

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR CULVERT REPAIR

LOCATED ON C.R. 83 AT TROTT BROOK

COUNTY PROJECT NO. 93-32-83 STATE AID PROJ. NO. _____

| | |
|---|--|
| GROSS LENGTH <u>126</u> FEET <u>0.024</u> MILES | GROSS LENGTH _____ FEET _____ MILES |
| BRIDGES-LENGTH _____ FEET _____ MILES | BRIDGES-LENGTH _____ FEET _____ MILES |
| EXCEPTIONS-LENGTH _____ FEET _____ MILES | EXCEPTIONS-LENGTH _____ FEET _____ MILES |
| NET LENGTH <u>126</u> FEET <u>0.024</u> MILES | NET LENGTH _____ FEET _____ MILES |

MINN. PROJ. NO. _____
MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 2, 1991 SHALL GOVERN.

INDEX

| SHEET NO. | DESCRIPTION |
|-----------|----------------|
| 1 | TITLE SHEET |
| 2 | TABS & DETAILS |
| 3 | PLAN & PROFILE |
| 4-5 | DETOUR PLANS |

THIS PLAN CONTAINS 5 SHEETS

DESIGN DESIGNATION

\$N18₂₀ N/A
 R VALUE N/A
 ADT (1994)= 1,621
 Proj. ADT (2014)= 2,756
 Proj. HCADT (2014)= 207
 Soil Factor 50%
9 TON DESIGN
 Shoulder Width 8 FT.

Functional Classification HIGH DENSITY COLLECTOR
 No. of Traffic Lanes 2 No. of Parking Lanes 0
 Design Speed 50 MPH
 Based on Stopping Sight Distance
 Height of eye 3.5 ft Height of object 0.5 ft.
 Design Speed not achieved at: N/A
 STA. _____ TO STA. _____ MPH
 STA. _____ TO STA. _____ MPH
 STA. _____ TO STA. _____ MPH

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 5/10/94 REG. NO. 200355 ENGR. Joel Carlson
 DESIGN SQUAD JOEL CARLSON
 Recommended for Approval Michael P. Kelly 5/10/1994
 Recommended for Approval David R. Remick 5/10/1994
 Recommended for Approval Steve P. Green 5/10/1994
 Recommended for Approval Joel Carlson 5/13/1994
 Approved 5/12/1994 Joel Carlson ANOKA COUNTY ENGINEER

