

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO

P.E., R.O.W. & UTILITIES
UNDER PROJ. FRO14-2(18)

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO	FR 014-2 (19)	1

AS CONSTRUCTED

NO REVISIONS REVISED 9-7-90 VOID

REVISIONS

R-1	9-6-89	Sht. Nos. 1, 5, 8	G.R.R.

PLAN AND PROFILE OF ~~PROPOSED~~ AS CONSTRUCTED
FEDERAL AID PROJECT NO. FR 014-2(19)
 STATE HIGHWAY NO. 14
 WELD COUNTY AS CONSTRUCTED

INDEX OF SHEETS

SHEET No. DESCRIPTION

1.	TITLE SHEET, TABULATION OF LENGTH AND DESIGN DATA
2.	STANDARD PLANS LIST
3.	TYPICAL SECTIONS
4.	GENERAL NOTES AND SEEDING REQUIREMENTS
5-6.	SUMMARY OF APPROXIMATE QUANTITIES
7.	STRUCTURE QUANTITIES
8.	SUMMARY OF EARTHWORK AND TABULATION OF FENCING
9.	CENTERLINE CONTROL AND ROAD APPROACH DETAILS CONC. COLLAR DETAIL
10.	TABULATION OF SURFACING QUANTITIES
11.	TABULATION OF DELINEATORS, CONSTRUCTION TRAFFIC SIGNS AND RESET ITEMS
12-17.	ROADWAY PLAN AND PROFILES
18-19	MILLER PIT - AVAILABLE SOURCE
20	CONTROL AND MONUMENTATION SHEET
21-22	SURVEY MONUMENTS
NEW AND REVISED STANDARDS	
M-620-2	FIELD LABORATORY CLASS 2 5/25/88 1 SHEET
M-210-1 MAILBOX SUPPORTS 8/04/89 2 SHEETS	

SCALES OF ORIGINAL DRAWINGS

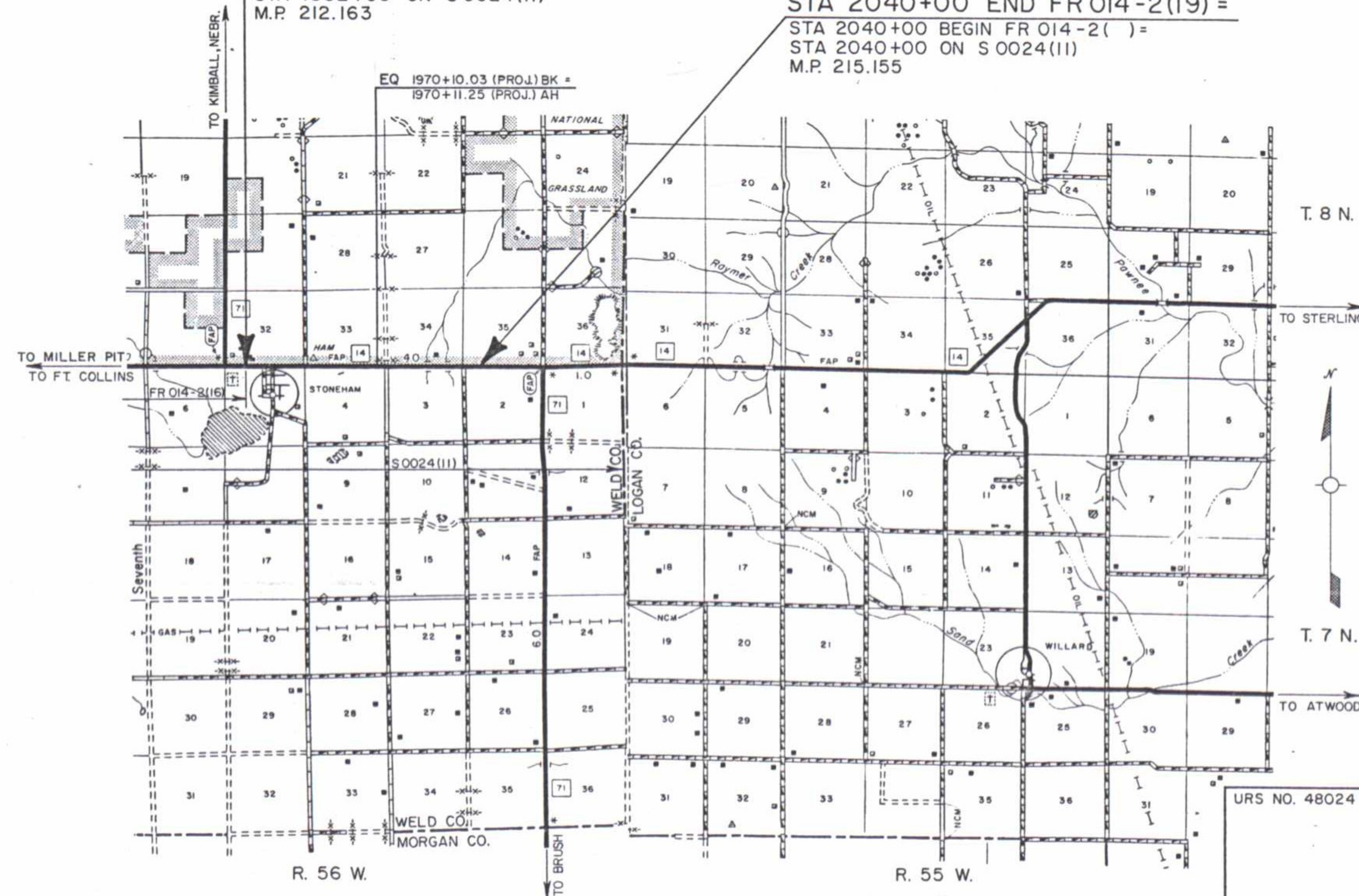
ON PLAN, 1 IN. = 100 FT.
ON PROFILE { 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL

STA 1882+00 BEGIN FR 014-2(19) =

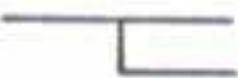
STA 1882+00 END FR 014-2(16)=
STA 1882+00 ON S 0024(11)
M.P. 212.163

STA 2040+00 END FR 014-2(19) =

STA 2040+00 BEGIN FR 014-2() =
STA 2040+00 ON S 0024(11)
M.P. 215.155



LENGTH AND DESIGN DATA

STATION	ROADWAY	
	FEET	MILES
STA 1882+00 (PROJ.) BEGIN FRO14-2(19)= A 1882+00 END FRO14-2(16) = A 1882+00 ON SOO24(11) M.P. 212.163	8810.03	1.669
EQ STA 1970+10.03 (PROJ.) BK = STA 1970+11.25 (PROJ.) AH	6988.75	1.324
STA 2040+00 (PROJ.) END FRO14-2(19)= STA 2040+00 (PROJ.) BEGIN FRO14-2() = STA 2040+00 ON SOO24(11) M.P. 215.155		
TOTALS	15,798.78	2.992
<u>DESIGN DATA</u>		
MAXIMUM GRADE	2.63 %	
MINIMUM S.S.D. VERTICAL	527	
MINIMUM S.S.D. HORIZONTAL	UNLIMITED	
MAXIMUM DESIGN SPEED	60 M.P.H.	
2009 DESIGN TRAFFIC VOLUME	 ADT = 1500 DHV = 190	
% TRUCKS	32	

URS NO. 48024

URS CONSULTANTS
5251 DTC PARKWAY, SUITE 800
ENGLEWOOD, COLORADO 80111-2737
TEL: (303) 796-9700

AS CONSTRUCTED INFORMATION

CONTRACTOR Grasser Const.
Resident ENGINEER Robert Patrick
 (Project or Resident)
 PROJECT STARTED 12-1-89
 PROJECT COMPLETED 9-7-90
 AS CONSTRUCTED PLANS Pat Patrick
 APPROVED
RF 2-15-92
 TITLE DATE

G.R.R. / DIST. IV

AS CONSTRUCTED

NO. REVISIONS

4-170

REVISEDVOID

FEDERAL ROAD REGION NO.

VIII

DIVISION

COLORADO

PROJECT NO.

FR014-2(19)

SHEET NO.

2

TOTAL SHEETS

22

Plan No.	Title	Page	Plan No.	Title	Page	Plan No.	Title	Page
☒ M-100-1	STANDARD SYMBOLS.....	1	☒ M-607-1	WIRE FENCES AND GATES.....	(2 SHEETS) 52	☒ S-612-1	TYPICAL DELINEATOR INSTALLATIONS.....	(4 SHEETS) 75
☐ M-107-1	TEMPORARY EROSION CONTROL.....	2	☐ M-607-2	CHAIN LINK FENCE.....	(3 SHEETS) 54	☒ S-614-1	TYPICAL GROUND SIGN PLACEMENT.....	79
☒ M-203-1	APPROACH ROADS, FLARING, CUT SLOPE TREATMENT, BRIDGE & CREST WIDENING.....	3	☐ M-607-3	BARRIER FENCE.....	57	☒ S-614-2	CLASS I GROUND SIGN INSTALLATIONS.....	80
☐ M-203-2	DITCH TYPES.....	4	☐ M-607-4	DEER FENCE AND GATE.....	(2 SHEETS) 58	☒ S-614-3	CLASS II GROUND SIGN INSTALLATIONS.....	81
☐ M-203-10	SUPERELEVATION OF CURVES - CROWNED HIGHWAYS.....	5	☐ M-607-10	PICKET SNOW FENCE.....	60	☐ S-614-4	CLASS III SIGNS, LAMINATED ALUMINUM PANELS AND POST SPACING TABLE.....	(2 SHEETS) 82
☐ M-203-11	SUPERELEVATION OF CURVES - DIVIDED HIGHWAYS - SHOULDER PIVOT.....	6	☐ M-608-1	CURB RAMPS.....	61	☐ S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS.....	(2 SHEETS) 84
☐ M-203-12	SUPERELEVATION OF CURVES - STREETS.....	7	☒ M-609-1	CURBS AND GUTTERS.....	62	☐ S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS.....	(2 SHEETS) 86
☐ M-203-13	SUPERELEVATION OF CURVES - DIVIDED HIGHWAYS - CENTER PIVOT.....	8	☐ M-611-1	CATTLE GUARD - WELDED GRILL UNITS - 10' THRU 42' ROADWAYS.....	(2 SHEETS) 63	☐ S-614-10	TYPICAL MARKER ASSEMBLY INSTALLATIONS.....	88
☒ M-206-1	EXCAVATION AND BACKFILL FOR STRUCTURES.....	(2 SHEETS) 9	☐ M-613-1	HIGHWAY LIGHTING.....	(2 SHEETS) 65	☐ S-614-11	MILEPOST SIGN AND INSTALLATION.....	89
☐ M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES.....	11	☐ M-615-1	EMBANKMENT PROTECTOR, TYPES 3 & 4.....	67	☐ S-614-12	STRUCTURE NUMBER INSTALLATION (BRIDGE INFORMATION SHEET).....	90
☐ M-214-1	PLANTING DETAILS.....	12	☐ M-615-2	EMBANKMENT PROTECTOR, TYPE 5.....	68	☐ S-614-13	STANDARD RAILROAD CROSSING SIGNS AND MARKINGS.....	91
☐ M-412-1	CONCRETE PAVEMENT JOINTS.....	13	☐ M-616-1	INVERTED SIPHON..... (ALSO USE M-603 OR M-604 AS REQUIRED)	69	☐ S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATION.....	92
☐ M-504-1	STEEL CRIBBING.....	14	☐ M-620-1	FIELD LABORATORY - CLASS 1.....	70	☐ S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS.....	93
☐ M-506-1	GABIONS AND SLOPE MATTRESS.....	15	☐ M-620-2	FIELD LABORATORY - CLASS 2.....	71	☐ S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS.....	94
☐ M-510-1	STRUCTURAL PLATE CULVERT PIPE - H-20 LOADING.....	(2 SHEETS) 16	☐ M-620-11	FIELD OFFICE - CLASS 1.....	72	☐ S-614-30	INTERSTATE ROUTE MARKERS.....	95
☐ M-601-1	SINGLE CONCRETE BOX CULVERT.....	18	☒ M-620-12	FIELD OFFICE - CLASS 2.....	73	☐ S-614-31	U. S. & COLORADO ROUTE MARKERS.....	96
☐ M-601-2	DOUBLE CONCRETE BOX CULVERT.....	19				☐ S-614-32	AUXILIARY MARKERS.....	97
☐ M-601-3	TRIPLE CONCRETE BOX CULVERT.....	20				☐ S-614-40	TRAFFIC SIGNAL INSTALLATION DETAILS.....	(3 SHEETS) 98
☒ M-601-10	HEADWALL FOR PIPE CULVERTS.....	21				☒ S-614-50	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION.....	(4 SHEETS) 101
☐ M-601-11	TYPE "S" SADDLE HEADWALL FOR PIPE CULVERTS.....	22				☒ S-614-51	BARRICADES, DRUMS, CONCRETE BARRIER (TEMP) & VERTICAL PANELS.....	105
☒ M-601-12	HEADWALL, INTERCEPTING HEADWALL AND CULVERT OUTLET PAVING.....	23				☒ S-627-1	TYPICAL PAVEMENT MARKINGS.....	(3 SHEETS) 106
☒ M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS.....	24						
☒ M-603-1	METAL CULVERT PIPE - H-20 LOADING.....	(2 SHEETS) 25						
☒ M-603-2	REINFORCED CONCRETE PIPE.....	27						
☐ M-603-3	PRECAST CONCRETE BOX CULVERT.....	28						
☒ M-603-10	CONCRETE AND METAL END SECTIONS.....	29						
☐ M-604-1	PIPE SEWER IN TRENCH.....	30						
☐ M-604-10	INLET, TYPE C.....	31						
☐ M-604-11	INLET, TYPE D.....	32						
☐ M-604-12	CURB INLET, TYPE R.....	(2 SHEETS) 33						
☐ M-604-13	CONCRETE INLET, TYPE 13.....	35						
☐ M-604-20	MANHOLES.....	36						
☐ M-604-21	STEPS FOR MANHOLES & INLETS.....	37						
☐ M-606-1	GUARD RAIL, TYPE 3, W-BEAM.....	(8 SHEETS) 38						
☐ M-606-2	GUARD RAIL, TYPE 3, W-BEAM FOR LOCAL ROADS & STREETS.....	(4 SHEETS) 46						
☐ M-606-10	GUARD RAIL, TYPE 4, CONCRETE BARRIER, CAST-IN-PLACE.....	50						
☐ M-606-11	GUARD RAIL, TYPE 4, CONCRETE BARRIER, PRECAST-PORTABLE.....	51						

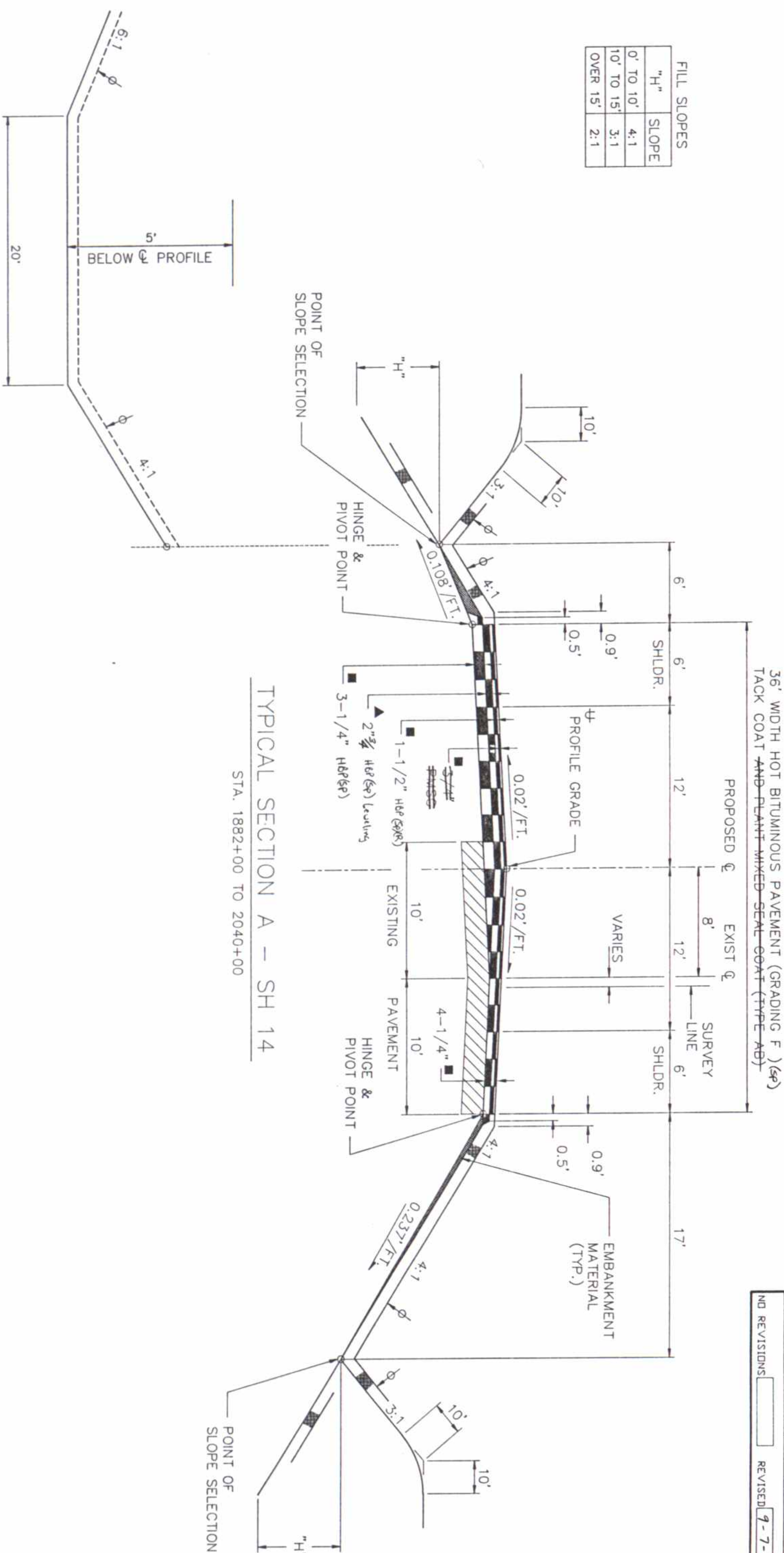
THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

STANDARD PLANS LIST

M & S STANDARDS - JANUARY, 1982

"H"	SLOPE
0' TO 10'	4:1
10' TO 15'	3:1
OVER 15'	2:1



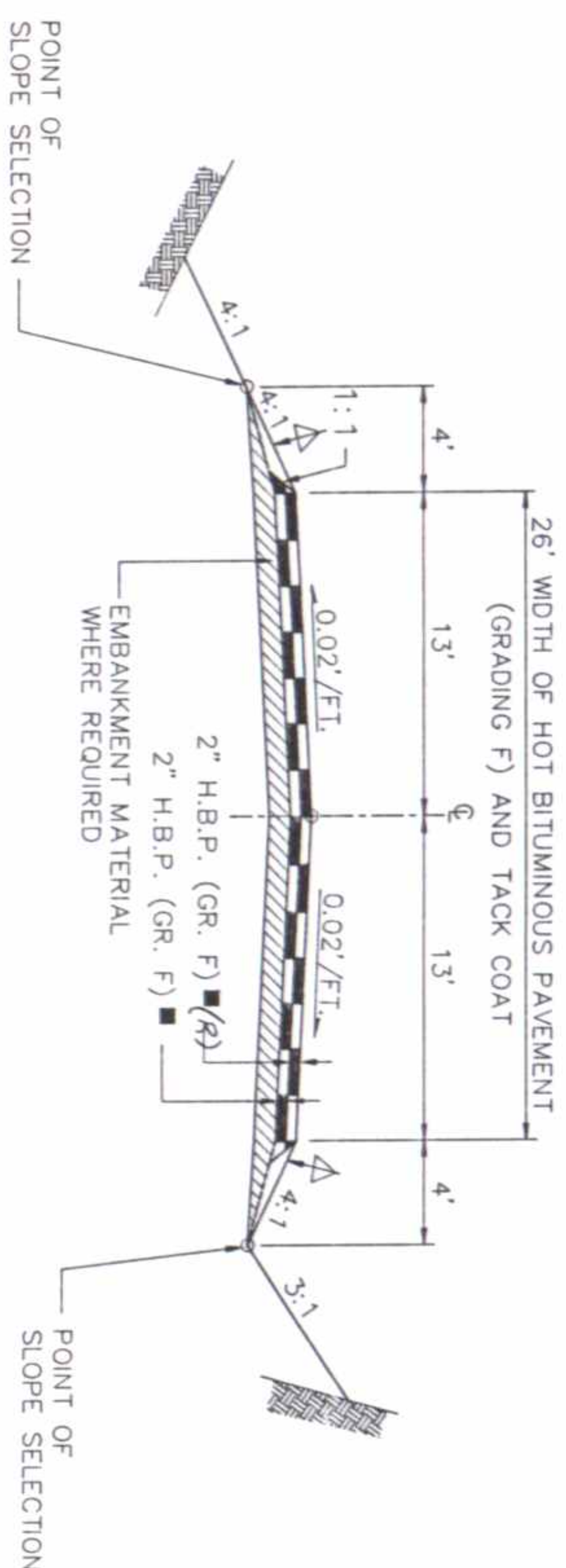
TYPICAL SECTION A - SH 14
STA. 1882+00 TO 2040+00

STA. 1882+00 TO 2040+00

SNOW DITCH

STA. 1919+00 TO 1926+00
STA. 1950+00 TO 1958+00
STA. 1990+00 TO 1999+00
STA. 2016+00 TO 2043+00

④ BACK SLOPE SHALL BE 3:



TYPICAL SECTION - COUNTY ROADS

AS CONSTRUCTED

NO REVISIONS REVISED VOID

FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLO.	FR 014-2(19)	3	22

SURFACING RATES FOR MINIMUM ROADWAY WIDTHS

MATERIAL SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING APPROXIMATE RATES PER 100 LINEAR FEET OF ROADWAY:

SH 14 - SECTION A

	17	TONS
TOP LAYER	33	TONS
MIDDLE LAYER . . .	4562	TONS
BOTTOM LAYER . . .	47	TONS *

BITUMINOUS PAVEMENT	TOP LAYER	32 TONS
	BOTTOM LAYER . . .	33 TONS

* INCLUDES WEDGE SECTION OVER EXISTING PAVEMENT.

