

# MINNESOTA DEPARTMENT OF TRANSPORTATION

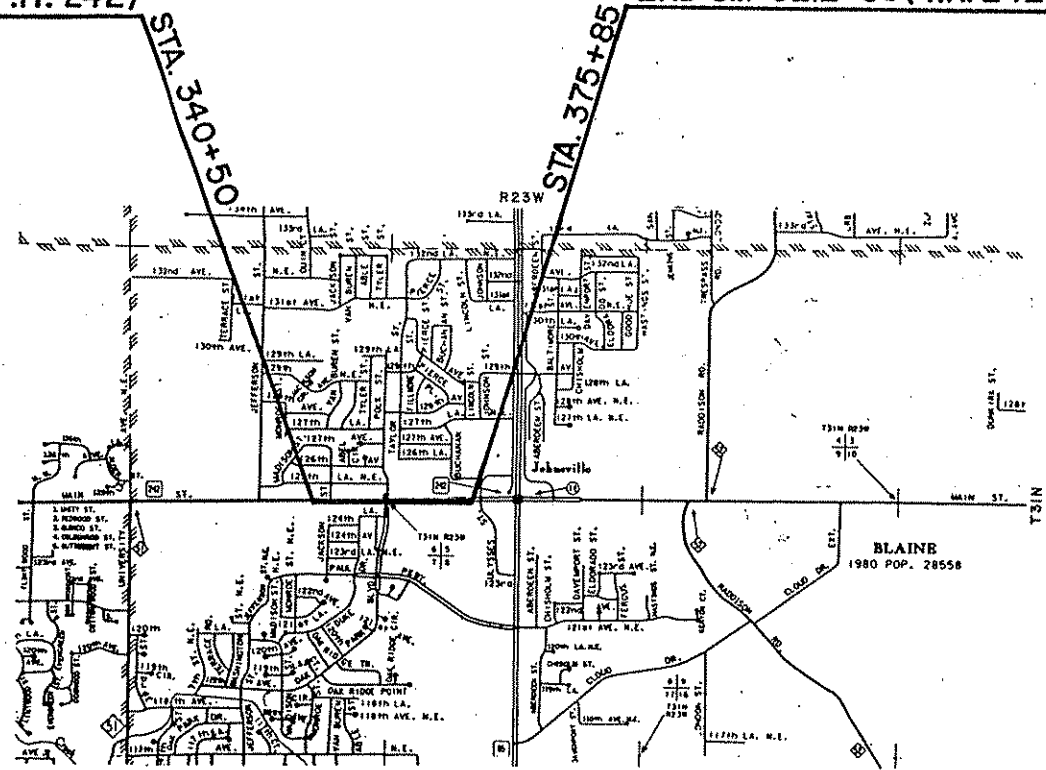
## CONSTRUCTION PLAN FOR GRADING, BASE, BITUMINOUS PAVEMENT, BITUMINOUS OVERLAY CURB & GUTTER, CONCRETE MEDIAN, STORM SEWER AND TRAFFIC SIGNALS

LOCATED ON T.H. 242 FROM 0.09 MILE WEST OF JACKSON TO 0.15 MILE WEST OF T.H. 65

STATE PROJ. NO. 0212-33  
 MINN. PROJ. NO. \_\_\_\_\_  
 GROSS LENGTH 3535 FEET 0.670 MILES  
 BRIDGES-LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 EXCEPTIONS-LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 NET LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 MILE POINT \_\_\_\_\_ TO MILE POINT \_\_\_\_\_

STATE PROJ. NO. \_\_\_\_\_  
 MINN. PROJ. NO. \_\_\_\_\_  
 GROSS LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 BRIDGES-LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 EXCEPTIONS-LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 NET LENGTH \_\_\_\_\_ FEET \_\_\_\_\_ MILES  
 MILE POINT \_\_\_\_\_ TO MILE POINT \_\_\_\_\_

BEGIN S.P. 0212-33 (T.H. 242) END S.P. 0212-33 (T.H. 242)



FED. PROJ. NO. \_\_\_\_\_ STATE FUNDS \_\_\_\_\_

### GOVERNING SPECIFICATIONS

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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NOTE: SHEETS 23A & 23B HAVE BEEN ADDED TO THE PLAN SET FOR A TOTAL OF 50 SHEETS.

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 3-21-88 REG. NO. 12007 ENGR. Howard O. Ruston

DESIGN SQUAD CHARLES RICH

Right of Way Approval [Signature] 5-5 1988  
 DIRECTOR, OFFICE OF RIGHT OF WAY & SURVEYS

Recommended for Approval [Signature] 4/13 1988  
 DIRECTOR, OFFICE OF TRAFFIC ENGINEERING

Recommended for Approval [Signature] 3/2 1988  
 DISTRICT ENGINEER

Recommended for Approval [Signature] 5-7 1988  
 W.M. FOR DESIGN SERVICES DIRECTOR

Recommended for Approval [Signature] 5-5 1988  
 DIRECTOR, OFFICE OF TECHNICAL SUPPORT

Approved 5-5-1988 [Signature]  
 DEPUTY DIVISION DIRECTOR TECHNICAL SERVICES DIVISION

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 APPROVED  
 DIVISION ADMINISTRATOR \_\_\_\_\_ DATE \_\_\_\_\_

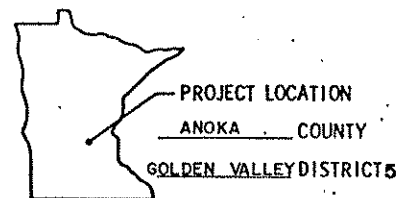
I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE \_\_\_\_\_ REG. NO. \_\_\_\_\_

SCALES  
 PLAN 50'  
 PROFILE 50'  
 INDEX MAP 1000'  
 GENERAL LAYOUT 200'

### DESIGN DESIGNATION

ADT (Current Year) 1986 = 13,600 VPD Design Speed 60 MPH  
 ADT (Future Year) 2005 = 35,000 VPD Based on STOPPING Sight Distance  
 DHV (Design Hr. Vol.) 10% = 3,500 VPH Height of eye 3.5' Height of object 0.5'  
 D (Directional Distr.) = 60 % Design Speed not achieved at: \_\_\_\_\_  
 T (Heavy Commercial) = 6 % STA. \_\_\_\_\_ TO STA. \_\_\_\_\_ MPH  
 STA. \_\_\_\_\_ TO STA. \_\_\_\_\_ MPH

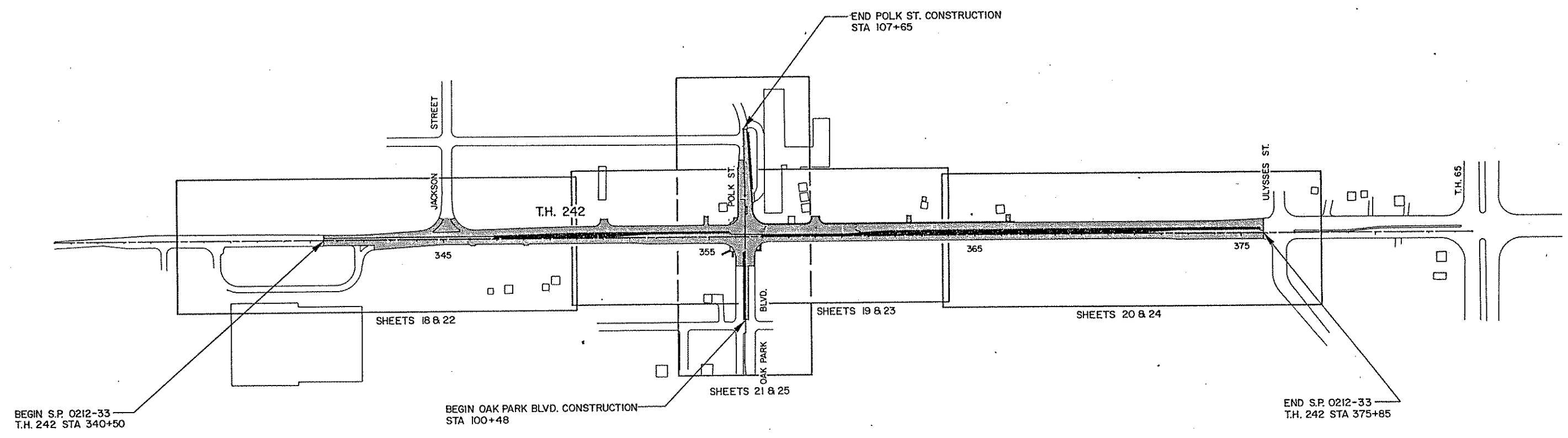
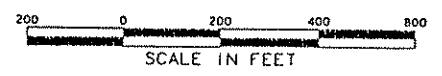


FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. 0212-33 AREA 5.2 JOB 211

STATE PROJ. NO. SP 0212-33 (T.H. 242 = 242) SHEET NO. 1 OF 48 SHEETS

DR 9/2/88 5-6-88



GENERAL LAYOUT

STATEMENT OF ESTIMATED QUANTITIES

CHART NO. SEE SHT. 8	ITEM NO.	ITEM	NOTE NO.	UNIT	STATE PARTICIPATION						CITY OF BLAINE PARTICIPATION						TOTAL	
					GRADING, SURFACING & MISCELLANEOUS		STORM SEWER				GRADING, SURFACING & MISCELLANEOUS		STORM SEWER				QUANTITIES	
					EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	2021.501	MOBILIZATION		LUMP SUM													1	
	2031.501	FIELD OFFICE TYPE D		EACH	1												1	
	2051.501	MAINT. & RESTORATION OF HAUL ROADS		LUMP SUM													1	
	2101.502	CLEARING	①	TREE	12							33					45	
	2101.507	GRUBBING	①	TREE	12							33					45	
2	2104.501	REMOVE PIPE CULVERTS		LIN. FT.	222												222	
2	2104.501	REMOVE SEWER PIPE (STORM)		LIN. FT.	95												95	
2	2104.501	REMOVE CURB AND GUTTER		LIN. FT.	271							549					820	
2	2104.505	REMOVE CONCRETE WALK		SQ. YD.	437												437	
2	2104.505	REMOVE BITUMINOUS WALK		SQ. YD.	46												46	
3	2104.505	REMOVE BITUMINOUS PAVEMENT		SQ. YD.	7504							1147					8651	
	2104.509	REMOVE MISCELLANEOUS STRUCTURES	②	EACH	1												1	
2	2104.509	REMOVE CATCH BASINS		EACH	2												2	
	2104.509	REMOVE IRON POSTS	③	EACH	3												3	
1	2104.513	SAWING BITUMINOUS PAVEMENT		LIN. FT.	4553							1220					5773	
2	2104.523	SALVAGE CASTINGS		EACH	2												2	
	2104.523	SALVAGE LIGHTING UNIT	④	EACH	3												3	
	2105.501	COMMON EXCAVATION (P)		CU. YD.	3583												3583	
	2105.507	SUBGRADE EXCAVATION (P)		CU. YD.	4467							1488					5955	
	2105.521	GRANULAR BORROW (LV)		CU. YD.	942												942	
	2105.522	SELECT GRANULAR BORROW (LV)		CU. YD.	4109												4109	
	2105.523	COMMON BORROW (LV)		CU. YD.	1420												1420	
	2130.501	WATER	⑤	M. GAL.	50												50	
7	2211.503	AGGREGATE BASE PLACED CLASS 5 (P)		CU. YD.	1396							334					1730	
	2231.501	BITUMINOUS PATCHING MIXTURE	⑥	TON	10												10	
7	2331.504	BITUMINOUS MATERIAL FOR MIXTURE		TON	222							18					240	
7	2331.510	BINDER COURSE MIXTURE (MODIFIED)		TON	968							164					1132	
7	2331.512	LEVELING COURSE MIXTURE (MODIFIED)		TON	1381												1381	
7	2331.514	BASE COURSE MIXTURE (MODIFIED)		TON	2415							218					2633	
7	2341.504	BITUMINOUS MATERIAL FOR MIXTURE		TON	77							7					84	
7	2341.508	WEARING COURSE MIXTURE (MODIFIED)		TON	29							113					142	
7	2341.516	SHOULDER MIXTURE (MODIFIED)		TON	1230												1230	
7	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	⑦	GALLON	2854							188					3042	
7	2361.504	ASPHALT CEMENT		TON	53.4												53.4	
7	2361.508	WEARING COURSE MIXTURE		TON	783												783	
4	2501.511	24" CM PIPE CULVERT		LIN. FT.				35									35	
4	2501.515	24" G.S. PIPE APRONS		EACH				2									2	
4	2501.515	15" RC PIPE APRONS		EACH				3									3	
4	2501.515	18" RC PIPE APRONS		EACH													1	
4	2503.511	15" RC PIPE SEWER		LIN. FT.				874								49	923	
4	2503.511	15" RC PIPE CLASS V		LIN. FT.												62	62	
4	2503.511	18" RC PIPE SEWER		LIN. FT.												23	23	

NOTES:

- ① CONSISTS OF CLEARING AND GRUBBING APPROXIMATELY 44 TREES FROM 4 INCHES TO 24 INCHES IN DIAMETER AND ONE 36 INCH DIAMETER TREE.
- ② CONSISTS OF A CONCRETE BLOCK RETAINING WALL, TWO BLOCKS IN HEIGHT BY APPROXIMATELY 76 FEET IN LENGTH. REFER TO SHEET NO.25 FOR LOCATION.
- ③ CONSISTS OF THREE CONCRETE FILLED 8" D.I.P. . REFER TO SHEET NO.25 FOR LOCATION.
- ④ REFER TO SHEET NO.24 FOR LOCATION- SALVAGED LIGHTING UNITS SHALL BE DELIVERED TO THE CITY OF BLAINE MUNICIPAL GARAGE, 101ST. STREET N.E., BLAINE MINNESOTA.
- ⑤ FOR DUST CONTROL WITHIN THE PROJECT LIMITS.
- ⑥ FOR USE AT THE DIRECTION OF THE ENGINEER TO PATCH DETERIORATED AREAS OF PAVEMENT PRIOR TO PLACING THE BITUMINOUS OVERLAY AND FOR TEMPORARY BYPASS CONSTRUCTION IN THE AREA OF JACKSON STREET.
- ⑦ INCLUDES 757 GALLONS FOR MULCH. REFER TO TURF ESTABLISHMENT NOTES SHEET NO. 6.

ESTIMATED QUANTITIES

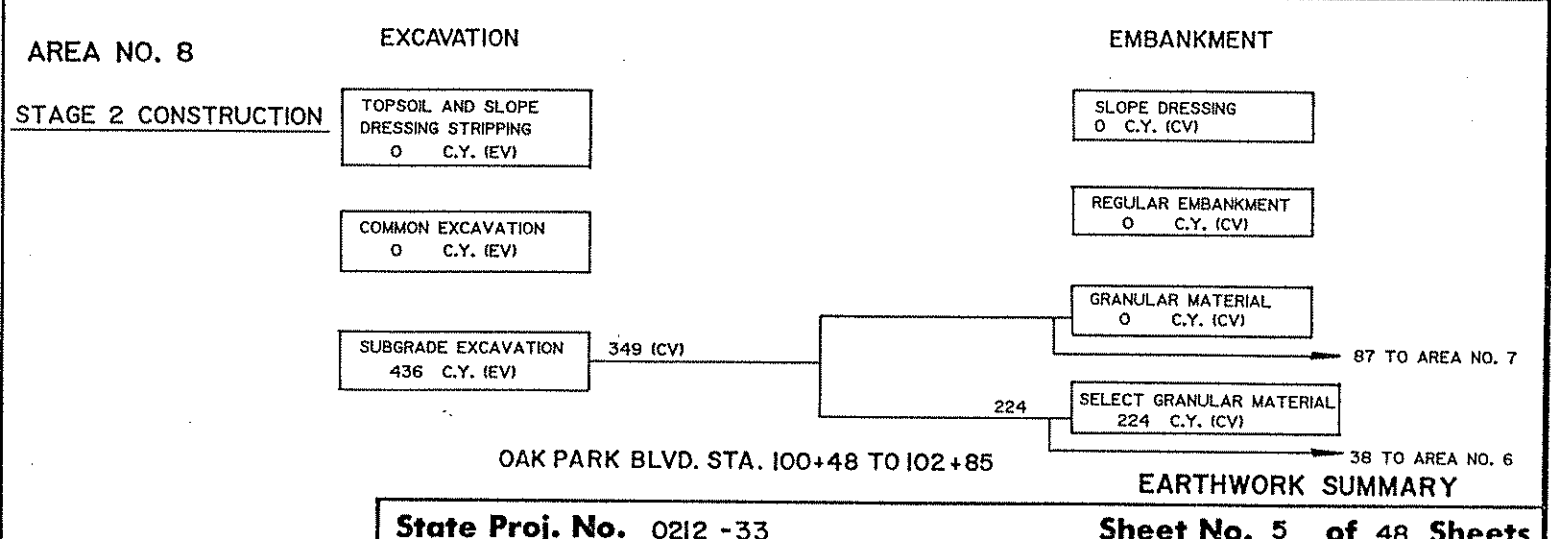
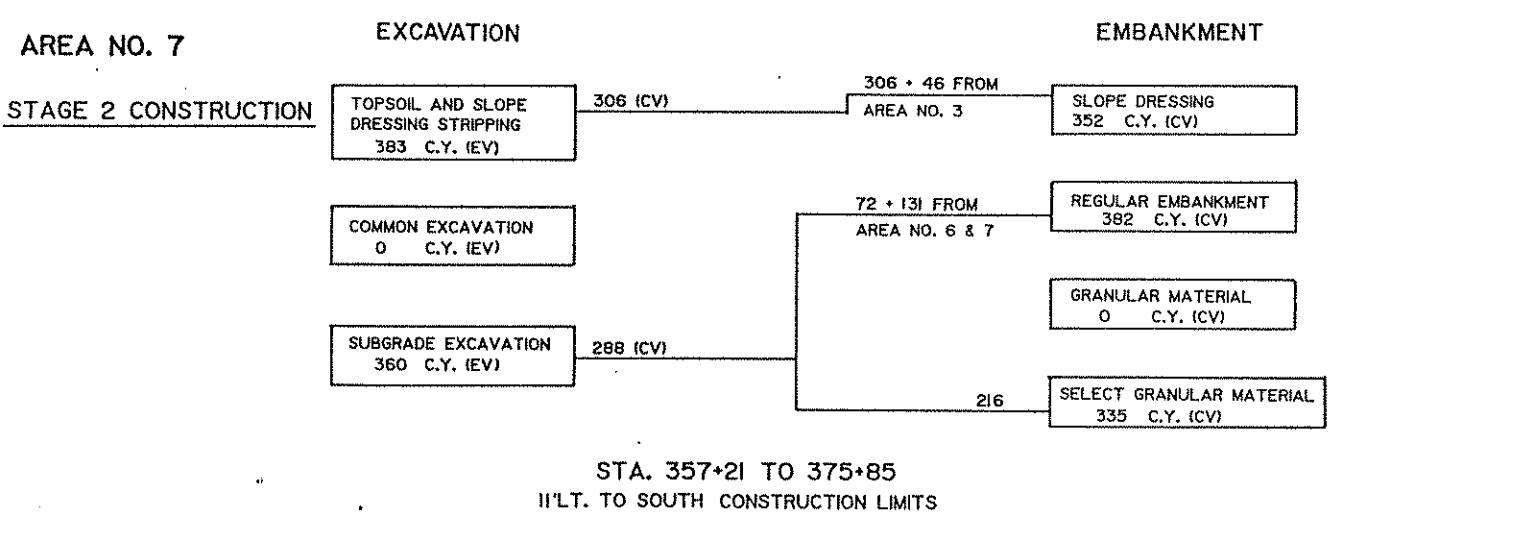
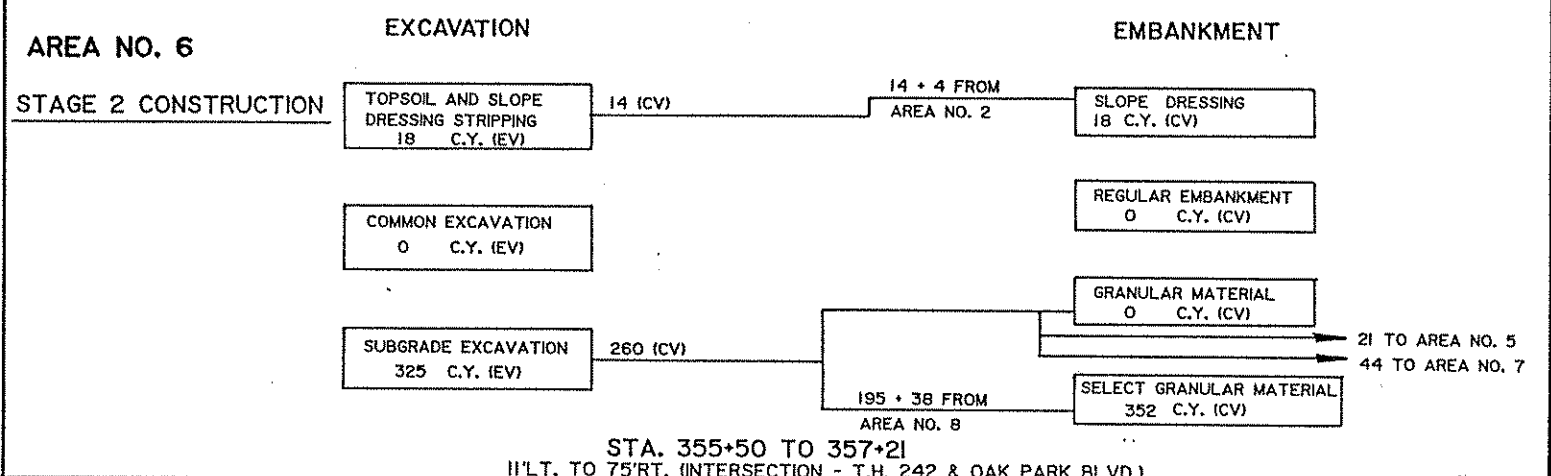
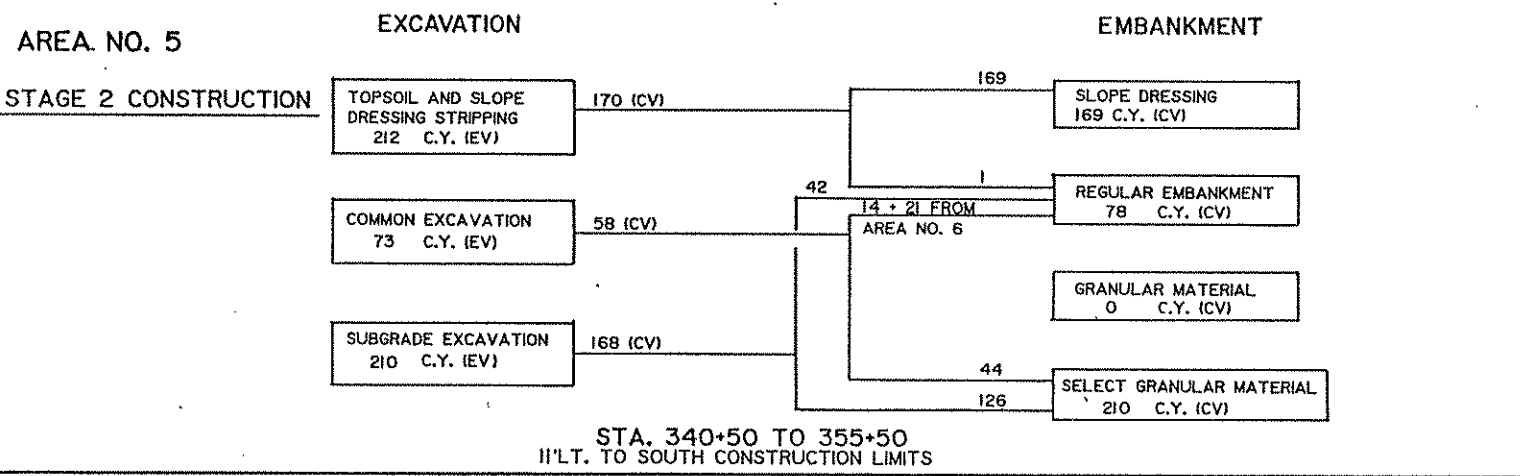
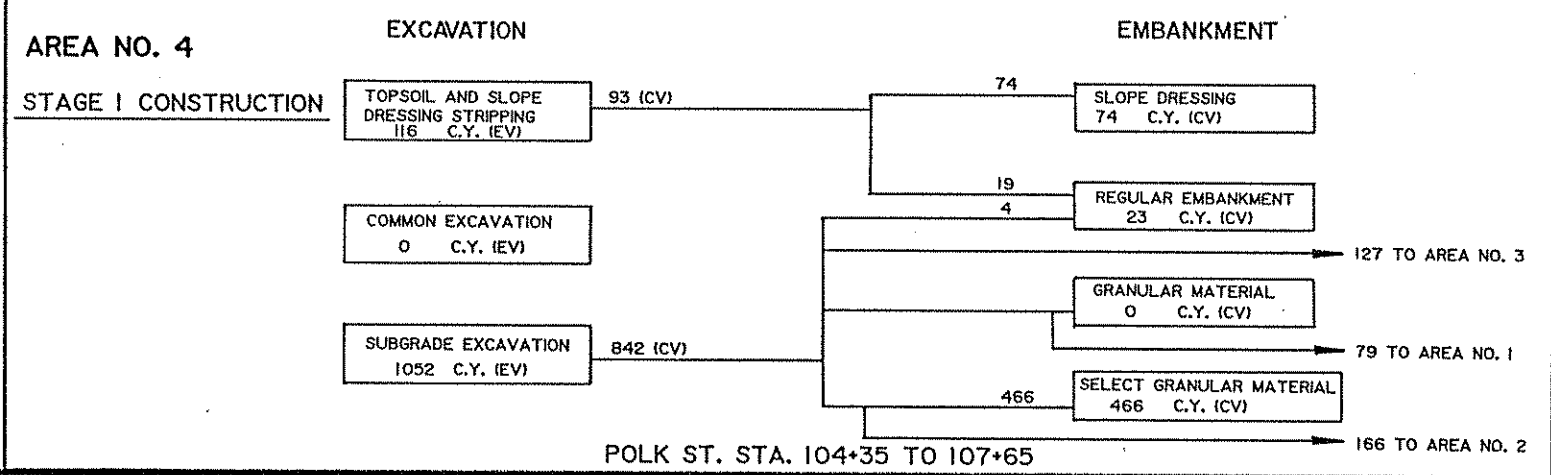
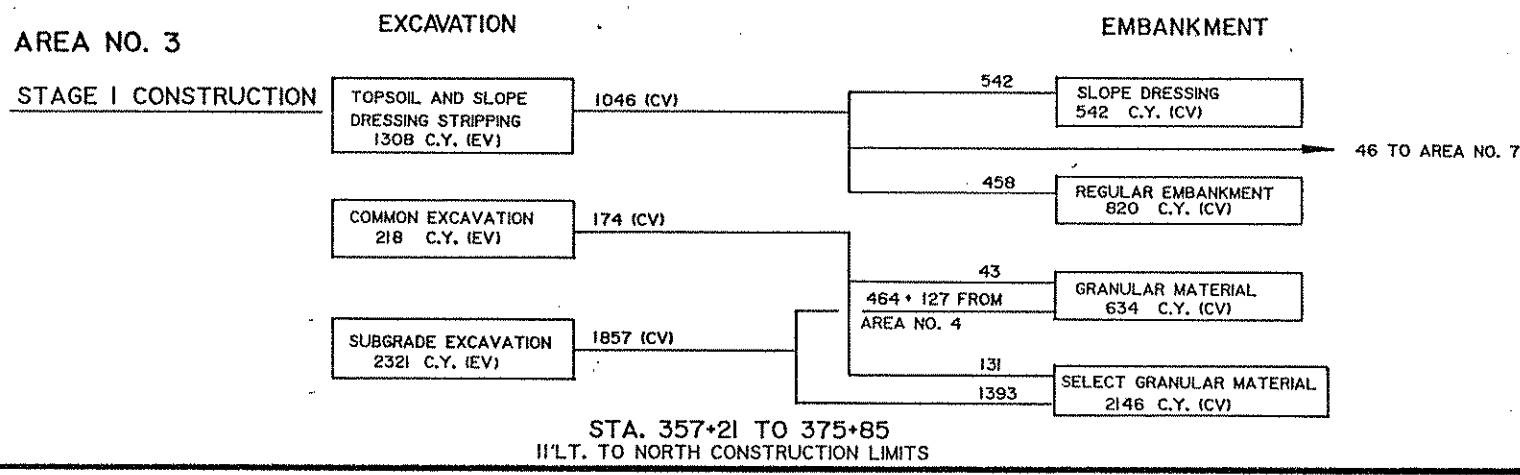
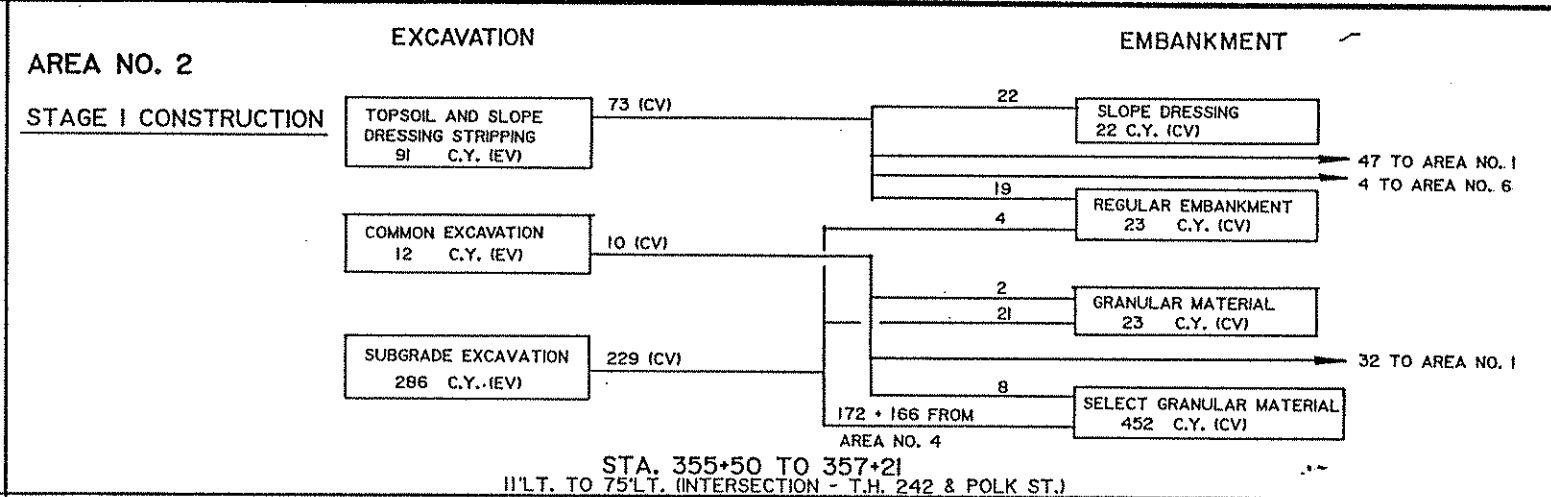
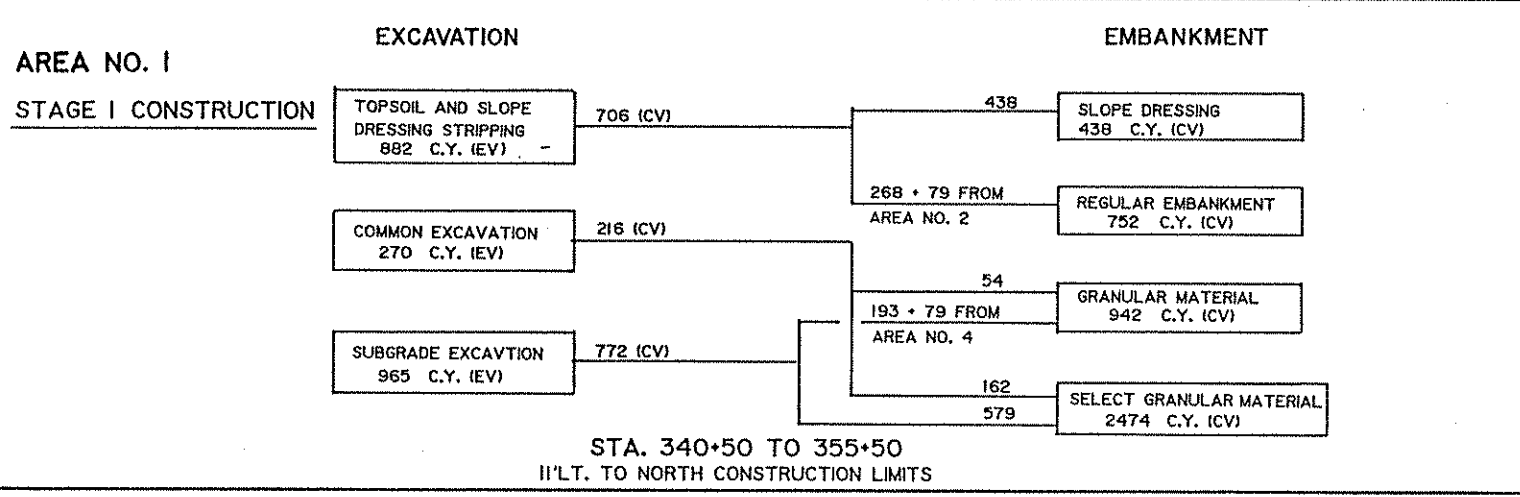
STATEMENT OF ESTIMATED QUANTITIES

