PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT OF WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)

SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F FRAME C CONCRETE
S STONE T TILE
B BRICK ST STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
OR TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN

CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

CENTER SECTION 35 T.10N. R.22W.

T.10N. R.22W. 35 36 2 1 T.9N. R.22W.

NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

PIT NO. _____ Located in _____ Dead Haul _____

PIT NO. _____ Located in _____ Dead Haul _____

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

S.A.P. NO. 62-659-05, M.S.A.P. NO. 174-020-09

	FEET	MILES
PROJECT GROSS LENGTH	9233.82	1.749
EXCEPTION	0	0
NET LENGTH	9233.82	1.749

PLAN 0 25 50 100
PROFILE-HORIZ. 0 25 50 100
PPOFILE-VERT. 0 5 10
CROSS SECTIONS-HORIZ. 0 5 10 20
CROSS SECTIONS-VERT. 0 5 10 20

RAMSEY COUNTY
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR: GRADING, STORM SEWER, BITUMINOUS SURFACING, SANITARY SEWER, WATERMAIN, AND CURB & GUTTER

END S.A.P. NO. 62-659-05
STA. 92+33.82

END M.S.A.P. NO. 174-020-09
STA. 26+38.95

ANOKA COUNTY
RAMSEY COUNTY
Mounds View
New Brighton
Arden Hills
North Oaks
Vadnais Heights
White Bear Lake
Maplewood
Roseville
Lauderdale
Falcon Hts.
Little Canada
St. Paul
CITY OF ST. PAUL
CITY OF MINNEAPOLIS
HENNEPIN COUNTY
Lake Owasso
Poplar Lake
Wilkinson Lake
Otter Lake
Bald Eagle Lakes
Turtle Lake
Pleasant Lake
Gilfillan Lake
Long Lake
Snail Lake
Island Lake
Grass Lake
Lake Johanna
Round Lake
Beaver Lake
Sucker Lake
Birch Lake
Emmons Lake
Owasso Creek
Rice Creek
Willow Creek
Loeb Lake
Bennett Lake
Lake Phalen
Como Lake
Como Park
Como Golf Course
Como Zoo
Como Conservatory
Como Pond

Fed. Proj. No.

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	RAMSEY COUNTY SAP NO. 62-659-05		CITY OF WHITE BEAR LAKE (1) MSAP NO. 174-020-09		NON-PARTICIPATING		WHITE BEAR TWN. NON-PARTICIPATING		STORM SEWER S.A.P. NO. 62-659-05 (2) CITY OF WHITE BEAR LAKE		WHITE BEAR TWN.		TOTAL		TOTALS	
				ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	0.9				0.1										1	
	2021.501	REMOBILIZATION (3)	EACH	2														2	
	2031.501	FIELD OFFICE, TYPE D	EACH	1														1	
	2101.501	CLEARING	ACRE	0.1														0.1	
	2101.502	CLEARING	TREE	218														218	
	2101.506	GRUBBING	ACRE	0.1														0.1	
	2101.507	GRUBBING	TREE	92														92	
	2104.501	REMOVE PIPE CULVERTS	LIN FT	445														445	
	2104.501	REMOVE FENCE	LIN FT	5,282														5,282	
	2104.501	REMOVE CHAIN LINK FENCE	LIN FT	223				265										488	
	2104.505	REMOVE CONCRETE SLAB	SQ YD					104										104	
	2104.505	REMOVE PAVEMENT	SQ YD	7,617				120										7,737	
	2104.505	REMOVE DRIVEWAY PAVEMENT	SQ YD	844				1,080										1,924	
	2104.521	SALVAGE PIPE CULVERT	LIN FT	39				96										135	
	2104.523	SALVAGE CASTINGS	EACH									1				1		1	
	2104.523	SALVAGE CONCRETE APRONS	EACH											1		1		1	
	2104.523	SALVAGE SIGN (SPECIAL)	EACH					1										1	
	2105.501	COMMON EXCAVATION (P)	CU YD	~~5,530~~ 5,480		50 ~~200~~												5,730	
	2105.505	MUCK EXCAVATION	CU YD	6,700														6,700	
	2105.507	SUBGRADE EXCAVATION (P)	CU YD	14,010		600												14,610	
	2105.522	SELECT GRANULAR BORROW MOD 10% (CV) (P)	CU YD	6,010		400												6,410	
	2105.522	SELECT GRANULAR BORROW MOD 10% (LV)	CU YD	66,500														66,500	
	2105.525	TOPSOIL BORROW (LV)	CU YD	~~6,085~~ 6,260		~~175~~												6,260	
	2105.609	GEOTEXTILE FABRIC	SQ YD	44,480														44,480	
	2130.501	WATER	M GAL	500														500	
	2211.501	AGGREGATE BASE CLASS 3	TON	4,803		269		37										5,109	
	2211.501	AGGREGATE BASE CLASS 6	TON	6,013		228		358		440								7,039	
	2221.501	AGGREGATE SHOULDERING CLASS 2	TON	250														250	
	2231.501	BITUMINOUS PATCHING MIXTURE (MOD)	TON	200														200	
	2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	270		8		8										286	
	2331.510	BINDER COURSE MIXTURE (MOD)	TON	1,556		54		128										1,738	
	2331.514	BASE COURSE MIXTURE (MOD)	TON	3,545		95		20										3,660	
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	230		3		8		15								256	
	2341.508	WEARING COURSE MIXTURE (MOD)	TON	3,709		54		128										3,891	
	2341.508	WEARING COURSE MIXTURE (MOD) (BIKEWAY)	TON							238								238	
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1,635		35		40										1,710	
	2411.503	CONCRETE SLAB	SQ YD					104										104	
	2411.601	RETAINING WALL (SPECIAL)	SQ FT	500														500	
	2433.501	REMOVE CONCRETE RETAINING WALL	LUMP SUM	1														1	
	2451.507	GRANULAR BEDDING MATERIAL (CV)	CU YD	35														35	
	2451.602	CRUSHED ROCK FOUNDATION	TON					100										100	
	2501.511	15" CM PIPE CULVERT	LIN FT	148														148	
	2501.511	INSTALL CM PIPE CULVERTS	LIN FT	30				96										126	
	2501.515	15" CM PIPE APRONS	EACH	12														12	
	2501.515	24" CM PIPE APRONS	EACH	2														2	
	2501.515	15" RC PIPE APRONS	EACH									2		2		4		4	
	2501.515	18" RC PIPE APRONS	EACH									1				1		1	
	2501.515	24" RC PIPE APRONS	EACH	2								1		2		3		5	
	2501.521	44" SPAN RC P-A CULVERT CLASS VA	LIN FT	156														156	
	2501.525	44" SPAN ARCH RC PIPE-ARCH APRONS	EACH	4														4	
	2501.561	24" RC PIPE CULVERT DES 3006 CLASS V	LIN FT	158														158	
	2501.569	TRASH GUARD FOR 15" RC PIPE APRONS	EACH									2		2		4		4	
	2501.569	TRASH GUARD FOR 18" RC PIPE APRONS	EACH									1				1		1	
	2501.569	TRASH GUARD FOR 24" RC PIPE APRONS	EACH	2								1		2		3		5	
	2501.569	TRASH GUARD FOR 44" SPAN ARCH RC PIPE APRN	EACH	4														4	
	2501.571	RELAY CULVERT (SURCHARGE AREA)	LIN FT	278														278	
	2501.602	PLUG AND ABANDON PIPE CULVERTS	EACH									1		1		2		2	
	2502.541	4" PE CORRUGATED PERFORATED PIPE DRAIN	LIN FT	2,151		649												2,800	
	2503.511	8" PVC SDR 35 PIPE SEWER 0'-10' DEPTH	LIN FT					193										193	
	2503.511	8" PVC SDR 35 PIPE SEWER 10'-12' DEPTH	LIN FT					310										310	
	2503.511	8" PVC SDR 35 PIPE SEWER 12'-14' DEPTH	LIN FT					323										323	
	2503.511	8" PVC SDR 35 PIPE SEWER 14'-16' DEPTH	LIN FT					604										604	
	2503.511	6" PVC SDR 35 PIPE SEWER	LIN FT					90										90	
	2503.511	4" PVC SDR 35 PIPE SEWER	LIN FT					60										60	
	2503.541	15" RC PIPE SEWER DES 3006 CLASS V	LIN FT									381		330		711		711	
	2503.541	18" RC PIPE SEWER DES 3006 CLASS III	LIN FT									87		100		187		187	
	2503.541	24" RC PIPE SEWER DES 3006 CLASS III	LIN FT									24		56		80		80	
	0503.602	4" X 8" SDR 35 WYE	EACH					2										2	
	0503.602	6" X 8" SDR 35 WYE	EACH					4										4	
	0503.602	CONNECT TO EXISTING SANITARY SEWER	EACH					1										1	
	0503.603	CONSTRUCT EXTRA DEPTH MANHOLE	LIN FT					16										16	
	0504.602	CONNECT TO EXISTING WATERMAIN	EACH					1										1	
	0504.602	WET TAP EXISTING WATERMAIN	EACH					2										2	
	0504.602	RELOCATE EXISTING HYDRANT AND VALVE	EACH	2														2	
	0504.602	ADJUST VALVE BOX	EACH	6														6	
	0504.602	1" CURB STOP AND BOX	EACH					2										2	
	0504.602	1" CORPORATION STOP INCL TAP	EACH					2										2	
	0504.602	HYDRANT	EACH					4										4	
	0504.602	6" GATE VALVE AND BOX	EACH					8										8	

(1) FOR QUANTITIES TO THE RIGHT OF THE TRAVEL LANE, STA. 7+60 TO STA. 14+09, COST PARTICIPATION IS 75% M.S.A.P. NO. 174-020-09, 25% S.A.P. NO. 62-659-05.

(2) DRAINAGE SPLIT TO BE DETERMINED ON THE BASIS OF THE HYDRAULICS MEMORANDUM
100% S.A.P. NO. 62-659-05
0% M.S.A.P. NO. 174-020-09

(3) INCLUDES COST OF REMOBILIZING FOR ADDITIONAL SURCHARGE PLACEMENT AND ASSOCIATED TRAFFIC CONTROL ITEMS.

Revised 6-28-89
Per WRL
TL

Fed. Proj. No.

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	RAMSEY COUNTY SAP NO. 62-659-05		CITY OF WHITE BEAR LAKE ① MSAP NO. 174-020-09		CITY OF WHITE BEAR LAKE NON-PARTICIPATING		WHITE BEAR TWN. NON-PARTICIPATING		STORM SEWER S.A.P. NO. 62-659-05 ② CITY OF WHITE BEAR LAKE		STORM SEWER WHITE BEAR TWN.		STORM SEWER TOTAL		TOTALS	
				ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	0.9				0.1										1	
	2021.501	REMOBILIZATION ③	EACH	2														2	
	2031.501	FIELD OFFICE, TYPE D	EACH	1														1	
	2101.501	CLEARING	ACRE	0.1														0.1	
	2101.502	CLEARING	TREE	218														218	
	2101.506	GRUBBING	ACRE	0.1														0.1	
	2101.507	GRUBBING	TREE	92														92	
	2104.501	REMOVE PIPE CULVERTS	LIN FT	445														445	
	2104.501	REMOVE FENCE	LIN FT	5,282														5,282	
	2104.501	REMOVE CHAIN LINK FENCE	LIN FT	223				265										488	
	2104.505	REMOVE CONCRETE SLAB	SQ YD					104										104	
	2104.505	REMOVE PAVEMENT	SQ YD	7,617				120										7,737	
	2104.505	REMOVE DRIVEWAY PAVEMENT	SQ YD	844				1,080										1,924	
	2104.521	SALVAGE PIPE CULVERT	LIN FT	39				96										135	
	2104.523	SALVAGE CASTINGS	EACH									1				1		1	
	2104.523	SALVAGE CONCRETE APRONS	EACH											1		1		1	
	2104.523	SALVAGE SIGN (SPECIAL)	EACH					1										1	
	2105.501	COMMON EXCAVATION (P)	CU YD	~~5,530~~ 5,680		~~50~~ ~~200~~												5,730	
	2105.505	MUCK EXCAVATION	CU YD	6,700														6,700	
	2105.507	SUBGRADE EXCAVATION (P)	CU YD	14,010		600												14,610	
	2105.522	SELECT GRANULAR BORROW MOD 10% (CV) (P)	CU YD	6,010		400												6,410	
	2105.522	SELECT GRANULAR BORROW MOD 10% (LV)	CU YD	66,500														66,500	
	2105.525	TOPSOIL BORROW (LV)	CU YD	~~6,085~~ 6,260		~~175~~												6,260	
	2105.609	GEOTEXTILE FABRIC	SQ YD	44,480														44,480	
	2130.501	WATER	M GAL	500														500	
	2211.501	AGGREGATE BASE CLASS 3	TON	4,803		269		37										5,109	
	2211.501	AGGREGATE BASE CLASS 6	TON	6,013		228		358		440								7,039	
	2221.501	AGGREGATE SHOULDERING CLASS 2	TON	250														250	
	2231.501	BITUMINOUS PATCHING MIXTURE (MOD)	TON	200														200	
	2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	270		8		8										286	
	2331.510	BINDER COURSE MIXTURE (MOD)	TON	1,556		54		128										1,738	
	2331.514	BASE COURSE MIXTURE (MOD)	TON	3,545		95		20										3,660	
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	230		3		8		15								256	
	2341.508	WEARING COURSE MIXTURE (MOD)	TON	3,709		54		128										3,891	
	2341.508	WEARING COURSE MIXTURE (MOD) (BIKEWAY)	TON							238								238	
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1,635		35		40										1,710	
	2411.503	CONCRETE SLAB	SQ YD					104										104	
	2411.601	RETAINING WALL (SPECIAL)	SQ FT	500														500	
	2433.501	REMOVE CONCRETE RETAINING WALL	LUMP SUM	1														1	
	2451.507	GRANULAR BEDDING MATERIAL (CV)	CU YD	35														35	
	2451.602	CRUSHED ROCK FOUNDATION	TON					100										100	
	2501.511	15" CM PIPE CULVERT	LIN FT	148														148	
	2501.511	INSTALL CM PIPE CULVERTS	LIN FT	30				96										126	
	2501.515	15" CM PIPE APRONS	EACH	12														12	
	2501.515	24" CM PIPE APRONS	EACH	2														2	
	2501.515	15" RC PIPE APRONS	EACH									2		2		4		4	
	2501.515	18" RC PIPE APRONS	EACH									1				1		1	
	2501.515	24" RC PIPE APRONS	EACH	2								1		2		3		5	
	2501.521	44" SPAN RC P-A CULVERT CLASS VA	LIN FT	156														156	
	2501.525	44" SPAN ARCH RC PIPE-ARCH APRONS	EACH	4														4	
	2501.561	24" RC PIPE CULVERT DES 3006 CLASS V	LIN FT	158														158	
	2501.569	TRASH GUARD FOR 15" RC PIPE APRONS	EACH									2		2		4		4	
	2501.569	TRASH GUARD FOR 18" RC PIPE APRONS	EACH									1				1		1	
	2501.569	TRASH GUARD FOR 24" RC PIPE APRONS	EACH	2								1		2		3		5	
	2501.569	TRASH GUARD FOR 44" SPAN ARCH RC PIPE APRN	EACH	4														4	
	2501.571	RELAY CULVERT (SURCHARGE AREA)	LIN FT	278														278	
	2501.602	PLUG AND ABANDON PIPE CULVERTS	EACH									1		1		2		2	
	2502.541	4" PE CORRUGATED PERFORATED PIPE DRAIN	LIN FT	2,151		649												2,800	
	2503.511	8" PVC SDR 35 PIPE SEWER 0'-10' DEPTH	LIN FT					193										193	
	2503.511	8" PVC SDR 35 PIPE SEWER 10'-12' DEPTH	LIN FT					310										310	
	2503.511	8" PVC SDR 35 PIPE SEWER 12'-14' DEPTH	LIN FT					323										323	
	2503.511	8" PVC SDR 35 PIPE SEWER 14'-16' DEPTH	LIN FT					604										604	
	2503.511	6" PVC SDR 35 PIPE SEWER	LIN FT					90										90	
	2503.511	4" PVC SDR 35 PIPE SEWER	LIN FT					60										60	
	2503.541	15" RC PIPE SEWER DES 3006 CLASS V	LIN FT									381		330		711		711	
	2503.541	18" RC PIPE SEWER DES 3006 CLASS III	LIN FT									87		100		187		187	
	2503.541	24" RC PIPE SEWER DES 3006 CLASS III	LIN FT									24		56		80		80	
	0503.602	4" X 8" SDR 35 WYE	EACH					2										2	
	0503.602	6" X 8" SDR 35 WYE	EACH					4										4	
	0503.602	CONNECT TO EXISTING SANITARY SEWER	EACH					1										1	
	0503.603	CONSTRUCT EXTRA DEPTH MANHOLE	LIN FT					16										16	
	0504.602	CONNECT TO EXISTING WATERMAIN	EACH					1										1	
	0504.602	WET TAP EXISTING WATERMAIN	EACH					2										2	
	0504.602	RELOCATE EXISTING HYDRANT AND VALVE	EACH	2														2	
	0504.602	ADJUST VALVE BOX	EACH	6														6	
	0504.602	1" CURB STOP AND BOX	EACH					2										2	
	0504.602	1" CORPORATION STOP INCL TAP	EACH					2										2	
	0504.602	HYDRANT	EACH					4										4	
	0504.602	6" GATE VALVE AND BOX	EACH					8										8	

① FOR QUANTITIES TO THE RIGHT OF THE TRAVEL LANE, STA. 7+60 TO STA. 14+09, COST PARTICIPATION IS 75% M.S.A.P. NO. 174-020-09, 25% S.A.P. NO. 62-659-05.

② DRAINAGE SPLIT TO BE DETERMINED ON THE BASIS OF THE HYDRAULICS MEMORANDUM
100% S.A.P. NO. 62-659-05
0% M.S.A.P. NO. 174-020-09

③ INCLUDES COST OF REMOBILIZING FOR ADDITIONAL SURCHARGE PLACEMENT AND ASSOCIATED TRAFFIC CONTROL ITEMS.

Revised 6-28-89
Per WRL
TL

28-106

Fed. Proj. No.

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	RAMSEY COUNTY SAP NO. 62-659-05		CITY OF WHITE BEAR LAKE ① MSAP NO. 174-020-09		NON-PARTICIPATING		WHITE BEAR TWN. NON-PARTICIPATING		STORM SEWER S.A.P. NO. 62-659-05 ② CITY OF WHITE BEAR LAKE		STORM SEWER WHITE BEAR TWN.		STORM SEWER TOTAL		TOTALS	
				ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES
	0504.602	8" GATE VALVE AND BOX	EACH					5										5	
	0504.603	1" TYPE K COPPER PIPE	LIN FT					45										45	
	0504.603	6" WATERMAIN DUCTILE IRON CLASS 52	LIN FT					53										53	
	0504.603	6" WATERMAIN DUCTILE IRON CLASS 54	LIN FT					70										70	
	0504.603	8" WATERMAIN DUCTILE IRON CLASS 52	LIN FT					1,124										1,124	
	0504.603	HYDRANT EXTENSION	LIN FT	0.5				2										2.5	
	0504.605	3" POLYSTYRENE INSULATION	SQ YD					7										7	
	0504.620	CAST IRON FITTINGS	POUND					2,195										2,195	
	2506.506	CONSTRUCT MANHOLE DESIGN F	LIN FT											7.54		7.54		7.54	
	2506.507	CONSTRUCT CATCH BASINS DESIGN LP	LIN FT									37.47		43.97		81.44		81.44	
	2506.508	CONSTRUCT STANDARD SANITARY MANHOLE	EACH					6										6	
	2506.511	RECONSTRUCT MANHOLES	LIN FT									2.11				2.11		2.11	
	2506.522	ADJUST FRAME AND RING CASTINGS	EACH	1														1	
	2511.501	RANDOM RIP RAP CLASS III ③	CU YD	33.6								12.3		11.6		23.9		57.5	
	2521.501	4" CONCRETE WALL	SQ FT	110														110	
	2531.501	CONCRETE CURB AND GUTTER DES B618	LIN FT	72														72	
	2531.501	CONCRETE CURB AND GUTTER DES B624	LIN FT	5843.38														5,843.38	
	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	~~33.66~~ 41.52		~~7.86~~												41.52	
	2531.507	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	~~230.12~~ 237.98		~~7.86~~												237.98	
	2557.501	WIRE FENCE DESIGN 6.5-9324	LIN FT	275		395												670	
	0557.603	INSTALL CHAIN LINK FENCE	LIN FT	223				265										488	
	0557.603	INSTALL WIRE FENCE (SPECIAL 2)	LIN FT	105		395												500	
	0563.601	TRAFFIC CONTROL	LUMP SUM	0.9				0.1										1	
	0563.602	TYPE II BARRICADES	UNIT DAY	200														200	
	0563.602	TYPE III BARRICADES	UNIT DAY	50														50	
	0563.602	FLASHER TYPE A (LOW INTENSITY)	UNIT DAY	50														50	
	0563.602	48 X 48 INCH SIGN	UNIT DAY	100														100	
	0563.602	48 X 48 INCH SIGN WITH SUPPORTS	UNIT DAY	100														100	
	0564.602	INSTALL SIGN (SPECIAL)	EACH					1										1	
	0565.602	SALVAGE HANDHOLE - TYPE HD	EACH	2														2	
	0565.602	INSTALL HANDHOLE - TYPE HD	EACH	2														2	
	0565.602	LOOP DETECTOR - 6' X 6'	EACH	3														3	
	0565.603	INSTALL 2/C #14	LIN FT	460														460	
	0565.603	1.25" RIGID STEEL CONDUIT	LIN FT	240														240	
	2571.544	TRANSPLANT SHRUB	SHRUB	5														5	
	2573.503	SILT FENCE, HEAVY DUTY	LIN FT	11,557		250												11,807	
	2575.501	ROADSIDE SEEDING	ACRE	11.7														11.7	
	2575.502	SEED MIXTURE 1000	POUND	585														585	
	2575.505	SODDING TYPE LAWN	SQ YD	~~28,945~~ 28,050		~~2105~~ 0												28,050	
	2575.511	MULCH MATERIAL TYPE 1	TON	24														24	
	2580.502	TEMPORARY LANE MARKING	LIN FT	735														735	
	0557.603	INSTALL WIRE FENCE (SPECIAL 1)	LIN FT	3,945														3,945	
	2105.521	GRANULAR BORROW (LV)	CU YD	66,500														66,500	

Revised 6-28-89
Per WBL. TL

① FOR QUANTITIES TO THE RIGHT OF THE TRAVEL LANE, STA. 7+60 TO STA. 14+09, COST PARTICIPATION IS 75% M.S.A.P. NO. 174-020-09, 25% S.A.P. NO. 62-659-05.

② DRAINAGE SPLIT TO BE DETERMINED ON THE BASIS OF THE HYDRAULICS MEMORANDUM
100% S.A.P. NO. 62-659-05
0% M.S.A.P. NO. 174-020-09

③ GRANULAR FILTER MATERIAL WILL BE CONSIDERED INCIDENTAL TO RIPRAP CONSTRUCTION AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

Fed. Proj. No.

STANDARD DETAIL PLATES

ITEM	DESCRIPTION
0005A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000K	REINFORCED CONCRETE PIPE
3006F	GASKET JOINT FOR R.C. PIPE
3014J	REINFORCED CONCRETE PIPE ARCH DETAIL
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE - ARCH
3123I	METAL APRON FOR C.S. PIPE
3133B	RIPRAP AT RCP OUTLETS
3134B	RIPRAP AT CMP OUTLETS
3145E	CONCRETE PIPE TIES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
4000I	MANHOLE OR CATCH BASIN
4005K	MANHOLE OR CATCH BASIN
4006K	MANHOLE OR CATCH BASIN
4010G	CONCRETE SHORT CONE AND ADJUSTING RING
4011D	PRECAST CONCRETE BASE
4021C	PRECAST CURB OPENING CATCH BASIN
4101C	RING CASTING FOR MANHOLE OR CATCH BASIN
4102C	MANHOLE OR CATCH BASIN RING CASTING
4108E	MANHOLE ADJUSTING RINGS
4110D	COVER CASTING FOR MANHOLE
4180H	MANHOLE OR CATCH BASIN STEP
7035J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036C	PEDESTRIAN CURB RAMP
7100F	CONCRETE CURB AND GUTTER
8000I	STANDARD BARRICADES
8150B	INSTALLATION OF CULVERT MARKERS
9102C	SODDING AT PIPE CULVERT ENDS
9322I	CHAIN LINK FENCE
9324C	BARBED WIRE FENCE - STEEL POST
3040F	C.M.P. CULVERT
3124B	METAL APRON CONNECTION

ABBREVIATIONS

AP	APRON
CMP	CORRUGATED METAL PIPE
INC	INCIDENTAL
INCL	INCLUDED
LP	LOW POINT
NIC	NOT IN CONTRACT
PE	PERMANENT EASEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
SE	SLOPE EASEMENT
SD	SUBCUT DRAIN

CONSTRUCTION NOTES

SODDING QUANTITIES ALONG ROADWAY SLOPES ARE BASED ON SODDING LIMITS FROM THE BACK OF CURB TO THE RIGHT-OF-WAY LINE OR TEMPORARY EASEMENT LINE. SEEDING QUANTITIES IN SUBGRADE CORRECTION AREAS ARE BASED ON SEEDING LIMITS FROM THE EDGE OF PAVEMENT.

SETTLEMENT PLATES AND PIEZOMETERS FOR MONITORING SETTLEMENT BENEATH PRELOAD (SURCHARGE) AREAS WILL BE PROVIDED AND MONITORED BY THE ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS RELATIVE TO INSTALLATION AND PROTECTION OF THESE ITEMS.

THE MPLS., ST. PAUL, SAULT STE. MARIE RAILROAD CO. AT-GRADE CROSSING WILL BE RECONSTRUCTED BY OTHERS AND SIGNALS WILL BE RELOCATED BY OTHERS UNDER PROJECT II CONSTRUCTION (NOT IN THIS CONTRACT).

THE CONSTRUCTION BYPASS SHALL BE FIELD STAKED BY THE ENGINEER.

LOCATION OF CURB DEPRESSIONS SHALL BE COORDINATED WITH THE CONSTRUCTION OF BIKEWAY. PEDESTRIAN CURB RAMPS AT BIKEWAY SHALL BE OF BITUMINOUS CONSTRUCTION AND SHALL CONFORM TO THE REQUIREMENTS OF STANDARD PLATE 7036 WHERE APPLICABLE.

UNLESS OTHERWISE NOTED, CABLE TV NORTH CENTRAL CABLES ARE MOUNTED ON EXISTING POWER POLES ALONG THE EXISTING EAST RIGHT-OF-WAY LINE.

SUBCUT DEPTHS INDICATED ON THE PROJECT ARE MINIMUM DEPTHS. ON URBAN SECTION, SUBGRADE EXCAVATION QUANTITIES WERE COMPUTED FROM FINISHED PAVEMENT SURFACE TO BOTTOM OF SUBCUT.

QUANTITIES OF SELECT GRANULAR BORROW MODIFIED (10%) FOR USE IN PRELOAD (SURCHARGE) AREAS ARE BASED ON ESTIMATED SETTLEMENT DEPTHS WHICH MAY VARY IN THE FIELD. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL CONTACT THE CITY OF WHITE BEAR LAKE TO ARRANGE FOR WATER MAIN VALVE SHUTOFF PRIOR TO CONNECTING TO THE CITY SYSTEM. SEE SPECIAL PROVISIONS.

TIMBER BLOCKING OF WATER MAIN WILL NOT BE PERMITTED.

VERTICAL RISERS AT PROPERTY LINES FOR SANITARY SEWER SHALL NOT BE INSTALLED. A 4' 2"X2" TIMBER SHALL BE PLACED AND THE SERVICE END TIED TO BUILDING.

THE CONTRACTOR SHALL CONTACT THE CITY OF WHITE BEAR LAKE BEFORE CONSTRUCTING FENCE AND EXTENDING WATER AND SANITARY SERVICES TO 4650 CENTERVILLE ROAD.

LOCATION OF FUTURE ENTRANCES AT APPROXIMATE STATIONS 9+95, 19+80 AND 23+25 SHALL BE VERIFIED WITH THE PROPERTY DEVELOPERS PRIOR TO CONSTRUCTION.

THE "FINAL TOE OF SLOPE" NOTATION IN PRELOAD AND BYPASS AREAS REFERS TO FINAL CONSTRUCTION LIMITS UNDER PROJECT II CONSTRUCTION (NOT IN THIS CONTRACT), AFTER SURCHARGE MATERIALS ARE REMOVED.

NEW FENCE SHALL BE CONSTRUCTED ALONG PROPOSED RIGHT-OF-WAY AS DIRECTED BY THE ENGINEER.

PROPOSED RIGHT-OF-WAY LIMITS SHOWN IN THE FUTURE MITIGATION AREA BETWEEN STATIONS 59+50 AND 73+00 BEYOND THE TEMPORARY SLOPE EASEMENT LINES WILL NOT BE ACCESSIBLE DURING STAGE I CONSTRUCTION. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL VERIFY EXISTING CROSS SECTIONS FROM STATION 21+00 TO 26+00, RT. PRIOR TO BEGINNING CONSTRUCTION AS THIS AREA WAS UNDER DEVELOPMENT AT THE TIME OF SURVEY.

NOT ALL DRIVEWAYS AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE TO BE CONSTRUCTED UNDER PROJECT I CONSTRUCTION. REFER TO QUANTITY TABLES FOR WORK ITEMS UNDER THIS CONTRACT.

THE CONTRACTOR SHALL SCHEDULE HIS CONSTRUCTION OPERATIONS IN COOPERATION WITH UTILITY COMPANIES. SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 72 HOURS IN ADVANCE OF DISRUPTION TO SANITARY SEWER, WATER AND OTHER SERVICES.

ANY USE OF TRENCH BOX, SHEETING, SHORING OR OTHER METHODS OR MEANS OF CONSTRUCTION NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS OR SLOPE EASEMENTS SHOWN IS INCIDENTAL TO COMMON EXCAVATION.

ANY DEWATERING REQUIRED FOR CONSTRUCTION IS INCIDENTAL TO COMMON EXCAVATION.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE SURFACING AND STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION.

SOME EXCAVATED MATERIAL ON THIS PROJECT MAY BE UNSUITABLE FOR USE IN NEW CONSTRUCTION. AS DETERMINED BY THE ENGINEER, UNSUITABLE MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN UNDESIGNATED WASTE AREA OFF THE PROJECT SITE. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO COMMON EXCAVATION.

SELECT GRANULAR BORROW MODIFIED (10%) SHALL MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

COMPACTION ON GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 "ORDINARY COMPACTION METHOD". THE BOTTOM OF ALL EXCAVATIONS SHALL BE COMPACTED WITH A MINIMUM OF FOUR PASSES OF AN APPROVED COMPACTING DEVICE EXCEPT IN SUBGRADE CORRECTION TYPE I AND II AREAS.

WHEN EXCAVATING ADJACENT TO AN INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 1/2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT. THESE EXCAVATIONS SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE PRIOR TO CONSTRUCTING ASPHALT SURFACING. SAWCUT PAVEMENT SHALL BE INCIDENTAL TO REMOVE PAVEMENT.

USE TACK COAT BETWEEN ALL BITUMINOUS PAVEMENT LIFTS.

COMPACTION OF ALL BITUMINOUS ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD".

WATER, GAS, ELECTRIC, TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE PLANS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE COMMENCING CONSTRUCTION. SEE SPECIAL PROVISIONS AND SECTION 1507 IN THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 8 FEET ON ALL WATER LINES UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 1 FOOT BETWEEN CROSSINGS OF WATER LINES AND PROPOSED STORM SEWER LINES. WHERE CONFLICTS OCCUR, THE WATER LINE SHALL BE RELOCATED WHERE DIRECTED BY THE ENGINEER.

ALL USES OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

ALL SIGNS ON THE PROJECT WILL BE REMOVED BY OTHERS.

CONCRETE AND BITUMINOUS MATERIAL DISTURBED BY THE CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT LIMITS. SEE SPECIAL PROVISIONS.

CENTERVILLE ROAD WILL BE MAINTAINED FOR LOCAL TRAFFIC DURING CONSTRUCTION EXCEPT DURING DEEP EXCAVATIONS AND INSTALLATION OF WATER MAIN AND SANITARY SEWER. SEE SPECIAL PROVISIONS.

FOR CONSTRUCTION SEQUENCING REQUIREMENTS DURING PLACEMENT OF SURCHARGE MATERIALS AND THE TERMS UNDER WHICH THE CONTRACTOR IS TO BE PAID FOR "REMOBILIZATION", SEE SPECIAL PROVISIONS.

PLACEMENT OF PATCHING MATERIAL SHALL BE AT THE DIRECTION OF THE ENGINEER.

THE CONTRACTOR SHALL BE REQUIRED TO PROCURE A PERMIT FROM MNDOT FOR WORK WITHIN MNDOT RIGHT-OF-WAY. TRAFFIC CONTROL ALONG T.H. 96, IF REQUIRED, SHALL BE INCIDENTAL TO PVC PIPE SEWER.

MUCK MATERIALS EXCAVATED FROM SWAMP AREAS WILL NOT BE CONSIDERED SUITABLE FOR USE AS COMMON EMBANKMENT OR TOPSOIL MATERIALS ON THE PROJECT.

SIGNING AND STRIPING, WITH THE EXCEPTION OF TEMPORARY PAVEMENT MARKING, WILL BE DONE BY COUNTY FORCES.

THE CONTRACTOR SHALL CONTACT U.S. WEST FOR REMOVAL OF TELEPHONE ALONG T.H. 96 TWO WEEKS PRIOR TO CONSTRUCTION. SEE SPECIAL PROVISIONS.

DITCH CLEANING FROM STA. 46+00 TO STA. 52+40 (RT.) SHALL BE INCIDENTAL TO MUCK EXCAVATION.

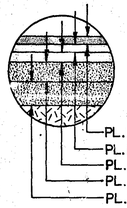
SUBCUT DRAINS SHALL BE INSTALLED FROM STA. 1+50 TO 28+90, RT.

CONTRACTOR SHALL CALL FOR CONDUIT LOCATIONS AT INPLACE SIGNALS, T.H. 96 AND CENTERVILLE ROAD.

CONTRACTOR SHALL CONTACT MnDOT DISTRICT 9 FOR LOCATION STAKES WHEN CONSTRUCTING NEW LOOP DETECTORS.

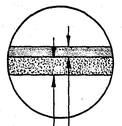
28-106

Fed. Proj. No.



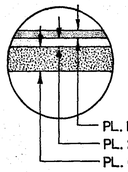
INSET "A"

PL. 1-1/2" BIT. WEARING COURSE (SPEC. 2341 MOD.)
PL. 1-1/2" BIT. BINDER COURSE (SPEC. 2331 MOD.)
PL. 3" BIT. BASE COURSE (SPEC. 2331 MOD.)
PL. 5" AGGREGATE BASE, CL. 6.
PL. 6" AGGREGATE BASE, CL. 3.



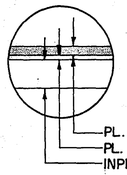
INSET "B"

PL. 2" BIT. WEARING COURSE (SPEC. 2341 MOD.)
PL. 4" AGGREGATE BASE, CL. 6.



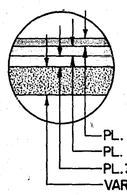
INSET "C"

PL. 1-1/2" BITUMINOUS WEARING COURSE (SPEC. 2341 MOD.)
PL. 2" BIT. BINDER COURSE (SPEC. 2331 MOD.)
PL. 6" AGGREGATE BASE, CL. 6.



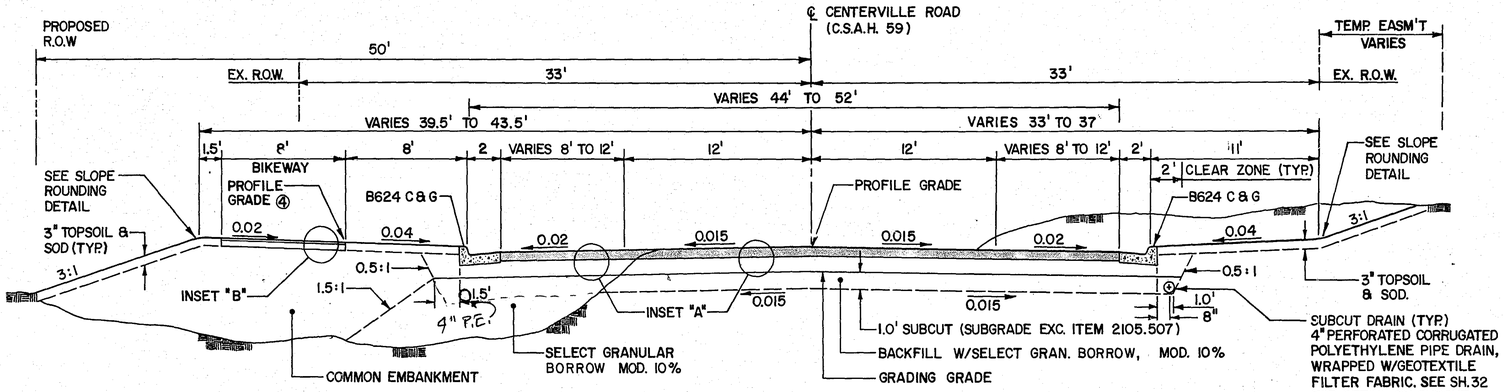
INSET "D"

PL. 1-1/2" BITUMINOUS WEARING COURSE (SPEC. 2341 MOD.) OVERLAY
PL. BIT. PATCHING MIXTURE AS REQUIRED (SPEC. 2231 MOD.)
INPLACE PAVEMENT



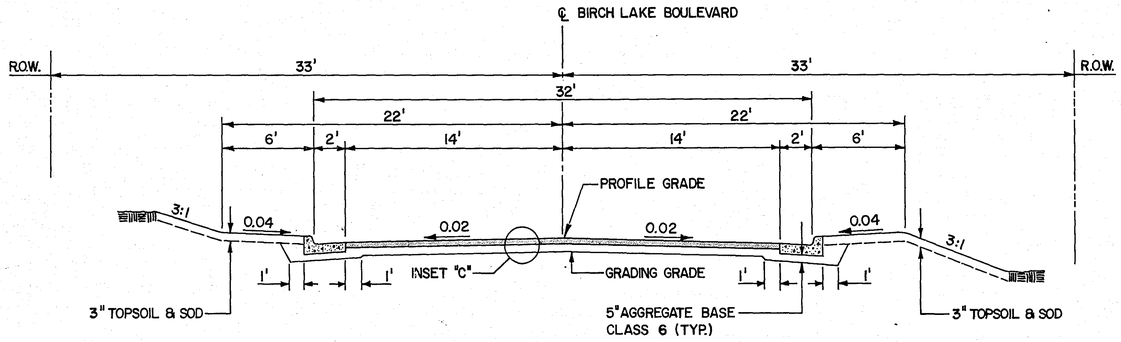
INSET "E"

PL. 1-1/2" BITUMINOUS WEARING COURSE (SPEC. 2341 MOD.)
PL. 1-1/2" BITUMINOUS BINDER COURSE (SPEC. 2331 MOD.)
PL. 3" BITUMINOUS BASE COURSE (SPEC. 2331 MOD.)
VARIABLE DEPTH AGGREGATE BASE, CL. 6



CENTERVILLE ROAD

STA. 1+50 TO STA. 28+86



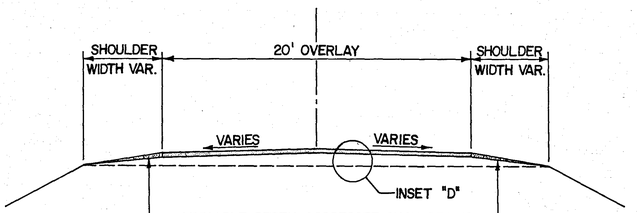
BIRCH LAKE BOULEVARD

STA. 9+43 TO STA. 11+97.5

NOTE: 2' OBSTACLE CLEAR ZONE REQ'D FROM FACE OF CURB.

NOTE: CROWN SLOPES ON THE TYPICAL SECTIONS ARE EXPRESSED IN FEET PER FOOT.

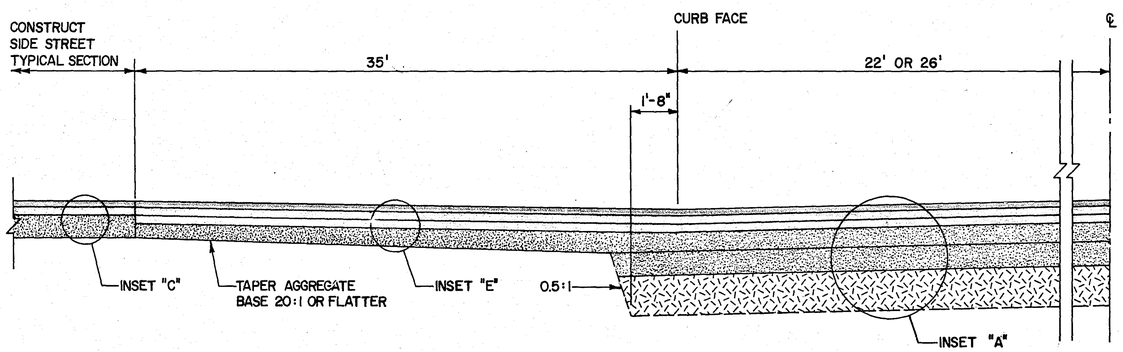
NOTE: DETAILS SHOWN ON RIGHT OR LEFT SIDE OF SECTION ARE NOT INTENDED TO APPLY EXCLUSIVELY TO THE SIDE OF ROADWAY SHOWN; BUT MAY BE APPLICABLE TO OTHER SIDE OF ROADWAY. SEE PLAN SHEETS AND CROSS SECTIONS.



NOTE: SEE SPECIAL PROVISIONS FOR CONSTRUCTION SEQUENCING REQUIREMENTS.

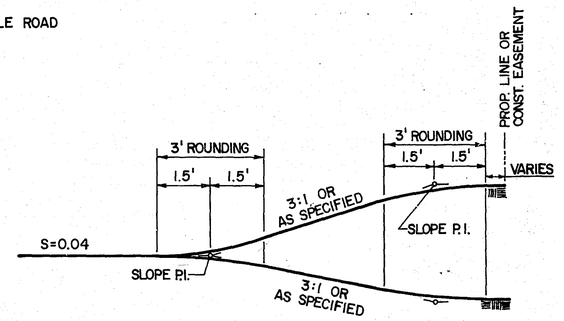
CENTERVILLE ROAD

STA. 28+86 TO STA. 52+89

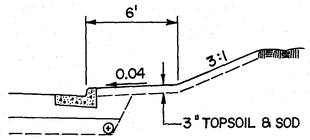


TYPICAL SIDE STREET APPROACH

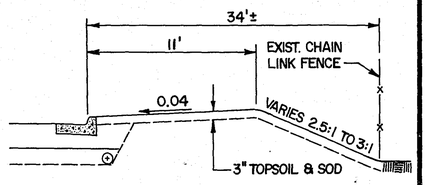
DRAWN FOR BIRCH LAKE BOULEVARD



SLOPE ROUNDING DETAIL



STA. 8+50 TO 11+00 RT.
STA. 26+72 TO 29+20 RT. ②



STA. 18+50 TO 20+50 RT.

NOTES:

① TYPICAL SHOULDER WIDTH IS 8'. WHERE RIGHT TURN LANES ARE PROPOSED, SHOULDERS SHALL BE 12' IN WIDTH. SEE SHEETS 20 AND 21 FOR TURN LANE TAPER LOCATIONS.

② USED FOR ALTERNATE RETAINING WALL DESIGN ONLY. SEE DETAIL, SHEET 7.

③ REMOVE EXISTING TOPSOIL AND VEGETATION BEFORE PLACING EMBANKMENT. TOPSOIL SHALL BE SALVAGED AND USED AS SLOPE DRESSING TO THE EXTENT THAT IT IS AVAILABLE. PLACEMENT OF SALVAGED TOPSOIL SHALL BE INCIDENTAL TO ITEM 2021.501, MOBILIZATION.

④ PROFILE GRADE FOR BIKEWAY SHALL BE CENTERVILLE ROAD PROFILE GRADE ADJUSTED AS FOLLOWS:
FOR 8' SHOULDER WIDTH, +0.36'
FOR 12' TURN LANE WIDTH, +0.28'

28-106

TYPICAL SECTIONS

83212

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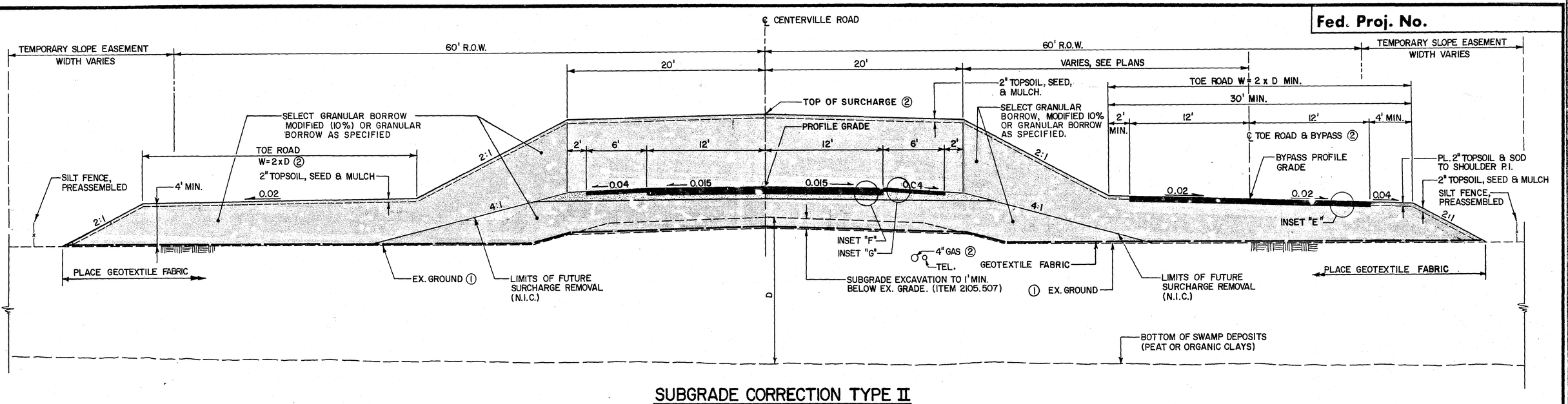


SUBGRADE CORRECTION TYPE II
(SURCHARGE)

STA. 56+20 TO STA. 74+00
STA. 83+00 TO STA. 89+00

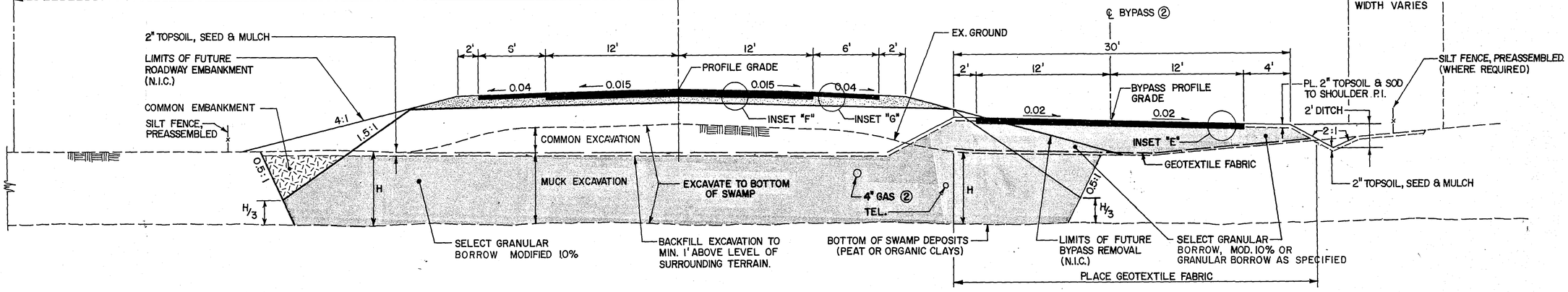
NOTES:

① PRIOR TO FABRIC PLACEMENT, FLATTEN VEGETATION & CLEAR LARGE ITEM AS SPECIFIED IN THE SPECIAL PROVISIONS TO AVOID TEARING FABRIC. DISTURBANCE OF EXIST. VEGETATIVE MAT SHALL BE MINIMIZED.

