# OLD CROSS CUT CANAL RECONSTRUCTION

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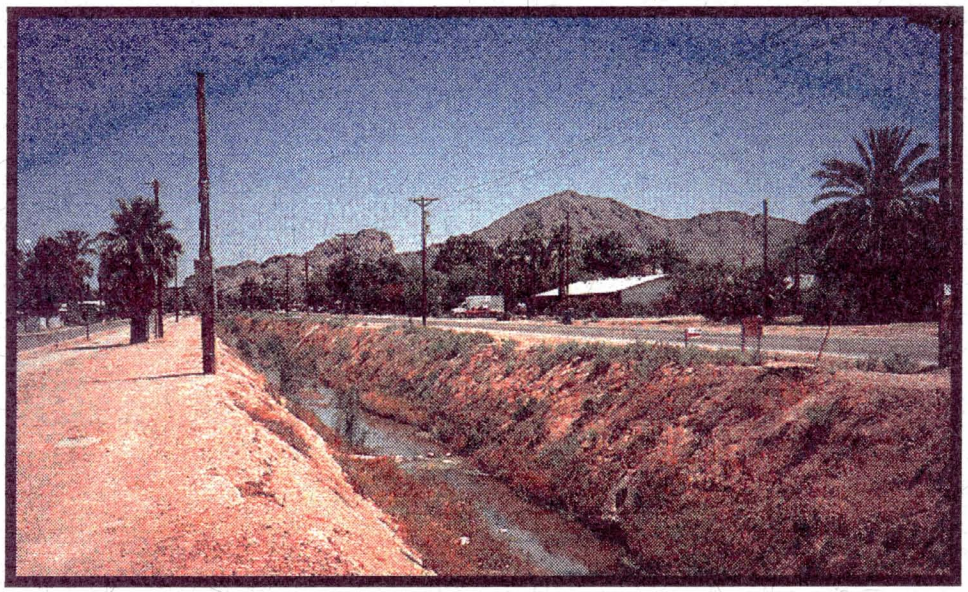

# PHASE I
# REVISED QUANTITY CALCULATIONS & COST ESTIMATE

FCDMC PROJECT NO. 94-24
GREINER PROJECT NO. E002102
JANUARY 1995

MESSAGE DISPLAY FOR DON RERICK

To: fbf
rcs
Cc: djr
pac

From: Don Rerick:TALOS
Host: TALOS
Postmark: 01/23/95 01:22PM
Delivered: 01/23/95 01:22PM
Status:

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Subject: OCC Phase 1 - Engineer's Estimate and quantity calcs.

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Message:
I have received and am sending to you the final subject estimate and calcs.

Please review them and get me your comments NLT Feb. 6.

Thanks.

C&O - review unit costs especially

Eng'rg - review the quantity calcs.

Greiner

FLOOD CONTROL DISTRICT
RECEIVED
JAN 23 1995

| | | | |
|---|---|---|---|
| | CHENG | | P.M.PM |
| | DSF | | SUPT |
| | ADMIN | | LABOR |
| | FINANCE | | PIO |
| | COUN | | |
| | ENGR | | |

REMARKS

# MEMORANDUM

**DATE:** January 23, 1995

**TO:** Don Rerick, Flood Control District of Maricopa County

**FROM:** Vince Gibbons
Alison Boldt

**SUBJECT:** Old Cross Cut Canal–Phase 1 90% Engineer's Estimate Review Comments

The following are responses to review comments from the District:

**COMMENTS –**

15. B.I. 301; The revised quantity calculated for this item is 20,288 SY. This quantity reflects the deletion of the multi-use path (607.7 SY) and the addition of the 10' x 10' access ramp (11.1 SY) at the pedestrian bridge, Sta. 214+40.

24. B.I. 340-2; The comment referring to this bid item number is not necessary due to realignment of 340 bid items.

26. B.I. 340-4; The comment referring to this bid item number is not necessary due to realignment of 340 bid items.

29. B.I. 340-7; The ALLEY ENTRANCE bid item was deleted because this quantity is now covered by bid items 340-5 and 340-6.

31. B.I. 505-17 (previously 340-9); This quantity was not revised to reflect the cutoff walls at both the upstream and downstream ends of slab because the Special Provisions indicate that the cutoff walls are incidental to the cost per square yard of 4-inch concrete slab.

33. B.I. 350-2; This bid item was deleted as the City of Phoenix and the Flood Control

District will now remove and reinstall the signs.

35. B.I. 350-10; This item was deleted. The safety curbs at Ted's Kitchen will be incidental to the parking lot removal. The single Type A concrete curb along the west side of 48th Street and south of Thomas Road is now included in B.I. 350-2 REMOVE SINGLE CURB AND CURB AND GUTTER.

36. B.I. 401-1; Based upon calculations for TRAFFIC CONTROL submitted on 12/16/94, the LS unit cost for this item is $83,000, which includes 4,600 feet of temporary D-1/2 A.C. pavement.

37. B.I. 401-3; Based upon calculations for THOMAS ROAD DETOUR submitted on 12/16/94, the LS unit cost for this item is $55,000, which includes the option for use of a temporary bridge for crossing of the canal.

42. B.I. 420-1; The new quantity for CHAIN LINK FENCE is 442 LF as shown in the calculations.

43. B.I. 505-1; The $1,700/LF does not include costs for excavation and backfill as these costs are covered in the 206 bid items. The determination of the unit cost for this item is shown in the calculations.

44. B.I. 505-4; The quantity for this item is calculated as 31 LF. As shown in the calculations, this is due to the required length of fitting encasement. The fittings are to be encased per Detail A on Sheet C9.3 to a minimum of 4 feet beyond the fitting pipe joint.

47. B.I. 505-11; The revised quantity for this item is calculated as 543 LF. This includes the additional concrete apron on Sheet C3.6 as well as refinement to the calculation for the apron on Sheet C3.9.

58. B.I. 610-3; The unit cost for this item has been revised to $2,025/LF. This unit cost, as

shown in the calculations, includes costs for cut and removal of existing pipe, pipe materials including a multiplier for installation, two 2'x17'x10' concrete thrust blocks, two special connection sleeves, one air release and drain assembly, and one fire hydrant relocation. The resulting unit cost is conservative and should cover the "around-the-clock" construction during the 7-day shutdown window.

62. B.I. 618-5; The revised quantity for this item is calculated as 87 LF. This includes the 68 LF from Sheet C3.5 plus an additional 19 LF for the "Bubble-Up" Manhole (Sheet BMH-1).

67. The revised total estimate, with contingency and including new bid items and other refinements is $3,243,827.

# COST ESTIMATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
OLD CROSS CUT CANAL – PRELIMINARY CONSTRUCTION COST ESTIMATE (PHASE 1 95% SUBMITTAL)

JOB NO. E002102
FILE NAME : COST95S.WK3

F.C.D. PROJECT NO. 94–24
BY : JVG/WCT/ALB

| ITEM # | BID ITEM | UNIT | QUANTITY | UNIT PRICE | ITEM TOTAL |
|---|---|---|---|---|---|
| 105 – 1 | 4–INCH GAS LINE AT THOMAS ROAD | L.S. | 1 | $20,000.00 | $20,000 |
| 105 – 2 | PROTECTION OF WATER AND SEWER LINES | L.S. | 1 | $40,000.00 | $40,000 |
| 107 – 1 | NPDES/SWPPP PERMITS | L.S. | 1 | $20,000.00 | $20,000 |
| 107 – 2 | PREPARATION OF HEALTH AND SAFETY PLAN | L.S. | 1 | $5,000.00 | $5,000 |
| 107 – 3 | PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE | L.S. | 1 | $50,000.00 | $50,000 |
| 107 – 4 | GROUND WATER DEWATERING | L.S. | 1 | $50,000.00 | $50,000 |
| 202 | MOBILIZATION | L.S. | 1 | $80,000.00 | $80,000 |
| 205 | ROADWAY EXCAVATION | C.Y. | 6,710 | $3.50 | $23,485 |
| 206 – 1 | STRUCTURE EXCAVATION | C.Y. | 15,295 | $14.00 | $214,130 |
| 206 – 2 | STRUCTURE BACKFILL | C.Y. | 5,318 | $16.00 | $85,088 |
| 206 – 3 | GEOCOMPOSITE DRAIN | S.Y. | 917 | $24.00 | $22,008 |
| 211 | FILL CONSTRUCTION | C.Y. | 5,725 | $8.00 | $45,800 |
| 220 | DUMPED RIPRAP | C.Y. | 133 | $45.00 | $5,985.00 |
| 221 | GABION CONSTRUCTION | C.Y. | 191 | $100.00 | $19,100 |
| 222 – 1 | GRASSCRETE CONSTRUCTION | S.F. | 1,162 | $6.00 | $6,972 |
| 222 – 2 | 8–INCH PVC SLEEVES | L.F. | 45 | $10.00 | $450.00 |
| 301 | SUBGRADE PREPARATION UNDER PAVEMENT | S.Y. | 20,288 | $2.00 | $40,576 |
| 310 | GRAVEL BEDDING | C.Y. | 2,322 | $13.50 | $31,347 |
| 321 – 1 | ASPHALT CONCRETE PAVEMENT C – 3/4 | TON | 51 | $32.00 | $1,632 |
| 321 – 2 | ASPHALT CONCRETE PAVEMENT D – 1/2 | TON | 2,175 | $32.00 | $69,600 |
| 321 – 3 | ASPHALT CONCRETE PAVEMENT A – 1 1/2 | TON | 5,476 | $32.00 | $175,232 |
| 321 – 4 | ASPHALT CONCRETE CURB | L.F. | 4,403 | $2.00 | $8,806 |
| 329 | TACK COAT | TON | 9 | $250.00 | $2,250 |
| 340 – 1 | CONCRETE CURB AND GUTTER, MAG DET 220, TYPE A | L.F. | 869 | $6.00 | $5,214 |
| 340 – 2 | CONCRETE CURB AND GUTTER, MAG DET 220, MODIFIED TYPE A | L.F. | 4,019 | $6.50 | $26,124 |
| 340 – 3 | CONCRETE ROLL CURB, MAG DET 220, TYPE C | L.F. | 55 | $7.00 | $385 |
| 340 – 4 | CONCRETE SIDEWALK, COP DET P–1230 | S.F. | 10,630 | $2.00 | $21,260 |
| 340 – 5 | CONCRETE DRIVEWAY, 5" SECTION | S.F. | 2,308 | $3.25 | $7,501 |
| 340 – 6 | CONCRETE DRIVEWAY, 9" SECTION | S.F. | 2,213 | $3.30 | $7,303 |

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
OLD CROSS CUT CANAL – PRELIMINARY CONSTRUCTION COST ESTIMATE (PHASE 1 95% SUBMITTAL)

JOB NO. E002102
FILE NAME : COST95S.WK3

F.C.D. PROJECT NO. 94–24
BY : JVG/WCT/ALB

| ITEM # | BID ITEM | UNIT | QUANTITY | UNIT PRICE | ITEM TOTAL |
|---|---|---|---|---|---|
| 340 – 7 | CONCRETE SIDEWALK RAMP, COP DET P–1236, TYPE D | EA. | 11 | $300.00 | $3,300 |
| 345 – 1 | ADJUST BOX FRAME AND COVER | EA. | 26 | $250.00 | $6,500 |
| 345 – 2 | ADJUST MANHOLE FRAME AND COVER | EA. | 24 | $240.00 | $5,760 |
| 350 – 1 | REMOVE FENCE, HANDRAIL, GUARDRAIL, POSTS, AND BARRICADES | L.S. | 1 | $3,500.00 | $3,500 |
| 350 – 2 | REMOVE SINGLE CURB AND CURB AND GUTTER | L.S. | 1 | $1,700.00 | $1,700 |
| 350 – 3 | REMOVE PIPE | L.S. | 1 | $250.00 | $250 |
| 350 – 4 | REMOVE SPILLWAYS AND CHANNEL LINING | L.S. | 1 | $1,000.00 | $1,000 |
| 350 – 5 | REMOVE ASPHALT PAVEMENT | L.S. | 1 | $34,000.00 | $34,000 |
| 350 – 6 | REMOVE SIDEWALK AND DRIVEWAYS | L.S. | 1 | $6,200.00 | $6,200 |
| 350 – 7 | REMOVE BOX CULVERTS AT THOMAS ROAD | L.S. | 1 | $20,000.00 | $20,000 |
| 350 – 8 | MISCELLANEOUS REMOVALS | L.S. | 1 | $5,000.00 | $5,000 |
| 350 – 9 | REMOVE TREES | EA. | 5 | $350.00 | $1,750 |
| 401 – 1 | TRAFFIC CONTROL | L.S. | 1 | $83,000.00 | $83,000 |
| 401 – 2 | TRAFFIC SIGNALIZATION | L.S. | 1 | $25,000.00 | $25,000 |
| 401 – 3 | THOMAS ROAD DETOUR | L.S. | 1 | $55,000.00 | $55,000 |
| 401 – 4 | OFF–DUTY UNIFORMED OFFICER | M.H. | 2,000 | $27.00 | $54,000 |
| 401 – 5 | EMERGENCY VEHICLE CROSSING | L.S. | 1 | $5,000.00 | $5,000.00 |
| 405 | TYPE 'A' SURVEY MARKER, MAG DET 120–1 | EA. | 3 | $250.00 | $750 |
| 415 – 1 | TYPE 'B' BARRICADE, COP DET P–1106 | L.F. | 127 | $37.00 | $4,699 |
| 415 – 2 | STEEL GUARDRAIL, MAG DET 135–1, 135–2, AND 135–3 | L.F. | 204 | $20.00 | $4,080 |
| 420 | CHAIN LINK FENCE | L.F. | 442 | $15.00 | $6,630 |
| 505 – 1 | DOUBLE 18'x 10' CONC. BOX CULVERT | L.F. | 500 | $1,700.00 | $850,000 |
| 505 – 2 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 402 | L.F. | 44 | $20.00 | $880 |
| 505 – 3 | CONCRETE ENCASEMENT FOR 45" WATER LINE, MAG DET 402 | L.F. | 40 | $80.00 | $3,200 |
| 505 – 4 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 402 | L.F. | 31 | $90.00 | $2,790 |
| 505 – 5 | CONCRETE ENCASEMENT FOR 45" WATER LINE FITTINGS | L.F. | 48 | $145.00 | $6,960 |
| 505 – 6 | CONCRETE ENCASEMENT FOR 54" WATER LINE FITTINGS | L.F. | 55 | $170.00 | $9,350 |
| 505 – 7 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 404 | L.F. | 14 | $18.00 | $252 |
| 505 – 8 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 404 | L.F. | 8 | $90.00 | $720 |

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
OLD CROSS CUT CANAL – PRELIMINARY CONSTRUCTION COST ESTIMATE (PHASE 1 95% SUBMITTAL)

JOB NO. E002102
FILE NAME : COST95S.WK3

F.C.D. PROJECT NO. 94–24
BY : JVG/WCT/ALB

| ITEM # | BID ITEM | UNIT | QUANTITY | UNIT PRICE | ITEM TOTAL |
|---|---|---|---|---|---|
| 505 – 9 | CONCRETE ENCASEMENT FOR 15" SANITARY SEWER LINE, MAG DET 404 | L.F. | 30 | $21.00 | $630 |
| 505 – 10 | CONCRETE CAP OVER EXISTING 48" WATER LINE | L.F. | 1,850 | $40.00 | $74,000 |
| 505 – 11 | CONCRETE APRON | S.F. | 543 | $3.00 | $1,629 |
| 505 – 12 | TYPE 'A' SPILLWAYS | S.Y. | 294 | $54.00 | $15,876 |
| 505 – 13 | DET P–1570 TYPE "N" SINGLE CATCH BASINS | EA. | 3 | $1,200.00 | $3,600 |
| 505 – 14 | DET P–1570 TYPE "N" DOUBLE CATCH BASINS | EA. | 2 | $2,000.00 | $4,000 |
| 505 – 15 | DET P–1570 TYPE "N" 4 GRATE CATCH BASINS | EA. | 2 | $3,000.00 | $6,000 |
| 505 – 16 | CONCRETE SCUPPERS, MAG 206.1 AND 206.2 | EA. | 5 | $900.00 | $4,500 |
| 505 – 17 | 4–INCH CONCRETE SLAB | S.Y. | 2,246 | $30.00 | $67,380 |
| 515 | FIXED BOLLARDS | EA. | 26 | $300.00 | $7,800 |
| 520 | HANDRAIL | L.F. | 62 | $15.00 | $930 |
| 525 – 1 | CHANNEL SIDE SLOPE PROTECTION | S.Y. | 390 | $30.00 | $11,700 |
| 525 – 2 | TYPE 'B' SPILLWAYS | S.Y. | 732 | $30.00 | $21,960 |
| 525 – 3 | PIPE OUTLET PROTECTION | S.Y. | 562 | $30.00 | $16,860 |
| 610 – 1 | WATER LINE RELOCATION (12 INCH AT THOMAS) | L.F. | 66 | $65.00 | $4,290 |
| 610 – 2 | WATER LINE CONSTRUCTION(12 INCH AT VIRGINIA) | L.F. | 125 | $65.00 | $8,125 |
| 610 – 3 | WATER LINE RELOCATION (45 INCH) | L.F. | 85 | $2,025.00 | $172,125 |
| 610 – 4 | WATER LINE RELOCATION (54 INCH) | L.F. | 111 | $800.00 | $88,800 |
| 610 – 5 | RETROFIT RESTRAINED JOINTS FOR 54" WATER LINE | EA. | 16 | $4,000.00 | $64,000 |
| 610 – 6 | RELOCATE FIRE HYDRANTS | EA. | 2 | $950.00 | $1,900 |
| 610 – 7 | CUT AND PLUG SANITARY SEWER LINE (8 INCH) | EA. | 2 | $150.00 | $300 |
| 610 – 8 | WATER SERVICE RELOCATION | L.F. | 800 | $10.00 | $8,000 |
| 618 – 1 | 18" RGRCP | L.F. | 373 | $80.00 | $29,840 |
| 618 – 2 | 24" RGRCP | L.F. | 13 | $100.00 | $1,300 |
| 618 – 3 | 30" RGRCP | L.F. | 15 | $120.00 | $1,800 |
| 618 – 4 | 36" RGRCP | L.F. | 6 | $135.00 | $810 |
| 618 – 5 | 42" RGRCP | L.F. | 104 | $150.00 | $15,600 |
| 618 – 6 | 48" RGRCP | L.F. | 87 | $180.00 | $15,660 |
| 618 – 7 | PIPE PLUG, MAG DET. 427 | EA. | 4 | $200.00 | $800 |

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
OLD CROSS CUT CANAL – PRELIMINARY CONSTRUCTION COST ESTIMATE (PHASE 1 95% SUBMITTAL)

JOB NO. E002102
FILE NAME : COST95S.WK3

F.C.D. PROJECT NO. 94–24
BY : JVG/WCT/ALB

| ITEM # | BID ITEM | UNIT | QUANTITY | UNIT PRICE | ITEM TOTAL |
|---|---|---|---|---|---|
| 618 – 8 | TYPE "B" PIPE SUPPORT MAG DET. 403–1,2 | EA. | 3 | $600.00 | $1,800 |
| 618 – 9 | TYPE "C" PIPE SUPPORT MAG DET. 403–1,2 | EA. | 1 | $800.00 | $800 |
| 625 – 1 | ACCESS MANHOLES | EA. | 1 | $1,600.00 | $1,600 |
| 625 – 2 | "BUBBLE–UP" MANHOLE | EA. | 1 | $8,000.00 | $8,000 |

| | |
|---|---|
| BID ITEM TOTAL = | $2,948,933 |
| CONTINGENCY (10%) = | $294,893 |
| TOTAL CONSTRUCTION COST = | $3,243,827 |

# BIDDING SCHEDULE

**BIDDING SCHEDULE**

**MUST BE LEGIBLY WRITTEN IN INK OR TYPED**
**PROJECT: OLD CROSS CUT CANAL**
**CONTRACT: FCD 94-24**

| ITEM NO. | BID ITEM | UNIT | QUANTITY | UNIT COST IN WRITING (AND /100 DOLLARS) | UNIT COST IN NUMBERS | EXTENDED AMOUNT IN NUMBERS |
|---|---|---|---|---|---|---|
| 105 - 1 | 4-INCH GAS LINE AT THOMAS ROAD | L.S. | 1 | | | |
| 105 - 2 | PROTECTION OF WATER AND SEWER LINES | L.S. | 1 | | | |
| 107 - 1 | NPDES/SWPPP PERMITS | L.S. | 1 | | | |
| 107 - 2 | PREPARATION OF HEALTH AND SAFETY PLAN | L.S. | 1 | | | |
| 107 - 3 | PUBLIC INFORMATION AND NOTIFICATION ALLOWANCE | L.S. | 1 | | | |
| 107 - 4 | GROUND WATER DEWATERING | L.S. | 1 | | | |
| 202 | MOBILIZATION | L.S. | 1 | | | |
| 205 | ROADWAY EXCAVATION | C.Y. | 6,710 | | | |
| 206 - 1 | STRUCTURE EXCAVATION | C.Y. | 15,295 | | | |
| 206 - 2 | STRUCTURE BACKFILL | C.Y. | 5,318 | | | |
| 206 - 3 | GEOCOMPOSITE DRAIN | S.Y. | 917 | | | |
| 211 | FILL CONSTRUCTION | C.Y. | 5,725 | | | |
| 220 | DUMPED RIPRAP | C.Y. | 133 | | | |
| 221 | GABION CONSTRUCTION | C.Y. | 191 | | | |
| 222 - 1 | GRASSCRETE CONSTRUCTION | S.F. | 1,162 | | | |
| 222 - 2 | 8-INCH PVC SLEEVES | L.F. | 45 | | | |
| 301 | SUBGRADE PREPARATION UNDER PAVEMENT | S.Y. | 20,288 | | | |
| 310 | GRAVEL BEDDING | C.Y. | 2,322 | | | |
| 321 - 1 | ASPHALT CONCRETE PAVEMENT C - 3/4 | TON | 51 | | | |
| 321 - 2 | ASPHALT CONCRETE PAVEMENT D - 1/2 | TON | 2,175 | | | |

**BIDDING SCHEDULE**

**MUST BE LEGIBLY WRITTEN IN INK OR TYPED**
**PROJECT: OLD CROSS CUT CANAL**
**CONTRACT: FCD 94-24**

| ITEM NO. | BID ITEM | UNIT | QUANTITY | UNIT COST IN WRITING (AND /100 DOLLARS) | UNIT COST IN NUMBERS | EXTENDED AMOUNT IN NUMBERS |
|---|---|---|---|---|---|---|
| 321 - 3 | ASPHALT CONCRETE PAVEMENT A - 1 1/2 | TON | 5,476 | | | |
| 321 - 4 | ASPHALT CONCRETE CURB | L.F. | 4,403 | | | |
| 329 | TACK COAT | TON | 9 | | | |
| 340 - 1 | CONCRETE CURB & GUTTER, MAG DET. 220, TYPE A | L.F. | 869 | | | |
| 340 - 2 | CONCRETE CURB & GUTTER, MAG DET. 220, MODIFIED TYPE A | L.F. | 4,019 | | | |
| 340 - 3 | CONCRETE ROLL CURB, MAG DET. 220, TYPE C | L.F. | 55 | | | |
| 340 - 4 | CONCRETE SIDEWALK, C.O.P. DET. P-1230 | S.F. | 10,630 | | | |
| 340 - 5 | CONCRETE DRIVEWAY, 5" SECTION | S.F. | 2,308 | | | |
| 340 - 6 | CONCRETE DRIVEWAY, 9" SECTION | S.F. | 2,213 | | | |
| 340 - 7 | CONCRETE SIDEWALK RAMP, C.O.P. DET. P-1236, TYPE D | EA. | 11 | | | |
| 345 - 1 | ADJUST BOX FRAME AND COVER | EA. | 26 | | | |
| 345 - 2 | ADJUST MANHOLE FRAME AND COVER | EA. | 24 | | | |
| 350 - 1 | REMOVE FENCE, HANDRAIL, GUARDRAIL, POSTS, AND BARRICADES | L.S. | 1 | | | |
| 350 - 2 | REMOVE CURB AND GUTTER | L.S. | 1 | | | |
| 350 - 3 | REMOVE PIPE | L.S. | 1 | | | |
| 350 - 4 | REMOVE SPILLWAYS AND CHANNEL LINING | L.S. | 1 | | | |
| 350 - 5 | REMOVE ASPHALT PAVEMENT | L.S. | 1 | | | |
| 350 - 6 | REMOVE SIDEWALK AND DRIVEWAYS | L.S. | 1 | | | |
| 350 - 7 | REMOVE BOX CULVERTS AT INTERSECTIONS | L.S. | 1 | | | |
| 350 - 8 | MISCELLANEOUS REMOVALS | L.S. | 1 | | | |

**BIDDING SCHEDULE**

**MUST BE LEGIBLY WRITTEN IN INK OR TYPED**
**PROJECT: OLD CROSS CUT CANAL**
**CONTRACT: FCD 94-24**

| ITEM NO. | BID ITEM | UNIT | QUANTITY | UNIT COST IN WRITING (AND /100 DOLLARS) | UNIT COST IN NUMBERS | EXTENDED AMOUNT IN NUMBERS |
|---|---|---|---|---|---|---|
| 350 - 9 | REMOVE TREES | E.A. | 5 | | | |
| 401 - 1 | TRAFFIC CONTROL | L.S. | 1 | | | |
| 401 - 2 | TRAFFIC SIGNALIZATION | L.S. | 1 | | | |
| 401 - 3 | THOMAS ROAD DETOUR | L.S. | 1 | | | |
| 401 - 4 | OFF-DUTY UNIFORMED OFFICER | M.H. | 2,000 | | | |
| 401 - 5 | EMERGENCY VEHICLE CROSSING | L.S. | 1 | | | |
| 405 | TYPE 'A' SURVEY MARKER, MAG DET. 120-1 | EA. | 3 | | | |
| 415 - 1 | TYPE 'B' BARRICADE, C.O.P. DET. P-1106 | L.F. | 127 | | | |
| 415 - 2 | STEEL GUARDRAIL, MAG DET 135-1, 135-2, AND 135-3 | L.F. | 204 | | | |
| 420 | CHAIN LINK FENCE | L.F. | 442 | | | |
| 505 - 1 | DOUBLE 18'x 10' CONC. BOX CULVERT | L.F. | 500 | | | |
| 505 - 2 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 402 | L.F. | 44 | | | |
| 505 - 3 | CONCRETE ENCASEMENT FOR 45" WATER LINE, MAG DET 402 | L.F. | 40 | | | |
| 505 - 4 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 402 | L.F. | 31 | | | |
| 505 - 5 | CONCRETE ENCASEMENT FOR 45" WATER LINE FITTINGS | L.F. | 48 | | | |
| 505 - 6 | CONCRETE ENCASEMENT FOR 54" WATER LINE FITTINGS | L.F. | 55 | | | |
| 505 - 7 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 404 | L.F. | 14 | | | |
| 505 - 8 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 404 | L.F. | 8 | | | |
| 505 - 9 | CONCRETE ENCASEMENT FOR 15" SANITARY SEWER LINE, MAG DET 404 | L.F. | 30 | | | |
| 505 - 10 | CONCRETE CAP OVER EXISTING 48" WATER LINE | L.F. | 1,850 | | | |

**BIDDING SCHEDULE**

**MUST BE LEGIBLY WRITTEN IN INK OR TYPED**
**PROJECT: OLD CROSS CUT CANAL**
**CONTRACT: FCD 94-24**

| ITEM NO. | BID ITEM | UNIT | QUANTITY | UNIT COST IN WRITING (AND /100 DOLLARS) | UNIT COST IN NUMBERS | EXTENDED AMOUNT IN NUMBERS |
|---|---|---|---|---|---|---|
| 505 - 11 | CONCRETE APRON | S.F. | 543 | | | |
| 505 - 12 | TYPE 'A' SPILLWAYS | S.Y. | 294 | | | |
| 505 - 13 | DET P-1570 TYPE "N" SINGLE CATCH BASINS | EA. | 3 | | | |
| 505 - 14 | DET P-1570 TYPE "N" DOUBLE CATCH BASINS | EA. | 2 | | | |
| 505 - 15 | DET P-1570 TYPE "N" 4 GRATE CATCH BASINS | EA. | 2 | | | |
| 505 - 16 | CONCRETE SCUPPERS, MAG 206.1 AND 206.2 | EA. | 5 | | | |
| 505 - 17 | 4-INCH CONCRETE SLAB | S.Y. | 2,246 | | | |
| 515 | FIXED BOLLARDS | EA. | 26 | | | |
| 520 | HANDRAIL | L.F. | 62 | | | |
| 525 - 1 | CHANNEL SIDE SLOPE PROTECTION | S.Y. | 390 | | | |
| 525 - 2 | TYPE 'B' SPILLWAYS | S.Y. | 732 | | | |
| 525 - 3 | PIPE OUTLET PROTECTION | S.Y. | 562 | | | |
| 610 - 1 | WATER LINE RELOCATION (12 INCH AT THOMAS) | L.F. | 66 | | | |
| 610 - 2 | WATER LINE CONSTRUCTION (12 INCH AT VIRGINIA) | L.F. | 125 | | | |
| 610 - 3 | WATER LINE RELOCATION (45 INCH) | L.F. | 85 | | | |
| 610 - 4 | WATER LINE RELOCATION (54 INCH) | L.F. | 111 | | | |
| 610 - 5 | RETROFIT RESTRAINED JOINTS FOR 54" WATER LINE | EA. | 16 | | | |
| 610 - 6 | CUT AND PLUG SANITARY SEWER LINE (8 INCH) MAG DET 427 | EA. | 2 | | | |
| 610 - 7 | RELOCATE FIRE HYDRANTS | EA. | 2 | | | |
| 610 - 8 | WATER SERVICE RELOCATION | L.F. | 800 | | | |

**BIDDING SCHEDULE**

**MUST BE LEGIBLY WRITTEN IN INK OR TYPED**
**PROJECT: OLD CROSS CUT CANAL**
**CONTRACT: FCD 94-24**

| ITEM NO. | BID ITEM | UNIT | QUANTITY | UNIT COST IN WRITING (AND /100 DOLLARS) | UNIT COST IN NUMBERS | EXTENDED AMOUNT IN NUMBERS |
|---|---|---|---|---|---|---|
| 618 - 1 | 18" RGRCP | L.F. | 373 | | | |
| 618 - 2 | 24" RGRCP | L.F. | 13 | | | |
| 618 - 3 | 30" RGRCP | L.F. | 15 | | | |
| 618 - 4 | 36" RGRCP | L.F. | 6 | | | |
| 618 - 5 | 42" RGRCP | L.F. | 104 | | | |
| 618 - 6 | 48" RGRCP | L.F. | 87 | | | |
| 618 - 7 | PIPE PLUG, MAG DET. 427 | EA. | 4 | | | |
| 618 - 8 | TYPE "B" PIPE SUPPORT MAG DET. 403-1 & 403-2 | EA. | 3 | | | |
| 618 - 9 | TYPE "C" PIPE SUPPORT MAG DET. 403-1 & 403-2 | EA. | 1 | | | |
| 625 - 1 | ACCESS MANHOLES | EA. | 1 | | | |
| 625 - 2 | "BUBBLE-UP" MANHOLE | EA. | 1 | | | |

**TOTAL ESTIMATED CONSTRUCTION COST**

**IN NUMBERS:** _____

**IN WRITING:** _____

_____

# REVISED
# QUANTITY CALCULATIONS

*Previously Submitted: 11/4/94*

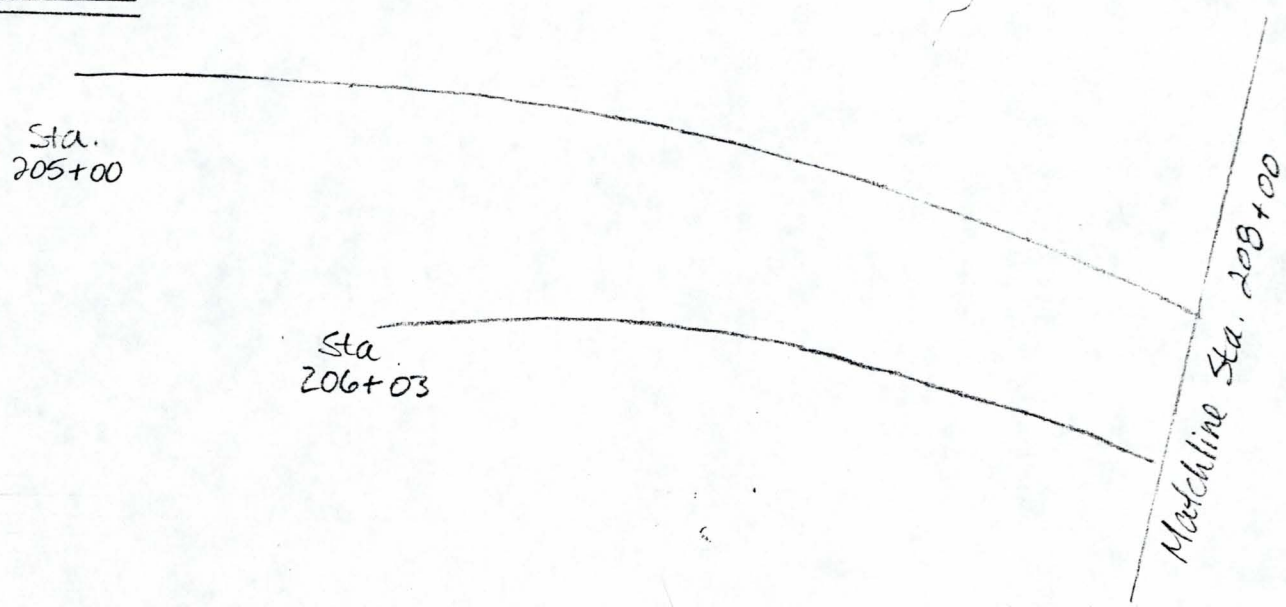
**Greiner**

Job No. E002102 Project OCCC Sheet 1 of

Subject Phase I 90% - Quantity Take-Offs (Sh. C3.1)

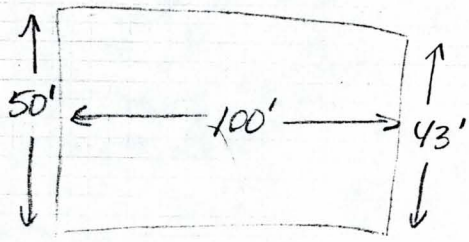
By ALB Date 10-13-94 Checked By KAS Date 11/3/94

Sheet C3.1



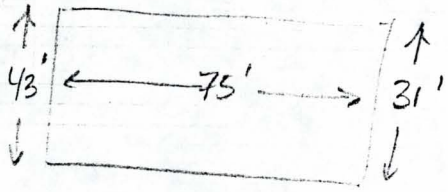

Item # 301 - Subgrade Preparation

Sta 205+00 - 206+00



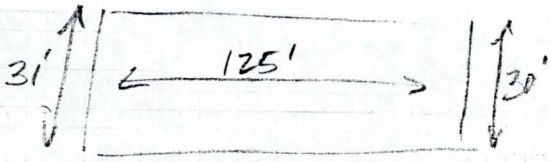

$\frac{1}{2}(50' + 43') \times 100' = 4650$ SF

Sta 206+00 - 206+75




$\frac{1}{2}(43' + 31') \times 75' = 2775$ SF

Sta 206+75 - 208+00




$30.5' \times 125' = 3812.5$ SF

11237.5 SF

$\Rightarrow$ 1248.6 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 2 of

Subject Phase I 90% - Quantity Take Off (Sh. C3.1)

By ALB Date 10-13-94 Checked By ~~KAS~~ / ALB Date 11/3/94 / 1/19/95

Item # 321-2 - Asphaltic Type D-1/2 (2" Thickness)

11237.5 SF (area taken from subgrade calc)
x (2/12)

1872.9 CF x 145#/CF = 271572.9 #/2000 = 135.8T

↳ conversion for asphalt

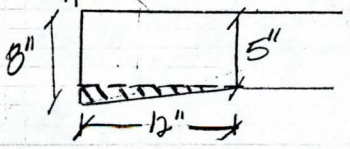
Driveway Entrance 206+52 {Incidental to Driveway Bid Items 1/20/95 ALB}
Sta 206+52
6LF x 30'wide x 3" thick
6 x 30 x 3/12 = 45 CF x 145#/CF x #/2000 = ~~3.26~~

⟹ ~~139.1T~~

Item # 321-3 - Asphaltic Type A-1/2 (5" Thickness)

11237.5 SF
x(5/12)
4682.29 CF x 145#/CF x T/2000# = 339.5T

Type 'B' Termination




A = ~~(5"x12")~~ + 1/2(3"x12")
= ~~78 sq in~~ = 18 in² = 0.125 ft²
= 0.542 SF

0.542 x 300 LF = ~~162.6~~ 37.5 CF x 145#/CF x T/2000 = ~~11.8T~~ 2.72T

⟹ ~~351.3T~~ 342.2T

Item # 329 - Tack Coat

Conversion to tons of dilute = 0.00042 x SY x (# lifts - 1)
= 0.00042 x 1248.6 SY x (2 - 1) ⟹ 0.52T

