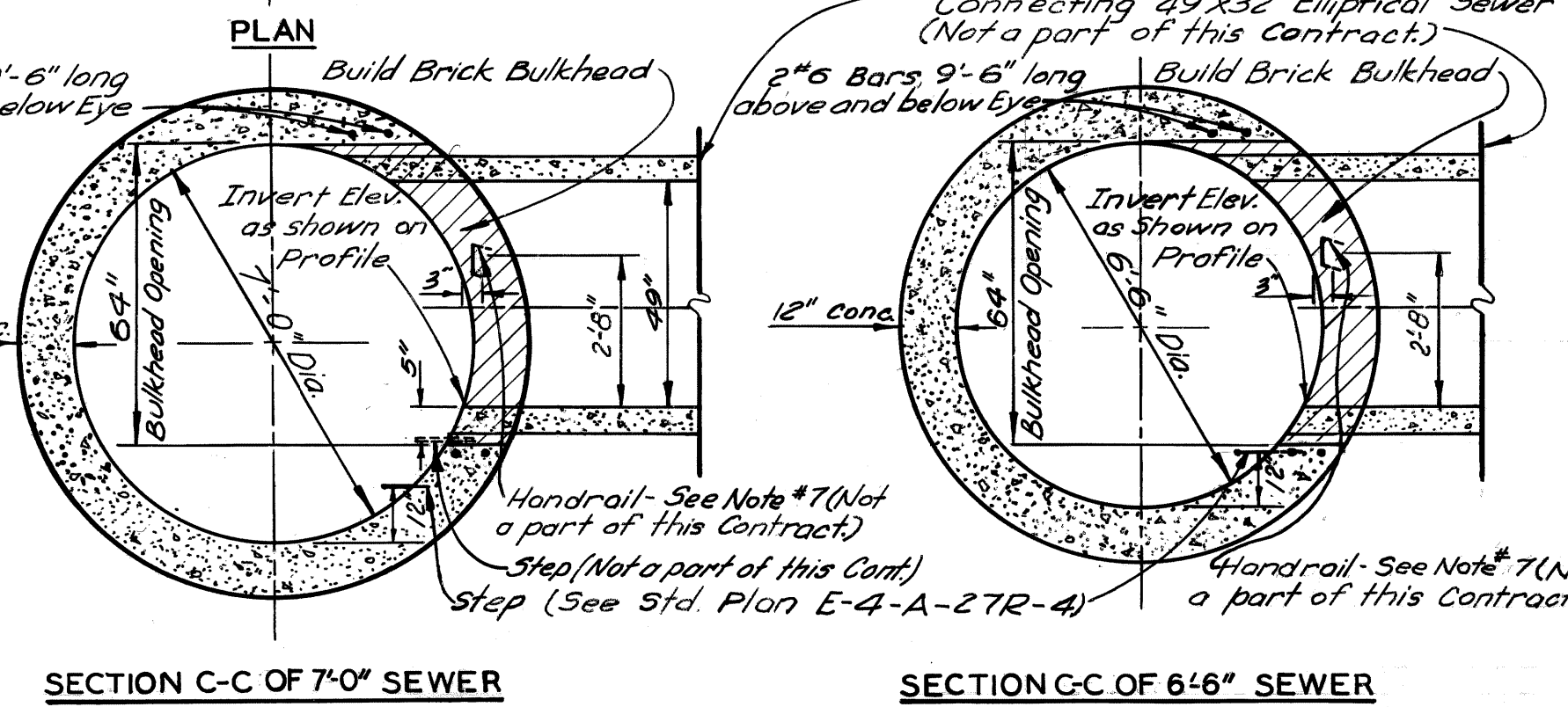