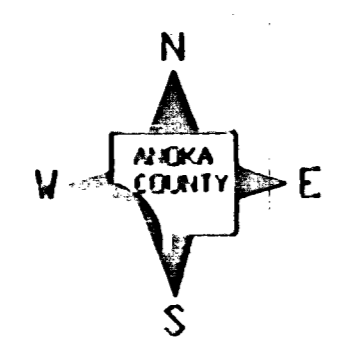
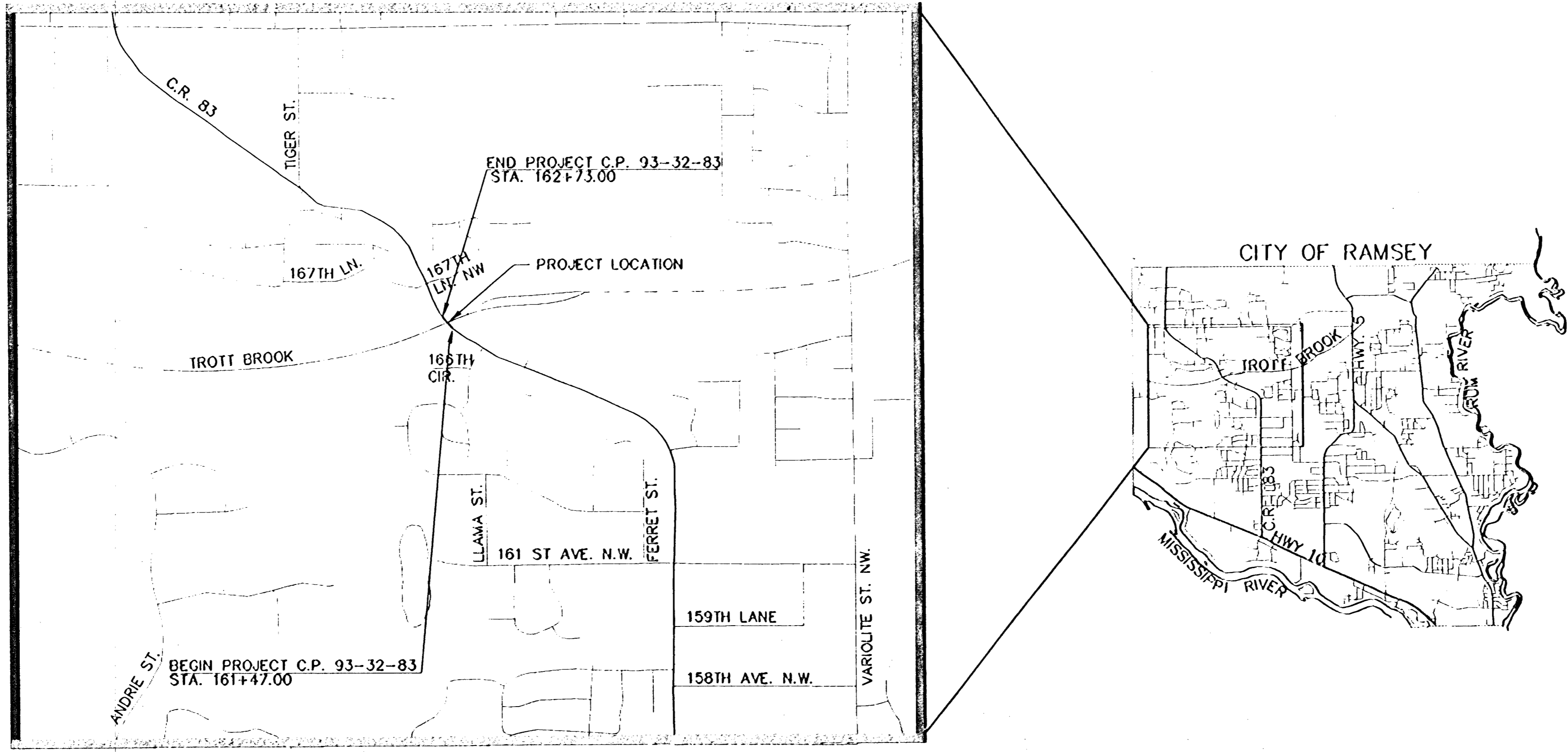
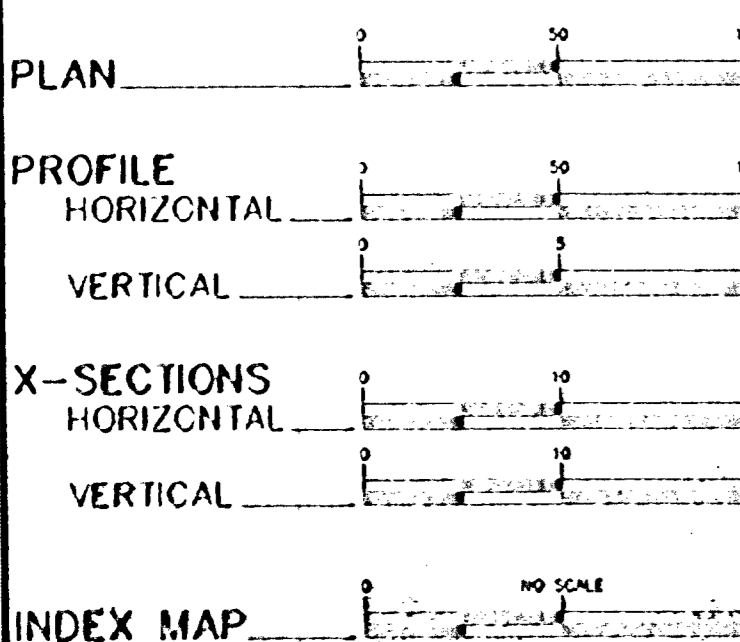
PLAN SYMBOLS

- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUADDER LINE _____
- SIXTEENTH LINE _____
- RIGHT OF WAY LINE _____
- SLOPE EASEMENT _____
- PRESENT RIGHT OF WAY _____
- PROPERTY LINE _____
- CO-OPERATIVE OR CITY LIMITS _____
- FEEDING TANK _____
- RAILROAD _____
- RAILROAD RIGHT OF WAY _____
- RIVER OR CREEK _____
- DRAINAGE DITCH _____
- CULVERT _____
- DROP HOLE _____
- GRUP ROAD _____
- BARBED WIRE FENCE _____
- WOVEN WIRE FENCE _____
- CHAIN LINK FENCE _____
- WOOD FENCE _____
- STONE WALL OR FENCE _____
- HEDGE _____
- LOVELAND _____
- TIMBER _____
- ORCHARD _____
- BRUSH _____
- NURSERY _____
- CATTLE GUARD _____
- OVERPASS (Highway Over) _____
- UNDERPASS (Highway Under) _____
- BRIDGE _____
- BUILDING (One Story Frame) 1-5-7
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL _____
- RAILROAD CROSSING GATE _____
- MANHOLE _____
- CATCH BASIN _____
- FIRE HYDRANT _____
- CAST IRON MONUMENT _____
- IRON PIN _____
- GRAVEL PIT _____
- SAND PIT _____
- BORROW PIT _____
- ROCK QUARRY _____

