

STATE DEPARTMENT OF HIGHWAYS

DIVISION OF HIGHWAYS—STATE OF COLORADO

PER ROW & BUTLER'S
UNDER FC 093-1(1)

| | | | | | |
|---------------|-----------------|-----------|-------|--------------|---|
| PROJECT NO. | FR-HES 093-1(6) | SHEET NO. | 1 | TOTAL SHEETS | 3 |
| AS CONTRACTED | | | | | |
| NO. REVISIONS | REVISED | DATE | TOTAL | | |
| REVISIONS | | | | | |
| ○ | ○ | ○ | ○ | ○ | ○ |

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. FR-HES 093-1(6) STATE HIGHWAY NO. 93 JEFFERSON COUNTY

See Sheet 8
For Tabulation of Length
and Design Data.

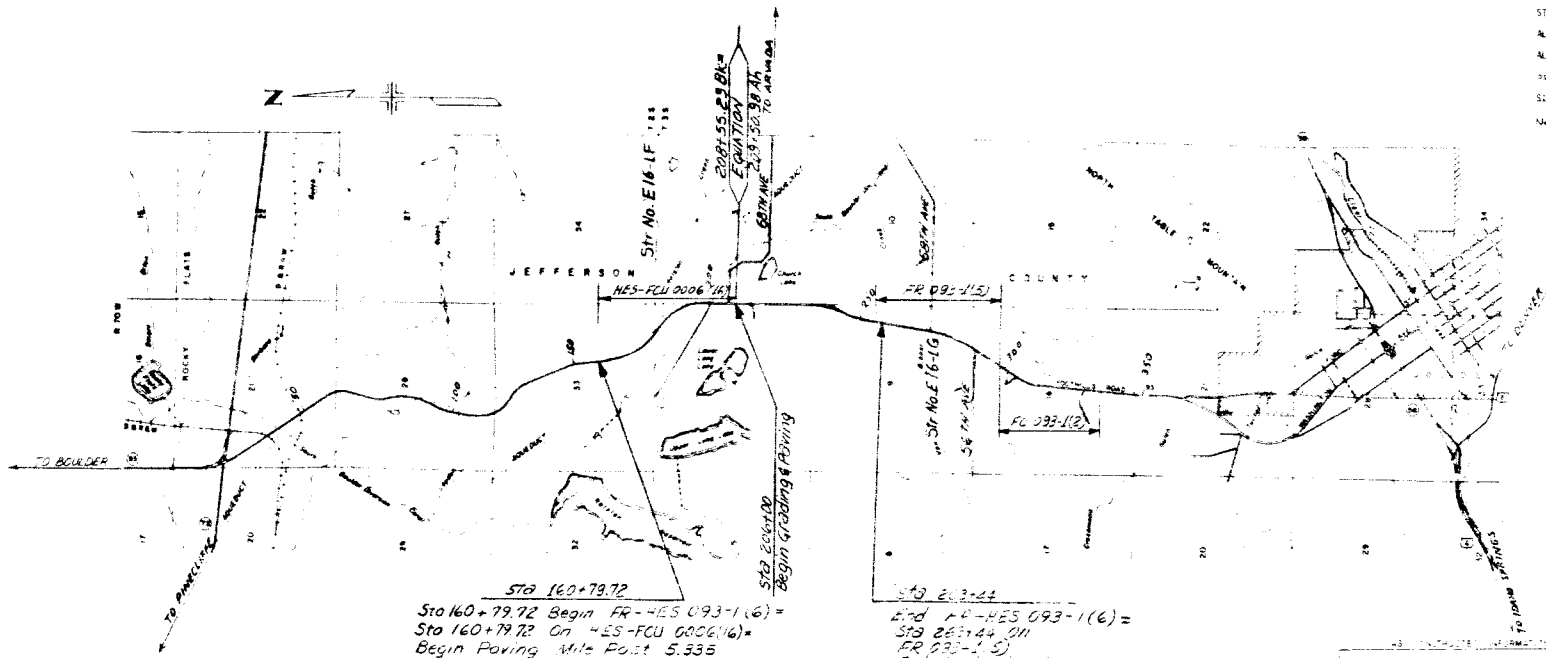
SCALES OF ORIGINAL DRAWINGS

ON PLAN: 1 IN = 100 FT
ON PROFILE: 1 IN = 100 FT HORIZONTAL
1 IN = 10 FT VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
GROSS LENGTH OF PROJECT: 19,160.06 Lin Ft = 1.324 Miles
NET LENGTH OF PROJECT: 19,160.06 Lin Ft = 1.324 Miles

| TITLE SHEETS | SHEET NO. |
|---|-----------|
| TITLE SHEET | 1 |
| STANDARD PLANS LIST | 2 |
| TYPICAL SECTIONS | 3-4 |
| GENERAL NOTES AND SUMMARY OF EARTHWORK QUANTITIES | 5 |
| SUMMARY OF APPROXIMATE QUANTITIES | 6-7 |
| FENCING REQUIREMENTS, TABULATION OF LENGTH AND DESIGN DATA AND DELINEATION TABULATION | 8 |
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| ALIGNMENT PLAN OF DETOUR | 11 |
| ALIGNMENT PLAN AND PROFILE | 12-13 |
| PROFILE OF ROAD APPROACHES | 14 |
| SCOURING AND STRIPING PLANS | 15-18 |
| No. REVISIONS | 2, 11 |

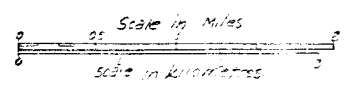
NEW AND REVISED STANDARDS
MINOR CHANGES TO PLAN & PROFILE TO BE MADE BY SHEET NO. 18, 19, 20



Sta 160+79.72
Sta 160+79.72 Begin FR-HES 093-1(6)
Sta 160+79.72 On HES-FCU 0906(16)
Begin Paving Mile Post 5.335

Sta 206+00
Sta 206+00 Begin grading & paving

Sta 283+44
Sta 283+44 End FR-HES 093-1(6)
Sta 283+44 End Paving
End grading & paving
Mile Post 3.463



CONTRACTOR: Robert R. McLean Co.
PROJECT ENGINEER: John A. Smith
PROJECT SUPERVISOR: John A. Smith
ALL CONTRACTS MADE UNDER: FC 093-1(6)
DATE: 12/1/55
JLH

APPROVED
James F. Smith
12/1/55

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

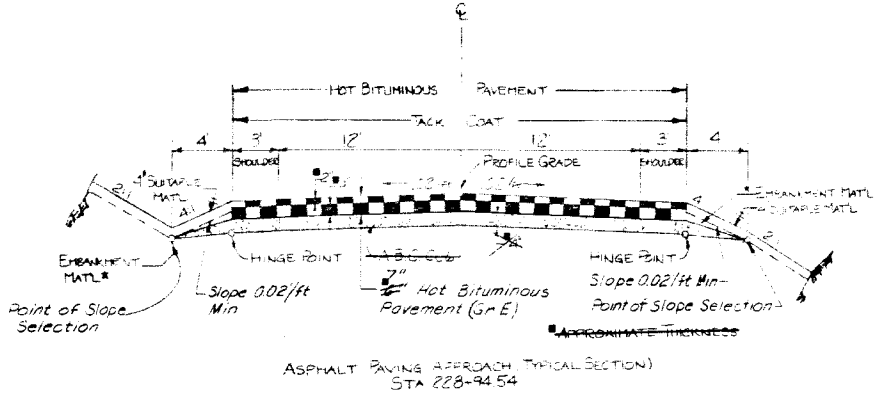
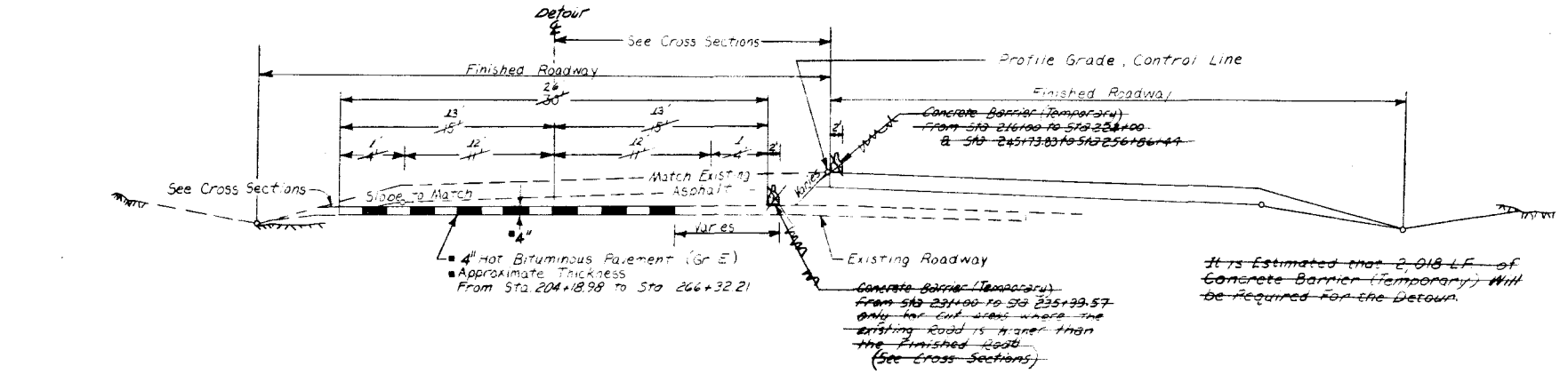
DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

STANDARD PLANS LIST

M & S STANDARDS - JANUARY, 1982

| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------------------|----------|----------------|-----------|--------------|
| VIII | COLORADO | PR-455 (RR-16) | 4 | 8 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | | REVISED | 2 | VOID |

TYPICAL SECTION OF DETOUR AND ROAD APPROACHES

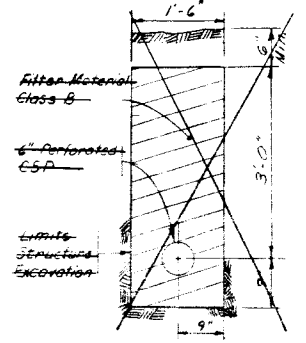


- † THE CONTRACTOR WILL BE REQUIRED TO PLACE EMBANKMENT MATERIAL TO THIS LINE AFTER COMPLETION OF PAVING OPERATION. MATERIAL WILL BE OBTAINED FROM EXCESS EXCAVATION.
 - ★ THE CONTRACTOR WILL BE REQUIRED TO PLACE EMBANKMENT MATL TO THIS LINE AFTER COMPLETION OF PAVING OPERATION.
- THICKNESS OF EACH LIFT MAY BE CHANGED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.

SUMMARY OF EARTHWORK QUANTITIES

| | | | | |
|-------------------------|----------|----------------|-----------|--------------|
| FEDERAL ROAD REGION NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | FR-465 193-116 | 5 | 18 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | | REVISED | VOID | |

| INDEX | | | Project Totals | |
|--|------|-------|----------------|---------|
| BOOK | PAGE | SHEET | | |
| <u>Unclassified Excavation (Haul)</u> | | | CU. Yd. | FINAL |
| * Roadway (From Computer) | | | 254,790 | |
| Removal of Detour | | | 2,048 | |
| Structure Quantities as Embankment | | | 2,161 | |
| * Subexcavation (Sta 226+50 TO 243+00) | | | 8,673 | |
| To Replace 2' Subexcavation (226+50 TO 243+00) | | | 9974 | |
| Estimated for Cut Slope Treatment | | | 1,013 | |
| Suitable Material | | | 10,728 | |
| TOTAL | | | 289,387 | 289,387 |
| <u>Compaction (AASHTO T99)</u> | | | CU. Yd. | |
| Embankment (Net) | | | 210,347 | |
| To Replace 2' Subexcavation (226+50 TO 243+00) | | | 8,673 | |
| Base of Cuts and Fills (Roadway) | | | 26,022 | |
| Base of Cuts and Fills (Detour) | | | 1,054 | |
| Embankment for Detour | | | 2,048 | |
| Structure Quantities as Emb (Net) | | | 1,879 | |
| TOTAL | | | 250,023 | 250,023 |
| <u>WETTING</u> | | | M. GAL | |
| Compaction | | | 10,001 | |
| Aggregate Base Course | | | 159 | |
| Dust Palliative | | | 200 | |
| TOTAL | | | 10,360 | 870 |
| For Information Only | | | | |
| <u>Roadway Quantities Balance</u> | | | CU. Yd. | |
| <u>Excavation</u> | | | | |
| Unclassified | | | 254,790 | |
| TOTAL | | | 254,790 | |
| <u>Embankment (Net)</u> | | | | |
| Roadway (From Computer) | | | 210,347 | |
| TOTAL | | | 210,347 | |
| <u>Embankment K1.15</u> | | | | |
| Roadway (From Computer) | | | 241,901 | |
| * Excess Excavation | | | 12,889 | |
| TOTAL | | | 254,790 | |



Detail 495 underlain from Sta 246+96 to Sta 247+44 (No Excavation by the Engineer)

It is estimated that 3846 cu. yds of Removal of Asphalt Material from the Detour will be required for this project.

GENERAL NOTES
FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT STRUCTURE MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
TACK COAT DILUTED EMA, ASPH. (SLW-SETTING) @ 0.1 GAL/SQ. YD. (DILUTED)
BITUMINOUS PAVEMENT # 1 @ 1.0 LBS. PER SQ. YD./INCH
AGGREGATE BASE COURSE (LESS 6") @ 1.33 LBS. PER CU. FT.
ASPHALT REGENERATING AGENT @ 0.09 GAL/SQ. YD. (DILUTED)
DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.
ASPHALT REGENERATING AGENT SHALL BE OBTAINED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. RATES OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.
WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED. THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVEMENT:
1. AN ELECTRONICALLY CONTROLLED RATE DEVICE AT LEAST 10 FEET IN LENGTH.
2. AN ELECTRONICALLY CONTROLLED SHOOTER OR SHOE.
3. PAVEMENT WILL BE FURNISHED WITH A 6" TAPERED SHOULDER AND 1500 FEET OF CONTROL LINE AND STAKES.
ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.
ROAD APPROACHES WHICH MEET THE BITUMINOUS PAVEMENT SHALL BE TACKED AND A 1/4" THICKNESS OF PAVEMENT PLACED AS FOLLOWS:
PUBLIC APPROPRIABLES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE PAVED 50 FEET OUT FROM EDGE OF SHOULDER OR 25 FEET FROM RIGHT OF WAY LINE, WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED A FEET OUT FROM EDGE OF SHOULDER.
DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
FULL DEPTH OF ALL EMBANKMENTS
BASES OF CUTS AND FILLS 1 FOOT
EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSTRATA TO MOISTURE-DENSITY CONTROL AND NOT BE WETTED SEPARATELY.
FLEXIBLE CONDUITS ON THIS PROJECT WITH HELICAL CORRUGATIONS, JOINED BY DIMPLED CONNECTING HANS, SHALL USE A SEALING JOINTING OR GASKET WITH THE CONNECTING BAND.
SEEDING, SOIL PREPARATION, APPLICATION WITH COMMERCIAL FERTILIZER, AND MULCHING WILL BE APPLIED PER STANDARD SPEC 20 (2000) FOR ROADWAY AND SIDE DRAIN AREAS ON ALL DISTURBED AREAS NOT SURFACED.
THE FOLLOWING TYPES AND RATES SHALL BE USED:

| COMMON NAME | BOTANICAL NAME | RATE PLS/ACRE ROUNDS |
|---------------------------|------------------------|----------------------|
| SIDE-OATS GRASS | SPLOETEA PATENSIS/DOLA | 5 |
| WESTERN WHEATGRASS | AROPHYUM SPICATUM | 7 |
| WHITE BUTEN COOPER | TRIPLOID W. SPENS | 4 |
| BUFFALO GRASS (STRAFFORD) | BUCHLOE DACTYLOIDES | 4 |
| ISMGOTH BROME | BROME INERMIS | 5 |
| CRESTED WHEATGRASS | AROPHYUM TRISTATUM | 7 |
| STANLEY STRAWGRASS | | |
| TOTAL PLS/ACRE SEEDING | | 32 |

MULCHING MATERIAL: * NATIVE HAY 2 TONS PER ACRE

| COMMERCIAL FERTILIZER (AMMONIUM PHOSPHATE 18-46-0) | RATE LBS/ACRE |
|--|---------------|
| AVAILABLE N | 45 |
| AVAILABLE P | 110 |

* 4 TONS PER ACRE NATIVE HAY WHICH SHALL BE MECHANICALLY CRIMPED INTO SOIL.

