## 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

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

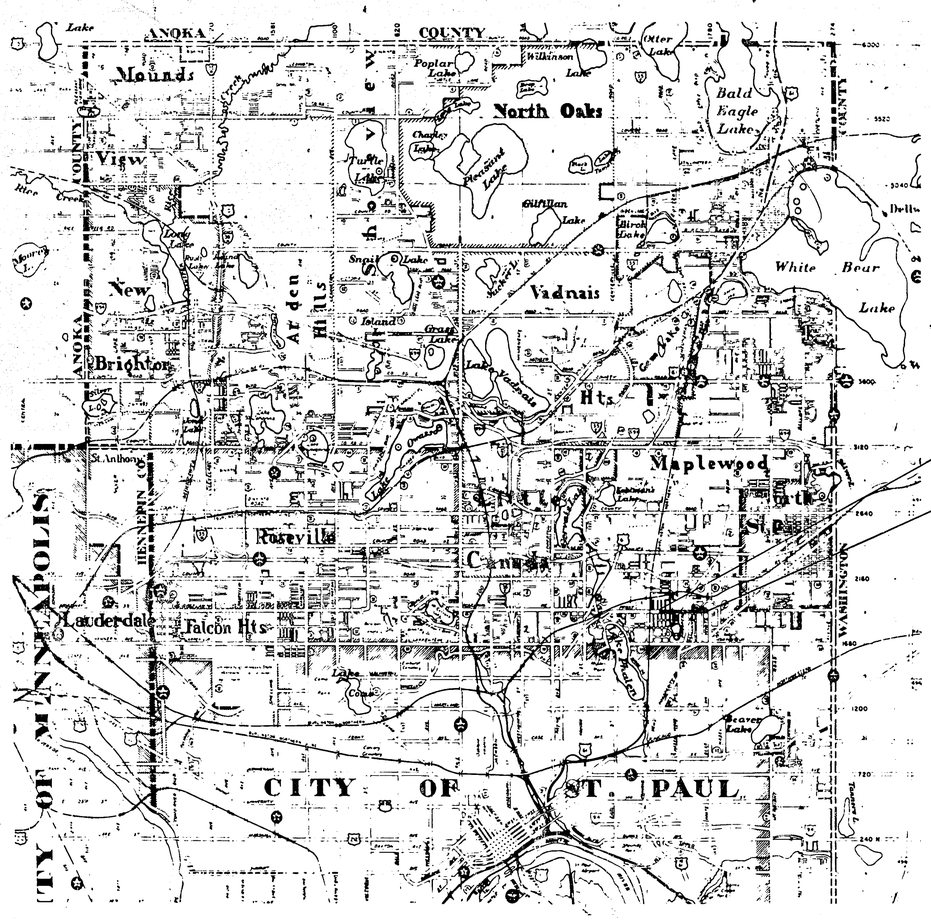
_____ PIT NO. _____ Located in
Dead Haul

_____ PIT NO. _____ Located in
Dead Haul

THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

| | FEET | | MILES |
|---|---|---|---|
| GROSS LENGTH | 4,064.94 | = | 0.7699 |
| BRIDGE LENGTH | 0 | = | 0 |
| EXCEPTION | 0 | = | 0 |
| NET LENGTH | 4,064.94 | = | 0.7699 |

PLAN 10 30 50
PROFILE HORIZ. 10 20 30 40 50
PROFILE VERT. 20 40
CROSS SECTIONS 5 10
LAYOUT MAP 5 10 5,280'




# RAMSEY COUNTY
## DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN: FOR GRADING, AGGREGATE BASE, BITUMINOUS BASE AND SURFACING, STORM SEWER, CONCRETE CURB AND GUTTER

# FROST AVENUE

BETWEEN: BIRMINGHAM ST. AND WHITE BEAR AVENUE

## S.A.P. 62-628-03

FROM: A POINT 1,453.72 FEET WEST OF THE CENTER OF SECTION 15, T29N, R22W.

TO: A POINT 41.5 FEET WEST OF THE EAST 1/4 CORNER OF SECTION 15, T29N, R22W.

BEGIN S.A.P 62-628-03
STA. 44+45.00

END S.A.P. 62-628-03
STA. 85+09.94

INDEX OF SHEETS


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | ESTIMATED QUANTITIES |
| 3 | TIPICAL SECTIONS |
| 4-5 | DRAINAGE CHART AND DETAILS |
| 6-11 | PLAN AND PROFILE SHEETS |
| 12-14 | STORM SEWER (GRIT CHAMBER) |
| 15-39 | X-SECTIONS |
| 40 | TRAFFIC SIGNAL SYSTEM (INFORMATIONAL ONLY) |


## DESIGN DESIGNATION
S.A.P. NO. 62-628-03

| | BIRMINGHAM TO PROSPERITY | PROSPERITY TO WHITE BEAR AVENUE |
|---|---|---|
| ADT (CURRENT YEAR) 1982 | 7,150 | 5,800 |
| ADT (FUTURE YEAR) 2000 | 12,000 | 10,000 |
| Σ, N20 20 YEAR | 1,953,986 | 1,585,052 |
| DESIGN LOAD | 10 TON | 10 TON |
| STABILOMETER "R" VALUE | 24.6 | 24.6 |
| DESIGN SPEED | 45 M.P.H. | 45 M.P.H. |

DESIGN SQUAD R. Bock DATE 3-30-82
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 1-21-83 REG. NO. 5782 ENGR. Wayne R. Howard

RECOMMENDED FOR APPROVAL _____ TRAFFIC ENGR. DATE 10-5-82
RECOMMENDED FOR APPROVAL _____ ENV. ENGR. DATE 9-16-82
RECOMMENDED FOR APPROVAL _____ MAIN. ENGR. DATE 9-21-83
RECOMMENDED FOR APPROVAL _____ CONSTR. ENGR. DATE 9-21-83
RECOMMENDED FOR APPROVAL _____ DESIGN ENGR. DATE 3-21-83
RECOMMENDED FOR APPROVAL _____ R/W MGR. DATE 10-5-82
APPROVED _____ COORDINATING ENGR. DATE 10-5-82 Rev. 12-13-82 MP

RECOMMENDED FOR APPROVAL _____ COUNTY ENGINEER DATE 10-5-82
APPROVED _____ VICE CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 4-11-83
APPROVED Kenneth B. Haun CITY OF MAPLEWOOD DATE 1/14/83
APPROVED _____ DATE _____

MINNESOTA DEPARTMENT OF TRANSPORTATION
RECOMMENDED FOR APPROVAL _____ DISTRICT TRAFFIC ENGINEER DATE 3-16-83
RECOMMENDED FOR APPROVAL _____ DISTRICT STATE AID ENGINEER DATE 2/23/83
APPROVAL _____ DIRECTOR, OFFICE OF STATE AID DATE 3/11/83

| PLAN REVISIONS | | |
|---|---|---|
| DATE | SHEET NO. | BY |
| 12-13-82 | Change Grades | R Bock |
| 1-12-83 | B.T. Path | R Bock |
| | | |
| | | |

S.A.P. NO 62-628-03 **Sheet No. 1 of 40 Sheets**

26-112

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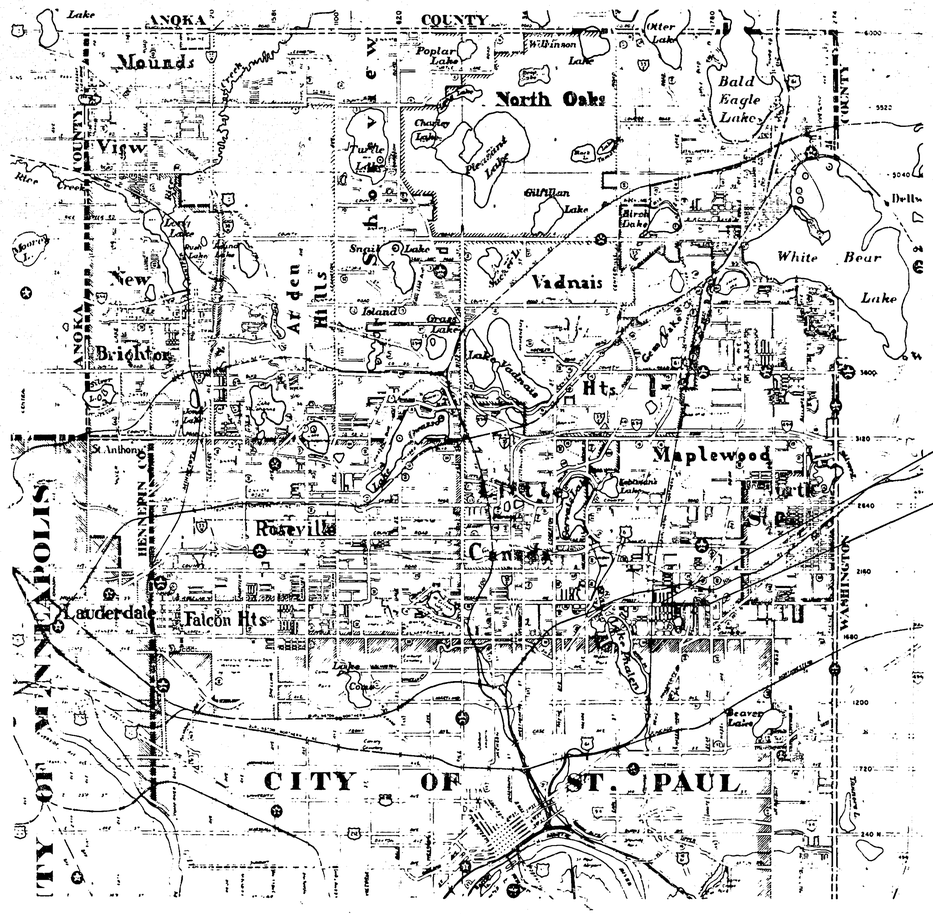


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RECOMMENDED FOR APPROVAL MDK MAINT ENGR DATE 3-21-83
RECOMMENDED FOR APPROVAL DHL SURVEY ENGR DATE 4-21-83
RECOMMENDED FOR APPROVAL LKF DESIGN ENGR DATE 3-21-83
RECOMMENDED FOR APPROVAL ARB R/W ENGR DATE 10-5-82
APPROVED Wayne R. Gomard COORDINATING ENGR DATE 10-5-82 Rev. 12-13-82 WRG

RECOMMENDED FOR APPROVAL [illegible] COUNTY ENGINEER DATE 10-5-82
APPROVED [illegible] 1ST VICE CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 4-11-83
APPROVED Kenneth B. Harder CITY OF MAPLEWOOD DATE 11/4/83
APPROVED _____ DATE _____

MINNESOTA DEPARTMENT OF TRANSPORTATION
RECOMMENDED FOR APPROVAL [illegible] DATE 3-10-83
RECOMMENDED FOR APPROVAL [illegible] DISTRICT STATE AID ENGINEER DATE 3/25/83
APPROVAL [illegible] DIRECTOR, OFFICE OF STATE AID DATE 3/11/83

| PLAN REVISIONS | | |
|---|---|---|
| DATE | SHEET NO. | BY |
| 12-13-82 | Change Grades | R Bock |
| 1-12-83 | B.L. Path | R Bock |
| | | |
| | | |

S.A.P. NO 62-628-03 **Sheet No. 1 of 40 Sheets**

26-112

## STATEMENT OF ESTIMATED QUANTITIES

| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITIES | FINAL ESTIMATED QUANTITIES |
|---|---|---|---|---|
| 2021.501 | MOBILIZATION | L.S. | 1 | |
| | | | | |
| 2101.502 | CLEARING | TREE | 41 | |
| 2101.507 | GRUBBING | TREE | 45 | |
| | | | | |
| 2104.501 | REMOVE CONCRETE SEWER PIPE | L.F. | 921 | |
| 2104.501 | REMOVE CONCRETE CURB AND GUTTER | L.F. | 294 | |
| 2104.501 | REMOVE CONCRETE CURB (MEDIAN) | L.F. | 340 | |
| 2104.501 | REMOVE 4' CONCRETE MEDIAN | L.F. | 18 | |
| 2104.503 | REMOVE CONCRETE SIDEWALK | S.F. | 3147 | |
| 2104.503 | REMOVE FLAGSTONE WALL | S.F. | 256 | |
| 2104.505 | REMOVE CONCRETE PAVEMENT | S.Y. | 9163 | |
| 2104.509 | REMOVE MANHOLES | EACH | 1 | |
| 2104.509 | REMOVE CATCH BASINS | EACH | 6 | |
| 2104.521 | SALVAGE TRAFFIC BARRIER | L.F. | 252 | |
| 2104.521 | SALVAGE FENCE | L.F. | 278 | |
| | | | | |
| 2105.501 | COMMON EXCAVATION | C.Y. | 47,314 | |
| 2105.523 | COMMON BORROW (L.V.) | C.Y. | 2163 | |
| 2105.525 | TOPSOIL BORROW (L.V.) | C.Y. | 1042 | |
| 2130.501 | WATER | GAL.(M) | 150 | |
| | | | | |
| 2211.501 | AGGREGATE BASE, CL. 6 (OR CL. 5, 100% CRUSHED) | TON | 2094 | |
| | | | | |
| 2331.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 739 | |
| 2331.508 | WEARING COURSE MIXTURE | TON | 116 | |
| 2331.510 | BINDER COURSE MIXTURE | TON | 2790 | |
| 2331.514 | BASE COURSE MIXTURE | TON | 13161 | |
| | | | | |
| 2357.502 | BITUMINOUS MATERIAL FOR TACK COAT | GAL. | 3680 | |
| | | | | |
| 2361.504 | ASPHALT CEMENT | TON | 87 | |
| 2361.508 | WEARING COURSE MIXTURE | TON | 1336 | |
| | | | | |
| 2451.503 | GRANULAR BACKFILL (L.V.) | C.Y. | 200 | |
| | | | | |
| 2501.515 | 15" R.C. PIPE APRONS | EACH | 1 | |
| 2503.511 | 12" R.C. PIPE SEWER, CLASS V | L.F. | 33 | |
| 2503.511 | 15" R.C. PIPE SEWER, CLASS V | L.F. | 2069 | |
| 2503.511 | 18" R.C. PIPE SEWER, CLASS V | L.F. | 696 | |
| 2503.511 | 21" R.C. PIPE SEWER, CLASS III | L.F. | 184 | |
| 2503.511 | 24" R.C. PIPE SEWER, CLASS III | L.F. | 295 | |
| 2503.511 | 33" R.C. PIPE SEWER, CLASS III | L.F. | 246 | |
| 2503.511 | 36" R.C. PIPE SEWER, CLASS II | L.F. | 180 | |
| 2503.511 | 42" R.C. PIPE SEWER, CLASS II | L.F. | 750 | |
| 2506.508 | CONSTRUCT SURFACE DRAINS, DESIGN A OR F | EACH | 2 | |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN 90"-4020 | EACH | 1 | |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN A OR F | EACH | 9 | |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN J | EACH | 2 | |
| (1) 2506.509 | CONSTRUCT CATCH BASINS, DESIGN L.P-4 | EACH | 21 | |
| 2506.509 | CONSTRUCT CATCH BASINS, DESIGN R.C.-2 | EACH | 12 | |
| 2506.512 | RECONSTRUCT MANHOLES | L.F. | 89.7 | |
| 2506.516 | CASTING ASSEMBLIES | EACH | 4 | |
| 2506.521 | INSTALL CASTINGS | EACH | 16 | |
| 2506.522 | ADJUST FRAME AND RING CASTINGS | EACH | 11 | |
| | | | | |
| 2521.501 | 4" CONCRETE WALK | S.F. | 2500 | |
| 2531.501 | CONCRETE CURB AND GUTTER, DESIGN B624 | L.F. | 8110 | |
| 2531.501 | CONCRETE CURB AND GUTTER, DESIGN B618 | L.F. | 114 | |
| 2531.503 | CONCRETE MEDIAN | S.Y. | 105 | |
| 2531.507 | 6" CONCRETE DRIVEWAY PAVEMENT | S.Y. | 290 | |
| 2535.501 | BITUMINOUS CURB | L.F. | 522 | |
| | | | | |
| 2575.505 | SODDING | S.Y. | 12500 | |
| 2575.531 | COMMERCIAL FERTILIZER, ANALYSIS 12-12-12 | TON | 0.5 | |
| 105.631 | SALVAGE BITUMIOUS PAVEMENT | S.Y. | 3202 | |
| 412.604 | TIMBER WALL | S.F. | 276 | |
| 503.605 | 3" INSULATION (SANITARY) | S.Y. | 56 | |
| 504.601 | LOWER WATER MAIN 8" | L.S. | 1 | |
| 504.601 | LOWER WATER MAIN 12" | L.S. | 1 | |
| 504.602 | ADJUST VALVE BOX | EACH | 15 | |
| 504.602 | RELOCATE HYDRANTS | EACH | 4 | |
| 504.603 | LOWER WATERMAIN | L.F. | 272 | |
| | | | | |
| 504.605 | 3" INSULATION (WATER) | S.Y. | 241 | |
| | | | | |
| 506.601 | GRIT CHAMBER MODIFICATION | L.S. | 1 | |
| 506.602 | DRILL CORE HOLES | EACH | 9 | |
| | | | | |
| 554.602 | INSTALL GUARDRAIL | L.F. | 65 | |
| 554.607 | TWISTED END TREATMENT | EACH | 1 | |
| 557.603 | INSTALL FENCE | L.F. | 278 | |
| | | | | |
| | **NON-PARTICIPATING** | | | |
| 2503.511 | 12" R.C. PIPE SEWER, CLASS V | L.F. | 231 | |
| 2506.509 | CONSTRUCT CATCH BASIN, DESIGN H | EACH | 1 | |
| 504.603 | LOWER WATER SERVICE | L.F. | 330 | |

## CLEAR AND GRUB CHART

| STATION | LOCATION LT. | LOCATION RT. | DESCRIPTION | CLEAR | GRUB |
|---|---|---|---|---|---|
| 53+08 | 36' | | 16" MAPLE | 1 | 1 |
| 53+66 | 37' | | 12" ASH | 1 | 1 |
| 54+19 | | 33 | STUMP | 0 | 1 |
| 58+33 | | 33' | 4" POP. | 1 | 1 |
| 58+40 | | 33' | 4" POP. | 1 | 1 |
| 58+47 | | 32' | 4" POP. | 1 | 1 |
| | | | | | |
| 54+46 | 25' | | 3 -5" ASH | 3 | 3 |
| 54+63 | 24' | | 18" ELM | 1 | 1 |
| 55+28 | 32' | | STUMP | 0 | 1 |
| 55+40 | 32' | | STUMP | 0 | 1 |
| 64+76 | | 42' | STUMP | 0 | 1 |
| 64+90 | | 42' | STUMP | 0 | 1 |
| 65+02 | | 43' | STUMP | 0 | 1 |
| 65+15 | | 43' | STUMP | 0 | 1 |
| 67+69 | | 30' | APPLE | 1 | 1 |
| 68+38 | | 39' | 6" OLIVE | 1 | 1 |
| 68+46 | | 39' | 5" OLIVE | 1 | 1 |
| 68+53 | | 40' | 8" OLIVE | 1 | 1 |
| 68+59 | | 40' | 8" OLIVE | 1 | 1 |
| 68+72 | | 40' | 2-6" OLIVE | 2 | 1 |
| 68+79 | | 41' | 2-6" OLIVE | 2 | 1 |
| 68+84 | | 40' | 6" OLIVE | 1 | 1 |
| 68+90 | | 41' | 6" OLIVE | 1 | 1 |
| 68+96 | | 41' | 9" OLIVE | 1 | 1 |
| | | | | | |
| 73+21 | 44' | | 4-5" ELM | 4 | 4 |
| 73+23 | 38' | | 10" ELM | 1 | 1 |
| 73+47 | 34' | | 14" ELM | 1 | 1 |
| 73+51 | 41' | | 6" ELM | 1 | 1 |
| 73+57 | 34' | | 13" ELM | 1 | 1 |
| 73+76 | 36' | | 18" ELM | 1 | 1 |
| 73+77 | 32' | | 22" ELM | 1 | 1 |
| 74+97 | 33' | | 2-8" ELM | 2 | 1 |
| 75+13 | 33' | | 12" ELM | 1 | 1 |
| 75+44 | 33' | | 18" ELM | 1 | 1 |
| 75+56 | 33' | | 6" COTT. | 1 | 1 |
| | | | | | |
| 75+77 | 40' | | 5" ELM | 1 | 1 |
| | | | | | |
| 83+80 | 35' | | 18" BOXELDER | 1 | 1 |
| 73+03 | 56' | | 8" ELM | 1 | 1 |
| 73+05 | 45' | | 10" ELM | 1 | 1 |
| 73+07 | 56' | | 10" ELM | 1 | 1 |
| | | | | | |
| | | | TOTALS | 41 | 45 |

## FENCE CHART

| REMOVE STATION | REMOVE LOCATION | INSTALL STATION | INSTALL LOCATION | TYPE |
|---|---|---|---|---|
| 51+00 TO 51+66 | RT. | 51+00 TO 51+66 | RT. | C.L. |
| 56+04 TO 56+82 | RT. | 56+04 TO 56+82 | RT. | WOOD RAIL |
| 57+59 TO 58+58 | RT. | 57+59 TO 58+58 | RT. | C.L. |
| | | | | |
| | | | | |

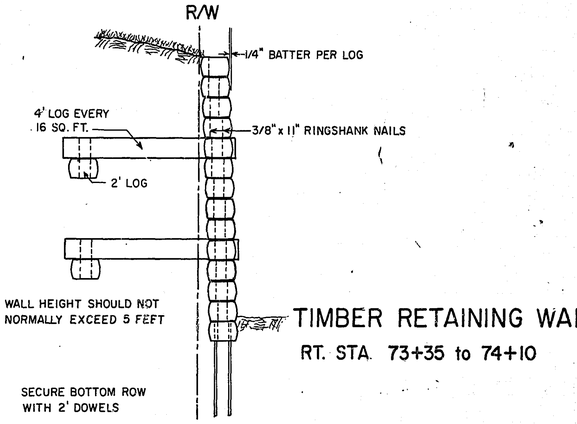
(1) SEE SHEET 5 FOR DEPTH REQUIREMENTS

## STANDARD DETAIL PLATES

| | |
|---|---|
| 0003A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| | |
| 3000 I | REINFORCED CONCRETE PIPE |
| 3006 C | GASKET JOINT FOR R.C. PIPE |
| 3100 F | CONCRETE APRON FOR REINFORCED CONCRETE PIPE |
| 4006K | MANHOLE OR CATCH BASIN |
| 4000H | MANHOLE OR CATCH BASIN |
| 4005K | MANHOLE OR CATCH BASIN |
| 4009C | MANHOLE OR CATCH BASIN |
| 4010F | CONC. SHORT CONE & ADJUSTING RING |
| 4011 D | PRECAST CONCRETE BASE |
| 4020C | MANHOLE OR CATCH BASIN |
| 4021C | PRECAST CURB OPENING CATCH BASIN |
| 4101C | RING CASTING FOR MANHOLE OR CATCH BASIN |
| 4108E | MANHOLE ADJUSTING RINGS |
| 4110D | COVER CASTING FOR MANHOLE |
| 4180G | MANHOLE OR CATCH BASIN STEP |
| 4140 D | SPECIAL GRATE CASTINGS FOR CATCH BASIN |
| 7035J | CONCRETE WALK & CURB RETURNS AT ENTRANCES |
| 7036C | PEDESTRIAN CURB RAMP |
| 7065C | BITUMINOUS CURB |
| 7100E | CONCRETE CURB AND GUTTERS |
| 7105C | CONCRETE MEDIAN |
| 7111 F | INSTALLATION OF CATCH BASIN: CASTINGS |
| 8000H | STANDARD BARRICADES |
| 8319D | TWISTED END TREATMENT |
| | |
| 9102C | SODDING AT PIPE CULVERT ENDS |
| 9322 I | CHAIN LINK FENCE |
| | |
| 3145B | CONCRETE PIPE TIES |
| 4016C | CURB OPENING CATCH BASIN |

FRONT VIEW OF STRAIGHT WALL

STRAIGHT WALL




TIMBER RETAINING WALL

RT. STA. 73+35 to 74+10

| REVISED | DATE | | |
|---|---|---|---|
| Grade Vals. | 12-13-84 | DESIGNED BY | |
| B.H. Pogrid | 1-12-85 | DRAWN BY | |
| Quant. & T.D. Rev. | 1-18-85 | CHECKED BY | |
| | | | |

I hereby certify that this plan, specification, or report 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.

