

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR GRADING, STORM SEWER, BIT SURFACING

County State Aid Highway No. **5**

Between C.S.A.H. # 22 And C.R. # 65

From 100 S. OF THE SE. OF SEC. 20 ON THE EAST LINE SEC. 29, T.33N, R.25W To 2200' N. OF THE SE. COR. OF SEC. 20, ON THE EAST LINE OF SEC. 20, T.33N, R.25W

Give proper reference to Sections, Township and Range

GROSS LENGTH 2300 FEET 0.44 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 2300 FEET 0.44 MILES

INDEX OF SHEETS

- Sheet No. 1. Title Sheet & Layout Map
- No. 2-3. Est. Quantities & Typical Sec. & Drainage Chart
- No. 4. Plan & Profile
- No. 5-8. Cross Sections

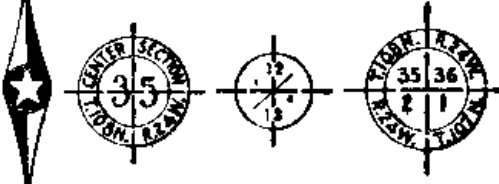
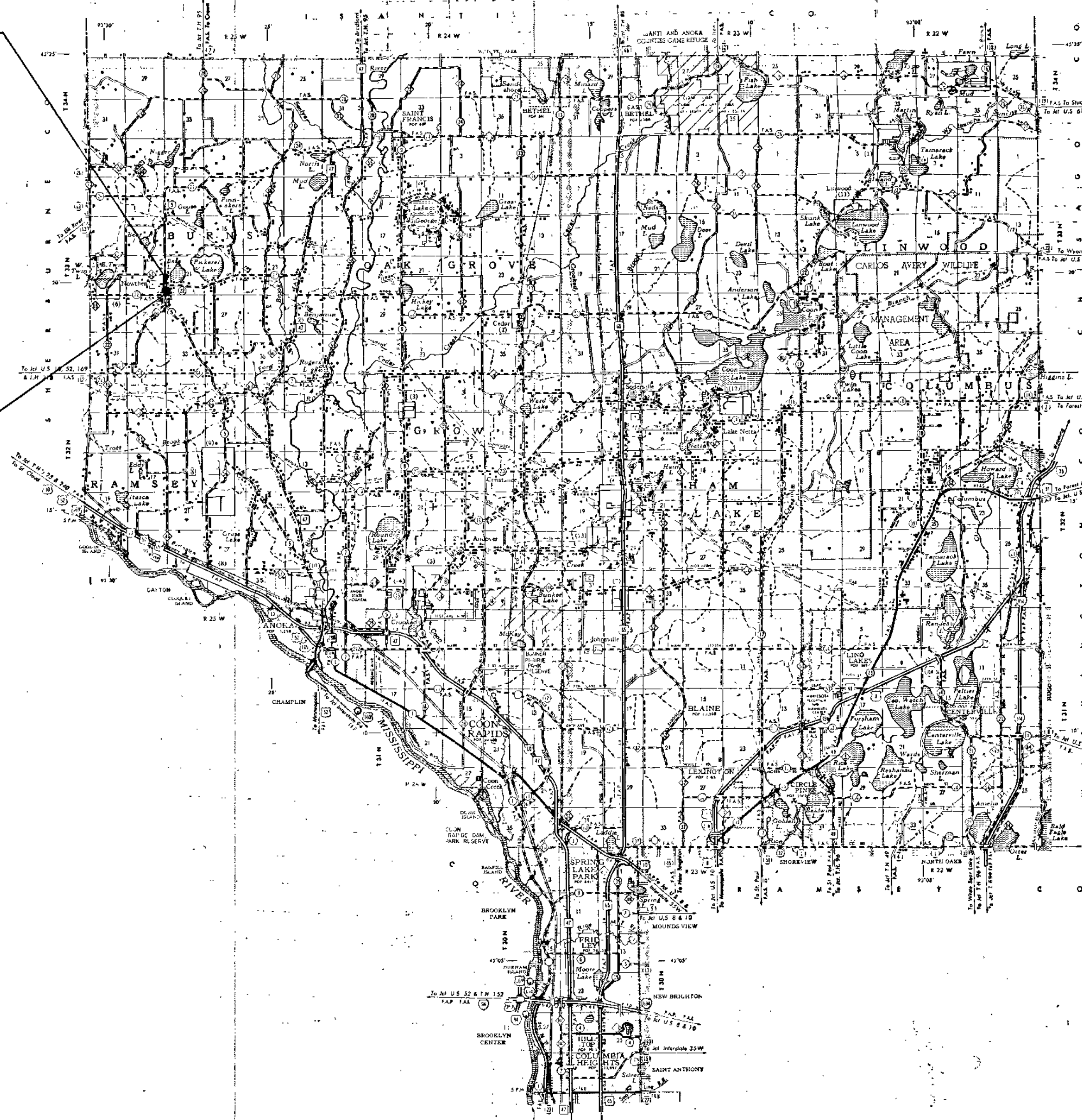
SCALE: PLAN 1" = 100'
PROFILE VERT 1" = 10'
HORZ. 1" = 100'
X - SECT. 1" = 10'

