COUNTY OF MARTIN
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

EAST CHAIN TOWNSHIP ROAD 143 (20TH ST.)

CONSTRUCTION PLAN FOR: BRIDGE REPLACEMENT (OVER J.D. NO.7)

LOCATION (GEOGRAPHIC DESCRIPTION) BEGINNING AT A POINT 3,440.44' EAST OF JCT. 20TH ST. (EAST CHAIN TWP. RD. 143) AND 300TH AVE (EAST CHAIN TWP. RD. 294) AND THENCE TERMINATING 500 FEET EAST ON 20TH ST. (EAST CHAIN TWP. RD. 143).

LOCATED (LEGAL DESCRIPTION) BEGINNING AT A POINT 1,100 FEET E. OF S 1/4 SEC. 25 T101N–R29W. AND THENCE EAST ALONG THE SOUTH LINE OF SAID SEC. 25 500 FEET THENCE TERMINATING.

GROSS LENGTH	500.00 FEET	0.094	MILES
BRIDGES LENGTH	10.00 FEET	0.001	MILES
EXCEPTIONS LENGTH	0.00 FEET	0.000	MILES
NET LENGTH	500.00 FEET	0.094	MILES

INDEX OF SHEETS

THIS PLAN CONTAINS 9 SHEETS

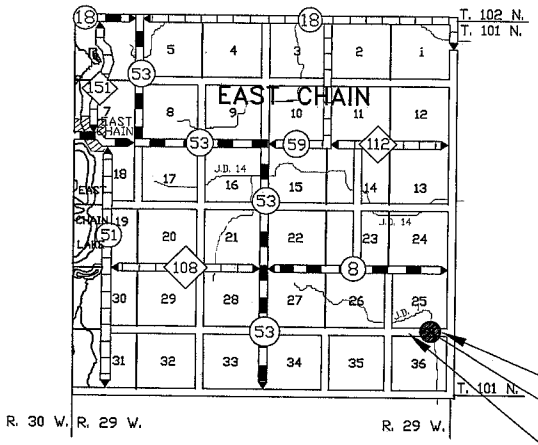
SCALES

PLAN 50 ft 0 ft 50 ft SCALE FEET 1:50 HORZ.

PROFILE 5 ft 0 ft 5 ft SCALE FEET 1:5 VERT.

X–SECTIONS 5 ft 0 ft 5 ft SCALE FEET 1:5 VERT.

INDEX MAP 5280 ft 0 ft 5280 ft SCALE FEET 1:5280 HORZ.



END S.A.P. 46–599–72
STA. 16+00.00

BRIDGE 46J26 (REPLACES BRIDGE R0469)
STA. 13+47.93

BEGIN S.A.P. 46–599–72
STA. 11+00.00

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
SLOPE EASEMENT
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
DRAINAGE 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 SIGNAL
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN PEG
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITIES SYMBOLS

POWER POLE
TELEPHONE POLE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
UNDERGROUND TELEPHONE CABLE TERMINAL
GAS MAIN
WATER MAIN
GATE VALVE
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: THE SUBSURFACE UTILITY IN THIS PLAN IS UTILITY QUALITY LEVEL "D". THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF THE EXISTING SUBSURFACE UTILITY DATA".

DESIGN DESIGNATION (RURAL)

ADT (CURRENT YEAR) UNDER 50 (2009)
ADT (FUTURE YEAR) N/A
HCADT N/A
N/A TON DESIGN
DESIGN SPEED 55 M.P.H.
FUNCTIONAL CLASSIFICATION MINOR
NO. OF TRAFFIC LANES 2
NO OF PARKING LANES 0
SHOULDER WIDTH 1.0 ft.
PROJ. SOIL FACTOR 130%
STOPPING SIGHT DISTANCE BASED ON:
3.5 ft. HEIGHT OF EYE
2.0 ft. HEIGHT OF OBJECT

"FOR INFORMATIONAL PURPOSES ONLY"

IN NO WAY SHOULD THESE DRAWINGS BE USED IN LIEU OF CONTACTING GOPHER ONE CALL FOR EXACT UTILITY LOCATIONS.

