ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

#2

LEGEND

BOL	●	BOLLARD
EBX		ELECTRIC BOX
ELC		ELECTRIC CABINET
ELR		ELECTRIC RISER
EMH		ELECTRIC MANHOLE
EMT		ELECTRIC METER
EVT		ELECTRIC VAULT
FH		FIRE HYDRANT
FOB		FIBER OPTIC BOX
FOM		FIBER OPTIC PEDESTAL
GMT		GAS METER
GUY	←	GUY WIRE
GVL	GV	GAS VALVE
LPB	BASE	LIGHT POLE BASE
LTP		LIGHT POLE
SDMH		STORM DRAIN MANHOLE
SSMH		SANITARY SEWER MANHOLE
TEP		TELEPHONE PEDESTAL
TER		TELEPHONE RISER
WVL	WV	WATER VALVE
STP		STUMP

	BORDER
CATV	CABLE TV
	CENTER
O	CHAIN LINK FENCE
FO	FIBER OPTIC
	EASEMENT
	FENCE
G	GAS LINE
P-OH	OVERHEAD POWER
SS	SANITARY SEWER
	SECTION LINE
SD	STORM SEWER
TEL	TELEPHONE LINE
P-UG	UNDERGROUND ELECTRIC
W	WATER LINE
P/L	PROPERTY LINE
1090	EXISTING CONTOURS
1090	PROPOSED CONTOURS
P/E	PERMANENT EASEMENT
S/L	SECTION LINE
	TREE MASS

VICINITY MAP
NOT TO SCALE

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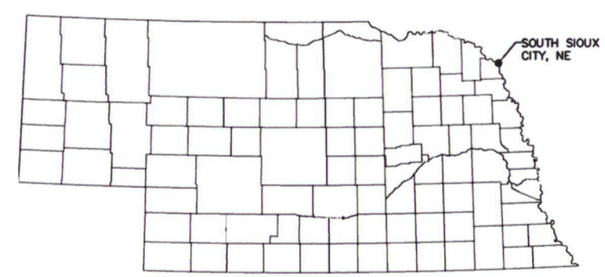

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South Sioux City, NE 68776-2356
TEL 402.494.3050
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PROFESSIONAL CIVIL ENGINEER JOSEPH BAXTER E-9238 STATE OF NEBRASKA

COORDINATING PROFESSIONAL

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

COVER SHEET

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by:	JSL, CKK
checked by:	JCB
approved by:	JCB
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

SHEET 1 of 97

DWG: F:\Projects\A15-0063_PBIN_SSC\Preliminary_Plans\150063_COV.dwg USER: ckuhl
DATE: Apr 21, 2015 3:00pm XREFS: JOE_BAXTER_PE_NE

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PROPERTY OWNERS A MINIMUM OF SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION AND ABIDING BY EASEMENT BOUNDARIES.
2. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES DURING CONSTRUCTION WHEN POSSIBLE. IF PROPERTY ACCESS NEEDS TO BE BLOCKED DURING CONSTRUCTION CONTRACTOR SHALL COORDINATE CLOSURE OF ACCESS WITH PROPERTY OWNER PRIOR TO BLOCKING ACCESS.
3. CONTRACTOR SHALL PRESERVE ALL PROPERTY CORNER MONUMENTS OR RE-ESTABLISH THEM IF THEY ARE DISTURBED DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL OBTAIN AND PAY THE COST OF ALL REQUIRED PERMITS AND FEES.
5. THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE AREA OF EXISTING MANHOLES, POWER POLES, AND EXISTING UTILITIES, AND SHALL BE RESPONSIBLE FOR DAMAGES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL. TRAFFIC CONTROL PLAN SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). TRAFFIC CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY THE CITY PRIOR TO IMPLEMENTATION.
7. SAW CUTTING PAVEMENT FOR REMOVAL SHALL BE SUBSIDIARY. PAVEMENT THAT IS REMOVED SHALL BE FULL PANELS.
8. THE CONTRACTOR SHALL REPAIR ALL SPRINKLER SYSTEMS DAMAGED DURING CONSTRUCTION.
9. TOPSOIL IS TO BE STRIPPED AND STOCKPILED PRIOR TO INSTALLATION OF SEWER LINE. UPON COMPLETION OF SEWER LINE INSTALLATION TOPSOIL IS TO BE SPREAD OVER DISTURBED AREAS ON BOTH TEMPORARY AND PERMANENT EASEMENTS AND STREET R.O.W.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND COSTS OF ALL TESTING PROCEDURES REQUIRED UNLESS SPECIFIED ELSEWHERE.
11. SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY. MOISTURE CONTENT PER SPECIFICATIONS.
12. ANY FILL MATERIAL REQUIRED TO RETURN TRENCHES BACK TO ORIGINAL GRADE SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLATION OF THE SANITARY SEWER.
13. THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED ON THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITY FACILITIES.
14. UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES.
15. A MINIMUM 18-INCH CLEARANCE SHALL BE MAINTAINED BETWEEN SANITARY SEWER SERVICES AND WATER MAINS AND WATER SERVICES.
16. CONTRACTOR TO PROVIDE ALL INCIDENTAL FITTINGS AND ITEMS NECESSARY TO COMPLETE WORK.
17. SEVEN (7) DAYS PRIOR TO MOVING OFF SITE THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING REQUESTING A FINAL WALK-THROUGH OF THE PROJECT.
18. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PIPE LENGTHS.
19. CITY WILL VIDEO GRAVITY SEWER LINES BEFORE ACCEPTING LINES AFTER OTHER TESTING HAS BEEN COMPLETED.

CONSTRUCTION SEQUENCING:

1. IN ADDITION TO THE COMPLETION DATES ESTABLISHED IN THE CONTRACT DOCUMENTS THE FOLLOWING SEGMENTS ARE TO BE COMPLETED IN THE FOLLOWING ORDER:
   A. THE SANITARY SEWER FORCE MAINS FROM STATION 1+00 TO APPROXIMATELY 24+00 WILL BE COMPLETED PRIOR TO ALL OTHER SEGMENTS OF THE PROPOSED SANITARY SEWER IMPROVEMENTS. CONTRACTOR SHALL START CONSTRUCTION AT STATION 1+00.
   B. BPI LIFT STATION AND PROPOSED FORCE MAIN FROM STA. 50+50 TO STA. 59+15 SHALL BE COMPLETED PRIOR TO INSTALLATION OF GRAVITY SEWER MAIN FROM STA. 65+00 TO STA. 80+39.
2. CONTRACTOR SHALL KEEP ACCESS TO ALL PROPERTIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF CONSTRUCTION AND TEMPORARY ACCESS OR LACK OF ACCESS WITH PROPERTY OWNERS/TENANTS PRIOR TO CONSTRUCTION IN THE AREA.
3. ROADWAY PAVEMENT CONSTRUCTION SHALL BEGIN WITHIN TWO WEEK OF INSTALLATION OF GRAVITY SEWER OR SANITARY SEWER FORCE MAIN IMPROVEMENTS.
4. GRAVITY SEWER CONNECTIONS TO PROPOSED LIFT STATIONS CANNOT BE MADE UNTIL PROPOSED LIFT STATIONS ARE COMPLETED AND OPERATION.
5. THE WORK ON LIFT STATION(S) OR SEWER COLLECTION SYSTEM ABANDONMENTS CANNOT BE COMPLETED UNTIL THE ASSOCIATED LIFT STATION(S), FORCE MAIN(S), OR GRAVITY SEWER IMPROVEMENTS ARE COMPLETED AND OPERATIONAL AND ACCEPTED BY THE OWNER.

STORM WATER AND EROSION CONTROL:

1. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL EROSION CONTROL MEASURES NECESSARY TO PROVIDE ADEQUATE PROTECTION FOR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INSTALL SILT FENCE ON THE DOWN SLOPE SIDE OF THE CONSTRUCTION ACTIVITIES AND SHALL INSTALL INLET PROTECTION WHERE NECESSARY.
2. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT STABILIZATION IS ESTABLISHED ON 95% OF THE SITE, OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES INCLUDING SILT FENCE, CONSTRUCTION ENTRANCES, CONCRETE WASH OUT PIT, ETC. SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE SUBSIDIARY.
3. THE CONTRACTOR SHALL CLEAN ANY CONSTRUCTION RELATED MUD OR DEBRIS FROM ADJACENT STREETS OR HIGHWAYS ON A DAILY BASIS.
4. THE CONTRACTOR SHALL USE A DESIGNATED AREA FOR A CONCRETE WASHOUT. THIS AREA SHALL BE A CONTAINMENT AREA WHERE THE WASTE CONCRETE CAN SOLDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
5. THE CONTRACTOR SHALL INSTALL SILT FENCE OR OTHER APPROVED EROSION CONTROL MEASURES AROUND THE PERIMETER OF ALL MATERIAL STOCKPILES. SILT FENCE SHALL BE COMPRISED OF MIRAFI 1120N, OR APPROVED EQUIVALENT.

NPDES PERMIT FOR DEWATERING (IF REQUIRED):

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMIT FROM NDEQ AND THE CITY FOR DISCHARGE OF WATER FROM DEWATERING OF THE SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL REQUIREMENTS OF THE PERMIT.

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TABLE OF APPROXIMATE QUANTITIES

ITEM	UNITS	QUANTITY
MOBILIZATION	LS	1
12-INCH PVC FORCE MAIN, DR 18	LF	6531
8-INCH PVC FORCE MAIN, DR 18	LF	10623
15-INCH PVC GRAVITY SEWER LINE, SDR 26	LF	810
12-INCH PVC GRAVITY SEWER LINE, SDR 26	LF	451
10-INCH PVC GRAVITY SEWER LINE, SDR 26	LF	2055
8-INCH PVC GRAVITY SEWER LINE, SDR 26	LF	14
12-INCH SEWER PLUG	EA	1
10-INCH SEWER PLUG	EA	1
8-INCH SEWER PLUG	EA	1
12" PLUG VALVE W/BOX	EA	4
8" PLUG VALVE W/BOX	EA	3
48-INCH DIA. MANHOLE (8.5' DEEP OR LESS)	EA	13
48-INCH DIA. DROP MANHOLE (8.5' DEEP OR LESS)	EA	1
ADDITIONAL MANHOLE DEPTH	VF	60.00
60-INCH DIA. OVERFLOW MANHOLE	EA	1
D.I. FITTINGS	LB	6680
TRENCHLESS CORSSING W/36-INCH X 0.531-INCH W.T. STEEL CASING	LF	182
TRENCHLESS CORSSING W/20-INCH X 0.344-INCH W.T. STEEL CASING	LF	200
AIR RELEASE STRUCTURE (DOUBLE)	EA	1
AIR RELEASE STRUCTURE (SINGLE)	EA	3
BENNET AVENUE LIFT STATION MODIFICATIONS	LS	1
39TH STREET LIFT STATION	LS	1
BPI LIFT STATION	LS	1
TRACER WIRE TEST BOX	EA	13
SEWER CONNECTION (FORCE MAIN)	EA	1
SEWER CONNECTION (MANHOLE)		3
CONNECTION EXISTING SANITARY SEWER STRUCTURE	LS	1
MANHOLE ABANDONMENT	EA	1
ABANDON 12-INCH OR LESS SANITARY SEWER (GROUT FILL)	LF	418
CONCRETE PLUG EXISTING SANITARY SEWER LESS THAN 15-INCH	EA	1
REMOVE PAVEMENT	SY	11644
PLACE 8-INCH P.C CONCRETE PAVEMENT (DOWELED)	SY	5005
PLACE 8-INCH P.C CONCRETE PAVEMENT (UN-DOWELED)	SY	3990
PLACE 8-INCH P.C CONCRETE DRIVEWAY	SY	912
PLACE 6-INCH P.C CONCRETE PAVEMENT	SY	152
PLACE 5-INCH ASPHALT PAVEMENT	SY	1361
DETECTABLE WARNING	SF	40
SUBGRADE PREPERATION	SY	8901
AGGREGATE FOUNDATION	TN	2841
GRAVEL SURFACING	TN	1105
TRAFFIC CONTROL DEVICES	LS	1
REMOVE AREA INLET	EA	1
PLACE AREA INLET	EA	2
24-INCH C.M STORM SEWER PIPE	LF	30
12-INCH R.C. STORM SEWER PIPE, CLASS III	LF	46
12-INCH R.C. FLARED END SECTION, CLASS III	LF	1
REMOVE AND RESET 36-INCH R.C. PIPE	LF	135
REMOVE AND RESET 12-INCH R.C. PIPE	LF	87
TREE REMOVAL/ CLEARING AND GRUBBING	LS	1
PAVEMENT STRIPING & SIGNAGE	LS	1
EROSION CONTROL	LS	1
TRAFFIC CONTROL	LS	1
SEEDING (TYPE 1)	AC	2.66
SEEDING (TYPE 2)	AC	3.62

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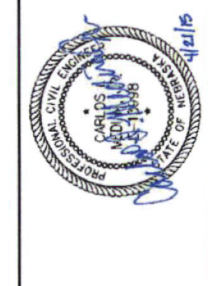

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

GENERAL NOTES SHEET

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 2 of 97

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drawn by: JSL CKK	OVERALL SITE PLAN	REV. NO. / DATE / REVISIONS DESCRIPTION	OLSSON ASSOCIATES
checked by: JCB			
approved by: CPK	ROTH PARK SANITARY SEWER IMPROVEMENTS		
QA/QC by: MJY			
project no.: 015-0063			
drawing no.:			
date: APRIL 2015	SOUTH SIOUX CITY, NEBRASKA 2015	NO. / DATE / DESCR. REVISIONS	

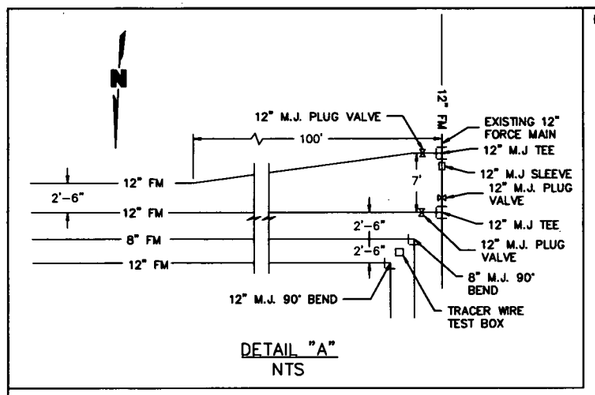
SHEET 3 of 97

PROFESSIONAL CIVIL ENGINEER CHAD P. KEHRT E-10037 STATE OF NEBRASKA

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
www.olssonassociates.com

NOTE:

1. CONSTRUCTION WORK BY OTHERS MAY BE ON-GOING DURING INSTALLATION OF THE FORCE MAIN. THE CONTRACTOR IS TO COORDINATE CONSTRUCTION WITH OTHER CONTRACTORS AS NECESSARY.



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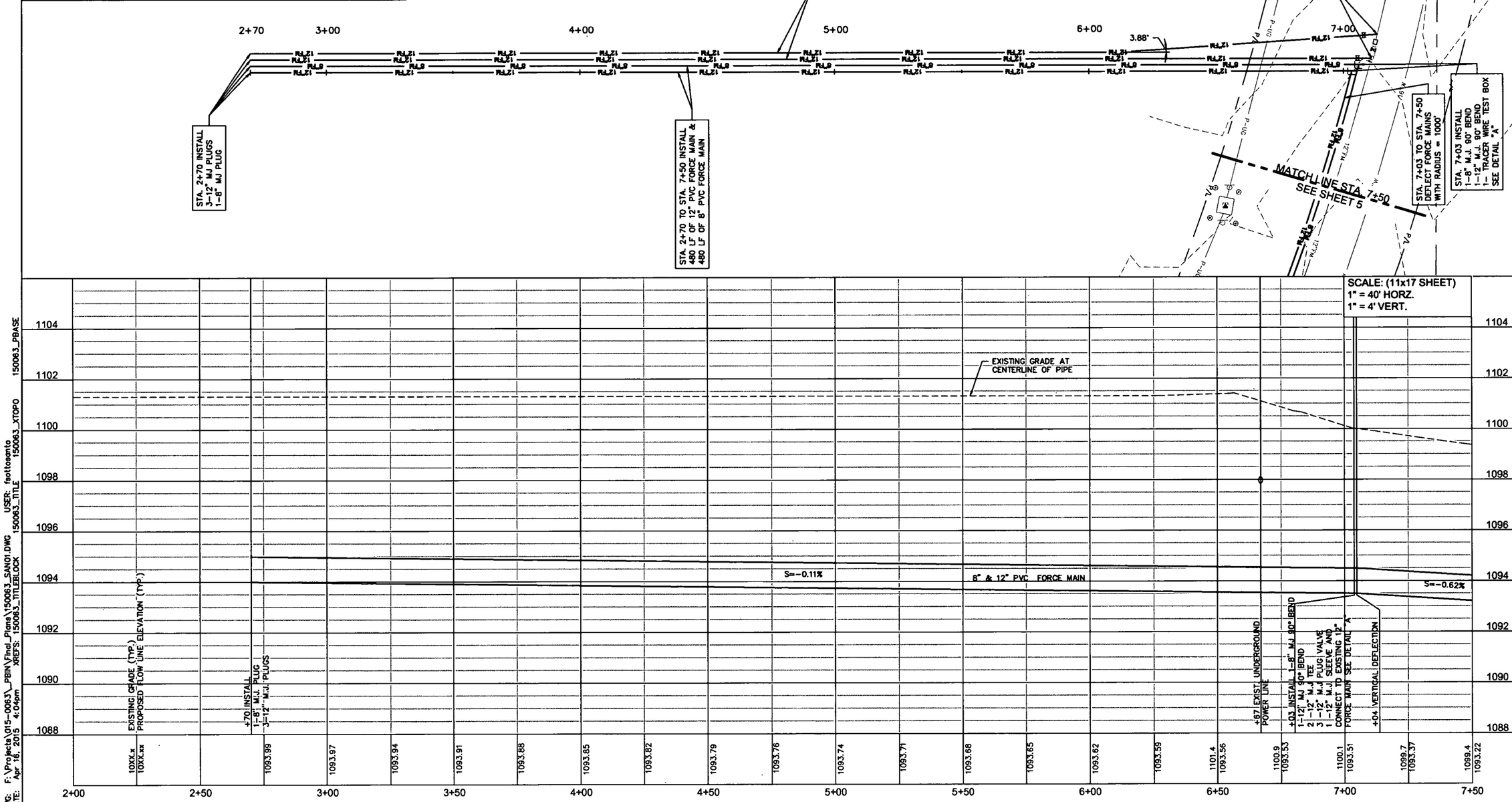

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OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.5050
FAX 402.494.4004
www.olssonassociates.com

4/21/15

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SANITARY FORCE MAIN PLAN AND PROFILE
STA. 1+00 TO STA. 6+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by: FJS / MKC
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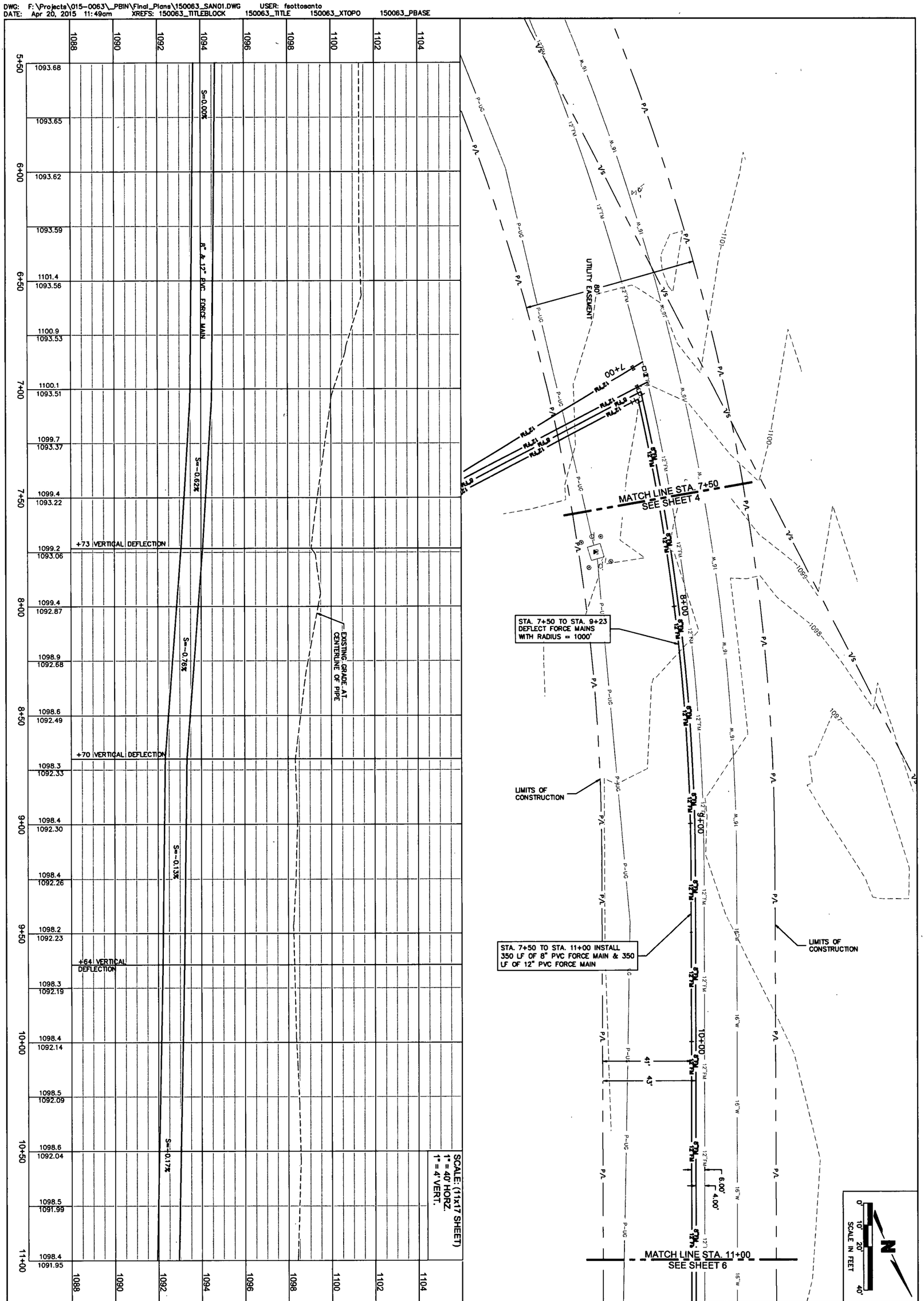

SHEET 5 of 97

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SANITARY FORCE MAIN PLAN AND PROFILE
STA. 6+00 TO STA. 11+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

REV. NO.	DATE	REVISIONS DESCRIPTION

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PROFESSIONAL CIVIL ENGINEER
CARLOS A. MEDINA
NEBRASKA
STATE OF NEBRASKA
4/21/15

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1707 Dakota Avenue
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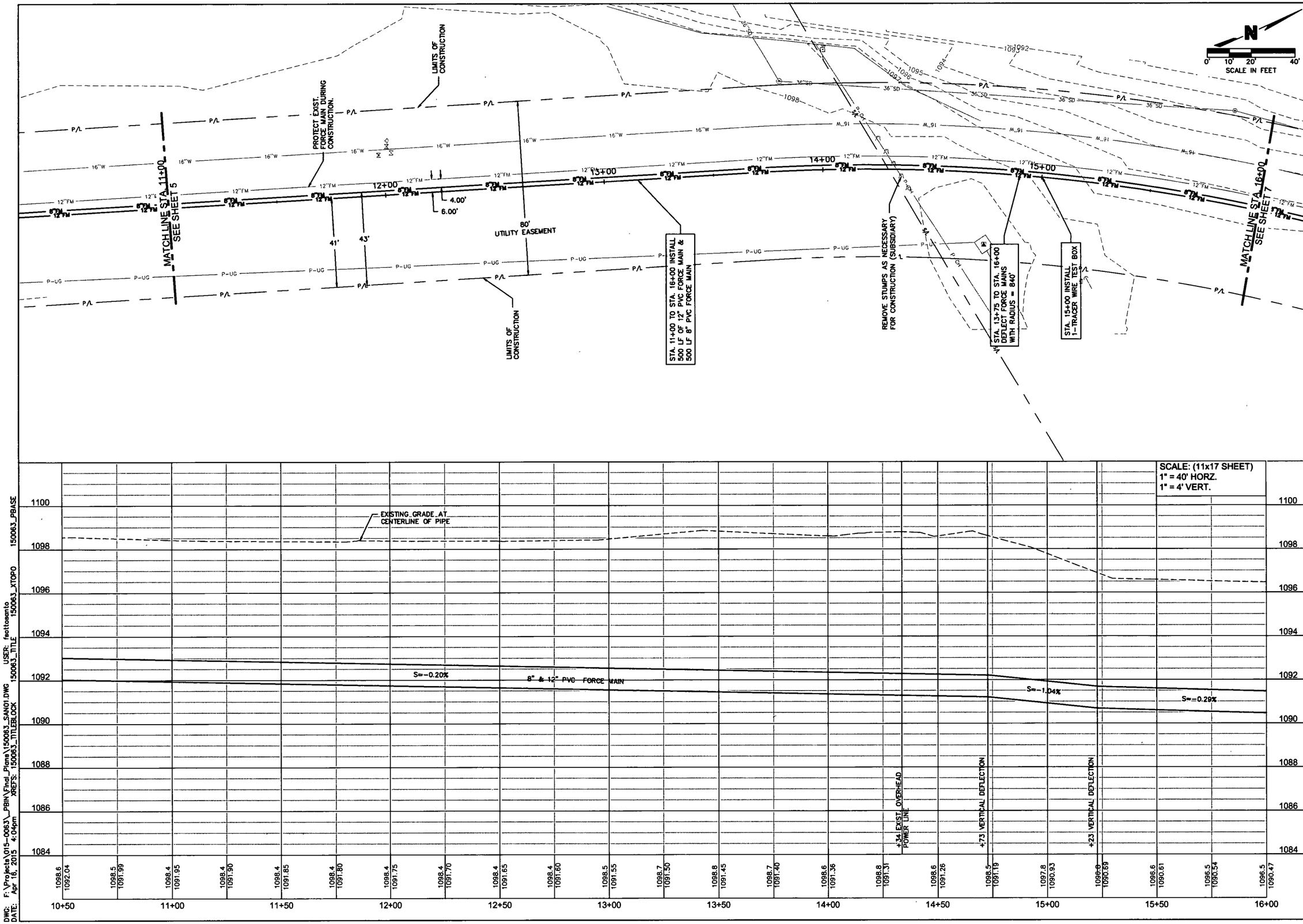

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REVISIONS

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SANITARY FORCE MAIN PLAN AND PROFILE STA. 11+00 TO STA. 16+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no: 015-0063
drawing no.:
date: APRIL 2015

SHEET 6 of 97

DWG: F:\Projects\015-0063_PBIN\Final_Plans\150063_SAN01.DWG
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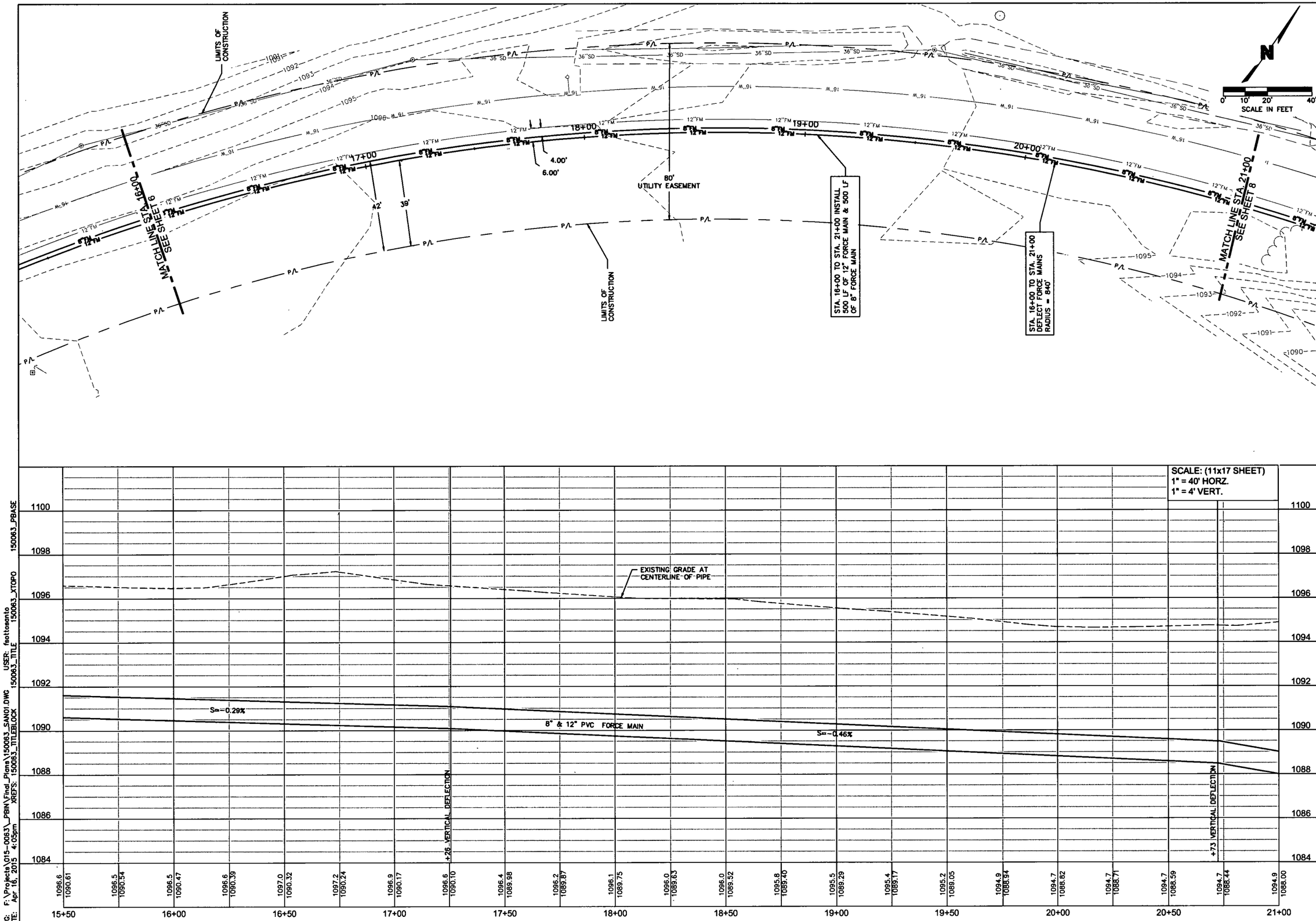

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PROFESSIONAL CIVIL ENGINEER
CARLOS M. MEDINA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

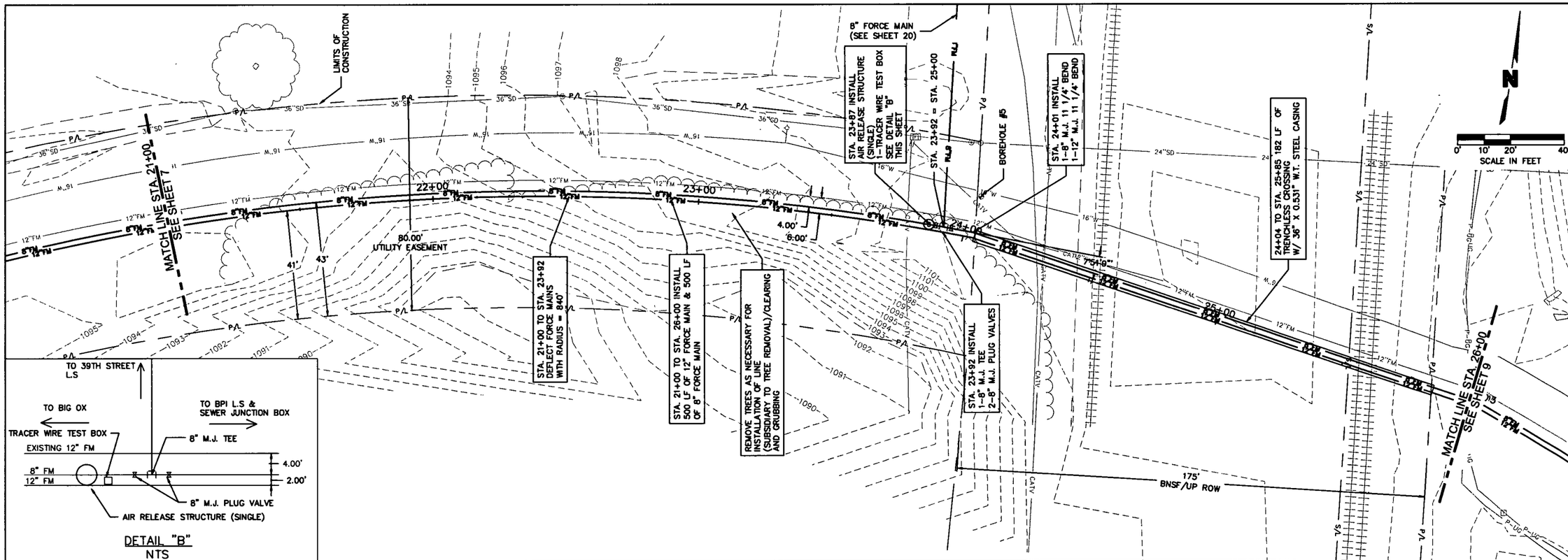
SANITARY FORCE MAIN PLAN AND PROFILE
STA. 16+00 TO STA. 21+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JCB
approved by:	CIM
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date	APRIL 2015



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PROFESSIONAL CIVIL ENGINEER
CARLOS M. MEDINA
NEBRASKA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY FORCE MAIN PLAN AND PROFILE
STA. 21+00 TO STA. 26+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

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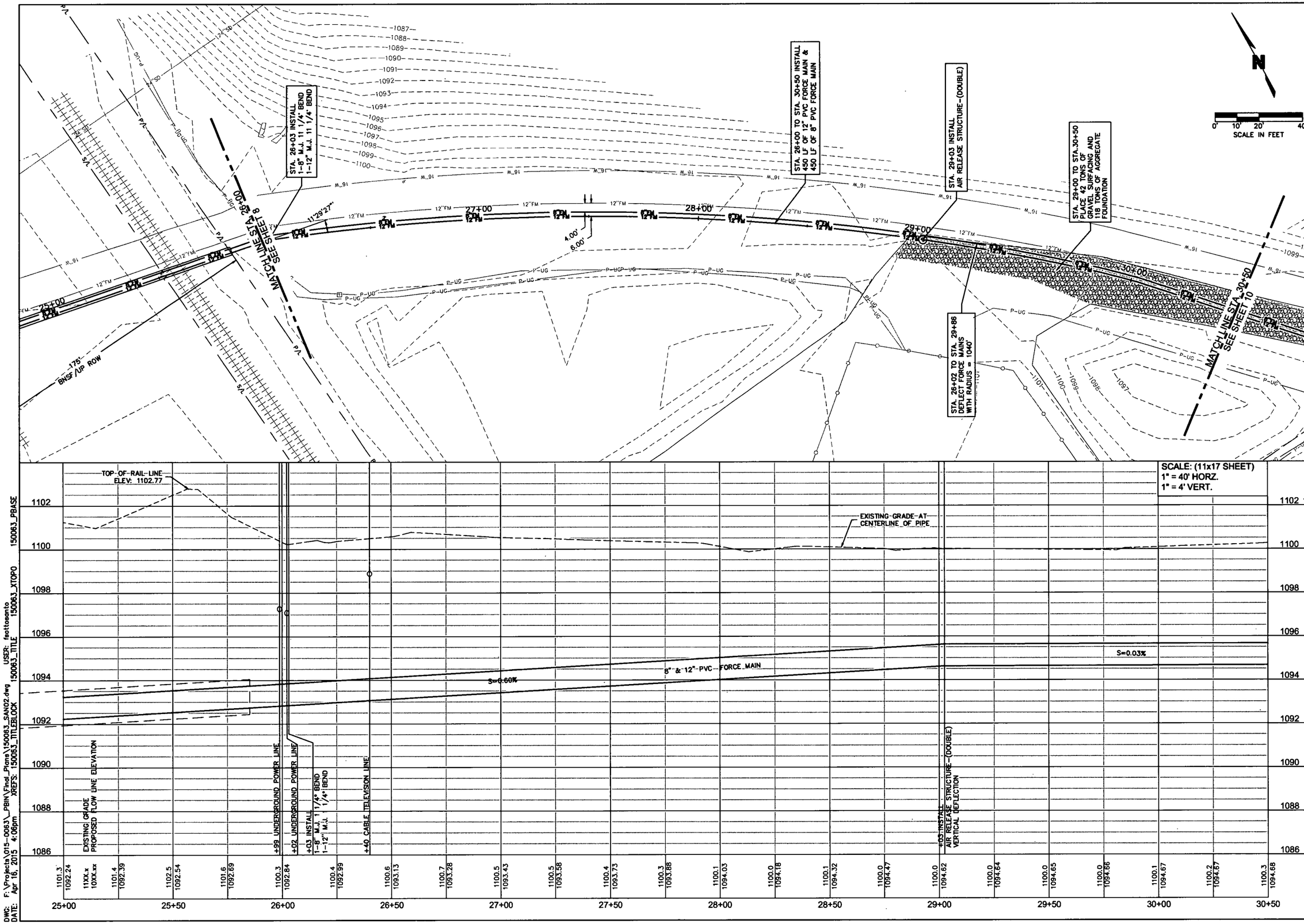

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PROFESSIONAL CIVIL ENGINEER
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NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY FORCE MAIN PLAN & PROFILE
STA. 26+00 TO STA. 30+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by: FJS / MKC
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project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET
9 of 97

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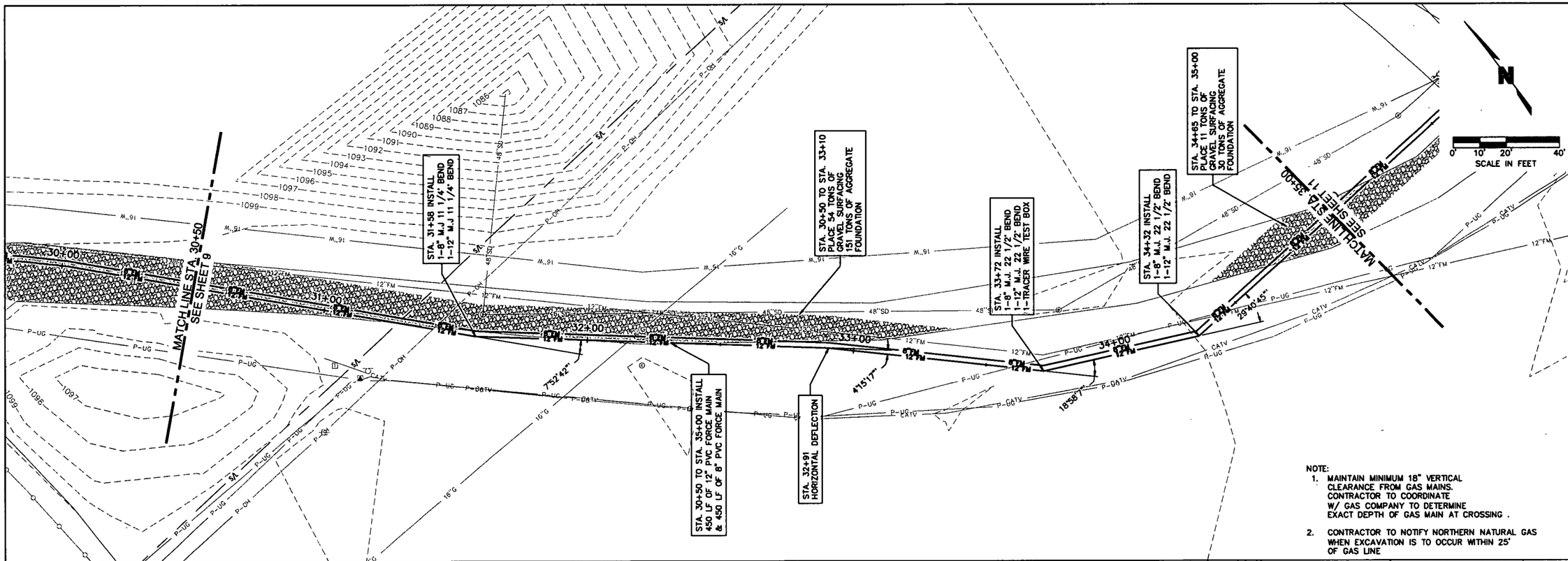
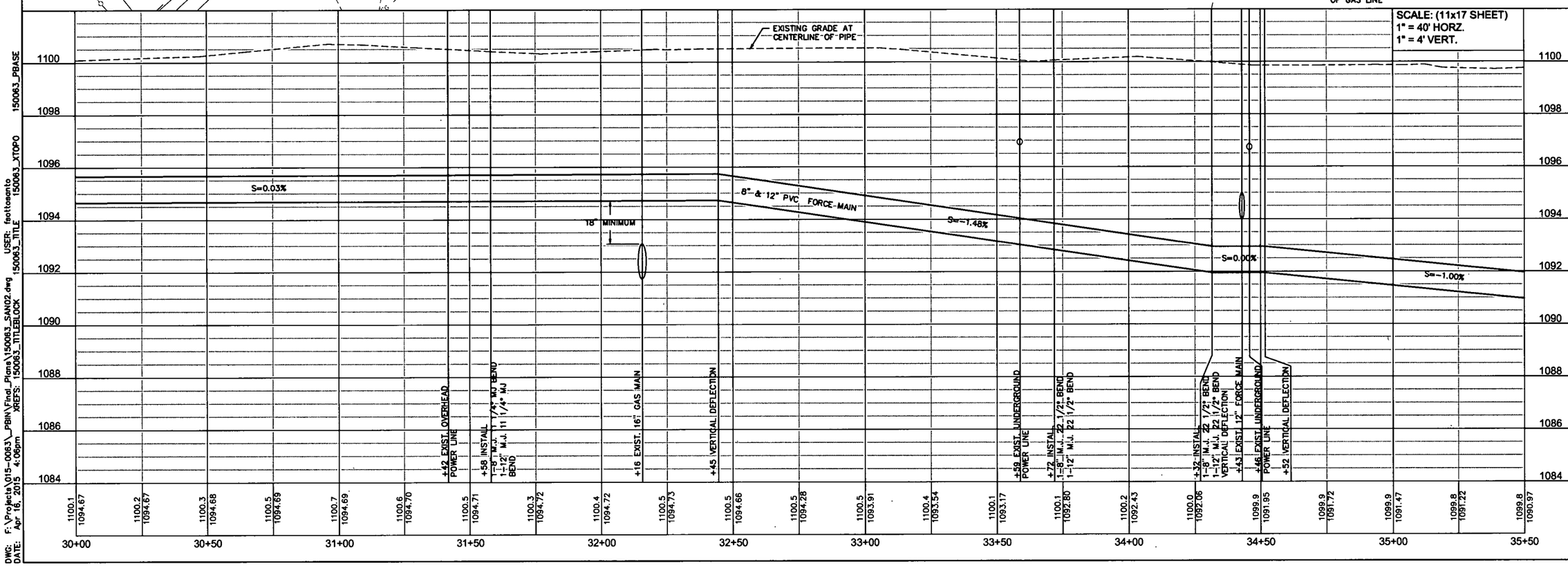


NOTE:
1. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE FROM GAS MAINS. CONTRACTOR TO COORDINATE W/ GAS COMPANY TO DETERMINE EXACT DEPTH OF GAS MAIN AT CROSSING .
2. CONTRACTOR TO NOTIFY NORTHERN NATURAL GAS WHEN EXCAVATION IS TO OCCUR WITHIN 25' OF GAS LINE



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REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY FORCE MAIN PLAN & PROFILE
STA. 30+50 TO STA. 35+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

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QA/QC by:	MJY
project no :	015-0063
drawing no.:	
date.	APRIL 2015

SHEET 10 of 97

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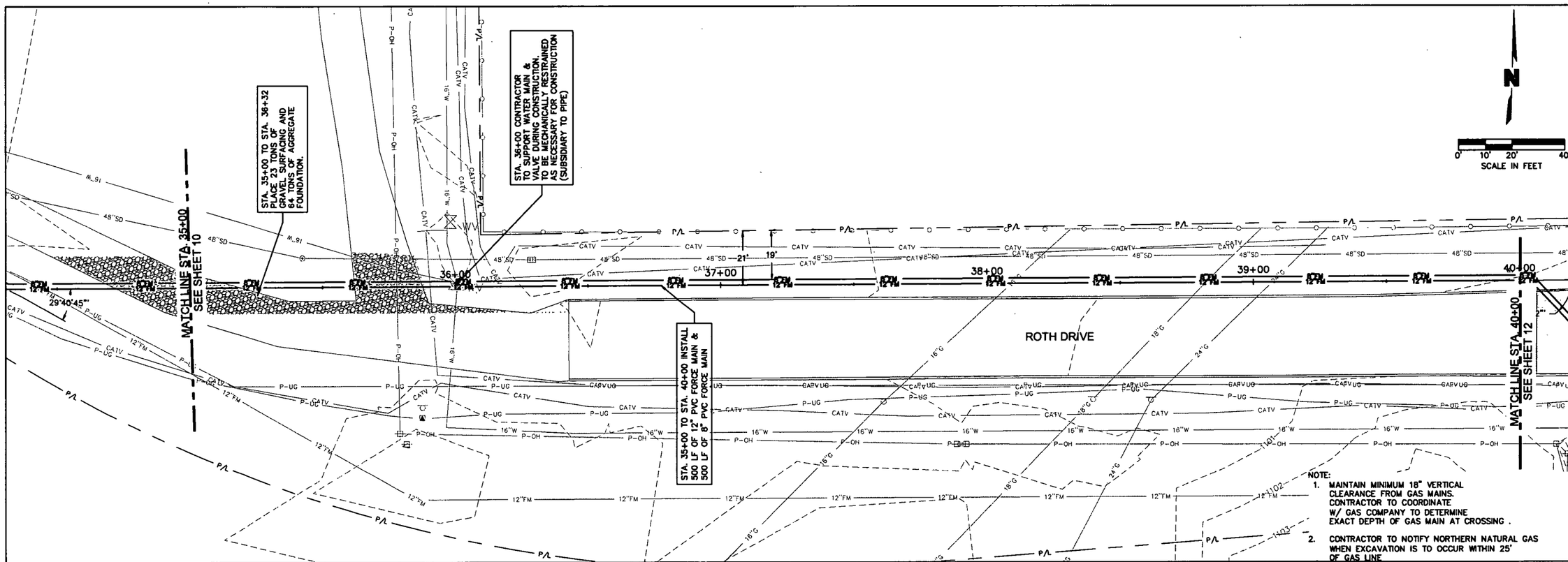

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SANITARY FORCE MAIN PLAN & PROFILE
STA. 35+00 TO STA. 40+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JGB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 11 of 97

DWG: F:\Projects\015-0063_PBIN\Final_Plans\150063_SAN02.dwg
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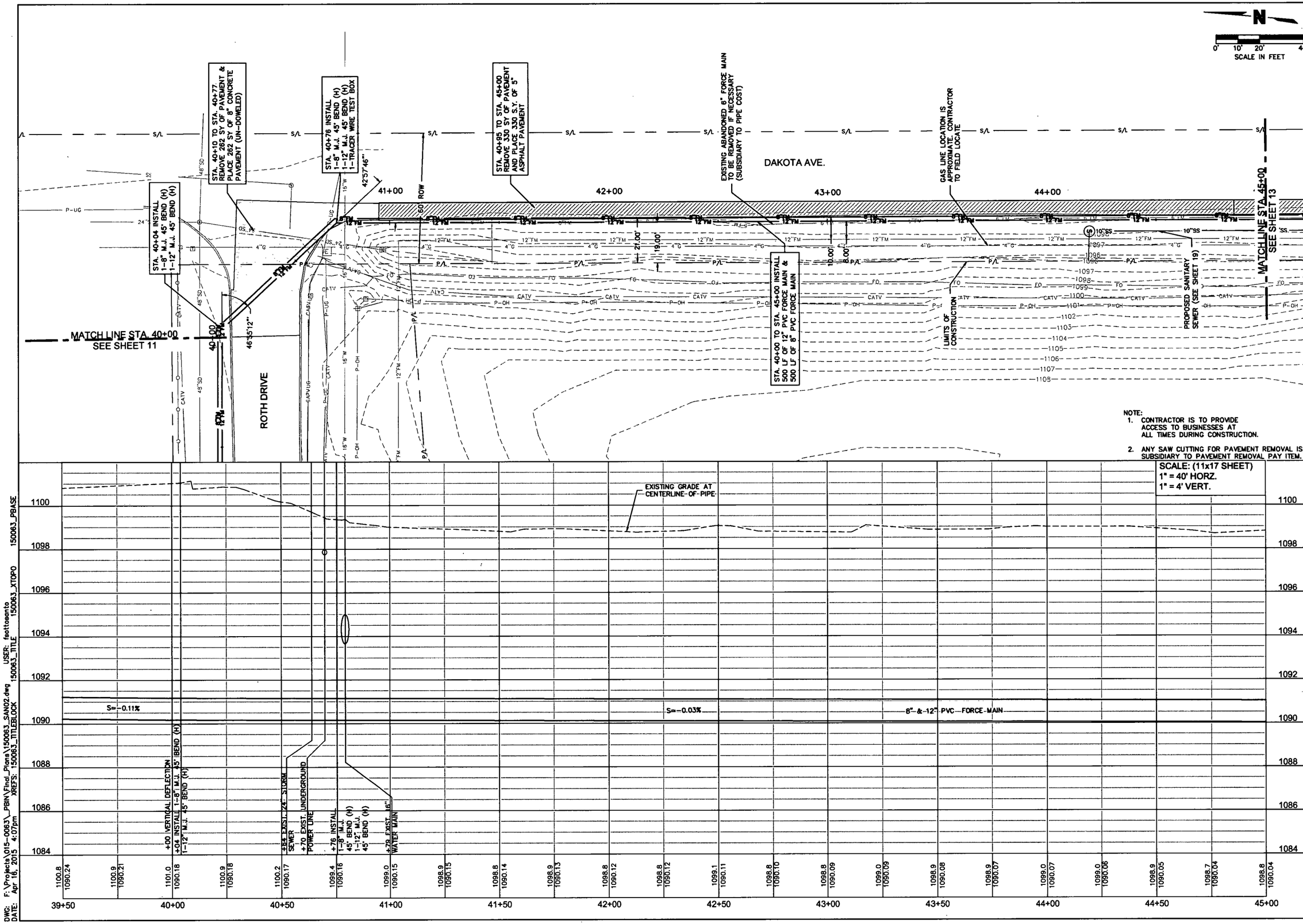

NOTE:
1. CONTRACTOR IS TO PROVIDE ACCESS TO BUSINESSES AT ALL TIMES DURING CONSTRUCTION.
2. ANY SAW CUTTING FOR PAVEMENT REMOVAL IS SUBSIDIARY TO PAVEMENT REMOVAL PAY ITEM.

SCALE: (11x17 SHEET)
1" = 40' HORZ.
1" = 4' VERT.