CONVENTIONAL SIGNS

- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- STATEMENT LINE
- RIGHT OF WAY LINE
- PRESUMED RIGHT OF WAY LINE
- CONTRIBUTION OF ACCESS LINE
- PROPERTY LINE (Color Line)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY LINE
- RIVER OR CREEK
- DEE RUN
- DRAINAGE DIST.
- ELECTRIC POWER LINE
- TELEPHONE OR TELEGRAPH LINE
- JOINT TELEPHONE AND POWER
- CONDUIT
- TELEPHONE CABLE (ASBUL)
- TELEPHONE CABLE UNDERGROUND
- POWER CABLE UNDERGROUND
- GAS MAIN
- DUCTILE
- SEWER MAIN
- GUARD RAIL
- BARRER WIRE FENCE
- WIRE WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD WOOD FENCE
- STONE WALL OR FENCE
- MUD
- WATER PIPE
- SEWER PIPE
- DRAIN TILE
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATCH BASIN
- MANHOLE
- FIRE HYDRANT
- STREET LIGHT
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING GATE
- CATTLE GUARD
- DIPPER (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F FRAME
- C CONCRETE
- S STONE
- B BRICK
- ST STEEL
- IRON PIPE OR ROW
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY
- MENARD CORNER

END PROJECT S.A.P. 02-605-03
STA. 24+00

BEGIN PROJECT S.A.P. 02-605-03
STA. 1+00



DESIGN DESIGNATION

ADT (CURRENT YEAR) 1060
ADT (FUTURE YEAR) 2070 (20 YEARS)
T (HEAVY COMMERCIAL)
9 Ton Design A-6 Soil Factor
Design Speed 40 MPH
Design Speed not achieved at:
STA. _____ TO STA. _____ MPH
STA. _____ TO STA. _____ MPH

SPECIFICATIONS

THE "STANDARD" SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, DATED JAN. 1, 1974, AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS DATED APRIL, 1976 SHALL GOVERN

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Paul K. Knud COUNTY ENGINEER DATE 9/24/76

ANOKA COUNTY REG. NO. 6549

RECOMMENDED FOR APPROVAL _____ 19____ DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL _____ 19____

APPROVED _____ 19____ STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S.A.P. 02-605-03

