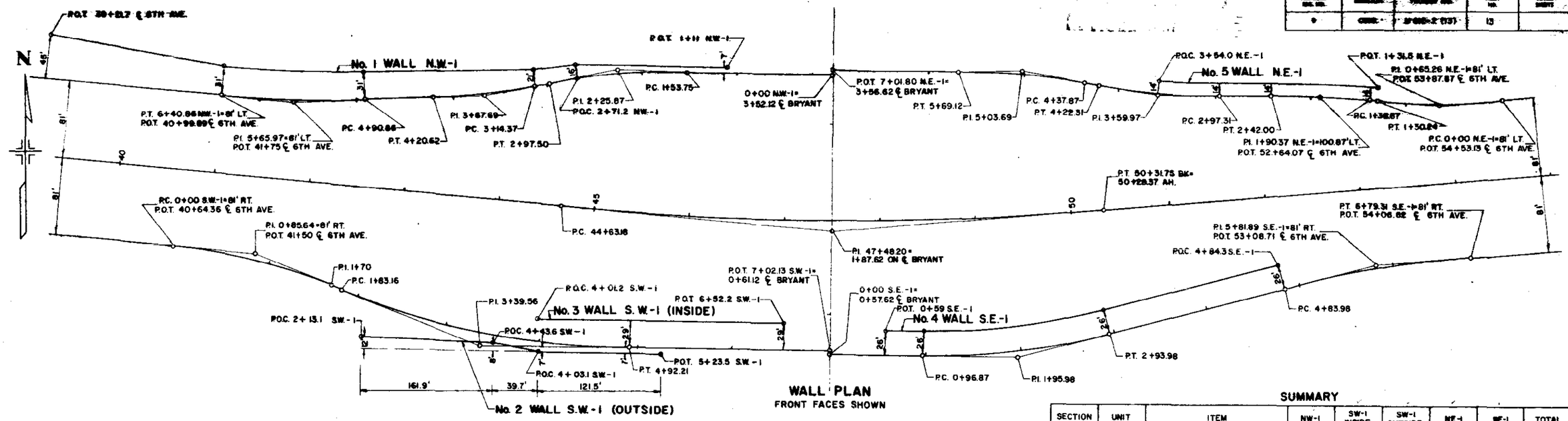
REVISIONS

| | | | | |
|---|---|---|---|---|
| | | | | |
| 9 | CONST. | [illegible] | 13 | |




WALL PLAN
FRONT FACES SHOWN

## SUMMARY

| SECTION | UNIT | ITEM | NW-1 | SW-1 INSIDE | SW-1 OUTSIDE | NE-1 | SE-1 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| 206 | CU YD | STR EXCAV | 1254 | 375 | 395 | 287 | 576 | 2887 |
| 206 | CU YD | STR BKFL (CL 3) | 1576 | 636 | 588 | 256 | 872 | 3928 |
| 601 | CU YD | CONCRETE CL A | 502 | 217 | 195 | 72 | 242 | 1228 |
| 602 | LB | REINF STEEL | ~~23825~~ 23,715 | ~~11040~~ 10,815 | ~~9346~~ 9853 | 2530 | ~~9846~~ 9823 | ~~56696~~ 56,336 |
| ① ___ | SQ FT | ½ EXP JT MATL | 314 | 142 | 120 | 51 | 138 | 765 |

THERE SHALL BE NO SEPARATE PAYMENT FOR ITEMS MARKED THUS (①).
PAYMENT THEREFORE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ITEM 601 CONCRETE CL. A.

JEFFERSON ASSOCIATES
CIVIL ENGINEERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

RETAINING WALLS
GENERAL PLAN

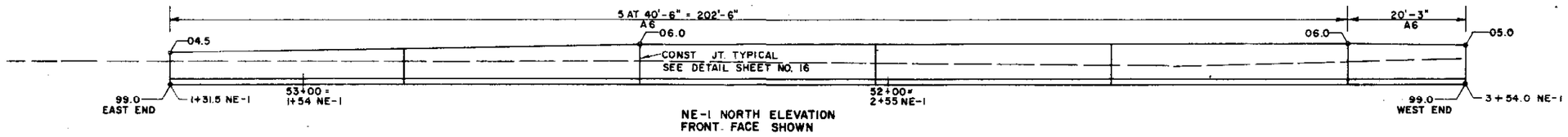
Sta. 39+21.7 WALL NW-1 TO
53+21.6 WALL NE-1
Near DENVER Sec. 5 T. 4S R. 68W

| | |
|---|---|
| Designed by L.H.K. | Approved by |
| Made by G.A.M. | Bridge Engineer |
| Checked by T.V.S. | Date: 19 |