PROJECT TOTALS

| | |
|---------------------------|----------------------|
| SEEDING (NATIVE) | 832 *** LBS |
| MULCHING | 52 *** TONS |
| FERTILIZER (AVAILABLE N) | 1170 *** LBS |
| FERTILIZER (AVAILABLE P) | 2390 *** LBS |
| SOIL PREPARATION (NATIVE) | 26 *** TONS PER ACRE |
| TOTAL | 0 *** TONS PER ACRE |

Concrete Pipe Joint Fasteners as shown on M standard are required on all concrete culvert installations excluding side drains

* Excess Excavation to be disposed as follows:
10,728 CU. Yds. to be used for suitable material and 2,161 CU. Yds. to be used for quantities as Embankment
Includes 9,100 sq. yds. of Asphalt mat from the Existing Road and Approach at Sta 228+94.54.
Three feet of Subgrade Treatment will be required through the Cut Section from Sta 224+50 to Sta 243+00. The treatment shall be done as follows:
Excavate 2 feet, add water and compact the bottom one foot. Replace the excavated 2 feet with moisture and Density control in 6 inches lifts. Density for the 3 feet shall be no less than 98% of standard density (AASHTO T99) Moisture shall be optimum or greater.

SUMMARY OF ~~APPROXIMATE~~ ^{FINAL} QUANTITIES

| | | | | | | |
|----------------|---------|---------------------------|----------|------------------|-----------|--------------|
| AS CONSTRUCTED | | FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| NO REVISIONS | REVISED | VII | COLORADO | FA-455 (P-3) (6) | 6 | 18 |

| INDEX | FORM NO. | CONTRACT ITEM NO. | CONTRACT ITEM | UNIT | | | | | | | | | | | PROJECT TOTALS | | DIFF | % PLAN |
|-------|----------|-------------------|--|----------|--|--|--|--|--|--|--|--|--|--|----------------|-----------|---------|--------|
| | | | | | | | | | | | | | | | PLAN | AS CONST. | | |
| 305 | 1 | 201 | Clearing and Grubbing | LS | | | | | | | | | | | | | | 110 |
| 305 | 2 | 202 | Removal of Structure | EACH | | | | | | | | | | | 6 | 7 | +1 | 117 |
| 305 | 3 | 202 | Removal of Asphalt mat | SQ. YD. | | | | | | | | | | | 7,910 | 3846 | -4064 | 49 |
| 305 | 4 | 202 | Removal of Pavement marking | SQ. FT. | | | | | | | | | | | 2,000 | 2665 | +665 | 139 |
| 305 | 5 | 202 | Removal of Ground Signs | EACH | | | | | | | | | | | 10 | 10 | +0 | 100 |
| 305 | 6 | 202 | Removal of Fence | LIN. FT. | | | | | | | | | | | 8,321 | 7750 | -571 | 93 |
| 305 | 7 | 203 | Unclassified Excavation (Haul) | CU. YD. | | | | | | | | | | | 289,387 | 289,387 | 0 | 100 |
| 305 | 8 | 203 | Compaction (AASHTO T99) | CU. YD. | | | | | | | | | | | 250,023 | 250,023 | 0 | 100 |
| 305 | 9 | 204 | Structure Excavation | CU. YD. | | | | | | | | | | | 1,182 | 1165 | +3 | 100 |
| 305 | 10 | 206 | Structure Backfill (Class 1) | CU. YD. | | | | | | | | | | | 279 | 265 | -14 | 95 |
| 305 | 11 | 206 | Structure Backfill (Class 2) | CU. YD. | | | | | | | | | | | 397 | 407 | +10 | 103 |
| 305 | 12 | 206 | Filter Material (Class B) (Deleted) | CU. YD. | | | | | | | | | | | 31 | 0 | -31 | 0 |
| 7 | 13 | 209 | Wetting | M. GAL | | | | | | | | | | | 10,360 | 875 | -9485 | 8 |
| 105 | 14 | 209 | Water (Landscaping) (Deleted) | M. GAL | | | | | | | | | | | 500 | 0 | -500 | 0 |
| 305 | 15 | 210 | Reset Mailbox Structure | EACH | | | | | | | | | | | 3 | 3 | 0 | 100 |
| 305 | 16 | 210 | Reset Ground Sign | EACH | | | | | | | | | | | 4 | 1 | -3 | 25 |
| 305 | 17 | 210 | Reset Fence | LIN. FT. | | | | | | | | | | | 1,311 | 1,707 | +396 | 131 |
| 305 | 18 | 210 | Reset Gate | EACH | | | | | | | | | | | 1 | 10 | +9 | 100 |
| 305 | 19 | 210 | Rebuild Cattle Guard | EACH | | | | | | | | | | | 1 | 1 | 0 | 100 |
| 305 | 20 | 212 | Seeding (Native) | LB | | | | | | | | | | | 640 | 832 | +192 | 130 |
| 305 | 21 | 212 | Fertilizer (Available N) | LB | | | | | | | | | | | 900 | 1,170 | +270 | 130 |
| 305 | 22 | 212 | Fertilizer (Available P) | LB | | | | | | | | | | | 2,300 | 2,990 | +690 | 130 |
| 305 | 23 | 212 | Soil Preparation (Native) | ACRE | | | | | | | | | | | 20 | 260 | +240 | 130 |
| 305 | 24 | 213 | Mulching | TON | | | | | | | | | | | 40 | 5,200 | +5,160 | 130 |
| 305 | 25 | 304 | Aggregate Base Course (Class 6) (Haul) | TON | | | | | | | | | | | 1,057 | 11,142 | +10,085 | 96 |
| 305 | 26 | 403 | Hot Bituminous Pavement (Patching, Overlays and Asphalt) | TON | | | | | | | | | | | 50 | 69,371 | +69,321 | 138 |
| 305 | 27 | 403 | Hot Bituminous Pavement (Grading, Haul and Asphalt) | TON | | | | | | | | | | | 27,461 | 28,577 | +1,116 | 104 |
| 67 | 28 | 411 | Emulsified Asphalt (Slow Setting) | Gal | | | | | | | | | | | 13,731 | 55,213 | +41,482 | 40 |
| 105 | 29 | 411 | Asphalt Rejuvenating Agent (Deleted) | Gal | | | | | | | | | | | 2,190 | 0 | -2,190 | 0 |
| 305 | 30 | 601 | Concrete Class A (Wall) | CU. YD. | | | | | | | | | | | 7 | 7 | 0 | 100 |
| 305 | 31 | 602 | Reinforcing Steel | LB | | | | | | | | | | | 205 | 265 | +60 | 100 |
| 305 | 32 | 603 | 30 Inch Reinforced Concrete Pipe | LIN. FT. | | | | | | | | | | | 152 | 168 | +16 | 111 |
| 305 | 33 | 603 | 30 Inch Reinforced Concrete End Section | EACH | | | | | | | | | | | 4 | 4 | 0 | 100 |
| 105 | 34 | 605 | 6 Inch Perforated Corrugated Steel Pipe | LIN. FT. | | | | | | | | | | | 400 | 0 | -400 | 0 |
| 305 | 35 | 607 | End Post (Deleted) | EACH | | | | | | | | | | | 13 | 7 | -6 | 54 |
| 305 | 36 | 607 | Corner and Line Brace Post | EACH | | | | | | | | | | | 23 | 27 | +4 | 117 |
| 305 | 37 | 607 | Frame Barbed Wire With Metal Posts | LIN. FT. | | | | | | | | | | | 6,795 | 6,530 | -265 | 103 |
| 305 | 38 | 611 | 16 Foot Cattle Guard | EACH | | | | | | | | | | | 1 | 1 | 0 | 100 |
| 305 | 39 | 612 | Deliminator Type I | EACH | | | | | | | | | | | 19 | 31 | +12 | 58 |
| 305 | 40 | 612 | Deliminator Type II | EACH | | | | | | | | | | | 26 | 20 | -6 | 77 |
| 305 | 41 | 612 | Deliminator Type III | EACH | | | | | | | | | | | 2 | 2 | 0 | 100 |
| 7 | 42 | 614 | Flagging | HOURLY | | | | | | | | | | | 2,000 | 1,492 | -508 | 75 |
| 7 | 43 | 614 | Traffic Control Supervisor | DAY | | | | | | | | | | | 75 | 50 | -25 | 67 |
| 305 | 44 | 614 | Sign Panel (Class I) | SQ. FT. | | | | | | | | | | | 38 | 40 | +2 | 105 |
| 305 | 45 | 614 | Sign Panel (Class II) | SQ. FT. | | | | | | | | | | | 23 | 53 | +30 | 230 |
| 305 | 46 | 614 | Timber Sign Post 4x4 Inch | LIN. FT. | | | | | | | | | | | 101 | 101 | 0 | 100 |
| 305 | 47 | 614 | Timber Sign Post 6x6 Inch | LIN. FT. | | | | | | | | | | | 35 | 65 | +30 | 157 |

SUMMARY OF APPROXIMATE QUANTITIES

| | | | | | | |
|--------------|-----------|----------------|----------|-----------|--------------|--------------|
| NO REVISIONS | REVISIONS | AS CONSTRUCTED | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| | | | VII | COLORADO | FA-AS 097-16 | 7 |

| INDEX | FORM NO. | REV. NO. | CONTRACT ITEM NO. | CONTRACT ITEM | UNIT | | | | | | | | | | | | | PROJECT TOTALS | | DIFF +/- | % PLAN |
|----------------------|----------|----------|-------------------|--|----------|--|--|--|--|--|--|--|--|--|--|--|--|----------------|-----------|----------|--------|
| | | | | | | | | | | | | | | | | | | PLAN | AS CONST. | | |
| 305 | | 48 | 614 | Barrierade (Type 3M-B)(Temporary) | EACH | | | | | | | | | | | | | 2 | 3 | +1 | 150 |
| 305 | | 49 | 614 | Construction Traffic Sign (Panel Size A) | EACH | | | | | | | | | | | | | 2 | 2 | 0 | 100 |
| 305 | | 50 | 614 | Construction Traffic Sign (Panel Size B) | EACH | | | | | | | | | | | | | 27 | 19 | -8 | 70 |
| 305 | | 51 | 614 | Vertical Panel | EACH | | | | | | | | | | | | | 175 | 60 | -115 | 34 |
| 305 | | 52 | 614 | Vertical Panel (With Light) (Flashing) | EACH | | | | | | | | | | | | | 25 | 16 | -9 | 64 |
| 195 | | 53 | 614 | Vertical Panel (with Light) (Steadyburn) (DELETED) | EACH | | | | | | | | | | | | | 50 | 0 | -50 | 0 |
| 105 | | 54 | 614 | CONCRETE Barrier (Temporary) (DELETED) | LIN. FT. | | | | | | | | | | | | | 2,018 | 0 | -2,018 | 0 |
| 305 | | 55 | 614 | Traffic Cone | EACH | | | | | | | | | | | | | 100 | 105 | +5 | 105 |
| 305 | | 56 | 617 | 18 Inch Culvert Pipe | LIN. FT. | | | | | | | | | | | | | 238 | 191 | -47 | 80 |
| 305 | | 57 | 617 | 48 Inch Culvert Pipe | LIN. FT. | | | | | | | | | | | | | 180 | 185 | +5 | 103 |
| 305 | | 58 | 617 | 34 Inch Culvert Pipe | LIN. FT. | | | | | | | | | | | | | 280 | 280 | +0 | 100 |
| 305 | | 59 | 620 | Field Office (Class 1) (MCR #1) | EACH | | | | | | | | | | | | | 1 | 1 | 0 | 100 |
| 305 | | 60 | 620 | Field Laboratory (Class 1) (MCR #1) | EACH | | | | | | | | | | | | | 1 | 1 | 0 | 100 |
| 305 | | 61 | 620 | Sanitary Facility (MCR #1) | EACH | | | | | | | | | | | | | 1 | 1 | 0 | 100 |
| ESTIMATES | | | 626 | MODIFICATION | L.S. | | | | | | | | | | | | | 1 | 1 | 0 | 100 |
| 305 | | 62 | 627 | Pavement Marking Paint | GAL | | | | | | | | | | | | | 401 | 418 | +17 | 104 |
| 305 | | 63 | 611 | 12 FOOT SATTLE GUARD (MCR #1) | EACH | | | | | | | | | | | | | 0 | 1 | -1 | 100 |
| <u>FORCE ACCOUNT</u> | | | | | | | | | | | | | | | | | | | | | |
| | | | FA01 | Minor Contract Revisions (MCR #1) | FA | | | | | | | | | | | | | 1 | 1 | 0 | 100 |
| | | | 7 | On-The-Job Trainee | EACH | | | | | | | | | | | | | 2 | 1 | -1 | 50 |
| | | | 17 | MBE Incentive Payment | FA | | | | | | | | | | | | | 1 | 0 | -1 | 0 |

FENCING REQUIREMENTS

| station to station | side | Remove Fence | Barbed Wire Fence With Metal Posts | POSTS | | | | RESET FENCE |
|--|--------------------------|------------------------|---|-------------------------|-------------|----------|---|----------------|
| | | | | CORNER POSTS EACH | End EACH | LIN. FT. | | |
| 206+48.33 to 219+63.79 213+62.40 (Approach) 213+54.0 to 247+28.18 233+ | Lt. Rt. Lt. | 3364 1295 4957 9851 | | | | | | 2340 200 |
| 222+56 (Approach) | Rt. | | | | | | | 2700 |
| 206+48.33 to 239+63.79 206+64.63 to 246+45.78 232+63.75 to 245+72.77 245+72.37 to 246+45.78 | Lt. Lt. Lt. Lt. | | 3467 3086.5 247.5 62 105 | 10 10 | 2 2 | 3 0 | | |
| 213+55.56 to 222+29.95 | Rt. | | 958 312 | 4 | 2 | 5 | 4 | |
| 222+89.95 to 230+00 | Rt. | | 674 576 | 4 | 4 | 3 | 0 | |
| 230+00 to 247+28.18 240+00 to 247+28.18 247+28.18 to 255+00 | Rt. Lt. Lt. Rt. | | 1694 1442 | 5 | 5 | 1 | 0 | |
| TOTAL | | 8327 7750 | 6799 6000 | 23 | 27 | 13 | 7 | 1311 1711 |

* 3,962 Lin. feet of Fence from Sta 223+12.73 to Sta 246+87.34
 Shall become the Property of the Adjacent Land Owner.
 • Existing Fence to be Reset Around Easements.