FORM MHD 21185 - 10 - 58

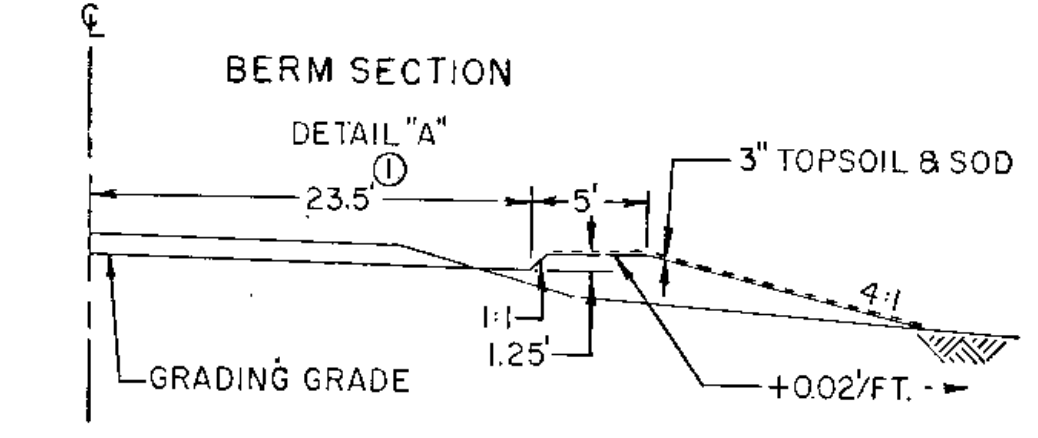
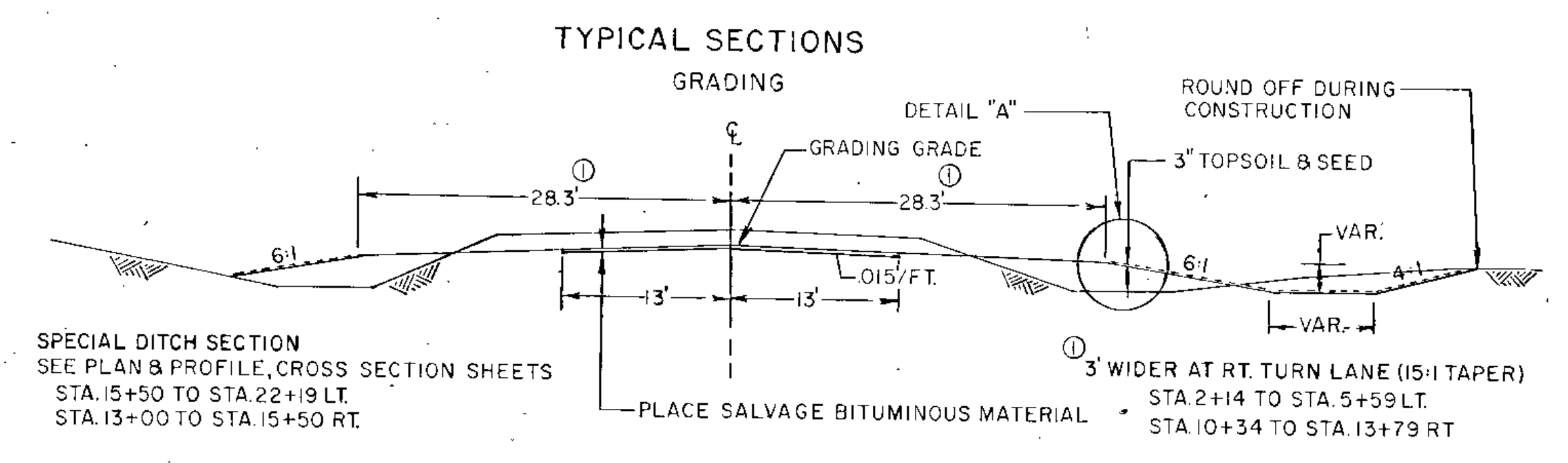
STATEMENT OF ESTIMATED QUANTITIES