THE RATES SHOWN HAVE BEEN DETERMINED FROM INFORMATION AVAILABLE AT THE TIME OF DESIGN. RATES SHOULD BE ADJUSTED DURING CONSTRUCTION TO OBTAIN THE REQUIRED APPROXIMATE THICKNESS.

NOTES:

1. THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE.
2. BREAK POINTS ON SLOPES AND IN BOTTOMS OF DITCHES SHALL BE ROUNDED ON CONSTRUCTION FOR A PLEASING APPEARANCE; SEE STANDARDS FOR DETAILS OF CUT SLOPE TREATMENT, FLARING AND WIDENING.
3. BETWEEN STA. 1973+40 TO STA. 1983+40 AND STA. 1993+60 TO STA. 1997+80 ON THE RIGHT SIDE, SLOPES SHALL BE VARIED AS DIRECTED BY THE ENGINEER, TO PROTECT EXISTING DITCH CHECKS THAT ARE TO REMAIN IN PLACE. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS.
4. ϕ THE CONTRACTOR WILL BE REQUIRED TO PLACE A SUITABLE MATERIAL $\downarrow$ TO THIS LINE AFTER COMPLETION OF PAVING OPERATION (4 INCHES MIN.).
5. Δ THE CONTRACTOR WILL BE REQUIRED TO PLACE A SUITABLE MATERIAL $\uparrow$ TO THIS LINE AFTER COMPLETION OF PAVING OPERATION.
6. ∇ PROFILE GRADE SHALL BE THE REQUIRED OVERLAY THICKNESS ABOVE THE EXISTING PAVEMENT.
7. $\blacksquare$ APPROXIMATE THICKNESS
8. $\blacktriangle$ VARIABLE THICKNESS LEVELING COURSE

STATE HIGHWAY 14			
TYPICAL SECTIONS			
DATE	PROJECT NO.	DESIGNED BY G.H. J.W. DRAWN BY J.G.C.-J.W. CHECKED BY J.E.	SHEET NO. 1 OF 1 SHEETS
MAY 5, 1989	URS 8024		DRAWING NO. TS-1

GENERAL NOTES

1. FOR PRELIMINARY PLAN QUANTITIES OF BITUMINOUS MATERIALS THE FOLLOWING RATES OF APPLICATION WERE USED:
- TACK COAT EMUL. ASPH. ~~PAVING~~ ^{PAVING}VE 0.10 GALS/SQ.YD. (DILUTED)
(SLOW-SETTING) & DUST 0.110 LBS. PER SQ.YD./INCH
BITUMINOUS PAVEMENT (GRADING F) 0.110 LBS. PER SQ.YD./INCH
~~PLANT MIXED SEAL COAT (TYPE AB)~~ 0.110 LBS. PER SQ.YD./INCH
EMULSIFIED ASPHALT USED FOR DUST PALIATIVE SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 9 PARTS WATER.
DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.
- WATER FOR EMULSIFIED ASPHALT WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
RATE OF APPLICATION SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.
2. THE FOLLOWING SHALL BE FURNISHED WITH EACH PAVER:
1. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
2. SHORT SKID SHOE
3. ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.
4. ROAD APPROACHES, OTHER THAN COUNTY ROADS, WHICH REQUIRE BITUMINOUS PAVEMENT SHALL HAVE A 2" THICKNESS OF PAVEMENT PLACED AS FOLLOWS:
- PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE PAVED 50 FEET OUT FROM EDGE OF SHOULDER OR TO THE RIGHT-OF-WAY LINE, WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED 4 FEET OUT FROM EDGE OF SHOULDER.
5. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
- FULL DEPTH OF ALL EMBANKMENTS
BASES OF CUT AND FILL - 6 INCHES
6. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THE WORK AND WILL NOT BE PAID FOR SEPARATELY.
7. THE TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-99.
8. MILE POSTS WILL BE ADJUSTED OR RESET BY STATE FORCES AT NO COST TO THE PROJECT.
9. ~~IT IS ESTIMATED THAT 100 HOURS OF BLADING WITH A MOTOR GRADER IN THE 125 TO 150 FLYWHEEL HORSEPOWER RANGE WILL BE REQUIRED FOR DRAINAGE IMPROVEMENTS OR AS DIRECTED BY THE ENGINEER.~~ ¹⁰⁰⁻¹⁵⁰
10. ~~FOR INFORMATION ONLY IT IS ESTIMATED THAT 2000 LBS. OF 4 INCH PAVEMENT MARKING TAPE WILL BE REQUIRED FOR TEMPORARY STRIPING.~~
11. SALVAGE OF REMOVED FENCE POSTS AND CULVERTS SHALL REMAIN THE PROPERTY OF THE COLORADO DEPARTMENT OF HIGHWAYS.
12. ~~IT IS ESTIMATED THAT 100 TONS HBP (PATCHING) (HAUL & ASPHALT) WILL BE REQUIRED AT LOCATIONS TO BE DIRECTED BY THE ENGINEER.~~ ⁹⁰⁻¹²⁰
13. A CUTTING WHEEL WILL BE REQUIRED TO OBTAIN A VERTICAL CUT APPROXIMATELY 6-INCHES FROM THE EDGE OF EXISTING PAVEMENT OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO PAINT THE EDGE OF CUT PAVEMENT WITH DILUTED EMULSIFIED ASPHALT (SLOW-SETTING) PRIOR TO PAVING OPERATION. VERTICAL EDGES WILL NOT BE LEFT OVERNIGHT. COST OF PAVEMENT REMOVAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM 203 EMBANKMENT MATERIAL (COMPLETE IN PLACE).
14. ~~IT IS ESTIMATED THAT 320 GALLONS OF PAVEMENT MARKING PAINT WILL BE REQUIRED FOR THIS PROJECT USING 2 APPLICATIONS AS FOLLOWS:~~ ³²¹
- WHITE LANE LINES: ~~245~~ ²¹² GALLONS
YELLOW LANE LINES: ~~34~~ ¹⁰⁷ GALLONS
- APPLICATIONS SHALL BE SEPARATED BY A MINIMUM OF 7 CALENDAR DAYS AND A MAXIMUM OF 21 CALENDAR DAYS.
15. REINFORCED CONCRETE PIPE ELLIPTICAL SHALL BE CR 4 RATED.
16. CONCRETE PIPE JOINT FASTENERS, AS SHOWN ON STANDARD M-603-10, ARE REQUIRED ON ALL CONCRETE CULVERT INSTALLATIONS EXCLUDING SIDE DRAINS.
17. ~~THE CONTRACTOR WILL BE REQUIRED TO PROTECT THE EXISTING U.S.G.S. MARKER AT STA. 1919+93.94E. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT HIS EXPENSE.~~
- To be removed by Contractor and markers given to State

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	VIII	COLO.	FR 014-2(19)	4	22

SEEDING REQUIREMENTS

SOIL PREPARATION, FERTILIZING, SEEDING, AND MULCHING FOR ~~AN ESTIMATED~~ ^{29.1} ~~30~~ ACRES WILL BE REQUIRED WITHIN THE RIGHT-OF-WAY LIMITS ON ALL DISTURBED AREAS NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	BOTANICAL NAME	RATE LBS. PLS/ACRE
WESTERN WHEATGRASS	AGROPYRON SMITHII	4
SMOOTH BROME V. LINCOLN	BROMUS INERMIS	5
PUBESCENT WHEATGRASS	AGROPYRON TRICHOPOHORUM	6
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	0.25
SIDEOLATS GRAMA	BOUTELOUA CURTIPENDULA	3
CRESTED WHEATGRASS	AGROPYRON DESERTORUM	1
ALFALFA V. LADAK	MEDICAGO SATIVA	0.5
BLUEFLAX	LINUM LEWISII	0.5
SCARLET GLOBEMALLOW	SPHAERALCEA COCINEA	0.25
TOTAL POUNDS OF PLS/ACRE		20.5

COMMERCIAL FERTILIZER: RATE LBS./ACRE

AVAILABLE N 27
AVAILABLE P 69

THE FOLLOWING ESTIMATED QUANTITIES WILL BE REQUIRED:		
SEEDING (NATIVE)	29.1	30 ACRES
MULCHING	29.1	30 ACRES
** FERTILIZER (AVAILABLE N)	706	310 LBS.
** FERTILIZER (AVAILABLE P)	2000	970 LBS.
** SOIL PREPARATION	29.1	30 ACRES

** FOR INFORMATION ONLY. QUANTITY INCLUDED IN COST OF SEEDING (NATIVE).
1.5 TONS PER ACRE OF NATIVE HAY SHALL BE MECHANICALLY CRIMPED INTO SOIL.

STATE HIGHWAY 14					
GENERAL NOTES & SEEDING REQUIREMENTS					
DATE	PROJECT NO.	DESIGNED BY	SHEET NO.	DRAWING NO.	
MAY 5, 1989	URS 8024	REVIEWED BY	1	GN-1	

SUMMARY OF APPROXIMATE ^{FINAL} QUANTITIES

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO REVISIONS	☐ REVISED ☒ VOID ☐				
(R-1) REVISED QUANTITY - GRR-9-6--89		XIII	COLOR.	FR 014-2(19)	5

[illegible]

FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
XIII	COL.	FR 014-2(19)	6

[illegible]

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED 9-7-90	VIII	COLD.	FR 014-2(19)	8	22

(R-1) REVISED EARTHWORK - GRR-9-6-89

SUMMARY OF EARTHWORK (R-1)

INDEX	ITEM	CUBIC YARDS	
		PLAN	FINAL
	PAY QUANTITIES		
	EMBANKMENT MATERIAL C.I.P. *FROM ROADWAY CROSS SECTIONS STRUCTURE QUANTITIES AS EMBANKMENT	36,138 254	37,558 254
	TOTAL FOR PAY QUANTITY	36,392	37,812
	FOR INFORMATION ONLY		
	UNCLASSIFIED EXCAVATION FROM ROADWAY CROSS SECTIONS ESTIMATED FOR CUT SLOPE TREATMENT	44,201 221	
	TOTAL	44,422	
	EMBANKMENT MATERIAL (NET)	36,392	
	EMBANKMENT X FACTOR (1.40)	50,948	
	BORROW (CONTRACTOR'S SOURCE)	6,392	
	COMPACTION (AASHTO T99)		
	EMBANKMENT (NET) BASES OF CUTS AND FILLS	36,392 11,059	
	TOTAL	47,451	
	WETTING (M-GAL)	1,908	

* INCLUDES SUITABLE MATERIAL FOR SLOPES.

FINAL TABULATION OF FENCING REQUIREMENTS

STATION	SIDE	REMOVAL OF FENCE		FENCE BARBED WIRE W/METAL POSTS		FENCE COMBINATION WIRE W/METAL POSTS		RESET FENCE		16" DRIVEWAY GATE		16" DRIVEWAY BARBED WIRE GATE	
		PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
1919+00 TO 1970+00	LT.	5,100	5,100										
1970+50 TO 2004+60	LT.	3,410	3,410										
2007+30 TO 2040+00	LT.	3,300	3,300										
2022+95	LT.												
1898+30 TO 1910+00	RT.	1,170	1,170	1,170	1,164								
2012+38	RT.				46								
2000+58	RT.							97					
1904+58	RT.							96					
2012+75 TO 2018+25	LT.				603								
1910+00 TO 1917+00	RT.	700	700	700	701								
1917+40 TO 1967+80	LT.			5,540	5,541								
1949+75 TO 1958+55	LT.				1035								
1996+54 TO 2043+50	LT.			4,346	4,678								
1917+00 TO 1917+40	RT.				41								
1984+75 TO 1994+27	LT.					4,607							
2010+80 TO 2017+80	RT.	700	700	700	703	703							
2020+70 TO 2034+20	LT.				800	793							
2032+00 TO 2036+00	RT.	400	400		431	431							
2035+50 TO 2043+50	LT.				400	431							
1931+51	RT.				918	800							
1970+11	LT.				31							1	1
1970+20	LT.											1	1
1990+20	RT.											1	0
2006+14	LT.											1	0
2006+14	RT.				30			2	2				
1970+11 TO 1972+06	RT.		195									1	1
1947+00	LT.												1
PROJECT TOTALS		14,780	14,975	12,856	19,350			5,780	1,93	2	2	5	4

* FOR INFORMATION ONLY
NOTE: IT IS ESTIMATED THAT 21' END POSTS AND 21' CORNER AND LINE BRACE POSTS WILL BE REQUIRED FOR THIS PROJECT.

STATE HIGHWAY 14			
EARTHWORK AND FENCE QUANTITIES			
DATE	PROJECT NO.	DESIGNED BY	SHEET NO.
MAY 5, 1989	URS B024	URS B024	1
		CHECKED BY	SE-1

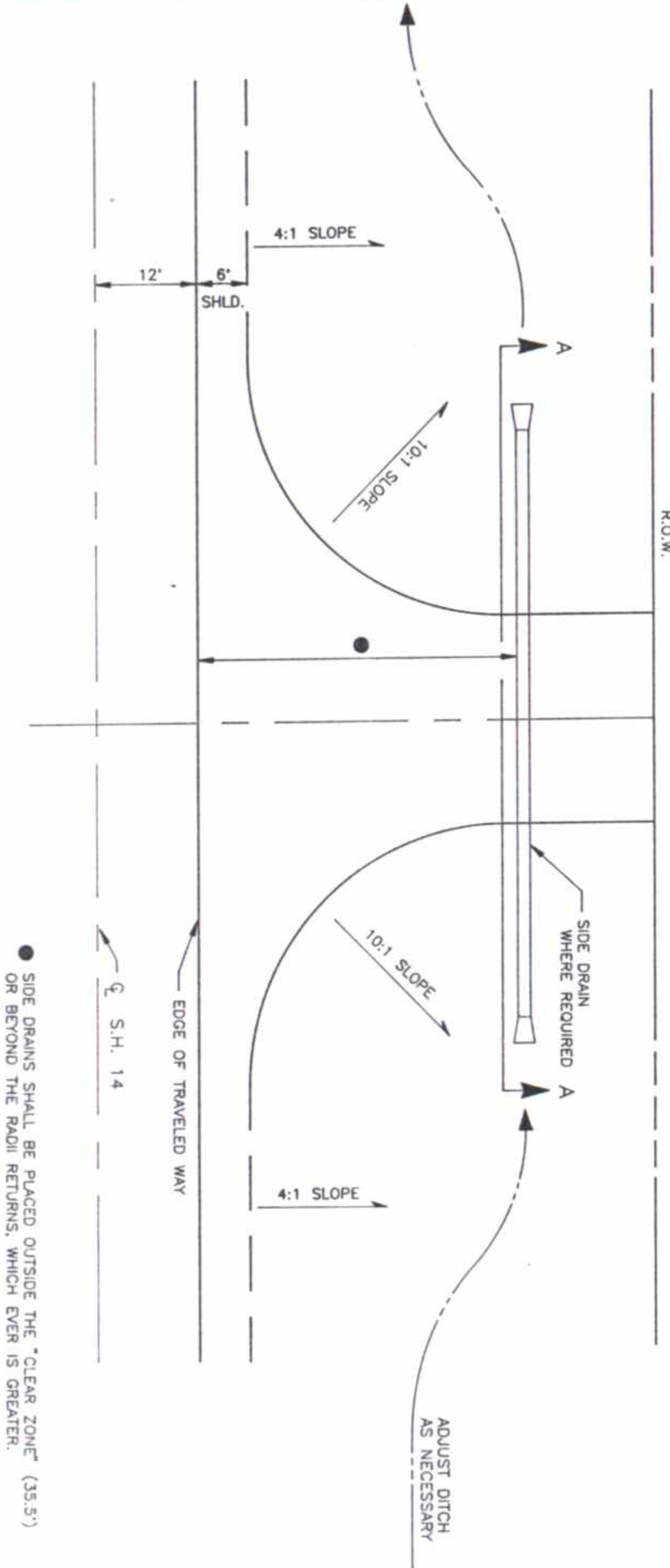
PREPARED BY • URS CONSULTANTS • DENVER

AS CONSTRUCTED				FED. ROAD REGION	DIVISION	PRJL. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	9-7-90	REVISED		VIII	COLD.	FR 014-2(19)	9	22

BASIS OF BEARINGS
ALL BEARINGS ARE BASED ON THE DIRECTION OF:
The S.W. Corner Section 36 T. 8 N., R. 56 W.
(Rebar & Cap) TO The W. 1/4 Corner of Said
Section 36 (USGS M27).
DESCRIBED DIRECTION BEING: N 0° 39' 06" E
at 2642.01' feet

