

ONT. NO. 66-06

HWY. NO. 11

DIST. NO. 11

PROVINCE OF ONTARIO



DEPARTMENT OF HIGHWAYS

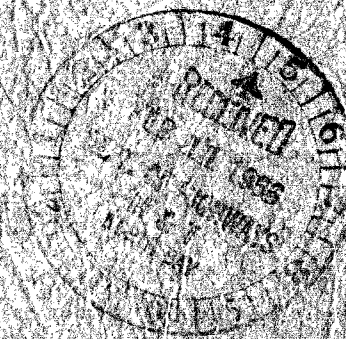
CONTRACT No. 66-06

CONTRACT DRAWINGS

REGIONAL MATERIALS ENGINEER	
CENTRAL REGION	
LAB. BLDG.	ROOM NO.

Hwy 11
Severn R. to Kahoke Lk Rd

NR GEOTECHNICAL APR 14 1982	
SOILS ENG.	FOR YOUR INFO
A-G S/PER	PLEASE DISCUSS
1-2-1 PER	REVIEW
	RECOMMENDATIONS
	TAKE APP ACTION
	FILE #



13
16
17
14

PROVINCE OF ONTARIO



N/R GEOTECHNICAL APR 14 1982			
SOILS ENG		FOR YOUR INFO	
AGG SUPER		PERMITS INSURANCE	
LAB SUPER		STUDY COMMENTS	
		TAKING APP ACTION	
		FILE #	

DEPARTMENT OF HIGHWAYS

HON. C. S. M^{AC} NAUGHTON
MINISTER

A. T. C. McNAB
DEPUTY MINISTER

H. W. ADCOCK
ASST. DEPUTY MINISTER
(Engineering)

J. WALTER
DIRECTOR OF DESIGN

INDEX

SHEET No.	DESCRIPTION	SHEET No.	DESCRIPTION
1	Title Sheet		DD-702 2' x 2' Catchbasin
2	Index Sheet		DD-705 'V' Type Catchbasin Frame and
3	Legend Sheet		Grate
4	Plan and Profile Sheet Sta. 936+50 to Sta. 942+00		DD-706 Flat Type Catchbasin Frame and
	Sta. 26+50.27 to Sta. 36+00		Grate
5	Plan and Profile Sheet Sta. 35+00 to Sta. 50+00		DD-808-A Bedding and Backfilling for C.I.
6	Plan and Profile Sheet Sta. 50+00 to Sta. 65+00		Pipe and Pipe-Arch
7	Plan and Profile Sheet Sta. 65+00 to Sta. 80+00		DD-808-B Bedding and Backfilling for C.I.
8	Plan and Profile Sheet Sta. 80+00 to Sta. 95+00		Pipe and Pipe-Arch
9	Plan and Profile Sheet Sta. 95+00 to Sta. 110+00	28	Standards: DD-808-C Bedding and Backfilling for C.I.
10	Plan and Profile Sheet Sta. 110+00 to Sta. 125+00		Pipe and Pipe-Arch
11	Plan and Profile Sheet Sta. 125+00 to Sta. 140+00		DD-809-B Excavation and Backfill for
12	Plan and Profile Sheet Sta. 140+00 to Sta. 155+00		Concrete and Creosoted Timber
13	Plan and Profile Sheet Sta. 155+00 to Sta. 170+00		Culverts
14	Plan and Profile Sheet Sta. 170+00 to Sta. 185+00		DD-813 Granular Backfill for C.I.P. &
15	Plan and Profile Sheet Sta. 185+00 to Sta. 200+00		Pipe-Arch
16	Plan and Profile Sheet Sta. 200+00 to Sta. 215+00		DD-819 Corrugated Iron Culvert
17	Plan and Profile Sheet Sta. 215+00 to Sta. 230+00		DD-821 Types of Corrugated Iron Pipes,
18	Plan and Profile Sheet Sta. 230+00 to Sta. 245+00		Pipe-Arches and Arches
19	Plan and Profile Sheet Sta. 245+00 to Sta. 255+00		DD-901 Highway Fence
20	Profiles of Side Roads and Entrances	29	Standards: DD-902 Guide Rail Single Cable
21	Profiles of Side Roads and Entrances		DD-908 Steel Beam Guide Rail
22	Typical Sections showing Paving and Trenching Detail		DD-909 Installation of Steel Beam
23	Standards: DD-201 Mod. Earth Fill Section		Guide Rail
	DD-202-A Mod. Earth Cut Section		DD-1010-A Methods of attaining
	SD-2-584 Mod. Grading Treatment in Earth		Superelevation
	Cut and Fill		DD-1010-D Methods of attaining
	SD-2-585 Mod. Widening in Rock Cut		Superelevation
24	Standards: DD-203 Mod. Rock Fill Section		DD-1217 Standard Concrete Culverts
	DD-204 Mod. Rock Cut Section	30 - 32	Bridge Drawings D-5611-1 to 3 Incl.
	DD-228 Mod. Earth Cut and Fill Section	33 - 37	Bridge Drawings D-5660-1 to 5 Incl.
	DD-229 Mod. Rock Cut and Fill Section	38	Breakdown of Main Items
	DD-301 Side Road Entrance	39	Concrete and Timber Culverts
	DD-239 Mod. Widening for Hot Mix and	40 - 41	Corrugated Steel Pipe, Pipe Arch and Structural Plate
	Granular Projects		Culverts
25	Standards: DD-302-A Side Road Entrance in Earth Cut	42	Sewers
	DD-303 Private Entrance on Fill	43	Manholes and Catch Basins
	DD-304 Private Entrance in Cut	44	Curb & Gutters and Curbs
	DD-406 Swamp Treatment under fills	45 - 46	Miscellaneous 1
	DD-411-A Treatment of Transition Points	47	Miscellaneous 2
	Earth Cut to Earth Fill	48	Miscellaneous 3
	DD-411-B Treatment of Transition Points		
	Rock Cut to Earth Fill		
26	Standards: DD-411-C Treatment of Transition Points		
	Rock Cut to Rock Fill		
	DD-411-D Treatment of Transition Points		
	DD-414 Benching of Earth Slopes		
	DD-601 Concrete Curb and Gutters		
	DD-602 Concrete Curbs		
	DD-606 Asphalt Curb and Gutter and		
	Asphalt Curb		
27	Standards: DD-624 Mod. Outlet for Square Concrete Curb		
	and Gutter		

LEGEND

REFERENCE POINTS

•	Nail
•	Nail & Washer
✕	Cut Cross
⊙	1 Inch Round Iron Bar
■	Standard Iron Bar
□	Standard Concrete Monument
○	Iron Pipe
↑	Cut Arrow
∨	Cut Crows Foot
∅	Diameter
△	Hub
⊗	Bearing Tree

CLEARING AND GRUBBING

	Area to be cleared
	Area to be grubbed
	Area to be cleared and grubbed

CULVERTS AND DRAINAGE

	Culvert to be constructed
	Culvert with headwall to be constructed.
	Existing Culvert
	Existing Culvert with headwall
	Sewer
	Manhole
	Catch Basin
	Catch Basin Setback
	90° Gutter Outlet
	45° Gutter Outlet

FENCES

	Existing Fence
	Fence to be erected
	Fence to be renewed
	Stone Fence

GUIDE RAIL

	Guide Rail to be erected
	Guide Rail to be removed

MATERIALS

	Granular 'B' Sand Cushion or Granular Borrow
	Granular 'A'
	Concrete

BUILDINGS

	1 Storey Brick House with Basement
	One - 2 Storey Brick & Frame, Service Station and Restaurant with Basement
	2 Storey Concrete Block Apartment with Basement
	Two - 2 Storey Brick Barns with Basements

RAILWAYS

	Single Track Railway
	Double Track Railway
	Abandoned Railway

MISCELLANEOUS

	Steel Hydro Tower
	Deciduous Tree
	Coniferous Tree
	Hedge
	Hydrant
	Light Standard
	Light Standard & Sign
	Wells or Wells & Windmill
	Traffic Light
	Mail Box
	Swamp on Marsh
	Edge of Swamp
	Vertical Earth
	Vertical Rock
	Sidewalk
	Lake or River Bank
	Earth or Rock Cut
	Earth or Rock Fill

A.

A.S.	Arch Structural Plate Bolted
A.C.	Asphalt Coated
A.C. & A.P.	Asphalt Coated and Asbestos Protected
A.C., A.P. & P.I.	Asphalt Coated, Asbestos Protected and Paved Invert
A.C. & P.I.	Asphalt Coated and Paved Invert

B.

B'fill	Backfill
B.W.F.	Barbed Wire Fence
B/R	Base of Rail
B.C.	Beginning of Curve
B.F.S.	Beginning of Full Superelevation
B.S.	Beginning of Superelevation
B.V.C.	Beginning of Vertical Curve
B.	Bell Pole
B.M.	Bench Mark
B.F.	Board Fence

C.

C.N.R.	Canadian National Railway
C.P.R.	Canadian Pacific Railway
C.B.	Catch Basin
℄	Centre Line
C.L.F.	Chain Link Fence
Cl.P.	Clay Pipe
Con.	Concession
Conc.	Concrete
C.P.	Concrete Pipe
S.P.	Concrete or Corrugated Sewer Pipe
Cont.	Contract
C.A.H.	Controlled Access Highway
C.S.P.	Corrugated Steel Pipe
C.S.P.A.	Corrugated Steel Pipe Arch
Co.	County
Culv.	Culvert
C. & G.	Curb and Gutter
C.S.	Curve Spiral

D.

D.	Degree of Curve
	Delta Angle
D.H.M.	Department of Highways Monument
D.H.O.	Department of Highways of Ontario
Dev. Rd.	Development Road
Dist.	District

E.

E.P.	Edge of Pavement
E.F.	Electric Fence
El. or Elev.	Elevation
E.C.	End of Curve
E.F.S.	End of Full Superelevation
E.S.	End of Superelevation
E.V.C.	End of Vertical Curve
Ent.	Entrance

F.

F.H.	Fire Hydrant
Ft.	Foot or Feet
Fdn.	Foundation
Fr.	Frame

G.

Gar.	Garage
G.M.	Gas Meter
G.V.	Gas Valve
Ga.	Gauge
G.B.M.	Geodetic Bench Mark
G.	Grading
G.D.	Grading and Drainage
Gran.	Granular
G.B.	Granular Base
G.R.	Guide Rail

H.

H.W.L.	High Water Level
Hwy.	Highway
H.S.	Highway Sign
H.M.	Hot Mix
Ho.	House
H.O.T.	Hub on Tangent
H.E.P.C.	Hydro Electric Power Commission
H.C.	Hydro Cable
H.	Hydro Pole
H. & B.	Hydro and Bell Pole
H. & L.	Hydro and Lamp Pole

I.

I.B.	Iron Bar
I.P.	Iron Pipe

L.

Lt.	Left
L.V.C.	Length of Vertical Curve
L.S.	Light Standard
L.W.L.	Low Water Level

M.

M.B.	Mail Box
M.H.	Manhole

N.

N. & W.	Nail and Washer
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P.

Pavt.	Pavement
P.	Pipe, Round Rivetted
P.A.	Pipe Arch, Rivetted
P.A.S.	Pipe Arch Structural Plate, Bolted
P.G.	Plain Galvanized
P.S.	Pipe Round Structural Plate Bolted

R.

R.	Radius
Rwy.	Railway
R.F.	Rail Fence
Rev'n	Revision
Rt.	Right
R.O.W.	Right of Way
R.I.B.	Round Iron Bar

S.

S.S.	School Section
Sec.	Secondary Road
Ser. Rd.	Service Road
S.R.	Side Road
S.R.F.	Snake Rail Fence
Sp.	Spiral Angle
S.C.	Spiral Curve
S.C.S	Spiral Curve Spiral
S.T.	Spiral Tangent
Std	Standard
S.C.M.	Standard Concrete Monument
S.I.B.	Standard Iron Bar
Sta.	Station
Stn.	Stone (Foundation)
Sty.	Storey (in Buildings)

T.

Tan	Tangent
T.S.	Tangent Spiral
T.	Telegraph Pole
T.L.C.	Temporary Level Crossing
T/R	Top of Rail
Twp.	Township
T.L.	Traffic Light
T.C.H.	Trans - Canada Highway
T.P.	Turning Point

V.

V.P.	Vitrified Pipe
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W.

W.M.	Water Meter
W.V.	Water Valve
W.F.	Wire Fence
W.M.F.	Wire Mesh Fence
W.P.	Work Project
W.I.F.	Wrought Iron Fence

MATERIALS

Sa.	Sand or Sandy
Si.	Silt or Silty
Cl.	Clay
Lo.	Loam
Org.	Organic
G.B.C.	Granular Base Course
Asph.	Asphalt
St.	Stone

ADJACENT CONT. N° 65-272

RANGE WEST OF
MUSKOKA ROAD

35+00

LOT 2

LOT 3

30+00

H.O.T. 942+00
= H.O.T. 26+50.27 A.H.D.

940+00



TO ORILLIA

Hwy. N° 11

P.I. 47+26.46

EXIST. GUIDE RAIL TO
BE LEFT IN PLACE

LIMIT OF CONTRACT N° 66-06
STA. 936+00

RANGE EAST OF
MUSKOKA ROAD

LOT 2

LOT 3

H.L. 1 - SURFACE COURSE - 1 1/2" Depth

H.L. 4 - UPPER BINDER COURSE - 2" Depth

- LOWER BINDER & PADDING COURSE - 1 1/2" Depth on Sand Asphalt &
Var. Depth on Existing Pavement

SAND ASPHALT COURSE - 3/4" Depth
(On Granular Base Only)

GRADE POINT TREATMENT AS PER STANDARDS DD-411-A,B,C,D

B.M. ELEV. 750.74
N. & W. in W. Root of 2.0" Pine
109' Rt. of Sta. 21+94

LIMIT OF CONTRACT N° 66-06
STA. 936+00

TOP OF PAVEMENT GRADE

BOTTOM OF GRANULAR 'A'

ORIGINAL GROUND AND
BOTTOM OF SAND CUSHION

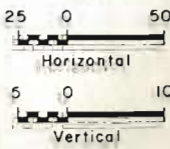
BOTTOM OF SAND CUSHION

TOP OF EXISTING PAVEMENT
AND BOTTOM OF HOT MIX

ORIGINAL GROUND AND
BOTTOM OF GRANULAR 'A'

942+00
= 26+50.27 A.H.D.

SCALES

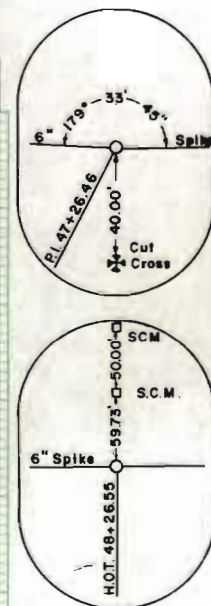


Totals
26+50 To 40+00

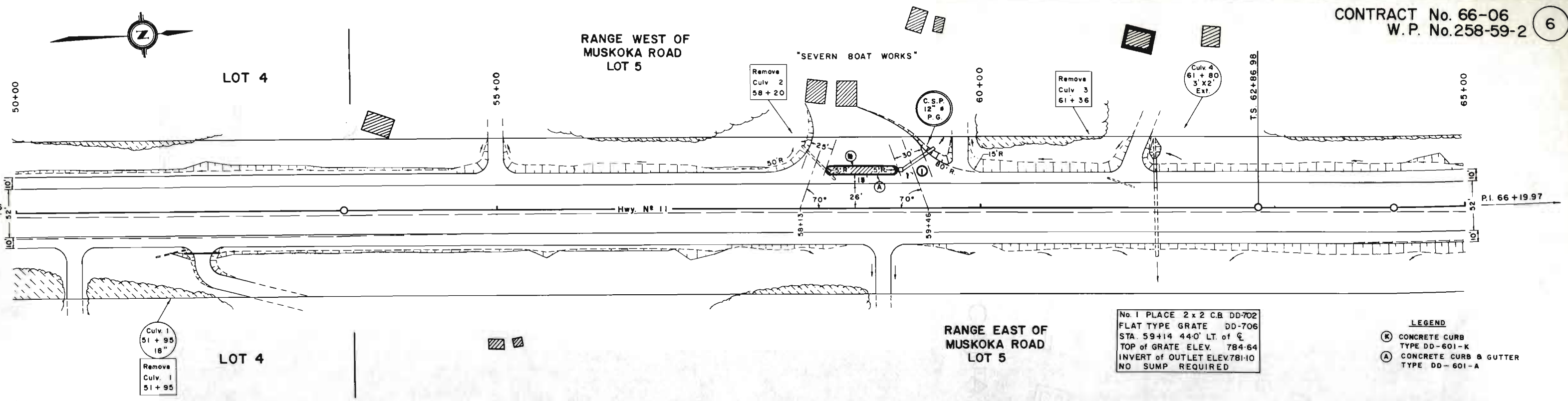
Earth Cut		E.C.	300	C.Y.		E.C.	200	C.Y.		500	Earth Cut
Sub-Excavation											Sub-Excavation
Stripping											Stripping
Ditching											Ditching
Muskeg Excavation											Muskeg Excav.
Earth Fill						E.F.	350	C.Y.		350	Earth Fill
Rock Cut		R.C.	700	C.Y.		R.C.	2,300	C.Y.		3,000	Rock Cut
Shatter		Sh.	200	C.Y.		Sh.	900	C.Y.		1,100	Shatter
Rock Fill		R.F.	300	C.Y.		R.F.	100	C.Y.		400	Rock Fill
Muskeg Backfill											Muskeg Backfill

GRANULAR 'A' & SAND CUSHION

RANGE WEST OF
MUSKOKA ROAD
LOT 4

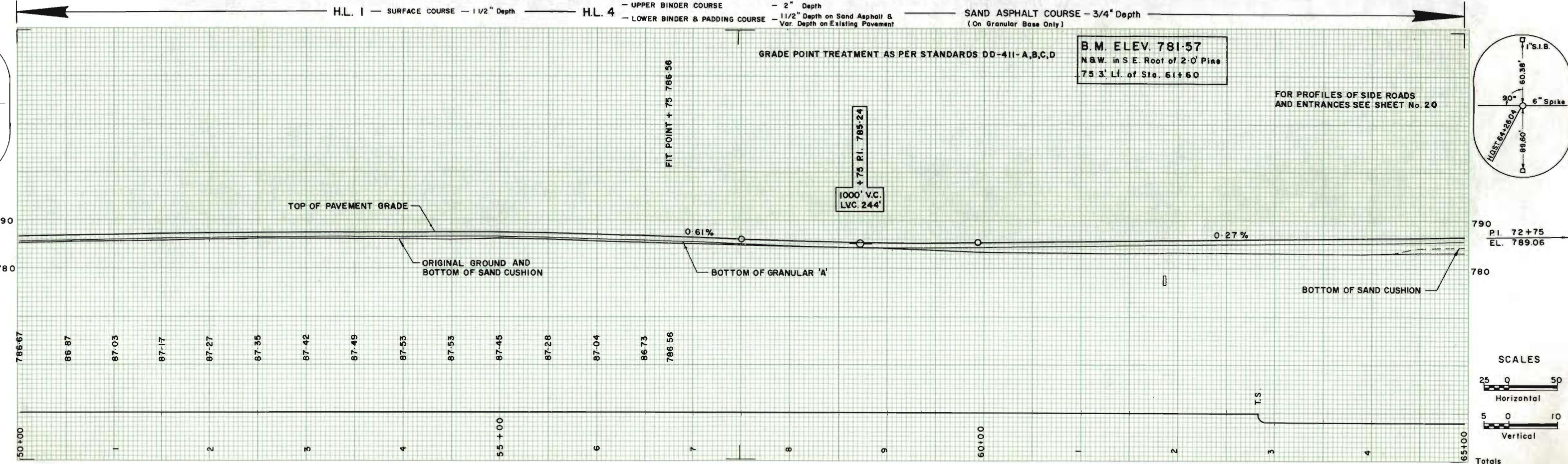
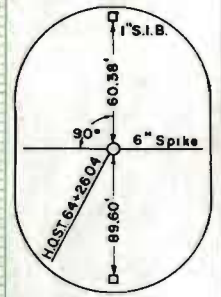
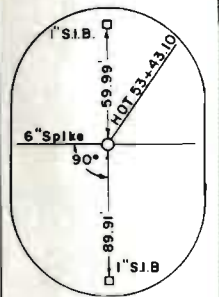


		40+00 to 50+00			50+00 to 60+00		
Earth Cut			EC	50	CY		50
Sub-Excavation							Sub-Excavation
Stripping							Stripping
Ditching							Ditching
Muskeg Excavation	FOR QUANTITIES SEE SHEET N° 4						Muskeg Excav.
Earth Fill			EF	50	CY		50
Rock Cut			RC	100	CY		100
Shatter			Sh	50	CY		50
Rock Fill			RF	7,700	CY		7,700
Muskeg Backfill							Muskeg Backfill
GRANULAR 'A' OR SAND CUSHION							



No. 1 PLACE 2 x 2 C.B. DD-702
FLAT TYPE GRATE DD-706
STA. 59+14 44'-0" LT. of C.
TOP of GRATE ELEV. 784.64
INVERT of OUTLET ELEV. 781.10
NO SUMP REQUIRED

- LEGEND
- (K) CONCRETE CURB TYPE DD-601-K
 - (A) CONCRETE CURB & GUTTER TYPE DD-601-A

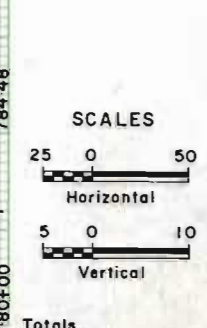
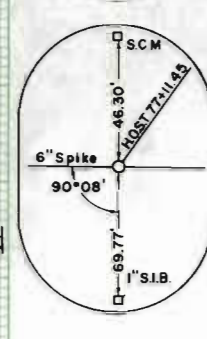
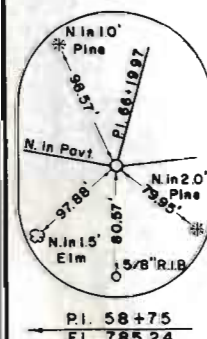
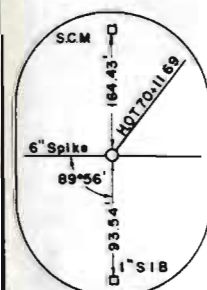


										50+00 To 70+00																																																	
Earth Cut											E.C.	250	CY.											E.C.	50	CY.	300	Earth Cut																															
Sub-Excavation																																									300	Sub-Excavation																	
Stripping											St.	50	C.Y. (INCL. T.S.	50	C.Y.)											St.	250	C.Y. (INCL. T.S.	250	C.Y.)	300	Stripping																											
Ditching																																									30	Ditching																	
Muskeg Excavation																																									30	Muskeg Excav.																	
Earth Fill											EF	450	CY.											EF	2,200	CY	2,650	Earth Fill																															
Rock Cut											RC	3,400	CY.											RC	800	CY	4,200	Rock Cut																															
Shatter											Sh	750	CY.											Sh	200	CY	950	Shatter																															
Rock Fill											RF	650	CY											RF	1,900	CY	2,550	Rock Fill																															
Muskeg Backfill																																										Muskeg Backfill																	

CURVE DATA	
Δ	8° 48' 00"
Δc	4° 18' 00"
D	2° 00' 00"
R	2864.79'
T_s	332.99'
L_c	215.00'
E_s	9.23'
L_s	225.00'
G_s	2° 15'
SUPERELEVATION DATA	
S	-0.050 ft./ft.
Profile Control	E

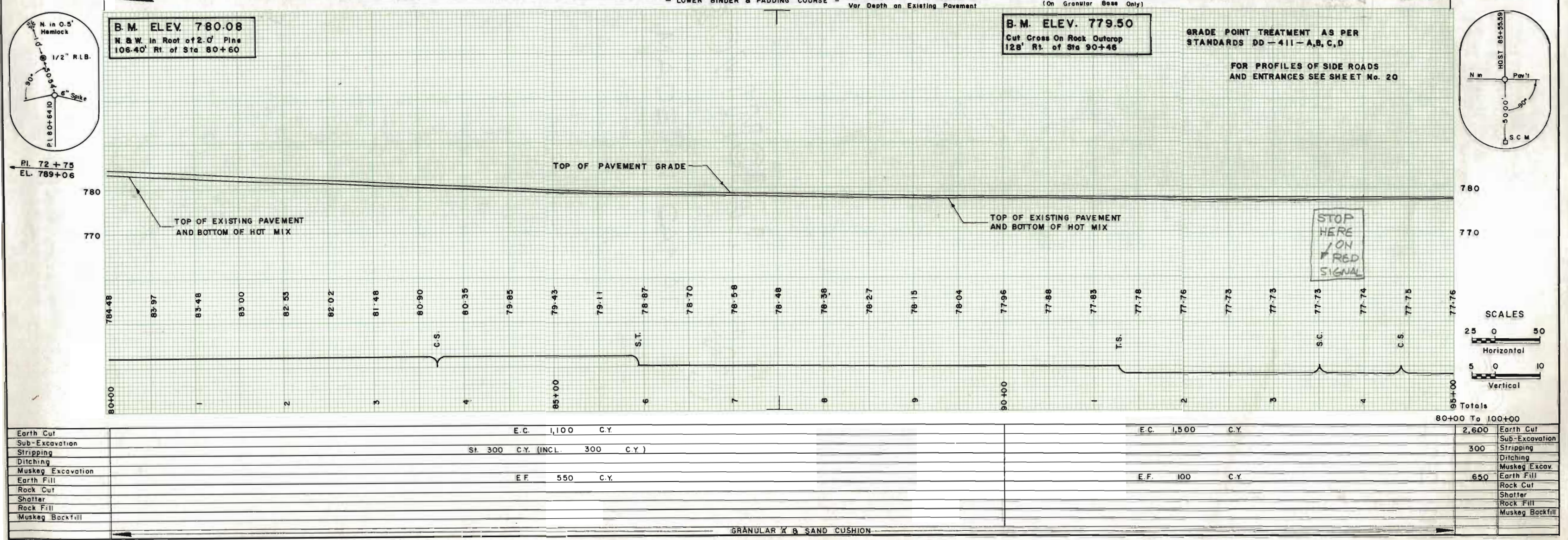
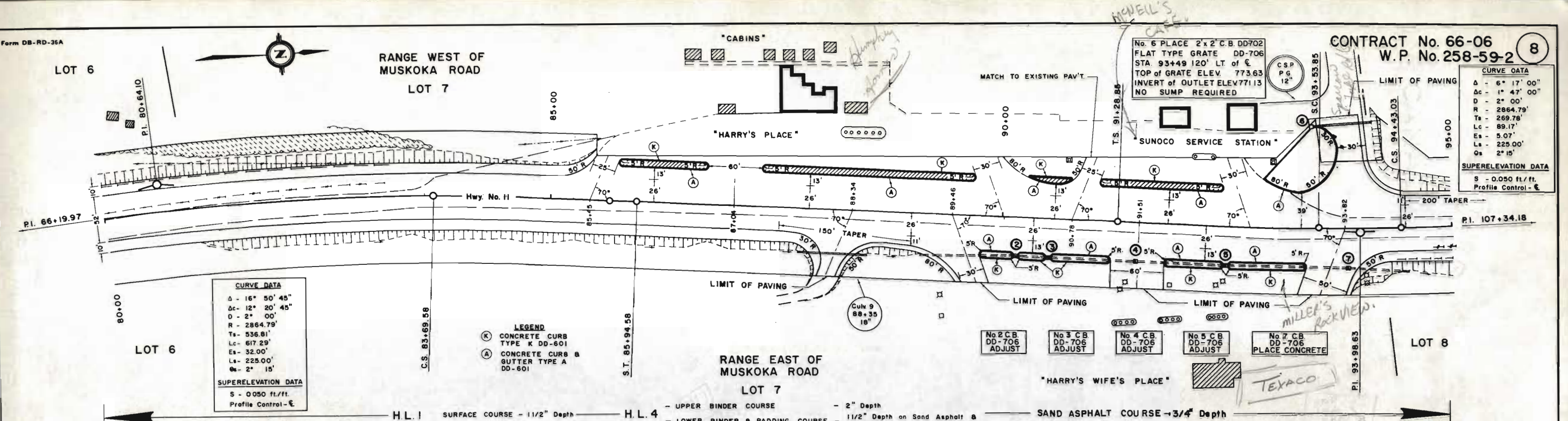
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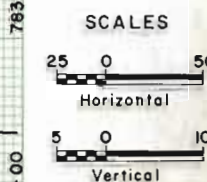
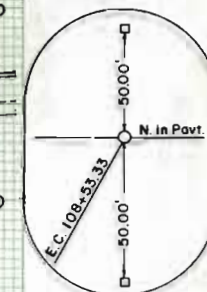
P.I. 80+64.10



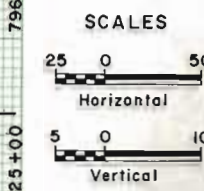
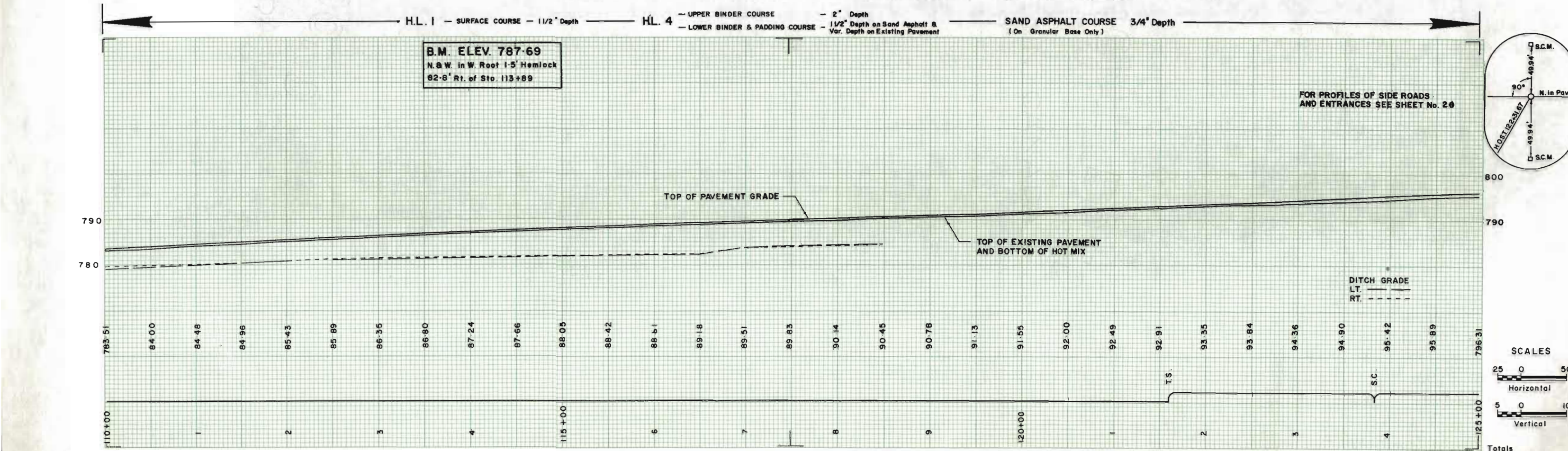
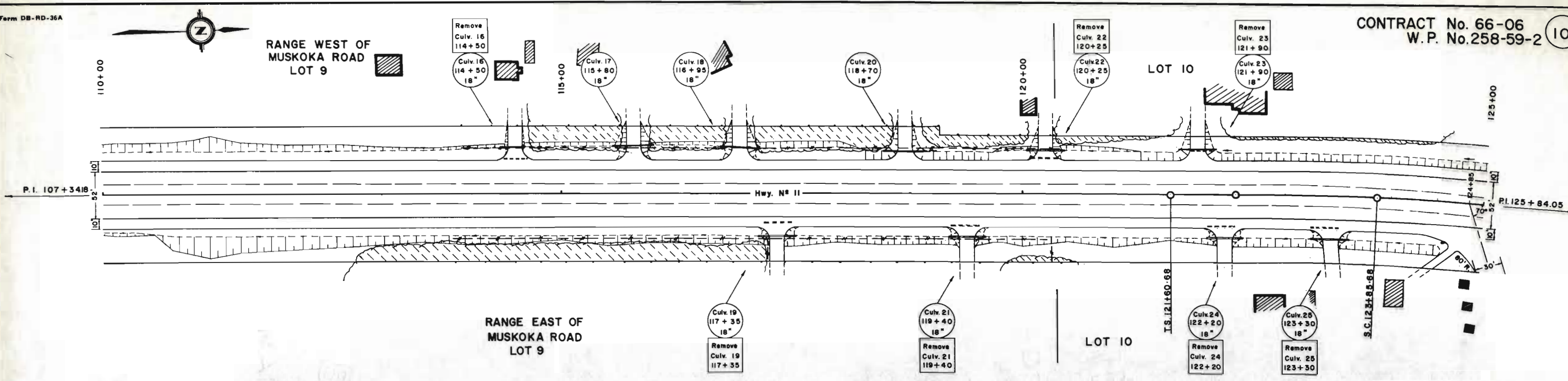
Earth Cut				Earth Fill			
Sub-Excavation				Sub-Excavation			
Stripping				Stripping			
Ditching				Ditching			
Muskeg Excavation				Muskeg Excav.			
Earth Fill				Earth Fill			
Rock Cut				Rock Cut			
Shatter				Shatter			
Rock Fill				Rock Fill			
Muskeg Backfill				Muskeg Backfill			

