

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Martin P. Cleveland, Construction Engineer

SUBJECT: Papillion Creek Watershed Structure W-2 Improvements Project
Bids (Project 502 W-2)

DATE: December 1, 2009

Attached is a location map and some plan sheets related to the referenced repair project. This 1972 vintage dam is located northwest of Kennard, Nebraska, and has experienced principal spillway pipe joint separation and wet downstream slope. The wet site conditions appear to have caused the pipe joint separation. This project consists of repairing three pipe joints and installing four sand drains in the downstream slope to intercept seepage. The proposed repair project was recommended and approved by the Nebraska Department of Natural Resources, Dam Safety Section. A bid summary is attached for your consideration. The apparent low bidder is Pruss Excavation Company, with a total base bid of \$45,169.00. The Engineer's opinion of probable construction cost is \$38,337. The Engineer's recommendation letter is attached.

This work will be funded via funds included in Project Maintenance General Contract Work (Account 010312 4479). As of November 6, 2009 remaining funds in this account was \$2,092,115.70. It is anticipated that this project will be completed in Fiscal Year 2010. In the fiscal year 2010 budget, \$50,000 was allocated for this repair project.

It is Management's recommendation that the Subcommittee recommend to the Board of Directors that the General Manager be authorized to execute a contract for the Papillion Creek Watershed Structure W-2 Improvements, with Pruss Excavation Company, for their total base bid of \$45,169.00.

Summary of Bid Proposals

Project: Papillion Creek Watershed Structure W-2 Improvements Project
 Opening Date: November 24, 2009

NRD Project No. 502 W-2
 Opening Time: 10:00 a.m.

1 2

| ITEM NO. | ITEM DESCRIPTION | UNIT | ESTIMATED QUANTITY* | BIDDERS NAME: | | Pruss Excavation Co. |
|----------|--|----------|---------------------|--------------------|----------------------------|----------------------|
| | | | | ENGINEER'S OPINION | Thompson Construction Inc. | |
| 1 | Mobilization and Demolization | Lump Sum | 1 | 3,000 | | |
| 2 | Surveying and Staking | Lump Sum | 1 | 500 | 2,000.00 | 17,225.00 |
| 3 | Dewatering | Lump Sum | 1 | 5,000 | 2,000.00 | 500.00 |
| 4 | Excavation, Common | Cu. Yds. | 260 | 1,040 | 5,000.00 | 2,000.00 |
| 5 | Earthfill, Borrow Compacted | Cu. Yds. | 95 | 522 | 2,900.00 | 3,900.00 |
| 6 | Drainfill, Sand Drain | Cu. Yds. | 92 | 4,600 | 1,600.00 | 2,700.00 |
| 7 | Drainfill, Drain Outlet Filter | Cu. Yds. | 18 | 900 | 10,000.00 | 4,837.00 |
| 8 | Rock Riprap | Tons | 20 | 600 | 2,000.00 | 946.00 |
| 9 | Crushed Rock Bedding | Tons | 10 | 250 | 2,500.00 | 701.00 |
| 10 | Plastic Pipe (PVC), 6" Dia. Perforated | Lin. Ft. | 250 | 3,375 | 1,100.00 | 305.00 |
| 11 | Ductile-Iron Pipe, 6"Dia. | Lin. Ft. | 40 | 1,700 | 4,500.00 | 1,500.00 |
| 12 | Joint Repairing Assembly | Each | 3 | 9,000 | 1,600.00 | 1,080.00 |
| 13 | Seeding and Erosion Control Blanketing | Sq. Yds. | 1,900 | 2,850 | 5,500.00 | 2,325.00 |
| 14 | Pollution Control | Lump Sum | 1 | 5,000 | 5,500.00 | 6,650.00 |
| 15 | Total Base Bid (Add items 1 thru 14) | | | 38,337 | 1,500.00 | 500.00 |
| | | | | 47,700.00 | | 45,169.00 |

* Quantities are provided to contractor as information only and it is the responsibility of the contractor to verify quantities. Job is to be bid as lump sum, and no adjustments to quantities will be made.

Bid Bond (5%)

| | |
|---------------|-----------------|
| Yes/No | Yes |
| Rock Supplier | Martin Marietta |
| | Martin Marietta |
| | Yes |
| | Yes |

* Apparent Low Bidder is Pruss Excavation Co.

Engineer's Opinion of Cost: \$38,337



ONE COMPANY | *Many Solutions*

Sent Electronically on November 30, 2009

November 30, 2009

Martin Cleveland, PE
Construction Engineer
Papio-Missouri River Natural Resources District
8901 S. 154th Street
Omaha, NE 68138-3621

RE: Rehabilitation of GSS Papillion Creek Watershed Structure W-2, Washington County
Recommendation of Award

Dear Martin:

HDR Engineering, Inc. has evaluated the bid forms submitted on the improvements of W-2 and recommends award to Pruss Excavation Co. for a lump sum contract price of \$45,169. Based on a lump sum contract price, the lowest responsive bidder was Pruss. The schedule of values submitted by the perspective bidders in the bid form will provide a breakdown to be used in preparing payment applications. Pruss also has provided a bid bond in equal to 5 percent of the total bid price. Pruss has experience with working on construction of embankment structures with the P-MRNRD and with other NRDs.