UTILITY SYMBOLS

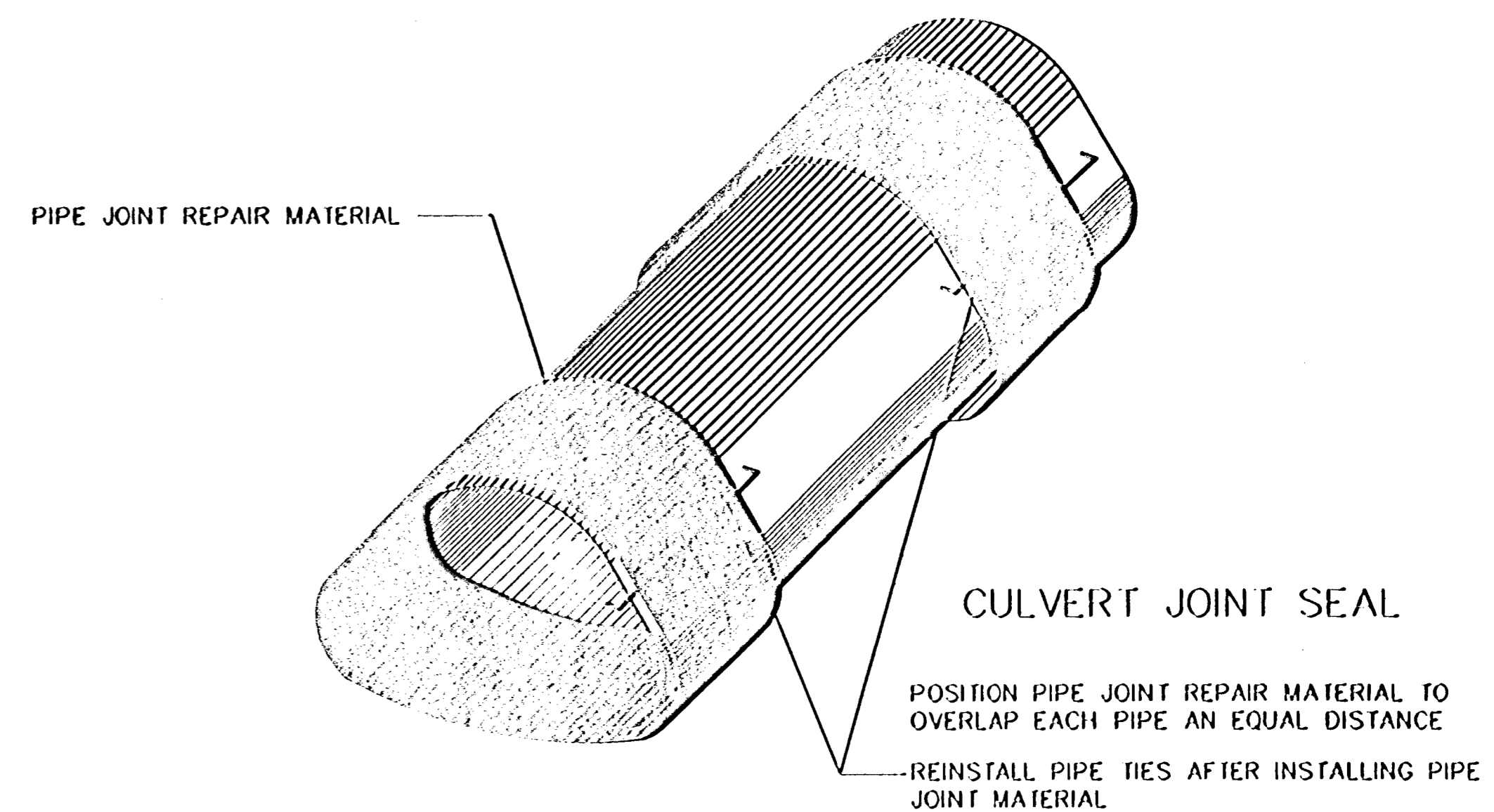
- POWER POLE LINE _____
- TELEPHONE OR TELEGRAPH POLE LINE _____
- JOINT TELEPHONE & POWER ON POWER POLES _____
- ON TELEPHONE POLES _____
- ANCHOR _____
- STEEL TOWER _____
- STREET LIGHT _____
- PEDESTAL (Cable Terminal) _____
- GAS MAIN _____
- WATER MAIN _____
- TELEPHONE CABLE IN CONDUIT _____
- ELECTRIC CABLE IN CONDUIT _____
- TELEPHONE MANHOLE (1) _____
- ELECTRIC MANHOLE (2) _____
- BURIED TELEPHONE CABLE T-BUR _____
- BURIED ELECTRIC CABLE P-BUR _____
- AERIAL TELEPHONE CABLE T-AE _____
- SEWER (Sanitary or Storm) _____
- SEWER MANHOLE _____