| ITEM NO. | ITEM | UNIT | TOTAL ESTIMATED QUANTITIES | TOTAL FINAL QUANTITIES |
|------------|--|----------|----------------------------|------------------------|
| 2031.503 | FIELD LABORATORY TYPE B | EACH | 1 | |
| 2104.521 | SALVAGE CULVERT PIPE | LIN. FT. | 95 | |
| ① 2105.501 | COMMON EXCAVATION | CU. YD. | 5,893(P) | |
| ② 2105.531 | SALVAGED BITUMINOUS MIXTURE (P) | CU. YD. | 297(P) | |
| ② 2105.535 | SALVAGED TOPSOIL FROM STOCKPILE | CU. YD. | 153 | |
| ③ 2130.501 | WATER | M-GAL | 50 | |
| ④ 2211.501 | AGGREGATE BASE, CLASS 5 | TON | 1,300 | |
| 2331.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 110 | |
| 2331.514 | BASE COURSE MIXTURE | TON | 2,500 | |
| 2341.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 77 | |
| ⑤ 2341.508 | WEARING COURSE MIXTURE | TON | 675 | |
| 2341.510 | BINDER COURSE MIXTURE | TON | 650 | |
| 2357.502 | BITUMINOUS MATERIAL FOR TACK COAT | GAL | 730 | |
| 2501.511 | 15" C. M. PIPE CULVERT | LIN. FT. | 86 | |
| 2501.511 | 24" R. C. PIPE CULVERT, CLASS - 3 | LIN. FT. | 54 | |
| 2501.515 | 15" C. M. PIPE APRON | EACH | 4 | |
| 2501.515 | 12" R. C. PIPE APRON | EACH | 2 | |
| 2501.515 | 15" R. C. PIPE APRON | EACH | 1 | |
| 2501.515 | 24" R. C. PIPE APRON | EACH | 2 | |
| 2503.511 | 12" R. C. PIPE SEWER, CLASS 2 | LIN. FT. | 71 | |
| 2503.511 | 15" R. C. PIPE SEWER, CLASS 2 | LIN. FT. | 1,490 | |
| 2506.506 | CONSTRUCT MANHOLES, DESIGN A OR F | LIN. FT. | 7.1 | |
| 2506.507 | CONSTRUCT CATCH BASINS, DESIGN A OR F | LIN. FT. | 18.1 | |
| 2506.507 | CONSTRUCT CATCH BASINS, DESIGN C OR G | LIN. FT. | 18.3 | |
| 2506.516 | CASTING ASSEMBLIES | EACH | 9 | |
| ⑥ 2575.501 | ROADSIDE SEEDING | ACRE | 2.05(P) | |
| ⑥ 2575.502 | SEED, MIXTURE NO. 5 | POUND | 123 | |
| 2575.505 | SODDING | SQ. YD. | 2,000 | |
| ⑦ 2575.511 | MULCH MATERIAL, TYPE 1 | TON | 4.1 | |
| ⑦ 2575.519 | DISC ANCHORING | ACRE | 2.05(P) | |
| ⑦ 2575.531 | COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 | TON | 0.51 | |

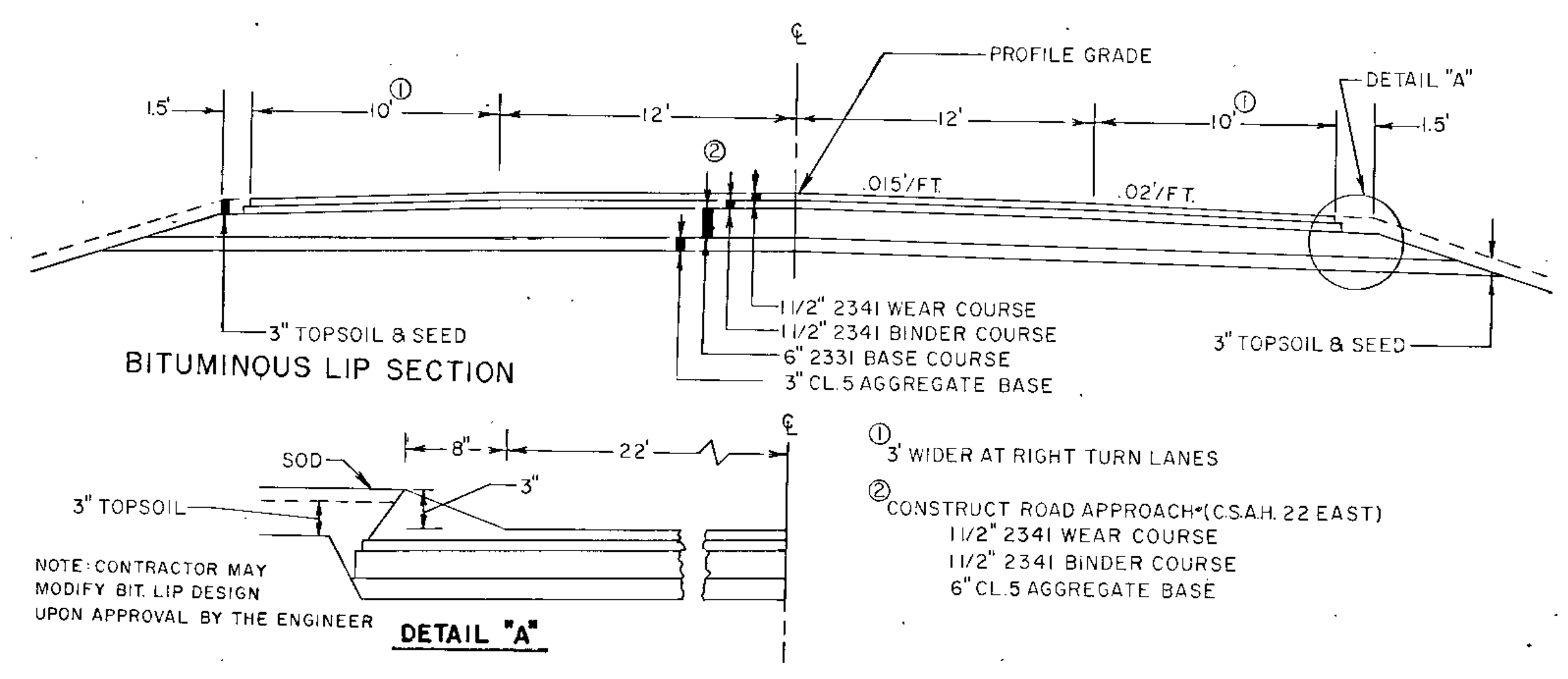
- ① INCLUDES HOLDING POND EXCAVATION QUANTITY AND SALVAGE TOPSOIL QUANTITY, TO BE USED IN SOD AREAS.
- ② FOR DUST CONTROL.
- ③ INCLUDES 120 TON FOR ENTRANCES.
- ④ INCLUDES QUANTITY FOR BITUMINOUS LIP AND 20 TON FOR BITUMINOUS ENTRANCES.
- ⑤ INCLUDES QUANTITY FOR HOLDING POND AREA.