CHART NO. SEE SHT. 8	ITEM NO.	ITEM	NOTE NO.	UNIT	STATE PARTICIPATION				CITY OF BLAINE PARTICIPATION				TOTAL				
					GRADING, SURFACING & MISCELLANEOUS		STORM SEWER		GRADING, SURFACING & MISCELLANEOUS		STORM SEWER		QUANTITIES		QUANTITIES		
					QUANTITIES		QUANTITIES		QUANTITIES		QUANTITIES		QUANTITIES		QUANTITIES		
					EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	
	0504.602	RELOCATE HYDRANT	(10)	EACH							1					1	
7	2506.507	CONSTRUCT CATCH BASIN DESIGN C OR G		LIN. FT.			27.3						6.9			34.2	
10	2506.511	RECONSTRUCT MANHOLES		LIN. FT.	14											14	
7,6	2506.516	CASTING ASSEMBLIES		EACH			8									8	
7	2506.521	INSTALL CASTINGS		EACH									2			2	
10	2506.522	ADJUST FRAME AND RING CASTINGS		EACH	1											1	
																8	
	2511.501	RANDOM RIPRAP CLASS II	(11)	CU. YD.	1.7											1.7	
	2511.515	GEOTEXTILE FILTER TYPE IV	(11)	SQ. YD.	8											8	
5	2521.501	3" CONCRETE WALK		SQ. FT.	2745											2745	
5	2521.501	4" CONCRETE WALK		SQ. FT.	1103											1103	
	0521.604	SAWING CONCRETE WALK	(12)	LIN. FT.	27											27	
5	2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LIN. FT.	220											220	
5	2531.501	CONCRETE CURB AND GUTTER DESIGN D412		LIN. FT.	90						480					570	
5	2531.501	CONCRETE CURB AND GUTTER DESIGN D424		LIN. FT.	1042											1042	
5	2531.503	CONCRETE MEDIAN		SQ. YD.	3807						187					3994	
	2554.501	TRAFFIC BARRIER DESIGN 8330	(14)	LIN. FT.							212.5					212.5	
	2554.501	TRAFFIC BARRIER DESIGN B8307		LIN. FT.	175						50					225	
	2554.521	ANCHORAGE ASSEMBLIES - CABLE		EACH							2					2	
	0554.602	BREAKAWAY CABLE TERMINAL		EACH	1											1	
	0563.601	TRAFFIC CONTROL	(15)	LUMP SUM	1											1	
	2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM		SIG. SYS.	0.5						0.5					1	
	0565.601	SALVAGE SIGNAL SYSTEM	(16)	LUMP SUM	1											1	
	2564.531	FURNISH AND INSTALL SIGN PANELS, TYPE "D" - SIGNALS		SQ. FT.	91.0											91.0	
	2573.501	BALE CHECK	(17)	EACH	40											40	
	2573.502	SILT FENCE, HEAVY DUTY	(17)	LIN. FT.	1200											1200	
8	2575.501	ROADSIDE SEEDING		ACRE	2.19						0.06					2.25	
	2575.502	SEED MIXTURE 6		POUND	164						5					169	
8,9	2575.505	SODDING		SQ. YD.	719											719	
	2575.511	MULCH MATERIAL TYPE I		TON	4.38						0.12					4.5	
	2575.519	DISC ANCHORING		ACRE	2.19						0.06					2.25	
	2575.532	COMMERCIAL FERTILIZER ANALYSIS 10-20-20		POUND	761						27					788	

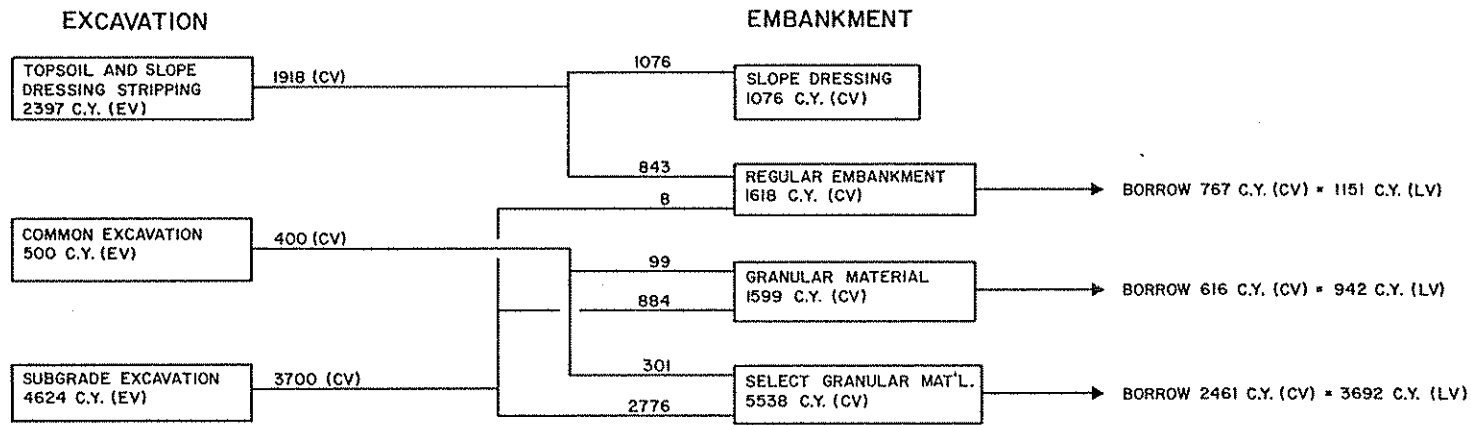
NOTES:

- (10) REFER TO SHEET NO. 25 FOR LOCATION.
- (11) FOR STORM SEWER OUTLET, REFER TO SHEET NO. 26 FOR LOCATION.
- (12) CONSISTS OF 27 LIN. FT. AT JACKSON STREET MEDIAN.
- (14) REFER TO POLK STREET ROADWAY CONSTRUCTION PLAN SHEET NO. 31 FOR LOCATION.
- (15) FOR TEMPORARY TRAFFIC CONTROL.
- (16) CONSISTS OF SALVAGING TWO POST MOUNTED SIGNAL HEADS, TWO SPAN WIRE MOUNTED OVERHEAD SIGNAL HEADS AND TWO PED. PUSH BUTTONS. SALVAGED ITEMS SHALL BE DELIVERED TO THE CITY OF BLAINE MUNICIPAL GARAGE, 101ST STREET N.E. BLAINE, MINNESOTA. REFER TO SHEET NO. 24 FOR LOCATION.
- (17) FOR TEMPORARY EROSION CONTROL.

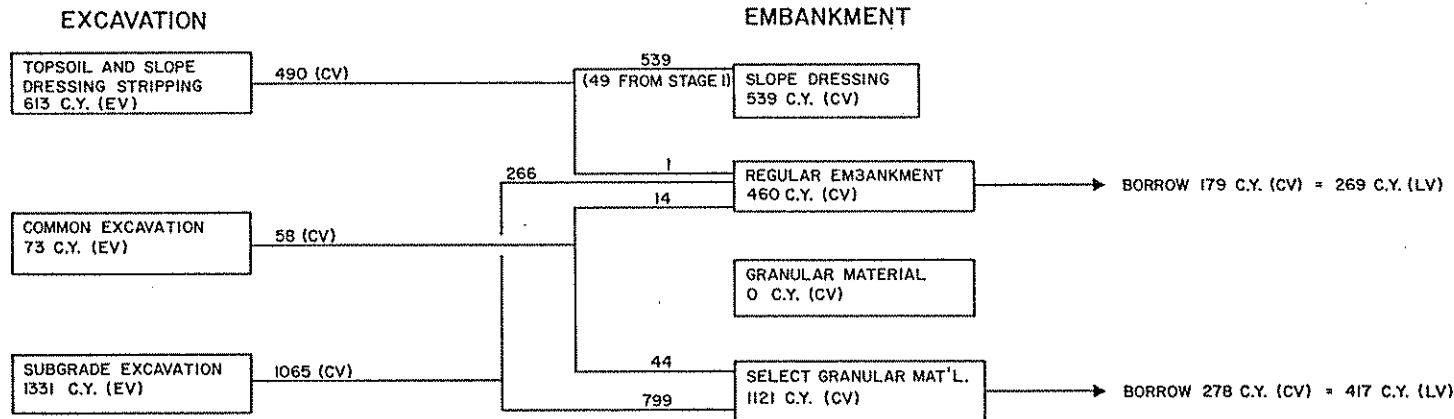
ESTIMATED QUANTITIES



**STAGE 1 CONSTRUCTION**



**STAGE 2 CONSTRUCTION**



**PROJECT TOTALS**

2105.501	COMMON EXCAVATION . . . . .	3583 CU. YD.
	(INCLUDES TOPSOIL AND SLOPE DRESSING STRIPPING)	
2105.507	SUBGRADE EXCAVATION . . . . .	5955 CU. YD.
2105.521	GRANULAR BORROW (LV) . . . . .	.942 CU. YD.
2105.522	SELECT GRANULAR BORROW (LV) . . . . .	4109 CU. YD.
2105.523	COMMON BORROW (LV) . . . . .	1420 CU. YD.

**NOTES :**

- A SHRINKAGE FACTOR OF 125%, EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV), HAS BEEN APPLIED TO NORMAL GRADING ITEMS.
- A SHRINKAGE FACTOR OF 150%; LOOSE VOLUME (LV) TO COMPACTED VOLUME (CV), HAS BEEN APPLIED TO BORROW ITEMS.
- SOIL BORINGS INDICATE THAT APPROXIMATELY 75% OF ALL EXCAVATIONS (EXCLUDING TOPSOIL AND SLOPE DRESSING STRIPPING) MEET THE REQUIREMENTS FOR SELECT GRANULAR MATERIAL.

**SOIL NOTES :**

- ① IN AREAS TO BE DISTURBED BY CONSTRUCTION, STRIP AND SAVE FOR REUSE AS SLOPE DRESSING, ALL TOPSOIL AND INPLACE SLOPE DRESSING. ASSUME AN AVERAGE DEPTH OF SIX INCHES.
- ② COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD."
- ③ THE ROADWAY EMBANKMENT WITHIN 1 1/2:1 SLOPES FROM THE GRADING SHOULDER P.I. SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL. IN FILL AREAS THE UPPER 4.0' FT. OF THE SUBGRADE SHALL BE CONSTRUCTED WITH GRANULAR MATERIAL, OF WHICH THE UPPER 2.0 FT. SHALL CONSIST OF SELECT GRANULAR MATERIAL.
- ④ STABILIZING AGGREGATE SHALL BE INCORPORATED INTO THE SUBGRADE TO ACHIEVE SATISFACTORY SURFACE STABILITY FOR PLACEMENT OF THE CLASS 5 AGGREGATE BASE AT LOCATIONS DEEMED NECESSARY BY THE ENGINEER, IN ACCORDANCE WITH SPEC. 2105.36. SELECT GRANULAR MATERIAL WHICH IS FURNISHED BY THE CONTRACTOR SHALL BE STABILIZED, IF NECESSARY AT THE CONTRACTORS EXPENSE. WHERE STABILIZING AGGREGATE IS DEEMED NECESSARY, IT SHOULD BE APPLIED AT THE RATE OF APPROXIMATELY 200 POUNDS PER SQUARE YARD.
- ⑤ TEST ROLLING WILL NOT BE REQUIRED.
- ⑥ AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 2:1 OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.

- ⑦ BITUMINOUS AND/OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED IN BASE OR SURFACING ITEMS OR SHALL BE DISPOSED OF OFF THE PROJECT LIMITS.
- ⑧ SELECTED GRADING MATERIALS, SHALL CONSIST OF GRANULAR MATERIALS, OF WHICH THE UPPER 2.0 FT. OF THE SUBGRADE SHALL CONSIST OF SELECT GRANULAR MATERIALS.
- ⑨ GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2A.
- ⑩ SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPC. 3149.2B (OF THE PORTION PASSING A 1" SIEVE, NOT MORE THAN 12% WILL PASS A NO. 200 SIEVE).
- ⑪ STABILIZING AGGREGATE SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2C, EXCEPT THAT WHEN CRUSHED CONCRETE IS USED THE GRADATION REQUIREMENT SHALL BE MODIFIED SO THAT AT LEAST 3%, BUT NOT MORE THAN 15% WILL PASS A NO. 200 SIEVE.

**TURF ESTABLISHMENT :**

- ① SLOPE DRESSING ON THIS PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PRIOR CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.
- ② PLACE A MINIMUM OF 5" OF TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 10-20-20 AT THE RATE OF 450 POUNDS PER ACRE, OR EQUIVALENT.
- ③ ON PERMANENT SLOPES 3:1 OR FLATTER USE MIXTURE 6 SEED AND TYPE 1 MULCH WITH DISC ANCHORING, EXCEPT FOR A 3 FT. + STRIP ADJACENT TO THE BITUMINOUS SHOULDERS WHICH SHOULD BE HELD IN PLACE WITH ASPHALT EMULSION (TACK COAT) APPLIED AT THE RATE OF 300 GALLONS PER ACRE (0.06 GALLONS PER SQUARE YARD).



PUBLIC UTILITIES			
LOCATION	ITEM INPLACE	REMARK	OWNERSHIP
T.H. 242			
339+90 70' RT.	POWER POLE NO	NOT AFFECTED	ANOKA ELEC. COOP.
340+50 78' LT. TO 343+16 78' LT.	BURIED TELEPHONE CABLE		N.W. BELL
340+50 58' RT. TO 345+62 56' RT.	BURIED TELEPHONE CABLE		N.W. BELL
340+50 65' RT. TO 345+62 65' RT.	BURIED TELEPHONE CABLE	NOT AFFECTED	N.W. BELL
340+50 45' LT. TO 345+24 45' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
340+50 70' LT. TO 343+20 78' LT.	BURIED POWER	NOT AFFECTED	ANOKA ELEC. COOP.
340+70 78' LT.	TELEPHONE PEDESTAL		N.W. BELL
341+94 78' LT.	TELEPHONE PEDESTAL		N.W. BELL
341+85 25' LT.	LIGHT POLE		ANOKA ELEC. COOP.
342+17 48' RT.	POWER POLE AND LIGHT		ANOKA ELEC. COOP.
342+90 70' RT.	POWER POLE		ANOKA ELEC. COOP.
343+16 78' LT.	TELEPHONE PEDESTAL		N.W. BELL
343+20 78' LT.	POWER PEDESTAL		ANOKA ELEC. COOP.
343+20 78' LT. TO 344+78 180' LT.	BURIED POWER		ANOKA ELEC. COOP.
345+20 37' RT.	LIGHT POLE	NOT AFFECTED	ANOKA ELEC. COOP.
345+24 45' LT. TO 345+24 179' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
345+24 45' LT. TO 347+54 45' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
345+62 56' RT. TO 347+86 56' RT.	BURIED TELEPHONE CABLE	NOT AFFECTED	N.W. BELL
345+62 65' RT. TO 347+98 65' RT.	BURIED TELEPHONE CABLE		N.W. BELL
345+72 67' RT.	POWER POLE		ANOKA ELEC. COOP.
345+80 67' RT.	POWER PEDESTAL	NOT AFFECTED	ANOKA ELEC. COOP.
347+54 45' LT. TO 347+54 100' RT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
347+54 45' LT. TO 357+70 45' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
347+86 56' RT.	TELEPHONE MANHOLE	NOT AFFECTED	N.W. BELL
347+86 56' RT. TO 355+78 63' RT.	BURIED TELEPHONE CABLE		N.W. BELL
347+98 65' RT.	TELEPHONE PEDESTAL		N.W. BELL
347+98 65' RT. TO 355+78 68' RT.	BURIED TELEPHONE CABLE		N.W. BELL
349+02 70' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
351+67 78' RT. TO 351+67 55' LT.	BURIED POWER CABLE	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
351+67 78' RT.	UTILITY BOX	NOT AFFECTED	ANOKA ELEC. COOP.
351+67 55' RT. TO 352+36 58' RT.	BURIED POWER CABLE		ANOKA ELEC. COOP.
352+36 58' RT. TO 352+36 68' RT.	BURIED POWER CABLE		ANOKA ELEC. COOP.
352+36 68' RT.	POWER POLE		ANOKA ELEC. COOP.
355+20 80' LT.	POWER POLE		ANOKA ELEC. COOP.
355+58 70' RT.	POWER POLE		ANOKA ELEC. COOP.
355+58 78' RT.	TELEPHONE PEDESTAL	NOT AFFECTED	N.W. BELL
355+58 70' RT. TO 355+78 80' LT.	BURIED C.T.V.	POSSIBLY AFFECTED	NORTH CENTRAL
355+58 70' RT. TO 356+85 70' RT.	BURIED C.T.V.		NORTH CENTRAL
355+78 63' RT.	TELEPHONE PEDESTAL		N.W. BELL
355+78 63' RT. TO 355+78 64' LT.	BURIED TELEPHONE CABLE		N.W. BELL
355+78 63' RT. TO 356+55 61' RT.	BURIED TELEPHONE CABLE		N.W. BELL
355+78 68' RT. TO 362+52 63' RT.	BURIED TELEPHONE CABLE		N.W. BELL
356+55 61' RT.	TELEPHONE MANHOLE		N.W. BELL
356+55 61' RT. TO 362+52 58' RT.	BURIED TELEPHONE CABLE		N.W. BELL
356+85 70' RT.	POWER POLE	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
357+50 70' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
358+70 45' LT. TO 358+70 75' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
358+70 45' LT. TO 372+66 45' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
359+03 70' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
359+03 70' RT. TO 359+31 68' RT.	BURIED C.T.V.	NOT AFFECTED	NORTH CENTRAL

NOTE: ALL T.H. 242 STATIONS AND OFFSETS SHOWN ARE BASED ON EAST BOUND & ALIGNMENT.

PUBLIC UTILITIES			
LOCATION	ITEM INPLACE	REMARK	OWNERSHIP
359+27 75' LT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
359+31 68' RT. TO 359+31 85' LT.	BURIED C.T.V.	POSSIBLY AFFECTED	NORTH CENTRAL
359+90 110' LT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
362+06 67' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
362+06 67' RT. TO 362+06 100' LT.	BURIED C.T.V.	POSSIBLY AFFECTED	NORTH CENTRAL
362+17 88' LT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
362+51 58' RT.	TELEPHONE MANHOLE		N.W. BELL
362+51 58' RT. TO 367+50 65' RT.	BURIED TELEPHONE CABLE		N.W. BELL
362+51 64' RT. TO 385+75 64' RT.	BURIED TELEPHONE CABLE		N.W. BELL
365+15 68' RT.	POWER POLE		ANOKA ELEC. COOP.
665+58 105' LT.	POWER POLE		ANOKA ELEC. COOP.
668+20 69' RT.	POWER POLE		ANOKA ELEC. COOP.
668+57 64' RT.	TELEPHONE MANHOLE		N.W. BELL
668+57 64' RT. TO 374+37 59' RT.	BURIED TELEPHONE CABLE		N.W. BELL
372+00 58' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
372+66 45' LT. TO 373+25 62' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
373+25 62' LT. TO 375+85 62' LT.	GAS	POSSIBLY AFFECTED	N.C.P. GAS CO.
374+37 59' RT.	TELEPHONE MANHOLE	NOT AFFECTED	N.W. BELL
374+35 59' RT. TO 375+85 80' RT.	BURIED TELEPHONE CABLE		N.W. BELL
374+45 68' RT.	POWER POLE		ANOKA ELEC. COOP.
375+00 65' RT.	POWER POLE		ANOKA ELEC. COOP.
376+03 53' RT.	POWER POLE	NOT AFFECTED	ANOKA ELEC. COOP.
OAKPARK BLVD. AND POLK ST.			
100+50 42' LT. TO 102+80 42' LT.	BURIED POWER	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
100+50 39' LT. TO 102+85 39' LT.	BURIED POWER	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
100+90 70' LT. TO 100+90 55' RT.	BURIED POWER	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
100+90 55' RT. TO 102+40 55' RT.	BURIED POWER	NOT AFFECTED	ANOKA ELEC. COOP.
102+40 55' RT. TO 102+40 115' RT.	BURIED POWER		ANOKA ELEC. COOP.
102+40 115' RT. TO 102+90 115' RT.	BURIED POWER	NOT AFFECTED	ANOKA ELEC. COOP.
102+80 42' LT. TO 102+90 76' LT.	BURIED POWER	POSSIBLY AFFECTED	ANOKA ELEC. COOP.
102+85 39' LT. TO 102+90 76' LT.	BURIED POWER		ANOKA ELEC. COOP.
102+90 50' RT. TO 104+30 50' RT.	BURIED POWER		ANOKA ELEC. COOP.
104+30 50' RT. TO 104+30 17' RT.	BURIED POWER		ANOKA ELEC. COOP.
104+30 17' RT. TO 107+66 30' RT.	BURIED POWER	POSSIBLY AFFECTED	ANOKA ELEC. COOP.

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

### STANDARD PLATES

PLATE NO.	DESCRIPTION	PLATE NO.	DESCRIPTION	PLATE NO.	DESCRIPTION
3000 K	REINFORCED CONCRETE PIPE	3133 B	RIPRAP AT RCP OUTLETS	7100 F	CONCRETE CURB AND GUTTERS
		3221 C	CORR. STEEL PIPE COUPLING BAND	7102 G	CONCRETE CURB AND GUTTER
		4002 E	MANHOLE OR CATCH BASIN	7036 C	PEDESTRIAN CURB RAMP
3040 F	CORRUGATED METAL PIPE CULVERT	4006 K	MANHOLE OR CATCH BASIN	7109 A	MEDIAN NOSE
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE	4010 G	CONC. SHORT CONE & ADJ. RING	7111 G	INST.&REIN. OF CATCH BASIN CAST.
		4011 D	PRECAST CONCRETE BASE	8000 I	STANDARD BARRICADES
3123 I	METAL APRON FOR C.S. PIPE	4132 E	CATCH BASIN FRAME CASTING	8307 N	STEEL PLATE BEAM GUARDRAIL
3124 B	METAL APRON CONNECTION	4154 B	CATCH BASIN GRATE CASTING	8330 D	3-CABLE GUARDRAIL
3145 E	CONCRETE PIPE TIES			8329 E	BREAKAWAY CABLE TERMINAL
				9102 C	SODDING AT PIPE CULVERT ENDS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.

*Howard J. Pustan*

Date 3-21-88, Minn. Reg. No. 12001



DESIGN BY:  
DRAWN BY:

ORIGINAL DATE:  
REVISIONS:

SURVEY BK. NO.

### PUBLIC UTILITIES AND STANDARD PLATES

S.P. 0212-33

SHEET 7 OF 48

DESIGN FILE No. 118701

SAWING BITUMINOUS PAVEMENT ①	
LOCATION	UNIT L.F.
340+50, 20'LT. TO 20'RT.	40
340+70, 20'LT. TO 20'RT.	40
341+50, 12'RT. TO 20'RT.	8
341+50 TO 342+46, 12'RT.	238
342+46, 12'RT. TO 37'RT.	25
344+00, 5.5'LT. TO 33.5'LT.	28
344+00 TO 346+87, 5.5'LT. TO 14.5'LT.	287
345+10, 75'LT.	34
346+87 TO 350+00, 12'LT. TO 20'LT.	313
350+00 TO 351+20, 20'LT.	120
350+90 TO 351+16, 73'LT.	26
352+15, 12'RT. TO 20'RT.	8
352+15 TO 357+21, 12'RT.	506
354+80 TO 355+00, 47'LT.	20
102+50 TO 102+89, 29'LT.	35
102+50, 29'LT. TO 8'LT.	26
102+50 TO 102+90, 8'LT TO 12'RT.	94
102+50, 12'RT. TO 29'RT.	24
102+50 TO 102+89, 29'RT.	35
357+21 TO 360+80, 20'RT.	359
357+21, 12'RT. TO 20'RT.	8
356+80 TO 361+80, 22'LT.	500
358+00 TO 358+24, 75'LT.	24
358+88 TO 359+24, 75'LT.	36
360+77 TO 360+99, 75'LT.	22
361+80 TO 362+65, 20'LT.	85
362+44 TO 362+61, 34'LT.	17
362+65, 19'LT. TO 2'LT.	17
362+65 TO 370+90, 2'LT.	825
366+18 TO 366+32, 34'LT.	14
370+90, 2'LT. TO 20'LT.	18
370+90 TO 375+55, 20'LT.	465
375+55, 20'LT. TO 14'LT.	6
375+55 TO 375+60, 14'LT.	5
375+60, 14'LT. TO 24'RT.	38
375+60 TO 375+85, 24'RT.	25
375+85, 24'RT. TO 45'LT.	69
355+72 TO 356+85, 22'LT.	113
104+33 TO 106+50, 29'LT. TO 19'LT.	217
106+50 TO 107+65, ON C	115
104+34 TO 107+65, 3'RT. TO 14'RT.	331
106+50, C TO 20'LT.	20
107+65, C TO 14'RT.	14
104+90 TO 105+18, 28'RT.	28
100+48 TO 102+50, 8'LT TO 12'RT.	495

MISCELLANEOUS REMOVALS ②								
STATION TO STATION	LOCATION	REMOVE CURB AND GUTTER	REMOVE CONC. WALK	REMOVE BIT. WALK	REMOVE STORM SEWER PIPE	REMOVE CULVERTS	SALVAGE CASTINGS	REMOVE C.B.
		LIN. FT.	SQ. YD.	SQ. YD.	LIN. FT.	LIN. FT.	EACH	EACH
343+40	55' RT.					20'-15"		
343+38 TO 343+46	30'RT. TO 77' RT.			4				
344+50 TO 345+78	20'LT. TO 75' LT.	271	409					
354+80	38' LT.					36'-15"		
355+75 TO 356+70	42'LT. TO 45' LT.			42				
355+85	45'RT. TO 55' RT.		19					
355+95	40' LT.		9					
356+54	44' LT.				95			
358+00	45' LT.					50'-24"		
359+00	47' LT.					52'-24"		
360+80	48' LT.					30'-15"		
366+25	32' LT.					34'-15"		
104+30 TO 106+50	32'LT. TO 20'LT.	218						
104+34 TO 107+65	3'RT. TO 16'RT.	331						

NOTE: ALL T.H. 242 STATIONS AND OFFSETS SHOWN ARE BASED ON EASTBOUND C ALIGNMENT.