TABULATION OF LENGTH AND DESIGN DATA

| Station to station | Roadway | |
|--|-----------|---------|
| | Lin. Ft. | MILES |
| Sta 160+79.72 Begin FR-HES 093-1(6) Sta 160+79.72 on HES FCU 0004(16) Begin Paving Mile Post 5.335 206+00 Begin Grading and Paving | 4520.28 | |
| 208+55.23 BK = EQUATION 209+50.98 An | 255.23 | |
| 252+55.32 BK(Proj) = EQUATION 252+63.79 An | 4304.34 | |
| 263+44 End FR-HES 093-1(6) Sta 263+44 On FR 093-1(6) = End Grading And Paving Mile Post 5.409 | 1080.21 | |
| TOTAL | 10,160.06 | |
| Summary | Lin. Ft. | MILES |
| Roadway (Net Length) | 10,160.06 | 1.924 |
| Roadway Total (Net And Gross Length) | 10,160.06 | 1.924 |
| DESIGN DATA | | |
| Maximum Grade | = | 5.089 % |
| Maximum Degree Of Curve | = | 2° 30' |
| Minimum SSD (Vertical) | = | 618 |
| Minimum SSD (Horizontal) | = | > .300' |
| Maximum Design Speed | = | 70 mph |
| 2005 Traffic Volume | = | 13,500 |
| ADT | = | |
| DHV | = | 1,620 |

| | | | | |
|-------------------------|----------|--------------|-----------|--------------|
| FEDERAL ROAD REGION NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | 20-FCU-3-116 | 9 | 8 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | REVISED | VOID | | |

DELINATOR TABULATION

| Location | side | Spacing | Delimiters | | |
|---|--|--|---------------------------|----------------------------|----------------------------|
| | | | Type I Crystal EACH | Type II Crystal EACH | Type III Yellow EACH |
| 213+21 213+22 (Approach) 218+50 to 226+00 222+56 (Approach) | Lt. Rt. Rt. Rt. | 100' (Tapered in) | 1 1 | 0 0 | 2 2 |
| 228+44.54 (Approach) 233+77.27 to 240+09.68 233+77.27 to 240+09.68 230+77.27 | Rt. Lt. Rt. Lt.+Rt. | 42' 46.5 42' 46.5 | 0 5 5 | 2 7 5 | 0 0 |
| 242+00 to 249+50 244+75 (Approach) | Rt. Lt. | 00' (Tapered in) | | 0 0 | 0 0 |
| 246+67.34 to 249+55.32 246+67.34 to 249+55.32 | Lt. Rt. | 42' | 5 5 | 4 0 | 0 0 |
| 249+55.32 Total | | | 19 | 26 | 2 |
| 260+00 TANGENT 206+00 APPROACH 227+00 TANGENT 222+00 TANGENT 217+50 TANGENT 205+00 to 206+00 | Lt.+Rt. Lt. Lt. Lt. Lt. Lt. | 528 MAX. 528 MAX. 528 MAX. 528 MAX. 528 MAX. | 2 1 1 1 1 | 0 0 0 0 0 | 0 0 0 0 0 |
| TOTAL | | | 37 | 26 | 2 |

| | | | | |
|---------------------------|----------|-----------------|-----------|--------------|
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | 45-455-193 J.R. | 9 | 6 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | REVISED | VOID | | |

SUBBASE AND SURFACING PLAN

| Station to Station | Source | Length in Stations | Quantity - Tons | | | | | | |
|---|--------------|--------------------|---|--|---------------------------|---------------------------|-------------------------------|------------------------|--|
| | | | Aggregate Base course (Haul) (class 6) (5") | Hot Bituminous Pavement (Haul and Asphalt) | | | | | |
| | | | | 3" Bottom Layer Grading E | 2" Middle Layer Grading E | 2" Middle Layer Grading E | 1 1/2" Middle Layer Grading E | 2" Top Layer Grading E | |
| 157+79.72 To 160+79.72 (Approach to Project) | | 3.00 | | | | | 121 | | |
| 160+79.72 To 206+00 (Main Roadway) | | 45.2028 | | | | | 1,673 | 2,215 | |
| 160+79.72 To 206+00 (Accel & Climbing Lane) | | 45.2028 | | | | | 352 | 442 | |
| 195+39 To 206+20 (Median) | | 10.81 | | | | | 159 | 212 | |
| 191+39 To 195+39 (Median Taper) | | 4.00 | | | | | 30 | 39 | |
| 206+00 to 210+95.75 (Main Roadway) | UNDESIGNATED | 4.00 | 74 | 110 | 71 | 69 | 184 | 314 | |
| 210+95.75 to 223+94.54 (Main Roadway) | | 12.99 | 1823 | 1191 | 779 | 762 | | 762 | |
| 216+50 to 226+00 (Transition) | | 7.5 | 139 | 83 | 55 | 55 | | 55 | |
| 223+94.54 to 228+45.4 (Main Roadway and Taper) | | 5.00 | 852 | 560 | 367 | 361 | | 361 | |
| 228+45.4 to 242+00 (Main Roadway) | | 13 | 2,689 | 764 | 1,157 | 1,144 | | 1,144 | |
| 242+00 to 257+00 (Main Roadway) | | 15.00 | 2,735 | 815 | 1,200 | 1,170 | | 1,170 | |
| 242+00 to 249+50 (Transition) | | 7.50 | 139 | 83 | 55 | 55 | | 55 | |
| 257+00 to 263+44 (Main Roadway) | | 6.44 | 387 | 248 | 161 | 158 | | 158 | |
| 204+18.76 to 206+22.21 (Detour) From Structure Quantities | | | | | 3,070* | | | | |
| For Irregularities In Subgrade | | | | 963 | 1,192* | | | | |
| Est. For Leveling Course | | | | | | | | 300 | |
| PROJECT SUB TOTALS | | | 10,571 | 10,116 | 2,845 | 3,774 | 2,479 | 7,227 | |
| PROJECT TOTALS | ABC | 19,571 10,571 | Hot Bituminous Pavement (Haul & Asphalt), 27,881 Tons | | | | | 28,577.68 Tons | |

Note: Stabilization Based On
 EOLA 18* (20 Years) - 2.38
 Regional Factor - 1.5
 Serviceability Index - 2.5
 Subgrade R - 5 Min
 Strength Coefficients
 Hot Bituminous Pavement - 0.44
 Base Course - 0.12
 WSN - 4.55

It is estimated that 30 Tons of Hot Bituminous Pavement (Patching) will be required on this Project.
 * 4* For the Detour
 * 6* For Approach at sta 228+94.54.

FINAL STRUCTURE QUANTITIES

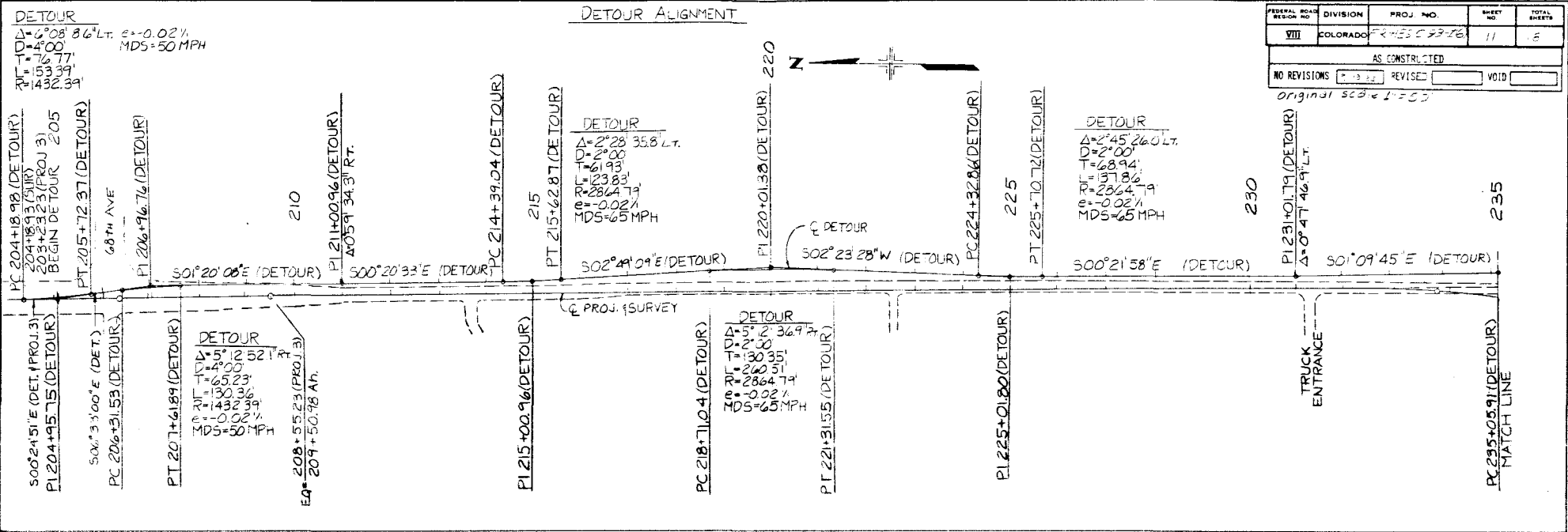
| | | | | | | | |
|----------------|---------|------|---------------------------|----------|---------------|-----------|--------------|
| AS CONSTRUCTED | | | FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| NO REVISIONS | REVISED | VOID | VIII | COLORADO | 70-485 (P-16) | 0 | 16 |

| INDEX | LOCATION | REMOVAL OF STRUCTURE | UNCLASSIFIED EXCAVATION | | | STRUCTURE EXCAVATION | STRUCTURE BACKFILL | FILTER MATERIAL | AGGREGATE BASE COURSE | HOT BITUMINOUS PAVEMENT | CONCRETE REINFORCING | STEEL | CONCRETE PIPE | CULVERT | PIPE | OVER | END SECTION | MISCELLANEOUS |
|----------------|-----------------------------|----------------------|-------------------------|------|------------|----------------------|--------------------|-----------------|-----------------------|-------------------------|----------------------|-------|---------------|---------|------|------|-------------|---|
| | | | CUBIC YARD | EMB. | CUBIC YARD | | | | | | | | | | | | | |
| | 206+00 to 283+44 | | | 0 | | 34 | | 31 | | | | | | | | | | 400 Lin. Ft. 6" Perforated CSP |
| | 213+21 | 1 | | 0 | | 103 114 | 30 33 | 77 85 | | | | | | | | | | |
| | 213+62.40 (Approach) | | | 67 | | 4 | 9 | | 42 | | | | | | | | | 1 Each-Reset mailbox structure |
| | 217+54 | 1 | | 0 | | 194 193 | 39 40 | 72 74 | | | | | | | | | | |
| | 222+56 (Approach) | 2 | | 159 | | 12 10 | 27 21 | | 58 | | | | | | | | | |
| | 228+94.54 (Approach) | 0 | | | | 4 | 9 | | -630 | 1,055 | | | | | | | | 1 Each-Reset 16' cattle guard 1 Each-Reset mailbox structure 1 Each-Rebuild Cattle Guard from Sta 231+20 1 Each-Reset gate from Sta 231+20 |
| | 230+80 231+20 (Approach) | 1 | | | | | | | | | | | | | | | | |
| | 244+75 (Approach) | 1 | | 653 | | 7 | 16 | | 37 | | | | | | | | | 1 Each-Reset mailbox structure 1 Each-Reset 12' cattle guard |
| | 251+49 | 1 | 6 | 0 | | 824 | 149 | 248 | | | 7 | 205 | | | 280 | 31 | | |
| Roadway Totals | | | 6 | 0 | 1979 | 1162 | 279 | 371 | 31 | 630 | 1,192 | 7 | 205 | 152 | 280 | | 4 | |
| Final Totals | | | 7 | 0 | 1979 | 1165 | 285 | 371 | 0 | 0 | 0 | 7 | 205 | 152 | 280 | | 4 | |

▲ For information only
● Carried to Surfacing Plan
○ Carried to Summary of Earthwork Quantities

○ Included in Earthwork Summary
* Cement shall be Type 3 or Type 2 modified

ALL QUANTITIES SHOWN ARE FOR THE CONSTRUCTION OF THE PROJECT AS SHOWN ON THE PLANS AND SPECIFICATIONS. QUANTITIES FOR MATERIALS TO BE SUPPLIED BY THE CONTRACTOR ARE SHOWN IN PARENTHESES. QUANTITIES FOR MATERIALS TO BE SUPPLIED BY THE STATE ARE SHOWN IN BRACKETS. QUANTITIES FOR MATERIALS TO BE SUPPLIED BY OTHER AGENCIES ARE SHOWN IN DASHES.



For more R.O.W Information see FC 093-1(1) Sec. 5

48 HOURS BEFORE YOU DIG CALL FOR THE BLUE STAKES

534-6700

Denver In-Utility Group Gas Electric & Telephone

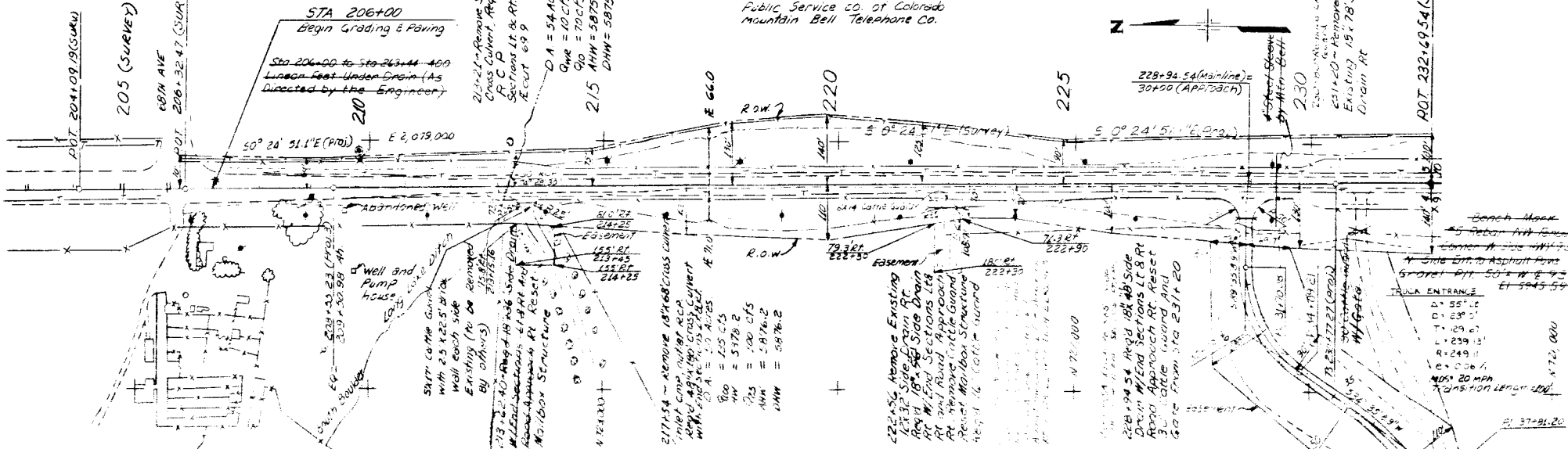
For Alignment/Grades From STA 160+79.72 to STA 320+00 see HES-FCU 0006(1a)

