

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## CONSTRUCTION PLAN FOR GRADING, SURFACING & BRIDGES NO.9263, 9264

LOCATED ON T.H. 10 FROM 0.31 MILES EAST OF T.H. 65 TO 0.36 MILES WEST OF T.H. 65 IN SPRING LAKE PARK

STATE PROJ. NO. 0203-75  
 MINN. PROJ. NO.  
 GROSS LENGTH 3550.00 FEET 0.672 MILES  
 BRIDGES-LENGTH 196.00 FEET 0.037 MILES  
 EXCEPTIONS-LENGTH 0.00 FEET 0.000 MILES  
 NET LENGTH 3550.00 FEET 0.672 MILES  
 REF. POINT 234+00 TO REF. POINT 235+00, 337

GOVERNING SPECIFICATIONS  
 THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION  
 "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE  
 JANUARY 2, 1991, SUPPLEMENTAL SPECIFICATION SHALL GOVERN.

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THIS PLAN CONTAINS 132 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 \_\_\_\_\_ REG. NO. 19122 ENGR. *Arthur M. Anderson*  
 DESIGN SQUAD D.M. ANDERSON

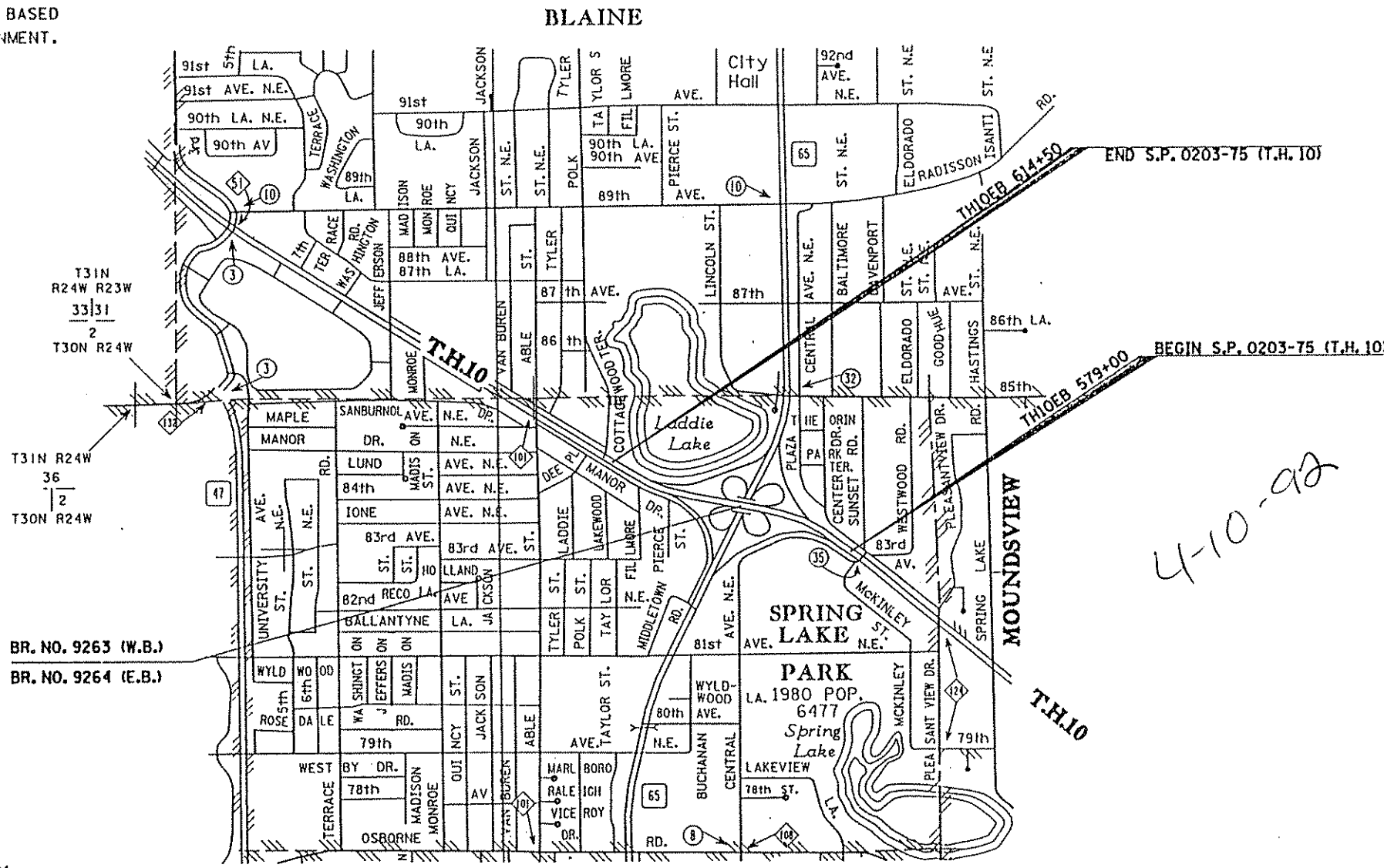
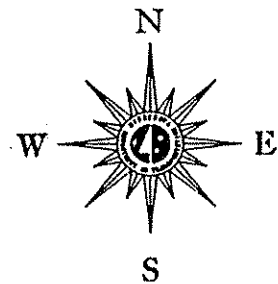
RIGHT OF WAY APPROVAL .....19 DIRECTOR, RIGHT OF WAY OPERATIONS  
 RECOMMENDED FOR APPROVAL .....19 DIRECTOR, OFFICE OF TRAFFIC ENGINEERING  
 RECOMMENDED FOR APPROVAL .....19  
 RECOMMENDED FOR APPROVAL .....19  
 RECOMMENDED FOR APPROVAL *Timothy C. Johnson* 2/7/92 FOR METRO DISTRICT  
 RECOMMENDED FOR APPROVAL .....19 DIRECTOR, PRE-LETTING ENGINEERING  
 RECOMMENDED FOR APPROVAL .....19 DIRECTOR, OFFICE OF TECHNICAL SUPPORT  
 APPROVED .....19 DIRECTOR, ENGINEERING SERVICES ASSISTANT CHIEF ENGINEER

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. \_\_\_\_\_

NOTE: LENGTH AND DESCRIPTION BASED UPON THE T.H. 10EB ALIGNMENT.



T31N R24W R23W  
 33 31  
 2  
 T30N R24W

T31N R24W  
 36  
 2  
 T30N R24W

BR. NO. 9263 (W.B.)  
 BR. NO. 9264 (E.B.)

SCALES

PLAN	50'
PROFILE (MAINLINE)	100' HORIZ. 10' VERT.
INDEX MAP	1000'
GENERAL LAYOUT	200'

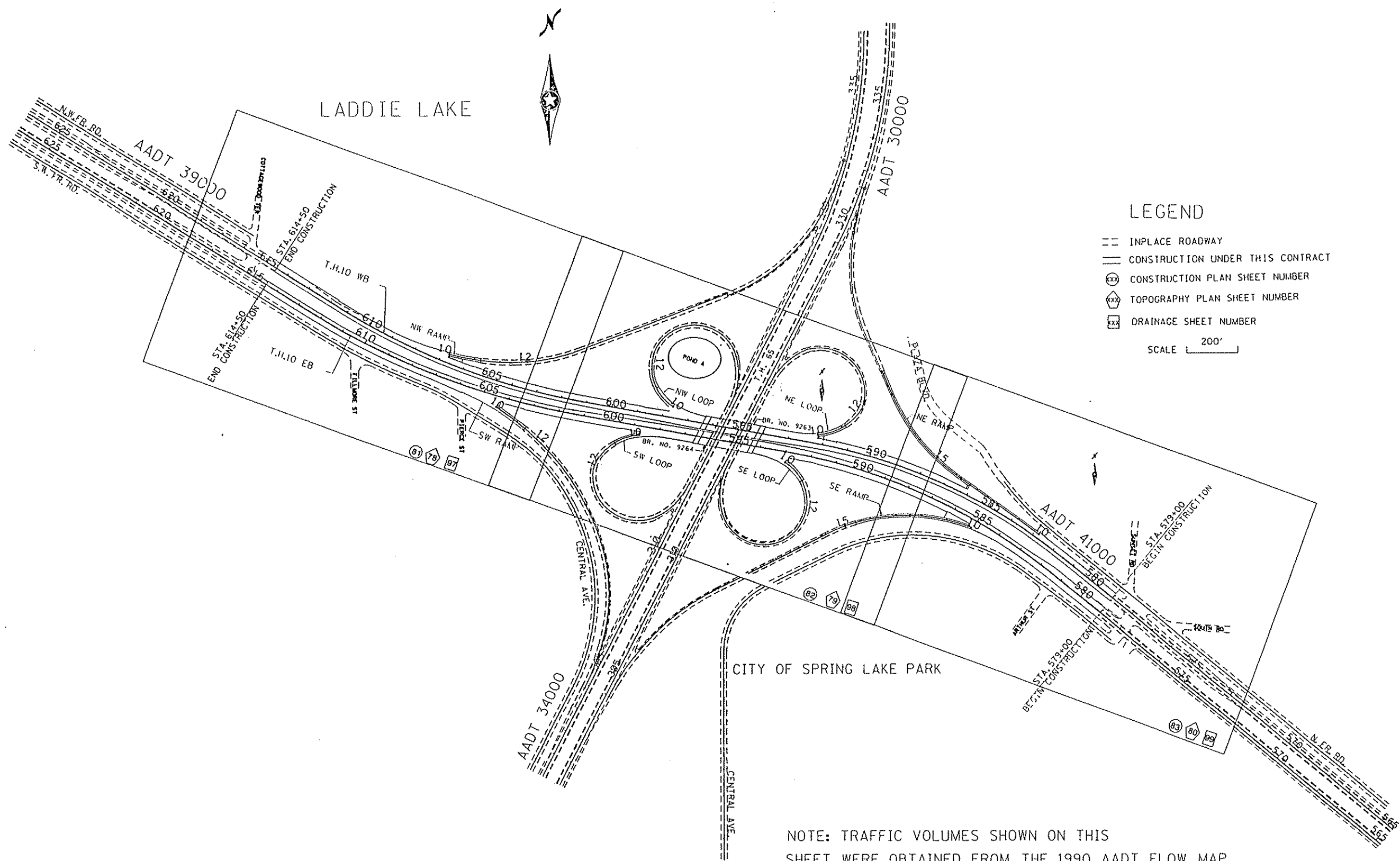
DESIGN DESIGNATION - TIER NO. \_\_\_\_\_  
 ADT (Current Year) 1988 = 38,700 Design Speed 50 MPH  
 ADT (Future Year) = \_\_\_\_\_ Based on Stopping Sight Distance  
 DIV (Design Hr. Vol.) = \_\_\_\_\_ Height of eye 3.5' Height of object 0.5'  
 D (Directional Distr.) = \_\_\_\_\_ %  
 T (Heavy Commercial) = \_\_\_\_\_ %

PROJECT LOCATION  
 COUNTY : ANOKA  
 DISTRICT : METRO  
 GOLDEN VALLEY OFFICE

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL  
 STATE PROJ. NO. CHARGE IDENTIFIER  
 0203-75 53463

PLAN REVISIONS

DATE	SHEET NO.	APPROVED BY



**LEGEND**

- == INPLACE ROADWAY
- CONSTRUCTION UNDER THIS CONTRACT
- ⊗ CONSTRUCTION PLAN SHEET NUMBER
- ⊕ TOPOGRAPHY PLAN SHEET NUMBER
- ⊞ DRAINAGE SHEET NUMBER

SCALE 200'

NOTE: TRAFFIC VOLUMES SHOWN ON THIS SHEET WERE OBTAINED FROM THE 1990 AADT FLOW MAP.

GENERAL LAYOUT  
TH10 STA. 579+00 TO 614+50

STATEMENT OF ESTIMATED QUANTITIES

TAB. (25)	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
	0015.601	COMPUTER EQUIPMENT (1)	LUMP SUM	1	
	2021.501	MOBILIZATION	LUMP SUM	1	
	2031.503	FIELD LABORATORY TYPE DX	EACH	1	
	2051.501	MAINT & RESTORATION OF HAUL ROADS	LUMP SUM	1	
	2102.502	PAVEMENT MARKING REMOVAL -PERMANENT	LIN FT	8000	
R	2104.501	REMOVE PIPE CULVERTS	LIN FT	229	
R	2104.501	REMOVE PIPE SEWERS	LIN FT	276	
F	2104.501	REMOVE CURB AND GUTTER	LIN FT	6565	
A	2104.501	REMOVE GUARDRAIL -PLATE BEAM	LIN FT	510	
	2104.501	REMOVE OVERHEAD CABLE (8)	LIN FT	2800	
	2104.505	REMOVE PAVEMENT (26)(10)	SO YD	1134	
B	2104.505	REMOVE BITUMINOUS PAVEMENT	SO YD	31125	
	2104.509	REMOVE CONCRETE NOSE	EACH	8	
	2104.509	REMOVE LIGHT STANDARD	EACH	22	
A	2104.509	REMOVE TWISTED END TREATMENT	EACH	2	
R	2104.509	REMOVE MANHOLE OR CATCH BASIN (27)	EACH	15	
	2104.509	REMOVE LIGHT STANDARD BASE	EACH	44	
	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH) (4)(24)	LIN FT	54	
C	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	9145	
R	2104.521	SALVAGE PIPE SEWER (9)	LIN FT	576	
A	2104.521	SALVAGE GUARDRAIL -PLATE BEAM	LIN FT	475	
A	2104.523	SALVAGE IMPACT ATTENUATOR NO. 1	EACH	4	
	2104.523	SALVAGE WOOD POLE (8)	EACH	6	
Q	2104.523	SALVAGE CONCRETE APRON	EACH	2	
	2104.523	SALVAGE TEMPORARY LIGHT UNIT (8)	EACH	8	
	2104.523	SALVAGE LIGHT STANDARD	EACH	20	
	2104.523	SALVAGE LUMINAIRE	EACH	42	
	2104.523	SALVAGE SERVICE PANEL	EACH	2	
	2104.523	SALVAGE TEMPORARY LIGHT BASE (8)	EACH	8	
E	2105.501	COMMON EXCAVATION (P)	CU YD	35565	
E	2105.507	SUBGRADE EXCAVATION (P)	CU YD	15288	
E	2105.523	COMMON BORROW (LV)	CU YD	19351	
	2105.543	STABILIZING AGGREGATE (2)(3)	TON	100	
	2130.501	WATER (18)	M GAL	50	
I,K	2211.503	AGGREGATE BASE PLACED CLASS 5 (P)	CU YD	4136	
I	2221.503	AGGREGATE SHOULDERING PLACED CLASS 3 (P)	CU YD	133	
	2231.501	BITUMINOUS PATCHING MIXTURE (2)	TON	10	
D	2301.553	BRIDGE APPROACH PANELS (19)	SO YD	492	
	2340.501	CONTRACTOR TESTING	TON	24226	
H,J	2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	1777	
H	2340.508	TYPE 61 WEARING COURSE MIXTURE	TON	1334	
H,J	2340.510	TYPE 41 BINDER COURSE MIXTURE	TON	7356	
H,J	2340.514	TYPE 31 BASE COURSE MIXTURE	TON	13759	
H,J	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	6152	
Q	2501.515	12" GS PIPE APRON	EACH	1	
Q	2501.515	12" RC PIPE APRON	EACH	6	
Q	2501.515	15" RC PIPE APRON	EACH	8	
Q	2501.515	18" RC PIPE APRON	EACH	1	
Q	2501.515	24" RC PIPE APRON	EACH	1	
Q	2501.521	28" SPAN RC PIPE -ARCH CULVERT CLASS IIA	LIN FT	12	
Q	2501.525	28" SPAN RC PIPE -ARCH APRON	EACH	1	

STATEMENT OF ESTIMATED QUANTITIES

TAB. (25)	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
Q	2501.561	12" RC PIPE CULVERT DES 3006 CL III (12)	LIN FT	22	
Q	2501.561	15" RC PIPE CULVERT DES 3006 CL II	LIN FT	97	
Q	2501.561	24" RC PIPE CULVERT DES 3006 CL II	LIN FT	8	
Q	2501.567	18" CS SAFETY APRON & GRATE DES 3128 (11)	EACH	1	
Q	2501.573	INSTALL CONCRETE APRON	EACH	2	
Q	2503.511	12" CP PIPE SEWER	LIN FT	392	
Q	2503.511	15" CP PIPE SEWER	LIN FT	184	
Q	2503.541	12" RC PIPE SEWER DESIGN 3006	LIN FT	160	
Q	2503.541	12" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	36	
Q	2503.541	15" RC PIPE SEWER DESIGN 3006	LIN FT	114	
Q	2503.541	18" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	91	
Q	2503.541	21" RC PIPE SEWER DESIGN 3006	LIN FT	93	
Q	2503.541	21" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	20	
Q	2503.541	24" RC PIPE SEWER DESIGN 3006	LIN FT	93	
M	2506.501	CONST DRAINAGE STRUCTURE DESIGN A OR F (13)	LIN FT	6	
M	2506.501	CONST DRAINAGE STRUCTURE DESIGN C OR G	LIN FT	28	
M	2506.501	CONST DRAINAGE STRUCTURE DES C G OR H	LIN FT	22	
M	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020 (13)	LIN FT	5	
N	2506.516	CASTING ASSEMBLY	EACH	16	
L	0506.602	CONSTRUCT CONTROL STRUCTURE (14)	EACH	1	
O	2511.501	RANDOM RIPRAP CLASS II	CU YD	6	
	2521.501	4" CONCRETE WALK (23)	SO FT	1016	
F	2521.501	6" CONCRETE WALK	SO FT	6868	
F	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	1866	
F	2531.501	CONCRETE CURB & GUTTER DESIGN D424	LIN FT	4699	
F	0531.602	CONCRETE ENTRANCE NOSE DESIGN 7107 (17)	EACH	1	
F	0531.602	CONCRETE ENTRANCE NOSE DESIGN 7107 (MOD) (17)	EACH	3	
	0533.603	FLEXIBLE PLASTIC GLARE SCREEN (16)	LIN FT	300	
A	0533.603	CONCRETE MEDIAN BARRIER DESIGN 8333	LIN FT	8180	
A	0533.603	RELOCATE CONCRETE MEDIAN BARRIER	LIN FT	5640	
	2545.511	LIGHTING UNIT TYPE 6-40	EACH	8	
	2545.511	LIGHTING UNIT TYPE 6B-40	EACH	2	
	2545.511	LIGHTING UNIT TYPE 9-40	EACH	41	
	2545.515	LIGHT BASE DESIGN E	EACH	49	
	2545.521	1" RIGID STEEL CONDUIT	LIN FT	20	
	2545.521	2" RIGID STEEL CONDUIT	LIN FT	100	
	2545.521	3" RIGID STEEL CONDUIT	LIN FT	760	
	2545.531	UNDERGROUND WIRE 1 COND NO 2	LIN FT	315	
	2545.531	UNDERGROUND WIRE 1 COND NO 4	LIN FT	1760	
	2545.531	UNDERGROUND WIRE 1 COND NO 10	LIN FT	150	
	2545.533	ARMORED CABLE 3 COND NO 4	LIN FT	12620	
	2545.537	OVERHEAD LIGHT CABLE 4 COND NO 4 (8)	LIN FT	2800	
	2545.541	SERVICE PANEL SECONDARY TYPE T1	EACH	2	
	2545.545	EQUIPMENT PAD	EACH	2	
	2545.551	JUNCTION BOX	EACH	2	
	0545.602	UNDERPASS LIGHTING UNIT TYPE L	EACH	2	
	0545.602	INSTALL LIGHTING UNIT (8)	EACH	8	
	0545.602	INSTALL 40" WOOD POLE (8)	EACH	6	
	0545.602	TEMPORARY LIGHT BASE (8)	EACH	8	
A	2554.501	TRAFFIC BARRIER DESIGN SPECIAL (5)	LIN FT	150	
A	2554.501	TRAFFIC BARRIER DESIGN B8307	LIN FT	1300	
Q	2554.509	GUIDE POST TYPE B (20)	EACH	20	
A	2554.511	INSTALL TRAFFIC BARRIER DESIGN B8307	LIN FT	475	

STATEMENT OF ESTIMATED QUANTITIES

TAB. (25)	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
	0554.602	IMPACT ATTENUATOR BARRELS	EACH	10	
A	0554.602	BREAKAWAY CABLE TERMINAL (21)	EACH	2	
A	0554.604	IMPACT ATTENUATOR NO. 1 (6)	ASSEMBLY	4	
A	0554.604	RELOCATE IMPACT ATTENUATOR NO. 1	ASSEMBLY	6	
	2557.529	TEMPORARY FENCE (2)	LIN FT	500	
	0563.601	TRAFFIC CONTROL STAGE 1	LUMP SUM	1	
	0563.601	TRAFFIC CONTROL, STAGE 2	LUMP SUM	1	
	0563.601	TRAFFIC CONTROL, STAGE 3	LUMP SUM	1	
	0563.601	TRAFFIC CONTROL, STAGE 4	LUMP SUM	1	
	0563.602	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	50	
	0563.603	PORTABLE CONCRETE BARRIER DELINEATOR	EACH	300	
	0563.603	RAISED PAVEMENT MARKER, TEMPORARY (22)	EACH	1000	
P	2573.501	BALE CHECK	EACH	177	
P	2573.502	SILT FENCE, HEAVY DUTY	LIN FT	4890	
G	2575.501	SEEDING (P)	ACRE	11	
G	2575.502	SEED MIXTURE 500	POUND	515	
G,Q	2575.505	SODDING TYPE EROSION	SO YD	19159	
G	2575.511	MULCH MATERIAL TYPE 1	TON	21	
	2575.513	MULCH MATERIAL TYPE AGGREGATE (7)	CU YD	10	
G	2575.519	DISK ANCHORING (P)	ACRE	11	
	2575.532	COMMERCIAL FERT ANALYSIS 10-20-20 (15)	POUND	6410	
	2580.502	TEMPORARY LANE MARKING	LIN FT	2000	
	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	6500	

- (1) GROUP B.
- (2) FOR USE AS DIRECTED BY THE ENGINEER.
- (3) TO BE USED FOR STABILIZING ON SITE GRANULAR MATERIAL.
- (4) INCLUDES 32 LIN. FT. FOR SAWING INPLACE CURB AND GUTTER.
- (5) FOR DETAILS SEE SHEET NO. 21.
- (6) FOR DETAILS SEE SHEET NO. 16.
- (7) FOR DETAILS SEE SHEETS NO. 16 AND 82. WILL BE MEASURED BY LOOSE VOLUME (VEHICULAR MEASURE) OF THE MATERIAL FURNISHED AND PLACED.
- (8) USED FOR TEMPORARY LIGHTING. FOR DETAILS SEE SHEET NO. 113.
- (9) CONSISTS OF CORRUGATED POLYETHYLENE PIPE.
- (10) ON E.B. LANES AT BEGIN AND END OF PROJECT FROM STA. 579+00 TO APPROX. STA. 579+18 AND FROM APPROX. STA. 612+54 TO 614+50. CONSISTS OF 27' WIDE CONCRETE PAVEMENT, 7-1/2" DEPTH WITH APPROX. 5" DEPTH BITUMINOUS OVERLAY.
- (11) FOR DETAILS SEE SHEET NO. 16.
- (12) INCLUDES 2 - 7930' LONG RADIUS BENDS.
- (13) STEPS REQUIRED.
- (14) FOR DETAILS SEE SHEET NO. 105.
- (15) APPLIED AT A RATE OF 450 POUNDS PER ACRE OR EQUIVALENT FOR ALL SEEDED AND SODDED AREAS.
- (16) FOR LOCATION SEE SHEET NO. 62.
- (17) CONSISTS OF ONLY THE 4' CONCRETE NOSE SECTION.
- (18) FOR USE AS DIRECTED BY THE ENGINEER FOR DUST CONTROL WITHIN THE PROJECT LIMITS.
- (19) EACH SO. YD. OF BRIDGE APPROACH PANEL REQUIRES 36.4 POUNDS OF RE-BAR PLUS 3 EXTRA NO. 5 BARS FOR EXPANSION JOINT, IF NEEDED. BAR SPACING WILL BE 6" AND 12" (ALONG CENTERLINE) REGARDLESS OF SKEW. FOR DIMENSIONS OF APPROACH PANELS, SEE SHEET NO. 18.
- (20) FOR USE AS CULVERT AND STORM SEWER MARKER POSTS. SEE STANDARD PLATE 8150.
- (21) FOR DETAILS SEE SHEET NO. 23.
- (22) CONSISTS OF ONE-WAY TYPE I WITH BUTYL PAD.
- (23) FOR UNDER BRIDGES BETWEEN CURB AND SLOPE PAVING. FOR DETAILS SEE SHEET NO. 82.
- (24) ON E.B. LANES, AT BEGIN AND END OF PROJECT. CONSISTS OF SAWING 27' WIDE CONCRETE PAVEMENT, 7-1/2" DEPTH WITH APPROX. 5" DEPTH BITUMINOUS OVERLAY.
- (25) FOR INDEX OF TABULATIONS, SEE SHEET NO. 4.
- (26) INCLUDES REMOVING INPLACE BRIDGE APPROACH PANELS.
- (27) INCLUDES REMOVAL OF CASTING.

ESTIMATED QUANTITIES

**CONSTRUCTION AND SOILS NOTES**

1. TOP OF THE GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
2. SELECTED GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE MATERIAL.
3. GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2A.
4. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B.
5. STABILIZING AGGREGATE SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2C.
6. IN ANY NEW EMBANKMENT CONSTRUCTION, THE UPPER 4.0' OF THE SUBGRADE SHALL BE CONSTRUCTED WITH GRANULAR MATERIAL OF WHICH THE UPPER 1.0' SHALL BE SELECT GRANULAR MATERIAL. THE REMAINDER OF THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
7. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND MAY BE RECYCLED OR DISPOSED OF OFF THE PROJECT LIMITS.
8. OBTAIN COMPACTION ON THE GRADING AND AGGREGATE BASE PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS, EXCEPT THAT, IN AREAS WHERE THE PLANNED THICKNESS OF THE AGGREGATE BASE IS 2", AND IN AREAS WHERE CRUSHED CONCRETE IS USED FOR AGGREGATE BASE, COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE "ORDINARY COMPACTION METHOD" REQUIREMENTS.
9. OBTAIN COMPACTION ON THE GRADING AND AGGREGATE BASE PORTIONS OF TEMPORARY CONSTRUCTION IN ACCORDANCE WITH THE "ORDINARY COMPACTION METHOD" REQUIREMENTS.
10. STABILIZING AGGREGATE SHALL BE INCORPORATED INTO THE SUBGRADE TO ACHIEVE SATISFACTORY SURFACE STABILITY, IF DEEMED NECESSARY BY THE ENGINEER, IN ACCORDANCE WITH SPEC. 2105.3G. USE AN APPLICATION RATE OF 200 POUNDS PER SQUARE YARD. STABILIZING AGGREGATE SHALL BE AT THE CONTRACTOR'S EXPENSE WHEN MATERIAL NEEDING STABILIZATION IS FURNISHED AS A BORROW ITEM.
11. TEST ROLLING WILL NOT BE REQUIRED.
12. IN ANY PROPOSED WIDENING CONSTRUCTION, THE CONTRACTOR AND MN/DOT PERSONNEL SHOULD STRIVE TO SUBSTANTIALLY MATCH THE SOILS INPLACE IN THE UPPER 5.0' OF THE ROADWAYS TO BE WIDENED.
13. WHERE CONNECTING NEW SURFACING ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:1 SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
14. WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 20:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
15. PROVIDE A SAWCUT TO ENSURE A UNIFORM JOINT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT.

16. 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 2:1 OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
17. USE TACK COAT, SPEC. 2357.2A, BETWEEN ALL BITUMINOUS LIFTS.
18. COMPACTION OF THE TYPE 61 WEAR, TYPE 41 WEAR AND ALL TEMPORARY BITUMINOUS MIXTURES SHALL BE BY THE "ORDINARY COMPACTION METHOD".
19. COMPACTION OF PERMANENT TYPE 41 BINDER AND TYPE 31 BASE MIXTURES SHALL BE BY THE "MODIFIED SPECIFIED DENSITY METHOD".
20. STRIP AND REUSE AS SLOPE DRESSING ALL TOPSOIL AND INPLACE SLOPE DRESSING WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION. APPROXIMATE DIMENSIONS ENCOUNTERED ARE 5" MINIMUM TO 13" MAXIMUM AND AVERAGE 8".
21. SLOPE DRESSING ON THIS PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PRIOR CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.
22. WHEREVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN IT MEANS THIS WORK SHALL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

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THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.	
STANDARD PLATES	
PLATE NO.	---DESCRIPTION---
0005A	SPECIFICATION REFERENCE TO STANDARD PLATES (1988)
3000L	REINFORCED CONCRETE PIPE
3006F	GASKET JOINT FOR R.C. PIPE
3007B	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014J	REINFORCED CONCRETE PIPE ARCH DETAIL
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128D	SAFETY APRON
3133B	RIPRAP AT RCP OUTLETS (1)
3145E	CONCRETE PIPE TIES
4000I	MANHOLE OR CATCH BASIN (DESIGN A) (2)
4002E	MANHOLE OR CATCH BASIN (DESIGN C)
4005K	MANHOLE OR CATCH BASIN (DESIGN F) (2)
4006K	MANHOLE OR CATCH BASIN (DESIGN G AND H)
4010G	CONCRETE SHORT CONE AND ADJUSTING RING
4011D	PRECAST CONCRETE BASE
4020E	MANHOLE OR CATCH BASIN (FOR USE UNDER TRAFFIC LOADS) (2)(4)
4101C	RING CASTING FOR MANHOLE OR CATCH BASIN (700-7)
4110E	COVER CASTING FOR MANHOLE (715 AND 716)
4132E	CATCH BASIN FRAME CASTING (805) (3)
4143D	STOOL GRATE AND CONCRETE FRAME (731)
4153A	CATCH BASIN GRATE CASTING (815)
4154B	CATCH BASIN GRATE CASTING (816) (3)
4180H	MANHOLE OR CATCH BASIN STEP
7100F	CONCRETE CURB AND GUTTERS (DESIGN B AND V)
7102H	CONCRETE CURB AND GUTTER (DESIGN BR, D AND S)
7107H	ENTRANCE NOSE
7108E	EXIT NOSE
7111G	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
8000I	STANDARD BARRICADES
8127A	LIGHT BASE - DESIGN E
8150B	INSTALLATION OF CULVERT MARKERS
8307N	STEEL PLATE BEAM GUARDRAIL
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8326D	FLEXIBLE PLASTIC GLARE SCREEN
8329E	BREAKAWAY CABLE TERMINAL (BCT)
8333A	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

- ① ADD TO SUBNOTE 2: REQUIRED FILTER MATERIAL IS INCIDENTAL.
- ② MODIFY NOTE REFERENCING STEP REQUIREMENTS TO THE PLANS AS FOLLOWS: CONSTRUCT STEPS PER STANDARD PLATE 4180.
- ③ INSTALL BOLT PER STANDARD PLATE 4154.
- ④ ADD NOTE AT FLOW LINE BETWEEN THE INLET AND OUTLET PIPE: PROVIDE MORTAR FILLETS TO FIT BOTTOM PORTION OF PIPE TO DIRECT FLOW TO OUTLET.

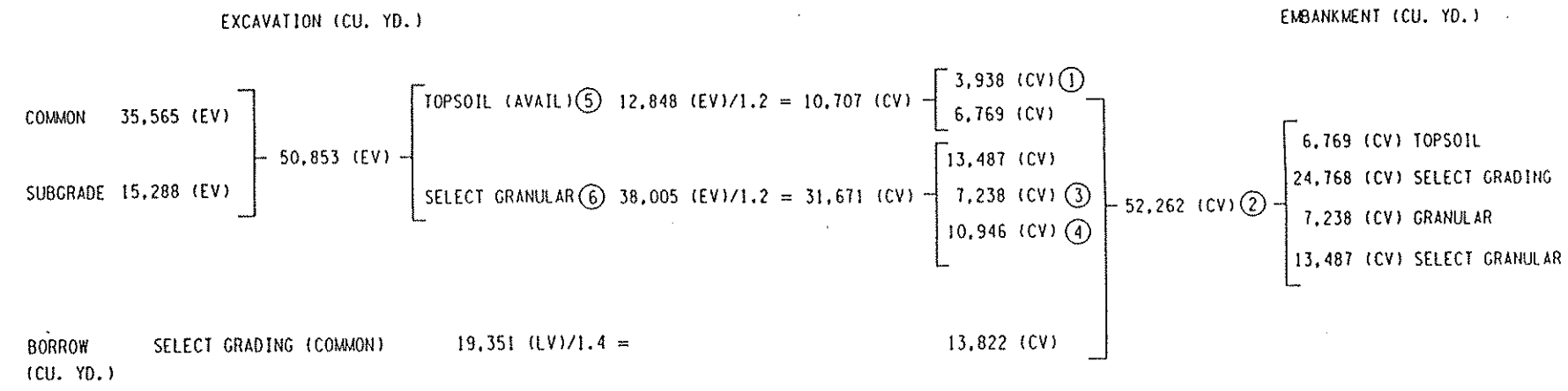
CONSTRUCTION AND SOILS NOTES  
STANDARD PLATES  
INDEX OF TABULATIONS

E EARTHWORK QUANTITIES (PERMANENT CONST.)							
STATION TO STATION	EXCAVATION			EMBANKMENT			
	TOPSOIL ⑤	COMMON	SUB- GRADE	SELECTED GRADING	GRANULAR	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
THIOEB							
579 + 00 TO 580 + 00	113	82	337	17	0	339	87
580 + 00 TO 581 + 00	100	56	337	15	0	341	83
581 + 00 TO 582 + 00	120	11	337	28	0	339	100
582 + 00 TO 583 + 00	156	56	335	70	0	333	119
583 + 00 TO 584 + 00	191	102	339	113	0	341	130
584 + 00 TO 585 + 00	215	61	591	170	211	391	143
585 + 00 TO 586 + 00	202	24	809	246	369	376	154
586 + 00 TO 587 + 00	222	9	550	359	315	322	182
587 + 00 TO 588 + 00	306	0	296	535	315	322	146
588 + 00 TO 589 + 00	350	0	233	763	317	324	263
589 + 00 TO 590 + 00	372	0	219	1033	324	332	274
590 + 00 TO 591 + 00	372	0	256	1104	337	344	263
591 + 00 TO 592 + 00	357	0	359	1030	402	407	230
592 + 00 TO 593 + 00	470	0	526	1656	494	498	296
593 + 00 TO 594 + 40	492	0	867	1774	579	583	293
596 + 35 TO 598 + 00	569	0	1084	896	598	603	323
598 + 00 TO 599 + 00	467	0	730	876	409	413	269
599 + 00 TO 600 + 00	419	0	485	839	391	394	261
600 + 00 TO 601 + 00	378	0	333	1011	356	361	250
601 + 00 TO 602 + 00	370	0	315	787	319	326	269
602 + 00 TO 603 + 00	326	0	306	552	315	322	235
603 + 00 TO 604 + 00	296	0	306	567	315	322	209
604 + 00 TO 605 + 00	235	0	389	456	348	356	154
605 + 00 TO 606 + 00	193	9	471	267	357	365	124
606 + 00 TO 607 + 00	165	37	415	113	167	359	117
607 + 00 TO 608 + 00	156	120	348	80	0	354	109
608 + 00 TO 609 + 00	157	167	319	70	0	320	111
609 + 00 TO 610 + 00	161	82	319	44	0	311	109
610 + 00 TO 611 + 00	172	7	317	52	0	311	126
611 + 00 TO 612 + 00	169	15	307	59	0	309	133
612 + 00 TO 613 + 00	182	35	307	85	0	309	141
613 + 00 TO 614 + 50	276	50	461	144	0	463	210
NERAMP							
13 + 32 TO 19 + 11	611	331	430	487	0	442	477
SERAMP							
10 + 00 TO 14 + 58	0	0	390	0	0	390	0
NWRAMP							
10 + 00 TO 11 + 25	0	0	120	0	0	120	0
SWRAMP							
10 + 00 TO 11 + 41	0	0	172	0	0	172	0
NWLOOP							
10 + 00 TO 11 + 75	⑦ 381	⑦ 6293	233	0	0	233	⑦ 379
SWLOOP							
10 + 00 TO 11 + 00	0	0	96	0	0	96	0
SELOOP							
10 + 00 TO 11 + 00	0	0	133	0	0	133	0
NELOOP							
10 + 00 TO 11 + 15	0	0	111	0	0	111	0
TOTALS	9721	7547	15288	16298	7238	13487	6769

E ADDITIONAL EARTHWORK QUANTITIES (BYPASSES)			
ROADWAY	TOPSOIL EXCAVATION ⑤	COMMON EXCAVATION	EMBANKMENT (SELECTED GRADING)
	CU. YD.	CU. YD.	CU. YD.
STAGE 1			
TH10 EB	603	4	977
TH10 WB	574	14	1979
SWRCONN	84		226
SELCONN	109		350
NWLCONN	193		1190
STAGE 2			
	1564		3748
STAGE 3			
		9473	
STAGE 4			
		5679	
TOTALS	3127	15170	8470

E EARTHWORK SUMMARY							
	EXCAVATION			EMBANKMENT			
	TOPSOIL ⑤	COMMON	SUBGRADE	SELECTED GRADING	GRANULAR	SELECT GRANULAR	TOPSOIL
	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.
PERMANENT CONSTRUCTION	9,721	7,547	15,288	16,298	7,238	13,487	6,769
BYPASSES	3,127	15,170	0	8,470	0	0	0
TOTALS	12,848	22,717	15,288	24,768	7,238	13,487	6,769

EARTHWORK BALANCE



- ① TO BE HAULED OFF THE PROJECT AS APPROVED BY THE ENGINEER.
- ② TOTAL EMBANKMENT (CV) REQUIRED FOR PROJECT.
- ③ CONSISTS OF SELECT GRANULAR MATERIAL AVAILABLE ON PROJECT THAT SHALL BE USED AS GRANULAR EMBANKMENT.
- ④ CONSISTS OF SELECT GRANULAR MATERIAL AVAILABLE ON PROJECT THAT SHALL BE USED AS SELECT GRADING EMBANKMENT.
- ⑤ PAID FOR AS COMMON EXCAVATION.
- ⑥ ALL EXCAVATED MATERIAL AVAILABLE ON THE PROJECT (EXCEPT TOPSOIL) IS ESTIMATED TO BE SELECT GRANULAR MATERIAL.
- ⑦ CONSISTS OF N.W. LOOP POND A CONSTRUCTION. FOR LOCATION AND DETAILS, SEE SHEET NO. 98.

EARTHWORK QUANTITIES  
EARTHWORK SUMMARY  
EARTHWORK BALANCE

**A** TRAFFIC BARRIERS

ROADWAY	STATION	LOCATION	REMOVE		FURNISH AND INSTALL					INSTALL	RELOCATE		SALVAGE	
			PLATE BEAM GUARDRAIL	TWISTED END TREATMENT	GUARDRAIL DESIGN B8307	GUARDRAIL DESIGN SPECIAL (12)	ECCENTRIC LOADER BCT (13)	PORTABLE PRECAST CONC. MEDIAN BARRIER DESIGN 8333 (8)	IMPACT ATTENUATOR NO. 1 (1)	PLATE BEAM GUARDRAIL DESIGN B8307	PORTABLE PRECAST CONC. MEDIAN BARRIER DESIGN 8333	IMPACT ATTENUATOR NO. 1 (1)	PLATE BEAM GUARDRAIL	IMPACT ATTENUATOR NO. 1
			LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	LIN. FT.	ASSEMBLY		LIN. FT.	ASSEMBLY	EACH	ASSEMBLY
T.H. 10 WB	592 + 90 - 594 + 10	N.E.COR. BR.9263	75	(2) 1										
T.H. 10 WB	593 + 40 - 594 + 30	LOOP (E. OF BR.)	180											
T.H. 10 WB	596 + 20 - 597 + 10	LOOP (W. OF BR.)	180											
T.H. 10 WB	591 + 90 - 594 + 25	MEDIAN LOOP			(1) 500	50								
T.H. 10 WB	596 + 20 - 600 + 00	MEDIAN LOOP			(1) 700	50								
T.H. 10 WB	592 + 90 - 594 + 10	H.E.COR. BR.9263			50	25	1							
T.H. 10 EB	596 + 40 - 597 + 60	S.W.COR. BR.9264	75	(2) 1										
T.H. 10 EB	596 + 40 - 597 + 60	S.W.COR. BR.9264			50	25	1							
T.H. 65 NB	314 + 15 - 316 + 45	LOOP (AT PIER)								475		(3) 475		
BYPASS STAGING														
STAGE 1														
T.H. 10 WB	592 + 00 - 596 + 20	LT.							410					
T.H. 10 EB	594 + 30 - 598 + 70	RT.							440					
T.H. 65 NB	313 + 80 - 316 + 45	LT.							270					
T.H. 65 SB	314 + 10 - 321 + 70	RT.							250					
STAGE 2														
T.H. 10 WB	592 + 00 - 596 + 20	LT.									(4) 410			
T.H. 10 WB	577 + 50 - 592 + 00	RT.							1450					
T.H. 10 WB	596 + 20 - 615 + 80	RT.							1960					
T.H. 10 EB	577 + 60 - 594 + 30	RT.							1670					
T.H. 10 EB	594 + 30 - 598 + 70	RT.									(4) 440			
T.H. 10 EB	598 + 70 - 616 + 00	LT.							1730					
T.H. 10 WB & EB	STAGE 3										(7) 4480			
T.H. 10 WB & EB	STAGE 4	LT./RT./LOOP									(10) 310			
STAGE 1														
T.H. 10 WB	592 + 00	LT.								1				
T.H. 10 EB	598 + 70	RT.								1				
T.H. 65 NB	313 + 80	LT.								1				
T.H. 65 SB	321 + 70	RT.								1				
STAGE 2														
T.H. 10 WB	577 + 50	LT.									(5) 1			
T.H. 10 EB	616 + 00	RT.									(5) 1			
STAGE 3														
T.H. 10 WB	592 + 00	LT.									(6) 1			
T.H. 10 WB	598 + 70	RT.									(6) 1			
T.H. 10 WB & EB	STAGE 4	LT./RT.										2	(9) 2	
T.H. 65 NB	313 + 80	LT.											(9) 1	
T.H. 65 SB	321 + 70	RT.											(9) 1	
TOTALS			510	2	1300	150	2	8180	4	475	5640	6	475	4

- (1) SEE DETAIL ON SHEET NO. 16 FOR ASSEMBLY ARRANGEMENT.
- (2) INCLUDES CONCRETE ANCHOR BLOCK.
- (3) TO ACCOMMODATE PIER CONSTRUCTION
- (4) BARRIER EAST AND WEST OF BRIDGES IS RELOCATED AS SHOWN IN STAGE 1 AND STAGE 2 BYPASS PLAN. SEE SHEET NOS. 30-35.
- (5) RELOCATE FROM STAGE 1 IMPACT ATTENUATOR LOCATIONS TO STAGE 2 LOCATIONS.
- (6) RELOCATE FROM STAGE 2 IMPACT ATTENUATOR LOCATIONS TO STAGE 3 LOCATIONS. SEE SHEET NOS. 36-38.
- (7) RELOCATE THE BARRIER (FROM STAGE 2) ON T.H. 10 TO THE LOCATIONS ILLUSTRATED IN STAGE 3. SEE SHEET NOS. 36-38.

- (8) BARRIER ON BRIDGES SHALL BE ANCHORED TO THE BRIDGE DECK ACCORDING TO B920 DETAIL IN THE BRIDGE PLAN.
- (9) UPON COMPLETION OF THE PROJECT.
- (10) RELOCATE FROM STAGE 3 LOCATIONS TO STAGE 4 LOCATIONS. SEE SHEET NOS.39-41.
- (11) INCLUDES ONE 5' RADIUS PREFORMED NOSE SECTION AND TWO 40' RADIUS PREFORMED RAIL SECTIONS.
- (12) FOR DETAILS SEE SHEET NOS. 21, 22.
- (13) FOR DETAILS SEE SHEET NOS. 23, 24.

**TABULATIONS**  
TRAFFIC BARRIERS

B BITUMINOUS PAVEMENT REMOVAL			
ROADWAY	STATION	LOCATION	SQ. YD.
TH10 WB	579 + 00 - 592 + 65	MAINLINE	3640
TH10 WB	592 + 31 - 593 + 94	MAINLINE	436
TH10 WB	579 + 00 - 592 + 65	LT SHLD	455
TH10 WB	592 + 31 - 594 + 00	LT SHLD	56
TH10 WB	579 + 00 - 582 + 50	RT SHLD	389
TH10 WB	582 + 50 - 584 + 50	DECEL LANE	222
TH10 WB	584 + 50 - 586 + 50	DECEL LANE & GORE	400
NERAMP	INP NOSE - 19 + 12	NERAMP	1097
TH10 WB	586 + 50 - 591 + 00	RT SHLD	500
TH10 WB	591 + 00 - 592 + 40	RT SHLD	93
TH10 WB	592 + 40 - 592 + 80	ACCEL LANE & GORE	116
TH10 WB	592 + 80 - 593 + 90	ACCEL LANE	122
NELOOP	INP NOSE - 11 + 15	NELOOP	270
TH10 WB	596 + 30 - 611 + 02	MAINLINE	3925
TH10 WB	611 + 26 - 614 + 50	MAINLINE	865
TH10 WB	611 + 26 - 597 + 55	DECEL LANE & GORE	235
NWLOOP	INP NOSE - 11 + 75	NWLOOP	380
TH10 WB	596 + 40 - 611 + 02	LT SHLD	487
TH10 WB	611 + 26 - 614 + 50	LT SHLD	108
TH10 WB	597 + 55 - 605 + 55	RT SHLD	889
TH10 WB	605 + 55 - 607 + 00	RT SHLD	97
TH10 WB	607 + 00 - 608 + 50	ACCEL LANE & GORE	217
NWRAMP	INP NOSE - 11 + 25	NWRAMP	267
TH10 WB	608 + 50 - 611 + 02	RT SHLD	280
TH10 WB	611 + 26 - 614 + 50	RT SHLD	421
TH10 EB	579 + 18 - 594 + 17	MAINLINE	3997
TH10 EB	579 + 00 - 582 + 10	LT TURN LANE	374
TH10 EB	582 + 10 - 594 + 14	RT SHLD	401
TH10 EB	579 + 00 - 583 + 32	LT SHLD	480
TH10 EB	583 + 32 - 584 + 58	ACCEL LANE & GORE	180
SERAMP	INP NOSE - 14 + 58	SERAMP	910
TH10 EB	584 + 58 - 592 + 95	LT SHLD	930
TH10 EB	592 + 95 - 594 + 20	DECEL LANE & GORE	240
SELOOP	INP NOSE - 11 + 00	SELOOP	200
TH10 EB	596 + 50 - 612 + 54	MAINLINE	4277
TH10 EB	596 + 50 - 614 + 50	RT SHLD	600
TH10 EB	596 + 55 - 598 + 45	ACCEL LANE & GORE	238
SWLOOP	INP NOSE - 11 + 00	SWLOOP	180
TH10 EB	598 + 45 - 599 + 88	LT SHLD	95
TH10 EB	599 + 88 - 604 + 53	LT SHLD	517
TH10 EB	604 + 53 - 606 + 45	DECEL LANE & GORE	368
SWRAMP	INP NOSE - 11 + 41	SWRAMP	277
TH10 EB	606 + 45 - 614 + 50	LT SHLD	894
TOTAL			31125

C SAWCUT BITUMINOUS			
STATION	LOCATION	LN FT	REMARKS
NE RAMP 19+12	LT-RT	16	END CONST.
SE RAMP 14+58	LT-RT	16	END CONST.
NE LOOP 11+15	LT-RT	18	END CONST.
SE LOOP 11+00	LT-RT	21	END CONST.
11+00 TO 12+20	LT	120	SELCONN CONST.
NW LOOP 11+75	LT-RT	19	END CONST.
11+75 TO 12+39	LT	64	NWLCONN CONST.
SW LOOP 11+00	LT-RT	18	END CONST.
NW RAMP 11+25	LT-RT	18	END CONST.
SW RAMP 11+41	LT-RT	20	END CONST.
11+41 TO 12+45	LT	104	SWRCONN CONST.
TH10WB			
579+00	LT-RT	37	BEGIN CONST.
578+67 TO 582+56	12' RT	398	BP3 CONST.
578+70 TO 593+90	2' RT	1650	BP3 CONST.
579+00 TO 594+04	LT	1504	BP5 REMOVAL
586+08 TO 592+23	12' RT	615	BP3 CONST.
596+30 TO 614+50	2' RT	1760	BP3 CONST.
596+36 TO 614+50	LT	1814	BP5 REMOVAL
597+77 TO 606+71	12' RT	894	BP3 CONST.
614+50	LT-RT	39	END CONST.
TH10EB			
579+00	LT-RT	25	BEGIN CONST.
579+00 TO 594+20	RT	1520	BP6 REMOVAL
585+20 TO 590+63	12' LT	543	BP4 CONST.
596+56 TO 614+50	2' LT	1794	BP4 CONST.
596+56 TO 614+50	RT	1794	BP6 REMOVAL
598+73 TO 604+35	12' LT	562	BP4 CONST.
608+00 TO 615+70	12' LT	770	BP4 CONST.
614+50	LT-RT	12	END CONST.
(1)		500	
TOTAL		9145	

① QUANTITY FOR USE AS DIRECTED BY THE ENGINEER.

D APPROACH PANELS		
STATION	LOCATION	BR. APPROACH PANEL (SQ. YD)
BR. NO. 9264		
TH10 EB		
594 + 20 - 594 + 40	LT. & RT.	123
596 + 36 - 596 + 56	LT. & RT.	123
BR. NO. 9263		
TH10 WB		
593 + 04 - 594 + 24	LT. & RT.	123
596 + 19 - 596 + 39	LT. & RT.	123
TOTAL		492

### TABULATIONS

BITUMINOUS PAVEMENT REMOVAL  
SAWCUT BITUMINOUS  
APPROACH PANELS

F CURB AND GUTTER						
STATION	LOCATION	CURB & GUTTER	CURB & GUTTER	CONCRETE ENTRANCE NOSE DESIGN 7107	6" CONCRETE WALK	REMOVE
		B424	D424			CURB & GUTTER
		LIN FT	LIN FT	EACH	SQ FT	LIN FT
TH10WB						
586+08 TO 587+08	RT	100				
586+75 TO 587+09	RT					114
591+49 TO 593+95	RT	238				
591+86 TO 592+23	RT					37
592+28 TO 594+22	RT					226
596+10 TO 597+50	RT					148
596+28 TO 598+77	RT	235				
597+70 TO 599+10	RT					140
605+71 TO 611+76	RT	96	504			
TH10EB						
581+40 TO 586+20	LT					426
581+40 TO 586+20	LT	96	370			
585+10 TO 585+92	LT					82
591+18 TO 592+23	LT					105
591+82 TO 594+29	LT	231				
592+96 TO 594+45	LT					149
596+65 TO 599+48	LT	280				
596+47 TO 598+74	LT					227
598+80 TO 599+90	LT					110
603+35 TO 605+84	LT	100	146			
NERAMP						
10+00 TO 19+12	LT-RT		1491		67	1491
SERAMP						
10+00 TO 14+58	LT-RT		902	1	1241	902
NELOOP						
10+00 TO 11+15	LT-RT	115	111	4	131	226
SELOOP						
10+00 TO 11+00	LT-RT	100	92		81	192
11+00 TO 12+20	LT		120			120
NWLOOP						
10+00 TO 11+75	LT-RT	175	170		88	345
11+75 TO 12+39	LT		64			64
SWLOOP						
10+00 TO 11+00	LT-RT	100	99	4	133	199
NWRAMP						
10+00 TO 11+25	LT-RT		247	4	355	247
SWRAMP						
10+00 TO 11+41	LT-RT		279		69	279
11+41 TO 12+45	LT		104			104
TOTAL		1866	4699	4	6868	5933

G TURF ESTABLISHMENT							
ROADWAY	STATION	LOCATION	SODDING	SEEDING	SEED MIXTURE	TYPE 1 MULCH	DISK ANCHORING
			③		500 ①	②	
			SQ. YD.	ACRE	POUND	TON	ACRE
TH10EB	576+40 TO 585+10	LT.	1661	0.1	5	0.2	0.1
TH10EB	585+10 TO 595+00	LT.	694	0.9	45	1.8	0.9
TH10EB	596+10 TO 604+40	LT.	502	0.6	30	1.2	0.6
TH10EB	604+40 TO 616+35	LT.	2879	0.2	10	0.4	0.2
TH10EB	576+40 TO 588+00	RT.	1406	0.8	40	1.6	0.8
TH10EB	588+00 TO 591+55	RT.	1104				
TH10EB	600+00 TO 604+35	RT.	1147				
TH10EB	604+35 TO 617+00	RT.	1547	0.7	35	1.4	0.7
TH10WB	578+60 TO 586+10	RT.	1393	0.2	10	0.4	0.2
TH10WB	586+10 TO 594+50	RT.	880	0.9	45	1.8	0.9
TH10WB	597+75 TO 606+70	RT.	633	0.5	25	1.0	0.5
TH10WB	606+70 TO 615+70	RT.	570	0.5	25	1.0	0.5
TH65SB	313+50 TO 322+00	RT.	556	0.1	5	0.2	0.1
NE RAMP	13+35 TO 19+12	LT. - RT.	769	1.0	50	2.0	1.0
SE RAMP	10+00 TO 14+58	LT. - RT.	567	0.4	20	0.8	0.4
SE LOOP	10+00 TO 12+25	LT. - RT.	217	0.3	15	0.6	0.3
NE LOOP	10+00 TO 11+15	LT. - RT.	153	0.2	10	0.4	0.2
NW LOOP	10+00 TO 12+40	LT.	160	0.2	10	0.4	0.2
NW LOOP	10+00 TO 18+74	RT. (POND A)	624	2.3	115	4.6	2.3
SW LOOP	10+00 TO 11+00	LT. - RT.	133	0.1	5	0.2	0.1
SW RAMP	10+00 TO 12+41	LT. - RT.	321	0.2	10	0.4	0.2
NW RAMP	10+00 TO 11+25	LT.	83	0.1	5	0.2	0.1
⑤			1000				
TOTALS			19007	10.3	515	20.6	10.3

- ① APPLIED AT THE RATE OF 50 POUNDS PER ACRE.
- ② APPLIED AT THE RATE OF 2 TONS PER ACRE.
- ③ FOR ADDITIONAL QUANTITIES SEE STORM SEWER TABULATION ON SHEET NO. 108.
- ④ MODIFIED NOSE. FOR DETAILS SEE SHEET NO. 17.
- ⑤ PROVIDED FOR MISCELLANEOUS LOCATIONS THROUGHOUT THE PROJECT AS DIRECTED BY THE ENGINEER.

TABULATIONS  
CURB AND GUTTER  
TURF ESTABLISHMENT



H BITUMINOUS SUMMARY																						
ROADWAY	STATION TO STATION			LOCATION		TYPE 31 BASE					TYPE 41 BINDER					TYPE 61 WEAR					TACK COAT	
						DEPTH	WIDTH	OOD AREA	TOTAL AREA	MIX	DEPTH	WIDTH	OOD AREA	TOTAL AREA	MIX	DEPTH	WIDTH	OOD AREA	TOTAL AREA	MIX	LIFTS	TACK COAT
						INCH	FT.	SQ. YD.	SQ. YD.	TON	INCH	FT.	SQ. YD.	SQ. YD.	TON	INCH	FT.	SQ. YD.	SQ. YD.	TON	NO.	GAL.
TH10EB	579 + 00	TO	581 + 40	RT. & LT.	5.75	55.0		1467	464	3.00	52.0		1387	229	1.00	52.0		1387	78	3	170	
TH10EB	581 + 40	TO	583 + 47	RT. & LT.	5.75	34.0	262	1044	330	3.00	34.0	219	1001	165	1.00	34.0	219	1001	57	3	122	
TH10EB	583 + 47	TO	586 + 23	RT. & LT.	5.75	40.0	174	1401	443	3.00	37.0	174	1309	216	1.00	37.0	174	1309	74	3	161	
TH10EB	586 + 23	TO	588 + 67	RT. & LT.	5.75	42.0		1139	360	3.00	39.0		1057	174	1.00	39.0		1057	60	3	130	
TH10EB	588 + 67	TO	591 + 85	RT. & LT.	5.75	39.0	251	1629	515	3.00	36.0	198	1470	243	1.00	36.0	198	1470	83	3	183	
TH10EB	591 + 85	TO	594 + 19	RT. & LT.	5.75	24.0	838	1462	462	3.00	24.0	800	1424	235	1.00	24.0	800	1424	80	3	172	
TH10EB	594 + 19	TO	599 + 48	RT. & LT.	5.75	34.0	659	1755	555	3.00	34.0	611	1707	282	1.00	34.0	611	1707	96	3	207	
TH10EB	599 + 48	TO	603 + 40	RT. & LT.	5.75	37.5	248	1881	595	3.00	36.0	181	1749	289	1.00	36.0	181	1749	99	3	215	
TH10EB	603 + 40	TO	604 + 40	RT. & LT.	5.75	38.5		428	135	3.00	37.0		411	68	1.00	37.0		411	23	3	50	
TH10EB	604 + 40	TO	605 + 84	RT. & LT.	5.75		756	756	239	3.00		756	756	125	1.00		756	756	43	3	91	
TH10EB	605 + 84	TO	614 + 50	RT. & LT.	5.75	28.5	1167	3909	1236	3.00	27.0	1023	3621	597	1.00	27.0	1023	3621	205	3	446	
TH10EB	614 + 50	TO	594 + 33	MEDIAN	2.25		361	361	45						1.50		361	361	(2) 31	1	29	
TH10EB	596 + 30	TO	600 + 05	MEDIAN	2.25		482	482	60						1.50		482	482	(2) 41	1	39	
TH10WB	579 + 00	TO	582 + 50	RT. & LT.	5.75	40.0		1556	492	3.00	37.0		1439	237	1.00	37.0		206	12	3	221	
TH10WB	582 + 50	TO	587 + 08	RT. & LT.	5.75	28.5	937	2387	755	3.00	27.0	932	2306	380	1.00	27.0	932	956	54	3	369	
TH10WB	587 + 08	TO	591 + 48	RT. & LT.	5.75	37.5	223	2056	650	3.00	36.0	181	1941	320	1.00	36.0	181	373	21	3	298	
TH10WB	591 + 48	TO	594 + 02	RT. & LT.	5.75	34.0	507	1467	464	3.00	34.0	465	1425	235	1.00	34.0	465	473	27	3	223	
TH10WB	594 + 02	TO	598 + 75	RT. & LT.	5.75	24.0	940	1567	495	3.00	24.0	901	1528	252	1.00	24.0	901	1101	62	3	262	
TH10WB	598 + 75	TO	601 + 83	RT. & LT.	5.75	37.5	243	1526	483	3.00	36.0	192	1424	235	1.00	36.0	192	524	30	3	231	
TH10WB	601 + 83	TO	605 + 71	RT. & LT.	5.75	42.0		1811	573	3.00	39.0		1681	277	1.00	39.0		308	17	3	261	
TH10WB	605 + 71	TO	606 + 71	RT. & LT.	5.75	38.5		428	135	3.00	37.0		411	68	1.00	37.0		292	16	3	45	
TH10WB	606 + 71	TO	611 + 76	RT. & LT.	5.75	38.5	195	2355	745	3.00	37.0	195	2271	375	1.00	37.0	195	507	29	3	205	
TH10WB	611 + 76	TO	614 + 50	RT. & LT.	5.75	42.0		1279	404	3.00	39.0		1187	196	1.00	39.0		217	12	3	107	
NW RAMP	10 + 00	TO	11 + 25	RT. & LT.	3.75		204	204	42	3.00		204	204	34	1.00		204	204	12	2	24	
SW RAMP	10 + 00	TO	11 + 41	RT. & LT.	3.75		293	293	60	3.00		293	293	48	1.00		293	293	17	2	35	
NW LOOP	10 + 00	TO	11 + 75	RT. & LT.	3.75		378	378	78	3.00		378	378	62	1.00		378	378	21	2	45	
SW LOOP	10 + 00	TO	11 + 00	RT. & LT.	3.75		168	168	35	3.00		168	168	28	1.00		168	168	9	2	20	
NE LOOP	10 + 00	TO	11 + 15	RT. & LT.	3.75		205	205	42	3.00		205	205	34	1.00		205	205	12	2	25	
SE LOOP	10 + 00	TO	11 + 00	RT. & LT.	3.75		220	220	45	3.00		220	220	36	1.00		220	220	12	2	26	
NE RAMP	13 + 08	TO	19 + 12	RT. & LT.	3.75		669	669	138	3.00		669	669	110	1.00		669	669	38	2	80	
SE RAMP	10 + 00	TO	14 + 58	RT. & LT.	3.75		614	614	127	3.00		614	614	101	1.00		614	614	35	2	74	
S.P. 0203-75 (T.H. 10) TOTALS								10994	36895	11202			9579	34255	5651			10422	24441	1334 (2) 72		4498

- ① IRREGULAR WIDTHS.
- ② CONSISTS OF TYPE 41 WEAR

NOTE: FOR COMPUTATION, AN EXTRA 1/4 INCH HAS BEEN ADDED TO THE DEPTH OF FIRST MIX PLACED

I AGGREGATE SUMMARY									
ROADWAY	STATION TO STATION			LOCATION		SPEC. 2221 AGGREGATE SHLD.		SPEC. 2211 AGGREGATE BASE	
						DEPTH	CLASS	DEPTH	CLASS
						INCH	CU. YD.	INCH	CU. YD.
TH10EB	579 + 00	TO	581 + 40	LT. & RT.			2	91	
TH10EB	581 + 40	TO	586 + 23	LT. & RT.			2	149	
TH10EB	586 + 23	TO	591 + 85	LT. & RT.			2	179	
TH10EB	591 + 85	TO	594 + 19	LT. & RT.			2	89	
TH10EB	596 + 58	TO	599 + 48	LT. & RT.			2	108	
TH10EB	599 + 48	TO	603 + 40	LT. & RT.			2	122	
TH10EB	603 + 40	TO	605 + 84	LT. & RT.			2	81	
TH10EB	605 + 84	TO	614 + 50	LT. & RT.			2	251	
TH10EB	591 + 55	TO	594 + 33	MEDIAN			8	67	
TH10EB	596 + 30	TO	600 + 05	MEDIAN			8	89	
TH10WB	579 + 00	TO	582 + 80	LT. & RT.			2	109	
TH10WB	582 + 80	TO	587 + 08	LT. & RT.			2	139	
TH10WB	587 + 08	TO	591 + 48	LT. & RT.			2	133	
TH10WB	591 + 48	TO	594 + 02	LT. & RT.			2	90	
TH10WB	596 + 40	TO	598 + 75	LT. & RT.			2	87	
TH10WB	598 + 75	TO	605 + 71	LT. & RT.			2	213	
TH10WB	605 + 71	TO	611 + 76	LT. & RT.			2	174	
TH10WB	611 + 76	TO	614 + 50	LT. & RT.			2	78	
NW RAMP	10 + 00	TO	11 + 25	LT. & RT.	VAR.	10	2	12	
SW RAMP	10 + 00	TO	11 + 41	LT. & RT.	VAR.	7	2	16	
NW LOOP	10 + 00	TO	11 + 75	LT. & RT.	VAR.	13	2	21	
SW LOOP	10 + 00	TO	11 + 00	LT. & RT.	VAR.	10	2	9	
NE LOOP	10 + 00	TO	11 + 15	LT. & RT.	VAR.	9	2	11	
SE LOOP	10 + 00	TO	11 + 00	LT. & RT.	VAR.	7	2	12	
NE RAMP	13 + 08	TO	19 + 12	LT. & RT.	VAR.	43	2	37	
SE RAMP	10 + 00	TO	14 + 58	LT. & RT.	VAR.	34	2	34	
S.P. 0203-75 TOTALS							133	2401	

③ TO BE PLACED BEHIND CURB & GUTTER

TABULATIONS  
BITUMINOUS SUMMARY  
AGGREGATE SUMMARY

**J BYPASS BITUMINOUS SUMMARY**

ROADWAY	STATION TO STATION	LOCATION	TYPE 31 BASE					TYPE 41 BINDER					TYPE 41 WEAR					TACK COAT		
			DEPTH	WIDTH	ODD AREA	TOTAL AREA	MIX	DEPTH	WIDTH	ODD AREA	TOTAL AREA	MIX	DEPTH	WIDTH	ODD AREA	TOTAL AREA	MIX	LIFTS	TACK COAT	
			INCH	FT.	SQ. YD.	SQ. YD.	TON	INCH	FT.	SQ. YD.	SQ. YD.	TON	INCH	FT.	SQ. YD.	SQ. YD.	TON	NO.	GAL.	
	STAGE 1																			
BYPASS 3	102 + 65 TO 106 + 58	RT./LT.	2.25	22		961	119	1.50	22.0		961	79	1.50	22.0		961	79	2	77	
BYPASS 3	106 + 58 TO 110 + 17	RT.	2.25		238	238	29	1.50		238	238	20	1.50		238	238	20	2	19	
BYPASS 3	110 + 85 TO 111 + 00	RT./LT.	2.25		30	30	4	1.50		30	30	2	1.50		30	30	2	2	2	
BYPASS 3	111 + 00 TO 116 + 00	RT./LT.	2.25	22		1222	151	1.50	22.00		1222	101	1.50	22.00		1222	101	2	98	
BYPASS 3	116 + 00 TO 116 + 30	RT./LT.	2.25		53	53	7	1.50		53	53	4	1.50		53	53	4	2	4	
BYPASS 3	122 + 10 TO 124 + 00	RT./LT.	2.25		435	435	54	1.50		435	435	36	1.50		435	435	36	2	35	
BYPASS 3	124 + 00 TO 130 + 03	RT./LT.	2.25	22		1474	182	1.50	22.0		1474	122	1.50	22.0		1474	122	2	118	
BYPASS 3	130 + 03 TO 130 + 78	RT./LT.	2.25		133	133	16	1.50		133	133	11	1.50		133	133	11	2	11	
BYPASS 3	130 + 88 TO 131 + 48	RT.	2.25		475	47	6	1.50		475	47	4	1.50		475	47	4	2	4	
BYPASS 3	131 + 48 TO 139 + 70	RT.	2.25	14		1279	158	1.50	14.0		1279	106	1.50	14.0		1279	106	2	102	
BYPASS 4	200 + 50 TO 202 + 55	LT.	2.25		159	159	20	1.50		159	159	13	1.50		159	159	13	2	13	
BYPASS 4	202 + 55 TO 209 + 05	LT.	2.25	14		1011	125	1.50	14		1011	83	1.50	14		1011	83	2	81	
BYPASS 4	209 + 70 TO 214 + 65	RT./LT.	2.25	22		1210	150	1.50	22		1210	100	1.50	22		1210	100	2	97	
BYPASS 4	214 + 65 TO 216 + 70	LT.	2.25	10		228	28	1.50	10		228	19	1.50	10		228	19	2	18	
BYPASS 4	222 + 70 TO 222 + 95	RT./LT.	2.25		44	44	5	1.50		44	44	4	1.50		44	44	4	2	4	
BYPASS 4	222 + 95 TO 228 + 13	RT./LT.	2.25	22		1266	157	1.50	22		1266	104	1.50	22		1266	104	2	101	
BYPASS 4	228 + 13 TO 228 + 35	RT./LT.	2.25		41	41	5	1.50		41	41	3	1.50		41	41	3	2	3	
BYPASS 4	229 + 15 TO 232 + 03	LT.	2.25		107	107	13	1.50		107	107	9	1.50		107	107	9	2	9	
BYPASS 4	232 + 03 TO 239 + 00	RT./LT.	2.25	22		1704	211	1.50	22		1704	141	1.50	22		1704	141	2	136	
MWL CONN			2.25			322	322	40	1.50		322	322	27	1.50		322	322	27	2	26
SWR CONN			2.25			275	275	34	1.50		275	275	23	1.50		275	275	23	2	22
SEL CONN			2.25			289	289	36	1.50		289	289	24	1.50		289	289	24	2	23
	STAGE 2																			
TH10EB	578 + 45 TO 583 + 20	RT	2.25		172	172	21	1.50		172	172	14	1.50		172	172	14	2	14	
TH10EB	583 + 20 TO 589 + 00	RT	2.25	16		1031	128	1.50	16.0		1031	85	1.50	16.0		1031	85	2	82	
TH10EB	589 + 00 TO 594 + 18	RT	2.25		367	367	45	1.50		367	367	30	1.50		367	367	30	2	29	
TH10EB	594 + 15 TO 601 + 30	RT	2.25		283	283	35	1.50		283	283	23	1.50		283	283	23	2	23	
TH10EB	601 + 30 TO 608 + 00	RT	2.25	10		744	92	1.50	10.0		744	61	1.50	10.0		744	61	2	60	
TH10EB	608 + 00 TO 615 + 10	RT	2.25	14		1104	137	1.50	14.0		1104	91	1.50	14.0		1104	91	2	88	
TH10WB	578 + 45 TO 589 + 30	LT	2.25	16		1929	239	1.50	16.0		1929	159	1.50	16.0		1929	159	2	154	
TH10WB	589 + 30 TO 594 + 18	LT	2.25		367	367	45	1.50		367	367	30	1.50		367	367	30	2	29	
TH10WB	594 + 15 TO 601 + 30	LT	2.25		283	283	35	1.50		283	283	23	1.50		283	283	23	2	23	
TH10WB	601 + 30 TO 609 + 80	LT	2.25	10		933	115	1.50	10.0		933	77	1.50	10.0		933	77	2	75	
TH10WB	609 + 80 TO 614 + 20	LT	2.25	16		729	90	1.50	16.0		729	60	1.50	16.0		729	60	2	58	
TH10WB	614 + 20 TO 616 + 50	LT	2.25		204	204	25	1.50		204	204	17	1.50		204	204	17	2	16	
S.P. 0203-75 (T.H. 10) TOTALS					4277	20674	2557			4277	20674	1705			4277	20674	1705		1654	

① IRREGULAR WIDTHS.

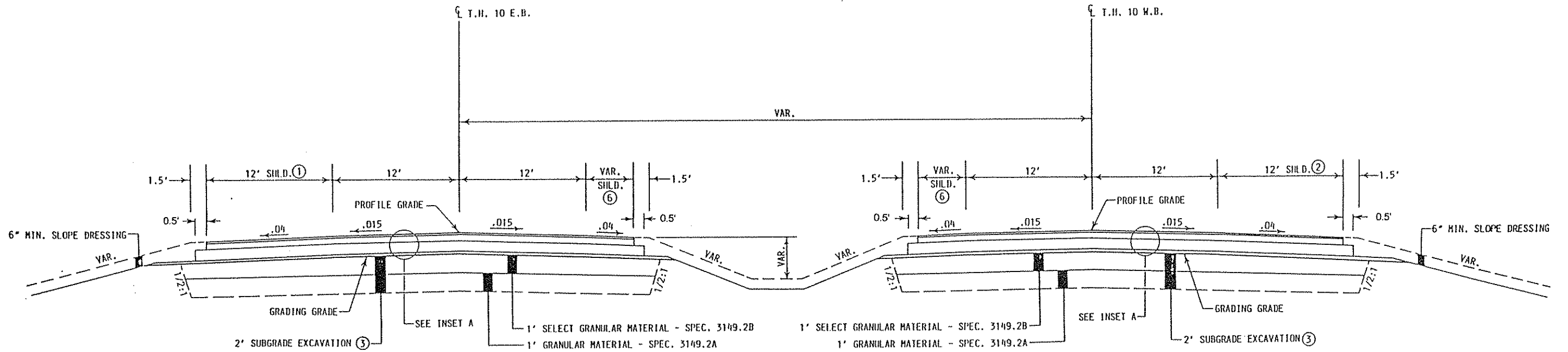
NOTE: FOR COMPUTATION, AN EXTRA 1/4 INCH HAS BEEN ADDED TO THE DEPTH OF FIRST MIX PLACED

**K BYPASS AGGREGATE SUMMARY**

ROADWAY	STATION TO STATION	LOCATION	SPEC. 2211 AGGREGATE BASE	
			DEPTH	CLASS 5
			INCH	CU. YD.
	STAGE 1			
BYPASS 3	102 + 65 TO 106 + 58	LT. & RT.	3	80
BYPASS 3	106 + 58 TO 110 + 15	LT. & RT.	3	20
BYPASS 3	110 + 85 TO 113 + 00	LT. & RT.	3	43
BYPASS 3	113 + 00 TO 116 + 30	LT. & RT.	3	61
BYPASS 3	122 + 10 TO 124 + 00	LT. & RT.	3	35
BYPASS 3	124 + 00 TO 130 + 78	LT. & RT.	3	126
BYPASS 3	130 + 78 TO 135 + 50	LT. & RT.	3	56
BYPASS 3	135 + 50 TO 139 + 70	LT. & RT.	3	54
BYPASS 4	200 + 50 TO 202 + 55	LT. & RT.	3	13
BYPASS 4	202 + 55 TO 209 + 05	LT. & RT.	3	84
BYPASS 4	209 + 70 TO 214 + 65	LT. & RT.	3	101
BYPASS 4	214 + 65 TO 216 + 70	LT. & RT.	3	19
BYPASS 4	222 + 95 TO 228 + 35	LT. & RT.	3	109
BYPASS 4	229 + 15 TO 232 + 00	LT. & RT.	3	24
BYPASS 4	232 + 00 TO 239 + 00	LT. & RT.	3	142
BYPASS 4	239 + 00 TO 240 + 75	LT. & RT.	3	26
	STAGE 2			
TH10EB	578 + 40 TO 581 + 00	RT.	3	20
TH10EB	581 + 00 TO 587 + 00	RT.	3	48
TH10EB	587 + 00 TO 592 + 00	RT.	3	59
TH10EB	592 + 00 TO 594 + 10	RT.	3	22
TH10EB	596 + 50 TO 600 + 00	RT.	3	63
TH10EB	600 + 00 TO 607 + 00	RT.	3	64
TH10EB	607 + 00 TO 615 + 30	RT.	3	85
TH10WB	578 + 45 TO 589 + 30	LT.	3	166
TH10WB	589 + 30 TO 594 + 18	LT.	3	31
TH10WB	596 + 15 TO 601 + 30	LT.	3	24
TH10WB	601 + 30 TO 609 + 80	LT.	3	80
TH10WB	609 + 80 TO 614 + 20	LT.	3	62
TH10WB	614 + 20 TO 616 + 50	LT.	3	18
TOTAL				1735

TABULATIONS  
 BYPASS BITUMINOUS SUMMARY  
 BYPASS AGGREGATE SUMMARY

T.H. 10

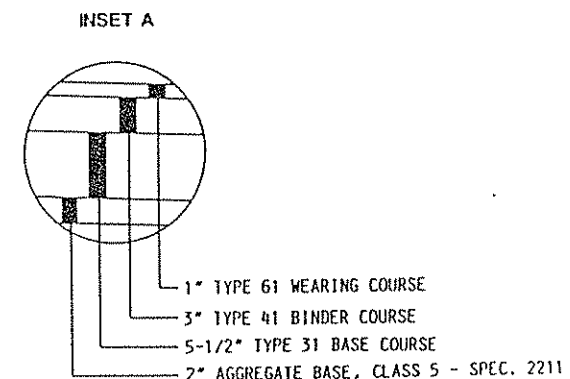
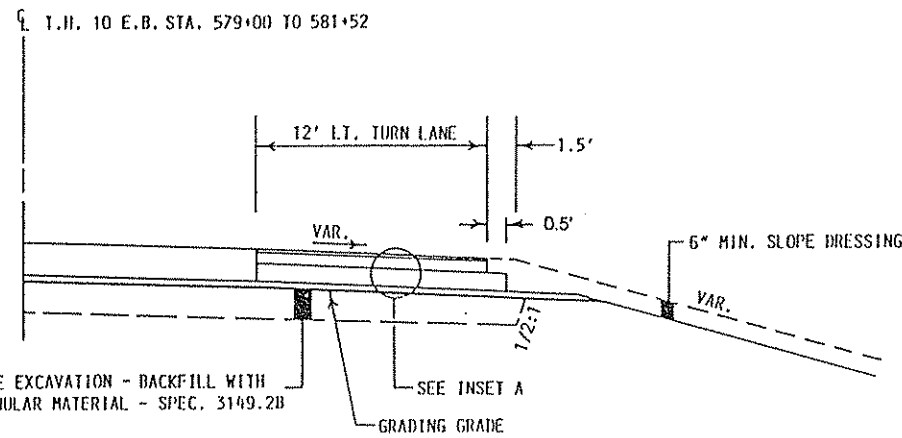
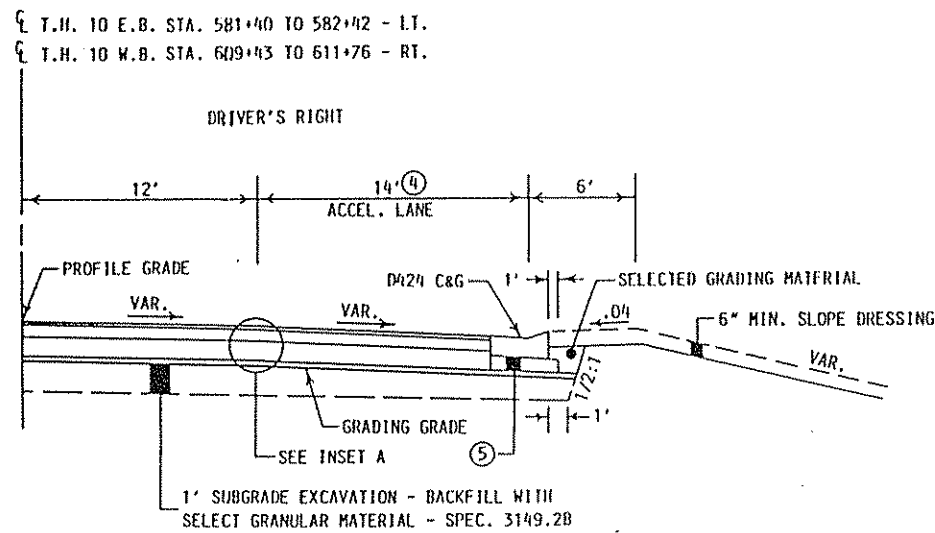


- ① STA. 607+20 TO 614+50 - 10' SHLD.
- ② STA. 579+00 TO 582+50 - 10' SHLD.
- ③ STA. 579+00 TO 585+00 | 1' SUBGRADE EXCAVATION - BACKFILL WITH  
STA. 606+00 TO 614+50 | SELECT GRANULAR MATERIAL - SPEC. 3149.2B
- ⑥ 3' NORMAL WIDTH

NOTE: CROSS SLOPES ARE IN FT./FT.  
UNLESS OTHERWISE SHOWN, THE CROSS SLOPE OF THE GRADING GRADE SHALL MATCH THE CROSS SLOPE OF THE FINISHED SURFACE.  
FOR SUPERELEVATION DETAILS, SEE SHEETS NO. 97 - 99.  
MAXIMUM SUPERELEVATION ROLLOVER AT SHOULDER SHALL BE .07 FT./FT.

T.H. 10

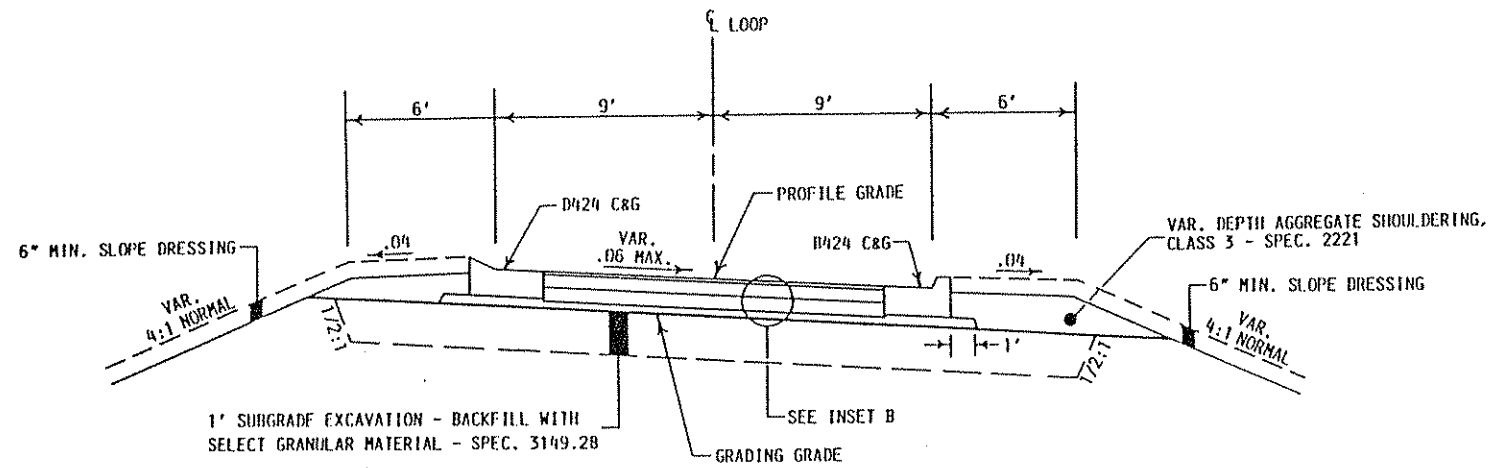
LEFT TURN LANE



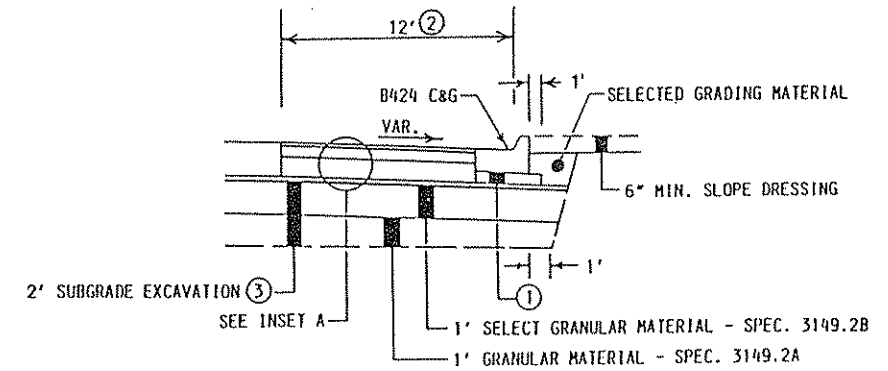
- ④ T.H. 10 W.B. STA. 609+43 TO 611+76 - 12'
- ⑤ VAR. DEPTH AGGREGATE BASE, CLASS 5 - SPEC. 2211

TYPICAL SECTIONS

**LOOPS**



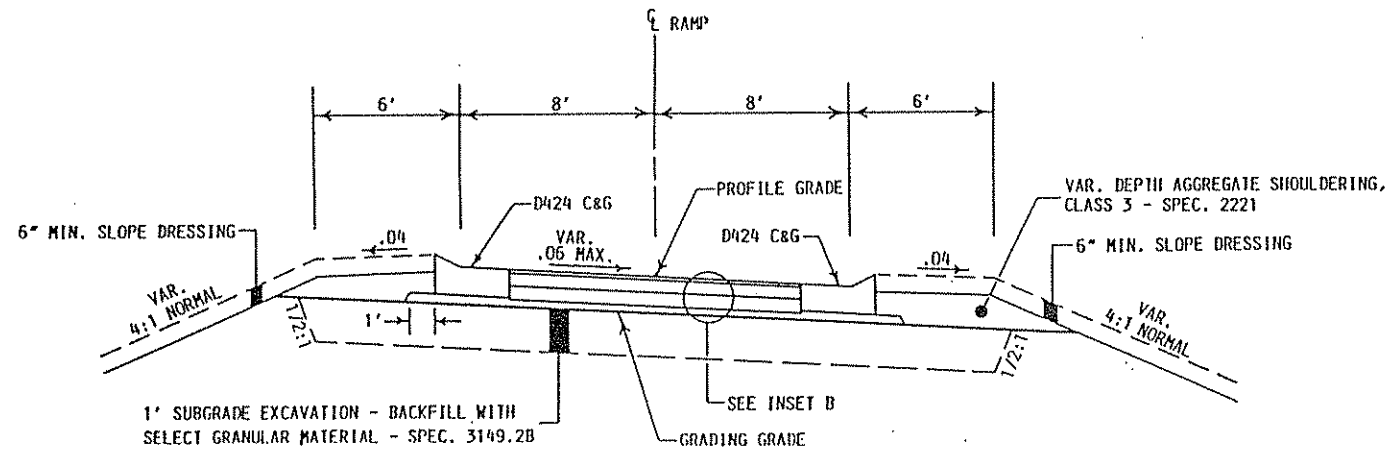
**MAINLINE SHOULDERS WITH B424 CURB AND GUTTER**



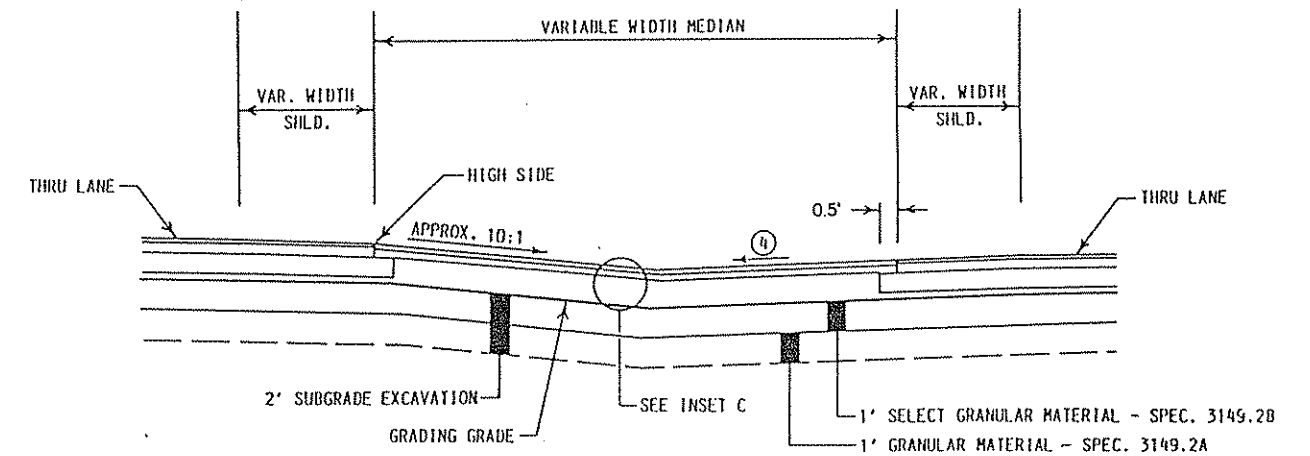
- ① VAR. DEPTH AGGREGATE BASE, CLASS 5 - SPEC. 2211
- ② T.H. 10 E.B. STA. 591+82 TO 592+82 - TAPER 12' TO 14'  
T.H. 10 W.B. STA. 597+77 TO 598+77 - TAPER 14' TO 12'
- ③ T.H. 10 W.B. STA. 606+00 TO 606+71 - 1' SUBGRADE EXCAVATION - BACKFILL WITH SELECT GRANULAR MATERIAL - SPEC. 3149.2B

NOTE: SEE CONSTRUCTION PLAN SHEETS NO. 81-83 FOR VARIATIONS IN RAMP AND LOOP PAVEMENT WIDTHS.