TABULATION OF PROPOSED CENTERLINE
WITH SECTION TIES

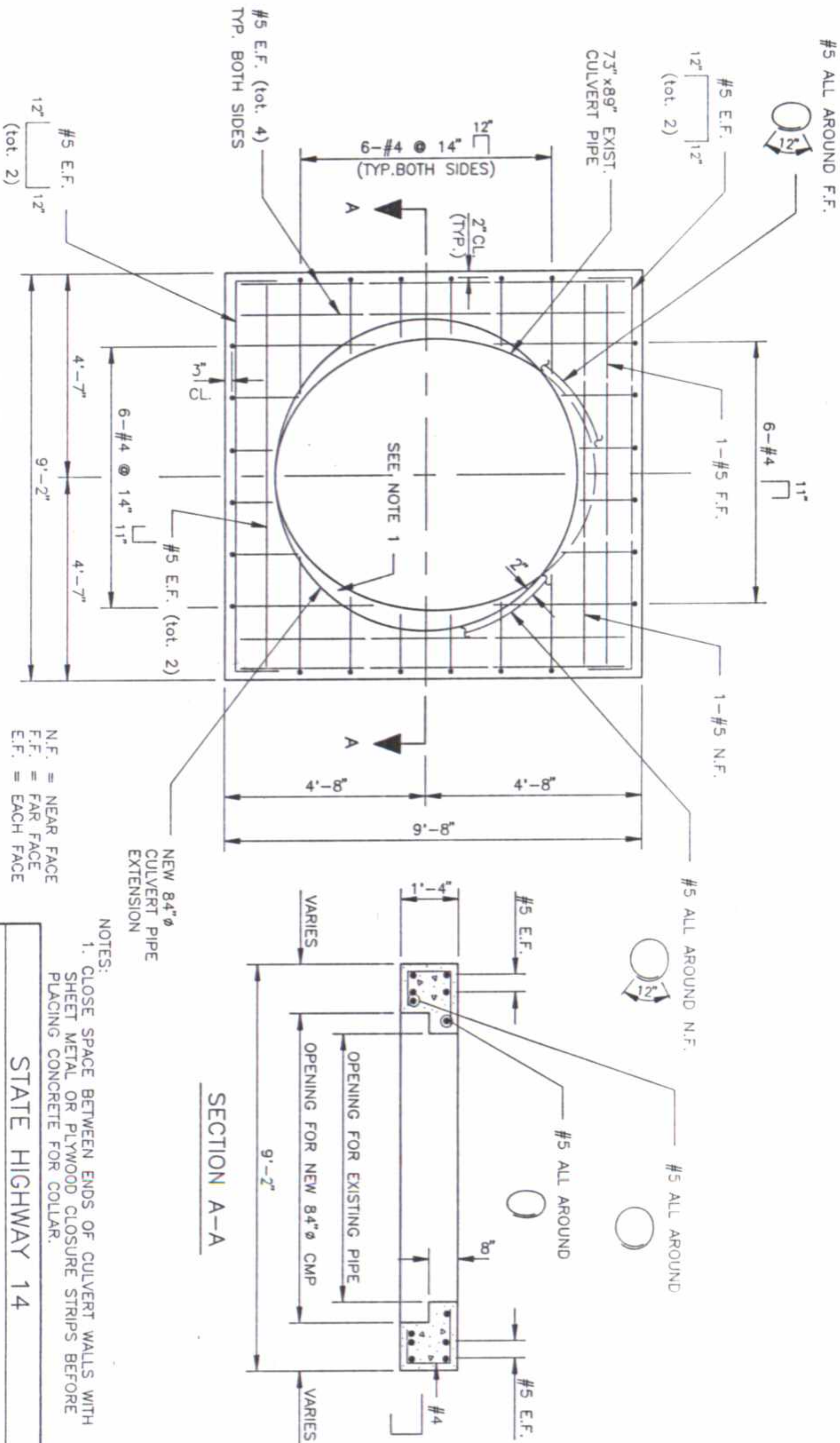
POINT No.	DESCRIPTION/STATION	COURSE	COORDINATES		TIE TO NEAREST SECTION CORNER
			NORTHING	EASTING	
1100	P.L. STA. 1864+00.36	2699.46' - N 88°52'14" E	100031.168	110826.622	8.00' S 1°07'46" E TO S.E. COR. SEC. 31
1101	P.L. STA. 1890+99.82	2899.64' - N 88°43'00" E	100084.378	113525.557	45.17' S 83°48'51" W TO S. 1/4 COR. SEC. 32
1102	P.L. STA. 1919+99.46	3086.96' - N 89°09'23" E	100149.320	116424.470	290.26' S 87°20'25" W TO S.E. COR. SEC. 32
1103	P.L. STA. 1950+86.42	1923.61' - N 89°08'33" E	100194.770	119511.095	726.79' S 88°29'59" W TO S. 1/4 COR. SEC. 33
1104	P.L. STA. 1970+10.03		100223.558	121434.488	8.00' S 0°51'27" E TO S.W. COR. SEC. 34
CENTERLINE EQUATION: STA. 1970+10.03 BACK = STA. 1970+11.25 AHEAD					
1104	P.L. STA. 1970+11.25	2643.08' - N 89°01'53" E	100223.558	121434.488	8.00' S 0°51'27" E TO S.W. COR. SEC. 34
1106	P.L. STA. 1996+54.33	2658.48' - N 89°01'13" E	100268.239	124077.194	8.00' S 0°58'27" E TO S. 1/4 COR. SEC. 34
1107	P.L. STA. 2023+12.81	2668.74' - N 88°57'40" E	100313.695	126735.281	8.00' S 1°00'34" E TO S.W. COR. SEC. 35
1108	P.L. STA. 2049+81.55	LENGTH = 18,579.97 ft.	100362.082	129403.582	8.00' S 1°04'53" E TO S. 1/4 COR. SEC. 35



SECTION A-A
TYPICAL SECTION ROAD & FIELD APPROACHES

DETAIL - TYPICAL ROAD & FIELD APPROACH TREATMENT

NO SCALE



SECTION A-A

NOTES:
1. CLOSE SPACE BETWEEN ENDS OF CULVERT WALLS WITH SHEET METAL OR PLYWOOD CLOSURE STRIPS BEFORE PLACING CONCRETE FOR COLLAR.

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

CONCRETE COLLAR DETAIL
FOR EXTENSION OF 84" Ø CMP

STATE HIGHWAY 14			
DATE	PROJECT NO.	DESIGNED BY	SHEET NO.
MAY 5, 1989	URS 8024	URS 8024	1

AS CONSTRUCTED		FED. ROAD REGION		DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED 4-7-90	VOID	VIII	COLD.	FR 014-2(19)	10	22

FLEXIBLE PAVEMENT DESIGN CRITERIA

PROVECT.
~~IT IS ESTIMATED THAT 75~~⁰ GALLONS OF EMULSIFIED ASPHALT
(DUST PALLIATIVE) WILL BE REQUIRED FOR THIS PROVECT.

18 K ESAL	2,184,000	2,184,000	STRENGTH COEFFICIENT
SERVICEABILITY INDEX	2.5	2.5	H.B.P. (GRADING F)
REGIONAL FACTOR	0.5	0.5	P.M.S.C. (TYPE AB)
SUBGRADE "R" VALUE	—	25	
W S N	1.70	3.12	

Final TABULATION OF DELINEATORS

LOCATION	SIDE	SPACING	DELINEATOR - EACH					
			TYPE I		TYPE II		TYPE III	
			CRYSTAL	YELLOW	CRYSTAL	YELLOW	CRYSTAL	YELLOW
1882+78 TO 1891+00	RT.	TAN.	2					
1891+00 TO 1891+40	RT.	R=50'	5					
1891+80 TO 1892+20	RT.	R=50'	5					
1892+20 TO 1894+70	RT.	TAN.	1					
1894+70 TO 1895+20	RT.	R=50'	5					
1895+50 TO 1896+00	RT.	R=50'	5					
1896+00 TO 1969+50	RT.	TAN.	43 1/4					
1969+50 TO 1970+00	RT.	R=50'	5					
1970+20 TO 1977+70	RT.	R=50'	5					
1977+70 TO 2022+50	RT.	TAN.	8 9					
2022+50 TO 2023+00	RT.	R=50'	5					
2023+30 TO 2023+80	RT.	R=50'	5					
2023+80 TO 2040+00	RT.	TAN.	3					
2040+00 TO 2044+00	RT.	TAPER		8 5				
1889+02.5 TO 1890+99.5	LT.	(2)R=16'	7				8 2	
1883+30 TO 1917+40	LT.	TAN.	6					
1917+40 TO 1917+90	LT.	R=50'	8 0					
1918+30 TO 1918+80	LT.	R=50'	8 0					
1918+80 TO 1969+50	LT.	TAN.	16 11					
1969+50 TO 1970+00	LT.	R=50'	5					
1970+20 TO 1970+70	LT.	R=50'	5					
1970+70 TO 2040+00	LT.	TAN.	13 1/4					
2040+00 TO 2044+00	LT.	TAPER		8 5				
PROJECT TOTALS			116 117		12 10			8 2

IT IS ESTIMATED THAT 38 DELINEATORS WILL BE REMOVED ON THIS PROJECT.

Final RESET GROUND SIGNS

STATION	SIDE	RESET MAILBOX		REMARKS
		EACH		
		PLAN	FINAL	
2006+28	LT.	2	2	
PROJECT TOTALS		2	2	

1890+22	LT.	1	0
1895+34	LT.	1	0
1895+66	RT.	1	1
1895+68	RT.	1	1
1896+25	LT.	1	1
1897+44	RT.	1	1
1900+36 36	RT.	1	1
1918+02	LT.	1	2
1970+31	RT.	2	2
2023+30	RT.	1	1
2023+32	RT.	1	1
1892+00	RT.	1	1
PROJECT TOTALS		13	12

Final SCHEDULE OF CONSTRUCTION TRAFFIC SIGNS

SIGNS						OTHER DEVICES				
SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE			ITEM	UNIT	PROJ. TOTALS		
36R2-1(55)	SPEED/LIMIT/55	36" x 48"	A	B	C	FLAGGING	HOUR	1500 2270		
36R2-1(40)	SPEED/LIMIT/40	36" x 48"		24		TRAFFIC CONTROL SUPERVISOR	DAY	60 74		
36R2-1(30)	SPEED/LIMIT/30	36" x 48"		24		VERTICAL PANEL	EACH	100 51		
48W8-3a	PAVEMENT ENDS SYMBOL	48" x 48"		2		VERTICAL PANEL (WITH LIGHT)(FLASHING)	EACH	100 4		
48W20-1	ROAD/CONSTRUCTION/(DISTANCE)	48" x 48"		10		TRAFFIC CONE	EACH	100 51		
48W20-4	ONE LANE/ROAD/(DISTANCE)	48" x 48"		2-						
48W20-7a	FLAGGER SYMBOL	48" x 48"		24						
60G20-1	ROAD/CONSTRUCTION/NEXT (X) MILES	60" x 36"		2						
60G20-2	END/CONSTRUCTION	60" x 24"		2						
36W21-14L	UNEVEN LANES SYMBOL - LEFT	36" x 36"		1						
36W21-14R	UNEVEN LANES SYMBOL - RIGHT	36" x 36"		1						
24W21-14a	UNEVEN/LANES	24" x 18"		2						
36R4R4-1	DO/NOT/PASS	36" x 36"		4						
36R4R4-2	PASS/WITH/CARE	36" x 36"		4						
36R4R4-3	TRUCK TURNING	36" x 36"		2						
36R4R4-4	KEEP RIGHT	36" x 36"		2						
SIGN TOTALS			12	24						

NOTES:

1. ALL CONSTRUCTION WARNING SIGNS PROVIDED ON THIS PROJECT SHALL BE EQUIPPED WITH HIGH BRIGHTNESS ENCAPSULATED TYPE REFLECTIVE SHEETING. SEE SECTION 713.10 OF THE STANDARD SPECIFICATIONS.
2. FOR INFORMATION ONLY - IT IS ESTIMATED THAT 2000 LIN. FT. OF PAVEMENT MARKING TAPE AND 15 GALLONS OF YELLOW PAINT WILL BE REQUIRED FOR TEMPORARY STRIPING DURING CONSTRUCTION.

SEE CASE IV AND CASE VI OF STANDARD S-614-50 OF THE "COLORADO STANDARD PLANS" FOR BASIC PLACEMENT DETAILS OF THE CONSTRUCTION TRAFFIC CONTROL DEVICES.

36R2-1(55) THIS SIGN IS INTENDED FOR USE 500' PAST THE "END OF CONSTRUCTION" SIGN.

60G20-1 THIS SIGN SHALL BE ERRECTED AT THE LIMITS OF ANY ROAD CONSTRUCTION JOB OF MORE THAN (2) MILES IN EXTENT, WHERE TRAFFIC IS MAINTAINED THROUGH THE JOB.

48W8-3a THE "PAVEMENT ENDS" SIGN IS INTENDED FOR USE TO WARN WHERE PAVEMENT SURFACE CHANGES FROM A HARD SURFACED PAVEMENT TO A LOW-TYPE SURFACE OR EARTH ROAD.

48R2-1(XX) THESE "SPEED LIMIT" SIGNS ARE INTENDED TO REDUCE TRAFFIC SPEED IN ADVANCE OF THE DAILY WORK AREA WITHIN THE OVERALL PROJECT LIMITS.

24R4-1/24R4-2 THESE REGULATORY SIGNS (DO/NOT/PASS; PASS/WITH/CARE) ARE USED IN CONJUNCTION TO PROHIBIT PASSING THROUGH THE CONSTRUCTION ZONE WHERE CONDITIONS DO NOT ALLOW AND ALLOWS PASSING PAST THE CONSTRUCTION ZONE LIMITS.

36W21-14() THE "UNEVEN LANE" SYMBOL SIGN IS INTENDED FOR USE 500' IN ADVANCE OF AN UNEVEN LANE SITUATION THAT EXCEEDS ONE INCH IN HEIGHT.

THE CONTRACTOR WILL BE REQUIRED TO UTILIZE THIS SCHEDULE OF CONSTRUCTION TRAFFIC SIGNS AND RELATED NOTES IN ORDER TO MAINTAIN TRAFFIC DURING CONSTRUCTION.

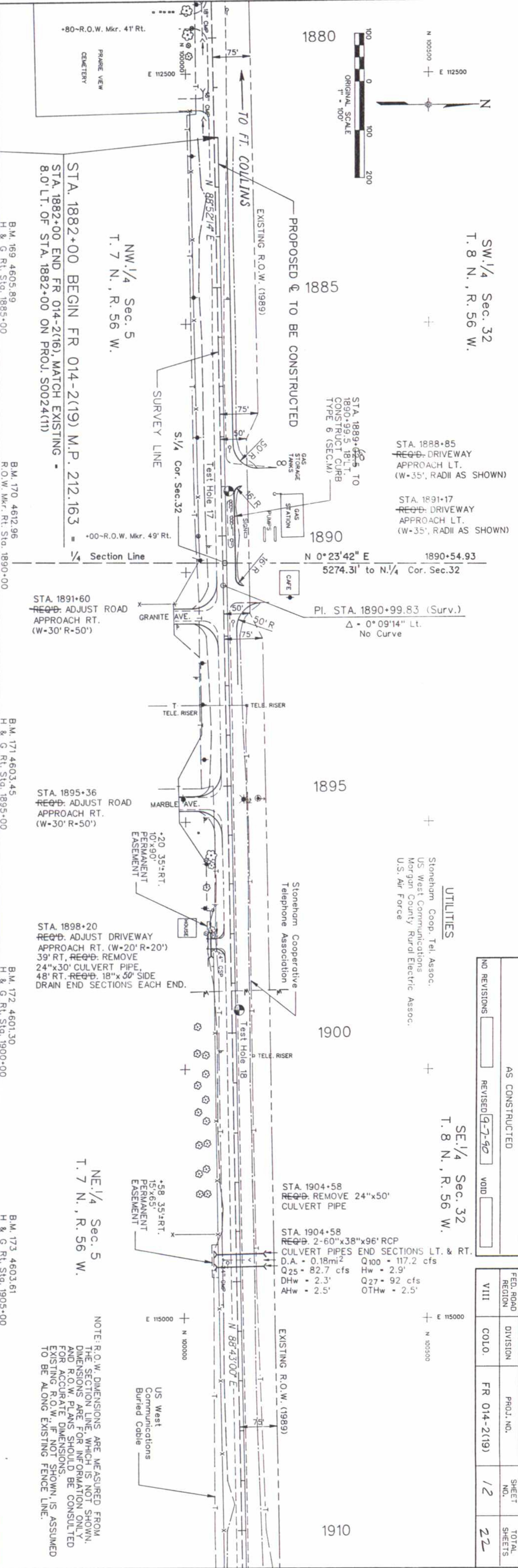
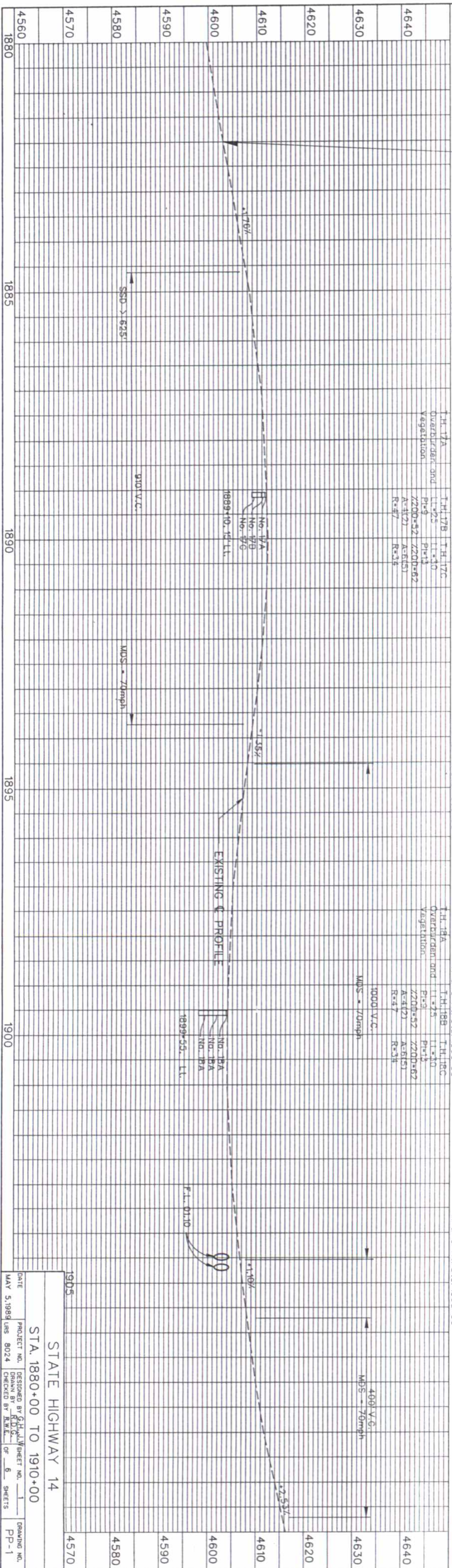
BASED UPON SIGHT DISTANCE AND OTHER CONSIDERATIONS THE FINAL LOCATION OF THESE SIGNS IS SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER.

GROUND SIGN NOTES:

1. DURING CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE REQUIRED EXISTING SIGNING. THIS SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN ITEM 210 "RESET GROUND SIGNS".

2. UPON COMPLETION OF THIS PROJECT THE CONTRACTOR WILL BE REQUIRED TO UTILIZE TABULATION OF RESET GROUND SIGNS AND STANDARD S-614-1 FOR PERMANENT SIGNING LOCATIONS.

STATE HIGHWAY 14			
MISCELLANEOUS TABULATION			
DATE	PROJECT NO.	DESIGNED BY	SHEET NO.
MAY 5, 1989	URS 8024	URS	1
CHECKED BY	DATE	OF	SHEETS
			1
			DRAWING NO.
			TM-1



SW 1/4 Sec. 32
T. 8 N., R. 56 W.