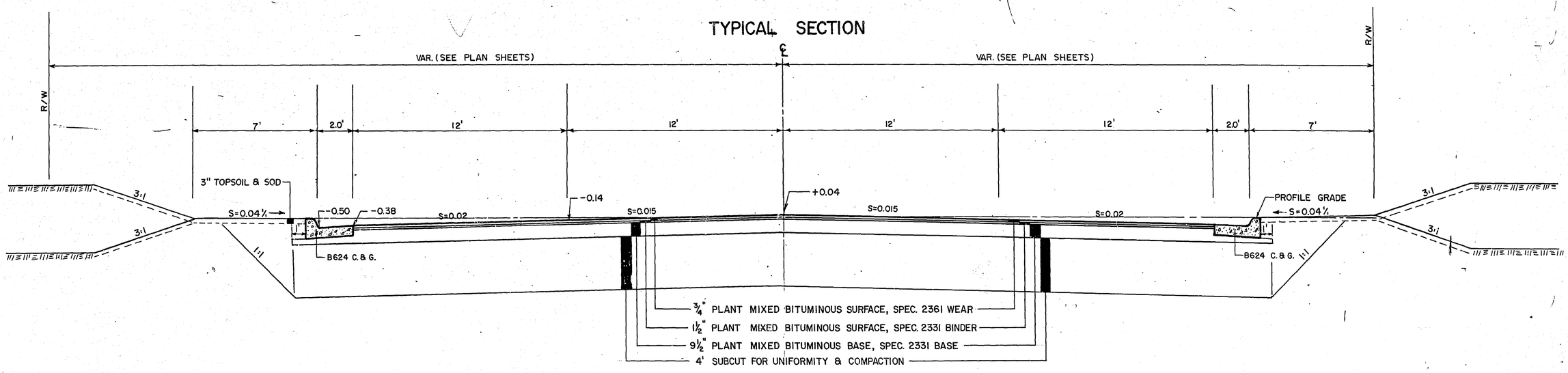
Date 11-28-82 Reg. No. 5782

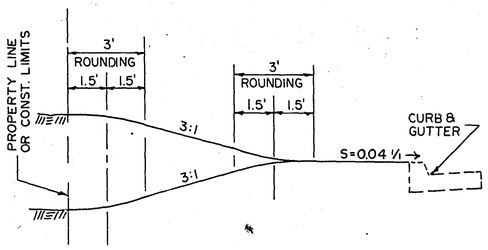
S.A.P. NO. 62-628-03

Sheet No. 2 of 40 Sheets

26-112

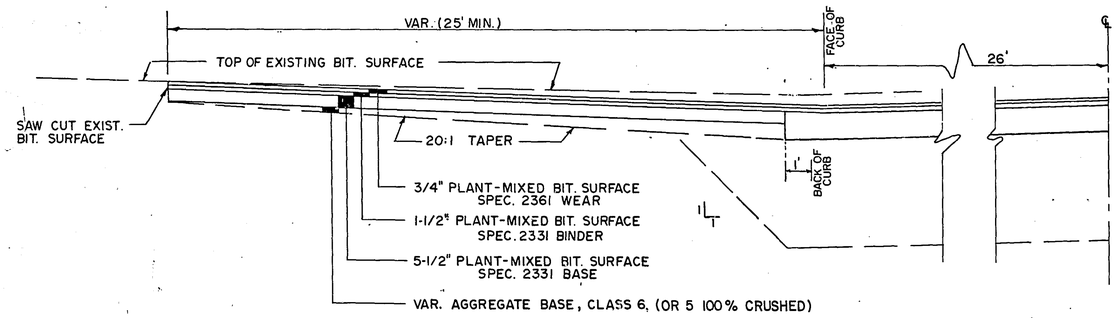
# TYPICAL SECTION




SLOPE ROUNDING DETAIL

CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. No. 7036C.




TYPICAL SIDE STREET APPROACH

| REVISED | DATE | | |
|---|---|---|---|
| Bit. Path | 1-12-83 | DESIGNED BY | |
| | | DRAWN BY | |
| | | CHECKED BY | |
| | | | |
| | | | |

I hereby certify that this plan, specification, or report 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.

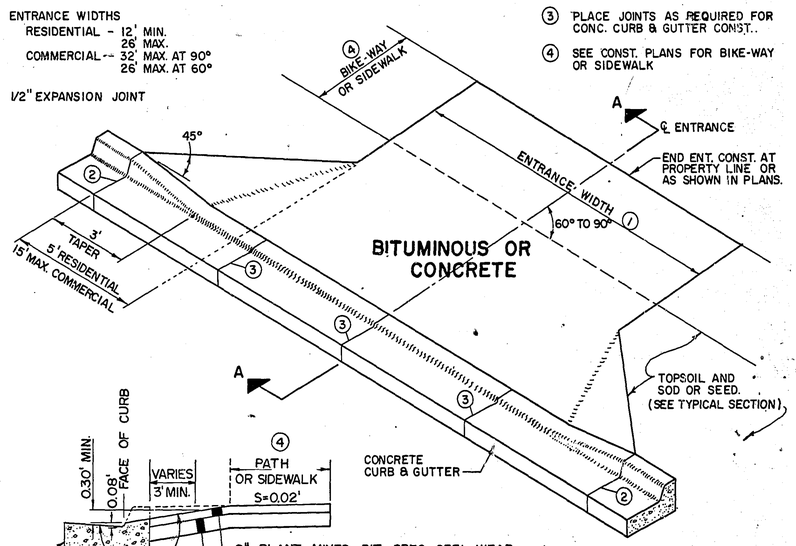
Date 10-28-82 Reg. No. 5782

① ENTRANCE WIDTHS
RESIDENTIAL - 12' MIN. 26' MAX.
COMMERCIAL -- 32' MAX. AT 90° 26' MAX. AT 60°

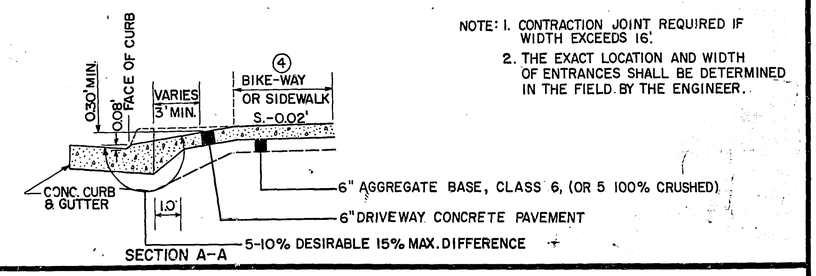
② 1/2" EXPANSION JOINT

③ PLACE JOINTS AS REQUIRED FOR CONC. CURB & GUTTER CONST..

④ SEE CONST. PLANS FOR BIKE-WAY OR SIDEWALK




SECTION A-A




SECTION A-A

NOTE: 1. CONTRACTION JOINT REQUIRED IF WIDTH EXCEEDS 16'.

2. THE EXACT LOCATION AND WIDTH OF ENTRANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

S.A.P. NO. 62-628-03

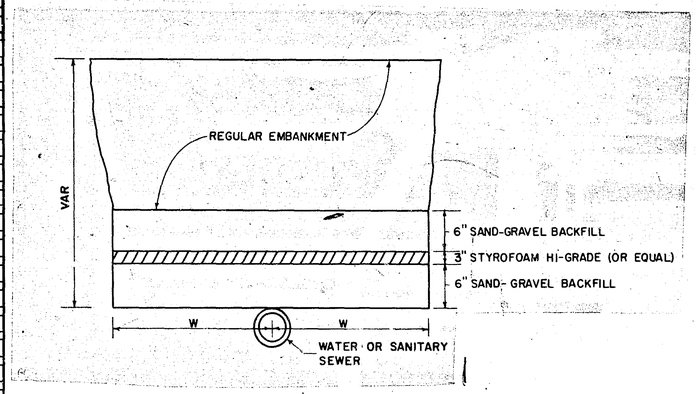
Sheet No. 3 of 40 Sheets

26-112

# DRAINAGE CHART

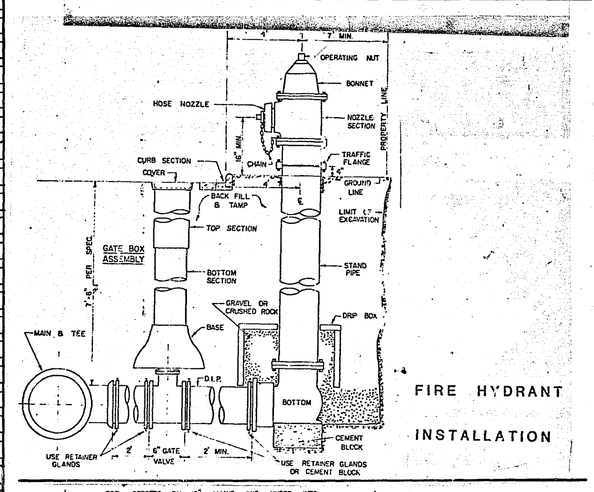
## EXISTING STRUCTURES

| STATION | LOCATION | NO. | TYPE | DESIGN | CONST. HEIGHT LIN. FT. | CASTING ASSEMBLY | ELEVATION: PROFILE | ELEVATION: ORIGNAL GRATE OR RING | ELEVATION: NEW GRATE OR RING | ELEVATION: C.B. or M.H. INVERT | ADJUST CASTING ASSEMBLY | RECONSTRUCT CATCH BASIN OR MANHOLE LIN. FT. | INSTALL CASTING ASSEMBLY | FURNISH AND INSTALL PIPE SEWER: REINFORCED CONCRETE PIPE 12" | 15" | 18" | 21" | 24" | CORRUGATED STEEL PIPE 12" | 15" | 18" | APRON | CLASS | DRAINS TO: STRUCTURE NO. | DRAINS TO: INVERT EL. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44+21 | LT 18' | 1 | M.H. | SAN. | | | 907.31 | 907.38 | 906.99 | 898.50 | | | | | | | | | | | | | | | | O.K LEAVE |
| 44+75 | LT 18' | 2 | M.H. | SAN. | | | 907.57 | 908.04 | 907.52 | 901.34 | | | | | | | | | | | | | | | | |
| 45+74 | LT 18' | 3 | M.H. | SAN. | | | 909.17 | 909.00 | 908.89 | 900.67 | | 6.5 | 1 | | | | | | | | | | | | | |
| 49+03 | LT 18' | 4 | M.H | SAN. | | | 907.99 | 908.29 | 907.71 | 897.79 | | 3.7 | 1 | | | | | | | | | | | | | |
| 50+64 | LT. 26' | 5 | S.D. | STORM | | | 905 72 | | — | | | | | | | | | | | | | | | | | REMOVE |
| 52+33 | LT 18' | 6 | M.H. | SAN. | | | 905.17 | 905.29 | 904.89 | 895.47 | 1 | | | | | | | | | | | | | | | |
| 54+41 | LT 18' | 7 | M.H. | SAN. | | | 902.26 | 902.60 | 901.98 | 892.83 | | 7.8 | 1 | | | | | | | | | | | | | |
| 54+41 | RT 21' | 8 | M.H. | SAN. | | | 902.26 | 902.01 | 901.92 | 892 27 | | 6.8 | 1 | | | | | | | | | | | | | |
| 55+64 | LT 18' | 9 | M.H. | SAN. | | | 900.46 | 900.46 | 900.18 | 891.66 | | 6.8 | 1 | | | | | | | | | | | | | |
| 55+64 | RT 21' | 10 | M.H. | SAN. | | | 900.46 | 900.28 | 900.12 | 891.54 | | 6.8 | 1 | | | | | | | | | | | | | |
| 56+80 | LT. 17' | 11 | M.H. | SAN. | | | 898.88 | 899.27 | 898.62 | 889.98 | | 6.9 | 1 | | | | | | | | | | | | | |
| 58+99 | LT. 17' | 12 | M.H | SAN. | | | 899.49 | 898.80 | 899.23 | 887.84 | 1 | | | | | | | | | | | | | | | |
| 61+21 | LT. 17' | 13 | M.H. | SAN. | | | 901.07 | 900.66 | 900.81 | 888.66 | | 10.6 | 1 | | | | | | | | | | | | | |
| 63+60 | LT 17' | 14 | M.H | SAN. | | | 906.14 | 906.36 | 905.88 | 890.36 | | 9.5 | 1 | | | | | | | | | | | | | |
| 65+76 | LT. 17' | 15 | M.H. | SAN. | | | 906.63 | 906.39 | 906.37 | 890.24 | 1 | | | | | | | | | | | | | | | |
| 67+55 | LT. 22' | 16 | C.B. | STORM | | | 904 73 | 905.30 | — | 902.00 | | | | | | | | | | | | | | | | REMOVE |
| 67+65 | RT 26' | 17 | C.B. | STORM | | | 904.68 | | — | | | | | | | | | | | | | | | | | REMOVE |
| 67+95 | LT. 17' | 18 | M.H | SAN. | | | 905.53 | 906.01 | 905.27 | 891.16 | | 9.5 | 1 | | | | | | | | | | | | | |
| 68+18 | LT. 24' | 19 | C.B | STORM | | | 904.42 | 905.74 | — | 900.34 | | | | | | | | | | | | | | | | REMOVE |
| 70+08 | LT 17' | 20 | M.H. | SAN | | | 904.86 | 905.08 | 904.60 | 891.58 | | 10.0 | 1 | | | | | | | | | | | | | |
| 71+56 | RT 98' | 21 | C.B | STORM | | | 905.82 | 902.77 | — | 894.57 | | | | | | | | | | | | | | | | O.K. LEAVE |
| 71+67 | LT. 24' | 22 | M H | STORM | | | 906.06 | 905 41 | — | 898.61 | | | | | | | | | | | | | | | | REMOVE |
| 71+76 | LT. 26' | 23 | M.H | STORM | | | 907.26 | | | | | | 1A | | | | | | | | | | | | | BURIED, PLYWOOD COVER |
| 72+25 | LT 17' | 24 | M H | SAN | | | 908 60 | 907.03 | 908 34 | 892.03 | 1 | | | | | | | | | | | | | | | |
| 72+69 | LT 28' | 25 | M H | STORM | | | 910.06 | 908.96 | 910.06 | 895 66 | | 3.8 | 1A | | | | | | | | | | | | | NO CASTING |
| 72+70 | RT 24' | 26 | C.B. | STORM | | | 909.06 | 905.85 | — | 901.35 | | | | | | | | | | | | | | | | REMOVE |
| 72+78 | LT 24' | 27 | C.B | STORM | | | 909.34 | 909 07 | — | 901.67 | | | | | | | | | | | | | | | | REMOVE |
| 73+54 | LT 116' | 28 | APR. | STORM | | | 912. 42 | | — | 896.39 | | | | | | | | | | | | | | | | O.K LEAVE |
| 75+53 | LT 17' | 29 | M.H. | SAN. | | | 922 70 | 923.33 | 922.44 | 911.23 | 1 | | | | | | | | | | | | | | | |
| 75+61 | LT. 26' | 30 | M.H | STORM | | | 923.17 | 923.75 | 922.60 | 916.85 | | 1.0 | 1 | | | | | | | | | | | | | LOCATED IN C & G |
| 78+65 | RT 58' | 31 | C.B | STORM | | | 939.25 | 939.44 | — | 936.74 | | | | | | | | | | | | | | | | O K LEAVE |
| 78+80 | LT. 17' | 32 | M.H. | SAN | | | 940 00 | 939.83 | 939.74 | 924.73 | 1 | | | | | | | | | | | | | | | |
| 78+92 | RT. 53' | 33 | C.B. | STORM | | | 940.60 | 940.76 | — | 936.06 | | | | | | | | | | | | | | | | O.K. LEAVE |
| 79+06 | LT 24' | 34 | C.B. | STORM | | | 941 30 | 940.53 | 940.90 | 931.92 | 1 | | 1A | | | | | | | | | | | | | CONVERT C.B. TO M.H. |
| 79+20 | RT 25' | 35 | S.D | STORM | | | 942 00 | 939.51 | 941.33 | 934.76 | 1 | | 1B | | | | | | | | | | | | | CONVERT S.D TO C.B. (R.C.-2) |
| 81+80 | LT. 17' | 36 | M.H. | SAN. | | | 955 00 | 954.96 | 954.74 | | 1 | | | | | | | | | | | | | | | |
| 84+80 | LT. 17' | 37 | M.H. | SAN. | | | 966 11 | | 965.85 | | 1 | | | | | | | | | | | | | | | |
| 85+27 | RT. 55' | 38 | M.H | SAN. | | | — | | — | | | | | | | | | | | | | | | | | O.K. LEAVE |

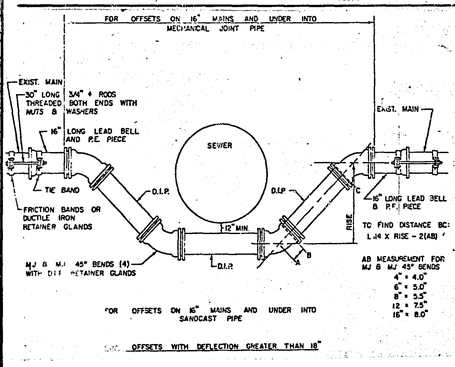



W=2' FOR WATER SERVICES OR SANITARY SEWER
W=4' FOR WATERMAIN
LENGTH AT CROSSINGS TO BE 8' FOR SANITARY SEWER AND WATER

WATER AND SANITARY SEWER INSULATION DETAIL




FIRE HYDRANT INSTALLATION




OFFSET DETAIL

| REVISED | DATE | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, specification, or report 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 10-28-82 Reg. No. 5782