**RAMPS**

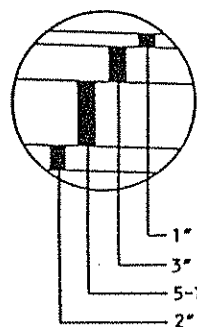


**BITUMINOUS MEDIAN AT BRIDGES**



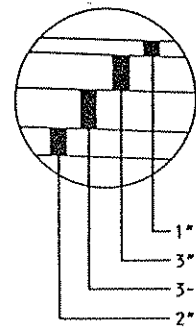
④ SLOPE SAME AS ADJACENT SHOULDER

**INSET A**



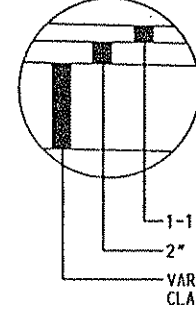
- 1" TYPE 61 WEARING COURSE
- 3" TYPE 41 BINDER COURSE
- 5-1/2" TYPE 31 BASE COURSE
- 2" AGGREGATE BASE, CLASS 5 - SPEC. 2211

**INSET B**



- 1" TYPE 61 WEARING COURSE
- 3" TYPE 41 BINDER COURSE
- 3-1/2" TYPE 31 BASE COURSE
- 2" AGGREGATE BASE, CLASS 5 - SPEC. 2211

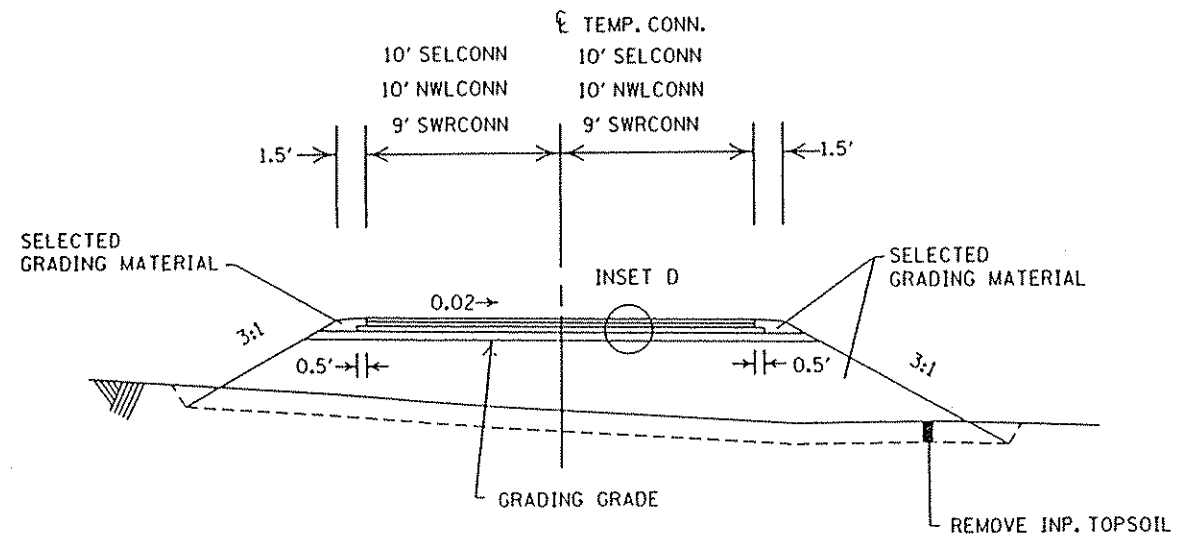
**INSET C**



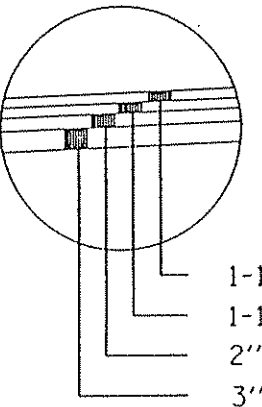
- 1-1/2" TYPE 41 WEARING COURSE
- 2" TYPE 31 BASE COURSE
- VARIABLE DEPTH (APPROX. 8") AGGREGATE BASE, CLASS 5 - SPEC. 2211

**TYPICAL SECTIONS**

TEMPORARY CONNECTIONS

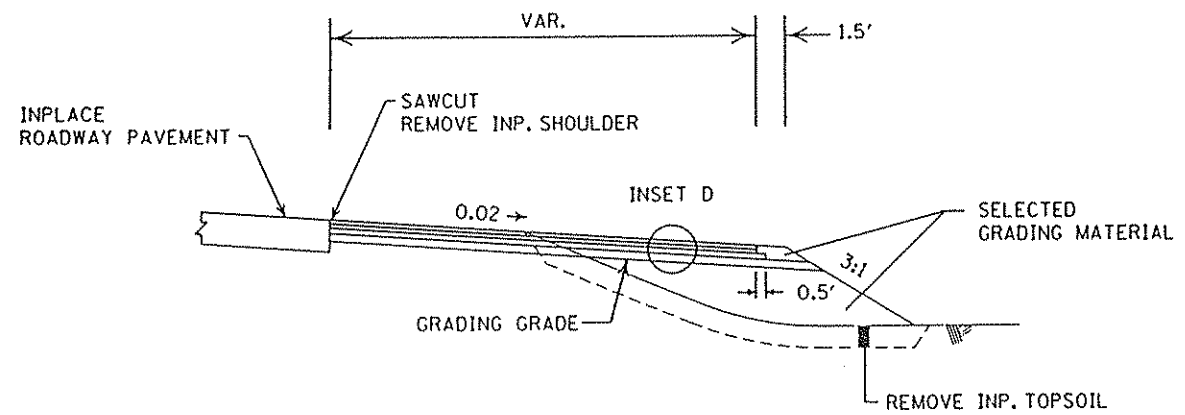


INSET D

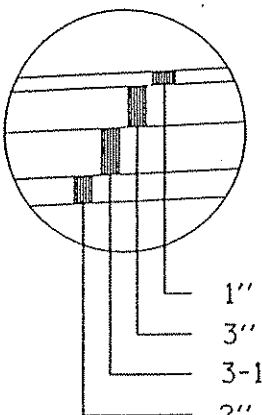


- 1-1/2" TYPE 41 WEAR
- 1-1/2" TYPE 41 BINDER
- 2" TYPE 31 BASE
- 3" AGGREGATE BASE, CLASS 5

BYPASSES (TEMPORARY WIDENING)

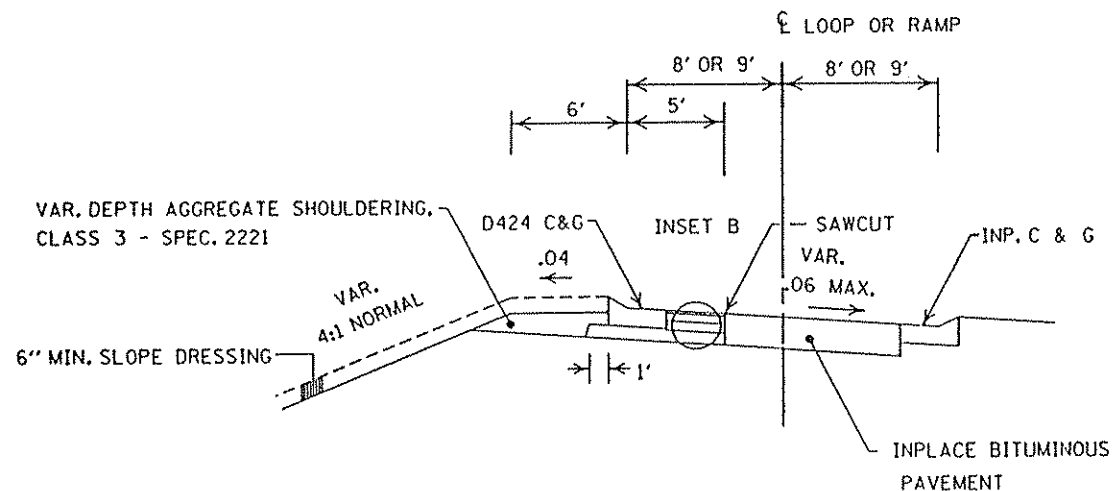


INSET B



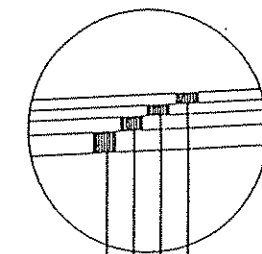
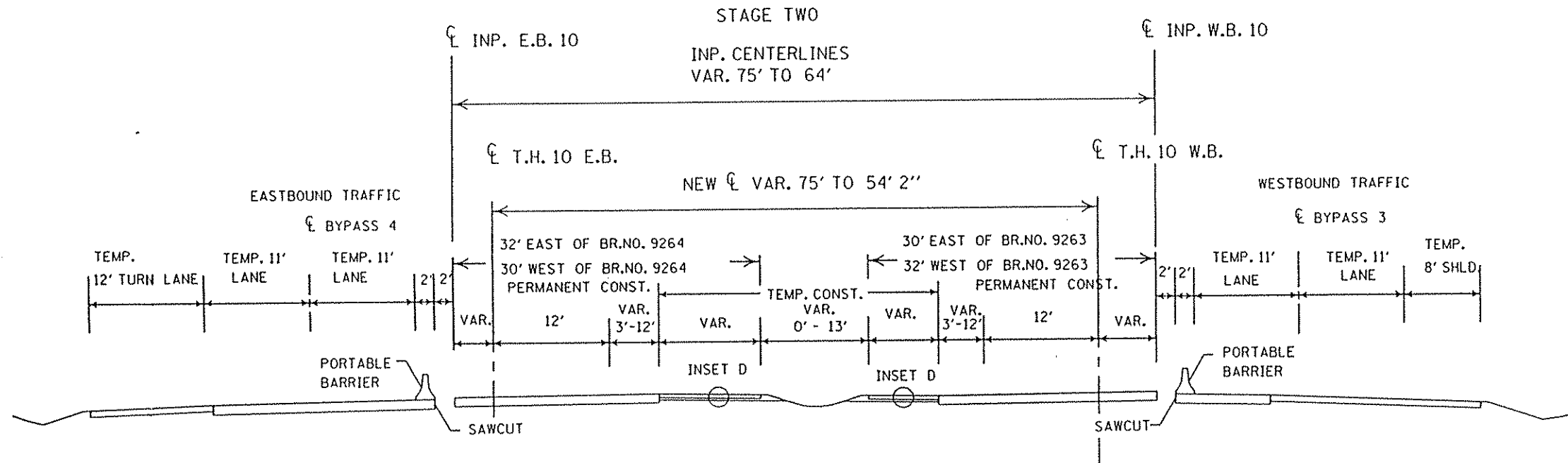
- 1" TYPE 61 WEAR
- 3" TYPE 41 BINDER
- 3-1/2" TYPE 31 BASE
- 2" AGGREGATE BASE, CLASS 5

CURB AND GUTTER CONSTRUCTION AFTER TEMP. CONN. IS REMOVED

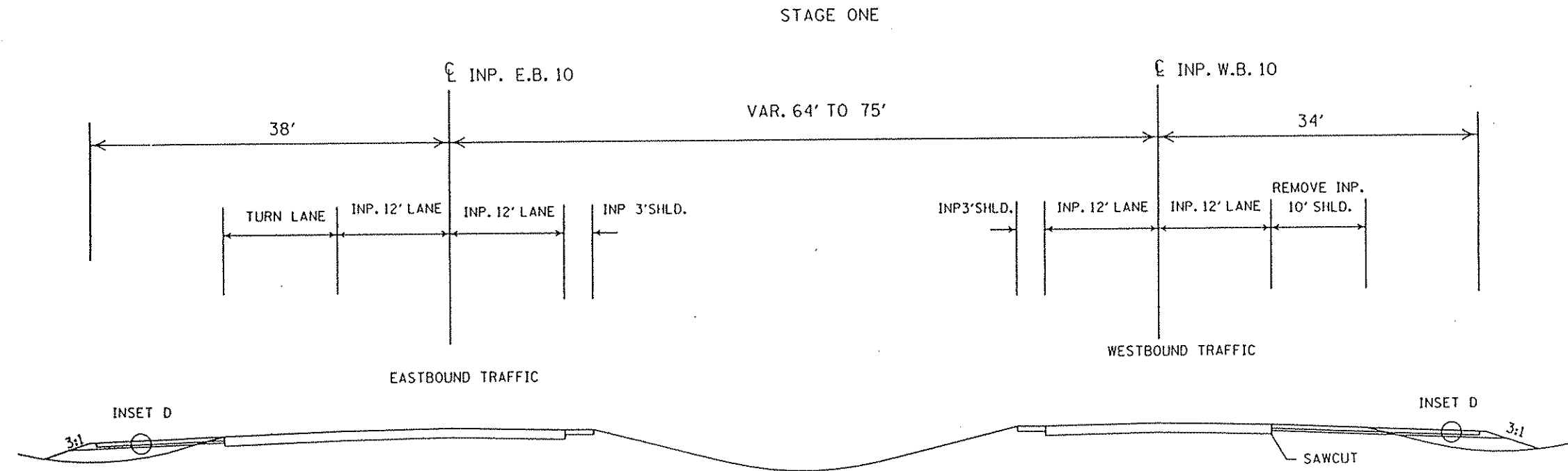


TYPICAL SECTIONS  
 TEMPORARY CONNECTIONS  
 BYPASSES

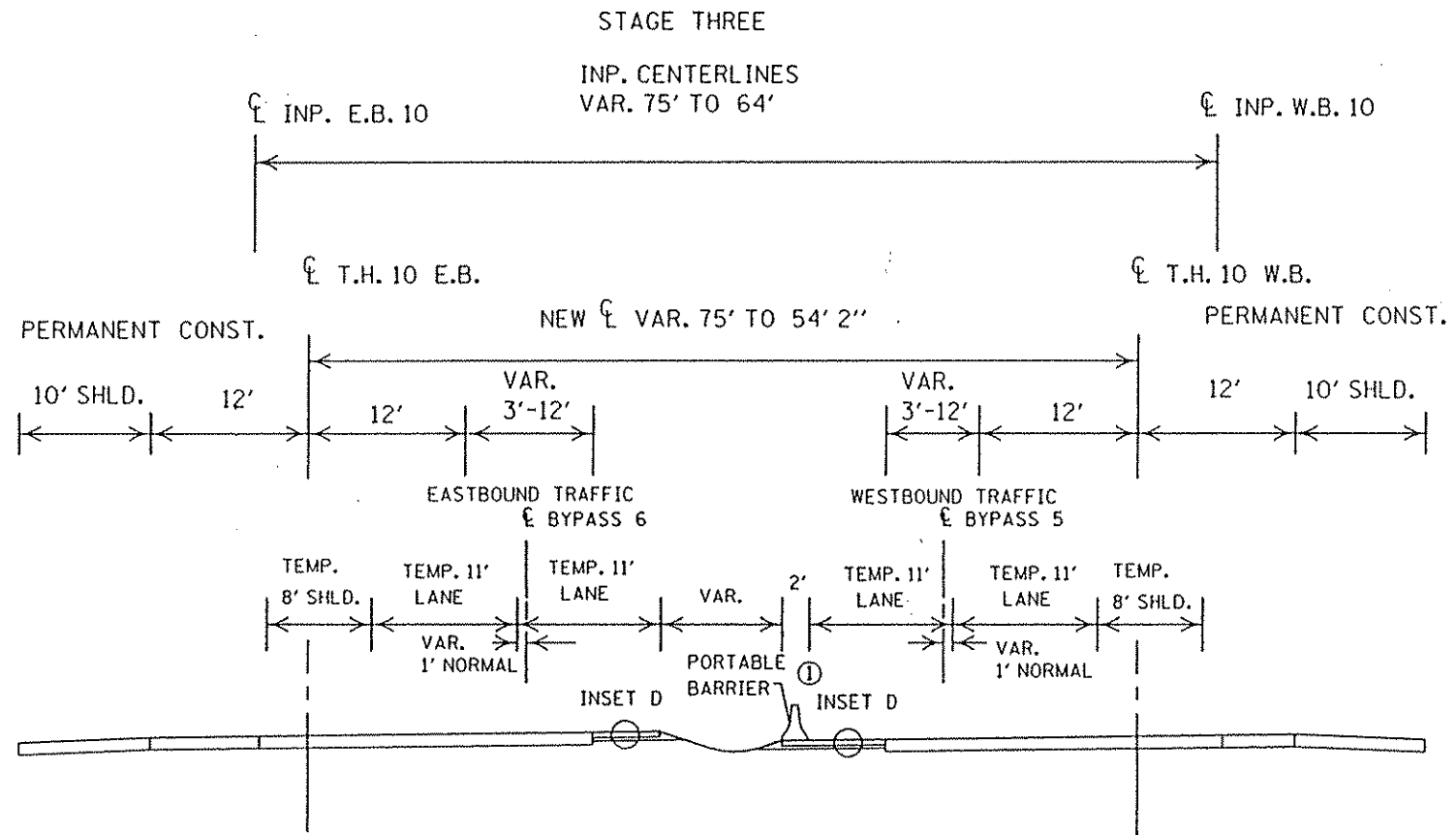
# INSET D



- 1-1/2" TYPE 41 WEAR
- 1-1/2" TYPE 41 BINDER
- 2" TYPE 31 BASE
- 3" AGGREGATE BASE, CLASS 5

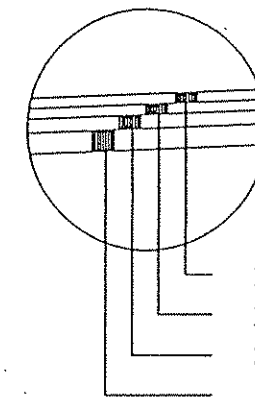
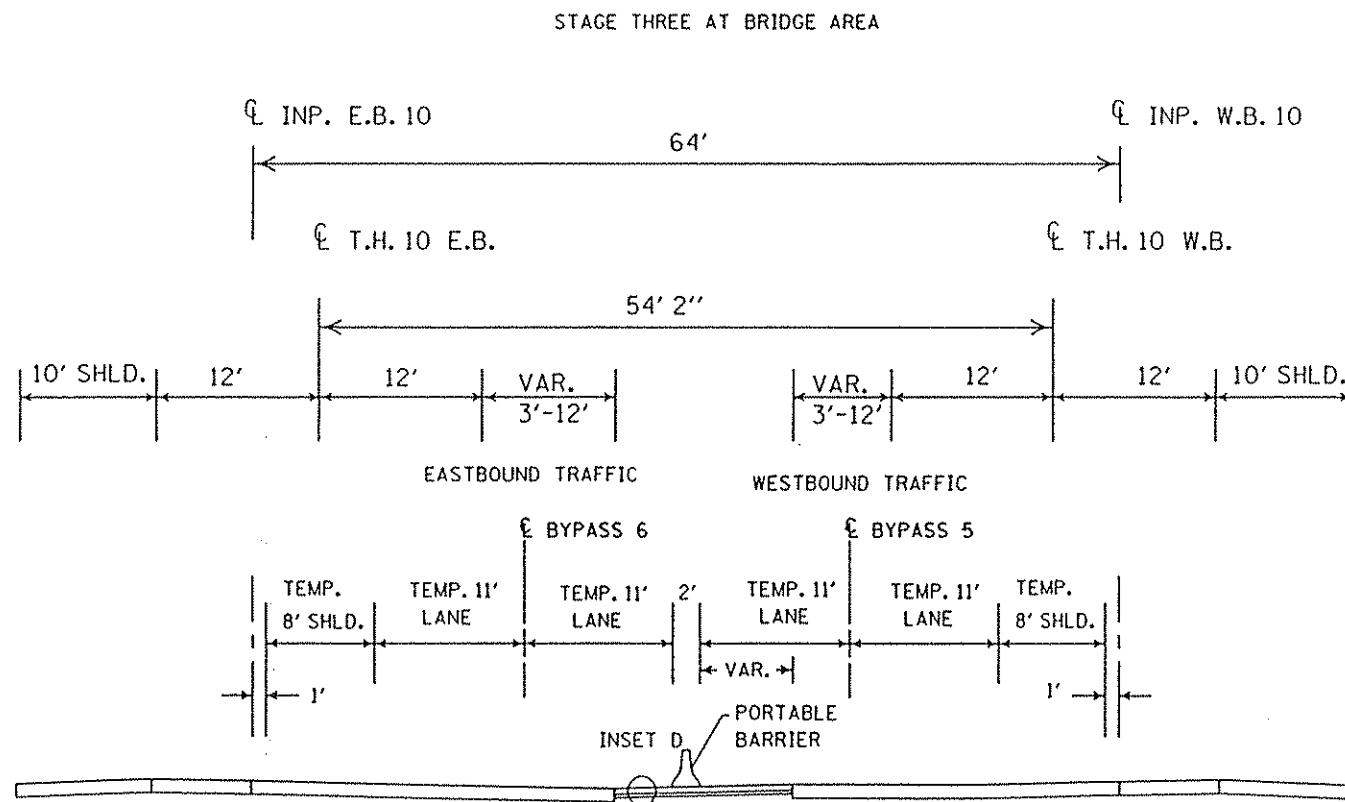


BYPASS DETAILS



① BARRIER PLACED AT THE EDGE OF THE INSIDE W.B. LANE (WEST OF THE BRIDGE) AND AT THE EDGE OF THE INSIDE E.B. LANE (EAST OF THE BRIDGE).

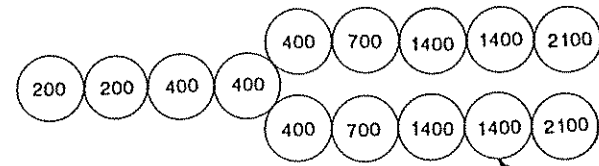
INSET D



1-1/2" TYPE 41 WEAR  
1-1/2" TYPE 41 BINDER  
2" TYPE 31 BASE  
3" AGGREGATE BASE, CLASS 5

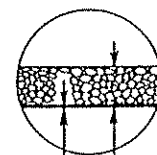
BYPASS DETAILS

**IMPACT ATTENUATOR NO. 1**



14 SAND-FILLED BARRELS. SAND WEIGHT PER BARREL SHOWN (IN POUNDS). TOTAL WEIGHT OF SAND IS 13200 POUNDS.

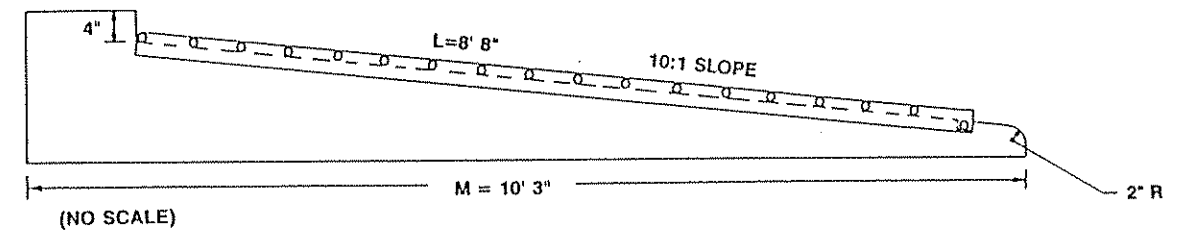
**AGGREGATE MULCH DETAIL**



3" AGGREGATE MULCH (SPEC. 2575)  
6 MIL PLASTIC SHEETING (INCIDENTAL)

**AGGREGATE MULCH REQUIREMENTS**  
3/8" TO 2", WITH 5% ALLOWABLE PASSING THE 3/8" SIEVE.  
CRUSHING IS ALLOWABLE, BUT NOT REQUIRED.

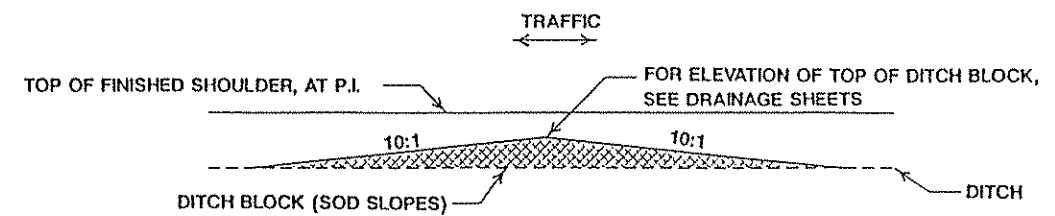
**18" CS SAFETY APRON & GRATE DESIGN 3128**



NUMBER OF BARS = 18  
NUMBER OF PIECES TO GRATE = 2

SEE STANDARD PLATE 3128 FOR OTHER DETAILS.

**DITCH BLOCK DETAIL**

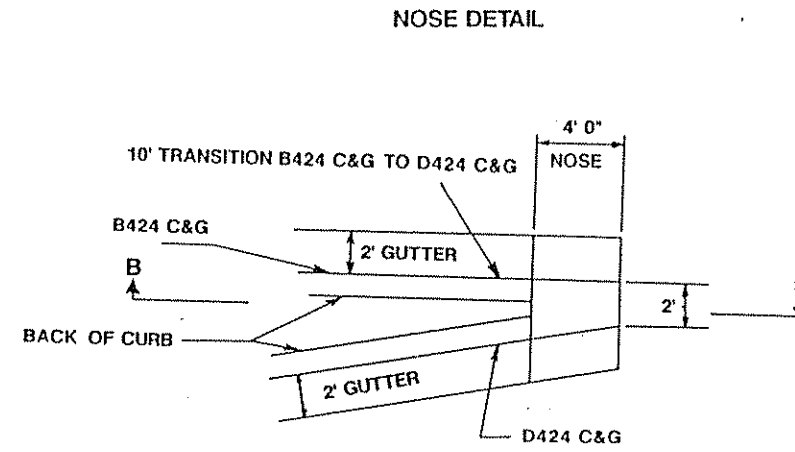
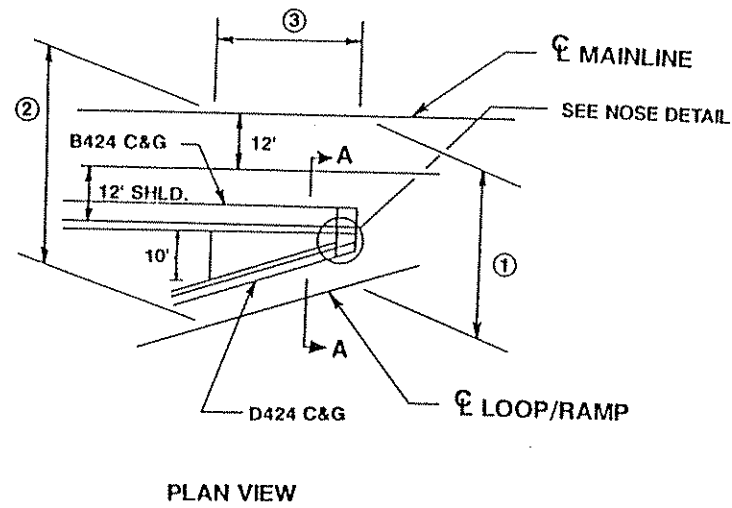


**DETAILS**

IMPACT ATTENUATOR  
AGGREGATE MULCH  
SAFETY APRON AND GRATE  
DITCH BLOCK

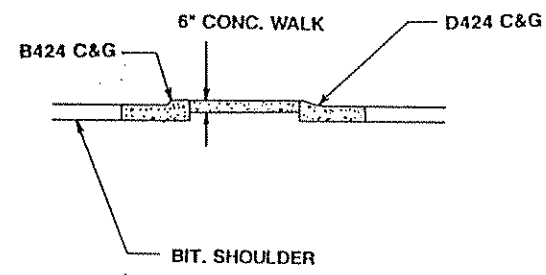


ENTRANCE NOSE DESIGN 7107 (MOD.)

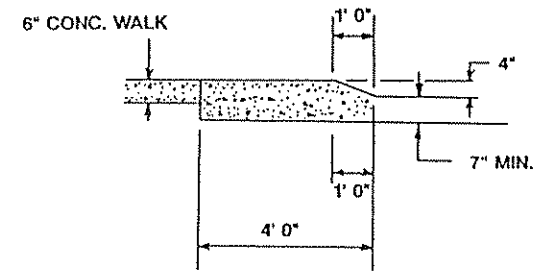


ENTRANCE NOSE DIMENSIONS (FT.)			
LOOP/RAMP	①	②	③
NW RAMP	34.1	42.5	57.9
NE LOOP	34.6	42.5	23.3
SW LOOP	35.5	42.4	24.2

SECTION A-A



SECTION B-B

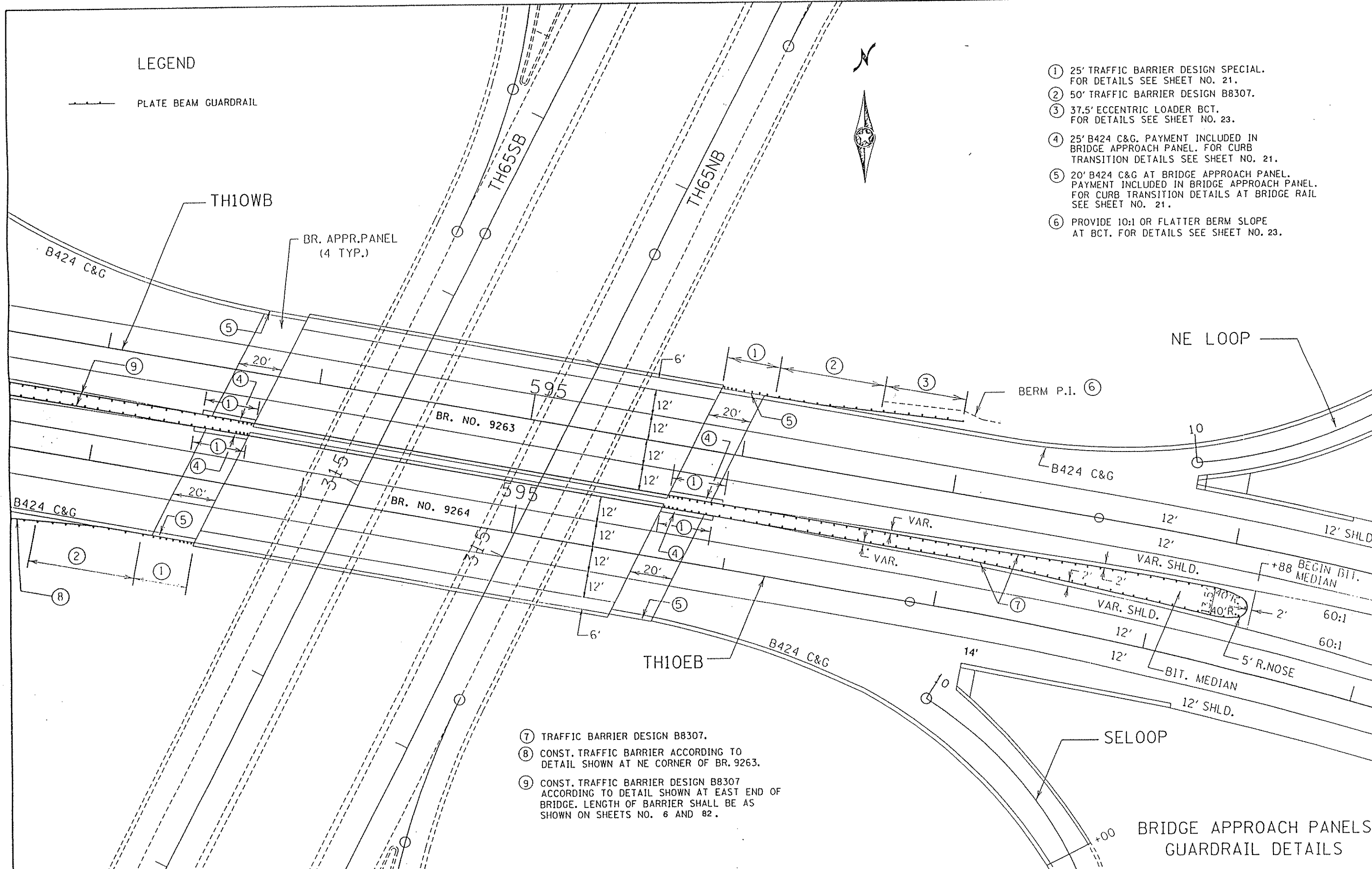


ENTRANCE NOSE DESIGN 7107 (MOD.)

LEGEND

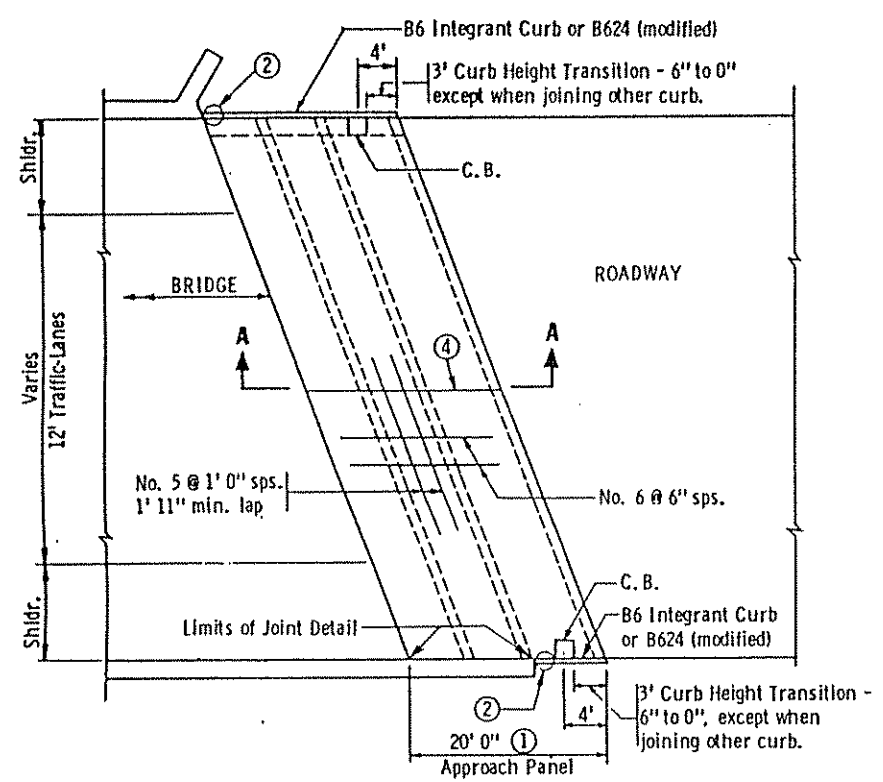
— PLATE BEAM GUARDRAIL

- ① 25' TRAFFIC BARRIER DESIGN SPECIAL. FOR DETAILS SEE SHEET NO. 21.
- ② 50' TRAFFIC BARRIER DESIGN B8307.
- ③ 37.5' ECCENTRIC LOADER BCT. FOR DETAILS SEE SHEET NO. 23.
- ④ 25' B424 C&G. PAYMENT INCLUDED IN BRIDGE APPROACH PANEL. FOR CURB TRANSITION DETAILS SEE SHEET NO. 21.
- ⑤ 20' B424 C&G AT BRIDGE APPROACH PANEL. PAYMENT INCLUDED IN BRIDGE APPROACH PANEL. FOR CURB TRANSITION DETAILS AT BRIDGE RAIL SEE SHEET NO. 21.
- ⑥ PROVIDE 10:1 OR FLATTER BERM SLOPE AT BCT. FOR DETAILS SEE SHEET NO. 23.

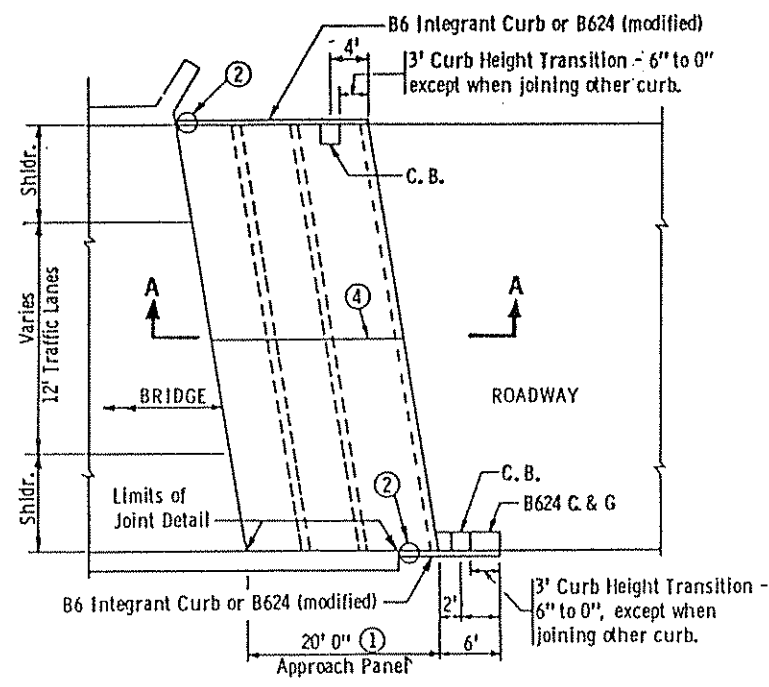


- ⑦ TRAFFIC BARRIER DESIGN B8307.
- ⑧ CONST. TRAFFIC BARRIER ACCORDING TO DETAIL SHOWN AT NE CORNER OF BR. 9263.
- ⑨ CONST. TRAFFIC BARRIER DESIGN B8307 ACCORDING TO DETAIL SHOWN AT EAST END OF BRIDGE. LENGTH OF BARRIER SHALL BE AS SHOWN ON SHEETS NO. 6 AND 82.

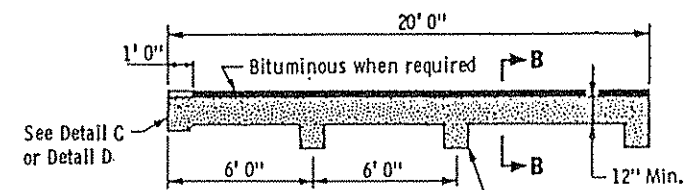
BRIDGE APPROACH PANELS  
GUARDRAIL DETAILS



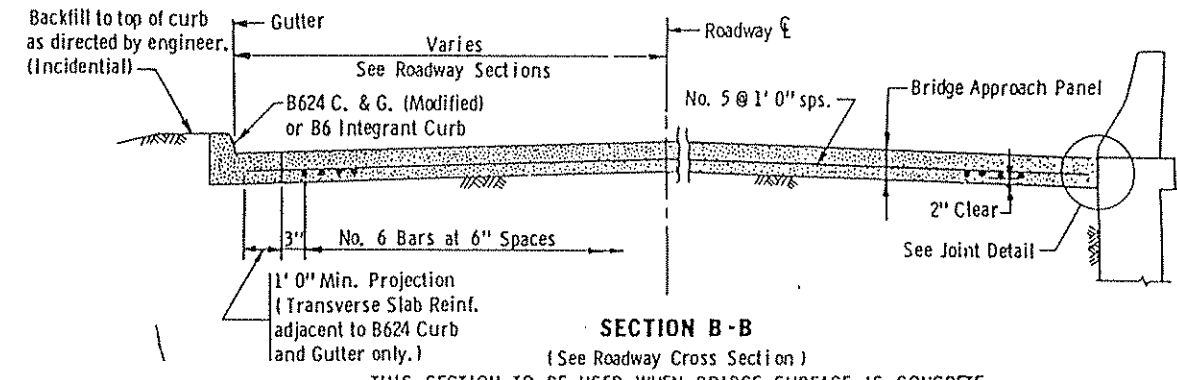
ROADWAY PLAN  
PARALLEL & NONPARALLEL WINGWALLS  
14 FT. AND LESS IN LENGTH



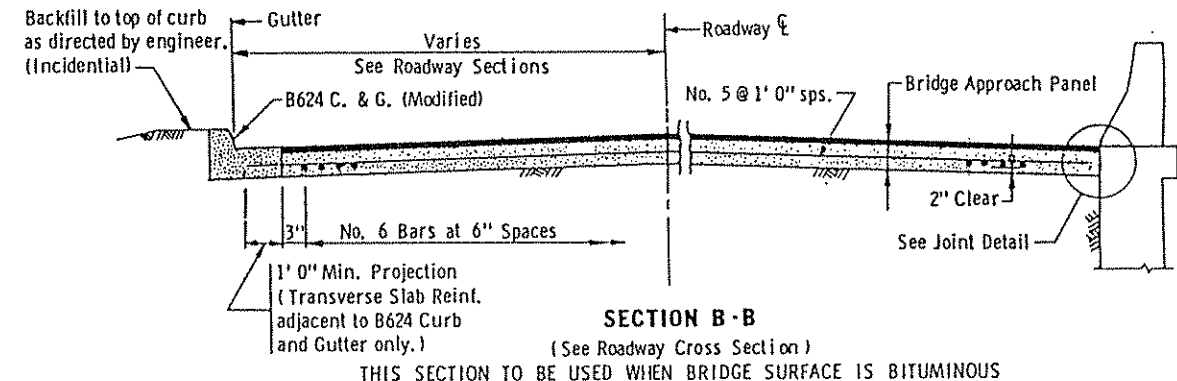
ROADWAY PLAN  
PARALLEL & NONPARALLEL WINGWALLS  
OVER 14 FT. IN LENGTH



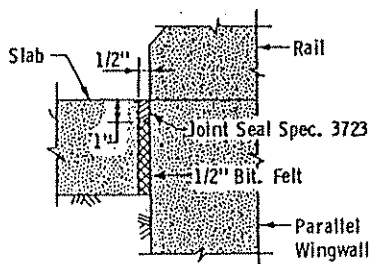
SECTION A-A



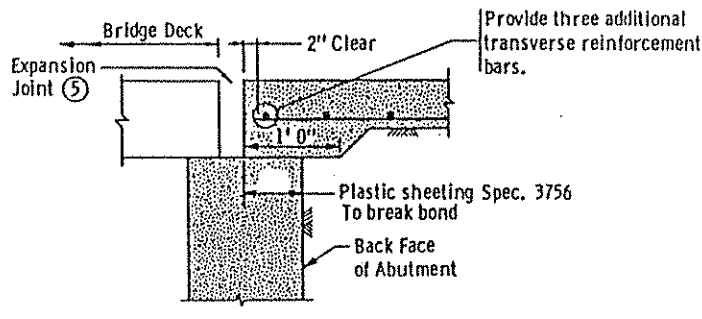
SECTION B-B  
(See Roadway Cross Section)  
THIS SECTION TO BE USED WHEN BRIDGE SURFACE IS CONCRETE



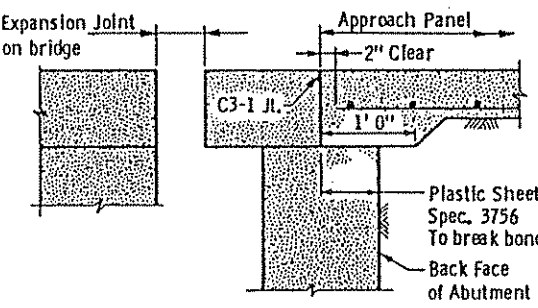
SECTION B-B  
(See Roadway Cross Section)  
THIS SECTION TO BE USED WHEN BRIDGE SURFACE IS BITUMINOUS



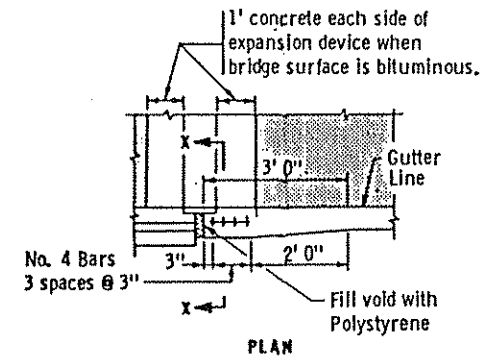
JOINT DETAIL



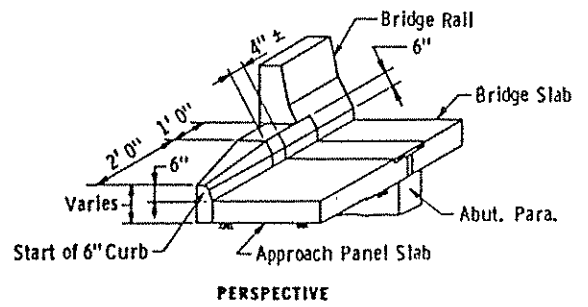
DETAIL C



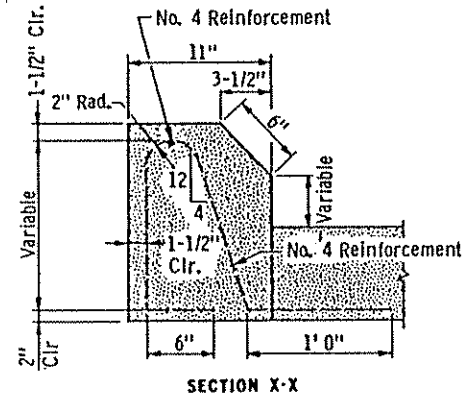
DETAIL D



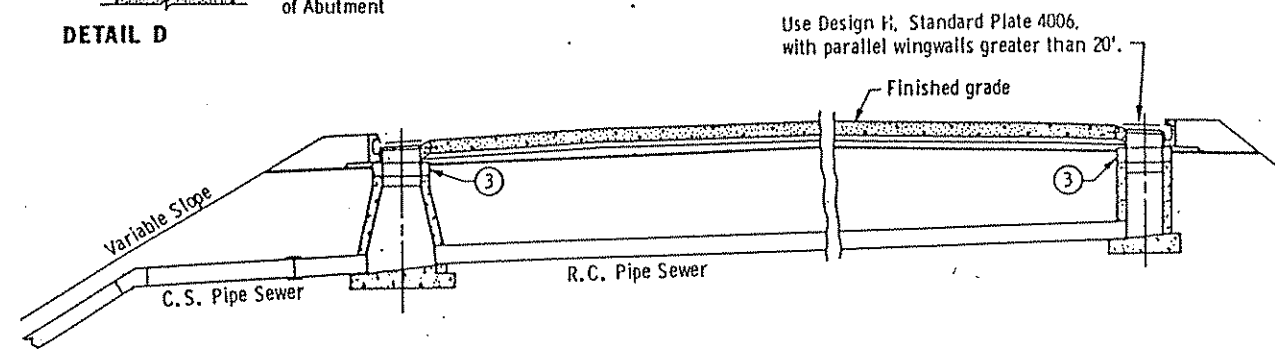
PLAN



PERSPECTIVE



SECTION X-X

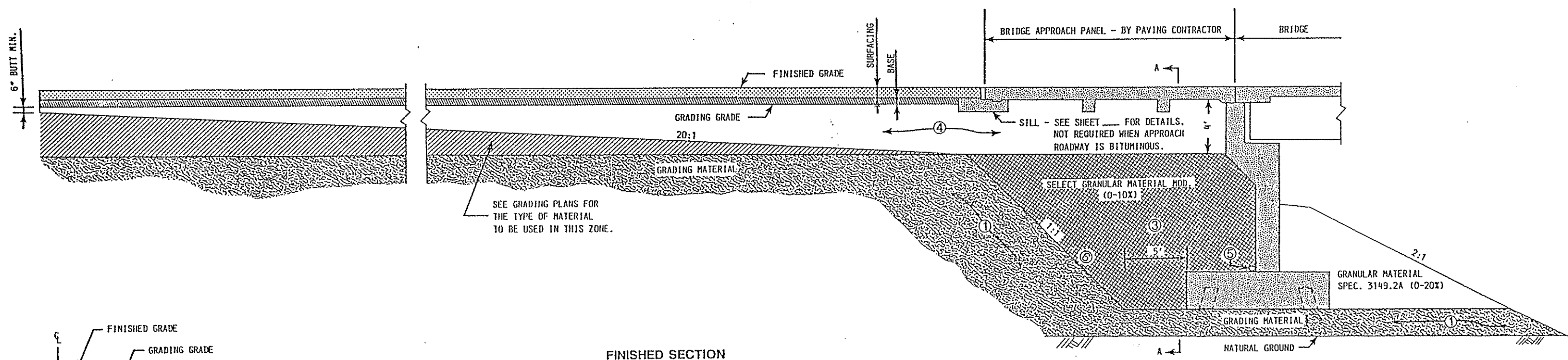


CROSS SECTION AT CATCH BASINS

- NOTES:**
- Use No. 6 bars @ 6" longitudinal and No. 5 bars @ 1'-0" transverse reinforcement.
  - Transition face of 6" curb into profile of bridge railing as necessary.
  - Adjust as required as per Spec. 2506 with 2" conc. adjusting rings. See Standard Plate 4010.
  - Permissible LZXT longitudinal joint. See Standard Plan Sheet 5-297.221.
  - Expansion device shall be furnished by bridge contractor. Bridge contractor shall install bridge end of expansion device and paving contractor shall complete expansion joint installation.
- GENERAL NOTES:**
- All reinforcement bars shall be epoxy coated
  - All curbs shown on this sheet shall be modified to B4. For curb transition details see Sheet No. 21
  - Panel concrete shall be Mx. No. 3X42.

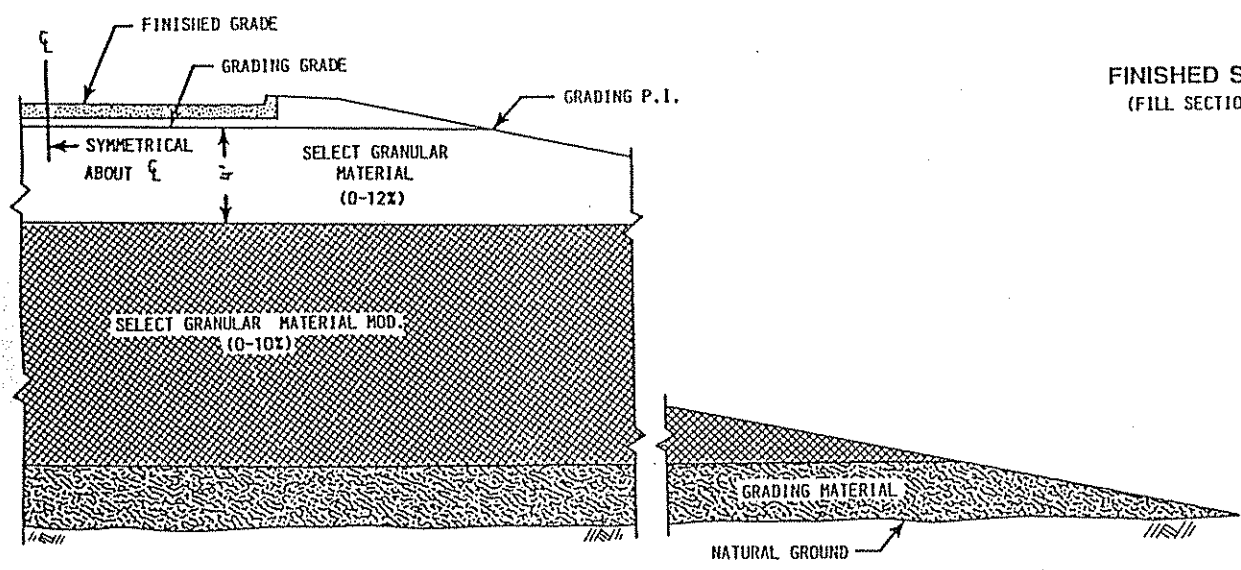
APPROVED July 5, 1979  
*John L. Anderson*  
 Director  
 OFFICE OF ENGINEERING STANDARDS

**CURB TRANSITION DETAILS**  
 FOR USE WHEN BRIDGE EXPANSION  
 JOINT IS BETWEEN END OF APPROACH  
 PANEL AND BRIDGE SLAB

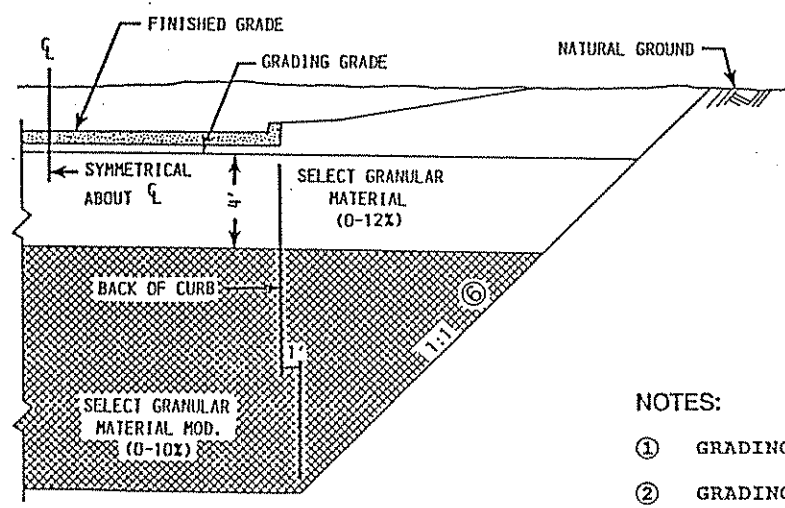


SEE GRADING PLANS FOR THE TYPE OF MATERIAL TO BE USED IN THIS ZONE.

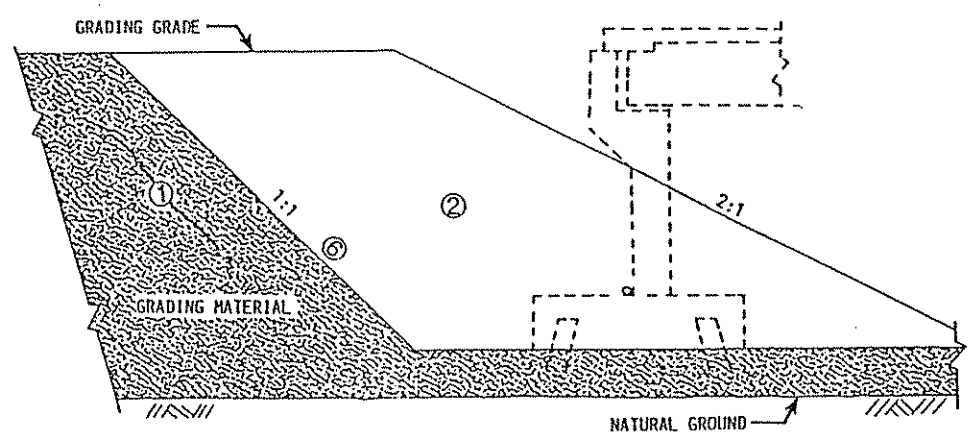
**FINISHED SECTION**  
(FILL SECTION SHOWN)



**HALF SECTION A-A**  
(FILL SECTION)



**HALF SECTION A-A**  
(CUT SECTION)

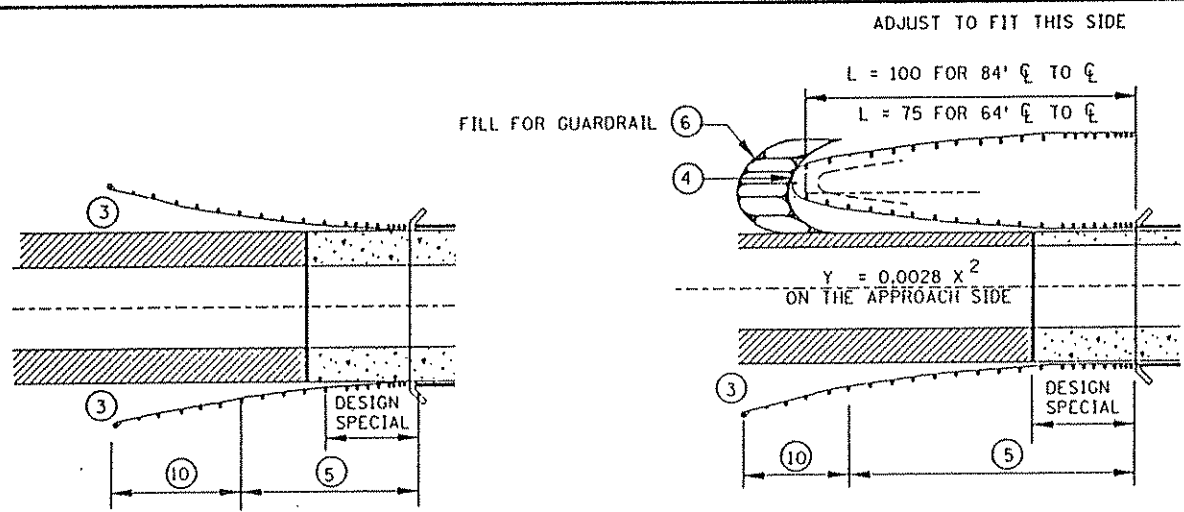


**GRADING SECTION AT ABUTMENT**

**NOTES:**

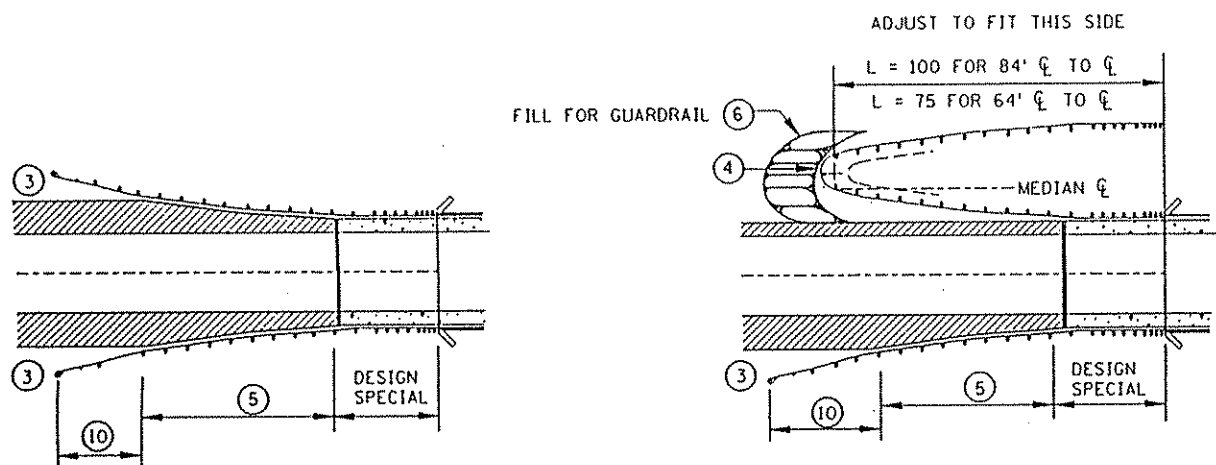
- ① GRADING MATERIAL PLACED BY GRADING CONTRACTOR.
- ② GRADING MATERIAL CONSTRUCTED BY GRADING CONTRACTOR PRIOR TO BRIDGE CONSTRUCTION. TO BE REMOVED BY BRIDGE CONTRACTOR.
- ③ SELECT GRANULAR MATERIAL MODIFIED SHALL COMPLY WITH SPEC. 3149.2B, MODIFIED TO 10% OR LESS PASSING THE NUMBER 200 SIEVE. MATERIAL SHALL BE PLACED BY GRADING CONTRACTOR AFTER COMPLETION OF ABUTMENT.
- ④ BACKFILL PLACED BY GRADING CONTRACTOR. MATERIAL SHALL COMPLY WITH SPEC. 3149.2B.
- ~~⑤ BRAIN TYPE D110 IS REQUIRED. SEE BRIDGE PLANS FOR DETAILS.~~
- ⑥ ACTUAL EXCAVATION SLOPE TO BE DETERMINED DURING CONSTRUCTION BY THE CONTRACTOR DEPENDING ON INSITU SOIL PROPERTIES AND/OR SAFETY FACTORS. (USE 1:1 FOR DESIGN)

**MODIFIED BRIDGE APPROACH TREATMENT**  
(FOR BOTH HIGH AND LOW ABUTMENTS ON PILING)



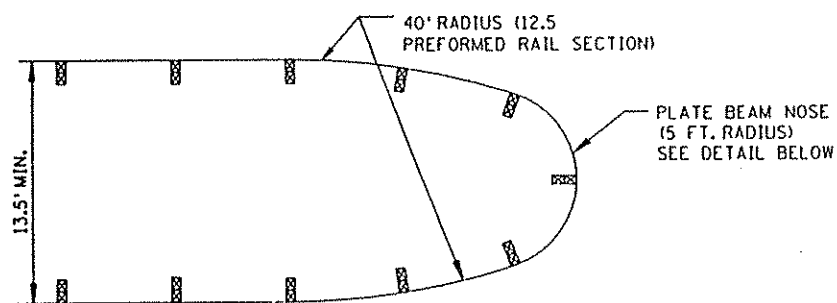
TWO - WAY BRIDGE WITH FULL SHOULDERS

ONE - WAY BRIDGE WITH FULL RIGHT SHOULDER



TWO - WAY BRIDGE WITHOUT FULL SHOULDERS

ONE - WAY BRIDGE WITHOUT FULL RIGHT SHOULDER



OPTIONAL GUARDRAIL INSTALLATION ①

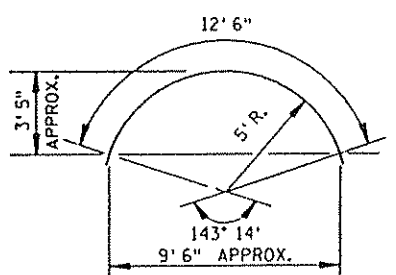
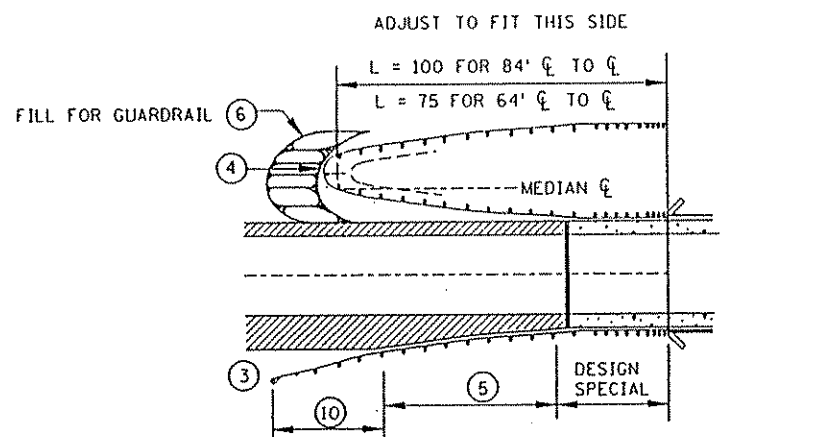
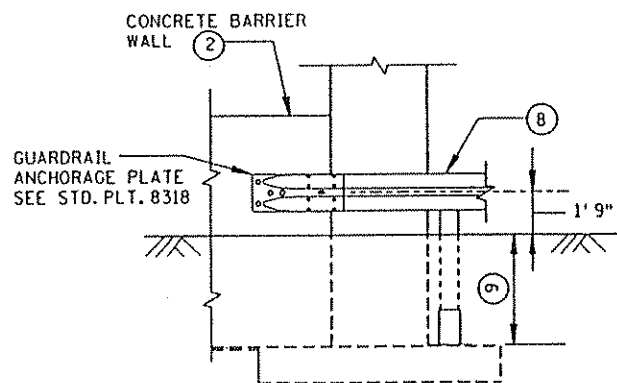
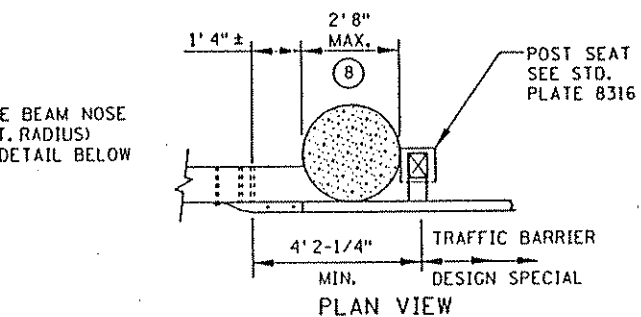


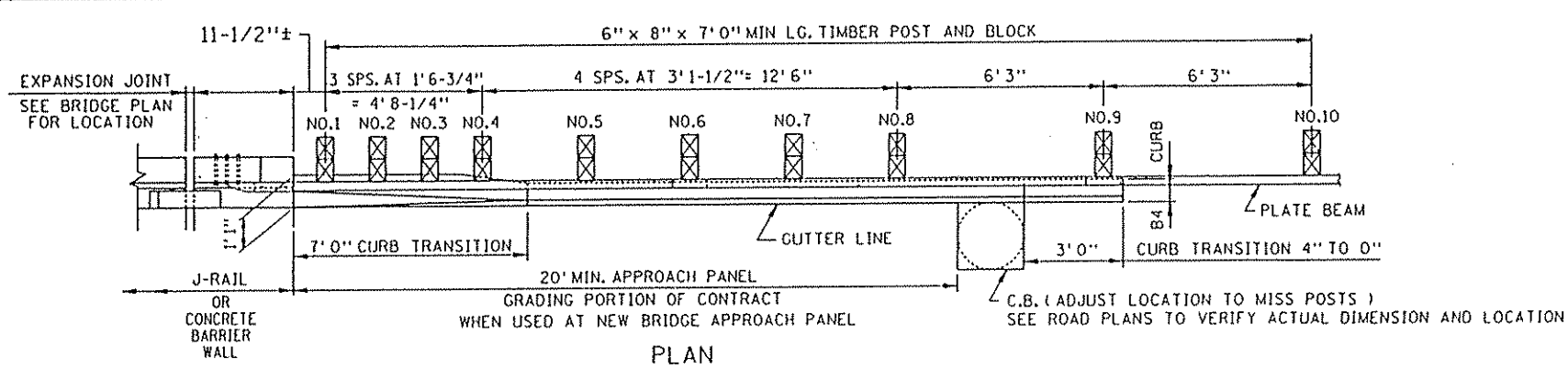
PLATE BEAM NOSE ⑦ (5 FOOT RADIUS)



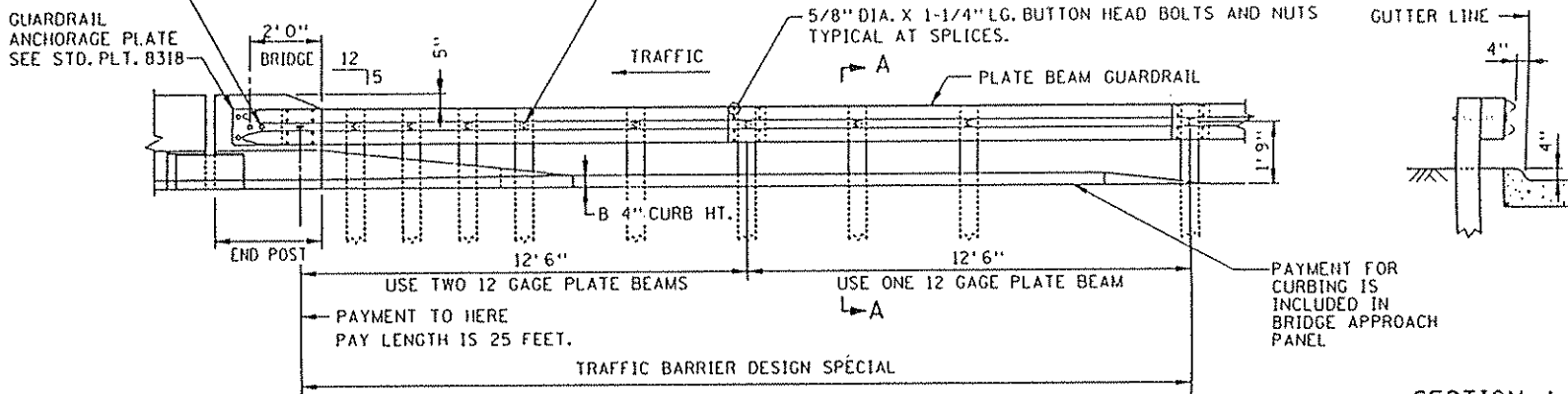
ONE - WAY BRIDGE WITHOUT FULL RIGHT SHOULDER



GUARDRAIL POST TO CONCRETE BARRIER WALL CONNECTION ①



7/8" DIA. H.S. BOLT 3" X 2" X 1/4" PLT. WASHER, & HEX NUT (4 REQUIRED)

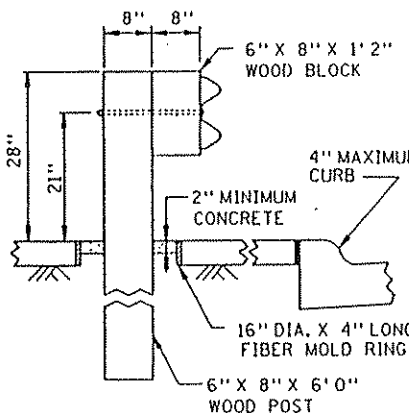
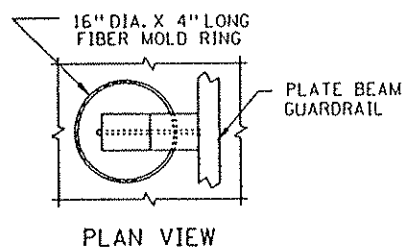


GUARDRAIL CONNECTION TO NEW BRIDGES OR CONCRETE BARRIER WALL ①

SECTION A-A

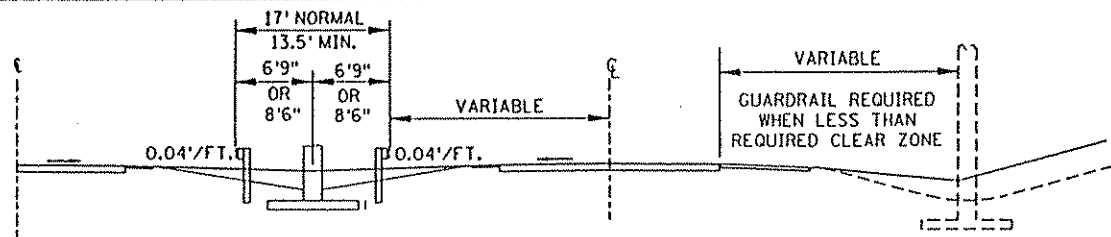
NOTES:

- ① ALL GUARDRAIL POSTS SHALL BE 6' 3" CTR. TO CTR., EXCEPT WHERE NOTED. WHEN THE APPROACHING FLARE CAN BE BURIED IN THE BACKSLOPE ELIMINATE THE END TREATMENT AND ADD REQUIRED RAIL LENGTH TO REACH BACKSLOPE. THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ② NOTE ②, AND ALTERNATE GUARDRAIL AS DETERMINED BY THE DESIGNER AND SPECIFIED ON SHEET NO.
- ③ CONCRETE BARRIER WALL BETWEEN PIER COLUMNS, SEE SHEET NO. FOR WALL DETAILS.
- ④ SEE APPROACH BARRIER SLOPE DETAIL FOR SLOPES IN THIS AREA.
- ⑤ 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED RAIL SECTION, SEE DETAIL).
- ⑥ THE REQUIRED L LENGTH AND W OFFSET SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. SEE ROAD DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS (MINIMUM L = 75 FT.).
- ⑦ THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6" ±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.
- ⑧ STANDARD PLATE BEAM GUARDRAIL SECTION HAVING STANDARD PUNCHING AT BOTH ENDS WITH INTERMEDIATE 3/4" X 2-1/2" SLOT. SEE STANDARD PLATE 8307.
- ⑨ FOR COLUMN DIAMETERS LARGER THAN 2' 8", FIELD PUNCH THE GUARDRAIL FOR THE FIRST POST AS SHOWN.
- ⑩ IF EMBEDMENT IS GREATER THAN 3' 0" OR IF EMBEDMENT IS 2' 6" TO 3' 0" AND ADJACENT POSTS ARE EMBEDDED 3' 0" OR MORE, POST SEAT IS NOT REQUIRED.
- ⑩ APPROVED END TREATMENT.

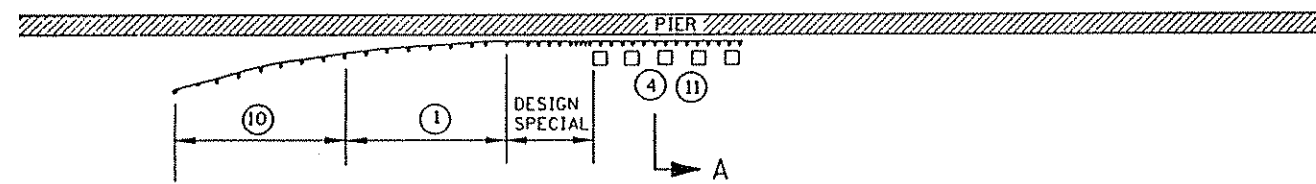
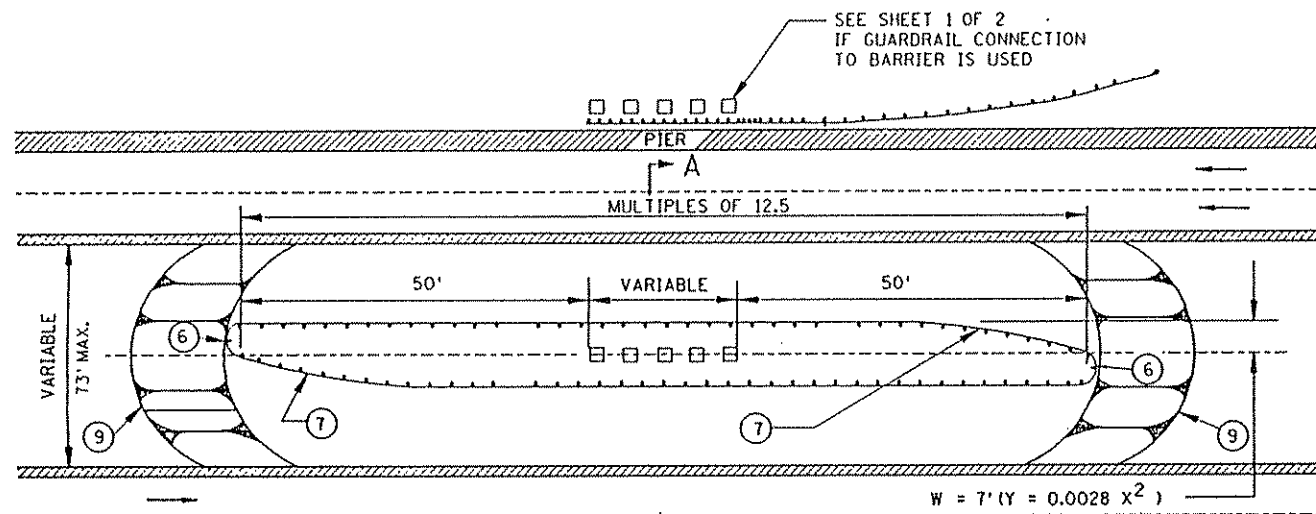


TYPICAL SECTION AT POST SET IN CONCRETE

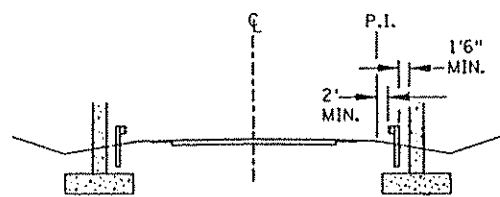
STANDARD SHEET NO. 5-297.601 (1 OF 2)	TITLE: GUARDRAIL INSTALLATIONS
STANDARD APPROVED: NOVEMBER 27, 1991	
STATE PROJ. NO. 0203-75 (T.H. 10)	SHEET NO. 21 OF 132 SHEETS



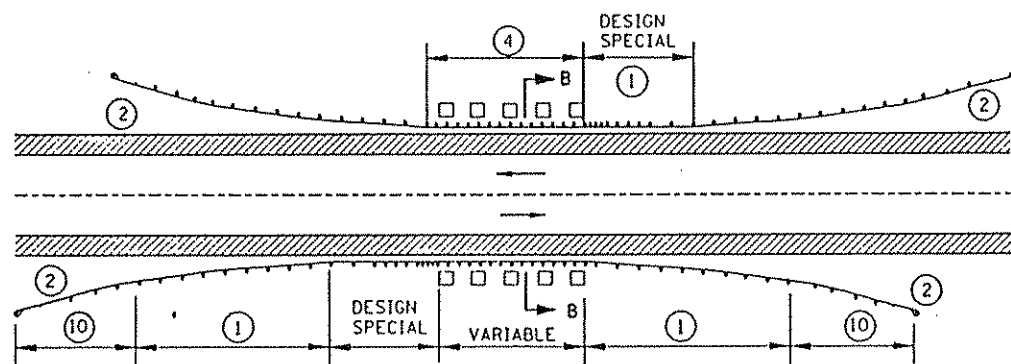
SECTION A-A (9)



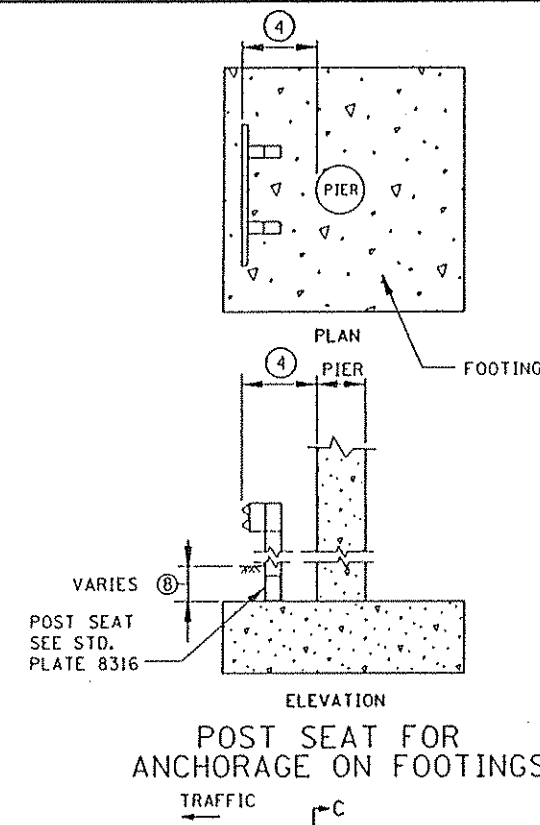
UNDERPASS-DEPRESSED MEDIAN



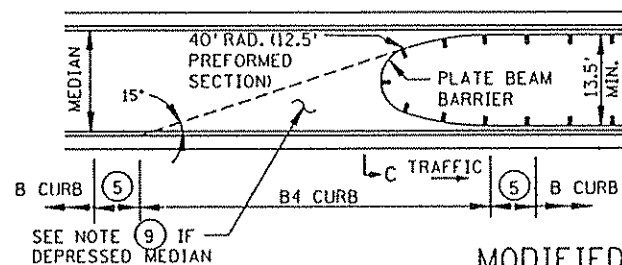
SECTION B-B



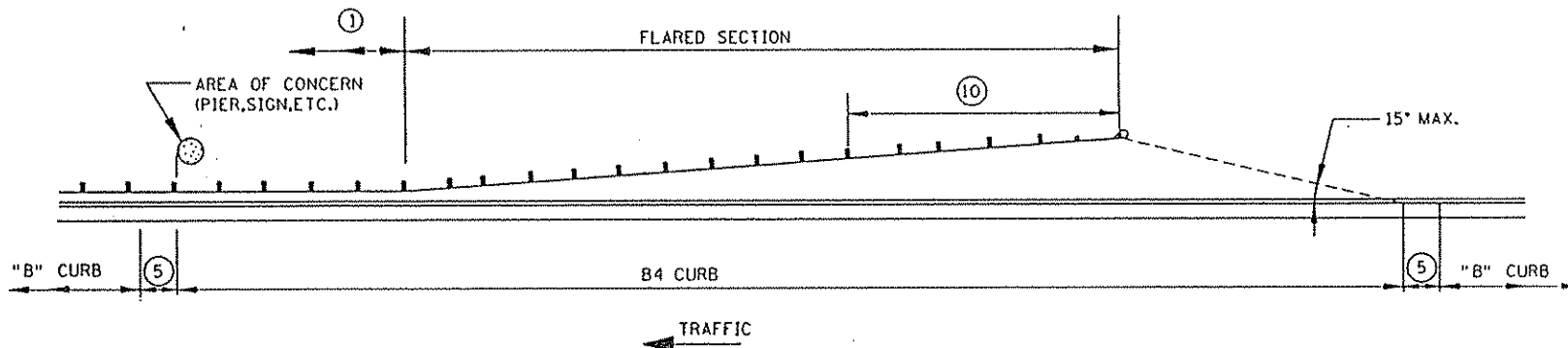
TWO-WAY UNDERPASS



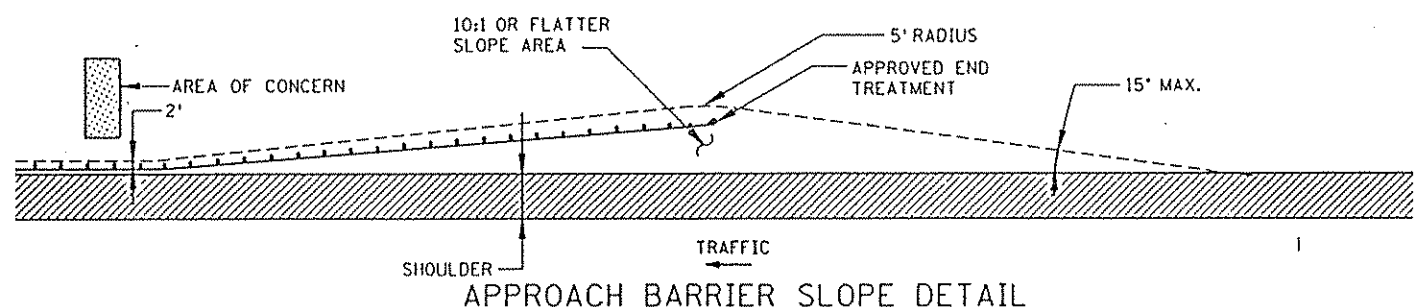
POST SEAT FOR ANCHORAGE ON FOOTINGS



MODIFIED CURB AT MEDIAN (OPTIONAL GUARDRAIL PLACEMENT SHOWN)



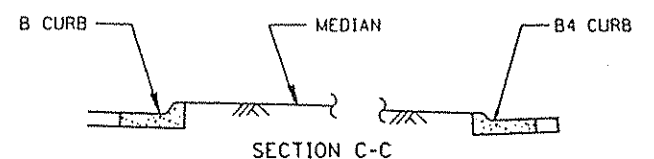
MODIFIED CURB AT EDGE OF ROADWAY



APPROACH BARRIER SLOPE DETAIL

NOTES:

- ALL GUARDRAIL POSTS SHALL BE 6'3" CTR. TO CTR., EXCEPT WHERE NOTED. THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ① THE REQUIRED L LENGTH AND W OFFSET SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, SEE ROAD DESIGN MANUAL 10-7.03 FOR DESIGN PARAMETERS (MINIMUM L = 75 FT.).
- ② SEE APPROACH BARRIER SLOPE DETAIL FOR SLOPES IN THIS AREA.
- ③ CONCRETE BARRIER WALL BETWEEN PIER COLUMNS. SEE SHEET NO. FOR WALL DETAILS. CONNECT GUARDRAIL TO BARRIER WALL ANCHORAGE PLATE (STANDARD PLATE 8318).
- ④ USE 3'-1-1/2" POST SPACING BETWEEN PIERS WHEN THERE IS LESS THAN 3'-0" FROM FACE OF RAIL TO FACE OF PIER. CONTINUE THREE SPACES PAST AREA OF CONCERN AS DIRECTED BY THE ENGINEER.
- ⑤ 5 FT. CURB TRANSITION, USE IF ADJACENT CURB IS A DIFFERENT TYPE OR HEIGHT.
- ⑥ 5 FOOT RADIUS NOSE SECTION (12.5' PREFORMED RAIL SECTION, SEE DETAIL, ON SHEET 1 OF 2).
- ⑦ 25' OF FIELD FORMED, PLUS 25' OF PREFORMED (40' RADIUS) RAIL SECTIONS.
- ⑧ IF EMBEDMENT IS GREATER THAN 3'-0" OR IF EMBEDMENT IS 2'-6" TO 3'-0" AND ADJACENT POSTS ARE EMBEDDED 3'-0" OR MORE, POST SEAT IS NOT REQUIRED.
- ⑨ THE MEDIAN DITCH SHALL BE FILLED TO PROVIDE AN ELEVATION OF GUARDRAIL APPROXIMATELY (WITHIN 6" ±) THE SAME AS IF INSTALLED ON THE SHOULDER. EXTEND FILL TO GUARDRAIL NOSE AND TAPER TO MEDIAN DITCH ON 10:1 SLOPE.
- ⑩ APPROVED END TREATMENT.
- ⑪ EXTEND DOWNSTREAM PAST HAZARD SUFFICIENT LENGTH TO PROVIDE TERMINAL SECTION FOR ANCHORAGE (SEE ROAD DESIGN MANUAL 10-7.0(16)).



