



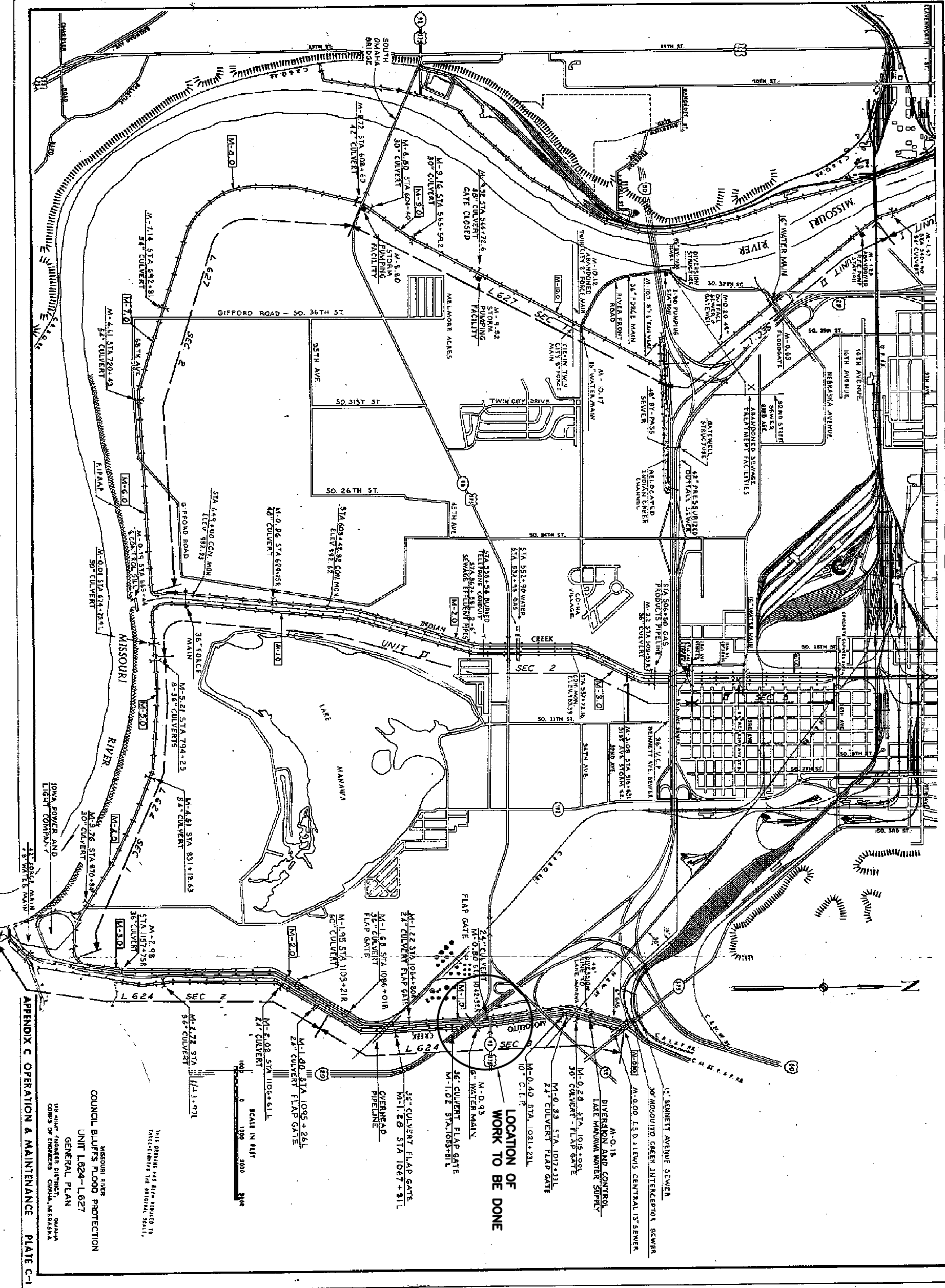
CenturyLink™

ADDRESS: I-29
COUNCIL BLUFFS, IA
CONDUIT RELOCATION
PROJECT

CENTURY LINK PROJECT
#E.299822

MAY 2012
FOR PERMIT





APPENDIX C OPERATION & MAINTENANCE PLATE C-1

MISSOURI RIVER
 COUNCIL BLUFFS FLOOD PROTECTION
 UNIT L824-L627
 GENERAL PLAN
 THIS DRAWING AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF POWER ENGINEERS, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF POWER ENGINEERS, INC.