S.A.P NO. 62-628-03

Sheet No. 4 of 40 Sheets

26 - 112

# DRAINAGE CHART

## PROPOSED STRUCTURES

| STATION | LOCATION | NO. | TYPE | DESIGN | CONST. HEIGHT LIN. FT | CASTING ASSEMBLY | ELEVATION: PROFILE | ELEVATION: ORIGNAL GRATE OR RING | ELEVATION: NEW GRATE OR RING | ELEVATION: C.B. or M.H. INVERT | ADJUST CASTING ASSEMBLY | RECONSTRUCT CATCH BASIN OR MANHOLE LIN. FT. | INSTALL CASTING ASSEMBLY | FURNISH AND INSTALL PIPE SEWER: REINFORCED CONCRETE PIPE 12" | 15" | 18" | 21" | 24" | 33" | 36" | 42" | APRON | CLASS | DRAINS TO: STRUCTURE NO. | DRAINS TO: INVERT EL. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48+56 | RT. 275' | 101 | C. B. | L.P.-4 | 6.1 | C | 908.22 | | 908.28 | 902.72 | | | | | 40' | | | | | | | | | 103 | 902.32 | |
| 48+56 | LT. 275' | 102 | C. B. | L.P.-4 | 6.1 | C | 908.22 | | 908.28 | 902.72 | | | | | 40' | | | | | | | | | 103 | 902.32 | |
| 48+85 | ℄ | 103 | M.H. | A OR F | 5.9 | A | 908.08 | | 908.12 | 902.32 | | | | | 325' | | | | | | | | | 108 | 899.75 | |
| 48+88± | LT. 44'± | 104 | C. B. | R.C.-2 | 4.5 | B | | | 907.2 ± | 902.86 | | | | | 54' | | | | | | | | | 103 | 902.32 | |
| 49+18± | LT. 44'± | 105 | C. B. | R.C.-2 | 4.2 | B | | | 907.2 ± | 903.16 | | | | | 30' | | | | | | | | | 104 | 902.86 | |
| 51+86 | RT. 275' | 106 | C. B. | L.P.-4 | 6.1 | C | 905.63 | | 905.69 | 900.13 | | | | | 37' | | | | | | | | | 108 | 899.75 | |
| 51+86 | LT. 275' | 107 | C. B. | L.P.-4 | 6.1 | C | 905.63 | | 905.69 | 900.13 | | | | | 37' | | | | | | | | | 108 | 899.75 | |
| 52+10 | ℄ | 108 | M.H. | A OR F | 6.0 | A | 905.41 | | 905.45 | 899.55 | | | | | | 185' | | | | | | | | 108A | 897.20 | |
| 52+18± | LT. 44'± | 109 | C. B. | R.C.-2 | 4.5 | B | | | 904.7 ± | 900.40 | | | | | 55' | | | | | | | | | 108 | 899.85 | |
| 52+48± | LT. 44'± | 110 | C. B. | R.C.-2 | 4.2 | B | | | 904.7 ± | 900.70 | | | | | 30' | | | | | | | | | 109 | 900.40 | |
| 55+17 | RT. 275' | 111 | C. B. | L.P.-4 | 6.0 | C | 901.15 | | 901.21 | 895.73 | | | | | 36' | | | | | | | | | 113 | 895.37 | |
| 55+17 | LT. 275' | 112 | C. B. | L.P.-4 | 6.0 | C | 901.15 | | 901.21 | 895.73 | | | | | 36' | | | | | | | | | 113 | 895.37 | |
| 55+40 | ℄ | 113 | M.H. | A OR F | 5.8 | A | 900.82 | | 900.86 | 895.17 | | | | | | | 184' | | | | | | | 117 | 893.08 | |
| 55+49± | LT. 44'± | 114 | C. B. | R.C.-2 | 4.1 | B | | | 899.7 ± | 895.72 | | | | | 55' | | | | | | | | | 113 | 895.17 | |
| 55+79± | LT. 44'± | 115 | C. B. | R.C.-2 | 3.8 | B | | | 899.7 ± | 896.02 | | | | | 30' | | | | | | | | | 114 | 895.72 | |
| 57+08 | LT. 27.5' | 116 | C. B. | L.P.-4 | 6.1 | C | 898.69 | | 898.75 | 893.19 | | | | | 32' | | | | | | | | | 117 | 892.88 | |
| 57+24 | ℄ | 117 | M.H. | A OR F | 7.6 | A | 898.69 | | 898.73 | 891.28 | | | | | | | | | 246' | | | | | 124 | 891.03 | |
| 57+26 | RT. 275' | 118 | C. B. | L.P.-4 | 6.5 | C | 898.69 | | 898.75 | 892.75 | | | | | 28' | | | | | | | | | 117 | 892.47 | |
| 58+80± | LT. 44± | 119 | C. B. | R.C.-2 | 3.8 | B | | | 898.5± | 894.90 | | | | | 35' | | | | | | | | | 120 | 894.55 | |
| 59+18± | LT. 44± | 120 | C.B. | RC.-2 | 4.2 | B | | | 898.5± | 894.51 | | | | | 35' | | | | | | | | | 122 | 894.11 | |
| 59+25± | LT. 65± | 121 | AP. | | | | | | | | | | | | 30' | | | | | | | 15" | | 120 | | TIE APRON & NEXT 3 JOINTS |
| 59+50 | LT 27.5 | 122 | C.B. | L.P.-4 | 6.2 | C | 899.75 | | 899.81 | 894.11 | | | | | 35' | | | | | | | | | 124 | 893.76 | |
| 59+50 | RT. 27.5 | 123 | C.B. | LP-4 | 6.2 | C | 899.75 | | 899.81 | 894.11 | | | | | 35' | | | | | | | | | 124 | 893.76 | |
| 59+70 | ℄ | 124 | M.H. | A OR F | 9.0 | A | 899.85 | | 899.89 | 890.83 | | | | | | | | | | 180' | | | | 125 | 890.65 | |
| 61+50 | ℄ | 125 | M.H. | A OR F | 11.4 | A | 901.66 | | 901.71 | 890.25 | | | | | | | | | | | 375' | | | 126 | 889.88 | |
| 3+75 | SHEET 12 | 126 | M.H. | J | 5.4 | A | | | 8954 ± | 889.88 | | | | | | | | | | | 300' | | | 127 | 889.58 | |
| 6+75 | SHEET 12 | 127 | M.H. | J | 11.6 | A | | | 901.3± | 889.58 | | | | | | | | | | | 75' | | | 128 | 889.5± | |
| 7+42 | SHEET 12 | 128 | M.H. | 90" 4020 | 7.5 | A | | | 896.8± | 889.5± | | | | | | | | | | | | | | GRIT CHAMBER | 889.5± | BUILD OVER 73" ARCH |
| 63+50 | ℄ | 129 | M. H. | A OR F | 7.9 | A | 906.00 | | 906.04 | 898.25 | | | | | 200' | | | | | | | | | 125 | 893.25 | |
| 63+55± | LT. 32'± | 130 | C. B | R.C.-2 | 5.1 | B | 906.07 | | 905.5± | 900.57 | | | | | 35' | | | | | | | | | 129 | 900.25 | |
| 63+65± | RT. 47'± | 131 | C. B. | R.C.-2 | 5.7 | B | 906.21 | | 906.2± | 900.71 | | | | | 46' | | | | | | | | | 129 | 900.25 | |
| 67+48 | RT. 27.5 | 132 | C. B. | L.P.-4 | 6.1 | C | 905.76 | | 905.82 | 900.26 | | | | | 56' | | | | | | | | | 133 | 899.70 | |
| 67+48 | LT. 27.5 | 133 | C. B. | L.P.-4 | 6.6 | C | 905.76 | | 905.82 | 899.70 | | | | | 62' | | | | | | | | | 136 | 899.39 | |
| 67+80± | LT. 44'± | 134 | C. B. | R.C.-2 | 4.8 | B | | | 905.0± | 900.32 | | | | | 30' | | | | | | | | | 135 | 900.02 | |
| 68+10± | LT. 44'± | 135 | C. B. | RC.-2 | 5.1 | B | | | 905.0 ± | 900.02 | | | | | 25' | | | | | | | | | 136 | 899.77 | |
| 68+10 | LT. 29.5 | 136 | M.H. | A OR F | 6.5 | A | 905.45 | | 905.6 ± | 899.19 | | | | | | 175' | | | | | | | | 138 | 898.32 | |
| 69+85 | RT. 27.5' | 137 | C. B. | L.P.-4 | 6.0 | C | 904.67 | | 904.73 | 899.26 | | | | | 56' | | | | | | | | | 138 | 898.70 | |
| 69+85 | LT. 27.5' | 138 | C. B. | L.P.-4 | 5.9 | C | 904.67 | | 904.73 | 898.32 | | | | | | 191' | | | | | | | | 23 | 897.36 | |
| 53+95 | ℄ | 108A | M.H. | A OR F | 6.2 | A | 902.93 | | 902.97 | 897.00 | | | | 33' | | 145' | | | | | | | | 113 | 895.17 | 33' x 12" TO NORTH R/W |
| 72+70 | RT. 27.5' | 141 | C. B. | L.P.-4 | 6.4 | C | 909.39 | | 909.45 | 903.56 | | | | | 56' | | | | | | | | | 142 | 903.00 | |
| 72+78 | LT. 27.5' | 142 | C. B. | L.P.-4 | 7.8 | C | 909.66 | | 909.72 | 902.42 | | | | | | | | 8' | | | | | | 25 | 902.00 | |
| 75+65 | RT. 27.5' | 143 | C. B. | L.P.-4 | 5.7 | C | 923.34 | | 923.40 | 918.23 | | | | | 54' | | | | | | | | | 30 | 917.69 | |
| 75+65 | LT. 26' | 30 | M H. | EXISTING | | | | | | | | | | | | | | 287' | | | | | | 25 | 902.42 | |
| 79+27 | RT. 27.5' | 144 | C. B. | L.P.-4 | 6.1 | C | 942.35 | | 942.41 | 936.85 | | | | | 15' | | | | | | | | | 35 | 936.55 | |
| 79+27 | LT. 27.5' | 145 | C. B. | L.P.-4 | 6.1 | C | 942.35 | | 942.41 | 936.85 | | | | | 20' | | | | | | | | | 34 | 936.65 | |
| 82+08 | RT. 27.5' | 146 | C. B. | L.P.-4 | 6.6 | C | 956.40 | | 956.46 | 950.34 | | | | | 281' | | | | | | | | | 144 | 936.85 | |
| 82+08 | LT. 27.5' | 147 | C. B. | L.P.-4 | 6.1 | C | 956.40 | | 956.46 | 950.90 | | | | | 56' | | | | | | | | | 146 | 950.34 | |
| 57+26 | RT. 53' | 118A | S.D. | A OR F | 2.5 | D | | | 895.5 | 893.0 | | | | | 25' | | | | | | | | | 118 | 892.75 | |
| 59+45 | LT. 45' | 122A | S.D. | A OR F | | D | | | 899.5± | 894.28 | | | | | 17' | | | | | | | | | 122 | 894.11 | |
| TOTALS | | | | | | | | | | | | | | 33' | 2,069' | 696' | 184' | 295' | 246' | 180' | 750' | 1 | | | | |
| | NON - PARTICIPATING | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53+95 | LT. 264' | 108B | S.D. | H | 2.5 | SPECIAL | | | 902.2 | 899.70 | | | | 231 | | | | | | | | | | 108A | 897.85 | |
| TOTALS | | | | | | | | | | | | | | 231 | | | | | | | | | | | | |

CASTINGS
- SPECIAL = DITCH GRATE, STOOL TYPE, NEENAH CASTING NO. R-4342 OR EQUAL (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).
- A = RING CASTING MN./DOT. NO. 700-7, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).
- B = NEENAH INLET FRAME, GRATE, & CURB BOX NO. R-3067-L OR EQUAL (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).
- C = RING CASTING MN./DOT. NO. 790-2, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).
- D = RING CASTING MN./DOT. NO. 700-7, GRATE CASTING NO. 720 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).

MANHOLES & CATCH BASINS
- H, Mn/DOT STD. PLT. NO. 4006K
- 90" 4020 MN/DOT STD. PLATE NO. 4020C
- R.C.-2, DETAIL ON SHEET NO. 5
- A OR F, MN./DOT STD. PLATE NO. 4000H OR 4005K
- L.P.-4, MN./DOT. STD. PLATE NO. 4021C

| REVISED | DATE | |
|---|---|---|
| Erik Rud | 12-13-82 | DESIGNED BY |
| | | DRAWN BY |
| | | CHECKED BY |

I hereby certify that this plan, specification, or report 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.

Wayne Leonard

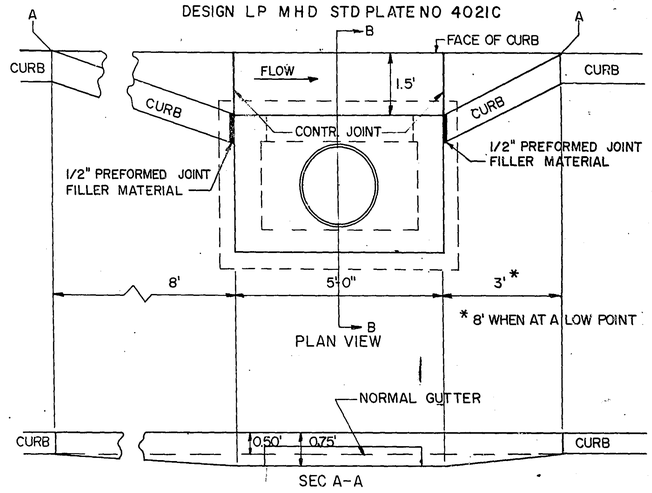
Date 10-28-82 Reg. No. 5782

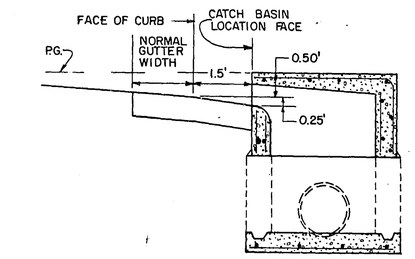
S.A.P. NO. 62-628-03

Sheet No. 5 of 40 Sheets

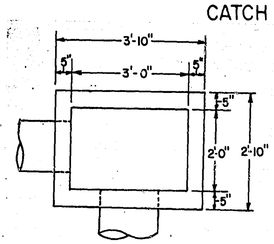
## CURB OPENING CATCH BASIN INSTALLATION DETAIL

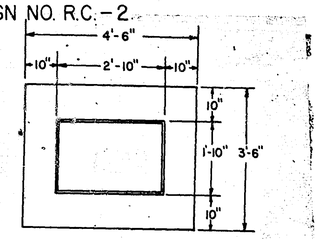
DESIGN LP MHD STD PLATE NO 4021C

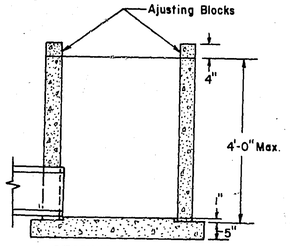



## CATCH BASIN DESIGN NO. R.C.-2

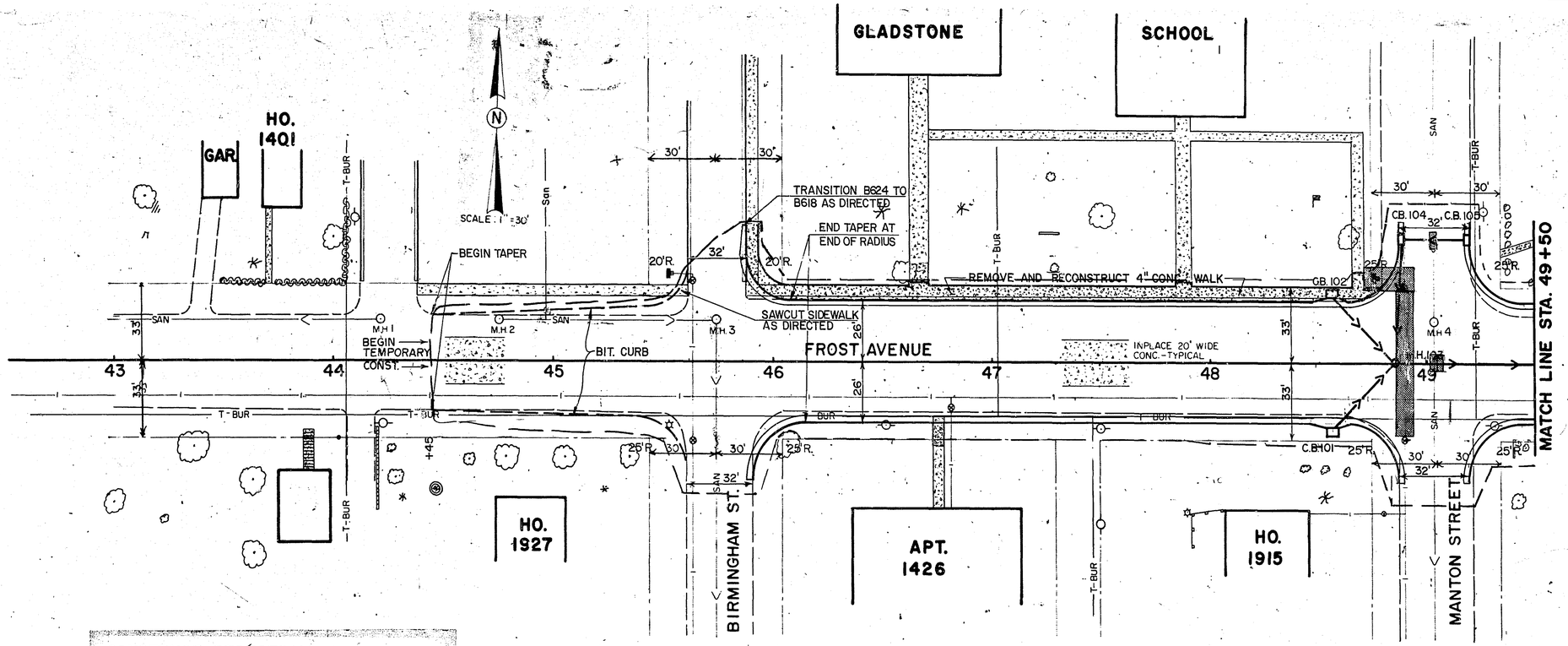


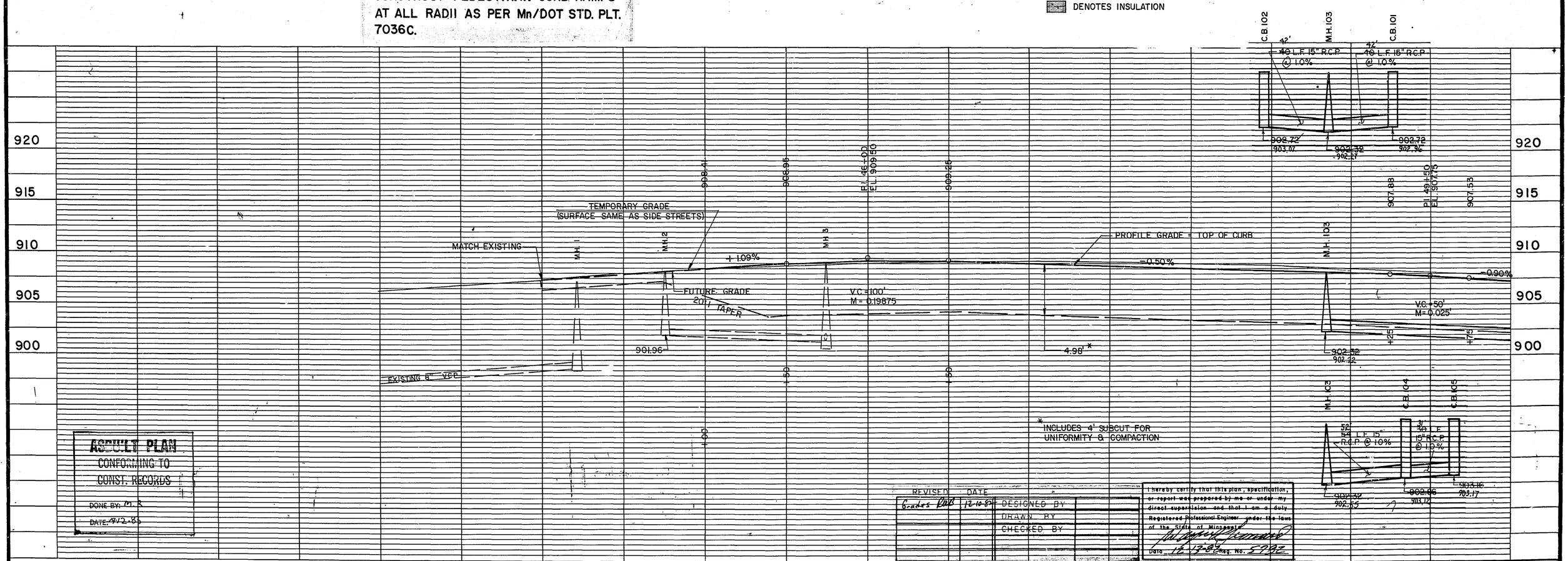

NOTES:
1. TO BE USED WITH NEENAH R-3067-L OR EQUAL.
2. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
3. ALTERNATE CAST-IN-PLACE BASE SLAB CAN BE USED.
4. INSTALL AS PER MN./DOT STD. PLATE NO. 7111 F
5. REINFORCING: SINGLE LINE STEEL WIRE FABRIC,
   WALL = W3.5 x W3.0 HAVING A AREA OF NOT LESS THAN .21 SQ. IN. PER. FOOT OF HEIGHT.
   BASE = W4.0 X W4.0 HAVING A AREA OF NOT LESS THAN .16 SQ. IN. PER. FOOT OF HEIGHT
6. ALTERNATE CONSTRUCTION - THE CATCH BASIN MAY BE CONSTRUCTED OF BLOCK OR BRICK CONFORMING TO THE REQUIREMENTS OF MN/DOT SPEC. 2506 AND AS DIRECTED BY ENGR..

| | | | | |
|---|---|---|---|---|
| TOPOGRAPHY | PLOTTED BY | DATE | CHECKED BY | DATE |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |




CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. 7036C.