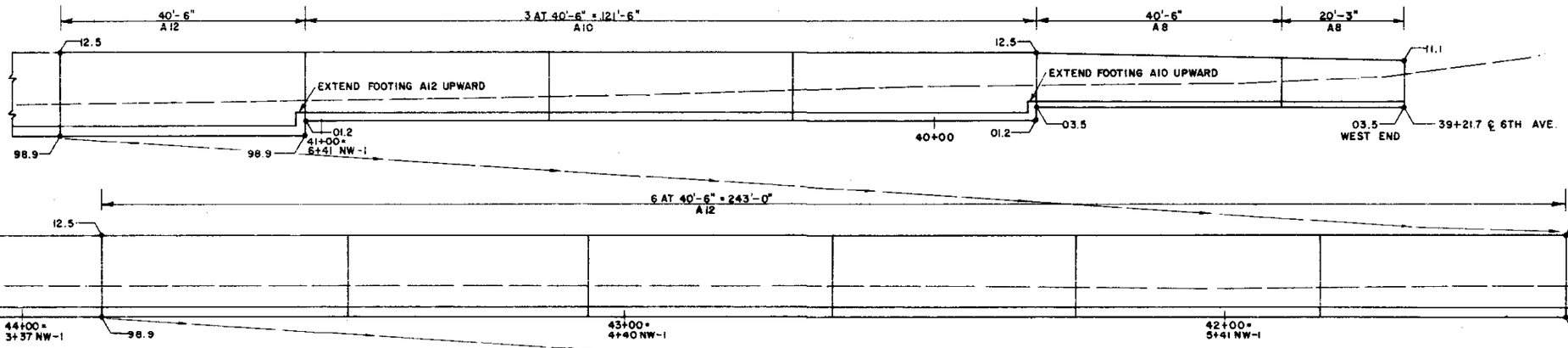
REVISIONS

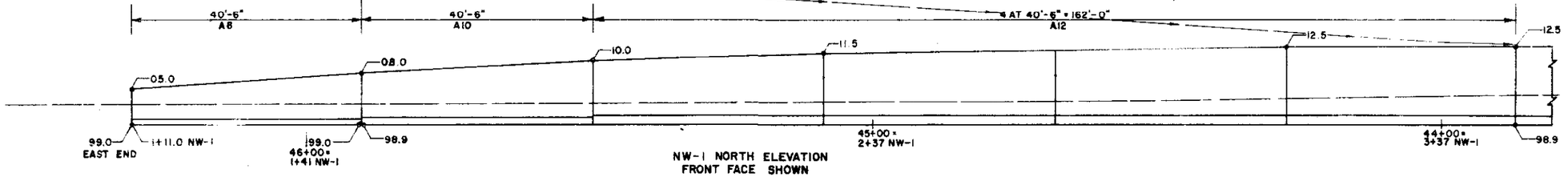
REVISIONS

| FED. ROAD REQ. NO. | DIVISION | PROJECT NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 9 | COLO. | U012-2(13) | 14 | |




NE-1 NORTH ELEVATION
FRONT FACE SHOWN




NW-1 NORTH ELEVATION
FRONT FACE SHOWN

JEFFERSON ASSOCIATES
CIVIL ENGINEERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
RETAINING WALL
FACE ELEVATIONS
NE-1 WALL
NW-1 WALL