UTILITY COMPANIES

UTILITY	OWNER	TELEPHONE NO.
TELEPHONE	BEVCOMM	(507) 526–5260
ELECTRIC	BENCO ELECTRIC	(507) 387–7963
ELECTRIC	FEDERATED RURAL ELECTRIC	(712) 732–3727
TELEPHONE	FRONTIER COMMUNICATIONS	(952) 891–2583

GOVERNING SPECIFICATIONS

THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" 2005 EDITION DATED AUGUST 31, 2005 SHALL GOVERN.

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

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

Kevin Peyman — DATE 4/20/2009
KEVIN PEYMAN, COUNTY ENGINEER

MARTIN COUNTY — REG. NO. 40,907

DATE 7/23/09
DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY.

DATE 7/23/09
APPROVED: FOR STATE AID FUNDING — STATE AID ENGINEER.

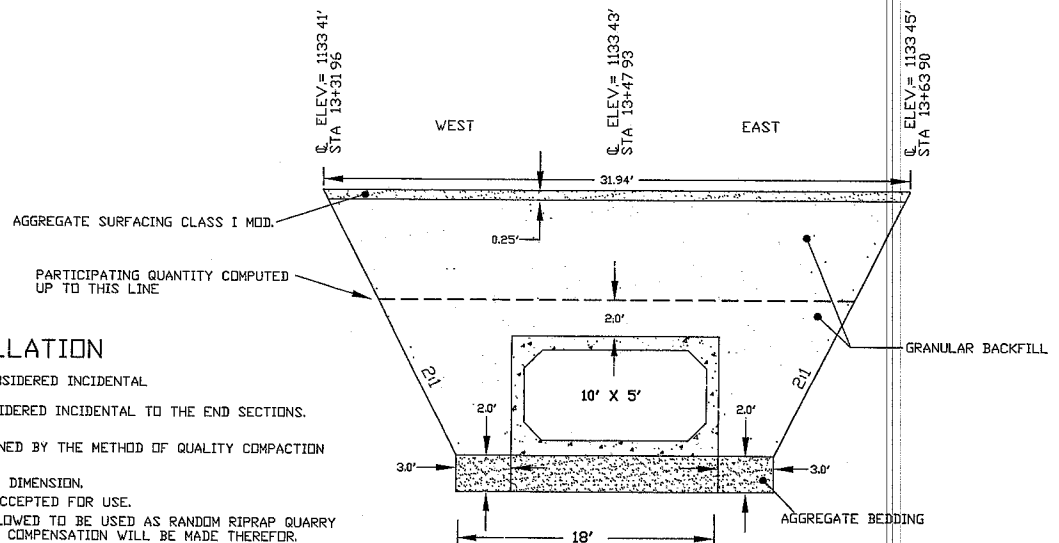
ESTIMATED QUANTITIES

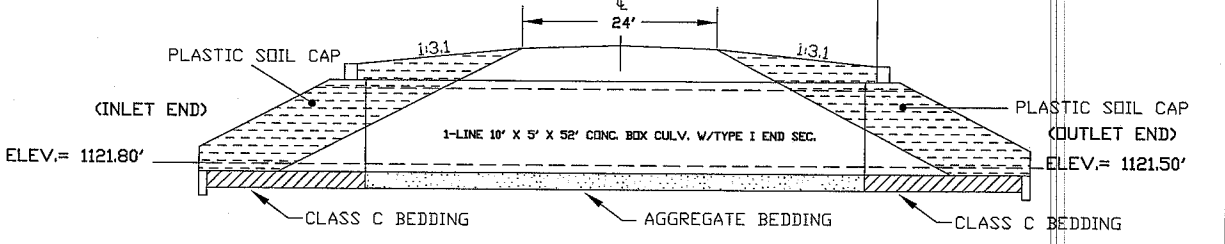
	SPECIFICATION NO.	ITEM	UNIT	PARTICIPATING	NON PARTICIPATING	TOTAL ESTIMATED QUANTITIES
	2104.501	REMOVE PIPE CULVERT	LIN. FT.	-----	108	108
	2105.501	COMMON EXCAVATION	CU. YD.	-----	237 (P)	237 (P)
	2118.501	AGGREGATE SURFACING CLASS I MOD	TON	-----	275	275
1.)	2412.511	10' X 5' X 52' PC CONC BOX CULVERT (CLASS II)	LIN. FT.	52	-----	52
2.)	2412.512	10' X 5' PC CONC BOX CULV END SECTION (TYPE I)	EACH	-----	-----	2
3.)	2442.501	REMOVE OLD BRIDGE	LUMP SUM	-----	1	1
4.)	2451.503	GRANULAR BACKFILL (CV)	CU. YD.	214 (P)	228 (P)	442 (P)
5.)	2451.509	AGGREGATE BEDDING (CV)	CU. YD.	67 (P)	-----	67 (P)
6.)	2501.511	18" CS PIPE CULVERT	LIN. FT.	-----	234	234
7.)	2511.501	RANDOM RIPRAP CLASS III (QUARRY STONE)	CU. YD.	20	-----	20
	2575.501	SEEDING	ACRE	-----	0.4	0.4
	2575.502	SEED MIXTURE GENERAL ROADSIDE 250	POUND	-----	30	30