SCALE IN FEET
 0 1000 2000 3000 3000

LOCATION OF WORK TO BE DONE

ADDRESS: I-29
 COUNCIL BLUFFS, IA

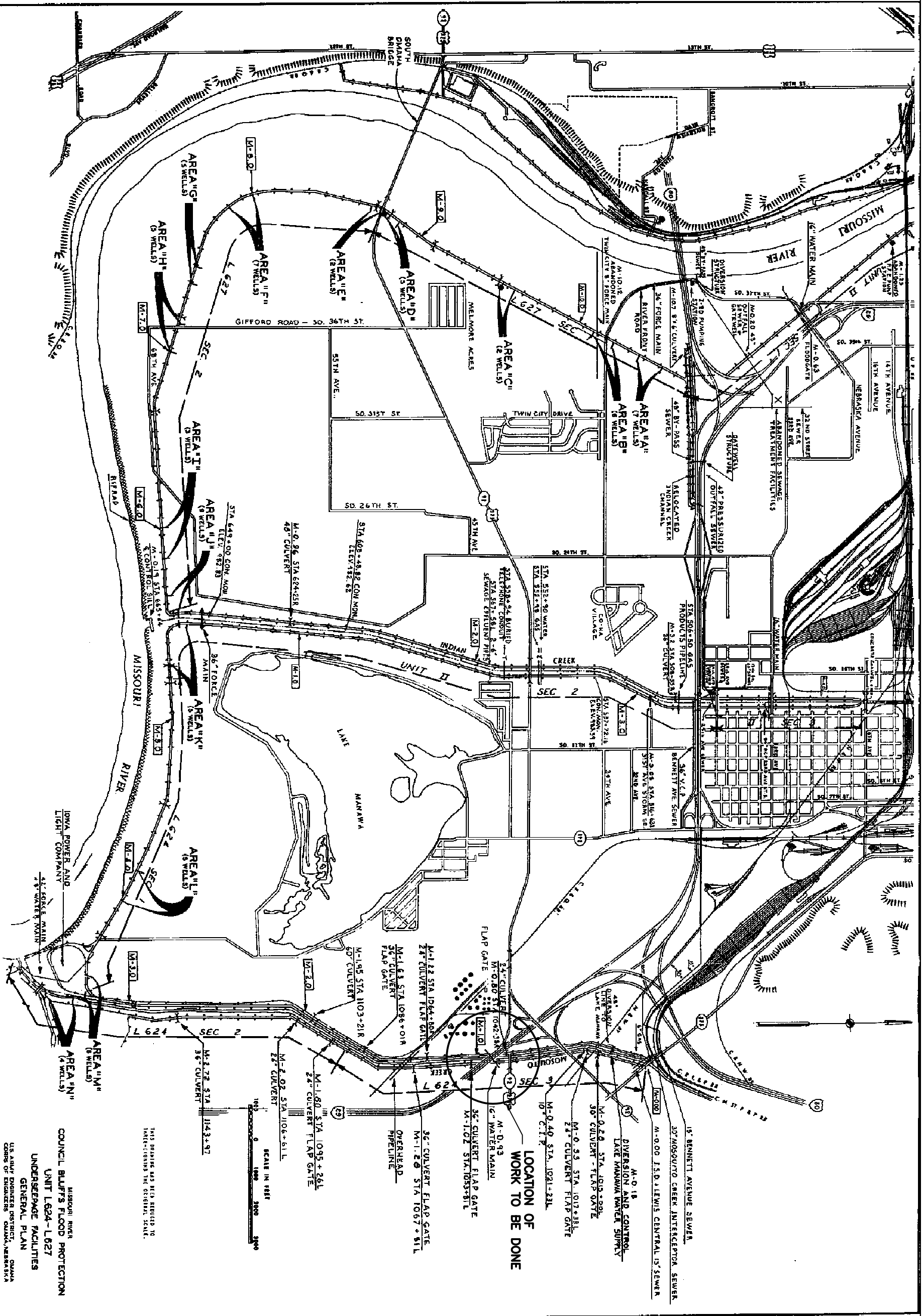
NTS CenturyLink™ SHEET: 2 OF 11



ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE:
 REVISION: 0

JOB#: E 299822
 GEO:
 CLI:
 DATE: 5/07/2012





THIS DRAWING HAS BEEN REVISED TO
 INDICATE CHANGES IN THE ORIGINAL SCALE.

SCALE IN FEET
 1" = 100'
 0 1000 2000 3000

MISSOURI RIVER
 COUNCIL BLUFFS FLOOD PROTECTION
 UNIT L624-L627
 UNDERSERPAGE FACILITIES
 GENERAL PLAN

U.S. ARMY ENGINEERS DISTRICT, QUAMBA
 CORPS OF ENGINEERS, QUAMBA, IOWA

JOB#: E 299822

GEO:

CLI:

DATE: 5/07/2012

ENGINEER: **POWER Engineers, Inc.**

DRAFTED BY: JARROD KELSEY

PHONE:

REVISION: 0


































ADDRESS: I-29
 COUNCIL BLUFFS, IA

NTS

CenturyLink™

SHEET: 3 OF 11

SYMBOLS KEY

CONSTRUCTION LINETYPES	UTILITY LINETYPES	
<p>TRENCH/PLOW HDPE _____</p> <p>DIRECTIONAL BORE _____</p> <p>JACK AND BORE _____</p> <p>REMOVE AND REPLACE _____</p> <p>CONCRETE CAP _____</p> <p>PLACE 6" STEEL W/ 2-2" HDPE _____</p> <p>PLACE 4" STEEL W/ 3-1 1/4" INDIT. _____</p> <p>ENVIRONMENT AREA _____</p> <p>AERIAL CABLE _____</p>	<p>TELEPHONE _____</p> <p>GAS _____</p> <p>CABLE TV _____</p> <p>SANITARY SEWER _____</p> <p>STORM DRAIN _____</p> <p>WATER _____</p> <p>BURIED ELECTRIC _____</p> <p>OVERHEAD POWER _____</p> <p>FIBER OPTIC CABLE _____</p> <p>PLOWED FIRE LINE _____</p>	<p>CONTROL HUB </p> <p>POWER/TELEPHONE POLE </p> <p>POWER ANCHOR </p> <p>TELEPHONE ANCHOR </p> <p>SIDEWALK ANCHOR </p> <p>TELEPHONE/CATV PEDESTAL </p> <p>TELEPHONE MANHOLE </p> <p>UTILITY MANHOLE </p> <p>FIRE HYDRANT </p> <p>STORM DRAIN </p> <p>GAS VALVE </p> <p>WATER VALVE </p> <p>STREET LIGHT </p> <p>BUSH </p> <p>TREE </p> <p>ROCKS </p> <p>SURVEY MONUMENT </p> <p>ROAD SIGN </p> <p>CULVERT AND DEPTH </p> <p>BRIDGE </p> <p>CAUTION ARROW </p> <p>BOND AND GROUND </p> <p>EXISTING CABLE MARKER </p> <p>PROPOSED CABLE MARKER </p> <p>PROPOSED HANDHOLE </p> <p>SPLICE </p>
<p>RIGHT OF WAY _____</p> <p>FENCE ON ROW _____ * _____</p> <p>BARBED WIRE FENCE _____</p> <p>CHAIN LINK FENCE _____</p> <p>RAIL ROAD TRACKS _____</p> <p>PROPERTY LINE _____</p> <p>GUARD RAIL _____</p> <p>TOP OF SLOPE _____</p> <p>TOP OF SLOPE _____</p> <p>TOE OF SLOPE _____</p> <p>TOE OF SLOPE _____</p> <p>SECTION LINE _____</p> <p>EASEMENT LINE _____</p> <p>CENTER LINE DITCH _____</p> <p>EDGE OF PAVEMENT _____ EOP _____</p> <p>SIDEWALK _____ S/W _____</p>	<p>INTERSTATE </p> <p>US HIGHWAY </p> <p>STATE ROUTE </p> <p>MILE POST </p> <p>MILE POST NOT IN FIELD </p> <p>MP </p> <p>ROCK PROBE </p>	<p>SYMBOLS</p>

