## PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
PRESENT RIGHT OF WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)

SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F FRAME C CONCRETE
S STONE T TILE
B BRICK ST STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

## UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN

CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR STORM)
SEWER MANHOLE

NOTE SECTION NUMBERS READ FROM THE SOUTH

### PIT DATA

PIT NO. _____ Located in Dead Haul

PIT NO. _____ Located in Dead Haul

RAMSEY COUNTY ACCOUNT NO. 47321
CITY OF MAPLEWOOD PROJECT NO. 86-37

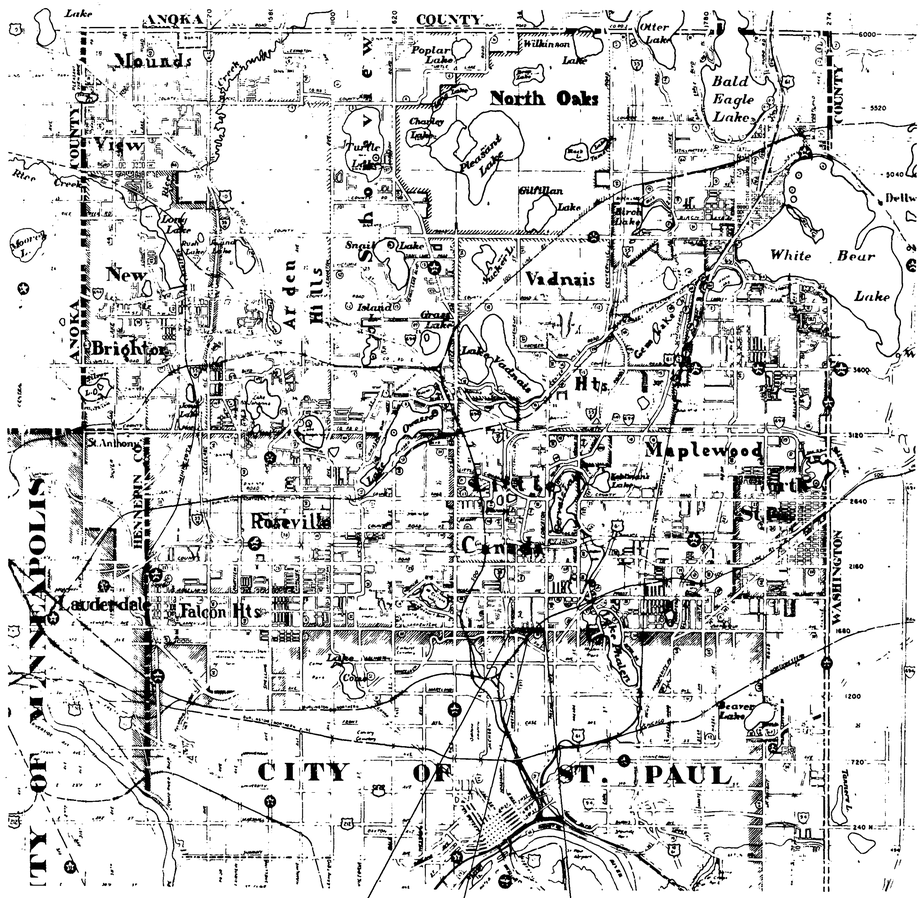
STOPPING SIGHT DISTANCE BASED ON 3.5' HEIGHT OF EYE AND 0.5' HEIGHT OF OBJECT.

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

### TOTAL

| | FEET | | MILES |
|---|---|---|---|
| GROSS LENGTH | 3132.00 | = | 0.5932 |
| BRIDGE LENGTH | 33.36 | = | 0.0063 |
| EXCEPTION | | | |
| NET LENGTH | 3132.00 | = | 0.5932 |

PLAN 10 30 50 / 0 20 40
PROFILE HORIZ 10 30 50 / 0 20 40
PROFILE VERT. 0 5 10
CROSS SECT. 0 5 10
LAYOUT MAP 5280'




BEGIN S.A.P. 138-020-07
BEGIN S.A.P. 62-630-36
STA. 45+23.00

END S.A.P. 138-020-07
END S.A.P. 62-630-36
STA 76+55.00

STA. 65+67.07 TO STA. 66+00.43
BRIDGE NO. 62554

### DESIGN DESIGNATION

| | |
|---|---|
| ADT (CURRENT YEAR) | 7200 |
| ADT. (FUTURE YEAR) | 9900 |
| HCADT | 5 % |
| ΣN18 (20 YEAR) | 800,000 |
| DESIGN LOAD | 9 TON |
| STABILOMETER "R" VALUE | 20 |
| DESIGN SPEED | 40 MPH |
| LOW DENSITY ARTERIAL | |
| NO. OF TRAFFIC LANES | 2 |
| NO. OF PARKING LANES | 2 |

PARCEL NO. 0
TEMPORARY EASEMENT
PERMANENT EASEMENT

# RAMSEY COUNTY
## DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN: FOR GRADING, AGGREGATE BASE, BITUMINOUS BASE AND SURFACING, STORM SEWER, CONCRETE CURB AND GUTTER S.A.P. 62-630-36 & S.A.P. 138-020-07

# CSAH 30
# LARPENTEUR AVENUE

BETWEEN I35E AND EDGERTON ST

FROM: A POINT 545FT. WEST OF THE WEST LINE OF SECTION 17, T29, R22
TO: A POINT 2587FT. EAST OF THE WEST LINE OF SECTION 17, T29, R22

### INDEX OF SHEETS


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2-3 | ESTIMATED QUANTITIES |
| 4-5 | TYPICAL SECTIONS |
| 6 | STRUCTURE SCHEDULE |
| 7 | EX. STRUCTURES & W.M. DETAILS |
| 8 | DRAINAGE DETAILS |
| 9 | MISCELLANEOUS DETAILS |
| 10 | DETOUR SIGNING |
| 11-15 | PLAN AND PROFILE |
| 16 | DRAINAGE PLAN |
| 17 | DRAINAGE PROFILES |
| 18-22 | WATERMAIN PLAN & PROFILE |
| 23-42 | CROSS-SECTIONS |
| 43-45 | DRIVEWAY PROFILES |
| 46-47 | FOR INFORMATION ONLY |


ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: SBC
DATE: 4/12/93

DESIGN ENGR _____ DATE _____
DRAWN BY _____ DATE _____
CHECKED BY _____ DATE _____

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
DATE 11/24/90 REG. NO. 9046 ENGR Gary R. Gray

RECOMMENDED FOR APPROVAL DES STAFF ENGR DATE 10/4/91
RECOMMENDED FOR APPROVAL _____ CONST. ENGR DATE 10/3/88
RECOMMENDED FOR APPROVAL _____ MAINT. ENGR DATE 10/_/93
RECOMMENDED FOR APPROVAL RHL/LKF CONST. ENGR DATE 10/3/88
RECOMMENDED FOR APPROVAL ZLR DESIGN ENGR DATE 10/4/88
RECOMMENDED FOR APPROVAL _____ R.O.W. ENGR DATE 10/5/88
RECOM'D _____ COORDINATED ENGR DATE 10-3-88
RECOM'D Paul Kurtz ASSISTANT COUNTY ENGINEER DATE 8-24-89

RECOMMENDED FOR APPROVAL _____ COUNTY ENGINEER DATE 8-22-89
APPROVED _____ CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 11/19/91
APPROVED _____ CITY OF ST. PAUL-ENGINEER DATE 8-23-89
APPROVED _____ CITY OF MAPLEWOOD-ENGINEER DATE 9/29/89

MINNESOTA DEPARTMENT OF TRANSPORTATION
RECOMMENDED FOR APPROVAL _____ DATE 9-20-91
RECOMMENDED FOR APPROVAL _____ DISTRICT STATE AID ENGINEER DATE 9/18/91
APPROVAL _____ DATE 9/20/91

| PLAN REVISIONS | | |
|---|---|---|
| DATE | SHEET NO. | BY |
| 6-11-91 | 2,3,6,11,12,23-27 | SB |
| 9-5-91 | 1,2,3,4,9,11,12,14,18, 19,20,21,22 | CFBM |
| | | |

28-116

SEH FILE NO. 88019

# STATEMENT OF ESTIMATED QUANTITIES

| | ITEM NO. | ITEM | UNIT | TOTAL ESTIMATED QUANTITIES | TOTAL FINAL QUANTITIES | S.A.P. 62-630-36 RAMSEY CO. ESTIMATED QUANTITIES | S.A.P. 62-630-36 RAMSEY CO. FINAL QUANTITIES | NON-PARTICIPATING CITY OF ST. PAUL ESTIMATED QUANTITIES | NON-PARTICIPATING CITY OF ST. PAUL FINAL QUANTITIES | S.A.P. 138-020-07 MAPLEWOOD ESTIMATED QUANTITIES | S.A.P. 138-020-07 MAPLEWOOD FINAL QUANTITIES | NON-PARTICIPATING MAPLEWOOD ESTIMATED QUANTITIES | NON-PARTICIPATING MAPLEWOOD FINAL QUANTITIES | TOTAL STORM SEWER ESTIMATED QUANTITIES | TOTAL STORM SEWER FINAL QUANTITIES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2021.501 | MOBILIZATION | L.S. | 1 | | 1 | | | | | | | | | |
| | 2101.501 | CLEARING | ACRE | 3 | | | | | | | | | | 3 | |
| | 2101.502 | CLEARING | TREE | 67 | | 67 | | | | | | | | | |
| | 2101.506 | GRUBBING | ACRE | 3 | | | | | | | | | | 3 | |
| | 2101.507 | GRUBBING | TREE | 67 | | 67 | | | | | | | | | |
| | 2104.501 | REMOVE GUARDRAIL | L.F. | 440 | | 440 | | | | | | | | | |
| | 2104.501 | REMOVE CURB AND GUTTER | L.F. | 135 | | 135 | | | | | | | | | |
| | 2104.501 | REMOVE STORM SEWER PIPE | L.F. | 65 | | 65 | | | | | | | | | |
| | 2104.505 | REMOVE CONCRETE WALK | S.Y. | 70 | | 70 | | | | | | | | | |
| | 2104.505 | REMOVE CONCRETE DRIVEWAY PAVEMENT | S.Y. | 135 | | 135 | | | | | | | | | |
| | 2104.509 | REMOVE CATCH BASINS | EACH | 14 | | 14 | | | | | | | | | |
| | 2104.509 | REMOVE MANHOLE | EACH | 1 | | 1 | | | | | | | | | |
| | 2104.523 | SALVAGE CASTING ASSEMBLIES | EACH | 15 | | 15 | | | | | | | | | |
| | 2105.501 | COMMON EXCAVATION (P) | C.Y. | 11920 | | 11920 | | | | | | | | | |
| 4 | 2105.515 | UNCLASSIFIED EXCAVATION (P) | C.Y. | 14900 | | | | | | | | | | 14900 | |
| | 2105.507 | SUBGRADE EXCAVATION (P) | C.Y. | 20900 | | 20900 | | | | | | | | | |
| 4 4 | 2105.522 | SELECT GRANULAR BORROW (C.V.) | C.Y. | 11200 | | 11200 | | | | | | | | | |
| | 2105.526 | SELECT TOPSOIL BORROW (L.V.) | C.Y. | 1700 | | 1700 | | | | | | | | | |
| | 2105.535 | SALVAGE TOPSOIL (L.V.) | C.Y. | 1600 | | 1600 | | | | | | | | | |
| | 2130.501 | WATER, DUST CONTROL | (M)GAL. | 100 | | 100 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | 2211.501 | AGG. BASE CLASS 5, 100% CRUSHED | TON | 7325 | | 7325 | | | | | | | | | |
| | 2232.501 | PAVEMENT PROFILING | S.Y. | 2500 | | 2500 | | | | | | | | | |
| | 2331.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 370 | | 370 | | | | | | | | | |
| | 2331.510 | BINDER COURSE MIXTURE | TON | 1700 | | 1700 | | | | | | | | | |
| | 2331.514 | BASE COURSE MIXTURE | TON | 4475 | | 4475 | | | | | | | | | |
| | 2331.531 | TEMPORARY LANE MARKING | ROAD STA | 35 | | 35 | | | | | | | | | |
| | 2104.513 | SAWCUT BITUMINOUS PAVEMENT 7" DEPTH | L.F. | 1270 | | 1270 | | | | | | | | | |
| | 2361.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 69 | | 69 | | | | | | | | | |
| | 2361.508 | WEARING COURSE MIXTURE (MOD.) | TON | 1135 | | 1135 | | | | | | | | | |
| | 0341.605 | BITUMINOUS DRIVEWAY RESTORATION | S.Y. | 1115 | | 1115 | | | | | | | | | |
| | 2357.502 | BITUMINOUS MATERIAL FOR TACK COAT | GAL. | 2880 | | 2880 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 4 | 0411.603 | MASONRY UNIT RETAINING WALL | S.F. | 2300 | | 2300 | | | | | | | | | |
| | 2442.501 | REMOVE EXISTING BRIDGE | L.S. | 1 | | 1 | | | | | | | | | |
| | 2451.507 | GRANULAR BEDDING (L.V.) | C.Y. | 100 | | | | | | | | 50 | | 50 | |
| | 2451.511 | COARSE FILTER AGGREGATE (L.V.) | C.Y. | 500 | | | | | | | | 100 | | 400 | |
| | | | | | | | | | | | | | | | |
| 4 | 2501.515 | 12" RC PIPE APRON | EACH | 2 | | | | | | | | | | 2 | |
| | 2501.515 | 18" RC PIPE APRON W/TRASH GUARD | EACH | 2 | | | | | | | | | | 2 | |
| | 2501.515 | 36" RC PIPE APRON W/TRASH GUARD | EACH | 1 | | | | | | | | | | 1 | |
| | 2501.515 | 48" RC PIPE APRON W/TRASH GUARD | EACH | 1 | | | | | | | | | | 1 | |
| | 2502.541 | 4" PERF PE PIPE DRAIN W/FILTER SOCK | L.F. | 3305 | | 3305 | | | | | | | | | |
| | 2503.541 | 12" RC PIPE SEWER, DES. 3006, CL V | L.F. | 280 | | | | | | | | | | 280 | |
| | 2503.541 | 15" RC PIPE SEWER, DES. 3006, CL. III | L.F. | 1219 | | | | | | | | | | 1219 | |
| | 2503.541 | 15" RC PIPE SEWER, DES. 3006, CL IV | L.F. | 140 | | | | | | | | | | 140 | |
| 4 4 | 2503.541 | 18" RC PIPE SEWER, DES. 3006, CL. III | L.F. | 412 | | | | | | | | | | 412 | |
| | 2503.541 | 18" RC PIPE SEWER, DES. 3006, CL. IV | L.F. | 265 | | | | | | | | | | 265 | |
| | 2503.541 | 21" RC PIPE SEWER, DES. 3006, CL. III | L.F. | 261 | | | | | | | | | | 261 | |
| | 2503.541 | 24" RC PIPE SEWER, DES. 3006, CL. III | L.F. | 774 | | | | | | | | | | 774 | |
| 2 | 2503.541 | 30" RC PIPE SEWER, DES. 3006, CL. III | L.F. | 144 | | | | | | | | | | 144 | |
| 2 | 2503.541 | 36" RC PIPE SEWER, DES. 3006, CL. IV | L.F. | 300 | | | | | | | | | | 300 | |
| | 2503.541 | 42" RC PIPE SEWER, DES. 3006, CL. IV | L.F. | 658 | | | | | | | | | | 658 | |
| | 2503.541 | 48" RC PIPE SEWER, DES. 3006, CL. IV | L.F. | 172 | | | | | | | | | | 172 | |
| 3 | 2506.506 | CONSTRUCT MANHOLE, DESIGN B | L.F. | 53 | | | | | | | | | | 53 | |
| | 2506.506 | CONSTRUCT MANHOLE, DESIGN C | L.F. | 44 | | | | | | | | | | 44 | |
| | 2506.506 | CONSTRUCT MANHOLE, DESIGN D | L.F. | 41 | | | | | | | | | | 41 | |
| 3 | 2506.506 | CONSTRUCT MANHOLE, DESIGN E | L.F. | 16 | | | | | | | | | | 16 | |
| 4 | 2506.509 | CONSTRUCT SPECIAL DRAINAGE STRUCTURE | EACH | 2 | | | | | | | | | | 2 | |
| | 2506.507 | CONSTRUCT CATCH BASIN, DESIGN B-1 | L.F. | 35 | | | | | | | | | | 35 | |
| | 2506.507 | CONSTRUCT CATCH BASIN, DESIGN D | L.F. | 6 | | | | | | | | | | 6 | |
| | 2506.507 | CONSTRUCT CATCH BASIN, DESIGN LP4 | L.F. | 38 | | | | | | | | | | 38 | |
| 3 | 2506.507 | CONSTRUCT CATCH BASIN, DESIGN X | L.F. | 58 | | | | | | | | | | 58 | |
| 3 | 2506.507 | CONSTRUCT CATCH BASIN, DESIGN X-X | L.F. | 11 | | | | | | | | | | 11 | |
| | 2506.516 | CAST ASSEM TYPE R-2578 W/CONVEX GRATE | EACH | 6 | | | | | | | | | | 6 | |
| | 2506.516 | CASTING ASSEMBLY TYPE R-3067-V | EACH | 22 | | | | | | | | | | 22 | |
| | 2506.516 | CASTING ASSEMBLY TYPE R-790-02-712 | EACH | 6 | | | | | | | | | | 6 | |
| | 2506.516 | CASTING ASSEMBLY TYPE R-1737 | EACH | 2 | | | | | | | | | | 2 | |
| | 2506.516 | CASTING ASSEMBLY TYPE R-1678 | EACH | 31 | | | | | | | | 14 | | 17 | |
| 4 | 2506.511 | RECONSTRUCT MANHOLE | L.F. | 7 | | | | | | | | | | 7 | |
| 4 | 2521.511 | 2.5" BITUMINOUS WALK | S.F. | 5550 | | | | | | | | | | 5550 | |
| 4 | 2535.501 | BITUMINOUS CURB | L.F. | 580 | | | | | | | | | | 580 | |

## STORM SEWER COST

| | |
|---|---|
| S.A.P. 62-630-36 (RAMSEY CO.) | 60.9 |
| CITY OF ST. PAUL NON-PARTICIPATING | 8.45 |
| S.A.P. 138-020-07 (MAPLEWOOD) | 30.65 |

## BASIS FOR ESTIMATED QUANTITIES

2211.501 AGGREGATE BASE - 140 POUNDS/CU. FT.
2357.502 - BIT. MATERIAL FOR TACK COAT - 0.05 GAL./SQ. YD. PER LIFT
2575.501 - ROADSIDE SEEDING MIXTURE 500 - 50 LBS/ACRE
2575.511 - MULCH MATERIAL (TYPE 1) - 1 TON/ACRE
2575.531 - COMM. FERTILIZER ANALYSIS 10-20-20 - 350 LBS./ACRE
2331.504 - BIT. MATERIAL FOR MIXTURE:
31 BASE AND 31 BINDER - 6.0%/TON
2361.504 - BIT. MATERIAL FOR MIXTURE 61 WEAR - 6.0%/TON

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 4 | CFBM | 5-23-90 | REVISED QUANTITIES |
| 4 | LCH | 7-10-90 | REVISED QUANTITIES |
| 4 | SB | 8-10-91 | REVISED QUANTITIES |
| 4 | CFBM | 9-5-91 | REVISED QUANTITIES & ITEM NO. |

ITEM | DESIGN | CHECKED

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.
Date. 7-23-90 Reg. No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY CO., MINNESOTA

ESTIMATED QUANTITIES

FILE NO. 88019
DATE 1/24/90
2 / 47

# STATEMENT OF ESTIMATED QUANTITIES

| | ITEM NO. | ITEM | UNIT | TOTAL ESTIMATED QUANTITIES | TOTAL FINAL QUANTITIES | S.A.P. 62-630-36 RAMSEY CO. ESTIMATED QUANTITIES | S.A.P. 62-630-36 RAMSEY CO. FINAL QUANTITIES | NON-PARTICIPATING CITY OF ST. PAUL ESTIMATED QUANTITIES | NON-PARTICIPATING CITY OF ST. PAUL FINAL QUANTITIES | S.A.P. 138-020-07 MAPLEWOOD ESTIMATED QUANTITIES | S.A.P. 138-020-07 MAPLEWOOD FINAL QUANTITIES | NON-PARTICIPATING MAPLEWOOD ESTIMATED QUANTITIES | NON-PARTICIPATING MAPLEWOOD FINAL QUANTITIES | TOTAL STORM SEWER ESTIMATED QUANTITIES | TOTAL STORM SEWER FINAL QUANTITIES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2511.501 | RANDOM RIPRAP CLASS III (1) | C.Y. | 38 | | | | | | | | | | 38 | |
| | | | | | | | | | | | | | | | |
| | 2521.501 | 4" CONCRETE WALK | S.F. | 630 | | 630 | | | | | | | | | |
| | 2531.501 | CONCRETE CURB & GUTTER, DES. B624 | L.F. | 6737 | | 4206 | | | | 2531 | | | | | |
| | 2531.507 | 6" CONCRETE DRIVEWAY PAVEMENT | S.Y. | 75 | | 75 | | | | | | | | | |
| | 0531.602 | PEDESTRIAN CURB RAMP | EACH | 14 | | 14 | | | | | | | | | |
| | 2554.501 | TRAFFIC BARRIER DES B 8307 | L.F. | 225 | | 225 | | | | | | | | | |
| | 2554.523 | TWISTED END TREATMENT | EACH | 4 | | 4 | | | | | | | | | |
| 2 | 0557.603 | CEDAR SPLIT RAIL FENCING | L.F. | 700 | | 700 | | | | | | | | | |
| | 0563.601 | TRAFFIC CONTROL | L.S. | 1 | | 1 | | | | | | | | | |
| | 0565.602 | LOOP DETECTOR 6' X 6' | EACH | 4 | | 4 | | | | | | | | | |
| | 0565.602 | LOOP DETECTOR 6' X 20' | EACH | 1 | | 1 | | | | | | | | | |
| | 0565.602 | RELOCATE HANDHOLE | EACH | 1 | | 1 | | | | | | | | | |
| | 2571.503 | F & P TREE RED OAK 2" CAL B & B | TREE | 46 | | 46 | | | | | | | | | |
| | 2573.503 | SILT FENCE, PRE-ASSEMBLED | L.F. | 1400 | | | | | | | | | | 1400 | |
| | 2575.501 | ROADSIDE SEEDING | ACRE | 3 | | 1 | | | | | | | | 2 | |
| | 2575.502 | SEED MIXTURE 500 | POUND | 150 | | 50 | | | | | | | | 100 | |
| | 2575.505 | SODDING TYPE (LAWN AND BOULEVARD) | S.Y. | 10375 | | 10375 | | | | | | | | | |
| | 2575.511 | MULCH MATERIAL, TYPE 1 | TON | 3 | | 1 | | | | | | | | 2 | |
| | 2575.519 | DISC ANCHORING | ACRE | 3 | | 1 | | | | | | | | 2 | |
| | 2575.531 | COMMERCIAL FERTILIZER ANALYSIS 10-20-20 | TON | 0.9 | | 0.4 | | | | | | | | 0.5 | |
| | | | | | | | | | | | | | | | |
| 3 | 0503.603 | REMOVE AND REPLACE SEWER PIPE W/8" PVC | L.F. | 55 | | | | | | | | 55 | | | |
| | 0503.603 | REMOVE AND REPLACE SEWER PIPE W/12" PVC | L.F. | 58 | | | | | | | | 58 | | | |
| | 0503.603 | 4" PVC SCHED. 40 SERV. PIPE | L.F. | 147 | | | | | | | | 147 | | | |
| | 0503.603 | 6" PVC SCHED. 40 SERV. PIPE | L.F. | 147 | | | | | | | | 147 | | | |
| | 0503.602 | 8" X 4" WYE | EACH | 3 | | | | | | | | 3 | | | |
| | 0503.602 | 8" X 6" WYE | EACH | 2 | | | | | | | | 2 | | | |
| | 0503.602 | 12" X 4" WYE | EACH | 3 | | | | | | | | 3 | | | |
| | 0503.602 | 4" SERVICE TAP | EACH | 2 | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | | | |
| | 0504.602 | EXC. & BACKFILL FOR RELOCATED HYDRANT | EACH | 2 | | 2 | | | | | | | | | |
| | 0504.602 | EXC. & BACKFILL FOR AIR VENTS | EACH | 2 | | 1 | | 1 | | | | | | | |
| | 0504.602 | CONNECT TO EXISTING 6" WATERMAIN | EACH | 2 | | 2 | | | | | | | | | |
| | 0504.602 | CONNECT TO EXISTING 8" WATERMAIN | EACH | 1 | | 1 | | | | | | | | | |
| | 0504.602 | CONNECT TO EXISTING 12" WM | EACH | 1 | | 1 | | | | | | | | | |
| | 0504.602 | CONNECT TO EXISTING 30" WM | EACH | 1 | | | | | | | | 1 | | | |
| | 0504.602 | TREATED TIMBERS 6" X 6" X 2' | EACH | 4 | | | | 4 | | | | | | | |
| 3 | 0504.620 | WATERMAIN FITTINGS | LBS. | 2000 | | 1400 | | | | | | 600 | | | |
| | 0504.602 | F & I HYDRANT W/6" GATE VALVE & BOX | EACH | 5 | | 4 | | | | | | 1 | | | |
| | 0504.602 | F & I 6" GATE VALVE & BOX | EACH | 2 | | 2 | | | | | | | | | |
| 3 | 0504.602 | F & I 8" GATE VALVE & BOX | EACH | 6 | | 4 | | | | | | 2 | | | |
| | 0504.602 | ADJUST GATE VALVE BOX | EACH | 6 | | 6 | | | | | | | | | |
| | 0504.602 | ADJUST CURB STOP BOX | EACH | 14 | | 14 | | | | | | | | | |
| | 0504.603 | TRENCH & BACKFILL FOR 1" WATER SERVICE | L.F. | 220 | | 170 | | | | | | 50 | | | |
| | 0504.603 | TRENCH & BACKFILL FOR 16" WM RELO. | L.F. | 607 | | 607 | | | | | | | | | |
| | 0504.603 | TR & BF FOR 16" WM RELO OVER PED TUNNEL | L.F. | 195 | | | | 195 | | | | | | | |
| | 0504.603 | REMOVE 6" WATERMAIN | L.F. | 140 | | 140 | | | | | | | | | |
| | 0504.603 | REMOVE 8" WATERMAIN | L.F. | 100 | | 100 | | | | | | | | | |
| | 0504.603 | REMOVE 12" WATERMAIN | L.F. | 35 | | 35 | | | | | | | | | |
| | 0504.603 | REMOVE 16" WATERMAIN | L.F. | 40 | | 40 | | | | | | | | | |
| | 0504.603 | F & I 6" DIP WATERMAIN | L.F. | 40 | | | | | | | | 40 | | | |
| | 0504.603 | F & I 8" DIP WATERMAIN | L.F. | 1812 | | 1287 | | | | | | 525 | | | |
| | 0504.603 | F & I 12" DIP WATERMAIN | L.F. | 30 | | 30 | | | | | | | | | |
| 3 | 0504.605 | 2" RIGID INSULATION | S.Y. | 107 | | 107 | | | | | | | | | |
| 3 | 0504.605 | 4" RIGID INSULATION | S.Y. | 102 | | 102 | | | | | | | | | |
| 3 | 0504.602 | F & I 12" BUTTERFLY VALVE & BOX | EACH | 1 | | 1 | | | | | | | | | |

(1) GEOTEXTILE FILTER MATERIAL WILL BE CONSIDERED TO BE INCIDENTAL TO RIPRAP CONSTRUCTION AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

STORM SEWER COST

S.A.P. 62-630-36 (RAMSEY CO.)

CITY OF ST. PAUL
NON-PARTICIPATING

S.A.P. 138-020-07 (MAPLEWOOD)

78-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| 1 | CFBM | 5-23-90 | REVISED QUANTITIES | | | |
| 2 | LCH | 7-10-90 | REVISED QUANTITIES | | | |
| 3 | CFBM | 9-5-91 | REVISED ITEM NO.'S/UNIT - ADD 12" BFV ITEM | | | |

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.
Date: 7/23/90 Reg. No. 9046

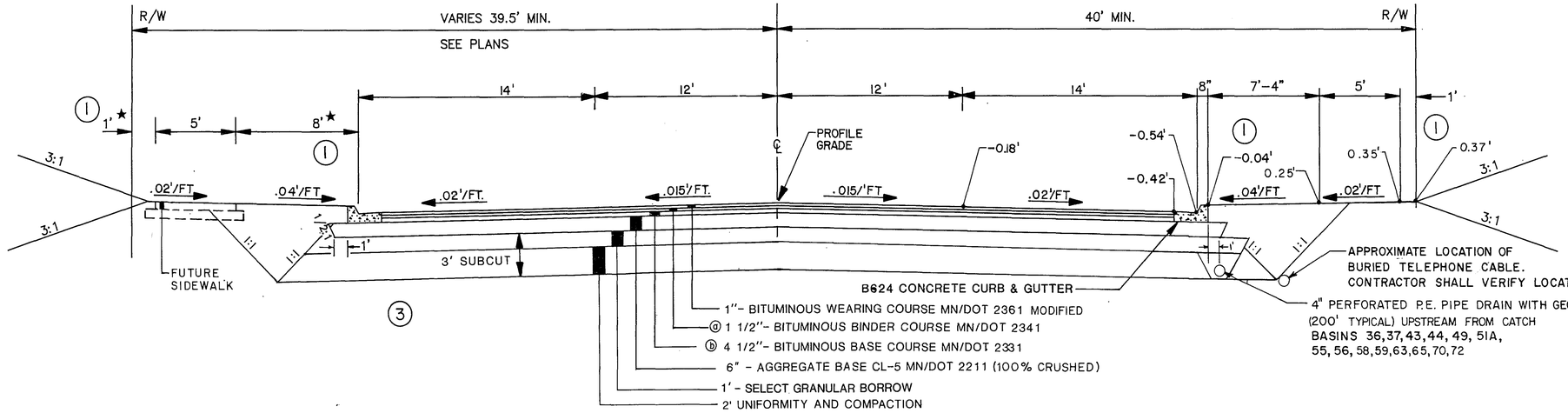
ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY CO., MINNESOTA

ESTIMATED QUANTITIES

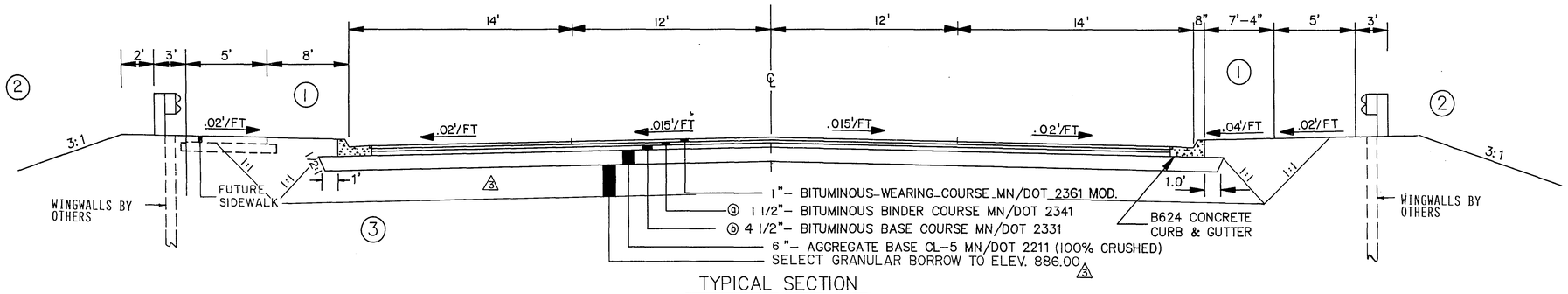
FILE NO. 88019
DATE 1/24/90

3
47




★ FROM STA. 54+56 TO STA. 61+15, 1' AND 8' DIMENSIONS SHALL CHANGE TO 3' AND 6' RESPECTIVELY DUE TO RETAINING WALL.

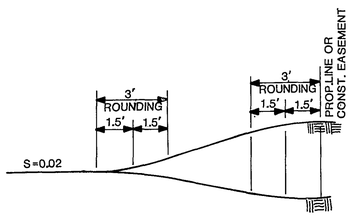
## TYPICAL SECTION
## LARPENTEUR AVENUE
## STA. 48+95 TO STA. 76+25
## (EXCEPT AS SEEN BELOW)




## TYPICAL SECTION
## LARPENTEUR AVENUE

STA. 65+86.14 TO STA. 67+74.67 - LT.

STA. 63+42.83 TO STA. 66+81.35 - RT.