	2575.511	MULCH MATERIAL TYPE 1	TON	-----	0.8	0.8
	2575.519	DISK ANCHORING	ACRE	-----	0.4	0.4
8.)	2575.523	EROSION CONTROL BLANKET TYPE CATEGORY 5	SQ. YD.	-----	611	611
	2575.532	COMMERCIAL FERTILIZER ANALYSIS (24-12-24)	POUND	-----	140	140

CULVERT SECTIONS

DRAWINGS ON THIS SHEET ARE NOT TO SCALE

OUTLET END VIEW





CONSTRUCTION NOTES FOR ℄ CONCRETE BOX CULVERT INSTALLATION

1.) CULVERT EXCAVATION AND CONSTRUCTION OF THE PLASTIC SOIL CAPS ON BOTH ENDS OF THE CULVERTS SHALL BE CONSIDERED INCIDENTAL TO THE CULVERT INSTALLATION.

2.) DROP WALLS SHALL BE INCLUDED ON THE INLET AND OUTLET ENDS OF THE TYPE I END SECTIONS AND SHALL BE CONSIDERED INCIDENTAL TO THE END SECTIONS.

3.) BRIDGE NO. R0469

4.) THE DENSITY OF THE GRANULAR BACKFILL, AGGREGATE BEDDING AND THE AGGREGATE SURFACING SHALL BE THAT ATTAINED BY THE METHOD OF QUALITY COMPACTION IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3F2.

5.) THE AGGREGATE BEDDING SHALL CONSIST OF A CRUSHED ROCK MATERIAL EVENLY GRADED BETWEEN 3/4" AND 2 1/2" IN DIMENSION.

6.) C.S. SPIRAL CULVERT SHALL NOT BE USED ON THIS PROJECT, ONLY CORRUGATED STEEL RIVETED CULVERTS WILL BE ACCEPTED FOR USE.

7.) RANDOM RIPRAP CLASS III SHALL BE QUARRY STONE. LIMESTONE OR ANY CALCAREOUS TYPES OF ROCK WILL NOT BE ALLOWED TO BE USED AS RANDOM RIPRAP QUARRY STONE. GRANULAR OR GEOTEXTILE FILTER MATERIAL SHALL BE CONSIDERED INCIDENTAL TO THE RIPRAP, AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

8.) THE CATEGORY 5 EROSION CONTROL BLANKETS SHALL CONFORM TO NORTH AMERICAN GREEN C-125 OR EQUIVALENT.

9.) COUNTY WILL SUPPLY RODENT GUARDS FOR TILE INSTALLATION.