Item # 340-1 - Concrete C/G
28.79 + 70.76 + 96.18 = 195.73
Sta 206+03 to Sta 208+00 ⟹ ~~197~~ 196 LF

Item # 340-~~5~~ 4 - Concrete Sidewalk
(~~197~~ 196 LF - ~~66~~ 66 LF DWY Ent.) x 5' w ⟹ ~~665~~ 650 SF
96 - 72 x 5' w = 620 SF 1/16/95 KAS

620 SF

**Greiner**

Job No. 6002102 Project OCC Sheet 3 of

Subject Phase I 90% - Quantity Take Off (Sh. C3.1)

By ALB Date 10-13-94 Checked By KAS / ALB Date 11/3/94 / 1/19/95

Item # 340-6 - Conc. driveway entrance ~~P-1255~~ 9" SECTION

Exist Asphalt DWY Sta 206+52 [30' DWY + 2(5' Warp)] x 5' S/W ⟹ ~~190~~ 200 SF

Item # 340-~~8~~5 - Conc. driveway - ~~MHG 260~~ 5" SECTION

Exist. Dirt DWY Sta 206+90 ~~[16' DWY + 2(5' warp)]~~ x 5' S/W ⟹ ~~130~~ 160 SF

[(12' DW + 2(10' WARP))' x 5' = 160]

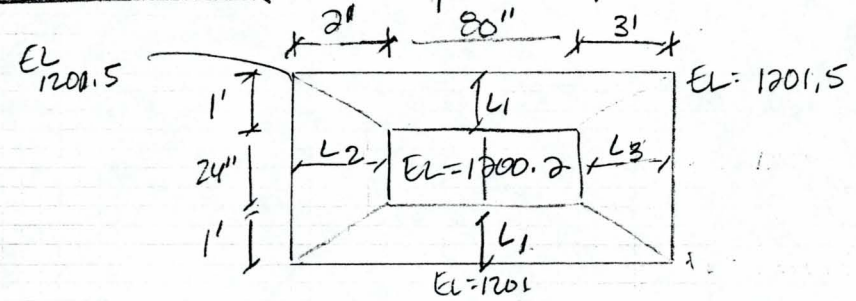
Item # 345-2 - Adj. MH FS. C ⟹ 1/16/95 KAS

Sta 206+85 ⟹ 1 EA

Item # 505-~~27~~ 14 - Type N Double Grate

Sta 206+78 ⟹ 1 EA

Item # 505-~~21~~ 11 - Type C Apron




$L_1 = \sqrt{1^2 + (0.8)^2} = 1.3'$

$L_2 = \sqrt{2^2 + (0.3)^2} = 2'$

$L_3 = \sqrt{3^2 + (1.3)^2} = 3.3'$

$(3' + 80/12 + 2') \times 1.3' \times 2 = 30.33$ SF = 3.4 SY

$(1' + 24/12 + 1') \times 2' = 8$ SF = 0.9 SY

$(1' + 24/12 + 1') \times 3.3' = 13.2$ SF = 1.5 SY ⟹ ~~5.8~~ SY

$\boxed{51.53 \text{ SF}}$

Item # 618-~~3~~ 1 - 18" RCRCP ⟹ ~~83~~ 92 LF

Item # 618-~~18~~ 7 - Type B Pipe Support

Sta 206+76 ⟹ 1 EA

**Greiner**

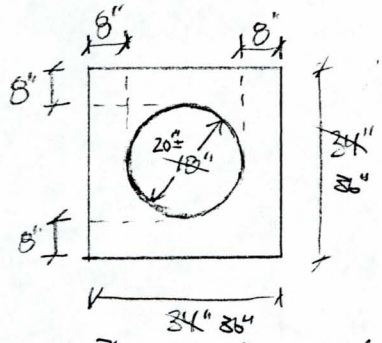
Job No. E002102 Project OCCC Sheet 3A of

Subject Phase I 90% - Quantity Take Offs (Sh. C3.1)

By AKB Date 10-24-94 Checked By KAS Date 11/3/94

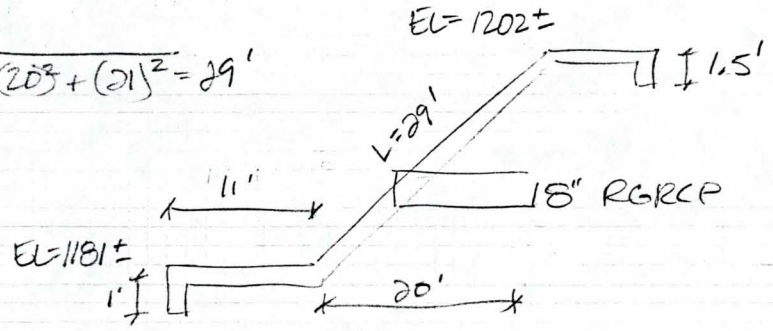
Item # 525-3 Pipe Outlet Protection

18" RGRCP - Sta 206+76




Surf. Aprotection = $\left(\frac{36}{12}\right) \times \left(\frac{36}{12}\right) - \left(\frac{\pi}{4}\left(\frac{20}{12}\right)^2\right)$

= ~~8.028~~ 9 − ~~1.767~~ 2.181 = ~~6.261~~ 6.818 sqft = 0.7 SY 0.8




$L = \sqrt{(20^2 + (21)^2} = 29'$

Total length = 48'

48' x 30'W = 1440 SF

− 9 ~~8.028~~ SF (Outlet Prot)

= 1432 SF

= 159.0 SY + ~~0.7~~ 0.8 SY ⟹ 159.8 SY

Item 321-4 AC Curb

300'

⟹ ~~300~~ 303 LF

10.64 + 113.80 + 178.78 = 303.22

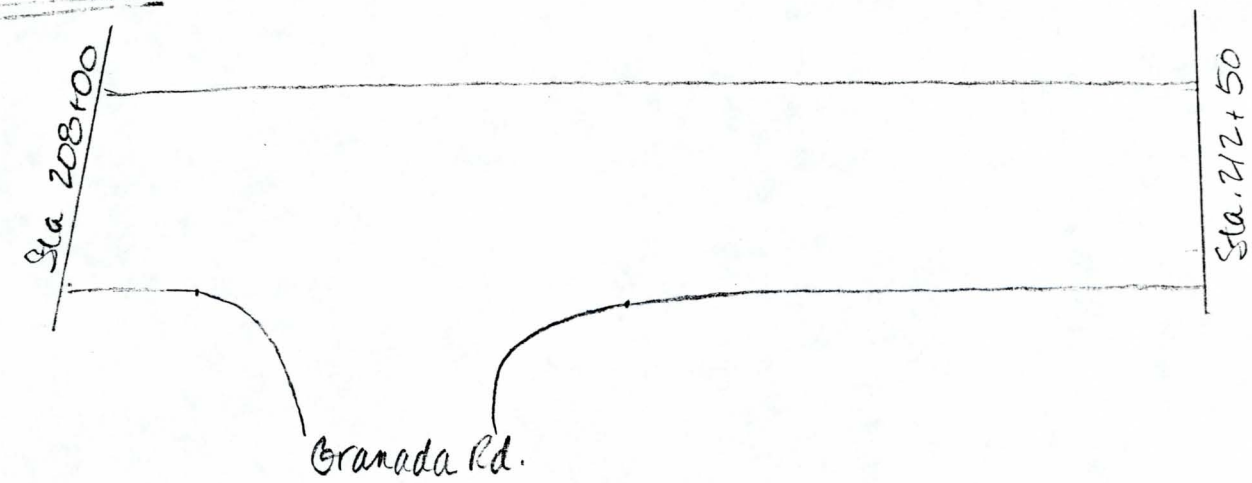
**Greiner**

Job No. E002102 Project OCCC Sheet 4 of

Subject Phase I 90% - Quantity Take-Offs (Sh. C3.2)

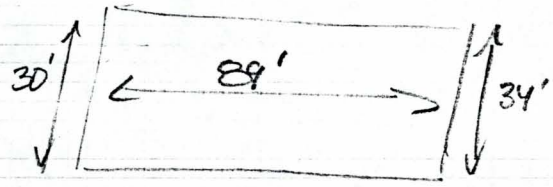
By ALB Date 10-13-94 Checked By KAS Date 11/3/93

Sheet C3.2



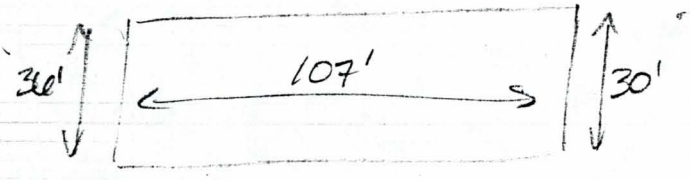

Item #301 - Subgrade Prep.

Sta. 208+00 - 208+89



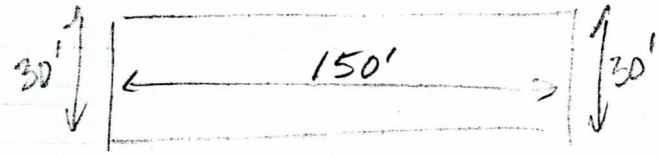

$\frac{1}{2}(30+34) \times 80 = 2560$ SF

Sta 209+93 - 211+00




$\frac{1}{2}(30+36) \times 107 = 3531$ SF

Sta 211+00 - 212+50




$30 \times 150 = 4500$ SF

10591 SF

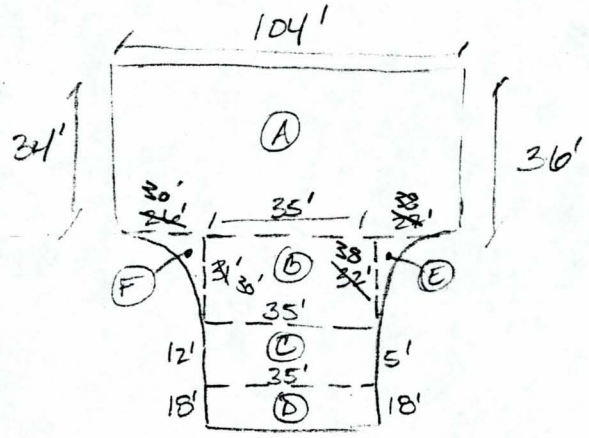
**Greiner**

Job No. E002102 Project OCCC Sheet 5 of

Subject Phase I 90% - Quantity Take Off (C3.2)

By ALB Date 10-13-94 Checked By RAS Date 11/3/94

Granada Inc.




| | | | |
|---|---|---|---|
| A | $\frac{1}{2}(34+36)\,104$ | = 3640 | SF |
| B | $\frac{1}{2}(31+32)\,35$ | = 1102.5 | SF |
| C | $\frac{1}{2}(12+5)\,35$ | = 297.5 | SF |
| D | $18 \times 35$ | = 630 | SF |
| ~~E~~ | ~~$\frac{1}{2}(27 \times 32)$~~ | ~~= 432~~ | ~~SF~~ |
| ~~F~~ | ~~$\frac{1}{2}(26 \times 31)$~~ | ~~= 403~~ | ~~SF~~ |
| | | ~~6505~~ | SF |

E $38^2 - \pi \frac{38^2}{4}$ = 310 SF

F $30^2 - \pi \frac{30^2}{4}$ = 193 SF

6173 SF

6173
~~6505~~ SF
+ 10591 SF
~~17096~~ SF
~~⇒ 1899 SY~~

→ 16764 SF

1863 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 6 of

Subject Phase I 90% - Quantity Take Off (C3.2)

By ALB Date 10-13-94 Checked By KAS / ALB Date 11/3/93 / 1/20/95

Item # 321-2 - Asphaltic Type D-1/2 (2" Thick)

16764
~~17096~~ SF
x (2/12)

~~2849.3~~ CF x 145 #/CF = 413153.3 #/2000 = 206.6 T
2794 CF 405,130 202.6 T

DOY not ϕ

⟹ ~~206.6 T~~

202.6 T

Item # 321-3 - Asphaltic Type A-1/2 (5" Thick)

16764
~~17096~~ SF
x (5/12)

6985 ~~7123.3~~ CF x 145 #/CF x 1T/2000# = 506.4 T ~~516.4 T~~

Type B Termination

~~0.542~~ 0.125 SF x 450 LF curb = ~~243.9~~ 56.25 CF x 145 #/CF x 1T/2000# = 4.1 T ~~17.7 T~~

⟹ ~~534.1 T~~ $\boxed{516.5\ T}$

Item # 329 - Tack Coat

0.00042 x ~~1899.6~~ 1863 SY x (2-1) ⟹ 0.8 T

Item # 340-1 - Concrete C/G

Sta 208 to Sta 208+89.43 — 89.43'
Curve 80 — 48.01'
30 LF S. edge Granada — 30'
18 LF N. edge Granada — 18'
Curve 79 — 56.69'
Sta 209+92.78 to Sta 212+50 — 257.29'
~~499.85~~ 42'

⟹ 185.44 LF ✓

⟹ ~~499.4 LF~~

MOVE TO 340-2 - MODIFIED ⟹ 313.98 ✓
KAS 1/16/95

**Greiner**

Job No. L002102 Project OCCC Sheet 7 of

Subject Phase 1 90% - Quantity Take Off (C3.2)

By ALB Date 10-13-94 Checked By KAS / ALB Date 11/3/93 / 1/20/95

Item # 340-4 - Conc. Sidewalk

(499.4 LF - ~~24~~ 36 LF DWY int.) x 5'W ⟹ ~~2367~~ ~~2377~~ SF 2317 SF ✓

1/16/95 KAS

Item # 520-1 - Handrail

~~44 LF~~ 40 LF ⟹ ~~44~~ 40 LF

Item # 340-~~6~~5 - Conc. Drive Entrance ~~Press~~ 5" SECTION Med.

Sta. 212+~~31~~ 25 [16' DWY + 2 x (4' Warp section)] x 15' to R/W ⟹ 254 ✓ ~~360~~ SF

[16' D/W + 2(10) x 5'] + 74 FE²

1/16/95 KAS

Item # 340-6 - Conc. Sidewalk ramp

2 EA at Granada Int. ⟹ 2 EA

Item # 345-1 - Adjust Box Frame & Cover

2 EA at Granada Int. ⟹ 2 EA

Item # 345-2 - Adjust MH Frame & Cover

Sta 208+50 ; ±10' LT 1 EA

Sta 210+08 ; ±40' RT 1 EA

Sta 210+15 ; ±3' LT 1 EA ⟹ 3 EA

Item # 505-~~31~~ 16 - Concrete Scuppers

2 EA at Granada Int. ⟹ 2 EA

Item # 610-~~13~~ 7 - Relocate Fire Hydrants

1 EA at Sta 209±10 ; ±55' RT ⟹ 1 EA

**Greiner**

Job No. E002102 Project OCCC Sheet 8 of

Subject Phase I 90% - Quantity Take-Offs C3.2

By ALB Date 10-14-94 Checked By KAS / ALB Date 11/3/93 / 1/20/95

Item # 618 - Storm Drain

11/18/95

618-~~8~~ 5 - ~~48"~~ 42" RCP ⟹ 104 LF

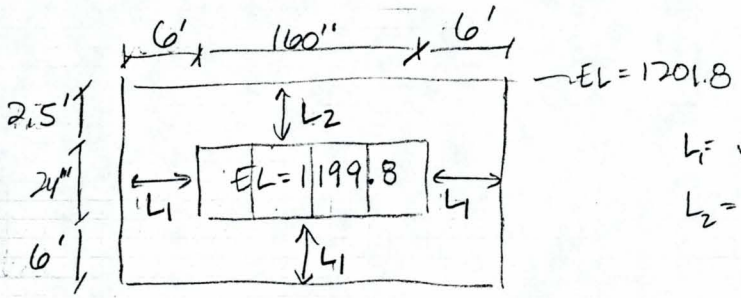
618-~~3~~ - 18" RCP ⟹ 128 LF

Item # 505-~~26~~ 13 - Type N Single CB ⟹ 1 EA

Item # 505-~~24~~ 15 - Type N 4 grate CB ⟹ 1 EA

Item # 505-~~21~~ 11 - Type C Aprons

4 Grate CB Sta 208+39




$L_1 = \sqrt{6^2 + 2^2} = 6.3'$

$L_2 = \sqrt{(2.5)^2 + 2^2} = 3.2'$

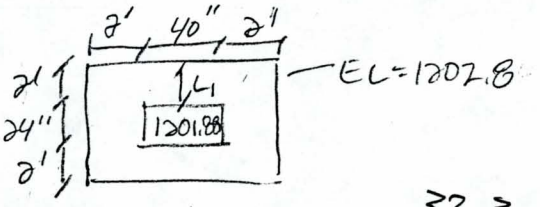
$(6.0' + 160/12 + 6.0') \times 2.5' = 63.33\ SF = 7.0\ SY$

$(6.0' + 160/12 + 6.0') \times 6.3' = 159.6\ SF = 17.7\ SY$

$(2.5' + 24/12 + 6.0') \times 6.3' \times 2 = 132.3\ SF = 14.7\ SY$

$\boxed{355.2\ SF}$ ⟹ 39.4 SY

Single Grate CB - Sta 208+60




$L_1 = \sqrt{2^2 + (1.0)^2} = 2.2'$

$(2' + 40/12 + 2') \times 2.2' \times 2 = \cancel{36.7}\ 32.3\ SF = \cancel{4.1}\ 3.6\ SY$

$(2' + 24/12 + 2') \times 2.2' \times 2 = 26.4\ SF = 2.9\ SY$

$\boxed{58.7\ SF}$ ⟹ ~~7~~ 6.5 SY

$\boxed{413.9\ SF}$ ⟹ ~~46.4~~ 45.9 SY

**Greiner**

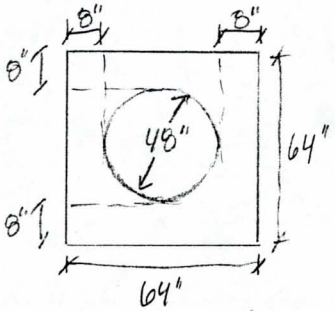
Job No. E002102 Project OCCL Sheet 8A of

Subject Phase I 90% - Quantity Take Offs (C3.2)

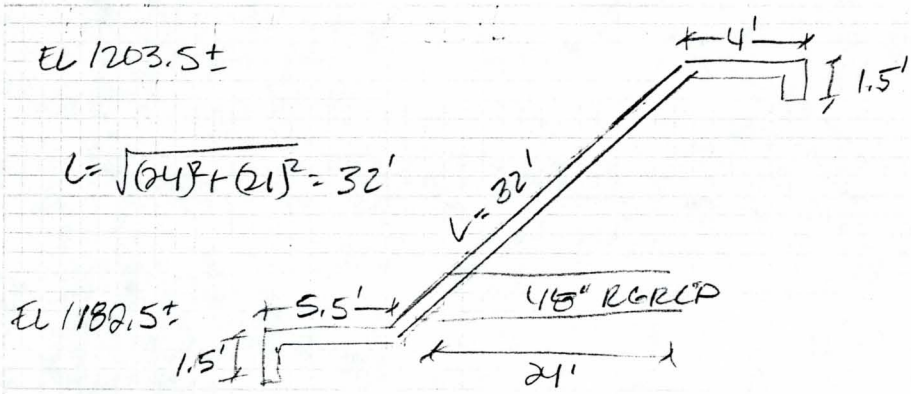
By ALB Date 10-24-94 Checked By KAS/ALB Date 11/3/93/1/19/95

Item # 618-12 - Type B pipe support
Sta 208+37.5 ⟹ 1 EA

Item 525-3 - Pipe outlet protection
48" RGRCP Sta 208 ± 05




Surf. Aprotect. $= (64/12) \times (64/12) - \left(\pi/4 \left(\frac{48}{12}\right)^2\right)$
$= 28.444 - 12.566 = 15.878$ sqft $= 1.8$ SY




$L = \sqrt{(24)^2 + (21)^2} = 32'$

Total length = 1.5' + 5.5' + 32' + 4' + 1.5' = 44.5'

44.5' x 35' W = 1557.5 SF
− 28.44 SF (pipe outlet)
1529.06 SF = 169.9 SY + 1.8 SY ⟹ 171.7 SY

Item # 321-4 AC Curb

450' ⟹ 450 LF

− 13 LF CURB OPENING ⟹ 437 LF ✓

1/16/95 KAS

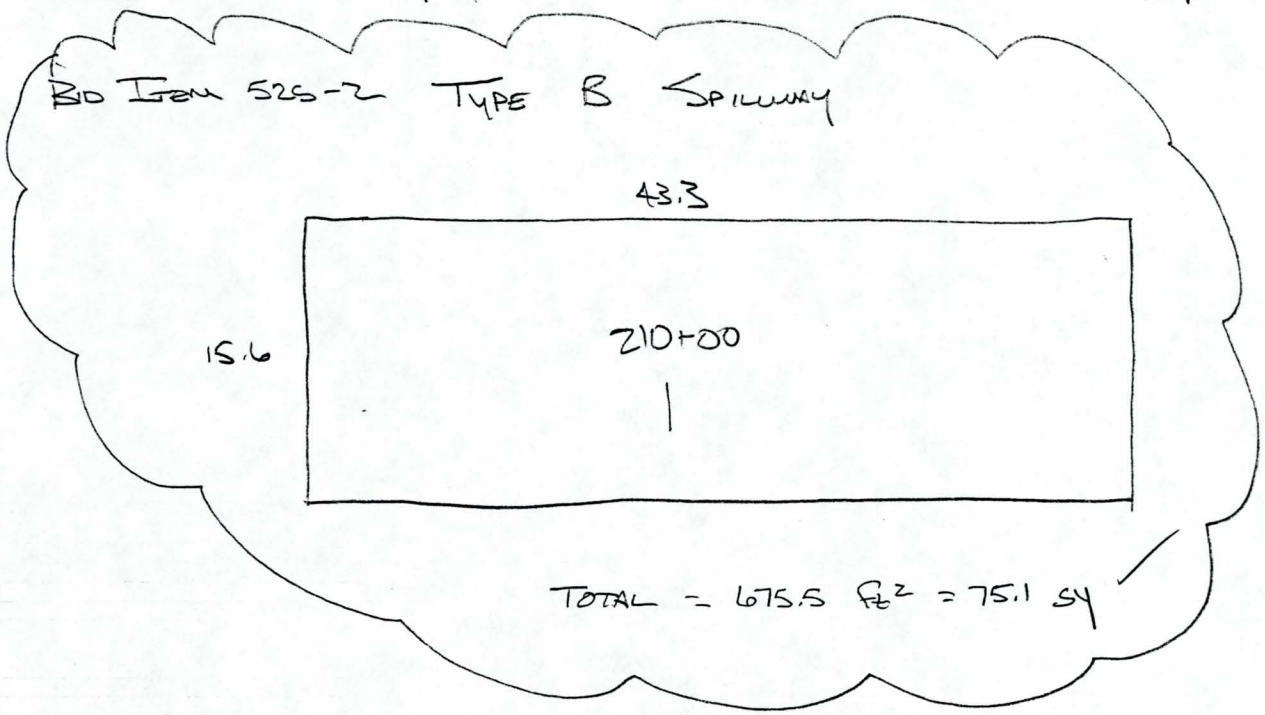
**Greiner**

Job No. E 002102 Project _____ Sheet 8B of _____

Subject PHASE 1 QUANTITY TAKE OFF (C3.2)

By KAS Date 1/18/95 Checked By AWB Date 1/20/95

BID ITEM 525-2 TYPE B SPILLWAY




TOTAL = 675.5 $ft^2$ = 75.1 SY

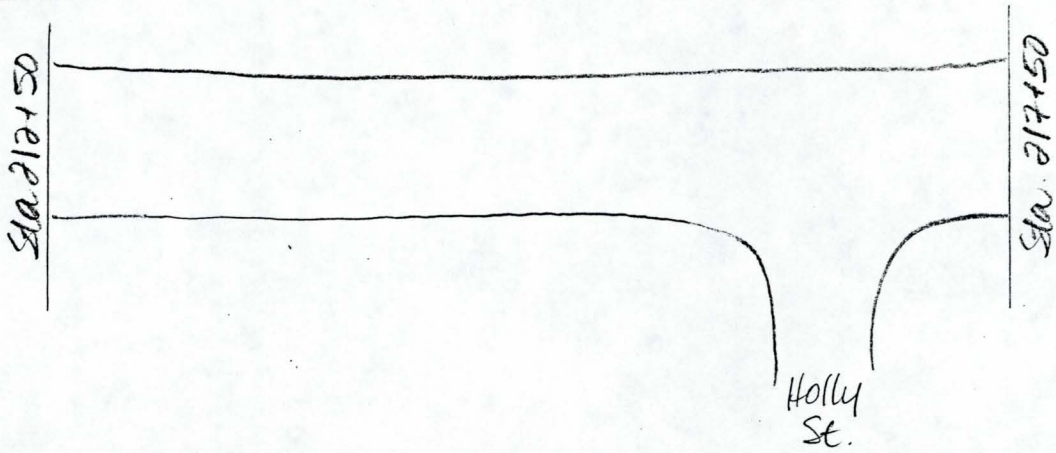
**Greiner**

Job No. E002102 Project OCCC Sheet 9 of

Subject Phase I 90% - Quantity Take Offs (C3.3)

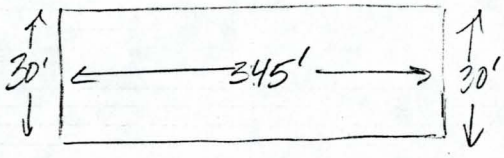
By ALB Date 10-14-94 Checked By KAS / ALB Date 11/3/94 / 1/19/95

Sheet C3.3



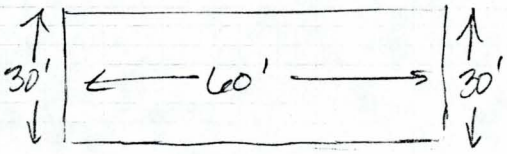

Item # 301 - Subgrade Prep

Sta 212+50 - 215+95



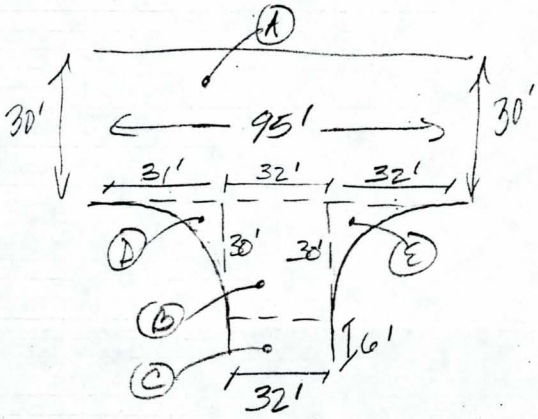

30' x 345' = 10350 SF

Sta 216+90 - 217+50




30' x 60' = 1800 SF

Holly Intersection Sta 215+95 - 216+90




(A) 30' x 95' = 2850 SF

(B) 30' x 32' = 960 SF

(C) 6' x 32' = 192 SF

~~(D) 1/2 (31' x 30') = 465 SF~~

~~(E) 1/2 (32' x 30') = 480 SF~~

4408

~~4947~~ SF

~~15477~~ SF

16,558 SF

(D) - $30.5^2 - \frac{\pi\, 30.5^2}{4} = 200$ SF

(E) - $31^2 - \frac{\pi\, 31^2}{4} = 206$ SF

~~1919.7~~ SY

1839.8 SY

11/18/95 KAS

ADD 10x10 ACCESS TO BRIDGE = 11.1 SY TOTAL = 1850.9

**Greiner**

Job No. E002102 Project OCCC Sheet 10 of

Subject Phase I 90% - Quantity Take Offs (C3-3)

By ALB Date 10-14-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # 321-2 - Asphaltic Type D-1/2 (2" thick)

16,558
~~15477~~ SF
(2/12)

~~2579.5~~ CF x 145#/CF x 1T/2000# = ~~187.2T~~
2759.7 CF

200.0T
+1.2T
201.2T

DWY Entrances (3" thick) {Incidental to DWY Bid Items ALB 11/20/95}

Sta 213+28 ~~71LF x 30'W x (3/12) = 52.5CF x 145#/CF x T/2000#~~ = ~~3.81T~~

Sta 215+25 11LF x 30'W x (3/12) = 82.5CF x 145#/CF x T/2000# = ~~5.98T~~

Sta 217+48 9LF x 18'W x (3/12) = 40.5CF x 145#/CF x T/2000# = ~~2.94T~~

10x10 ACCESS RAMP = 100 ft² (2/12) x 145#/cf ÷ 2000 = 1.2T ⟹ ~~199.7T~~

~~213.9T~~ + 212.7T
KAS 1/18/95

Item # 321-3 - Asphaltic Type A-1/2 (5" thick)

16,558 ~~15477~~ SF
x (5/12)

6899.2 ~~6448.75~~ CF x 145#/CF x 1T/2000#

500.2T
= ~~467.5T~~

Type B Termination ~~1.5125~~ 0.125 SF x 500LF = ~~27~~ 62.5 CF x 145#/CF x 1T/2000# = ~~19.6T~~ 4.53T

~~487.1T~~

504.7T

Item # 329 - Tack Coat

0.00042 x ~~1419.7~~ 1839.8 SY x (2-1) ⟹ ~~0.72T~~

0.77T

Item # 340-1 Concrete C/G

Sta 212+50 - 215+40 290 LF

~~Sta 215+87 - 215+95 8LF~~

Curve 77 47.38 LF

6LF S. edge of Holly 6LF

6LF N. edge of Holly 6LF

Sta 216+90 - 217+50 60 LF

~~417.38~~
409.4

1/16/95 KAS

CURVE 76 - 46.94'
215+87 → 215+95.32 - 8.32'
55.26'
+ 409.4
464.66

ALL ITEM # 340-2 (MODIFIED TYPE A) ⟹

464.7
~~409.4~~
~~417.4~~ LF

Item # 340-4 Roll Curb

Sta 215+40 - 215+87 ~~55 47 LF~~ ⟹ 55 ~~47~~ LF

**Greiner**

Job No. ED02102 Project OCCC Sheet 11 of

Subject Phase I 90% - Quantity Take Offs (C3.3)

By ALB Date 10-14-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item #340-4 - Conc. Sidewalk

[(~~417.4'~~ 409.4' + ~~47'~~ 55') - ~~156~~ 162 LF DWY Cut] x 5' Wide 1/16/95 KAS → ~~1562~~ 1512 ~~1562~~ SF

Item #340-6 - Conc Driveway ~~P.1255~~ 9" SECTION

Exist. Bit. DWY Sta 213+28 [30' DWY + 2(~~4~~ 5' Warp)] x 5' S/W = ~~190~~ 200 SF

Exist. Conc. DWY Sta 214+389 [18' DWY + 2(~~4~~ 5' Warp)] x ~~12'~~ 5' ~~to R/W~~ +65 = ~~312~~ 205 SF

Exist. Bit. DWY Sta 215+25 [30' DWY + 2(~~4~~ 5' Warp)] x 5' S/W = ~~200~~ ~~40~~ SF

→ ~~602~~ SF

Item #340-7 - Conc. DWY MAG ~~250~~ 5" SECTION

Exist Conc. DWY Sta 213+8~~74~~ [16' DWY + 2(5' Warp)] x ~~12'~~ 5' ~~to R/W~~ = ~~312~~ 130 SF

Exist Bit. DWY Sta 217+~~40~~ [18' DWY + 2(5' Warp)] x 5' S/W = 140 SF

→ ~~452~~ SF 605 SF

1/16/95 KAS

Item 345-1 - Adj. BOX F&C

Sta 214+33; ± 16' LT - 1 EA

Sta 216+60; ± 30' RT 1 EA

Sta 216+60; ± 30' RT 1 EA → 3 EA

Item 345-2 - Adj. MH F&C

Sta 213+20; ± 20' RT 1 EA

Sta 215+18; ± 2' LT 1 EA

Sta 216+50; ± 22' RT 1 EA → 3 EA

Item #505-~~3~~ 16 - Conc. Scuppers

~~Sta 215+95 1 EA~~

Sta 216+95 1 EA → ~~2~~ 1 EA

Item #340-~~6~~ 8 - Conc. S/W Ramp

Sta 216+15 1 EA

Sta 216+70 1 EA → 2 EA

**Greiner**

Job No. E002102 Project OCCC Sheet 12 of

Subject Phase I 907. — Quantity Take Offs (C3.3)

By ALB Date 10-14-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # 610-~~12~~ 7 - Relocate Hydrant

To Sta 216+80 1EA → 1 EA

Item # 505-~~15~~ 10 - Conc. Cap.

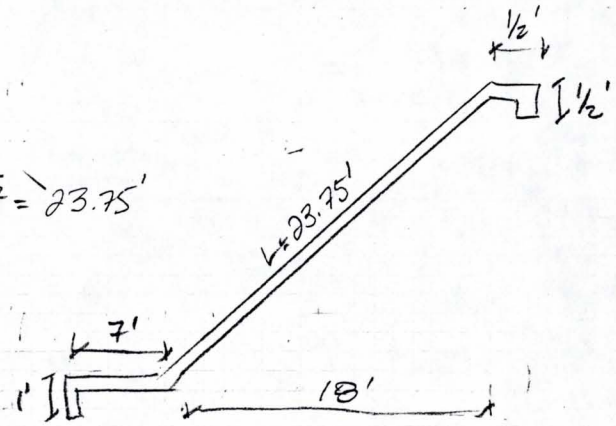
Sta 215+00 - Sta 217+50 = 250 LF → 250 LF

Item # 525-2 - Pneum. conc. spillway

Sta 216+50

EL 1204±

$L = \sqrt{(15.5)^2 + 18^2} = 23.75'$




EL 1188.5±

Total length = 1' + 7' + 23.75' + 1/2' + 1/2' = 32.75'

32.75' L x 10' W = 327.5 SF

= 36.4 SY → 36.4 SY

Item # 321-4 AC Curb

500' → 500 LF

— 14 LF CURB OPEN/UG 11/6/95 KAS → 486 LF

Item # 350-4 Remove Pipe

20 LF of Abandoned 6" W → 1 LS

Greiner

Job No. E002102 Project OCCC Sheet 12A of

Subject PHASE 1 QUANTITY TAKE OFF

By JLAS Date 1/18/95 Checked By ALB Date 1/20/95

DID ITEM 525-2 TYPE B SPILLWAY

STA 216+41.51 (Henry St)

10' x 54' SPILLWAY = 540 sf = 60 sy ✓

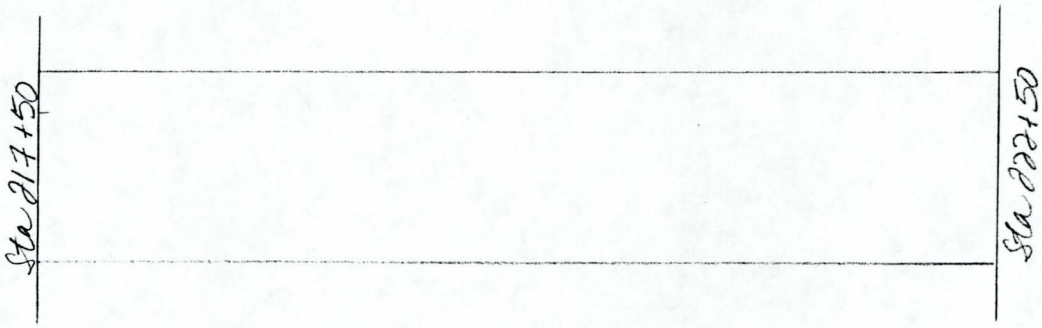
**Greiner**

Job No. E002102 Project OCCC Sheet 13 of

Subject Phase I 90% - Quantity Take-Offs C3.4

By KLB Date 10-17-94 Checked By KAS Date 11/3/94

Sheet C3.4




Item # 301 - Subgrade Prep.

30' ~~31'~~ x 500' = ~~15500~~ 15000 SF ⟹ ~~1882.2~~ 1666.7 SY

Item # 321-2 - Asphalt Type D-1/2 (2" thick)

~~15500~~ 15000 SF

x (2/12)

~~2583.3~~ 2500 CF x 145 #/CF x T/2000# = ~~187.3~~ 181.3 T

DWY Cut.