STA. 39+21.7 WALL NW-1 TO
53+21.6 WALL NE-1

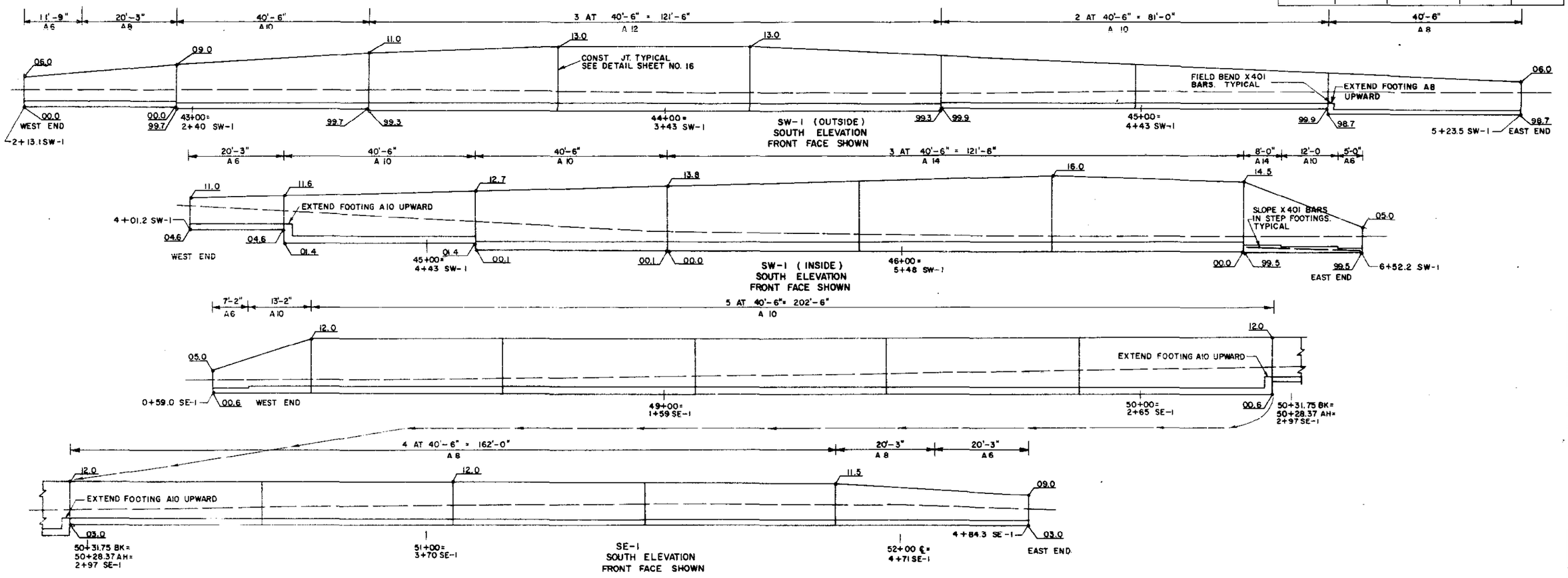
Near DENVER Sec. 5 T 4 S R 68W

| | |
|---|---|
| Designed by L.H.C. | Approved by |
| Made by M.L.K. | Bridge Engineer |
| Checked by T.V.S. | Date: 19 |

REVISIONS

REVISIONS

| FED. ROAD REG. NO. | DIVISION | PROJECT NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 9 | COLO. | U 012-2(13) | 15 | |




JEFFERSON ASSOCIATES
CIVIL ENGINEERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
RETAINING WALLS
FACE ELEVATIONS
SW-1 WALL OUTSIDE
SW-1 WALL INSIDE
SE-1 WALL
STA. 39+21.7 WALL NW-1 TO 55+21.6 WALL NE-1
Near DENVER Sec. 5 T.4S R.68W

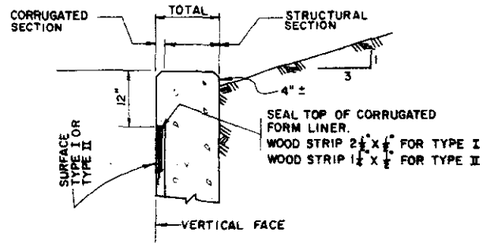
| | |
|---|---|
| Designed by L.H.C. | Approved by |
| Made by M.L.K. | Bridge Engineer |
| Checked by T.V.S. | Date: 19 |

REVISIONS

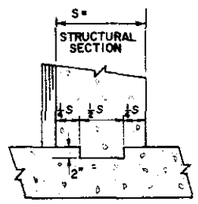
REVISIONS

HIGHWAY 3
COLORADO
R. 137

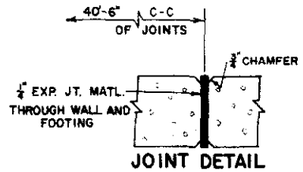
| FED. ROAD REG. NO. | DIVISION | PROJECT NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 9 | COLO. | U 012-2 (13) | 16 | |