GRANULAR 'A' & SAND CUSHION



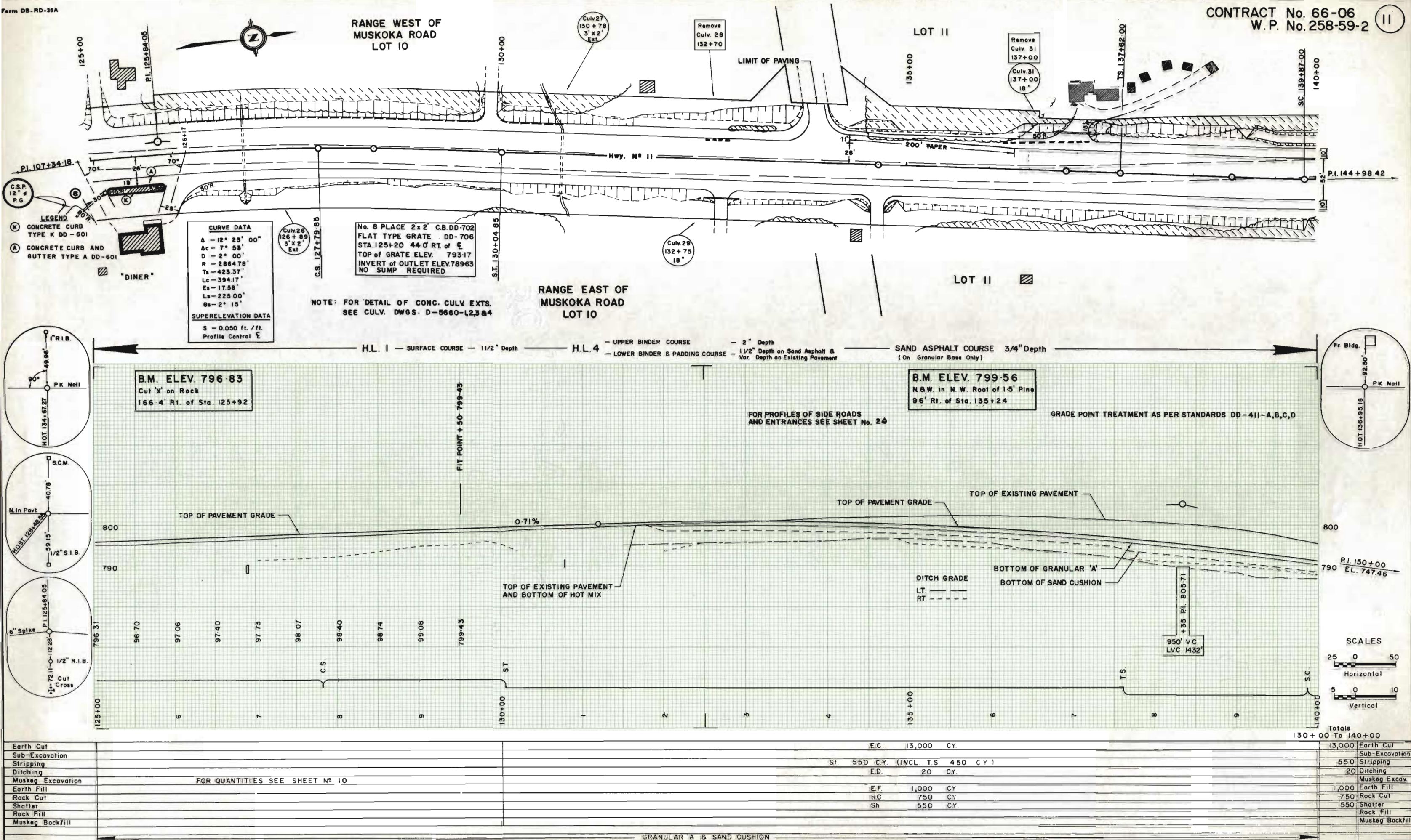


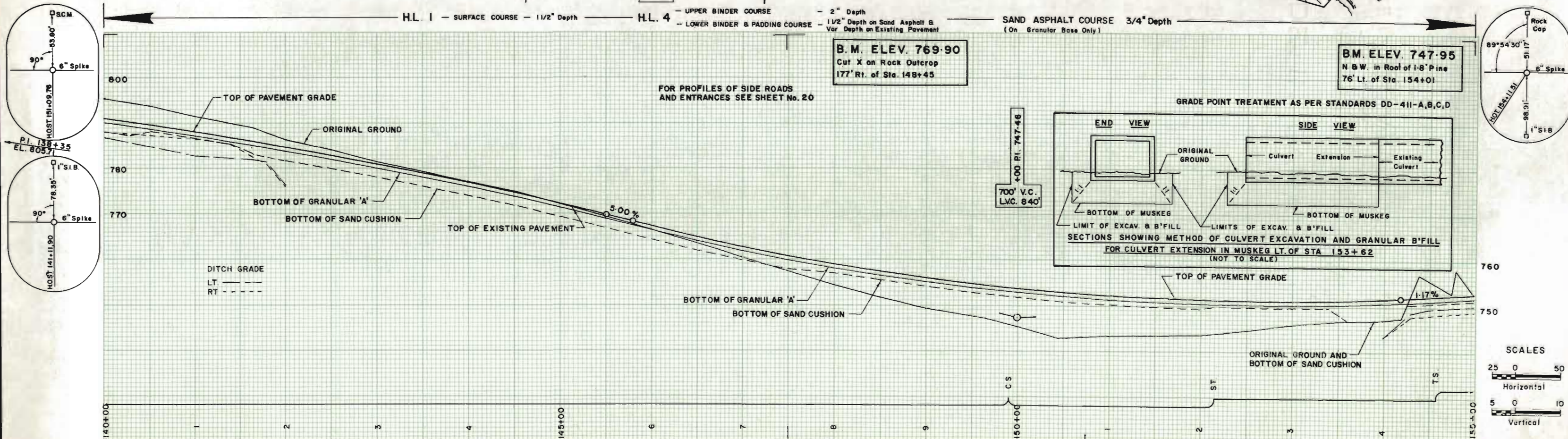
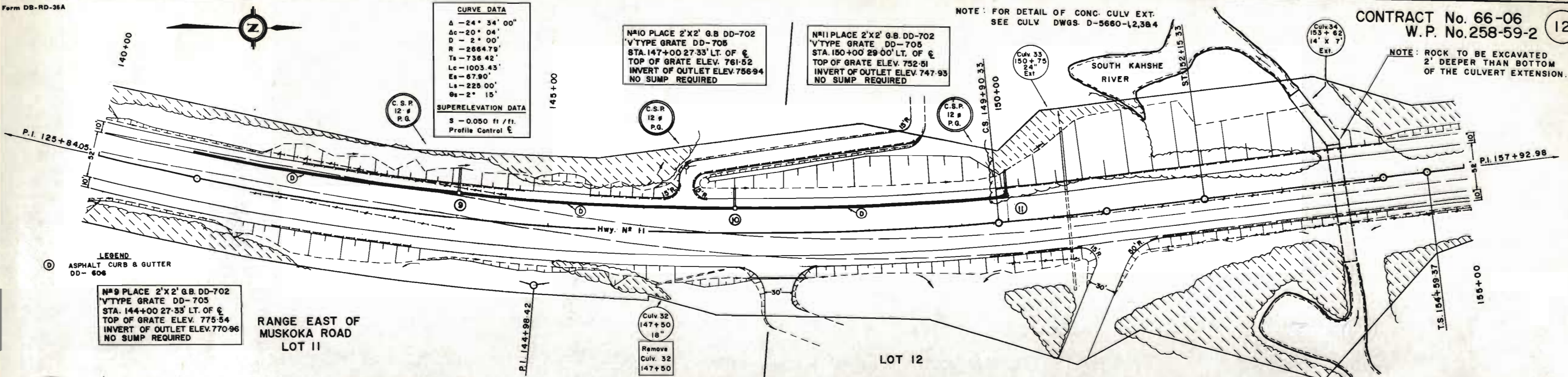
Earth Cut		EC	2,400	CY		2,400	Earth Cut
Sub-Excavation		ST	200	C.Y. (INCL. 200 C.Y.)		200	Sub-Excavation
Stripping		ED	10	CY		10	Stripping
Ditching							Ditching
Muskeg Excavation	FOR QUANTITIES SEE SHEET N° 8						Muskeg Excav.
Earth Fill		EF	2,900	CY		2,900	Earth Fill
Rock Cut		RC	500	CY		500	Rock Cut
Shatter		Sh	250	CY		250	Shatter
Rock Fill		RF	850	CY		850	Rock Fill
Muskeg Backfill							Muskeg Backfill
GRANULAR 'A' & SAND CUSHION							



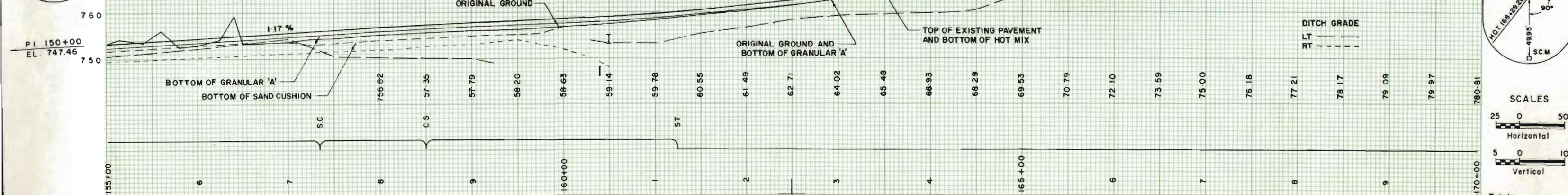
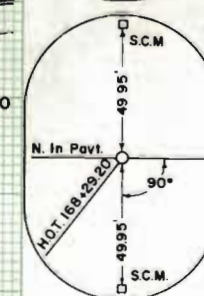
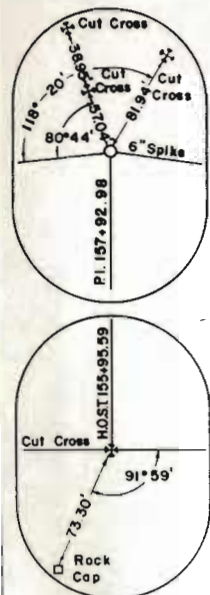
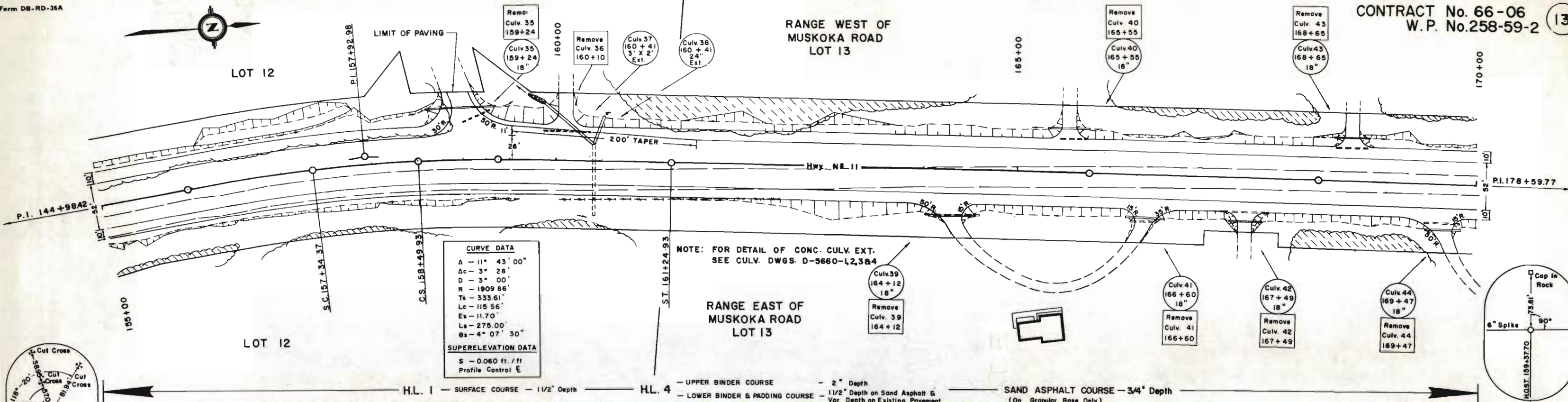
Totals 110+00 To 130+00				Totals 110+00 To 130+00			
Earth Cut	EC	2,100	CY.	Earth Cut	EC	1,200	CY
Sub-Excavation				Sub-Excavation			
Stripping	SI	1100 C.Y. (INCL. T.S. 500 C.Y.)		Stripping	SI	650 C.Y. (INCL. 300 C.Y.)	
Ditching				Ditching			
Muskeg Excavation				Muskeg Excav.			
Earth Fill	EF	350	CY.	Earth Fill	EF	3,100	CY
Rock Cut	RC	100	CY.	Rock Cut	RC	50	CY
Shatter	Sh	50	CY	Shatter	Sh	50	CY
Rock Fill				Rock Fill	RF	700	CY
Muskeg Backfill				Muskeg Backfill			

GRANULAR 'A' & SAND CUSHION

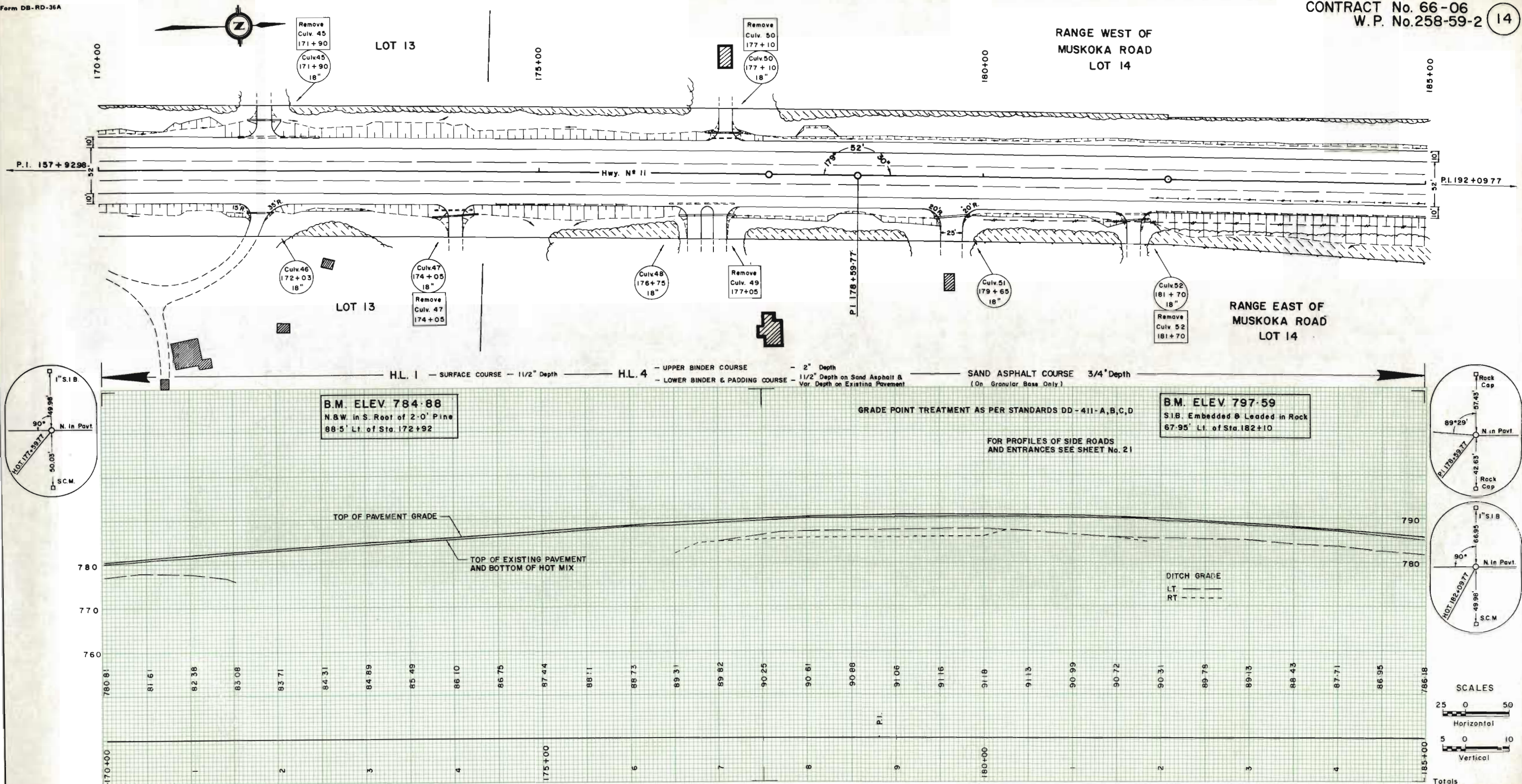




Totals 140+00 To 160+00			Totals 140+00 To 160+00		
Earth Cut	EC	10,000 CY	EC	2,000 CY	12,000 Earth Cut
Sub-Excavation					Sub-Excavation
Stripping	St.	750 C.Y. (INCL. T.S. 600 C.Y.)	St.	250 C.Y. (INCL. T.S. 250 C.Y.)	1,000 Stripping
Ditching					Ditching
Muskeg Excavation					Muskeg Excav.
Earth Fill	EF	4,000 CY	EF	17,000 CY	21,000 Earth Fill
Rock Cut	RC	2,400 CY	RC	4,700 CY	7,100 Rock Cut
Shatter	Sh	600 CY	Sh	600 CY	1,200 Shatter
Rock Fill			RF	9,900 CY	9,900 Rock Fill
Muskeg Backfill					Muskeg Backfill

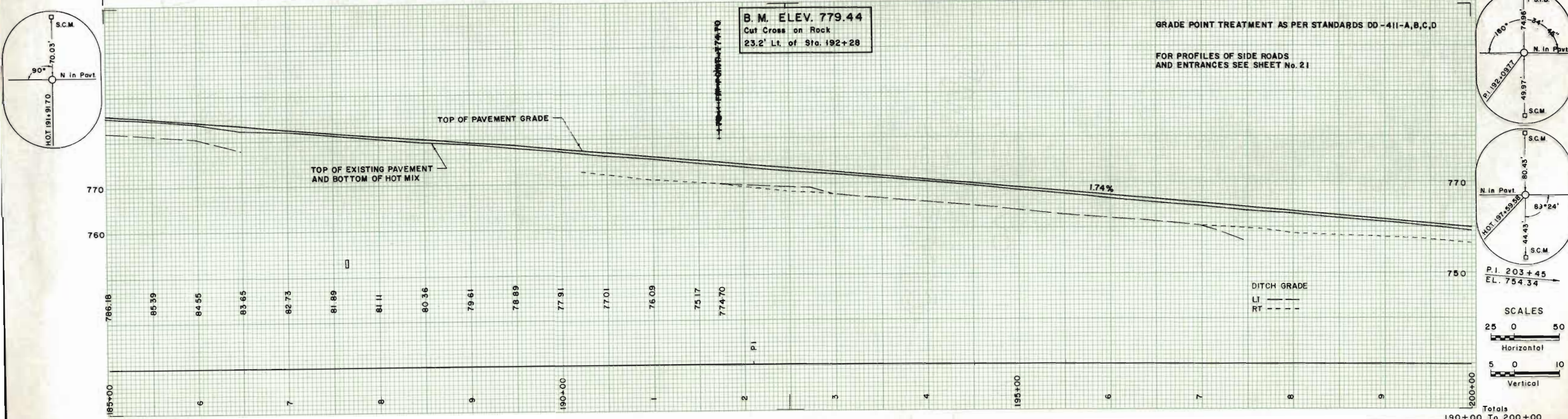
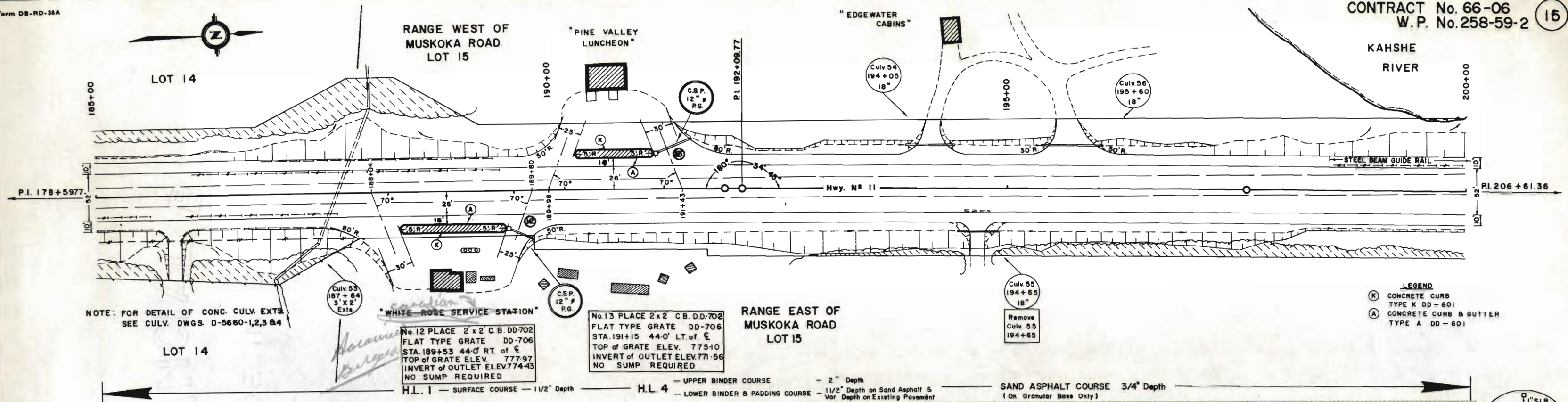


		Totals	
		To 160+00	To 170+00
Earth Cut		E.C. 1,200 CY	1,200 Earth Cut
Sub-Excavation			Sub-Excavation
Stripping		SI 250 C.Y. (INCL. T.S. 250 C.Y.)	250 Stripping
Ditching		ED 20 CY	20 Ditching
Muskeg Excavation	FOR QUANTITIES SEE SHEET N# 12		Muskeg Excavation
Earth Fill		EF 2,600 CY	2,600 Earth Fill
Rock Cut		RC 200 CY	200 Rock Cut
Shatter		Sh 100 CY	100 Shatter
Rock Fill		RF 200 CY	200 Rock Fill
Muskeg Backfill			Muskeg Backfill
GRANULAR 'A' & SAND CUSHION			



Totals 170+00 To 190+00			
Earth Cut	EC	1,600	CY.
Sub-Excavation			
Stripping	St	300	C.Y. (INCL. T.S. 300 C.Y.)
Ditching			
Muskeg Excavation			
Earth Fill	EF	1,800	CY.
Rock Cut	RC	650	CY.
Shatter	Sh	200	CY.
Rock Fill	RF	800	CY.
Muskeg Backfill			
GRANULAR 'A' & SAND CUSHION			

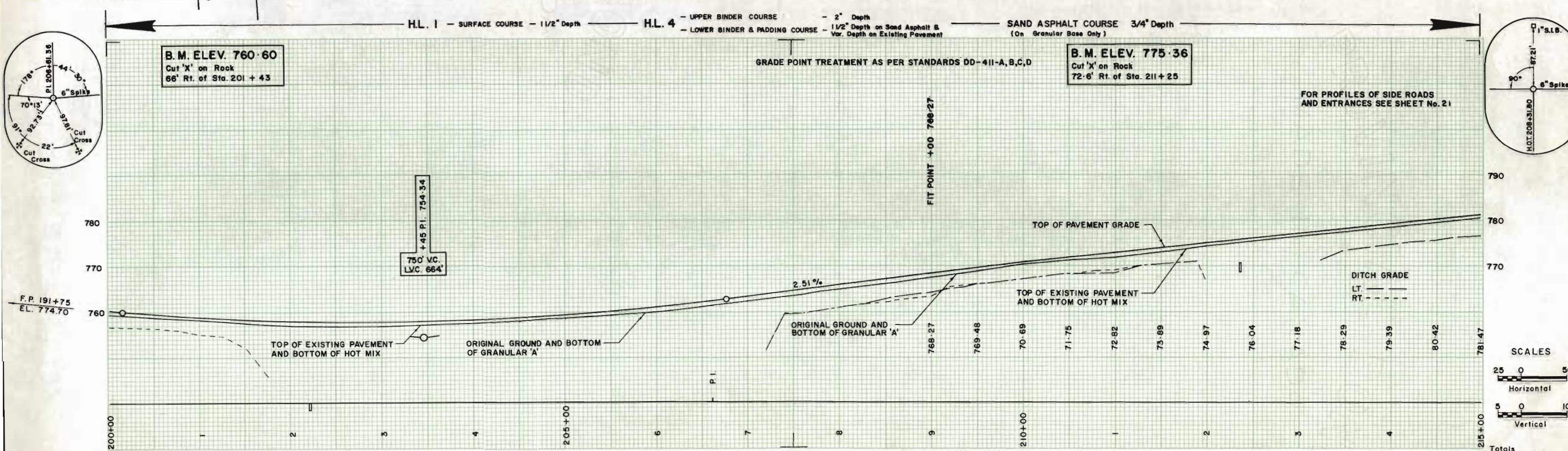
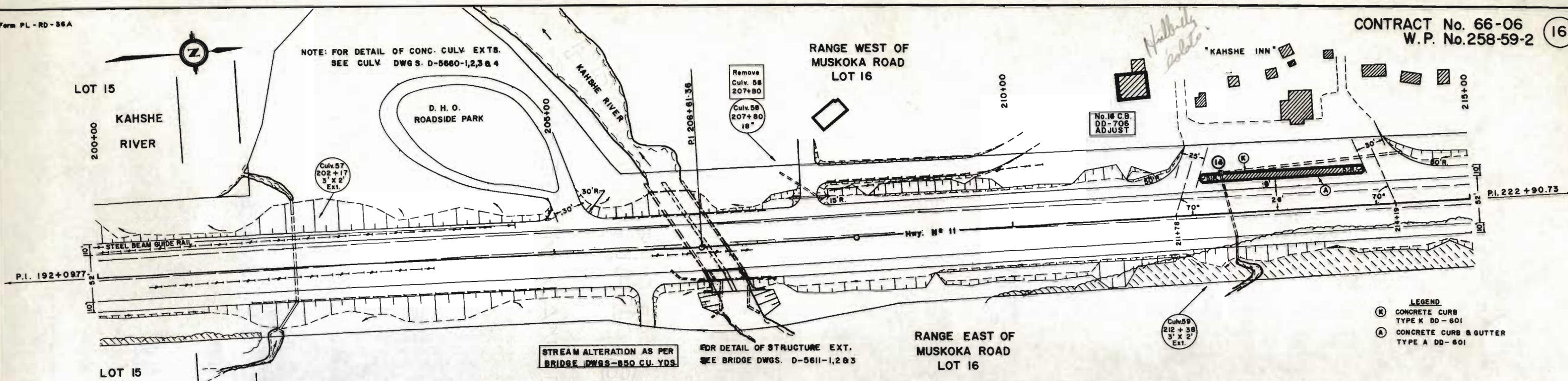
Earth Cut	EC	1,600	CY.
Sub-Excavation			
Stripping	St	50	C.Y. (INCL. T.S. 50 C.Y.)
Ditching			
Muskeg Excav.			
Earth Fill	EF	5,800	CY.
Rock Cut	RC	700	CY.
Shatter	Sh	300	CY.
Rock Fill	RF	1,100	CY.
Muskeg Backfill			



Totals 190+00 To 200+00		EC. 5,700 CY.		5,700 Earth Cut
		SI. 700 C.Y. (INCL. T.S. 700 C.Y.)		700 Sub-Excavation
				700 Stripping
				700 Ditching
				700 Muskeg Excav.
		EF. 350 CY.		350 Earth Fill
		RC. 150 CY.		150 Rock Cut
		Sh. 100 CY.		100 Shatter
				100 Rock Fill
				100 Muskeg Backfill