STA. 1888+85
REQ'D DRIVEWAY
APPROACH LT.
(W=35', RADII AS SHOWN)

STA. 1891+17
REQ'D DRIVEWAY
APPROACH LT.
(W=35', RADII AS SHOWN)

UTILITIES

Stoneham Coop. Tel. Assoc.
US West Communications
Morgan County Rural Electric Assoc.
U.S. Air Force

SE 1/4 Sec. 32
T. 8 N., R. 56 W.

AS CONSTRUCTED				FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	9-7-90	VOID	VIII	COLO.	FR 014-2(19)	12	22

STA. 1882+00 BEGIN FR 014-2(19) M.P. 212.163
STA. 1882+00 END FR 014-2(16), MATCH EXISTING
8.0' LT. OF STA. 1882+00 ON PROJ. S0024(11)

STA. 1891+60
REQ'D ADJUST ROAD
APPROACH RT.
(W=30' R=50')

STA. 1895+36
REQ'D ADJUST ROAD
APPROACH RT.
(W=30' R=50')

STA. 1898+20
REQ'D ADJUST DRIVEWAY
APPROACH RT. (W=20' R=20')
39' RT. REQ'D REMOVE
24"x30" CULVERT PIPE
48' RT. REQ'D 18"x50" SIDE
DRAIN END SECTIONS EACH END.

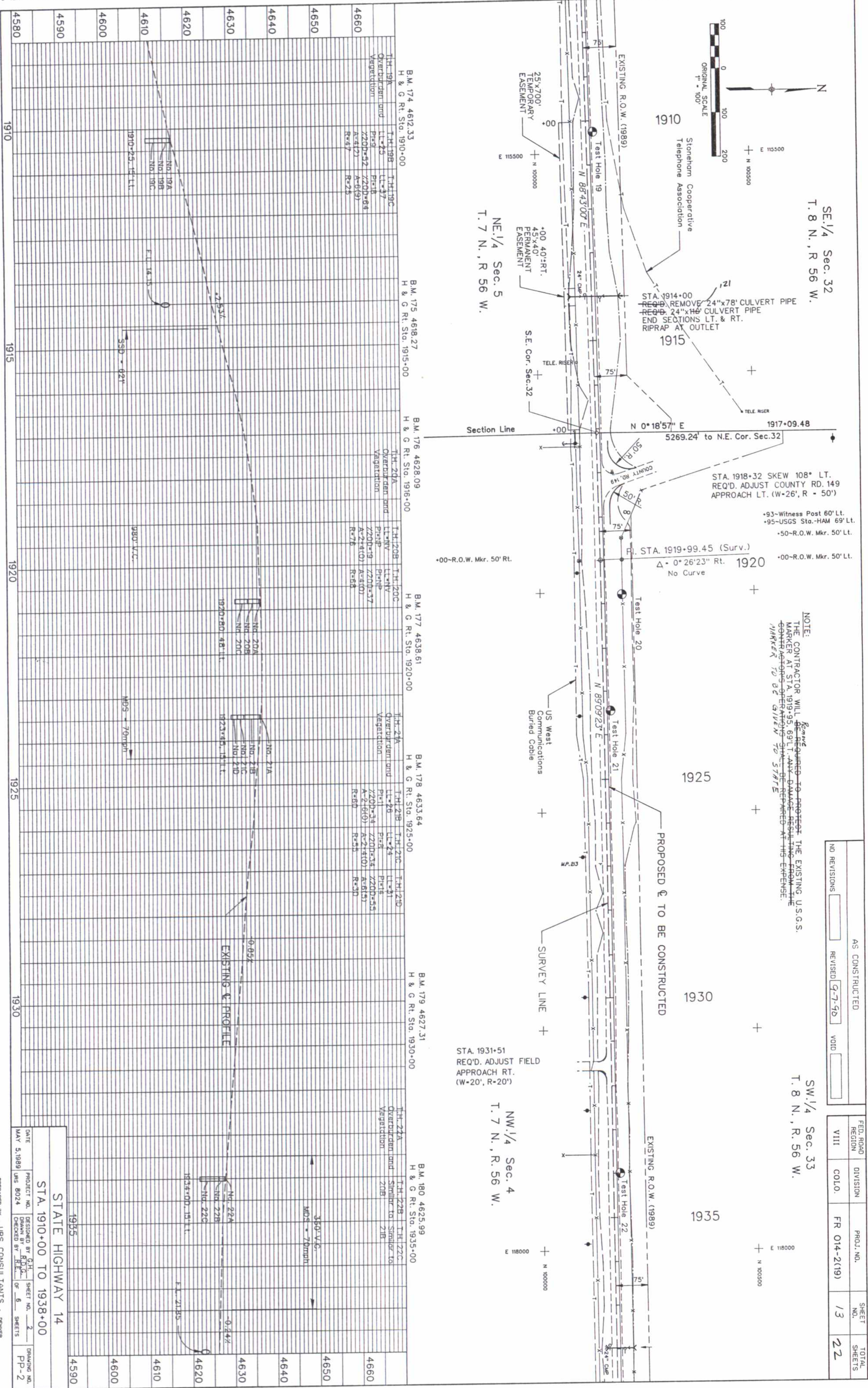
STA. 1904+58
REQ'D REMOVE 24"x50'
CULVERT PIPE

STA. 1904+58
REQ'D 2-60"x38"x96' RCP
CULVERT PIPES END SECTIONS LT. & RT.
D.A. = 0.18mi² Q100 = 117.2 cfs
Q25 = 82.7 cfs Hw = 2.9'
DHw = 2.3' Q27 = 92 cfs
AHw = 2.5' OTHw = 2.5'

NOTE: R.O.W. DIMENSIONS ARE MEASURED FROM
THE SECTION LINE, WHICH IS NOT SHOWN.
DIMENSIONS ARE FOR INFORMATION ONLY
AND R.O.W. PLANS SHOULD BE CONSULTED
FOR ACCURATE DIMENSIONS.
EXISTING R.O.W. IF NOT SHOWN, IS ASSUMED
TO BE ALONG EXISTING FENCE LINE.

STATE HIGHWAY 14
STA. 1880+00 TO 1910+00

DATE MAY 5, 1989
PROJECT NO. 8024
DESIGNED BY S.L.M.
CHECKED BY R.W.E.
OF 6 SHEETS
GRADING NO. PP-1



AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	9-7-90	VIII	COLO.	FR 014-2(19)	13	22

NOTE:
THE CONTRACTOR WILL BE REQUIRED TO PROTECT THE EXISTING U.S.G.S. MARKER AT STA. 1919+95.69 LT. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT HIS EXPENSE.
MARKER TO BE GIVEN TO STATE

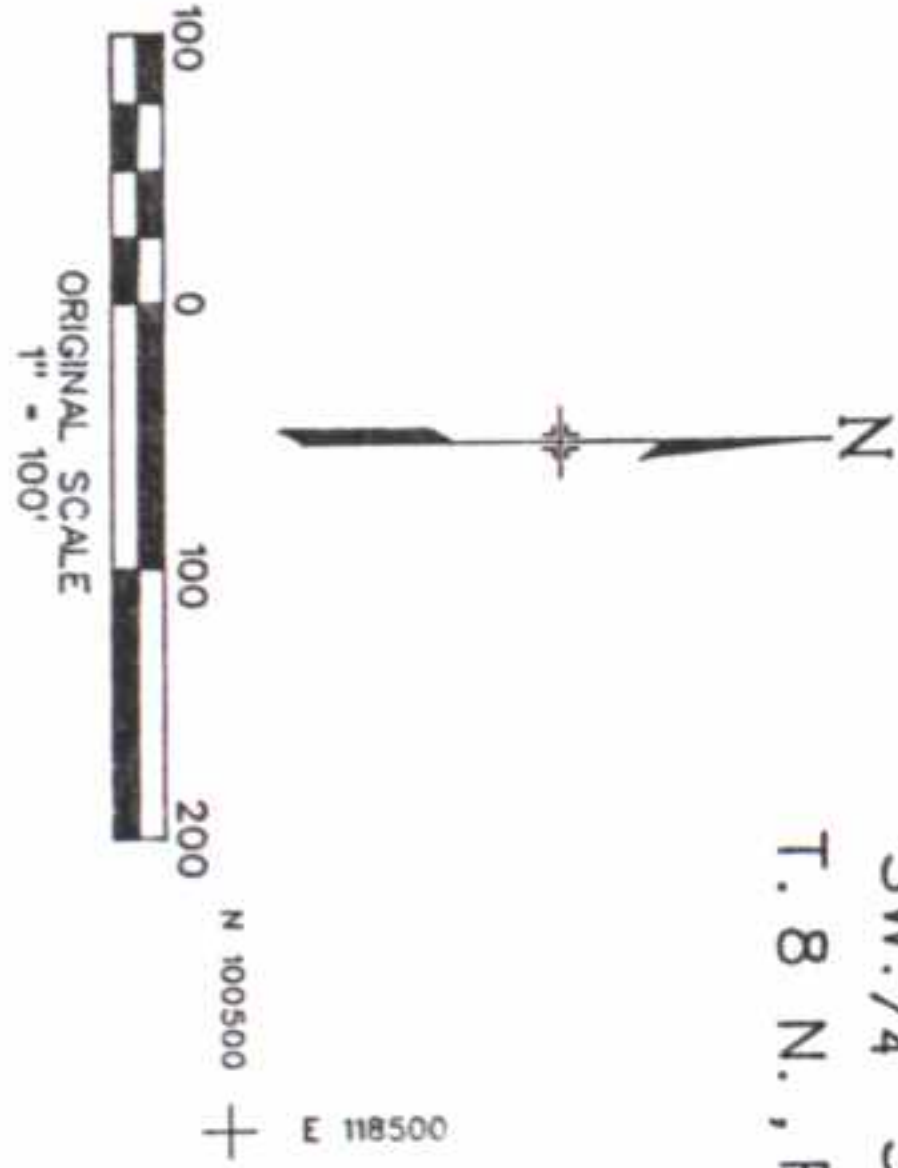
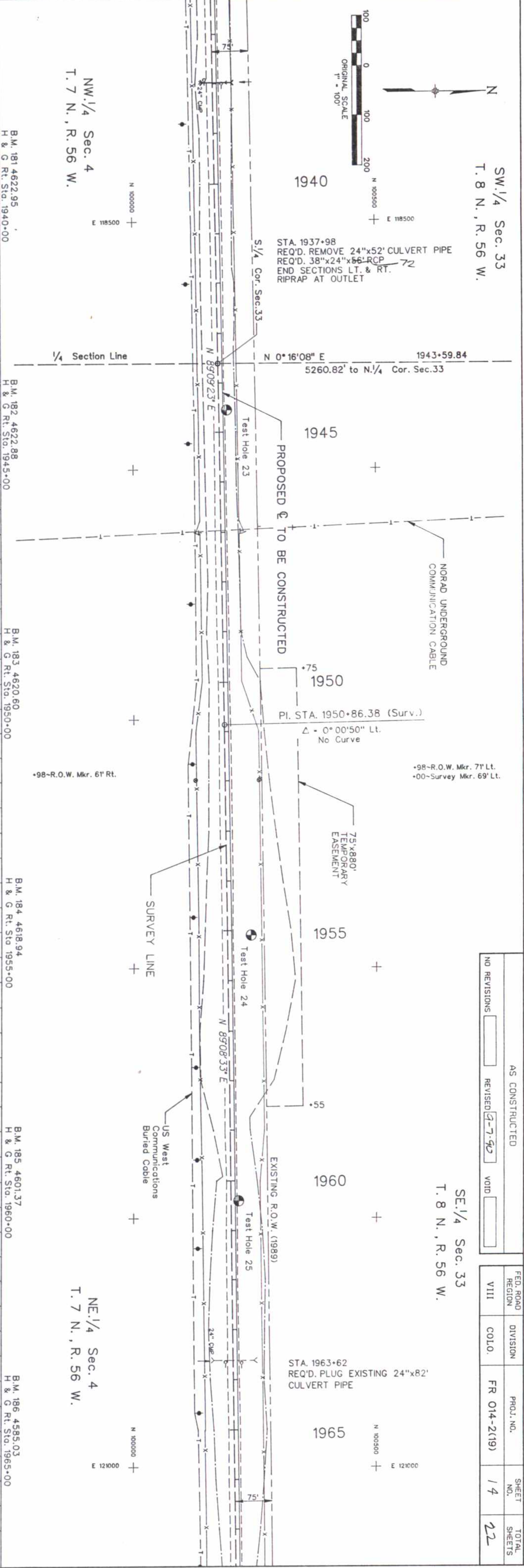
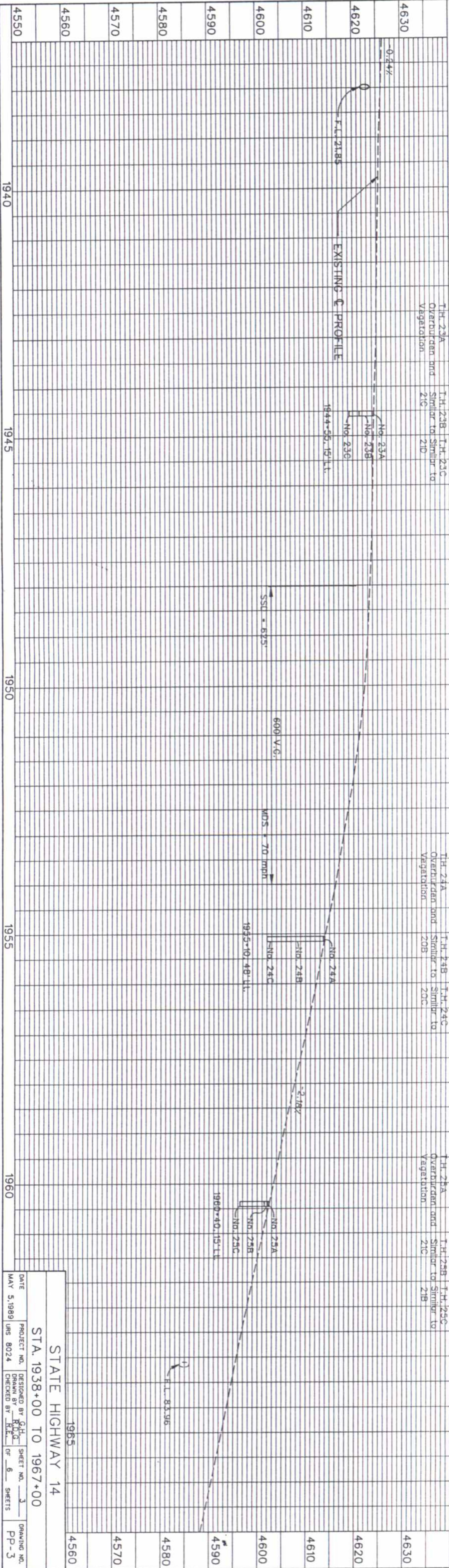
SW 1/4 Sec. 33
T. 8 N., R. 56 W.

SE 1/4 Sec. 32
T. 8 N., R. 56 W.

NW 1/4 Sec. 4
T. 7 N., R. 56 W.

STA. 1931+51
REQ'D. ADJUST FIELD
APPROACH RT.
(W=20', R=20')

STATE HIGHWAY 14			
STA. 1910+00 TO 1938+00			
DATE	DESIGNED BY	SHEET NO.	DRAWING NO.
MAY 5, 1989	URS 8024	2	PP-2
CHECKED BY			
PREPARED BY			



STA. 1937+98
REQ'D. REMOVE 24"x52' CULVERT PIPE
REQ'D. 38"x24"x56' RCP
END SECTIONS LT. & RT.
RIPRAP AT OUTLET

NO REVISIONS	AS CONSTRUCTED	FED. ROAD REGION VIII	DIVISION COLO.	PROJ. NO. FR 014-2(19)	SHEET NO. 14	TOTAL SHEETS 22
--------------	----------------	-----------------------	----------------	------------------------	--------------	-----------------

SE 1/4 Sec. 33
T. 8 N., R. 56 W.

STA. 1963+62
REQ'D. PLUG EXISTING 24"x82' CULVERT PIPE

NW 1/4 Sec. 4
T. 7 N., R. 56 W.

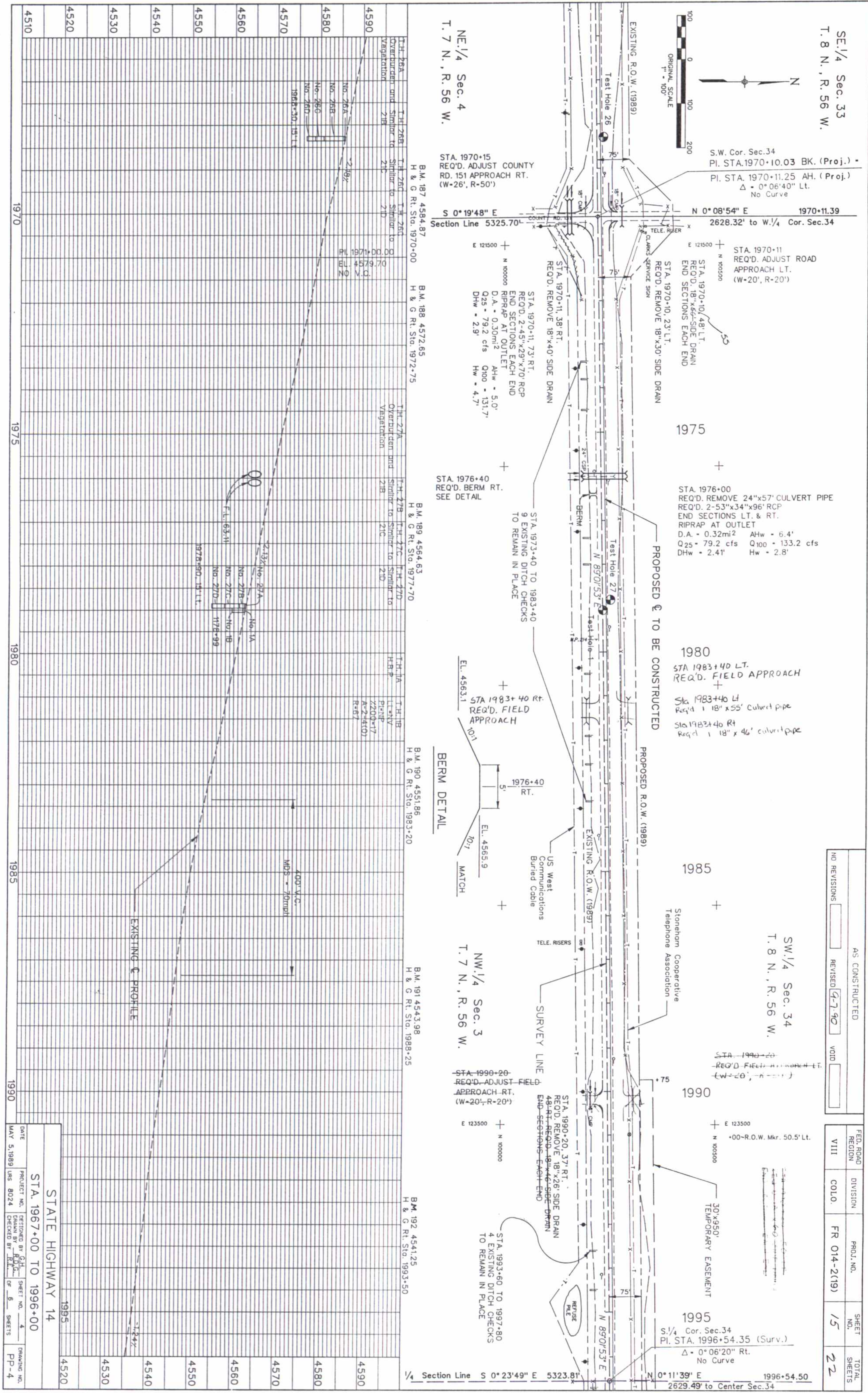
NE 1/4 Sec. 4
T. 7 N., R. 56 W.