ADDRESS: I-29
COUNCIL BLUFFS, IA

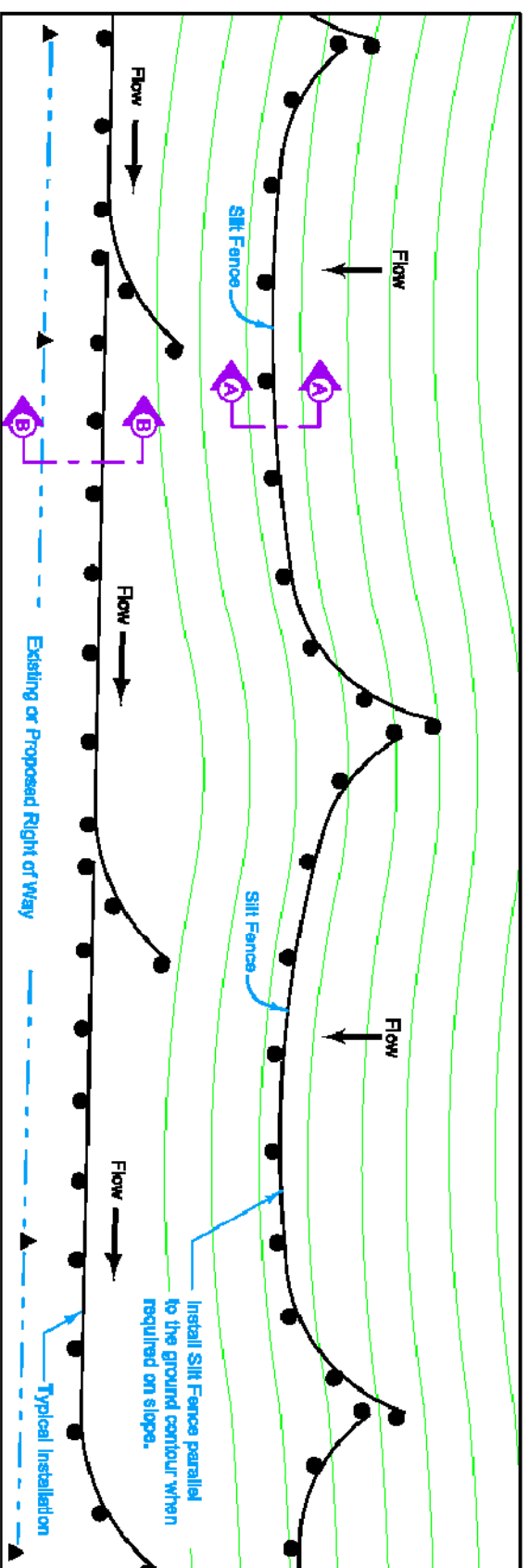
ENGINEER: **POWER** Engineers, Inc.
DRAFTED BY: JARROD KELSEY
PHONE:
REVISION: 0



NTS
CenturyLink™ SHEET: 4 OF 11

JOB#: E 299822
GEO:
CLI:
DATE: 5/07/2012

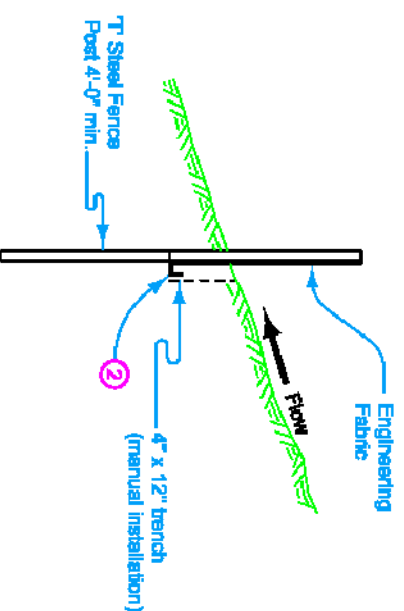




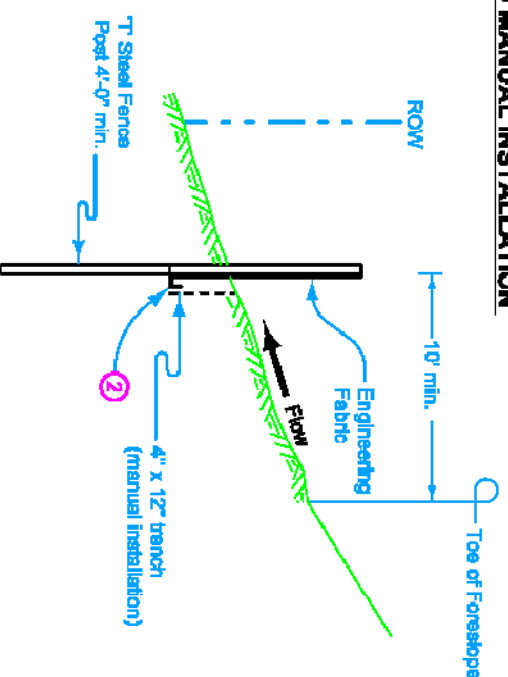
PLAN FOR SILT FENCE

- Install all silt fence using a silt fence machine. Use manual (trench) installation if physical conditions prohibit machine installation.
- For machine installation, compact by driving over each side of silt fence at least two times with device exerting 60 p.s.i. or greater.
- For manual installation, compact with a mechanical or pneumatic tamper.
- Place silt fence continuously up to a maximum length of 200 feet. For every segment of silt fence that is placed, flare up the slope the last 20 feet of the segment to contain runoff as shown.
- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See back view attachment to post.
 - ② For manual installation only, fold engineering fabric along bottom of trench.
 - ③ Embed all posts 28 inches below the ground line.

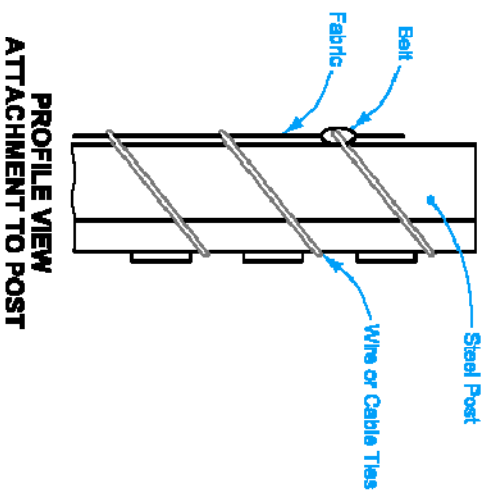
SILT FENCE - MACHINE AND MANUAL INSTALLATION



