

FILED DIST. NO.	DIST.	PROJ. NO.	SHEET NO.
3	6	50012(5)	1

Rev 10-28-55, Bidders Notice, G.R.

Rev 10-28-55, Bidders Notice, J G R

UGR 2.05

CONVENTIONAL SIGNS

PLAN AND PROFILE OF PROPOSED
FEDERAL AID SECONDARY PROJECT NO. S 0012(5)
STATE HIGHWAY NO. 10
OTERO COUNTY

- | FEDERAL ROAD DESIGN DATA | | FED |
|--------------------------|--|--------|
| 2 | TYPICAL SECTION, GENERAL NOTES AND SUMMARY OF APPROXIMATE QUANTITIES | |
| 3 | SURFACING PLAN, SUB-BASE PLAN, LIST OF STRUCTURES AND TIMBER GUARD POSTS. | |
| 4 | PIT LOCATION | |
| 5 | STANDARD METHODS FOR SUPERELEVATION & WIDENING OF CURVES. | M-1-C |
| 6 | STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT & WIDENING AT BRIDGES & AT CREST OF GRADES. | M-2-EM |
| 7 | STANDARD MARKER POSTS. | M-7-C |
| 8 | STANDARD TIMBER GUARD POSTS. | M-19-D |
| 9 | STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS. | M-29-A |
| 10-11 | STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS (2 SHEETS) | M-29-B |
| 12-23 | ALIGNMENT PLAN AND PROFILE | |
| 24 | SUMMARY OF EARTHWORK QUANTITIES. | |
| 25-30 | CROSS SECTIONS | |

SCALES OF ORIGINAL DRAWINGS

ON PLAN	1 INCH = 100 FEET
ON PROFILE	1 INCH = 100 FEET HORIZONTAL
	1 INCH = 10 FEET VERTICAL

E ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

GROSS LENGTH OF PROJECT	} 34,100 FT. = 6.458 MILES
NET LENGTH OF PROJECT	

CENTER LINE _____
RIGHT OF WAY LINE _____
TOWNSHIP OR RANGE LINE _____
SECTION LINE _____
QUARTER SECTION LINE _____
SIXTEENTH SECTION LINE _____
BARBED WIRE FENCE _____
COMBINATION FENCE _____
SNOW FENCE _____
TELEP. & TELEO. LINE _____
POWER LINE _____
PRESENT ROAD (PLAN SHEETS) _____

INACTIVE

NOTES TO READER

IT IS RECOMMENDED THAT BIDDERS OF THIS
STATEMENT BE OPENED WITH ONE OF THE
FOLLOWING: 1. OF THIS DEPAR
B. MITCHELL L. CONST. ENGINEER, PUEB
E. W. KILLIAN, RESIDENT ENGINEER, PUEB
HOME TEL. LING-N. 2-7661

COLORADO
DEPARTMENT OF HIGHWAYS

APPROVED
James L. Quinn
CHIEF ENGINEER

OK As Constructed

STATION		ROADWAY LIN FT		
STA 600+00 BEGIN S 0012(3) END S 0012(3)		34,100		
STA 941+00 END S 0012(3)				
TOTAL		34,100		
SUMMARY		LIN FT	MILES	
TOTAL NET & GROSS LENGTH		34,100	6.458	
DESIGN DATA				
Maximum Degree of Curve		3°00'		
Maximum Grade		2.38%		
Minimum N.P.S.D. - horizontal		830'		
Minimum N.P.S.D. - vertical		520'		
Maximum Design Speed		50 M.P.H.		

STATE FORCES

It is estimated that material for Sub-Base and Surfacing for the project is available in the vicinity of the pit indicated in the following tabulations. Estimated quantities involved in these operations are shown below.

Alteration of the Sub-Base Plan or Surfacing Plan as here outlined will be allowed only on written permission from the Department.

SURFACING PLAN

MATERIAL TO BE PLACED	SOURCE	AVAIL.	QUANTITY TONS USED			OVERHAUL TON MILES		
			GRADING - C			TOP COURSE	BOTTOM COURSE	
			TOP COURSE	BOTTOM COURSE				
Est. for Appn. to Proj. Sta. 600+	Pit No. 1	75,000 Cu. Yds.	12	14		65	76	
600+00 to 766+00	"R" Value = 80		3,984	4,482		15,426	17,354	
766+00 to 928+38.1	Haul Distance 12144' or 2.3 Mi. to Sta.		3,897	4,384		14,956	16,824	
928+38.1 to 928+56.1 (Bridge)			5	—		26	—	
928+56.1 to 941+00			299	336		1,644	1,847	
Est. Widening at Bridge Sta. 928+			3	3		17	17	
From List of Structures			—	106		—	416	
Appn. to Proj. Sta. 941+			12	14		67	79	
SUB-TOTALS			6,212	9,339		32,201	36,613	
TOTALS			17,551			63,814		

SUB-BASE PLAN

MATERIAL TO BE PLACED	SOURCE	AVAIL.	QUANTITY AND THICKNESS CLASS - 2			OVERHAUL TON MILES
			Δ THICKNESS		TONS	
			T	T'		
600+00 to 720+00	Pit No. 1	75,000 Cu. Yds.	5"	4"	2,760	3,773
720+00 to 766+00	"R" Value 73		7"	4"	4,462	12,506
766+00 to 790+00			7"	4"	2,258	5,883
790+00 to 896+00	Haul Distance 12,144' or 2.3 Mi. to Sta.		5"	4"	2,738	29,082
896+00 to 928+38.1			14"	10"	7,286	36,931
928+56.1 to 941+00			14"	10"	2,759	15,385
Est. for Widening at Bridge 928+					24	129
Appn. to Project 941+					113	635
Est. for correcting Irreg. in Subgrade					5,027	20,698
From List of Structures					108	533
TOTALS					33,645	159,216

Based on Curve "B"

LIST OF STRUCTURES

LOCATION OF STRUCTURE	EXCAVATION CUBIC YARDS		SUB-BASE CLASS 2 TONS	SURF- ACING TONS	MISCELLANEOUS
	UNCL.	EMBANK.			
600+00				*	
652+75				20	
766+50				18	
767+37				18	
834+45			36	14	
928+	700			*	
940+00			72	36	
941+00				*	
941+00				*	
TOTALS	700		108	106	

* Included in Surfacing Plan.

Ø Included in Roadway Quantities.

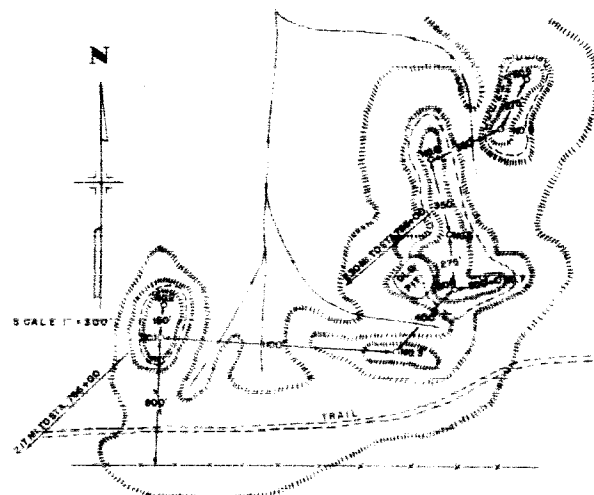
TIMBER GUARD POSTS

STATION	SIDE	SPACING	NUMBER
644+18 to 660+72	Rt & Lt	3" Curve	12
681+	Rt & Lt	Cattle Guard	2
738+	Rt & Lt	Culvert	2
770+	Rt & Lt	Culvert	2
803+	Rt & Lt	Culvert	2
817+	Rt & Lt	Culvert	2
843+	Rt & Lt	Culvert	2
853+	Rt & Lt	Culvert	2
853+	Rt & Lt	Cattle Guard	2
868+	Rt & Lt	Culvert	2
878+	Rt & Lt	Culvert	2
897+	Rt & Lt	Culvert	2
927+74.1 to 928+35.1	Rt & Lt	Bridge	10
928+59.1 to 929+20.1	Rt & Lt	Bridge	10
939+	Rt & Lt	Cattle Guard	2
940+	Rt & Lt	Culvert	2
TOTAL			88

PIT NO. 1

STONE SCREENINGS, SUB-BASE & SURFACING MATERIAL

LOCATION: S 1/2 SEC. 32, T. 23 S., R. 57 W.
OWNER: WALLACE FAGG, ROCKYFORD, COLO.
QUANTITY AVAILABLE: 75,000 CU. YDS.
HAUL DISTANCE: 2.30 MILE TO STA. 766+00
MAXIMUM SIZE OF MATERIAL: 7 INCHES
MATERIAL OVER 5 INCHES: 5%
MATERIAL OVER 3 INCHES: 15%
ESTIMATED FOR STRIPPING OVERBURDEN - 2,500 Cu. Yds.



LOG OF PIT - SAMPLE NO. 1156

TEST NO.	DEPTH IN FEET	DESCRIPTION OF TEST HOLE MATERIAL
1-A	0.0 - 1.0	OVERBURDEN
1-B	1.0 - 6.0	SAND & GRAVEL
2	6.0 - 1.0	CEMENTED SAND & GRAVEL APPROX 3'
2-A	0.0 - 1.0	OVERBURDEN, SIMILAR NO. 1
2-B	1.0 - 5.0	SAND & GRAVEL, SIMILAR NO. 1-A
3	5.0+	SOFT SANDSTONE
3-A	0.0 - 0.5	OVERBURDEN, SIMILAR NO. 1
3-B	0.5 - 1.5	SAND & GRAVEL, SIMILAR NO. 1-A
4	1.5+	SOFT SANDSTONE
4-A	0.0 - 2.0	OVERBURDEN
4-B	2.0 - 6.0	SAND & GRAVEL
5	6.0+	CEMENTED SAND & GRAVEL APPROX 3'
5-A	0.0 - 2.0	OVERBURDEN, SIMILAR NO. 4
5-B	2.0 - 7.5	SAND & GRAVEL, SIMILAR NO. 4-B
6	7.5+	CEMENTED SAND & GRAVEL APPROX 3'
6-A	0.0 - 1.5	OVERBURDEN, SIMILAR NO. 4
6-B	1.5 - 7.0	SAND & GRAVEL, SIMILAR NO. 4-A
7	7.0+	SOFT SANDSTONE
7-A	0.0 - 0.5	OVERBURDEN, SIMILAR NO. 4
7-B	0.5 - 3.5	SAND & GRAVEL, SIMILAR NO. 4-A
8	3.5+	TIGHT SANDSTONE
8-A	0.0 - 0.3	OVERBURDEN, SIMILAR NO. 4
8-B	0.3 - 6.0	SAND & GRAVEL, SIMILAR NO. 4-A
9	6.0+	TIGHT SANDSTONE
9-A	0.0 - 0.5	OVERBURDEN, SIMILAR NO. 4
9-B	0.5 - 5.0	SAND & GRAVEL, SIMILAR NO. 4-A
10	5.0+	TIGHT SANDSTONE

FED. ROAD DIST. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLC	50012(5)	4	

GENERAL NOTES

Curves on projects using the Section shown are to be superelevated and widened as indicated in the accompanying drawings and tables.

The normal inside edge of the Graded or Surfaced Section is to remain at the standard elevation of 0.02 ft per foot width of roadway below the profile grade, or as shown on the Typical Section for the Project. The centering pivot point is to be used until the super-elevation equals 0.02 ft per foot width of roadway. When this elevation is exceeded the normal inside shoulder pivot point is to be used.

When the degree of curvature exceeds 10°, the inside edge of the Asphaltic Mat or the inside shoulder of the Graded or Surfaced Section is to be widened from the normal inside edge or shoulder, respectively, as shown by the table and plan, and by cross sections. Curves of 10° or less are not to be widened.

The slope of the shoulder and widened sections shall conform to the rate per foot width of roadway required, except that the inside shoulder shall maintain the 1% cross-section slope until this slope is exceeded by the required super-elevation slope.

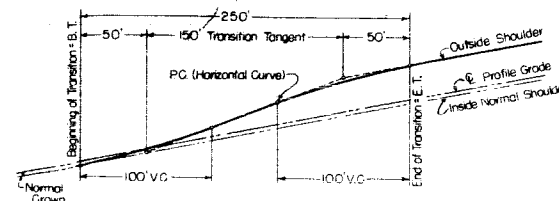
The outside ditch on super-elevated sections is to be modified, where necessary, to provide proper drainage. Otherwise, this ditch shall conform to normal ditch section shown for Project. The rate of super-elevation per foot width of roadway to be applied to the outside shoulder of the roadway is computed as follows:

The full super-elevation per foot width of roadway rate for a given degree of curvature is 0.015 ft x Degree of Curvature.