SECTION C-C

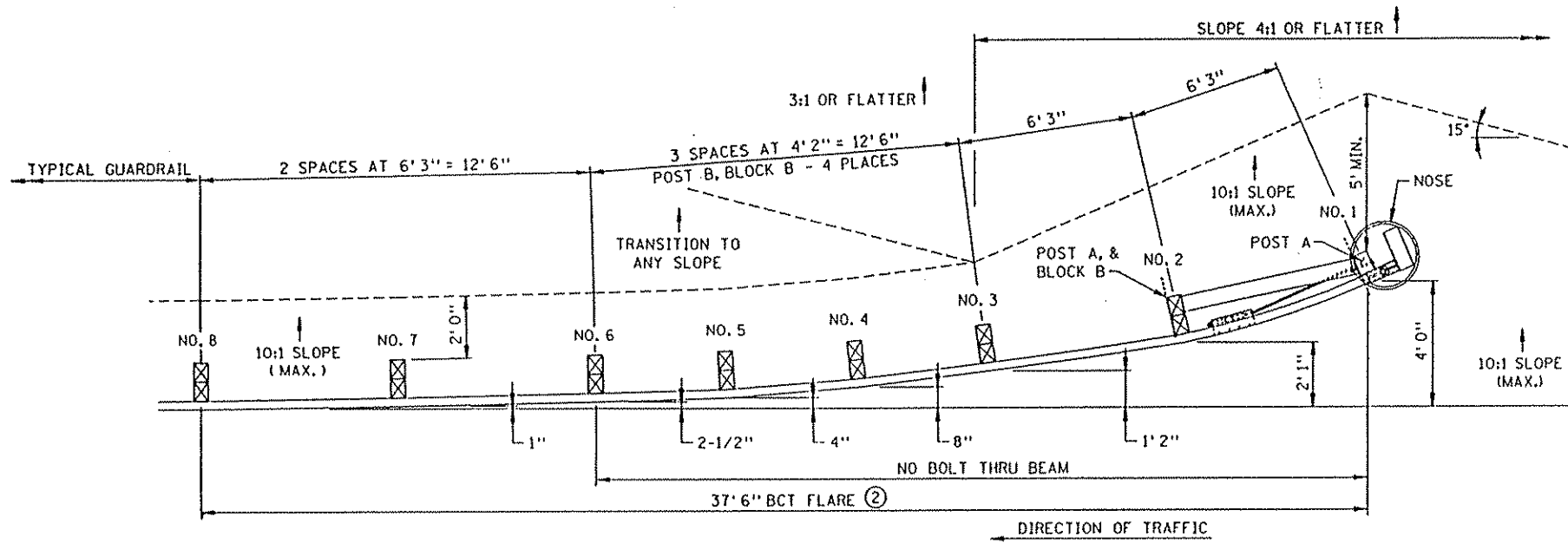
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STANDARD SHEET NO.  
5-297.601 ( 2 OF 2 )  
STANDARD APPROVED:  
NOVEMBER 27, 1991

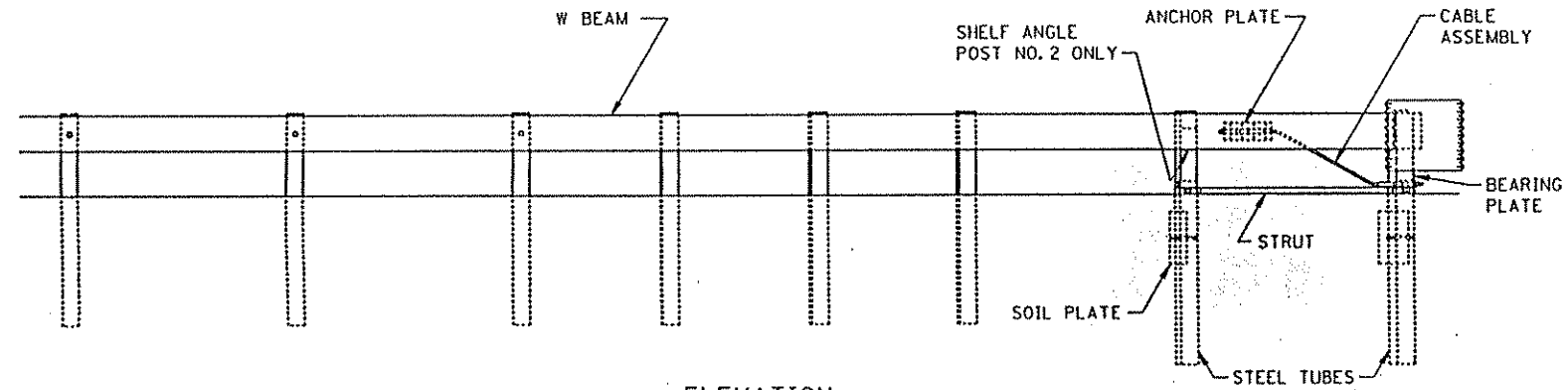
TITLE:  
GUARDRAIL INSTALLATIONS

STATE PROJ. NO. 0203-75 (T.H. 10)

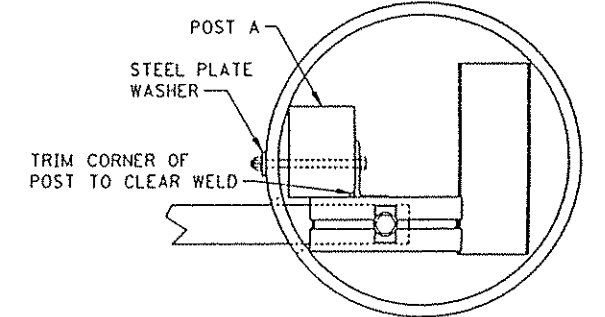
SHEET NO. 22 OF 132 SHEETS



PLAN VIEW

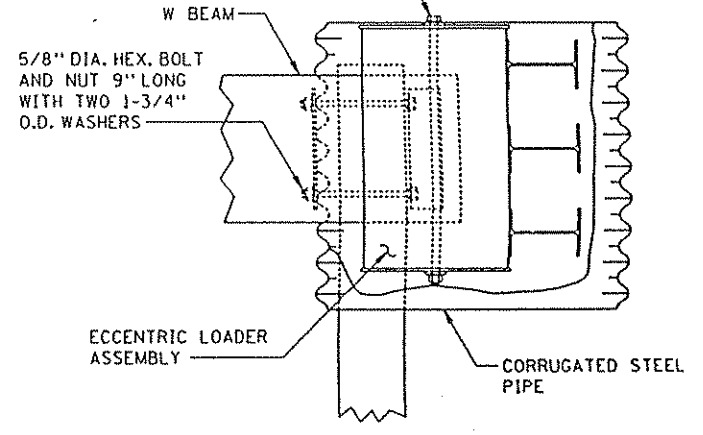


ELEVATION



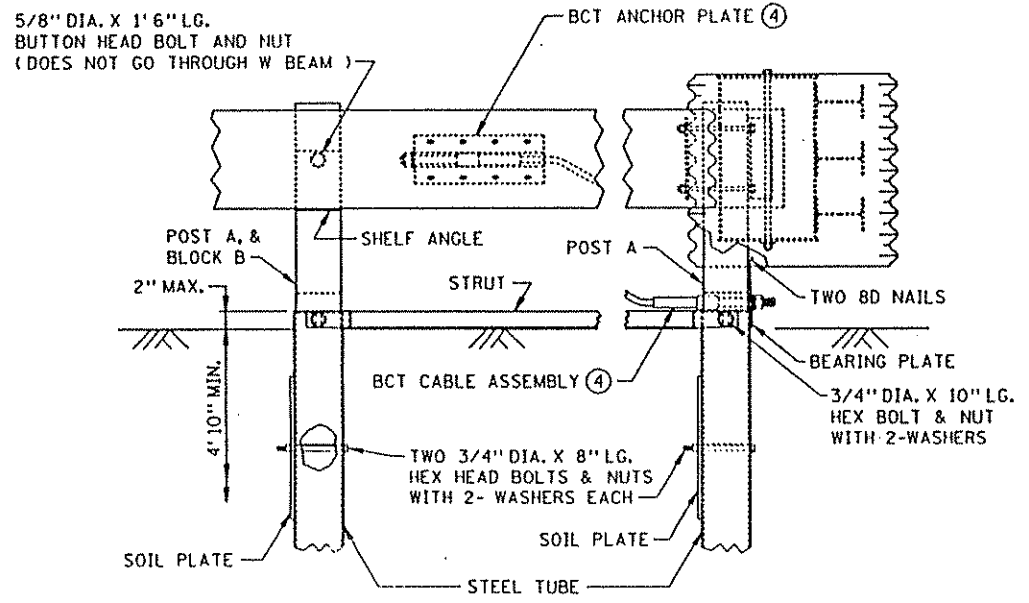
TOP VIEW

5/8" DIA. HEX BOLT AND NUT 22" LONG WHICH PASSES THRU END SPLICE BOLT SLOTS OF W-BEAM. 1-3/4" X 3" RECTANGULAR WASHER AND 1-3/4" O.D. WASHERS ON TOP AND BOTTOM



SIDE VIEW

NOSE DETAILS



ELEVATION - NOSE ASSEMBLY

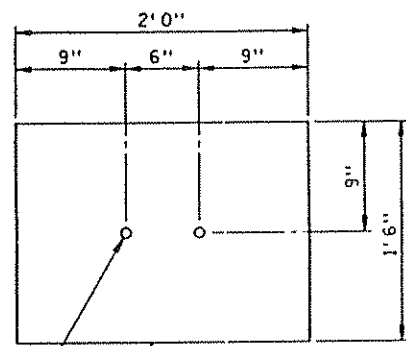
NOTES:

1. SEE "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", FOR ADDITIONAL HARDWARE INFORMATION. THE MN/DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL GOVERN.
- ② ECCENTRIC LOADER BCT - PAY ITEM LENGTH IS 37.5'.
3. TRAFFIC BARRIER AS PER SPEC. 2554.
- ④ SEE STANDARD PLATE 8329 FOR ADDITIONAL INFORMATION.
5. LENGTH-OF-NEED BEGINS 12.5' FROM BCT NOSE.

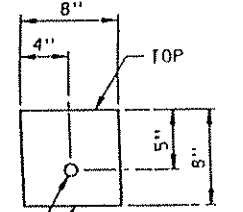
VAX780 05A3145.1001 FILE NAME BCIECL.DGN

STANDARD SHEET NO.	TITLE:	ECCENTRIC LOADER BCT INSTALLATION DETAILS
STANDARD APPROVED: NOT APPROVED		
STATE PROJ. NO. 0203-75 (T.H. 10)		SHEET NO. 23 OF 132 SHEETS

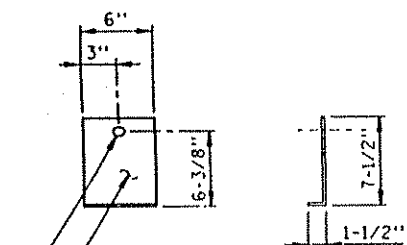
SHEET 1 OF 2  
REFERENCE DATE: 8-28-91



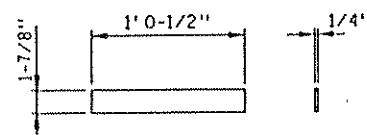
SOIL PLATE (POST A)  
(2 REQUIRED)



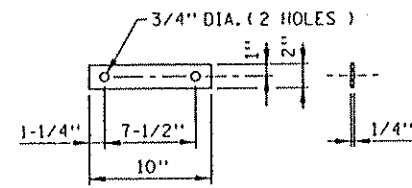
BEARING PLATE



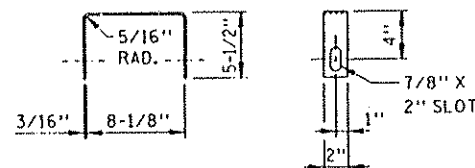
SHELF ANGLE  
(ONE REQUIRED)



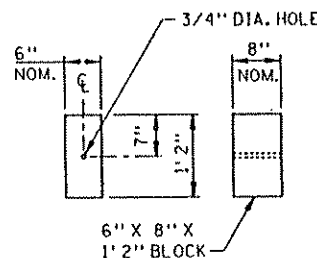
STEEL PLATE  
(4 REQUIRED)



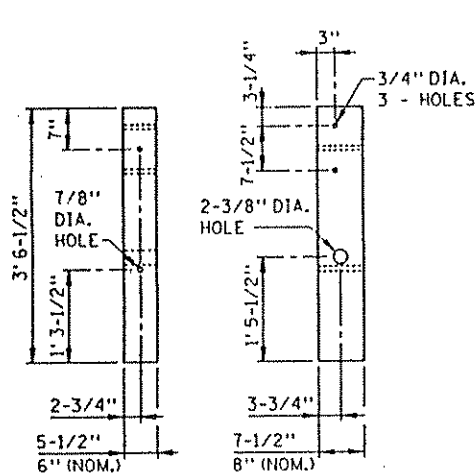
STEEL PLATE WASHER



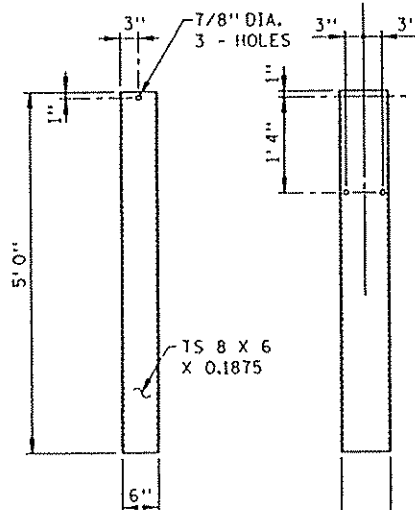
YOKE  
(2 REQUIRED)



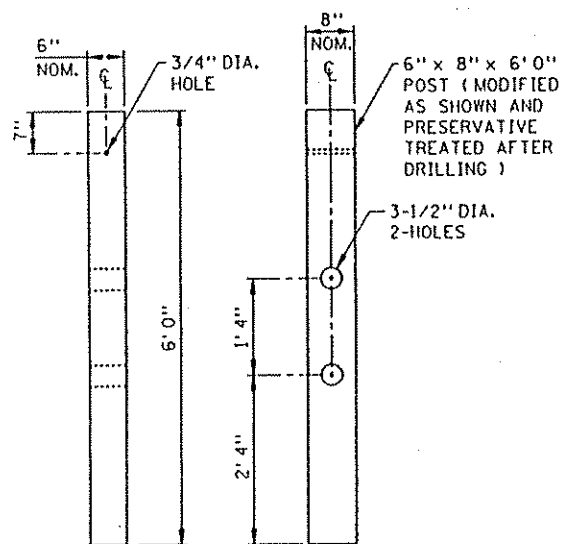
WOOD BLOCK B  
(STANDARD BLOCKOUT)



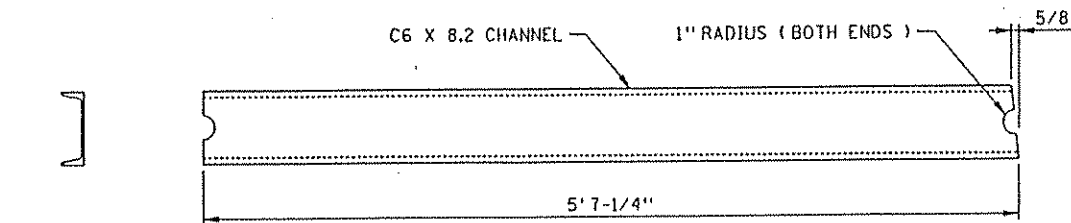
WOOD BREAKAWAY POST A



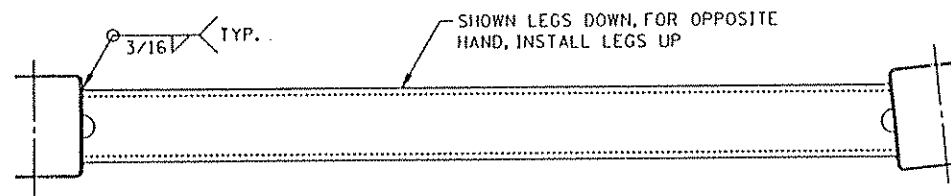
STEEL TUBE (POST A)



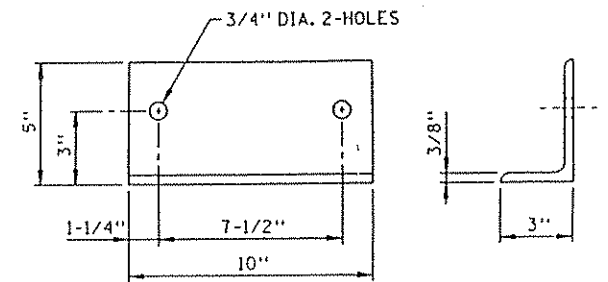
WOOD BREAKAWAY POST B



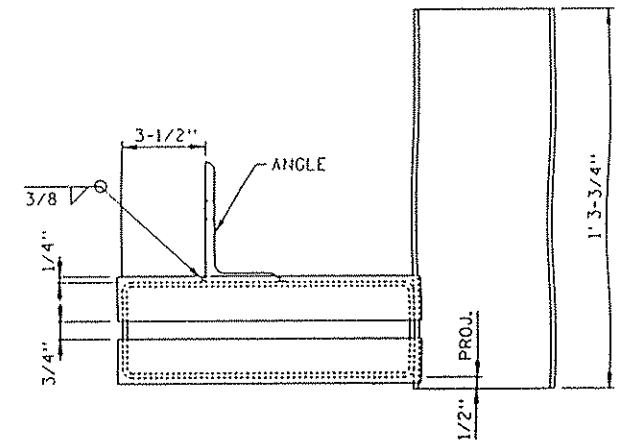
STRUT



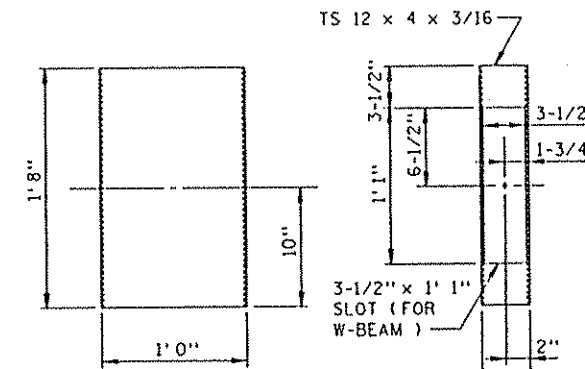
STRUT AND YOKE ASSEMBLY



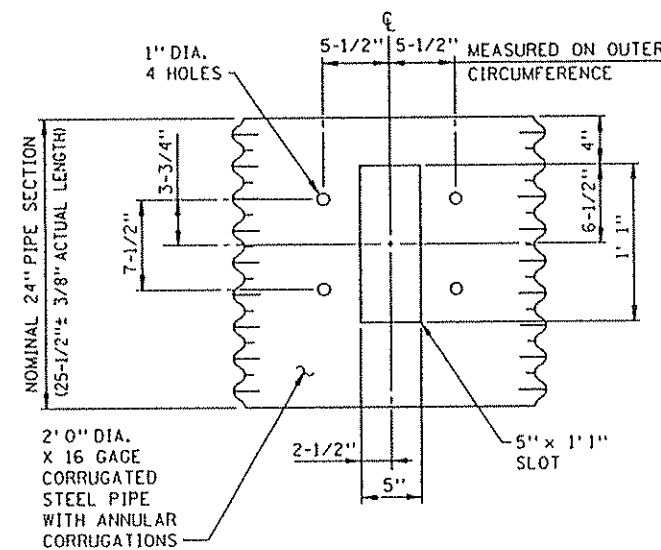
ANGLE



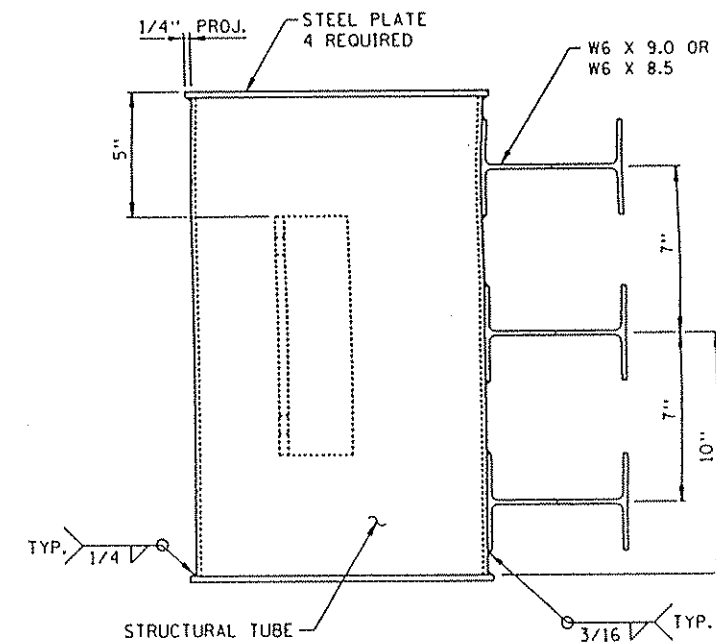
TOP VIEW



STRUCTURAL TUBE



CORRUGATED STEEL PIPE



SIDE VIEW  
ECCENTRIC LOADER ASSEMBLY

NOTES:  
CORRUGATED STEEL PIPE AS PER SPEC. 3226.  
STRUCTURAL STEEL AS PER SPEC. 3306, UNLESS OTHERWISE NOTED.  
GALVANIZE STRUCTURAL STEEL AS PER SPEC. 3392 & 3394 AFTER FABRICATION, UNLESS OTHERWISE NOTED.

STANDARD SHEET NO.	TITLE:
STANDARD APPROVED: NOT APPROVED	ECCENTRIC LOADER BCT MISCELLANEOUS DETAILS
STATE PROJ. NO.	

SHEET 2 OF 2  
REFERENCE DATE: 8-28-91



15-JA 1/90 REV 6

The Minnesota Department of Transportation has many survey crews who set stakes for a wide variety of construction operations and information purposes.

In order to promote uniformity of practice within Mn/DOT, to provide standard training, to implement automation systems within the process, to provide common definition and to provide the clientele with an ability to interpret survey stakes, the following examples have been generated for use as guides by Mn/DOT Surveyors.

It should be noted that the examples are guides and that variations may occur due to varying situations. However, these examples should cover most cases encountered and it is recommended that survey crews follow these examples whenever possible.

No attempt was made at this time to produce computational examples for defining computational procedures for position definition of the stakes. Also no attempt was made at this time to define the positional tolerance of each stake type. These issues are being reviewed and may be added later.

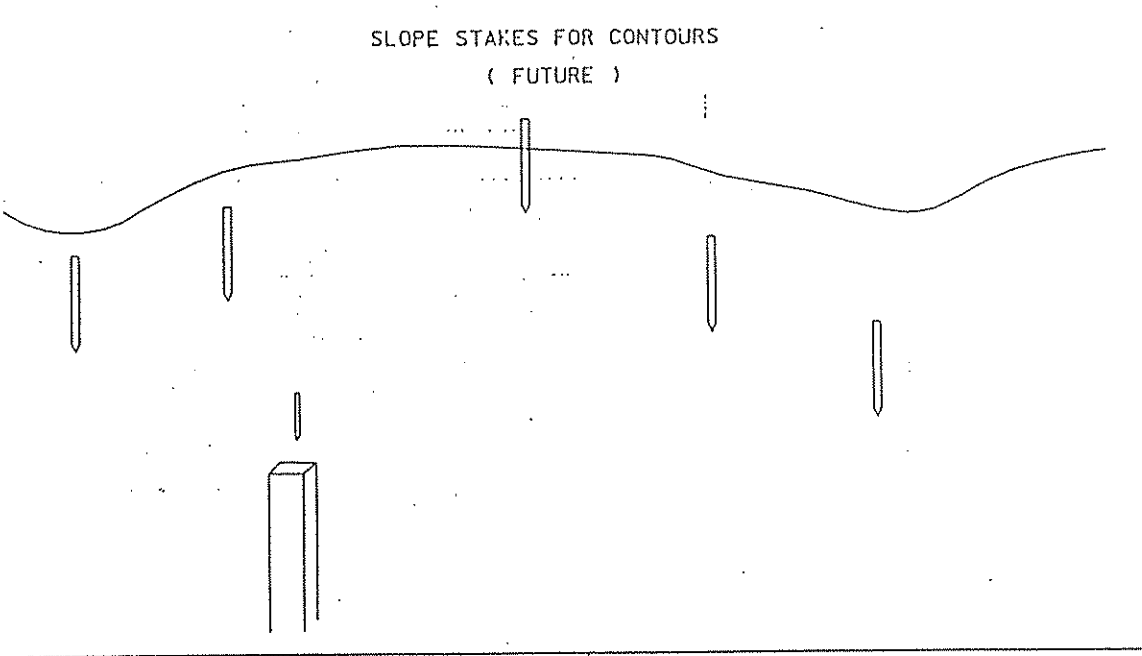
The table in Fig. A is given as a recommended guide for the frequency of stake placement and is derived from review of normal practice at the time of this writing.

The table is given with the idea that it may be used to estimate the amount of staking needed per project or work activity. Deviations may occur. See Surveying and Mapping Manual, See 6.5 for Example SURVEY FIELD NOTES.

Any questions regarding these examples may be addressed to the Surveying and Mapping Standards, Practices and Procedures Committee.

FIG. A  
STAKING INTERVALS

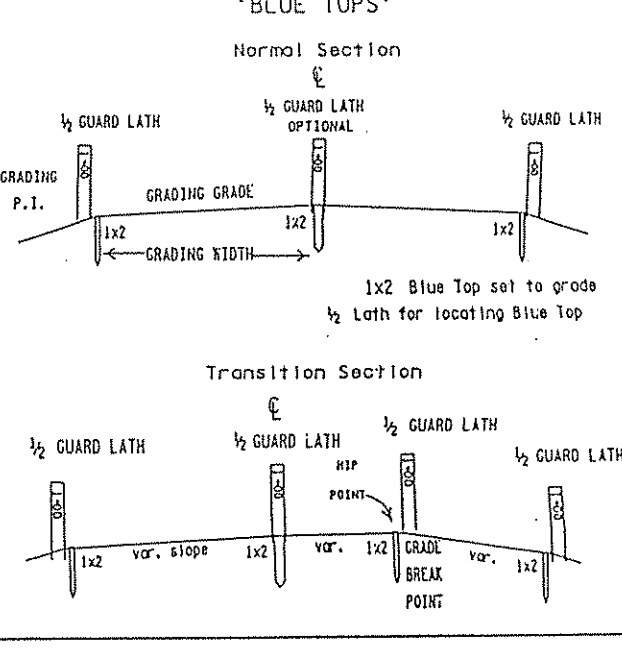
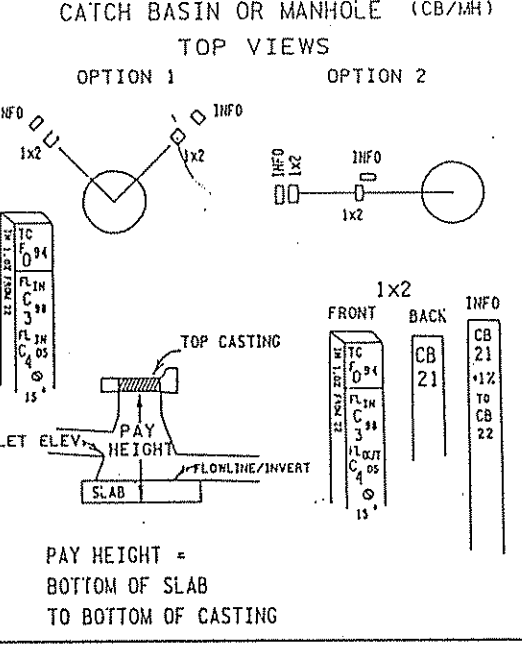
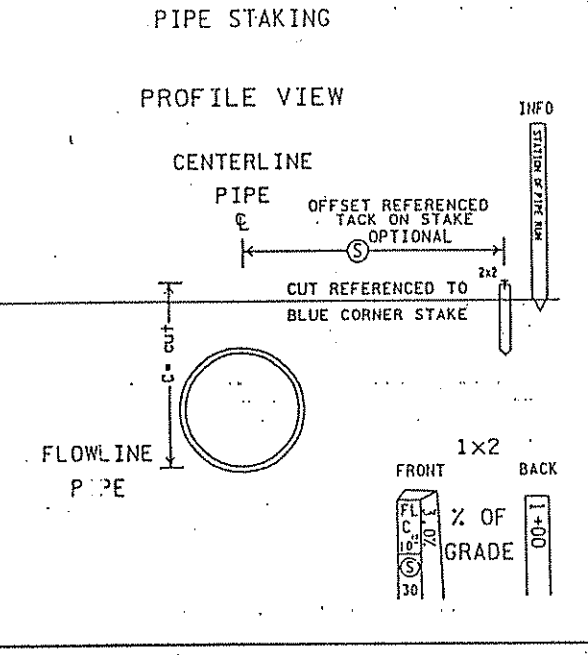
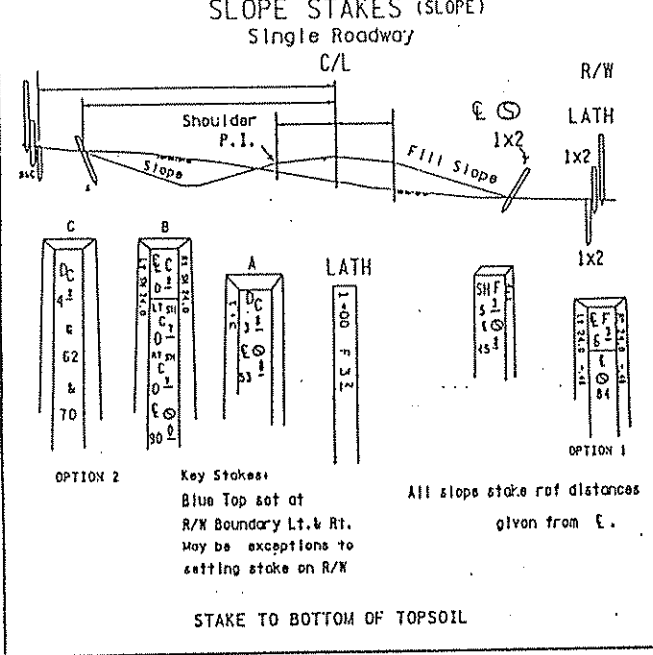
	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	BUCK. EXC.	R/W	TEMP EASE
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZONTAL CURVE									
0-3'	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3' -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERTICAL CURVE									
'M' 100' CHORD 0-.25	100	100	100	50	50				
'M' OVER .25	100	50	50	25	25				
IRON.		50	50						



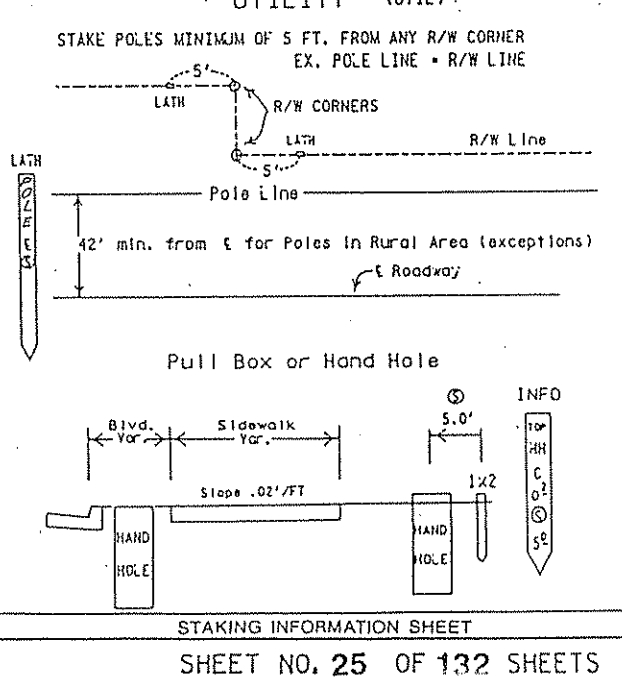
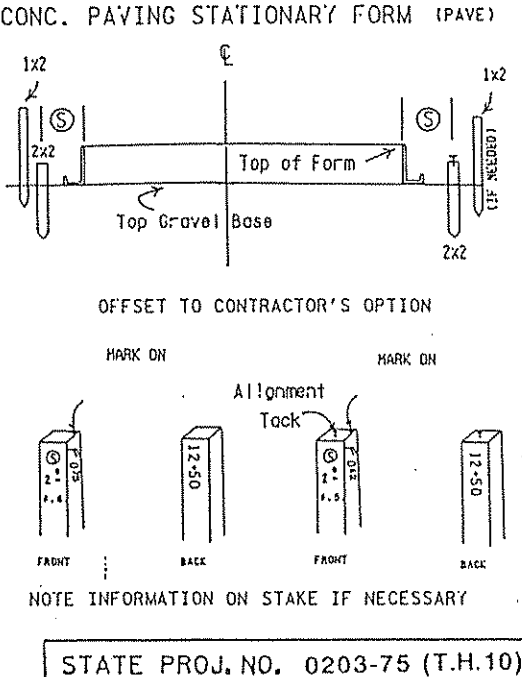
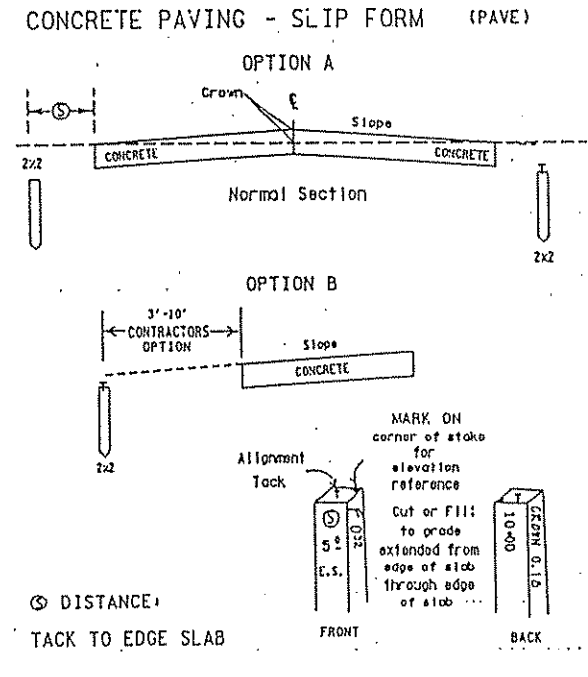
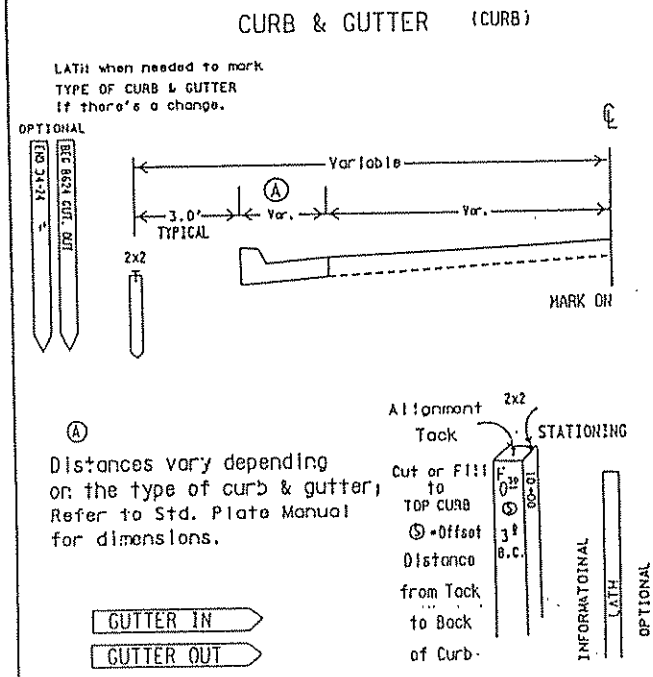
DISCLAIMER

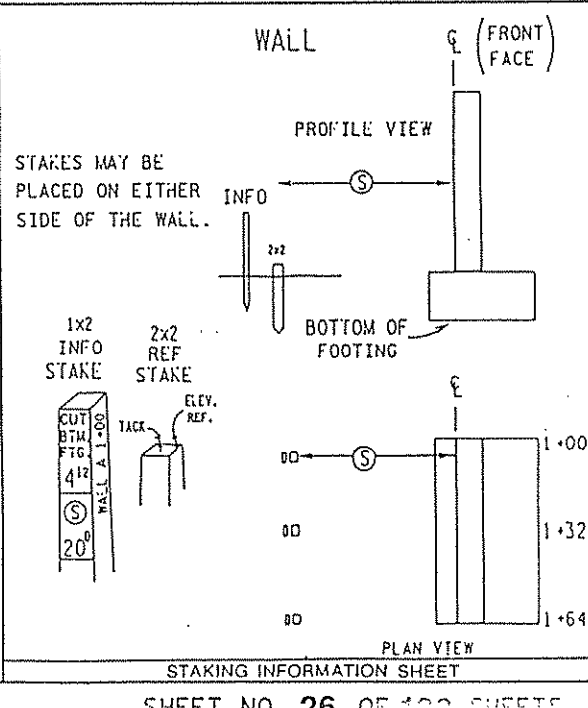
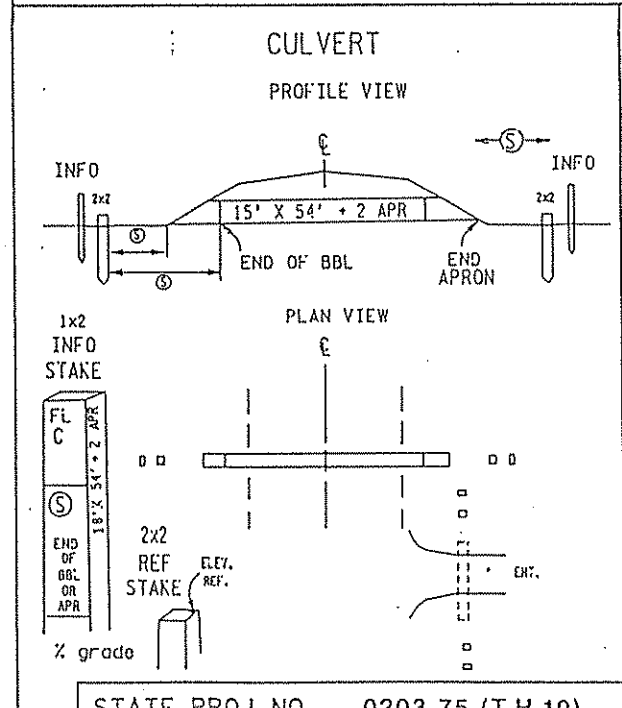
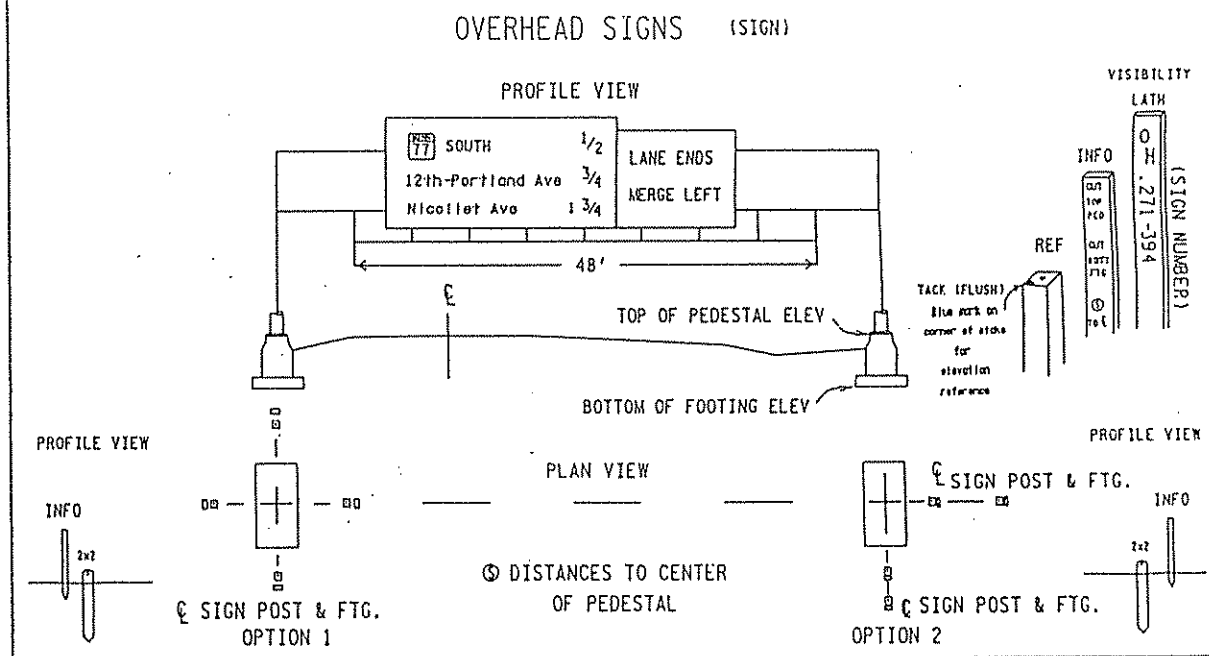
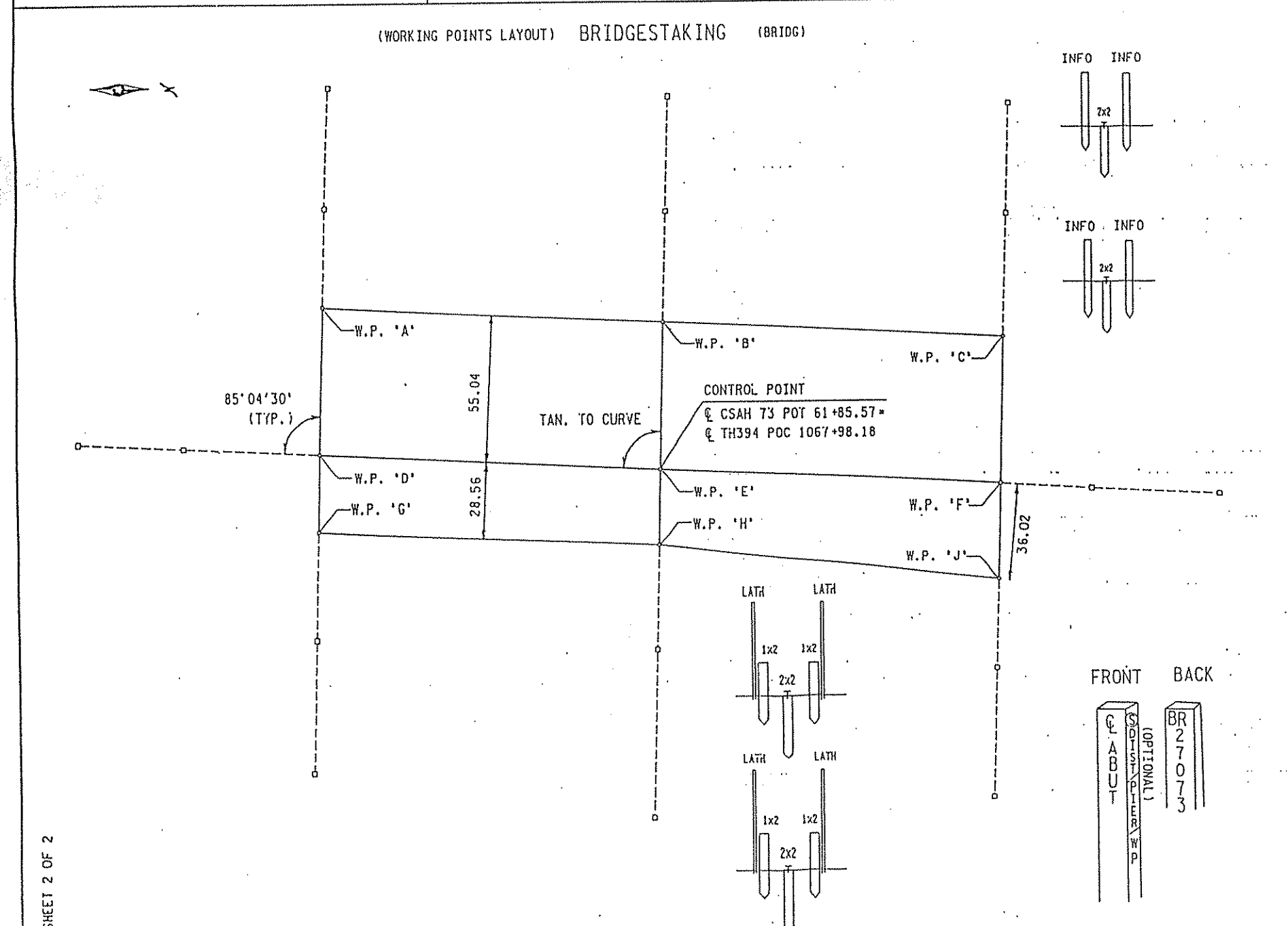
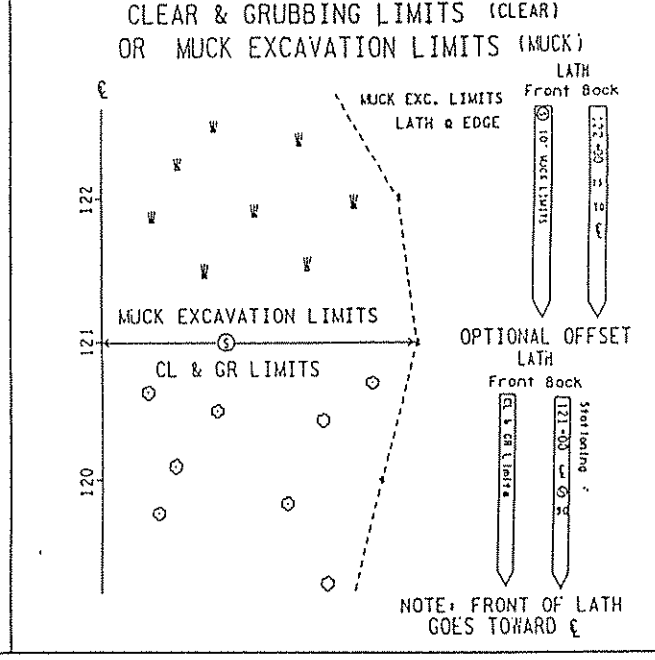
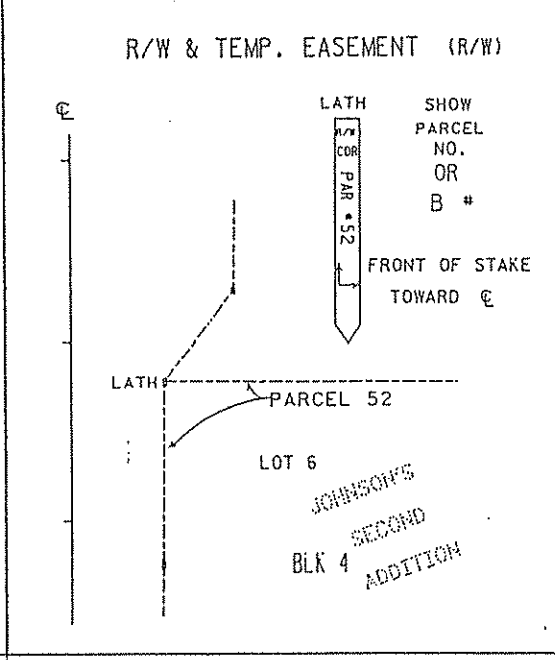
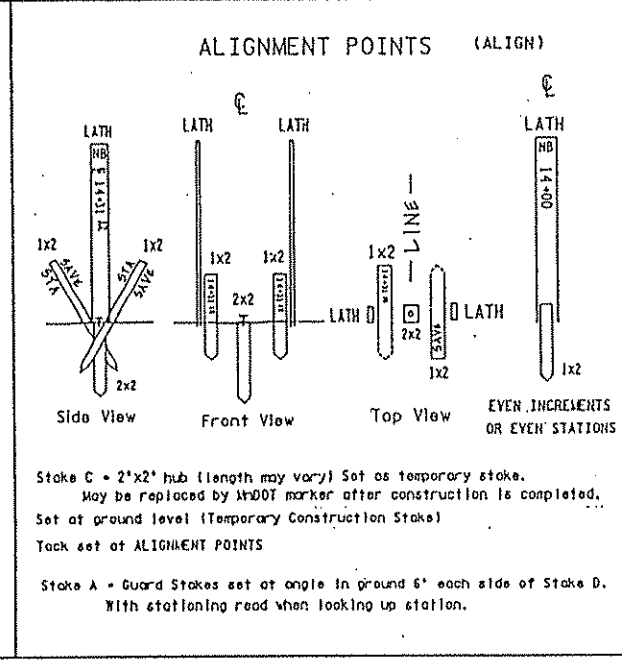
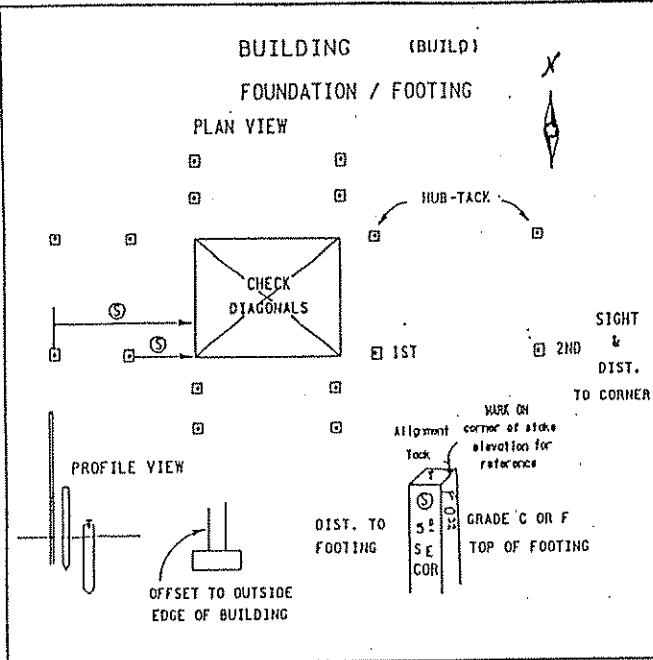
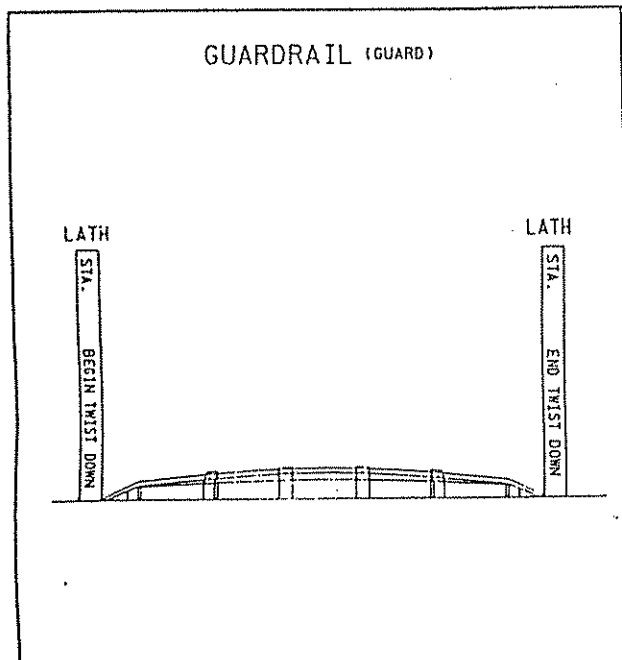
These STAKING INFORMATION SHEETS are for information purposes only. Staking procedures vary and may be subject to change during construction by circumstances and/or Agreements between Survey Crew and Contractor.

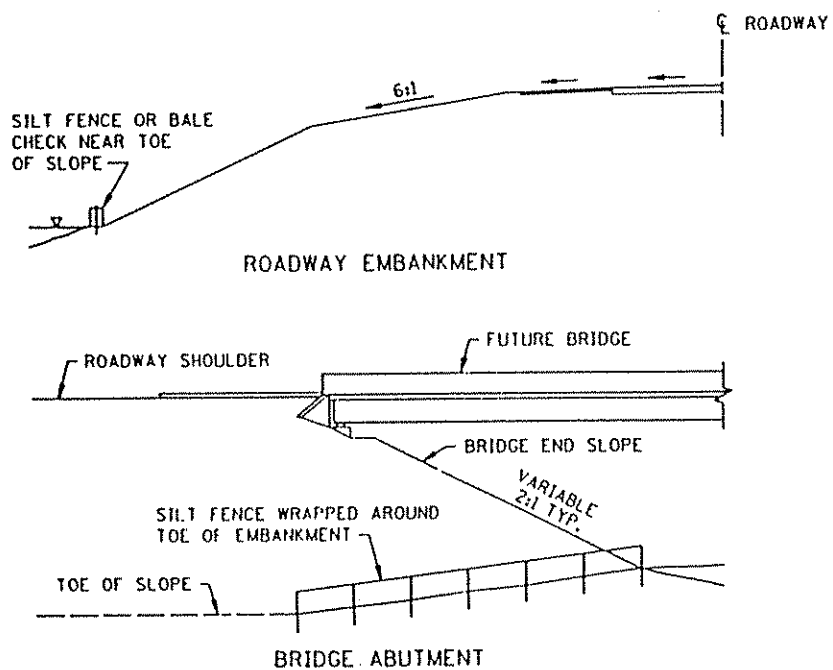
- ABBREVIATIONS
- BBL = BARREL (PIPE)
  - B.C. = BACK CURB
  - C & G = CURB & GUTTER
  - C = CUT
  - CAP = CORRUGATED ALUM. PIPE
  - CB = CATCH BASIN
  - CL = CENTERLINE
  - CL & GR = CLEAR & GRUB
  - CMP = CORRUGATED METAL PIPE
  - COR = CORNER
  - CR = CROWN
  - CSP = CORRUGATED STEEL PIPE
  - CC = DITCH CUT
  - D.E. = DRAINAGE EASEMENT
  - DI = DROP INLET
  - EB = EASTBOUND
  - E.M. = EDGE BIT MAT
  - E.S. = EDGE CONCRETE SLAB
  - F = FILL
  - FF = FRONT FACE
  - FL = FLOW LINE
  - FL IN = FLOWLINE INLET
  - FL OUT = FLOWLINE OUTLET
  - GR = GRADE
  - GW = GRADING WIDTH
  - HH = HANDHOLE
  - HP = HIP POINT
  - LT = LEFT
  - MH = MANHOLE
  - NB = NORTHBOUND
  - PAR = PARCEL
  - % = PERCENT GRADE
  - P.E. = PERMANENT EASEMENT
  - OS = OFFSET
  - RAD = RADIUS POINT
  - RCP = REINFORCED CONCRETE PIPE
  - RP = REF. POINT
  - RSC = REINFORCED SECT. CONC.
  - RT = RIGHT
  - R/W = RIGHT OF WAY
  - SB = SOUTHBOUND
  - SCP = SECT. CONC. PIPE
  - SH = SHOULDER
  - TC = TOP CASTING/TOP CURB
  - T.E. = TEMP EASEMENT
  - 3:1 = SLOPE (EXAMPLE)
  - WB = WESTBOUND
  - WP = WORKING POINTS



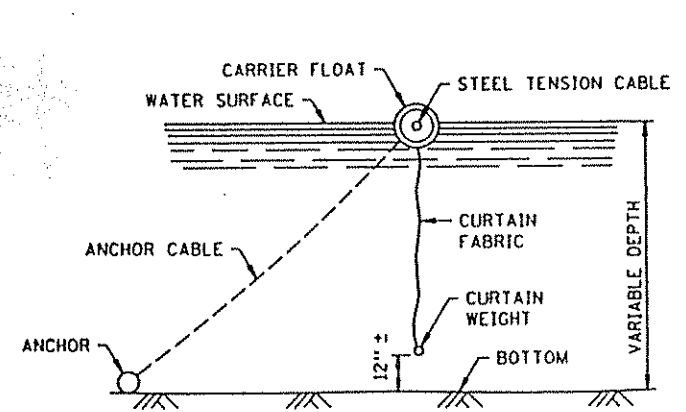
- STANDARD STAKES
- TYPES:
- REFERENCE (REF) 2x2
  - INFORMATIONAL (INFO) 1x2
  - VISIBILITY (VIS) 1x2
  - GUARD (GUARD) 1x2
- SIZES:
- A = 2' X 2' X VAR. REF/INFO/GUARD
  - B = 1' X 2' X VAR. REF/INFO/GUARD
  - C = 1' X 2' X VAR. REF
  - D = LATH INFO/VIS/GUARD 1X2 OR LATH =INFO STAKES



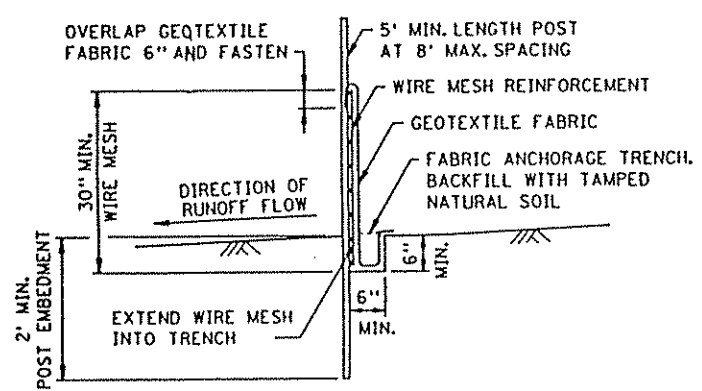




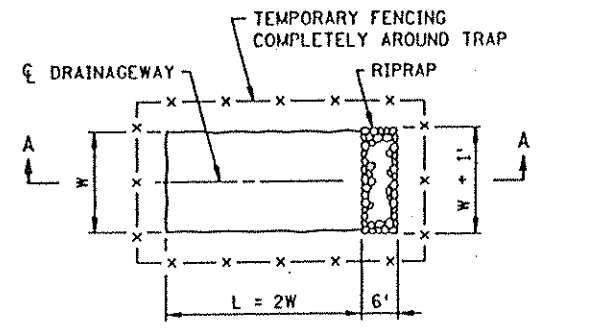
SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS



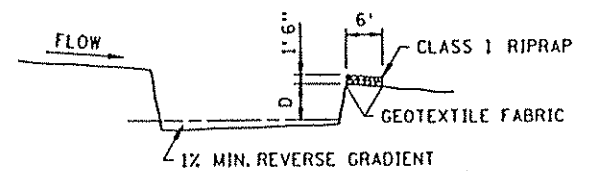
FLOATATION SILT CURTAIN



SILT FENCE DETAIL



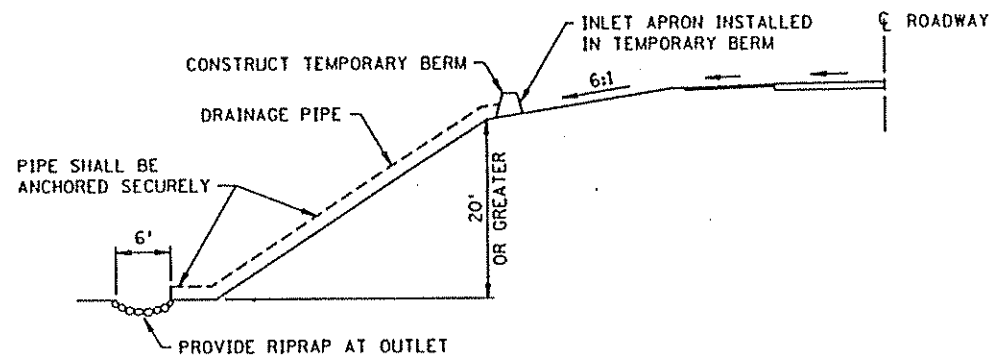
PLAN



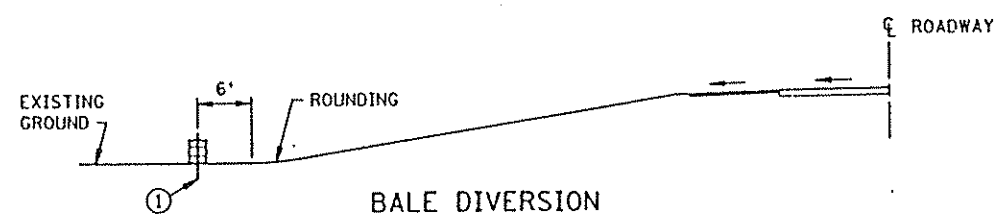
NOTE:  
D = 3' MIN., 6' MAX.  
W = 10' MIN., 20' MAX.

SECTION A-A

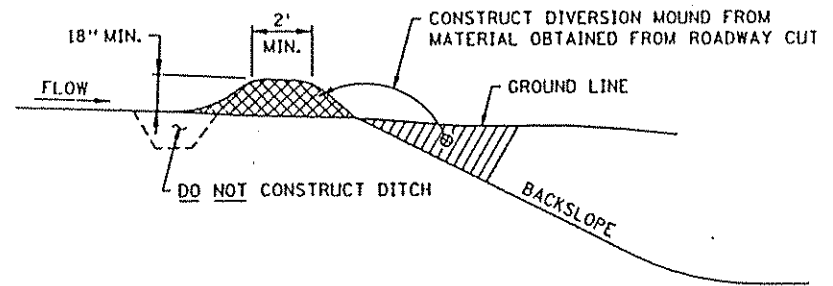
TEMPORARY SEDIMENT TRAP



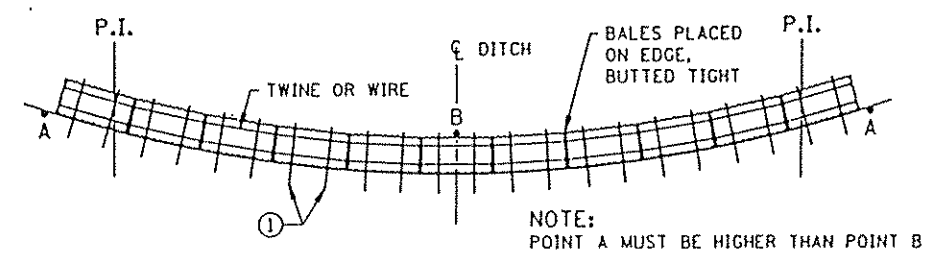
TEMPORARY DRAIN ON FILL SLOPE



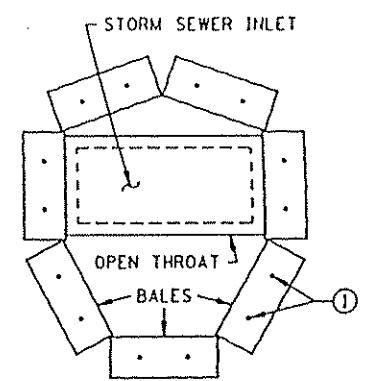
BALE DIVERSION



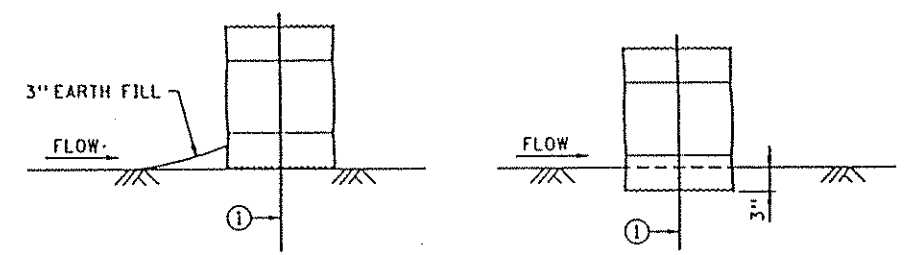
DIVERSION MOUND



BALE DITCH CHECK



BALE CHECK TO PROTECT STORM SEWER INLETS

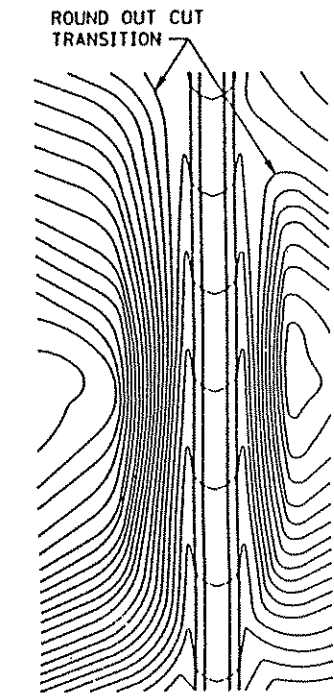


BALE CHECK DETAILS

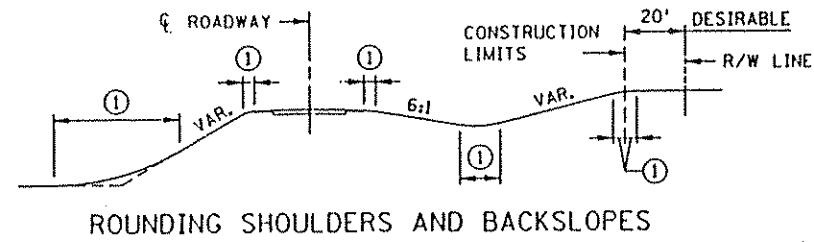
NOTE:  
① TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.

FILE NAME S405L90.SPN

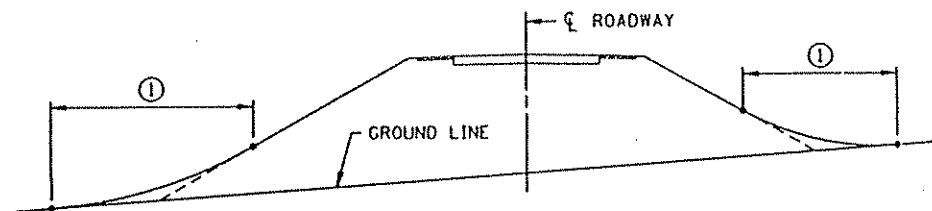
STANDARD SHEET NO. 5-297.405	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. 0203-75 (T.H.10)	SHEET NO. 27 OF 132 SHEETS



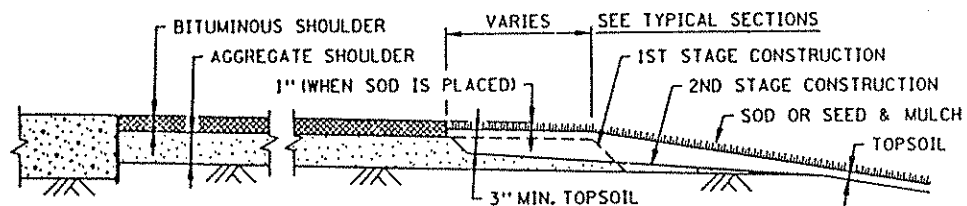
CONTOURING ROAD CUTS



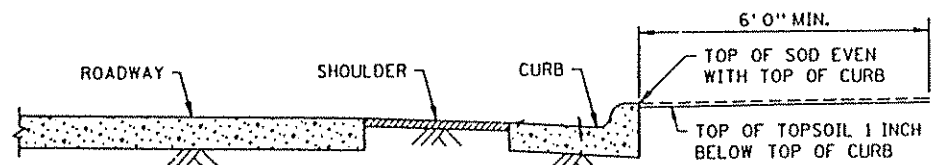
ROUNDING SHOULDERS AND BACKSLOPES



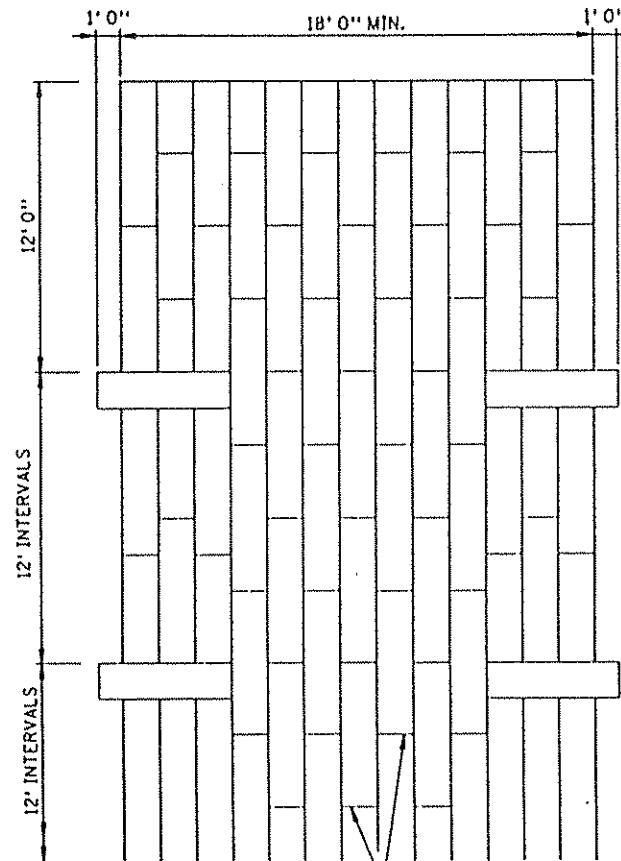
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



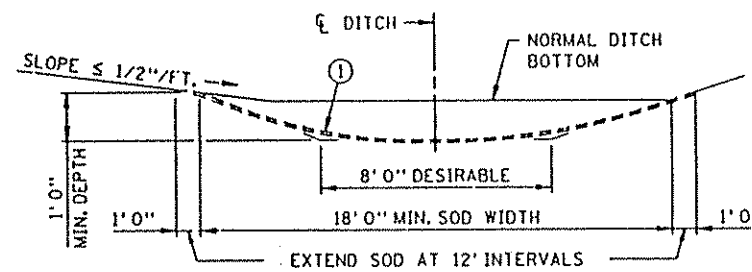
SHAPING AND TOPSOILING INSLOPES



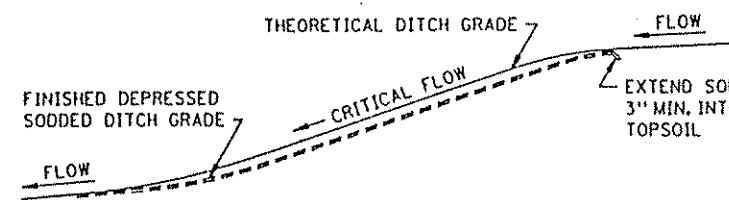
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



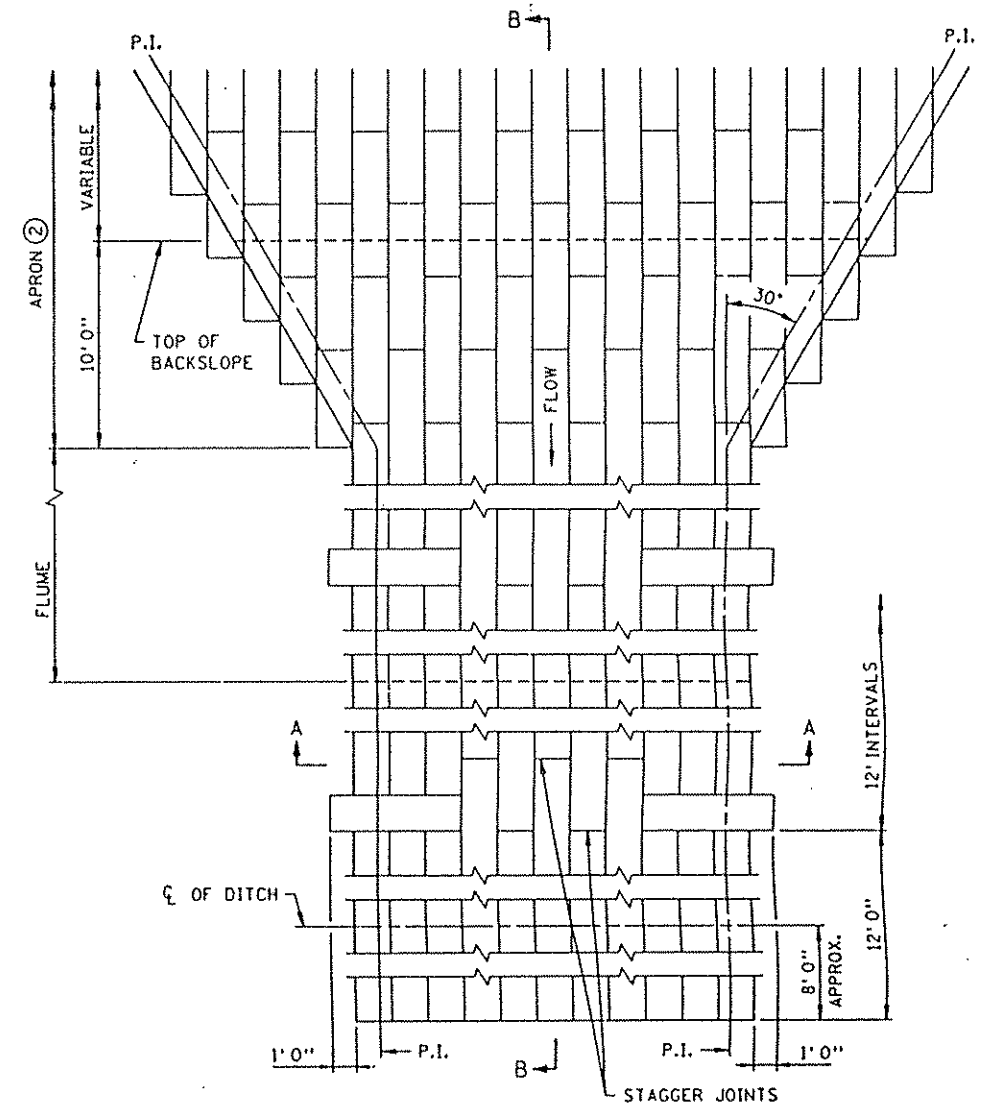
STAGGER JOINTS  
PLAN VIEW



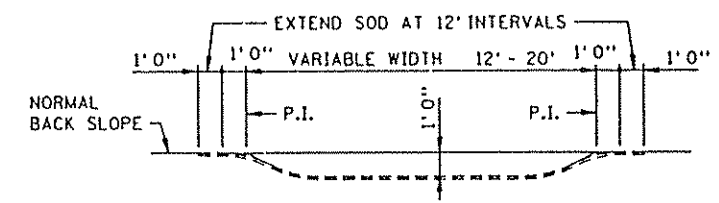
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),  
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



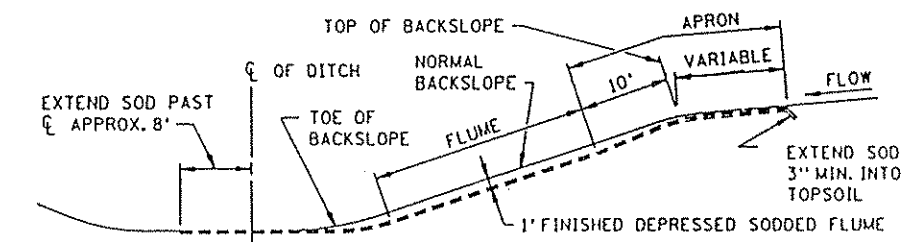
DITCH PROFILE  
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A

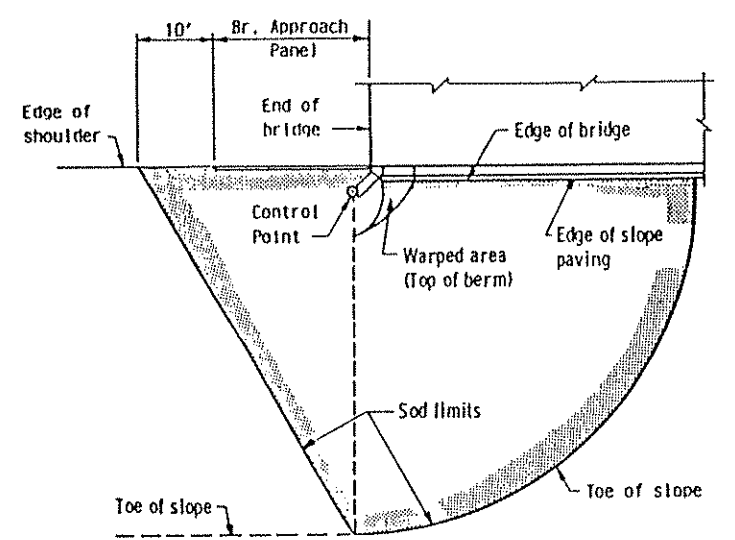


SECTION B-B

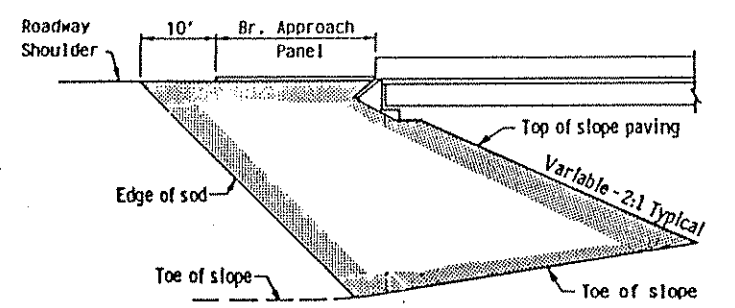
SODDED FLUME DETAILS

- NOTES:  
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
① FOR ROUNDING, SEE ROAD DESIGN MANUAL.  
② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE:
STANDARD APPROVED: DECEMBER 19, 1990	PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES

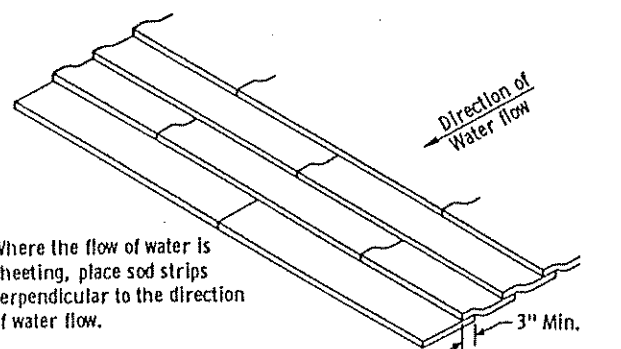


PLAN

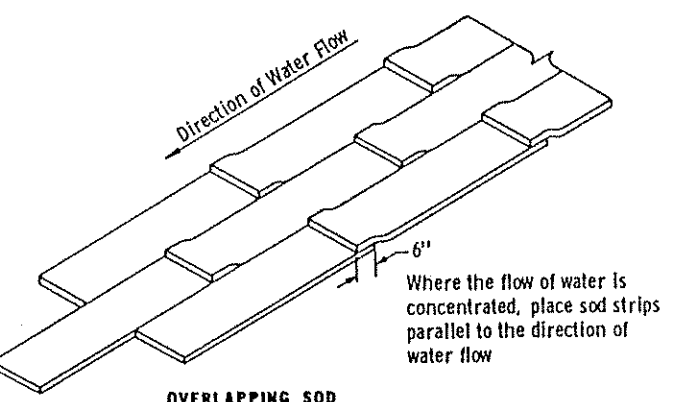


ELEVATION

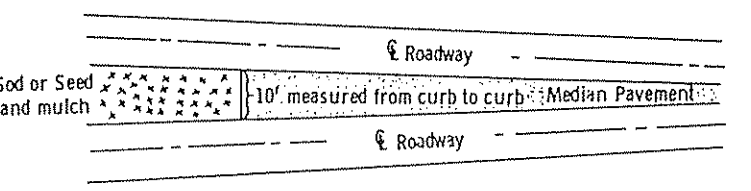
SODDING LIMITS AT BRIDGE APPROACH FILLS



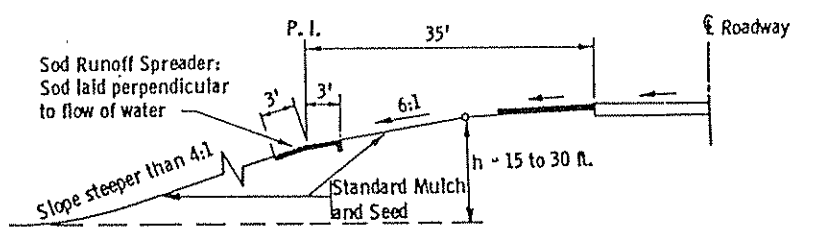
SHINGLING SOD



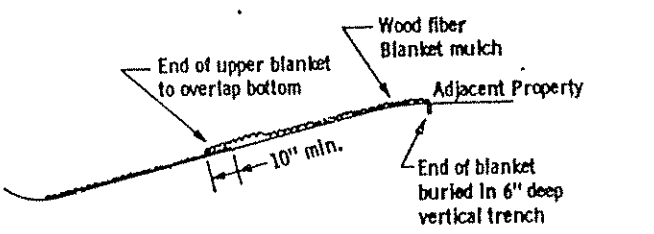
SPECIAL SOD PLACEMENT TECHNIQUES



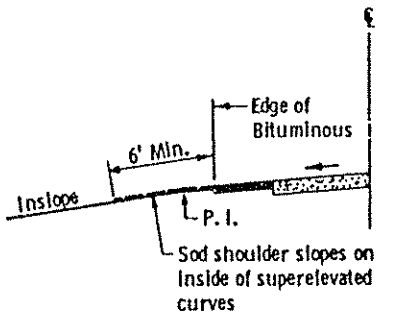
SODDING LIMITS AT GORE AREA



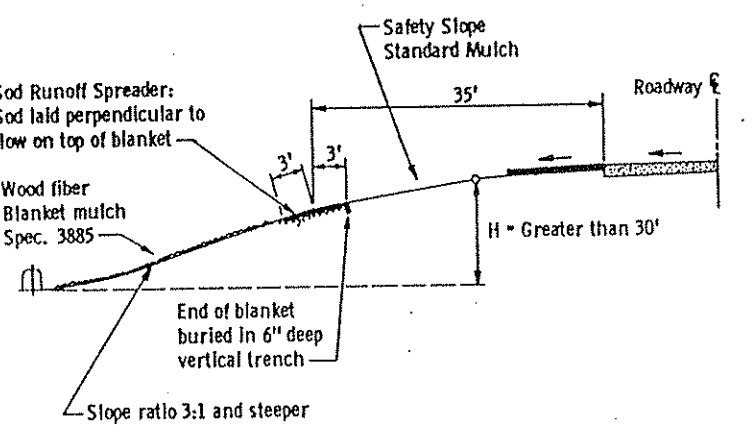
BROKEN - BACK SAFETY FILL SLOPE



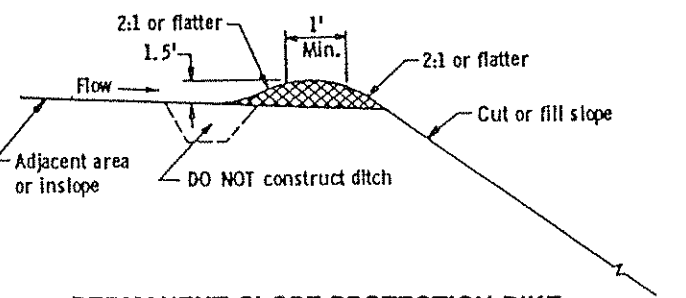
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



SODDING INSLOPES OF SUPERELEVATED CURVES



WOOD FIBER BLANKET INSTALLATION ON A BACKSLOPE (WHEN REQUIRED)



PERMANENT SLOPE PROTECTION DIKE

MVDOT NO 9 (B27)

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

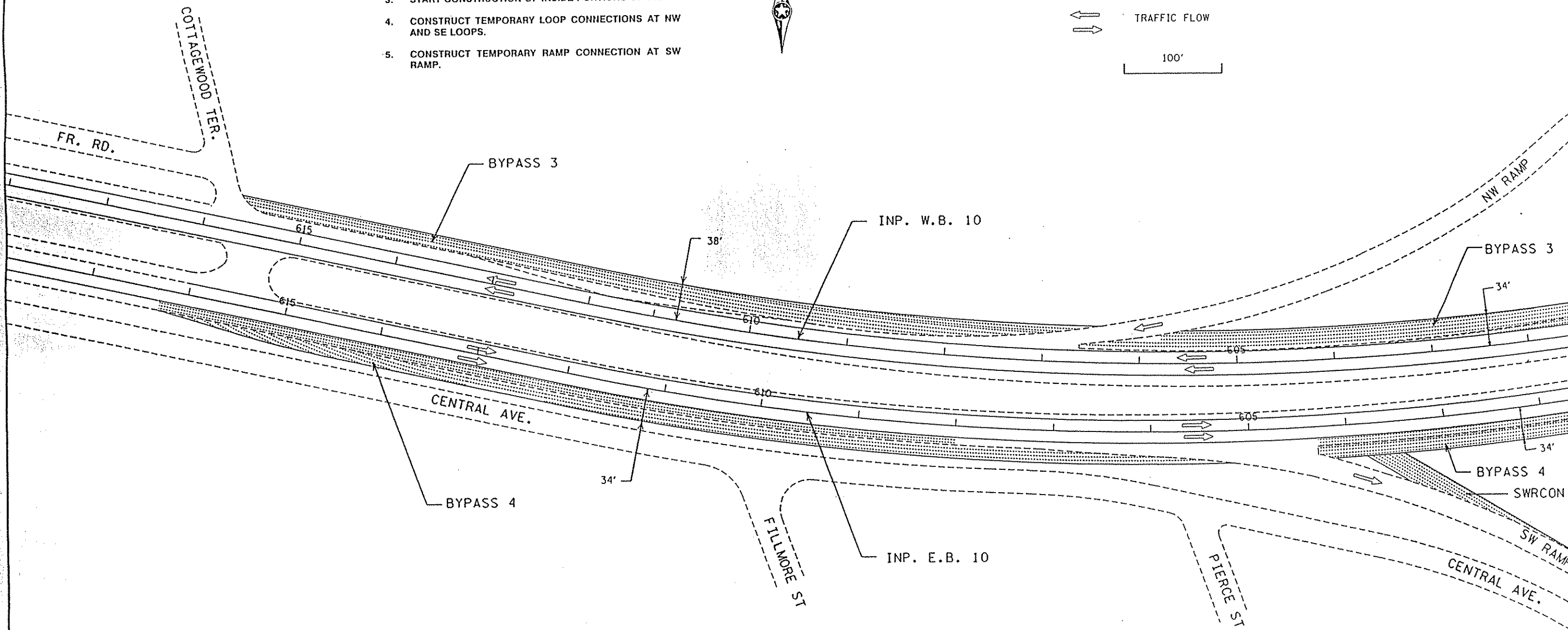
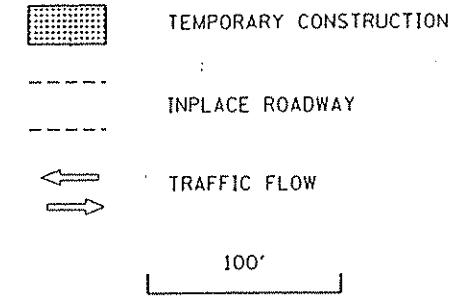
**STAGE 1 TRAFFIC**

1. THE SW AND NE LOOP SHALL BE CLOSED.
2. TRAFFIC UTILIZES THE INPLACE 12' LANES AND SHIFTS TO BYPASSES 1 AND 2 AT THE BRIDGES.
3. ALL OTHER EXISTING RAMPS AND LOOPS WILL REMAIN OPEN.