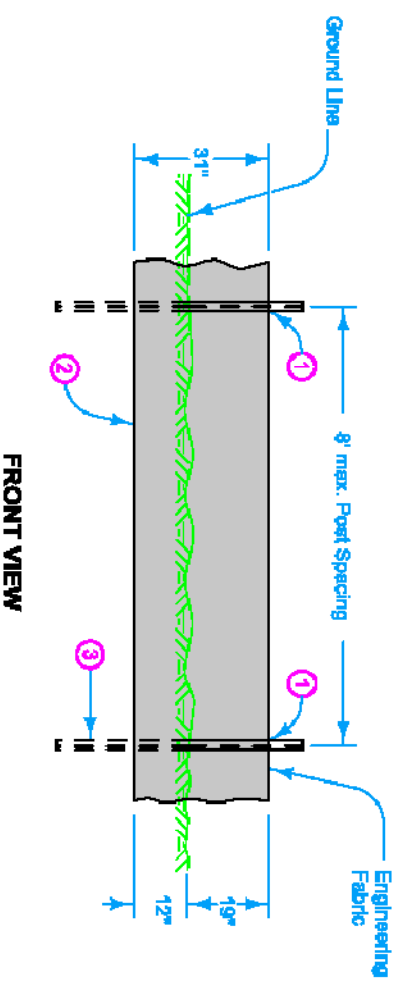
SECTION A-A



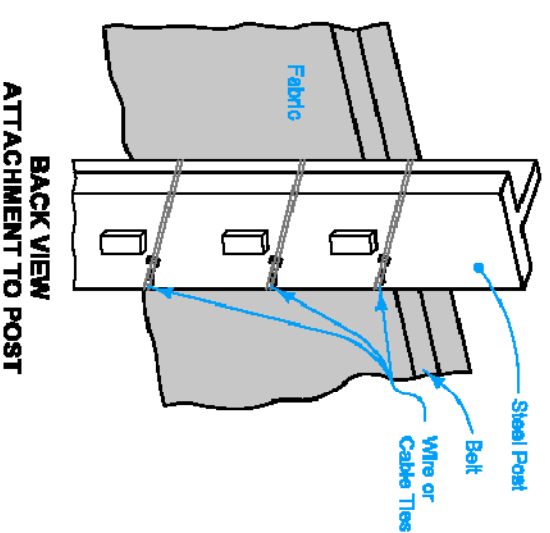
SECTION B-B



PROFILE VIEW ATTACHMENT TO POST



FRONT VIEW



BACK VIEW ATTACHMENT TO POST



Contour Lines

Possible Contract Items:
Silt Fence
Silt Fence for Ditch Checks

Possible Tabulations:
100-17
100-18

		STANDARD ROAD PLAN <small>REVISIONS: M.W. RAPELBAUM RC-17</small>	
Iowa Department of Transportation		EC-201 <small>SHEET 1 of 3</small>	
<small>APPROVED BY DESIGN/INTEGRATION ENGINEER</small> <i>Dianne McElroy</i>		<small>REVISION</small> NW 04-20-10	
SILT FENCE			

ADDRESS: I-29
COUNCIL BLUFFS, IA

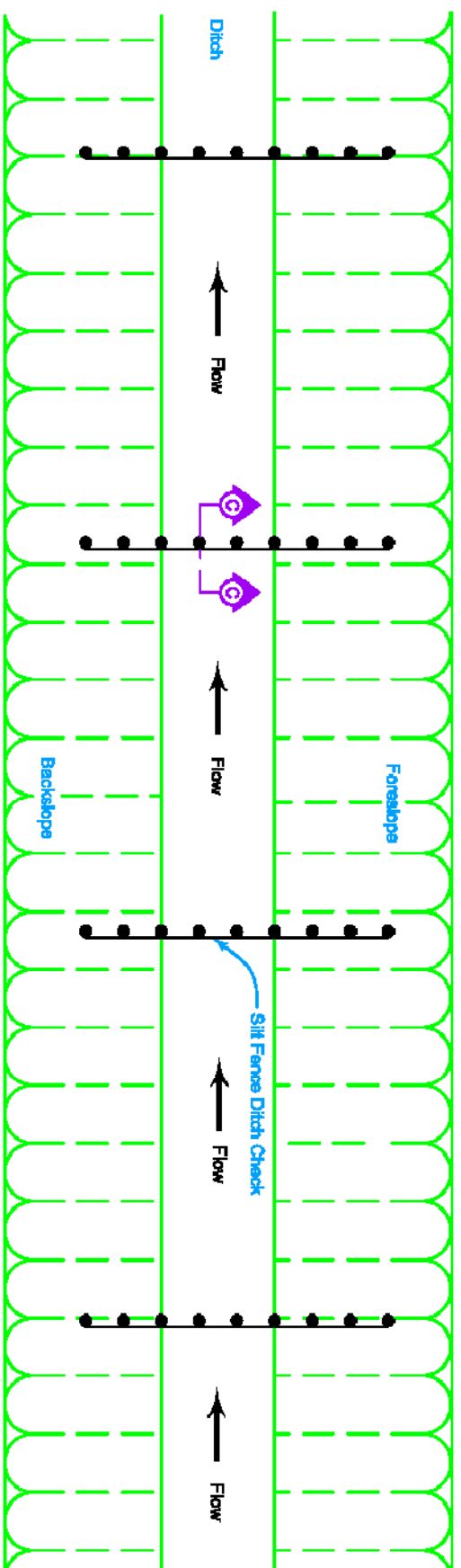


NTS CenturyLink™ SHEET: 5 OF 11

ENGINEER: **POWER Engineers, Inc.**
DRAFTED BY: JARROD KELSEY
PHONE:
REVISION: 0

JOB#: E 299822
GEO:
CLLI:
DATE: 5/07/2012

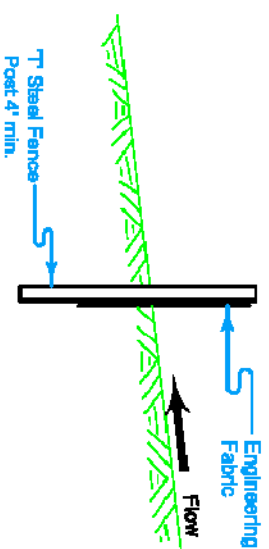




- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See attachment to post.
 - ② For manual installation only, fold engineering fabric along bottom of trench.
 - ③ Embed all posts 28 inches below the ground line.
 - ④ Locate posts at toe of foreslope and toe of backslope and space remaining posts equally.
 - ⑤ The minimum end span of ditch check from the toe of slope will be according to the following table:
- | Foreslope or Backslope | Width |
|------------------------|-------|
| 6:1 | 12' |
| 6-1/3:5:1 | 10' |
| 6-1/3:1 | 9' |
| 3.5:1 | 7' |
| 3:1 | 6' |