DENOTES INSULATION




* INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

AS-BUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: M.R.
DATE: 9-12-85

| REVISED | DATE | |
|---|---|---|
| Grades Only | 12-10-82 | DESIGNED BY |
| | | DRAWN BY |
| | | CHECKED BY |

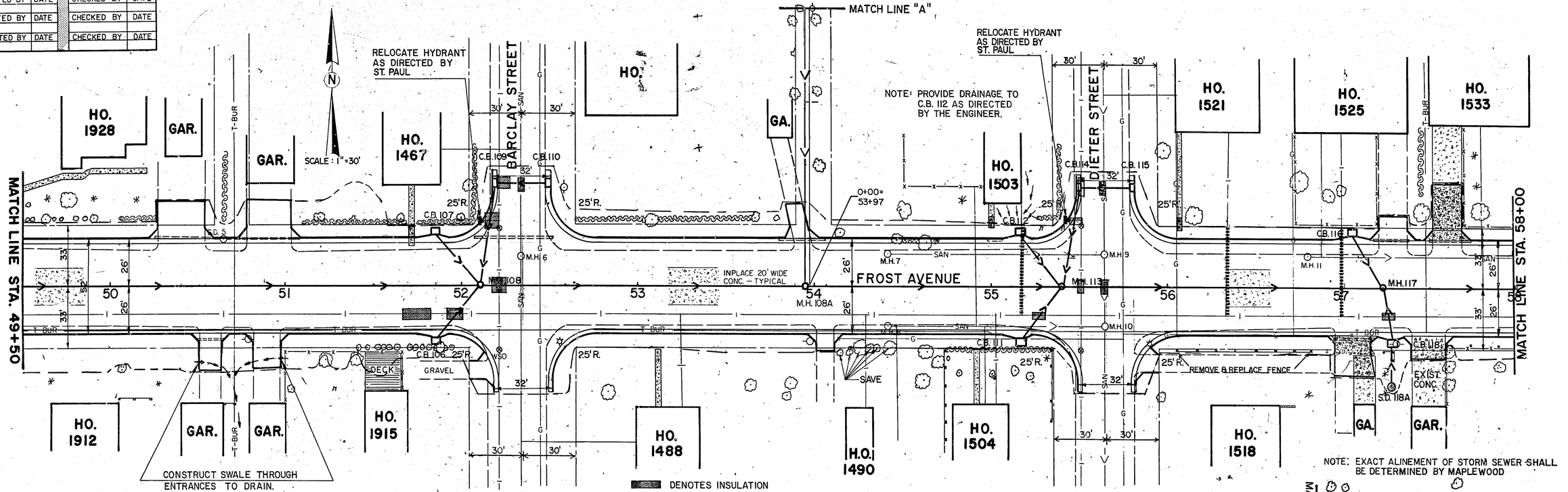
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-13-82 Reg. No. 5792

S.A.P. NO. 62-628-03

Sheet No. 6 of 40 Sheets

26-112

| | PLOTTED BY | DATE | CHECKED BY | DATE |
|---|---|---|---|---|
| TOPOGRAPHY | | | | |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

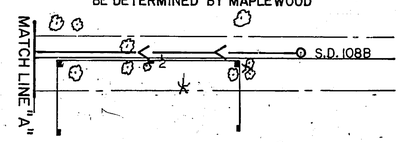


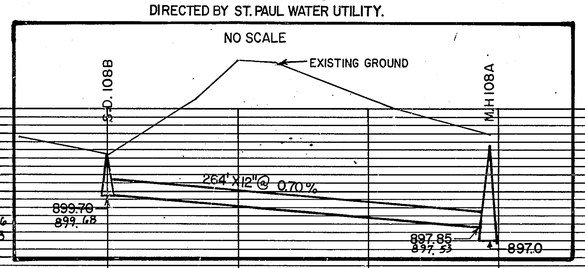

DENOTES INSULATION

LOWER WATER SERVICE AS DIRECTED BY ST. PAUL WATER UTILITY.

**CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. 7036C.**

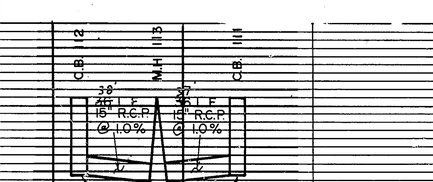
NOTE: EXACT ALINEMENT OF STORM SEWER SHALL BE DETERMINED BY MAPLEWOOD

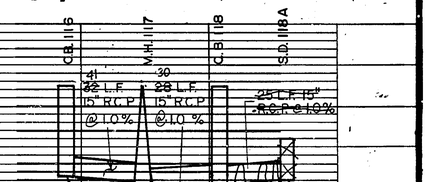


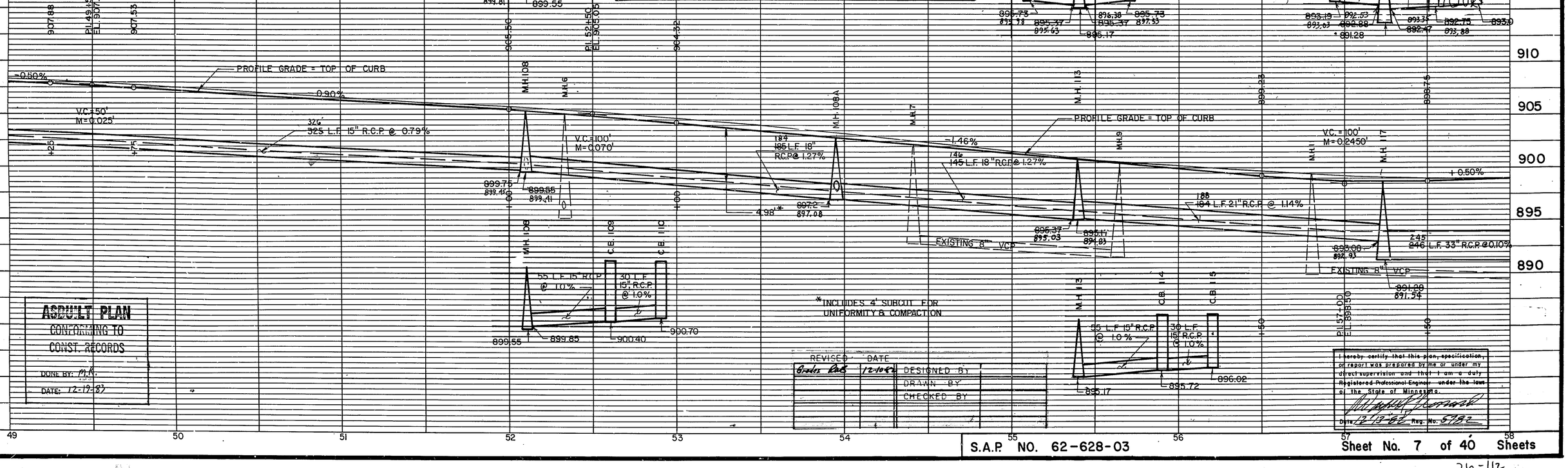










*INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: M.K.
DATE: 12-19-87

| REVISED | DATE |
|---|---|
| Grades Only | 12-10-87 |

DESIGNED BY
DRAWN BY
CHECKED BY

I hereby certify that this plan, specification, or report 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: 12-13-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 7 of 40 Sheets

26-112

| | | | | |
|---|---|---|---|---|
| TOPOGRAPHY | PLOTTED BY | DATE | CHECKED BY | DATE |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. 7036C.

HO. 1633

HO. 1597

HO. 1603

HO. 1615

HO. 1604

RELOCATE AS DIRECTED BY ST. PAUL

PLACE BIT. SURFACING AS DIRECTED BY THE ENGINEER

AP 121 EXACT LOCATION TO BE DETERMINED IN THE FIELD.

BIT. PARKING LOT

SAWCUT BIT. — CONST. LIMITS

ACQUIRE 25' X 25' Δ

10' REPLACE IN KIND BIT. CURB

C.B. 119 C.B. 120 C.B. 122 C.B. 123 C.B. 130 C.B. 131

S.D. 122A

MH 13 MH 14 MH 15

M.H. 124 M.H. 125 M.H. 129

FROST AVE.

HAZELWOOD AVE.

PROSPERITY AVE.

MATCH LINE STA. 58+00

MATCH LINE STA. 67+00

SIGN TO BE RELOCATED BY MAPLEWOOD

SCOREBOARD TO BE RELOCATED BY MAPLEWOOD

LOWER MAINS AS DIRECTED BY ST. PAUL

PLACE BIT. SURFACING AS DIRECTED BY THE ENGINEER

B.M. ELEV. 902.72
TOP HYD. HAZELWOOD

B.M. ELEV. 908.26
TOP HYD. HAZELWOOD

RAMSEY COUNTY WAKEFIELD PARK

ACQUIRE 20' EASEMENT

750 L.F. 42" R.C.P. (SEE SHEET 12) @ 0.10%

23.62 C.F.S.
9.75 C.F.S. ROAD R/W
33.37 C.F.S.

FILL SWALE

GRAVEL ENT.

12" CMP

BIT. ENT.

EXIST. BIT. ENT.

FURNISH AND INSTALL TWISTED END TREATMENT AND 65 L.F. BARRIER AS DIRECTED BY THE TRAFFIC ENGINEER

DENOTES INSULATION

① TAPER ROADWAY (15:1) TO MATCH EXISTING.

② TAPER ROADWAY (VARIABLE) TO MATCH EXISTING

③ REPLACE BITUMINOUS IN KIND AS DIRECTED BY THE ENGINEER.

④ CONTRACTOR SHALL EXPOSE WATERMAIN DEPTH PRIOR TO STORM SEWER CONSTRUCTION (INCIDENTAL)

246 L.F. 33" R.C.P. @ 0.10%

179 180 L.F. 36" R.C.P. @ 0.10%

124 200 L.F. 12" R.C.P. @ 2.50%

PROFILE GRADE = TOP OF CURB

+0.50%

+2.33%

-0.50%

V.C. = 100' M = 0.22875'

V.C. = 250' M = 0.88437'

P.I. 61+00.00 EL. 900.50

P.I. 64+00.00 EL. 907.60

EXISTING 8" VCP

EXISTING 10" VCP

EXISTING 12" VCP

*INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: M.R.
DATE: 12-9-85

| REVISED | DATE |
|---|---|
| Grade Rock | 11-14-85 |
| Bit. Leveling | 11-25-85 |

DESIGNED BY
DRAWN BY
CHECKED BY

I hereby certify that this plan, specification, or report 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 12-13-85 Reg. No. 5702

S.A.P. NO. 62-628-03

Sheet No. 8 of 40 Sheets

26-112

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| TOPOGRAPHY | PLOTTED BY | DATE | CHECKED BY | DATE |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

HO. 1625 HO. 1637 HO. 1645 HO. 1653 HO. 1638 HO. 1684 HO.

MATCH LINE STA. 67+00

MATCH LINE STA. 76+10

MARYKNOLL AVE.

FROST AVE.

KENNARD ST.

GAR.

C.B.134 C.B.135 M.H.136 C.B.137 C.B.138 C.B.133 C.B.132 C.B.16 M.H.18 M.H.19 M.H.20 M.H.22 M.H.23 M.H.24 M.H.25 C.B.142 C.B.141 C.B.143 M.H.29 M.H.30 C.B.21A C.B.21B B21

12" C.M.P. 15" C.M.P. 18" C.M.P. 24" C.M.P. T-BUR WSO SAN G

25'R. 30' 33' 43' 52' 26' 32' 63' 24"

GRAVEL WALL BIT. ENT. DIRT ENT. BIT. CURB

CONSTRUCTION LIMITS

SPILLWAY

SAVE IF POSSIBLE

Flag Pole

CONSTRUCT TIMBER RETAINING WALL - SEE DETAILS SHT. NO. 2. AND CROSS SECTION SHT. NO. 31.

REMOVE EXISTING SPILLWAY. PAYMENT TO BE INCIDENTAL TO COMMON EXCAVATION.

CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. 7036C.

DENOTES INSULATION

LOWER WATER SERVICE AS DIRECTED BY ST. PAUL WATER UTILITY.

B.M. ELEV. 909.48
TOP HYD. KENARD & FROST

N AP. 28

SCALE: 1"=30'

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: M.R.
DATE: 12-19-85

* INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

31 L.F. 15" R.C.P. @ 1.0%
28 L.F. 15" R.C.P. @ 1.0%
58 L.F. 15" R.C.P. @ 1.0%
2 L.F. 24" R.C.P. @ 5.25%
60 58 L.F. 15" R.C.P. @ 1.0%
55 54 L.F. 15" R.C.P. @ 1.0%
58 56 L.F. 15" R.C.P. @ 1.0%
58 56 L.F. 15" R.C.P. @ 1.0%
179 175 L.F. 18" R.C.P. @ 0.50%
186 181 L.F. 18" R.C.P. @ 0.50%
28 28.7 L.F. 24" R.C.P. @ 5.32%

PROFILE GRADE = TOP OF CURB

EXISTING 15" R.C.P.
EXISTING 18" R.C.P.
EXISTING 24" R.C.P.
EXISTING 8" V.C.P.

V.C. = 500'
M = 3.63125

+42.08

| REVISED | DATE | |
|---|---|---|
| Grades 1985 | 12-19-85 | DESIGNED BY |
| B.F. Pedestrian Ramps | 1-16-86 | DRAWN BY |
| | | CHECKED BY |

I hereby certify that this plan, specification, or report 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 [signature]
Date 12-17-85 Reg. No. 5782

SAP NO. 62-628-03

Sheet No. 9 of 40 Sheets

26-112

| | | | | |
|---|---|---|---|---|
| TOPOGRAPHY | PLOTTED BY | DATE | CHECKED BY | DATE |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

SCALE 1"=30'

MATCH LINE STA. 76+10

MATCH LINE STA. 84+75

FROST AVE.

FLANDRAU ST.

HO. 1725 · HO. 1731 · HO. 1739 · HO. 1751 · HO. 1761 · HO. 1769

CONSTRUCTION LIMITS

MATCH RADII TO EXISTING C.B'S

B.M. ELEV. 942.07
TOP HYD. S.W. COR FLANDRAU

DENOTES INSULATION

CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT 7036C.

PROFILE GRADE = TOP OF CURB

EXISTING 24" R.C.P. @ 4.12%

+5.31%

+5.00%

+0.20%

V.C.=200
M=1.200

*INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

ASSIGNED PLAN CONFORMING TO CONST. RECORDS
DONE BY: M.K.
DATE: 12-19-83

| REVISED | DATE |
|---|---|
| Storm Sewer | 10-9-85 |
| Bit Path | 1-12-85 |

DESIGNED BY
DRAWN BY
CHECKED BY

I hereby certify that this plan, specification, or report 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 11-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 10 of 40 Sheets

26-112

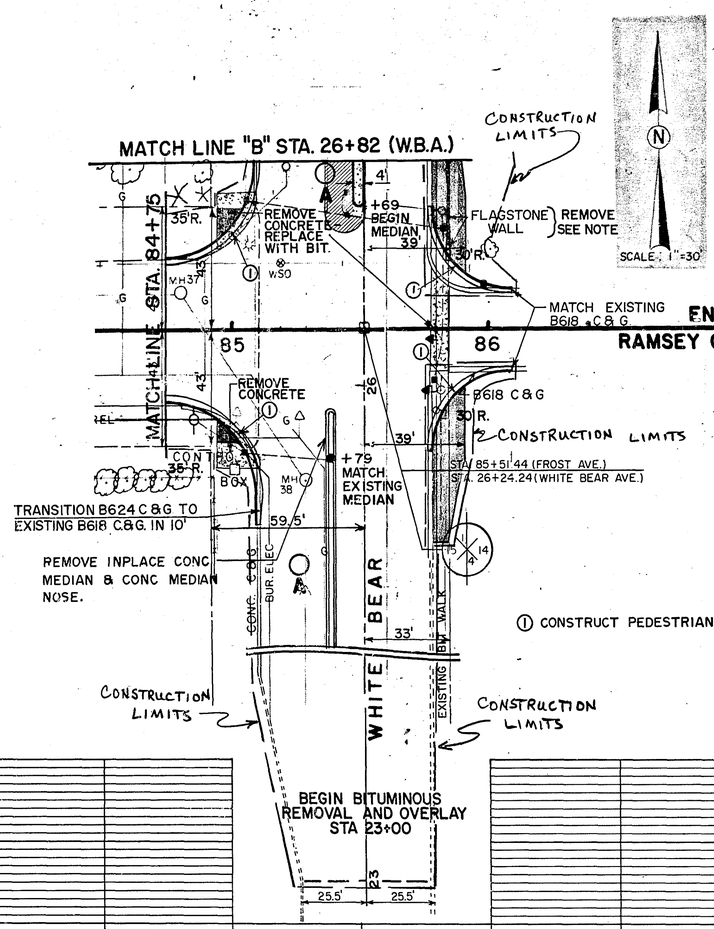
| | PLOTTED BY | DATE | CHECKED BY | DATE |
|---|---|---|---|---|
| TOPOGRAPHY | | | | |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

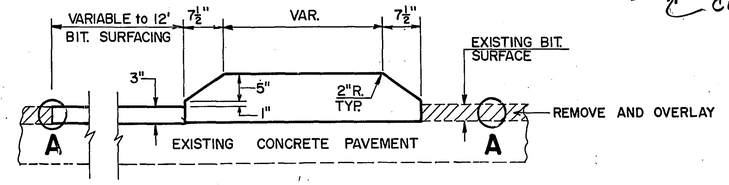
NOTES: REMOVE FLAGSTONE WALL BETWEEN STA. 26+50± AND STA 27+00. TRANSITION WALL TO FULL HEIGHT BETWEEN STA. 27+00 AND STA. 27+12.

TAPER EXISTING BIT. WALK TO 39' BETWEEN STA. 25+45 AND STA. 25+80. TAPER BIT. WALK FROM 39' TO MATCH EXISTING BETWEEN STA. 26+70 AND STA. 27+00. REPLACE IN KIND.

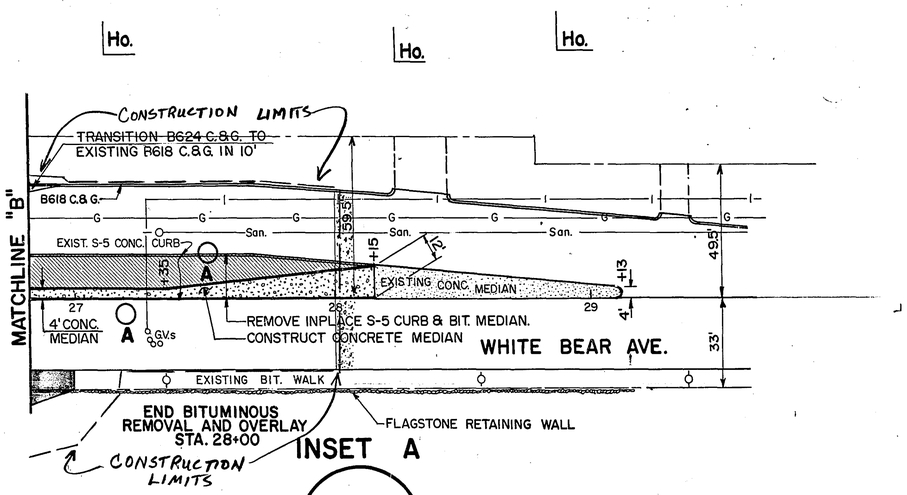
SIGNALS ARE TO BE RELOCATED UNDER A SEPERATE CONTRACT.

**CONSTRUCT PEDESTRIAN CURB RAMPS AT ALL RADII AS PER Mn/DOT STD. PLT. 7036C.**

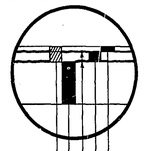


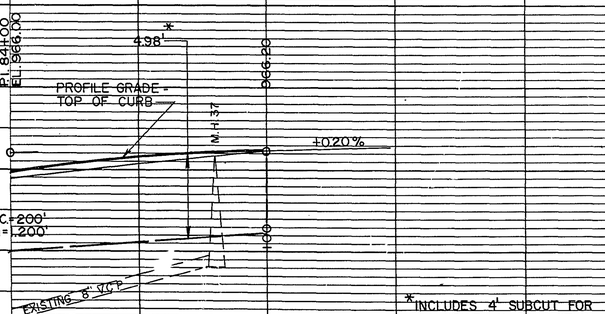

**CONCRETE MEDIAN DETAIL**
STA. 26+61 TO STA. 28+15




**INSET A**



1" PLANT MIXED BIT. SURFACE, SPEC. 2361 WEAR
2" PLANT MIXED BIT. SURFACE, SPEC. 2331 BINDER
BITUMINOUS TACK COAT, SPEC. 2357
EXISTING 8" CONCRETE BASE
EXISTING BITUMINOUS SURFACE—TO BE REMOVED FULL WIDTH




*INCLUDES 4' SUBCUT FOR UNIFORMITY & COMPACTION

AS BUILT PLAN
CORRECTED TO
CONST. RECORDS
DONE BY: M.R.
DATE: 12-19-83

| REVISED | DATE |
|---|---|
| | |

DESIGNED BY
DRAWN BY
CHECKED BY

I hereby certify that this plan, specification, or report 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.
Wayne Simonds
Date 12-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 11 of 40 Sheets

26-112

| | | | | |
|---|---|---|---|---|
| TOPOGRAPHY | PLOTTED BY | DATE | CHECKED BY | DATE |
| UTILITIES | PLOTTED BY | DATE | CHECKED BY | DATE |
| PROFILE | PLOTTED BY | DATE | CHECKED BY | DATE |

PROSPERITY AVE.

SAN FROST AVE.

63

62

61

WAKEFIELD PARK RAMSEY COUNTY

SCALE 1"=30'

10" MAPLE

8" ELM

24' LIGHT POLE

8" ASH

10" ELM

8" MAPLE

10" ASH

8" ASH

MH. 125

MH 13

+50

73°33'50"

M.H. 126

M.H. 127

M.H. 128

1 2 3 4 5 6

ACQUIRE 20' EASEMENT

3" TRI ASH

8" ASH

6" ASH

25°

EXISTING 73" R.C.P. ARCH

EXISTING GRIT CHAMBER

EXISTING 33" R.C.P.