BITUMINOUS PAVEMENT REMOVAL ③		
STATION TO STATION	LOCATION	SQ. YD.
341+50 TO 342+46	12'RT. TO 37'RT.	95
344+00 TO 350+00	5.5'LT. TO 75'LT.	1095
350+00 TO 351+20	20'LT. TO 73'LT.	185
352+15 TO 360+80	12'RT. TO 75'RT.	1379
354+80 TO 355+00	20'LT. TO 47'LT.	50
356+80 TO 360+00	22'LT. TO 75'LT.	476
360+00 TO 364+00	2'LT. TO 75'LT.	598
364+00 TO 375+85	2'LT. TO 55'LT.	3082
100+48 TO 102+50	8'LT. TO 12'RT.	191
102+50 TO 102+85	29'LT. TO 29'RT.	192
103+82 TO 104+35	65'LT. TO 50'RT.	353
104+35 TO 107+65	32'LT. TO 16'RT.	955

INDEX OF TABULATION CHARTS		
CHART NO.	SHEET NO.	DESCRIPTION
1	8	SAWING BITUMINOUS PAVEMENT
2	8	MISCELLANEOUS REMOVALS
3	8	BITUMINOUS PAVEMENT REMOVAL
4	9	DRAINAGE
5	9	CONCRETE WALK, CURB & GUTTER, & MEDIAN
6	9	CASTING SCHEDULE
7	10	BITUMINOUS SURFACING & AGGREGATE BASE SUMMARY
8	11	TURF ESTABLISHMENT
9	11	SODDING, CULVERTS & STORM SEWER
10	9	ADJUST MANHOLE AND RECONSTRUCT MANHOLE

INDEX OF TABULATION CHARTS AND TABULATED QUANTITIES



DRAINAGE

4

STRUCTURE NUMBER	STATION	LOCATION	ITEM IN PLACE	REMARKS	NOTES NO.	TOP OF CASTING OR INLET ELEV.	OUTLET ELEV.	CONSTRUCTION			ADJUST	FURNISH & INSTALL				DRAINS TO			
								PAY HEIGHT	DESIGN			F. & I. CASTING ASSY TYPE	SIZE DIA. "D" OR SPAN "S"	TYPE	LENGTH LIN. FT.	CLASS OR GAUGE	STRUCT. NO.	GRADE IN %	INLET ELEV.
									LIN. FT.	M.H.									
1	350+00	70'LT.		15" RCP APRON			899.60												
2	351+00	13'LT.				905.85	901.91	3.8											
2A	352+00	8.0'LT.				905.96	902.78	3.1				15"	RCP	118'		1	1.89		
3	354+68	68'LT.		24" METAL APRON			901.60					15"	RCP	101'		2	0.76	902.01	
4	355+10	68'LT.		24" METAL APRON		901.72						24"	CM-CULV.	35'		3	0.36		
5	355+82	67'LT.		18" RCP APRON			901.85												
6	POLK ST. 104+39	26.5'LT.		INSTALL SALVAGED CASTINGS		905.88	902.04	3.8				18"	RCP	23'		5	0.70		
7	POLK ST. 104+39	35'RT.		INSTALL SALVAGED CASTINGS		905.68	902.49	3.1				15"	RCP	62'	V	6	0.60	902.14	
8	357+24	47'LT.				906.97	903.47	3.4				15"	RCP	62'		7	1.52	902.59	
9	359+40	47'LT.				907.91	904.84	3.0				15"	RCP	216'		8	0.60	903.57	
10	367+65	68'LT.		15" RCP APRON			900.00												
11	367+65	47'LT.				904.99	901.36	3.6				15"	RCP	14'		10	8.11		
12	366+11	47'LT.				905.74	902.36	3.3				15"	RCP	154'		11	0.60	901.46	
13	364+00	47'LT.				907.50	904.13	3.3				15"	RCP	211'		12	0.81	902.46	
14	376+67	40'RT.		15" RCP APRON			898.20												
15	367+67	13'LT.				903.95	900.00	3.8				15"	RCP	47'		14	3.53		

NOTE:  
INDICATED STRUCTURE LOCATIONS ARE GIVEN TO THE CENTER OF THE STRUCTURE.  
TOP OF CASTING ELEVATIONS SHOWN ARE TOP OF CASTING ELEVATIONS AT THE CENTER OF THE STRUCTURE.  
TIE ALL RCP OUTLETS PER STD. PL. 3145

CONCRETE WALK, CURB AND GUTTER, AND MEDIAN

5

STATION TO STATION UNIT	LOCATION	3" CONC WALK SQ. FT.	4" CONC WALK SQ. FT.	B618 C & G LIN. FT.	D412 C & G LIN. FT.	D424 C & G LIN. FT.	MONOLITHIC CONCRETE MEDIAN SQ. YD.
344+60 TO 345+64	25'LT. TO 75'LT.	2745		220			
346+85 TO 355+75	2'LT. TO 20'LT.						1105
356+97 TO 375+70	2'LT. TO 20'LT.						2702
357+21 TO 367+64	46'LT. TO 75'LT.					1042	
100+53 TO 103+03	2'LT. TO 8'LT.						166
104+45 TO 104+75	2'RT. TO 8'RT.						21
104+05 TO 107+05	87'RT. TO 15'RT.				395		
104+45 TO 106+20	26'LT.				175		
355+85	34'RT. TO 75'LT.		463				
355+90	46'LT. TO 75'LT.		309				
356+90	28'RT. TO 54'RT.		200				
356+90	55'LT. TO 73'LT.		131				

NOTE: ALL T.H 242 STATIONS AND OFFSETS SHOWN ARE BASED ON EASTBOUND C ALIGNMENT

CASTING NO.	STD. PL. NO.
805	4132E
816	4154B

CASTING SCHEDULE			
STANDARD CASTING ASSEMBLY	NUMBER REQUIRED	FRAME CASTING	GRATE CASTING
B-8	3	805	816
D-5	5	805	816

INSTALL BENT BOLT PER STD. PLATE 4154

ADJUST MANHOLE AND RECONSTRUCT MANHOLE

10

STATION	LOCATION	EXISTING RIM ELEVATION	PROPOSED RIM ELEVATION	ADJUST LIN. FT.	RECONSTRUCT LIN. FT.
353+60	63' LT.	901.20	904.60		① +7.4'
356+77	59' LT.	904.71	906.28	+1.57'	
373+17	50' LT.	899.80	902.50		② +6.7'

① CONSISTS OF REMOVING A 4' CONE SECTION AND REBUILDING WITH A 7.4' CONE SECTION.  
② CONSISTS OF REMOVING A 4' CONE SECTION AND REBUILDING WITH A 6.7' CONE SECTION.

TABULATED QUANTITIES

BITUMINOUS SURFACING AND AGGREGATE BASE SUMMARY

7

LOCATION	INSET	2211 AGGREGATE BASE CLASS 5 (CV) CU. YD.	2331 BITUMINOUS MATERIAL FOR MIXTURE TON	2331 BINDER COURSE MIXTURE (MOD.) TON	2331 LEVELING COURSE MIXTURE (MOD.) TON	2331 BASE COURSE MIXTURE (MOD.) TON	2341 BITUMINOUS MATERIAL FOR MIXTURE TON	2341 SHOULDER MIXTURE (MOD.) 2341 *WEARING COURSE TON	2361 ASPHALT CEMENT TON	2361 WEARING COURSE MIXTURE TON	2357 BITUMINOUS MATERIAL FOR TACK COAT GAL.
340+50 TO 340+70, 12' LT. & 12' RT.	D	3	1.1	5	--	19	--	--	0.21	3	5
340+50 TO 340+70, 12'-20' LT. & RT.	C	6	0.4	3	--	4	0.1	2	--	--	4
340+70 TO 341+50, 12'-20' RT.	B	--	--	--	--	--	--	15	--	--	4
340+70 TO 344+00, 12'-34' LT.	B	--	--	--	--	--	6.0	97	--	--	19
341+50 TO 342+46, 12'-20' RT. TO 12'-37' RT.	C	17	2.0	9	--	12	0.4	6	--	--	10
340+70 TO 344+00, 12' LT. & RT. TO 18' LT & 12' RT	A	--	6.8	--	152	--	--	--	4.04	59.4	99
344+00 TO 346+89, 6' LT & 12' RT. TO 19' LT & 12' RT	A	--	5.0	--	110	--	--	--	2.94	43.3	72
346+89 TO 347+49, 6' LT & 12' RT TO 2' LT & 12' RT	A	--	0.9	--	19	--	--	--	0.43	6.4	11
347+49 TO 350+95, 2' LT & 12' RT.	A	--	4.7	--	105	--	--	--	2.20	32.3	54
350+95 TO 352+75, 2' LT & 12' RT TO 14' LT & 12' RT	A	--	3.2	--	72	--	--	--	1.63	24	40
352+75 TO 355+72, 14' LT & 12' RT	A	--	7.5	--	167	--	--	--	3.50	51.5	86
355+72 TO 357+00, 22' LT & 12' RT	A	--	3.8	--	84	--	--	--	1.97	30	48
342+46 TO 352+15, 12'-37' RT. TO 12'-20' RT.	B	--	--	--	--	--	13.8	223	--	--	56
344+00 TO 355+72, 5'-17' LT. TO 20'-34' LT.	D	105	36.3	153	--	612	--	--	7.42	106	176
344+00 TO 346+10, JACKSON ST. INTERSECTION	C2	80	4.4	41	--	55	1.8	* 29	--	--	47
346+10 TO 355+72, 34'-46' LT.	C	244	13.6	125	--	166	8.0	129	--	--	144
352+15 TO 355+49, 12'-20' RT. TO 12'-24' RT.	C	73	4.1	38	--	50	1.8	26	--	--	43
355+49 TO 356+35, 12'-24' RT. TO 12'-75' RT.	C	63	3.4	32	--	43	2.1	33	--	--	37
356+35 TO 357+21, 12'-75' RT. TO 12'-20' RT.	C	73	4.1	37	--	50	1.6	26	--	--	43
355+72 TO 356+25, 34'-42' LT. TO 34'-75' LT.	C	40	2.2	21	--	28	1.3	21	--	--	24
356+35 TO 357+23, 34'-75' LT. TO 34'-42' LT.	C	49	2.7	25	--	33	1.6	26	--	--	29
357+00 TO 370+90, 2' LT. & 12' RT.	A	--	20.3	--	451	--	--	--	8.82	129.7	216
357+00 TO 360+00, 8'-22' LT.	A	--	3.5	--	78	--	--	--	1.90	28.0	47
360+00 TO 361+80, 8'-22' LT. TO 20'-22' LT.	A	--	1.2	--	27	--	--	--	0.65	9.6	16
357+23 TO 373+98, 34'-42' LT.	C	438	22.3	204	--	272	13.1	211	--	--	235
370+90 TO 372+70, 2' LT & 12' RT TO 14' LT & 12' RT	A	--	1.9	--	42	--	--	--	1.63	24	40
372+70 TO 375+60, 14' LT. & 12' RT.	A	--	3.3	--	74	--	--	--	3.60	53.0	88
357+21 TO 372+10, 12'-20' RT.	B	--	--	--	--	--	21.3	343	--	--	66
372+10 TO 375+60, 12'-20' RT. TO 12'-24' RT.	B	--	--	--	--	--	4.0	65	--	--	23
373+98 TO 375+85, 34'-46' LT. TO 34'-54' LT.	C	12	0.7	7	--	9	0.3	5	--	--	7
375+60 TO 375+85, 12'-24' RT.	C	6	0.3	3	--	4	0.1	2	--	--	4
355+72 TO 361+80, 22'-34' LT.	D	49	16.7	71	--	282	--	--	3.30	48.7	81
361+80 TO 375+60, 20'-34' LT.	D	129	44.3	187	--	747	--	--	8.76	128.8	215
375+60 TO 375+85, 34' LT. TO 12' RT.	D	9	1.7	7	--	29	--	--	0.40	5.0	8
100+48 TO 102+50, 2' LT. & 12' RT.	C2	54	3.2	28	--	37	1.2	* 19	--	--	32
102+50 TO 102+85, LT. & RT.	C2	41	2.2	21	--	28	.9	* 14	--	--	24
104+35 TO 106+50, LT. & RT.	C2	200	10.5	97	--	129	4.1	* 67	--	--	111
106+50 TO 107+65, 19' RT. TO 14' RT	C2	39	2.0	18	--	24	.8	* 13	--	--	21

NOTE: ALL T.H. 242 STATIONS AND OFFSETS ARE BASED ON EASTBOUND C ALIGNMENT

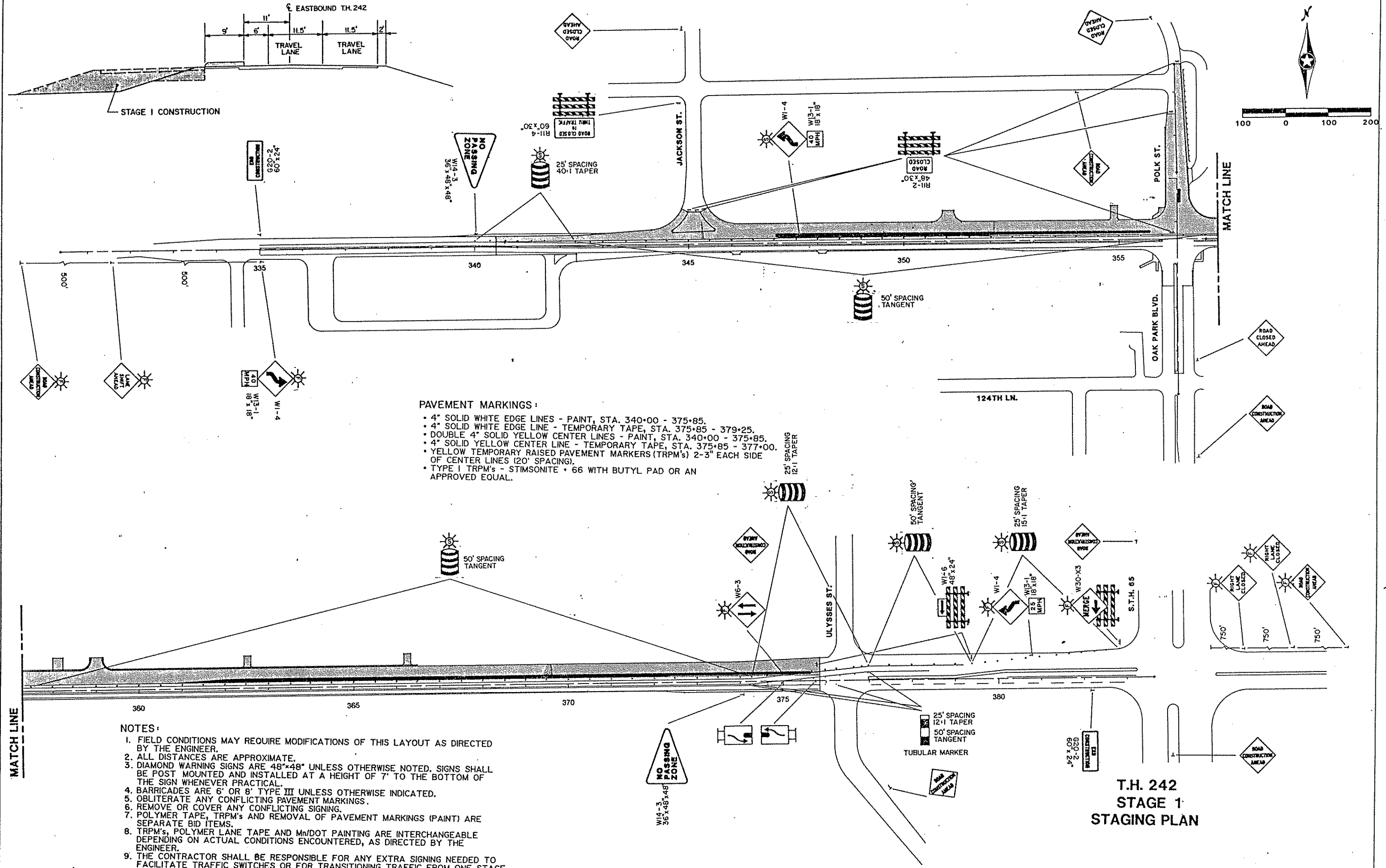
TABULATED QUANTITIES

TURF ESTABLISHMENT (8)			
STA TO STA	SIDE	WIDTH	SO. YD.
<b>SODDING</b>			
346+00 TO 349+94	LT	5-20'	547
354+00 TO 354+61	LT	0-8'	27
355+13 TO 355+78	LT	12'	87
<b>ROADSIDE SEEDING</b>			
			ACRES
340+50 TO 344+84	LT	0-10'	0.05
345+45 TO 350+00	LT	0-25'	0.18
350+00 TO 350+90	LT	20'	0.04
351+19 TO 354+80	LT	20'	0.16
354+92 TO 355+93	LT	20'	0.03
356+75 TO 357+00	LT	20'	0.06
357+22 TO 358+88	LT	20'	0.03
359+12 TO 360+75	LT	5-20'	0.06
360+92 TO 362+45	LT	6-13'	0.04
362+60 TO 364+00	LT	20'	0.08
364+00 TO 366+19	LT	10-20'	0.09
366+31 TO 375+85	LT	0-20'	0.47
340+50 TO 346+02	RT	0-6'	0.07
346+18 TO 348+03	RT	5-15'	0.04
348+18 TO 355+85	RT	5-20'	0.15
356+75 TO 364+00	RT	0-20'	0.17
364+00 TO 366+24	RT	20'	0.09
366+37 TO 375+85	RT	0-25'	0.38
104+35 TO 107+64	RT	0-5'	0.05
104+35 TO 106+19	LT	0-5'	0.01

SODDING AT CULVERTS AND STORM OUTLETS (9)		
STATION	LOCATION	SO. YD.
350+00	70'LT.	9
354+68	68'LT.	17
355+10	68'LT.	14
355+82	67'LT.	9
375+67	40'RT.	9

NOTE: ALL TH. 242 STATIONS AND OFFSETS ARE BASED ON EASTBOUND  $\phi$  ALIGNMENT

TABULATED QUANTITIES



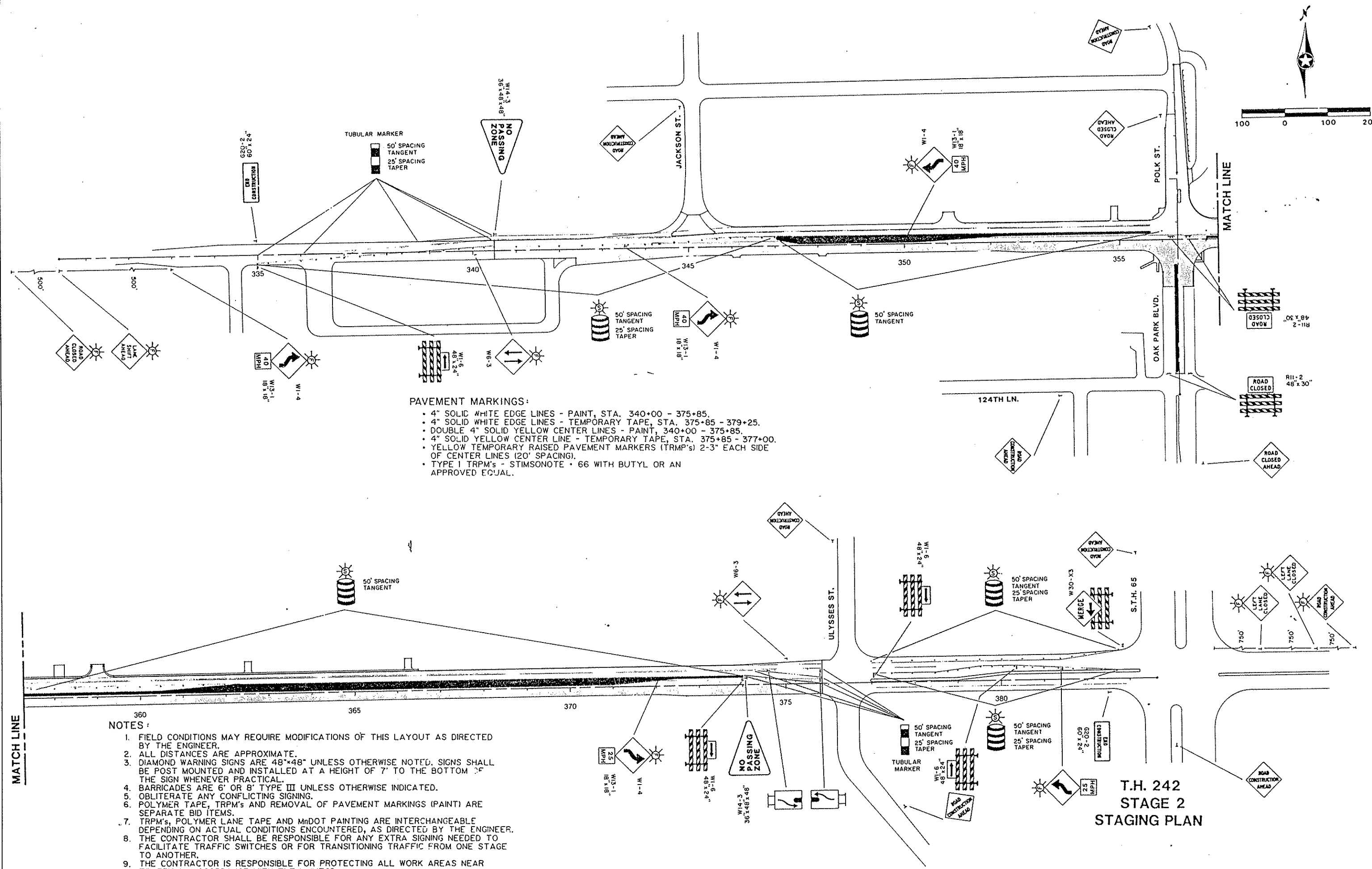
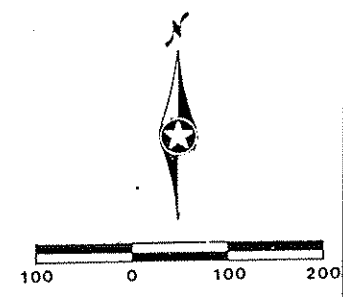
**PAVEMENT MARKINGS:**

- 4" SOLID WHITE EDGE LINES - PAINT, STA. 340+00 - 375+85.
- 4" SOLID WHITE EDGE LINE - TEMPORARY TAPE, STA. 375+85 - 379+25.
- DOUBLE 4" SOLID YELLOW CENTER LINES - PAINT, STA. 340+00 - 375+85.
- 4" SOLID YELLOW CENTER LINE - TEMPORARY TAPE, STA. 375+85 - 377+00.
- YELLOW TEMPORARY RAISED PAVEMENT MARKERS (TRPM's) 2-3" EACH SIDE OF CENTER LINES (20' SPACING).
- TYPE I TRPM's - STIMSONITE • 66 WITH BUTYL PAD OR AN APPROVED EQUAL.

**NOTES:**

1. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DIRECTED BY THE ENGINEER.
2. ALL DISTANCES ARE APPROXIMATE.
3. DIAMOND WARNING SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. SIGNS SHALL BE POST MOUNTED AND INSTALLED AT A HEIGHT OF 7' TO THE BOTTOM OF THE SIGN WHENEVER PRACTICAL.
4. BARRICADES ARE 6' OR 8' TYPE III UNLESS OTHERWISE INDICATED.
5. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS.
6. REMOVE OR COVER ANY CONFLICTING SIGNING.
7. POLYMER TAPE, TRPM's AND REMOVAL OF PAVEMENT MARKINGS (PAINT) ARE SEPARATE BID ITEMS.
8. TRPM's, POLYMER LANE TAPE AND Mn/DOT PAINTING ARE INTERCHANGEABLE DEPENDING ON ACTUAL CONDITIONS ENCOUNTERED, AS DIRECTED BY THE ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MMUTCD.

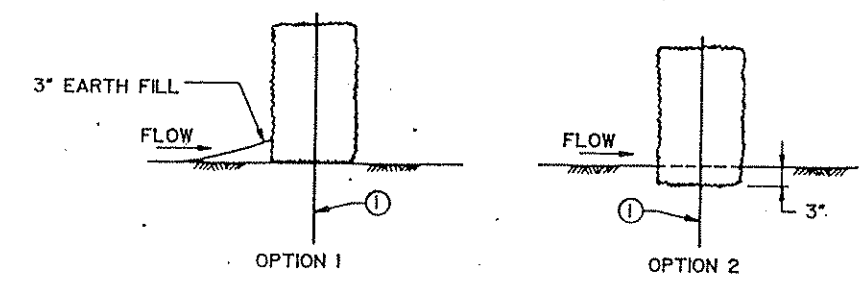
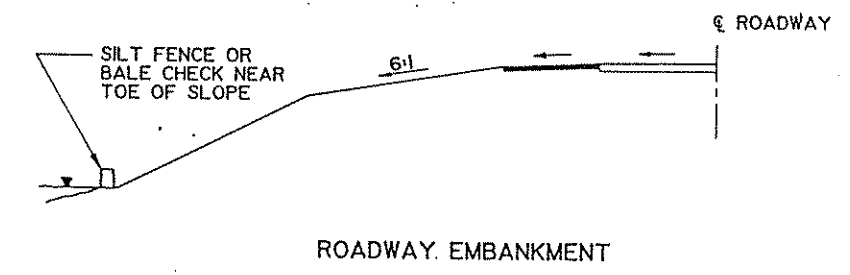
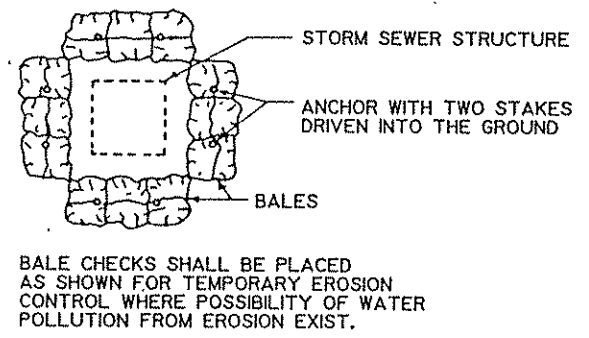
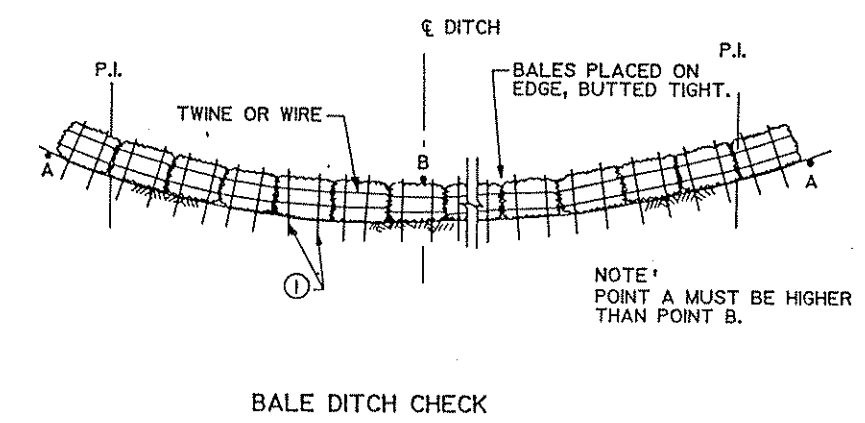
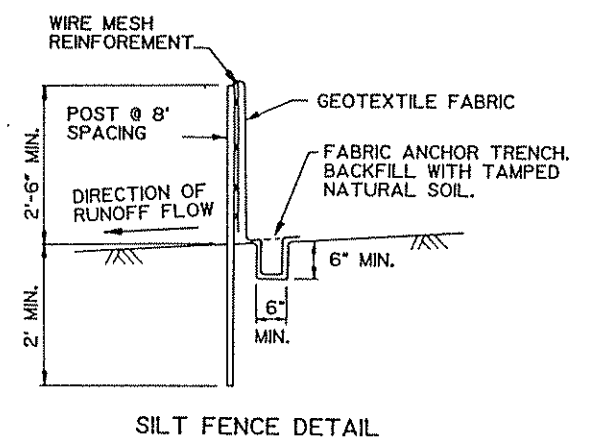
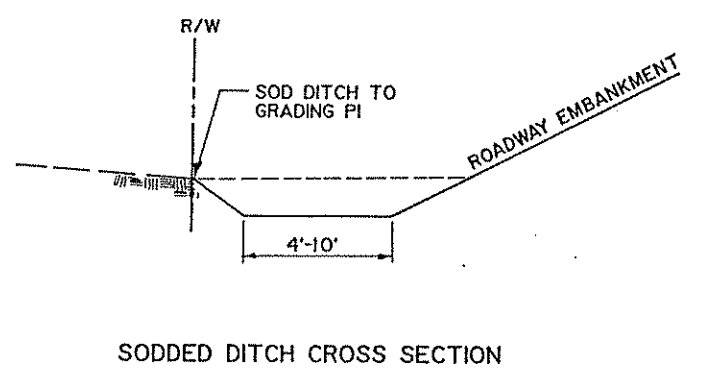
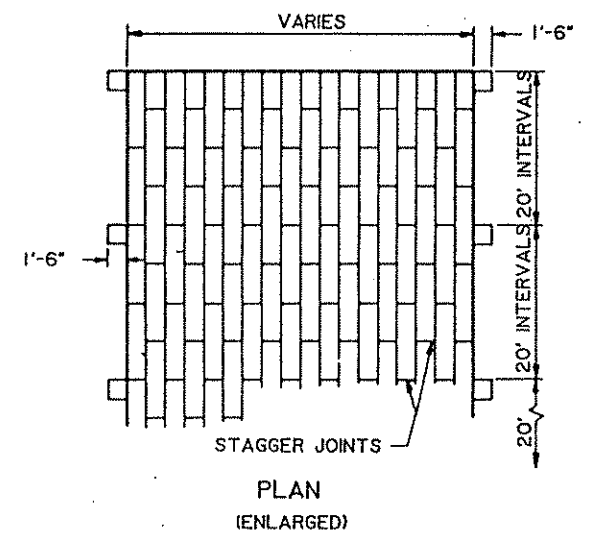
**T.H. 242  
STAGE 1  
STAGING PLAN**



- PAVEMENT MARKINGS:**
- 4" SOLID WHITE EDGE LINES - PAINT, STA. 340+00 - 375+85.
  - 4" SOLID WHITE EDGE LINES - TEMPORARY TAPE, STA. 375+85 - 379+25.
  - DOUBLE 4" SOLID YELLOW CENTER LINES - PAINT, 340+00 - 375+85.
  - 4" SOLID YELLOW CENTER LINE - TEMPORARY TAPE, STA. 375+85 - 377+00.
  - YELLOW TEMPORARY RAISED PAVEMENT MARKERS (TRPM's) 2-3" EACH SIDE OF CENTER LINES (20' SPACING).
  - TYPE I TRPM's - STIMSONOTE • 66 WITH BUTYL OR AN APPROVED EQUAL.

- NOTES:**
1. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DIRECTED BY THE ENGINEER.
  2. ALL DISTANCES ARE APPROXIMATE.
  3. DIAMOND WARNING SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. SIGNS SHALL BE POST MOUNTED AND INSTALLED AT A HEIGHT OF 7' TO THE BOTTOM OF THE SIGN WHENEVER PRACTICAL.
  4. BARRICADES ARE 6' OR 8' TYPE III UNLESS OTHERWISE INDICATED.
  5. OBLITERATE ANY CONFLICTING SIGNING.
  6. POLYMER TAPE, TRPM's AND REMOVAL OF PAVEMENT MARKINGS (PAINT) ARE SEPARATE BID ITEMS.
  7. TRPM's, POLYMER LANE TAPE AND MHDOT PAINTING ARE INTERCHANGEABLE DEPENDING ON ACTUAL CONDITIONS ENCOUNTERED, AS DIRECTED BY THE ENGINEER.
  8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
  9. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MMUTCD.
  10. REMOVE OR COVER ANY CONFLICTING SIGNING.

**T.H. 242  
STAGE 2  
STAGING PLAN**

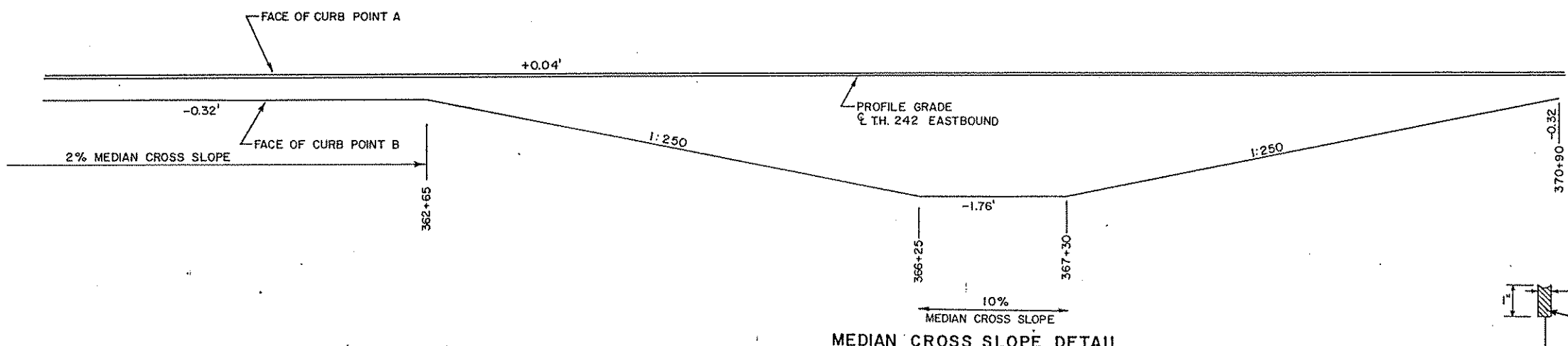


NOTE:  
 ① TWO 2" x 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.