UTILITIES

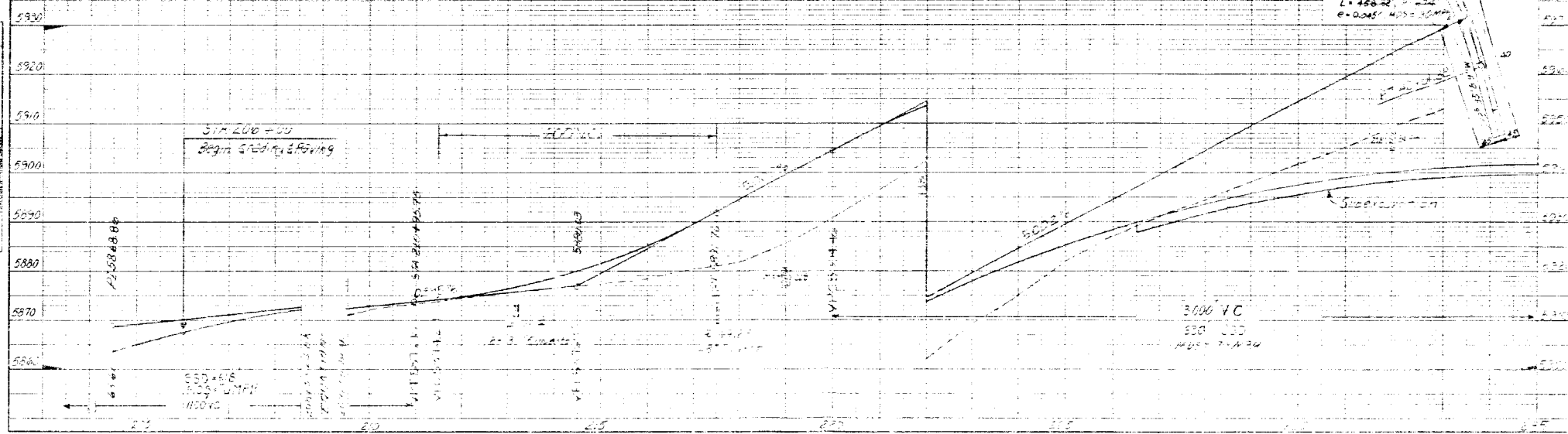
Public Service Co. of Colorado Mountain Bell Telephone Co.

| | |
|---------------|----|
| NO. OF SHEETS | 40 |
| NO. OF SHEETS | 40 |
| NO. OF SHEETS | 40 |
| NO. OF SHEETS | 40 |

| | |
|------|---------|
| DATE | 1983-16 |
| NO. | 2 |
| BY | 18 |



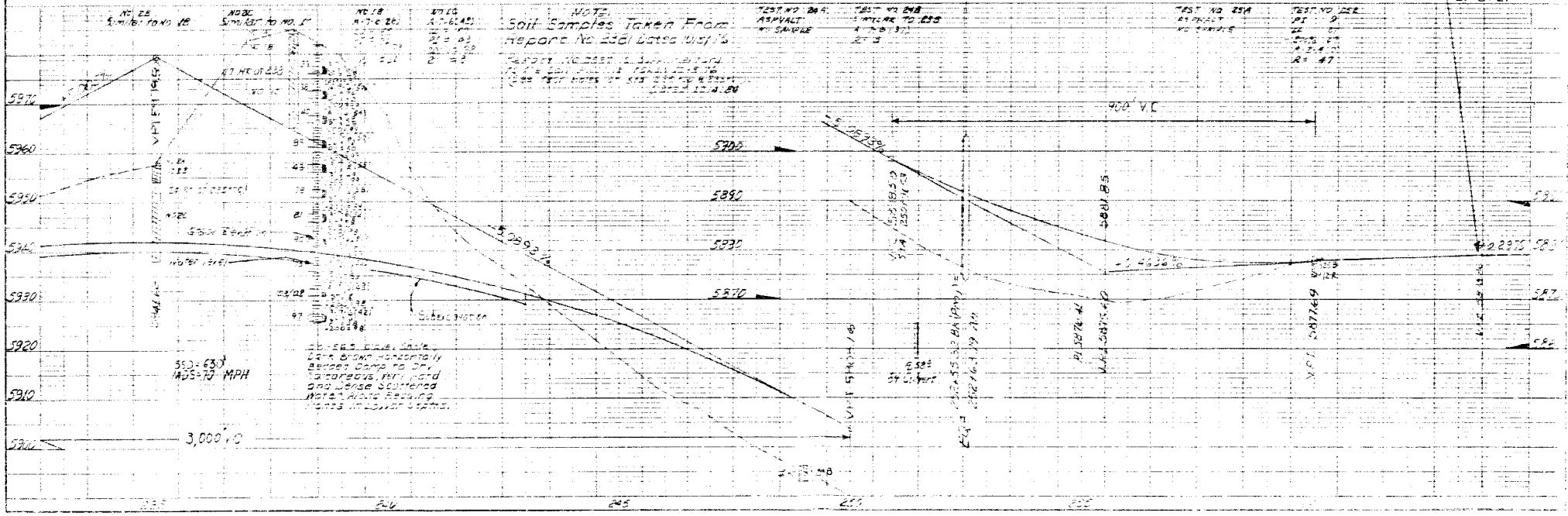
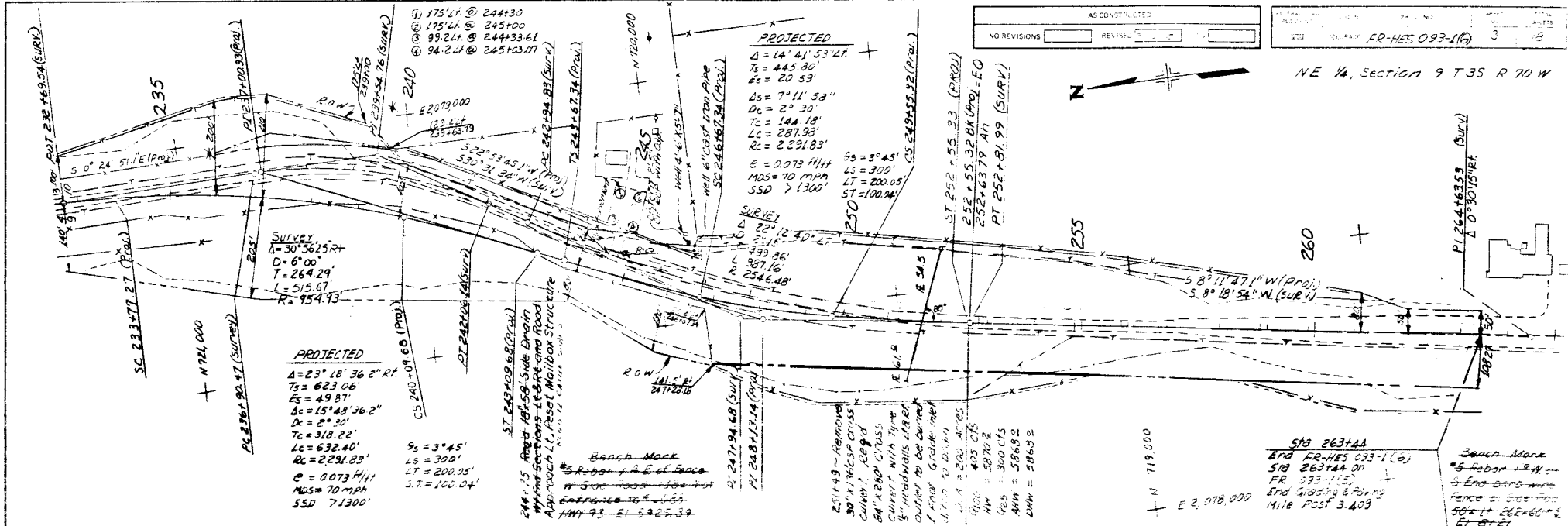
Note: Soil Samples Taken From Report No. 6001 Dated 10/12/76 Project No. FC 093-1(1)



PLAN
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 DATE: [Date]

AS CONSTRUCTED
 NO REVISIONS REVISED BY: [Name]

FR-HES 093-1(C)
 NE 1/4, Section 9 T35 R70 W



PROFILE
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 DATE: [Date]

PROFILE OF ROAD APPROACHES.

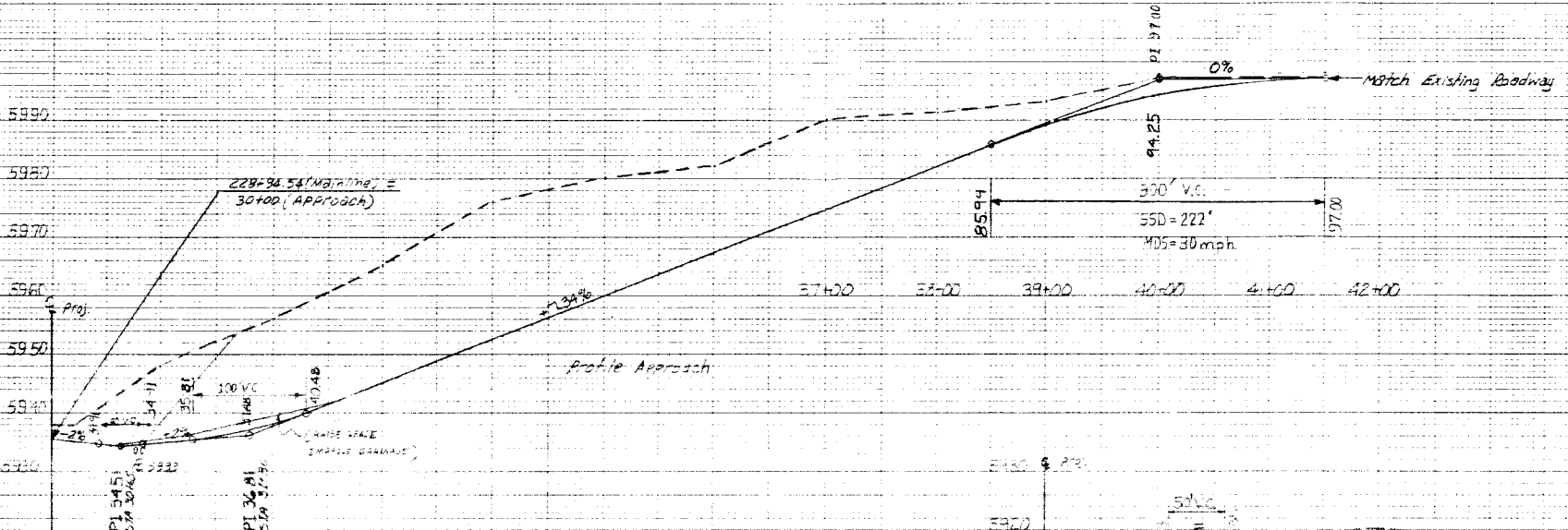
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|----------------|---------|
| AS CONSTRUCTED | |
| NO REVISIONS | REVISED |

| | | | | |
|----------------|-------------|---------|-----------|--------------|
| PROJECT NO. | SECTION NO. | PR. NO. | SHEET NO. | TOTAL SHEETS |
| 10-455 (93-16) | | | 14 | 18 |

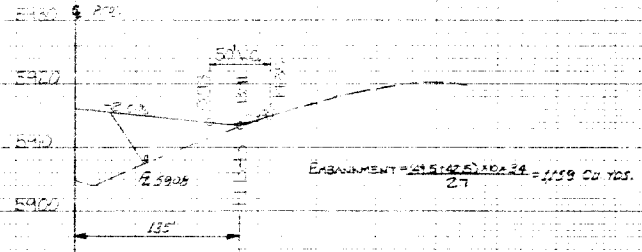
ORIGINAL SCALE: 1" = 50' H
 1" = 10' V

| | |
|--------------|------|
| FINAL SURVEY | DATE |
| DESIGNED BY | DATE |
| CHECKED BY | DATE |
| APPROVED BY | DATE |

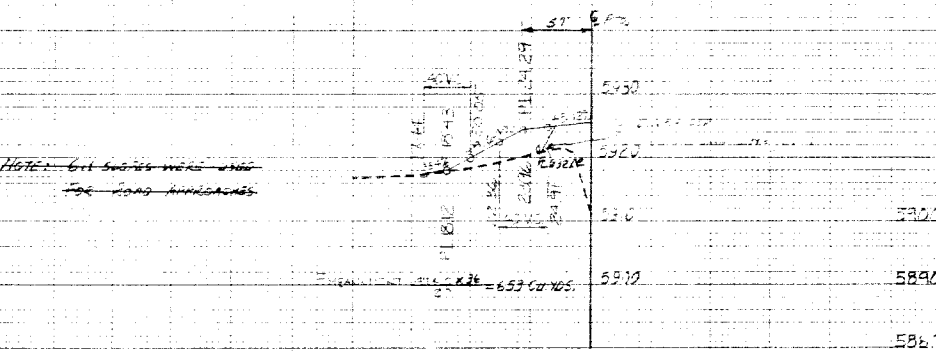
| | |
|------|----|
| DATE | BY |
| | |
| | |
| | |



STA 228-2454 Reg'd 10' x 10' Side Drain w/ End Sections And Road Approach Rt
 10' x 10' side drain 34+00 to 36+00

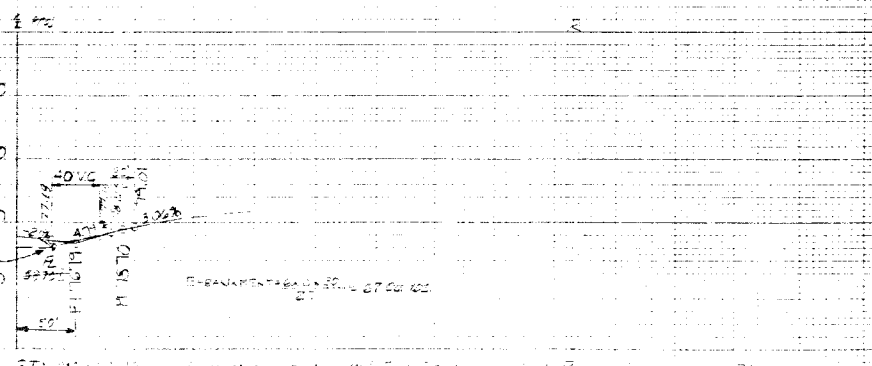


STA 222-2300 Reg'd 10' x 10' Side Drain w/ End Sections And Road Approach Rt



NOTE: 6' x 6' SIDES WERE USED FOR ROAD APPROACHES

STA 244-25 Reg'd 6' x 6' Side Drain w/ End Sections And Road Approach Lt
 6' x 6' side drain 32+00 to 34+00



STA 215-224 Reg'd 6' x 6' Side Drain w/ End Sections And Road Approach Rt

NOTE: Quantities And Based on C.A.P.