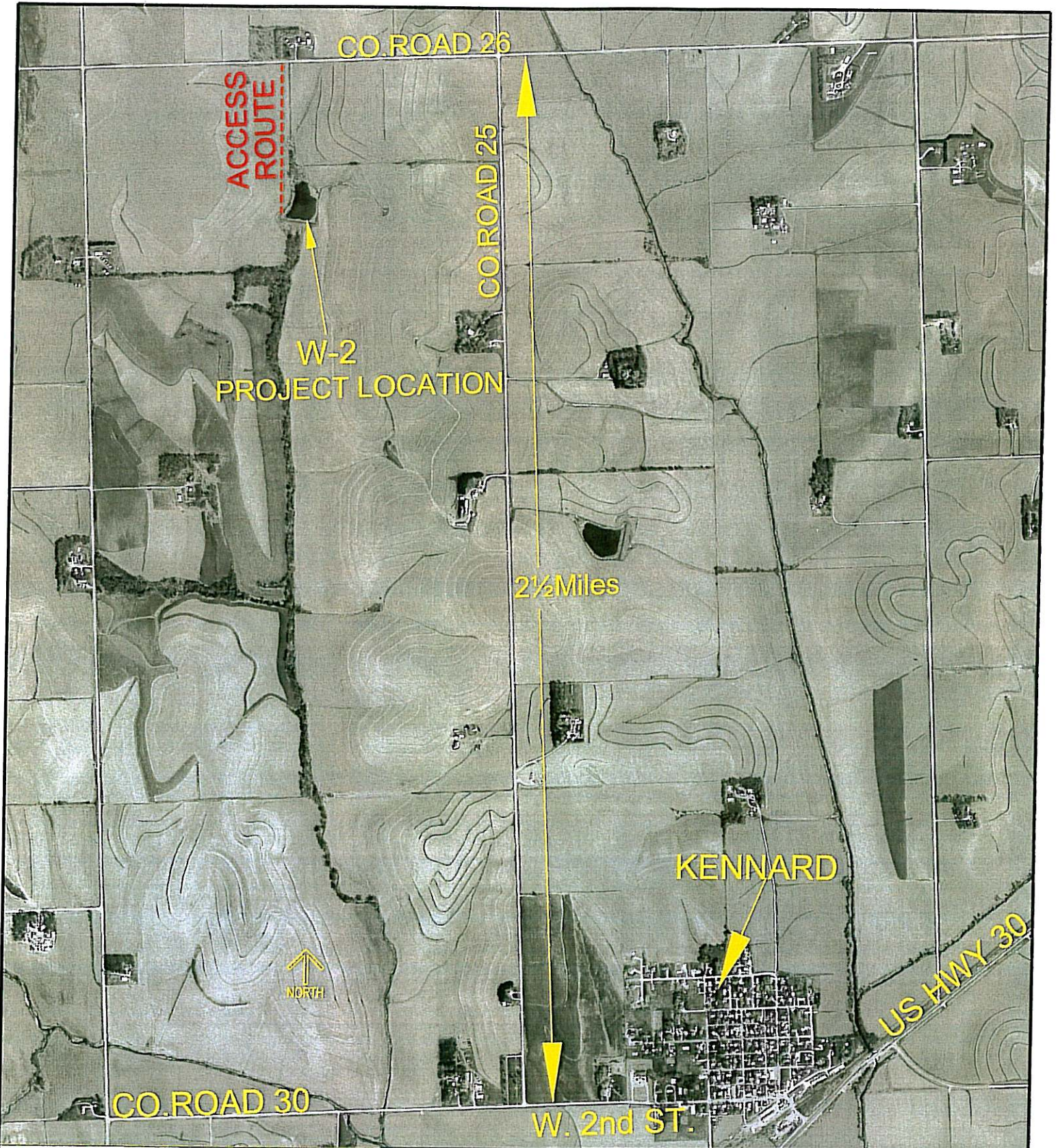
If you have any questions, please contact me at 399-1082 at your convenience.

Very truly yours,

HDR ENGINEERING, INC.

Troy R. Meyer, P.E.
Senior Civil Project Engineer

NOV 30 2009



Legal Description:
Sec 30 T18 N , R11 E

Structure W-2 is located within the jurisdiction of Washington County, NE, Approximately 2 miles North, & 1 mile West of Kennard, NE



8901 S. 154th St.
Omaha, NE 68138-3621

TITLE

PAPIO CREEK WATERSHED STRUCTURE
W-2
IMPROVEMENT PROJECT
Location Map

NO SCALE

Figure 1

Date: 11/4/09

STRUCTURE W-2 IMPROVEMENTS PAPILLION CREEK WATERSHED

WASHINGTON COUNTY, NEBRASKA

SPONSORED BY: PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

DESIGNED BY: HDR ENGINEERING, INC.
OMAHA, NEBRASKA

Preliminary Drawings
August 2009

APPLICANT'S CERTIFICATE
STATE OF NEBRASKA)
WASHINGTON COUNTY) SS.

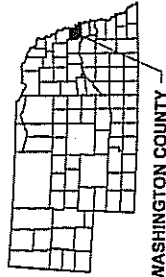
I HEREBY CERTIFY THAT THESE DRAWINGS WERE
MADE WITH MY FULL KNOWLEDGE AND CONSENT.

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

10-8-09 2009 BY: *John Winkler*
JOHN WINKLER, GENERAL MANAGER

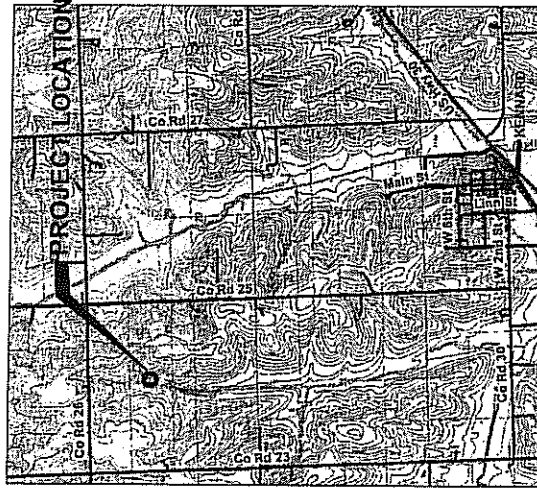


NEBRASKA



WASHINGTON COUNTY

VICINITY MAP



Sec 30, T 18 N, R 11 E
Structure W-2 is located within the jurisdiction of
Washington County, NE., Approximately 2 miles North
and 1 mile West of Kennard, NE.
National Inventory of Dams
Identification Number: NE000463

STRUCTURE W-2 IMPROVEMENTS
PAPILLION CREEK WATERSHED
WASHINGTON COUNTY, NEBRASKA

HDR

PAPIO-MISSOURI RIVER
NATURAL
RESOURCES
DISTRICT



DRW. SHE.