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REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY FORCE MAIN PLAN & PROFILE
STA. 40+00 TO STA. 45+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

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drawing no :	
date:	APRIL 2015

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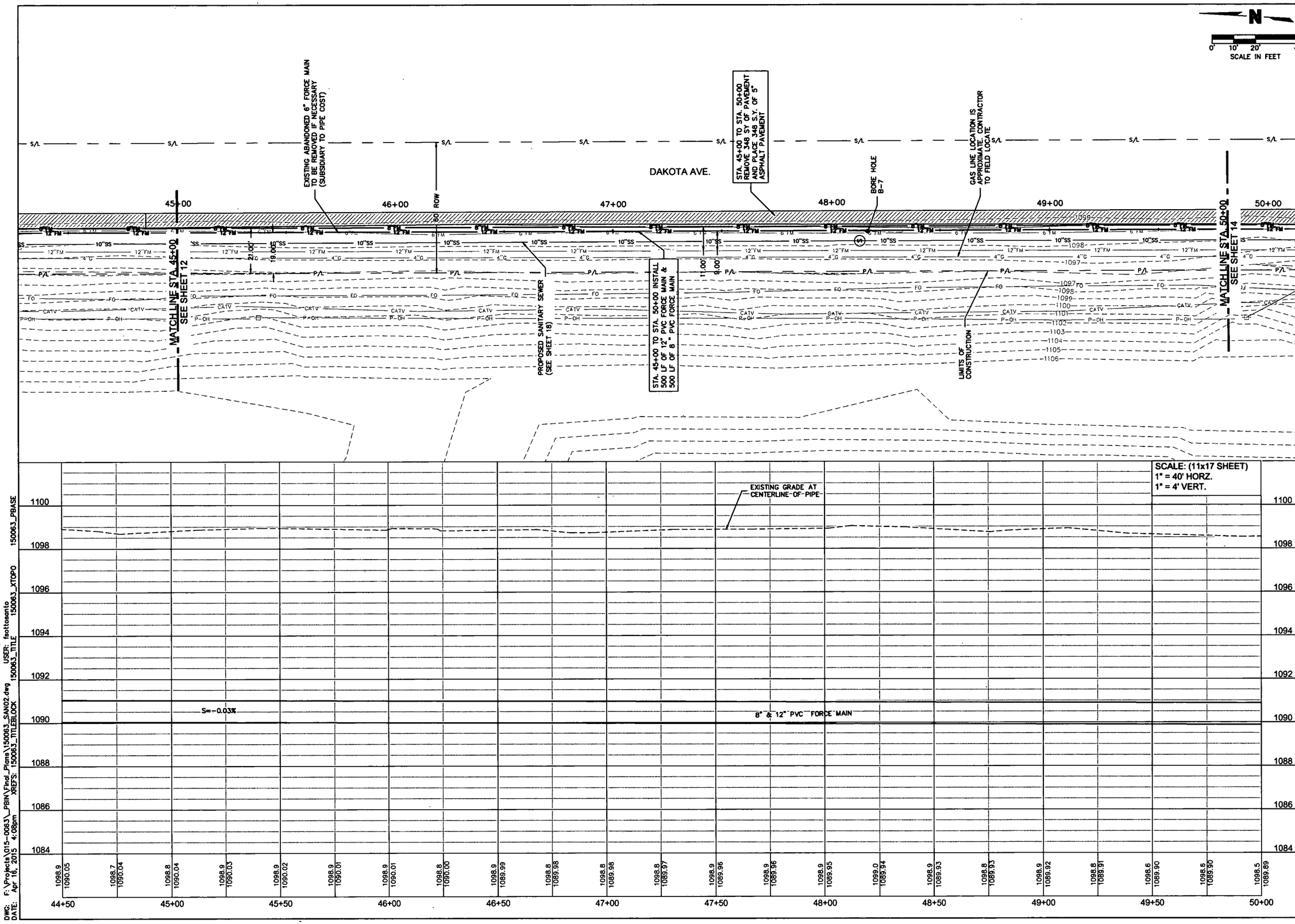

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5/1/15

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

SANITARY FORCE MAIN PLAN & PROFILE
STA. 45+00 TO STA. 50+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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project no: 015-0063
drawing no.:
date: APRIL 2015

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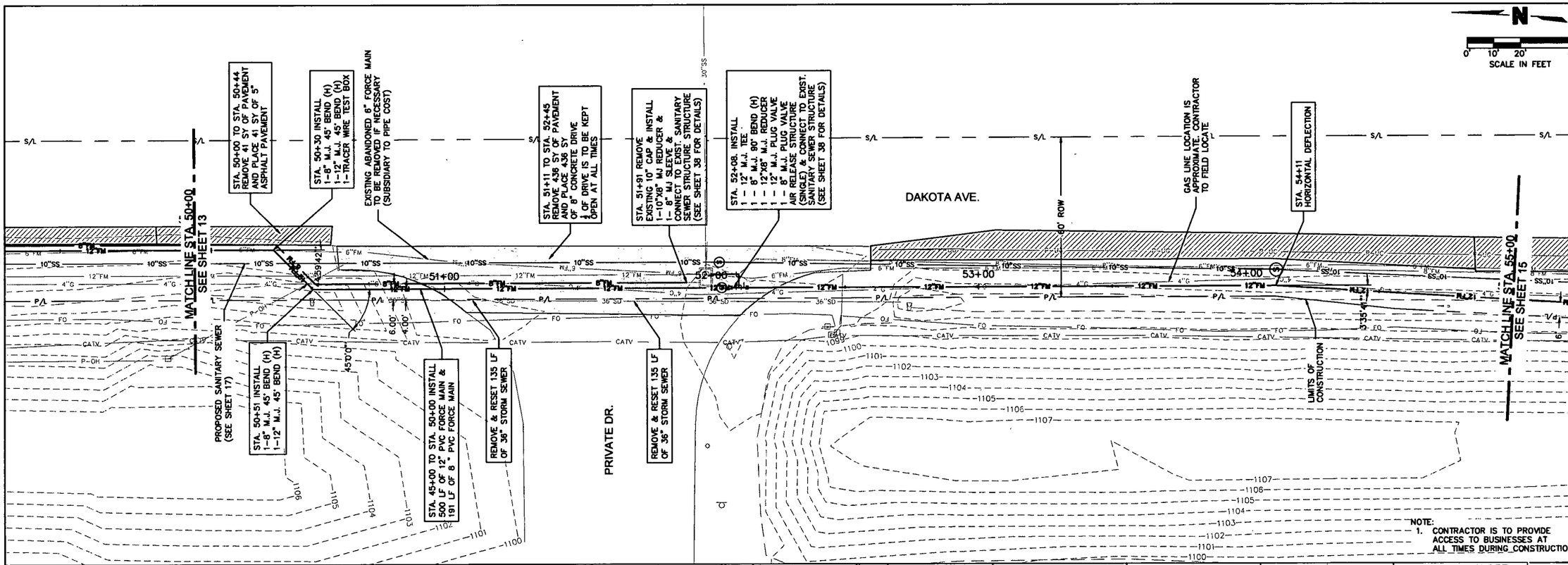

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SANITARY FORCE MAIN PLAN & PROFILE STA. 50+00 TO STA. 55+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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project no.: 015-0063
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date: APRIL 2015

SHEET 14 of 97

DWG: F:\Projects\015-0063_PBIN\Final_Plans\150063_SAN02.dwg USER: fsottosanto
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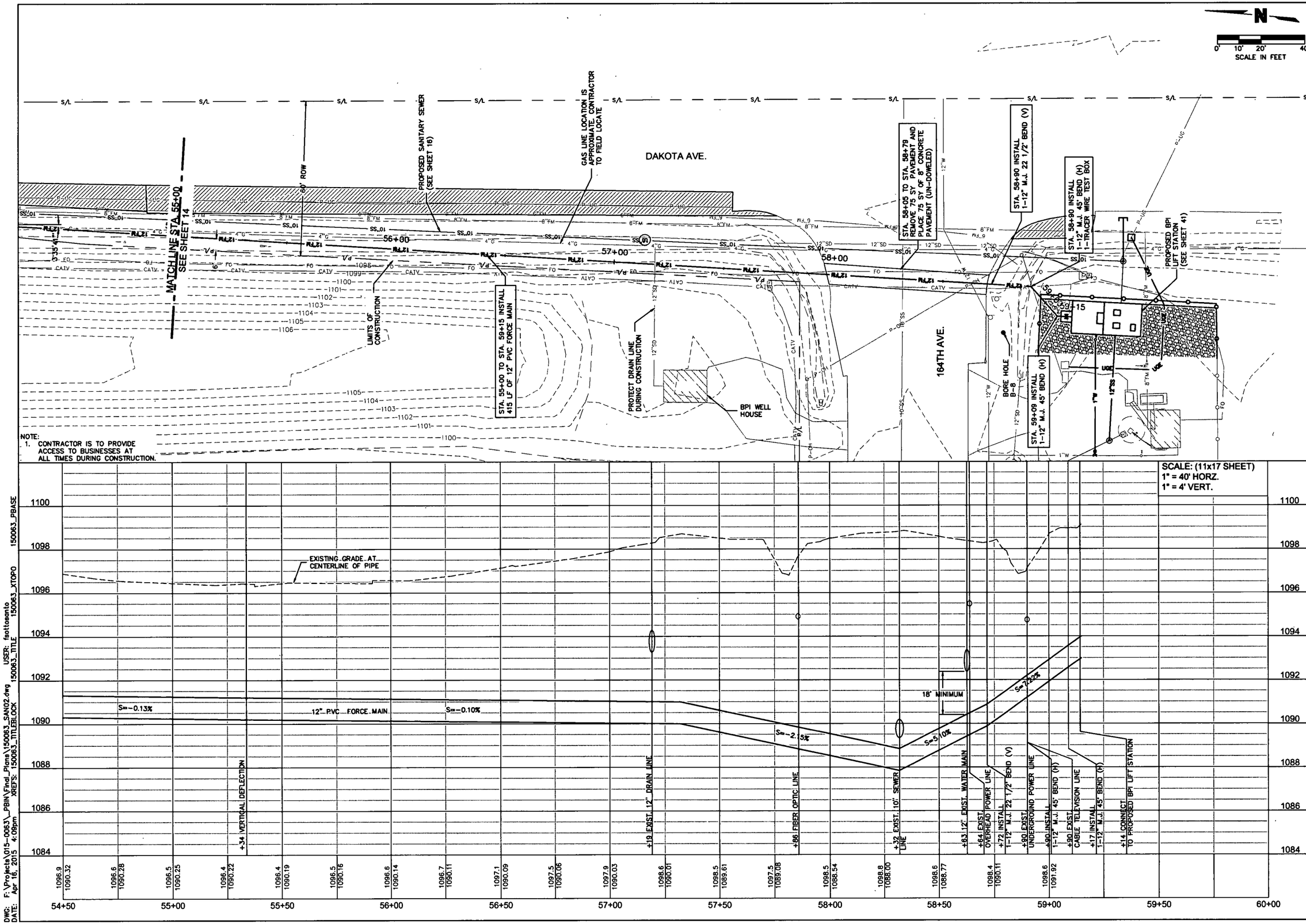

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SANITARY FORCE MAIN PLAN & PROFILE
STA. 55+00 TO STA. 59+15

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

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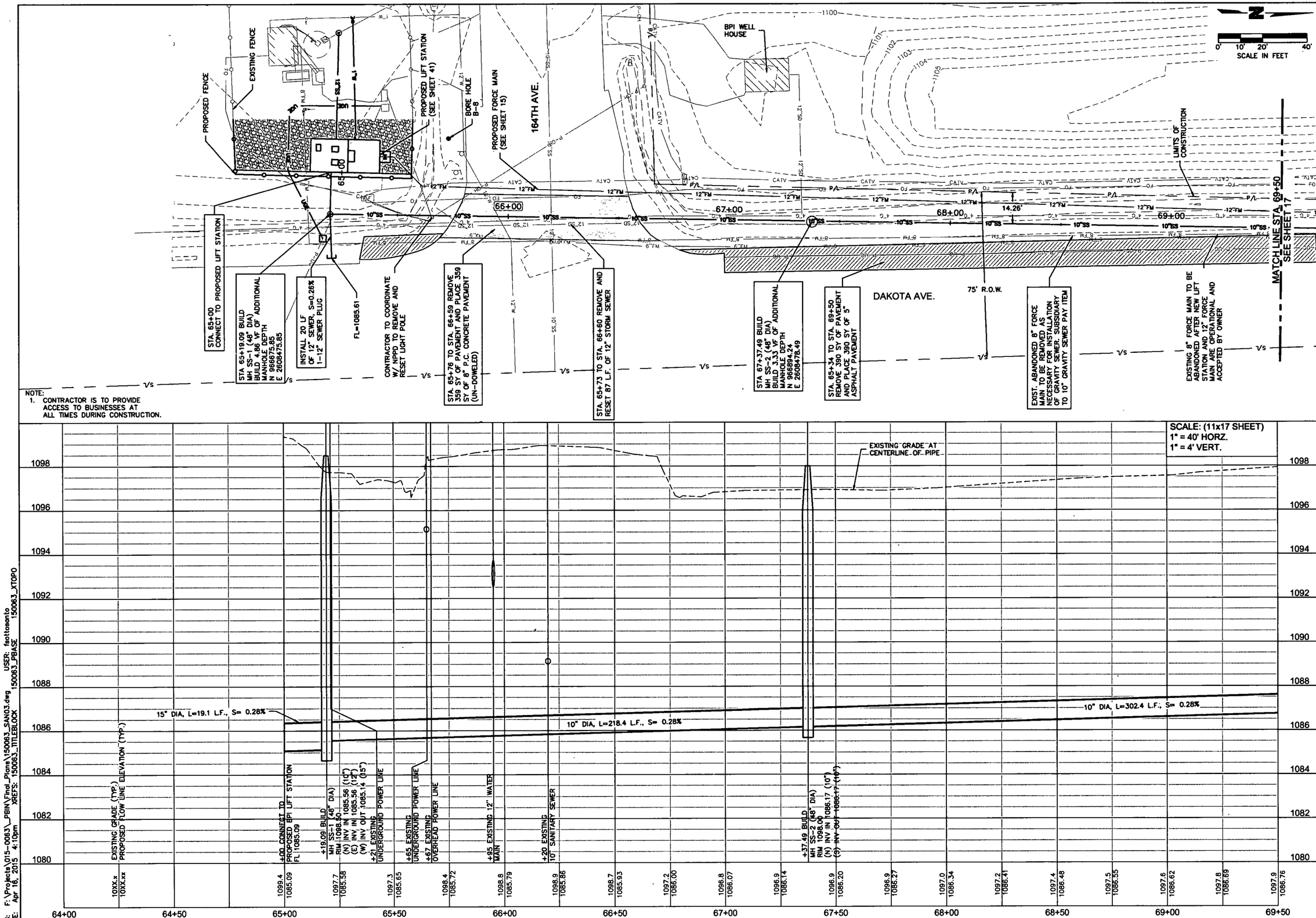
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 15 of 97



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NEBRASKA
4/16/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY SEWER PLAN AND PROFILE STA. 65+00 TO STA. 69+50

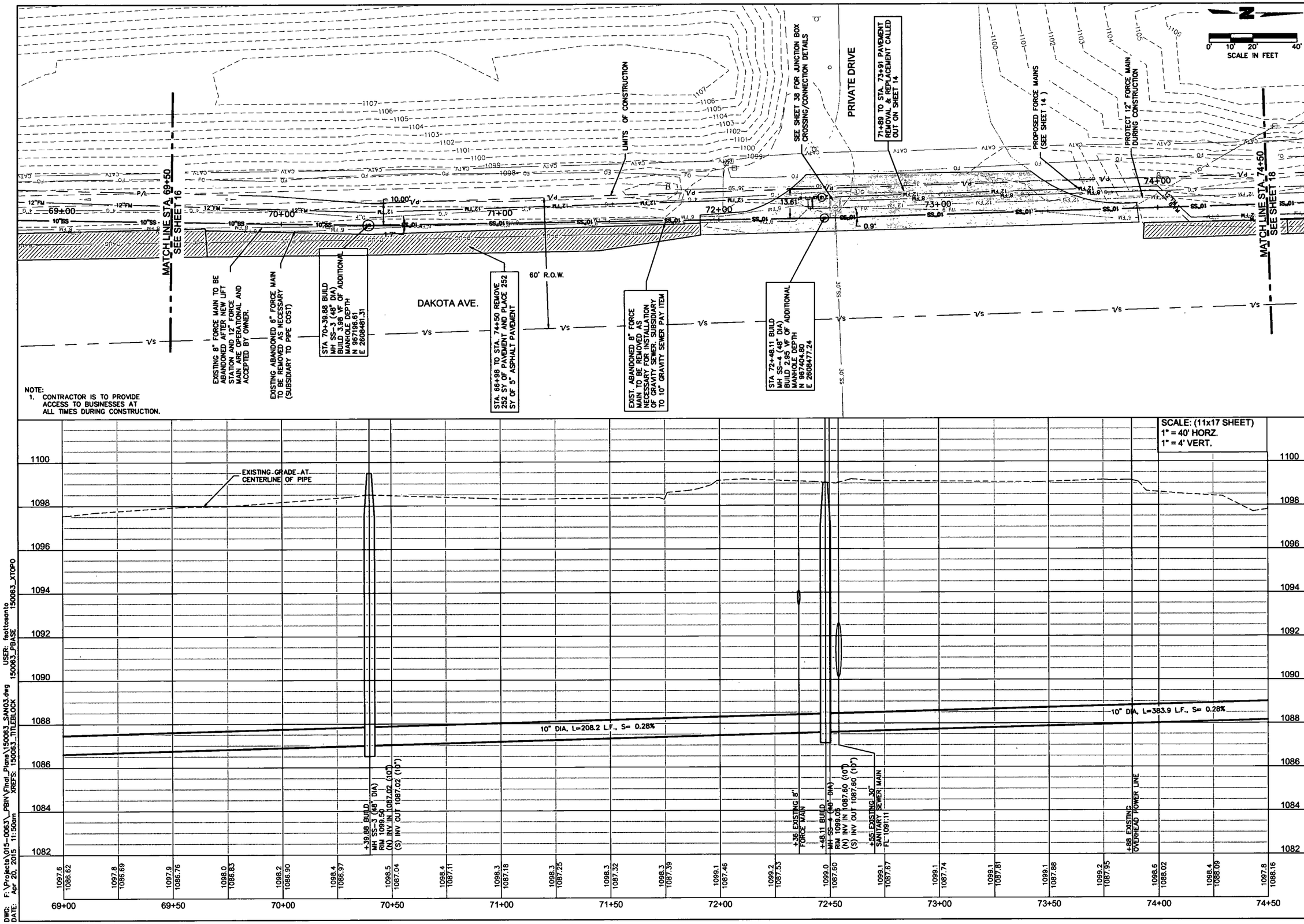
ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 16 of 97



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CARLOS M. MEDINA
NEBRASKA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY SEWER PLAN AND PROFILE
STA. 69+50 TO STA. 74+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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drawing no.:	
date:	APRIL 2015

SHEET
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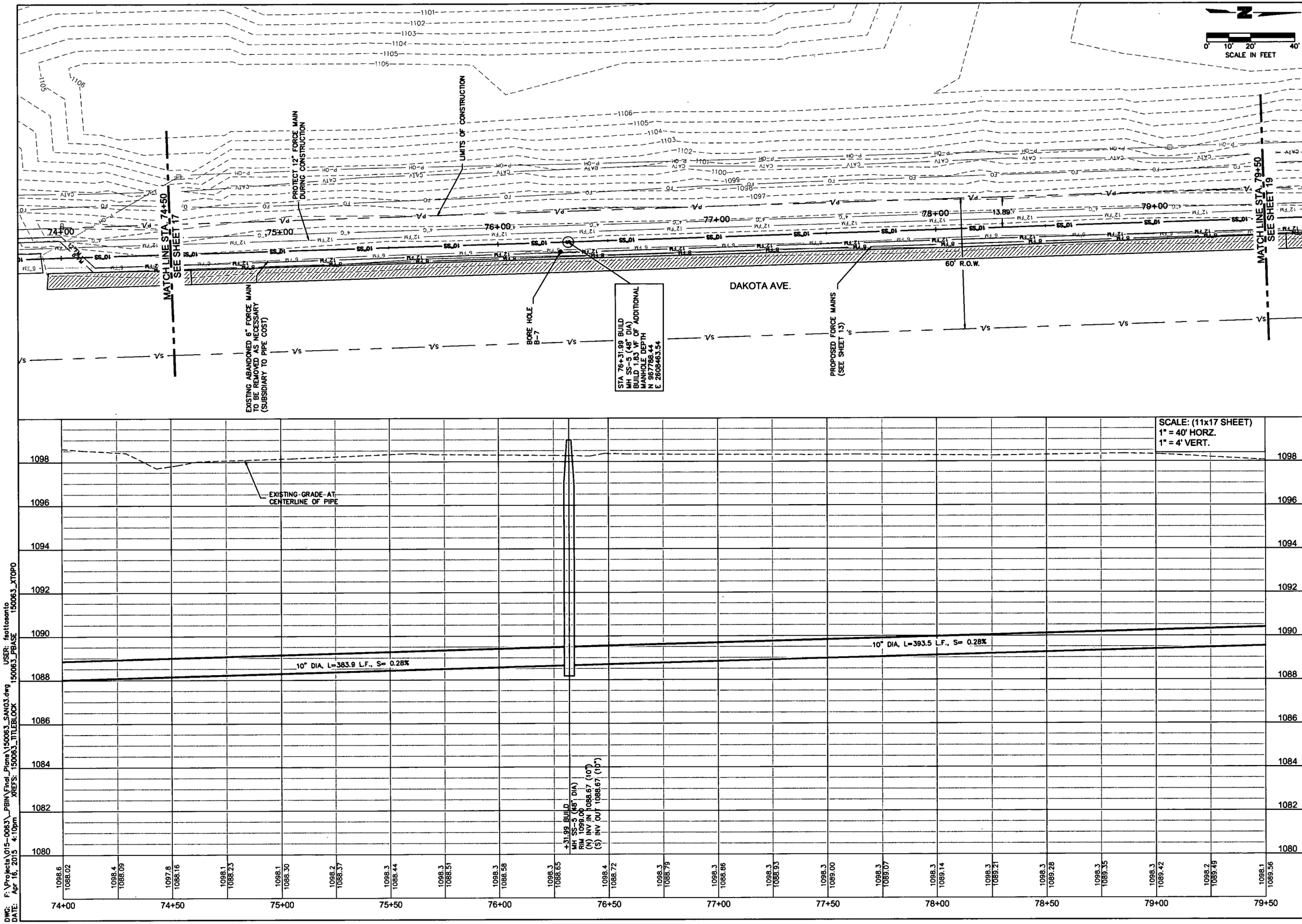

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NEBRASKA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY SEWER PLAN AND PROFILE
STA. 74+50 TO STA. 79+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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SHEET
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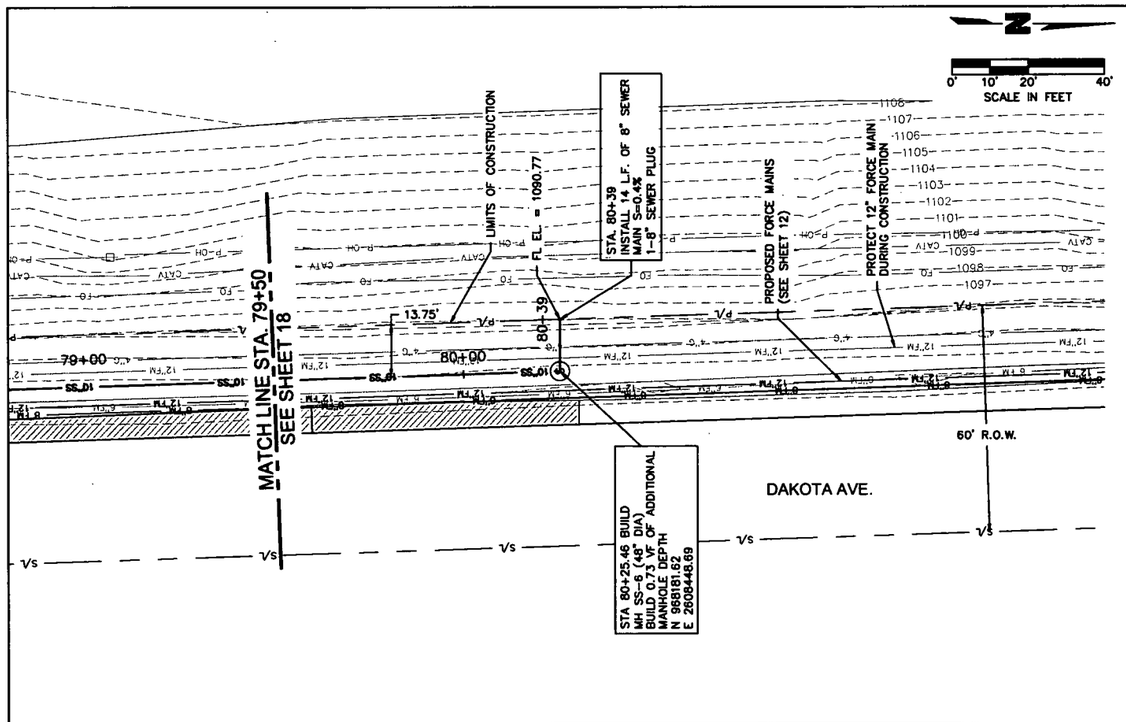

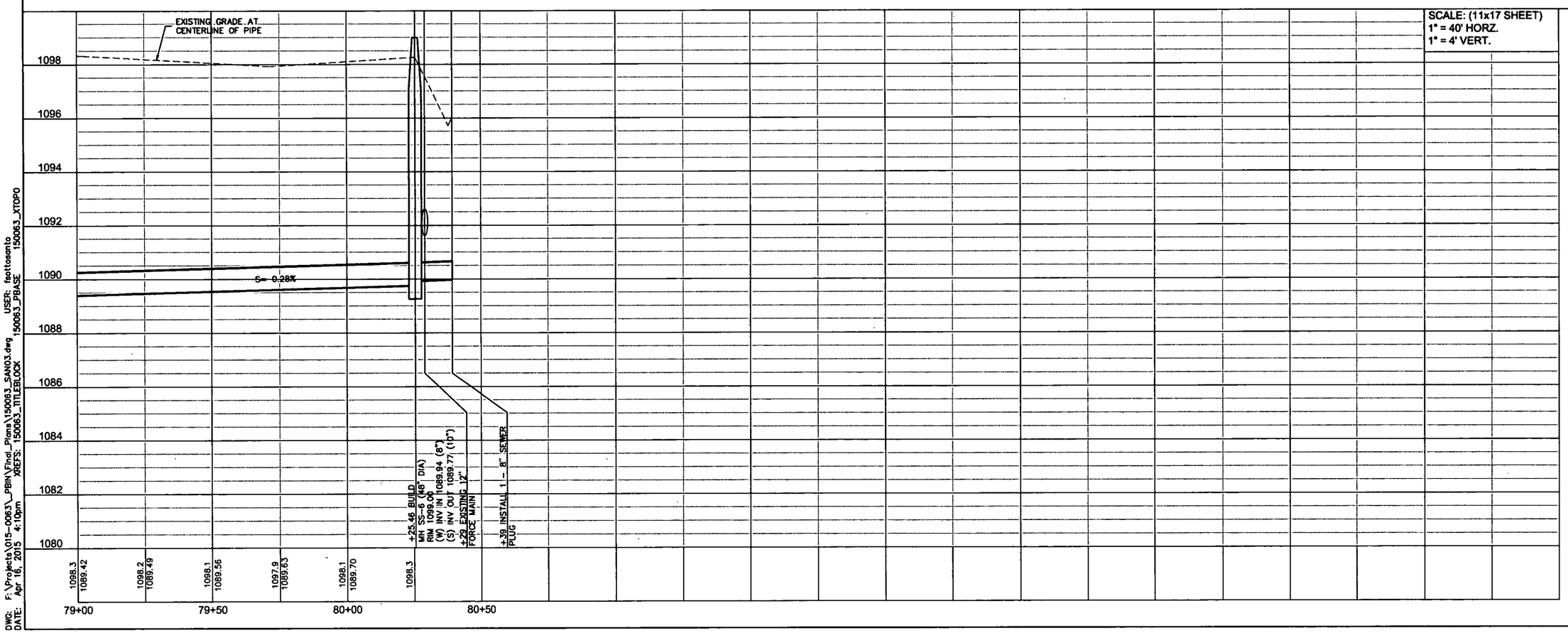

SCALE: (11x17 SHEET)
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1" = 4' VERT.

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STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY SEWER PLAN AND PROFILE
STA. 79+50 TO STA. 80+25

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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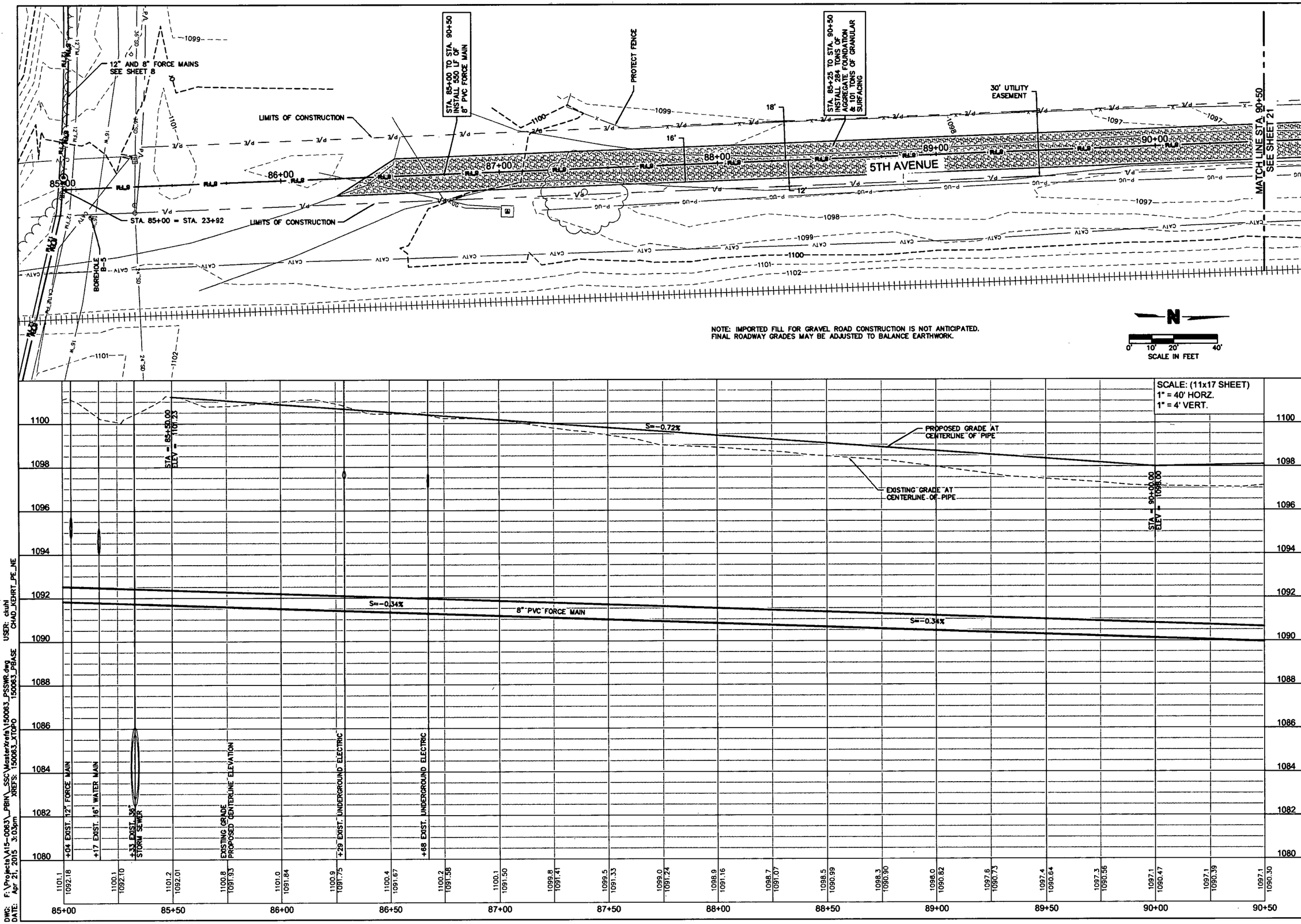
date: APRIL 2015

SHEET
19 of 97



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CHAD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

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SANITARY FORCE MAIN PLAN & PROFILE STA. 85+00 TO STA. 90+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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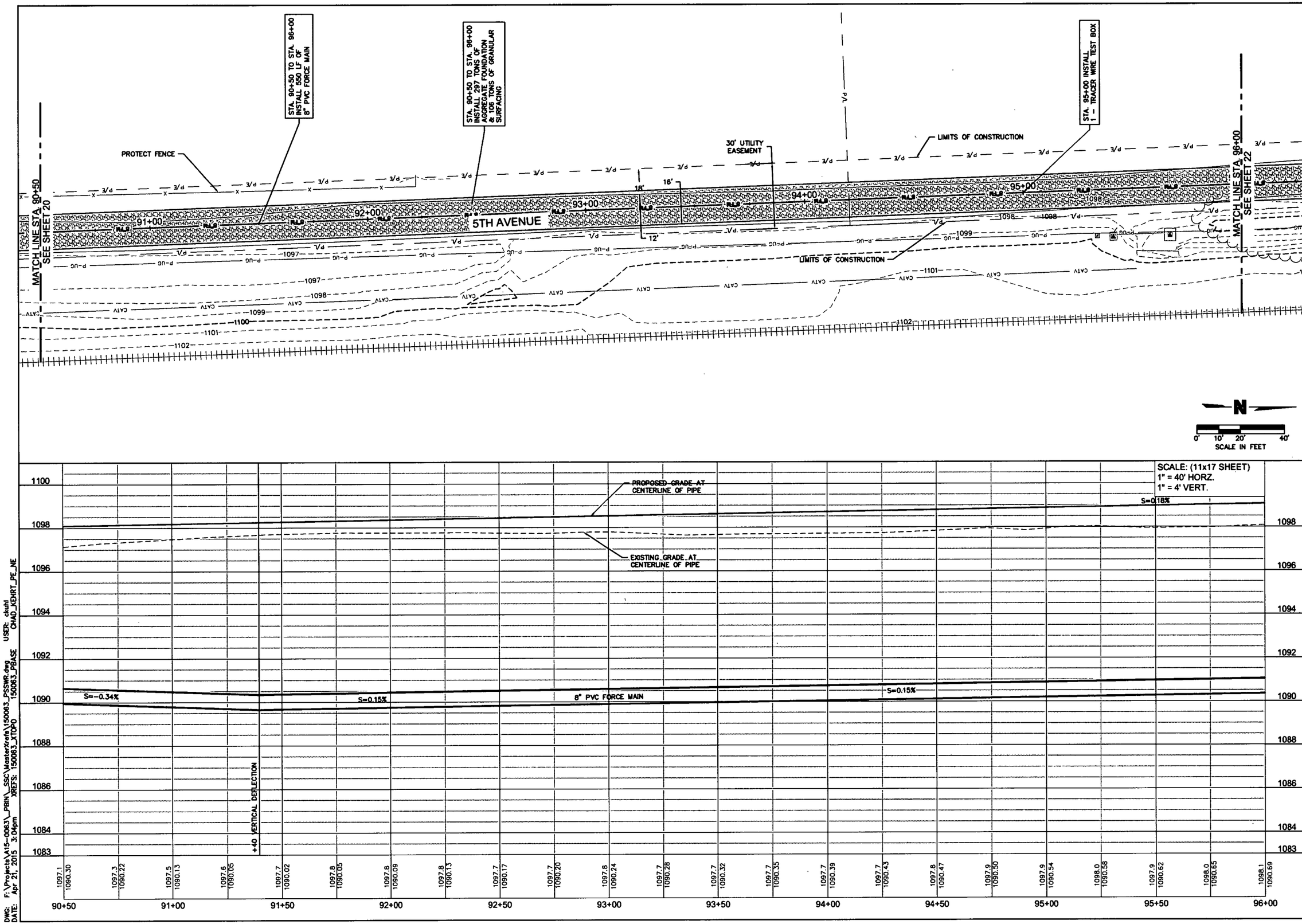
QA/QC by: KJ
project no.: 015-0063
drawing no.:
date APRIL 2015



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SANITARY FORCE MAIN PLAN & PROFILE
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ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 21 of 97

DWG: F:\Projects\A15-0063_PBIN_SSC\Masterxrefs\150063_PSSWR.dwg
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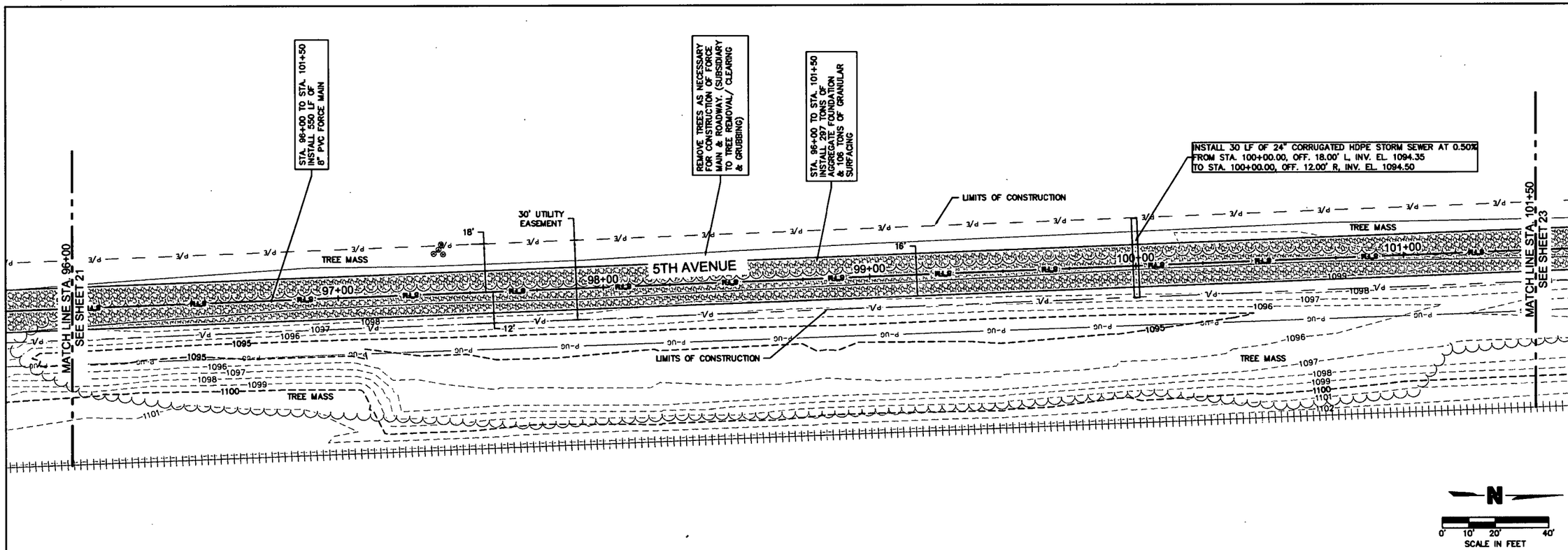

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STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

SANITARY FORCE MAIN PLAN & PROFILE
STA. 96+00 TO STA. 101+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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QA/QC by: MJY
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drawing no.:
date: APRIL 2015

SHEET
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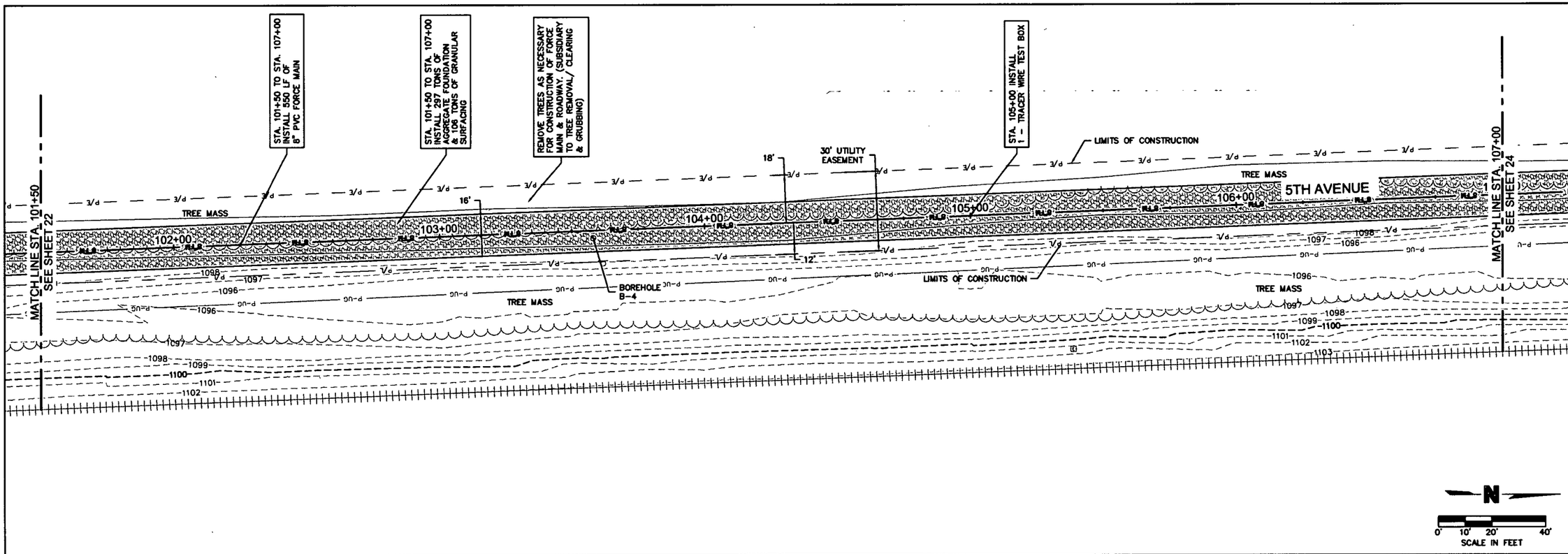

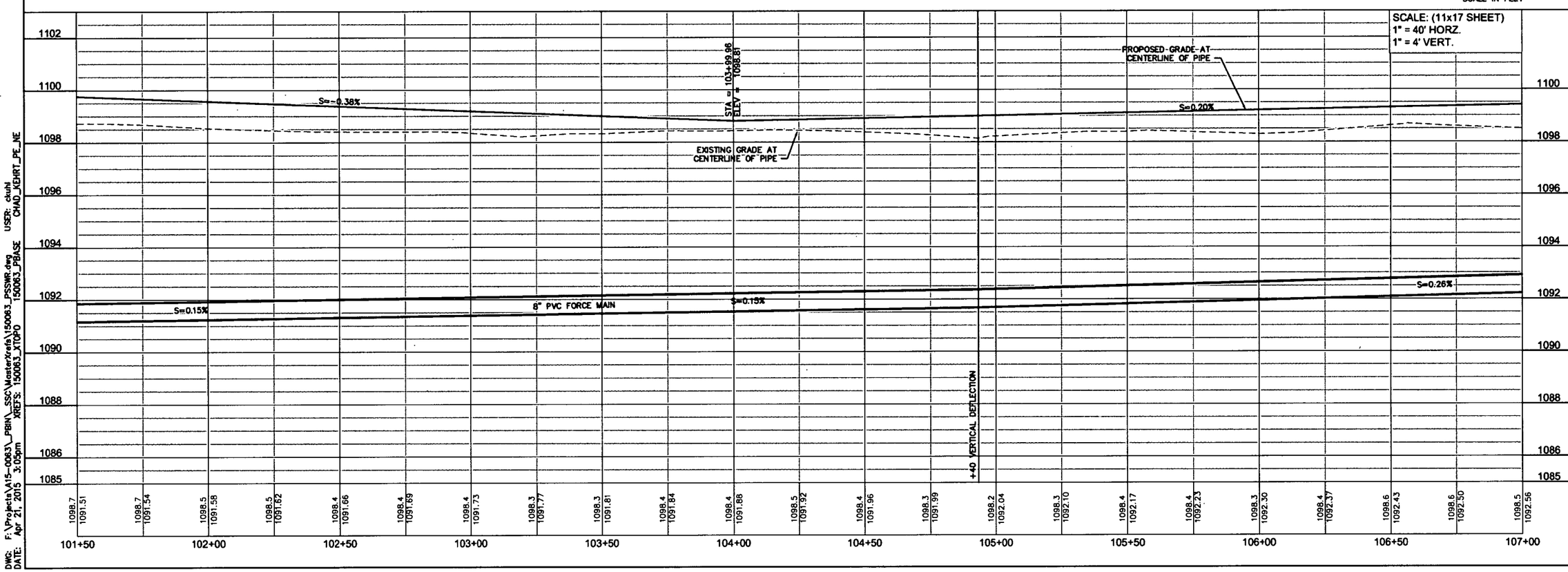

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REVISIONS

SANITARY FORCE MAIN PLAN & PROFILE
STA. 101+50 TO STA. 107+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 23 of 97

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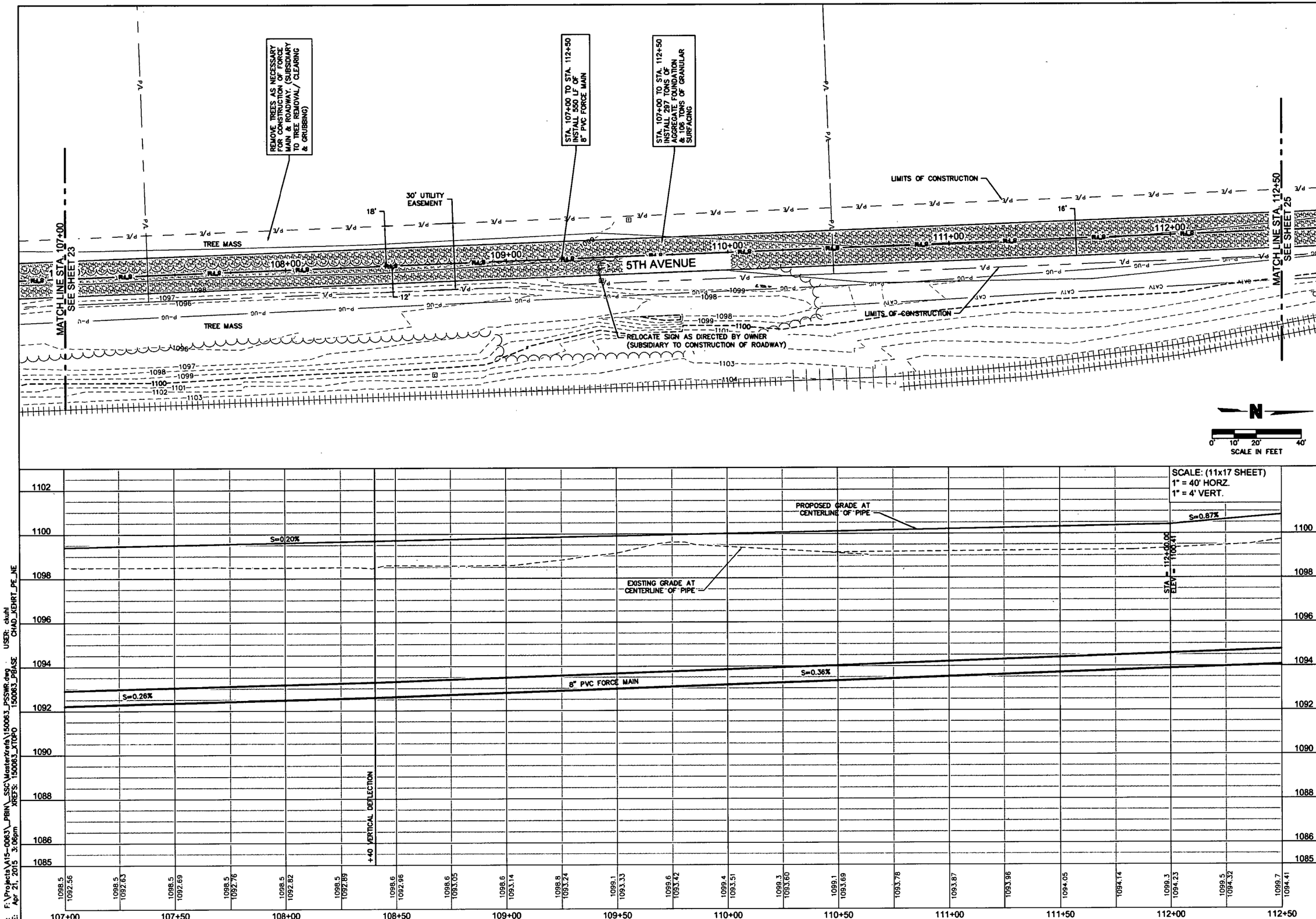

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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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approved by: CPK
QA/QC by: MJY
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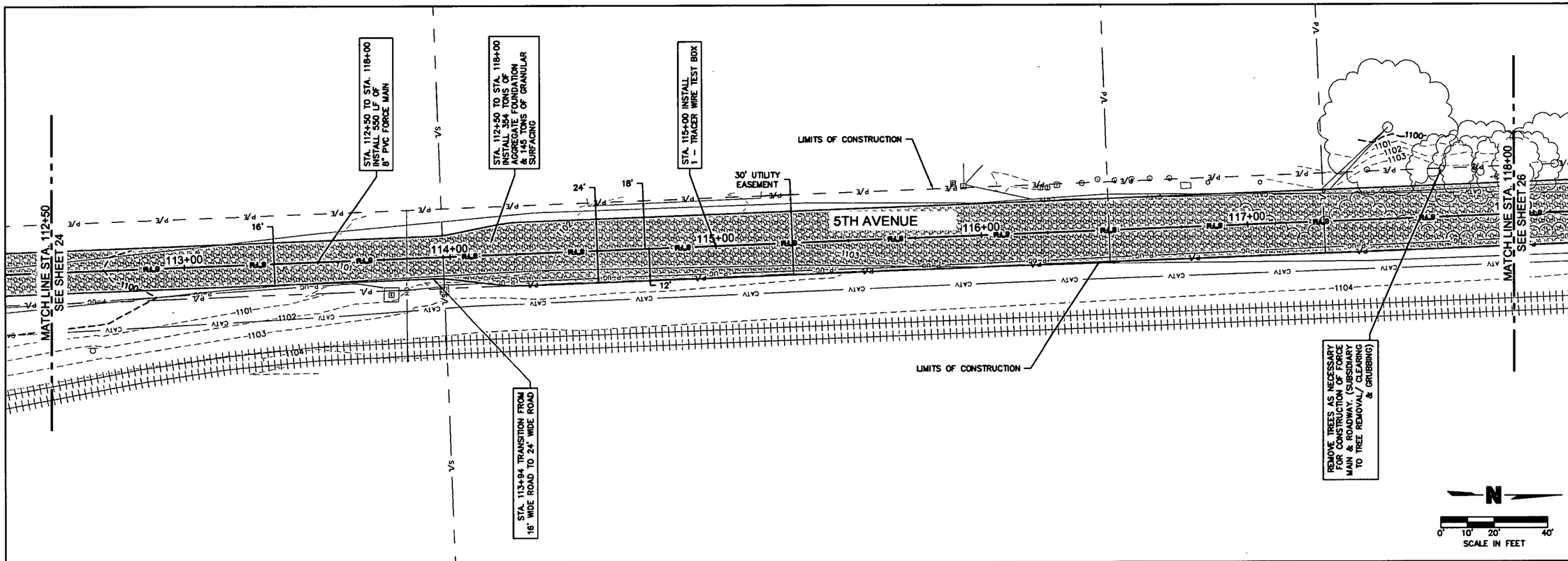
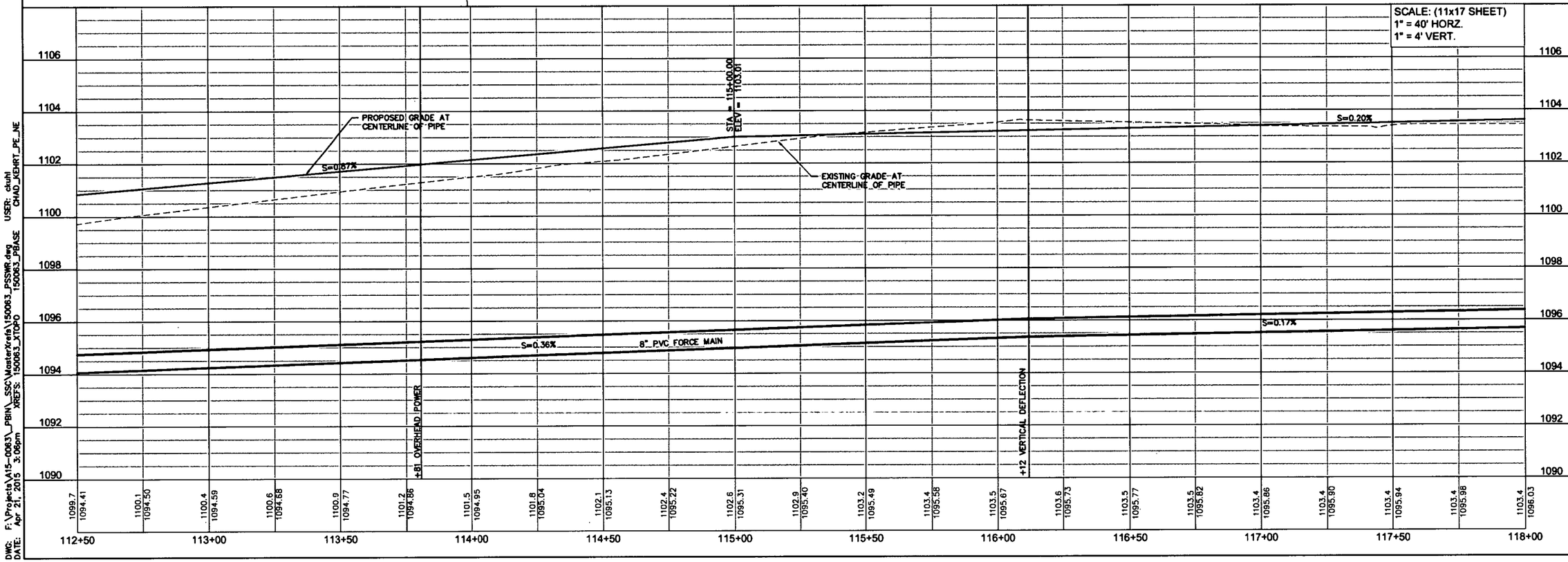
SHEET
24 of 97





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South Sioux City, NE 68776-2356
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ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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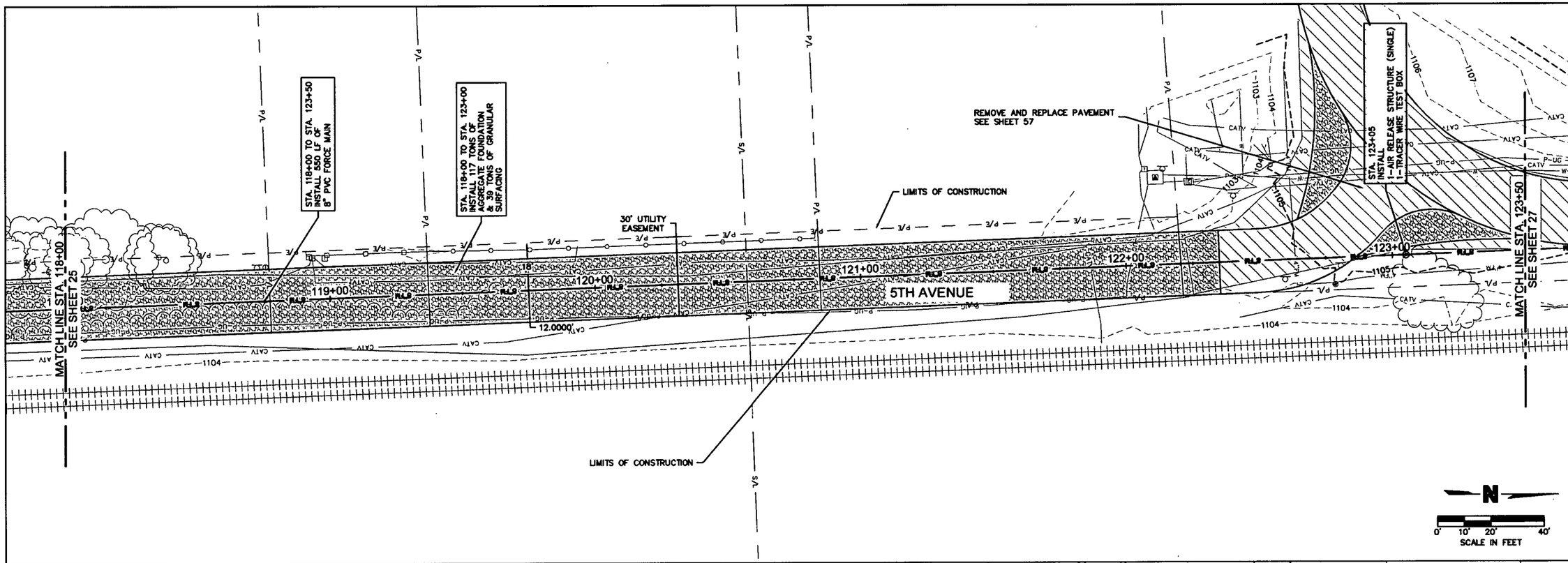
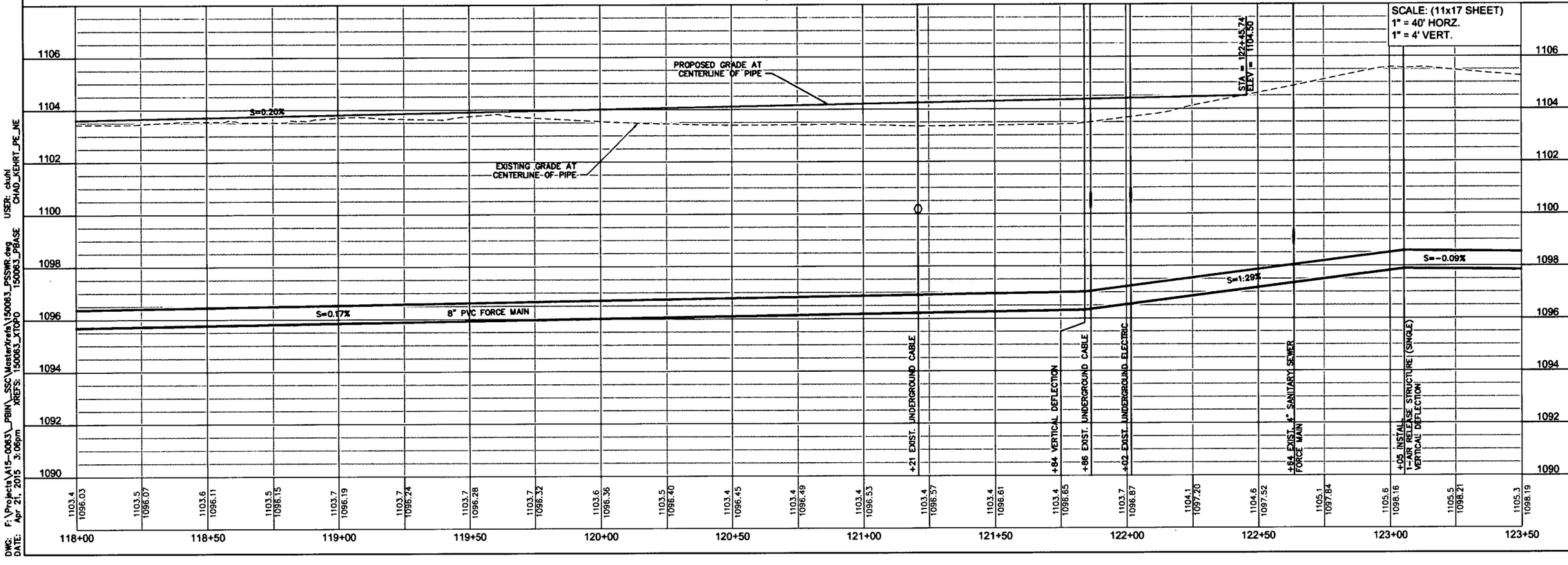
QA/QC by:	MJY
project no.:	015-0083
drawing no.:	
date:	APRIL 2015