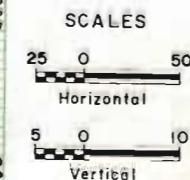
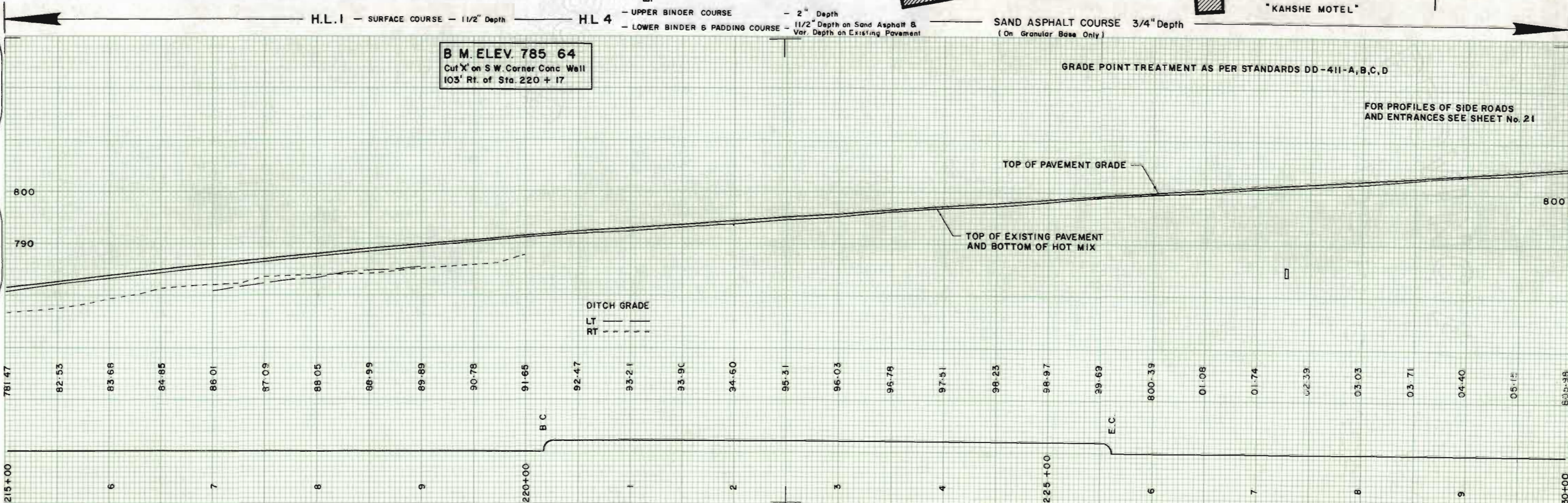
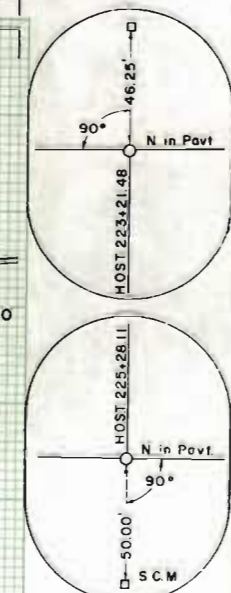
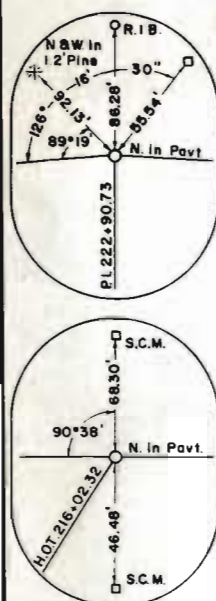
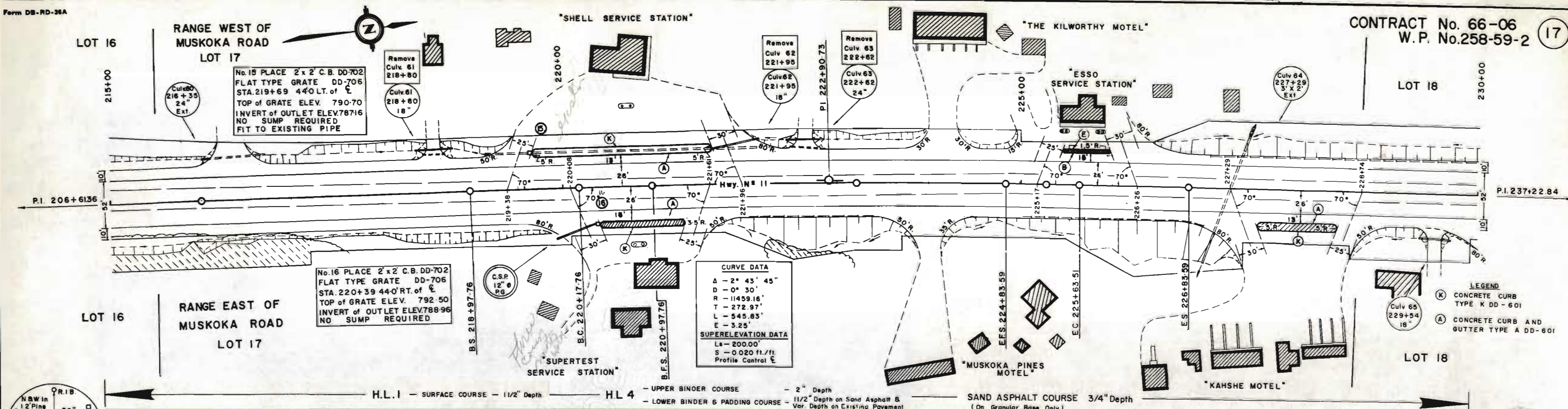
FOR QUANTITIES SEE SHEET NO. 14

GRANULAR A & SAND CUSHION



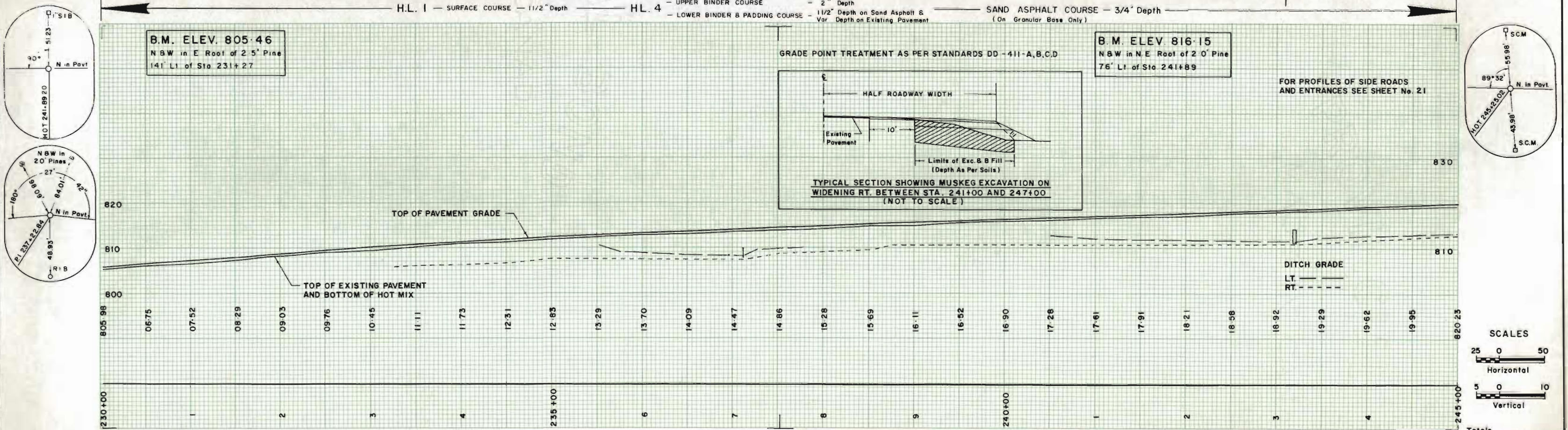
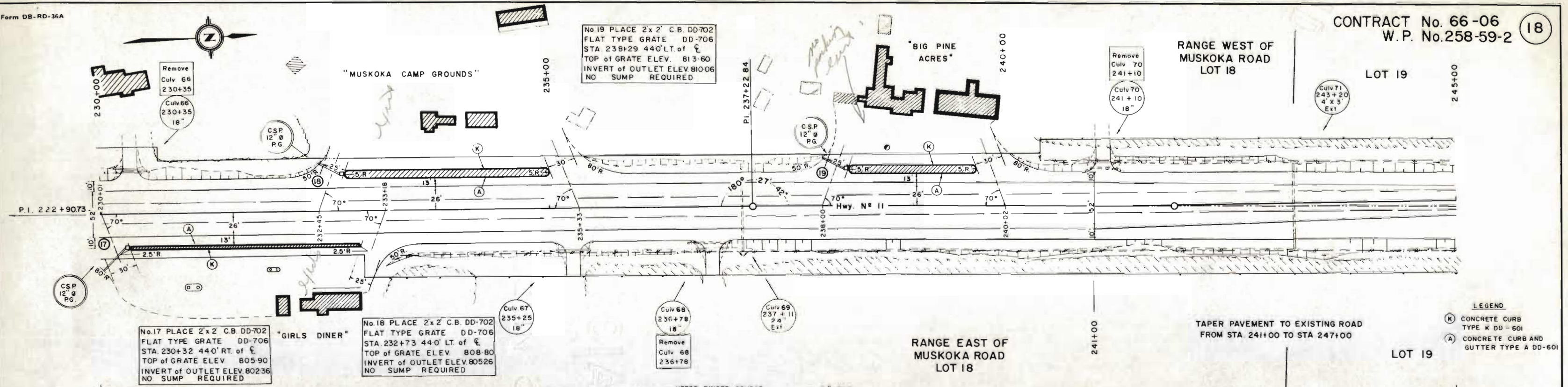
Totals 200+00 To 220+00				Totals 200+00 To 220+00			
Earth Cut	EC.	1,800	CY.	EC.	2,400	CY.	4,200
Sub-Excavation							Sub-Excavation
Stripping	St.	150	C.Y. (INCL. T.S. 150 C.Y.)	St.	400	C.Y. (INCL. T.S. 400 C.Y.)	550
Ditching	ED.	10	CY.				10
Muskeg Excavation							Muskeg Excav.
Earth Fill	E.F.	3,800	CY.	E.F.	700	CY.	4,500
Rock Cut	RC.	500	CY.	RC.	1,000	CY.	1,500
Shatter	Sh.	200	CY.	Sh.	300	CY.	500
Rock Fill	RF.	2,100	CY.				2,100
Muskeg Backfill							Muskeg Backfill

GRANULAR 'A' & SAND CUSHION



Earth Cut		EC	1,500	CY	Totals	220+00 To 230+00
Sub-Excavation					1,500	Earth Cut
Stripping		St.	200	C.Y. (INCL. T.S. 200 C.Y.)		Sub-Excavation
Ditching		FD	10	CY	200	Stripping
Muskeg Excavation	FOR QUANTITIES SEE SHEET No. 16	EF	3,400	CY	10	Ditching
Earth Fill					3,400	Muskeg Excav.
Rock Cut						Earth Fill
Shatter						Rock Cut
Rock Fill						Shatter
Muskeg Backfill						Rock Fill
						Muskeg Backfill

GRANULAR A B SAND CUSHION



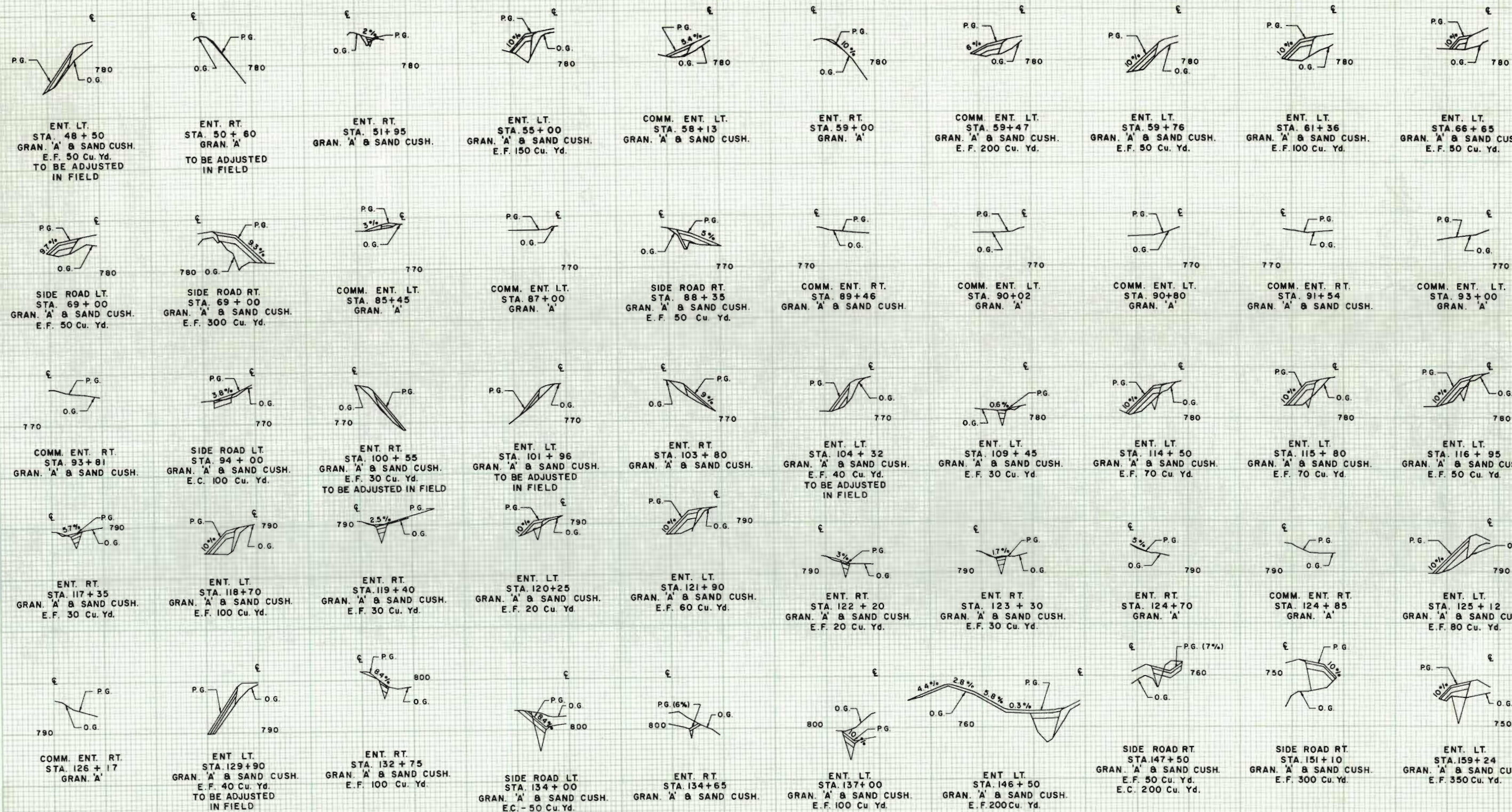
				Totals				230+00 To 247+00		
Earth Cut		EC	2000	CY		EC	450	CY	2,450	Earth Cut
Sub-Excavation										Sub-Excavation
Stripping		SI	250	C.Y. (INCL. T.S. 250 C.Y.)		SI	150	C.Y. (INCL. T.S. 150 C.Y.)	400	Stripping
Ditching										Ditching
Muskeg Excavation						ME	2,200	CY	2,200	Muskeg Excav.
Earth Fill		EF	800	CY		EF	1,400	CY	2,200	Earth Fill
Rock Cut										Rock Cut
Shatter										Shatter
Rock Fill										Rock Fill
Muskeg Backfill						EMB	2,400	CY	2,400	Muskeg Backfill
GRANULAR 'A' & SAND CUSHION										

Earth Cut
Sub-Excavation
Stripping
Ditching
Muskeg Excav.
Earth Fill
Rock Cut
Shalter
Rock Fill
Muskeg Backfill

FOR QUANTITIES SEE SHEET N° 18

GRAN 'A' & SAND CUSH

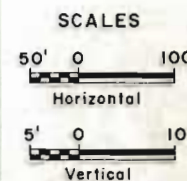
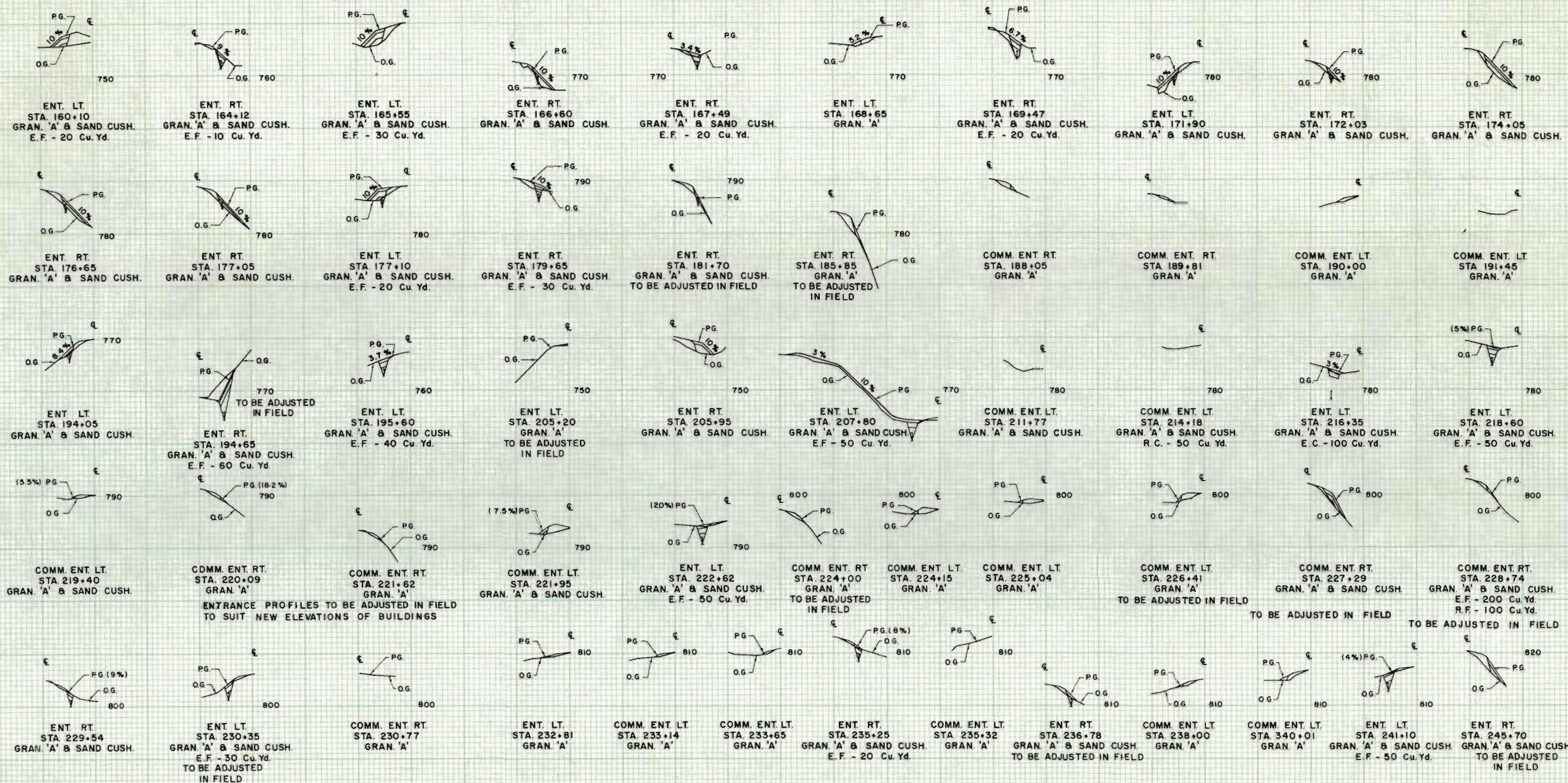
PROFILES OF SIDE ROADS AND ENTRANCES



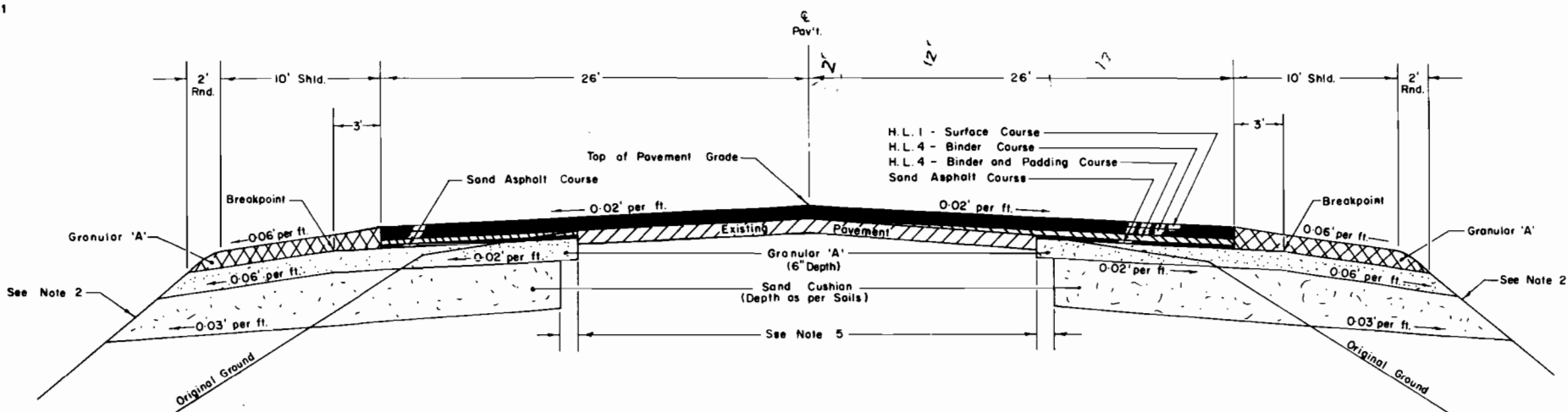
Totals		Earth Cut
Earth Cut		Sub-Excavation
Sub-Excavation		Stripping
Stripping		Ditching
Ditching		Muskeg Excav.
Muskeg Excavation		Earth Fill
Earth Fill		Rock Cut
Rock Cut		Shatter
Shatter		Rock Fill
Rock Fill		Muskeg Backfill
Muskeg Backfill		

PROFILES OF SIDE ROADS AND ENTRANCES

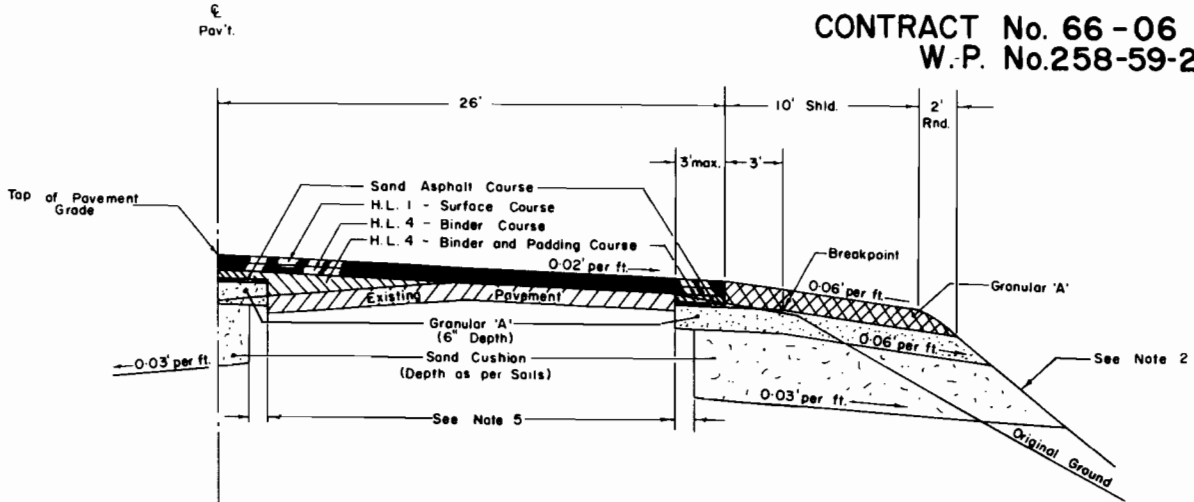
LEGEND
O.G. - Original Ground
P.G. - Profile Grade



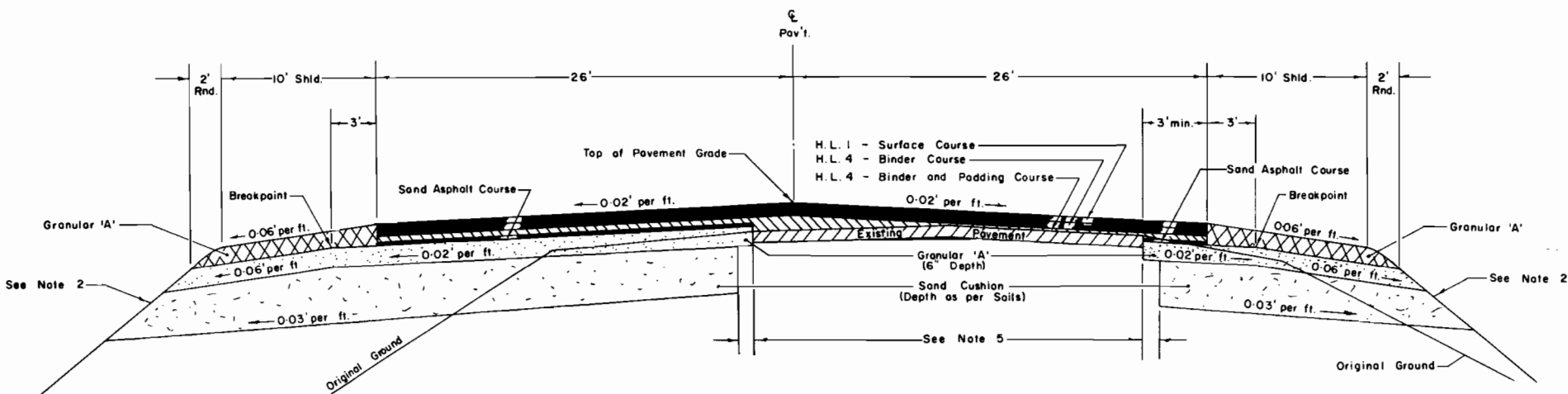
Totals		Earth Cut
Earth Cut		Earth Cut
Sub-Excavation		Sub-Excavation
Stripping		Stripping
Ditching		Ditching
Muskeg Excavation		Muskeg Excav.
Earth Fill		Earth Fill
Rock Cut		Rock Cut
Shatter		Shatter
Rock Fill		Rock Fill
Muskeg Backfill		Muskeg Backfill



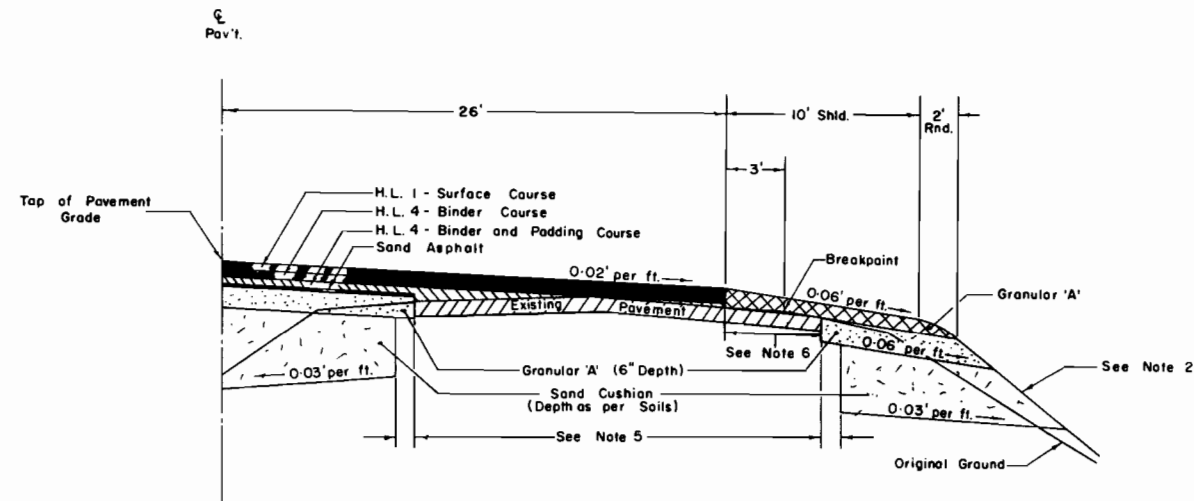
NEW AND OLD CENTER LINE COINCIDE



NEW PAVEMENT OVERLAPPING EXISTING PAVEMENT LESS THAN 3'



NEW PAVEMENT OVERLAPPING EXISTING PAVEMENT MORE THAN 3'

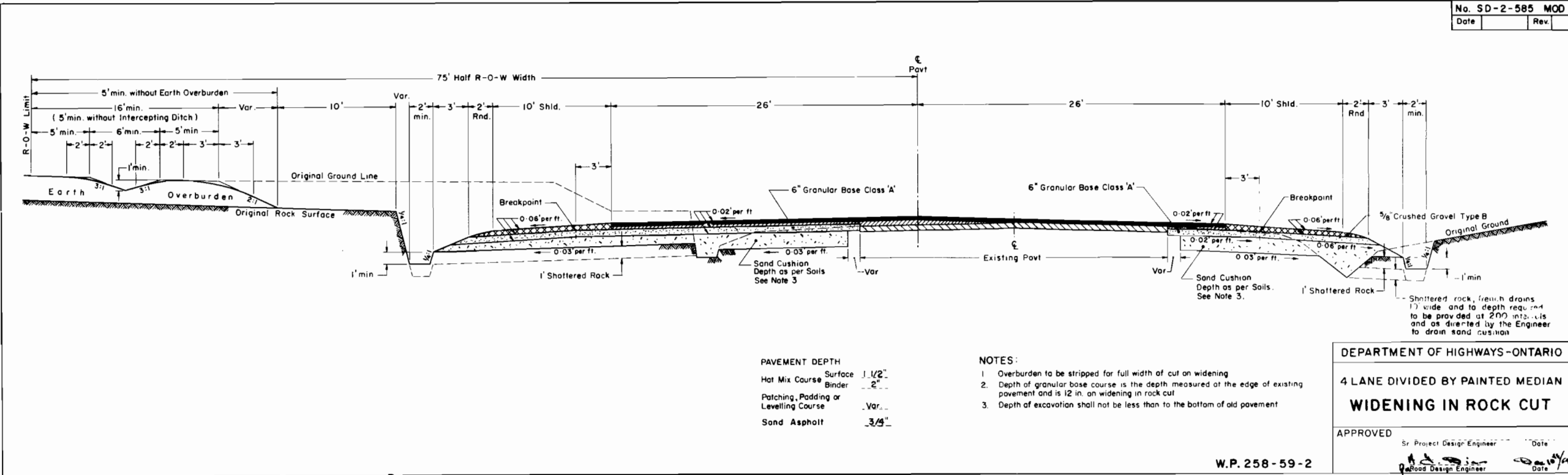
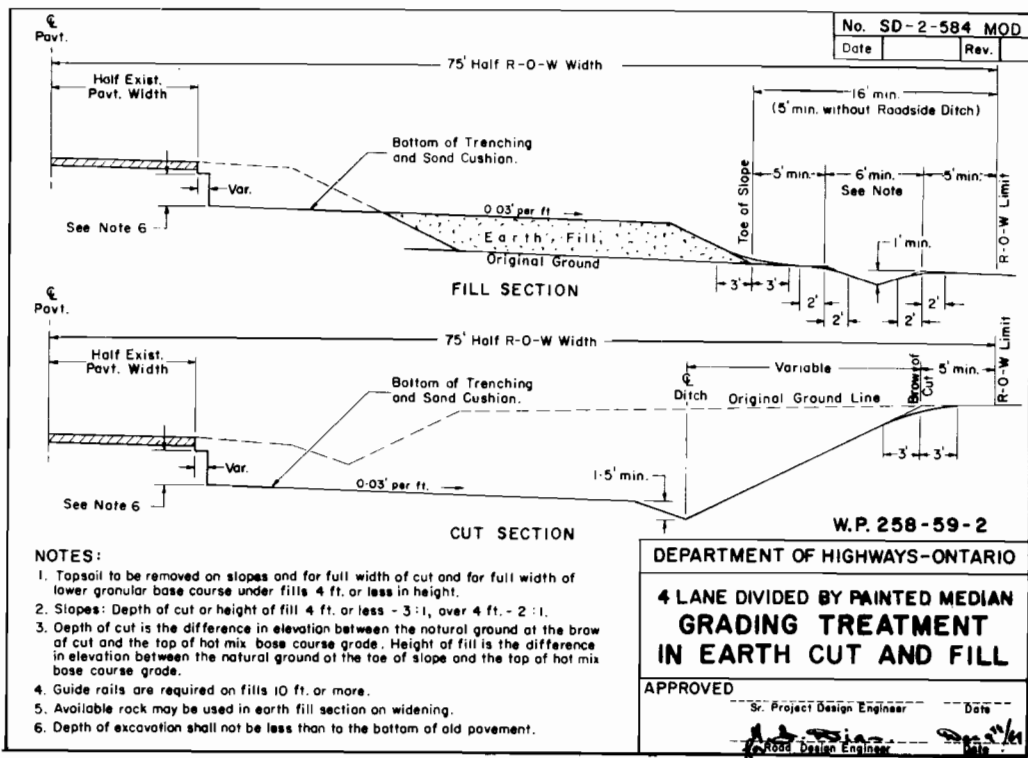
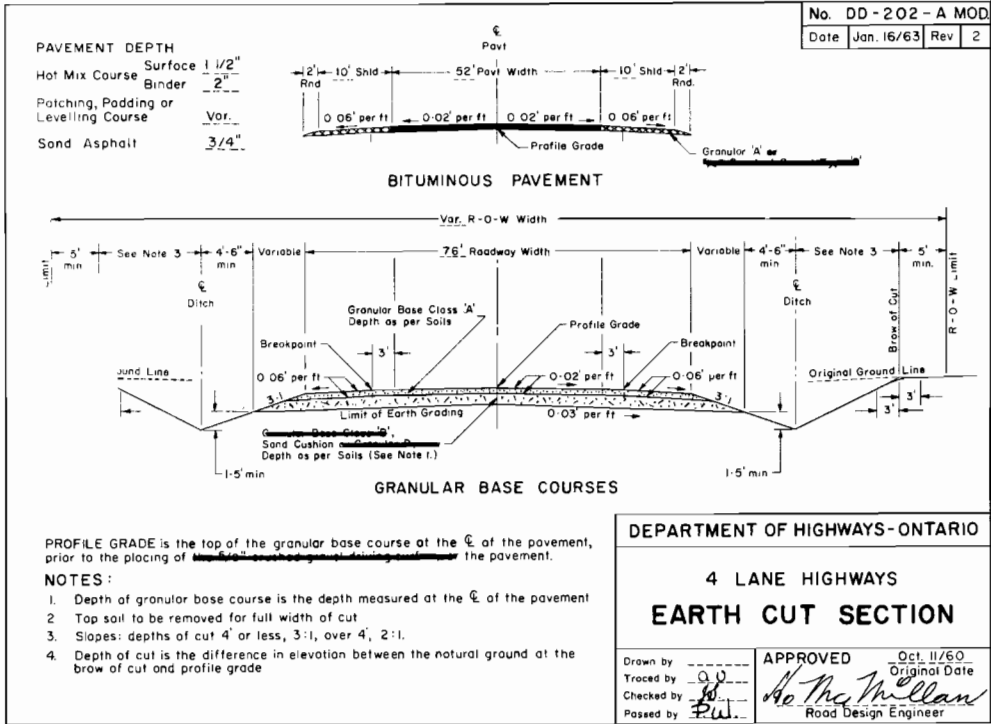
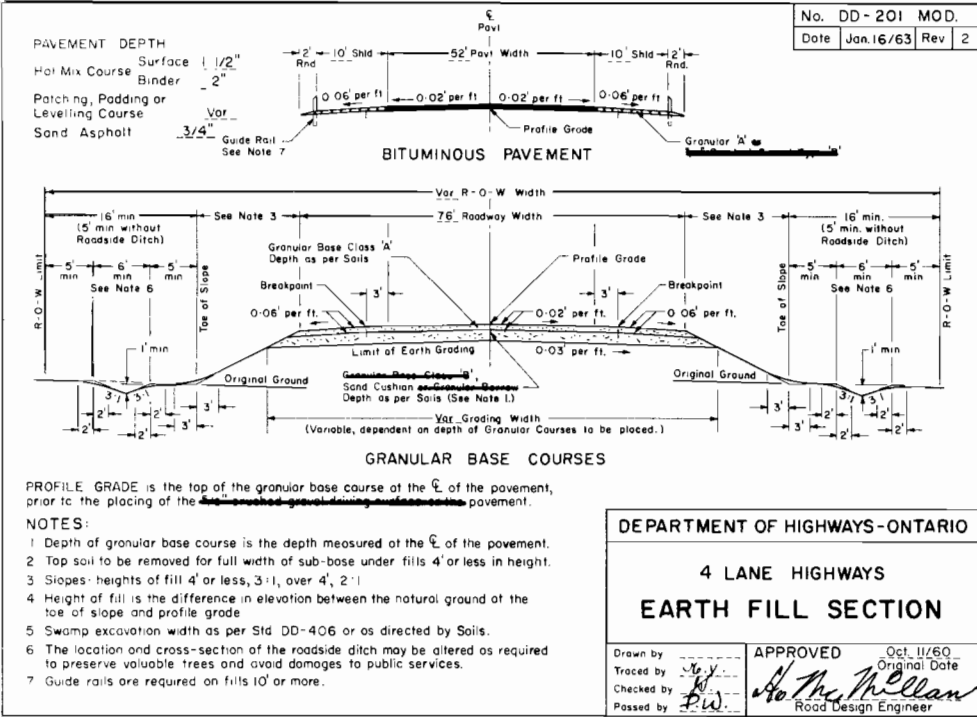