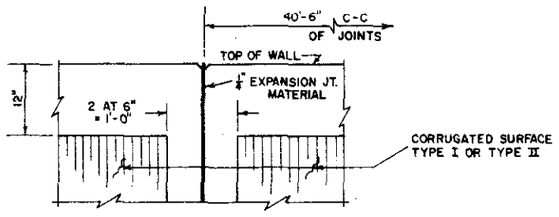

DETAIL AT TOP OF WALL



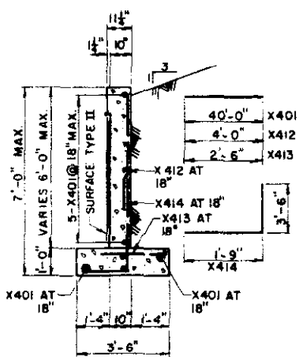

CONSTRUCTION KEY DETAIL



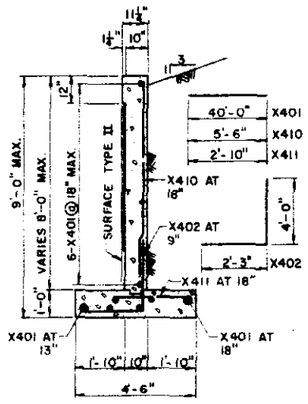

JOINT DETAIL



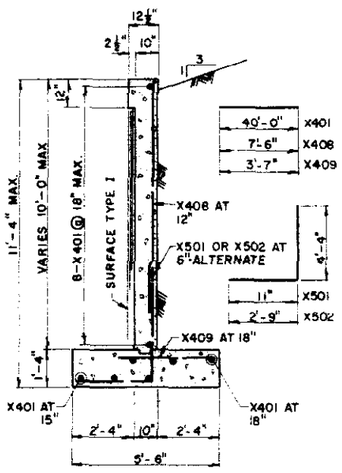

FRONT FACE OF WALL AT JOINT



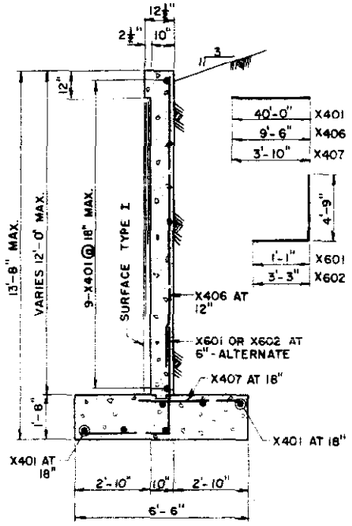

A6



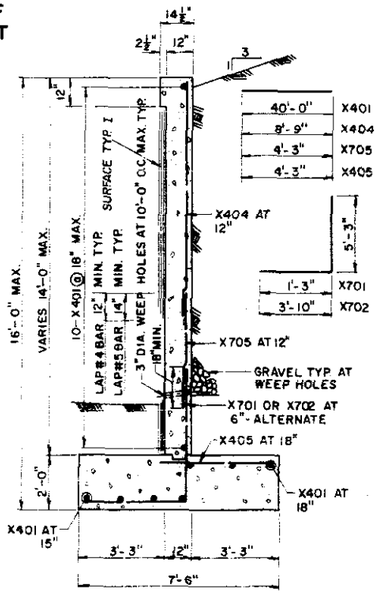

A8




A10




A12




A14

① BAR LIST

| MARK | SIZE | SHAPE | REQ'D | LENGTH |
|---|---|---|---|---|
| X401 | 4 | —— | 9 | 40'-0" |
| X412 | | | 28 | 4'-0" |
| X413 | | | 28 | 2'-6" |
| X414 | | ⌐ | 28 | 5'-3" |

① BAR SUMMARY

689 L.F. #4 AT 0.668 #/FT. = 460
TOTAL = 460

① BAR LIST

| MARK | SIZE | SHAPE | REQ'D | LENGTH |
|---|---|---|---|---|
| X401 | 4 | —— | 12 | 40'-0" |
| X410 | | | 28 | 5'-6" |
| X411 | | | 28 | 2'-10" |
| X402 | | ⌐ | 55 | 6'-3" |

① BAR SUMMARY

1057 L.F. #4 AT 0.668 #/FT. = 710
TOTAL = 710

① BAR LIST

| MARK | SIZE | SHAPE | REQ'D | LENGTH |
|---|---|---|---|---|
| X401 | 4 | —— | 15 | 40'-0" |
| X408 | | | 41 | 7'-6" |
| X409 | | | 28 | 3'-7" |
| X501 | 5 | ⌐ | 40 | 5'-3" |
| X502 | | | 40 | 7'-1" |

① BAR SUMMARY

968 L.F. #4 AT 0.668 #/FT. = 650
493 L.F. #5 AT 1.043 #/FT. = 515
TOTAL = 1165

① BAR LIST

| MARK | SIZE | SHAPE | REQ'D | LENGTH |
|---|---|---|---|---|
| X401 | 4 | —— | 15 | 40'-0" |
| X406 | | | 41 | 9'-6" |
| X407 | | | 28 | 3'-10" |
| X601 | 6 | ⌐ | 40 | 5'-10" |
| X602 | | | 40 | 8'-0" |

① BAR SUMMARY

1097 L.F. #4 AT 0.668 #/FT. = 735
553 L.F. #6 AT 1.502 #/FT. = 830
TOTAL = 1565

① BAR LIST

| MARK | SIZE | SHAPE | REQ'D | LENGTH |
|---|---|---|---|---|
| X401 | 4 | —— | 17 | 40'-0" |
| X404 | | | 41 | 8'-9" |
| X405 | | | 28 | 4'-3" |
| X701 | 7 | ⌐ | 40 | 6'-6" |
| X702 | | | 40 | 9'-1" |
| X705 | | —— | 41 | 4'-3" |