Drawing No.

1 of 9

SHEET INDEX

| SHEET NO. | SHEET TITLE |
|-----------|-------------------------------------|
| 1 | COVER SHEET |
| 2 | GENERAL SHEET |
| 3 | LOCATION PLAN |
| 4 | SITE PLAN |
| 5 | SAND DRAIN PROFILES |
| 6 | SAND DRAIN AND DRAIN OUTLET DETAILS |
| 7 | PROFILE OF PRINCIPAL SPILLWAY |
| 8 | JOINT REPAIR AND EROSION DETAILS |
| 9 | GEOLOGIC INFORMATION |

THESE CONFORMED DRAWINGS WERE ORIGINALLY APPROVED
AND SEALED ON OCTOBER 8, 2009 BY TROY R. MEYER, A
LICENSED PROFESSIONAL ENGINEER IN THE STATE OF
NEBRASKA (E-9566).

10818

RECEIVED

OCT 13 2009

DEPARTMENT OF
NATURAL RESOURCES

10/13/2009 - 11/16/2009 - P.M.
Department of Natural Resources

COVER SHEET

APPROVED OCT 28 2009
Department of Natural Resources
R. A. Dunigan
Director



NOV 2 2009 109

Approved _____
Checked _____
Drawn _____
Detail _____
Date _____

JTM
JRM
JRM
JRM

JRM
JRM
JRM
JRM

**STRUCTURE W-2 IMPROVEMENTS
 PAPILLON CREEK WATERSHED
 WASHINGTON COUNTY, NEBRASKA**



2 of 9
 Drawing No.

CONSTRUCTION NOTES

- THE INTENT OF THIS PROJECT IS TO DRY THE EMBANKMENT OF THE DAM VIA A SERIES OF TRENCHED SAND DRAINS. THE CONTRACTOR IS TO MINIMIZE THE DISTURBANCE TO THE REMAINDER OF THE SLOPE AND SHALL AVOID, AS MUCH AS POSSIBLE, ANY PROLONGED PERIODS OF OTHER TRAFFIC.
- THE CONTRACTOR WILL INSPECT THE CONSTRUCTION AREA FOR THE PRESENCE OF UTILITY FACILITIES BOTH SURFACE AND SUBSURFACE. ANY UTILITY FACILITIES ARE TO BE MAINTAINED. SYSTEM PHONE: 1-800-331-5668.
- REINFORCED CONCRETE SHALL BE MASONRY CONSTRUCTION. PLANTING AND/OR BRUSHING SHALL BE ALLOWED TO PROCEED. SEEPAGE TO DRAIN FROM THE EMBANKMENT. ADDITIONAL DRAINAGE MAY BE NECESSARY IF THE WATER LEVEL RISES IN THE POOL AREA AND THE EMBANKMENT BECOMES WET.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY FIELD CONDITIONS THAT MAY WARRANT DEVIATIONS FROM THE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT DISTURB ANY AREAS BEYOND THE PROJECT LIMITS. ANY DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION. REVEALINGS SHALL BE BLANKETED WITH NORTH AMERICAN GREEN STABILIZATION CONTROL BLANKETS OR APPROVED EQUAL. BLANKET SHALL BE INSTALLED AND ANCHORED PER MANUFACTURERS RECOMMENDATIONS.
- BORROW FOR EARTH FILL SHALL BE SUPPLIED BY THE CONTRACTOR. SEE SPECIFICATIONS FOR SOIL REQUIREMENTS.
- ALL EARTH FILL SHALL BE COVERED BY A 5 FT. TO 1.0 FT. OF TOP SOIL NORMAL TO THE SLOPE OF THE STRUCTURE.
- THE EXISTING CONCRETE REINFORCED CONCRETE PIPE CONDUIT, CONCRETE BEDDING AND PIPE SUPPORTS ARE TO BE USED IN PLACE. THE CONTRACTOR IS COMPLETELY RESPONSIBLE TO REMOVE ALL EXISTING CONCRETE REINFORCEMENT AT THEIR ACTIVITIES AND SHALL REPAIR OR REPLACE THE CONDUIT AT THEIR COST. IF DAMAGE OCCURS DURING THE PERIOD OF THE CONTRACT, ANY REPAIR OR REPLACEMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE WORK BEING ACCOMPLISHED. ALL EARTH FILL REQUIRES CLASS C COMPACTION.
- EXCAVATED MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR OFF-SITE IN SUITABLE UPLAND AREAS.
- ALL ELEVATIONS ON THESE DRAWINGS ARE PRESENTED IN NAVD 83 UNLESS NOTED OTHERWISE.

RESERVOIR CAPACITY TABLE

| ELEV. | AREA (ACRES) | INCREMENTAL CAPACITY (ACRE-FT.) | CUMULATIVE CAPACITY (ACRE-FT.) |
|--------|--------------|---------------------------------|--------------------------------|
| 1218.0 | 0.00 | 0.0 | 0.0 |
| 1218.0 | 0.10 | 0.1 | 0.1 |
| 1220.0 | 0.20 | 0.3 | 0.4 |
| 1220.0 | 0.30 | 0.5 | 0.9 |
| 1221.0 | 0.42 | 0.7 | 1.6 |
| 1221.0 | 0.43 | 0.8 | 2.4 |
| 1225.0 | 0.50 | 0.9 | 3.3 |
| 1230.0 | 0.70 | 1.2 | 4.5 |
| 1235.0 | 1.10 | 1.8 | 6.3 |
| 1235.0 | 1.70 | 2.8 | 9.1 |
| 1236.0 | 2.40 | 4.1 | 13.2 |
| 1238.0 | 3.10 | 5.5 | 18.7 |
| 1240.0 | 4.30 | 7.2 | 25.9 |
| 1242.0 | 5.80 | 9.9 | 35.8 |
| 1245.5 | 8.22 | 10.0 | 45.8 |
| 1244.5 | 7.50 | 10.3 | 56.1 |
| 1246.0 | 8.40 | 10.9 | 67.0 |

* THERE ARE NO CHANGES TO THE ORIGINAL DESIGN RESERVOIR DATA FOR THIS SITE. DATA OBTAINED FROM 1972 AS-BUILT PLANS. ELEVATIONS STATED ARE NAVD 83.