WAKEFIELD PARK

RAMSEY COUNTY

MH 125

MH 126

MH 127

MH 128

905
900
895
890
885

353
~~375~~ L.F. 42" R.C.P. @ 0.10%

890.25

889.88

+75

303
~~300~~ L.F. 42" R.C.P. @ 0.10%

889.58

75 L.F. 42" R.C.P. @ 0.10%

889.5±

889.5±

0 1 2 3 4 5 6 7

CO. RD. NO.
CONST. ROADS

DONE BY: M.K.
DATE: 12-19-83

REVISED DATE

DESIGNED BY
DRAWN BY
CHECKED BY

I hereby certify that this plan, specification, or report 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.

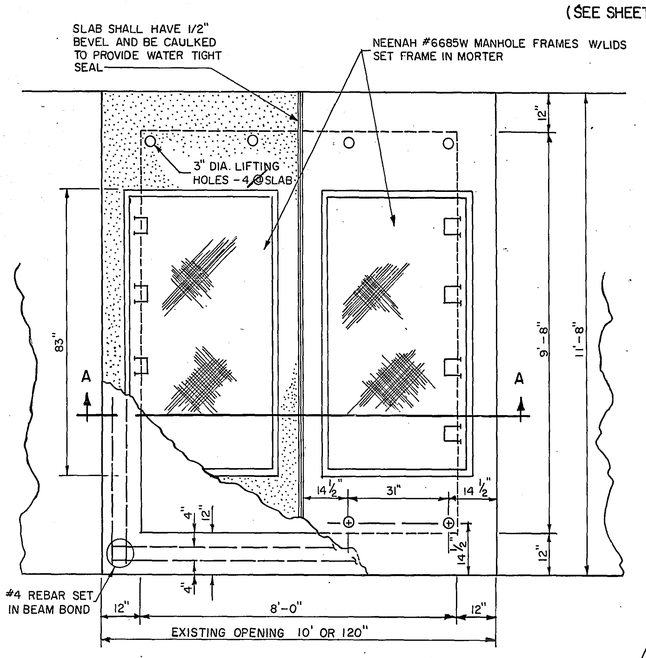
Date 12-28-83 Reg. No. 5382

S.A.P. No. 62-628-03

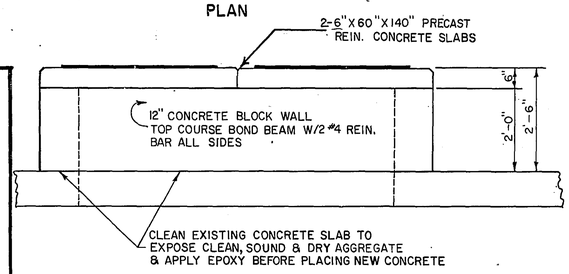
Sheet No. 12 of 40 Sheets

26-112

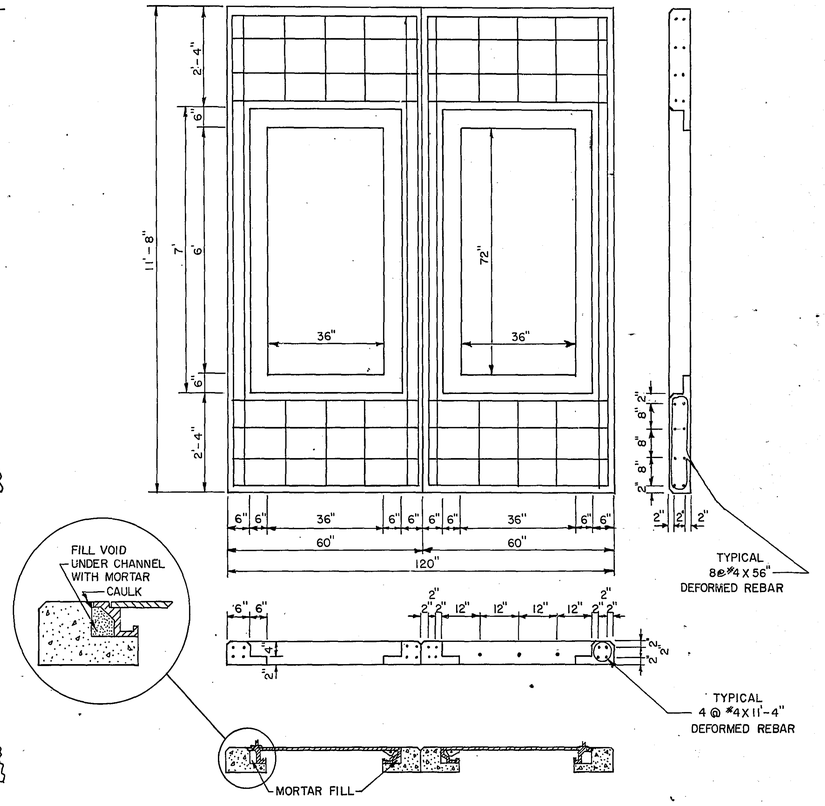
## GRIT CHAMBER ACCESS DOORS
(SEE SHEET NO.14)



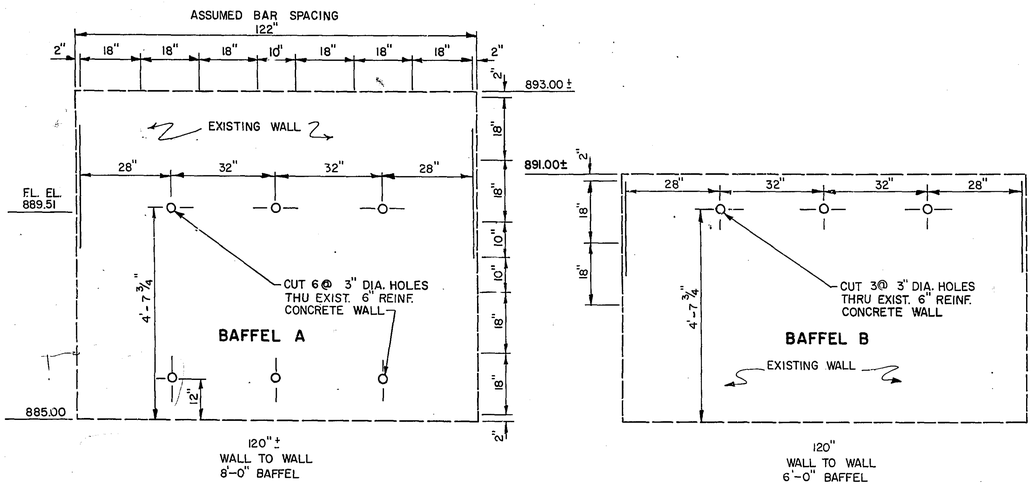

PLAN




ELEVATION




SECTION A-A




CORE DRILLED HOLE DETAILS
(SEE SHEET NO.14)

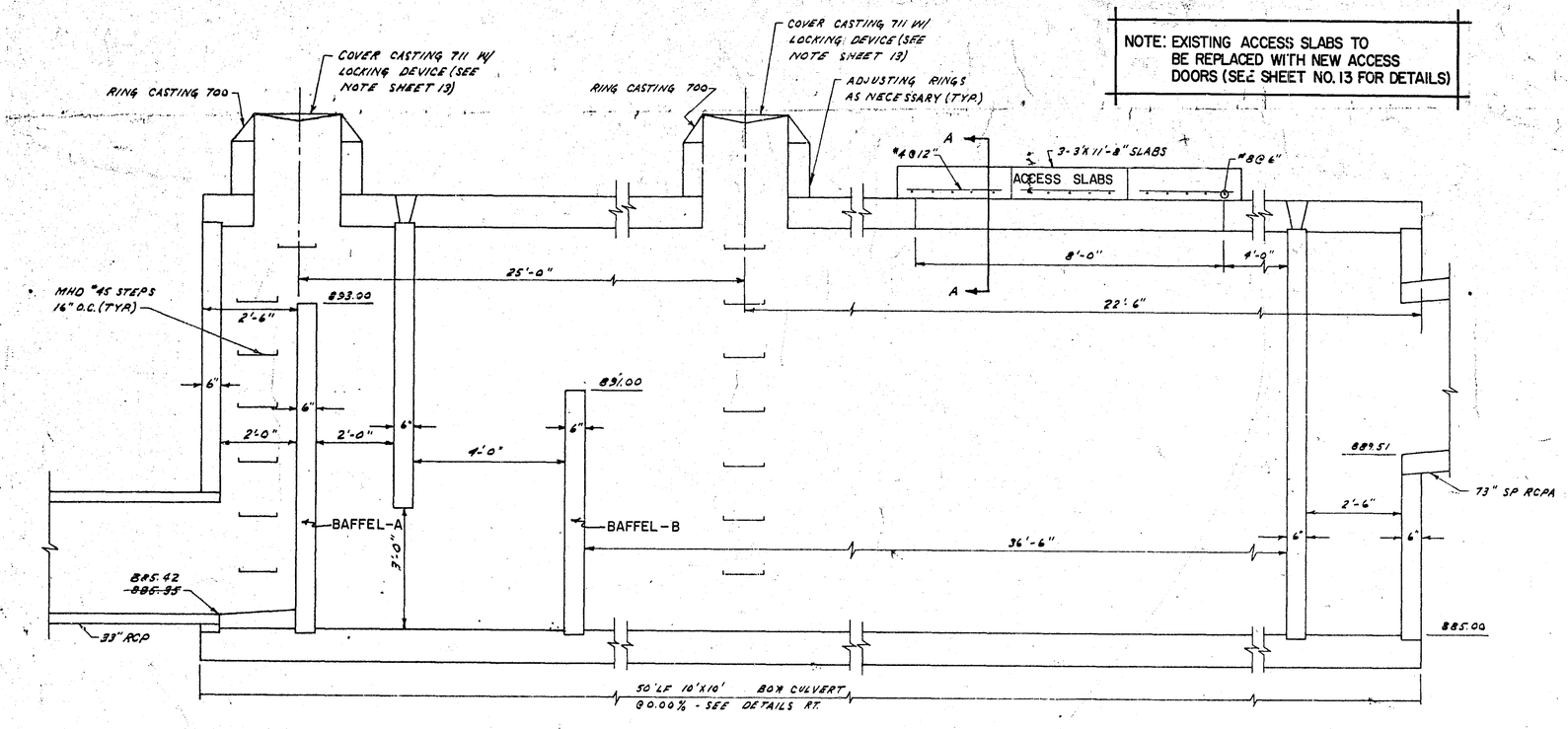
CONCRETE (CAST IN PLACE OR PRECAST)
1. FC= 4000 PSI (AIR ENTRAINED 4-6%
2. REINFORCMENT ASTM- 615, GRADE 60,000 PSI

I hereby certify that this plan, specification, or report 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 _____ Reg. No. _____

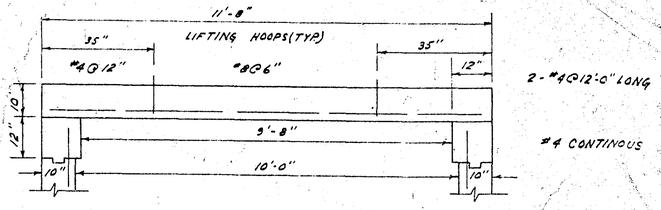


26-112.




▲ PROFILE: GRIT CHAMBER

NOTE: EXISTING ACCESS SLABS TO BE REPLACED WITH NEW ACCESS DOORS (SEE SHEET NO. 13 FOR DETAILS)




▲ SECTION A-A

NOTE: CUT 3" DIA. HOLES IN BAFFELS A & B (SEE SHEET NO. 13 FOR DETAILS)

# FOR INFORMATION ONLY

SAP.62-628-03

I HEREBY CERTIFY THAT THIS DRAWING OR 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

REG. NO.

REVISIONS

▲ AS BUILTS

SCALE: 1"=2'-0"

DWN. BY: DAD

DATE: 11/8/77

DWG. NO.:

CITY OF MAPLEWOOD

BARR ENGINEERING CO.
CONSULTING ENGINEERS
MINNEAPOLIS, MINNESOTA

COUNTY DITCH #17
74-18 STRUCTURE 1
GRIT CHAMBER

SHEET NO. 14 OF 40 SHEETS

26-112 4155

STATION - ELEVATION

℄

Fed. Proj. No.

EXC. EMB

GUTTER LINE B-6-19

44+38 907.72

GUTTER LINE B-6-19

GRAVEL ENT

+12 07.38

44+00 07.26

GARAGE

BIT ENT

+39 06.63

43+00 906.11

| REVISED | DATE | |
|---|---|---|
| | | DESIGNED BY |
| | | DRAWN BY |
| | | CHECKED BY |

I hereby certify that this plan, specification, or report 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 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 15 of 40 Sheets

26-112

COPY EQUIPMENT TORUK #1

STATION—ELEVATION

℄

46+00 909.02

Fed. Proj. No.

EXC. 711 EMB. 589

171 125

GUTTER LINE B&I 2

+86 08.92

GUTTER LINE BIRMINGHAM

149 96

℄ BIRMINGHAM

+75 08.84

186 122

GUTTER LINE B&I 2

+61 08.79

GUTTER LINE BIRMINGHAM

595 386

45+00 908.41

H0

EXIST. WALK
DO NOT DISTURB

44+45 222

108

| REVISED | DATE | | |
|---|---|---|---|
| Grades Only | 12-10-82 | DESIGNED BY | |
| | | DRAWN BY | |
| | | CHECKED BY | |

I hereby certify that this plan, specification, or report 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.

Wayne R. Sonnek

Date: 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 16 of 40 Sheets

26-112

COPY EQUIPMENT CORP. #1

## STATION–ELEVATION

℄

Fed. Proj. No.

EXC. EMB.

635 WOODEN FENCE 437

42+00 908.96

167 114

CONC S.W.

+87 09.00

451 323

+50 09.10

582 437

APARTMENT BUILDING

47+00 09.17

388 297

CONC S.W.

46+66 909.17

APARTMENT BUILDING

| REVISED | DATE | | |
|---|---|---|---|
| Grader Hub | 12-10-82 | DESIGNED BY | |
| | | DRAWN BY | |
| | | CHECKED BY | |

I hereby certify that this plan, specification, or report 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.

Mark R. Lenard

Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 17 of 40 Sheets

26-112

COPY EQUIPMENT FORM #1

## STATION–ELEVATION

℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| CONC. S.W. | 470 | 370 |
| 50+00 07.48 | | |
| HOUSE | | |
| | 576 | 460 |
| CONC. S.W. | | |
| +50 08.00 | | |
| | 610 | 418 |
| ℄ MANTON RT | | |
| 49+05 08.24 | | |
| ℄ MANTON LT. | | |
| 49+01 08.24 | | |
| | 711 | 463 |
| 48+50 908.74 | | |

Grade Rite 12-10-82

I hereby certify that this plan, specification, or report 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 [illegible]

Wyatt R. Leonard

Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 18 of 40 Sheets

26-112

Fed. Proj. No.

## STATION–ELEVATION

℄

EXC. EMB.

563 468

GARAGE — +50 906.18 — C-L FENCE — HOUSE

573 473

GARAGE — 51+00 06.59 — CORNER C-L FENCE — GARAGE

112 80

GARAGE — BIT. ENT. — +91 06.70 — BIT. ENT. — GARAGE

422 300

+51 07.03 — BIT. ENT. — GARAGE

205 153

BIT ENT — 50+40 907.17 — GARAGE

Carla Peck 12-16-82

I hereby certify that this plan, special provision or report 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 Wyoming.

Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 19 of 40 Sheets

26-112

## STATION–ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 03.59<br>+50 903.98 | 684 | 439 |
| | 656 | 437 |
| 04.32<br>53+00 04.63 | 523 | 361 |
| 04.87<br>+59 05.08 | 354 | 237 |
| 05.18<br>℄ BARCLAY<br>+32 05.39 | 411 | 283 |
| 05.50<br>52+00 905.66 | | |

Grade Check 12-10-82

I hereby certify that this plan, specification, or report 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 Iowa.

Wayne Leonard
Date 10-28-82 Reg. No. 5082

S.A.P. NO. 62-628-03

Sheet No. 20 of 40 Sheets

26-112

Fed. Proj. No.

## STATION–ELEVATION

℄

| EXC. | EMB. |
|---|---|
| 375 | 221 |

+40 900.96

| | |
|---|---|
| 523 | 356 |

55+00 01.61

HO. HO.

| | |
|---|---|
| 598 | 442 |

+50 02.44

| | |
|---|---|
| 546 | 386 |

+06 03.12 DIRT ENT

| | |
|---|---|
| 80 | 53 |

℄ GRASS ENT

54+00 903.21

| | | | |
|---|---|---|---|
| Gradey Rec | 10-8- | | |
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, specifications, or report 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 Kansas.

Wayne T. Fonard

Date 10-28-82 No. E-7782

S.A.P. NO. 62-628-03

Sheet No. 21 of 40 Sheets

## STATION–ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| BIT. ENT. +29 899.08 | 231 | 175 |
| | 276 | 201 |
| 57+06 899.18 CONC. ENT. GARAGE | 687 | 499 |
| +50 899.59 H.O. | 594 | 456 |
| 56+00 00.15 | 470 | 313 |

℄ DIETER

55+65 900.59

Grade Rods 1-10-62

I hereby Certify that this survey and plat 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 New York

Date 10-29-62 Reg. No. 57002

S.A.P. NO. 62-628-03

Sheet No. 22 of 40 Sheets

STATION—ELEVATION
℄

Fed. Proj. No.

EXC. EMB.

526 467

99.00
58+00 98.95

486 369

CONC. ENT.

98.80
+60 98.98

GARAGE

135 99

98.75
57+49 899.00

CONC. ENT.

| | | | |
|---|---|---|---|
| Grades OAB 12-08-82 | | | |
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, profile, quantities and special provisions were prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Wyoming.

Wayne A. Leonard
Date 10-28-82 Reg. No. 5718

S.A.P. NO. 62-628-03

Sheet No. 23 of 40 Sheets

26-112

Fed. Proj. No.

STATION—ELEVATION

℄

EXC. EMB.

59+17 898.9

370 394

132 111

59+07 898.9

GUTTER LINE HAZLEWOOD

℄ HAZELWOOD

58+95 898.8

162 105

233 149

58+78 898.9

GUTTER LINE HAZELWOOD

330 254

58+50 898.9

| | | | |
|---|---|---|---|
| Grades Okd | 12-6-82 | | |
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, specification or report 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.

Wayne R. Leonard

Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

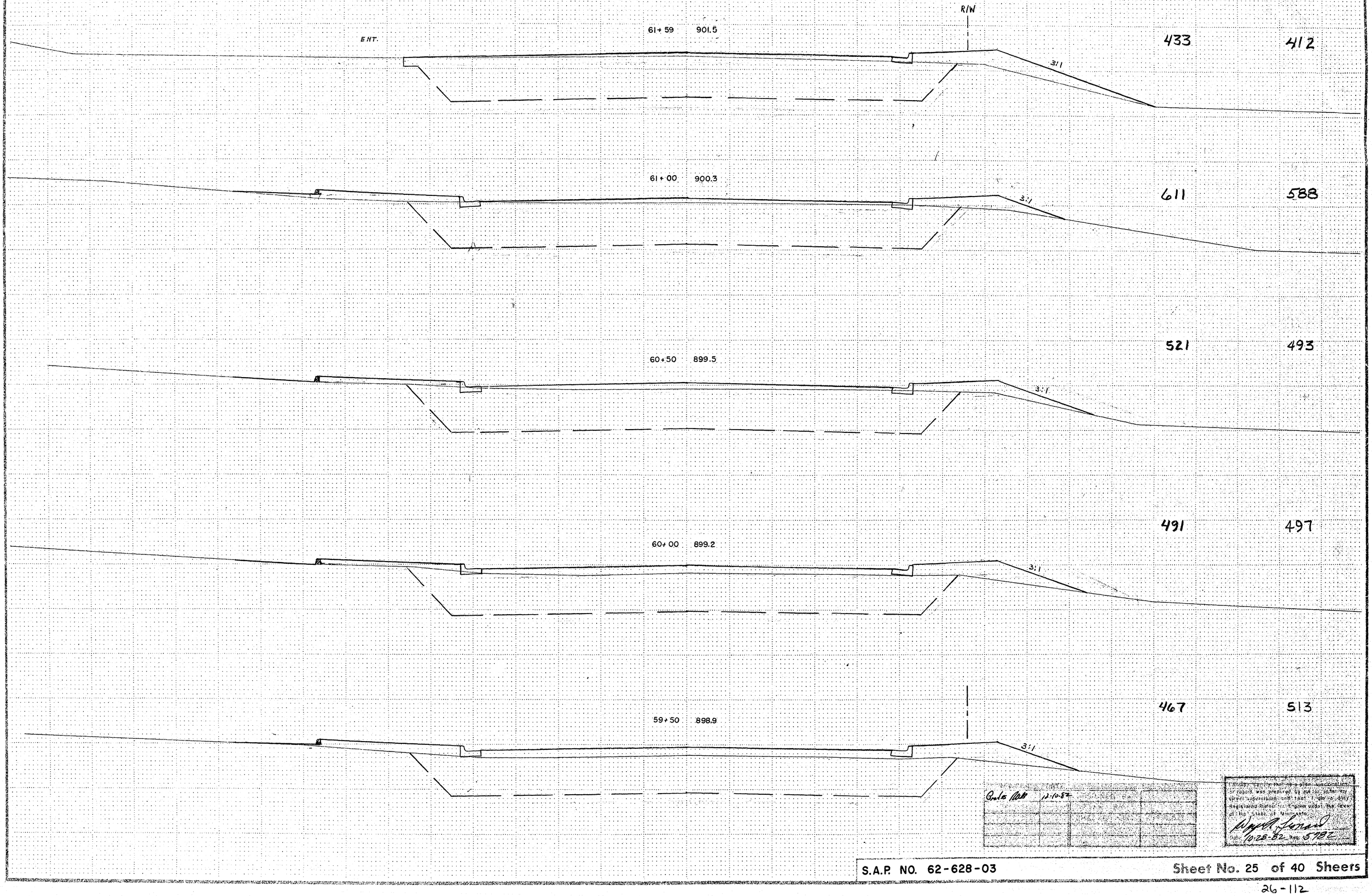
Sheet No. 24 of 40 Sheets

26-112

STATION–ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 61+59 901.5 | 433 | 412 |
| 61+00 900.3 | 611 | 588 |
| 60+50 899.5 | 521 | 493 |
| 60+00 899.2 | 491 | 497 |
| 59+50 898.9 | 467 | 513 |




| | | | |
|---|---|---|---|
| Grade Check | 12-10-82 | | |
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, specification, or report 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 10-28-82 Reg. No. 6782

S.A.P. NO. 62-628-03

Sheet No. 25 of 40 Sheets

STATION–ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 63+65 906.6 | 503 | 323 |
| | 517 | 266 |
| ℄ Prosperity 63+35 906.2 | | |
| | 546 | 311 |
| 63+00 905.5 | | |
| | 659 | 489 |
| 62+50 904.27 | | |
| | 578 | 515 |
| 62+00 902.39 | | |

R/W

3:1

Graber 10-16-82

I hereby certify that this map was prepared by me or under my supervision and meets the minimum standards of the State of Iowa.
Wayne R. Leonard
Date 10-28-82 No. 5782

S.A.P. NO. 62-628-03

Sheet No. 26 of 40 Sheets

Fed. Proj. No.