TEMPORARY EROSION CONTROL

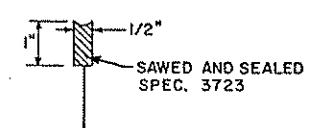
TEMPORARY EROSION CONTROL AND DITCH SODDING



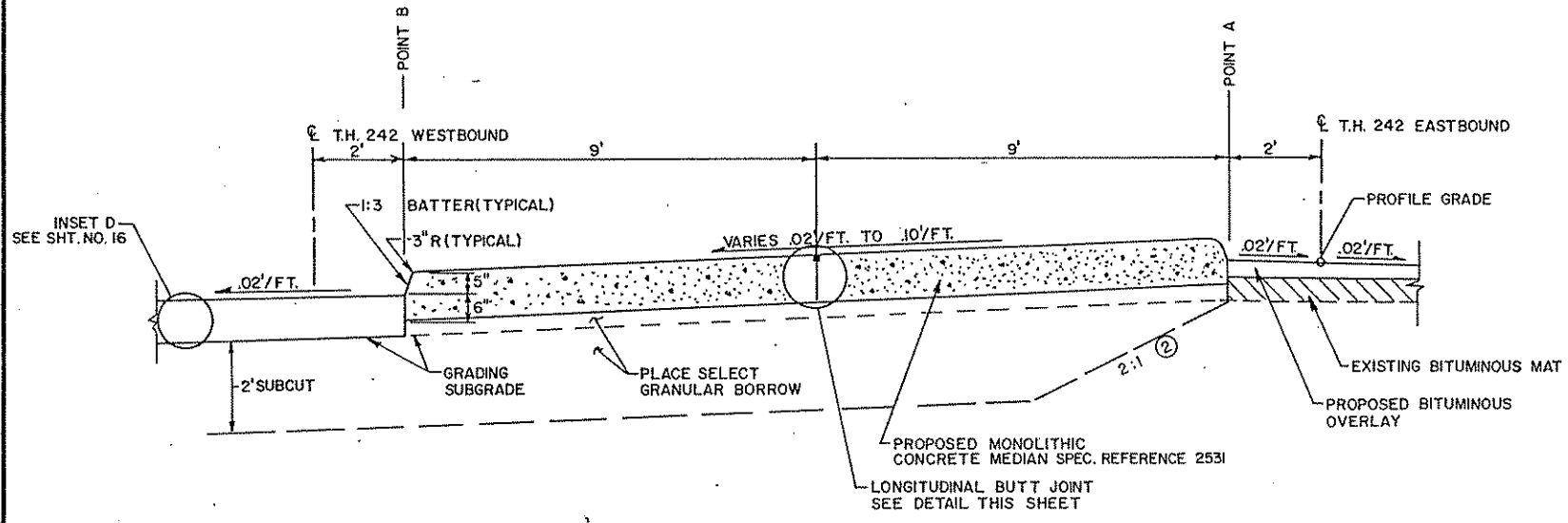


MEDIAN CROSS SLOPE DETAIL

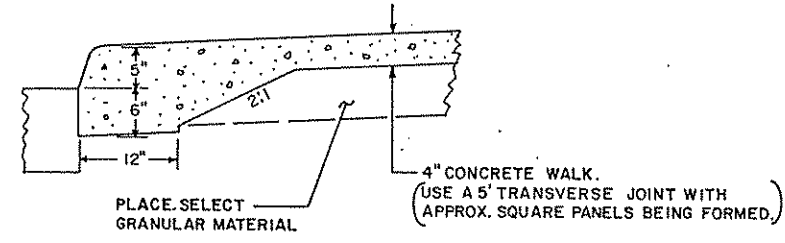
- NOTES:
- ① TRANSVERSE CONTRACTION JOINTS SHALL BE CONSTRUCTED 10' INTERVALS. (MINIMUM) (FULL DEPTH CONCRETE MEDIAN)
  - ② USE A SAWCUT OR COLTER, TO PROVIDE NEAT LINE. CUT VERTICALLY TO THE TOP OF THE GRADING SUBGRADE OR BOTTOM OF THE EXISTING BITUMINOUS SURFACING (WHICHEVER IS DEEPER), AND THEN AT A 2:1 TAPER TO THE BOTTOM OF THE SUBGRADE EXCAVATION.
  - ③ ALL SAWED AND SEALED JOINTS SHALL BE INCIDENTAL TO CONSTRUCTING MEDIAN.



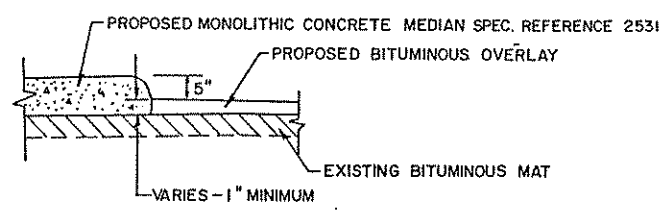
LONGITUDINAL BUTT JOINT DETAIL ③



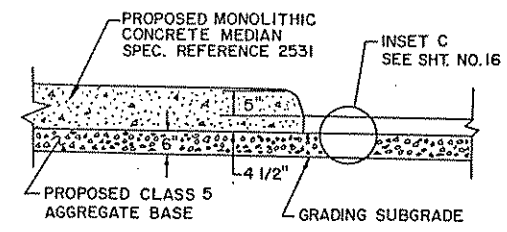
T.H. 242 MONOLITHIC CONCRETE MEDIAN  
STA. 362+65 TO STA. 370+90



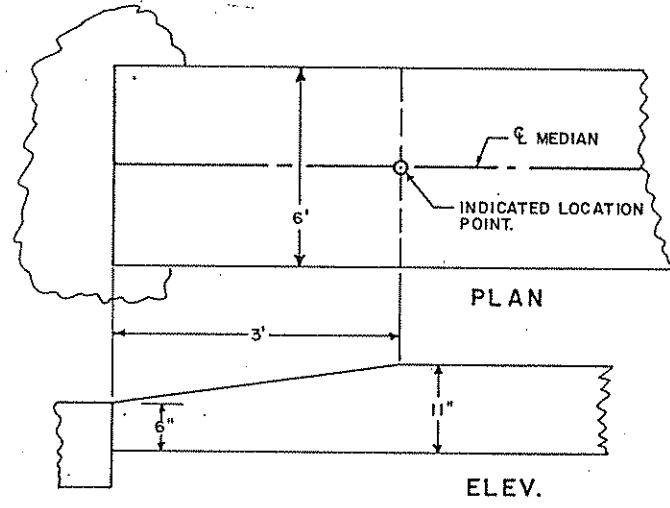
MONOLITHIC CONCRETE MEDIAN  
(CONTRACTOR'S OPTION)



MONOLITHIC CONCRETE MEDIAN WHERE CONSTRUCTED  
OVER EXISTING BITUMINOUS MAT



MONOLITHIC CONCRETE MEDIAN  
OAK PARK BLVD.  
AND  
ROLK STREET

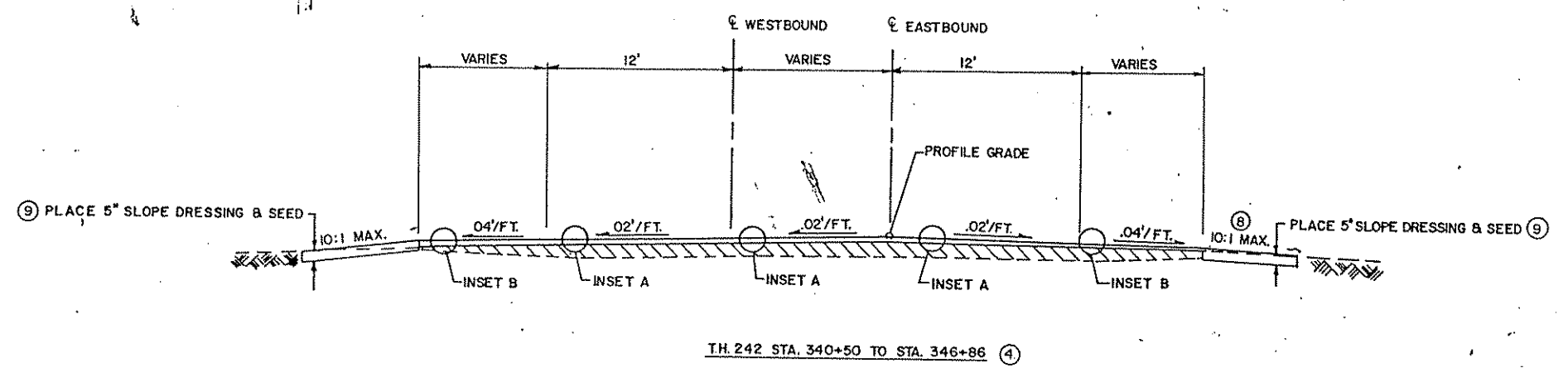
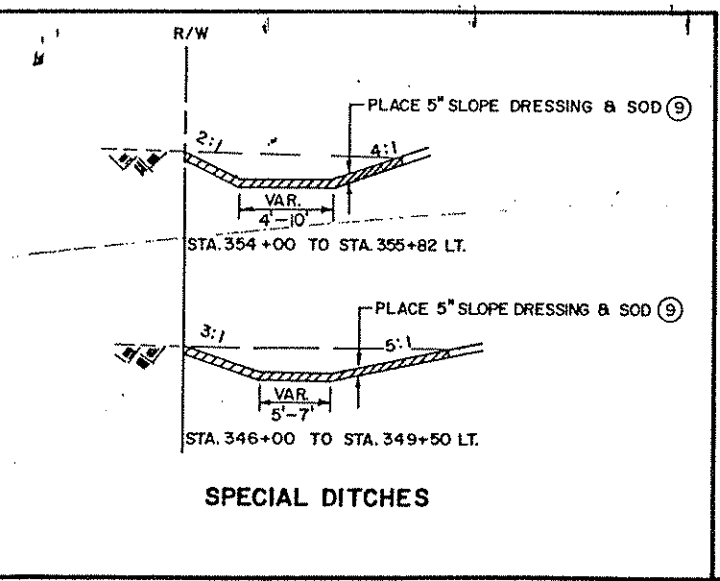
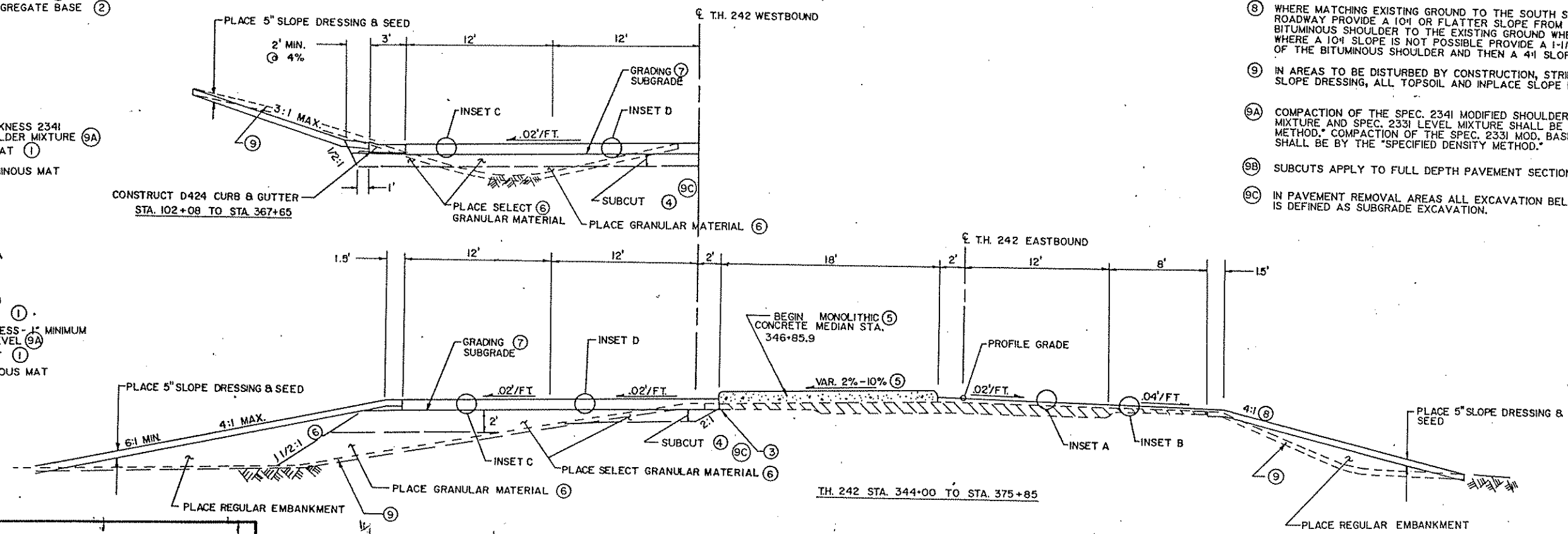
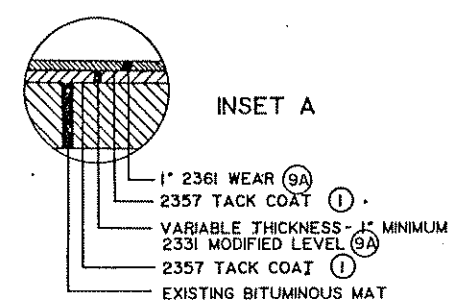
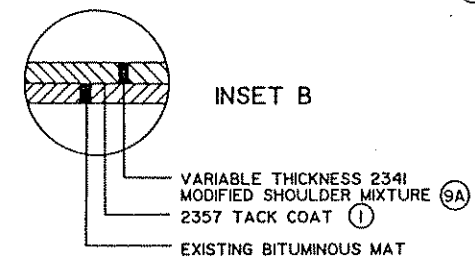
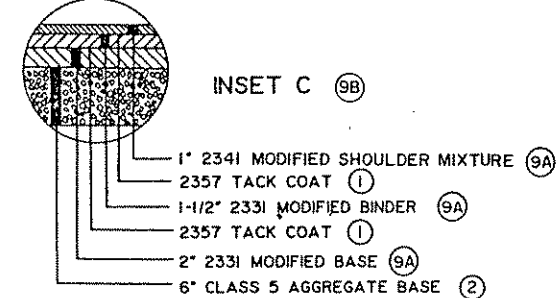
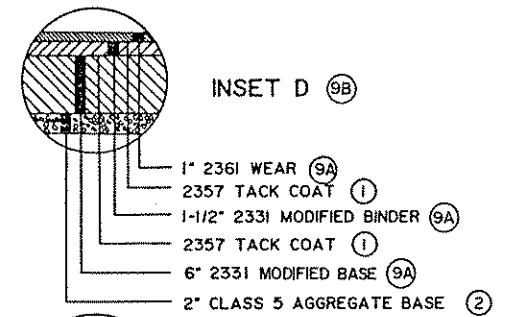
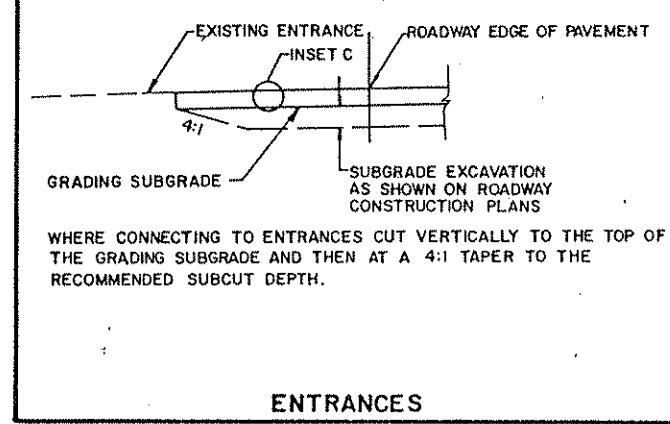
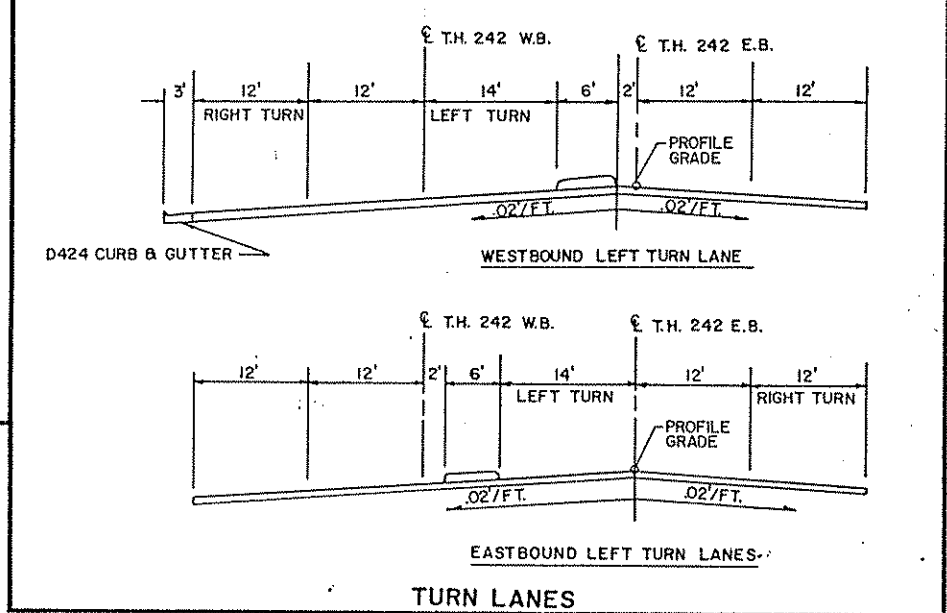


NOSE DETAIL

MONOLITHIC CONCRETE MEDIAN  
CONSTRUCTION AND SUPERELEVATION DETAILS

NOTES:

- ① USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF .03 TO .05 GAL./SQ. YD. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED BY THE REFINERY); ASPHALT EMULSION MAY BE FUTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPECIFICATION 2357.
- ② COMPACTION OF THE CLASS 5 AGGREGATE BASE SHALL BE BY THE "SPECIFIED DENSITY METHOD", EXCEPT THAT IN AREAS WHERE THE PLANNED THICKNESS OF THE AGGREGATE BASE IS 2" COMPACTION SHALL BE OBTAINED BY THE "ORDINARY COMPACTION METHOD".
- ③ WHERE WIDENING TO THE NORTH SIDE OF THE T.H. 242 ROADWAY USE A SAWCUT, OR COLTER, TO PROVIDE A NEAT LINE AS SHOWN ON THE ROADWAY CONSTRUCTION PLANS. CUT VERTICALLY TO THE TOP OF THE GRADING SUBGRADE OR BOTTOM OF THE EXISTING BITUMINOUS SURFACING (WHICHEVER IS DEEPER), AND THEN AT A 2:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
- ④ SEE PROFILES ON ROADWAY CONSTRUCTION PLANS FOR RECOMMENDED SUBCUTS.
- ⑤ SEE MONOLITHIC CONCRETE MEDIAN DETAIL SHEET FOR MEDIAN CONSTRUCTION AND MEDIAN SUPERELEVATION DETAILS.
- ⑥ [THE UPPER 4' OF THE SUBGRADE WITHIN 1-1/2:1 SLOPES FROM THE GRADING SHOULDER P.I. SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL OF WHICH THE UPPER 2' SHALL CONSIST OF SELECT GRANULAR MATERIAL MEETING THE REQUIREMENTS OF SPEC. NO. 3149.2B (OF THE PORTION PASSING A 1" SIEVE NOT MORE THAN 12 PERCENT WILL PASS A NO. 200 SIEVE). THE REMAINING SELECTED GRADING MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. NO. 3149.2A.]
- ⑦ TOP OF GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- ⑧ WHERE MATCHING EXISTING GROUND TO THE SOUTH SIDE OF THE T.H. 242 ROADWAY PROVIDE A 10:1 OR FLATTER SLOPE FROM THE EDGE OF THE BITUMINOUS SHOULDER TO THE EXISTING GROUND WHEREVER POSSIBLE. IN AREAS WHERE A 10:1 SLOPE IS NOT POSSIBLE PROVIDE A 1-1/2' 25:1 SLOPE FROM THE EDGE OF THE BITUMINOUS SHOULDER AND THEN A 4:1 SLOPE TO THE EXISTING GROUND.
- ⑨ IN AREAS TO BE DISTURBED BY CONSTRUCTION, STRIP AND SAVE FOR REUSE AS SLOPE DRESSING, ALL TOPSOIL AND INPLACE SLOPE DRESSING.
- ⑨A COMPACTION OF THE SPEC. 2341 MODIFIED SHOULDER MIXTURE, SPEC. 2361 WEAR MIXTURE AND SPEC. 2331 LEVEL MIXTURE SHALL BE BY THE "ORDINARY COMPACTION METHOD." COMPACTION OF THE SPEC. 2331 MOD. BASE AND BINDER MIXTURES SHALL BE BY THE "SPECIFIED DENSITY METHOD."
- ⑨B SUBCUTS APPLY TO FULL DEPTH PAVEMENT SECTIONS (INSETS C, C2 AND D).
- ⑨C IN PAVEMENT REMOVAL AREAS ALL EXCAVATION BELOW THE EXISTING PAVEMENT IS DEFINED AS SUBGRADE EXCAVATION.



TYPICAL SECTIONS  
T.H. 242





CURVE DATA

CURVE NO.	ROADWAY	BEGIN CURVE			P.I.		END CURVE			Δ	D R	T	L	RADIUS POINT COORDINATES
		AZ. FROM N.	STATION	COORDINATES	STATION	COORDINATES	STATION	COORDINATES	AZ. FROM N.					
1001	W.B. T.H. 242	88° 59' 30"	240+50.00	101870.270N 893083.237E	242+21.37	101873.286N 893254.584E	243+92.72	101881.424N 893425.764E	87° 16' 41"	01° 42' 49"	00° 30' 00"	171.373	342.721	113327.652N 892881.604E
1002	W.B. T.H. 242	87° 16' 41"	247+85.67	101900.084N 893818.271E	249+57.04	101908.222N 893989.451E	251+28.39	101911.237N 894160.798E	88° 59' 30"	01° 42' 49"	00° 30' 00"	171.373	342.721	90453.855N 894362.432E

CONSTRUCTION REFERENCE POINTS







POINT	LOCATION	COORDINATES
2001	T.H. 242 & P.O.T. STA. 383+63.37 SEC. 6 & 7 QUARTER COR. C.I.M.	101852.452N 892070.765E
2002	E.B. T.H. 242 & P.I. STA. 357+01.52 SEC. 5, 6, 7 & 8 CORNER C.I.M.	101899.330N 894734.505E
2003	E.B. T.H. 242 & P.O.T. STA. 330+37.37 SEC. 5 & 8 QUARTER COR. C.I.M.	101948.220N 897395.900E
1003	W.B. T.H. 242 & P.O.T. STA. 256+35.35= POLK STREET & P.O.T. STA. 103+81.82	101920.157N 894667.673E
1004	W.B. T.H. 242 & P.I. STA. EQU.= 257+01.80=357+01.52 SEC. LINE 5 & 6	101921.327N 894734.118E
1005	W.B. T.H. 242 & P.O.T. STA. 376+00.00	101956.196N 896632.278E
2004	OAK PARK DRIVE & P.O.T. STA. 100+00.00	101538.371N 894673.002E
2006	E.B. T.H. 242 & P.O.T. STA. 356+34.99= OAK PARK BLVD. & P.O.T. STA. 103+59.82	101898.160N 894667.980E
1006	POLK STREET & P.I. STA. 105+14.74	102053.061N 894665.818E
1007	POLK STREET & P.O.T. STA. 107+65.05	102303.227N 894657.323E

ALIGNMENT TABULATIONS

## ABBREVIATIONS

3-1(eg)	SIGNAL HEAD PHASE "3" - NO. "1"
BL	BLUE
BL/BLK	BLUE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
BR. GR.	BARE GROUND
CH. SW.	CHECK SWITCH
CLR	CLEAR
D2-1(eg)	DETECTOR PHASE "2" - NO. "1"
DNL	DOWNLIGHT
DMK	DON'T WALK
EGG	EQUIPMENT GROUND
EVP	EMERGENCY VEHICLE PRE-EMPTION
F&I	FURNISH AND INSTALL
FL	FLASH/FLASHING
G/BLK	GREEN WITH BLACK TRACER
G	GREEN
GLTA	GREEN LEFT TURN ARROW
GRN	GREEN
GR. R.	GROUND ROD
GRTA	GREEN RIGHT THRU ARROW
GTHA	GREEN THRU ARROW
HH	HANDHOLE
HPS	HIGH PRESSURE SODIUM
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
LUM	LUMINAIRE
MV	MERCURY VAPOR
NEU	NEUTRAL
NMC	NONMETALLIC CONDUIT
O	ORANGE
O/BLK	ORANGE WITH BLACK TRACER
P1-1(eg)	PEDESTRIAN INDICATIONS PHASE "1" - NO. "1"
PB	PUSHBUTTON
PB2-1(eg)	PUSHBUTTON PHASE "2" - NO. "1"
PEC	PHOTOELECTRIC CELL
PED	PEDESTRIAN
R	RED
R&S	REMOVE AND SALVAGE
R/BLK	RED WITH BLACK TRACER
RLTA	RED LEFT TURN ARROW
RRTA	RED RIGHT TURN ARROW
RSC	RIGID STEEL CONDUIT
SOP	SOURCE OF POWER
SPR	SPARE
ST LHT	STREET LIGHT
STA	STATION
SW	SWITCH
SWD	SWITCHED
TDW	TELEPHONE DROP WIRE
THRA	THRU AND RIGHT ARROW
WH	WHITE
WH/BLK	WHITE WITH BLACK TRACER
WLK	WALK
YEL	YELLOW
YLTA	YELLOW LEFT TURN ARROW
YRTA	YELLOW RIGHT TURN ARROW
YTHA	YELLOW THRU ARROW

## SYMBOLS

	EGG CONNECTION
	EVP DETECTOR DIRECTION
	LUMINAIRE NO. (eg. 4)
	SIGNAL BASE NO. (eg. 13)
	SIGNAL FACE NO. (Phase 2-Face 1)
	SPLICE

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

## STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
7036 C	PEDESTRIAN CURB RAMP
* 8110 C	TRAFFIC SIGNAL BRACKETING
8111 B	TRAFFIC SIGNAL BRACKETING
8112 C	PEDESTAL FOUNDATION
8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSHBUTTON INSTALLATION
8117 F	PRECAST CONCRETE HANDHOLE (OR PULLBOX)
* 8118 C	SERVICE EQUIPMENT & POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 H	P-80 & P-90 POLE FOUNDATION
* 8121 B	TRANSFORMER BASE WITH POLE BASE PLATE
8122 C	PEDESTAL & PEDESTAL BASE
* 8123 B	POLE & MAST ARM
* 8124 D	MAST ARM SIGNAL HEAD MOUNTS
* 8126 C	P-100 POLE FOUNDATION
* 8130 D	SAW CUT LOOP DETECTORS

\* STANDARD PLATES APPLICABLE TO THIS PROJECT

I HEREBY CERTIFY THAT SHEETS 20 THROUGH 23B  
OF THIS PLAN WERE 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.