**STAGE 1 CONSTRUCTION**

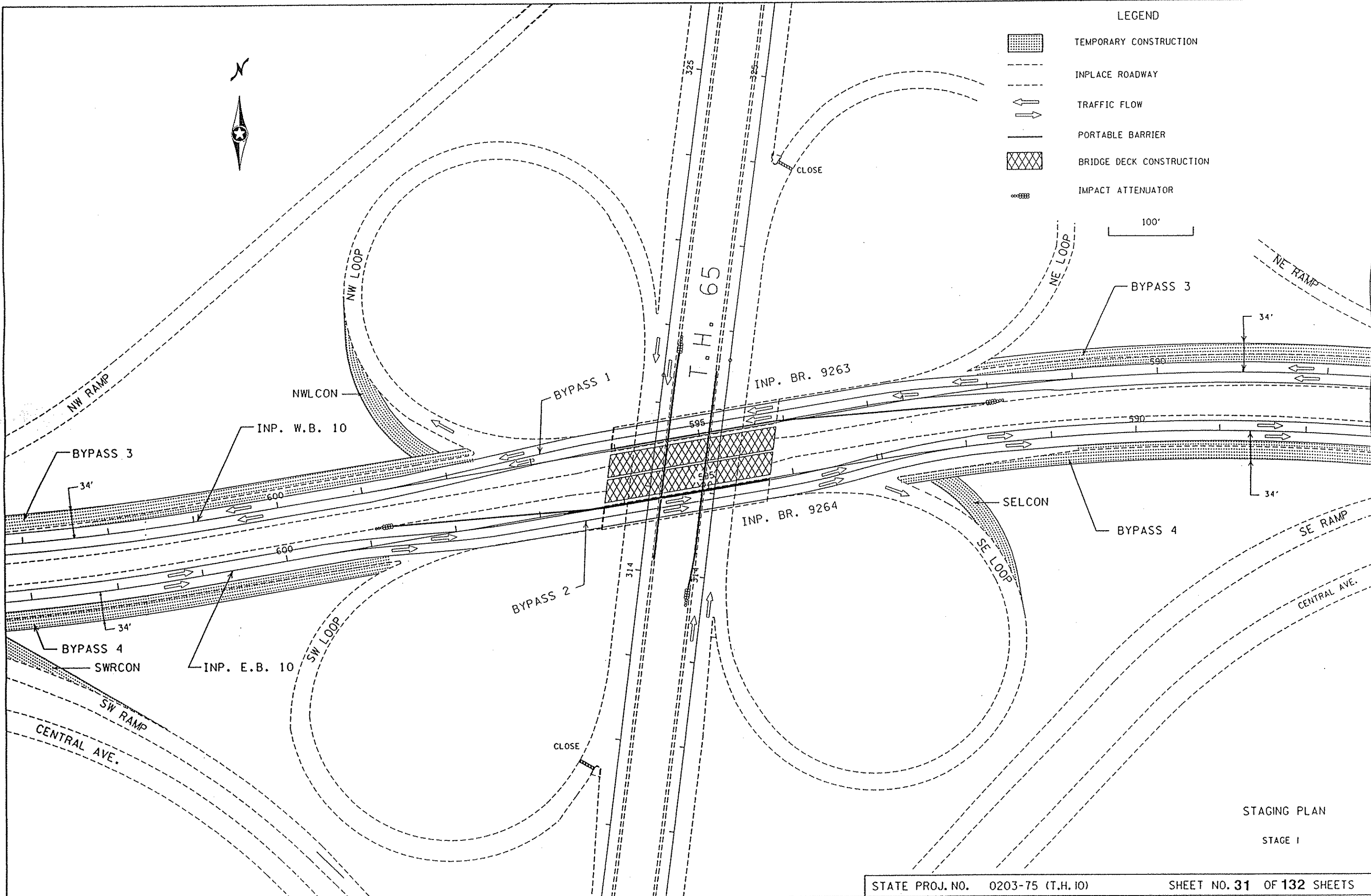
1. PLACE TEMPORARY PORTABLE PRECAST CONCRETE (TPPC) BARRIER ON T.H. 10 BETWEEN THE TRAVELING LANES AND THE BRIDGE CONSTRUCTION AND ON T.H. 65 IN THE BRIDGE CONSTRUCTION AREA.
2. CONSTRUCT TEMPORARY WIDENING FOR BYPASSES 3 AND 4.
3. START CONSTRUCTION OF INSIDE PORTIONS OF BRIDGE.
4. CONSTRUCT TEMPORARY LOOP CONNECTIONS AT NW AND SE LOOPS.
5. CONSTRUCT TEMPORARY RAMP CONNECTION AT SW RAMP.

**LEGEND**









STAGING PLAN

STAGE 1



LEGEND




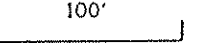
-  TEMPORARY CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  PORTABLE BARRIER
-  BRIDGE DECK CONSTRUCTION
-  IMPACT ATTENUATOR

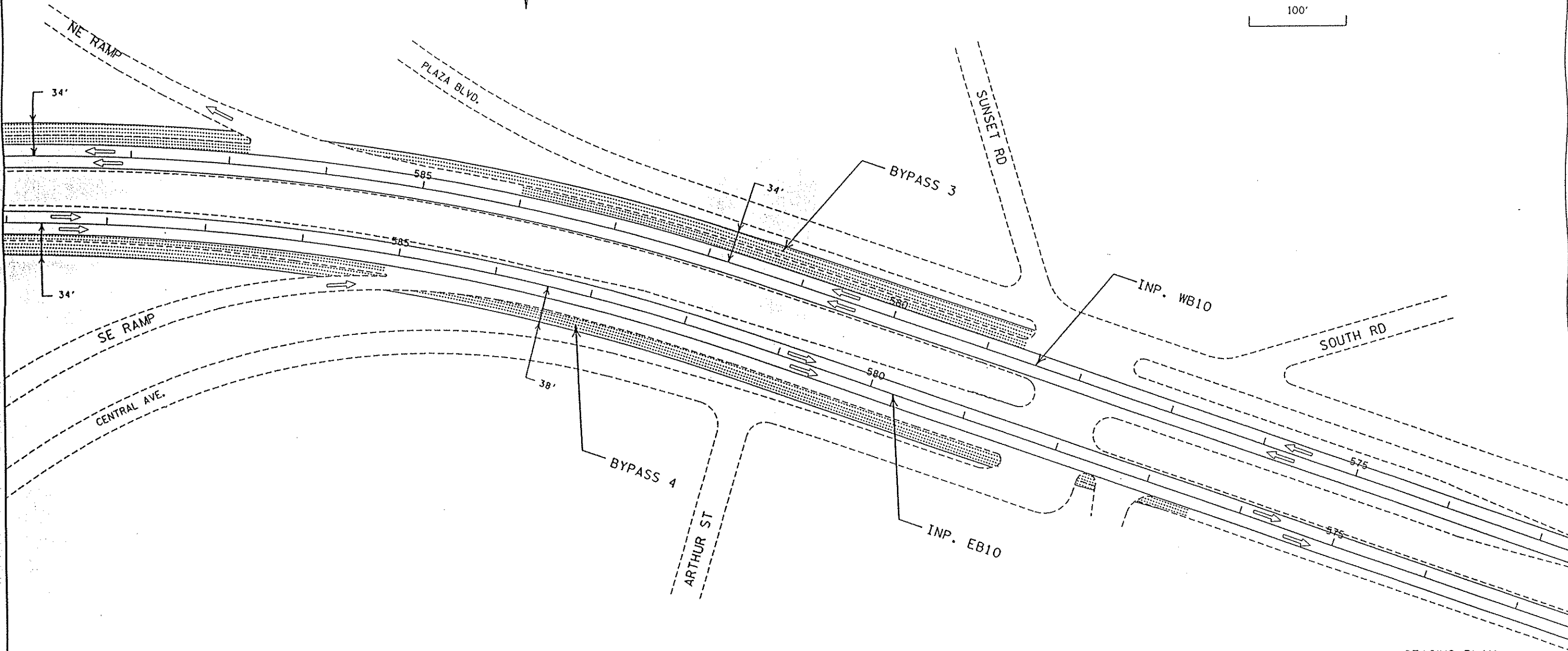
100'

STAGING PLAN

STAGE I

LEGEND

-  TEMPORARY CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  100'



STAGING PLAN  
STAGE I









**STAGE 2 TRAFFIC**

1. THE CROSSOVER AND NORTH FRONTAGE ROAD ACCESS AT THE EAST END OF THE PROJECT IS CLOSED.
2. THE CROSSOVER AT THE WEST END OF THE PROJECT IS CLOSED.
3. TRAFFIC SWITCHES TO THE 2-11' OUTSIDE LANES (BYPASSES 3 AND 4) AND UTILIZES THE OUTSIDE LANES OF EACH BRIDGE AS IN STAGE 1.
4. ALL EXISTING RAMPS AND THE NW AND SE LOOPS WILL REMAIN OPEN.

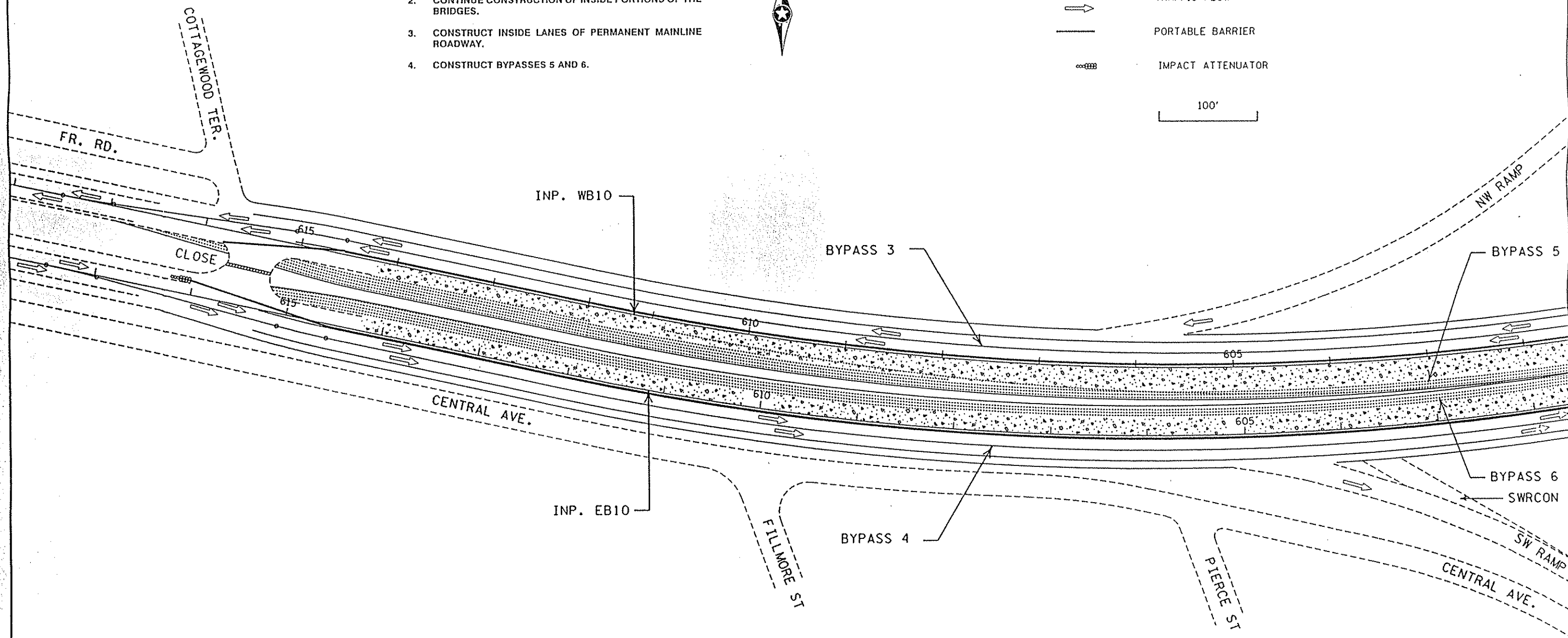
**STAGE 2 CONSTRUCTION**

1. PRIOR TO SWITCHING TRAFFIC, PLACE TPPC BARRIER AT THE EDGE OF THE INSIDE TRAVELING LANES.
2. CONTINUE CONSTRUCTION OF INSIDE PORTIONS OF THE BRIDGES.
3. CONSTRUCT INSIDE LANES OF PERMANENT MAINLINE ROADWAY.
4. CONSTRUCT BYPASSES 5 AND 6.

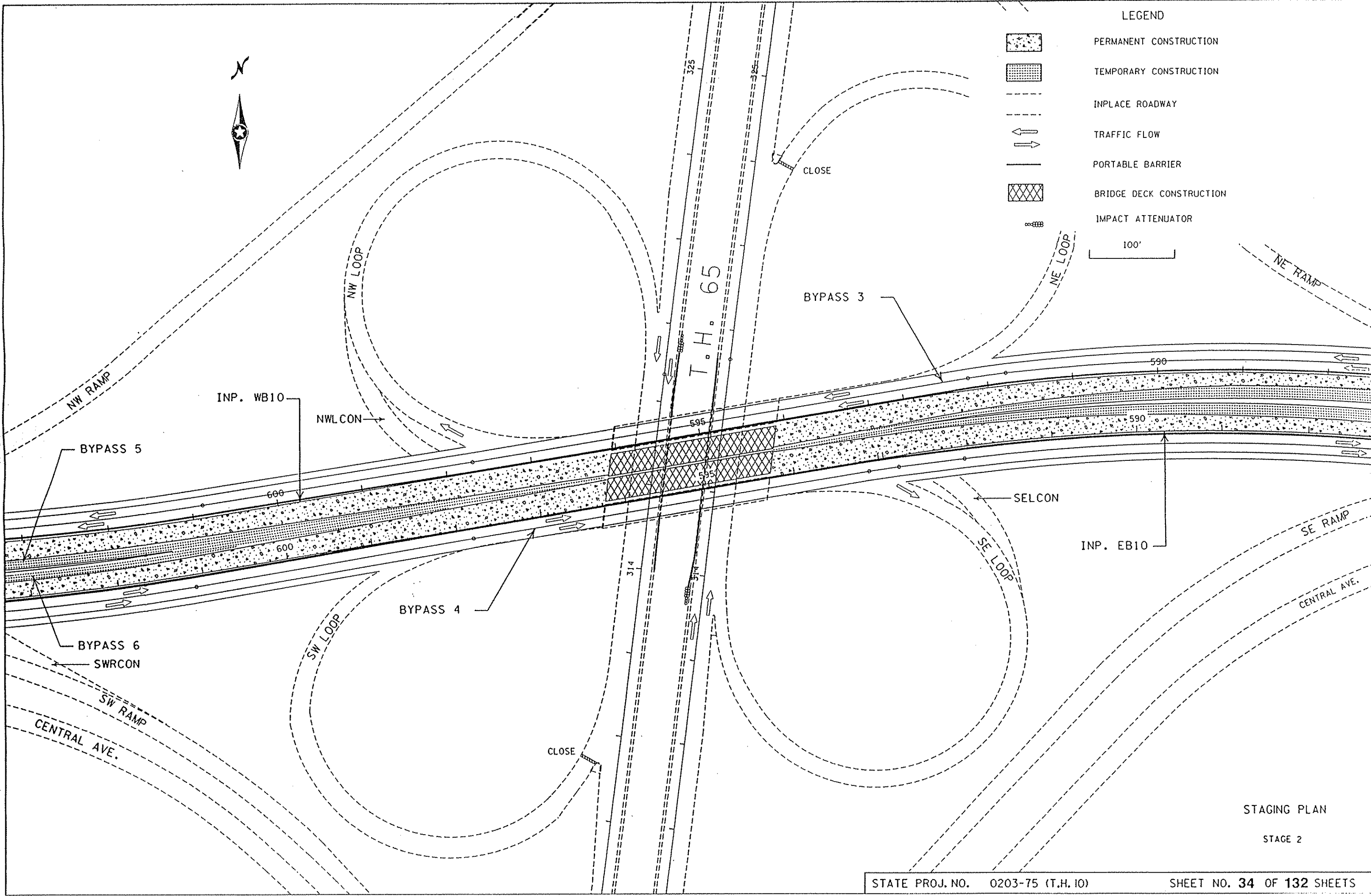
**LEGEND**

	PERMANENT CONSTRUCTION
	TEMPORARY CONSTRUCTION
	INPLACE ROADWAY
	TRAFFIC FLOW
	PORTABLE BARRIER
	IMPACT ATTENUATOR








100'



STAGING PLAN  
STAGE 2



LEGEND







-  PERMANENT CONSTRUCTION
-  TEMPORARY CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  PORTABLE BARRIER
-  BRIDGE DECK CONSTRUCTION
-  IMPACT ATTENUATOR

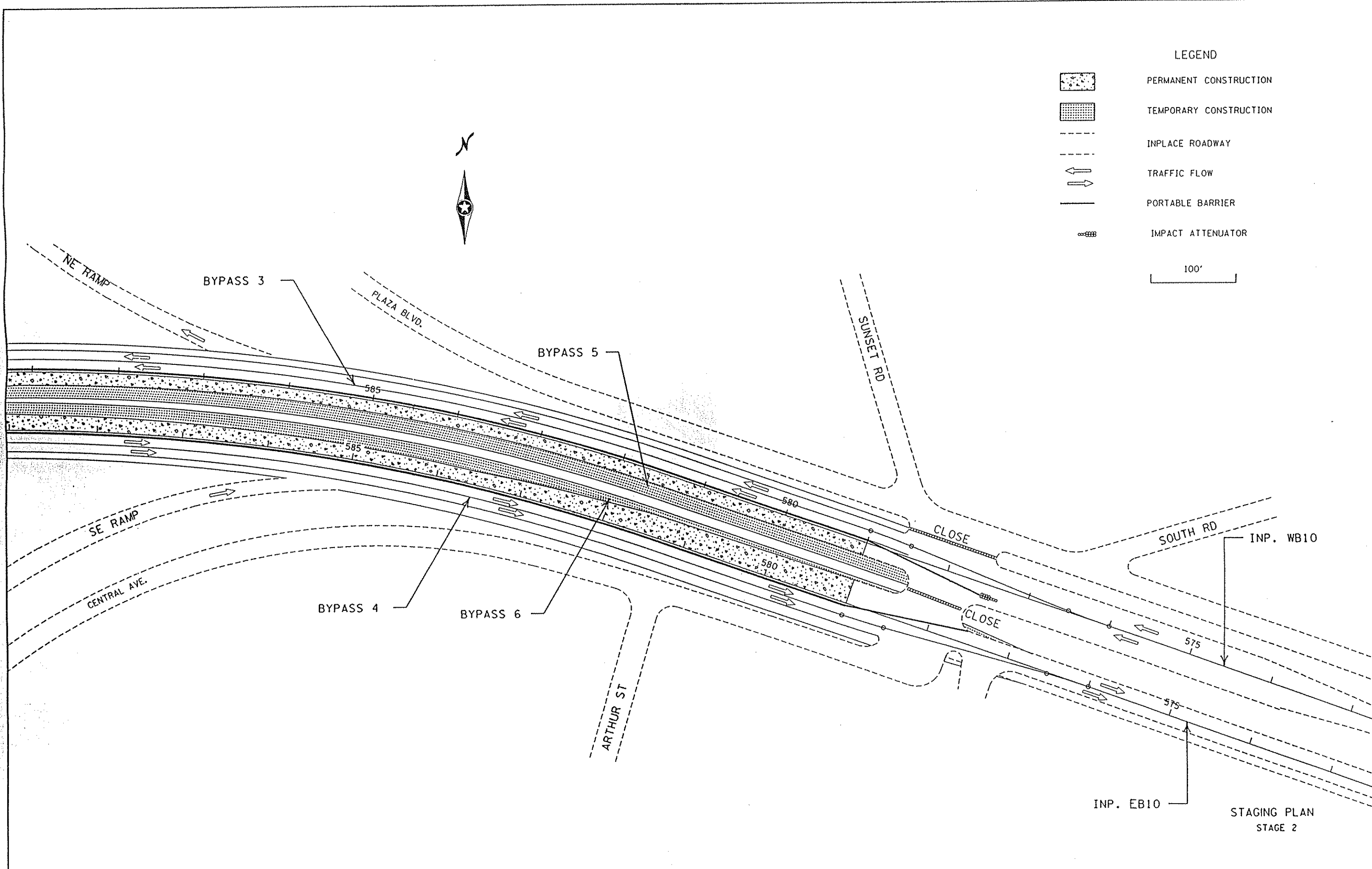
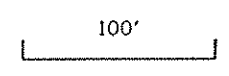
100'

STAGING PLAN

STAGE 2

LEGEND

-  PERMANENT CONSTRUCTION
-  TEMPORARY CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  PORTABLE BARRIER
-  IMPACT ATTENUATOR



STAGING PLAN  
STAGE 2


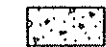
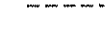
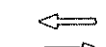

**STAGE 3 TRAFFIC**

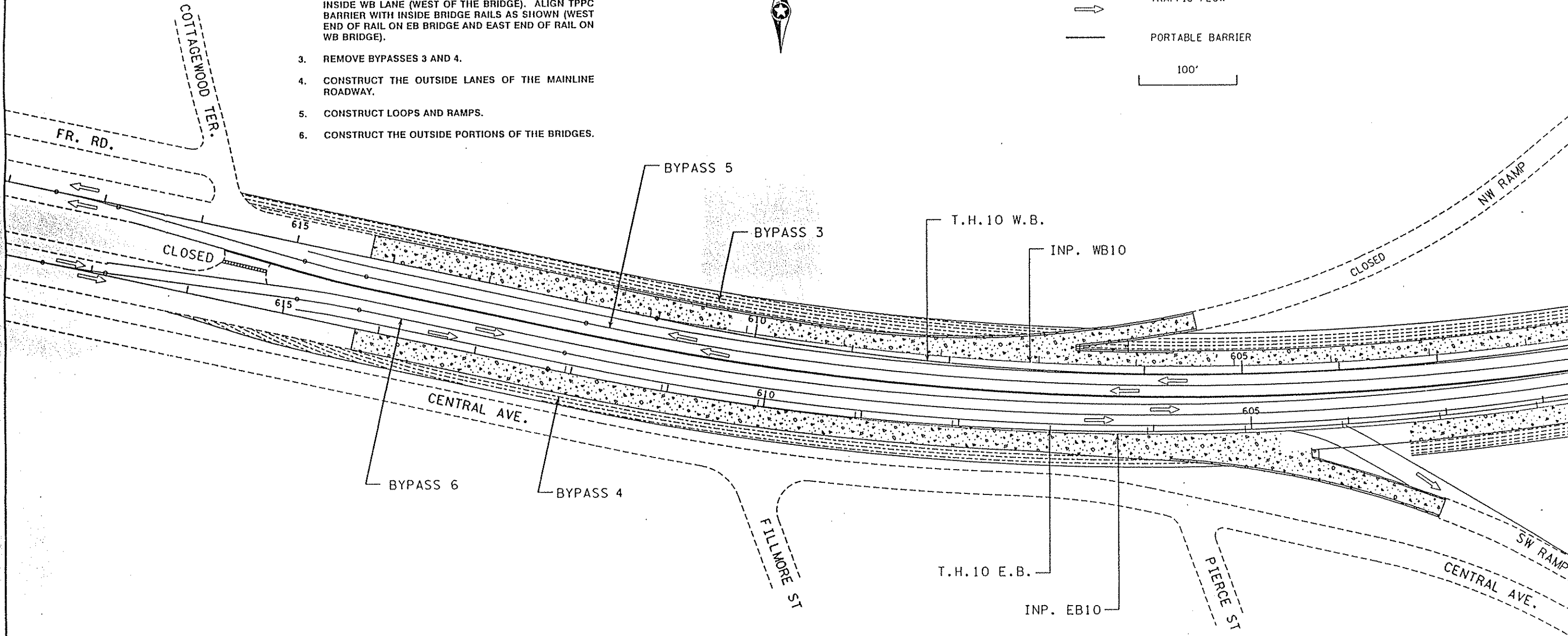
1. TRAFFIC SWITCHES TO THE COMPLETED INSIDE LANES (BYPASSES 5 AND 6).
2. THE NORTHWEST, NORTHEAST, AND SOUTHEAST RAMPS ARE CLOSED.
3. TRAFFIC UTILIZES TEMPORARY LOOP CONNECTIONS AT NW AND SE LOOPS.
4. TRAFFIC UTILIZES THE SOUTHWEST RAMP TEMPORARY CONNECTION.

**STAGE 3 CONSTRUCTION**

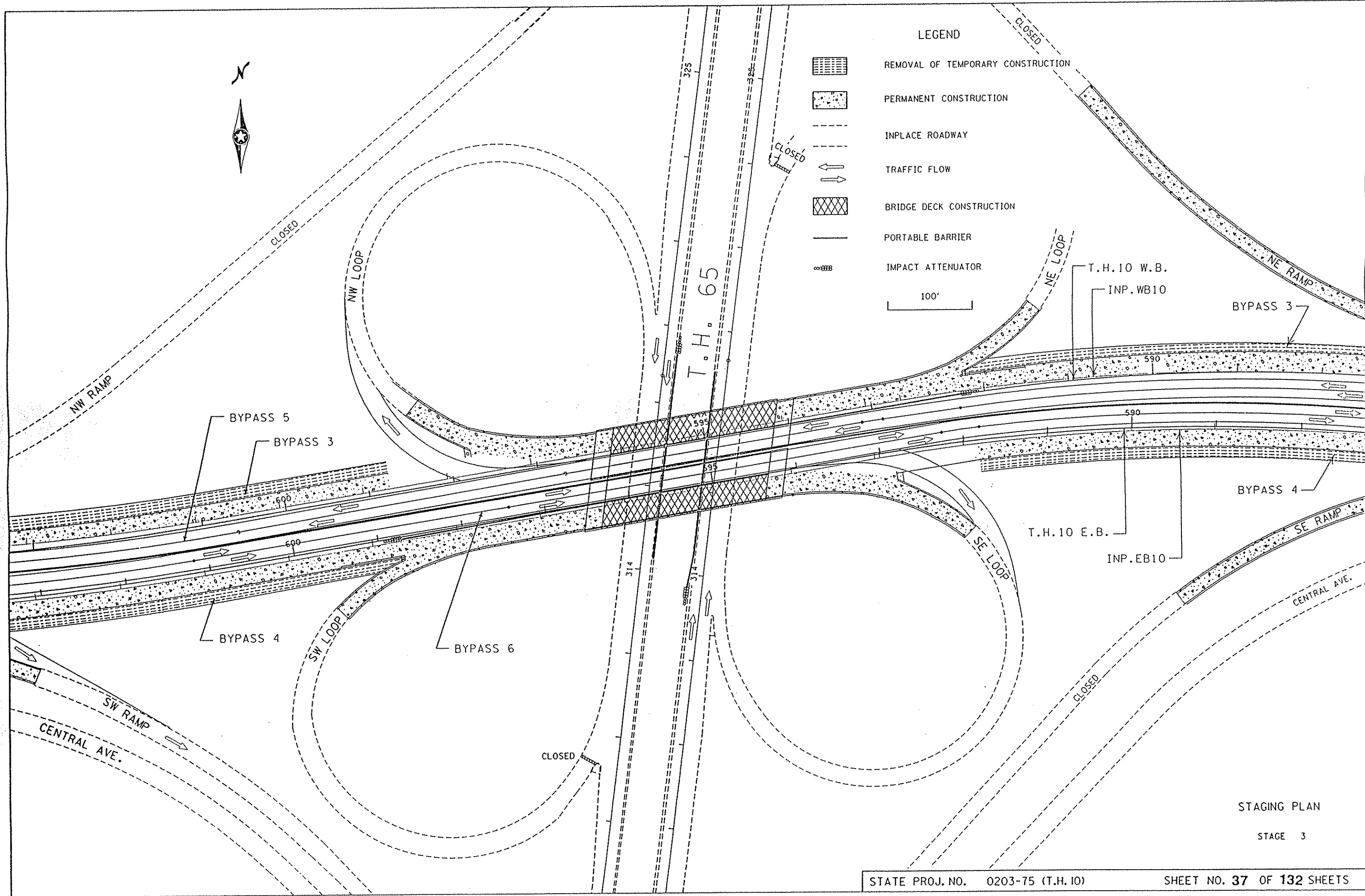
1. RELOCATE TPPC BARRIER TO OUTSIDE EDGE OF COMPLETED LANES AT BRIDGES AS SHOWN.
2. PLACE TPPC BARRIER AT THE EDGE OF THE INSIDE EB LANE (EAST OF THE BRIDGE) AND AT THE EDGE OF THE INSIDE WB LANE (WEST OF THE BRIDGE). ALIGN TPPC BARRIER WITH INSIDE BRIDGE RAILS AS SHOWN (WEST END OF RAIL ON EB BRIDGE AND EAST END OF RAIL ON WB BRIDGE).
3. REMOVE BYPASSES 3 AND 4.
4. CONSTRUCT THE OUTSIDE LANES OF THE MAINLINE ROADWAY.
5. CONSTRUCT LOOPS AND RAMPS.
6. CONSTRUCT THE OUTSIDE PORTIONS OF THE BRIDGES.

**LEGEND**








-  REMOVAL OF TEMPORARY CONSTRUCTION
  -  PERMANENT CONSTRUCTION
  -  INPLACE ROADWAY
  -  TRAFFIC FLOW
  -  PORTABLE BARRIER
- 100'



STAGING PLAN  
STAGE 3



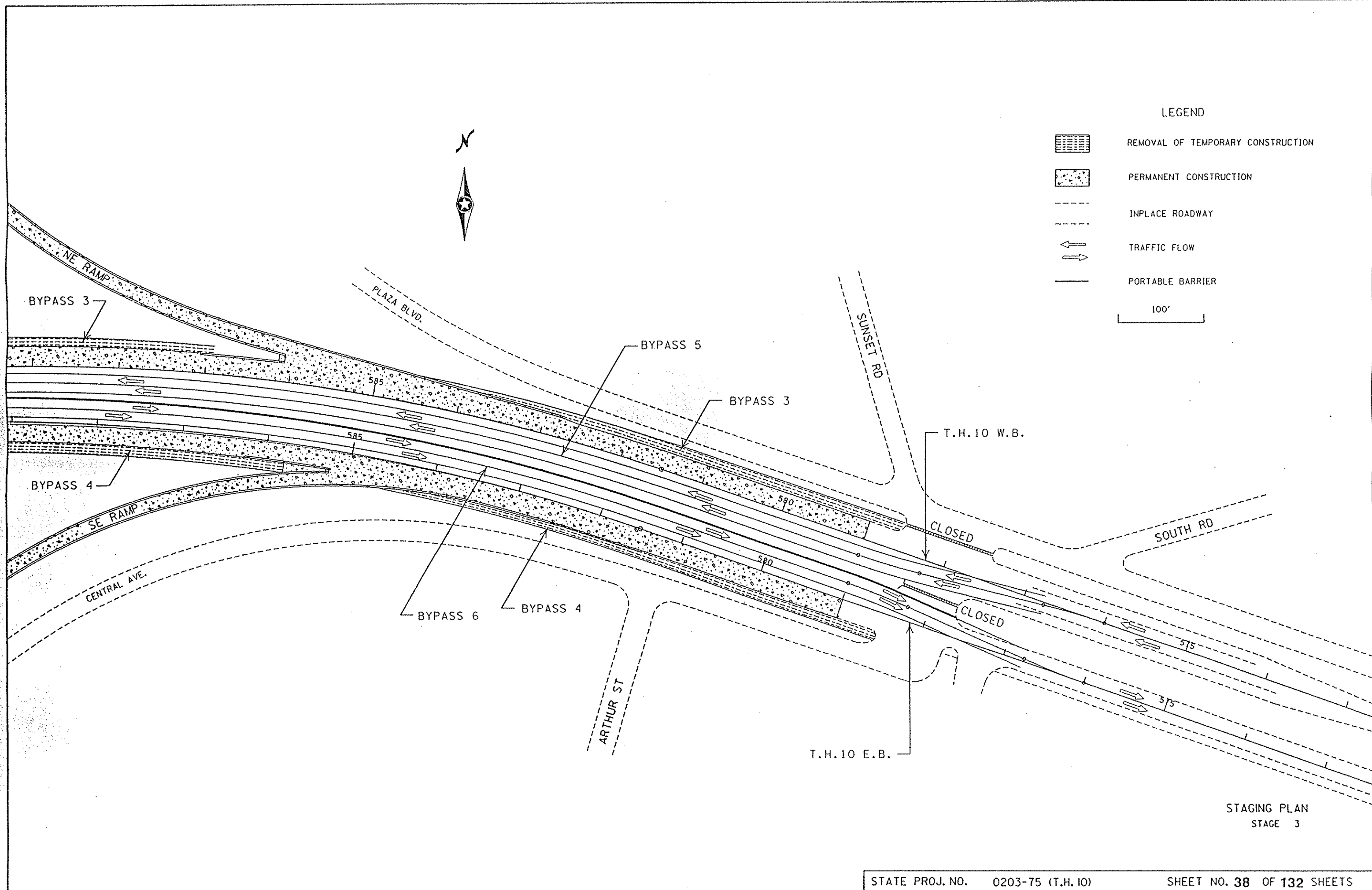
LEGEND

-  REMOVAL OF TEMPORARY CONSTRUCTION
-  PERMANENT CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  BRIDGE DECK CONSTRUCTION
-  PORTABLE BARRIER
-  IMPACT ATTENUATOR






100'

STAGING PLAN

STAGE 3



LEGEND

-  REMOVAL OF TEMPORARY CONSTRUCTION
  -  PERMANENT CONSTRUCTION
  -  INPLACE ROADWAY
  -  TRAFFIC FLOW
  -  PORTABLE BARRIER
- 100'

STAGING PLAN  
STAGE 3

**STAGE 4A TRAFFIC**

1. THE NW LOOP SHALL BE TEMPORARILY CLOSED WHILE THE CONSTRUCTION IS COMPLETED.

**STAGE 4A CONSTRUCTION**

1. COMPLETE REMOVALS AND CONSTRUCTION IN AREAS OF THE SW RAMP, NW LOOP, AND SE LOOP.





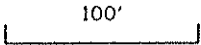
**STAGE 4B TRAFFIC**

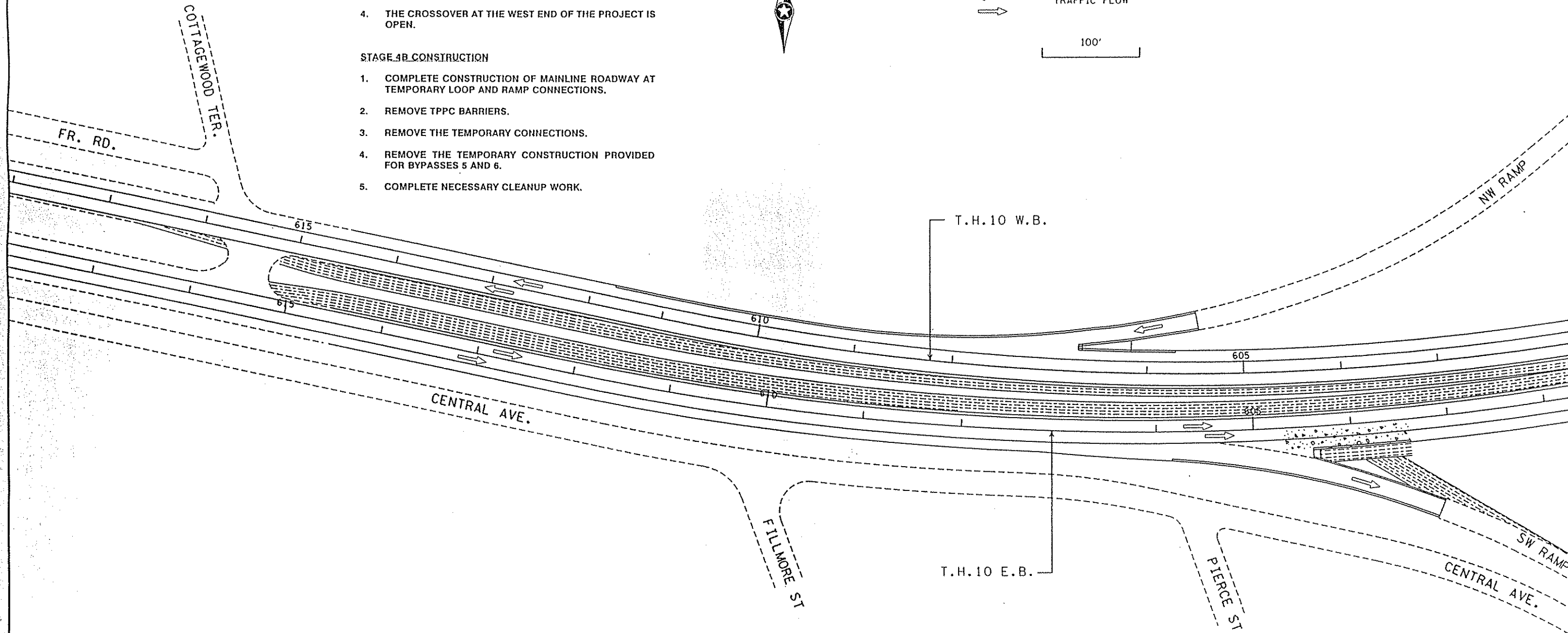
1. TRAFFIC UTILIZES THE MAINLINE ROADWAYS AS SHOWN.
2. TRAFFIC UTILIZES THE COMPLETED LOOPS AND RAMPS.
3. THE CROSSOVER AND FRONTAGE ROAD ACCESS AT THE EAST END OF THE PROJECT ARE OPEN.
4. THE CROSSOVER AT THE WEST END OF THE PROJECT IS OPEN.

**STAGE 4B CONSTRUCTION**

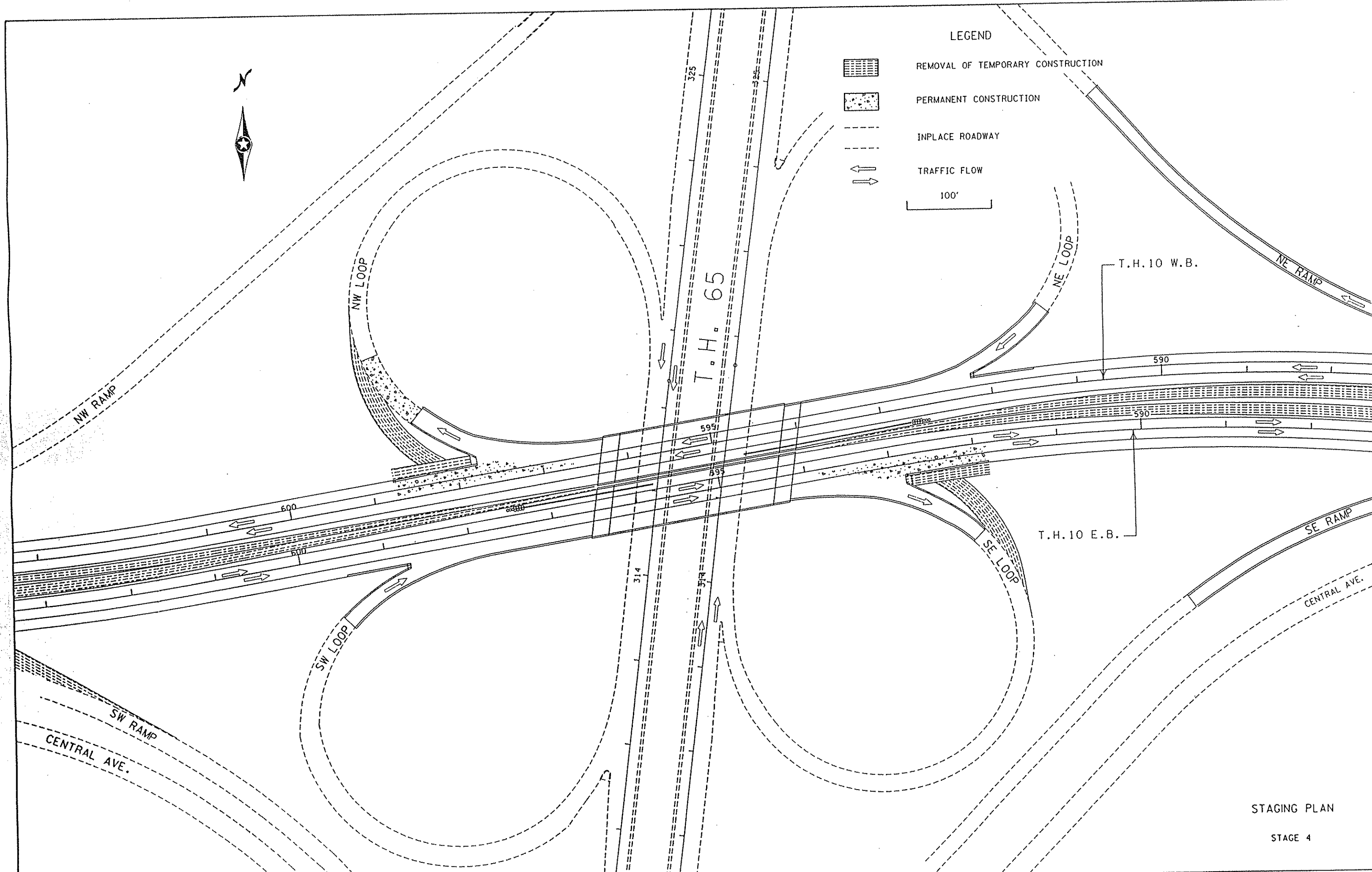
1. COMPLETE CONSTRUCTION OF MAINLINE ROADWAY AT TEMPORARY LOOP AND RAMP CONNECTIONS.
2. REMOVE TPPC BARRIERS.
3. REMOVE THE TEMPORARY CONNECTIONS.
4. REMOVE THE TEMPORARY CONSTRUCTION PROVIDED FOR BYPASSES 5 AND 6.
5. COMPLETE NECESSARY CLEANUP WORK.

**LEGEND**





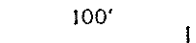
	REMOVAL OF TEMPORARY CONSTRUCTION
	PERMANENT CONSTRUCTION
	INPLACE ROADWAY
	TRAFFIC FLOW
	



STAGING PLAN  
STAGE 4



LEGEND




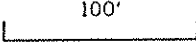
-  REMOVAL OF TEMPORARY CONSTRUCTION
-  PERMANENT CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  100'

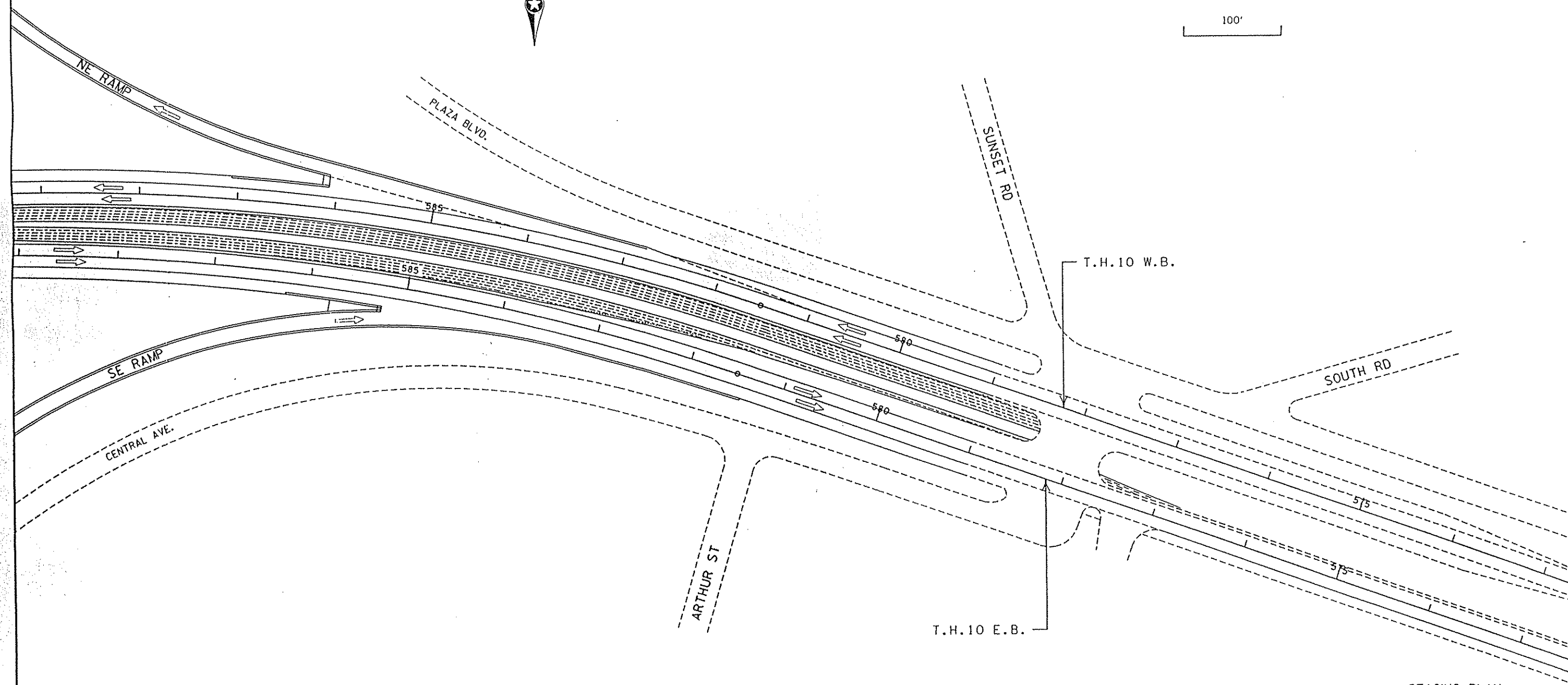
STAGING PLAN

STAGE 4



LEGEND

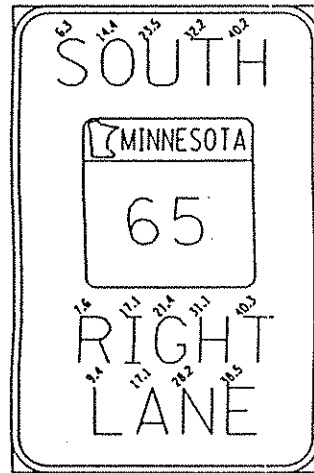
-  REMOVAL OF TEMPORARY CONSTRUCTION
-  INPLACE ROADWAY
-  TRAFFIC FLOW
-  100'



STAGING PLAN  
STAGE 4

# TRAFFIC CONTROL LAYOUT

## SPECIAL SIGNS

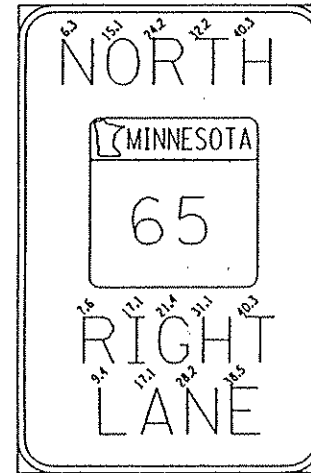


8"  
10"D  
7"  
36"  
7"  
10"D  
6.5"  
10"D  
8"

1

6

54" X 102"  
Black on Diamond Grade Orange  
1.25"Border 6"Radius

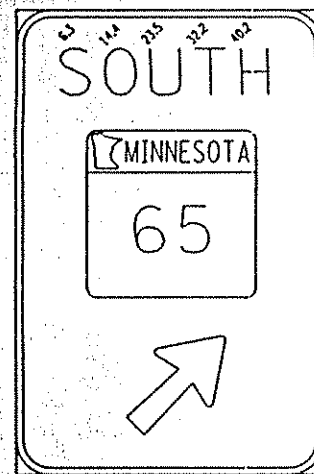


8"  
10"D  
7"  
36"  
7"  
10"D  
6.5"  
10"D  
8"

3

8

54" X 102"  
Black on Diamond Grade Orange  
1.25"Border 6"Radius

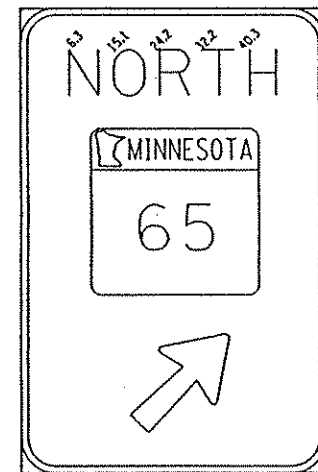


7.75"  
10"D  
6.5"  
36"  
5.75"  
23"  
7"

2

4

54" X 96" #16-29 Arrow  
Black on Diamond Grade Orange  
1.25"Border 6"Radius



7.75"  
10"D  
6.5"  
36"  
5.75"  
23"  
7"

5

7

54" X 96" #16-29 Arrow  
Black on Diamond Grade Orange  
1.25"Border 6"Radius

## NOTES:

1. Field conditions may require modifications of this layout as deemed necessary by the engineer.
2. All distances are approximate.
3. Diamond warning signs are 48" x 48" Black on Diamond Grade Orange unless otherwise indicated.
4. Barricades are 6' or 8' Type III White on Diamond Grade Orange unless otherwise indicated.
5. Obliterate any conflicting pavement markings.
6. Remove or cover any conflicting signing.
7. Cover or alter any conflicting overhead signing as directed by the engineer.
8. Polymer lane tape, TRPM's, barrier, barrier delineators, attenuators, modular glare screen and removal of pavement markings (paint) are separate bid items.
9. The type of striping (Mn/DOT paint, Polymer lane tape and/or TRPM's) are interchangeable according to actual conditions encountered as directed by the engineer.
10. Barrier delineators will be used at 50' spacing on top of the barrier when the barrier is within 3' of traffic unless otherwise noted or as directed by the engineer. Delineator spacing may be closer in transition areas.
11. The contractor shall be responsible for any extra signing needed to facilitate traffic switches or for transitioning traffic from one stage to another.
12. The contractor is responsible for protecting any work areas near traffic in accordance with the MUTCD.
13. The contractor shall remove without damage all signs in the construction area, store the signs at the construction area and replace them in Stage 4 or as needed.

Portable Concrete Barrier Delineators = MN/DOT approved top mounted (PORTABLE CONCRETE BARRIER DELINEATORS) with a minimum of 24 sq. in. of reflective surface area [except when side mounted barrier delineators are noted they shall have a minimum of 16 sq. in. of reflective surface area.]  
If a smaller approved barrier delineator is used it shall be at one half the spacing and at one half the bid price.

TRPM's = Temporary Raised Pavement Markers Type I with butyl pad.

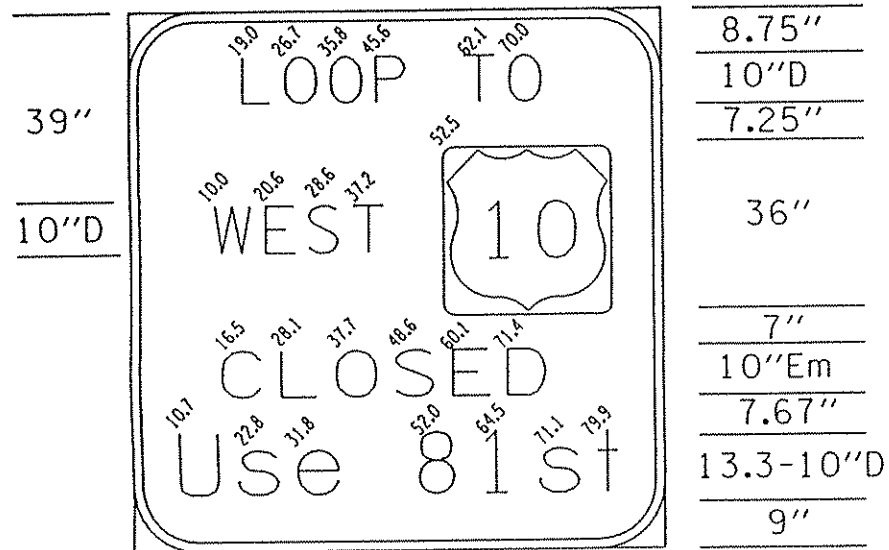
Flasher =

Steadyburn =

I HEREBY CERTIFY THAT SHEETS 42 THROUGH 71 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.

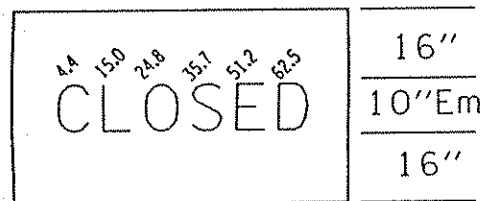
*Kerry Edman*

DATE 1-17-92 REG. NO. 8641  
DESIGNER KERRY EDMAN



96" X 108"  
Black on Diamond Grade Orange  
2"Border 12"Radius

9



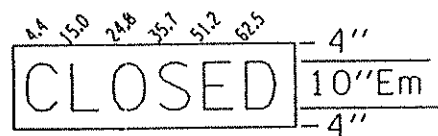
72" X 42" plate No Border  
Black on Diamond Grade Orange

10

13

14

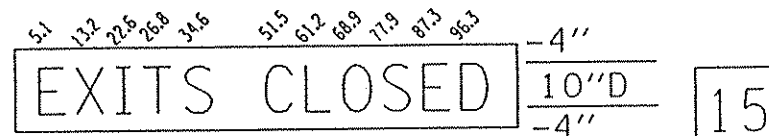
20



72" X 18" plate No Border  
Black on Diamond Grade Orange

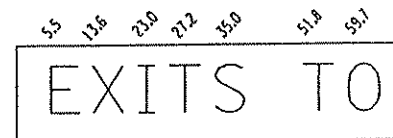
12

11



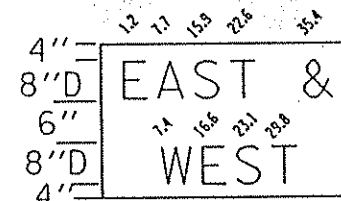
108" X 18" plate No Border  
Black on Diamond Grade Orange

15



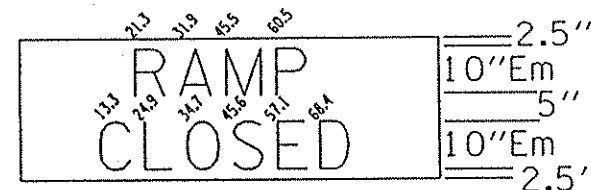
72" X 18" plate No Border  
Black on Diamond Grade Orange

16



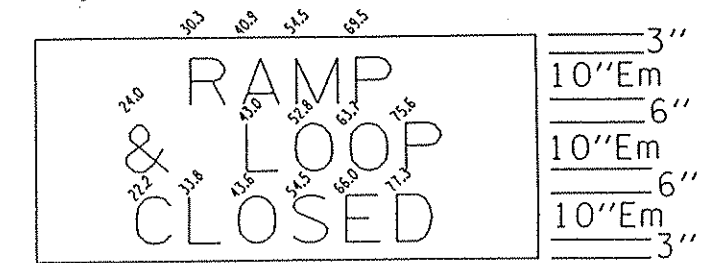
42" X 30" plate No Border  
Black on Diamond Grade Orange

17



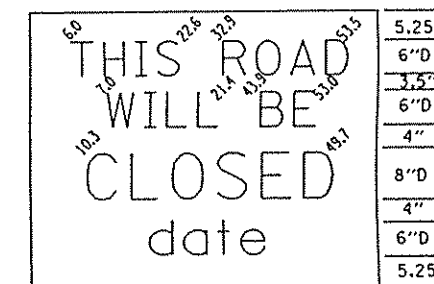
90" X 30" plate No Border  
Black on Diamond Grade Orange

18

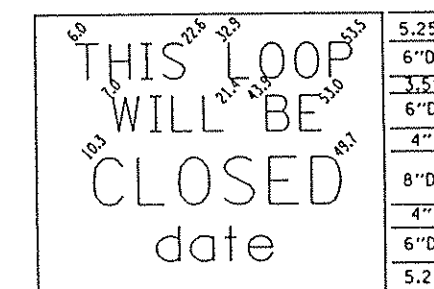


108" X 48" plate No Border  
Black on Diamond Grade Orange

19


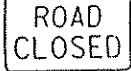










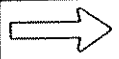






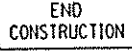

60" X 48"  
Black on Diamond Grade Orange  
1.25"Border 6"Radius


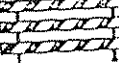
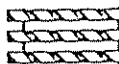






60" X 48"  
Black on Diamond Grade Orange  
1.25"Border 6"Radius

SPECIAL SIGNS

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	R3-X1	Black on White	30" X 30"	1
	R11-2	Black on White	48" X 30"	6
	M1-4	Black on White	24" X 24"	12
	M2-1	Black on White	21" X 15"	1
	M3-4	Black on White	24" X 12"	3
	M4-5	Black on White	24" X 12"	11
	M5-1L	Black on White	21" X 15"	3
	M5-1R	Black on White	21" X 15"	3
	M6-1	Black on White	21" X 15"	3
	M6-3	Black on White	21" X 15"	3

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	W1-6	Black on Orange	24" X 48"	8
	W4-1R	Black on Orange	48" X 48"	2
	W14-X7	Black on Orange	48" X 48"	8
	W20-X7R	Black on Orange	48" X 48"	4
	W20-x16	Black on Orange	48" X 48"	5
	W21-4	Black on Orange	48" X 48"	19
	W21-X1	Black on Orange	48" X 48"	2
	G20-2	Black on Orange	60" X 24"	4
	E5-1	White on Green	72" X 60"	4

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	DRUM	White on Orange	Standard	178
	Barricade	White on Orange	6-8'	22
	Barricade	White on Orange	6-8'	8
	SEE DETAIL	Black on Orange	60" X 48"	2
	SEE DETAIL	Black on Orange	60" X 48"	1
	X4-2	Yellow on Yellow	18" X 18"	8
	X4-2	Yellow on Black	18" X 36"	2

STAGE 1

TRAFFIC CONTROL DEVICES DETAILS

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	R1-1	White on Red	48" X 48"	3
	R3-X1	Black on White	30" X 30"	2
	R11-2	Black on White	48" X 30"	7
	R3-1	Black & Red on White	36" X 36"	1
	R3-2	Black & Red on White	36" X 36"	2
	R3-5R	Black on White	30" X 36"	2
	R5-1	White on Red	30" X 30"	2
	R6-1R	Black on White	48" X 18"	6
	X4-2	Yellow on Yellow	18" X 18"	4
	X4-2	Yellow on Black	18" X 36"	2

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	W1-6	Black on Orange	24" X 48"	8
	W4-1R	Black on Orange	48" X 48"	2
	W14-X7	Black on Orange	48" X 48"	8
	W20-X7R	Black on Orange	48" X 48"	4
	W20-x16	Black on Orange	48" X 48"	5
	W21-4	Black on Orange	48" X 48"	19
	W13-2	Black on Orange	48" X 60"	2
	W20-X7L	Black on Orange	48" X 48"	4
	E5-1	White on Green	72" X 60"	4
	G20-2	Black on Orange	60" X 24"	4

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	DRUM	White on Orange	Standard	43
	Barricade	White on Orange	6-8'	16
	Barricade	White on Orange	6-8'	15
	M1-4	Black on White	24" X 24"	12
	M2-1	Black on White	21" X 15"	1
	M3.4	Black on White	24" X 12"	3
	M4-5	Black on White	24" X 12"	11
	M5-1L	Black on White	21" X 15"	3
	M5-1R	Black on White	21" X 15"	3
	M6-1	Black on White	21" X 15"	3
	M6-3	Black on White	21" X 15"	3

STAGE 2

TRAFFIC CONTROL DEVICES DETAILS


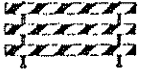
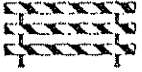







SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	R1-1	White on Red	48" X 48"	3
	R3-X1	Black on White	30" X 30"	1
	R11-2	Black on White	48" X 30"	10
	R3-1	Black & Red on White	36" X 36"	2
	R3-2	Black & Red on White	36" X 36"	4
	R3-5R	Black on White	30" X 36"	2
	R5-1	White on Red	30" X 30"	2
	R6-1R	Black on White	48" X 18"	6
	R4-7	Black on White	24" X 30"	1
	X4-2	Yellow on Yellow	18" X 18"	6
	X4-2	Yellow on Black	18" X 36"	1
	X4-2	Yellow on Black	18" X 36"	2

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	W1-6	Black on Orange	24" X 48"	8
	W20-X7L	Black on Orange	48" X 48"	4
	W14-X7	Black on Orange	48" X 48"	10
	W20-X7R	Black on Orange	48" X 48"	4
	W20-x16	Black on Orange	48" X 48"	5
	W21-4	Black on Orange	48" X 48"	18
	G20-2	Black on Orange	48" X 60"	4
	E5-1	White on Green	60" X 24"	3
	DRUM	White on Orange	Standard	198
	Barricade	White on Orange	6-8'	54
	Barricade	White on Orange	6-8'	10

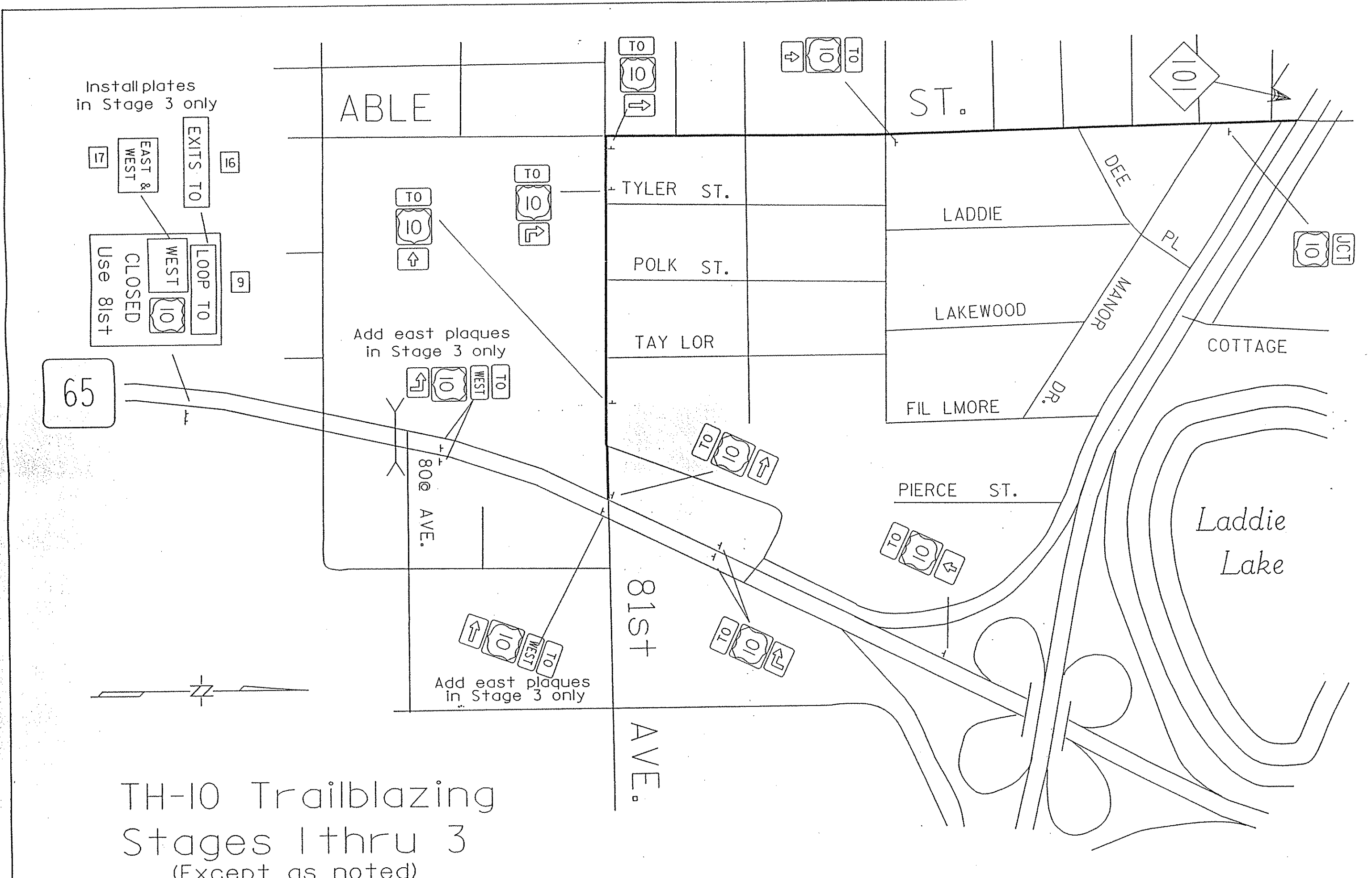
SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	SEE DETAIL	Black on Orange	60" X 48"	3
	M3-2A	White on Blue	24" X 12"	3
	M1-5A	White on Blue	24" X 24"	9
	M1-4	Black on White	24" X 24"	12
	M2-1	Black on White	21" X 15"	1
	M3-4	Black on White	24" X 12"	3
	M4-5	Black on White	24" X 12"	20
	M5-1L	Black on White	21" X 15"	3
	M5-1R	Black on White	21" X 15"	6
	M6-1	Black on White	21" X 15"	5
	M6-3	Black on White	21" X 15"	7

STAGE 3

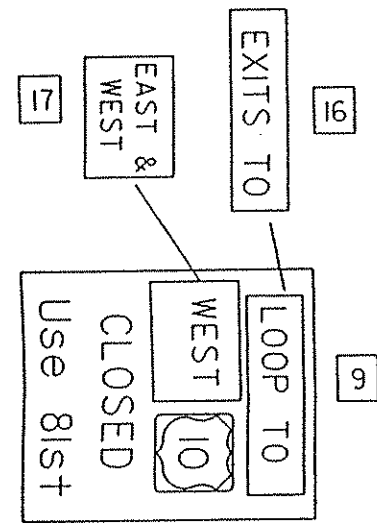
TRAFFIC CONTROL DEVICES DETAILS

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	EST. QUANTITY
	DRUM	White on Orange	Standard	172
	Barricade	White on Orange	6-8'	5
	Barricade	White on Orange	6-8'	10
	W21-4	Black on Orange	48" X 48"	10
	W21-X1	Black on Orange	48" X 48"	1
	W20-x16	Black on Orange	48" X 48"	2
	W1-6	Black on Orange	24" X 48"	4
	R5-1	White on Red	30" X 30"	2
	R11-2	Black on White	48" X 30"	1
	G20-2	Black on Orange	60" X 24"	2