HYDROLOGIC AND HYDRAULIC DATA*

DRAINAGE AREA 146 ACRES, 0.22 SQ. MI.
 TIME OF CONCENTRATION = 0.24 HR. SOIL COMPLEX (NO. 7)
 100 YEAR FLOOD PLAN WITH A FREQUENCY OF 4 HR. AND RAINFALL OF 5.1 IN.
 RUNOFF = 27 IN. 273 C.F.S. PEAK = 91.5 AC. FT.
 PRINCIPAL SPILLWAY DISCHARGE = W.S. EL. 1242.5 = 187 C.F.S.
 EMERGENCY SPILLWAY DISCHARGE = W.S. EL. 1246.0 = 594 C.F.S.
 RESERVOIR STORAGE BELOW 1240.0 RECD. 3,250 IN. 26.9 AC. FT.
 AVAILABLE STORAGE BELOW 1246.0 RECD. 25.9 AC. FT.
 SEDIMENT STORAGE ABOVE 1240.0 RECD. 0.24 IN. 4.9 AC. FT.
 RESER. EL. 1246.0 DETENTION STORAGE RECD. 0.10 IN. 8.2 AC. FT.
 AVAILABLE STORAGE 8.9 AC. FT.

* THERE ARE NO CHANGES TO THE ORIGINAL DESIGN HYDROLOGIC DATA FOR THIS SITE. DATA OBTAINED FROM 1972 AS-BUILT PLANS. ELEVATIONS STATED ARE NAVD 83.

LEGEND AND SYMBOLS

- BOUNDARIES
 - CLEARING AREA
 - RIGHT-OF-WAY
 - SEEDING AND MULCHING AREA
 - LIMITS OF CONSTRUCTION
 - DRAINAGE AND WATER COURSES
 - STREAMS, INTERMEDIATE
 - STREAMS, PERENNIAL
 - DRAINAGE
 - DRAINAGE DITCH
 - WATERWAY, GRASSED
- CIRCLED SYMBOL INDICATES ITEMS TO BE REMOVED.

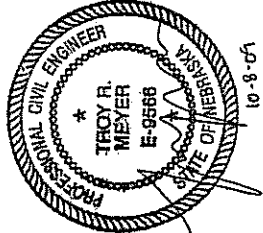
ORIGINAL STRUCTURE DATA

- FROM AS-BUILT PLANS, 1972
- PRINCIPAL SPILLWAY, CL STA 2+00
- BARREL
- 3" DIA. REINFORCED CONCRETE
- PRESSURE PIPE
- RISER 3' x 9' CONCRETE RISER
- DRAWDOWN
- N/A
- PIPE SUPPORT
- CONCRETE
- ELEVATIONS (DRAIN. NAVD 1983)
- 1242.5
- 2400
- 1239.0
- 1239.0
- 1241.0
- 1243.3
- 540/F/2/T

TABLE OF QUANTITIES*

| ITEM | UNIT | QUANTITY |
|--|-----------|----------|
| MOBILIZATION AND DEMOBILIZATION | LUMP SUM | 1 |
| SURVEYING AND STAKING | LUMP SUM | 1 |
| DEWATERING | LUMP SUM | 1 |
| EXCAVATION, COMMON | CUB. YDS. | 200 |
| EARTH FILL, BORROW, COMPACTED | CUB. YDS. | 95 |
| DRAINELL SAND DRAIN | CUB. YDS. | 18 |
| DRAINELL DRAIN OUTLET FILTER | TONS | 20 |
| ROCK STRIPS | TONS | 10 |
| CRUSHED ROCK BEDDING | TONS | 250 |
| PLASTIC PIPE (POLYETHYLENE) PERFORATED | LN. FT. | 40 |
| DUCTILE-IRON PIPE, 8" DIA. | LN. FT. | 3 |
| JOINT REPAIRING ASSEMBLY | EACH | 3 |
| SEEDING AND EROSION CONTROL BUCKETING | SQ. YDS. | 1,000 |
| POLLUTION CONTROL | LUMP SUM | 1 |

* QUANTITIES ARE PROVIDED TO CONTRACTOR AS INFORMATION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY QUANTITIES. QUANTITIES TO BE BID AS LUMP SUM, AND NO ADJUSTMENTS TO QUANTITIES WILL BE MADE.



GENERAL SHEET

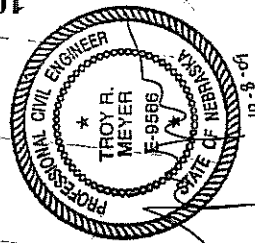
| CONTROL POINT | DATE |
|---------------|---------|
| CP-1 | 2/10/17 |
| CP-2 | 2/10/17 |
| CP-3 | 2/10/17 |

| SAND DRAIN STATIONING | COMMENTS |
|-----------------------|----------------------------------|
| 1 | 11.30' TO 11.40' FROM CENTERLINE |
| 2 | 11.40' TO 11.50' FROM CENTERLINE |
| 3 | 11.50' TO 11.60' FROM CENTERLINE |
| 4 | 11.60' TO 11.70' FROM CENTERLINE |