## STATION–ELEVATION
℄

| | EXC. | EMB. |
|---|---|---|
| 66+00 906.5 R/W | 624 | 506 |
| ENT 65+50 906.5 ENT | 572 | 466 |
| 65+00 906.7 | 550 | 481 |
| | 524 | 481 |
| 64+50 906.8 | 550 | 456 |
| 64+00 906.9 R/W | | |

Grades 10-10-62
R/W Rds. 1-12-63

I hereby certify that this plan, specification, or report 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 Wyoming.
Wayne Leonard
Date 10-26-62 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 27 of 40 Sheets

26-112

Fed. Proj. No.

STATION–ELEVATION
℄

| | EXC. | EMB. |
|---|---|---|
| 68+50 905.7 R/W | 835 | 601 |
| ℄ ROSEWOOD 67+95 905.9 | 765 | 501 |
| 67+50 906.0 | 623 | 412 |
| | 581 | 474 |
| 67+00 906.2 | 574 | 438 |
| 66+53 906.3 R/W ENT. | | |

Bowles Wilt 10-10-83
B-T Path 11-17-83

Jerome Cvetko, the land surveyor in charge of the survey, and the date of such survey; that the survey was made by me or under my supervision and that the survey data complies with the requirements of the Minnesota Department of Transportation.
Signed Jerome Cvetko
Date 10-28-83 Reg. No. 5785

S.A.P. NO. 62-628-03

Sheet No. 28 of 40 Sheets

26-112

STATION–ELEVATION
(℄)

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 70+37 905.1 ENT. | 162 | 117 |
| 70+25 905.1 ENT. | 157 | 105 |
| | 307 | 228 |
| 70+00 904.9 | 603 | 445 |
| 69+53 905.3 ENT. | 519 | 336 |
| 69+16 905.4 ENT. R/W | | |

Bonding Rate 12-10-52
Bid Tab 1-1253

I hereby certify that this plan, specification, or report 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.

Wayne R. Ronnard
Date 10-28-52 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 29 of 40 Sheets

26-112

## STATION–ELEVATION

℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| ℄ KENNARD 72+25 907.4 | 315 | 267 |
| 72+00 906.6 | 320 | 263 |
| 71+50 905.6 | 565 | 544 |
| 71+00 905.6 | 518 | 523 |
| 70+50 905.1 | 562 | 481 |

R/W

Grades Roll 10-10-82
Bit Pave 1-12-83

I hereby certify that the plan, specifications, or report 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 Michigan.

Wayne Leonard
10-28-82 No. 5782

S.A.P. NO. 62-628-03

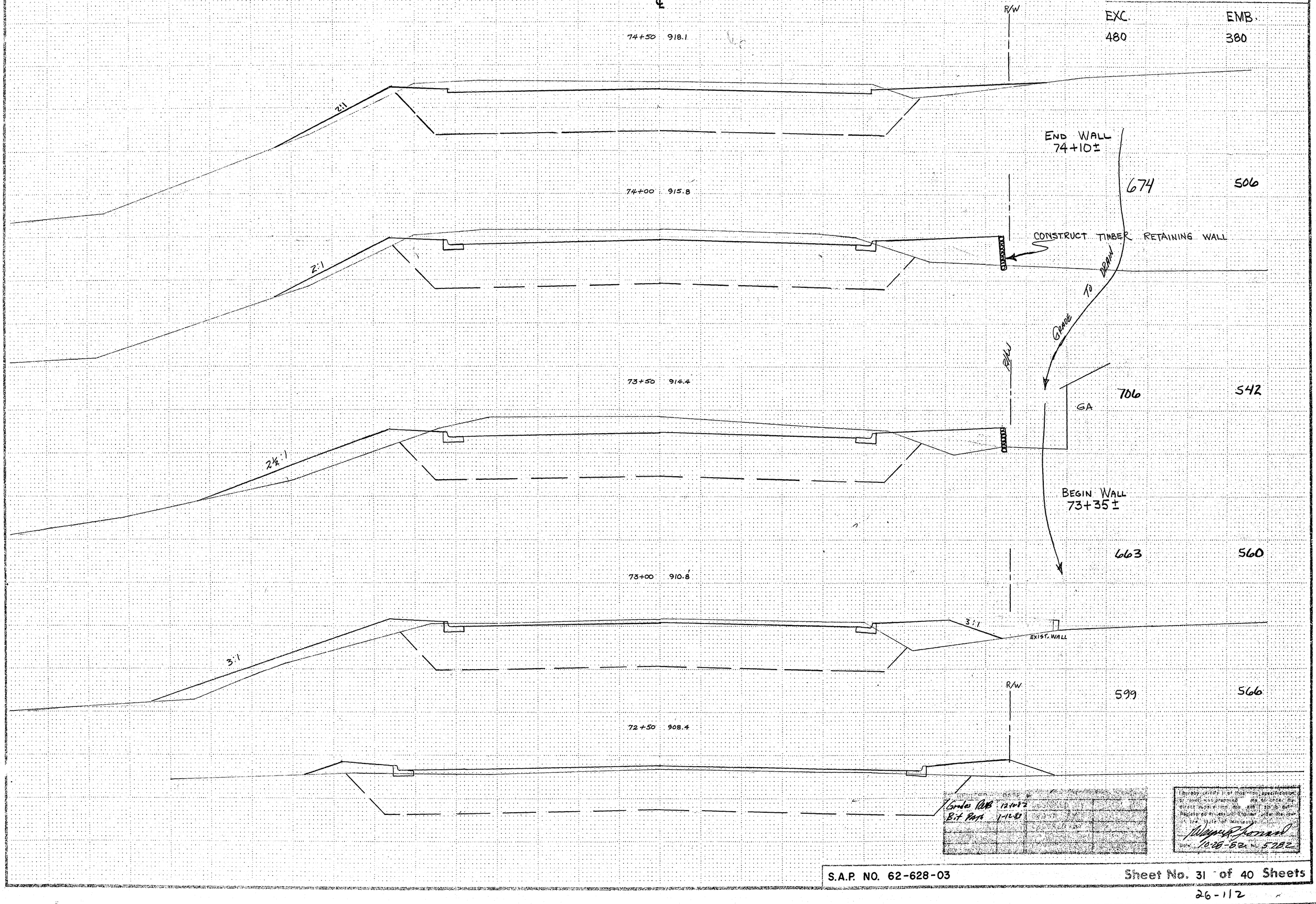
Sheet No. 30 of 40 Sheets

26-112

Fed. Proj. No.

STATION–ELEVATION
℄

| | EXC. | EMB. |
|---|---|---|
| 74+50 918.1 | 480 | 380 |
| | | |
| 74+00 915.8 | 674 | 506 |
| | | |
| 73+50 914.4 | 706 | 542 |
| | | |
| 73+00 910.8 | 663 | 560 |
| | | |
| 72+50 908.4 | 599 | 566 |




Grader Ck'd 12-10-82
Bit. Plant 1-12-83

I hereby certify that this specification 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.
Wayne A. Stonard
Date 10-26-82 Reg. No. 5782

S.A.P. NO. 62-628-03

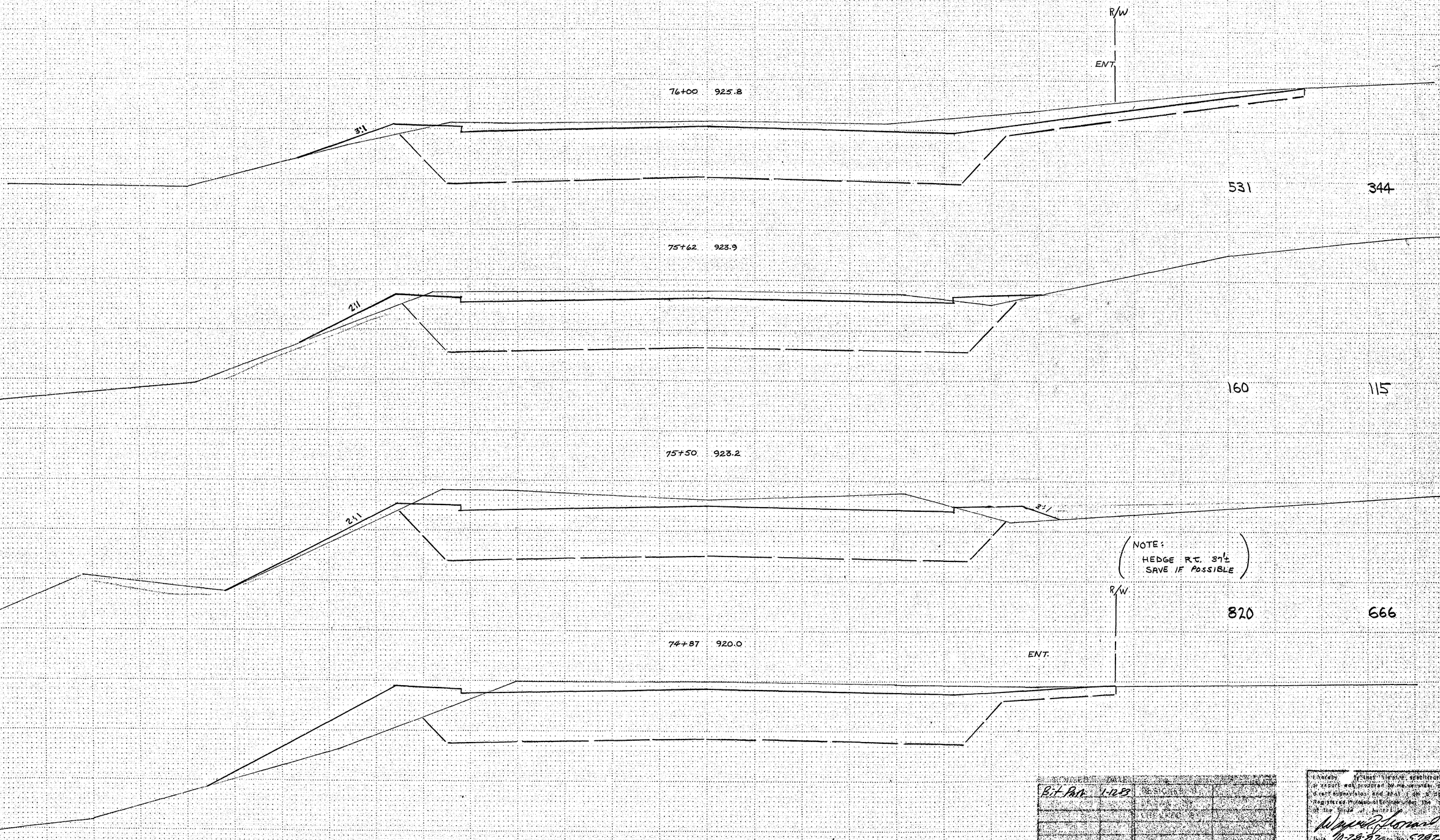
Sheet No. 31 of 40 Sheets

26-112

## STATION–ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 76+00 925.8 | 489 | 320 |
| 75+62 923.9 | 531 | 344 |
| 75+50 923.2 | 160 | 115 |
| 74+87 920.0 | 820 | 666 |




| Bit Pen 1-12B | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

I hereby ... that the ... specifications ... work was prepared ... and ... direct supervision, and that I am a duly Registered Professional Engineer ... the laws of the State of ...

Wayne P. Leonard

Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 32 of 40 Sheets

26-112

STATION–ELEVATION

℄

Fed. Proj. No.

| STATION | | EXC. | EMB. |
|---|---|---|---|
| 78+00 | 935.9 | | |
| | | 243 | 187 |
| 77+79 | 934.9 | | |
| 77+50 | 933.4 | 323 | 262 |
| | | 748 | 569 |
| 76+87 | 930.1 | | |
| | | 468 | 365 |
| 76+48 | 928.2 | | |
| | | 144 | 112 |
| 76+36 | 927.6 | | |

R/W

ENT.

CONC. SLAB

VAR.

| Rev. Date | Description | By |
|---|---|---|
| | B.F. Proj. 1-1283 | |

I hereby certify that this plan, specifications or report 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 Missouri.

Wayne R. Arnold

Date 10-28-83 No. 5782

S.A.P. NO. 62-628-03

Sheet No. 33 of 40 Sheets

26-112

℄

STATION—ELEVATION

℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 80+00 945.9 ENT. | | |
| | 658 | 444 |
| 79+50 943.4 | | |
| | 723 | 553 |
| 79+00 941.1 | | |
| | 336 | 218 |
| ℄ FLANDRAU 78+80 939.9 | | |
| | 419 | 269 |
| 78+50 938.3 | | |
| | 587 | 456 |

| | | | |
|---|---|---|---|
| B.F. Poth | 1-12-28 | | |

I hereby certify that this plan, specifications, or report 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 10-29-28 Reg. No. 5782

S.A.P. NO. 62-628-03

Sheet No. 34 of 40 Sheets

COPY (UNOFFICIAL) FROM 4

## STATION—ELEVATION
℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 81+52 953.6 ENT | 559 | 462 |
| | 254 | 199 |
| 81+31 952.6 ENT. | 366 | 292 |
| 81+00 951.0 | 518 | 417 |
| 80+54 948.6 ENT. | 698 | 472 |

R/W

R/W

| B.I. Date | 1-12-83 | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

I hereby certify that this plan, specification, or report 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.

Wayne R. Stennard
Date 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03 Sheet No. 35 of 40 Sheets

## STATION–ELEVATION

℄

Fed. Proj. No.

| | EXC. | EMB. |
|---|---|---|
| 83+54 963.1 ENT | 623 | 489 |
| 83+00 960.9 | 613 | 482 |
| 82+45 958.2 ENT. RT. | 657 | 491 |
| ENT. LT. 82+25 957.2 | 239 | 179 |
| 82+00 956.0 | 290 | 237 |

R/W

R/W

B.L. Plotter 1-12-83

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.

Wayne R. Tisdale
Date 10-28-82 Lic. No. 5702

S.A.P. NO. 62-628-03

Sheet No. 36 of 40 Sheets

26-112

STATION–ELEVATION
℄

SUMMARY

EXC. 49,181 — EMB. 37,675
CONC. PAVEMENT – 1,867 — x 1.3
47,314 — 48,978
EMB. – 48,978
1,664 C.Y. BORROW (E.V.)
x 1.3
2,163 C.Y. BORROW (L.V.)

Fed. Proj. No.

EXC. 49,187 C.Y. TOTAL — EMB. 37,675 C.Y. TOTAL

℄ W. B. A
+44 966.4

R/W 85+10 — 139 — 114

85+00 966.2

94 — 76

+93 966.1

497 — 416

+50 965.5

R/W
430 — 357
ENT.

ENT. 84+10 964.7

| REVISED | DATE |
|---|---|
| | |
| | |
| | |
| | |

I hereby certify that this plan, specification, or report 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 Illinois.
Donald W. Stewart
Date 10-28-82 No. 5702

S.A.P. NO. 62-628-03

Sheet No. 37 of 40 Sheets

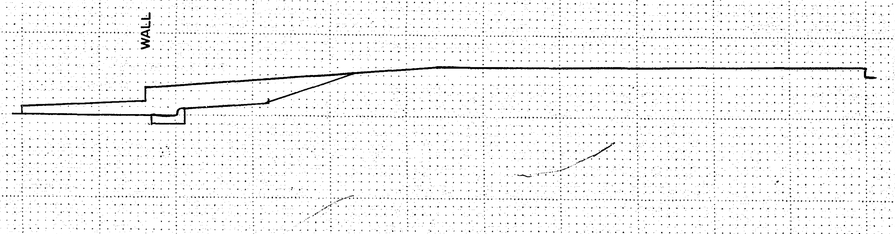
26-112

Fed. Proj. No.

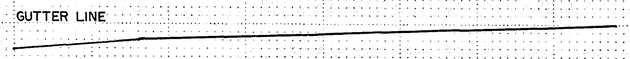
WHITE BEAR AVE.

℄

26 + 48 T.C. = 965.50

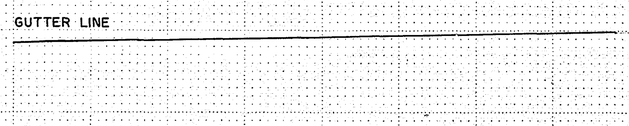



26 + 38



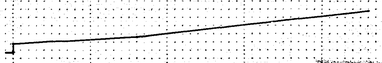

26+24
℄ FROST AVE.

26 + 09




25 + 50 T.C. = 955.97

25 + 00 T.C. = 956.85



| REVISED | DATE |
|---|---|
| | |
| | |
| | |
| | |

I hereby certify that this plan, specification, or report 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 10-28-82 Reg. No. 5782

S.A.P. NO. 62-628-03 W.B.A. WALL Sheet No. 38 of 40 Sheets

℄

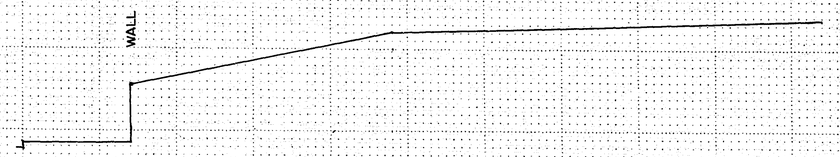
26-112

COPY EQUIPMENT FORM #1

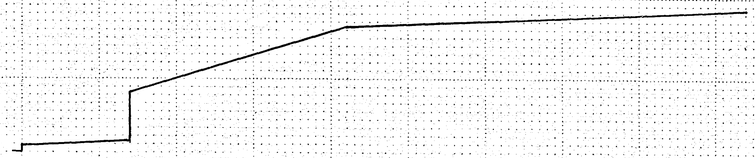
Fed. Proj. No.

℄

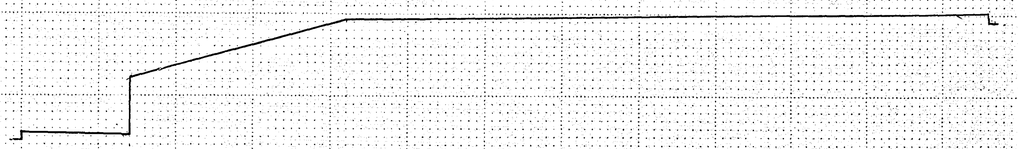
28+50 T.C.=959.33



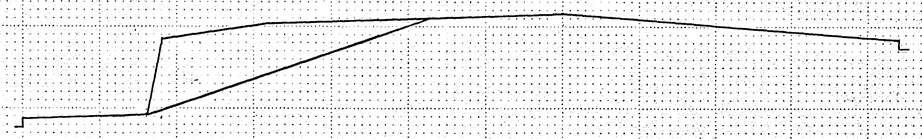

28+00 T.C.=960.85



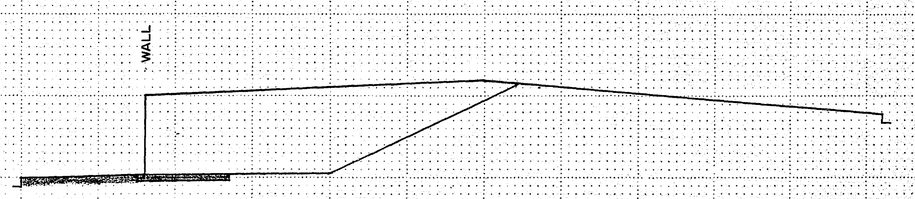
27+50 T.C.=962.82



27+00 T.C.=964.41



REMOVE WALL TO
STA. 27+00 & TRANSITION
TO FULL WALL HEIGHT AT STA. 27+12




26+80 T.C.=965.00

| REVISED | DATE | CHKD. BY |
|---|---|---|
| | | |

I hereby certify that this plan, specification, or report 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.