① BAR SUMMARY

1158 L.F. #4 AT 0.668 #/FT = 775
797 L.F. #7 AT 2.044 #/FT = 1630
TOTAL = 2405

① SUMMARY OF QUANTITIES

| SECTION | UNIT | ITEM | AMOUNT |
|---|---|---|---|
| 601 | CU.YD. | CONCRETE CL. A | 14 |
| 602 | LB. | REINF. STEEL | ~~480~~ * |
| ②— | SQ.FT. | ¼" EXP. JT. MATL. | 9 |

① SUMMARY OF QUANTITIES

| SECTION | UNIT | ITEM | AMOUNT |
|---|---|---|---|
| 601 | CU.YD. | CONCRETE CL. A | 18 |
| 602 | LB. | REINF. STEEL | * ~~710~~ |
| ②— | SQ.FT. | ¼" EXP. JT. MATL. | 12 |

① SUMMARY OF QUANTITIES

| SECTION | UNIT | ITEM | AMOUNT |
|---|---|---|---|
| 601 | CU.YD. | CONCRETE CL. A | 25 |
| 602 | LB. | REINF. STEEL | ≠ ~~1165~~ |
| ②— | SQ.FT. | ½" EXP. JT. MATL. | 17 |

① SUMMARY OF QUANTITIES

| SECTION | UNIT | ITEM | AMOUNT |
|---|---|---|---|
| 601 | CU.YD. | CONCRETE CL.A. | 33 |
| 602 | LB. | REINF. STEEL | ≠ ~~1565~~ |
| ②— | SQ.FT. | ½"EXP. JT. MATL. | 22 |

① SUMMARY OF QUANTITIES

| SECTION | UNIT | ITEM | AMOUNT |
|---|---|---|---|
| 601 | CU.YD. | CONCRETE CL. A | 46 |
| 602 | LB. | REINF. STEEL | ≠ ~~2405~~ |
| ②— | SQ.FT. | ½" EXP. JT. MATL. | 31 |

* Total Quantities Reinf Steel on Sheet #13

① FOR 40'-6" WALL SECTION.
THERE SHALL BE NO SEPARATE PAYMENT FOR ITEMS MARKED THUS ② PAYMENT THEREFORE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ITEM 601, CONCRETE CL. A.

FOR WALL SECTIONS SHORTER THAN 40'-6" FIELD CUT X401 BARS TO 6" SHORTER THAN LENGTH OF SECTION

NOTES

BAR LAPS SHOWN SHALL BE INCREASED AS REQUIRED FOR WALLS HAVING DECREASING HEIGHTS

CORRUGATED RUSTICATION ON RETAINING WALL FACES SHALL BE PRODUCED BY LINING THE FORM WITH GALVANIZED CORRUGATED STEEL SHEETS. PEAKS AND VALLEYS SHALL RUN IN THE VERTICAL DIRECTION.
FOR SURFACE TYPE I- USE 2½" X 28 GA. CORRUGATED STEEL SHEETS.
FOR SURFACE TYPE II- USE 1½" X 29 GA. CORRUGATED STEEL SHEETS.

JEFFERSON ASSOCIATES
CIVIL ENGINEERS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

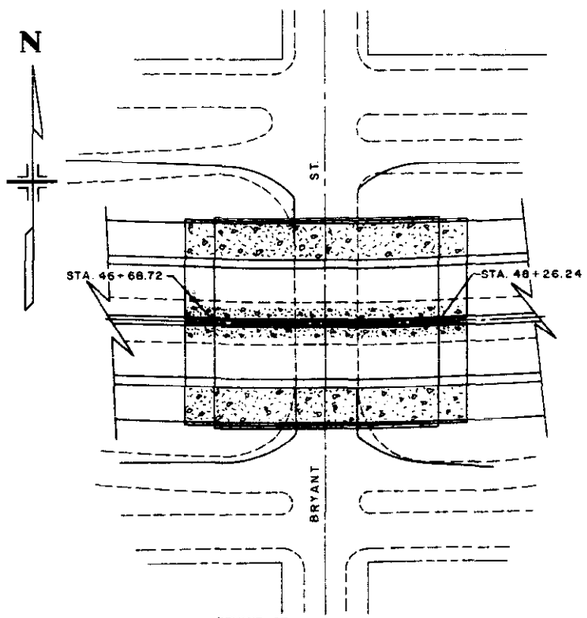
RETAINING WALLS
SECTIONS & DETAILS

STA. 39+21.7 WALL NW-1 TO
53+21.6 WALL NE-1
Near DENVER Sec. 5 T. 4S R. 68W

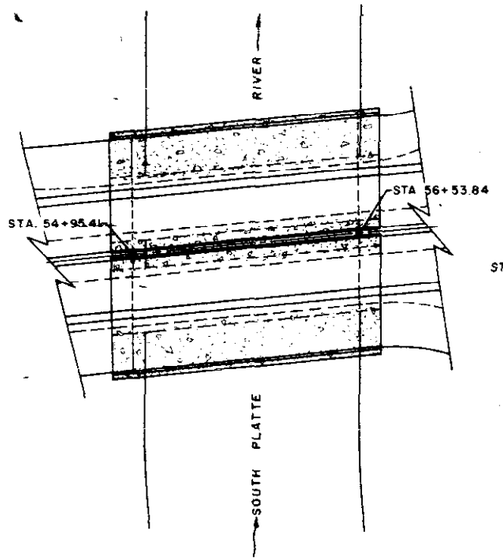
| Designed by L.H.C. | Approved by |
|---|---|
| Made by M.L.K. | Bridge Engineer |
| Checked by T.V.S. | Date: 19 |

