

MINNESOTA DEPARTMENT OF TRANSPORTATION
AITKIN COUNTY

CONSTRUCTION PLAN FOR MILLING BITUMINOUS SURFACE, PLANT MIXED BITUMINOUS
AND AGGREGATE SHOULDERING

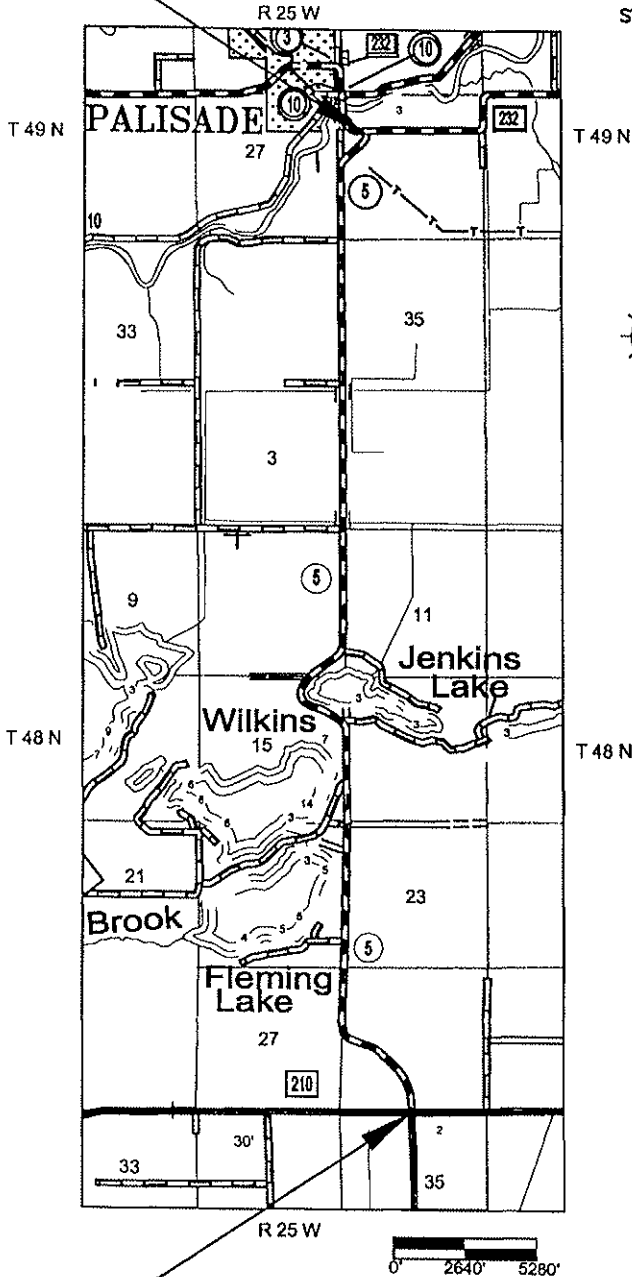
LOCATED ON CSAH 5 BETWEEN TRUNK HWY 210 AND TRUNK HWY 232 (GEOGRAPHICAL DESCRIPTION)

FROM: S1/4 COR. SEC. 26 T48N-R25W TO: 1331.7' S. & 9747.7' E. OF NW COR. SEC. 26, T49, R25 (LEGAL DESCRIPTION)

END SAP 01-605-11
STA. 388+20

GROSS LENGTH 39512.09 FEET 7.483 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 39512.09 FEET 7.483 MILES

STATION EQUATIONS 47+33.41 = 47+50.00 -16.59
158+48.61 = 158+29.47 +19.14
191+32.92 = 184+41.30 +691.62
204+14.68 = 204+20.36 -5.68
377+34.84 = 377+31.24 +3.60



BEGIN SAP 01-605-11
STA. 0+00

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET 1 TITLE SHEET
SHEET 2 ESTIMATED QUANTITIES
SHEET 3 TYPICAL SECTIONS
SHEET 4 TURN LANE
SHEET 5 TRAFFIC CONTROL PLAN

THIS PLAN CONTAINS 5 SHEETS.