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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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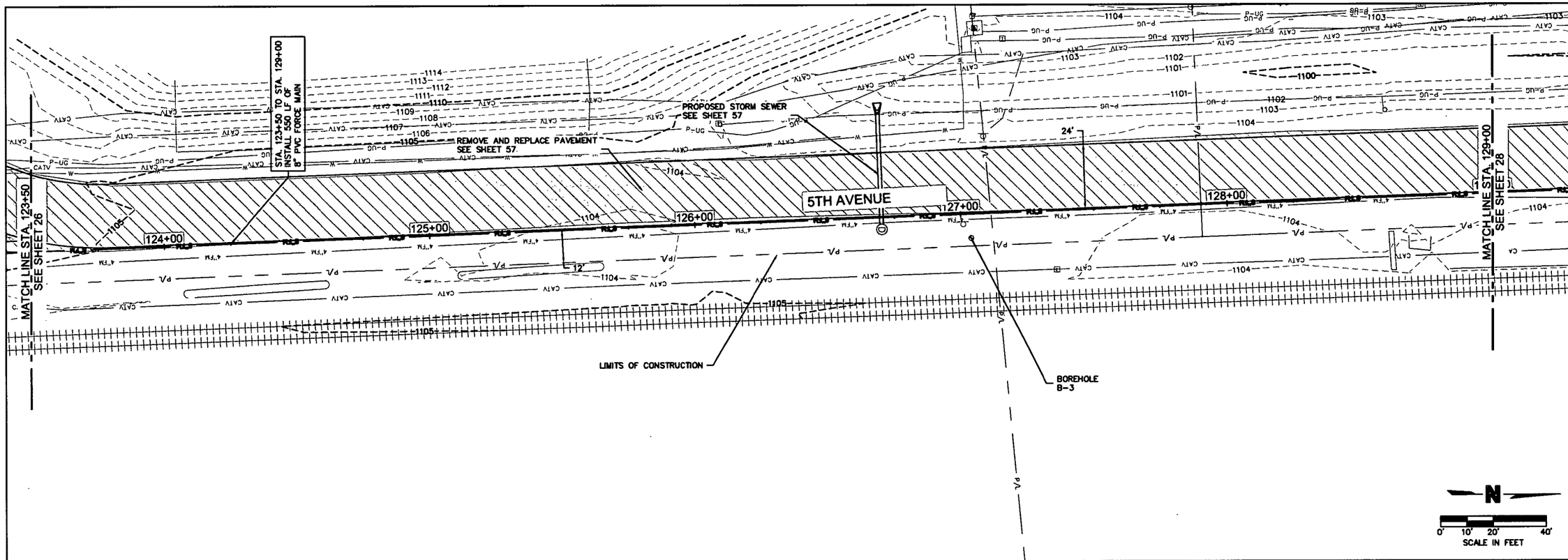

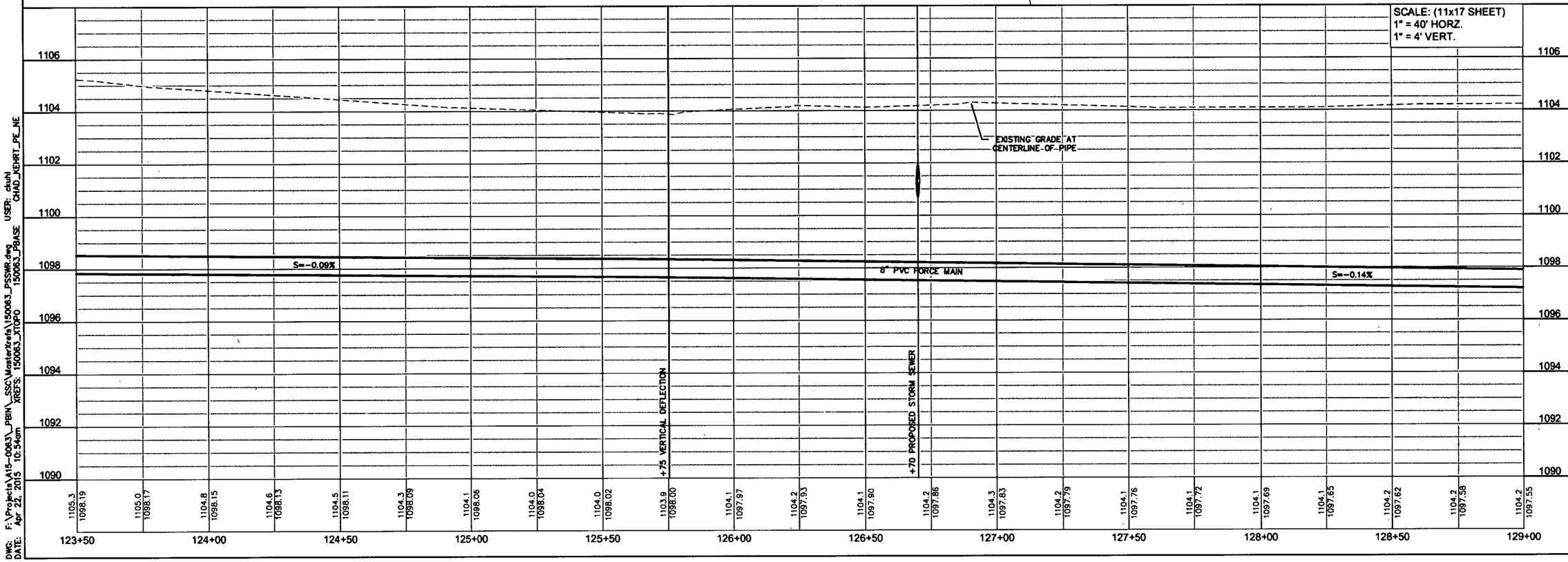

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3060
FAX 402.494.4064
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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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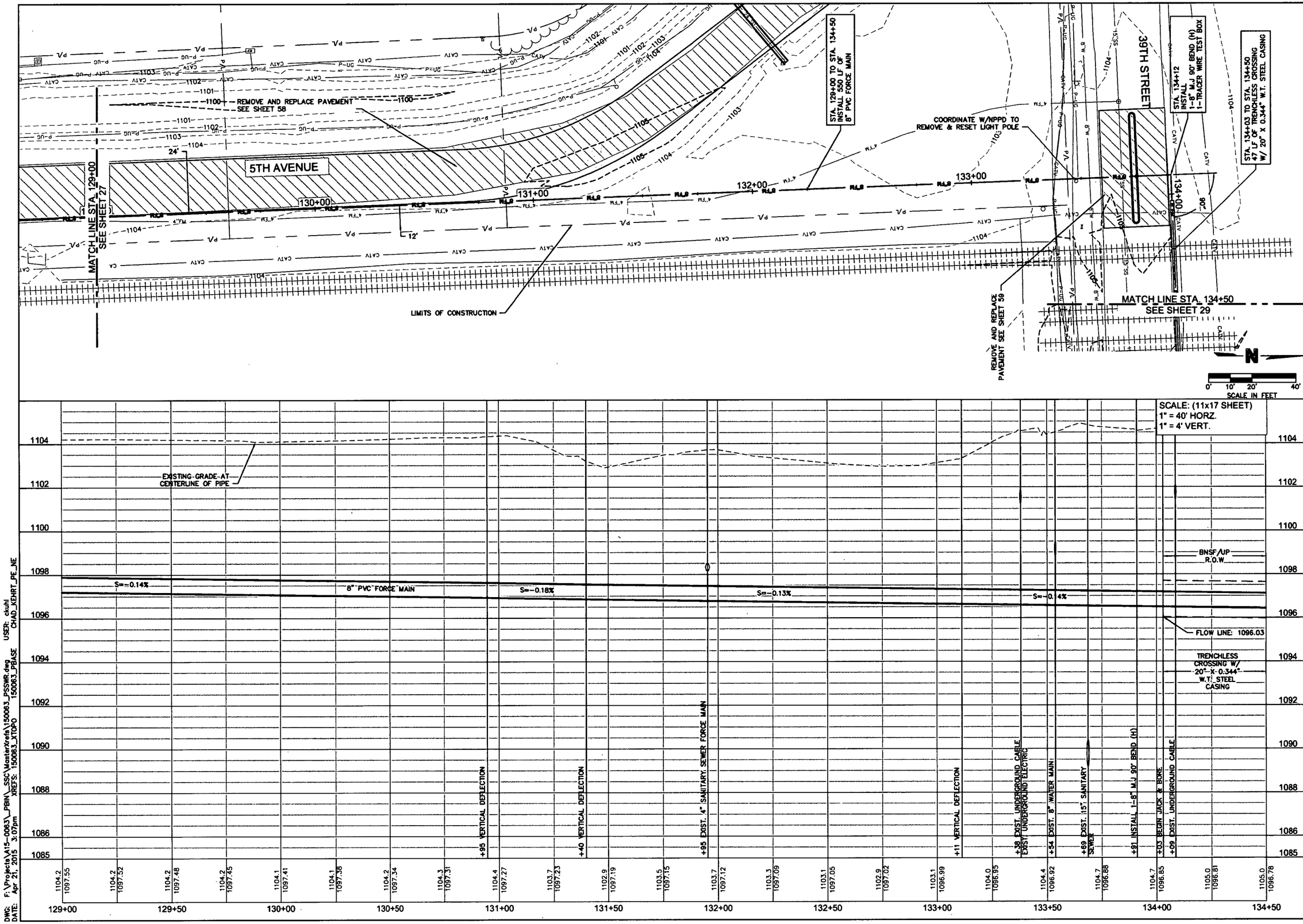

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TEL 402.494.5059
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ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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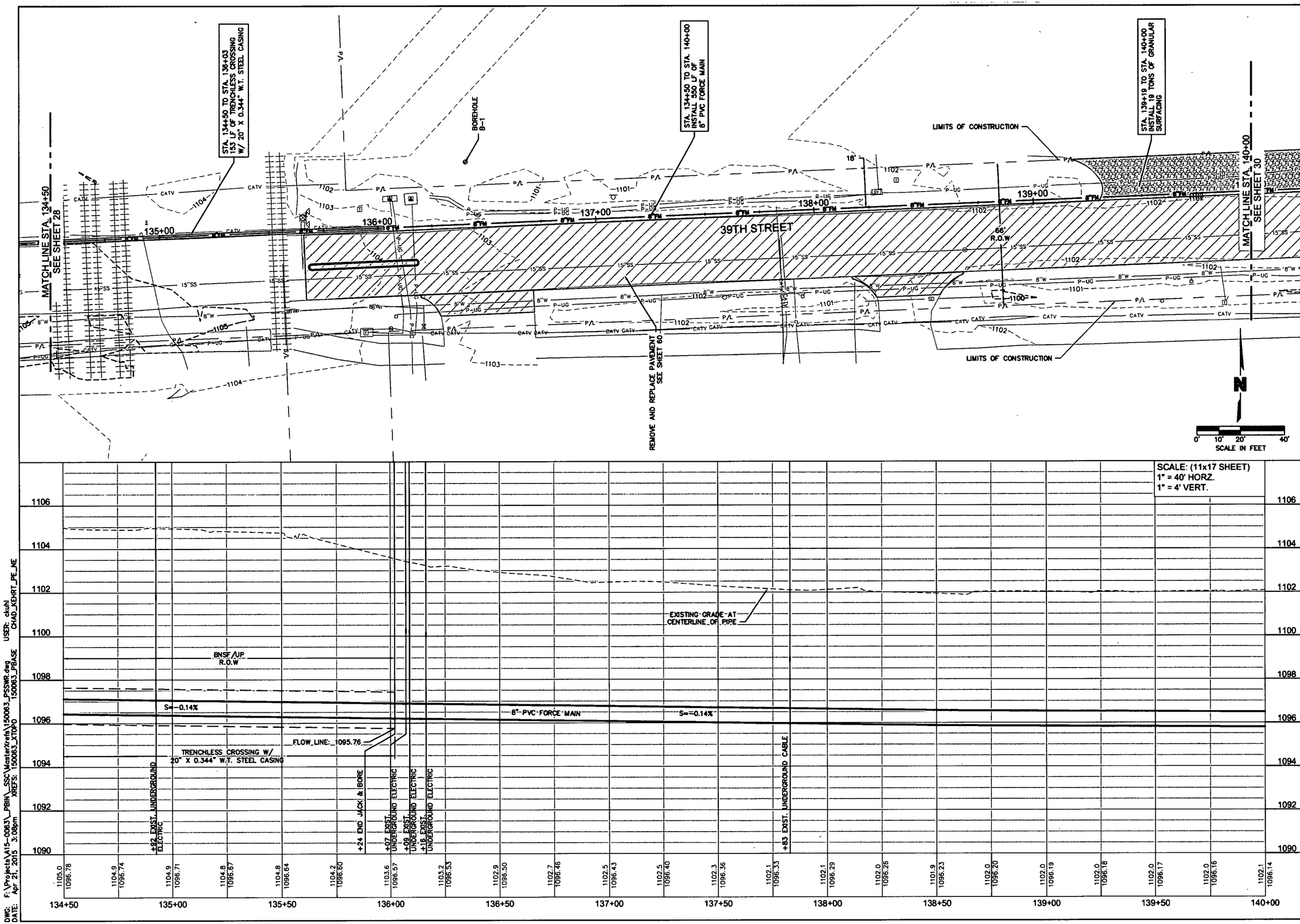
SHEET 28 of 97



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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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project no.:	015-0063
drawing no.:	
date	APRIL 2015

SHEET
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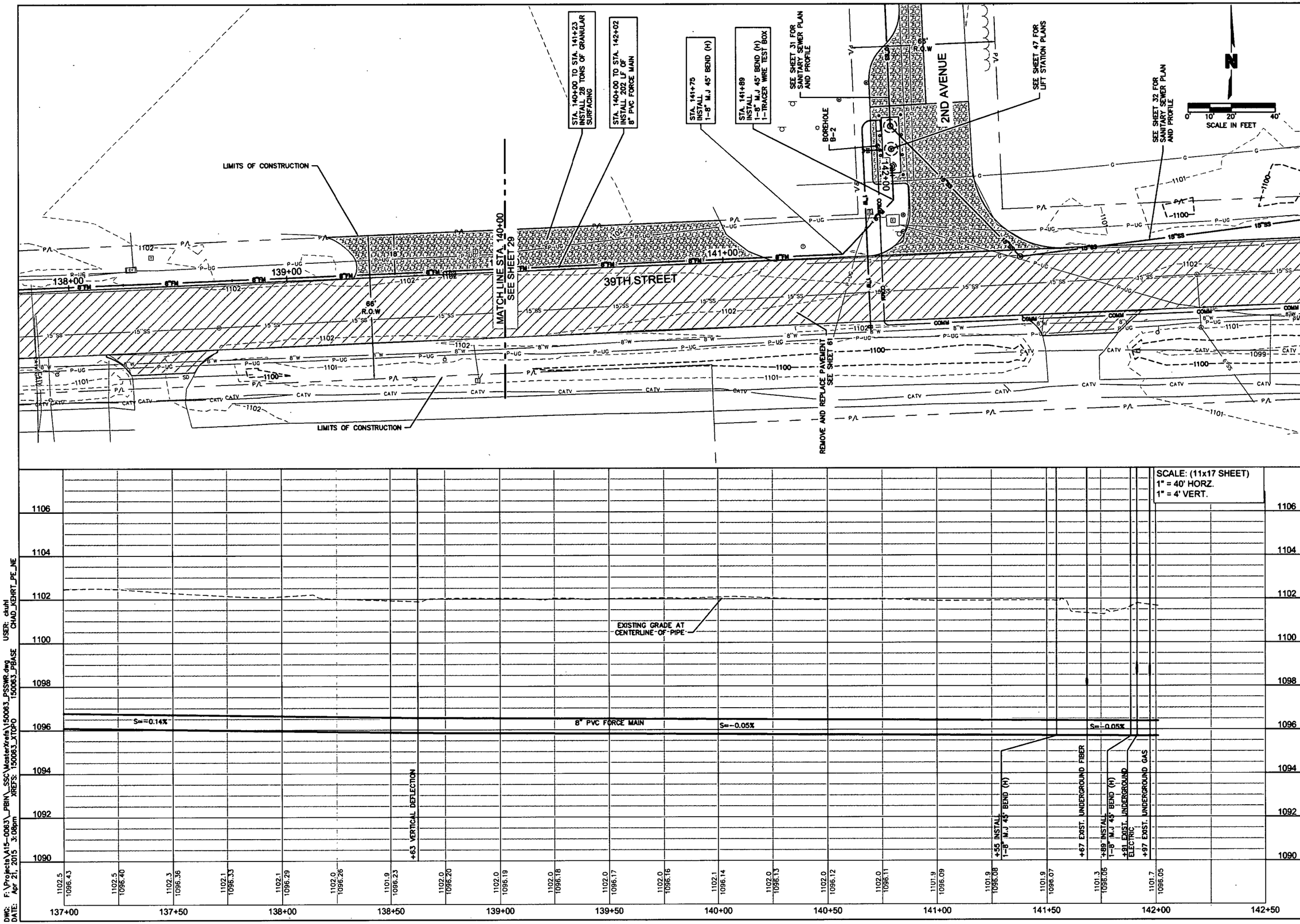

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ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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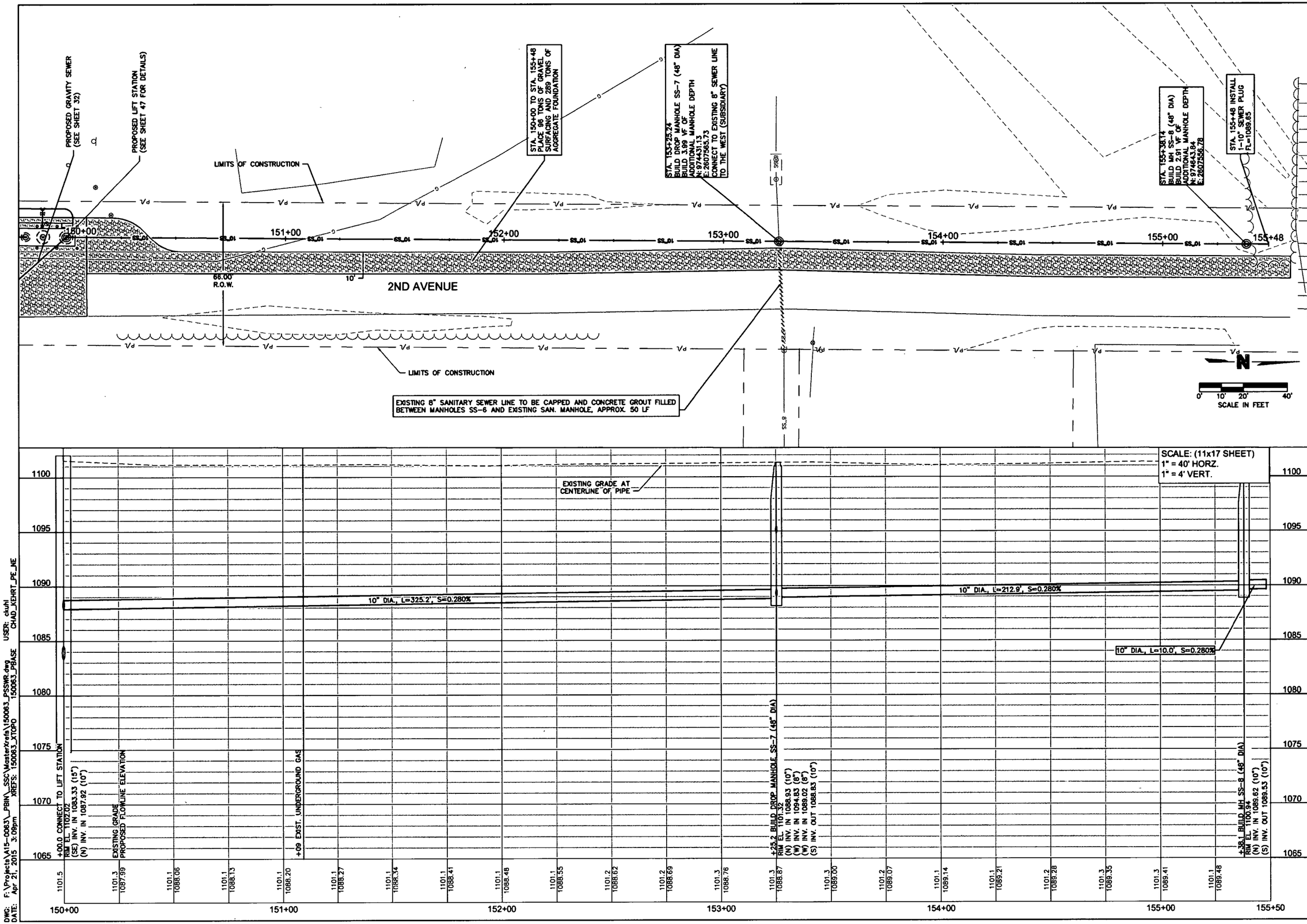
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 30 of 97



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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

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QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

SHEET
31 of 97

DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PSSWR.dwg USER: ckuhl
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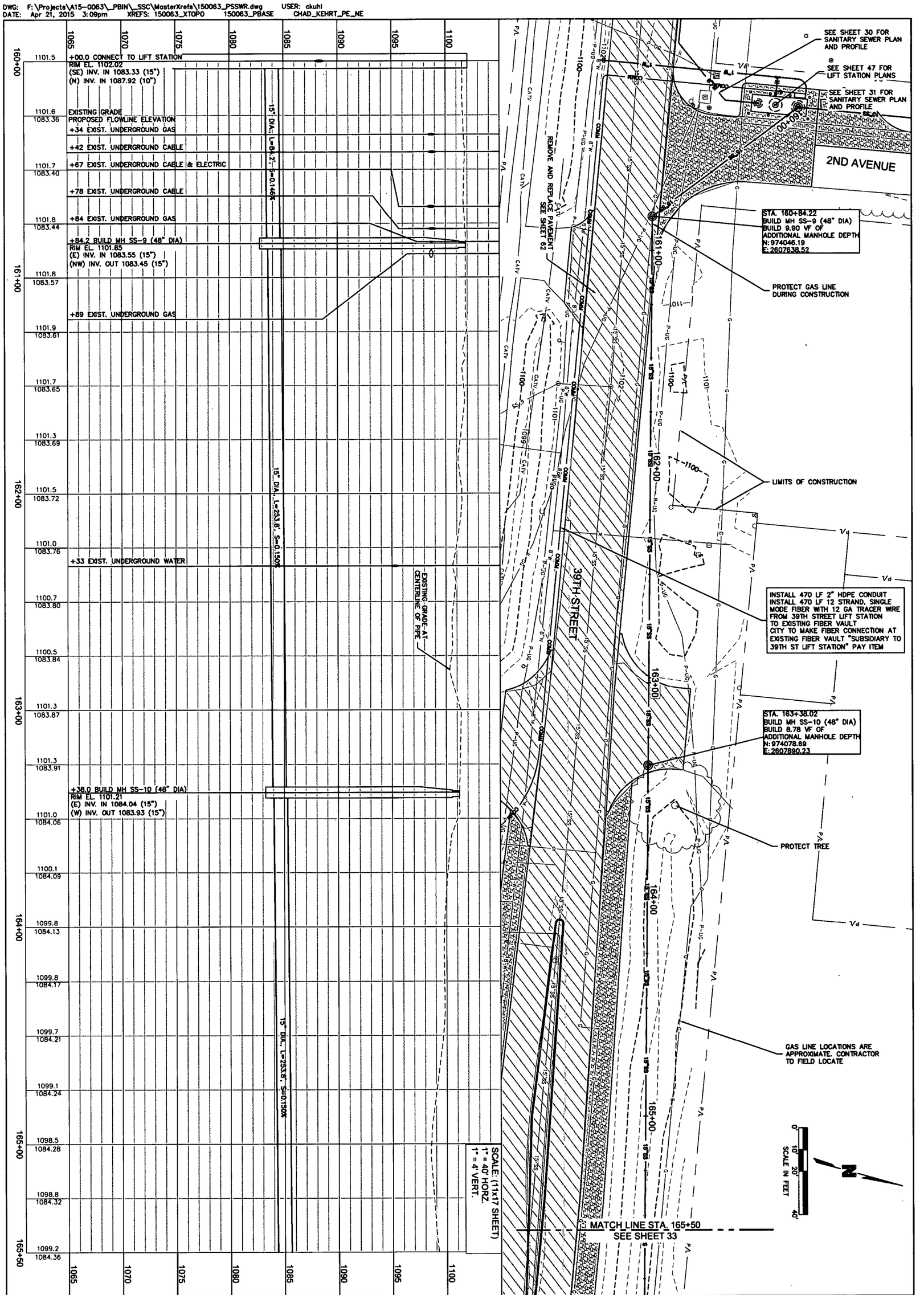

SHEET 32 of 97

drawn by:	JSL, DCG
checked by:	DCG
approved by:	CRK
QA/QC by:	MAK
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

SANITARY SEWER PLAN & PROFILE
STA. 160+00 TO STA. 165+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

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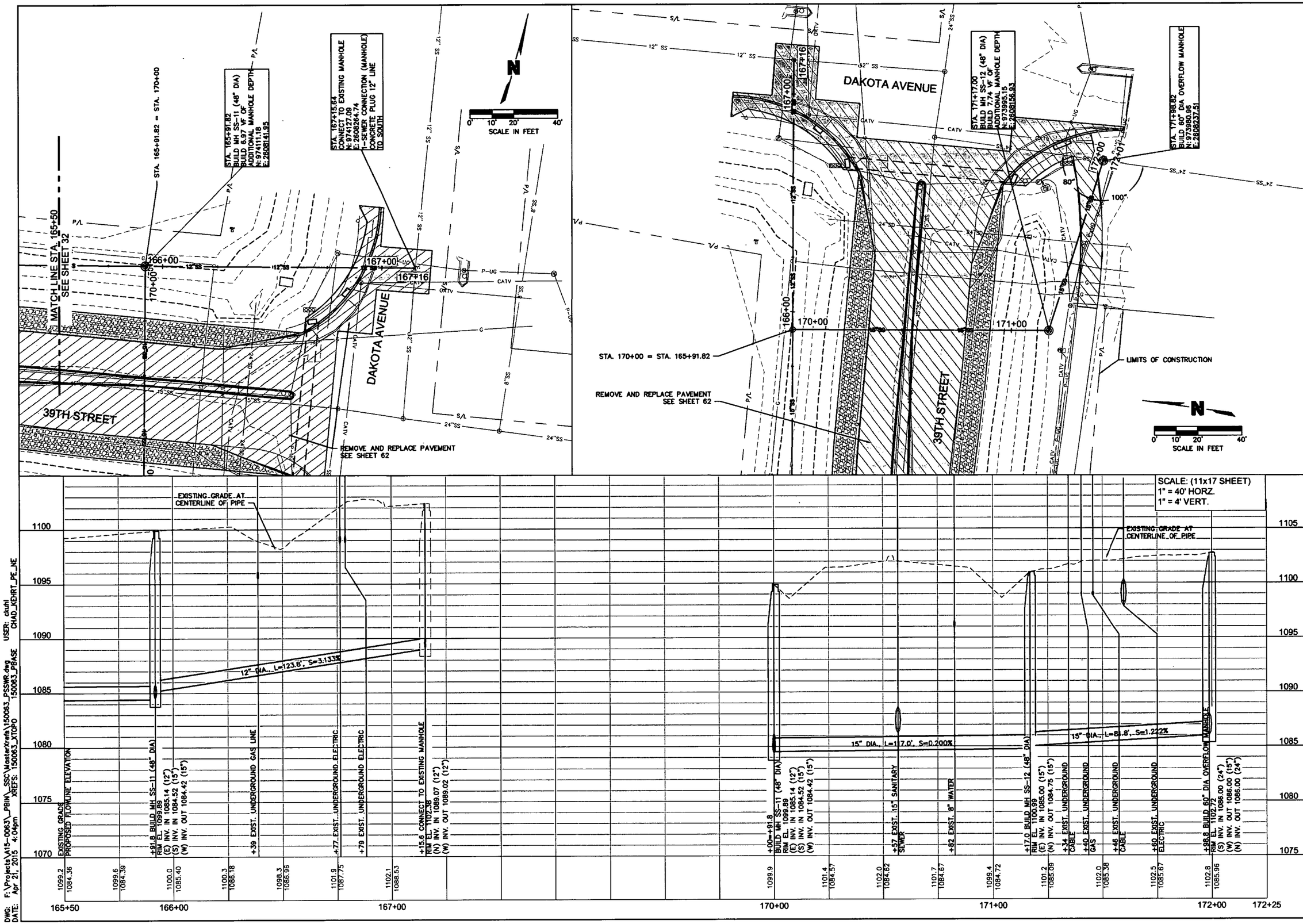

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ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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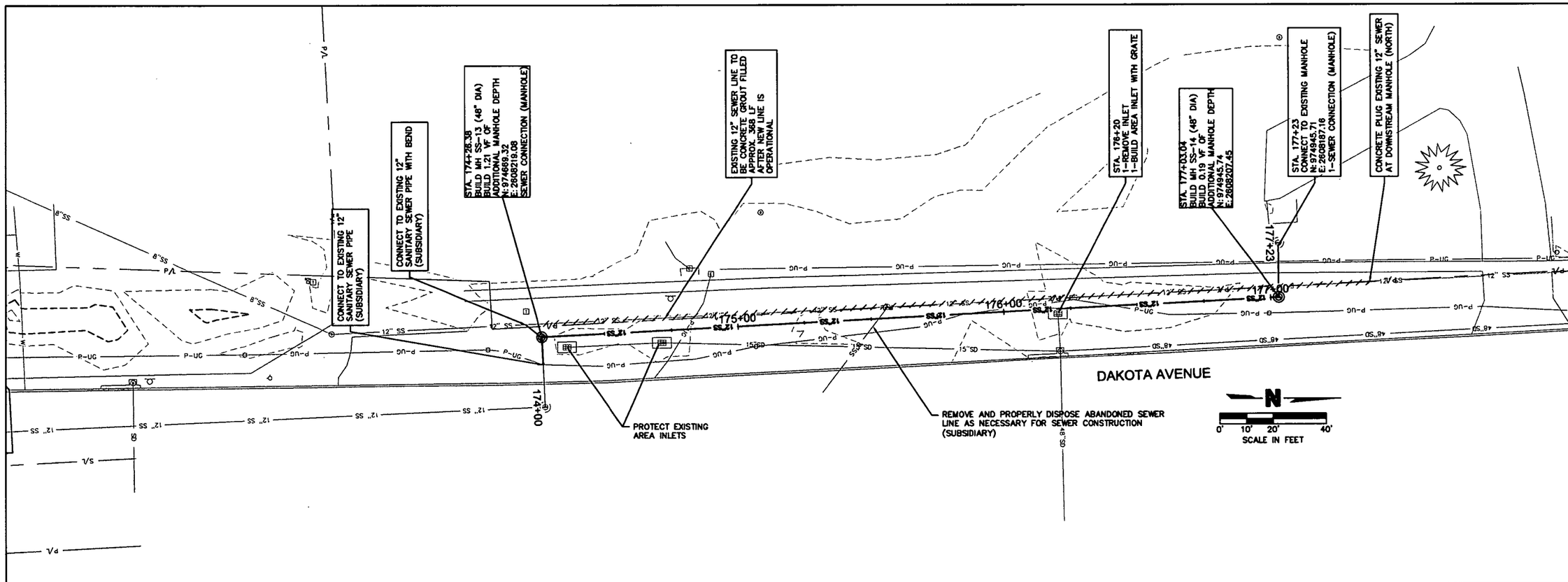
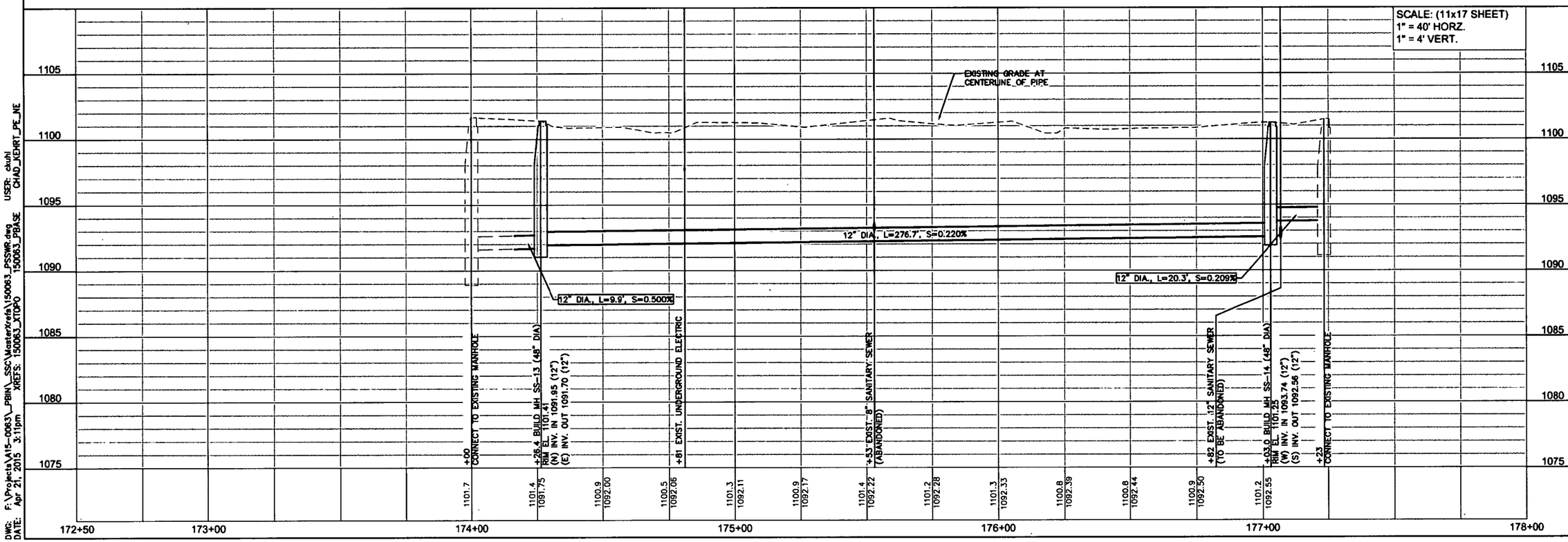
SHEET
33 of 97





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SANITARY SEWER PLAN & PROFILE STA. 173+00 TO STA. 177+23

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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SHEET 34 of 97

DWG: F:\Projects\015-0063_PBIN_SSC\MasterXrefs\150063_PSSWR.dwg
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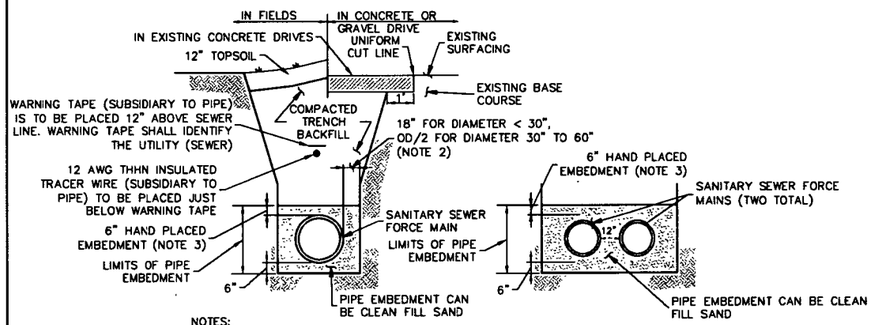
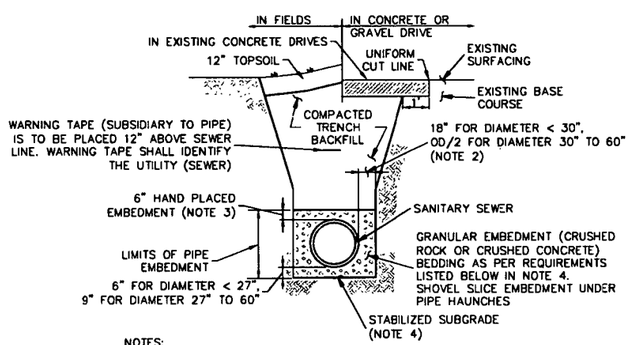


NOTES:

1. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN & PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
2. CLEARANCE IS FROM PIPE OUTER WALL TO INNER FACE OF TRENCH SHORING, SHEETING, OR TRENCH BOX.
3. EMBEDMENT ABOVE THE PIPE SHALL BE AN UNCOMPACTED LAYER.
4. IN FARMLAND AND PASTURE CONSTRUCTION AREAS, CONTRACTOR SHALL STRIP AND STOCK PILE THE TOP 12" OF SOIL SEPARATELY. CONTRACTOR SHALL PLACE COMPACTED BACKFILL TO WITHIN 12" OF EXISTING GROUND, THEN CONTRACTOR SHALL REPLACE ORIGINAL TOP SOIL STRIPPINGS TO MATCH ORIGINAL GRADES.

TRENCH DETAIL - FORCE MAIN (SINGLE OR DOUBLE)

NOT TO SCALE



NOTES:

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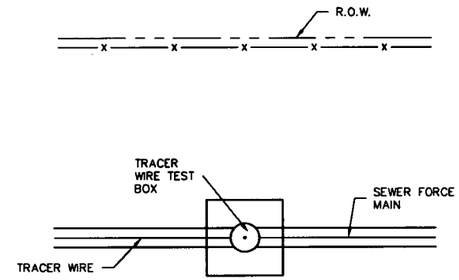
2. CLEARANCE IS FROM PIPE OUTER WALL TO INNER FACE OF TRENCH SHORING, SHEETING, OR TRENCH BOX.
3. EMBEDMENT ABOVE THE PIPE SHALL BE AN UNCOMPACTED LAYER.
4. THE BEDDING MATERIAL SHALL BE A WELL-GRADED CRUSHED ROCK OR CRUSHED CONCRETE WITH A MINIMUM OF 100 PERCENT PASSING THE 1.0 INCH SIEVE, 20 TO 60 PERCENT PASSING THE #4 SIEVE, 0 TO 30 PERCENT PASSING THE #10 SIEVE, AND 0 TO 10 PERCENT PASSING THE #200 SIEVE.
5. IN FARMLAND AND PASTURE CONSTRUCTION AREAS, CONTRACTOR SHALL STRIP AND STOCK PILE THE TOP 12" OF SOIL SEPARATELY. CONTRACTOR SHALL PLACE COMPACTED BACKFILL TO WITHIN 12" OF EXISTING GROUND, THEN CONTRACTOR SHALL REPLACE ORIGINAL TOP SOIL STRIPPINGS TO MATCH ORIGINAL GRADES.

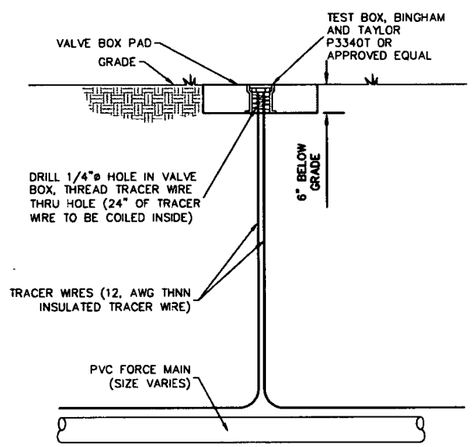
TRENCH DETAIL -GRAVITY SEWER

NOT TO SCALE



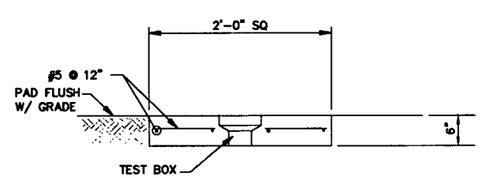
TRACER WIRE TEST BOX INSTALLATION LOCATION

NOT TO SCALE



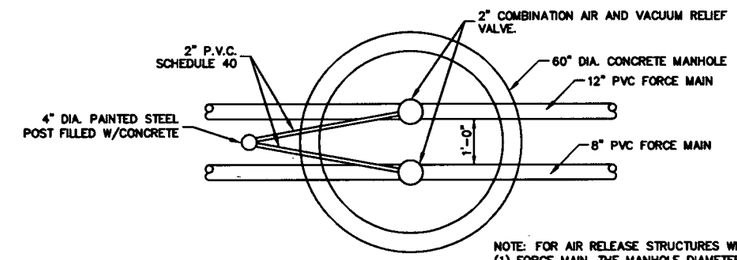
TRACER WIRE TEST BOX

NOT TO SCALE



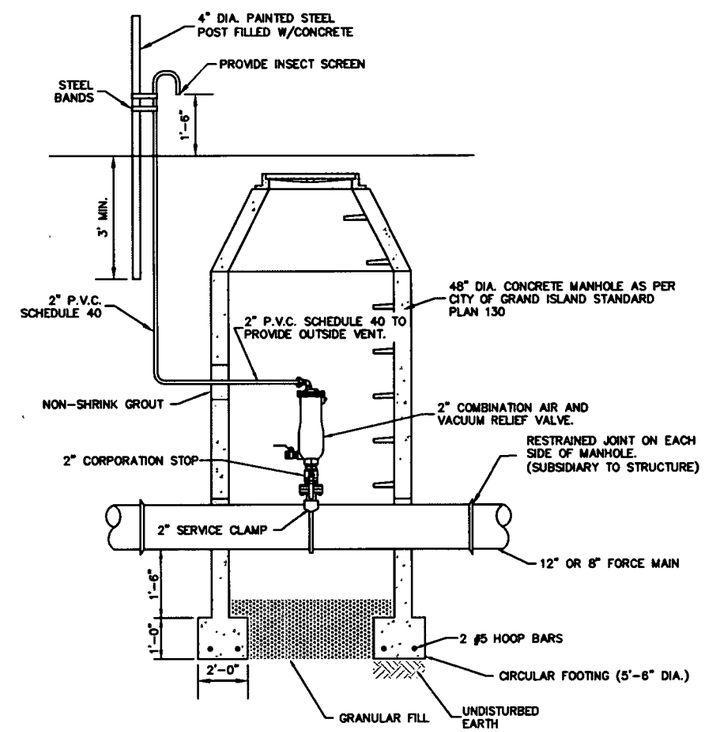
TEST BOX PAD

NOT TO SCALE



NOTE: FOR AIR RELEASE STRUCTURES WITH ONE (1) FORCE MAIN, THE MANHOLE DIAMETER SHALL BE 48" AND HAVE THE FORCE MAIN CENTERED IN THE STRUCTURE.

PLAN VIEW



NOTE: COMBINATION AIR AND VACUUM RELIEF VALVE SHALL BE VAL-MATIC 2" COMBINATION AIR VALVE MODEL VM-801AS (STAINLESS STEEL), A.R.I. 2" COMBINATION AIR VALVE MODEL D-025, OR APPROVED EQUAL.

AIR RELEASE STRUCTURE DETAIL

NOT TO SCALE

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2050
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL ENGINEER
RICHARD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

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SANITARY SEWER DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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project no :	015-0063
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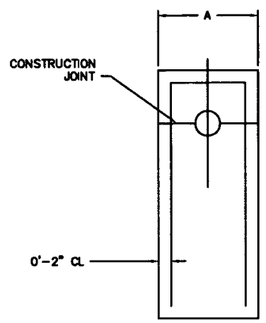
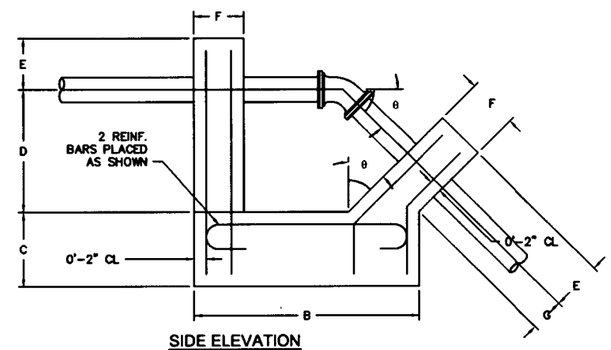
DIA.	θ = 45°										θ = 22 1/2° & 11 1/4°									
	A	B	C	D	E	F	G	CONC. CU. YDS	REINF. BAR SIZE	STEEL LBS.	A	B	C	D	E	F	G	CONC. CU. YDS	REINF. BAR SIZE	STEEL LBS.
6"&8"	2'-0"	4'-6"	1'-6"	2'-6"	1'-0"	1'-0"	0'-8"	0.94	#4	34	2'-0"	4'-6"	0'-9"	1'-6"	1'-0"	1'-0"	0'-8"	0.54	#4	28
10"	2'-6"	5'-0"	1'-6"	3'-0"	1'-3"	1'-0"	1'-0"	1.31	#4	42	2'-6"	5'-0"	0'-9"	1'-9"	1'-3"	1'-0"	0'-9"	0.75	#4	32
12"	3'-0"	5'-0"	2'-0"	3'-6"	1'-6"	1'-0"	1'-6"	1.98	#4	48	3'-0"	5'-0"	0'-9"	2'-0"	1'-6"	1'-0"	1'-0"	1.05	#4	36
16"	3'-6"	6'-6"	2'-9"	4'-6"	1'-6"	1'-0"	1'-9"	3.46	#5	92	3'-0"	6'-6"	2'-0"	2'-9"	1'-6"	1'-0"	1'-6"	1.79	#4	47



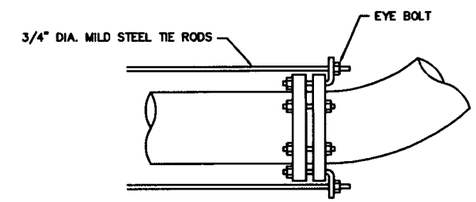
END ELEVATION



SIDE ELEVATION

DETAIL-REINFORCED CONCRETE ANCHORAGE

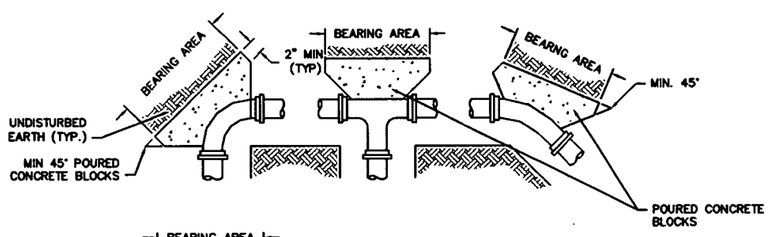
NOT TO SCALE

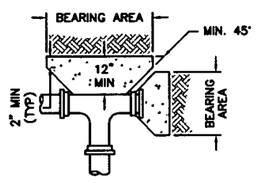


MAY USE MEG-A-LUGS OR RODDING

DETAIL-RESTRAINED JOINTS

NOT TO SCALE





NOTES:

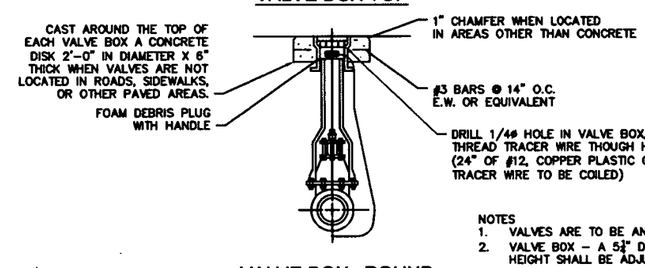
1. PLACE 4 MIL POLYETHYLENE BETWEEN CONCRETE AND FITTING (CONCRETE SHALL NOT INTERFERE WITH JOINT.)
2. MINIMUM CONCRETE THICKNESS SHALL BE 12 INCHES.
3. THE HORIZONTAL DIMENSION OF THE BEARING AREA SHALL BE BETWEEN 0.8 AND 1.25 TIMES THE VERTICAL DIMENSION.
4. THRUST BLOCK ORIENTATION SHALL BE SUCH THAT THE CENTER OF THE FITTING CORRESPONDS WITH THE CENTER OF THE THRUST BLOCK.
5. THE MINIMUM ALLOWABLE ANGLE (EITHER VERTICAL OR HORIZONTAL) SHALL BE 45 DEGREES.

TYPICAL THRUST BLOCKING

SCALE: 1/2" = 1'-0"

BEARING AREA OF BLOCK IN SQ. FT.					
PIPE SIZES	TEE & END	90° BEND	45° BEND	22° BEND	11° BEND
4" DIA.	0.70	0.90	0.50	0.30	--
6" DIA.	1.50	2.00	1.10	0.60	--
8" DIA.	2.60	3.60	2.00	1.00	--
10" DIA.	4.0	5.60	3.10	1.50	--
12" DIA.	11.5	16.0	9.0	4.5	2.5

VALVE BOX TOP



NOTES

1. VALVES ARE TO BE ANCHORED TO FITTINGS.
2. VALVE BOX – A 5¼" DIAMETER CAST IRON VALVE BOX, VALVE BOX HEIGHT SHALL BE ADJUSTABLE, FLARED BASES SHALL BE INSTALLED.

VALVE BOX - ROUND

SCALE: 1/2" = 1'-0"

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3050
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL ENGINEER CHAD P. KEHRT E-10032 STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

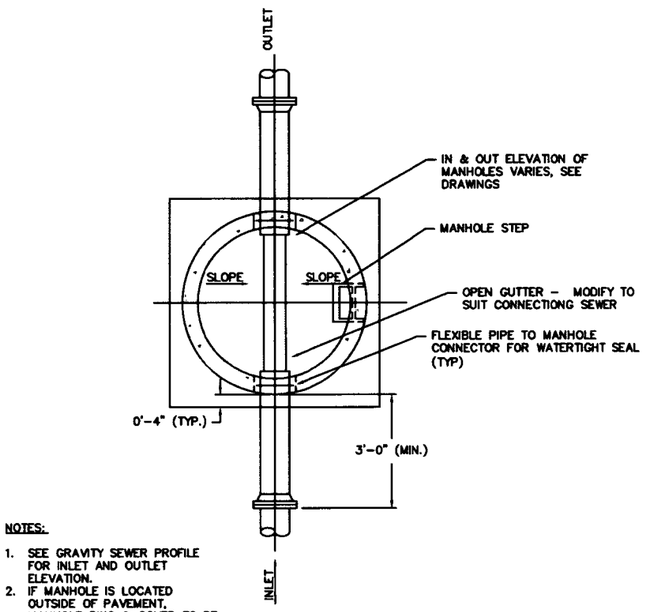
SANITARY SEWER DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

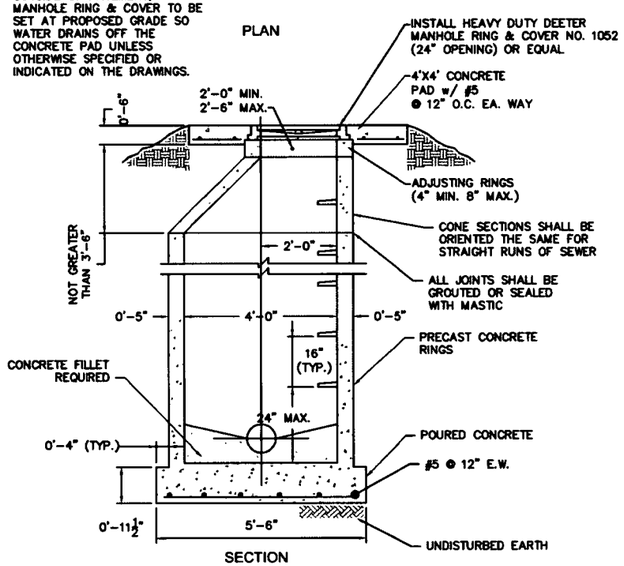
drawn by:	JSL, CKK
checked by:	JDB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date.	APRIL 2015



PLAN

NOTES:

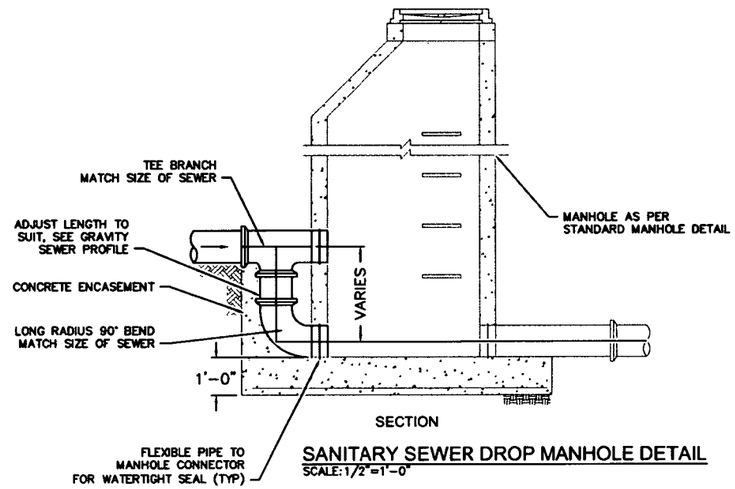
1. SEE GRAVITY SEWER PROFILE FOR INLET AND OUTLET ELEVATION.
2. IF MANHOLE IS LOCATED OUTSIDE OF PAVEMENT, MANHOLE RING & COVER TO BE SET AT PROPOSED GRADE SO WATER DRAINS OFF THE CONCRETE PAD UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS.