SLOPE ROUNDING DETAIL

GENERAL NOTES:

1) EXACT LOCATION OF UNDERGROUND ELECTRIC, GAS AND TELEPHONE UTILITIES IS UNCERTAIN. CONTRACTOR SHALL CONTACT APPROPRIATE UTILITIES BEFORE EXCAVATING.
2) EXISTING WATER AND SANITARY SERVICES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
3) CONTRACTOR SHALL FIELD VERIFY WATER/STORM CROSSING ELEVATIONS. IN CASES WHERE MINIMUM SEPERATION REQUIREMENTS ARE NOT MET, THE WATERMAIN SHALL BE LOWERED AND INSULATION INSTALLED.
4) ALL CURB RETURN RADII ARE MEASURED TO THE FACE OF THE CURB
ⓐ 5) BITUMINOUS BINDER COURSE SHALL NOT CONTAIN MORE THAN 30% RECYCLED MATERIAL
ⓑ 6) BITUMINOUS LIFTS SHALL NOT EXCEED 2 1/2"
7) CLEAR ZONE 2' FROM FACE OF CURB △3

## EARTHWORK SUMMARY △1 △2

| | |
|---|---|
| EXCAVATION (C.Y.) | |
| COMMON EXCAVATION (P) | 11920 |
| SUBGRADE EXCAVATION (P) | 20900 |
| UNCLASSIFIED EXCAVATION (B) (P) (E) | 14900 |
| SALVAGE TOPSOIL (A) (L.V.) | 1600 |
| EMBANKMENT (C.Y.) | |
| REGULAR EMBANKMENT | 6800 △3 |
| SUBGRADE EMBANKMENT | 11915 |
| SELECT GRANULAR BORROW (C.V.) (D) | 9500 △3 |
| SELECT TOPSOIL BORROW (L.V.) | 1700 |
| SALVAGE TOPSOIL (L.V.) | 1600 |
| POND EMBANKMENT (C.V.) (C) | 1700 |

(A) EXCESS SALVAGE TOPSOIL WILL BE CONSIDERED AS COMMON EXCAVATION
(B) UNCLASSIFIED EXCAVATION FOR PONDS, SEE SHEET 16
(C) SELECT GRANULAR BORROW FOR POND CONSTRUCTION, SEE SHEET 16
(D) INCLUDES 2000 C.Y. FOR REPLACEMENT OF UNSUITABLE MATERIAL IN 3' SUBCUT
(P) INDICATES PLANNED QUANTITY
(C.V.) INDICATES COMPACTED VOLUME
(L.V.) INDICATES LOOSE VOLUME
(E) INCLUDES 400 CY FOR RUBBLE PILE EXCAVATION

NOTES:
1) EARTHWORK QUANTITIES CALCULATED BY USING THE AVERAGE END AREA METHOD
2) ALL QUANTITIES ARE CALCULATED AS COMPACTED VOLUME (C.V.) UNLESS OTHERWISE NOTED
3) ALL BITUMINOUS AND CONCRETE REMOVALS SHALL BE DISPOSED OF AT A RAMSEY COUNTY APPROVED RECYCLER.

(1) 4" SALVAGED TOPSOIL, SOD
(2) 4" SALVAGED TOPSOIL, SEED, MULCH AND DISC ANCHORING IN DISTURBED AREA
(3) REMOVE TOPSOIL AND ORGANIC MATERIAL

28-116

S.A.P 62-630-36 S.A.P 138-020-07

| NO. | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| △3 | CFBM | 9-5-91 | REVISED EARTHWORK SUMMARY, TYPICAL SEC., ADD NOTES | | | |
| △2 | LCH | 7/10/90 | REVISED EARTHWORK SUMMARY | | | |
| △1 | RJW | 1/9/90 | REVISED EARTHWORK SUMMARY | | | |

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.
Date: 1/24/90 Reg. No. 9046

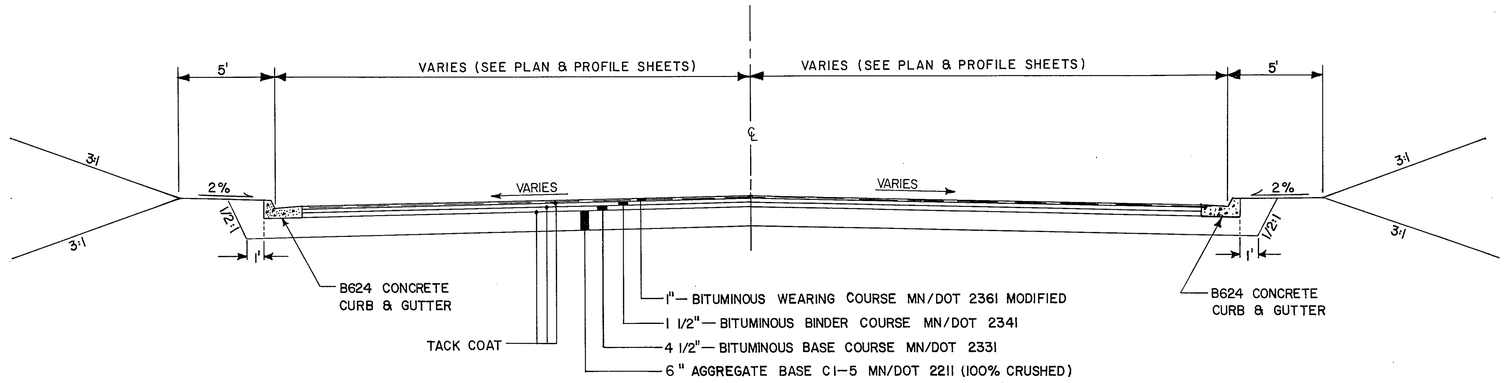
ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

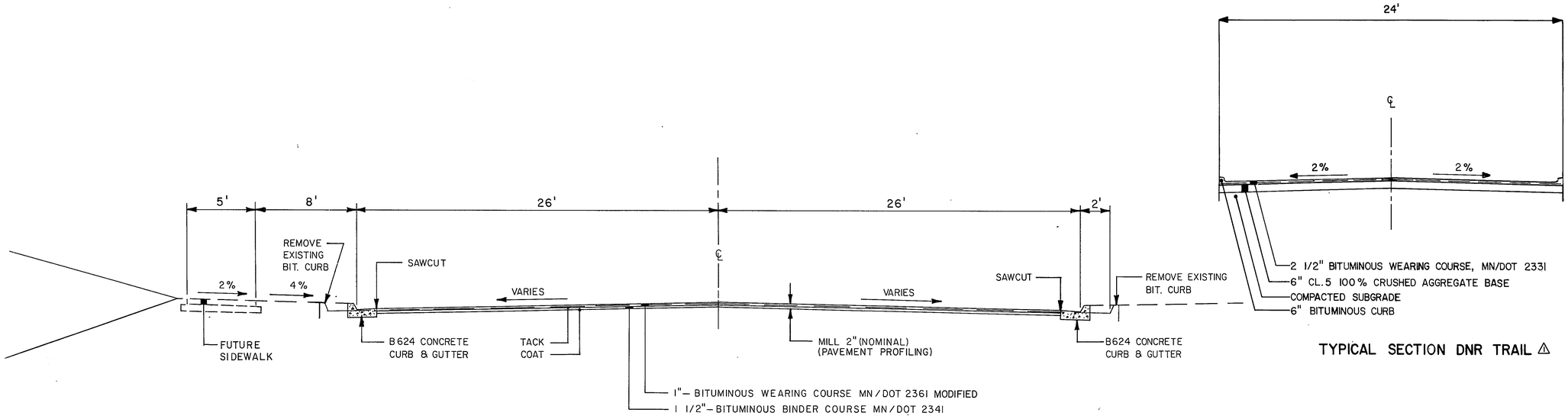
TYPICAL SECTIONS & DETAILS

FILE NO. 88019 | 4
DATE 1/24/90 | 47

| BASE | OVERLAY | DRG. NO. |
|---|---|---|
| | | |




TYPICAL SECTION INTERSECTING STREETS




STA. 45+25 TO STA. 48+95
TYPICAL SECTION LARPENTEUR AVE.




TYPICAL SECTION DNR TRAIL ⚠

28-116

S.A.P 62-630-36 SA.P 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| ⚠ | LCH | 7-10-90 | ADD TYPICAL SECTION D.N.R. TRAIL |

| ITEM | DESIGN | CHECKED |
|---|---|---|
| | | |

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

Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

TYPICAL SECTIONS

FILE NO. 88019

DATE 1/24/90

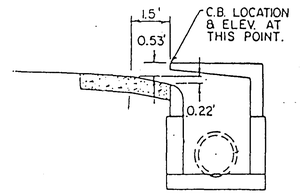
5 / 47

| | STATION | LOCATION * | NO. | TYPE | DESIGN | CONST. HEIGHT LIN.FT. | CASTING ASSEMBLY | 4" PERF. PIPE | ELEVATION GRATE OR RIM | ELEVATION INVERT | FURNISH AND INSTALL RCP 12" | 15" | 18" | 21" | 24" | 30" | 36" | 42" | 48" | APRON | DRAINS TO STRUCT. # | DRAINS TO INVERT ELEV. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ② | 46+98 | 79' LT. | 31A | APRON | | | | | | 56.63 | | | .21 | | | | | | 18" | 31 | 56.00 | W/TRASH GUARD |
| ② | 46+98 | 65' LT. | 31 | MH | B | 6.00 | E | | 60.00 | 54.00 | | | | | 36 | | | | | | 32 | 53.65 | ① |
| ② | 47+33 | 49' LT. | 32 | MH | B | 4.35 | A | | 58.00 | 53.65 | | | | | 162 | | | | | | 35 | 51.54 | |
| ② | 48+90 | 54' LT. | 33 | CB | X-X | 3.30 | A | | 55.50 | 52.20 | | 10 | | | | | | | | | 34 | 52.00 | |
| ② | 49+00 | 54' LT. | 34 | CB | X-X | 3.50 | A | | 55.50 | 52.00 | | 5 | | | | | | | | | 35 | 51.54 | |
| ② | 49+00 | 49' LT. | 35 | MH | B | 4.46 | A | | 56.00 | 51.54 | | | | | 84 | | | | | | 38 | 50.49 | |
| | 49+70 | 27.5' LT. | 36 | CB | LP-4 | 4.43 | C | 355' | 57.61 | 53.18 | | 16 | | | | | | | | | 38 | 52.78 | |
| | 49+70 | 27.5' RT. | 37 | CB | LP-4 | 4.11 | C | 340' | 57.61 | 53.50 | | 40 | | | | | | | | | 38 | 53.10 | |
| | 49+70 | 12' LT. | 38 | MH | B | 6.94 | E | | 57.43 | 50.49 | | | | | 108 | | | | | | 42 | 48.96 | |
| | 50+44.3 | 65' LT. | 39 | CB | X | 3.66 | B | | 59.16 | 55.50 | | 35 | | | | | | | | | 41 | 55.00 | |
| | 50+89.6 | 75' LT. | 40 | CB | X | 4.25 | B | | 59.90 | 55.65 | | 12 | | | | | | | | | 41 | 55.00 | |
| | 50+78 | 78' LT. | STUB | | | | | | | 55.10 | | 6 | | | | | | | | | 41 | 55.00 | CAP FOR FUTURE USE |
| | 50+78 | 72' LT. | 41 | MH | B | 5.06 | E | | 60.06 | 55.00 | | 60 | | | | | | | | | 42 | 52.00 | |
| | 50+78 | 12' LT. | 42 | MH | B | 9.90 | E | | 58.06 | 48.16 | | | | | | | 50 | | | | 45 | 47.71 | |
| | 51+30 | 25.67' LT. | 43 | CB | X | 3.90 | B | 200' | 58.13 | 54.23 | | 14 | | | | | | | | | 45 | 53.33 | |
| | 51+16 | 25.67' RT. | 44 | CB | X | 3.58 | B | 200' | 57.99 | 54.41 | | 40 | | | | | | | | | 45 | 53.51 | |
| | 51+30 | 12.0' LT. | 45 | MH | C | 10.87 | E | | 58.58 | 47.71 | | | | | | | 118 | | | | 46 | 46.77 | |
| | 52+46 | 45' LT. | 46A | APRON | | | | | | 58.00 | | | 33 | | | | | | | 18" | 46 | 55.86 | W/TRASH GUARD |
| | 52+46 | 12' LT. | 46 | MH | C | 13.37 | E | | 59.74 | 46.37 | | | | | | | | 154 | | | 51 | 45.45 | |
| ② | 54+25 | 41' LT. | 47 | CB | B-I | 4.24 | B | | 62.2 | 59.10 | | | 38 | | | | | | | | 51 | 57.05 | |
| | 54+55.67 | 56' LT. | 48 | CB | X | 3.90 | B | | 63.66 | 59.76 | | 31 | | | | | | | | | 47 | 59.45 | |
| | 54+85 | 25.67' LT. | 49 | CB | X | 4.32 | B | 200' | 61.82 | 57.50 | | 26 | | | | | | | | | 52 | 56.99 | |
| | 54+00 | 12' LT. | 51 | MH | E | 15.83 | E | | 61.28 | 45.45 | | | | | | | | 204 | | | 51B | 43.41 | |
| | 54+00 | 25.67' RT. | 51A | CB | X | 3.58 | B | 200' | 60.79 | 57.21 | | 38 | | | | | | | | | 51 | 56.83 | |
| | 54+00 | 192' RT. | 51B | MH | D | 6.19 | E | | 49.60 | 43.41 | | | | | | | | 300 | | | 51C | 39.81 | |
| ① | 57+00 | 192' RT. | 51C | MH | D | 16.46 | E | | 47.00 | 30.54 | | | | | | | | | 172 | | 51D | 30.00 | |
| ① | POND | 368' RT. | 51D | APRON | | | | | | 30.00 | | | | | | | | | | 48" | | | W/TRASH GUARD |
| | 54+85 | ℄ | 52 | MH | B | 5.95 | E | | 62.53 | 56.58 | | | 86 | | | | | | | | 51 | 54.00 | |
| | 58+34.33 | 56' LT. | 53 | CB | B-I | 3.90 | B | | 73.28 | 69.38 | | 63 | | | | | | | | | 57 | 67.49 | |
| | 58+65.67 | 56' LT. | 54 | CB | X | 3.90 | B | | 73.90 | 70.00 | | 31 | | | | | | | | | 53 | 69.38 | |
| | 58+93 | 25.67' LT. | 55 | CB | X | 4.71 | B | 200' | 74.47 | 69.76 | | 92 | | | | | | | | | 57 | 66.08 | |
| | 58+36 | 25.67' RT. | 56 | CB | X | 3.58 | B | 200' | 72.43 | 68.85 | | 40 | | | | | | | | | 57 | 68.05 | |
| | 58+05 | ℄ | 57 | MH | C | 6.46 | E | | 72.00 | 65.54 | | | 320 | | | | | | | | 52 | 56.58 | |
| ① | 64+00 | 25.17' RT. | 58 | CB | B-I | 9.07 | B | 120' | 87.22 | 78.15 | | | 60 | | | | | | | | 62D | 57.00 | ALL PIPE TIED |
| | 64+00 | 27.5' LT. | 59 | CB | LP-4 | 5.18 | C | 120' | 87.89 | 82.71 | | 55 | | | | | | | | | 58 | 82.15 | |
| | 65+36.97 | 61' LT. | 60 | CB | B-I | 3.82 | B | | 87.51 | 83.69 | | 140 | | | | | | | | | 59 | 82.71 | |
| | 65+72.51 | 61' LT. | 61 | CB | X | 3.58 | B | | 87.51 | 83.93 | | 35 | | | | | | | | | 60 | 83.69 | |
| | 67+50 | 18' LT. | 62 | MH | C | 12.70 | E | | 89.70 | 77.00 | | | | | | | 107 | | | | 62A | 61.75 | ALL PIPE TIED |
| | 66+78 | 82' LT. | 62A | CB | D | 6.25 | A | | 67.00 | 60.75 | | | | | | 94 | | | | | 62C | 58.99 | |
| | 11+25 | 10' LT. | 62B | CB | X-X | 4.00 | A | | 67.00 | 63.00 | | 20 | | | | | | | | | 62A | 62.80 | |
| ① | 8+40 | 10' LT. | 62C | MH | D | 6.01 | E | | 65.00 | 59.04 | | | | | | 50 | | | | | 62D | 58.54 | |
| ① | 64+25 | 85' RT. | 62D | MH | D | 7.00 | E | | 61.00 | 54.00 | | | | | | | 26 | | | | 62E | 53.45 | |
| | 63+74 | 143' RT. | 62E | APRON | | | | | | 53.45 | | | | | | | | | | 36" | | | W/TRASH GUARD |
| | 68+06 | 44' RT. | 62F | CB | B-I | 4.51 | B | | 90.50 | 85.99 | | 80 | | | | | | | | | 62 | 84.95 | |
| | 68+38 | 44' RT. | 62G | CB | X | 4.00 | B | | 90.50 | 86.50 | | 32 | | | | | | | | | 62F | 85.99 | |
| | 71+34 | 27.5' LT. | 63 | CB | LP-4 | 4.43 | C | 400' | 88.23 | 83.80 | | 11 | | | | | | | | | 66 | 83.69 | |
| | 71+34 | 25.67' RT. | 65 | CB | X | 3.58 | B | 400' | 87.56 | 83.98 | | 44 | | | | | | | | | 66 | 83.54 | |
| | 71+34 | 18' LT. | 66 | MH | B | 5.27 | E | | 87.93 | 82.66 | | | | | 384 | | | | | | 62 | 78.06 | |
| | 73+39.33 | 61' LT. | 67 | CB | X | 3.57 | B | | 89.18 | 85.61 | | 31 | | | | | | | | | 68 | 85.39 | |
| | 73+70.67 | 61' LT. | 68 | CB | B-I | 3.64 | B | | 89.03 | 85.39 | | 46 | | | | | | | | | 72 | 84.93 | |
| | 73+99 | 25.67' RT. | 70 | CB | X | 3.58 | B | 170' | 89.92 | 86.34 | | 44 | | | | | | | | | 71 | 85.90 | |
| | 73+95 | 18' LT. | 71 | MH | D | 5.50 | E | | 90.25 | 84.75 | | | | 261 | | | | | | | 66 | 82.92 | |
| | 73+99 | 25.67' LT. | 72 | CB | B-I | 4.99 | B | 200' | 89.92 | 84.93 | | 8 | | | | | | | | | 71 | 84.85 | |
| | 76+50 | 24' LT. | 73 | MH | B | 4.30 | E | | 92.30 | 88.00 | | 254 | | | | | | | | | 71 | 85.46 | PLUG EX. PIPE (W) |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | PONDING AREAS (SHEETS 16 & 17) | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 51E | APRON | | | | | | 30.00 | 10 | | | | | | | | | 12" | 51F | 29.50 | |
| | | | 51F | CB | SPECIAL | 9.27 | D | | 38.77 | 29.50 | | | 55 | | | | | | | | 51G | 28.95 | SEE SHEET 8 |
| | | | 51G | CB | LP-4 | 9.91 | C | | 38.86 | 28.95 | | | 40 | | | | | | | | 51H | 28.55 | |
| | | | 51H | CB | LP-4 | 10.15 | C | | 38.70 | 28.55 | | | 24 | | | | | | | | 51J | 27.80 | CONNECT TO EX. MH. |
| | | | 51J | MH | | | | | 36.50 | 27.80 | | | | | | | | | | | EXIST | 18"PIPE | EXISTING MANHOLE |
| ① | | | 62H | CB | SPECIAL | 7.57 | D | | 59.17 | 51.60 | 270 | | | | | | | | | | 62J | 30.00 | |
| ① | | | 62J | APRON | | | | | | 30.00 | | | | | | | | | | 12" | | | |

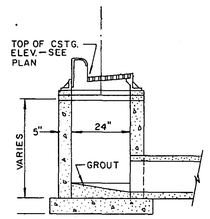
* LOCATION IS TO CENTER OF STRUCTURE EXCEPT FOR DESIGN LP-4 CB. SEE DETAIL (6/1) AT RIGHT.

① VERIFY LOCATION IN FIELD TO AVOID CONFLICT WITH SIGNAL CONDUIT.

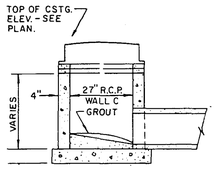
## TOP OF CSTG. ELEVATION LOCATIONS




DESIGN LP-4 CATCH BASIN




DESIGN "X" CATCH BASIN




DESIGN "X-X" CATCH BASIN

## STORM SEWER COST

S.A.P. 62-630-36 (RAMSEY CO.)

CITY OF ST. PAUL NON-PARTICIPATING

S.A.P. 138-020-07 (MAPLEWOOD)

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| ① | LCH | 7-10-90 | REVISED STRUCTURE SCHEDULE |
| ② | SB | 6-10-91 | REVISED STRUCTURE SCHEDULE |

ITEM | DESIGN | CHECKED

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.
Date: 1/24/90 Reg. No. 9046

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

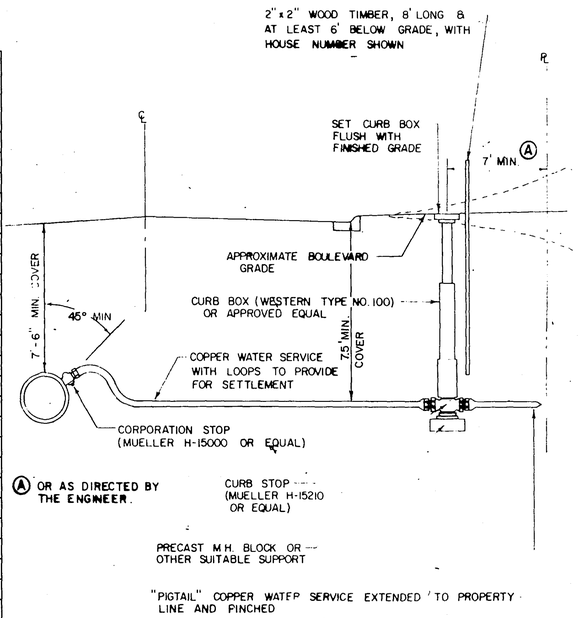
RAMSEY COUNTY
LARPENTEUR AVENUE

STRUCTURE SCHEDULE

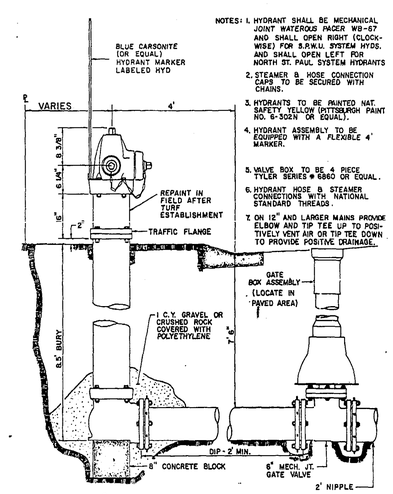
FILE NO. 88019
DATE 1/24/90

# EXISTING STRUCTURES

| STATION | LOCATION | NO. | TYPE | DESIGN | CONST. HEIGHT LIN.FT. | CASTING ASSEMBLY | ELEVATION PROFILE | ELEVATION ORIGINAL GRATE OR RING | ELEVATION NEW GRATE OR RING | ELEVATION CB OR MH INVERT | ADJUST CASTING ASSEMBLY | RECONSTRUCT CATCH BASIN OR MANHOLE LIN.FT. | INSTALL CASTING ASSEMBLY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47+37 | 24'LT. | 6-24 | MH | SAN. | | E | | 60.10 | 59.95 | | X | | | ADJUST |
| 48+98 | 31'LT. | 2 | CB | STORM | | | | | | | | | | REMOVE |
| 48+98 | 31'RT. | 3 | CB | STORM | | | | | | | | | | REMOVE |
| 50+46 | 52'LT. | 4 | CB | STORM | | | | | | | | | | REMOVE |
| 50+67 | 25'LT. | 6-01 | MH | SAN. | | E | | 58.21 | 57.75 | | X | | | ADJUST |
| 50+89 | 65'LT. | | MH | SAN. | | E | | 58.90 | 60.02 | | X | | | ADJUST |
| 53+68 | 30'LT. | 7 | CB | STORM | | | | | | | | | | REMOVE |
| 53+68 | 30'RT. | 8 | CB | STORM | | | | | | | | | | REMOVE |
| 54+41 | 25'LT. | 6-07 | MH | SAN. | | E | | 61.43 | 61.50 | | X | | | ADJUST |
| 57+61 | 21'RT. | 10 | CB | STORM | | | | | | | | | | REMOVE |
| 58+06 | 20'LT. | 11 | CB | STORM | | | | | | | | | | REMOVE |
| 58+35 | 46'LT. | 12 | CB | STORM | | | | | | | | | | REMOVE |
| 58+48 | 25'LT. | 6-12 | MH | SAN. | | E | | 72.83 | 73.10 | | X | | | ADJUST |
| 58+65 | 46'LT. | 14 | CB | STORM | | | | | | | | | | REMOVE |
| 61+70 | 25'LT. | 6-13 | MH | SAN. | | E | | 85.08 | 84.15 | | X | | | ADJUST |
| 64+90 | 27'LT. | 6-14 | MH | SAN. | | E | | 93.62 | 88.45 | 82.20 | | 7.17 | | RECONSTRUCT |
| 65+60 | 237'LT. | 6-15 | MH | SAN. | | E | | 95.30 | 94.64 | | X | | | ADJUST |
| 68+09 | 45'RT. | 18 | CB | STORM | | | | | | | | | | REMOVE |
| 68+33 | 46'RT. | 19 | CB | STORM | | | | | | | | | | REMOVE |
| 68+73 | 5'LT. | 7-25 | MH | SAN. | | E | | 90.18 | 89.61 | | X | | | ADJUST |
| 69+10 | 33'LT. | 21 | MH | STORM | | | | | | | | | | REMOVE |
| 70+22 | 5'LT. | 7-24 | MH | SAN. | | E | | 87.17 | 88.70 | | X | | | ADJUST |
| 70+62 | 28'LT. | 23 | CB | STORM | | | | | | | | | | REMOVE |
| 70+69 | 30'RT. | 24 | CB | STORM | | | | | | | | | | REMOVE |
| 73+50 | 5'LT. | 7-22 | MH | SAN. | | E | | 88.40 | 90.04 | | X | | | ADJUST |
| 73+73 | 28'LT. | 26 | CB | STORM | | | | | | | | | | REMOVE |
| 76+10 | 5'LT. | 7-23 | MH | SAN. | | E | | 92.40 | 92.80 | | X | | | ADJUST-M.H. BURIED |
| 76+46 | 44'LT. | 28 | CB | STORM | | | | | | | | | | ADJUST IF REQUIRED |
| 76+52 | 15'LT. | 7-31 | MH | SAN. | | E | | | | | | | | ADJUST IF REQUIRED |
| 56+44 | 25'LT. | 6-11 | MH | SAN. | | E | | 66.50 | 65.88 | | X | | | ADJUST |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |




WATER SERVICE INSTALLATION




⚠ HYDRANT INSTALLATION

FEET OF RESTRAINED OR TIED PIPE REQUIRED ON EACH SIDE OF THE BEND

NOTE: (1) Table based on sand excavation for silt increase 50%
(2) If Polyethylene wrapping is used increase value by 100%

N.R. = Not Recommended

| Pipe Size | 4' Cover Bend Sizes | | | | 6' Cover Bend Sizes | | | | 8' Cover Bend Sizes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 22½° | 45° | 67½° | 90° | 22½° | 45° | 67½° | 90° | 22½° | 45° | 67½° | 90° |
| 3" | N.R. | N.R. | N.R. | N.R. | 1' | 3' | 4' | 8' | 1' | 2' | 3' | 4' |
| 4" | N.R. | N.R. | N.R. | N.R. | 2' | 4' | 5' | 8' | 1' | 3' | 4' | 5' |
| 6" | N.R. | N.R. | N.R. | N.R. | 3' | 6' | 8' | 9' | 2' | 4' | 5' | 6' |
| 8" | N.R. | N.R. | N.R. | N.R. | 4' | 7' | 9' | 11' | 3' | 5' | 7' | 9' |
| 12" | N.R. | N.R. | N.R. | N.R. | 6' | 10' | 14' | 17' | 5' | 8' | 10' | 12' |
| 16" | N.R. | N.R. | N.R. | N.R. | 7' | 13' | 18' | 21' | 6' | 10' | 14' | 17' |
| 20" | 12' | 22' | 30' | 37' | 9' | 15' | 22' | 27' | 7' | 12' | 17' | 20' |
| 24" | 14' | 25' | 37' | 43' | 10' | 18' | 26' | 30' | N.R. | N.R. | N.R. | N.R. |
| 30" | 17' | 30' | 45' | 52' | 12' | 21' | 30' | 37' | N.R. | N.R. | N.R. | N.R. |
| 36" | 19' | 35' | 50' | 61' | 14' | 25' | 35' | 43' | N.R. | N.R. | N.R. | N.R. |
| 42" | 22' | 39' | 56' | 69' | 16' | 28' | 40' | 49' | N.R. | N.R. | N.R. | N.R. |
| 48" | 24' | 43' | 63' | 77' | 18' | 31' | 45' | 55' | N.R. | N.R. | N.R. | N.R. |

The table was determined from the following formula printed in the 1975 fall issue of "Cast Iron Pipe News" published by the Cast Iron Research Association.

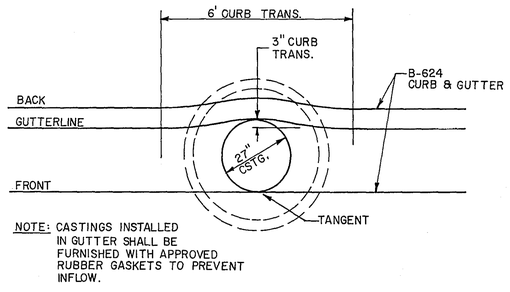
$$L \text{ (restrained length)} = \frac{S_f K P A}{K F_s + D P_p}$$

Sf = Safety factor (1.25)
P = Max. Pressure (150 p.s.i.)
A = Pipe Cross-section area ($in^2$)
Fs = Conduit frictional resistance neglecting bell resistance (p.l.f.)
D = Conduit outside diameter (ft.)
Pp = Passive soil pressure (p.s.f.)
K = 4 tan (friction angle / 2)

NOTE: When concrete pipe is used higher strength pipe may be necessary adjacent to bends if thrust blocks are not used.

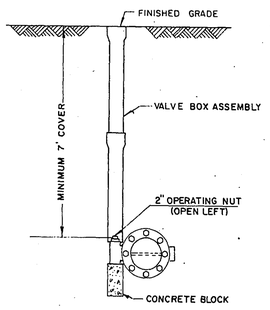
WATER DEPARTMENT - CITY OF ST. PAUL, MINN.

TIED PIPE REQUIRED FOR BENDS
ALL TYPES OF PIPE 28-116
S.A.P. 62-630-36 S.A.P. 138-020-07



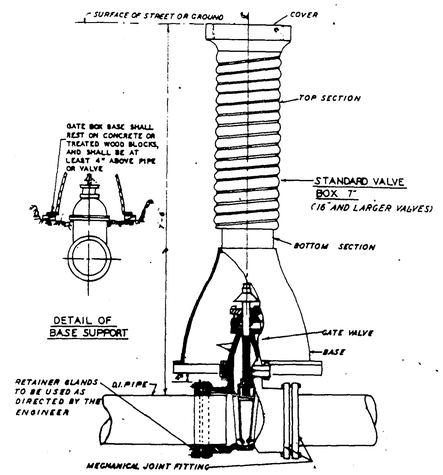

NOTE: CASTINGS INSTALLED IN GUTTER SHALL BE FURNISHED WITH APPROVED RUBBER GASKETS TO PREVENT INFLOW.

MANHOLE CASTING DETAIL
IN GUTTER




ELEVATION

TYPICAL BUTTERFLY VALVE & BOX INSTALLATION




GATE VALVE & BOX INSTALLATION

| NO. | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| | CFBM | 5-16-90 | ADD MH CASTING DETAIL | | | |
| ⚠ | JMP | 2-19-91 | REVISED HYDRANT DETAIL | | | |

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 Minn.
Date: 1/24/90 Reg. No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

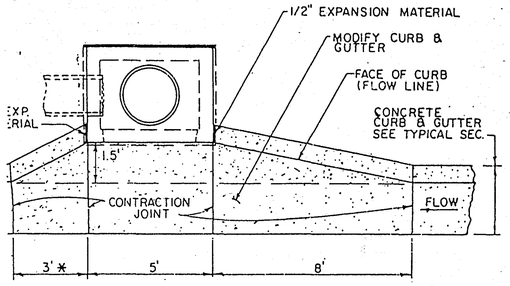
RAMSEY COUNTY, MINNESOTA

EXISTING STRUCTURES AND WATERMAIN DETAILS

FILE NO. 88019
DATE 1/24/90
7
47

BASE | OVERLAY | DRG. NO.

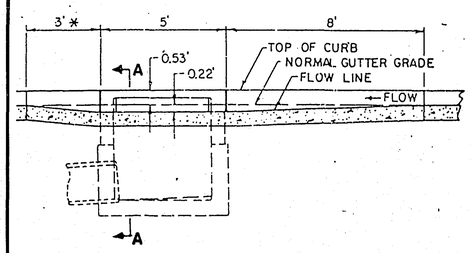
## CURB OPENING CATCH BASIN-DESIGN LP-4 INSTALLATION DETAIL

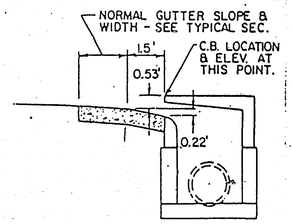



PLAN VIEW

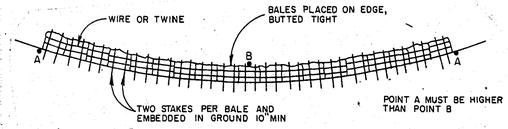
NOTES:

1. * DIMENSION SHALL BE 8' WHEN STRUCTURE INSTALLED AT LOW POINT IN GRADE
2. CATCH BASIN - DESIGN LP-4 SEE MN/DOT STD. PL. NO. 4021C.
3. TOP OF CATCH BASIN SHALL BE INSTALLED AT SAME SLOPE AS BLVD. GRADES AND TOP OF CURB GRADE . EACH SIDE OF STRUCTURE.
4. ELEVATION OF STRUCTURE IS COMPUTED AT LOCATION SHOWN IN SEC. A-A AT ℄ OF C.B. OPENING.