The maximum super-elevation of 0.10 ft per foot width applying to curves of 10° and over is not to be exceeded.

Where spiral curves are used, the transition from normal to full super-elevation and widening shall take place over the full length of spiral curve.

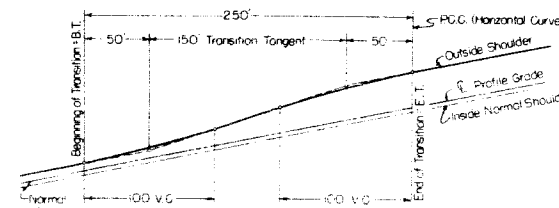
Special transition problems not covered by the standards shall be covered by appropriate notes included with curve data on plans.



CASE I: SIMPLE CURVE WITH UNLIMITED TANGENT APPROACH

NOTE: CASE I

The transition in this case, from crowned section to super-elevated section, shall proceed by raising the outside shoulder, over a distance of 250 ft as shown, beginning at a point on the tangent 150 ft from the end of the curve and acquiring full super-elevation at a point 100 ft inside the curve.



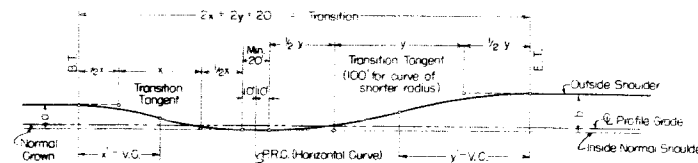
CASE II: COMPOUND CURVE

NOTE: CASE II

Super-elevation transitions at the outside ends of compound curves shall be constructed in accordance with rules given under CASE I.

Super-elevation transition between the arcs of different radii shall be made as in CASE I, except that the entire transition shall be within the limits of the curve of the longer radius.

In cases where curves in the same direction have a tangent distance of less than 300 ft between points of curve, the intervening tangent shall be super-elevated an amount equal to that of the curve of greater radius and the transition shall be made as in the case of a true compound curve.



CASE III: REVERSE CURVES

NOTE: CASE III

Transitions between true reverse curves shall be accomplished as shown on the above diagram.

Transition tangents shall be directly proportional to the amount of super-elevation of the respective curves.

EXAMPLE: Let a represent the amount of super-elevation on 1st curve;
 b = 2nd
 x = transition tangent = 1st
 y = 2nd

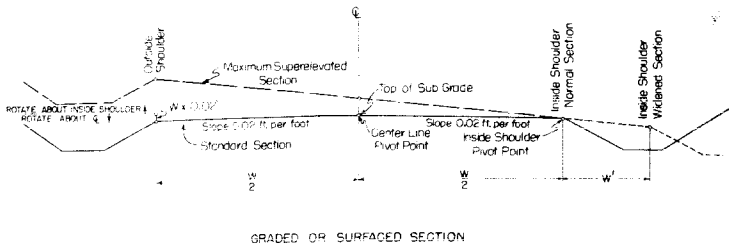
then, $a:b = x:y$

The transition tangent of the curve having the shorter radius shall be set at 100 ft.

A normal crowned section 20 ft long, 10 ft on each side of the P.C. shall be used.

In cases where curves in opposite directions are in such proximity that a standard transition cannot be had, the practice outlined for true reversing curves shall be used.

The total distance between the R.T. of the first curve and the P.C. of the succeeding curve shall be prorated into the transition distance of the respective curves until a maximum of 150 ft of transition tangent for each curve is achieved.

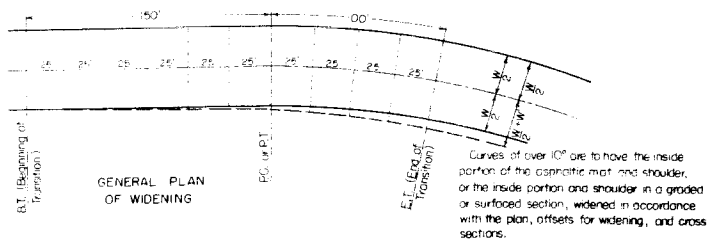
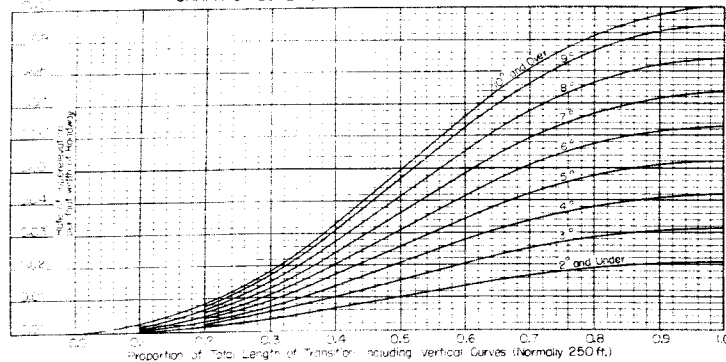


GRADED OR SURFACED SECTION

SUPERELEVATION AND WIDENING TABLES

DISTANCE FROM B.T. (DEGREES)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Max. 1.0
Degree of Curvature	RATE OF SUPERELEVATION (IN FEET) PER FOOT WIDTH OF ROADWAY									
2° and under	0.0044	0.0075	0.0103	0.0134	0.0170	0.0205	0.0240	0.0275	0.0306	0.0350
3°	0.0066	0.0123	0.0159	0.0200	0.0240	0.0280	0.0313	0.0350	0.0384	0.0420
4°	0.0088	0.0150	0.0198	0.0240	0.0280	0.0313	0.0350	0.0384	0.0420	0.0450
5°	0.0109	0.0175	0.0225	0.0265	0.0300	0.0330	0.0360	0.0390	0.0420	0.0450
6°	0.0131	0.0200	0.0250	0.0290	0.0320	0.0350	0.0380	0.0410	0.0440	0.0470
7°	0.0153	0.0225	0.0275	0.0315	0.0340	0.0370	0.0400	0.0430	0.0460	0.0490
8°	0.0175	0.0250	0.0300	0.0340	0.0370	0.0400	0.0430	0.0460	0.0490	0.0520
9°	0.0197	0.0275	0.0325	0.0365	0.0390	0.0420	0.0450	0.0480	0.0510	0.0540
10° and over	0.0219	0.0300	0.0350	0.0390	0.0420	0.0450	0.0480	0.0510	0.0540	0.0570
OFFSETS FOR WIDENING - W' (IN FEET)										
2° and under	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0.30
3°	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.40
4°	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
5° and over	0.06	0.12	0.18	0.24	0.30	0.36	0.42	0.48	0.54	0.60

GRAPH OF SUPERELEVATION TRANSITION FIGURES

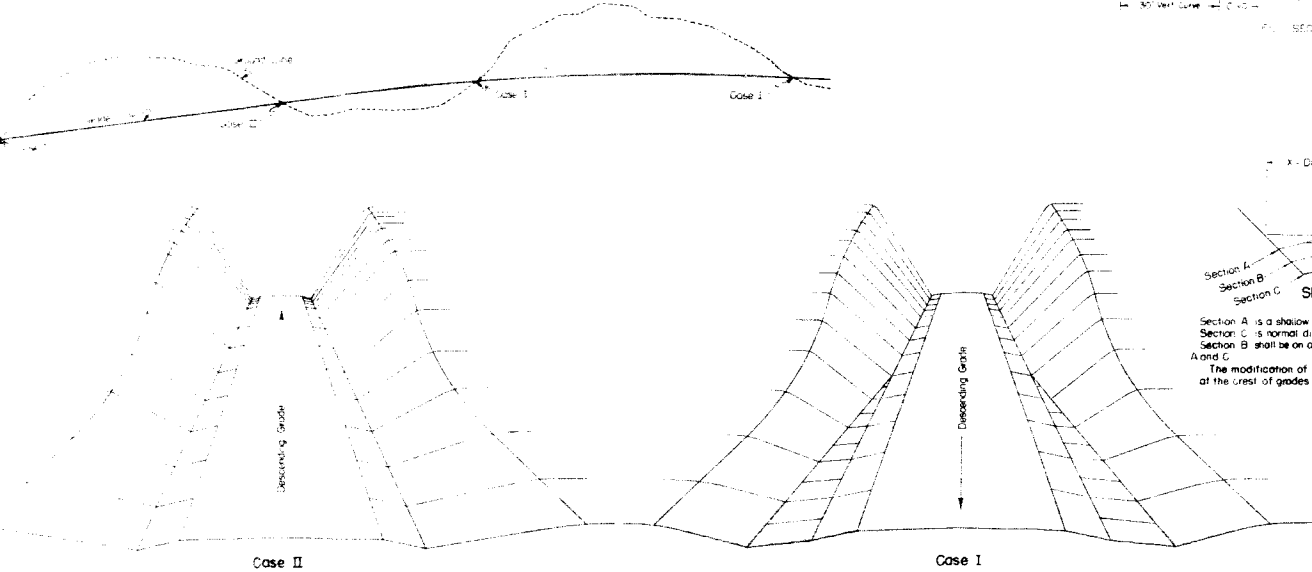
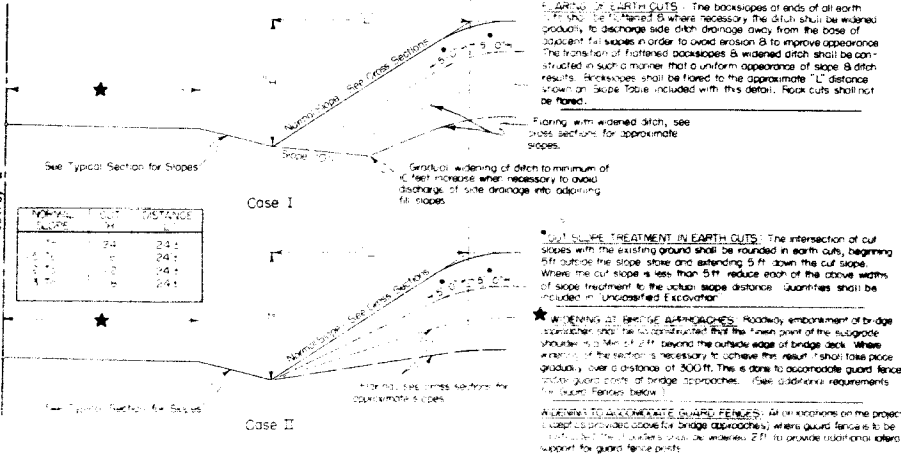


STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT & WIDENING AT BRIDGES AND AT CREST OF GRADES

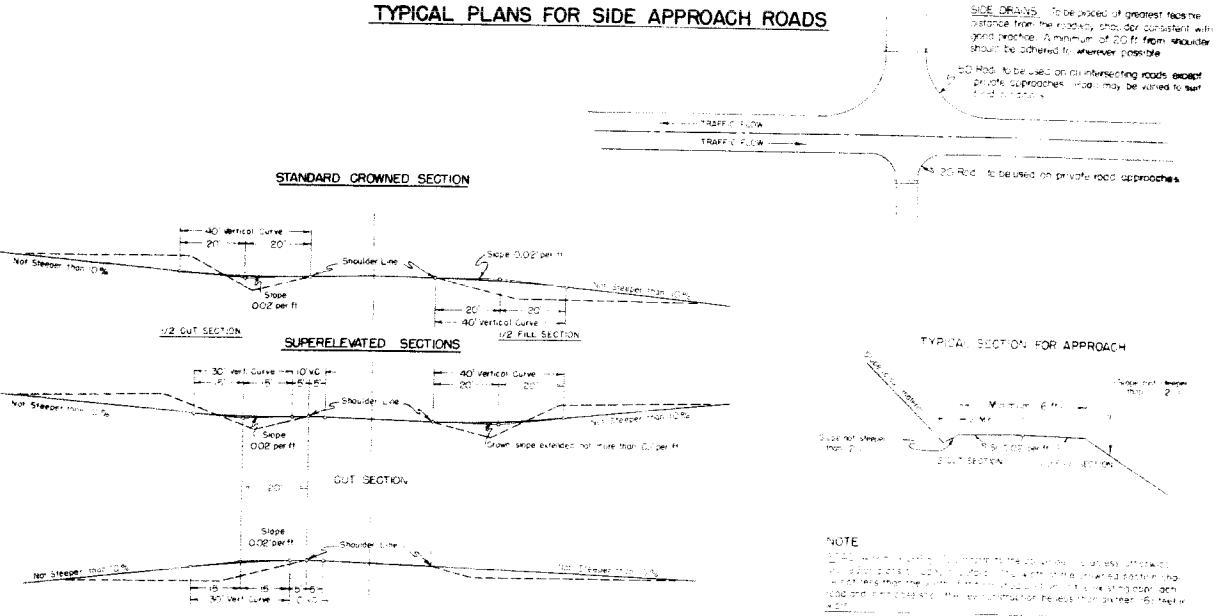
STANDARD M-2-EM

FED. ROAD DISTRICT SHEET NO. TOTAL SHEETS
 9 6
 COLORADO S00/2.5
 Rev 12-9-53, Details of Road Approaches, J.G.R.