*Charles J. Hurdick*

DATE 12-31-87 REG. NO. 11940

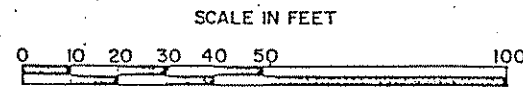
DESIGN SQUAD LONNY CARPENTER



SIGNAL INDICATION CHART							
FACE	PHASE	FLASH	TYPE AND SIZE IN INCHES				
			R	Y	G	Y	G
1-1	1	R	12	12	12	—	—
1-2	1	R	12	12	12	—	—
5-1	5	R	12	12	12	—	—
5-2	5	R	12	12	12	—	—
2-1	2	R	12	12	12	—	—
2-2	2	R	12	12	12	—	—
6-1	6	R	12	12	12	—	—
6-2	6	R	12	12	12	—	—
4-1	4	R	12	12	12	—	—
4-2	4	R	12	12	12	—	—
4-3	4	R	12	12	12	—	—
8-1	8	R	12	12	12	—	—
8-2	8	R	12	12	12	—	—
8-3	8	R	12	12	12	—	—
4-4	4	R	12	12	12	—	—
8-4	8	R	12	12	12	—	—

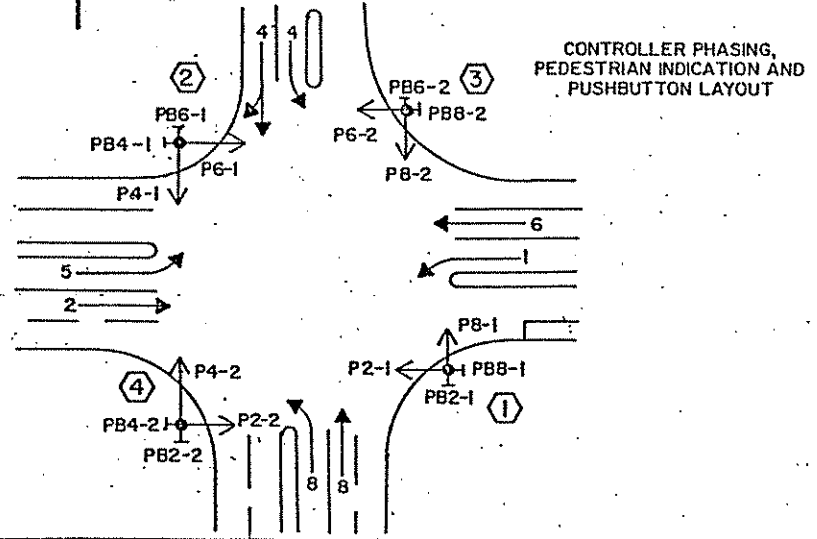
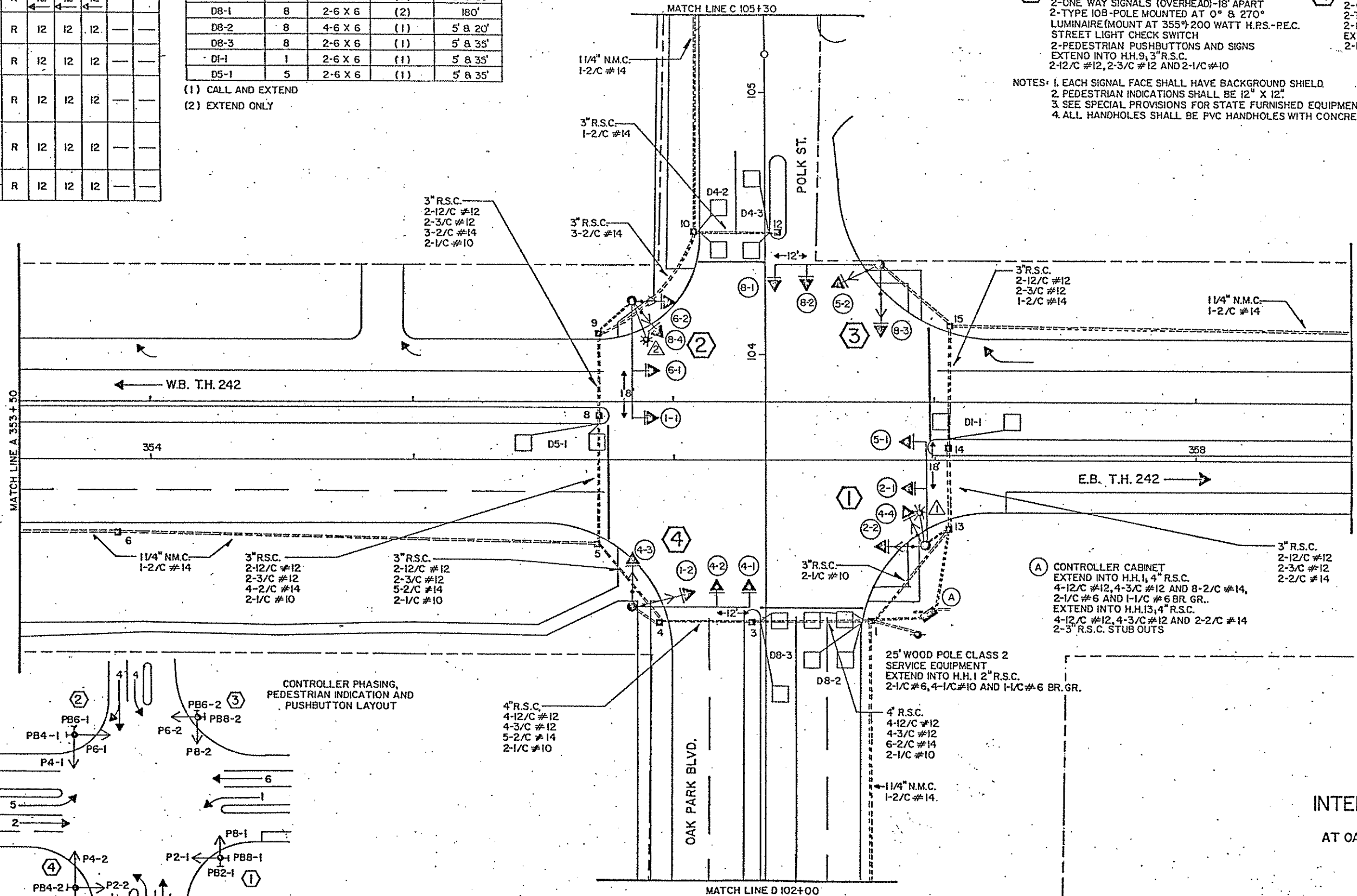
DETECTOR CHART				DISTANCE FROM STOP BAR
DESIGNATION	PHASE	SIZE IN FT	FUNCTION	
D2-1	2	1-6 X 6	(1)	380'
D6-1	6	1-6 X 6	(1)	380'
D4-1	4	2-6 X 6	(2)	180'
D4-2	4	2-6 X 6	(1)	5' & 20'
D4-3	4	2-6 X 6	(1)	5' & 35'
D8-1	8	2-6 X 6	(2)	180'
D8-2	8	4-6 X 6	(1)	5' & 20'
D8-3	8	2-6 X 6	(1)	5' & 35'
D1-1	1	2-6 X 6	(1)	5' & 35'
D5-1	5	2-6 X 6	(1)	5' & 35'

(1) CALL AND EXTEND  
(2) EXTEND ONLY



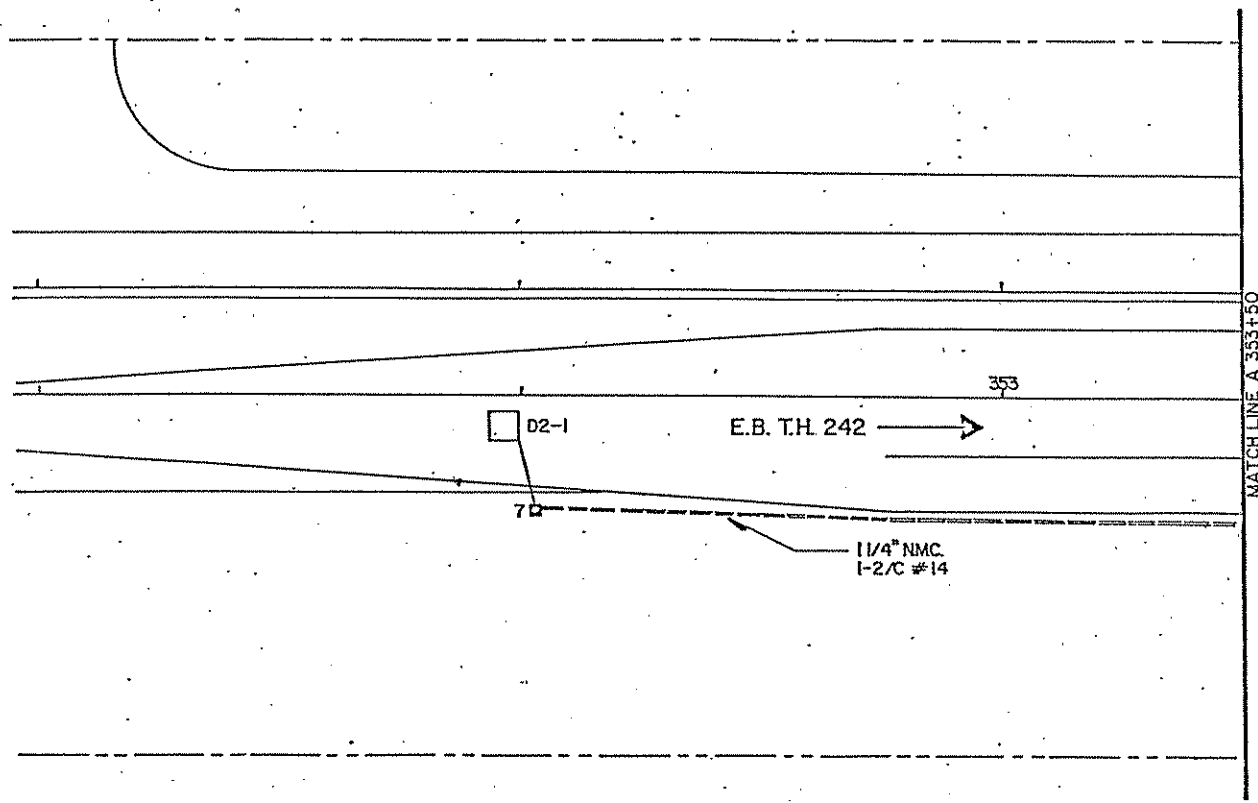
- ① TYPE A-100-A-40-D40-9  
2-ONE WAY SIGNALS (OVERHEAD)-18' APART  
2-TYPE 10B-POLE MOUNTED AT 0° & 270°  
LUMINAIRE (MOUNT AT 355°) 200 WATT H.P.S.-REC.  
STREET LIGHT CHECK SWITCH  
2-PEDESTRIAN PUSHBUTTONS AND SIGNS  
EXTEND INTO H.H.13, 3" R.S.C.  
2-12/C #12, 2-3/C #12 AND 2-1/C #10
- ② TYPE A-100-A-45-D40-9  
2-ONE WAY SIGNALS (OVERHEAD)-18' APART  
2-TYPE 10B-POLE MOUNTED AT 0° & 270°  
LUMINAIRE (MOUNT AT 355°) 200 WATT H.P.S.-REC.  
STREET LIGHT CHECK SWITCH  
2-PEDESTRIAN PUSHBUTTONS AND SIGNS  
EXTEND INTO H.H.9, 3" R.S.C.  
2-12/C #12, 2-3/C #12 AND 2-1/C #10
- ③ TYPE P-100-A-40  
2-ONE WAY SIGNALS (OVERHEAD)-12' APART  
2-TYPE 10B-POLE MOUNTED AT 0° & 270°  
2-PEDESTRIAN PUSHBUTTONS AND SIGNS  
EXTEND INTO H.H.15, 3" R.S.C.  
2-12/C #12 AND 2-3/C #12
- ④ TYPE A-100-A-45  
2-ONE WAY SIGNALS (OVERHEAD)-12' APART  
2-TYPE 10B-POLE MOUNTED AT 0° & 270°  
2-PEDESTRIAN PUSHBUTTONS AND SIGNS  
EXTEND INTO H.H.4, 3" R.S.C.  
2-12/C #12 AND 2-3/C #12

NOTES: 1. EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.  
2. PEDESTRIAN INDICATIONS SHALL BE 12" X 12".  
3. SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.  
4. ALL HANDHOLES SHALL BE PVC HANDHOLES WITH CONCRETE COVERS.

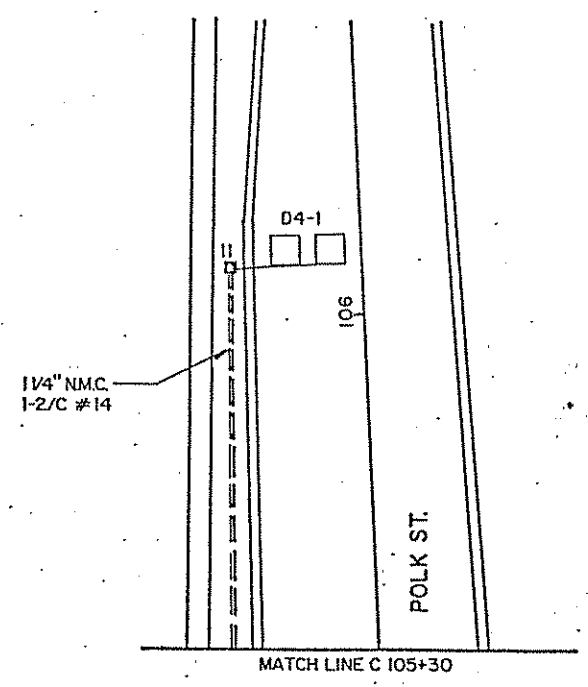


(A) CONTROLLER CABINET  
EXTEND INTO H.H.1, 4" R.S.C.  
4-12/C #12, 4-3/C #12 AND 8-2/C #14,  
2-1/C #6 AND 1-1/C #6 BR. GR..  
EXTEND INTO H.H.13, 4" R.S.C.  
4-12/C #12, 4-3/C #12 AND 2-2/C #14  
2-3" R.S.C. STUB OUTS

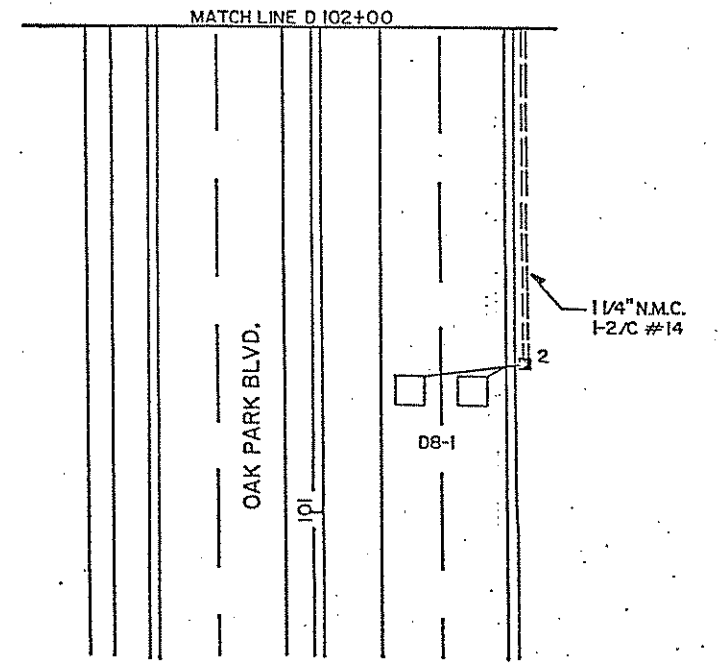
**INTERSECTION LAYOUT**  
T.H. 242  
AT OAK PARK BLVD & POLK ST.  
BLAINE



MATCH LINE A 353+50

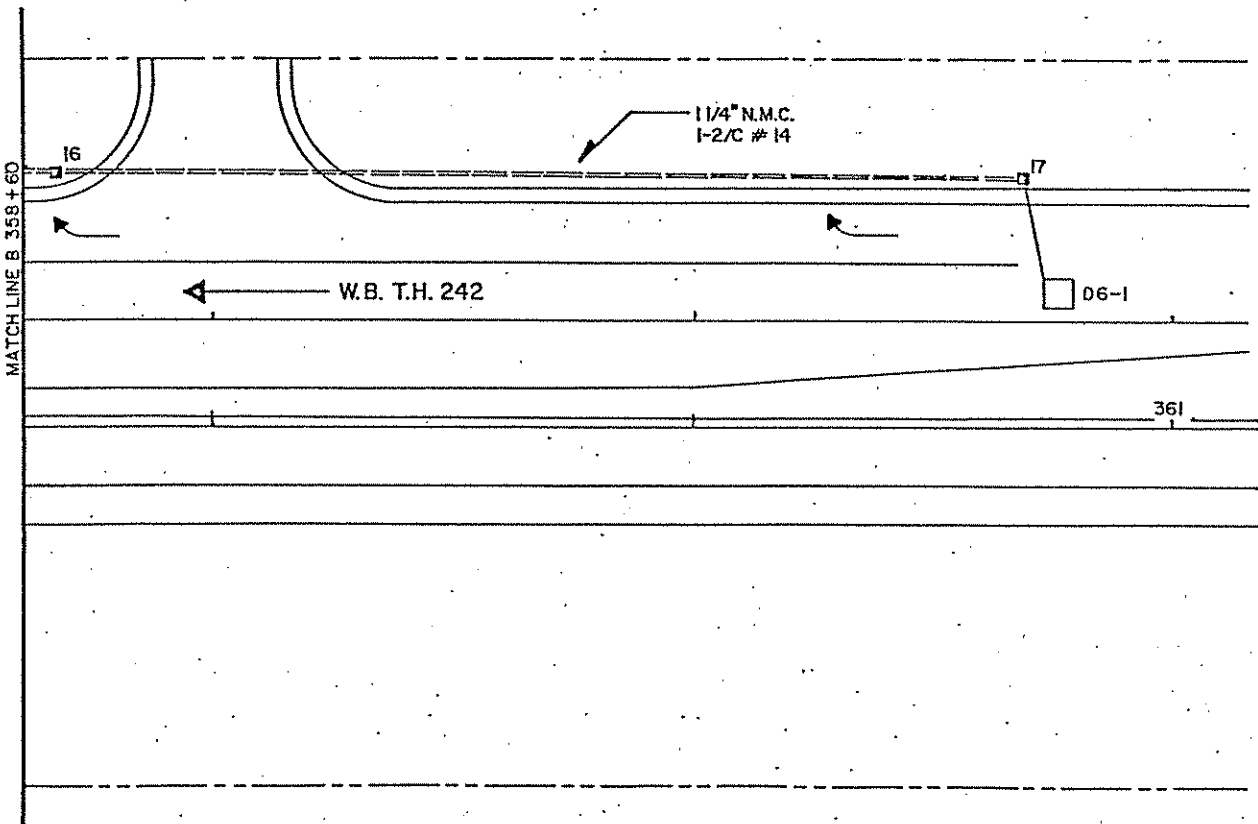
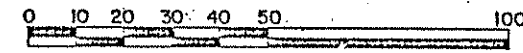


MATCH LINE C 105+30



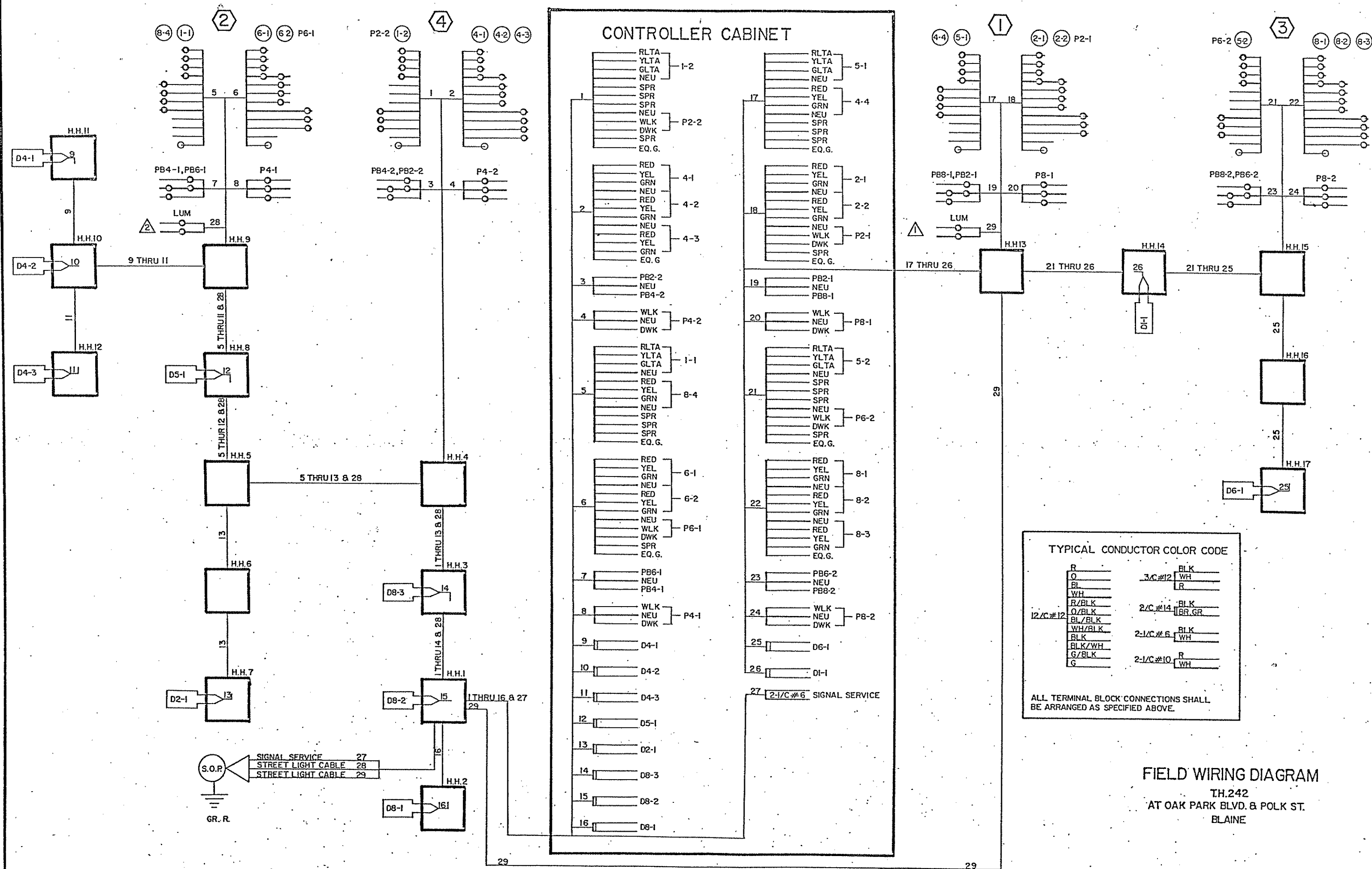
MATCH LINE D 102+00

SCALE IN FEET



MATCH LINE B 358+60

MATCH LINE DETAILS  
 T.H. 242  
 AT OAK PARK BLVD. & POLK ST.  
 BLAINE



**CONTROLLER CABINET**

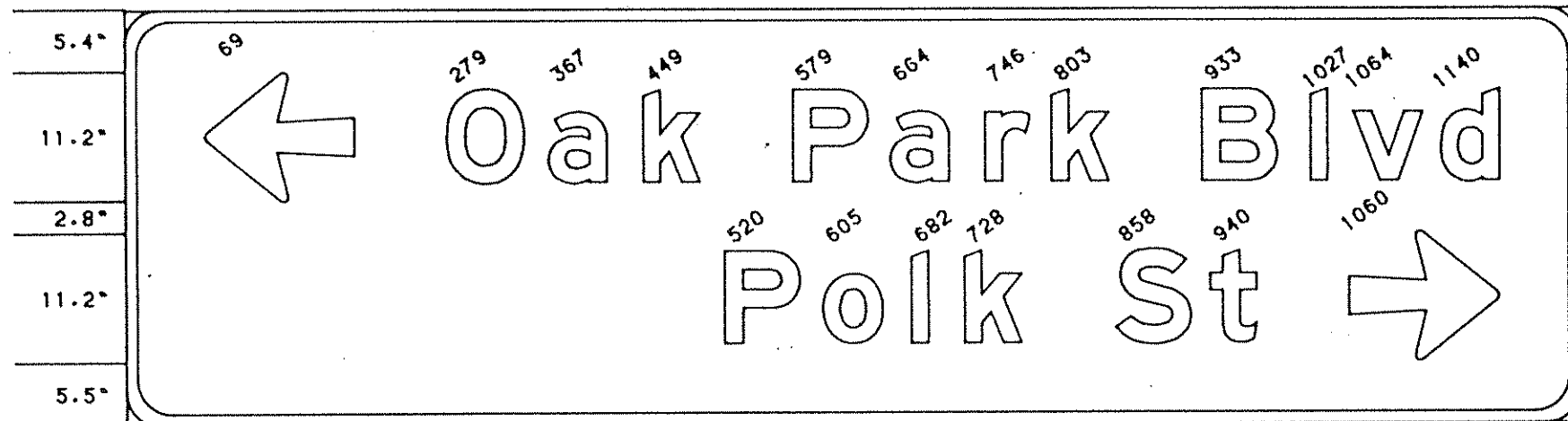
- |    |       |      |    |                         |      |
|----|-------|------|----|-------------------------|------|
| 1  | RLTA  | 1-2  | 17 | RLTA                    | 5-1  |
|    | YLTA  |      |    | YLTA                    |      |
|    | GLTA  |      |    | GLTA                    |      |
|    | NEU   |      |    | NEU                     |      |
|    | SPR   |      |    | RED                     | 4-4  |
|    | SPR   |      |    | YEL                     |      |
|    | NEU   |      |    | GRN                     |      |
|    | WLK   | P2-2 |    | NEU                     |      |
|    | DWK   |      |    | SPR                     |      |
|    | SPR   |      |    | SPR                     |      |
|    | EQ.G. |      |    | EQ.G.                   |      |
| 2  | RED   | 4-1  | 18 | RED                     | 2-1  |
|    | YEL   |      |    | YEL                     |      |
|    | GRN   |      |    | GRN                     |      |
|    | NEU   |      |    | NEU                     |      |
|    | RED   | 4-2  |    | RED                     | 2-2  |
|    | YEL   |      |    | YEL                     |      |
|    | GRN   |      |    | GRN                     |      |
|    | NEU   |      |    | NEU                     |      |
|    | RED   | 4-3  |    | WLK                     | P2-1 |
|    | YEL   |      |    | DWK                     |      |
|    | GRN   |      |    | SPR                     |      |
|    | EQ.G. |      |    | EQ.G.                   |      |
| 3  | PB2-2 |      | 19 | PB2-1                   |      |
|    | NEU   |      |    | NEU                     |      |
|    | PB4-2 |      |    | PB8-1                   |      |
| 4  | WLK   | P4-2 | 20 | WLK                     | P8-1 |
|    | NEU   |      |    | NEU                     |      |
|    | DWK   |      |    | DWK                     |      |
| 5  | RLTA  | 1-1  | 21 | RLTA                    | 5-2  |
|    | YLTA  |      |    | YLTA                    |      |
|    | GLTA  |      |    | GLTA                    |      |
|    | NEU   |      |    | NEU                     |      |
|    | RED   | 8-4  |    | SPR                     |      |
|    | YEL   |      |    | SPR                     |      |
|    | GRN   |      |    | NEU                     |      |
|    | NEU   |      |    | WLK                     | P6-2 |
|    | SPR   |      |    | DWK                     |      |
|    | SPR   |      |    | EQ.G.                   |      |
|    | EQ.G. |      |    | EQ.G.                   |      |
| 6  | RED   | 6-1  | 22 | RED                     | 8-1  |
|    | YEL   |      |    | YEL                     |      |
|    | GRN   |      |    | GRN                     |      |
|    | NEU   |      |    | NEU                     |      |
|    | RED   | 6-2  |    | RED                     | 8-2  |
|    | YEL   |      |    | YEL                     |      |
|    | GRN   |      |    | GRN                     |      |
|    | NEU   |      |    | NEU                     |      |
|    | WLK   | P6-1 |    | RED                     | 8-3  |
|    | DWK   |      |    | YEL                     |      |
|    | EQ.G. |      |    | GRN                     |      |
| 7  | PB6-1 |      | 23 | PB6-2                   |      |
|    | NEU   |      |    | NEU                     |      |
|    | PB4-1 |      |    | PB8-2                   |      |
| 8  | WLK   | P4-1 | 24 | WLK                     | P8-2 |
|    | NEU   |      |    | NEU                     |      |
|    | DWK   |      |    | DWK                     |      |
| 9  | D4-1  |      | 25 | D6-1                    |      |
| 10 | D4-2  |      | 26 | DI-1                    |      |
| 11 | D4-3  |      | 27 | 2-1/C #6 SIGNAL SERVICE |      |
| 12 | D5-1  |      |    |                         |      |
| 13 | D2-1  |      |    |                         |      |
| 14 | D8-3  |      |    |                         |      |
| 15 | D8-2  |      |    |                         |      |
| 16 | D8-1  |      |    |                         |      |

**TYPICAL CONDUCTOR COLOR CODE**

R	BLK
O	3/C #12 WH
BL	R
WH	
R/BLK	2/C #14 BLK
O/BLK	BR GR
BL/BLK	
WH/BLK	2-1/C #6 BLK
BLK	WH
BLK/WH	
G/BLK	2-1/C #10 R
G	WH

ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

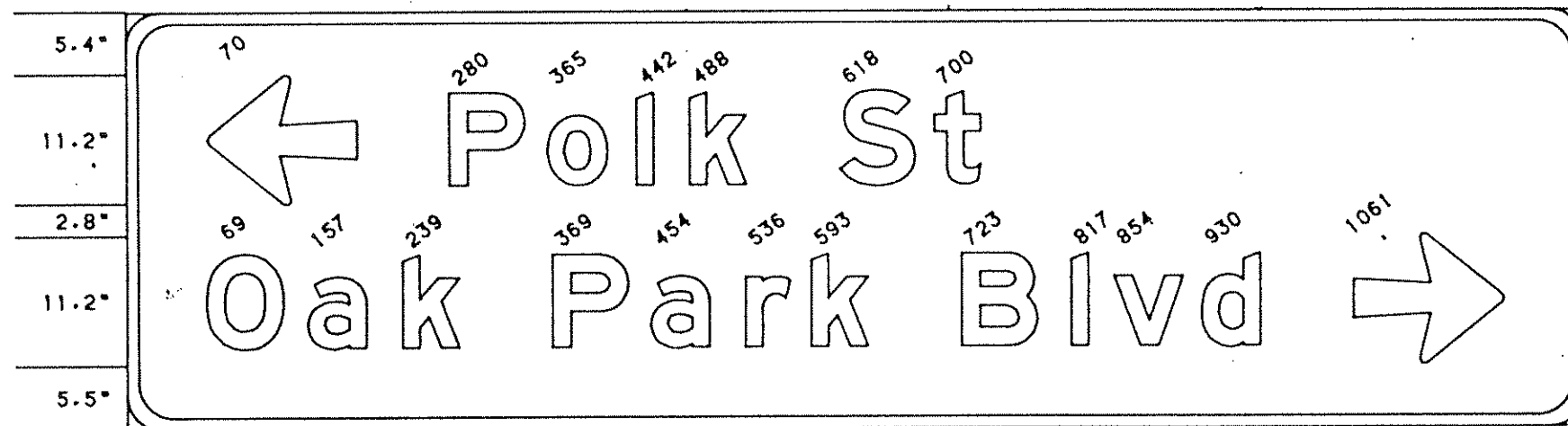
**FIELD WIRING DIAGRAM**  
 TH.242  
 AT OAK PARK BLVD. & POLK ST.  
 BLAINE



126" X 36", 3" R. 1.0" B. D 1

LINE 1 112.2 : 5--13 ARROW-180. 8"-6" E MOD.  
 LINE 2 67.0 : 8"-6" E MOD., 5--13 ARROW-0

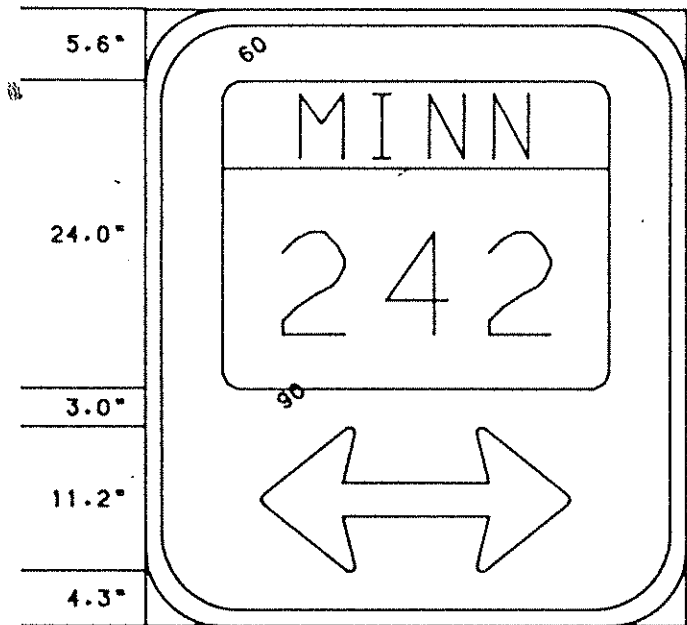
FOR ADDITIONAL SIGN DATA  
 SEE SHEET 23B.