REVISIONS (R-1) 12-2-66 QUANTITIES ITEM 206,501,502,601,602

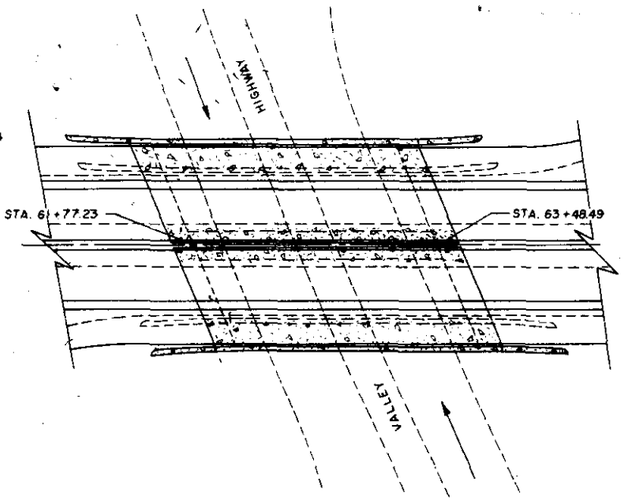
| FED. ROAD REG. NO. | DIVISION | PROJECT NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 9 | COLO. | U 012-2 (13) | 17 | |



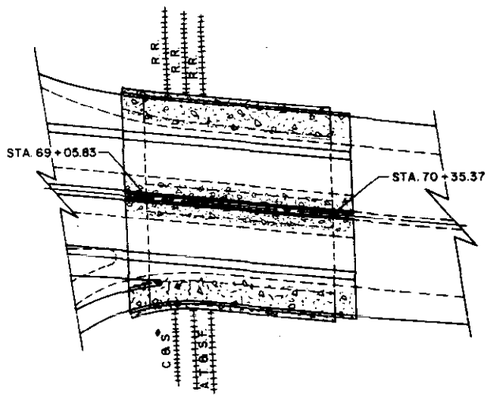

BRYANT ST.
F-16-EM
F-16-EN




SOUTH PLATTE RIVER
F-16-EE
F-16-EF




VALLEY HIGHWAY
F-16-DY
F-16-DU




C B & S AND - AT & SF R.R.
F-16-EI
F-16-EJ

## INDEX OF BRIDGE SHEETS

| SHEET NO. | TITLE |
|---|---|
| 18 | GENERAL PLAN & ELEVATION |
| 19 | DETAILS ABUTMENT NO. 1 & 4 |
| 20 | DETAILS PIER NO. 2 & 3 |
| 21 | GIRDER DETAILS |
| 22 | SUPERSTRUCTURE DETAILS |
| 23 | DECK PLAN NORTH BRIDGE |
| 24 | DECK PLAN SOUTH BRIDGE |

| SHEET NO. | TITLE |
|---|---|
| 25 | GENERAL PLAN & ELEVATION |
| 26 | DETAILS ABUTMENT NO. 1 SOUTH SIDE |
| 27 | DETAILS ABUTMENT NO. 1 NORTH SIDE |
| 28 | PIER DETAILS |
| 29 | APPROACH SLAB DETAILS<br>PIER BAR LIST & QUANTITES |
| 30 | DETAILS ABUTMENT NO. 4 NORTH SIDE |
| 31 | DETAILS ABUTMENT NO. 4 SOUTH SIDE |
| 32 | GIRDER & STRUCTURAL STEEL DETAILS |
| 33 | SUPERSTRUCTURE DETAILS |
| 34 | DECK PLAN NORTH BRIDGE |
| 35 | DECK PLAN SOUTH BRIDGE |

| SHEET NO | TITLE |
|---|---|
| 36 | GENERAL PLAN & ELEVATION |
| 37 | DETAILS ABUTMENT NO 1 |
| 38 | DETAILS WEST WINGS |
| 39 | PIER NO. 2 DETAILS |
| 40 | DETAILS ABUTMENT NO. 3 |
| 41 | DETAILS EAST WINGS |
| 42 | APPROACH SLAB DETAILS<br>FRAME BAR DETAILS |
| 43 | FRAME DETAILS 1C, 2C, & 3C |
| 44 | FRAME DETAILS 1N, 2N, 3N, 1S, 2S, & 3S |
| 45 | PIER NO. 2 QUANTITIES<br>LEG DETAILS AT ABUTMENT NO. 3 |
| 46 | SUPERSTRUCTURE DETAILS |
| 47 | DECK PLAN SOUTH BRIDGE |
| 48 | DECK PLAN NORTH BRIDGE |
| 49 | FALSEWORK DETAILS |