SECTION

STANDARD MANHOLE DETAIL

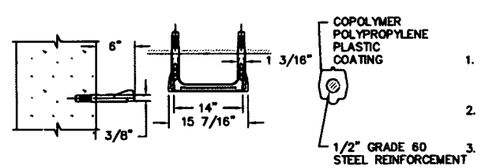
SCALE: 1/2"=1'-0"



SECTION

SANITARY SEWER DROP MANHOLE DETAIL

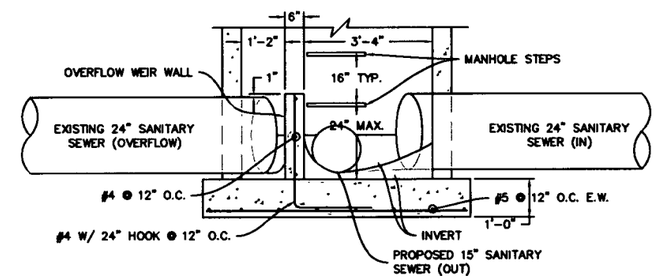
SCALE: 1/2"=1'-0"



1. STEP CONFORMS TO ASTM C-478 AASHTO M-199 OSHA STD 1-1.9
2. POLYPROPYLENE PLASTIC CONFORMS TO ASTM D-4101
3. STEPS MANUFACTURER BY M.A. INDUSTRIES INC. PEACHTREE, GA MODEL NO. PS2-PF

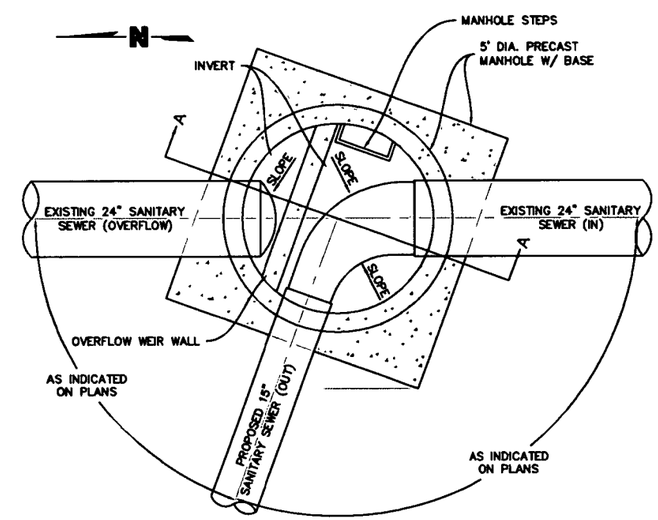
MANHOLE STEP

NOT TO SCALE



OVERFLOW STRUCTURE SECTION A-A

SCALE: 1/2"=1'-0"



OVERFLOW STRUCTURE PLAN VIEW, STA. 172+03.56

SCALE: 1/2"=1'-0"

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3069
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SANITARY SEWER DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
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approved by:	CPK
QA/QC by:	MJY
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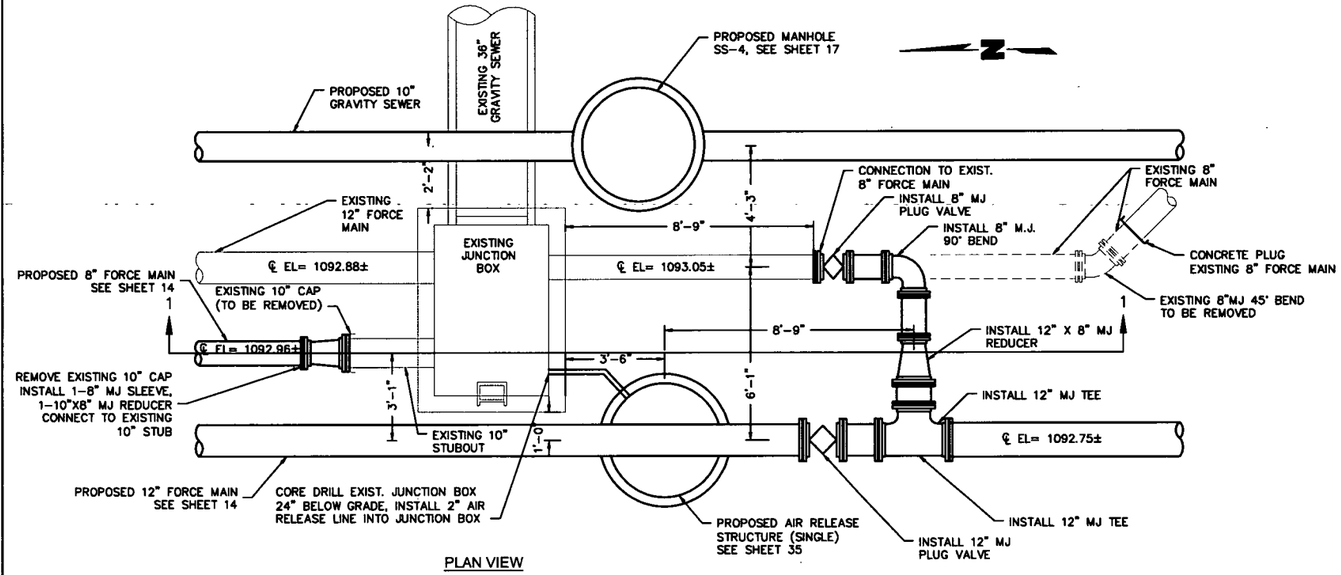
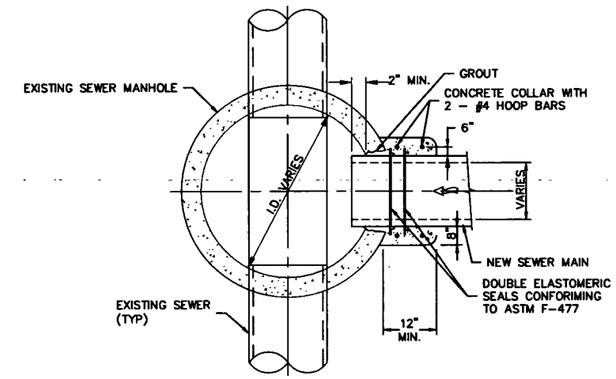
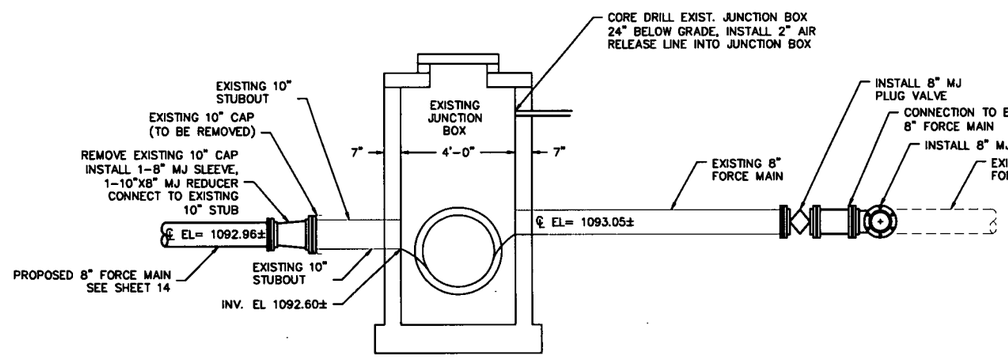


PLAN VIEW



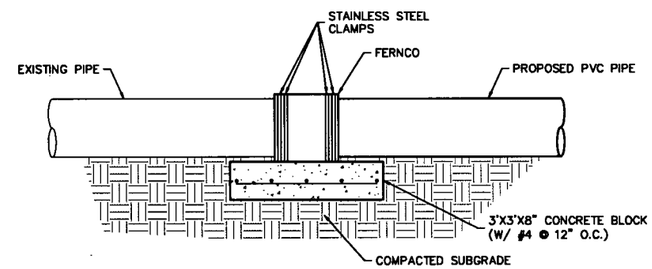
PLAN VIEW

SEWER MAIN CONNECTION TO EXISTING MAHOLE
SCALE: NOT TO SCALE

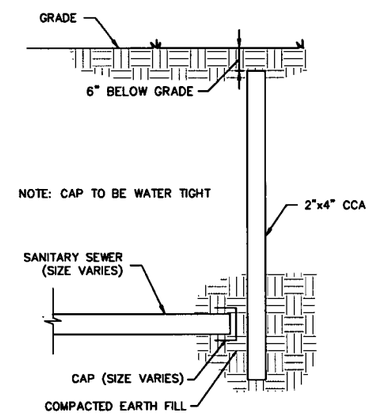


SECTION 1-1

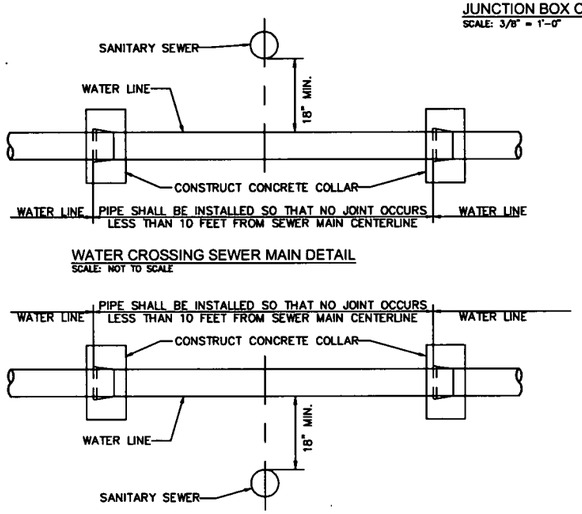
JUNCTION BOX CONNECTION DETAIL (STA. 51+91)
SCALE: 3/8" = 1'-0"



TYPICAL CONNECTION TO EXISTING SANITARY SEWER MAIN
SCALE: NOT TO SCALE



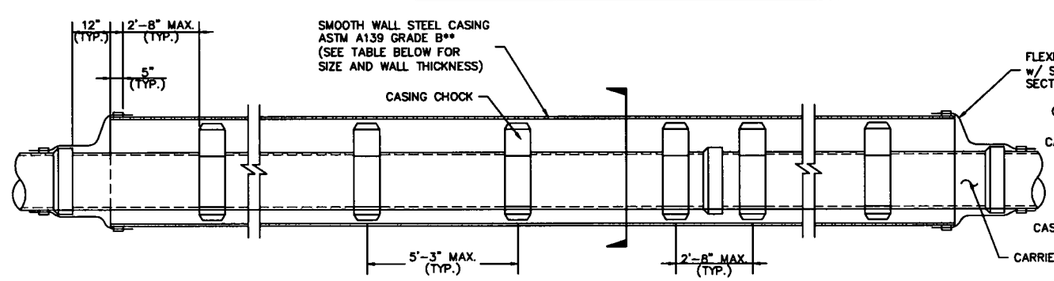
PIPE PLUG DETAIL
SCALE: NOT TO SCALE



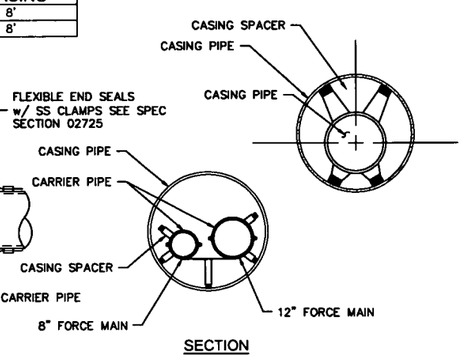
WATER CROSSING SEWER MAIN DETAIL
SCALE: NOT TO SCALE

WATER CROSSING OVER SEWER MAIN DETAIL
SCALE: NOT TO SCALE

CARRIER PIPE NOMINAL DIA	CASING PIPE			MINIMUM SPACER SPACING
	CASING MATERIAL	MIN. I.D.	MIN. WALL THICKNESS	
12" & 8"	STEEL	36"	0.531"	8'
8"	STEEL	20"	0.375"	8'



LONGITUDINAL SECTION



SECTION

BORED TUNNEL CROSSING DETAIL
SCALE: NOT TO SCALE

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4684
www.olssonassociates.com

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

SANITARY SEWER DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 38 of 97

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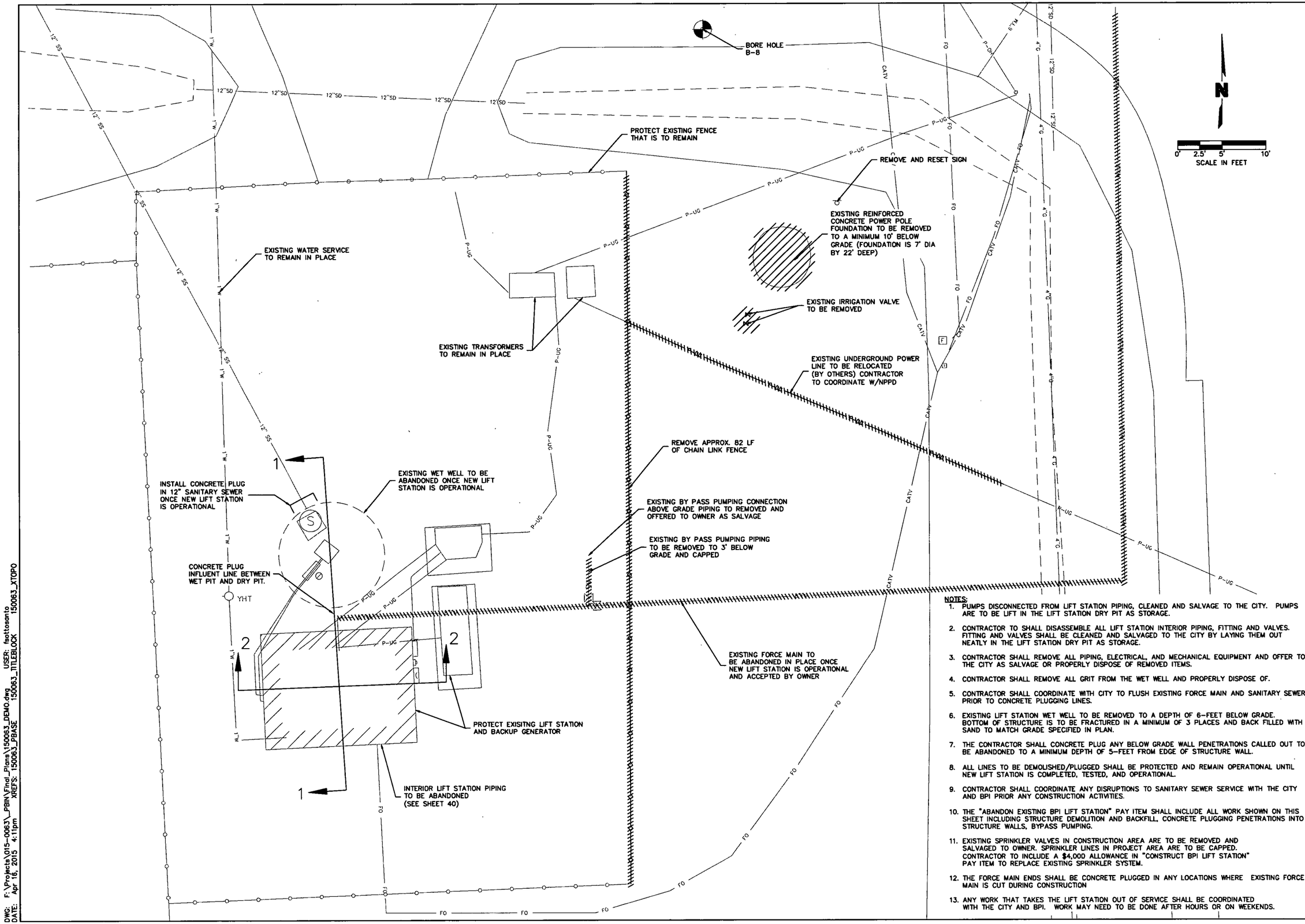

NOTES:

1. PUMPS DISCONNECTED FROM LIFT STATION PIPING, CLEANED AND SALVAGE TO THE CITY. PUMPS ARE TO BE LIFT IN THE LIFT STATION DRY PIT AS STORAGE.
2. CONTRACTOR TO SHALL DISASSEMBLE ALL LIFT STATION INTERIOR PIPING, FITTING AND VALVES. FITTING AND VALVES SHALL BE CLEANED AND SALVAGED TO THE CITY BY LAYING THEM OUT NEATLY IN THE LIFT STATION DRY PIT AS STORAGE.
3. CONTRACTOR SHALL REMOVE ALL PIPING, ELECTRICAL, AND MECHANICAL EQUIPMENT AND OFFER TO THE CITY AS SALVAGE OR PROPERLY DISPOSE OF REMOVED ITEMS.
4. CONTRACTOR SHALL REMOVE ALL GRIT FROM THE WET WELL AND PROPERLY DISPOSE OF.
5. CONTRACTOR SHALL COORDINATE WITH CITY TO FLUSH EXISTING FORCE MAIN AND SANITARY SEWER PRIOR TO CONCRETE PLUGGING LINES.
6. EXISTING LIFT STATION WET WELL TO BE REMOVED TO A DEPTH OF 6-FEET BELOW GRADE. BOTTOM OF STRUCTURE IS TO BE FRACTURED IN A MINIMUM OF 3 PLACES AND BACK FILLED WITH SAND TO MATCH GRADE SPECIFIED IN PLAN.
7. THE CONTRACTOR SHALL CONCRETE PLUG ANY BELOW GRADE WALL PENETRATIONS CALLED OUT TO BE ABANDONED TO A MINIMUM DEPTH OF 5-FEET FROM EDGE OF STRUCTURE WALL.
8. ALL LINES TO BE DEMOLISHED/PLUGGED SHALL BE PROTECTED AND REMAIN OPERATIONAL UNTIL NEW LIFT STATION IS COMPLETED, TESTED, AND OPERATIONAL.
9. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO SANITARY SEWER SERVICE WITH THE CITY AND BPI PRIOR ANY CONSTRUCTION ACTIVITIES.
10. THE "ABANDON EXISTING BPI LIFT STATION" PAY ITEM SHALL INCLUDE ALL WORK SHOWN ON THIS SHEET INCLUDING STRUCTURE DEMOLITION AND BACKFILL, CONCRETE PLUGGING PENETRATIONS INTO STRUCTURE WALLS, BYPASS PUMPING.
11. EXISTING SPRINKLER VALVES IN CONSTRUCTION AREA ARE TO BE REMOVED AND SALVAGED TO OWNER. SPRINKLER LINES IN PROJECT AREA ARE TO BE CAPPED. CONTRACTOR TO INCLUDE A $4,000 ALLOWANCE IN "CONSTRUCT BPI LIFT STATION" PAY ITEM TO REPLACE EXISTING SPRINKLER SYSTEM.
12. THE FORCE MAIN ENDS SHALL BE CONCRETE PLUGGED IN ANY LOCATIONS WHERE EXISTING FORCE MAIN IS CUT DURING CONSTRUCTION
13. ANY WORK THAT TAKES THE LIFT STATION OUT OF SERVICE SHALL BE COORDINATED WITH THE CITY AND BPI. WORK MAY NEED TO BE DONE AFTER HOURS OR ON WEEKENDS.

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2050
FAX 402.494.2061
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER CARLOS M. MUJY STATE OF NEBRASKA 5/18/15

REV NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

EXISTING BPI LIFT STATION DEMOLITION PLAN

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JGB
approved by:	CIM
QA/QC by:	MJY
project no.	015-0063
drawing no.:	
date:	APRIL 2015

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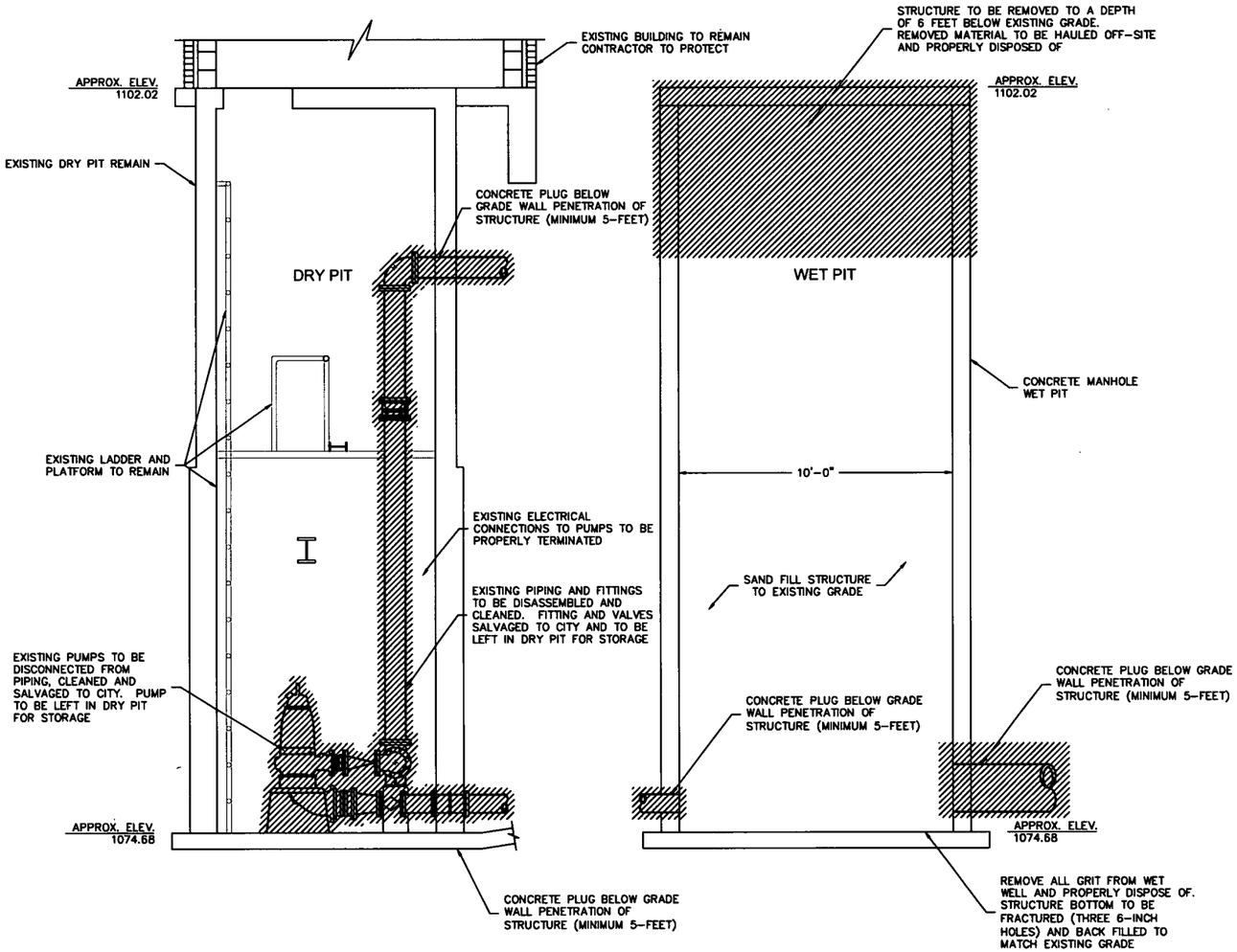
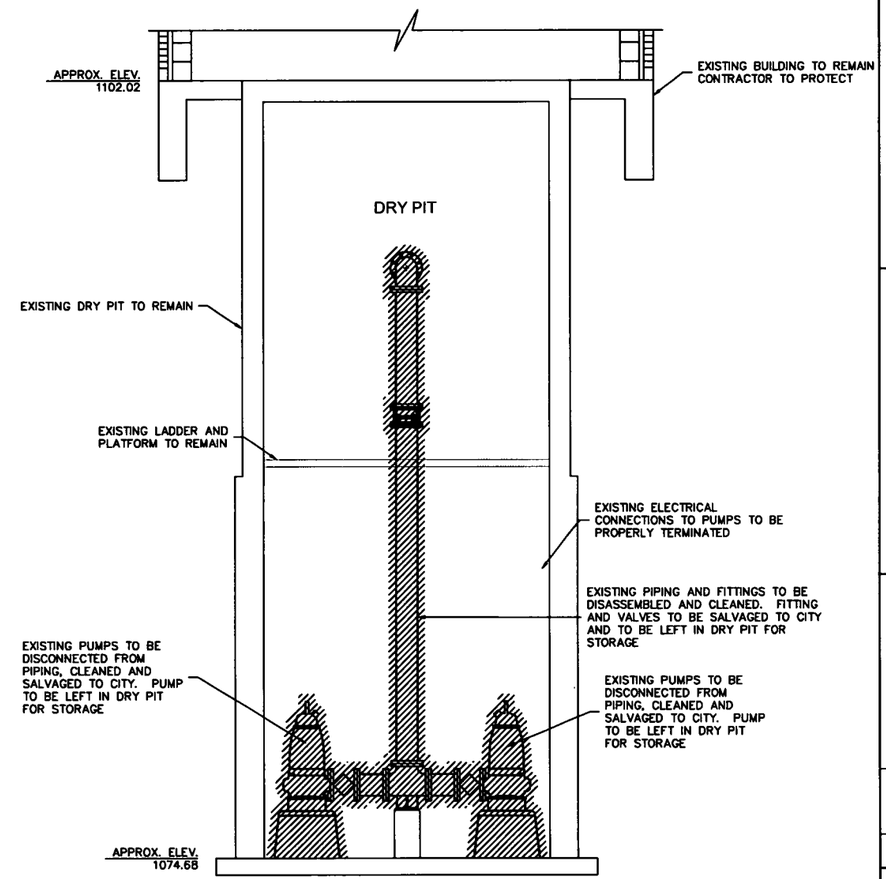


EXISTING BPI LIFT STATION SECTION VIEW 1

SCALE: NOT TO SCALE



EXISTING BPI LIFT STATION SECTION VIEW 2

SCALE: NOT TO SCALE

NOTES:

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OLSSON ASSOCIATES
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South Sioux City, NE 68776-2356
TEL 402.494.3063
FAX 402.494.4064
www.olssonassociates.com

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

EXISTING BPI LIFT STATION DEMOLITION PLAN

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

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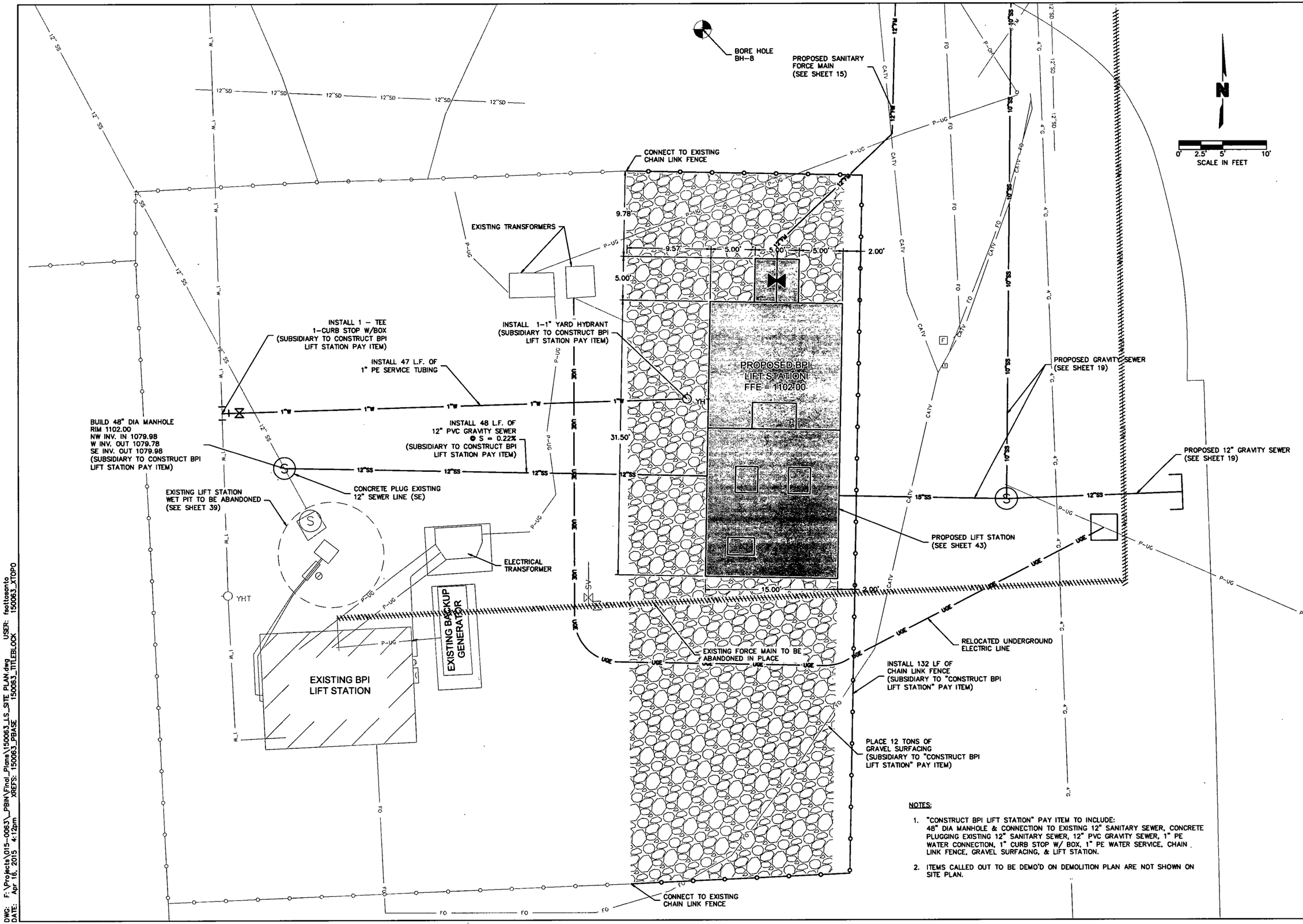

NOTES:

1. "CONSTRUCT BPI LIFT STATION" PAY ITEM TO INCLUDE: 48" DIA MANHOLE & CONNECTION TO EXISTING 12" SANITARY SEWER, CONCRETE PLUGGING EXISTING 12" SANITARY SEWER, 12" PVC GRAVITY SEWER, 1" PE WATER CONNECTION, 1" CURB STOP W/ BOX, 1" PE WATER SERVICE, CHAIN LINK FENCE, GRAVEL SURFACING, & LIFT STATION.
2. ITEMS CALLED OUT TO BE DEMO'D ON DEMOLITION PLAN ARE NOT SHOWN ON SITE PLAN.

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.0054
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER CARLOS J. MUNOZ 9338 STATE OF NEBRASKA 4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

BPI LIFT STATION
SITE PLAN

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by	FJS / MKC
checked by:	JCB
approved by:	CIM
QA/QC by	MJY
project no .	015-0063
drawing no :	
date	APRIL 2015

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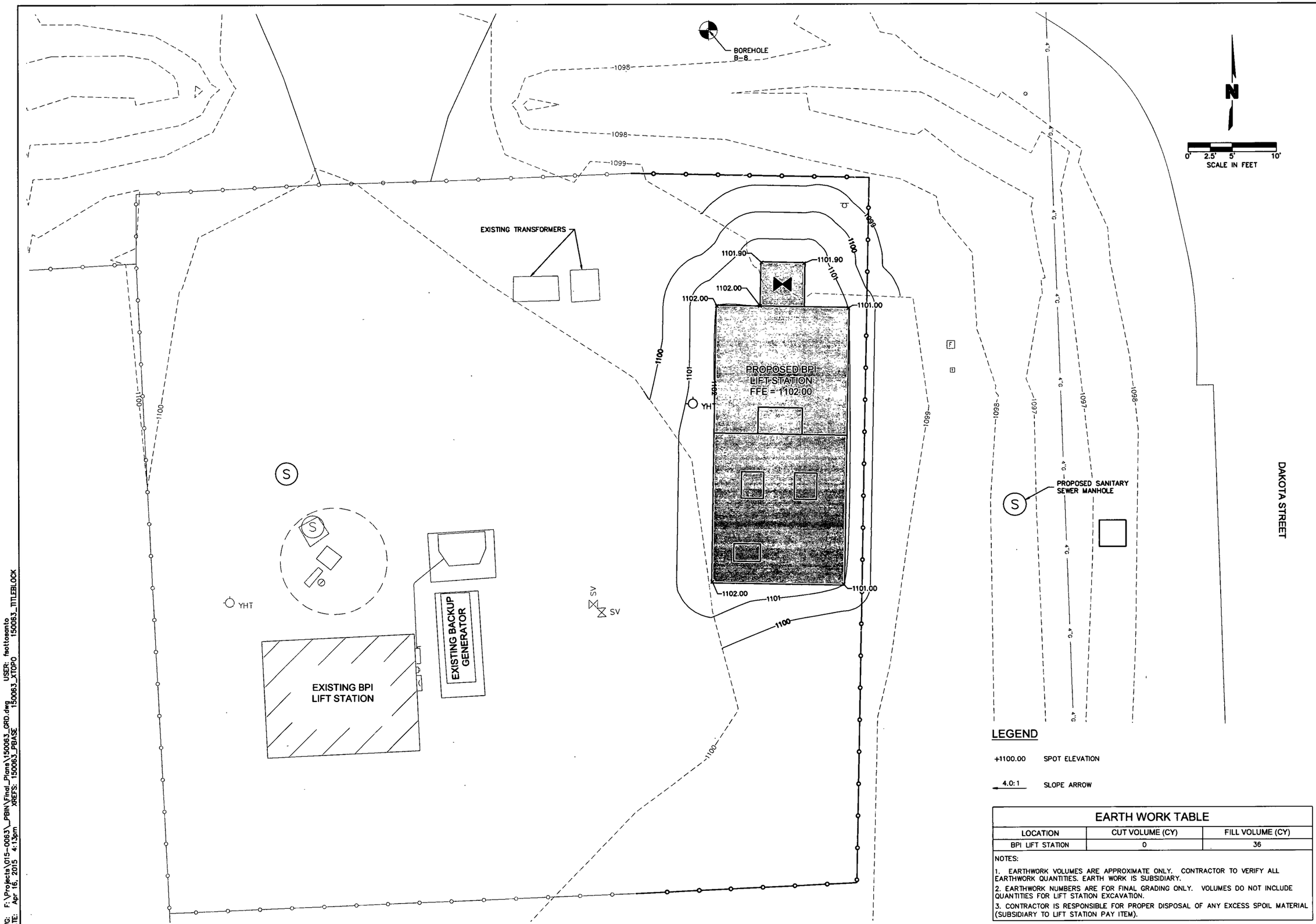

LEGEND

+1100.00 SPOT ELEVATION

4.0:1 SLOPE ARROW

EARTH WORK TABLE		
LOCATION	CUT VOLUME (CY)	FILL VOLUME (CY)
BPI LIFT STATION	0	36

NOTES:

1. EARTHWORK VOLUMES ARE APPROXIMATE ONLY. CONTRACTOR TO VERIFY ALL EARTHWORK QUANTITIES. EARTH WORK IS SUBSIDIARY.
2. EARTHWORK NUMBERS ARE FOR FINAL GRADING ONLY. VOLUMES DO NOT INCLUDE QUANTITIES FOR LIFT STATION EXCAVATION.
3. CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ANY EXCESS SPOIL MATERIAL (SUBSIDIARY TO LIFT STATION PAY ITEM).

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CARLOS J. MEDINA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

BPI LIFT STATION GRADING PLAN

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET
42 of 97

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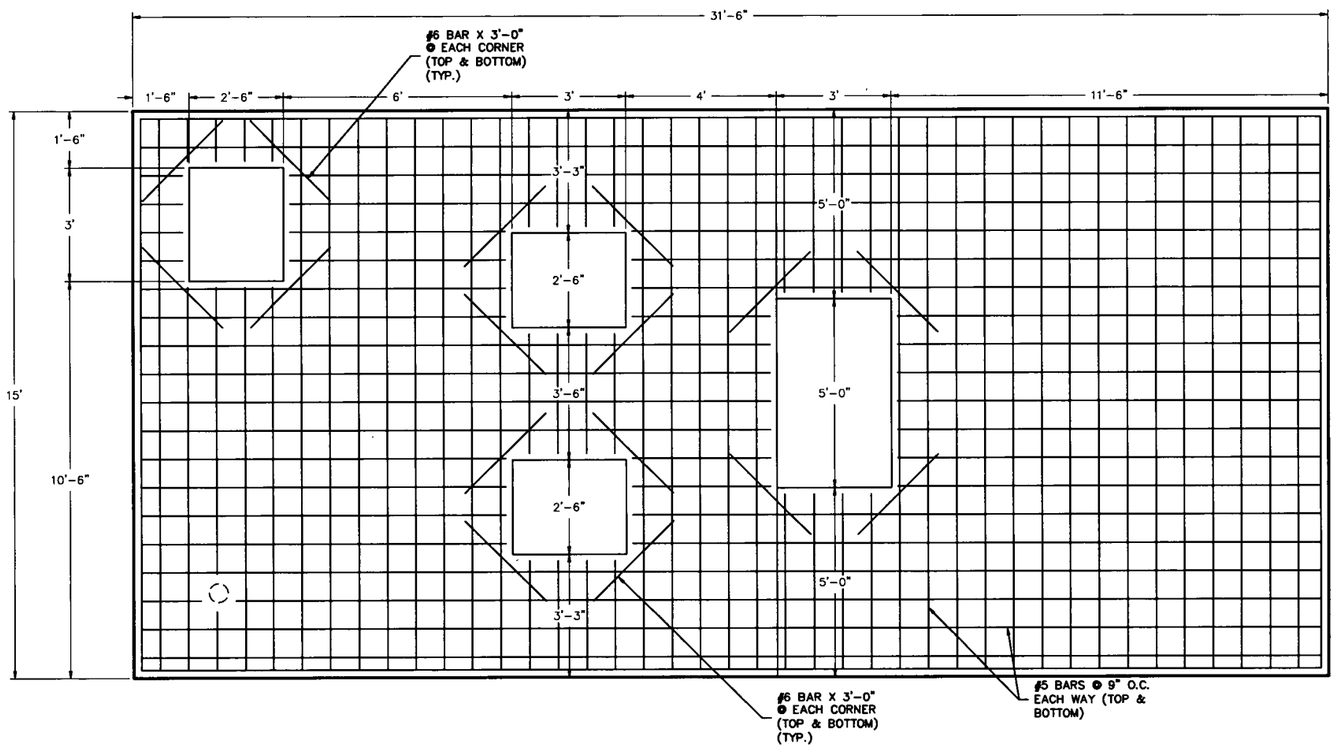

BPI LIFT STATION - REINFORCING PLAN

SCALE: 1/2" = 1'-0"

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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3069
FAX 402.494.6084
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REVISIONS

BPI LIFT STATION
PLAN VIEW

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET
43 of 97

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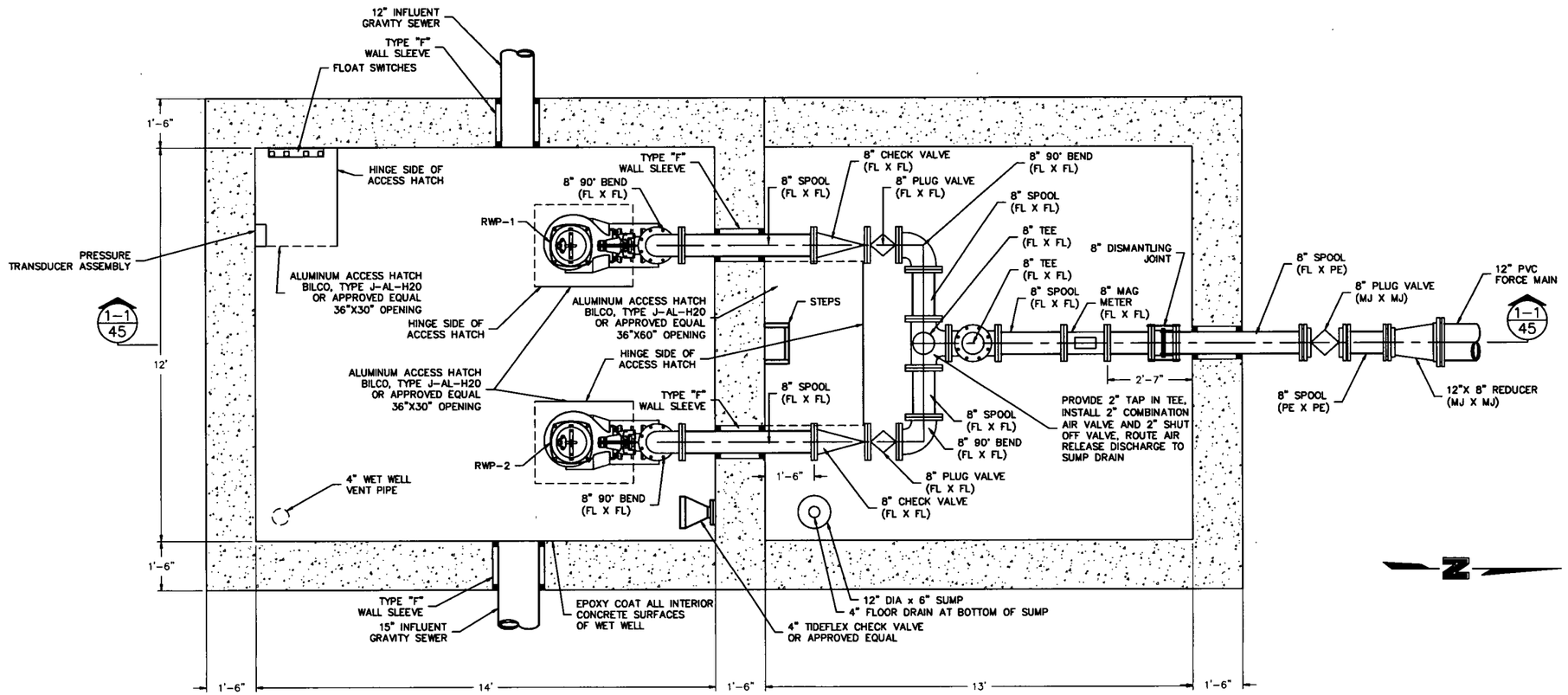

BPI LIFT STATION - PLAN VIEW

SCALE: 1/2" = 1'-0"

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DATE: Apr 16, 2015 4:13pm XREFS: 150063_TITLEBLOCK

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064 www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CARLOS M. MEDINA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

BPI LIFT STATION
PLAN VIEW

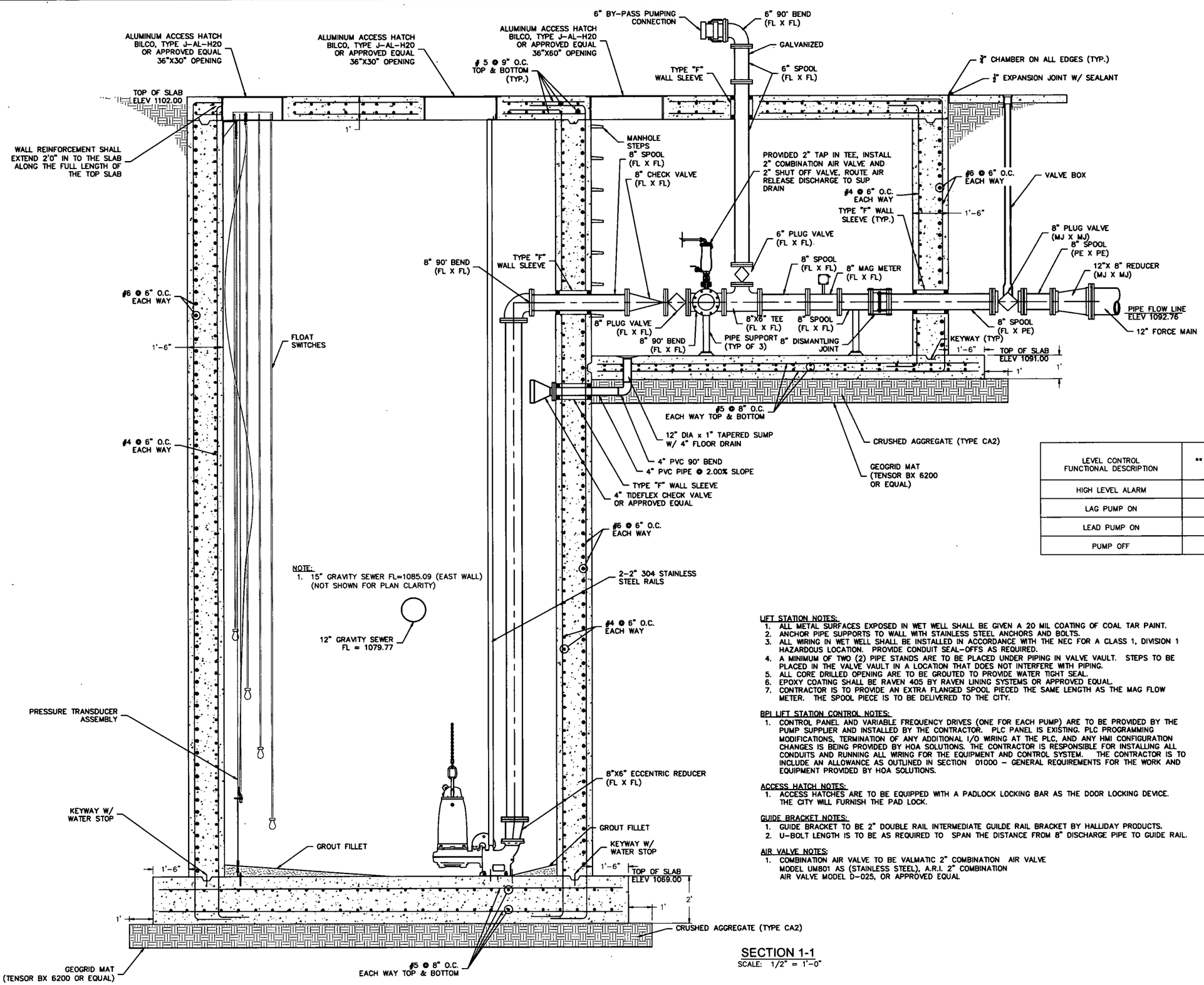
ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JCB
approved by:	CIM
QA/QC by:	MJY
project no :	015-0063
drawing no :	ABC.DWG
date:	APRIL 2015

SHEET
44 of 97



LEVEL CONTROL FUNCTIONAL DESCRIPTION	** ELEVATION
HIGH LEVEL ALARM	1079.00
LAG PUMP ON	1076.50
LEAD PUMP ON	1074.00
PUMP OFF	1071.00

SECTION 1-1
SCALE: 1/2" = 1'-0"

LIFT STATION NOTES:
1. ALL METAL SURFACES EXPOSED IN WET WELL SHALL BE GIVEN A 20 MIL COATING OF COAL TAR PAINT.
2. ANCHOR PIPE SUPPORTS TO WALL WITH STAINLESS STEEL ANCHORS AND BOLTS.
3. ALL WIRING IN WET WELL SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC FOR A CLASS 1, DIVISION 1 HAZARDOUS LOCATION. PROVIDE CONDUIT SEAL-OFFS AS REQUIRED.
4. A MINIMUM OF TWO (2) PIPE STANDS ARE TO BE PLACED UNDER PIPING IN VALVE VAULT. STEPS TO BE PLACED IN THE VALVE VAULT IN A LOCATION THAT DOES NOT INTERFERE WITH PIPING.
5. ALL CORE DRILLED OPENING ARE TO BE GROUTED TO PROVIDE WATER TIGHT SEAL.
6. EPOXY COATING SHALL BE RAVEN 405 BY RAVEN LINING SYSTEMS OR APPROVED EQUAL.
7. CONTRACTOR IS TO PROVIDE AN EXTRA FLANGED SPOOL PIECED THE SAME LENGTH AS THE MAG FLOW METER. THE SPOOL PIECE IS TO BE DELIVERED TO THE CITY.

BPI LIFT STATION CONTROL NOTES:
1. CONTROL PANEL AND VARIABLE FREQUENCY DRIVES (ONE FOR EACH PUMP) ARE TO BE PROVIDED BY THE PUMP SUPPLIER AND INSTALLED BY THE CONTRACTOR. PLC PANEL IS EXISTING. PLC PROGRAMMING MODIFICATIONS, TERMINATION OF ANY ADDITIONAL I/O WIRING AT THE PLC, AND ANY HMI CONFIGURATION CHANGES IS BEING PROVIDED BY HOA SOLUTIONS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL CONDUITS AND RUNNING ALL WIRING FOR THE EQUIPMENT AND CONTROL SYSTEM. THE CONTRACTOR IS TO INCLUDE AN ALLOWANCE AS OUTLINED IN SECTION 01000 – GENERAL REQUIREMENTS FOR THE WORK AND EQUIPMENT PROVIDED BY HOA SOLUTIONS.

ACCESS HATCH NOTES:
1. ACCESS HATCHES ARE TO BE EQUIPPED WITH A PADLOCK LOCKING BAR AS THE DOOR LOCKING DEVICE. THE CITY WILL FURNISH THE PAD LOCK.

GUIDE BRACKET NOTES:
1. GUIDE BRACKET TO BE 2" DOUBLE RAIL INTERMEDIATE GUILDE RAIL BRACKET BY HALLIDAY PRODUCTS.
2. U-BOLT LENGTH IS TO BE AS REQUIRED TO SPAN THE DISTANCE FROM 8" DISCHARGE PIPE TO GUIDE RAIL.

AIR VALVE NOTES:
1. COMBINATION AIR VALVE TO BE VALMATIC 2" COMBINATION AIR VALVE MODEL UM801 AS (STAINLESS STEEL), A.R.I. 2" COMBINATION AIR VALVE MODEL D-025, OR APPROVED EQUAL

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3063
FAX 402.494.4064
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BPI LIFT STATION
SECTION VIEW

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
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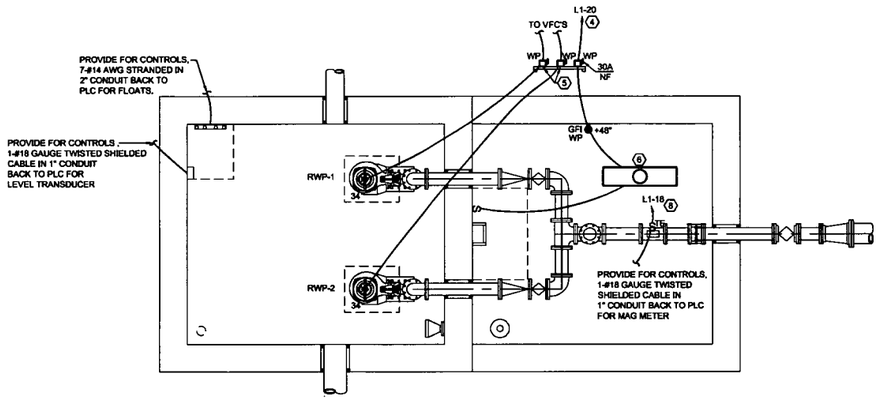
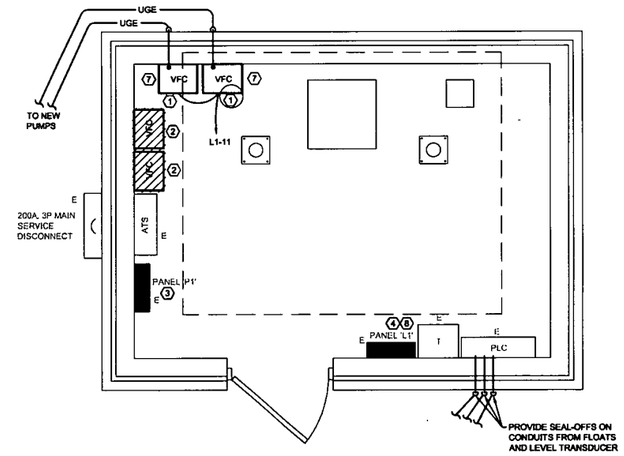


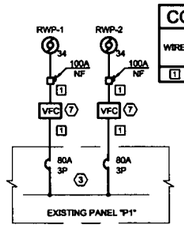
3/46 BPI LIFT STATION ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"



2/46 BPI EXISTING BUILDING ELECTRICAL PLAN

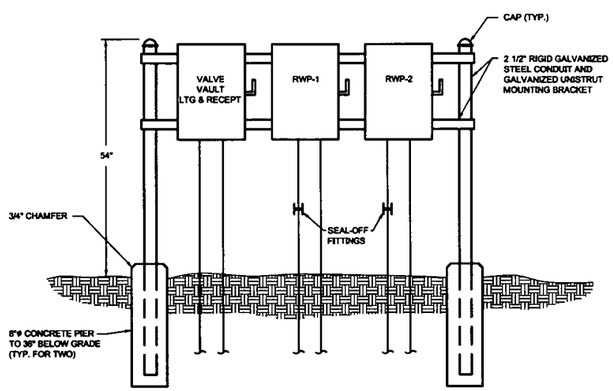
SCALE: 3/8" = 1'-0"



CONDUIT AND WIRE SCHEDULE		
WIRE	WIRE AND CONDUIT SIZE	NOTES
1	3-#4 AWG, #8 GND, 1-1/4"C.	

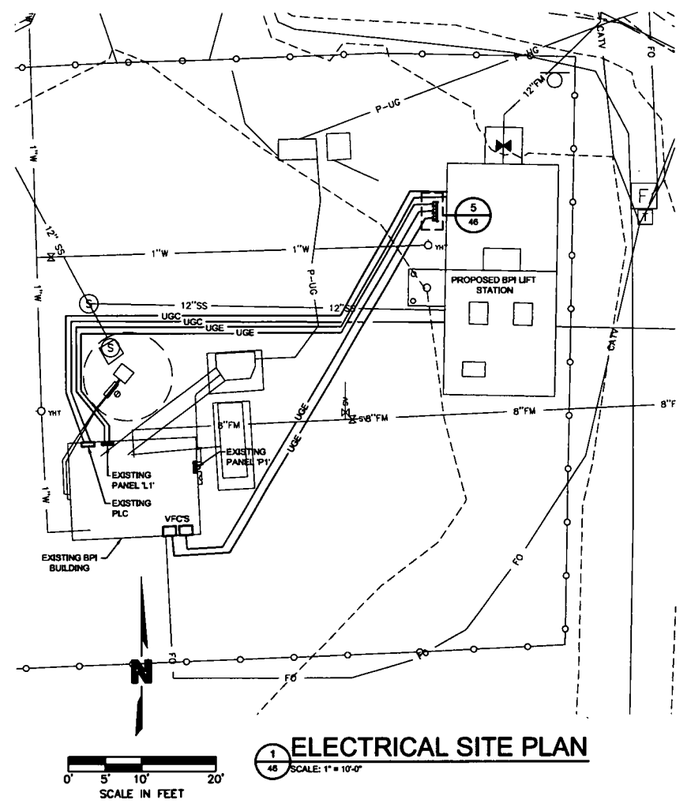
4/46 ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE



5/46 EQUIPMENT MOUNTING DETAIL

NOT TO SCALE



1/46 ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0"

GENERAL NOTES:

A. COORDINATE ALL DEVICES AND LIGHT FIXTURE LOCATIONS WITH STRUCTURAL AND CIVIL DRAWINGS AND EQUIPMENT INSTALLATIONS.

B. PROVIDE LABELS FOR ALL EQUIPMENT INDICATING POWER SOURCE, CIRCUIT, AND VOLTAGE. EXAMPLE: "P1-3, 480V.".

C. PROVIDE HARD WIRED GROUNDS FOR ALL CIRCUITS. PROVIDE INDIVIDUAL NEUTRAL AND GROUND WIRES FOR ALL EQUIPMENT, CONTROL, AND DEDICATED CIRCUITS.

D. EXISTING PANELS ARE SEIMENS BRAND. CONTRACTOR TO VERIFY PROPER BREAKER TYPE FOR NEW BREAKERS.

E. ALL WIRING IN WET WELL SHALL BE SUITABLE FOR A CLASS 1, DIVISION 1, HAZARDOUS LOCATION. INSTALL IN ACCORDANCE WITH THE N.E.C.