126" X 36", 3" R. 1.0" B. D 3

LINE 1 67.0 : 5--13 ARROW-180. 8"-6" E MOD.  
 LINE 2 112.2 : 8"-6" E MOD., 5--13 ARROW-0

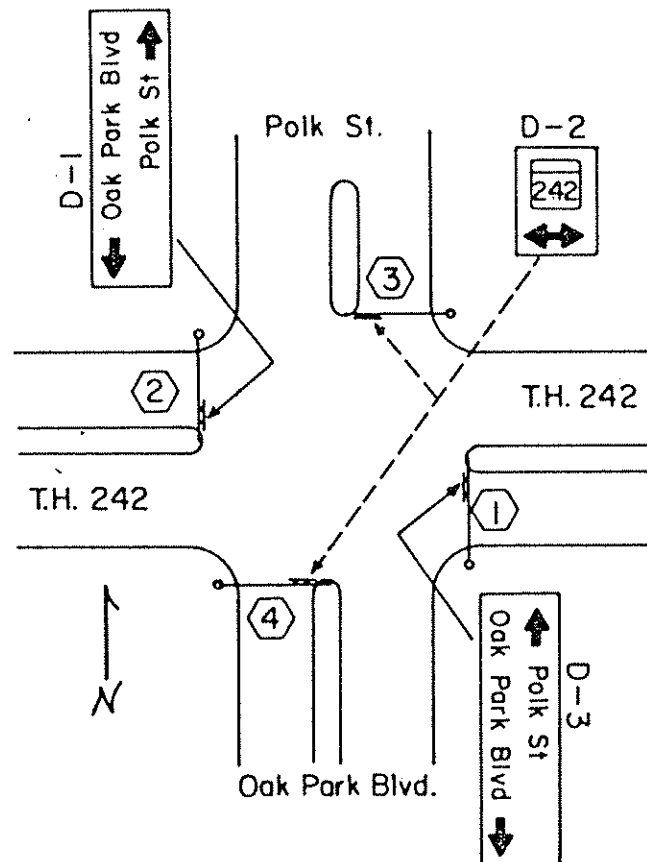
TYPE "D" SIGN DATA



42" X 48", 6" R. 1.2" B. D 2

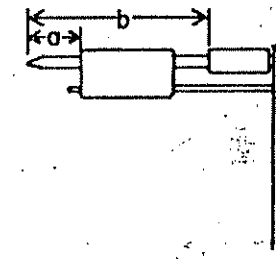
LINE 1 30.0 + 30" X 24" --10" NUM.  
 LINE 2 24.0 + 5-24 DBL. AR.

FOR ADDITIONAL SIGN DATA  
 SEE SHEET 23A.



### TYPE "D" SIGNS

Sign Panel	Size	No. Req.	No. Posts per Sign	Post Spacing	Sq. Ft. per. Sign	a	b
D-1	42" x 48"	2	2	24"	14.0	4'	
D-2	126" x 36"	1	3	42"	31.5	4'	
D-3	126" x 36"	1	3	42"	31.5	4'	



### OVERLAYS

Code No.	Quantity	Size	Legend	Sq. Ft. per Overlay
MI-5B	2	30" x 24"	MN. 242	5.0

- NOTES:
1. Color-White legend and border on green background, fully reflectorized.
  2. Corners extending beyond the border shall not be trimmed.
  3. See Standard Signs Manual for arrow and overlay details.
  4. For structural details, Type D signs, see Standard Signs Manual, page 105B.
  5. For Type D Stringer and Panel-Joint Detail, see Standard Signs Manual.

### TYPE "D" SIGN DATA












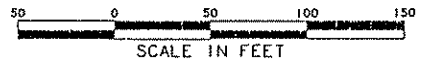






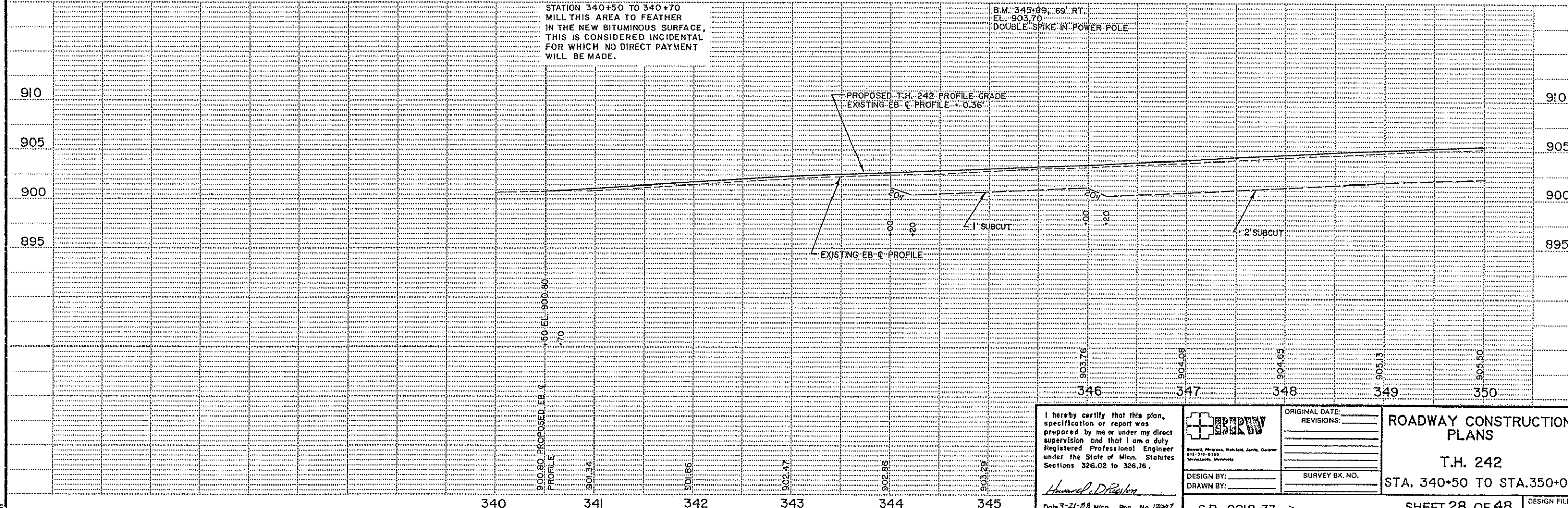
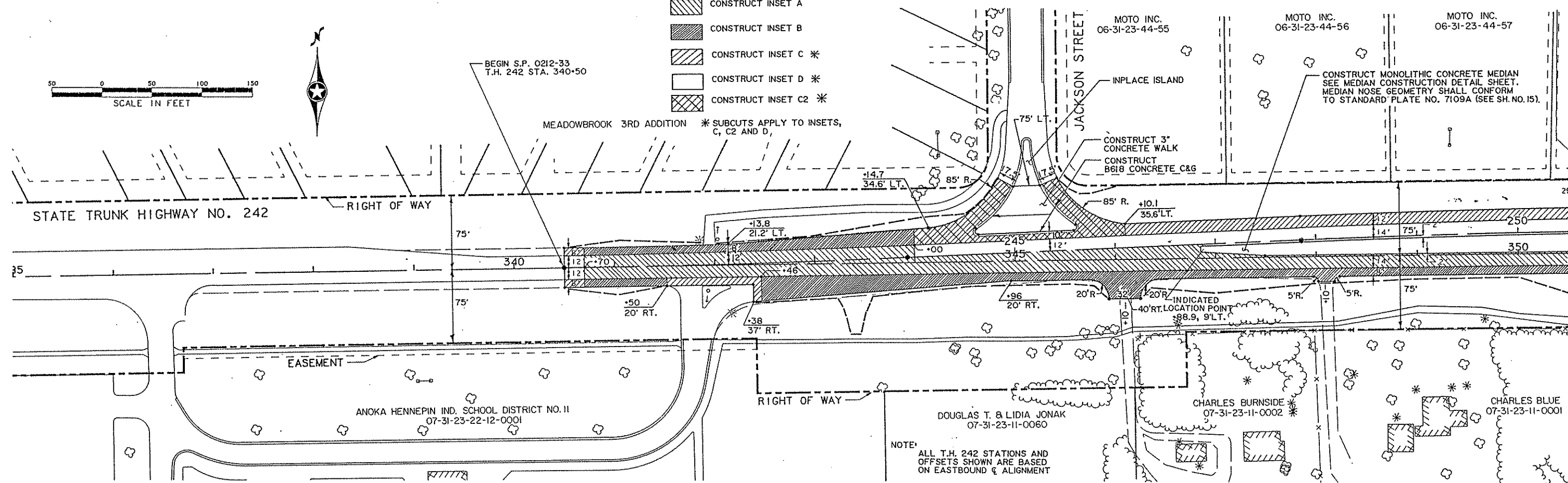
**BITUMINOUS PAVING  
LEGEND**

-  CONSTRUCT INSET A
-  CONSTRUCT INSET B
-  CONSTRUCT INSET C \*
-  CONSTRUCT INSET D \*
-  CONSTRUCT INSET C2 \*



BEGIN S.P. 0212-33  
T.H. 242 STA. 340+50

MEADOWBROOK 3RD ADDITION \* SUBCUTS APPLY TO INSETS, C, C2 AND D.



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.

*Harold D. Peterson*

Date 3-21-82 Minn. Reg. No. 17202

DESIGN BY: \_\_\_\_\_

DRAWN BY: \_\_\_\_\_

ORIGINAL DATE: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

SURVEY BK. NO. \_\_\_\_\_

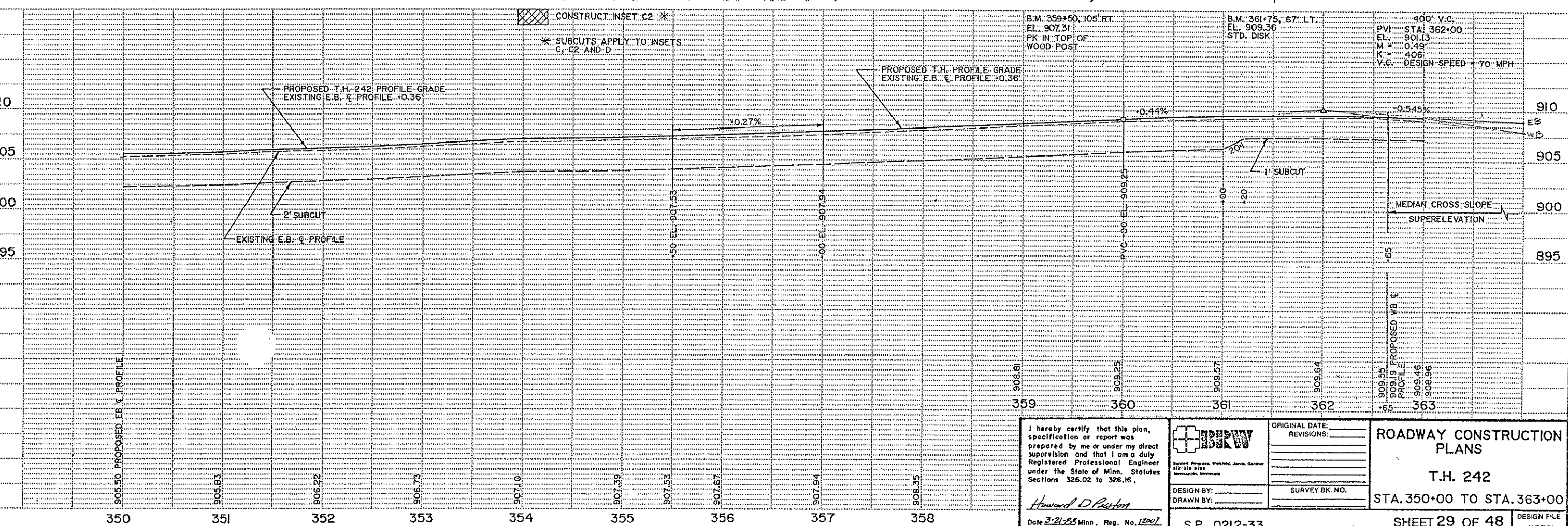
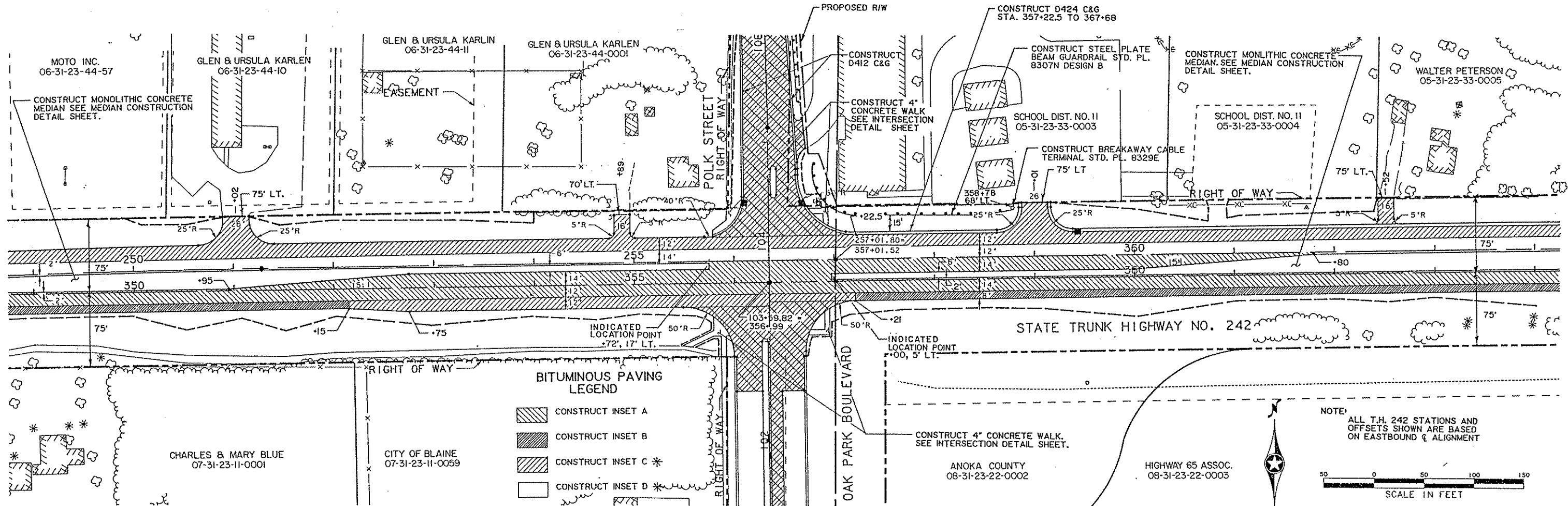
**ROADWAY CONSTRUCTION  
PLANS**

T.H. 242

STA. 340+50 TO STA. 350+00

SHEET 28 OF 48

DESIGN FILE No. 118701



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.

*Howard D. Pustan*  
Date 3-21-88 Minn. Reg. No. 12007

**ROADWAY CONSTRUCTION PLANS**  
T.H. 242  
STA. 350+00 TO STA. 363+00

DESIGN BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_

ORIGINAL DATE: \_\_\_\_\_  
REVISIONS: \_\_\_\_\_

SURVEY BK. NO. \_\_\_\_\_

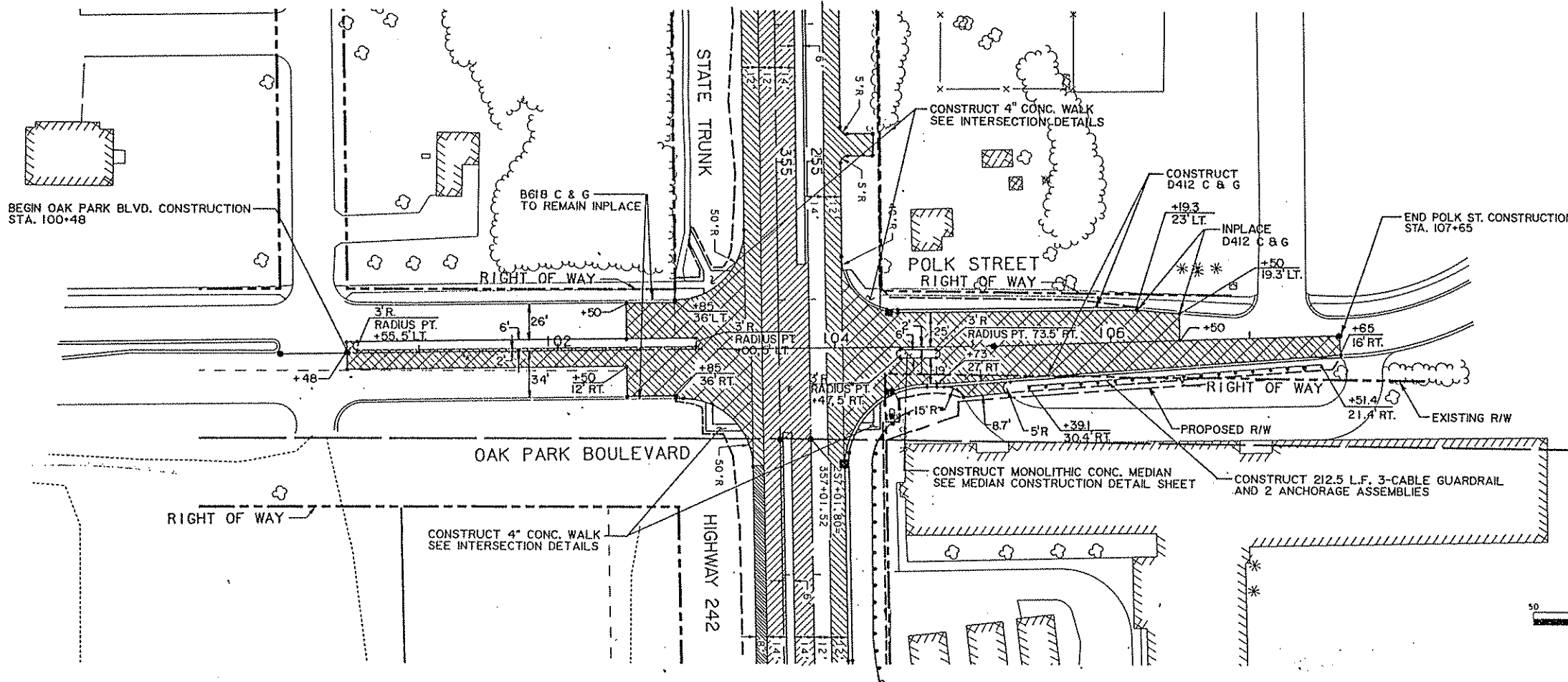
S.P. 0212-33

SHEET 29 OF 48

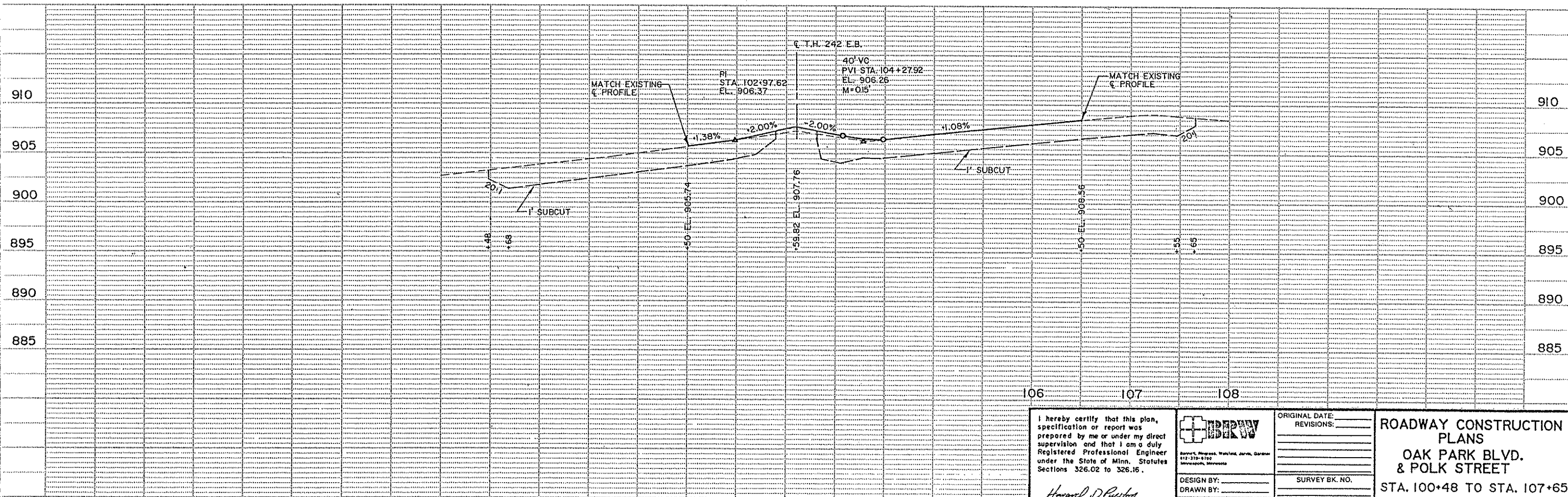
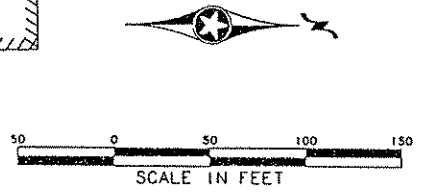
DESIGN FILE No. 118701







- BITUMINOUS PAVING LEGEND**
- CONSTRUCT INSET A
  - CONSTRUCT INSET B
  - CONSTRUCT INSET C \*
  - CONSTRUCT INSET D \*
  - CONSTRUCT INSET C2 \*
- \* SUBCUTS APPLY TO INSETS C, C2, AND D



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.

*Howard D. Pustan*

Date 2-21-82 Minn. Reg. No. 12207

**IBERAW**

Barry's, Rogers, Walker, Jara, Garraway  
112-378-8700  
Inverhock, Minnesota

DESIGN BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_

ORIGINAL DATE: _____
REVISIONS: _____
SURVEY BK. NO. _____

**ROADWAY CONSTRUCTION PLANS**

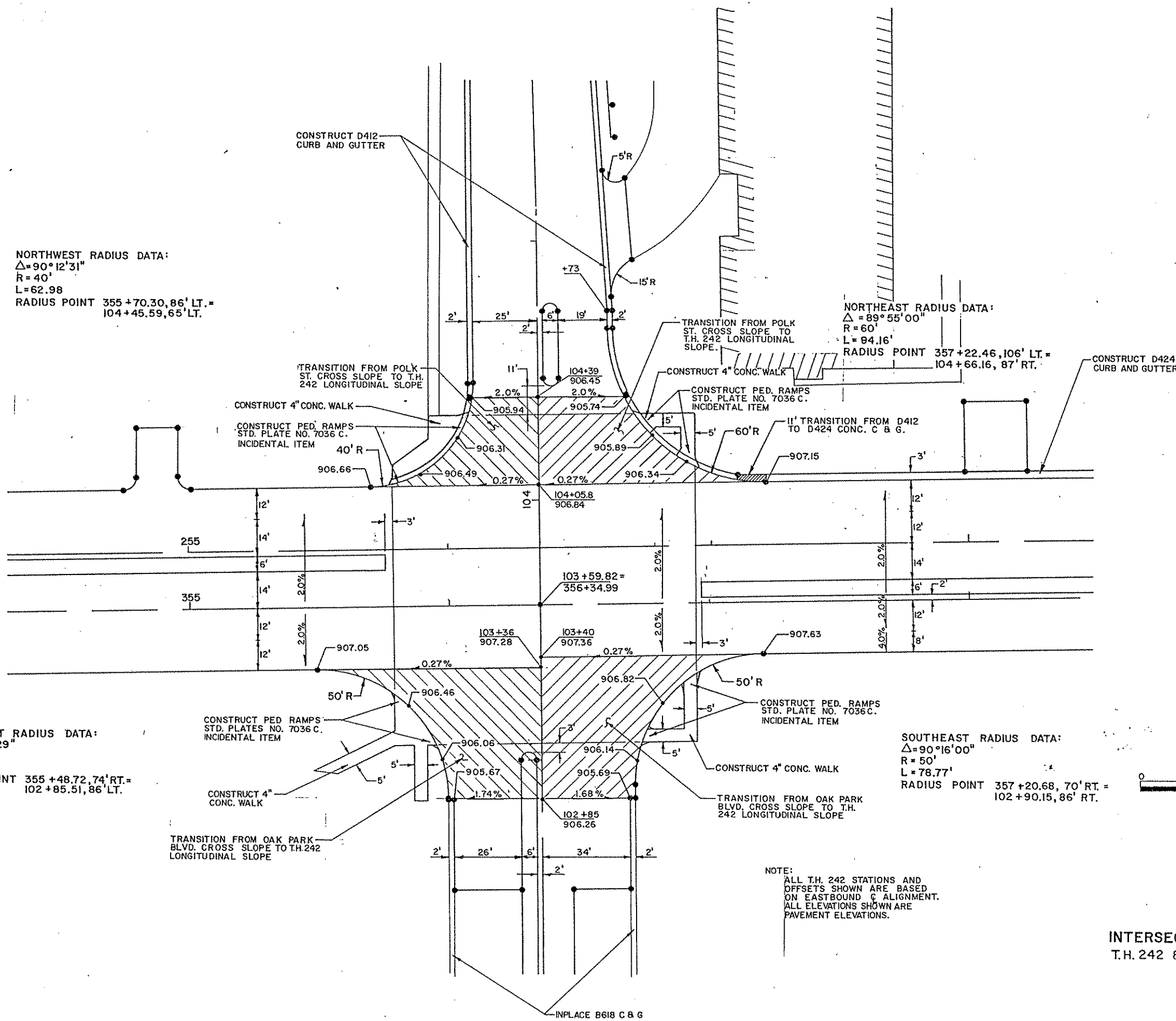
**OAK PARK BLVD. & POLK STREET**

STA. 100+48 TO STA. 107+65

SHEET 31 OF 48

DESIGN FILE No. 118701

S.P. 0212-33



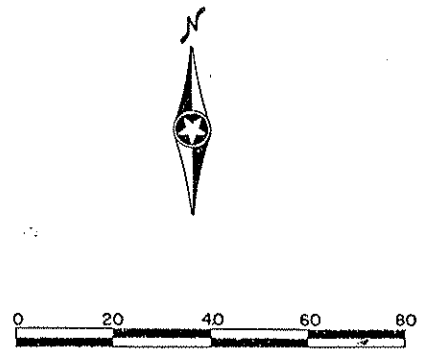
NORTHWEST RADIUS DATA:  
 $\Delta = 90^\circ 12' 31''$   
 $R = 40'$   
 $L = 62.98$   
 RADIUS POINT  $355 + 70.30, 86'$  LT. =  
 $104 + 45.59, 65'$  LT.

NORTHEAST RADIUS DATA:  
 $\Delta = 89^\circ 55' 00''$   
 $R = 60'$   
 $L = 94.16$   
 RADIUS POINT  $357 + 22.46, 106'$  LT. =  
 $104 + 66.16, 87'$  RT.

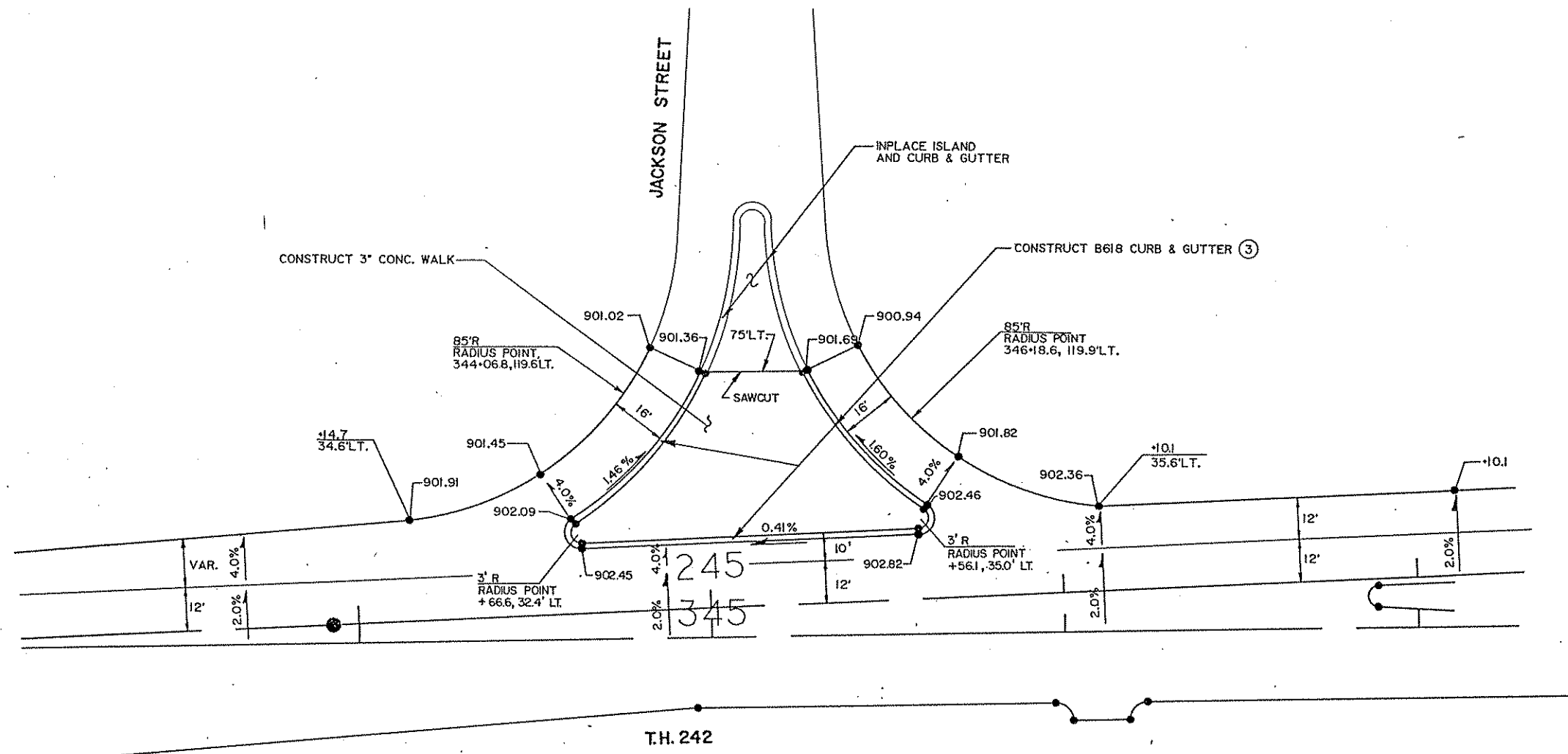
SOUTHWEST RADIUS DATA:  
 $\Delta = 89^\circ 47' 29''$   
 $R = 50'$   
 $L = 78.36'$   
 RADIUS POINT  $355 + 48.72, 74'$  RT. =  
 $102 + 85.51, 86'$  LT.

SOUTHEAST RADIUS DATA:  
 $\Delta = 90^\circ 16' 00''$   
 $R = 50'$   
 $L = 78.77'$   
 RADIUS POINT  $357 + 20.68, 70'$  RT. =  
 $102 + 90.15, 86'$  RT.