Approved: _____
 Checked: _____
 Drawn: _____
 Designed: _____

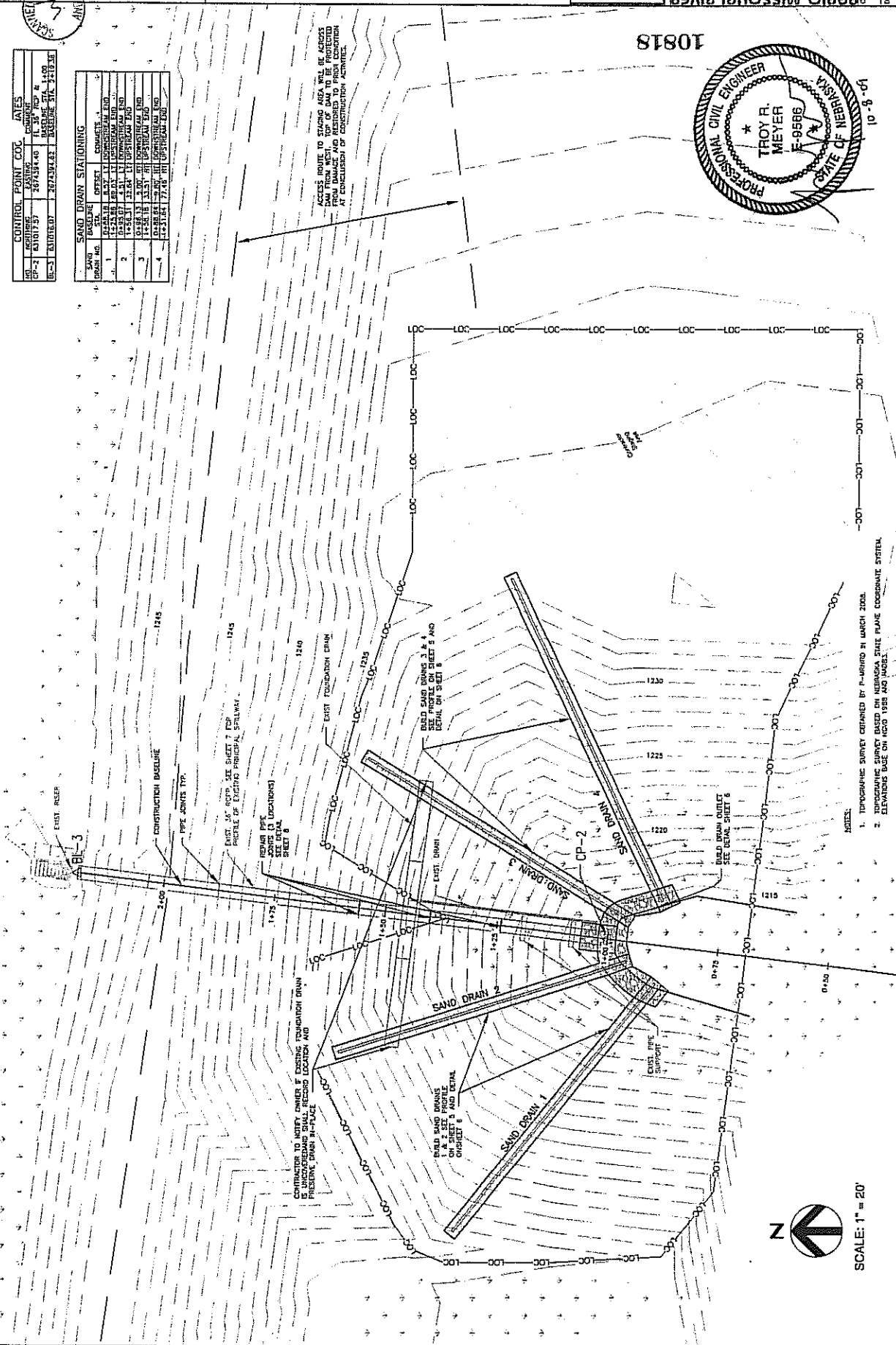
STRUCTURE W-2 IMPROVEMENTS
 PAPPILLON CREEK WATERSHED
 WASHINGTON COUNTY, NEBRASKA

NATURAL RESOURCES DISTRICT
HFR
 PAPPIO-MISSOURI RIVER
 10-3-01
 Drawing No.



SITE PLAN

4 of 9



SCALE: 1" = 20'

| | |
|----------|-----|
| Approved | JTM |
| Checked | DJK |
| Drawn | BOS |
| Design | BOS |
| Date | |