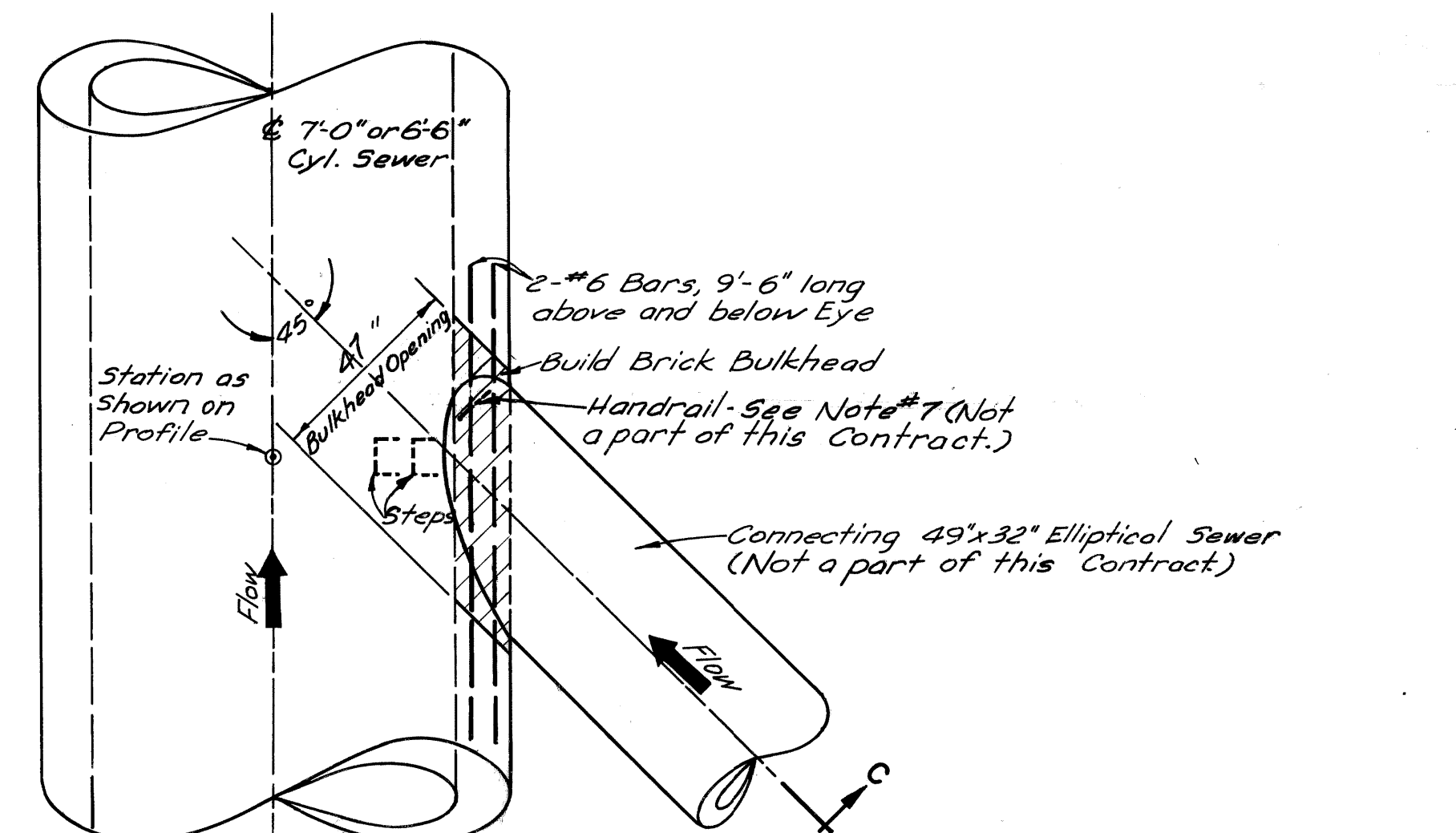