SCALES

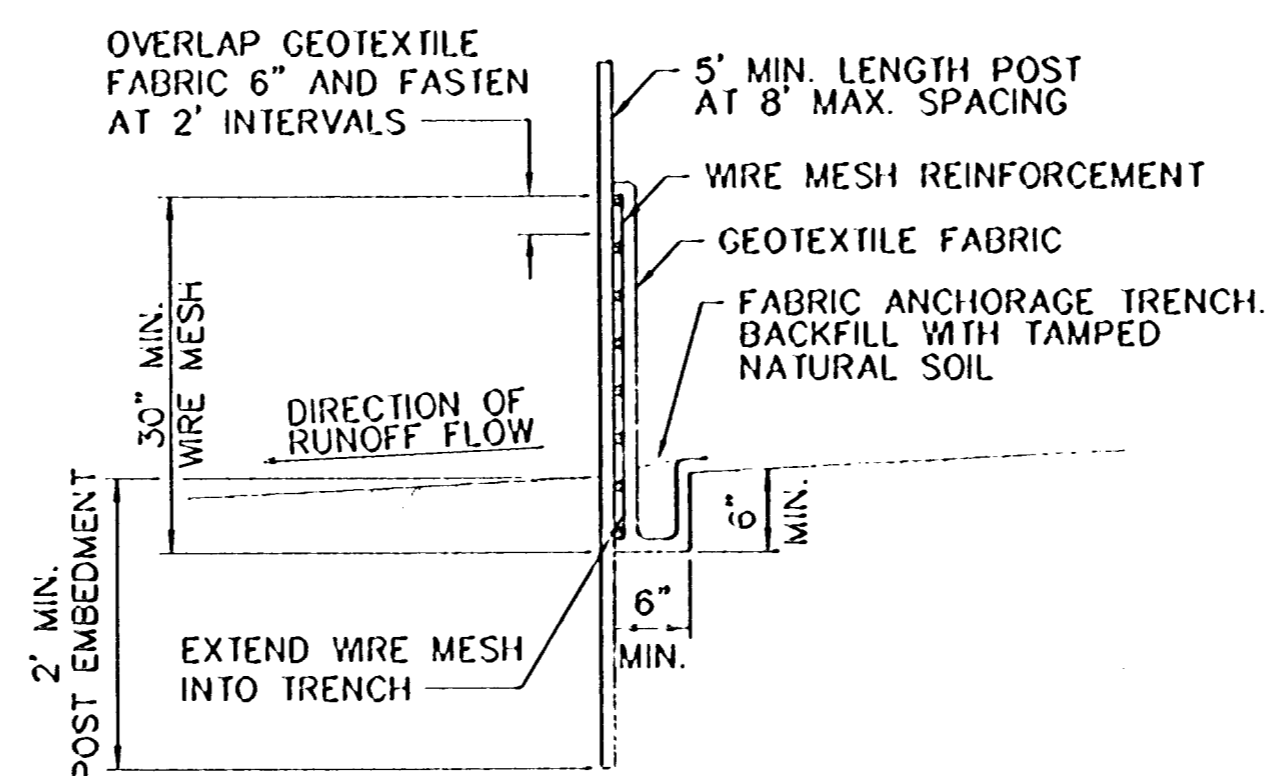


STATEMENT OF ESTIMATED QUANTITIES

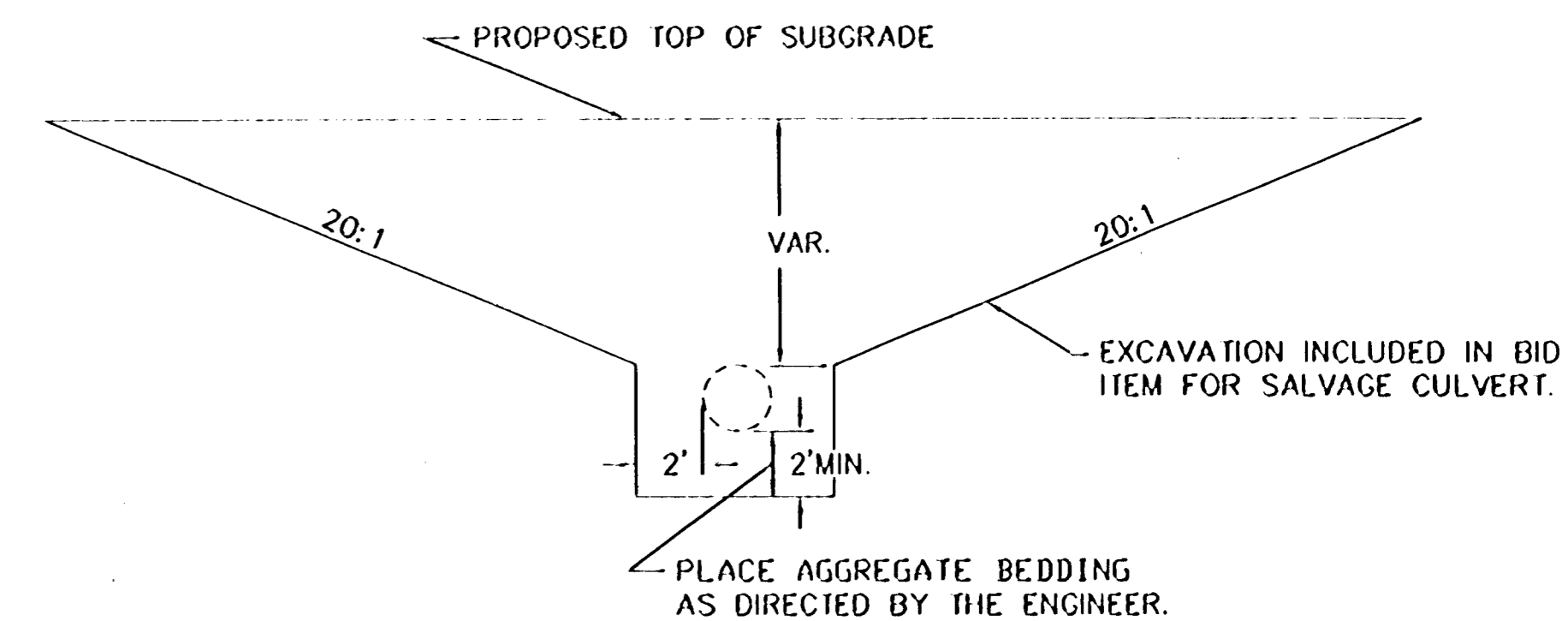
| ITEM NO. | ITEM | UNIT | C.P. 93-32-83 | |
|----------|--|----------|---------------|-------|
| | | | ESTIMATED | FINAL |
| 2021.501 | MOBILIZATION | LUMP SUM | 1 | |
| 2104.505 | REMOVE BITUMINOUS PAVEMENT | SQ YD | 280 | |
| 2104.505 | REMOVE RIPRAP | SQ YD | 26 | |
| 2104.513 | SAWING BITUMINOUS PAVEMENT | LIN FT | 166 | |
| 2104.521 | SALVAGE GUARD RAIL | LIN FT | 75 | |
| 2104.521 | SALVAGE 102" RC PIPE-ARCH CULVERT | LIN FT | 42 | |
| 2104.523 | SALVAGE 102" RC PIPE ARCH APRON | EACH | 1 | |
| 2211.501 | AGGREGATE BASE, CL 5A | TON | 118 | |
| 2340.508 | TYPE 31 WEARING COURSE MIXTURE | TON | 23 | |
| 2340.510 | TYPE 31 BINDER COURSE MIXTURE | TON | 19 | |