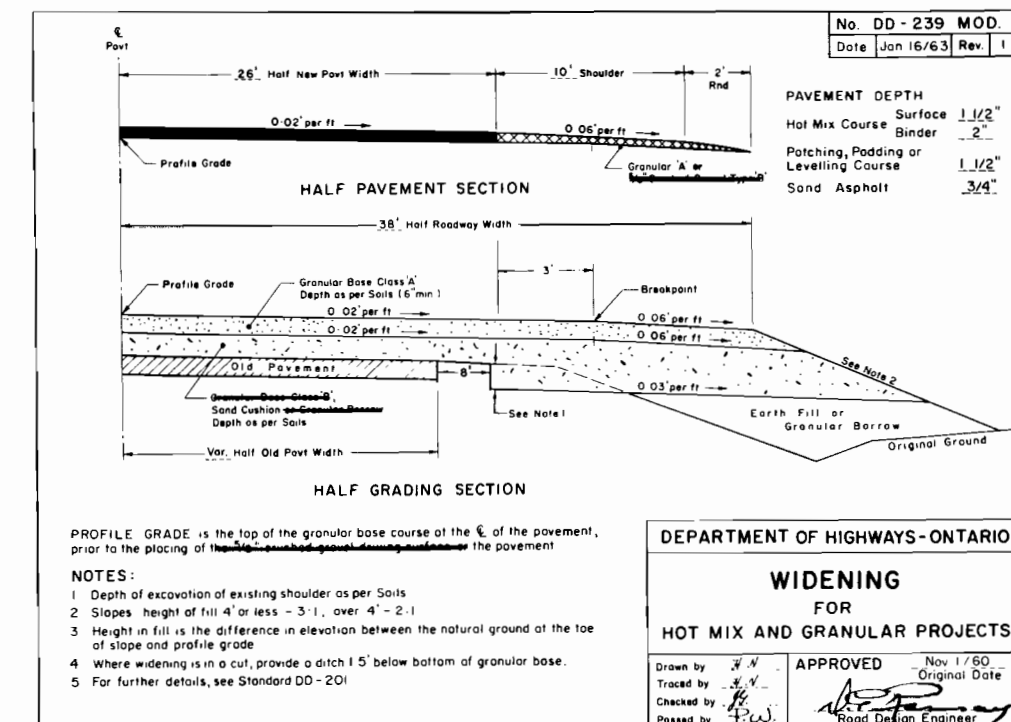
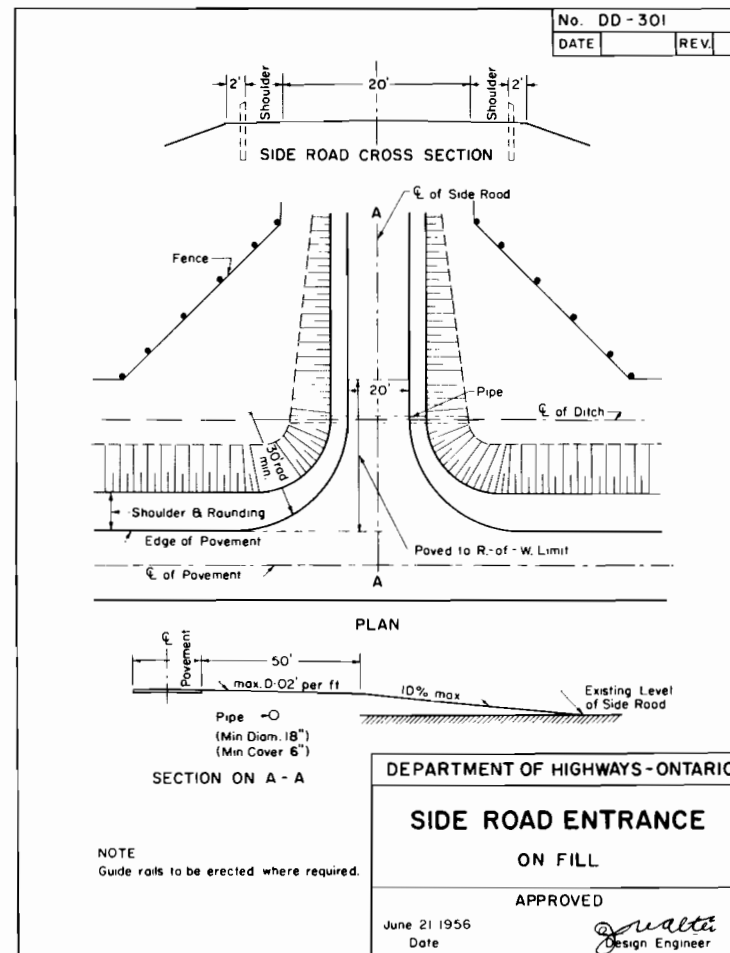
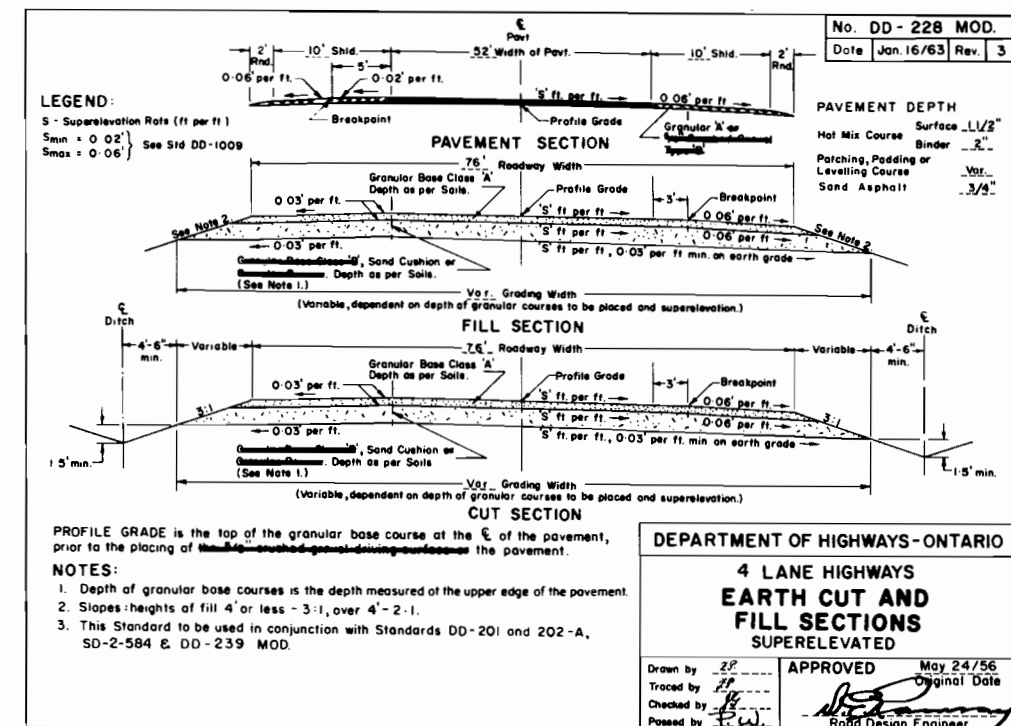
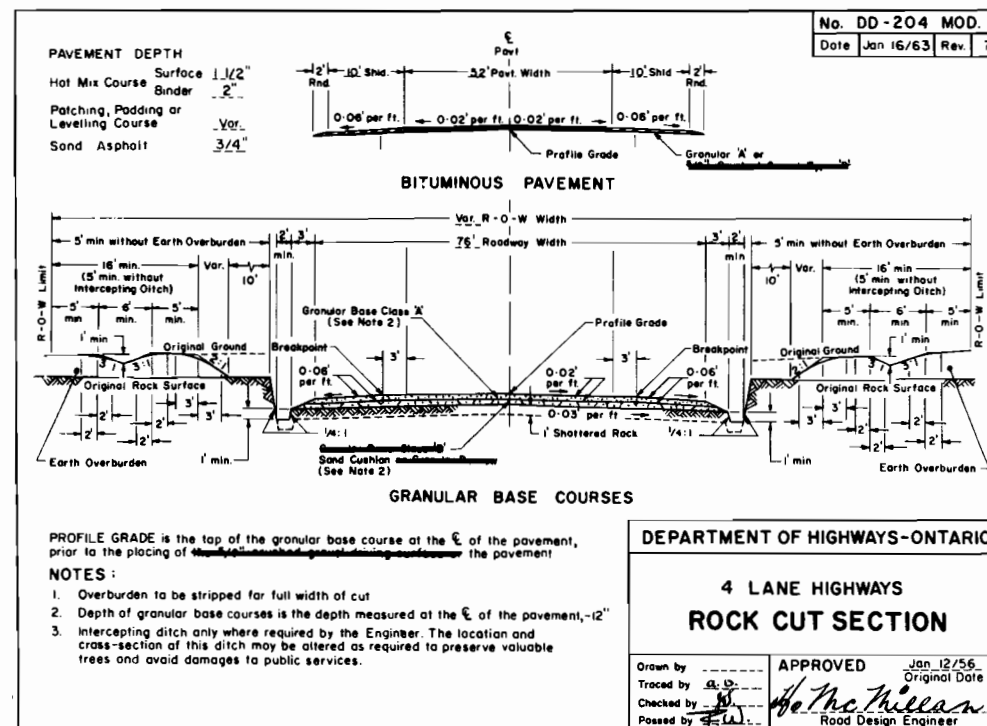
NEW PAVEMENT NOT OVERLAPPING EXISTING PAVEMENT

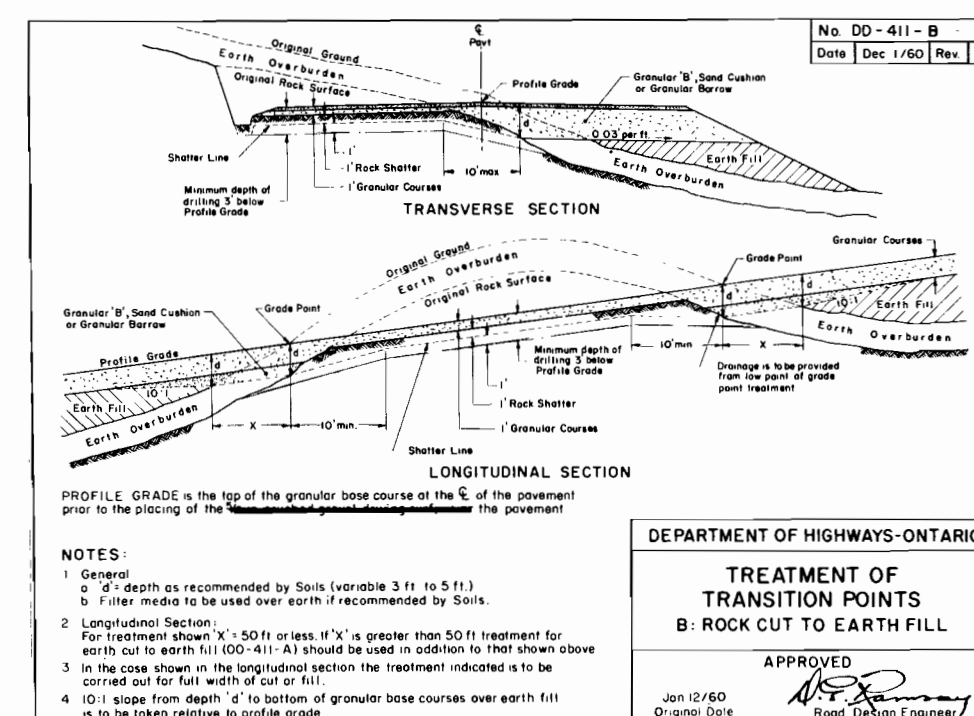
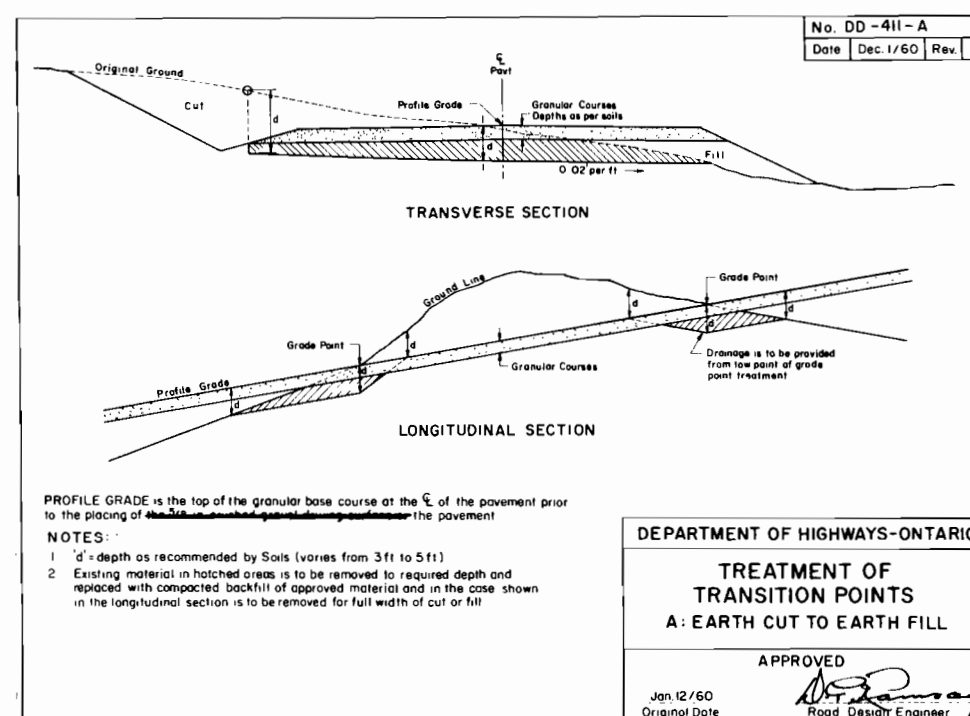
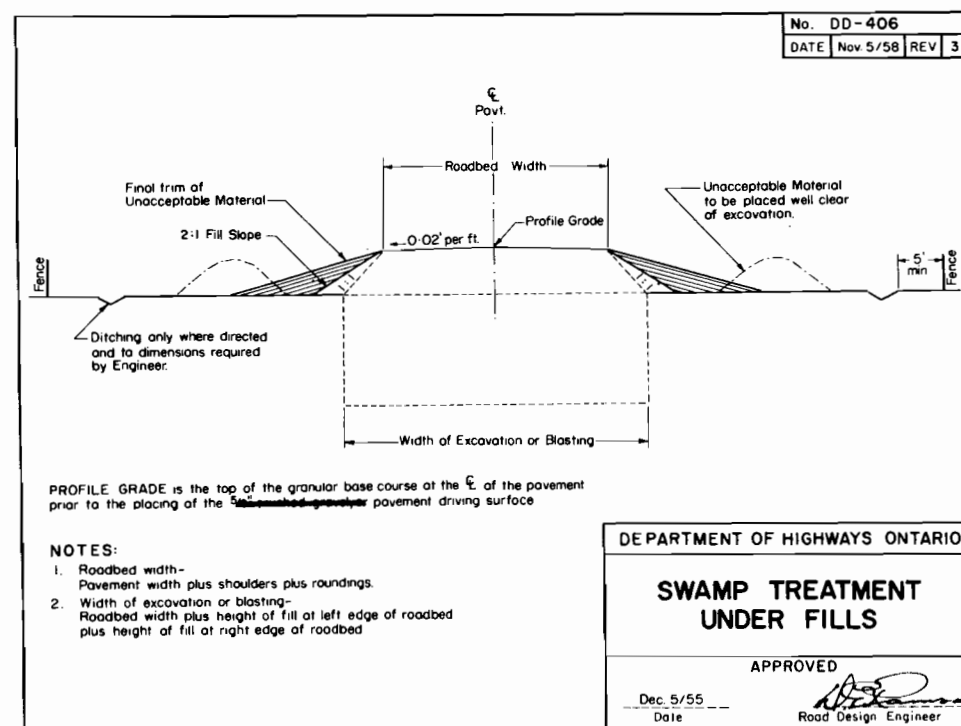
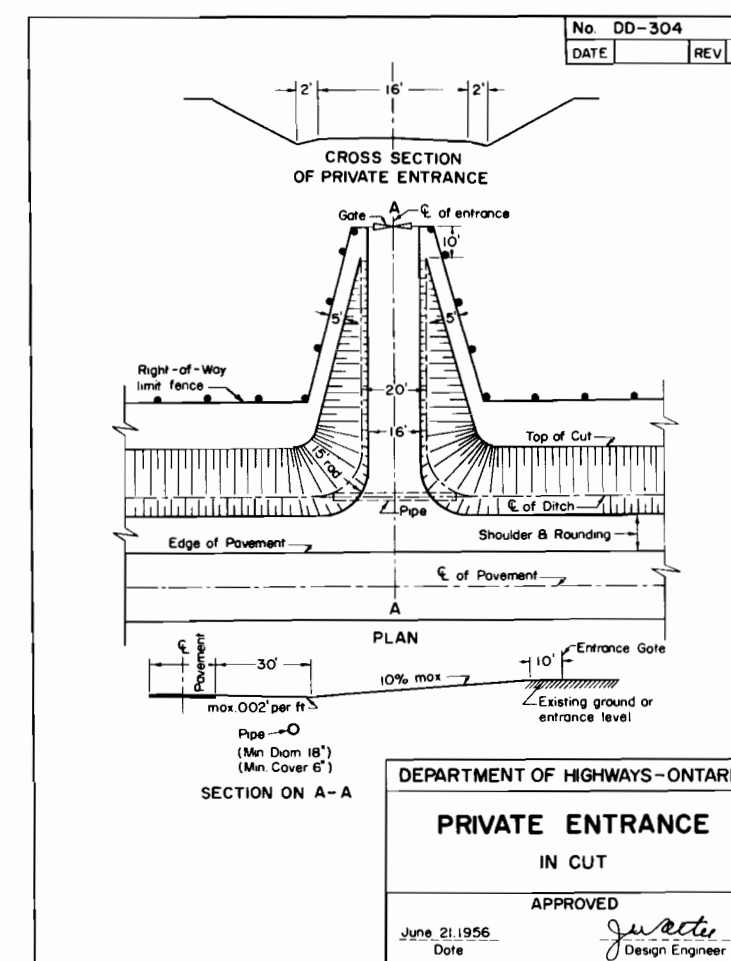
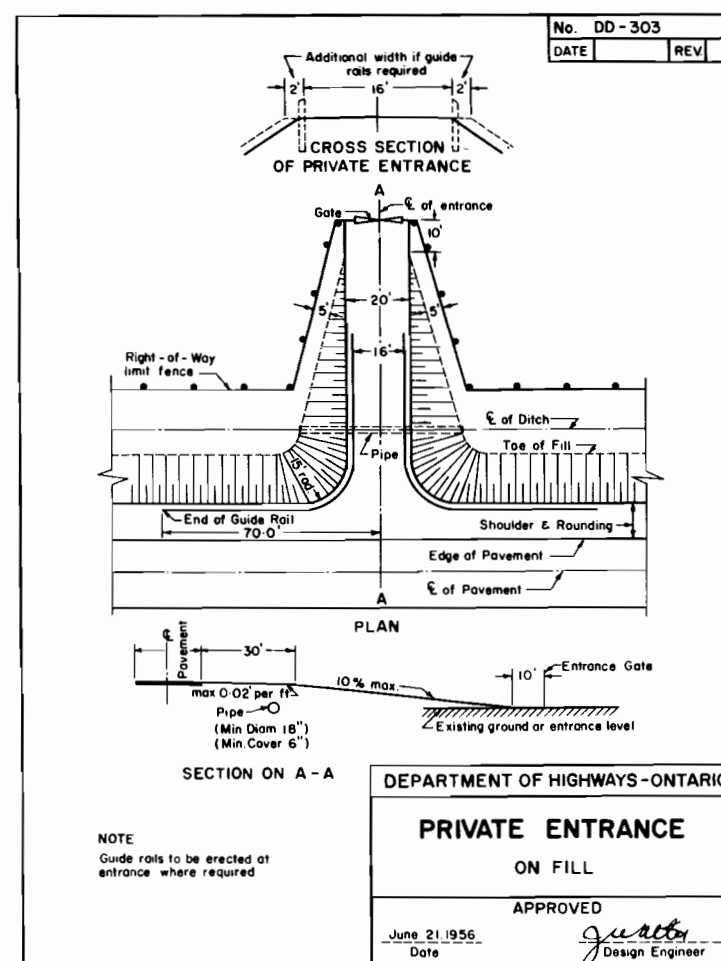
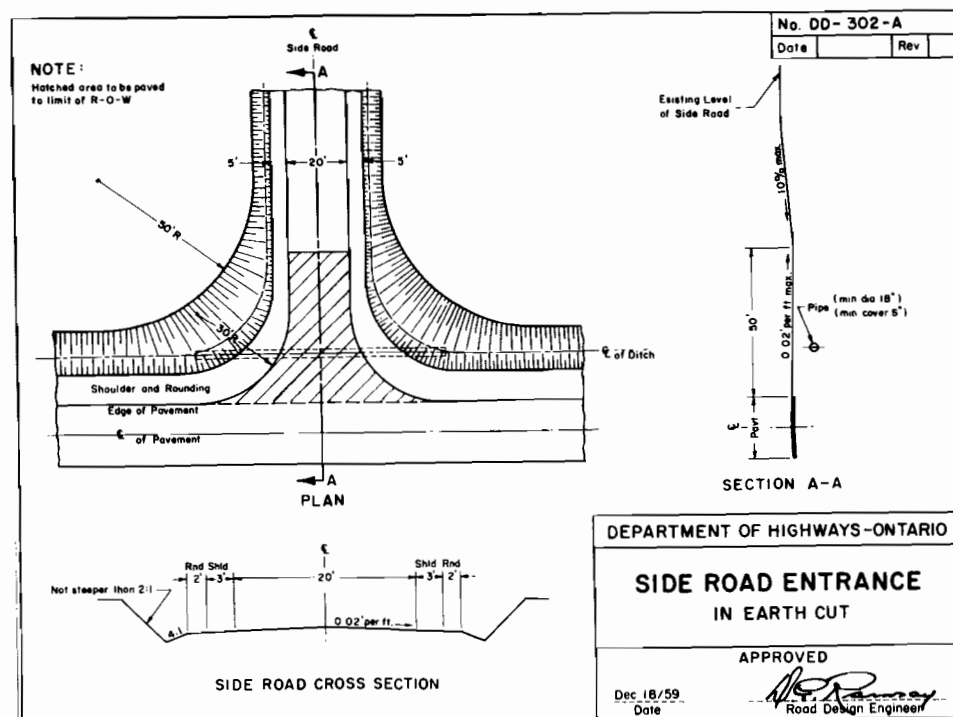
TYPICAL SECTIONS SHOWING PAVING AND TRENCHING DETAIL