BASIS FOR PLANNED QUANTITIES

AGGREGATE SURFACING, CLASS I MOD. - 140 LBS./CU. FT. COMPACTED DRY DENSITY. ASSUMED TO CONTAIN 4% MOISTURE BY WEIGHT

SEED, MIXTURE GENERAL ROADSIDE 250 - 75 LBS./ACRE

MULCH MATERIAL, TYPE 1 - 2 TONS/ACRE

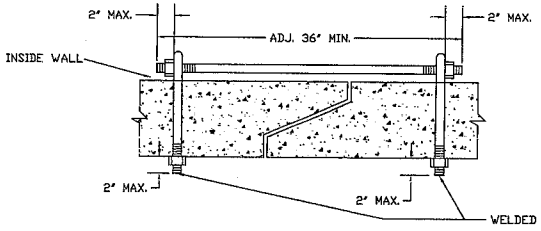
COMMERCIAL FERTILIZER, ANALYSIS 24-12-24 - 350 LBS./ACRE

* COMMON EXCAVATION = 237 CU. YARDS
* EMBANKMENT = 332 CU. YARDS
* SHRINKAGE = 40%

STANDARD PLATES

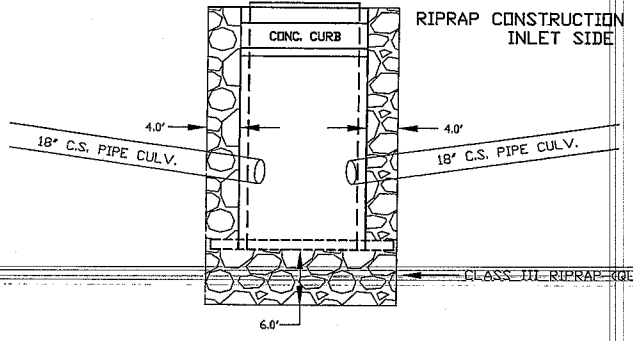
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

PLATE NO.	DESCRIPTION
3040 F	CORRUGATED METAL PIPE CULVERT
3145 F	CONCRETE PIPE TIES (EYE BOLT TIE)
8000 I	STANDARD BARRICADES
9000 D	APPROACHES AND ENTS. (MODIFY SIDE SLOPES TO 1:3)



EYE BOLT AND TIE BOLT ASSEMBLY INCIDENTAL TO CULVERT & END SECTION CONSTRUCTION. THIS ASSEMBLY TO BE USED WHERE NORMAL EYE BOLT TIE IS NOT ACCESSIBLE.