F. ALL WIRING AND DEVICES IN VALVE VAULT SHALL BE SUITABLE FOR A CLASS 1, DIVISION II LOCATION.

G. COORDINATE ROUTING OF CONDUITS WITH OTHER UTILITIES, EXISTING AND NEW.

H. UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 BURIED 24" BELOW GRADE MINIMUM.

SHEET NOTES: (SYMBOLS 1, 2, ETC.)

1. PROVIDE 2-#18 GAUGE TWISTED SHIELDED CABLE AND 10-#14 STRANDED WIRES IN 1" CONDUIT TO CONTROL PANEL "PLC".
2. COORDINATE THE REMOVAL OF EXISTING VFC'S AND PUMPS IN LOWER LEVEL AFTER NEW VFC'S AND PUMPS ARE INSTALLED. VFC'S TO BE OFFERED TO OWNER AS SALVAGE.
3. REPLACE EXISTING 40 AMP 3 POLE CIRCUIT BREAKERS THAT SERVE EXISTING PUMPS WITH NEW 60 AMP 3 POLE CIRCUIT BREAKERS TO SERVE NEW PUMPS. PROVIDE TEMPORARY POWER TO EXISTING PUMPS UNTIL NEW PUMPS ARE OPERATIONAL.
4. PROVIDE NEW 20 AMP SINGLE POLE CIRCUIT BREAKER IN AVAILABLE SPACE IN EXISTING PANEL "L1" FOR RECEPTACLE AND LIGHT. SERVE WITH 2-#12 AWG, #12 GND IN 3/4" CONDUIT.
5. PROVIDE SEAL-OFF FITTING IN CONDUIT FROM PUMP UNDER EACH PUMP DISCONNECT.
6. PROVIDE NEW SURFACE MOUNTED LIGHT FIXTURE ON VAULT LID. PROVIDE FIXTURE BY PARAMOUNT INDUSTRIES MODEL C62323-D4-120V/60HZ OR EQUAL WITH ZINC COATED STEEL HOUSING, CORROSION RESISTANT, WET LOCATION EPDM GASKETING, TWO 32 WATT T8 FLUORESCENT LAMPS, <10% THD ELECTRON BALLAST, AND 0.125 WHITE ACRYLIC LENS.
7. NEW VARIABLE FREQUENCY CONTROLLERS (VFC) SHALL BE PROVIDE BY PUMP SUPPLIER AND INSTALLED BY ELECTRICAL CONTRACTOR.
8. PROVIDE NEW 20 AMP SINGLE POLE CIRCUIT BREAKER IN AVAILABLE SPACE IN EXISTING PANEL "L1" FOR MAG METER. SERVE WITH 2-#12 AWG, #12 GND IN 3/4" CONDUIT.

LEGEND

	1'x4' TYPICAL CEILING MOUNTED FLUORESCENT FIXTURE
	DUPLEX RECEPTACLE; MOUNT AT 18" TO CENTER OF DEVICE AFF UNLESS OTHERWISE NOTED.
	SURFACE MOUNTED POWER PANEL
	NON-FUSED DISCONNECT SWITCH
XX	ELECTRICAL MOTOR; NUMBER ON SIDE INDICATES MOTOR SIZE.
S	SINGLE-POLE SWITCH
	BRANCH CIRCUIT POWER WIRING
	CONDUIT UP
	CONDUIT DOWN
	HOME RUN 3/4" CONDUIT, 2#12 AND 1#12 GROUND. UNLESS OTHERWISE NOTED. NOTE: HOME RUN SHALL BE FROM FIRST ELECTRICAL DEVICE JUNCTION BOX IN CIRCUIT TO ELECTRICAL PANEL.
GFI	GROUND FAULT INTERRUPTER
E	EXISTING DEVICES TO REMAIN
VFC	VARIABLE FREQUENCY CONTROLLER
UGE	UNDERGROUND ELECTRICAL
UGC	UNDERGROUND CONTROL
WP	WEATHERPROOF
ATS	AUTOMATIC TRANSFER SWITCH
NF	NON-FUSED

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3050
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL ENGINEER
FRANK L. EGELHOFF
E-10342
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

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BPI LIFT STATION
ELECTRICAL PLAN AND DETAILS

SOUTH SIOUX CITY ROTH PARK
SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by:	EMK
checked by:	FLE
approved by:	FLE
QA/QC by:	FLE
project no.:	015-0063
drawing no.:	
date:	04.21.15

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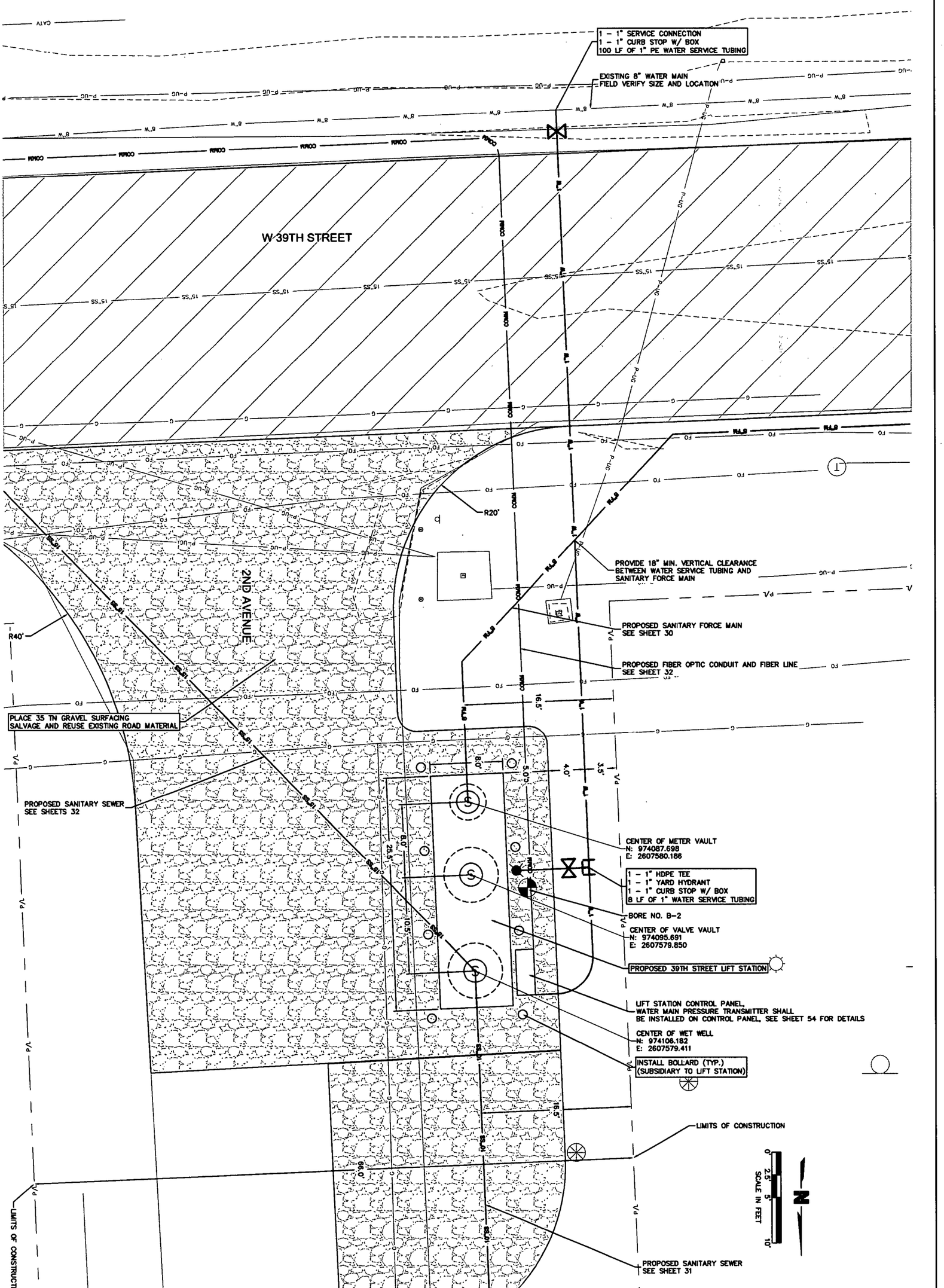


drawn by:	JSL	CADD	
designed by:	CDS		
approved by:	CTK		
QA/QC by:	MJV		
project no.:	015-0063		
drawing no.:			
date:	APRIL 2015		

SHEET 47 of 97

39TH STREET LIFT STATION
SITE PLAN

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

REV. NO.	DATE	REVISIONS DESCRIPTION

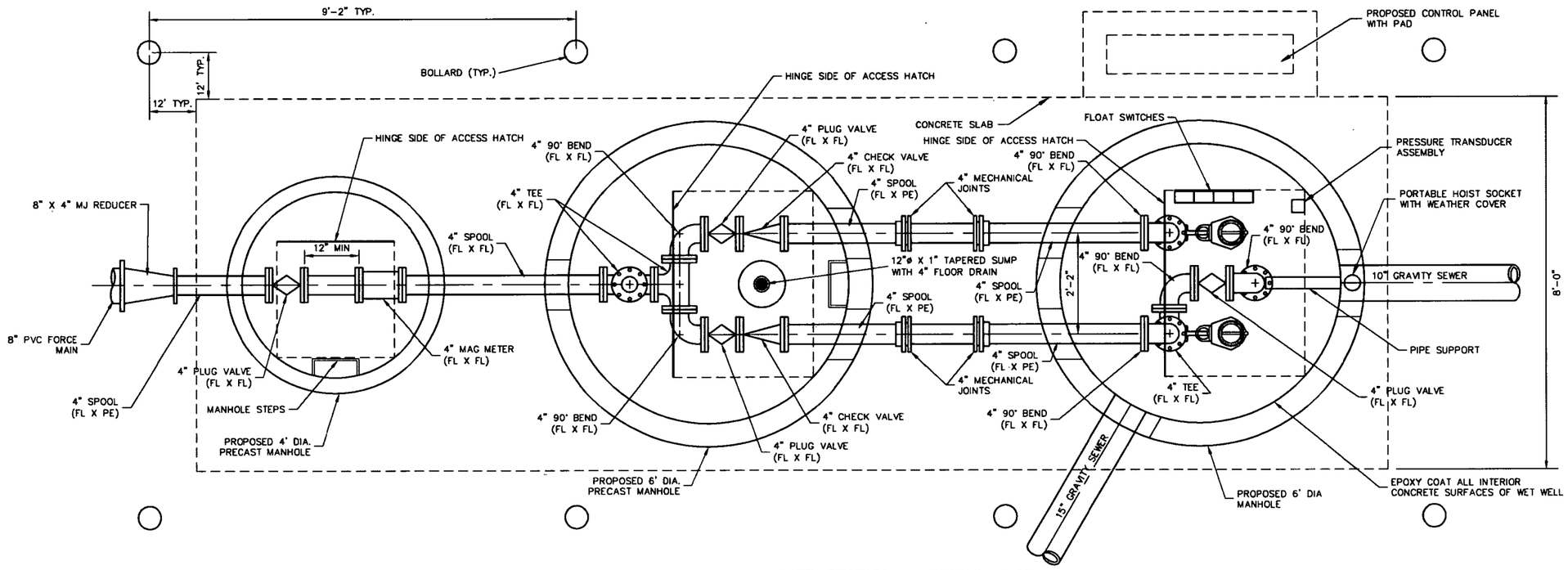
NO.	DATE	DESCR.

REVISIONS

CHAD P. KEHRT
E-10015
21
NEBRASKA
PROFESSIONAL ENGINEER

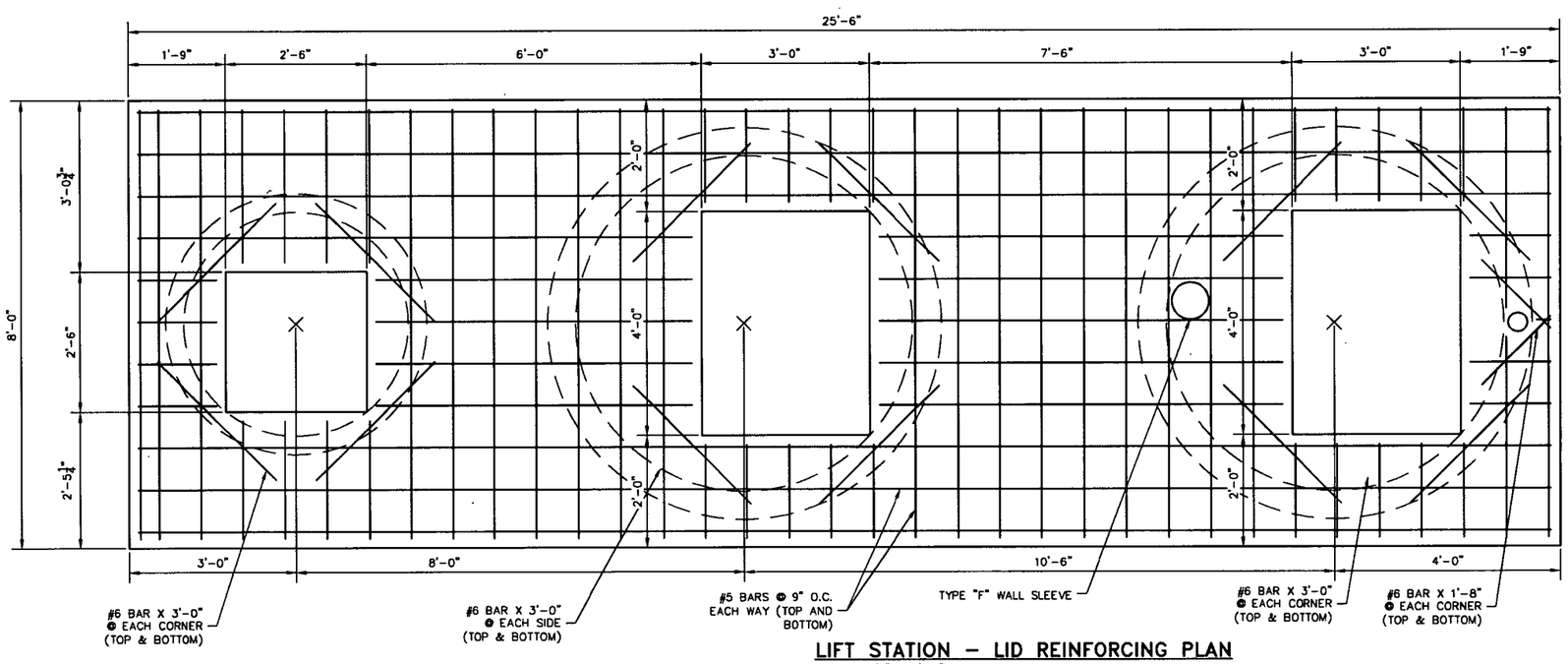
OLSSON ASSOCIATES

1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
www.olssonassociates.com



LIFT STATION – PIPING PLAN VIEW

SCALE: 3/4" = 1'-0"



LIFT STATION – LID REINFORCING PLAN

SCALE: 3/4" = 1'-0"

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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3069
FAX 402.494.4064
www.olssonassociates.com

CHAD P. KEHRT E-10037 STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

39TH STREET LIFT STATION
PLAN VIEW

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSS, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

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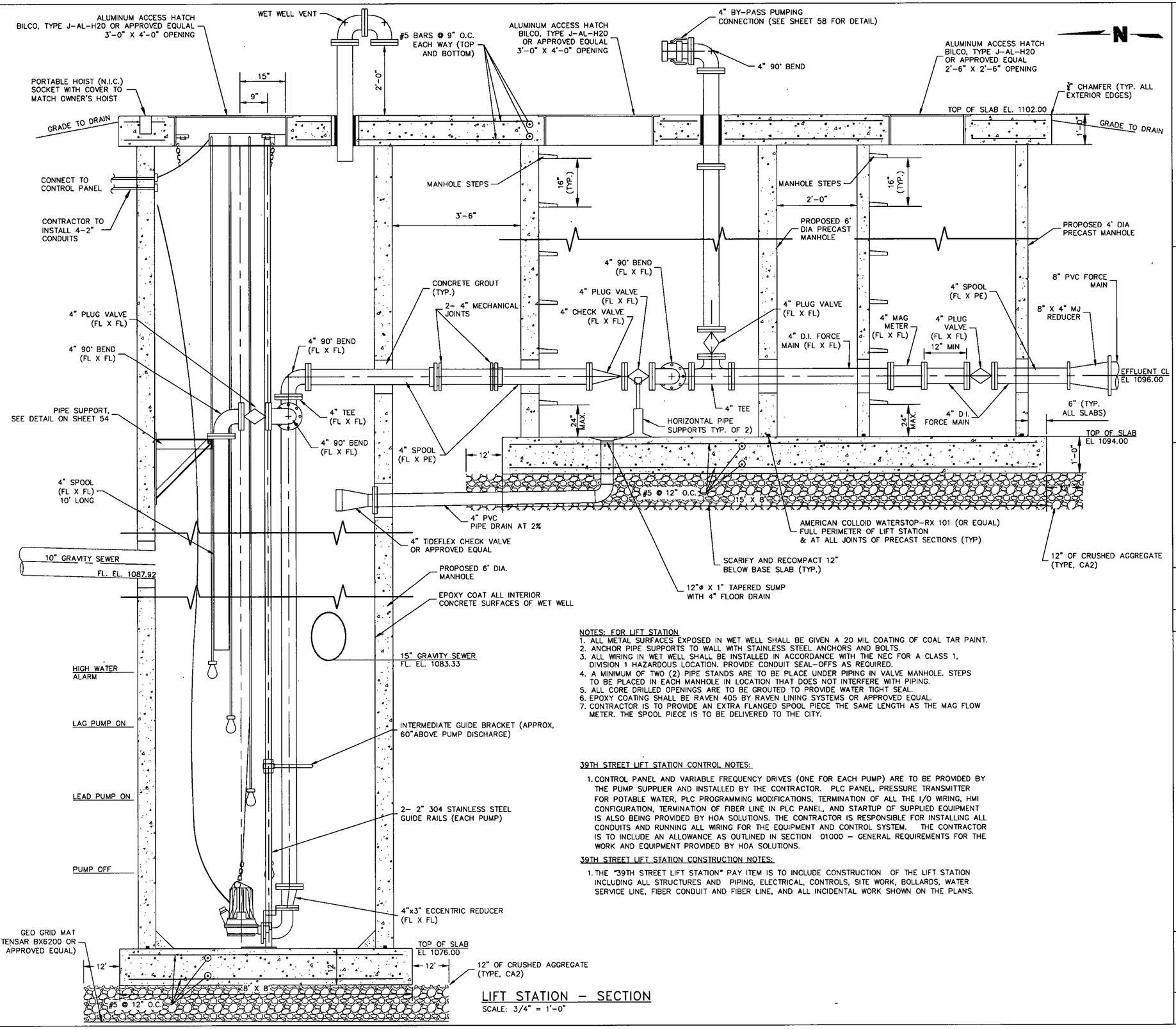
DATE: Apr 21, 2015 3:13pm XREFS: CHAD_KEHRT_PE_NE

LEVEL CONTROL FUNCTIONAL DESCRIPTION	** ELEVATION
HIGH LEVEL ALARM	1083.00
LAG PUMP ON	1082.00
LEAD PUMP ON	1080.00
PUMP OFF	1078.00



LIFT STATION – SECTION

SCALE: 3/4" = 1'-0"

EQUIPMENT NOTES:
1. DAVIT CRANE SOCKET TO BE PN 8512828 AND SOCKET CAP TO BE PN 8510827 BY DBI SALA.

ACCESS HATCH NOTES:
1. ACCESS HATCHES ARE TO BE EQUIPPED WITH A PADLOCK LOCKING BAR AS THE DOOR LOCKING DEVICE. THE CITY WILL FURNISH THE PADLOCK.

GUIDE BRACKET NOTES:
1. GUIDE BRACKET TO BE 2" DOUBLE RAIL INTERMEDIATE GUIDE RAIL BRACKET BY HALLIDAY PRODUCTS.
2. U-BOLT LENGTH IS TO BE AS REQUIRED TO SPAN THE DISTANCE FROM 4" DISCHARGE PIPE TO GUIDE RAIL.

NOTES: FOR LIFT STATION
1. ALL METAL SURFACES EXPOSED IN WET WELL SHALL BE GIVEN A 20 MIL COATING OF COAL TAR PAINT.
2. ANCHOR PIPE SUPPORTS TO WALL WITH STAINLESS STEEL ANCHORS AND BOLTS.
3. ALL WIRING IN WET WELL SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC FOR A CLASS 1, DIVISION 1 HAZARDOUS LOCATION. PROVIDE CONDUIT SEAL-OFFS AS REQUIRED.
4. A MINIMUM OF TWO (2) PIPE STANDS ARE TO BE PLACE UNDER PIPING IN VALVE MANHOLE. STEPS TO BE PLACED IN EACH MANHOLE IN LOCATION THAT DOES NOT INTERFERE WITH PIPING.
5. ALL CORE DRILLED OPENINGS ARE TO BE GROUTED TO PROVIDE WATER TIGHT SEAL.
6. EPOXY COATING SHALL BE RAVEN 405 BY RAVEN LINING SYSTEMS OR APPROVED EQUAL.
7. CONTRACTOR IS TO PROVIDE AN EXTRA FLANGED SPOOL PIECE THE SAME LENGTH AS THE MAG FLOW METER. THE SPOOL PIECE IS TO BE DELIVERED TO THE CITY.

39TH STREET LIFT STATION CONTROL NOTES:

1. CONTROL PANEL AND VARIABLE FREQUENCY DRIVES (ONE FOR EACH PUMP) ARE TO BE PROVIDED BY THE PUMP SUPPLIER AND INSTALLED BY THE CONTRACTOR. PLC PANEL, PRESSURE TRANSMITTER FOR POTABLE WATER, PLC PROGRAMMING MODIFICATIONS, TERMINATION OF ALL THE I/O WIRING, HMI CONFIGURATION, TERMINATION OF FIBER LINE IN PLC PANEL, AND STARTUP OF SUPPLIED EQUIPMENT IS ALSO BEING PROVIDED BY HOA SOLUTIONS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL CONDUITS AND RUNNING ALL WIRING FOR THE EQUIPMENT AND CONTROL SYSTEM. THE CONTRACTOR IS TO INCLUDE AN ALLOWANCE AS OUTLINED IN SECTION 01000 – GENERAL REQUIREMENTS FOR THE WORK AND EQUIPMENT PROVIDED BY HOA SOLUTIONS.

39TH STREET LIFT STATION CONSTRUCTION NOTES:

1. THE "39TH STREET LIFT STATION" PAY ITEM IS TO INCLUDE CONSTRUCTION OF THE LIFT STATION INCLUDING ALL STRUCTURES AND PIPING, ELECTRICAL, CONTROLS, SITE WORK, BOLLARDS, WATER SERVICE LINE, FIBER CONDUIT AND FIBER LINE, AND ALL INCIDENTAL WORK SHOWN ON THE PLANS.

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2092
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER CHAD P. KEHRT E-10037 STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.

REVISIONS

39TH STREET LIFT STATION SECTION VIEW

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
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date:	APRIL 2015

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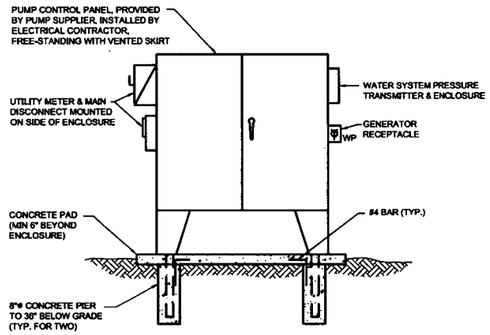
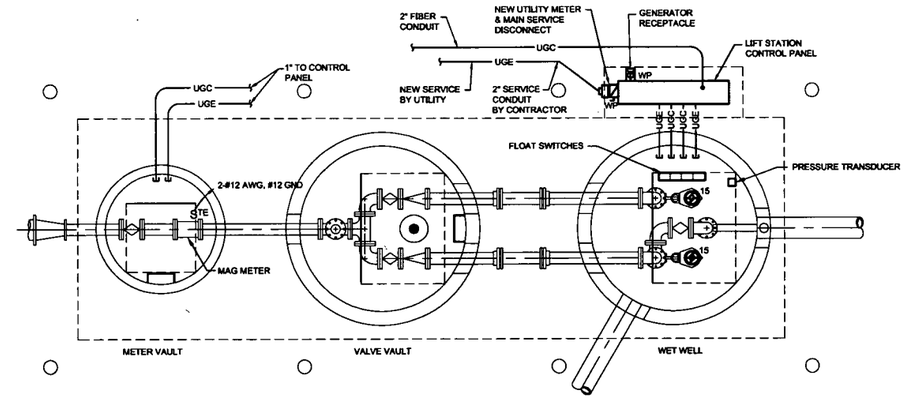


PUMP CONTROL ENCLOSURE MOUNTING DETAIL

3/50 NOT TO SCALE

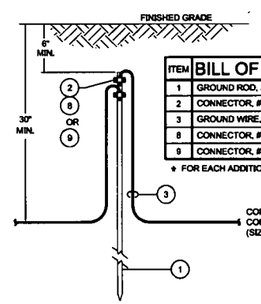
LEGEND

	ELECTRICAL POWER TRANSFORMER
	FUSED DISCONNECT SWITCH
	GENERATOR RECEPTACLE
XX	ELECTRICAL MOTOR: NUMBER ON SIDE INDICATES MOTOR SIZE.
	UTILITY METER
STE	SINGLE POLE MANUAL MOTOR STARTER WITH THERMAL ELEMENT
	BRANCH CIRCUIT POWER WIRING
	CONDUIT UP
	CONDUIT DOWN
	HOME RUN 3/4" CONDUIT, 2#12 AND 1#12 GROUND. UNLESS OTHERWISE NOTED. NOTE: HOME RUN SHALL BE FROM FIRST ELECTRICAL DEVICE JUNCTION BOX IN CIRCUIT TO ELECTRICAL PANEL.
GFI	GROUND FAULT INTERRUPTER
UGE	UNDERGROUND ELECTRICAL
UGC	UNDERGROUND CONTROL
WP	WEATHERPROOF



ELECTRICAL SITE PLAN

2/50 SCALE: 3/8" = 1'-0"



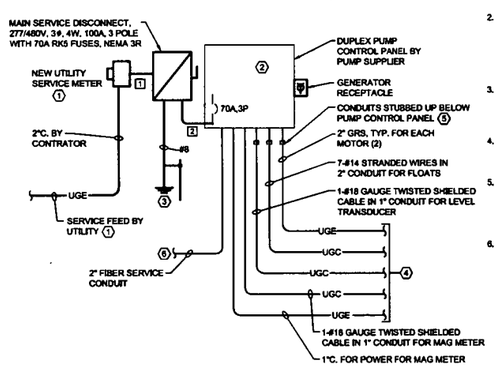
ITEM	BILL OF MATERIAL
1	GROUND ROD, 3/4" DIA. x 10' LONG, COPPER CLAD STEEL
2	CONNECTOR, #4 SOLID THRU #2/0 STR. CABLE TO GND. ROD, BURNDY #GAR-8428
3	GROUND WIRE, STRANDED DIRECT-BURRIED COPPER
8	CONNECTOR, #2/0 SOLID THRU 250KCMIL STR. CABLE TO GND. ROD, BURNDY #GAR-8429
9	CONNECTOR, #8 SOLID THRU #4 STR. CABLE TO GND. ROD, BURNDY #GAR-8444C

* FOR EACH ADDITIONAL CABLE CONNECTION ADD 1 CONNECTOR.

GROUND ROD INSTALLATION

4/50 NOT TO SCALE

CONDUIT AND WIRE SCHEDULE		
WIRE	WIRE AND CONDUIT SIZE	NOTES
1	3-#4 AWG, 1-#4 NEUTRAL, IN 1-1/2"C.	1
2	3-#4 AWG, 1-#4 NEUTRAL, #8 GND, IN 1-1/2"C.	

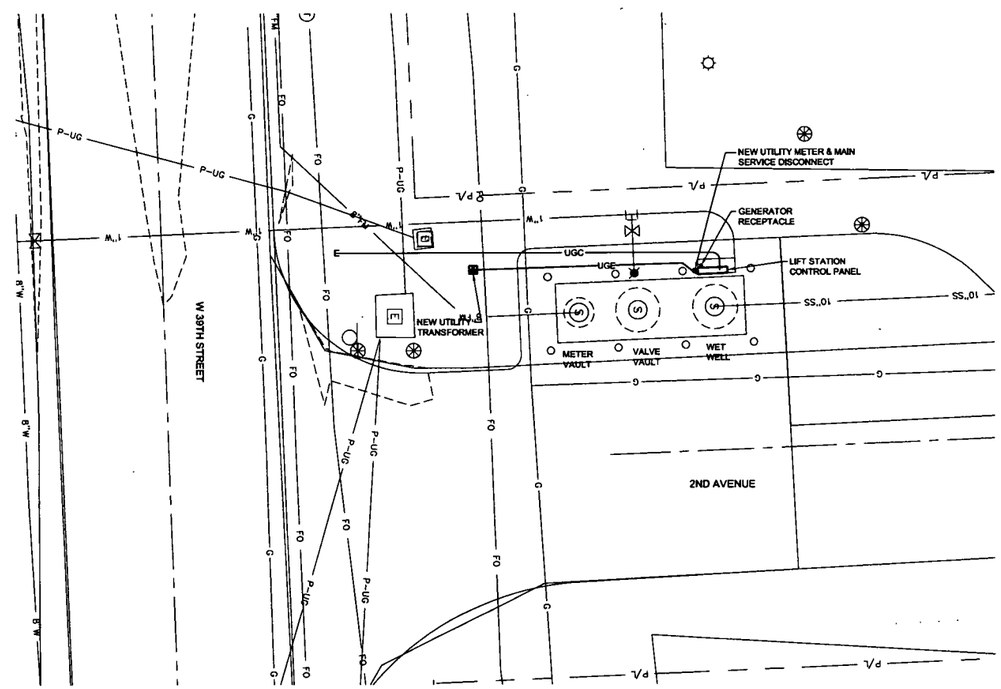


ONE LINE DIAGRAM

3/50 NOT TO SCALE

ELECTRICAL ONE-LINE/DETAIL NOTES: (SYMBOLS 1, 2, ETC.)

1. COORDINATE ALL LIFT STATION ELECTRICAL SERVICE REQUIREMENTS WITH OWNER & LOCAL UTILITY, NEBRASKA PUBLIC POWER DISTRICT (NPPD). NEW UNDERGROUND FEED AND METER BY NPPD, MAIN SERVICE DISCONNECT BY ELECTRICAL CONTRACTOR. SERVICE IS 277/480V, 3 ø, 4W. MOUNT NEW UTILITY METER AND MAIN DISCONNECT ON SIDE OF CONTROL PANEL ENCLOSURE.
2. PUMP CONTROL PANEL PROVIDED WITH MAIN BREAKER, MANUAL BYPASS, GENERATOR RECEPTACLE, PUMP STARTERS & PROTECTION, SURGE PROTECTIVE DEVICE, GFI RECEPTACLES, AND ALL REQUIRED CONTROL AND PROTECTION ACCESSORIES. PUMP CONTROL PANEL PROVIDED BY PUMP SUPPLIER, INSTALLED BY ELECTRICAL CONTRACTOR.
3. GROUND LIFT STATION SERVICE AND ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND AS REQUIRED BY THE UTILITY AND LOCAL AUTHORITIES.
4. ALL WIRING IN WET WELL SHALL BE SUITABLE FOR A CLASS 1, DIVISION 1, HAZARDOUS LOCATION. INSTALL IN ACCORDANCE WITH THE N.E.C.
5. PROVIDE BUSHING FOR CONDUITS STUBBED UP FROM PUMP STATION MANHOLES. CABLES FROM PUMP TO EXTEND TO CONTROL PANEL. PROVIDE SEALS (GROMMETS) FOR CABLES ENTERING PANEL. CABLES FROM CONDUIT TO CONTROL PANEL TO BE PROTECTED FROM DAMAGE BY VENTILATED COVER.
6. COORDINATE WITH CITY THE EXACT LOCATION OF CONDUIT RUN FOR FIBER TIE IN.



N

0' 5' 10' 20'
SCALE IN FEET

ELECTRICAL SITE PLAN

1/50 SCALE: 1" = 10'-0"

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-3256
TEL 402.494.3050
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL ELECTRICAL ENGINEER
FRANK L. EGELHOFF
E-10342
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

39TH STREET LIFT STATION
ELECTRICAL PLANS AND DETAILS

SOUTH SIOUX CITY ROTH PARK
SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by:	EMK
checked by:	FLE
approved by:	FLE
QA/QC by:	FLE
project no.:	015-0063
drawing no.:	
date:	04.21.15

SHEET
50 of 97

DWG: F:\Projects\015-0063_ELEC\Final_Plans\39th Street Lift Station\E_NPWRS1A_50063.dwg USER: eklein
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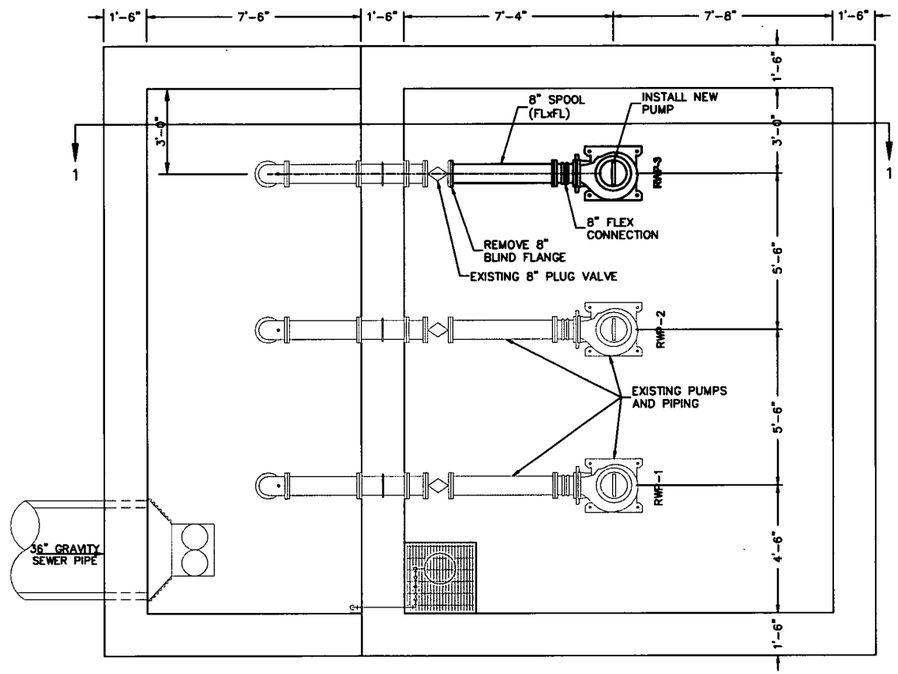
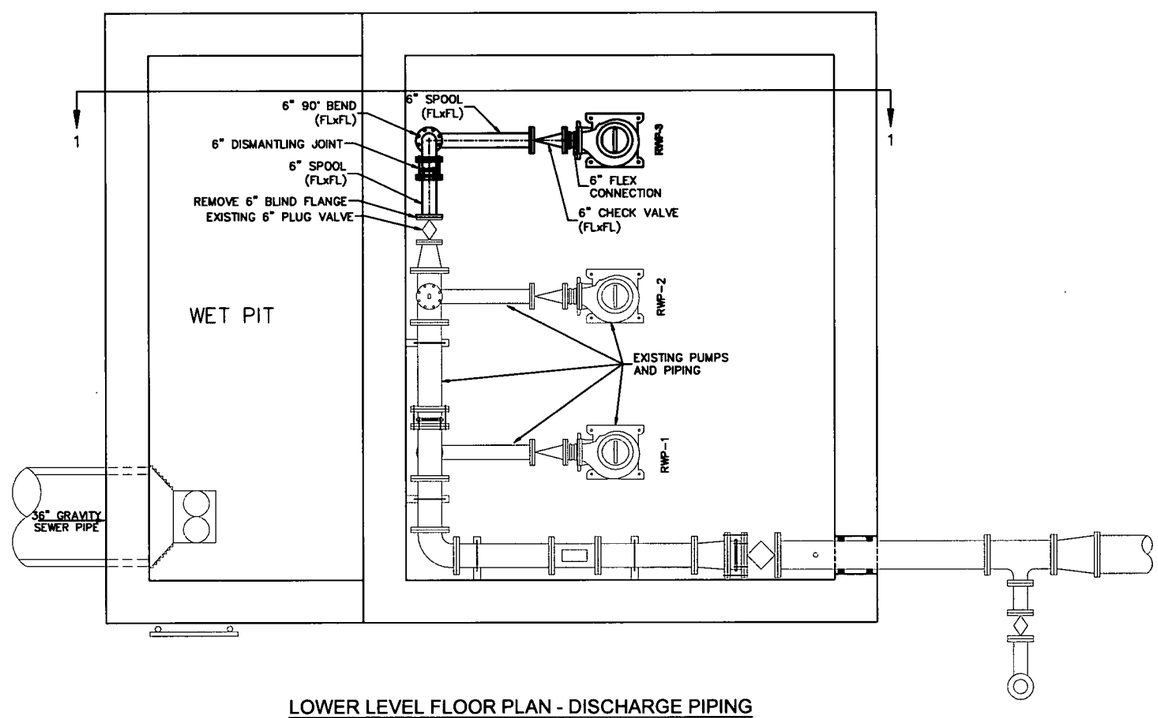


LOWER LEVEL FLOOR PLAN - SUCTION PIPING
SCALE: 3/8" = 1'-0"



LOWER LEVEL FLOOR PLAN - DISCHARGE PIPING
SCALE: 3/8" = 1'-0"

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REVISIONS

BENNET AVENUE LIFT STATION
PLAN VIEW

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

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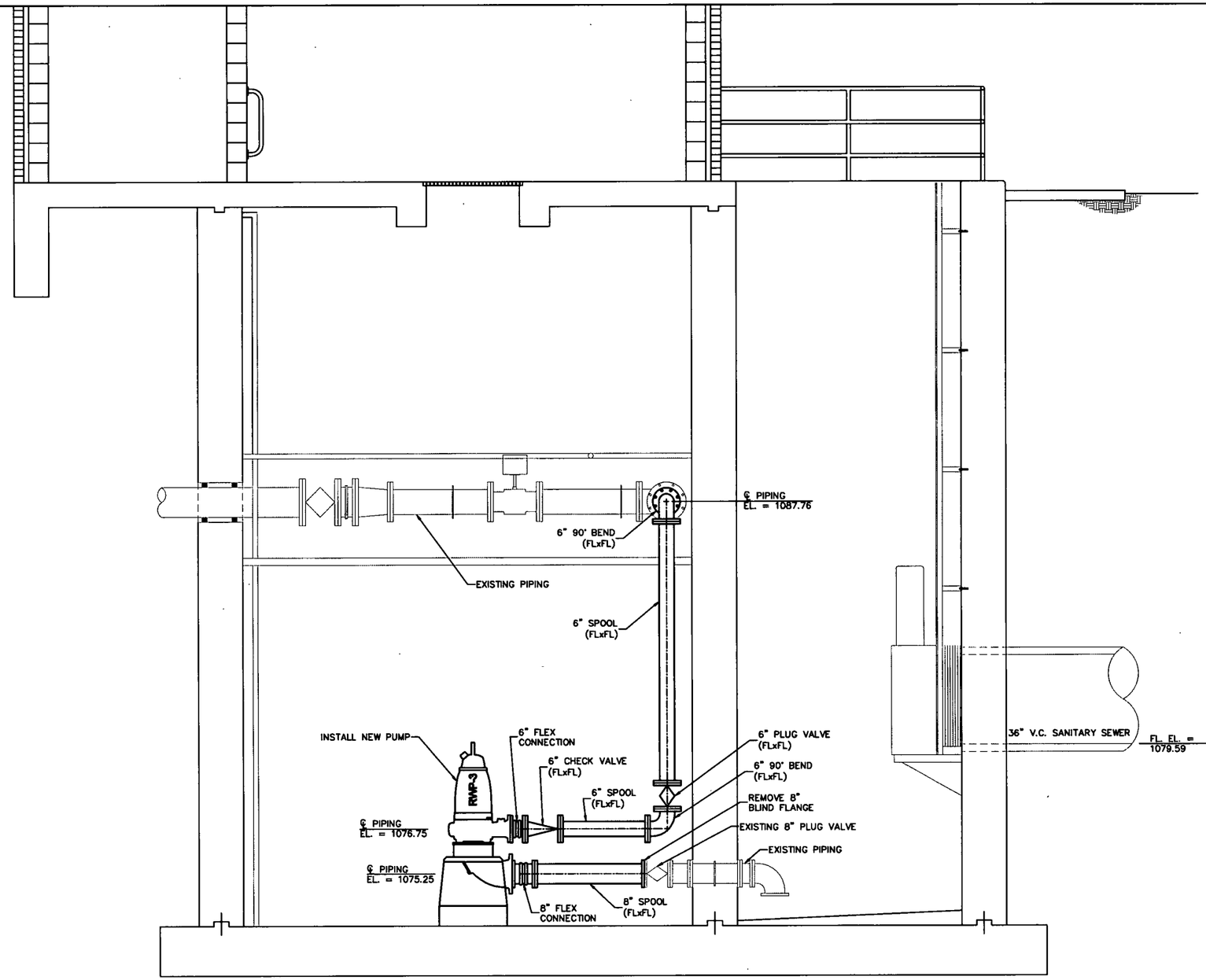

SECTION 1-1
SCALE: 1/2" = 1'-0"

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
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PROFESSIONAL CIVIL ENGINEER
CARLOS A. MEDINA
STATE OF NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

BENNET AVENUE LIFT STATION
SECTION VIEW

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JCB
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QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

SHEET
52 of 97

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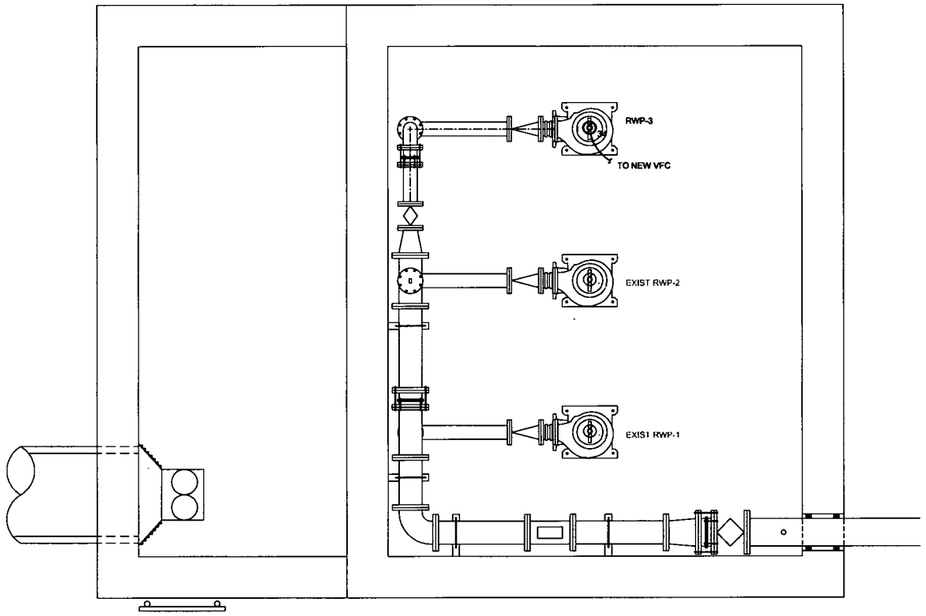
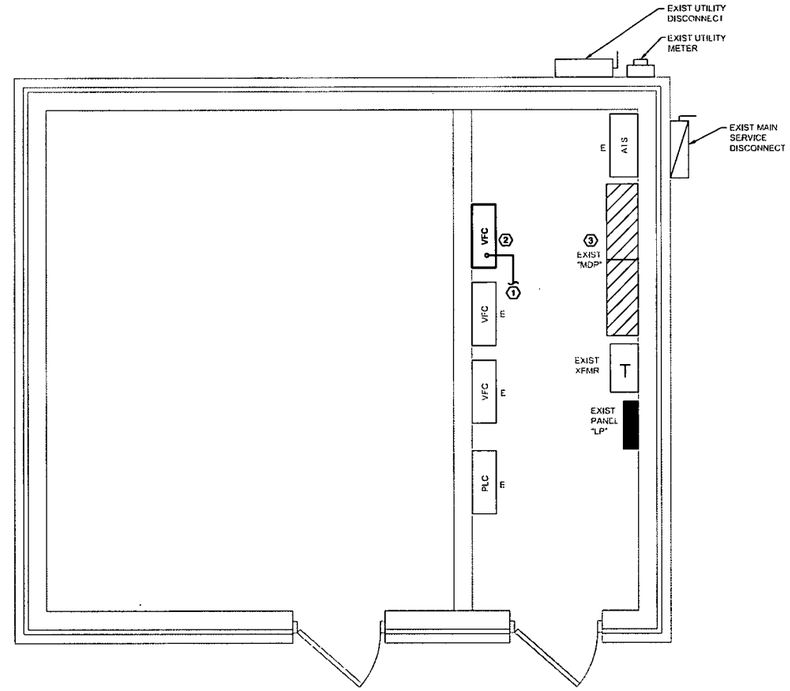


2/53 LOWER LEVEL ELECTRICAL PLAN

SCALE: 3/8" = 1'-0"



1/53 ELECTRICAL BUILDING PLAN

SCALE: 3/8" = 1'-0"

GENERAL NOTES:

A. ALL EQUIPMENT AND INSTALLATION IN PUMP ROOMS SHALL BE CLASS I, DIVISION 2.

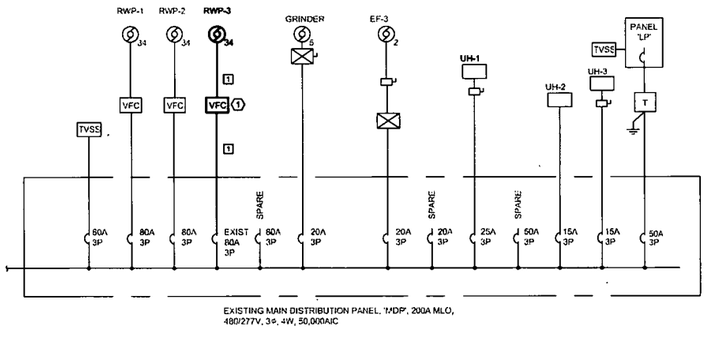
B. COORDINATE ALL DEVICE LOCATIONS WITH EXISTING CONDITIONS AND EQUIPMENT INSTALLATIONS.

C. PROVIDE LABELS FOR ALL EQUIPMENT INDICATION POWER SOURCE, CIRCUIT, AND VOLTAGE. EXAMPLE: "MDP-6, 480V".

D. PROVIDE HARDWIRED GROUND FOR ALL CIRCUITS. PROVIDE INDIVIDUAL NEUTRAL AND GROUND WIRES FOR ALL EQUIPMENT, CONTROL, AND DEDICATED CIRCUITS.

SHEET NOTES: (SYMBOLS 1, 2, ETC.)

1. PROVIDE 2-#18 GAUGE TWISTED SHIELDED CABLES AND 10-#14 STRANDED WIRES IN 1" CONDUIT TO CONTROL PANEL "PLC".
2. PROVIDE SEAL-OFF FITTING UNDER VFC IN CONDUIT TO MOTOR.
3. MAKE CONNECTION TO EXISTING SPARE 80A, 3 POLE BREAKER IN EXISTING MDP TO SERVE NEW VFC.



3/53 EXISTING ONE-LINE DIAGRAM

NOT TO SCALE

ELECTRICAL ONE-LINE SHEET NOTES: (SYMBOLS 1, 2, ETC.)

1. VARIABLE FREQUENCY CONTROLLERS (VFC) SHALL BE PROVIDED BY PUMP SUPPLIER AND INSTALLED BY ELECTRICAL CONTRACTOR.

CONDUIT AND WIRE SCHEDULE

WIRE	WIRE AND CONDUIT SIZE	NOTES
1	3-#4 AWG, #8 GND, 1"C.	

LEGEND

- SURFACE MOUNTED POWER PANEL
- ELECTRICAL MOTOR: NUMBER ON SIDE INDICATES MOTOR SIZE.
- FUSED DISCONNECT SWITCH
- BRANCH CIRCUIT POWER WIRING
- CONDUIT UP
- CONDUIT DOWN
- HOME RUN 3/4" CONDUIT, 2#12 AND 1#12 GROUND. UNLESS OTHERWISE NOTED. NOTE: HOME RUN SHALL BE FROM FIRST ELECTRICAL DEVICE JUNCTION BOX IN CIRCUIT TO ELECTRICAL PANEL.
- E — EXISTING DEVICES TO REMAIN
- VFC — VARIABLE FREQUENCY CONTROLLER
- UGE — UNDERGROUND ELECTRICAL
- ATS — AUTOMATIC TRANSFER SWITCH

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402-494-3059
FAX 402-494-4064
www.olssonassociates.com

PROFESSIONAL ELECTRICAL ENGINEER
FRANK L. EGELHOFF
E-10342
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

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BENNET AVENUE LIFT STATION
ELECTRICAL PLANS AND DETAILS

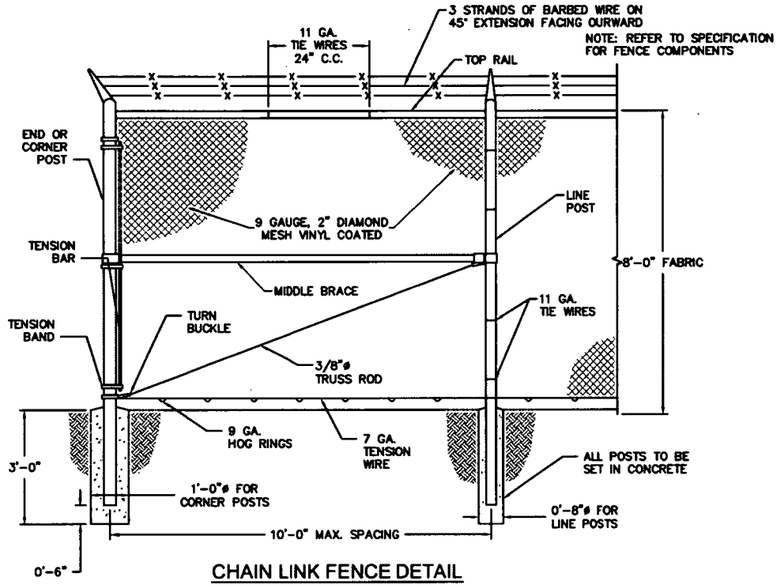
SOUTH SIOUX CITY ROTH PARK
SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

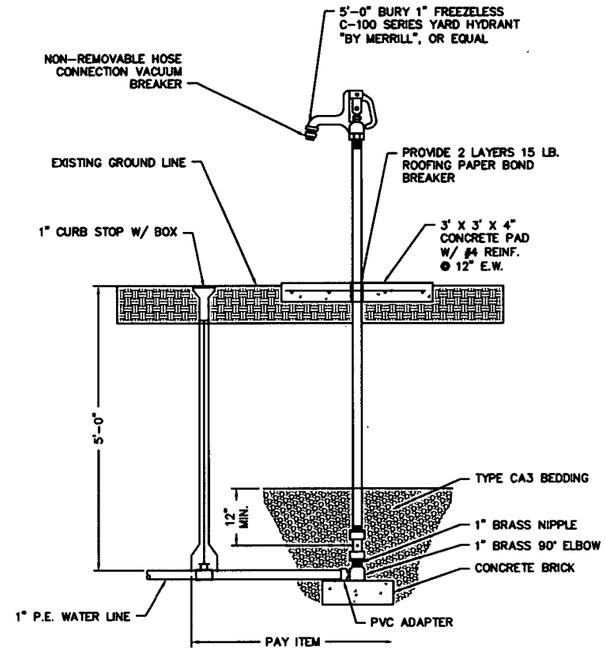
drawn by: EMK
checked by: FLE
approved by: FLE
QA/QC by: FLE
project no.: 015-0063
drawing no.:
date: 04.21.15

DWG: F:\Projects\015-0063_ELEC\Find_Plans\BENNET LIFT STATION\E_NPWR1A_50063.dwg USER: eklein
DATE: Apr 21, 2015 8:28am XREFS: 150063_BENNET PUMPSTATION 150063 XREF BENNET BUILDING 150063_TITLEBLOCK



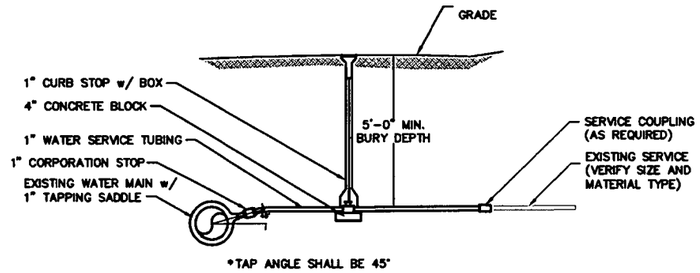
CHAIN LINK FENCE DETAIL

NOT TO SCALE



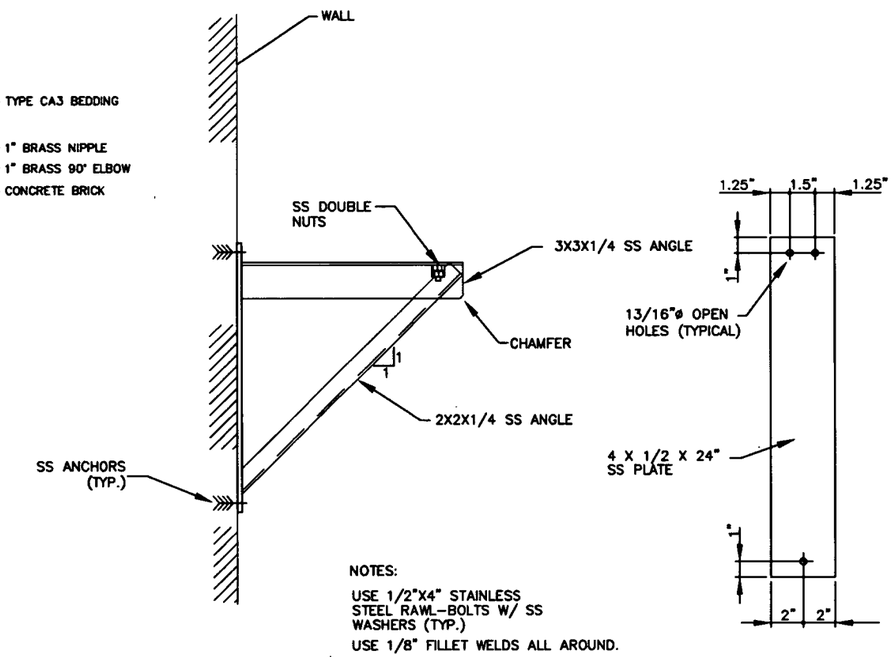
YARD HYDRANT DETAIL

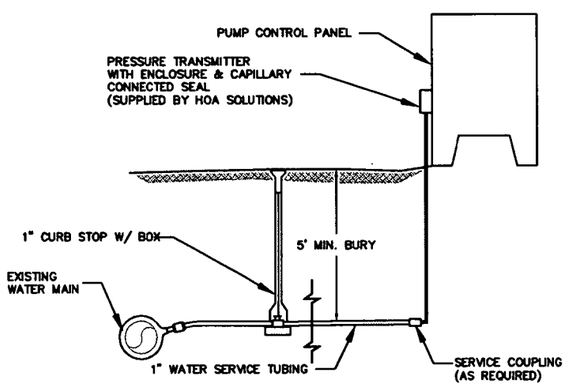
SCALE: 3/4" = 1'-0"



TYPICAL SERVICE CONNECTION

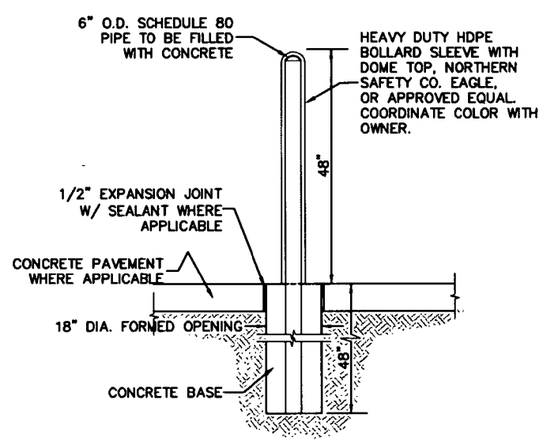
SCALE: 1/2" = 1'-0"





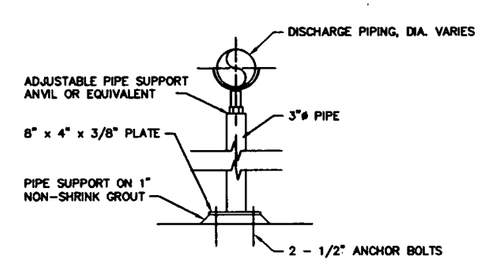
PRESSURE TRANSMITTER SERVICE CONNECTION

NOT TO SCALE



BOLLARD DETAIL

SCALE: NOT TO SCALE



HOIZONTAL PIPE SUPPORT DETAIL

SCALE: 1" = 1'-0"

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2656
FAX 402.494.2866
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10032
4-21-15
STATE OF NEBRASKA

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REVISIONS

LIFT STATION DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

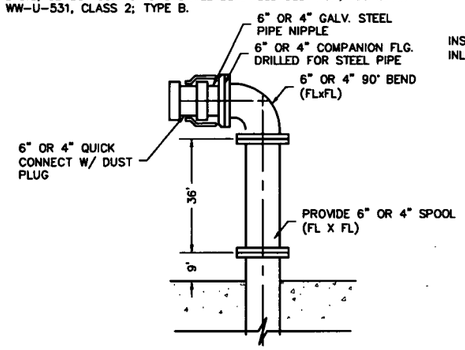
SOUTH SIOUX CITY, NEBRASKA

2015

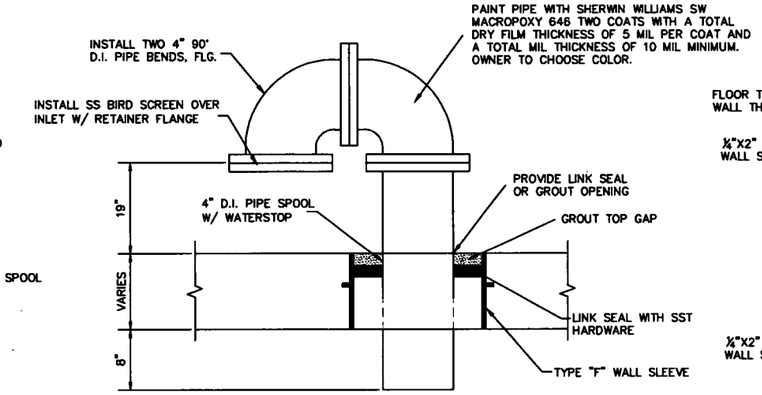
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

NOTE:
1. THE QUICK CONNECT COUPLINGS FOR EMERGENCY BYPASS PUMPING SHALL BE OF STAINLESS STEEL CONSTRUCTION. PROVIDE KAMLOK OR EQUAL. COORDINATE TYPE OF CONNECTION REQUIRED AND ORIENTATION WITH OWNER AND ENGINEER.