Wayne P. Thorvald

Date 10-25-82 Reg. No. 5782

S.A.P. NO. 62-628-03 W.B.A. WALL Sheet No. 39 of 40 Sheets

℄

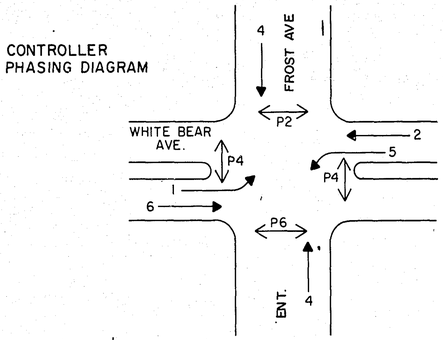
26-112

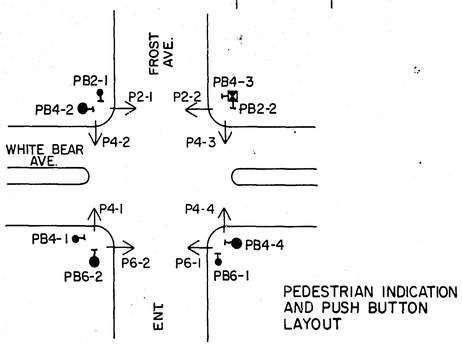
COPY EQUIPMENT FOTM #1

## LEGEND OF SYMBOLS

SIGNAL BASE No. (5) (4-2)
SIGNAL FACE No.
CONTROLLER AND CABINET
CONTROLLER AND CABINET - INPLACE
HANDHOLE
HANDHOLE - INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.) - INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE - INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS - INPLACE
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE
PEDESTRIAN PUSH BUTTON STATION
TRAFFIC SIGNAL PEDESTAL
TRAFFIC SIGNAL PEDESTAL - INPLACE
TRAFFIC SIGNAL POLE AND MAST ARM
TRAFFIC SIGNAL POLE AND MAST ARM - INPLACE
MAST ARM AND LUMINAIRE
MAST ARM AND LUMINAIRE - INPLACE
WOOD POLE
WOOD POLE - INPLACE
SOURCE OF POWER
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION

## CONTROLLER PHASING DIAGRAM




PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

## VEHICLE DETECTION

| NUMBER | SIZE | OPERATION |
|---|---|---|
| DI-1 | 6'X40' | EXTEND ONLY |
| DI-2 | 6'X25' | CALL & EXTEND ① |
| D2-1 | 6'X6' | CALL & EXTEND |
| D2-2 | 6'X6' | CALL & EXTEND |
| D4-1 | 2-6'X20' | CALL & EXTEND ① |
| D4-2 | 6'X18' | CALL & EXTEND |
| D4-3 | 6'X18' | CALL & EXTEND |
| D4-4 | 6'X15' | CALL & EXTEND ① * |
| | | |
| D5-1 | 6'X40' | CALL & EXTEND ① |
| D6-1 | 6'X6' | CALL & EXTEND |
| D6-2 | 6'X6' | CALL & EXTEND |

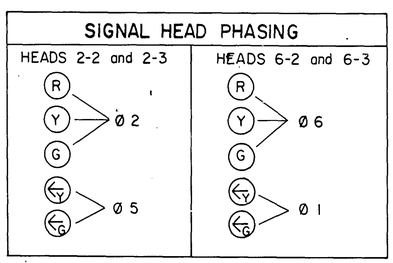
① TIME DELAYED
* INPLACE - USE INPLACE

## SIGNAL INDICATION CHART

| | FACE | PHASE | FLASH | INDICATION SIZE R | Y | G | ←Y | ←G |
|---|---|---|---|---|---|---|---|---|
| | 2-1 | 2 | | 12" | 12" | 12" | – | – |
| ** | 2-2 | 2 and 5 | | 12" | 12" | 12" | 12" | 12" |
| ** | 2-3 | 2 and 5 | | 12" | 12" | 12" | 12" | 12" |
| | 2-4 | 2 | | 12" | 12" | 12" | – | – |
| | 4-1 | 4 | | 12" | 12" | 12" | – | – |
| ** | 4-2 | 4 | | 12" | 12" | 12" | – | – |
| | 4-3 | 4 | | 12" | 12" | 12" | – | – |
| | 4-4 | 4 | | 12" | 12" | 12" | – | – |
| | 4-5 | 4 | | 12" | 12" | 12" | – | – |
| | | | | | | | | |
| | 6-1 | 6 | | 12" | 12" | 12" | – | – |
| ** | 6-2 | 6 and 1 | | 12" | 12" | 12" | 12" | 12" |
| ** | 6-3 | 6 and 1 | | 12" | 12" | 12" | 12" | 12" |
| | 6-4 | 6 | | 12" | 12" | 12" | – | – |

** NEW SIGNAL FACE, ALL OTHERS ARE SALVAGED SIGNAL FACES FROM INPLACE SYSTEM (SEE NOTE 3)

## SIGNAL HEAD PHASING




# FOR INFORMATION ONLY

① P90-A-35-T40-10
LUMINAIRE - 250 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
SIGN DOWN LIGHT (OVERHEAD MTD.)
ONE WAY EVP DETECTOR & LIGHT Ø2&5 MTD. OVERHEAD - USE SALVAGED DETECTOR AND LIGHT.
EXTEND INTO H.H. 11
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20
2-1/c #10

EQUIPMENT PAD (SEE DETAIL).
6 STEEL GUARD POSTS.
SERVICE CABINENT.
EXTEND INTO H.H. 1
1¼" R.S.C.
3-1/c #6
EXTEND INTO H.H. 11
1¼" R.S.C.
2-1/c #10
CONTROLLER AND CABINET
EXTEND INTO H.H. 2
4" R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
7-2/c #14
EXTEND INTO H.H. 11
4" R.S.C.
4-12/c #12
4-3/c #12
2-3/c #20
4-2/c #14
BETWEEN H.H. 2 & 11
3" R.S.C.
1-3/c #12

1¼" R.S.C. INPLACE, EXTEND R.S.C. INTO H.H. 11.
1-2/c #14

3" R.S.C. - INSTALL BY DRILLING METHOD
2-12/c #12
1-3/c #12
1-3/c #20
3-2/c #14

PEDESTRIAN PUSH BUTTON STA. (4")
1-PEDESTRIAN PUSH BUTTON (MTD. NORTH SIDE)
EXTEND INTO H.H. 12
1¼" R.S.C.
2-3/c #12

② TWO WAY SIGNAL (TYPE 2C)
2-SETS PEDESTRIAN INDICATIONS (12")
2-PEDESTRIAN PUSH BUTTON
PHOTOELECTRIC CELL (DOWN LIGHTS)
MTD. TOP SIGNAL BRACKETS
EXTEND INTO H.H. 5
3" R.S.C.
2-12/c #12
2-3/c #12

1¼" R.S.C.
1-2/c #14

1¼" R.S.C.
2-2/c #14

S.O.P. (N.S.P. POLE)
1¼" R.S.C. RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
1¼" R.S.C.
3-1/c #6

PEDESTRIAN PUSH BUTTON STATION (4")
1-PEDESTRIAN PUSH BUTTON (MTD. EAST SIDE)
EXTEND INTO H.H. 2
1¼" R.S.C.
1-3/c #12

4" R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
4-2/c #14

2" R.S.C.
2-2/c #14

STA. 26+24.24 WHITE BEAR AVE. =
STA. 85+51.84 FROST AVE.

2" R.S.C.
2-2/c #14

2" R.S.C.
3-2/c #14

3" R.S.C. INPLACE - USE INPLACE.
EXTEND 3" R.S.C. INTO H.H. 5
2-12/c #12
3-3/c #12
1-3/c #20
2-2/c #14

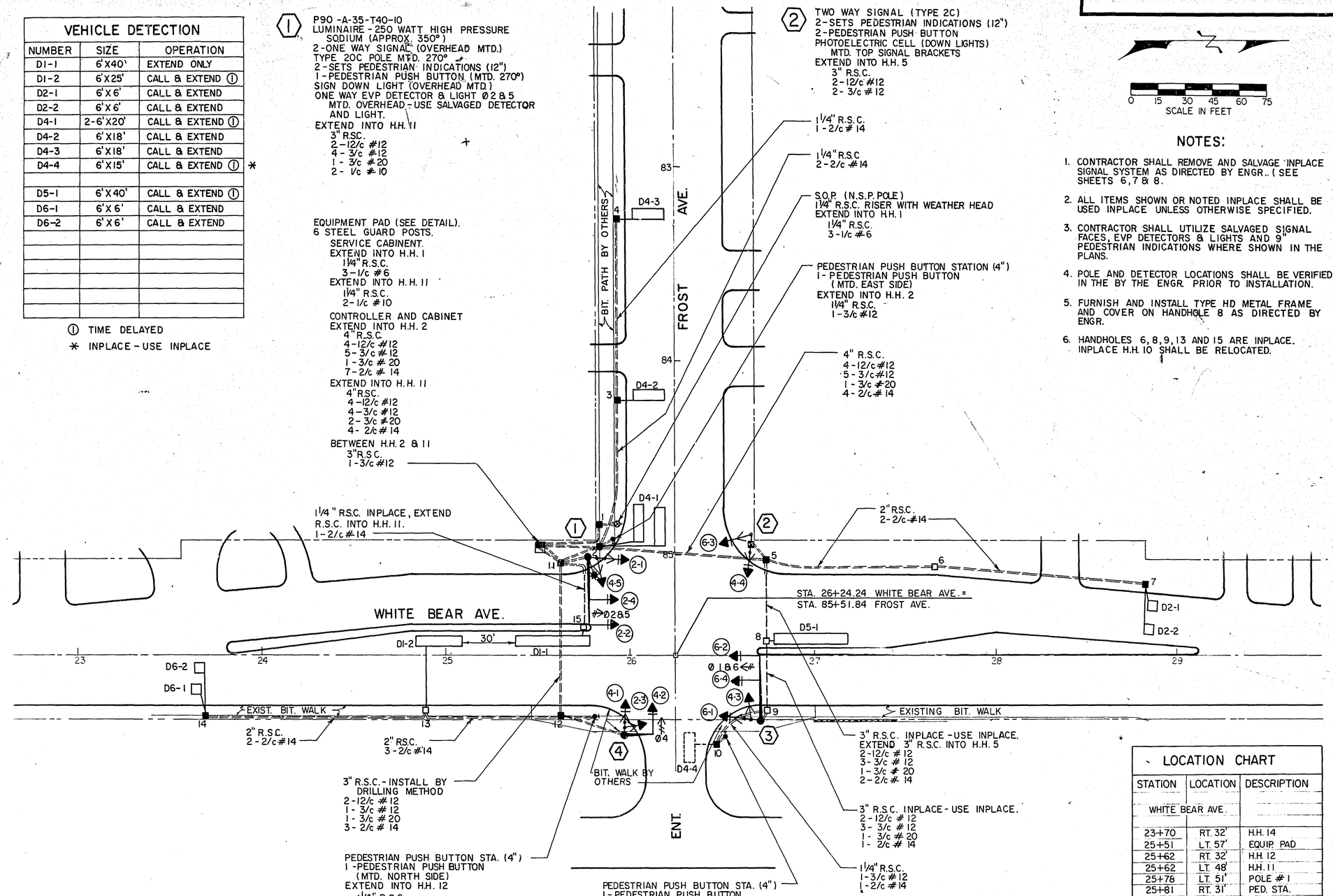
3" R.S.C. INPLACE - USE INPLACE.
2-12/c #12
3-3/c #12
1-3/c #20
1-2/c #14

1¼" R.S.C.
1-3/c #12
1-2/c #14

PEDESTRIAN PUSH BUTTON STA. (4")
1-PEDESTRIAN PUSH BUTTON (MTD. WEST SIDE)
EXTEND INTO H.H. 10
1¼" R.S.C.
1-3/c #12

③ P90-A-35
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C-POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (1-SET 9"-USE SALVAGE) (1-SET 12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
SIGN DOWN LIGHT (OVERHEAD MTD.)
ONE WAY EVP DETECTOR & LIGHT Ø1&6 MTD. OVERHEAD-USE SALVAGE DETECTOR & LIGHT
EXTEND INTO H.H. 9
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20

④ P80-A-15
ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (1-SET 9"-USE SALVAGE) (1-SET 12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
ONE WAY EVP DETECTOR & LIGHT Ø4 MTD. OVERHEAD-USE SALVAGE DETECTOR & LIGHT.
EXTEND INTO H.H. 12
3" R.S.C.
2-12/c #12
1-3/c #12
1-3/c #20




0 15 30 45 60 75
SCALE IN FEET

## NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM AS DIRECTED BY ENGR.. ( SEE SHEETS 6, 7 & 8.
2. ALL ITEMS SHOWN OR NOTED INPLACE SHALL BE USED INPLACE UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL UTILIZE SALVAGED SIGNAL FACES, EVP DETECTORS & LIGHTS AND 9" PEDESTRIAN INDICATIONS WHERE SHOWN IN THE PLANS.
4. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE BY THE ENGR. PRIOR TO INSTALLATION.
5. FURNISH AND INSTALL TYPE HD METAL FRAME AND COVER ON HANDHOLE 8 AS DIRECTED BY ENGR.
6. HANDHOLES 6, 8, 9, 13 AND 15 ARE INPLACE. INPLACE H.H. 10 SHALL BE RELOCATED.

## LOCATION CHART

| STATION | LOCATION | DESCRIPTION |
|---|---|---|
| WHITE BEAR AVE. | | |
| 23+70 | RT. 32' | H.H. 14 |
| 25+51 | LT. 57' | EQUIP. PAD |
| 25+62 | RT. 32' | H.H. 12 |
| 25+62 | LT. 48' | H.H. 11 |
| 25+76 | LT. 51' | POLE #1 |
| 25+81 | RT. 31' | PED. STA. |
| 25+83 | LT. 56' | H.H. 2 |
| 25+83 | LT. 68' | H.H. 1 |
| 25+91 | LT. 59' | PED. STA. |
| 25+97 | RT. 42' | POLE #4 |
| 26+47 | RT. 46' | H.H. 10 |
| 26+48 | RT. 41' | PED. STA. |
| 26+65 | LT. 58' | POLE #2 |
| 26+71 | RT. 34' | POLE #3 |
| 26+74 | LT. 49' | H.H. 5 |
| 28+83 | LT. 36' | H.H. 7 |
| FROST AVE. | | |
| 83+27 | RT. 28' | H.H. 4 |
| 84+20 | RT. 28' | H.H. 3 |

I hereby certify that this plan, specification, or report 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.
Wayne Simard
Date 10-25-82 Reg. No. 5782

INTERSECTION LAYOUT
WHITE BEAR AVE & FROST AVE.

S.A.P. NO. 62-665-22

SHEET NO. 40 OF 40 SHEETS

26-112

## LEGEND OF SYMBOLS

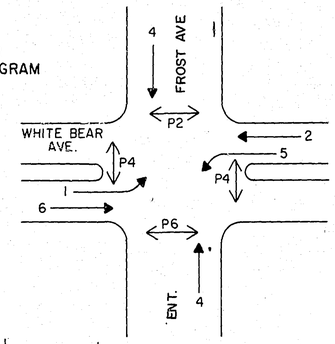
SIGNAL BASE No. (5)
SIGNAL FACE No. (4-2)
CONTROLLER AND CABINET
CONTROLLER AND CABINET - INPLACE
HANDHOLE
HANDHOLE - INPLACE
RIGID STEEL CONDUIT (R.S.C.)
RIGID STEEL CONDUIT (R.S.C.) - INPLACE
SIGNAL FACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE - INPLACE
PEDESTRIAN INDICATIONS
PEDESTRIAN INDICATIONS - INPLACE
PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE
PEDESTRIAN PUSH BUTTON STATION
TRAFFIC SIGNAL PEDESTAL
TRAFFIC SIGNAL PEDESTAL - INPLACE
TRAFFIC SIGNAL POLE AND MAST ARM
TRAFFIC SIGNAL POLE AND MAST ARM - INPLACE
MAST ARM AND LUMINAIRE
MAST ARM AND LUMINAIRE - INPLACE
WOOD POLE
WOOD POLE - INPLACE
SOURCE OF POWER
EMERGENCY VEHICLE PRE-EMPTION DETECTOR LOCATION

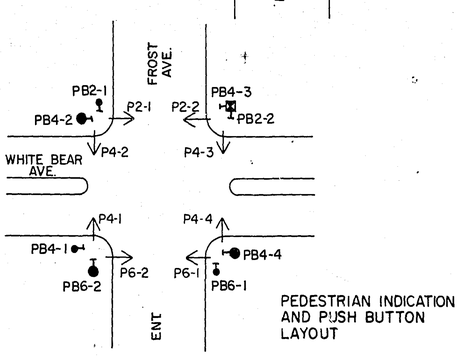
## VEHICLE DETECTION

| NUMBER | SIZE | OPERATION |
|---|---|---|
| D1-1 | 6'X40' | EXTEND ONLY |
| D1-2 | 6'X25' | CALL & EXTEND ① |
| D2-1 | 6'X6' | CALL & EXTEND |
| D2-2 | 6'X6' | CALL & EXTEND |
| D4-1 | 2-6'X20' | CALL & EXTEND ① |
| D4-2 | 6'X18' | CALL & EXTEND |
| D4-3 | 6'X18' | CALL & EXTEND |
| D4-4 | 6'X15' | CALL & EXTEND ① * |
| | | |
| D5-1 | 6'X40' | CALL & EXTEND ① |
| D6-1 | 6'X6' | CALL & EXTEND |
| D6-2 | 6'X6' | CALL & EXTEND |

① TIME DELAYED
* INPLACE - USE INPLACE

### CONTROLLER PHASING DIAGRAM



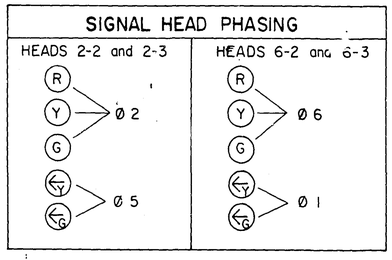

PEDESTRIAN INDICATION AND PUSH BUTTON LAYOUT

## SIGNAL INDICATION CHART

| | FACE | PHASE | FLASH | INDICATION SIZE R | Y | G | ←Y | ←G |
|---|---|---|---|---|---|---|---|---|
| | 2-1 | 2 | | 12" | 12" | 12" | - | - |
| ** | 2-2 | 2 and 5 | | 12" | 12" | 12" | 12" | 12" |
| ** | 2-3 | 2 and 5 | | 12" | 12" | 12" | 12" | 12" |
| | 2-4 | 2 | | 12" | 12" | 12" | - | - |
| | 4-1 | 4 | | 12" | 12" | 12" | - | - |
| ** | 4-2 | 4 | | 12" | 12" | 12" | - | - |
| | 4-3 | 4 | | 12" | 12" | 12" | - | - |
| | 4-4 | 4 | | 12" | 12" | 12" | - | - |
| | 4-5 | 4 | | 12" | 12" | 12" | - | - |
| | | | | | | | | |
| | 6-1 | 6 | | 12" | 12" | 12" | - | - |
| ** | 6-2 | 6 and 1 | | 12" | 12" | 12" | 12" | 12" |
| ** | 6-3 | 6 and 1 | | 12" | 12" | 12" | 12" | 12" |
| | 6-4 | 6 | | 12" | 12" | 12" | - | - |

** NEW SIGNAL FACE, ALL OTHERS ARE SALVAGED SIGNAL FACES FROM INPLACE SYSTEM (SEE NOTE 3)

## SIGNAL HEAD PHASING




# FOR INFORMATION ONLY

① P90-A-35-T40-10
LUMINAIRE - 250 WATT HIGH PRESSURE SODIUM (APPROX. 350°)
2-ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
SIGN DOWN LIGHT (OVERHEAD MTD.)
ONE WAY EVP DETECTOR & LIGHT Ø2 & 5 MTD. OVERHEAD - USE SALVAGED DETECTOR AND LIGHT.
EXTEND INTO H.H. 11
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20
2-1/c #10

EQUIPMENT PAD (SEE DETAIL).
6 STEEL GUARD POSTS.
SERVICE CABINENT.
EXTEND INTO H.H. 1
1¼" R.S.C
3-1/c #6
EXTEND INTO H.H. 11
1¼" R.S.C.
2-1/c #10

CONTROLLER AND CABINET
EXTEND INTO H.H. 2
4" R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
7-2/c #14
EXTEND INTO H.H. 11
4" R.S.C.
4-12/c #12
4-3/c #12
2-3/c #20
4-2/c #14
BETWEEN H.H. 2 & 11
3" R.S.C.
1-3/c #12

1¼" R.S.C. INPLACE, EXTEND R.S.C. INTO H.H. 11.
1-2/c #14

② TWO WAY SIGNAL (TYPE 2C)
2-SETS PEDESTRIAN INDICATIONS (12")
2-PEDESTRIAN PUSH BUTTON
PHOTOELECTRIC CELL (DOWN LIGHTS) MTD. TOP SIGNAL BRACKETS
EXTEND INTO H.H. 5
3" R.S.C.
2-12/c #12
2-3/c #12

1¼" R.S.C.
1-2/c #14

1¼" R.S.C.
2-2/c #14

S.O.P. (N.S.P. POLE)
1¼" R.S.C. RISER WITH WEATHER HEAD
EXTEND INTO H.H. 1
1¼" R.S.C.
3-1/c #6

PEDESTRIAN PUSH BUTTON STATION (4")
1-PEDESTRIAN PUSH BUTTON (MTD. EAST SIDE)
EXTEND INTO H.H. 2
1¼" R.S.C.
1-3/c #12

4" R.S.C.
4-12/c #12
5-3/c #12
1-3/c #20
4-2/c #14

2" R.S.C.
2-2/c #14

STA. 26+24.24 WHITE BEAR AVE. = STA. 85+51.84 FROST AVE.