② SEE SPECIAL PROVISIONS FOR CONST. SEQUENCING REQUIREMENTS AND FOR INFORMATION ON MAINTENANCE OF UTILITY SYSTEMS DURING CONST.

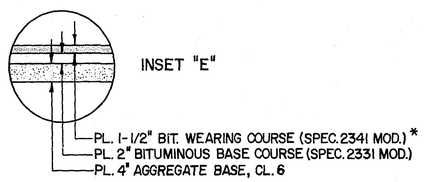
③ REMOVE EXIST. TOPSOIL & VEGETATION BEFORE PLACING EMBANKMENT. TOPSOIL SHALL BE SALVAGED AND USED AS SLOPE DRESSING TO THE EXTENT THAT IT IS AVAILABLE. PLACEMENT OF SALVAGED TOPSOIL SHALL BE INCIDENTAL TO ITEM 2021.501, MOBILIZATION.

NOTE: CROWN SLOPES ON THE TYPICAL SECTIONS ARE EXPRESSED IN FEET PER FOOT.

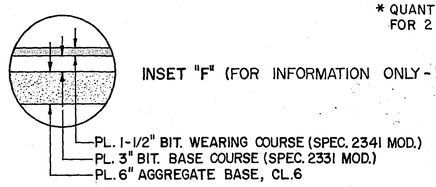


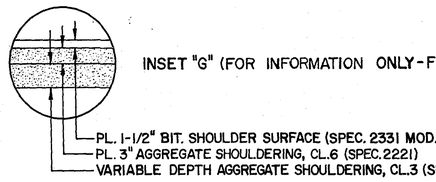
SUBGRADE CORRECTION TYPE I
(EXCAVATE SWAMP & BACKFILL)

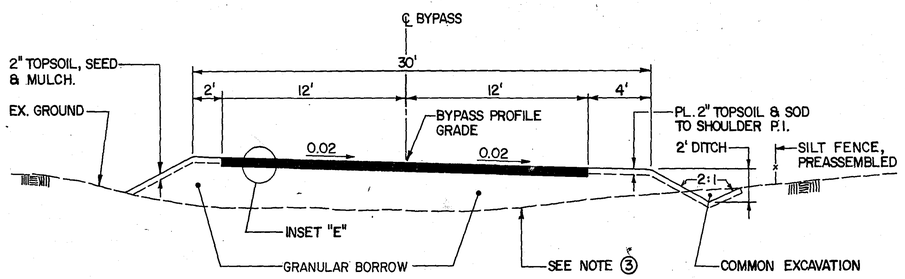
STA. 53+00 TO STA. 56+20
STA. 81+00 TO STA. 83+00



* QUANTITIES INCLUDE PROVISION FOR 2 ADDITIONAL 1 INCH OVERLAYS

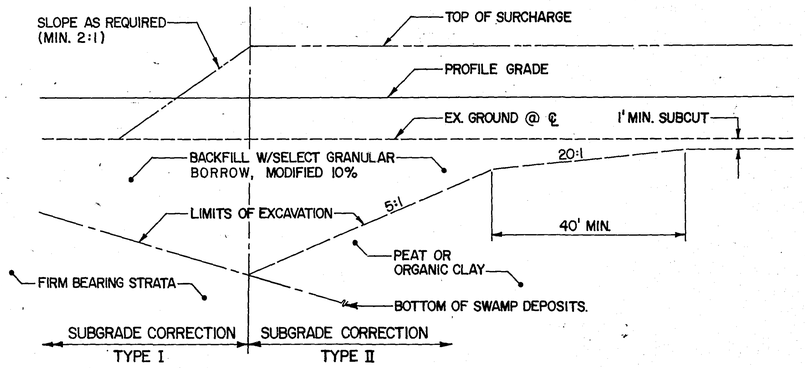






CONSTRUCTION BYPASS

STA. 74+00 TO STA. 81+00



TRANSITION BETWEEN EXCAVATION & PRELOAD AREAS
TYPICAL SECTION

28-106

SUBGRADE CORRECTION TYPICAL SECTIONS

COPY EQUIPMENT FORM #1
83212

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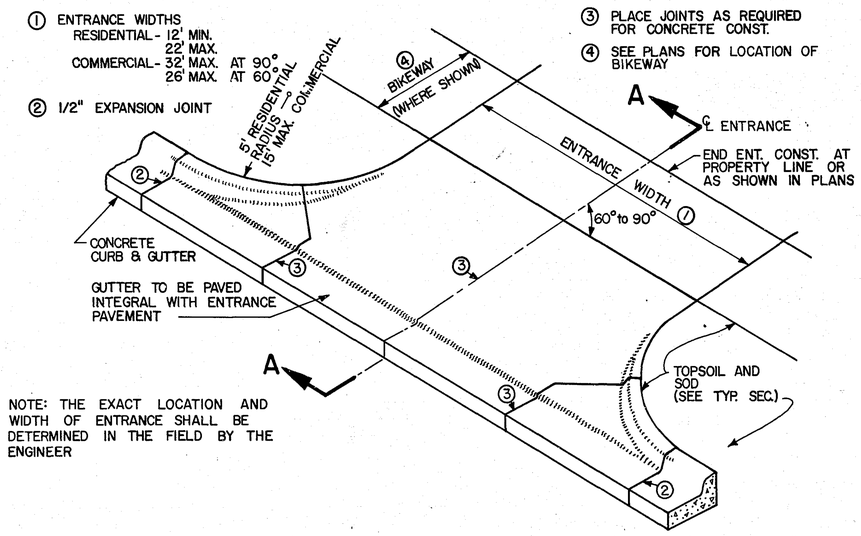
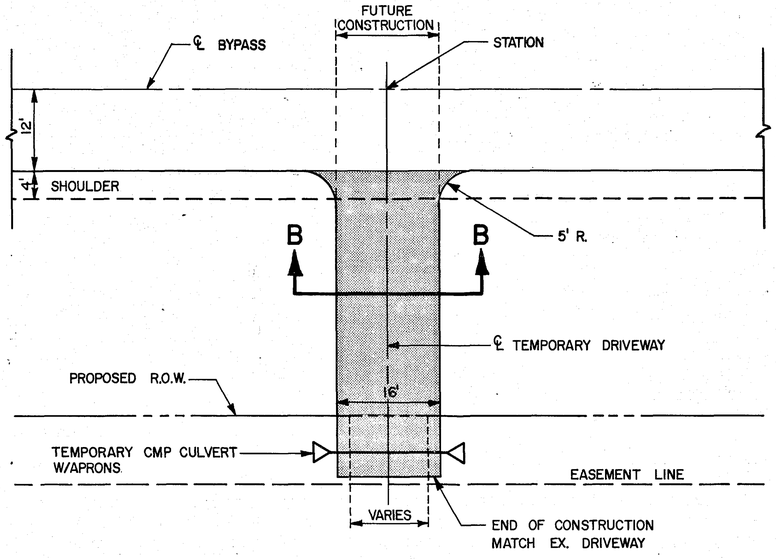
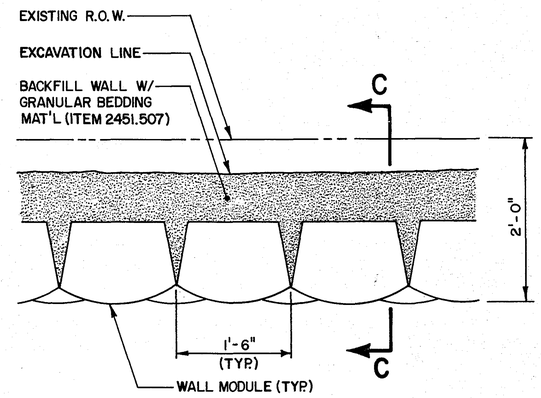


NOTE: THE EXACT LOCATION AND WIDTH OF ENTRANCE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER

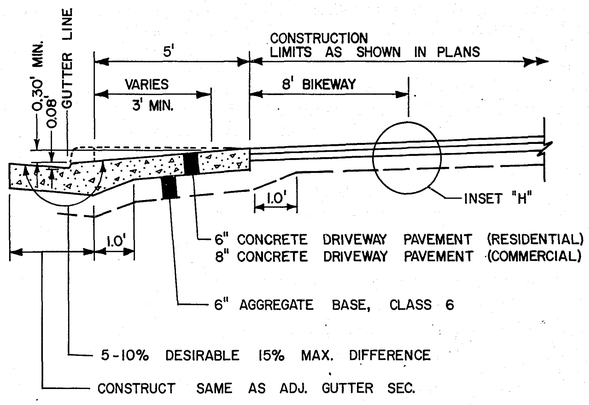


TEMPORARY DRIVEWAY PLAN

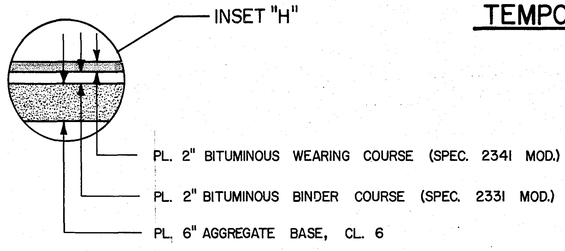
SEE SHEET 30 FOR PROFILES



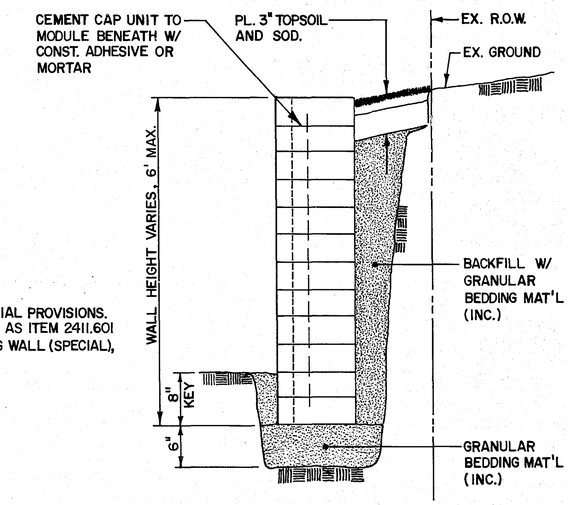
PLAN



SECTION A-A



NOTE: CROWN SLOPES ON THE TYPICAL SECTIONS ARE EXPRESSED IN FEET PER FOOT.



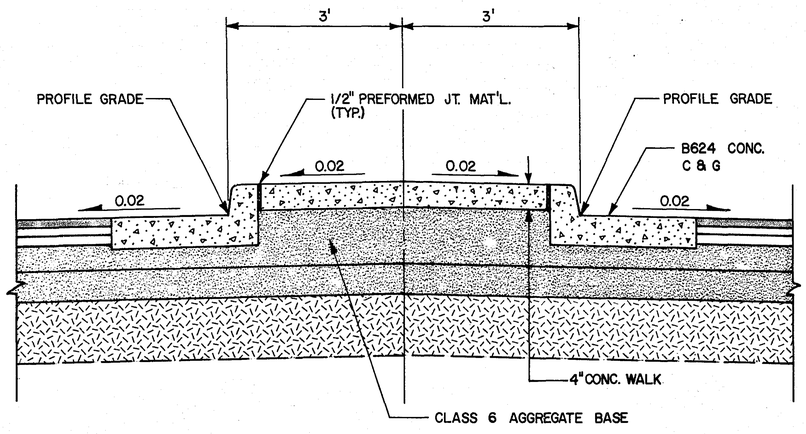
SEE SPECIAL PROVISIONS. PAID FOR AS ITEM 2411.601 RETAINING WALL (SPECIAL), S.F.

SECTION C-C

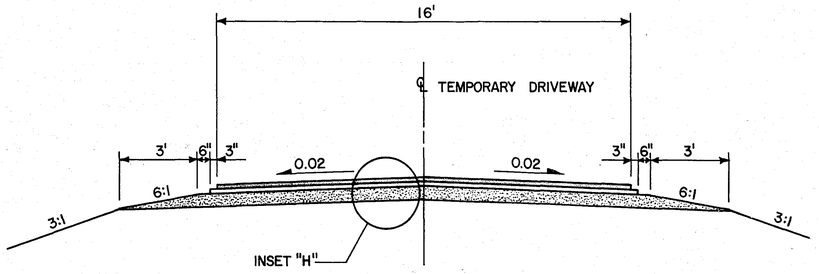
RETAINING WALL "A" DETAILS

FOR ALTERNATE DESIGN, STA. 27+10 TO STA. 28+25 (SEE SH. 21)

CONCRETE ENTRANCE DETAILS



CONCRETE MEDIAN DETAIL



SECTION B-B

TYPICAL SECTIONS AND DETAILS

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 | Sheet No. 7 of 72 Sheets

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DRAINAGE CHART

STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN FT	CASTING ASSEMBLY	ELEVATION ℄ PROFILE	ELEVATION ORIGINAL GRATE OR RING	ELEVATION NEW GRATE OR RING	ELEVATION C.B. OR M.H. INVERT	ADJUST CASTING ASSEMBLY	RECONST. C.B. OR M.H. LIN FT	INSTALL CASTING ASSEMBLY	FURNISH AND INSTALL PIPE SEWER — REINFORCED CONCRETE PIPE 12"	15"	18"	24"	30"	36"	APRON	CLASS	FURNISH AND INSTALL PIPE SEWER — TRASH GUARDS 12"	15"	18"	24"	30"	36"	DRAINS TO STRUCTURE NO.	DRAINS TO INVERT EL.	REMARKS
PROPOSED STRUCTURES																														
CENTERVILLE RD																														
1+55.0	RT 32'	1-1	AP				961.27													1 - 15"			1						DRAINS TO DITCH
2+14.6	RT 27.5'	1-2	CB	LP	3.70		961.08		961.06	958.06					60'						V							AP 1-1	957.80	
2+14.6	LT 55'	2-1	AP				961.08													1 - 15"			1						DRAINS TO DITCH
2+14.6	LT 27.5'	2-2	CB	LP	6.65		961.08		961.06	955.11					26'						V							AP 2-1	955.00	
12+05.0	LT 69'	3-1	AP				957.02													1 - 24"					1				DRAINS TO DITCH
12+05.0	LT 55'	3-2	MH	F	7.54		957.02		952.50	945.66							14'				III							AP 3-1	945.62	
12+05.0	LT 23.5'	3-3	CB	LP	9.15		957.02		957.08	948.63					30'						V							MH 3-2	948.50	
12+07.0	RT 57'	4-1	AP				957.00													1 - 18"				1					DRAINS TO DITCH
12+07.0	RT 23.5'	4-2	CB	LP	11.98		957.00		957.06	945.78						32'					III							AP 4-1	945.69	
13+88.5	RT 23.5'	4-3	CB	LP	4.00		955.71		955.77	952.47					182'						V							CB 4-2	951.67	
14+05.0	LT 23.5'	3-2C	CB	LP	7.84		955.70		955.76	948.62					24'						V							MH 3-2B	948.51	CONN. TO STUB AT EX. MH
14+29.5	RT 23.5'	4-4	CB	LP	3.70		955.72		955.75	952.75					41'						V							CB 4-3	952.57	
15+40.7	LT 27.5'	3-2D	CB	LP	3.70		956.20		956.19	953.19					136'						V							CB 3-2C	952.59	
16+78.0	LT 68'	5-1	AP				956.88										42'			1 - 24"	III				1			MH 6-1	947.93	CONNECT TO EX. RCP
16+96.0	RT 27.5'	6-2	CB	LP	3.70		956.98		956.96	953.96					20'						V							MH 6-1	953.87	MH CONN. INC. TO PIPE CONSTR.
25+08.0	RT 53'	7-4	AP				952.36								78'					1 - 15"	V			1				CB 7-3	945.09	
25+83.3	LT 49'	7-1	AP				950.85													1 - 24"					1				DRAINS TO DITCH
25+83.3	LT 23.5'	7-2	CB	LP	7.42		950.85		950.91	944.19							24'				III							AP 7-1	944.16	
25+83.3	RT 27.5'	7-3	CB	LP	6.69		950.85		950.83	944.84						55'					III							CB 7-2	944.69	
28+33.0	LT 73'	8-1	AP				946.06													1 - 15"			1						DRAINS TO DITCH
28+59.68	LT 23.5'	8-2	CB	LP	9.21		945.69		945.75	937.24					54'						V							AP 8-1	937.00	
28+90.32	RT 23.5'	8-3	CB	LP	3.70		945.32		945.39	942.39					60'						V							CB 8-2	942.13	
EXISTING STRUCTURES																														
CENTERVILLE RD																														
13+00.0	LT 55'	3-2A	AP	EXIST			956.06			947.09						100'					III							MH 3-2	946.09	SALVAGE EX. AP 3-2A
14+05.0	LT 49'	3-2B	MH	EXIST			955.70	955.00		948.31																				CONN. TO STUB AT EX. MH
16+78.0	RT 33'	6-1	MH	EXIST			956.88	954.89	957.00	947.54		2.11																		

CULVERTS

STATION	LOCATION	℄ PROFILE ELEV.	FURNISH AND INSTALL CULVERT PIPE — CORRUGATED METAL PIPE 12"	15"	18"	24"	APRON	REINFORCED CONCRETE PIPE 15"	18"	24"	27" X 44" P-A	CLASS	APRON	% GRADE	FURNISH AND INSTALL TRASH GUARDS 15"	18"	24"	27" X 44" P-A	PLUG AND ABANDON PIPE CULVERT 12"	15"	18"	24"	30"	REMARKS
C'VILLE RD																									
12+06	CL	957.01																				2			
56+58	65' RT	906.28		24'			2																		
66+15	CL	905.00									120'	VA	2	1.00				2							W.INV.=899.5
73+41	67' RT	905.00		24'			2																		
74+50	CL	——				30'	2																		INSTALL SALVAGED CMP
77+58	64' RT	905.63		20'			2																		
78+45	62' RT	906.06		20'			2																		
80+75	65' RT	907.22		24'			2																		
86+45	CL	911.23								158		V	2	2.60			2								E.INV.=898.5
88+87	76' RT	918.67		20'			2																		
52+40	CL	——									36'	VA	2	1.00				2							W.INV.=902.5
HWY 96																									
1+70	RT				46'																				INSTALL SALVAGED CMP
2+48	RT				50'																				INSTALL SALVAGED CMP
1+00	LT & RT	——		16'																					EXTEND EX. CULVERT

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REMOVALS, SALVAGES AND RELOCATIONS

STATION	LOCATION	REM PIPE CULV. LF	REM C-L FENCE LF	REM FENCE LF	REM CONC SLAB SY	REM PVMT SY	REM DRWY PVMT SY	REM CONC WALL LS		SALV SIGN SPEC LS	SALV PIPE CULV. LF	SALV CONC APRONS EACH	SALV CASTING EACH		INST SIGN SPEC LS	REMARKS
CENTERVILLE RD																
1+25 TO 1+50	CL					120										FOR SANITARY SEWER AND WATERMAIN
1+50 TO 28+88	CL					6084										
1+60 TO 2+65	30' RT	105														REM OF CB INCIDENTAL TO PIPE REM
1+86	RT						153									
2+10	27' RT												1			
4+95	RT						151									
6+60 TO 8+75	33' RT			220												INSTALL ALONG EASEMENT LINE
8+53	RT						49									
9+71 TO 9+88	21' RT	17														
10+20 TO 13+00	33' RT			280												INSTALL ALONG EASEMENT LINE
13+00	55' LT											1				
16+49	RT						188									C AND G REM INCIDENTAL TO PVMT REM
18+15 TO 19+35	33' LT			120												
18+19 TO 20+42	60' RT		223													INSTALL ALONG RIGHT OF WAY LINE
20+86	RT						190									C AND G REM INCIDENTAL TO PVMT REM
21+20 TO 22+50	32' LT			130												
24+88	CL	65														
25+00 TO 26+26	RT					489										
26+65 TO 28+00	36' LT			170												
27+58	RT						57	1								SEE SPECIAL PROVISIONS
52+90 TO 92+35	33' LT			3945												INSTALL ALONG EASEMENT LINE OR AS DIRECTED
56+58	21' RT	25														
63+10	CL										39					SALVAGE FOR USE AS A TEMPORARY CULVERT
66+10	CL	80														
73+41	22' RT	21														
73+68 TO 77+32	36' RT			417												
77+58	22' RT	26														
78+46	23' RT	29														
86+44	CL	42														
88+87	32' RT	35														
BIRCH LAKE BLVD.																
8+90 TO 12+50						1044										
10+82	LT						28									
11+20	LT						28									
HWY 96																
0+10 TO 1+40	RT		265													
0+10 TO 3+00	RT						1080									
1+70	RT										46					
2+05	RT									1					1	SEE SPECIAL PROVISIONS
2+15	RT				81											SAWING CONC INCIDENTAL TO SLAB REM
2+48	RT										50					
2+90	RT				23											SAWING CONC INCIDENTAL TO SLAB REM

FENCING

STATION	LOCATION	INSTALL C-L FENCE	F AND I WIRE FENCE	INSTALL WIRE FENCE (SPECIAL 2)	INSTALL WIRE FENCE (SPECIAL 1)
		LF	LF	LF	LF
CENTERVILLE RD					
6+60 TO 8+75	RT		220 (1)(4)	220 (2)	
10+20 TO 13+00	RT		280 (1)	280 (2)	
18+19 TO 20+42	RT	223			
26+65 TO 28+00	LT		170		
52+90 TO 92+35	LT				3945
HWY 96					
0+10 TO 0+95	RT	265 (3)			

(1) INSTALL NEW FENCE ALONG RIGHT OF WAY LINE.
(2) REMOVE EXISTING FENCE ALONG RIGHT OF WAY LINE AND INSTALL ALONG EASEMENT LINE.
(3) INCL. INSTALLATION OF 20' GATE. INSTALL EXISTING FENCE WHERE SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
(4) INCLUDES INSTALLATION OF 10' GATE.

UTILITY ADJUSTMENTS

STATION	LOCATION	ITEM	REMARKS
CENTERVILLE ROAD			
4+44	45' LT	VALVE	ADJUST
5+60	45' LT	HYDRANT AND VALVE	RELOCATE
8+55	16' RT	VALVE	ADJUST
15+28	46' LT	HYDRANT	0.5' EXTENSION
15+28	45' LT	VALVE	ADJUST
16+35	18' RT	VALVE	ADJUST
16+40	33' RT	VALVE	ADJUST
16+50	34' RT	SANITARY MH	ADJUST UP 0.87'
26+23	40' LT	VALVE	ADJUST
26+75	30' RT	HYDRANT AND VALVE	RELOCATE

BITUMINOUS

	STATION	LOCATION	DESCRIPTION	SPEC 2341 WEAR		SPEC 2331 BINDER		SPEC 2331 BASE		SPEC 2221 PATCH	
				DEPTH IN.	TOTAL TON	DEPTH IN.	TOTAL TON	DEPTH IN.	TOTAL TON	DEPTH IN.	TOTAL TON
	CENTERVILLE ROAD										
	0+60 TO 1+50	CL	MAINLINE (INCL. WIDENING)	1.5	20.0	1.5	20.0	3.0	40.0		
(1)	1+50 TO 29+45	CL	MAINLINE	1.5	1142.0	1.5	1142.0	3.0	2284.0		
	1+50 TO 28+36	LT	BIKEWAY (8' WIDE)	2.0	238.3 (3)						
	1+90	RT	DRIVEWAY	2.0	8.2	2.0	8.2				
	2+50	RT	DRIVEWAY	2.0	9.4	2.0	9.4				
	4+35	LT	MEADOWLANDS DRIVE	1.5	155.1	1.5	155.1	3.0	310.4		
	4+90	RT	DRIVEWAY	2.0	3.1	2.0	3.1				
	8+60	RT	DRIVEWAY	2.0	3.7	2.0	3.7				
	9+80	RT	DRIVEWAY	2.0	2.9	2.0	2.9				
	10+00	LT	DRIVEWAY	2.0	5.9	2.0	5.9				
	14+94.17	LT	STODDART LANE	1.5	49.1	1.5	49.1	3.0	98.1		
	16+60	RT	DRIVEWAY	2.0	11.3	2.0	11.3				
	19+90	LT	DRIVEWAY	2.0	5.9	2.0	5.9				
	20+90	RT	DRIVEWAY	2.0	12.9	2.0	12.9				
	23+20	LT	DRIVEWAY	2.0	5.9	2.0	5.9				
	26+38.95	LT AND RT	BIRCH LAKE BLVD. INTER.	1.5	27.4	1.5	27.4	3.0	54.8		
	27+60	RT	DRIVEWAY	2.0	2.8	2.0	2.8				
	29+45 TO 52+88.6	CL	MAINLINE (20' OVERLAY)	1.5	429.7						200.0
	BIRCH LAKE BLVD.										
	8+90.5 TO 9+43	CL	MAINLINE	1.5	13.7	1.5	13.7	2.0	18.3		
	10+61 TO 12+50	CL	MAINLINE	1.5	99.5	1.5	99.5	2.0	132.7		
	10+80	LT	DRIVEWAY	2.0	2.2	2.0	2.2				
	11+20	LT	DRIVEWAY	2.0	2.2	2.0	2.2				
	12+20	LT	DRIVEWAY	2.0	2.2	2.0	2.2				
	TEMPORARY BYPASS										
	52+88.60 TO 92+33.82	CL	MAINLINE	1.5	1723.3 (2)			1.5	723.3		
	56+58	RT	DRIVEWAY	2.0	5.0	2.0	5.0				
	73+41	RT	DRIVEWAY	2.0	7.4	2.0	7.4				
	77+58	RT	DRIVEWAY	2.0	8.5	2.0	8.5				
	78+45	RT	DRIVEWAY	2.0	3.1	2.0	3.1				
	80+75	RT	DRIVEWAY	2.0	6.0	2.0	6.0				
	88+87	RT	DRIVEWAY	2.0	5.4	2.0	5.4				
	HWY 96										
	0+10 TO 3+00	RT	DRIVEWAY	2.0	118.8	2.0	118.8				

(1) INCLUDES QUANTITIES FOR TURNING LANES.
(2) INCLUDES 1000 TON FOR BYPASS REPAIR AS DIRECTED BY THE ENGINEER.
(3) PAID FOR AS ITEM 2341.508 WEARING COURSE MIXTURE (MOD.) (BIKEWAY) PEDESTRIAN RAMPS INCIDENTAL TO THIS ITEM.

BASIS OF PLAN QUANTITIES

BITUMINOUS WEARING COURSE
BIT. MAT'L = 6.2% OF MIXTURE BY WEIGHT
BIT. MIXTURE = 110 LBS/SQ YD/INCH OF DEPTH

BITUMINOUS BINDER COURSE
BIT. MAT'L = 5.3% OF MIXTURE BY WEIGHT
BIT. MIXTURE = 110 LBS/SQ YD/INCH OF DEPTH

BITUMINOUS BASE COURSE
BIT. MAT'L = 5.3% OF MIXTURE BY WEIGHT
BIT. MIXTURE = 110 LBS/SQ YD/INCH OF DEPTH

BITUMINOUS MATERIAL FOR TACK COAT
0.03 GAL/SQ YD

AGGREGATE BASE COURSE
135 LBS/CU FT

AGGREGATE BASE

	STATION	LOCATION	DESCRIPTION	CLASS 6 TON	CLASS 3 TON
	CENTERVILLE ROAD				
	0+60 TO 1+50	CL	MAINLINE (INCL. WIDENING)	60.4	72.6
	1+50 TO 29+45	CL	MAINLINE (40' WIDE)	2144.4	3773.2
	1+50 TO 29+45	LT AND RT	ALL C AND G AREAS	329.0	657.9
	1+50 TO 28+36	LT	BIKEWAY (8' WIDE)	440.0	
	1+50 TO 7+10	LT	TURN LANE	59.6	71.6
	1+50 TO 7+60	RT	TURN LANE	57.4	68.8
	1+90	RT	DRIVEWAY	18.9	
	2+50	RT	DRIVEWAY	21.6	
	4+35	LT	MEADOWLANDS DRIVE	476.0	84.8
	4+90	RT	DRIVEWAY	7.1	
	8+60	RT	DRIVEWAY	8.4	
	9+80	RT	DRIVEWAY	6.8	
	10+00	LT	DRIVEWAY	13.5	
	14+09 TO 33+40	RT	TURN LANE (INCL. TAPER)	210.7	253.1
	15+08.17 TO 17+23	LT	TURN LANE	21.6	25.9
	16+60	RT	DRIVEWAY	26.1	
	19+90	LT	DRIVEWAY	13.5	
	20+90	RT	DRIVEWAY	29.7	
	23+20	LT	DRIVEWAY	13.5	
	26+38.95	LT AND RT	BIRCH LAKE BLVD. INTER.	84.0	100.8
	27+60	RT	DRIVEWAY	8.0	
	29+45 TO 52+88.6	LT AND RT	SHLDR REPAIR (20' OVERLAY)		250.0 (1)
	BIRCH LAKE BLVD.				
	8+90.5 TO 9+43	CL	MAINLINE (25'-32' WIDE)	50.5	
	10+61 TO 12+50	CL	MAINLINE (25'-32' WIDE)	366.5	
	10+80	LT	DRIVEWAY	5.1	
	11+20	LT	DRIVEWAY	5.1	
	12+20	LT	DRIVEWAY	5.1	
	TEMPORARY BYPASS				
	52+88.60 TO 92+33.82	CL	MAINLINE (24' WIDE)	2130.4	
	56+58	RT	DRIVEWAY	13.9	
	73+41	RT	DRIVEWAY	20.3	
	77+58	RT	DRIVEWAY	23.6	
	78+45	RT	DRIVEWAY	8.5	
	80+75	RT	DRIVEWAY	16.6	
	88+87	RT	DRIVEWAY	14.9	
	HWY 96				
	0+10 TO 3+00	RT	DRIVEWAY	328.0	

(1) PAID FOR AS ITEM NO. 2221.501, AGGREGATE SHOULDERING, CLASS 2.

TURF ESTABLISHMENT

	STATION	LOCATION	ROADSIDE SEEDING ACRE	SEED MIXT. 1000 POUND	SODDING SQ YD	MULCH TYPE I TON
(1)	1+50 TO 29+45	LT AND RT			26,300 (2)	
	52+89 TO 93+00	LT AND RT	11.7 (3)	585 (3)	1,750 (4)	24 (3)

(1) INCLUDES QUANTITIES FOR BIRCH LAKE BOULEVARD.
(2) SODDING QUANTITY BASED ON LIMITS FROM THE BACK OF CURB TO THE RIGHT-OF-WAY OR SLOPE EASEMENT, AS SHOWN ON THE PLANS.
(3) SEEDING AND MULCH QUANTITIES IN SUBGRADE CORRECTION AREAS BASED ON SEEDING LIMITS FROM SLOPE EASEMENT TO SLOPE EASEMENT, EXCEPT PAVEMENT AREAS OR AREAS DESIGNATED TO RECEIVE SOD. SEE TYPICAL SECTIONS.
(4) SODDING QUANTITY ADJOINS BYPASS. SEE TYPICAL SECTIONS.

28-10C

Fed. Proj. No.

CONCRETE

STATION	LOCATION	CURB AND GUTTER ③		DRIVEWAY		MEDIAN ③	SLAB
		B624 ①	B618	6"	8"		
		LIN FT	LIN FT	SQ YD	SQ YD	SQ FT	SQ YD
CENTERVILLE ROAD							
1+05 TO 4+04	LT	318.98					
1+05 TO 26+22.95	RT	2508.18					
1+86	RT				18.97		
2+50	RT				18.97		
4+35	LT	44.71				110.0	
4+66 TO 14+78.17	LT	1048.42					
4+95	RT			7.86			
8+53	RT				7.86		
9+79	RT			7.86			
9+95	LT				64.06		
15+10.17 TO 26+22.95	LT	1147.03					
16+49	RT		30				
19+80	LT				64.06		
20+86	RT		42				
23+25	LT				64.06		
26+54.95 TO 28+73	LT	238.03					
26+54.95 TO 29+00	RT	265.03					
27+58	RT			10.08			
BIRCH LAKE BLVD.							
10+61 TO 11+97.5	LT AND RT	273.00					
10+82	LT			7.86			
11+20	LT			7.86			
HWY 96							
2+15							81
2+90							23

① TRANSITION FROM B624 TO B618 AND D412 SHALL BE PAID FOR AS B624 C AND G.
② PEDESTRIAN RAMPS AT BIKEWAY SHALL BE OF BITUMINOUS CONSTRUCTION.
③ REMOVAL OF EXISTING C AND G AND MEDIAN SHALL BE INCIDENTAL TO PAVEMENT REMOVAL. MEDIAN PAID FOR AS ITEM 2521.501, 4" CONC. WALK.

EARTHWORK

STATION	ITEM	QUANTITY
1+00 TO 29+45	COMMON EXCAVATION	2,290 CY
52+50 TO 92+50	COMMON EXCAVATION	3,440 CY ⑥
	TOTAL	5,730 CY
1+00 TO 29+45	EMBANKMENT	12,480 CY
52+50 TO 92+50	EMBANKMENT	220 CY
	TOTAL	12,700 CY ④
1+00 TO 29+45	SUBGRADE EXCAVATION	10,660 CY
52+50 TO 92+50	SUBGRADE EXCAVATION	3,950 CY ⑦
	TOTAL	14,610 CY
52+50 TO 92+50	MUCK EXCAVATION	6,700 CY
1+00 TO 29+45	SELECT GRAN. BORROW (MOD 10%) (CV)	6,410 CY
52+50 TO 92+50	SELECT GRAN. BORROW (MOD 10%) (LV)	66,500 CY ⑤
52+50 TO 92+50	GRANULAR BORROW (LV)	66,500 CY ⑤
1+00 TO 29+45	TOPSOIL BORROW 3" DEPTH (LV)	2,520 CY ①
52+50 TO 92+50	TOPSOIL BORROW 2" DEPTH (LV)	3,740 CY ②
	TOTAL	6,260 CY
52+50 TO 92+50	GEOTEXTILE FABRIC	44,480 SY
	WATER ③	500 MGAL

① TOPSOIL QUANTITY BASED ON LIMITS FROM THE BACK OF CURB TO THE RIGHT-OF-WAY OR SLOPE EASEMENT, AS SHOWN ON THE PLANS. INCLUDES 15% SHRINKAGE.
② TOPSOIL QUANTITY BASED ON LIMITS FROM THE EDGE OF PAVEMENT TO THE RIGHT-OF-WAY OR SLOPE EASEMENT, AS SHOWN ON THE PLANS. INCLUDES 15% SHRINKAGE
③ FOR DUST CONTROL.
④ FOR INFORMATION ONLY.
⑤ INCLUDES 10% SHRINKAGE.
⑥ PAVEMENT REMOVAL SHALL BE INCIDENTAL TO THIS WORK IN TYPE I SUBGRADE CORRECTION AREAS.
⑦ PAVEMENT REMOVAL SHALL BE INCIDENTAL TO THIS WORK IN TYPE II SUBGRADE CORRECTION AREAS.

CLEAR GRUB AND TRANSPLANT

STATION	LOCATION		DESCRIPTION	CLEAR		GRUB		TRANSPLANT
	LT	RT		TREE	ACRE	TREE	ACRE	SHRUB
CENTERVILLE RD								
4+00 TO 5+00		X	1-4", 1-10"	2		2		
5+00 TO 6+00		X	1-12"	1		1		
8+90 TO 9+30		X	5-3"					5 - LILACS ①
10+00 TO 11+40	X		2-8"		0.05		0.05	
11+00 TO 12+00	X		1-4"	1		1		
12+00 TO 13+00	X		4-4", 1-6"	5		5		
13+00 TO 14+00	X	X	1-4", 3-5", 2-7", 1-10"	7		7		
14+00 TO 15+00	X	X	5-4", 20-4"-18"	25		25		
15+00 TO 16+00	X	X	15-4"-12", 2-28"	15		17		
16+00 TO 17+00	X		2-4"	2		2		
17+00 TO 18+00	X		1-4", 1-12", 2-18"	3		4		
19+00 TO 20+00		X	2"-6"		0.05		0.05	
21+00 TO 22+00		X	1-22"			1		
23+00 TO 24+00	X		1-4", 2-6", 1-7"	4		4		
25+00 TO 26+00		X	3-4"	3		3		
26+00 TO 27+00	X		1-8", 1-12"	2		2		
27+00 TO 28+00		X	1-6"	1		1		
54+00 TO 55+00	X		6-4"-8"	2		2		
56+00 TO 57+00	X		1-4"	1				
58+00 TO 59+00	X		1-10"	1				
60+00 TO 61+00	X		8-4", 1-8", 1-10"	10				
61+00 TO 62+00	X		2-6"	2				
64+00 TO 65+00	X		6-4"-16"	6				
65+00 TO 66+00	X		13-4"-10"	13				
66+00 TO 67+00	X		1-6", 1-8", 1-10", 2-12", 1-14"	6				
67+00 TO 68+00	X		5-5", 1-16"	6				
70+00 TO 71+00	X		5-4", 3-5", 3-6", 2-8"	13				
71+00 TO 72+00	X		3-4", 1-6", 2-8"	6				
72+00 TO 73+00	X		5-4", 3-5", 9-6", 1-7", 1-8"	19				
73+00 TO 74+00	X		3-5", 1-6", 2-8"	6				
81+00 TO 82+00		X	2-4", 4-6", 1-10"	7		7		
82+00 TO 83+00		X	3-4"	3		3		
83+00 TO 84+00	X		19-4"-8"	19				
84+00 TO 85+00	X	X	3-4", 3-6"	6				
85+00 TO 86+00	X		1-6"	1				
86+00 TO 87+00	X		2-6"	2				
87+00 TO 88+00		X	2-4", 1-6", 3-10"	6				
88+00 TO 89+00	X	X	2-4", 2-5"	4				
89+00 TO 90+00	X	X	2-4", 1-15"	3				
90+00 TO 91+00		X	3-4", 2-6"	5		5		

① TRANSPLANT WHERE DIRECTED BY THE ENGINEER WITHIN PROPERTY LIMITS OF 4650 CENTERVILLE ROAD.

RIPRAP

STATION	LOCATION	① F AND I RIPRAP CL III	② F AND I GRAN. FILTER
		CU YD	CU YD
CENTERVILLE RD			
1+55	32' RT	2.9	1.4
2+14.6	55' LT	2.9	1.4
12+05	69' LT	5.8	2.9
12+07	57' RT	3.6	1.8
25+83.3	49' LT	5.8	2.9
28+33	73' LT	2.9	1.4
66+15	67' LT	11.0	5.5
74+50	15' LT	5.8	2.9
86+45	83' RT	5.8	2.9
52+40	18' LT.	11.0	5.5

① DEPTH OF RIPRAP = 15"
② DEPTH OF GRANULAR FILTER = 7.5"

SILT FENCE

STATION	LOCATION	F AND I SILT FENCE HEAVY DUTY
		LF
CENTERVILLE RD		
0+50 TO 29+45	LT	2895
2+50 TO 5+00	RT	250
11+00 TO 13+50	RT	250
15+50 TO 25+50	RT	1000
52+89 TO 75+00	LT	2211
52+89 TO 92+00	RT	3911
82+00 TO 93+00	LT	1100
BIRCH LAKE BLVD		
10+60 TO 12+50	RT	190

28-106

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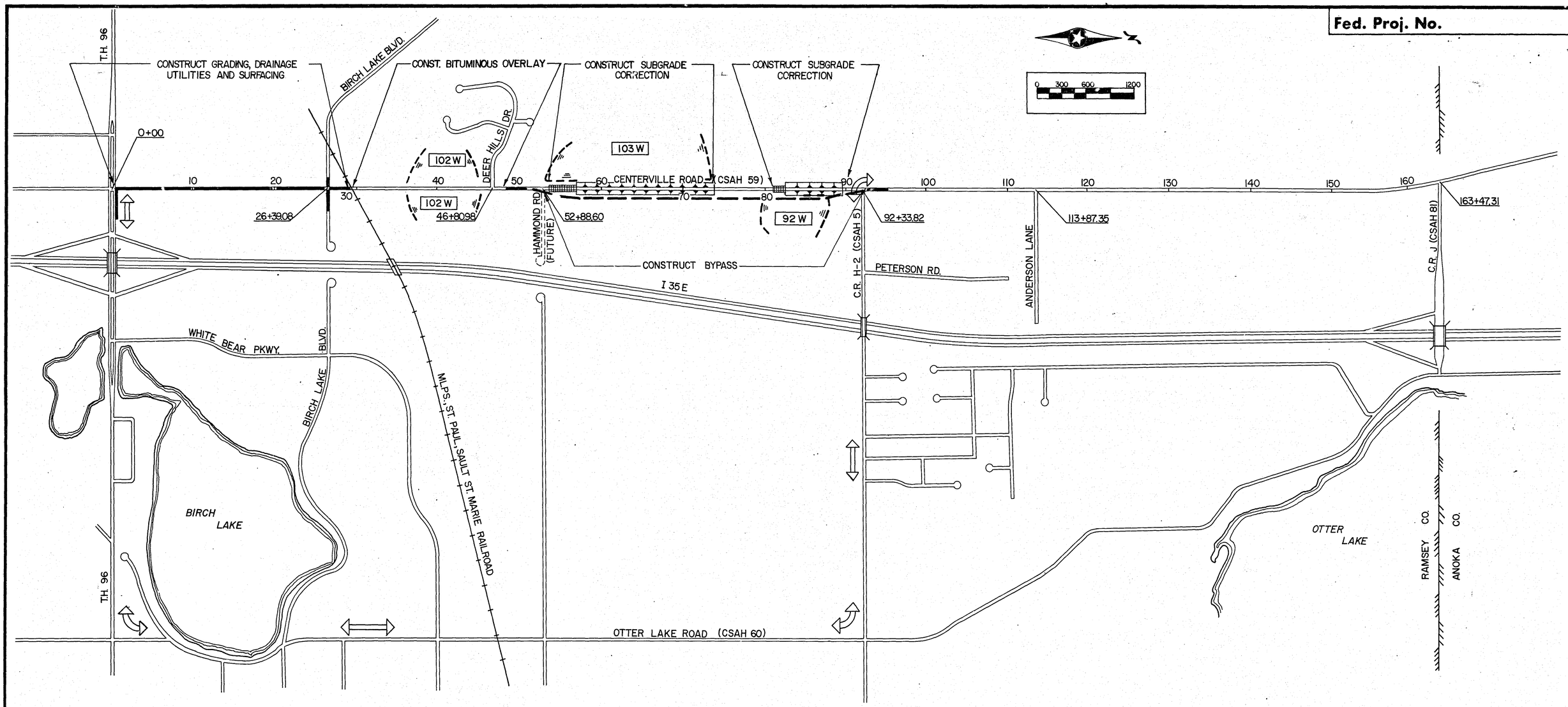


NOTES: ① SEE TRAFFIC CONTROL PLANS, SH. 15-18C.

102W ------- PROTECTED WETLAND WITH IDENTIFICATION NUMBER

------- SUBGRADE CORRECTION, TYPE I, EXCAVATE SWAMP & BACKFILL

------- SUBGRADE CORRECTION, TYPE II, SURCHARGE

------- DETOUR ROUTE

------- BYPASS (TOE ROAD EMBANKMENT)

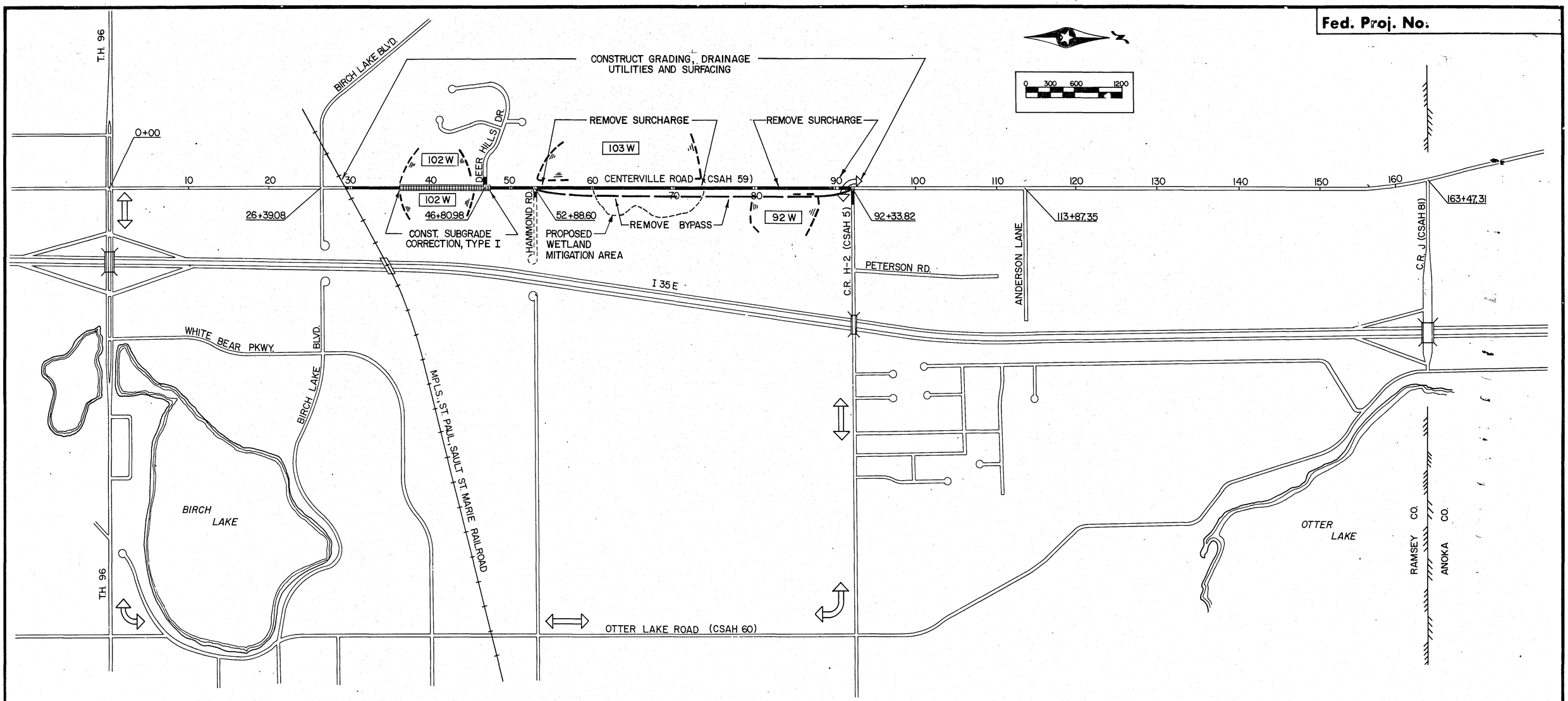
CONSTRUCTION PLAN
PROJECT I

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 12 **of** 72 **Sheets**

83212

Fed. Proj. No.