BASIS OF PLANNED QUANTITIES

- 2211 AGGREGATE BASE CLASS 5, 145 LBS. PER CU. FT. COMPACTED
- 2331 PLANT MIXED BASE COURSE
BITUMINOUS MIXTURE 660 LBS. PER S.Y. PER 6" THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 4.5% BY WT.
- 2341 PLANT MIXED WEARING COURSE
BITUMINOUS MIXTURE 165 LBS. PER S.Y. PER 1 1/2" THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 6.5% BY WT.
- 2341 PLANT MIXED BINDER COURSE
BITUMINOUS MIXTURE 165 LBS. PER S.Y. PER 1 1/2" THICKNESS
BITUMINOUS MATERIAL FOR MIXTURE 5% BY WT.
- 2357 BITUMINOUS MATERIAL FOR TACK COAT, 0.05 GAL. PER S.Y.



TYPICAL BASE & SURFACING SECTION



SPECIAL DETAILS

THE CONTRACTOR SHALL REMOVE SUFFICIENT TOPSOIL MATERIAL WITHIN THE EXCAVATION AREAS AND AREAS ON WHICH EMBANKMENT WILL BE PLACED AND IN THE AREA OF THE HOLDING POND AND DISPOSAL AREA, STOCKPILE IF NECESSARY, AND USE IT FOR TOPSOIL COVERING ON THE DISPOSAL AREA, NEW SLOPES AND DITCH BOTTOMS IN AREAS TO BE SEEDED. THIS WILL REQUIRE APPROXIMATELY 828 CU. YD. TO PROVIDE A MINIMUM COVER OF 3". SALVAGING TOPSOIL SHALL BE CONSIDERED INCIDENTAL TO THE EXCAVATION ITEMS. THE AREAS TO BE SEEDED ARE STA. 10+50 TO STA. 24+00 LEFT AND STA. 10+50 TO STA. 16+00 RIGHT.

ANOKA COUNTY SHALL FURNISH AND STOCKPILE 153 CU. YD. OF TOPSOIL FOR SOD AREA (STA. 1+00 TO STA. 10+50) WITHIN 0.50 MILES OF THE PROJECT. THE CONTRACTOR WILL BE PAID FOR THE LOADING, HAULING, SPREADING AND ALL OTHER OPERATIONS AS ITEM 2105.535, SALVAGED TOPSOIL FROM STOCKPILE, AND NO ADDITIONAL COMPENSATION SHALL BE MADE THEREFORE.

EXCESS MATERIAL (APPROXIMATELY 1900 CU. YD.) SHALL BE DISPOSED OF IN THE AREA OF THE HOLDING POND AND REMAINING EXCESS MATERIAL FROM ROADWAY CONSTRUCTION (APPROXIMATELY 526 CU. YD.) DISPOSED OF AT THE DIRECTION OF THE ENGINEER. THIS WILL BE CONSIDERED INCIDENTAL TO GRADING OPERATIONS AND NO ADDITIONAL COMPENSATION SHALL BE MADE THEREFORE.