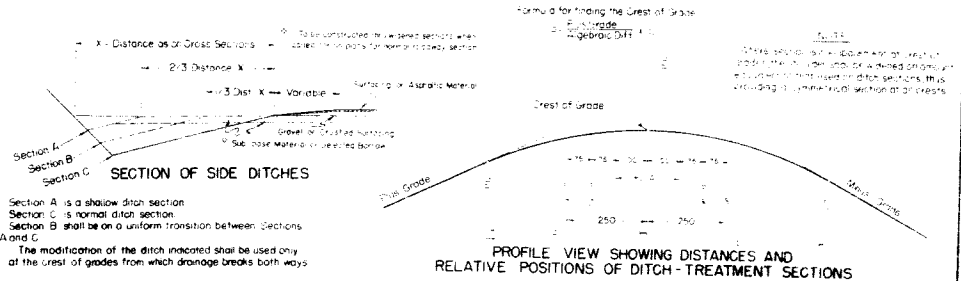
GENERAL DETAILS FOR FLARING OF EARTH CUTS, CUT SLOPE TREATMENT & WIDENING AT BRIDGES



TYPICAL PLANS FOR SIDE APPROACH ROADS



DETAILS FOR DITCH & WIDENED SHOULDERS AT CREST OF GRADES



COLORADO DEPARTMENT OF HIGHWAYS

STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT, AND WIDENING AT BRIDGES AND AT CREST OF GRADES

Designed by J. J. Made by J. M. S. Checked by G. R. S.

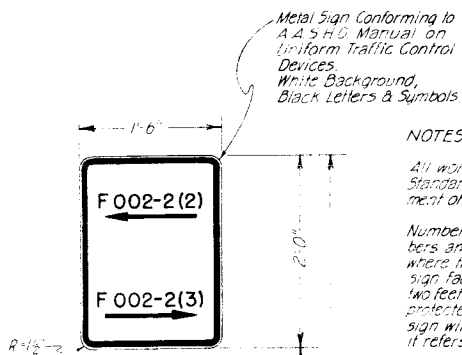
Approved by J. J. Date: November 1954

PROJECT MARKER POST

RIGHT OF WAY MARKER POST

STANDARD M-7-C

FEDERAL ROAD DIVISION NO	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	COLORADO	50012(5)	7	



NOTES FOR PROJECT MARKER POSTS

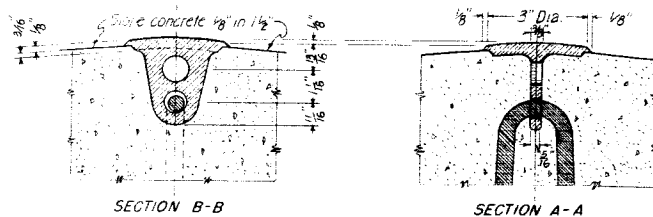
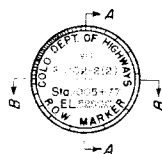
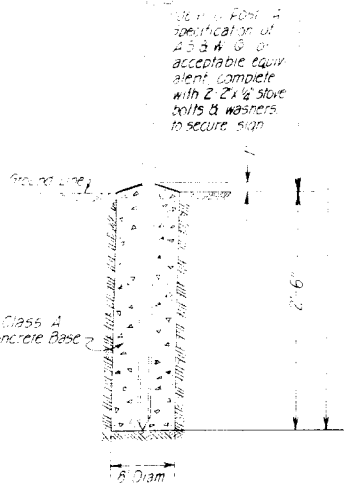
All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to this project.

Numbers and arrows shall show the proper numbers and directions of the projects each way from where the post is placed. Post is to be set with sign facing the road at the end of the project, two feet inside the ROW line or at a point amply protected from traffic in such a position that the sign will indicate properly the projects to which it refers.

NOTES FOR R.O.W. MARKER POSTS

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the project. Posts shall be made of Class A Concrete. The upper 12 inches of marker posts shall be rubbed free of form marks, and the top surface of the post must be constructed to drain thoroughly.

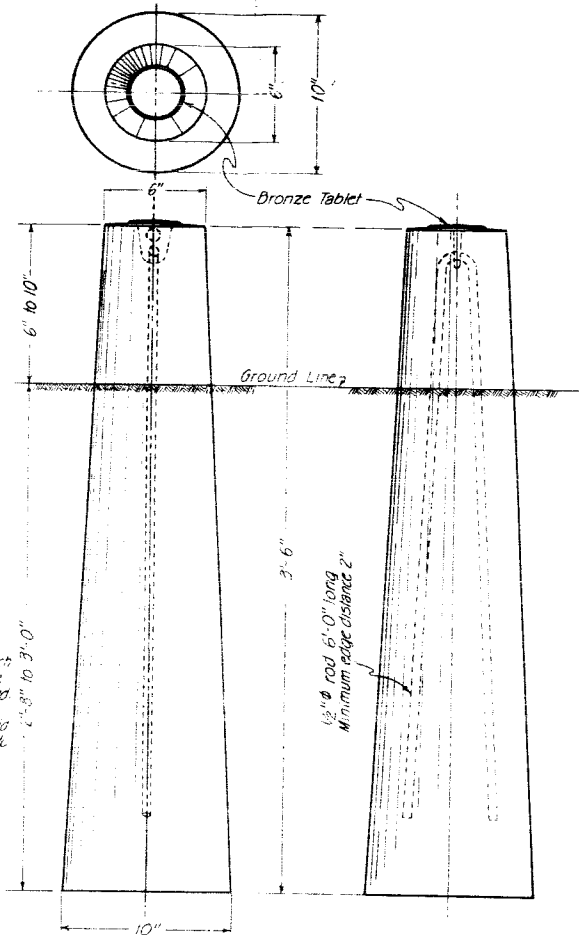
All exposed surfaces of the bronze tablet are to be ground to a smooth surface. All letters are to be depressed a minimum of 1/8 inch. Information on the bronze tablet indicated by punctuation is to be stamped in relief by the end, ending partly after not is placed. Each inch letters and figures to be used. Project designations on tablets shall be properly shown: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 82



SECTION B-B

SECTION A-A

DETAIL OF BRONZE TABLET
FOR RIGHT OF WAY MARKER POST



COLORADO
DEPARTMENT OF HIGHWAYS
STANDARD
MARKER POSTS

Designed by REL	Approved by
Made by EEO	
Checked by REL	Date 2/19/51

STANDARD TIMBER GUARD POSTS

STANDARD M-19-D SPECIFICATIONS

F.C.D. ROAD DIVISION NO.	DISTRICT
9	6

Rev 5-13-53, Specifications, J.C.R.
Rev 12-4-53, State Nails, Cates, D.L.V.
Rev 2-1-54, Delineation by State Forces, J.C.R.

POSTS: Lodgepole Pine, Southern Yellow Pine or West Coast Douglas Fir, not less than six (6) inches in diameter. All posts shall be pressure treated with Pentachlorophenol as provided under paragraph 42.2.20 of the specifications, after being peeled and shaved in accordance with specifications.

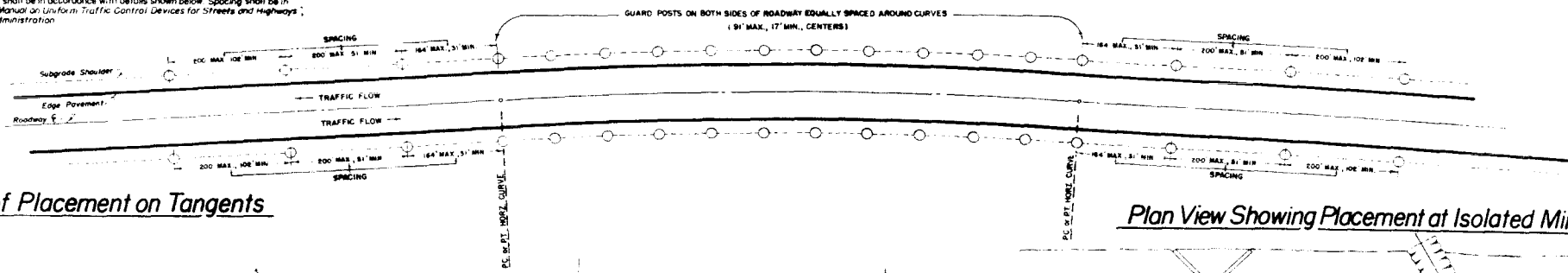
PAINTING: Posts shall be painted with aluminum paint and a black band placed around each post as per details on this sheet. Number of coats and type of paint applied shall be in accordance with specifications.

(Work By State Forces)

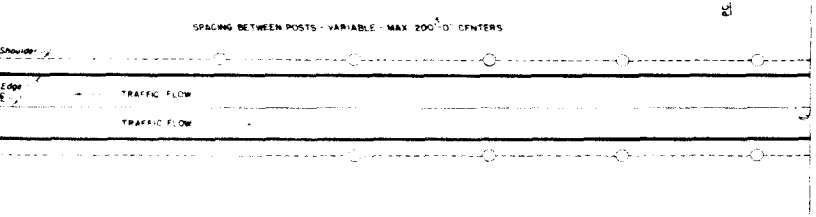
REFLECTIVE SHEETING: In accordance with the details hereon, State Forces will furnish and place the required 2"x6" smooth s. faced reflective delineators fabricated from 3s + H14 aluminum alloy, minimum thickness .0025, reflectorized by means of wide angle flattop silver "Scotchlite". Strips shall be suitable for placement around a curved surface.

Typical Installation on Curves

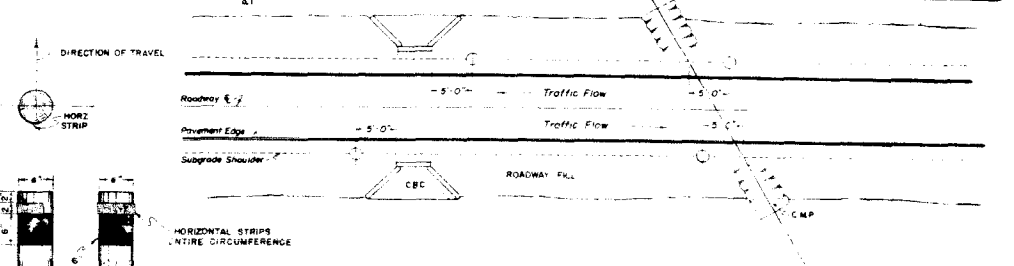
Installation of guard posts on curves shall be in accordance with details shown below. Spacing shall be in accordance with Section 15.7, Table 1 of "Manual on Uniform Traffic Control Devices for Streets and Highways", 1948 by the Public Roads Administration.