STATE HIGHWAY 14

STA. 1938+00 TO 1967+00

DATE	PROJECT NO.	DESIGNED BY	CHECKED BY	SHEET NO.	DRAWING NO.
MAY 5, 1989	URS 8024	URS	URS	3	PP-3

PREPARED BY - URS CONSULTANTS - DENVER



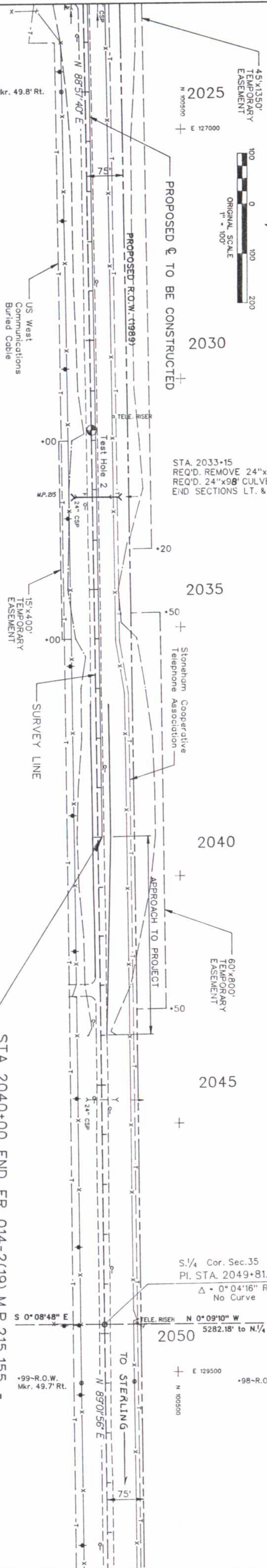
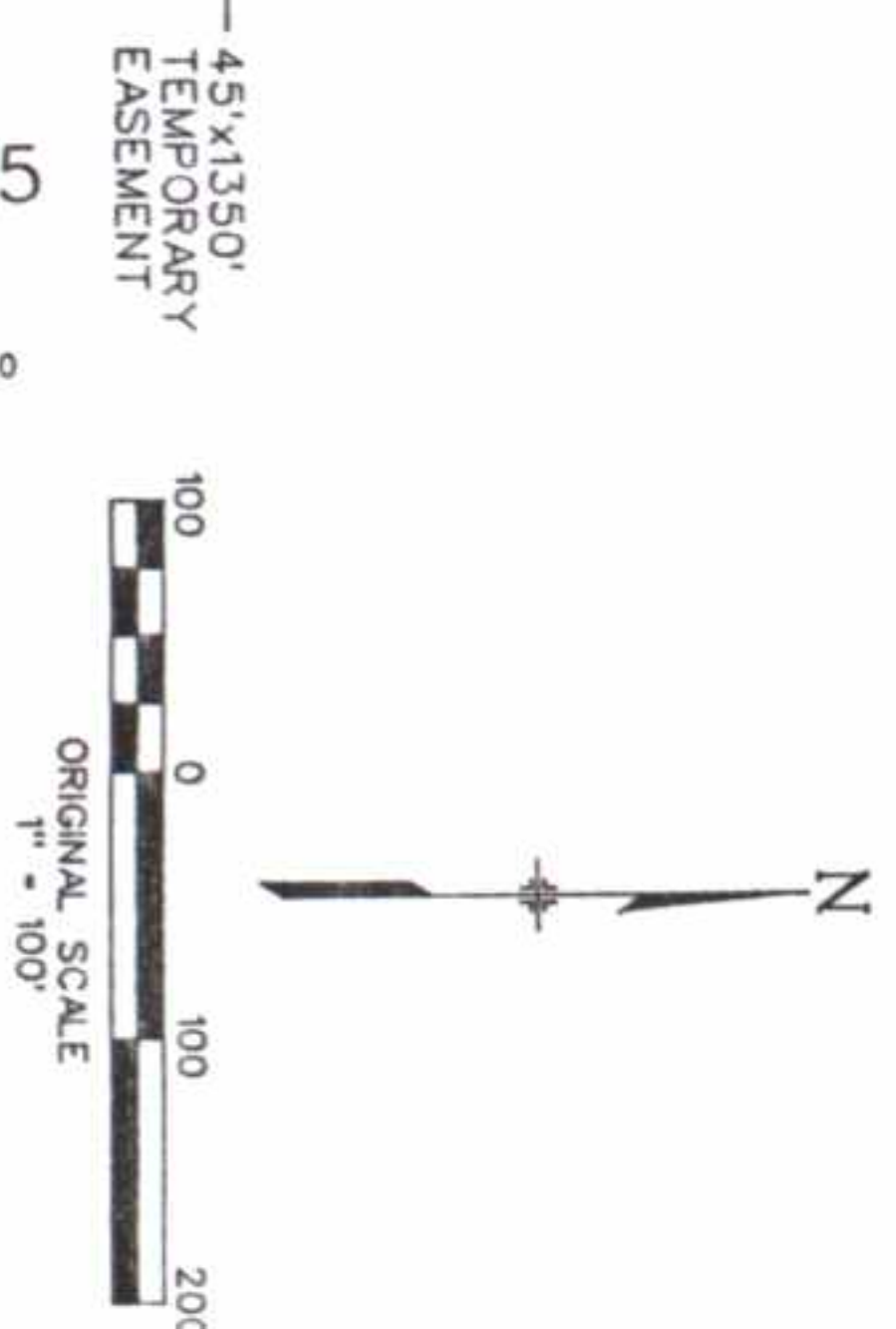
AS CONSTRUCTED				FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	REVISED	4-7-90	VOID	VIII	COLO.	FR 014-2(19)	15	22

STATE HIGHWAY 14
STA. 1967+00 TO 1996+00
DATE MAY 5, 1989
PROJECT NO. URS 8024
DESIGNED BY G.H.
DRAWN BY R.D.G.
CHECKED BY R.E.
SHEET NO. 4
OF 8 SHEETS
DRAWING NO. PP-4

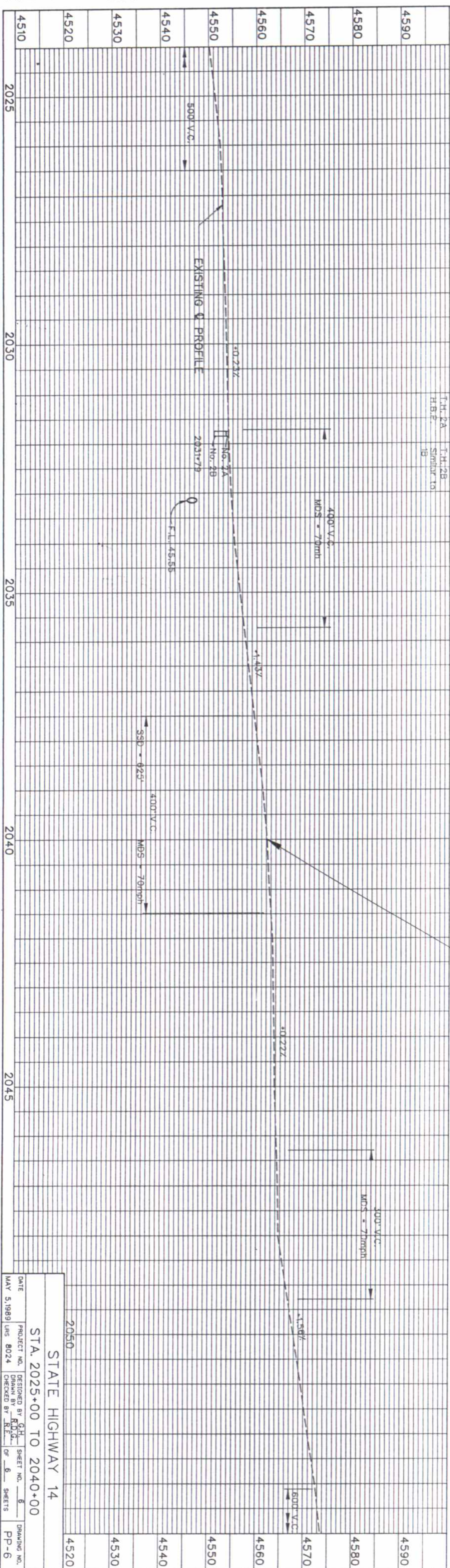
SW 1/4 Sec. 35
T. 8 N., R. 56 W.

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
NO REVISIONS	9-7-90	VIII	COLO.	FR 014-2(19)	17	22
REVISED						
VOID						

SE 1/4 Sec. 35
T. 8 N., R. 56 W.



PROPOSED C. TO BE CONSTRUCTED
PROPOSED R.O.W. (1989)
US West Communications Buried Cable
TELE. RISER
Stoneham Cooperative Telephone Association
SURVEY LINE
APPROACH TO PROJECT
60'x80' TEMPORARY EASEMENT
S. 1/4 Cor. Sec. 35
Pl. STA. 2049+81.58 (Surv.)
 $\Delta = 0^\circ 04' 16''$ Rt.
No Curve
5282.18' to N. 1/4 Cor. Sec. 35
2049+81.65
TO STERLING
N 89° 56' E
75'
+99-R.O.W. Mkr. 49.7' Rt.
+98-R.O.W. Mkr. 59.5' Lt.
N 100° 500
E 129500
N 100° 000
E 127000
+99-R.O.W. Mkr. 49.8' Rt.
N 100° 000
E 127000
B.M. 199 4552.45
H & G Rt. Sta. 2026+90
B.M. 200 4548.38
H & G Rt. Sta. 2031+50
B.M. 201 4550.00
H & G Rt. Sta. 2036+00
B.M. 202 4563.52
H & G Rt. Sta. 2040+50
B.M. 203 4560.13
H & G Rt. Sta. 2044+50
B.M. 204 4560.90
H & G Rt. Sta. 2048+75
B.M. 205 4568.40
H & G Rt. Sta. 2052+75
NW 1/4 Sec. 2
T. 7 N., R. 56 W.
NE 1/4 Sec. 2
T. 7 N., R. 56 W.



STATE HIGHWAY 14			
STA. 2025+00 TO 2040+00			
DATE	PROJECT NO.	DESIGNED BY	SHEET NO.
MAY 5, 1989	URS 8024	G.H.	8
		DR. G.	6
		CHECKED BY	PP-6

AL MILLER PIT -- AVAILABLE SOURCE

AS CONSTRUCTED			FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	SHEET TOTALS
NO REVISIONS	7-7-92	REVISED	VOID	VIII	COLO.	FR 014 - 2(19)	18
							22

DESIGNATED MATERIALS PIT INFORMATION

PIT NAME Al Miller Pit
OWNERS NAME Albert and Ethel Mae Miller
OWNERS ADDRESS Re. J. Sterling, CO. 80751
PIT LOCATION (LEGAL) A portion of the Northeast 1/4 Section 3,
Dominion 8 North, Range 58 West of the 6th P.M., Weld County, Colorado
TYPE OF PIT Sand and Gravel
ROYALTY FEE Forty Cents (40¢) per Ton
ROYALTY CHECKS PAYABLE TO Albert and Ethel Mae Miller
OPTION EXPIRATION DATE October 30, 1991
OPTION DATE August 3, 1988

PIT CONSTRUCTION REQUIREMENTS

- The Department has obtained the necessary county zoning clearance and the required permit from Colorado Mine Land Reclamation.
- At the preconstruction conference the Contractor will submit an excavation plan to the Engineer for his approval. The plan will include stockpile locations, the Contractor's plan to prevent widespread contamination and gravel, and the Contractor's plan to prevent widespread contamination should there be any leaks of fuel or other hazardous materials.
- This available source is not to be used as a plant site for producing hot bituminous pavement. The Contractor will be responsible for obtaining his own plant site.
- The area to be utilized by the Contractor for the gravel operation will be known as the affected area. The boundaries of the affected area will be marked by the Engineer and all of the Contractor's activities on the owner's property that pertain to the gravel operation will be confined within these boundaries. If the Contractor's operation strays beyond these boundaries and disturbs previously disturbed areas, the gravel operation will stop until a 1-wire fence has been built on all unfenced boundaries of the affected area.
- Variations were noted in the gradations of test hole samples from this deposit. Care should be exercised by the Contractor during aggregate production to assure that the material is removed and blended in a manner that will produce a uniform material in the stockpile.
- A screening plant will be required to produce specification material.
- The Contractor will use equipment capable of working a vertical face when excavating the gravel. All materials designated by the Engineer as reusable will be removed full depth as the Contractor proceeds with his excavation.
- The Contractor will be required to stockpile the screened material prior to mixing it with asphalt cement.
- The Contractor will strip the top six inches of any stockpile areas to be excavated, haul roads, or any other areas that will be disturbed by his operation. This material will be stockpiled in a separate stockpile.
- Any additional overburden in areas that are excavated will be removed and stockpiled separately from the stockpiled top six inches.
- The Contractor will begin his excavation at the east face of the existing pit and continue back into the deposit.
- The bottom of the pit excavation will be left relatively smooth with no large humps or depressions.
- All backlopes created by this excavation will be left no steeper than 4:1. Any backslope with a vertical distance that is greater than feet from top to toe of slope must be benched at the appropriate midpoint of the slope to aid in preventing water erosion.
- All rock obtained as overburden from the screening operation will be placed on the existing overburden stockpile in the affected area.
- No trash will be buried on this site. It will be hauled from the affected area.
- At the completion of the operation all locations in the affected area that had overburden removed or vegetation disturbed will be ripped a minimum depth of six inches (6") using an approved ripper. Methods such as backdragging with loader bucket teeth are not acceptable.
- The stockpiled excess overburden will then be placed uniformly over the bottom of the area where gravel was removed during this operation.
- The top six inches will then be placed uniformly over the areas from which it was removed.

PIT CONSTRUCTION AND RECLAMATION REQUIREMENTS-CONTINUED

19. All areas that were ripped and/or covered with the stockpiled top six inches (6") will then be fertilized, seeded, and mulched using the materials and quantities listed below:

COMMON NAME	SCIENTIFIC NAME	RATE - PLS/ACRE
Western Wheatgrass (Barton)	Agropyron Saitchii	9.6
Fellow Speedclove	Helictus Officinalis	1.9
Sand Dipsweed	Sporobolus Cympanthus	1.9
Crested Wheatgrass (Jordan)	Agropyron Desereticum	1.6
TOTAL PLS/ACRE - SEEDING		16.0

MULCH

Mulching Material - 2 tons per acre Native Hay.

FERTILIZER

COMMERCIAL FERTILIZER	lbs/acre
Available Nitrogen	40
Available Phosphate	40

ALL WORK REQUIRED TO PERFORM THE PIT CONSTRUCTION AND RECLAMATION REQUIREMENTS AND OTHER ITEMS NECESSARY FOR THE COMPLETION OF THE PIT OPERATION WILL BE CONSIDERED SUBSIDIARY TO THE GRAVEL PIT OPERATION.

MILLER PIT
AGGREGATE TEST REPORT

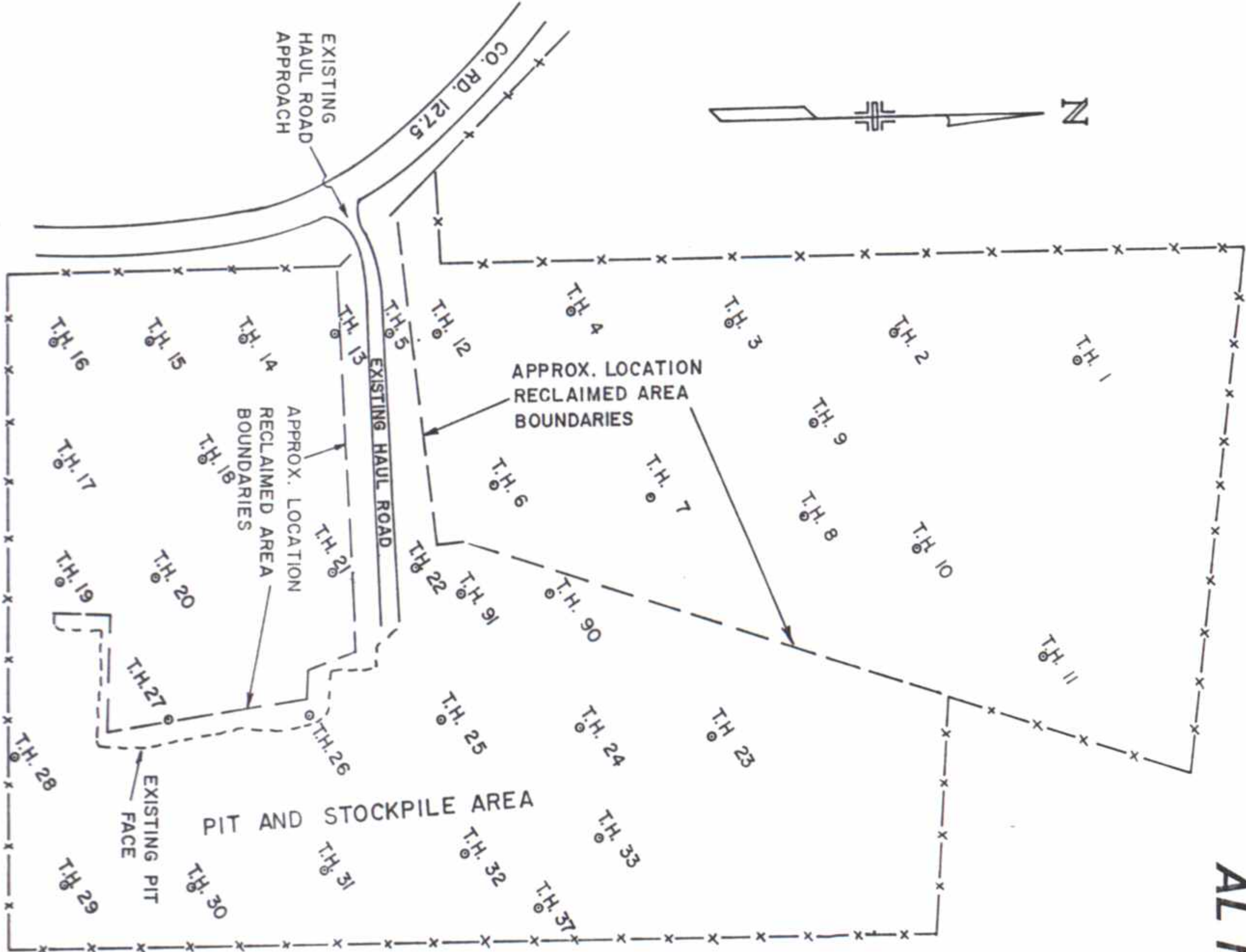
TEST NO.	AC	6C	7C	9C	10C	08	90C	91C
2 PASTING								
2-1/2"	100	100	100	100	100	100	100	100
2"	100	100	99	100	100	100	99	99
1-1/2"	100	100	100	100	100	100	99	99
1"	99	99	97	99	97	100	98	98
3/4"	97	98	95	99	96	100	97	96
1/2"	94	97	91	96	90	100	94	92
3/8"	91	95	87	93	84	100	90	88
1/4"	76	86	73	77	62	100	79	74
#4	60	73	55	62	45	96	66	56
#16	46	55	36	46	27	93	49	39
#50	19	22	12	18	10	69	17	17
#100	12	13	7	10	7	47	8	13
#200	8.1	8.7	4.6	6.7	5.4	25.7	5.0	9.3
LL								
17	NV	NV	NV	NV	27	NV	NV	23
PL								
15					18			20
ZI								
2	NP	NP	NP	NP	9	NP	NP	3
SAND								
36	39	59	44	34				
EQUITY								

FOR INFORMATION:

STRIPPING IS 2,100 CU. YDS. REMOVE AND REPLAC.
OVERBURDEN IS 33,000 CU. YDS. REMOVE AND REPLAC.