| SHEET NO. | TITLE |
|---|---|
| 50 | GENERAL PLAN & ELEVATION |
| 51 | DETAILS ABUTMENT NO. 1 |
| 52 | APPROACH SLAB DETAILS<br>ABUTMENT NO. 1 QUANTITIES |
| 53 | DETAILS WEST WINGS |
| 54 | PIER NO. 2 DETAILS |
| 55 | DETAILS ABUTMENT NO. 3 |
| 56 | GIRDER & STRUCTURAL STEEL DETAILS |
| 57 | SUPERSTRUCTURE DETAILS |
| 58 | DECK PLAN SOUTH BRIDGE |
| 59 | DECK PLAN NORTH BRIDGE |
| 60 | STANDARD DETAILS |
| 61 | CLASS 2 SURFACE FINISH DETAILS |

WALLS

| SHEET NO. | TITLE |
|---|---|
| ~~13~~ | ~~RETAINING WALLS GENERAL PLAN~~ |
| ~~14~~ | ~~RETAINING WALLS FACE ELEVATIONS~~ |
| ~~15~~ | ~~RETAINING WALLS FACE ELEVATIONS~~ |
| ~~16~~ | ~~RETAINING WALLS SECTIONS & DETAILS~~ |
| 17 | INDEX OF BRIDGE SHEETS |

## SUMMARY OF QUANTITIES

| | ITEM | UNIT | DESCRIPTION | F-16-EM F-16-EN | F-16-EE F-16-EF | F-16-DY F-16-DU | F-16-EI F-16-EJ | TOTAL BRIDGES | ~~WALLS~~ * |
|---|---|---|---|---|---|---|---|---|---|
| | 202 | EA | REM PORT PRESENT STR | 2 | 2 | 2 | 2 | 8 | |
| (R-1) | 206 | CU YD | STR EXCAV | 493 | 1456 | 896 | 1619 | 4464 | ~~2887~~ |
| (R-1) | 206 | CU YD | STR BKFL (CL3) | 375 | 1269 | 2889 | 2443 | 6976 | ~~3828~~ |
| | 403 | TON | HBP (GR E) | 145 | 165 | 163 | 103 | 576 | |
| | 411 | GAL | LIQ ASPH MATL (RC-800) | 190 | 215 | 192 | 128 | 725 | |
| (R-1) | 501 | SQ FT | STEEL SHEET PILE (TY I) | | 2910 | | | 2910 | |
| | 502 | LIN FT | DRILL HOLE FAC PILE DR | | | 16 | | 16 | |
| | 502 | LIN FT | STEEL PILE (10BP42) | | | | 282 | 282 | |
| (R-1) | 502 | LIN FT | STEEL PILE (12 BP53) | 936 | | 576 | | 1512 | |
| (R-1) | 502 | LIN FT | STEEL PILE (12 BP 74) | | | 104 | | 104 | |
| | 506 | CU YD | RIP RAP | | 550 | | | 550 | |
| | 507 | CU YD | CONC S AND D PAVE (REINF) | 190 | | | | 190 | |
| (R-1) | ① 509 | LS | STR. STEEL | | • | • | • | LS | |
| | ② 509 | LS | STR STEEL (GALV) | • | • | • | • | LS | |
| | 210 | LIN FT | RES RAILING | | 436 | 525 | 320 | 1281 | |
| | 513 | EA | DRAIN PIPE 4" IN (-4 FT.) | | 28 | | | 28 | |
| (R-1) | 601 | CU YD | CONCRETE CL A | 919 | 1123 | 1449 | 969 | 4460 | ~~1804~~ |
| (R-1) | 602 | LB | REINF STEEL | 241,795 | 152,750 | 280,305 | 122,980 | 797,830 | ~~56,155~~ |
| | 606 | LIN FT | GD RAIL TY 3A (DOUBLE) | 200 | 200 | 187.5 | 150 | 737.5 | |
| | 613 | LIN FT | 1½" ELEC COND | 340 | 386 | 559 | | 1285 | |
| | ③ | SQ FT | ½" EXP JT MATL | 326 | 512 | 971 | 438 | 2247 | ~~785~~ |
| | ④ | SQ FT | ½" EXP JT MATL | 75 | | 72 | | 147 | |
| | ⑤ | SQ FT | 16GA GALV SHT STEEL | | 166 | | 207 | 373 | |
| | 607 | LIN FT | FENCE CHAIN LINK (36 INCH) | 200 | 200 | 188 | 150 | 738 | |

① DESIGN WT = 493,345 LB. (R-1)

② DESIGN WT = 21,735 LB.