102 W ------- PROTECTED WETLAND WITH IDENTIFICATION NUMBER

------- SUBGRADE, CORRECTION, TYPE I, EXCAVATE SWAMP & BACKFILL

------- SUBGRADE CORRECTION, TYPE II, SURCHARGE

------- DETOUR ROUTE

CONSTRUCTION PLAN

PROJECT II

28-106

"FOR INFORMATION ONLY"

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 13 **of** 72 **Sheets**

83212

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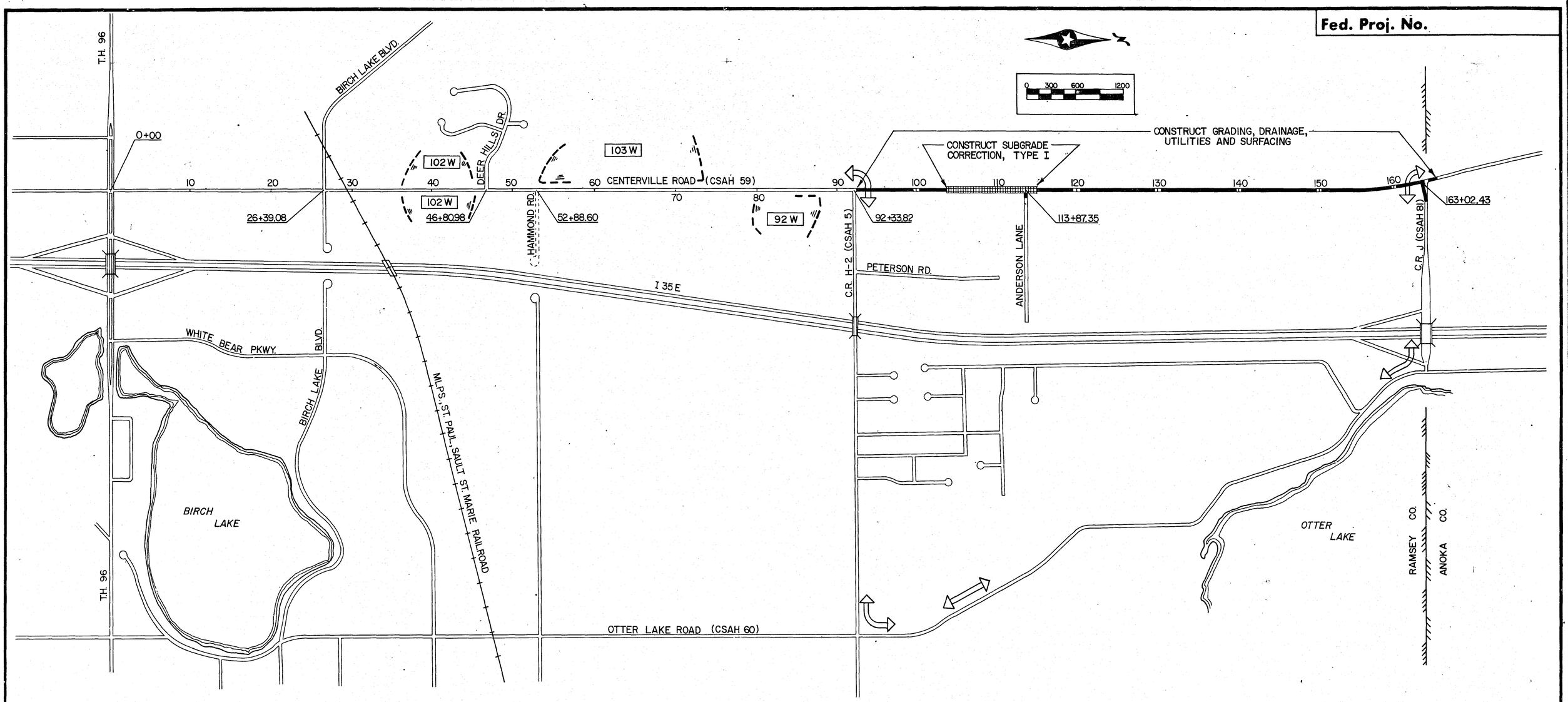

102W ------- PROTECTED WETLAND WITH IDENTIFICATION NUMBER

------- SUBGRADE CORRECTION, TYPE I, EXCAVATE SWAMP & BACKFILL

------- SUBGRADE CORRECTION, TYPE II, SURCHARGE

------- DETOUR ROUTE

CONSTRUCTION PLAN

PROJECT III

"FOR INFORMATION ONLY"

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 14 **of** 72 **Sheets**

83212

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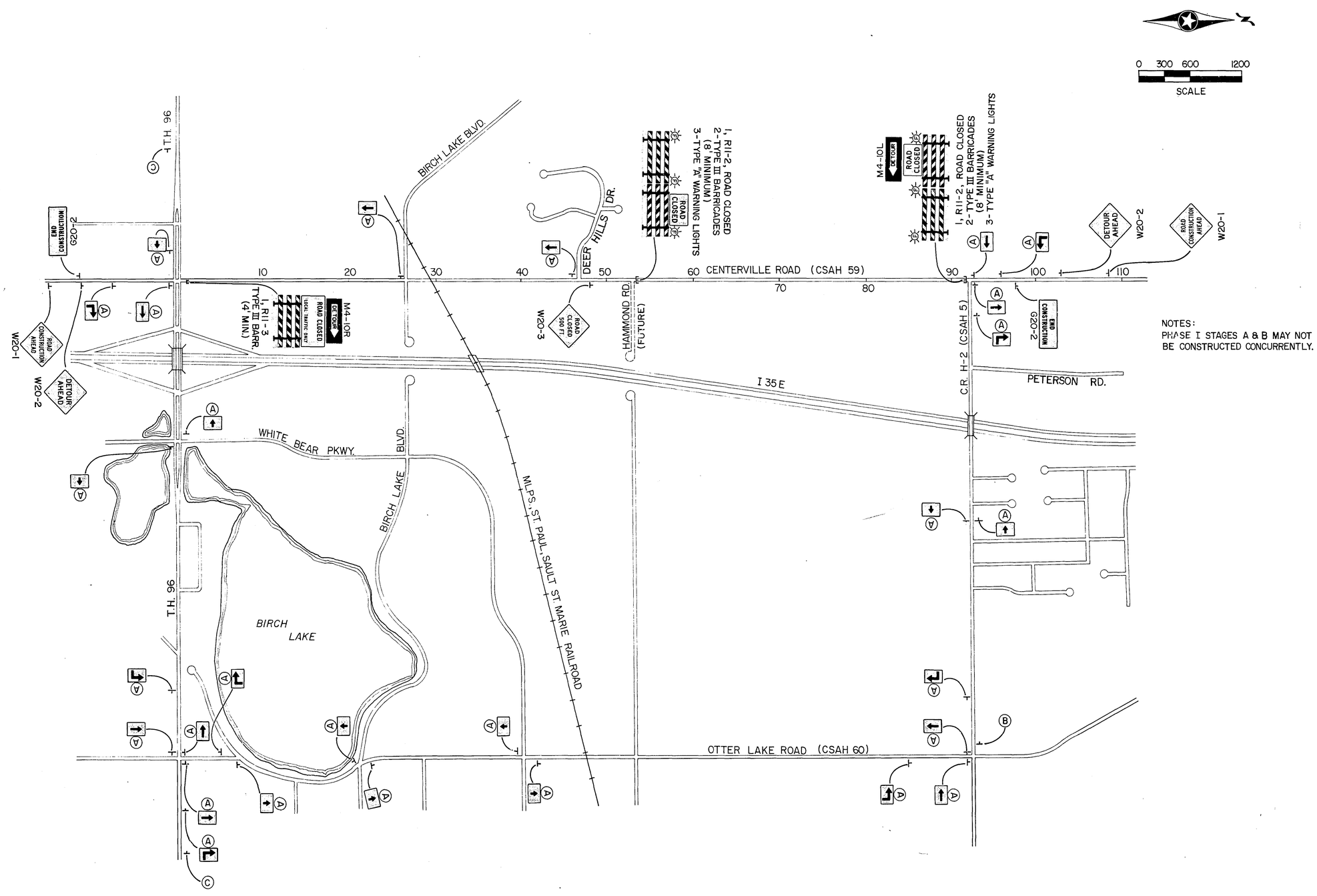


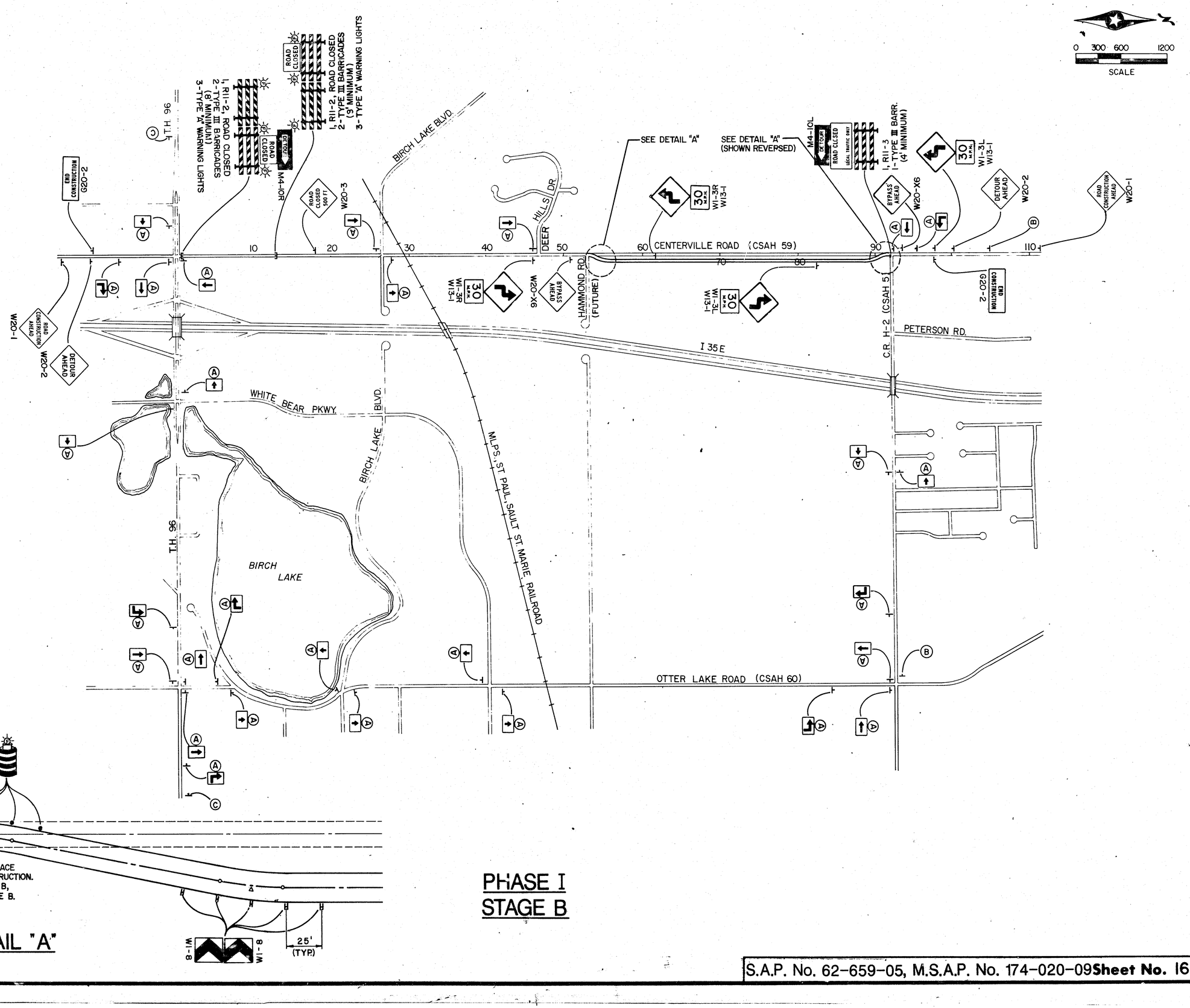
NOTES:
PHASE I STAGES A & B MAY NOT BE CONSTRUCTED CONCURRENTLY.

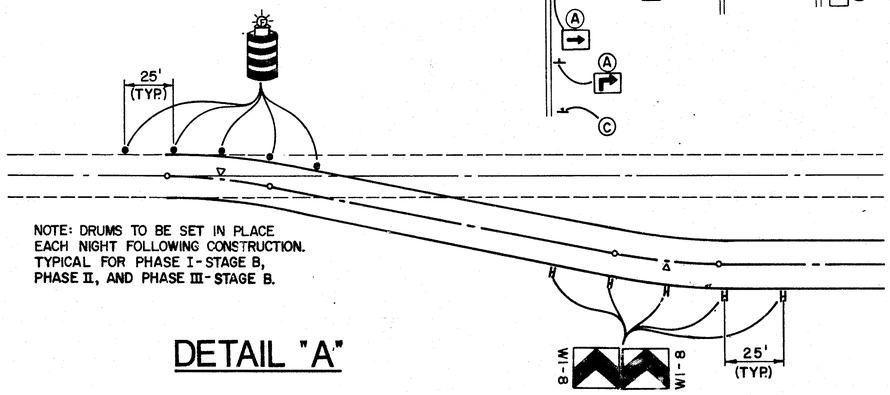
PHASE I
STAGE A

28-106

83212

Fed. Proj. No.





NOTE: DRUMS TO BE SET IN PLACE EACH NIGHT FOLLOWING CONSTRUCTION. TYPICAL FOR PHASE I-STAGE B, PHASE II, AND PHASE III-STAGE B.

DETAIL "A"

PHASE I STAGE B

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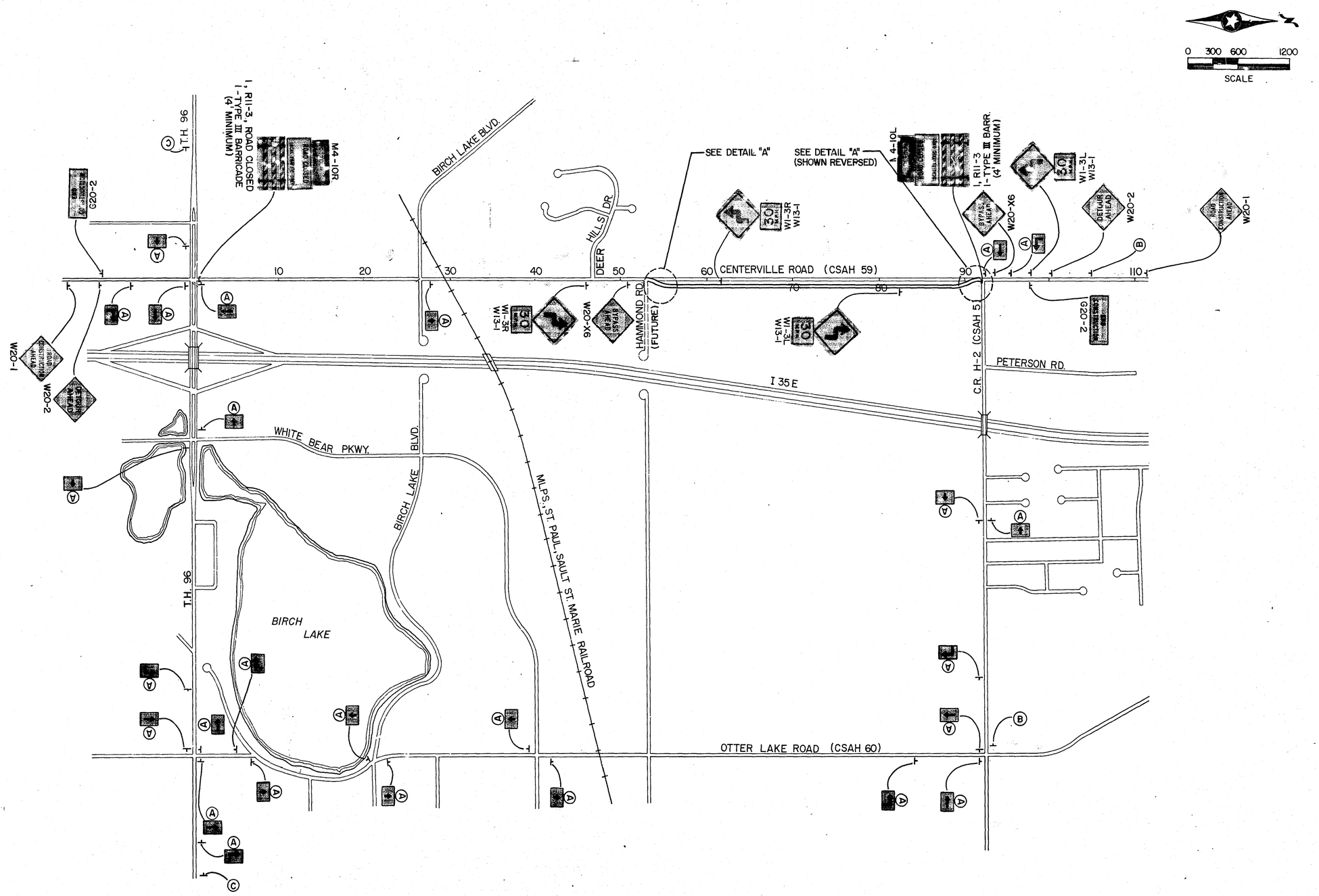
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 16 of 72 Sheets**

COPY EQUIPMENT FIRM #1
83312

Fed. Proj. No.



PHASE II

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 17 of 72 Sheets**

83212

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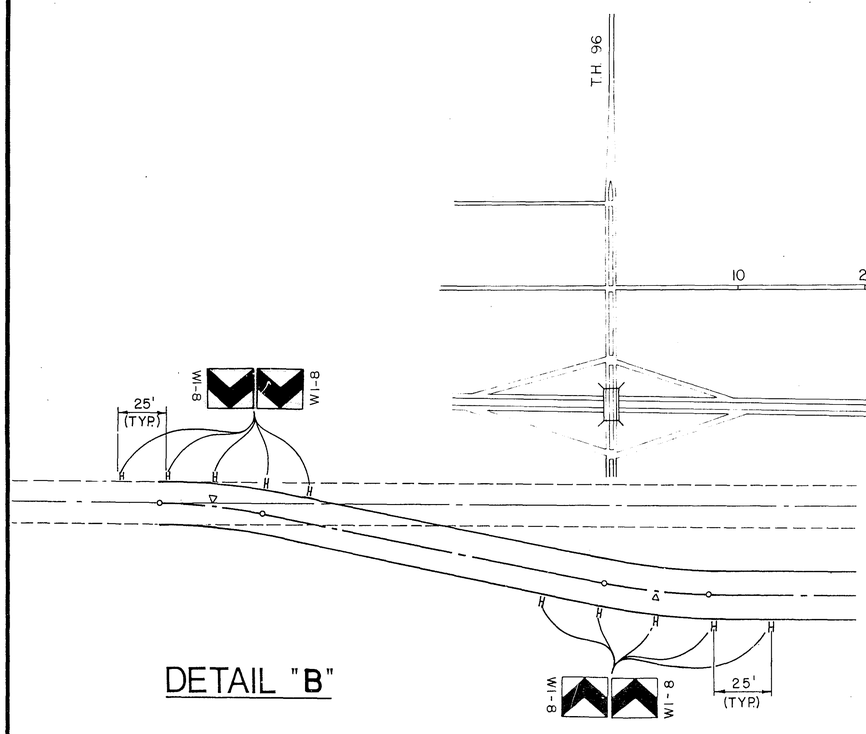
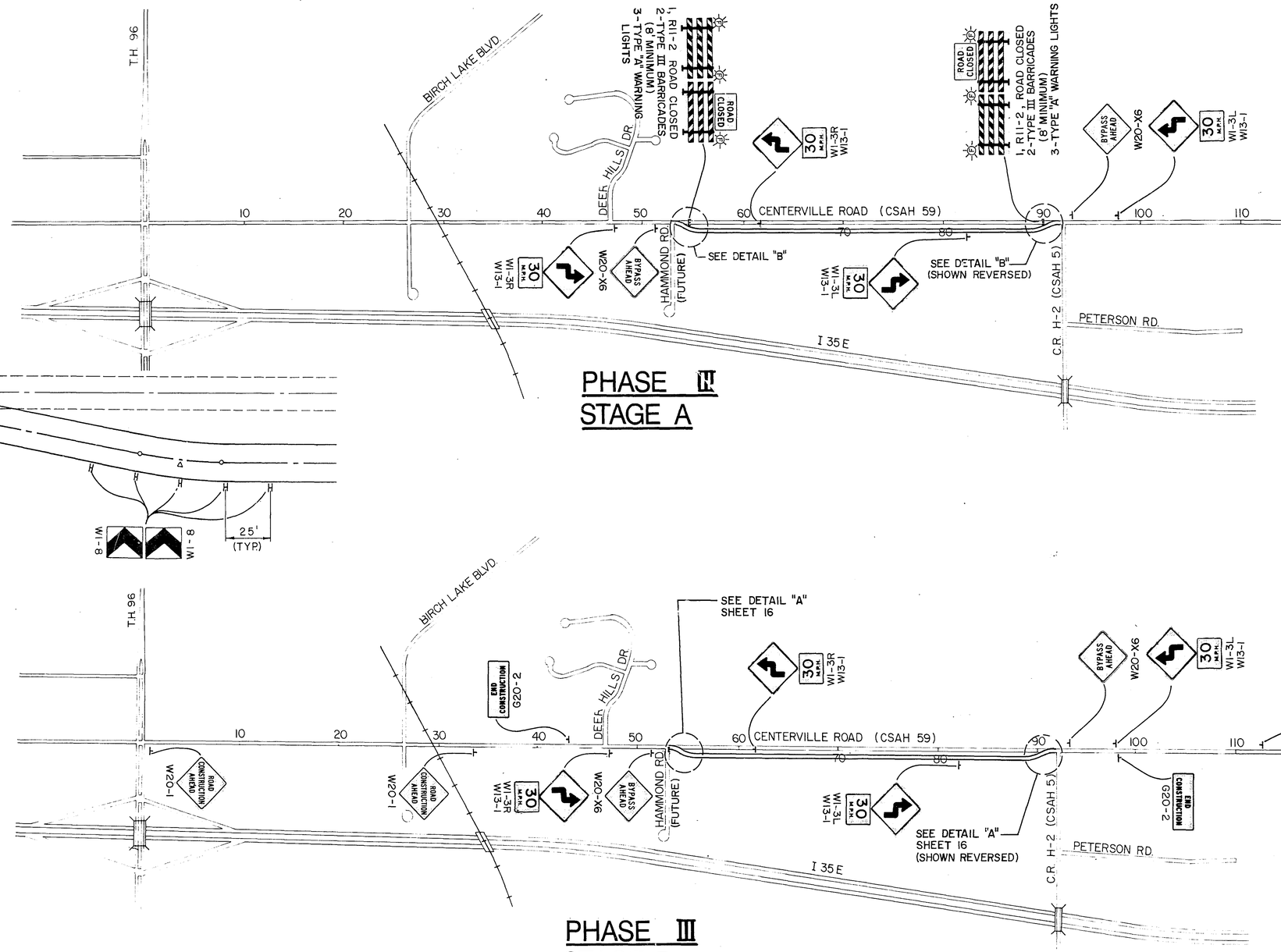


DETAIL "B"



PHASE III
STAGE A

PHASE III
STAGE B

0 300 600 1200
SCALE

0 300 600 1200
SCALE

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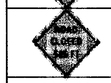
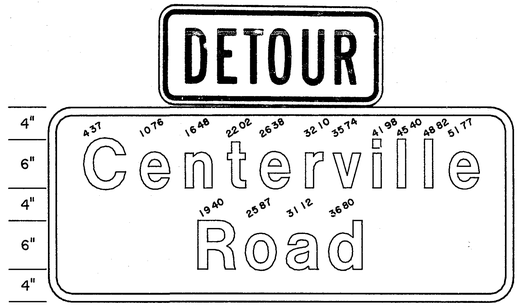
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 18 **of** 72 **Sheets**

COPY EQUIPMENT 11 copy #1
83212

Fed. Proj. No.

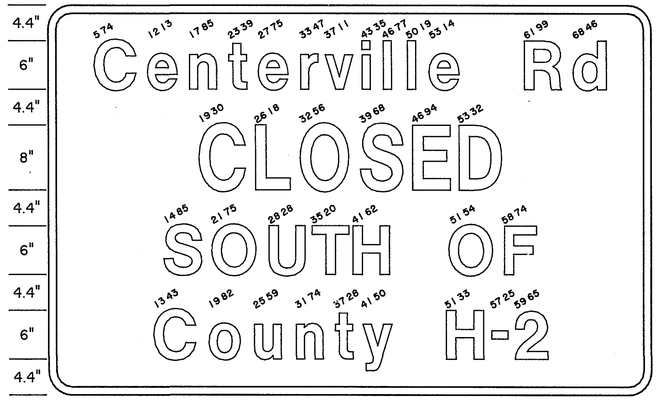
TRAFFIC CONTROL LUMP SUM						REMOBIL. L.S.	
ITEM	NO. OR TYPE	SIZE	QUANTITY				
			PHASE IA	PHASE IB	PHASE II	PH. IIIA	PH. IIIB
	M5-1R	21"X15" BLACK ON WHITE	5	4	4	—	—
	M5-1L	21"X15" BLACK ON WHITE	3	3	3	—	—
	M6-1	21"X15" BLACK ON WHITE	10	10	8	—	—
	M6-3	21"X15" BLACK ON WHITE	10	11	11	—	—
	M4-8	24"X12" BLACK ON ORANGE	28	28	26	—	—
	G20-2	60"X24" BLACK ON ORANGE	2	2	2	—	2
	M4-10R	48"X18" BLACK ON ORANGE ON BLACK	1	1	1	—	—
	M4-10L	48"X18" BLACK ON ORANGE ON BLACK	1	1	1	—	—
	R11-2	48"X30" BLACK ON WHITE	2	2	—	—	—
	R11-3	60"X30" BLACK ON WHITE	1	1	2	—	—
	W20-1	48"X48" BLACK ON ORANGE	2	2	2	—	3
	W20-2	48"X48" BLACK ON ORANGE	2	2	2	—	—
	W20-3	48"X48" BLACK ON ORANGE	1	1	—	—	—
	DRUMS	ORANGE AND WHITE	—	10	10	—	10
	TYPE "A" AMBER	—	6	16	10	—	10
	TYPE III BARRICADES	4' ORANGE AND WHITE	1	1	2	—	—
	TYPE III BARRICADES	8' ORANGE AND WHITE	4	4	—	—	—
(A)	SPECIAL	60"X24" BLACK ON WHITE	28	28	26	—	—
(B)	SPECIAL	78"X48" BLACK ON WHITE	1	2	2	—	—
(C)	SPECIAL	78 "X48" BLACK ON WHITE	2	2	2	—	—
(D)	SPECIAL	60"X60" BLACK ON WHITE	2 SIGNS TO BE PLACED AS AS DIRECTED BY THE ENGINEER			—	—

SIGNS FURNISHED AND INSTALLED BY OTHERS						
ITEM	NO. OR TYPE	SIZE	QUANTITY			
			PHASE IB	PHASE II	PHASE IIIA	PHASE IIIB
	W13-1	24"X24" BLACK ON ORANGE	4	4	4	4
	R11-2	48"X30" BLACK ON WHITE	—	—	2	—
	W1-3R	36"X36" BLACK ON ORANGE	2	2	2	2
	W1-3L	36"X36" BLACK ON ORANGE	2	2	2	2
	W1-8	24"X30" BLACK ON ORANGE	20	20	40	20
	W20-X6	36"X36" BLACK ON ORANGE	2	2	2	2
	TYPE A AMBER	—	—	—	6	—
	TYPE III BARRICADE	8' ORANGE AND WHITE	—	—	4	—



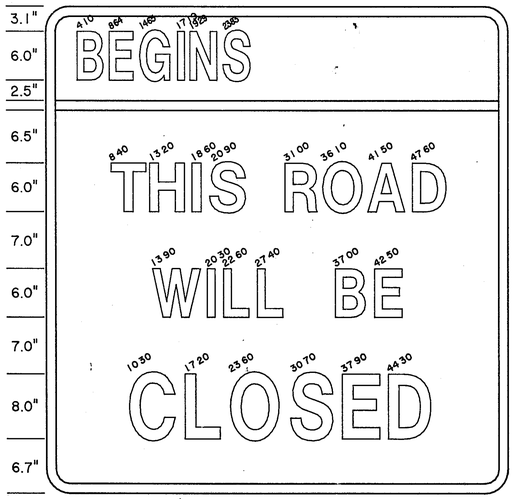
60" X 24", 3.0" R. 1.0" B. BLACK ON WHITE
LINE 1 51.25" 6"-4.5" E MOD
LINE 2 21.20" 6"-4.5" E MOD

(A)



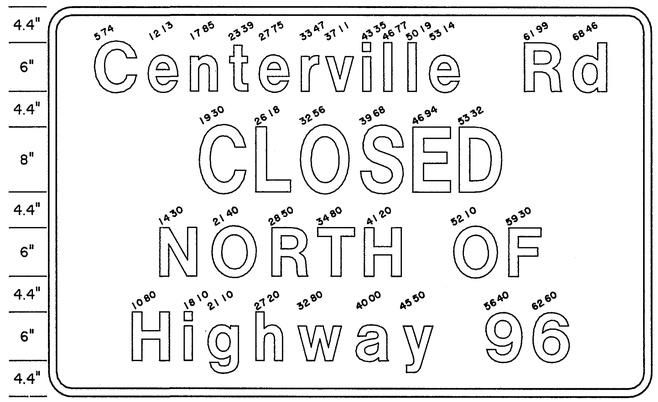
78" X 48" 3.0" R. 1.0"B BLACK ON WHITE
LINE 1 66.52" 6"-4.5" E MOD
LINE 2 39.40" 8" D
LINE 3 48.29" 6" E MOD
LINE 4 51.14" 6"-4.5" E MOD

(B)



60" X 60" 6.0" R. 1.2" B. BLACK ON WHITE
LINE 1 51.80" 6" C
LINE 2 57.50" 1.2" HORIZ. LINE
LINE 3 43.30" 6" D
LINE 4 32.20" 6" D
LINE 5 39.40" 6" D

(D)



78" X 48" 3.0" R. 1.0" B. BLACK ON WHITE
LINE 1 66.52" 6"-4.5" E MOD
LINE 2 39.40" 8" D
LINE 3 49.40" 6" E MOD
LINE 4 56.40" 6"-4.5" E MOD

(C)

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NOTES:

1) SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.
2) EACH LUMINAIRE SHALL HAVE A PHOTOELECTRIC CELL AND CHECK SWITCH.
3) FOR SIGN DETAILS SEE SHEET 10A.
4) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
5) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
6) ALL SIGNAL FACES SHALL BE 12" 3 SECTION R-Y-G EXCEPT FACE NO'S 1-1 AND 5-1 WHICH SHALL BE 12" 3 SECTION RLTA-YLTA-GLTA.
7) A MID-MAST ARM MOUNT SHALL BE LOCATED 12' FROM THE END OF THE MAST ARM AT POLES 2 AND 4.

LOOP DETECTORS

NUMBER	SIZE	FUNCTION	LOCATION
D1-1	MULTIPLE	1	5'
D2-1	6'X6'	1	400'
D2-2	6'X6'	1	400'
D4-1	6'X6'	3	250'
D4-2	6'X6'	1	120'
D4-3	6'X6'	1	120'
D4-4	6'X20'	2	5'
D4-5	6'X20'	1	5'
D4-6	6'X20'-6'X6'	1	5'
D4-7	6'X20'	2	5'
D4-8	6'X6'	1	120'
D4-9	6'X6'	1	120'
D4-10	6'X6'	3	250'
D5-1	MULTIPLE	1	5'
D6-1	6'X6'	1	300'
D6-2	6'X6'	1	300'

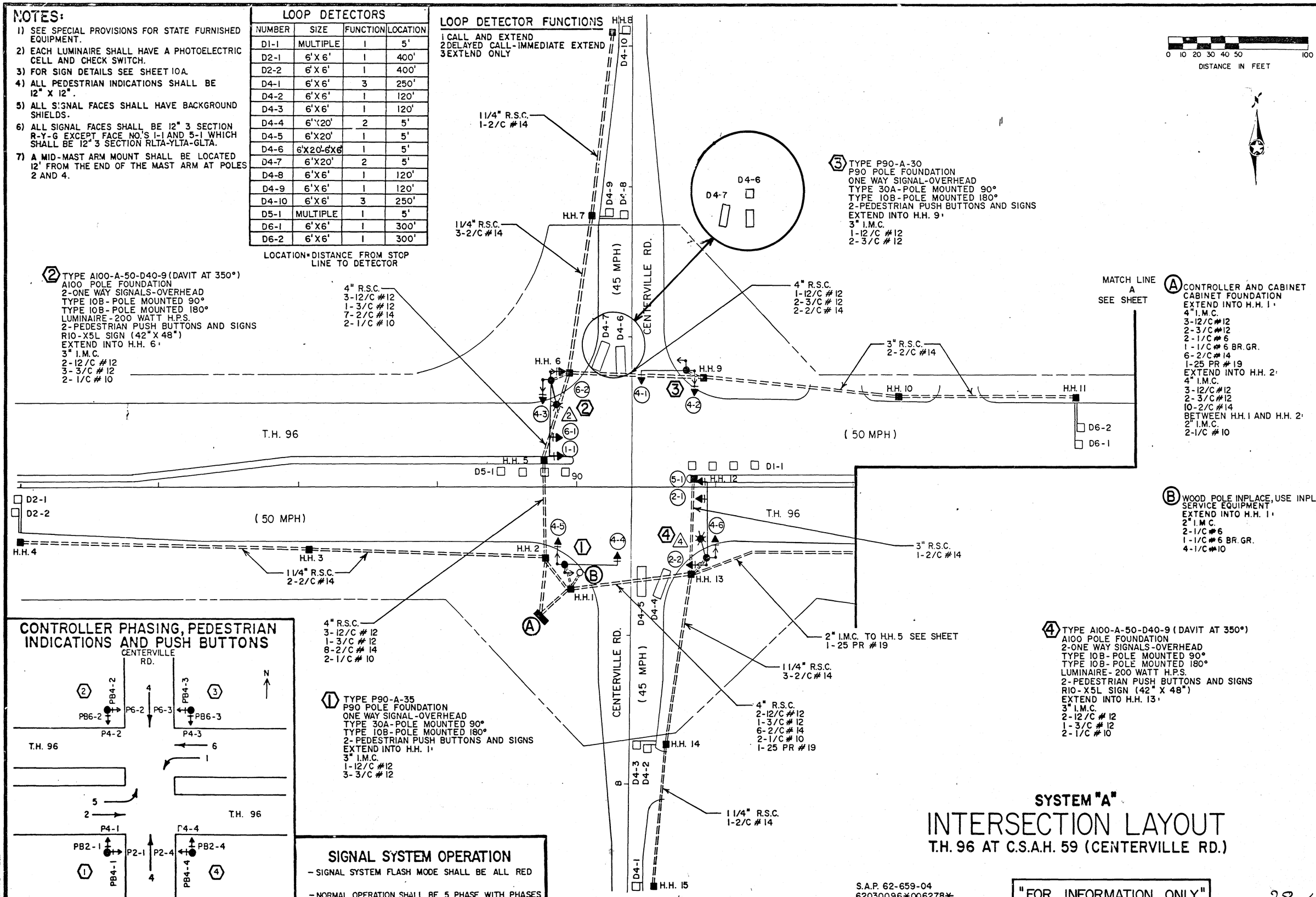
LOCATION=DISTANCE FROM STOP LINE TO DETECTOR

LOOP DETECTOR FUNCTIONS

1 CALL AND EXTEND
2 DELAYED CALL-IMMEDIATE EXTEND
3 EXTEND ONLY

0 10 20 30 40 50 100
DISTANCE IN FEET

N



(2) TYPE A100-A-50-D40-9 (DAVIT AT 350°)
A100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
LUMINAIRE-200 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
R10-X5L SIGN (42" X 48")
EXTEND INTO H.H. 6
3" I.M.C.
2-12/C #12
3-3/C #12
2-1/C #10

(3) TYPE P90-A-30
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 30A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 9
3" I.M.C.
1-12/C #12
2-3/C #12

(A) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1
4" I.M.C.
3-12/C #12
2-3/C #12
2-1/C #6
1-1/C #6 BR.GR.
6-2/C #14
1-25 PR #19
EXTEND INTO H.H. 2
4" I.M.C.
3-12/C #12
2-3/C #12
10-2/C #14
BETWEEN H.H. 1 AND H.H. 2
2" I.M.C.
2-1/C #10

(B) WOOD POLE INPLACE, USE INPLACE SERVICE EQUIPMENT
EXTEND INTO H.H. 1
2" I.M.C.
2-1/C #6
1-1/C #6 BR.GR.
4-1/C #10

(1) TYPE P90-A-35
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 30A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 1
3" I.M.C.
1-12/C #12
3-3/C #12

(4) TYPE A100-A-50-D40-9 (DAVIT AT 350°)
A100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
LUMINAIRE-200 WATT H.P.S.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
R10-X5L SIGN (42" X 48")
EXTEND INTO H.H. 13
3" I.M.C.
2-12/C #12
1-3/C #12
2-1/C #10

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED
- NORMAL OPERATION SHALL BE 5 PHASE WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURNS.

SYSTEM "A"
INTERSECTION LAYOUT
T.H. 96 AT C.S.A.H. 59 (CENTERVILLE RD.)

S.A.P. 62-659-04
62030096*006278*

"FOR INFORMATION ONLY"

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 18B of 72 Sheets

CONTROLLER CABINET

1
RED 4-4
YEL 4-4
GRN 4-4
NEU 4-4 4-5
RED 4-5
YEL 4-5
GRN 4-5
NEU P2-1
WLK P2-1
DWK P2-1
SPR
EQG

2
RLTA 5-1
YLTA 5-1
GLTA 5-1
NEU 5-1
RED 2-1
YEL 2-1
GRN 2-1
NEU 2-1 2-2
RED 2-2
YEL 2-2
GRN 2-2
EQG

3
RED 4-6
YEL 4-6
GRN 4-6
NEU 4-6 P4-4
WLK P4-4
DWK P4-4
SPR
NEU P2-4
WLK P2-4
DWK P2-4
SPR
EQG

4
RED 4-3
YEL 4-3
GRN 4-3
NEU 4-3 P4-2
WLK P4-2
DWK P4-2
WLK P6-2 P6-3
NEU P6-2 P6-3
DWK P6-2 P6-3
SPR
SPR
EQG

5
RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1 6-2
RED 6-2
YEL 6-2
GRN 6-2
NEU 1-1
RLTA 1-1
YLTA 1-1
GLTA 1-1
EQG

6
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1 4-2
RED 4-2
YEL 4-2
GRN 4-2
NEU P4-3
WLK P4-3
DWK P4-3
SPR
EQG

P4-1 WLK
P4-1 NEU 7
P4-1 DWK

PB2-1 PB2-4
NEU 8
PB4-1 PB4-4

PB4-2 PB4-3
NEU 9
PB6-2 PB6-3

SIGNAL SERVICE 10

D1-1 11

D2-1 12

D2-2 13

D4-1 14

D4-2 15

D4-3 16

D4-4 17

D4-5 18

D4-6 19

D4-7 20

D4-8 21

D4-9 22

D4-10 23

D5-1 24

D6-1 25

D6-2 26

INTERCONNECT TO SYSTEM "B" 41

1,2,3,7,8,10,11,14,15,16,17,18,41

4,5,6,9,12,13,19,20,21,22,23,24,25,26

10,28,29

29

2,3,8,11,14,15,16,17,18,28,41

11

CONDUCTOR COLOR CODING

12/C#12
R
O
BL
WH
R/BLK
O/BLK
BL/BLK
WH/BLK
BLK
BLK/WH
G/BLK
G

BLK
WH 2-1/C#6 2-1/C#10

R
WH 3/C#12
BLK

BLK
CLEAR 2/C#14

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

H.H. 1
H.H. 2
H.H. 3
H.H. 4
H.H. 5
H.H. 6
H.H. 7
H.H. 8
H.H. 9
H.H. 10
H.H. 11
H.H. 12
H.H. 13
H.H. 14
H.H. 15

D1-1
D2-1 D2-2
D4-1
D4-2 D4-3
D4-4 D4-5
D4-6 D4-7
D4-8 D4-9
D4-10
D5-1
D6-1 D6-2

① ② ③ ④

LUMINAIRE 2
LUMINAIRE 4

4-4 4-5 P2-1
4-3 P4-2 P6-2
4-6 P4-4 P2-4
4-1 4-2 P4-3

P4-1
PB2-1 PB4-1
PB2-4 PB4-4
PB4-2 PB6-2
PB4-3 PB6-3
P6-3

6-1 6-2 1-1
5-1 2-1 2-2

R
WH
BLK

6,9,25,26,27
21,22,23
25,26
12,13
4,5,6,9,19,20,21,22,23,24,25,26,29
4,5,6,9,19,20,21,22,23,25,26,29

10 SIGNAL SERVICE
S.O.P.
STREET LIGHT SERVICE 28 29
GROUND ROD

TO H.H. 5 SYSTEM "B"
SEE SHEET 14

SYSTEM "A"

FIELD WIRING DIAGRAM

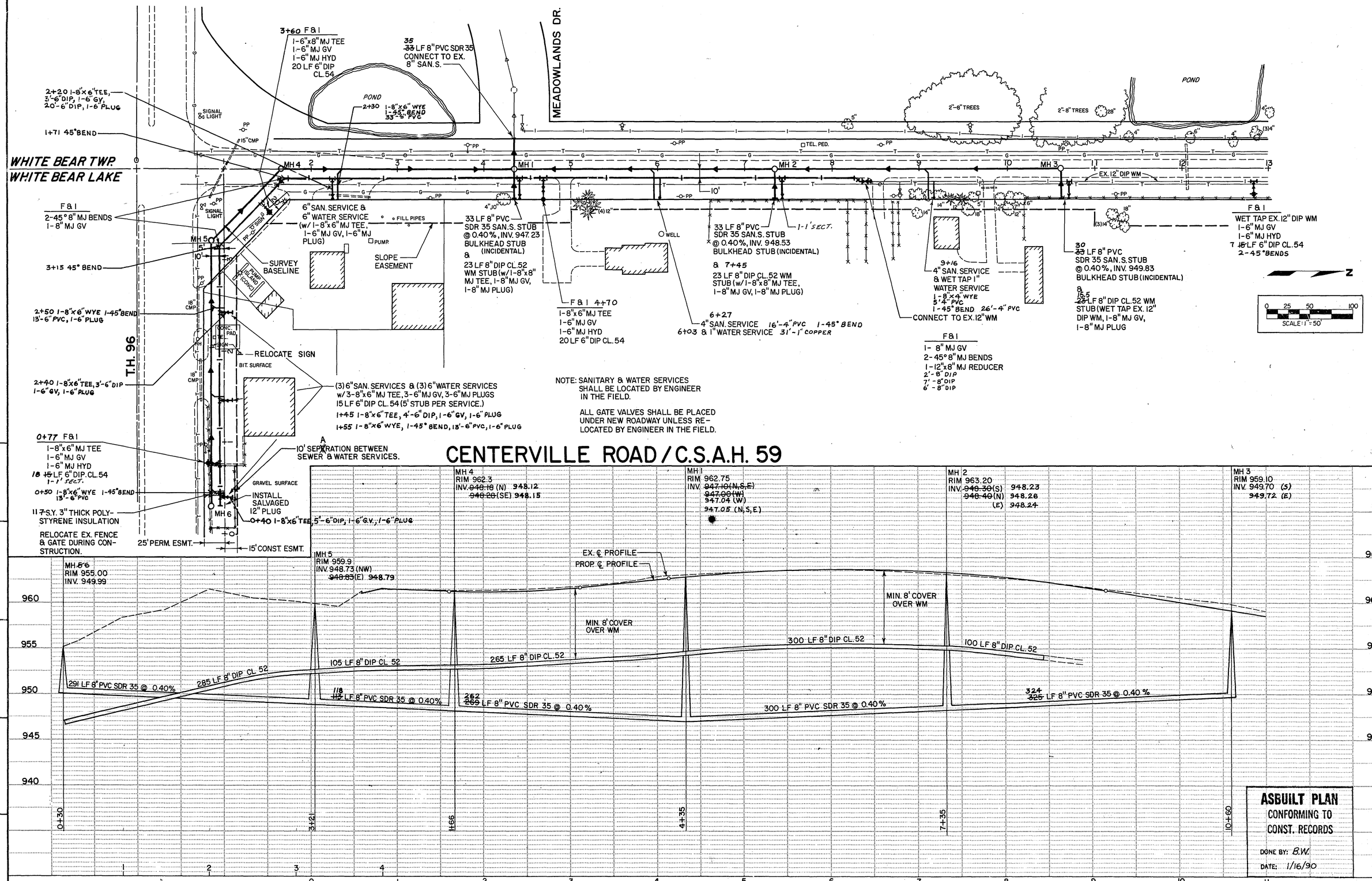
"FOR INFORMATION ONLY"

T.H. 96 AT C.S.A.H. 59 (CENTERVILLE ROAD)

28-406

S.A.P.No.62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 18C **of** 72 **Sheets**

CENTERVILLE ROAD / C.S.A.H. 59



NOTE: SANITARY & WATER SERVICES SHALL BE LOCATED BY ENGINEER IN THE FIELD.