STAGE 4



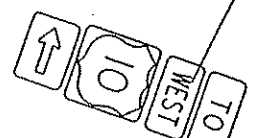
Install plates  
in Stage 3 only



Add east plaques  
in Stage 3 only

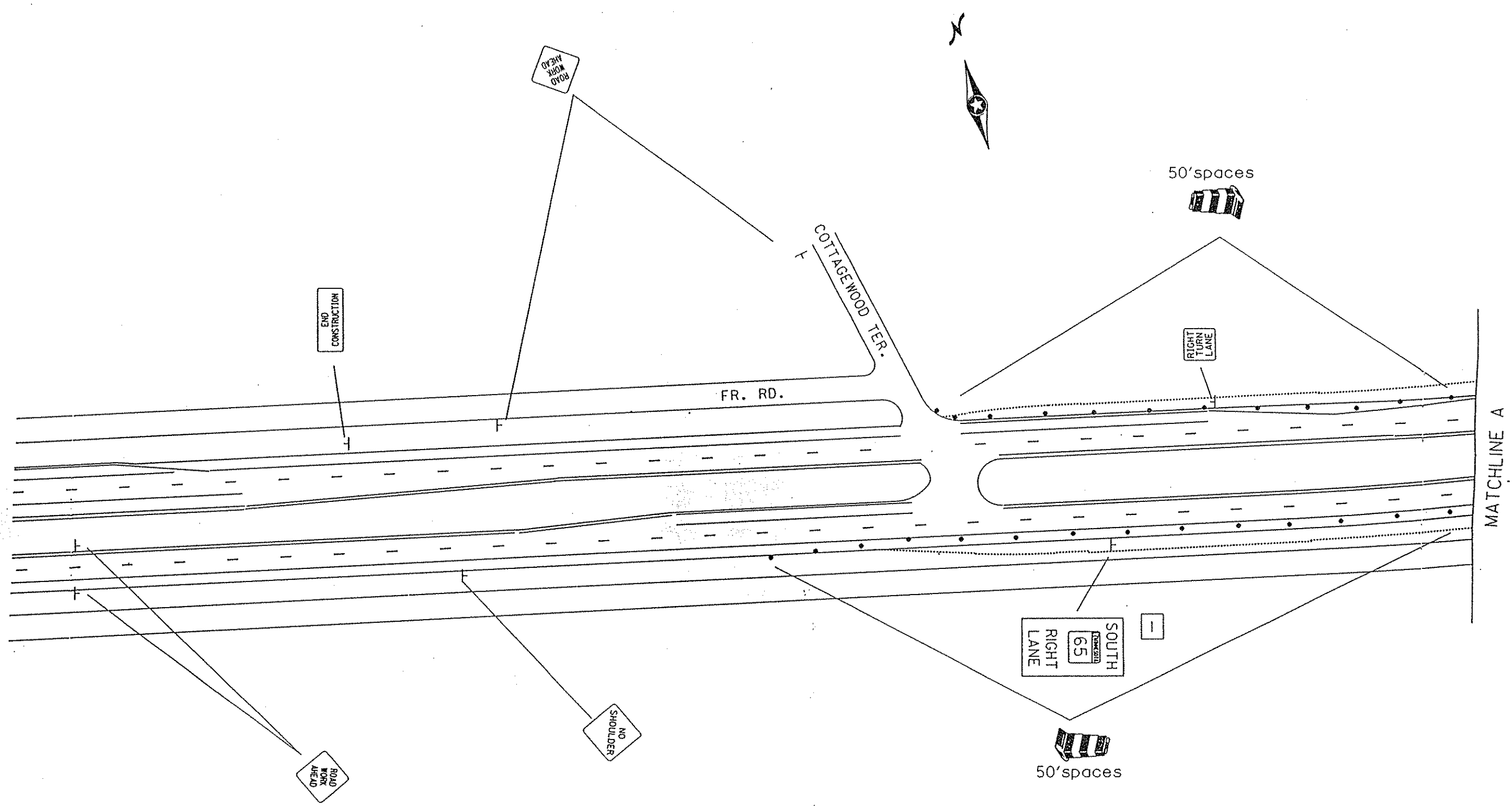


Add east plaques  
in Stage 3 only

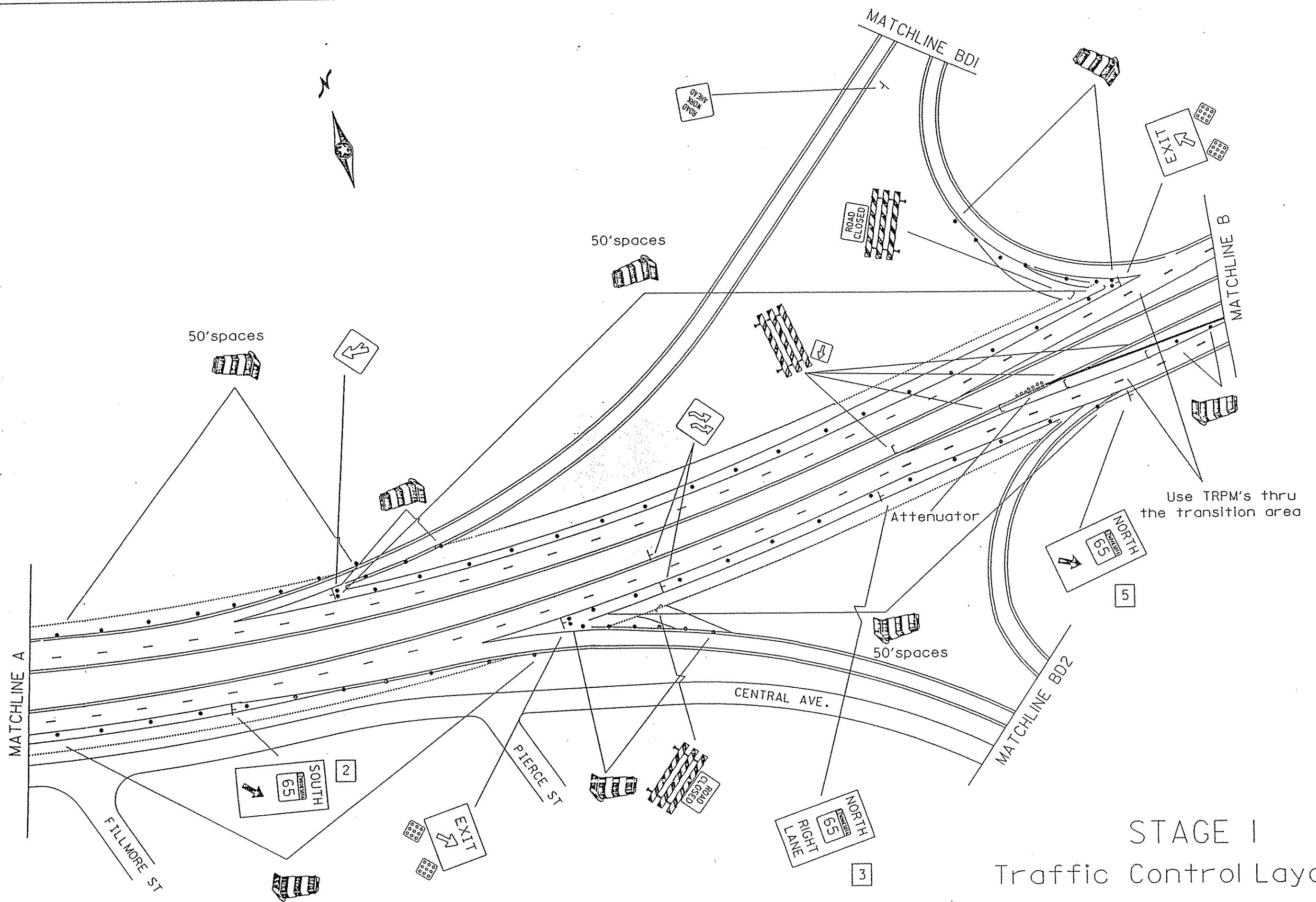


# TH-10 Trailblazing Stages 1 thru 3 (Except as noted)

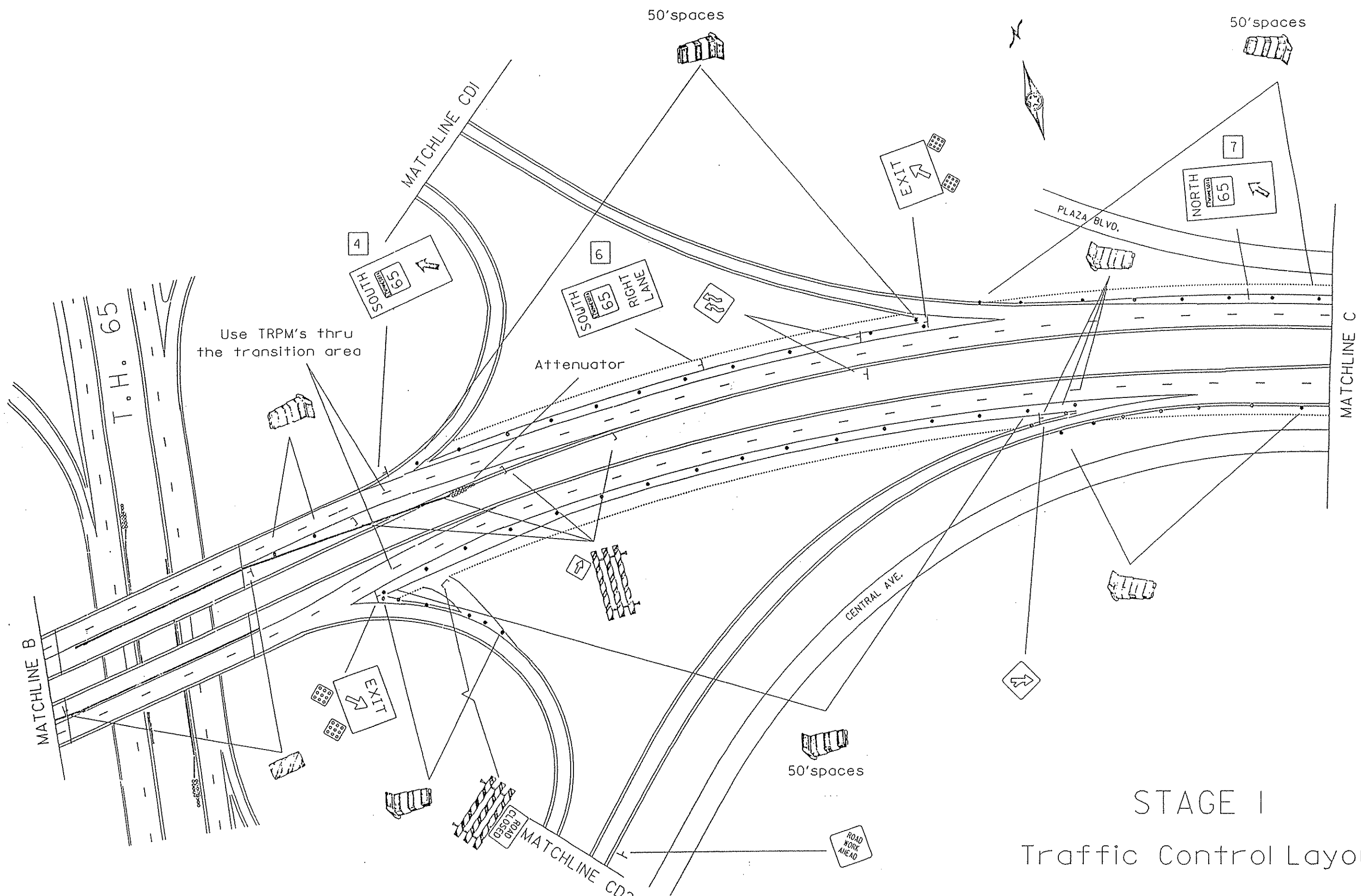




STAGE I  
Traffic Control Layout

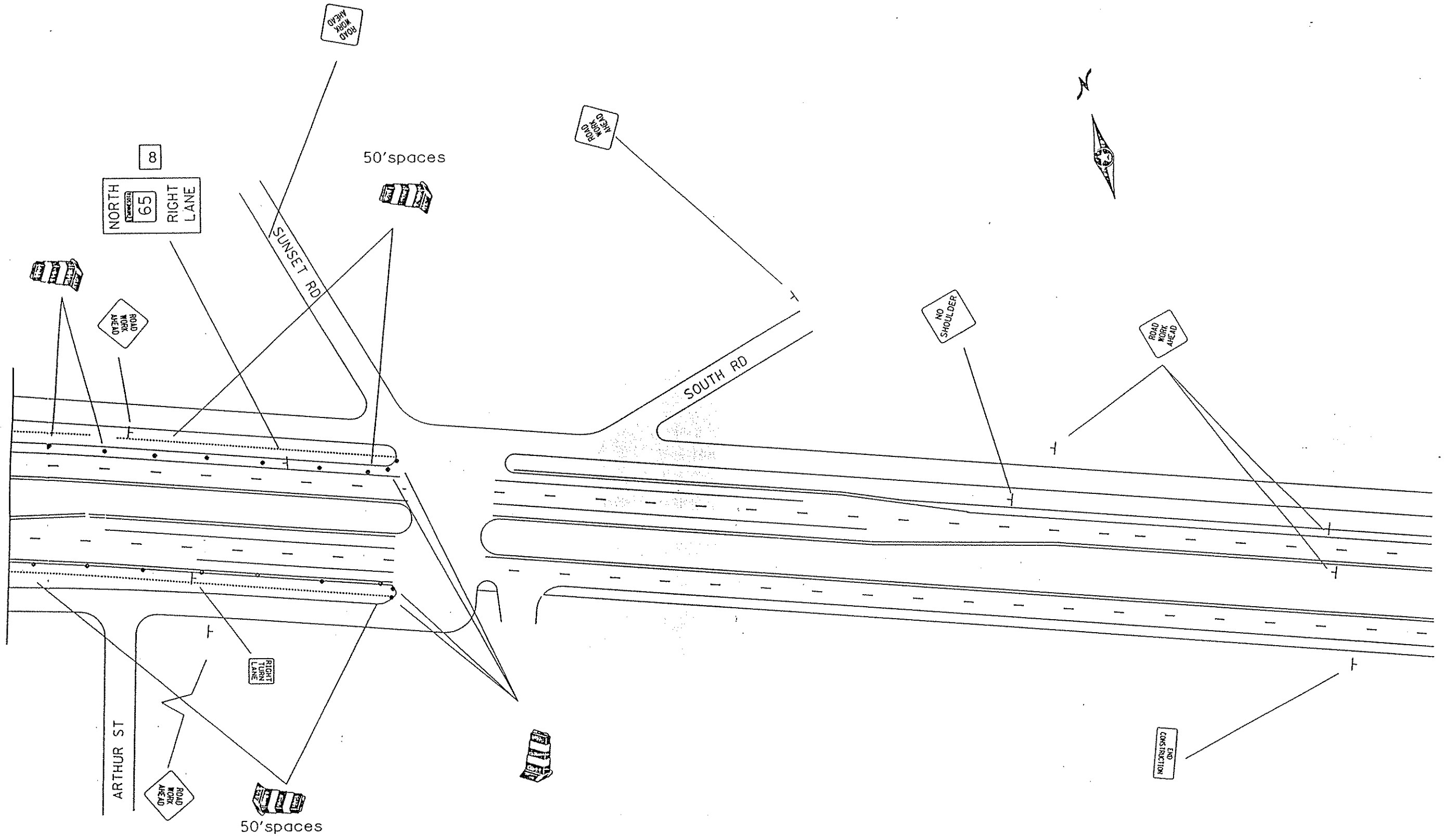


STAGE I  
Traffic Control Layout

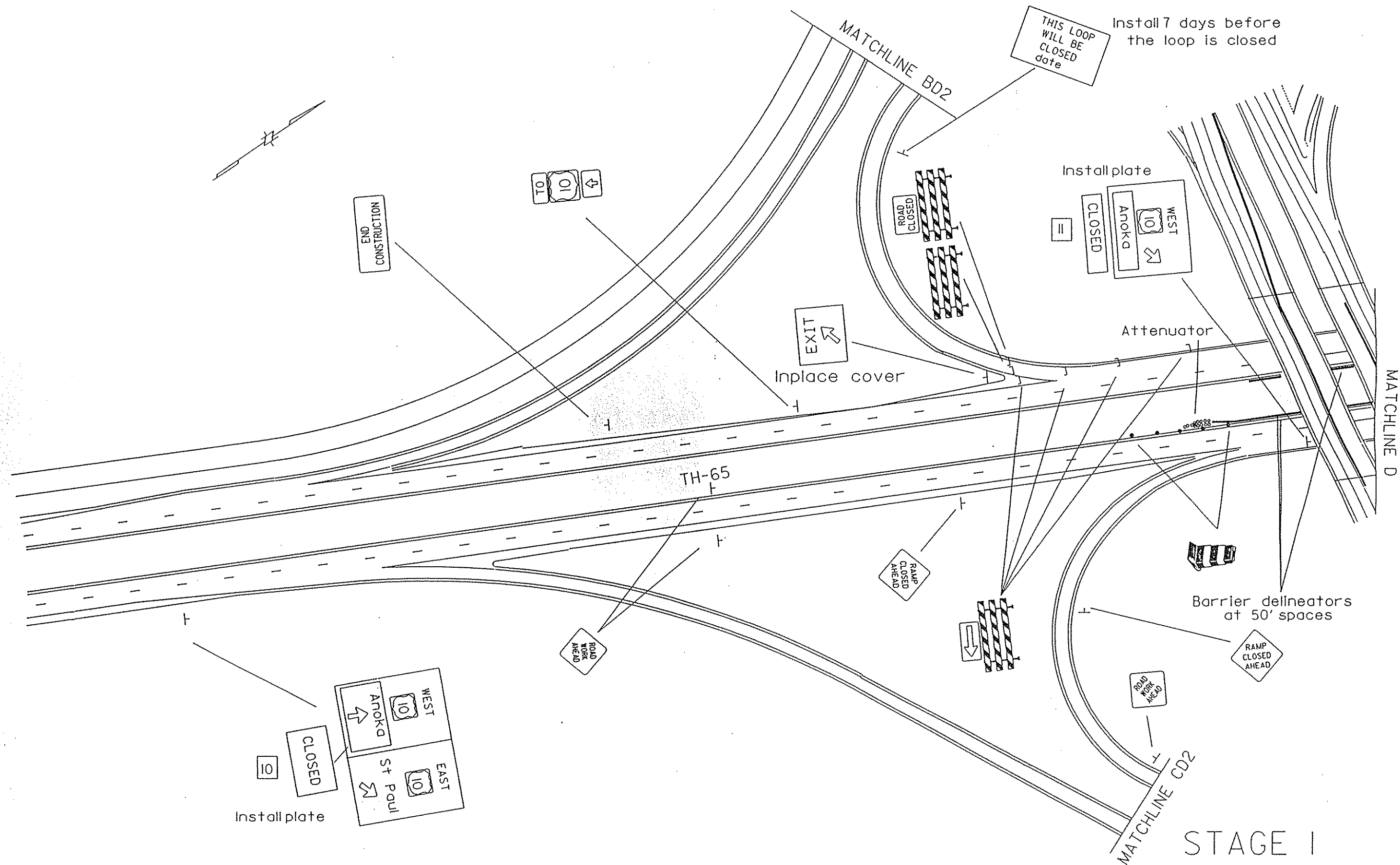


STAGE I  
Traffic Control Layout

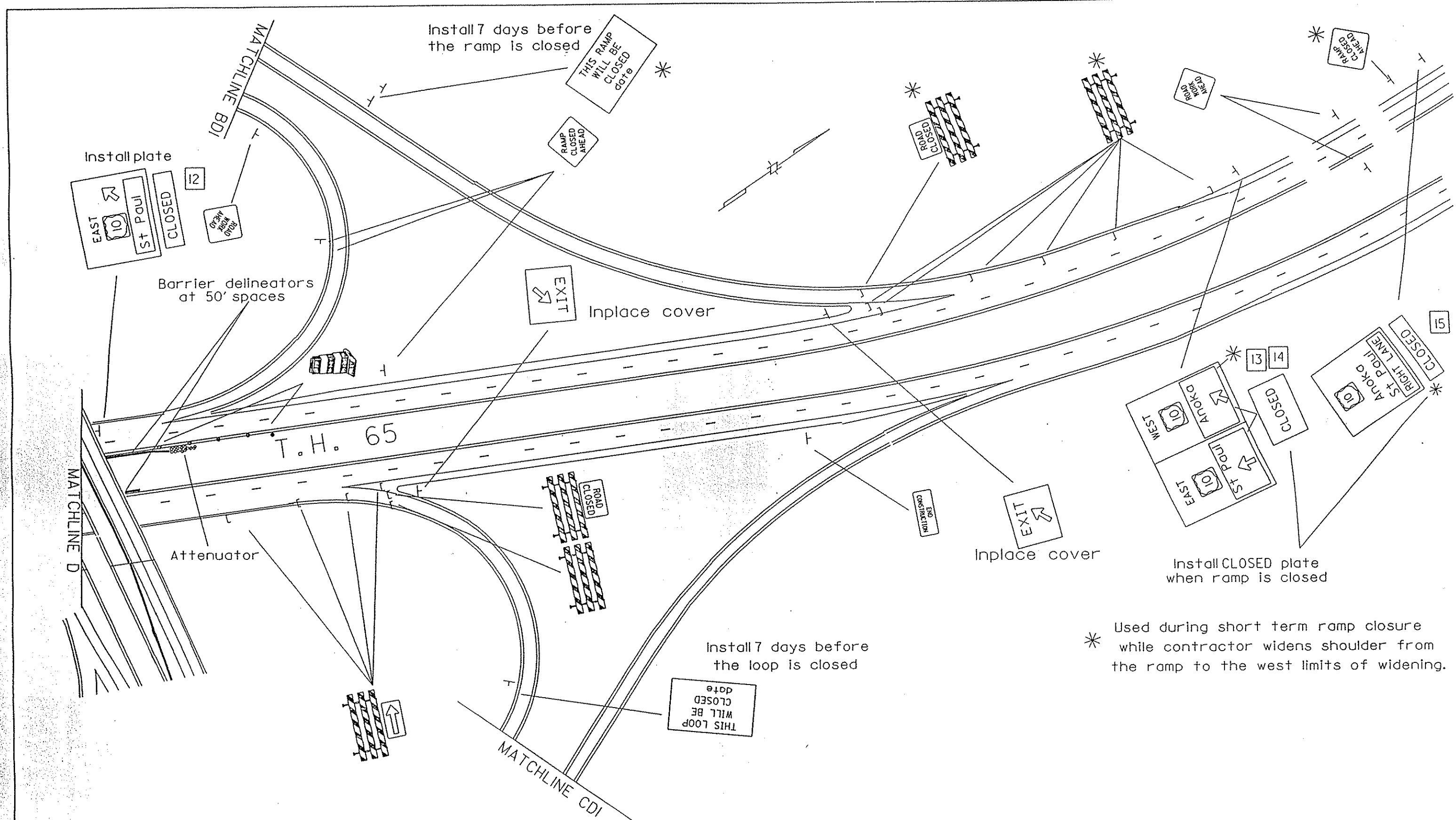
MATCHLINE C



STAGE I  
Traffic Control Layout



STAGE I  
Traffic Control Layout



Install 7 days before the ramp is closed

THIS RAMP WILL BE CLOSED date \*

Install plate  
EAST 10  
St Paul  
CLOSED 12  
ROAD AHEAD

Barrier delineators at 50' spaces

EXIT  
Inplace cover

ROAD CLOSED

ROAD AHEAD

RAMP CLOSED AHEAD \*

T.H. 65

MATCHLINE D

Attenuator

ROAD CLOSED

END OF CONSTRUCTION

EXIT  
Inplace cover

13 14  
CLOSED  
ANOKA WEST  
ANOKA EAST  
St Paul  
CLOSED

15  
CLOSED  
St Paul  
RIGHT LANE  
CLOSED

Install CLOSED plate when ramp is closed

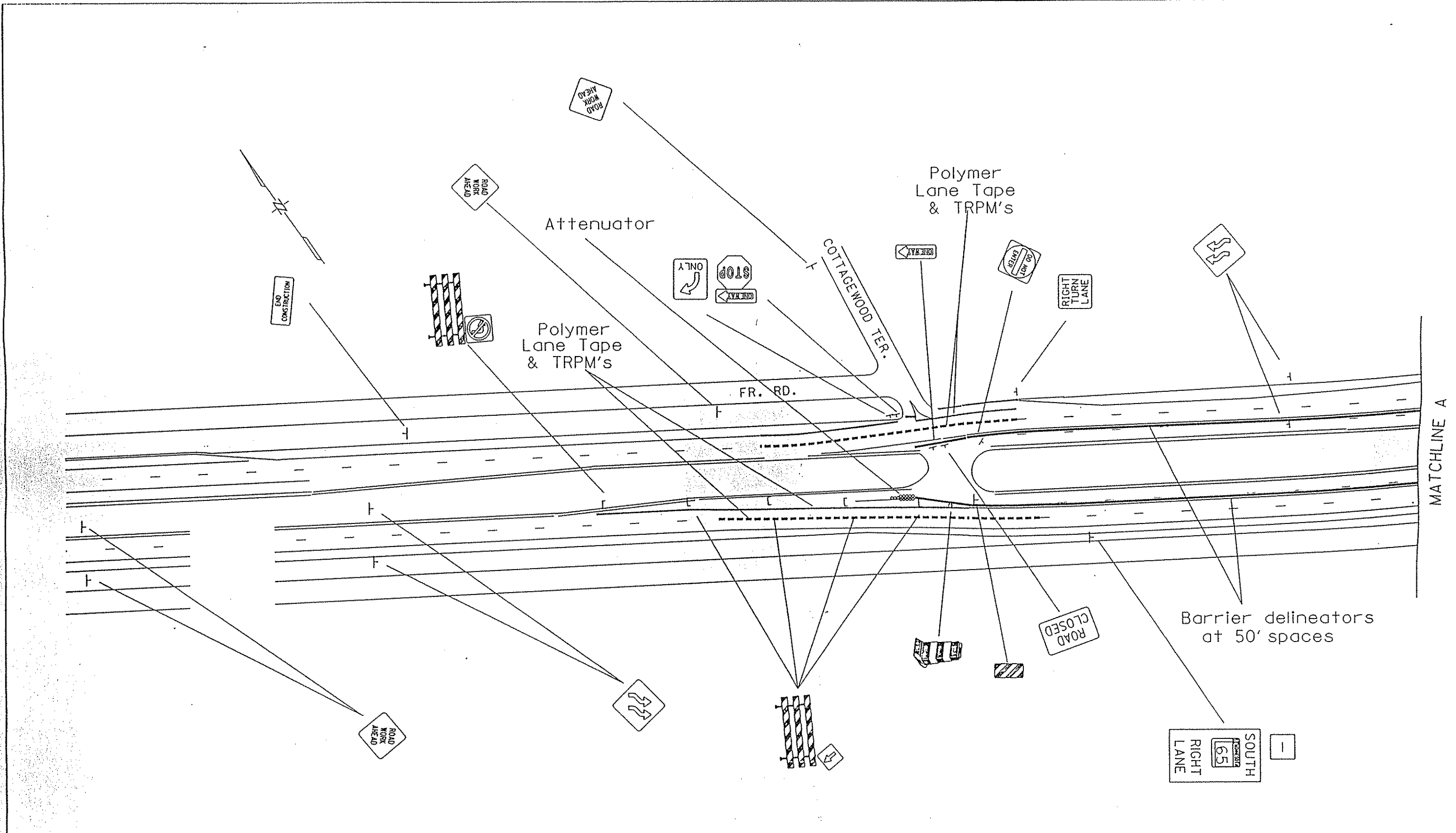
Install 7 days before the loop is closed

THIS LOOP WILL BE CLOSED date

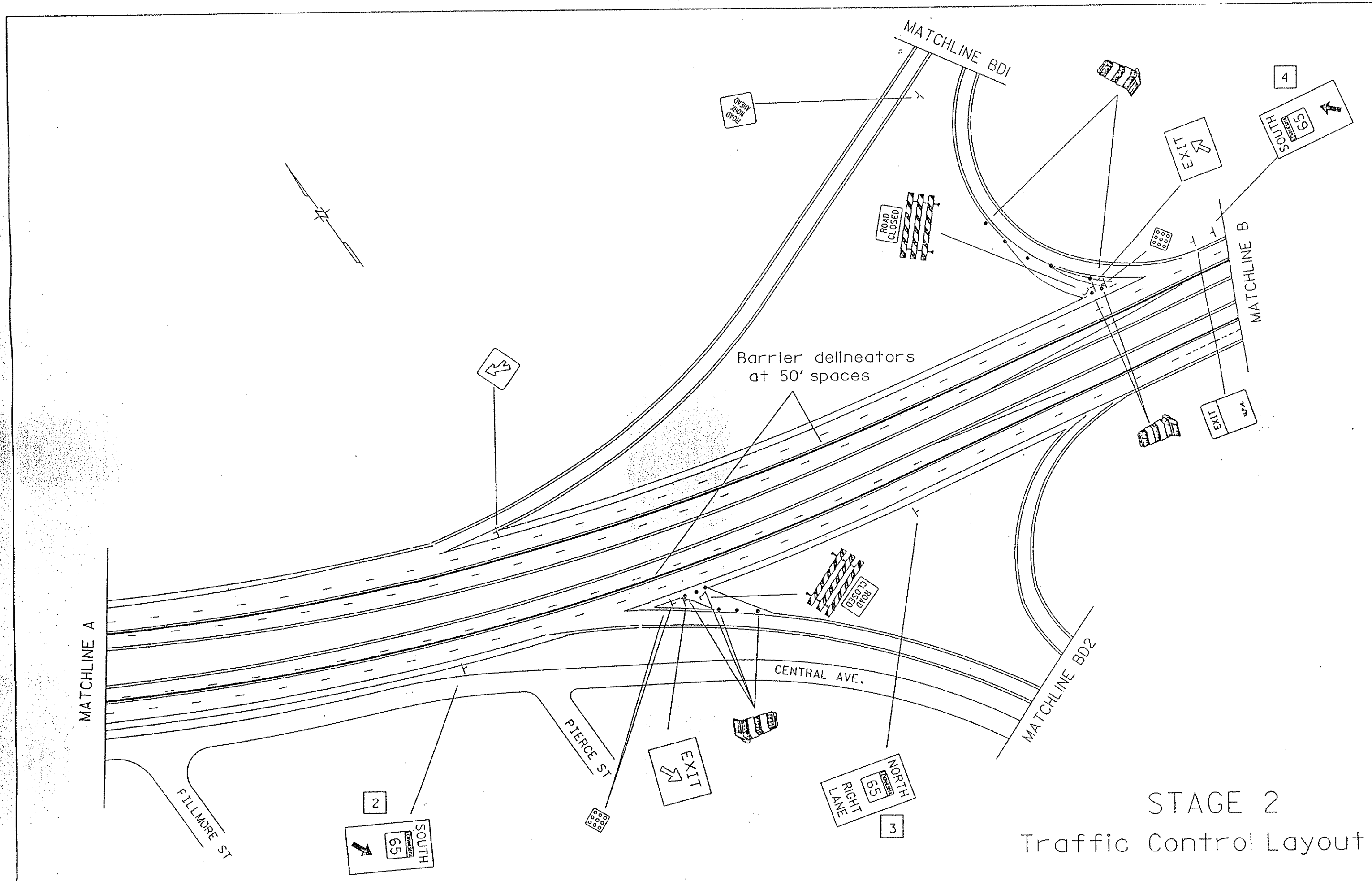
MATCHLINE CDI

\* Used during short term ramp closure while contractor widens shoulder from the ramp to the west limits of widening.

# STAGE I Traffic Control Layout

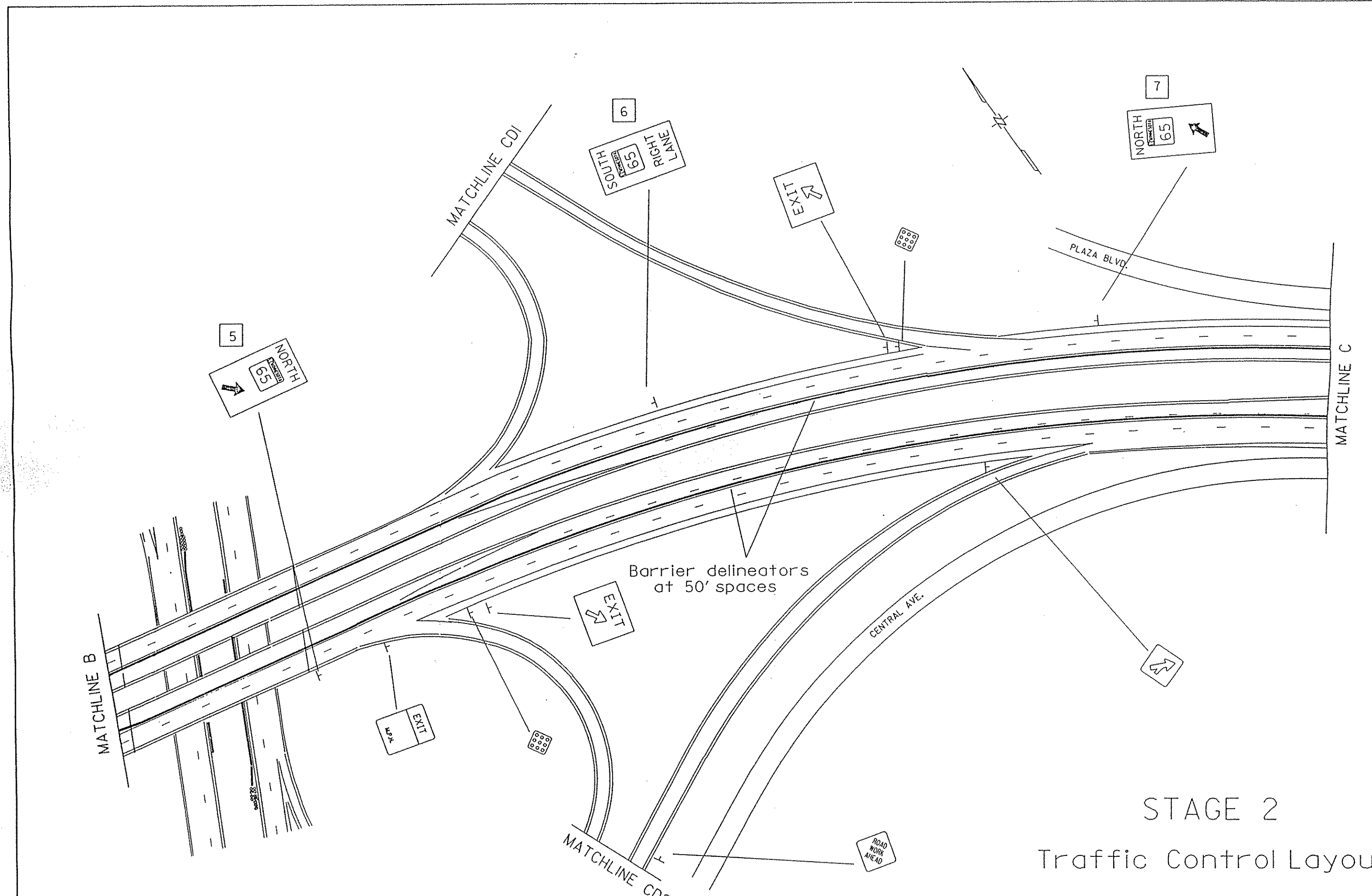


STAGE 2  
Traffic Control Layout



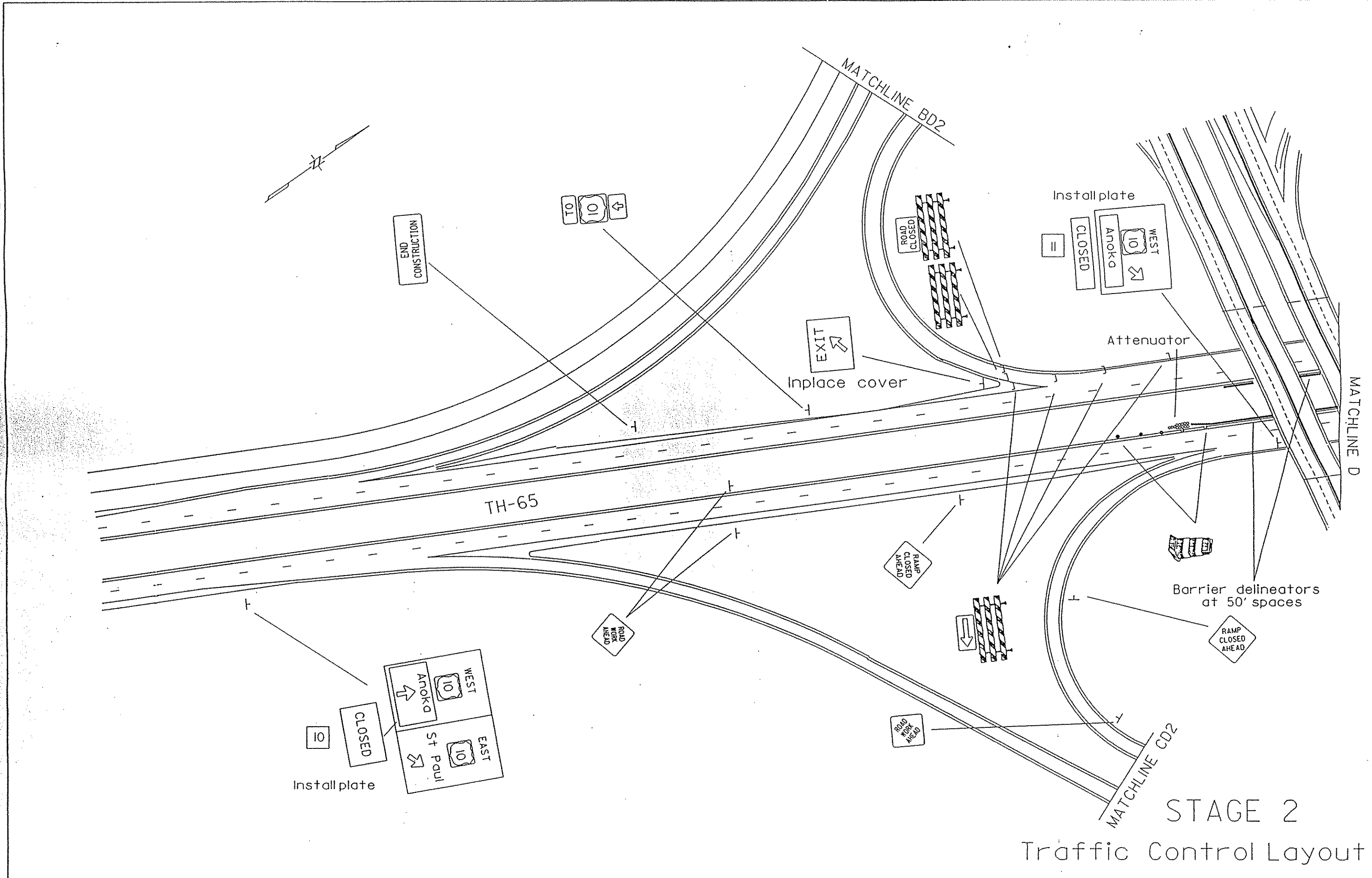
STAGE 2  
Traffic Control Layout





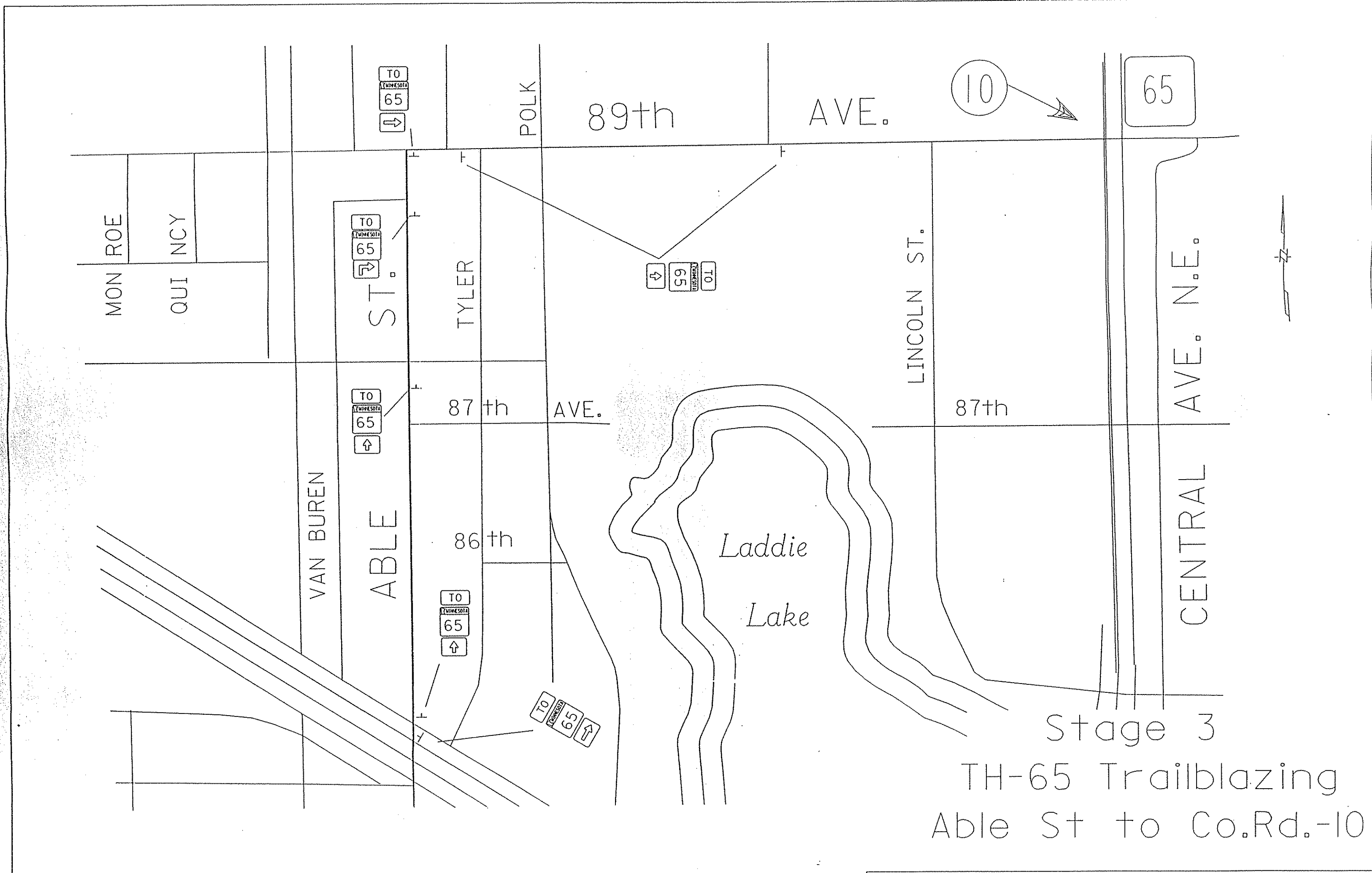
STAGE 2  
Traffic Control Layout



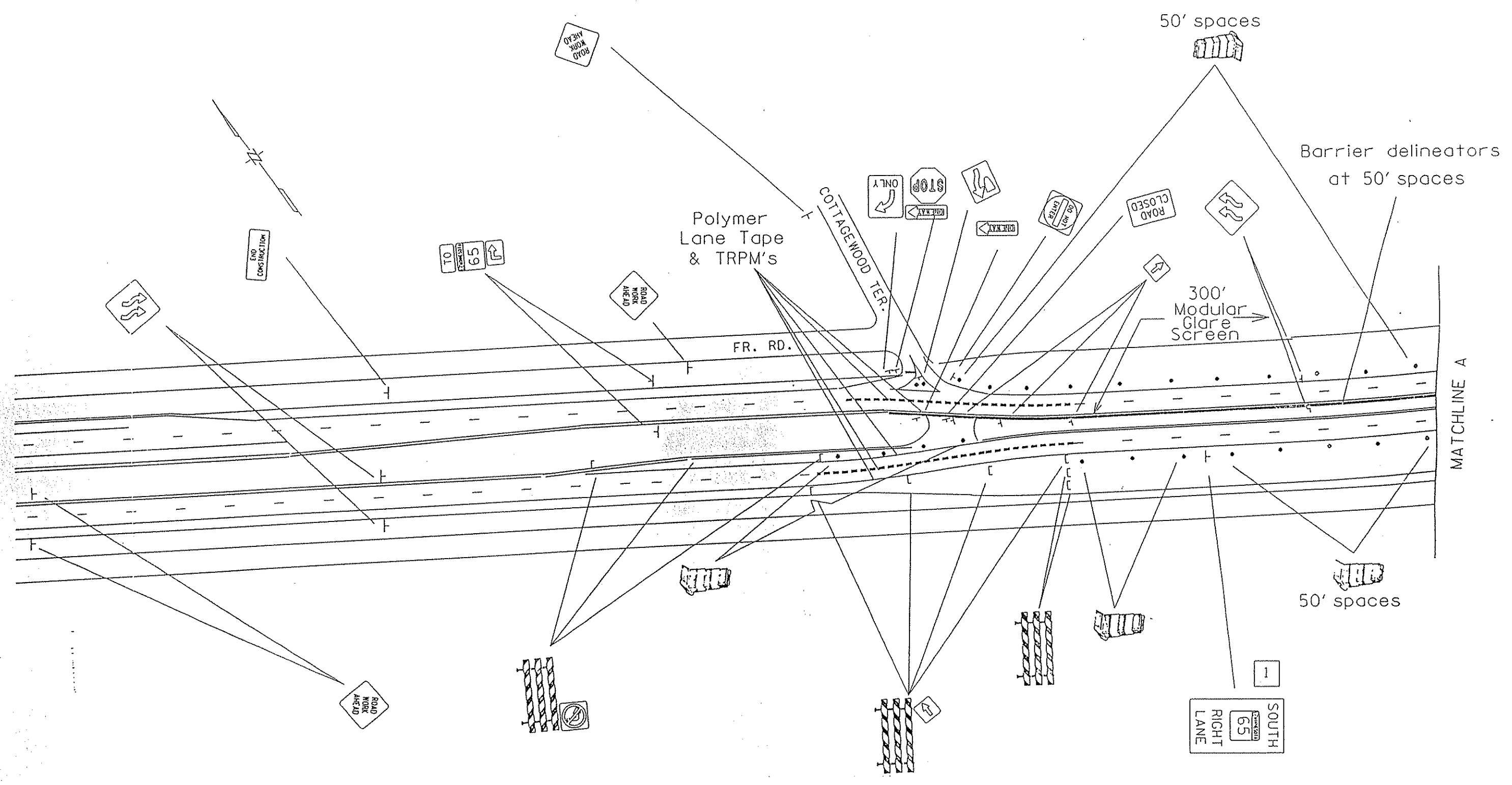


STAGE 2  
Traffic Control Layout



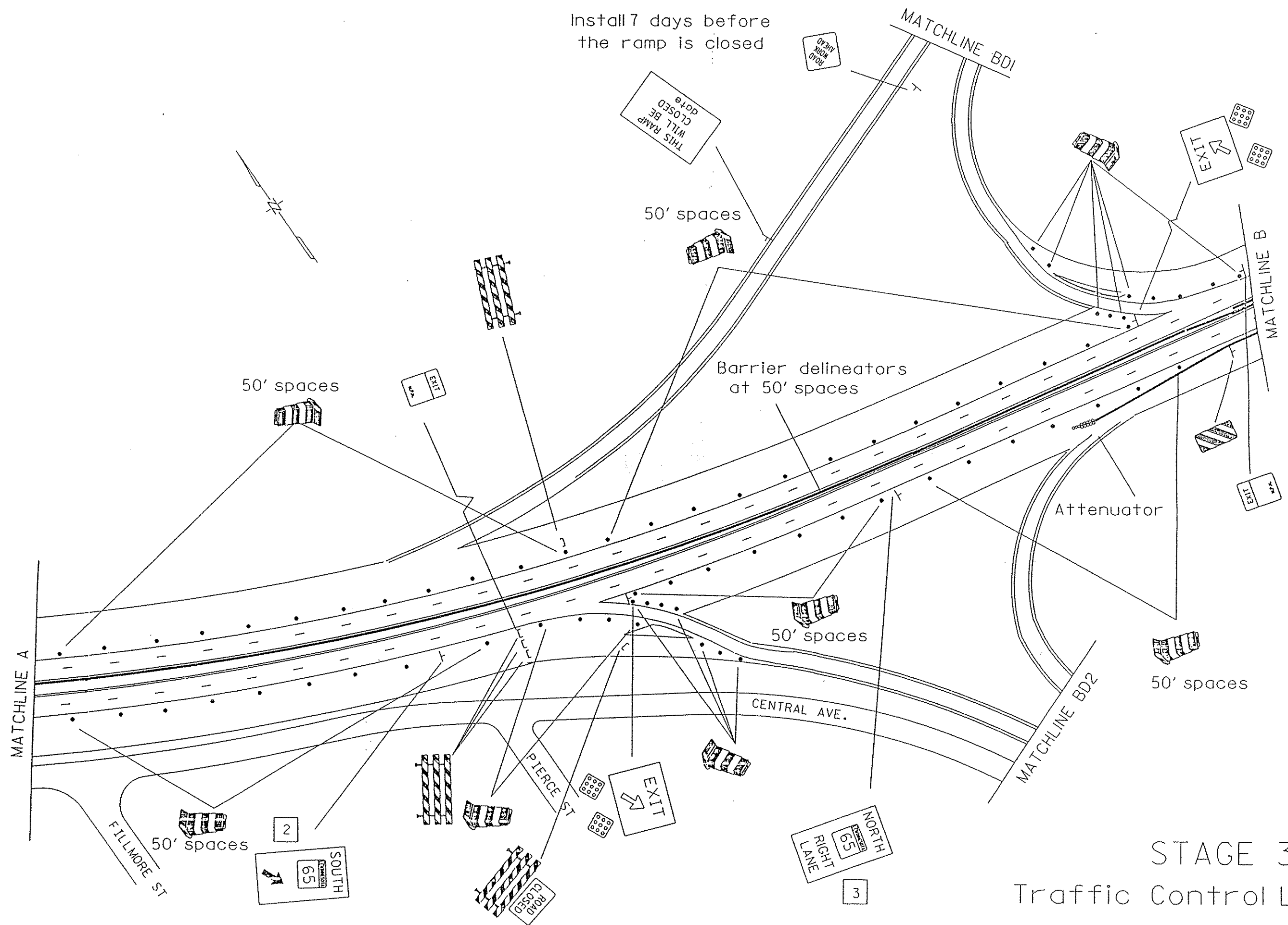


Stage 3  
 TH-65 Trailblazing  
 Able St to Co.Rd.-10



STAGE 3  
Traffic Control Layout

Install 7 days before  
the ramp is closed



STAGE 3  
Traffic Control Layout





Close Tight

8 18  
NORTH  
65  
RAMP  
CLOSED

SUNSET RD

SOUTH RD  
Polymer  
Lane Tape  
& TRPM's

Barrier delineators  
at 50' spaces

50' spaces

MATCHLINE C

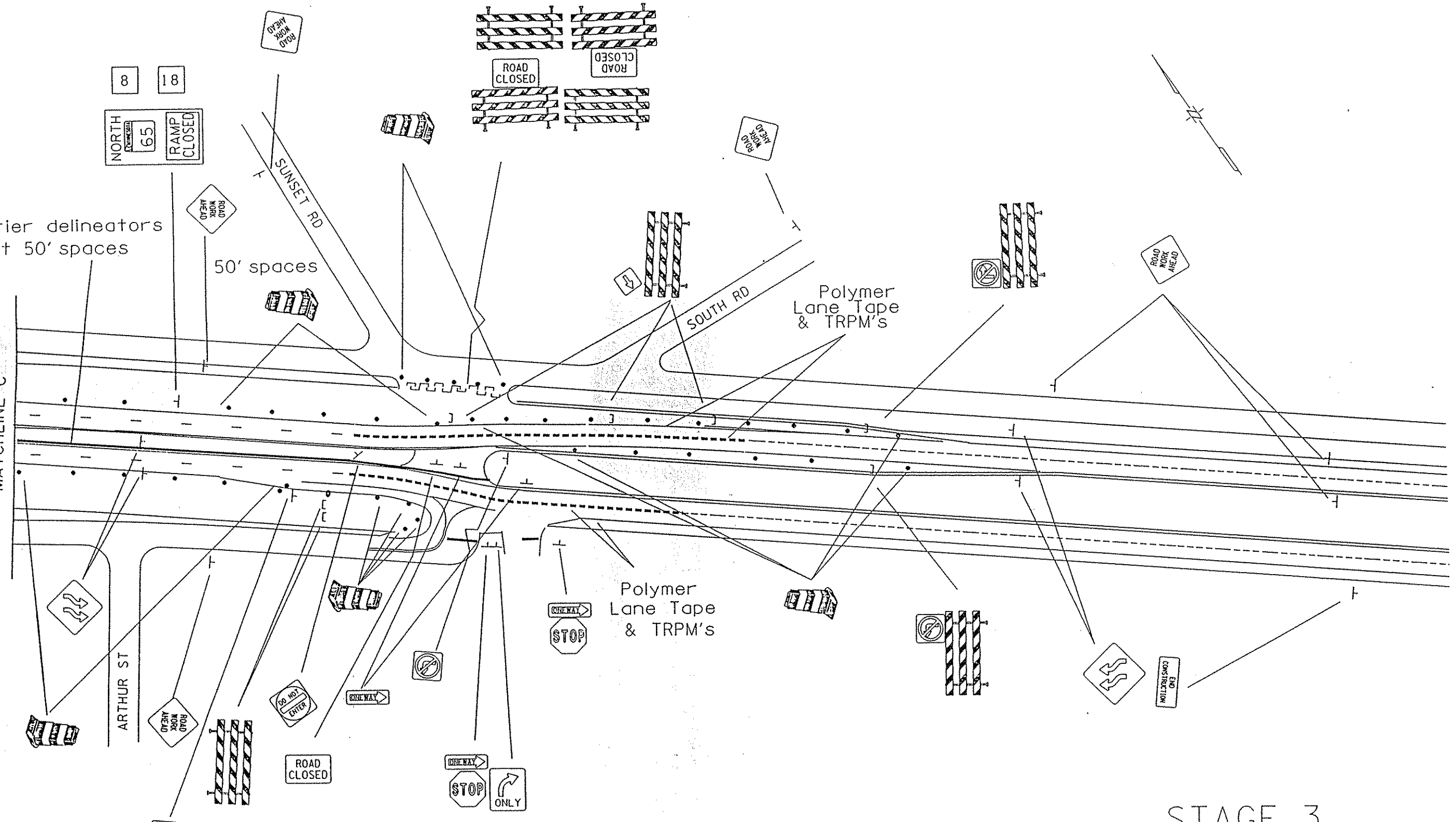
ARTHUR ST

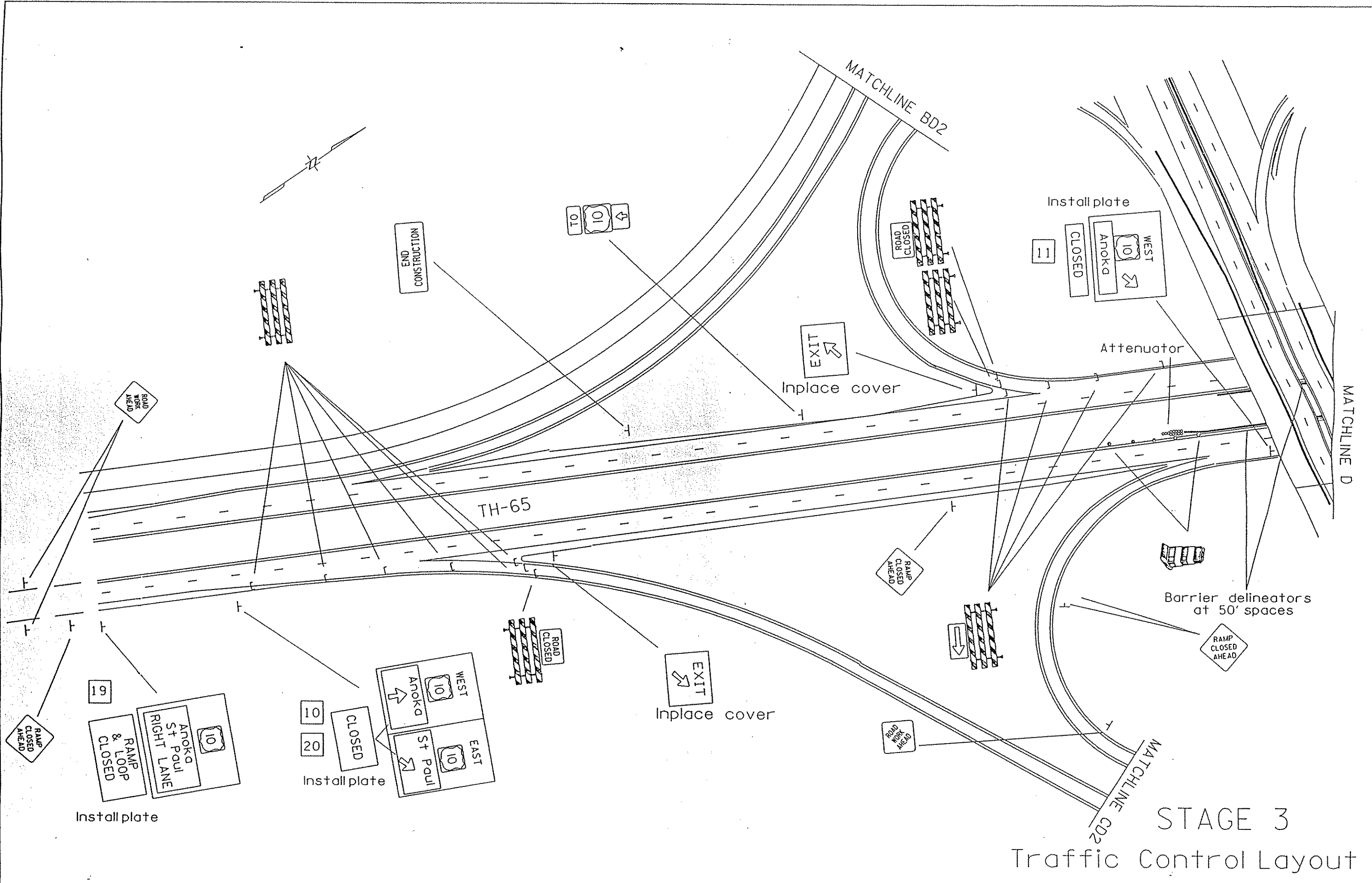
Polymer  
Lane Tape  
& TRPM's

END  
CONSTRUCTION

To be used whenever a turn lane  
can be provided, gravel or otherwise

# STAGE 3 Traffic Control Layout

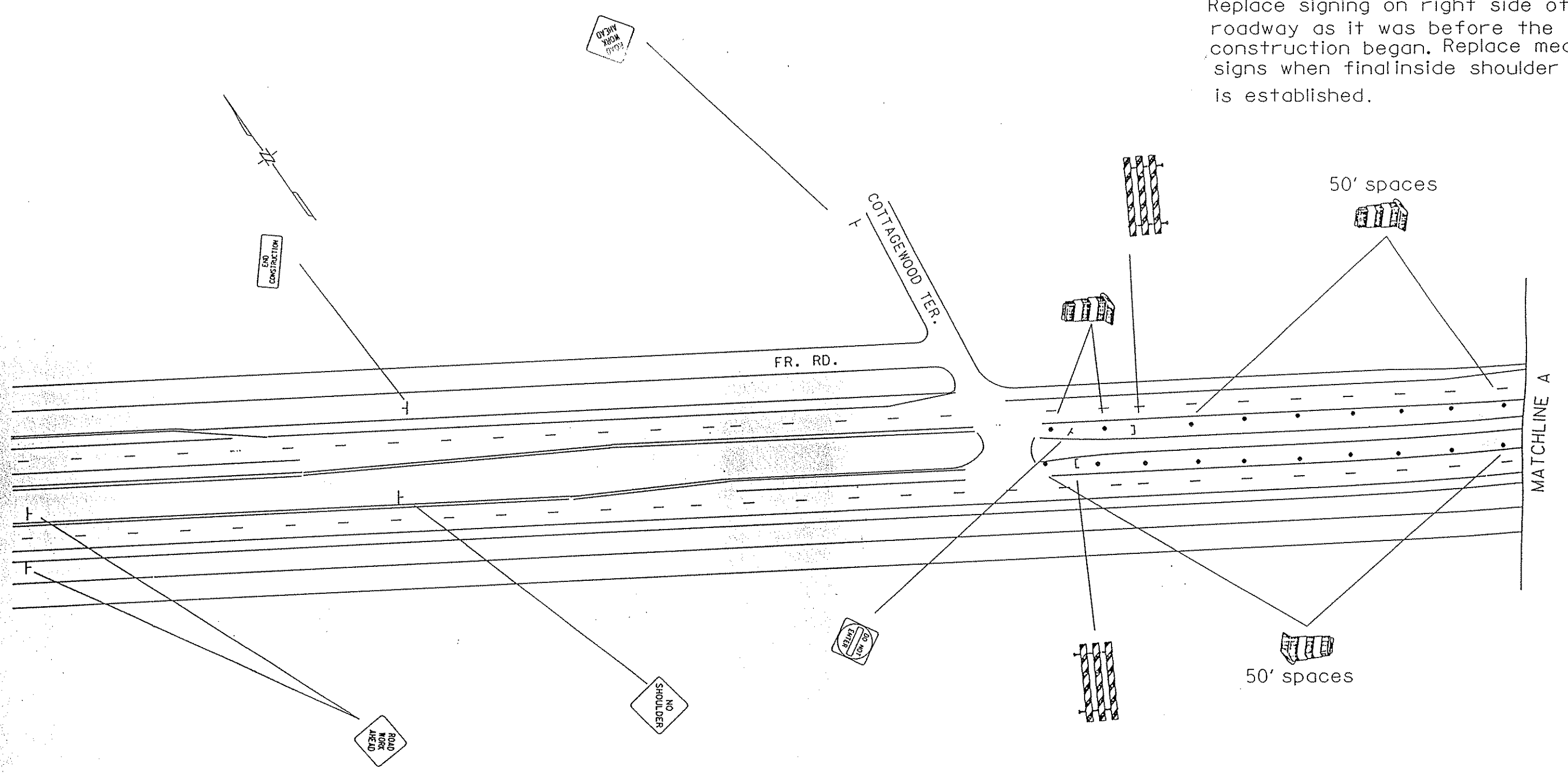




STAGE 3  
Traffic Control Layout



NOTE:  
 Replace signing on right side of roadway as it was before the construction began. Replace median signs when final inside shoulder is established.



STAGE 4  
 Traffic Control Layout

NOTE:

Replace signing on right side of roadway as it was before the construction began. Replace median signs when final inside shoulder is established

\* Indicates short term signing to close the loop during the beginning of Stage 4 construction. Maintain TH-10 to TH-65 guide signing until the loop is opened.

Install 7 days before the loop is closed \*

THIS LOOP WILL BE CLOSED date

ROAD CLOSED

MATCHLINE B

50' spaces

50' spaces

Attenuator

Barrier delineators at 50' spaces

50' spaces

CENTRAL AVE.

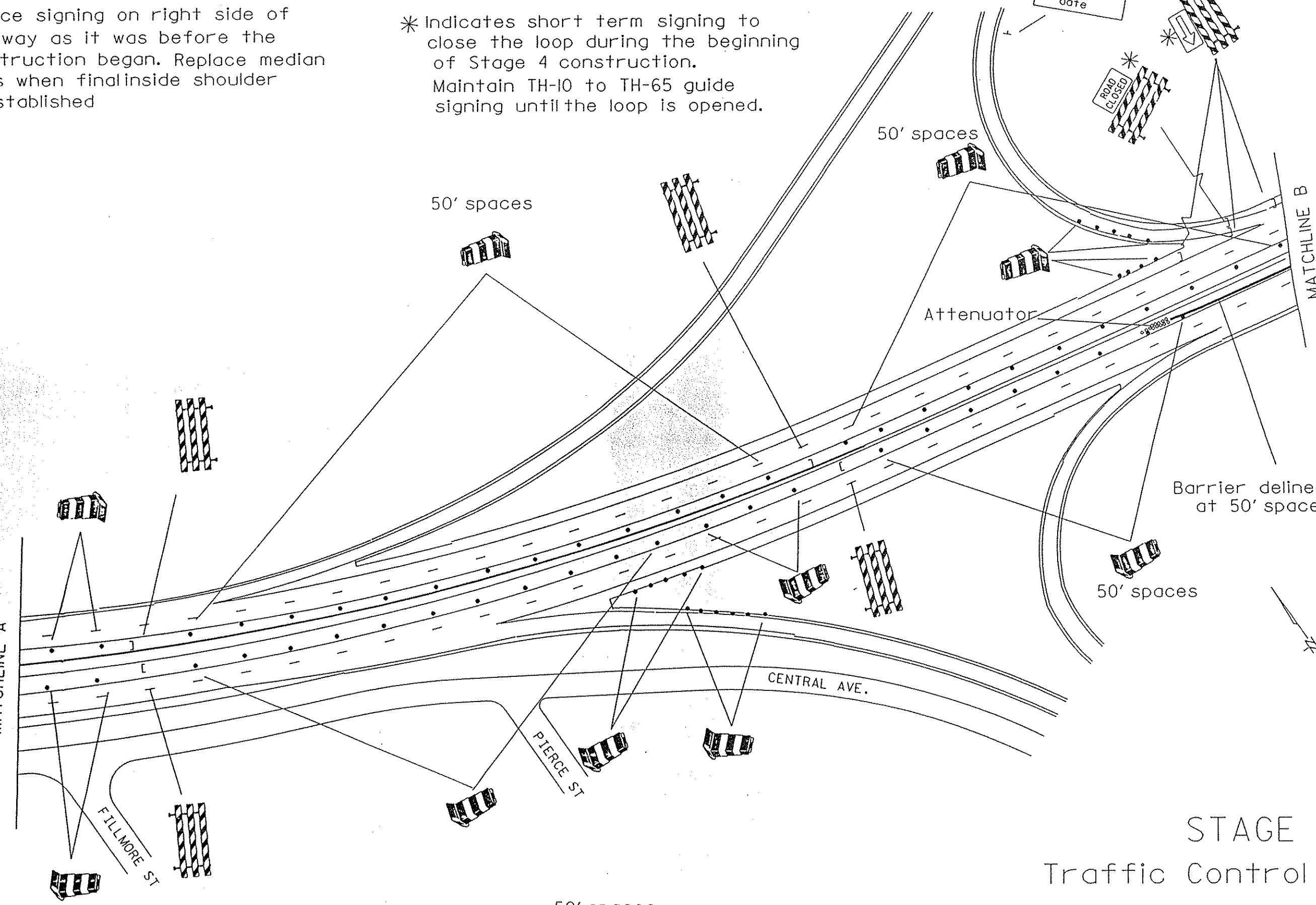
PIERCE ST

FILLMORE ST

MATCHLINE A

50' spaces

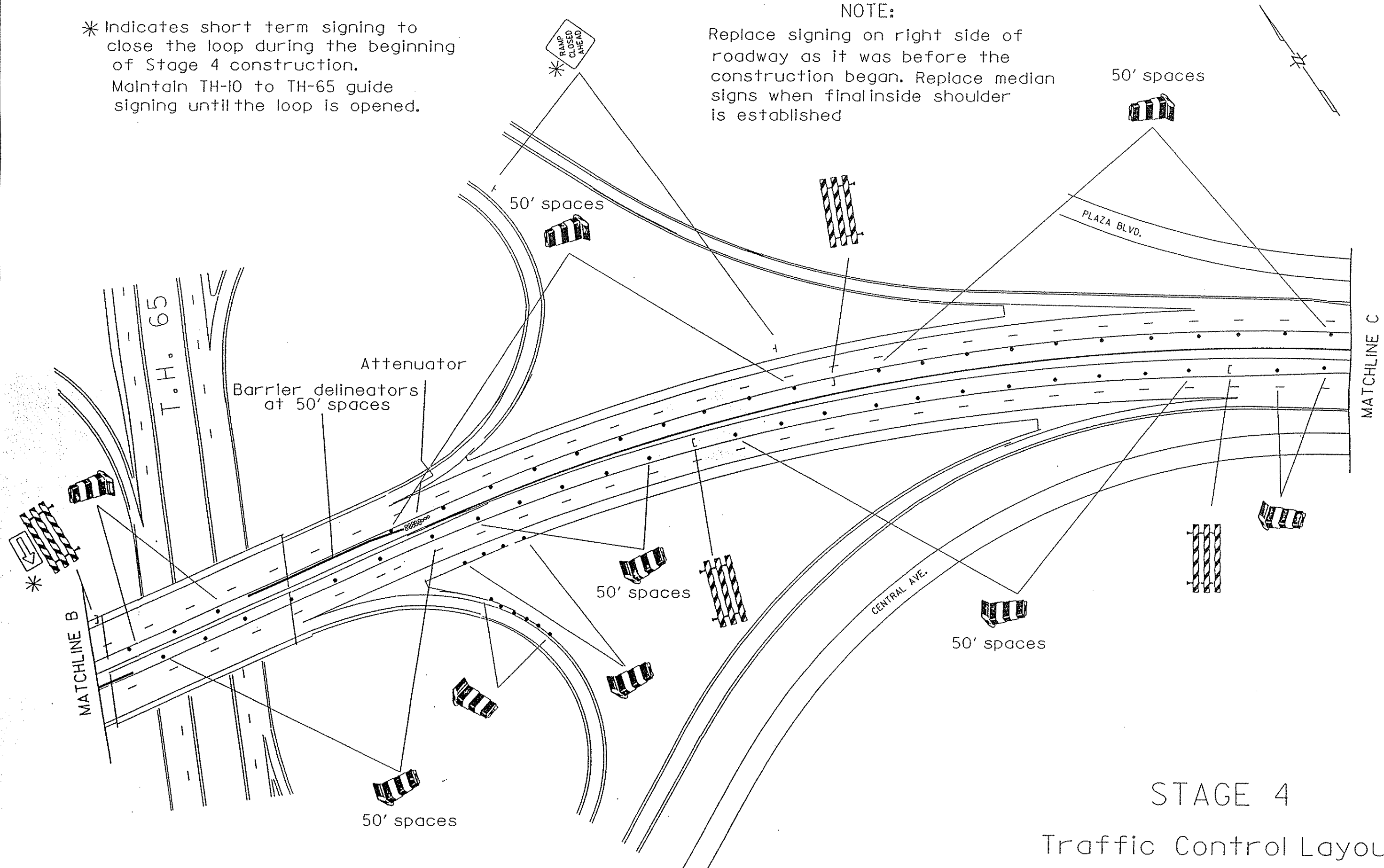
STAGE 4 Traffic Control Layout



\* Indicates short term signing to close the loop during the beginning of Stage 4 construction. Maintain TH-10 to TH-65 guide signing until the loop is opened.

NOTE:

Replace signing on right side of roadway as it was before the construction began. Replace median signs when final inside shoulder is established



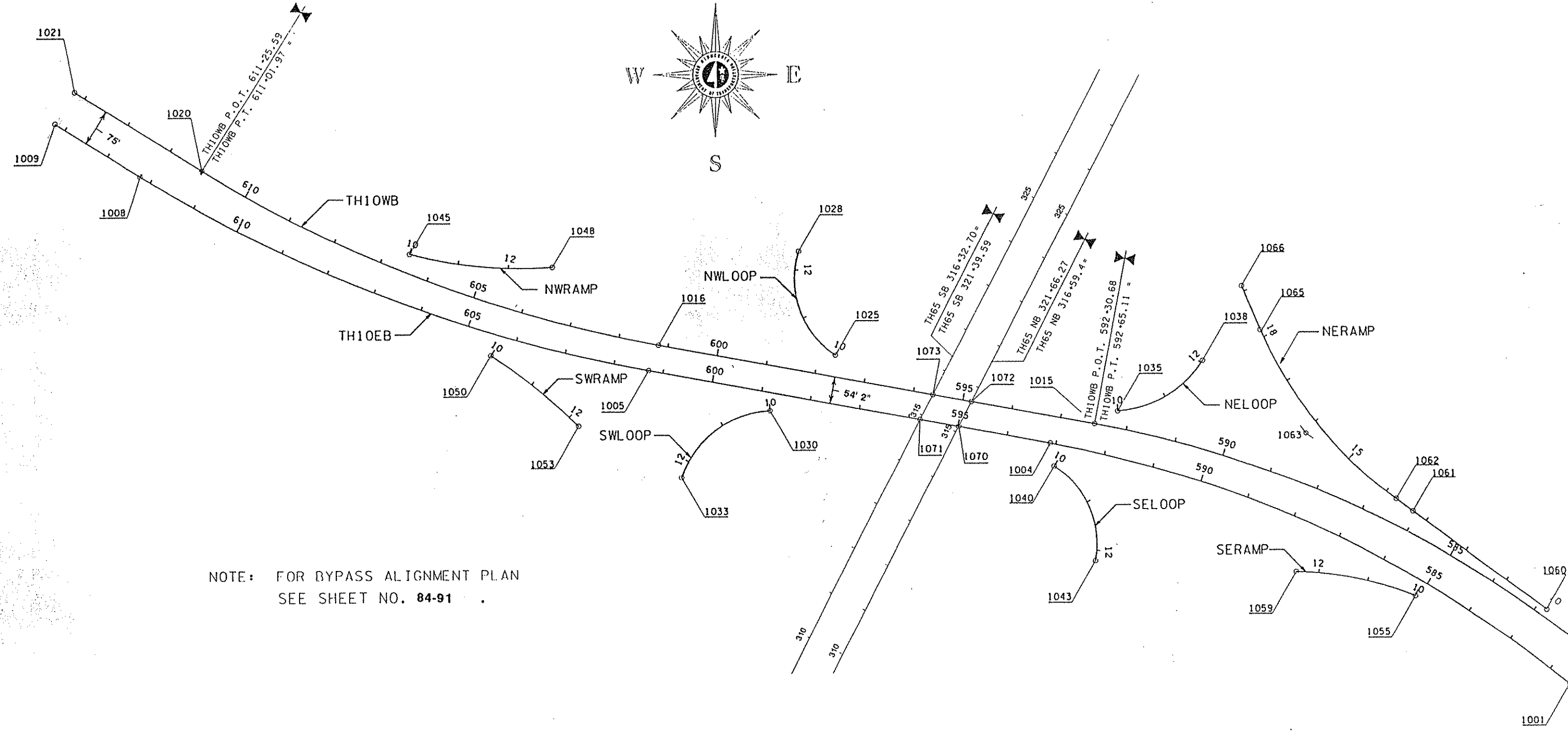
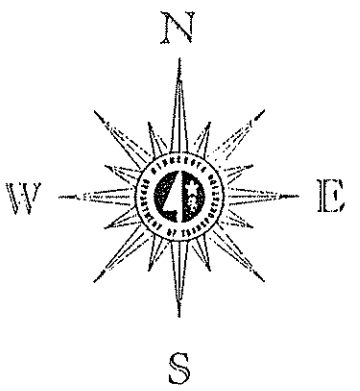
STAGE 4

Traffic Control Layout



**HORIZONTAL CONTROL**

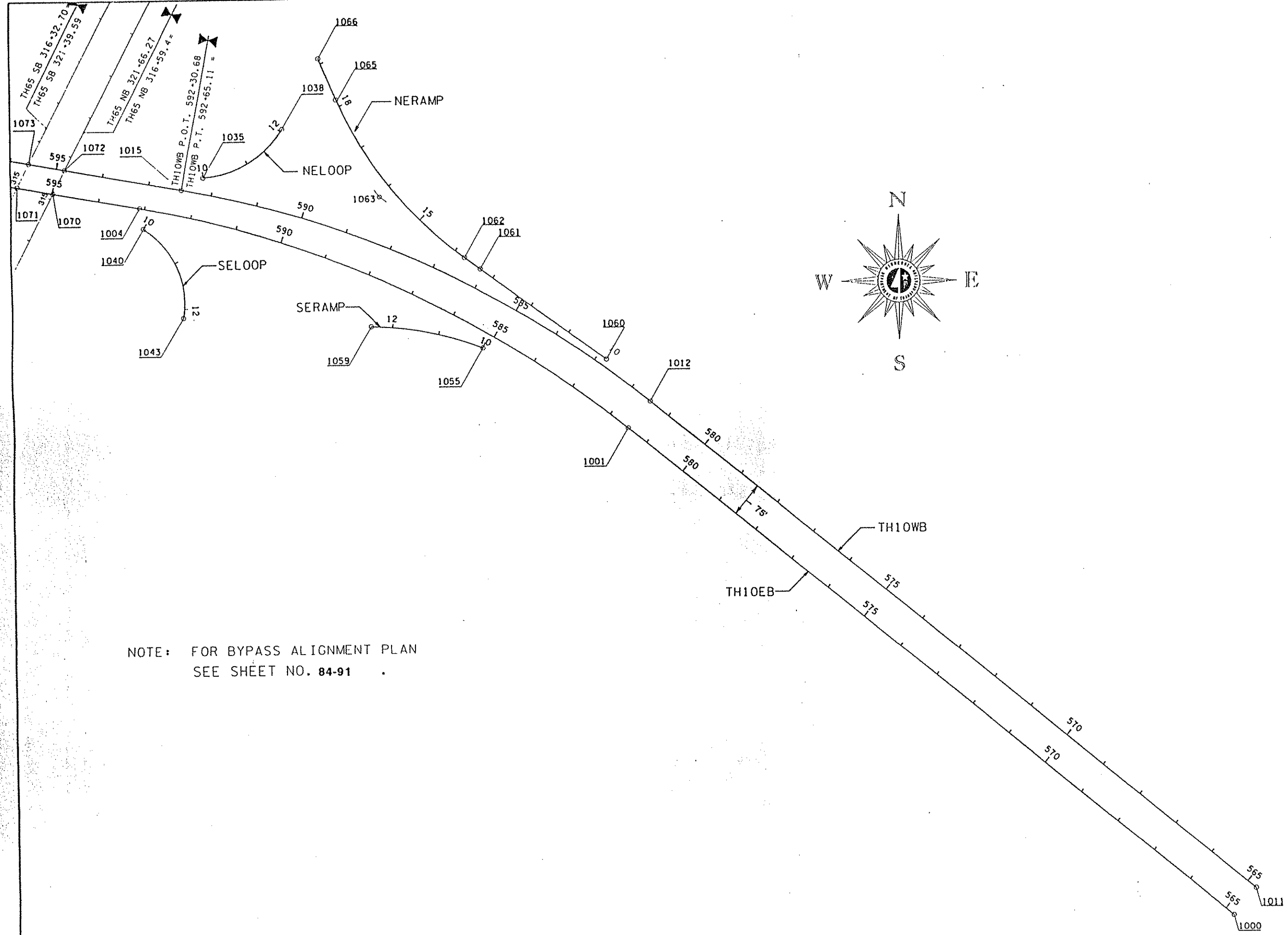
THE HORIZONTAL DATUM IS BASED ON PROJECT COORDINATES WHICH ARE RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, BY THE FOLLOWING RELATIONSHIPS:  
 X STATE PLANE = (X PROJECT +1,300,000) (0.999932)  
 Y STATE PLANE = (Y PROJECT +700,000 ) (0.999932)  
 FOR ADDITIONAL CONTROL SURVEY INFORMATION, CONTACT GOLDEN VALLEY METRO DISTRICT SURVEYS.



NOTE: FOR BYPASS ALIGNMENT PLAN SEE SHEET NO. 84-91

ALIGNMENT PLAN  
 TH10 WB STA. 583+00 TO 614+50  
 TH10 EB STA. 582+00 TO 614+50





NOTE: FOR BYPASS ALIGNMENT PLAN  
SEE SHEET NO. 84-91 .

ALIGNMENT PLAN  
TH10 WB STA. 565+00 TO 596+00  
TH10 EB STA. 565+00 TO 595+00

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		THROW								
1011	POT	564+77.080					899,597.463	63,493.374		
1012	PC	581+50.518					898,305.141	64,556.529	309° 26' 34.98"	
1013	PI	587+20.038	29° 01' 00.00' LT	2° 36' 12.05'	2,200.850	569.520	1,114.591	897,865.325	64,918.351	PI
1014	CC						896,906.916	62,856.908		
1015	PT	592+65.109					897,305.209	65,021.418	280° 25' 34.98"	
	POT	592+30.680								
1016	PC	601+19.310					896,431.251	65,182.236	280° 25' 35.11'	
1018	PI	606+16.700	21° 52' 49.90' RT	2° 13' 35.98'	2,573.170	497.390	982.661	895,942.074	65,272.250	PI
1019	CC						896,896.925	67,712.918		
1020	PT	611+01.971					895,521.681	65,538.082	302° 18' 25.00"	
	POT	611+25.590					895,521.681	65,538.082	N57°41'35"	
1021	POT	614+23.599					895,269.805	65,697.354		
		S.W. LOOP								
	POT	36.27' LT. THIOEB								
1030	PC	S.W. LOOP					896,653.883	65,049.315	266° 56' 20.94"	
1031	PI	11+34.063	68° 11' 18.51' LT	28° 55' 46.42'	198.053	134.063	235.705	896,520.012	65,042.157	PI
1032	CC						896,664.458	64,851.545		
1033	PT	12+35.705					896,476.917	64,915.209	198° 45' 02.43"	
		S.W. RAMP								
	POC	43.24' LT. THIOEB								
1050	PC	S.W. RAMP					896,096.975	65,162.112	123° 45' 00.04"	
1051	PI	11+13.315	11° 35' 24.53' RT	5° 07' 53.97'	1,116.516	113.315	225.856	896,191.193	65,099.158	PI
1052	CC						895,476.672	64,233.763		
1053	PT	12+25.856					896,270.841	65,018.558	135° 20' 24.57"	
		N.W. LOOP								
	POT	43.92' RT. THIOEB								
1025	PC	N.W. LOOP					896,786.120	65,161.594	303° 19' 59.07"	
1026	PI	11+39.331	74° 16' 13.33' RT	31° 08' 24.64'	183.993	139.331	238.503	896,669.711	65,238.157	PI
1027	CC						896,887.225	65,315.318		
1028	PT	12+38.503					896,711.848	65,370.963	17° 36' 12.40"	
		N.W. RAMP								
	POC	34.08' RT. THIOEB					895,916.491	65,370.757	105° 39' 38.35"	
1045	PC	N.W. RAMP	19° 28' 58.80' LT	6° 22' 03.69'	899.789	154.475	305.966	896,065.231	65,329.058	PI
1046	PI	11+54.475					896,159.379	66,237.143		
1047	CC						896,219.362	65,339.356	86° 10' 39.55"	
1048	PT	13+05.966								
		S.E. LOOP								
	POC	42.98' LT. THIOEB								
1040	PC	S.E. LOOP					897,223.574	64,937.605	122° 31' 13.29"	
1041	PI	11+25.059	67° 57' 52.79' RT	30° 52' 55.09'	185.532	125.059	220.079	897,329.024	64,870.373	PI
1042	CC						897,123.832	64,781.165		
1043	PT	12+20.079					897,306.266	64,747.402	190° 29' 06.08"	

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		T.H. 10 E.B.								
1000	POT	564+77.080						899,549.815	63,435.455	
1001	PC	581+50.515						898,257.495	64,498.607	309° 26' 34.98"
1002	PI	587+43.578	29° 00' 59.99' LT	2° 30' 00.00'	2,291.831	593.063	1,160.667	897,799.498	64,875.387	PI
1003	CC							896,801.470	62,728.726	
1004	PT	593+11.181						897,216.227	64,982.715	280° 25' 34.99"
1005	PC	601+29.304						896,411.613	65,130.773	280° 25' 34.99"
1006	PI	606+83.065	21° 52' 50.02' RT	2° 00' 00.00'	2,864.789	553.760	1,094.028	895,866.996	65,230.988	PI
1007	CC							896,930.060	67,948.259	
1008	PT	612+23.332						895,398.959	65,526.948	302° 18' 25.01"
1009	POT	614+23.567						895,229.721	65,633.964	
1010	POT	625+87.716						894,245.173	66,256.128	
		INPLACE E.B. T.H. 10 EB10								
2000	POT	564+77.080						899,549.815	63,435.455	
2001	PC	581+40.378						898,265.322	64,492.167	309° 26' 35.00"
2002	PI	587+33.442	29° 01' 00.00' LT	2° 30' 00.00'	2,291.831	593.063	1,160.667	897,807.325	64,868.947	PI
2003	CC							896,809.297	62,722.286	
2004	PT	593+01.045						897,224.054	64,976.275	280° 25' 35.00"
	POT	592+95.340						897,224.054	64,976.275	
2005	PC	601+10.082						896,422.765	65,123.721	280° 25' 35.00"
2006	PI	606+63.843	21° 52' 50.00' RT	2° 00' 00.00'	2,864.789	553.760	1,094.028	895,878.148	65,223.936	PI
2007	CC							896,941.212	67,941.207	
2008	PT	612+04.110						895,410.111	65,519.896	302° 18' 25.00"
	POST	540.566' AHD. THIOEB						895,410.111	65,519.896	
		PI 1019								
		INPLACE W.B. T.H. 10 WB10								
2009	POT	564+77.080						899,597.462	63,493.373	
2010	PC	581+37.102						898,315.501	64,548.005	309° 26' 35.29"
2011	PI	587+30.168	29° 01' 00.41' LT	2° 30' 00.00'	2,291.831	593.066	1,160.671	897,857.503	64,924.787	PI
2012	CC							896,859.473	62,778.126	
2013	PT	592+97.773						897,274.229	65,032.115	280° 25' 34.88"
2014	POT	593+37.010						897,235.636	65,039.216	
	POT	592+95.340								
2015	PC	600+68.194						896,475.543	65,179.082	280° 25' 35.00"
2016	PI	606+21.952	21° 52' 49.69' RT	2° 00' 00.00'	2,864.789	553.758	1,094.023	895,930.929	65,279.296	PI
2017	CC							896,993.990	67,996.568	
2018	PT	611+62.218						895,462.893	65,575.254	302° 18' 25.00"
	POT	THIOEB						895,450.193	65,583.285	

ALIGNMENT TABULATION

T.H. 10 EASTBOUND INPLACE EASTBOUND T.H. 10  
 T.H. 10 WESTBOUND INPLACE WESTBOUND T.H. 10  
 N.W. LOOP S.W. RAMP S.E. LOOP  
 N.W. RAMP S.W. LOOP

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		S.E. RAMP								
	POC	32.37' LT. THIOEB 585+08.67*								
1055	POT	S.E. RAMP 10+00.000						898,040.638	64,638.425	
1056	PC	11+00.000						897,947.866	64,675.753	291° 55' 04.71'
1057	PI	12+23.936	20° 46' 31.40' LT	8° 28' 28.42"	676.091	123.936	245.150	897,832.888	64,722.016	PI
1058	CC							897,695.495	64,048.530	
1059	PT	13+45.150						897,708.977	64,724.487	271° 08' 33.31'
		N.E. LOOP								
	POC	34.18' RT. THIOEB 592+24.56*								
1035	PC	N.E. LOOP 10+00.000						897,351.820	65,047.213	86° 26' 45.44'
1036	PI	11+11.225	54° 38' 04.83' LT	26° 36' 27.69"	215.335	111.225	205.334	897,462.832	65,054.108	PI
1037	CC							897,338.471	65,262.134	
1038	PT	12+05.334						897,521.461	65,148.626	31° 48' 40.61'
		N.E. RAMP								
	POC	16.00' RT. THIOEB 582+80.00*								
1060	POT	N.E. RAMP 10+00.000						898,212.208	64,648.735	
1061	PI	13+32.902						897,943.214	64,844.862	
1062	PC	13+75.000						897,909.198	64,869.664	306° 05' 48.30'
1063	PI	15+98.780	30° 34' 54.74' RT	7° 00' 00.00"	818.511	223.780	436.884	897,728.378	65,001.504	PI
1064	CC							898,391.424	65,531.040	
1065	PT	18+11.884						897,639.786	65,207.001	336° 40' 43.04'
1066	POT	19+11.883						897,600.196	65,298.830	
		INTERSECTION POINTS								
1070	POT	T.H. 10 EASTBOUND 594+98.67*						897,031.834	65,016.645	
	POT	T.H. 65 NORTHBOUND 315+12.29								
1071	POT	T.H. 10 WESTBOUND 595+76.25*						896,954.846	65,030.812	
	POT	T.H. 65 SOUTHBOUND 314+89.86								
1072	POT	T.H. 10 WESTBOUND 594+82.48*						897,057.566	65,066.987	
	POT	T.H. 65 NORTHBOUND 315+68.83								
1073	POT	T.H. 10 WESTBOUND 595+60.75*						896,980.589	65,081.152	
	POT	T.H. 65 SOUTHBOUND 315+46.40								

POINT NUMBERS	COORDINATES		RADIUS
	X	Y	
1600	896999.645	64534.113	451.0
1601	897321.560	65394.734	328.0
1602	896974.208	65403.801	370.0
1603	896699.246	64644.515	370.0

ALIGNMENT TABULATION  
 S.E. RAMP N.E. RAMP  
 N.E. LOOP  
 INTERSECTION POINTS  
 RADIUS POINTS

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		BYPASS 5								
	POT	WB10 576+00.000+								
1186	PC	300+00.000					898.730.281	64.206.778	309° 26' 34.38"	
1187	PI	300+37.725	5° 05' 22.25" LT	6° 45' 00.01"	848.826	37.725	75.400	898.701.148	64.230.745	PI
1188	CC						898.191.014	63.551.265		
1189	PT	300+75.400					898.670.003	64.252.033	304° 21' 12.13"	
1190	PC	302+25.390					898.546.175	64.336.672	304° 21' 12.13"	
1191	PI	302+63.117	5° 05' 22.94" RT	6° 45' 00.01"	848.826	37.726	75.403	898.515.029	64.357.961	PI
1192	CC						899.025.164	65.037.440		
1193	PT	303+00.793					898.405.895	64.381.929	309° 26' 35.07"	
1194	PC	305+37.891					898.302.795	64.532.560	309° 26' 35.29"	
1195	PI	310+90.632	27° 20' 56.28" LT	2° 31' 19.23"	2,271.831	552.741	1,084.412	897.875.937	64.883.723	PI
1196	CC						896.859.473	62.778.126		
1197	PT	316+22.303					897.335.465	64.999.532	282° 05' 39.01"	
1198	PC	317+14.684					897.245.135	65.018.888	282° 05' 39.89"	
1199	PI	317+27.042	1° 40' 05.75" LT	6° 45' 00.01"	848.826	12.358	24.715	897.233.051	65.021.477	PI
1200	CC						897.067.286	64.188.903		
1201	PT	317+39.399					897.220.896	65.023.714	280° 25' 34.14"	
1202	PI	320+94.801					896.871.362	65.088.030		
1203	PC	324+85.470					896.486.779	65.156.718	280° 07' 35.54"	
1204	PI	330+50.928	22° 10' 49.14" RT	1° 59' 10.08"	2,884.789	565.459	1,116.758	895.930.129	65.256.139	PI
1205	CC						896.993.991	67.996.568		
1206	PT	336+02.228					895.452.205	65.558.350	302° 18' 24.68"	
1207	PC	338+30.684					895.259.115	65.680.449	302° 18' 23.40"	
1208	PI	338+63.076	4° 22' 14.33" RT	6° 44' 58.98"	848.862	32.392	64.753	895.231.737	65.697.761	PI
1209	CC						895.712.788	66.397.908		
1210	PT	338+95.437					895.205.758	65.717.109	306° 40' 37.73"	
1211	PC	340+93.089					895.047.238	65.835.168	306° 40' 37.91"	
1212	PI	341+25.453	4° 22' 16.69" LT	6° 45' 23.68"	848.000	32.364	64.697	895.021.281	65.854.499	PI
1213	CC						894.540.723	65.155.061		
1214	PT	341+57.786					894.993.927	65.871.796	302° 18' 21.22"	
		SELCONN								
	POT	A Pt. 7.5' LT. TH10WB 593+54.85+								
1244	PC	SELCONN 10+00.000					897.174.633	64.997.996	100° 25' 34.91"	
1245	PI	11+75.707	90° 13' 51.42" RT	32° 44' 25.60"	175.000	175.707	275.595	897.347.438	64.966.198	PI
1246	CC						897.142.963	64.825.886		
1247	PT	12+75.595					897.314.944	64.793.522	190° 39' 26.33"	
1248	POT	13+22.525					897.306.265	64.747.401		
		NWLCONN								
	POT	A Pt. 7.5' LT. TH10WB 597+10.00+								
1249	PC	NWLCONN 10+00.000					896.832.445	65.100.784	280° 25' 33.57"	
1250	PI	11+99.286	97° 25' 30.46" RT	32° 44' 25.60"	175.000	199.286	297.568	896.636.449	65.136.848	PI
1251	CC						896.864.114	65.272.895		
1252	PT	12+97.568					896.697.539	65.326.540	17° 51' 04.03"	
1253	POT	13+45.033					896.712.089	65.371.720		