Ø

⟹ ~~187.3~~ 181.3 T

Item # 321-3 - Asphalt Type A-1/2 (5" thick)

~~15500~~ 15000 SF

x (5/12)

~~6458.3~~ 6250 CF x 145 #/CF x T/2000# = ~~468.2~~ 453.1 T

Type B Termination

~~0.542~~ 0.125 SF x 500 LF = ~~271~~ 62.5 CF x 145 #/CF x 1T/2000# = ~~19.6~~ 4.5 T

$\boxed{457.6T}$ ⟹ ~~487.8~~ T

Item # 329 - Tack Coat

0.00042 x ~~1882.2~~ 1666.7 SY x (2-1) = ⟹ ~~0.77~~ 0.70 T

**Greiner**

Job No. E002102 Project OCCC Sheet 14 of

Subject Phase I 90% - Quantity Take off (L3.4)

By AWD Date 10-17-94 Checked By KAS / AWD Date 11/3/94 / 1/20/95

Item # 340-1 - Concrete C/G

Sta 217+50 - Sta 222+50

1/16/95 KAS
ALL MODIFIED TYPE 'A'
ITEM # 340-2

⟹ 500 LF

Item # 340-~~5~~ 4 - Conc. Sidewalk

(500 LF - 30 LF DWY Cut) x 5' wide

⟹ 2350 SF

Item # 340-~~7~~ 5 - Conc. Driveway Cut. ~~MAG 250~~ 5" SECTION

Quick Conc. DWY Sta 218+82 [20' DWY + 2x(5' warp)] x ~~15'~~ 5' to R/W

⟹ ~~450~~ 150 SF

1/16/95 KAS

Item # 345-1 - Adjust Box Frame & Cover

1 EA at Sta 219+35
1 EA at Sta 219+70
1 EA AT 219+05, 25' RT (SSLO)

⟹ ~~2~~ 3 EA

Item # 345-2 - Adjust MH Frame & Cover

1 EA at Sta 220+18
~~1 EA Sta 219+05, 25' LT~~

⟹ ~~2~~ 1 EA

Item # 505-~~3~~ 16 - Concrete Scupper

1 EA at Sta 222+50

⟹ 1 EA

Item # 505-~~15~~ 10 - Conc. Cap

Sta 217+50 - Sta 219+50

⟹ 200 LF

Item # 321-4 AC Curb

500'

⟹ 500 LF

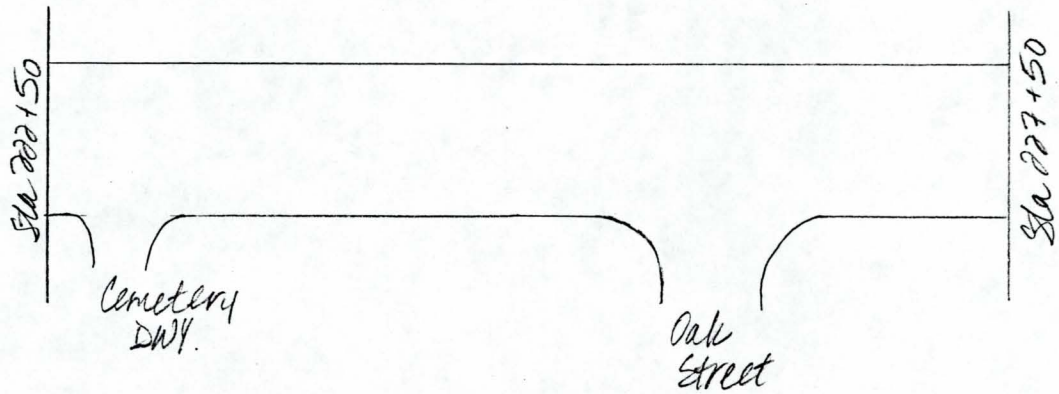
**Greiner**

Job No. E002102 Project OCC Sheet 15 of

Subject Phase 1 90% - Quantity Take-Offs (C3.5)

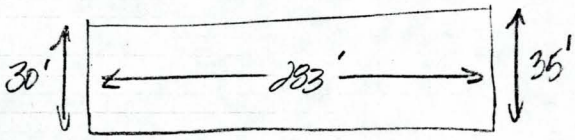
By KB Date 10-17-94 Checked By KAS Date 11/3/94

Sheet C3.5



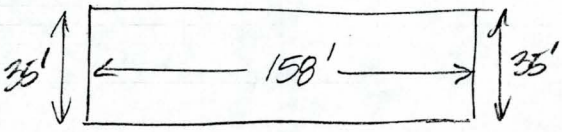

Item #301 - Subgrade Prep

Sta 223+09 - Sta 225+92



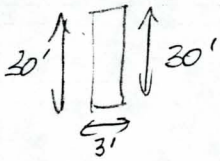

$\frac{1}{2}(30+35') \times 283'$ = 9197.5 SF

Sta 225+92 - Sta 227+50



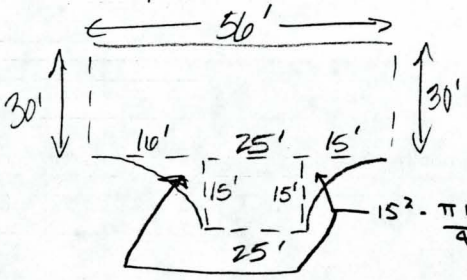

35' x 158' = 5530 SF

Sta 222+50 - Sta 222+53




3' x 30' = 90 SF

Cemetery DWY Sta 222+53 - Sta 223+09




56' x 30' = 1680 SF

25' x 15' = 375 SF

~~$\frac{1}{2}(16' \times 15') = 120$ SF~~

~~$\frac{1}{2}(15' \times 15') = 112.5$ SF~~

~~2287.5 SF~~

2151 SF

$15^2 - \frac{\pi 15^2}{4} = 48$ SF

2151

= ~~2287.5 SF~~

16,968.5

~~17105 SF~~

~~1900.6 SY~~

1885.4 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 16 of

Subject Phase I 90% - Quantity Take Offs (13.5)

By AUB Date 10-17-94 Checked By KAS / AUB Date 11/3/94 / 1/20/95

Item # 321-2 - Asphalt Type D-1/2 (2" thick)

16968.5 ~~17105~~ SF
x (2/12)

~~2850.8~~ 2828.1 CF x 145#/CF x T/2000# = ~~206.7~~ 205.0 T

Don't Cut
Ø

⟹ ~~206.7~~ 205.0 T

Item # 321-3 - Asphalt Type A-1/2 (5" thick)

16968.5 ~~17105~~ SF
x (5/12)

7070.2 ~~7127.1~~ CF x 145#/CF x T/2000# = ~~516.7~~ 512.6 T

Type B Termination
~~0.542~~ 0.125 SF x 500 LF = ~~271~~ 62.5 CF x 145#/CF x T/2000# = ~~19.6~~ 4.5 T

⟹ ~~536.3~~ T

$\boxed{517.1\ T}$

Item # 329 - Tack Coat
0.00042 x ~~1900.6~~ 1885.4 SY x (2-1)

⟹ 0.8T

Item # 340-1 - Concrete C/G

1/16/95 KAS

| | |
|---|---|
| Sta 222+50 - Sta 222+53 | 3' |
| Curve 73 | 23.63' |
| Curve 72 | 23.49' |
| Sta 223+09 - Sta 225+91.35 | 282.35' |
| Sta 226+98.78 - Sta 227+50 | 51.22' |
| | 383.69' |

All modified type 'A' ✓
Bid Item 340-2

⟹ 383.69 LF

Item # 340-4 - Concrete S/W

| | |
|---|---|
| Sta 222+50 - Sta 222+53 | 3' |
| Curve 73 | 23.63' |
| Curve 72 | 23.49' |
| Sta 223+09 - Sta 225+91.35 | 282.35' |
| | 332.47' x 5' W = |

- 4' scupper

1/16/95 KAS

⟹ ~~1642.35~~ 1642.35 SF ✓

**Greiner**

Job No. E002102 Project OCCC Sheet 17 of

Subject Phase I 90% - Quantity Take-offs (C3-5)

By ALD Date 10-17-94 Checked By RAS/ALD Date 11/3/94 / 1/20/95

Item # 345-1 - Adjust Box Frame & Cover

- Sta 222+95
- Sta 226+95 → 2EA

Item # 345-2 - Adjust MH Frame & Cover

- Sta 225+18 → 1 EA

Item # 340 ~~6~~ 8 - S/W Ramp

2 EA at Cemetery Rd/ → 2EA

Item # 505-~~31~~ 16 - Conc. Scupper

1EA at Sta 223+15 → 1EA

(Sta 222+50 included on Sh. C3.4 est.)

Item # 618-~~9~~ 5 - 48" RGRCP

68 LF → 68 LF

Item # 618-~~11~~ 6 Pipe Plug MAC 427

2 EA → 2EA

Item # 618-~~13~~ 7 Type B Pipe Support

Sta 226+38 → 1 EA

Item # 321-4 AC Curb

500' → 500 LF

- 20 LF CURB OPENINGS → 480 LF ✓

11/16/95 RAS

**Greiner**

Job No. E002102 Project OCCC Sheet 17A of

Subject Phase 1 90% – Qty Take Offs (Sh C3.5)

By ALB Date 10-24-94 Checked By KAS / ALB Date 11/3/93 / 11/20/95

Item 405-1 – Type 'A' Survey MAG 120-1 ⟹ ~~1~~ 2 EA

KAS 1/17/95 EA

Item 415-1 – Type 'B' Barricade P 1106

Sta 225+75 – Sta 227+02 ⟹ 127 LF

Item #525-2 – Type B Spillway

Sta 222+80

EL ±1202.5

EL ±1200

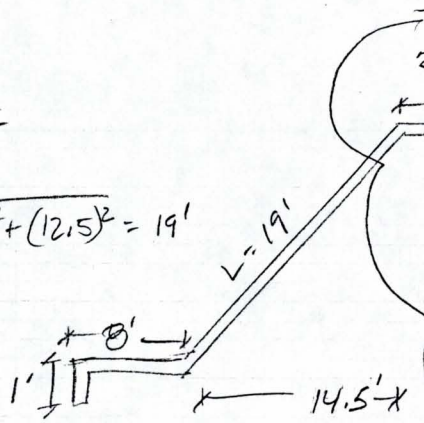
$L = \sqrt{4^2 + 2.5^2} = 4.7'$

$4.7' L \times 10' W = 47 SF$

$= 5.2 SY + \frac{35(10)}{9} = 44.1$

KAS 1/18/95

EL 1204±




$L = \sqrt{(14.5)^2 + (12.5)^2} = 19'$

EL 1191.5±

Total length = ~~33.0'~~ 49'

$33.0' \times 10 W = \cancel{330} 735 SF$

$49' \times 15' = \cancel{36.7} 81.7 SY$

$\cancel{36.7} SY + \cancel{5.2} SY \Rightarrow \cancel{41.9} SY$

$81.7 + 44.1 \Rightarrow 125.8$

1/18/95 KAS

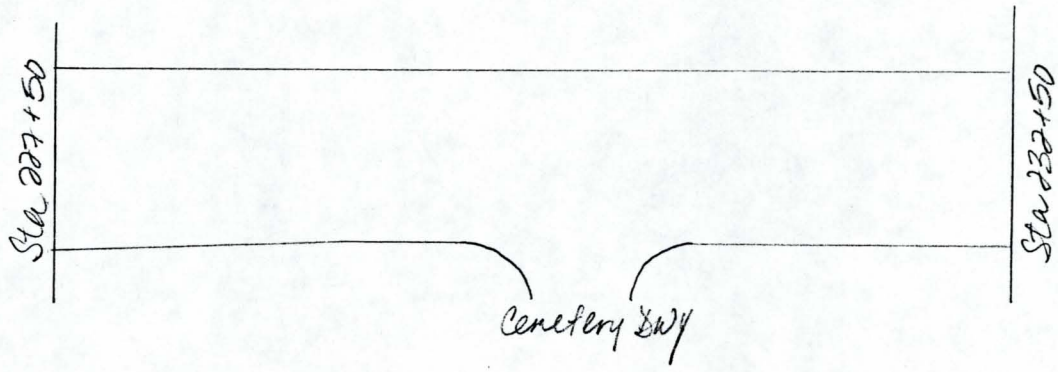
**Greiner**

Job No. E002102 Project OCCC Sheet 18 of

Subject Phase I 90% - Quantity Take-Offs (C3.6)

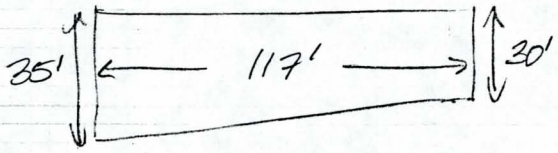
By ALB Date 10-17-94 Checked By KAS Date 11/3/94

Sheet C3.6



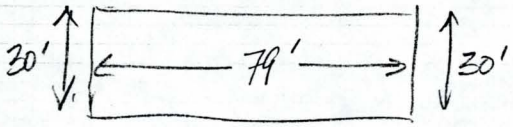

Item #301 - Subgrade Preparation

Sta 227+50 - Sta 228+67



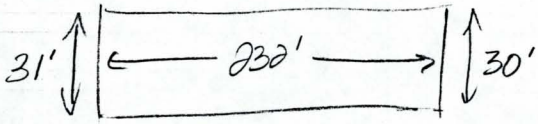

$\frac{1}{2}(35+30) \times 117' =$ 3802.5 SF

Sta 228+67 - Sta 229+46



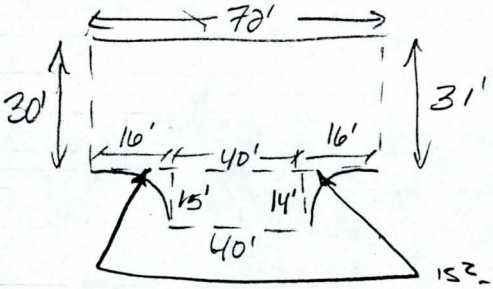

$30' \times 79' =$ 2370 SF

Sta 230+18 - Sta 232+50




$\frac{1}{2}(31+30) \times 232' =$ 7076 SF

Cemetery Dwy Sta 229+46 - Sta 230+18




$\frac{1}{2}(31+32) \times 72' =$ 2268 SF

~~$\frac{1}{2}(16 \times 15) =$ 120 SF~~

~~$\frac{1}{2}(16 \times 15) =$ 120 SF~~

$\frac{1}{2}(15+14) \times 40' =$ 580 SF

~~3088 SF~~

2944.6

$15^2 - \frac{\pi 15^2}{4} = 48.3$ SF

2944.6

= ~~3088~~ SF

16193.1

~~16277.5~~ SF

1799.2

$\Rightarrow$ 1814.8 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 19 of

Subject Phase I 90% - Quantity Take offs (C3.6)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # 321-2 - Asphalt Type D-1/2 (2" thick)

16,193.1 ~~16333.5~~ SF

x (2/12)

~~2722.25~~ 2698.9 CF x 145 #/CF x T/2000# = ~~197.4~~ 195.7 T

DOY Cont.

Ø

⟹ ~~197.4T~~ 195.7

Item #321-3 - Asphalt Type A-1/2 (5" thick)

16,193.1 ~~16333.5~~ SF

x(5/12)

6747.1 ~~6805.6~~ CF x 145 #/CF x T/2000# = ~~493.4~~ 489.2 T

Type B Termination

~~0.542~~ 0.125 SF x 500 LF = ~~271~~ 62.5 CF x 145#/CF x T/2000# = ~~19.6~~ 4.5 T

⟹ ~~513T~~ 493.7T

Item #329 - Tack Coat

0.00047 x ~~1844.854~~ 1799.2 x (2-1) ⟹ 0.76 T

Item # 340-1 - Conc. C/G

1/16/95 KAS

ALL TYPE A MODIFIED BID ITEM 340-2

| | |
|---|---|
| Sta 227+50 - Sta 229+46 | 196' |
| Curve 71 | 23.72' |
| Curve 70 | 23.40' |
| Sta 230+17.9 - Sta 232+50 | 232.1' |
| | 475.22' |

⟹ 475.2 LF

Item # 345-2 - Adjust MH Frame & Cover

Sta 230+18 ⟹ 1 EA

Item # 340-2 - Ribbon C/G

10 LF at Cemetery Dr. ⟹ 10 LF

BID ITEM 505-13 - SINGLE CATCH BASIN - 1 EA 11/14/95 KAS

**Greiner**

Job No. E602102 Project OCCC Sheet 20 of

Subject Phase I 90% - Quantity Take-Offs (Sh. C3.6)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # ~~505-15~~ 10 - Conc. Cap

Sta 228+75 - Sta 231+25 = ~~252~~ LF ⟹ ~~252~~ LF

232+50 375 375 LF

1/18/95 KAS

Item # 321-4 AC Curb

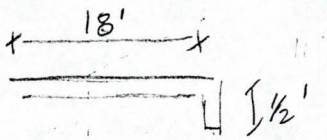
500'

-13 LF CURB OPENING ⟹ ~~500~~ LF

1/16/95 KAS ⟹ 487 LF

Item # 525-2 ~~Pneumatic~~ Spillway
TYPE B

Sta 230+10




18.5'L x 11'W = 203.5 SF

= 22.6 SY + 7.5 (41.8) / 9 = 57.4 SY

1/18/95 KAS

Item 618-1 - 18" RGRCP

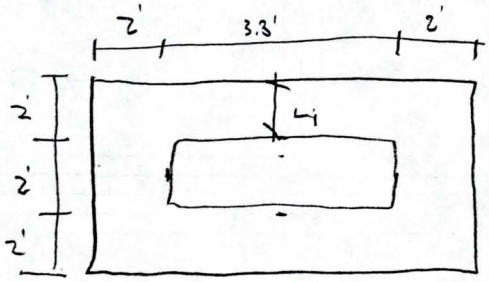
80 LF @ 231+49.5

1/11/95 KAS

Item # 505-11 Concrete Apron ⟹ ~~22.6~~ SY

1/19/95

KAS




Depth = 1.5' ±

$L_1 = \sqrt{1.5^2 + 2^2} = 2.1$

Area = [(2.1)(3.3')(2) + (2)(2)(2.1)]

= 39.1 sf

Item # 525-5 Pipe Outlet Protection (18" RGRCP)

USE 115 SY - SEE SHEET C3.9 CALCULATIONS

1/18/95

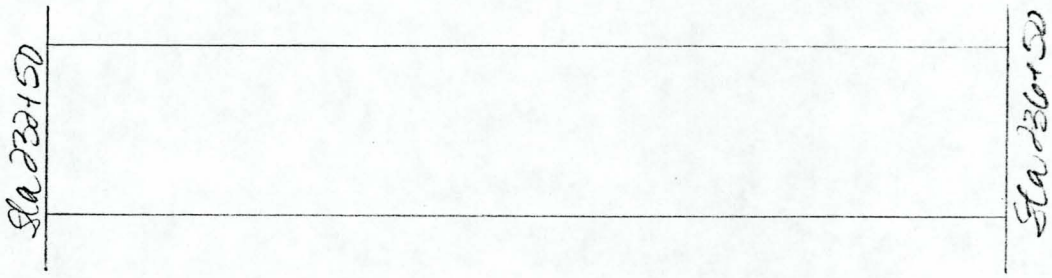
**Greiner**

Job No. E002102 Project OCCC Sheet 21 of

Subject Phase I 90% - Quantity Take-Offs Sh (C3.7)

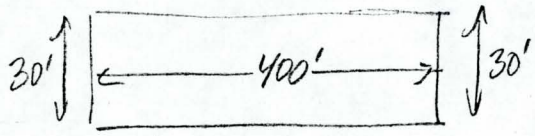
By ALD Date 10-17-94 Checked By RAS / ALD Date 11/3/94 / 1/20/95

Sheet C3.7




Item # 301 - Subgrade Prep.

Sta 232+50 - Sta 236+50




30' x 400' = 12000 SF ⟹ 1333.35 SY

Item # 321-2 - Asphalt Type D-1/2 (2" Thick)

12000 SF
x (2/12)
2000 CF x 145 #/CF x T/2000# = 145 T

Incidental to DWY Bid Items ALD 1/20/95

~~DWY Cnt.~~
Sta 233+09 - no addtnl pave
Sta 234+35 3LF x 22'W x (3/12) = 16.5 CF x 145 #/CF x T/2000# = ~~1.2 T~~
Sta 234+85 3LF x 24'W x (3/12) = 18 CF x 145 #/CF x T/2000# = ~~1.3 T~~
Sta 235+81 - no addtnl pave.

⟹ ~~147.5 T~~

Item # 321-3 - Asphalt Type A-1/2 (5" thick)

12000 SF
x (5/12)
5000 CF x 145 #/CF x 1T/2000# = 362.5 T

Type B Termination

0.542 SF x 400 LF = ~~216.8~~ 50 CF x 145 #/CF x 1T/2000# = ~~15.7 T~~ 3.6
0.125

⟹ ~~378.2 T~~

366.1 T

Item # 329 - Tack Coat

0.00042 x 1333.35 SY x (2-1) ⟹ 0.6 T

**Greiner**

Job No. E002102 Project OCCL Sheet 22 of

Subject Phase I 90% - Quantity Take Offs (C3.7)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # 340-1 - Concrete C/G

Sta 232+50 - Sta 236+50 → ~~400 LF~~

ALL MODIFIED TYPE 'A' B.I. 340-2

1/16/95 KAS

Item # 340-~~7~~5 - Conc. DWY End. ~~MAG 250~~ 5" SECTION

1/16/95 KAS

Sta 233+09 [18' DWY + 2(5' Warp)] x 5' = 140 SF

Sta 234+~~35~~ 24 [22' DWY + 2(5' Warp)] x 5' = 160

Sta 234+85 [24' DWY + 2(5' Warp)] x 5' = 170

Sta 235+81 [26' DWY + 2(5' Warp)] x 5' = 180

1050 SF → 1050 SF

Item # 345-1 - Adjust Box Frame & Cover

Sta 233+05 ; 5' LT

~~Sta 234+43 ; 18' RT~~

~~Sta 235+55 ; 18' RT~~

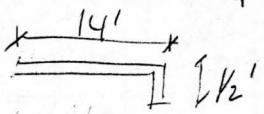
~~Sta 236+20 ; 18' RT~~

→ ~~4~~ 1 EA

Item # 345-2 - Adjust MH Frame & Cover

Sta 234+15 ; 2 LT → 1 EA

Item # 525-2 - Pneumatic Spillway




14.5' x 10' w = 145 SF

= 16.1 SY + $\frac{8.5(34)}{9}$ = 48.2 SY → 16.1 SY

1/18/95 KAS

4/18/95 KAS

ITEM 505-10 - CONCRETE CAP

232+50 → 236+25 = 375 LF

Item # 321-4 AC Curb

400'

- 6 LF CURB OPENING → 394 LF

1/16/95 KAS

→ 400 LF

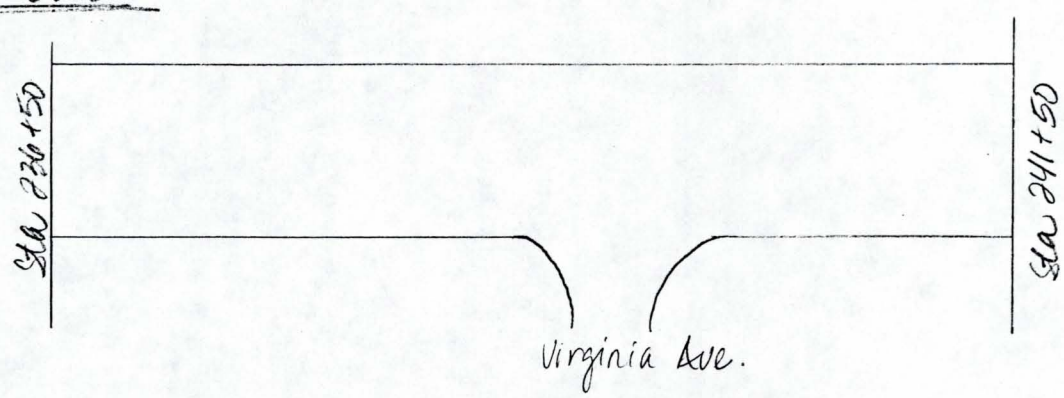
**Greiner**

Job No. E002102 Project OCLC Sheet 23 of

Subject Phase I 90% - Quantity Take Offs (Sh. C3.8)

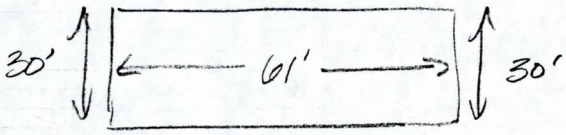
By ALB Date 10-17-94 Checked By KAS Date 11/3/94

Sheet C3.8



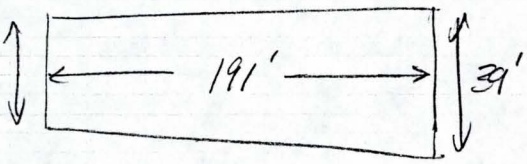

Item #301 - Subgrade Prep.

Sta 236+50 - Sta 237+11



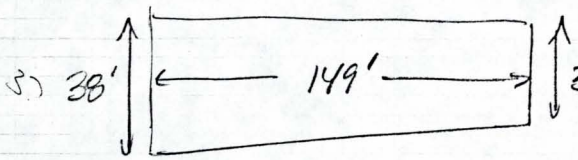

30' x 61' = 1830 SF

Sta 237+11 - Sta 239+02



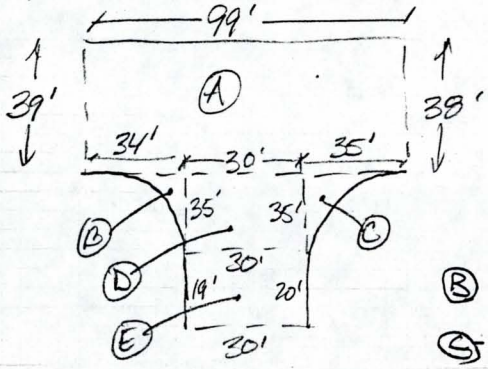

1/2(30+39) x 191' = 6589.5 SF

Sta 240+01 - Sta 241+50




1/2(38+31) x 149' = 5140.5 SF

Virginia Ave Int. - Sta 239+02 - Sta 240+01




(A) 1/2(39+38) x 99' = 3811.5 SF

~~(B) 1/2(34 x 35) = 595 SF~~

~~(C) 1/2(35 x 35) = 612.5 SF~~

(D) 30 x 35 = 1050 SF

(E) 1/2(19+20) x 30' = 585 SF

~~6654~~ SF 5972.3

(B) - $35^2 - \frac{\pi 35^2}{4}$ = 262.9 SF

(C) 262.9 SF

5972.3 = ~~6654~~ SF

19,532.5 ~~20214~~ SF

⇒ ~~2246~~ SY

2170.3 SY

**Greiner**

Job No. E002102 Project OCC Sheet 24 of

Subject Phase I 90% - Quantity Take Offs (Sh. C3.8)

By ALB Date 10-17-94 Checked By KAS/ALB Date 11/3/94/11/20/95

Item # 320-2 - Asphalt Type D-1/2 (2" thick)

19,532.5 ~~20214~~ SF
x (2/12)
~~3369~~ 3255.4 CF x 145 #/CF x T/2000# = 236.0 ~~244.3~~ T

Div. Cut
Ø

→ 236.0 ~~244.3~~ T

Item # 320-3 - Asphalt Type A-1/2 (5" thick)

19,532.5 ~~20214~~ SF
x (5/12)
8138.5 ~~8422.5~~ CF x 145 #/CF x 1T/2000# = 590.0 ~~610.6~~ T

Type B Term. ~~0.5425~~ 0.125 x 500LF = ~~271~~ 62.5 CF x 145 #/CF x 1T/2000# = 4.5 ~~19.6~~ T

⇒ ~~630.2~~ T

594.5 T

Item # 329 - Tack Coat

0.00042 x ~~2346~~ 2170.3 SY x (2-1) ⇒ 0.9~~8~~ T

Item # 340-1 - Concrete C/G

| | |
|---|---|
| Sta 236+50 - Sta 236+89.12 | 39.12' |
| Curve 68 | 21.43' |
| Sta 237+10.7 - Sta 239+01.75 | 191.05' |
| Curve 67 | 53.41' |
| Sta 1+59 - Sta 1+78 (Virginia Ave LT) | 19' |
| Sta 1+78 - Sta 1+59 (Virginia Ave RT) | 19' |
| Curve 66 | 54.03' |
| Sta 240+01.38 - Sta 241+50 | 148.62' |
| | 545.66' |

1/16/95 KAS

ALL MODIFIED TYPE 'A' B.I. 340-2

⇒ 545.7 LF

Item 340-5 - Conc D/W - 5" Section

[24' + 2(5')](5) = 170 ft²

1/16/95 KAS

**Greiner**

Job No. E002102 Project OCEC Sheet 25 of

Subject Phase I 90% - Quantity Take Offs (C3.8)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item 345.1 - Adjust Box Frame & Cover

- Sta 239+35 ; 12' LT
- Sta 239+68 ; 10' LT
- Sta 239+70 ; 4' LT
- ~~Sta 1+30 ; 27' RT~~ LT
- Sta 1+31 ; 14' ~~RT~~ LT
- Sta 1+35 ; 15' ~~RT~~ LT
- Sta 1+40 ; 9' ~~RT~~ LT
- Sta 1+50 ; 18' ~~RT~~ LT

} Virginia Ave

⇒ ~~8~~ 7 EA

Item 345.2 - Adjust MH Frame & Cover

Sta 238+80 ;
Sta 239+30 ; 24' RT
Sta 239+35 ; 28' RT
Sta 1+45 ; 17' RT - Virginia Ave
Sta 1+59 , 18' LT - "

⇒ ~~4~~ 5 EA

Item # 505.78 - Type 'N' Catch basin

~~Sta 1+73 ; 15 RT - Virginia Ave~~

⇒ ~~1 EA~~

Item # 505.15 10 - Conc Cap

Sta 238+50 - Sta 241+50 = 300'

⇒ 300' LF

Item # 321-4 - AC Curb

500' - 10' curb opening

⇒ ~~500 LF~~ 490

Item # 618-11 - Pipe Plug MAG 427

Sta 239+20
Sta 239+70

⇒ 2 EA

ITEM # 525-2 CONCRETE SPILLWAY
10' x 22.6 = 226 sf = 25.1 sy

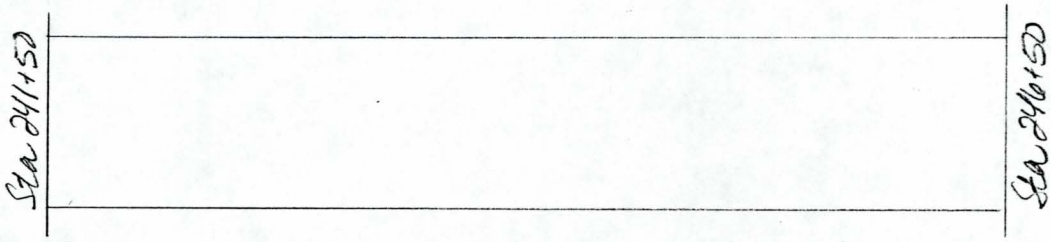
**Greiner**

Job No. E002102 Project OCCC Sheet 26 of ____

Subject Phase I 90% - Quantity Take Offs (Sh. C3.9)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 11/20/95

Sheet C3.9




Item #301 - Subgrade Preparation

Sta 241+50 - Sta 246+50

500' x (31' + 30'/2) ~~15500~~ 15250 SF = ~~1722.25Y~~ 1694.4 ⇒ ~~1722.25Y~~ 1694.4

Item #321-2 - Asphalt Type D-1/2 (2" thick)

15,250 ~~15500~~ SF
x (2/12)
~~2583.3~~ 2541.7 CF x 145#/CF x T/2000# = ~~187.3~~ 184.3 T

DWY ~~Est.~~ (3" thick) (Incidental to DWY bid items 11/20/95 ALB)

Sta 241+89 14 LF x 20'W x (3/12) = ~~70 CF x 145#/CF x 1T/2000#~~ = ~~5.075T~~
Sta 246+02 10.5 LF x 30'W x (3/12) = ~~78.75 CF x 145#/CF x 1T/2000#~~ = ~~5.71T~~
Sta 244+42 18 LF x 24'W x (3/12) = 108 CF x 145#/CF x 1T/2000# = ~~7.83T~~
~~205.4T~~
~~202.9~~

Item #321-3 - Asphalt Type A-1/2 (5" thick)

15,250 ~~15500~~ SF
x (5/12)
~~6458.3~~ 6354.2 CF x 145#/CF x T/2000# = ~~468.2T~~ 460.7

Type B Termination

~~0.542~~ 0.125 SF x 500 LF = ~~271~~ 62.5 CF x 145#/CF x 1T/2000# = ~~19.6T~~ 4.5
⇒ ~~487.8T~~
465.2T

Item #329 - Tack Coat

0.00042 x ~~1722.25Y~~ 1694.4 x (2-1) ⇒ 0.72T

Item #340-1 - Concrete C/G 11/16/95 KAS

Sta 241+50 - Sta 246+50 = 500' ALL MODIFIED TYPE 'A' BI. 340-2 ⇒ 500 LF

**Greiner**

Job No. E002107 Project OCCC Sheet 27 of

Subject Phase I 90% - Quantity Take Offs (Sh. C3.9)

By ALB Date 10-17-94 Checked By RJS / ALB Date 11/3/93 / 1/20/95

Item #340-6 - Conc. DWY ~~P-1255~~ 9" SECTION 1/16/95 KS

Exist Bit DWY Sta 241+89 [20' DWY + 2(5' warp)] x 5' = ~~140~~ 150 SF

Exist Bit DWY Sta 241+02 (30' DWY + 2(5' warp)] x 5' = ~~190~~ 200

Exist Conc DWY Sta 243+53 {[20' DWY + 2(5' warp)] x ~~20'~~ 5'} = ~~500~~ 288 +138

Exist Bit DWY Sta 244+42 [24' DWY + 2(5' warp)] x 5' = ~~160~~ 170 // 808 → B. Item 340-5 (5" SECTION)

Exist Bit DWY Sta 245+38 [16' DWY + 2(5' warp)] x 5' = ~~120~~ 130

Exist Conc DWY Sta 244+75 {[16' DWY + 2(5' warp)] x ~~20'~~ 5'} = ~~480~~ 234 +104 / ~~1050 SF~~ 364

⟹ ~~1050 SF~~

Item # 345-1 - Adjust Box Frame & Cover

~~Sta 243+10; 18' RT~~ Sta 244+20; 25' RT

~~Sta 243+75; 18' RT~~

Sta 244+20; 7' LT

Sta 244+46; 27' RT

~~Sta 245+45; 22' RT~~

Sta 245+80; 12' LT

⟹ ~~6~~ 4 EA

4/16/96

Item # 345-2 - Adjust MH Frame & Cover

~~245+75, 15' LT~~

~~Sta 246+00, 23' RT~~ 246+00; 23' RT

~~243+00, 25' RT~~ 243+00; 25' RT

⟹ ~~1~~ 2 EA

Item # 505-~~15~~10 - Conc. Cap

Sta 241+50 - (Sta ~~242+50~~ = ~~100'~~

245+00 = 350

⟹ 100 LF

350 LF

Item # 505-28 - Type 'N' Single Grate

Sta 244+12

⟹ 1 EA

Item # 608-~~13~~ 8 - Type C Pipe Support

Sta 244+07

⟹ 1 EA

**Greiner**

Job No. E002102 Project OCCC Sheet 27A of

Subject Phase I 90% - Quantity Take Offs (Sh. (3.9)

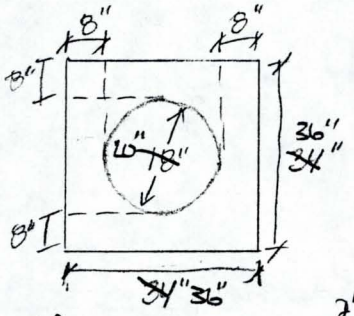
By ALB Date 10-24-94 Checked By RAS / ALB Date 11/3/93 / 1/20/95

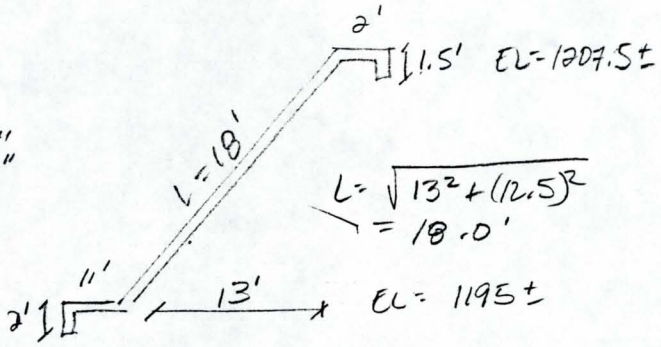
Item 618 ~~3~~ 1 - 18" RGRCP

Sta 244+05 73' ⇒ 73 LF

Item #525.3 Pipe Outlet Protection

18" RGRCP Sta 244+00




$L = \sqrt{13^2 + (12.5)^2} = 18.0'$

Surf A prot $= \left(\frac{34}{12}\right) \times \left(\frac{34}{12}\right) - \left(\frac{\pi}{4}\left(\frac{18}{12}\right)^2\right)$

$= \cancel{8.038} - \cancel{1.767}$ (2.182)

$= \cancel{6.271}$ (6.818) SF

$= 0.\cancel{7}$ (8) SY

Total L = 2' + 11' + 18' + 2' + 1.5'

= 34.5'

34.5' L × 30' W = 1035 SF

~~- 6.271 SF~~ 6.818

~~1028.7 SF~~ 1028.2

= ~~114.3~~ SY 114.2

114.2 ~~114.3~~ SY + 0.7 SY = 115 SY

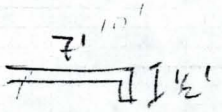
Item #321-4 AC Curb

1/16/95 KAS

500' — 10 LF CURB OPENING ⇒ 490 LF ⇒ 500 LF

Item #525-2 Temp Spillway

Sta 242+45



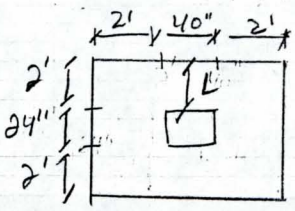

7.5' × 10' = 75 SF

⇒ 8.3 SY + $\left(\frac{15+10}{2}\right)9' \div 9$ ⇒ ~~8.3 SY~~

= 20.8 SY

1/18/95 KAS

Item #525-~~22~~ 11 - Conc. Apron




Grate El = 1207

Surf El = 1207.5

$L = \sqrt{2^2 + (0.5)^2} = 2.06$

$(2' + 40/12 + 2') \times 2.06 \times 2 = 30.2\,SF = 3.35\,SY$

~~$(2' + 24/12 + 2') \times 2.06 \times 2 = 24.72\,SF = 2.75\,SY$~~

$2 \times 2.06 \times 2 = 8.24$ ~~54.9 SF~~ 38.4 SF ~~6.1 SY~~

⇒ ~~6.1 SY~~

KAS 1/18/95

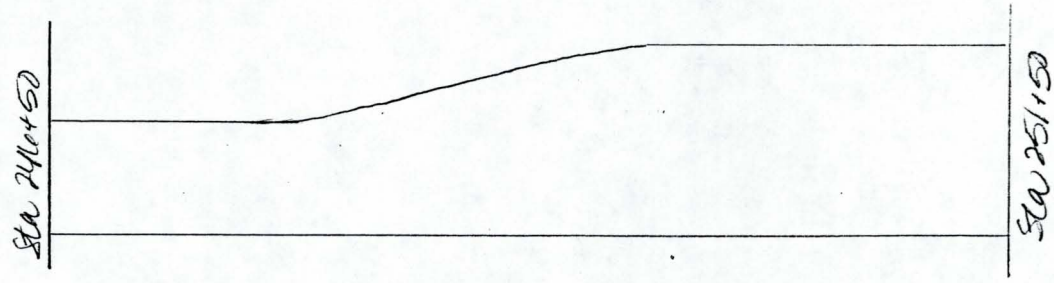
**Greiner**

Job No. E002102 Project OCCL Sheet 28 of ____

Subject Phase I 90% - Quantity Take-Offs (Sh. C3.10)

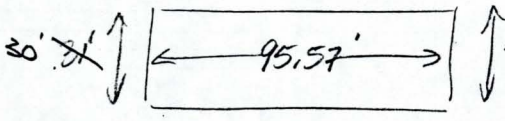
By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 11/20/95

Sheet C3.10



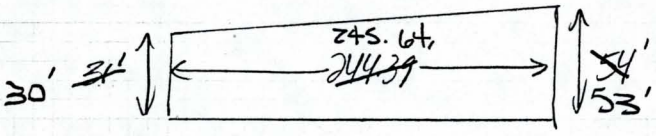

Item # 301 - Subgrade Prep.