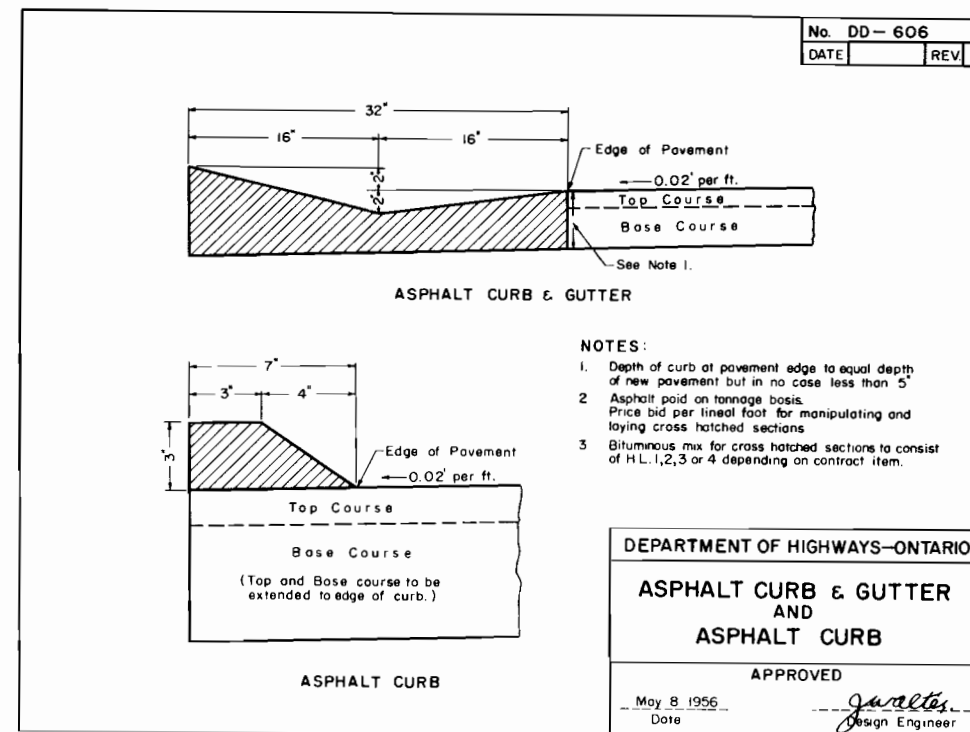
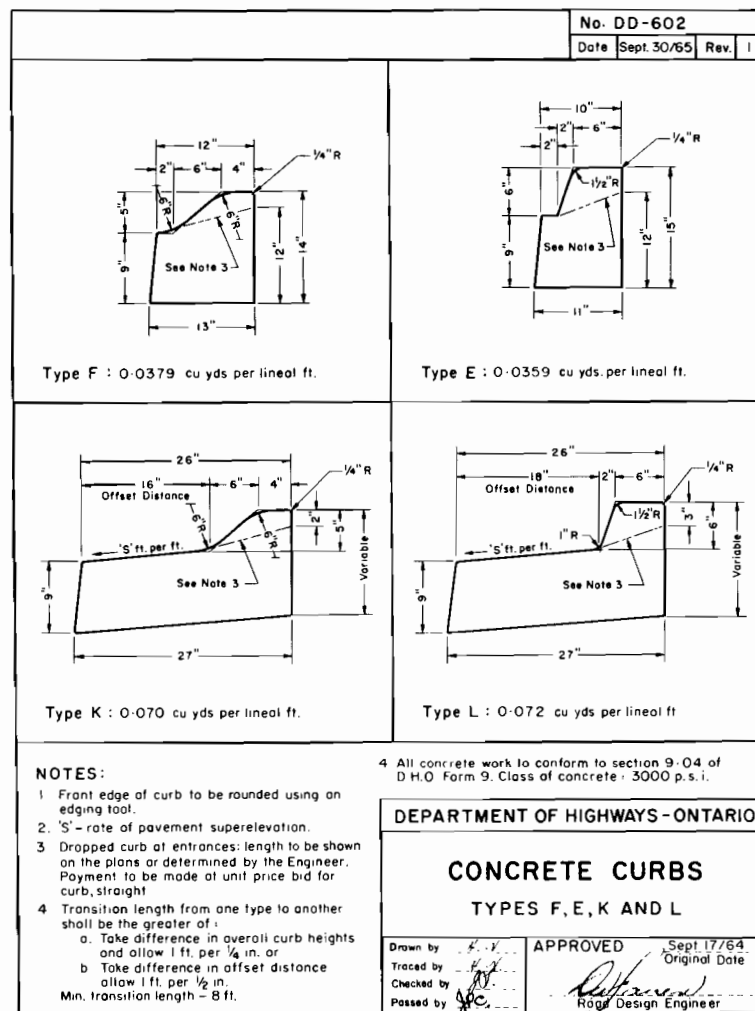
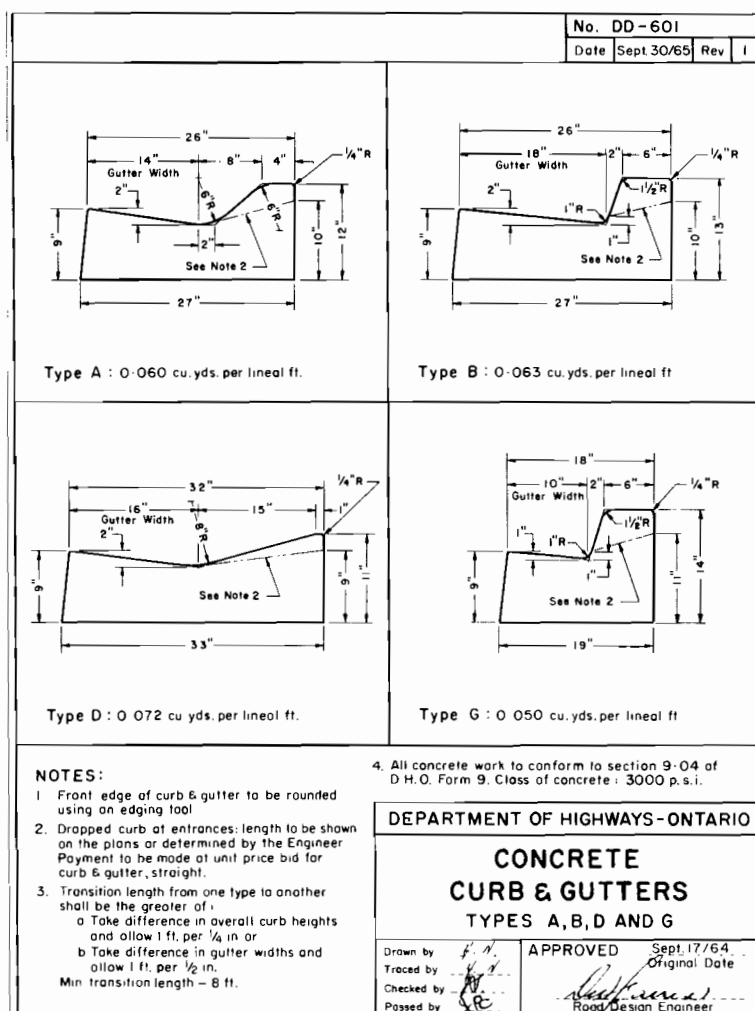
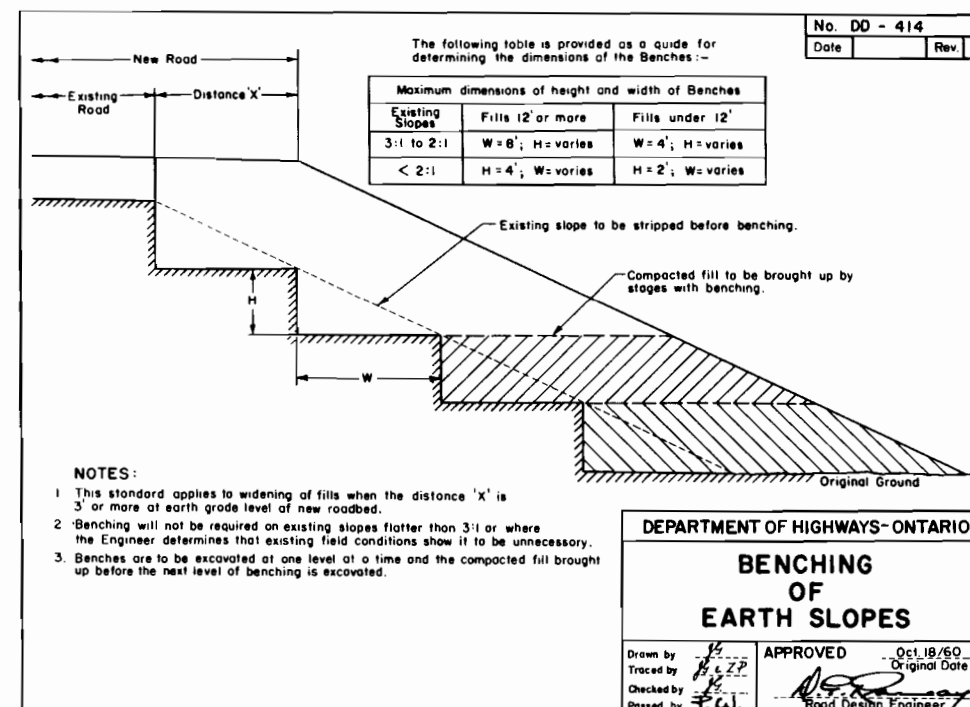
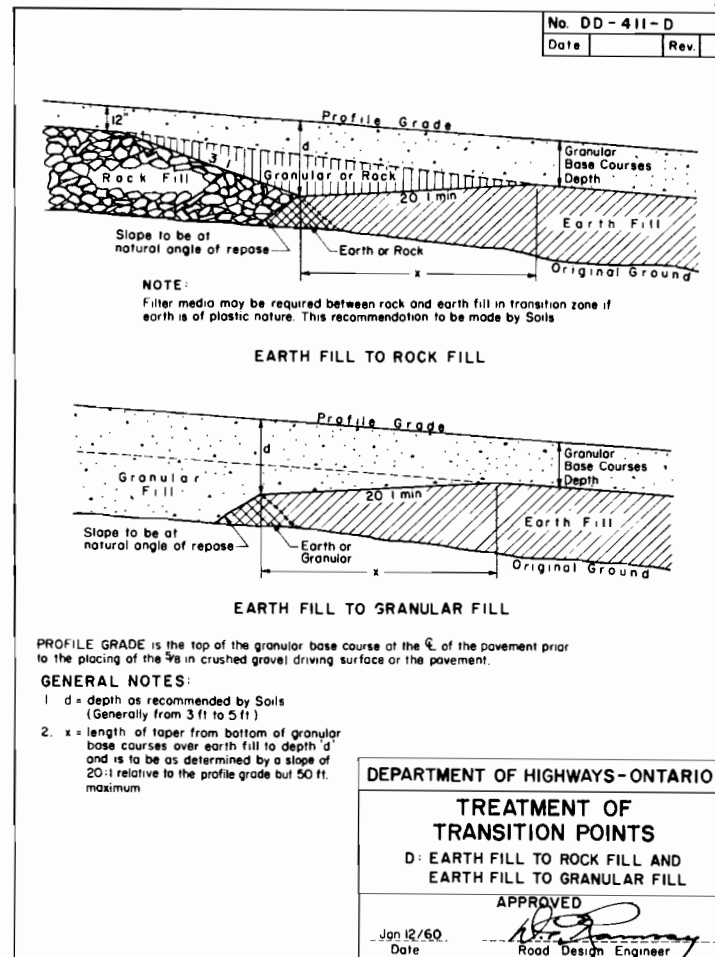
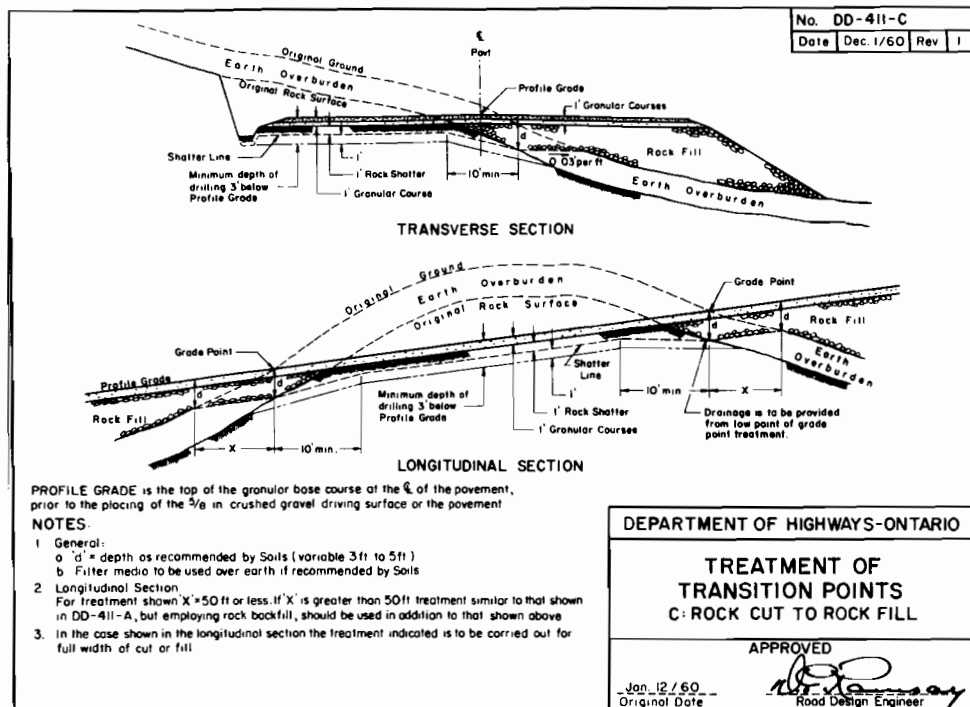
PAVEMENT DEPTHS	
Surface Course	- H.L. 1 - 1 1/2"
Binder Course	- H.L. 4 - 2"
Binder & Padding Course	- H.L. 4 - 1 1/2" over Sand Asphalt and variable depth of padding over existing pavement.
Sand Asphalt Course	- 3/4" (over granular only)

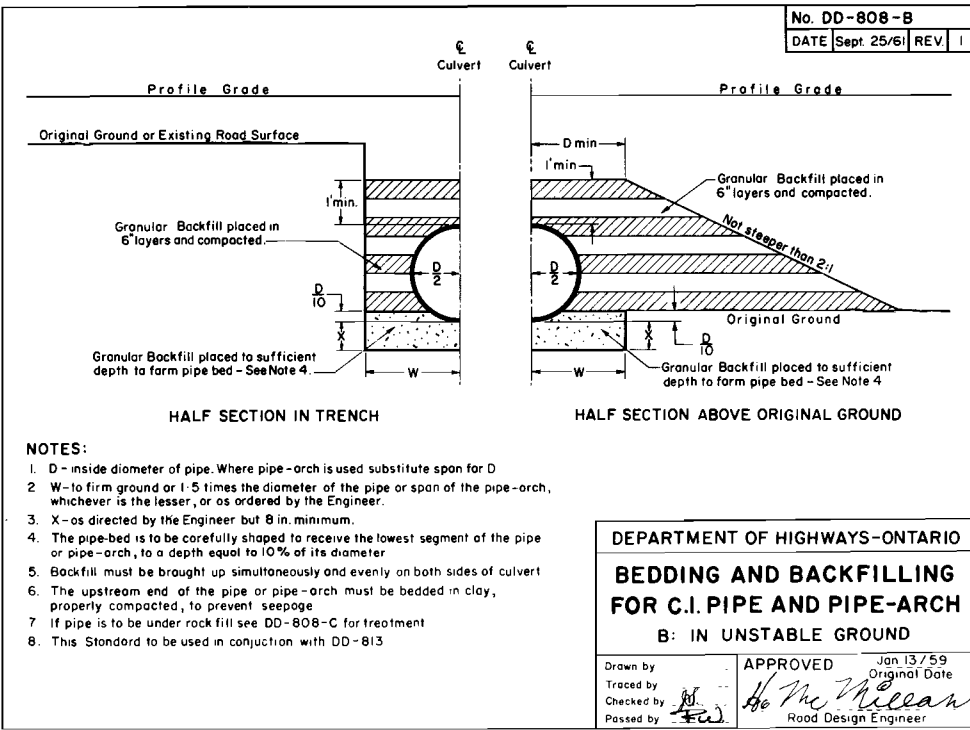
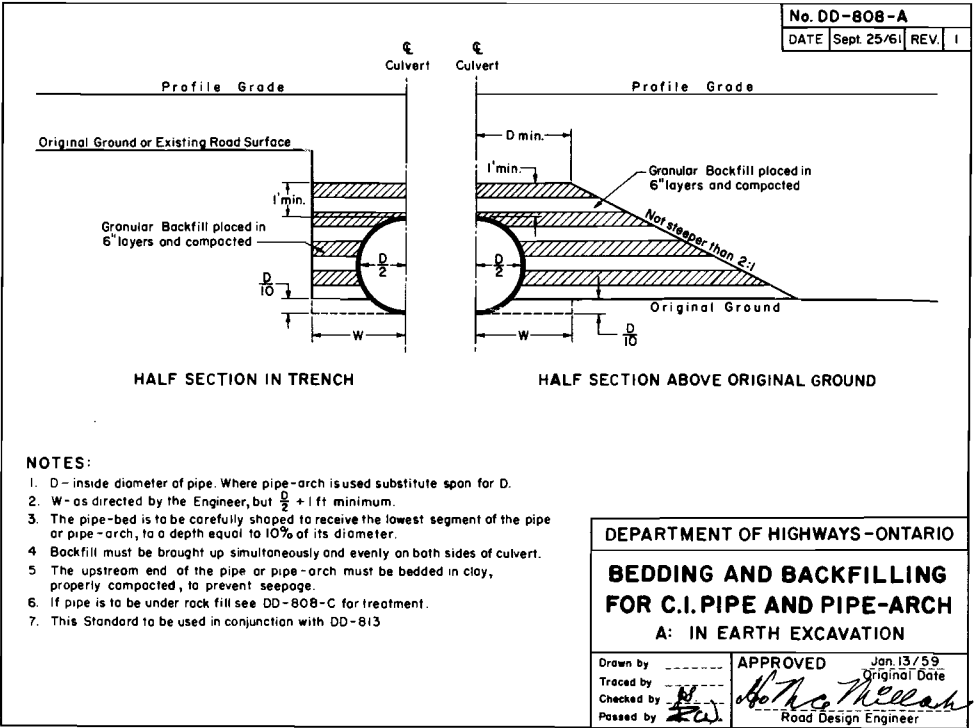
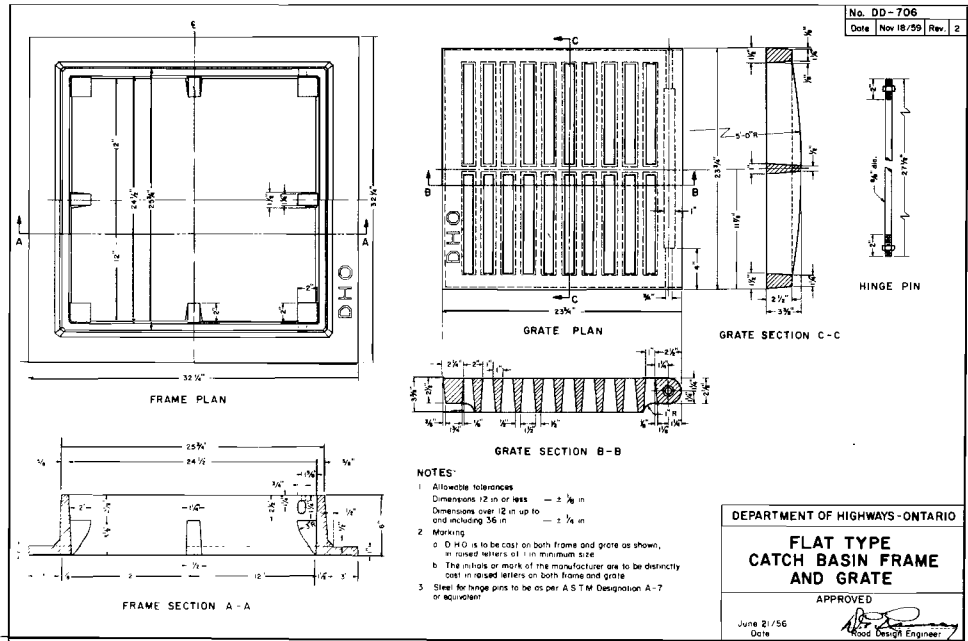
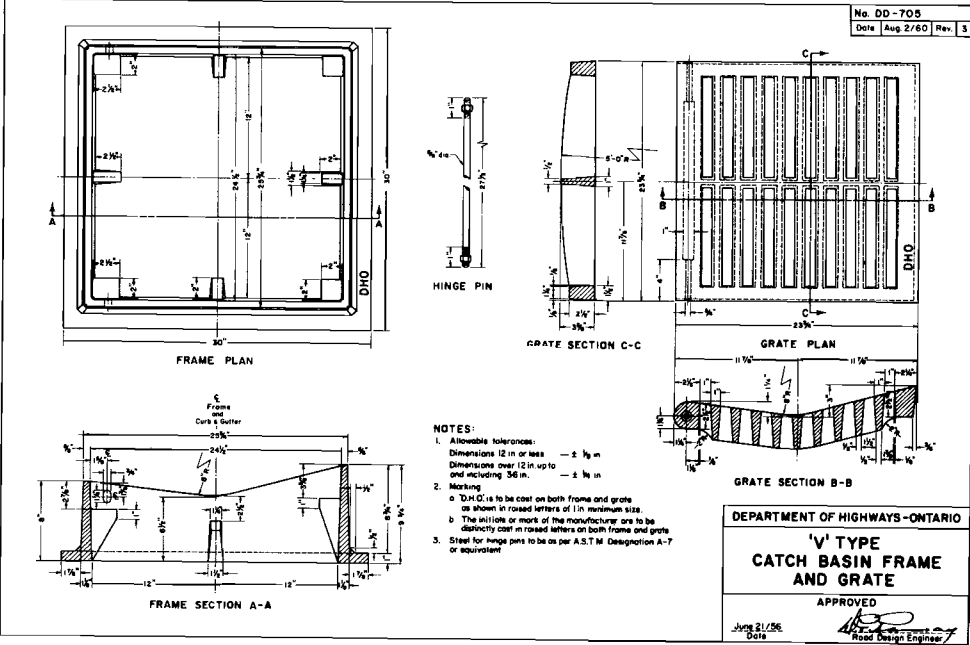
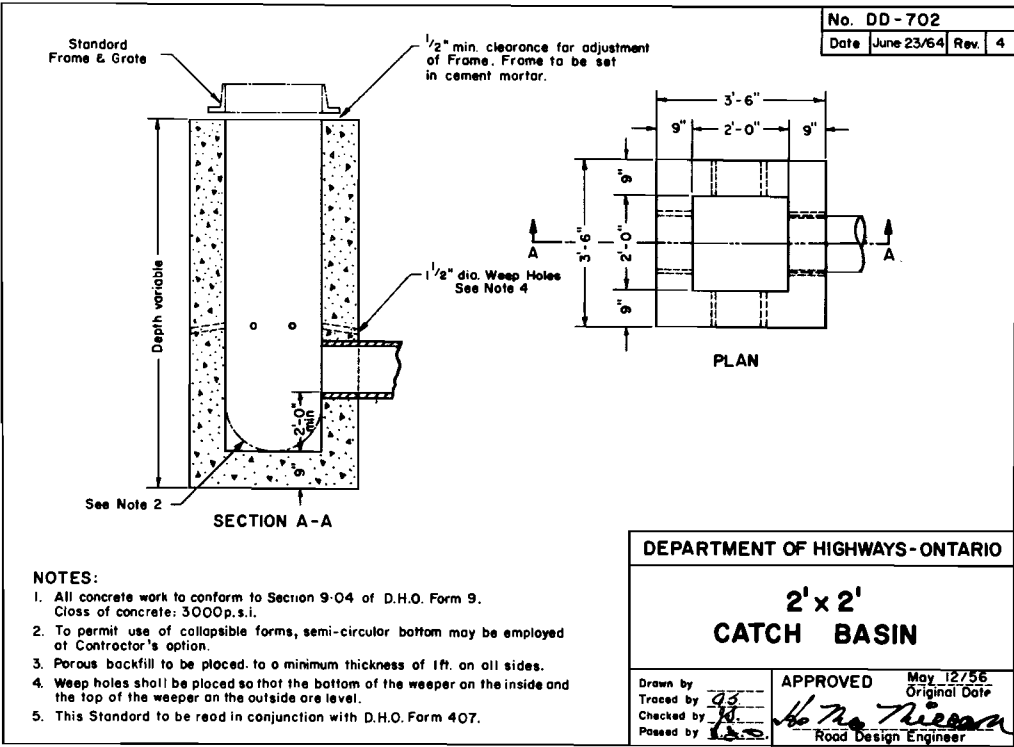
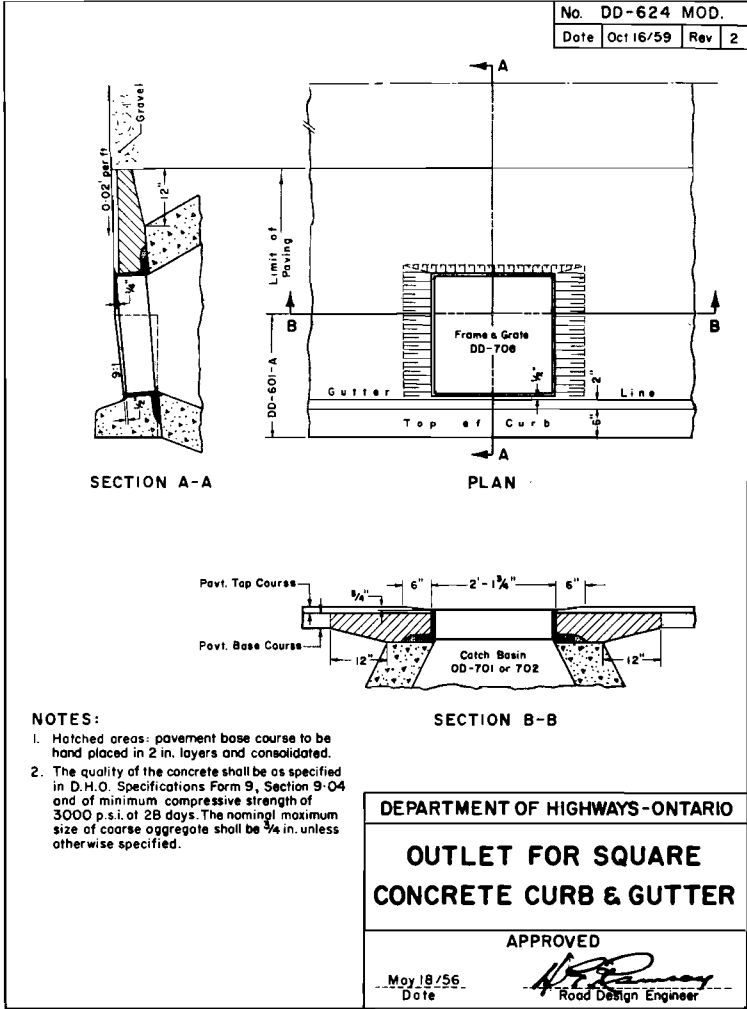
- NOTES:
1. Topsoil to be removed on slopes.
 2. Slopes: depth of cut or height of fill 4' or less - 3:1; over 4' - 2:1.
 3. Depth of granular base course and trenching is the depth measured at the edge of excavation.
 4. These sections are to be used in conjunction with standard SD-2-584.
 5. Start excavation 2' from the edge of existing pavement between stations 94+00 to 97+50; 165+00 to 196+00, and 225+60 to 229+00; and 8' from the edge of existing pavement for the remainder of the contract.
 6. Remove existing pavement under new shoulder if granular depth over existing pavement is less than 5 inches.

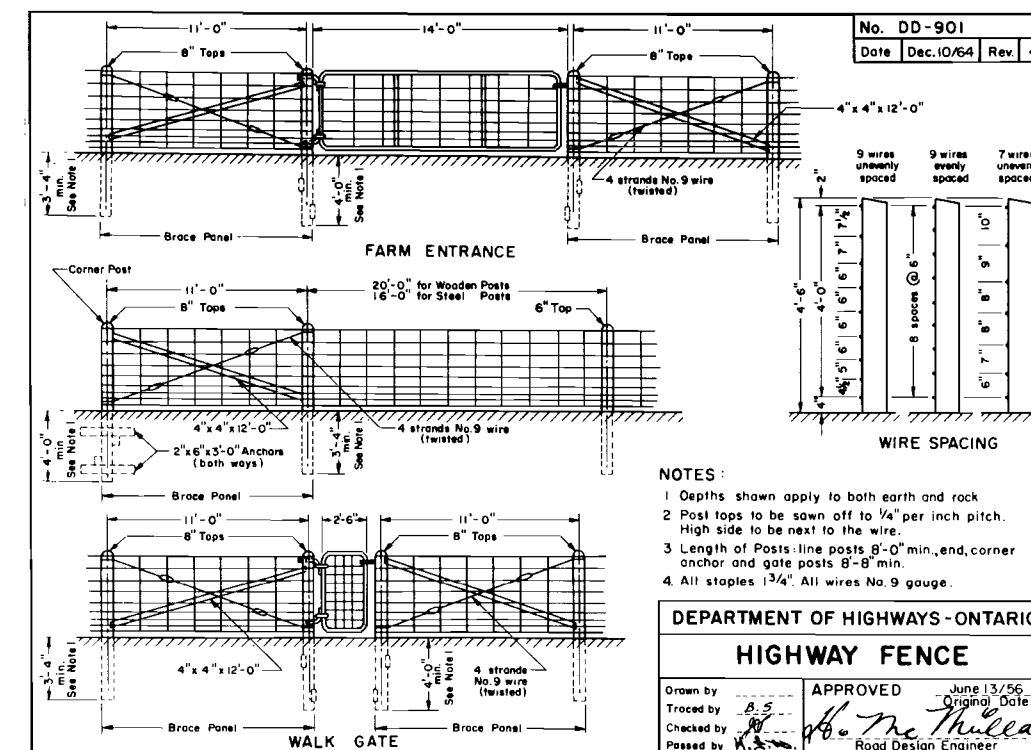
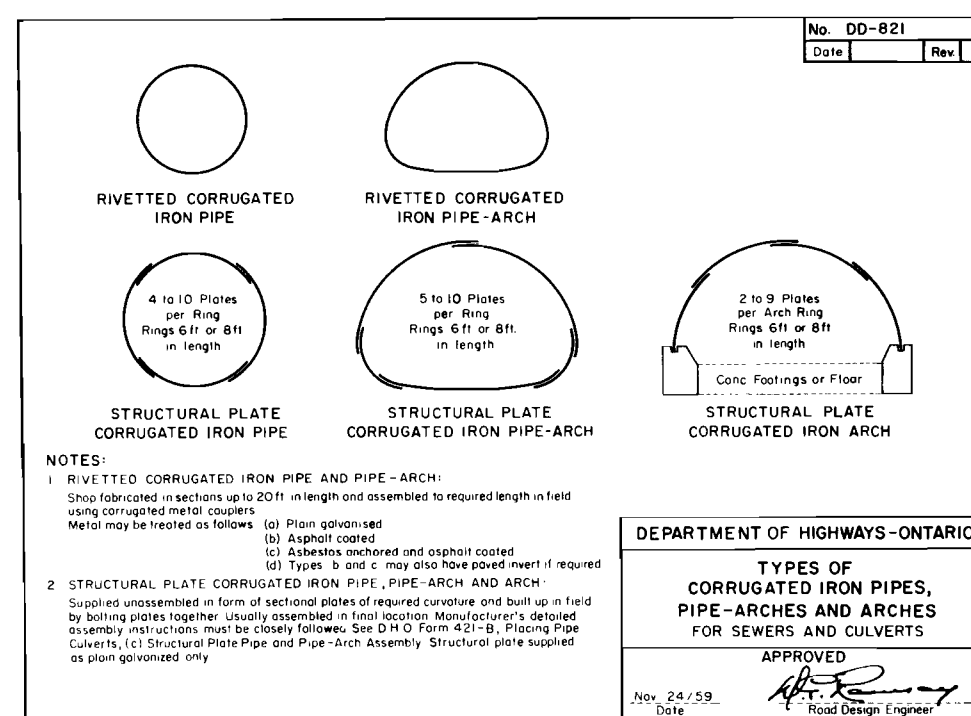
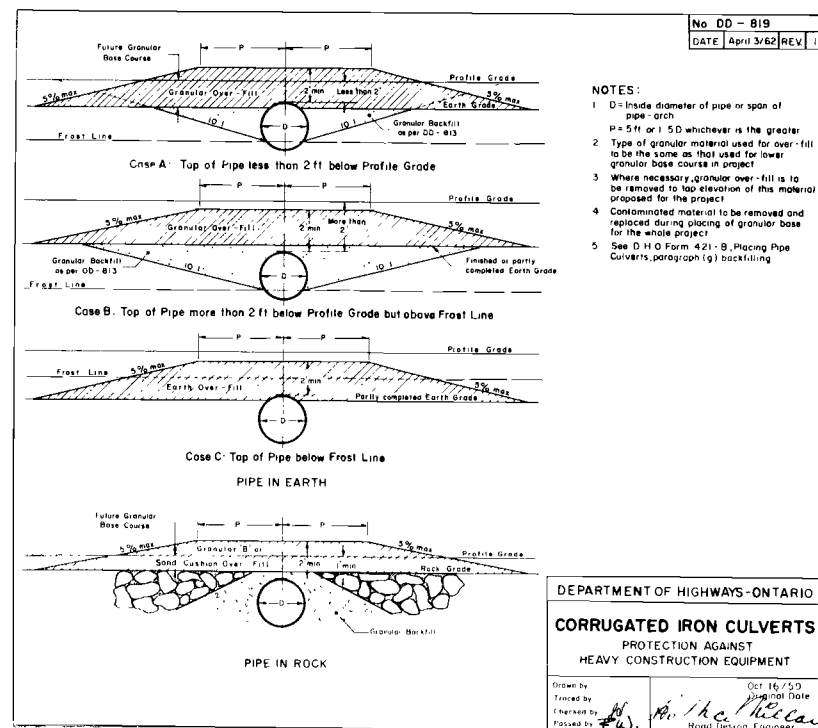
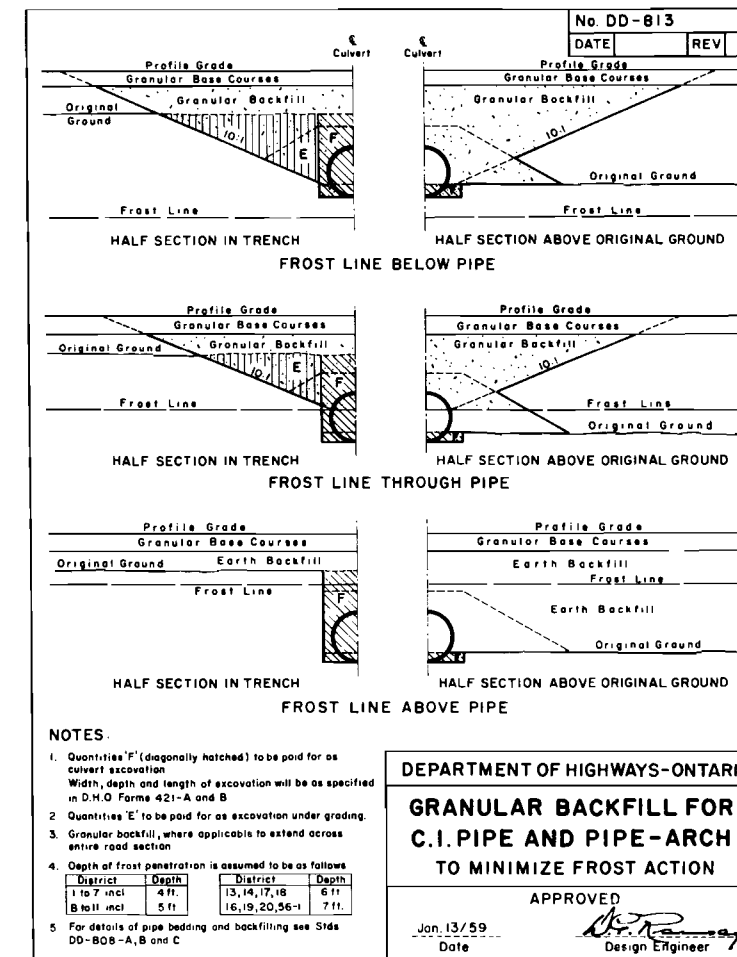
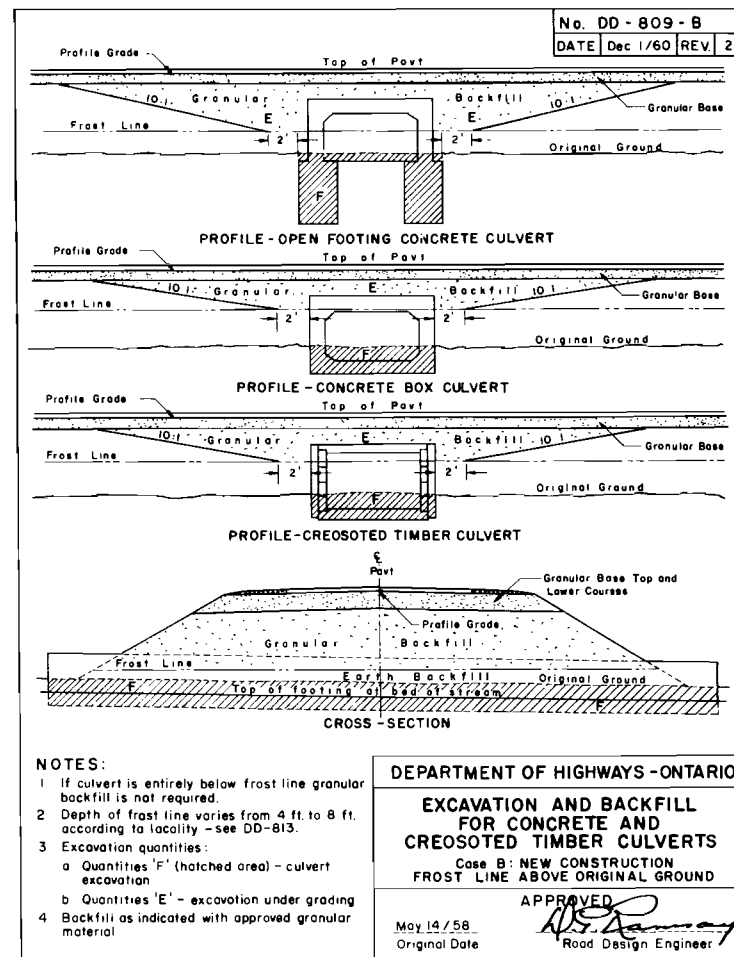
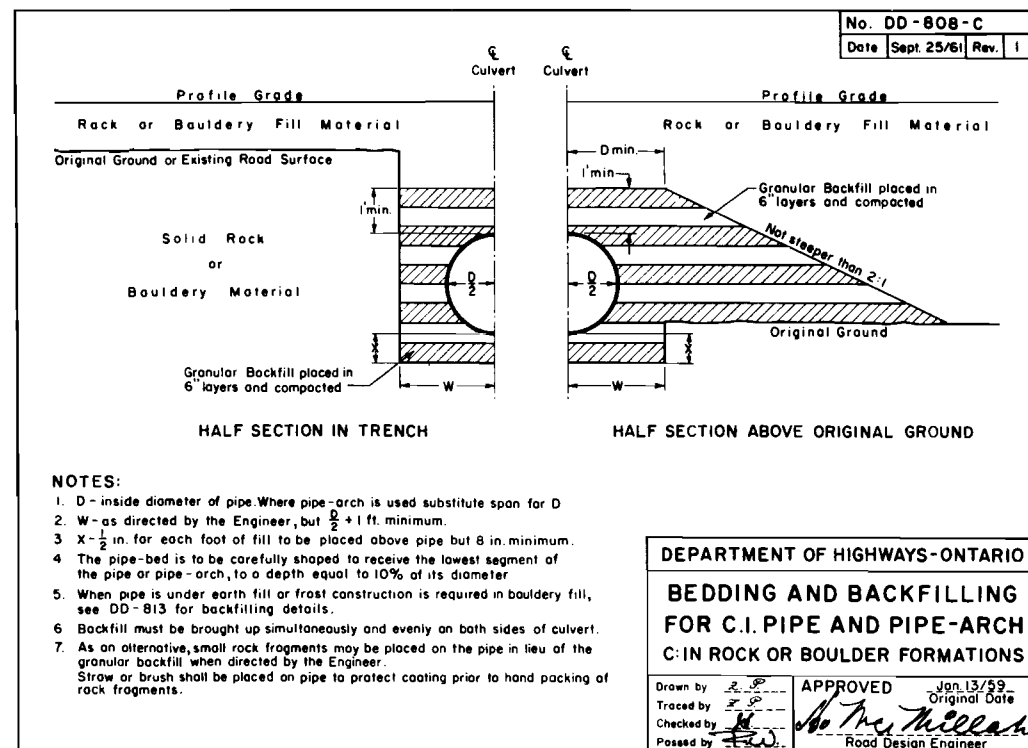