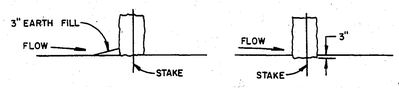



SECTION AA



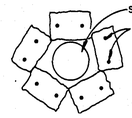

SECTION THRU DITCH




OPTION 1 OPTION 2

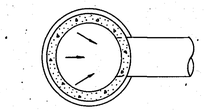
SECTIONS

### HAY OR STRAW BALE DITCH CHECK

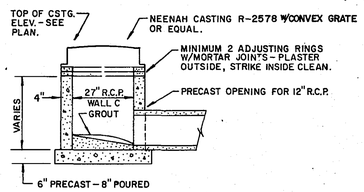



### STORM SEWER INLET PROTECTION

## EROSION CONTROL

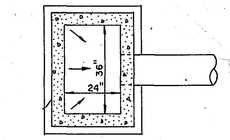


PLAN

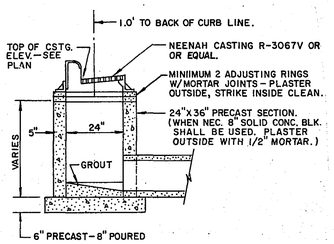



SECTION

### DESIGN "X-X" CATCH BASIN (ROUND)

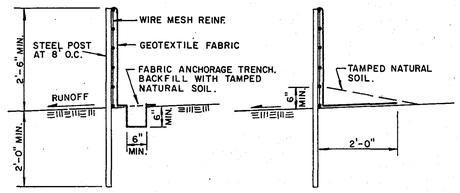



PLAN




SECTION

### DESIGN "X" CATCH BASIN (RECTANGULAR)



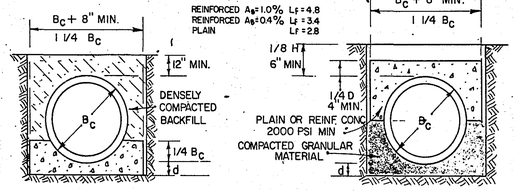

OPTION 1 OPTION 2

### SILT FENCE

## TRENCH BEDDING - CIRCULAR PIPE

CLASS A

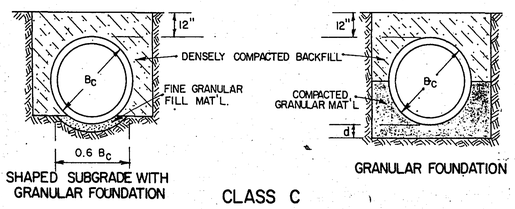
REINFORCED $A_s$=1.0% $L_f$=4.8
REINFORCED $A_s$=0.4% $L_f$=3.4
PLAIN $L_f$=2.8




CONCRETE CRADLE CONCRETE ARCH

CLASS B

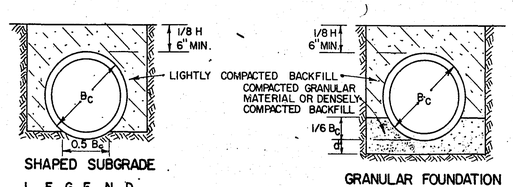
$L_f$ = 1.9




SHAPED SUBGRADE WITH GRANULAR FOUNDATION GRANULAR FOUNDATION

CLASS C

$L_f$ = 1.5

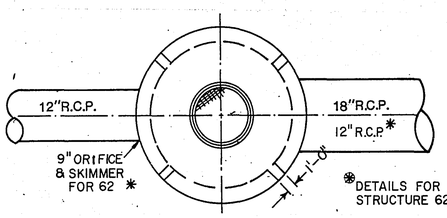



SHAPED SUBGRADE GRANULAR FOUNDATION

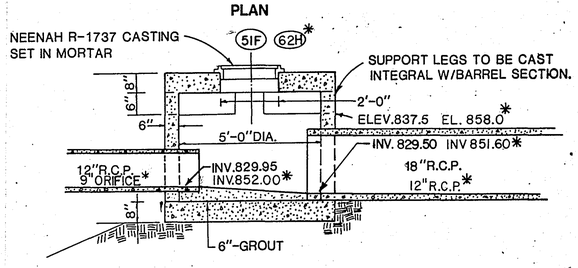
L E G E N D

$B_c$ = OUTSIDE DIAMETER
H = BACKFILL COVER OVER TOP OF PIPE
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE.
$A_s$ = AREA OF TRAVERSE STEEL IN THE CRADLE OR ARCH EXPRESSED AS A PERCENTAGE OF AREA OF CONCRETE AT INVERT OR CROWN

| DEPTH OF BEDDING MATERIAL BELOW PIPE | |
|---|---|
| D | d MIN |
| 27" & SMALLER | 3" |
| 30" TO 60" | 4" |
| 66" & LARGER | 6" |

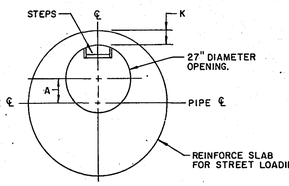



PLAN




SECTION

## SPECIAL DRAINAGE STRUCTURE DETAIL

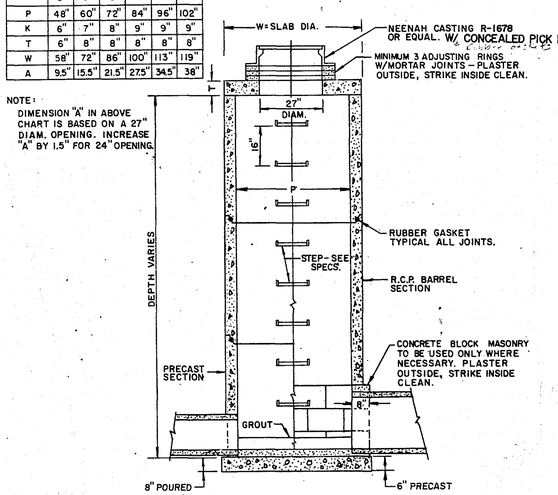



COVER SLAB

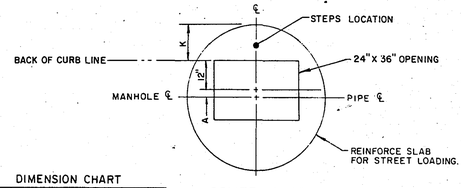
DIMENSION CHART

| DIMEN. | MANHOLE DESIGN | | | | | |
|---|---|---|---|---|---|---|
| | B | C | D | E | F | G |
| P | 48" | 60" | 72" | 84" | 96" | 102" |
| K | 6" | 7" | 8" | 9" | 9" | 9" |
| T | 6" | 8" | 8" | 8" | 8" | 8" |
| W | 58" | 72" | 86" | 100" | 113" | 119" |
| A | 9.5" | 15.5" | 21.5" | 27.5" | 34.5" | 38" |

NOTE: DIMENSION "A" IN ABOVE CHART IS BASED ON A 27" DIAM. OPENING. INCREASE "A" BY 1.5" FOR 24" OPENING.



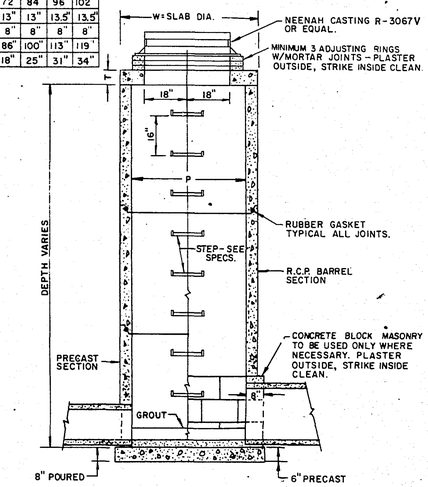

MANHOLE DESIGN B THRU G




COVER SLAB

DIMENSION CHART

| DIMEN. | CATCH BASIN DESIGN | | | | | |
|---|---|---|---|---|---|---|
| | B-1 | C-1 | D-1 | E-1 | F-1 | G-1 |
| P | 48" | 60" | 72" | 84" | 96" | 102" |
| K | 14" | 13" | 13" | 13" | 13.5" | 13.5" |
| T | 6" | 8" | 8" | 8" | 8" | 8" |
| W | 58" | 72" | 86" | 100" | 113" | 119" |
| A | 3" | 11" | 18" | 25" | 31" | 34" |




CATCH BASIN DESIGN B-1 THRU G-1

28-116

S.A.P 62-630-36 S.A.P 138-020-07

| NO. | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| | | | | | | |

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

Date 1/24/90 Reg No. 9046

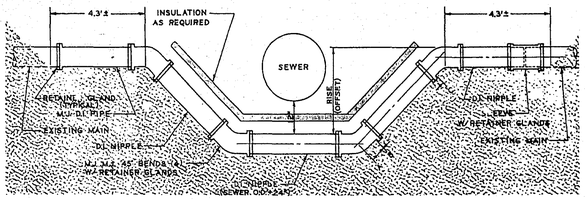
ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

DRAINAGE DETAILS

FILE NO. 88019 | DATE 1/24/90 | 8 / 47

| BASE | OVERLAY | DRG NO. |
|---|---|---|
| | | |

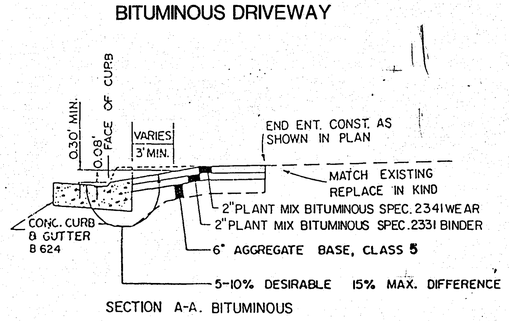



BC NIPPLE LENGTH = (L414 X RISE)-2 AB

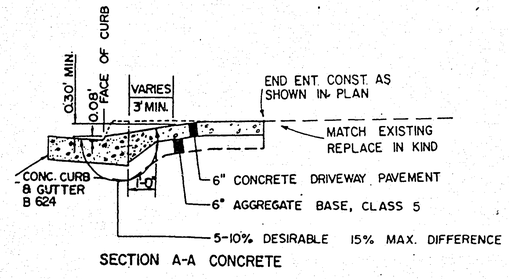
| PIPE SIZE | STD. BEND MEAS. | S.B. BEND MEAS. |
|---|---|---|
| 4" | 4" | 2.5" |
| 6" | 5" | 3.5" |
| 8" | 5.5" | 4" |
| 12" | 7.5" | 6" |
| 16" | 8" | – |

## WATERMAIN OFFSET DETAIL

## BITUMINOUS DRIVEWAY

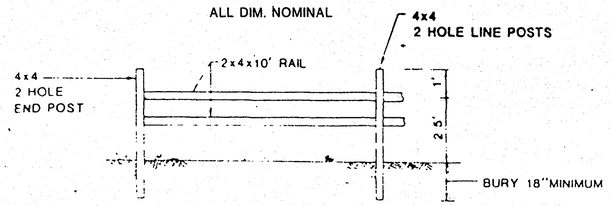


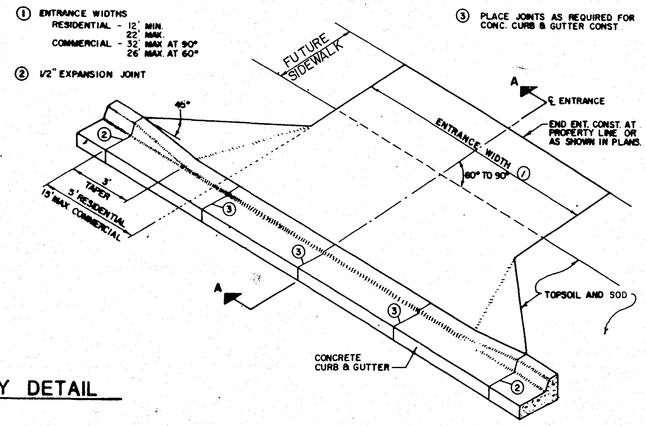

SECTION A-A. BITUMINOUS



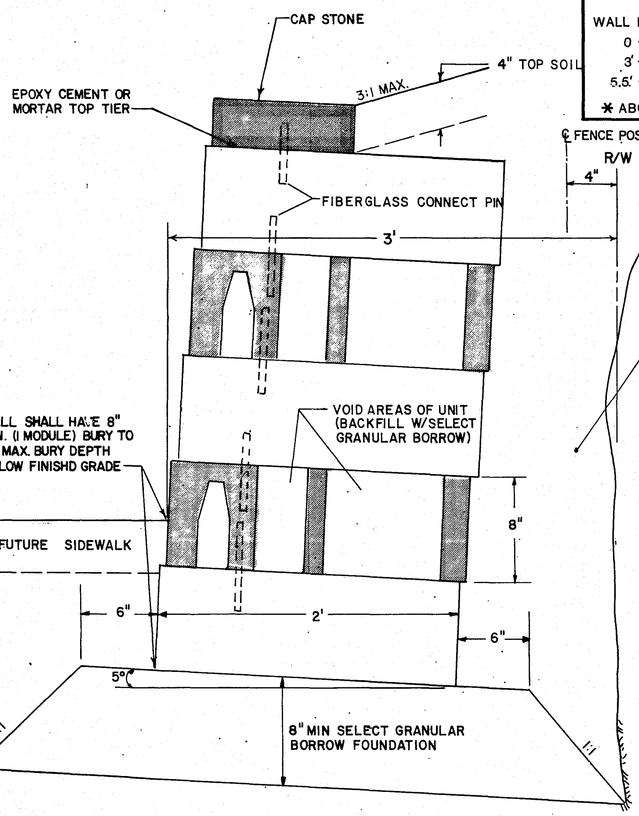

SECTION A-A CONCRETE

## CEDAR HAND SPLIT RAIL FENCING DETAIL




## DRIVEWAY DETAIL



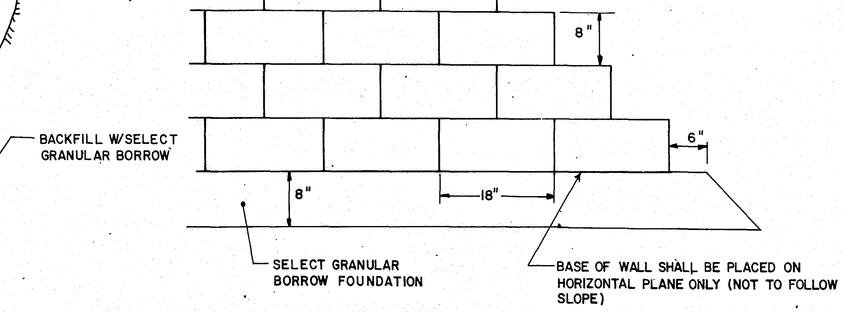

### SRI TENSAR REINFORCING

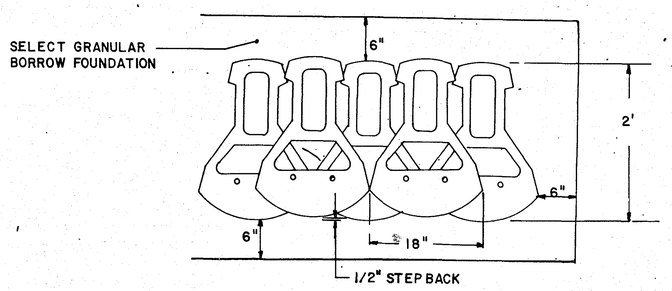
CONTINUOUS 5' GRID

| WALL HEIGHT | 1st GRID LOCATION * | 2nd GRID LOCATION * |
|---|---|---|
| 0 - 3' | – | – |
| 3' - 5.5' | 3 BLOCKS | – |
| 5.5' - 7' | 2 BLOCKS | 6 BLOCKS |

* ABOVE PROPOSED FINISHED GRADE

## CONCRETE RETAINING WALL




## CONCRETE RETAINING WALL

| CASTING ASSEMBLY | NEENAH CASTING OR EQUAL |
|---|---|
| A | R-2578 W/CONVEX GRATE |
| B | R-3067V |
| C | 790-2-712 |
| D | R-1737 |
| E | R-1678 W/ 2 CONCEALED PICK HOLES |
| | |
| | |

NOTE: MANHOLE COVERS SHALL BE LABELED SANITARY SEWER OR STORM SEWER FOR THE APPROPRIATE UTILITY.

The following Standard Plates, approved by the FEDERAL HIGHWAY ADMINISTRATION, shall apply on this project.

### MN/DOT STANDARD PLATES

| PLATE NO. | DESCRIPTION |
|---|---|
| 0005 A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| | |
| ⚠ 3000 L | REINFORCED CONCRETE PIPE |
| 3006 F | GASKET JOINT FOR REINFORCED CONCRETE PIPE |
| 3100 G | CONCRETE APRON FOR REINFORCED CONCRETE PIPE |
| 3133 B | RIPRAP AT R.C.P. OUTLETS |
| 3145 E | CONCRETE PIPE TIES |
| | |
| | |
| | |
| | |
| 4011 D | PRECAST CONCRETE BASE |
| ⚠ 4021 D | PRECAST CURB OPENING CATCH BASIN |
| 4101 C | RING CASTING FOR MANHOLE OR CATCH BASIN |
| 4180 H | MANHOLE OR CATCH BASIN STEP |
| 7035 J | CONCRETE WALK |
| ⚠ 7036 D | PEDESTRIAN CURB RAMP |
| ⚠ 7065 C | BIT. CURB |
| 7100 F | CONCRETE CURB AND GUTTERS |
| 7111 G | INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS |
| 8000 I | STANDARD BARRICADES |
| 8307 N | STEEL PLATE BEAM GUARD RAIL |
| | |
| ⚠ 8319 G | TWISTED END TREATMENT |
| | |

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| ⚠ | CFBM | 9-5-91 | REVISED STANDARD PLATES |

ITEM | DESIGN | CHECKED

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

Date 1/24/90 Reg. No. 9046

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

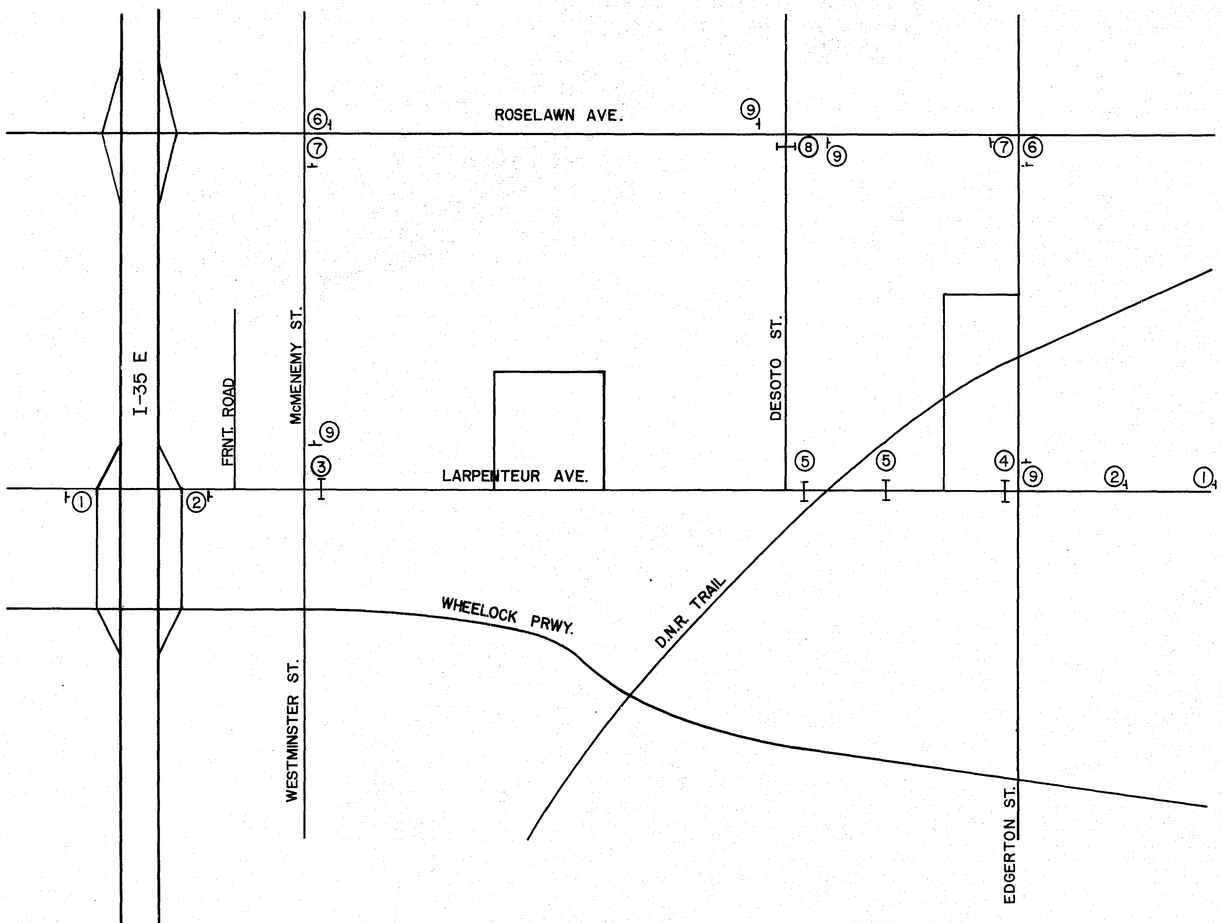
MISCELLANEOUS DETAILS

FILE NO. 88019

DATE 1/24/90

BASE | OVERLAY | DRG. NO.

# DETOUR SIGNING
N.T.S.




① W 20-3
② W 20-2
③ TYPE III BARRICADE W/ R11-4 & M4-10L
④ TYPE III BARRICADE W/ R11-4 & M4-10R
⑤ 4 TYPE III BARRICADES W/ R11-2
⑥ M4-9L
⑦ M4-9R
⑧ TYPE III BARRICADE W/ R11-4
⑨ M4-9

**LEGEND**

| NUMBER | SIGN | SIZE | QUANTITY |
|---|---|---|---|
| R 11-4 | ROAD CLOSED TO THRU TRAFFIC | 60"x30" | 3 ✓ |
| R 11-2 | ROAD CLOSED | 48"x30" | 2 ✓ |
| W 20-2 | DETOUR AHEAD | 48"x48" | 2 ✓ |
| W 20-3 | ROAD CLOSED AHEAD | 48"x48" | 2 ✓ |
| M 4-9 | LARPENTEUR AVE / DETOUR ↑ | 30"x24" | 8(INC 2L,2R) ✓ |
| M 4-10 | DETOUR → | 48"x18" | 1L,1R ✓ |

NOTE: SEE SPECIAL PROVISIONS FOR RESTRICTIONS ON USE OF DETOUR.

ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING APPENDIX B, DATED MARCH, 1990.

Z8-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| | | | | | | |

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
Date 1/24/90 Reg No. 9046

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

DETOUR SIGNING

FILE NO. 88019
DATE 1/24/90

10
47

BASE OVERLAY DRG NO. - 18

I-35E N.B. ON RAMP

FRONTAGE ROAD

CITY OF MAPLEWOOD

CITY OF ST. PAUL

1 RSC Investment Company

STA. 45+25 BEGIN PAVEMENT PROFILING & 2 1/2" OVERLAY

END CURB & GUTTER WITH 5'TAPER T.C. 67.00

TRF. PED. EX. 1¼"RSC EX. 2-2/c#14

EX. 3"RSC EX. 2-2/c#14

RESTORE BIT. DRIVEWAY

CONNECT EXISTING

APRON 31A

PROTECT CONDUIT

CONSTRUCTION LIMITS

STA. 50+67.95 LARPENTEUR AVE. = ℄ McMENEMY ST.

EX. 2-2/c=14 EX. 1¼" RSC

200 L.F. PIPE DRAIN (TYPICAL)

REMOVE & PLUG

REMOVE C.B. & PIPE

155 L.F. PIPE DRAIN

REPLACE EXIST. 6'x20' LOOP DETECTOR AFTER MILLING

FURN. & INSTALL 2-6'x6' LOOP DETECTOR

STA. 48+95 END PAVEMENT PROFILING & 2 1/2" OVERLAY

STA. 49+00 BEGIN SUB CUT

SECTION LINE

REMOVE & REBUILD FENCE AS DIRECTED BY THE ENGINEER. (INCIDENTAL)

REMOVE AND REBUILD 4' WIDE 4" CONC. WALK

REMOVE AND REBUILD 5' WIDE 4" CONC. WALK

RESTORE BIT. DRIVEWAY

40 L.F. PIPE DRAIN

PLUG

REMOVE & PLUG

LOT 30

LOT 29

LOT 1 CONSTRUCTION LIMITS

BLOCK 1

KAVANHNGH & DAWSON'S ADDITION

Richard E. Eitel

Emmett V. Kenefick & Ann E. Kenefick

BLDG.

Steven R. Kissel & Rosel Yound

Marshall E. Carlson & Sue T. Carlson

HOUSE #1675

NOTE: S.S. SERVICES STATIONED UPSTREAM FROM DOWNSTREAM M.H.

8'x8' INSULATE WATERMAIN & VERIFY ELEVATION

B.M. ELEV. 872.17
DISK SE CORNER LARP. & 35E

B.M. ELEV. 859.89
TOP NUT HYD. LARP. & McMENEMY

McMENEMY ST.

WESTMINSTER ST.

END CURB & GUTTER WITH 5'TAPER

BLOCK 3 MONN'S VILLA

T. 29N R. 22W 18 17 19 20

Michael H. Schultz & Irene L. Schultz

2

LOT 7

LOT 8

SCALE IN FEET 0 30 60

3 Robert Anderson & Alice L. Anderson

#1688 HOUSE

GAR.

RESTORE BIT. DRIVEWAY

TEMPORARY EASEMENT.

PLUG

APRON 46A

MATCH LINE STA. 53+00

SEE SHEET 12

Albert Bizjak & Margaret Bizjak

HOUSE #1680

LOT 1

LOT 2

LOT 16

LOT 15

Lester C. Johnson & Faye L. Johnson

HH #366

REMOVE EXISTING TREES

BLOCK 1

PARCEL NO. 0

TEMPORARY EASEMENT

PERMANENT EASEMENT

CLARKE'S-2nd ADDITION

+25 BEGIN CONSTRUCTION EL. MATCH EXIST.

18" APRON 31A W/ TRASH GUARD

10 L.F. 15" R.C.P. CL III @ 2.00%

5 L.F. 15" R.C.P. CL III @ 9.20%

16 L.F. 15" R.C.P. CL III @ 2.50%

EXIST. 12" S.S. (FIELD VERIFY)

25 L.F. 15" R.C.P. CL III @ 1.48%

12 L.F. 15" R.C.P. CL III @ 5.42%

60 L.F. 15" R.C.P. CL III @ 5.00%

6 L.F. 15" R.C.P. CL III @ 1.60%

CAP

EXIST. 12" W.M.

EXIST. 18" SAN.

14 L.F. 15" R.C.P. CL III @ 6.48%

40 L.F. 15" R.C.P. CL III @ 2.25%

33 L.F. 18" R.C.P. CL III @ 6.50%

INCLUDING APRON

EXIST. 16" W.M. (FIELD VER)

EXIST. SAN.

-3.21%

-3.47%

400' V.C. M = 2.24'

P.I. +60 EL. 56.10

FINISHED ℄ GRADE

EXISTING ℄ GRADE

MH6-24

167 L.F. 24" R.C.P. CL III @ 1.29%

30 L.F. 24" R.C.P. CL III @ 0.97%

79 L.F. 24" R.C.P. CL III @ 1.25%

108 L.F. 24" R.C.P. CL III @ 1.42%

SUBCUT (SEE NOTE @ LT.)

SUBCUT (SEE NOTE @ LEFT)

EXIST. 8" SAN. SEWER

EXIST. 12" W.M. (FIELD VERIFY)

EXIST. 21" SAN.

+1.00%

117 L.F. 36" R.C.P. CL III @ 0.89%

153 L.F. 42" R.C.P. CL IV @ 0.60%

EXIST. 12" SAN. SEWER

50 L.F. 36" R.C.P. CL III @ 0.90%

NOTE: SPECIAL SUBCUT PROVISIONS EXIST IN 30" WATERMAIN VICINITY. VERIFY WATERMAIN DEPTH AND PROVIDE COVER PROTECTION AS SHOWN ON PAGE 18 DETAIL.

NOTE: CONNECT PERFORATED DRAIN PIPES TO EASTSIDE FOR C.B. 43 & C.B. 44 & TO EAST & WEST SIDES OF C.B. 36 & C.B. 37 (SEE TYPICAL SECTION, SHEET NO. 4)

ASBUILT PLAN CONFORMING TO CONST. RECORDS DONE BY: ABC DATE: 1/12/93

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 3 | CFBM | 4-18-90 | ADD EX. SIGNAL LAYOUT |
| 2 | SB | 8-10-91 | RELOC. STM SEW. LINE TO SOUTH, OMIT TEMP ESMT. |
| 1 | CFBM | 9-5-91 | RELOC. WM - ADD 12" BFV |

ITEM | DESIGN | CHECKED

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. Date 1/24/90 Reg No. 9066

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

PLAN & PROFILE

FILE NO. 88019 | DATE 1/24/90 | 11 / 47

BASE | OVERLAY | DRG. ING.

CITY OF MAPLEWOOD

CITY OF ST. PAUL

LARPENTEUR AVENUE

EDGEMONT ST.

ARKWRIGHT ST.

CLARK ST.

CLOSE DRIVEWAY

END CURB & GUTTER WITH 5'TAPER

STA.54+40.00 LARPENTEUR AVE. =℄ EDGEMONT ST.

STA.58+50.00 LARPENTEUR AVE. =℄ ARKWRIGHT ST.

SAVE TREE

TEMPORARY EASEMENT

RETAINING WALL

CONSTRUCTION LIMITS

REMOVE TREES

TAPERED RADIUS AS NEEDED (TYPICAL)

REMOVE CB's & PLUG PIPE

REMOVE CB & PLUG PIPE

REMOVE CP'S & PLUG PIPE

SECTION LINE

SEE SHEET 11 MATCH LINE STA.53+00

MATCH LINE STA. 62+00 SEE SHEET 13

SEE SHEETS 16 & 17 FOR ALIGNMENT & PROFILE

REMOVE & REBUILD 4' CONC. WALK

REMOVE AND REBUILD 3' WIDE 4" CONC. WALK

REMOVE AND REBUILD 4' WIDE 4" CONC. WALK

REMOVE AND REBUILD 5' WIDE 4" CONC. WALK

RESTORE BIT. DRIVEWAY

RESTORE GRAVEL DRIVEWAY W/BIT.

RESTORE CONC. DRIVEWAY

TEMPORARY EASEMENT

CONSTRUCTION LIMITS LOT 20 TEMPORARY EASEMENT

200 LF PIPE DRAIN (TYPICAL)

REMOVE EXISTING TREES

8'x 8' INSULATE WATERMAIN & VERIFY ELEVATION

SCALE IN FEET 0 30 60

B.M ELEV. 859.89 TOP/HYD. LARP. & McMENEMY

B.M. ELEV 875.93 TOP/HYD. LARP. & ARKWRIGHT

CURVE DATA
P.I. 60+67.94
△ =0°43'
D = 0°40'
R = 8594.37'
T = 53.75'
L = 107.50'

P.C. 60+14.19

P.T. 61+21.69

65' YD. LT.

LOT 7 HOUSE #366

LOT 1 HOUSE #372 Thomas E. Nimis & Joann M. Nimis

LOT 2 HOUSE #380 John Lichtscheidl

LOT 4 HOUSE #388 #1688 Norynne M. Schiminsky

LOT 5 Albrecht Heinz Hamann

LOT 4 HOUSE #396 Edwin J. Skari, Jr & Colleen Mr. Skari

LOT 15 Charles B. Johnson & Judith A. Johnson

LOT 4 Donna Fae Pinotti #1686

LOT 3 HOUSE #433 Robert Schneider & Cecelia Schneider

LOT 2

LOT 1 BLOCK 3

LOT 1 BLOCK 4

LOT 1 John E. Stone & Marion J. Stone #1659

BLOCK 2 MONN'S VILLA

BLOCK 1 MONN'S VILLA

CLARKE'S 2nd ADDITION

NOTE: S.S SERVICES STATIONED UPSTREAM FROM DOWNSTREAM M.H.

PARCEL NO. 0

TEMPORARY EASEMENT

PERMANENT EASEMENT

+12 END WALL & FENCE TOP EL. 83.47

FIELD VERIFY ALL UTILITY CROSSINGS

EXISTING ℄ GRADE

FINISHED ℄ GRADE

SUBCUT

EXIST. 8" SAN. SEWER

EXIST. 12" SAN. SEWER

EXIST. W.M.