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		BYPASS 6								
	POT	EB10 576+00.000+								
1215	PC	400+00.000						898.682.633	64.148.859	309° 26' 35.33"
1216	PI	400+37.722	5° 05' 20.75" RT	6° 45' 00.01"	848.826	37.722	75.394	898.653.503	64.172.825	PI
1217	CC							899.221.903	64.804.370	
1218	PT	400+75.394						898.626.612	64.199.279	314° 31' 56.08"
1219	PC	402+25.388						898.519.688	64.304.472	314° 31' 56.06"
1220	PI	402+63.112	5° 05' 21.63" LT	6° 45' 00.01"	848.826	37.724	75.398	898.492.797	64.330.928	PI
1221	CC							897.924.398	63.699.381	
1222	PT	403+00.786						898.463.664	64.354.894	309° 26' 34.43"
1223	PC	405+41.168						898.278.028	64.507.612	309° 26' 35.00"
1224	PI	410+74.051	25° 57' 36.81" LT	2° 28' 42.14"	2,311.832	532.883	1,047.471	897.866.505	64.846.158	PI
1225	CC							896.809.296	62.722.285	
1226	PCC	415+88.639						897.348.308	64.970.402	283° 28' 58.19"
1227	PI	416+11.286	3° 03' 23.60" LT	6° 45' 00.01"	848.826	22.647	45.282	897.326.286	64.975.682	PI
1228	CC							897.150.401	64.144.970	
1229	PT	416+33.921						897.304.013	64.979.781	280° 25' 34.59"
1230	PI	421+51.588						896.794.894	65.073.464	
1231	PC	425+26.675						896.426.383	65.143.390	280° 25' 35.00"
1232	PI	430+76.569	21° 52' 50.00" RT	2° 00' 50.62"	2,844.789	549.894	1,086.390	895.885.569	65.242.905	PI
1233	CC							896.941.211	67.941.206	
1234	PT	436+13.065						895.420.800	65.536.799	302° 18' 25.00"
1235	PC	438+26.494						895.240.410	65.650.867	302° 18' 26.30"
1236	PI	438+58.897	4° 22' 20.40" LT	6° 45' 00.01"	848.826	32.403	64.775	895.213.023	65.668.185	PI
1237	CC							894.786.746	64.933.445	
1238	PT	438+91.269						895.184.395	65.683.365	297° 56' 05.90"
1239	PC	440+88.931						895.009.765	65.775.964	297° 56' 05.99"
1240	PI	441+21.295	4° 22' 16.53" RT	6° 45' 23.68"	848.000	32.364	64.696	894.981.172	65.791.125	PI
1241	CC							895.407.027	66.525.155	
1242	PT	441+53.627						894.953.818	65.808.422	302° 18' 22.52"
		SWRCONN								
		A Pt. 11.21' LT. TH10EB 604+94.50+								
1254	PC	SWRCONN 10+00.000						896.061.082	65.230.206	107° 59' 09.81"
1255	PI	10+55.102	32° 20' 43.52" RT	30° 09' 20.42"	190.000	55.102	107.261	896.113.491	65.213.191	PI
1256	CC							896.002.412	65.049.491	
1257	PT	11+07.261						896.148.665	65.170.777	140° 19' 53.39"
1258	POT	13+79.439						896.322.408	64.961.268	

ALIGNMENT TABULATION  
 BYPASS 5 NWLCONN  
 BYPASS 6 SWRCONN  
 SELCONN

ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		BYPASS 1								
	POT	WB10 590+52.91								
1100	POT	10+00.000					897,512.225	64,975.034		
1101	PC	11+99.079					897,321.392	65,031.735	286° 32' 52.34"	
1102	PI	12+44.466	6° 07' 17.49" LT	6° 45' 00.01"	848.826	45.388	90.689	897,277.884	65,044.662	PI
1103	CC						897,079.632	64,218.065		
1104	PT	12+89.768					897,233.246	65,052.876	280° 25' 34.85"	
1105	PC	16+05.834					896,922.398	65,110.076	280° 25' 38.05"	
1106	PI	16+30.107	3° 16' 33.40" LT	6° 45' 00.01"	848.826	24.273	48.532	896,898.526	65,114.469	PI
1100	CC						896,768.772	64,275.268		
1108	PT	16+54.367					896,874.442	65,117.491	277° 09' 04.65"	
1109	PC	18+33.422					896,696.779	65,139.781	277° 09' 04.23"	
1110	PI	18+57.690	3° 16' 30.67" RT	6° 45' 00.01"	848.826	24.267	48.521	896,672.701	65,142.802	PI
1111	CC						896,802.448	65,982.004		
1112	PT	18+81.944					896,648.834	65,147.194	280° 25' 34.90"	
	POT	WB10 598+91.99								
		BYPASS 3								
	POT	WB10 576+00.00								
1113	PC	100+00.000					898,730.281	64,206.778	309° 26' 35.20"	
1114	PI	100+25.558	3° 26' 57.68" RT	6° 45' 00.01"	848.826	25.558	51.102	898,710.543	64,223.016	PI
1115	CC						899,269.550	64,862.289		
1116	PT	100+51.102					898,691.818	64,240.411	312° 53' 32.88"	
1117	PC	102+49.322					898,546.596	64,375.325	312° 53' 32.85"	
1118	PI	102+74.881	3° 26' 58.22" LT	6° 45' 00.01"	848.826	25.560	51.104	898,527.870	64,392.721	PI
1119	CC						897,968.864	63,753.447		
1120	PT	103+00.425					898,508.131	64,408.959	309° 26' 34.63"	
1121	PC	105+37.529					898,325.031	64,559.589	309° 26' 35.29"	
1122	PI	110+70.443	26° 00' 57.80" LT	2° 29' 01.48"	2,306.831	532.914	1,047.453	897,913.485	64,898.156	PI
1123	CC						896,859.473	62,778.126		
1124	PCC	115+84.982					897,395.137	65,021.903	283° 25' 37.49"	
1125	PI	116+07.215	3° 00' 02.58" LT	6° 45' 00.01"	848.826	22.233	44.455	897,373.512	65,027.065	PI
1126	CC						897,198.033	64,196.278		
1127	PT	116+29.437					897,351.646	65,031.089	280° 25' 34.90"	
1128	PI	122+17.272					896,773.518	65,137.470		
1129	PC	125+38.214					896,458.257	65,197.588	280° 50' 07.96"	
1130	PI	130+78.524	21° 28' 16.74" RT	2° 00' 37.90"	2,849.789	540.310	1,067.945	895,927.580	65,299.161	PI
1131	CC						896,993.991	67,996.568		
1132	PT	136+06.158					895,470.911	65,587.932	302° 18' 24.70"	
1133	PC	138+66.016					895,251.280	65,726.814	302° 18' 24.36"	
1134	PI	138+92.247	3° 32' 24.43" LT	6° 45' 00.01"	848.826	26.231	52.446	895,229.109	65,740.833	PI
1135	CC						894,797.623	65,009.387		
1136	PT	139+18.462					895,206.115	65,753.457	298° 45' 59.93"	
1137	PC	141+08.993					895,039.098	65,845.149	298° 46' 00.02"	
1138	PI	141+35.228	3° 32' 26.18" RT	6° 45' 00.01"	848.826	26.235	52.453	895,016.101	65,857.774	PI
1139	CC						895,447.590	66,589.219		
1140	PT	141+61.446					894,993.927	65,871.796	302° 18' 26.20"	
	POT	TH10WB 617+50.00								

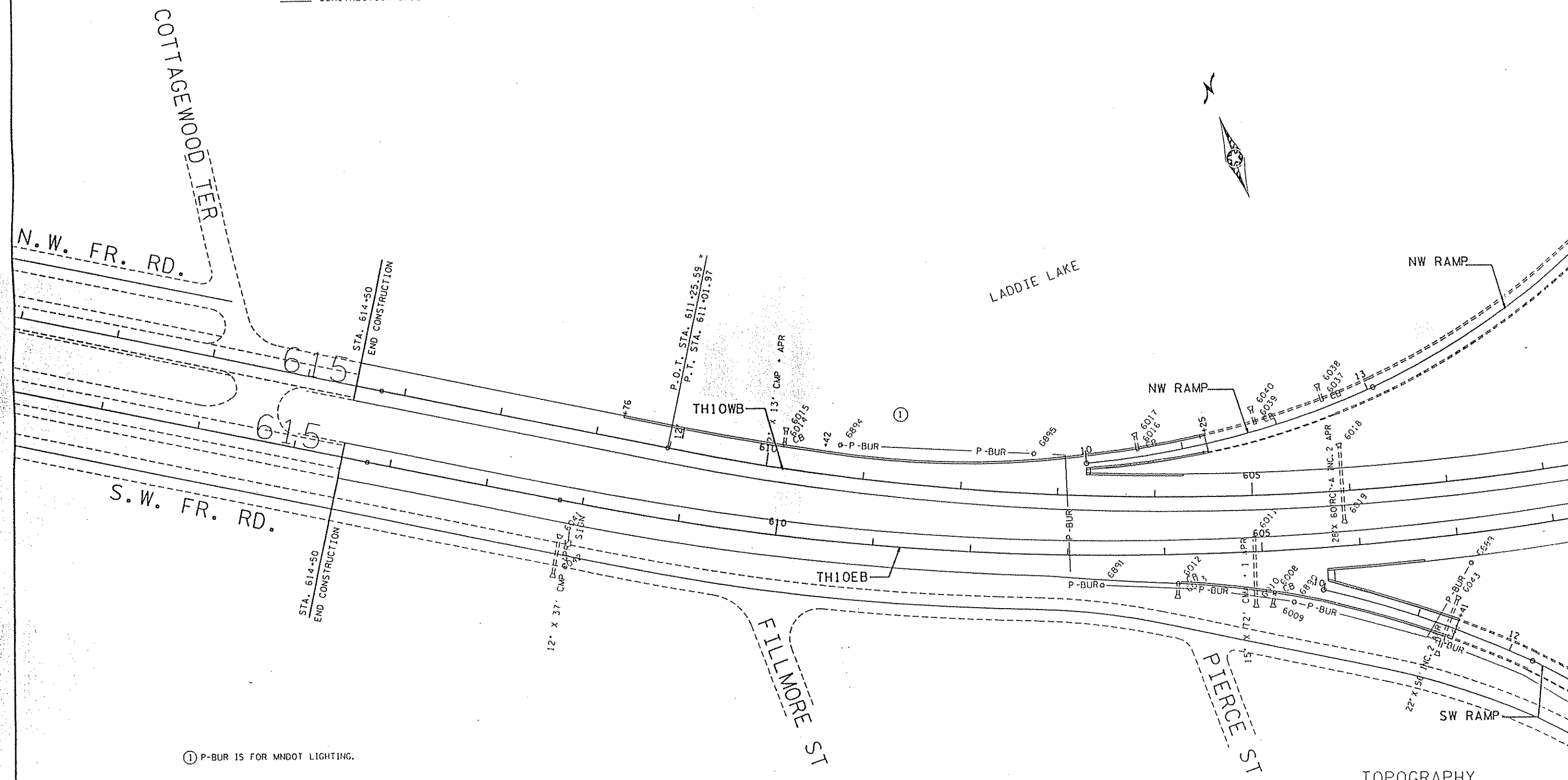
ALIGNMENT TABULATION

POINT NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		BYPASS 2								
	POT	EB10 591+83.70								
1141	PC	20+00.000					897,338.865	64,952.094	283° 21' 35.91"	
1142	PI	20+64.969	8° 45' 13.39" LT	6° 45' 00.01"	848.826	64.969	129.685	897,275.654	64,967.106	PI
1143	CC						897,142.728	64,126.239		
1144	PT	21+29.685					897,210.896	64,972.323	274° 36' 22.52"	
1145	PC	21+52.929					897,187.726	64,974.190	274° 36' 22.20"	
1146	PI	21+96.077	5° 49' 11.89" RT	6° 45' 00.01"	848.826	43.148	86.222	897,144.717	64,977.655	PI
1147	CC						897,255.892	65,820.274		
1148	PT	22+39.151					897,102.282	64,985.463	280° 25' 34.09"	
1149	PC	25+56.198					896,790.470	65,042.838	280° 25' 34.25"	
1150	PI	25+93.662	5° 03' 15.91" RT	6° 45' 00.01"	848.826	37.464	74.880	896,753.624	65,049.618	PI
1151	CC						896,944.081	65,877.649		
1152	PT	26+31.078					896,717.519	65,059.618	285° 28' 50.16"	
1153	PC	27+03.736					896,647.497	65,079.011	285° 28' 49.44"	
1154	PI	27+41.197	5° 03' 14.22" LT	6° 45' 00.01"	848.826	37.461	74.873	896,611.395	65,089.010	PI
1155	CC						896,420.938	64,260.979		
1156	PT	27+78.609					896,574.552	65,095.789	280° 25' 35.22"	
	POT	EB10 599+55.75								
		BYPASS 4								
	POT	EB10 576+00.00								
1157	PC	200+00.000					898,682.633	64,148.859	309° 26' 35.29"	
1158	PI	200+25.562	3° 26' 59.62" LT	6° 45' 00.01"	848.826	25.562	51.110	898,662.893	64,165.100	PI
1159	CC						898,143.364	63,493.349		
1160	PT	200+51.110					898,642.210	64,180.122	305° 59' 35.67"	
1161	PC	202+49.331					898,481.832	64,296.615	305° 59' 35.78"	
1162	PI	202+74.895	3° 27' 00.49" RT	6° 45' 00.01"	848.826	25.564	51.113	898,461.148	64,311.639	PI
1163	CC						898,980.679	64,983.388		
1164	PT	203+00.444					898,441.406	64,327.880	309° 26' 36.27"	
1165	PC	205+40.799					898,255.791	64,480.582	309° 26' 35.00"	
1166	PI	210+79.361	26° 36' 58.67" LT	2° 30' 59.29"	2,276.831	538.562	1,057.684	897,839.883	64,822.737	PI
1167	CC						896,809.296	62,722.285		
1168	PT	215+98.483					897,314.761	64,942.300	282° 49' 36.33"	
1169	PC	216+76.143					897,239.038	64,959.541	282° 49' 35.44"	
1170	PI	216+93.924	2° 24' 00.10" LT	6° 45' 00.01"	848.826	17.781	35.556	897,221.702	64,963.488	PI
1171	CC						897,050.599	64,131.896		
1172	PT	217+11.699					897,204.215	64,966.706	280° 25' 35.34"	
1173	PI	221+80.727					896,742.931	65,051.587		
1174	PC	225+08.668					896,420.049	65,108.967	280° 25' 35.00"	
1175	PI	230+65.328	21° 52' 49.97" RT	1° 59' 22.50"	2,879.789	556.660	1,099.756	895,872.581	65,209.707	PI
1176	CC						896,941.211	67,941.206		
1177	PT	236+08.424					895,402.094	65,507.217	302° 18' 24.97"	
1178	PC	238+53.257					895,195.162	65,638.069	302° 18' 25.66"	
1179	PI	238+79.457	3° 32' 09.52" RT	6° 45' 00.01"	848.826	26.201	52.385	895,173.017	65,652.072	PI
1180	CC						895,648.823	66,355.493		
1181	PT	239+05.642					895,151.778	65,667.414	305° 50' 35.18"	
1182	PC	240+96.344					894,997.191	65,779.083	305° 50' 35.09"	
1183	PI	241+22.538	3° 32' 06.49" LT	6° 45' 00.01"	848.826	26.194	52.372	894,975.957	65,794.422	PI
1184	CC						894,500.146	65,091.005		
1185	PT	241+48.716					894,953.818	65,808.422	302° 18' 28.60"	
	POT	TH10EB 617+50.00								

ALIGNMENT TABULATION  
 BYPASS 1      BYPASS 3  
 BYPASS 2      BYPASS 4

LEGEND

- INPLACE ROADWAY
- ==== CONSTRUCTION UNDER THIS CONTRACT



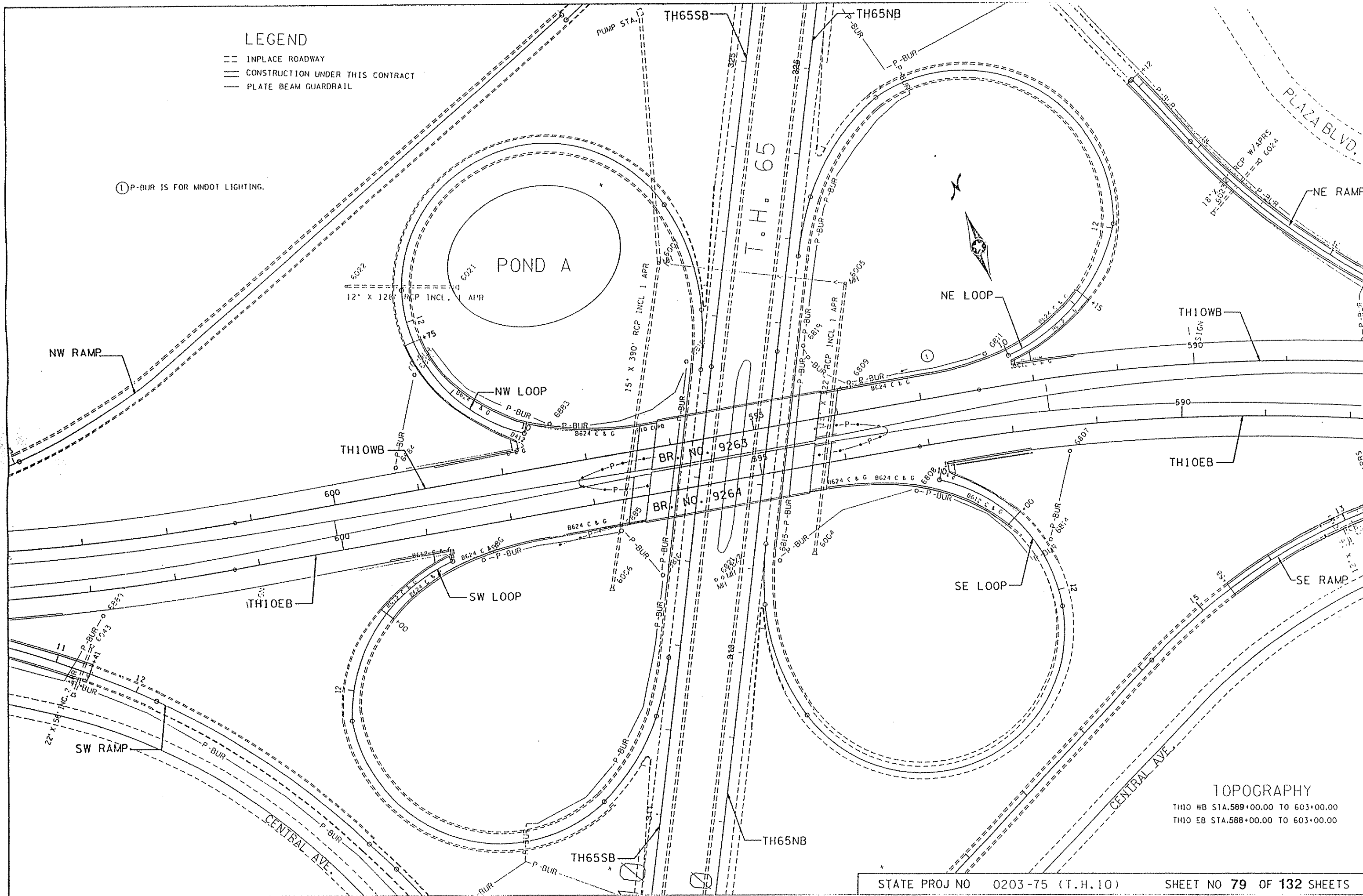
① P-BUR IS FOR MNDOT LIGHTING.

TOPOGRAPHY  
 TH10 WB STA. 602+00.00 TO 614+50.00  
 TH10 EB STA. 602+00.00 TO 614+50.00

LEGEND

- INPLACE ROADWAY
- CONSTRUCTION UNDER THIS CONTRACT
- PLATE BEAM GUARDRAIL

① P-BUR IS FOR MNDOT LIGHTING.

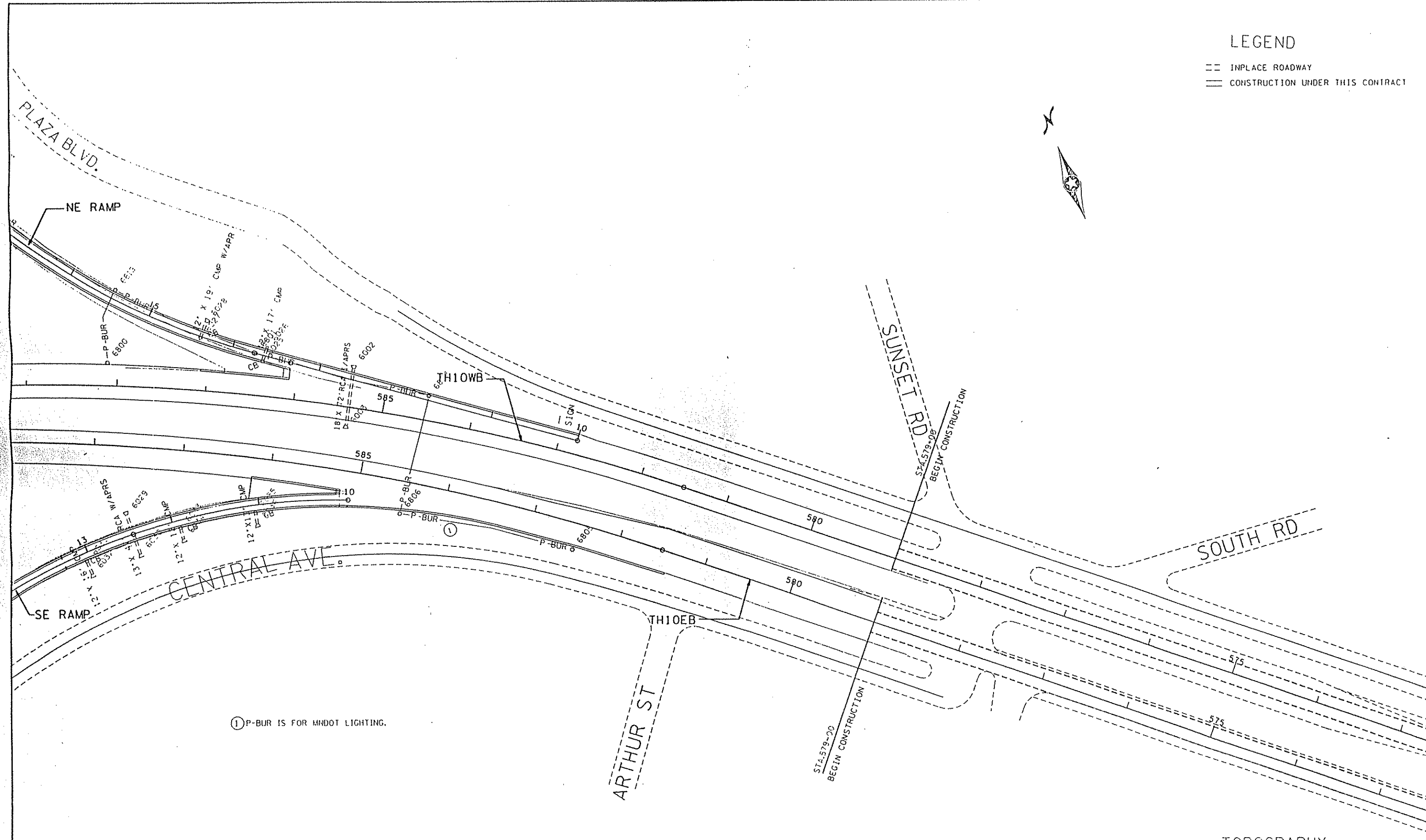


TOPOGRAPHY

TH10 WB STA.589+00.00 TO 603+00.00  
 TH10 EB STA.588+00.00 TO 603+00.00

LEGEND

- INPLACE ROADWAY
- CONSTRUCTION UNDER THIS CONTRACT



TOPOGRAPHY

TH10 WB STA. 579+00.00 TO 589+00.00  
 TH10 EB STA. 579+00.00 TO 588+00.00



LEGEND

- INPLACE ROADWAY
- ==== CONSTRUCTION UNDER THIS CONTRACT

NOTE: ALL DIMENSIONS SHOWN TO CURBS ARE MEASURED TO FACE OF CURB.

OFFSET FROM TH10WB  $\xi$  TO HWR GUTTERLINE

STATION	606+71	606+80	607+00	607+20	607+40	607+60	607+80	608+00
OFFSET	43.4'	42.0'	39.0'	36.4'	33.9'	31.8'	29.9'	28.2'
STATION	608+20	608+40	608+60	608+80	609+00	609+20	609+40	609+42
OFFSET	26.9'	25.7'	24.9'	24.2'	23.9	23.7'	23.9'	24.0'

OFFSET FROM TH10EB  $\xi$  TO SWR RAMP GUTTERLINE

STATION	604+41	604+60	604+80	605+00	
OFFSET	55.3'	50.1'	45.3'	41.0'	
STATION	605+20	605+40	605+60	605+80	605+84
OFFSET	37.4'	34.4'	32.0'	30.2'	30.0'

- ① 10' CURB HEIGHT TRANSITION, 4' TO 0'.
- ② EXIT NOSE, SEE STD. PLATE 710B, MODIFIED TO 8.61' FACE OF CURB TO FACE OF CURB.
- ③ SEE ENTRANCE NOSE DETAIL ON SHEET NO. 17.
- ④ 10' TRANSITION, B424 C&G TO D424 C&G.
- ⑤ 10' C&G TRANSITION TO INPLACE C&G.

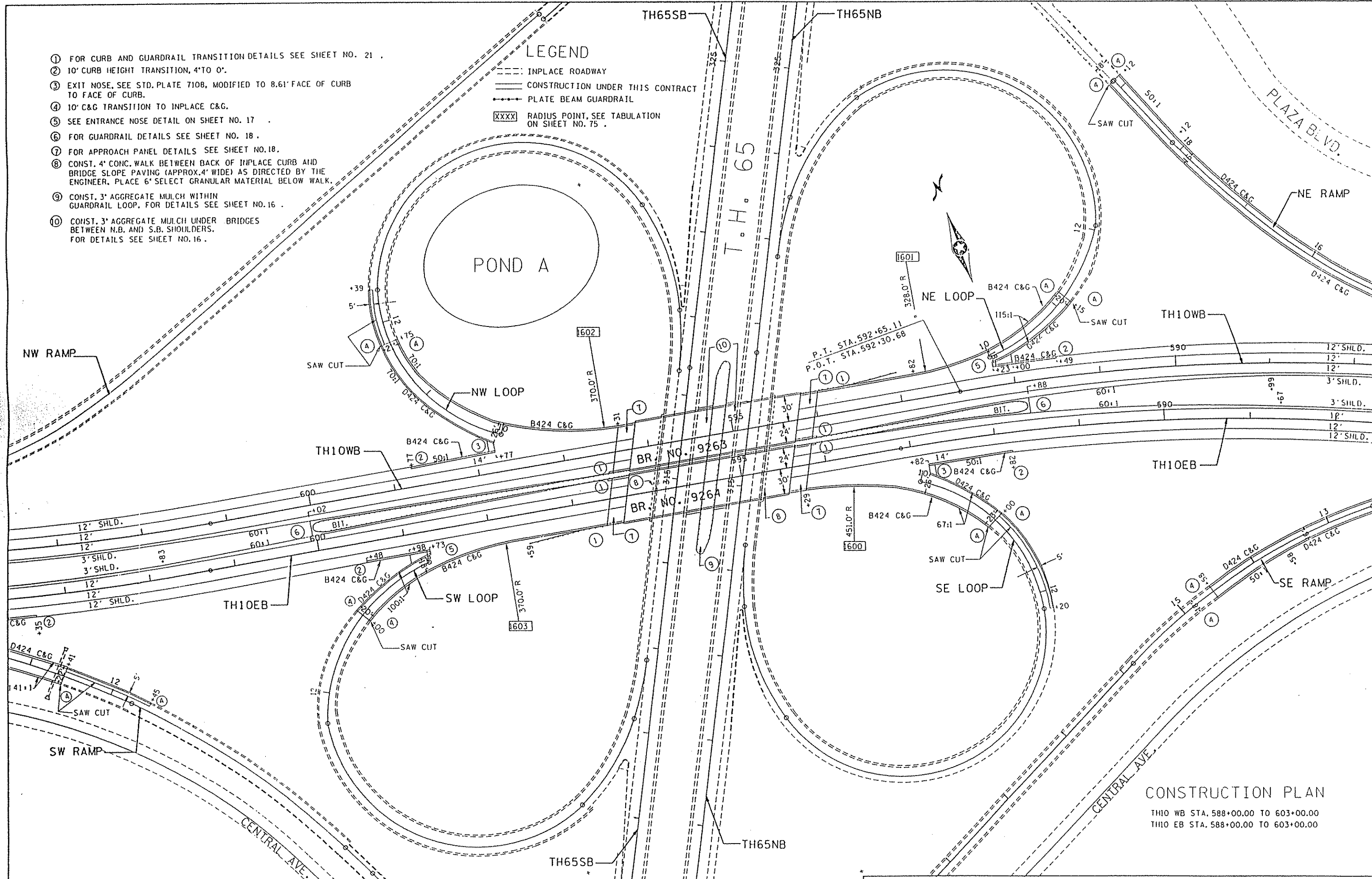
CONSTRUCTION PLAN

TH10 WB STA. 602+00.00 TO 614+50.00  
TH10 EB STA. 602+00.00 TO 614+50.00

- ① FOR CURB AND GUARDRAIL TRANSITION DETAILS SEE SHEET NO. 21 .
- ② 10' CURB HEIGHT TRANSITION, 4" TO 0".
- ③ EXIT NOSE, SEE STD. PLATE 710B, MODIFIED TO 8.61' FACE OF CURB TO FACE OF CURB.
- ④ 10' C&G TRANSITION TO INPLACE C&G.
- ⑤ SEE ENTRANCE NOSE DETAIL ON SHEET NO. 17 .
- ⑥ FOR GUARDRAIL DETAILS SEE SHEET NO. 18 .
- ⑦ FOR APPROACH PANEL DETAILS SEE SHEET NO.18.
- ⑧ CONST. 4' CONC. WALK BETWEEN BACK OF INPLACE CURB AND BRIDGE SLOPE PAVING (APPROX.4' WIDE) AS DIRECTED BY THE ENGINEER. PLACE 6" SELECT GRANULAR MATERIAL BELOW WALK.
- ⑨ CONST. 3" AGGREGATE MULCH WITHIN GUARDRAIL LOOP, FOR DETAILS SEE SHEET NO.16 .
- ⑩ CONST. 3" AGGREGATE MULCH UNDER BRIDGES BETWEEN N.B. AND S.B. SHOULDERS. FOR DETAILS SEE SHEET NO.16 .




**LEGEND**

- - - INPLACE ROADWAY
- CONSTRUCTION UNDER THIS CONTRACT
- PLATE BEAM GUARDRAIL
- XXXX RADIUS POINT, SEE TABULATION ON SHEET NO. 75 .



**CONSTRUCTION PLAN**  
 TH10 WB STA. 588+00.00 TO 603+00.00  
 TH10 EB STA. 588+00.00 TO 603+00.00

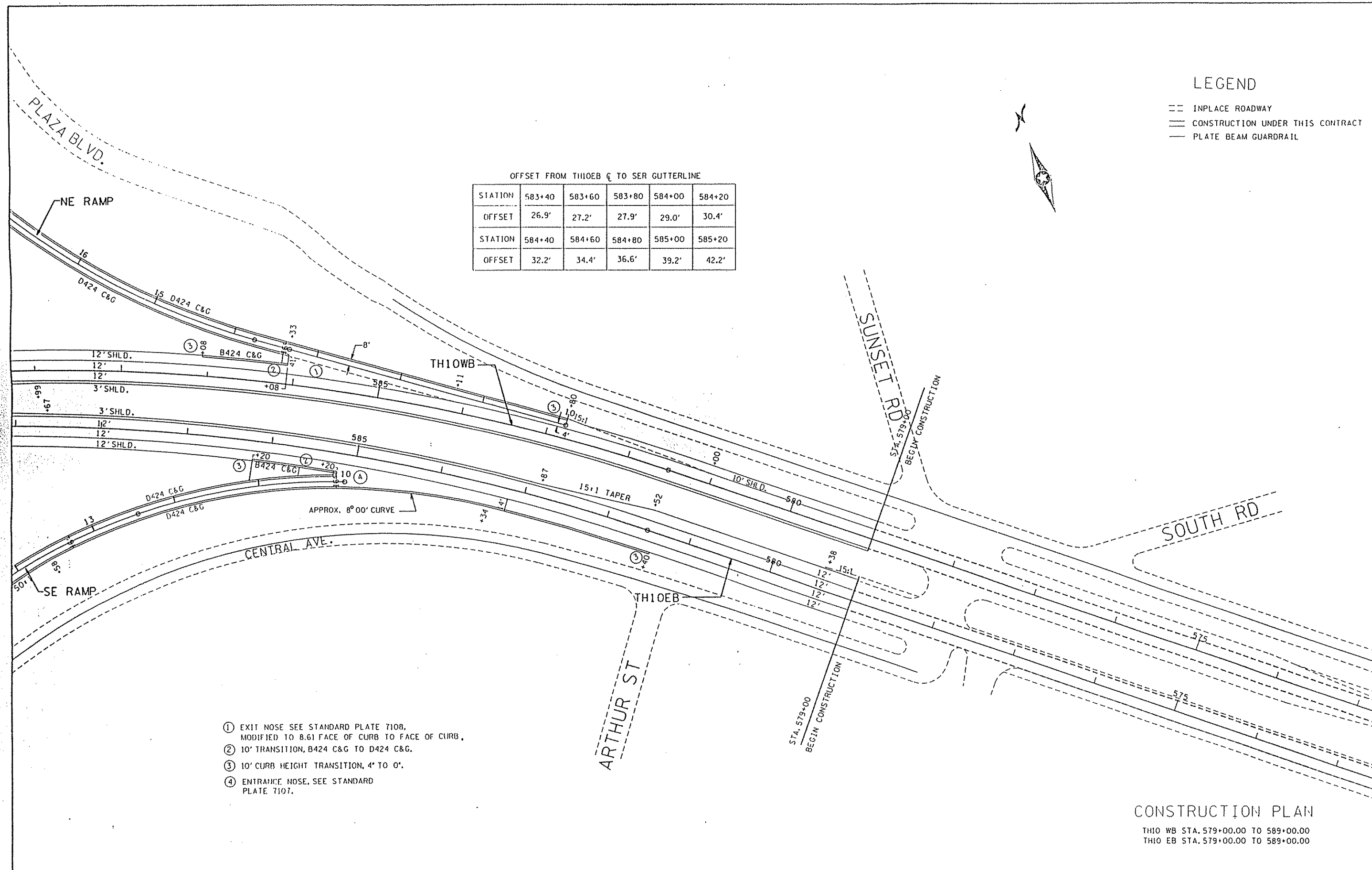
### LEGEND

-  INPLACE ROADWAY
-  CONSTRUCTION UNDER THIS CONTRACT
-  PLATE BEAM GUARDRAIL



OFFSET FROM THIOEB C TO SER GUTTERLINE

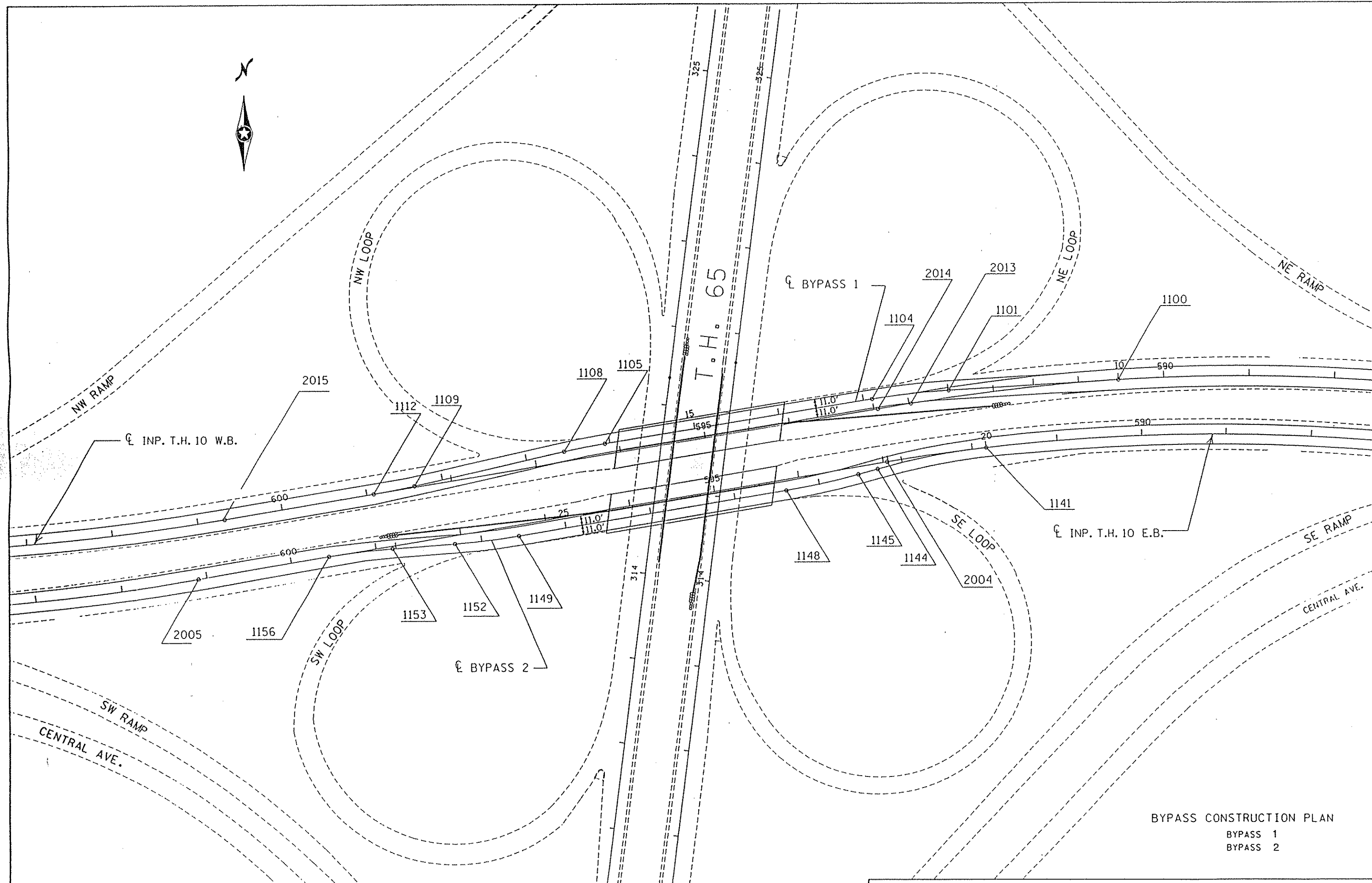
STATION	583+40	583+60	583+80	584+00	584+20
OFFSET	26.9'	27.2'	27.9'	29.0'	30.4'
STATION	584+40	584+60	584+80	585+00	585+20
OFFSET	32.2'	34.4'	36.6'	39.2'	42.2'



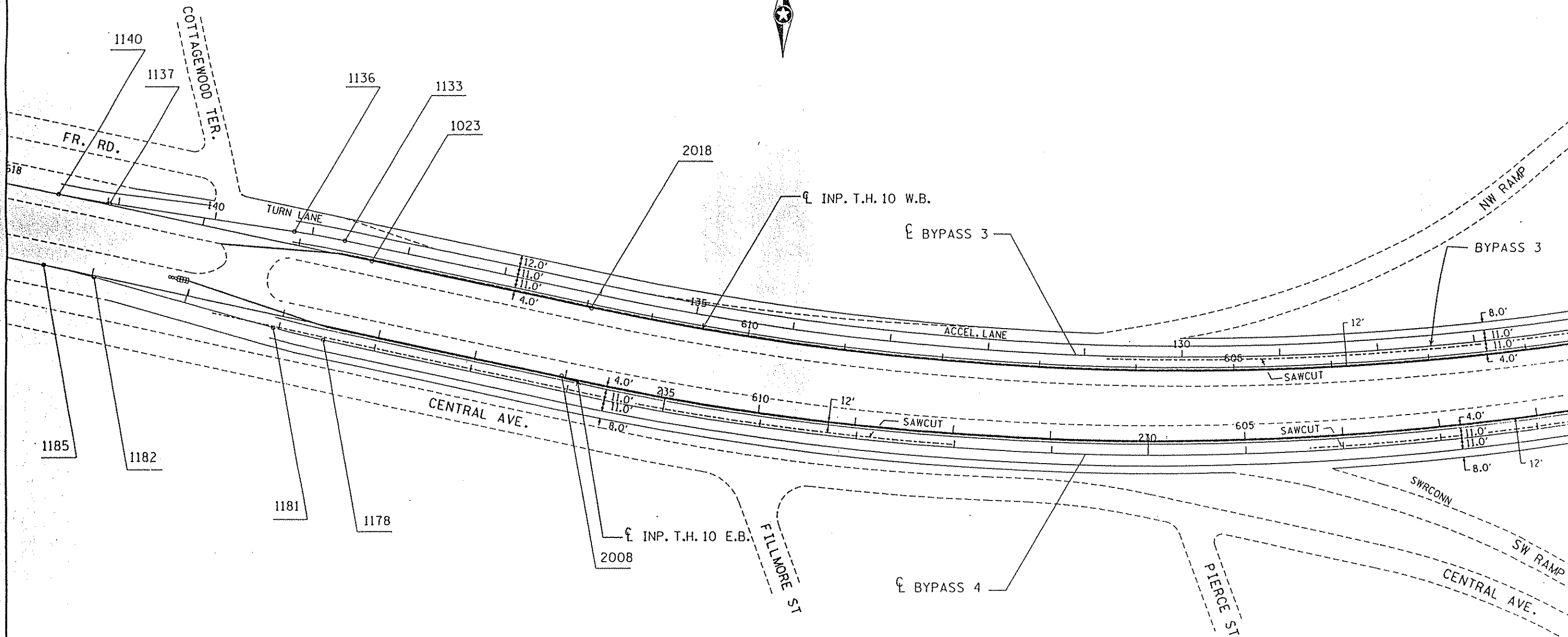
- ① EXIT NOSE SEE STANDARD PLATE 7108, MODIFIED TO 8.61 FACE OF CURB TO FACE OF CURB.
- ② 10' TRANSITION, B424 C&G TO D424 C&G.
- ③ 10' CURB HEIGHT TRANSITION, 4" TO 0".
- ④ ENTRANCE NOSE, SEE STANDARD PLATE 7107.

### CONSTRUCTION PLAN

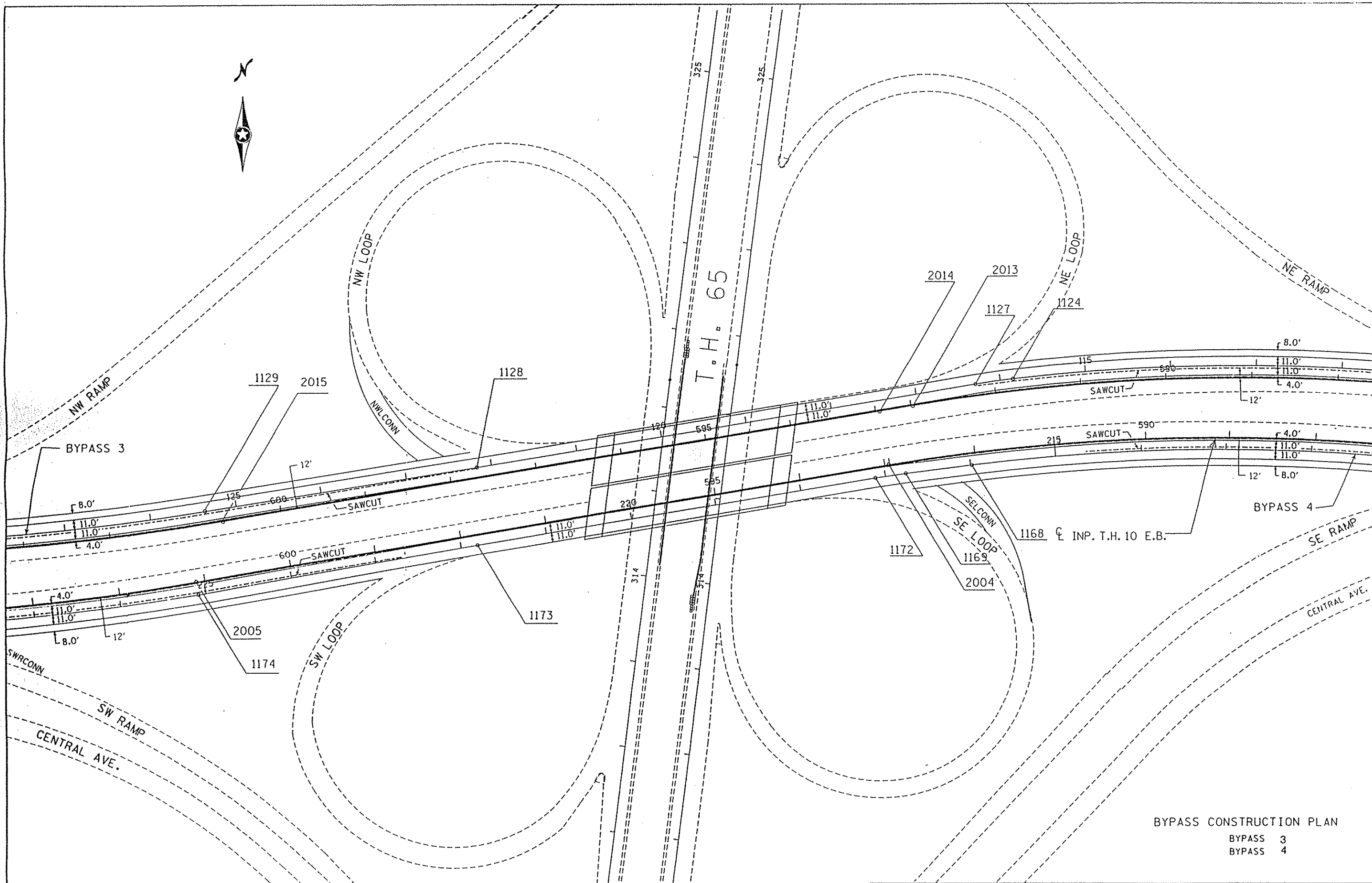
THIO WB STA. 579+00.00 TO 589+00.00  
 THIO EB STA. 579+00.00 TO 589+00.00



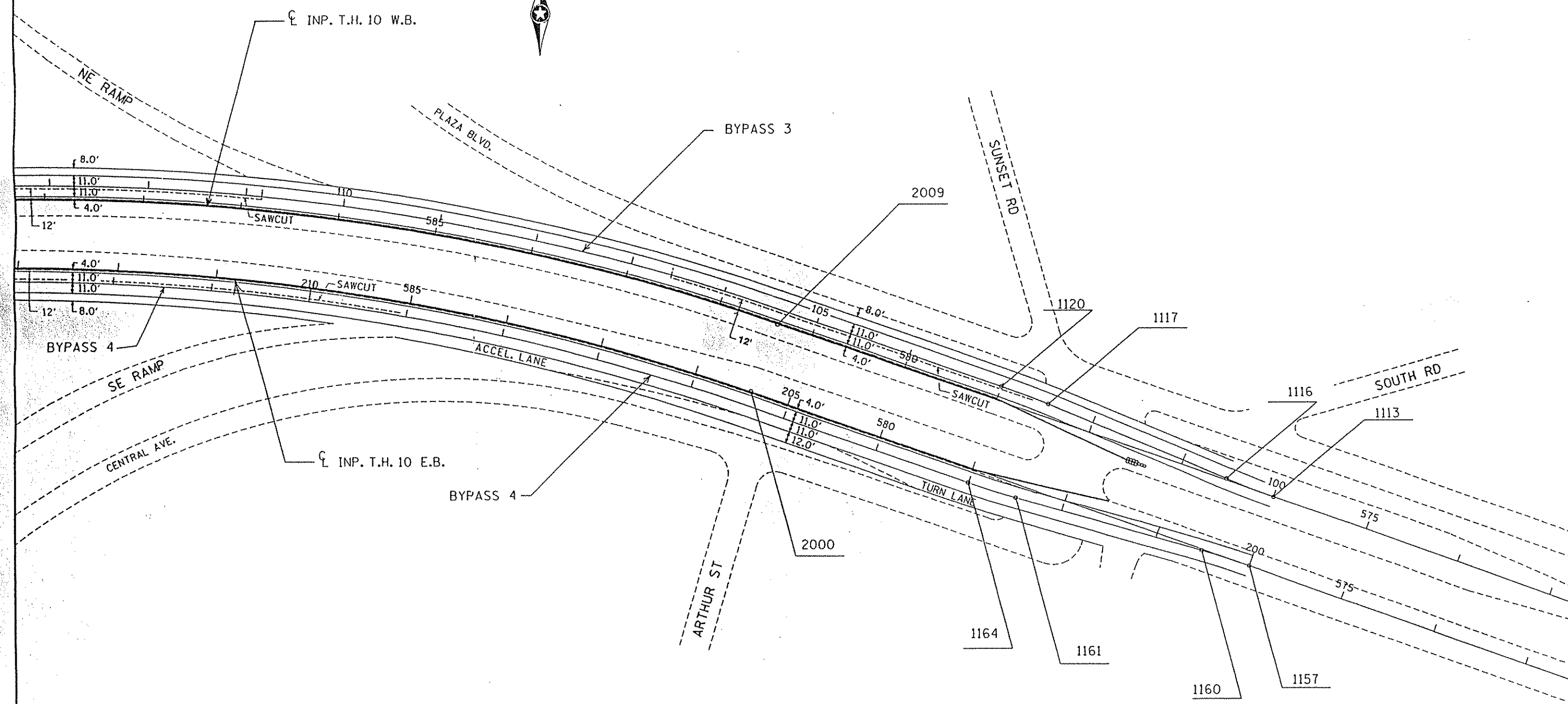
BYPASS CONSTRUCTION PLAN  
BYPASS 1  
BYPASS 2



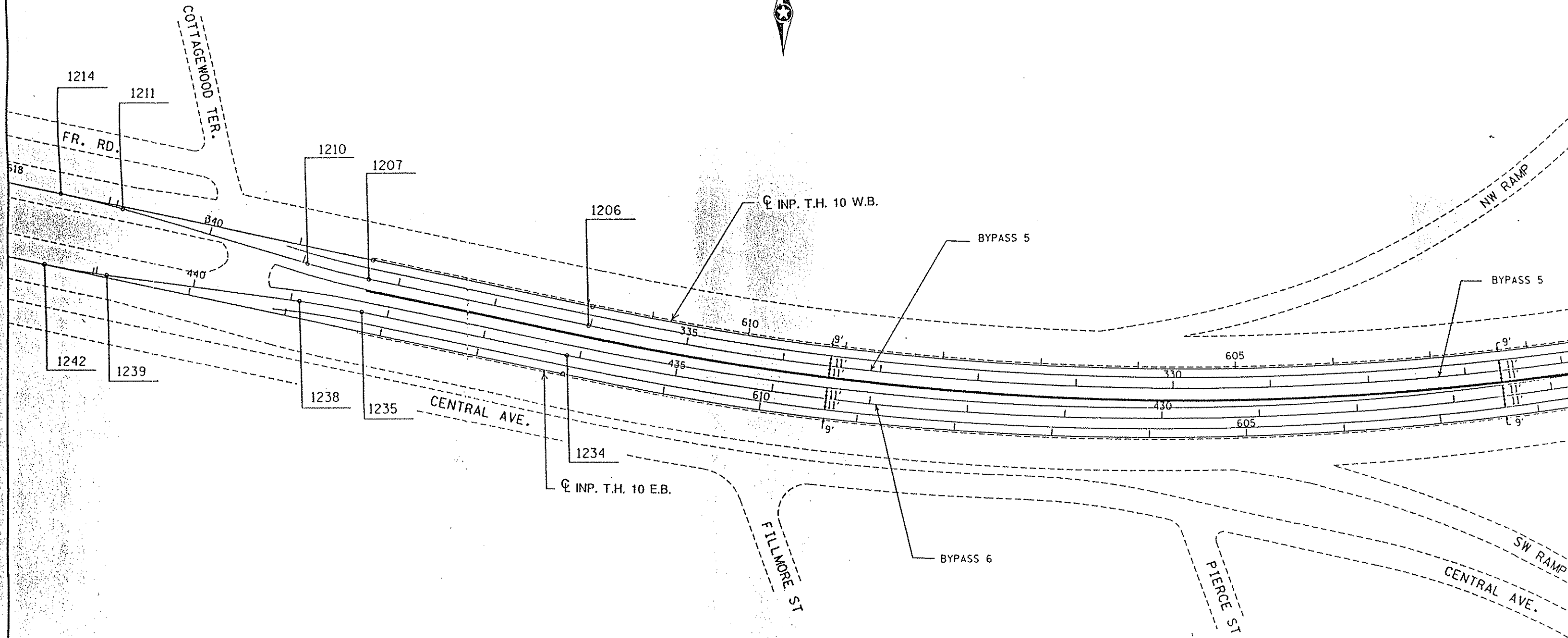
BYPASS CONSTRUCTION PLAN  
BYPASS 3  
BYPASS 4



BYPASS CONSTRUCTION PLAN  
BYPASS 3  
BYPASS 4

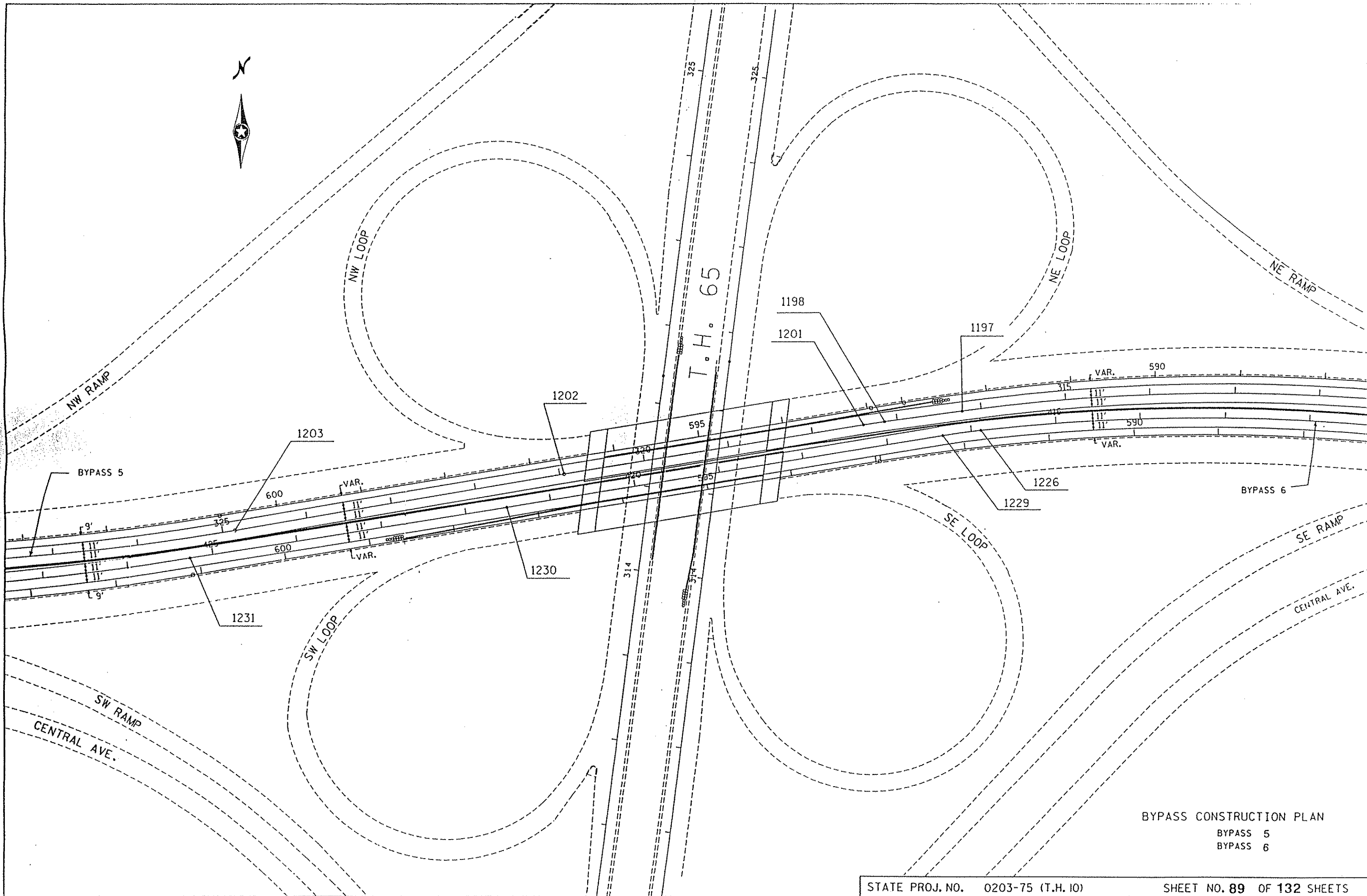


BYPASS CONSTRUCTION PLAN  
BYPASS 3  
BYPASS 4

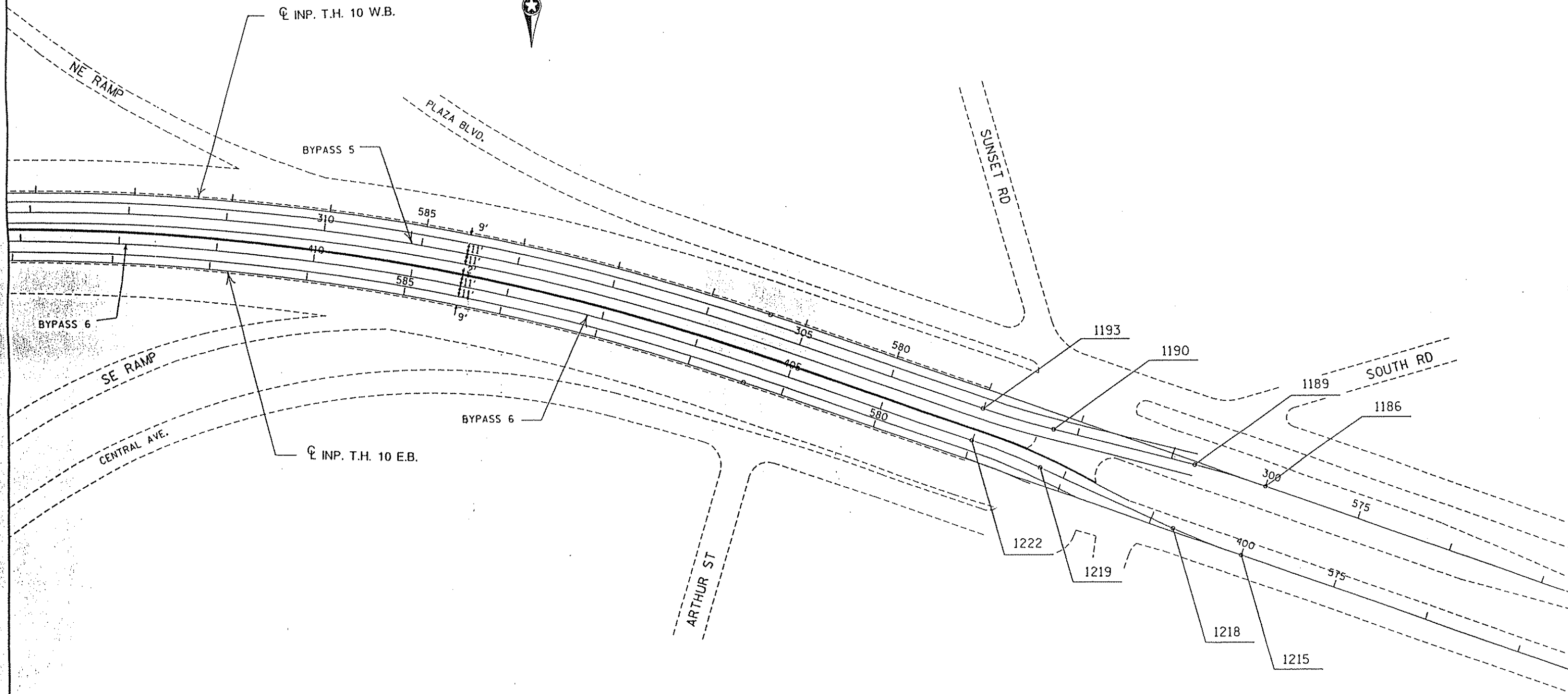


BYPASS CONSTRUCTION PLAN  
BYPASS 5  
BYPASS 6

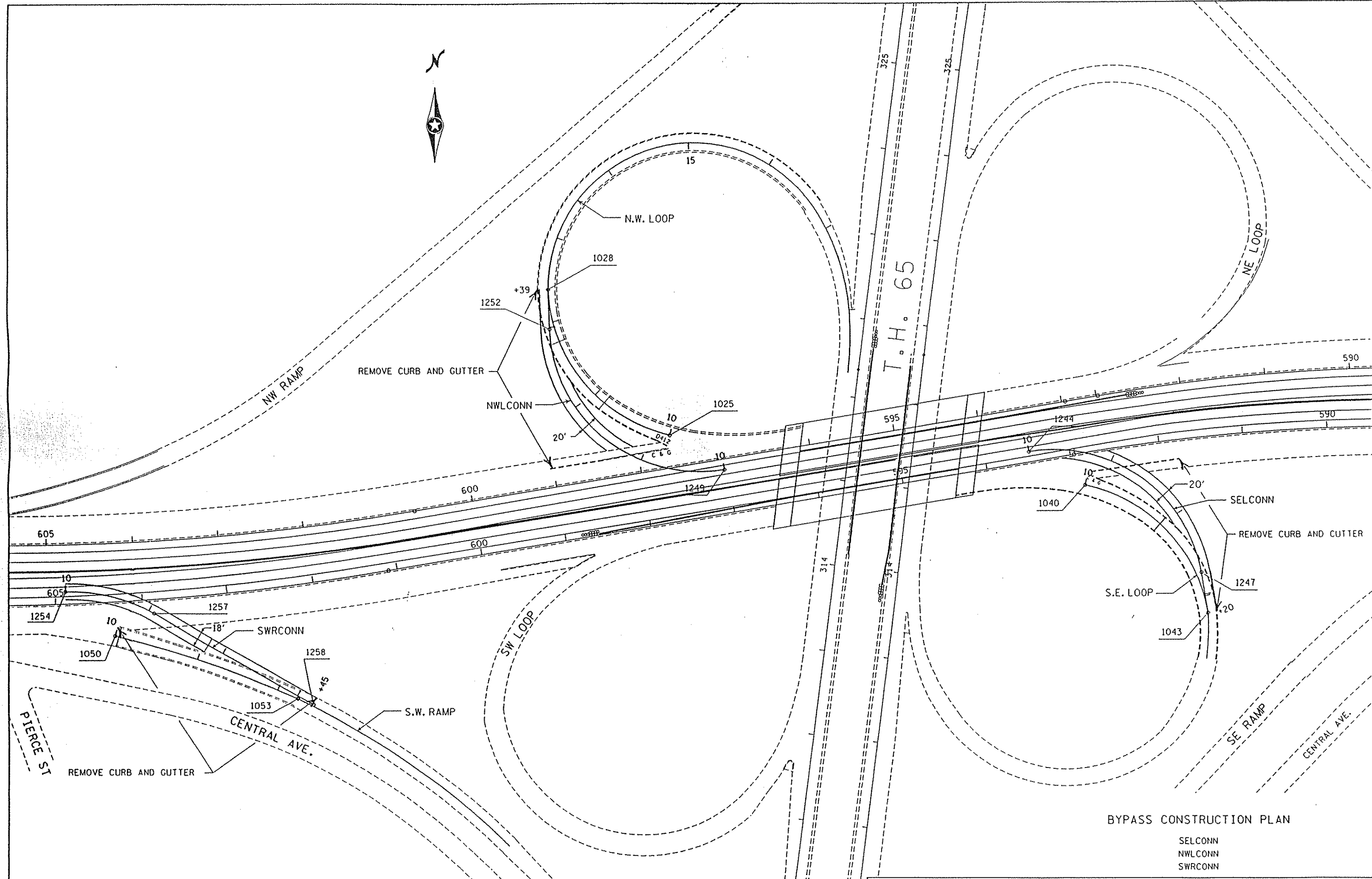




BYPASS CONSTRUCTION PLAN  
BYPASS 5  
BYPASS 6



BYPASS CONSTRUCTION PLAN  
BYPASS 5  
BYPASS 6

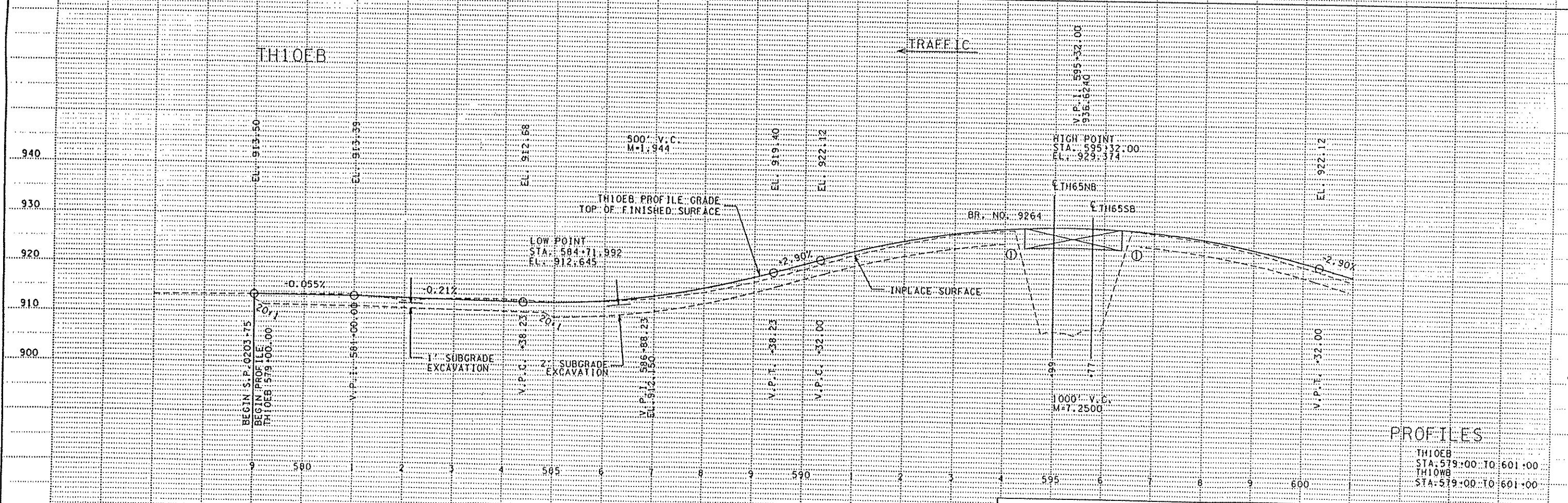
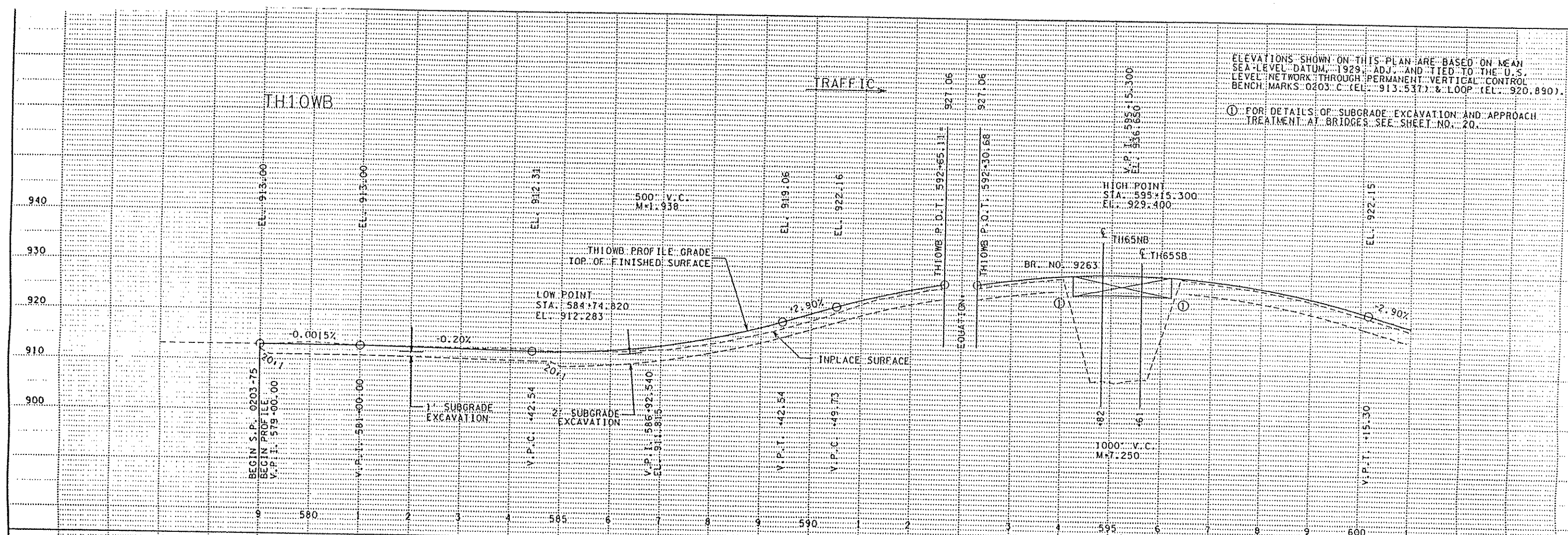


BYPASS CONSTRUCTION PLAN

- SELCONN
- NWLCNN
- SWRCONN

ELEVATIONS SHOWN ON THIS PLAN ARE BASED ON MEAN SEA LEVEL DATUM, 1929, ADJ. AND TIED TO THE U.S. LEVEL NETWORK THROUGH PERMANENT VERTICAL CONTROL BENCH MARKS 0203.C (EL. 913.537) & LOOP (EL. 920.890).

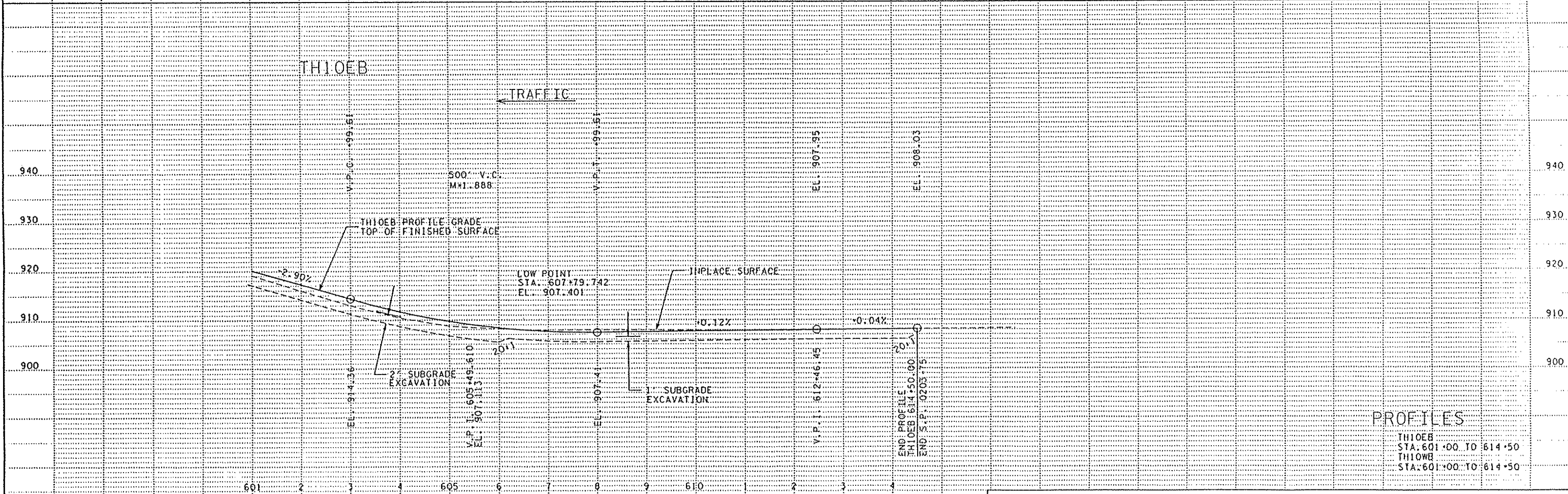
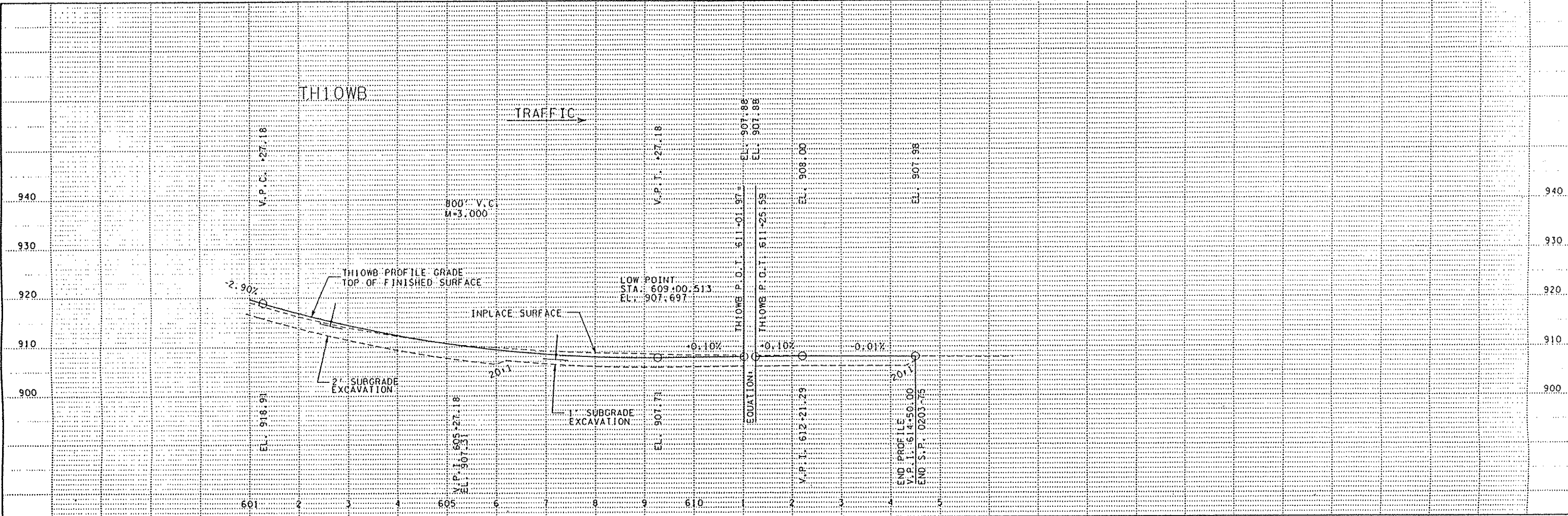
① FOR DETAILS OF SUBGRADE EXCAVATION AND APPROACH TREATMENT AT BRIDGES SEE SHEET NO. 20.