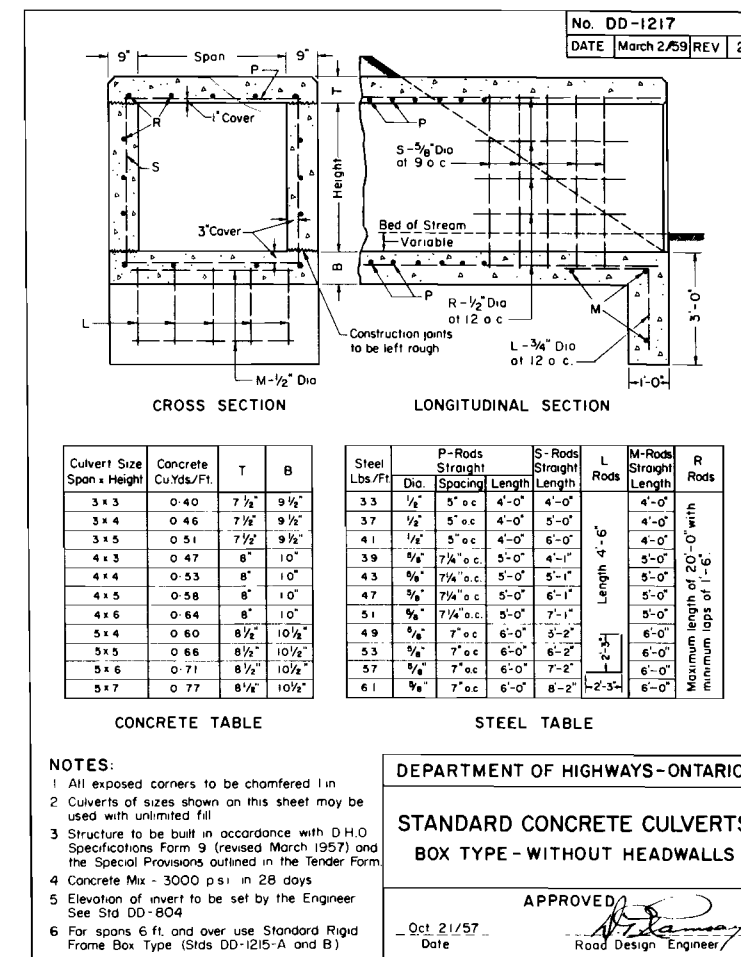
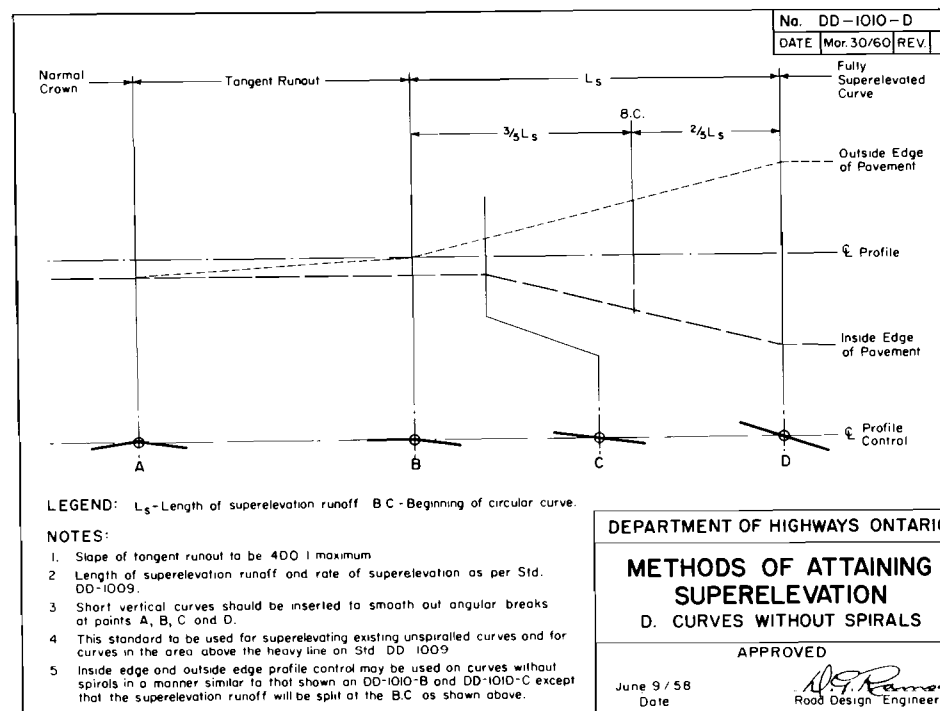
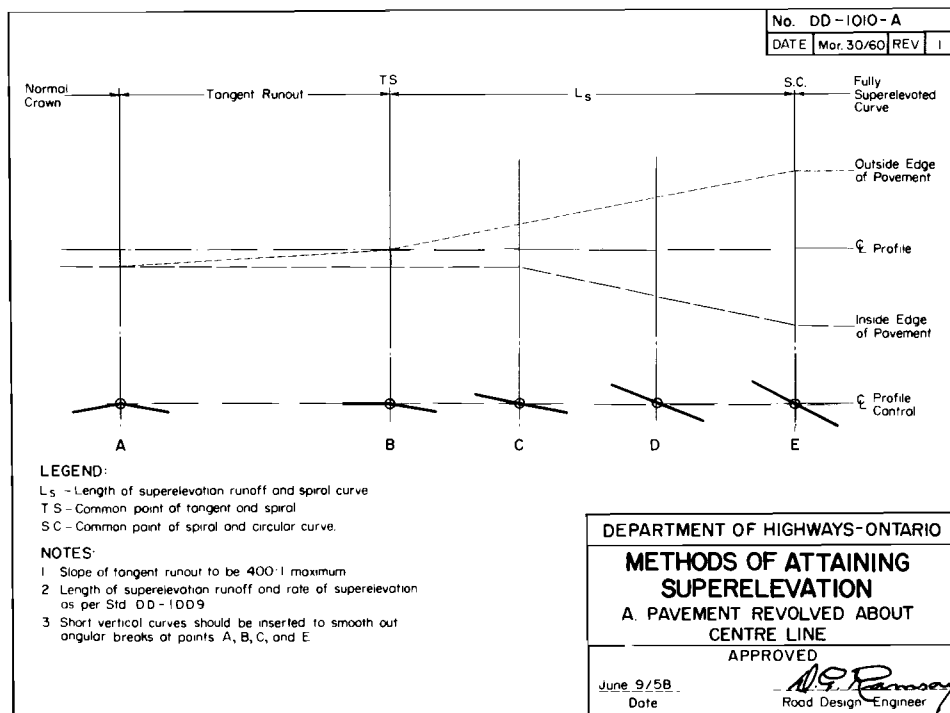
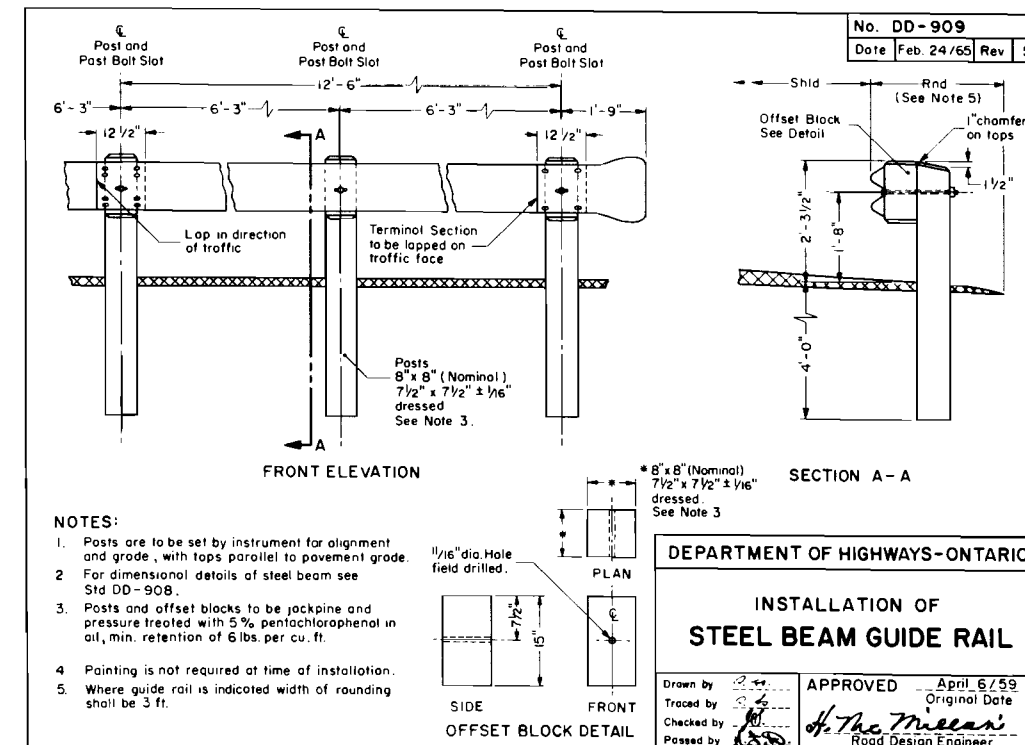
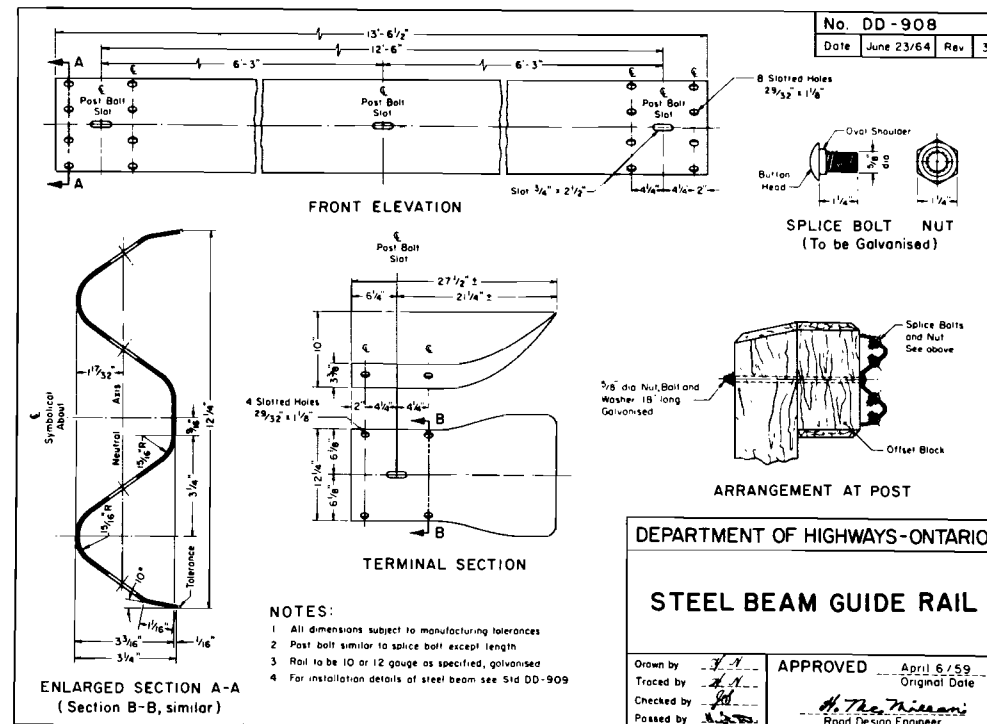
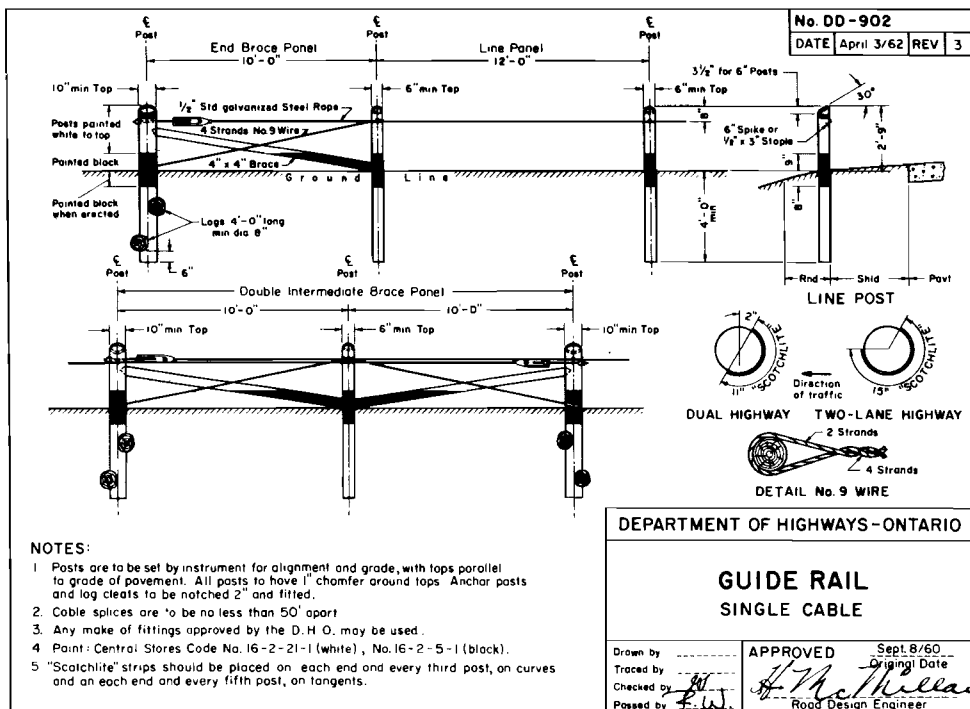


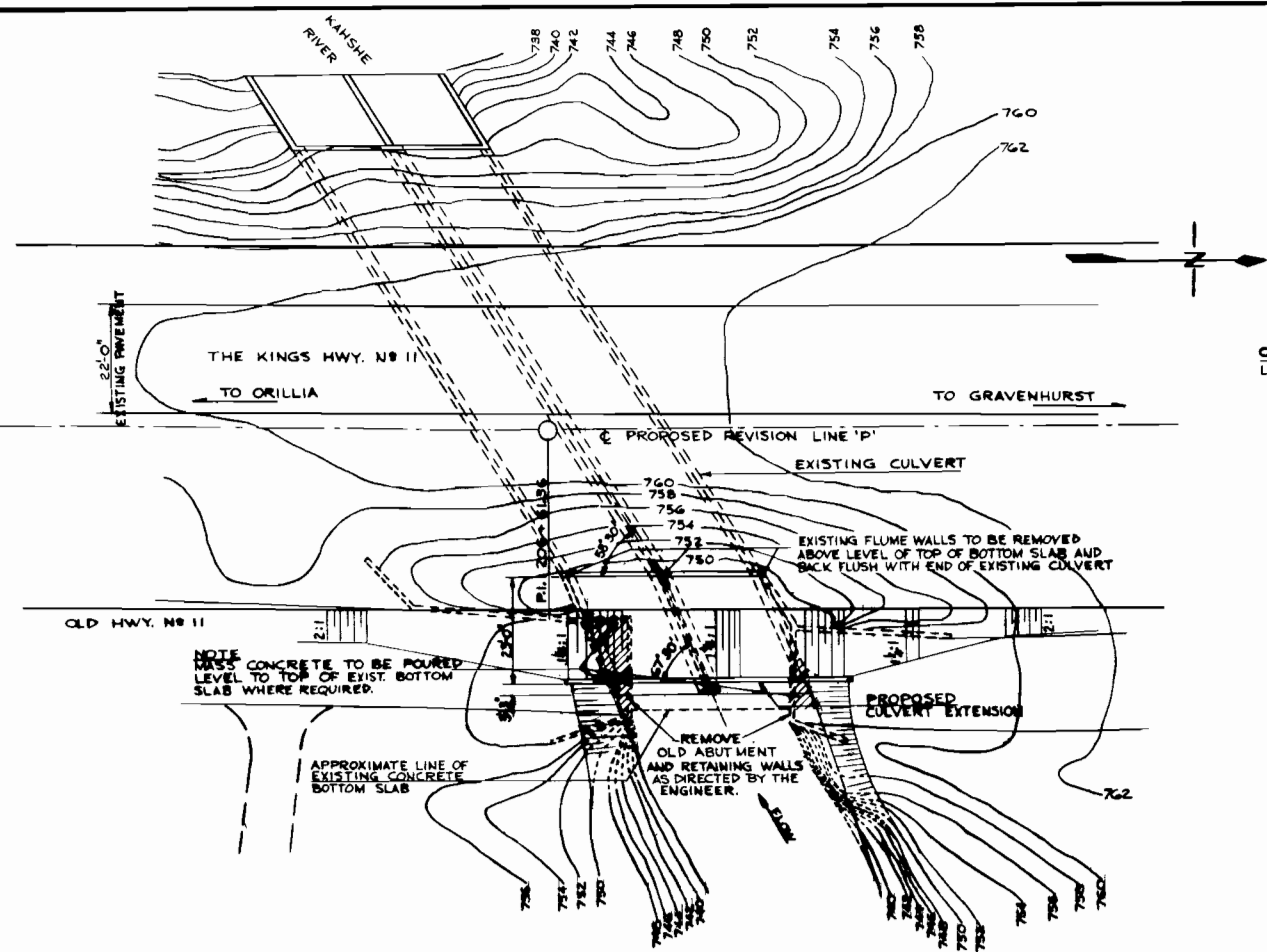




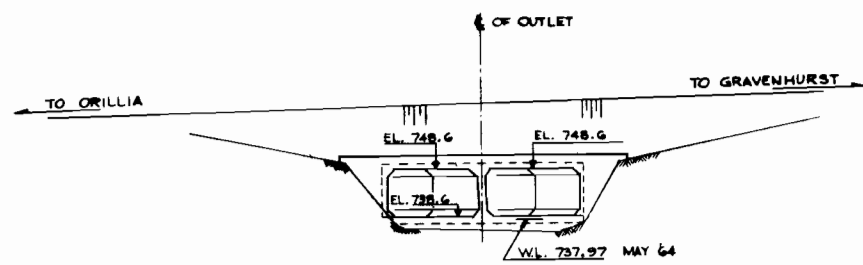




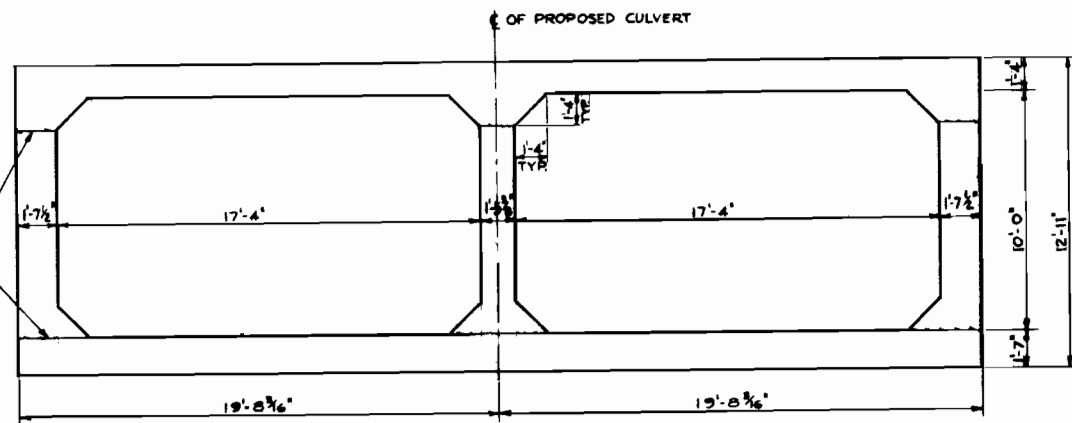




PLAN
SCALE: 1" = 20.0'



EAST ELEVATION
SCALE: 1" = 20.0'



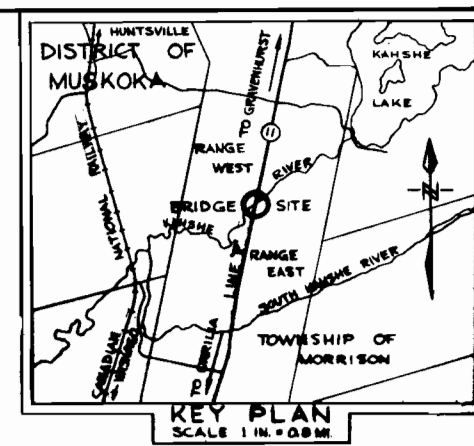
TYPICAL CROSS SECTION
SCALE: 1/4" = 1'-0"

LIST OF DRAWINGS

- D-5611 - 1 GENERAL PLAN
- 2 REINFORCING STEEL DETAILS
- 3 REINFORCING STEEL SCHEDULE

FUNCTIONS OF 67°-30'

SIN. 0.92388
COS. 0.38268
TAN. 2.41421
SEC. 2.61313



NOTES

TO ENGINEER
CONCRETE WORK ON THIS STRUCTURE MUST NOT BE COMMENCED UNTIL MONUMENTS TO FIX CONTROL POINTS HAVE BEEN ERRECTED AND CHECKED BY THE ENGINEER.

TO CONTRACTOR
STRUCTURE TO BE BUILT IN ACCORDANCE WITH FORM NO. 9 AND THE SPECIAL PROVISIONS, EXTRA COPIES OF WHICH MAY BE OBTAINED FROM THE ENGINEER.

CONCRETE MIX
CLASS OF CONCRETE 3000 P.S.I.
APPROVED ADMIXTURES SUPPLIED BY THE CONTRACTOR WILL BE ADDED TO ALL CONCRETE AS SPECIFIED BY THE ENGINEER.

CLEAR COVER ON REINFORCING STEEL
SHALL BE 3" EXCEPT AS NOTED.

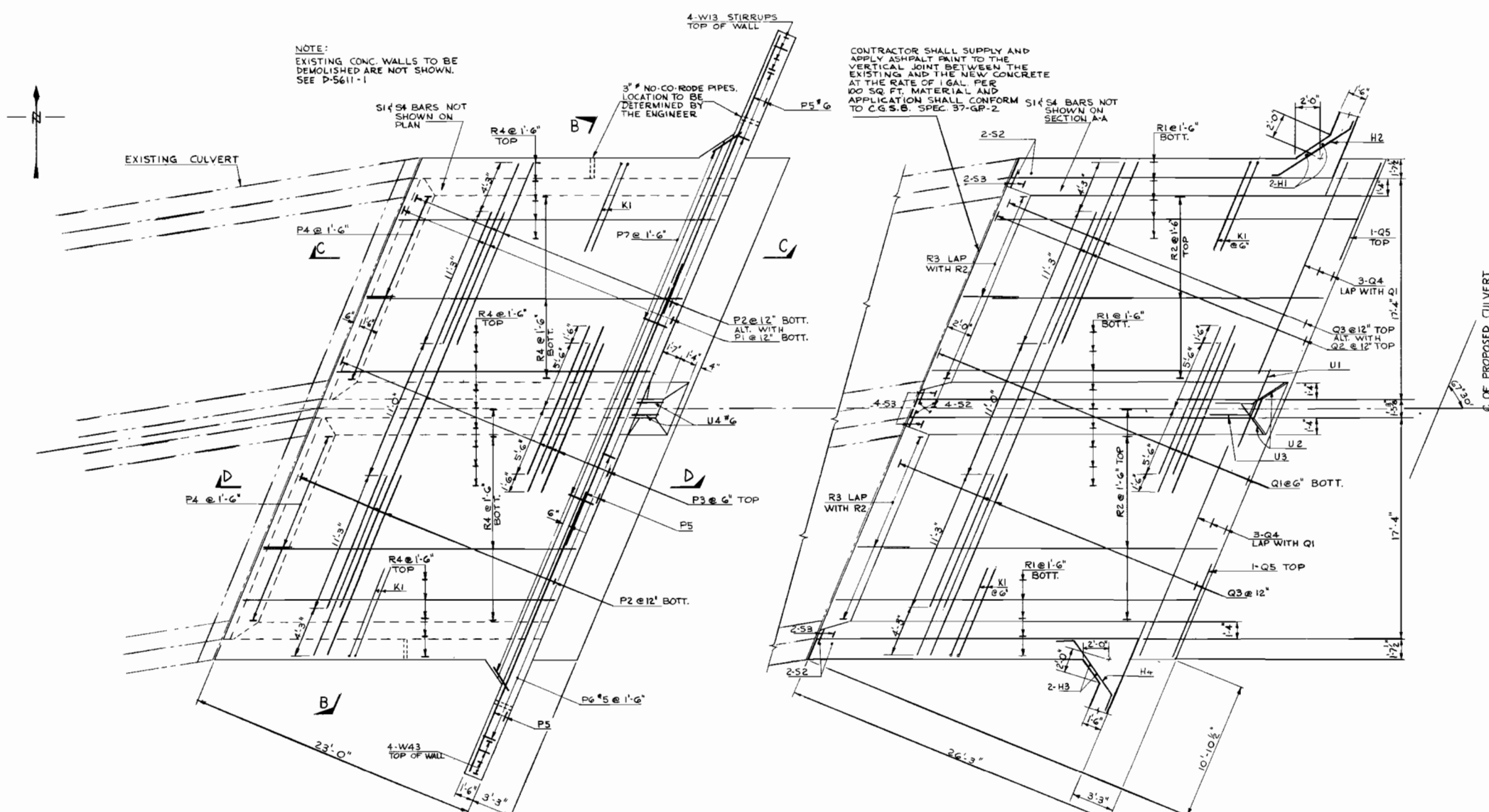
CONSTRUCTION NOTES
ALL EXPOSED EDGES TO BE CHAMFERED 1/4" EXCEPT AS NOTED.
ALL CONSTRUCTION JOINTS MUST BE APPROVED BY THE ENGINEER.
GRANULAR MATERIAL BACKFILL TO BE PLACED ON BOTH SIDES OF CULVERT EXTENSION SIMULTANEOUSLY.

G.B.M. NO DCCXXII ELEV. 718.028
C.N.R. STEEL TRUSS BRIDGE OVER SEVERN RIVER, ONE-QUARTER OF A MILE NORTH OF STATION. NORTH BRIDGE ABUTMENT, WEST END OF SOUTH FACE, FIRST COURSE ABOVE BRIDGE SEAT. BOLT SET HORIZONTALLY.
PUBLICATION NO. 19, SEVERN BRIDGE.