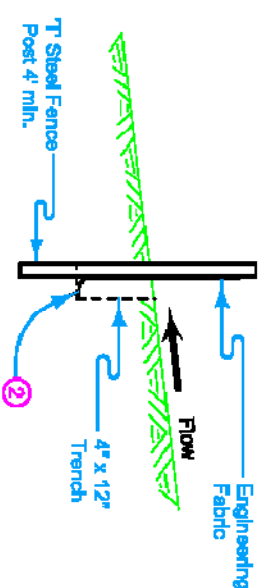
PLAN FOR DITCH CHECK

DITCH CHECK - MACHINE INSTALLATION

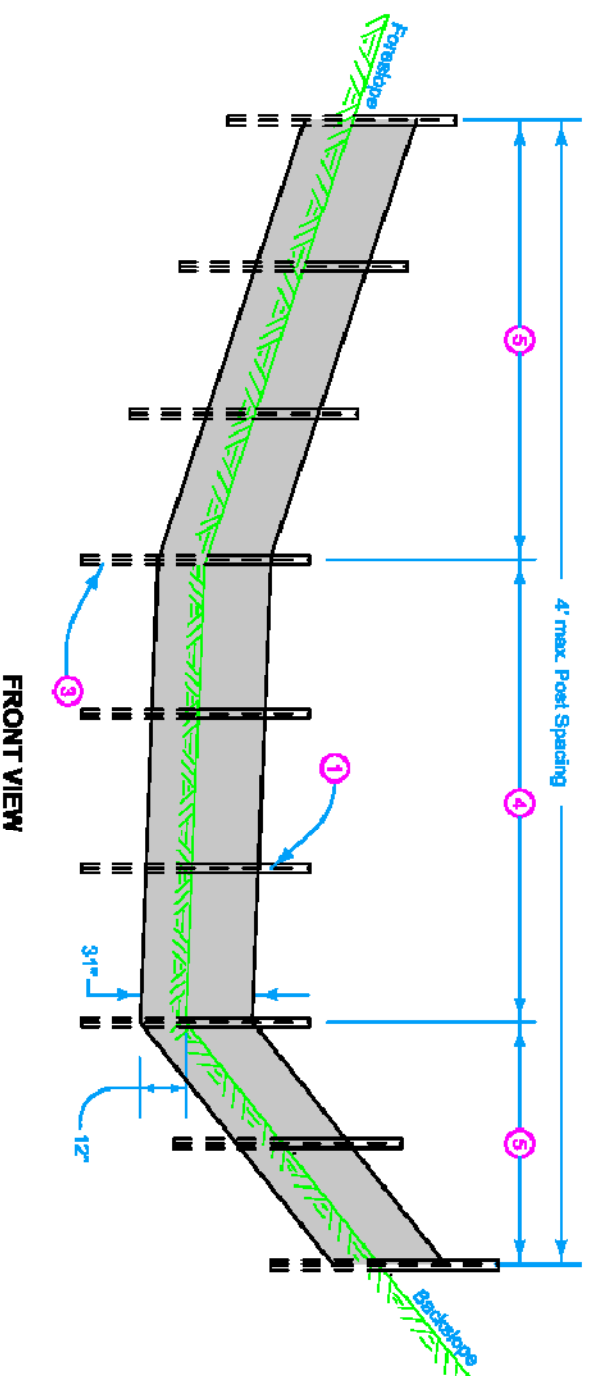


SECTION C-C

DITCH CHECK - MANUAL INSTALLATION



SECTION C-C



FRONT VIEW

SILT FENCE

 Iowa Department of Transportation
STANDARD ROAD PLAN
 REVISIONS: N.W. RABBITZ RD-17
EC-201
 SHEET 2 of 3

APPROVED BY DESIGN METHOD FOR ENGINEER

 Dawn McElroy
 DESIGN METHOD FOR ENGINEER

SILT FENCE

ADDRESS: I-29
COUNCIL BLUFFS, IA

ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE:
 REVISION: 0
 CenturyLink
 NTS SHEET: 6 OF 11

JOB#: E 299822
 GEO:
 CLLI:
 DATE: 5/07/2012



SEQUENCE OF MAJOR ACTIVITIES	
EARLY SUMMER 2012	START OF PROJECT CONSTRUCTION
SUMMER 2012	COMPLETION OF PROJECT CONSTRUCTION

IMPLEMENTATION PLAN	
CONSTRUCTION ACTIVITY	STABILIZATION
TOPSOIL STRIPPING AND CONSTRUCT SILT GRADING OF THE BERM FENCE	
CONTINUE GRADING OF THE BERM	MAINTAIN SILT FENCE
FINAL STABILIZATION	COINCIDENT WITH FINAL GRADING CONTOURS

NOTE:

THE CONTRACTOR SHALL MAINTAIN SILT FENCE AND DITCH CHECK AFTER PERMANENT SEEDING IS COMPLETE UNTIL 80 PERCENT OF THE SEEDING HAS GERMINATED. THE COST FOR REMOVING ALL SILT FENCE AND DITCH WORK SHALL BE CONSIDERED INCIDENTAL.

SITE EROSION NOTES:

1. SILT FENCING SHALL BE CONSTRUCTED AROUND THE PERIMETER OF THE SITE BEFORE GRADING OPERATIONS BEGIN. INTERCEPTOR DITCHES AND ADDITIONAL SILT FENCING SHALL BE INSTALLED IF FIELD CONDITIONS DICTATE OR AS DIRECTED BY THE OWNER ENGINEER.
2. SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS.
TEMPORARY SEEDING MIXTURE FOR AREAS THAT WILL NOT BE DISTURBED FOR TWO MONTHS OR GREATER SHALL BE PERENNIAL RYE GRASS, 10 LBS./ACRE; TALL FESCUE, 6 LBS./ACRE; RED CLOVER, 2 LBS./ACRE; ALFALFA, 2 LBS./ ACRE; OATS, 48 LBS./ACRE (48 LBS. OF OATS IS EQUAL TO 1.5 BUSHELS OF OATS); FERTILIZER, 13-13-13, 450 LBS./ACRE; MULCH - STRAW, 2 TONS/ACRE. MULCH SHALL BE ANCHORED INTO THE SOIL.
TEMPORARY SEEDING MIXTURE FOR AREAS THAT WILL NOT BE DISTURBED AFTER TWENTY DAYS BUT BEFORE TWO MONTHS SHALL BE OATS, 100 LBS./ACRE; FERTILIZER, 13-13-13, 450 LBS./ACRE; MULCH - STRAW, 2 TONS/ACRE. MULCH SHALL BE ANCHORED INTO THE SOIL.
3. SILT FENCING TO BE MAINTAINED AND AFTER EVERY 1/2" RAIN. DISPOSE OF ACCUMULATED SILT.
4. INSPECTIONS OF ALL EROSION CONTROL MEASURES SHALL BE LOGGED WEEKLY AND AFTER EVERY 1/2" RAIN BY THE CONTRACTOR AND THE OWNERS ON-SITE REPRESENTATIVE. INSPECTION LOGS AND UPDATED POLLUTION PREVENTION PLANS ARE SUBJECT TO INSPECTION BY THE IOWA DEPARTMENT OF NATURAL RESOURCES, OWNER AND THE ENGINEER. THE CONTRACTOR TO PROVIDE COPIES TO THE OWNER WEEKLY AND MAINTAIN ORIGINALS ON-SITE IN CONSTRUCTION TRAILER FOR INSPECTION.