ALL GATE VALVES SHALL BE PLACED UNDER NEW ROADWAY UNLESS RE-LOCATED BY ENGINEER IN THE FIELD.

(3) 6" SAN. SERVICES & (3) 6" WATER SERVICES w/ 3-8"x6" MJ TEE, 3-6" MJ GV, 3-6" MJ PLUGS 15 LF 6" DIP CL.54 (5' STUB PER SERVICE.)
1+45 1-8"x6" TEE, 4'-6" DIP, 1-6" GV, 1-6" PLUG
1+55 1-8"x6" WYE, 1-45° BEND, 13'-6" PVC, 1-6" PLUG

10' SEPARATION BETWEEN SEWER & WATER SERVICES.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: B.W.
DATE: 1/16/90

	DATE	BY	FIELD BOOK
AS BUILT			
STAKING			
ORIGINAL SURVEY			

NO.	DATE	BY	DESCRIPTION
1	2-6-89	MDK	SAN. SEW. AND WATERMAIN REALIGNMENT.

REVISIONS

DESIGNED DCB DRAWN DLW
MDK
CHECKED RET

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
DATE 1-25-89 REG. NO. 6937

TKDA
ENGINEERS ARCHITECTS PLANNERS
TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES INCORPORATED
SAINT PAUL, MINNESOTA

SANITARY SEWER AND WATER MAIN CONSTRUCTION
T.H. 96 AND CENTERVILLE ROAD
CITY PROJECT NO. 87-03
CITY OF WHITE BEAR LAKE, MINNESOTA

SANITARY SEWER & WATER MAIN PLAN AND PROFILE
SHEET NO. 19 OF 72 SHEETS

COMMISSION NO. 9176

28-106

Fed. Proj. No.

NOTE:
DEPRESS CURB AT ALL INTERSECTIONS
PER STD. PLATE NO. 7036.

BEGIN PROJECT
STA. 0+00

STA. 0+00 CENTERVILLE RD.
℄ T.H. 96

T.H. 96

CONST. PVMT. WIDENING

BEGIN RECONSTRUCTION

BEGIN CURB & GUTTER STA. 1+05 LT. & RT.

STA. 1+50

℄ 20' PERMANENT DRAINAGE EASEMENT STA. 2+14.60

BLOCK 1
LOT 3

STA. 4+35 CENTERVILLE RD. =
STA. 13+34.17 MEADOWLANDS DR.

MEADOWLANDS DR.

OUTLOT "A"

WHITE BEAR TOWNSHIP

CONSTRUCTION LIMITS

CONC. MEDIAN

BEGIN TAPER STA. 6+50

END TAPER STA. 7+10

ELIMINATED FROM PLANS AS PER DEVELOPER

℄ 20' PERMANENT DRAINAGE EASEMENT STA. 12+05

OUTLOT "F"

POND

EX. AP3-2A & 18" RCP

8' BIKEWAY

S.E.

POND

AP 2-1

AP3-1

MH 3-2

24" RCP
INV. 945.79

CB 3-3

CB 2-2

INV. 958.43

T-BUR

R-BUR

P-BUR

LOOP DETECTOR (TYP.)

CB1-2

INV. 957.26

INV. 958.09

API-1
INV. 957.72

50'R (TYP.)

INV. 957.04

24" CMP

INV. 956.93

CB & 2-15" CMP. RIM-959.43
INV. 957.43-S, 957.33-N

BLDG

PUMP

GRAV

FILL PIPES

GRAV.

BIT

PROTECT TREES

WELL

BEGIN TAPER STA. 5+60

END TAPER STA. 7+60

WHITE BEAR LAKE

CONSTRUCTION LIMITS

HSE

GRAV

BLDG

PROTECT TREES RT.

15" RCP

CB 4-2
INV. 945.74

AP 4-1

℄ 20' PERMANENT DRAINAGE EASEMENT STA. 12+07

FOR SANITARY SEWER AND WATERMAIN CONSTRUCTION ALONG T.H. 96 & CENTERVILLE ROAD, SEE SHEET 19.

0 50 100

MATCH EXISTING 1"=50

P.V.C. 1+62
EL. 961.23

150' V.C.
M = 0.29'

P.V.T. 3+12
EL. 961.57

℄ MEADOWLANDS DR.
4 + 35.00

P.V.I. 6+65
EL. 965.10

P.V.C. 11+79
EL. 957.39

-0.54%

+1.00 %

15"CMP

20:1

L.P. 2+1.60
EL. 961.08

P.V.I. 2+37
EL. 960.82

P.V.C. 4+15
EL. 962.60

500' VC
M = 1.56'

SUBCUT

EX. GROUND @ ℄

PROFILE GRADE

-1.50 %

P.V.T. 9+15
EL. 961.35

24" RCP

965
960
955

MEADOWLANDS DRIVE

P.V.C. 10+59.61
EL. 961.01

100' VC
M = 0.29'

L.P. 11+15.94
EL. 960.64

P.V.T. 11+59.61
EL. 960.86

13+10.17
EL. 962.37

13+34.17
EL. 962.79

PROFILE GRADE

-1.29%

+1.00%

+2.00%

+1.50 %

P.O.T. 10+00
EL. 961.78

P.V.I. 11+09.61
EL. 960.36

13+22.17
EL. 962.61

10 12 13

-2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: D J B
DATE: 1-16-90

28-1063

S.A.P. No. 62-659-05, M S.A.P. No. 174-020-09 Sheet No. 20 of 72 Sheets

Copy Equipment Form #3

Fed. Proj. No.

NOTE:
DEPRESS CURB AT ALL INTERSECTIONS
PER STD. PLATE NO. 7036.

BLOCK 4 LOT 6 | BLOCK 9 LOT 3 | OUTLOT "F" | OUTLOT "B" | WHITE BEAR TOWNSHIP | WHITE BEAR LAKE | WHITE BEAR TOWNSHIP

STODDART LN. | BIRCH LAKE BLVD.

STA. 14+94.17 CENTERVILLE RD. = STA. 10+00 STODDART LN.
STA. 26+38.95 CENTERVILLE RD. = STA. 10+00 BIRCH LAKE BLVD.
STA. 8+90.5

BRICK ENTRANCE MARKERS | POND | BEGIN TAPER STA. 16+77 | END TAPER STA. 17+23 | ℄ 20' PERMANENT DRAINAGE EASEMENT STA 16+77 | ℄ 20' PERMANENT DRAINAGE EASEMENT STA. 25+83.30

ELIMINATE FROM PLANS AS PER DEVELOPER

CONSTRUCTION LIMITS | END CURB & GUTTER STA. 9+43 LT. & RT. | 8' BIKEWAY | 50' R | 35' R

EX. MH 3-2B | CB3-2C | CB3-2D | CB4-3 | CB4-4 | CB6-2 | CB7-2 | CB7-3 | MH | HYD | TEL | INV 947.93 | INV. 945.59 | INV. 943.80 | INV. 944.07 | 24" CMP

CB. RIM - 953.18
INV. - 945.78 N
- 945.83 SW & S
EX. MH 6-1 RIM - 954.89
INV. - 947.79 24" W
- 947.54 12" NE
CB RIM - 953.17

BEGIN TAPER STA. 14+09 | END TAPER STA. 14+68 | BEGIN TAPER STA. 21+30 | END TAPER STA. 23+30

CONSTRUCTION LIMITS | REMOVE EXISTING ROADWAY | END CURB & GUTTER STA. 11+97.5 LT. & RT. | STA. 12+50

RETAINING WALL "A" ~~(ALTERNATE DESIGN)~~ SEE SH. 7 | CONSTRUCTION LIMITS | CONC. WALLS | HSE | CONC. | BIT | GAR | MB | GRAV.

0 50 100

STODDART LANE

300' V.C.
M = 0.75
P.V.T. 14+79
EL. 955.89
℄ STODDART LN.
14+94.17
+0.50 %
P.V.I. 13+29
EL. 955.14
P.V.C. 19+11
EL. 958.05
SUBCUT
24" RCP
P.V.I. 21+61
EL. 959.30
500' V.C.
M = 1.56'
PROFILE GRADE
EX. GROUND @ ℄
P.V.T. 24+11
EL. 954.30
24" CMP
℄ BIRCH LAKE BLVD.
26+38.95
P.V.C. 27+55
EL. 947.42
-2.00 %

955 | 950 | 945 | 940

13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

STODDART LANE

PROFILE GRADE
+0.63%
+2.00%
+1.50%
A.P. 9+76 EL. 955.55
9+88 EL. 955.79
10+00 EL. 955.97
8 9 10

BIRCH LAKE BLVD.

MATCH EXISTING STA. 8+90
PROFILE GRADE
+0.50%
+2.0%
A.P. 9+80 EL. 949.40
+1.5%
A.P. 9+88 EL. 949.56
A.P. 10+00 EL. 949.74
P.V.C. 10+24 EL. 949.32
-2.0%
-1.5%
A.P. 10+12 EL. 949.56
P.V.I. 10+44 EL. 949.52
P.V.T./P.V.C. 10+64 EL. 950.72
40' V.C.
M=0.25
+0.6%
+1.0%
P.V.I. 11+29 EL. 954.62
EX. GROUND @ ℄
130' V.C.
M = 0.87
+0.62%
P.V.T. 11+94 EL. 955.02
MATCH EXISTING STA. 12+50
9 10 11 12

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: D.J.B.
DATE: 1-15-90

28-106

Fed. Proj. No.

END RECONSTRUCTION | BEGIN OVERLAY ONLY THIS PROJECT
(RECONSTRUCTION UNDER PROJECT II)

MPLS. ST. PAUL. SAULT ST. MARIE RAILROAD CO.

℄ 20' PERMANENT DRAINAGE EASEMENT

STA. 29+45 CENTERVILLE RD. = ℄ SAULT ST. MARIE RAILWAY

CONSTRUCT PAVEMENT TAPERS (PROJECT I)

END CURB & GUTTER STA. 28+73 LT.

PROJECT II CONSTRUCTION LIMITS

NORTH OAKS

FINAL TOE OF SLOPE

AP8-1

8' BIKEWAY

PP TEL GAS

GAS VENT VALVE

60-12" CASING

CB8-2

CB8-3

GARDEN

TEL

28+40 (LT.)
DEPRESS CURB PER STD. PLATE NO. 7036.

29+45
RAILWAY AT-GRADE CROSSING WILL BE RECONSTRUCTED BY OTHERS AND SIGNALS WILL BE RELOCATED BY OTHERS UNDER PROJECT II CONSTRUCTION.

END TAPER STA. 33+40

GRAVEL

HYD.

PROJECT II CONSTRUCTION LIMITS

WHITE BEAR TOWNSHIP

FOR INFORMATION ONLY

END CURB & GUTTER STA. 29+00, 21.8' RT

P.I. 29+05 EL. 945.17

℄ RAILROAD 29+45

P.I. 31+10 EL. 943.12

150' V.C. M=0.19'

-1.00 %

20'

SUBCUT

P.V.I. 28+30 EL. 945.92

P.V.C. 29+50 EL. 944.72

320' V.C. M=1.60'

P.V.T. 32+70 EL. 935.12

-5.00%

P.V.C. 34+31 EL. 927.07

EXISTING GROUND ℄

PROFILE GRADE (FUTURE)

SUBCUT (FUTURE)

600' V.C. M=3.75'

P.V.T. 40+32 EL. 912.07

0.00%

INPLACE FILL

SWAMP DEPOSITS

EXCAVATE TO BOTTOM OF SWAMP

P.V.I. 37+31 EL. 912.07

945 940 935 930 925 920 915 910

28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 22 **of** 72 **Sheets**

Copy Equipment Form #2

Fed. Proj. No.

END OVERLAY THIS PROJECT ONLY (RECONSTRUCTION UNDER PROJECT II)

BEGIN CONSTRUCTION OF BYPASS AND SUBGRADE CORRECTION WORK (FUTURE)

N

DEER HILLS DRIVE

NORTH OAKS

SAN. SEW. ON PILING

FINAL TOE OF SLOPE

PROJECT II CONSTRUCTION LIMITS

BEGIN CURB & GUTTER STA. 44+90 LT.

STA. 46+80.98 CENTERVILLE RD. = STA. 104+00 DEER HILLS DR.

STA. 50+40 LT.

END CURB & GUTTER

℄ 10' PERMANENT DRAINAGE EASEMENT STA. 50+35

STA. 52+88.60 CENTERVILLE RD. = STA. 0+00 HAMMOND RD. (FUTURE)

CONSTRUCTION LIMITS

BYPASS

HAMMOND ROAD (FUTURE)

WHITE BEAR TOWNSHIP

NOTE: CONST. CULVERT AT STA. 52+40 UNDER PROJECT I. CLEAN DITCH RT., STA. 46+00 TO 52+40 (INC.)

FOR INFORMATION ONLY

0 50 100

DEER HILLS DRIVE

HAMMOND ROAD

PROFILE GRADE (FUTURE)

℄ HAMMOND ROAD 52 + 88.60

CENTERVILLE RD. PROFILE GRADE

TOP OF SURCHARGE

BYPASS PROFILE GRADE

EX. GROUND @ ℄ CENTERVILLE RD.

SWAMP DEPOSITS

INPLACE FILL

BOTTOM OF EXC.

(FUTURE) SUBCUT

EXC. TO BOTTOM OF SWAMP

SUBCUT

36" CMP

42" RCP

12" RCP

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: D J B
DATE: 1-16-90

28-100

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 23 of 72 Sheets**

Copy Equipment Form #2

Fed. Proj. No.

CONSTRUCTION OF BYPASS AND SUBGRADE CORRECTION WORK
(FINAL CONSTRUCTION UNDER PROJECT II)

N

NORTH OAKS

WHITE BEAR TOWNSHIP

CONSTRUCTION LIMITS

FINAL TOE OF SLOPE

BYPASS

℄ BYPASS

MARSH ELEV. 897.95

INV. 897.24

INV. 901.34

INV. 898.99

INV. 898.29

INV. 898.95

INV. 898.81

INV. 899.11

INV. 899.36

INV. 899.53

INV. 899.18

INV. 898.97

INV. 898.76

INV. 899.13

INV. 902.06

24" CMP

2-24" CMP

PP

SE

S.E.

60+00

69+00

72+90

69+50

A.P. 72+00 (BYPASS) 44' RT.

A.P. 73+00 (BYPASS) 42' RT.

0 50 100

WETLAND MITIGATION AREA
(CONSTRUCTION UNDER PROJECT II)

CENTERVILLE RD PROFILE GRADE

BYPASS PROFILE GRADE

CENTERVILLE RD & BYPASS PROFILE GRADE

TOP OF SURCHARGE

PROFILE GRADE

PVI 58+14 BYPASS EL. 907.00

P.V.C. 58+64 EL. 907.25

P.V.T. PVC 58+64 EL. 906.00 BYPASS

P.V.T. 59+64 EL. 905.00

P.V.I. 59+14 EL. 905.00

100' V.C. M = 0.06 M = 0.25 BYPASS

-0.50 %

0.00 %

EX. GROUND @ ℄

INPLACE FILL

SUBCUT

SWAMP DEPOSITS

915 910 905 900 895 890 885 880 875

58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: DJB
DATE: 7-16-90

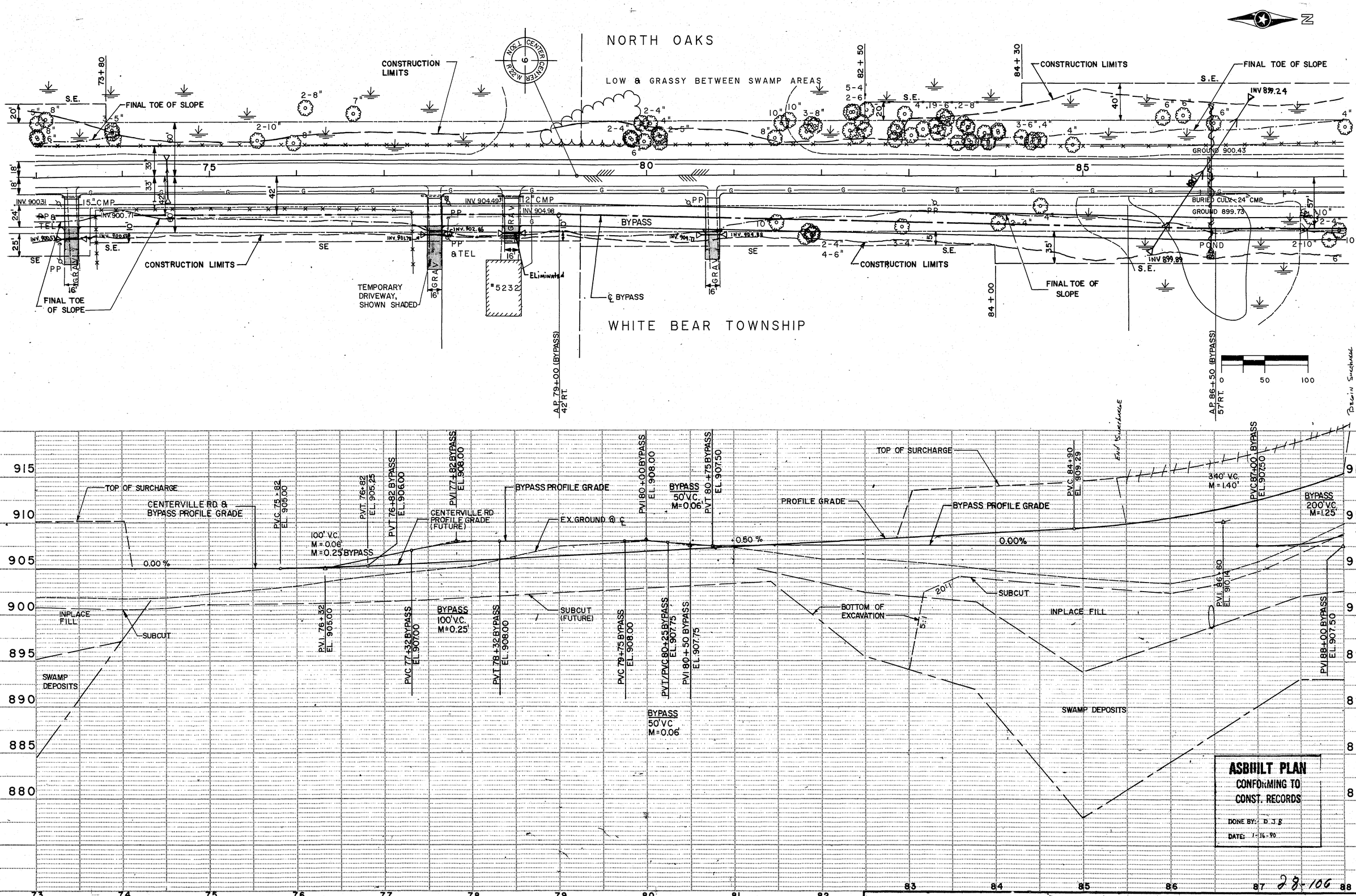
28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 24 of 72 Sheets**

Copy Equipment Form #2

Fed. Proj. No.

CONSTRUCTION OF BYPASS AND SUBGRADE CORRECTION WORK
(FINAL CONSTRUCTION UNDER PROJECT II)



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: D.J.B
DATE: 1-16-90

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 25 of 72 Sheets**

Fed. Proj. No.

END CONSTRUCTION OF BYPASS AND SUBGRADE CORRECTION WORK

RECONSTRUCTION UNDER PROJECT III (INCL. C.R. "H-2")

END PROJECT STA. 92+33.82

STA. 92+33.82 CENTERVILLE RD. = STA. 0+00 COUNTY RD. "H-2"

N

NORTH OAKS

CONSTRUCTION LIMITS

BEGIN CURB & GUTTER (STAGE II) STA. 90+50 LT.

℄ 20' PERMANENT DRAINAGE EASEMENT STA. 90+55.50

FINAL TOE OF SLOPE

BYPASS

℄ BYPASS R=300'(TYP.)

TEMPORARY DRIVEWAY LIMITS SHOWN SHADED

40' S.E.

DIR

CONSTRUCTION LIMITS

COUNTY ROAD "H-2"

BEGIN CURB & GUTTER STA. 92+50 RT.

STA. 1+50

2' CMP CONC

GAR

GRAV CONC

*5398

*5400

*5440

END CURB & GUTTER STA. 100+00 RT.

WHITE BEAR TOWNSHIP

NOTES:
PLANS FOR RECONSTRUCTION OF CENTERVILLE ROAD FROM C.R. "H-2" TO C.R. "J" (PROJECT III) NOT INCLUDED IN THIS PLAN SET

0 50 100

BYPASS 200' VC M=1.25' PVT 89+00 BYPASS EL. 912.50

CENTERVILLE RD PROFILE GRADE

BYPASS PROFILE GRADE

PVI 90+30 EL. 924.20

AP 91+50 BYPASS EL. 925.00 END BYPASS CONST.

℄ COUNTY ROAD "H2" 92+33.82

TOP OF SURCHARGE

+3.80% ▽ +1.40%

SUBCUT (FUTURE)

+5.00%

400' V.C M=1.30'

PVI 88+00 BYPASS EL. 907.50

PVI C. 88+30 EL. 916.60

INPLACE FILL

P.V.C.C. 92+30 EL. 927.00

PVI 97+30 EL. 934.00

+1.40% ▽ -1.40%

EX. GROUND @ ℄

PROFILE GRADE (FUTURE)

1000' V.C. M=3.50'

PVI 102+90 EL. 926.16

120' V.C. M=.025'

P.V.C.C. 102+30 EL. 927.00

CO. RD. "H-2" (FOR INFORMATION ONLY)

PROFILE GRADE

EX. GROUND @ ℄

0+00 EL. 927.05

P.V.C. 0+18 EL. 926.63

P.V.T. 0+58 EL. 928.03

P.V.I. 0+98 EL. 930.43

+2.2%

40' V.C. M=0.25'

80' V.C. M=0.38'

+10%

+60%

P.V.T. 1+38 EL. 931.31

A.P. 0+12 EL. 926.87

P.V.C. 0+38 EL. 926.83

MATCH EXIST STA 1+50

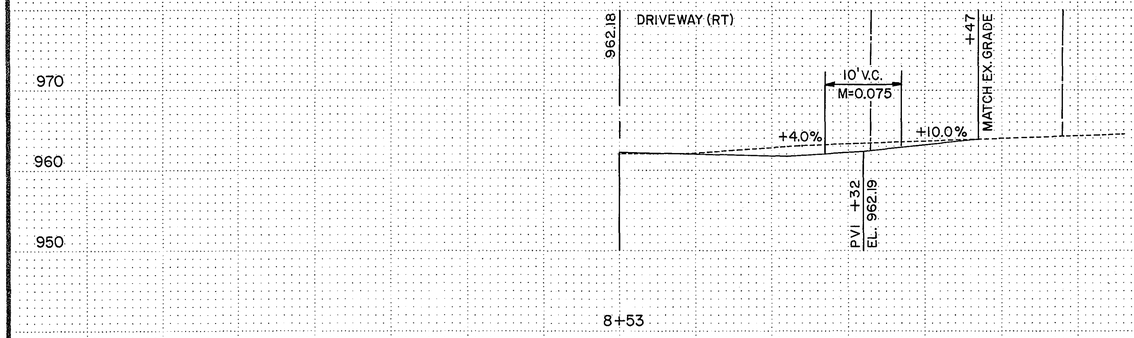
ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: D.J.B.
DATE: 1-16-90

28-106

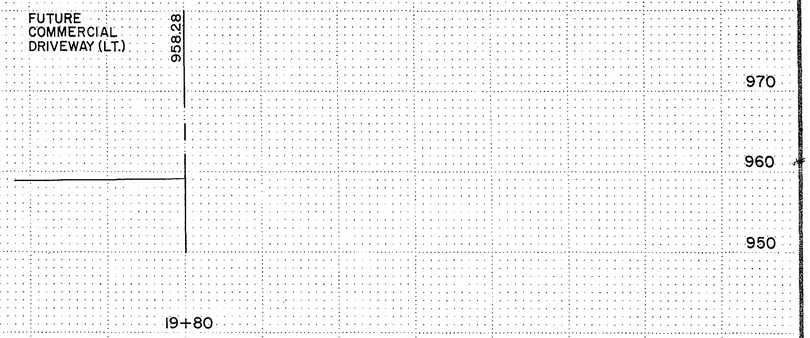
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 26 of 72 Sheets**

Copy Equipment Form #2

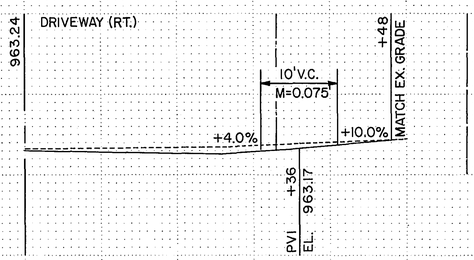
Fed. Proj. No.



8+53



19+80



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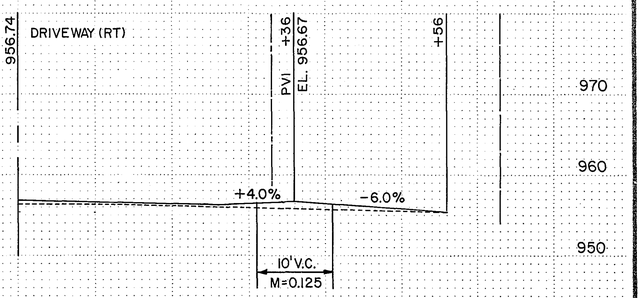
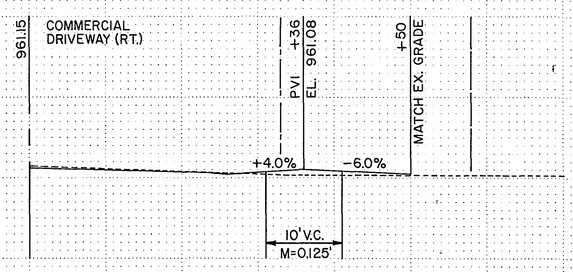
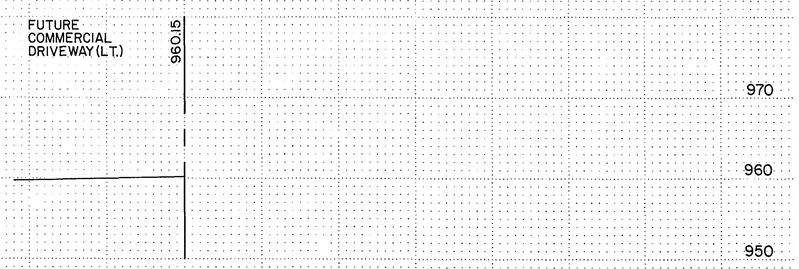


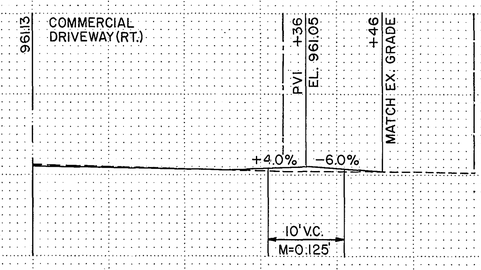
16+49



2+50



9+95



1+86

9+79

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

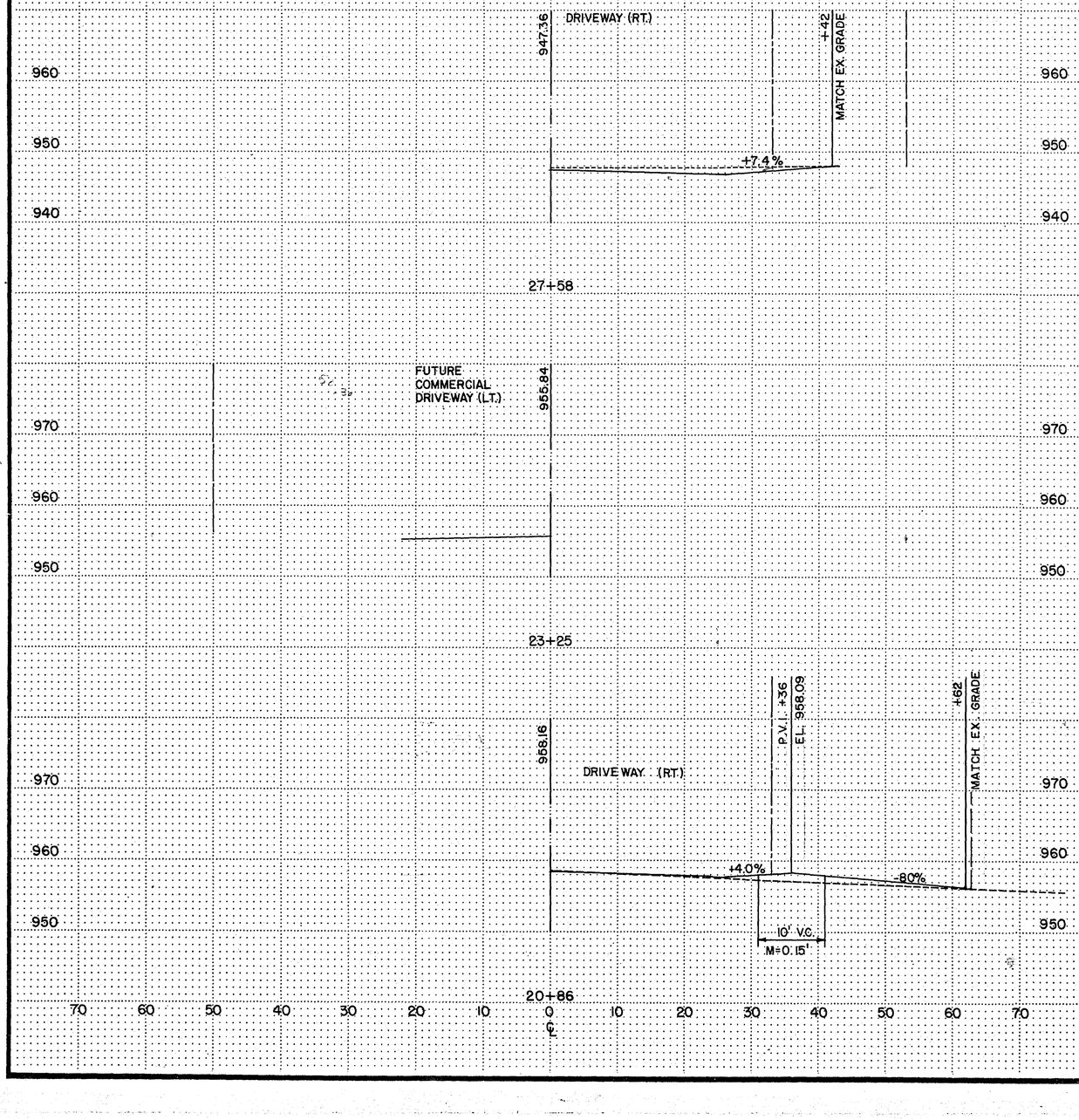
℄

DRIVEWAY PROFILES

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 27 **of** 72 **Sheets**

Fed. Proj. No.



DRIVEWAY PROFILES

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 28 of 72 Sheets**

COPY EQUIPMENT FORM #1

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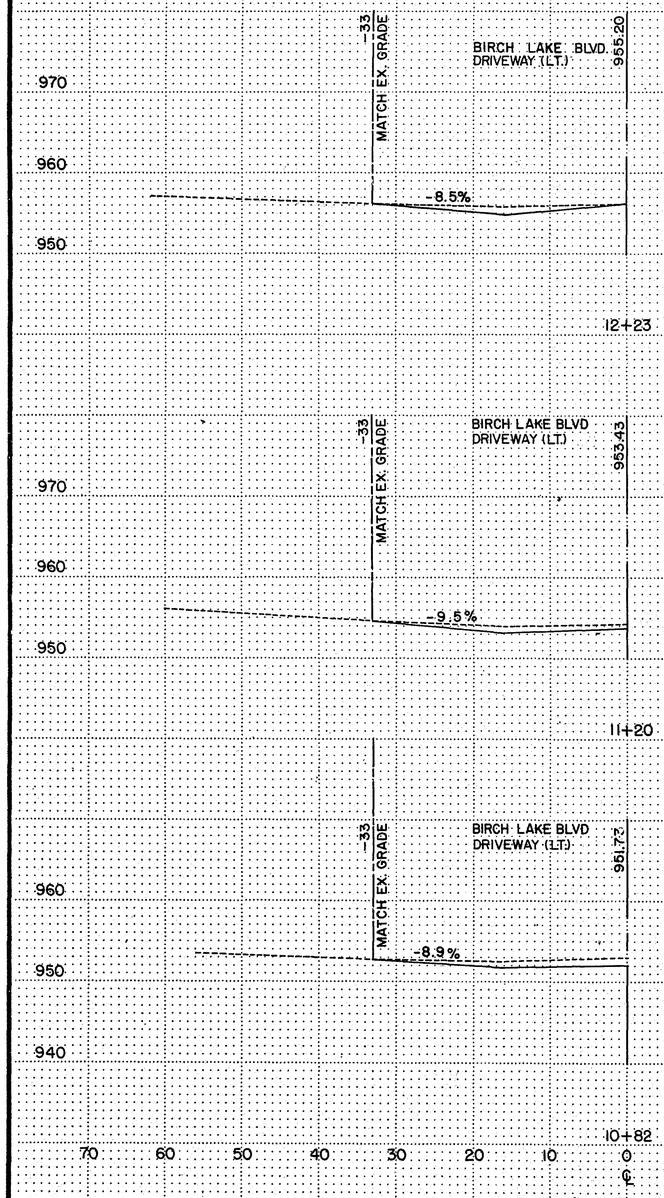

DRIVEWAY PROFILES

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 | Sheet No. 29 of 72 Sheets

COPY EQUIPMENT FORM #1

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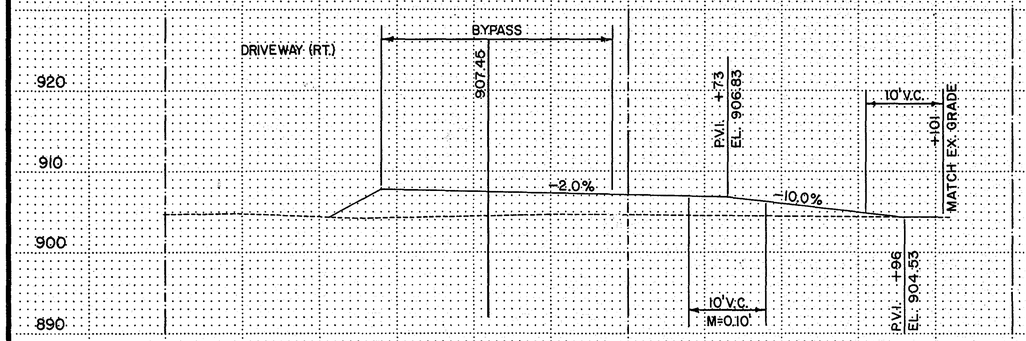
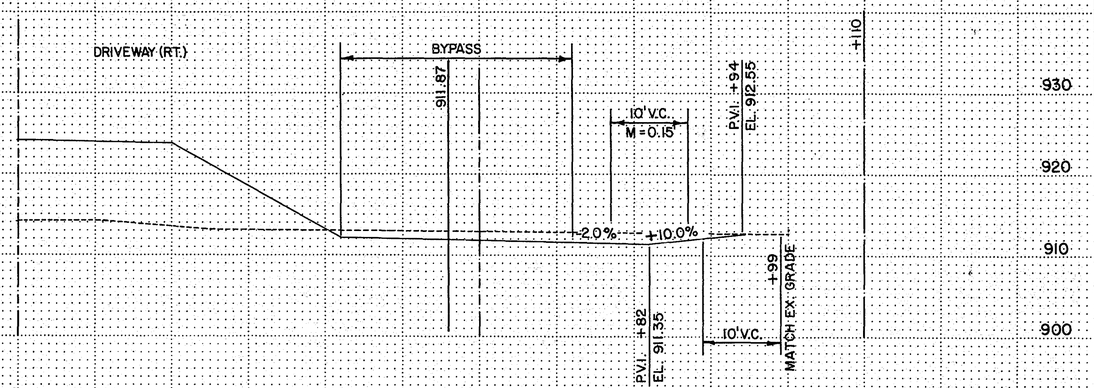
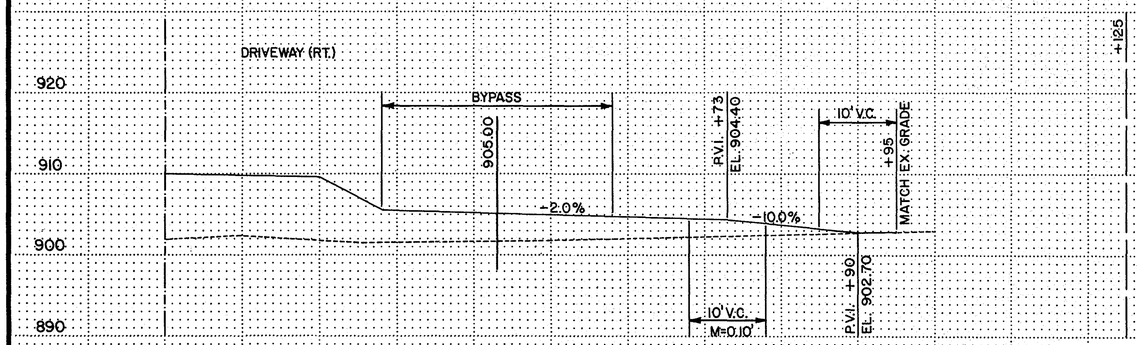


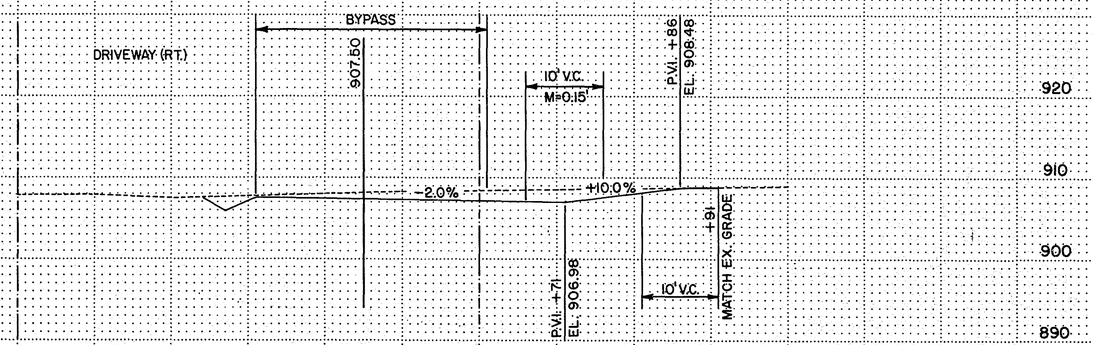
77+58



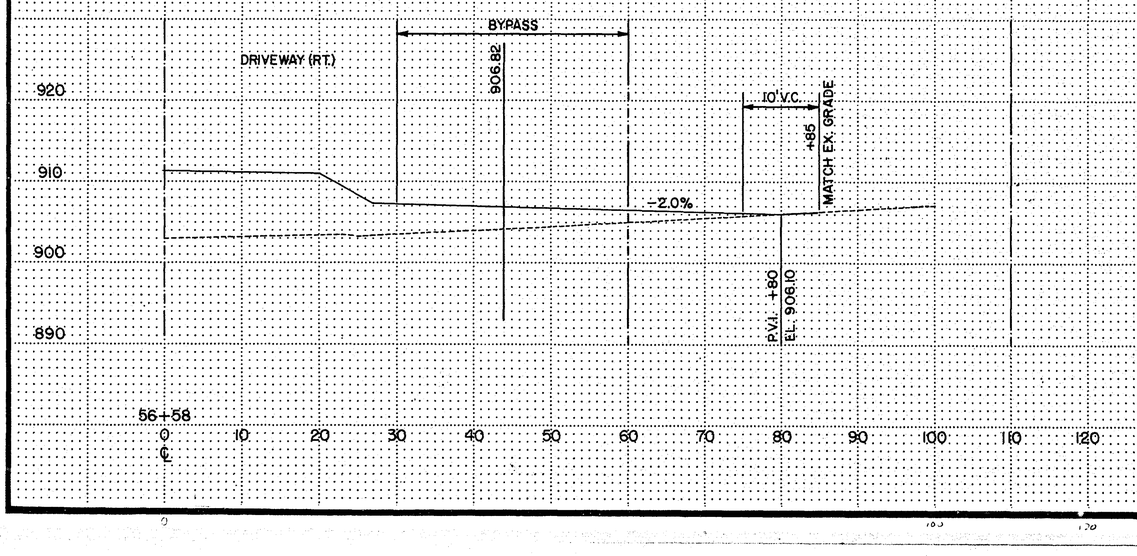
88+87



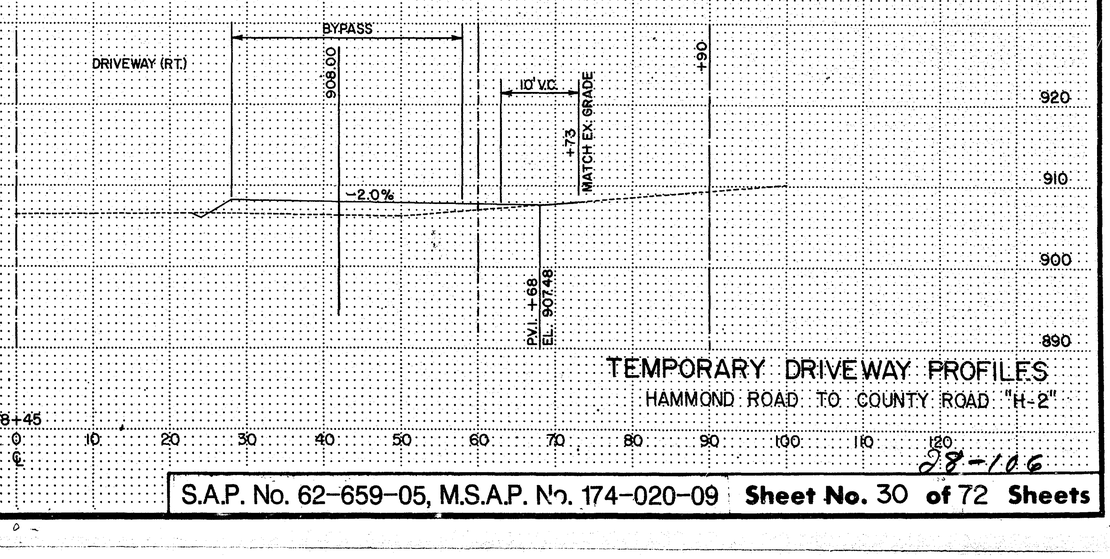
73+41



80+75



56+58



78+45

TEMPORARY DRIVEWAY PROFILES

HAMMOND ROAD TO COUNTY ROAD "H-2"

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 30 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

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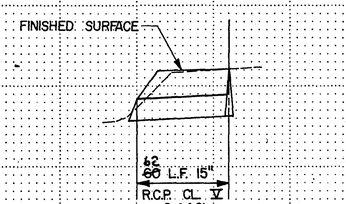
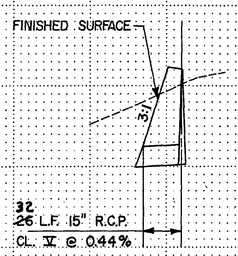


AP 1-1
15" R.C.P. APRON
INV. ~~957.80~~ 957.63

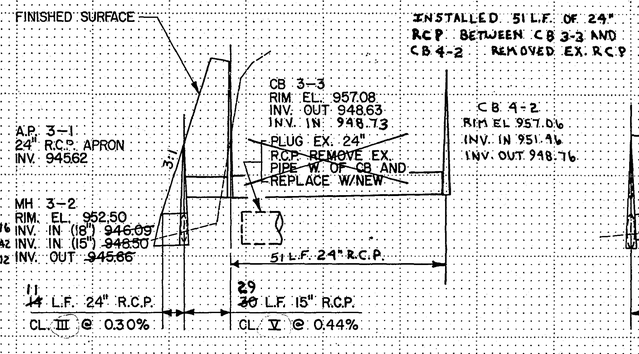
CB 1-2
2+14.60 RT.
RIM EL. 961.06
INV. OUT ~~958.06~~ 958.23

2+14.60



AP 2-1
15" R.C.P. APRON
INV. ~~955.0~~ 954.76

CB 2-2
2+14.60 LT.
RIM EL. 961.06
INV. OUT ~~956.11~~ 955.38



A.P. 3-1
24" R.C.P. APRON
INV. 945.62

MH 3-2
RIM EL. 952.50
945.76 INV. IN (18") ~~946.09~~
941.42 INV. IN (15") ~~948.50~~
945.12 INV. OUT ~~945.66~~

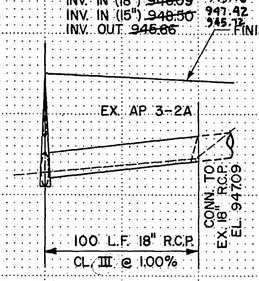
CB 3-3
RIM EL. 957.08
INV. OUT 948.63
INV. IN 948.73
PLUG EX. 24" R.C.P. REMOVE EX. PIPE W. OF CB AND REPLACE W/NEW

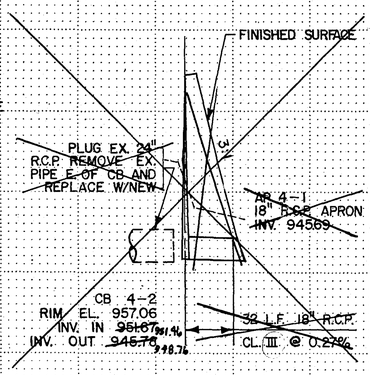
INSTALLED 51 L.F. OF 24" RCP BETWEEN CB 3-3 AND CB 4-2 REMOVED EX. R.C.P.