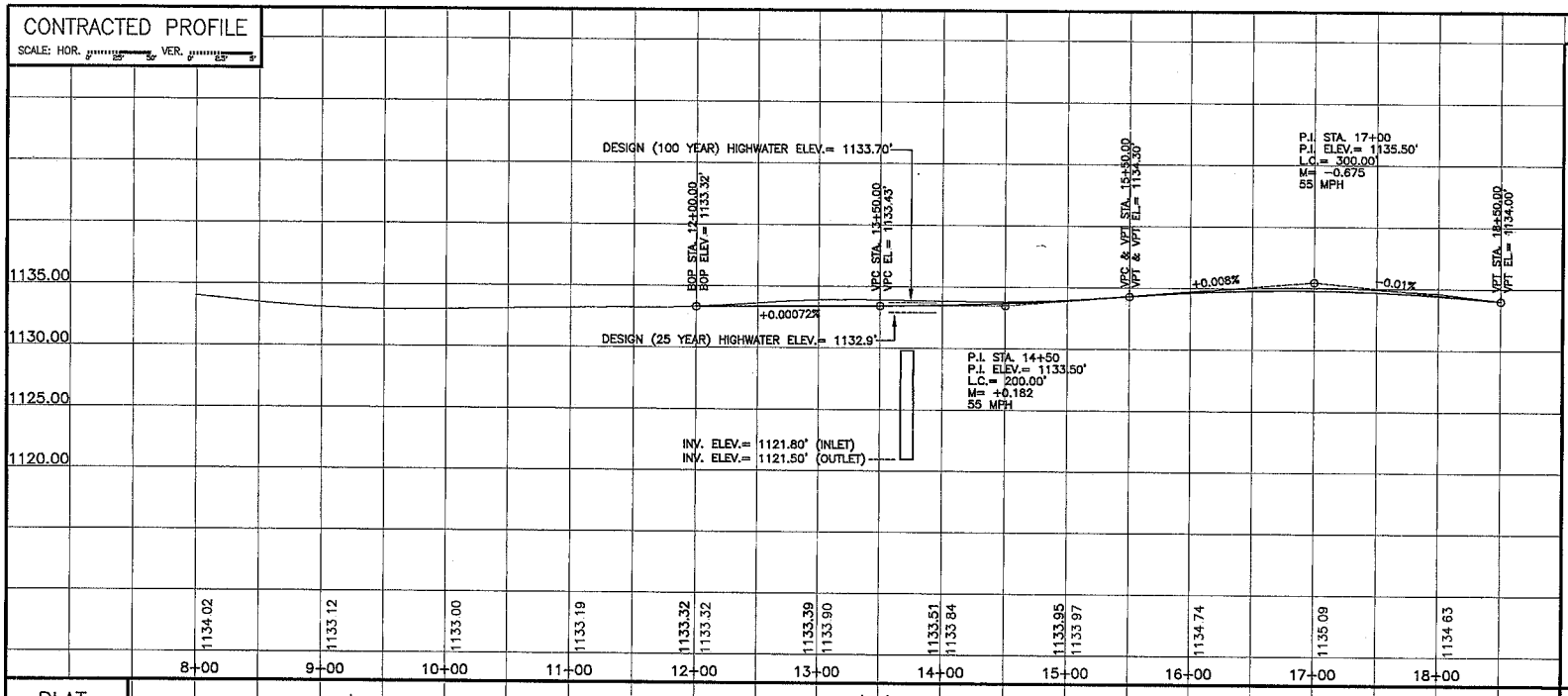
RIPRAP CONSTRUCTION (TOP VIEW) INLET SIDE