IOWA NPDES GENERAL PERMIT NO 2

STORM WATER POLLUTION PLAN
CONSTRUCTION/IMPLEMENTATION
CHECKLIST

MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES WHEN MAJOR GRADING ACTIVITIES OCCUR
DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY CEASE ON A PORTION OF THE SITE
DATES WHEN CONSTRUCTION ACTIVITIES PERMANENTLY CEASE ON A PORTION OF THE SITE
DATES WHEN STABILIZATION MEASURES ARE INITIATED ON THE SITE

PREPARE INSPECTION REPORTS SUMMARIZING:

NAME OF INSPECTOR _____
QUALIFICATIONS OF INSPECTOR _____
MEASURES/AREAS INSPECTED _____
OBSERVED CONDITIONS _____
CHANGE NECESSARY TO THE STORM WATER PREVENTION PLAN _____
NOTE: INSPECTIONS SHALL BE LOGGED WEEKLY AND AFTER EVERY 1/2" RAIN BY CONTRACTORS

REPORT ANY "HAZARDOUS CONDITIONS":

NOTIFY THE OWNER, IDNR AND SHERIFF'S OFFICE NOT LESS THAN SIX HOURS AFTER THE ONSET OF THE "HAZARDOUS CONDITION"
MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE:
-- THE DATE OF RELEASE
-- CIRCUMSTANCES LEADING TO THE RELEASE
-- STEPS TAKEN TO PREVENT REOCCURRENCE OF THE RELEASE

MODIFY POLLUTION PREVENTION PLAN AS NECESSARY TO:

COMPLY WITH MINIMUM PERMIT REQUIREMENTS WHEN NOTIFIED BY THE IDNR THAT THE PLAN DOES NOT COMPLY
ADDRESS A CHANGE IN DESIGN, CONSTRUCTION OPERATION OR MAINTENANCE WHICH HAS AN EFFECT ON THE POTENTIAL FOR DISCHARGE OF POLLUTANTS
PREVENT REOCCURRENCE OF A "HAZARDOUS CONDITION"

CONTRACTOR CERTIFICATION STATEMENT

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE. ELIMINATION SYSTEMS (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER CONSTRUCTION SITE AS A PART OF THE CERTIFICATION, FURTHER, BY MY SIGNATURE, I UNDERSTAND THAT I AM BECOMING A CO-PERMITTEE, ALONG WITH THE OWNER(S) AND OTHER CONTRACTORS AND SUBCONTRACTORS SIGNING SUCH CERTIFICATIONS, TO THE IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2 FOR THE "STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES: AT THE IDENTIFIED SITE. AS A CO-PERMITTEE, I UNDERSTAND THAT I, AND MY COMPANY ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE CODE OF IOWA, TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE STORM WATER POLLUTION PLAN DEVELOPED UNDER THIS NPDES AND THE TERMS OF THIS NPDES PERMIT.

THIS CERTIFICATION MUST INCLUDE THE NAME AND TITLE OF THE PERSON PROVIDING THE SIGNATURE; THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE CONTRACTING FIRM AND THE DATE THE CERTIFICATION IS MADE. SUBCONTRACTORS SHALL ALSO CERTIFY. SIGNATURES AFFIXED TO THIS PLAN.

SIGNATURE (CONTRACTOR) _____

SIGNATURE (SUB CONTRACTOR) _____

ADDRESS: I-29
COUNCIL BLUFFS, IA

ENGINEER: **POWER Engineers, Inc.**
DRAFTED BY: JARROD KELSEY
PHONE:
REVISION: 0
SHEET: 7 OF 11



JOB#: E 299822
GEO:
CLI:
DATE: 5/07/2012



4. Backfill and compaction requirements.

4.1. Crushed rock or other pervious materials will not be permitted within the critical area. An exception can be made for pervious zones existing in the foundation.

4.2. Care shall be taken to replace the natural foundation stratification and embankment zoning. In lieu of selective stockpiling and zoned backfill, impervious materials from an approved borrow may be used.

4.3. Frozen material shall not be used nor shall any fill be placed on frozen surfaces.

4.4. No foundation or embankment backfill shall be placed in standing or running water. Should a quick condition develop, dewatering by well points or other methods, which will nullify the excess gradient, shall be used. Sump pumping will not be permitted.

4.5. Impervious materials such as silts, clays (ML, CL and CH) or semi-impervious materials placed as backfill within the levee embankment, and within the projected embankment slopes, must be placed in loose lifts thicknesses not to exceed 8 inches and compacted to a minimum 95 percent Standard Proctor density determined at optimum moisture content according to ASTM D-698. Moisture control limits are to be within -1% to +3% of optimum.

4.6. Compaction of impervious and semi-impervious materials outside the projected levee

4.9.2 Flowable fill strength - The mixture shall have a compressive strength of 100 psi at 28 days age.

4.9.3 Flowable fill consistency - The fresh mixture shall not be thin and watery, but shall have a consistency similar to that of batter. It shall be tested by filling an open-ended 3-inch diameter, 6-inch high cylinder to the top with the mixture and immediately pulling the cylinder straight up. The correct consistency will produce an approximate 8-inch diameter circular-type spread with no segregation.

slopes, within the critical area of the flood control project, should be compacted to a minimum of 90 percent of maximum Standard Proctor dry density determined at optimum moisture content according to ASTM D-698, unless otherwise directed. Moisture control limits are to be within -1% to +3% of optimum.

4.7. Compaction requirements of pervious materials. Pervious materials are usually defined as free-draining, cohesionless sand and/or gravel, containing less than approximately 5% passing US Standard 200 screen. Where zoning of the levee or stratification of the foundation permits the use of pervious material, it shall be placed in 6-inch layers in a manner that will prevent segregation. Compaction shall be performed to a minimum of 70% relative density according to ASTM Test D-2049.

4.8. All disturbed areas shall be completely restored to the original condition. This restoration shall include but is not limited to, sodding, seeding, surfacing, slope protection, and bedding restoration.

4.9. Flowable fill used for trench backfill. If flowable fill is used for trench backfill it should conform to the following requirements:

4.9.1 Flowable fill mix:

Material	Fill Mix (Batch weights per cubic yard)	Remarks
Portland Cement, Type I or II (lbs)	at least 100	ASTM C 150 meeting low alkali requirements. Alternately, Ground Granulated Blast Furnace Slag (GGBS) cement conforming to ASTM C 989 Grade 100 or 120 is acceptable.
Fly Ash (lbs)	at least 275	ASTM C 618, Class N, C, or F. (Class C shall not be used with Missouri River Sand, or other aggregate, which exhibits alkali-aggregate reactivity potential).
Sand, SSD (lbs)	2795	ASTM C 33, concrete fine aggregate. Projects requiring 200 cubic yards or more of flowable fill shall be tested for alkali-aggregate reactivity in accordance with ASTM C 1260. Test results shall indicate measured expansion of less than 0.10% at 16 days after casting.
Total Water (lbs)	no more than 370	Potable source.
Air Entraining Agent, oz.	at least 2	ASTM C 260.
Water Reducing Admixture	As Required to produce a cohesive flowable mixture.	ASTM C 494, Type A or F. See Para. 4.9.3.