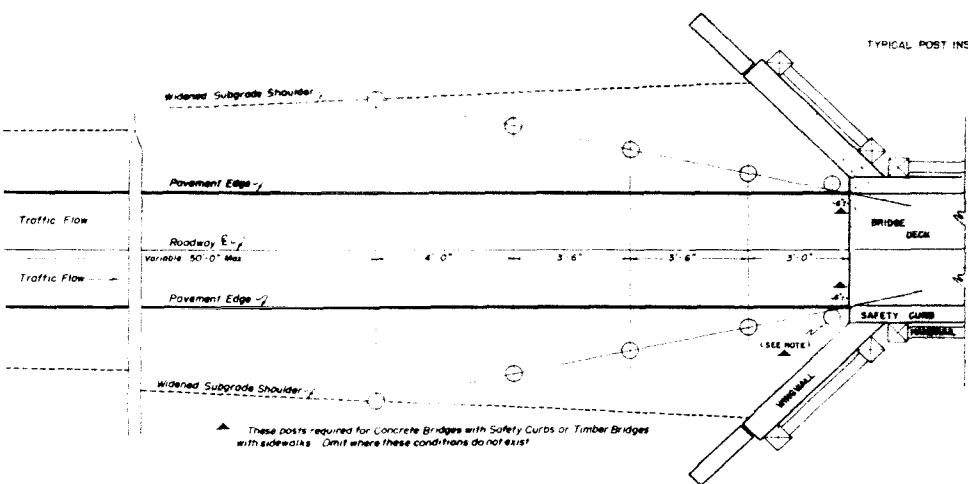
Method of Placement on Tangents



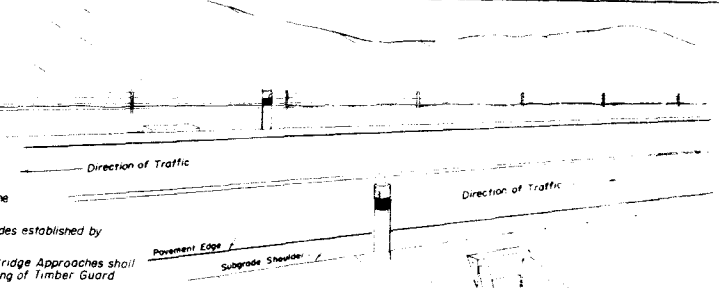
Plan View Showing Placement at Isolated Minor Structures



Typical Installation at Bridge Approaches



Pictorial View Showing Location at Isolated Minor Structures



INSTALLATION DETAILS OF REFLECTORIZED STRIPS

(Work By State Forces)

GENERAL NOTES

(Work By Contractor)

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the project.

All posts shall be set and tamped in, plumb and firm, to the line and grades established by the Engineer.

INSTALLATION of Timber Guard Posts on Tangents, Curves and at Bridge Approaches shall be in conformity with details on this sheet. The number, location and spacing of Timber Guard Posts is shown on plans.

(Work By State Forces)

Reflective delineators shall be furnished and installed by State Forces after the Contractor has finished his operations.

Installation of reflective delineators shall be in accordance with the following: Wrap Around Reflective Sheeting Strips shall be installed horizontally one (1) sheet on all posts. Island posts shall have Wrap Around Reflective Sheeting Strips placed horizontally to cover entire circumference of Post.

On Undivided Highways and Islands, Reflective Sheeting Strips shall be placed in a manner to obtain maximum visibility for the primary direction of travel. In all instances tests shall be made to insure the maximum effectiveness of reflective delineators.

All Traffic Islands shall be marked with Island Posts as indicated hereon.

COLORADO
DEPARTMENT OF HIGHWAYS

STANDARD
TIMBER GUARD POSTS

Designed by
Checked by

Approved by
Engineer, Survey & Plans
Date

STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

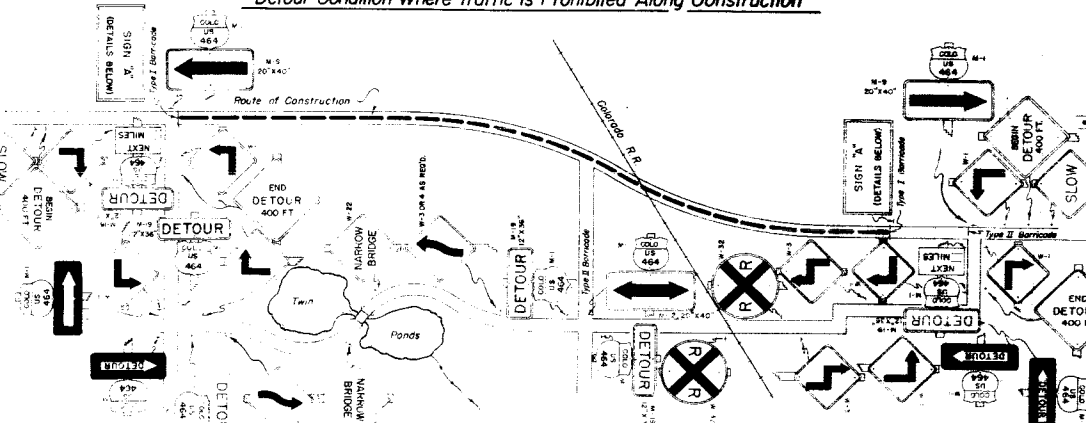
STANDARD M-29-A

FED. ROAD DIST. NO.	DIST. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	500/2/3	9

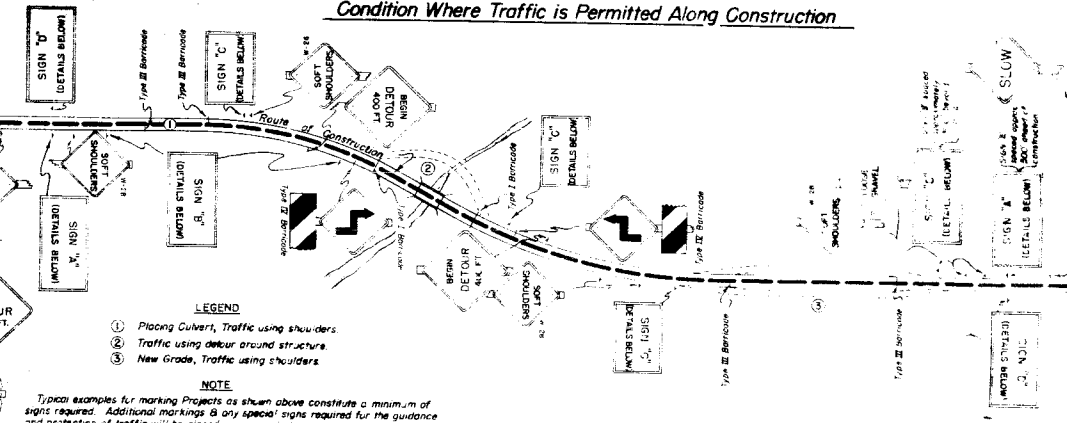
Rev. 11-28-52, J.C.R.
Rev. 4-22-54, Scotchite Specs., J.C.R.

Typical Methods of Marking Highways & Detours

Detour Condition Where Traffic is Prohibited Along Construction



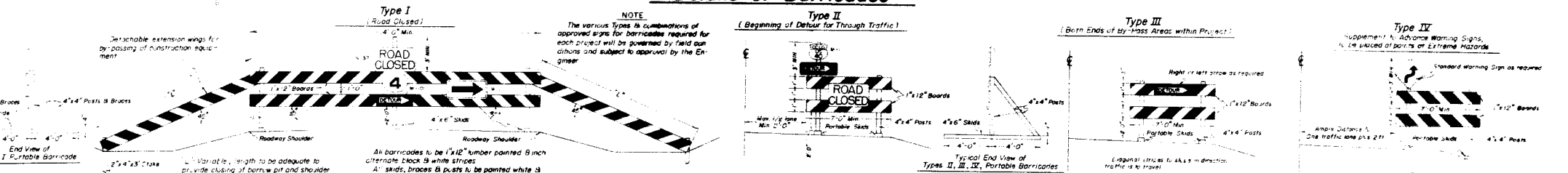
Condition Where Traffic is Permitted Along Construction



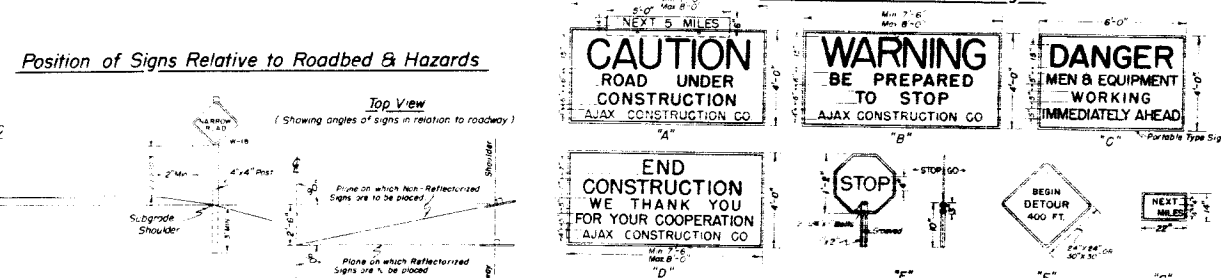
- LEGEND
1. Placing Culvert, Traffic using shoulders.
 2. Traffic using detour around structure.
 3. New Grade, Traffic using shoulders.

NOTE
Typical examples for marking Projects as shown above constitute a minimum of signs required. Additional markings & any special signs required for the guidance and protection of traffic will be placed as required along the project. Contractors & Engineers' equipment must be parked so that signs & barricades are visible in traffic at all times.

Details of Barricades



Details of Construction Signs

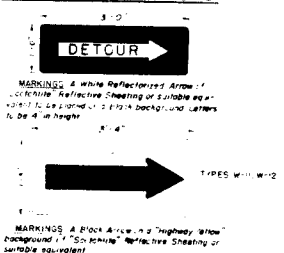


GENERAL NOTES

- All work shall be done in accordance with the Standard Specification of the Colorado Department of Highways applicable to the project.
 - Where traffic is maintained through or over any part of the Project, the Contractor will be required to mark all hazards within the limits of the Project with well pointed, well maintained Barricades, Warning Signs and Directional Type Signs. All Barricades & Signs shall be moved, added to, changed or removed as required during the progress of construction and removed entirely when project is completed.
 - All Warning & Directional Type Signs will be "ReflectORIZED" with "Scotchite" Reflective Sheeting or its suitable equivalent. Except for variations noted on this sheet all signs will be in conformity with the specifications outlined in "Manual on Uniform Traffic Control Devices for Streets & Highways" (M.U.T.C.D.) of August 1948 by the U.S. Public Roads Administration. U.S. or State Route Markers required for the Project will be furnished by the Department and installed by the Contractor. Numbers adjacent to signs refer to Standards in the Manual.
 - The Contractor shall furnish & install the following as required within the limits of the Project:
 - All Barricades As Required
 - "CAUTION, ROAD UNDER CONSTRUCTION, NEXT 5 MILES, CONTRACTORS NAME" Minimum 2
 - Standard Warning & Directional Signs As Required
 - "WARNING, BE PREPARED TO STOP, CONTRACTORS NAME" As Required
 - Approved Directional Arrows for Barricades As Required
 - "DANGER, MEN & EQUIPMENT WORKING IMMEDIATELY AHEAD" Minimum 2
 - "END CONSTRUCTION, WE THANK YOU FOR YOUR COOPERATION, CONTRACTORS NAME" Minimum 2
 - Torches and Flares as follows:

Type I Barricades	Minimum 2
Type II, III & IV Barricades	Minimum 1
Standard Warning Signs	Minimum 1
- Where traffic is prohibited from the Project, the Detour will be marked by the Department except for Barricades complete with approved Warning Signs & Arrows which will be provided, erected & maintained by the Contractor at ends of Project and intersecting roads.
- All timber used shall be of sound durable material. Barricades, Signs, Symbols & Lettering conforming to styles noted herein will be well pointed & maintained. Uneven or smeared lettering will not be accepted.
- Flares & Torches shall be of the U.S. Type approved by the Department and shall be placed 3ft. to 5ft. ahead of the object to be illuminated. Portable cars shall be taken to protect all signs and barricades from smoke and smudge arising from torches and flares.
- All signs are to be in clear view of traffic and are not to be obstructed by equipment, weeds or other means.
- Speed control signs as required, may be requested from the Engineer by the Contractor.

Details of ReflectORIZED Arrows



COLORADO
DEPARTMENT OF HIGHWAYS

Standard Roadway
Construction Traffic Signs

Designed by: C.R.
Modified by: C.R.
Checked by: C.R.