DESIGN DESIGNATION

RURAL RECONDITIONING STANDARDS

Σ N-18 = 200,000 ESALS
R-VALUE = 15 (ASSUMED)

STATUTORY SPEED: 55 MPH

PRESENT ADT: 449 (2009)
PROJECTED ADT: 674 (2029)
PROJECTED HCADT: UNKNOWN

10 TON DESIGN

FUNCTIONAL CLASSIFICATION = MAJOR COLLECTOR

2-12' LANES
2-VAR 3.0'-4.0' SHOULDERS (2' PAVED)

PREVIOUS PROJECTS:

SAP 01-605-08-GRADING AND AGG. BASE AND BIT SURFACE
SAP 01-605-07-GRADING AND AGG. SURFACING
SAP 01-605-06-GRADING AND AGG. SURFACING

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

SIGNATURE: John Welle
DATE: 7-10-09 JOHN WELLE LIC. NO. 24340

DISTRICT STATE AID ENGINEER John Welle 7/21/09
REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY DATE

STATE AID ENGINEER; APPROVED FOR STATE-AID FUNDING John Welle 7/21/09 DATE

SAP 01-605-11

SHEET 1 OF 5 SHEETS

10/10/09 10:15 AM 6/27/09/1/

STATEMENT OF ESTIMATED QUANTITIES

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|----------|--|----------|----------|
| | 2021.501 MOBILIZATION | LUMP SUM | 1 |
| | 2051.501 MAINT & RESTORATION OF HAUL ROADS | LUMP SUM | 1 |
| ① | 2105.501 COMMON EXCAVATION (P) | CU YD | 412 |
| ① | 2211.501 AGGREGATE BASE CLASS 5 | TON | 420 |
| ② | 2221.501 AGGREGATE SHOULDERING CLASS 1 | TON | 2030 |
| | 2231.501 BITUMINOUS PATCHING MIXTURE | TON | 100 |
| | 2232.501 MILL BITUMINOUS SURFACE (1.5") | SQ YD | 117034 |
| | 2357.502 BITUMINOUS MATERIAL FOR TACK COAT CSS 1H | GALLON | 1290 |
| ③ | 2360.501 TYPE SP 12.5 WEARING COURSE MIXTURE (2,B) | TON | 12909 |
| | 2563.601 TRAFFIC CONTROL | LUMP SUM | 1 |
| ④ | 2580.603 INTERIM PAVEMENT MARKING | LIN FT | 24912 |
| | 2582.502 4" SOLID LINE WHITE-EPOXY | LIN FT | 78103 |
| | 2582.502 4" SOLID LINE YELLOW-EPOXY | LIN FT | 21678 |
| | 2582.502 4" BROKEN LINE YELLOW-EPOXY | LIN FT | 6467 |

- 1) FOR TURN LANE CONSTRUCTION TO COUNTY ROAD 88
- 2) AGGREGATE SHOULDERING INCLUDES 121 TONS FOR 11 TOWNSHIP ROADS AND 117 APPROACHES.
- 3) ALL NEW PAVING INCLUDING MAINLINE, TURNLANES, TOWNSHIP ROADS, AND PRIVATE APPROACHES MUST MATCH INTO EXISTING PAVEMENTS AT A TRANSVERSED MILLED JOINT.
INCLUDES 173 TON FOR 86 2' X 80' "BUMPOUTS" AND 2 PAVED DRIVEWAYS
AND INCLUDES 226 TON FOR 11 TOWNSHIP ROADS AND TURNLANES
- 4) INTERIM PAVEMENT MARKING TO INCLUDE NO PASSING ZONES AS MARKED IN THE FIELD AND PASSING ZONES WITH 5' SKIP LINES EVERY 50'

BASIS OF QUANTITIES

- 1) AGGREGATE SHOULDERING/BASE 145 LBS. PER CU. FT.
- 2) BITUMINOUS MATERIAL FOR TACK APPLICATION RATE 0.10 GAL. PER SQ. YD.
- 3) BITUMINOUS WEAR COURSE 149 LBS. PER CU. FT.