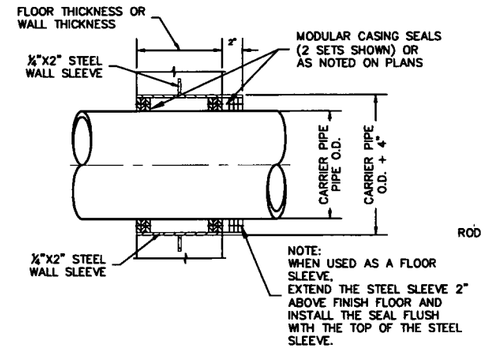
2. GALVANIZED STEEL PIPE SHALL COMPLY WITH ASTM A53, TYPE E, GRADE A OR B. FITTINGS SHALL BE MALLEABLE IRON, ANSI/ASME B16.3, CLASS 150. UNIONS SHALL BE MALLEABLE IRON, FED SPEC WW-U-531, CLASS 2; TYPE B.



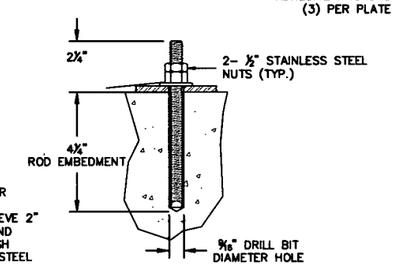
TYPICAL QUICK CONNECTION
SCALE: NOT TO SCALE



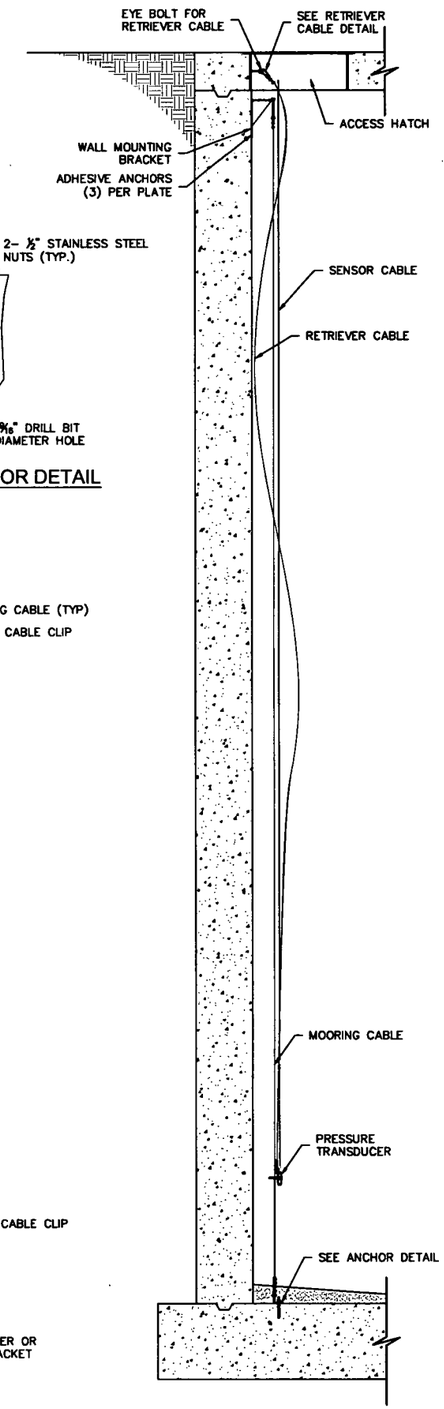
TYPICAL WET WELL VENT
SCALE: NOT TO SCALE



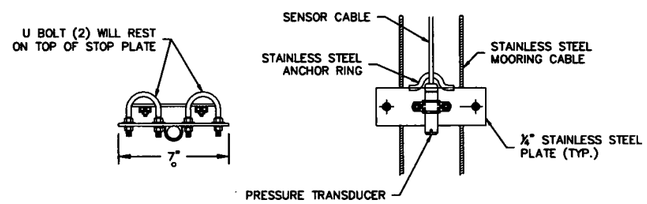
TYPE "F" WALL SLEEVE
SCALE: NOT TO SCALE



ADHESIVE ANCHOR DETAIL
SCALE: NOT TO SCALE



NOTE:
1. PRESSURE TRANSDUCER TO BE WITHIN 6" OF FLOOR



PRESSURE TRANSDUCER ASSEMBLY
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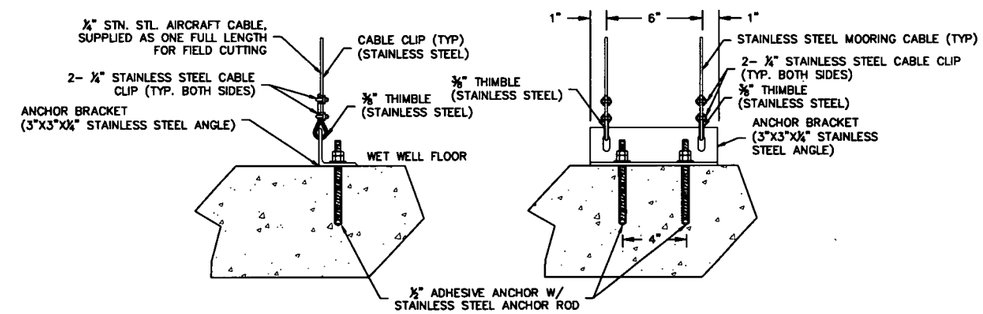
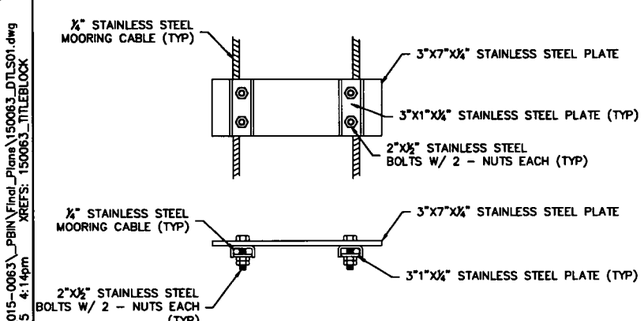
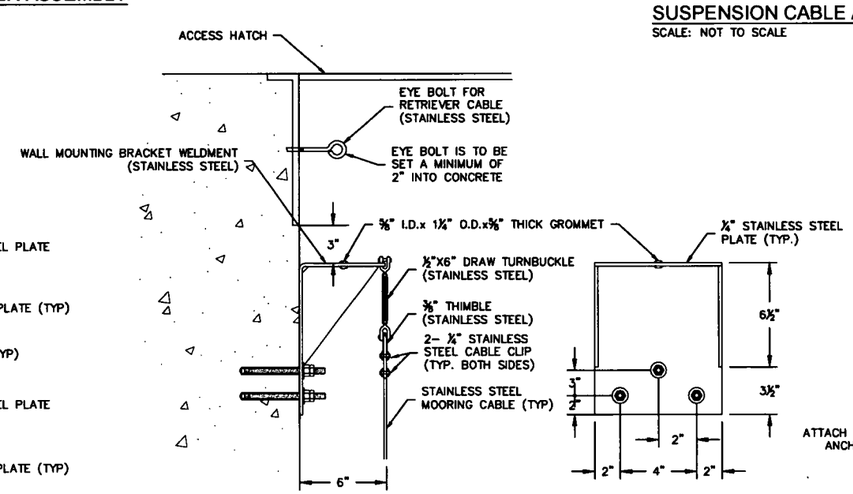


SUSPENSION CABLE ANCHOR DETAILS
SCALE: NOT TO SCALE



STOP PLATE WELMENT
SCALE: NOT TO SCALE



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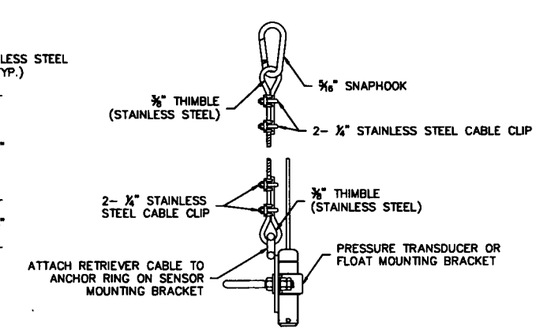

RETRIEVER CABLE DETAIL
SCALE: NOT TO SCALE

PRESSURE TRANSDUCER DETAIL
SCALE: NOT TO SCALE

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1707 Dakota Avenue
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TEL: 402.494.3069
FAX: 402.494.9064
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REVISIONS

LIFT STATION DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JCB
approved by:	CJM
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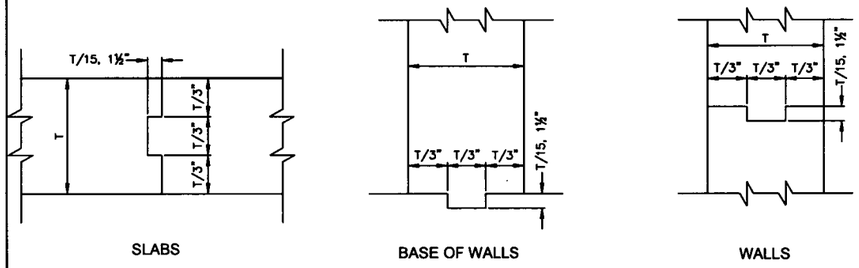
DATE: Apr 16, 2015 4:14pm XREFS: 150063_TITLEBLOCK

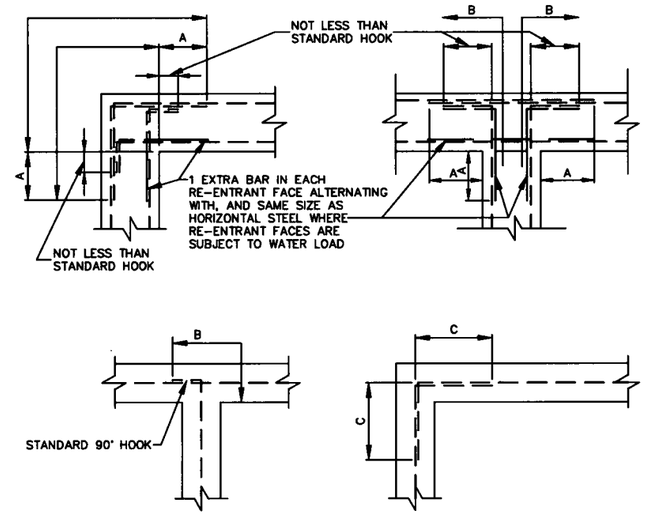


SLABS

BASE OF WALLS

WALLS

JOINTS WITHOUT WATER STOPS



NOTE:
VERTICAL REINFORCING NOT SHOWN

A=1/5 THE CLEAR SPAN DISTANCE MEASURED HORIZONTALLY OR 0.4 THE CLEAR SPAN OR CANTILEVER MEASURED VERTICALLY, WHICHEVER IS THE SMALLER: BUT IN NO CASE LESS THAN THE REQUIRED LENGTH OF LAPPED SPLICES FOR TOP BARS AS SHOWN ON THIS SHEET. THE "A" DIMENSION FOR ONE-HALF OF THE EXTRA BARS CAN BE REDUCED BY 30%.

B=SUFFICIENT LENGTH TO PERMIT BARS TO EXTEND THROUGH THE WALL TO THE OPPOSITE FACE AND TERMINATE IN A STANDARD HOOK BUT SHALL NOT BE LESS THAN THE LENGTH REQUIRED FOR EMBEDMENT OF THE BARS, AS SHOWN ON THIS SHEET.

C=NOT LESS THAN THE LENGTH REQUIRED FOR LAPPED SPLICES FOR TOP BARS, AS SHOWN ON THIS SHEET.

TYPICAL CORNER REINFORCING DETAILS

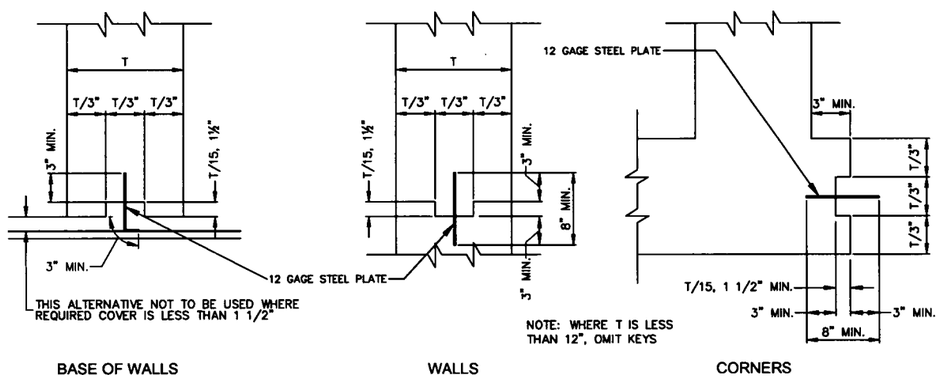
BAR SIZE	LENGTH OF LAPPED SPLICES FOR REINFORCING IN INCHES		LENGTH OF EMBEDMENT FOR END ANCHORAGE OF REINFORCING WITH STANDARD HOOKS, IN INCHES	
	* TOP BARS	OTHERS	* TOP BARS	OTHER
3	20	20	14	14
4	23	20	16	16
5	29	20	20	18
6	37	26	26	20
7	50	36	36	22
8	66	47	44	26
9	83	60	55	32
10	106	76	66	41
11	130	93	78	52
14	NOT PERMITTED		108	79
18	NOT PERMITTED		158	119

* TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN THE WALLS ARE TO BE PROVIDED WITH A LAPS AS REQUIRED FOR TOP BARS.

EXCEPT AS OTHERWISE INDICATED ON THE PLANS. EMBEDMENT LENGTHS FOR END ANCHORAGE AND LAPPED SPLICES SHALL BE NOT LESS THAN (NO MINUS TOLERANCE) SHOWN ABOVE.

LAPPED SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS AS DETERMINED BY THE ENGINEER, AND SHALL NOT BE SPACED CLOSER THAN 6" ON CENTERS. IF SPLICES ARE STAGGERED SO THAT NO MORE THAN 1/2" ARE SPLICED IN A LAP SPLICE LENGTH, THE SPLICE LENGTH CAN BE REDUCED TO 75% OF THE LENGTHS TABULATED ABOVE.

STD. HOOK
3 - 6"
4 - 8"
5 - 10"
6 - 12"
7 - 14"
8 - 16"



BASE OF WALLS

WALLS

CORNERS

TYPICAL CONSTRUCTION JOINTS
(WATERTIGHT JOINTS, T = 12" OR MORE)

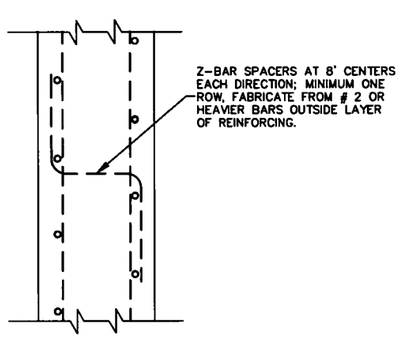
NOTE:
REINFORCING STEEL IS TO BE CARRIED ACROSS ALL CONSTRUCTION JOINTS

CONCRETE COVER FOR REINFORCEMENT

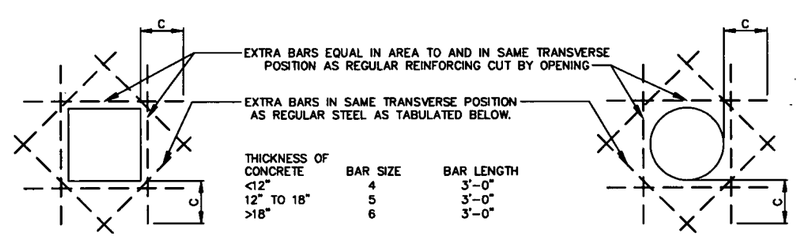
LOCATION	MINIMUM COVER
UNFORMED SURFACES ADJACENT TO EXCAVATION	3"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH	
# 6 OR LARGER BARS	2"
# 5 OR SMALLER BARS	2"
OTHER LOCATIONS	
BARS IN BEAMS OR GIRDERS, INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1½"
SLABS, WALLS AND JOIST	
# 14 AND # 18	1½"
# 11 AND SMALLER	3/4"

COVER FOR REINFORCEMENT STEEL SHALL NOT BE LESS THAN THE MINIMUM GIVEN ABOVE (NO MINUS TOLERANCE), AND SHALL NOT EXCEED THE MINIMUM BY MORE THAN 1/4" WHERE THE CONCRETE THICKNESS IS 24" OR LESS, OR MORE THAN 1/2" WHERE THE CONCRETE THICKNESS IS MORE THAN 24".

GENERAL NOTE:
DETAILS ON THIS SHEET APPLY TO THE ENTIRE SET OF PLANS EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE.



SPACERS FOR WALL REINFORCEMENT

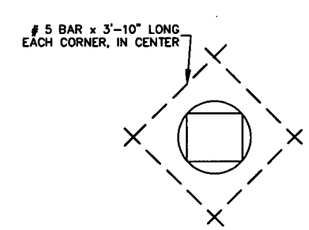


THICKNESS OF CONCRETE	BAR SIZE	BAR LENGTH
<12"	4	3'-0"
12" TO 18"	5	3'-0"
>18"	6	3'-0"

C = THE REQUIRED LENGTH FOR LAPPED SPLICE FOR TOP BARS AS SHOWN ON THIS SHEET

FOR RECTANGULAR OPENINGS LARGER THAN 21" DIAGONAL

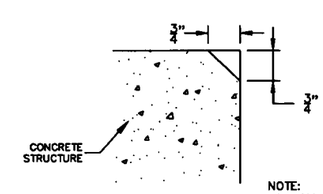
FOR CIRCULAR OPENINGS LARGER THAN 21" DIAMETER



NOTE:
EXTRA BARS NOT REQUIRED AT SLEEVES OR WALL PIPES WHEN REINFORCEMENT IS NOT CUT AND O.D. IS 10" OR LESS

FOR OPENINGS 21" AND SMALLER IN DIAMETER OR DIAGONAL

TYPICAL EXTRA REINFORCING AT OPENINGS



NOTE:
1. ALL EXPOSED EDGES OF CONCRETE STRUCTURES TO HAVE CHAMFERED EDGES.

CONCRETE CHAMFER DETAIL
SCALE: NOT TO SCALE

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TYPICAL REINFORCING DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CJM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

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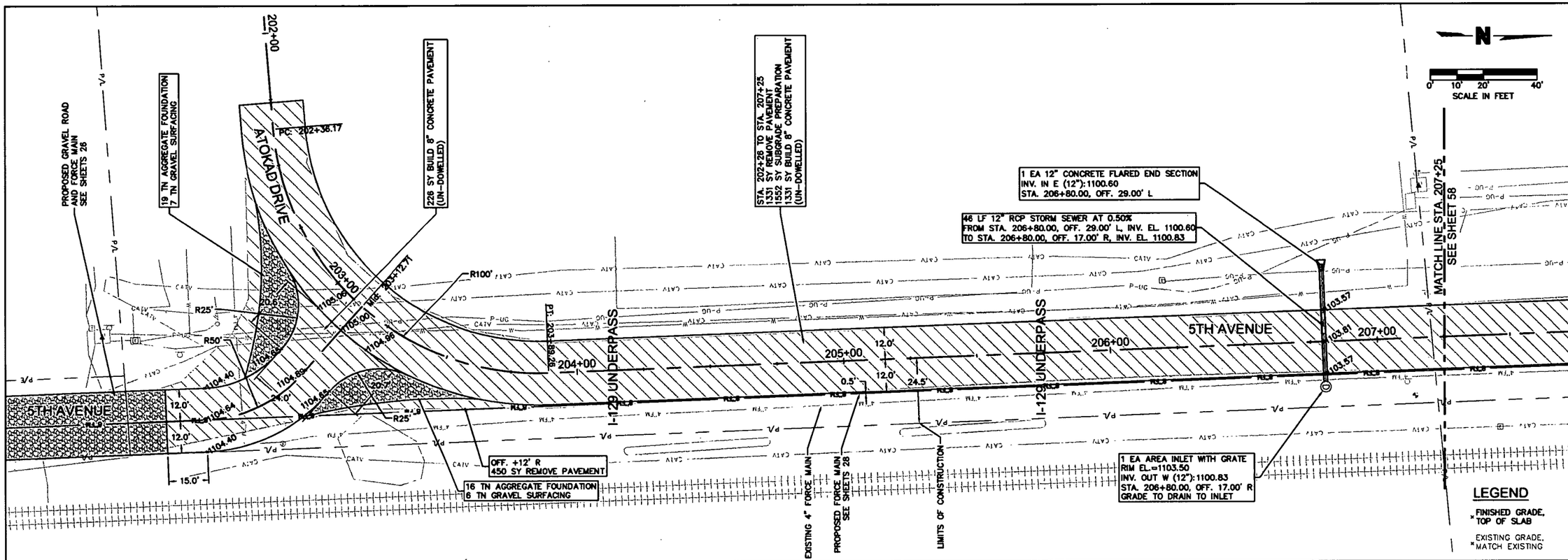

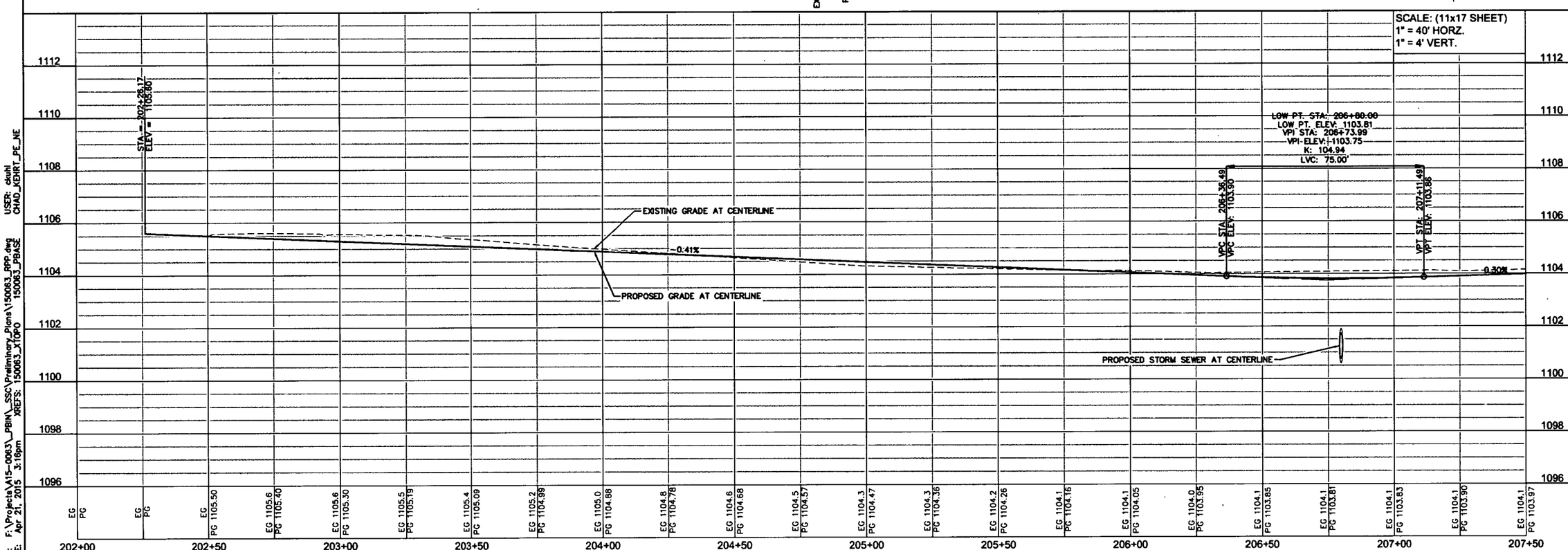

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REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

2015

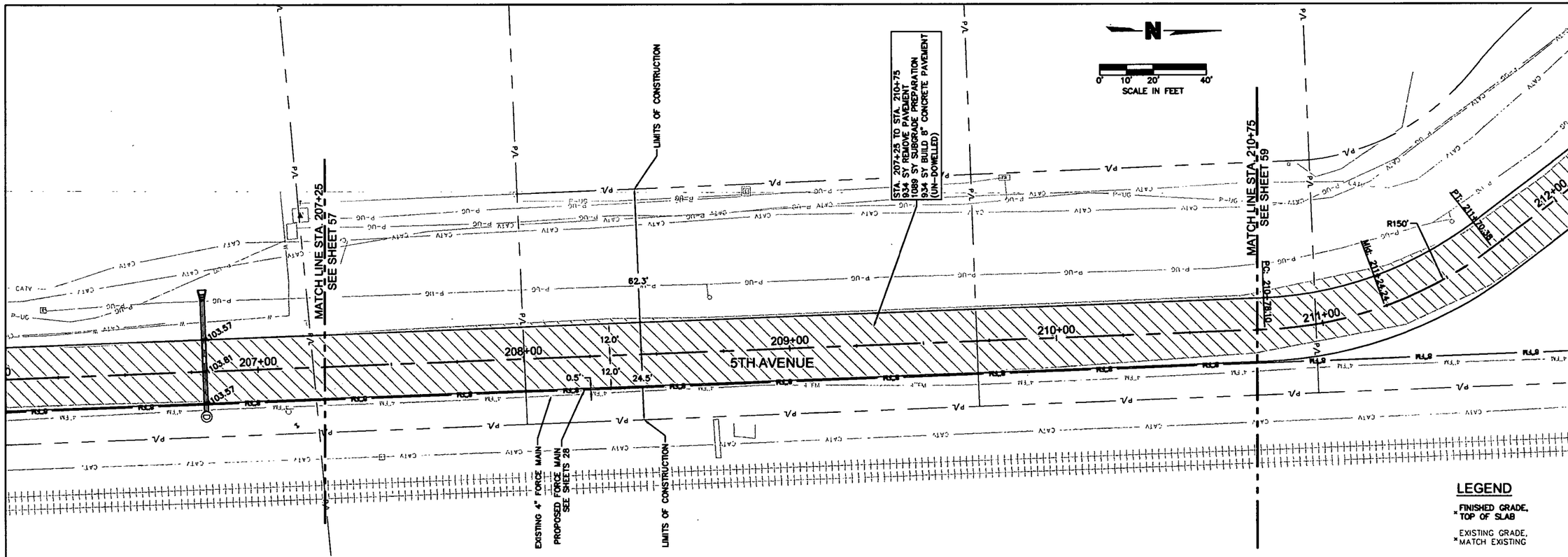
ROADWAY PLAN & PROFILE
STA. 202+00 TO STA. 207+25

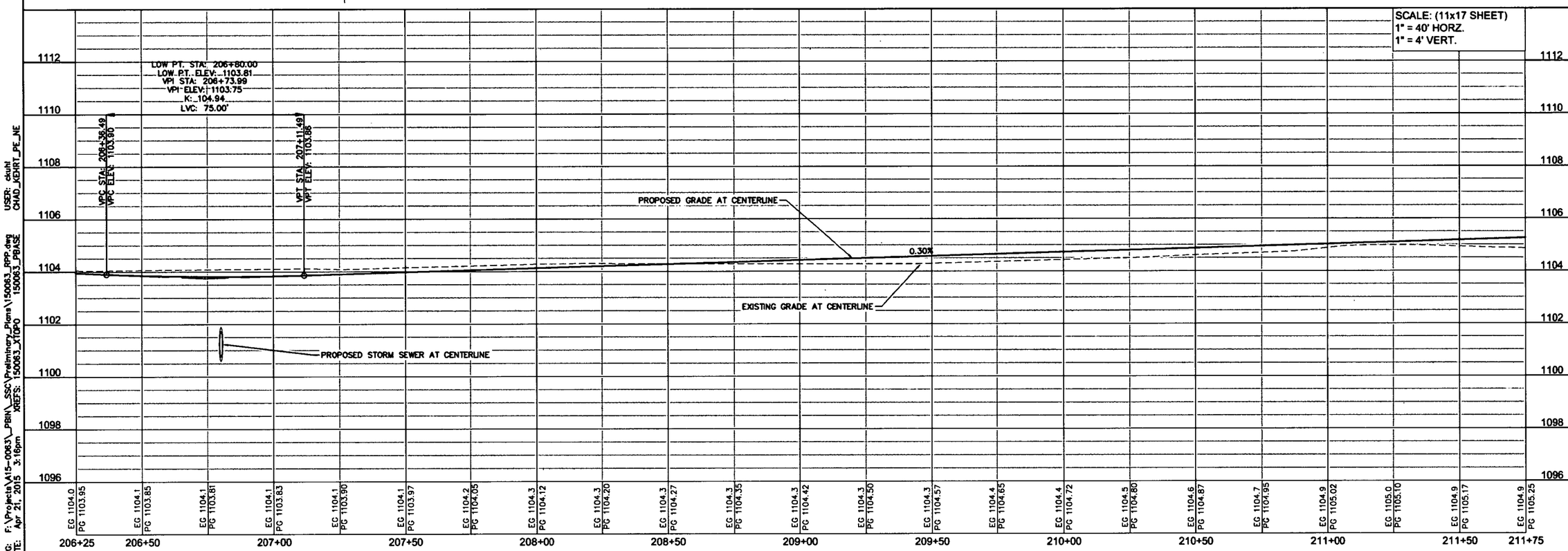
ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no: 015-0063
drawing no:
date: APRIL 2015

SHEET
57 of 97





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ROADWAY PLAN & PROFILE STA. 207+25 TO STA. 210+75

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJV
project no: 015-0063
drawing no:
date: APRIL 2015

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DWG: F:\Projects\A15-0063_PBIN_SSC\Preliminary_Plans\150063_RPP.dwg USER: ckuhl
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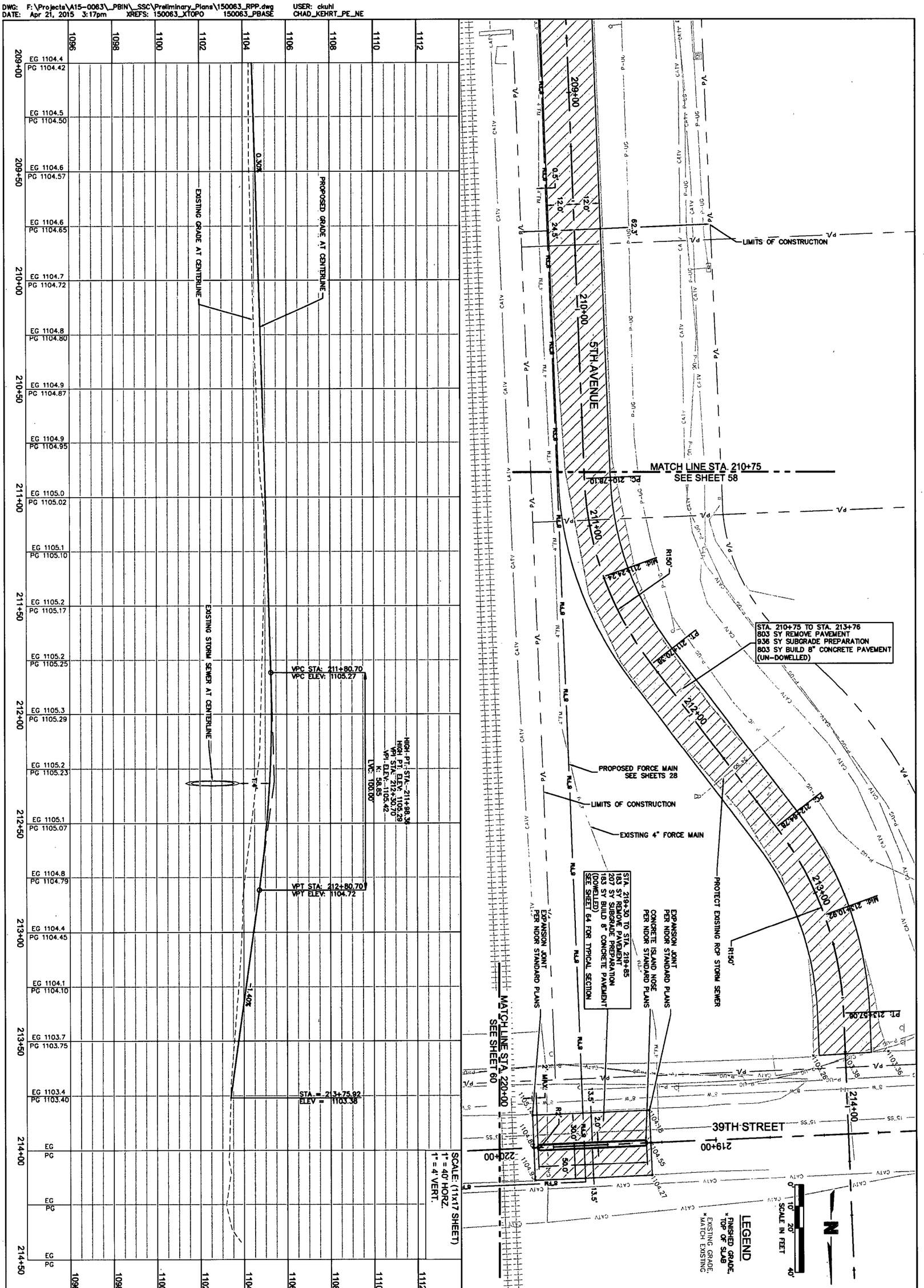

drawn by: JSL CKK	ROADWAY PLAN & PROFILE STA. 210+75 TO STA. 220+00	REV. NO. / DATE / REVISIONS DESCRIPTION	OLSSON ASSOCIATES
checked by: JCB			
approved by: CPK	ROTH PARK SANITARY SEWER IMPROVEMENTS		
QA/QC by: MJY			
project no.: 015-0063	SOUTH SIOUX CITY, NEBRASKA 2015	NO. / DATE / DESCR.	1707 Dakota Avenue South Sioux City, NE 68776-2356 TEL 402.494.3059 FAX 402.494.4064 www.olssonassociates.com
date: APRIL 2015		REVISIONS	

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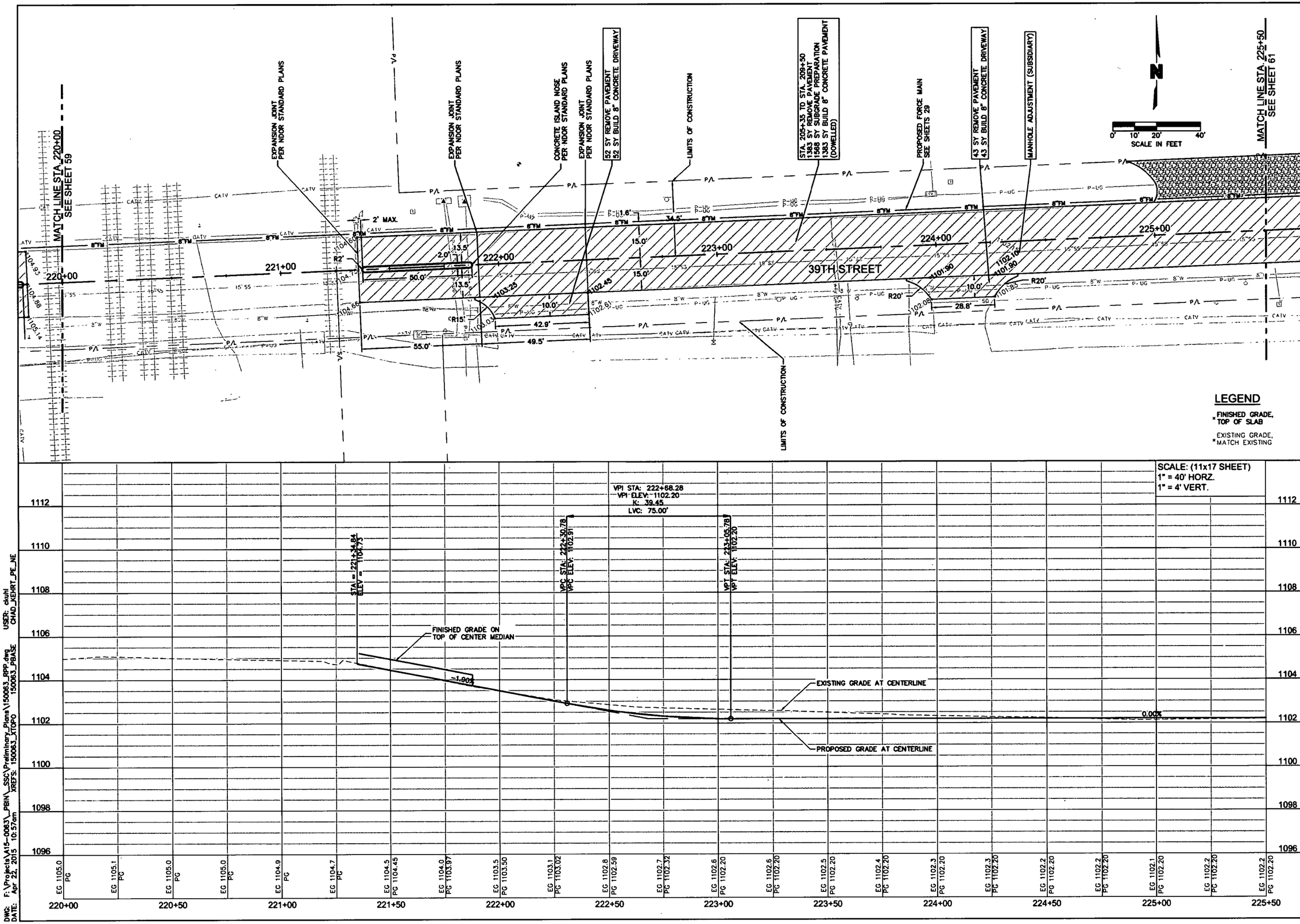

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E-10037
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ROADWAY PLAN & PROFILE STA. 220+00 TO STA. 225+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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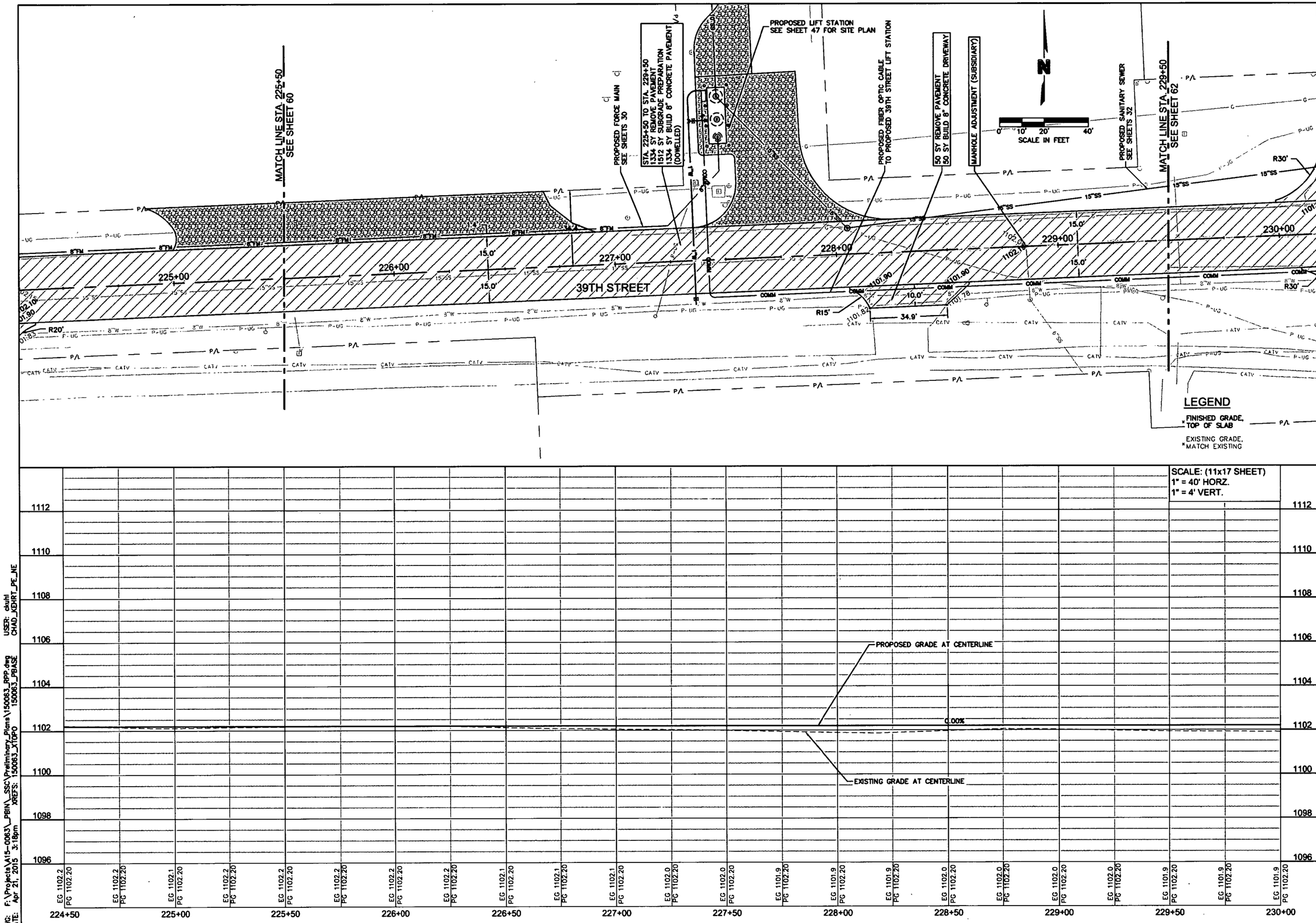
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015



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NO.	DATE	DESCR.

REVISIONS

ROADWAY PLAN & PROFILE
STA. 225+50 TO STA. 229+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
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approved by: CPK
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

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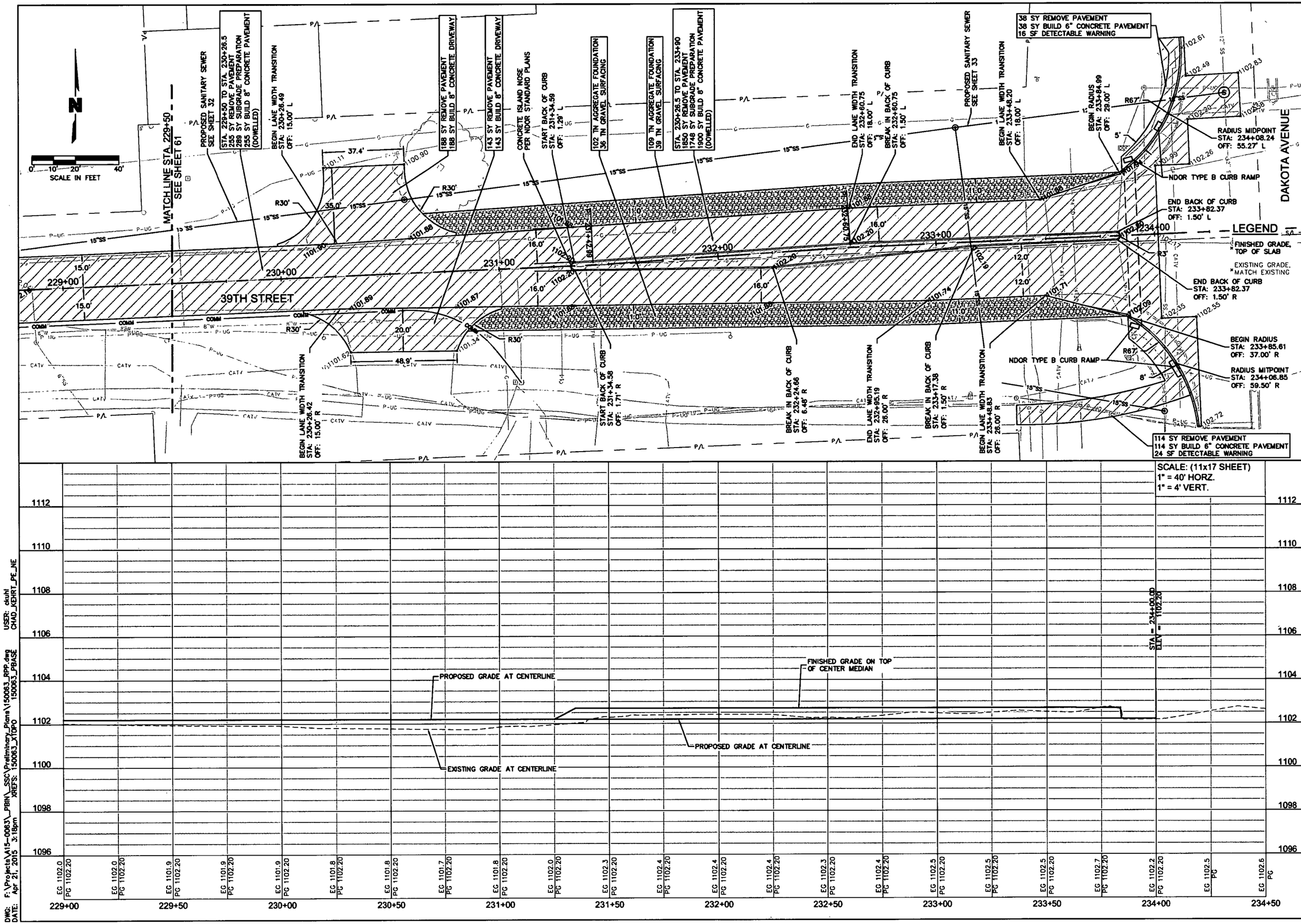

SCALE: (11x17 SHEET)
1" = 40' HORZ.
1" = 4' VERT.

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ROADWAY PLAN & PROFILE
STA. 229+50 TO STA. 234+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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QA/QC by: MJY
project no: 015-0063
drawing no:
date: APRIL 2015

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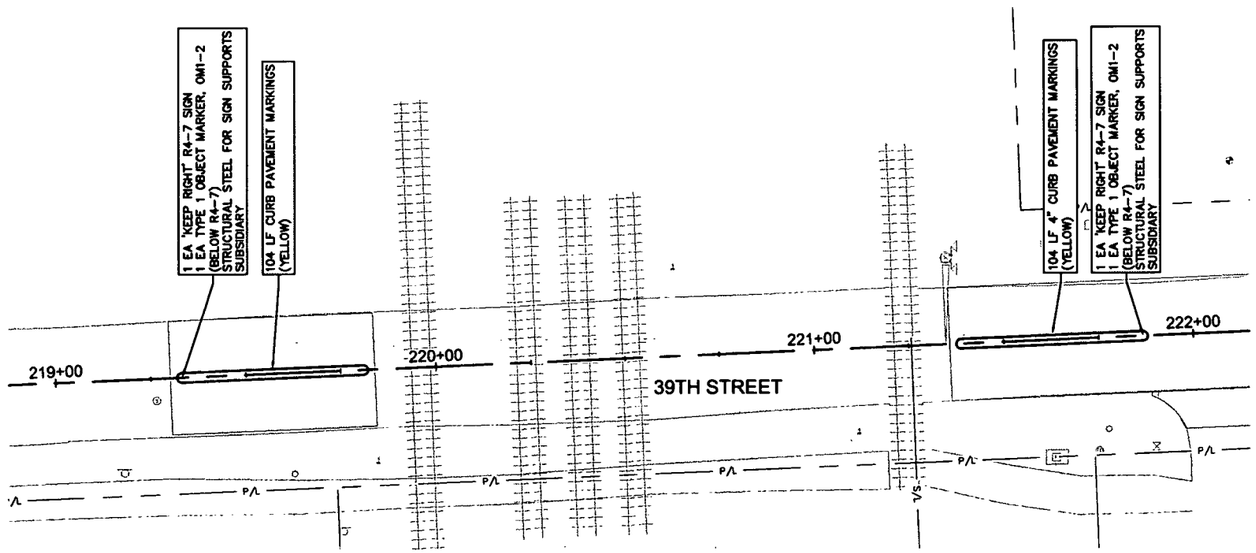
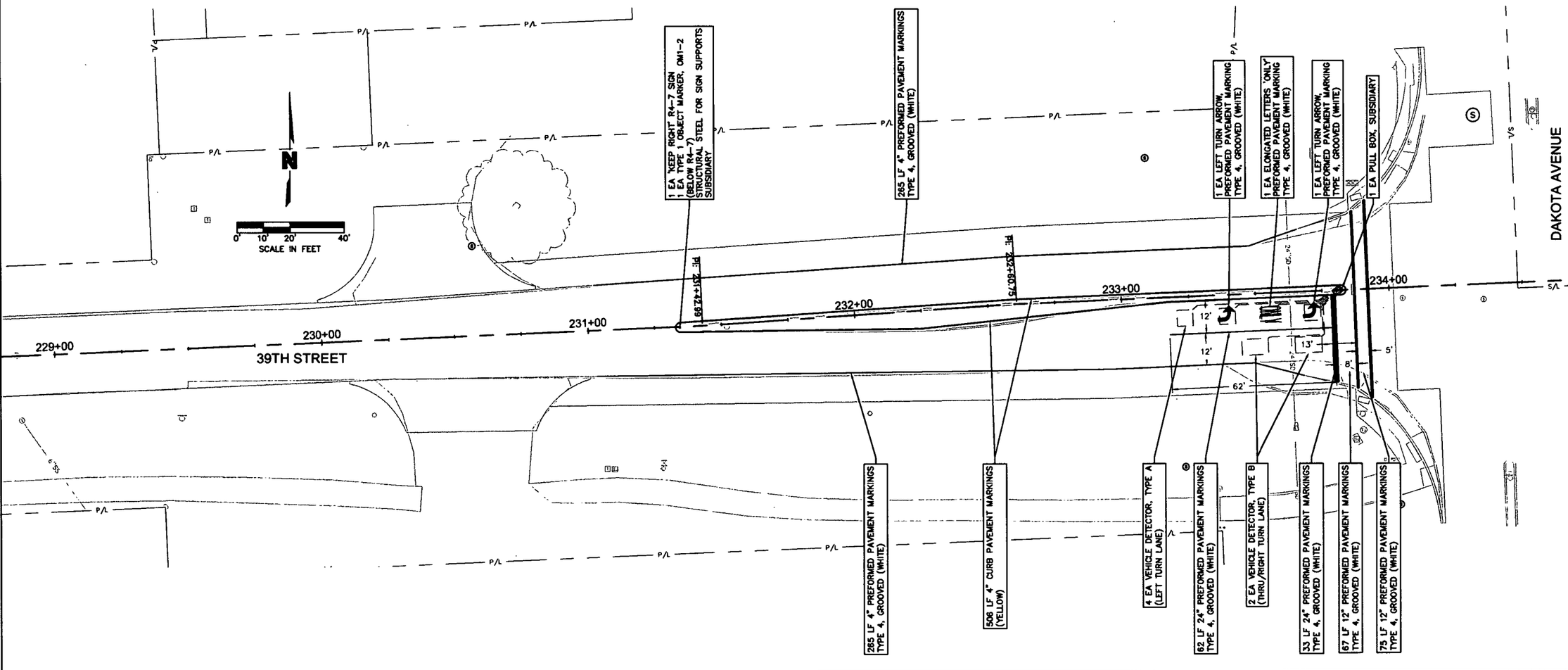
62 of 97



TRAFFIC CONTROL DEVICES/MARKINGS GENERAL NOTES:

1. THE DETECTOR LOOPS SHALL BE PREFORMED AND SHALL BE INSTALLED IN THE SUBGRADE APPROXIMATELY 3" BELOW THE BOTTOM OF THE PROPOSED PAVEMENT. LOOPS SHALL BE CENTERED IN THEIR LANES AND THE SPACING BETWEEN LOOPS SHALL BE APPROXIMATELY 10'. SAW CUT LOOPS ARE NOT AN ACCEPTABLE SUBSTITUTE FOR PREFORMED LOOPS.
2. VEHICLE DETECTOR TYPE "A" SHALL BE 6' X 6' W/3 TURNS, IMSA 51-5 PREFORMED.
3. VEHICLE DETECTOR TYPE "B" SHALL BE 6' X 10' W/3 TURNS, IMSA 51-5 PREFORMED.
4. REMOVAL OF EXISTING DETECTOR LOOPS SHALL BE CONSIDERED SUBSIDIARY.
5. MATERIALS NECESSARY FOR CONNECTION TO EXISTING PULL BOX/TRAFFIC CONTROL SYSTEM SHALL BE CONSIDERED SUBSIDIARY.
6. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
7. TRAFFIC SIGNAL ITEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE NEBRASKA DEPARTMENT OF ROADS STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION. ALL TRAFFIC SIGNAL ITEMS SHALL BE IN ACCORDANCE WITH THE NDOR APPROVED PRODUCTS LISTING.
8. TRAFFIC SIGNAL CABLE AND DETECTOR LEAD-IN CABLE SHALL NOT BE BROKEN AND SPLICED BETWEEN THE CONTROLLER CABINET AND THE CABLES FINAL DESTINATION WITHOUT THE APPROVAL OF THE NEBRASKA DEPARTMENT OF ROADS TRAFFIC ENGINEERING DIVISION. APPROVED SPLICES SHALL ONLY BE MADE IN CABINETS, PULL BOXES, JUNCTION BOXES, POLE BASES AND SIGNAL HEADS. SPLICES WILL NOT BE ALLOWED IN EARTH, CONDUIT, OR EXPOSED AERIALLY. CONDUCTORS TO BE SPLICED SHALL BE TWISTED TOGETHER TO FORM A MECHANICALLY AND ELECTRICALLY SECURE CONNECTION, SECURED WITH WIRE NUT OR SOLDER, AND WATERPROOFED. THE WATERPROOFING SHALL EXTEND A MINIMUM OF 1" OVER THE CONDUCTORS INSULATION. SPLICES IN CABINETS SHALL NOT BE WATERPROOFED. WATERPROOFING SHALL BE ACCOMPLISHED WITH ONE OF THE FOLLOWING METHODS:
   A. SELF VULCANIZING RUBBER ELECTRICAL TAPE WRAPPED THROUGH THE CROTCH OF THE SPLICE THEN HALF-LAPPED OVER THE ENTIRE SPLICE. COVER THE RUBBER TAPE WITH A HALF-LAPPED LAYER OR ELECTRICAL TAPE.
   B. 3M DBY-6 OR DBR-6 DIRECT BURY SPLICE KITS.
9. ALL PAINT SHALL COMPLY WITH NEBRASKA DEPARTMENT OF ROADS PAINT SPECIFICATIONS.
10. ALL PAINTING/STRIPING SHALL CONFORM TO THE MOST CURRENT ADDITION OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
11. ALL PAVEMENT MARKINGS SHALL BE SUBSIDIARY TO "PAVEMENT STRIPING & SIGNAGE" PAY ITEM.
12. TYPE "A" VEHICLE DETECTOR LOOPS, TYPE "B" VEHICLE DETECTOR LOOPS, PULL BOX, CONDUIT, PULL STRING, AND WIRE SHALL BE SUBSIDIARY TO "TRAFFIC CONTROL DEVICES" PAY ITEM.