Approved by: C.R.
Date: October 10, 1954

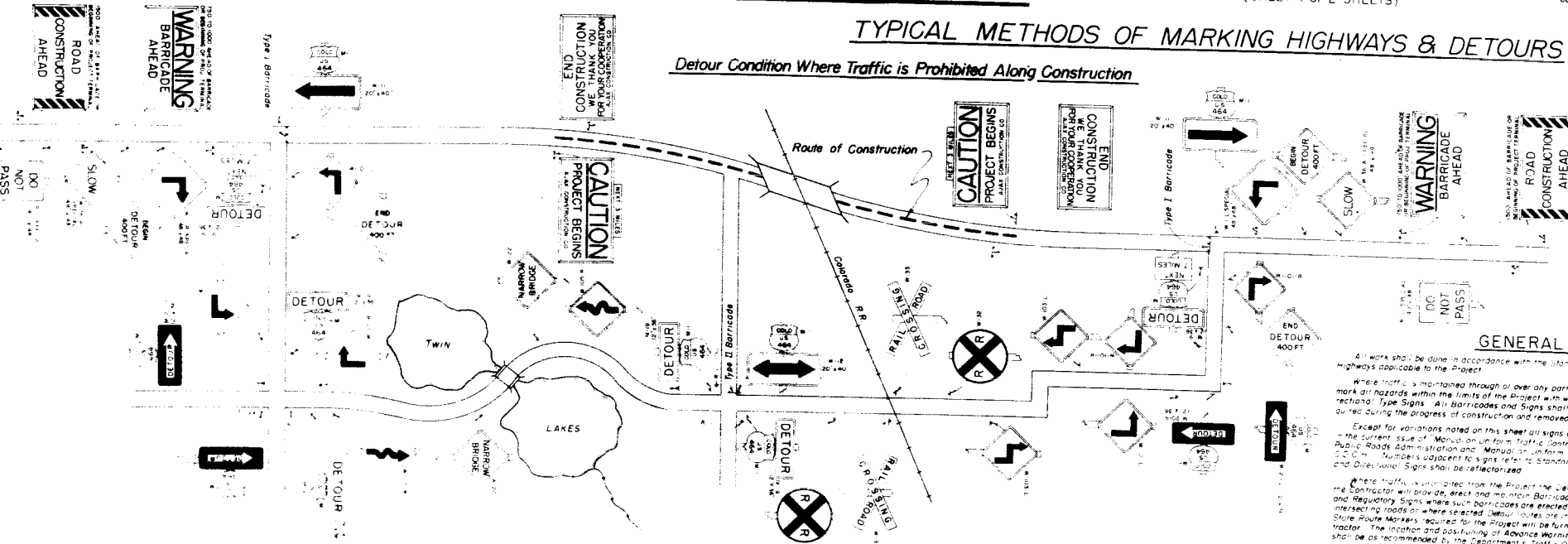
STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

STANDARD M-29-B
(SHEET 1 OF 2 SHEETS)

FED. ROAD DISTRICT SHEET NO. TOTAL SHEETS
S.0012(3) 10

TYPICAL METHODS OF MARKING HIGHWAYS & DETOURS

Detour Condition Where Traffic is Prohibited Along Construction



GENERAL NOTES

4.1 Work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the Project.

Where traffic is maintained through or over any part of the Project, the Contractor will be required to mark all hazards within the limits of the Project with well-maintained Barricades, warning Signs and Directional Type Signs. All Barricades and Signs shall be moved, added to, changed or removed as required during the progress of construction and removed entirely when project is completed.

Except for variations noted on this sheet all signs will be in conformity with the specification outlined in the current issue of Manual on Uniform Traffic Control Devices for Streets & Highways by the U.S. D.O.T. Numbers subject to signs related to Standards in the Manual, Standard Warning, Regulatory, and Directional Signs shall be as follows:

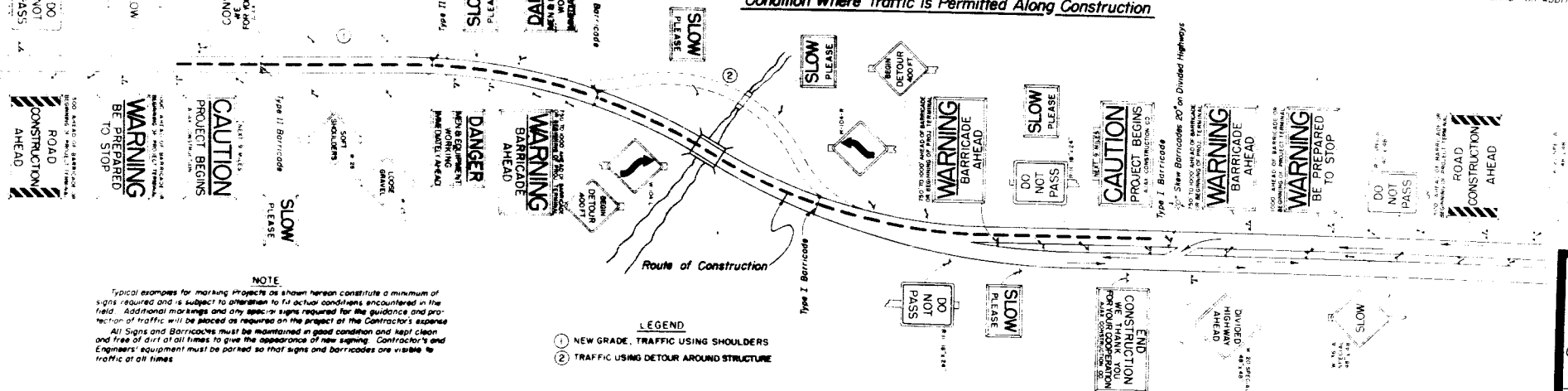
Where traffic is prohibited from the Project, the Detour will be marked by the Department except that the Contractor will provide, erect and maintain Barricades complete with approved Directional Arrows and Regulatory Signs where such barricades are erected and maintained at the ends of the Project and intersecting roads on where detour routes are in advance of the actual project terminal. U.S. or State Route Markers required for the Project will be furnished by the Department and installed by the Contractor. The location and positioning of Advance Warning Signs, Barricades and Speed Control Signs shall be as recommended by the Department's Traffic Operations Section.

No work shall commence on the Project until all Warning Signs are in place and approved by the Engineer. Where speed control appears necessary for protection of the traveling public, such speed control shall be requested from the Department by the Contractor.

All signs are to be in clear view of traffic and are not to be obstructed by equipment, weeds or otherwise running effect.

SEE SHEET 2 OF 2 THIS STANDARD FOR ADDITIONAL NOTES AND DETAILS

Condition Where Traffic is Permitted Along Construction



NOTE

Typical examples for marking Projects as shown herein constitute a minimum of signs required and is subject to alteration to fit actual conditions encountered in the field. Additional markings and any special signs required for the guidance and protection of traffic will be placed as required on the project at the Contractor's expense. All Signs and Barricades must be maintained in good condition and kept clean and free of dirt at all times to give the appearance of new signing. Contractor's and Engineer's equipment must be parked so that signs and barricades are visible to traffic at all times.

LEGEND

- 1 NEW GRADE, TRAFFIC USING SHOULDERS
- 2 TRAFFIC USING DETOUR AROUND STRUCTURE

COLORADO
DEPARTMENT OF HIGHWAYS

Standard Roadway
Construction Traffic Signs

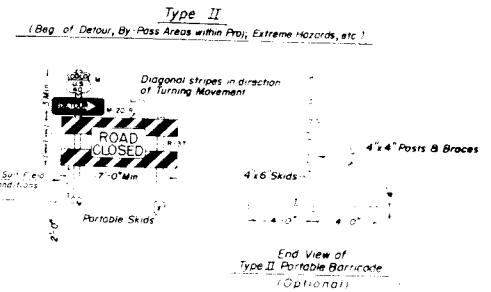
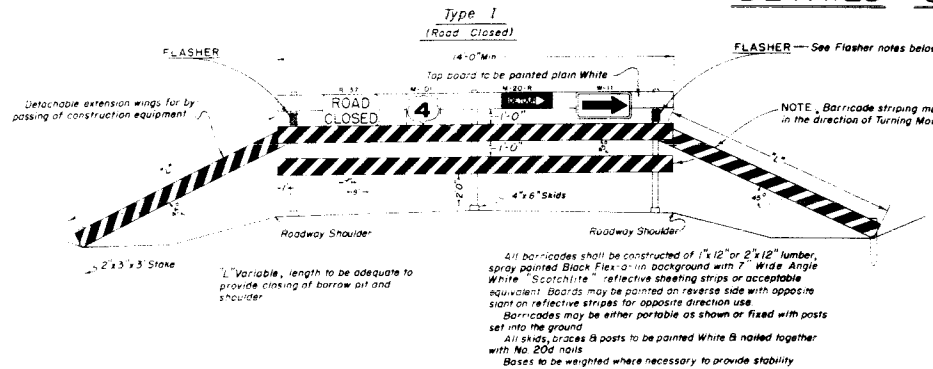
Designed by JCR Approved by J. J. Sullivan
Made by JCR Date: July 22, 1995
Checked by JCR

STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

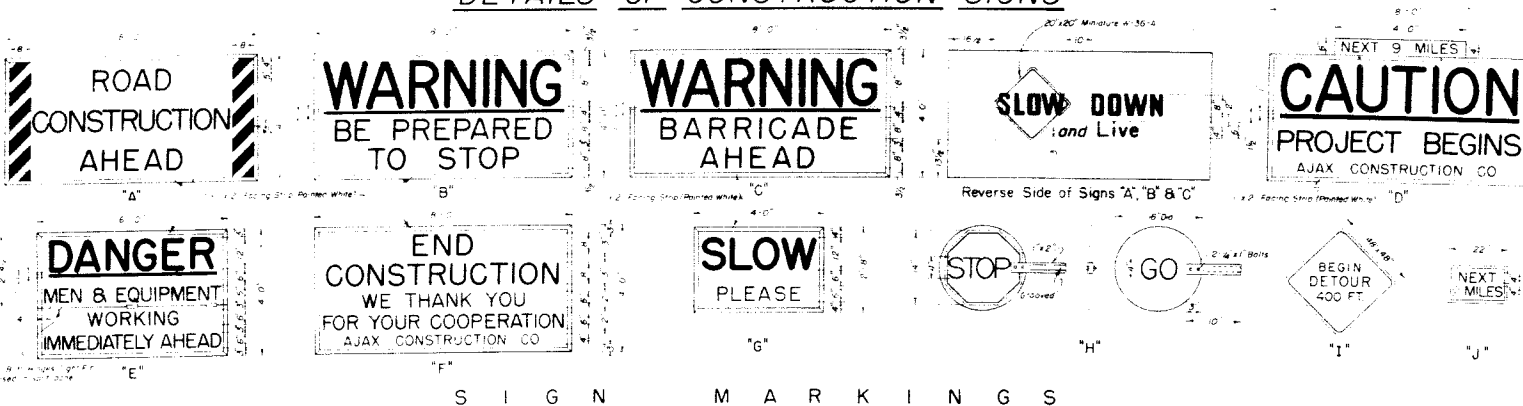
STANDARD M-29-B
(SHEET 2 OF 2 SHEETS)

FED. ROAD DISTRICT NO. COLOR. SHEET NO. TOTAL SHEETS

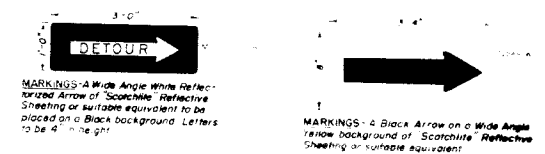
DETAILS OF BARRICADES



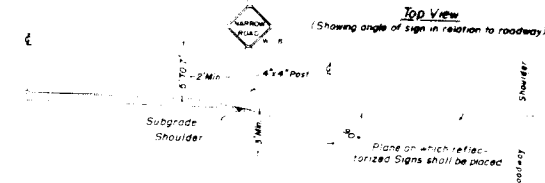
DETAILS OF CONSTRUCTION SIGNS



Details of ReflectORIZED Arrows



Position of Signs Relative to Roadbed & Hazards



S I G N M A R K I N G S

Construction Signs A through and including G shall be made of 3/4" plywood or other material after approval by the Department, with the following reflectorization (Scotchlite reflective sheeting or acceptable equivalent) and per details above.