CB 4-2
RIM EL 957.06
INV. IN 951.96
INV. OUT 948.76

12+05

MH 3-2
RIM EL. 952.50
INV. IN (18") ~~946.09~~ 945.76
INV. IN (15") ~~948.50~~ 947.42
INV. OUT ~~945.66~~ 945.12





12+07

14+05

16+78

CB 7-2
RIM EL. 950.91
INV. IN ~~944.69~~ 944.62
INV. OUT 944.19

CB 7-3
RIM EL. 950.83
INV. IN ~~945.08~~ 945.15
INV. OUT ~~944.84~~ 945.05

25+83.30

CB 8-2
28+59.68 LT.
RIM EL. 945.75
INV. IN ~~942.13~~ 941.91
INV. OUT ~~937.24~~ 937.31

CB 8-3
28+90.32 RT.
RIM EL. 945.39
INV. OUT ~~942.39~~ 942.26

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: D.J.B
DATE: 1-16-90

STORM SEWER PROFILES

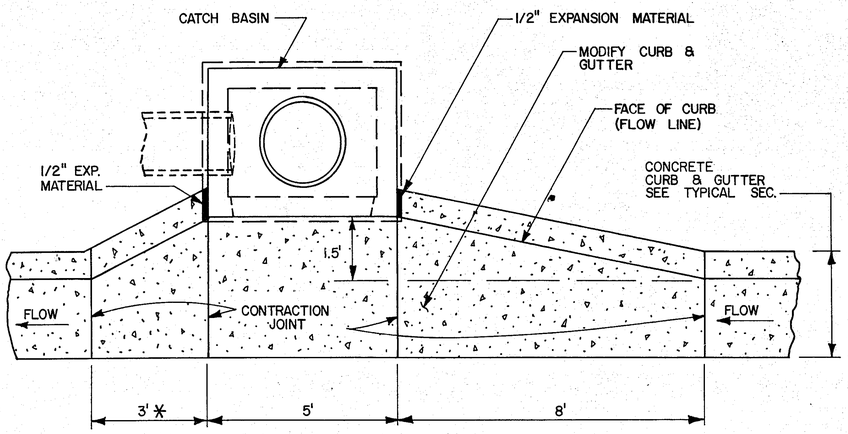
28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 31 of 72 Sheets**

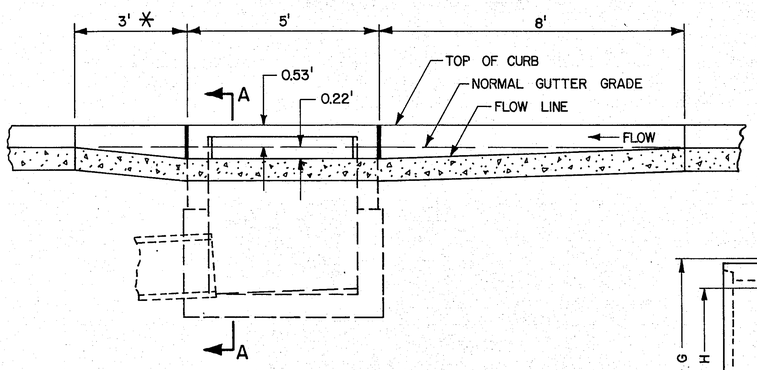
COPY EQUIPMENT FORM #1

Fed. Proj. No.

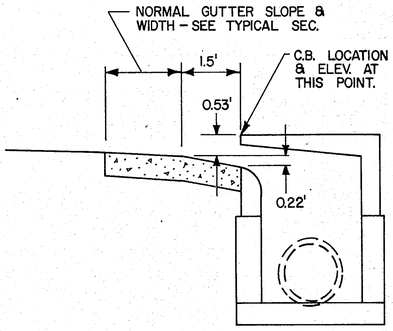
CURB OPENING CATCH BASIN - DESIGN LP INSTALLATION DETAIL



PLAN VIEW

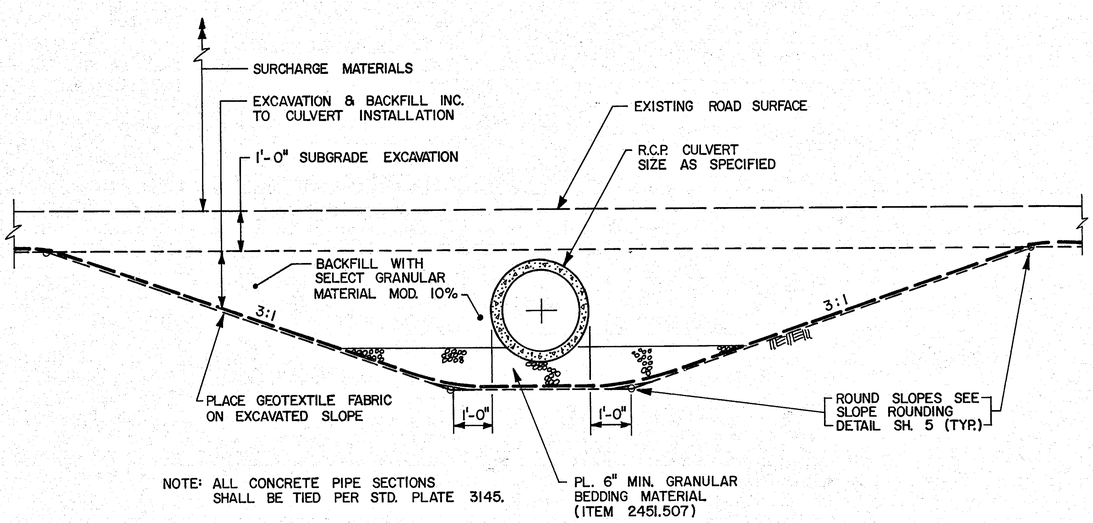


ELEVATION
(AT FLOW LINE)



SECTION A--A

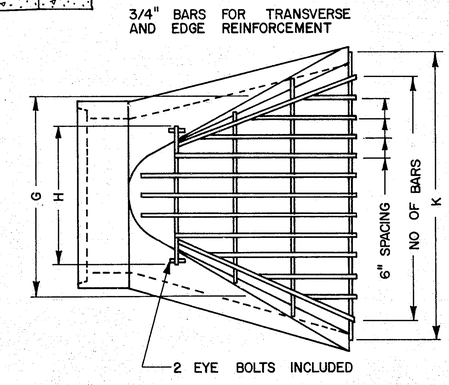
NOTE:
CATCH BASIN DESIGN LP SHALL CONFORM TO MnDOT STD. PLATE 4021 AND BE CONSTRUCTED PER THESE DETAILS.

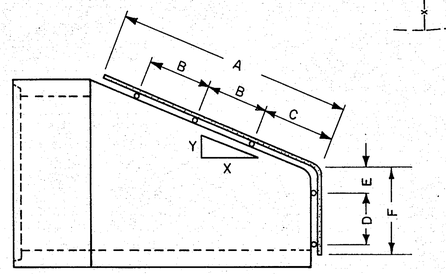


NOTE: ALL CONCRETE PIPE SECTIONS SHALL BE TIED PER STD. PLATE 3145.

TYPICAL CULVERT INSTALLATION BENEATH PRELOAD AREAS

TYP. AT STA. 66+15 & STA. 86+45
SECTION TAKEN ALONG CENTERVILLE ROAD



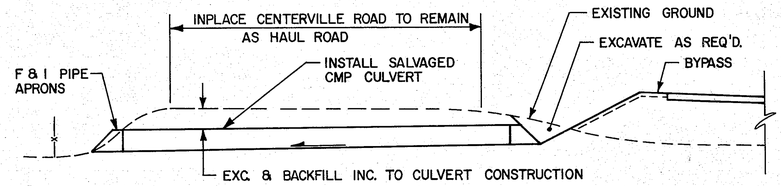


1/2" BARS FOR LONGITUDINAL INTERIOR BARS, WELD EACH INTERSECTION.

CONTRACTOR SHALL FURNISH SUITABLE LOCKING DEVICE APPROVED BY ENGINEER.

SIZE	NO. OF BARS	SLOPE	A	B	C	D	E	F	G	H	K
12"	5	3 : 1	24	7	6	5	2	8	24		30
15"	6	"	24	7	6	6	2	10	26		34
18"	7	"	24	7	6	6	3	12	28		40
21"	8	"	36	11	10	7	3	12	34		50
24"	9	"	44	14	12	10	4	16	36		52
27"	10	"	50	16	14	10	4	16	38		58
30"	11	"	56	18	16	12	4	18	42		64
36"	13	"	64	20	20	12	4	18	48		76
42"	15	"	68	22	20	16	8	26	60		88
48"	16	"	76	24	24	14	10	28	62		92
54"	17	2.4 : 1	76	24	24	16	12	32	68		96

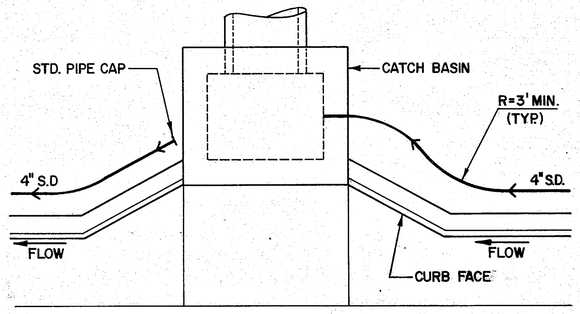
TRASH GUARD (GALVANIZED)
(FOR CONCRETE APRON)



NOTE: MAINTAIN 0.5 PERCENT SLOPE MINIMUM ON CULVERT

TEMPORARY CMP CULVERT

TYPICAL AT STA. 74+50 AND WHERE DIRECTED
STA. 74+00 TO STA. 83+00



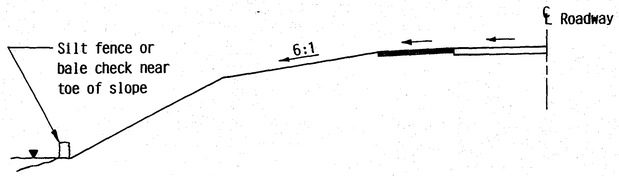
NOTE: CATCH BASIN LAYOUTS VARY. SUBDRAIN CONNECTION SHALL NOT INTERFERE W/ STORM SEWER PIPING.

SUBDRAIN CONNECTION AT CATCH BASIN

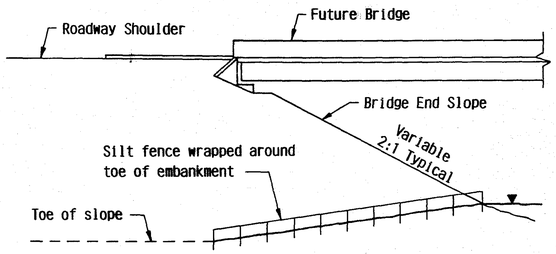
28-106
STORM SEWER DETAILS

S.A.P. No. 62-659-05, ~~M.S.A.P. No. 174-020-09~~ Sheet No. 32 of 72 Sheets

COPY EQUIPMENT 17100 81

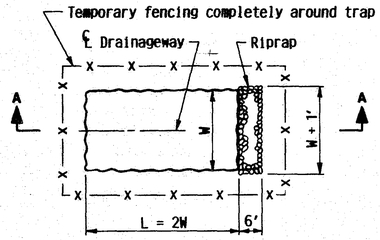


ROADWAY EMBANKMENT

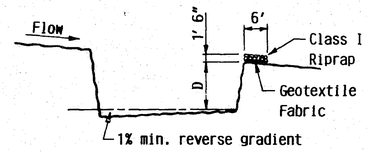


BRIDGE ABUTMENT

SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS



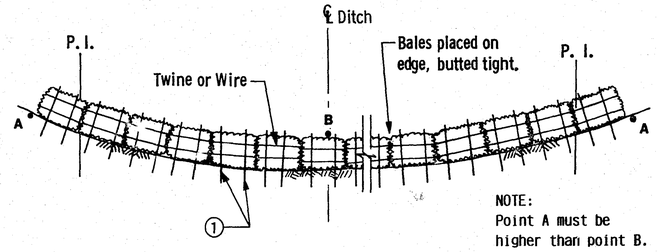
PLAN



SECTION A-A

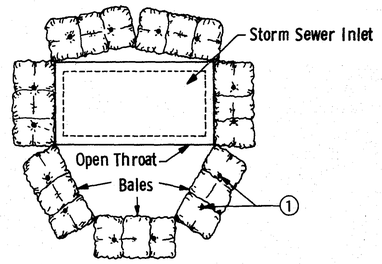
NOTE:
D = 3' min., 6' max.
W = 10' min., 20' max.

TEMPORARY SEDIMENT TRAP

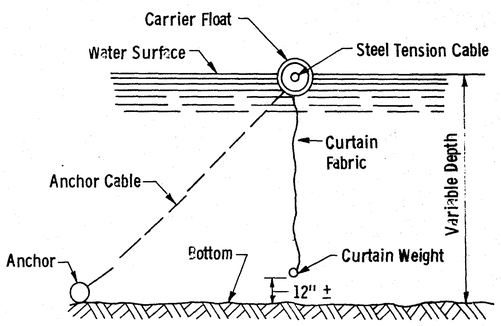


NOTE:
Point A must be
higher than point B.

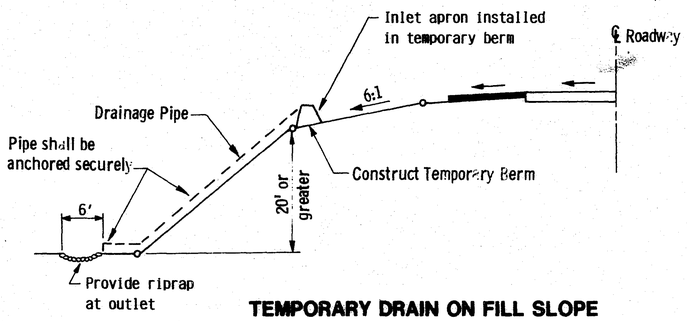
BALE DITCH CHECK



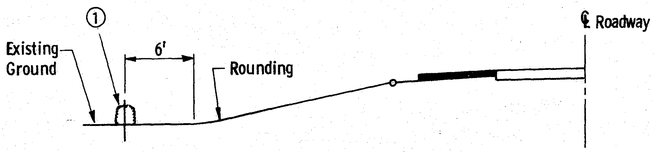
BALE CHECK TO PROTECT STORM SEWER INLETS



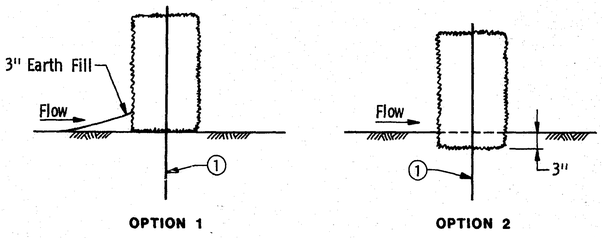
FLOATATION SILT CURTAIN



TEMPORARY DRAIN ON FILL SLOPE

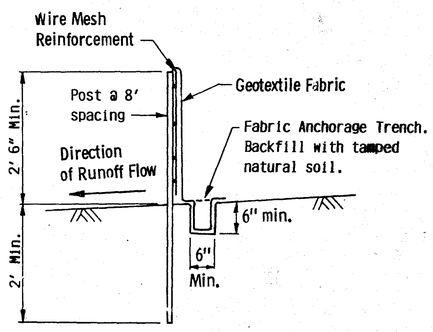


BALE DIVERSION

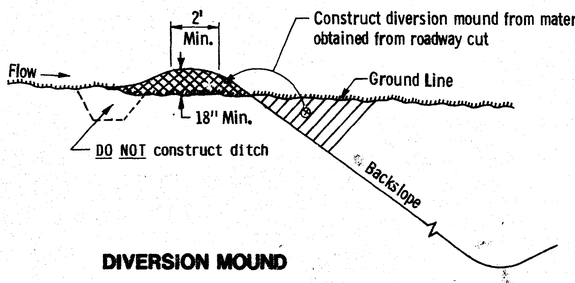


OPTION 1 OPTION 2

BALE CHECK DETAILS



SILT FENCE DETAIL



DIVERSION MOUND

NOTE:

① Two 2" x 2" Wood Stakes or Reinforcing Bars in each bale and embedded in the ground 10" minimum.

APPROVED January 31, 1985
R.D. Kipp
Director
OFFICE OF ENGINEERING STANDARDS

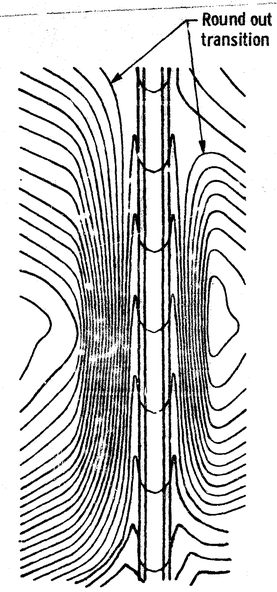
28-106

TEMPORARY EROSION CONTROL

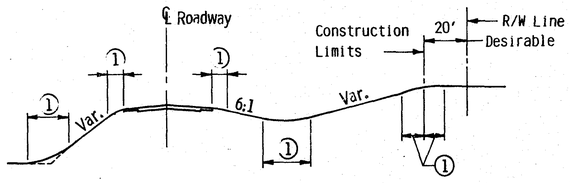
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 33 **of** 72 **Sheets**

Mn/DOT NO. 9 (8-82)
52113
OZALIO

Fed. Proj. No.

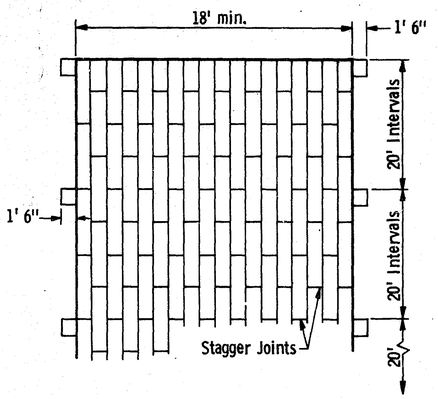


CONTOURING ROAD CUTS

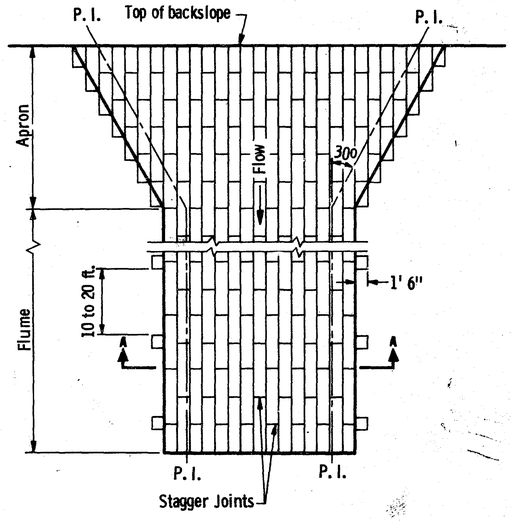


ROUNDING SHOULDERS AND BACKSLOPES

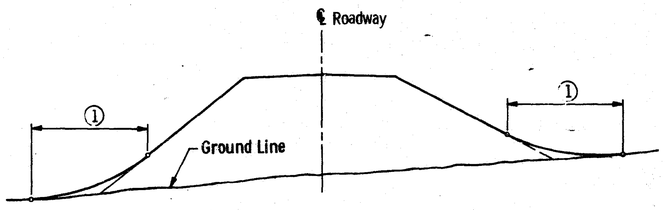
① Rounding per typical sections.



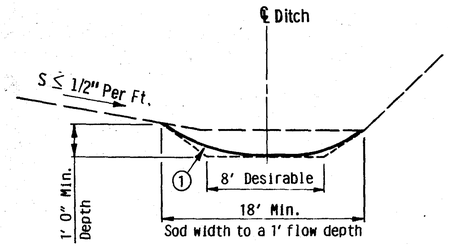
PLAN
(ENLARGED)



PLAN

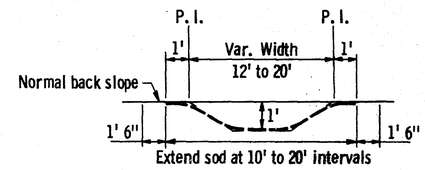


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

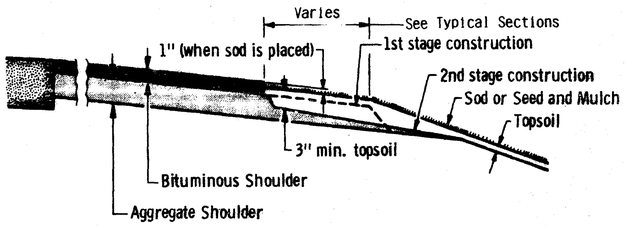


SODDED DITCH CROSS SECTION

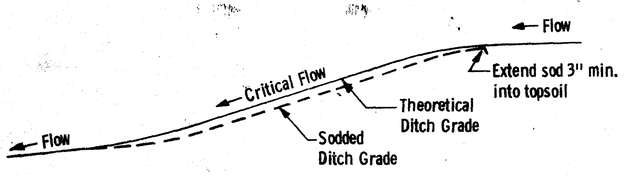
Where front or back slope is flat (less than 1/2"/ft.), first notch ditch and than provide rounding.



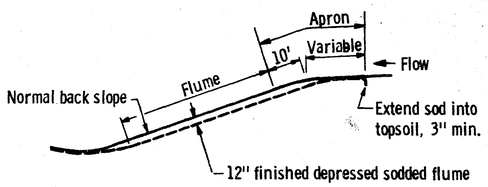
SECTION A-A



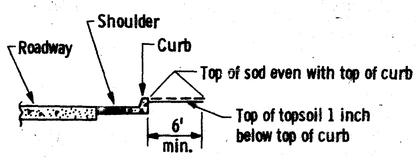
SHAPING AND TOPSOILING INSLOPES



DITCH PROFILE



LONGITUDINAL CROSS SECTION



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

SODDED DITCH DETAILS

SODDED FLUME DETAILS

APPROVED January 31, 1985
R.O. Kipp
Director
OFFICE OF ENGINEERING STANDARDS

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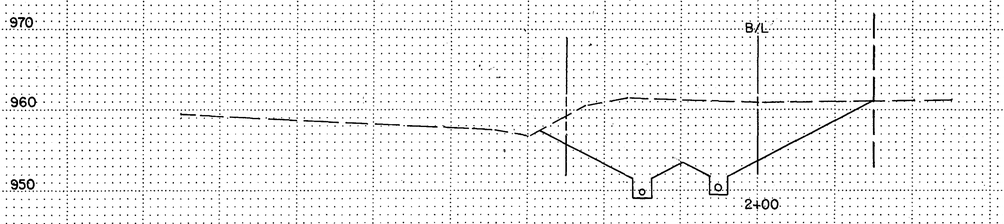
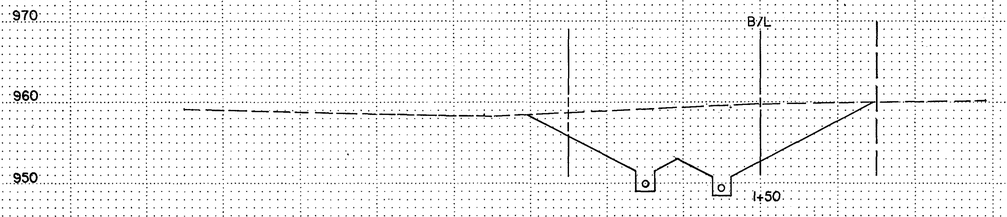
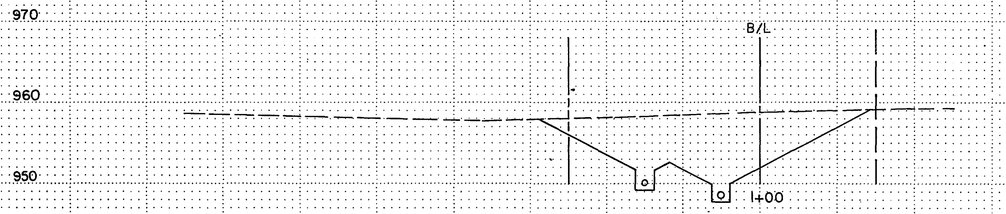
PERMANENT EROSION CONTROL

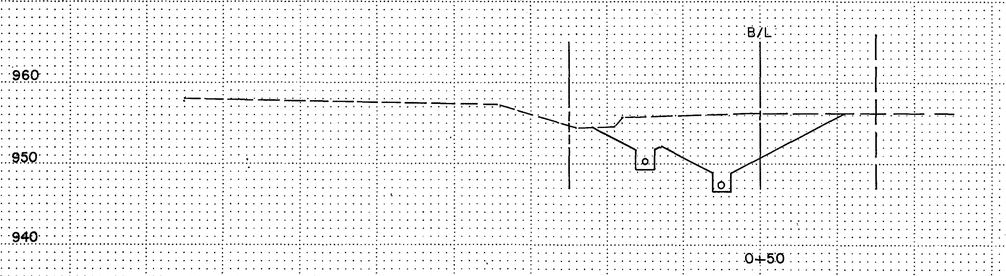
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 34 of 72 **Sheets**

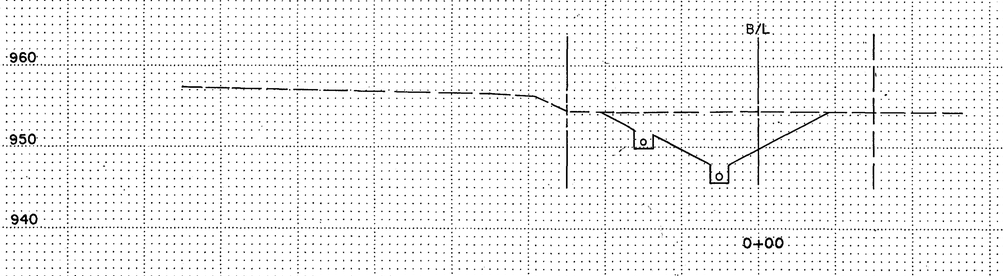
Fed. Proj. No.





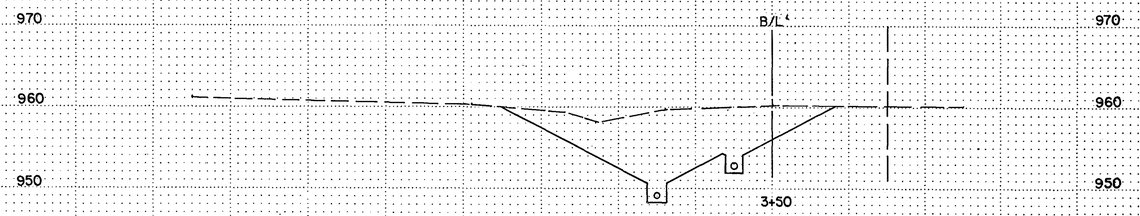


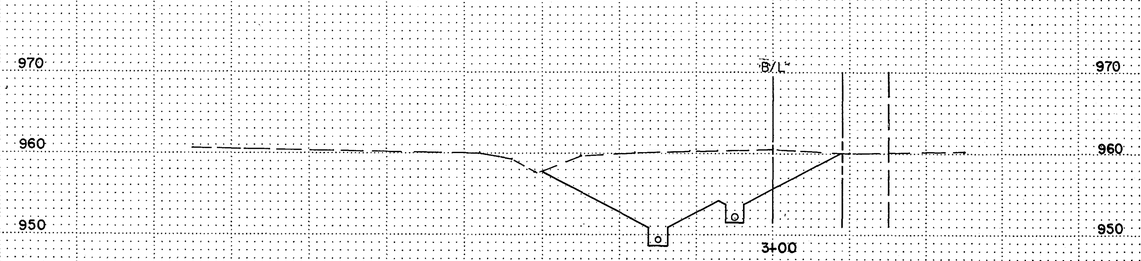


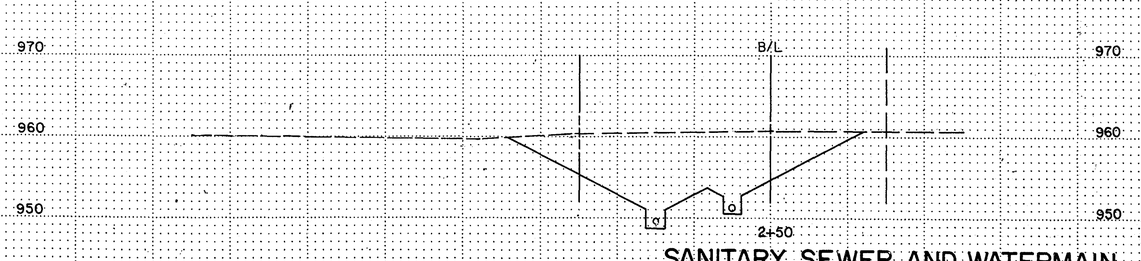


NOTE: EXCAVATION LIMITS SHOWN INDICATE A METHOD OF CONSTRUCTION USING 2:1 SLOPES FOR REFERENCE ONLY.

NOTE: SURVEY BASELINE LOCATED 25' NORTH OF T.H. 96 NORTH R.O.W. LINE.







SANITARY SEWER AND WATERMAIN
T.H. 96

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 35 of 72 Sheets

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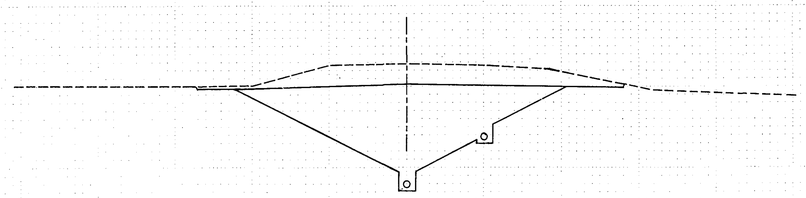
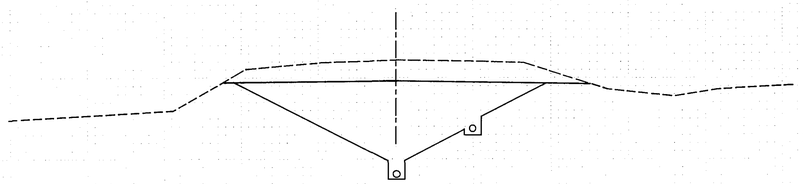
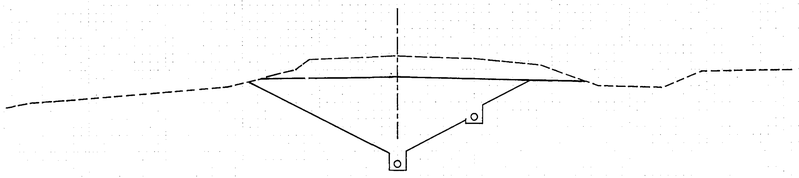
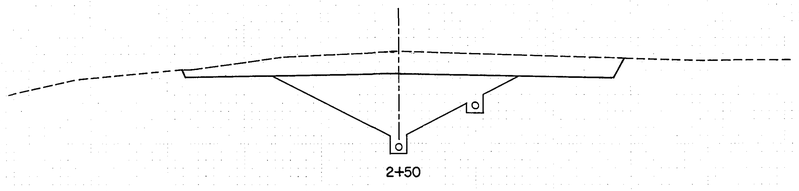
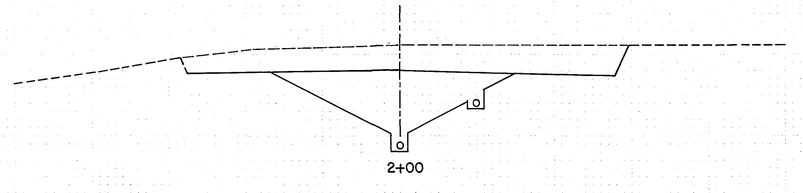
COPY EQUIPMENT FORM #1

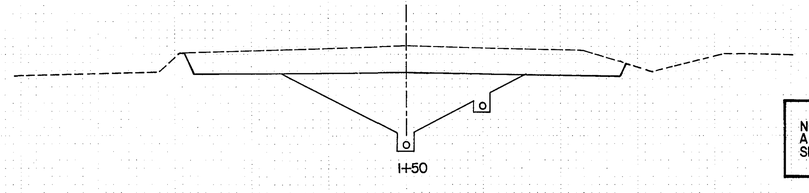


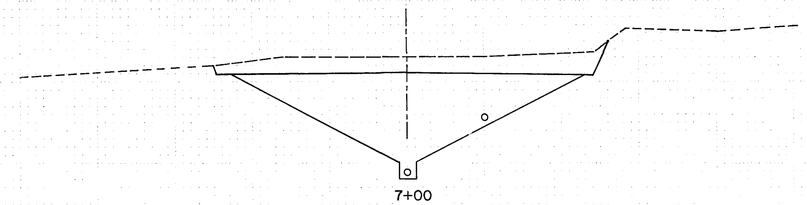


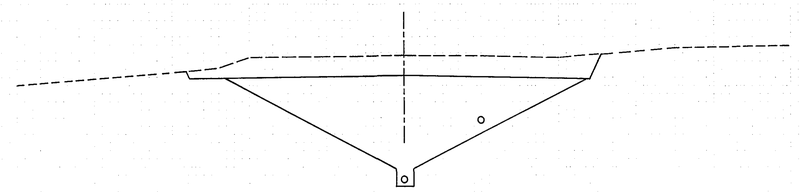


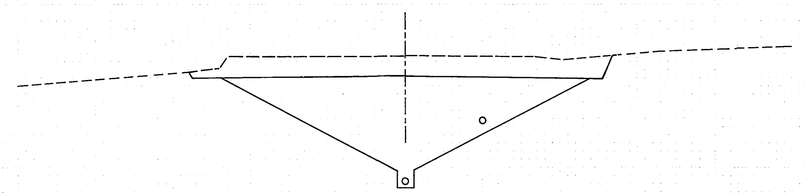


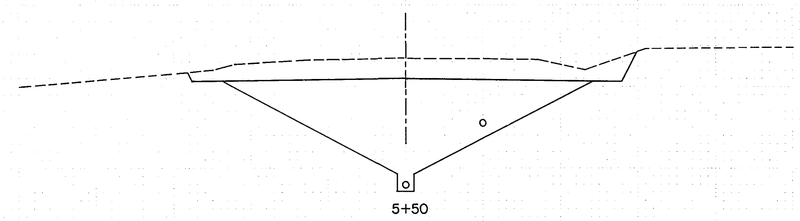


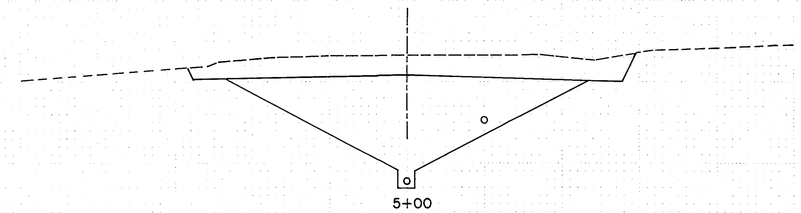


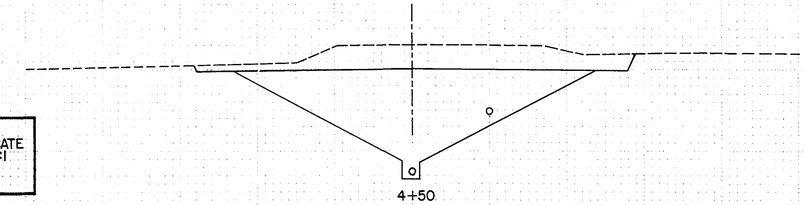












NOTE: EXCAVATION LIMITS SHOWN INDICATE A METHOD OF CONSTRUCTION USING 2:1 SLOPES FOR REFERENCE ONLY

STATIONING SHOWN IS ALONG ℄ OF CENTERVILLE ROAD.

SANITARY SEWER AND WATERMAIN
CENTERVILLE ROAD

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 36 of 72 Sheets

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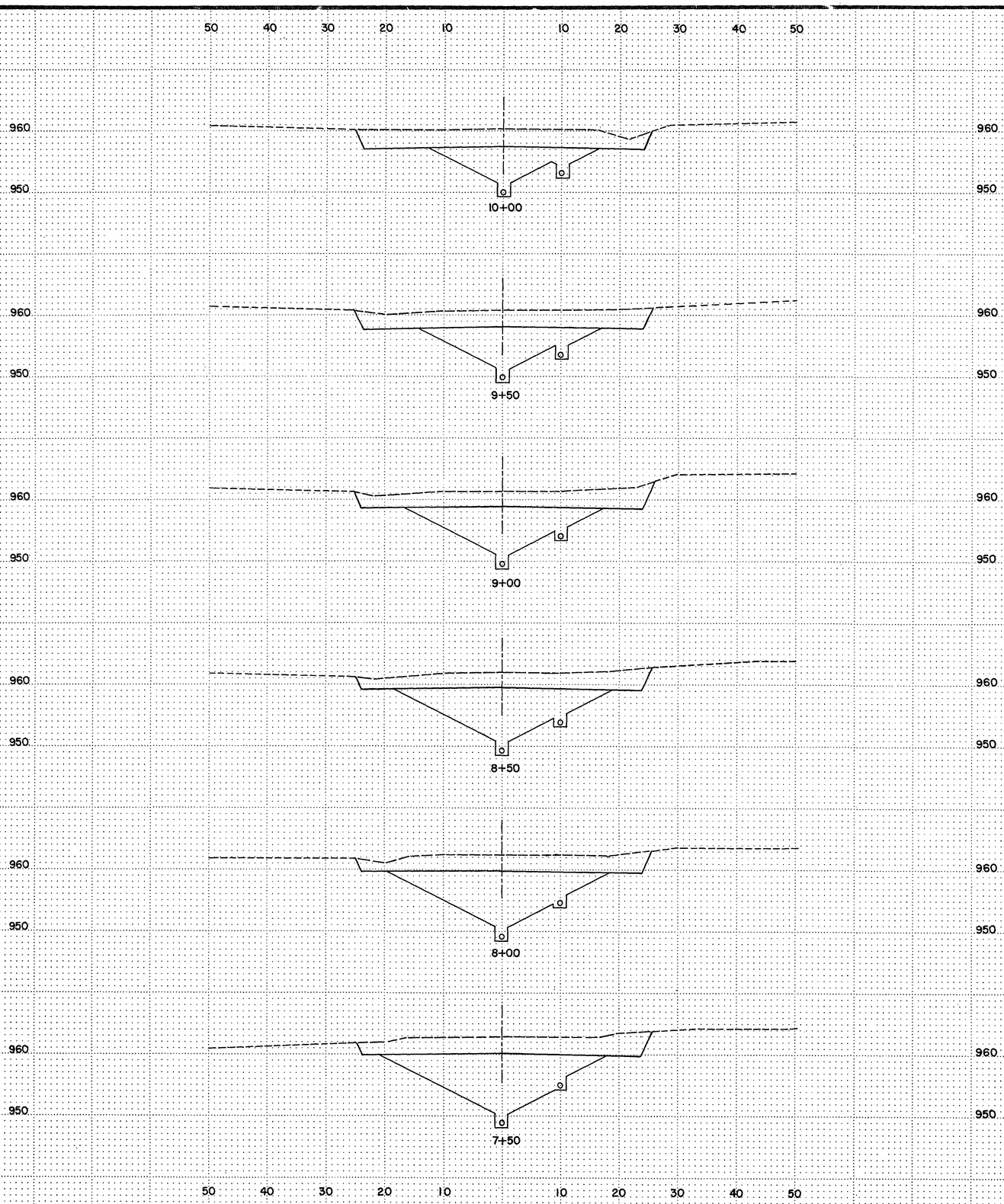
NOTE: EXCAVATION LIMITS SHOWN INDICATE A METHOD OF CONSTRUCTION USING 2:1 SLOPES FOR REFERENCE ONLY.

STATIONING SHOWN IS ALONG ℄ OF CENTERVILLE ROAD.



SANITARY SEWER AND WATERMAIN
CENTERVILLE ROAD

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 37 of 72 Sheets

COPY EQUIPMENT FORM #1

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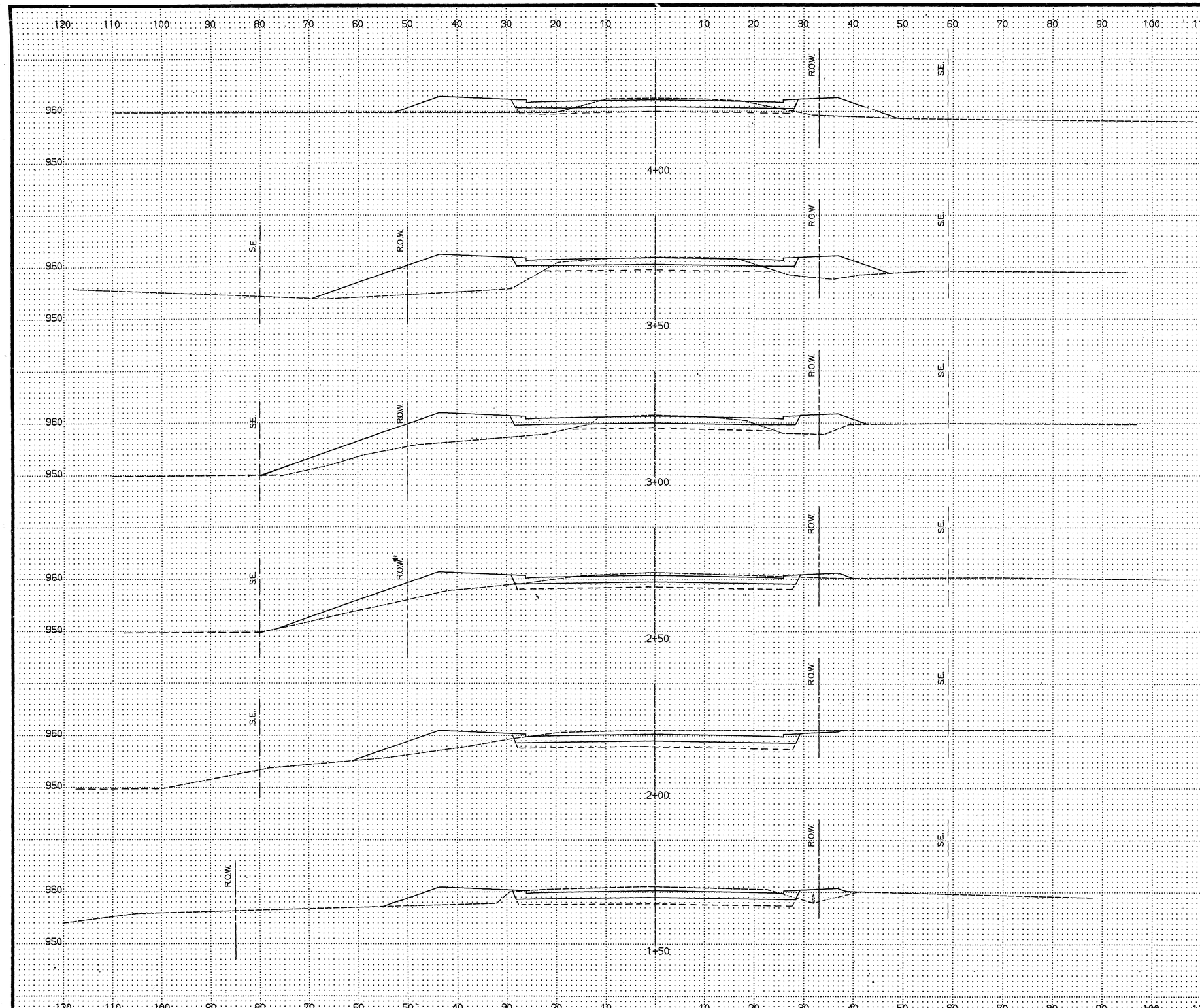

	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN.	COM. (CU. YDS.)
4+00	0	0	179.6	138.0	326.9
3+50	0	0	165.7	156.5	424.1
3+00	0	13.0	175.9	119.4	301.9
2+50	0	59.3	228.7	104.6	172.2
2+00	0	81.5	253.7	121.3	140.7
1+50	0	35.2	130.6	62.0	76.9

KEY

COM. ..... COMMON
SUB. ..... SUBGRADE
GRAN. ..... GRANULAR

28-100

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-69 **Sheet No. 38 of 72 Sheets**

COPY EQUIPMENT FORM #1

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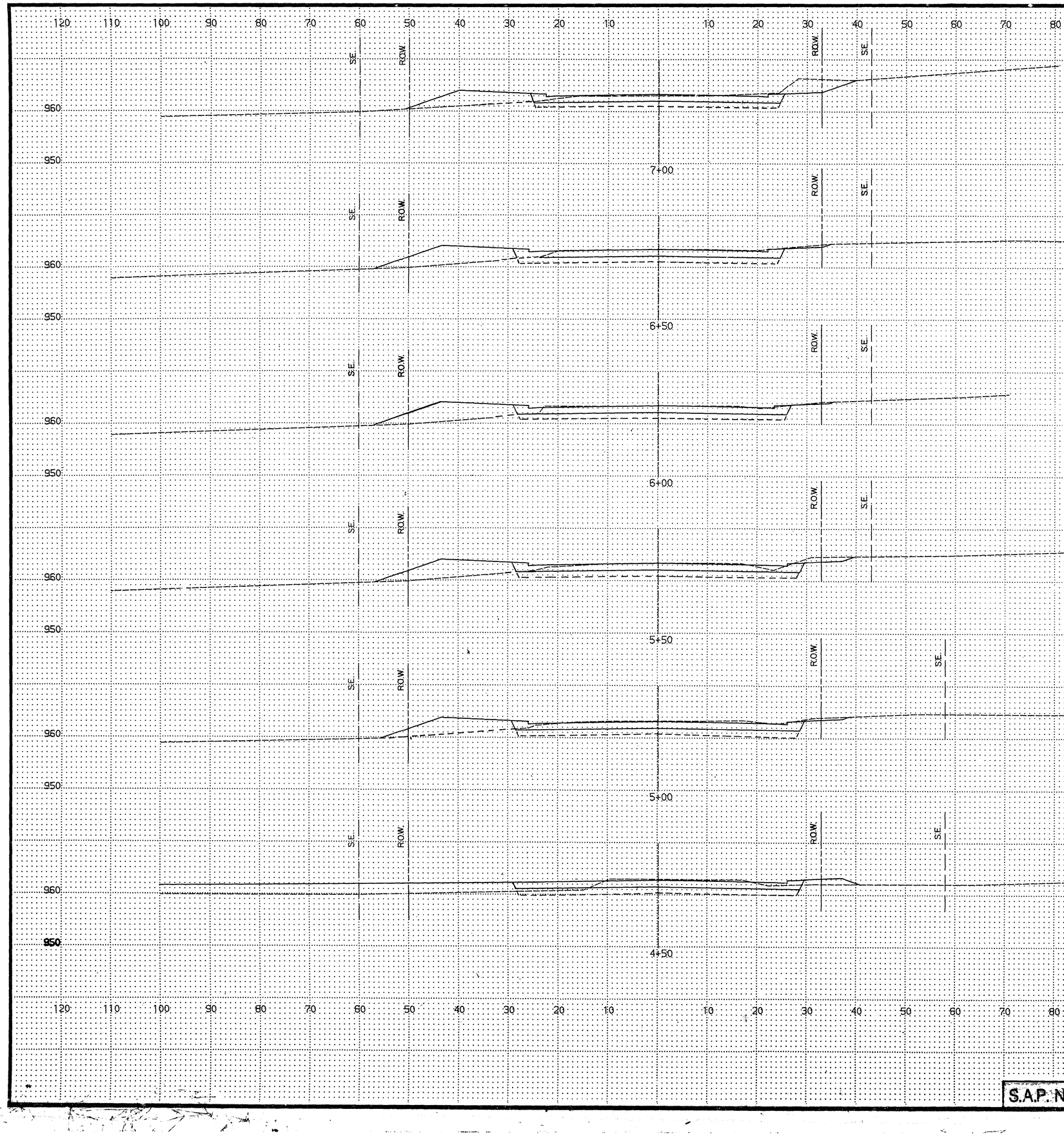

	EXCAVATION (CU. YDS.)			EMBANKMENT (CU. YDS.)	
	MUCK	COM.	SUB.	GRAN.	COM.
7+00	0	22.2	208.3	110.2	181
6+50	0	2.8	213.9	93.5	131.5
6+00	0	9.3	227.8	99.1	128.7
5+50	0	6.5	240.7	112.0	109.3
5+00	0	0	233.3	124.1	112.0
4+50	0	0	195.4	120.4	161.1

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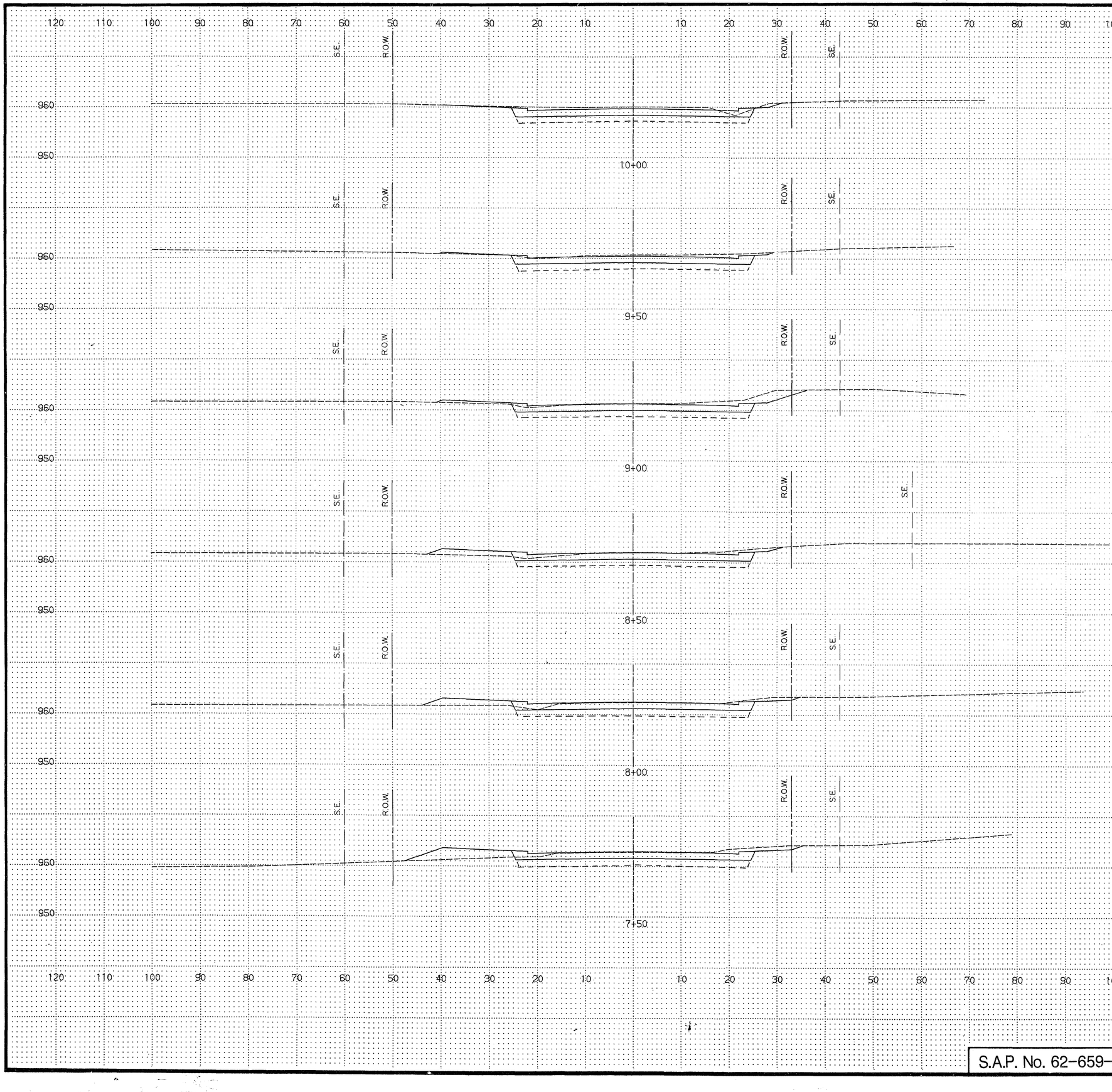
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 39 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

Fed. Proj. No.