TABULATION OF SIGNING QUANTITIES

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES

| ITEM NO. | ITEM | UNIT | PROJECT TOTALS |
|----------|--|---------------|------------------------|
| 202 | REM GROUND SIGN | EA | 10 |
| 202 | REM PAVEMENT MARKING | SQ FT | 2,000 1,330 |
| 210 | RES GROUND SIGN | EA | 1 |
| 614 | SIGN PANEL (CL 1) | SQ FT | 38 16 |
| 614 | SIGN PANEL (CL 2) | SQ FT | 23 93 |
| 614 | TIMBER SIGN POST (4" X 4") | LIN FT | 101 |
| 614 | TIMBER SIGN POST (6" X 6") | LIN FT | 35 60 |
| 614 | BARRICADE (3-MB) (TEMP) | EA | 2 3 |
| 614 | CONST TRAF SIGN (A) | EA | 2 |
| 614 | CONST TRAF SIGN (B) | EA | 27 19 |
| 614 | VERTICAL PANEL | EA | 175 20 |
| 614 | VERTICAL PANEL (LIGHT) (F) | EA | 25 16 |
| 614 | VERTICAL PANEL (LIGHT) (SB) | EA | 50 |
| 614 | TRAFFIC CONE 28" | EA | 100 105 |
| 627 | PVMT MKG PAINT | GAL | 42 112 |

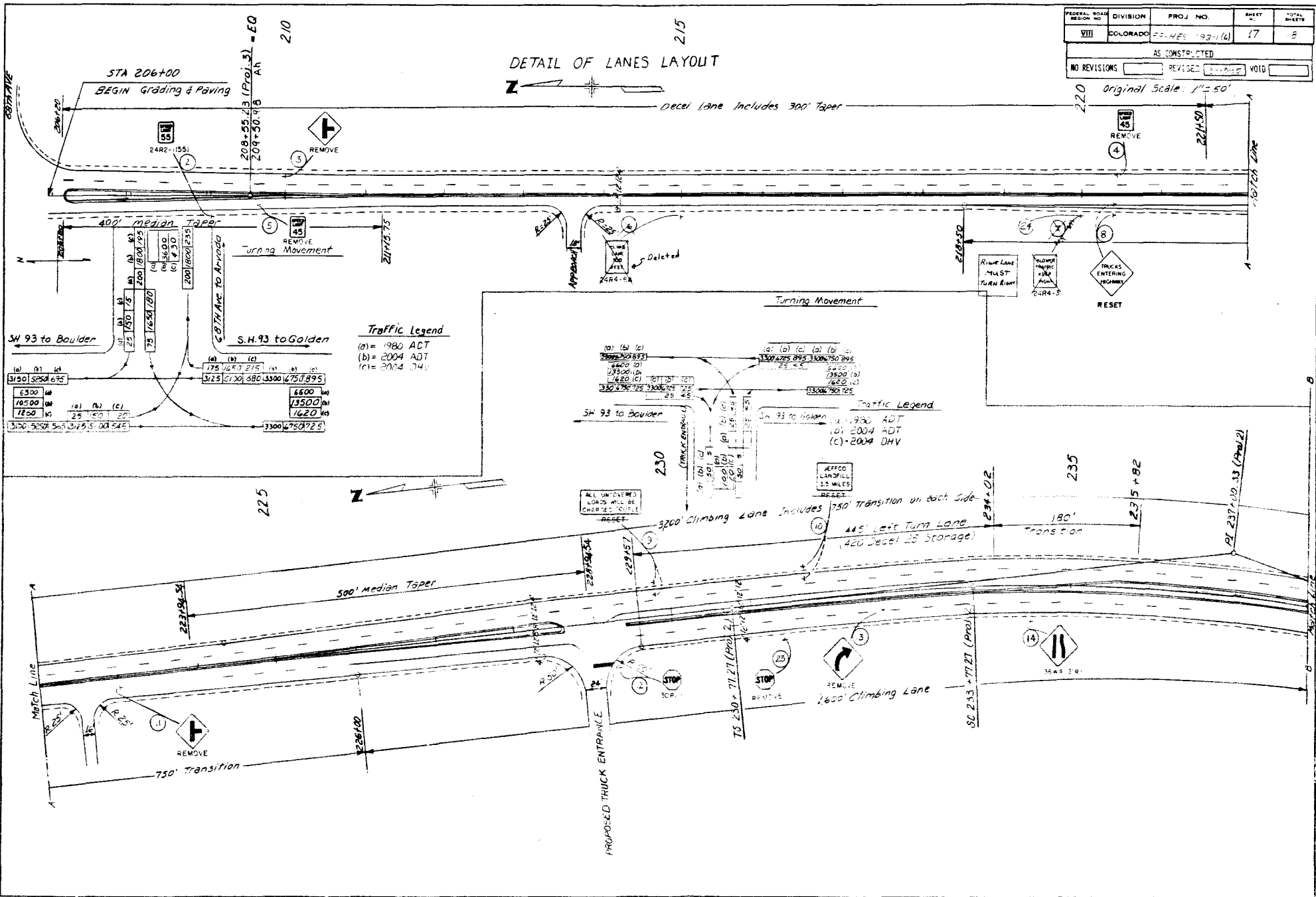
| SIGN CODE | LEGEND | DIMENSIONS | EACH | | | OTHER DEVICES | ITEM | QUANTITY EACH |
|--------------------|------------------------------|----------------------|--------------|--------------|---|------------------------------|------|---------------|
| | | | A | B | C | | | |
| 36R2-1(40) | SPEED LIMIT 40 | 36" X 48" | 2 | 1 | | BARRICADE TYPE (3-MB) (TEMP) | 2 | 3 |
| 36R4-1 | DO NOT PASS | 36" X 48" | 2 | 2 | | VERTICAL PANEL | 175 | 60 |
| 36R4-2 | PAGE WITH CANE | 36" X 48" | 2 | 1 | | VERTICAL PANEL (LIGHT) (F) | 25 | 16 |
| 48R11-2 | ROAD CLOSED | 48" X 30" | 1 | 1 | | VERTICAL PANEL (LIGHT) (SB) | 50 | |
| 48M4-10(R) | DETOUR ARROW | 48" X 18" | | | | TRAFFIC CONE 28" | 100 | 105 |
| 48R11-2 | ROAD CLOSED | 48" X 30" | 1 | 1 | | | | |
| 48M4-10(L) | DETOUR ARROW | 48" X 18" | | | | | | |
| 48W1-4(R) | CURVE - (RT) | 48" X 48" | 2 | 1 | | | | |
| 48W1-4(L) | CURVE - (LT) | 48" X 48" | 2 | 1 | | | | |
| 36W8-3a | PVMT ENDS SYMBOL | 36" X 36" | 2 | | | | | |
| 48W8-9a | LOW SHOULDER SYMB | 48" X 48" | 2 | 1 | | | | |
| 48W20-1 | ROAD/CONST/UST | 48" X 48" | 2 | 1 | | | | |
| 48W20-1 | ONE LANE RD. DIST | 48" X 48" | 2 | 1 | | | | |
| 48W20-7a | FLAGGER SYMBOL | 48" X 48" | 2 | 2 | | | | |
| 48W20-50 | BE PREPARED TO STOP | 48" X 48" | 2 | 2 | | | | |
| 60G20-2 | END CONSTRUCTION | 60" X 24" | 2 | 1 | | | | |
| 48M4-10 | DETOUR AHEAD | 48" X 18" | | 2 | | | | |
| 48W20-1 | CONSTRUCTION AHEAD | 48" X 48" | | 1 | | | | |
| SIGN TOTALS | | | | | | | | |
| | | | | | | 2 | 19 | |

NOTE:

| | Pvmt Mkg | Paint Required |
|-------------|----------------------------|----------------|
| | Yellow | White |
| Phase I | 50 | 40 |
| Phase II | 50 | 40 |
| Final | 126 | 95 |
| Subtotals - | 226 | 175 |
| Total - | 404 Gallons Pvmt Mkg Paint | |
| FINAL TOTAL | 412 Gallons Pvmt Mkg Paint | |

| | | | | |
|---------------------------|----------|----------------|-----------|--------------|
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | FS-MES-93-1(4) | 17 | 8 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | REVISED | VOID | | |

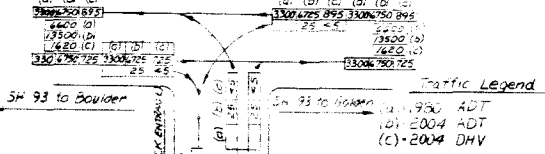
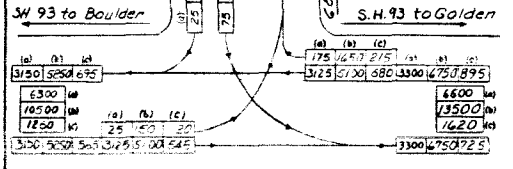
DETAIL OF LANES LAYOUT



Original Scale: 1" = 50'

Traffic Legend

- (a) = 1980 ADT
- (b) = 2004 ADT
- (c) = 2004 DHV



ALL UNCOVERED LOADS WILL BE CHARGED TO THE DRIVER

REFER TO PLAN 1.5 MILES AHEAD

3200' Climbing Lane Includes 750' Transition on each Side

445' Left Turn Lane (420' Decel 25' Storage)

1600' Climbing Lane

750' Transition

PROPOSED TRUCK ENTRANCE

TRUCK ENTRANCE

REMOVE

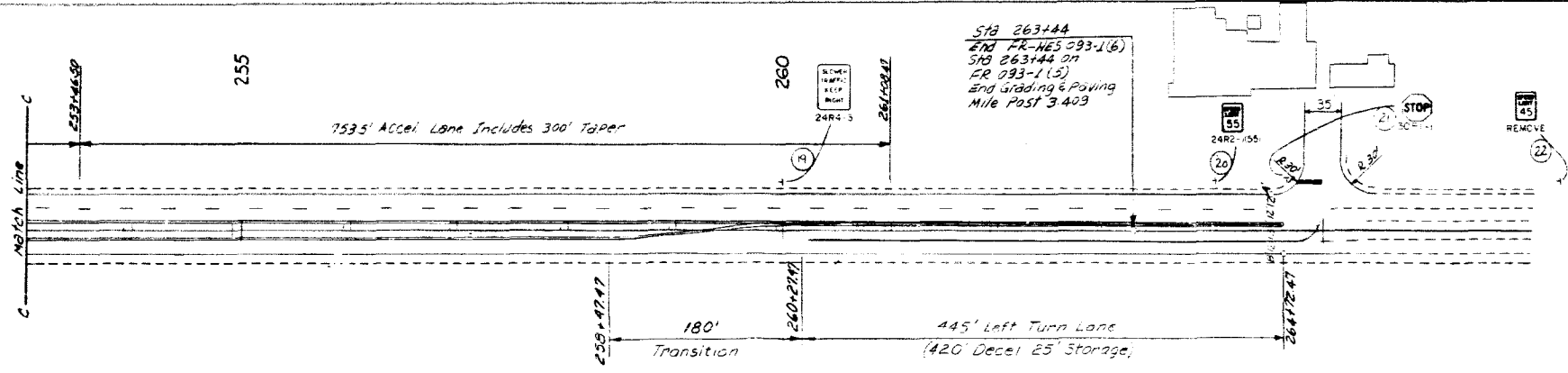
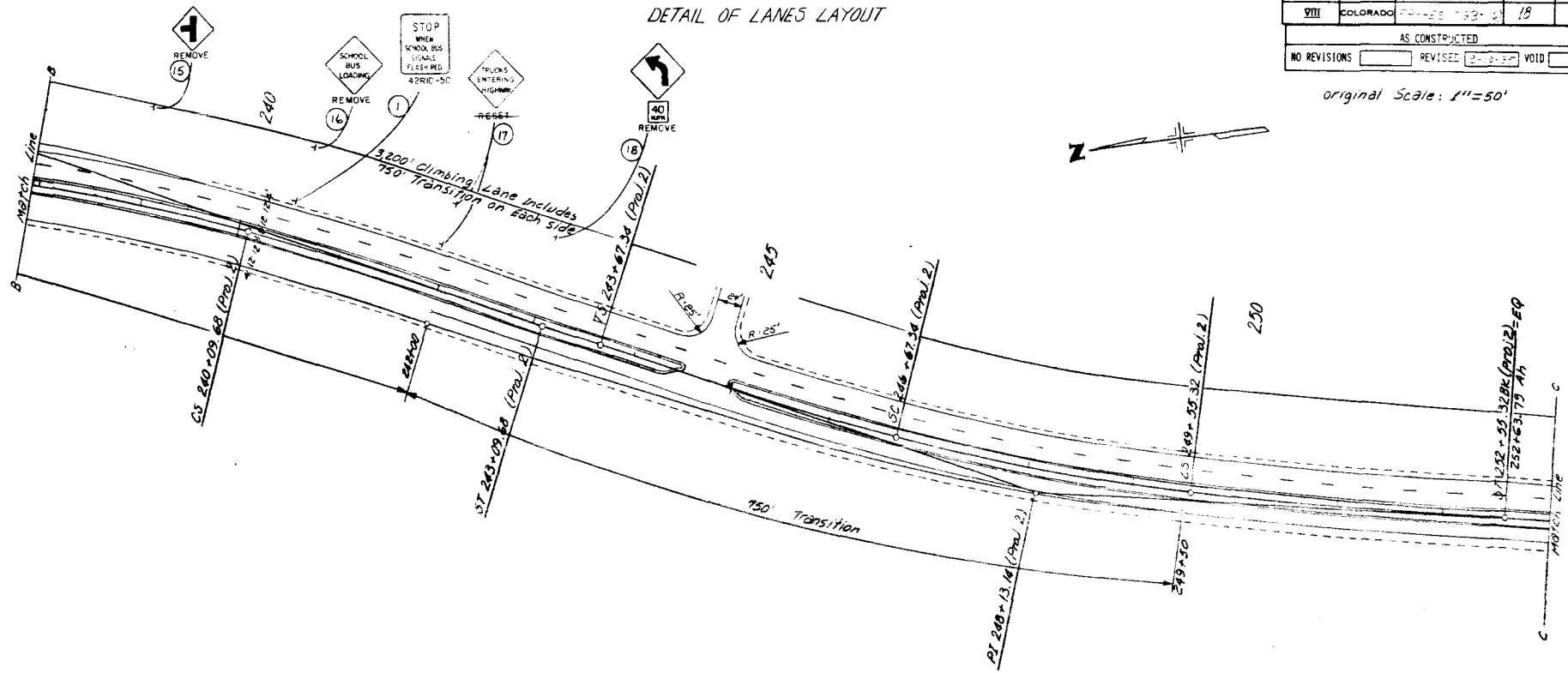
SC 233 + 77.27 (Proj. 2)

RI 237 + 10.33 (Proj. 2)

DETAIL OF LANES LAYOUT

| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------------------|----------|-------------|-----------|--------------|
| VIII | COLORADO | 73-28-132-4 | 18 | 18 |
| AS CONSTRUCTED | | | | |
| NO REVISIONS | | REVISED | VOID | |

original Scale: 1"=50'

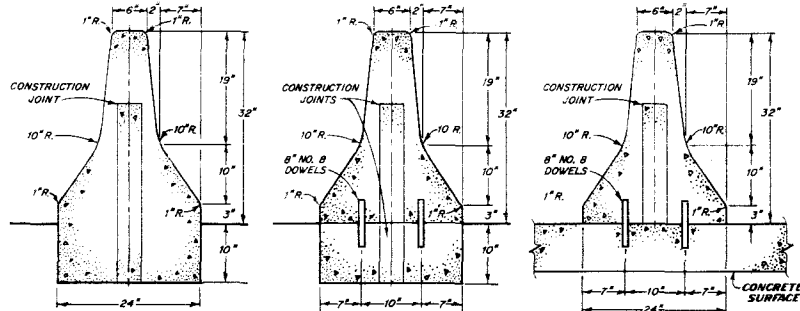


DETAILS FOR CAST IN PLACE CONCRETE BARRIER STANDARD M-606-12

(SHEET 1 OF 9)

| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------------------|----------|-----------|-----------|--------------|
| VIII | COLORADO | | | |

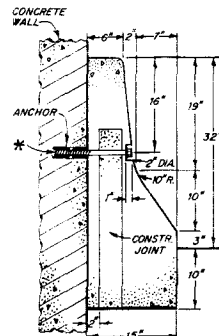
| REVISIONS | |
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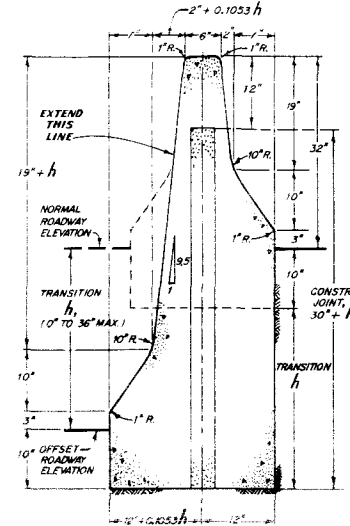
STYLE CA
MONOLITHIC BARRIER

STYLE CA (OPT.)
TWO PIECE DOWELLED BARRIER
 (OPTIONAL)

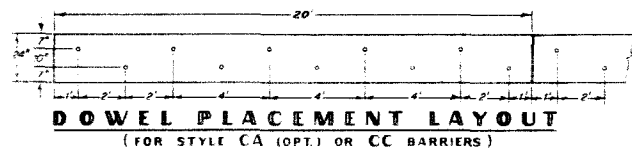
STYLE CC
BARRIER DOWELLED TO CONCRETE SURFACE



STYLE CD
BARRIER DOWELLED AGAINST WALL
 * 3/4" DIA. x 12" LONG GALVANIZED ANCHOR BOLT AND WASHER, MECHANICALLY FASTENED AT 2'-6" CTRS.; USE ONLY WHEN CALLED FOR ON PLANS.