3" R.S.C. INPLACE - USE INPLACE. EXTEND 3" R.S.C. INTO H.H. 5
2-12/c #12
3-3/c #12
1-3/c #20
2-2/c #14

3" R.S.C. INPLACE - USE INPLACE.
2-12/c #12
3-3/c #12
1-3/c #20
1-2/c #14

1¼" R.S.C.
1-3/c #12
1-2/c #14

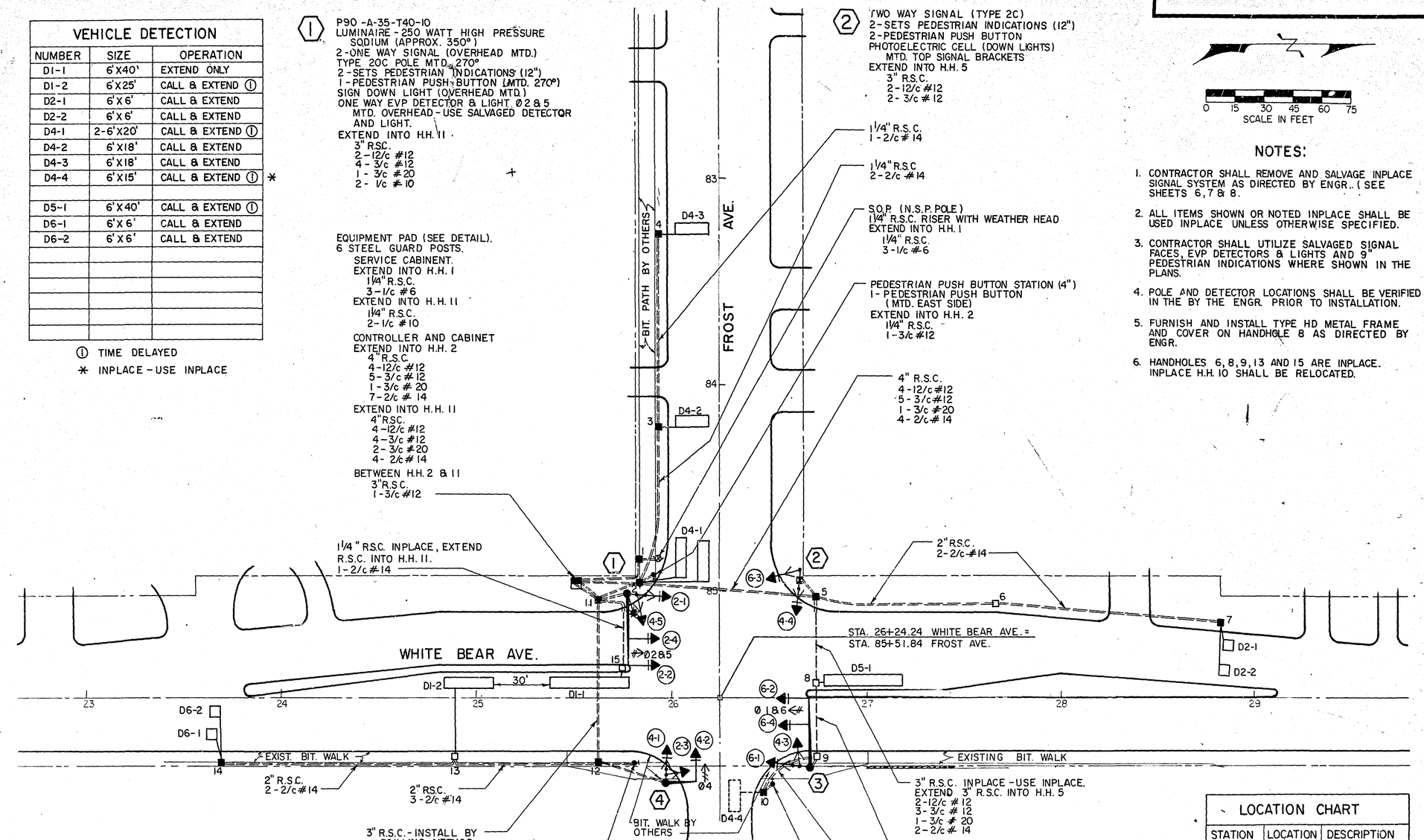
3" R.S.C. - INSTALL BY DRILLING METHOD
2-12/c #12
1-3/c #12
1-3/c #20
3-2/c #14

PEDESTRIAN PUSH BUTTON STA. (4")
1-PEDESTRIAN PUSH BUTTON (MTD. NORTH SIDE)
EXTEND INTO H.H. 12
1¼" R.S.C.
2-3/c #12

PEDESTRIAN PUSH BUTTON STA. (4")
1-PEDESTRIAN PUSH BUTTON (MTD. WEST SIDE)
EXTEND INTO H.H. 10
1¼" R.S.C.
1-3/c #12

③ P90-A-35
2-ONE WAY SIGNALS (OVERHEAD MTD.)
TYPE 20C-POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (1-SET 9"-USE SALVAGE) (1-SET 12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
SIGN DOWN LIGHT (OVERHEAD MTD.)
ONE WAY EVP DETECTOR & LIGHT Ø1 & 6 MTD. OVERHEAD-USE SALVAGE DETECTOR & LIGHT
EXTEND INTO H.H. 9
3" R.S.C.
2-12/c #12
4-3/c #12
1-3/c #20

④ P80-A-15
ONE WAY SIGNAL (OVERHEAD MTD.)
TYPE 20C POLE MTD. 270°
2-SETS PEDESTRIAN INDICATIONS (1-SET 9"-USE SALVAGE) (1-SET 12")
1-PEDESTRIAN PUSH BUTTON (MTD. 270°)
ONE WAY EVP DETECTOR & LIGHT Ø4 MTD. OVERHEAD-USE SALVAGE DETECTOR & LIGHT.
EXTEND INTO H.H. 12
3" R.S.C.
2-12/c #12
1-3/c #12
1-3/c #20




0 15 30 45 60 75
SCALE IN FEET

## NOTES:

1. CONTRACTOR SHALL REMOVE AND SALVAGE INPLACE SIGNAL SYSTEM AS DIRECTED BY ENGR. (SEE SHEETS 6, 7 & 8.
2. ALL ITEMS SHOWN OR NOTED INPLACE SHALL BE USED INPLACE UNLESS OTHERWISE SPECIFIED.
3. CONTRACTOR SHALL UTILIZE SALVAGED SIGNAL FACES, EVP DETECTORS & LIGHTS AND 9" PEDESTRIAN INDICATIONS WHERE SHOWN IN THE PLANS.
4. POLE AND DETECTOR LOCATIONS SHALL BE VERIFIED IN THE BY THE ENGR PRIOR TO INSTALLATION.
5. FURNISH AND INSTALL TYPE HD METAL FRAME AND COVER ON HANDHOLE 8 AS DIRECTED BY ENGR.
6. HANDHOLES 6, 8, 9, 13 AND 15 ARE INPLACE. INPLACE H.H. 10 SHALL BE RELOCATED.

## LOCATION CHART

| STATION | LOCATION | DESCRIPTION |
|---|---|---|
| WHITE BEAR AVE. | | |
| 23+70 | RT. 32' | H.H. 14 |
| 25+51 | LT. 57' | EQUIP. PAD |
| 25+62 | RT. 32' | H.H. 12 |
| 25+62 | LT. 48' | H.H. 11 |
| 25+78 | LT. 51' | POLE #1 |
| 25+81 | RT. 31' | PED. STA. |
| 25+83 | LT. 56' | H.H. 2 |
| 25+83 | LT. 68' | H.H. 1 |
| 25+91 | LT. 59' | PED. STA. |
| 25+97 | RT. 42' | POLE #4 |
| 26+47 | RT. 46' | H.H. 10 |
| 26+48 | RT. 41' | PED. STA. |
| 26+65 | LT. 58' | POLE #2 |
| 26+71 | RT. 34' | POLE #3 |
| 26+74 | LT. 49' | H.H. 5 |
| 28+83 | LT. 36' | H.H. 7 |
| FROST AVE. | | |
| 83+27 | RT. 28' | H.H. 4 |
| 84+20 | RT. 28' | H.H. 3 |

I hereby certify that this plan, specification, or report 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.
Wayne A. Simonds
Date 10-28-82 Reg. No. 5782

INTERSECTION LAYOUT
WHITE BEAR AVE & FROST AVE.

S.A.P. NO. 62-665-22

SHEET NO. 40 OF 40 SHEETS

26-112

100,000E 101,000E 102,000E 103,000E 104,000E 105,000E

55,000N 54,000N 53,000N 52,000N

16 14

COUNTY RD. BURKE AVE. ELDRIDGE AVE. BELMONT AVE. SKILLMAN AVE. RYAN AVE. FROST AVE. SUMMER AVE. RIPLEY AVE. HARRIS AVE. ROSEWOOD AVE. PROSPERITY AVE. HAZELWOOD AVE. MARYKNOLL AVE. BEAR AVE. WHITE AVE.

ST. CLAIR RD. SAULT STE. MARIE R. R. ST. P. M. R. R. N. R. R. ST. CLAIR ST. MANTON ST. BARCLAY ST. DIETER ST. ENGLISH ST. CLARENCE ST. TIDE ST. BIRMINGHAM ST. KENNARD ST. JOHN AUSTIN ST. LONGFELLOW ST.

Parking Parking Courts Rink Rink Water Water

1"=200'

Revised 1-12-84 JAE

2.67AC 2.62 CFS

3.72AC 4.09CFS

2.42AC 3.05CFS

1.30AC 1.89CFS

7.44AC 9.39CFS

1.26CFS 1.68CFS 1.68CFS 1.68CFS 1.56CFS 2.04CFS 9.75CFS

ALL DRAINAGE FLOWS South To Wakefield Lake

TOTAL: 33.37 C.F.S.

23.62 C.F.S

9.75 C.F.S. ROAD R/W

33.37 C.F.S. TOTAL

Existing Storm Sewer System

Existing Grit Chamber

26-112

Frost Avenue S.A.P. 62-628-03

## STATEMENT OF ESTIMATED QUANTITIES

Cost Breakdown

| ITEM NO | ITEM | UNIT | ESTIMATED QUANTITIES | FINAL ESTIMATED QUANITITIES | Completed Project UNIT PRICE | Completed Project AMOUNT | | Maplewood AMOUNT | | Ramsey County State Aid Funds. AMOUNT |
|---|---|---|---|---|---|---|---|---|---|---|
| 2021.501 | MOBILIZATION | L.S | 1 | 1 | 30,000 00 | 30,000 00 | | — | | 30,000 00 |
| 2101.502 | CLEARING | TREE | + 41 | 28 | 75 00 | 2,100 00 | | — | | 2,100 00 |
| 2101.507 | GRUBBING | TREE | 45 | 34 | 40 00 | 1,360 00 | | — | | 1,360 00 |
| 2104.501 | REMOVE CONCRETE SEWER PIPE | L.F. | 921 | 925 | 7 00 | 6,475 00 | | — | | 6,475 00 |
| 2104.501 | REMOVE CONCRETE CURB AND GUTTER | L.F. | 294 | 259 | 2 50 | 647 50 | | — | | 647 50 |
| 2104.501 | REMOVE CONCRETE CURB (MEDIAN) | L.F. | 340 | 340 | 3 00 | 1,020 00 | | — | | 1,020 00 |
| 2104.501 | REMOVE 4' CONCRETE MEDIAN | L.F. | 18 | 18 | 20 00 | 360 00 | | — | | 360 00 |
| 2104.503 | REMOVE CONCRETE SIDEWALK | S.F. | 3147 | 2695 | 0 70 | 1,886 50 | | — | | 1,886 50 |
| 2104.503 | REMOVE FLAGSTONE WALL | S.F. | 256 | 256 | 3 50 | 896 00 | | — | | 896 00 |
| 2104.505 | REMOVE CONCRETE PAVEMENT | S.Y. | 9163 | 9594 | 2 60 | 24,944 50 | | — | | 24,944 50 |
| 2104.509 | REMOVE MANHOLES | EACH | 1 | 2 | 150 00 | 300 00 | | — | | 300 00 |
| 2104.509 | REMOVE CATCH BASINS | EACH | 6 | 6 | 120 00 | 720 00 | | — | | 720 00 |
| 2104.521 | SALVAGE TRAFFIC BARRIER | L.F. | + 252 | 252 | 2 00 | 504 00 | | — | | 504 00 |
| 2104.521 | SALVAGE FENCE | L.F. | 278 | 75 | 2 00 | 150 00 | | — | | 150 00 |
| 2105.501 | COMMON EXCAVATION | C.Y. | 47,314 | 47,448 | 2 65 | 125,737 20 | | — | | 125,737 20 |
| 2105.523 | COMMON BORROW (L.V.) | C.Y. | 2163 | 0 | 2 70 | — | | — | | — |
| 2105.525 | TOPSOIL BORROW (L.V.) | C.Y. | 1042 | 2,498 | 7 00 | 17,486 00 | | — | | 17,486 00 |
| 2130.501 | WATER | GAL. (M) | 150 | 134.5 | 12 00 | 1,614 00 | | — | | 1,614 00 |
| 2211.501 | AGGREGATE BASE, CL. 6 (OR CL. 5, 100% CRUSHED) | TON | 2094 | 1,688.6 | 6 90 | 11,651 34 | | — | | 11,651 34 |
| 2331.504 | BITUMINOUS MATERIAL FOR MIXTURE | TON | 739 | 630.2 | 160 00 | 100,832 00 | | — | | 100,832 00 |
| 2331.508 | WEARING COURSE MIXTURE | TON | 116 | 238 | 13 25 | 3,153 50 | | — | | 3,153 00 |
| 2331.510 | BINDER COURSE MIXTURE | TON | 2790 | 2824.4 | 8 45 | 23,866 18 | | — | | 23,866 18 |
| 2331.514 | BASE COURSE MIXTURE | TON | 13161 | 11,739.5 | 8 20 | 96,263 90 | | — | | 96,263 90 |
| 2357.502 | BITUMINOUS MATERIAL FOR TACK COAT | GAL. | 3680 | 3,815 | 1 20 | 4,578 00 | | — | | 4,578 00 |
| 2361.504 | ASPHALT CEMENT | TON | 87 | 109.9 | 160 00 | 17,584 00 | | — | | 17,584 00 |
| 2361.508 | WEARING COURSE MIXTURE | TON | 1336 | 1712.9 | 22 90 | 39,225 41 | | — | | 39,225 41 |
| 2451.503 | GRANULAR BACKFILL (L.V) | C.Y. | 200 | 0 | 8 00 | — | | — | | — |
| 2501.515 | 15" R.C. PIPE APRONS | EACH | 1 | 0 | 270 00 | — | | — | | — |
| 2503.511 | 12" R.C. PIPE SEWER, CLASS V | L.F. | 33 | 33 | 21 00 | 693 00 | * | | | |
| 2503.511 | 15" R.C. PIPE SEWER, CLASS V | L.F. | 2069 | 2056 | 21 00 | 43,176 00 | * | | | |
| 2503.511 | 18" R.C. PIPE SEWER, CLASS V | L.F. | 696 | 695 | 23 00 | 15,985 00 | * | | | |
| 2503.511 | 21" R.C. PIPE SEWER, CLASS III | L.F. | 184 | 188 | 25 00 | 4,700 00 | * | | | |
| 2503.511 | 24" R.C. PIPE SEWER, CLASS III | L.F. | 295 | 297 | 27 00 | 8,019 00 | * | | | |
| 2503.511 | 33" R.C. PIPE SEWER, CLASS III | L.F. | 246 | 245 | 38 00 | 9,310 00 | * | | | |
| 2503.511 | 36" R.C. PIPE SEWER, CLASS II | L.F. | 180 | 179 | 41 00 | 7,339 00 | * | | | |
| 2503.511 | 42" R.C. PIPE SEWER, CLASS II | L.F. | 750 | 722 | 58 00 | 41,876 00 | * | | | |
| 2506.508 | CONSTRUCT SURFACE DRAINS, DESIGN A OR F | EACH | 2 | 1 | 620 00 | 620 00 | * | 29.9 % | 60,524 34 | 70.1 % 141,898 21 |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN 90"-4020 | EACH | 1 | 1 | 4000 00 | 4,000 00 | * | | | |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN A OR F | EACH | 9 | 9 | 870 00 | 7,830 00 | * | | | |
| 2506.508 | CONSTRUCT MANHOLES, DESIGN J | EACH | 2 | 2 | 1500 00 | 3,000 00 | * | | | |
| 2506.509 | CONSTRUCT CATCH BASINS, DESIGN L.P-4 | EACH | 21 | 21 | 1430 00 | 30,030 00 | * | | | |
| 2506.509 | CONSTRUCT CATCH BASINS, DESIGN R.C.-2 | EACH | 12 | 12 | 750 00 | 9,000 00 | * | | | |
| 2506.512 | RECONSTRUCT MANHOLES | L.F. | 89.7 | 41.6 | 115 00 | 4,784 00 | | — | | 4,784 00 |
| 2506.516 | CASTING ASSEMBLIES | EACH | 4 | 4 | 230 00 | 920 00 | | — | | 920 00 |
| 2506.521 | INSTALL CASTINGS | EACH | 16 | 16 | 130 00 | 2,080 00 | | — | | 2,080 00 |
| 2506.522 | ADJUST FRAME AND RING CASTINGS | EACH | 11 | 10 | 130 00 | 1,300 00 | | — | | 1,300 00 |
| 2521.501 | 4" CONCRETE WALK | S.F. | 2500 | 2313 | 1 48 | 3,423 24 | | — | | 3,423 24 |
| 2531.501 | CONCRETE CURB AND GUTTER, DESIGN B624 | L.F. | 8110 | 8047 | 5 35 | 43,051 45 | | — | | 43,051 45 |
| 2531.501 | CONCRETE CURB AND GUTTER, DESIGN B618 | L.F. | 114 | 100 | 5 85 | 585 00 | | — | | 585 00 |
| 2531.503 | CONCRETE MEDIAN | S.Y. | 105 | 93 | 19 50 | 1,813 50 | | — | | 1,813 50 |
| 2531.507 | 6" CONCRETE DRIVEWAY PAVEMENT | S.Y. | 290 | 458 | 18 50 | 8,473 00 | | — | | 8,473 00 |
| 2535.501 | BITUMINOUS CURB | L.F. | 522 | 483 | 2 25 | 1,086 75 | | — | | 1,086 75 |
| 2575.505 | SODDING | S.Y. | .12500 | 18,303 | 0 95 | 17,387 85 | | — | | 17,387 85 |
| 2575.531 | COMMERCIAL FERTILIZER, ANALYSIS 12-12-12 | TON | 0.5 | 0.2 | 265 00 | 53 00 | | — | | 53 00 |
| 105.631 | SALVAGE BITUMIOUS PAVEMENT | S.Y. | 3202 | 3,202 | 1 40 | 4,482 80 | | — | | 4,482 80 |
| 412.604 | TIMBER WALL | S.F. | 276 | 0 | 8 81 | — | | — | | — |
| 503.605 | 3" INSULATION (SANITARY) | S.Y. | 56 | 85.1 | 20 00 | 1,702 00 | | — | | 1,702 00 |
| 504.601 | LOWER WATER MAIN 8" | L.S. | 1 | 1 | 2000 00 | 2,000 00 | | — | | 2,000 00 |
| 504.601 | LOWER WATER MAIN 12" | L.S. | 1 | 1 | 2800 00 | 2,800 00 | | — | | 2,800 00 |
| 504.602 | ADJUST VALVE BOX | EACH | 15 | 32 | 95 00 | 3,040 00 | | — | | 3,040 00 |
| 504.602 | RELOCATE HYDRANTS | EACH | 4 | 5 | 950 00 | 4,750 00 | | — | | 4,750 00 |
| 504.603 | LOWER WATERMAIN | L.F. | 272 | 0 | 17 00 | — | | — | | — |
| 504.605 | 3" INSULATION (WATER) | S.Y. | 241 | 310.9 | 20 00 | 6,218 00 | | — | | 6,218 00 |
| 506.601 | GRIT CHAMBER MODIFICATION | L.S. | 1 | 1 | 6700 00 | 6,700 00 | * | | | |
| 506.602 | DRILL CORE HOLES | EACH | 9 | 9 | 72 00 | 648 00 | * | | | |
| 554.602 | INSTALL GUARDRAIL | L.F. | 65 | 100 | 9 00 | 900 00 | | — | | 900 00 |
| 554.607 | TWISTED END TREATMENT | EACH | 1 | 2 | 440 00 | 880 00 | | — | | 880 00 |
| 557.603 | INSTALL FENCE | L.F. | 278 | 75 | 3 75 | 281 25 | | — | | 281 25 |
| | **NON-PARTICIPATING** | | | | | | | | | |
| 2503.511 | 12" R.C. PIPE SEWER, CLASS V | L.F. | 231 | 231 | 24 00 | 5,544 00 | * | | | |
| 2506.509 | CONSTRUCT CATCH BASIN, DESIGN H | EACH | 1 | 1 | 500 00 | 500 00 | * | | | |
| 504.603 | LOWER WATER SERVICE | L.F. | 330 | 358 | 12 00 | 4,296 00 | | | 4,296 00 | — |
| | Supplemental Agreements: | | | | | | | | | |
| No. 1 | Arch Pipe and Manhole | | | | | 3,452 55 | * | | | |
| 2 | Gate Valves at Hydrants | | | | | 3,004 77 | | | 3,004 77 | — |
| 3 | Traffic Control - Fence, Signs etc. | | | | | 3,260 22 | | | | 3,260 22 |
| 4 | Plate Beam Radius Guard Rail | | | | | 1,040 00 | | | | 1,040 00 |
| | | | | | | $ 839,390 31 | | | $ 67,825 11 | $ 771,565 20 |

* DESIGNATES DRAINAGE ITEMS WHICH TOTALS $60,524.34

3-7-84
1/4/84 R.C. RHP