EXIST. 6" WM

EXIST. 8" SAN. SEWER

EXIST. 12" SAN. SEWER

8" WM

8" WM - FIELD VERIFY CLEARANCE WITH SAN.

+67 BEGIN WALL & FENCE (SEE DETAIL SHEET 9) TOP ELEV. 63.97

+27 END WALL TOP EL 73.69

+72 BEGIN WALL & FENCE TOP EL 75.28

P.I. + 50.00 EL 63.00

250' V.C. M=0.79

+1.00 %

+3.53%

320 LF 18" RCP CL III @ 2.80%

86 LF 18" RCP CL III @ 3.00 %

92 L.F 15" R.C.P. CL. III @ 4.00%

40 L.F. 15" R.C.P. CL. III @ 1.00%

50 L.F. 18" R.C.P. CL III @ 4.10 %

31 L.F. 15" R.C.P. CL III @ 1.00 %

26 L.F 15" R.C.P CL III @ 2.00 %

31 L.F. 15" R.C.P. CL III @ 2.00 %

83 L.F 15" RCP CL III @ 3.00 %

40 L.F. 15" RCP CL III @ 2.00 %

+12 END WALL & FENCE TOP EL. 83.47

MH6-7 MH6-11 MH6-12 MH6-13

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: A.B.C
DATE: 1/12/93

NOTE: CONNECT PERFORATED DRAIN PIPES TO EAST SIDE OF CB 55 & CB 56 AND TO EAST SIDE OF CB 49 & CB 51A. (SEE TYPICAL SECTION, SHEET NO. 4 ).

S.A.P. 62-630-36 S.A.P. 138-020-07 28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-18-90 | RELOCATE STORM SEWER |
| 2 | SB | 8-10-91 | RELOCATED ENTRANCE TO EDGEMONT, RELOCATED CB47 |
| 3 | CFBM | 9-5-91 | RELOC. GV'S - ADD 8" GV @ EDGEMONT |

ITEM | DESIGN | CHECKED

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.
Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90

12 / 47

BASE | OVERLAY | DRG. NO.
3 Pc.

8" W.M.—SEE SHEETS 20 & 22.

Eugene R. Hillstrom & Edward C. Hillstrom

LOT 2 | BLOCK 1 MONN'S VILLA | LOT 1 CONSTRUCTION LIMITS

SILT FENCE

8" D.I.P. W.M.

REMOVE EXIST. GUARDRAIL

EXIST. 18" CMP

DESOTO ST.

SEE SHEET 15

P.I. = 11+15
Δ = 45°
6-7½° S.R. BENDS

NOTE: GRADE DITCH TO DRAIN TO C.B.

CB 62 B STA. 11+25 (TRAIL) 10' LT.

CB 62 A STA. 66+78.82' LT. = STA. 1+25 (TRAIL) 10' RT.

CITY OF MAPLEWOOD

25 L.F. METAL BEAM GUARDRAIL & TWISTED END TREATMENT

CB 60

CB 61 STA. 1+00 C

WINGWALL BY OTHERS

50 L.F. METAL BEAM GUARDRAIL & TWISTED END TREATMENT

MH 61

15" CMP

65+11.64 T.C. 88.60

65+67.64 T.C. 89.18

T.C. 88.23

T.C. 88.42

T.C. 88.71

12" SS

MH 6-14

CB59

REBUILD MANHOLE

120 L.F. PIPE DRAIN

REMOVE EXIST. GUARDRAIL

STA. 65+83.75 (LARPENTEUR AVE.) = STA. 10+00 (D.N.R. TRAIL)

REMOVE EXISTING BRIDGE

MH 62

LOT 13

LOT 12

CURVE DATA
P.I. STA. 68-67.44
Δ = 0°43'
D = 0°40'
R = 8594.37'
T = 53.75'
L = 107.50'

LOT 11 CONSTRUCTION LIMITS
CONSTRUCT BIT. DRIVEWAY

P.C. 66+13.69

P.T. 69+21.19

REMOVE & RELOC. DRIVEWAY

LOT 10

REMOVE MH & PLUG PIPE

BLOCK 6

KING'S ADDITION TO THE CITY OF ST. PAUL

Scott J. Williams & Linda L. Halcon
531 LOT 8 HOUSE

LOT 9

8

9

535

GAR.

(EXIST. FLAGSTONE)

TEMPORARY EASEMENT

REM. & RELOC. EXISTING BIT. DRIVEWAY

RET. WALL

RETAINING WALL

BRADLEY ST. (VACATED)

SCALE IN FEET
0 15 30 60

MATCH LINE STA. 62 + 00
SEE SHEET 12

STA. 62+50 LT. 16' WIDE BIT. DRIVE TO BE LOCATED BY ENGINEER DURING CONST.

SECTION LINE

16" DIP WM

WINGWALL BY OTHERS

STA. 9+00 C

50 L.F. METAL BEAM GUARDRAIL & TWISTED END TREATMENT

LOT 1 BLOCK GASTON'S SUBDIVISION NO. 1

STA. 65+54.64 LARPENTEUR AVE. = 0+00 @ DESOTO ST.

19

24" RCP FRAME CONC. STRUCT. W/ WINGWALLS TO BE BUILT BY OTHERS

CONVERT EXST. 24" CMP INTO MH 62

MH 62 C
STA. 8+36 (TRAIL) 10' LT.

EXIST. 24" CMP

66' LITTLE CANADA ROAD

MINNESOTA DEPT. OF NATURAL RESOURCES

LOT 3

LOT 14

BLOCK 4

CLARKE'S 2nd ADDITION

NOTE: S.S. SERVICES STATIONED UPSTREAM FROM DOWNSTREAM M.H.

13 CU. YD. CL III RIPRAP

APRON 62 E

M.H. 62 D

LOT 1 BLOCK 2 GASTON'S SUBDIVISION NO. 1

P.I. = 8+26
Δ = 45°
6-7½° S.R. BENDS

LOT 2

LOT 3

CITY OF ST. PAUL

LARPENTEUR GREEN CONDOMINIUM

STA. 61+50 TO 69+52 16" WATER MAIN TO BE EXTENDED AND LOWERED DURING CONSTRUCTION

GRADING, TRENCHING AND BACKFILL BY THE CONTRACTOR. REMOVAL & LAYING OF 16" DIP BY THE CITY OF ST. PAUL.

REMOVE CB'S & PLUG PIPE

RESTORE BIT. DRIVEWAY

TEMPORARY EASEMENT

16

CONSTRUCTION LIMITS

RESTORE CONC. DRIVEWAY

PLANTER

CONC

HOUSE #518

Raymond E. Marasich & Joan O. Marasich

Carl F. Mohrland & Kathleen M. Mohrland LOT 1

BLOCK 1

EDGERTON MANOR

REMOVE EXISTING TREES

MATCH LINE STA. 71 + 00
SEE SHEET 14

LARPENTEUR AVENUE

8' x 8' INSULATE WATERMAIN & VERIFY ELEVATION

NOTE: CONTRACTOR TO RESTORE D.N.R. TRAIL UNDER BRIDGE, AND ALL DISTURBED AREAS

NOTE: CONNECT PERF. DRAINAGE PIPES TO EAST SIDE OF C.B. 58 & 59. (SEE TYPICAL SECTION, SHEET NO. 4)

B.M. ELEV. 896.24
TOP NUT HYD. LARP. & DESOTO

B.M. ELEV. 892.91
TOP NUT HYD. LARP. & JESSIE

PARCEL NO. 0

TEMPORARY EASEMENT

PERMANENT EASEMENT

DRAINAGE EASEMENT

EXISTING 24" C.M.P. 62.65

50 L.F. 30" R.C.P. CL. III @ 4.16%

64 L.F. 30" R.C.P. CL III @ 0.60% (INCL. 6-7½° S.R. RCP BENDS)

200 L.F. 30" R.C.P. (BY OTHERS)

30 L.F. 30" R.C.P. CL III @ 0.60% (INCL. 6-7½° S.R. RCP BENDS)

EXIST. 18" C.M.P.

P.I. +25 EL. 86.83

250' V.C. M = 0.91

EXISTING ℄ GRADE

FINISHED ℄ GRADE

+0.63%

EL. = 886.00

SUBCUT

EXISTING 12" S.S.

EXISTING 8" W.M.

FILL & BRIDGE BY SEPARATE CONTRACTOR

30 L.F. 36" R.C.P. CL. III @ 0.80%

2-36" 7 1/2° L.R. R.C.P. BENDS

16 L.F. 36" R.C.P. CL III @ 1.00%

20 L.F. 15" R.C.P. CL. III @ 2.50%

45 L.F. 36" R.C.P. CL. III @ 33.00%

2-36" - 7 1/2° L.R. R.C.P. BENDS

M.H. 62 A

150' V.C. M = 0.23'

P.I. +75 EL. 90.29

C.B. 62 F

C.B. 62 G

-0.61%

MH 7-25

MH 7-24

SUBCUT

32 L.F. 15" R.C.P. CL. III @ 1.60%

80 L.F. 15" R.C.P. CL. III @ 1.30%

384 L.F. 24" R.C.P. CL. III @ 1.00%

EXISTING 8" VCP SAN. SEWER

NOTE: ALL PIPE TIED FROM MH 62 TO MH 62 A.

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: ABC
DATE: 1/13/92

C.B. 58 | ℄ LARPENTEUR AVE | C.B. 59 | MH 59 A | C.B. 60 | ℄ DESOTO ST. | C.B. 61

55 L.F. 15" RCP CL III @ 1.00%

140 L.F. 15" CL. IV @ 0.70%

95 L.F.

EXIST. 12" S.S. (FIELD VERIFY)

EXIST. 8" W.M.

30 L.F. 15" RCP CL III @ 0.70%

0.47%

SEE SHEET 15 FOR PROFILE

C.B. 62 B | C.B. 62 A

S.A.P. 62-630-36 S.A.P. 138-020-07

28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-18-90 | RELOCATE STORM SEWER |
| 2 | CFBM | 4-18-90 | REVISE BRIDGE LOCATION |
| 3 | LCH | 7-10-90 | ADDITIONAL NOTES. REVISE STORM SEWER |
| 4 | LCH | 7-10-90 | ADDITIONAL NOTES, ESMT. ADD RETAINING WALL |

ITEM | DESIGN | CHECKED

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
Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
13 / 47

BASE | OVERLAY | DRG. NO.

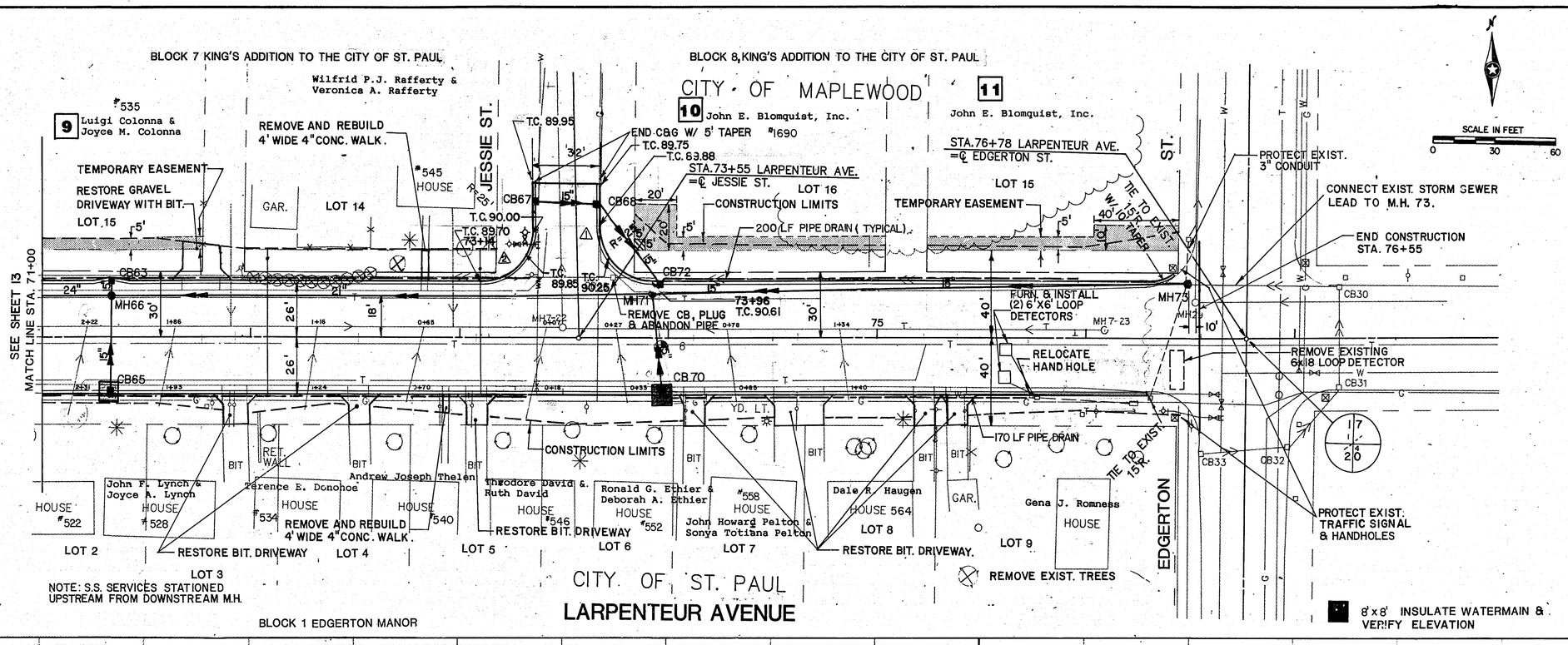
PARCEL NO. 0

TEMPORARY EASEMENT

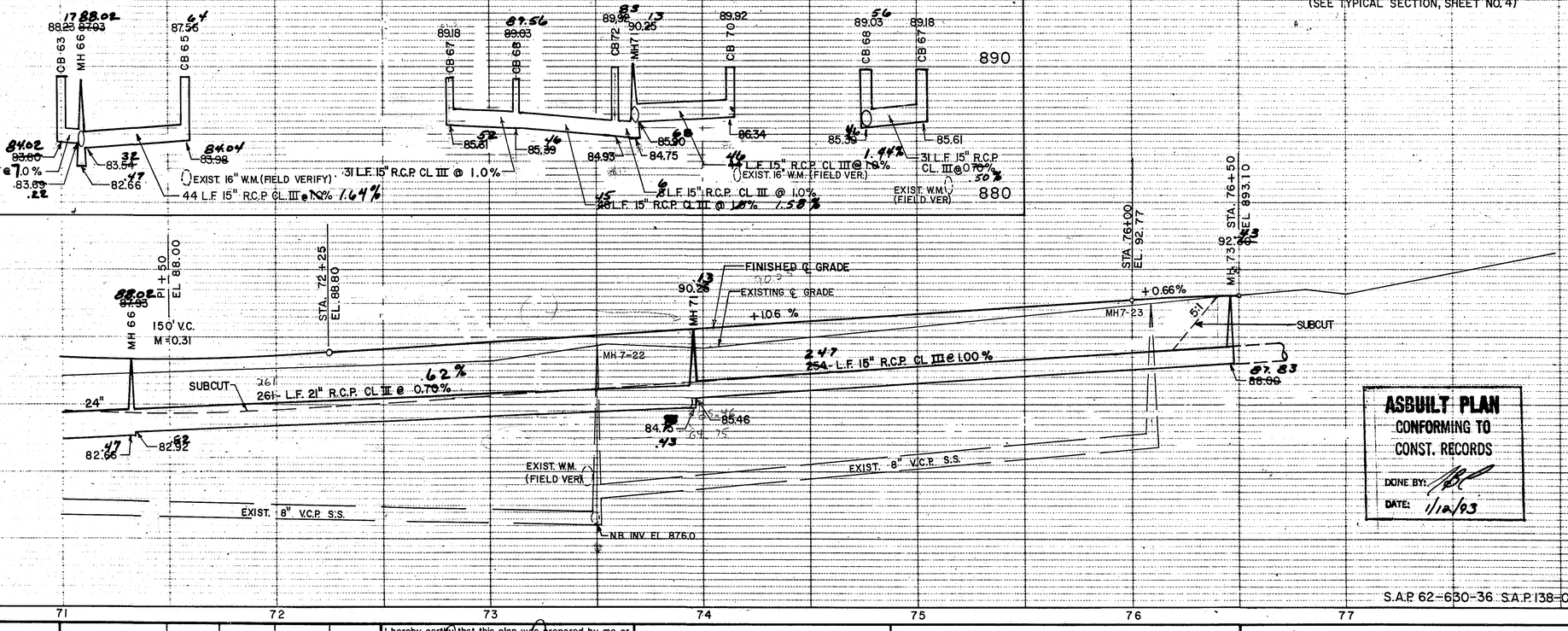
PERMANENT EASEMENT

B.M. ELEV. 896.82
TOP NUT HYD. LARPENTEUR & EDGERTON

B.M. ELEV. 892.91
TOP NUT HYD. LARPENTEUR & JESSIE




NOTE: CONNECT PERF. DRAIN PIPE TO EAST & WEST SIDES OF C.B. 63 & C.B. 65
TO EAST SIDE OF C.B. 70 & 72
(SEE TYPICAL SECTION, SHEET NO. 4)




ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: [illegible]
DATE: 1/12/93

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-18-90 | REVISE STORM SEWER LAYOUT |
| 2 | CFBM | 9-5-91 | RELOC. HYD. |

ITEM | DESIGN | CHECKED

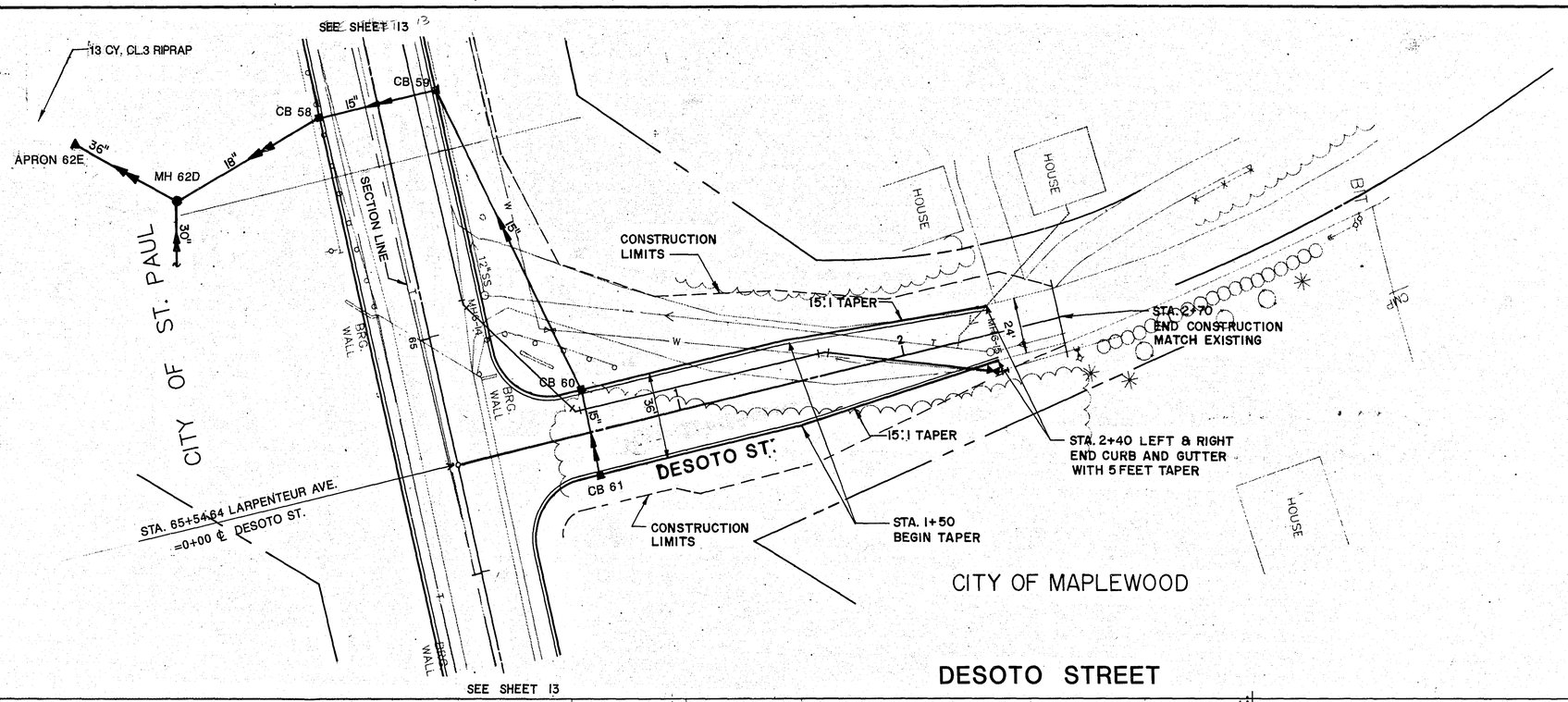
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota
Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

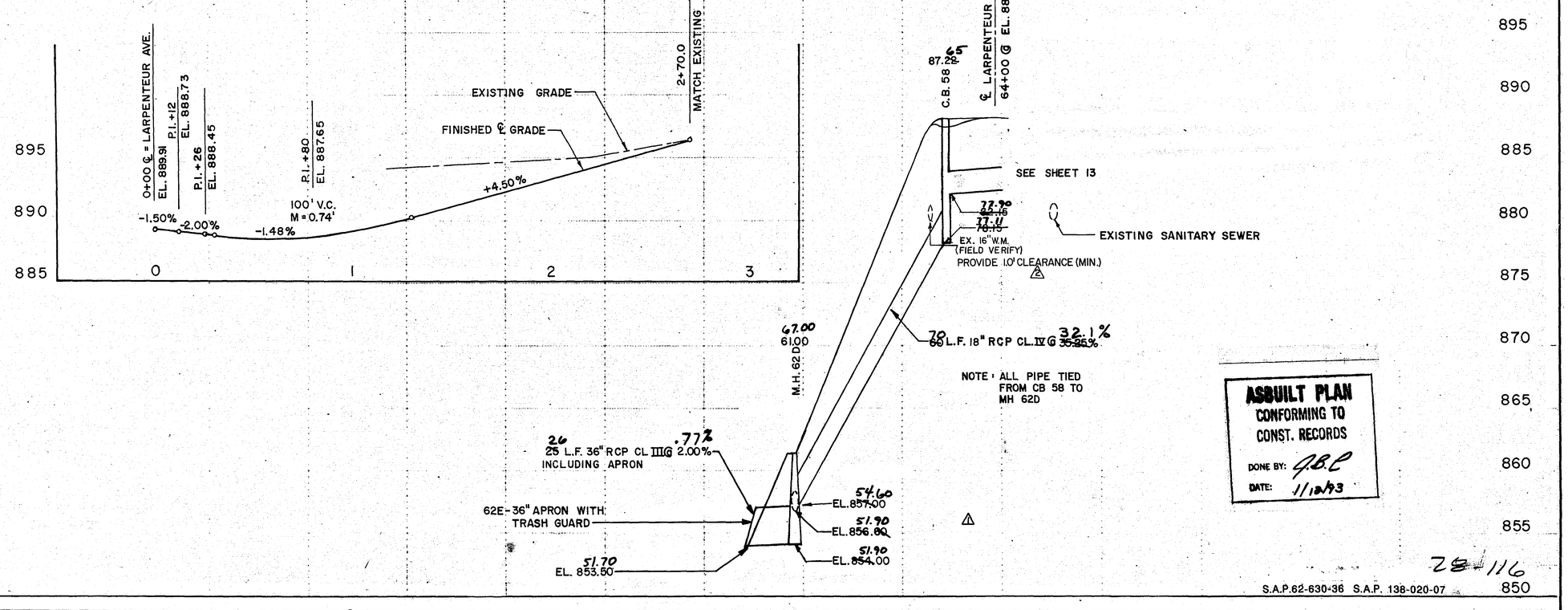
RAMSEY COUNTY, MINNESOTA

PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
14 / 47




## DESOTO STREET




ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: GBL
DATE: 11/13/93

28-116

S.A.P.62-630-36 S.A.P. 138-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | LCH | 7-10-90 | REVISED STORM SEWER |
| 2 | CFBM | 9-5-91 | ADD CLEARANCE NOTE |

ITEM | DESIGN | CHECKED

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

Date 9/24/90 Reg No. 20472

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
15
47

BASE | OVERLAY | DRG. NO.

SEE SHEET 12
STA. 54+00

MH 51

CB 51A

E. LARPENTEUR AVE.

NORTH LINE OF THE N.W. 1/4 OF SEC. 20-29-22

CLARKES

DAWSONS

ARKWRIGHT ST.

CLARK ST.

BLOCK 1

BLOCK 2

BLOCK 3

5TH

WHEELOCK

PARKWAY

12 13 14 15 16 17 18 19

Thomas E. Nimis & Joann M. Nimis

John Lichtscheidl

Edwin J. Skari Jr. & Colleen M. Skari

Charles B. Johnson & Judith A. Johnson

James J. Wingate

John E. Stone & Marlen J. Stone

John Stone

City of St. Paul

MH 51B

RUBBLE PILE

PROTECTED TREE AREA

POND

SILT FENCE

CB 62B
CB 62A
CB 60
CB 61
CB 59
CB 58
CB 62C

15" 36" 100' 65 145' 630'

65 + 83.75 LARP. = 10 + 00 TRAIL

SEE SHEET 13 & 15

CAMP FL 863.34

APRON 62 E
INV. ~~858.30~~ 852.19
13 C.Y. CLASS III RIPRAP

APRON 61B
INV. 830.00
20 C.Y. CLASS III RIPRAP

APRON 62J
INV. 830.0
STA. 2+30
150' LT.

5 C.Y. CLASS III RIPRAP

270 L.F. 12" R.C.P. @ 8.15%

POND H.W. = 838.6
BOTTOM = 829.0

CB 51F
SPECIAL DRAINAGE STRUCTURE
SEE DETAIL SHEET NO. 8
BALE CHECK
APRON 51 E
INV. 830.0

CB 51G

CB 51H

MH 51J

BULKHEAD OUTLET TO POND AT CATCH BASIN

REMOVE & REPLACE BIT. & CURB

CONNECT TO EXIST. MH 51J

REMOVE EXIST. MH

BALE CHECK

SPECIAL DRAINAGE STRUCTURE 62H – SEE DETAIL SHEET NO. 8
STA. 4+85, 65' LT
INV. EL. 851.80
ORIFICE EL. 852.00

B.M. ELEV. 859.89
TOP OF HYD. LARPENTEUR & McMENEMY

B.M. ELEV.. 896.24
TOP OF HYD. LARPENTEUR & DESOTO

EXISTING 1' CONTOURS
FINISHED 1' CONTOURS
0 PARCEL NO.
TEMPORARY EASEMENT
PERMANENT EASEMENT
DRAINAGE EASEMENT PARCEL NO. 19A
SILT FENCE OR BALE CHECK
DRAINAGE EASEMENT PARCEL NO. 17

N

50 0 50 100
scale feet

NOTE: NEW CB 51G AND CB 51H REPLACE EXISTING CATCH BASINS. ALL EXISTING PIPE AND STRUCTURES FROM THE POND TO EXIST. MH 51J SHALL BE REMOVED AND REPLACED WITH STRUCTURES AS SHOWN. REMOVE AND REPLACE 60 L.F. OF B6-24 CONC C. & G. AND BITUMINOUS ROADWAY FOR WHEELOCK PARKWAY CROSSING. RESTORATION SECTION TO BE 8" CL. 5 AGGREGATE BASE AND 4" OF 2341 BIT. MIX

NOTE FOR PONDING AREA:

CONTRACTOR SHALL COVER ALL DISTURBED AREAS WITH TOPSOIL AND SEED MIX IN ACCORDANCE WITH SPECIFICATIONS. BERM ADJACENT TO WHEELOCK PARKWAY SHALL RECEIVE TOPSOIL AND SOD BETWEEN THE CURB AND PROTECTED TREE AREA. TREES REMOVED FOR POND CONSTRUCTION SHALL BE REPLACED WITH FORTY-SIX 2" B&B RED OAK TREES AT THE DIRECTION OF THE ST. PAUL FORESTRY DEPT.

See Page 44

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: J.B.C
DATE: 1/2/93

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 6 | KRM | 7-30-90 | REVISE EASEMENTS PARCEL NO. 17 |
| 5 | SFH | 8-17-89 | RELOCATED POND BERM |
| 4 | RJW | 1-19-90 | ADD NOTE FOR PONDING AREA, WHEELOCK CROSSING |
| 3 | RJW | 1-19-90 | LOWER POND 1' TO EL. 829.00 |
| 2 | CFBM | 6-26-90 | TRACE BASE-MAP TO NEW MYLAR/REVISE STORM SEWER & |
| 1 | LCH | 7-10-90 | EXIST. CONTOURS, PONDING AREAS, EASEMENTS |

ITEM | DESIGN | CHECKED

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Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY. MINNESOTA

DRAINAGE PLAN

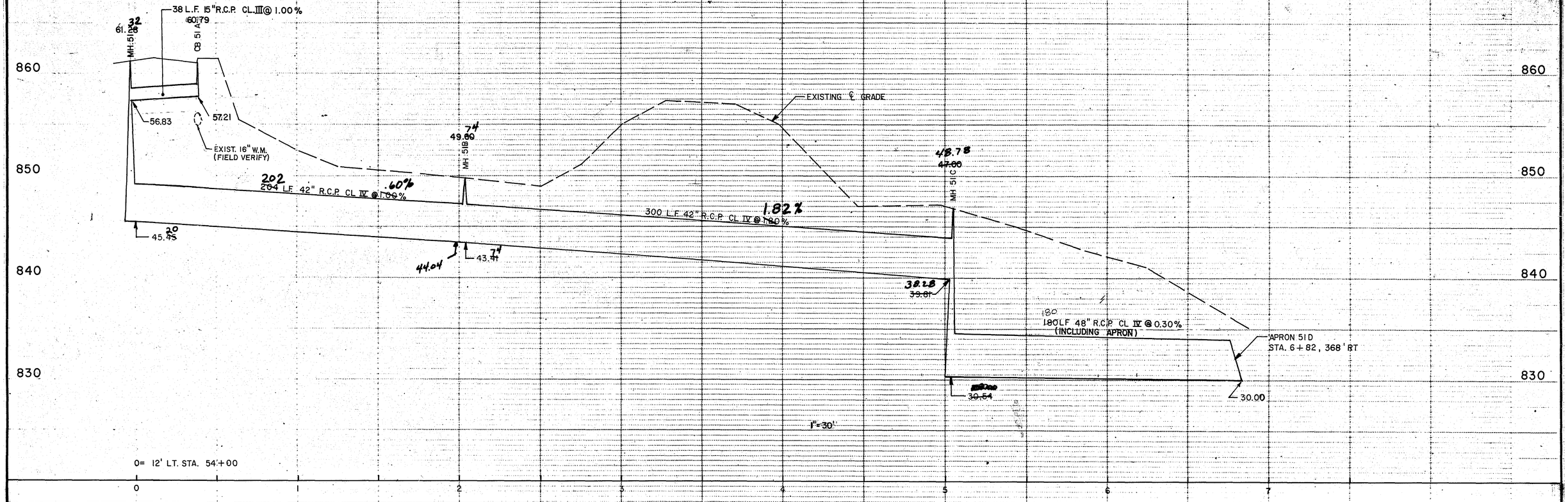
FILE NO. 88019
DATE 1/24/90

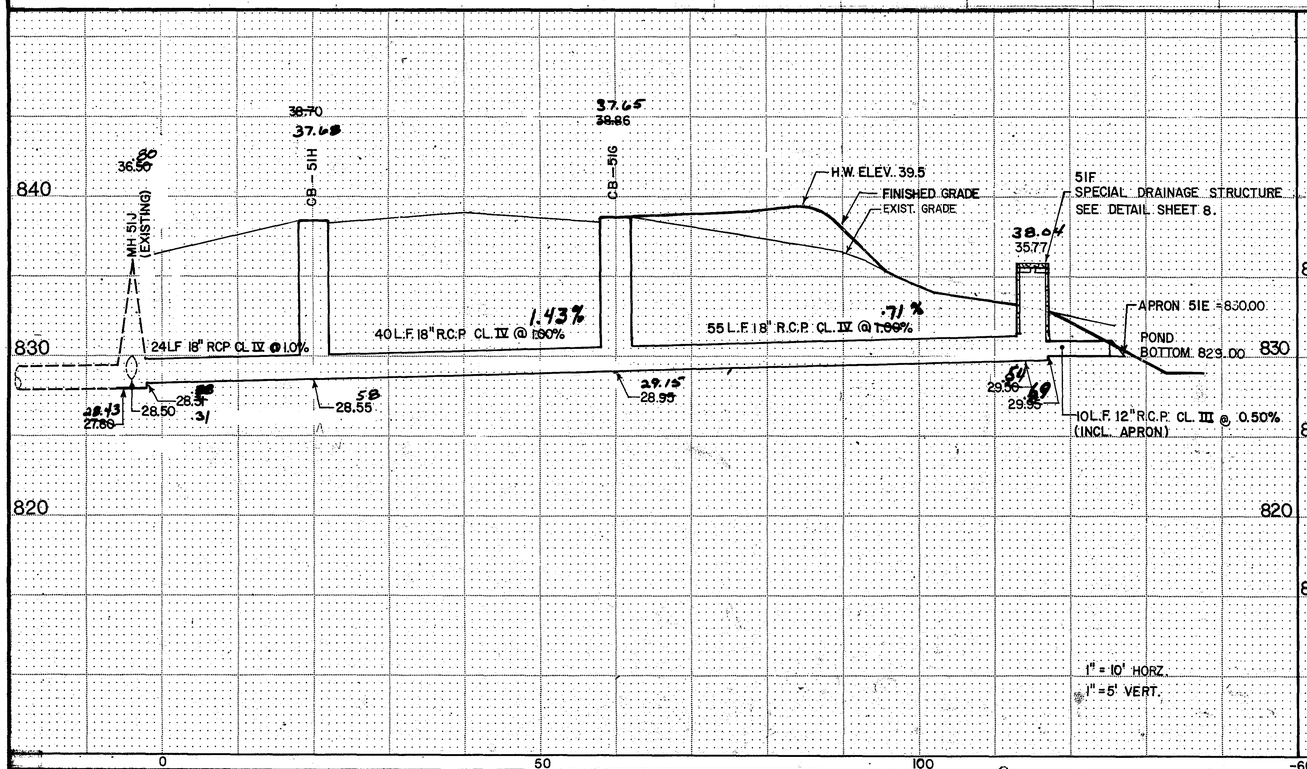
16
47

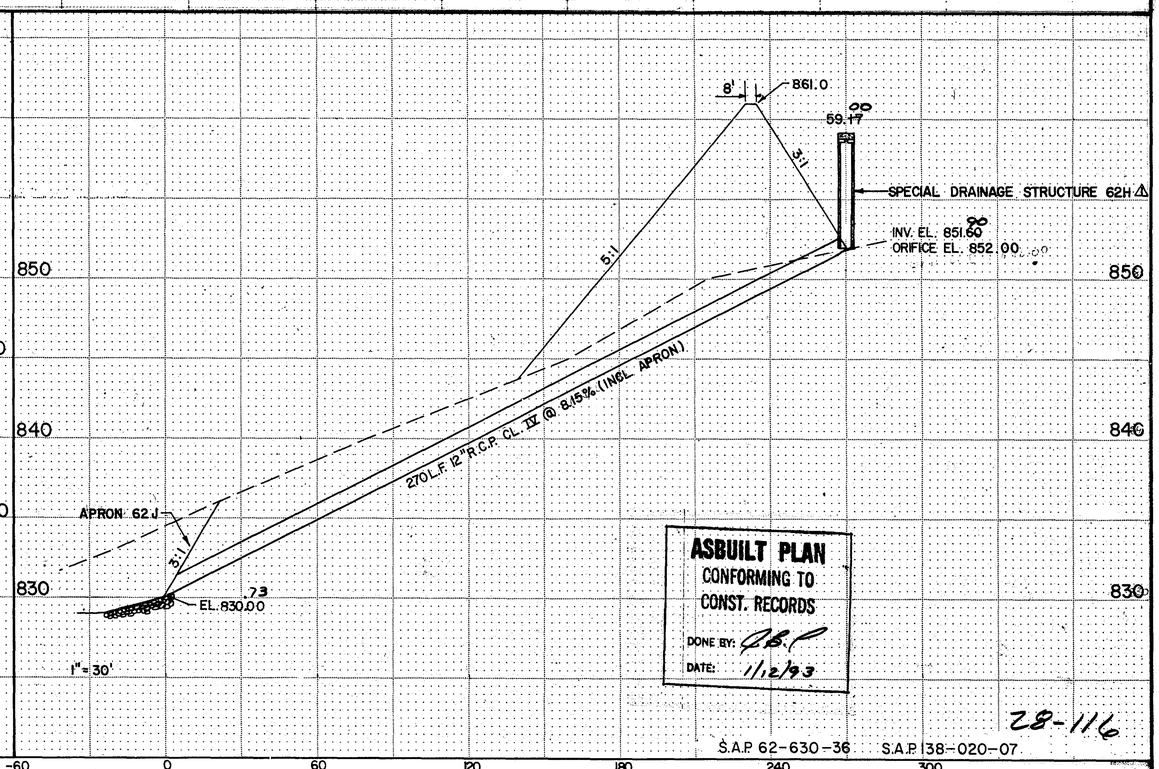
S.A.P. 62-630-36 S.A.P. 138-020-07

ZS-116

BASE | OVERLAY | DRIG. INC.




ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: G.B.C.
DATE: 11/2/93

28-116

S.A.P 62-630-36 S.A.P 38-020-07

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | LCH | 7-10-90 | REVISED STORM SEWER |

ITEM | DESIGN | CHECKED

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Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

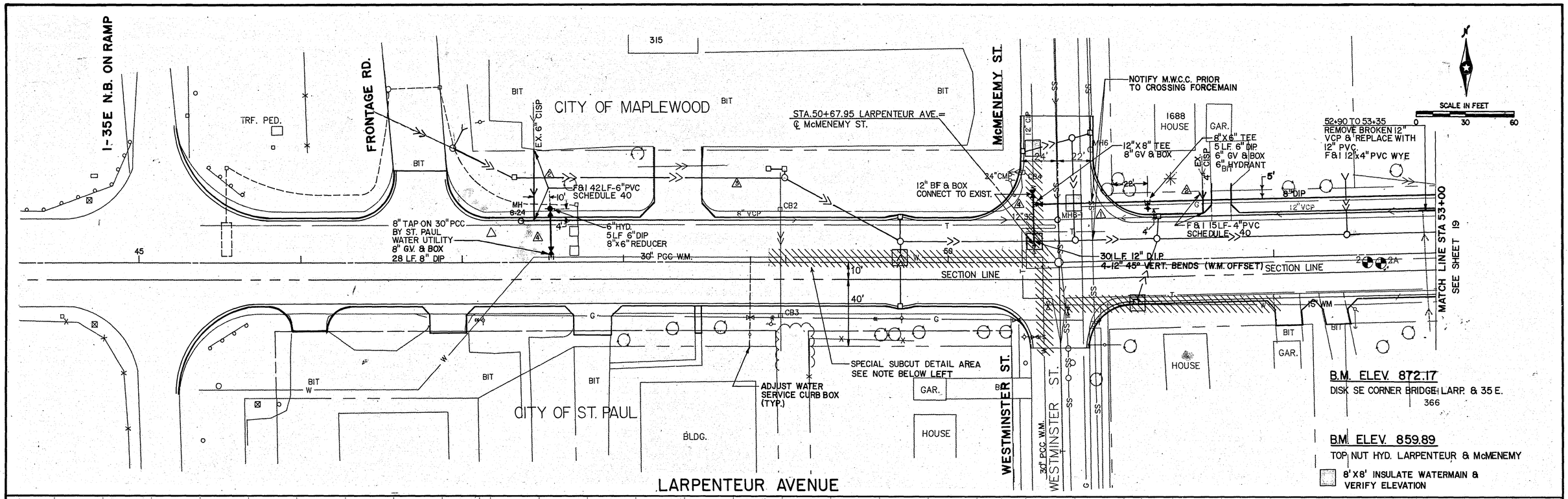
RAMSEY COUNTY, MINNESOTA

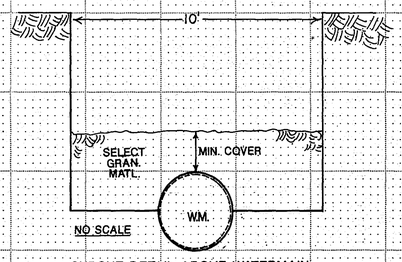
DRAINAGE PROFILE

FILE NO. 88019
DATE 1/24/90

17
47

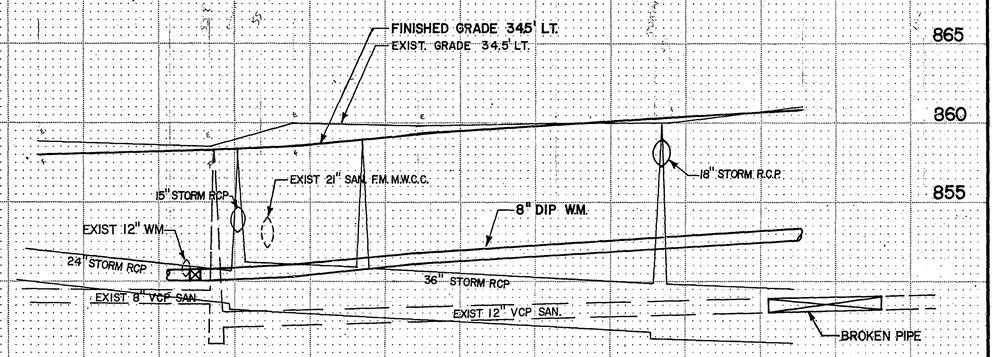
BASE OVERLAY DRG. NO.

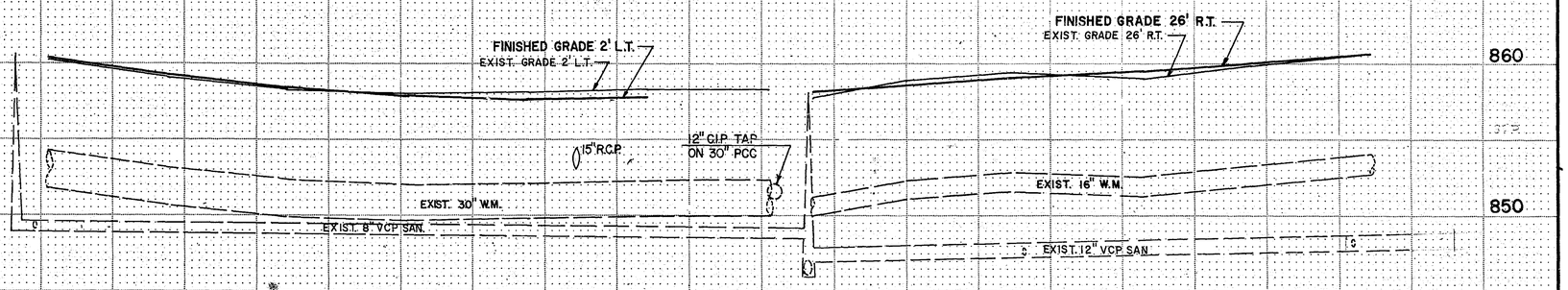



SUBCUT DETAIL ABOVE WATERMAIN

THE CONTRACTOR SHALL EXCAVATE TO SPRING-LINE OF WATERMAIN FROM STA. 48+90 TO 52+10. THE TRENCH SHALL THEN BE BACKFILLED AND COMPACTED WITH SELECT GRAN. MATERIAL A MINIMUM OF 18" ABOVE CONCRETE W.M. AND 3' ABOVE DUCTILE AND CAST W.M. THESE MIN. COVER DEPTHS MUST BE MAINTAINED AT ALL TIMES TO PROTECT WATERMAIN FROM EQUIPMENT.




28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-18-90 | ADD W.M. |
| 2 | CFBM | 4-18-90 | ADD SAN. SEWER SERVICES |
| 3 | SB | 5-10-91 | RELOC. STM SEW. LINE TO SOUTH, OMIT TEMP. ESMT. |
| 4 | CFBM | 9-5-91 | RELOC. WM - ADD 12" BFV |

ITEM | DESIGN | CHECKED

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Date 1/24/90 Reg No. 9046

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

WATERMAIN PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
18 / 47

BASE | OVERLAY | DRG. NO.

CITY OF MAPLEWOOD

CITY OF ST. PAUL

SEE SHEET 18 MATCH LINE STA 53+00

MATCH LINE STA 62+00 SEE SHEET 20

1689 HOUSE

1688

1686

HOUSE 366

HOUSE 372

HOUSE 380

HOUSE 390

HOUSE 396

HOUSE 433

EDGEMONT ST.

ARKWRIGHT ST.

STA.54+40.00 LARPENTEUR AVE. =℄ EDGEMONT ST.

STA.58+50.00 LARPENTEUR AVE. =℄ ARKWRIGHT ST.

EX. 4" CISP

F&I 15LF 4" PVC SCHEDULE 40 AND 12"x 4" PVC WYE

8" DIP

8" GV & BOX

8"x8" TEE

CONNECT TO EXIST. 6" WM W/ 6" G.V. 6"x8" REDUCER 10LF-6" DIP

PLANTER

HYDRANT 8"x 6" TEE 6" GV 5'-6" LEAD

RET. WALL

FURNISH & INSTALL 8" DIP WM.

ABANDON 6" EXIST. WM

8" GV.

CB11

CONNECT TO EXIST. 6" WM. 6" G.V. & BOX 30LF-6" DIP

INSTALLED BY ST. PAUL WATER UTILITY

27 LF WATER SERVICE TRENCH EXC.
1" COPPER SERVICE (TYPICAL)
1" CORP STOP
1" CURB STOP & BOX
CONNECT TO EXIST. SERVICE

FURNISH & INSTALL 8" DIP WM

P.C. 60+14.19

P.T. 61+21.69

6"x 6" TEE 6" LEAD 6" VALVE & BOX HYDRANT

CONC

SCALE IN FEET 0 30 60

CB7

MH6-7

MH6-5

MH6-12

MH6-13

12" SS

8" DIP

10'

15'

55 8x8 INSULATION

8"RCP

90° BEND

8"x6" TEE

8x8 INSULATION

6" PLUG

STA 61+50 CONNECT TO EXIST.

16" WM

CB8

CB10

BIT

RET. WALL

GRV

ADJUST WATER SERVICE CURB BOX. (TYP.)

55+00 TO 55+13 REMOVE BROKEN 12" VCP & REPLACE WITH 12" PVC. F & I 12"x 4" PVC WYE

RELOCATE HYDRANT (BY ST. PAUL WATER UTILITY) CONTRACTOR TO TRENCH & BACKFILL FOR ST. PAUL WATER UTILITY.

F&I 15LF-4" PVC SCHEDULE 40

16" BF VALVE & BOX

16" DIP WM RELOCATION STA 61+50 TO 64+65 CONTRACTOR TO TRENCH & BACKFILL FOR ST. PAUL WATER UTILITY

B.M. ELEV. 859.89
TOP NUT HYD. LARPENTEUR & McMENEMY

B.M. ELEV. 875.93
TOP NUT HYD. LARPENTEUR & ARKWRIGHT

## LARPENTEUR AVENUE

FINISHED GRADE 15' LT.

EXISTING GRADE 15' LT.

RET. WALL & FENCE

7.5' COVER

15" STORM RCP

8" W.M.

EXIST. 12" SS

EXISTING GRADE 34.5' LT.

FINISHED GRADE 34.5' LT.

BROKEN PIPE

8" WM

FINISHED GRADE 27' RT.

EXISTING GRADE 27' RT.

EXIST. 16" W.M.

870 860 880

53 54 55 56 57 58 59 60 61 62

28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 2 | CFBM | 4-18-90 | ADD & RELOCATE WM |
| 3 | CFBM | 4-18-90 | ADD SAN. SEWER SERVICES |
| 4 | SS | 8-10-91 | RELOC. ENTRANCE TO EDGEMONT, RELOC. CB47 |
| 5 | CFBM | 9-5-91 | RELOC GVS - ADD 8" GV @ EDGEMONT |
| 1 | RJW | 1/9/90 | CORRECT ℄ STATION OF EDGEMONT ST. |
| 6 | CFBM | 9-5-91 | ADD WM & SAN. PIPE OFFSET DIMENSIONS |

| ITEM | DESIGN | CHECKED |
|---|---|---|
| | | |

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Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

WATERMAIN PLAN & PROFILE

FILE NO. 88019

DATE 1/24/90

19 / 47

BASE | OVERLAY | DRG. NO.

62+20: 4" TAP INTO 12"VCP
F&I: 15 LF-4"PVC SCHEDULE 40 SERVICE
62+30 & 63+10
25 LF-WATER SERVICE TRENCH EXC
SERVICES INSTALLED BY ST. PAUL WATER. SEE TYPICAL.

63+00: 4"TAP INTO 12"VCP
F&I: 15 LF-4"PVC SCHEDULE 40 SERVICE

FURNISH & INSTALL 8" DIP W.M.

SEE SHEET 22

DESOTO ST.

CITY OF MAPLEWOOD

LOT 13 | LOT 12 | LOT 11 | LOT 10 | LOT 9 | LOT 8 | VACATED BRADLEY ST.

47' | 40' | 33' | 33'

LOT 8: 531 HOUSE NEW LOT-120

LOT 11 INSTALLED BY ST.PAUL WATER
1" COPPER SERVICE (TYP.)
1" CORP. STOP
1" CURB STOP & BOX
CONNECT TO EXIST. SERVICE
70 LF TRENCH EXC. & BACKFILL

TYPICAL WATER SERVICE

535

SCALE IN FEET 0 30 60

ADJUST WATER SERV. (TYP.) BY ST. PAUL WATER UTILITY.
10 LF TRENCH EXC. & BACKFILL

10 LF WATER SERVICE TRENCH EXC. & BACKFILL

SEE SHEET 19 — MATCH LINE STA 62+00

SEE SHEET 21 — MATCH LINE STA 71+00

45° BEND

12" VCP

12"SS MH6-16

8'x8' INSULATION

45° BEND 65

BRG. WALL

SECTION LINE

PROPOSED R/W LINE

EXIST. 40' SLOPE ESMT.

P.C. 68+13.69

T. 69+21.19

EX. 4" CISP

RET. WALL

20' PROP. DRIVE

NEW DRIVE 22'

F&I: 37 LF 4" PVC

F&I: 35 LF 4" PVC

F&I: 35 LF 6" PVC

MH 7-25

MH 7-24

STA. 69+52
CONNECT TO EXIST. WM

STA. 69+52
16" B.F. VALVE & BOX

70+80 TO 70+90
REMOVE SETTLED 8" VCP & REPLACE W/ 8" PVC. F&I 8"x6" PVC WYE

69+40 TO 69+50
REMOVE BROKEN 8" VCP AND REPLACE WITH 8" PVC. F&I - 8"x4" PVC WYE N&S

ADJUST WATER SERVICE (TYP) BY ST. PAUL WATER UTILITY
10 LF TRENCH EXC. & BACKFILL

PLANTER

HOUSE 516

HOUSE 522

RELOCATE HYDRANT (BY ST. PAUL WATER UTILITY)

INSTALL 16" DIP WM

16" DIP WM RELOCATION
STA 61+50 TO 64+65

STA.65+54.64 LARPENTEUR AVE.
=0+00 ℄ DESOTO ST.

CONNECT TO RELOCATED 16" DIP WM (BY ST. PAUL WATER UTILITY)

NOTE: SEE PED. TUNNEL CROSSING DETAIL (BELOW RT.)
FOR WATERMAIN STA. 65+26 TO STA. 65+83, CONTRACTOR TO TRENCH & BACKFILL FOR ST. PAUL WATER UTILITY ON ALL 16" WM

CITY OF ST. PAUL

68+59
75 LF-WATER SERVICE TRENCH EXCAVATION
WATER SERVICE INSTALLED BY ST PAUL WATER (TYP.)

16" DIP WM RELOCATION
STA 66+58 TO 69+52

68+75 TO 68+85
REMOVE BROKEN 8" VCP AND REPLACE WITH 8" PVC F&I - 8"x4" PVC WYE

GAR. | BIT | CB18 | CB19 | CB24

B.M. ELEV. 896.24
TOP NUT HYD. LARPENTEUR & DESOTO

B.M. ELEV. 892.91
TOP NUT HYD. LARPENTEUR & JESSIE

# LARPENTEUR AVENUE

890 / 880

FINISHED GRADE 15' LT.
EXISTING GRADE 15' LT.
MH 6-14
64+90-22.5 LT
RIM=894.0±
INV=882.2±W
INV=882.3±N
7.5' COVER
15" RCP STORM
8" DIP WM
EX. 12" VCP
SEE SHEET 22
62+20 TAP NORTH
63+00 TAP NORTH

EXISTING BRIDGE
FINISHED GRADE 30' RT.
EXISTING GRADE 30' RT.
EXIST. 16" DIP WM
15" R.C.P.
6.5' COVER
15" R.C.P.
16" DIP WM
CIRCULAR CRACK
SPIRAL CRACK
EX. 8" VCP
SETTLED PIPE
68+80 WYE NORTH
69+43 WYE NORTH (REPLACE)
69+48 WYE SOUTH (REPLACE)

GRANULAR MATERIAL
2" AIR VENT STA. 65+70±
104.8'x4" INSULATION
6"x6"x2" TREATED TIMBER (4)
65+10.83 45° BEND
65+34.17
65+75.92
65+78.73 45° BEND
65+66.75 45° BEND
65+82.81 45° BEND
3.34' | 2' | 10' | 10' | 2' | 3.34'
* USE MJ. 16" D.I. PIPE THROUGHOUT CROSSING W/RETAINER GLANDS

PEDESTRIAN TUNNEL CROSSING SCALE: NONE

62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70

28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-17-90 | RELOCATE WATERMAIN - ADD SAN. SERVICES (5) |
| 2 | CFBM | 9-5-91 | ADD WM OFFSET DIMENSION |

ITEM | DESIGN | CHECKED

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Date 1/24/90 Reg No. 9046

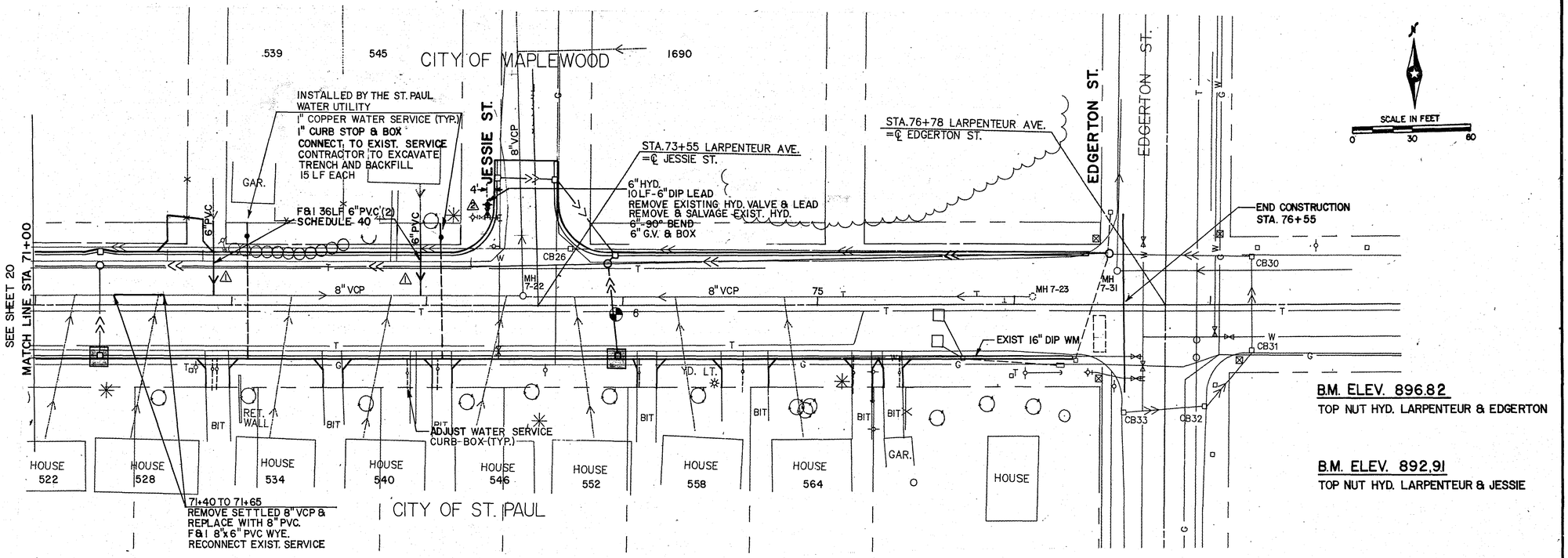
SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

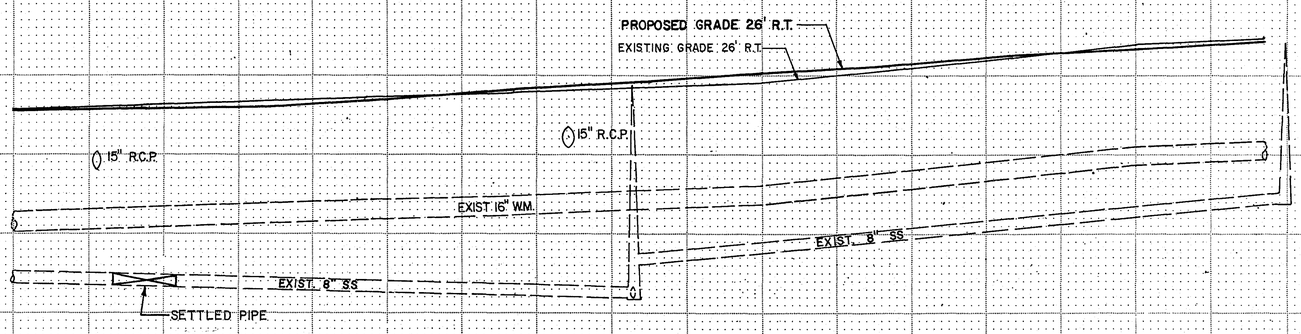
WATERMAIN PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
20 / 47

BASE | OVERLAY | DRG. NO.




LARPENTEUR AVENUE




28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-16-90 | ADD SANITARY SERVICES |
| 2 | CFBM | 9-5-91 | RELOC. HYD. - REVISE NOTES |

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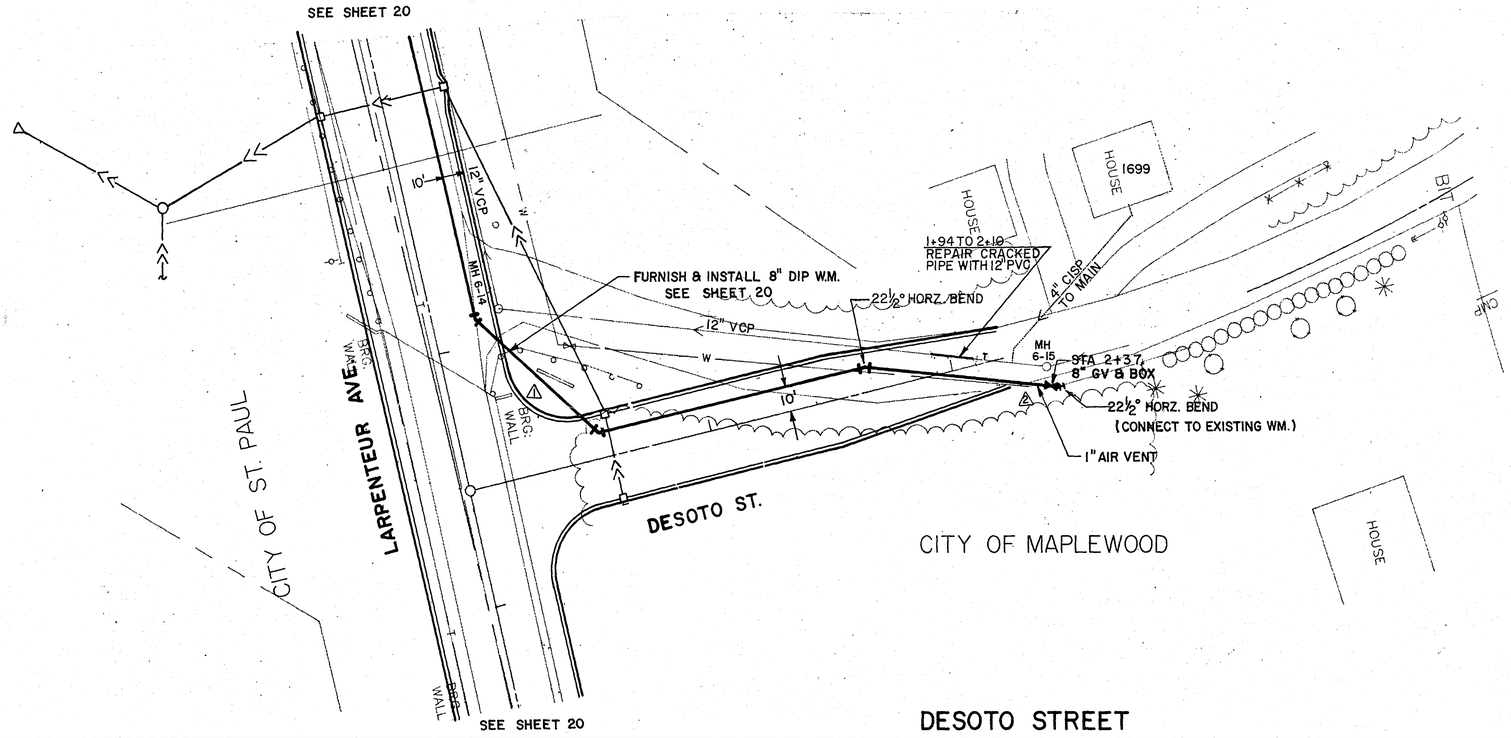
21 / 47

BASE | OVERLAY | DRG. NO.

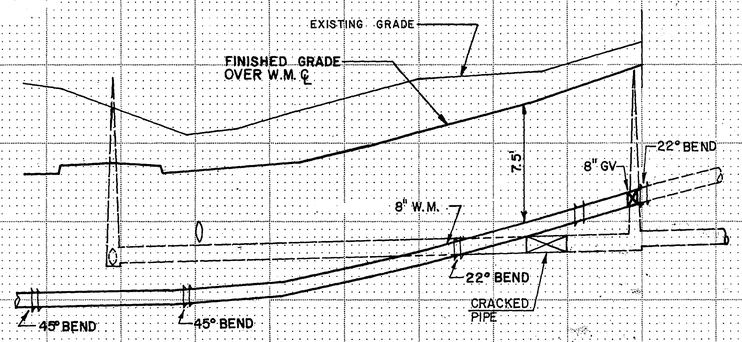



B.M. ELEV. 896.24
TOP NUT HYD. LARPENTEUR & DESOTO

B.M. ELEV. 892.91
TOP NUT HYD. LARPENTEUR & JESSIE

## DESOTO STREET

900 890 880




28-116

| NO. | BY | DATE | REVISIONS |
|---|---|---|---|
| 1 | CFBM | 4-18-90 | RELOCATE WM |
| 2 | CFBM | 9-5-91 | RELOC. AIR VENT |

ITEM | DESIGN | CHECKED

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Date 1/24/90 Reg No. 9046

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

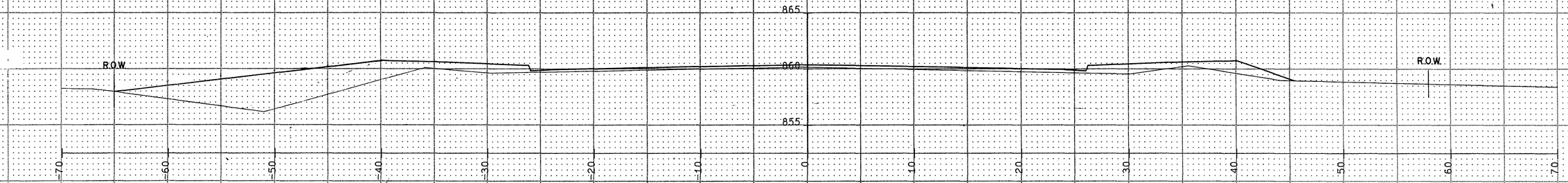
RAMSEY COUNTY, MINNESOTA

WATERMAIN PLAN & PROFILE

FILE NO. 88019
DATE 1/24/90
22 / 47

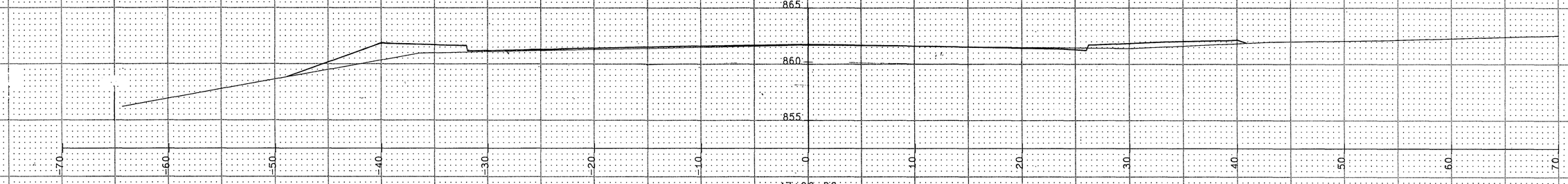
SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)



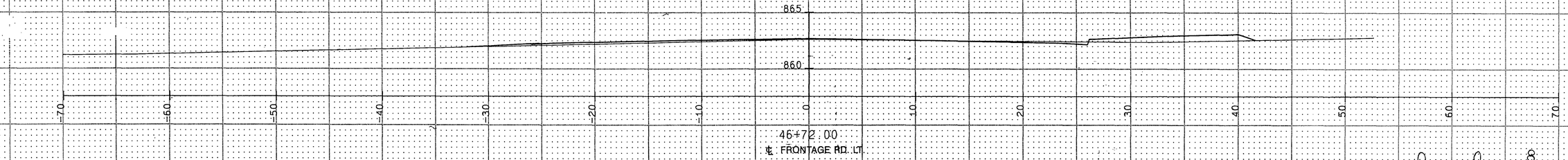

47+50.00

0 0 75



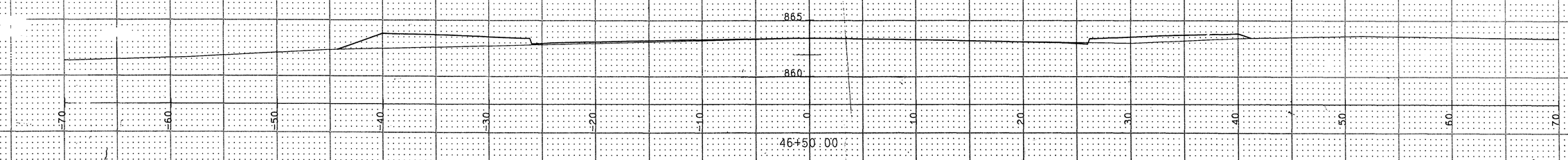

47+00.00
MID RAD. LT.