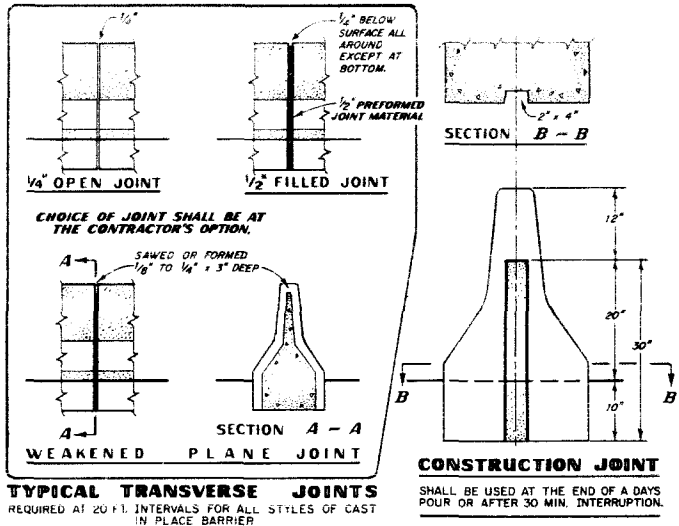
STYLE CE
BARRIER FOR OFFSET ROADWAYS



GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.
- CONCRETE SHALL BE CLASS A, B OR D.
- PAVEMENT SHALL BE PATCHED ALONG THE BARRIER FOUNDATION TO MATCH EXISTING ASPHALT SURFACE.
- TYPE 4 BARRIER MAY BE CAST IN PLACE OR PRECAST UNLESS A SPECIFIC STYLE OF BARRIER IS SPECIFIED ON THE PLAN.
- DOWEL BARS MAY BE PLACED IN WET CONCRETE OR GROUTED IN HOLES DRILLED IN EXISTING CONCRETE.
- ALL INCIDENTAL WORK AND MATERIALS SUCH AS DOWELS, GROUT, ANCHORS, BOLTS, PINS, JOINT MATERIAL, EXCAVATION FOR BASE, ETC. SHALL BE INCLUDED IN THE COST OF BARRIER.
- PRECAST BARRIER:**
 ALL EXPOSED LOOPS SHALL BE THOROUGHLY CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 509.
- NUTS, WASHERS, LIFTING HARDWARE, CONNECTING PINS, DRIFT PINS AND ANCHOR BOLTS SHALL BE GALVANIZED.
- TRIANGULAR SPACE IN BASE OF BARRIER IS TYPICAL. CIRCULAR ARC OR RECTANGULAR SHAPE WILL BE PERMITTED.
- DRAINAGE SLOTS MAY BE OMITTED ON:
 1. MEDIAN INSTALLATION WITH INLET DRAINAGE.
 2. SHOULDER BARRIER ON HIGH EDGE OF SUPERELEVATED SHOULDER.
 3. MEDIAN BARRIER ON CREST VERTICAL CURVE.
 4. PERMANENT BARRIER.
- STYLE CE BARRIER SHALL BE CAST IN PLACE UNLESS OTHERWISE PERMITTED.
- THE JOINT BETWEEN CAST IN PLACE AND PERMANENT PRECAST BARRIER SHALL INCLUDE ALL RECESSES, LOOP REBARS AND PINS TO MAKE A PROPER MATCHING JOINT.

- MIXING GUARD RAIL TYPES:**
 THIS STANDARD SHOWS THE DETAILS FOR VARIOUS USAGES OF GUARD RAIL, TYPE 4, CONCRETE BARRIER.
- THE PLANS WILL INDICATE THE LOCATIONS ON THE PROJECT WHERE GUARD RAIL TYPES 3 OR 4 ARE REQUIRED.
- WHEN GUARD RAIL, TYPE 3, W-BEAM IS TO BE USED AS AN END TREATMENT TO CONCRETE BARRIER OR AT A LOCATION SHOWN ON THE PLAN; REFER TO THE W-BEAM GUARD RAIL STANDARD FOR DETAILS.
- WHEN BRIDGE RAIL IS DIFFERENT FROM ROADWAY RAIL, THE BRIDGE PLANS WILL SHOW THE CONNECTION DETAILS.



STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL - TYPE 4
 CONCRETE BARRIER**

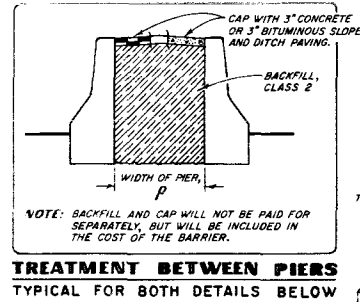
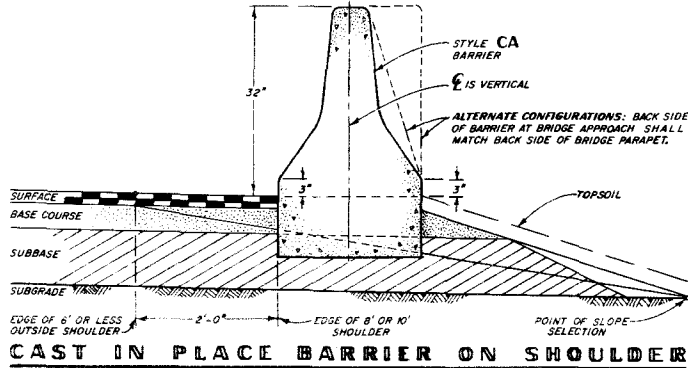
APPROVED BY: [Signature]
 STATE ENGINEER
 DATE: FEBRUARY 18, 1983

STANDARD PLAN NO.
M-606-12
 SHEET 1 OF 9

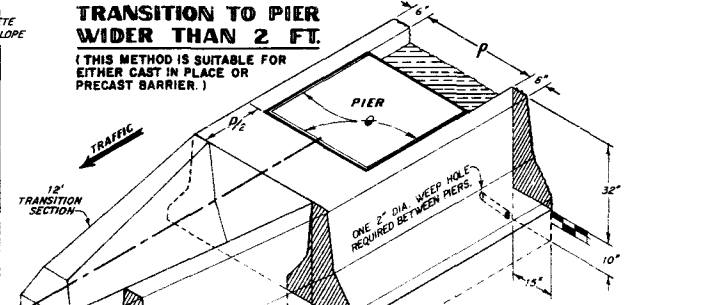
DETAILS FOR CAST IN PLACE CONCRETE BARRIER (CONT'D.)

STANDARD M-606-12
 (SHEET 2)

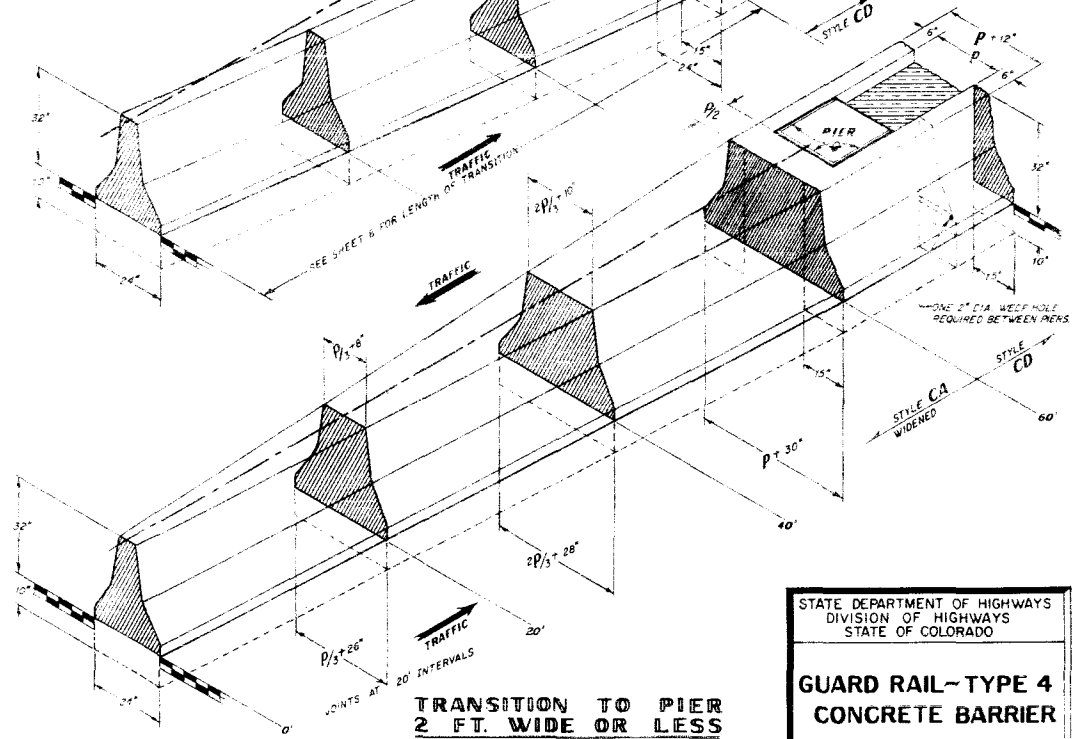
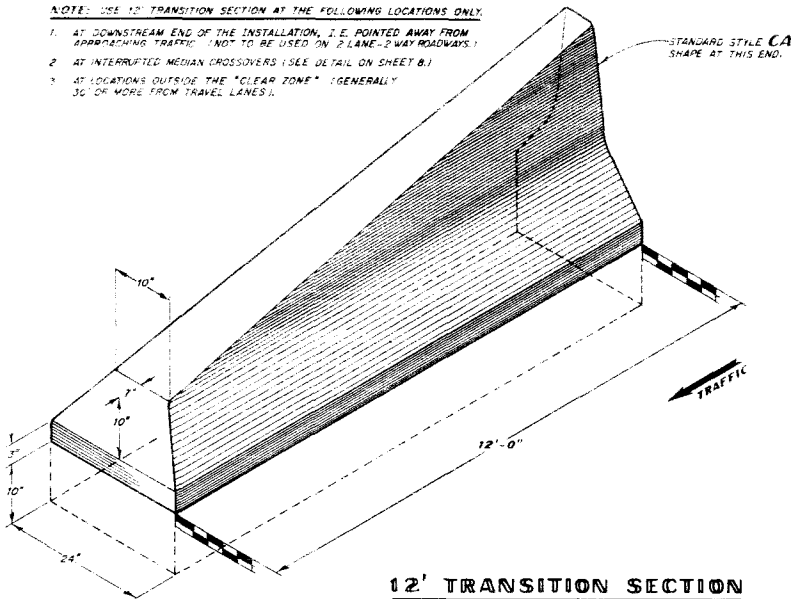
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------------------|----------|-----------|-----------|--------------|
| VIII | COLORADO | | | |
| REVISIONS | | | | |
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**TRANSITION TO PIER
 WIDER THAN 2 FT.**
 (THIS METHOD IS SUITABLE FOR
 EITHER CAST IN PLACE OR
 PRECAST BARRIER.)



- NOTE: USE 12' TRANSITION SECTION AT THE FOLLOWING LOCATIONS ONLY.**
1. AT DOWNSTREAM END OF THE INSTALLATION, I.E. POINTED AWAY FROM APPROACHING TRAFFIC. (NOT TO BE USED ON 2-LANE-2-WAY ROADWAYS.)
 2. AT INTERRUPTED MEDIUM CROSSOVERS (SEE DETAIL ON SHEET 8.)
 3. AT LOCATIONS OUTSIDE THE "CLEAR ZONE" (GENERALLY 30' OR MORE FROM TRAVEL LANES.)



**TRANSITION TO PIER
 2 FT. WIDE OR LESS**

$\frac{1}{2}$ " PREFORMED JOINT MATERIAL.

STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL-TYPE 4
 CONCRETE BARRIER**

APPROVED BY: K. J. WAGLE
 STAFF DESIGN ENGINEER
 DATE: FEBRUARY 18, 1983

STANDARD PLAN NO.
M-606-12
 SHEET 2 OF 9

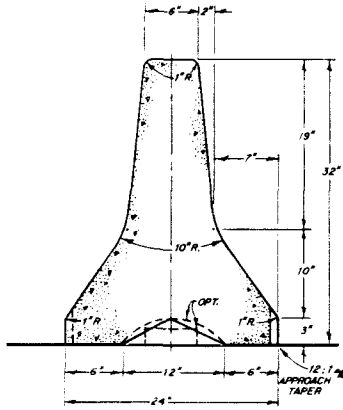
DETAILS FOR PRECAST CONCRETE BARRIER

STANDARD M-606-12

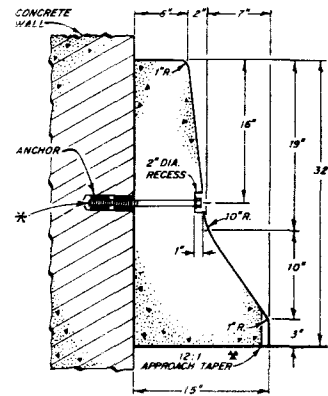
(SHEET 3)

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|---------------------------|----------|-----------|-----------|--------------|
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | | | |

| REVISIONS | |
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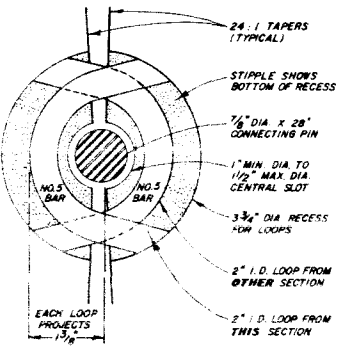
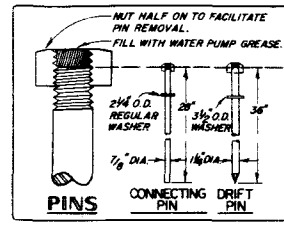


STYLE PA
 PRECAST BARRIER

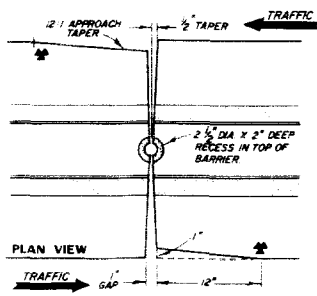


STYLE PD
 PRECAST BARRIER
 AGAINST WALL

* 3/4" DIA. X 12" LONG GALVANIZED ANCHOR BOLT AND WASHER, MECHANICALLY FASTENED AT 90° CTGS.; USE ONLY WHEN CALLED FOR ON PLANS.