③ THERE SHALL BE NO SEPARATE PAYMENT FOR ITEMS MARKED THUS(③) PAYMENT THEREFORE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ITEM 601, CONCRETE CL. A.

* SEE LIST OF STRUCTURES FOR WALL QUANTITIES.


See Sheet No 18 for Summary of Quantities for Str. F-16-EM & EN
" " " 25 " " " " " " F-16-EE & EF
" " " 36 " " " " " " F-16-DU & DY
" " " 50 " " " " " " F-16 EI & EJ


### SPECIAL NOTES

ALL STRUCTURAL STEEL RAIL REMOVED FROM THE SOUTH CURB OF NORTH BRIDGES AND FROM THE NORTH CURB OF SOUTH BRIDGES UNDER THE PROVISIONS OF SECTION 202 SHALL BE DELIVERED BY THE CONTRACTOR AND STOCK PILED AT THE COLORADO DEPARTMENT OF HIGHWAYS MAINTENANCE YARD LOCATED AT 18300 EAST COLFAX AVENUE DENVER, COLORADO HAULING AND STOCK PILING SHALL BE INCLUDED FOR PAYMENT IN ITEM 202

### GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD 1965 INTERIM SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.
ALL CONCRETE SHALL BE CLASS "A".
ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.
IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPLICED, THEY SHALL LAP A MINIMUM OF 28 DIAMETERS FOR BARS NEAR TOPS OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS, AND 17 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS WHEN SPLICED SHALL LAP 17 DIAMETERS OF THE BAR
DIMENSIONS FOR REINFORCING STEEL ARE SHOWN AS CLEAR, OR OUT TO OUT OF BARS

SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA, AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY
FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.
WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LABOR METHODS
FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL SEE STANDARD M-206-4
ALL CONCRETE SURFACES MARKED WITH THE SYMBOL F AS SHOWN ON SHEET NO. 61 SHALL RECEIVE CLASS "2" SURFACE FINISH.
ALL STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 FOR ALUMINUM PAINT
ALL BOLTS SHALL BE ⅞ INCH DIAMETER UNLESS OTHERWISE NOTED.
ALL REINFORCING STEEL SHOWN IN BUNDLES OF 2 OR 3 BARS SHALL BE WIRE TIED AT 6'-0" MAXIMUM INTERVALS ALONG THE LENGTH OF THE BUNDLES

WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.
FOR WELDED GIRDERS ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE WELDING INTO GIRDER.
WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIOGRAPHICALLY AND BY THE PENETRANT DYE METHOD.
WHEN TREATED TIMBER PILING IS SHOWN ON THE PLANS THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.
EXPANSION JOINT MATERIAL SHALL CONFORM TO A.A.S.H.O. SPEC. M-153-64 TYP III
FOR CAST IN PLACE CONCRETE CONSTRUCTION ALL SHORING SHALL REMAIN IN PLACE UNTIL ALL CONCRETE IN PIER CAP BEAMS, GIRDER STEMS AND DECK SLABS HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 2400 lbs. per sq. in.
ALL EXPOSED CAST IN PLACE CONCRETE CORNERS SHALL BE CHAMFERED WITH A ¾" MILLED STRIP.

TELFORD V. STRADLEY, 3545

JEFFERSON ASSOCIATES
CIVIL ENGINEERS

LOADING DATA
LIVE LOAD = A.A.S.H.O. H S 20-44
DEAD LOAD ASSUMES 17.5 LBS. PER SQ. FT. WEARING SURFACE.

DESIGNING DATA
A.A.S.H.O. 1961 UNIT STRESSES, EXCEPT AS NOTED.
Reinforcing Steel $f_s$ = 20000 lbs. per sq. in.
Structural Steel $f_s$ = 20000 lbs. per sq. in. ASTM-A36
$f_s$ = 18,000 lbs. per sq. in. ASTM-A7
Concrete $f_c$ = 1,200 lbs. per sq. in. n=10

# COLORADO DEPARTMENT OF HIGHWAYS

BRIDGE SITUATION INDEX
SUMMARY OF QUANTITIES
GENERAL NOTES
WEST 6TH AVENUE

Sta. 46+68.72 TO STA. 70+35.77
Near DENVER Sec. 4,5,8,9 T. 4 S. R. 68 W.

| | |
|---|---|
| Designed by M.L.K | Approved by |
| Made by E.L.M | Bridge Engineer |
| Checked by T.V.S | Date: 19 |

K & E CO 375 5-141