NOTE:  
 ALL T.H. 242 STATIONS AND  
 OFFSETS SHOWN ARE BASED  
 ON EASTBOUND C ALIGNMENT.  
 ALL ELEVATIONS SHOWN ARE  
 PAVEMENT ELEVATIONS.

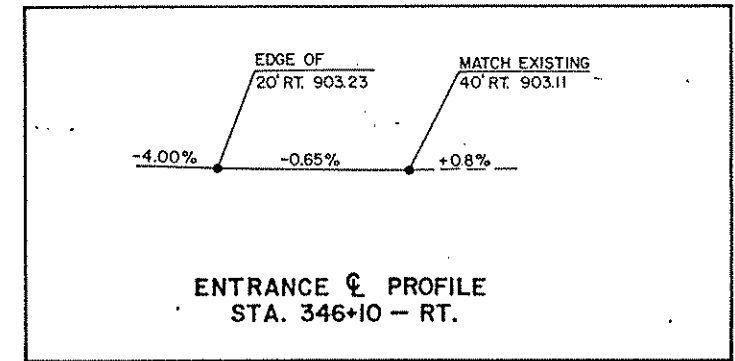
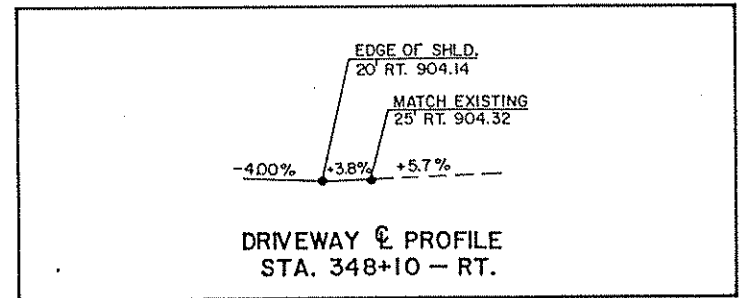
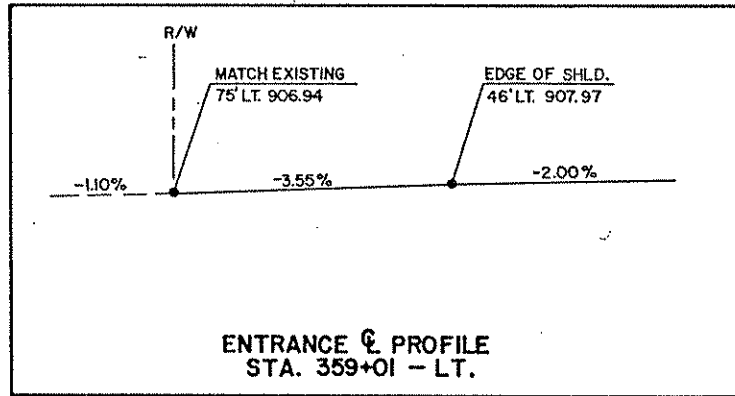
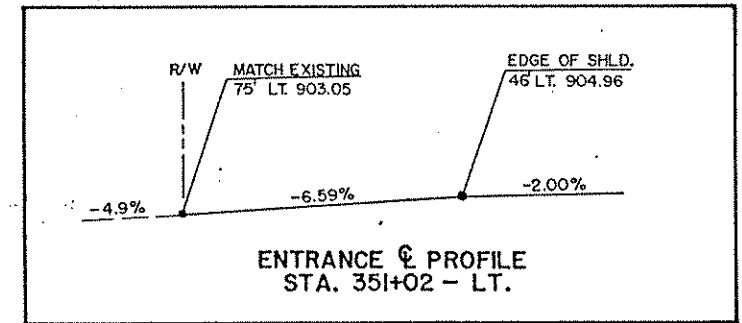
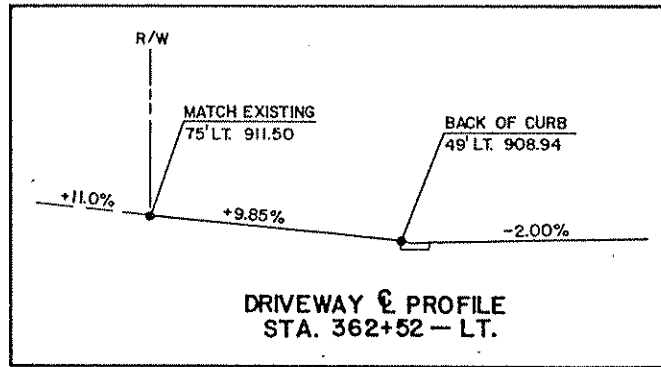
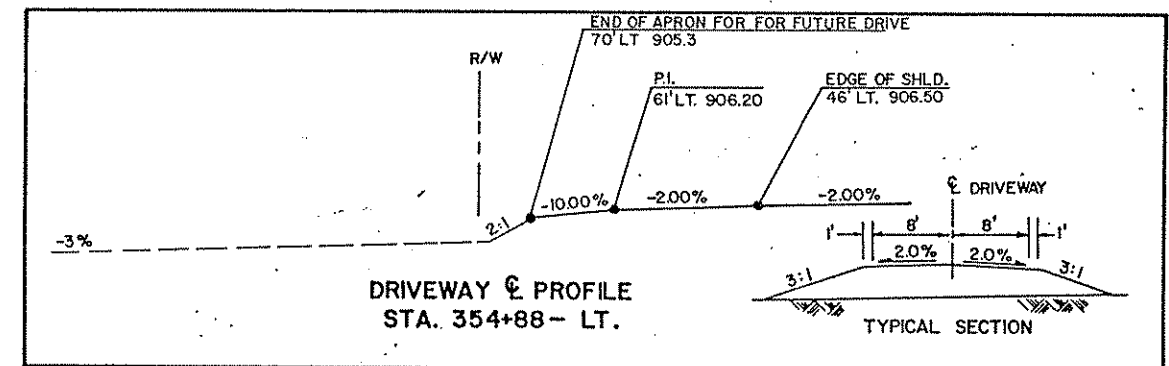
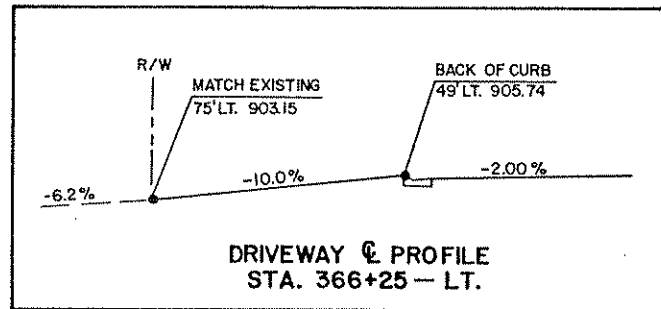


INTERSECTION DETAILS  
 T.H. 242 & OAK PARK BLVD



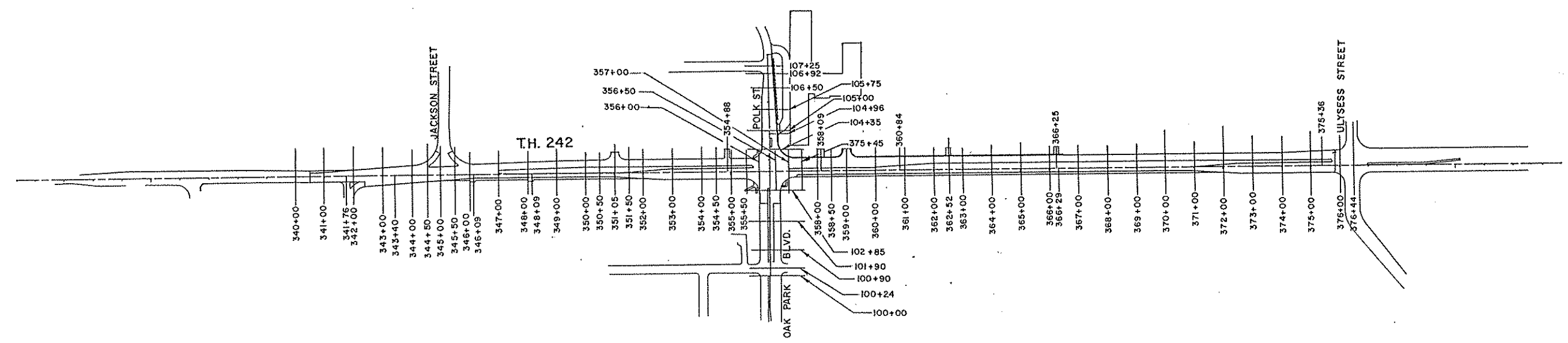
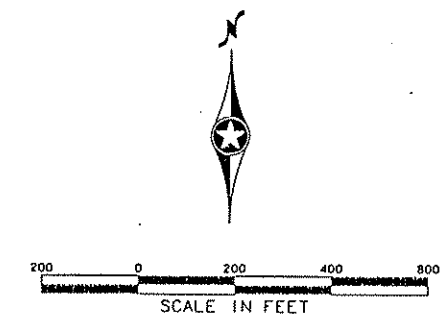
- NOTE:
- ① ALL STATIONS AND OFFSETS SHOWN ARE BASED ON EASTBOUND  $\epsilon$  ALIGNMENT.
  - ② ALL ELEVATIONS SHOWN ARE PAVEMENT ELEVATIONS
  - ③ B618 GUTTER SHALL BE CONSTRUCTED TO MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT.

INTERSECTION DETAIL  
T.H. 242 & JACKSON STREET

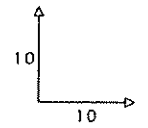
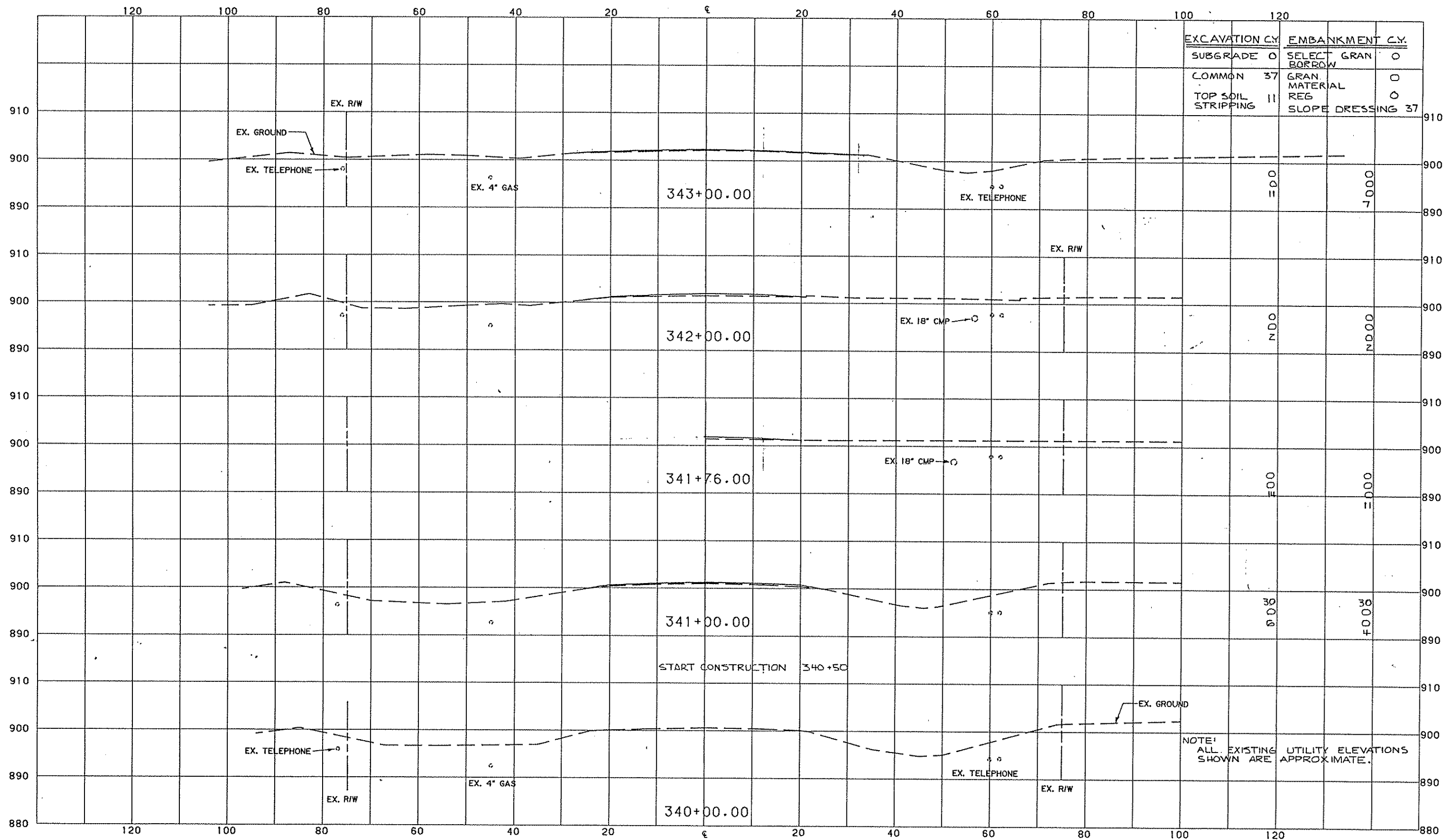


NOTE:  
ALL T.H. 242 STATIONS AND OFFSETS SHOWN  
ARE BASED ON EASTBOUND  $\text{\textcircled{C}}$  ALIGNMENT

DRIVEWAY AND ENTRANCE  
PROFILES



CROSS SECTION LAYOUT



NOTE:  
ALL EXISTING UTILITY ELEVATIONS SHOWN ARE APPROXIMATE.

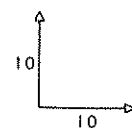
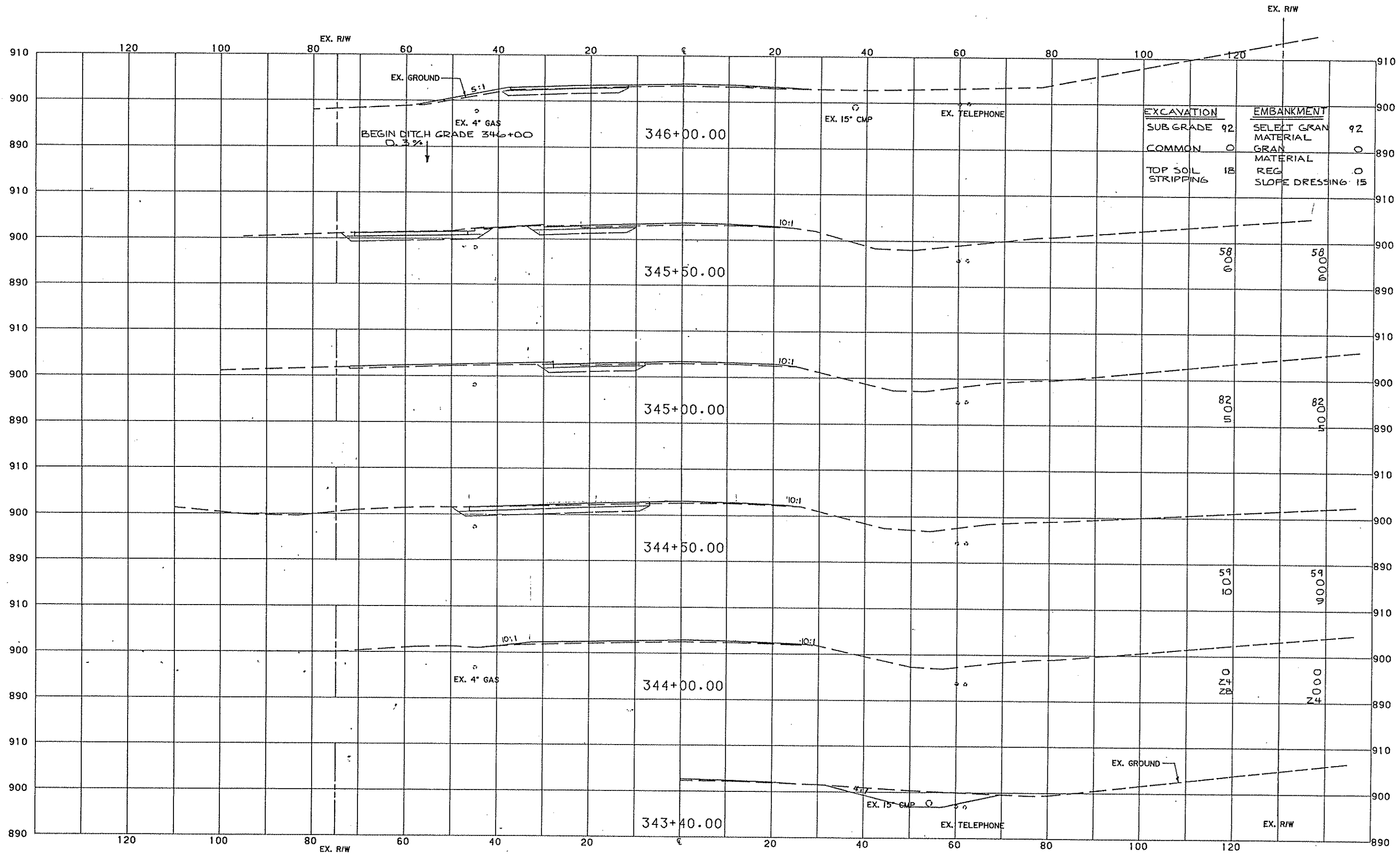
ROADWAY CROSS SECTIONS  
T.H. NO. 242  
STA 340+00.00 TO 343+00.00

PLOTTED: SEPT. 30, 1987  
FIELD BOOK 8242

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ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 343+40.00 TO 346+00.00

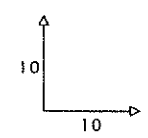
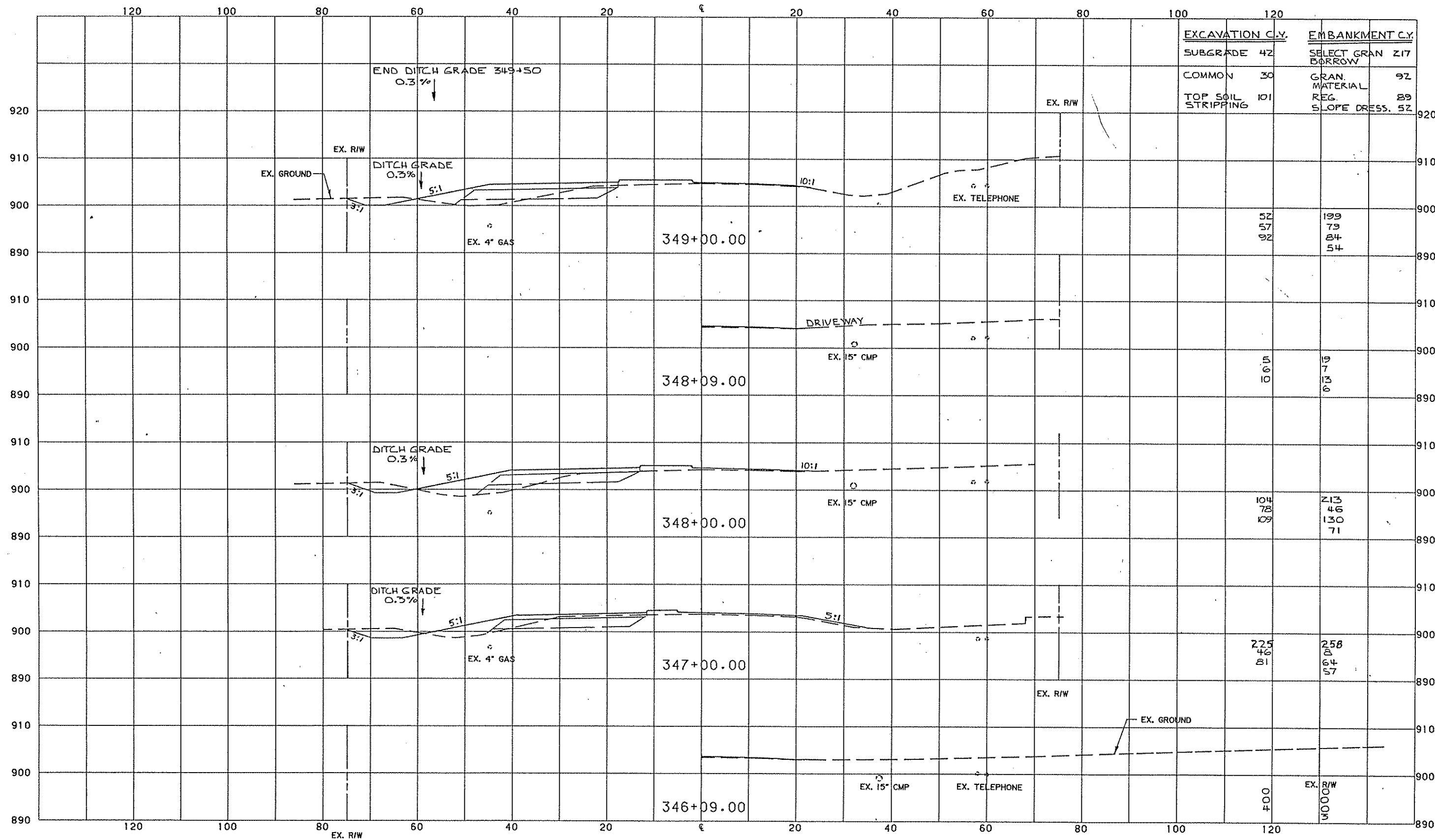
PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 37 OF 48

DESIGN FILE NO. 11-870





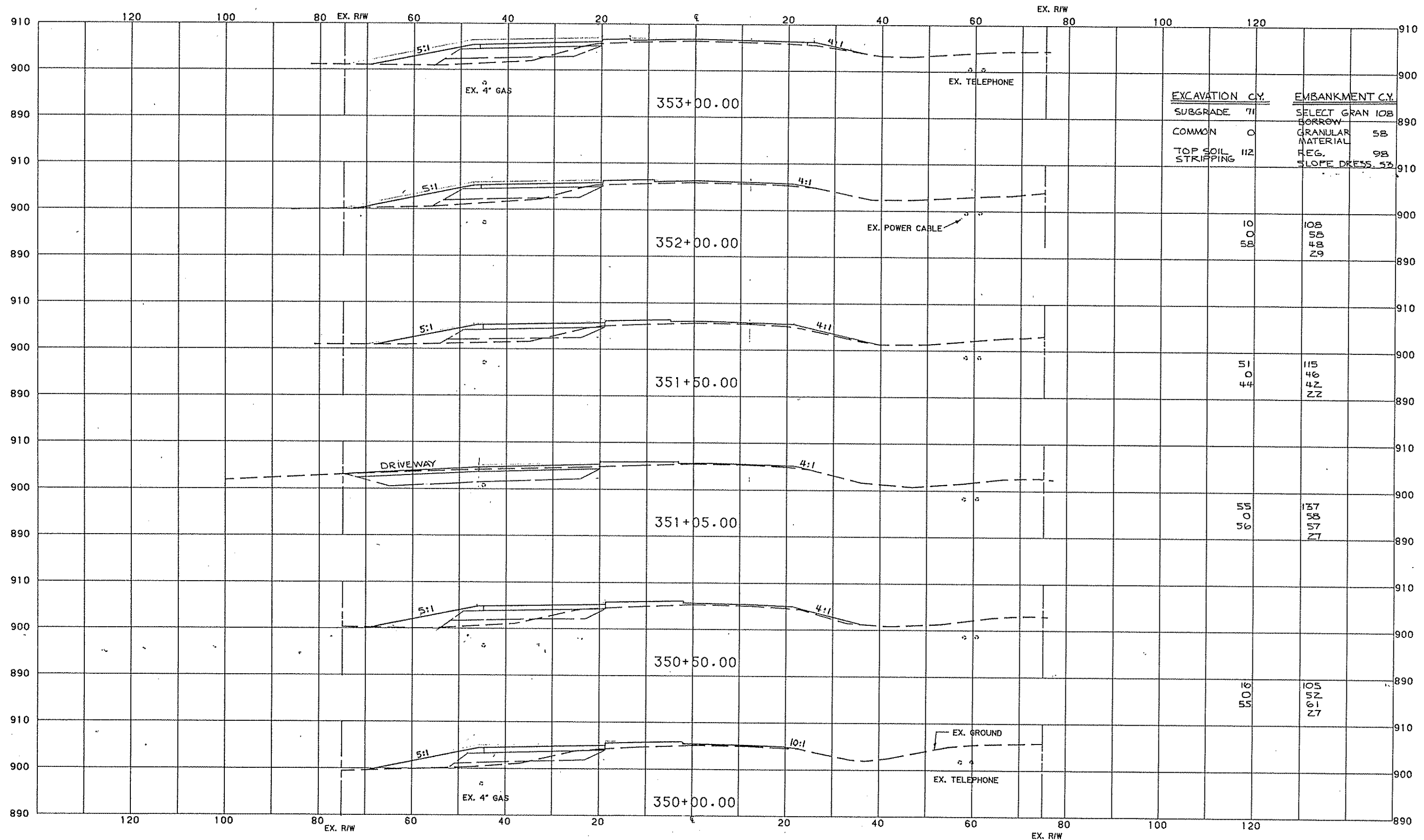
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 346+09.00 TO 349+00.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 38 OF 48

DESIGN FILE NO. 11-870



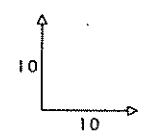
EXCAVATION C.Y.		EMBANKMENT C.Y.	
SUBGRADE	71	SELECT GRAN	108
COMMON	0	BORROW	58
TOP SOIL STRIPPING	112	GRANULAR MATERIAL	58
		REG.	98
		SLOPE DRESS.	53

10	108
0	58
58	48
	29

51	115
0	46
44	42
	22

55	137
0	58
56	57
	27

16	105
0	52
55	61
	27



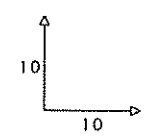
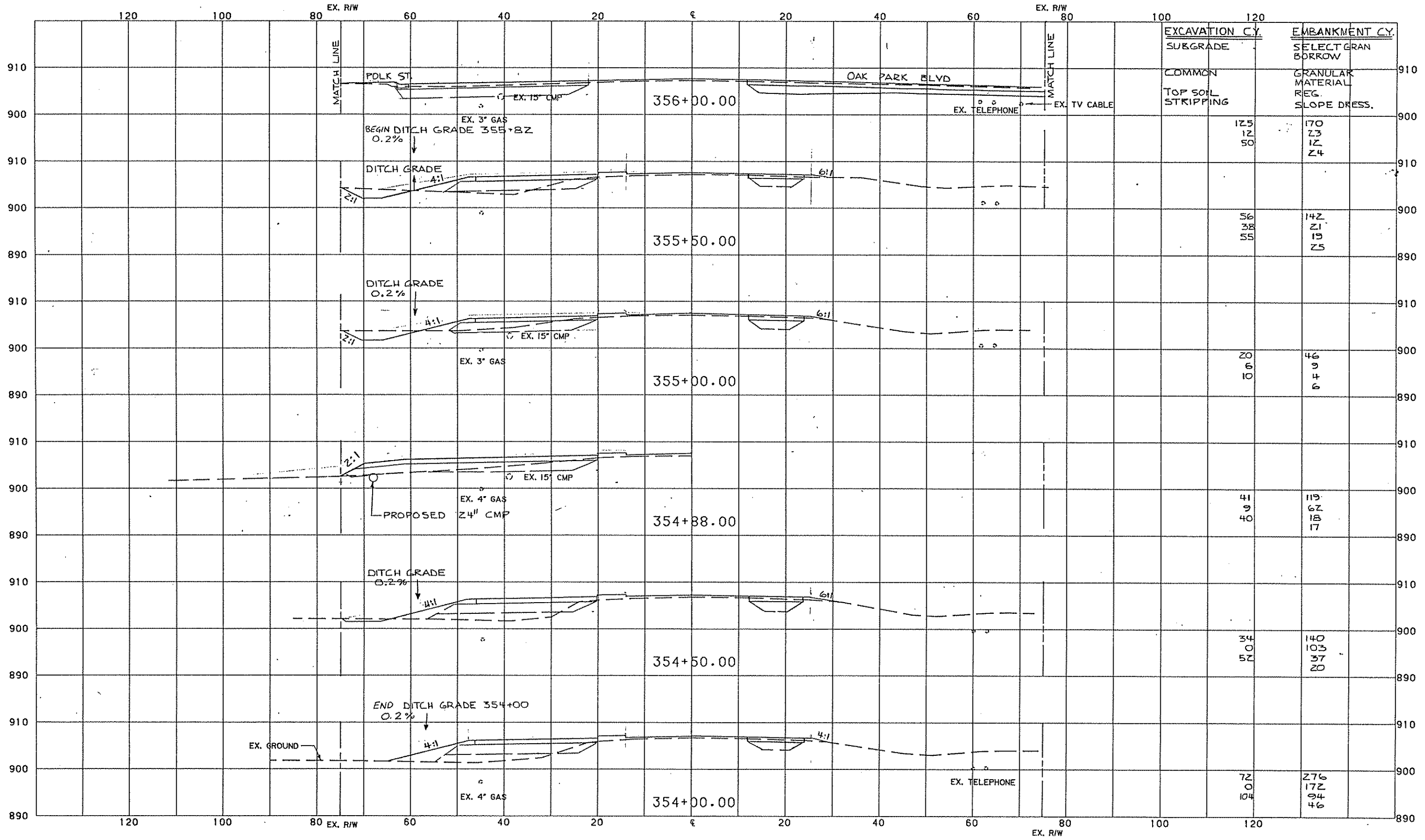
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 350+00.00 TO 353+00.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 39 OF 48