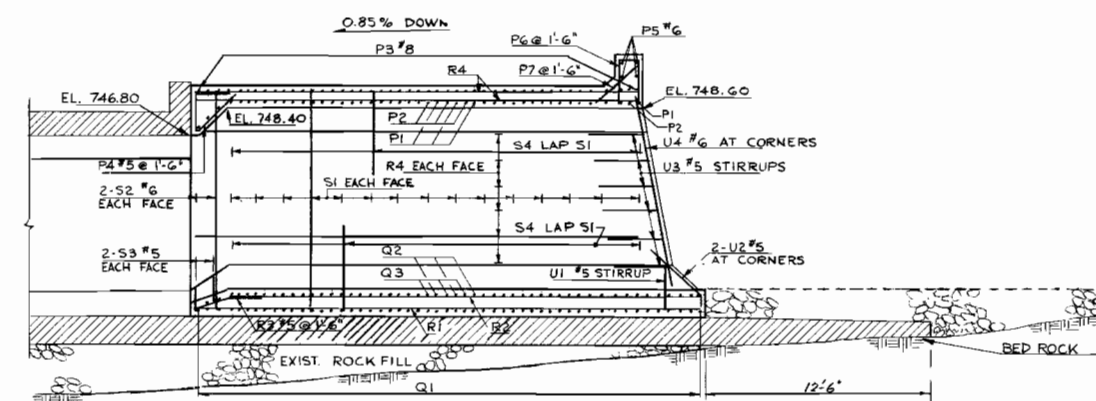
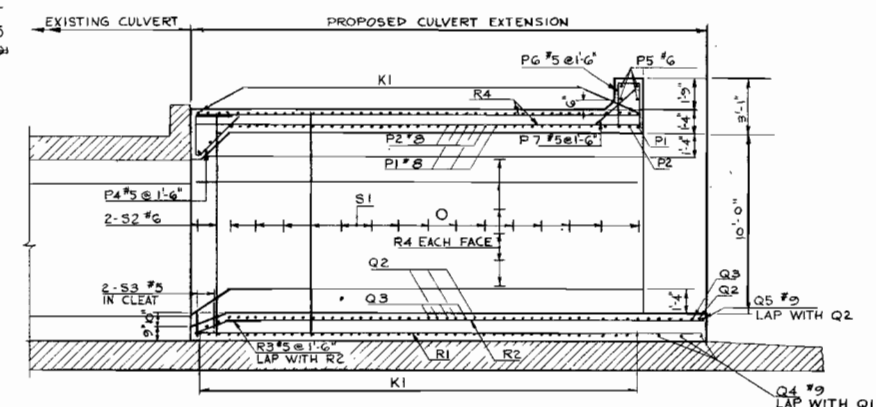
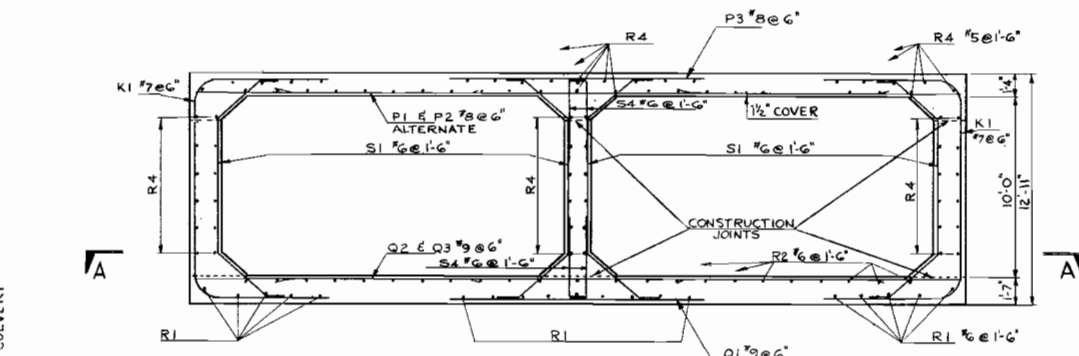
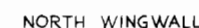
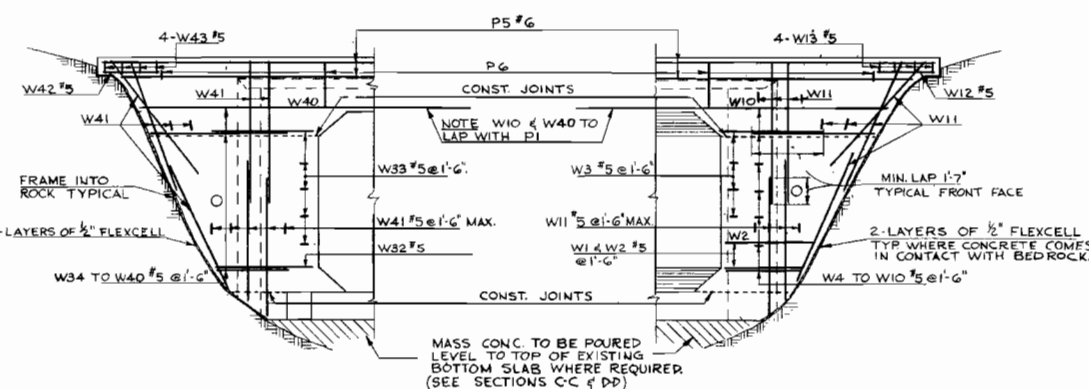
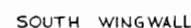
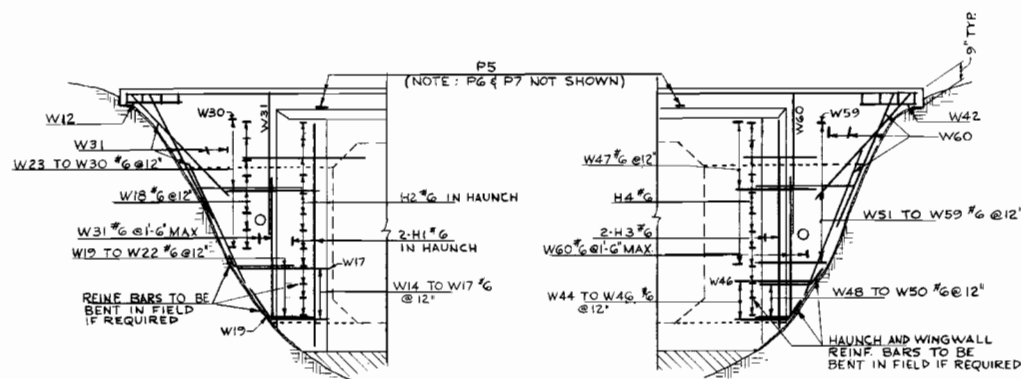


REVISIONS	DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS ONTARIO BRIDGE DIVISION			
EAST EXTENSION TO KAHSHE RIVER STRUCTURE			
KING'S HIGHWAY No. 11		DIST. No. 11	
DIST. MUSKOKA		TWP. MORRISON	
LOT 16		CON. RANGE W. OF MUSK.	
GENERAL PLAN			
APPROVED	DESIGN	SITE No.	W.P. No.
	A. P.	42-105	258-59-2
DRAWING	CHECK	CONTRACT	
G.F. M.F.	W.T.H.	No.	66-06
DATE	FEB. 65	DRAWING	No.
LOADING	H2O - SIG	No.	D-5611-1



NOTE
ALL SCALES: $\frac{3}{16}" = 1'-0"$



REVISIONS	DATE	BY	DESCRIPTION
	26 Jan 84	HSA	Dimension added for length of mass concrete slab. End squared off.

DEPARTMENT OF HIGHWAYS ONTARIO
BRIDGE DIVISION


EAST EXTENSION
TO
KAHSHE RIVER STRUCTURE

KING'S HIGHWAY No. 11 DIST. No. 11

DIST. MUSKOKA

TWP. MORRISON LOT 16 CON. RANGE E. OF MUSK. R. RANGE W. OF MUSK. R.

REINFORCING STEEL DETAILS

APPROVED 				SITE No. 42-105		W.P. No. 258-59-2	
BRIDGE ENGINEER				CONTRACT No.		GENERAL	
DESIGN	A. P.	CHECK	W. T. H.			66-06	
DRAWING	G. F. M.	CHECK	ASB	DRAWING No.		D-5611-2	
DATE	FEB. 65	LOADING	H20-S16				

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	LOCATION
R1	19	6	27'-11"	STR																CULVERT
R2	28	6	26'-0"	STR																LONGIT. BOT. OF BOTTOM SLAB @ 1'-6"
R3	28	5	4'-2"	(19)	2'-1"	2'-1"							9"	1'-11"						LONGIT. TOP — do — @ 1'-6"
R4	78	5	24'-3"	STR																TRANSVERSE IN BOTTOM SLAB @ 1'-6"
																				LONGIT. IN SIDES AND TOP SLAB @ 1'-6"
K1	82	8	26'-1"	(X1)	6'-0"	2'-4"	9'-5"	2'-4"	6'-0"							12'-5"	1'-6"			IN CORNERS AND SIDES @ 6"
S1	60	6	16'-8"	(X2)	1'-0"	3'-4"	7'-7"	3'-9"	1'-0"				2'-5"	2'-3 1/2"	2'-9"	2'-6 1/2"	12'-5"			INSIDE FACE OF WALLS @ 1'-6"
S2	8	6	12'-5"	STR																VERT. IN WALLS
S3	8	5	3'-0"	STR																DOWELS IN HAUNCH AS SHOWN
S4	60	6	5'-8"	20		1'-0"	4'-8"													VERT. IN CENTRE WALL LAP WITH S1, TOP & BOT.
Q1	52	9	12'-6"	STR																TRANSV. BOT. OF BOTTOM SLAB @ 6"
Q2	26	9	33'-6"																	-do- TOP @ 12" ALT. WITH Q3
Q3	50	9	15'-6"																	-do- TOP @ 12" ALT. WITH Q2
Q4	6	9	17'-10"																	-do- BOT. — do —
Q5	2	9	8'-0"	STR																-do- TOP — do —
P1	23	8	35'-6"	STR																TRANSV. BOT. OF TOP SLAB @ 12" ALT. WITH Q2
P2	46	8	15'-6"	STR																— do — ALT. WITH P1
P3	46	8	12'-6"	STR																TRANSV. TOP OF TOP SLAB @ 6"
P4	22	5	7'-8"	(X3)	2'-0"	2'-4"	3'-4"						2'-5"	2'-6"						IN TOP SLAB @ 1'-6" TRANSVERSE HAUNCH
P5	12	6	23'-8"	STR									4 LINES OF 3 PER LINE							LONGIT. IN HEAD WALL MIN. LAP 2'-0"
P6	39	5	6'-2"	(S10)		2'-7"	1'-0"	2'-7"												STIRRUPS IN HEAD WALL @ 1'-6"
P7	32	5	3'-0"	STR																IN HEAD WALL @ 1'-6"
U1	1	5	8'-5"	(7)			3'-10"	9"	3'-10"				2'-8"	2'-8"		6'-1"				IN CENTRE WALL HAUNCH
U2	2	5	5'-1"	(19)		1'-0"	4'-1"						9"	7 1/2"						IN CORNERS OF HAUNCH
U3	6	5	6'-11"	(S10)		3'-0"	11"	3'-0"												STIRRUPS IN CENTRE WALL
U4	2	6	10'-9"	STR																VERT. IN CENTRE WALL
W1	1	5	4'-3"	STR																NORTH WING WALL
W2	1	5	4'-9"																	HORIZONTAL FRONT FACE @ 1'-6"
W3	4	5	5'-6"																	— do —
W4	1	5	4'-0"																	— do —
W5	1	5	4'-2"																	— do —
W6	1	5	4'-6"																	— do —
W7	1	5	5'-0"																	— do —
W8	1	5	5'-9"																	— do —
W9	1	5	6'-6"																	— do —
W10	1	5	17'-0"																	— do —
W11	13	5	7'-9"																	VERTICAL FRONT FACE @ 1'-6" MAXIMUM
W12	2	5	3'-0"	STR																HORIZONTAL TOP OF WALL BOTH FACES
W13	4	5	3'-8"	(T2)	4"	1'-0"	6"	1'-0"	6"		4"									STIRRUPS TOP OF WALL
W14	1	6	3'-3"	STR																HORIZONTAL BACK FACE
W15	1	6	4'-0"																	— do —
W16	1	6	4'-6"																	— do —
W17	1	6	5'-0"																	— do —
W18	8	6	5'-3"																	— do —
W19	1	6	4'-0"																	— do —
W20	1	6	4'-6"																	— do —
W21	1	6	4'-9"																	— do —
W22	1	6	5'-0"																	— do —
W23	1	6	4'-3"																	— do —
W24	1	6	4'-7"																	— do —
W25	1	6	5'-1"	STR																— do —

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	LOCATION
W26	1	6	5'-9"	STR																N. WINGWALL CONT'D.
W27	1	6	6'-3"																	HORIZONTAL BACK FACE
W28	1	6	6'-9"																	— do —
W29	1	6	7'-3"																	— do —
W30	1	6	7'-9"																	— do —
W31	9	6	7'-10"	STR																VERTICAL BACK FACE
W32	1	5	5'-6"	STR																SOUTH WING WALL
W33	5	5	6'-0"																	HORIZONTAL FRONT FACE
W34	1	5	4'-0"																	— do —
W35	1	5	4'-5"																	— do —
W36	1	5	5'-0"																	— do —
W37	1	5	5'-10"																	— do —
W38	1	5	6'-6"																	— do —
W39	1	5	6'-10"																	— do —
W40	1	5	18'-0"																	— do —
W41	15	5	7'-9"																	VERTICAL FRONT FACE
W42	2	5	3'-0"	STR																HORIZONTAL TOP OF WALL BOTH FACES
W43	4	5	3'-8"	(T2)	4"	1'-0"	6"	1'-0"	6"		4"									STIRRUPS TOP OF WALL
W44	1	6	3'-0"	STR																HORIZONTAL BACK FACE
W45	1	6	3'-6"																	— do —
W46	1	6	4'-3"																	— do —
W47	9	6	4'-6"																	— do —
W48	1	6	3'-3"																	— do —
W49	1	6	3'-6"																	— do —
W50	1	6	3'-9"																	— do —
W51	1	6	4'-0"																	— do —
W52	1	6	4'-3"																	— do —
W53	1	6	4'-6"																	— do —
W54	1	6	5'-0"																	— do —
W55	1	6	5'-6"																	— do —
W56	1	6	5'-9"																	— do —
W57	1	6	6'-0"																	— do —
W58	1	6	6'-6"																	— do —
W59	1	6	7'-6"																	— do —
W60	9	6	8'-0"	STR																VERTICAL BACK FACE
H1	2	6	12'-4"	STR																HAUNCHES
H2	12	6	8'-3"	(7)			6"	7'-3"	6"				3"	4 1/2"						VERTICAL IN N. HAUNCH
H3	2	6	12'-3"	STR																HORIZONTAL — do —
H4	12	6	7'-9"	(7)			1'-4"	5'-1"	1'-4"				1'-1 1/2"	9"						VERTICAL IN S. HAUNCH
																				HORIZONTAL — do —

NOTES:-

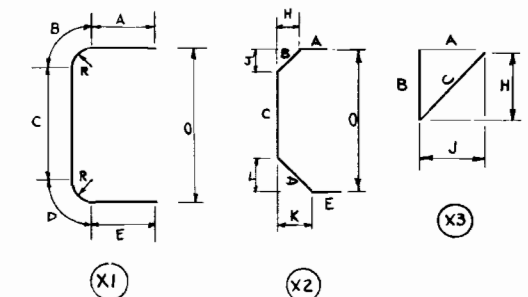
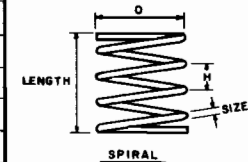
BENDING DETAILS AND NOTES ARE AS OUTLINED IN THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (A.C.I. 318-67) AS ISSUED BY THE AMERICAN CONCRETE INSTITUTE WITH THE FOLLOWING EXCEPTIONS AND ADDITIONS:-

7. (REVISED AS FOLLOWS)

NO ALLOWANCE FOR BEND CURVATURE HAS BEEN MADE EXCEPT FOR STANDARD HOOK AND RADII IN EXCESS OF SAME. ALLOWANCE FOR BAR EXTENSION DUE TO BENDING (CREEP) SHALL BE MADE BY THE FABRICATOR. WEIGHT FOR PAYMENT SHALL BE BASED ON THE DIMENSION GIVEN IN THE COLUMN HEADED "LENGTH".

8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 318-67

9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED IN THE BOX MARKED "WEIGHT OF STEEL" IN THE TITLE BLOCK.



ALL STEEL TO BE HARD GRADE & HIGH BOND EXCEPT AS NOTED.

REVISIONS	DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS ONTARIO
BRIDGE DIVISION

EAST EXTENSION

TO

KAHSHE RIVER STRUCTURE

KING'S HIGHWAY NO. 11

DIST. NO. 11

DIST. MUSKOKA

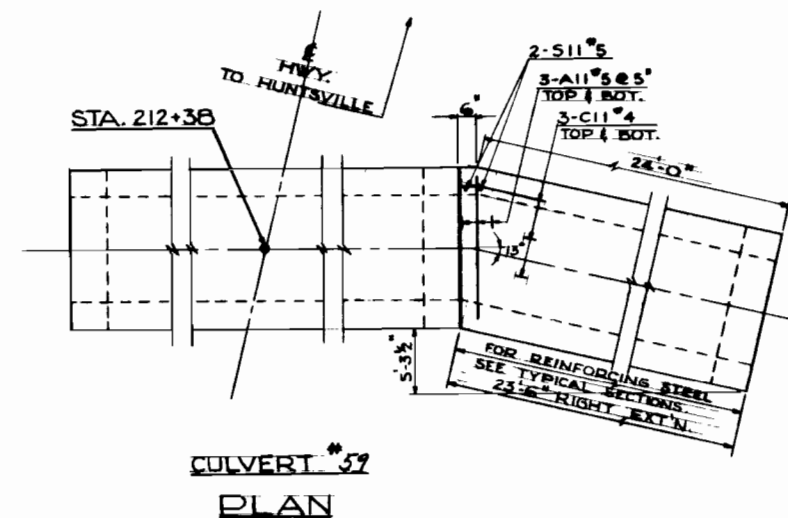
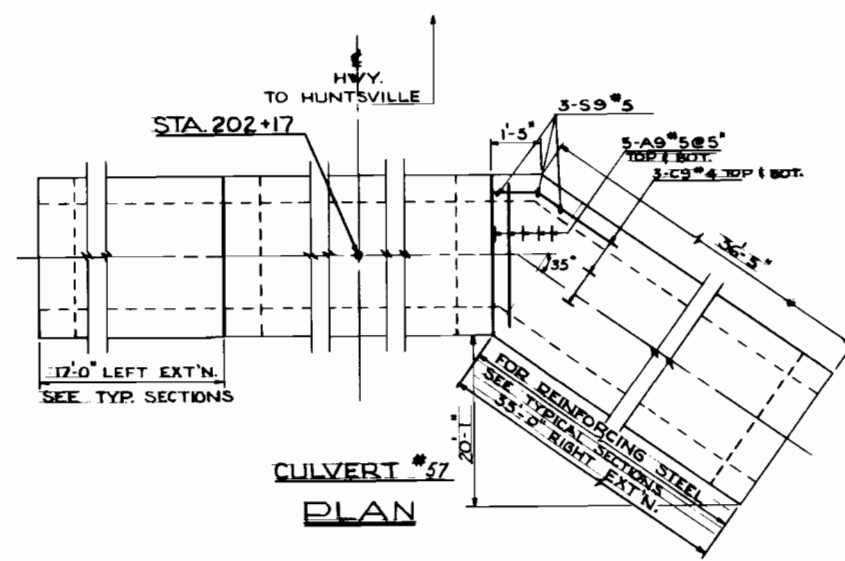
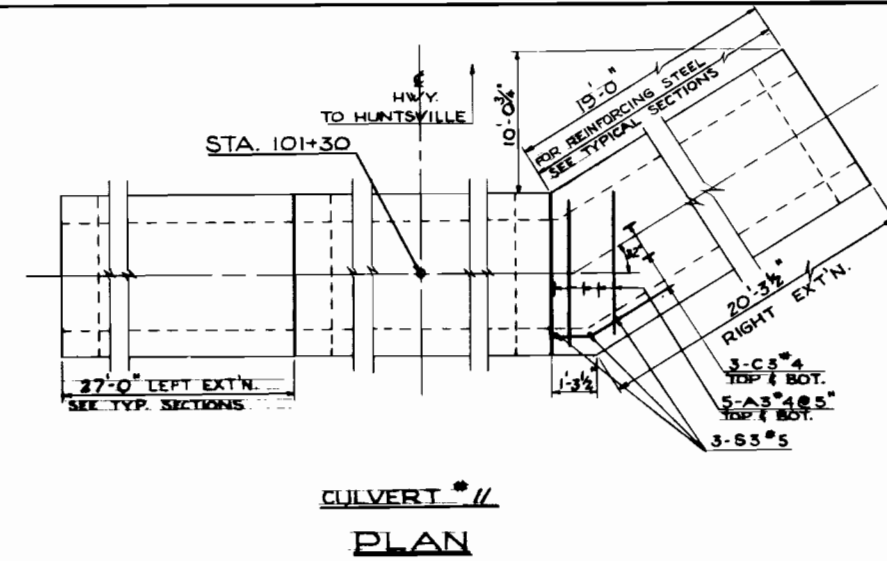
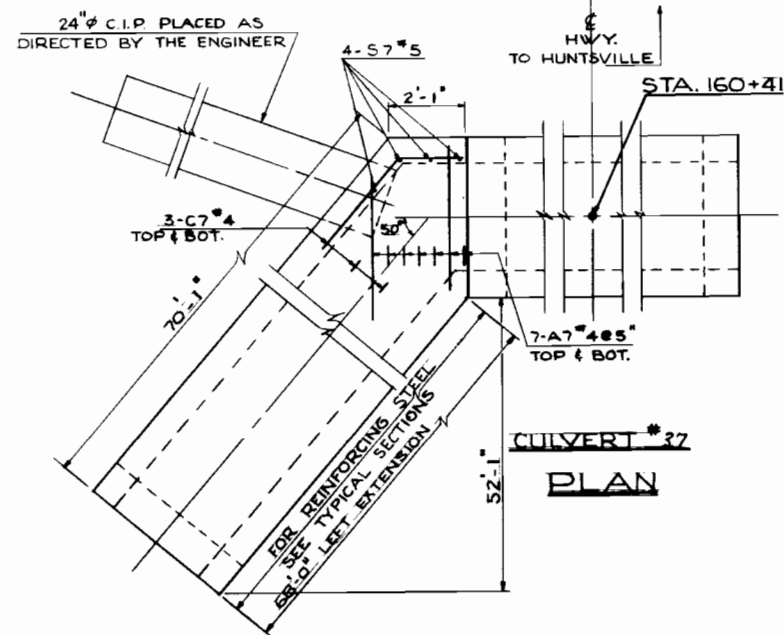
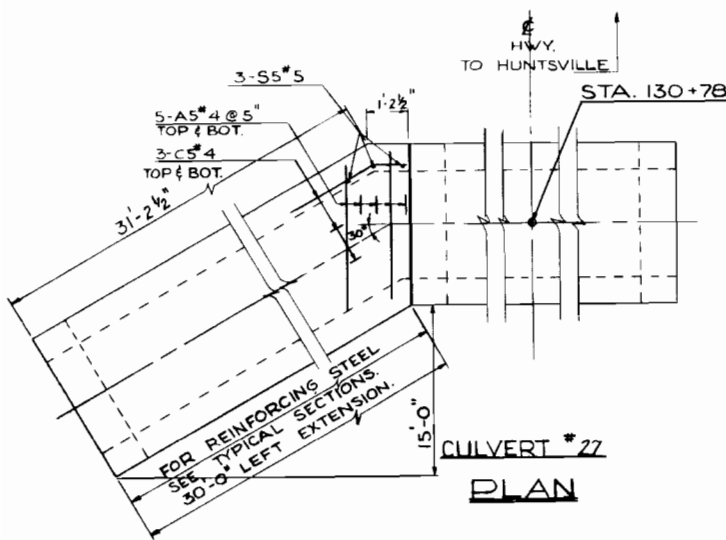
TWP. MORRISON

LOT 16

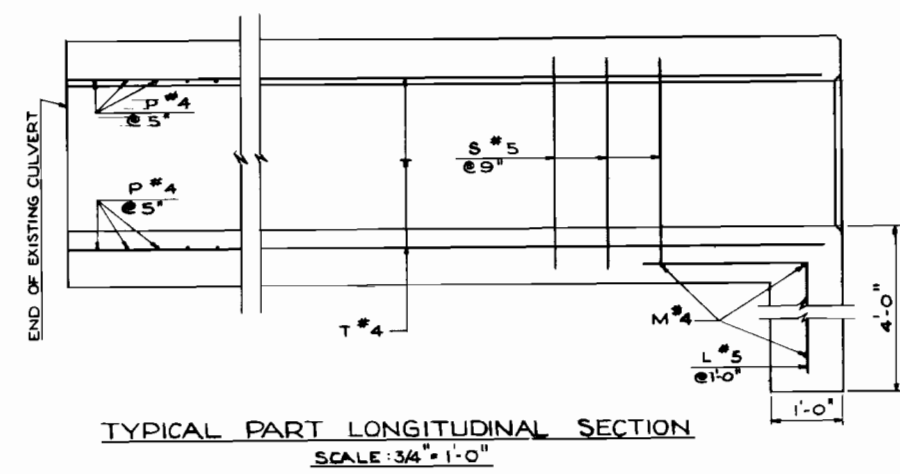
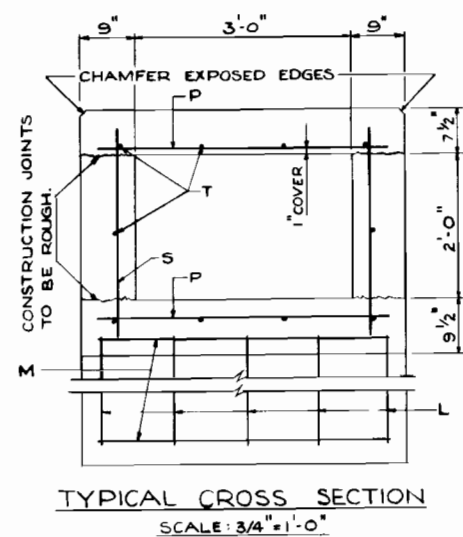
RANGE E. OF MUSK. RD.
CON. RANGE W. OF MUSK. RD.

REINFORCING STEEL SCHEDULE

WEIGHT OF STEEL	27,095 lbs.	REQ'D NO.	350251	W.P. NO.	258-59-2
DRAWN G. F. M.	CHECK HSB	CONTRACT NOS.			66-06
DATE FEBRUARY 1965		DRAWING NO.			D-5611-3



NOTE: SCALES 3/8" = 1'-0"
EXCEPT AS NOTED.



- LIST OF DRAWINGS
- 1 PLANS AND CROSS-SECTIONS
 - 2 PLANS AND CROSS-SECTIONS
 - 3 REINFORCING STEEL SCHEDULE
 - 4 REINFORCING STEEL SCHEDULE
 - 5 BOREHOLE LOCATION AND SOIL DATA

NOTES

TO ENGINEER
CONCRETE WORK ON THIS STRUCTURE MUST NOT BE COMMENCED UNTIL MONUMENTS TO FIX CONTROL POINTS HAVE BEEN ERECTED AND CHECKED BY THE ENGINEER.

TO CONTRACTOR
STRUCTURE TO BE BUILT IN ACCORDANCE WITH FORM NO. 1 AND THE SPECIAL PROVISIONS, EXTRA COPIES OF WHICH MAY BE OBTAINED FROM THE ENGINEER.

CONCRETE MIX
CLASS OF CONCRETE, 3,000 P.S.I.
APPROVED ADMIXTURES SUPPLIED BY THE CONTRACTOR WILL BE ADDED TO ALL CONCRETE AS SPECIFIED BY THE ENGINEER.