STRUCTURE W-2 IMPROVEMENTS
PAPILLION CREEK WATERSHED
WASHINGTON COUNTY, NEBRASKA

H&R

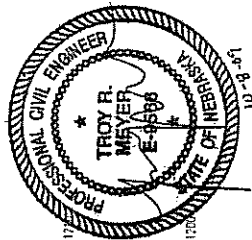
NATURAL RESOURCES DISTRICT



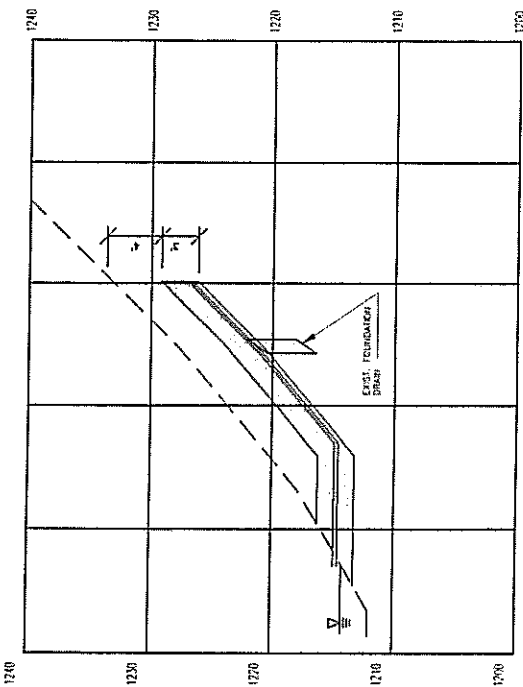
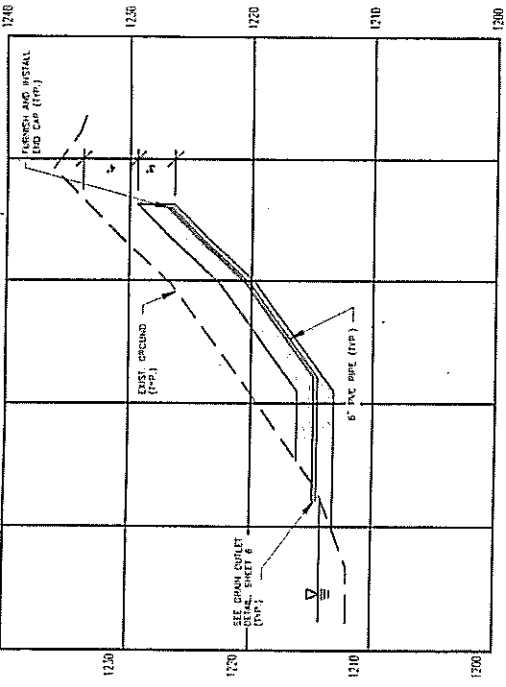
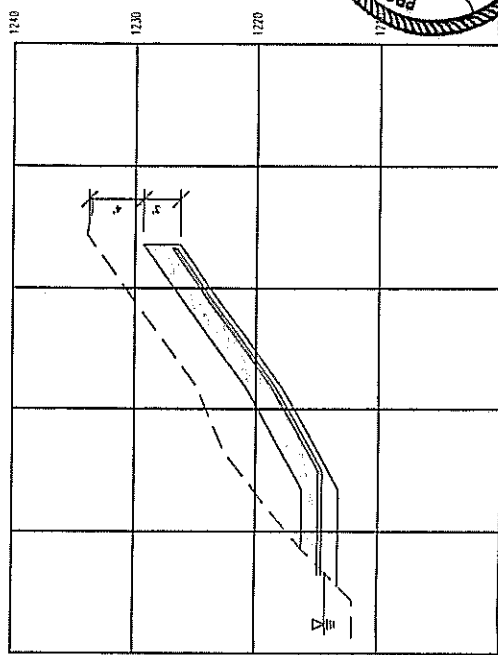
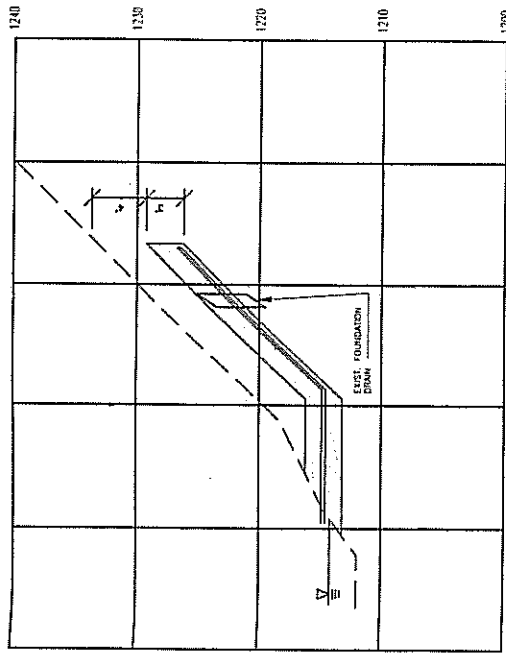
100 PC
Company Inc.



10818



SAND DRAIN PROFILES



Approved _____
 Checked _____
 Drawn _____
 Designed _____
 Date _____

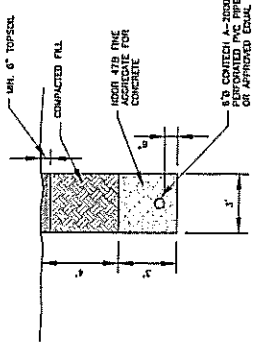
STRUCTURE W-2 IMPROVEMENTS
PAPILLION CREEK WATERSHED
 WASHINGTON COUNTY, NEBRASKA



PAPPIO-MISSOURI RIVER
NATURAL RESOURCES
DISTRICT



Drawing No. _____
 6 of 6



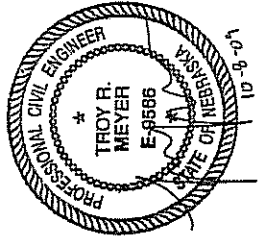
SAND DRAIN DETAIL
NOT TO SCALE

ROCK RIPRAP GRADATION
 ROCK FRAGMENTS SHALL BE ANGULAR AND WELL-SORTED AND IN ACCORDANCE WITH THE FOLLOWING GRADATION:
 MAXIMUM WIDTH: = 150 LBS.
 AT LEAST 25% = 110 TO 150 LBS.
 AT LEAST 25% = 75 TO 110 LBS.
 AT LEAST 10% = 40 TO 75 LBS.
 NOT MORE THAN 7% SMALLER THAN 2 LBS.