CERTIFIED BY _____ REG. NO 40,907 S.A.P. 46-599-72 EAST CHAIN TOWNSHIP ROAD 143 MARTIN COUNTY SHEET 2 OF 9 SHEETS

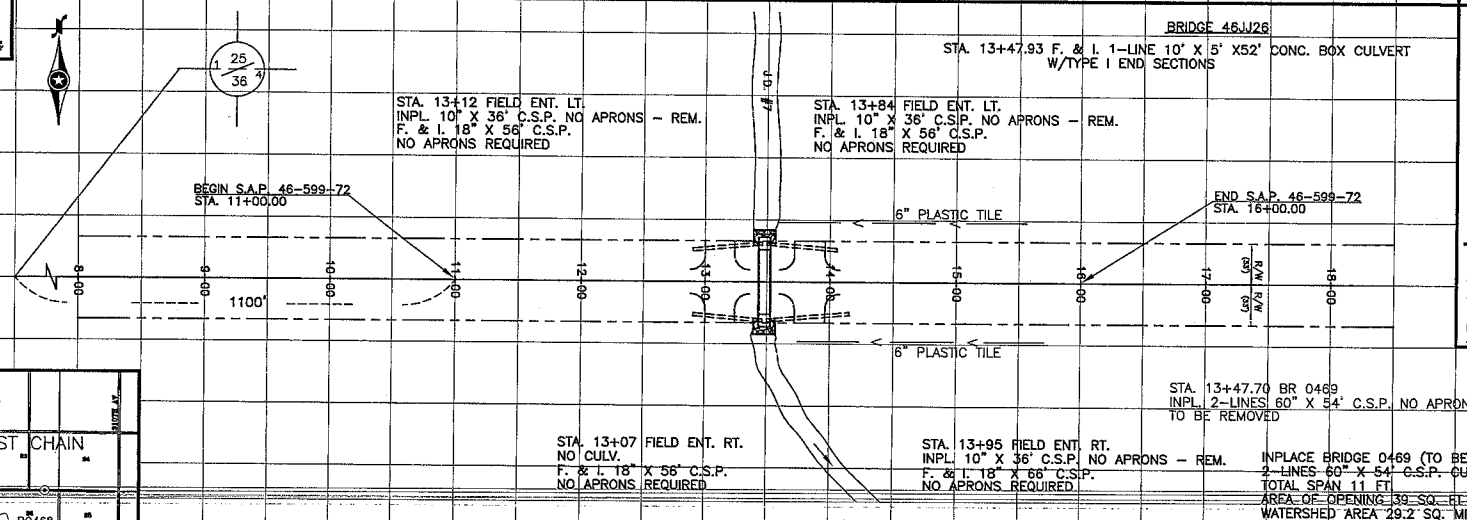
CONTRACTED PROFILE

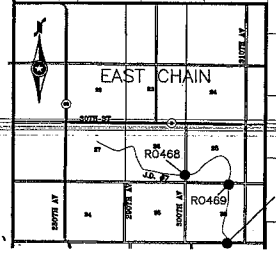
SCALE: HOR. 0' 25' 50' VER. 0' 5'



PLAT

SCALE: 0' 25' 50'





Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks,

2. Other bridges or culverts over the same stream (part. structures which carry high water without overflow of roadway) :Given location, length, type, height above high water, cross-sectional area etc.
APPROX. 1/4 MILE UPSTREAM IS BRIDGE R0468 1-LINE 48" X 50' C.S.P. CULVERT & 1-LINE 60" X 50' C.S.P. AREA OF OPENNING 32 SQ. FT. WATERSHED AREA 28 SQ. MI. BUILT IN 1970. APPROX. 1/4 MILE DOWNSTREAM IS 1-LINE 10' X 50' C.S.P. AREA OF OPENNING 78.5 SQ.FT. WATERSHED AREA 30.4 SQ. MI. BUILT IN 1977.

3. Apparent highwater elevation 1134.40' Obtained from LOCAL FARMER

4. Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 3/20/2009

Stream or ditch designation J.D. #7
Drainage area 5.9 S.Q. MI.
Max. flood on record UNKNOWN Design flood (25 yr. freq.) 385 C.F.S.
Max. observed highwater elevation 1134.32' Design hw. elev. 1132.9'
Design mean velocity through structure 8.0 F.P.S.
Low superstructure at or above elevation N/A
Flowline elevation INLET ELEV.= 1121.80' OUTLET ELEV.= 1121.50' Skew angle 0°
Waterway area req'd. below elevation =Sq. Ft. at Rt. angles to the channel N/A

In the interest of flood plain zoning the regional flood (100 yr.) is 600 C.F.S. at stage 1133.7' and mean velocity of 1.8 F.P.S. with 0.4 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Department of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE 3/20/2009

1-LINE 10' X 5' X 52' CONCRETE BOX CULVERT

Bridge survey sheets made from: SURVEY BY MARTIN COUNTY HIGHWAY DEPT. ON AUGUST 9, 2007 BY B.W. & S.M

Bench mark elevation 1157.370' (NAVD 1988)
Location: STEEL ROD WITH 5" LOGO CAP KOSSUTH 504

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

(20TH ST.)

AT MILE POINT 0.2 ON TWP. RD. 143
PROPOSED BRIDGE LOCATED 12.7 MILES SE OF FAIRMONT, MINNESOTA
SEC. 25 & 36 TWP. 101N. R. 29W.
TOWNSHIP EAST CHAIN COUNTY MARTIN
EXIST. BRIDGE NO. R 0469
PROP. BRIDGE NO. 46J26

CERTIFIED BY [signature] REG. NO. 40,907 | S.A.P. 46-599-72 EAST CHAIN TOWNSHIP ROAD 143 MARTIN COUNTY | BRIDGE 46J26 | SHEET 3 OF 9