GOPHER STATE ONE CALL 1-800-252-1166

CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS, PRIOR TO CONSTRUCTION WITH RESPECTIVE UTILITY COMPANIES.

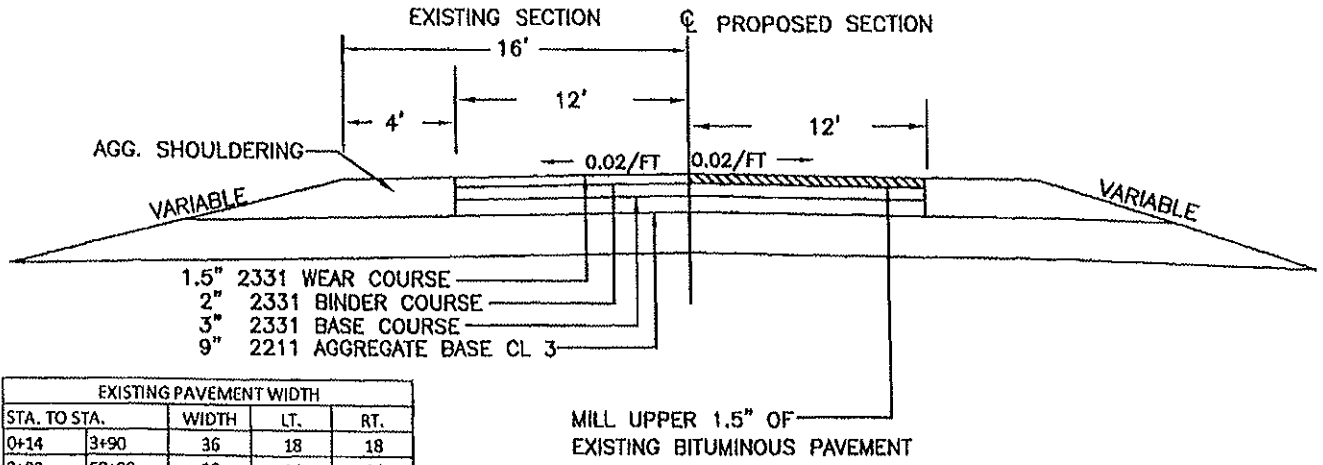
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

| STANDARD PLATES | |
|---|-------------------------------------|
| THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY | |
| PLATE NO. | DESCRIPTION |
| 8000I | STANDARD BARRICADES |
| 9000D | APPROACHES AND ENTRANCES (MODIFIED) |

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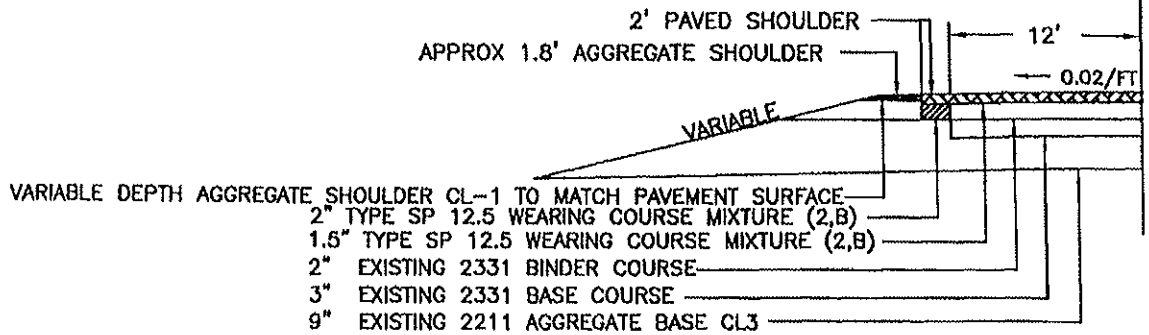
TYPICAL MILL SECTION
STATION 0+00 TO 388+20