Sta 246+50 - Sta 247+45.57



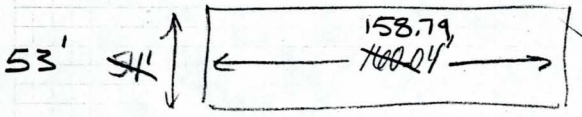

~~31'~~ 30' x 95.57' = ~~2902.7~~ 2867.1 SF

Sta 247+45.57 - Sta 249+~~89.96~~ 91.21




1/2(~~31'~~ 30' + ~~54'~~ 53') x ~~244.39'~~ 245.64' = ~~10396.6 SF~~ 10,194.1 SF

Sta 249+~~89.96~~ 91.21 - Sta 251+50




1/2(~~54'~~ 53' + 52) x ~~100.04'~~ 158.79' = ~~4241.1 SF~~ 8336.5

~~14590.4 CF~~ 21397.1

⇒ ~~1454.5 SY~~ 2377.5

Item 321-2 - Asphalt Type D-1/2 (2" thick)

~~14590.4~~ 21397.1 SF
x(2/12)

~~2431.7~~ 3566.3 CF x 145#/CF x 1T/2000# = ~~212.5 T~~ 258.6

DWY Cut (3' thick) {Incidental to DWY Bid Items 11/20/95 ALB}

Sta 247+91 ~~7CF x 30' W x (3/12) = 52.5CF x 145#/CF x 1T/2000# = 3.81T~~

Sta 248+82 ~~6CF x 30' W x (3/12) = 45CF x 145#/CF x 1T/2000# = 3.26T~~

Sta 249+65 ~~5CF x 30' W x (3/12) = 37.5CF x 145#/CF x 1T/2000# = 2.72T~~

Sta 250+68 ~~3CF x 20' W x (3/12) = 15CF x 145#/CF x 1T/2000# = 1.10T~~

⇒ ~~223.4 T~~

269.4 T

**Greiner**

Job No. E002107 Project OCCC Sheet 29 of

Subject Phase I 90% - Quantity Take-offs (Sh. 13.10)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item #321-3 - Asphalt Type A-1/2 (5" thick)

21397.7 ~~17590.4~~ SF
x (5/12)
~~7329.3~~ 8915.7 CF x 145 #/CF x T/2000# = ~~531.4~~ 646.4 T

Type B Termination
~~0.542~~ 0.125 x ~~339.96~~ 341.21 LF = 184.3 CF x 145 #/CF x T/2000# = 42.7 = ~~13.4~~ 3.1 T

⟹ ~~544.8~~ T
649.5 T

Item #329 - Tack Coat
0.00042 x ~~1954.5~~ 2377.5 SY x (2-1) ⟹ ~~0.82~~ 1.0 T

Item #340-1 - Concrete C/G
Sta 246+50 to Sta 250+85.7 RT = 435.7' MODIFIED TYPE 'A' 1/16/95 KAS
Sta 249 + ~~89.46~~ 91.21 to Sta 251+50 LT = ~~100.04~~ 157.8
~~595.74~~ ~~594.5~~ ~~593.5~~ 1/16/95 ⟹ ~~594.5~~ 595.7 LF

Item #340-~~6~~ 6 Conc DWY ~~RI755~~ 9" SECTION
Exist Bit DWY Sta 247+91 [30' DWY + 2(~~4~~ 5' Warp)] x 5' = ~~190~~ 200 SF
Exist Bit DWY Sta 248+82 [30' DWY + 2(~~4~~ 5' Warp)] x 5' = ~~190~~ 200
Exist Bit DWY Sta 249+65 [30' DWY + 2(~~4~~ 5' Warp)] x 5' = ~~190~~ 200
~~590~~ 600 SF ⟹ ~~570~~ 600 SF

Item #340-~~7~~ 5 Conc DWY ~~MAG 250~~ 5" SECTION
Exist Conc DWY Sta 246+55 [18' DWY + 2(5' Warp)] x ~~9'~~ 5' = ~~252~~ 140 SF
Exist Bit DWY Sta 250+~~68~~ 70 [20' DWY + 2(5' Warp)] x 5' = 150
~~402~~ 290 SF ⟹ ~~402~~ 290 SF

1/16/95 KAS

**Greiner**

Job No. E002102 Project OCCC Sheet 30 of

Subject Phase I 907. - Quantity Take Offs (Sh. 3.10)

By ALB Date 10-17-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item # 345-1 Adjust Box Frame & Cover

~~Sta 249+35 ; 35' RT~~

~~Sta 250+65 ; 35' RT~~ → ~~2 EA~~ 0

Item # 345-2 Adj. MH F&C

- Sta 251+30 ; 20' LT → 1 EA

Item # 321-1 AC Curb

Sta 246+50 - Sta 249+~~89.96~~ 91.21 = ~~339.96'~~ 341.5 → ~~340~~ 341.5 LF

- 6 @ CURB OPENING → 335.5

1/16/95 KAS

Item # 525-2 TYPE B SPILLWAY

$\frac{13.5 \times 13}{9} = 19.5$ SY

1/18/95 KAS

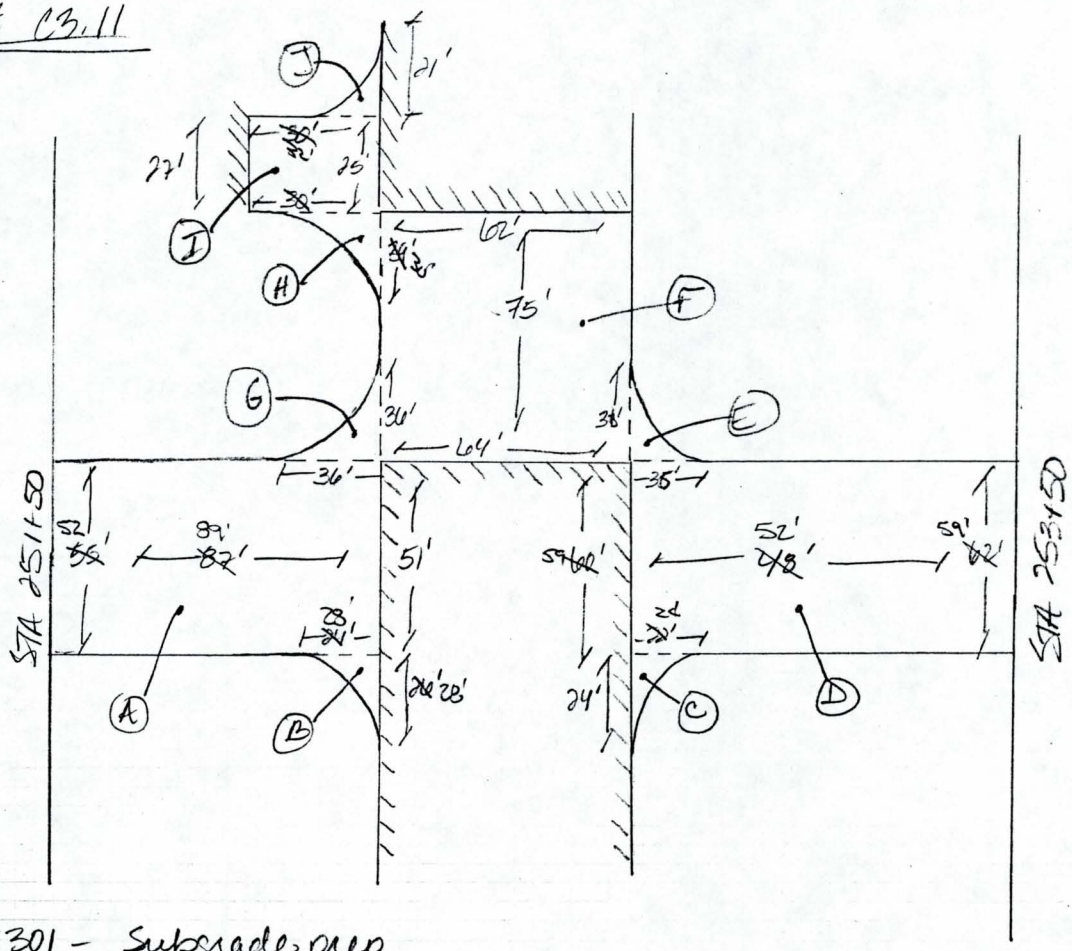
**Greiner**

Job No. E002102 Project OCCC Sheet 31 of

Subject Phase 1 90% - Quantity Take Offs (Sh C3.11)

By AKB Date 10-17-94 Checked By KAS Date 11/3/94

Sheet C3.11




Item #301 - Subgrade prep

(A) $\frac{1}{2}(52' + 51') \times 89' = 4583.5$ SF

~~(B) $\frac{1}{2}(24 \times 26') = 312$ SF~~ (B) $28^2 - \frac{\pi 28^2}{4} = 168.2$ SF

~~(C) $\frac{1}{2}(24' \times 20') = 246$ SF~~ (C) $24^2 - \frac{\pi 24^2}{4} = 123.6$ SF

(D) $\frac{1}{2}(59' + 62') \times 52' = 3068$ SF

~~(E) $\frac{1}{2}(35' \times 37') = 647.5$ SF~~ (E) $36^2 - \frac{\pi 36^2}{4} = 278.1$ SF

(F) $\frac{1}{2}(64' + 62') \times 75' = 4725$ SF

~~(G) $\frac{1}{2}(36 \times 36') = 648$ SF~~ (G) $36^2 - \frac{\pi 36^2}{4} = 278.1$ SF

~~(H) $\frac{1}{2}(39' \times 30') = 585$ SF~~ (H) $30^2 - \frac{\pi 30^2}{4} = 193.1$ SF

(I) $\frac{1}{2}(27' + 25') \times 30' = 780$ SF

~~(J) $\frac{1}{2}(30' \times 21') = 315$ SF~~ (J) $22^2 - \frac{\pi 22^2}{4} = 103.9$ SF

~~15791.5~~ SF

14,301.5

1589.1

⇒ 7755.35 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 32 of

Subject Phase 1907. - Quantity Take-Offs (C3.11)

By ALB Date 10-17-94 Checked By KAS Date 11/3/94

Item # 321-2 - Asphalt Type D-1/2 (2" thick)

14,301 ~~15797.5~~ SF
x(2/12)
~~2632.9~~ 2383.6 CF x 145#/CF x T/2000# = ~~190.9T~~ 172.8

DWY Cut ∅

ITEM # 520-1 - RAILING 22 LF

253+36 - 30' LT - 11'
252+02 - 30' LT - 11'

Item # 321-3 - Asphalt Type A-1/4 (5" thick)

14,301.5 ~~15797.5~~ SF
x(5/12)
~~6582.3~~ 5959 CF x 145#/CF x T/2000# = ~~477.2T~~ 432.0 T

Type B Termination ∅

Item # 329 - Tack Coat

0.00042 x ~~1755.3~~ 1589.1 SY x (2-1) ⇒ ~~0.74T~~ 0.67

Item # 340-1 - Concrete C/G

| | | |
|---|---|---|
| Sta 251+50 - Sta 252+01.21 LT | = | 51.21' |
| Curve 35 | = | 54.78' |
| +6 LF | = | 6' |
| Curve 36 | = | 46.17' |
| Sta 9+00 - Sta 9+37 | = | 37' |
| Curve 37 | = | 55.63' |
| Sta 253+36.31 - Sta 253+50 | = | 13.69' |
| ~~+5 Curb Transition Sta 252+05 - Sta 252+10~~ | = | ~~5'~~ |
| | | ~~269.5 LF~~ 264.5 |

⇒ ~~269.5 LF~~ 264.5

**Greiner**

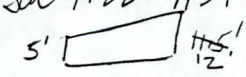
Job No. E002102 Project OCCC Sheet 33 of ____

Subject Phase I 90% - Quantity Take-Offs (Sh C3.11)

By ALB Date 10-17-94 Checked By KAS/ALB Date 11/3/94/1/20/95

Item # 340-4 - Conc. Sidewalk

| | | | |
|---|---|---|---|
| Curve 35 | 54.78' x ~~11.5'~~ 12' W = | ~~629.97~~ SF | 657.4 SF |
| + 6 LF | 6 ' x ~~11.5'~~ 12' W = | ~~69~~ SF | 72 SF |
| Curve 36 | 46.17' x ~~11.5'~~ 12' W = | ~~530.96~~ SF | 554 SF |
| Sta 9+00-9+22 | 22 ' x 5' W = | 110 SF | |
| Sta 9+22+9+37 | 15' x 1/2 (5' + ~~11.5'~~ 12') W = | ~~123.75~~ SF | 127.5 SF |
| Curve 37 | 55.63' x ~~11.5'~~ 12' W = | ~~639.74~~ SF | 667.6 SF |
| | | ~~2103.42~~ 2188.5 | |




⇒ ~~2103.4~~ 2188.5 SF

Item # 345-1 - Adj. Box F&C

- Sta 252+30; 20' LT
- Sta 253+05; 8' LT
- Sta 253+10; 40' RT
- Sta 253+18; 8' LT

⇒ 4 EA

Item # 345-2 - Adj. MH F&C

- Sta 252+08; 23' RT
- Sta 253+05; 31' RT
- Sta 253+15; 33' RT

⇒ 3 EA

11/8/95 KAS

Item # 610-~~12~~ 7 - Relocate Hydrant

Sta 253+34 - REVISE TO BE APPURTENANCE TO RELOCATE 45" W/L ⇒ ~~1 EA~~

Item # 340-9 - S/W Ramp

5 EA Thomas Rd. Int. ⇒ 5 EA

Item # 405-1 Type 'A' Survey Marker ⇒ 2 EA

Replace Sta 252+68; 35' LT

Install Sta 252+68

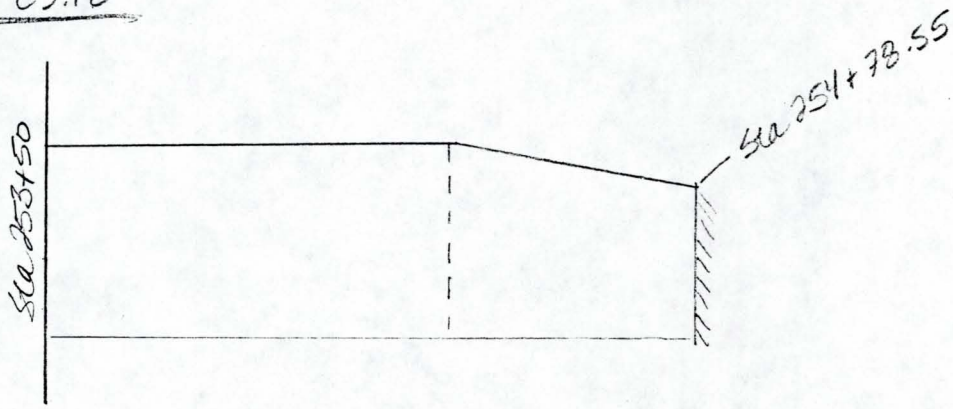
**Greiner**

Job No. E002102 Project OCCL Sheet 34 of

Subject Phase I 90% - Quantity Take-Offs (Sh. C3.12)

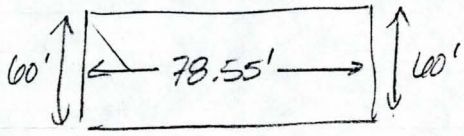
By ALB Date 10-18-94 Checked By KAS Date 11/3/94

Sheet C3.12



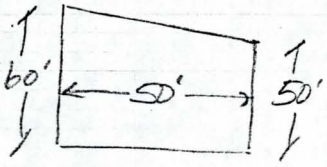

Item #301 - Subgrade Prep.

Sta 253+50 - Sta 254+28.55




60' x 78.55' = 4713 SF

Temp. Pavement - Sta 254+28.55 - Sta 254+78.55




½(60'+50') x 50' = 2750 SF

7463 SF ⟹ 829.25T

Item #321-1 - Asphalt Type C-3/4 (Temp. Pave. - 3" thick)

2750 SF
x (3/12)

687.5 CF x 145#/CF x 1T/2000# = 49.8T

Type B Termination

0.542 SF x 50 LF = 27.1 CF x 145#/CF x 1T/2000# = 1.96T

0.125 6.25 0.5

⟹ 51.8T

Item #321-2 - Asphalt Type D-½ (2" thick)

4713
x (2/12)

785.5 CF x 145#/CF x 1T/2000#

DW4 Cost ϕ ⟹ 56.9T

50.3T

**Greiner**

Job No. E002102 Project OCCC Sheet 35 of

Subject Phase I 90% - Quantity Take-Offs (Sh C3.12)

By ALB Date 10-18-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Item #321-3 - Asphalt Type A-1/2 (5" thick)

4713 SF
x (5/12)

1963.33 CF x 145 #/CF x 1T/2000 # ⇒ 142.3T

Item #340.1 - Concrete C/G

Sta 253+50 - Sta 254+28.55 = 78.55'
- STA 254+15.69 = 65.69
1/16/95 KAS

⇒ ~~78.6 LF~~ 65.7

Item #329 - Tack Coat

$0.00042 \times \left(\frac{4713}{9}\right) SY \times (2-1)$ ⇒ 0.22T

Item #345-2 - Adjust MH F&C

Sta 254+52; 11' LT ⇒ 1 EA

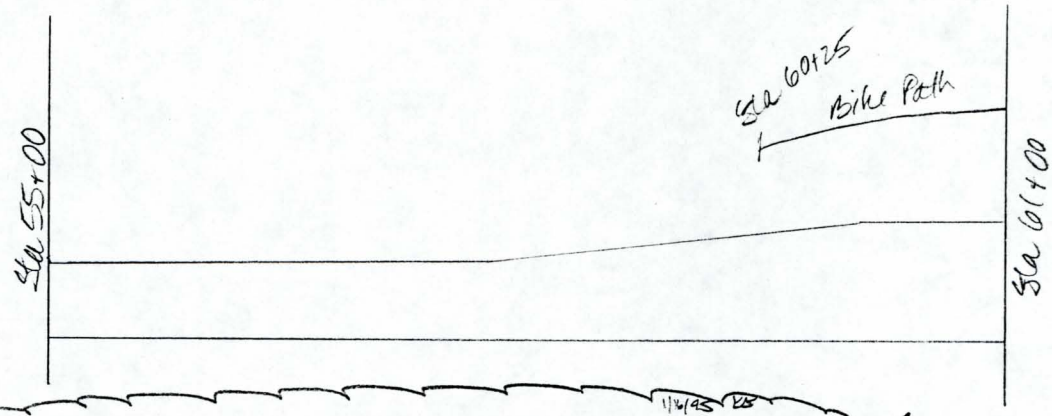
**Greiner**

Job No. E002102 Project OCCC Sheet 35A of

Subject Phase I 90% - Quantity Take Offs (Sh. C4.1)

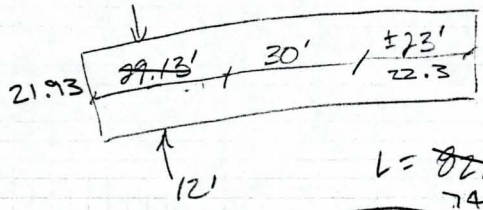
By ALB Date 10-27-94 Checked By ~~KAS~~ / ALB Date 11/3/94 / 1/19/95

Sheet C4.1 Grading Plan




ITEM 220 - DUMPED RIPRAP 80' x 15' x 3' ÷ 27 = 133.3 CY 1/16/95 KAS

Multi-Use Path




L = ~~82.13'~~ 74.23 SA = ~~82.13 LF~~ 74.23 x (12' w) = ~~985.56 SF~~ 890.8 891 PER DCA

Item # 301 Subgrade Prep

SA of Path = ~~985.56 SF~~ 891

= ~~109.5 SY~~ 99 → ~~109.5 SY~~ 99

DELETE FROM PHASE I 1/16/95 KAS

Item # 310-1 Aggreg. Base Course (4" lift)

~~985.56 SF~~ 891

(4/12)

~~328.52 CF~~ 297 = ~~12.17 CY~~ 11 → ~~12.2 CY~~ 11

Item # 321-1 AC Pavement C-3/4 (2" thick)

891 ~~985.56 SF~~

(2/12)

~~164.26 CF~~ 148.5 x 145 #/CF x 1T/2000# = ~~11.91~~ 10.8 → ~~11.9 T~~ 10.8

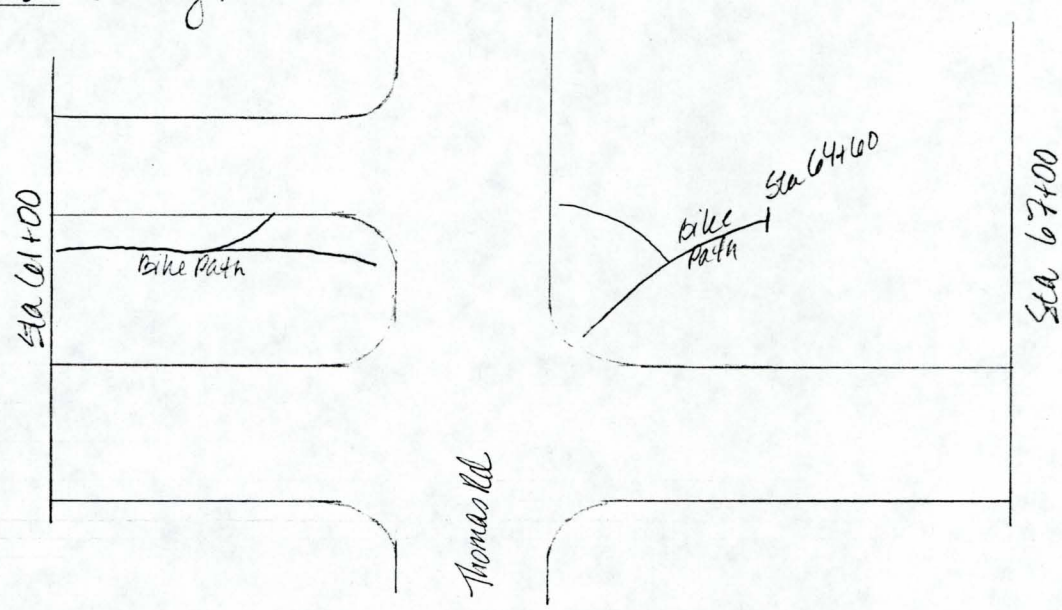
**Greiner**

Job No. ED02102 Project OCCC Sheet 35B of ____

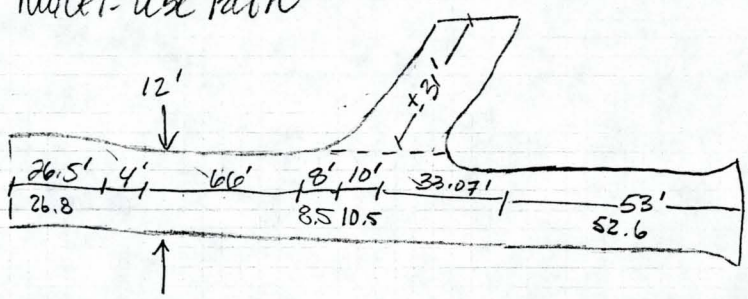
Subject Phase 1 - 90% - Quantity Take Offs (Sh C4.2)

By ALB Date 10-27-94 Checked By KAS Date 11/3/94

Sheet C4.2 - Grading Plan

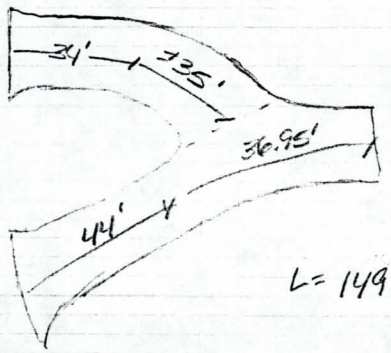



Multi-Use Path




L = 231.57' SA = 231.57 LF x 12'w = 2778.84 SF OK

232.07 2837 SF PER DCA




1775 SF PER DCA

L = 149.95 LF x 12'w = 1799.4 SF OK

4578.24 SF

(Total w/ Sh. C4.1 = 4578.24 SF + 985.56 SF = 5563.8 SF

Total on DCA = 5570.45 SF ✓)

**Greiner**

Job No. E002102 Project OCC Sheet 35C of

Subject Phase I - 90% Quantity Take Offs (C4/2)

By AMB Date 10-27-94 Checked By KAS / AMB Date 11/3/94 / 1/19/95

Item # 301 - Subgrade Prep.

S.A. of Path = 4578.24 SF

= 508.7 SY → 508.7 SY

Item # 310-1 - Aggreg. Base Course (4" lift)

4578.24 SF

(4/12)

1526.08 CF = 56.52 CY → 56.5 CY

Item # 321-1 AC Pavement C-3/4 (2" thick)

4578.24 SF

(2/12)

763.04 CF x 145 #/CF x 1T/2000# = 55.32 T → 55.3 T

Item # 515-2 Removable Bollards

3 ~~2~~ EA Sta 62+35 ± 40' LT

3 ~~2~~ EA Sta 63+87 ± 47' LT

→ 6 ~~4~~ EA

DELETE FROM PHASE I 1/16/95 KB

**Greiner**

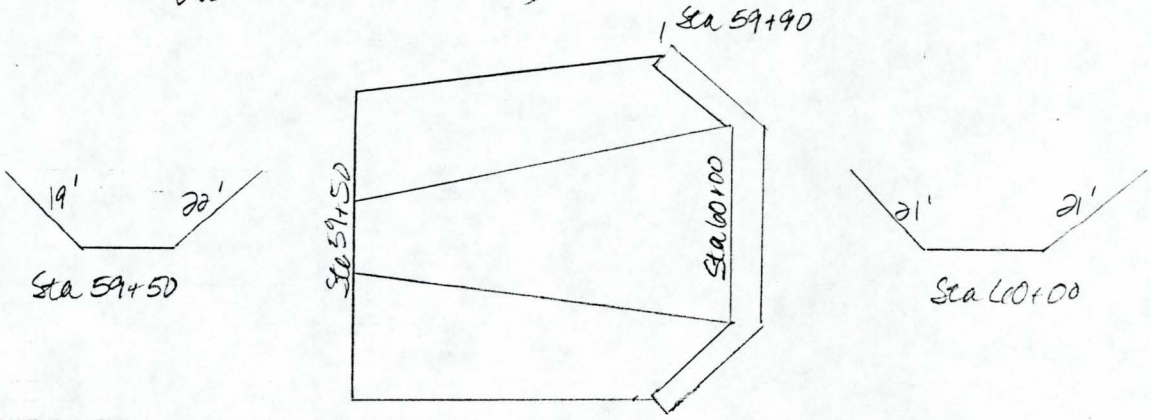
Job No. E002102 Project OCCC Sheet 35D of ____

Subject Phase I 90% - Qty Take Offs (Sh. C4.1 & C4.2)

By ALB Date 10-28-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

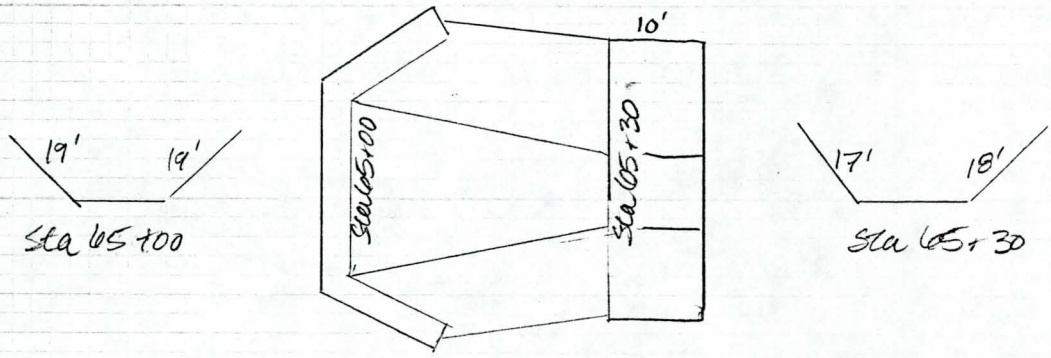
Item # 525-1 Channel Side Slope Protected (S.Y.)

Box Outlet (Sta 60+00)




LT: ½(19'+21')x50' = 1000 SF
RT: ½(22'+21')x50' = 1050 SF
~~2050 SF = 228 SY~~

Box Inlet (Sta 65+00)




LT: ½(19'+17')x ~~30'~~ 40' = ~~540~~ 720 SF
RT: ½(19'+18')x ~~30'~~ 40' = ~~555~~ 740 SF
~~1095 SF = 122 SY~~
1460 162 SY

1/17/95 KAS

Item # 415-2 - Steel Guardrail
C4.1 - 2(70.5) = 141
C4.2 - 63.0

204

228 SY + 162 SY ⟹ ~~390~~ 390 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 36 of —

Subject Phase I 90% – Quantity Take offs (Sh. C5.1)

By ALB Date 10-20-94 Checked By KJS / ALB Date 11/3/94 / 1/20/95

Sheet C5.1 Box Sta 58+00 - 62+00

Item # 420 Chain Link Fence (For both C5.1 & C5.2) 1/16/95

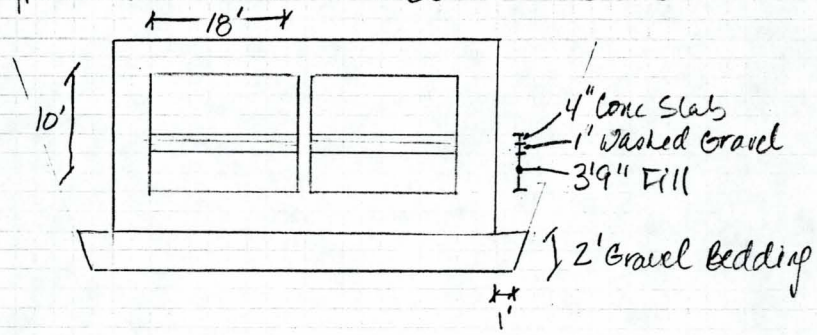
~~LF req'd = ~~300'~~ 300'~~
~~LF existing = 158'~~
~~say 10% not reusable, LF exist = 143~~
~~LF new fence = 123'~~
~~say relocate at $4.50/LF 143' x 4.50 = $643.50~~
~~say new fence at $ 9/LF 123' x 9.00 = $1107.00~~ $1413.00
~~$1750.50~~ 2056.50 → $2100 ~~$1755 LS~~

231 LF - C5.1 TOTAL = 442
211 LF - C5.2
ALL NEW FX

Item # 505-1 18'x10' Box Culvert
Sta 60+00 - Sta 62+00 = 200'
→ 200 LF

Item # 345-2 - Adjust MH
Sta 59+83; 38' RT
→ 1 EA

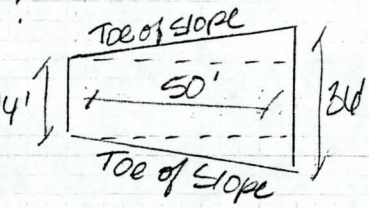
Typical X-Sect Sta 60+00 - 62+00




Item # 340-~~10~~ 9 - Conc Slab (4")

Inside Box: 2(18'w) x 200'L = 7200 SF = 800 SY

Beyond Box: Box Outlet




S.A. = ½(14'+36') x 50'
= 1250 SF
= 138.9 SY

→ 938.9 SY

**Greiner**

Job No. E002102 Project OCCC Sheet 37 of

Subject Phase I 90% - Quantity Take Off (Sh C5.1)

By ALB Date 10-21-94 Checked By KAS / ALB Date 11/3/94 / 1/19/95

Item # ~~340-8~~ 310-2 Gravel Bedding

Inside Box Culvert: 1' thick below slab

2(18'W) x 1' H x 200' L = 7200 CF = 266.67 CY — 266.67 cy

Beyond Box: 1' thick below slab

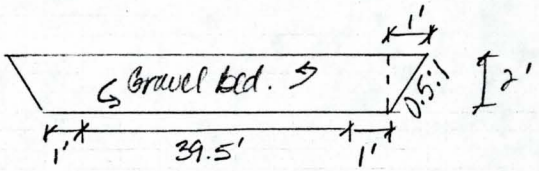
S.A. of Slab = 1250 SF

1250 SF x 1' H = 1250 CF = 46.3 CY — 46.3 cy

AT TOEDOWN: 2' x 5' x 15' ÷ 27 = 5.6 cy
1/16/95 KAS

Below Box: 2' thick

18' x 10' Box Width = 39.5'




41.5' W x 2' H x 200' L + 2[1/2 (1' x 2') x 200' L] = 17000 CF
= 629.6 CY

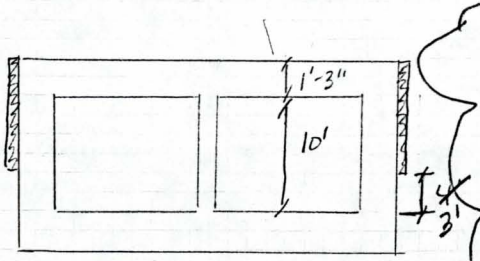
629.6 cy
⇒ ~~942.57 CY~~
948.15 17
KAS 1/16/95

Item # 211 - Fill Construction

Inside Box: 3'-~~4~~ 8" thick

2(18') x 3.~~75~~ 67' H x 200' L = ~~27000~~ 26424 CF
= ~~1000~~ CY
979 cy

Item # 206-4 Geocomposite Drain




8' 3"
~~7' 3"~~ of drain along length of both sides 1/16/95 KAS

2 x [200 LF x ~~7.25~~ 8.25'] = ~~2900~~ 3300 SF
= ~~322.2~~ SY
366.7

⇒ ~~322.25~~
366.7

**Greiner**

Job No. E002102 Project OCCC Sheet 37A of

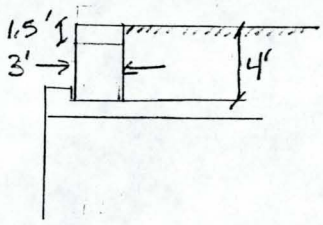
Subject Phase I 90% - Qty Take Offs (C5.1 & C5.2 & C8.6)

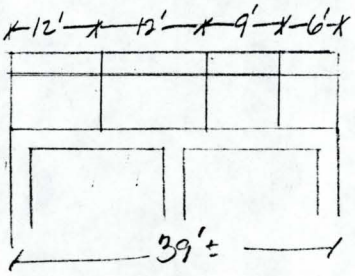
By ALB Date 10-27-94 Checked By KAS / ALB Date 11/3/94 / 11/20/95

Item # 221 Gabion Construction (See attached sheet for Gabion letter codes & dims.)