ADDRESS: I-29

COUNCIL BLUFFS, IA



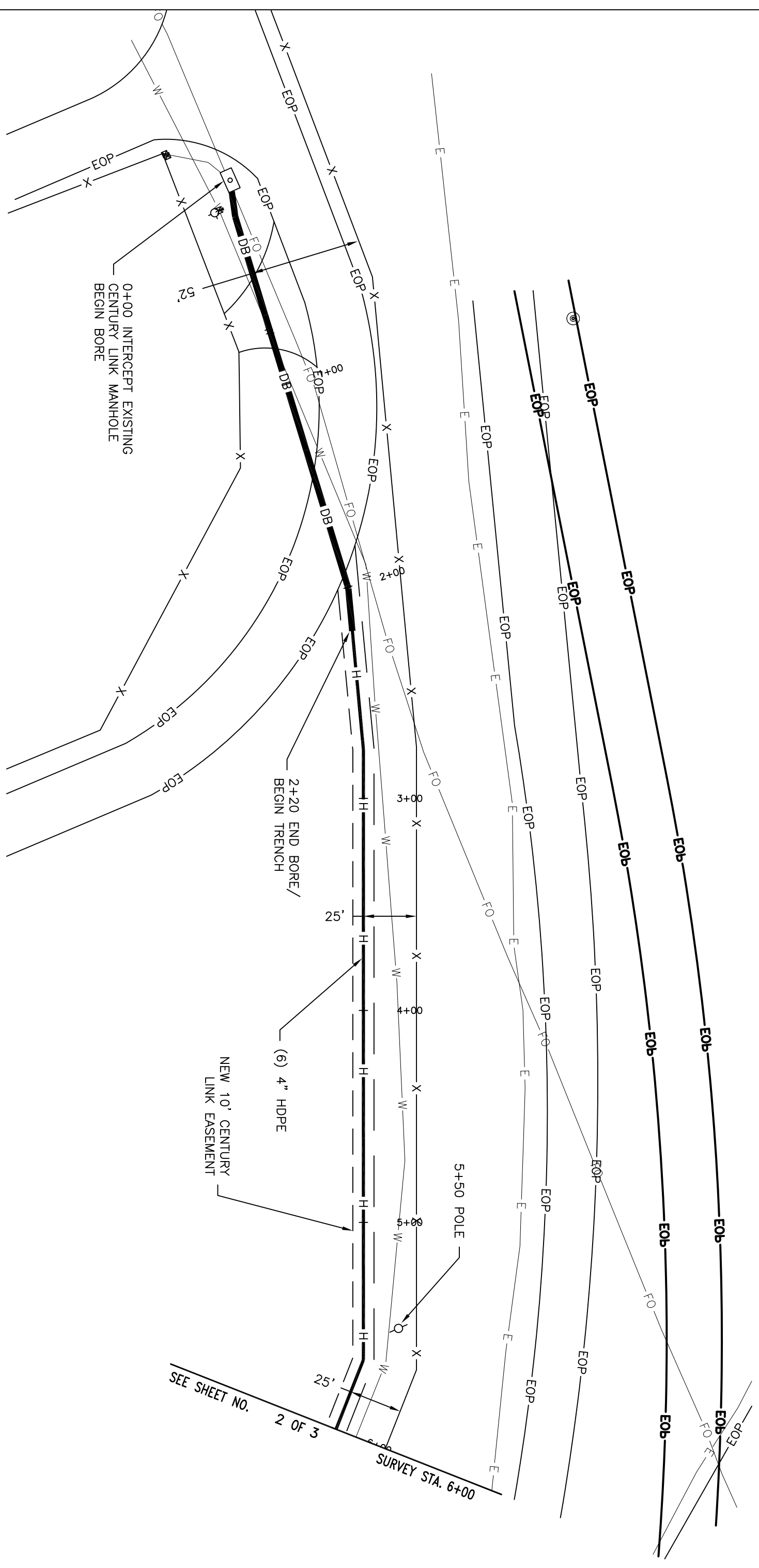
NTS

CenturyLink

ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE:
 REVISION: 0

JOB#: E 299822
 GEO:
 CLII:
 DATE: 5/07/2012





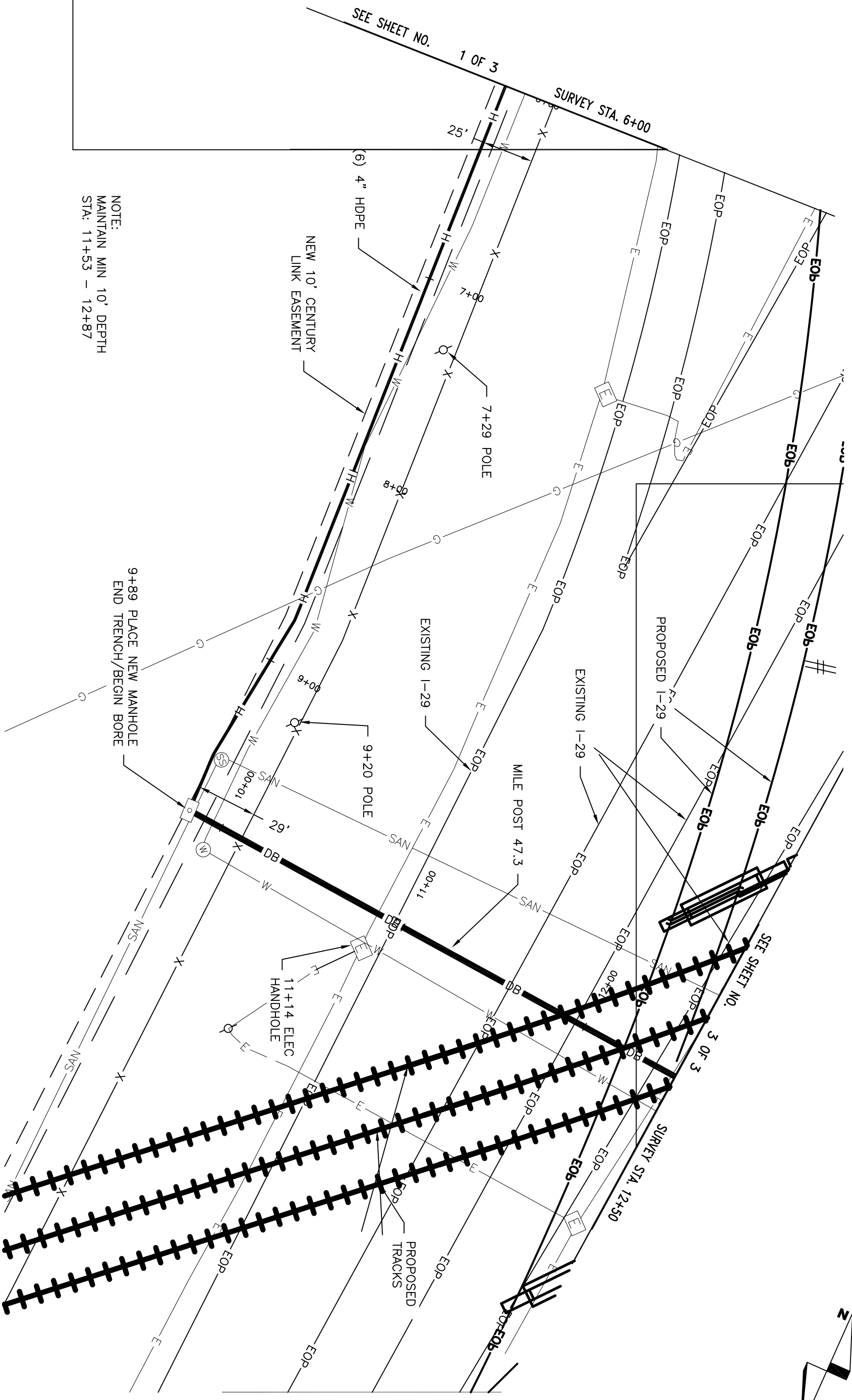
SEE SHEET NO. 2 OF 3 SURVEY STA. 6+00

ADDRESS: I-29
 COUNCIL BLUFFS, IA

ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE:
 REVISION: 0
 NTS CenturyLink™ SHEET: 9 OF 11

JOB#: E 299822
 GEO:
 CLLI:
 DATE: 5/07/2012





NOTE:
 MAINTAIN MIN 10' DEPTH
 STA: 11+53 - 12+87

SEE SHEET NO. 1 OF 3

SURVEY STA. 6+00

SEE SHEET NO. 3 OF 3