| 2340.514 | TYPE 31 BASE COURSE MIXTURE | TON | 25 | |
| 2357.502 | BITUMINOUS MATERIAL FOR TACK COAT | GALLON | 18 | |
| 2451.509 | AGGREGATE BEDDING (LV) | CU YD | 50 | |
| 2501.571 | INSTALL 102" RC PIPE-ARCH CULVERT | LIN FT | 42 | |
| 2501.573 | INSTALL 102" RC PIPE-ARCH APRON | EACH | 1 | |
| 0501.602 | CULVERT JOINT SEAL | EACH | 7 | |
| 2511.507 | GROUTED RIPRAP | CU YD | 52 | |
| 2554.511 | INSTALL TRAFFIC BARRIER, DESIGN 8330 | LIN FT | 75 | |
| 0563.501 | TRAFFIC CONTROL | LUMP SUM | 1 | |
| 2573.503 | SILT FENCE, PREASSEMBLED | LIN FT | 70 | |
| 2575.501 | SEEDING | ACRE | 0.01 | |
| 2575.502 | SEED MIXTURE 700 | POUND | 1 | |
| 2575.523 | WOOD FIBER BLANKET, TYPE REGULAR | SQ YD | 48 | |
| 2575.532 | COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 | POUND | 5 | |