BOX Outlet

Across box top:



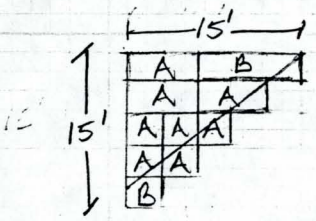



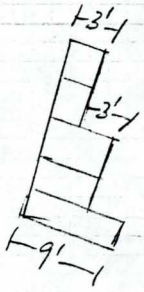

2 - 12'L x 3'W x 3'D = 2(4CY) = 8CY
1 - 9'L x 3'W x 3'D = 1(3CY) = 3CY
1 - 6'L x 3'W x 3'D = 1(2CY) = 2CY
2 - 12'L x 3'W x 1.5'D = 2(2CY) = 4CY
1 - 9'L x 3'W x 1.5'D = 1(1.5CY) = 1.5CY
1 - 6'L x 3'W x 1.5'D = 1(1CY) = 1CY

19.5 CY

(2) Symmetrical Wing Walls

For one wall:

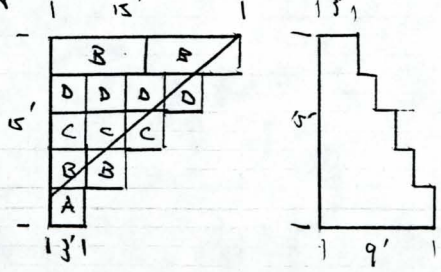



8-A's: 6x3x3 = 8(2CY) = 16CY
2-B's: 9x3x3 = ~~9~~ 2(3CY) = ~~27~~ CY
22 ~~43~~ CY

For two walls = ~~86~~ 44 CY

Box outlet: 19.5 CY + ~~86~~ 44 CY ⇒ ~~105.5~~ 63.5 CY




| | | | | |
|---|---|---|---|---|
| A - 3x3x9 | (1 EA) | = 3 cy | | 3 |
| B - 3x3x7.5 | (4 EA) | = 4(2.5 cy) | = | 10 |
| C - 3x3x6 | (3 EA) | = 3(2 cy) | = | 6 |
| D - 3x3x4.5 | (4 EA) | = 4(1.5) | = | 6 |

25 cy / WALL

1/16/95 KAS

BOX OUTLET = 25(2) + 19.5 = 69.5

**Greiner**

Job No. E002102 Project OCCC Sheet 37B of

Subject Phase I 90% - Qty Take Offs (C5.1 & C5.2 & C8.6)

By Date Checked By KAS / AMB Date 11/3/94 / 1/20/95

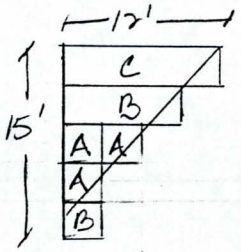
Item # 221 - Gabion Construction

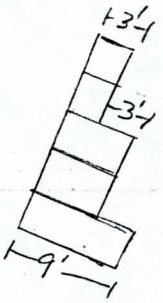
Box Inlet

Across box top (see calcs for box outlet) - 17.33 cy

(2) Symmetrical Wing Walls

For one wall:



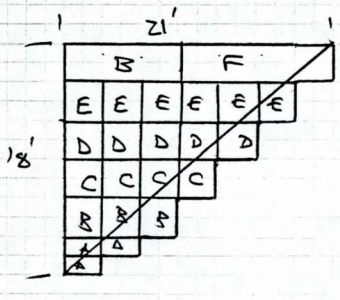

3-A's: 6'x3'x3' = 3(2cy) = 6cy
2-B's: 9'x3'x3' = ~~27~~ 18(3cy) = ~~27~~ 6 cy
1-C: 12'x3'x3' = 1(4cy) = 4 cy

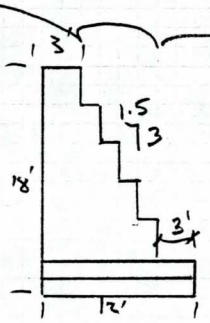
~~37~~ 16 cy

For two walls = ~~74cy~~ 32 cy

Box inlet: 19.5 cy + ~~74~~ 32 cy ⇒ ~~93.5~~ 51.5 cy

63.5 + 51.5 = 115 cy




A - 1.5'x3'x12' (3 ea) = 3(2) = 6 cy
B - 3'x3'x9' (4 ea) = 4(3) = 12 cy
C - 3'x3'x7.5' (4 ea) = 4(2.5) = 10 cy
D - 3'x3'x6' (5 ea) = 5(2) = 10 cy
E - 3'x3'x4.5' (6 ea) = 6(1.5) = 9 cy
F - 3'x3'x12' (1 ea) = 1(4) = 4 cy

51.0 cy

BOX INLET = 2(51) + 19.5 = 121.5 cy

69.5 + 121.5 = 191 cy

1/16/95 KAS

Non-Raveling. The wire mesh is to be fabricated in such a manner as to be non-raveling. This is defined as the ability to resist pulling apart at any of the twists or connections forming the mesh when a single wire strand in a section of mesh is cut.

MATERIALS

Galvanized Steel Wire Mesh Gabions. Gabion baskets units shall be of non-raveling construction and fabricated from a double twisted hexagonal mesh of hot dipped galvanized steel wire having a diameter of 0.118 inches (approx. US gauge 11) after galvanization. The steel wire used shall be galvanized prior to weaving into mesh. All gabion diaphragm and frame wire shall equal or exceed Federal Spec. QQ-W-461H, possess soft tensile strength, and a Finish 5 Class 3 zinc coating of not less than 0.80 oz/sq. ft. of uncoated wire surface. The weight of zinc coating shall be as determined by ASTM test designation A-90. Mesh openings shall be hexagonal in shape and uniform in size measuring not more than 3.25 inches by 4.50 inches approximately (=9 sq. in. area opening). Selvedge or perimeter basket frame wire shall be of heavier gauge than the mesh wire with a diameter of 0.150 inches (approx. US gauge 9) after galvanization. Lacing and connecting wire shall meet the same specifications as the wire used in the gabion body except that its diameter shall be of 0.0866 inches (approx. US gauge 13.5) after galvanization.

All of the above wire diameters are subject to tolerance limit of 0.004 inches in accordance with ASTM a-641.

GABION STANDARD SIZES

| Letter Code | Dimensions | No. of Cells | Capacity in Cubic Yards |
|---|---|---|---|
| A | 6′ x 3′ x 3′ | 2 | 2 |
| B | 9′ x 3′ x 3′ | 3 | 3 |
| C | 12′ x 3′ x 3′ | 4 | 4 |
| D | 6′ x 3′ x 1′6" | 2 | 1 |
| E | 9′ x 3′ x 1′6" | 3 | 1.5 |
| F | 12′ x 3′ x 1′6" | 4 | 2 |
| G | 6′ x 3′ x 1′ | 2 | 0.666 |
| H | 9′ x 3′ x 1′ | 3 | 1 |
| I | 12′ x 3′ x 1′ | 4 | 1.33 |

Tolerances. All gabion dimensions shall be within a tolerance limit of =5% of the manufacturer's stated sizes.

From Maccaferri Gabions – "Galvanized Gabion Specifications"

**Greiner**

Job No. E002102 Project OCCC Sheet 38 of

Subject Phase I 90% - Quantity Take Offs (Sh C5.2)

By ALB Date 10-21-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

Sheet C5.2 Box Sta 62+00 -

Item # 505-1 18'x10' Dbl. Box Culvert
Sta 62+00 - 65+00 = 300' ⇒ 300 LF

Item # 618-~~5~~ 3 30" RGRCP 1/20/95 ALB
Sta 63+73 ~~10.5'~~ 10
Sta 64+34 ~~4'~~ 5' ⇒ ~~14~~ 15' ~~15~~ LF

Item # 618-~~7~~ 2 24" RGRCP
Sta 63+91 ~~13.5'~~ 13 ⇒ ~~14~~ 13 LF

Item # 610-~~8~~ 5 Cut & Plug 8" San. Sew.
Sta 65+30 ⇒ 1 EA

Item # 625-1 Install access MH
Sta 64+75; 18' RT ⇒ 1 EA

Item # 505-~~31~~ 15 Type N CB & Grate
Sta 62+55; 24' RT ⇒ 1 EA

Item # 505-~~29~~ 14 Type N CB Dbl. Grate
Sta 64+37.50; 22.5' RT ⇒ 1 EA

Item # 618-~~8~~ 4 36" RGRCP
Sta 62+49 6' ⇒ 6 LF

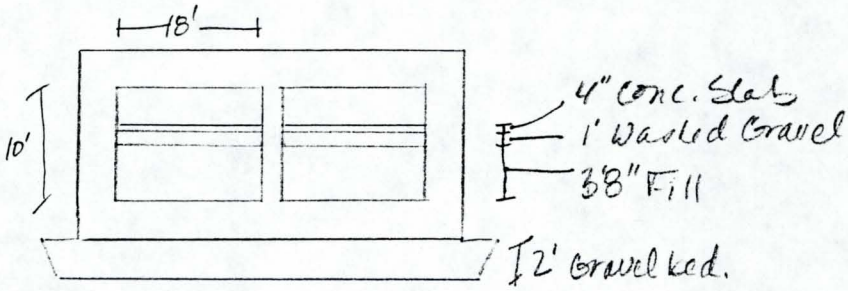
**Greiner**

Job No. ED02102 Project OCCL Sheet 39 of

Subject Phase I 90% - Quantity Take Offs (C5.2)

By ALB Date 10-21-94 Checked By KAS / ALB Date 11/3/94 / 1/19/95

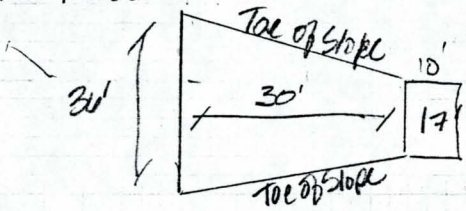
Typical X-Sect Sta 62+00 - 65+00




Item # 340-10 - 4" Conc Slab

Inside Box: 2(18'w) x 300'L = 10800 SF = 1200 SY

Beyond Box: Box Inlet




1/2(36'+17') x 30' = 795 SF + 170 = 965

~~88.3~~ 107.2 SY

+ +

1307.2 SY

⇒ ~~1288.3~~ SY

Item # 310-26 Gravel Bedding

Inside box: 1' thick below slab

2(18'w) x 1'H x 300'L = 10800 CF = 400 CY

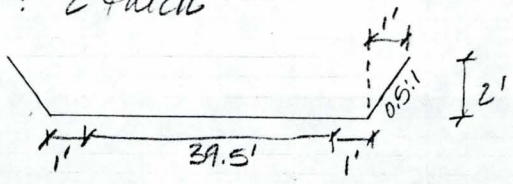
Beyond box: 1' thick below slab

S.A. of slab = 795 SF

795 SF x 1'H = 795 CF = 29.4 CY

~~AT TOEDOWN = 5'x2'x15' ÷ 27 = 5.6 CY~~ 1/19/95 ALB

Below box: 2' thick




41.5'W x 2'H x 300'L + 2[1/2(1'x2') x 300'L] = 25500 CF

= 944.4 CY

⇒ ~~1373.8~~ CY

~~1379.4~~

11/16/95 KAS

1373.8 CY

1/19/95 ALB

**Greiner**

Job No. E002107 Project OCC Sheet 40 of

Subject Phase I 90% - Quantity Take Offs (Sh. C5.2)

By ALB Date 10-21-94 Checked By KLS / ALB Date 11/3/94 / 1/19/95

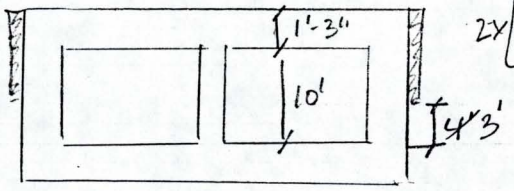
Item #211 - Fill Construction

Inside Box: 3'-8" thick

2(18'w) x 3.667'H x 300'L = 39603.6 CF

= 1467 CY

Item # 206.4 - Geocomposite Drain




1/16/95

2x[300LF x ~~7.25'~~ 8.25] = ~~4350~~ 4950 SF → ~~483.3 SY~~ 550

550

Item # ~~505.35~~ 222-2 8" PVC Sleeves

1/16/95

~~Sta 62+33 - 62+78 = 55'~~

Sta 64+11 - 64+61 = ~~50'~~ 45'

→ ~~105 LF~~ 45

Item # 520-1 Handrail

Sta 62+77 11 LF.

Sta 64+12 11 LF

⇒ ~~22 LF~~

SEE SHEET C3.11

**Greiner**

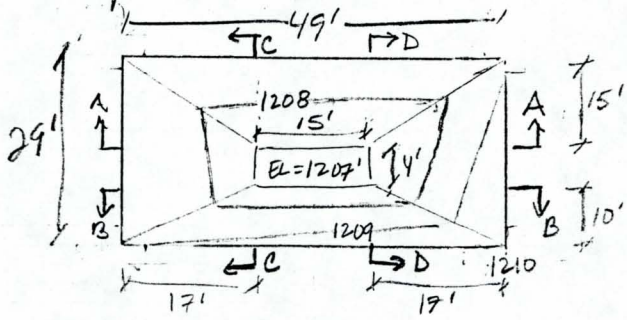
Job No. E002102 Project OCLL Sheet 40A of

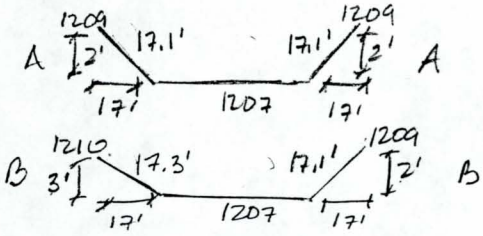
Subject Phase I 90% - Qty Take Off (Sh. C4.2/C5.2)

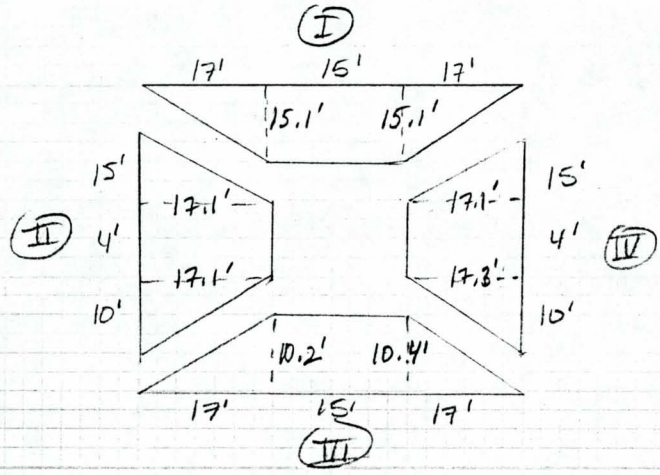
By ALB Date 10-27-94 Checked By KAS Date 11/3/94

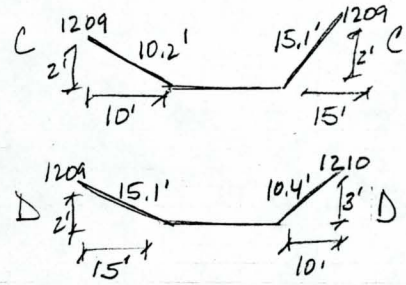
Item # 505-23 - Type A Conc Spillway (Perm.)

S. of Thomas Intersection




I $SA = (15' \times 15.1') + 2[\frac{1}{2}(17' \times 15.1')] = 483.2\,SF$

II $S.A. = (4' \times 17.1') + [\frac{1}{2}(15' \times 17.1')] + [\frac{1}{2}(10' \times 17.1')] = 282.15\,SF$

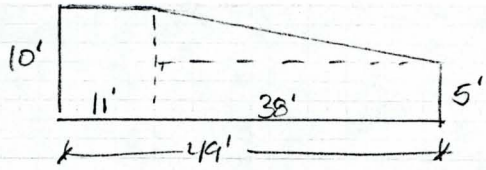
III $S.A. = (15' \times 10.3') + [\frac{1}{2}(17' \times 10.2')] + [\frac{1}{2}(17' \times 10.4')] = 329.6\,SF$

IV $S.A. = (4' \times 17.2') + [\frac{1}{2}(10' \times 17.3')] + [\frac{1}{2}(15' \times 17.1')] = 283.55\,SF$

Total = 1378.5 SF $\Longrightarrow$ 153.2 SY

Item # 222 - Grassrete

S. of Thomas Intersection




$(10' \times 11') + (38' \times 5') + \frac{1}{2}(38' \times 5')$

$= 395\,SF$

401 SF PER DCA

$\Longrightarrow$ ~~395~~ 401 SF

**Greiner**

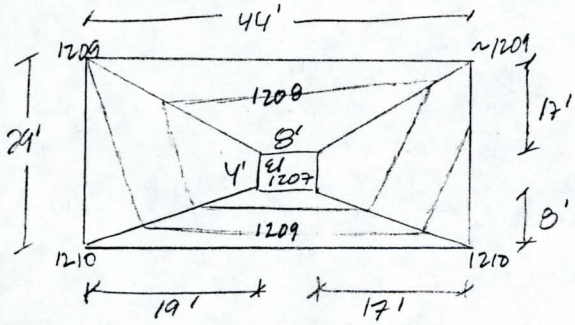
Job No. E002102 Project DCC Sheet 403 of

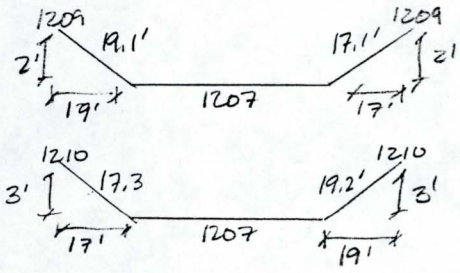
Subject Phase I 90% - Quantity Take Off (Sh C4.2/C5.2)

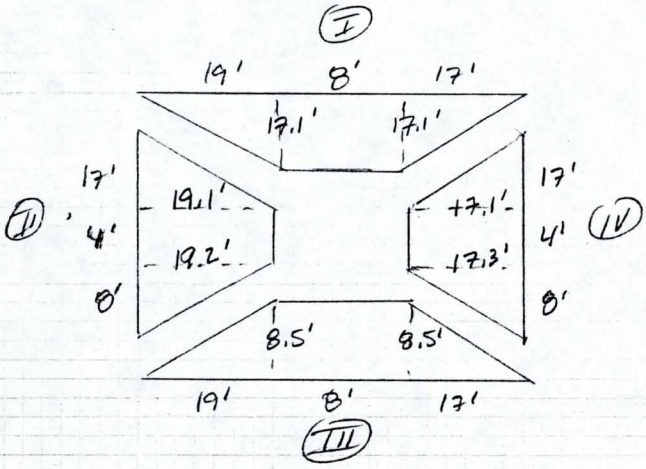
By AVB Date 10-27-94 Checked By KAS Date 11/3/94

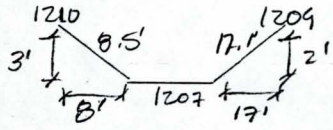
Item # 505-23 Type A Spillway - Perm.

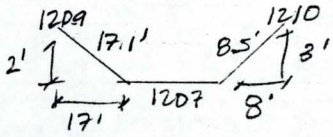
N. of Thomas Intersection




(I) $(8' \times 17.1') + [\tfrac{1}{2}(19' \times 17.1')] + [\tfrac{1}{2}(17' \times 17.1')] = 444.6$ SF

(II) $(4' \times 19.15') + [\tfrac{1}{2}(17' \times 19.1')] + [\tfrac{1}{2}(8' \times 19.2')] = 317.15$ SF

(III) $(8' \times 8.5') + [\tfrac{1}{2}(19' \times 8.5')] + [\tfrac{1}{2}(17' \times 8.5')] = 221$ SF

(IV) $(4' \times 17.2') + [\tfrac{1}{2}(17' \times 17.1')] + [\tfrac{1}{2}(8' \times 17.3')] = 283.35$ SF

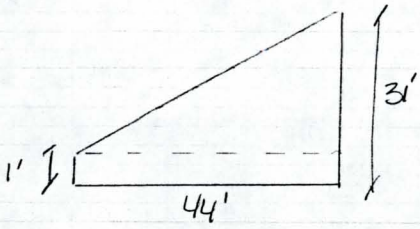
1266.1 SF $\Rightarrow$ 140.7 SY

+ 153.2 SY

$\boxed{293.9 \text{ SY}}$

Item # 222 Grassercte

N. of Thomas Intersection




$\tfrac{1}{2}(44' \times 30') + (1' \times 44') = 704$ SF

761 SF PER DCA $\Rightarrow$ 761 ~~704~~ SF

401 ~~395~~ SF

$\boxed{1099 \text{ SF}}$ ~~1162~~

**Greiner**

Job No. E002102 Project OCCC Sheet 40C of

Subject Phase 1 - 90% Qty Take Off (Sh. C4.2/C5.2)

By ALB Date 10-27-94 Checked By RAS Date 11/3/94

Item # 515-1 Fixed Bollard

S. of Thomas

Curbopening = 49'

$\# = 49' - 2' = \frac{47'}{3.5'} = 13.4$ bollards; use 14

N. of Thomas

Curb opening = 44'

$\# = 44' - 2' = \frac{42'}{3.5'} = 12$ bollards $\Rightarrow$ 26 EA

505-17 8" PVC SLEEVE

55 + 50 = 105 105 LF

**Greiner**

NOTE: SEE DCA PRINTOUTS ATTACHED AFTER PAGE 45.

Job No. E002102 Project OCCL Sheet 40D of

Subject Phase I 90% - Quantity Take Offs (Sh. C5.1 & C5.2)

By ALB Date 10-25-94 Checked By KAS/ALB Date 11/3/94/1/20/95

Item # 206-2 Structural Backfill

From attached quantity spreadsheet, for Sta 60+00-65+00 plus fill construction inside box (1467 CY → C5.1 + 979 → C5.2) 2446 CY TOTAL →

~~2872 CY~~
2446 CY
5318 CY

~~2872 CY~~
+ ~~1467 CY~~
~~4339 CY~~

Item # 211 Fill Construction

- From attached quantity spreadsheet, Regular backfill Sta 60+00 – 65+00 = 5725 CY
- Fill Constr. inside box Sta 60+00 to 62+00 (see quantities Sh. C5.1) = ~~1002~~ 979 CY *
- Fill Constr. inside box Sta 62+00 to 65+00 (see quantities Sh. C5.2) = 1467 CY *

⇒ ~~6725~~ 5725 CY

* must come from offsite; structural backfill requirement.

Item # 206-1 Structural Exc.

From attached quantity spreadsheet, Sta 60+00-65+00 ⇒ 15,295 CY

~~Item # 206-3 Surplus removal~~

~~(Roadway Exc. + Struct. Exc.) - Fill Constr.~~

~~(16673 + 15295) - 6725~~ 5725 ⇒ ~~16,423 CY~~

DELETED ITEM
1/20/95 ALB

**Greiner**

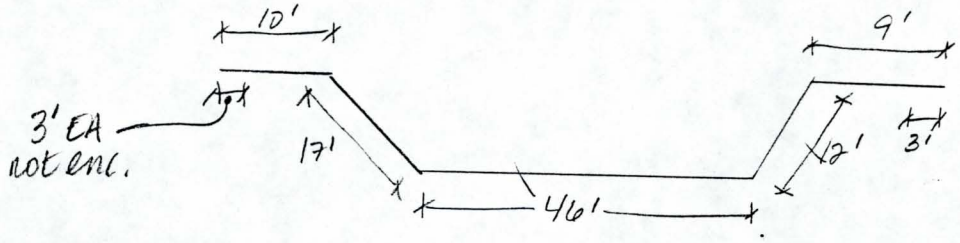
Job No. E002102 Project OCCC Sheet 41 of

Subject Phase I 90% - Quantity Take Offs (Sh. C9.1)

By ALO Date 10-21-94 Checked By KAS Date 11/3/94

Sheet C9.1 - 45" & 12" WL Relocations - Thomas Rd & 48th Street

Item # 610-~~8~~ 2 WL Relocation (45")

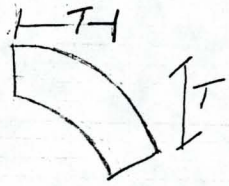



Total length ⟹ 94 LF

Item # 509-9 Conc. Encase. for 45" fittings

45° Elbow (Typ for 2)

Per AWWA C208 for 3 piece elbows




T = ±21.8"

2T = ± length of fitting

2T = ± 43.6"

Per det. A Sh. C9.3, encasement for fitting

= length of fitting + additional 4' both ends

L = 43.6" + 2(4') = 11.6'/elbow

For 2 elbows = 23.2' = 23.2'

60° Elbow (Typ. for 2)

Per AWWA C208 for 3 piece elbow

T = ± 25.95"

2T = ± 51.9"

Per det A, C9.3 L = 51.9" + 2(4') = 12.3'/elbow

For 2 elbows = 24.6' = 24.6'

47.8'

⟹ 48 LF

**Greiner**

Job No. E002102 Project OCCC Sheet 42 of

Subject Phase I 90% - Quantity Take Offs (Sh C9.1)

By ACB Date 10-21-94 Checked By KAS Date 11/3/94

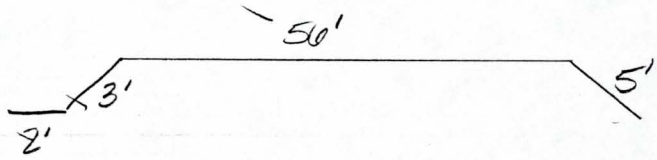
Item # 505-7 - Conc. Enc. for 45" WL per MAG 402

3' EA end not encased

47.8' enc. per fitting det.

$L = 94' - 2(3') - 47.8' = 40'$ ⟹ 40 LF

Item # 610-2 - WL Relocation (12")




Total Length ⟹ 66 LF

**Greiner**

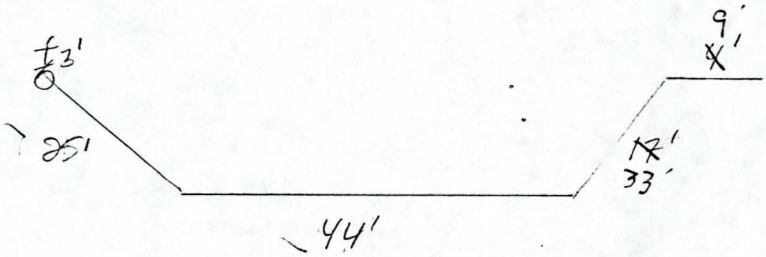
Job No. E002102 Project OCCC Sheet 43 of

Subject Phase I 90% - Quantity Take Offs (C9.2)

By ALB Date 10-21-94 Checked By KAS Date 11/3/93

Sheet C9.2 - 54" & 12" WL Relocations - Virginia Ave & 48th St

Item # 610-4 - WL Relocation (54")




Total length ⟹ ~~93~~ 111 LF

Item # 50~~9-10~~ 5-6 - Conc. Encase for 54" fittings

90° Elbow

Per AWWA C208 for 3 piece elbows

T = ± 41.5"

2T = length of fitting

2T = ± 83"

Per det A Sh C9.3, encasement for fitting

= length of fitting + addtnl 4' both ends

L = 83" + 2(4') = 14.9' = 14.9'

45° Elbow

Per AWWA C208 for 3 pcc. elbow

T = ± 23.7"

2T = ± 47.4"

Per det A Sh C9.3 L = 47.4" + 2(4') = 11.95' = 11.95'

70° Elbow (Typ for 2)

T = ± 34.3"

2T = ± 68.6"

L = 68.6" + 2(4') = 13.7'/elbow ⟹ 27.4'

For 2 elbows: 27.4'

54.25'

⟹ 55 LF

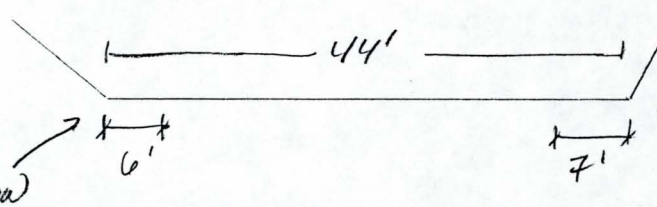
**Greiner**

Job No. E007102 Project OCCC Sheet 44 of

Subject Phase I 90% - Quantity Take Offs (Sh C9.2)

By ALB Date 10-21-94 Checked By KAS / ALB Date 11/3/94 / 1/20/95

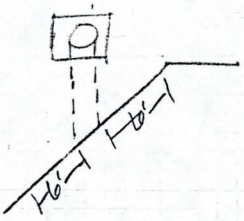
Item # 505-~~8~~ 4 - Conc. Enc. for 54" WL per MAG 402




31 LF of MAG 402 encasement due to encasement requirements of elbows BI # 505-6 ALB 1/20/95

$L = 44' - (6' + 7') = 31'$ ⟹ 31 LF

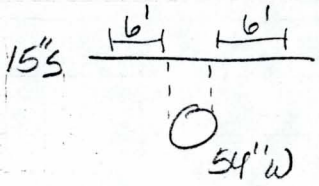
Item # 505-~~13~~ 8 - Conc. Enc. for 54" WL per MAG 404




$L = 15' + 2(6') = 13.25'$ ⟹ 14 LF

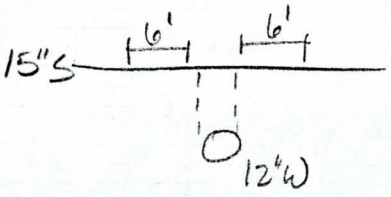
Item # 505-~~14~~ 9 - Conc. Enc. for 15" San Sew per MAG 404

Over 54" WL




$L = 54'' + 2(6')$
$= 16.5'$

Over 12" WL




$L = 12'' + 2(6')$
$= 13'$

$16.5' + 13' = 29.5'$ ⟹ 30 LF

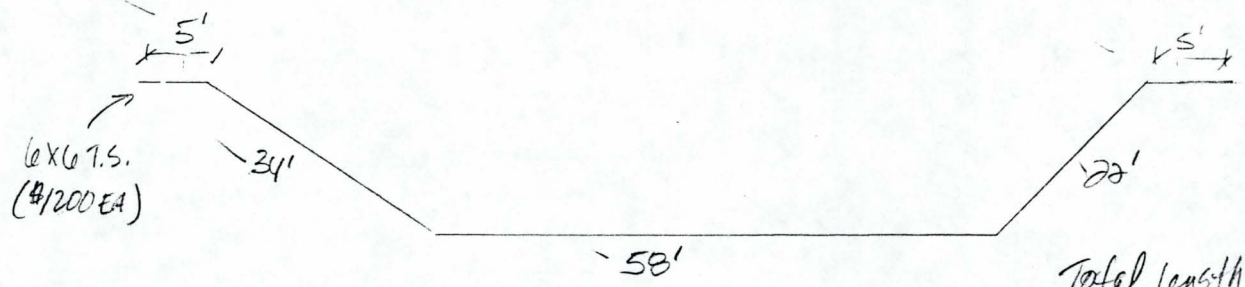
**Greiner**

Job No. E002102 Project OCCC Sheet 45 of

Subject Phase 1907 - Quantity Take Offs (Sh C9.2)

By ALB Date 10-21-94 Checked By KAS Date 11/3/94

Item # 610-5 - WL Construction (12")

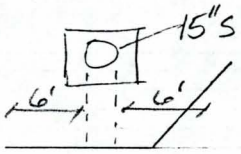



Total length ⟹ 125 LF

Item # 505-6 - Conc. Enc. 12" WL MAG 402

44' per profile ⟹ 44 LF

Item # 505-7 - Conc Enc. 12" WL MAG 404




L = 15" + 2(6') = 13.25' ⟹ 14 LF

Item # 610-11 - Retrofit Restr. Jnts for 54"ω

at Virginia - 2 85' sections
at 20' intervals ⟹ 8 EA

at Hubbel ⟶ 8 EA ⟶ 16 EA
(No dwg.; sketch in specs)

Item # 525-2 - Pneumatic Spillway

200 SY ⟶ Canal lining at 54" waterline ⟹ ~~280~~ 300 SY

CCCC EC2102

Ned 5/4/94

GRANULAR BACKFILL

| STATION | TOTAL LENGTH(F) | CROSS SECTION AREA (F^2) | QUANTITY F^3 | Y^3 |
|---|---|---|---|---|
| 10+00-77+00 | 6,700 | 86 | 576,200 | 21,341 |
| 77+00-113+00 | 3,600 | 62 | 223,200 | 8,267 |
| 113+00-117+00 | 400 | 53 | 21,000 | 778 |
| TOTAL | | | 820,400 | 30,385 |

STRUCTURAL BACKFILL

| STATION | TOTAL LENGTH(F) | CROSS SECTION AREA (F^2) | QUANTITY F^3 | Y^3 |
|---|---|---|---|---|
| 1000 | | 233 | | |
| 1100 | 100 | 152 | 19,235 | 712 |
| 1200 | 100 | 150 | 15,103 | 559 |
| 1300 | 100 | 145 | 14,772 | 547 |
| 1400 | 100 | 152 | 14,862 | 550 |
| 1500 | 100 | 164 | 15,800 | 585 |
| 1600 | 100 | 152 | 15,803 | 585 |
| 1700 | 100 | 162 | 15,683 | 581 |
| 1800 | 100 | 160 | 16,111 | 597 |
| 1900 | 100 | 161 | 16,053 | 595 |
| 2000 | 100 | 161 | 16,055 | 595 |
| 2100 | 100 | 162 | 16,147 | 598 |
| 2200 | 100 | 159 | 16,064 | 595 |
| 2300 | 100 | 162 | 16,041 | 594 |
| 2400 | 100 | 167 | 16,424 | 608 |
| 2500 | 100 | 158 | 16,222 | 601 |
| 2600 | 100 | 162 | 15,977 | 592 |
| 2700 | 100 | 159 | 16,051 | 594 |
| 2800 | 100 | 158 | 15,883 | 588 |
| 2900 | 100 | 161 | 15,952 | 591 |
| 3000 | 100 | 161 | 16,078 | 595 |
| 3100 | 100 | 161 | 16,089 | 596 |
| 3200 | 100 | 161 | 16,096 | 596 |
| 3300 | 100 | 161 | 16,088 | 596 |
| 3400 | 100 | 162 | 16,145 | 598 |
| 3500 | 100 | 161 | 16,164 | 599 |
| 3600 | 100 | 160 | 16,059 | 595 |
| 3700 | 100 | 161 | 16,058 | 595 |
| 3800 | 100 | 160 | 16,064 | 595 |
| 3900 | 100 | 159 | 15,938 | 590 |
| 4000 | 100 | 162 | 16,019 | 593 |
| 4100 | 100 | 161 | 16,139 | 598 |
| 4200 | 100 | 161 | 16,125 | 597 |
| 4300 | 100 | 160 | 16,078 | 595 |
| 4400 | 100 | 156 | 15,828 | 586 |
| 4500 | 100 | 154 | 15,506 | 574 |
| 4600 | 100 | 160 | 15,708 | 582 |
| 4700 | 100 | 157 | 15,858 | 587 |
| 4800 | 100 | 157 | 15,666 | 580 |
| 4900 | 100 | 156 | 15,614 | 578 |

| | | | | |
|---|---|---|---|---|
| 5000 | 100 | 154 | 15,496 | 574 |
| 5100 | 100 | 155 | 15,453 | 572 |
| 5200 | 100 | 156 | 15,523 | 575 |
| 5300 | 100 | 154 | 15,479 | 573 |
| 5400 | 100 | 154 | 15,386 | 570 |
| 5500 | 100 | 154 | 15,411 | 571 |
| 5600 | 100 | 162 | 15,834 | 586 |
| 5700 | 100 | 156 | 15,897 | 589 |
| 5800 | 100 | 157 | 15,622 | 579 |
| 5900 | 100 | 157 | 15,672 | 580 |
| 6000 | 100 | 155 | 15,572 | 577 |
| 6100 | 100 | 158 | 15,622 | 579 |
| 6200 | 100 | 153 | 15,547 | 576 |
| 6300 | 100 | 158 | 15,572 | 577 |
| 6400 | 100 | 152 | 15,522 | 575 |
| 6500 | 100 | 153 | 15,247 | 565 |
| 6600 | 100 | 151 | 15,172 | 562 |
| 6700 | 100 | 157 | 15,372 | 569 |
| 6800 | 100 | 153 | 15,472 | 573 |
| 6900 | 100 | 155 | 15,372 | 569 |
| 7000 | 100 | 158 | 15,647 | 580 |
| 7100 | 100 | 157 | 15,772 | 584 |
| 7200 | 100 | 152 | 15,447 | 572 |
| 7300 | 100 | 153 | 15,247 | 565 |
| 7400 | 100 | 151 | 15,222 | 564 |
| 7500 | 100 | 155 | 15,322 | 567 |
| 7600 | 100 | 154 | 15,447 | 572 |
| 7700 | 100 | 152 | 15,272 | 566 |
| 7800 | 100 | 139 | 14,528 | 538 |
| 7900 | 100 | 152 | 14,559 | 539 |
| 8000 | 100 | 140 | 14,634 | 542 |
| 8100 | 100 | 149 | 14,484 | 536 |
| 8200 | 100 | 151 | 15,034 | 557 |
| 8300 | 100 | 152 | 15,159 | 561 |
| 8400 | 100 | 152 | 15,209 | 563 |
| 8500 | 100 | 155 | 15,359 | 569 |
| 8600 | 100 | 149 | 15,184 | 562 |
| 8700 | 100 | 148 | 14,834 | 549 |
| 8800 | 100 | 144 | 14,609 | 541 |
| 8900 | 100 | 148 | 14,609 | 541 |
| 9000 | 100 | 147 | 14,759 | 547 |
| 9100 | 100 | 150 | 14,859 | 550 |
| 9200 | 100 | 146 | 14,784 | 548 |
| 9300 | 100 | 151 | 14,859 | 550 |
| 9400 | 100 | 154 | 15,259 | 565 |
| 9500 | 100 | 145 | 14,959 | 554 |
| 9600 | 100 | 154 | 14,984 | 555 |
| 9700 | 100 | 157 | 15,584 | 577 |
| 9800 | 100 | 156 | 15,684 | 581 |
| 9900 | 100 | 154 | 15,534 | 575 |
| 10000 | 100 | 153 | 15,384 | 570 |
| 10100 | 100 | 149 | 15,134 | 561 |
| 10200 | 100 | 134 | 14,174 | 525 |
| 10300 | 100 | 139 | 13,640 | 505 |
| 10400 | 100 | 141 | 13,965 | 517 |
| 10500 | 100 | 121 | 13,065 | 484 |