CONSTRUCTION SIGN "A" - The word "ROAD CONSTRUCTION AHEAD" shall be placed on a 24" strip of wide angle white. This sign shall be placed 1500 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "B" - The word "WARNING" and "BE PREPARED TO STOP" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of barricade or beginning of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "C" - The word "WARNING" and "BARRICADE AHEAD" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of barricade or beginning of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "D" - The word "CAUTION" and "PROJECT BEGINS" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "E" - The word "DANGER" and "MEN & EQUIPMENT WORKING IMMEDIATELY AHEAD" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "F" - The word "END CONSTRUCTION" and "WE THANK YOU FOR YOUR COOPERATION" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "G" - The word "SLOW" and "PLEASE" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "H" - The word "STOP" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "I" - The word "GO" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "J" - The word "BEGIN DETOUR" and "400 FT" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "K" - The word "NEXT 9 MILES" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "L" - The word "SLOW DOWN" and "and Live" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "M" - The word "CAUTION" and "PROJECT BEGINS" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "N" - The word "DANGER" and "MEN & EQUIPMENT WORKING IMMEDIATELY AHEAD" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "O" - The word "END CONSTRUCTION" and "WE THANK YOU FOR YOUR COOPERATION" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "P" - The word "SLOW" and "PLEASE" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "Q" - The word "STOP" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "R" - The word "GO" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "S" - The word "BEGIN DETOUR" and "400 FT" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

CONSTRUCTION SIGN "T" - The word "NEXT 9 MILES" shall be painted white on a 24" strip of wide angle white. This sign shall be placed 1000 feet ahead of project terminal and on both sides of the traveled way in all cases.

NOTE: Warning Signs to be made of 3/8" (Min.) plywood or No. 16 Gauge (Min.) metal and shall be reflectORIZED. Location to be governed by field conditions. Exact location to be marked by the Engineer. In all cases, warning signs are to be placed well in advance of hazard, the distance depending on topography, and existing approach speeds.

COLORADO
DEPARTMENT OF HIGHWAYS

Standard Roadway
Construction Traffic Signs

Designed by JCR
Made by JCR
Checked by JCR

Approved by JCR
Engineer, June 22, 1955

NOTE:
Alignment and Grades as shown are subject to modification during construction after approval by the Denver Office.

Soil data shown on the plans is obtained from best available testing laboratory information. This information is shown for convenience of the Contractor and the Department does not guarantee the accuracy of these tests. If materials not conforming to the data on plans are encountered during construction the grading plan shown on plans will be modified where necessary to secure dense, stable embankments.

Guard Posts are tabulated on Sheet No. 3.

600+00 to Repld Approach to Project

Project Mkr. in place

ADDER E.O.

STA. 600+00 =
BEGIN S 0012(5) =
END S 0012(3)

GRASSING LAND RT. & LT.

R.O.W. Along Existing Property Line

P.O.T. 618+35.1

R.M. NO. 2
HUB & QUANT. TO STA. 6+00
ELEV. 4039.34

S.E. 1/4 SEC. 10

K.I. 11.2

BEGIN SHAPING

The Profile Grade shall be the combined thickness of Sub-Base Material and Surfacing above the profile of the present road, except where grade line is shown.

NPSD = 310'

NPSD = 930'

NPSD = 860'

NPSD = 1110'

CAUTION:
EMBANKMENT
BANK 1
TA. 10 OVERHAUL
2 MILE OVERHAUL
ORROW SOURCE

N.W. 1/4 SEC. 10
T. 24 S., R. 57 W.

FED. ROAD
DIST. NO.
9

DIST.
COLO.

PROJ. NO.
50012(5)

SHEET
NO.
13

TOTAL
SHEETS

N.E. 1/4 SEC. 9

A = 20° 24' 11"
B = 3400'
C = 3779'
L = 146'
R = 1910'
Hor. 90° = 830'

P.O.T. 6.57+17.5

647+18.5 END FENCE - T
CATTLE GUARD,
26 C.C. RHW

P.C. 648+72.2

GRAZING LAND RT. & LT.

652+75 - Road Field
Approach, Rt. & Lt.
(For Stock only)

651+19 W

S.W. 1/4 SEC. 3

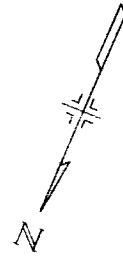
N.P.S.D. = 1140'

N.P.S.D. = 930'

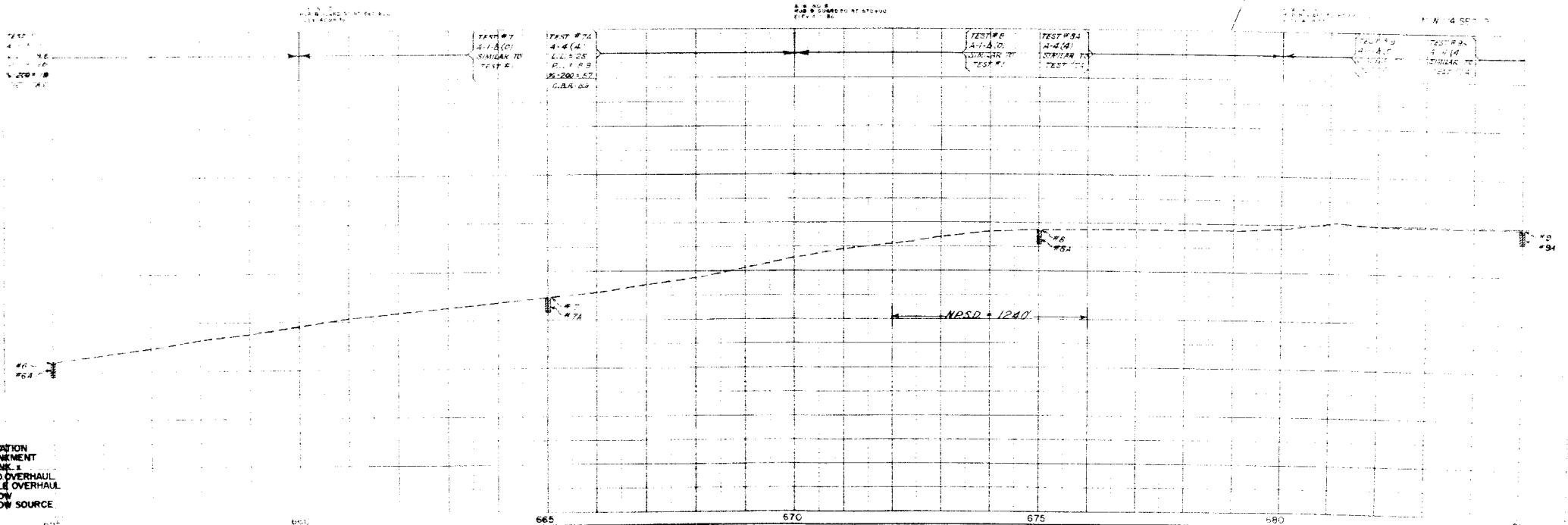
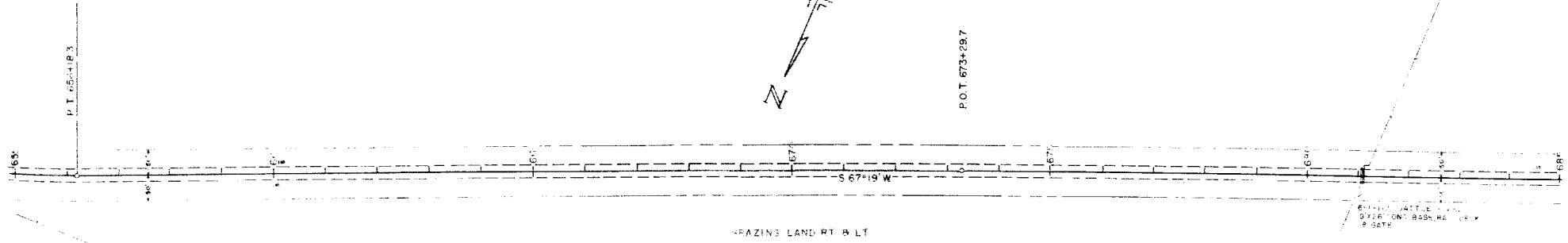
CAVATION
BANK X
YO. OVERHAUL
MILE OVERHAUL
TROW SOURCE

NE 1/4 SEC. 9
T.24 S., R.57 W

FED. ROAD DIST. NO. 9	DIST COLO	PROJ. NO. 50012(5)	SHEET NO. 14	TOTAL SHEETS
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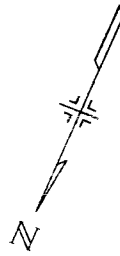


P.O.T 673+29.7



EXCAVATION
EMBANKMENT
STA TO OVERHAUL
YD. MILE OVERHAUL
BORROW SOURCE

NW 1/4 SEC 9
T 24S, R 57W



FED. ROAD
DIST. NO.
9

DIST. NO. 9
COLO. S 0012(5)
SHEET NO. 15
TOTAL SHEETS 15
SE 1/4 SEC 9



GRAZING LAND RT. 8 LT.

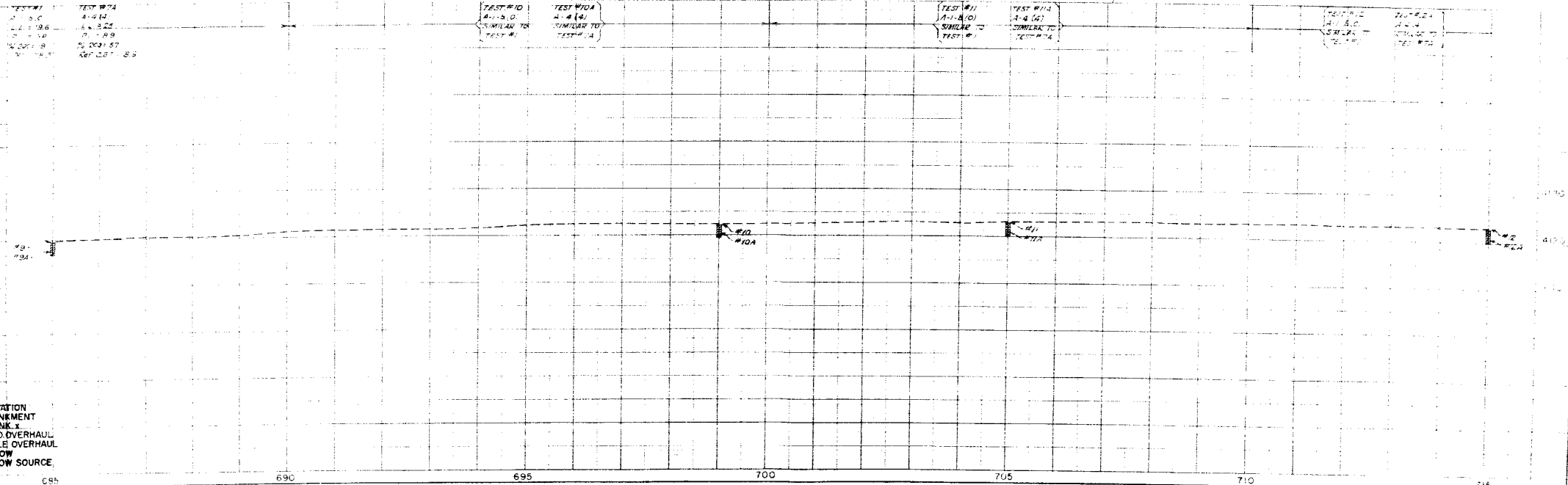
PI 690+00
S 67° 16' W

PI 703+75.4
S 10° 30' W

B.M. NO. 11
A.B. & GARDEN RT. TO GARDEN
LEV. 4 87.00

B.M. NO. 12
A.B. & GARDEN RT. TO GARDEN
LEV. 4 87.00

B.M. NO. 13
A.B. & GARDEN RT. TO GARDEN
LEV. 4 87.00



CAUTION
BANKMENT
BANK
LAYO OVERHAUL
MILE OVERHAUL
ARROW
ARROW SOURCE

CSS

690

695

700

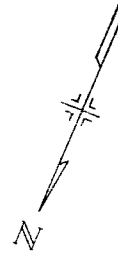
705

710

715

SE 1/4 SEC 8
T 24 S, R 57 W

FED. ROAD DIST. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0012(5)	16	
S.W. 40' R.				