**SECTION B-B  
TYPICAL EYE DETAIL**

TABLE OF EYE DIAMETERS AND REINFORCING		
Size of Connecting Sewer	Diameter of Eye	Length of #6 Bars Above & Below Eye
12"	21"	6'-6"
18"	28"	7'-4"
21"	32"	7'-9"
24"	37"	8'-4"
30"	44"	9'-2"
36"	51"	10'-0"

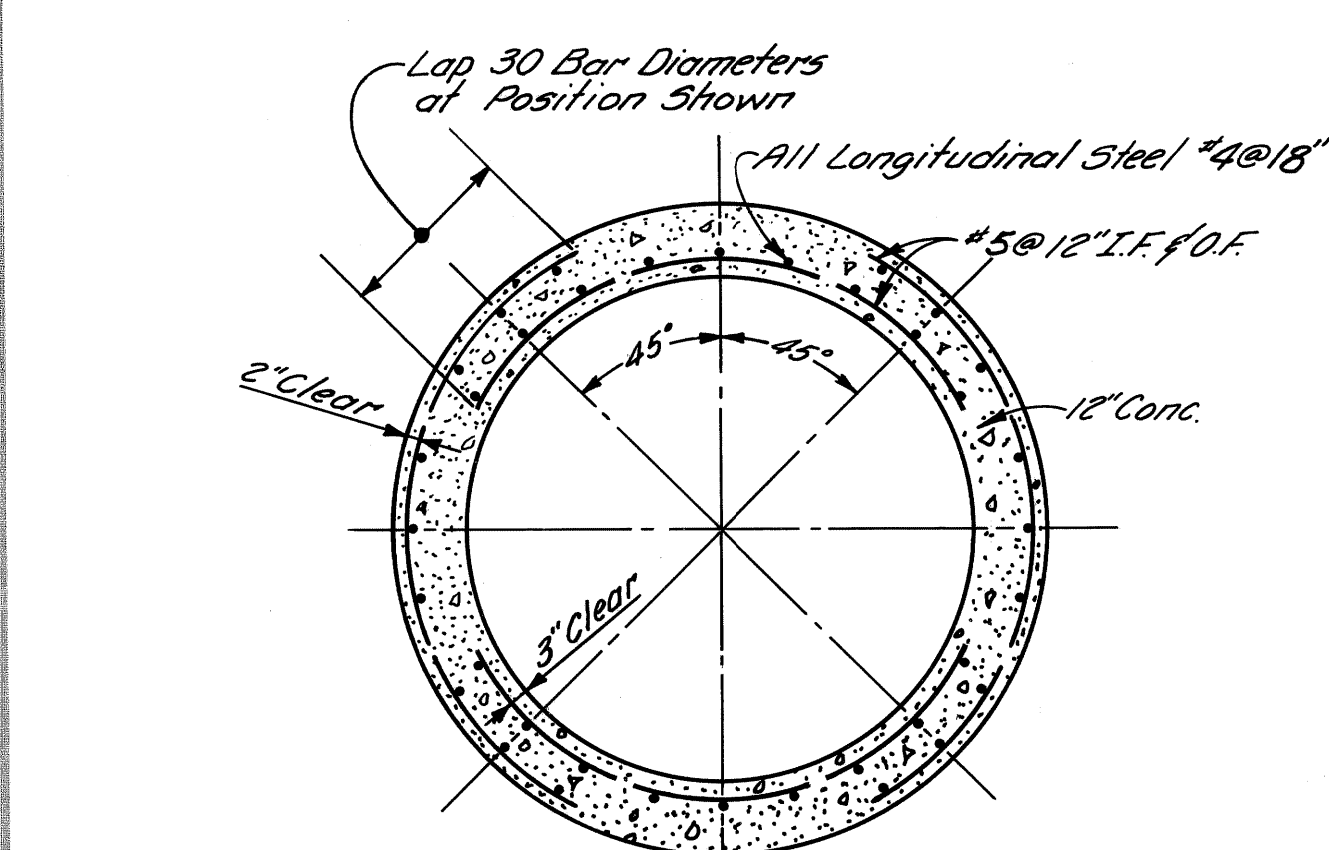
**Notes for Eyes & Brick Bulkheads:**

1. A full ring of Mortar 1/2" thick, shall be placed between the brick bulkhead & the wall of the eye.
2. The wall of the eye shall be cleaned and wetted before building the Bulkhead.
3. Bulkhead thickness shall be equal to the sewer wall thickness and shall be placed to insure a tight seal.
4. No brick or brick fragment shall be in contact with the wall of the eye to be Bulkheaded.
5. Eyes and Brick Bulkheads are incidental to "Sewer in Tunnel".
6. Reinforcement is incidental to "Sewer in Tunnel".
7. For handrail use Steps as shown on Std. Plan E-4-A-27R-4.