| EXISTING PAVEMENT WIDTH | | | | |
|-------------------------|--------|-----|-----|----|
| STA. TO STA. | WIDTH | LT. | RT. | |
| 0+14 | 3+90 | 36 | 18 | 18 |
| 3+90 | 50+00 | 28 | 14 | 14 |
| 50+00 | 145+00 | 24 | 12 | 12 |
| 145+00 | 146+50 | 26 | 14 | 12 |
| 146+50 | 205+00 | 28 | 14 | 14 |
| 205+00 | 369+00 | 24 | 12 | 12 |
| 369+00 | 386+30 | 32 | 16 | 16 |
| 386+30 | 388+60 | 30 | 16 | 14 |

MILL UPPER 1.5" OF
EXISTING BITUMINOUS PAVEMENT

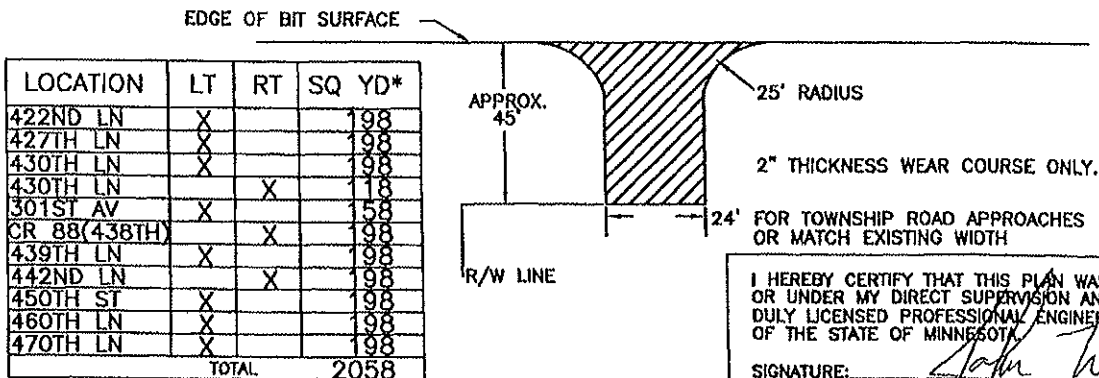
STATION 0+00 TO 388+20
TYPICAL PAVEMENT AND AGGREGATE BASE SECTION



* NOTE: PAVE ADDITIONAL 2 FOOT WIDTH ON LOW SIDE OF SUPER