**PROFILES**

TH10EB  
STA. 579+00 TO 601+00

TH10WB  
STA. 579+00 TO 601+00



**PROFILES**  
 TH10EB  
 STA: 601+00 TO 614+50  
 TH10WB  
 STA: 601+00 TO 614+50

NW RAMP

TRAFFIC ←

SW RAMP

TRAFFIC →

920

920

910

910

900

900

NW RAMP PROFILE GRADE  
TOP OF FINISHED SURFACE

HIGH POINT  
STA. 10+66.434  
EL. 907.556

INPLACE SURFACE

0.26%  
1' SUBGRADE  
EXCAVATION

0.44%  
20:1

BEGIN PROFILE  
NW RAMP 10+00.00  
EL. 907.42

V.P.C. 33.00  
EL. 907.51

90' V.C.  
M=0.079  
V.P. 10+78.00  
EL. 907.63

V.P.T. 23.00  
EL. 907.42

END PROFILE  
NW RAMP 11+25.00  
EL. 907.42

SW RAMP PROFILE GRADE  
TOP OF FINISHED SURFACE

100' V.C.  
M=0.066

INPLACE SURFACE

1.03%

1.56%

1' SUBGRADE  
EXCAVATION

BEGIN PROFILE  
SW RAMP 10+00.00  
EL. 910.64

V.P.C. 25.00  
EL. 910.90

90' V.C.  
M=0.089  
V.P. 10+75.00  
EL. 911.41

V.P.T. 19.00  
EL. 912.19

END PROFILE  
SW RAMP 11+41.00  
EL. 912.44

NW LOOP

TRAFFIC →

SW LOOP

TRAFFIC →

930

930

920

920

910

910

NW LOOP PROFILE GRADE  
TOP OF FINISHED SURFACE

INPLACE SURFACE

1' SUBGRADE  
EXCAVATION

20:1

BEGIN PROFILE  
NW LOOP 10+00.00  
EL. 926.53

V.P.C. 10+25.00  
EL. 925.74

V.P. 10+50.00  
EL. 924.83

V.P. 10+75.00  
EL. 923.80

V.P. 11+00.00  
EL. 922.64

V.P. 11+25.00  
EL. 921.60

V.P. 11+50.00  
EL. 920.69

V.P. 11+75.00  
EL. 919.94

END PROFILE  
NW LOOP 11+75.00

SW LOOP PROFILE GRADE  
TOP OF FINISHED SURFACE

INPLACE SURFACE

1' SUBGRADE  
EXCAVATION

2.77%

3.56%

BEGIN PROFILE  
SW LOOP 10+00.00  
EL. 925.12

V.P.C. 21.97  
EL. 923.04

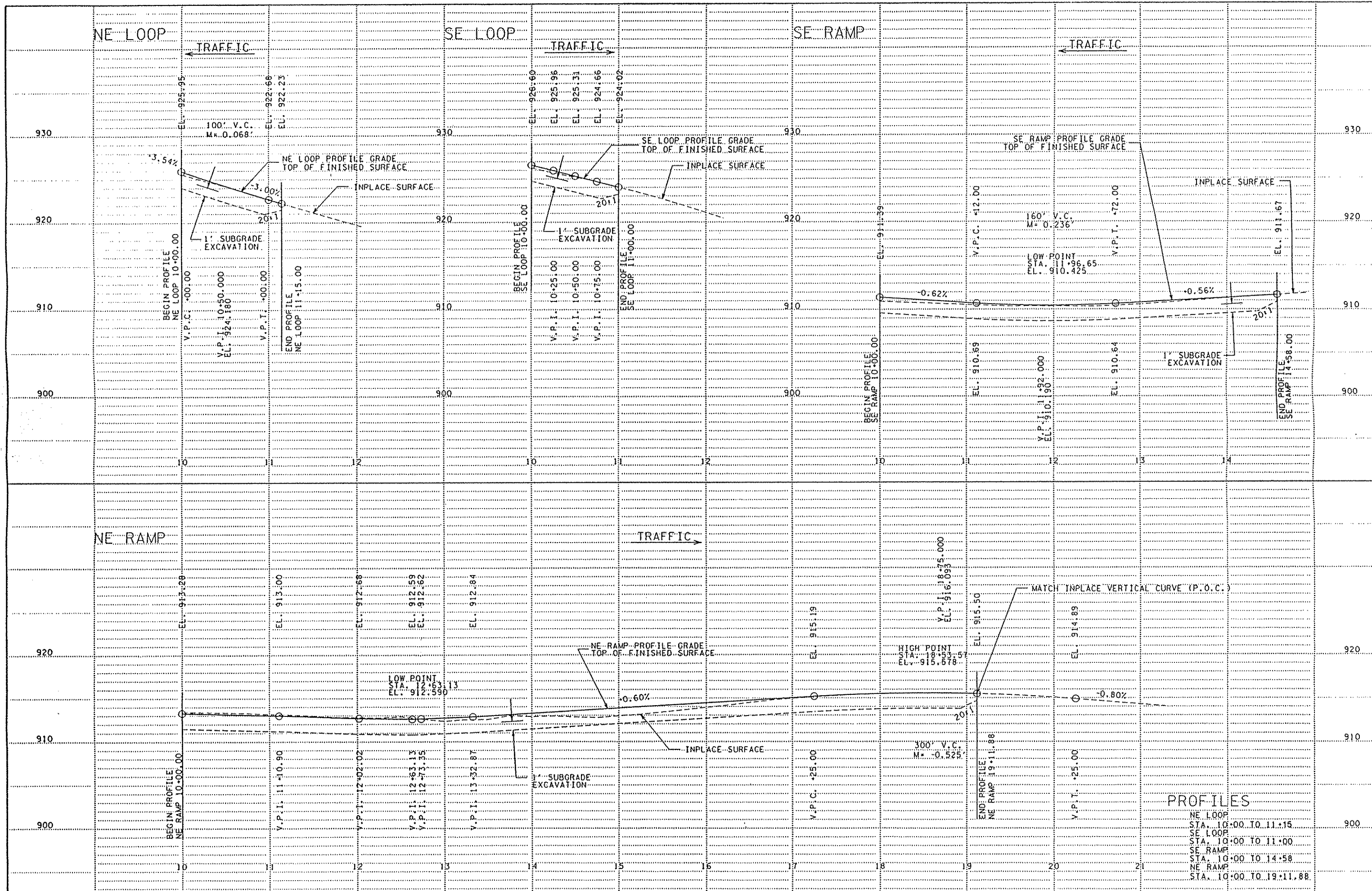
90' V.C.  
M=0.089  
V.P. 10+47.97  
EL. 923.79

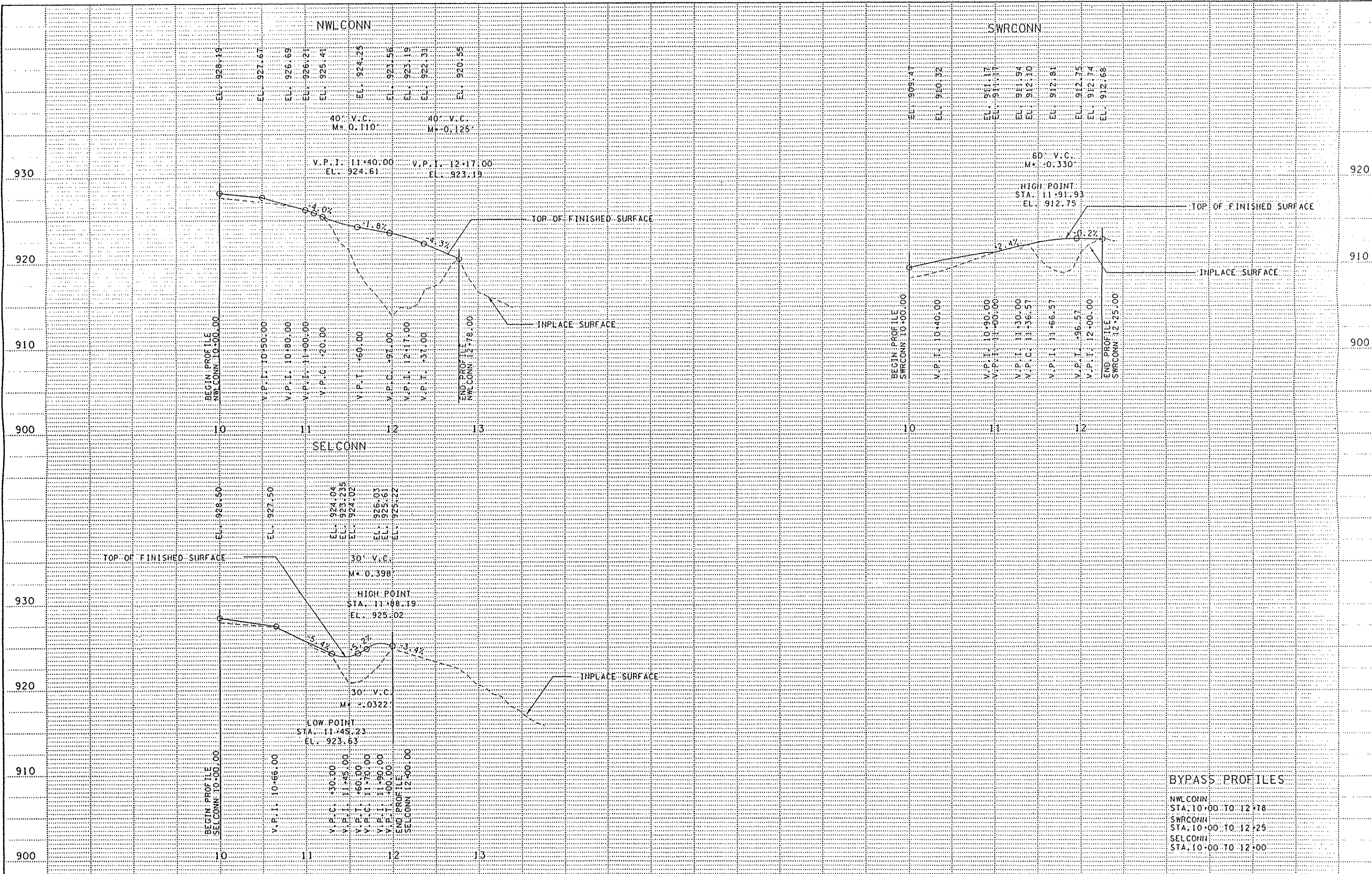
V.P.T. 19.00  
EL. 922.19

END PROFILE  
SW LOOP 11+00.00  
EL. 921.84

PROFILES

NW RAMP  
STA. 10+00 TO 11+25  
SW RAMP  
STA. 10+00 TO 11+41  
NW LOOP  
STA. 10+00 TO 11+75  
SW LOOP  
STA. 10+00 TO 11+00

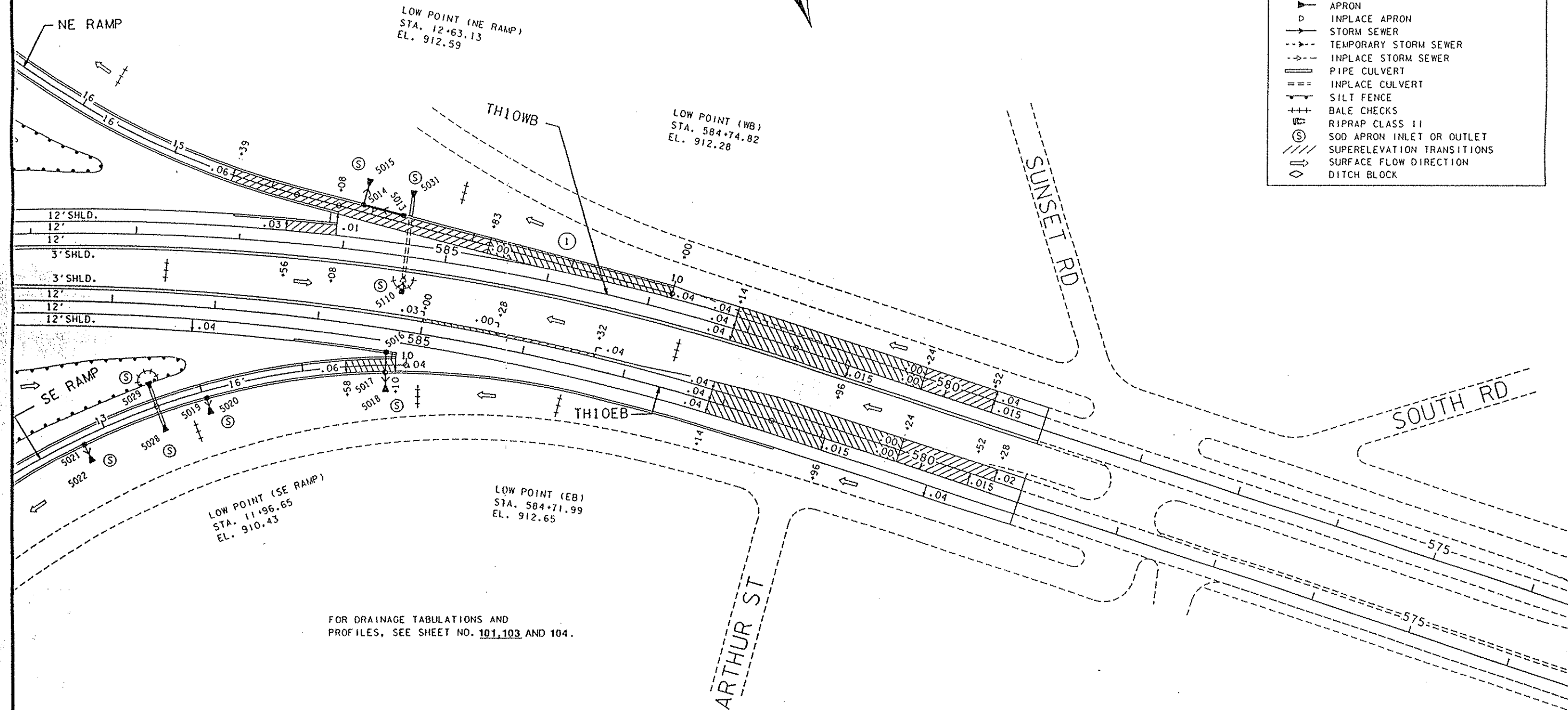




**BYPASS PROFILES**  
 NWLCONN  
 STA. 10+00 TO 12+18  
 SWRCONN  
 STA. 10+00 TO 12+25  
 SELCONN  
 STA. 10+00 TO 12+00



LEGEND	
=====	CONSTRUCTION UNDER THIS CONTRACT
XXXX	STRUCTURE NUMBER
■	CATCH BASIN
□	INPLACE CATCH BASIN
●	MANHOLE
▲	APRON
▷	INPLACE APRON
→	STORM SEWER
- - - -	TEMPORARY STORM SEWER
- · - ·	INPLACE STORM SEWER
	PIPE CULVERT
===	INPLACE CULVERT
⊥	SILT FENCE
⊥⊥	BALE CHECKS
⊥⊥⊥	RIPRAP CLASS II
⊙	SOD APRON INLET OR OUTLET
///	SUPERELEVATION TRANSITIONS
→	SURFACE FLOW DIRECTION
◇	DITCH BLOCK



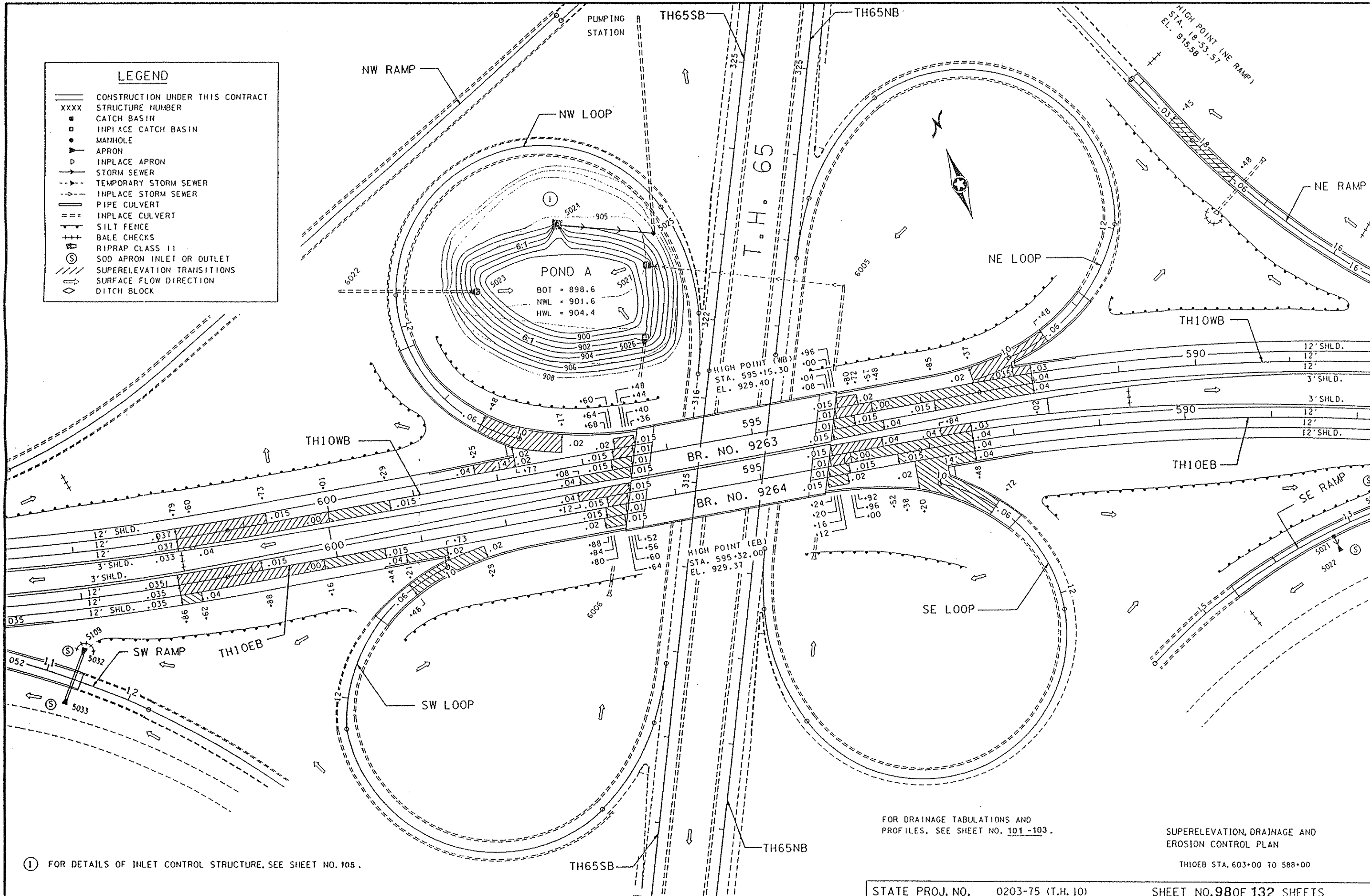
FOR DRAINAGE TABULATIONS AND PROFILES, SEE SHEET NO. 101, 103 AND 104.

① OUTPUT GUTTER, NE RAMP STATION 10+00 TO 11+83 RT.

SUPERELEVATION, DRAINAGE AND EROSION CONTROL PLAN

TH10EB STA. 589+00 TO 573+00

LEGEND	
	CONSTRUCTION UNDER THIS CONTRACT
XXXX	STRUCTURE NUMBER
■	CATCH BASIN
□	INPLACE CATCH BASIN
●	MANHOLE
○	APRON
▽	INPLACE APRON
—	STORM SEWER
- - -	TEMPORARY STORM SEWER
- · - · -	INPLACE STORM SEWER
	PIPE CULVERT
	INPLACE CULVERT
	SILT FENCE
	BALE CHECKS
	RIPRAP CLASS 11
○	SOD APRON INLET OR OUTLET
	SUPERELEVATION TRANSITIONS
→	SURFACE FLOW DIRECTION
◇	DITCH BLOCK



**POND A**  
 BOT = 898.6  
 NWL = 901.6  
 HWL = 904.4

① FOR DETAILS OF INLET CONTROL STRUCTURE, SEE SHEET NO. 105.

FOR DRAINAGE TABULATIONS AND PROFILES, SEE SHEET NO. 101-103.

SUPERELEVATION, DRAINAGE AND EROSION CONTROL PLAN

TH10EB STA. 603+00 TO 588+00

FOR DRAINAGE TABULATIONS AND PROFILES, SEE SHEET NO. 100, 103 AND 104.

LEGEND	
====	CONSTRUCTION UNDER THIS CONTRACT
XXXX	STRUCTURE NUMBER
■	CATCH BASIN
□	INPLACE CATCH BASIN
●	MANHOLE
▽	APRON
▷	INPLACE APRON
→	STORM SEWER
- - -	TEMPORARY STORM SEWER
- · - ·	INPLACE STORM SEWER
	PIPE CULVERT
	INPLACE CULVERT
+	SILT FENCE
+	BALE CHECKS
⊗	RIPRAP CLASS II
⊙	SOD APRON INLET OR OUTLET
///	SUPERELEVATION TRANSITIONS
→	SURFACE FLOW DIRECTION
◇	DITCH BLOCK



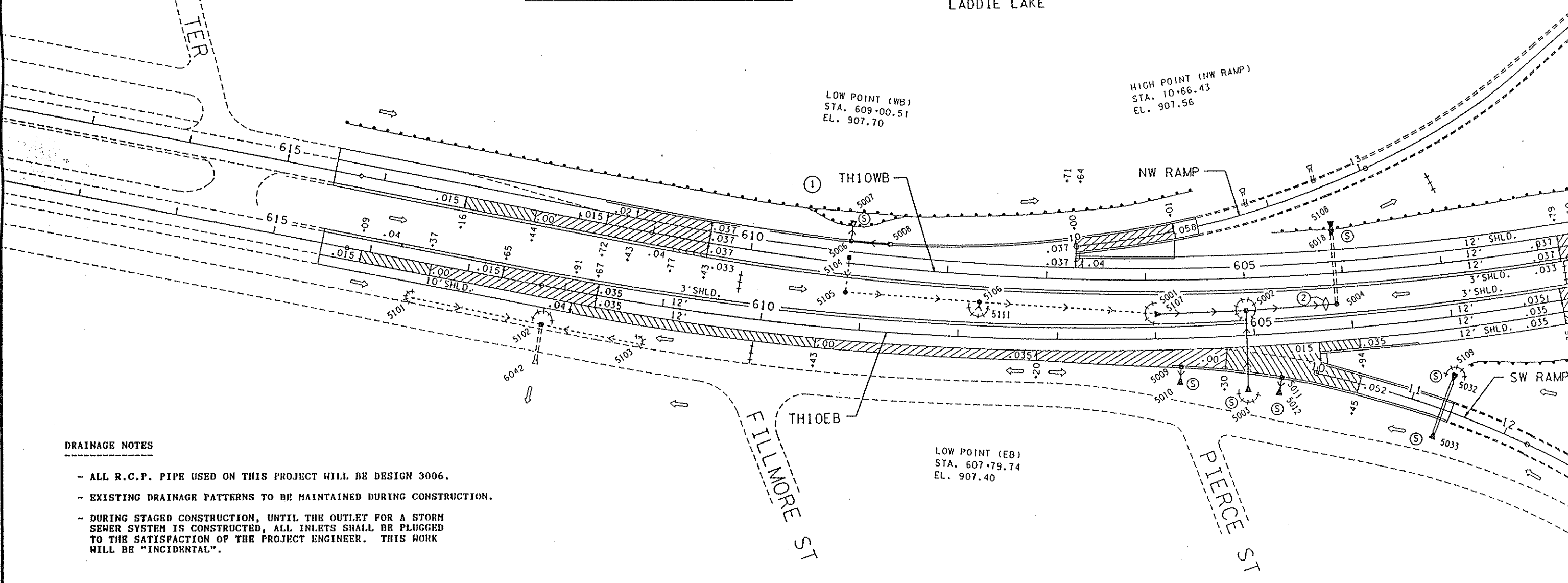
ENVIRONMENTALLY SENSITIVE AREA

LADDIE LAKE

COTTAGEWOOD TER

LOW POINT (WB)  
STA. 609+00.51  
EL. 907.70

HIGH POINT (NW RAMP)  
STA. 10+66.43  
EL. 907.56



**DRAINAGE NOTES**

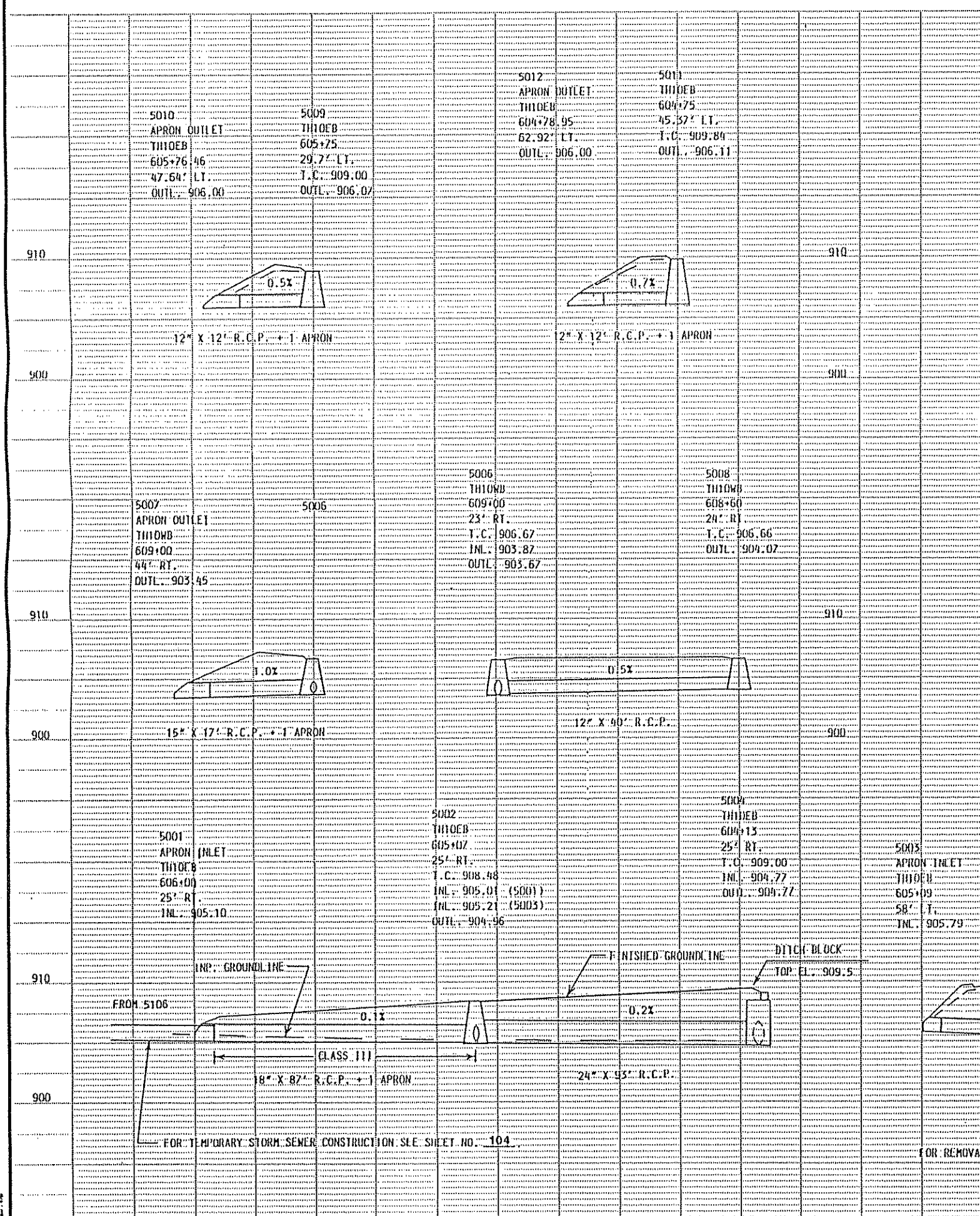
- ALL R.C.P. PIPE USED ON THIS PROJECT WILL BE DESIGN 3006.
- EXISTING DRAINAGE PATTERNS TO BE MAINTAINED DURING CONSTRUCTION.
- DURING STAGED CONSTRUCTION, UNTIL THE OUTLET FOR A STORM SEWER SYSTEM IS CONSTRUCTED, ALL INLETS SHALL BE PLUGGED TO THE SATISFACTION OF THE PROJECT ENGINEER. THIS WORK WILL BE "INCIDENTAL".

LOW POINT (EB)  
STA. 607+79.74  
EL. 907.40

- ① ADDITIONAL SILT FENCE FOR STAGED CONSTRUCTION.
- ② DITCH BLOCK TOP ELEVATION 909.5.

SUPERELEVATION, DRAINAGE AND EROSION CONTROL PLAN

THIOEB STA. 617+00 TO 602+00



### DRAINAGE STRUCTURES

STRUCT. NO.	COORDINATES		CONSTRUCTION			CASTING ASSEMBLY ②	PIPE SEWER ①				GUIDE POST TYPE B	SOD SO. YD.	REMARKS	
			M.H. OR C.B.	DESIGN	PAY HEIGHT LIN. FT.		12"	15"	18"	24"				
							R.C.P. LIN. FT.	R.C.P. LIN. FT.	R.C.P. LIN. FT.	R.C.P. LIN. FT.				
5009	895971.47	65217.11	C.B.	C, G OR H	2.9	D-5	12							
5010	895964.13	65200.68									1	9	12' APRON ③ ⑦	
5011	896062.70	65170.36	C.B.	C, G OR H	3.7	D-5	12							
5012	896053.62	65154.82									1	9	12' APRON ③ ⑦	
5008	895742.84	65439.96	C.B.	C, G OR H	2.6	D-5	40							
5006	895707.18	65457.29	C.B.	C OR G	3.0	D-4		17						
5007	895716.97	65475.86									1	9	15' APRON ③ ⑦	
5001	895966.24	65277.03							10	87			18' APRON ③ ④ ⑦	
5002	896053.45	65247.16	M.H.	C OR G	3.6	A-7								
5003	896025.88	65168.84						77					15' APRON ③ ⑦	
5004	896142.53	65219.84											⑧	
5904	896141.58	65220.13	M.H.	48-4020	4.3	M-11							⑤ ⑨	
TOTALS						⑥		64	94	87	93	5	45	

- ① CLASS II UNLESS OTHERWISE NOTED. DESIGN 3006.
- ② FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 107.
- ③ LOCATION AND ELEVATION GIVEN AT END OF APRON.
- ④ APRON TO BE INSTALLED AFTER REMOVAL OF TEMPORARY STORM SEWER FROM STAGED CONSTRUCTION. APRON TO BE 18" SAFETY APRON & GRATE DESIGN 3128 MODIFIED TO 10:1 SLOPE. FOR DETAIL SEE SHEET NO. 16.
- ⑤ CONNECT STRUCTURE TO INPLACE PIPE. THIS WORK SHALL BE 'INCIDENTAL'.
- ⑥ FOR CATCH BASIN AND MANHOLE SUMMARY SEE SHEET NO. 107.
- ⑦ TIE LAST 3 JOINTS.
- ⑧ COORDINATES GIVEN ARE AT CENTER OF THE CASTING.
- ⑨ COORDINATES GIVEN ARE AT CENTER OF THE 4020 STRUCTURE.
- ⑩ 87' OF CLASS III PIPE.

### STORM SEWER TABULATION AND PROFILE

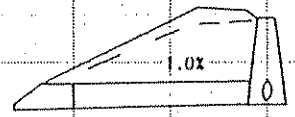
STRUCT. NO.	COORDINATES	CONSTRUCTION	CASTING ASSEMBLY	PIPE SEWER	GUIDE POST	SOD	REMARKS
5001	895966.24, 65277.03	C.B.	D-5	12"			
5002	896053.45, 65247.16	M.H.	A-7				
5003	896025.88, 65168.84						
5004	896142.53, 65219.84						
5904	896141.58, 65220.13	M.H.	M-11				

### DRAINAGE STRUCTURES

STRUCT. NO.	COORDINATES		CONSTRUCTION			CASTING ASSEMBLY ②	PIPE SEWER ①			GUIDE POST TYPE B EACH	SOO SO. YD.	REMARKS
			M.H. OR C.B.	DESIGN	PAY HEIGHT LIN. FT.		12" R.C.P. LIN. FT.	15" R.C.P. LIN. FT.				
	X	Y										
5013	897998.16	64813.46	C.B.	C OR G	3.8	D-4	40					
5014	897965.84	64837.03	C.B.	C OR G	4.5	D-5		20				
5015	897981.16	64858.03							1	9	15' APRON ③ ⑤	
5016	897934.37	64694.46	C.B.	C OR G	4.0	B-8	20					
5017	897926.78	64676.38	C.B.	C OR G	3.4	D-5	13					
5018	897920.22	64658.55							1	9	12' APRON ③ ⑤	
5019	897756.75	64714.81	C.B.	C, G OR H	2.8	D-4	10					
5020	897755.29	64698.88							1	9	12' APRON ③ ⑤	
5021	897629.85	64714.97	C.B.	C, G OR H	3.6	D-5	13					
5022	897631.56	64696.05							1	9	12' APRON ③ ⑤	
<b>TOTALS</b>					④		96	20	4	36		

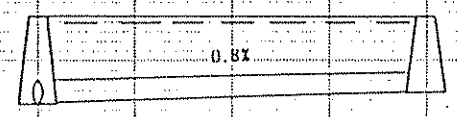
- ① CLASS II UNLESS OTHERWISE NOTED. DESIGN 3006.
- ② FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 107.
- ③ LOCATION AND ELEVATION GIVEN AT END OF APRON.
- ④ FOR CATCH BASIN AND MANHOLE SUMMARY SEE SHEET NO. 107.
- ⑤ TIE LAST 3 JOINTS.

5015  
APRON OUTLET  
NE RAMP  
13+10  
33' RT.  
OUTL. 907.60



15' X 20' R.C.P. + 1 APRON

5014  
NE RAMP  
13+10  
7' RT.  
T.C. 912.36  
INL. 908.09  
OUTL. 907.84



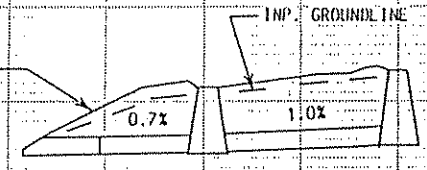
12' X 40' R.C.P.

5018  
APRON OUTLET  
SE RAMP  
10+20  
26' LT.  
OUTL. 907.20

5017  
SE RAMP  
10+20  
7' LT.  
T.C. 910.78  
INL. 907.35  
OUTL. 907.35

5016  
THROB  
585+30  
23' LT.  
T.C. 911.55  
OUTL. 907.51

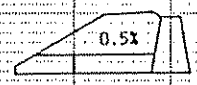
FINISHED GROUNDLINE



12' X 20' R.C.P.

12' X 13' R.C.P. + 1 APRON

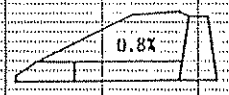
5020  
APRON OUTLET  
SE RAMP  
11+96.65  
23' LT.  
OUTL. 906.90



12' X 10' R.C.P. + 1 APRON

5019  
SE RAMP  
11+96.65  
7' LT.  
T.C. 909.85  
OUTL. 906.97

5022  
APRON OUTLET  
SE RAMP  
13+25  
26' LT.  
OUTL. 906.60



12' X 13' R.C.P. + 1 APRON

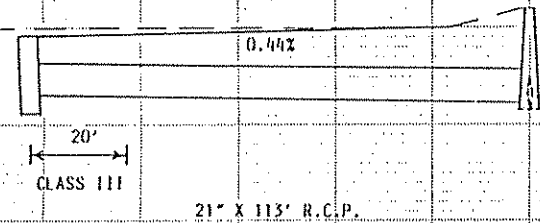
5021  
SE RAMP  
13+25  
7' LT.  
T.C. 910.35  
OUTL. 906.70

STORM SEWER TABULATION AND PROFILE

5024  
TH65SD  
322+90.31  
194.46' LT.  
OUIL. 901.6

5025

INLET CONTROL STRUCTURE



DRAINAGE STRUCTURES

STRUCT. NO.	COORDINATES		CONSTRUCTION			PIPE SEWER (1)		GUIDE POST TYPE B EACH	REMARKS	
			M.H. OR C.B.	DESIGN	PAY HEIGHT LIN.FT.	CASTING ASSEMBLY (2)	18"			21"
							R.C.P. LIN.FT.			R.C.P. LIN.FT.
5024	896915.12	65380.35					(8) 113	1	(10)	
5025	897016.40	65331.11	M.H.	A OR F	5.3	A-7			(5)	
5026	896963.99	65219.12						1	15' APRON (3) (4) (7)	
6007	897005.43	65294.53					(9) 4			
5027	896997.79	65298.41						1	18' APRON (3) (4) (7)	
TOTALS					(6)		4	113	3	

- (1) CLASS II UNLESS OTHERWISE NOTED. DESIGN 3006.
- (2) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 107.
- (3) LOCATION AND ELEVATION GIVEN AT END OF APRON.
- (4) FOR RIPRAP QUANTITIES SEE TABULATION ON SHEET NO. 107.
- (5) CONNECT STRUCTURE TO INPLACE PIPE. THIS WORK SHALL BE 'INCIDENTAL'.
- (6) FOR CATCH BASIN AND MANHOLE SUMMARY SEE SHEET NO. 107.
- (7) TIE ALL JOINTS.
- (8) 20' OF CLASS III PIPE.
- (9) 4' OF CLASS III PIPE.
- (10) FOR DETAILS OF INLET CONTROL STRUCTURE SEE SHEET NO. 105.

5026  
APRON OUTLET  
TH65SB  
321+69.0  
27.57' LT.  
OUIL. 901.66

6007 INP. THOLE  
595+74.93  
268.52' RT.  
T.C. 904.24  
INL. 901.15 (6005)  
OUIL. 901.35 (6005)

5025  
TH65SD  
322+92.57  
81.88' LT.  
T.C. 906.00  
INL. 901.14 (5024)  
OUIL. 900.80

5027  
APRON OUTLET  
TH65SB  
322+54.98  
83.56' LT.  
OUIL. 901.12

INP. GROUNDLINE

INP. 15" R.C.P.

INP. 21" R.C.P.

INP. 21" R.C.P. TO PUMPING STATION

6007 INP.

INP. 18" RCP FROM 6005

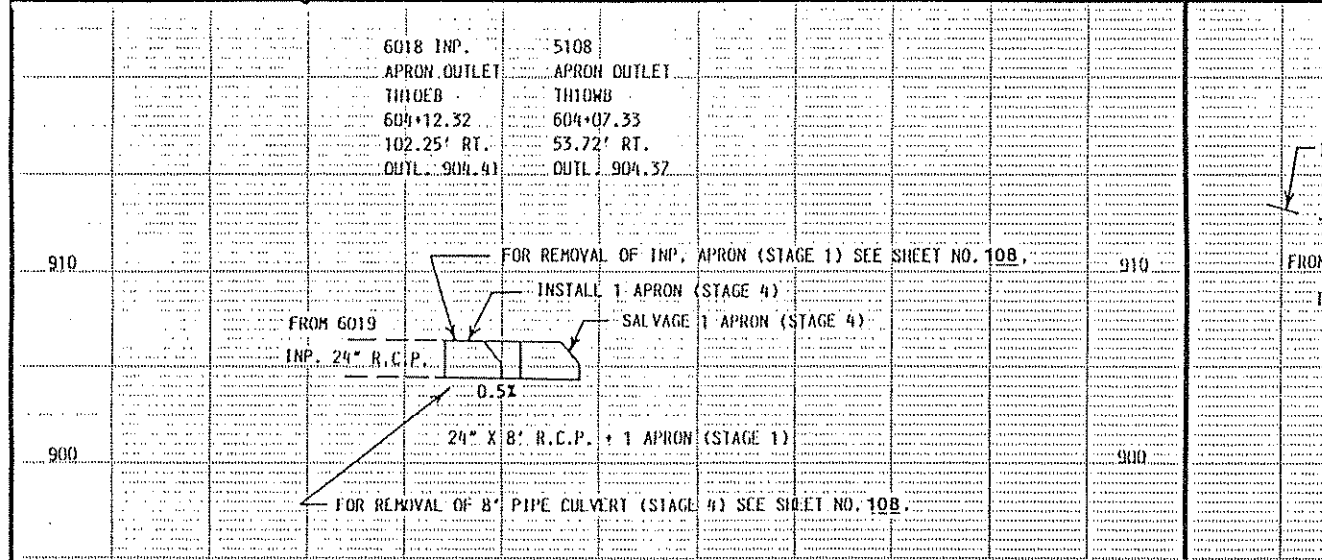
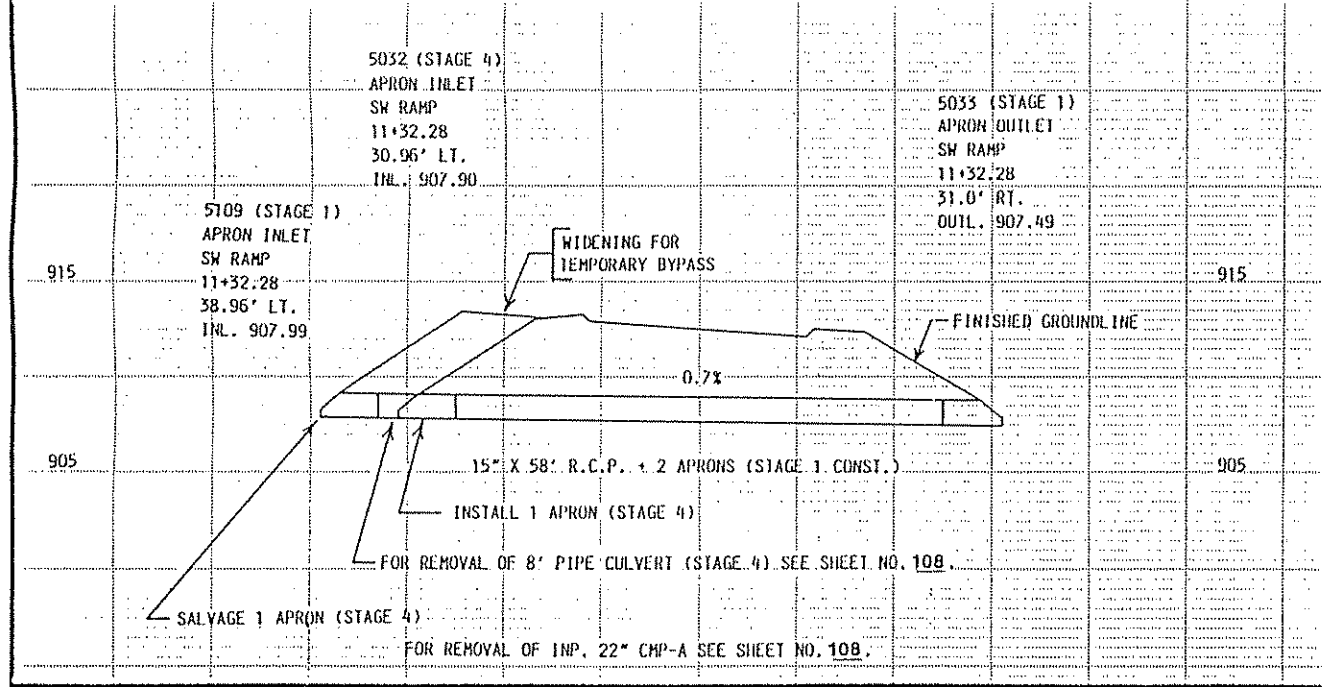
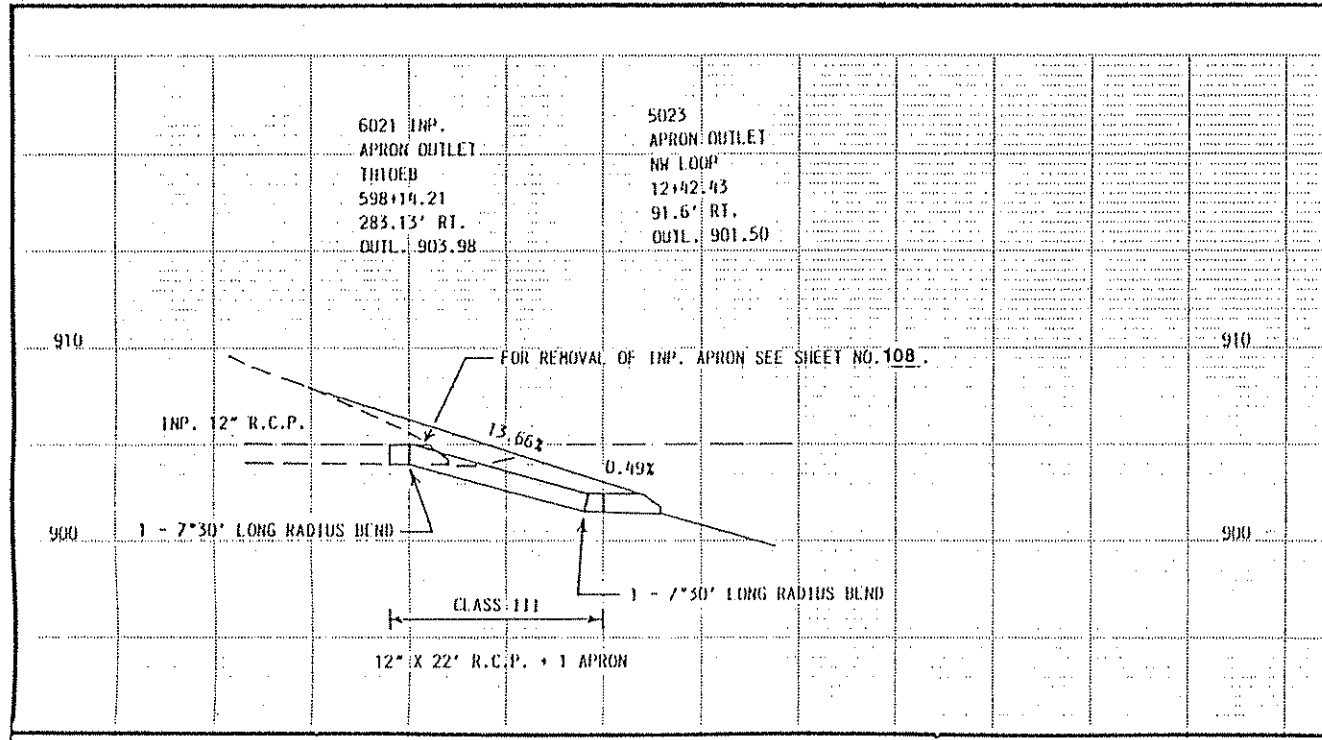
CLASS III

18" X 4' R.C.P. + 1 APRON

FOR REMOVAL OF INP. 15" R.C.P., 21" R.C.P. AND MANHOLE. SEE SHEET NO. 108.

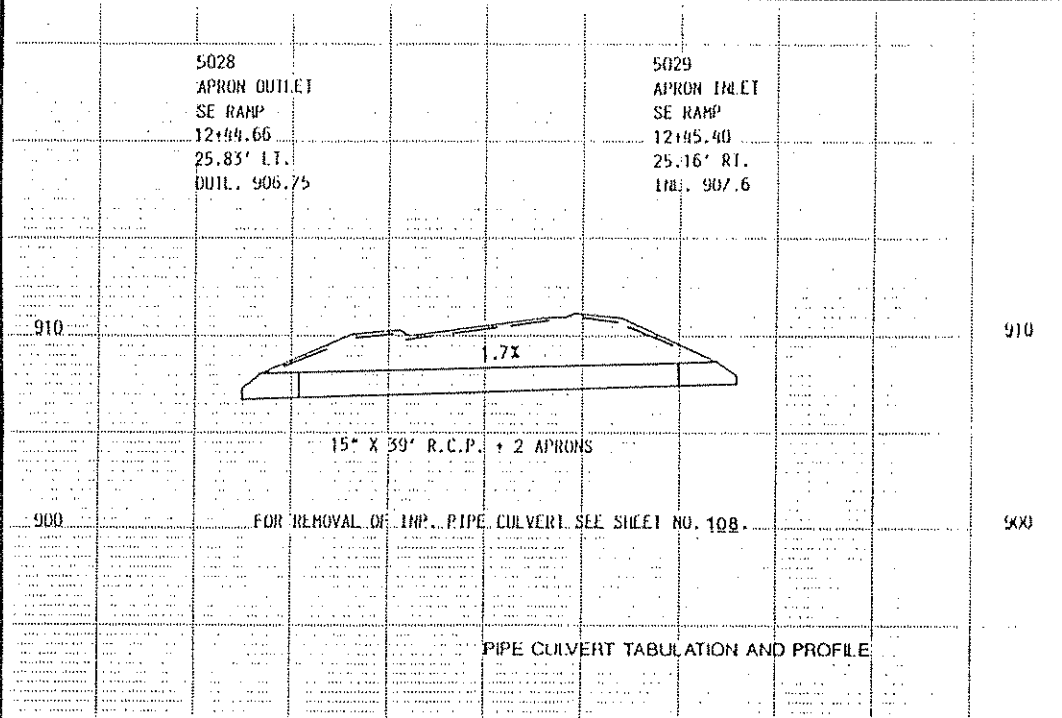
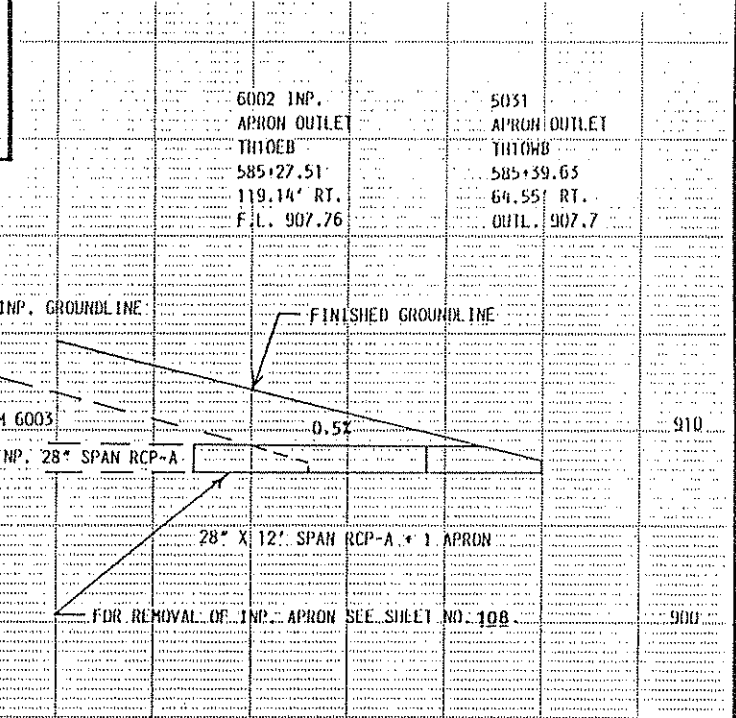
FOR REMOVAL OF INP. MANHOLE SEE SHEET NO. 108.

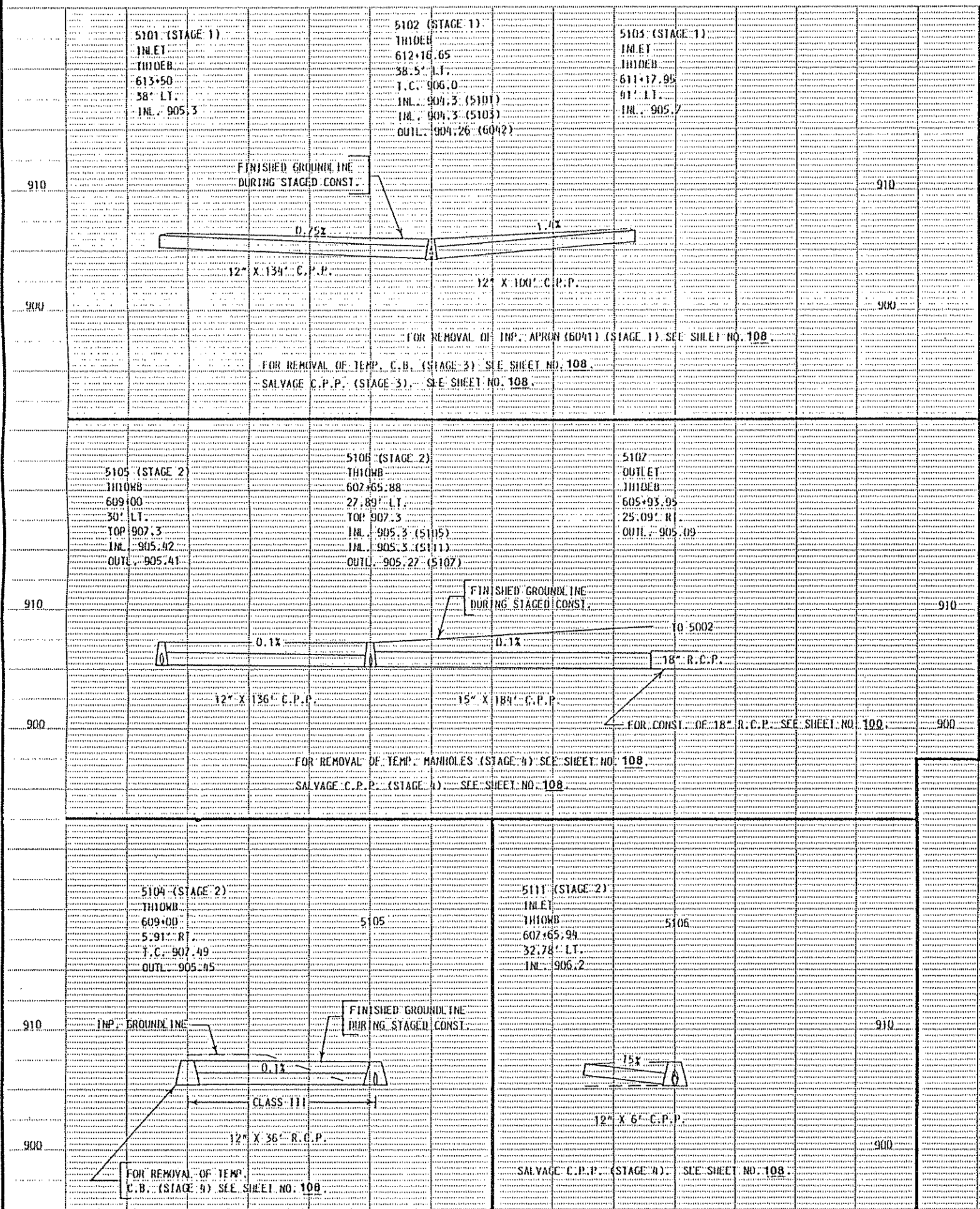
STORM SEWER TABULATION AND PROFILE



STRUCT. NO.	COORDINATES		F. & I. PIPE CULVERT ①				APRON EACH	SALVAGE APRON EACH	INSTALL APRON EACH	GUIDE POST TYPE B EACH	SOD SO. YD.	REMARKS
			12" R.C.P. LIN. FT.	15" R.C.P. LIN. FT.	24" R.C.P. LIN. FT.	28" R.C.P. -A LIN. FT.						
			X	Y								
6021	896772.75	65352.21	③ ⑦ 22									
5023	896798.87	65342.13				1				1		12" APRON OUTLET ④
5109	896227.88	65111.72		58		1	1					15' APRON INLET
5032	896226.57	65110.20						1	1	8		15' APRON INLET ⑤
5033	896182.05	65058.86				1				1		15' APRON OUTLET
6018	896164.60	65293.89			8					1	15	24" APRON OUTLET ⑥
5108	896167.05	65301.51				1	1					24" APRON OUTLET
6002	898007.62	64816.31										
5031	898016.06	64832.21				1				1	15	28" SPAN APRON OUTLET
5029	897709.22	64749.65		39		1				1	8	15' APRON INLET
5028	897708.93	64698.65				1				1	9	15' APRON OUTLET
TOTALS			22	97	8	12	7	2	2	7	64	

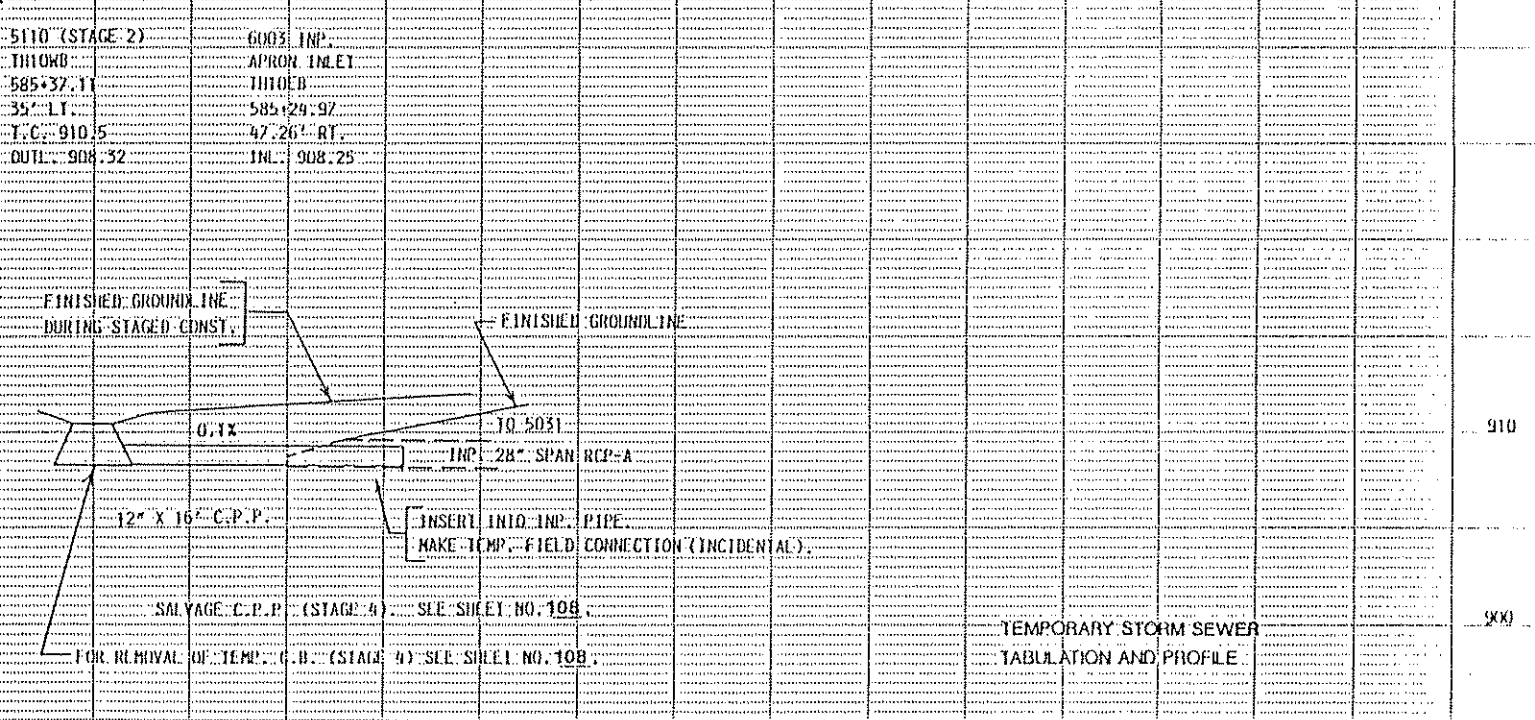
- ① ALL R.C. PIPE CULVERT IS DESIGN 3006 GASKET JOINT PIPE. TIE ALL JOINTS.
- ② CLASS II UNLESS OTHERWISE NOTED.
- ③ INCLUDES 2 - 7°30' LONG RADIUS BENDS.
- ④ FOR RIPRAP QUANTITIES SEE TABULATION ON SHEET NO. 107.
- ⑤ INSTALL APRON FROM 5109
- ⑥ INSTALL APRON FROM 5108
- ⑦ 22" OF CLASS III PIPE.
- ⑧ CLASS B BEDDING REQUIRED (INCIDENTAL).





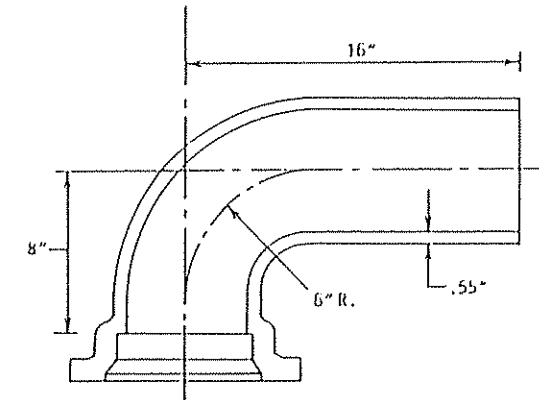
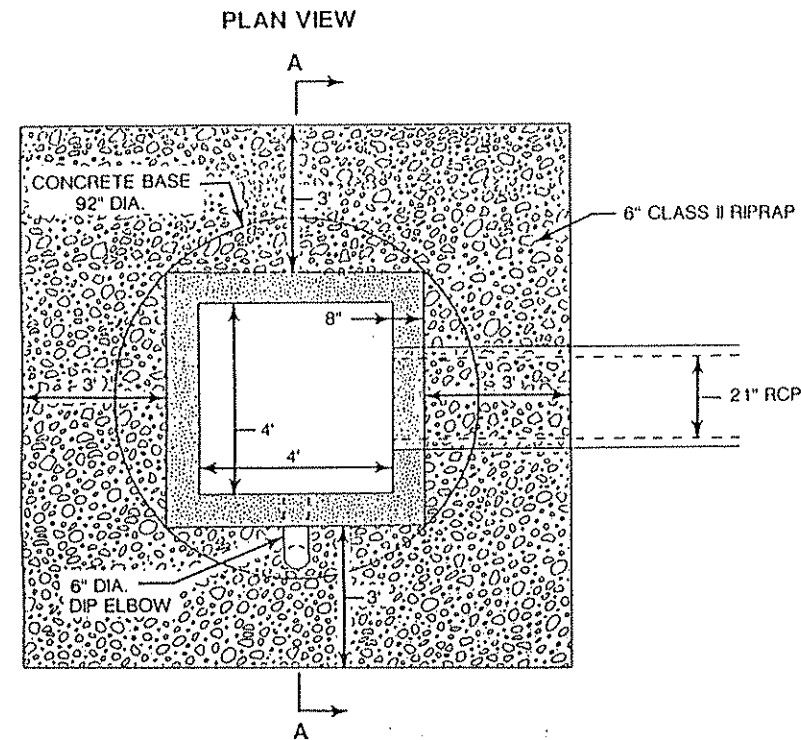
STRUCT. NO.	COORDINATES		CONSTRUCTION			CASTING ASSEMBLY (2)	PIPE SEWER (1)			GUIDE POST TYPE B EACH	SOD SO. YD.	REMARKS
			M.H. OR C.B.	DESIGN	PAY HEIGHT L IN. FT.		12"	12"	15"			
							R.C.P. L IN. FT.	L.P.P. L IN. FT.	C.P.P. L IN. FT.			
5101	895271.59	65562.53										(3)
5102	895384.11	65490.80	C.B.	C, G OR H	2.0	M-11 (4)		134	1	7	12' G.S. APRON (6) (7)	
5103	895468.42	65436.84						100				(3)
5104	895699.20	65442.17	C.B.	C, G OR H	2.0	D-4 (9)	36					(10)
5105	895682.41	65410.33	M.H.	C OR G	2.6	(11)		136				
5106	895804.94	65352.18	M.H.	C OR G	2.7	(11)				184		
5107	895971.91	65275.09										(5)
5111	895802.37	65346.76						6				
5110	897969.38	64744.25	C.B.	C, G OR H	2.2	M-11		16				
6003	897973.90	64752.77										
TOTALS					(8)		36	392	184	1	7	

- (1) R.C.P. SHALL BE CLASS II UNLESS OTHERWISE NOTED. DESIGN 3006.
- (2) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 107.
- (3) LOCATION AND ELEVATION GIVEN AT END OF PIPE.
- (4) OMIT CONCRETE FRAME.
- (5) TEMP. FIELD CONNECT AND GROUT 15" C.P.P. TO 18" R.C.P. THIS WORK SHALL BE 'INCIDENTAL'.
- (6) CONNECT STRUCTURE TO INPLACE PIPE. THIS WORK SHALL BE 'INCIDENTAL'.
- (7) FURNISH & INSTALL 12' G.S. PIPE APRON (STAGE 3) AFTER REMOVAL OF C.B. 5102.
- (8) FOR CATCH BASIN AND MANHOLE SUMMARY SEE SHEET NO. 107.
- (9) 36' OF CLASS III PIPE.
- (10) PLUG AND ABANDON 12" R.C.P. (STAGE 4). THIS WORK SHALL BE 'INCIDENTAL'.
- (11) 1/4" STEEL PLATE TO BE INSTALLED AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE 'INCIDENTAL'.

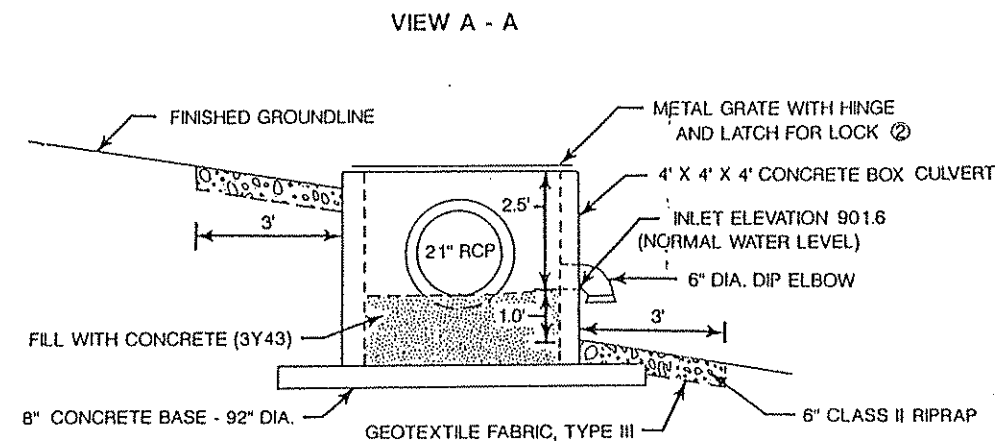




# INLET CONTROL STRUCTURE

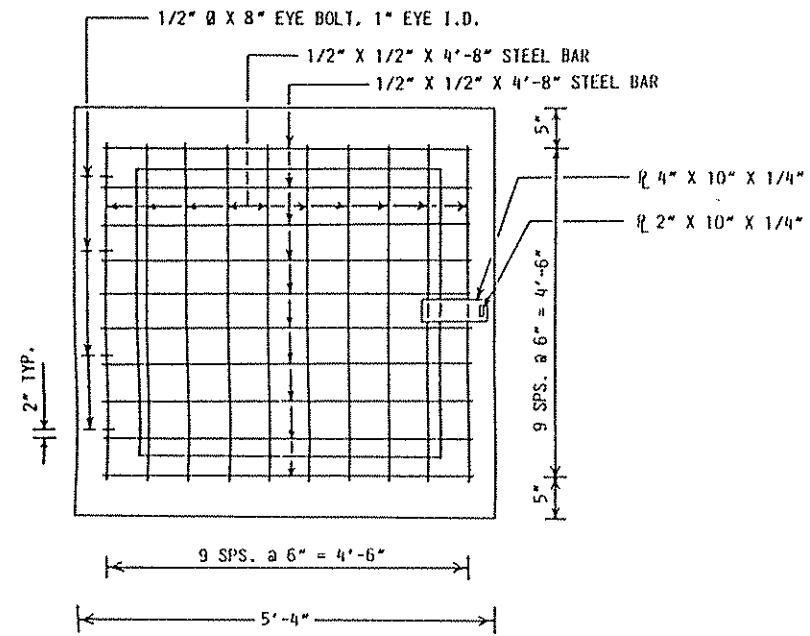


STANDARD 6" DIAMETER DUCTILE IRON PIPE - 90° BEND  
(MECHANICAL JOINT WITH PLAIN END OR BELL-AND-SPIGOT)

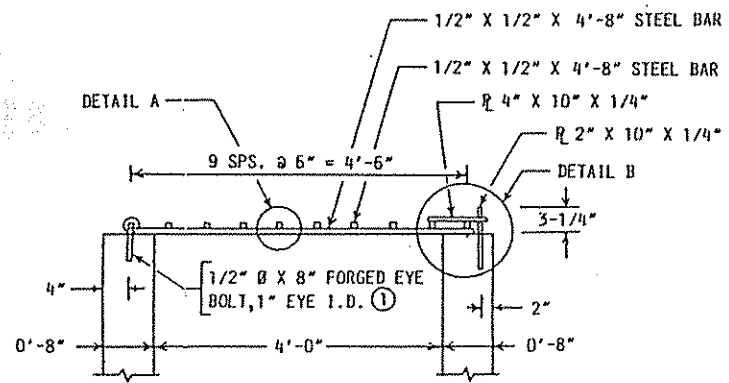


SUMMARY OF QUANTITIES	
INLET CONTROL STRUCTURE	
TH65SB, STATION 322+90.31, 194.46' LT.	
STRUCTURE CONCRETE (3Y43)	0.89 CU. YD.
4' X 4' X 4' CONCRETE BOX CULVERT ①	1 EACH
6' DIP ELBOW	1 EACH
METAL GRATE WITH HINGE AND LATCH ②	1 EACH
8" CONCRETE BASE, 92" DIAMETER	1 EACH
6' RIPRAP CL. II	1.9 CU. YD.
GEOTEXTILE FABRIC, TYPE III ③	11 SQ. YD.

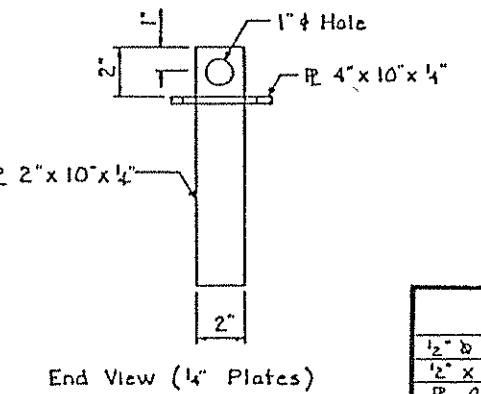
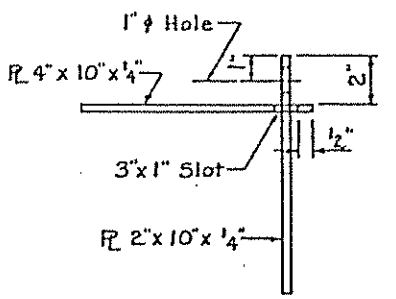
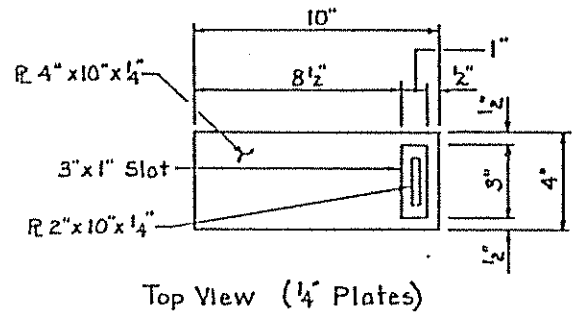
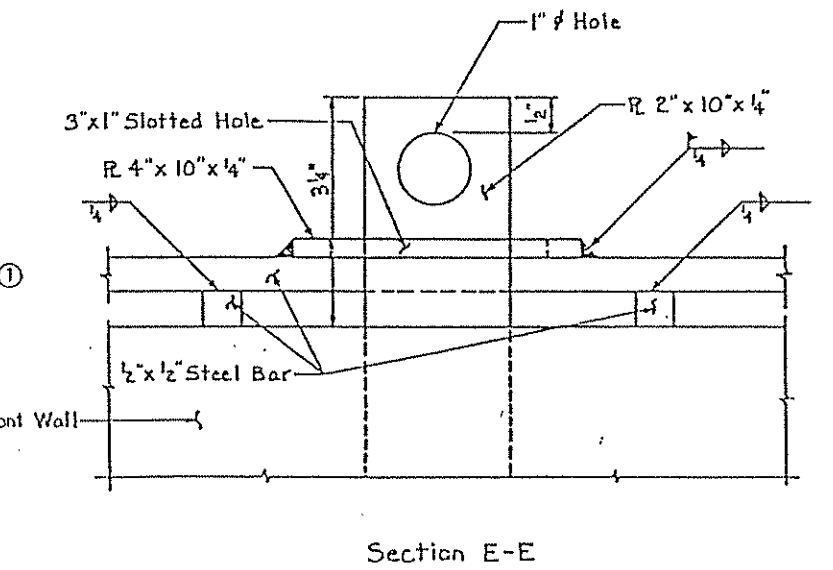
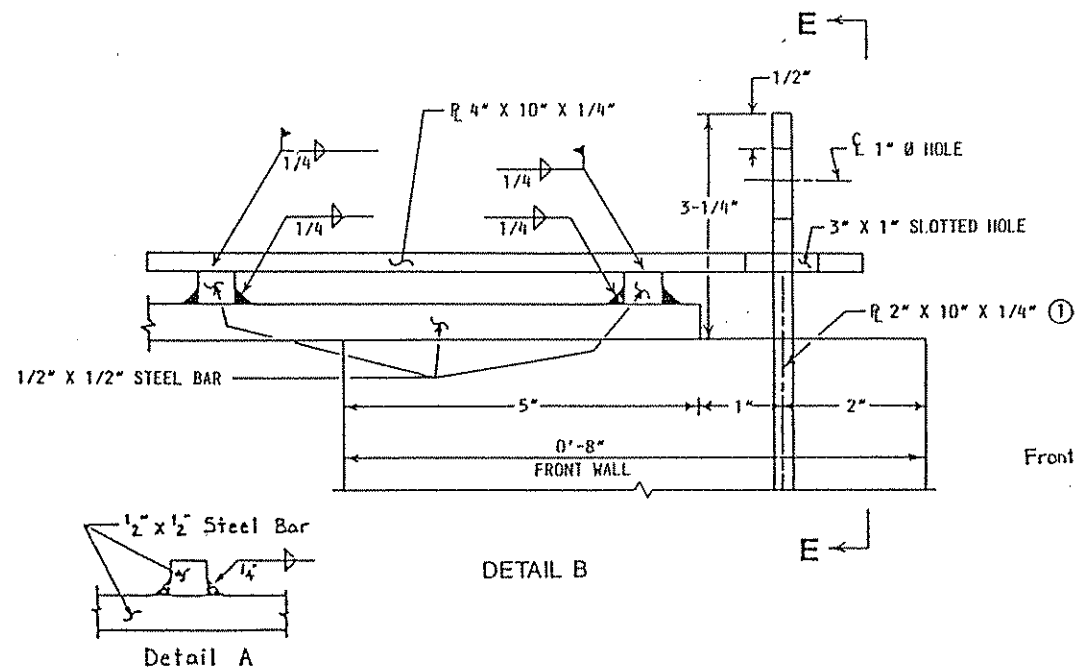
- ① PROVIDE HOLE IN BOX CULVERT FOR 21' R.C.P. AND 6' C.I.P. ELBOW AT APPROPRIATE LOCATION. MORTAR BOTH CONNECTIONS TO ELIMINATE ANY LEAKAGE.
- ② FOR DETAILS SEE SHEET NO. 106.
- ③ CONTRACTOR SHALL USE GEOTEXTILE FABRIC, TYPE III (NO OPTION).



PLAN VIEW SHOWING SAFETY GRATE



ELEVATION SHOWING SAFETY GRATE



QUANTITIES FOR 1 METAL GRATE

1/2" Ø X 8" Forged Eye Bolt, 1" I.D.	4 Each
1/2" X 1/2" X 4'-8" Steel Bars	20 Each
R 4" X 10" X 1/4"	1 Each
R 2" X 10" X 1/4"	1 Each

Steel bars and plates shall conform to Mn/DOT 3306.

Reinforcement bars to be Grade 60. The first digit of each bar marking indicates the bar size.  
 Galvanize grating assembly per Mn/DOT 3394.  
 Galvanize eye bolts per Mn/DOT 3392.

① DRILL AND GROUT.

METAL GRATE DETAILS

M CATCH BASIN & MANHOLE SUMMARY					
TOTALS FROM SHEET NO.	CATCH BASIN DESIGN		MANHOLE DESIGN		
	CONSTRUCT		CONSTRUCT		
	C, C, OR H	C OR G	A OR F	C OR G	48-4020
	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
	9.2	3.0		3.6	4.3
			5.3		
	6.4	15.7			
				5.3	
TOTALS	21.8	18.7	5.3	8.9	4.3

O RIPRAP					
STATION	LOCATION	STRUCTURE NO.	RIPRAP	GRAVELLAR	REMARKS
			CL. II	FILTER ④	
			CU. YDS.	CU. YDS.	
NW LOOP					
12+42	92' RT.	5023	1.3	0.6	12' R.C.P. APRON
TH655B					
321+69	78' LT.	5026	1.7	0.9	15' R.C.P. APRON
322+55	84' LT.	5027	2.2	1.1	18' R.C.P. APRON
TOTALS			5.2	2.6	

④ REQUIRED FILTER MATERIAL IS "INCIDENTAL".

N CASTING SUMMARY				
ASSEMBLY	ASSEMBLIES REQUIRED	CASTING NO.	STANDARD PLATE NO.	CASTINGS REQUIRED
D-4	4	FRAME CASTING NO. 805 GRATE CASTING NO. 815	4132 4153	4
D-5	6	FRAME CASTING NO. 805 GRATE CASTING NO. 816 ①	4132 4154	6
B-8	1	FRAME CASTING NO. 805 GRATE CASTING NO. 816 ①	4132 4154	1
A-7	2	RING CASTING NO. 700-7 COVER CASTING NO. 712	4101 4110	2
M-11	3	FRAME CASTING ② ③ GRATE CASTING NO. 731	4143 4143	3

① INSTALL BOLT AS PER STANDARD PLATE 4154.

② CONCRETE FRAME MAY BE PRECAST OR CAST-IN-PLACE,  
SEE STANDARD PLATE 4143.

③ OMIT CONCRETE FRAME ON STRUCTURE NO. 5102.

P EROSION CONTROL			
STATION	LOCATION ⑤	BALE CHECK	SILT FENCE
		EACH	LIN. FT.
TH10EB			
579+00 to 587+00	LT. & RT.	20	
587+00 to 592+00	LT. & RT.	25	770
592+00 to 599+50	LT.		500
599+50 to 607+00	LT. & RT.	27	300
607+00 to 614+50	LT. & RT.	30	
TH10WB			
579+00 to 587+00	RT.	5	
587+00 to 591+50	RT.	15	680
591+50 to 598+50	RT.		620
598+50 to 605+00	RT.	5	710
605+00 to 614+50	RT.		1010
VARIOUS LOCATIONS ⑥		50	300
TOTALS		177	4890

⑤ SEE DRAINAGE AND EROSION CONTROL PLAN ON SHEET NO. 97 - 99.

⑥ FOR USE AS DIRECTED BY THE ENGINEER DURING TEMPORARY  
AND STAGED CONSTRUCTION.

TABULATIONS

CATCH BASIN & MANHOLE SUMMARY  
CASTING SUMMARY  
RIPRAP  
EROSION CONTROL

R DRAINAGE SALVAGE AND REMOVALS						
STATION	LOCATION	ITEM INPLACE	REMOVE			SALVAGE
			MANHOLE OR ② CATCH BASIN	PIPE SEWERS ①	PIPE CULVERTS ①	PIPE SEWER
			EACH	LIN.FT.	LIN.FT.	LIN.FT.
TH10EB						
585+28	119' RT.	28" RCP-A			6	
598+14	283' RT.	12" RCP			6	
604+12	102' RT.	24" RCP			6	
604+12	102' RT.	24" RCP			8	
604+89	43' LT.	CB, 12' CMP	1	15		
605+08	℄	22" CMP-A			74	
605+87	29' LT.	CB, 12' CMP	1	15		
606+27	110' RT.	CB, 12' CMP	1	14		
610+02	95' RT.	CB, 12' CMP	1	15		
612+17	39' LT.	12" CMP			2	
612+17	39' LT.	CB, 12' CPP	1			234
TH10WB						
585+37	35' LT.	CB, 12' CPP	1			16
607+66	33' LT.	12" CPP				6
607+66	28' LT.	MH, 15' CPP	1			184
609+00	6' RT.	CB	1			
609+00	30' LT.	MH, 12' CPP	1			136
NE RAMP						
13+64	6' LT.	CB, 12' CMP	1	17		
14+38	2' LT.	CB, 12' CMP	1	21		
SE RAMP						
11+05	9' LT.	CB, 12' CMP	1	15		
11+93	9' LT.	CB, 12' CMP	1	14		
12+45	℄	22" RCP-A			59	
13+06	9' LT.	CB, 12' CMP	1	18		
SW RAMP						
11+32	℄	22" CMP-A			60	
11+32	39' LT.	15" RCP			8	
TH65SB						
321+69 TO 322+55	78' TO 75' LT.	15" RCP		92		
322+55 TO 322+93	75' TO 82' LT.	MH, 21" RCP	1	40		
TOTALS			15	276	229	576

- ① LENGTH INCLUDES APRON(S).  
② INCLUDES CASTING.

Q PIPE CULVERT AND PIPE SEWER SUMMARY							
ITEM	UNIT	QUANTITIES FROM SHEET NO.					TOTAL ALL SHEETS
		100	102	101	103	104	
SALVAGE CONCRETE APRON	EACH				2		2
INSTALL CONCRETE APRON	EACH				2		2
12" RC PIPE CULVERT DESIGN 3006, CL. III	LIN. FT.				22		22
15" RC PIPE CULVERT DESIGN 3006, CL. II	LIN. FT.				97		97
24" RC PIPE CULVERT DESIGN 3006, CL. II	LIN. FT.				8		8
12" CS PIPE APRON	EACH					1	1
18" CS SAFETY APRON & GRATE DESIGN 3128	EACH	1					1
12" RC PIPE APRON	EACH	2		3	1		6
15" RC PIPE APRON	EACH	2	1	1	4		8
18" RC PIPE APRON	EACH		1				1
24" RC PIPE APRON	EACH				1		1
28" SPAN RC PIPE-ARCH CULVERT CL. IIA	LIN. FT.				12		12
28" SPAN RC PIPE-ARCH APRON	EACH				1		1
12" CP PIPE SEWER	LIN. FT.					392	392
15" CP PIPE SEWER	LIN. FT.					184	184
12" R.C. PIPE SEWER DESIGN 3006, CL. II	LIN. FT.	64		96			160
12" R.C. PIPE SEWER DESIGN 3006, CL. III	LIN. FT.					36	36
15" R.C. PIPE SEWER DESIGN 3006, CL. II	LIN. FT.	94		20			114
18" R.C. PIPE SEWER DESIGN 3006, CL. III	LIN. FT.	87	4				91
21" R.C. PIPE SEWER DESIGN 3006, CL. II	LIN. FT.		93				93
21" R.C. PIPE SEWER DESIGN 3006, CL. III	LIN. FT.		20				20
24" R.C. PIPE SEWER DESIGN 3006, CL. II	LIN. FT.	93					93
GUIDE POST TYPE B	EACH	5	3	4	7	1	20
SODDING	SO. YD.	45		36	64	7	152

TABULATIONS  
DRAINAGE SALVAGE AND REMOVALS  
PIPE CULVERT AND PIPE SEWER SUMMARY

**HYDRAULICS NOTES**

THESE NOTES ARE INTENDED TO GIVE INFORMATION ABOUT CRITICAL FEATURES AND ELEVATIONS FOR THE DRAINAGE ON THIS PROJECT. A CONTROL IS THE ELEVATION OF A PLACE OR FEATURE WHICH DETERMINES HOW LOW A STORM SEWER MUST OR CAN BE OR HOW HIGH THE WATER CAN GET IN A POND.

GENERALLY SPEAKING, STORM SEWERS, PONDS AND DITCHES ARE LOCATED TO DIRECT THE WATER IN MUCH THE SAME DIRECTION IT WAS GOING PRIOR TO THIS PROJECT. IN SOME CASES, THE DIRECTION HAS BEEN CHANGED TO COORDINATE WITH A CITY PROJECT. CHANGING THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS COULD CAUSE PROBLEMS OFF THE PROJECT. DIRECTION CHANGES SHOULD BE REVIEWED WITH THE HYDRAULICS DESIGNER, F. C. HOWARD, 593-8571.

IN MOST CASES J-STRUCTURES, BENDS AND REDUCERS ARE BEING USED TO CREATE BETTER FLOW OF THE STORM WATER AND TO PREVENT TURBULENCE IN THE PIPES WHICH CAN CAUSE HIGH WATER IN OTHER AREAS. CHANGING TO A 4020/4019 STRUCTURE TO CHANGE DIRECTION, ELEVATION OR PIPE SIZE SHOULD BE REVIEWED WITH THE HYDRAULICS DESIGNER. SEE SHEETS 104 FOR TEMPORARY DRAINAGE.

1. THE STORMWATER MANAGEMENT SYSTEM DESCRIBED IN THESE HYDRAULICS NOTES HAS BEEN DESIGNED TO BE CONSISTENT WITH THE FOLLOWING PLANS:

SIX CITIES WATERSHED MANAGEMENT ORGANIZATION

2. THIS SYSTEM CONSISTS OF SEVERAL SMALL STORM SEWER SYSTEMS TO PERPETUATE INPLACE DRAINAGE PATTERNS WITH ELEVATIONS CONTROLLED BY INPLACE DITCHES OR PIPES.

IF CHANGES ARE MADE IN THESE LOCATIONS OR IN THE CONTROL POINT ELEVATIONS, PLEASE CHECK WITH THE HYDRAULICS DESIGNER. STORM SEWER OUTLETS ARE INTENDED TO BE AT THE DITCH BOTTOM OR AT THE POND OR CREEK WATER LEVEL.

3. THE FOLLOWING SPECIAL STRUCTURES ARE INCLUDED IN THESE STORM SEWERS:

STRUCTURE NUMBER	FUNCTION OF STRUCTURE	CONTROLLING FEATURE
5024	LIMIT RATE OF DISCHARGE FOR SEDIMENT CONTROL AND SKIM FLOATABLES.	6" ORIFACE TO CONTROL RATE, 6" EL BOW TO PROVIDE SKIMMING, 4'X4' WEIR TO ALLOW OVERTOPPING FOR LARGER STORMS.

4. THIS SYSTEM ALSO INCLUDES THE PONDING AREA LISTED BELOW:


NAME	LOCATION	NORMAL/HIGH WATER LEVEL	NWL CONTROL	FLOOD CONTROL AND/OR WETLAND
POND A	NW LOOP	901.6/904.4	STRUCTURE NO. 5024 6" D.I.P.	FLOOD CONTROL AND SEDIMENT

5. IT HAS BEEN ANTICIPATED THAT IN CASE OF SEVERE FLOODING THE PONDS WILL OVERFLOW AS DESCRIBED BELOW:


POND NAME	OVERFLOW CONDITION	CONTROLLED BY
POND A	BACKFLOW AT STRUCTURE 5023	LOW POINT ON T.H. 65

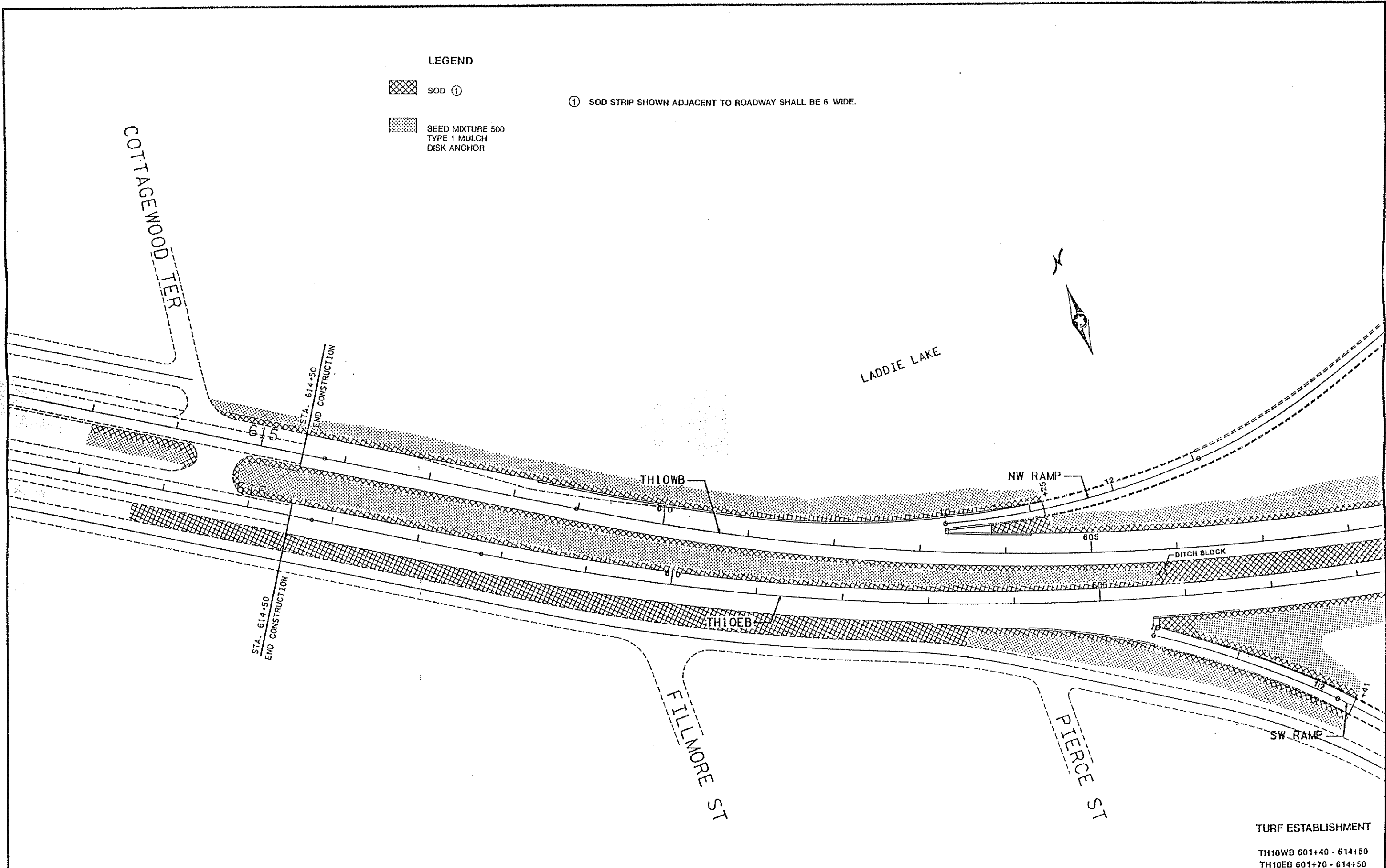
HYDRAULICS NOTES

LEGEND

 SOD ①

① SOD STRIP SHOWN ADJACENT TO ROADWAY SHALL BE 6' WIDE.