Phase 1

Phase 1 Structural Backfill ⇒ 2872 CY

| | | | | |
|---|---|---|---|---|
| 10600 | 100 | 141 | 13,090 | 485 |
| 10700 | 100 | 136 | 13,865 | 514 |
| 10800 | 100 | 142 | 13,890 | 514 |
| 10900 | 100 | 133 | 13,715 | 508 |
| 11000 | 100 | 145 | 13,890 | 514 |
| 11100 | 100 | 143 | 14,415 | 534 |
| 11200 | 100 | 136 | 13,940 | 516 |
| 11300 | 100 | 121 | 12,815 | 475 |
| 11400 | 100 | 123 | 12,190 | 451 |
| 11500 | 100 | 127 | 12,515 | 464 |
| 11600 | 100 | 124 | 12,540 | 464 |
| 11700 | 100 | 132 | 12,790 | 474 |
| TOTAL | | | 1,631,646 | 60,431 |

Fill Construction Over top of culvert

CULAR BACKFILL

| STATION | TOTAL LENGTH(F) | CROSS SECTION AREA (F^2) | QUANTITY F^3 | Y^3 |
|---|---|---|---|---|
| 1000 | | 46 | | |
| 1100 | 100 | 120 | 8,300 | 307 |
| 1200 | 100 | 120 | 12,001 | 444 |
| 1300 | 100 | 127 | 12,342 | 457 |
| 1400 | 100 | 123 | 12,468 | 462 |
| 1500 | 100 | 102 | 11,241 | 416 |
| 1600 | 100 | 108 | 10,533 | 390 |
| 1700 | 100 | 165 | 13,651 | 506 |
| 1800 | 100 | 198 | 18,139 | 672 |
| 1900 | 100 | 224 | 21,094 | 781 |
| 2000 | 100 | 287 | 25,553 | 946 |
| 2100 | 100 | 285 | 28,591 | 1,059 |
| 2200 | 100 | 270 | 27,736 | 1,027 |
| 2300 | 100 | 258 | 26,432 | 979 |
| 2400 | 100 | 270 | 26,421 | 979 |
| 2500 | 100 | 270 | 27,011 | 1,000 |
| 2600 | 100 | 245 | 25,747 | 954 |
| 2700 | 100 | 247 | 24,570 | 910 |
| 2800 | 100 | 244 | 24,518 | 908 |
| 2900 | 100 | 260 | 25,189 | 933 |
| 3000 | 100 | 260 | 26,006 | 963 |
| 3100 | 100 | 253 | 25,649 | 950 |
| 3200 | 100 | 257 | 25,498 | 944 |
| 3300 | 100 | 264 | 26,068 | 965 |
| 3400 | 100 | 259 | 26,163 | 969 |
| 3500 | 100 | 257 | 25,809 | 956 |
| 3600 | 100 | 266 | 26,186 | 970 |
| 3700 | 100 | 272 | 26,919 | 997 |
| 3800 | 100 | 266 | 26,896 | 996 |
| 3900 | 100 | 264 | 26,477 | 981 |
| 4000 | 100 | 263 | 26,349 | 976 |
| 4100 | 100 | 260 | 26,170 | 969 |
| 4200 | 100 | 258 | 25,886 | 959 |
| 4300 | 100 | 263 | 26,021 | 964 |
| 4400 | 100 | 258 | 26,033 | 964 |
| 4500 | 100 | 265 | 26,144 | 968 |
| 4600 | 100 | 265 | 26,514 | 982 |
| 4700 | 100 | 259 | 26,219 | 971 |
| 4800 | 100 | 262 | 26,040 | 964 |
| 4900 | 100 | 260 | 26,092 | 966 |
| 5000 | 100 | 265 | 26,227 | 971 |
| 5100 | 100 | 260 | 26,246 | 972 |
| 5200 | 100 | 257 | 25,862 | 958 |
| 5300 | 100 | 272 | 26,418 | 978 |
| 5400 | 100 | 261 | 26,628 | 986 |
| 5500 | 100 | 269 | 26,502 | 982 |
| 5600 | 100 | 260 | 26,450 | 980 |
| 5700 | 100 | 258 | 25,900 | 959 |
| 5800 | 100 | 261 | 25,925 | 960 |
| 5900 | 100 | 265 | 26,250 | 972 |
| 6000 | 100 | 267 | 26,550 | 983 |
| 6100 | 100 | 315 | 29,050 | 1,076 |
| 6200 | 100 | 319 | 31,675 | 1,173 |
| 6300 | 100 | 313 | 31,600 | 1,170 |
| 6400 | 100 | 308 | 31,025 | 1,149 |
| 6500 | 100 | 318 | 31,250 | 1,157 |
| 6600 | 100 | 327 | 32,200 | 1,193 |
| 6700 | 100 | 316 | 32,100 | 1,189 |

Phase 1

Phase 1 Fill Construction (top of box) ⇒ 5725 cy

| | | | | |
|---|---|---|---|---|
| 6800 | 100 | 320 | 31,750 | 1,176 |
| 6900 | 100 | 320 | 31,975 | 1,184 |
| 7000 | 100 | 324 | 32,200 | 1,193 |
| 7100 | 100 | 321 | 32,250 | 1,194 |
| 7200 | 100 | 324 | 32,225 | 1,194 |
| 7300 | 100 | 323 | 32,325 | 1,197 |
| 7400 | 100 | 325 | 32,375 | 1,199 |
| 7500 | 100 | 293 | 30,875 | 1,144 |
| 7600 | 100 | 294 | 29,325 | 1,086 |
| 7700 | 100 | 307 | 30,000 | 1,111 |
| 7800 | 100 | 364 | 33,525 | 1,242 |
| 7900 | 100 | 363 | 36,325 | 1,345 |
| 8000 | 100 | 396 | 37,900 | 1,404 |
| 8100 | 100 | 396 | 39,550 | 1,465 |
| 8200 | 100 | 427 | 41,125 | 1,523 |
| 8300 | 100 | 431 | 42,875 | 1,588 |
| 8400 | 100 | 428 | 42,925 | 1,590 |
| 8500 | 100 | 450 | 43,900 | 1,626 |
| 8600 | 100 | 467 | 45,850 | 1,698 |
| 8700 | 100 | 494 | 48,025 | 1,779 |
| 8800 | 100 | 506 | 49,950 | 1,850 |
| 8900 | 100 | 515 | 51,025 | 1,890 |
| 9000 | 100 | 503 | 50,875 | 1,884 |
| 9100 | 100 | 536 | 51,900 | 1,922 |
| 9200 | 100 | 543 | 53,900 | 1,996 |
| 9300 | 100 | 569 | 55,575 | 2,058 |
| 9400 | 100 | 583 | 57,600 | 2,133 |
| 9500 | 100 | 618 | 60,025 | 2,223 |
| 9600 | 100 | 626 | 62,175 | 2,303 |
| 9700 | 100 | 644 | 63,475 | 2,351 |
| 9800 | 100 | 628 | 63,575 | 2,355 |
| 9900 | 100 | 592 | 61,000 | 2,259 |
| 10000 | 100 | 583 | 58,725 | 2,175 |
| 10100 | 100 | 572 | 57,725 | 2,138 |
| 10200 | 100 | 532 | 55,200 | 2,044 |
| 10300 | 100 | 530 | 53,075 | 1,966 |
| 10400 | 100 | 571 | 55,025 | 2,038 |
| 10500 | 100 | 613 | 59,175 | 2,192 |
| 10600 | 100 | 578 | 59,525 | 2,205 |
| 10700 | 100 | 568 | 57,275 | 2,121 |
| 10800 | 100 | 577 | 57,200 | 2,119 |
| 10900 | 100 | 609 | 59,275 | 2,195 |
| 11000 | 100 | 629 | 61,875 | 2,292 |
| 11100 | 100 | 631 | 62,975 | 2,332 |
| 11200 | 100 | 529 | 57,975 | 2,147 |
| 11300 | 100 | 497 | 51,250 | 1,898 |
| 11400 | 100 | 482 | 48,925 | 1,812 |
| 11500 | 100 | 489 | 48,550 | 1,798 |
| 11600 | 100 | 506 | 49,725 | 1,842 |
| 11700 | 100 | 521 | 51,325 | 1,901 |
| TOTAL | | | 3,825,705 | 141,693 |

EXCAVATION

| STATION | TOTAL LENGTH(F) | CROSS SECTION AREA (F^2) | QUATITY F^3 | Y^3 |
|---|---|---|---|---|
| 1000 | | 209 | | |
| 1100 | 100 | 258 | 23,325 | 864 |
| 1200 | 100 | 517 | 38,725 | 1,434 |
| 1300 | 100 | 841 | 67,850 | 2,513 |
| 1400 | 100 | 867 | 85,375 | 3,162 |
| 1500 | 100 | 897 | 88,175 | 3,266 |
| 1600 | 100 | 819 | 85,775 | 3,177 |
| 1700 | 100 | 709 | 76,400 | 2,830 |
| 1800 | 100 | 721 | 71,475 | 2,647 |
| 1900 | 100 | 661 | 69,050 | 2,557 |
| 2000 | 100 | 656 | 65,800 | 2,437 |
| 2100 | 100 | 581 | 61,825 | 2,290 |
| 2200 | 100 | 673 | 62,675 | 2,321 |
| 2300 | 100 | 698 | 68,525 | 2,538 |
| 2400 | 100 | 650 | 67,375 | 2,495 |
| 2500 | 100 | 906 | 77,750 | 2,880 |
| 2600 | 100 | 974 | 93,975 | 3,481 |
| 2700 | 100 | 998 | 98,600 | 3,652 |
| 2800 | 100 | 933 | 96,550 | 3,576 |
| 2900 | 100 | 968 | 95,050 | 3,520 |
| 3000 | 100 | 914 | 94,100 | 3,485 |
| 3100 | 100 | 934 | 92,400 | 3,422 |
| 3200 | 100 | 924 | 92,875 | 3,440 |
| 3300 | 100 | 928 | 92,550 | 3,428 |
| 3400 | 100 | 869 | 89,825 | 3,327 |
| 3500 | 100 | 911 | 89,000 | 3,296 |
| 3600 | 100 | 887 | 89,875 | 3,329 |
| 3700 | 100 | 909 | 89,775 | 3,325 |
| 3800 | 100 | 910 | 90,950 | 3,369 |
| 3900 | 100 | 866 | 88,775 | 3,288 |
| 4000 | 100 | 864 | 86,475 | 3,203 |
| 4100 | 100 | 857 | 86,050 | 3,187 |
| 4200 | 100 | 848 | 85,225 | 3,156 |
| 4300 | 100 | 847 | 84,725 | 3,138 |
| 4400 | 100 | 819 | 83,275 | 3,084 |
| 4500 | 100 | 812 | 81,525 | 3,019 |
| 4600 | 100 | 814 | 81,275 | 3,010 |
| 4700 | 100 | 827 | 82,025 | 3,038 |
| 4800 | 100 | 800 | 81,325 | 3,012 |
| 4900 | 100 | 810 | 80,475 | 2,981 |
| 5000 | 100 | 789 | 79,950 | 2,961 |
| 5100 | 100 | 791 | 78,975 | 2,925 |
| 5200 | 100 | 803 | 79,650 | 2,950 |
| 5300 | 100 | 797 | 79,950 | 2,961 |

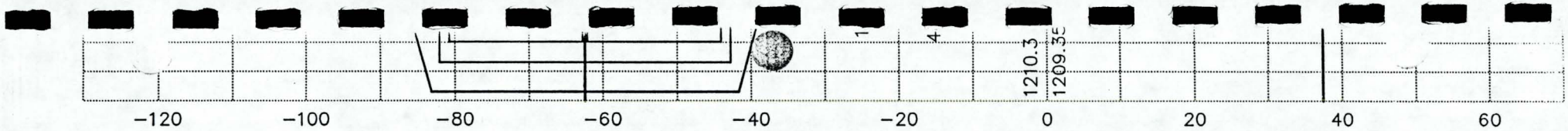
| | | | | |
|---|---|---|---|---|
| 5400 | 100 | 785 | 79,075 | 2,929 |
| 5500 | 100 | 789 | 78,675 | 2,914 |
| 5600 | 100 | 780 | 78,425 | 2,905 |
| 5700 | 100 | 769 | 77,425 | 2,868 |
| 5800 | 100 | 779 | 77,350 | 2,865 |
| 5900 | 100 | 770 | 77,400 | 2,867 |
| 6000 | 100 | 792 | 78,075 | 2,892 |
| 6100 | 100 | 822 | 80,700 | 2,989 |
| 6200 | 100 | 802 | 81,200 | 3,007 |
| 6300 | 100 | 907 | 85,450 | 3,165 |
| 6400 | 100 | 773 | 84,000 | 3,111 |
| 6500 | 100 | 860 | 81,625 | 3,023 |
| 6600 | 100 | 897 | 87,825 | 3,253 |
| 6700 | 100 | 886 | 89,150 | 3,302 |
| 6800 | 100 | 882 | 88,400 | 3,274 |
| 6900 | 100 | 1,106 | 99,400 | 3,681 |
| 7000 | 100 | 882 | 99,400 | 3,681 |
| 7100 | 100 | 858 | 86,975 | 3,221 |
| 7200 | 100 | 870 | 86,350 | 3,198 |
| 7300 | 100 | 847 | 85,800 | 3,178 |
| 7400 | 100 | 860 | 85,325 | 3,160 |
| 7500 | 100 | 852 | 85,575 | 3,169 |
| 7600 | 100 | 874 | 86,275 | 3,195 |
| 7700 | 100 | 554 | 71,375 | 2,644 |
| 7800 | 100 | 549 | 55,100 | 2,041 |
| 7900 | 100 | 564 | 55,600 | 2,059 |
| 8000 | 100 | 556 | 55,950 | 2,072 |
| 8100 | 100 | 540 | 54,775 | 2,029 |
| 8200 | 100 | 552 | 54,575 | 2,021 |
| 8300 | 100 | 516 | 53,375 | 1,977 |
| 8400 | 100 | 533 | 52,450 | 1,943 |
| 8500 | 100 | 522 | 52,725 | 1,953 |
| 8600 | 100 | 519 | 52,000 | 1,926 |
| 8700 | 100 | 522 | 52,000 | 1,926 |
| 8800 | 100 | 507 | 51,425 | 1,905 |
| 8900 | 100 | 466 | 48,625 | 1,801 |
| 9000 | 100 | 1,030 | 74,775 | 2,769 |
| 9100 | 100 | 505 | 76,750 | 2,843 |
| 9200 | 100 | 502 | 50,325 | 1,864 |
| 9300 | 100 | 694 | 59,750 | 2,213 |
| 9400 | 100 | 736 | 71,475 | 2,647 |
| 9500 | 100 | 713 | 72,450 | 2,683 |
| 9600 | 100 | 705 | 70,900 | 2,626 |
| 9700 | 100 | 704 | 70,425 | 2,608 |
| 9800 | 100 | 685 | 69,425 | 2,571 |
| 9900 | 100 | 643 | 66,400 | 2,459 |
| 10000 | 100 | 679 | 66,075 | 2,447 |
| 10100 | 100 | 749 | 71,350 | 2,643 |
| 10200 | 100 | 661 | 70,475 | 2,610 |
| 10300 | 100 | 668 | 66,450 | 2,461 |

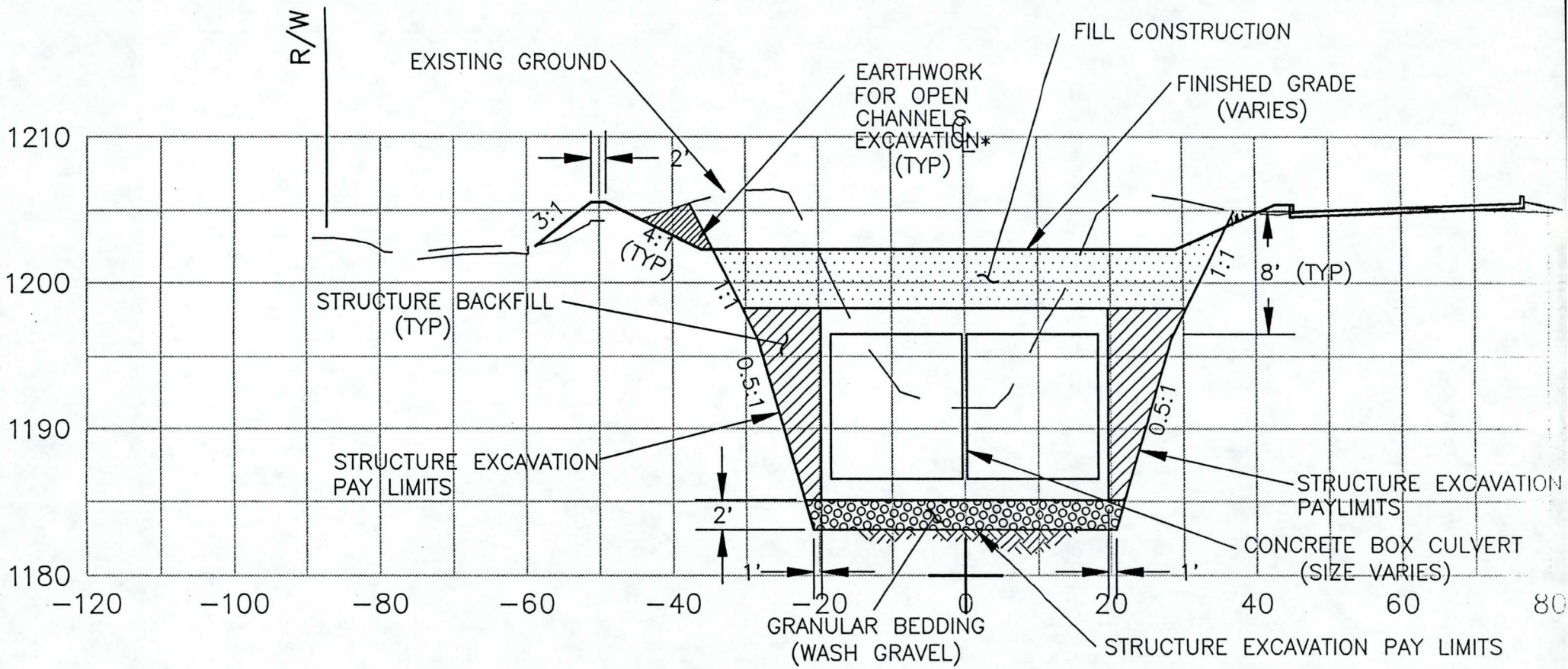
804
812
861.5
540
816.5

Phase 1

Phase 1 Structural Excavation ⇒ 15,295 CY

| | | | | |
|---|---|---|---|---|
| 10400 | 100 | 659 | 66,350 | 2,457 |
| 10500 | 100 | 667 | 66,300 | 2,456 |
| 10600 | 100 | 590 | 62,825 | 2,327 |
| 10700 | 100 | 709 | 64,900 | 2,404 |
| 10800 | 100 | 741 | 72,475 | 2,684 |
| 10900 | 100 | 714 | 72,725 | 2,694 |
| 11000 | 100 | 698 | 70,550 | 2,613 |
| 11100 | 100 | 641 | 66,900 | 2,478 |
| 11200 | 100 | 549 | 59,475 | 2,203 |
| 11300 | 100 | 626 | 58,725 | 2,175 |
| 11400 | 100 | 621 | 62,325 | 2,308 |
| 11500 | 100 | 581 | 60,075 | 2,225 |
| 11600 | 100 | 933 | 75,675 | 2,803 |
| 11700 | 100 | 471 | 70,200 | 2,600 |
| TOTAL | | | 7,991,675 | 295,988 |




**LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION, STRUCTURE BACKFILL & FILL CONSTRUCTION ITEMS ASSOCIATED WITH THE CONSTRUCTION OF THE CONCRETE BOX CULVERT**

**N.T.S.**

* LIMITS VARY. ACTUAL PAY QUANTITIES TO BE CALCULATED AS DETERMINED BY THE ENGINEER.

| | |
|---|---|
| 3 | |
| 2 | |
| 1 | |

**Greiner**

Job No. E002102 Project OCCC Sheet 1 of

Subject Phase I 90% - Quantity Check on Earthwork

By AWB Date 10-25-94 Checked By Date

Planimeter correction factor

For 1-inch square: 0.47 > 0.50
0.97 > 0.52
1.49 >

AVG = 0.4967

$$Ft^2 = \left(\frac{Reading}{0.4967}\right) \times Scale^2$$

$Scale^2$ = Vert × horiz.
= 10' × 20'
= 200 sq ft.

Structural Excavation

Planimeter Rdg. Spreadsheet Qty.

Sta 60+00
2.0
4.06 > 2.06
6.09 > 2.03

AVG = 2.03

$\frac{2.03}{0.4967} \times 200 = 817.4$ SF

Sta 61+00
2.13
4.25 > 2.12
6.34 > 2.09

AVG = 2.11

$\frac{2.11}{0.4967} \times 200 = 849.6$ SF

Sta 60+00-61+00 $\frac{817.4 + 849.6}{2} = 833.5$ SF × 100 SF = 83350 CF = 3087 CY

Sta 60+00-61+00 2989 CY

Sta 62+00
2.0
3.99 > 1.99
5.99 > 2.0

AVG = 2.0

$\frac{2.0}{0.4967} \times 200 = 805.3$ SF

Sta 61+00-62+00 $\frac{849.6 + 805.3}{2} = 827.45$ SF × 100 LF = 82745 CF = 3065 CY

Sta 61+00-62+00 3007 CY

**Greiner**

Job No. E0021102 Project OCCC Sheet 2 of

Subject Phase 1 90% - Quantity Check on Earthwork

By ALB Date 10-25-94 Checked By Date

Structural Exc. continued

Planimeter Rdg. Spreadsheet Qty

Sta 63+00

2.29 > 2.31
4.6
6.89 > 2.29

AVG = 2.30

$\frac{2.30}{0.4967} \times 200SF = 926.1 SF$

Sta 62+00-63+00 $\frac{805.3+926.1}{2} = 865.7SF \times 100LF = 86570CF$
$= 3206 CY$

Sta 62+00-63+00 3165 CY

Sta 64+00

2.06 > 2.03
4.09
6.1 > 2.01

AVG = 2.03

$\frac{2.03}{0.4967} \times 200SF = 817.4 SF$

Sta 63+00-64+00 $\frac{926.1+817.4}{2} = 871.75SF \times 100LF = 87175CF$
$= 3229 CY$

Sta 63+00-64+00 3111 CY

Sta 65+00

2.12 > 2.19
4.31
6.53 > 2.22

AVG = 2.18

$\frac{2.18}{0.4967} \times 200SF = 877.8 SF$

Sta 64+00-65+00

$\frac{817.4SF + 877.8SF}{2} = 847.6SF$

$847.6SF \times 100LF = 84760 CF$
$= 3139 CY$

Sta 64+00-65+00 3023 CY

15,726 CY

15,295 CY

difference

**Greiner**

Job No. E002102 Project OCCC Sheet 3 of

Subject Phase 1 90% - Quantity Check on Earthwork

By ALB Date 10-25-94 Checked By Date

Structural Backfill

Planinetu Rd.

Spreadsheet Qty

Sta 60+00 RT 0.19, 0.40, 0.59 > 0.21, 0.19 LT 0.20, 0.39, 0.59 > 0.19, 0.20

AVG = 0.1967 AVG = 0.1967

RT + LT = 0.3934

$\frac{0.3934}{0.4967} \times 200SF = 158.4 SF$

Sta 61+00 RT 0.20, 0.41, 0.59 > 0.21, 0.18 LT 0.19, 0.39, 0.58 > 0.20, 0.19

AVG = 0.1967 AVG = 0.1933

RT + LT = 0.39

$\frac{0.39}{0.4967} \times 200SF = 157.0 SF$

Sta 60+00-61+00 $\frac{158.4+157.0}{2} = 157.7 SF \times 100LF = 15770 CF = \boxed{584 CY}$ Sta 60+00-61+00 $\boxed{579 CY}$

Sta 62+00 RT 0.20, 0.39, 0.58 > 0.19, 0.19 LT 0.20, 0.38, 0.57 > 0.18, 0.19

AVG = 0.1933 AVG = 0.19

RT + LT = 0.3833

$\frac{0.3833}{0.4967} \times 200 SF = 154.3 SF$

Sta 61+00-62+00 $\frac{157.0+154.3}{2} = 155.65 SF \times 100LF = 15565 CF = \boxed{576 CY}$ Sta 61+00-62+00 $\boxed{576 CY}$

Sta 63+00 RT 0.19, 0.39, 0.59 > 0.20, 0.20 LT 0.20, 0.38, 0.58 > 0.18, 0.20

AVG = 0.1967 AVG = 0.1933

RT + LT = 0.39

$\frac{0.39}{0.4967} \times 200 = 157.0 SF$

Sta 62+00-63+00 $\frac{154.3+157.0}{2} = 155.65 SF \times 100 LF = 15565 CF = \boxed{576 CY}$ Sta 62+00-63+00 $\boxed{577 CY}$

**Greiner**

Job No. E002102 Project OCC Sheet 4 of

Subject Phase 1 90% - Quantity Check on Earthwork

By ALB Date 10-25-94 Checked By Date

Structural Backfill Continued

Planimeter | Spreadsheet Qty

Sta 64+00 RT 0.21, 0.40, 0.60 > 0.19, 0.20 LT 0.20, 0.40, 0.60 > 0.20, 0.20

AVG = 0.20 AVG = 0.20

RT + LT = 0.40

$\frac{0.40}{0.4967} \times 200 = 161.1$ SF

Sta 63+00-64+00 $\frac{157.0+161.1}{2} = 159.0$ SF x 100 LF = 15900 CF = 589 CY

Sta 63+00-64+00 575 CY

Sta 65+00 RT 0.19, 0.38, 0.57 > 0.19, 0.19 LT 0.19, 0.39, 0.58 > 0.20, 0.19

AVG = 0.19 AVG = 0.1933

RT + LT = 0.3833

$\frac{0.3833}{0.4967} \times 200$ SF = 154.3 SF

Sta 64+00-65+00 $\frac{161.1+154.3}{2} = 157.7$ SF

157.7 SF x 100 LF = 15770 CF = 584 CY

Sta 64+00 - 65+00 565 CY

2909 CY

2872 CY

1.27% difference

**Greiner**

Job No. E002102 Project OCC Sheet 5 of

Subject Phase 1 90% - Quantity Check on Earthwork

By AVB Date 10-25-94 Checked By Date

Fill Construction Over Box Culvert

Planimeter Calc. | Spreadsheet Qty

Sta 60+00

0.65 > 0.68
1.33
1.99 > 0.66

AVG = 0.6633

$\frac{0.6633}{0.4967} \times 200SF = 267.1 SF$

Sta 61+00

0.80
1.60 > 0.80
2.41 > 0.81

AVG = 0.8033

$\frac{0.8033}{0.4967} \times 200SF = 323.4 SF$

Sta 60+00-61+00

$\frac{267.1 + 323.4}{2} = 295.25 SF \times 100LF = 29525 CF$
$= \boxed{1094 CY}$

Sta 60+00-61+00
$\boxed{1076 CY}$

Sta 62+00

0.82
1.63 > 0.81
2.43 > 0.80

AVG = 0.81

$\frac{0.81}{0.4967} \times 200SF = 326.2 SF$

Sta 61+00-62+00

$\frac{323.4 + 326.2}{2} = 324.8 SF \times 100LF = 32480 CF$
$= \boxed{1203 CY}$

Sta 61+00-62+00
$\boxed{1173 CY}$

**Greiner**

Job No. E002102 Project OCC Sheet 6 of

Subject Phase I 90% - Quantity Check on Earthwork

By ALD Date 10-25-94 Checked By Date

Fill Constr. Continued

Planimeter Rdg.

Spreadsheet Qty

Sta 63+00

0.75 > 0.76
1.51
2.29 > 0.78

AVG = 0.7633

$\frac{0.7633}{0.4967} \times 200SF = 307.3 SF$

$\boxed{\text{Sta 62+00-63+00}}$ $\frac{324.8 + 307.3}{2} = 316.05 SF \times 100LF = 31605CF$
$= \boxed{1171 CY}$

Sta 62+00-63+00 $\boxed{1170 CY}$

Sta 64+00

0.76 > 0.76
1.52
2.33 > 0.81

AVG = 0.7767

$\frac{0.7767}{0.4967} \times 200SF = 312.7 SF$

$\boxed{\text{Sta 63+00-64+00}}$ $\frac{307.3 + 312.7}{2} = 310 SF \times 100LF = 31000CF$
$= \boxed{1148 CY}$

Sta 63+00-64+00 $\boxed{1149 CY}$

Sta 65+00

0.74 > 0.74
1.48 > 0.74
2.22

AVG = 0.74

$\frac{0.74}{0.4967} \times 200SF = 298 SF$

$\boxed{\text{Sta 64+00-65+00}}$ $\frac{312.7 + 298}{2} = 305.35 SF \times 100LF = 30535CF$
$= \boxed{1131 CY}$

Sta 64+00-65+00 $\boxed{1157 CY}$

5747 CY

5725 CY

0.4% difference

**Greiner**

Job No. E002102 Project OCCL Sheet 7 of

Subject Phase I (90%) - Quantity Check on Earthwork

By AWB Date 10-25-94 Checked By Date

Gravel Bed. below box

Planimeter Rdg.

Sta 60+00

0.22
0.40 > 0.18
0.62 > 0.22

AVG = 0.2067

$\frac{0.2067}{0.4967} \times 200SF = 83.3SF$

Sta 61+00

0.25
0.47 > 0.22
0.68 > 0.21

AVG = 0.2267

$\frac{0.2267}{0.4967} \times 200SF = 91.3SF$

Sta 60+00-61+00 $\frac{83.3+91.3}{2} = 87.3SF \times 100LF = 8730CF$
$= \boxed{323 CY}$

Sta 62+00

0.23
0.43 > 0.20
0.65 > 0.22

AVG = 0.2167

$\frac{0.2167}{0.4967} \times 200SF = 87.3SF$

Sta 61+00-62+00 $\frac{91.3+87.3}{2} = 89.3SF \times 100LF = 8930CF$
$= \boxed{331 CY}$

Sta 63+00

0.20
0.41 > 0.21
0.61 > 0.20

AVG = 0.2033

$\frac{0.2033}{0.4967} \times 200SF = 81.9SF$

Sta 62+00-63+00 $\frac{87.3+81.9}{2} = 84.6SF \times 100LF = 8460CF$
$= \boxed{313 CY}$