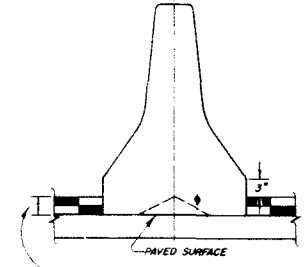


BARRIER CONNECTION
 (FOR STYLE PA OR PD)



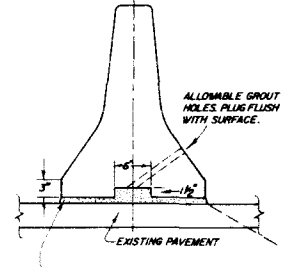
* A 1" IN 12" TAPER WILL BE REQUIRED AT ALL TRAFFIC APPROACH CORNERS OF PRECAST BARRIER SECTIONS TO ELIMINATE SWAGGING OF SNOW FLOW BLADE (BOTH STYLE PA AND PD BARRIERS.)

JOINT IN PRECAST BARRIER



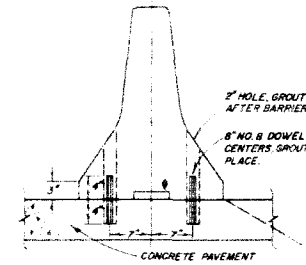
ADJACENT OVERLAY

THICKNESS OF OVERLAY 1" MINIMUM, 1.3" OR MORE (PREFERRED) USE AT LEAST THE NEW OVERLAY THICKNESS.



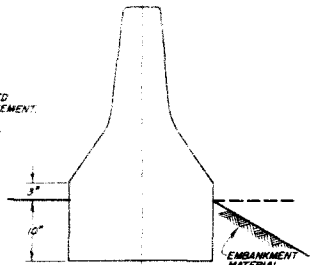
GROUT BED

1" LAYER OF GROUT, SHIMS REQUIRED TO PLACE BARRIER AT PROPER LINE AND GRADE.



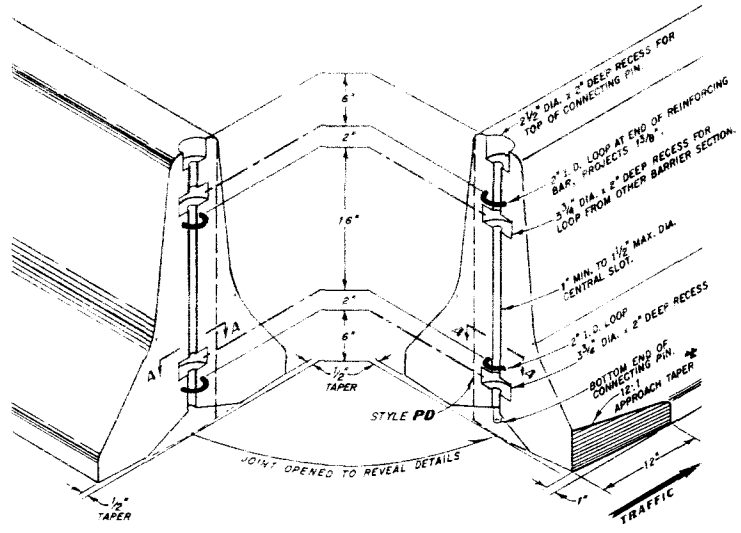
DOWELLED TO PAVEMENT

⊙ SHAPE OF LONGITUDINAL SPACE IS OPTIONAL OR MAY BE OMITTED.



BARRIER WITH BASE

EXCAVATION FOR BASE WILL BE INCLUDED IN THE COST OF BARRIER.



JOINT IN STYLES PA AND PD

ANCHOR DETAILS FOR PERMANENT BARRIERS

- NOTES:
- ONE OF THE FOUR ALTERNATE ANCHOR DETAILS SHALL BE USED WHEN PRECAST BARRIER IS INSTALLED AS A PERMANENT BARRIER. STYLE PA DIMENSIONS APPLY AND THE BARRIER SHALL BE CAST WITH EXTRA FEATURES OF DOWEL HOLES, EXTRA BASE DEPTH, MODIFIED OR NO LONGITUDINAL SPACE IN BASE, ETC. AS NEEDED TO PROVIDE THE ANCHOR DETAIL TO BE CONSTRUCTED.
 - THESE ANCHOR DETAILS MAY BE USED FOR SHOULDER OR MEDIAN LOCATIONS EXCEPT THE ADJACENT OVERLAY ALTERNATE WHICH IS FOR MEDIANS ONLY.
 - THE 12:1 APPROACH TAPER ON BARRIER BOTTOM IS NOT REQUIRED ON PERMANENT BARRIERS.

STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL - TYPE 4
 CONCRETE BARRIER**

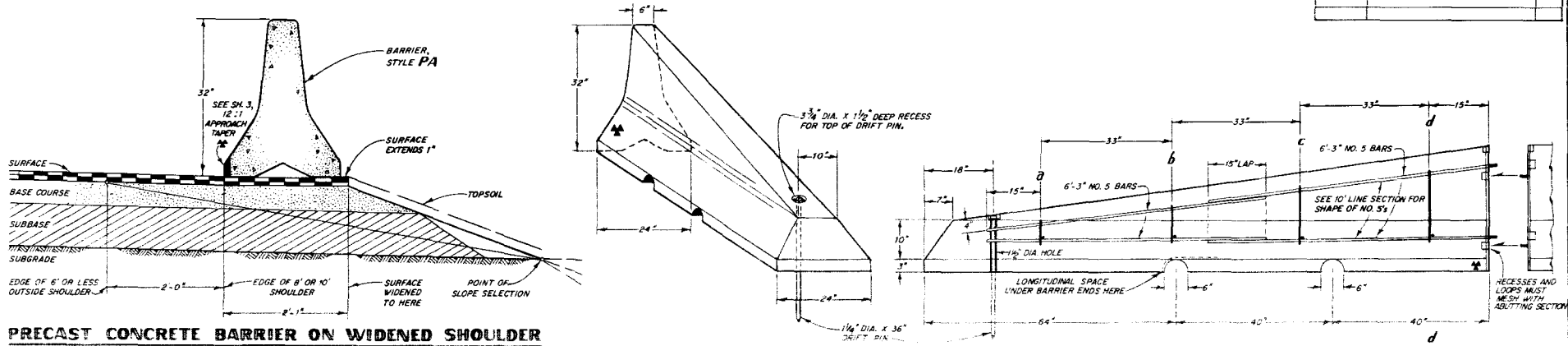
APPROVED BY: *[Signature]*
 STAFF DESIGN ENGINEER
 DATE: FEBRUARY 18, 1983

STANDARD PLAN NO.
M-606-12
 SHEET 3 OF 9

DETAILS FOR PRECAST CONCRETE BARRIER (CONT'D.)

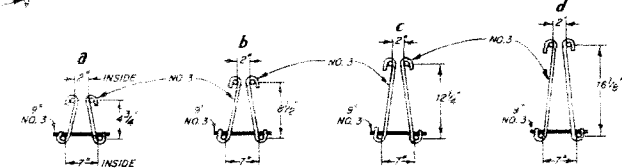
STANDARD M-606-12
 (SHEET 4)

| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------------------|----------|-----------|-----------|--------------|
| VIII | COLORADO | | | |
| REVISIONS | | | | |
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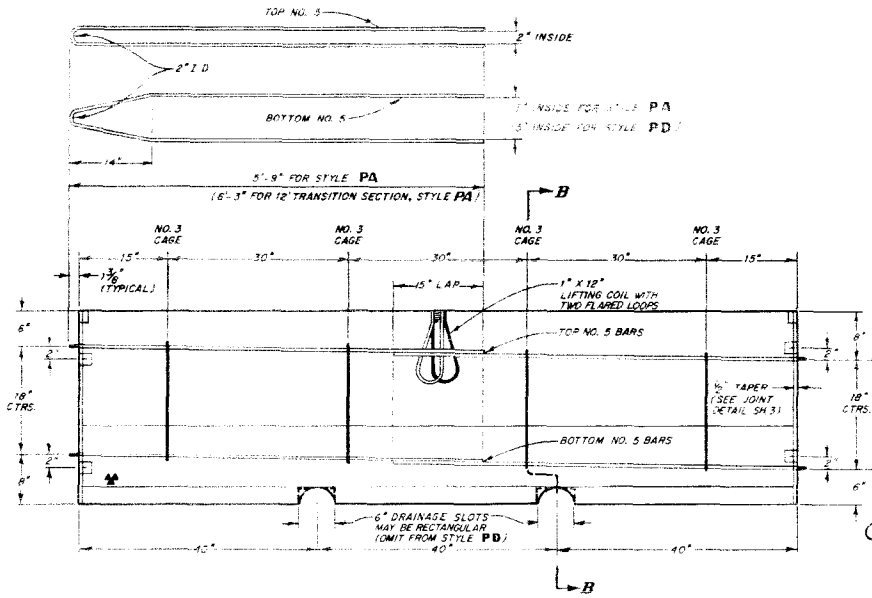


PRECAST CONCRETE BARRIER ON WIDENED SHOULDER

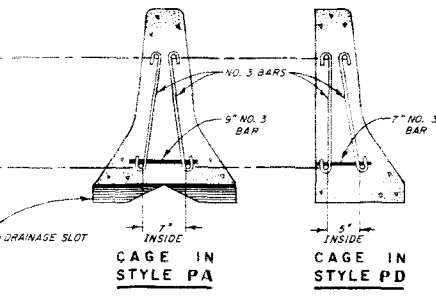
NOTES ON SHEET 2 DESCRIBING THE USES OF CAST IN PLACE 12' TRANSITION SECTION APPLY FOR PRECAST ALSO.



12' TRANSITION SECTION FOR STYLE PA BARRIER



10' LINE SECTION FOR STYLE PA OR PD



SECTIONS B - B

STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL-TYPE 4
 CONCRETE BARRIER**

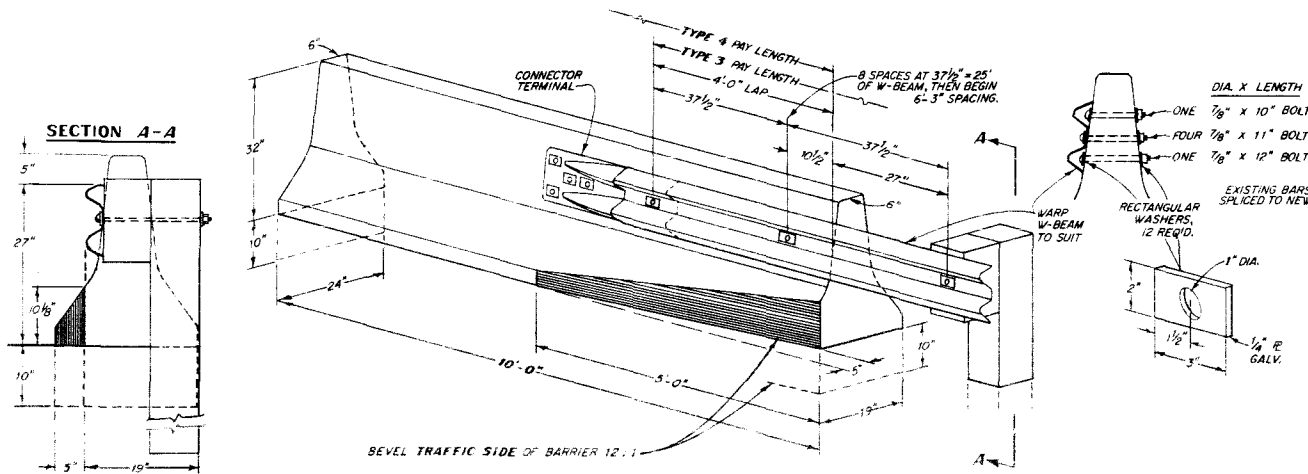
CONCRETE PLAN NO.
M-606-12

REVISED FEBRUARY 1977

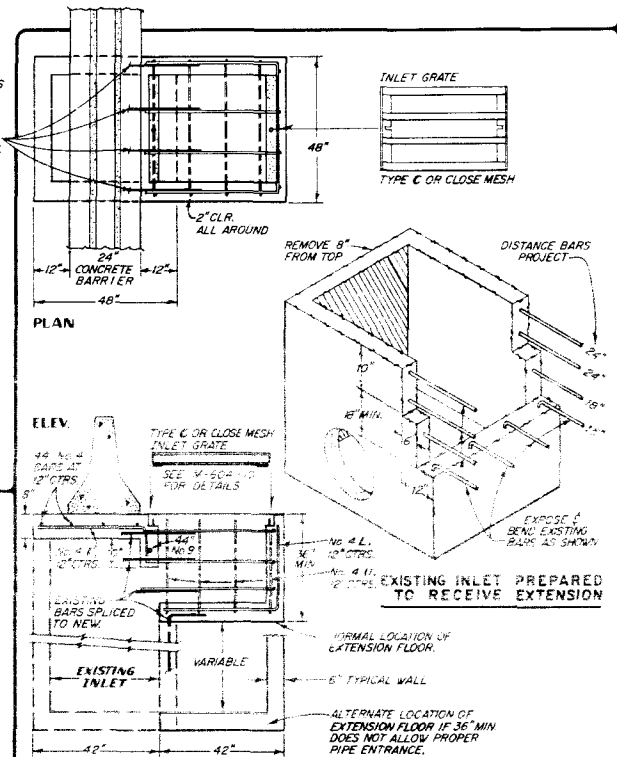
STANDARD M-606-12

(SHEET 5)

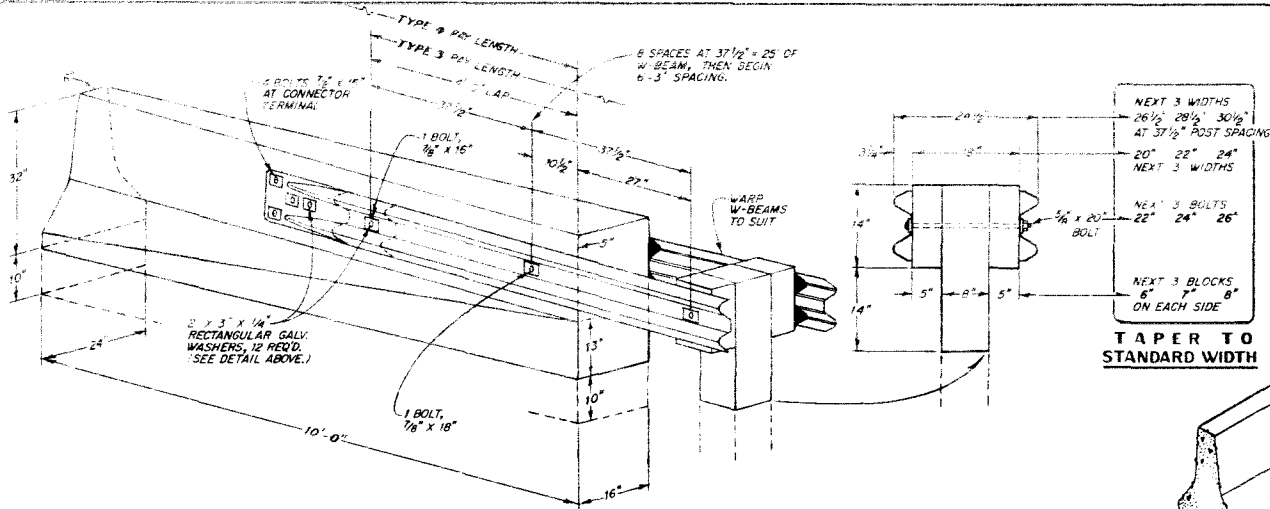
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| VII | COLORADO | | | |
| REVISIONS | | | | |
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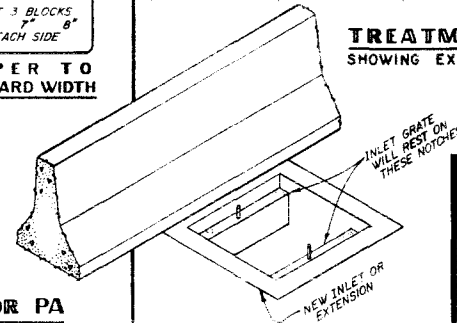
10' TRANSITION TO CONNECT SINGLE W-BEAM TO CONCRETE BARRIER - STYLE CA OR PA