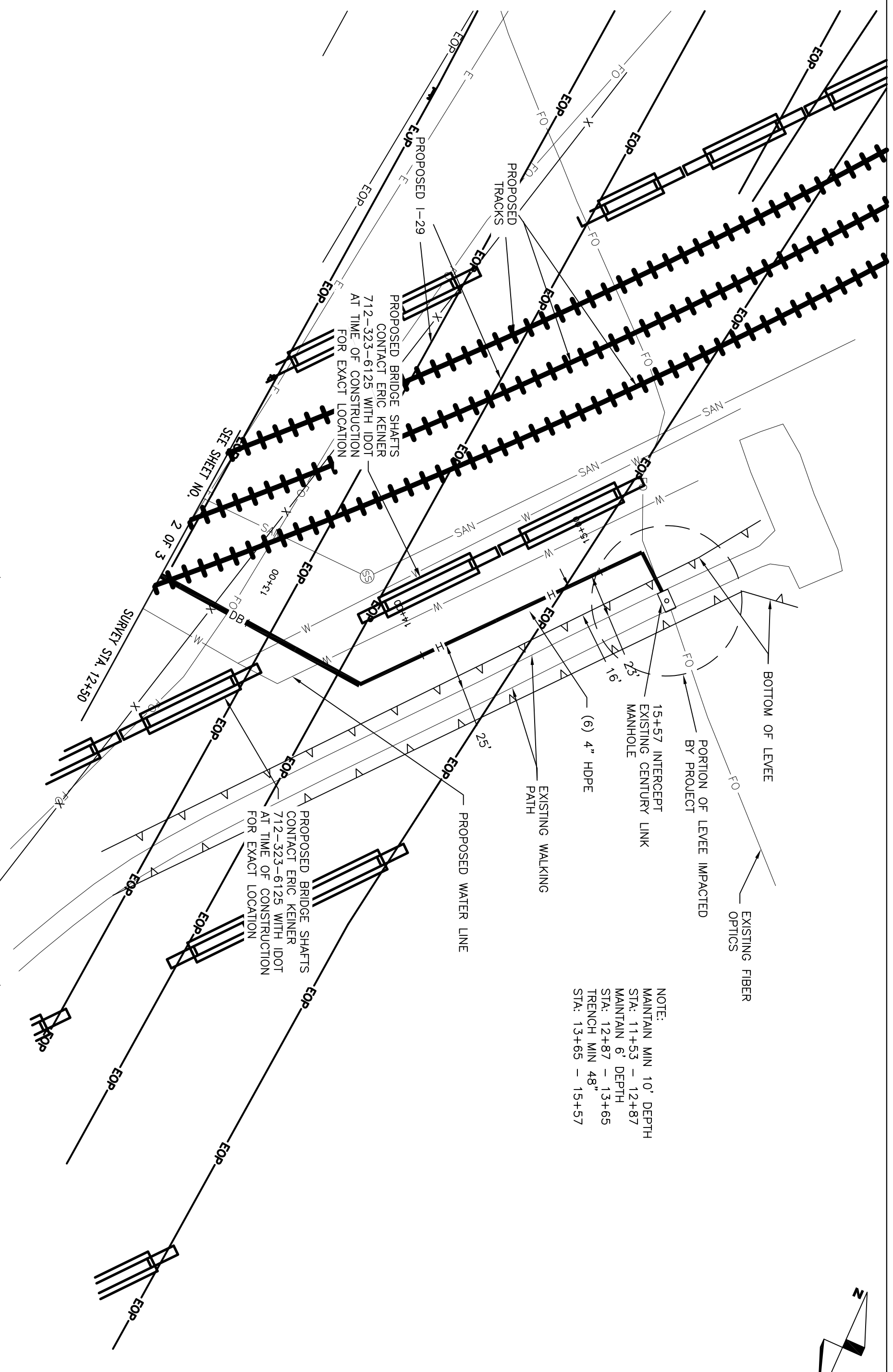
SURVEY STA. 12+50

ADDRESS: I-29
 COUNCIL BLUFFS, IA

ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE:
 REVISION: 0
 NTS CenturyLink™ SHEET: 10 OF 11

JOB#: E 299822
 GEO:
 CLLI:
 DATE: 5/07/2012





NOTE:
 MAINTAIN MIN 10' DEPTH
 STA: 11+53 - 12+87
 MAINTAIN 6' DEPTH
 STA: 12+87 - 13+65
 TRENCH MIN 48"
 STA: 13+65 - 15+57

ADDRESS: I-29
 COUNCIL BLUFFS, IA

ENGINEER: **POWER Engineers, Inc.**
 DRAFTED BY: JARROD KELSEY
 PHONE: 303-716-8926
 REVISION: 0

NTS CenturyLink™ SHEET: 11 OF 11

JOB#: E 299822
 GEO:
 CLLI:
 DATE: 5/07/2012