STATION	EXCAVATION MUCK (CU. YDS.)	EXCAVATION COM. (CU. YDS.)	EXCAVATION SUB. (CU. YDS.)	EMBANKMENT GRAN. (CU. YDS.)	EMBANKMENT COM. (CU. YDS.)
10+00	0	6.5	231.5	107.4	0
9+50	0	25.0	218.5	103.7	3.7
9+00	0	24.1	219.4	109.3	18.5
8+50	0	12.0	223.2	119.4	31.5
8+00	0	13.0	221.3	120.4	52.8
7+50	0	27.8	208.3	120.4	82.4

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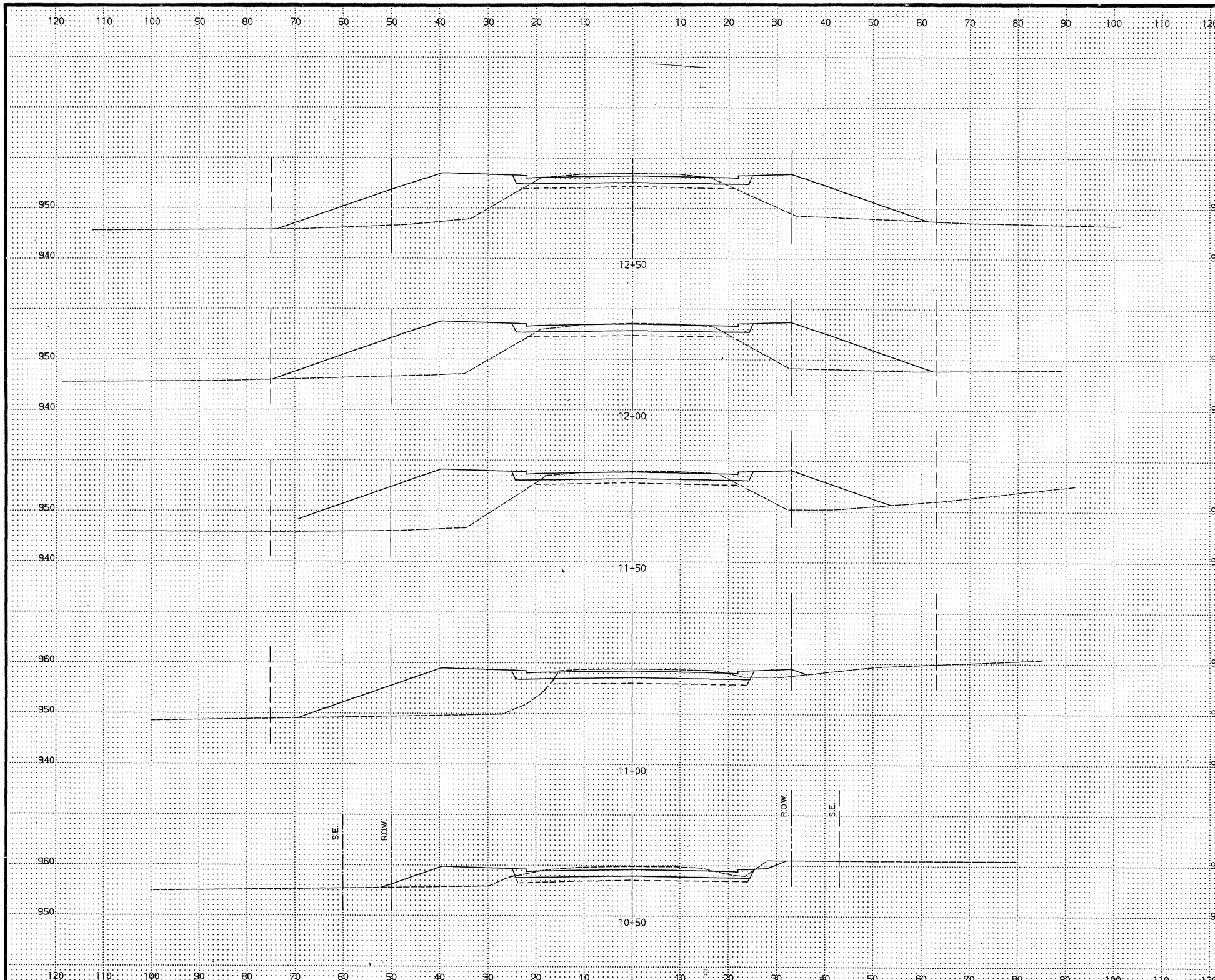
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 40 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
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12+50	0	12.0	127.8	140.7	838.9
12+00	0	0	194.4	157.4	878.7
11+50	0	13.0	266.7	158.3	677.8
11+00	0	39.8	231.5	121.3	248.2
10+50	0	27.8	215.7	93.5	6.5

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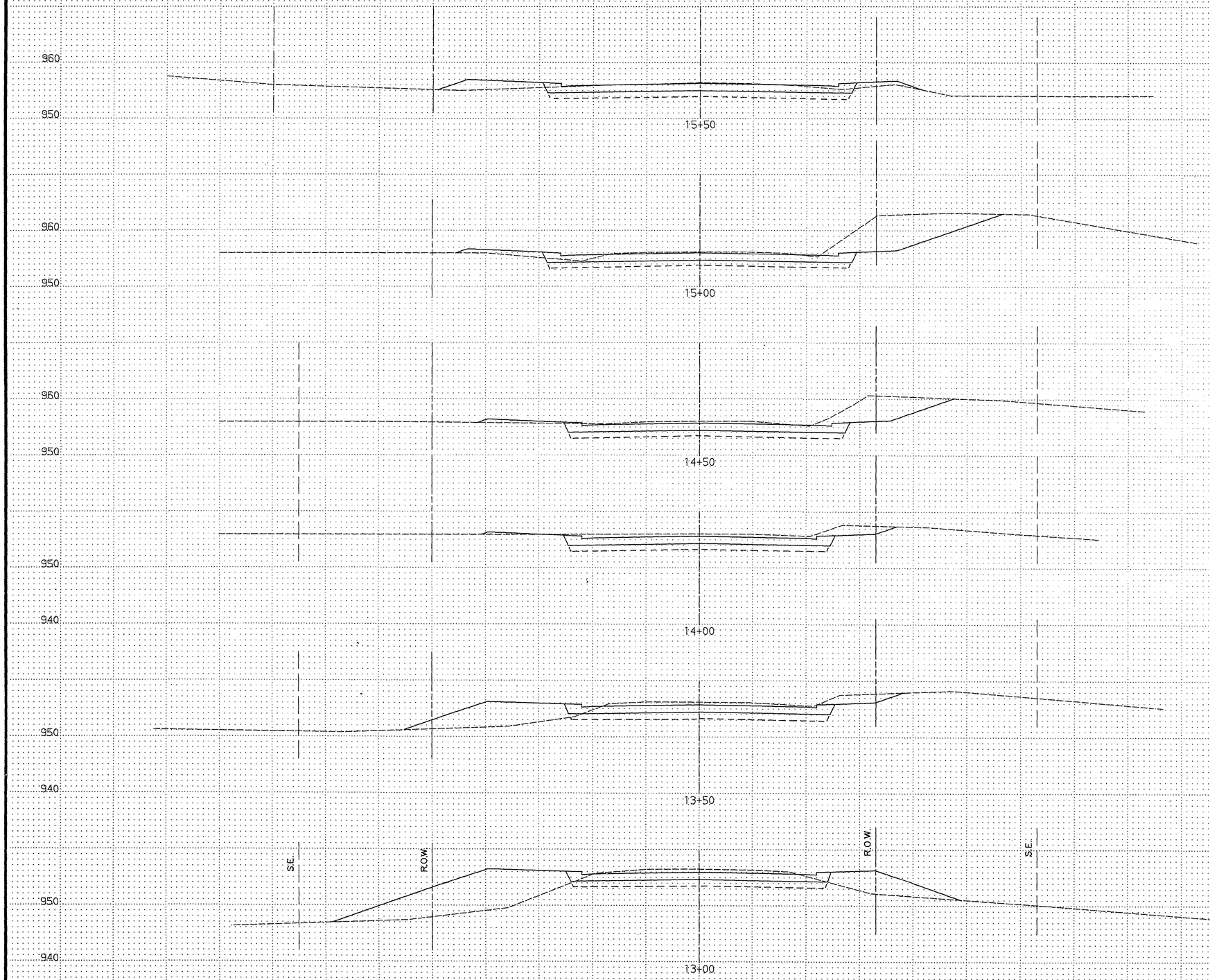
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 41 **of** 72 **Sheets**

COPY BY JENSEN FORM #1

Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
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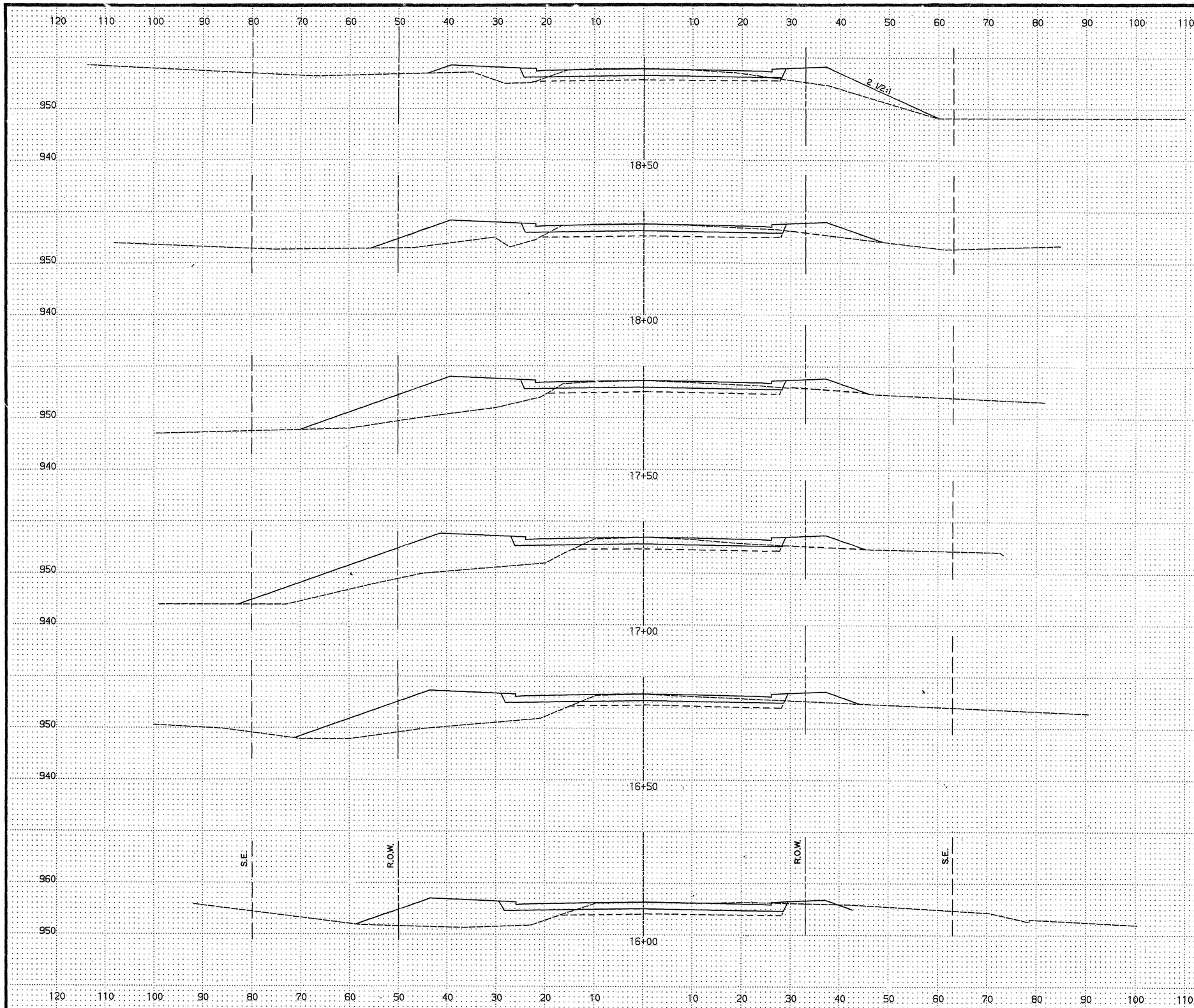
15+50					
15+00	0	113.9	246.3	114.8	40.7
14+50	0	125.9	227.8	100.9	16.7
14+00	0	54.6	216.7	94.4	8.3
13+50	0	75.9	155.6	96.3	85.2
13+00	0	49.1	145.4	98.2	327.8
	0	27.8	154.6	104.6	640.7

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 42 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN.	COM. (CU. YDS.)
18+50	0	0	175.0	97.2	205.6
18+00	0	0	167.6	97.2	342.6
17+50	0	0	139.8	119.4	501.9
17+00	0	0	132.4	148.2	478.7
16+50	0	2.8	158.3	152.8	313.9
16+00	0	2.8	214.8	140.7	139.8

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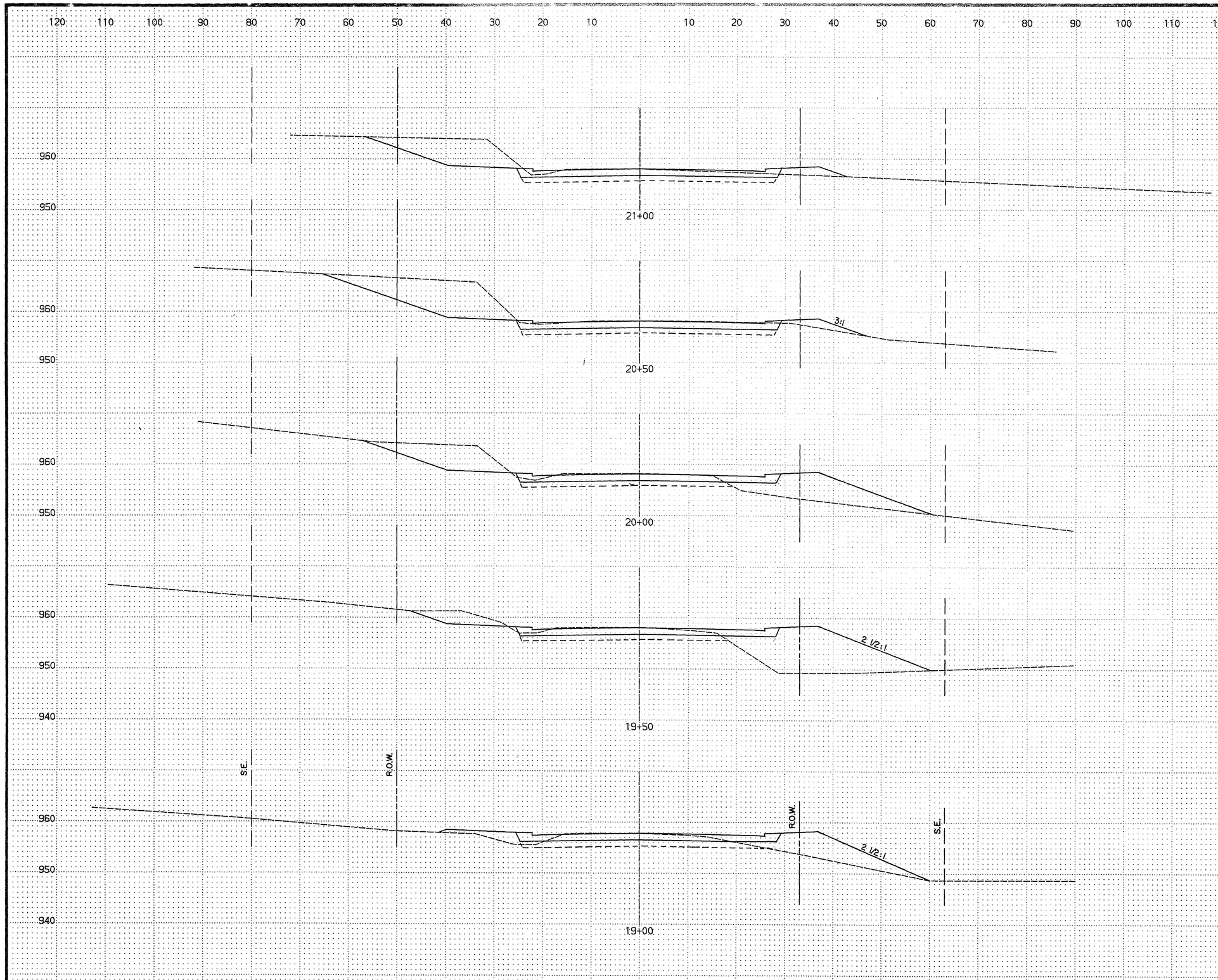
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 43 of 72 Sheets

COPY EQUIPMENT FORM #1

Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
	MUCK	COM.	SUB.	GRAN.	COM.
	(CU. YDS.)			(CU. YDS.)	
0	261.1	222.2		104.6	30.6
0	242.6	188.0		98.2	109.3
0	113.9	153.7		159.3	236.1
0	28.7	170.4		175.0	246.3
0	0	178.7		113.0	196.3

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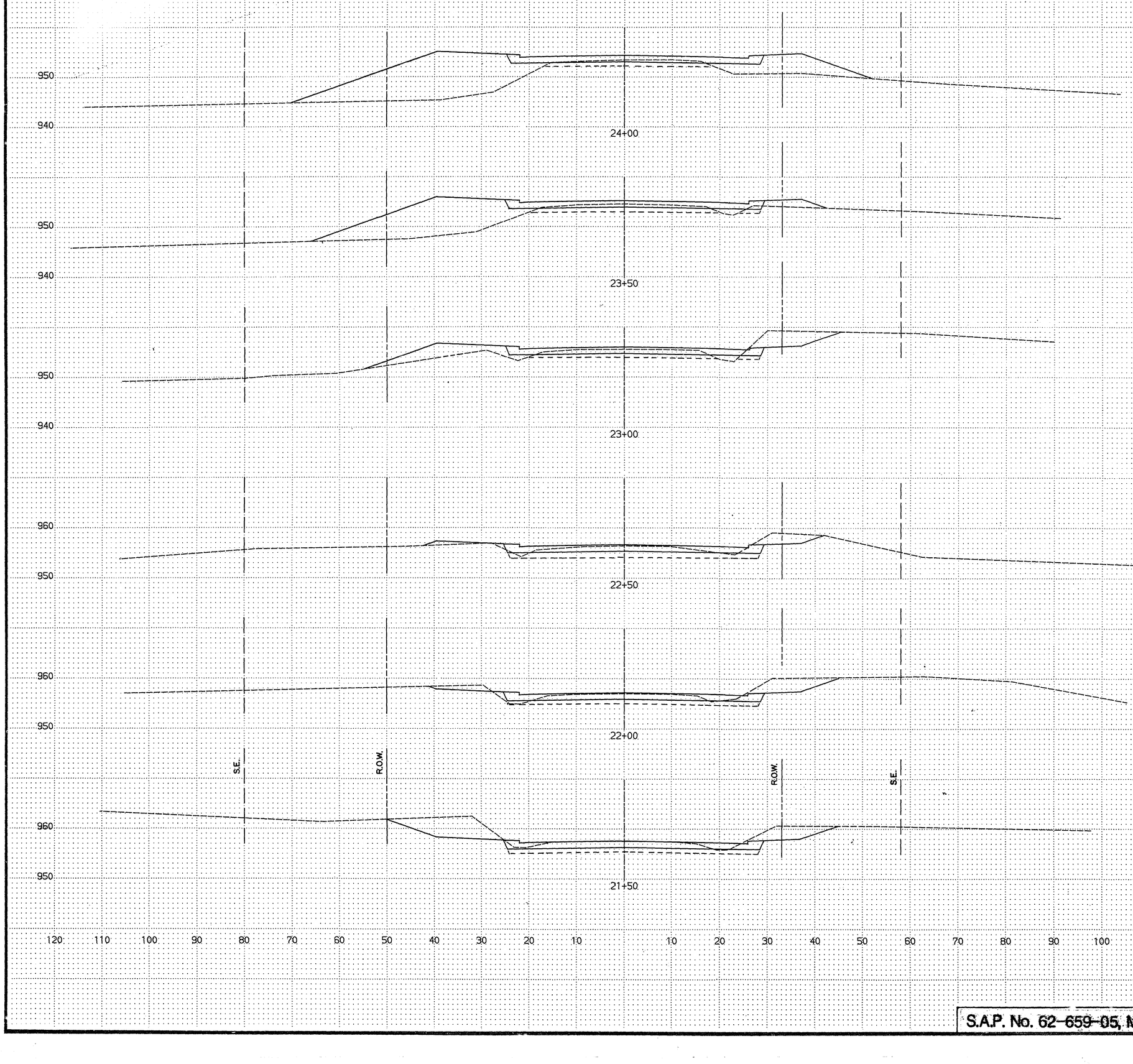
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020 09 Sheet No. 44 of 72 Sheets

COPY EQUIPMENT FORM #1

Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GR.N. (CU. YDS.)	COM.
24+00	0	0	87.0	131.5	488.9
23+50	0	0	98.2	84.3	267.6
23+00	0	9.3	127.8	49.1	79.6
22+50	0	25.9	153.7	56.5	13.9
22+00	0	77.8	170.4	88.0	4.6
21+50	0	164.8	205.6	106.5	16.7

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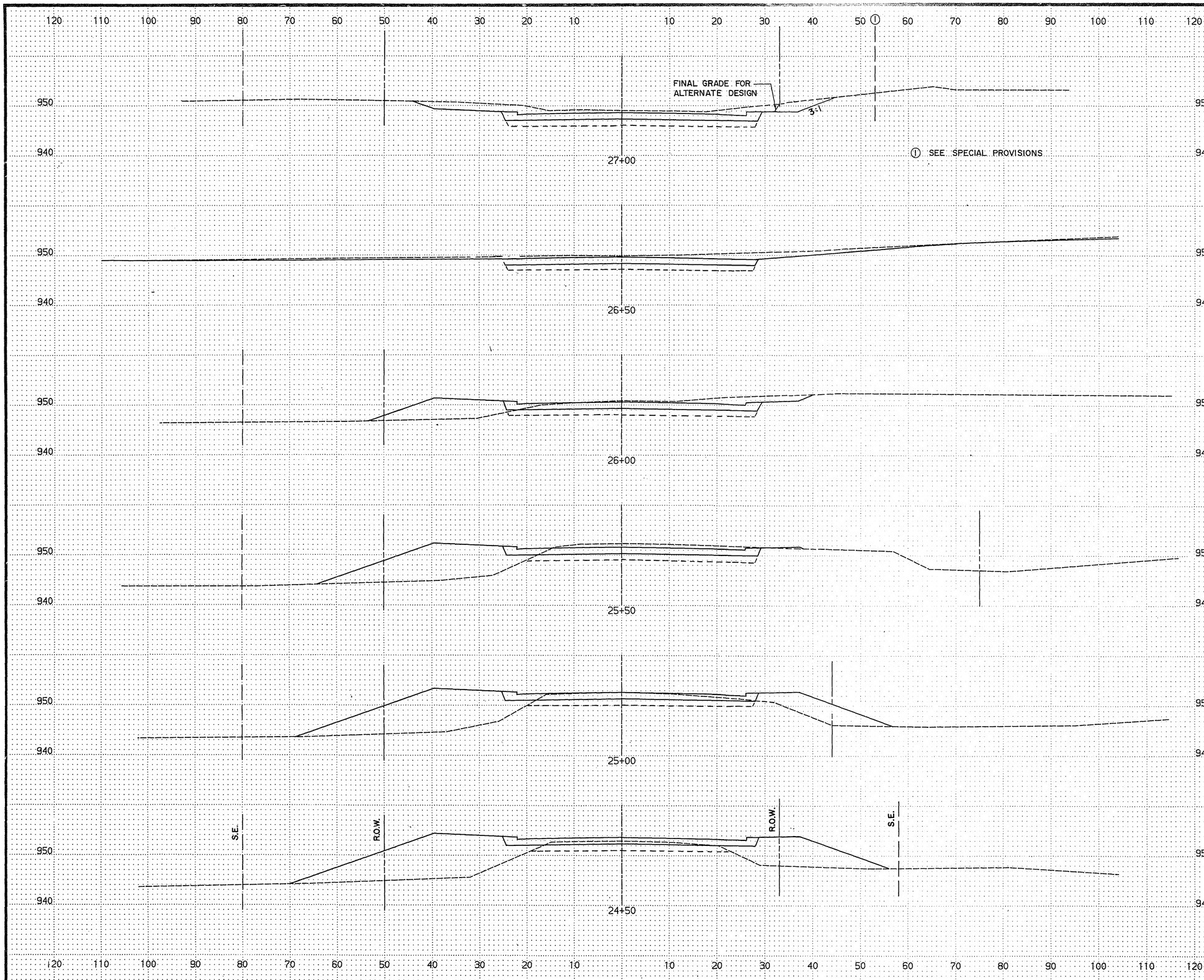
S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 45 of 72 Sheets

COPY EQUIPMENT FORM #1

Fed. Proj. No.



	EXCAVATION (CU. YDS.)			EMBANKMENT (CU. YDS.)	
	MUCK	COM.	SUB.	GRAN.	COM.
27+00	0	88.0	231.5	91.7	7.4
26+50	0	32.4	210.2	86.1	84.3
26+00	0	42.6	200.9	110.2	242.6
25+50	0	24.1	190.7	143.5	423.2
25+00	0	0	146.3	160.2	574.1
24+50	0	0	94.4	159.3	608.3

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 46 of 72 Sheets

COPY EQUIPMENT FORM #1

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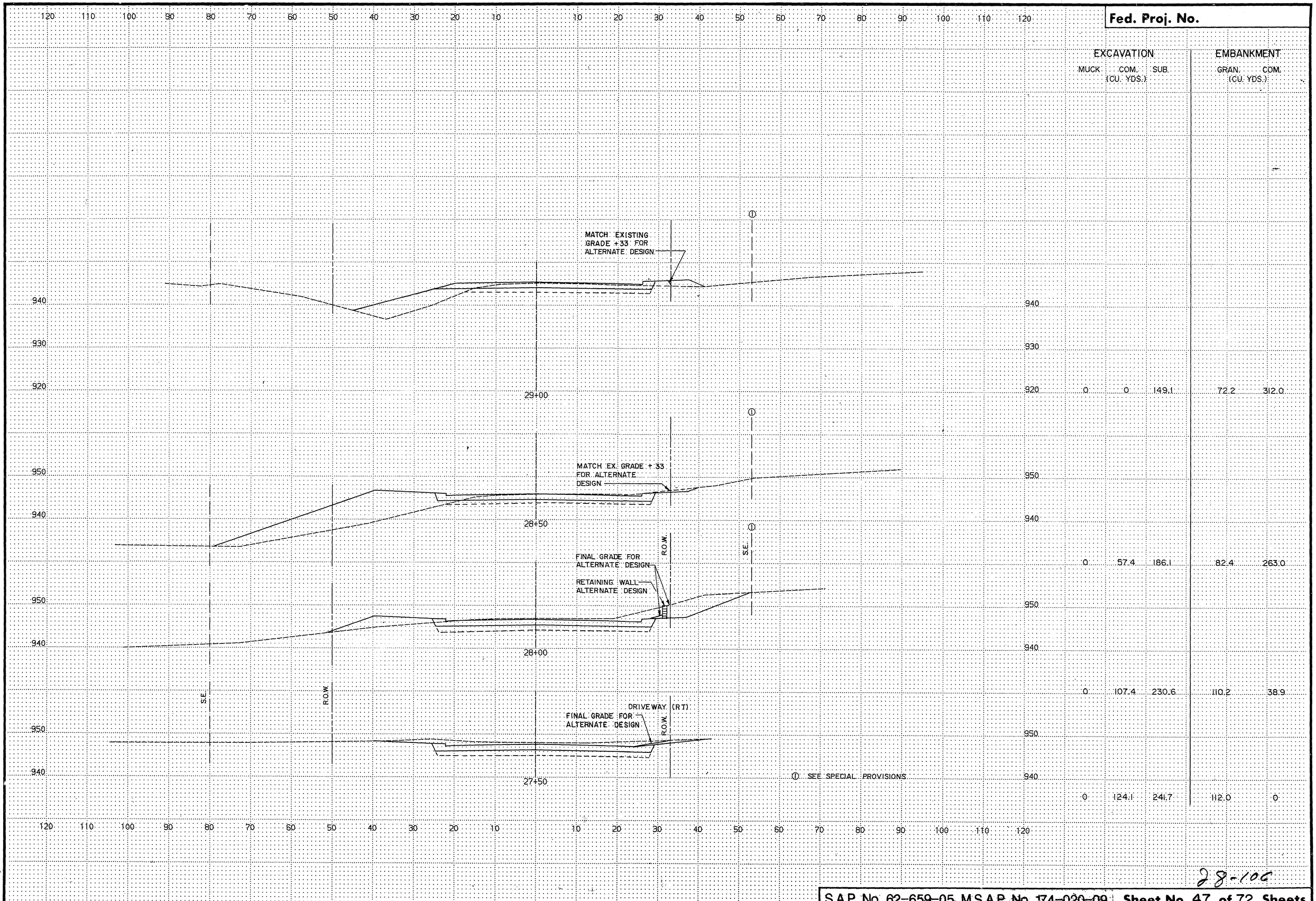

EXCAVATION			EMBANKMENT	
MUCK (CU. YDS.)	COM. (CU. YDS.)	SUB. (CU. YDS.)	GRAN. (CU. YDS.)	COM. (CU. YDS.)
0	0	149.1	72.2	312.0
0	57.4	186.1	82.4	263.0
0	107.4	230.6	110.2	38.9
0	124.1	241.7	112.0	0

① SEE SPECIAL PROVISIONS

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No. 47 of 72 Sheets**

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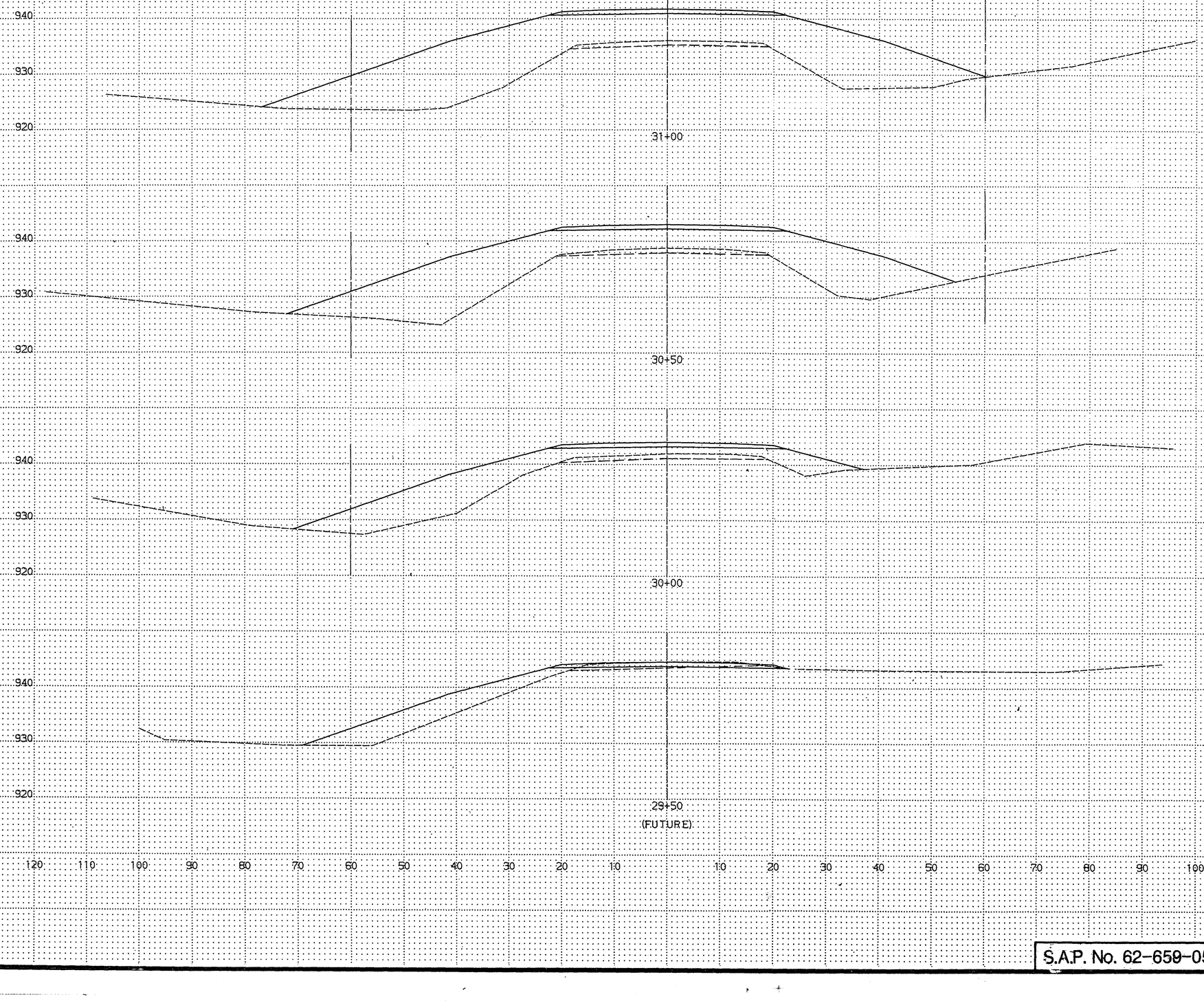
NO SECTIONS SHOWN 31+50 TO 51+50



EXCAVATION			EMBANKMENT	
MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	72.2	39.8	88.0

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 48 **of** 72 **Sheets**

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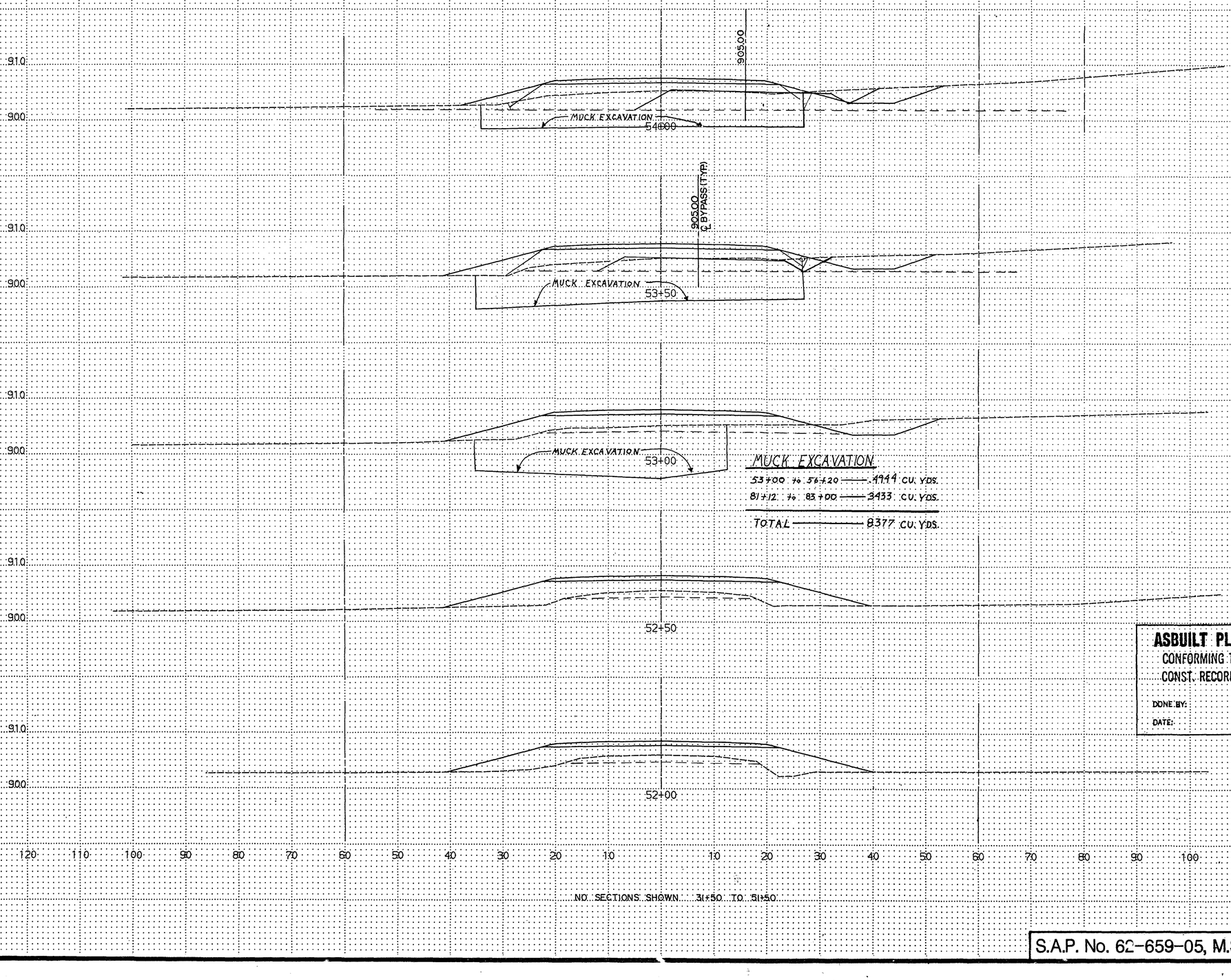

	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN.	COM. (CU. YDS.)
	281.3	6.7	0	168.5	0
	105.4	0	0	70.4	0
		0	0	0	0
		0	0	0	0
		0	0	0	0
		0	0	0	0

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY:

DATE:

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 49 **of** 72 **Sheets**

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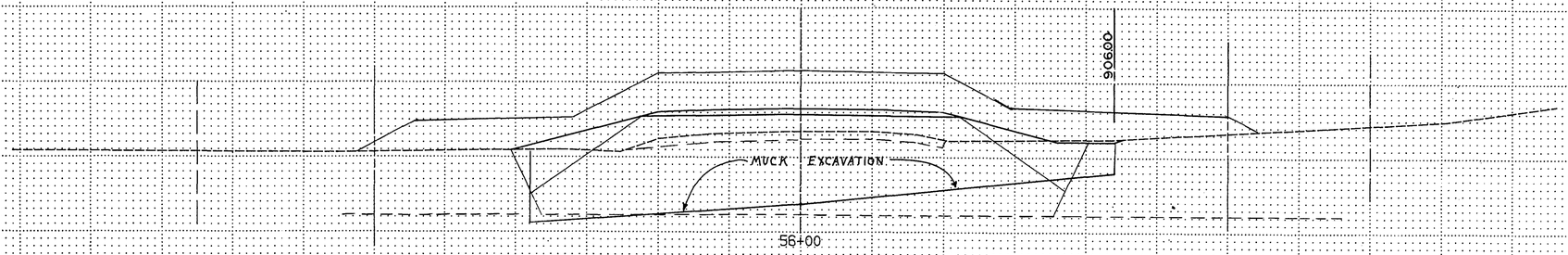

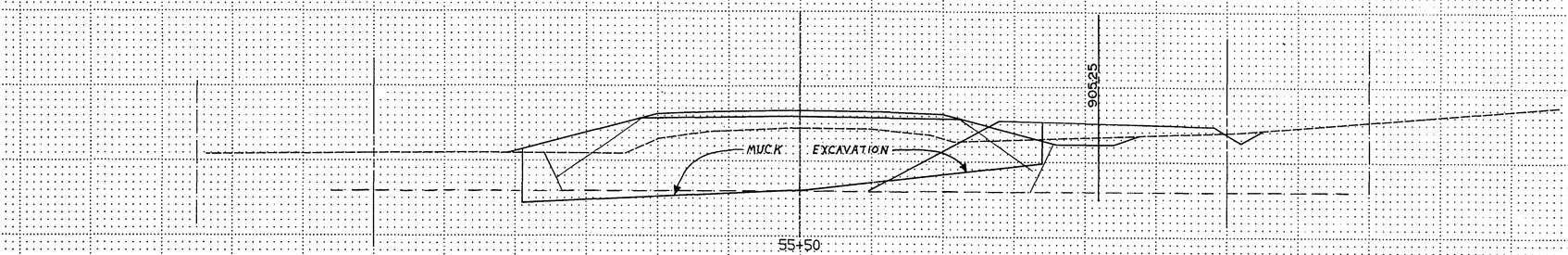

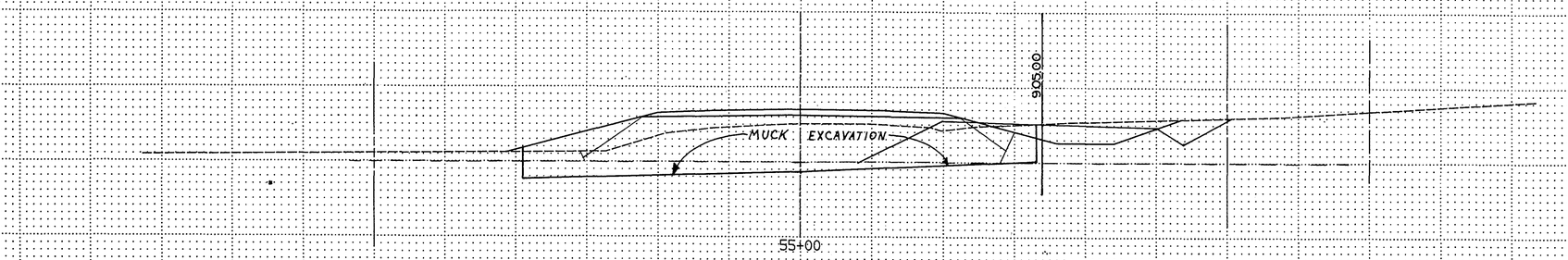

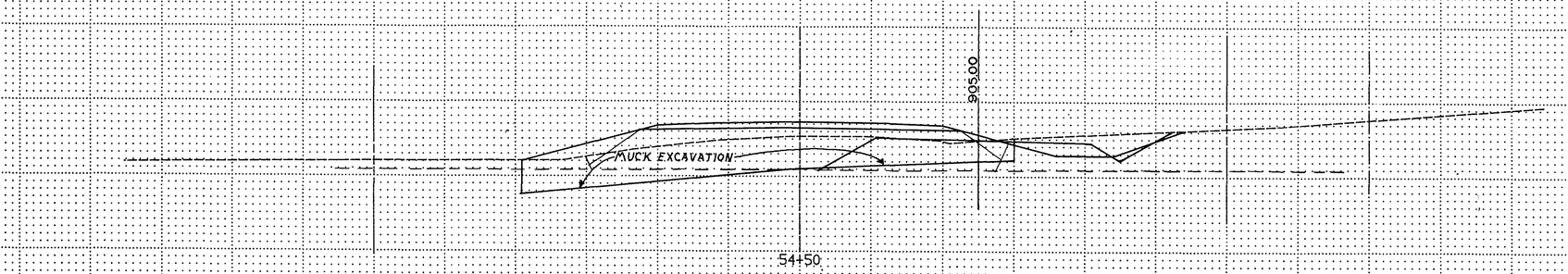

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
56+00	1090.7	166.1	0	1759.3	47.2
55+50	657.4	115.3	0	626.0	11.1
55+00	462.0	53.7	0	381.5	2.8
54+50	388.0	29.3	0	266.7	2.0