**Greiner**

Job No. E00207 Project ACC Sheet 8 of

Subject Phase 1 90% - Quantity Check on Earthwork

By ALB Date 10-25-94 Checked By Date

Gravel Bed below Box Continued

Planimeter Rdg

Sta 64+00

0.20
0.40 > 0.20
0.60 > 0.20

AVG = 0.20

$\frac{0.20}{0.4967} \times 200\,SF = 80.5\,SF$

Sta 63+00 - 64+00 $\frac{81.9 + 80.5}{2} = 81.2\,SF \times 100\,LF = 8120\,CF$

$= \boxed{301\,CY}$

Sta 65+00

0.20
0.40 > 0.20
0.60 > 0.20

AVG = 0.20

$\frac{0.20}{0.4967} \times 200\,SF = 80.5$

Sta 64+00 - 65+00 $\frac{80.5 + 80.5}{2} = 80.5\,SF \times 100\,LF = 8050\,CF$

$= \boxed{298\,CY}$

1566 CY

629.6
944.4
1574 CY by hand

OK

0.51% difference

Roadway [illegible]



horizontal control for 48th street

F ct: roadh

Wed Oct 26 09:24:59 1994

Alignment: 48th-cl

END AREA VOLUME LISTING

| Station | Cut Area (sqft) | Fill Area (sqft) | Cut 1.0000 Volume (yds) | Fill 1.0000 Volume (yds) | Cut 1.0000 Tot Vol (yds) | Fill 1.0000 Tot Vol (yds) | Mass Ordinate |
|---|---|---|---|---|---|---|---|
| 205+00 | 0.00 | 0.00 | | | | | |
| | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 205+30.70 | 0.00 | 0.00 | | | | | |
| | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 206+00 | 0.00 | 0.00 | | | | | |
| | | | 15.57 | 0.87 | 15.57 | 0.87 | 14.69 |
| 206+90.01 | 9.34 | 0.52 | | | | | |
| | | | 3.57 | 0.19 | 19.14 | 1.06 | 18.07 |
| 207+00 | 9.95 | 0.50 | | | | | |
| | | | 34.88 | 9.27 | 54.02 | 10.33 | 43.69 |
| 207+89.05 | 11.20 | 5.12 | | | | | |
| | | | 4.85 | 2.19 | 58.86 | 12.52 | 46.34 |
| 208+00 | 12.69 | 5.70 | | | | | |
| | | | 66.25 | 10.02 | 125.12 | 22.54 | 102.57 |
| 208+87.69 | 28.11 | 0.47 | | | | | |
| | | | 13.72 | 0.20 | 138.83 | 22.74 | 116.10 |
| 209+00 | 32.05 | 0.39 | | | | | |
| | | | 154.59 | 0.73 | 293.42 | 23.47 | 269.95 |
| 210+00 | 51.42 | 0.00 | | | | | |
| | | | 183.71 | 3.44 | 477.13 | 26.91 | 450.22 |
| 211+00 | 47.78 | 1.85 | | | | | |
| | | | 2.00 | 0.08 | 479.13 | 26.98 | 452.14 |
| 211+01.13 | 47.70 | 1.84 | | | | | |
| | | | 64.93 | 1.93 | 544.05 | 28.92 | 515.13 |
| 211+38.41 | 46.35 | 0.97 | | | | | |
| | | | 104.59 | 1.49 | 648.64 | 30.41 | 618.24 |
| 212+00 | 45.35 | 0.34 | | | | | |
| | | | 176.47 | 0.65 | 825.12 | 31.06 | 794.06 |
| 213+00 | 49.94 | 0.01 | | | | | |
| | | | 26.69 | 0.00 | 851.81 | 31.06 | 820.75 |
| 213+14.44 | 49.92 | 0.01 | | | | | |
| | | | 71.29 | 0.00 | 923.10 | 31.07 | 892.04 |
| 213+53.34 | 49.04 | 0.00 | | | | | |
| | | | 81.62 | 0.00 | 1004.73 | 31.07 | 973.66 |
| 214+00 | 45.42 | 0.00 | | | | | |
| | | | 159.62 | 0.00 | 1164.34 | 31.07 | 1133.28 |
| 215+00 | 40.78 | 0.00 | | | | | |
| | | | 169.56 | 0.00 | 1333.91 | 31.07 | 1302.84 |
| 216+00 | 50.79 | 0.00 | | | | | |
| | | | 189.79 | 0.00 | 1523.69 | 31.07 | 1492.62 |
| 217+00 | 51.70 | 0.00 | | | | | |
| | | | 179.17 | 0.00 | 1702.86 | 31.07 | 1671.79 |
| 218+00 | 45.05 | 0.00 | | | | | |
| | | | 93.65 | 0.00 | 1796.51 | 31.07 | 1765.45 |
| 218+57.86 | 42.35 | 0.00 | | | | | |
| | | | 36.19 | 0.00 | 1832.70 | 31.07 | 1801.63 |

horizontal control for 48th street

Project: roadh

Alignment: 48th-cl

Wed Oct 26 09:24:59 1994

END AREA VOLUME LISTING

| Station | Cut Area (sqft) | Fill Area (sqft) | Cut 1.0000 Volume (yds) | Fill 1.0000 Volume (yds) | Cut 1.0000 Tot Vol (yds) | Fill 1.0000 Tot Vol (yds) | Mass Ordinat |
|---|---|---|---|---|---|---|---|
| 218+80.89 | 42.51 | 0.00 | | | | | |
| | | | 29.75 | 0.00 | 1862.44 | 31.07 | 1831.38 |
| 219+00 | 41.56 | 0.00 | | | | | |
| | | | 135.37 | 0.12 | 1997.82 | 31.18 | 1966.63 |
| 220+00 | 31.55 | 0.06 | | | | | |
| | | | 103.15 | 0.50 | 2100.97 | 31.68 | 2069.28 |
| 221+00 | 24.15 | 0.21 | | | | | |
| | | | 56.92 | 0.61 | 2157.89 | 32.29 | 2125.59 |
| 221+65.08 | 23.08 | 0.30 | | | | | |
| | | | 28.73 | 0.32 | 2186.62 | 32.62 | 2154.00 |
| 222+00 | 21.35 | 0.20 | | | | | |
| | | | 1.20 | 0.01 | 2187.82 | 32.63 | 2155.19 |
| 222+01.51 | 21.54 | 0.19 | | | | | |
| | | | 92.45 | 0.34 | 2280.27 | 32.97 | 2247.29 |
| 223+00 | 29.15 | 0.00 | | | | | |
| | | | 106.74 | 0.19 | 2387.00 | 33.16 | 2353.84 |
| 224+00 | 28.49 | 0.10 | | | | | |
| | | | 98.31 | 0.54 | 2485.31 | 33.70 | 2451.61 |
| 225+00 | 24.60 | 0.19 | | | | | |
| | | | 115.01 | 0.36 | 2600.33 | 34.07 | 2566.26 |
| 226+00 | 37.51 | 0.00 | | | | | |
| | | | 143.80 | 0.01 | 2744.12 | 34.07 | 2710.05 |
| 227+00 | 40.14 | 0.00 | | | | | |
| | | | 121.13 | 0.18 | 2865.26 | 34.25 | 2831.00 |
| 228+00 | 25.27 | 0.10 | | | | | |
| | | | 90.06 | 0.29 | 2955.31 | 34.55 | 2920.77 |
| 229+00 | 23.36 | 0.06 | | | | | |
| | | | 94.28 | 0.21 | 3049.60 | 34.76 | 3014.84 |
| 230+00 | 27.55 | 0.05 | | | | | |
| | | | 82.03 | 0.37 | 3131.63 | 35.13 | 3096.50 |
| 231+00 | 16.75 | 0.15 | | | | | |
| | | | 68.48 | 0.57 | 3200.11 | 35.70 | 3164.41 |
| 232+00 | 20.23 | 0.16 | | | | | |
| | | | 82.73 | 0.45 | 3282.84 | 36.15 | 3246.69 |
| 233+00 | 24.44 | 0.08 | | | | | |
| | | | 48.51 | 0.07 | 3331.35 | 36.22 | 3295.13 |
| 233+44.38 | 34.58 | 0.00 | | | | | |
| | | | 14.59 | 0.00 | 3345.94 | 36.22 | 3309.72 |
| 233+55.59 | 35.64 | 0.00 | | | | | |
| | | | 59.68 | 0.00 | 3405.61 | 36.22 | 3369.40 |
| 234+00 | 36.92 | 0.00 | | | | | |
| | | | 140.08 | 0.00 | 3545.70 | 36.22 | 3509.48 |
| 235+00 | 38.72 | 0.00 | | | | | |
| | | | 135.25 | 0.00 | 3680.95 | 36.22 | 3644.73 |
| 236+00 | 34.31 | 0.00 | | | | | |
| | | | 101.50 | 0.01 | 3782.44 | 36.23 | 3746.21 |

horizontal control for 48th street

P :t: roadh

Wed Oct 26 09:25:00 1994

Alignment: 48th-cl

END AREA VOLUME LISTING

| Station | Cut Area (sqft) | Fill Area (sqft) | Cut 1.0000 Volume (yds) | Fill 1.0000 Volume (yds) | Cut 1.0000 Tot Vol (yds) | Fill 1.0000 Tot Vol (yds) | Mass Ordinate |
|---|---|---|---|---|---|---|---|
| 236+89.12 | 27.19 | 0.01 | | | | | |
| | | | 10.94 | 0.00 | 3793.38 | 36.23 | 3757.15 |
| 237+00 | 27.12 | 0.01 | | | | | |
| | | | 10.74 | 0.00 | 3804.12 | 36.24 | 3767.88 |
| 237+10.70 | 27.09 | 0.01 | | | | | |
| | | | 91.94 | 0.04 | 3896.07 | 36.28 | 3859.79 |
| 238+00 | 28.51 | 0.01 | | | | | |
| | | | 128.81 | 0.02 | 4024.88 | 36.30 | 3988.58 |
| 239+00 | 41.05 | 0.00 | | | | | |
| | | | 176.53 | 0.00 | 4201.41 | 36.30 | 4165.11 |
| 240+00 | 54.27 | 0.00 | | | | | |
| | | | 36.45 | 0.00 | 4237.86 | 36.30 | 4201.56 |
| 240+17.98 | 55.23 | 0.00 | | | | | |
| | | | 101.17 | 0.00 | 4339.03 | 36.30 | 4302.72 |
| 240+67.55 | 54.97 | 0.00 | | | | | |
| | | | 63.00 | 0.00 | 4402.02 | 36.30 | 4365.72 |
| 241+00 | 49.87 | 0.00 | | | | | |
| | | | 57.22 | 0.00 | 4459.25 | 36.30 | 4422.95 |
| +32.95 | 43.91 | 0.00 | | | | | |
| | | | 97.02 | 0.00 | 4556.27 | 36.30 | 4519.97 |
| 242+00 | 34.23 | 0.00 | | | | | |
| | | | 118.12 | 0.00 | 4674.40 | 36.30 | 4638.09 |
| 243+00 | 29.56 | 0.00 | | | | | |
| | | | 97.05 | 0.16 | 4771.44 | 36.46 | 4734.98 |
| 244+00 | 22.85 | 0.09 | | | | | |
| | | | 11.39 | 0.03 | 4782.84 | 36.49 | 4746.34 |
| 244+12.98 | 24.55 | 0.04 | | | | | |
| | | | 22.02 | 0.02 | 4804.85 | 36.51 | 4768.34 |
| 244+35.73 | 27.72 | 0.01 | | | | | |
| | | | 76.46 | 0.01 | 4881.31 | 36.52 | 4844.79 |
| 245+00 | 36.52 | 0.00 | | | | | |
| | | | 151.13 | 0.00 | 5032.44 | 36.52 | 4995.92 |
| 246+00 | 45.09 | 0.00 | | | | | |
| | | | 152.56 | 0.00 | 5185.01 | 36.52 | 5148.49 |
| 247+00 | 37.29 | 0.00 | | | | | |
| | | | 3.71 | 0.00 | 5188.72 | 36.52 | 5152.20 |
| 247+02.70 | 37.10 | 0.00 | | | | | |
| | | | 56.72 | 0.00 | 5245.44 | 36.53 | 5208.91 |
| 247+45.57 | 34.34 | 0.01 | | | | | |
| | | | 68.44 | 0.01 | 5313.88 | 36.54 | 5277.34 |
| 248+00 | 33.56 | 0.00 | | | | | |
| | | | 146.68 | 0.02 | 5460.55 | 36.56 | 5423.99 |
| 249+00 | 45.65 | 0.01 | | | | | |
| | | | 214.72 | 0.02 | 5675.28 | 36.58 | 5638.70 |
| 250+00 | 70.30 | 0.00 | | | | | |
| | | | 251.25 | 0.00 | 5926.52 | 36.58 | 5889.95 |

horizontal control for 48th street

ct: roadh
Alignment: 48th-cl

Wed Oct 26 09:25:00 1994

END AREA VOLUME LISTING

| Station | Cut Area (sqft) | Fill Area (sqft) | Cut 1.0000 Volume (yds) | Fill 1.0000 Volume (yds) | Cut 1.0000 Tot Vol (yds) | Fill 1.0000 Tot Vol (yds) | Mass Ordinate |
|---|---|---|---|---|---|---|---|
| 251+00 | 65.37 | 0.00 | | | | | |
| | | | 788.3 | | 6709.82 | 36.58 | 6673.24 |
| 254+29 | 63.2 | 0.00 | | | | | |

FILL VOLUME TO ROADWAY EXCAVATION PER 90% REVIEW COMMENTS

BID ITEM 205 → 6710 CY RES 1/16/95

**Greiner**

Job No. E002102 Project OCC Sheet ____ of ____

Subject Phase 190% - Roadway Exc. Quant.

By ALB Date 10-26-94 Checked By ____ Date ____

Planimeter Correction Factor

O O

O O

1.10 > 1.15
2.25 > 1.15
3.40 > 1.15
AVG = 1.133

Sta 210+00 Cut Area

Plan. Rdg.

0.29
0.58 > 0.29
0.88 > 0.30

AVG = 0.2933

$\frac{0.2933}{1.133} \times 200\,SF = 51.77\,SF$

| | DCA Qty |
|---|---|
| 9/26/94 | 51.46 SF |
| 10/26/94 | 51.42 SF |

Sta 220+00 Cut Area

Plan Rdg.

0.21
0.40 > 0.19
0.59 > 0.19

AVG = 0.1967

$\frac{0.1967}{1.133} \times 200\,SF = 34.72\,SF$

| | DCA Qty |
|---|---|
| 9/26/94 | 31.60 SF |
| 10/26/94 | 31.55 SF |

Sta 240+00 Cut Area

Plan. Rdg.

0.31
0.60 > 0.30
0.92 > 0.32

AVG = 0.31

$\frac{0.31}{1.133} \times 200\,SF = 54.72\,SF$

| | DCA Qty |
|---|---|
| 9/26/94 | 54.66 SF |
| 10/26/94 | 54.27 SF |

**Greiner**

Job No. E002102 Project OCU Sheet ____ of ____

Subject Phase I 90% - Roadway Exc. Quant.

By ALB Date 10-26-94 Checked By ____ Date ____

Sta 250+00 Cut Area

Plan Rdg.

0.40
0.82 > 0.42
1.19 > 0.37
1.59 > 0.40
2.00 > 0.41

AVG = 0.40

$\frac{0.40}{1.133} \times 200\ SF = 70.61\ SF$

| DCA | Qty |
|---|---|
| 9/26/94 | 70.63 SF |
| 10/26/94 | 70.30 SF |

Sta 251+00 Cut Area

Plan Rdg.

0.37
0.76 > 0.39
1.13 > 0.37
1.49 > 0.36
1.86 > 0.37

AVG = 0.372

$\frac{0.372}{1.133} \times 200\ SF = 65.67\ SF$

| DCA | Qty | |
|---|---|---|
| 9/26/94 | 81.70 SF | X |
| 10/26/94 | 65.37 SF | OK |

Use 10/26/94 DCA Qty, Total = 5889.95. Adjust through Sta 254+00

Sta 254+00 Cut Area

1.18

0.36
0.72 > 0.36
1.08 > 0.36
1.45 > 0.37
1.79 > 0.34

AVG = 0.358

$\frac{0.358}{1.133} \times 200\ SF = 63.2\ SF$

Greiner

Job No. E000102 Project ACC Sheet ____ of ____

Subject Phase 1 90% - AC Pavement Qty Check

By ALB Date 10-26-94 Checked By ____ Date ____

See Attached DCA printout plus notes on last page.

Phase 1



horizontal control for 48th street

Project: roadh

Thu Sep 29 15:57:02 1994

Alignment: 48th-cl

SURFACE: 2" ac top coarse, Adjustment: 0.0000

TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 206+00 | 5.76 | | |
| | | 17.46 | 17.46 |
| 206+90.01 | 4.72 | | |
| | | 1.74 | 19.20 |
| 207+00 | 4.68 | | |
| | | 15.43 | 34.63 |
| 207+89.05 | 4.68 | | |
| | | 1.90 | 36.53 |
| 208+00 | 4.69 | | |
| | | 16.40 | 52.93 |
| 208+87.69 | 5.41 | | |
| | | 2.51 | 55.44 |
| 209+00 | 5.59 | | |
| | | 20.83 | 76.27 |
| 210+00 | 5.66 | | |
| | | 19.47 | 95.74 |
| 211+00 | 4.86 | | |
| | | 0.20 | 95.95 |
| 211+01.13 | 4.85 | | |
| | | 6.60 | 102.55 |
| [illegible]38.41 | 4.71 | | |
| | | 10.73 | 113.28 |
| 212+00 | 4.70 | | |
| | | 17.37 | 130.64 |
| 213+00 | 4.68 | | |
| | | 2.50 | 133.15 |
| 213+14.44 | 4.68 | | |
| | | 6.74 | 139.88 |
| 213+53.34 | 4.68 | | |
| | | 8.08 | 147.97 |
| 214+00 | 4.68 | | |
| | | 17.32 | 165.28 |
| 215+00 | 4.68 | | |
| | | 17.32 | 182.60 |
| 216+00 | 4.68 | | |
| | | 17.32 | 199.92 |
| 217+00 | 4.68 | | |
| | | 17.32 | 217.24 |
| 218+00 | 4.68 | | |
| | | 10.02 | 227.26 |
| 218+57.86 | 4.68 | | |
| | | 3.99 | 231.25 |
| 218+80.89 | 4.68 | | |
| | | 3.31 | 234.56 |
| 219+00 | 4.68 | | |
| | | 17.32 | 251.88 |
| 220+00 | 4.68 | | |
| | | 17.32 | 269.19 |

horizontal control for 48th street

Project: roadh Thu Sep 29 15:57:06 1994
Alignment: 48th-cl
SURFACE: 2" ac top coarse, Adjustment: 0.0000
TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 221+00 | 4.68 | | |
| | | 11.27 | 280.47 |
| 221+65.08 | 4.68 | | |
| | | 6.05 | 286.52 |
| 222+00 | 4.68 | | |
| | | 0.26 | 286.78 |
| 222+01.51 | 4.68 | | |
| | | 17.06 | 303.85 |
| 223+00 | 4.68 | | |
| | | 17.59 | 321.44 |
| 224+00 | 4.82 | | |
| | | 18.59 | 340.02 |
| 225+00 | 5.21 | | |
| | | 20.03 | 360.06 |
| 226+00 | 5.60 | | |
| | | 20.93 | 380.98 |
| 227+00 | 5.70 | | |
| | | 20.00 | 400.98 |
| 228+00 | 5.10 | | |
| | | 18.11 | 419.09 |
| 229+00 | 4.68 | | |
| | | 17.32 | 436.42 |
| 230+00 | 4.68 | | |
| | | 17.33 | 453.74 |
| 231+00 | 4.68 | | |
| | | 17.33 | 471.07 |
| 232+00 | 4.68 | | |
| | | 17.33 | 488.41 |
| 233+00 | 4.68 | | |
| | | 7.69 | 496.10 |
| 233+44.38 | 4.68 | | |
| | | 1.94 | 498.04 |
| 233+55.59 | 4.68 | | |
| | | 7.69 | 505.73 |
| 234+00 | 4.68 | | |
| | | 17.32 | 523.05 |
| 235+00 | 4.68 | | |
| | | 17.32 | 540.37 |
| 236+00 | 4.68 | | |
| | | 15.43 | 555.80 |
| 236+89.12 | 4.68 | | |
| | | 1.88 | 557.69 |
| 237+00 | 4.67 | | |
| | | 1.85 | 559.54 |
| 237+10.70 | 4.66 | | |
| | | 16.47 | 576.00 |
| 238+00 | 5.29 | | |
| | | 20.87 | 596.87 |

horizontal control for 48th street

Tc : roadh Thu Sep 29 15:57:06 1994
Alignment: 48th-cl
SURFACE: 2" ac top coarse, Adjustment: 0.0000
TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 239+00 | 5.98 | | |
| | | 21.90 | 618.77 |
| 240+00 | 5.85 | | |
| | | 3.86 | 622.63 |
| 240+17.98 | 5.76 | | |
| | | 10.22 | 632.85 |
| 240+67.55 | 5.37 | | |
| | | 6.28 | 639.12 |
| 241+00 | 5.07 | | |
| | | 6.09 | 645.21 |
| 241+32.95 | 4.91 | | |
| | | 11.92 | 657.13 |
| 242+00 | 4.70 | | |
| | | 17.36 | 674.49 |
| 243+00 | 4.68 | | |
| | | 17.32 | 691.81 |
| 244+00 | 4.68 | | |
| | | 2.25 | 694.06 |
| 244+12.98 | 4.69 | | |
| | | 3.95 | 698.01 |
| 245.73 | 4.69 | | |
| | | 11.14 | 709.15 |
| 245+00 | 4.68 | | |
| | | 17.32 | 726.47 |
| 246+00 | 4.68 | | |
| | | 17.39 | 743.86 |
| 247+00 | 4.72 | | |
| | | 0.47 | 744.33 |
| 247+02.70 | 4.73 | | |
| | | 7.66 | 752.00 |
| 247+45.57 | 4.93 | | |
| | | 10.63 | 762.62 |
| 248+00 | 5.62 | | |
| | | 23.60 | 786.22 |
| 249+00 | 7.13 | | |
| | | 29.01 | 815.23 |
| 250+00 | 8.54 | | |
| | | 32.43 | 847.66 |
| 251+00 | 8.97 | | |
| | | 16.61 | |
| 251+50 | 8.97 | | |

horizontal control for 48th street

Project: roadh Thu Sep 29 15:57:06 1994
Alignment: 48th-cl
SURFACE: 5" ac base coarse, Adjustment: 0.0000
TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 206+00 | 14.36 | | |
| | | 43.58 | 43.58 |
| 206+90.01 | 11.78 | | |
| | | 4.34 | 47.91 |
| 207+00 | 11.68 | | |
| | | 38.49 | 86.41 |
| 207+89.05 | 11.67 | | |
| | | 4.74 | 91.15 |
| 208+00 | 11.70 | | |
| | | 40.93 | 132.08 |
| 208+87.69 | 13.50 | | |
| | | 6.26 | 138.34 |
| 209+00 | 13.95 | | |
| | | 51.98 | 190.31 |
| 210+00 | 14.12 | | |
| | | 48.59 | 238.90 |
| 211+00 | 12.12 | | |
| | | 0.51 | 239.41 |
| 211+01.13 | 12.10 | | |
| | | 16.47 | 255.88 |
| [illegible]8.41 | 11.76 | | |
| | | 26.78 | 282.66 |
| 212+00 | 11.72 | | |
| | | 43.33 | 325.99 |
| 213+00 | 11.67 | | |
| | | 6.24 | 332.23 |
| 213+14.44 | 11.67 | | |
| | | 16.81 | 349.04 |
| 213+53.34 | 11.67 | | |
| | | 20.17 | 369.20 |
| 214+00 | 11.67 | | |
| | | 43.21 | 412.42 |
| 215+00 | 11.67 | | |
| | | 43.21 | 455.63 |
| 216+00 | 11.67 | | |
| | | 43.21 | 498.84 |
| 217+00 | 11.67 | | |
| | | 43.21 | 542.06 |
| 218+00 | 11.67 | | |
| | | 25.00 | 567.06 |
| 218+57.86 | 11.67 | | |
| | | 9.95 | 577.01 |
| 218+80.89 | 11.67 | | |
| | | 8.26 | 585.27 |
| 219+00 | 11.67 | | |
| | | 43.21 | 628.48 |
| 220+00 | 11.67 | | |
| | | 43.21 | 671.70 |

horizontal control for 48th street

r t: roadh Thu Sep 29 15:57:06 1994

Alignment: 48th-cl

SURFACE: 5" ac base coarse, Adjustment: 0.0000

TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 221+00 | 11.67 | | |
| | | 28.13 | 699.83 |
| 221+65.08 | 11.68 | | |
| | | 15.10 | 714.93 |
| 222+00 | 11.68 | | |
| | | 0.65 | 715.58 |
| 222+01.51 | 11.68 | | |
| | | 42.58 | 758.16 |
| 223+00 | 11.67 | | |
| | | 43.89 | 802.05 |
| 224+00 | 12.03 | | |
| | | 46.38 | 848.43 |
| 225+00 | 13.01 | | |
| | | 49.99 | 898.42 |
| 226+00 | 13.98 | | |
| | | 52.22 | 950.64 |
| 227+00 | 14.21 | | |
| | | 49.90 | 1000.53 |
| 228+00 | 12.73 | | |
| | | 45.19 | 1045.72 |
| 229+00 | 11.67 | | |
| | | 43.23 | 1088.95 |
| 230+00 | 11.67 | | |
| | | 43.24 | 1132.19 |
| 231+00 | 11.67 | | |
| | | 43.24 | 1175.43 |
| 232+00 | 11.68 | | |
| | | 43.25 | 1218.67 |
| 233+00 | 11.68 | | |
| | | 19.19 | 1237.87 |
| 233+44.38 | 11.68 | | |
| | | 4.85 | 1242.72 |
| 233+55.59 | 11.67 | | |
| | | 19.19 | 1261.91 |
| 234+00 | 11.67 | | |
| | | 43.21 | 1305.12 |
| 235+00 | 11.67 | | |
| | | 43.21 | 1348.33 |
| 236+00 | 11.67 | | |
| | | 38.51 | 1386.85 |
| 236+89.12 | 11.67 | | |
| | | 4.70 | 1391.54 |
| 237+00 | 11.65 | | |
| | | 4.61 | 1396.16 |
| 237+10.70 | 11.64 | | |
| | | 41.09 | 1437.24 |
| 238+00 | 13.21 | | |
| | | 52.07 | 1489.32 |

horizontal control for 48th street

Pr :: roadh Thu Sep 29 15:57:06 1994

Alignment: 48th-cl

SURFACE: 5" ac base coarse, Adjustment: 0.0000

TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 239+00 | 14.91 | | |
| | | 54.63 | 1543.95 |
| 240+00 | 14.59 | | |
| | | 9.64 | 1553.59 |
| 240+17.98 | 14.37 | | |
| | | 25.49 | 1579.08 |
| 240+67.55 | 13.40 | | |
| | | 15.66 | 1594.74 |
| 241+00 | 12.66 | | |
| | | 15.19 | 1609.94 |
| 241+32.95 | 12.24 | | |
| | | 29.75 | 1639.69 |
| 242+00 | 11.72 | | |
| | | 43.31 | 1683.00 |
| 243+00 | 11.67 | | |
| | | 43.21 | 1726.21 |
| 244+00 | 11.67 | | |
| | | 5.62 | 1731.83 |
| 244+12.98 | 11.69 | | |
| | | 9.85 | 1741.68 |
| 35.73 | 11.69 | | |
| | | 27.80 | 1769.48 |
| 245+00 | 11.67 | | |
| | | 43.21 | 1812.69 |
| 246+00 | 11.67 | | |
| | | 43.40 | 1856.10 |
| 247+00 | 11.77 | | |
| | | 1.18 | 1857.27 |
| 247+02.70 | 11.79 | | |
| | | 19.12 | 1876.39 |
| 247+45.57 | 12.29 | | |
| | | 26.51 | 1902.90 |
| 248+00 | 14.01 | | |
| | | 58.88 | 1961.78 |
| 249+00 | 17.78 | | |
| | | 72.39 | 2034.17 |
| 250+00 | 21.31 | | |
| | | 80.92 | 2115.09 |
| 251+00 | 22.39 | | |
| | | 41.46 | |
| 251+50 | 22.39 | | |

horizontal control for 48th street

Pr t: roadh Thu Sep 29 15:57:06 1994
Alignment: 48th-cl
SURFACE: mag201 type a, Adjustment: 0.0000
TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 206+00 | 1.42 | | |
| | | 4.73 | 4.73 |
| 206+90.01 | 1.42 | | |
| | | 0.52 | 5.25 |
| 207+00 | 1.42 | | |
| | | 4.68 | 9.93 |
| 207+89.05 | 1.42 | | |
| | | 0.58 | 10.50 |
| 208+00 | 1.42 | | |
| | | 4.60 | 15.11 |
| 208+87.69 | 1.42 | | |
| | | 0.65 | 15.75 |
| 209+00 | 1.42 | | |
| | | 5.25 | 21.00 |
| 210+00 | 1.42 | | |
| | | 5.25 | 26.25 |
| 211+00 | 1.42 | | |
| | | 0.06 | 26.31 |
| 211+01.13 | 1.42 | | |
| | | 1.96 | 28.27 |
| 38.41 | 1.42 | | |
| | | 3.23 | 31.51 |
| 212+00 | 1.42 | | |
| | | 5.25 | 36.76 |
| 213+00 | 1.42 | | |
| | | 0.76 | 37.51 |
| 213+14.44 | 1.42 | | |
| | | 2.04 | 39.56 |
| 213+53.34 | 1.42 | | |
| | | 2.45 | 42.01 |
| 214+00 | 1.42 | | |
| | | 5.25 | 47.26 |
| 215+00 | 1.42 | | |
| | | 5.25 | 52.51 |
| 216+00 | 1.42 | | |
| | | 5.25 | 57.76 |
| 217+00 | 1.42 | | |
| | | 5.25 | 63.01 |
| 218+00 | 1.42 | | |
| | | 3.04 | 66.05 |
| 218+57.86 | 1.42 | | |
| | | 1.21 | 67.26 |
| 218+80.89 | 1.42 | | |
| | | 1.00 | 68.26 |
| 219+00 | 1.42 | | |
| | | 5.25 | 73.51 |
| 220+00 | 1.42 | | |
| | | 5.25 | 78.76 |

horizontal control for 48th street

Pro : roadh Thu Sep 29 15:57:06 1994

Alignment: 48th-cl

SURFACE: mag201 type a, Adjustment: 0.0000

TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 221+00 | 1.42 | | |
| | | 3.42 | 82.18 |
| 221+65.08 | 1.42 | | |
| | | 1.83 | 84.01 |
| 222+00 | 1.42 | | |
| | | 0.08 | 84.09 |
| 222+01.51 | 1.42 | | |
| | | 5.17 | 89.27 |
| 223+00 | 1.42 | | |
| | | 5.25 | 94.52 |
| 224+00 | 1.42 | | |
| | | 5.25 | 99.77 |
| 225+00 | 1.42 | | |
| | | 5.25 | 105.02 |
| 226+00 | 1.42 | | |
| | | 5.25 | 110.27 |
| 227+00 | 1.42 | | |
| | | 5.25 | 115.52 |
| 228+00 | 1.42 | | |
| | | 5.25 | 120.77 |
| 229+00 | 1.42 | | |
| | | 5.25 | 126.02 |
| 230+00 | 1.42 | | |
| | | 5.25 | 131.27 |
| 231+00 | 1.42 | | |
| | | 5.25 | 136.52 |
| 232+00 | 1.42 | | |
| | | 5.25 | 141.78 |
| 233+00 | 1.42 | | |
| | | 2.33 | 144.11 |
| 233+44.38 | 1.42 | | |
| | | 0.59 | 144.69 |
| 233+55.59 | 1.42 | | |
| | | 2.33 | 147.03 |
| 234+00 | 1.42 | | |
| | | 5.25 | 152.28 |
| 235+00 | 1.42 | | |
| | | 5.25 | 157.53 |
| 236+00 | 1.42 | | |
| | | 4.68 | 162.21 |
| 236+89.12 | 1.42 | | |
| | | 0.57 | 162.78 |
| 237+00 | 1.42 | | |
| | | 0.56 | 163.34 |
| 237+10.70 | 1.42 | | |
| | | 4.69 | 168.03 |
| 238+00 | 1.42 | | |
| | | 5.25 | 173.28 |

horizontal control for 48th street

r t: roadh Thu Sep 29 15:57:07 1994

Alignment: 48th-cl

SURFACE: mag201 type a, Adjustment: 0.0000

TEMPLATE END AREA VOLUME LISTING

| Station | Area (sqft) | Volume (yds) | Tot Vol (yds) |
|---|---|---|---|
| 239+00 | 1.42 | | |
| | | 5.25 | 178.53 |
| 240+00 | 1.42 | | |
| | | 0.94 | 179.48 |
| 240+17.98 | 1.42 | | |
| | | 2.60 | 182.08 |
| 240+67.55 | 1.42 | | |
| | | 1.70 | 183.78 |
| 241+00 | 1.42 | | |
| | | 1.73 | 185.51 |
| 241+32.95 | 1.42 | | |
| | | 3.52 | 189.03 |
| 242+00 | 1.42 | | |
| | | 5.25 | 194.28 |
| 243+00 | 1.42 | | |
| | | 5.25 | 199.54 |
| 244+00 | 1.42 | | |
| | | 0.68 | 200.22 |
| 244+12.98 | 1.42 | | |
| | | 1.19 | 201.41 |
| [illegible]35.73 | 1.42 | | |
| | | 3.37 | 204.79 |
| 245+00 | 1.42 | | |
| | | 5.25 | 210.04 |
| 246+00 | 1.42 | | |
| | | 5.25 | 215.29 |
| 247+00 | 1.42 | | |
| | | 0.14 | 215.43 |
| 247+02.70 | 1.42 | | |
| | | 2.25 | 217.68 |
| 247+45.57 | 1.42 | | |
| | | 2.86 | 220.54 |
| 248+00 | 1.42 | | |
| | | 5.25 | 225.79 |
| 249+00 | 1.42 | | |
| | | 5.25 | 231.04 |
| 250+00 | 1.42 | | |
| | | 5.25 | 236.29 |
| 251+00 | 1.42 | | |

horizontal control for 48th street

P ct: roadh Thu Sep 29 15:57:07 1994
. gnment: 48th-cl
tation range: 206+00 to 251+00

TEMPLATE END AREA VOLUME SUMMARY

DCA Qty Unadjusted to Sta 251+00

| Surface | Volume (yds) | |
|---|---|---|
| 2" ac top coarse | 847.66 | = 22886.82 CF x 145#/CF x 1T/2000# = 1660T |
| 5" ac base coarse | 2115.09 | = 57107.43 CF x 145#/CF x 1T/2000# = 4140T |
| mag201 type a thickened edge w/ 4" curb | 236.29 | |
| VOLUME TOTAL: | 3199.04 | |

Adjustment for 50 LF (Sta 251+00 - 251+50; see pg. 3 & pg. 6)

2" AC Top Course = 16.61 CY = 448.5 CF x 145#/CF x 1T/2000# = 32.5T
5" AC Base Course = 41.46 CY = 1119.5 CF x 145#/CF x 1T/2000# = 81.2T

Adjustment for side street pavement (from subgrade hand calcs)

| | |
|---|---|
| Granada | 2865 SF |
| Holly | 2097 SF |
| Cemetery | 607.5 SF |
| Cemetery | 820 SF |
| Virginia | 2842.5 SF |
| | 9232 SF |

2" AC Top Course = 1538.67 CF x 145#/CF x 1T/2000# = 111.6T
5" AC Base Course = 3846.67 CF x 145#/CF x 1T/2000# = 278.9T

Adjustment for Sta 251+50 - 251+28.55 (from hand calcs, Sh. C3.11 & C3.12)

2" AC Top Course = 190.9T + 56.9T = 247.8T
5" AC Base Course = 477.2T + 142.3T = 619.5T

| Adjusted DCA Qty | Hand Calc Qty | |
|---|---|---|
| 2" AC = 2052T | 2" AC = 2206T | ⇒ 7% difference |
| 5" AC = 5120T | 5" AC = 5570T | ⇒ 8% difference |

# REVISED
# QUANTITY CALCULATIONS:

- **Removal Items**
- **Traffic Control**
- **Traffic Signalization**
- **Thomas Road Detour**

*Previously Submitted: 12/16/94*

**Greiner**

Job No. E002102 Project OCC Sheet 1 of 5

Subject Quantity Take Off - Phase I Removal Items

By AUB Date 12/14/94 Checked By KAS Date 12/15/94

Item # 350-1 Remove Fence, Handrail, Guardrail, Posts & Barricades

| Sheet # | Barricade | Guardrail | | | Total |
|---|---|---|---|---|---|
| C3-5 | 127 LF | | | | 127 LF |
| C3-11 | | 172+120 LF | | | 292 LF |
| | | | | | 419 LF |

419 LF @ $8.00/LF = $3352 → use $3500 LS

Item # 350-2 Remove signs & markers & reinstall

| Sheet # | Qty |
|---|---|
| C3-1 | 5 ea |
| C3-2 | 5 ea |
| C3-3 | 1 ea |
| C3-4 | 1 ea |
| C3-5 | 1 ea |
| C3-8 | 2 ea |
| C3-9 | 3 ea |

18 ea @ $53/ea = $954 → use $960 LS

**Greiner**

Job No. E002107 Project OCCL Sheet 2 of 5

Subject Quantity Take Off - Phase I Removal Items

By ALB Date 12/14/94 Checked By KAS / ALB Date 12/15/94 / 1/20/95

Item # 350-3 Remove Curb & Gutter

| Sheet # | Qty |
|---|---|
| C3-1 | 80' |
| C3-2 | 60' |
| C3-3 | 46' |
| C3-8 | 90' |
| C3-11 | 188' |
| | 464 LF |

Add single curb, 562 LF along west side of 48th St. south of Thomas Rd.