NOTE:

- SKETCH NOT DRAWN TO SCALE.
- TEST HOLE NUMBERS 1 THROUGH 22 AND NUMBERS 26 & 27 WERE LOCATED IN AN AREA THAT HAS SINCE BEEN EXCAVATED, AND WHERE THE GRAVEL IS NOW DEPLETED.
- TEST LOCATIONS 12 THROUGH 37 WERE INVESTIGATED ONLY TO PROVIDE INFORMATION AS TO THE APPROXIMATE LOCATION AND DEPTHS OF GRAVEL. NO SAMPLES WERE TAKEN FROM THESE TEST HOLES.
- TEST LOCATIONS 90 & 91 WERE TAKEN IN AN AREA ADJACENT TO THE PREVIOUSLY EXCAVATED AREA. A PORTION OF THE OVERBURDEN IN THIS AREA WAS PREVIOUSLY REMOVED.



MILLER PIT - AVAILABLE SOURCE, CONT'D

COMPLETE LOG OF EACH TEST HOLE

TEST NO.	MATERIAL CHANGES	SAMPLE SHIPPED	DEPTH TO WATER	DESCRIPTION OF MATERIAL (With or Without Sample)
1A	0.0' From To	Yes	10.0'	Sod
1B	0.0' From To	Yes	10.0'	Sod
1C	0.0' From To	Yes	10.0'	Sod
2A	0.0' From To	Yes	10.0'	Sod
2B	0.0' From To	Yes	10.0'	Sod
2C	0.0' From To	Yes	10.0'	Sod
2D	0.0' From To	Yes	10.0'	Sod
3A	0.0' From To	Yes	10.0'	Sod
3B	0.0' From To	Yes	10.0'	Sod
3C	0.0' From To	Yes	10.0'	Sod
3D	0.0' From To	Yes	10.0'	Sod
4A	0.0' From To	Yes	10.0'	Sod
4B	0.0' From To	Yes	10.0'	Sod
4C	0.0' From To	Yes	10.0'	Sod
5A	0.0' From To	Yes	10.0'	Sod
5B	0.0' From To	Yes	10.0'	Sod
5C	0.0' From To	Yes	10.0'	Sod
5D	0.0' From To	Yes	10.0'	Sod
6A	0.0' From To	Yes	10.0'	Sod
6B	0.0' From To	Yes	10.0'	Sod
6C	0.0' From To	Yes	10.0'	Sod
6D	0.0' From To	Yes	10.0'	Sod
7A	0.0' From To	Yes	10.0'	Sod
7B	0.0' From To	Yes	10.0'	Sod
7C	0.0' From To	Yes	10.0'	Sod
7D	0.0' From To	Yes	10.0'	Sod
8A	0.0' From To	Yes	10.0'	Sod
8B	0.0' From To	Yes	10.0'	Sod
8C	0.0' From To	Yes	10.0'	Sod
8D	0.0' From To	Yes	10.0'	Sod
9A	0.0' From To	Yes	10.0'	Sod
9B	0.0' From To	Yes	10.0'	Sod
9C	0.0' From To	Yes	10.0'	Sod
9D	0.0' From To	Yes	10.0'	Sod
10A	0.0' From To	Yes	10.0'	Sod
10B	0.0' From To	Yes	10.0'	Sod
10C	0.0' From To	Yes	10.0'	Sod
10D	0.0' From To	Yes	10.0'	Sod
11A	0.0' From To	Yes	10.0'	Sod
11B	0.0' From To	Yes	10.0'	Sod
11C	0.0' From To	Yes	10.0'	Sod
11D	0.0' From To	Yes	10.0'	Sod
12A	0.0' From To	Yes	10.0'	Sod
12B	0.0' From To	Yes	10.0'	Sod
12C	0.0' From To	Yes	10.0'	Sod
12D	0.0' From To	Yes	10.0'	Sod
13A	0.0' From To	Yes	10.0'	Sod
13B	0.0' From To	Yes	10.0'	Sod
13C	0.0' From To	Yes	10.0'	Sod
13D	0.0' From To	Yes	10.0'	Sod
14A	0.0' From To	Yes	10.0'	Sod
14B	0.0' From To	Yes	10.0'	Sod
14C	0.0' From To	Yes	10.0'	Sod
14D	0.0' From To	Yes	10.0'	Sod
15A	0.0' From To	Yes	10.0'	Sod
15B	0.0' From To	Yes	10.0'	Sod
15C	0.0' From To	Yes	10.0'	Sod
15D	0.0' From To	Yes	10.0'	Sod
16A	0.0' From To	Yes	10.0'	Sod
16B	0.0' From To	Yes	10.0'	Sod
16C	0.0' From To	Yes	10.0'	Sod
16D	0.0' From To	Yes	10.0'	Sod
17A	0.0' From To	Yes	10.0'	Sod
17B	0.0' From To	Yes	10.0'	Sod
17C	0.0' From To	Yes	10.0'	Sod
17D	0.0' From To	Yes	10.0'	Sod

TEST NO.	MATERIAL CHANGES	SAMPLE SHIPPED	DEPTH TO WATER	DESCRIPTION OF MATERIAL (With or Without Sample)
18A	0.0' From To	Yes	10.0'	Sod
18B	0.0' From To	Yes	10.0'	Sod
18C	0.0' From To	Yes	10.0'	Sod
18D	0.0' From To	Yes	10.0'	Sod
19A	0.0' From To	Yes	10.0'	Sod
19B	0.0' From To	Yes	10.0'	Sod
19C	0.0' From To	Yes	10.0'	Sod
19D	0.0' From To	Yes	10.0'	Sod
20A	0.0' From To	Yes	10.0'	Sod
20B	0.0' From To	Yes	10.0'	Sod
20C	0.0' From To	Yes	10.0'	Sod
20D	0.0' From To	Yes	10.0'	Sod
21A	0.0' From To	Yes	10.0'	Sod
21B	0.0' From To	Yes	10.0'	Sod
21C	0.0' From To	Yes	10.0'	Sod
21D	0.0' From To	Yes	10.0'	Sod
22A	0.0' From To	Yes	10.0'	Sod
22B	0.0' From To	Yes	10.0'	Sod
22C	0.0' From To	Yes	10.0'	Sod
22D	0.0' From To	Yes	10.0'	Sod
23A	0.0' From To	Yes	10.0'	Sod
23B	0.0' From To	Yes	10.0'	Sod
23C	0.0' From To	Yes	10.0'	Sod
23D	0.0' From To	Yes	10.0'	Sod
24A	0.0' From To	Yes	10.0'	Sod
24B	0.0' From To	Yes	10.0'	Sod
24C	0.0' From To	Yes	10.0'	Sod
24D	0.0' From To	Yes	10.0'	Sod
25A	0.0' From To	Yes	10.0'	Sod
25B	0.0' From To	Yes	10.0'	Sod
25C	0.0' From To	Yes	10.0'	Sod
25D	0.0' From To	Yes	10.0'	Sod
26A	0.0' From To	Yes	10.0'	Sod
26B	0.0' From To	Yes	10.0'	Sod
26C	0.0' From To	Yes	10.0'	Sod
26D	0.0' From To	Yes	10.0'	Sod
27A	0.0' From To	Yes	10.0'	Sod
27B	0.0' From To	Yes	10.0'	Sod
27C	0.0' From To	Yes	10.0'	Sod
27D	0.0' From To	Yes	10.0'	Sod
28A	0.0' From To	Yes	10.0'	Sod
28B	0.0' From To	Yes	10.0'	Sod
28C	0.0' From To	Yes	10.0'	Sod
28D	0.0' From To	Yes	10.0'	Sod
29A	0.0' From To	Yes	10.0'	Sod
29B	0.0' From To	Yes	10.0'	Sod
29C	0.0' From To	Yes	10.0'	Sod
29D	0.0' From To	Yes	10.0'	Sod
30A	0.0' From To	Yes	10.0'	Sod
30B	0.0' From To	Yes	10.0'	Sod
30C	0.0' From To	Yes	10.0'	Sod
30D	0.0' From To	Yes	10.0'	Sod
31A	0.0' From To	Yes	10.0'	Sod
31B	0.0' From To	Yes	10.0'	Sod
31C	0.0' From To	Yes	10.0'	Sod
31D	0.0' From To	Yes	10.0'	Sod

TEST NO.	MATERIAL CHANGES	SAMPLE SHIPPED	DEPTH TO WATER	DESCRIPTION OF MATERIAL (With or Without Sample)
32A	0.0' From To	Yes	10.0'	Sod
32B	0.0' From To	Yes	10.0'	Sod
32C	0.0' From To	Yes	10.0'	Sod
32D	0.0' From To	Yes	10.0'	Sod
33A	0.0' From To	Yes	10.0'	Sod
33B	0.0' From To	Yes	10.0'	Sod
33C	0.0' From To	Yes	10.0'	Sod
33D	0.0' From To	Yes	10.0'	Sod
34A	0.0' From To	Yes	10.0'	Sod
34B	0.0' From To	Yes	10.0'	Sod
34C	0.0' From To	Yes	10.0'	Sod
34D	0.0' From To	Yes	10.0'	Sod
35A	0.0' From To	Yes	10.0'	Sod
35B	0.0' From To	Yes	10.0'	Sod
35C	0.0' From To	Yes	10.0'	Sod
35D	0.0' From To	Yes	10.0'	Sod
36A	0.0' From To	Yes	10.0'	Sod
36B	0.0' From To	Yes	10.0'	Sod
36C	0.0' From To	Yes	10.0'	Sod
36D	0.0' From To	Yes	10.0'	Sod
37A	0.0' From To	Yes	10.0'	Sod
37B	0.0' From To	Yes	10.0'	Sod
37C	0.0' From To	Yes	10.0'	Sod
37D	0.0' From To	Yes	10.0'	Sod
37E	0.0' From To	Yes	10.0'	Sod
38A	0.0' From To	Yes	10.0'	Sod
38B	0.0' From To	Yes	10.0'	Sod
38C	0.0' From To	Yes	10.0'	Sod
38D	0.0' From To	Yes	10.0'	Sod
39A	0.0' From To	Yes	10.0'	Sod
39B	0.0' From To	Yes	10.0'	Sod
39C	0.0' From To	Yes	10.0'	Sod
39D	0.0' From To	Yes	10.0'	Sod
40A	0.0' From To	Yes	10.0'	Sod
40B	0.0' From To	Yes	10.0'	Sod
40C	0.0' From To	Yes	10.0'	Sod
40D	0.0' From To	Yes	10.0'	Sod

NOTE: Test holes numbers 1 through 22 and numbers 26 and 27 were located in an area that has since been excavated and where the gravel is now depleted.

Test locations 12 through 37 were investigated only to provide information as to the approximate location and depth of gravel. No samples were taken from these test holes.

Test locations 38 and 39 were taken in an area adjacent to the existing excavated area. A portion of the overburden in this area was previously removed.

TABULATION OF R.O.W. MARKERS
TO BE SET

CONTROL AND MONUMENTATION SHEET
TABULATION OF R.O.W. MARKERS
TO BE SET

SURVEY CONTROL POINT TABULATION

224	100391.10	121465.06	L.T. OF STA 1970+ PROJ.
225	100292.86	121570.07	L.T. OF STA 1971+ PROJ.
226	100335.25	124077.58	L.T. OF STA 1996+ PROJ.
247	100380.71	126735.44	L.T. OF STA 2023+ PROJ.
248	100095.81	116134.40	R.T. OF STA 1917+ PROJ.
249	100066.10	114734.71	R.T. OF STA 1903+ PROJ.
254	100085.82	116134.37	R.T. OF STA 1917+ PROJ.
255	100090.09	116327.92	R.T. OF STA 1919+ PROJ.
256	100097.31	116827.67	R.T. OF STA 1924+ PROJ.
257	100104.76	116927.59	R.T. OF STA 1925+ PROJ.
262	100123.04	118176.18	R.T. OF STA 1937+ PROJ.
263	100141.31	119424.76	R.T. OF STA 1950+ PROJ.
264	100126.81	119525.02	R.T. OF STA 1951+ PROJ.
265	100140.35	120424.92	R.T. OF STA 1960+ PROJ.
266	100153.89	121324.82	R.T. OF STA 1969+ PROJ.
267	100115.61	121413.18	R.T. OF STA 1969+ PROJ.
278	100115.48	121457.18	R.T. OF STA 1970+ PROJ.
279	100157.08	121525.05	R.T. OF STA 1971+ PROJ.
280	100178.77	121624.72	R.T. OF STA 1972+ PROJ.
281	100202.43	123024.52	R.T. OF STA 1986+ PROJ.
282	100220.24	124077.61	R.T. OF STA 1986+ PROJ.
291	100314.06	122823.83	L.T. OF STA 1984+ PROJ.
293	100359.19	125477.38	L.T. OF STA 2010+ PROJ.
295	100231.17	124720.38	R.T. OF STA 2003+ PROJ.
296	100222.89	124820.54	R.T. OF STA 2004+ PROJ.
297	100231.44	125320.47	R.T. OF STA 2009+ PROJ.
298	100244.14	125420.26	R.T. OF STA 2010+ PROJ.
299	100265.73	126621.00	R.T. OF STA 2022+ PROJ.
300	100205.32	126714.01	R.T. OF STA 2022+ PROJ.
324	100429.09	129403.53	L.T. OF STA 2049+ PROJ.
325	100405.83	128121.00	L.T. OF STA 2037+ PROJ.
326	100206.10	126758.00	R.T. OF STA 2023+ PROJ.
327	100257.22	126821.09	R.T. OF STA 2023+ PROJ.
329	100280.86	128123.27	R.T. OF STA 2037+ PROJ.
330	100304.06	129403.86	R.T. OF STA 2049+ PROJ.

347 1970+ 7 Added per additional Row purchased by Row Section
348 1972+ 7

REVISIONS	

FED. ROAD REGION	DIVISION	PROJECT NUMBER	SHEET NUMBER
III	COLORADO	FR 014 - 2 (19)	29

GENERAL NOTES

1. This Right of Way plan is not a complete boundary survey of all adjoining owners and is prepared for Highway Department purposes only.
2. Survey Control Points set with a higher degree of accuracy than ROW Markers.
3. NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect in no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.
4. All R.O.W. Markers set from survey control points.
5. All centerline and offset stationing is theoretical only and may not represent the centerline as constructed in the field. All stationing is approximate.
6. All coordinates listed are project coordinates only.
7. Field survey control precision computed to exceed 1/20,000.
8. Memorandum of Ownerships supplied by the Transamerica Title Company.
9. Control points No. 31, 32, 33, 34, 35, 36, 37 are to be reset with a type 2A monument. Aliquot corners No. 133, 153, 154 are to be reset with a type 3 monument, corners No. 11, 12, 13, 100, 101, 102, 103, 119, 120, 131, 134, 149, 152, 161, 162, 164, 166, 181, 182 are to be reset with a type 3A monument.

QUANTITY OF MONUMENTS TO BE SET

CAP TYPE	MONUMENT TYPE							
	1	1A	2	2A	3	3A	4	5
REFERENCE								
RIGHT OF WAY	37-35							
CONTROL				7				
ALIQUOT CORNER					3	19		
WITNESS POST				-7				

SURVEYOR CERTIFICATE (FIELD)

Control survey and monumentation was done under my supervision and checking.

NAME William J. Williams 25524
DATE 10-10-90

SURVEYOR CERTIFICATE (OFFICE)

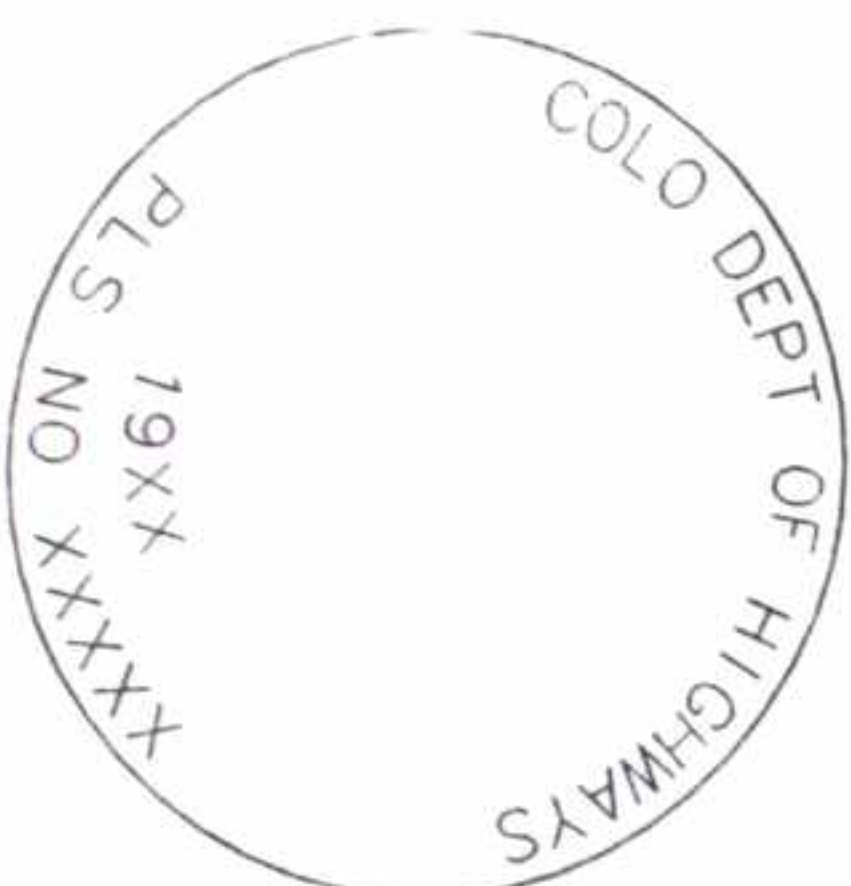
R.O.W. Plans and Legal Descriptions were prepared under my supervision and checking.

NAME William J. Williams 25524
DATE 10-31-90 P.L.S. NO. 25524

SURVEYOR CERTIFICATE (FIELD)

Control Survey and Monumentation was done under my supervision and checking.