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY:
DATE: 28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 50 **of** 72 **Sheets**

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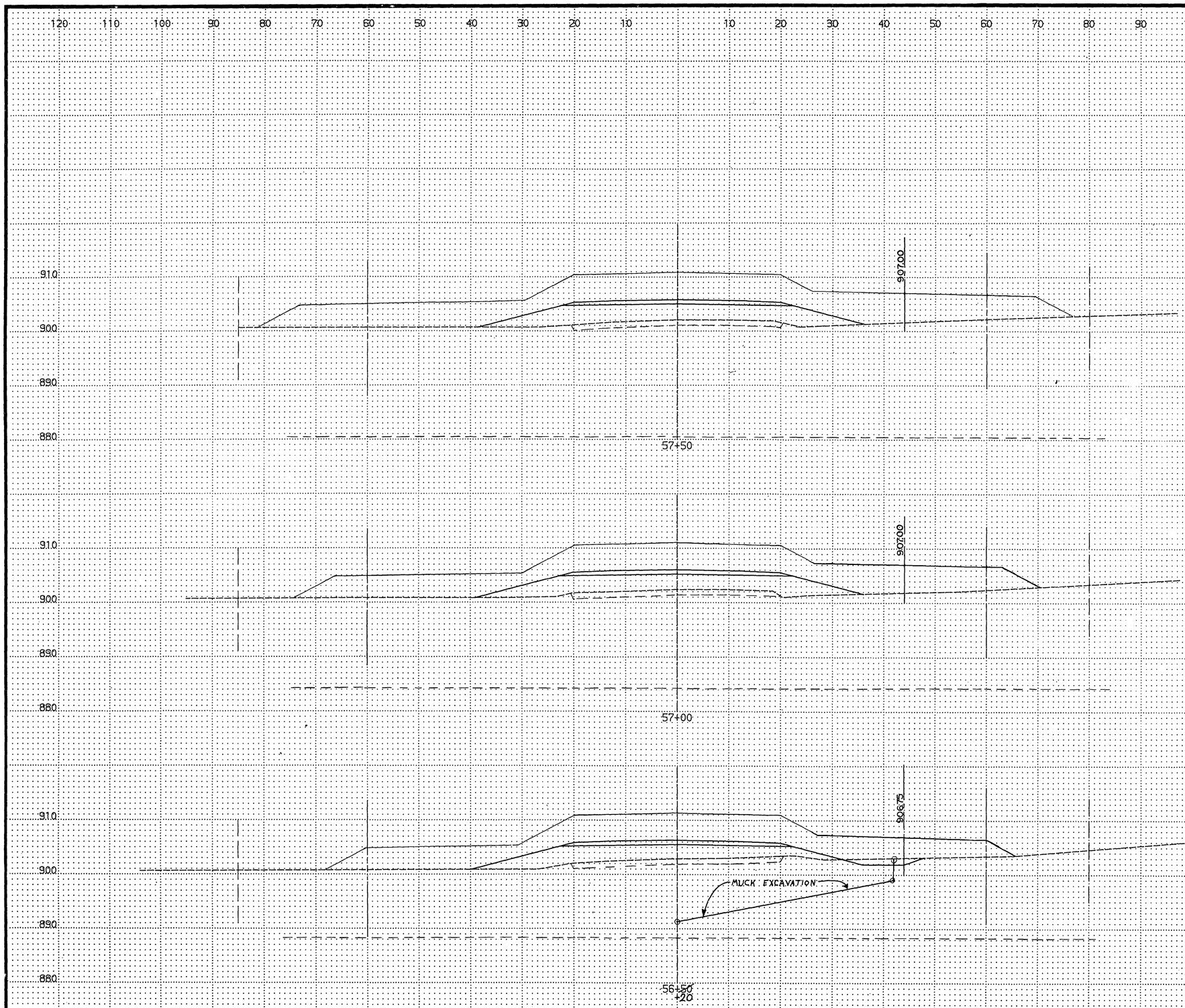

EXCAVATION			EMBANKMENT	
MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
0	0	78.7	1724.1	0
0	0	91.7	1552.8	0
683.3	81.9	52.8	2079.6	37.0

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY:
DATE: 12-1-06

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 51 **of** 72 **Sheets**

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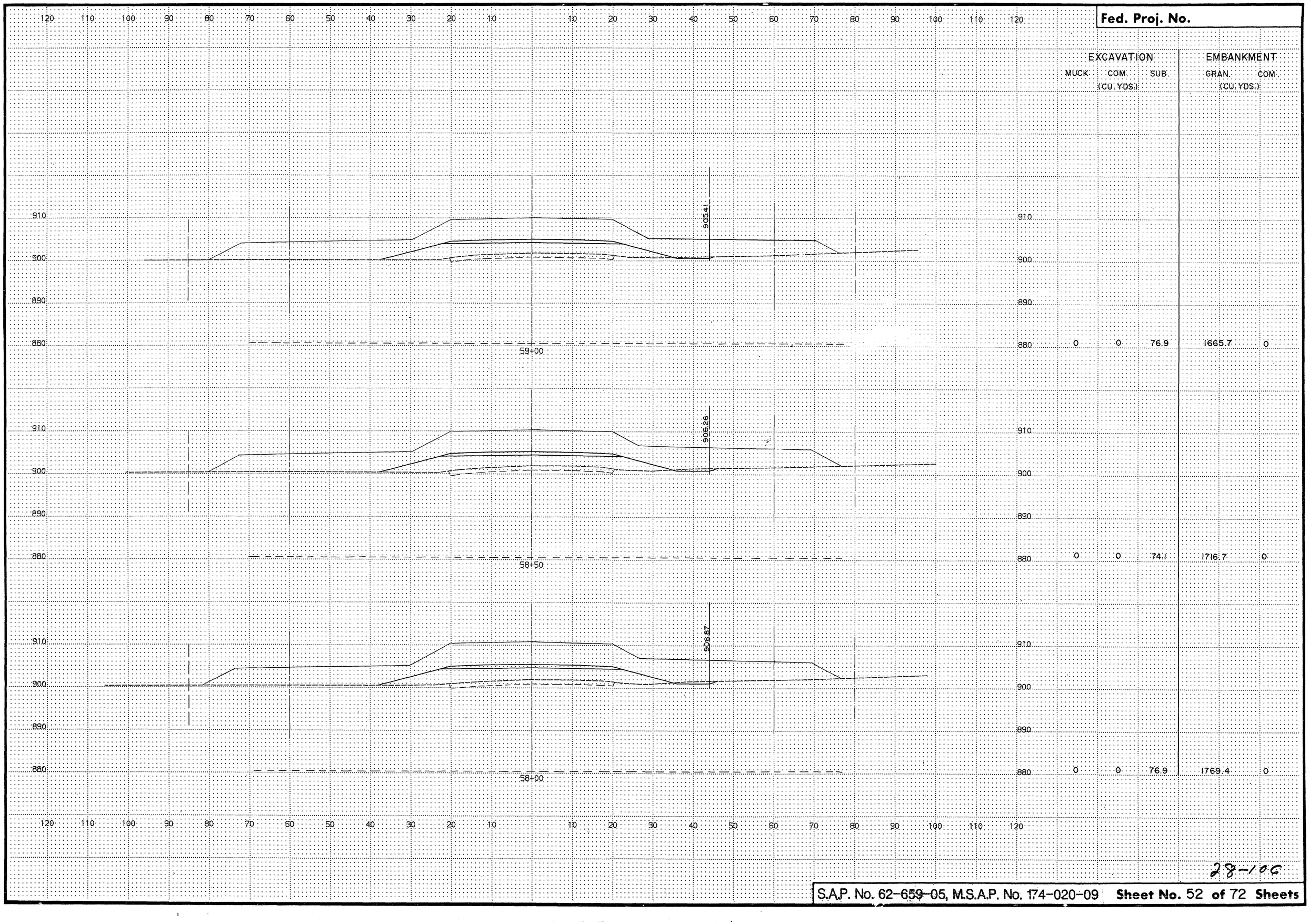

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
59+00	0	0	76.9	1665.7	0
58+50	0	0	74.1	1716.7	0
58+00	0	0	76.9	1769.4	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 52 **of** 72 **Sheets**

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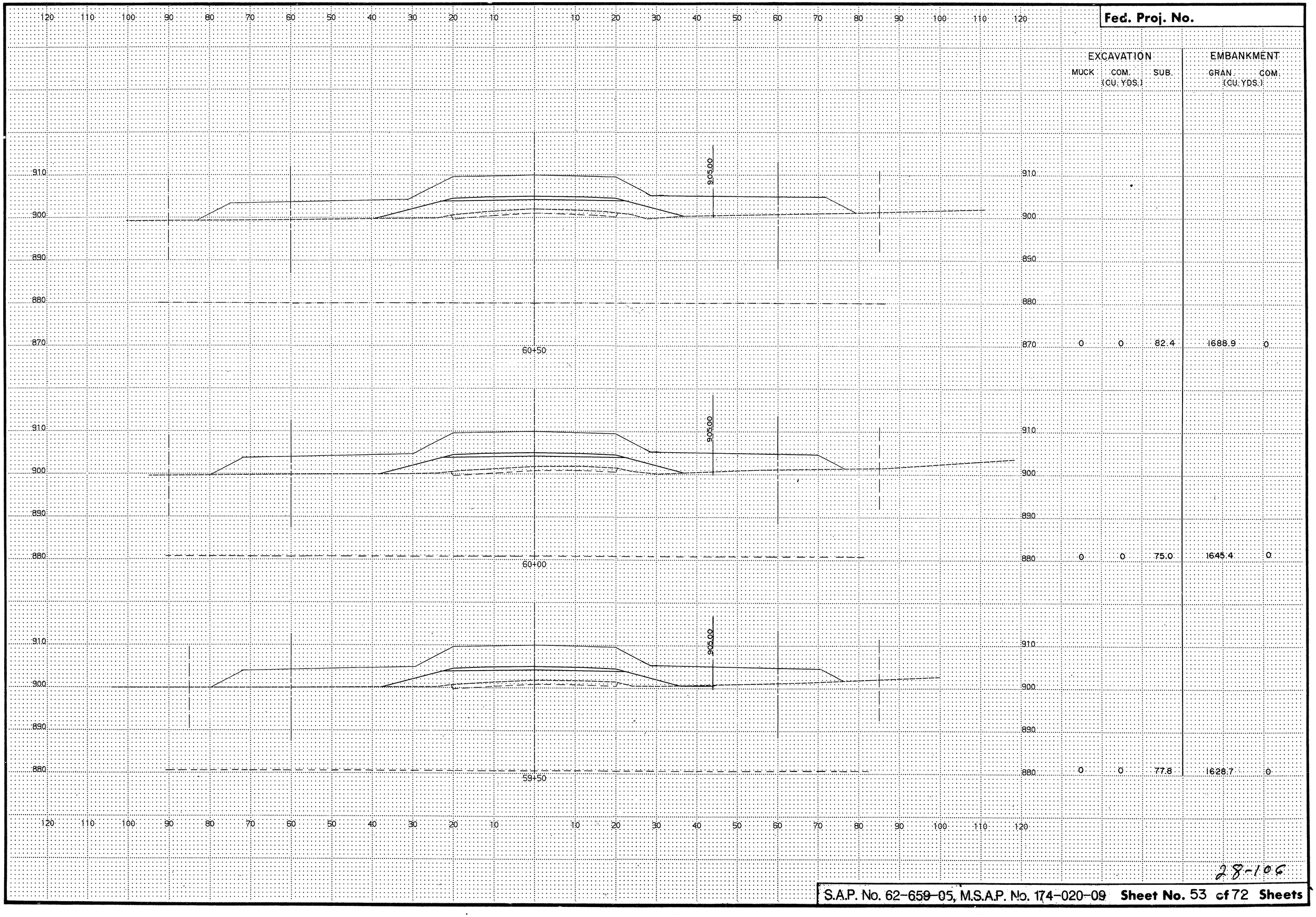

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM.	SUB.	GRAN.	COM. (CU. YDS.)
60+50	0	0	82.4	1688.9	0
60+00	0	0	75.0	1645.4	0
59+50	0	0	77.8	1628.7	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 53 **of** 72 **Sheets**

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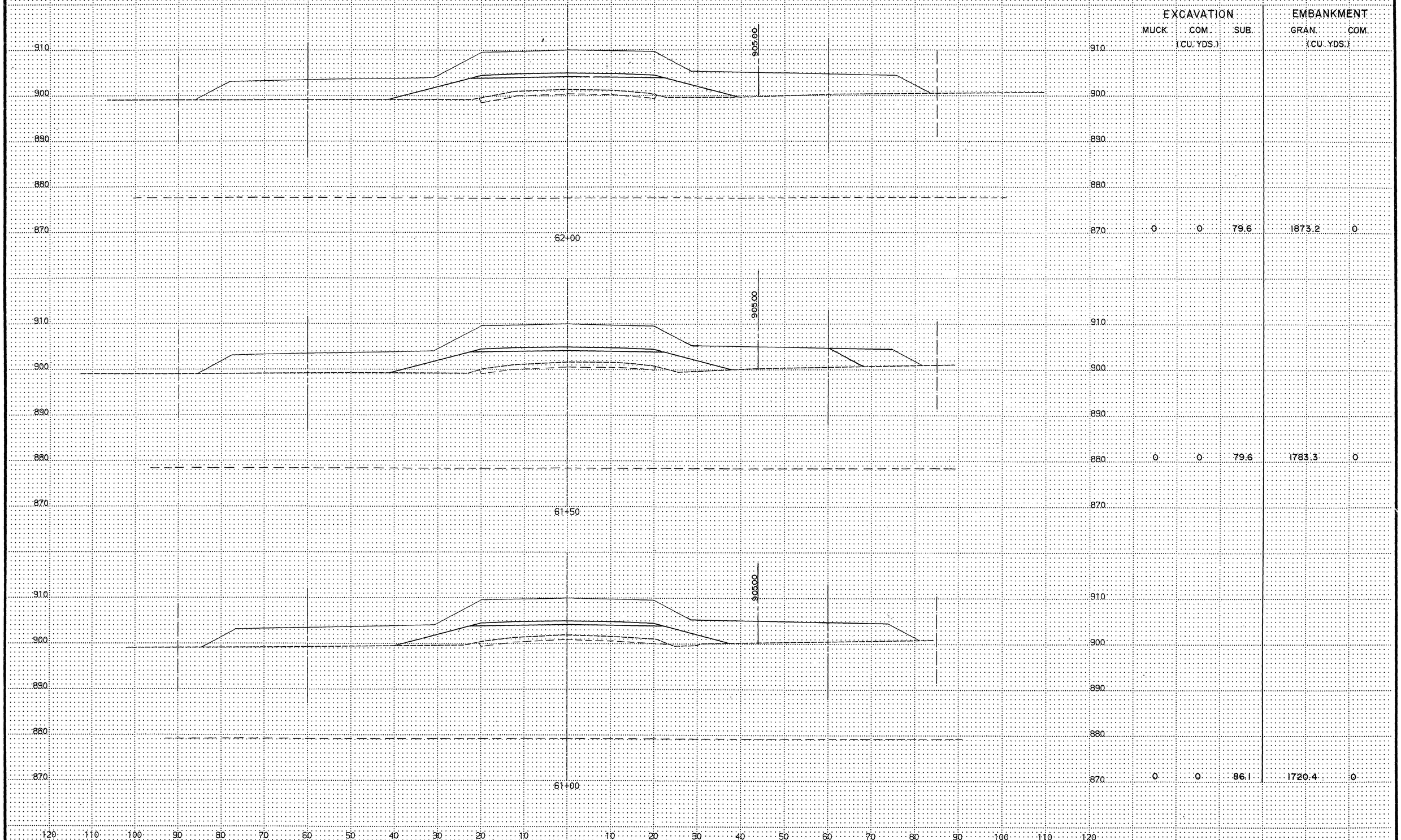
Fed. Proj. No.



	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM. (CU. YDS.)	SUB.	GRAN. (CU. YDS.)	COM.
62+00	0	0	79.6	1873.2	0
61+50	0	0	79.6	1783.3	0
61+00	0	0	86.1	1720.4	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 54 **of** 72 **Sheets**

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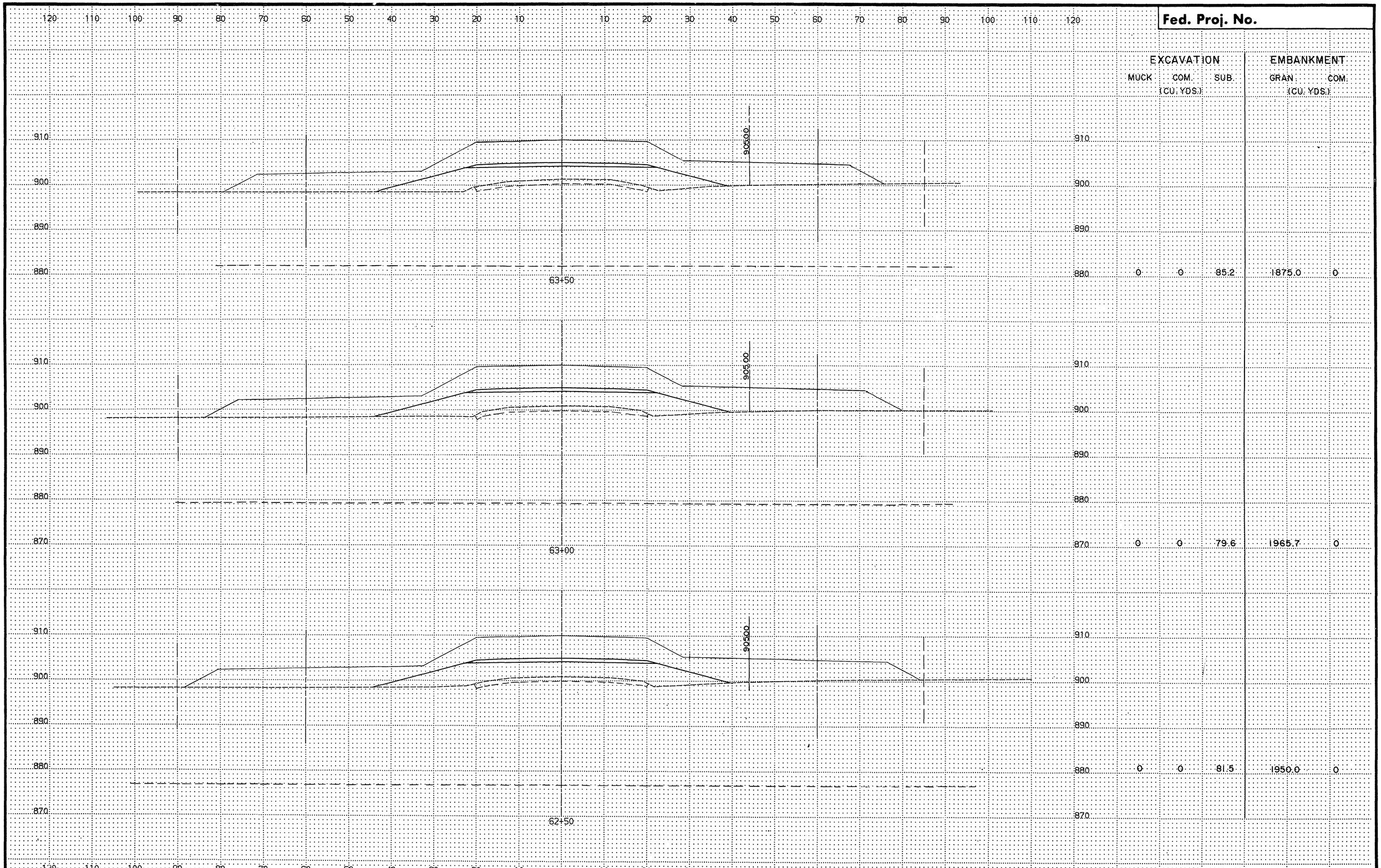

STATION	EXCAVATION MUCK (CU. YDS.)	EXCAVATION COM. (CU. YDS.)	EXCAVATION SUB. (CU. YDS.)	EMBANKMENT GRAN. (CU. YDS.)	EMBANKMENT COM. (CU. YDS.)
63+50	0	0	85.2	1875.0	0
63+00	0	0	79.6	1965.7	0
62+50	0	0	81.5	1950.0	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 55 **of** 72 **Sheets**

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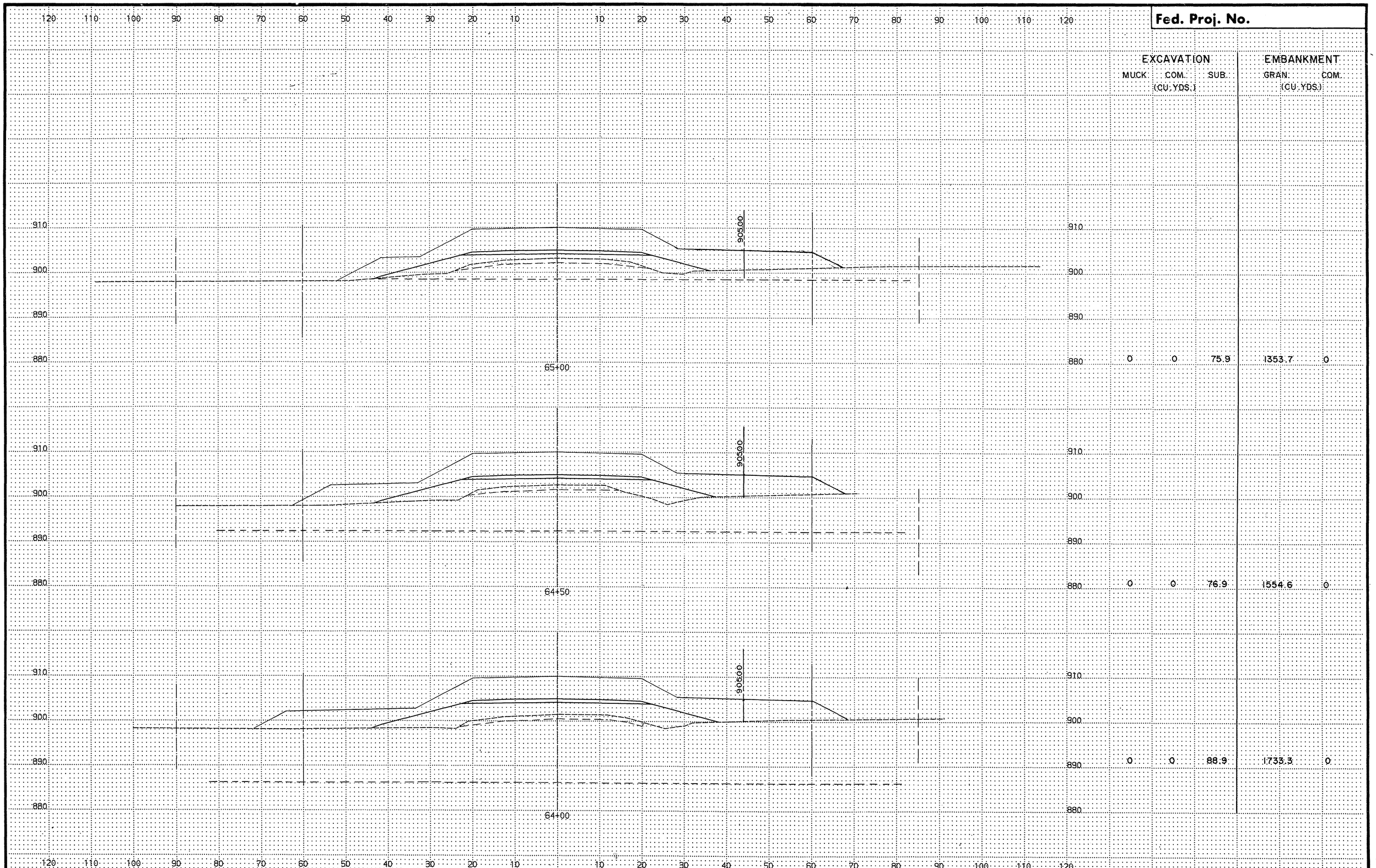

STATION	EXCAVATION MUCK (CU. YDS.)	EXCAVATION COM. (CU. YDS.)	EXCAVATION SUB. (CU. YDS.)	EMBANKMENT GRAN. (CU. YDS.)	EMBANKMENT COM. (CU. YDS.)
65+00	0	0	75.9	1353.7	0
64+50	0	0	76.9	1554.6	0
64+00	0	0	88.9	1733.3	0

28-106

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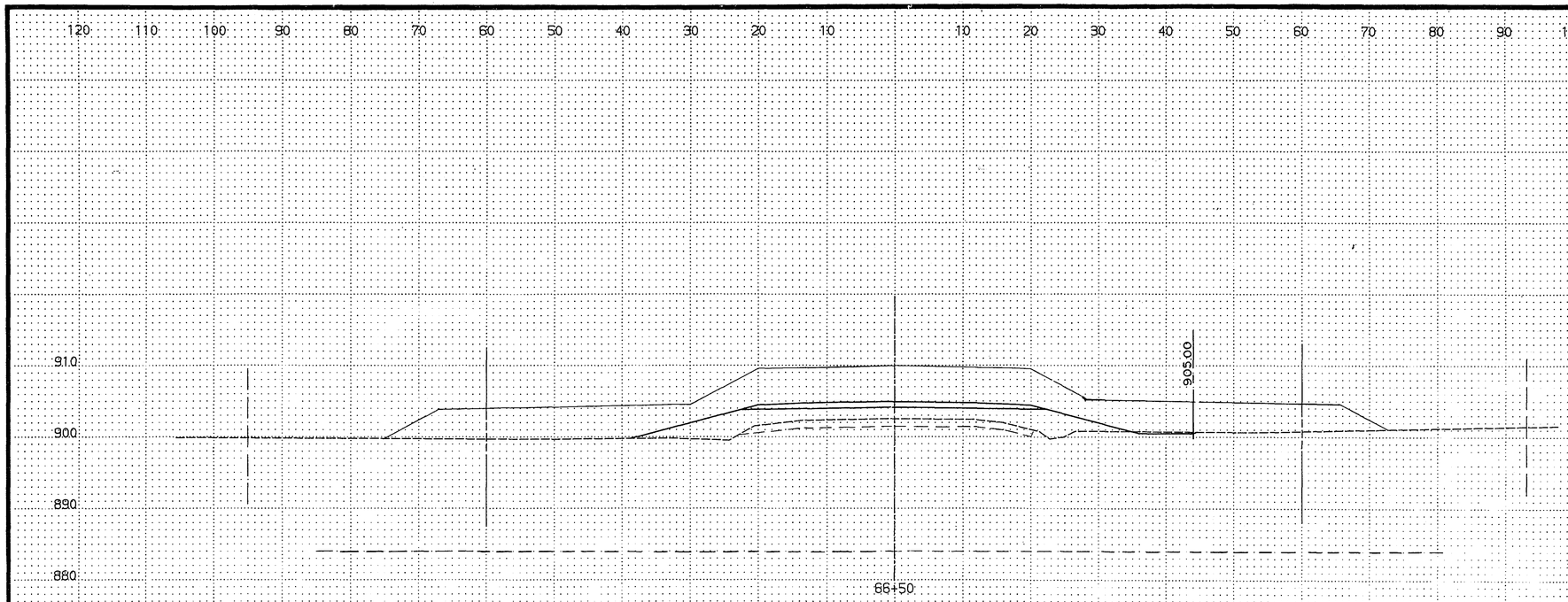

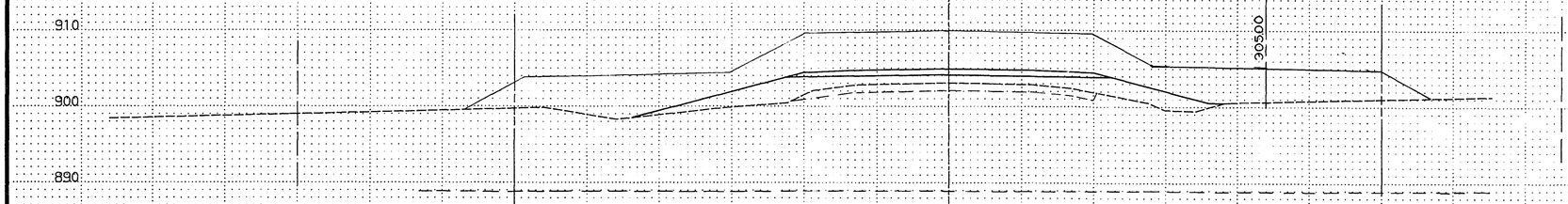

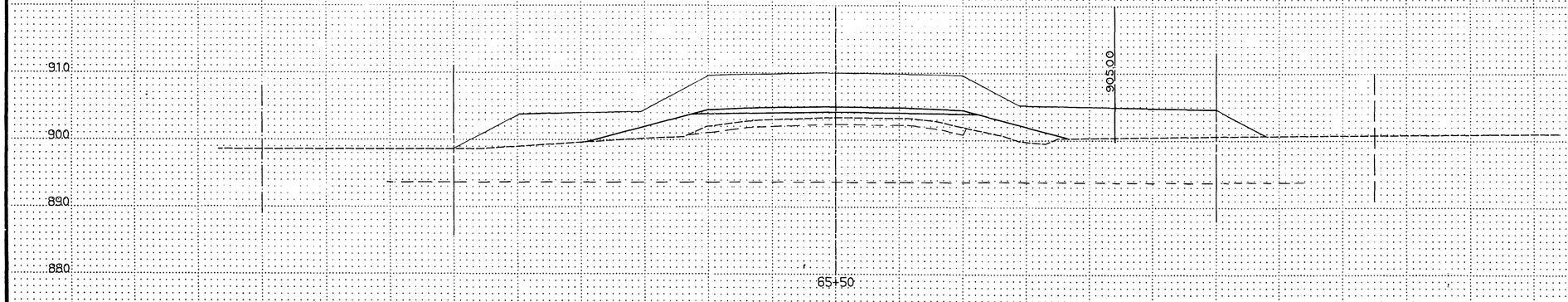

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM. (CU. YDS.)	SUB.	GRAN. (CU. YDS.)	COM. (CU. YDS.)
66+50	0	0	80.6	1484.3	0
66+00	0	0	80.6	1371.3	0
65+50	0	0	81.5	1286.1	0

28-10 a

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 57 **of** 72 **Sheets**

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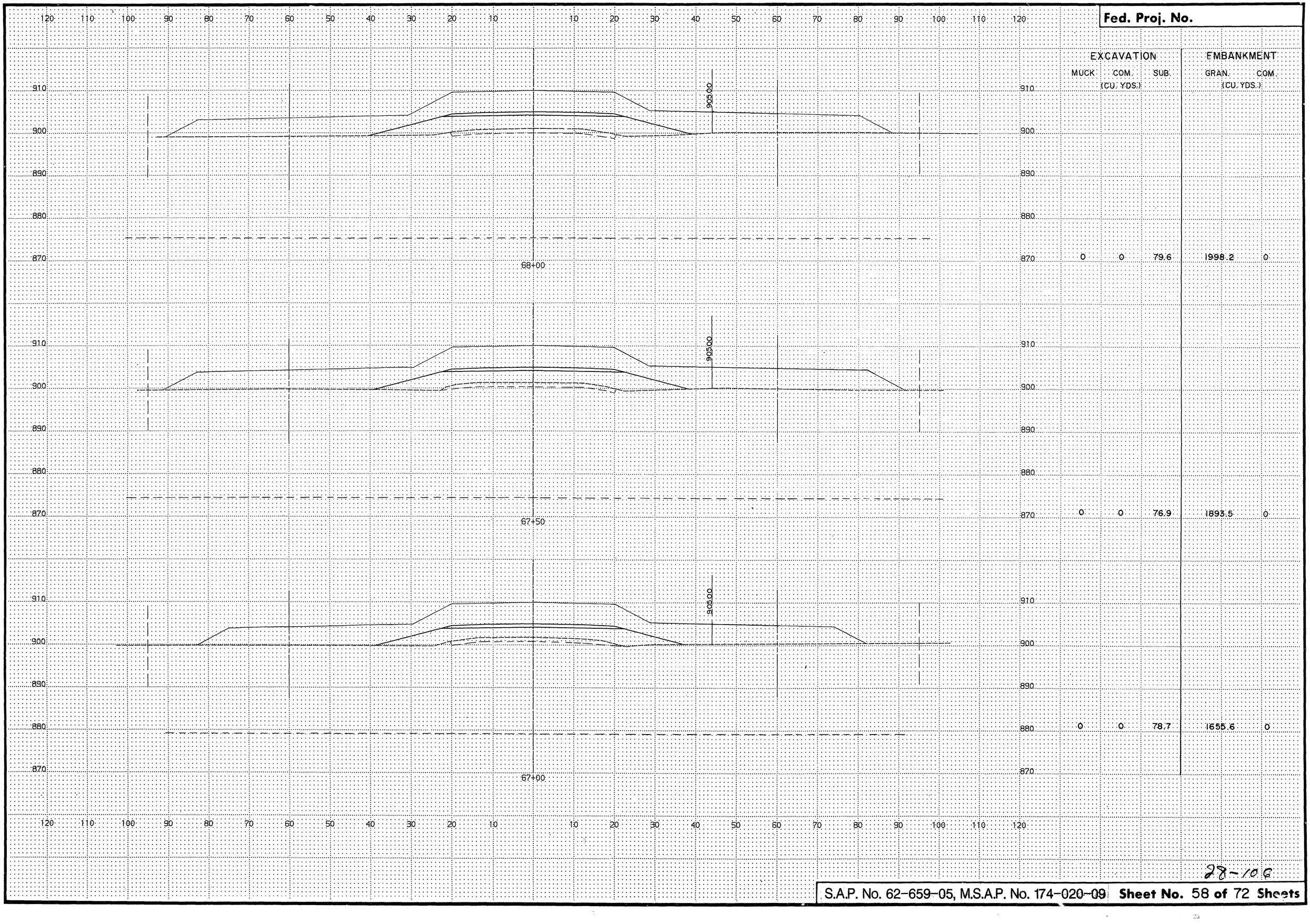

EXCAVATION			EMBANKMENT	
MUCK (CU. YDS.)	COM. (CU. YDS.)	SUB.	GRAN. (CU. YDS.)	COM.
0	0	79.6	1998.2	0
0	0	76.9	1893.5	0
0	0	78.7	1655.6	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 58 **of** 72 **Sheets**

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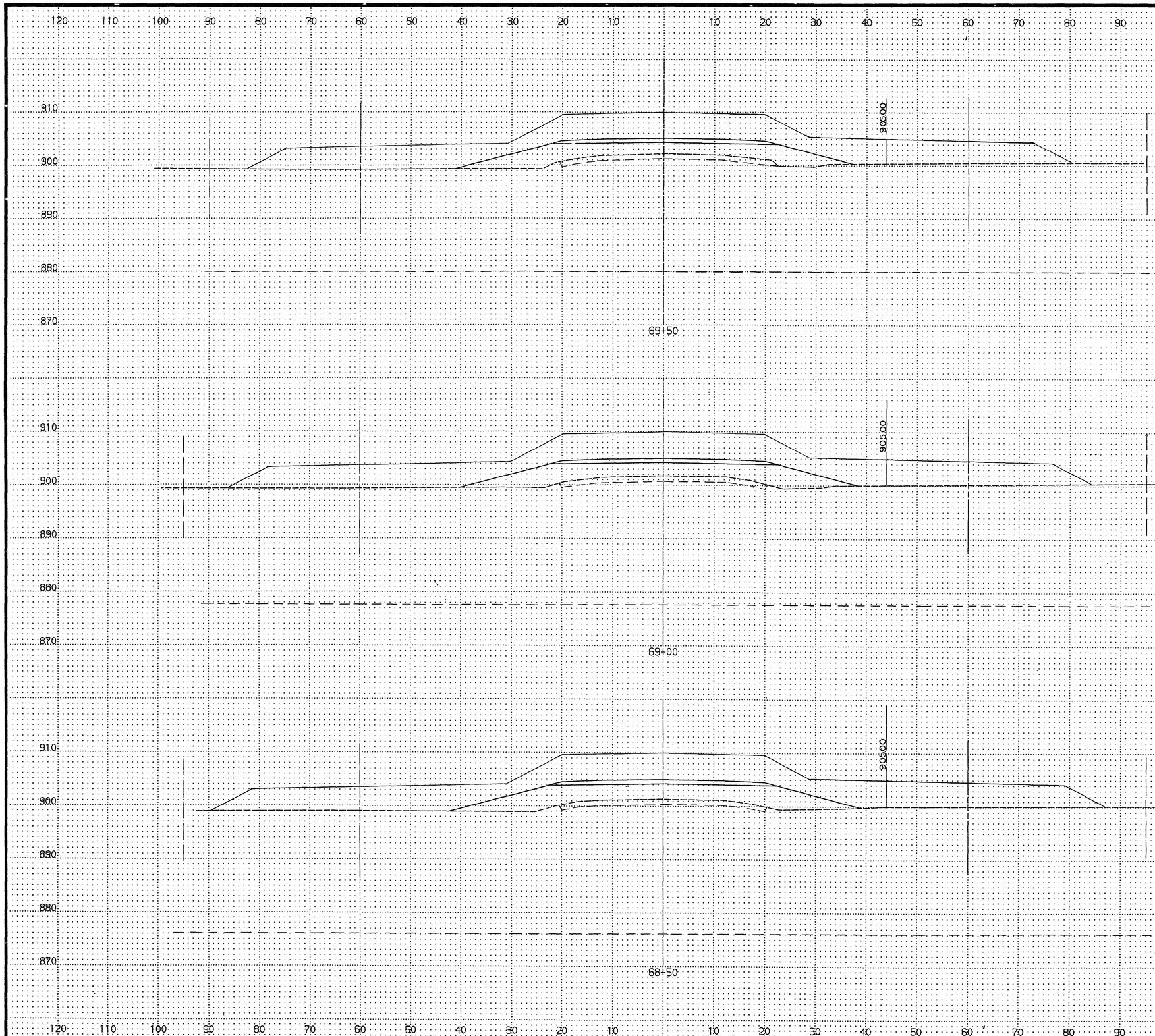

	EXCAVATION			EMBANKMENT	
	MUCK	COM	SUB.	GRAN.	COM.
	(CU. YDS.)			(CU. YDS.)	
69+50	0	0	80.6	1779.6	0
69+00	0	0	78.7	1881.5	0
68+50	0	0	81.5	1949.1	0

28-100

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 59 **of** 72 **Sheets**

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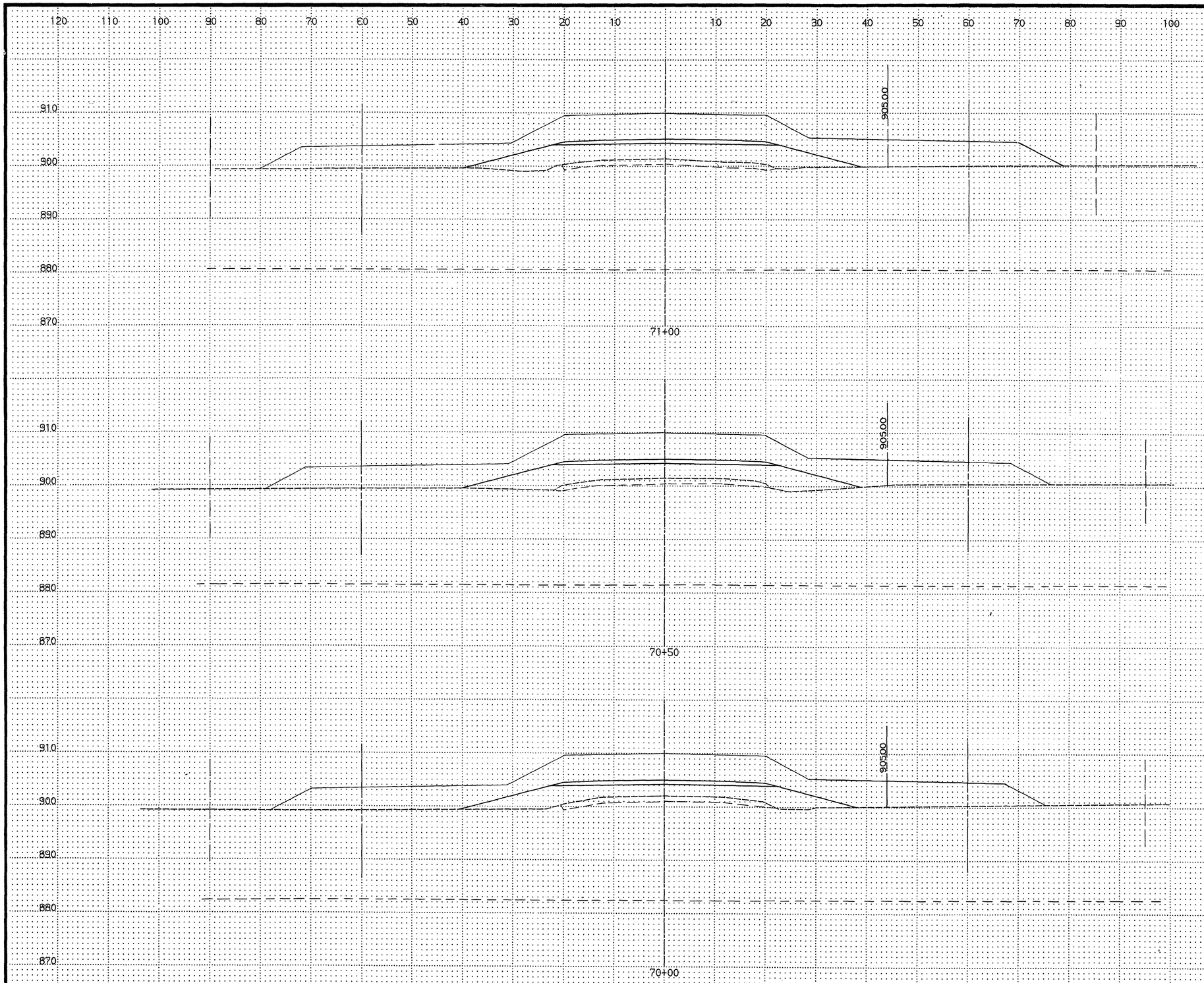

EXCAVATION			EMBANKMENT	
MUCK	COM.	SUB	GRAN	COM
(CU. YDS.)			(CU. YDS.)	
0	0	87.0	1784.3	0
0	0	80.6	1714.8	0
0	0	81.5	1897.2	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 60 **of** 72 **Sheets**

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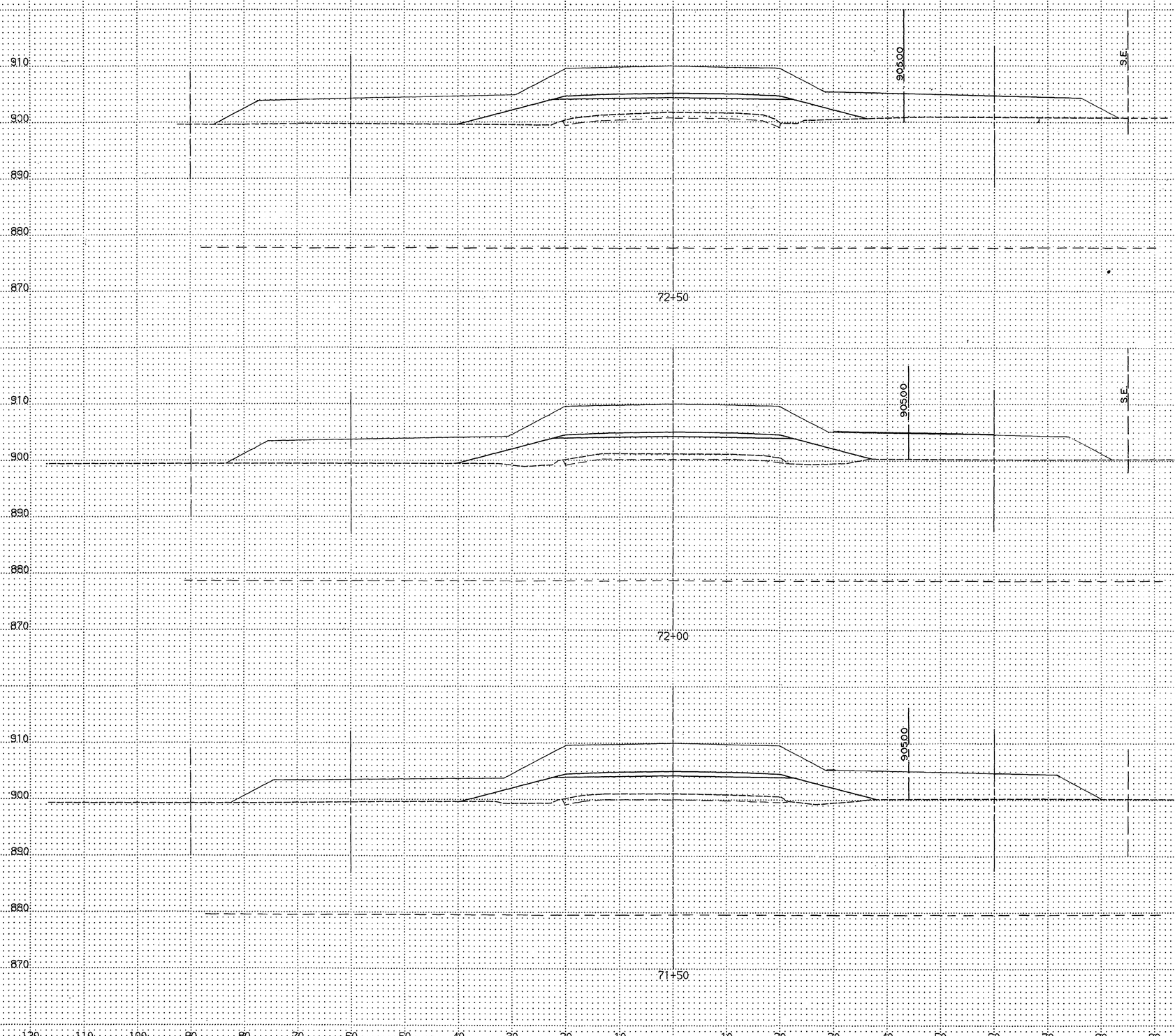