562 LF @ $1.00/LF = $562

562
1160
$ 1722

464 LF @ $2.50/LF = $1160 LS

use $1700 LS
ALB 1/20/95

Item # 350-4 Remove Pipe

Sheet C3-3 20' of 6" W

20 LF @ $12.50 LF = $250 LS

Item # 350-5 Remove Spillways / Channel Lining

| Sheet # | Qty |
|---|---|
| C3.5 | 11'x4' = 44 SF |
| C3.6 | 11'x17.5' = 192.5 SF |
| C3.7 | 10'x15' = 150 SF |
| C3.9 | 10'x8' = 80 SF |
| C3.12 | 20'x38' = 760 SF |
| | 1226.5 SF = 136 SY |

136 SY @ $4.40/SY = $598 use $600 LS

**Greiner**

Job No. E002102 Project OCC Sheet 3 of 5

Subject Quantity Take-Off - Phase I Removal Items

By ALB Date 12/15/94 Checked By RAS Date 12/15/94

Item # 350-6 Remove Pavement

| Sheet # | Qty |
|---|---|
| C3-1 | $\left(\frac{50'+35'}{2}\right) \times 300' =$ 12750 SF |
| C3-2 | $\left(\frac{35'+28'}{2}\right) \times 450' =$ 14175 SF |
| C3-3 | $\left(\frac{28'+26'}{2}\right) \times 500' =$ 13500 SF |
| C3-4 | $\left(\frac{26'+27'}{2}\right) \times 500' =$ 13250 SF |
| C3-5 | $27' \times 500' =$ 13500 SF |
| C3-6 | $\left(\frac{27'+26'}{2}\right) \times 500' =$ 13250 SF |
| C3-7 | $\left(\frac{26'+24'}{2}\right) \times 400' =$ 10000 SF |
| C3-8 | $24' \times 500' =$ 12000 SF |
| C3-9 | $\left(\frac{24'+32'}{2}\right) \times 500 =$ 14000 SF |
| C3-10 | $\left(\frac{32'+52'}{2}\right) \times 500 =$ 21000 SF |
| C3-11 | 52'x90'<br>58.7'x50'<br>60'x74' = 12055 SF |
| C3-12 | 58.7'x75'<br>½(58.7'x30') = 5283 SF |
| C4-2 | 135'x45' = 6075 SF |

160838 SF = 17871 SY

17871 SY @ \$1.80/SY = \$32168 use \$34000 LS

**Greiner**

Job No. E002102 Project OCC Sheet 4 of 5

Subject Quantity Take Off - Phase I Removal Items

By ALB Date 12/15/94 Checked By KAS Date 12/15/94

Item #350-7 Remove Sidewalk & Driveways

| Sheet # | Sidewalk Qty | STA. | Paved Driveway Qty |
|---|---|---|---|
| C3-1 | 103'x5' = 515 SF | 206+52 | 30'x5' = 150 SF |
| C3-2 | 409'x5' = 2045 SF | | |
| C3-3 | 107'x5' = 535 SF | | |
| C3-4 | | 218+82 | 20'x5' = 100 SF |
| C3-5 | | Cemetery Dr. | 1242 SF |
| C3-7 | | 234+35 | 22'x13' = 286 SF |
| C3-8 | 43'x5' = 215 SF | 236+80 | 24'x12' = 288 SF |
| C3-10 | | 246+55 | 18'x15' = 270 SF |
| | | 249+65 | 30'x7' = 210 SF |
| C3-11 | 200'x5' = 1000 SF | | |
| | 4310 SF | | 2546 SF |

Total = 4310 + 2546 = 6856 SF @ $0.90/SF = $6170

use $6200 LS*

* Indicate that amount differs from estimate submitted 11/94

**Greiner**

Job No. E002102 Project OCC Sheet 5 of 5

Subject Quantity Take-offs – Phase I Removal Items

By ALB Date 12/15/94 Checked By KAS / ALB Date 12/15/94 / 1/20/95

Item # 350-9 Miscellaneous Removals

Sheet C3.9 2 CB @ $450/ea = $900

Plus various additional structures & obstructions

use $5000 LS

Item # 350-10 Remove Safety Curb

| Sheet # | Qty |
|---|---|
| C3-9 | 34' |
| C3-10 | 473' |
| C3-11 | 55' |
| | 562 LF |

Delete Item. Safety curb at Tods Kitchen incidental to parking lot removal; single curbs along West of 48th st just south of Thomas to be included in Item # 350-3. ALB 1/20/95

562 LF @ $1.00/LF = $562 use $600 LS

**Greiner**

Job No. E002102 Project OCC Sheet 1 of 1

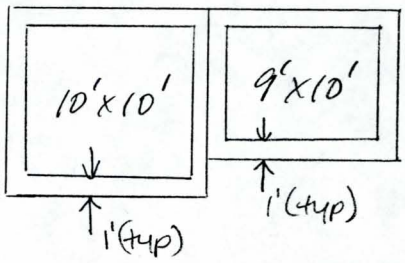
Subject Quantity Take-Off - Phase I Box Culvert Removal

By ALB Date 12/15/94 Checked By V.G. Date 12/15/94

Item # 350-7 Remove Box Culvert at Thomas Road

Reference: McMahon Heavy Construction Cost Guide 1992

Exist. Box Culvert




McMahon p.4

| Demolish Structures | Unit | Labor | Equipment |
|---|---|---|---|
| Pneumatic tools | | | |
| Reinforced Conc. | CY | 98.92 | 45.38 |

McMahon p. XIV

| | | |
|---|---|---|
| Geographic Multiplier | 0.62 | — |
| | $61.33/CY | $45.38/CY |

CY for 80LF of culvert:

10'x10' : 4 sides x 10' x 1' x 80' = 3200 CF ✓

9'x10' : 2 sides x 10' x 1' x 80' = 1600 CF ✓

2 sides x 9' x 1' x 80' = 1440 CF ✓

6240 CF ✓ = 231.1 CY ✓

Cost: 231 CY x $61.33/CY = $14,167 ✓ (labor)

231 CY x $45.38/CY = $10,483 ✓ (equip)

$24,650

With wing walls and channel lining, use $30,000 LS

**Greiner**

Job No. E002102 Project OCCC - PHASE 1 Sheet 1 of 1

Subject Traffic Control Cost Estimate

By VG Date 12/15/94 Checked By RAS Date 12/15/94

Traffic Control for Phase 1

Length = 202+00 To 257+00 = 5,500' ≈ 1 Mile

C.O.P. 1988 Ave. Traffic Control Devices — over 1 Mile = $35,000; 1/4 to 1 mile = $17,000

C.O.P. 1990 Ave Traffic Control Devices — over 1 mile = 52,500; 1/4 to 1 mile = 28,300

66% increase

1994 1/4 To 1 mile projected = $53,000 estimated

85% increase

Similar ADOT Projects 1992 Bids Traffic control & maintenence

1. Jct. SR84 Pueblo St. - 1.24 miles - mill & replace AC - $38,000
2. Vekol wash Area - 1.04 miles - pave & C.B.C. - $50,000
3. Arizona Ave - Hotel Lane - 0.56 miles - Reconstruct Pavement - $15,000

Ave for 1 mile = $35,200 ± + 23,200 (66% increase) = $58,400 ±

(53,000 + 58,400) ÷ 2 = $55,700

For Traffic Control Devices use $55,000

Temporary Pavement 4600' x 11' x 3"/12 x 145 lb/CF x 1/2000 = 917 Tons

205+00 TO 251+00 (3" C34) D 1/2 12/15/95

917 Tons @ $30.00/ton = $27,513.75

Traffic Control W/O Temp Pavement use $55,000

Traffic Control with Temp Pavement use $83,000

**Greiner**

Job No. E002107 Project ACC Sheet 1 of 2

Subject Quantity Take Off - Phase I Traffic Signalization

By ALO Date 12/15/94 Checked By VG Date 12/15/94

Item # 401-2 Traffic Signalization

2" PVC conduit for Traffic Signal

85' + 14' + 10' + 102' + 15' + 9' + 74' = 309 LF

$6.60/LF = $ 2039.40

Utility trench & backfill 309 LF $4.45/LF = $ 1375.05

No. 5 Junction Box 2 EA

$195/EA = $390

Type A Signal Pole Foundation 2 EA

$345/EA = $690

Type M Signal Pole Foundation 2 EA

$470/EA = $940

$5435

KAS 1/10/95

USE $5500 LS

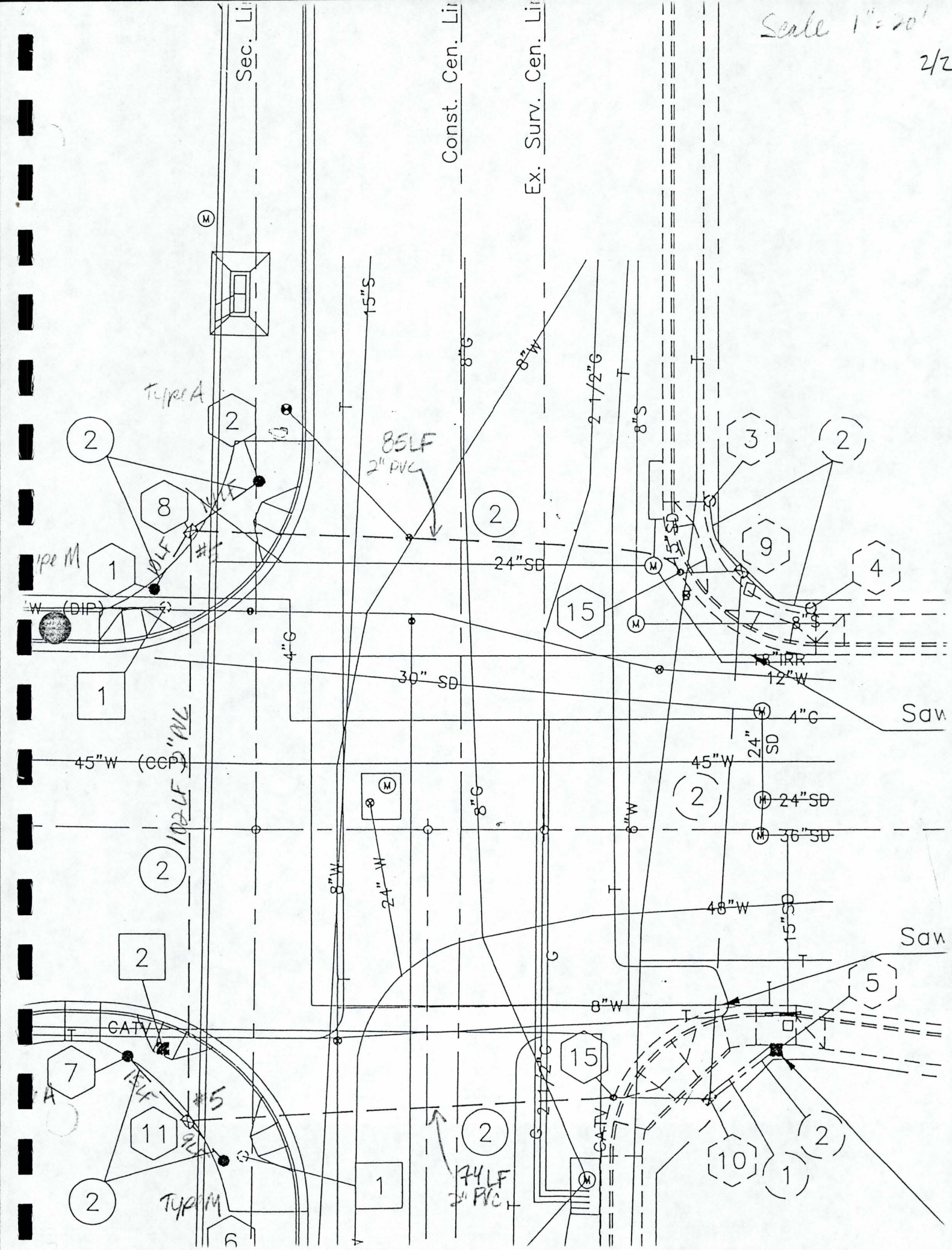
SIGNALIZATION PLANS UNCLEAR -

ASSUME: 2- NEW POLES w/ MAST ARM & HEADS @ $10,000.00 EA

USE $25,000

Scale 1" = 20'

2/2


Sec. Li
Const. Cen. Li
Ex. Surv. Cen. Li
15"S
8"C
8"W
2 1/2"G
8"S
Type A
85LF
2" PVC
24"SD
15"SD
8"S
48"IRR
12"W
30" SD
4"C
45"W (CCP)
45"W
24" SD
24"SD
36"SD
102LF 3" PVC
8"W
24" W
48"W
15"SD
8"W
CATV
74LF
2" PVC
Type M
Saw
Saw

Item #401-3 Thomas Road Detour

**Greiner**

Job No. E002102 Project O.C.C. Sheet 1 of 1

Subject Q.T.O.

By WCT Date 7-20-94 Checked By JVG Date 7/22/94

Sheet C10-1 (ADDITIONAL COST FOR DETOUR)

SAW CUT: 50 LF. + 20 = 70 LF × $1 = $70

C&G, SIDEWALK REMOVAL: 140 + 165 + 100 = 405 LF. = $1215

REPLACE C&G, & SIDEWALK: 405 LF $5.10 = $2066

405 × 5 = 2025 SF. : $2633

2" AC. SIDEWALK: 265 + 350 = 615 LF. ⇒ 37.2 TON // $876

TEMP BARRICADE: 240 + 310 = 550 LF. ⇒ $1.0/LF = $550

8' CONST. FENCE: 165 + 160 = 325 LF. ⇒ $8 = $2600

TEMP. 8" AC.: $\frac{1}{2}(245+105)(50) + \frac{1}{2}(175+100)(32)$

$+ \frac{1}{2}(315+195)(50)$ SF.

= 8750 + 4400 + 12750 SF

= 25900 SF.

⇒ 6475 CF. ⇒ 469 TON // $23.5/T $11,022

$21,020

Temporary Signalization: $5000

Signing & Striping: 750 × 5 × 1.5 = $5625 → $31,645

TEMPORARY BRIDGE: TWO 24' × 80' BRIDGE & FOOTING

FOOTING: (48 × 2)(1 × 3) = 11 C.Y. × $280 = $3080

Temp Bridge: (80)(2) × $100/LF = $16,000

Total: $20,080

Temp Bridge

w/o Temp. Bridge use ~~$35,000~~

With Temp. Bridge use $55,000

# ADDITIONAL
# UNIT COST CALCULATIONS:

- **45" Waterline Relocation**
- **Double 18' x 10' Box Culvert**
- **Concrete Driveways**
- **"Bubble-up" Manhole**

**Greiner**

Job No. E10002102 Project OCCC Sheet 1 of 10

Subject COST ESTIMATE - PHASE 1 45" W/L RELOCATION (C9.1)

By KAS Date 1/18/95 Checked By ALB Date 1/20/95

BID ITEM 610-3 - RELOCATE 45" WATERLINE

TASKS INCLUDED:

A) 45" WATERLINE CUT & REMOVE

B) 45" WATERLINE CONSTRUCTION (INCLUDING EXCAVATION & BACKFILL)

2 EA 45" 45° ELL

2 EA 45" 60° ELL

C) 2 EA 2' x 17' x 10' THRUST BLOCK

D) 2 EA SPECIAL CONNECTION JOINTS

E) AIR RELEASE / DRAIN ASSEMBLY

F) FH RELOCATION

TASK A:

SAWCUT — $2 \times \left(\pi \cdot \frac{45}{12}\right) \times 5.00$ LF = $118

REMOVE 90 LF x 15 = 1350

TOTAL TASK A = 1468 SAY $1500

TASK B1

85 LF @ $500/LF FOR 45" WL ("AMERON" - JOHN AMERINE 602-252-7111)

PLUS ADDITIONAL COSTS FOR TRENCHING & SHORING
(SEE ATTACHED CALL SHEET FROM 54" WL COSTS)

**Greiner**

Job No. E1000210Z Project OCCC Sheet 2 of 10

Subject COST ESTIMATE - PHASE 1 45" W/L RELOCATION (C9.1)

By KAS Date 1/18/95 Checked By ALB Date 1/20/95

TASK B (CONT'D)

$500/LF
× 1.5 ← TO ACCOUNT FOR HEAVY EQUIP TO MOVE PIPING
$750/LF
28.84/LF (SHORING)
14.48/LF (TRENCHING)
48.70/LF (CANAL ACCESS EARTHWORK)

SUBTOTAL $842.02/LF

ADD 30% FOR PROTECTING EX. UTIL'S, TRENCH ZONE

$1094.63/LF ⇒ USE $1100/LF

85 LF @ $1100/LF = $93500 TOTAL

TASK C:

CONCRETE VOLUME ⇒ $\frac{2' \times 17.5' \times 10'}{27}$ = 13. cy

13 cy × $250 = $3250

STEEL VOLUME ⇒

12 - #8 × 9' 10" = 118'
14 - #8 × 17' 4" = 242.6'
6 - #8 × 6' = 36'
11 - #8 × 13'.5" = 148.5'
2 - #8 @ 60" ϕ = 31.4'

576.5 LF

#8 → 2.67 lb/ft × 576.5 LF = 1539 lb × $0.52/lb = $800

$3250 + $800 = $4050, SAY $4100/EACH

THRUST BLOCKS ⇒ $8200 TOTAL

**Greiner**

Job No. E10002102 Project OCCC Sheet 3 of 10

Subject COST ESTIMATE - PHASE 1 45" W/L RELOCATION (C9.1)

By KAS Date 1/18/95 Checked By ALB Date 1/20/95

TASK D

2 EA @ $31,500 / EA = 63,000

TASK E

AIR RELEASE
- 1 - TOP FLANGED OUTLET @ $800 / EA — $800 -
- 1 - 6" VALVE } @ $400 — $400 -
- 1 - VALVE BOX
- 1 - 90° ELL (6") } @ $25 / LF — $150 -
- 30 LF DIP (6")

DRAIN
- 1 - BOTTOM FLANGED OUTLET @ $800 / EA — $800 -
- 1 - 6" VALVE } @ $400 — $400 -
- 1 - VALVE BOX
- 2 - 90° ELL (6") } $25 / LF — $375 -
- 15 LF DIP (6")

COMBO
- 6" x 6" x 6" TEE
- 1 - 6" VALVE } @ $400 — $400 -
- 1 - VALVE BOX
- 15 LF DIP (6") @ $25 / LF (INCLUDES TEE) — $375 -

TOTAL $4300

TASK F

1 - FH RELOCATION @ $1300 - EA = $1300 -

**Greiner**

Job No. E10002102 Project OCCC Sheet 4 of 10

Subject Cost Estimate - Phase 1 45" W/L Relocation (C9.1)

By KAS Date 1/18/95 Checked By ALB Date 1/20/95

Summary

| | | |
|---|---|---|
| Task | A | $1,500- |
| Task | B | $93,500 |
| Task | C | $8,200 |
| Task | D | $63,000 |
| Task | E | $4300- |
| Task | F | $1300- |
| | TOTAL | $171,800 |

$$\frac{\$171,800}{85\,LF} = \$2021/LF$$

use $2025/LF

**Greiner**

Job OCCC (FCD 94-18) Project No. E002102 Sheet 1 of 1
Description 54" WATER LINE COST. Computed By WCT Date 5-1994
Checked By JVG Date 6/1/94

"AMERON" : $250/lf. (95 LF. TOTAL)
(DAVID TANTALEAN 602-252-7111) INCL. SPECIAL FITTING.
X 150
$375/lf ← TO ACCOUT FOR HEAVY EQIP. TO MOVE PIPE & FITTING.

TRENCH SHORING : (7)(2) X $2.06/lf.
= $28.84/lf

TRENCH EXCAVATION & BACKFILL : $3 + $5 = $8/CY

TRENCH EARTHWORK : (7 X 7)/27 = 1.81 CY/lf ⇒ $14.48/lf

CANAL/ACCESS RAMP EARTHWORK : (0.75)($300)/95
(75% OF TOTAL) = $49.7/lf

SUB-TOTAL = $ 468.02/lf.

ADD 30% FOR PROTECTING EX. UTIL. & TRENCH ZONE (X1.30)

$608/lf ⇒ $620/lf (USED)

NOTE: TRENCH VOL. ON CONSERVATIVE SIDE AS PART OF TRENCH EXCA. INSIDE CANAL/ ACCESS RAMP EARTHWORK.

**Greiner**

Job No. E002102 Project OCC Sheet 6 of 10

Subject Box Culvert Qty

By ALB Date 11-03-94 Checked By KAS Date 1/18/95

Double 18'x10' Box Culvert

Concrete 4.82 CY/LF

Steel Rebar 800 LBS/LF

Cost per LF for conc. at $260/CY

4.82 CY/LF x $260/CY = $1253.20/LF

Cost per LF for conc. at $271/CY

4.82 CY/LF x $271/CY = $1306.22/LF

Cost per LF for rebar at $0.52/lbs.

800 LBS/LF x $0.52/LBS. = $416/LF

| | Unit Price (LF) |
|---|---|
| Using $260/CY conc. | $1669.20 |
| $271/CY conc. | $1722.22 |

$1700/LF ok for estimate

**Greiner**

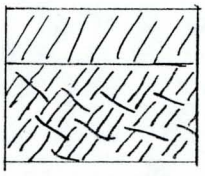
Job No. EDO2102 Project OCCC Sheet 7 of 10

Subject Phase I - Quantity & Cost - Driveways

By ALB Date 1/20/95 Checked By RAS Date 1/20/95

DETERMINE COST/LF FOR DRIVEWAY BID ITEMS TO INCLUDE REPLACEMENT OF ASPHALT BEHIND DRIVEWAYS AS SHOWN ON ROADWAY PLANS

PER SHEET C2.5, DETAIL F-F



← MIN 3" TYPE D½ ASPHALT CONCRETE

← 6" COMPACTED SUBGRADE

B.1. 340-5 CONCRETE DRIVEWAY, 5" SECTION

2308 SF $3.00/SF BEFORE CONSIDERING ADDTNL ASPHALT

- ADDITIONAL ASPHALT REPLACEMENT QTY

| | | |
|---|---|---|
| SHEET | C3.3 | 108 SF |
| | C3.4 | 120 |
| | C3.7 | 245 |
| | C3.9 | 138 |
| | C3.10 | 55 |

$666\ SF \times \frac{3''}{12} = 166.5\ CF \times \frac{145\#}{CF} \times \frac{1T}{2000\#} = 12.1T$

$12.1T \times \$32/T = \$387.20$

$\frac{\$387.20}{2308\ SF} = \$0.17/SF$ FOR ASPHALT

- SUBGRADE PREP QTY

$666\ SF \div 9 = 74\ SY$

$74\ SY \times \$2.00/SY = \$148$

$\frac{\$148}{2308\ SF} = \$0.06/SF$ FOR SUBGRADE PREP

TOTAL ADDITIONAL = $0.17 + $0.06 = $0.23/SF

use $0.25/SF

∴ B.1. 340-5 CONC. DWY, 5" SECTION 2308SF $3.25/SF

**Greiner**

Job No. E002102 Project OCCC Sheet 8 of 10

Subject Phase 1 - Quantity & Cost - Driveway

By ALB Date 1/20/05 Checked By RAS Date 1/20/05

B.1. 340-6 CONCRETE DRIVEWAY, 9" SECTION

2213 SF $3.00/SF BEFORE ADJUSTMENT

- ADDITIONAL ASPHALT REPLACEMENT QTY

| SHEET | | | |
|---|---|---|---|
| | C3.1 | 171 | SF |
| | C3.3 | 178.5 | |
| | C3.9 | 38 | |
| | C3.9 | 269.5 | |
| | C3.10 | 120 | |

$777\ SF \times \frac{3''}{12} = 194.25\ CF \times \frac{145\#}{CF} \times \frac{1T}{2000\#} = 14.1T$

$14.1T \times \$32/T = \$451.20$

$\frac{\$451.20}{2213\ SF} = \$0.20/SF$ FOR ASPHALT

- SUBGRADE PREP

$777\ SF \div 9 = 86.3SY$

$86.3SY \times \$2.00/SY = \$172.67$

$\frac{\$172.67}{2213\ SF} = \$0.08/SF$ FOR SUBGRADE PREP

TOTAL ADDITIONAL - $0.20 + $0.08 = $0.28/SF

use $0.30/SF

∴ B.1. 340-6 CONC DWY, 9" SECTION 2213 SF $3.30 SF

TEMPORARY DRAINAGE STRUCTURE

The contractor shall construct a temporary drainage structure in the Old Cross Cut Canal at Oak Street in accordance with sheet BMH-1 of the project plans, M.A.G. and C.O.P. specifications and details and this special provision.

Work shall consist of excavating in the Old Cross Cut Canal for installation of a manhole base and shaft. A 48-inch diameter reinforced concrete pipe (Class V) shall be installed from the manhole base and match the 48-inch pipe construction shown on sheet C3.5 of the construction plans.

Measurement and payment for this construction shall be by the job and shall be payment in full for furnishing all materials, tools and equipment for excavation, backfill and compaction , manhole base and shaft construction, construction of a reinforced concrete slab around the manhole shaft and installation of an outfall access barrier. Measurement and payment to furnish and install approximately 19 L.F. of 48-inch reinforced concrete pipe in accordance with plan sheet BMH-1 shall be made under the item for 48-inch pipe.

| DESCRIPTION | APPROX. QUANTITY & UNIT | UNIT PRICE | AMOUNT |
|---|---|---|---|
| TEMPORARY DRAINAGE STRUCTURE | 1 JOB | 8,000.00 | 8,000.00 |
| 48-inch R.C.P. (Class V) | 19 L.F. | 150.00 | 2,850.00 |
| TOTAL | | | 10,850.00 |

**SHEET BREAK OUT**

| ITEM # | BID ITEM | UNIT | SHEET C3-1 | SHEET C3-2 | SHEET C3-3 | SHEET C3-4 | SHEET C3-5 | SHEET C3-6 | SHEET C3-7 | SHEET C3-8 | SHEET C3-9 | SHEET C3-10 | SHEET C3-11 | SHEET C3-12 | SHEET C4-1 | SHEET C4-2 | SHEET C5-1 | SHEET C5-2 | SHEET C9-1 | SHEET C9-2 | SHEET C10-1 | SHEET BMH-1 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 202 | MOBILIZATION | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 205 | ROADWAY EXCAVATION | C.Y. | | | | | | | | | | | | | | | | | | | | | 6,710 |
| 206 - 1 | STRUCTURE EXCAVATION | C.Y. | | | | | | | | | | | | | | | | | | | | | 15,295 |
| 206 - 2 | STRUCTURE BACKFILL | C.Y. | | | | | | | | | | | | | | | | | | | | | 5,318 |
| 206 - 3 | GEOCOMPOSITE DRAIN | S.Y. | | | | | | | | | | | | | | | 366.7 | 550 | | | | | 917 |
| 211 | FILL CONSTRUCTION | C.Y. | | | | | | | | | | | | | | | | | | | | | 5,725 |
| 220 | DUMPED RIPRAP | C.Y. | | | | | | | | | | | | | 133.3 | | | | | | | | 133 |
| 221 | GABION CONSTRUCTION | C.Y. | | | | | | | | | | | | | | | 69.5 | 121.5 | | | | | 191 |
| 222 - 1 | GRASSCRETE CONSTRUCTION | S.F. | | | | | | | | | | | | | | | | 1162.0 | | | | | 1,162 |
| 222 - 2 | 8-INCH PVC SLEEVES | L.F. | | | | | | | | | | | | | | 45 | | | | | | | 45 |
| 301 | SUBGRADE PREPARATION UNDER PAVEMENT | S.Y. | 1248.6 | 1863.0 | 1850.9 | 1666.7 | 1885.4 | 1779.2 | 1333.3 | 2170.3 | 1694.4 | 2377.5 | 1589.1 | 829.2 | 0.0 | 0.0 | | | | | | | 20,288 |
| 310 | GRAVEL BEDDING | C.Y. | | | | | | | | | | | | | | | 948.2 | 1373.8 | | | | | 2,322 |
| 321 - 1 | ASPHALT CONCRETE PAVEMENT C - 3/4 | TON | | | | | | | | | | | | 50.5 | 0.0 | 0.0 | | | | | | | 51 |
| 321 - 2 | ASPHALT CONCRETE PAVEMENT D - 1/2 | TON | 135.8 | 202.6 | 201.2 | 181.3 | 205.0 | 195.7 | 145.0 | 236.0 | 184.3 | 258.6 | 172.8 | 56.9 | | | | | | | | | 2,175 |
| 321 - 3 | ASPHALT CONCRETE PAVEMENT A - 1 1/2 | TON | 342.2 | 510.5 | 504.8 | 457.6 | 517.1 | 493.7 | 366.1 | 594.5 | 465.2 | 649.5 | 432.0 | 142.3 | | | | | | | | | 5,476 |
| 321 - 4 | ASPHALT CONCRETE CURB | L.F. | 303 | 437 | 486 | 500 | 480 | 487 | 394 | 490 | 490 | 335.5 | | | | | | | | | | | 4,403 |
| 329 | TACK COAT | TON | 0.5 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.6 | 0.9 | 0.7 | 1.0 | 0.7 | 0.2 | | | | | | | | | 9.00 |
| 340 - 1 | CONCRETE CURB AND GUTTER, MAG DET 220, TYPE A | L.F. | 196.0 | 185.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 157.8 | 264.5 | 65.7 | | | | | | | | | 869 |
| 340 - 2 | CONCRETE CURB AND GUTTER, MAG DET 220, MODIFIED TYPE A | L.F. | | 314.0 | 464.7 | 500.0 | 383.7 | 475.2 | 400.0 | 545.7 | 500.0 | 435.7 | | | | | | | | | | | 4,019 |
| 340 - 3 | CONCRETE ROLL CURB, MAG DET 220, TYPE C | L.F. | | | 55.0 | | | | | | | | | | | | | | | | | | 55 |
| 340 - 4 | CONCRETE SIDEWALK, COP DET P-1230 | S.F. | 620.0 | 2317.0 | 1512.0 | 2350.0 | 1642.4 | | | | | | 2188.5 | | | | | | | | | | 10,630 |
| 340 - 5 | CONCRETE DRIVEWAY, 5" SECTION | S.F. | 160.0 | 254.0 | 270.0 | 150.0 | | | 650.0 | 170.0 | 364.0 | 290.0 | | | | | | | | | | | 2,308 |
| 340 - 6 | CONCRETE DRIVEWAY, 9" SECTION | S.F. | 200.0 | | 605.0 | | | | | | 808.0 | 600.0 | | | | | | | | | | | 2,213 |
| 340 - 7 | CONCRETE SIDEWALK RAMP, COP DET P-1236, TYPE D | EA. | | 2.0 | 2.0 | | 2.0 | | | | | | 5.0 | | | | | | | | | | 11 |
| 345 - 1 | ADJUST BOX FRAME AND COVER | EA. | | 2.0 | 3.0 | 3.0 | 2.0 | | 1.0 | 7.0 | 4.0 | | 4.0 | | | | | | | | | | 26 |
| 345 - 2 | ADJUST MANHOLE FRAME AND COVER | EA. | 1.0 | 3.0 | 3.0 | 1.0 | 1.0 | 1.0 | 1.0 | 5.0 | 2.0 | 1.0 | 3.0 | 1.0 | | | 1.0 | | | | | | 24 |
| 350 - 1 | REMOVE FENCE, HANDRAIL, GUARDRAIL, POSTS, AND BARRICADES | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 2 | REMOVE SINGLE CURB AND CURB AND GUTTER | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 3 | REMOVE PIPE | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 4 | REMOVE SPILLWAYS AND CHANNEL LINING | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 5 | REMOVE ASPHALT PAVEMENT | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 6 | REMOVE SIDEWALK AND DRIVEWAYS | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 7 | REMOVE BOX CULVERTS AT THOMAS ROAD | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 8 | MISCELLANEOUS REMOVALS | L.S. | | | | | | | | | | | | | | | | | | | | | 1 |
| 350 - 9 | REMOVE TREES | L.S. | | | | | | | | | | | | | 2.0 | 3.0 | | | | | | | 5 |
| 401 - 1 | TRAFFIC CONTROL | L.S. | | | | | | | | | | | | | | | | | | | 1.0 | | 1 |
| 401 - 2 | TRAFFIC SIGNALIZATION | L.S. | | | | | | | | | | | | | | | | | | | 1.0 | | 1 |

| ITEM # | BID ITEM | UNIT | SHEET C3-1 | SHEET C3-2 | SHEET C3-3 | SHEET C3-4 | SHEET C3-5 | SHEET C3-6 | SHEET C3-7 | SHEET C3-8 | SHEET C3-9 | SHEET C3-10 | SHEET C3-11 | SHEET C3-12 | SHEET C4-1 | SHEET C4-2 | SHEET C5-1 | SHEET C5-2 | SHEET C9-1 | SHEET C9-2 | SHEET C10-1 | SHEET BMH-1 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 401 - 3 | THOMAS ROAD DETOUR | L.S. | | | | | | | | | | | | | | | | | | | 1.0 | | 1 |
| 401 - 4 | OFF-DUTY UNIFORMED OFFICER | M.H. | | | | | | | | | | | | | | | | | | | 2000.0 | | 2,000 |
| 401 - 5 | EMERGENCY VEHICLE CROSSING | L.S. | | | | | | | | | | | | | | | | | | | 1 | | 1 |
| 405 | TYPE 'A' SURVEY MARKER, MAG DET 120-1 | EA. | | | | | 1.0 | | | | | | 2.0 | | | | | | | | | | 3 |
| 415 - 1 | TYPE 'B' BARRICADE, COP DET P-1106 | L.F. | | | | | 127.0 | | | | | | | | | | | | | | | | 127 |
| 415 - 2 | STEEL GUARDRAIL, MAG DET 135-1, 135-2, AND 135-3 | L.F. | | | | | | | | | | | | | 141.0 | 63.0 | | | | | | | 204 |
| 420 | CHAIN LINK FENCE | L.F. | | | | | | | | | | | | | | | 231.0 | 211.0 | | | | | 442 |
| 505 - 1 | DOUBLE 18'x 10' CONC. BOX CULVERT | L.F. | | | | | | | | | | | | | | | 200.0 | 300.0 | | | | | 500 |
| 505 - 2 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 402 | L.S. | | | | | | | | | | | | | | | | | | 44.0 | | | 44 |
| 505 - 3 | CONCRETE ENCASEMENT FOR 45" WATER LINE, MAG DET 402 | L.F. | | | | | | | | | | | | | | | | | 40.0 | | | | 40 |
| 505 - 4 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 402 | L.F. | | | | | | | | | | | | | | | | | | 31.0 | | | 31 |
| 505 - 5 | CONCRETE ENCASEMENT FOR 45" WATER LINE FITTINGS | L.F. | | | | | | | | | | | | | | | | | 48.0 | | | | 48 |
| 505 - 6 | CONCRETE ENCASEMENT FOR 54" WATER LINE FITTINGS | L.F. | | | | | | | | | | | | | | | | | | 55.0 | | | 55 |
| 505 - 7 | CONCRETE ENCASEMENT FOR 12" WATER LINE, MAG DET 404 | L.F. | | | | | | | | | | | | | | | | | | 14.0 | | | 14 |
| 505 - 8 | CONCRETE ENCASEMENT FOR 54" WATER LINE, MAG DET 404 | L.F. | | | | | | | | | | | | | | | | | | 8.0 | | | 8 |
| 505 - 9 | CONCRETE ENCASEMENT FOR 15" SANITARY SEWE LINE, MAG DET 404 | L.F. | | | | | | | | | | | | | | | | | | 30.0 | | | 30 |
| 505 - 10 | CONCRETE CAP OVER EXISTING 48" WATER LINE | L.F. | | | 250 | 200 | | 375 | 375 | 300 | 350 | | | | | | | | | | | | 1,850 |
| 505 - 11 | CONCRETE APRON | S.F. | 51.5 | 413.9 | | | | 39.1 | | | 38.4 | | | | | | | | | | | | 543 |
| 505 - 12 | TYPE 'A' SPILLWAYS | S.Y. | | | | | | | | | | | | | | | | 293.9 | | | | | 294 |
| 505 - 13 | DET P-1570 TYPE "N" SINGLE CATCH BASINS | EA. | | 1.0 | | | | 1.0 | | | 1.0 | | | | | | | | | | | | 3 |
| 505 - 14 | DET P-1570 TYPE "N" DOUBLE CATCH BASINS | EA. | 1.0 | | | | | | | | | | | | | | | 1.0 | | | | | 2 |
| 505 - 15 | DET P-1570 TYPE "N" 4 GRATE CATCH BASINS | EA. | | 1.0 | | | | | | | | | | | | | | 1.0 | | | | | 2 |
| 505 - 16 | CONCRETE SCUPPERS, MAG 206.1 AND 206.2 | EA. | | 2.0 | 1.0 | 1.0 | 1.0 | | | | | | | | | | | | | | | | 5 |
| 505 - 17 | 4-INCH CONCRETE SLAB | S.Y. | | | | | | | | | | | | | | | 938.9 | 1307.2 | | | | | 2,246 |
| 515 | FIXED BOLLARDS | EA. | | | | | | | | | | | | | | | | 26.0 | | | | | 26 |
| 520 | HANDRAIL | L.F. | | 40.0 | | | | | | | | | 22.0 | | | | | | | | | | 62 |
| 525 - 1 | CHANNEL SIDE SLOPE PROTECTION | S.Y. | | | | | | | | | | | | | 228.0 | 162.0 | | | | | | | 390 |
| 525 - 2 | TYPE 'B' SPILLWAYS | S.Y. | | 75.1 | 60.0 | | 125.8 | 57.4 | 48.2 | 25.1 | 20.8 | 19.5 | | | | | | | | 300.0 | | | 732 |
| 525 - 3 | PIPE OUTLET PROTECTION | S.Y. | 159.8 | 171.7 | | | | 115.0 | | | 115.0 | | | | | | | | | | | | 562 |
| 610 - 1 | WATER LINE RELOCATION (12 INCH AT THOMAS) | L.F. | | | | | | | | | | | | | | | | | 66.0 | | | | 66 |
| 610 - 2 | WATER LINE CONSTRUCTION (12 INCH AT VIRGINIA) | L.F. | | | | | | | | | | | | | | | | | | 125 | | | 125 |
| 610 - 3 | WATER LINE RELOCATION (45 INCH) | L.S. | | | | | | | | | | | | | | | | | 85.0 | | | | 85 |
| 610 - 4 | WATER LINE RELOCATION (54 INCH) | L.F. | | | | | | | | | | | | | | | | | | 111.0 | | | 111 |
| 610 - 5 | RETROFIT RESTRAINED JOINTS FOR 54" WATER | EA. | | | | | | | | | | | | | | | | | | 16.0 | | | 16 |
| 610 - 6 | RELOCATE FIRE HYDRANTS | EA. | | 1.0 | 1.0 | | | | | | | | | | | | | | | | | | 2 |
| 610 - 7 | CUT AND PLUG SANITARY SEWER LINE (8 INCH) | EA. | | | | | | | | | | | | | | | | 2.0 | | | | | 2 |
| 610 - 8 | WATER SERVICE RELOCATION | L.F. | | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | | | | | | | | | | | | 800 |

| ITEM # | BID ITEM | UNIT | SHEET C3-1 | SHEET C3-2 | SHEET C3-3 | SHEET C3-4 | SHEET C3-5 | SHEET C3-6 | SHEET C3-7 | SHEET C3-8 | SHEET C3-9 | SHEET C3-10 | SHEET C3-11 | SHEET C3-12 | SHEET C4-1 | SHEET C4-2 | SHEET C5-1 | SHEET C5-2 | SHEET C9-1 | SHEET C9-2 | SHEET C10-1 | SHEET BMH-1 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 618 - 1 | 18" RGRCP | L.F. | 92.0 | 128.0 | | | | 80.0 | | | 73.0 | | | | | | | | | | | | 373 |
| 618 - 2 | 24" RGRCP | L.F. | | | | | | | | | | | | | | | | 13.0 | | | | | 13 |
| 618 - 3 | 30" RGRCP | L.F. | | | | | | | | | | | | | | | | 15.0 | | | | | 15 |
| 618 - 4 | 36" RGRCP | L.F. | | | | | | | | | | | | | | | | 6.0 | | | | | 6 |
| 618 - 5 | 42" RGRCP | L.F. | | 104.0 | | | | | | | | | | | | | | | | | | | 104 |
| 618 - 6 | 48" RGRCP | L.F. | | | | | 68.0 | | | | | | | | | | | | | | | 19 | 87 |
| 618 - 7 | PIPE PLUG, MAG DET. 427 | L.S. | | | | | 2.0 | | | 2.0 | | | | | | | | | | | | | 4 |
| 618 - 8 | TYPE "B" PIPE SUPPORT MAG DET. 403-1,2 | EA. | 1 | 1 | | | 1 | | | | | | | | | | | | | | | | 3 |
| 618 - 9 | TYPE "C" PIPE SUPPORT MAG DET. 403-1,2 | EA. | | | | | | | | | 1 | | | | | | | | | | | | 1 |
| 625 - 1 | ACCESS MANHOLES | EA. | | | | | | | | | | | | | | | | 1.0 | | | | | 1 |
| 625 - 2 | "BUBBLE-UP" MANHOLE | EA. | | | | | | | | | | | | | | | | | | | | 1 | 1 |