SILT FENCE DETAIL



CENTERLINE CULVERT INSTALLATION



- NOTES:
- FILL AND COMPACT GRANULAR TO 2" ABOVE FLOWLINE BEFORE PLACING CULVERT
 - EXCAVATION TO EXTEND 3' BEYOND END OF APRON

BASIS OF PLANNED QUANTITIES

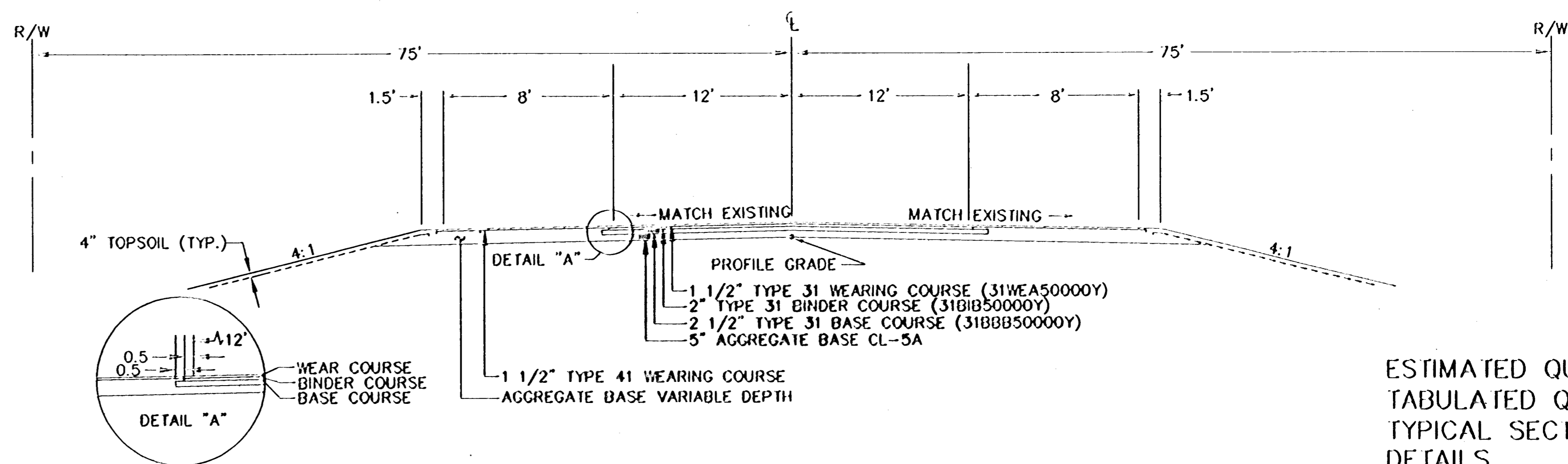
| | |
|------|--|
| 2340 | TYPE 41 PLANT MIXED WEARING COURSE MIXTURE: 110 LBS./SQ.YD. PER 1" THICKNESS |
| 2340 | TYPE 31 PLANT MIXED BINDER COURSE MIXTURE: 110 LBS./SQ.YD. PER 1" THICKNESS |
| 2340 | TYPE 31 PLANT MIXED BASE COURSE MIXTURE: 110 LBS./SQ.YD. PER 1" THICKNESS |
| 2357 | BITUMINOUS MATERIAL FOR TACK: 0.05 GALS./SQ.YD. |
| 2575 | COMMERCIAL FERTILIZER, ANALYSIS 10-10-10: 500 LBS./ACRE ON ALL SEED AREAS |
| 2575 | SEEDING: BASED ON HORIZONTAL MEASURE +10% |
| 2575 | SEED MIXTURE NO. 700: 35 LBS./ACRE |