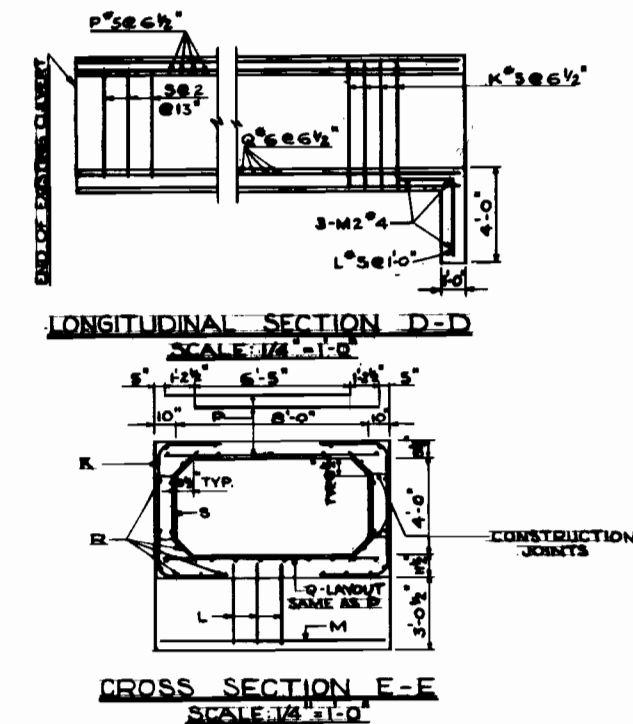
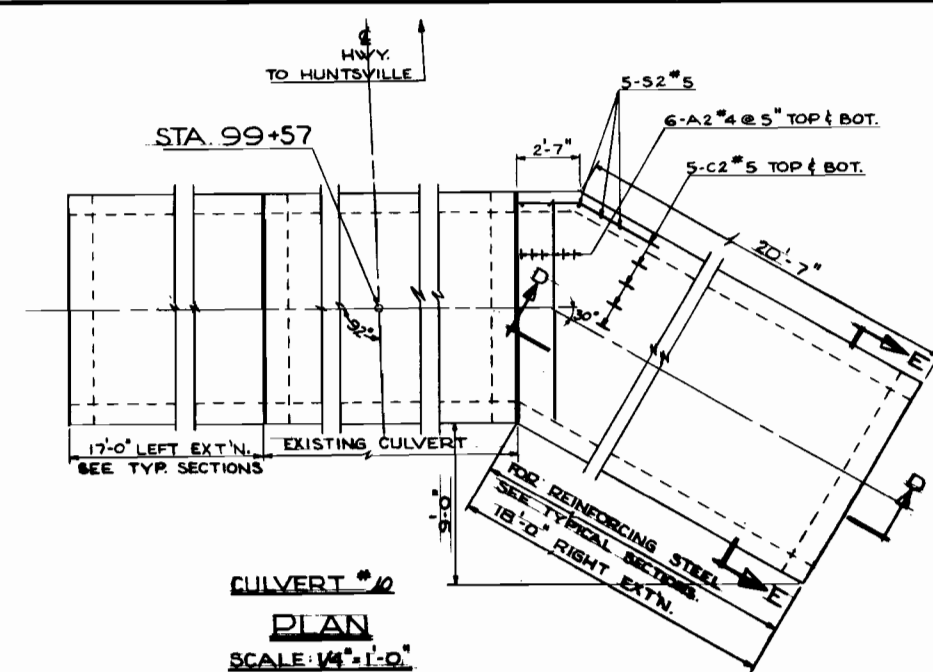
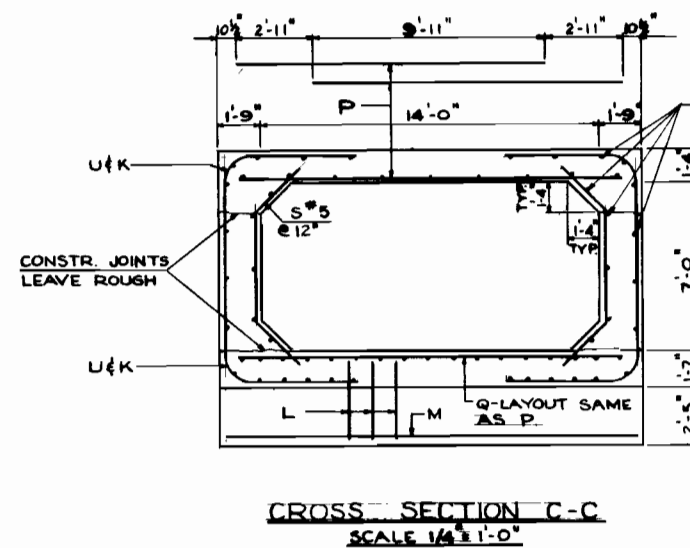
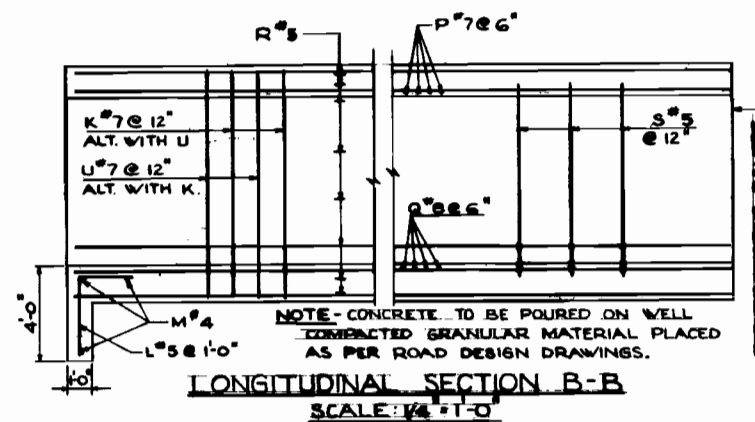
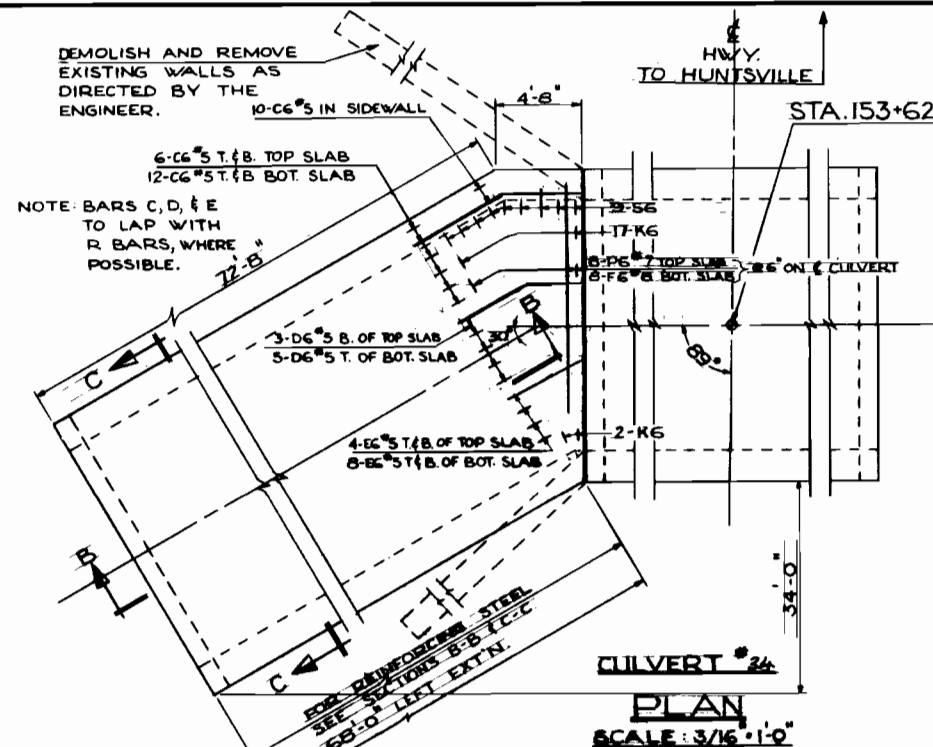
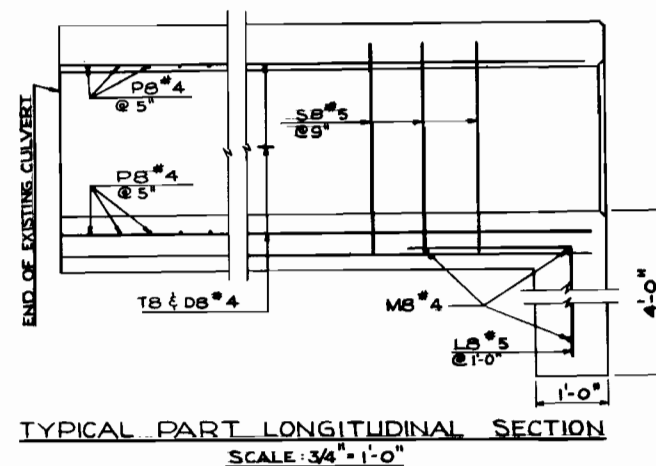
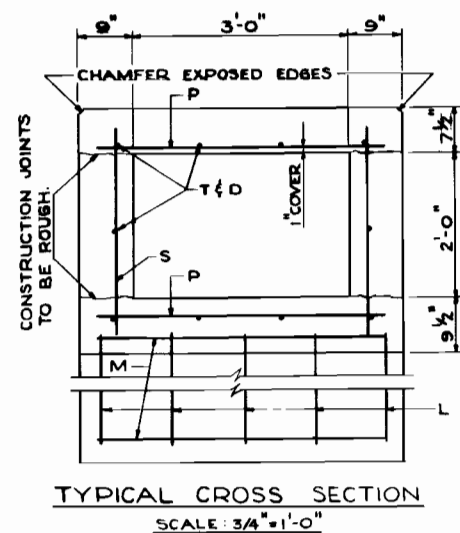
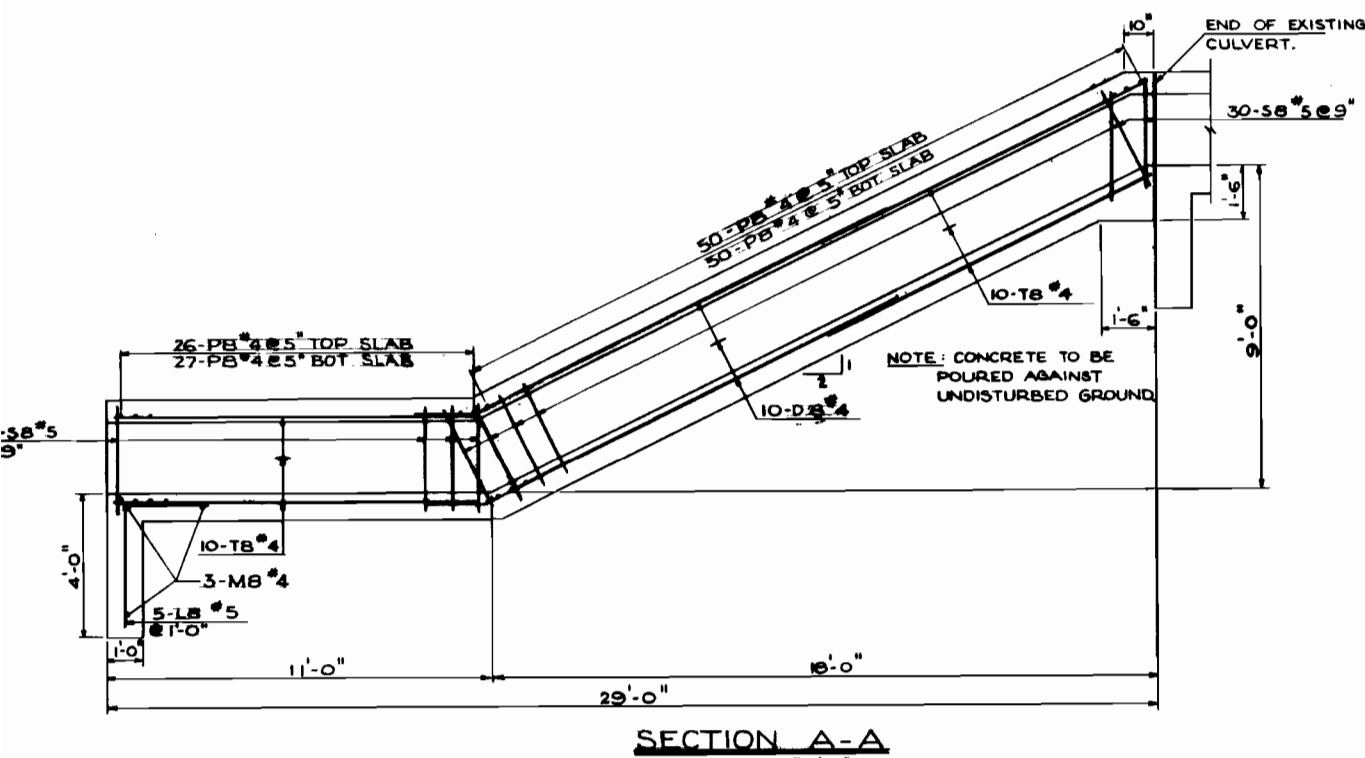
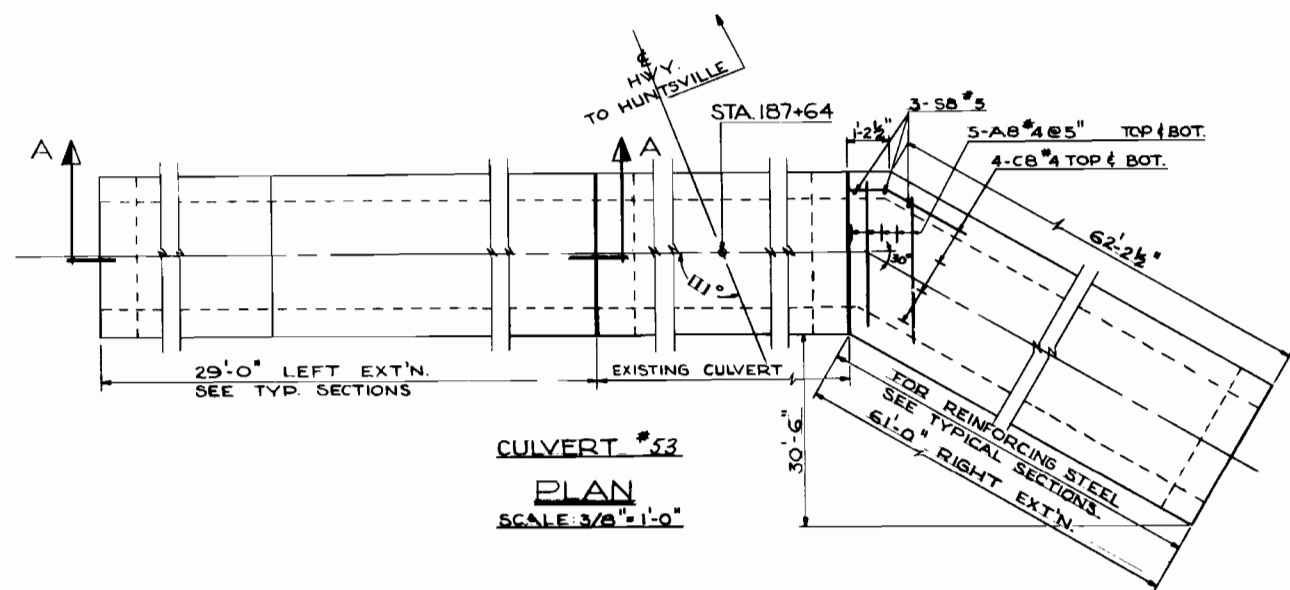
CLEAR COVER ON REINFORCING STEEL
3" EXCEPT AS NOTED.

CONSTRUCTION NOTES
ALL EXPOSED EDGES TO BE CHAMFERED AT 1" EXCEPT AS NOTED.
ALL CONSTRUCTION JOINTS MUST BE APPROVED BY THE ENGINEER.
ALL JOINTS BETWEEN EXTENSIONS AND EXISTING CULVERTS TO BE PAINTED WITH ASPHALT PAINT AT THE RATE OF 1 GAL. PER 100 SQ. FT. MATERIAL AND APPLICATION SHALL CONFORM TO C.G.S.B. SPEC. 17-S.P.-2. ASPHALT PAINT TO BE SUPPLIED AND APPLIED BY CONTRACTOR.



REVISIONS	DATE	BY	DESCRIPTION
1	12-2-65	W.E.H.	Recheck location drop added, correct to 100' Culvert number revised.

DEPARTMENT OF HIGHWAYS ONTARIO BRIDGE DIVISION			
CULVERTS SEVERN BRIDGE TO KANSHE RIVER			
KING'S HIGHWAY No. 11		DIST. No. 11	
DIST. MUSKOKA		TWP. MORRISON LOT CON.	
PLANS AND CROSS SECTIONS			
APPROVED	W. E. HARTMAN BRIDGE ENGINEER	SITE No. 42	W.P. No. 25B-59-2
DESIGN	ADAPTED	CHECK	N.T.H.
DRAWING	R. E.	CHECK	1955
DATE	FEB. 65	LOADING	M20-516
CONTRACT No.		66-06	
DRAWING No.		D-5660-1	



REVISIONS	DATE	BY	DESCRIPTION
1			Revised Culvert numbers revised.

DEPARTMENT OF HIGHWAYS ONTARIO BRIDGE DIVISION			
CULVERTS SEVERN BRIDGE TO KASHE RIVER			
KING'S HIGHWAY No. 11		DIST. No. 11	
DIST. MUSKOKA			
TWP. MORRISON	LOT	CON.	
PLANS AND CROSS SECTIONS			
APPROVED	BRIDGE ENGINEER	SITE No. 42	W.P. No. 258-59-2
DESIGN	ADAPTED	CHECK	CONTRACT No.
DRAWING	R. E.	CHECK	1198
DATE	FEB. 1965	LOADING	H20-S16
		DRAWING No.	D-5660-2

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	LOCATION
CULVERT #27 STA. 130+78 EXTENSION LEFT 31'-0"																				
P 5	144	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 5	85	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 5	20	4	15'-5"	STR		10	LINES, 2 PER LINE												TIES FOR P AND S @ 1'-0" LAP 1'-6"	
L 5	5	5	5'-6"	17			2'-3"	3'-3"											IN APRON @ 1'-0"	
M 5	3	4	4'-0"	STR															TIES FOR L.	
A 5	10	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 5	6	4	3'-8"	19			2'-8"	1'-0"				5 1/2"	1'-1"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0" LAP WITH T5.	
CULVERT #37 STA. 160+41 EXTENSION LEFT 70'-0"																				
P 7	328	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 7	186	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 7	40	4	17'-11"	STR		10	LINES, 4 PER LINE												TIES FOR P AND S @ 1'-0" LAP 1'-6"	
L 7	5	5	5'-6"	17			2'-3"	3'-3"											IN APRON @ 1'-0"	
M 7	3	4	4'-0"	STR															TIES FOR L.	
A 7	14	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 7	6	4	5'-4"	19			3'-4"	2'-0"				1'-5"	1'-2"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0"	
CULVERT #53 STA. 187+64 EXTENSION LEFT 29'-0"																				
P 8	151	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 8	88	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 8	20	4	10'-0"	STR															TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 8	5	5	5'-6"	17			3'-3"	2'-3"											IN APRON @ 1'-0"	
M 8	3	4	4'-0"	STR															TIES FOR L.	
D 8	10	4	14'-6"	19		1'-9"	12'-9"					9 1/2"	1'-7"						TIES FOR PTS PLACED AS SHOWN. LAP 1'-9"	
CULVERT #53 STA. 187+64 EXTENSION RIGHT 61'-0"																				
P 8	294	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 8	167	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 8	30	4	20'-11"	STR		10	LINES, 3 PER LINE												TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 8	5	5	5'-6"	17			3'-3"	2'-3"											IN APRON @ 1'-0"	
M 8	3	4	4'-0"	STR															TIES FOR L.	
A 8	10	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 8	8	4	3'-8"	19			2'-8"	1'-0"				5 1/2"	1'-1"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0"	

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	LOCATION
CULVERT #67 STA. 202+17 EXTENSION LEFT 17'-0"																				
P 9	82	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 9	46	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 9	10	4	16'-9"	STR		10	LINES, 1 PER LINE												TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 9	5	5	5'-6"	17			2'-3"	3'-3"											IN APRON @ 1'-0"	
M 9	3	4	4'-0"	STR															TIES FOR L.	
CULVERT #67 STA. 202+17 EXTENSION RIGHT 36'-0"																				
P 9	168	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 9	101	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 9	20	4	18'-2"	STR		10	LINES, 2 PER LINE												TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 9	5	5	5'-6"	17			2'-3"	3'-3"											IN APRON @ 1'-0"	
M 9	3	4	4'-0"	STR															TIES FOR L.	
A 9	10	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 9	6	4	4'-0"	19			2'-9"	1'-3"				8"	1'-0"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0" LAP WITH T9.	
CULVERT #69 STA. 212+38 EXTENSION RIGHT 24'-0"																				
P 11	114	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 11	66	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 11	20	4	12'-5"	STR		10	LINES, 2 PER LINE												TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 11	5	5	5'-6"	17			2'-3"	3'-3"											IN APRON @ 1'-0"	
M 11	3	4	4'-0"	STR															TIES FOR L.	
A 11	6	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 11	6	4	2'-4"	19			1'-10"	6"				1 1/2"	6 1/2"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0"	
CULVERT #11 STA. 101+30 EXTENSION LEFT 27'-0"																				
P 3	130	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 3	74	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 3	20	4	14'-0"	STR		10	LINES, 2 PER LINE												TIES FOR P & S @ 1'-0" LAP 1'-6"	
L 3	5	5	5'-6"	17			3'-3"	2'-3"											IN APRON @ 1'-0"	
M 3	3	4	4'-0"	STR															TIES FOR L.	
CULVERT #11 STA. 101+30 EXTENSION RIGHT 20'-0"																				
P 3	92	4	4'-0"	STR															IN TOP & BOT. SLABS @ 5"	
S 3	55	5	3'-0"	STR															VERTICALS IN WALLS @ 9"	
T 3	10	4	18'-9"	STR		10	LINES, 1 PER LINE												TIES FOR P & S @ 1'-0"	
L 3	5	5	5'-6"	17			3'-3"	2'-3"											IN APRON @ 1'-0"	
M 3	3	4	4'-0"	STR															TIES FOR L.	
A 3	10	4	4'-0"	STR															IN TOP & BOT. SLABS AT EXISTING CULVERT @ 5"	
C 3	6	4	3'-8"	19			2'-8"	1'-0"				5 1/2"	1'-1"						IN TOP & BOT. SLABS AT EXISTING CULVERT @ 1'-0" LAP WITH T3.	

NOTES:-
BENDING DETAILS AND NOTES ARE AS OUTLINED IN THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (A.C.I. 318-57) AS ISSUED BY THE AMERICAN CONCRETE INSTITUTE WITH THE FOLLOWING EXCEPTIONS AND ADDITIONS:-
7. (REVISED AS FOLLOWS)
NO ALLOWANCE FOR BEND CURVATURE HAS BEEN MADE EXCEPT FOR STANDARD HOOK AND RADI IN EXCESS OF SAME. ALLOWANCE FOR BAR EXTENSION DUE TO BENDING (CREEP) SHALL BE MADE BY THE FABRICATOR. WEIGHT FOR PAYMENT SHALL BE BASED ON THE DIMENSION GIVEN IN THE COLUMN HEADED "LENGTH".
8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 318-57
9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED IN THE BOX MARKED "WEIGHT OF STEEL" IN THE TITLE BLOCK.

SPIRAL

ALL STEEL TO BE HARD GRADE 8 HIGH BOND EXCEPT AS NOTED.

REVISIONS	DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS ONTARIO
BRIDGE DIVISION

CULVERTS
SEVERN BRIDGE TO KAHKHE RIVER

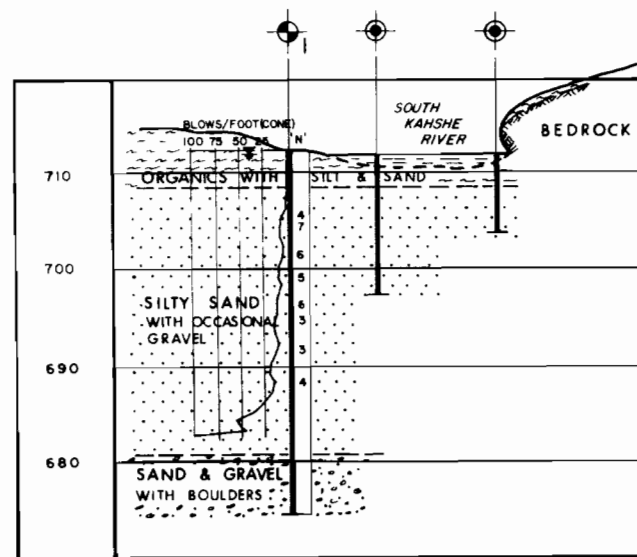
KING'S HIGHWAY NO. 11
DIST. MUSKOKA
TWP. MORRISON
LOT
CON.

DIST. NO. 11

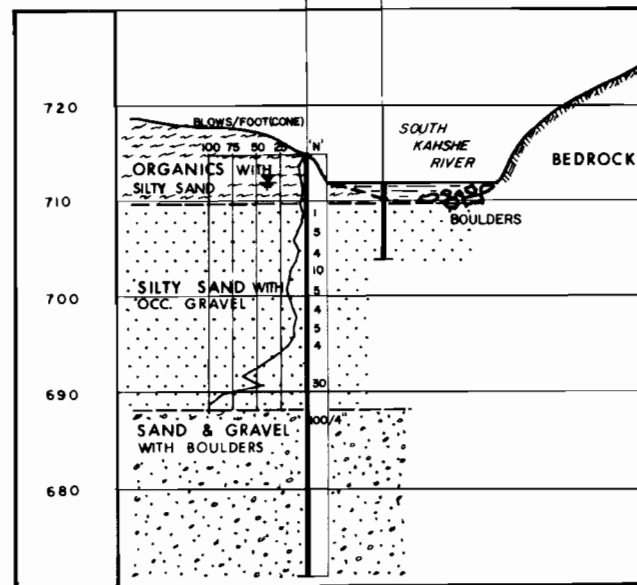
REINFORCING STEEL SCHEDULE

WEIGHT OF STEEL SEE D-5660-4
REQN. NO. 850253
CONTRACT NOS.
DRAWN R. E.
CHECK H.P.B.
DATE FEBRUARY 1965

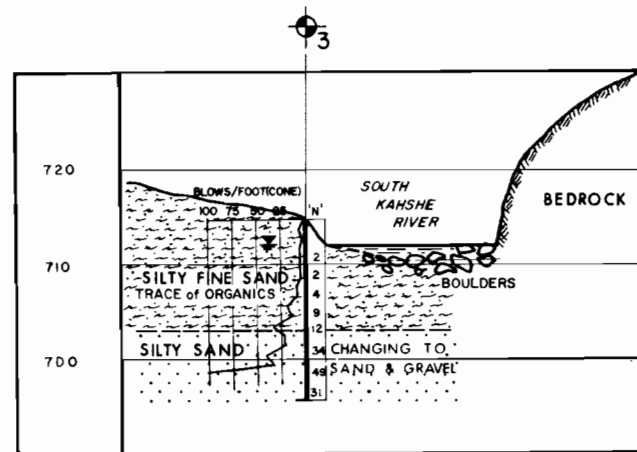
W.P. NO. 258-59-2
GENERAL
66-06
DRAWING NO. D-5660-3



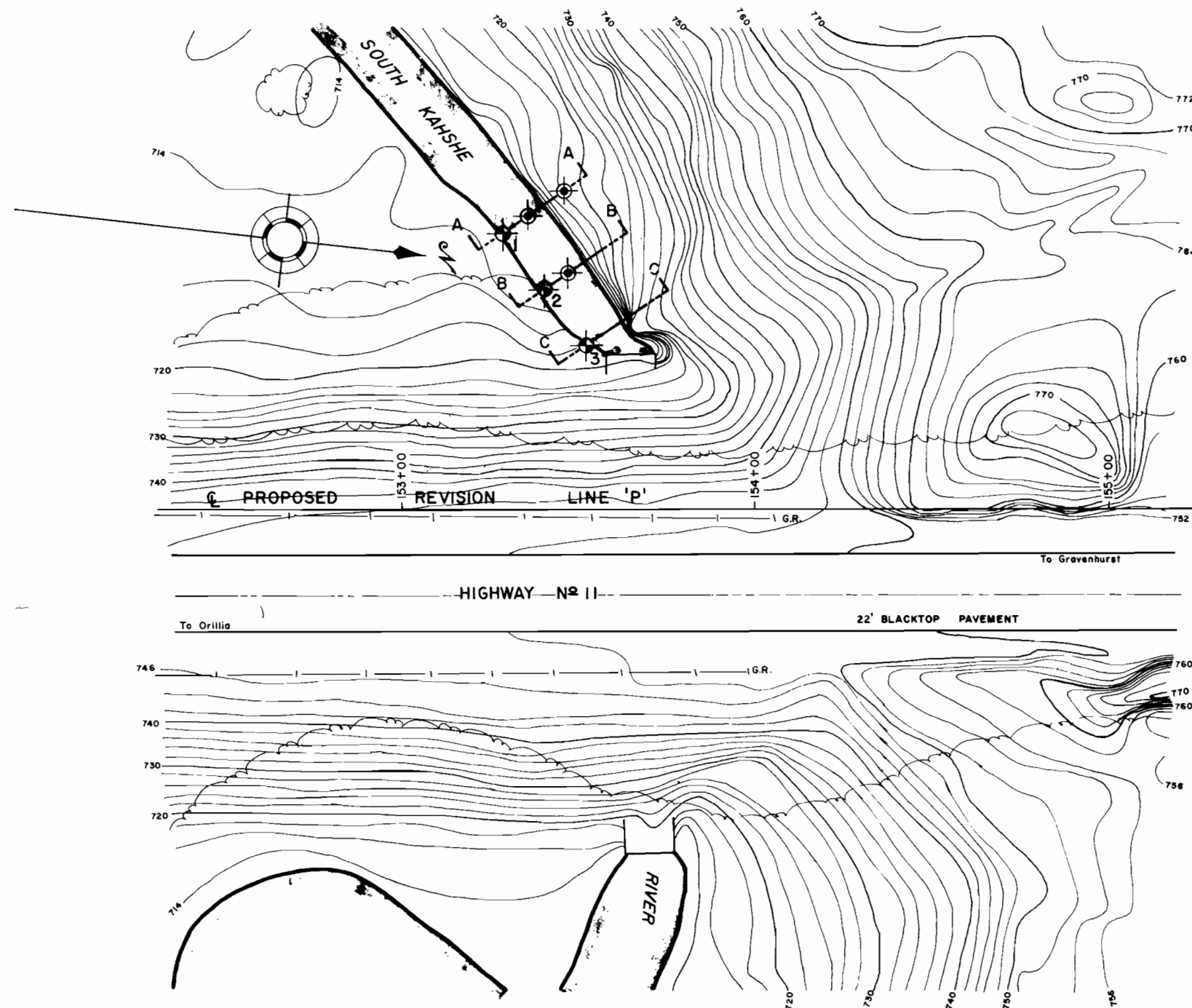
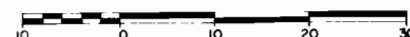
A-A



B-B



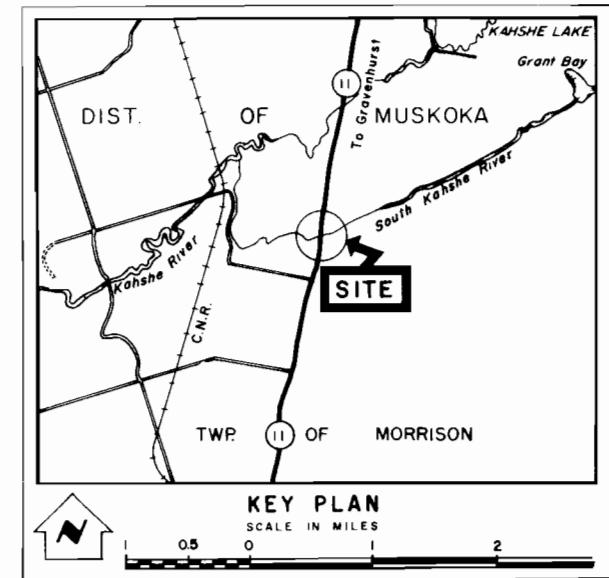
C-C
SECTIONS
SCALE IN FEET



PLAN
SCALE IN FEET



NOTE
The complete soil investigation report for this structure may be examined at the Bridge Office and Foundation Office, Downsview, and at the Huntsville District Office.



KEY PLAN
SCALE IN MILES

LEGEND			
	Bore Hole		
	Cone Penetration Hole		
	Bore & Cone Penetration Hole		
	Water Levels established at time of field investigation, Oct. 1964		
	Hand Auger Hole		
NO.	ELEVATION	STATION	OFFSET
1	712.5	153+28	79' LT.
2	715.0	153+41	83' LT.
3	715.0	153+52	46' LT.

NOTE
The boundaries between soil strata have been established only at Bore Hole locations. Between Bore Holes the boundaries are assumed from geological evidence and may be subject to considerable error.

REVISIONS	DATE	BY	DESCRIPTION
1	22 Jan 65	WES	This drawing added to set

DEPARTMENT OF HIGHWAYS - ONTARIO			
MATERIALS & RESEARCH DIVISION - FOUNDATION SECTION			
SOUTH KAMSHE RIVER			
KING'S HIGHWAY NO. 11 LINE 'P' REV. DIST NO. 11			
CO. DIST. OF MUSKOKA			
TWP. MORRISON LOT 12 CON. R.W.M.R.			
BORE HOLE LOCATION & SOIL STRATA			
SUBM'D V.K.	CHECKED	WP NO. 258-5.1-2	M.B.R. DRAWING NO.
DRAWN D.G.H.	CHECKED	JOB NO. 64-F-89	64-F-89A
DATE 4 NOV. 1964	SITE NO. 11P	BRIDGE DRAWING NO.	1) 5660-5
APPROVED	CONT NO. 66.06		

BREAKDOWN OF MAIN ITEMS

W. P. No. 258-59-2

Contract No. 66-06

Description	Excavation (cu. yds.)		Material available (cu. yds.)		Fill required (cu. yds.)X		Granular Courses (TONS) ("A") ("A") (Sand) Cush.			5/8" Cr. Gravel Type_	Hot Mix Pavt. (tons)						
	Earth	Rock	Earth	Rock	Earth	Rock	Top	Shld.	Lower		Surface Course H.L. 1	Binder Course H.L. 4	Sand Asphalt Course				
HIGHWAY No. _____	Cut and Fill	52,650	21,500	52,650	28,900	53,000	28,900	54,000	14,500	109,000		11,585		2,734			
	Stripping or Shatter:	6,650	6,050	900													
	Muskeg:	2,200				2,400											
	Ditching:	100															
SIDE ROAD ENTRANCES	Cut and Fill:	450	50	450	100	3,500	100	4,200		4,600		360	1,146	228			
	Stripping:																
PRIVATE ENTRANCES	Cut and Fill:																
	Stripping:																
DETOURS	Cut and Fill:																
	Stripping:																
	Removal:																
SIDE ROADS	Cut and Fill:																
	Stripping:																
REMOVAL OF PIPE																	
	Placing Gran. Backfill for Culverts:	50															
	Placing Gran. Backfill for Structure:																
STREAM ALTERATION		850															
SHATTER FOR FRENCH DRAINS			250														
SHATTER AT ENTRANCE			50														
MAINTENANCE OF TRAFFIC								1,100		3,300							
ASPHALT SPILLWAYS																	
ASPHALT CURB AND GUTTER												81	8				
MAIN HIGHWAY:																	
- UPPER BINDER COURSE													12,944				
- LOWER BINDER AND PADDING COURSE													12,355				
- SURFACE COURSE TRIAL AREA												1,373	1,756	610			
SIDE BORROW (INSIDE R-O-W)	Cut:																
	Stripping:																
													</				

X Quantity of earth fill shown includes assumed estimated shrinkage.

Remarks:

[illegible]

* Carry these Totals over to the sheet "Concrete and Timber Culverts" if any in the Project.

--

[illegible]

* Place here the Totals of Exavations and Granular Backfill for M.H. and C.B. and Granular Backfill for Sub-drains.

[illegible]

NOTE: Slope of Grates 2:1 /a
3:1 /b
4:1 /c

* Carry these Totals over to the space provided for "Granular Backfill to Sewers, M.H., C.B. and Sub-Drains" on quantity sheets for Sewers or Sewers and Manholes.

[illegible]

* Carry this Total over to the space provided for "Granular Backfill to Sewers, M.H., C.B. and Sub-Drains" on quantity sheets for Sewers or Sewers and Manholes.

[illegible][illegible]

* Carry this Total over to the space provided for "Granular Backfill to Sewers, M.H., C.B. and Sub-Drains" on quantity sheets for Sewers or Sewers and Manholes.

TOTALS
ROUNDING
TENDER
ITEM No.