0 0 8




46+72.00
℄ FRONTAGE RD. LT.

0 0 8




46+50.00

0 0 35

BEGIN CONSTRUCTION 45+25

28-116

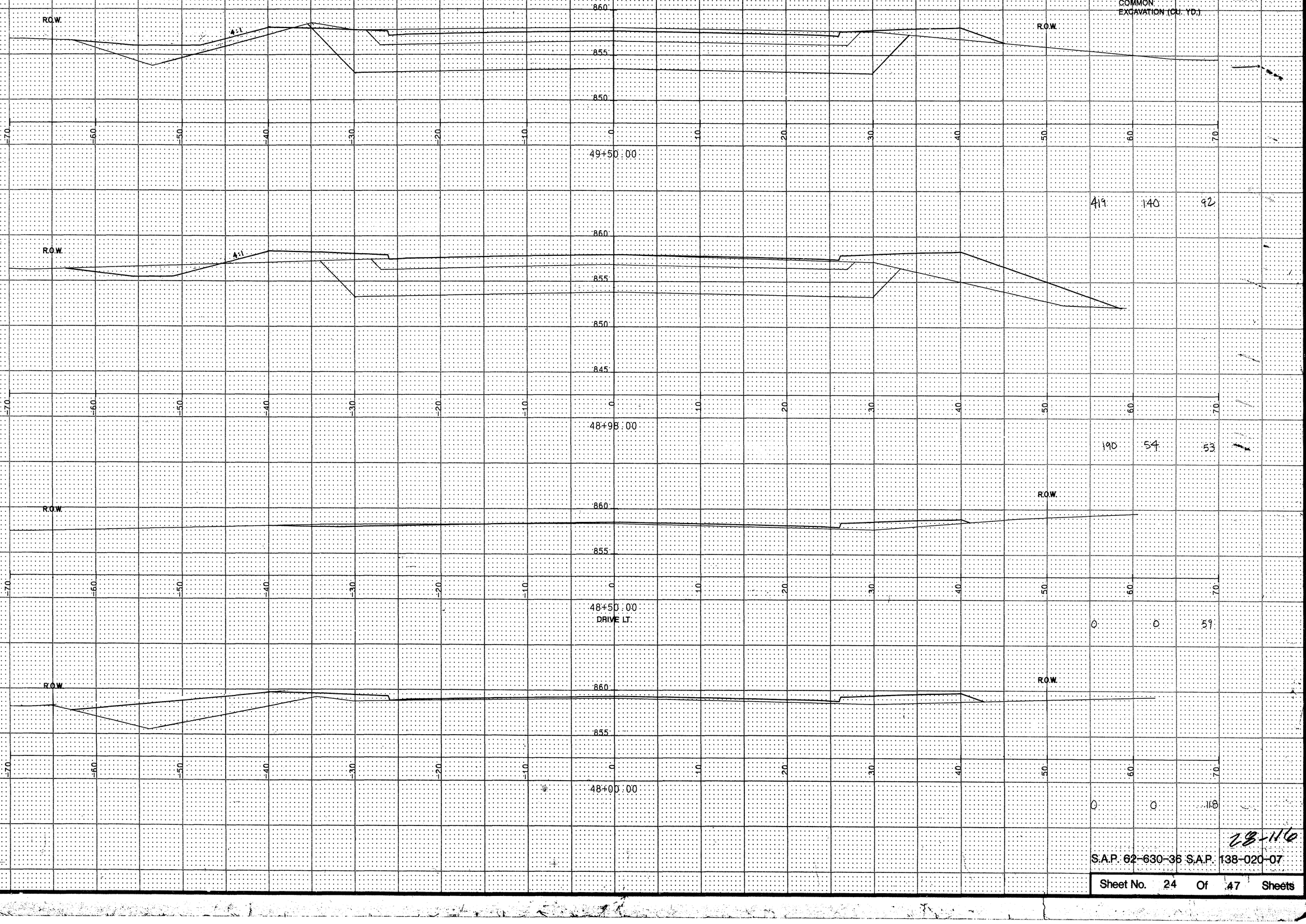
S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 23 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.)

EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)




419 140 92

190 54 53

0 0 59

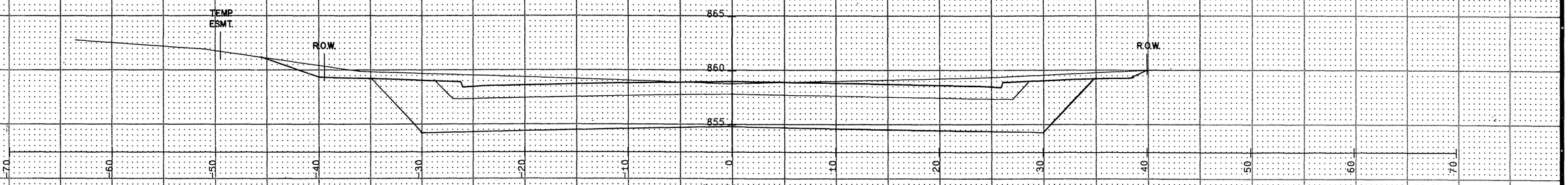
0 0 118

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

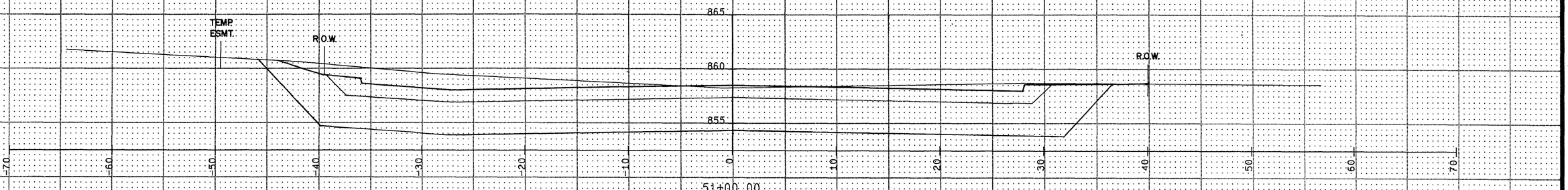
Sheet No. 24 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.) | COMMON EXCAVATION (CU. YD.)



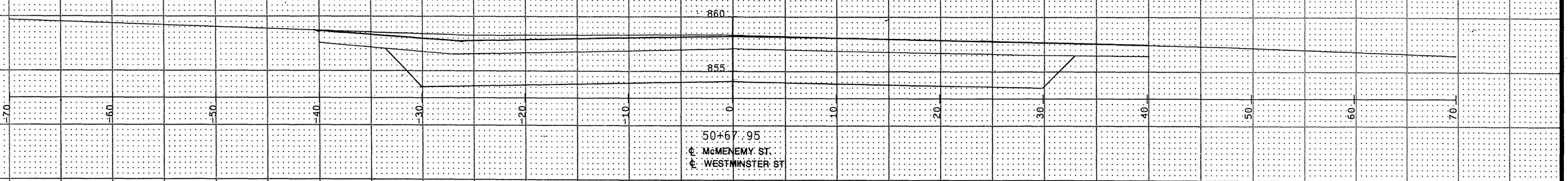

51+50.00

48 215 0



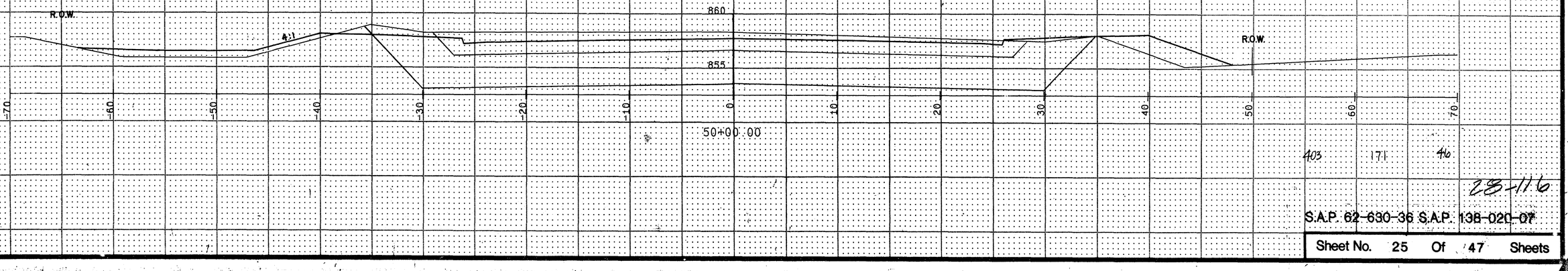

51+00.00
MID RAD. RT.
MID RAD. LT.

265 131 0




50+67.95
℄ McMENEMY ST.
℄ WESTMINSTER ST

520 256 11



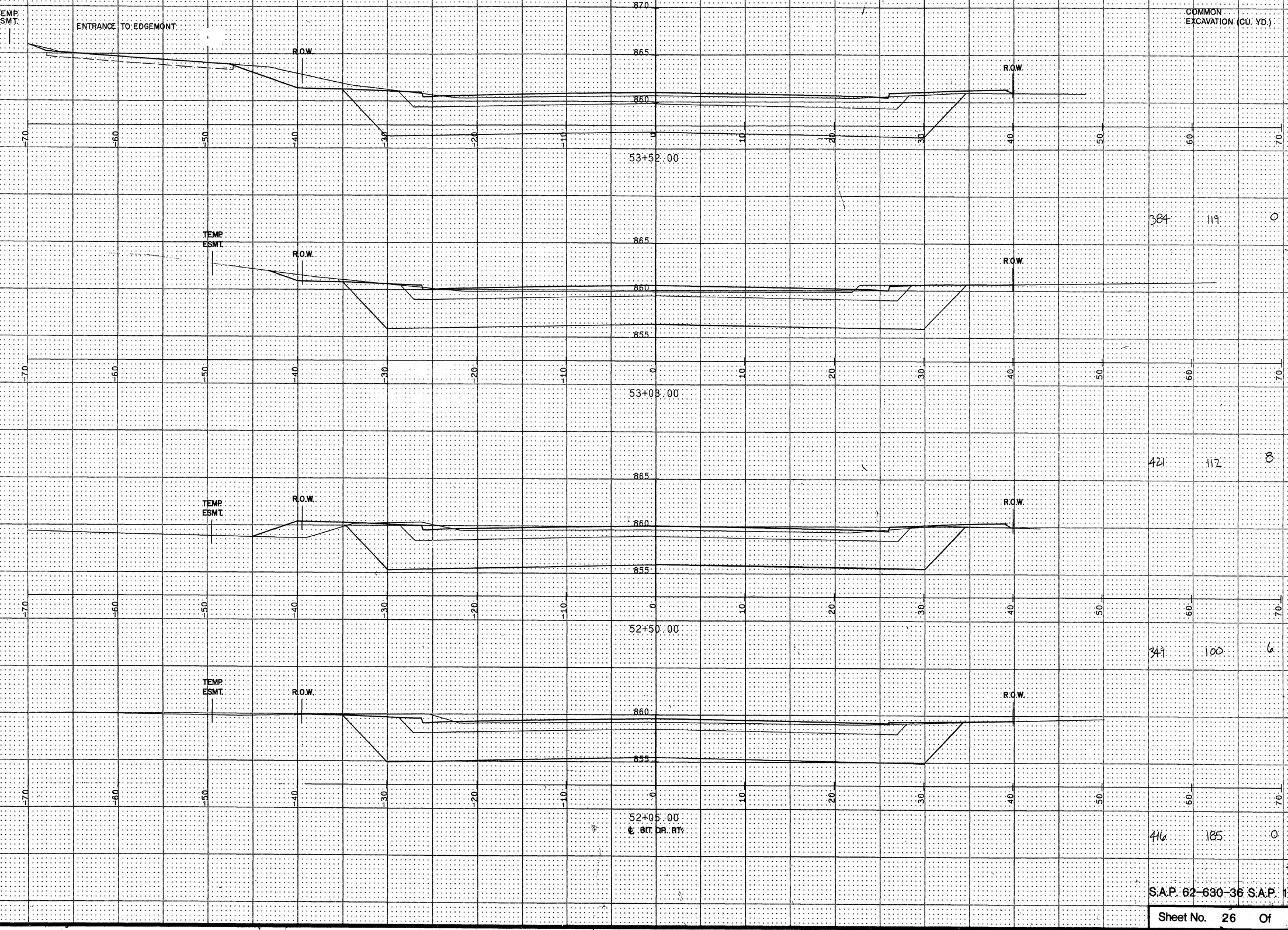

50+00.00

403 171 46

28-116

S.A.P. 62-630-36 S.A.P. 136-020-07

Sheet No. 25 Of 47 Sheets




SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)

384 119 0

421 112 8

349 100 6

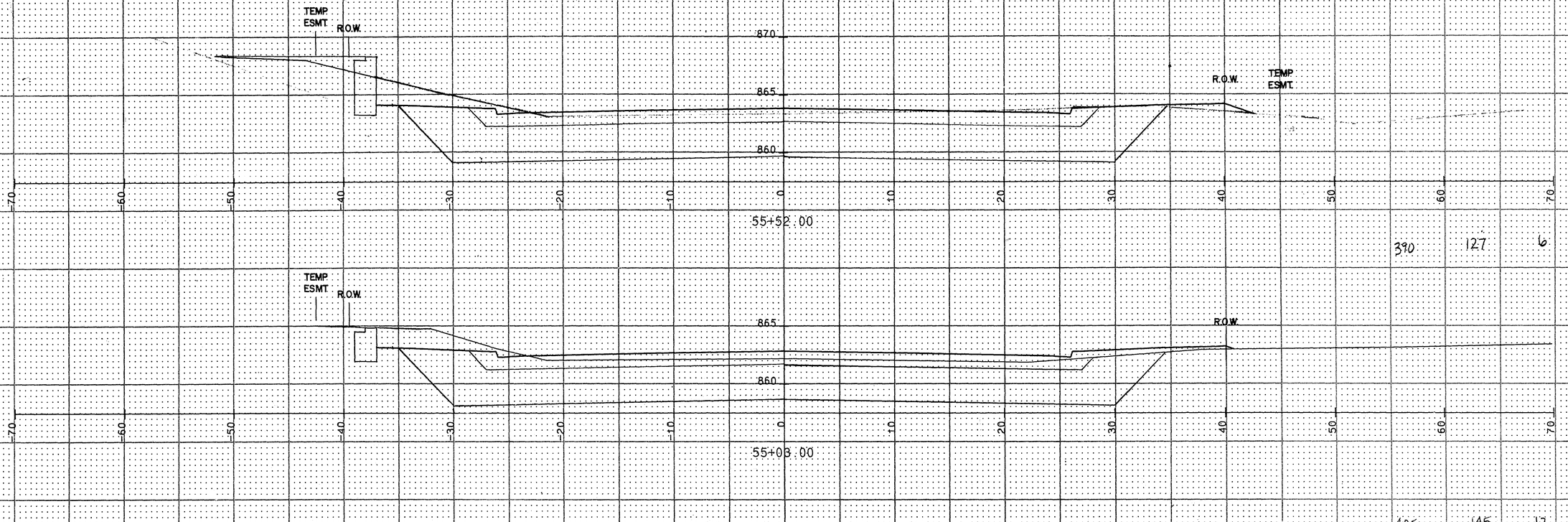
416 185 0

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 26 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.) | COMMON EXCAVATION (CU. YD.)



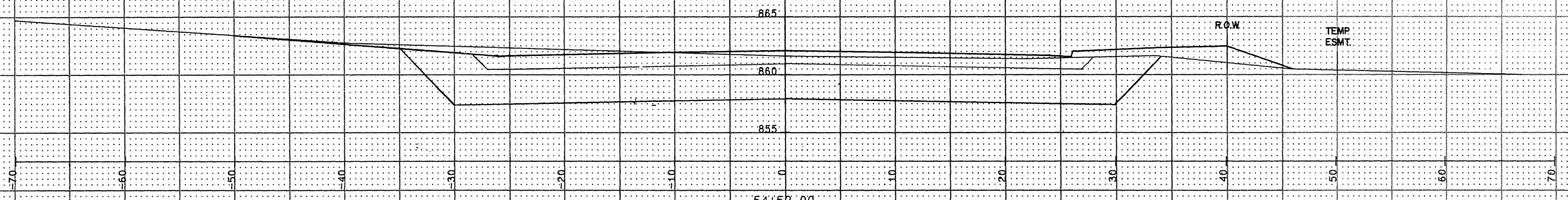

55+52.00

390 127 6




55+08.00

405 145 12




54+52.00
EDGEMONT ST. LT.

407 164 10




54+00.00

375 132 0

S.A.P. 62-630-36 S.A.P. 138-020-07

210 LF 42" RCP @ 1.3 %

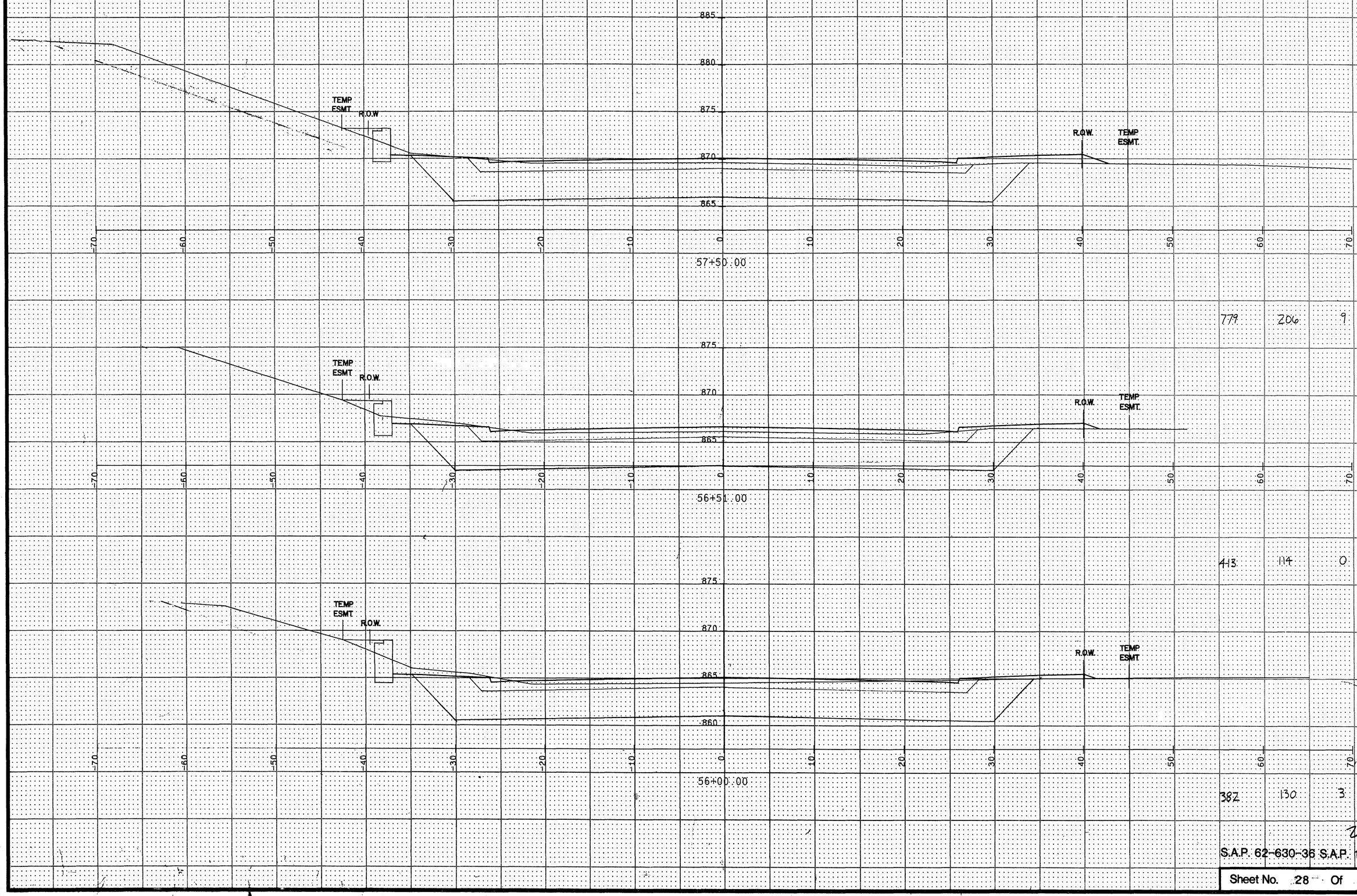
TAN 46°

28-116

Sheet No. 27 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)




779 206 9

413 114 0

387 130 3

28-116

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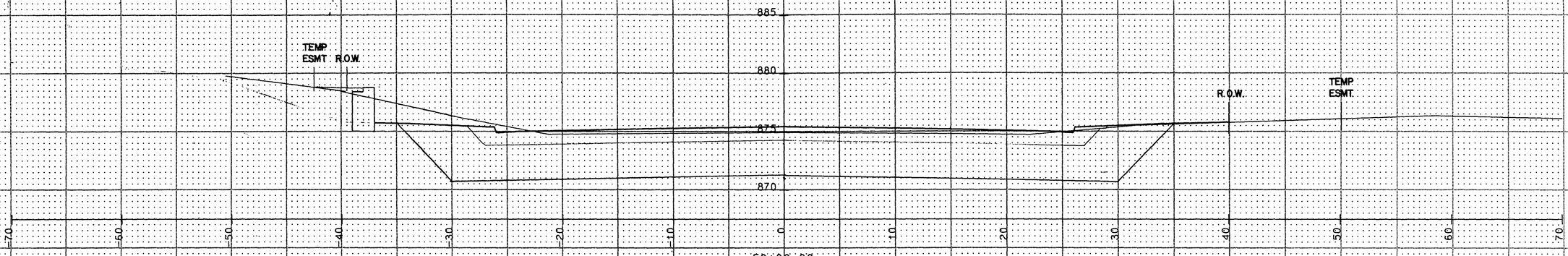
Sheet No. 28 Of 47 Sheets

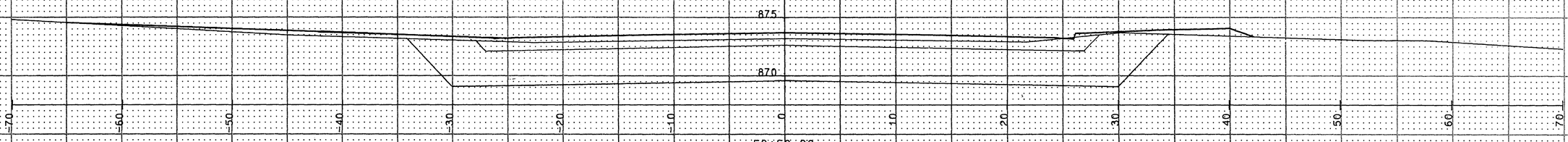
SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)




59+00.00

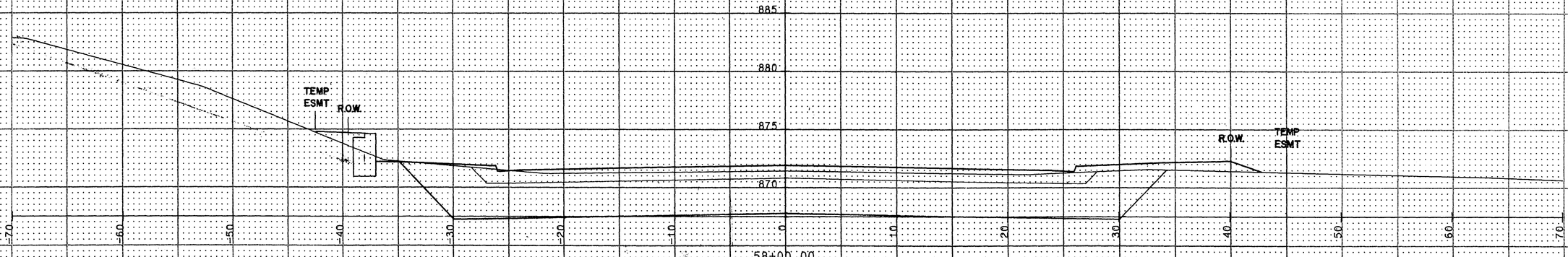
382 107 4




58+50.00

℄ ARKWRIGHT ST. LT.

379 87 5




58+00.00

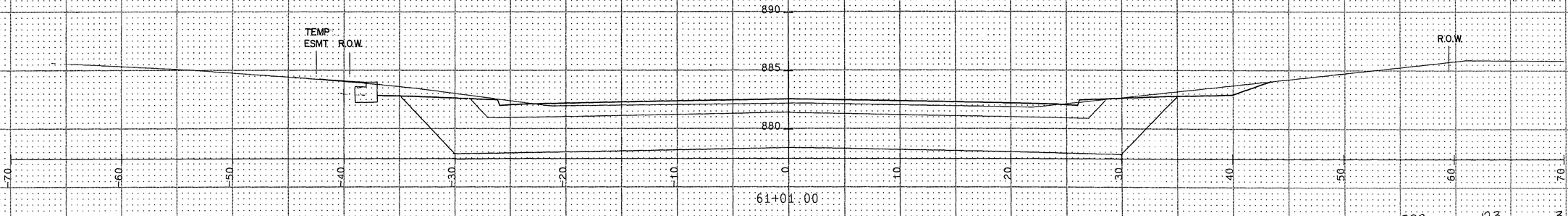
376 96 8

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

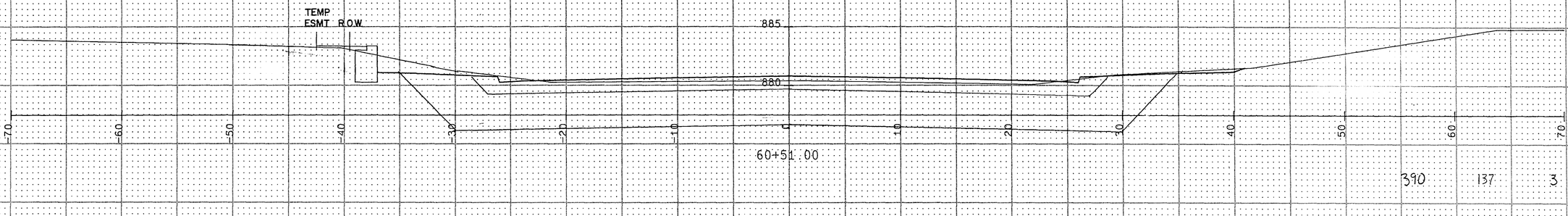
Sheet No. 29 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.) | COMMON EXCAVATION (CU. YD.)



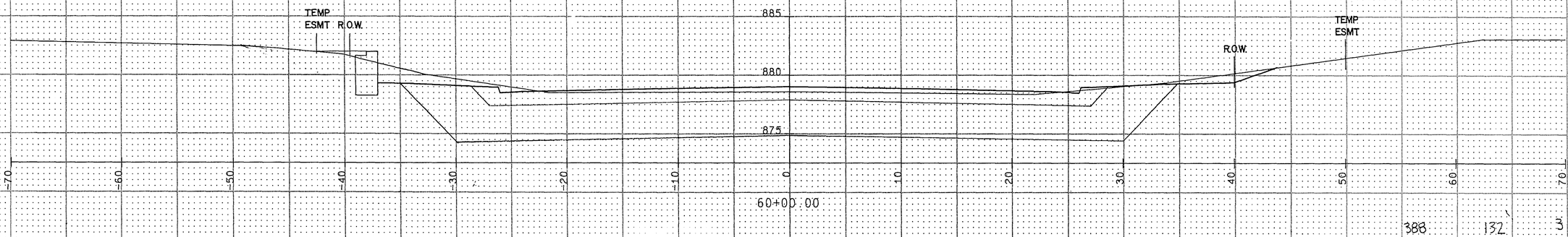

61+01.00

388 123 3



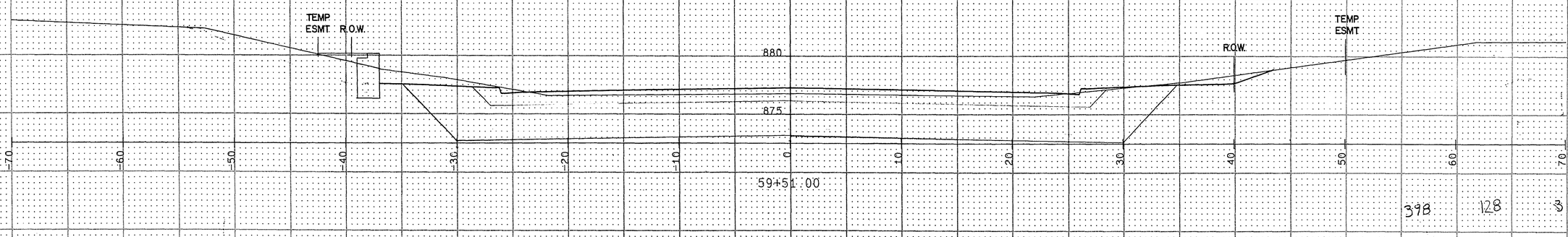

60+51.00

390 137 3




60+00.00

388 132 3




59+51.00

398 128 3

28-116

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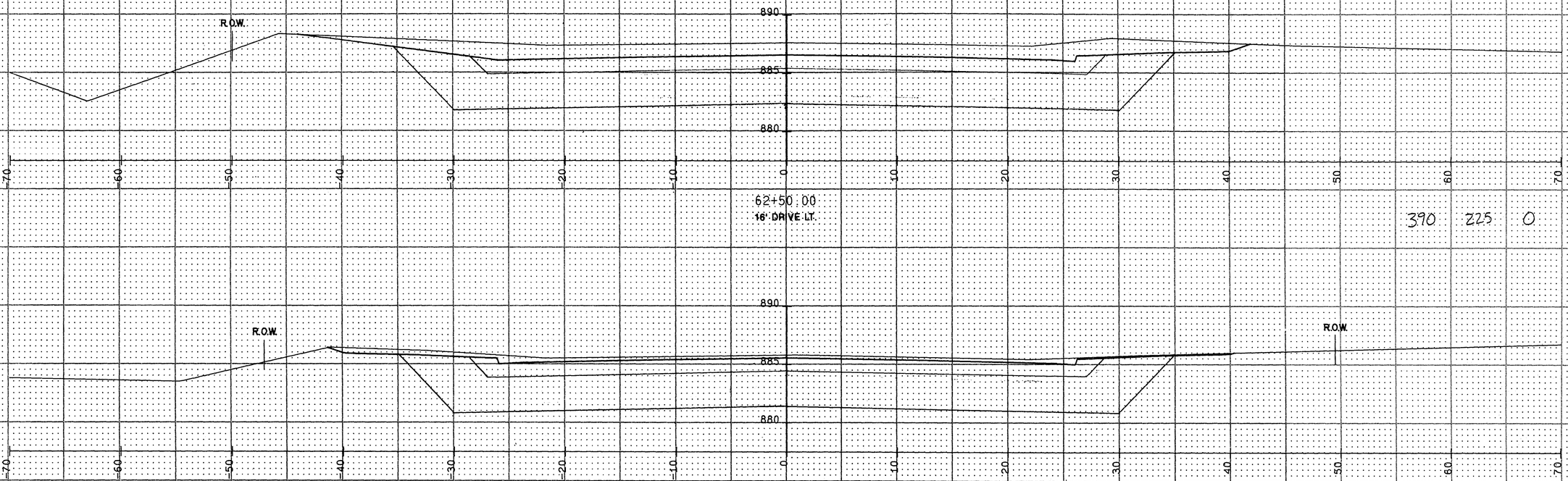
Sheet No. 30 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)



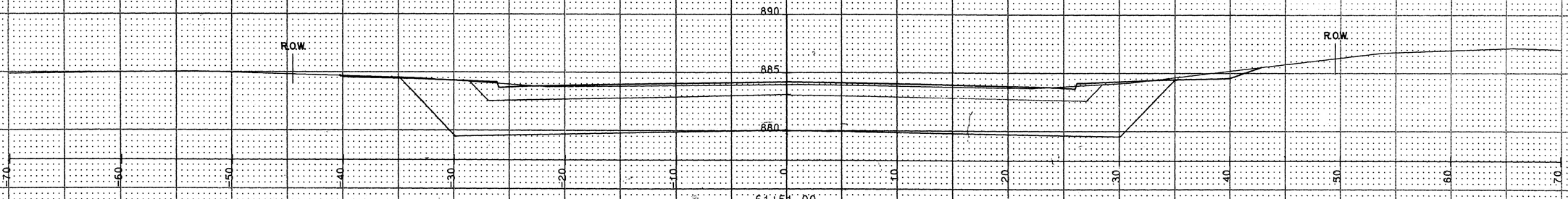

62+50.00
16' DRIVE LT.