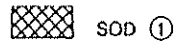
 SEED MIXTURE 500  
TYPE 1 MULCH  
DISK ANCHOR



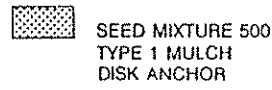
TURF ESTABLISHMENT

TH10WB 601+40 - 614+50  
TH10EB 601+70 - 614+50

LEGEND

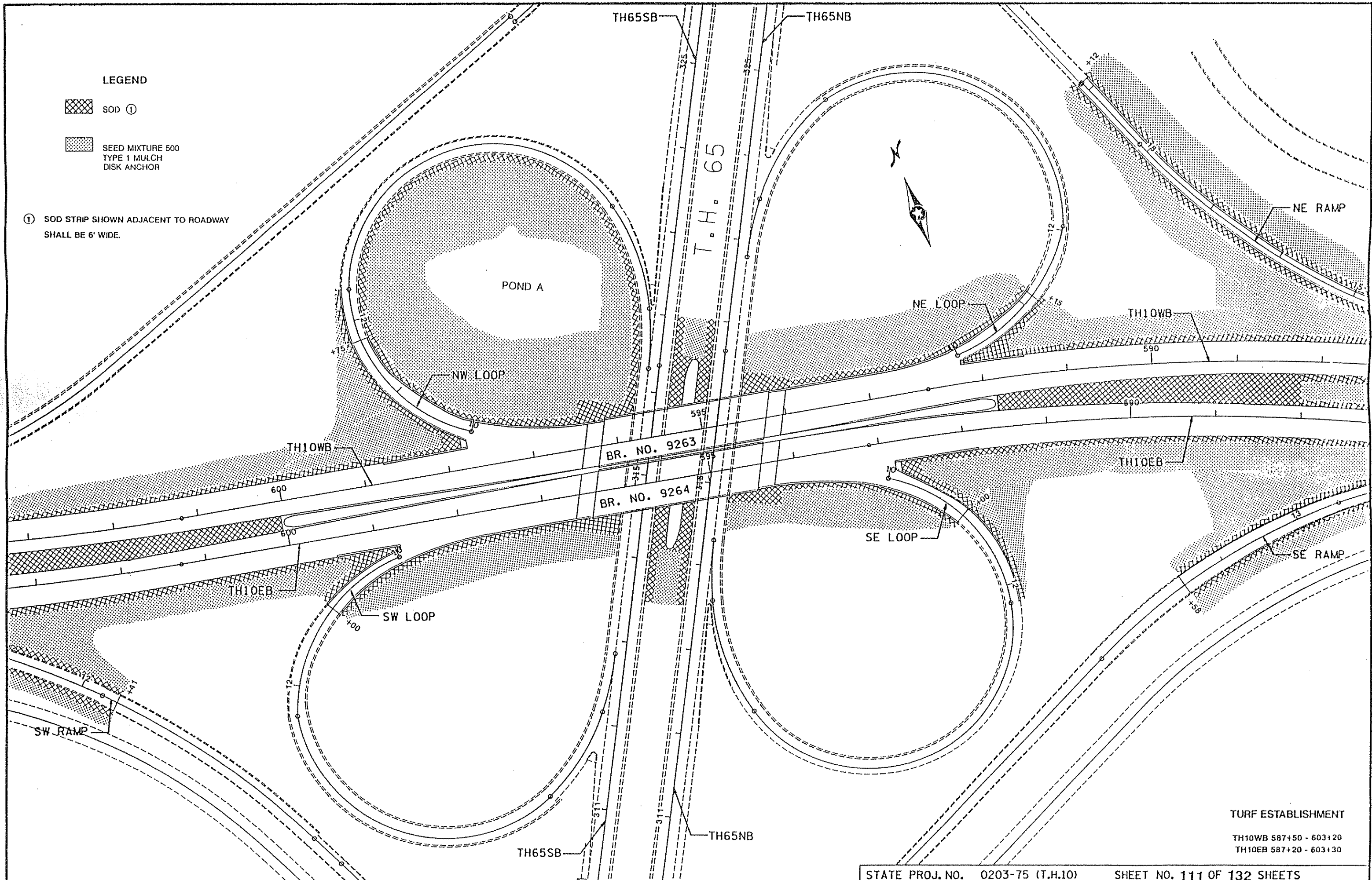


SOD ①



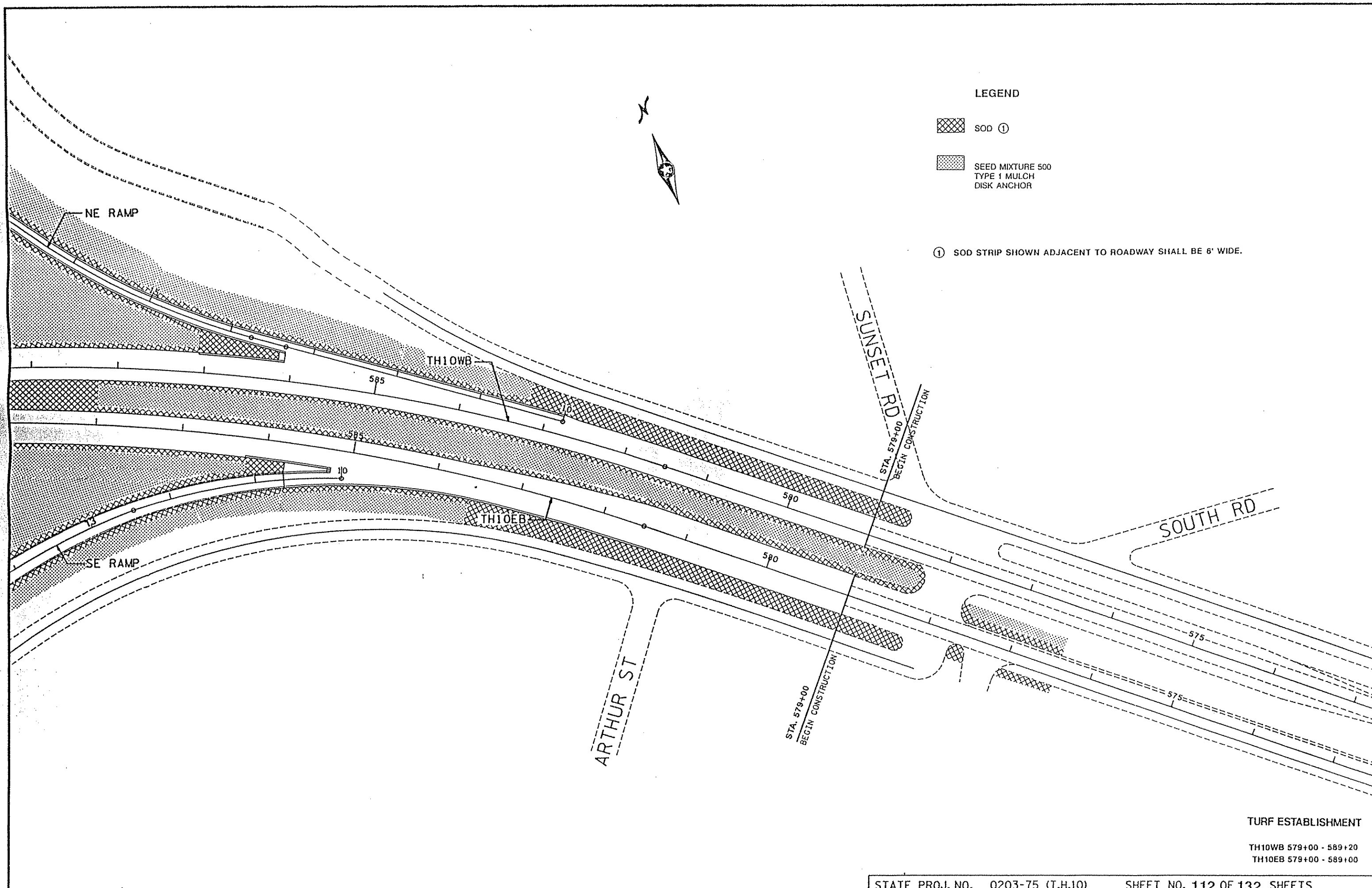
SEED MIXTURE 500  
TYPE 1 MULCH  
DISK ANCHOR

① SOD STRIP SHOWN ADJACENT TO ROADWAY  
SHALL BE 6' WIDE.





TURF ESTABLISHMENT

TH10WB 587+50 - 603+20  
TH10EB 587+20 - 603+30



LEGEND

-  SOD ①
-  SEED MIXTURE 500  
TYPE 1 MULCH  
DISK ANCHOR

① SOD STRIP SHOWN ADJACENT TO ROADWAY SHALL BE 6' WIDE.

TURF ESTABLISHMENT

TH10WB 579+00 - 589+20  
TH10EB 579+00 - 589+00



NOTES:

- ① MAINTAIN 240/480 V TO ALL INPLACE LIGHTS NOT REMOVED FOR TEMPORARY WIDENING.
- ② ALL WOOD POLES MUST BE PLACED GREATER THAN 30' FROM ROADWAY.
- ③ SEE SHEET 114 AND 115 FOR INPLACE LIGHTING LAYOUT
- ④ SPLICE OH 4/C # 4 TO INPLACE ARMORED CABLE.
- ⑤ PLACE WOOD POLE BEHIND BARRIER

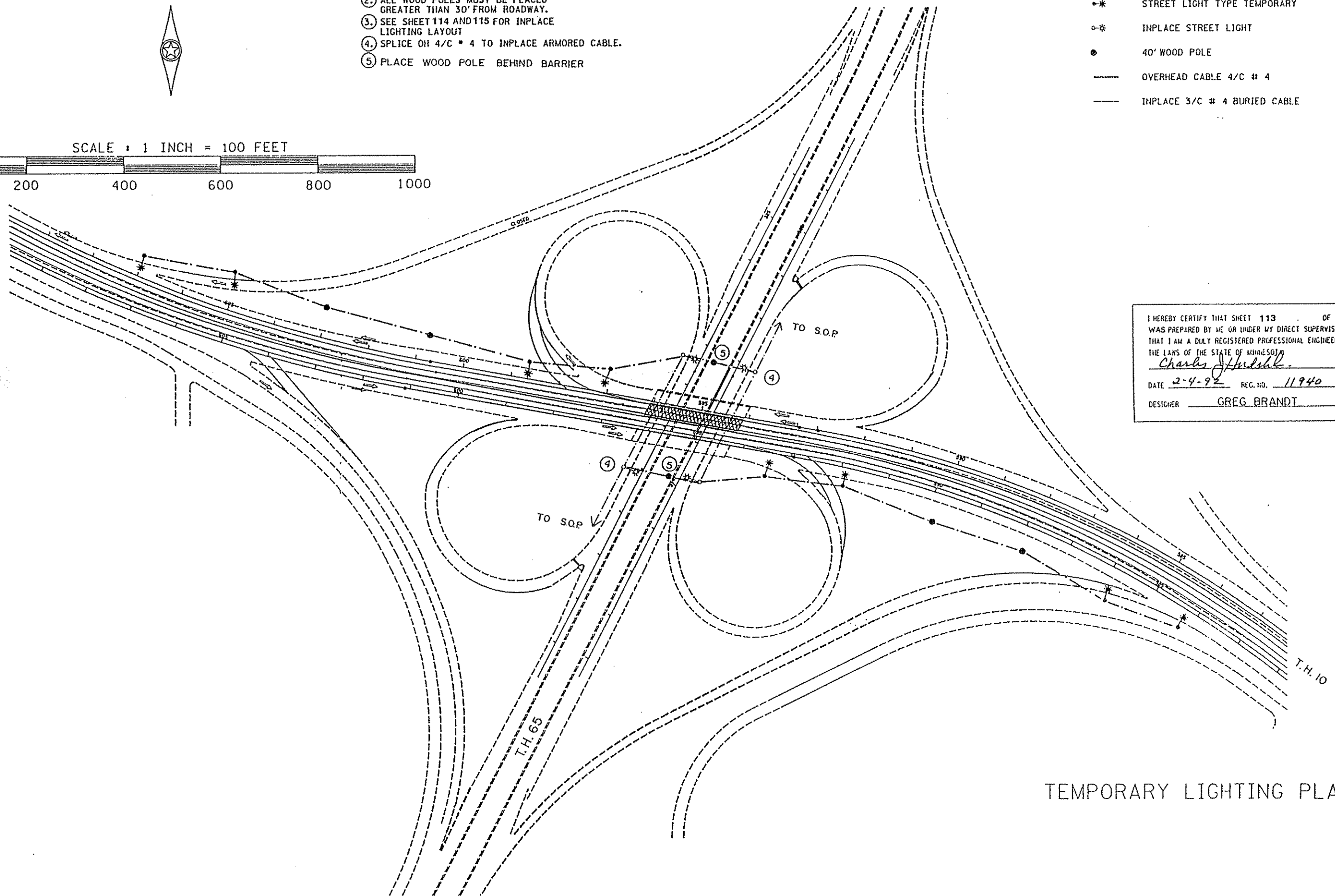


SCALE : 1 INCH = 100 FEET



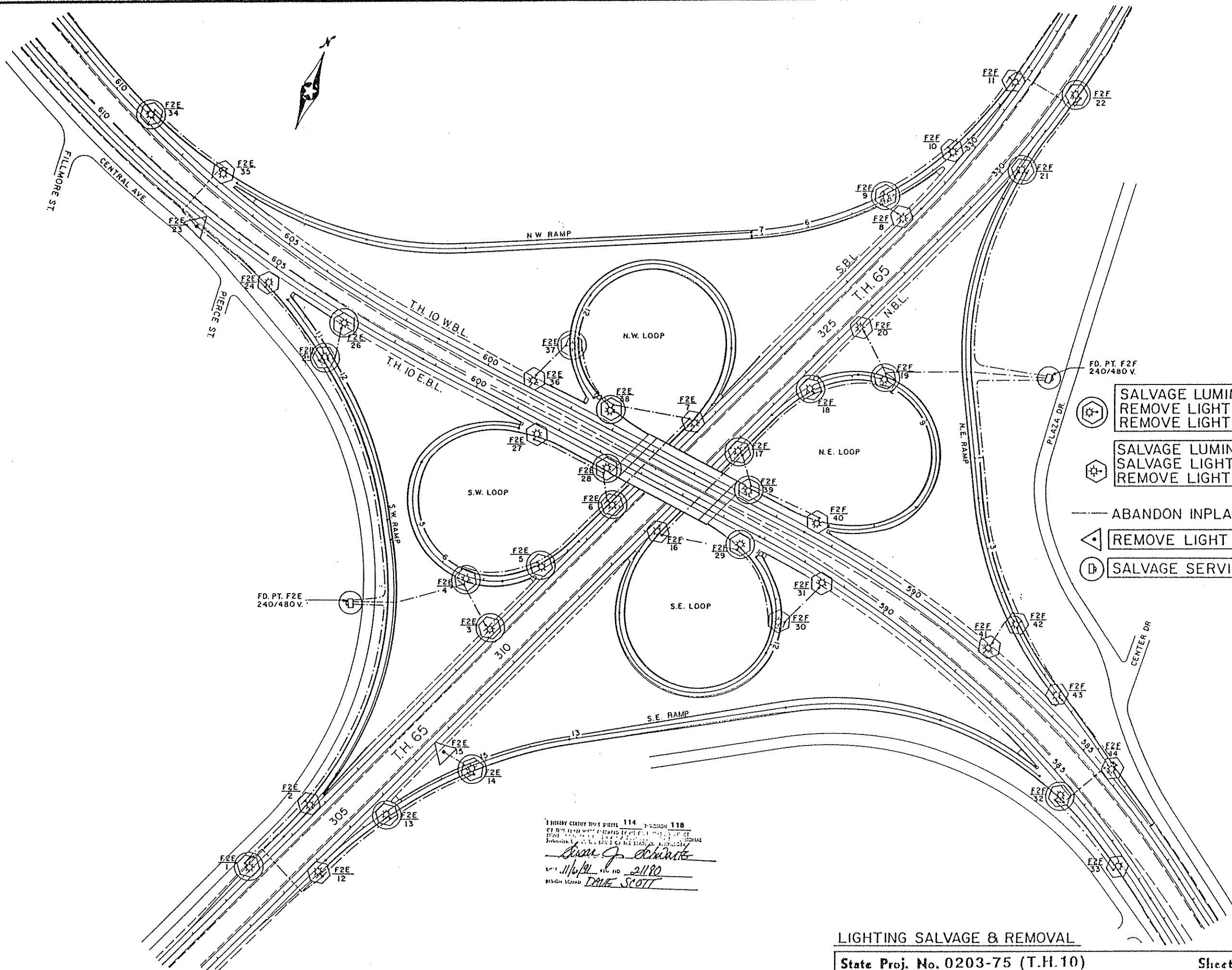
LEGEND






- \* STREET LIGHT TYPE TEMPORARY
- \* INPLACE STREET LIGHT
- 40' WOOD POLE
- OVERHEAD CABLE 4/C # 4
- INPLACE 3/C # 4 BURIED CABLE



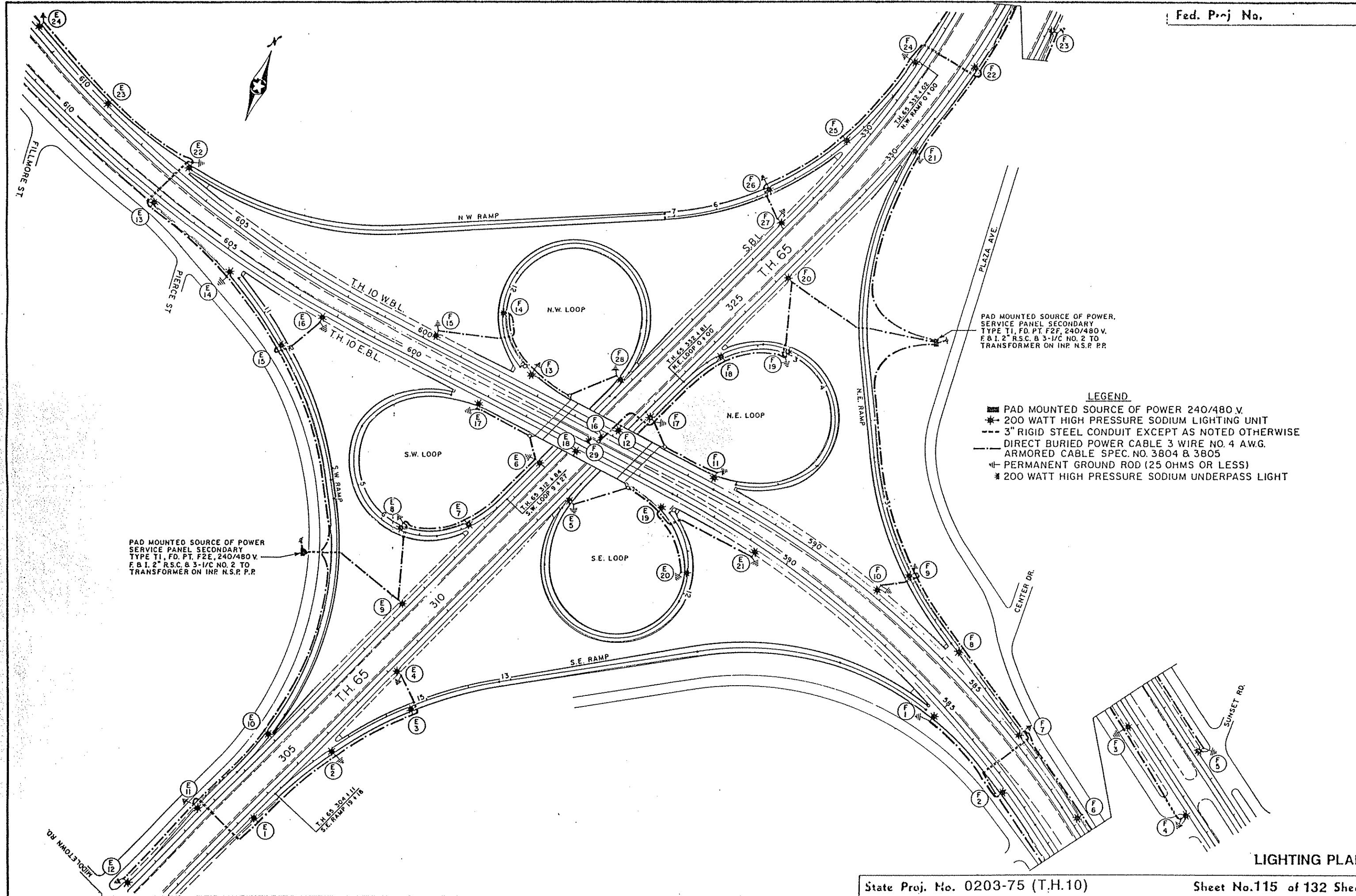
I HEREBY CERTIFY THAT SHEET 113 OF THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA  
*Charles J. Hurdick*  
 DATE 2-4-92 REG. NO. 11940  
 DESIGNER GREG BRANDT

TEMPORARY LIGHTING PLAN



-  SALVAGE LUMINAIRE  
REMOVE LIGHT STANDARD  
REMOVE LIGHT STANDARD BASE
-  SALVAGE LUMINAIRE  
SALVAGE LIGHT STANDARD  
REMOVE LIGHT STANDARD BASE
-  ABANDON INPLACE ARMORED CABLE
-  REMOVE LIGHT STANDARD BASE
-  SALVAGE SERVICE PANEL

114 THROUGH 118  
 OF THE HIGHWAY LIGHTING PLAN FOR THE  
 INTERCHANGE AT THE JUNCTION OF THE STATE OF CALIFORNIA  
 DESIGNER: *David J. Edwards*  
 DATE: 11/6/81 NO. 21180  
 DESIGNER: *DAVE SCOTT*



PAD MOUNTED SOURCE OF POWER  
 SERVICE PANEL SECONDARY  
 TYPE T1, FD. PT. F2E, 240/480 V.  
 F & I. 2" R.S.C. & 3-1/4" NO. 2 TO  
 TRANSFORMER ON INR. N.S.R. P.P.

PAD MOUNTED SOURCE OF POWER,  
 SERVICE PANEL SECONDARY  
 TYPE T1, FD. PT. F2F, 240/480 V.  
 F & I. 2" R.S.C. & 3-1/4" NO. 2 TO  
 TRANSFORMER ON INR. N.S.R. P.P.

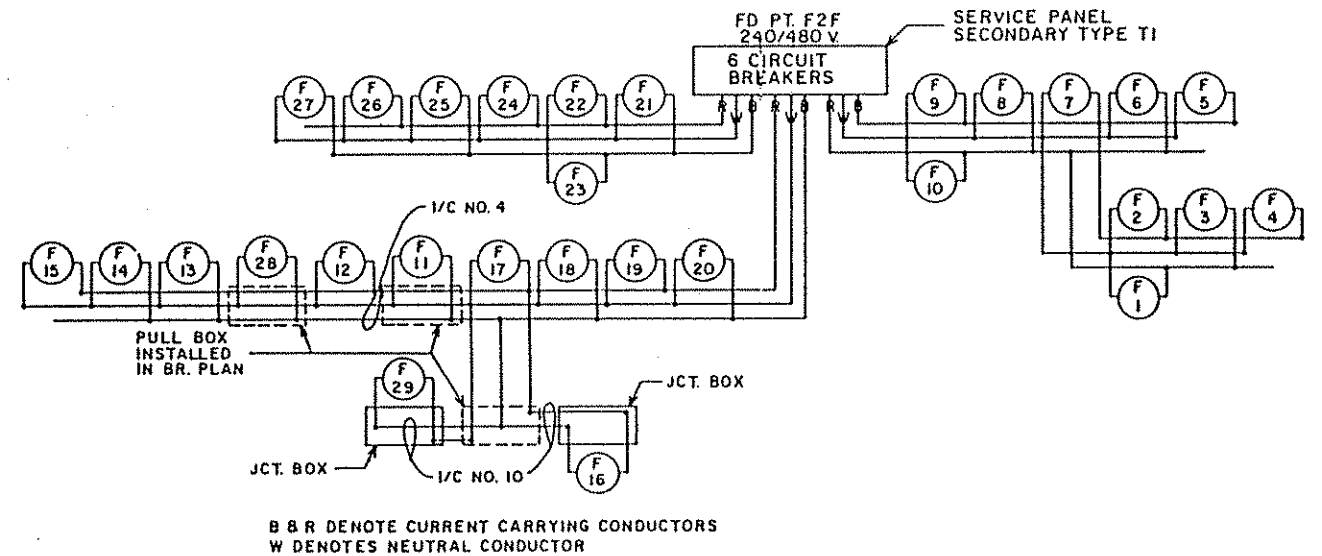
**LEGEND**

- PAD MOUNTED SOURCE OF POWER 240/480 V.
- ★ 200 WATT HIGH PRESSURE SODIUM LIGHTING UNIT
- - - 3" RIGID STEEL CONDUIT EXCEPT AS NOTED OTHERWISE
- DIRECT BURIED POWER CABLE 3 WIRE NO. 4 AWG. ARMORED CABLE SPEC. NO. 3804 & 3805
- ⊥ PERMANENT GROUND ROD (25 OHMS OR LESS)
- ★ 200 WATT HIGH PRESSURE SODIUM UNDERPASS LIGHT

FD. PT. F2F

LIGHTING STANDARDS & BASES					
NO.	STATION	LT.	RT.	LOCATION	TYPE
1	585 + 00	-	-	T.H. 10 E.B.L.	9-40
2	582 + 60	-	-	T.H. 10 E.B.L.	9-40
3	580 + 10	-	-	T.H. 10 E.B.L.	9-40
4	577 + 60	-	-	T.H. 10 E.B.L.	9-40
5	578 + 70	-	-	T.H. 10 W.B.L.	9-40
6	581 + 05	-	-	T.H. 10 W.B.L.	9-40
7	583 + 45	-	-	T.H. 10 W.B.L.	9-40
8	585 + 85	-	-	T.H. 10 W.B.L.	9-40
9	4 + 80	-	-	N.E. RAMP	6-40
10	587 + 25	-	-	T.H. 10 W.B.L.	9-40
11	592 + 45	-	-	T.H. 10 W.B.L.	9-40
(1) 12	594 + 95	-	-	T.H. 10 W.B.L.	6B-40
13	597 + 35	-	-	T.H. 10 W.B.L.	9-40
14	11 + 35	-	-	N.W. LOOP	6-40
15	599 + 75	-	-	T.H. 10 W.B.L.	9-40
16	AS SHOWN	-	-	T.H. 65 N.B.L.	L
17	321 + 70	-	-	T.H. 65 N.B.L.	9-40
18	323 + 90	-	-	T.H. 65 N.B.L.	9-40
19	7 + 25	-	-	N.E. LOOP	6-40
20	326 + 30	-	-	T.H. 65 N.B.L.	9-40
21	330 + 40	-	-	T.H. 65 N.B.L.	9-40
22	332 + 80	-	-	T.H. 65 N.B.L.	9-40
23	335 + 20	-	-	T.H. 65 N.B.L.	9-40
24	331 + 95	-	-	T.H. 65 N.B.L.	9-40
25	329 + 55	-	-	T.H. 65 S.B.L.	9-40
26	4 + 65	-	-	N.W. RAMP	6-40
27	327 + 15	-	-	T.H. 65 S.B.L.	9-40
28	321 + 80	-	-	T.H. 65 S.B.L.	9-40
29	AS SHOWN	-	-	T.H. 65 S.B.L.	L

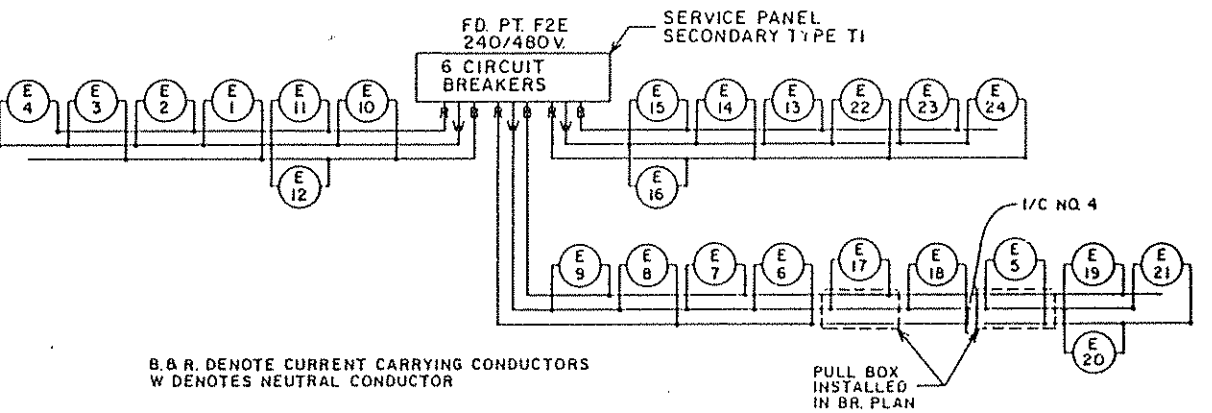
(1) LIGHT ANCHORAGE INSTALLED IN BRIDGE PLAN  
PLACE LIGHTING UNITS 9' BEHIND BIT. SHOULDER OR CURB OR AS DIRECTED BY THE ENGINEER

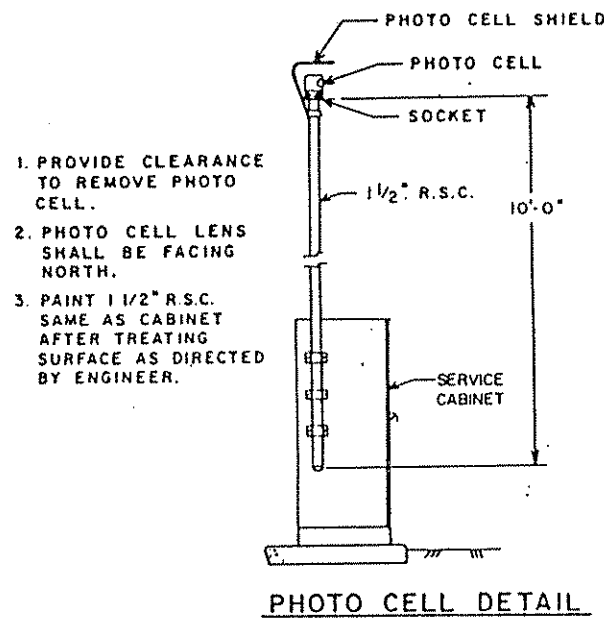


FD. PT. F2E

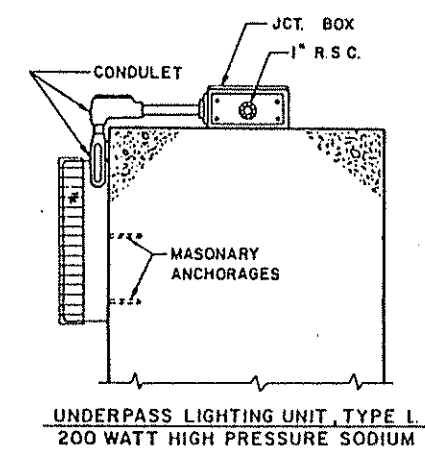
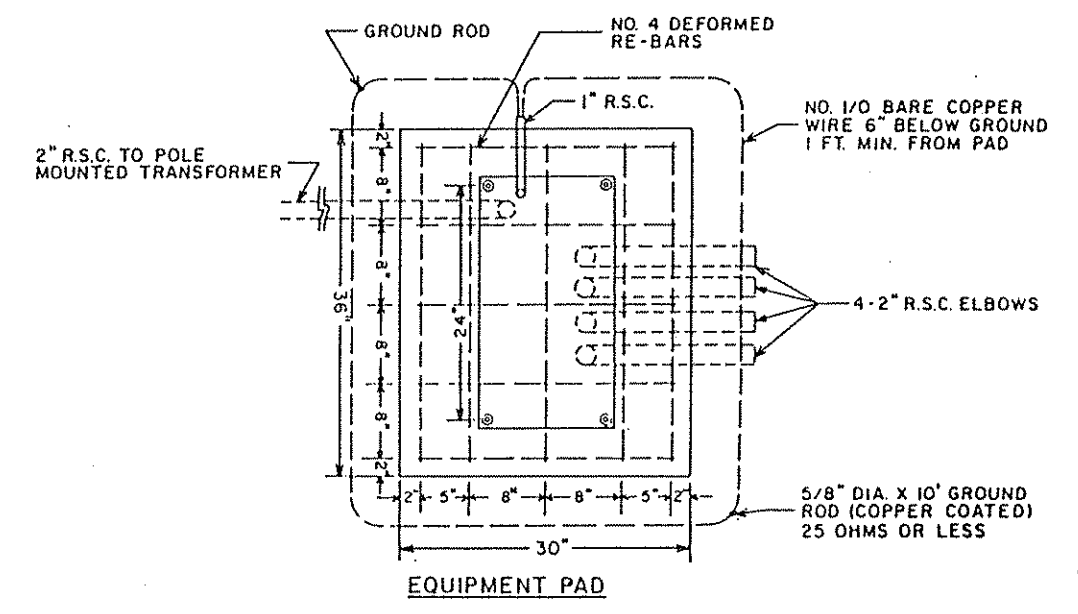
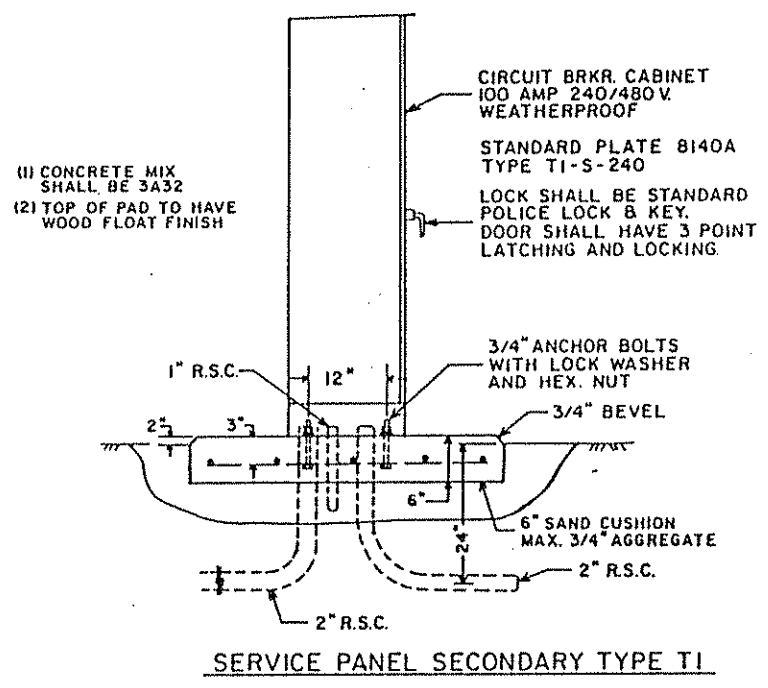
LIGHTING STANDARDS & BASES					
NO.	STATION	LT.	RT.	LOCATION	TYPE
1	303 + 35	-	-	T.H. 65 N.B.L.	9-40
2	305 + 75	-	-	T.H. 65 N.B.L.	9-40
3	15 + 30	-	-	S.E. RAMP	6-40
4	308 + 15	-	-	T.H. 65 N.B.L.	9-40
5	313 + 85	-	-	T.H. 65 N.B.L.	9-40
6	315 + 00	-	-	T.H. 65 S.B.L.	9-40
7	311 + 75	-	-	T.H. 65 S.B.L.	9-40
8	6 + 50	-	-	S.W. LOOP	6-40
9	309 + 35	-	-	T.H. 65 S.B.L.	9-40
10	305 + 00	-	-	T.H. 65 S.B.L.	9-40
11	302 + 60	-	-	T.H. 65 S.B.L.	9-40
12	300 + 20	-	-	T.H. 65 S.B.L.	9-40
13	607 + 05	-	-	T.H. 10 E.B.L.	9-40
14	604 + 65	-	-	T.H. 10 E.B.L.	9-40
15	11 + 85	-	-	S.W. RAMP	6-40
16	602 + 25	-	-	T.H. 10 E.B.L.	9-40
17	598 + 10	-	-	T.H. 10 E.B.L.	9-40
(1) 18	595 + 60	-	-	T.H. 10 E.B.L.	6B-40
19	593 + 20	-	-	T.H. 10 E.B.L.	9-40
20	11 + 50	-	-	S.E. LOOP	6-40
21	590 + 80	-	-	T.H. 10 E.B.L.	9-40
22	606 + 80	-	-	T.H. 10 W.B.L.	9-40
23	609 + 20	-	-	T.H. 10 W.B.L.	9-40
24	611 + 60	-	-	T.H. 10 W.B.L.	9-40

(1) LIGHT ANCHORAGE INSTALLED IN BRIDGE PLAN  
PLACE LIGHTING UNITS 9' BEHIND BIT. SHOULDER OR CURB OR AS DIRECTED BY THE ENGINEER

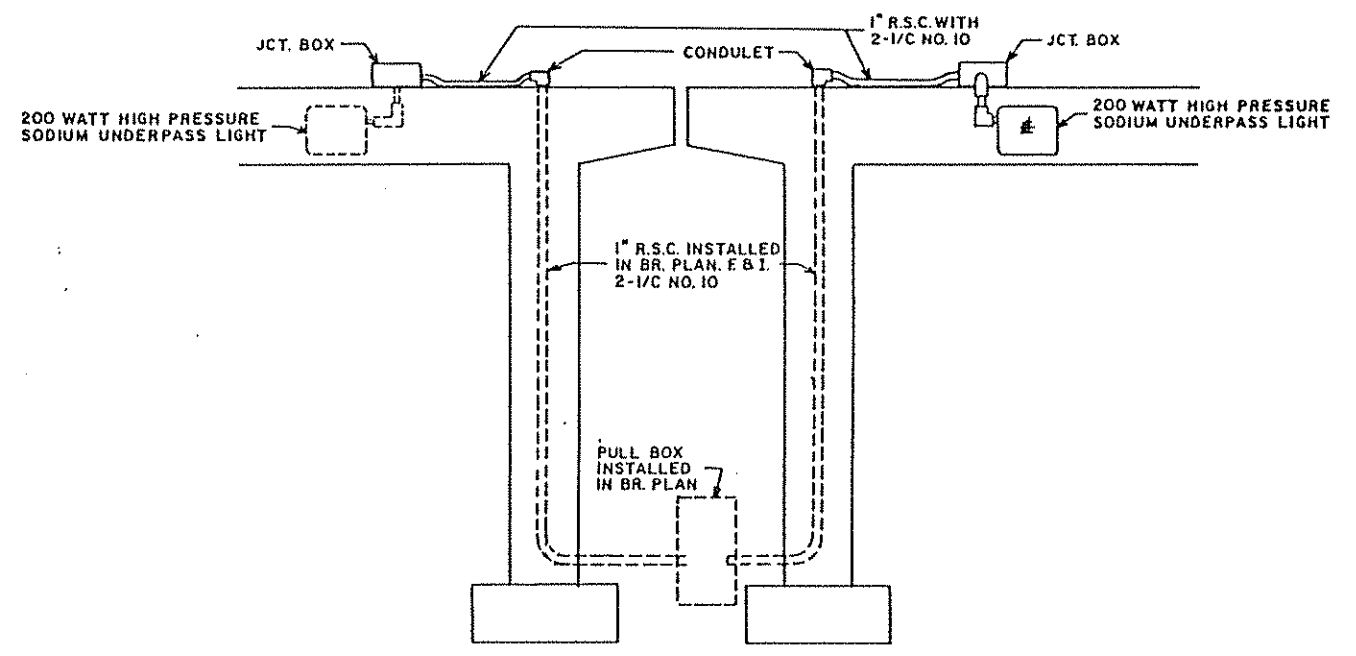




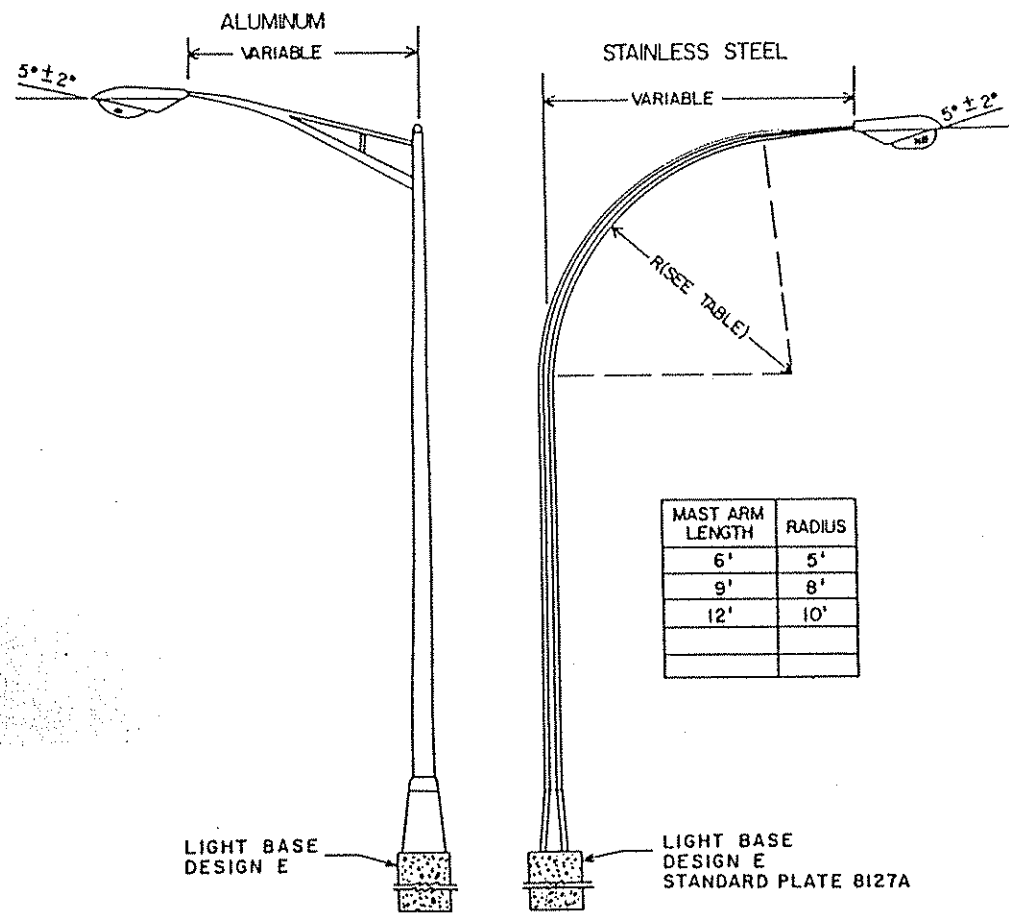
1. PROVIDE CLEARANCE TO REMOVE PHOTO CELL.
2. PHOTO CELL LENS SHALL BE FACING NORTH.
3. PAINT 1 1/2" R.S.C. SAME AS CABINET AFTER TREATING SURFACE AS DIRECTED BY ENGINEER.



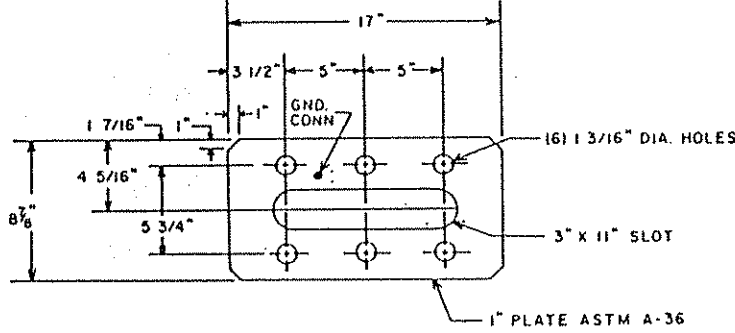
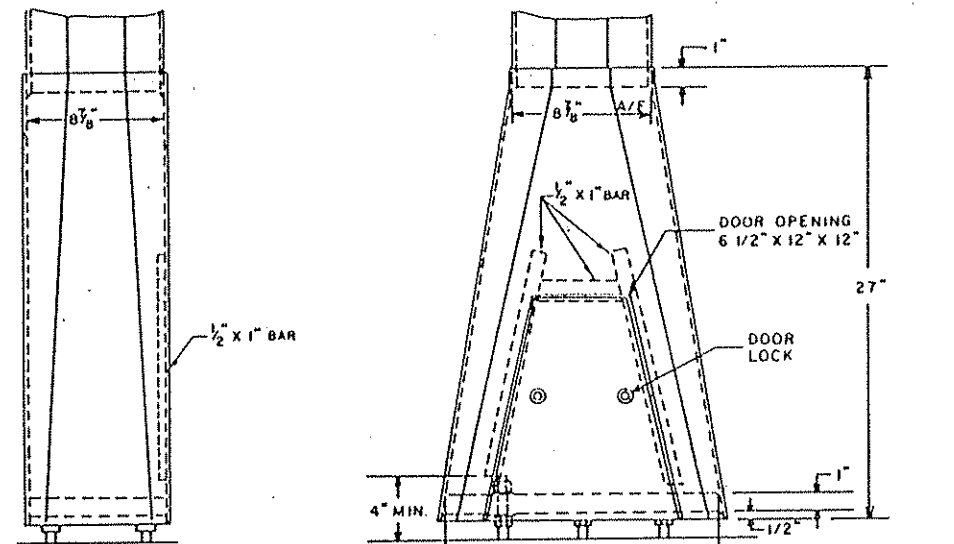
1. THE JUNCTION BOXES SHALL BE 8-1/2" L. X 8-1/2" W. X 4" D. WITH REMOVABLE HUB PLATES AND MOUNTING LUGS.
2. FASTEN RIGID STEEL CONDUIT WITH CABLE CLAMPS ABOUT 5'-0" ON CENTER.
3. FASTEN CLAMPS AND JUNCTION BOXES TO CONCRETE WITH MASONRY ANCHORAGES OR POWER ACTIVATED STUDS.



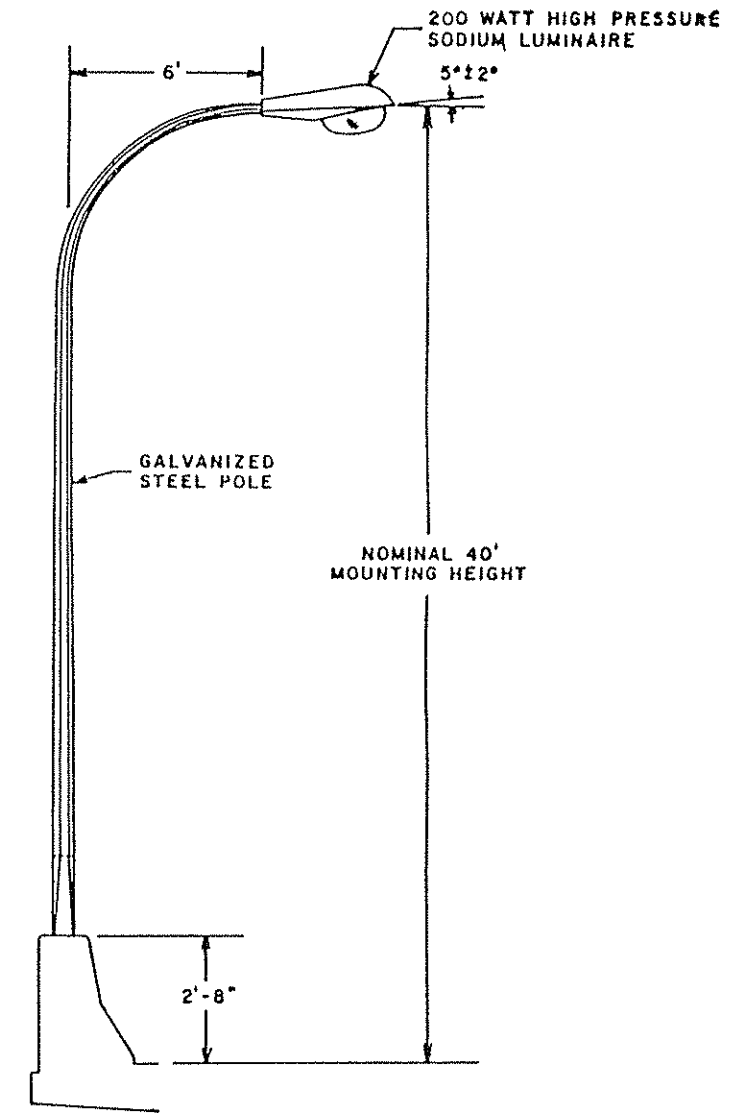
40 FT. ORNAMENTAL LIGHT STANDARDS



LIGHTING UNIT TYPE 6-40 & 9-40



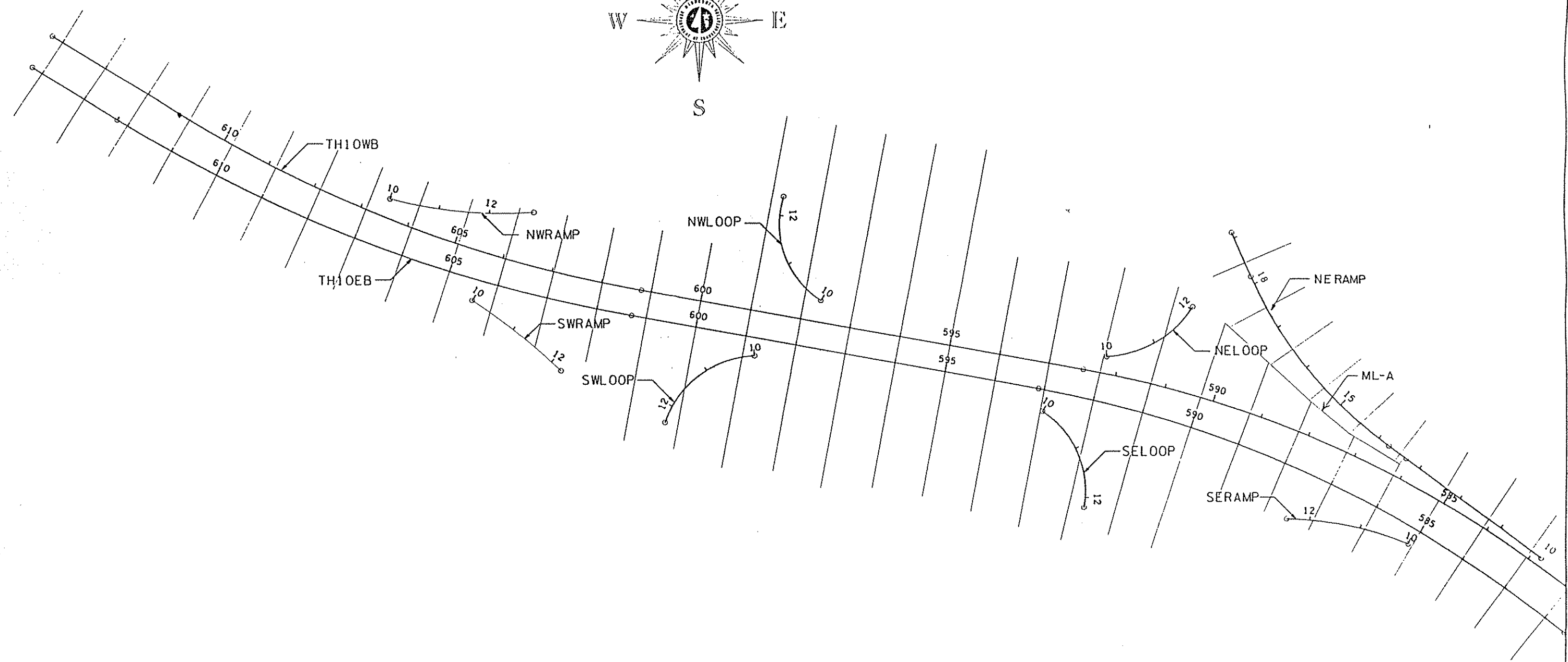
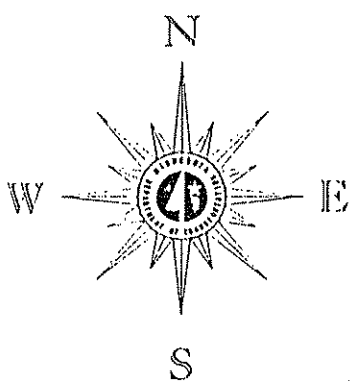
BASE PLATE DETAIL



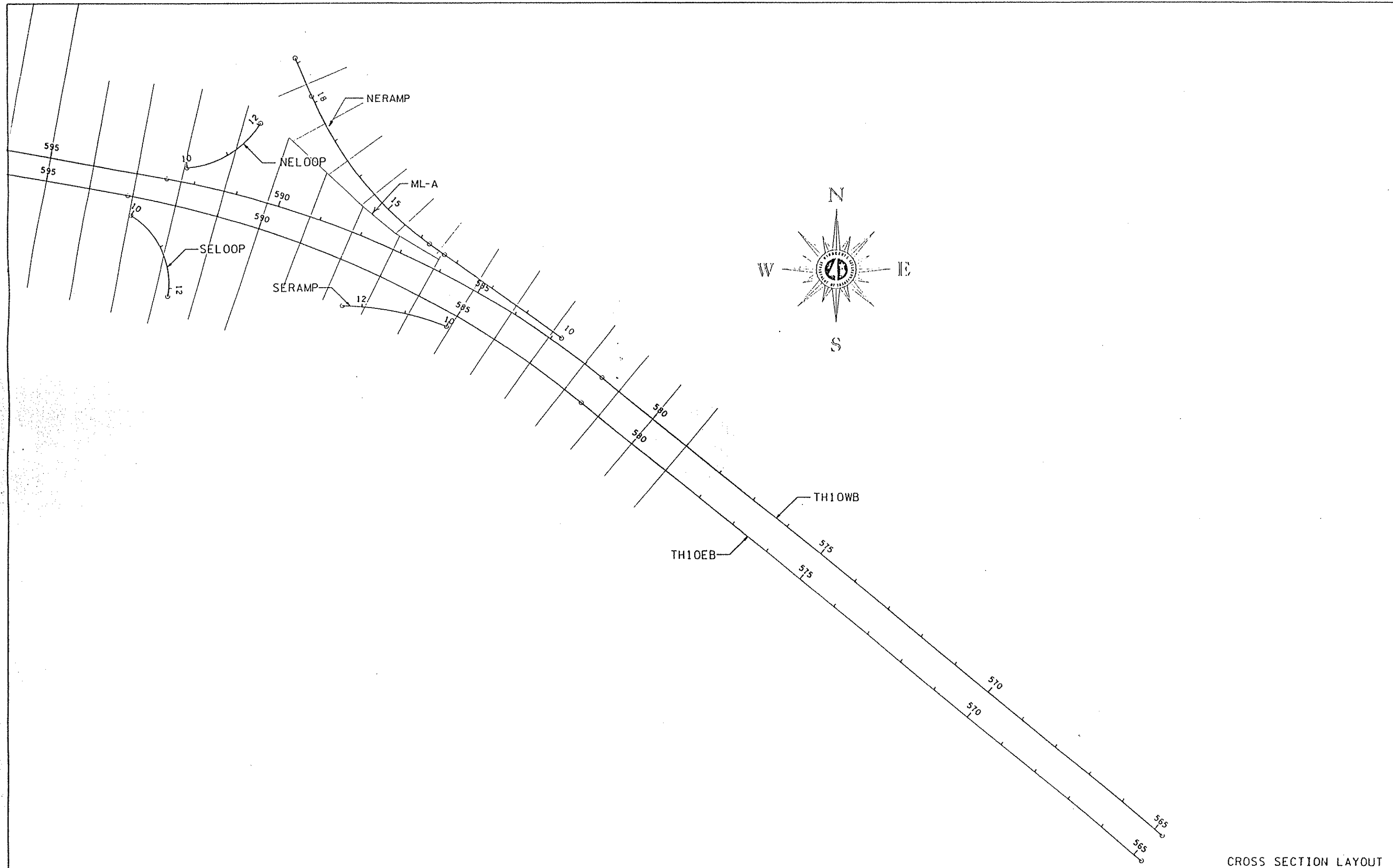
LIGHTING UNIT, TYPE 6B-40

**LUMINAIRES**  
 GENERAL ELECTRIC M-400R2 REGULATOR BALLAST FOR 240 VOLTS CAT. NO. M4RR20SOAIGMS2  
 CROUSE-HINDS 0V-25, CONSTANT WATTAGE BALLAST FOR 240 VOLTS CAT. NO. 0VM20SCW2E  
 AMERICAN ELECTRIC ITT REGULATED BALLAST FOR 240 VOLTS, CAT. NO. I26-67J2  
 LAMPS SHALL BE 200 WATT HIGH PRESSURE SODIUM LUMINAIRES SHALL HAVE A TYPE II MEDIUM SEMI-CUTOFF DISTRIBUTION PER 1972 ANSI/IES STANDARDS

OR APPROVED EQUAL



CROSS SECTION LAYOUT



CROSS SECTION LAYOUT



150

100

50

0

50

100

150

EXCAVATION  
CU. YDS.

EMBANKMENT  
CU. YDS.

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

+48  
L.P.

582+00.00      913.18

582+01.62      912.80

581+00.00      913.39

581+00.00      913.00

580+00.00      913.44

580+00.00      913.00

579+00.00      913.50

579+00.00      913.00

NOTES:

- 1. ALL UTILITIES AND DRAINAGE STRUCTURES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
- 2. UTILITY ELEVATIONS SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.
- 3. FOR EXCAVATION AND EMBANKMENT QUANTITIES SEE SHEET NO. 5.
- 4. CENTERLINE ELEVATIONS SHOWN ON THE CROSS SECTIONS ARE AT THE FINISHED SURFACE.

TH10EB STA. 579+00 TO STA. 582+00

150

100

50

0

50

100

150

150

100

50

0

50

100

150

EXCAVATION  
CU. YDS.

EMBANKMENT  
CU. YDS.

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

920

910

900

SE RAMP  
10+91.53 910.82

586+00.00

TH10EB  
913.15

586+14.50

TH10WB  
912.89

ML-A  
13+38.95

NE RAMP  
912.88

+32  
L.P.

+48  
L.P.

584+00.00

TH10EB  
912.76

584+08.13

TH10WB  
912.38

NE RAMP  
+13  
L.P.

583+00.00

TH10EB  
912.97

583+04.88

TH10WB  
912.59

NE RAMP

TH10EB STA. 583+00 TO STA. 586+00

150

100

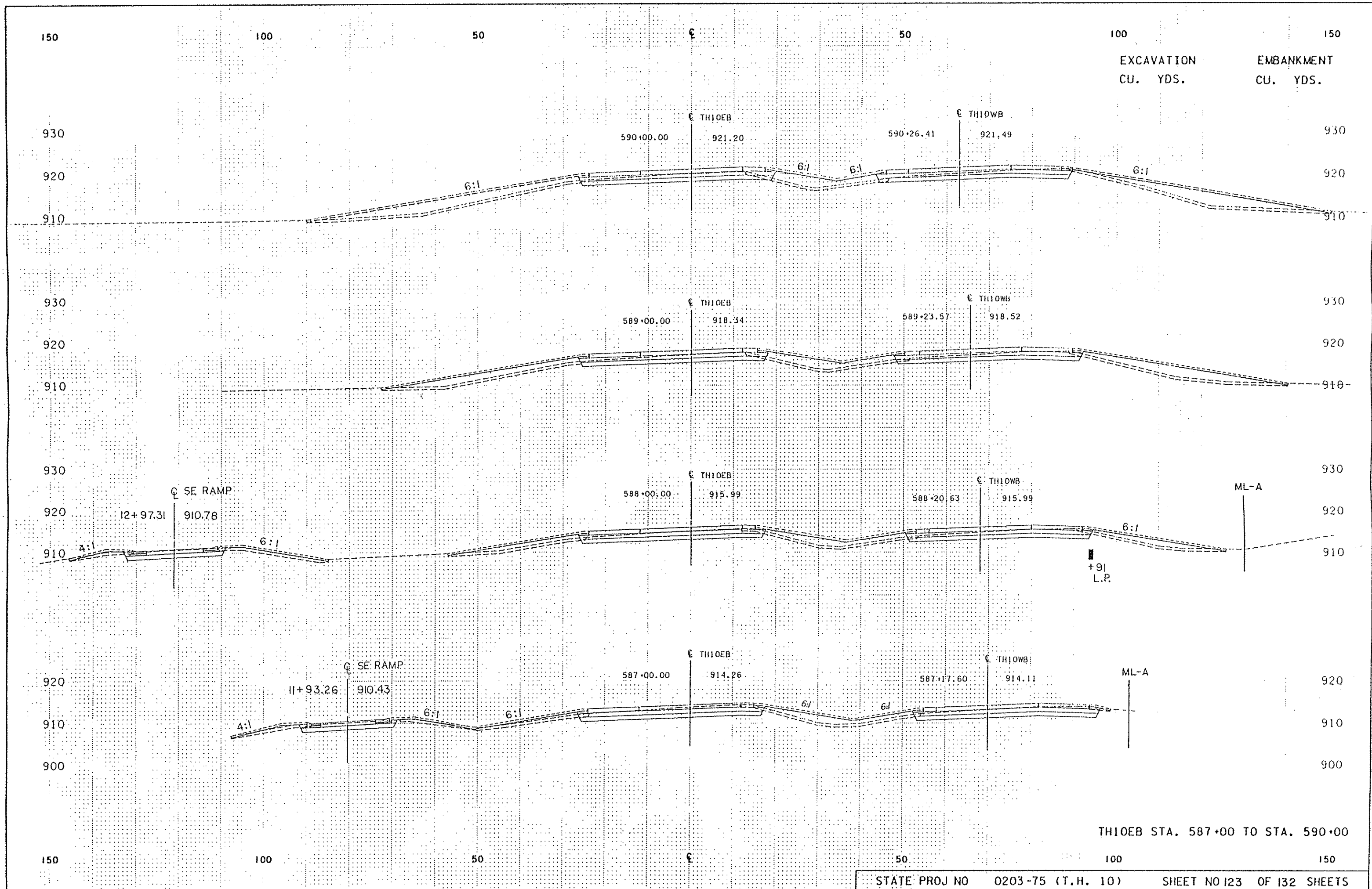
50

0

50

100

150

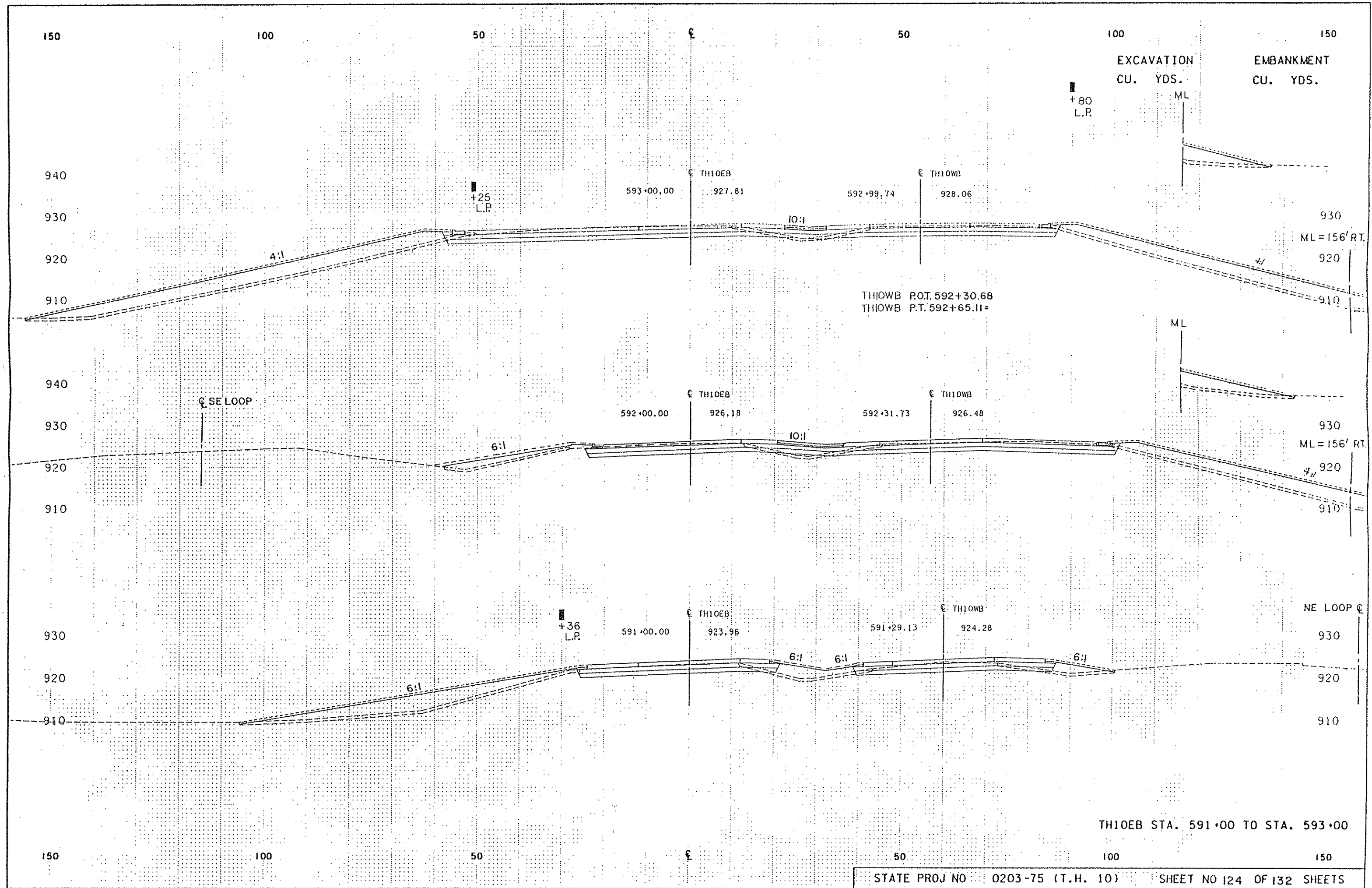


EXCAVATION  
CU. YDS.

EMBANKMENT  
CU. YDS.

TH10EB STA. 587+00 TO STA. 590+00

STATE PROJ NO 0203-75 (T.H. 10) SHEET NO 123 OF 132 SHEETS



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EXCAVATION  
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EMBANKMENT  
CU. YDS.

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596+00.00

TH10EB  
929.24

596+00.01

TH10WB  
929.19

BR. NO. 9264

BR. NO. 9263

595+00.00

TH10EB  
929.34

595+00.01

TH10WB  
929.40

594+00.00

TH10EB  
928.87

594+00.01

TH10WB  
929.02

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TH10EB STA. 594+00 TO STA. 596+00

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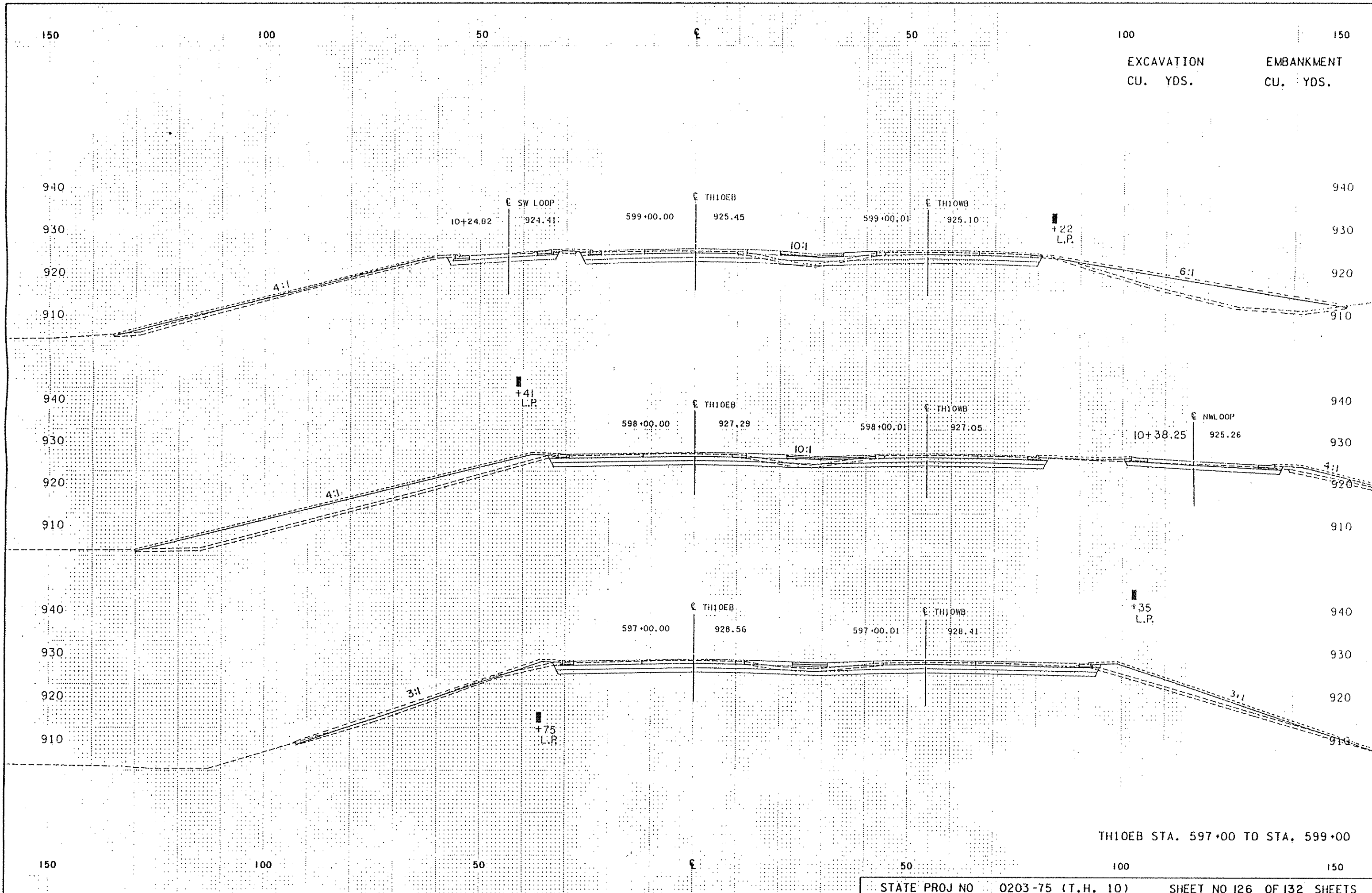
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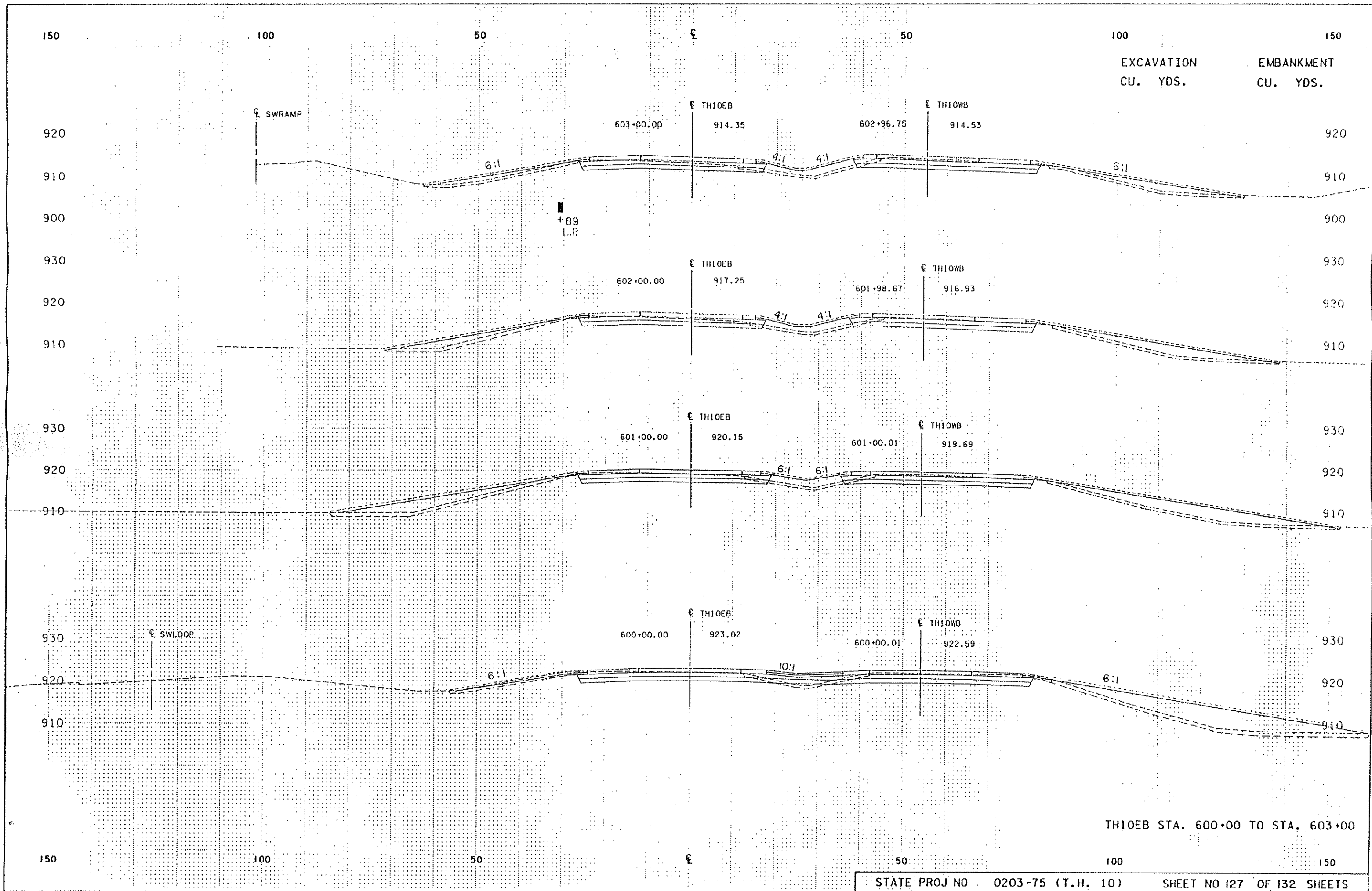
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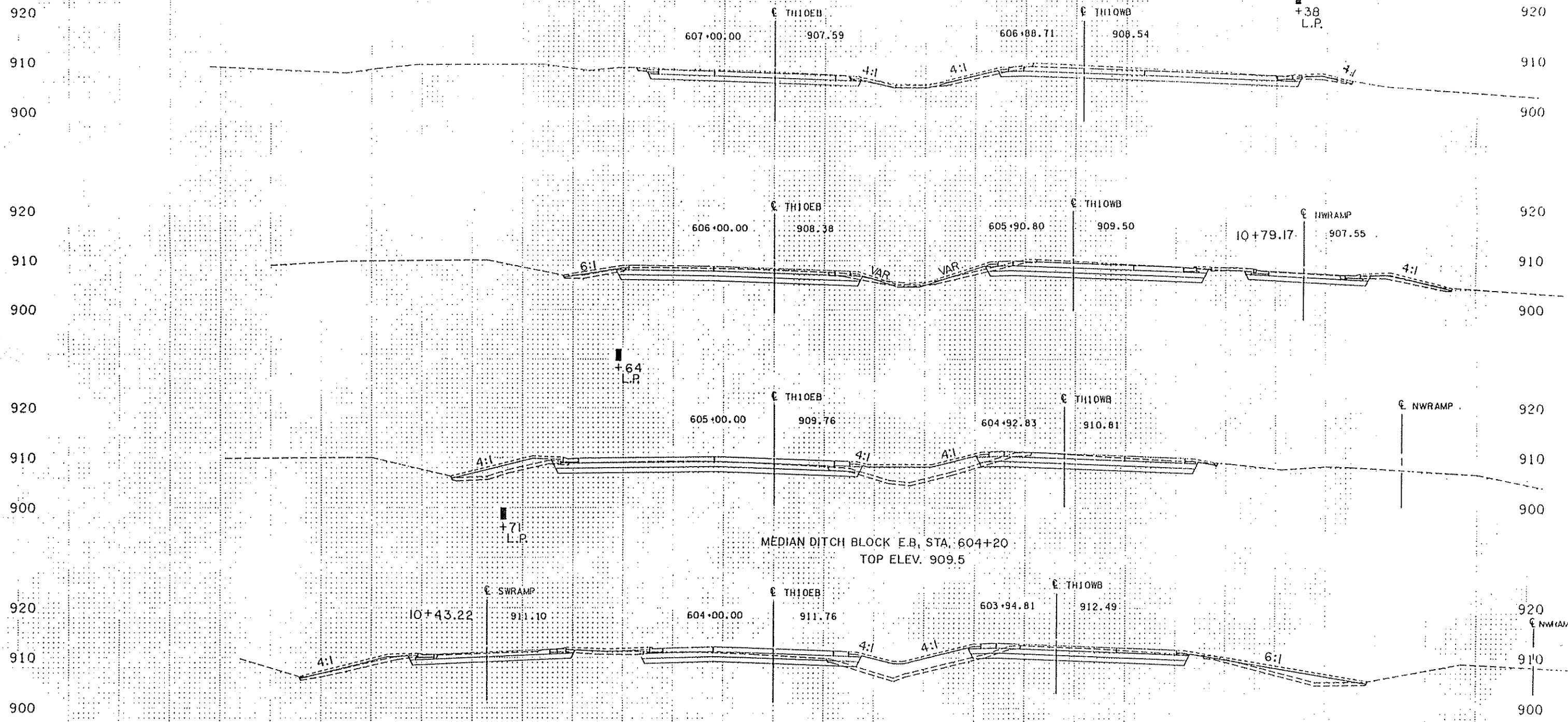
EXCAVATION CU. YDS.	EMBANKMENT CU. YDS.
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TH10EB STA. 597+00 TO STA. 599+00



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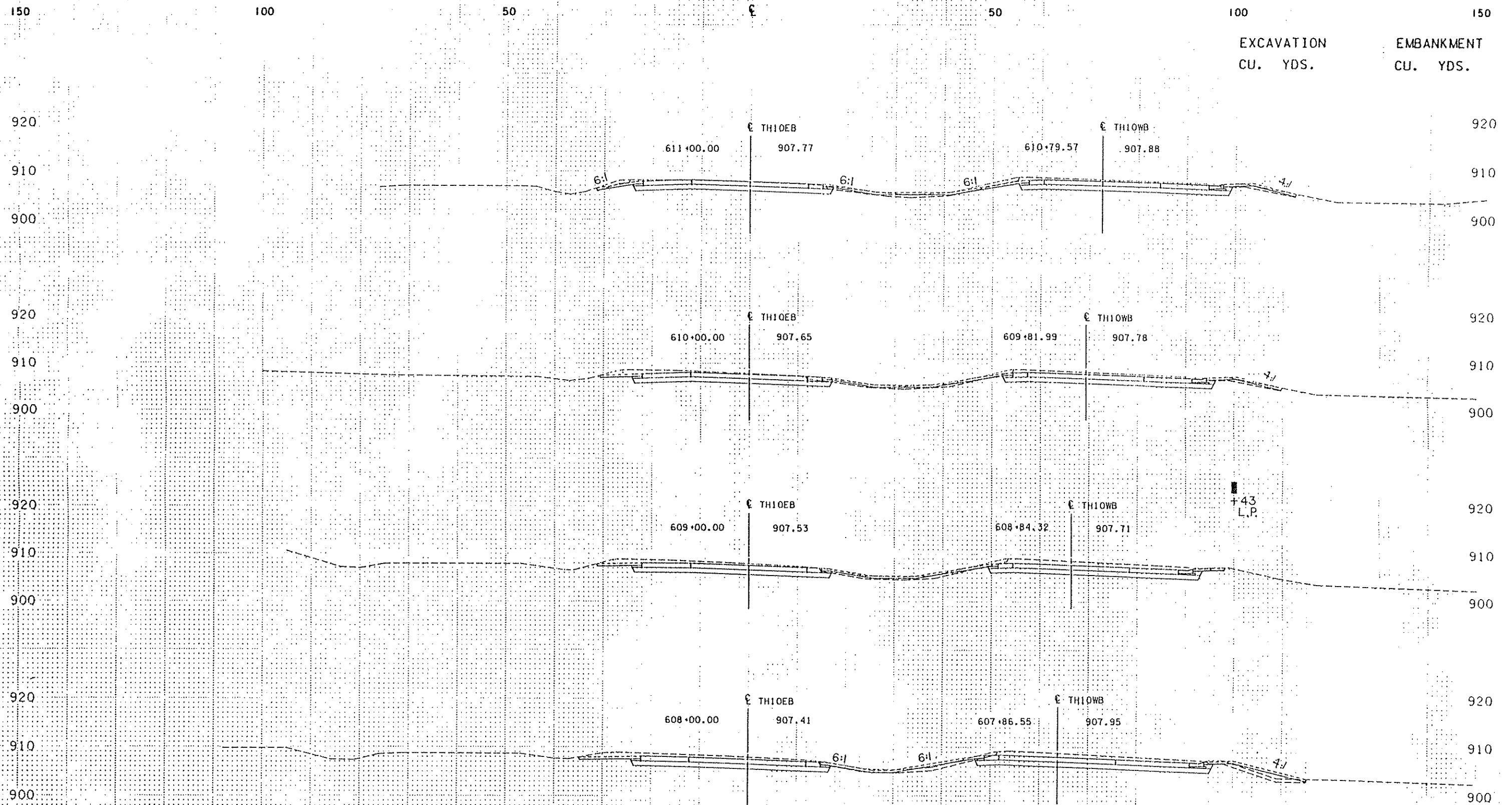
EXCAVATION  
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TH10EB STA. 604+00 TO STA. 607+00

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EXCAVATION  
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EMBANKMENT  
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THIOEB STA. 608+00 TO STA. 611+00

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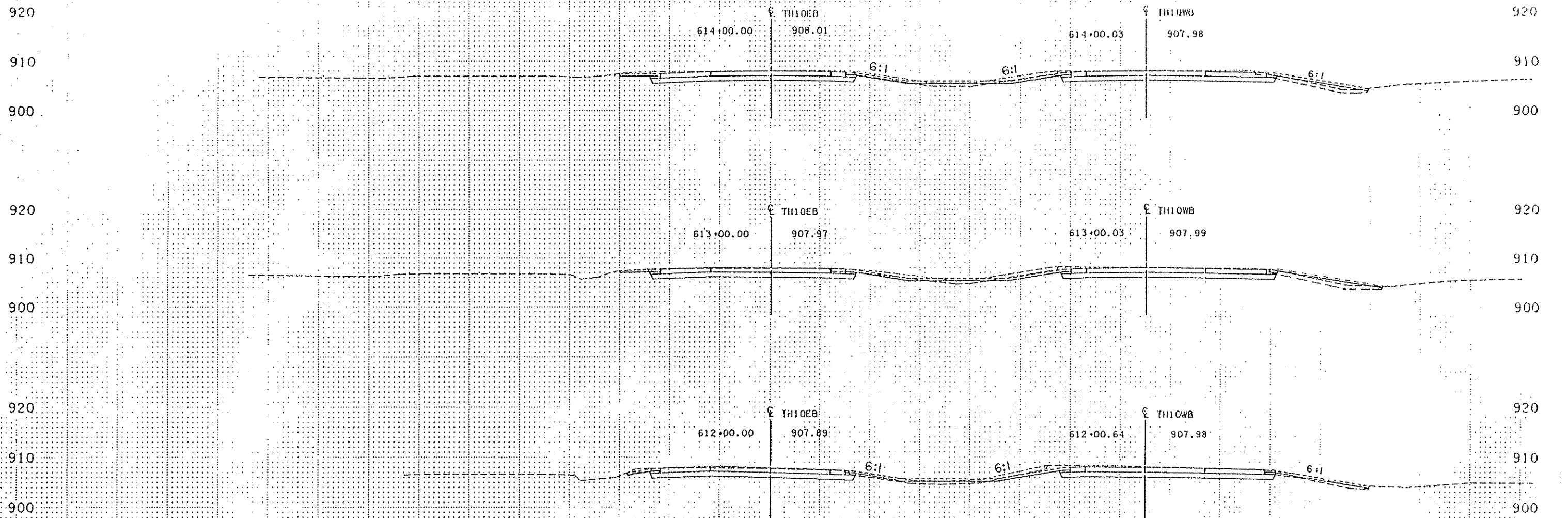
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EXCAVATION  
CU. YDS.

EMBANKMENT  
CU. YDS.



THIQWB P.O.T. 611+25.59  
THIQWB P.T. 611+01.97

THIOEB STA. 612+00 TO STA. 614+00

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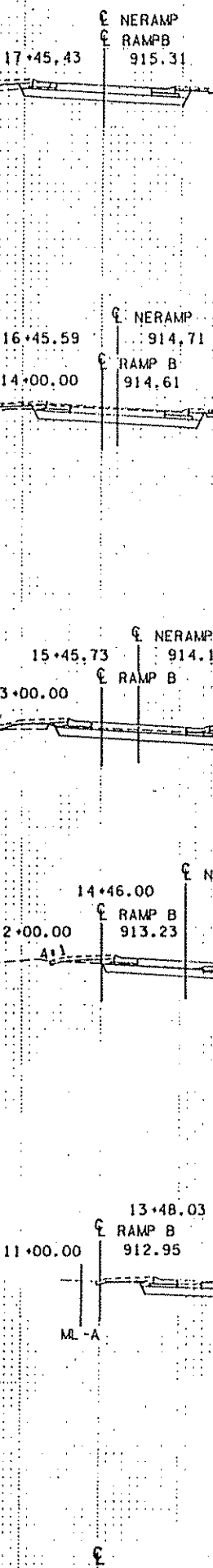
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NERAMP STA. 13+43.03 TO STA. 17+45.43

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18+45.43

NERAMP  
RAMP B  
915.58

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NERAMP STA. 18+45.43