TREATMENT AT INLET
 SHOWING EXTENSION OF EXISTING INLET



10' TRANSITION TO CONNECT DOUBLE W-BEAM TO CONCRETE BARRIER - STYLE CA OR PA

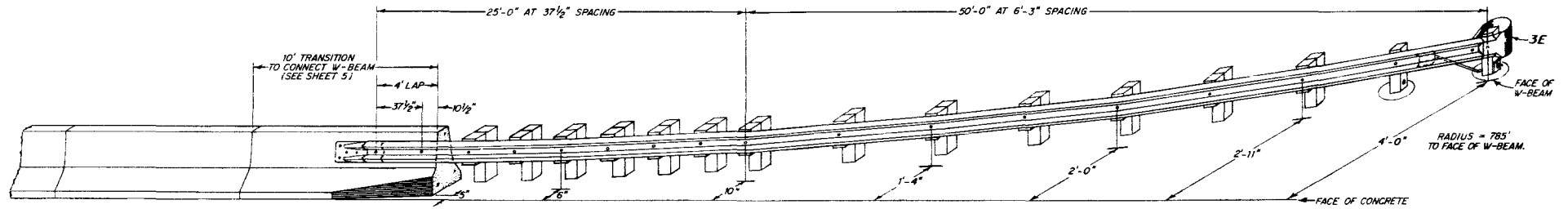


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| STATE DEPARTMENT OF HIGHWAYS DIVISION OF HIGHWAYS STATE OF COLORADO | |
| GUARD RAIL-TYPE 4 CONCRETE BARRIER | |
| APPROVED BY <small>DATE: FEBRUARY 18, 1983</small> | STANDARD PLAN NO. M-606-12 <small>SHEET 5 OF 9</small> |

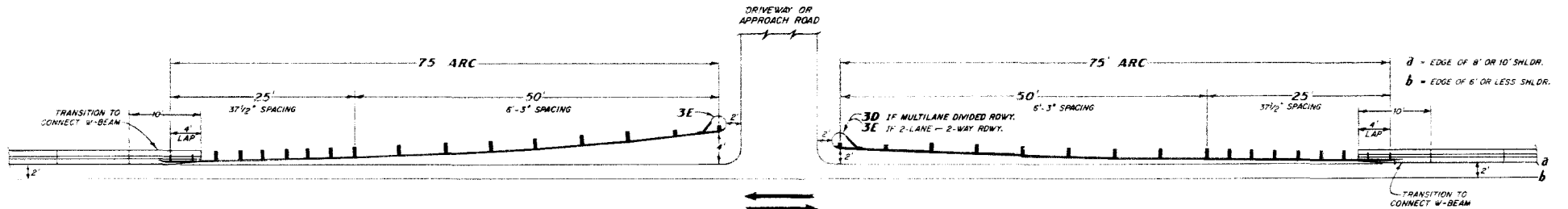
STANDARD M-606-12

(SHEET 6)

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| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | | | |
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CONCRETE BARRIER WITH TYPE 3 FLARE



LAYOUT FOR INTERRUPTED SHOULDER BARRIER

STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL - TYPE 4
 CONCRETE BARRIER**

APPROVED BY: *K. C. WOODRUFF*
 STAFF DESIGN ENGINEER
 DATE FEBRUARY 18, 1983

STANDARD PLAN NO.
M-606-12
 SHEET 6 OF 9

MULTILANE DIVIDED HIGHWAYS (DEPRESSED MEDIAN)

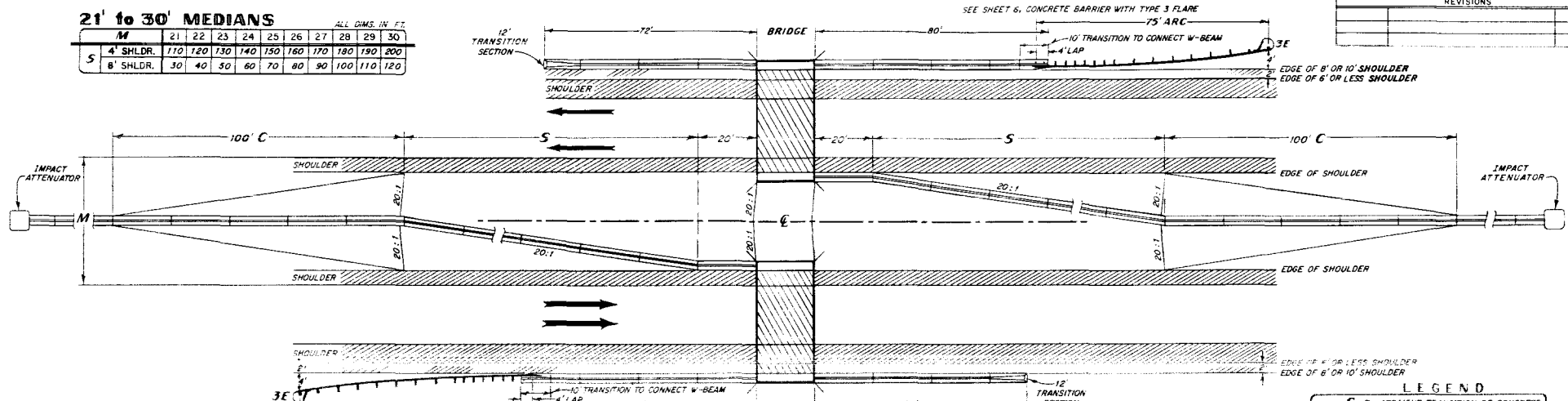
STANDARD M - 606 - 12 (SHEET 7)

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| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | | | |
| REVISIONS | | | | |
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21' to 30' MEDIANS

ALL DIMS. IN FT.

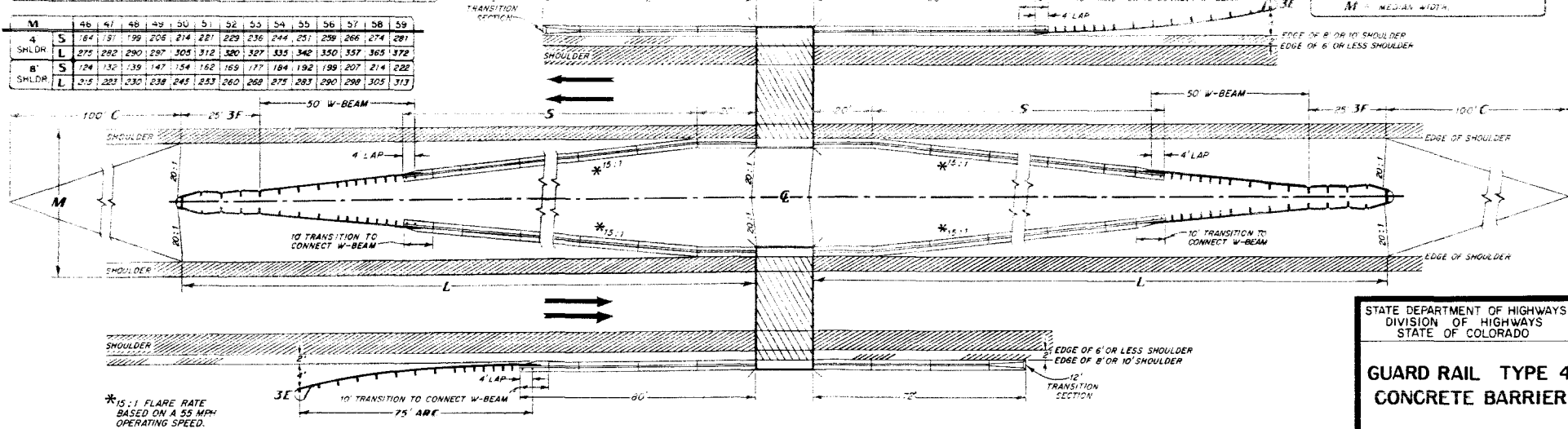
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|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 4' SHLDR. | 170 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 8' SHLDR. | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |



31' to 59' MEDIANS

ALL DIMS. IN FT.

| | | | | | | | | | | | | | | | |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| M | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 4' SHLDR. | 162 | 170 | 177 | 185 | 192 | 200 | 207 | 215 | 222 | 230 | 237 | 245 | 252 | 260 | 267 |
| 8' SHLDR. | 150 | 150 | 150 | 150 | 150 | 150 | 155 | 162 | 170 | 177 | 185 | 192 | 200 | 207 | 215 |



LEGEND

- S = STRAIGHT TRANSITION OF CONCRETE BARRIER.
- C = CHANGE; 100' TRANSITION TO NORMAL SLOPE
- 3E & 3F = STANDARD END TREATMENTS FOR W-BEAM RAIL.
- L = TOTAL LENGTH.
- = DIRECTION OF TRAFFIC.
- M = MEDIAN WIDTH.

* 15:1 FLARE RATE BASED ON A 55 MPH OPERATING SPEED.

STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL TYPE 4
 CONCRETE BARRIER**

APPROVED BY: *[Signature]*
 STATE DESIGN ENGINEER
 DATE: FEBRUARY 18, 1983

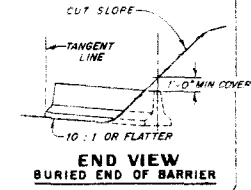
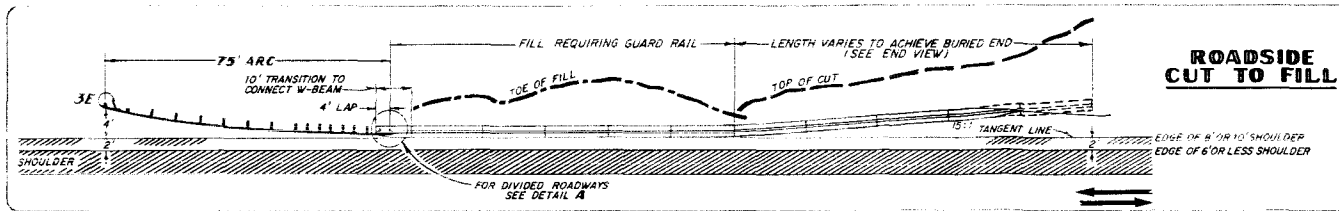
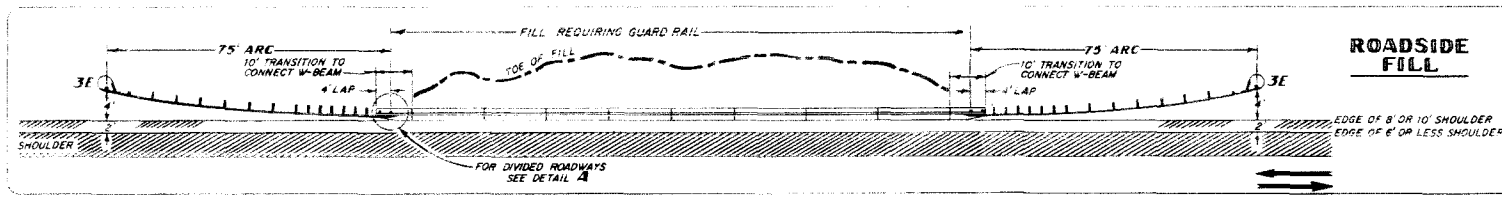
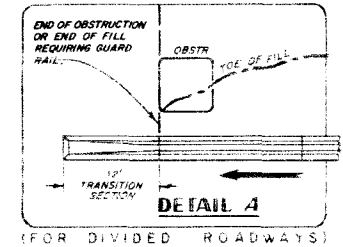
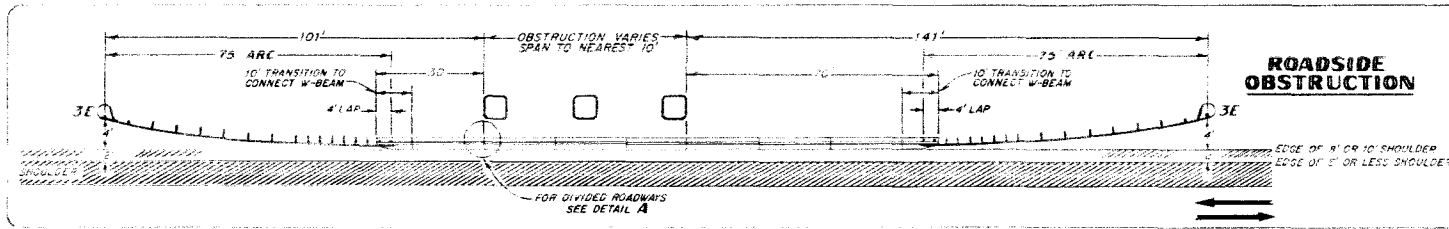
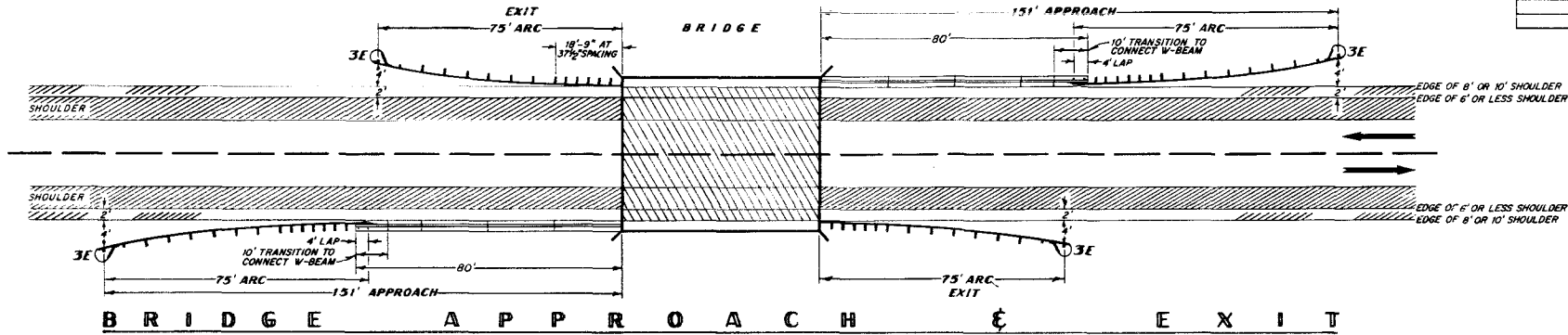
STANDARD PLAN NO.
M-606-12
 SHEET 7 OF 9

2 LANE - 2 WAY HIGHWAYS

STANDARD M-606-12
 (SHEET 9 OF 9)

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|---------------------------|----------|-----------|-----------|--------------|
| FEDERAL ROAD DISTRICT NO. | DIVISION | PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| VIII | COLORADO | | | |

| REVISIONS | |
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STATE DEPARTMENT OF HIGHWAYS
 DIVISION OF HIGHWAYS
 STATE OF COLORADO

**GUARD RAIL - TYPE 4
 CONCRETE BARRIER**

APPROVED BY: [Signature]
 STAFF DESIGN ENGINEER
 DATE: FEBRUARY 18, 1983

STANDARD PLAN NO.
M-606-12
 SHEET 9 OF 9