390 225 0




62+01.00

393 134 0




61+51.00

394 115 2

28-116

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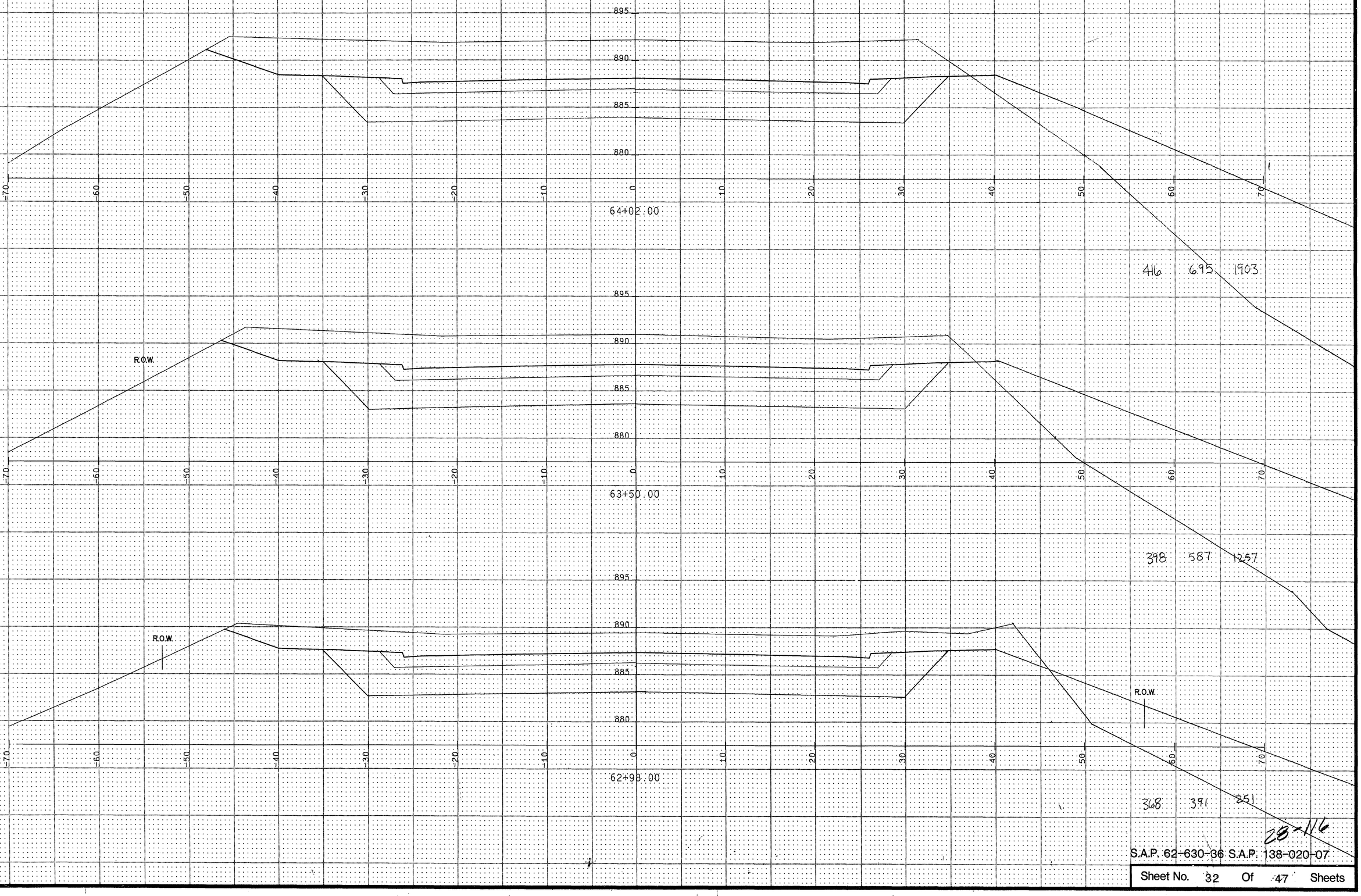
Sheet No. 31 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.) EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)




28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

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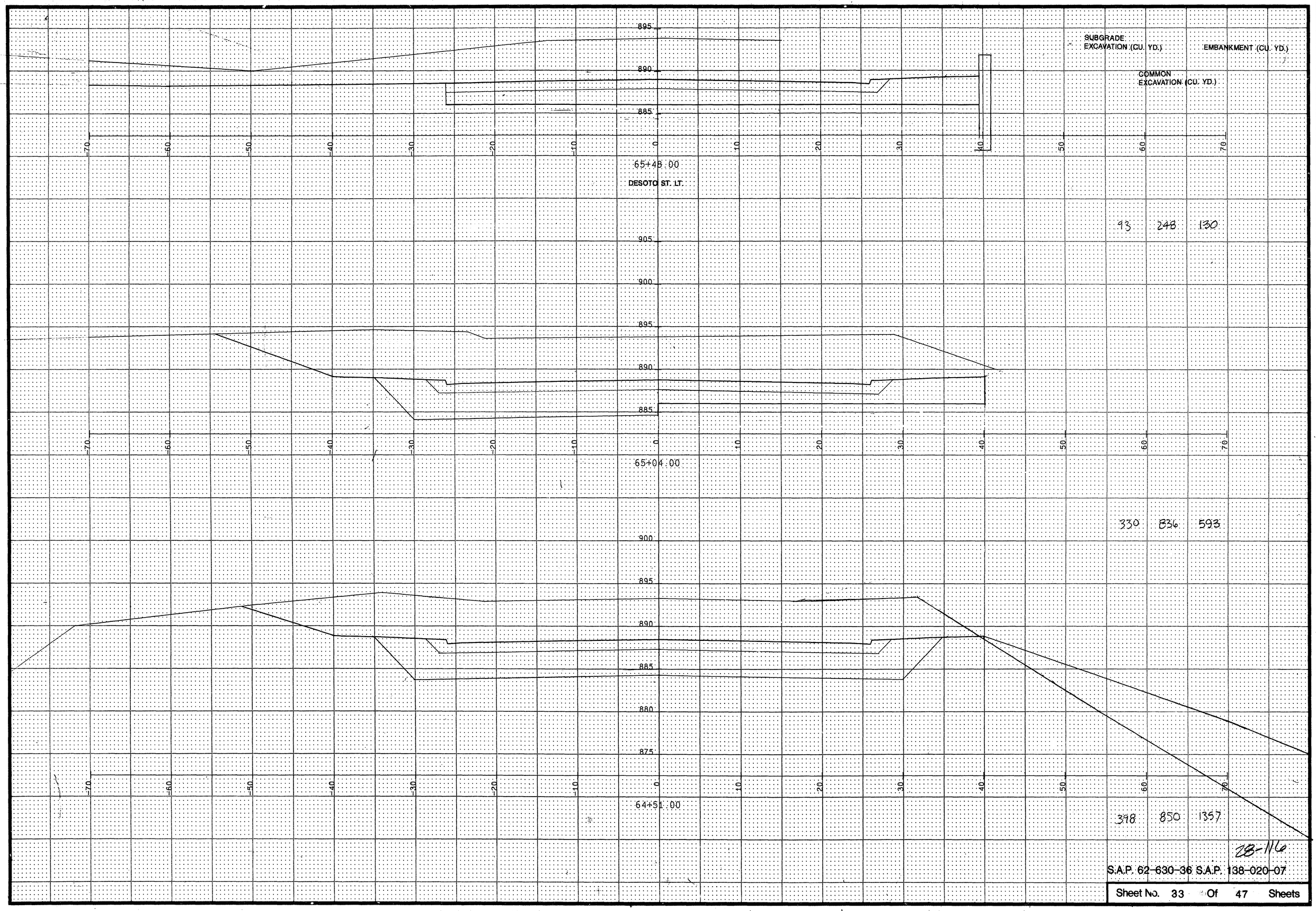


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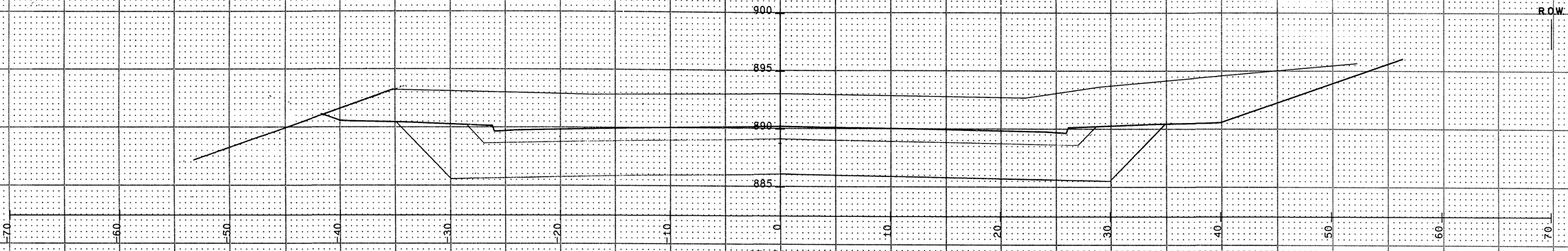
S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 33 Of 47 Sheets

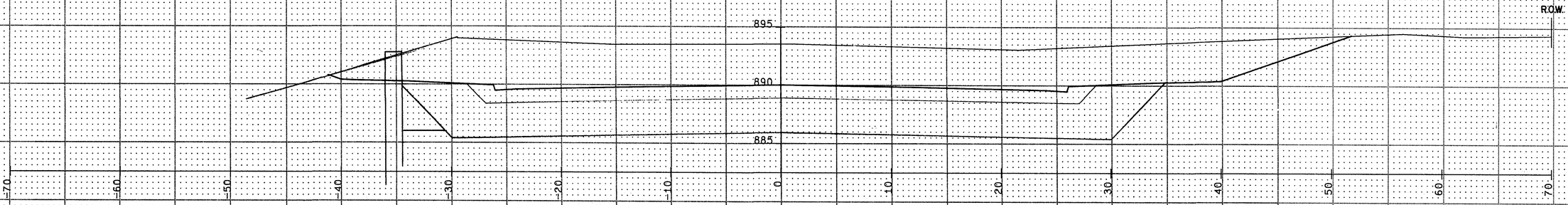
SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)



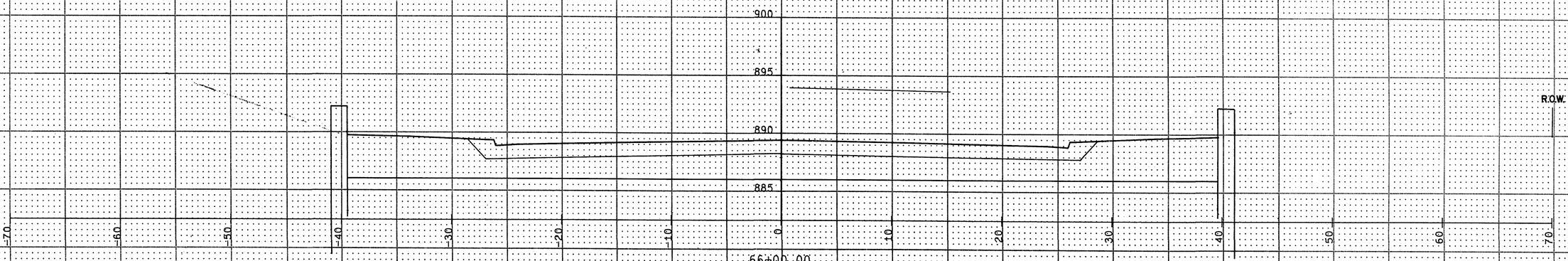

67+50.00

392 634 6




67+01.00

402 681 315




66+00.00

0 0 251

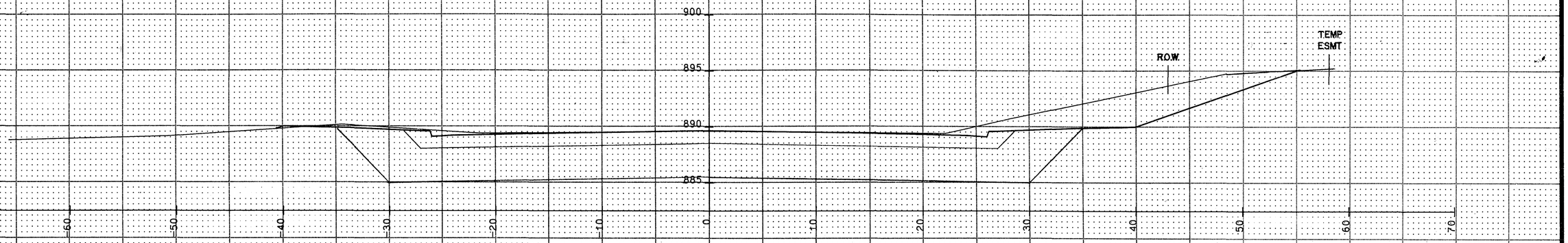
28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 34 Of 47 Sheets

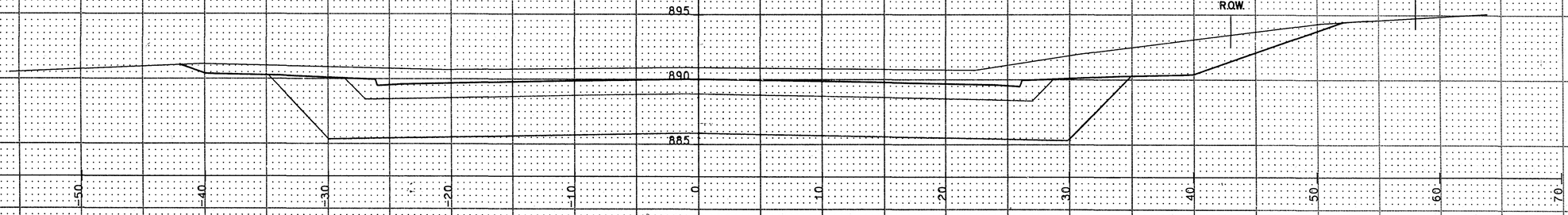
SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)



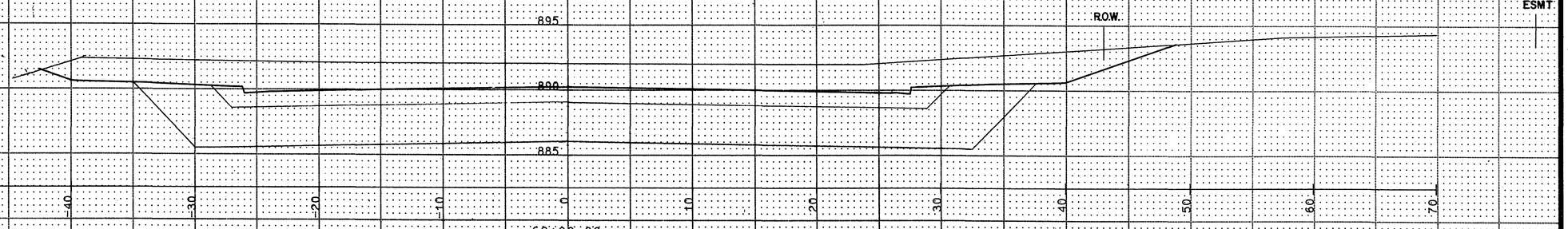

69+01.00

423 285 0




68+48.00

382 356 0




68+00.00

DRIVE: RAD. RT.

403 527 0

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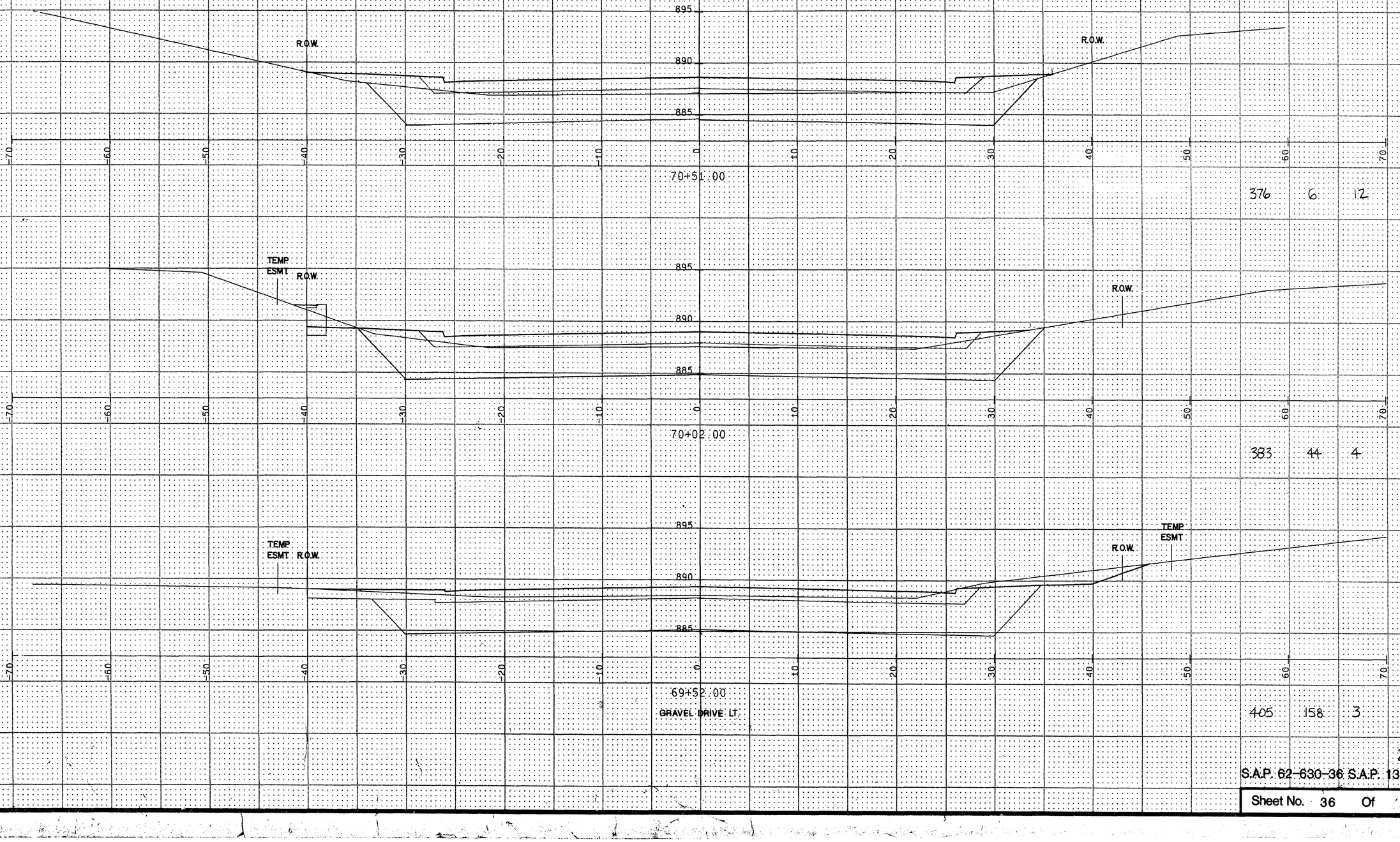
SUBGRADE EXCAVATION (CU. YD.) EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)




70+51.00

376 6 12




70+02.00

383 44 4




69+52.00

GRAVEL DRIVE LT.

405 158 3

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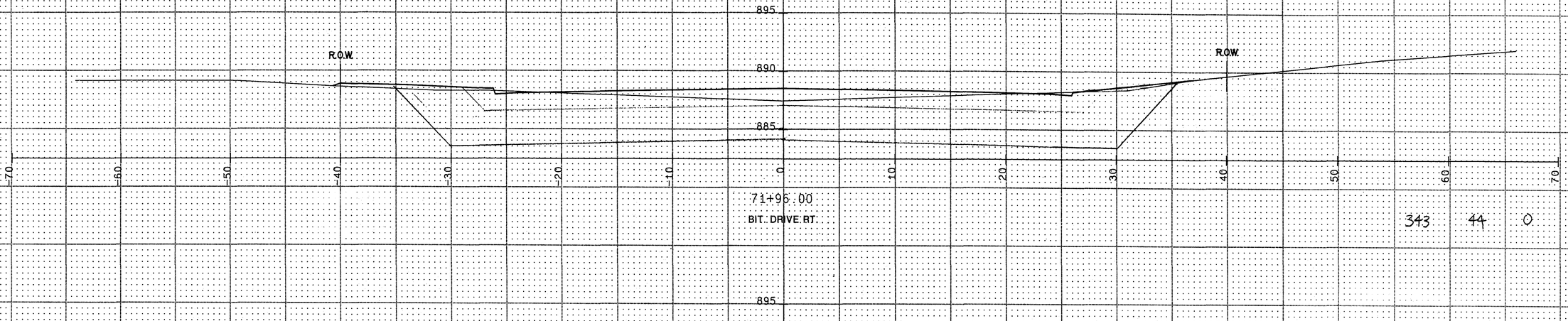
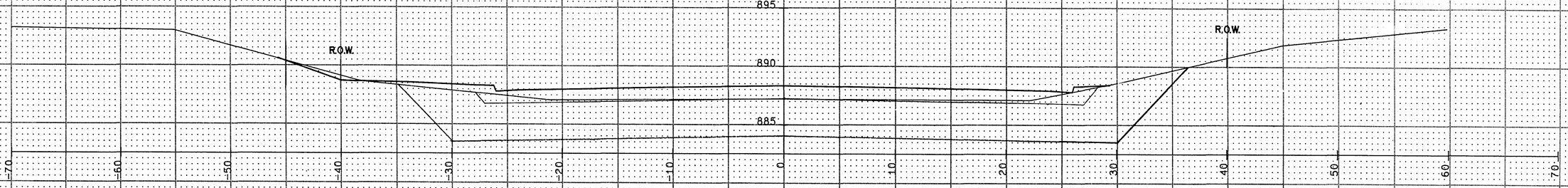
SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.) | COMMON EXCAVATION (CU. YD.)



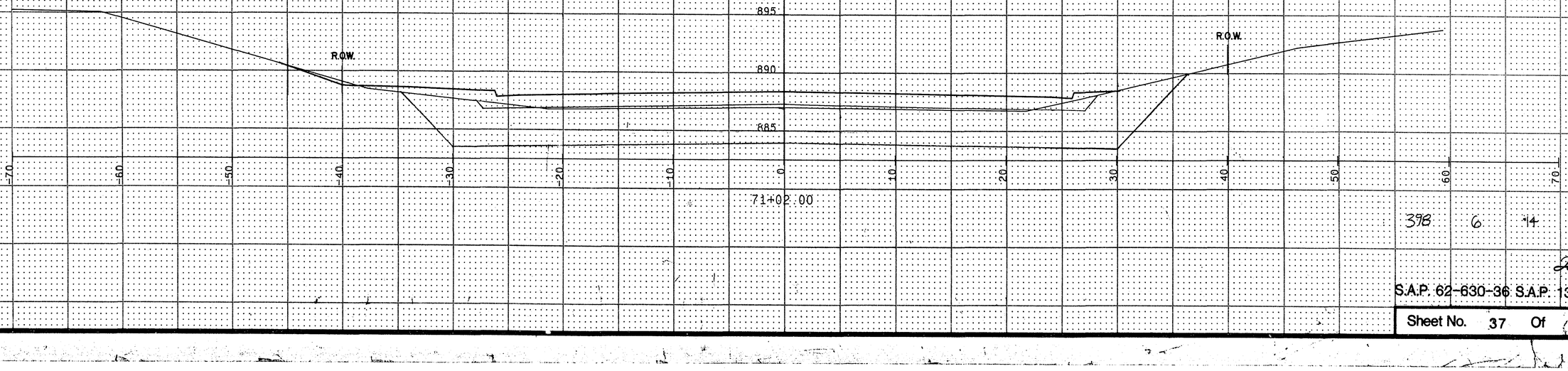

71+96.00
BIT. DRIVE RT.

343 44 0




71+51.00

374 18 3



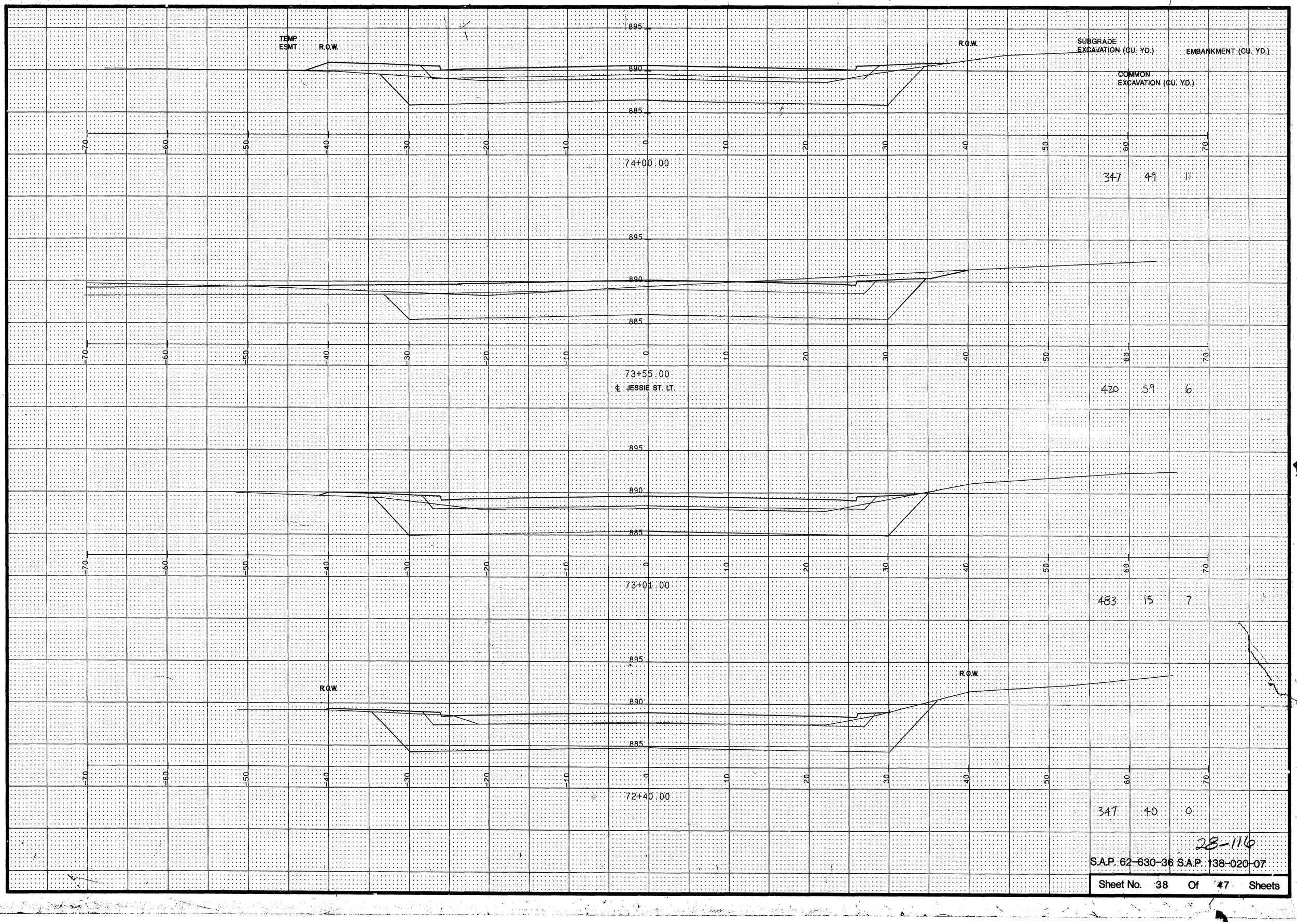

71+02.00

398 6 14

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 37 Of 47 Sheets

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S.A.P. 62-630-36 S.A.P. 138-020-07

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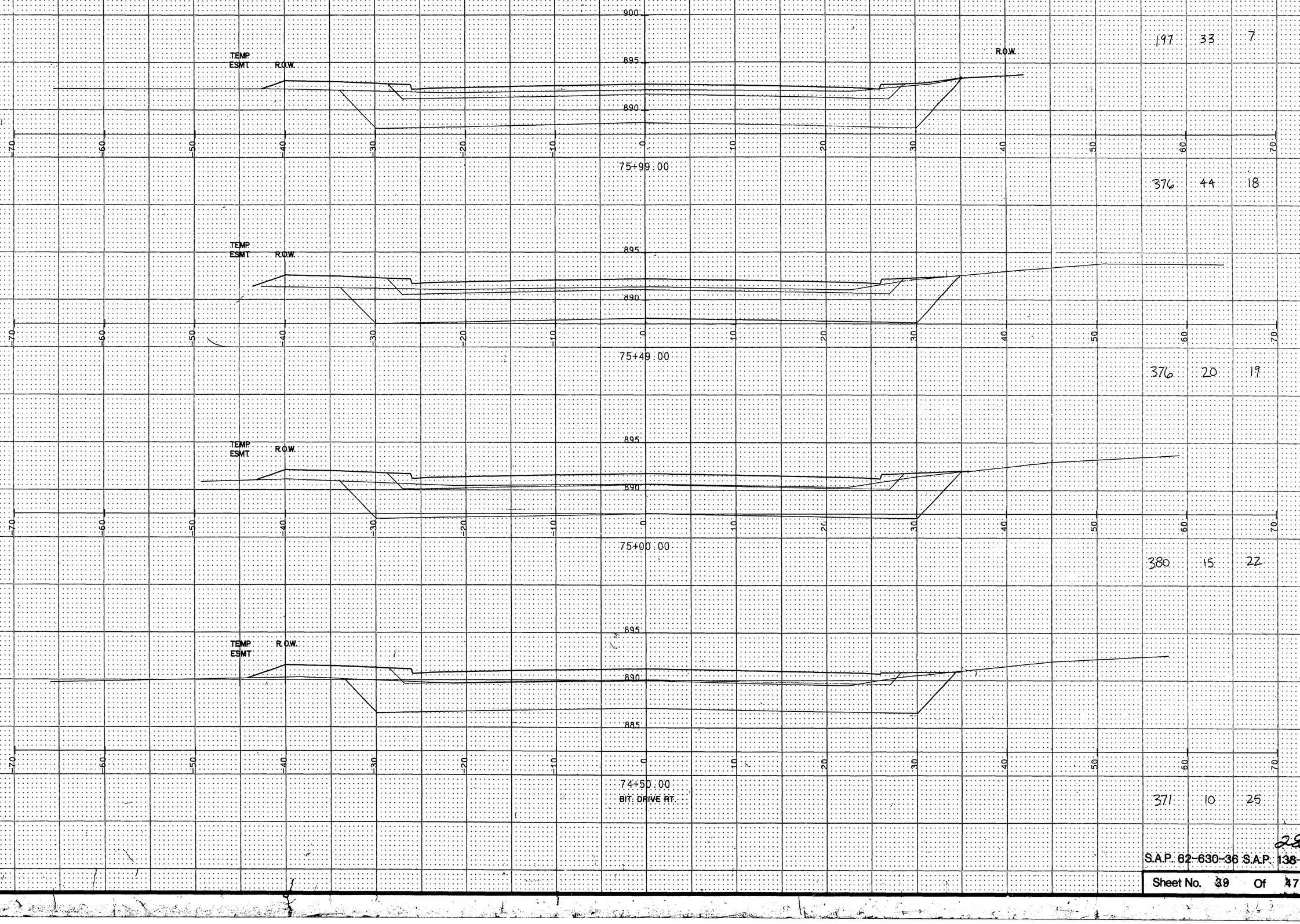
END CONSTRUCTION 78+55

| | SUBGRADE EXCAVATION (CU. YD.) | EMBANKMENT (CU. YD.) | COMMON EXCAVATION (CU. YD.) |
|---|---|---|---|
| 75+99.00 | 197 | 33 | 7 |
| 75+49.00 | 376 | 44 | 18 |
| 75+00.00 | 376 | 20 | 19 |
| 74+50.00 BIT. DRIVE RT. | 380 | 15 | 22 |
| | 371 | 10 | 25 |

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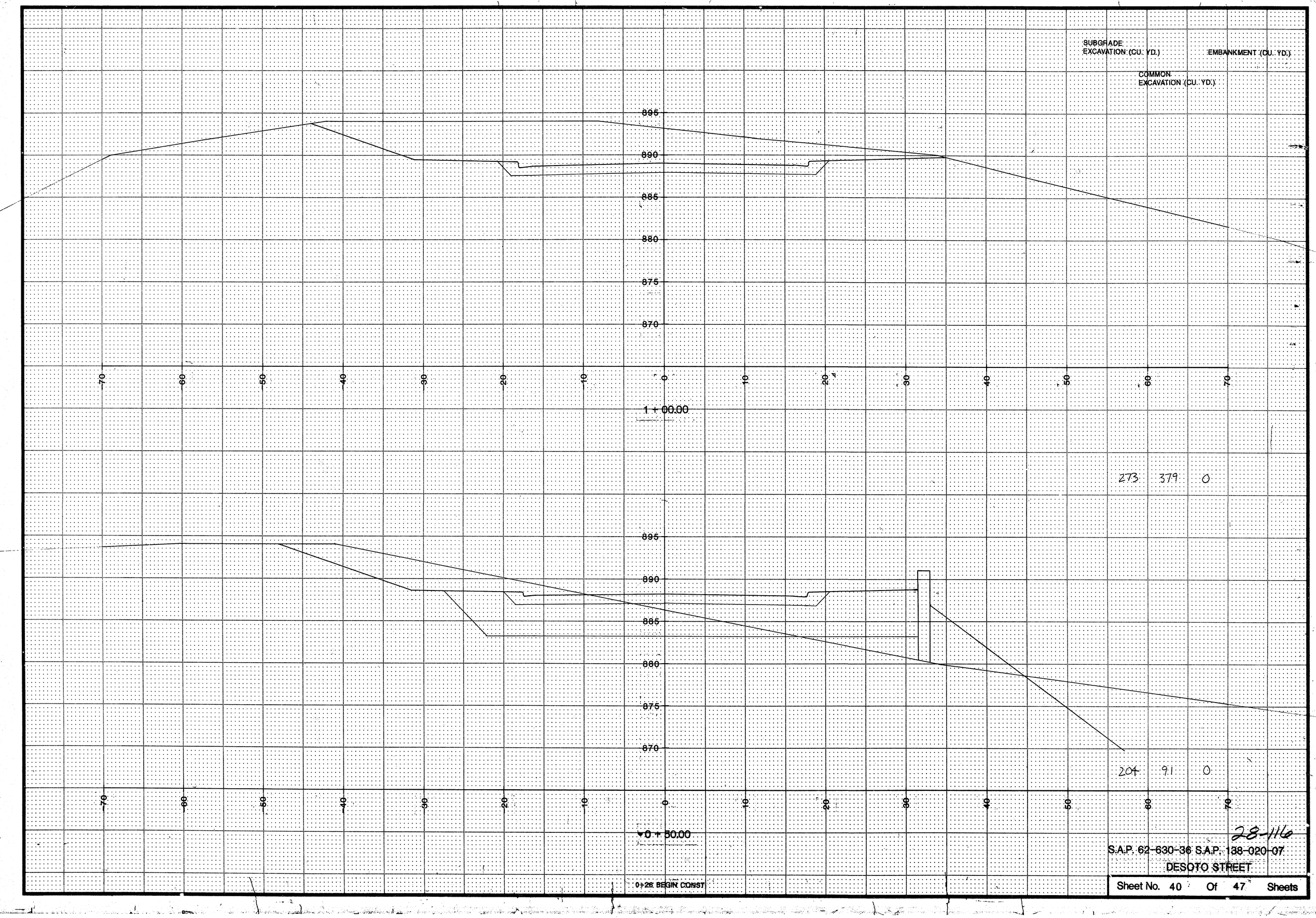
S.A.P. 62-630-36 S.A.P. 138-020-07

Sheet No. 39 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.)

EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)

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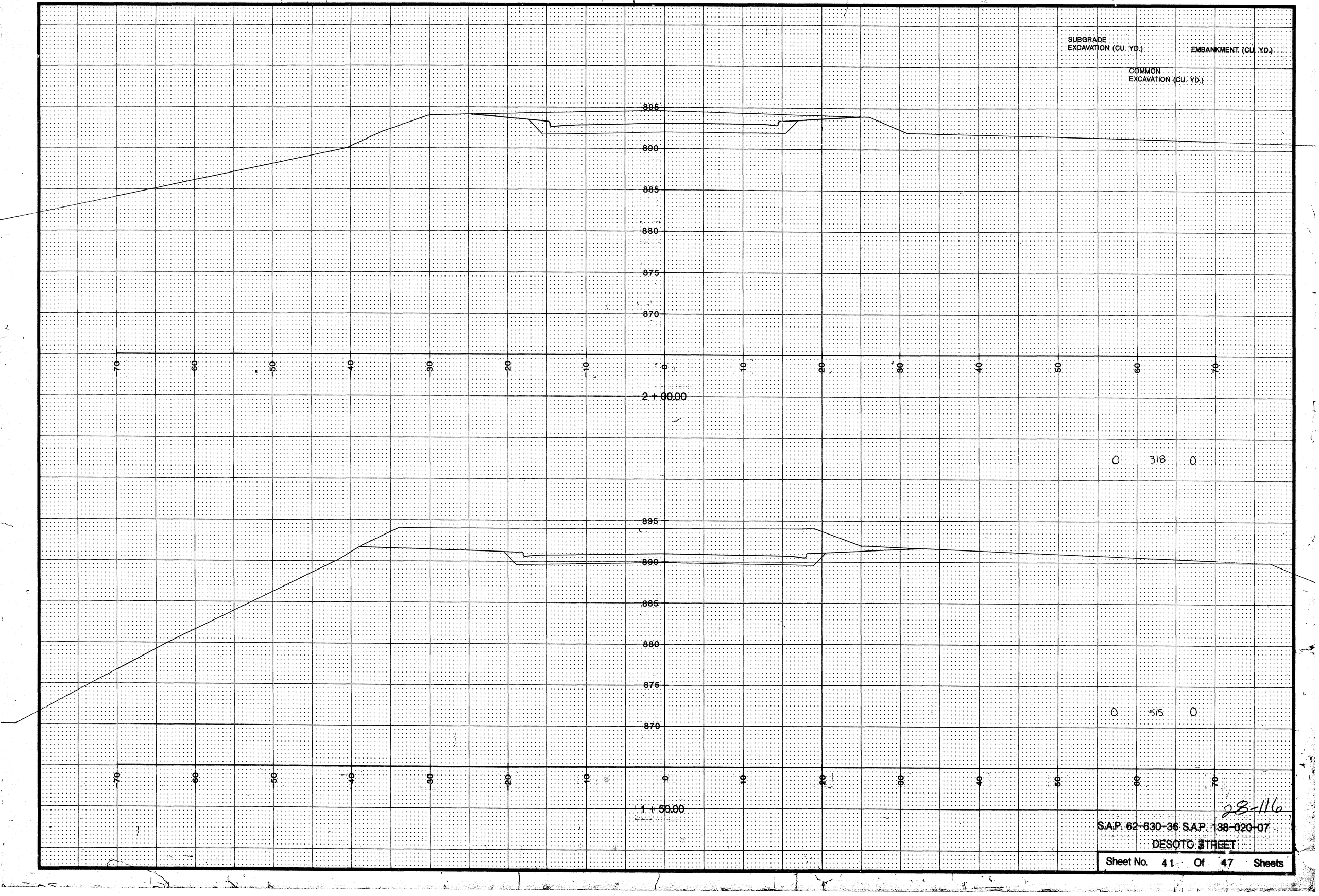
S.A.P. 62-630-36 S.A.P. 138-020-07

DESOTO STREET

Sheet No. 40 Of 47 Sheets

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S.A.P. 62-630-36 S.A.P. 138-020-07

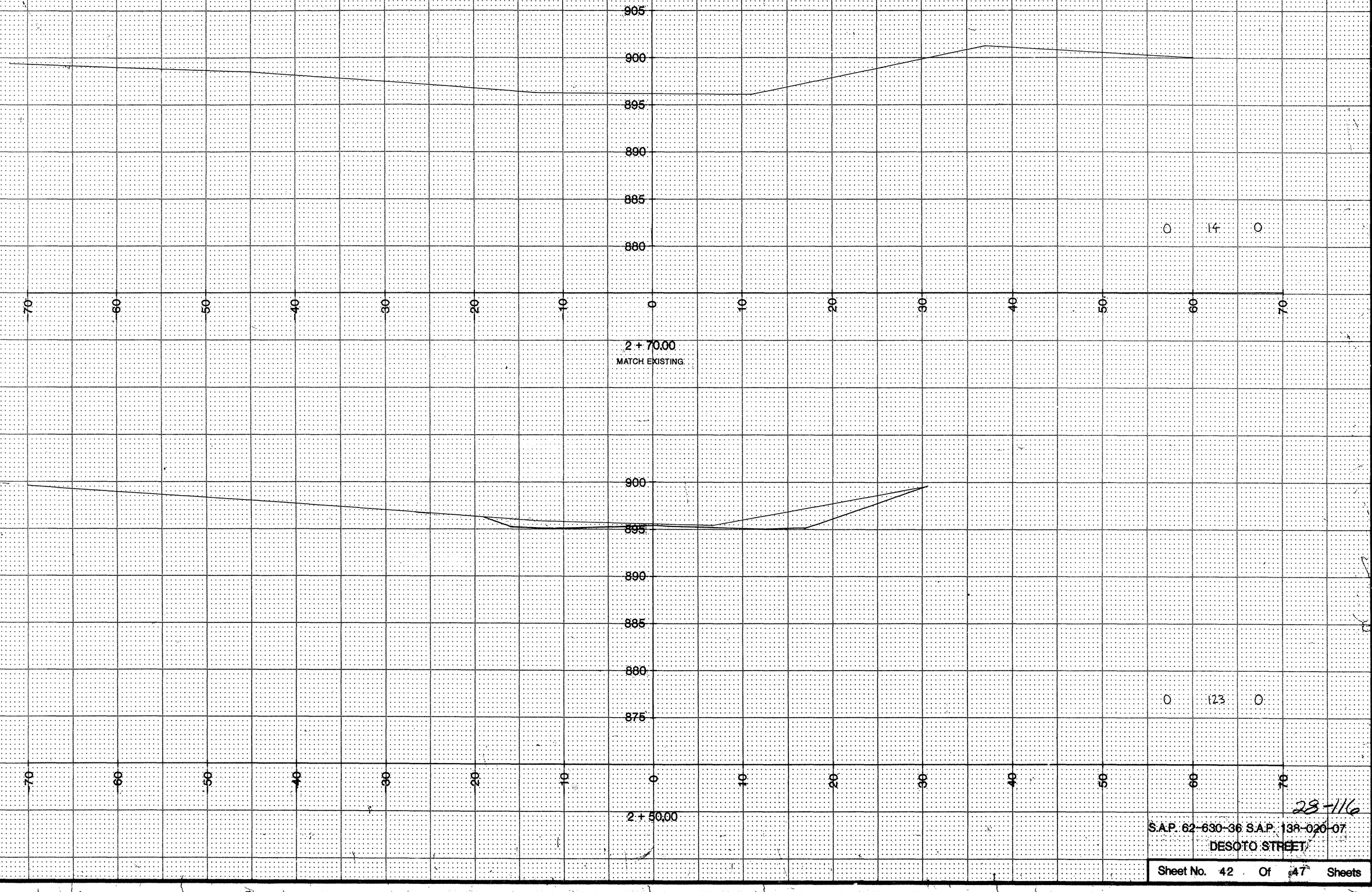
DESOTO STREET

Sheet No. 41 Of 47 Sheets

SUBGRADE EXCAVATION (CU. YD.)

EMBANKMENT (CU. YD.)

COMMON EXCAVATION (CU. YD.)

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S.A.P. 62-630-36 S.A.P. 138-020-07

DESOTO STREET

VOID

RELOCATED TO EDGEMONT

61.50
54+00

59.90
52+40

59.55
52+05

59.18
51+68

58.66
48+36

62.63
46+72

63.97
46+00

5'
5'

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07

LARPENTEUR AVENUE DRIVEWAYS-PROFILE

Sheet No. 43 Of 47 Sheets

895
890
895
890
890
885
885
880
875
870
865
860
865
860

89.21
69+52

89.96
68+24

86.41
62+50

83.26
61+25

74.19
58+67

64.09
55+63

62.53
54+85

5'
5'

28-1164

70 60 50 40 30 20 10 0 10 20 30 40 50

S.A.P. 62-630-36 S.A.P. 138-020-07
LARPENTEUR AVENUE DRIVEWAYS-PROFILE
Sheet No. 44 Of 47 -Sheets

92.14
75+40

91.96
75+23

91.33
74+64

90.80
74+14

89.69
73+09

89.10
72+53

88.53
71+96

88.43
70+80

88.74
70+29

890

70 60 50 40 30 20 10 0 10 20 30 40 50

5
5

28-116

S.A.P. 62-630-36 S.A.P. 138-020-07
LARPENTEUR AVENUE DRIVEWAYS-PROFILE

Sheet No. 45 Of 47 Sheets

## NOTES:

1. ELEVATION ON SIDEWALK. SEE SECTION ON SHEET 18.
2. FUTURE EXPANSION FOR DNR TRAIL PROVIDED FOR ON EITHER SIDE OF PROPOSED TUNNEL. (24'-0" WIDE MAXIMUM OPENING)
3. SLOPES GRADED PERPENDICULAR TO C/L DNR TRAIL. EXCEPT AT SE. CORNER.
4. 3/4" INSET FROM FACE OF PORTAL/RETAINING WALL. INSET SURFACE TO RECEIVE BUSH HAMMERED SURFACE TREATMENT. FINISH WITH CLEAR HIGH GLOSS ACRYLIC CONCRETE SEALER.
5. CONSTRUCTION OF RETAINING WALL FOOTINGS SHALL NOT BE STARTED UNTIL THE EMBANKMENT AT THOSE FOOTINGS HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION.
6. FOR IN PLACE BRIDGE LIMITS, SEE SHEET 19. BRIDGE REMOVAL TO BE DONE BY OTHERS.
7. BRIDGE CONTRACTOR SHALL INSTALL PROPOSED 30" RC PIPE PRIOR TO STRUCTURE EXCAVATION. PIPE WILL BE EXTENDED BEYOND GRADING LIMITS BY OTHERS.
8. SEE SHEET 18 FOR TYPICAL SECTION LARPENTEUR AVENUE AT PROPOSED STRUCTURE.

Fed. Proj. No BRM-M 5103 (1)

### DESIGN DATA

1989 AND INTERIM A.A.S.H.T.O. DESIGN SPECIFICATIONS LOAD FACTOR DESIGN METHOD H-25 LOADING

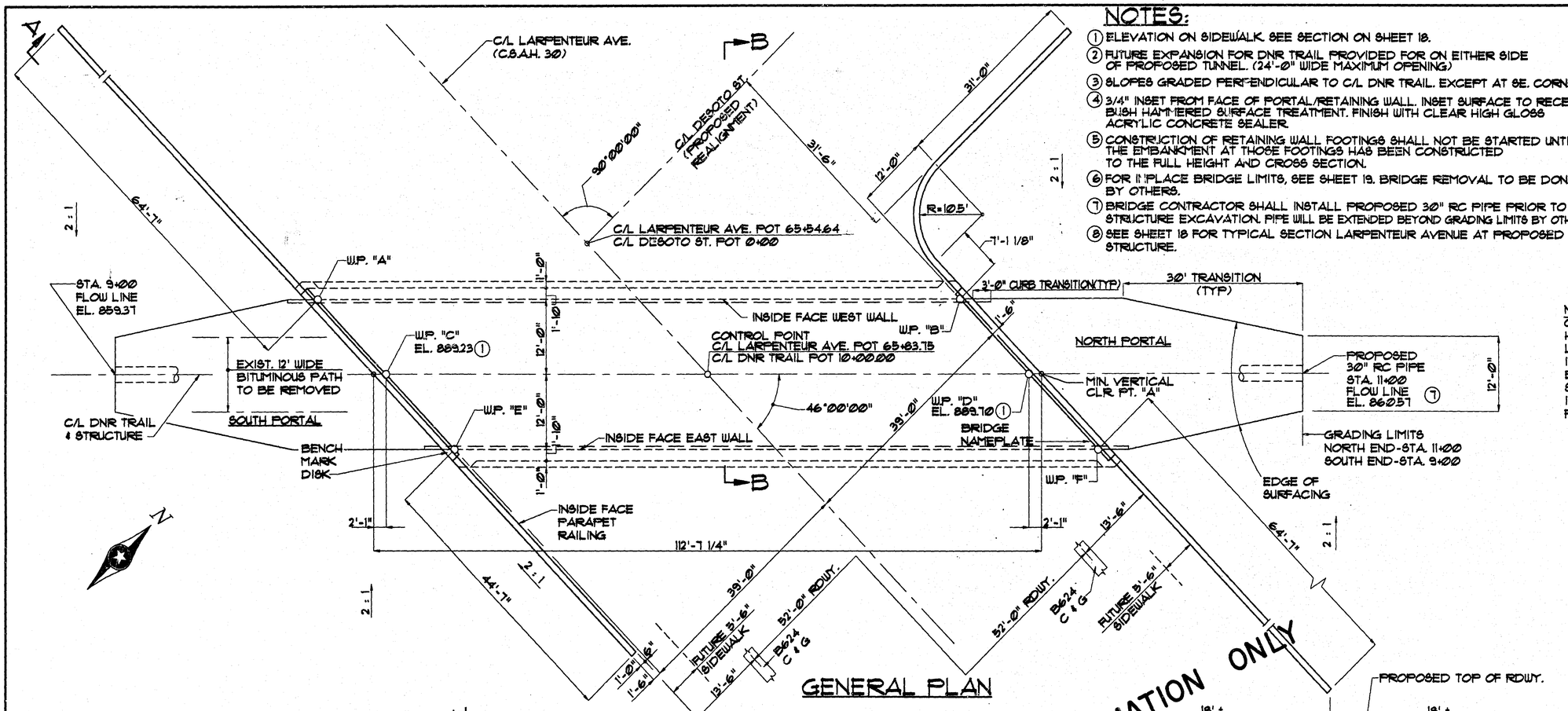
MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c=4000 P.S.I., n=8
fy=60000 P.S.I. REINFORCEMENT (GRADE 60)

DECK AREA= 3115 SQ. FT.

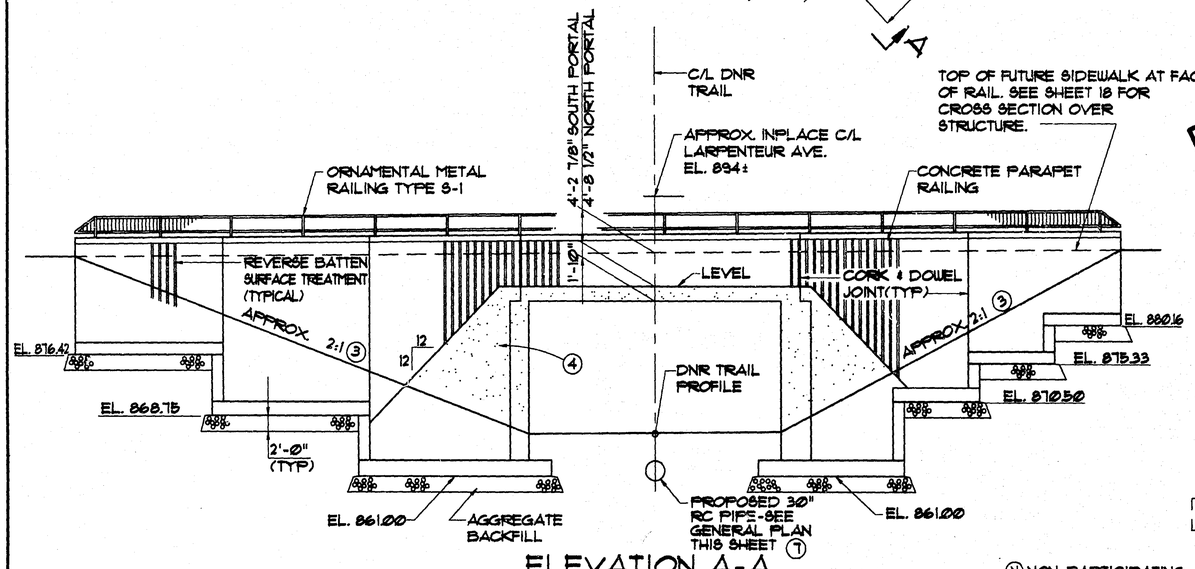
OPERATING RATING=H-15

PROJECTED ADT(2008)= 9900

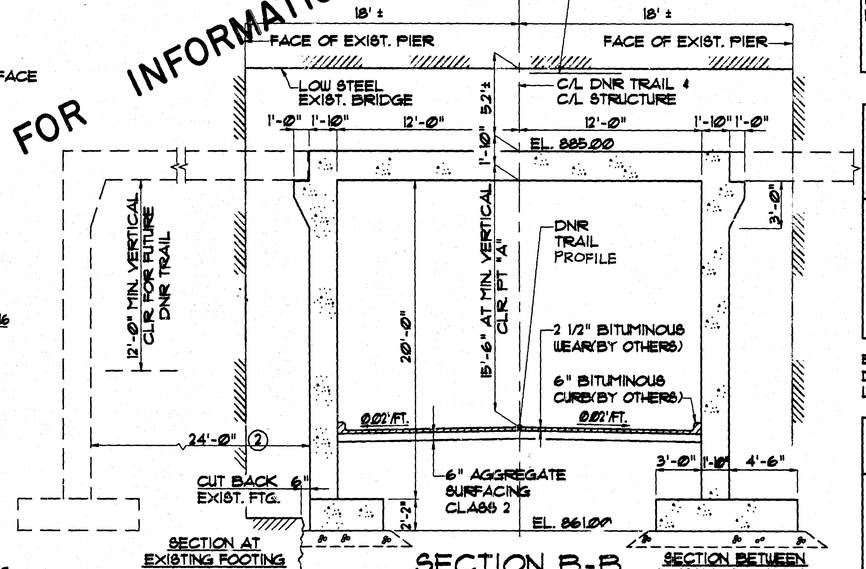
NOTE:
GRADING OF TRAIL WITHIN HORIZONTAL AND VERTICAL LIMITS SHOWN OR NOTED INCLUDING ALL COMMON BORROW, EXCAVATION AND SHAPING TO BE CONSIDERED INCIDENTAL TO PRICE BID FOR STRUCTURE EXCAVATION.




## GENERAL PLAN




## ELEVATION A-A




## SECTION B-B

Ⓝ NON-PARTICIPATING

### SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

| ITEM NO. | 2021.501 | 2105.523 | Ⓝ 2118.501 | 2401.501 | 2401.501 | 2401.513 | 2401.541 | 2401.541 | 2402.583 | 2451.505 | Ⓝ 2503.511 | Ⓝ 2545.503 | 0401.601 | Ⓝ 0401.603 | Ⓝ 0401.603 | 0502.603 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM | MOBILIZATION | COMMON BORROW (C.V.) | AGGREGATE SURFACING CLASS 2 | STRUCTURE CONCRETE (1A43) | STRUCTURE CONCRETE (3Y43) | TYPE 'F' RAILING CONCRETE (3X46) | REINFORCEMENT BARS | REIN-FORCEMENT BARS (EPOXY COATED) | ORNAMENTAL METAL RAILING TYPE S-1 | AGGREGATE BACKFILL (C.V.) | 30" REIN-FORCED CONCRETE PIPE SEWER CLASS V | CONDUIT SYSTEM (LIGHTING) | STRUCTURE EXCAVATION | REVERSE BATTEN SURFACE TREATMENT | BUSH HAMMERED SURFACE TREATMENT | DRAINAGE SYSTEM | | | | | | |
| UNIT | LUMP SUM | CU. YD. | TON | CU. YD. | CU. YD. | LIN. FT. | POUND | POUND | LIN. FT. | CU. YD. | LIN. FT. | LUMP SUM | LUMP SUM | SQ. FT. | SQ. FT. | LUMP SUM | | | | | | |
| QUANTITY | 1 | 677 | 156 | 380 (P) | 808 (P) | 296 (P) | 39 840 (P) | 137 740 (P) | 296 (P) | 432 (P) | 200 (P) | 1 | 1 | 3020 (P) | 917 (P) | 1 | | | | | | |

### CONSTRUCTION NOTES

THE 1988 EDITION OF THE MN/DOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION", SHALL GOVERN.
THE FIRST DIGIT OR THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE.
THE BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.
DRAWINGS ARE NOT TO BE SCALED.
STRUCTURE TO BE CONSTRUCTED BEFORE IN-PLACE BRIDGE IS REMOVED. REMOVAL OF IN-PLACE BRIDGE IS BY OTHERS.

SEH
ENGINEERS ■ ARCHITECTS ■ PLANNERS

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.

SIGNED John D. Steenberg
DATE 6/18/90 REG. NO. 13865

B.M. EL. 894.27 (M.S.L. 1929 Adj.)
DISK SE. WINGWALL BRIDGE NO. 7231
LARPENTEUR AVENUE OVER 800 LINE RAILROAD

TRUNK HIGHWAY NO. 30
MINNESOTA
DEPARTMENT OF TRANSPORTATION

# Bridge No. 62554

LARPENTEUR AVENUE (C.S.A.H. 30) OVER DNR TRAIL (ABANDONED 800 LINE RAILROAD)
0.5 MI. EAST OF JCT. T.H. 35E & LARPENTEUR AVE.
24' RIGID FRAME

IDENTIFICATION NO. 100

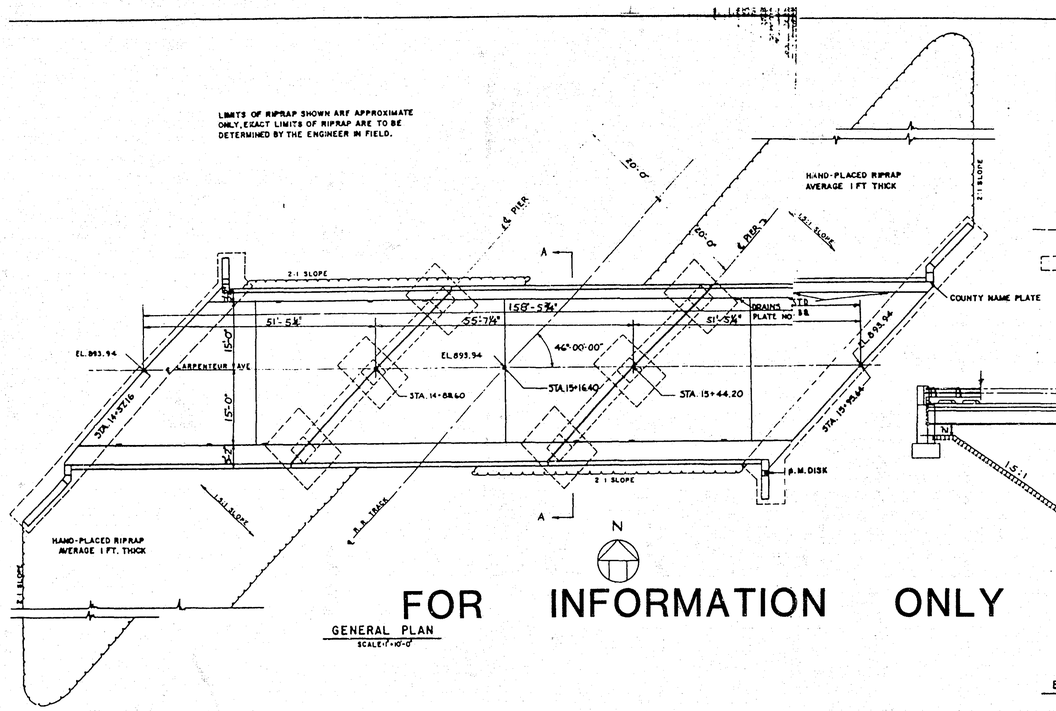
## GENERAL PLAN AND ELEVATION

SEC. 17 T. 29 N R. 22 W
CITY OF ST. PAUL/MAPLEWOOD RAMSEY COUNTY

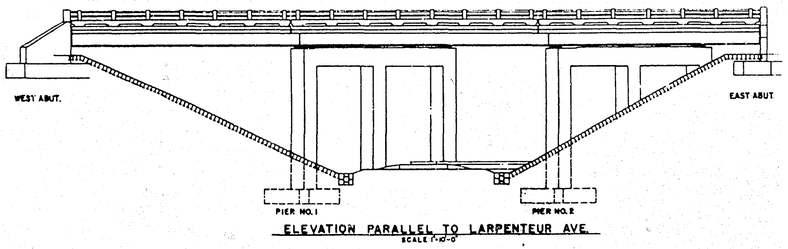
APPROVED: _____ 28-116
BRIDGE ENGINEER

| DES. MW | DR. MW | 62554 |
|---|---|---|
| CHK. MLH | CHK. MLH | |

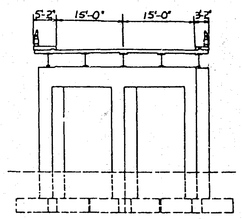
Area No. Job No. Design Group _____ State Proj. No. SP 62-630-21 28-116 Sheet No. 46 of 47 Sheets



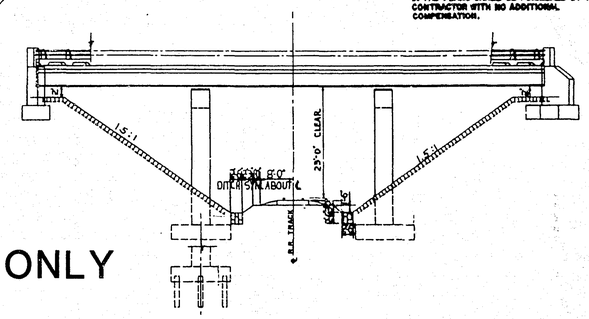

GENERAL PLAN
SCALE: 1"=10'-0"




ELEVATION PARALLEL TO LARPENTEUR AVE.
SCALE: 1"=10'-0"




SECTION A-A
SCALE: 1"=10'




ELEVATION NORMAL TO ℄ OF R.R. TRACK
SCALE: 1"=10'

## DESIGN DATA

1953 AASHO DESIGN SPECIFICATIONS
H20-44 LOADING

$f_s$ = 20,000 $f_c$ = 1200 n = 10
$f_s$ = 20,000 INTER. GRADE REINF.
STRUCTURAL CARBON STEEL

| | |
|---|---|
| COMPRESSION & AXIAL TENSION | 18,000 |
| FIBER STRESS IN BENDING | 18,000 |
| SHEAR IN GIRDER WEB | |
| GROSS SECTION | 12,000 |
| BEARING ON BRONZE | 2,000 |
| WOOD PILING | 40K |

## CONSTRUCTION NOTES

THE MINNESOTA SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JULY 1, 1947 & SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON OCTOBER 16, 1947, AS MODIFIED BY SUPPLEMENT NO. 1 THERETO, DATED APRIL 15, 1953 & SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 25, 1953 SHALL GOVERN.

ALL REINFORCEMENT BARS SHALL BE INTERMEDIATE GRADE DEFORMED BARS. THE LISTS OF JOINT FILLER MATERIAL ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. ANY ADDITIONAL JOINT FILLER REQUIRED AS SHOWN IN THE PLANS SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

## SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

| ITEM NO. | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 2401.821 | CLASS DE EXCAVATION | 1140 | CU.YD. |
| 2401.504 | CONCRETE MIX NO. 1A6 | 336.2 | CU.YD. |
| 2401.501 | CONCRETE MIX NO. 3Y6 | 302.9 | CU.YD. |
| 2401.501 | CONCRETE GRADE Y MIX NO. 3Y6 | 13.2 | CU.YD. |
| 2401.516 | REINFORCEMENT BARS | 66668 | LB |
| 2402.509 | WROUGHT BRONZE | 304 | LB |
| 2402.513 | STRUCTURAL STEEL | 113600 | LB |
| 2402.517 | STANDARD NAME PLATES | ONE | UNIT |
| 2402.549 | ORNAMENTAL METAL RAILING | 340.36 | LIN. FT. |
| 2402.505 | TREATED TIMBER PILING DELIVERED | 5208 | LIN. FT. |
| 2402.504 | TREATED TIMBER PILING DRIVEN | 4917 | LIN. FT. |
| 2402.517 | TREATED TIMBER TEST PILES IN PLACE 50 FT. LONG | 7 | PILE |
| 2402.517 | TR. TIM. TEST PILES IN PLACE 20 FT. LONG | ONE | PILE |
| 2402.517 | TR. TIM. TEST PILES IN PLACE 40 FT. LONG | ONE | PILE |
| 2402.517 | TR. TIM. TEST PILES IN PLACE 60 FT. LONG | ONE | PILE |
| 2402.553 | LOAD TEST FOR BEARING CAPACITY | 2 | LOAD TEST |
| 2502.551 | HAND-PLACED RIPRAP | 448 | CU. YD. |
| 24-42.504 | REMOVE OLD STRUCTURE | ONE | STRUCT. |

* SEE SPECIAL PROVISIONS

C.S.A.H. NO. 30 — RAMSEY COUNTY

# GENERAL PLAN & ELEVATIONS

54'-56'-54' BEAM SPAN 44° SKEW 30' ROADWAY

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ENGINEERS AND ARCHITECTS

BRIDGE NO. 7231
OVER M.ST.P.&S.S.M.RY. TRACKS AT ST. PAUL
SEC. 17 T 29 N R 22 W
RAMSEY COUNTY

M.H.D. APPROVED ..... BRIDGE ENGINEER
DATE ...

S.A.P. NO. 62-608-05 (C.S.A.H. 30) — SHEET NO. 1 OF 9 SHEETS — 7231

FOR INFORMATION ONLY

25-116

| NO | BY | DATE | REVISIONS | ITEM | DESIGN | CHECKED |
|---|---|---|---|---|---|---|
| | | | | | | |

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.
Date 1/24/90 Reg No. 9046

ENGINEERS ■ ARCHITECTS ■ PLANNERS

RAMSEY COUNTY, MINNESOTA

EXISTING STRUCTURE

FILE NO. 88019
DATE 1/24/90
47 / 47