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
72+50	0	0	85.2	1807.4	0
72+00	0	0	89.8	1816.7	0
71+50	0	0	93.5	1818.5	0

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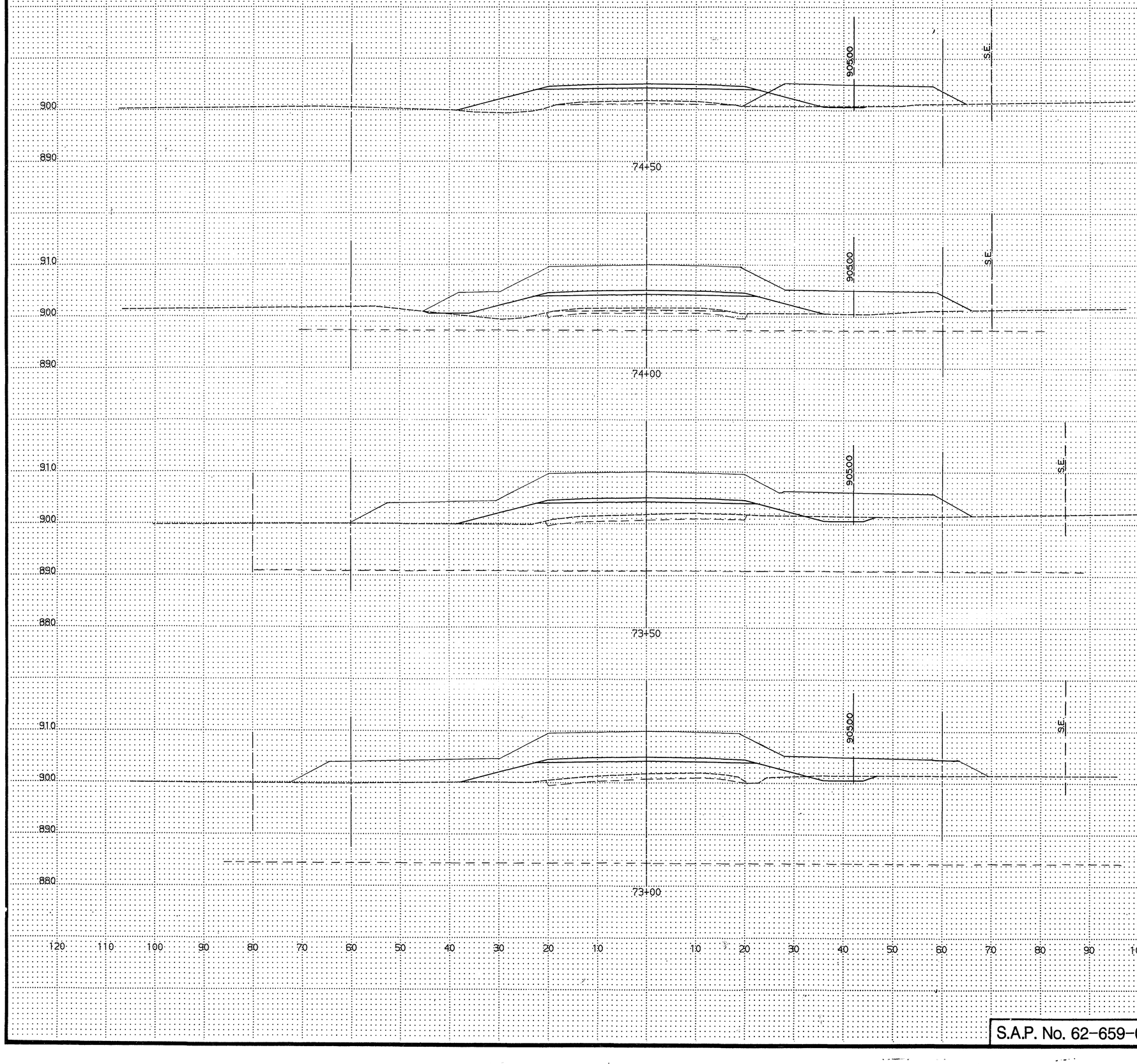

	EXCAVATION			EMBANKMENT	
	MUCK (CU. YDS.)	COM.	SUB.	GRAN. (CU. YDS.)	COM.
74+50	0	0	34.3	785.2	0
74+00	0	0	75.0	1361.1	0
73+50	0	0	70.4	1461.1	0
73+00	0	0	72.2	1649.1	0

28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 62 **of** 72 **Sheets**

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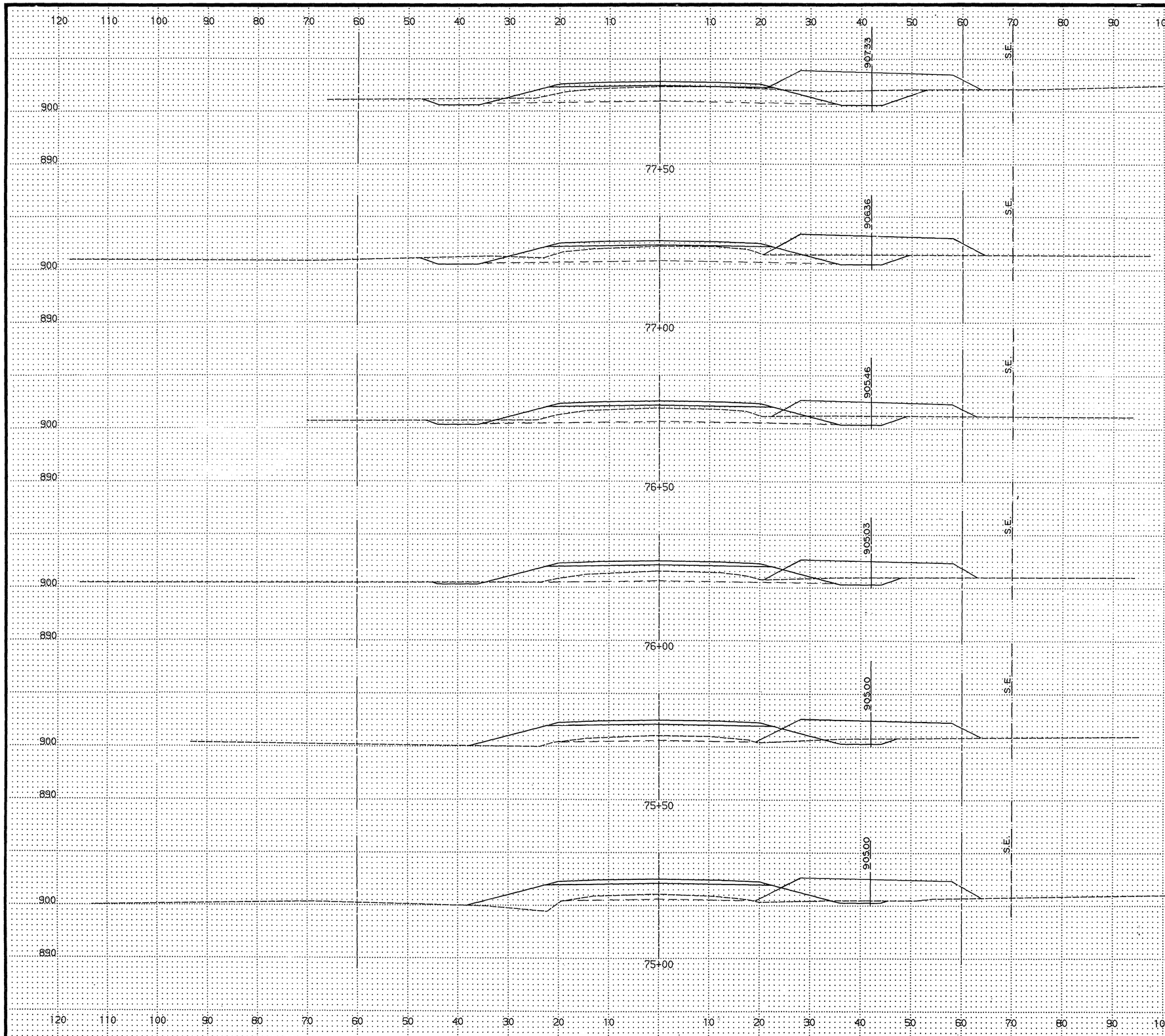

	EXCAVATION			EMBANKMENT
	MUCK	COM.	SUB.	GRAN. COM.
	(CU. YDS.)			(CU. YDS.)
77+50	0	0	0	223.6 0
77+00	0	0	0	208.3 0
76+50	0	0	0	193.5 0
76+00	0	0	0	223.1 0
75+50	0	0	0	258.3 0
75+00	0	0	0	280.6 0

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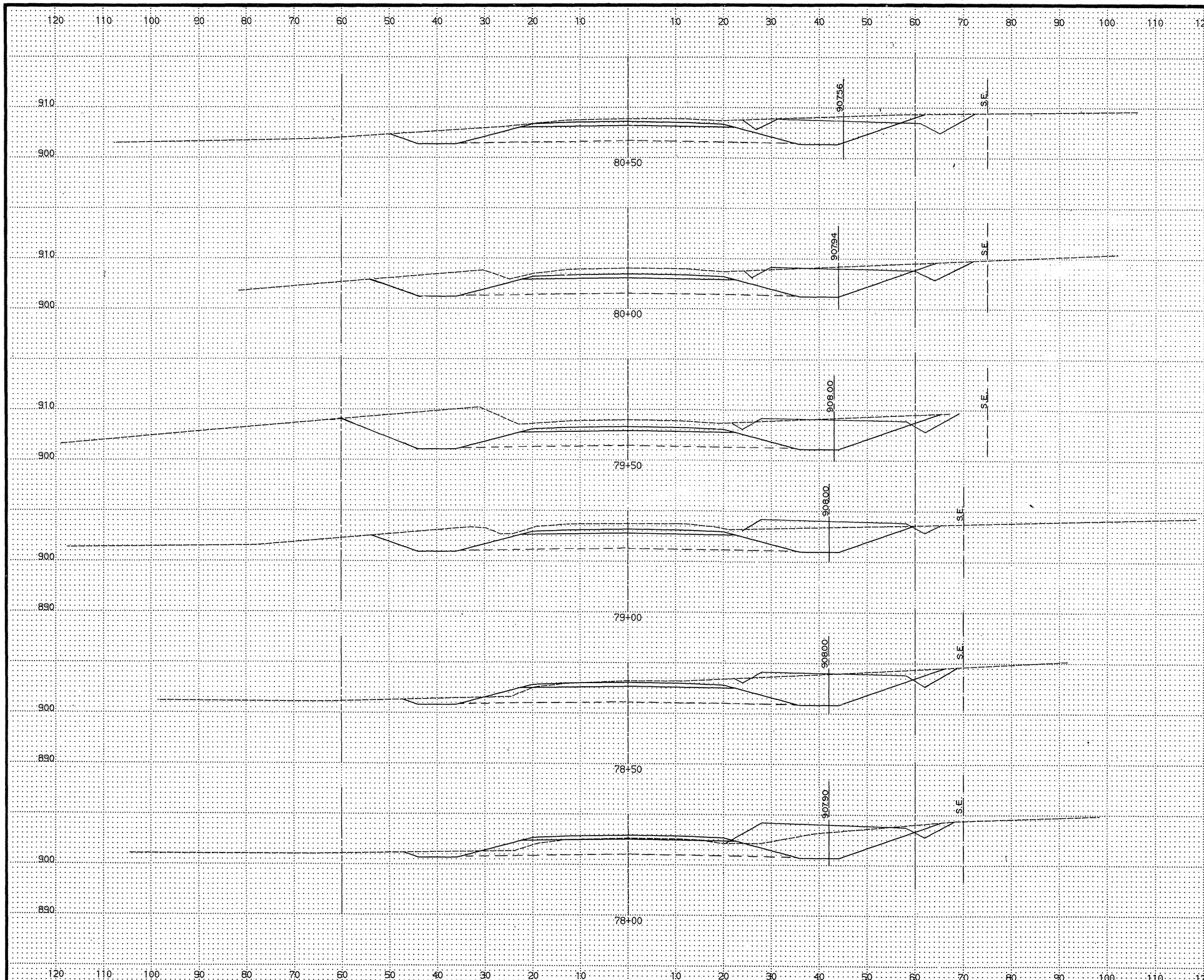

	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN. (CU. YDS.)	COM.
80+50	0	98.1	0	1.9	0
80+00	0	75.0	0	5.6	0
79+50	0	38.9	0	40.7	0
79+00	0	30.6	0	45.4	0
78+50	0	38.9	0	65.7	0
78+00	0	13.0	0	166.7	0

28-106

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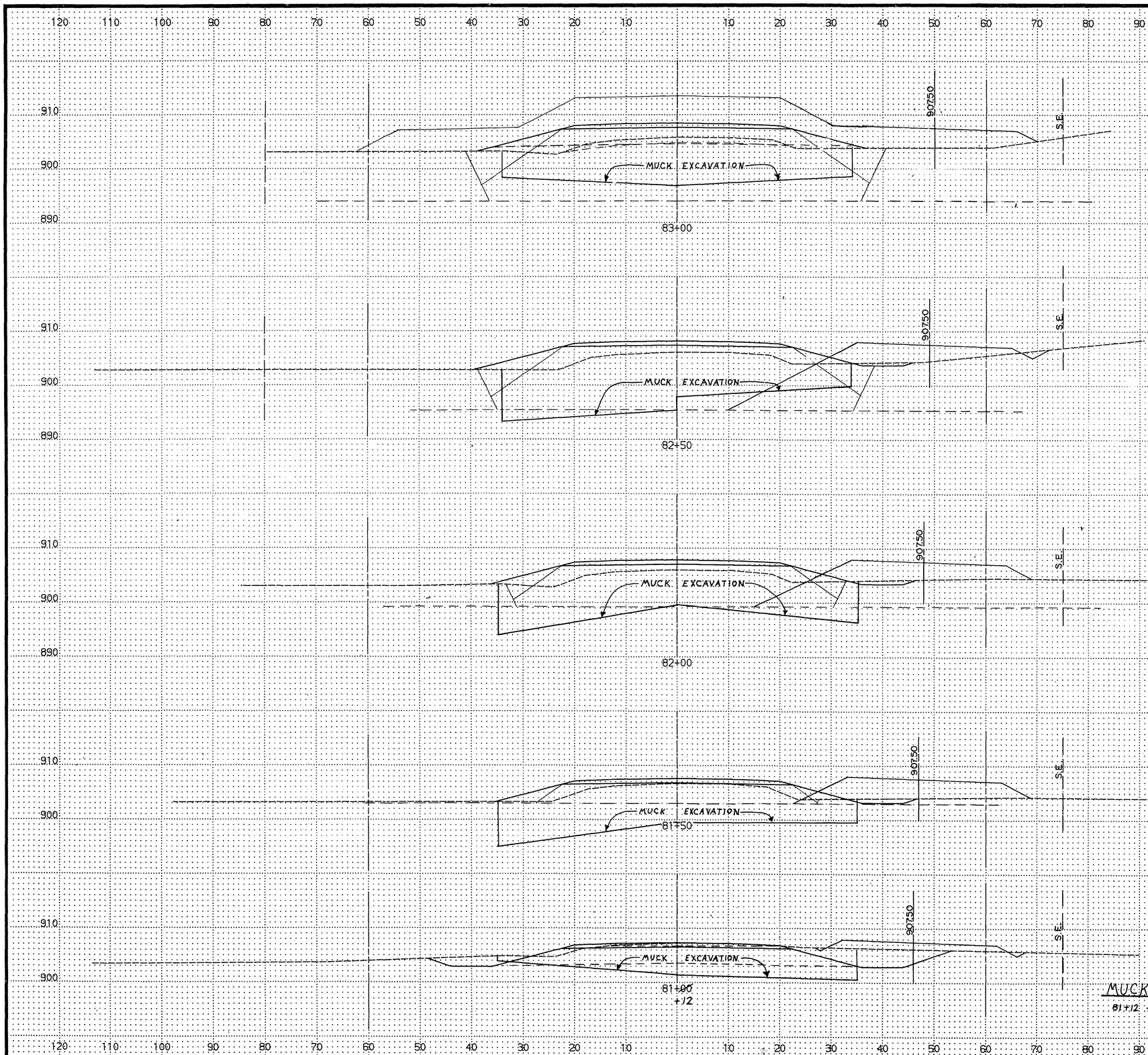

	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN.	COM. (CU. YDS.)
83+00	1216.1	170.0	39.8	1162.6	55.9
82+50	797.4	177.9	0	983.9	28.3
82+00	304.8	194.8	0	574.1	70
81+50	38.9	104.4	0	230.0	0
81+00 +12	0	59.3	0	41.7	0

MUCK EXCAVATION
81+12 to 83+00 ——— 3433 CU. YDS.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY:
DATE:

28-10C

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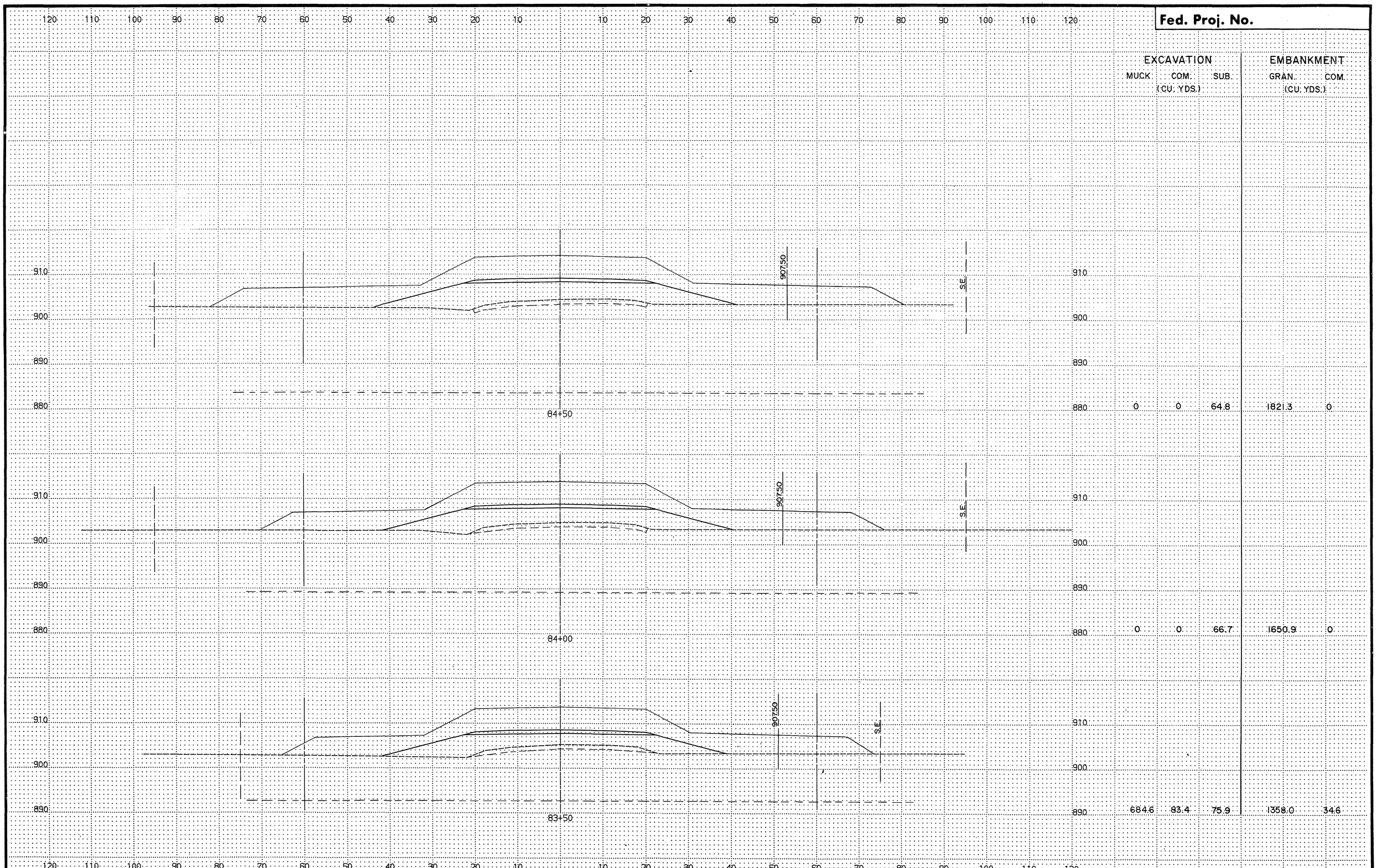

STATION	EXCAVATION MUCK (CU. YDS.)	EXCAVATION COM. (CU. YDS.)	EXCAVATION SUB. (CU. YDS.)	EMBANKMENT GRAN. (CU. YDS.)	EMBANKMENT COM. (CU. YDS.)
84+50	0	0	64.8	182.3	0
84+00	0	0	66.7	1650.9	0
83+50	684.6	83.4	75.9	1358.0	34.6

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 66 **of** 72 **Sheets**

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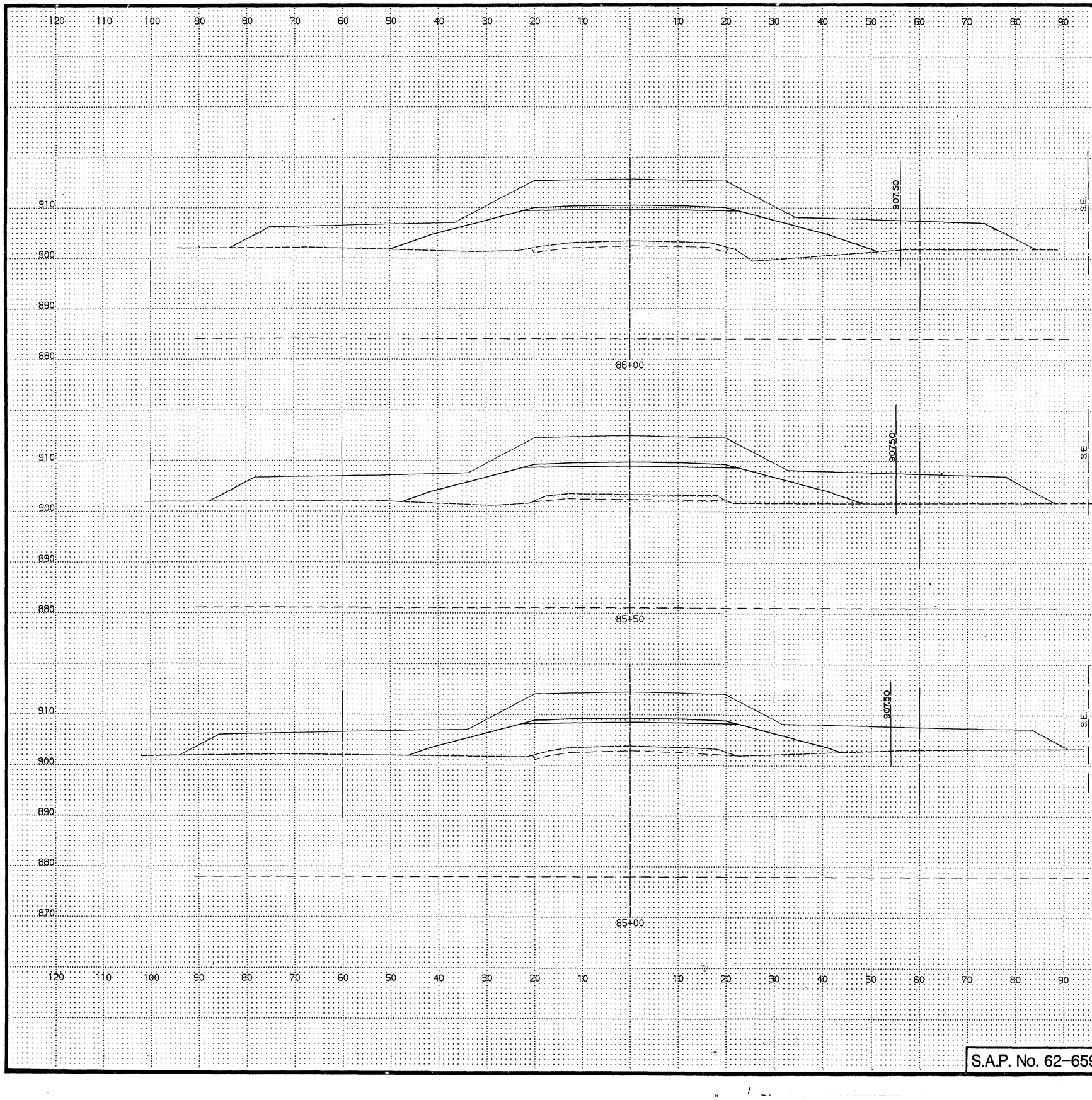

	EXCAVATION			EMBANKMENT	
	MUCK	COM.	SUB.	GRAN.	COM.
	(CU. YDS.)			(CU. YDS.)	
86+00	0	0	86.1	2469.4	0
85+50	0	0	75.0	2369.4	0
85+00	0	0	69.4	2108.3	0

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S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 67 **of** 72 **Sheets**

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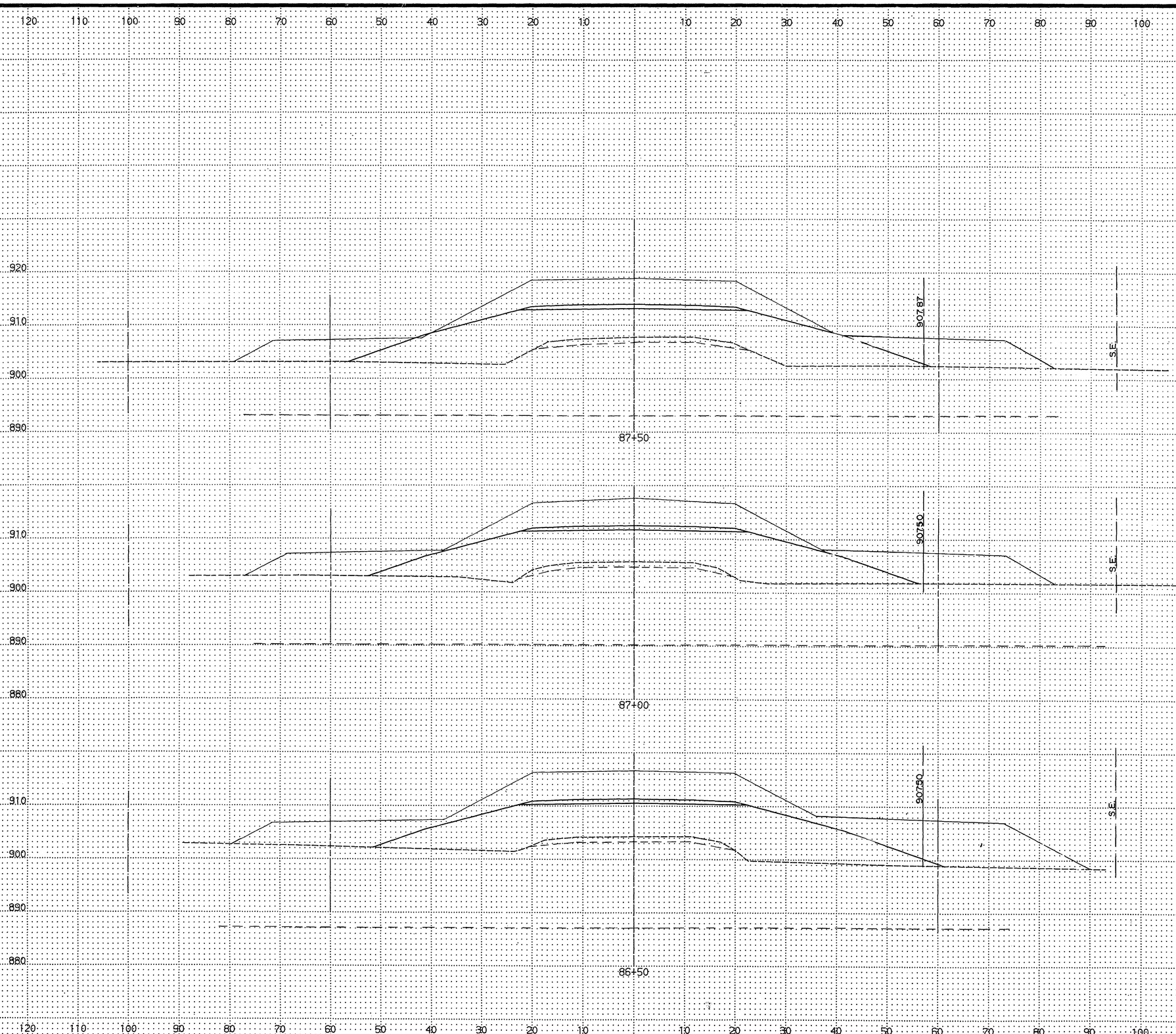

STATION	EXCAVATION MUCK (CU. YDS.)	EXCAVATION COM. (CU. YDS.)	EXCAVATION SUB. (CU. YDS.)	EMBANKMENT GRAN. (CU. YDS.)	EMBANKMENT COM. (CU. YDS.)
87+50	0	0	74.1	2345.4	0
87+00	0	0	64.8	2560.2	0
86+50	0	0	74.1	2625.9	0

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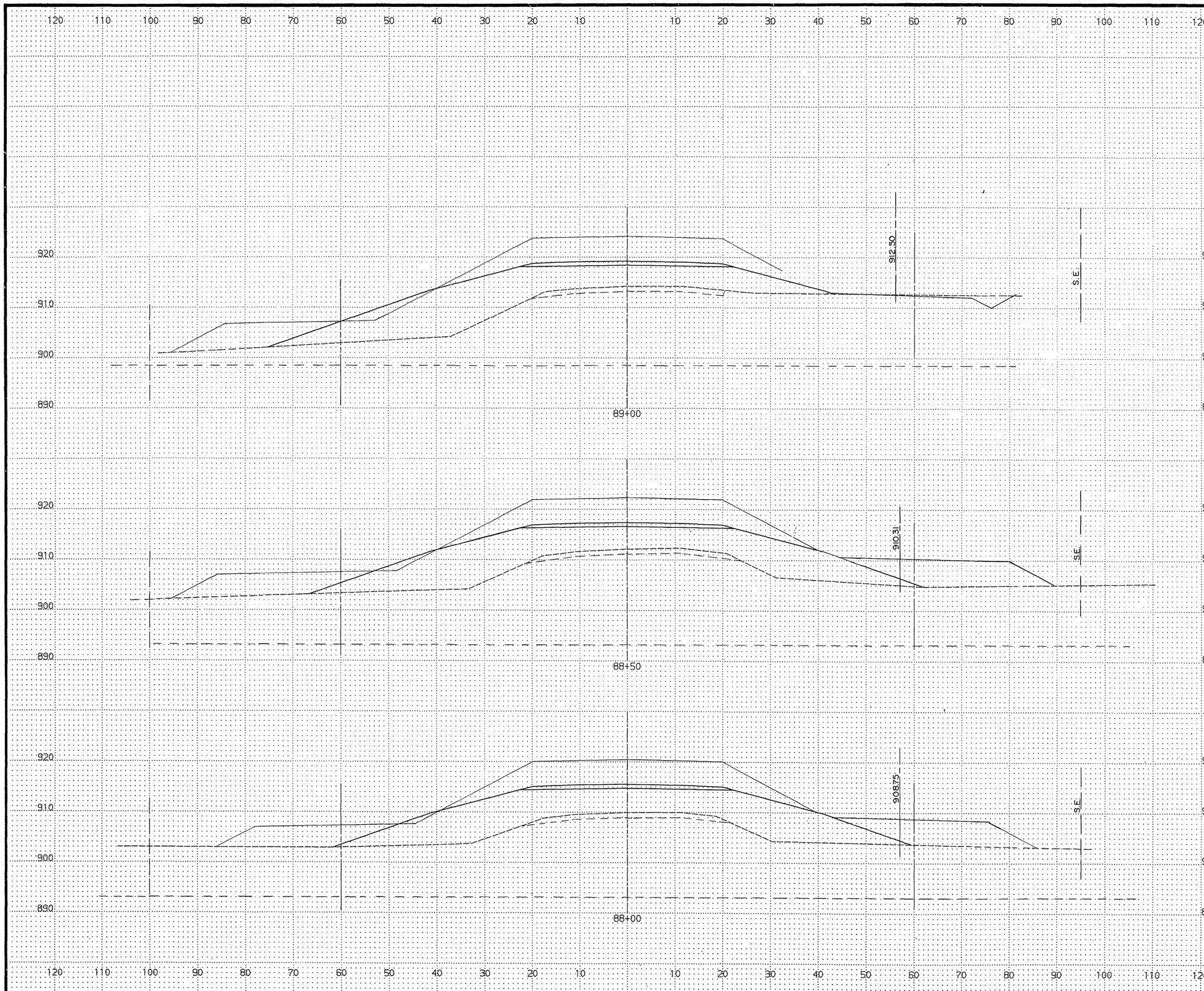


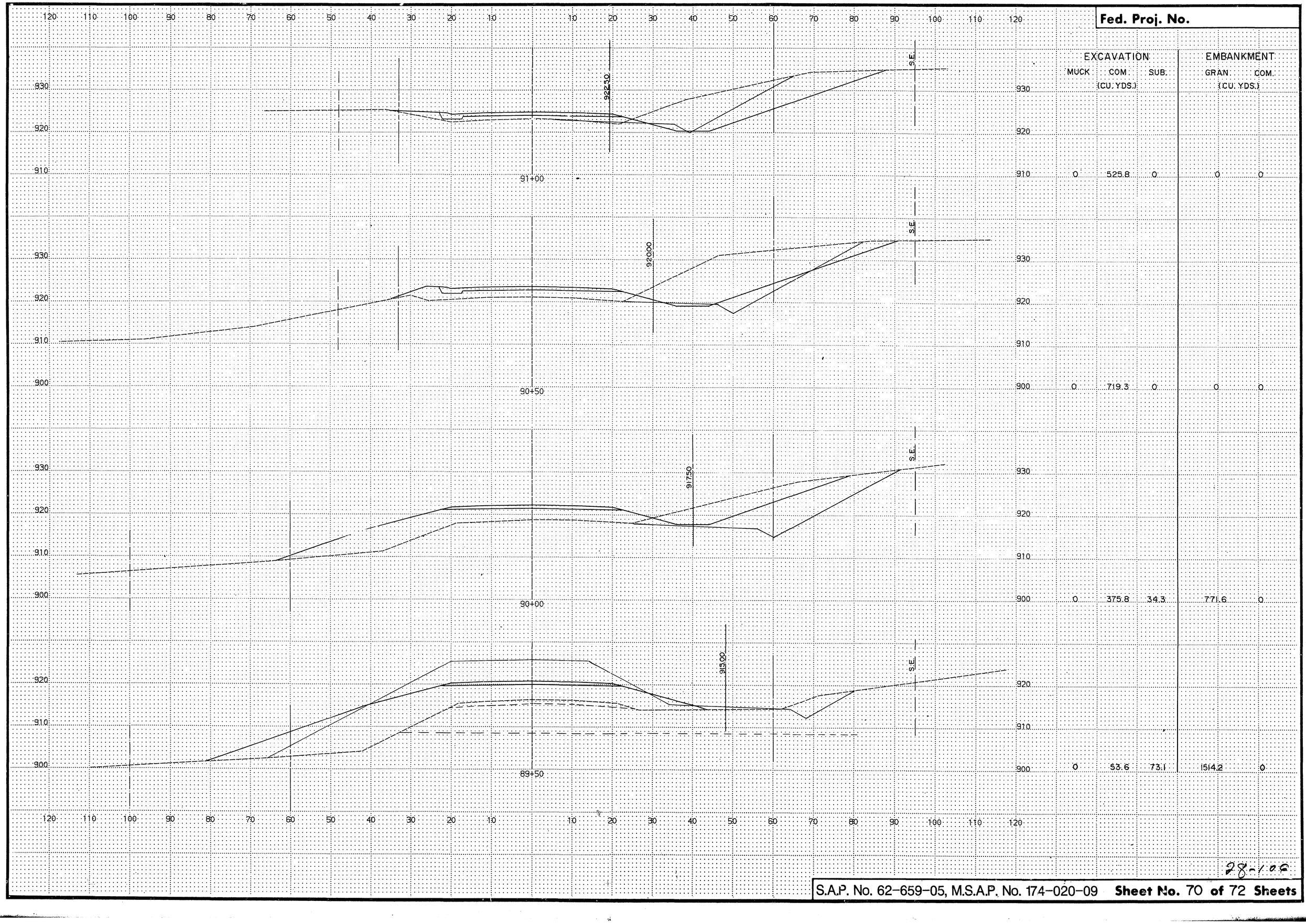
	EXCAVATION			EMBANKMENT	
	MUCK	COM. (CU. YDS.)	SUB.	GRAN.	COM. (CU. YDS.)
89+00	0	17.6	80.6	1983.3	0
88+50	0	0	82.4	2411.1	0
88+00	0	0	77.8	2337.0	0

28-06

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 69 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

Fed. Proj. No.



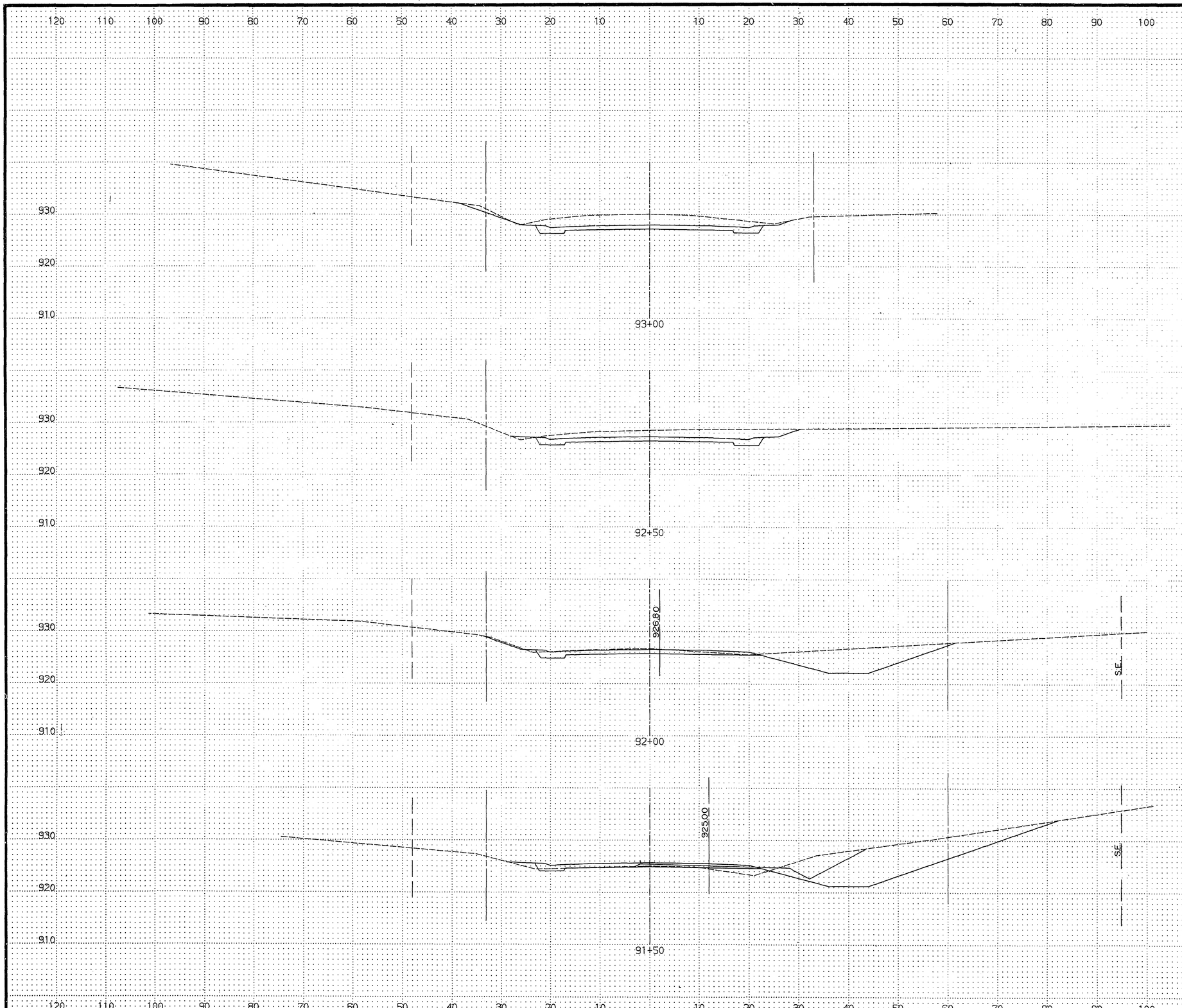
	EXCAVATION			EMBANKMENT	
	MUCK	COM.	SUB.	GRAN.	COM.
	(CU. YDS.)			(CU. YDS.)	
91+00	0	525.8	0	0	0
90+50	0	719.3	0	0	0
90+00	0	375.8	34.3	771.6	0
89+50	0	53.6	73.1	1514.2	0

28-100

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 **Sheet No.** 70 **of** 72 **Sheets**

COPY EQUIPMENT FORM #1

Fed. Proj. No.

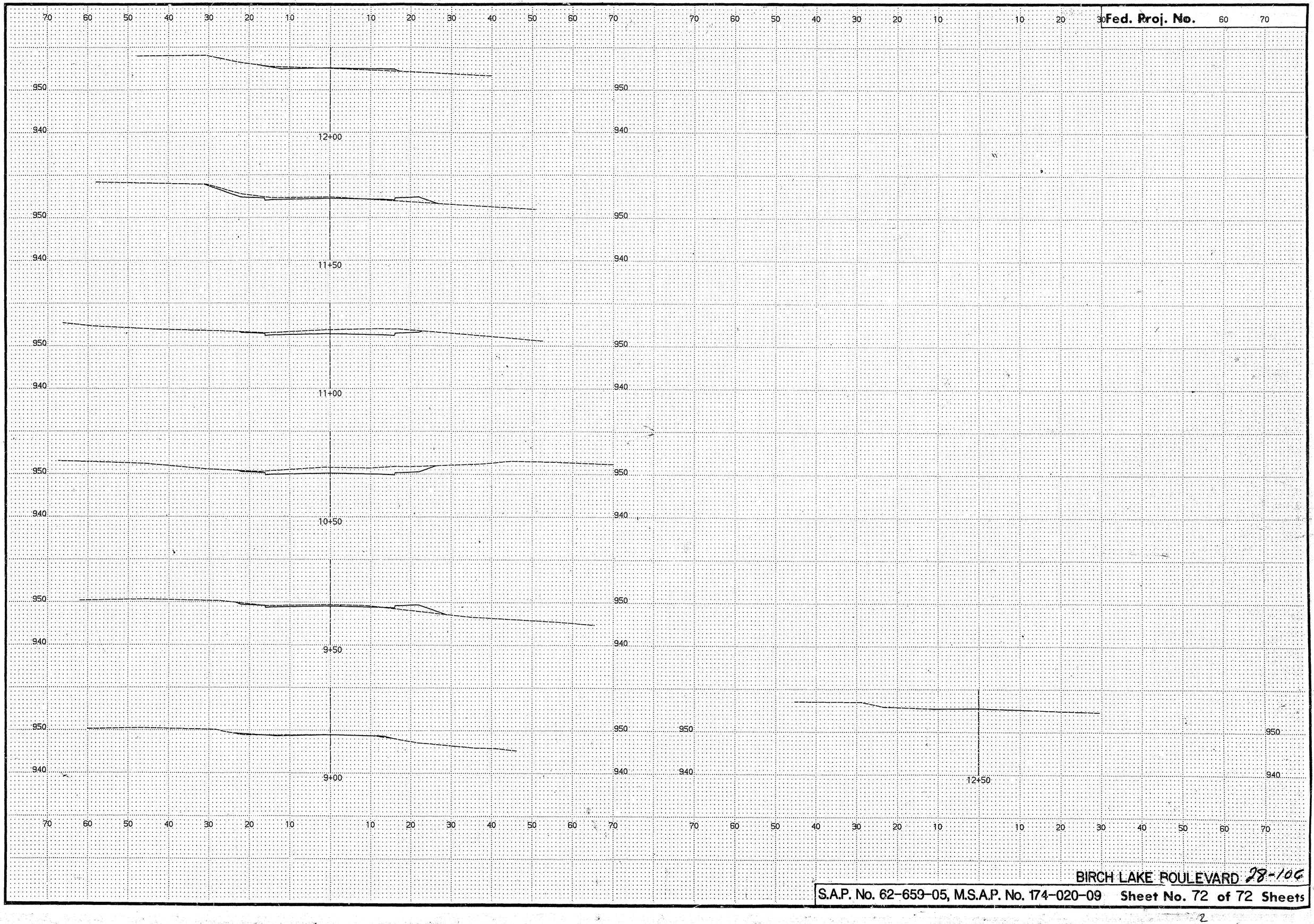


	EXCAVATION			EMBANKMENT	
	MUCK	COM.	SUB.	GRAN.	COM.
				21,780 ①	
930					
920	0	0	0	0	0
910					
930					
920					
910	0	0	0	0	0
930					
920					
910	0	31.5	0	0	0
930					
920					
910	0	177.9	0	0	0

① ADD 21,780 CY FOR ESTIMATED SETTLEMENT IN PRELOAD AREAS.

28-106

Fed. Proj. No.



BIRCH LAKE BOULEVARD 28-106

S.A.P. No. 62-659-05, M.S.A.P. No. 174-020-09 Sheet No. 72 of 72 Sheets

COPY EQUIPMENT FORM #1