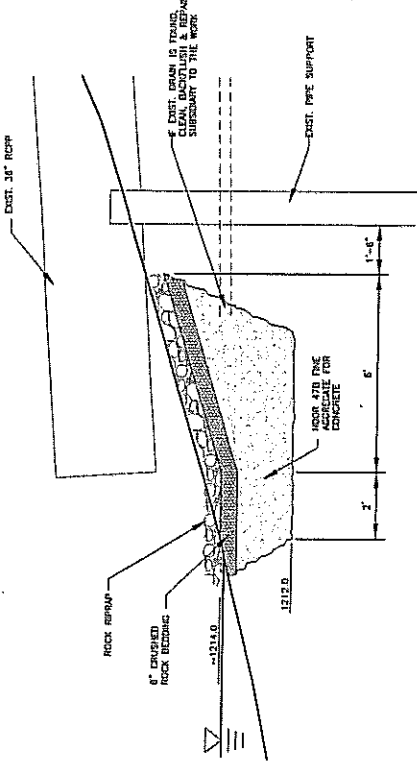
GRADATION FOR CRUSHED ROCK BEDDING
 CRUSHED ROCK TO BE PERMANENTLY WELL-SORTED, TIGHT, HARD, DENSIBLE MATERIAL MEETING THE FOLLOWING GRADATION:
 MAXIMUM SIZE 3" AVERAGE SIZE (NO. 3) 3/4"
 NOT MORE THAN 10% PASSING NO. 4 SIEVE

- NOTES:
1. PLACE PIPE CANS ON THE UPSTREAM END OF THE DRAIN PIPE.
 2. STANDARD FITTINGS SHALL BE USED IN ALL CONNECTIONS IN ORDER TO PLACE PIPE TO LINE AND GRADE AS SHOWN.
 3. METAL SLOTTED PIPE MUST BE 6" ABOVE BOTTOM OF DRAIN INLET.

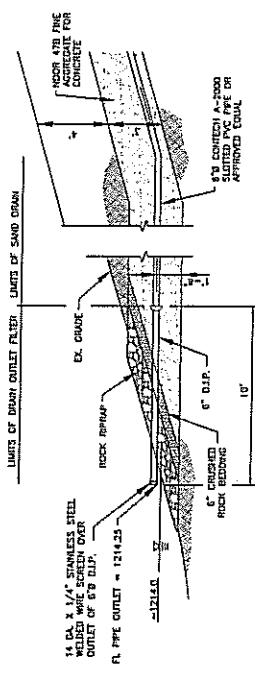
10818



SAND DRAIN AND DRAIN OUTLET DETAILS



DRAIN OUTLET FILTER DETAIL AT PIPE OUTLET
NOT TO SCALE



DRAIN OUTLET FILTER DETAIL
NOT TO SCALE

1/2" DIA. 1/4" THICKNESS STEEL
 WELDED WIRE MESH IN DRAIN
 OUTLET OF 6" D.I.P.
 P. PIPE OUTLET = 1214.25

| | |
|----------|-------|
| Approved | ----- |
| Checked | PCS |
| Drawn | RJK |
| Designed | JTM |
| Date | 8/09 |

STRUCTURE W-2 IMPROVEMENTS
PAPILLION CREEK WATERSHED
WASHINGTON COUNTY, NEBRASKA

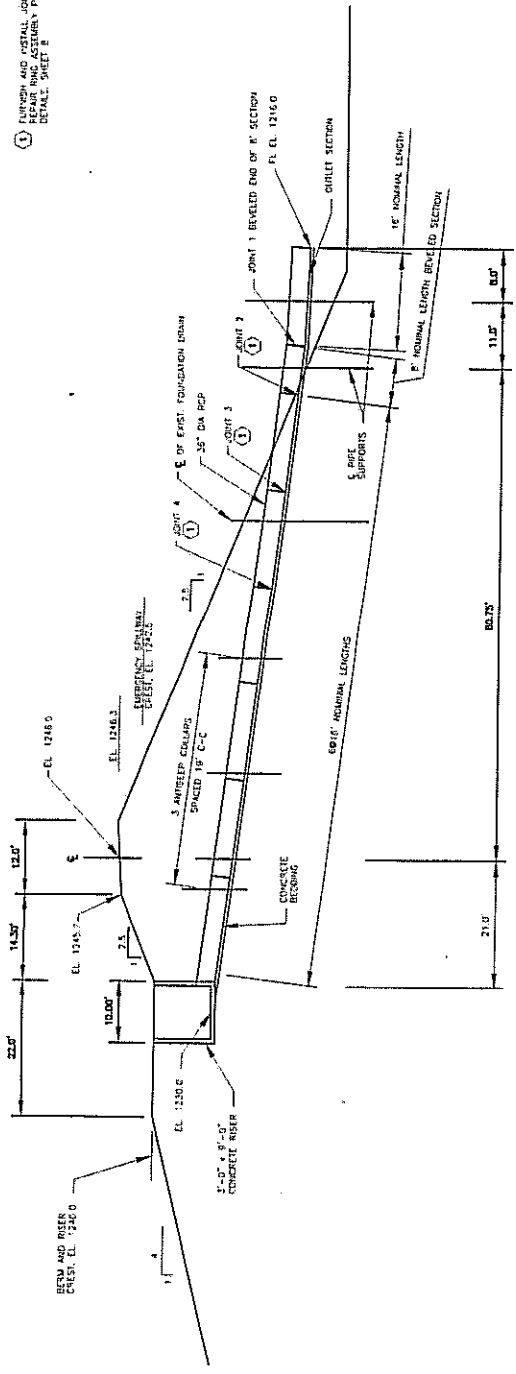


PROFESSOR OF CIVIL ENGINEERING
TROY R. MEYER
E-19586

PROJECT NO. 10818
DRAWING NO. 10818-10-8-10



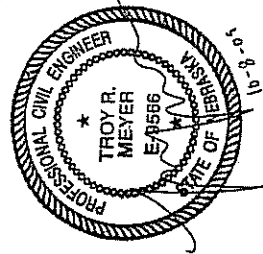
1 FINISH AND INSTALL JOINT
SEE THE NEXT DRAWING FOR
DETAIL PAGE 2



NOTES: 1. ELEVATIONS AND DIMENSIONS ARE BASED ON 45'-BENT PLAN DRAWINGS DATED JULY 6, 1972.
2. ELEVATIONS SHOWN ARE MOVD 1922 ELEVATION ADJUSTMENT FROM HCGD
1929 TO NAD 1983 IS +0.49 FEET.