SALVAGE BITUMINOUS MIXTURE QUANTITIES ARE COMPUTED AS THE VOLUME OF BITUMINOUS IN ITS ORIGINAL POSITION BASED ON AVERAGE DEPTH OF 0.3' AND AVERAGE WIDTH OF 24'. PAYMENT FOR SALVAGED BITUMINOUS WILL BE MADE ON THE BASIS OF PLANNED QUANTITIES.

DRAINAGE CHART

| STRUCT NO | STATION | LOCATION | CONSTRUCTION | | TOP OF CASTING OR INLET ELEV. | SUMP | OUTLET ELEV. | CASTING ASSY. TYPE | REMOVE | ADJUST | RECON-STRUCT | FURNISH AND INSTALL SEWER PIPE | | | | | | CLASS | APRONS | | DRAINS TO | | INLET ELEV. | SODDING SQ. YD. | REMARKS |
|--------------------|---------|----------|--------------|---------------------|-------------------------------|------|--------------|--------------------|--------|--------|--------------|--------------------------------|------------|------------|------------|-----|--------|-------|---------|---------|-----------|-----|--|------------------------------|---------|
| | | | DESIGN | PAY HEIGHT LIN. FT. | | | | | | | | 12" R.C.P. | 15" R.C.P. | 24" R.C.P. | 15" C.M.P. | RCP | C.M.P. | | STR. NO | GRADE % | | | | | |
| | | | | | | | | | | | | | | | | | | | | | M.H. | CB. | | | |
| CB 1 | 3+15 | 24.6' LT | Cor G | 3.3 | 937.65 | 0.2 | 934.30 | A | | | | | | | | 2 | | | 3 | 0.30 % | | | | | |
| APRON 1A | 3+15 | 33.0' LT | | | 935.50 | | | | | | | | | | | 2 | 1 | | 1 | 944 % | | 8 | | | |
| CB 2 | 3+15 | 21.6' RT | Cor G | 3.2 | 937.85 | 0.2 | 934.60 | A | | | | | | | | 2 | | | 1 | 0.64 % | | | | | |
| INLET 2A | 1+02 | 43' RT | | | 936.10 | | | | | | | | | | | 2 | | | 2 | 0.61 % | | 8 | SALVAGE 15" C.M.P. APRON CONNECT 15" R.C.P. TO EXISTING 15" C.M.P. | | |
| APRON 2B | 3+15 | 33' RT | | | 935.50 | | | | | | | | | | | 2 | 1 | | 2 | 5.00 % | | | | | |
| CB 3 | 5+50 | 22.2' LT | A or F | 4.9 | 938.54 | 0.2 | 933.60 | A | | | | | | | | 2 | | | 6 | 0.30 % | | | | | |
| CB 4 | 5+50 | 30' LT | Cor G | 3.3 | 937.00 | 0.2 | 933.98 | C | | | | | | | | 2 | | | 3 | 2.00 % | | | | | |
| CB 5 | 5+50 | 21.6' RT | Cor G | 4.0 | 938.74 | 0.2 | 934.68 | A | | | | | | | | 2 | | | 3 | 2.00 % | | | | | |
| CB 6 | 7+50 | 21.6' LT | A or F | 6.3 | 939.30 | 0.2 | 933.00 | A | | | | | | | | 2 | | | 8 | 0.30 % | | | | | |
| CB 7 | 7+50 | 30' LT | Cor G | 4.5 | 937.60 | 0.2 | 933.38 | C | | | | | | | | 2 | | | 6 | 2.00 % | | | | | |
| CB 8 | 10+50 | 21.6' LT | A or F | 6.9 | 939.01 | 0.2 | 932.10 | A | | | | | | | | 2 | | | 9 | 0.30 % | | | | | |
| MH 9 | 13+25 | 21.6' LT | A or F | 7.1 | 938.06 | | 931.28 | B | | | | | | | | 2 | 1 | | OUTLET | 0.30 % | | | | | |
| STORM SEWER OUTLET | 15+50 | 31.9' LT | | | | | 930.61 | | | | | | | | | | | | | | | 9 | | | |
| ENT. PIPE | 11+50 | 48' RT | | | 935.50 | | 935.30 | | | | | | | | | | | 2 | | 0.40 % | | 17 | | | |
| RD. APPROACH PIPE | 13+92 | 50' RT | | | 934.00 | | 933.87 | | | | | | | | | 3 | 2 | | | 0.30 % | | 29 | SALVAGE INP 15" X 55' C.M.P. | | |
| ENT. PIPE | 15+15 | 40' LT | | | 935.00 | | 934.80 | | | | | | | | | | | 2 | | 0.50 % | | 17 | | | |
| INP PIPE | 3+42 | Ø | | | | | | | | | | | | | | | | | | | | | | SALVAGE INP 15" X 40' C.M.P. | |