TYPICAL TOWNSHIP ROAD APPROACH PAVEMENT

CSAH 5



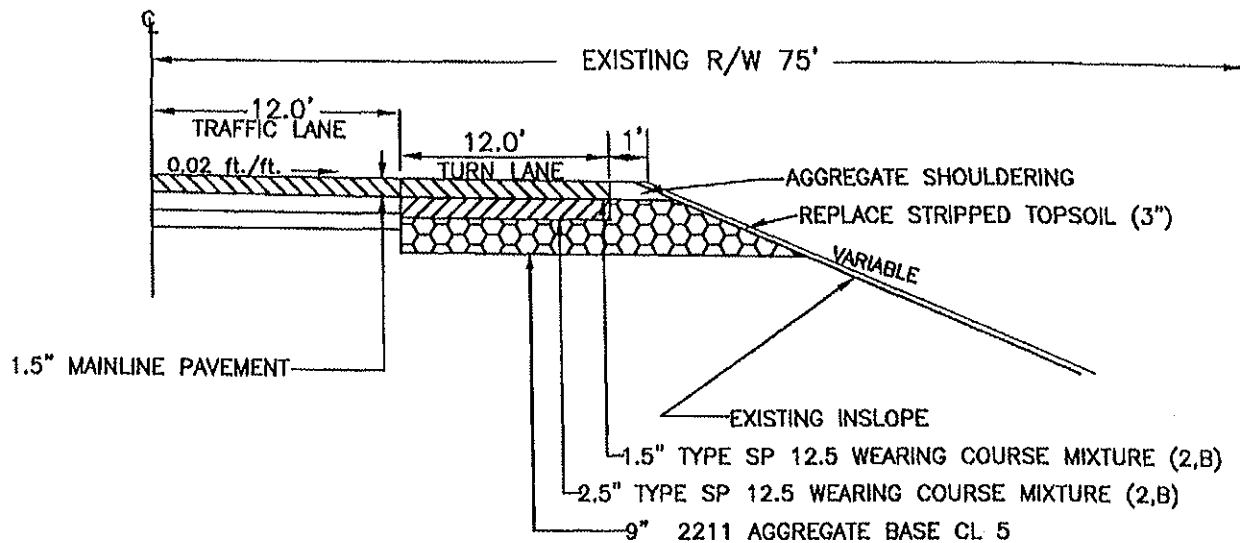
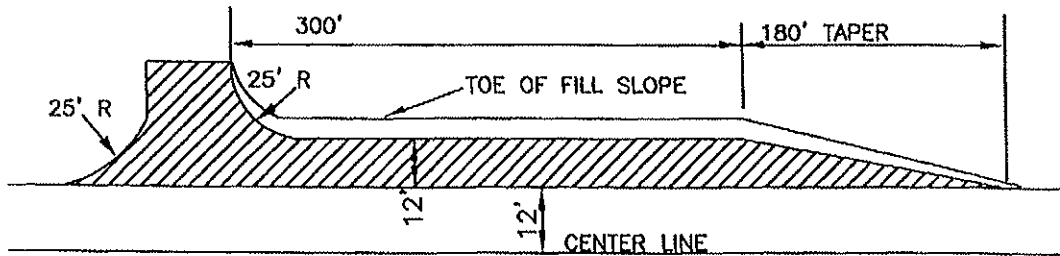
* - SHAPING PRIOR TO PAVING OF TOWNSHIP
ROADS TO BE INCIDENTAL

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TYPICAL TURN-LANE BASE AND SURFACE SECTION

COUNTY ROAD 88



NOTE: EXCAVATE SHOULDER TO 13" BELOW EXISTING PAVEMENT ELEVATION, BACKFILL WITH 9" OF CLASS 5 AGGERGATE BASE. STRIP TOPSOIL FROM INSLOPES PRIOR TO EXCAVATION AND EMBANKMENT

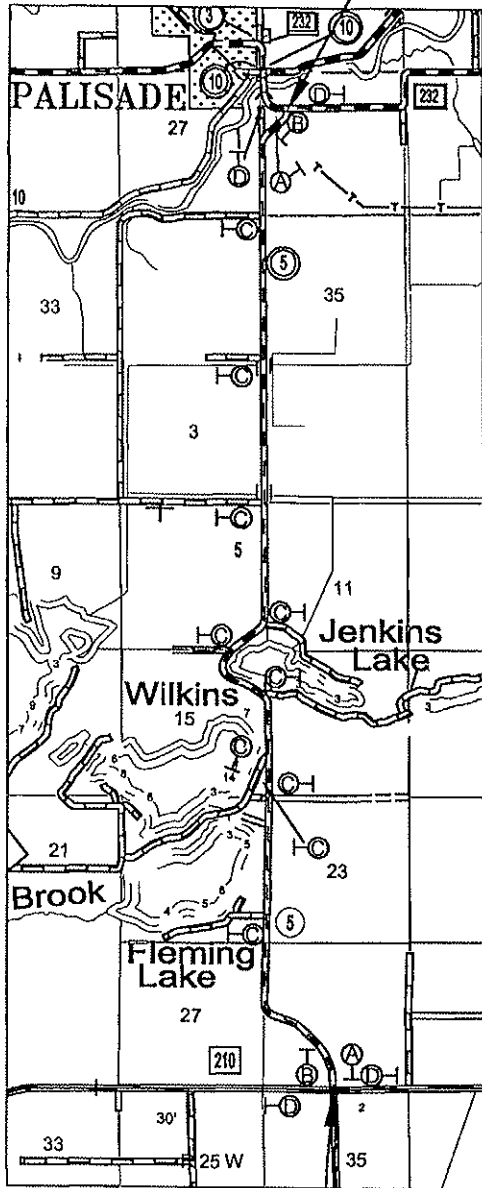
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END SAP 01-605-11
STA. 388+20