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E-10037
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.

REVISIONS

TRAFFIC CONTROL DEVICES & MARKINGS

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no : 015-0063
drawing no :
date. APRIL 2015

SHEET
63 of 97

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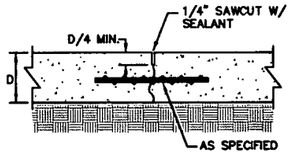
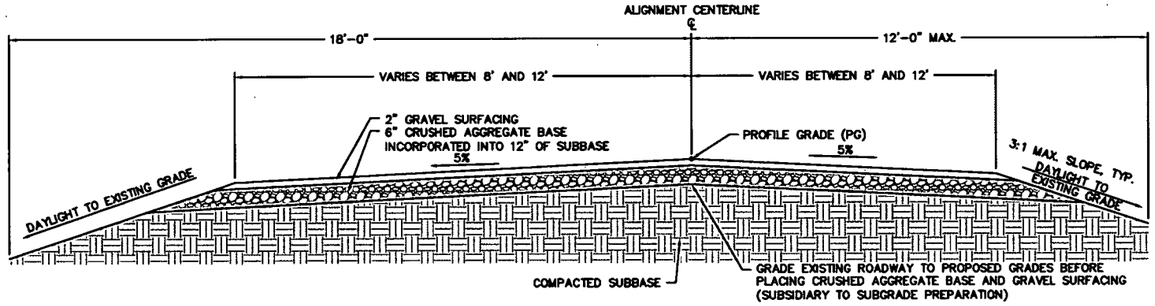
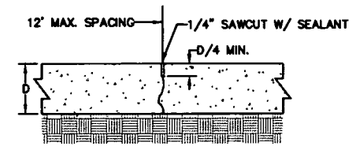


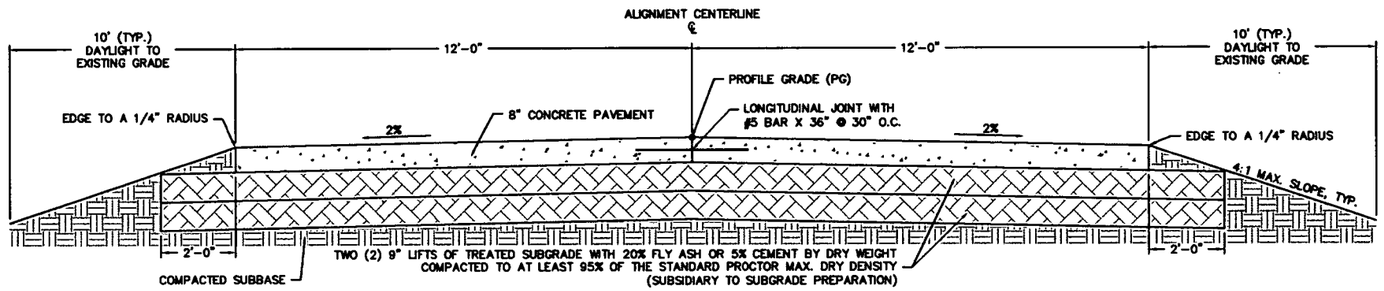
LONGITUDINAL CONTRACTION JOINT
NOT TO SCALE



TYPICAL GRAVEL ROAD SECTION (5TH AVENUE)
SCALE: 1/2"=1'-0"



CONTRACTION JOINT W/O DOWELS



TYPICAL 24' ROAD SECTION (5TH AVENUE)
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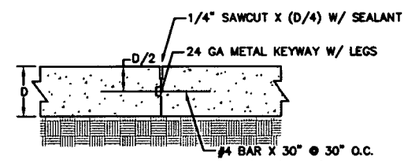
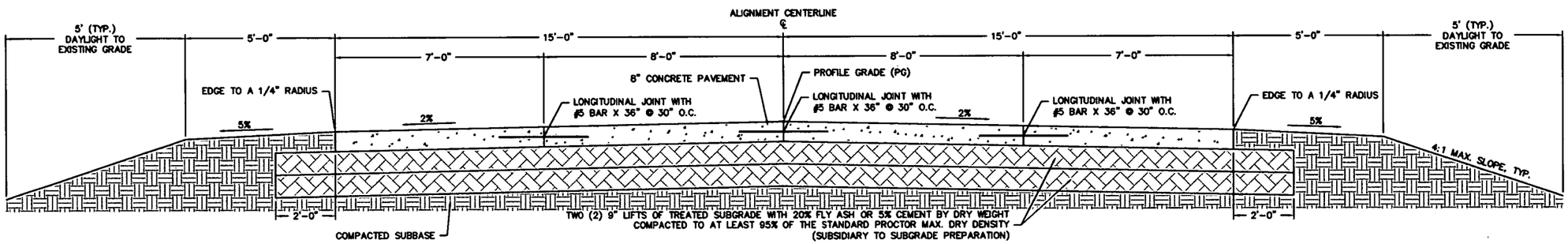


LONGITUDINAL CONSTRUCTION JOINT



TYPICAL 30' ROAD SECTION (39TH STREET)
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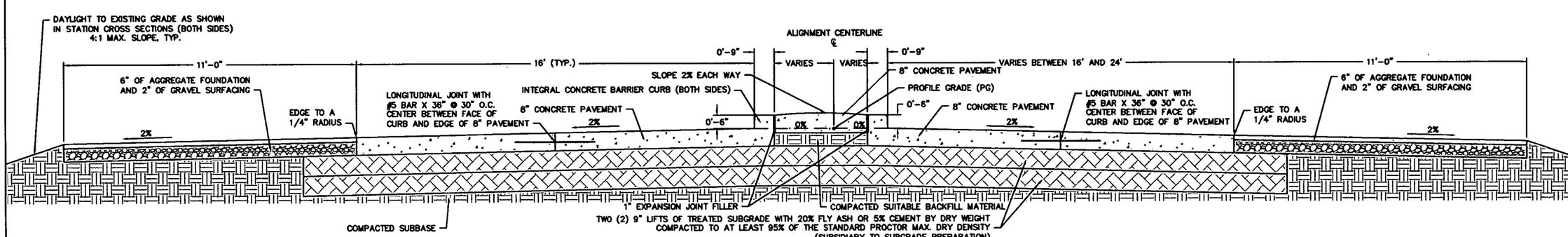

TYPICAL ROAD SECTION WITH CENTER MEDIAN (39TH STREET)
NOT TO SCALE

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TYPICAL ROADWAY CROSS-SECTION AND PAVEMENT DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date	APRIL 2015

DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR2.dwg USER: ckuhl
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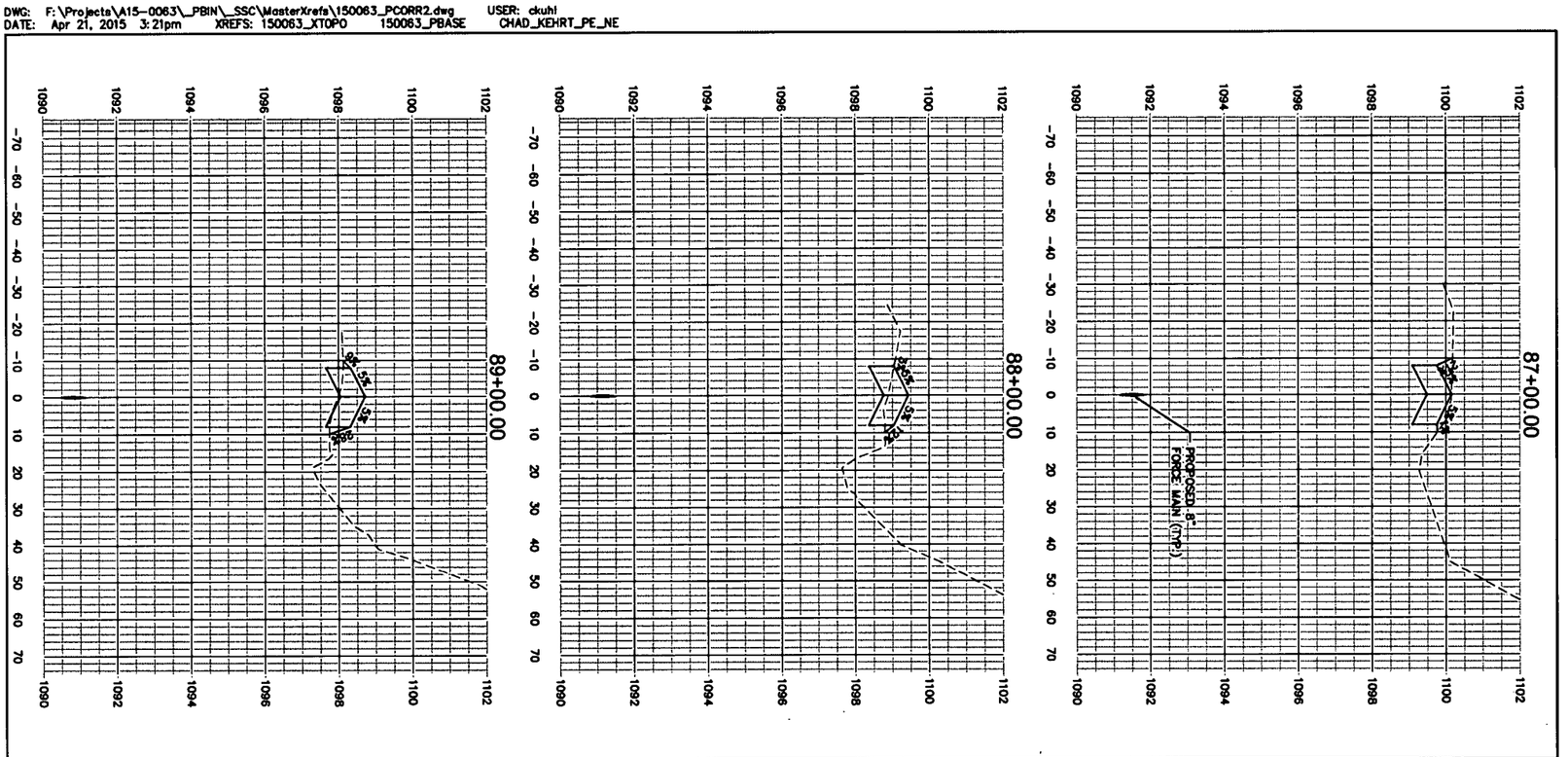

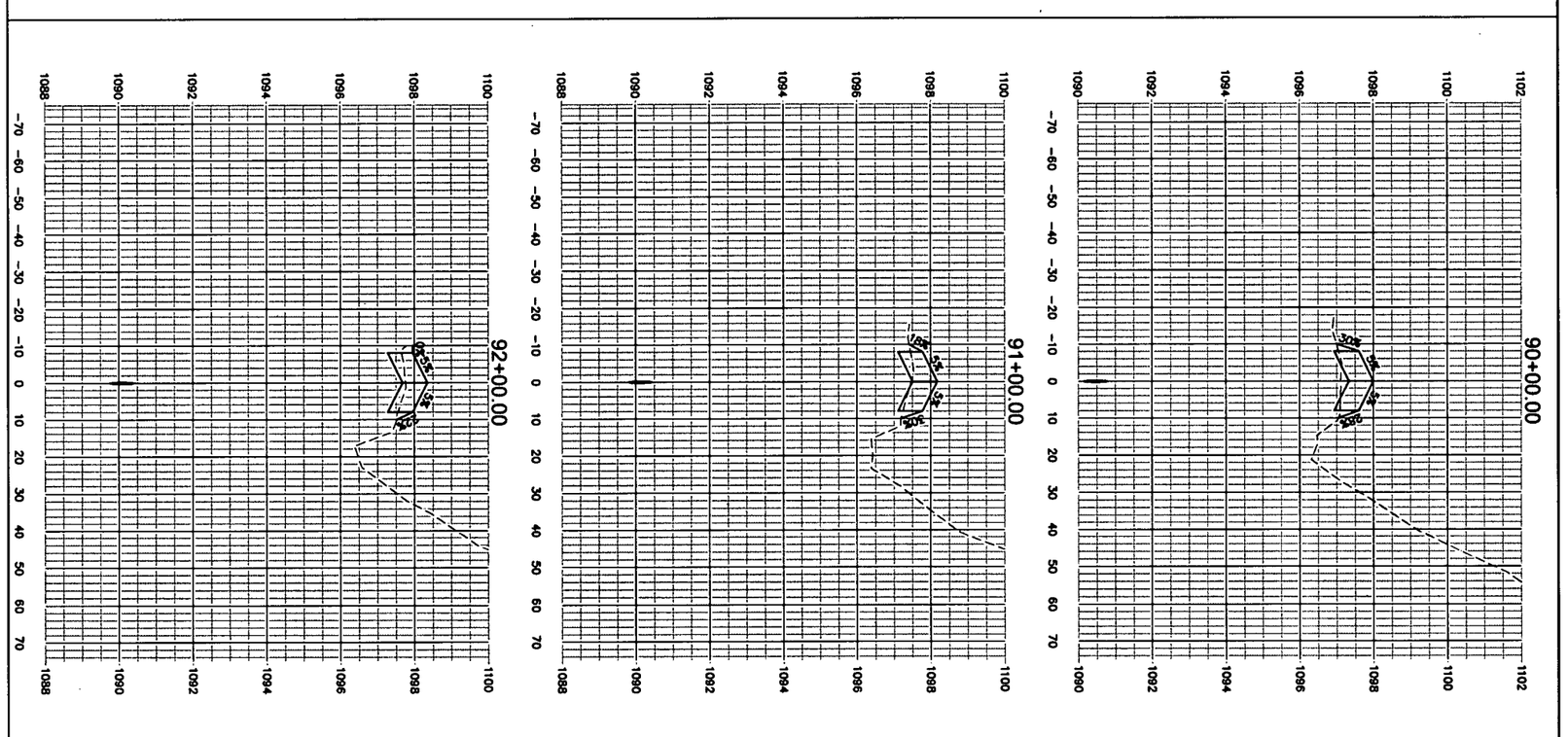

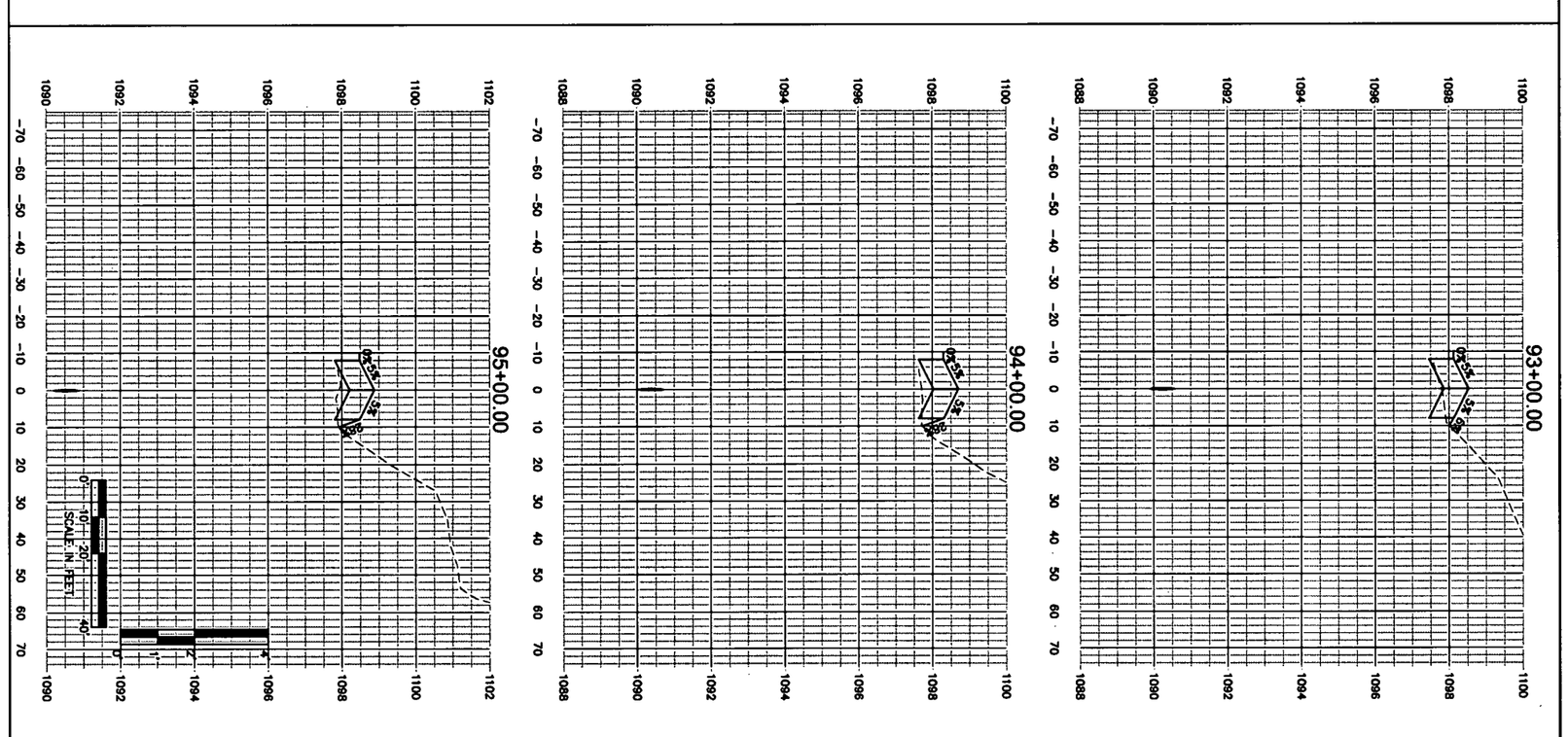

drawn by: JSL, CKK	ROADWAY CROSS-SECTIONS STA. 87+00 TO STA. 95+00	REV. NO.	DATE	REVISIONS DESCRIPTION
checked by: JCK				
approved by: CKK	ROTH PARK SANITARY SEWER IMPROVEMENTS			
CAD/OC by: MJY				
project no.: 015-0063				
drawing no.:		NO.	DATE	DESCR.
date: APRIL 2015	SOUTH SIOUX CITY, NEBRASKA 2015	REVISIONS		

SHEET 65 of 97

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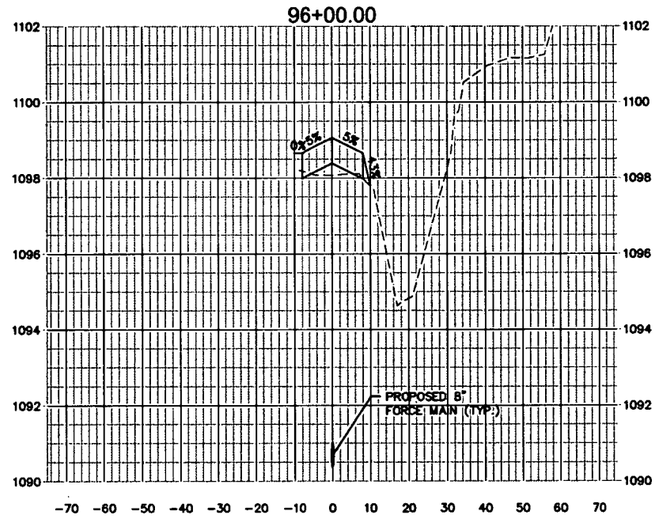

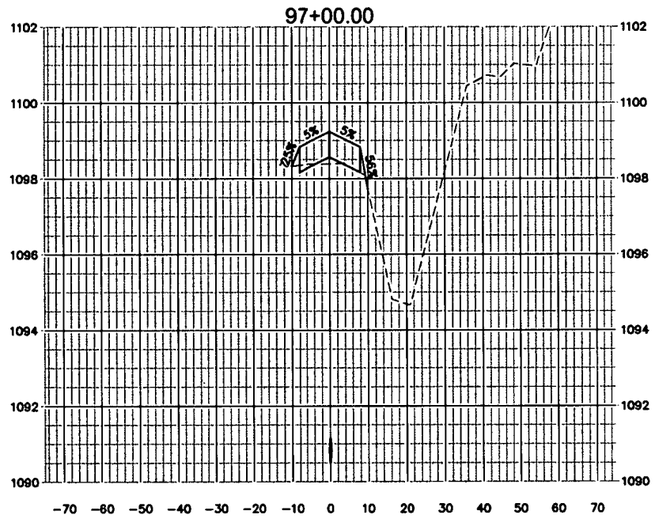

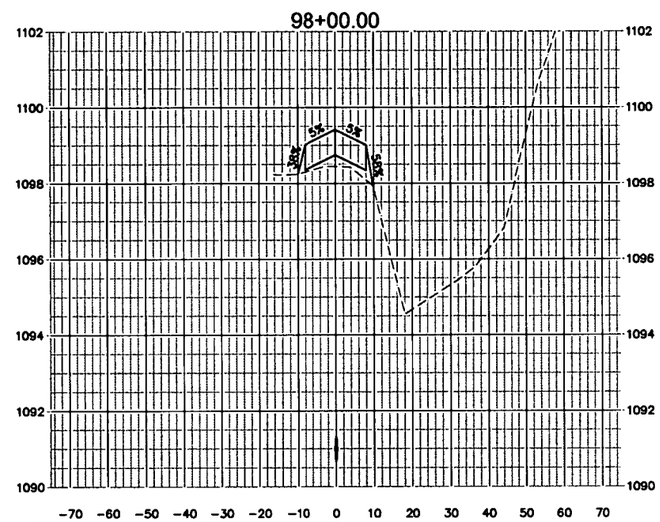

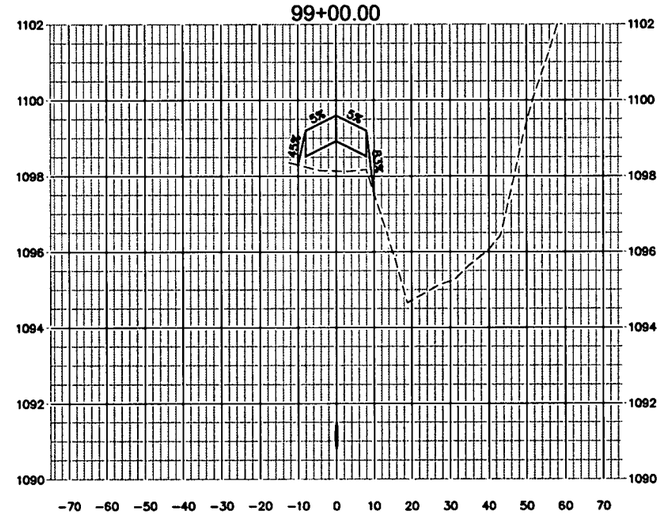

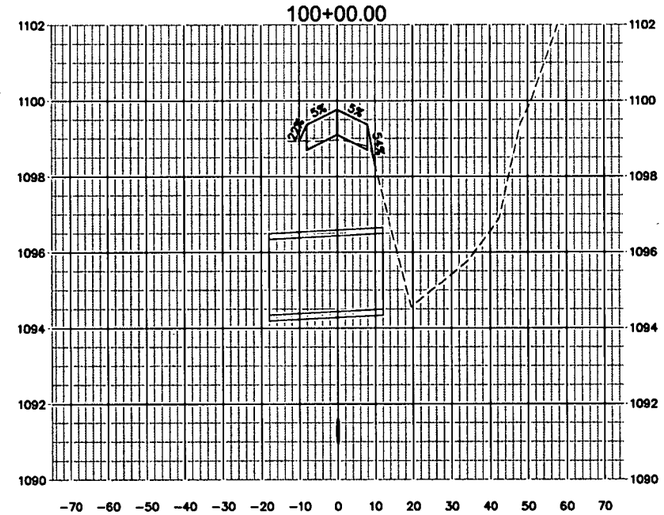

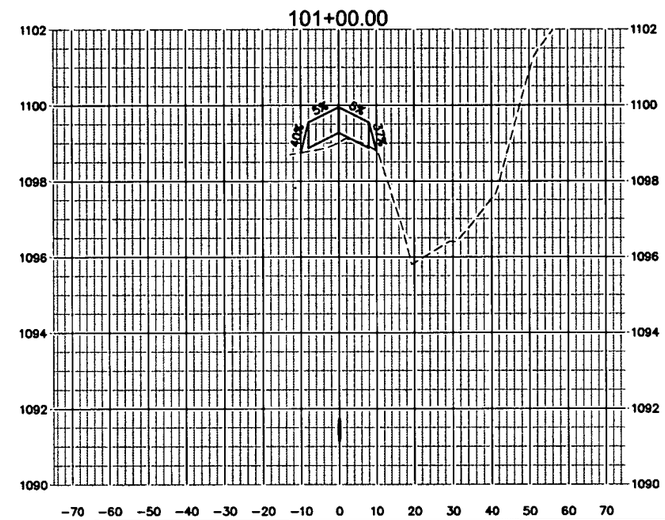

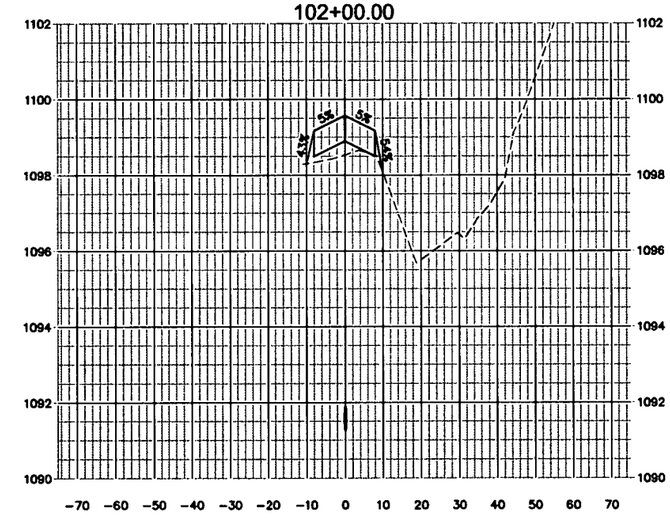

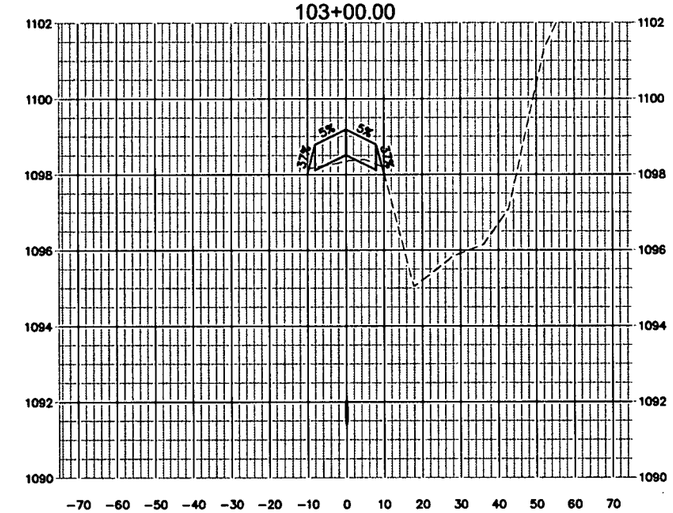

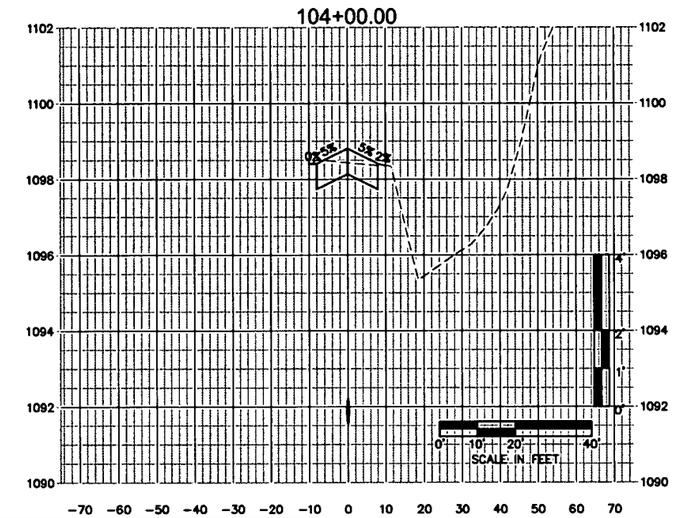

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
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CHAD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 96+00 TO STA. 104+00

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no: 015-0063
drawing no:
date: APRIL 2015

SHEET
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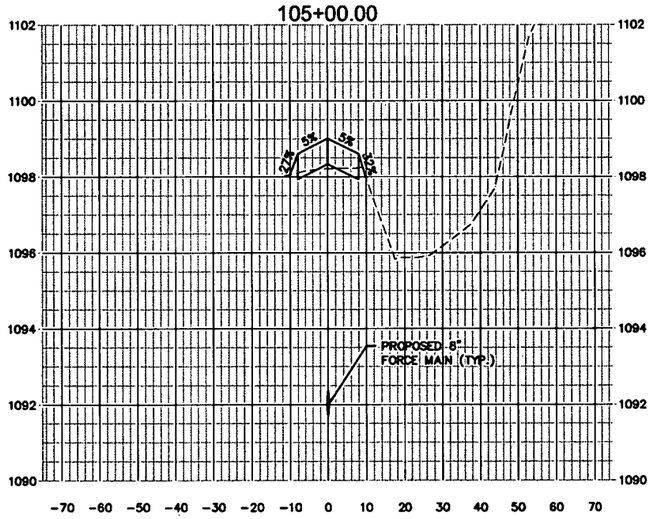
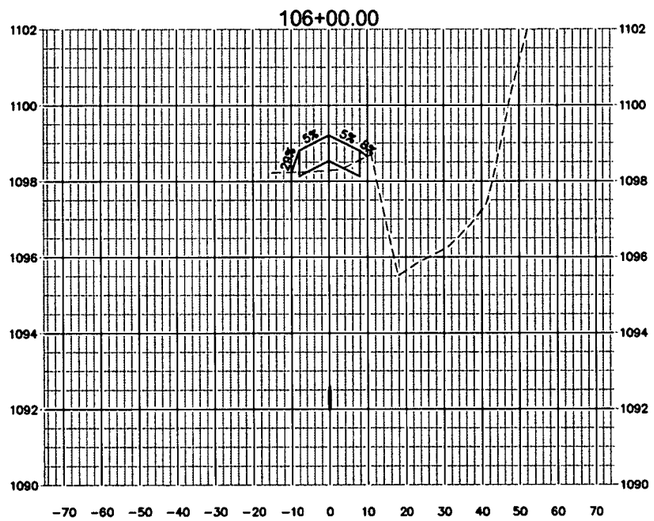
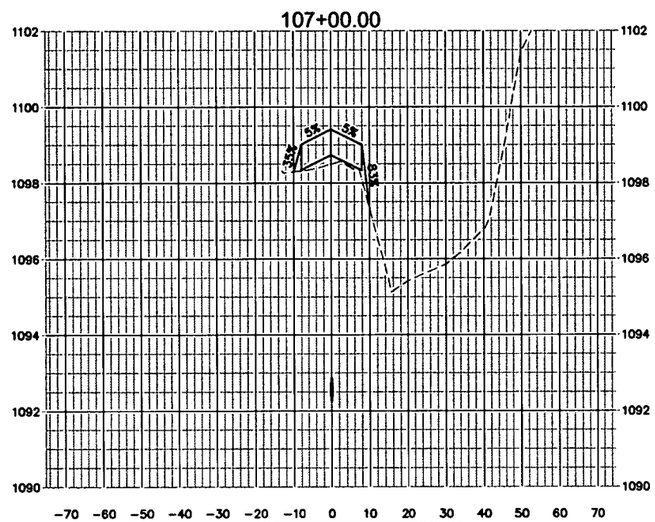
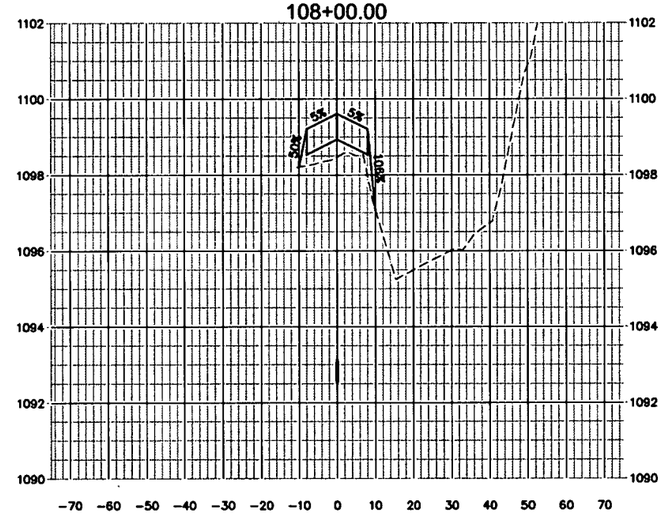
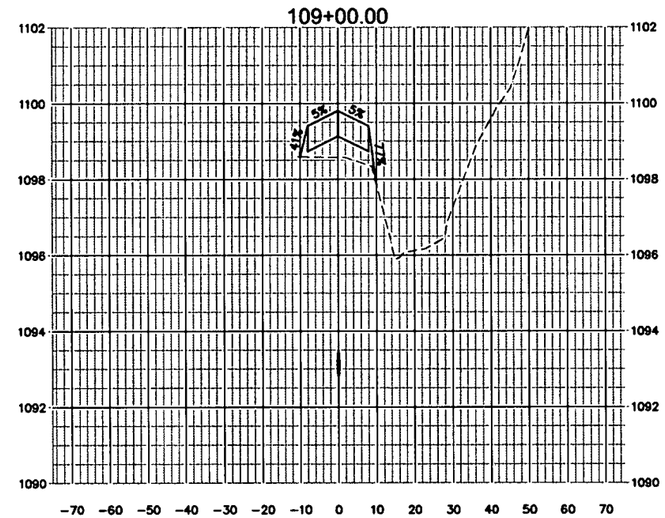
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:21pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

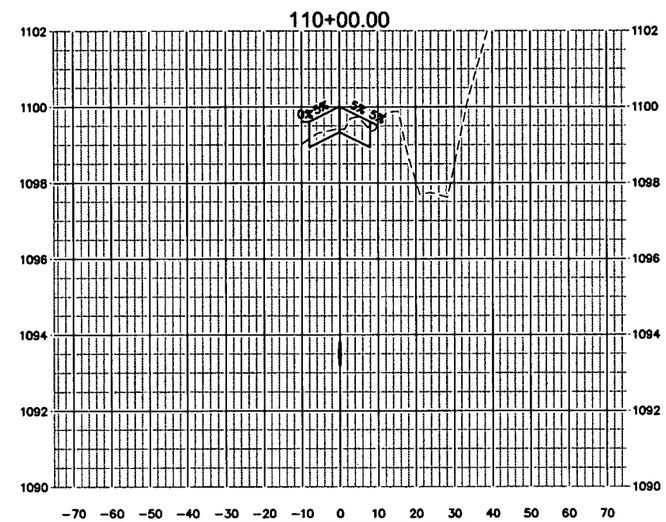


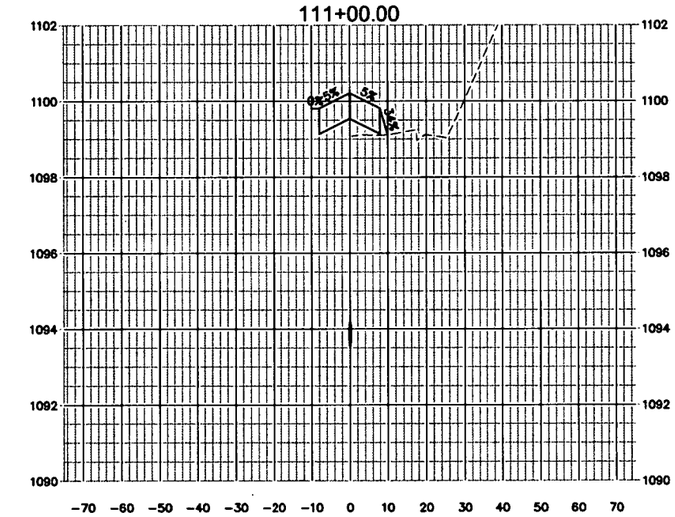


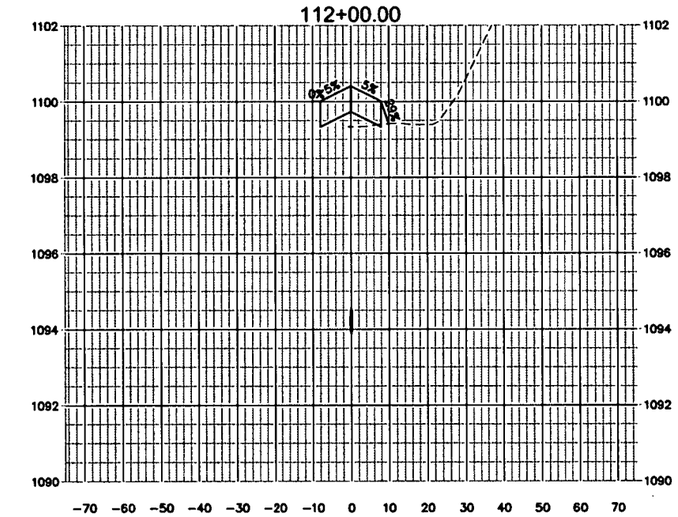


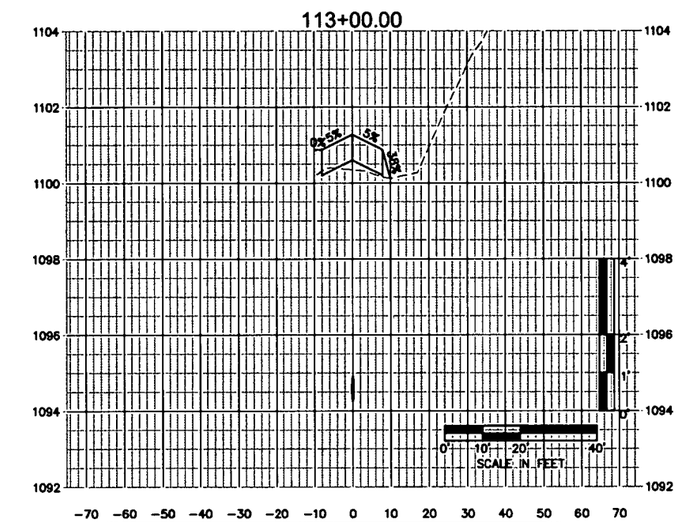












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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3059
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CHAD P. KEHRT E-10037 NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS STA. 105+00 TO STA. 113+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

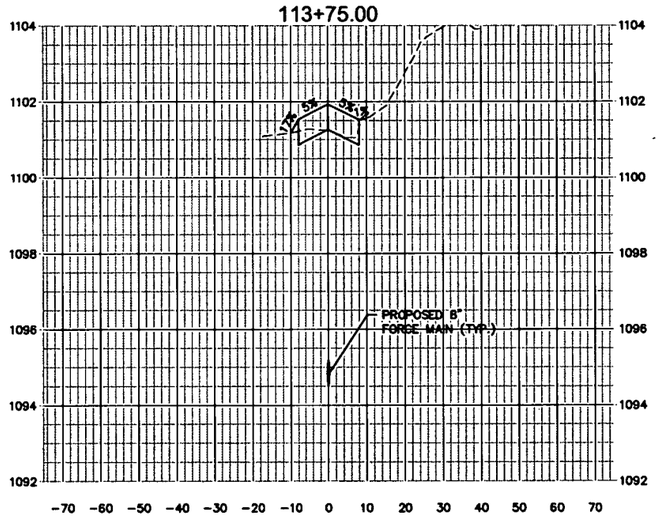
SOUTH SIOUX CITY, NEBRASKA

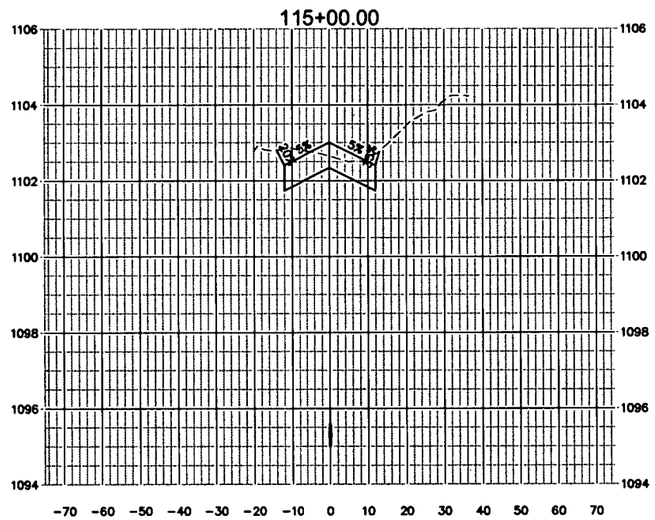
2015

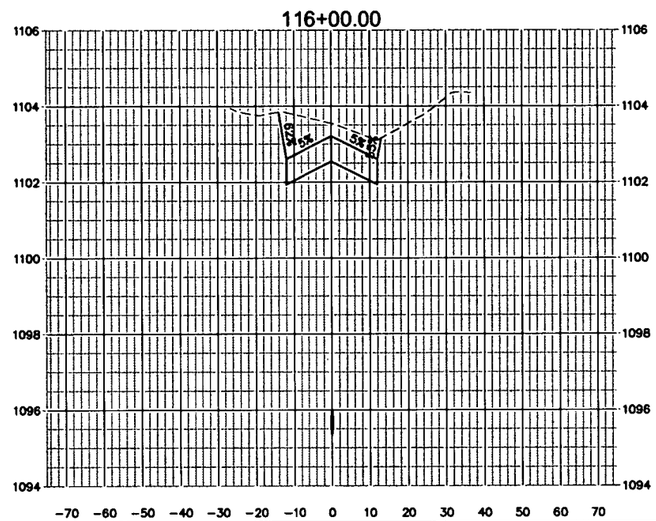
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0083
drawing no.:	
date:	APRIL 2015

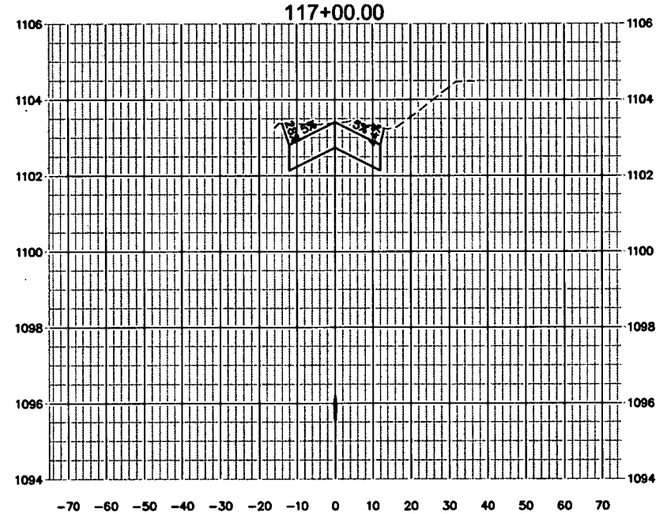
SHEET 67 of 97

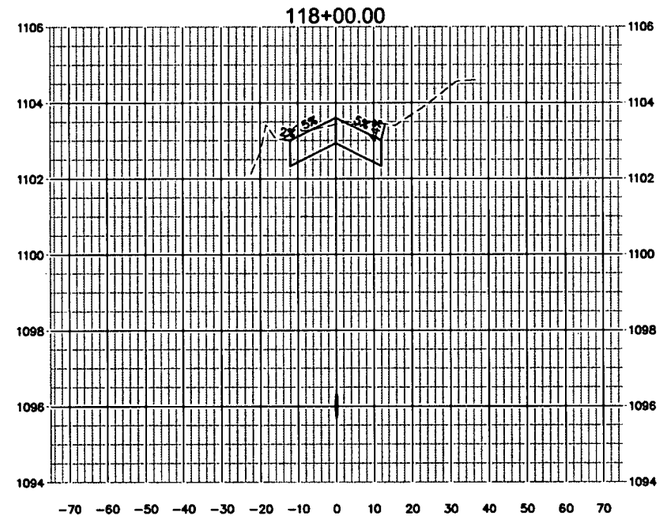
DWG: F:\Projects\A15-0083_PBIN_SSC\MasterXrefs\150083_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:22pm XREFS: 150083_XTOPO 150083_PBASE CHAD_KEHRT_PE_NE

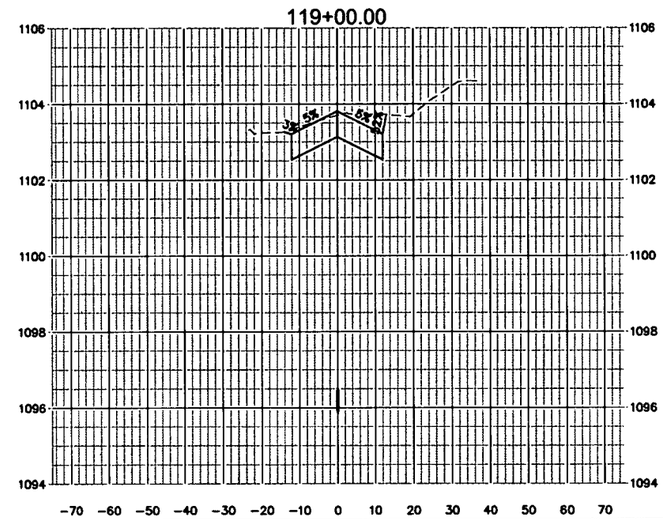


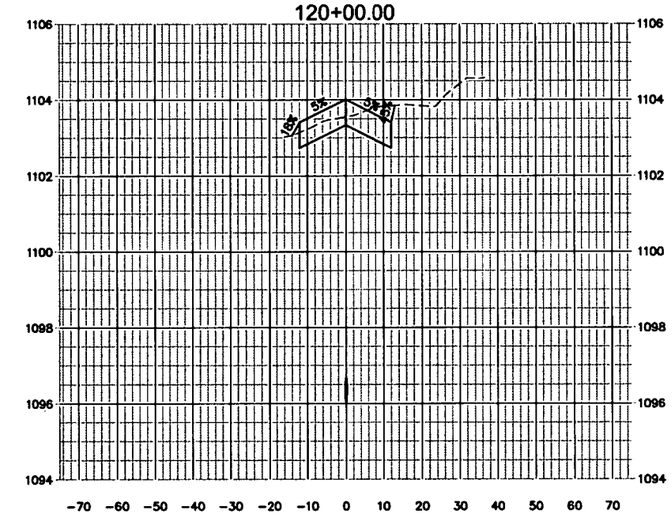


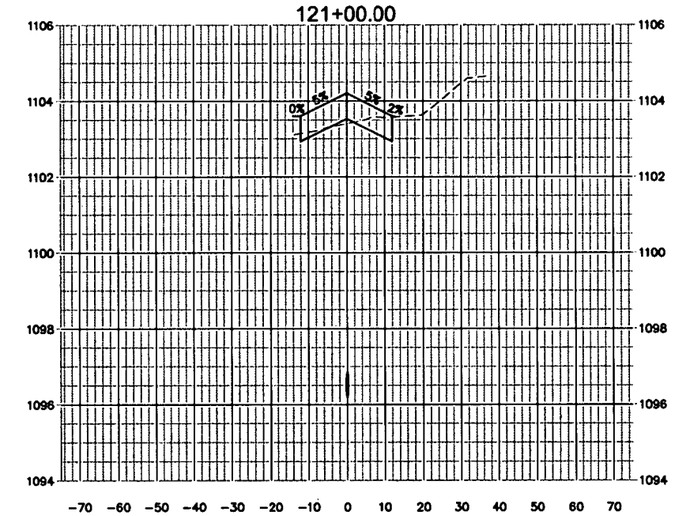


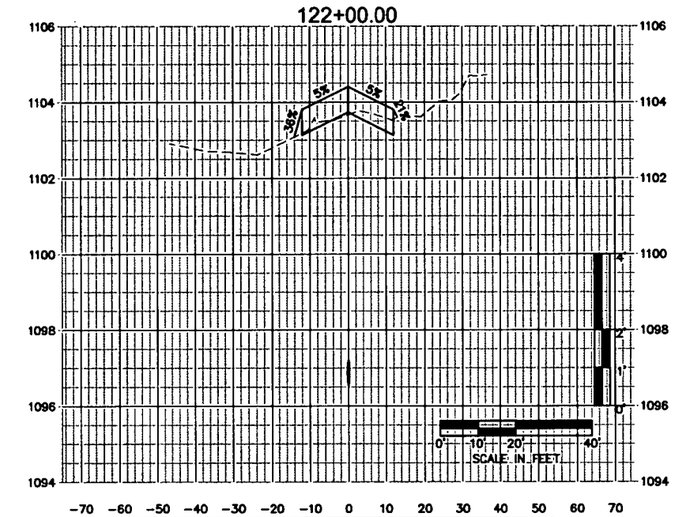












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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3059
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CHAD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS
STA. 114+00 TO STA. 122+00

ROTH PARK SANITARY
SEWER IMPROVEMENTS

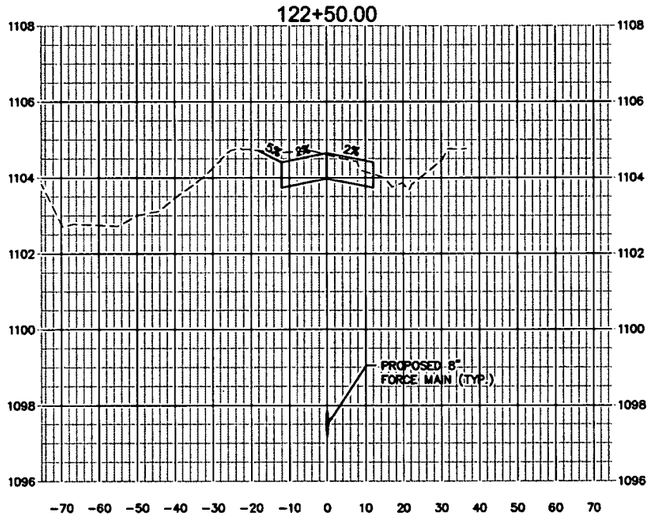
SOUTH SIOUX CITY, NEBRASKA

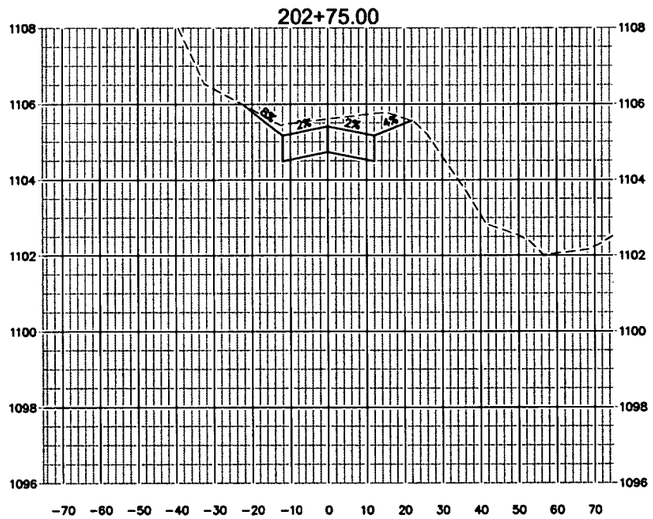
2015

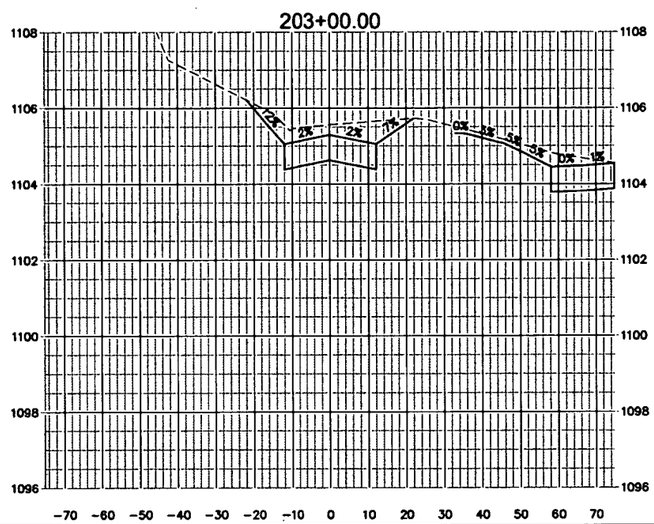
drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no: 015-0063
drawing no:
date: APRIL 2015