① THE LOCATION OF ALL STRUCTURES IS TO THE C OF THE STRUCTURE.
 ② T.C. FOR CATCH BASINS IS TOP OF FRAME CASTINGS AT OUTER LINE.

MHD 21166 (9/73)

The following Standard Plates, approved by the Federal Highway Administration, shall apply on this project.

| PLATE NO. | DESCRIPTION |
|-----------|---|
| 0002A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| 3000G | REINFORCED CONCRETE PIPE |
| 3006B | GASKET JOINT FOR R.C. PIPE |
| 3040D | CORRUGATED METAL PIPE |
| 3100F | CONCRETE APRON FOR REINFORCED CONCRETE PIPE |
| 3123G | METAL APRON FOR C.M. PIPE |
| 4000G | MANHOLE OR CATCH BASIN |
| 4002D | MANHOLE OR CATCH BASIN |
| 4005J | MANHOLE OR CATCH BASIN |
| 4006H | MANHOLE OR CATCH BASIN |
| 4011C | PRECAST CONCRETE BASE |
| 4101B | RING CASTING FOR MANHOLE |
| 4110D | COVER CASTING FOR MANHOLE |
| 4126D | CATCH BASIN FRAME CASTING |
| 4140D | SPECIAL GRATE CASTINGS FOR CATCH BASIN |
| 4149C | GRATE CASTING FOR CATCH BASIN |
| 4161E | CURB BOX CASTING FOR CATCH BASIN |
| 8000D | STANDARD BARRICADES |
| 9000B | APPROACHES AND ENTRANCES |
| 9102C | SODDING AT PIPE CULVERT ENDS |

| CASTING ASSEMBLIES | | |
|--------------------|------|--|
| NO. | TYPE | DESCRIPTION |
| 8 | A | GRATE FRAME CASTING NO. 801 GRATE CASTING NO. 810 CURB BOX CASTING NO. 822 |
| 1 | B | RING CASTING NO. 700-7 COVER CASTING NO. 711 |
| 2 | C | RING CASTING NO. 700-7 GRATE CASTING NO. 721 |

| SODDING | | |
|--------------------|--------------------|---------------|
| STATION TO STATION | LOCATION | SQ. YD. |
| 2+14 - 2+75 | 26' TO 57' LT. | 126 |
| 3+36 - 10+00 | 23' TO 37' LT. | 587 |
| 1+00 - 5+80 | 23' TO 56' RT. | 812 |
| 7+68 - 10+50 | 23' TO 38' RT. | 310 |
| PIPE CULVERT ENDS | SEE DRAINAGE CHART | 88 |
| | | TOTAL = 1,923 |

| CONSTRUCTION EASEMENTS | | | |
|------------------------|-------------|---------------|---------------------|
| BEGINNING STATION | END STATION | LEFT OR RIGHT | LIMIT FROM C (FEET) |
| 2+00 | 3+75 | RT. | 48' |
| 2+00 | 5+30 | LT. | 40' |
| 10+40 | 13+60 | RT. | 63' |
| 9+10 | 15+20 | LT. | 43' |
| 14+25 | 16+50 | RT. | 63' |
| 15+20 | 19+25 | LT. | 63' |
| 19+25 | 24+00 | LT. | 250' |
| 21+25 | 22+70 | LT. | 63' |

PLAN
 DATE: _____
 BY: _____
 SUPERVISOR: _____
 CHECKED: _____
 NOTE BOOK: _____
 ALIGNMENT CHECKED: _____
 RT. OF WAY CHECKED: _____
 No. _____

PROFILE
 DATE: _____
 BY: _____
 SUPERVISOR: _____
 CHECKED: _____
 NOTE BOOK: _____
 GRADE CHECKED: _____
 S. M. V. NOTED: _____
 S. M. V. CHECKED: _____
 No. _____