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

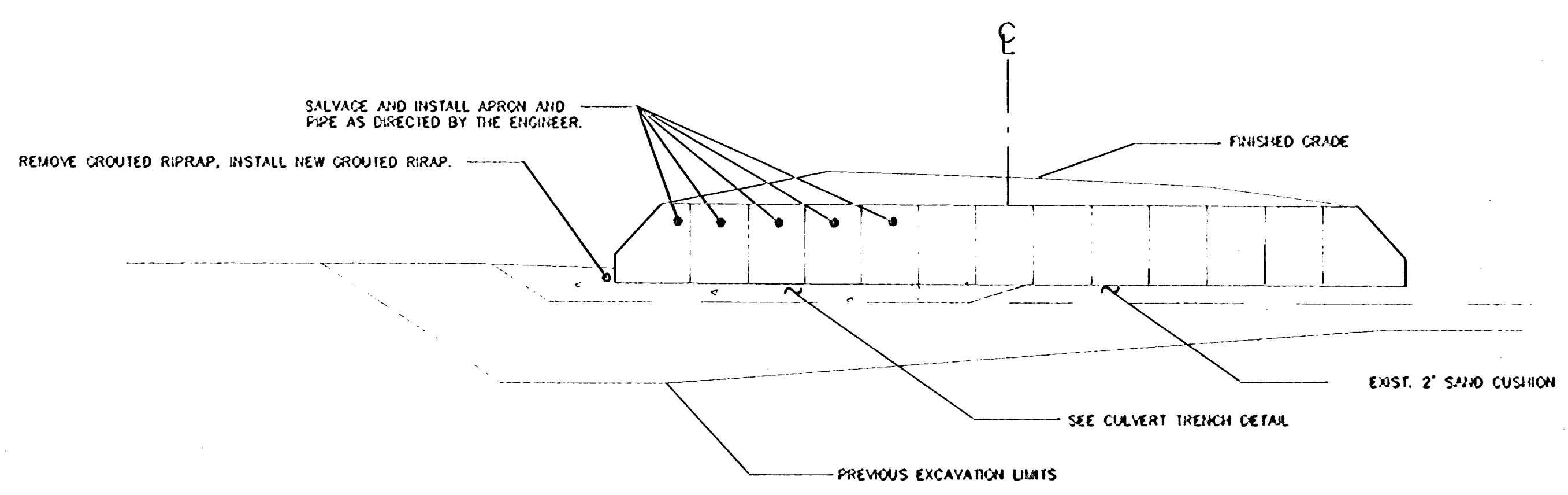
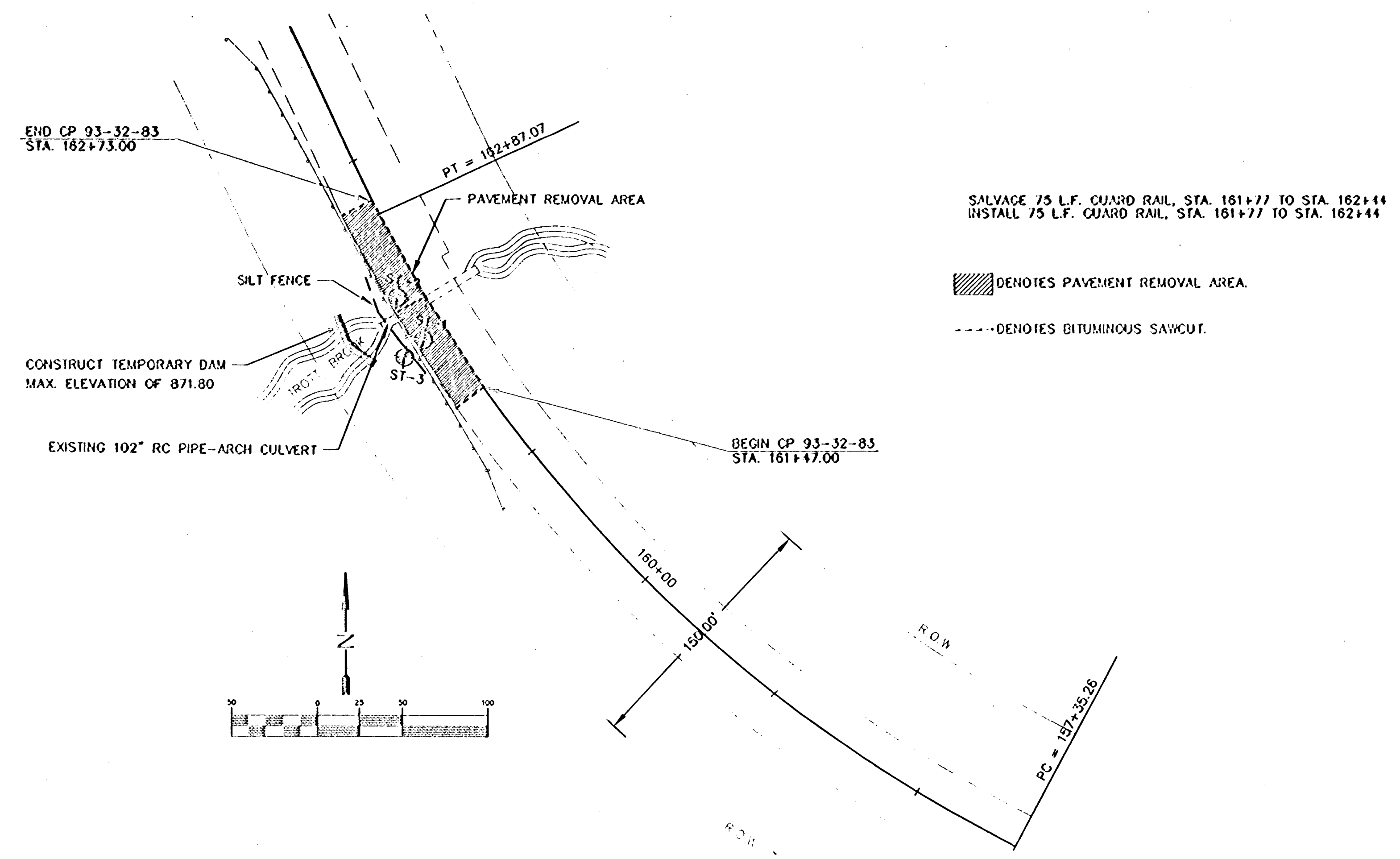
| PLATE NO. | DESCRIPTION |
|-----------|--|
| 0005 A | SPECIFICATION REFERENCE TO STANDARD PLATES |
| 3007 B | SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURE |
| 3014 J | REINFORCED CONCRETE PIPE ARCH |
| 3110 G | CONCRETE APRON FOR REINFORCED CONCRETE PIPE ARCH |
| 3133 B | RIPRAP AT RCP OUTLETS |
| 3145 E | CONCRETE PIPE TIES |
| 8000 I | STANDARD BARRICADES |
| 8307 P | STEEL PLATE BEAM GUARDRAIL |
| 9102 D | TURF ESTABLISHMENT AREAS (FOR PIPE CULVERT ENDS) |