DESIGN FILE NO. 11-870



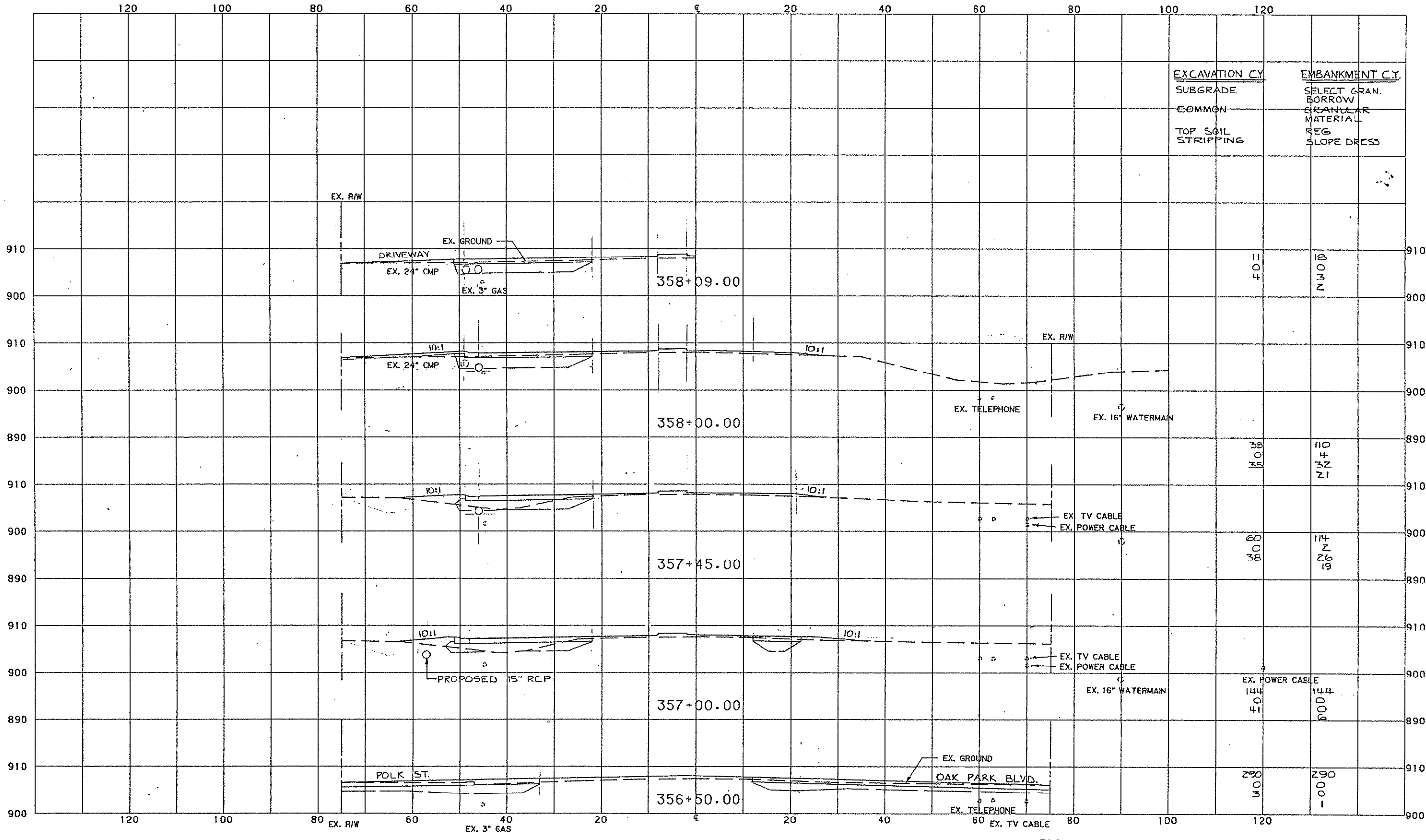
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 354+00.00 TO 356+00.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

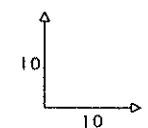
S.P. NO. 0212-33

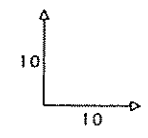
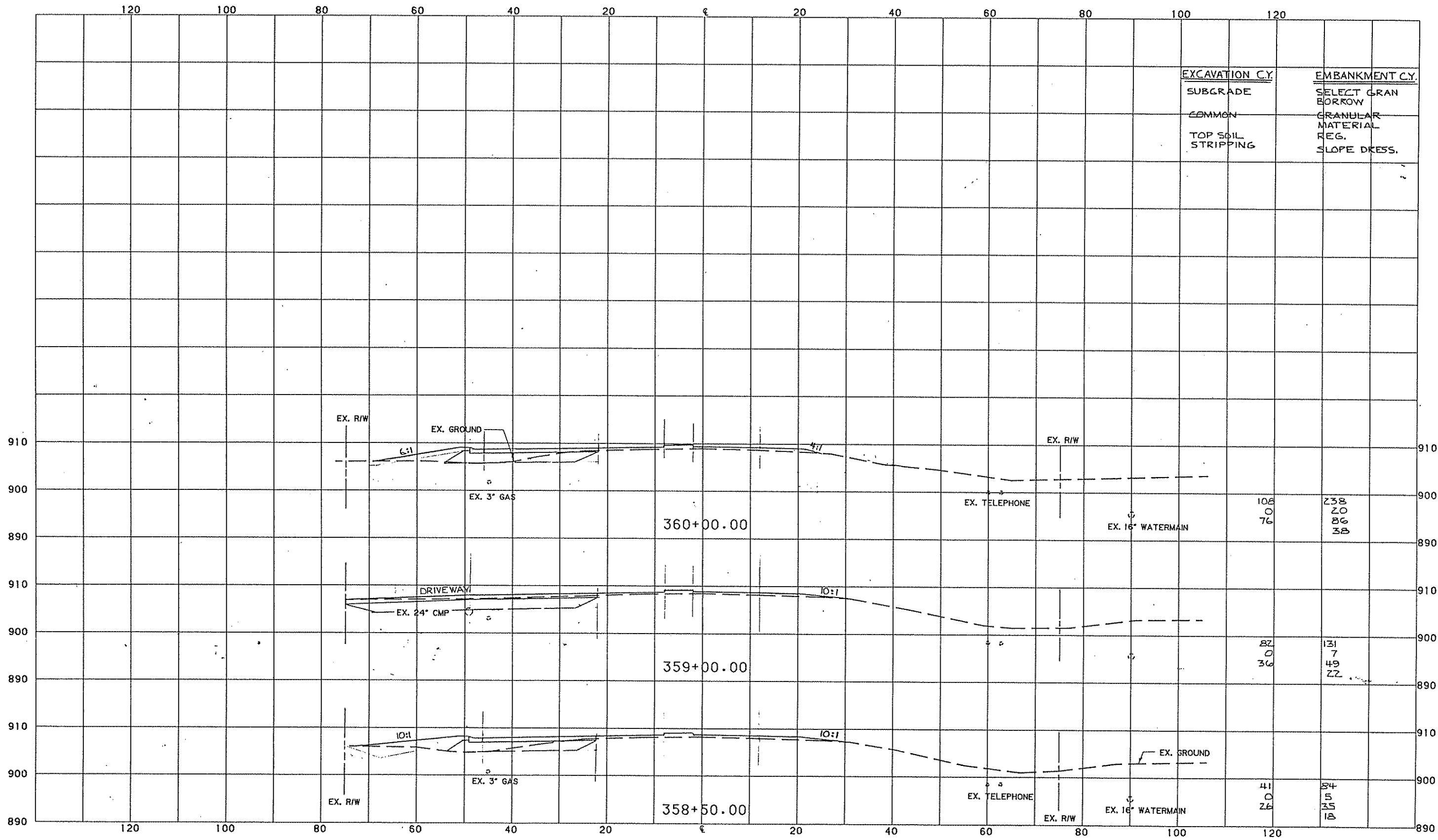
SHEET 40 OF 48

DESIGN FILE NO. 11-8701



ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 356+50.00 TO 358+09.00





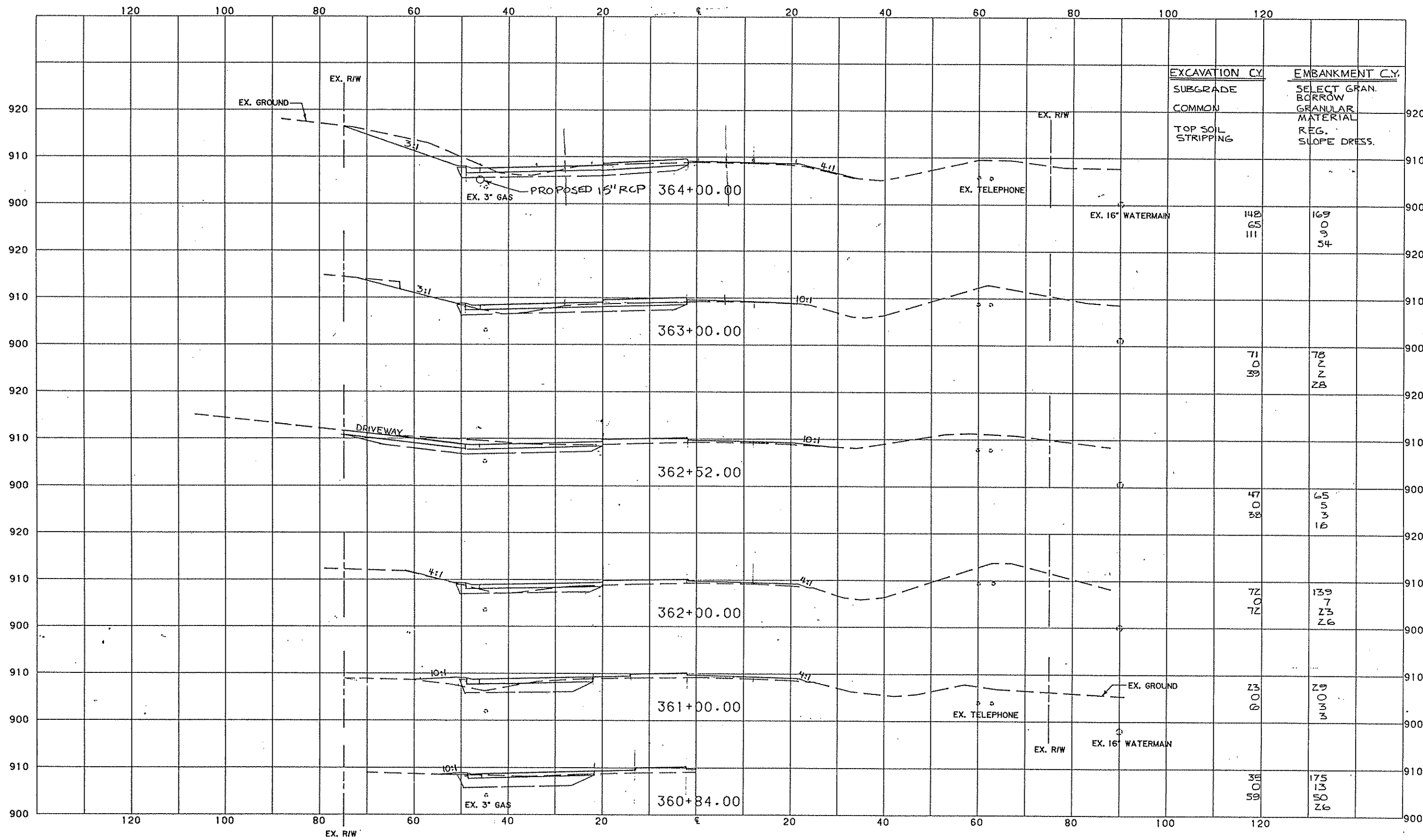
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 358+50.00 TO 360+00.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 42 OF 48

DESIGN FILE NO. 11-8701



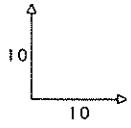
ROADWAY CROSS SECTIONS  
T.H. NO. 242  
STA 360+84.00 TO 364+00.00

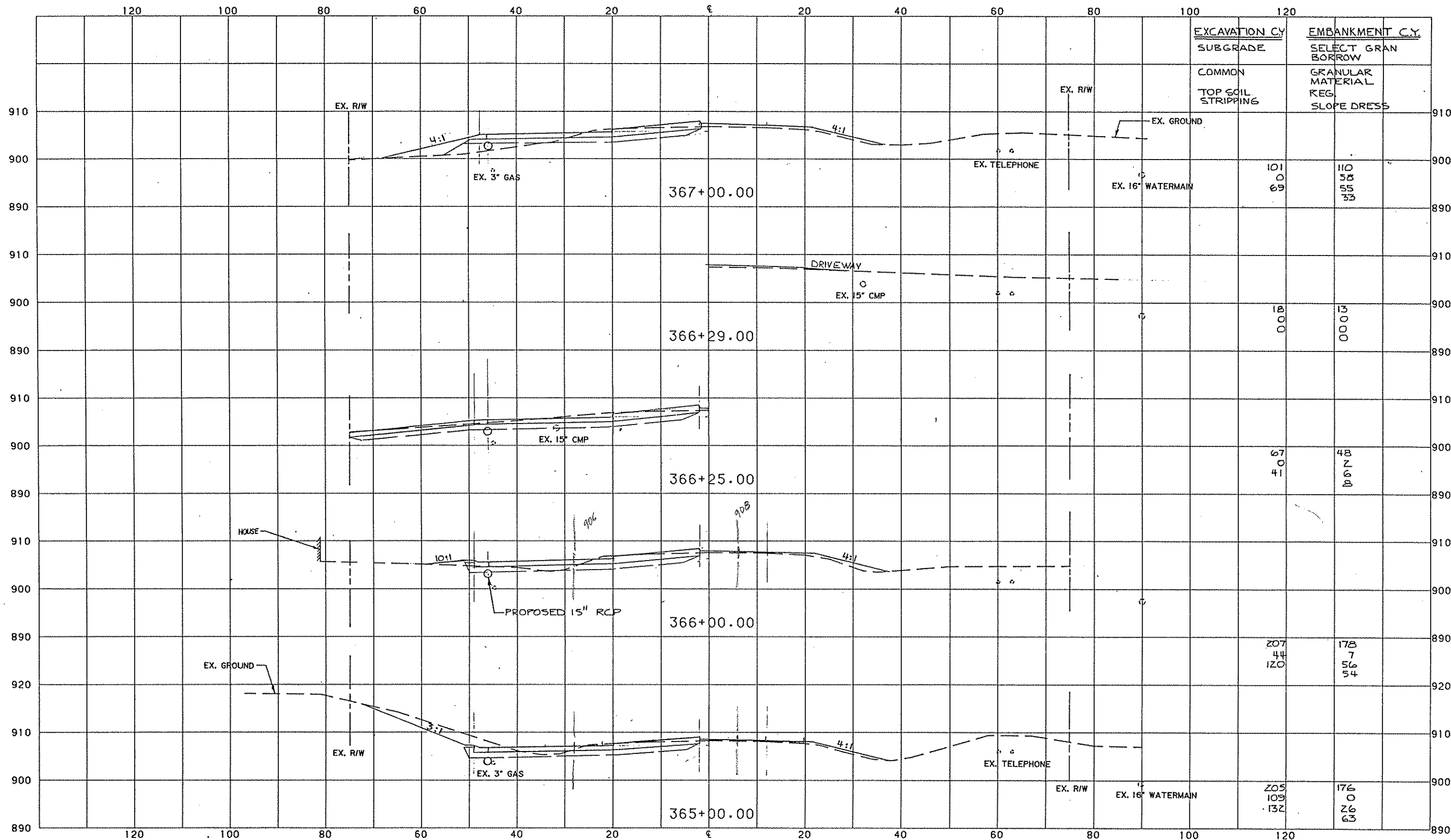
PLOTTED: SEPT. 30, 1987  
FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 43 OF 48

DESIGN FILE NO. 11-8701

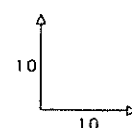
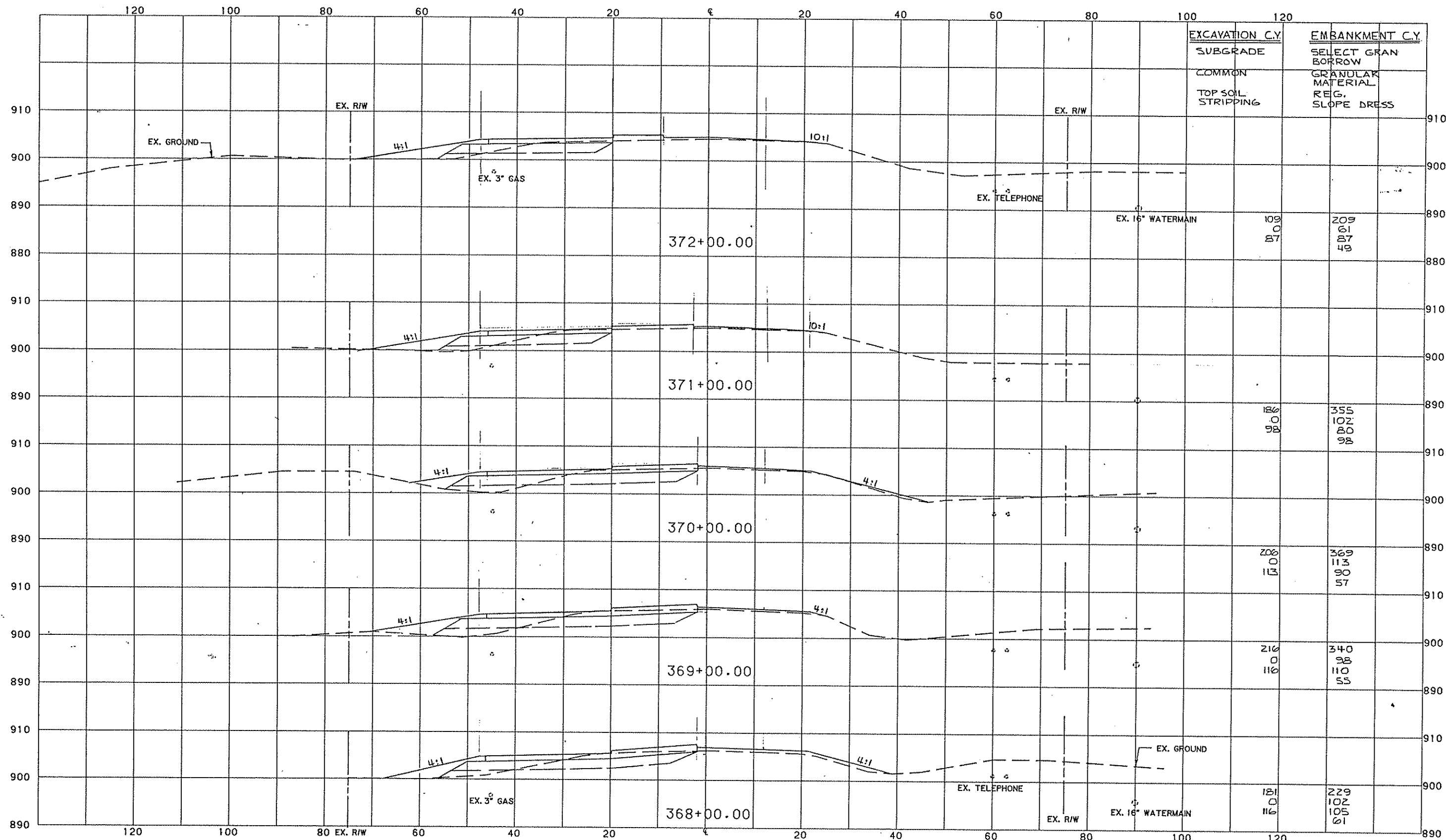




EXCAVATION C.Y.		EMBANKMENT C.Y.	
SUBGRADE	COMMON	SELECT GRAN BORROW	GRANULAR MATERIAL
TOP SOIL STRIPPING		REG.	SLOPE DRESS

ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 365+00.00 TO 367+00.00





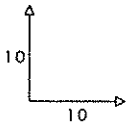
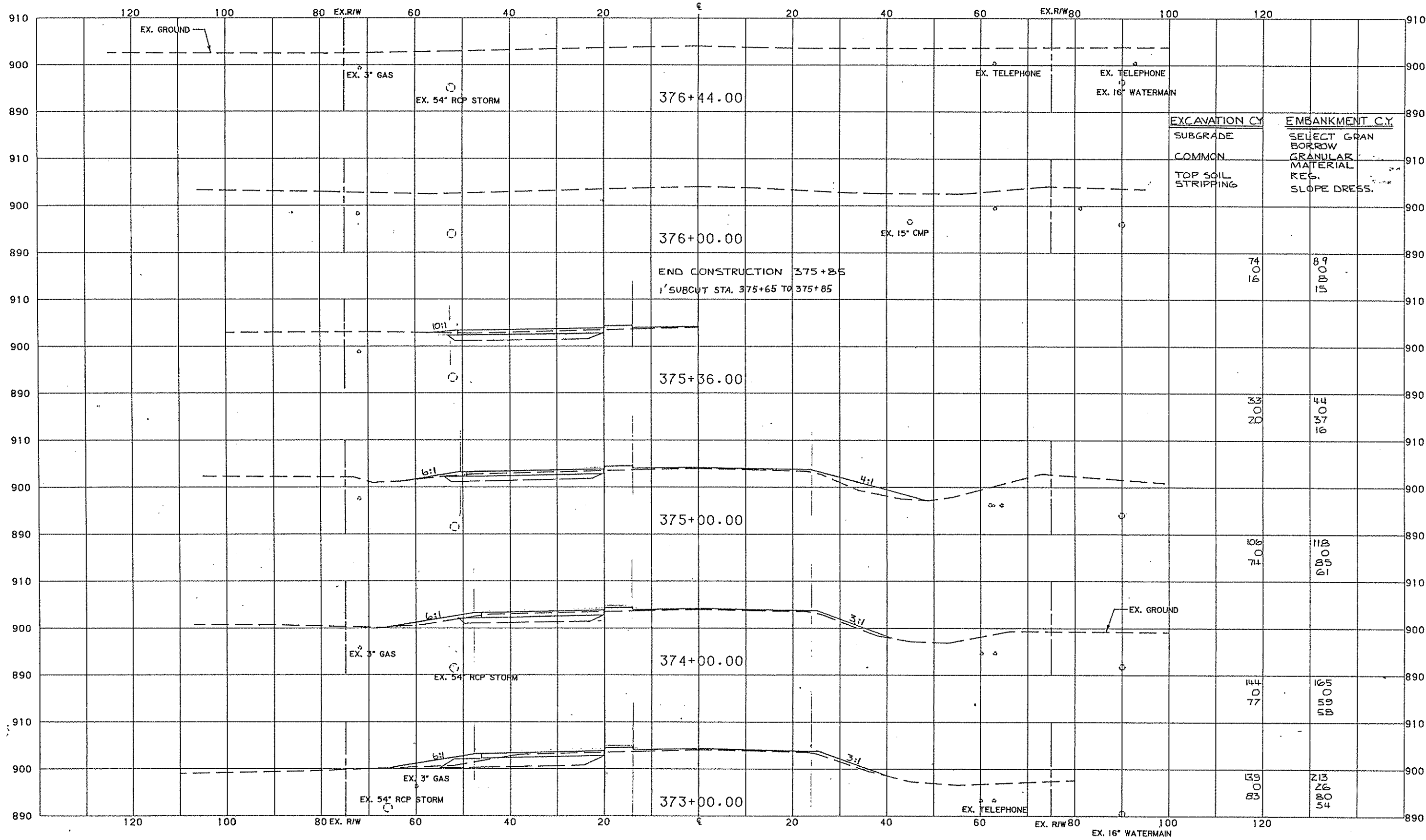
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 368+00.00 TO 372+00.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 45 OF 48

DESIGN FILE NO. 11-8701



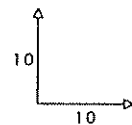
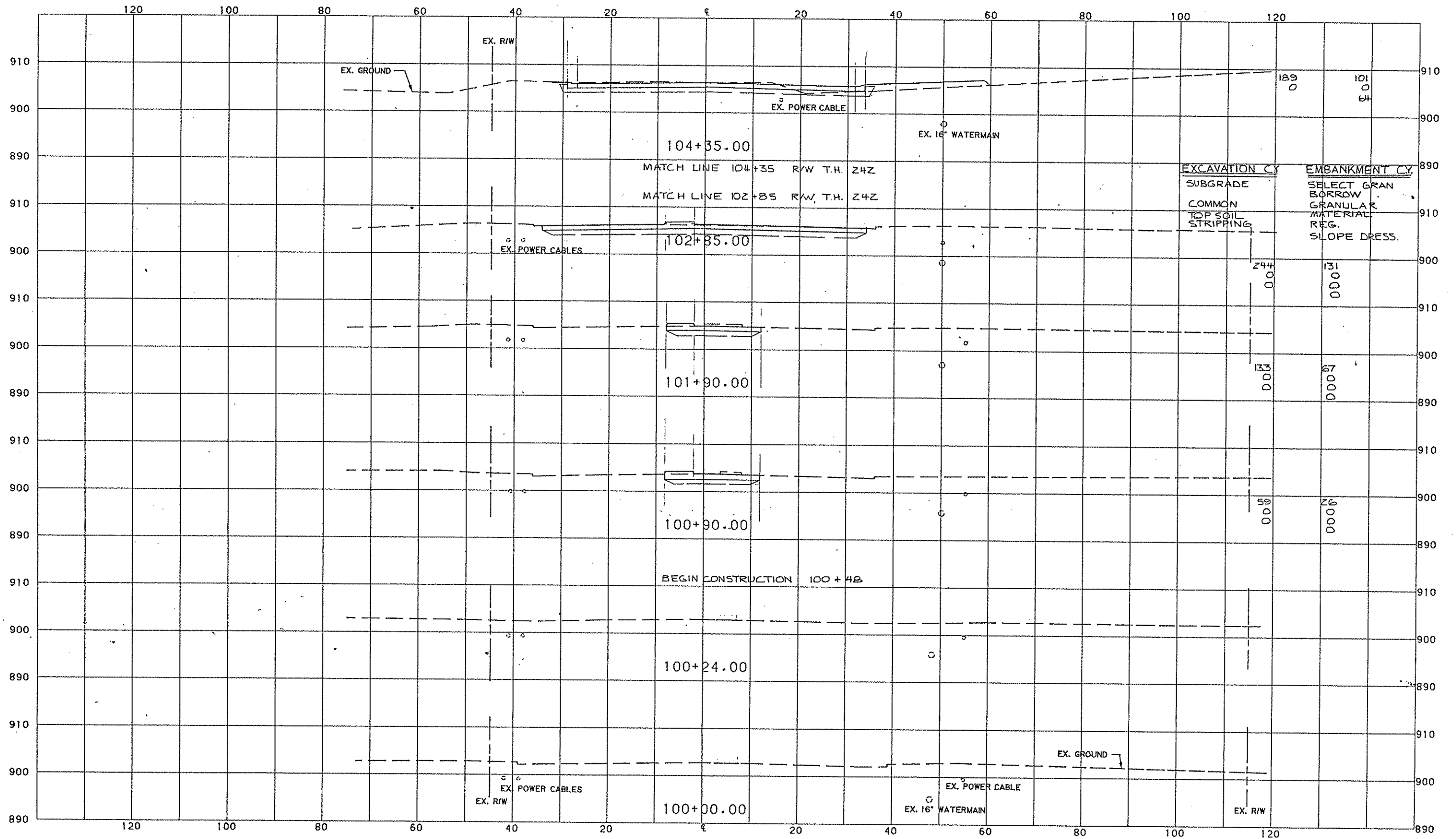
ROADWAY CROSS SECTIONS  
 T.H. NO. 242  
 STA 373+00.00 TO 376+44.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 46 OF 48

DESIGN FILE NO. 11-8701



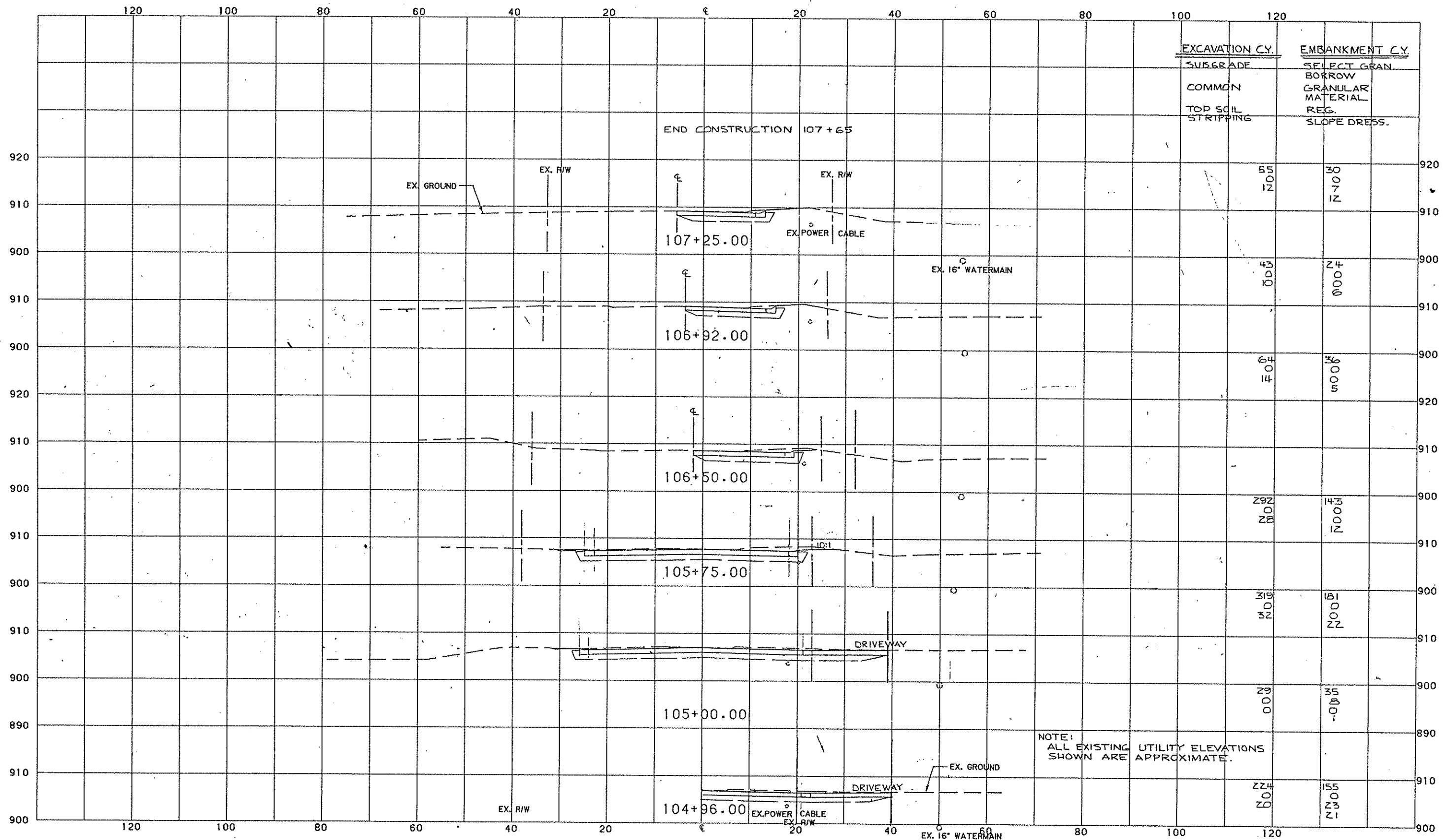
ROADWAY CROSS SECTIONS  
 OAK PARK BOULEVARD  
 STA 100+00.00 TO 104+35.00

PLOTTED: SEPT. 30, 1987  
 FIELD BOOK 8242

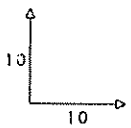
S.P. NO. 0212-33

SHEET 47 OF 48

DESIGN FILE NO. 11-8701



NOTE:  
ALL EXISTING UTILITY ELEVATIONS  
SHOWN ARE APPROXIMATE.



ROADWAY CROSS SECTIONS  
POLK STREET  
STA 104+96.00 TO 107+25.00

PLOTTED: SEPT. 30, 1987  
FIELD BOOK 8242

S.P. NO. 0212-33

SHEET 48 OF 48

DESIGN FILE  
NO. 11-8701