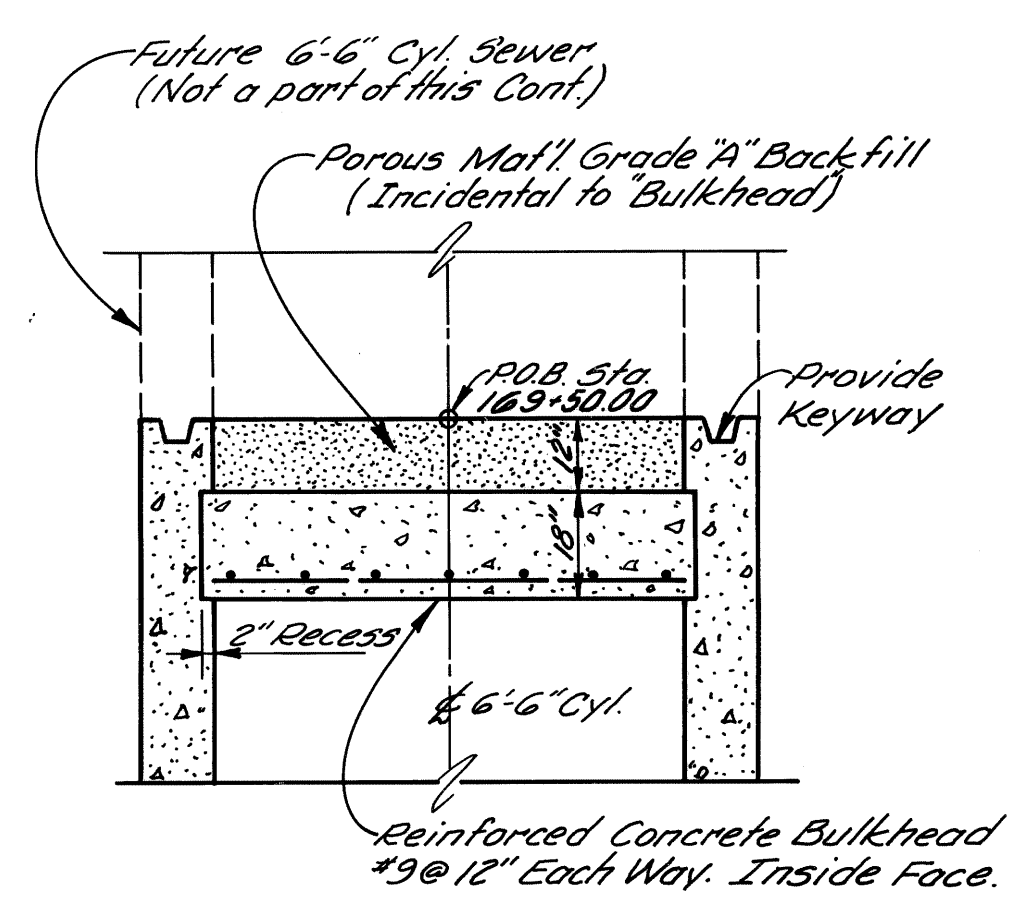


**SECTION C-C OF 7'-0" SEWER  
SECTION C-C OF 6'-6" SEWER  
EYE, STEP AND HANDRAIL DETAIL FOR LOCATIONS REQUIRING 49x32" ELLIPTICAL PIPES**