TYPICAL SECTION



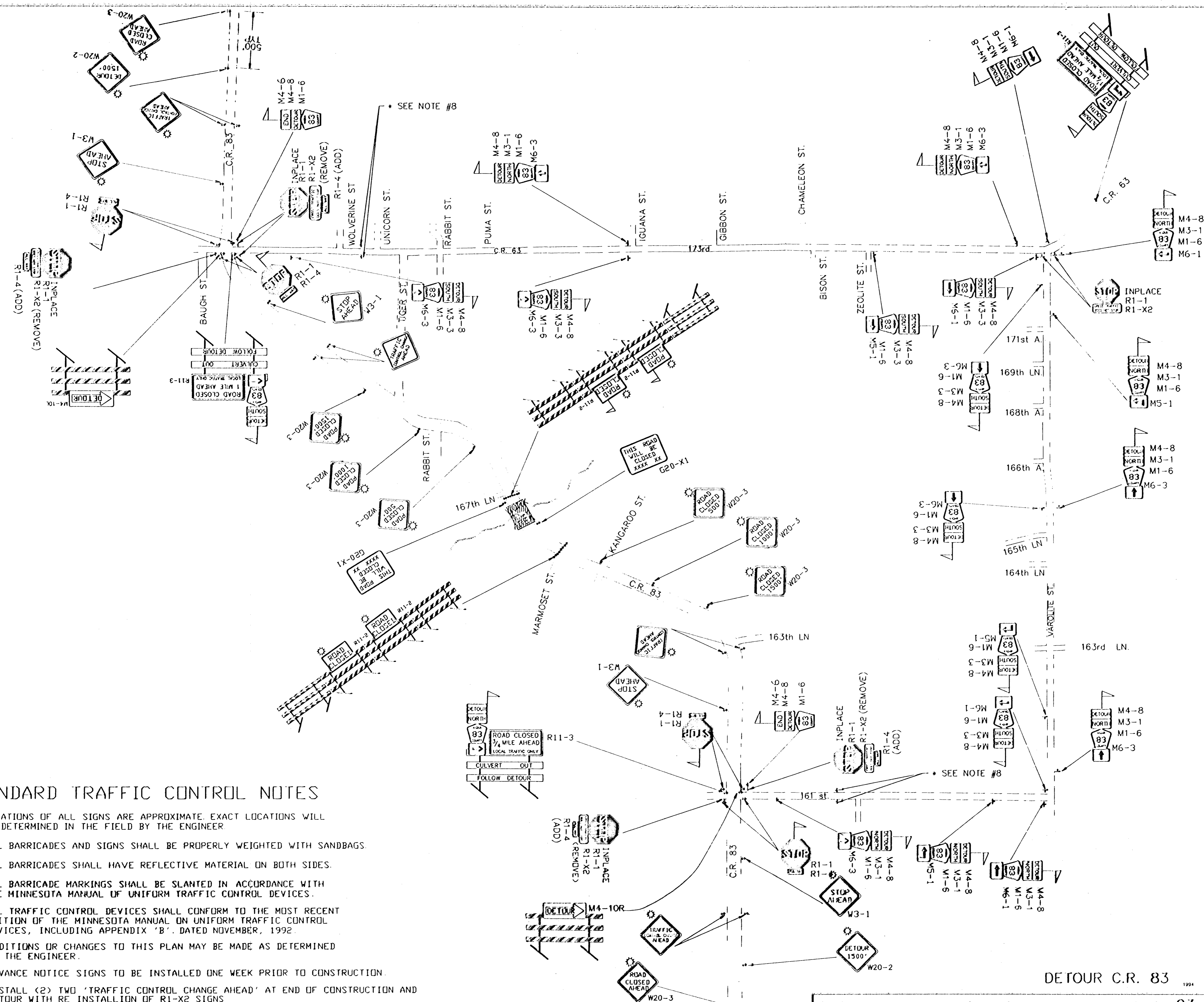
ESTIMATED QUANTITIES
TABULATED QUANTITIES
TYPICAL SECTIONS
DETAILS

REVISIONS
 DATE BY DATE BY
 CAPV93283N83TAB
 1.99405119192242E+007



| REVISIONS | DATE | BY |
|-----------|------|----|
| | | |
| | | |
| | | |

PLAN & PROFILE



STANDARD TRAFFIC CONTROL NOTES

- 1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER
- 2) ALL BARRICADES AND SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- 3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- 4) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX 'B'. DATED NOVEMBER, 1992.
- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.
- 7) ADVANCE NOTICE SIGNS TO BE INSTALLED ONE WEEK PRIOR TO CONSTRUCTION.
- 8) INSTALL (2) TWO 'TRAFFIC CONTROL CHANGE AHEAD' AT END OF CONSTRUCTION AND DETOUR WITH RE INSTALLION OF R1-X2 SIGNS

| REVISIONS | DATE | BY |
|-----------|------|----|
| | | |
| | | |
| | | |

| M.U.T.C.D. CODE | SIZE | INSERT | QTY. | M.U.T.C.D. CODE | SIZE | INSERT | QTY. |
|-----------------|----------|--------|---------|-----------------|---------|--------|------|
| FLASHER | TYPE 'A' | | • 2 | | | | |
| R11-2 | 48"x30" | | • 2 | G20-X1 | 84"x60" | | • 2 |
| M4-10L | 48"x18" | | • 1 | | | | |
| TYPE III | 8 FT. | | • 5 | R1-1 | 48"x48" | | • 8 |
| FLASHER | TYPE 'A' | | • 2 | R1-4 | 18"x6" | | • 14 |
| R11-2 | 48"x30" | | • 2 | W3-1 | 48"x48" | | • 4 |
| M4-10L | 48"x18" | | • 1 | | 48"x48" | | • 8 |
| TYPE III | 8 FT. | | • 5 | | | | |
| R11-3 | 60"x30" | | • 3/4 | W20-2 | 48"x48" | | • 2 |
| FLAG | | | • 1 | | | | |
| M4-8 | 24"x12" | | • 1 1/2 | W20-3 | 48"x48" | | • 2 |
| M3-1 | 24"x12" | | • 1 | | | | |
| M1-6 | 24"x24" | | • 1 | FLAG | | | |
| M6-1L | 21"x15" | | • 1 | M4-8 | 24"x12" | | • 1 |
| FLAG | | | | M3-1 | 24"x12" | | • 2 |
| M4-8 | 24"x12" | | • 1 | M1-6 | 24"x24" | | • 0 |
| M3-3 | 24"x12" | | • 1 | | 21"x15" | | • 2 |
| M1-6 | 24"x24" | | • 1 | | | | |
| M6-1R | 21"x15" | | • 1 | | | | |
| FLAG | | | | | | | |
| M4-8 | 24"x12" | | • 1 | | | | |
| M3-3 | 24"x12" | | • 1 | | | | |
| M1-6 | 24"x24" | | • 1 | | | | |
| M5-1L | 21"x15" | | • 1 | | | | |
| TYPE III | 8 FT. | | • 3 | | | | |
| | | | | | | | |

INSTALL TWO SIGNS EACH ON 161st. AVE AND 173rd. AVE. WEST BOUND AT END OF CONSTRUCTION AND DETOUR, FOR A PERIOD OF ONE WEEK.

STANDARD TRAFFIC CONTROL NOTES

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- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

| | | |
|-----------|------|----|
| REVISIONS | DATE | BY |
| | | |
| | | |

CSAH 83 DETOUR QUANTITY