**CROSS SECTION OF STRUCTURE
ALONG CENTERLINE OF PRINCIPAL SPILLWAY**

10818



PROFILE OF PRINCIPAL SPILLWAY

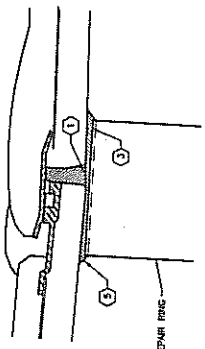
DATE _____
 DESIGNED BY TRM
 DRAWN BY DPK
 CHECKED BY PGB
 APPROVED BY _____

3
 SCARF
 FILE CODED

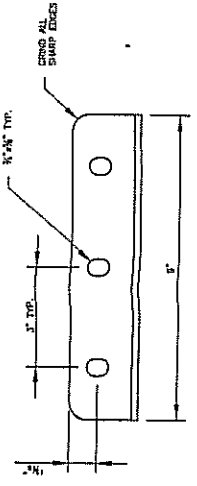
- MATERIAL**
1. IRON METAL BAND: 114" LONG x 6" WIDE x 3/4" STEEL.
 2. ANGLES: 3 1/2" x 3 1/2" GALVANIZED FOR IRON PER DETAIL. WELD 1/4" EACH SIDE, 1" FROM END OF THESE EDGE OF BAND, 11 3/4" FROM END OF OUTSIDE END OF BAND.
 3. THREADED ROD: 3/4" x 11 3/4" LONG, GALVANIZED (NOT NICKEL PLATED) - 3 ROD BAND.
 4. BANDS AND BRACKETS SHALL BE HOT-DIP GALVANIZED AFTER WELDING.
 5. GROUT SHALL BE A FINE-AGGREGATE, HIGH-STRENGTH, NON-SHREK GROUT AND SHALL MEET THE REQUIREMENTS OF ASTM C-109. STANDARD SPECIFICATION FOR GROUT FOR CONSTRUCTION OF STRUCTURES. THE MINIMUM COMPRESSIVE STRENGTH SHALL BE 10,000 POUNDS PER SQUARE INCH AT TWENTY-FOUR (24) HOURS AND INCREASE THROUGHOUT (10,000) POUNDS PER SQUARE INCH AT TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH.

INSTALLATION

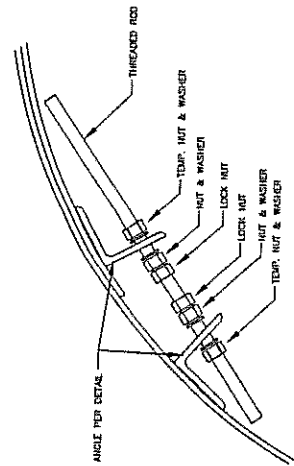
1. GROUT EXIST. JOINTS SMOOTH. (1)
2. INSERT INSPECTION METAL BAND ASSEMBLY AND PLACE. POSITION ANGLE & ROD ASSEMBLIES NEAR THE TOP OF THE PIPE.
3. PLACE GROUT BETWEEN BAND AND WALL OF PIPE PRIOR TO EXPANDING. (2)
4. EXPAND BAND TO FORM TIGHT SEAL & TIGHTEN BOLTS. (3)
5. CLEAN EXCESS GROUT. (4)



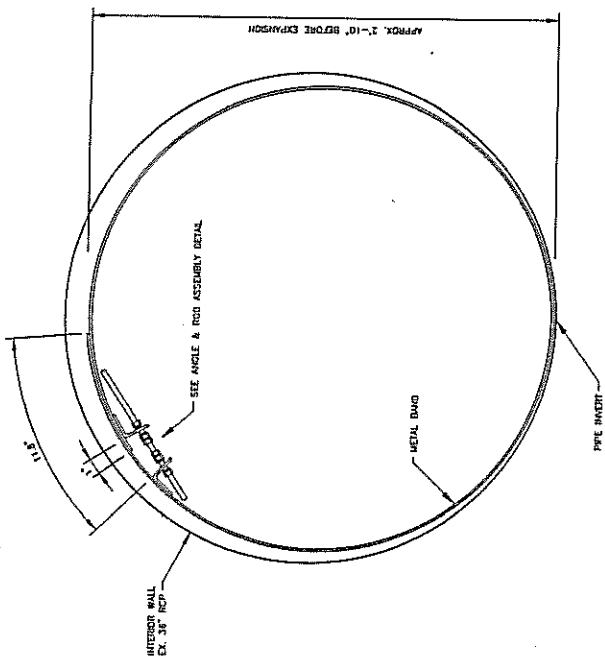
JOINT REPAIR RING



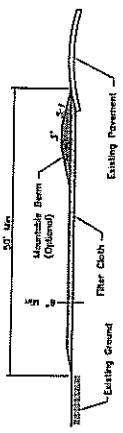
ANGLE DETAIL
 NOT TO SCALE



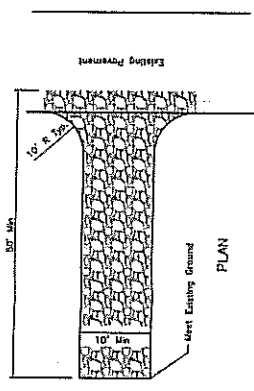
ANGLE & BAR ASSEMBLY DETAIL
 NOT TO SCALE



PIPE JOINT REPAIR RING ASSEMBLY
 NOT TO SCALE



PROFILE



PLAN

STABILIZED CONSTRUCTION ENTRANCE (CCE)
 NO SCALE

STRUCTURE W-2 IMPROVEMENTS
 PAPPILLON CREEK WATERSHED
 WASHINGTON COUNTY, NEBRASKA



PPPIO-MISSOURI RIVER
 NATURAL
 RESOURCES
 DISTRICT



PPPIO-MISSOURI RIVER
 NATURAL
 RESOURCES
 DISTRICT
 Drawing No. 8 of 9

10818