NAME William J. Williams
DATE 10-31-90 P.L.S. NO. 10740

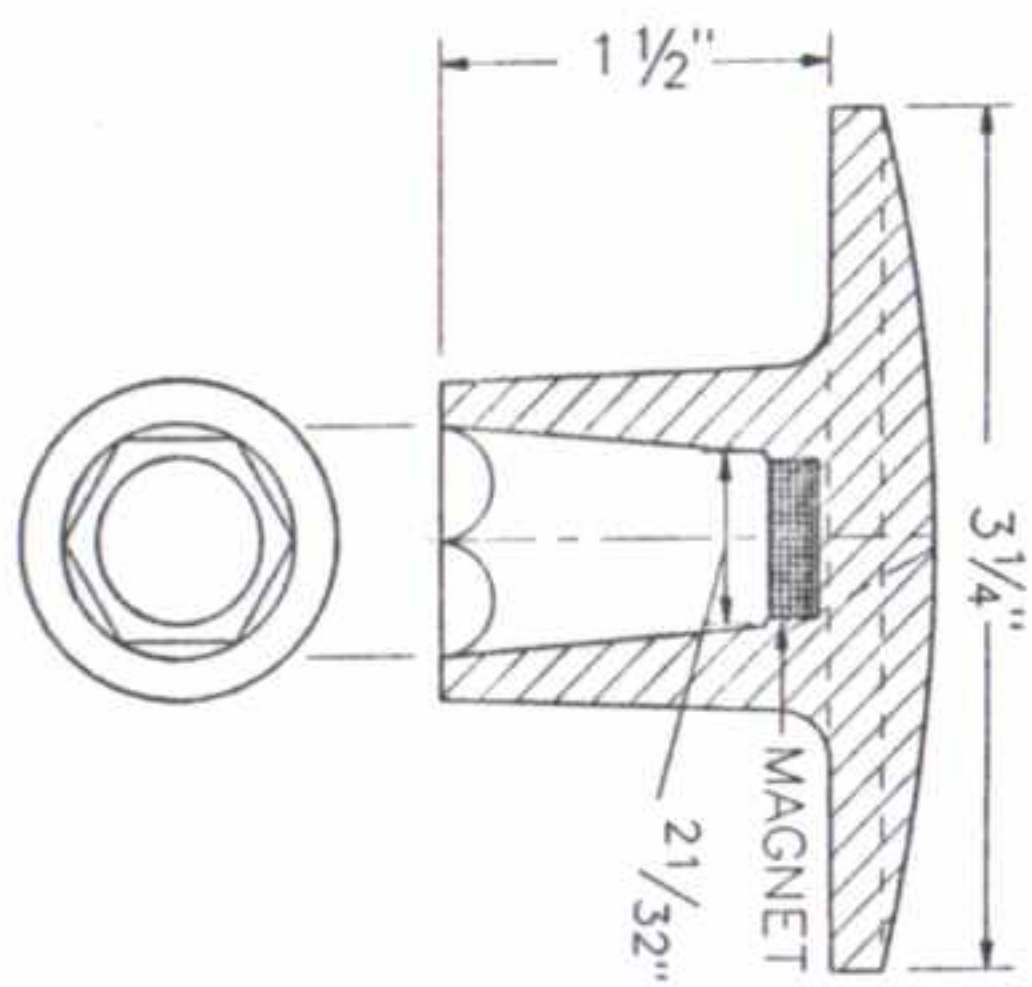


REFERENCE MONUMENT CAP
NOTE: (A BLANK CAP MAY BE SUBSTITUTED IF ANY ABOVE CAPS ARE NOT AVAILABLE.)

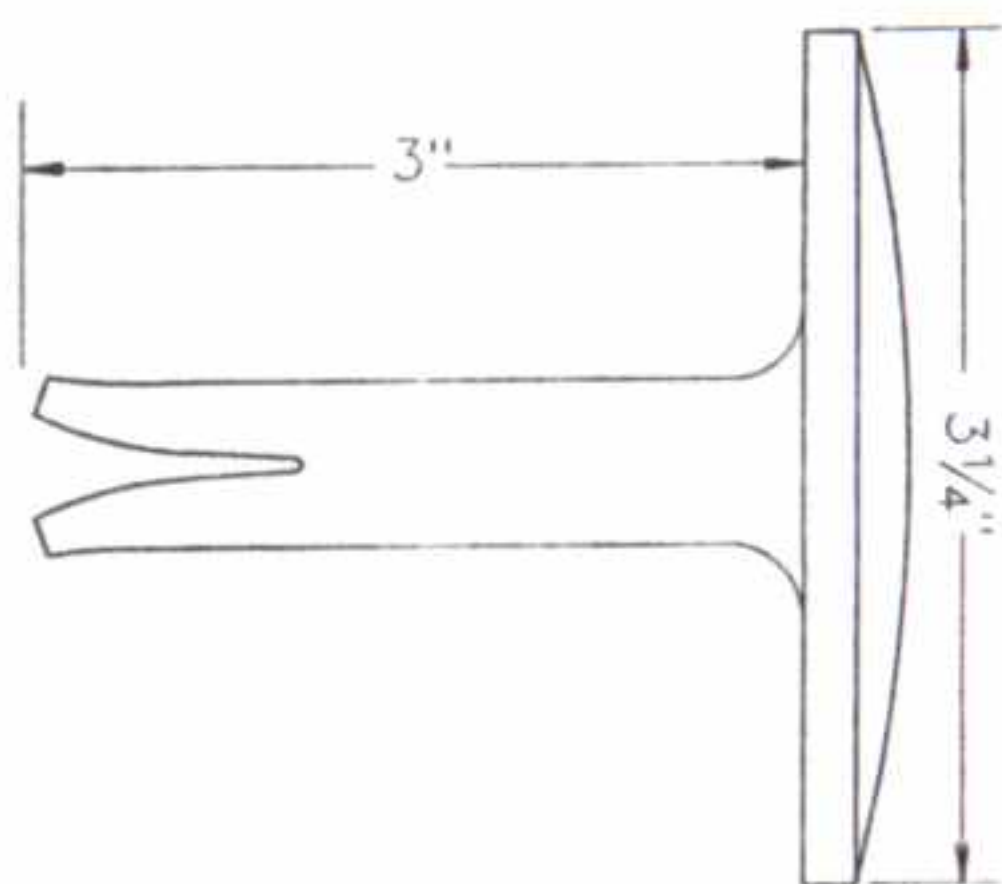
ROW MONUMENT CAP

CONTROL MONUMENT CAP

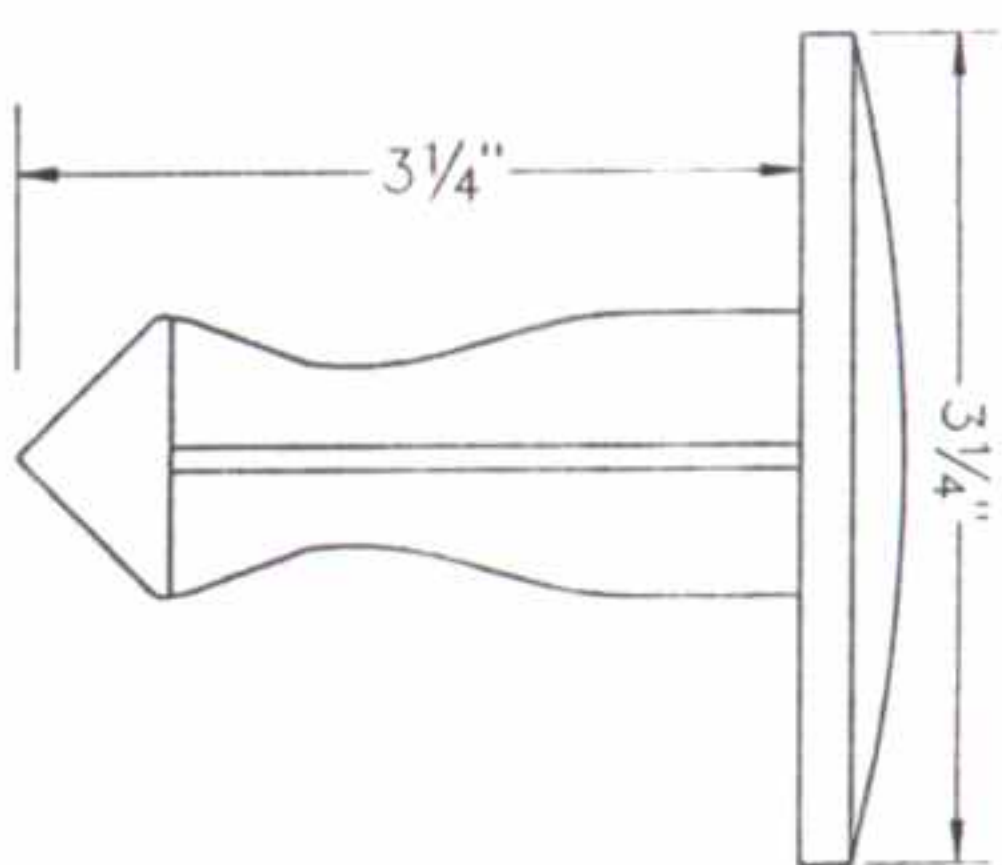
ALIQUOT CORNER CAP



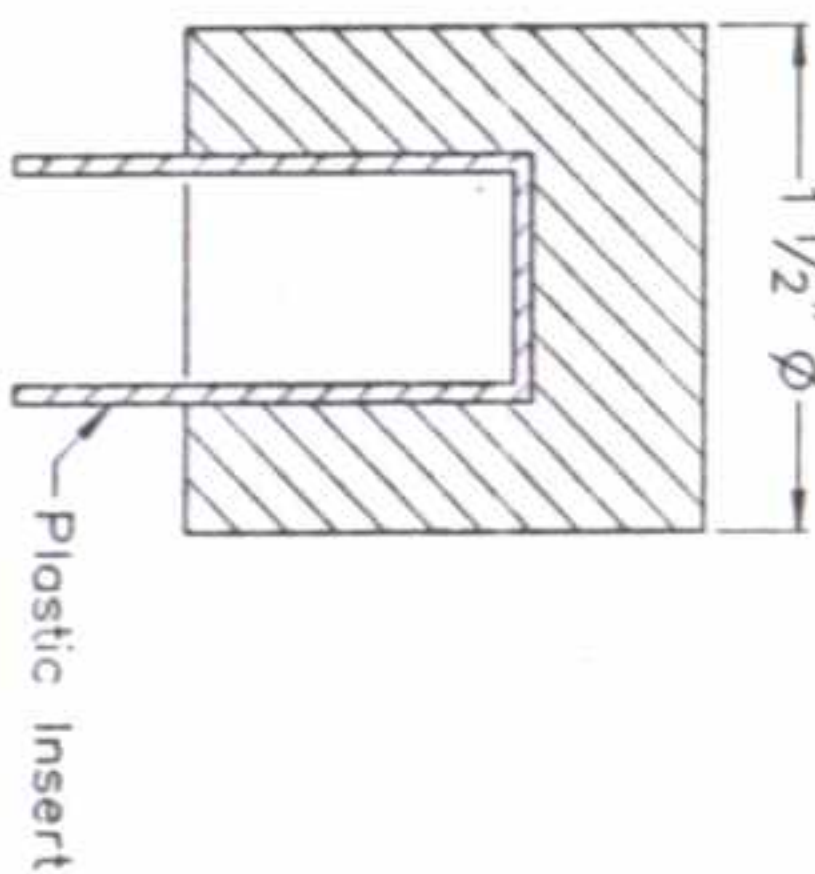
BRASS AND ALUMINUM CAPS
BRASS CAP USED WITH STAINLESS STEEL ROD
ALUMINUM CAP USED WITH ALUMINUM ROD
(Threaded Cap is also available)



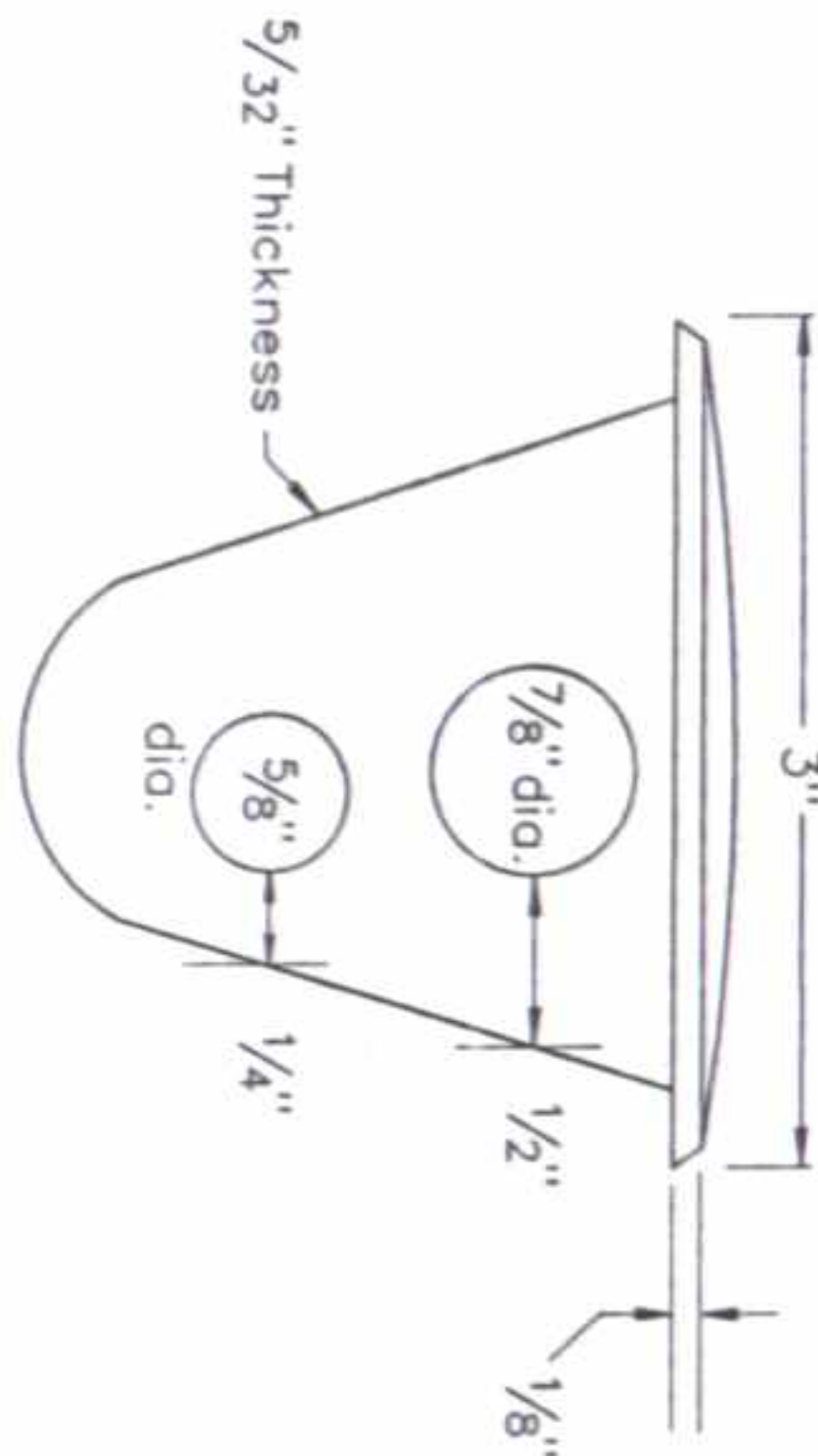
BRASS CAP
FOR PLACING IN EXISTING CONCRETE OR ROCK



BRASS CAP
FOR PLACING IN EXISTING CONCRETE OR ROCK



TEMPORARY ALUMINUM CAP



BRASS CAP
INSTALL DURING PLACEMENT OF CONCRETE.
PLACE A REINFORCING BAR THRU ONE HOLE.

CAP TYPE	MONUMENT TYPE				
	1	1A	2	2A	3A
REFERENCE	X	X			X
ROW	X	X			X
CONTROL		X	X		X
ALIQUOT CORNER			X	X	
WITNESS POST (WHEN REQUIRED)	X	X	X	X	X

AS CONSTRUCTED		FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.
NO. REVISIONS	9-7-82	REVISED	VOID	FR 014-2(19)	21

TYPE 1 AND TYPE 1A ALUMINUM AND STAINLESS STEEL DRIVEN MONUMENTS

Monuments are assembled by attaching the proper size tip to one end of a section of rod and the 3" long x 3/4" dia. stainless steel driver to the other end. A steel driver is then placed over the stainless steel driver for the hammer to contact. When additional sections of rod are needed, they are to be attached using a set of self-locking washers. Rods are stocked in two foot and three foot sections. One foot sections may be obtained by cutting a two foot section in half. The rod section is driven by using the proper hammer with a soft face. A power adapter is available for use with a gasoline powered driver.

Type 1 monuments typically use a three foot section of rod. When subsurface rock or concrete is encountered less than 3 feet below the ground surface, the rod shall be embedded in the rock or concrete at least 6" with a grout material. The rod may be shortened to accommodate the conditions.

Type 1A monuments may be driven to refusal by threading additional sections onto the first section. Added sections require a set of lock washers. Refusal is defined as one inch of movement with four blows of a 12 lb. hammer. A driven cap is necessary (vs. a threaded cap) when a cut rod is used. The soft faced hammer is also required to seat the driven caps onto the rod.

TYPE 2 AND TYPE 2A ALUMINUM FINNED ROD MONUMENTS

A Type 2 monument is used for horizontal control monuments where loose material is encountered. The larger size tip is to be used on one end of the three foot rod and the fins on the opposite end of the three foot rod are to be bent over to accommodate the cap. If more vertical stability is required for use as a vertical control monument, the added sections which are not finned, should be driven first. The number of sections to be added will vary with needs and type of soil.

Type 1A monument note above also applies to Type 2A monument.

TYPE 3 AND TYPE 3A ALUMINUM PIPE MONUMENTS

This monument is used to monument an aliquot corner. The installation of this monument and record filing shall be done in accordance with the Colorado Revised Statutes, Title 38, Articles 50 and 51. Also refer to the CDOH Survey Manual. The Land Surveyor's license number and the year shall be stamped on the cap.

TYPE 4 BRASS CAP MONUMENT

This monument is placed in concrete, such as bridge super structure concrete. It is placed above a footing support over the abutment or over a pier. An alternate placement is vertically in the abutment wall or pier if only an elevation reference is desired and it is possible to leave access for an elevation rod.

TYPE 5 BRASS CAP MONUMENT

This monument is placed in locations where a Type 1 or Type 1A monument cannot be placed. A common application is in a large boulder where a property corner has been placed. This monument could also be placed in a sidewalk.

WITNESS POSTS

The witness post, when required, will be supplied by the Division and installation shall be included in the work. It shall be driven within 10 feet of the monument, when possible. A delineator post with a 6" x 10" metal sign panel may be used in lieu of the plastic post. This post is to conform to Standard S-612-1.

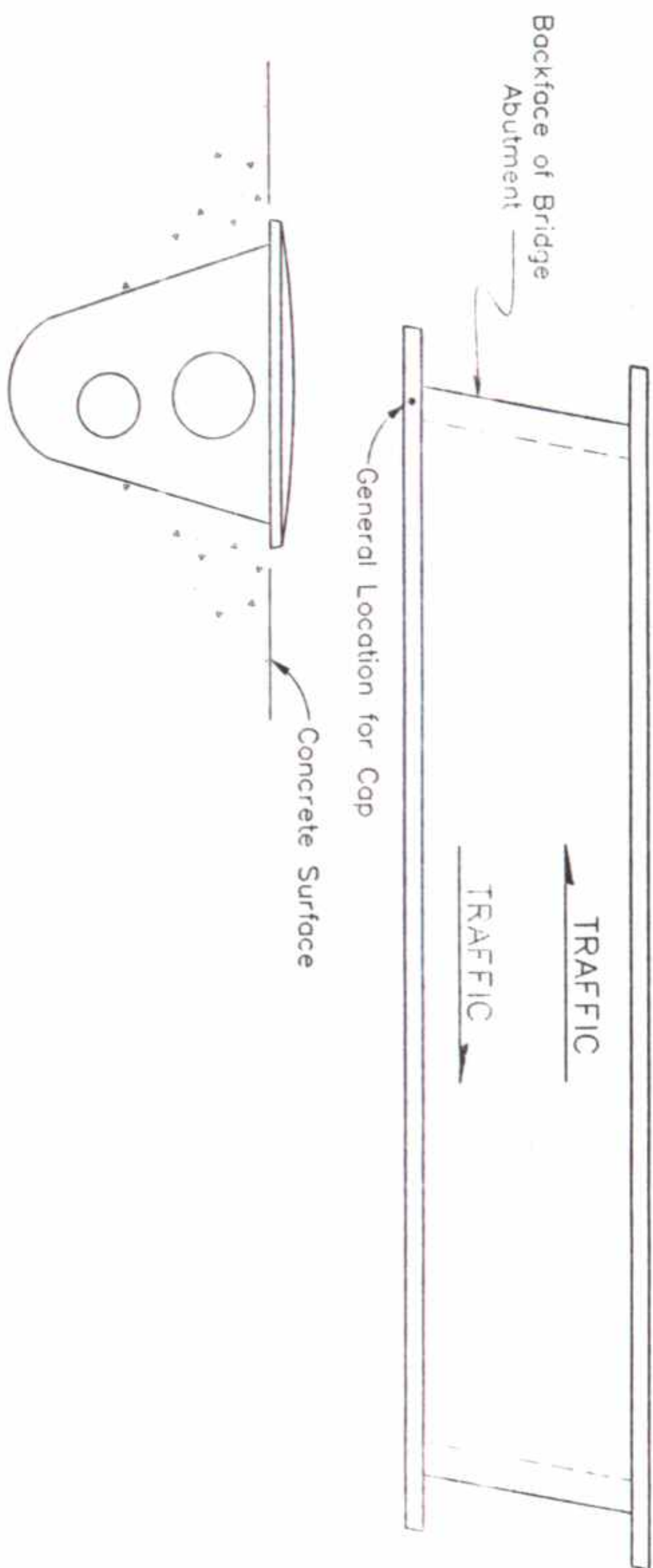
SELF-LOCKING WASHERS

A set of two washers shall be used at rod joints and threaded cap joints, but not at tip joints.