P.O.T. 725+00

P.O.T. 745+00

GRAZING LAND RT & LT

S 67°19' W

7.08 L.V.
11.17 P.C.

TEST #1
A-B-C
1-1-1
1-1-1
1-1-1

TEST #13
A-B-C
1-1-1
1-1-1
1-1-1

TEST #14
A-B-C
1-1-1
1-1-1
1-1-1

TEST #14
A-B-C
1-1-1
1-1-1
1-1-1

TEST #14
A-B-C
1-1-1
1-1-1
1-1-1

TEST #14
A-B-C
1-1-1
1-1-1
1-1-1

TEST #14
A-B-C
1-1-1
1-1-1
1-1-1

N.P.S.D. = 930'

EXCAVATION
EMBANKMENT
EMBANK. 1
STA. YD. OVERHAUL
YD. MILE OVERHAUL
BORROW
BORROW SOURCE

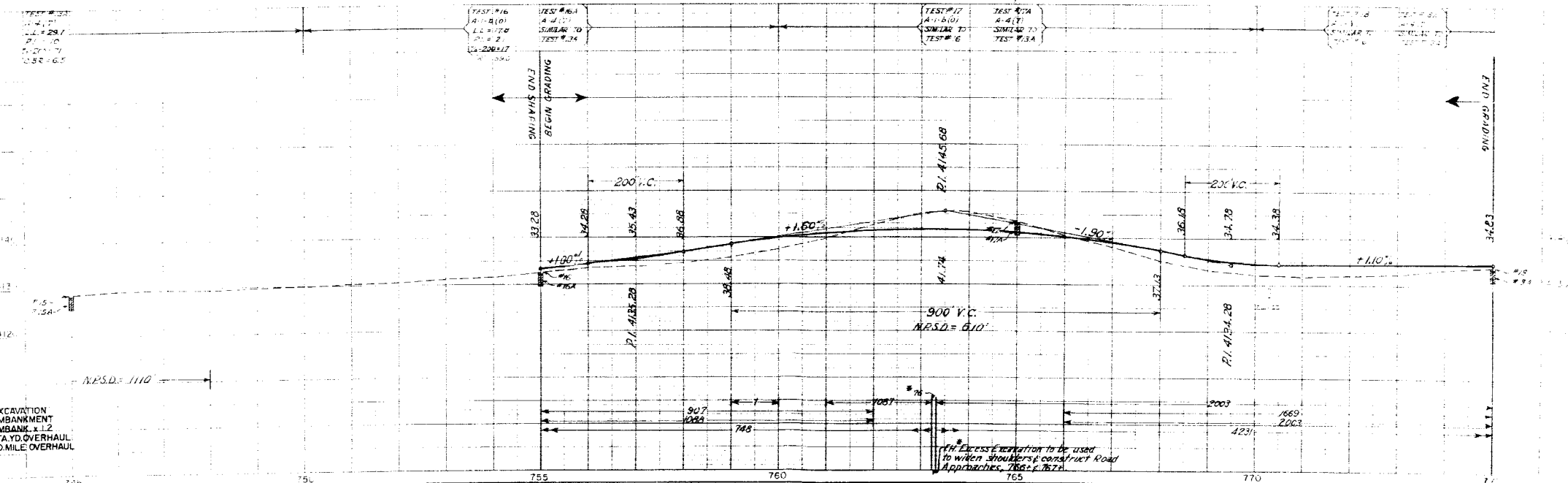
767+37 ~ Req'd.
Road Approach Lt.

766 + 50 = Req'd.
Road Approach, Rt

FED ROAD DIST NO	DIST	PRJ NO	SHEET NO	TOTAL SHEETS
9	COLO	500-2151	17	
SECTION 4 E 1				

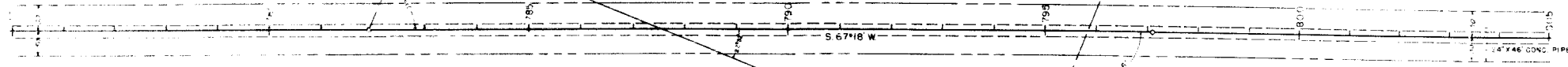
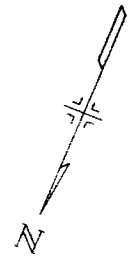
GRAZING LAND RT. & LT.

7 12 10
 100 5 1000 50 100 100
 100 100 100 100 100



NE 1/4 SEC 18
T.24 S., R.57 W.

FED. ROAD DIST. NO. 9
DIST. COLO. S 0012(5)
PROJ. NO. 18
SHEET NO. 18
TOTAL SHEETS 18
NW 1/4 SEC 18



PASTURE LAND R. BLT

787164.6
N 69°50' W

320'
N 79°56' W

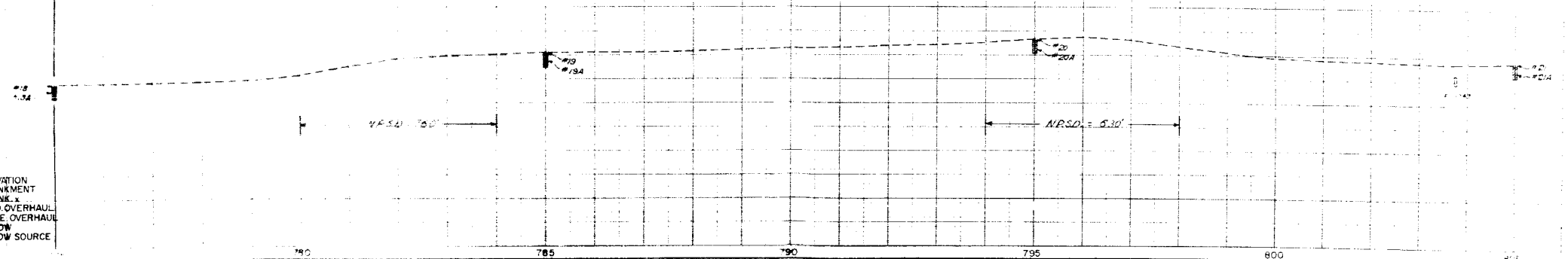
795°84.4

P.O.T. 797+10.4

SE 1/4 SEC 7

TEST #134 A-4.0 C.L. 29.7 P.L. C T.L. 24.0 T.S. 1.5	TEST #10 A-5.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5	TEST #19 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #16	TEST #134 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #134	TEST #20 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #16	TEST #204 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #16	TEST #20 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #16	TEST #204 A-4.0 C.L. 17.8 P.L. 2.0 T.L. 2.0 T.S. 1.5 SIMILAR TO TEST #16
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REGIN SHAPING

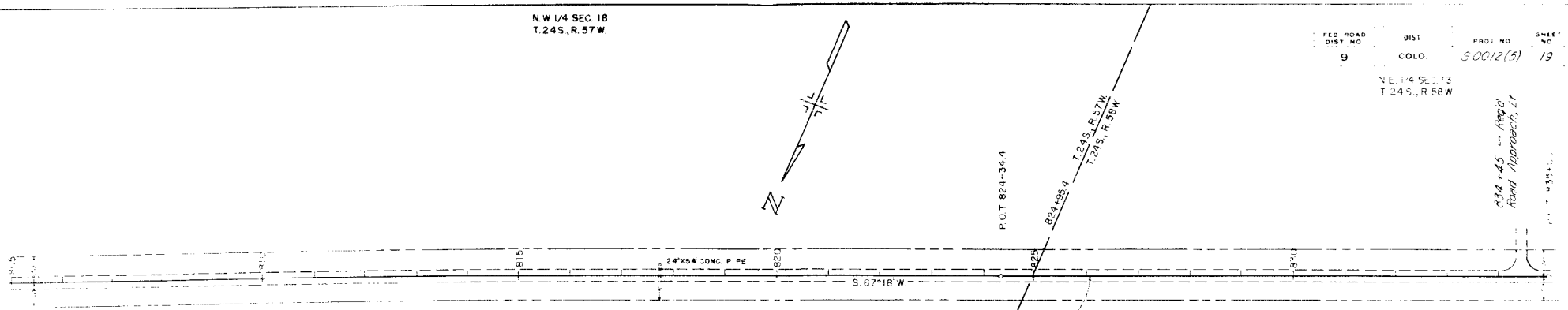


N.W. 1/4 SEC. 18
T. 24 S., R. 57 W.

FED. ROAD DIST. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	50012(5)	19	

NE 1/4 SEC. 13
T. 24 S., R. 58 W.

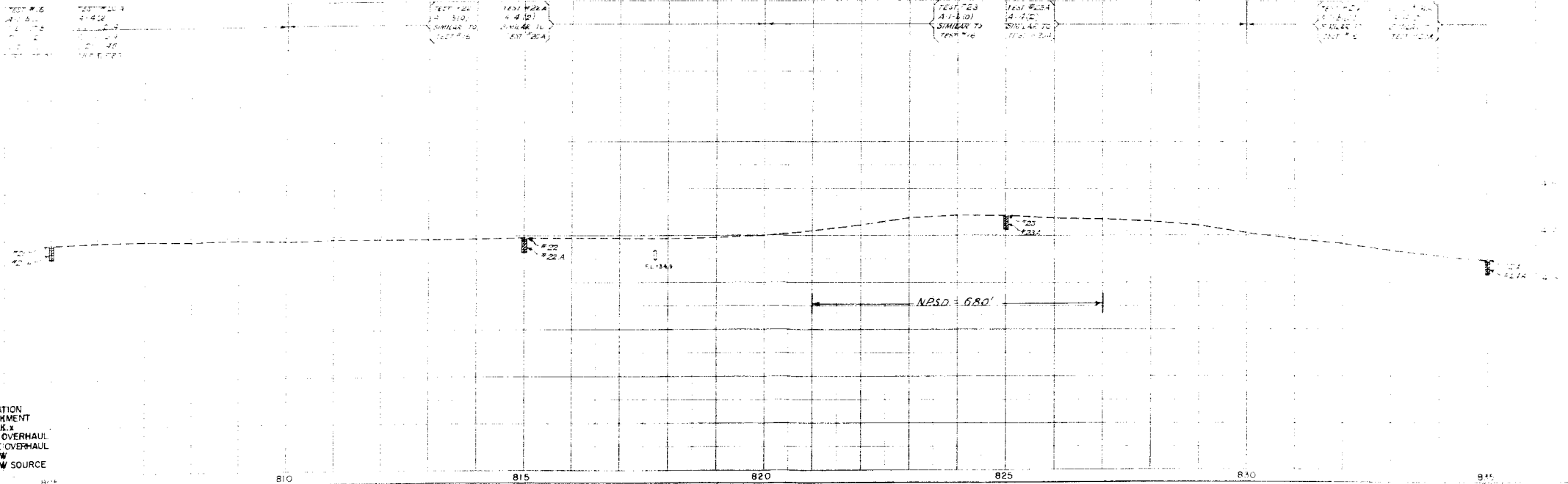
834+45 - Appd.
Road Approach, Lt.



GRAZING LAND RT. & LT.