TRAFFIC CONTROL



BEGIN SAP 01-605-11
STA. 0+00

| SIGN | SIGN NO. | INSTALL CODE | QUANTITY |
|--------------------------|---------------------|--------------|----------|
| ROAD WORK NEXT 7.5 MILES | G20-1 60" X 24" | A | 2 |
| END ROAD WORK | G20-2A 48" X 24" | B | 2 |
| ROAD WORK AHEAD | W20-1 | C | 10 |
| ROAD WORK AHEAD CR 5 | W20-1 | D | 4 |

QUANTITIES OF TRAFFIC CONTROL DEVICES ON THIS SHEET ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION ONLY. PAYMENT FOR TRAFFIC CONTROL IS INTENDED TO COVER ALL SUCH DEVICES AS SHOWN ON THE TRAFFIC CONTROL PLAN.

ALL SIGNS SHALL BE 48" X 48" UNLESS INDICATED OTHERWISE ON THE SIGN TABULATION.

POST REQUIREMENTS AND POST SPACING SHALL BE IN ACCORDANCE WITH TABLE 1 & TABLE 2. ALL POSTS SHALL NOT BE GREATER THAN 3.0 LBS/FT.

CONTRADICTORY INPLACE SIGNING AND PAVEMENT MARKINGS SHALL BE CORRECTED, COVERED OR REMOVED AS DIRECTED BY THE ENGINEER, AND REINSTALLED WHEN TRAFFIC CONTROL SIGNING IS REMOVED.

POST SHALL BE PLUMB WITH SIGNS INSTALLED LEVEL AND AT PROPER MOUNTING HT. IN ACCORDANCE WITH M.U.T.C.D.

ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY 2007".

TRAFFIC CONTROL FOR LONGITUDINAL DROP-OFFS SHALL BE AS PER "THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" PAGES 6K-xv THRU 6K-xvii.

TABLE 1
STANDARD CONSTRUCTION SIGNS IN MN/DOT STANDARD SIGNS MANUAL

| PANEL SIZE (IN) | POSTS | | | |
|-----------------|------------|--------------|--------------------|-------------|
| | NO. & TYPE | SPACING (IN) | KNEE BRACES QUANT. | LENGTH (FT) |
| 24 x 24 | 2-U | 18 | 0 | 13 |
| 30 x 24 | 2-U | 18 | 0 | 13 |
| 36 x 30 | 2-U | 24 | 0 | 13 |
| 36 x 36 | 2-U | 18 | 0 | 14 |
| 42 x 36 | 2-U | 30 | 0 | 14 |
| 48 x 48 | 2-U | 30 | 0 | 15 |
| 60 x 60 | 2-U | 42 | 1 | 16 |
| 72 x 72 | 2-U | 42 | 2 | 17 |
| 96 x 54 | 2-U | 54 | 2 | 16 |
| 168 x 132 | 4-U | 48 | 4 | 20 |

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE STANDARD SIGN MANUAL FOR PUNCHING HOLES.

TABLE 2
SPECIAL DESIGN CONSTRUCTION SIGNS

| PANEL SIZE | | POSTS | | | |
|-------------|-------------|------------|--------------|--------------------|-------------|
| LENGTH (IN) | HEIGHT (IN) | NO. & TYPE | SPACING (IN) | KNEE BRACES QUANT. | LENGTH (FT) |
| 54-96 | 78 | 2-U | 42 | 2 | 20 |
| 102-138 | 78 | 3-U | 45 | 3 | 20 |
| 144-180 | 78 | 4-U | 45 | 4 | 20 |

DESIGNER NOTE:
INCLUDE SPECIAL SIGN DETAILS IN THE TRAFFIC CONTROL PLAN IN TABLE TWO.

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