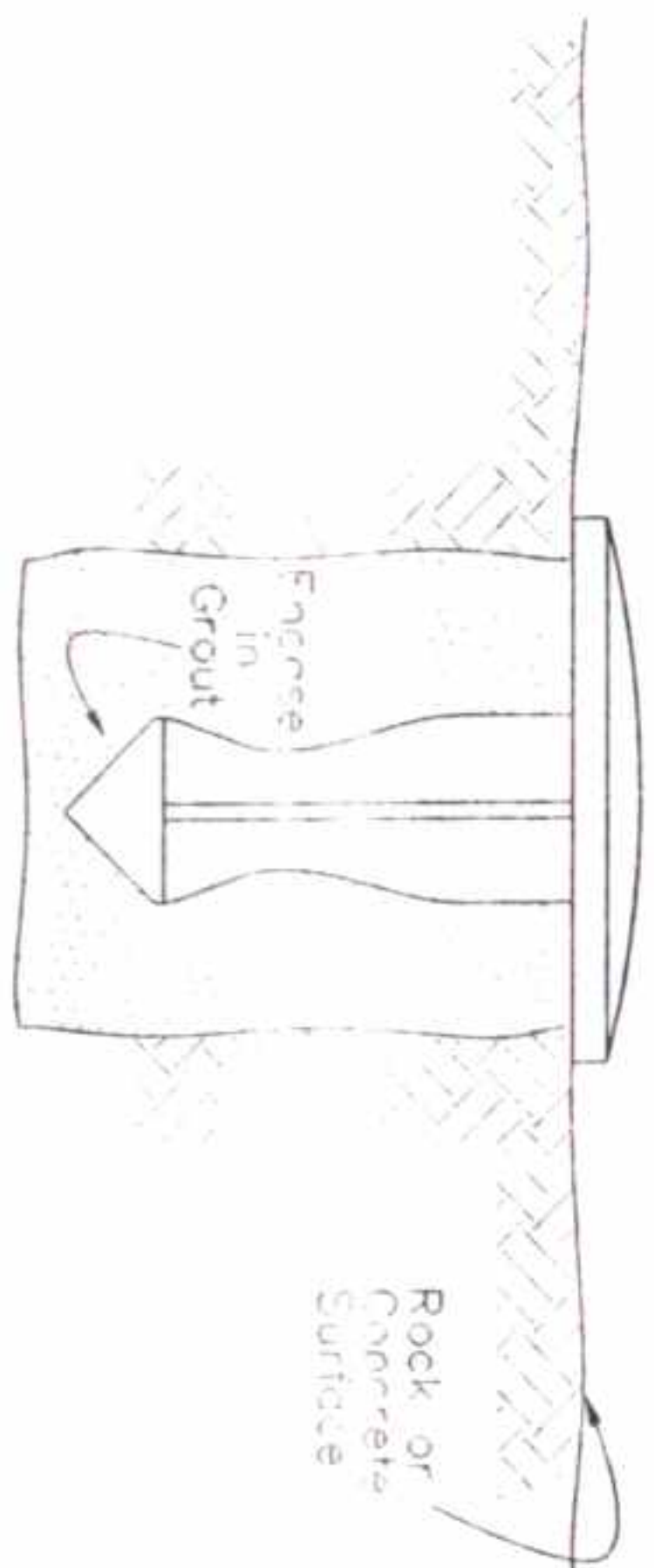
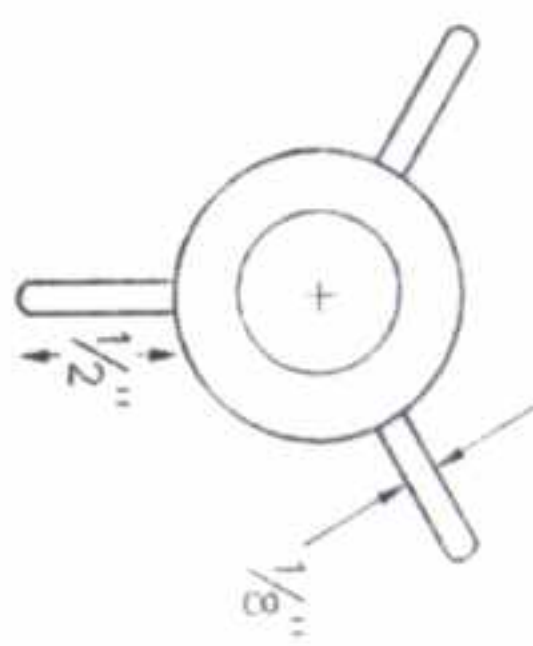
TEMPORARY MONUMENTS

This cap is used on a #5 rebar.

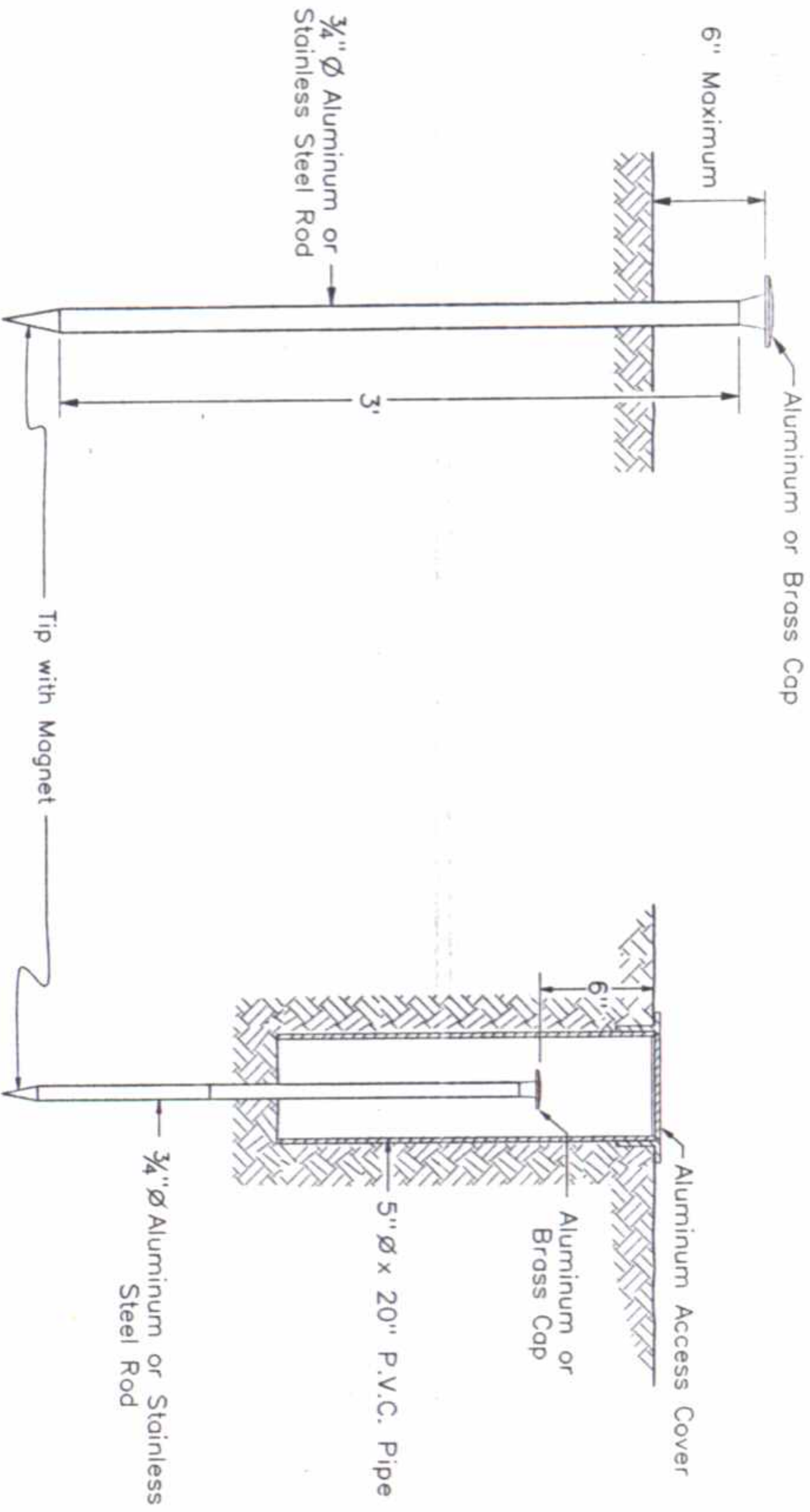
SURVEY MONUMENTS



TYPE 4 MONUMENT



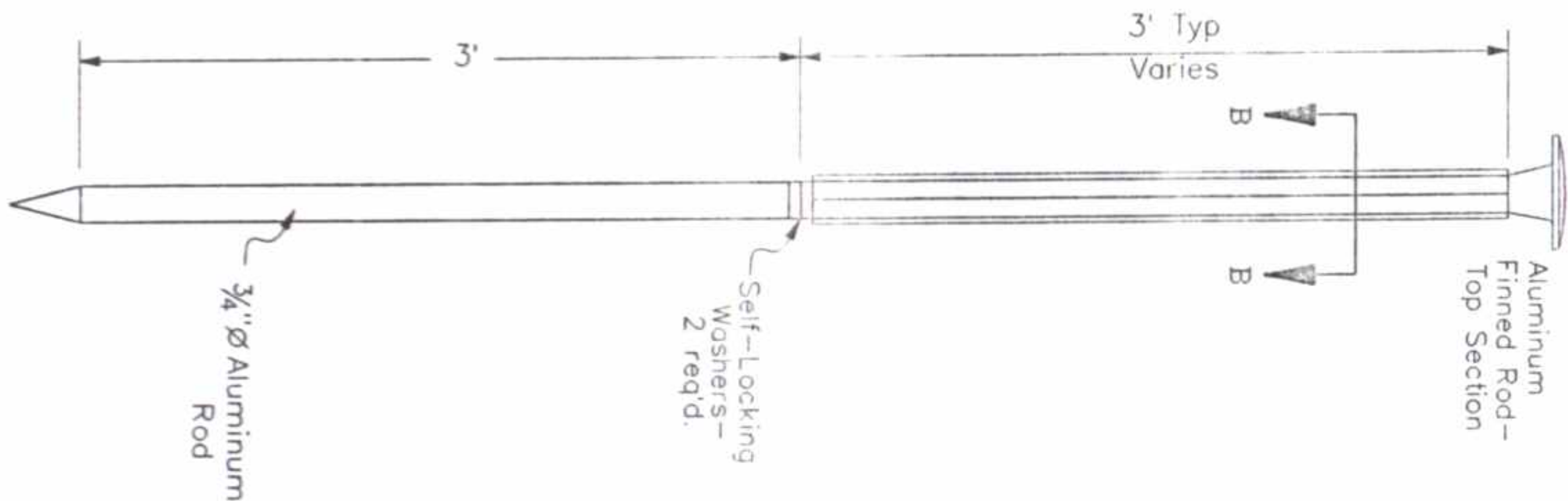
TYPE 5 MONUMENT



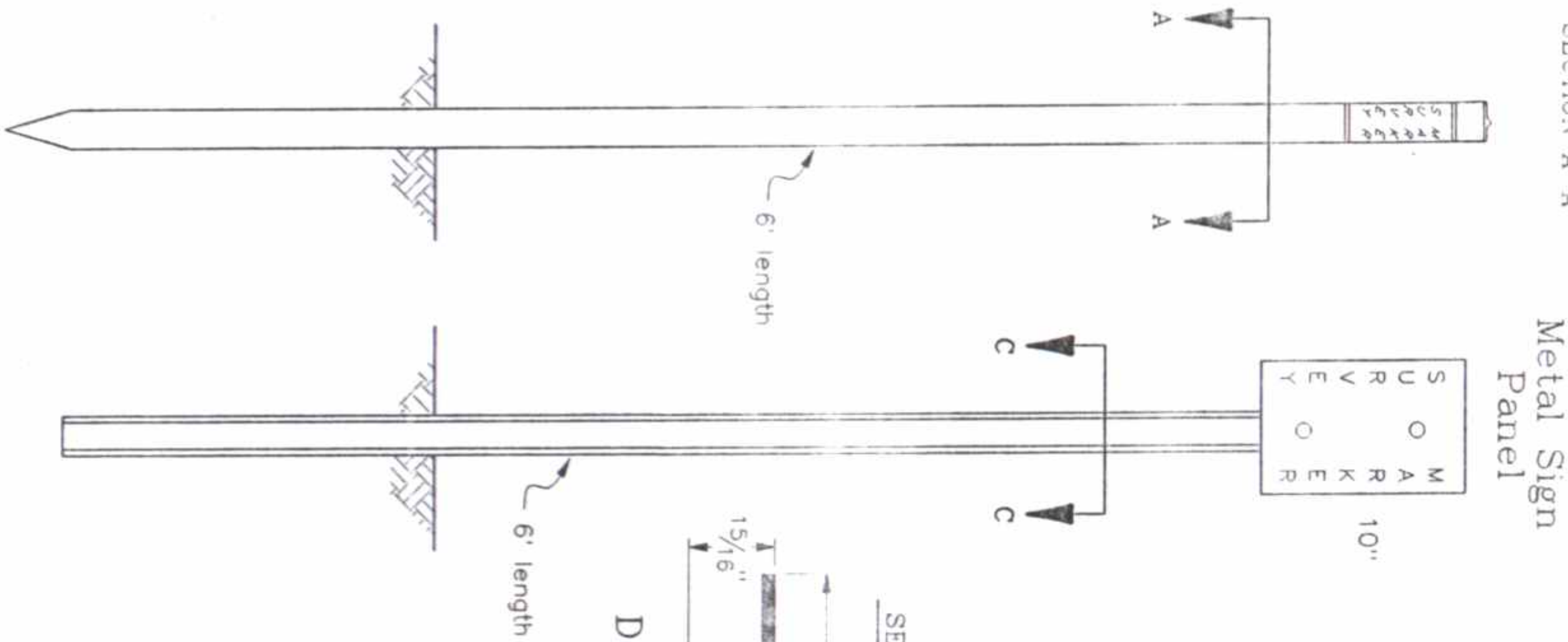
TYPE 1 MONUMENT

TYPE 1A MONUMENT & TYPE 2A MONUMENT

Includes Monument Box

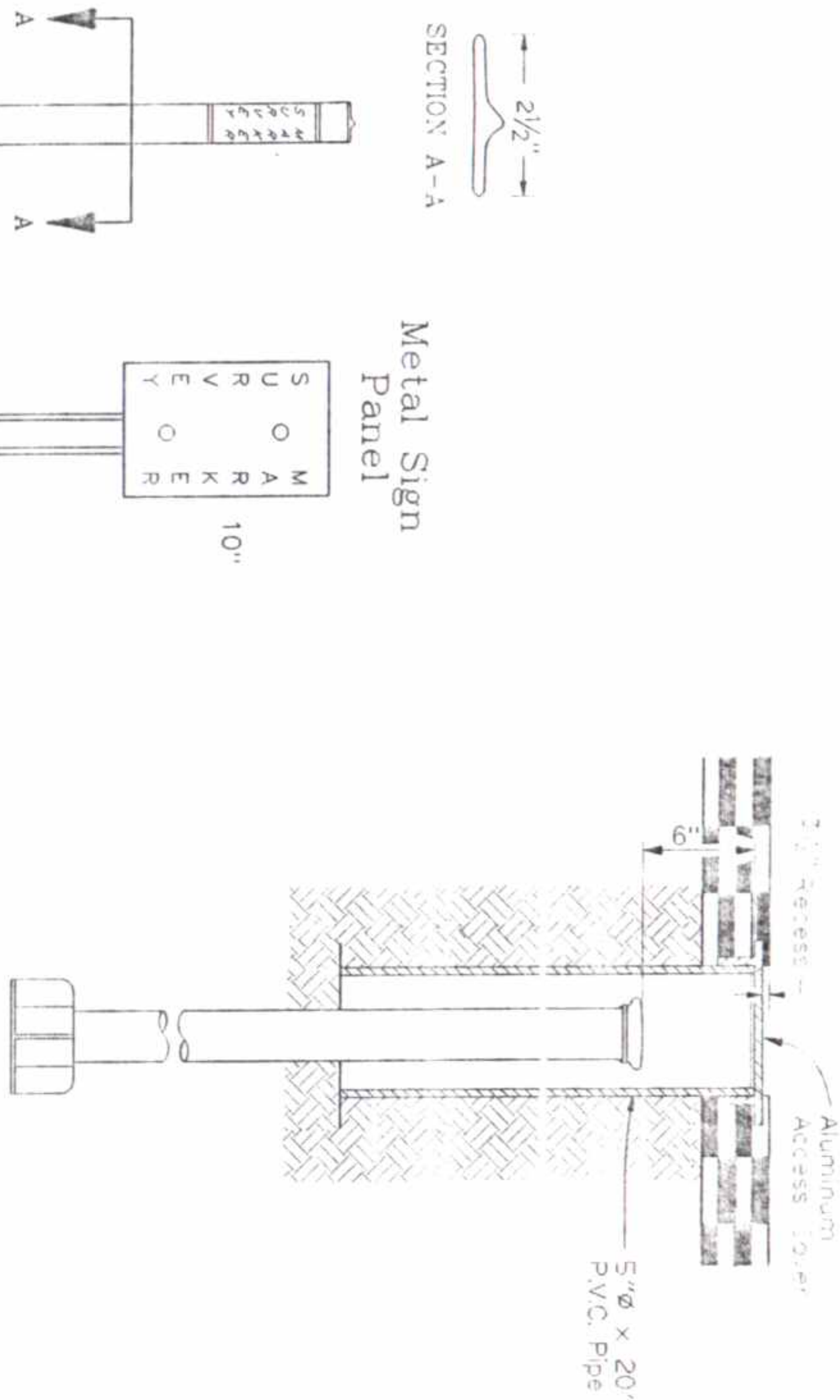


TYPE 2 MONUMENT



TYPE 3 MONUMENT

TYPE 3A MONUMENT,
Roadway Installation



SURVEY
MONUMENTS

WITNESS POSTS

AS CONSTRUCTED		FED ROAD REGION	DIVISION	PROJ. NO	SHEET NO
NO REVISIONS	9-7-90	REVISED	VOID	FR 014-2(19)	22