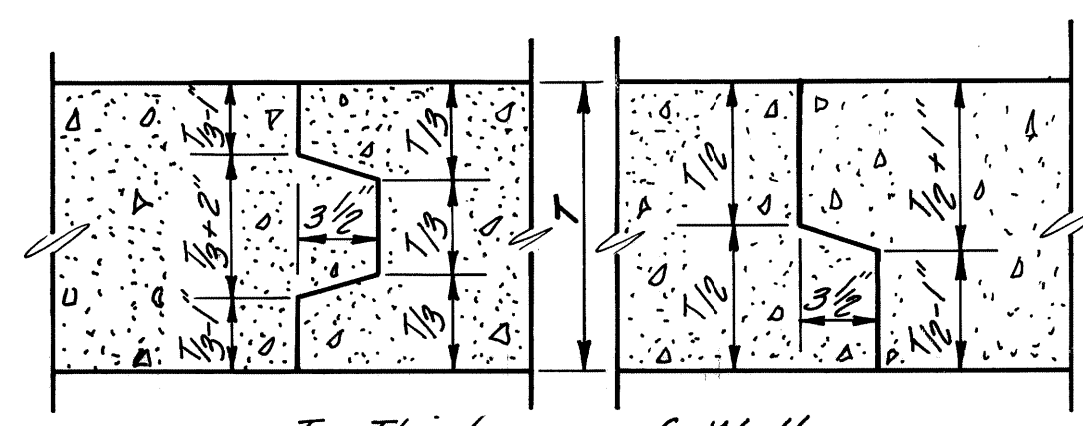
**MISCELLANEOUS SEWER DETAILS**



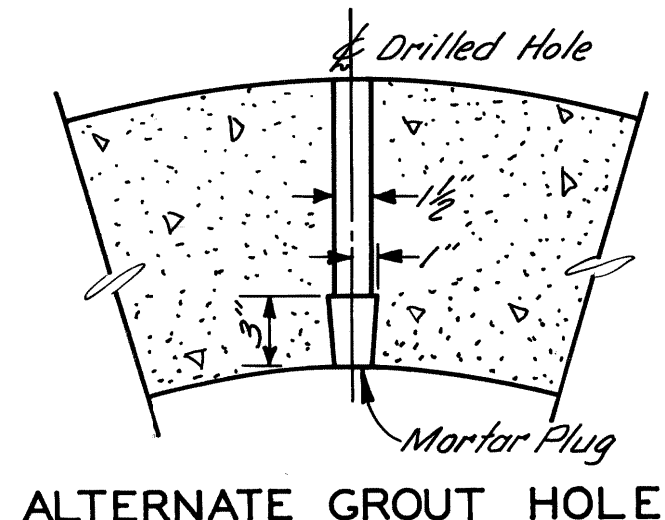
**NOTE:  
Reinforcement is incidental to "Sewer in Tunnel"**  
**SPECIAL REINFORCEMENT OF 7'-0" CYL.  
BETWEEN STA. 211+60 TO STA. 213+90 (SEWER STA.)**



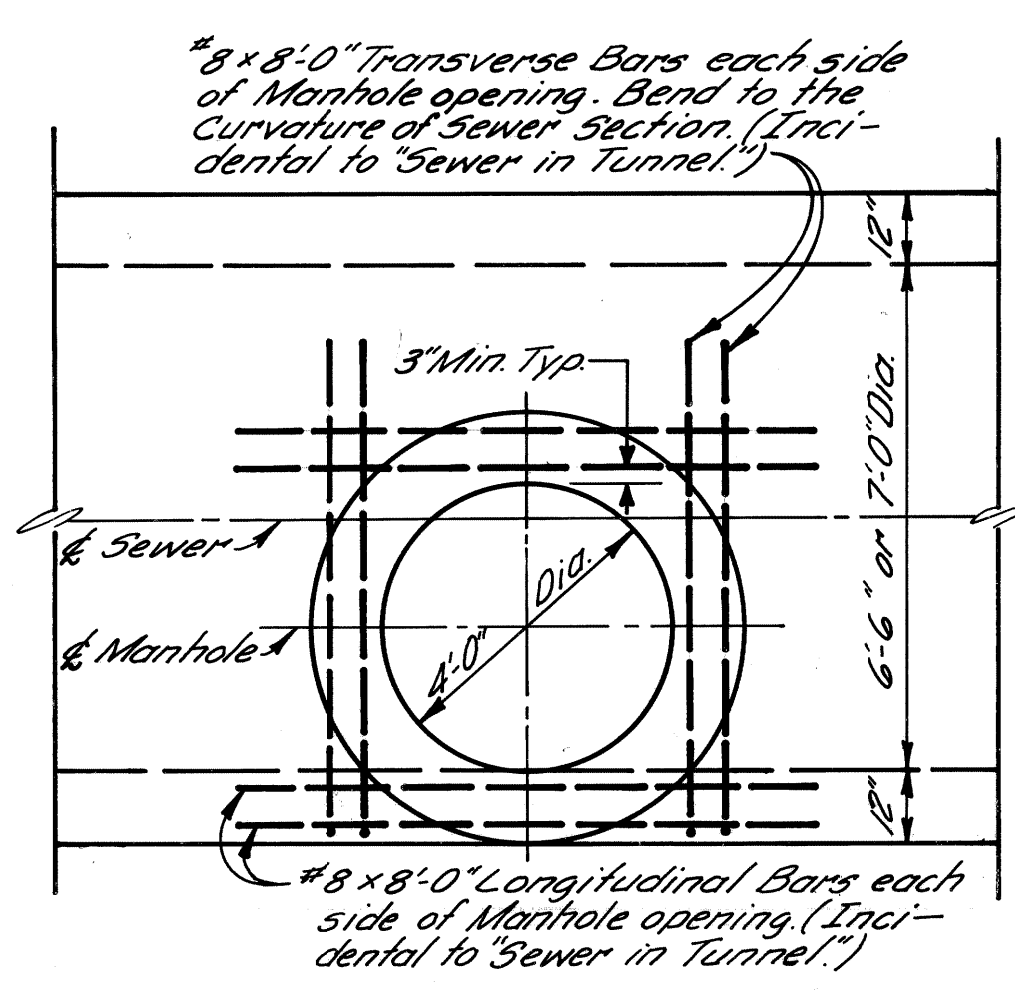
**TYPICAL DETAIL OF SEWER BULKHEAD**



**ALTERNATE CONSTRUCTION JOINTS**



**ALTERNATE GROUT HOLE**



**DETAIL OF REINFORCING STEEL AT MANHOLE OPENING**