1445.0' TO SEC. 10R

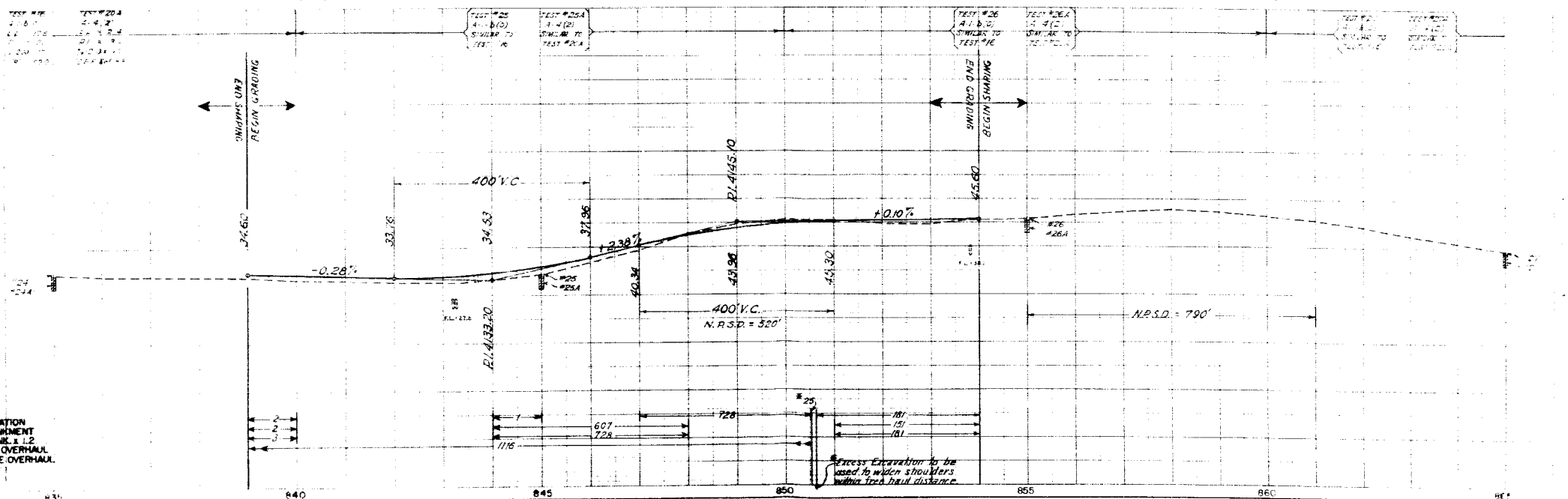
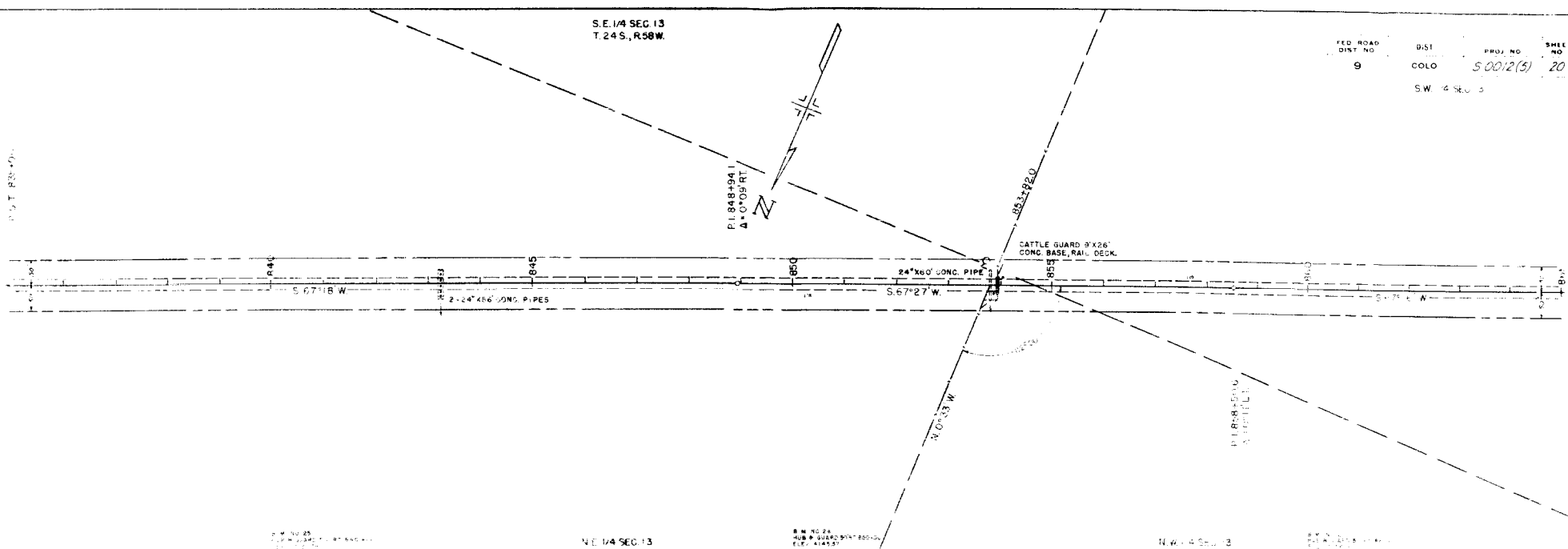
S.W. 1/4 SEC. 18
T. 24 S., R. 57 W.



AVATION
BANKMENT
BANK X
YD. OVERHAUL
MILE OVERHAUL
CROW SOURCE

S.E. 1/4 SEC 13
T.24 S., R.58 W.

FED. ROAD DIST. NO. 9
DIST. COLO. 5.0012(3)
SHEET NO. 20
TOTAL SHEETS
SW 1/4 SEC 13



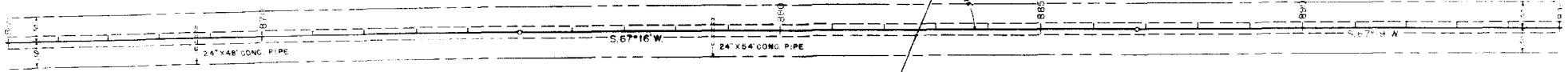
S.W. 1/4 SEC. 13
T 24S, R 56W.

FFD ROAD DIST. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0012(5)	21	

S.E. 1/4 SEC. 14



P.O.T. 875+00



GRAZING LAND RT. & LT.

PL 886+87.4
AT 6003 RT.

882+69.7

S.W. 1/4 SEC. 13
RUB. & QUARRY RT. SEC. 100
C.P. 7.21942

S.W. 1/4 SEC. 14
RUB. & QUARRY RT. SEC. 100
C.P. 7.21942

TEST #28
4.2' 4.0'
SIMILAR TO
TEST #16

TEST #28A
4.2' 4.0'
C.C. = 19.2'
2.1' 1.8'
C.B.R. = 12.2

TEST #29
4.2' 4.0'
SIMILAR TO
TEST #16

TEST #29A
4.2' 4.0'
SIMILAR TO
TEST #28A

TEST #30
4.2' 4.0'
SIMILAR TO
TEST #16

TEST #30A
4.2' 4.0'
SIMILAR TO
TEST #28A

N.P.S.D. = 660'

N.P.S.D. = 930'

EXCAVATION
EMBANKMENT
EMBANK. &
STAYD OVERHAUL
1/2 MILE OVERHAUL
BORROW
BORROW SOURCE

SE 1/4 SEC. 14
T. 24 S., R. 68 W.

N.W. 1/4 SEC. 23

FED. ROAD
DIST. NO.
9

DIST
COLO.

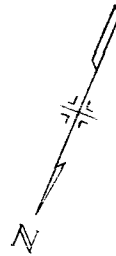
PROJ. NO.
S 0012(5)

SHEET
NO.
22

TOTAL
SHEETS

P.O. 900+00

P.O. 915+00



GRAZING LAND RT. & LT.

S.W. 1/4 SEC. 20
P.O. 900+00

S.W. 1/4 SEC. 14

TEST #1
4.1-6.0
4.1-6.0
4.1-6.0
4.1-6.0

TEST #2
4.1-6.0
4.1-6.0
4.1-6.0
4.1-6.0

TEST #3
4.1-6.0
4.1-6.0
4.1-6.0
4.1-6.0

TEST #4
4.1-6.0
4.1-6.0
4.1-6.0
4.1-6.0

TEST #5
4.1-6.0
4.1-6.0
4.1-6.0
4.1-6.0

#30
#32

ED
N 1/4 SEC. 17

#3
#31

#32

#32

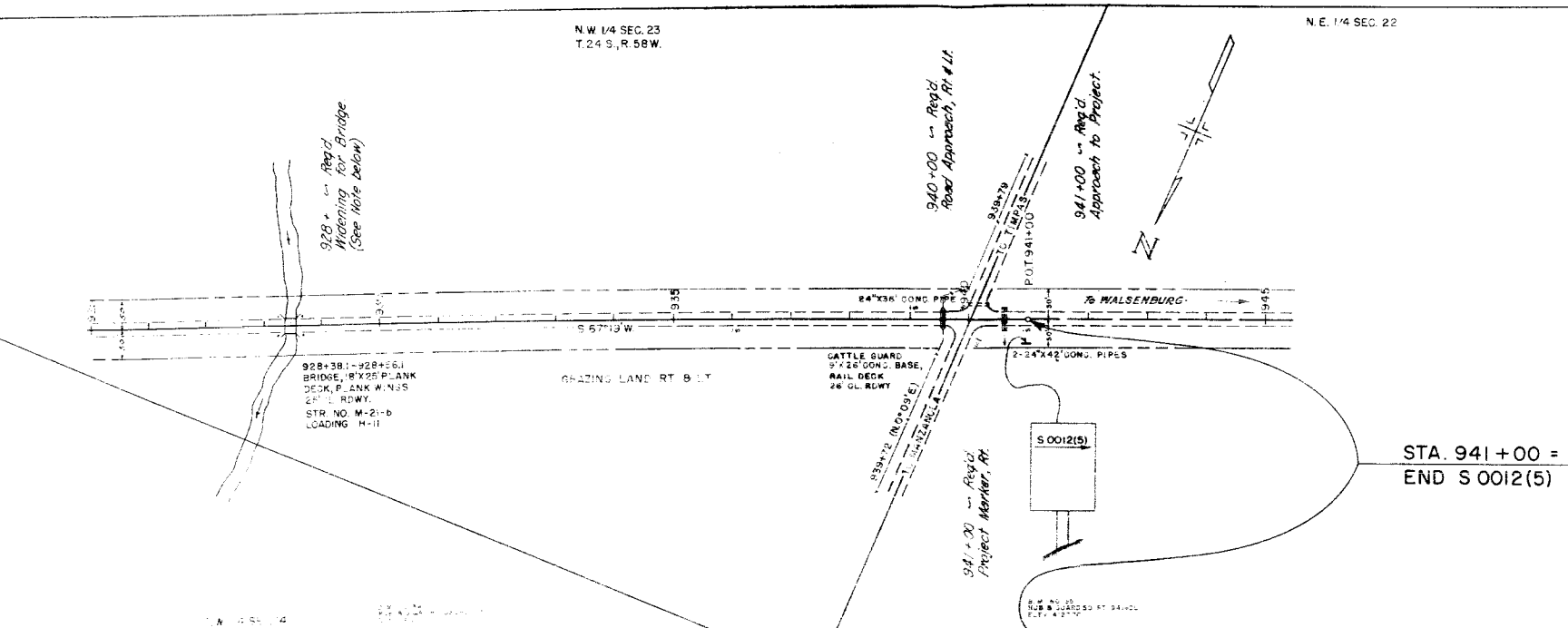
N.T.S.D. > 1:300

EXCAVATION
EMBANKMENT
STAYD. OVERHAUL
10. MILE OVERHAUL
BORROW SOURCE

N.W. 1/4 SEC. 23
T.24 S., R.58 W.

N.E. 1/4 SEC. 22

FED. ROAD DIST. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0012(5)	23	



TEST #312
4.4.10
LL = 34.9
P = 67
T = 22.3
C = 2.3

TEST #312
4.4.10
LL = 34.9
P = 67
T = 22.3
C = 2.3

Note: It is estimated that 700 cu yds. of unclassified excavation will be required to reconstruct the bridge. This material is to be used for widening of shoulders within the project limits.

Proportional surface over the bridge, estimated to be five inches thick, is to be removed to appropriate level and disposed of. This material will be included in the price for unclassified excavation and disposed material to be used to widen shoulders within the project limits.

Any damage to the bridge resulting from Contractor's operations will be repaired by the Contractor at his expense.

EXCAVATION
EMBANKMENT
BRIDGE
10 YD. OVERHAUL
1 MILE OVERHAUL
CROW SOURCE

N.B.S.D. = 1900'

930

935

940

945

Excavation
Cu. Yds. Area

Embankment
Area Cu. Yds.

Excavation
Cu. Yds. Area

Embankment
Area Cu. Yds.

RD. ROAD
DIVISION NO. DISTRICT
9 2010 5-12-20

2-

SUMMARY OF EARTHWORK QUANTITIES

EXCAVATION

FROM CROSS SECTIONS
ESTIMATED FOR SUBSIDENCE
LIST OF STRUCTURES AS EXCAVATION
LIST OF STRUCTURES AS EMBANKMENT

4,104
410
700
0

TOTAL 5,214 Cu. Yds.

NOTE:

THERE IS NO UNCLASSIFIED
DITCH EXCAVATION ESTIMATED
FOR THIS PROJECT.

EMBANKMENT

FROM CROSS SECTIONS

3,336

TOTAL 3,336 Cu. Yds.

EMPAVEMENT FACTOR

FROM CROSS SECTIONS (1.25 FACTOR)

4,003

TOTAL 4,003 Cu. Yds.

EXCESS EXCAVATION

FROM CROSS SECTIONS

101

TOTAL 101 Cu. Yds. {To be disposed of as
indicated on Plans.

STATION YARD OVERHAUL

FROM PLANS DIAGRAM
ESTIMATED FOR SUBSIDENCE

6,095
610

TOTAL 6,705 Sta Yds O.H.

YARD MILE OVERHAUL

NONE ESTIMATED FOR PROJECT