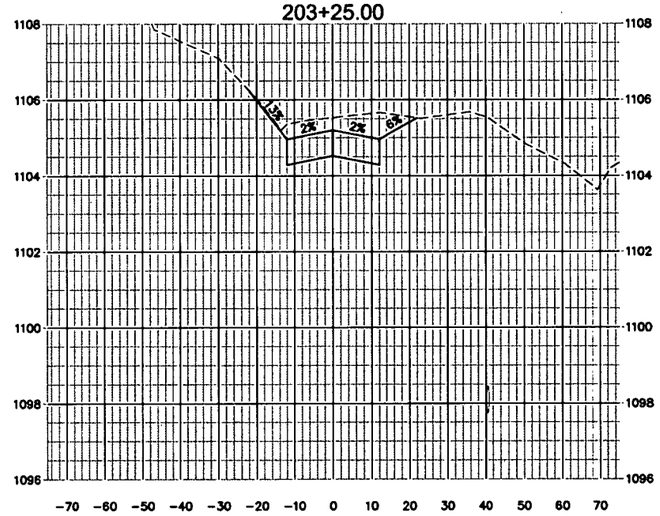
SHEET
68 of 97

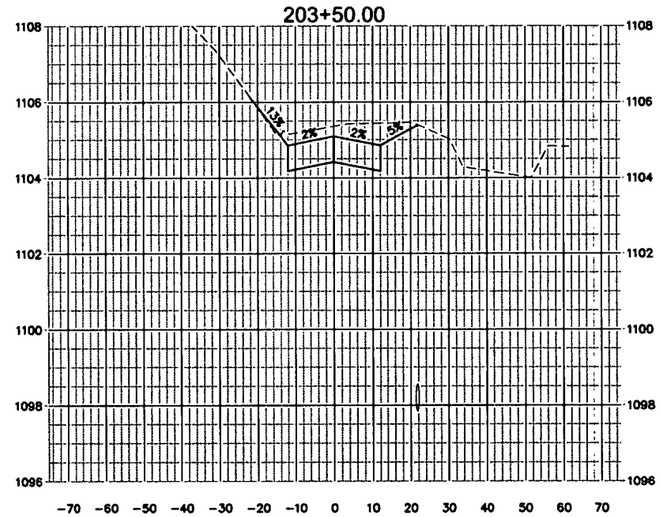
DWG: F:\Projects\A15-0063_PBW_SSC\Master\refs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:23pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

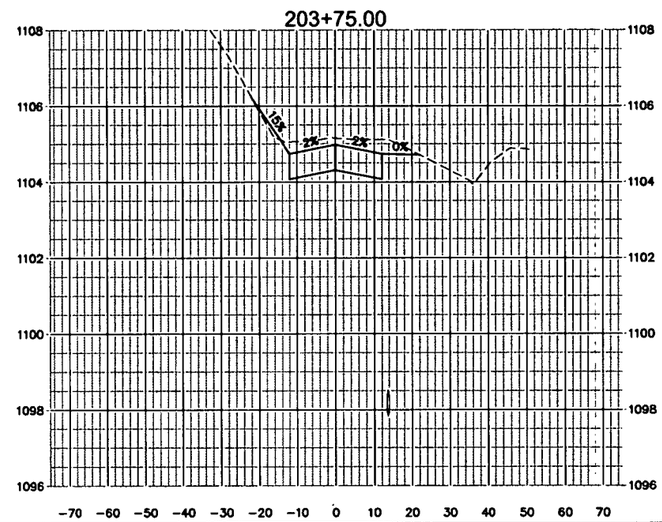


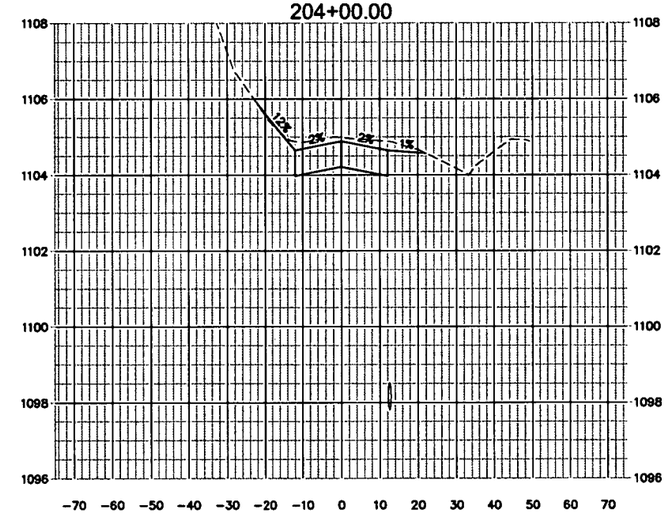


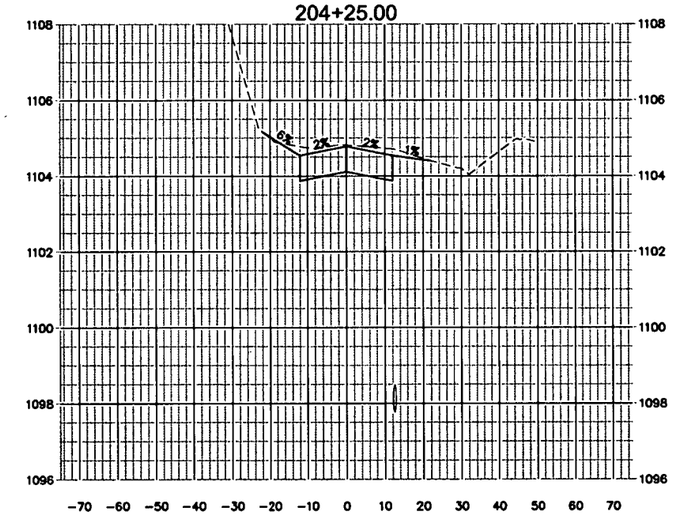


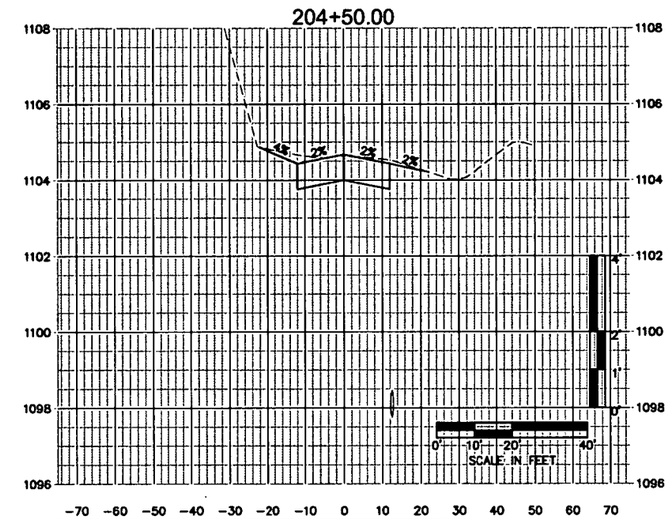












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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2050
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CHAD P. KEHRT
E-10032
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 122+50 TO STA. 204+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

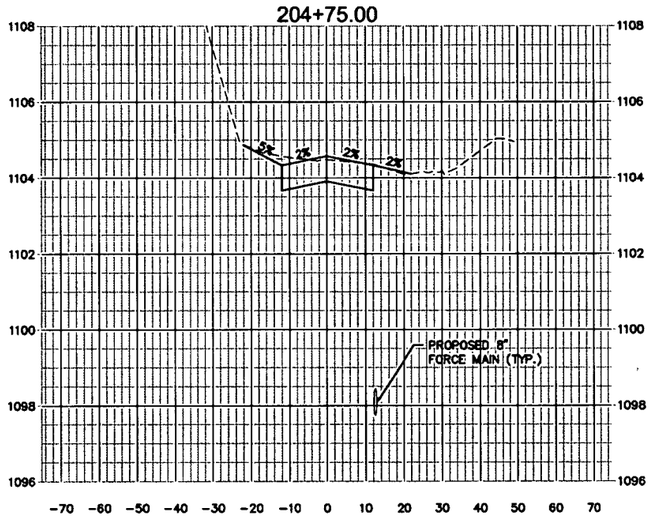
SOUTH SIOUX CITY, NEBRASKA

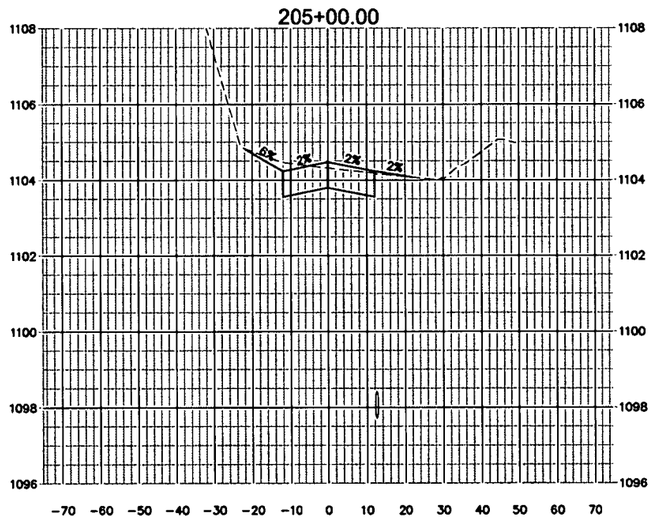
2015

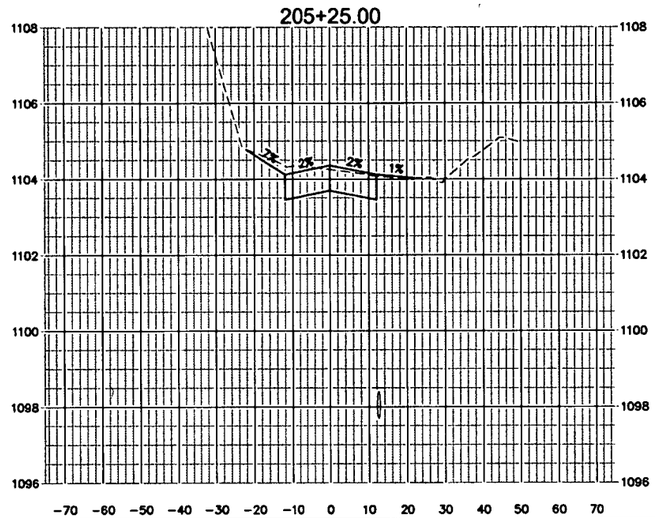
drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no : 015-0063
drawing no :
date: APRIL 2015

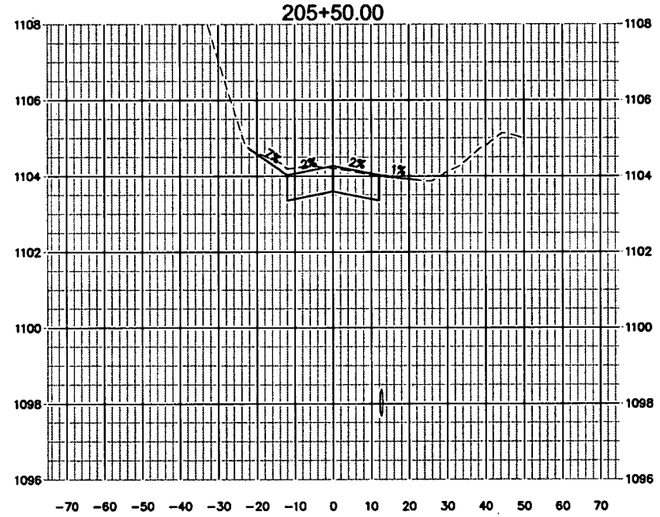
SHEET
69 of 97

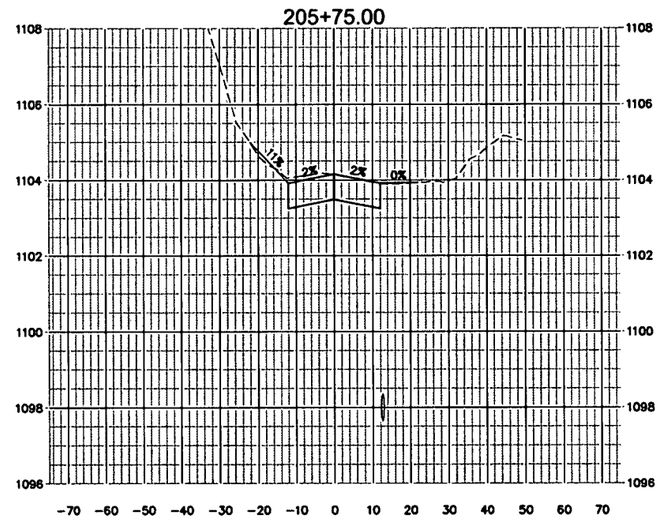
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:23pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

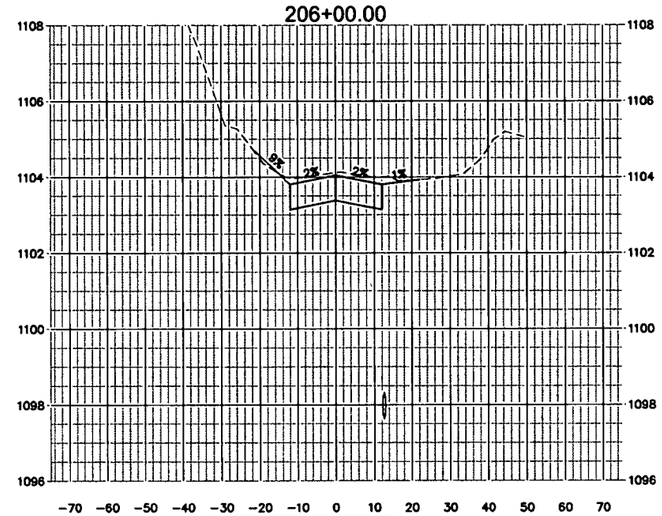


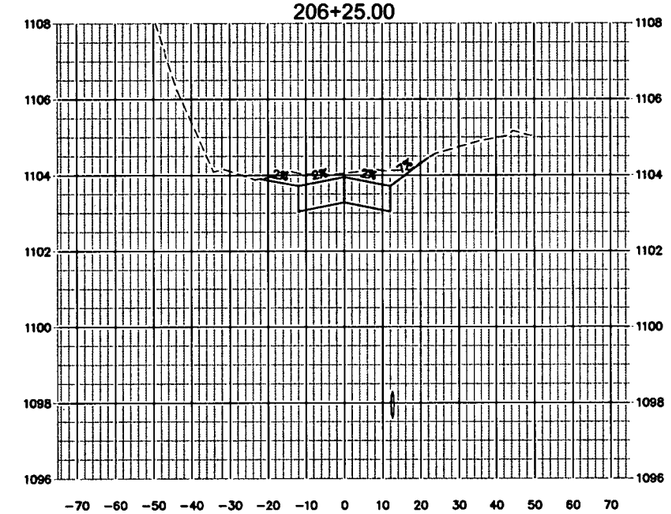


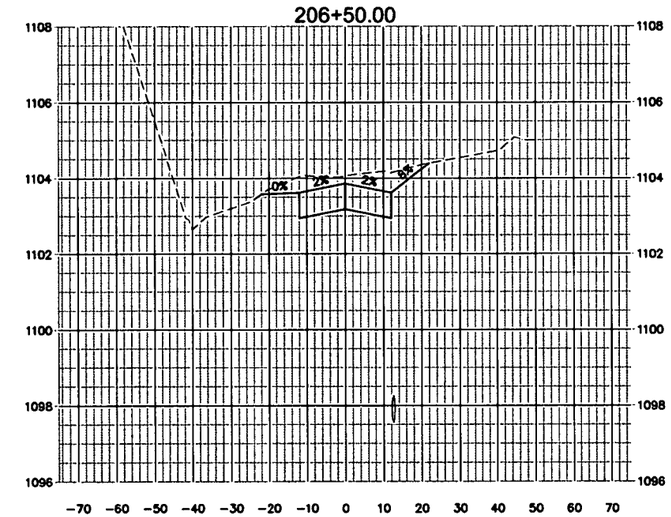


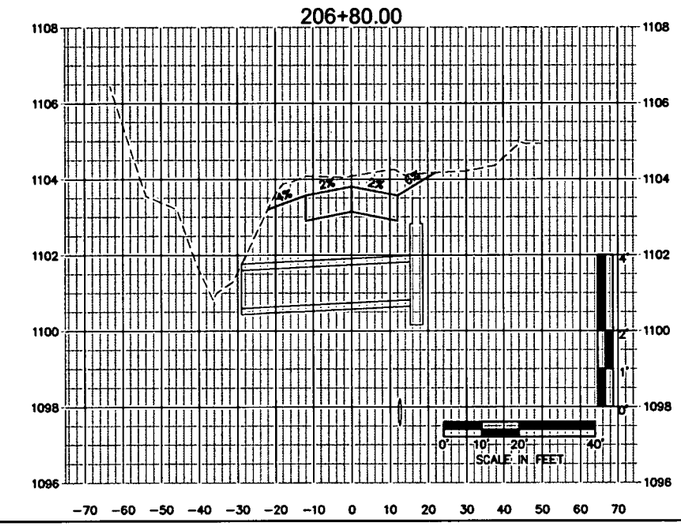












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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2050
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CHAD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 204+75 TO STA. 206+80

ROTH PARK SANITARY
SEWER IMPROVEMENTS

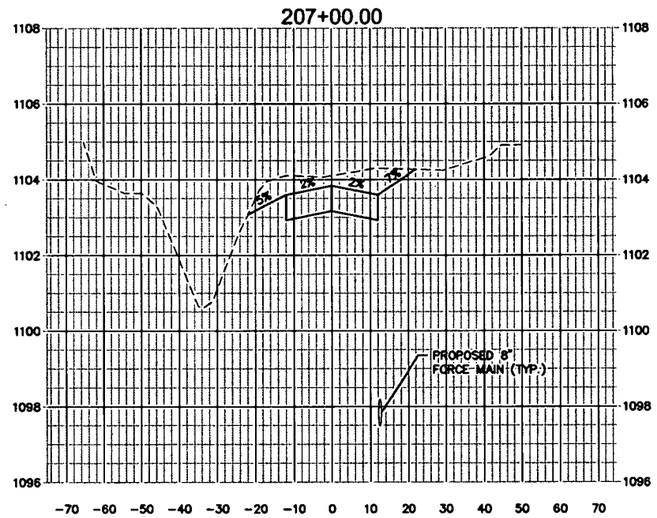
SOUTH SIOUX CITY, NEBRASKA

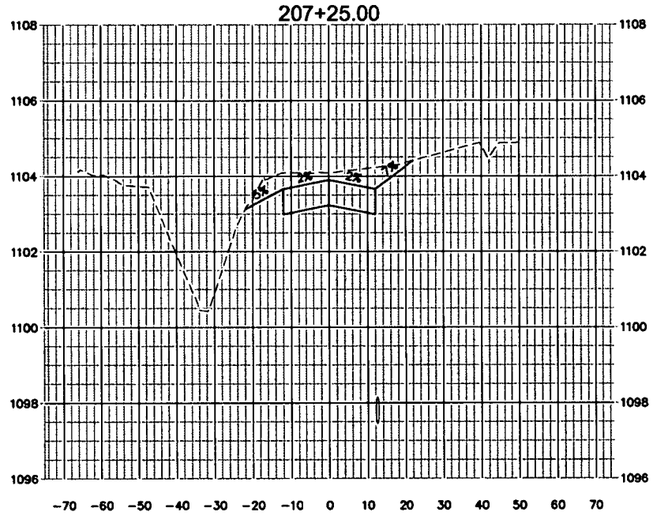
2015

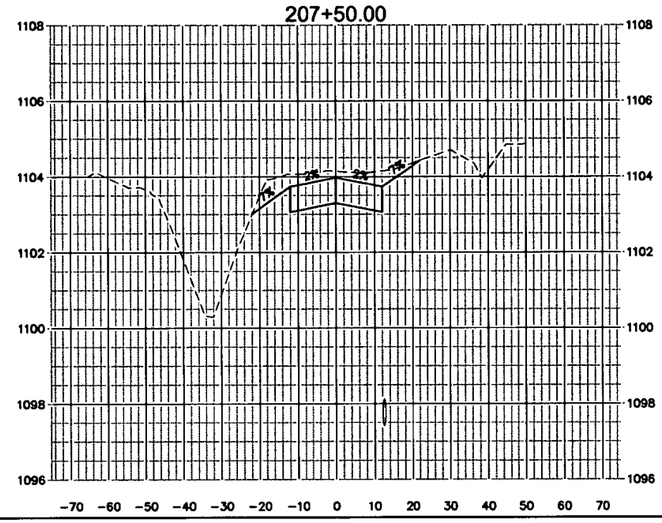
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date	APRIL 2015

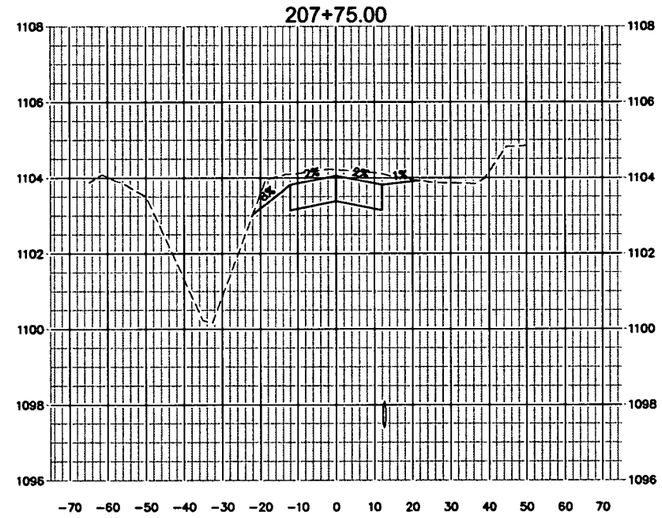
SHEET
70 of 97

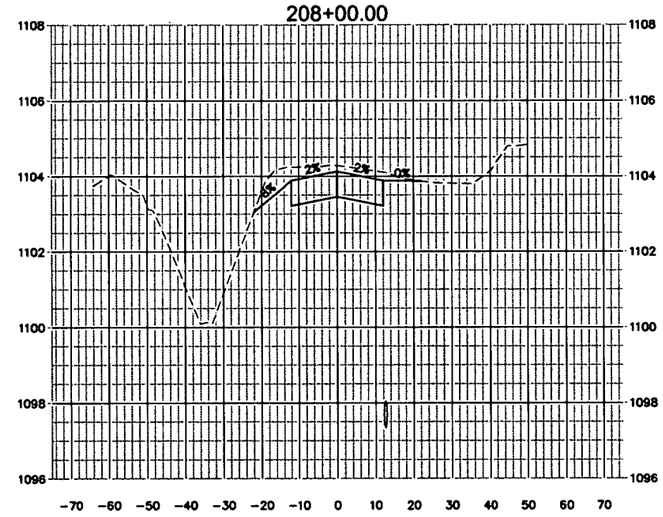
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:24pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

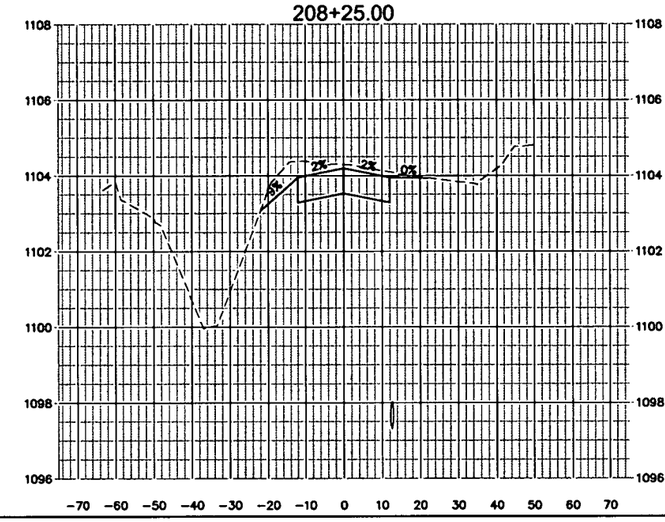


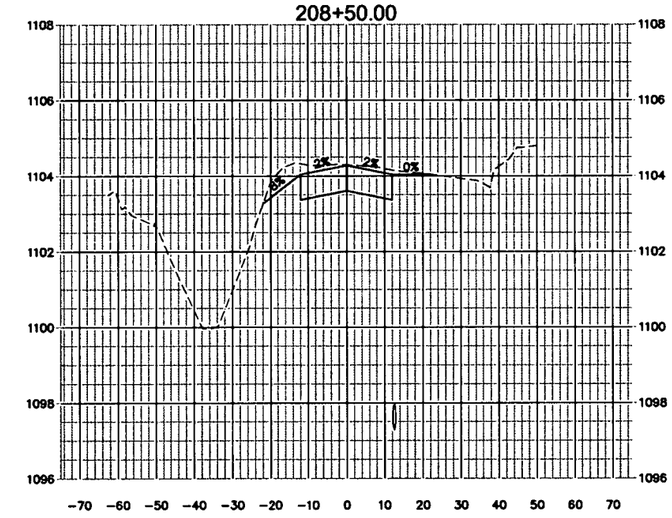


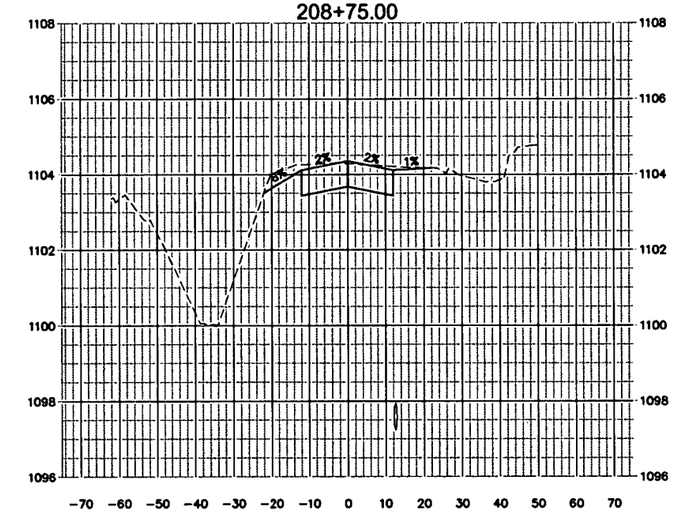


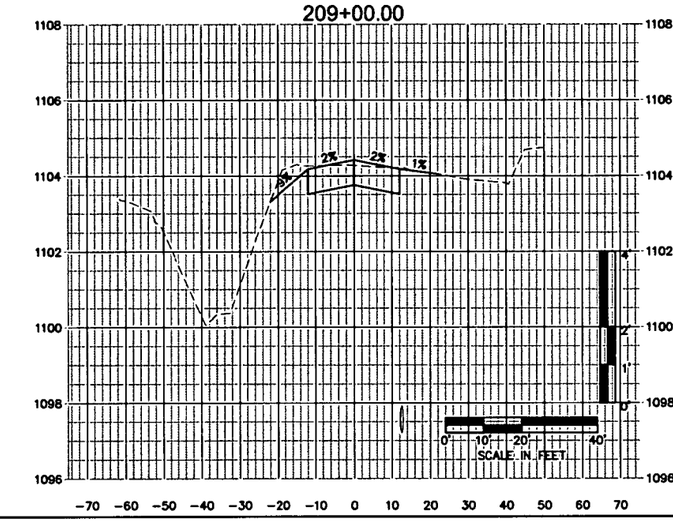












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NEBRASKA PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10033
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS
STA. 207+00 TO STA. 209+00

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date	APRIL 2015

SHEET
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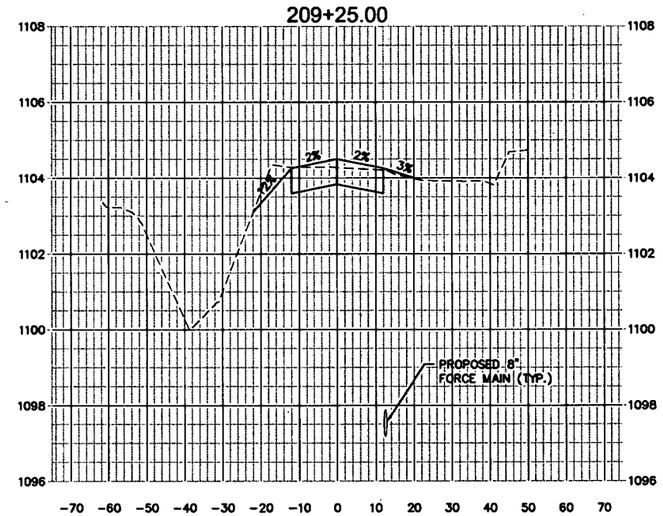
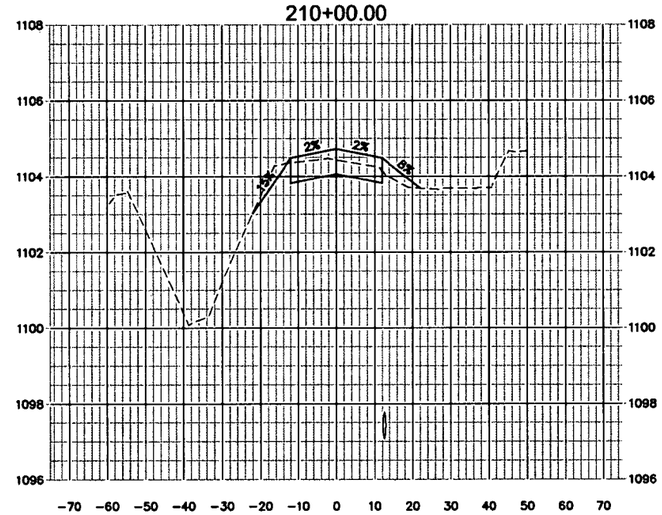
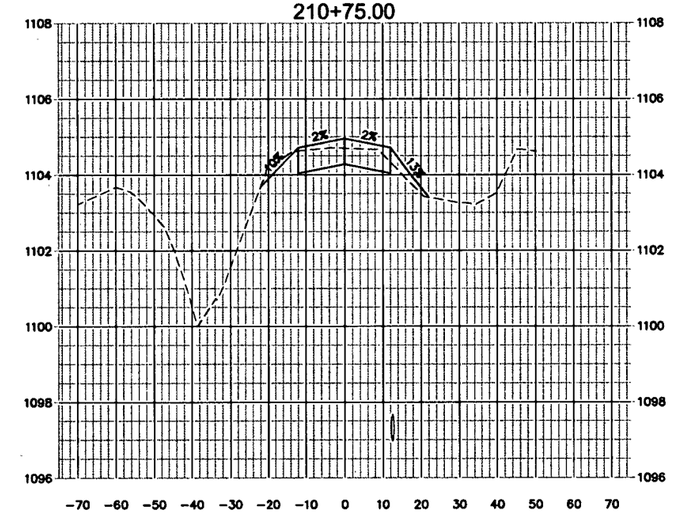
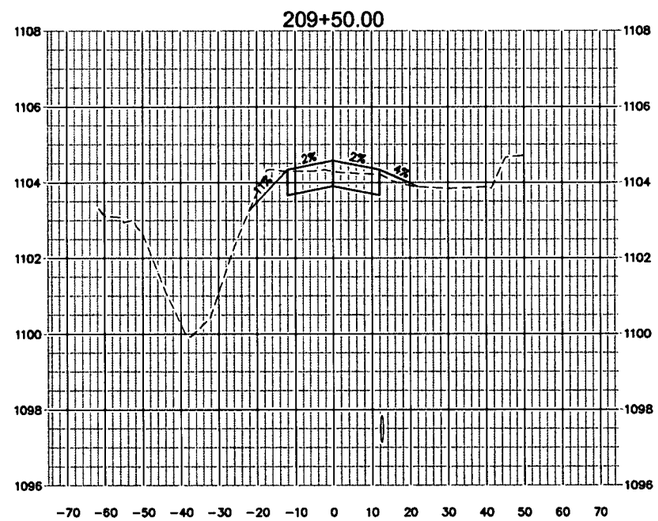
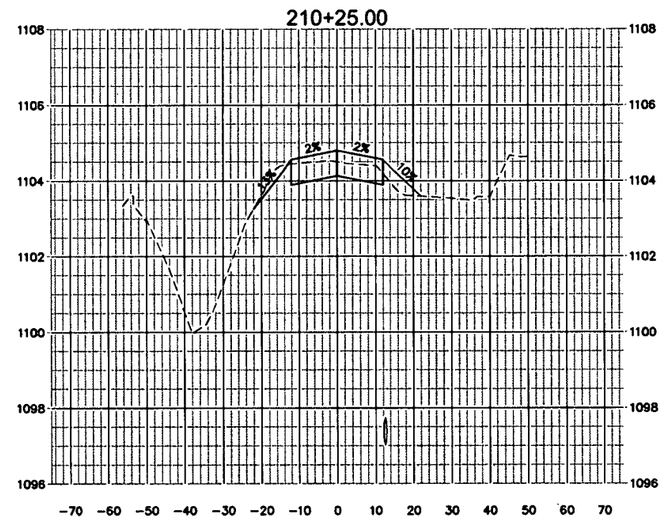
DWG: F:\Projects\015-0063_PBW_SSC\Master\rets\150063_PCORR2.dwg USER: dsuhl
DATE: Apr 21, 2015 3:24pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

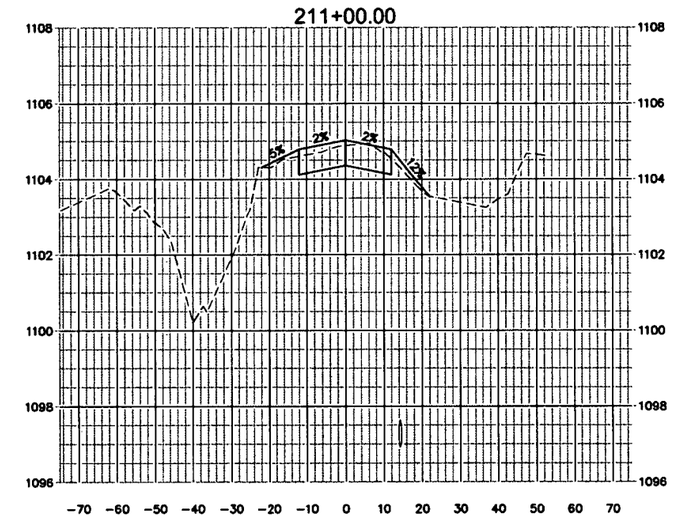


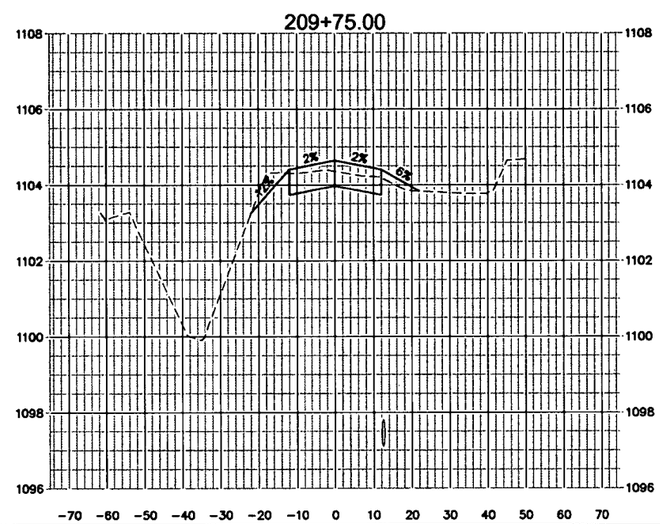


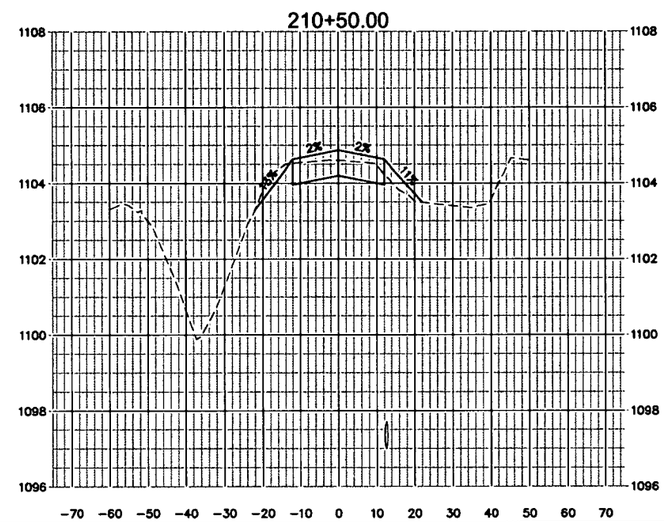


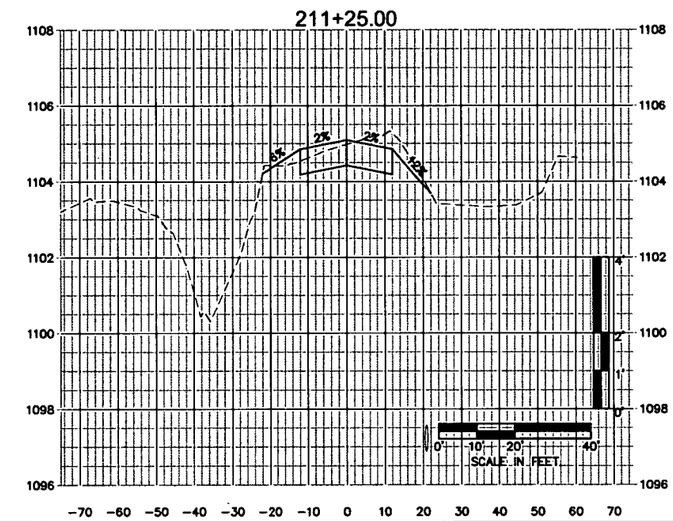












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TEL 402.494.3069
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CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 209+25 TO STA. 211+25

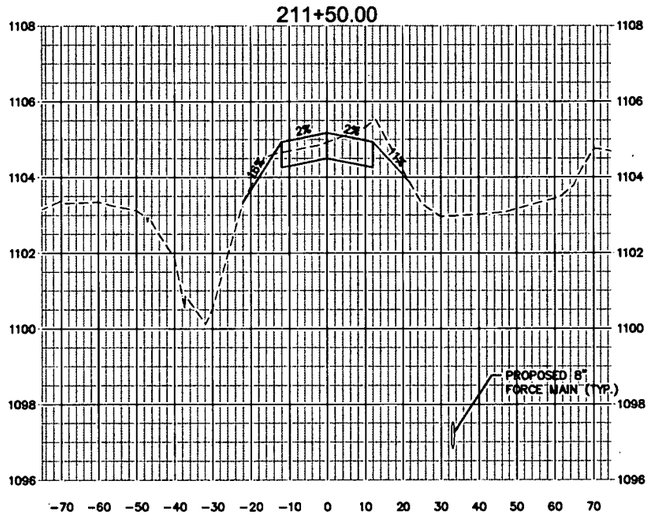
ROTH PARK SANITARY
SEWER IMPROVEMENTS

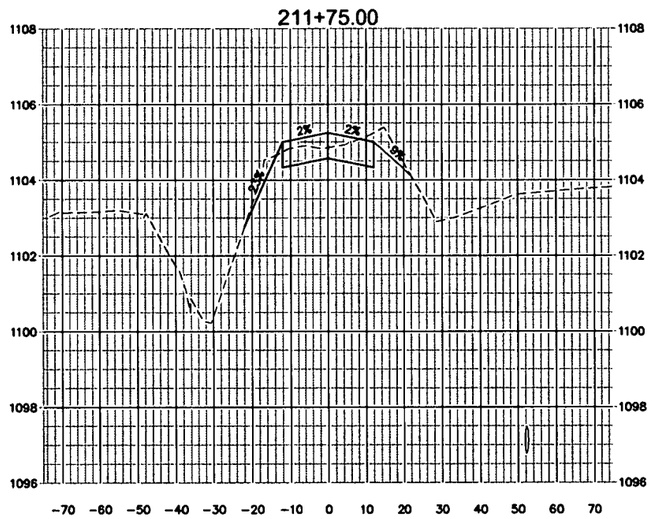
SOUTH SIOUX CITY, NEBRASKA

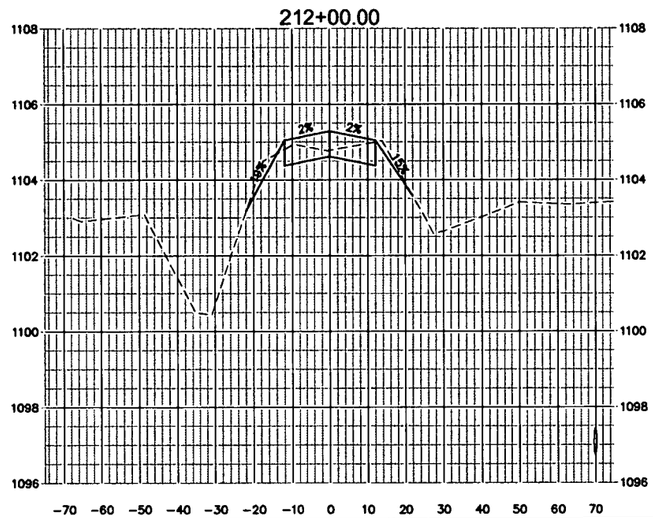
2015

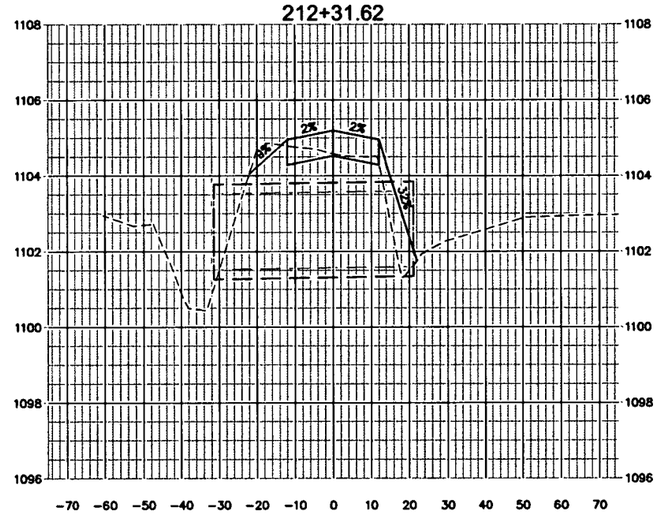
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date	APRIL 2015

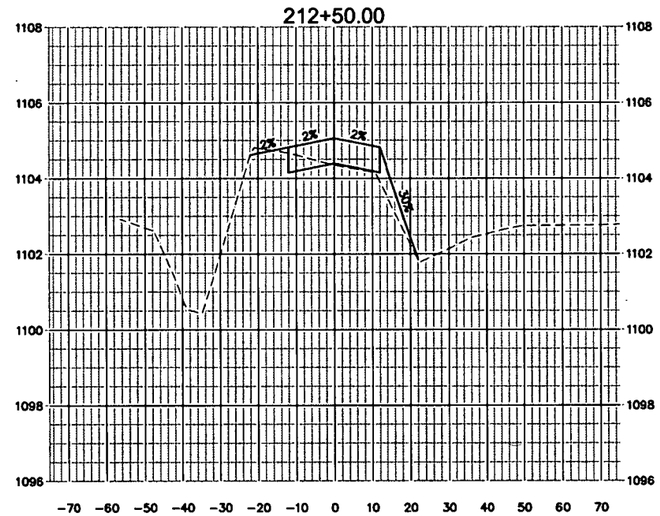
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:25pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

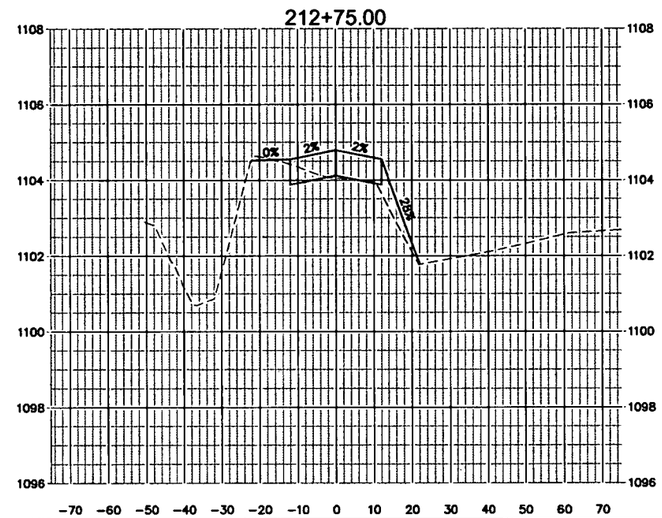


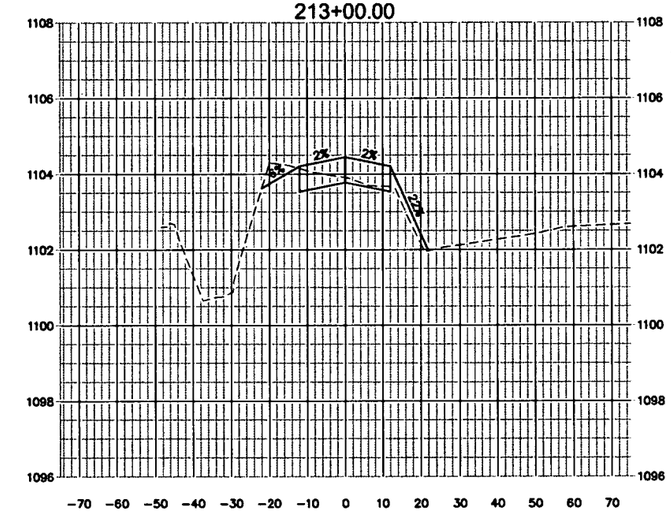


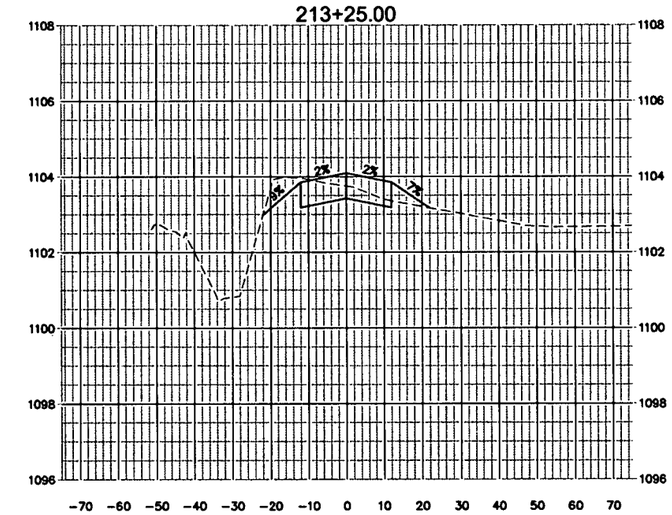


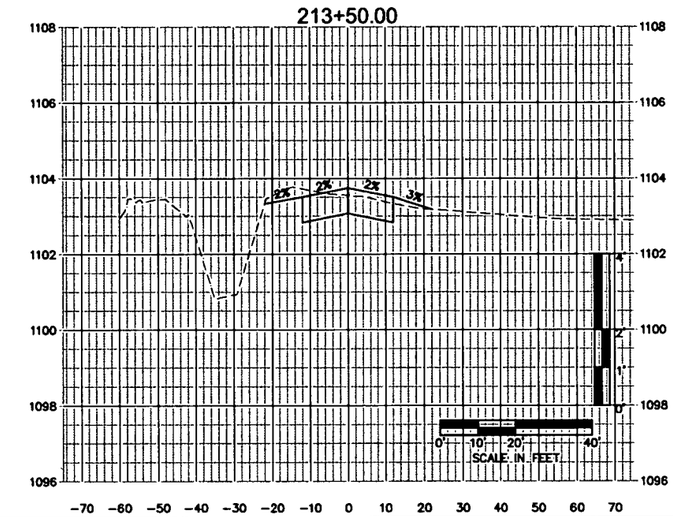












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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3060
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PROFESSIONAL ENGINEER
CHAD P. KEHRT
E-10037
21 APR 15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS
STA. 211+50 TO STA. 213+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

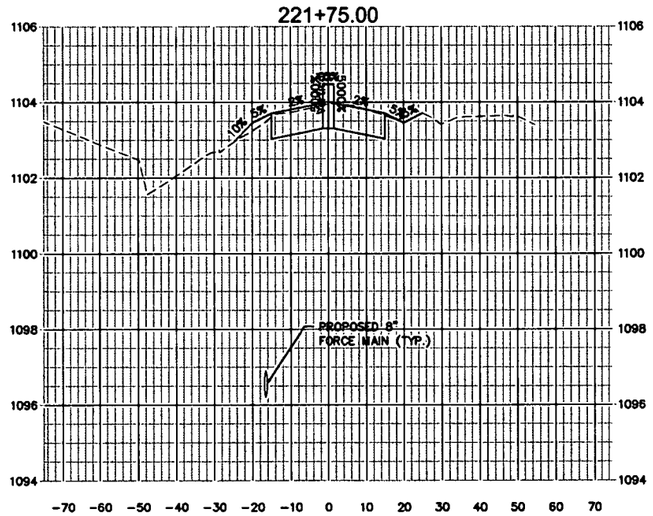
SOUTH SIOUX CITY, NEBRASKA

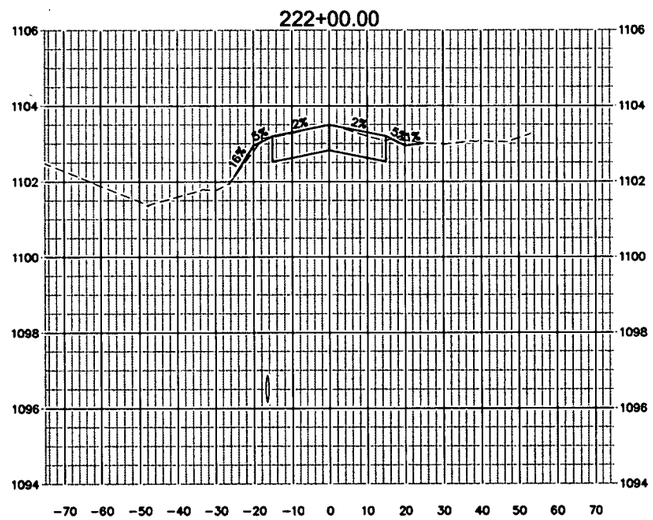
2015

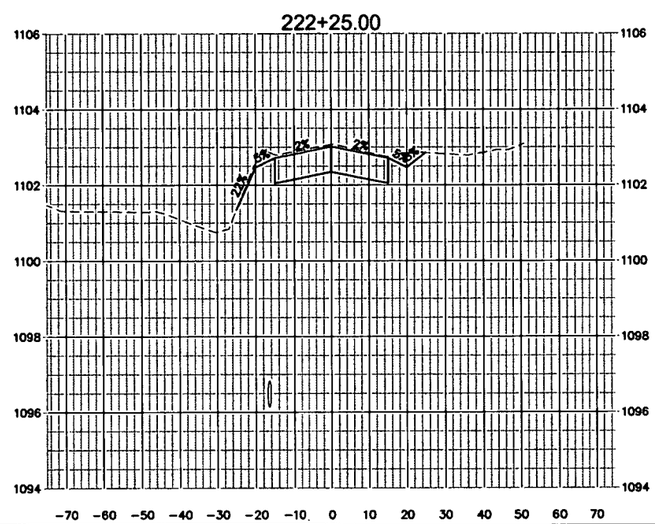
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MUY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

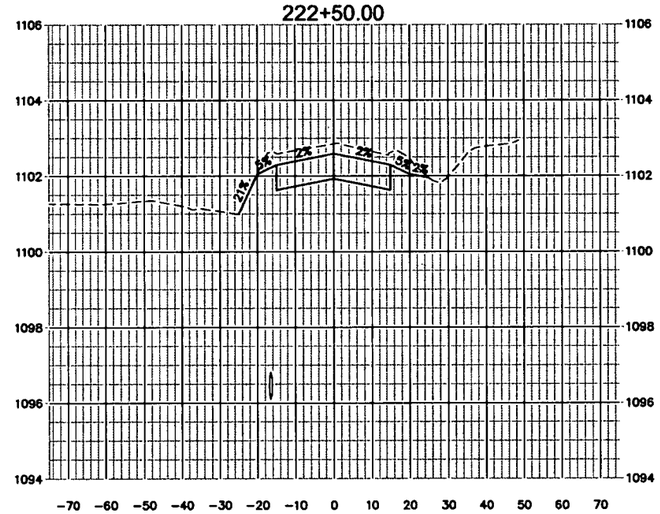
SHEET
73 of 97

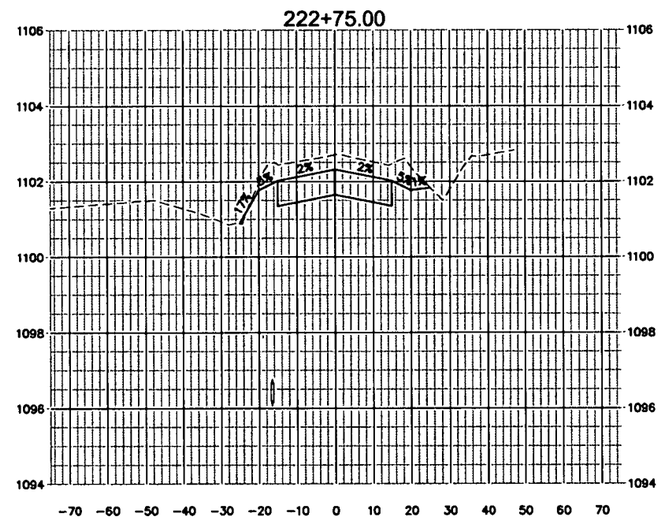
DWG: F:\Projects\015-0063_PBIN_SSC\Master\refs\150063_PCORR2.dwg USER: ckuhl
DATE: Apr 21, 2015 3:25pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

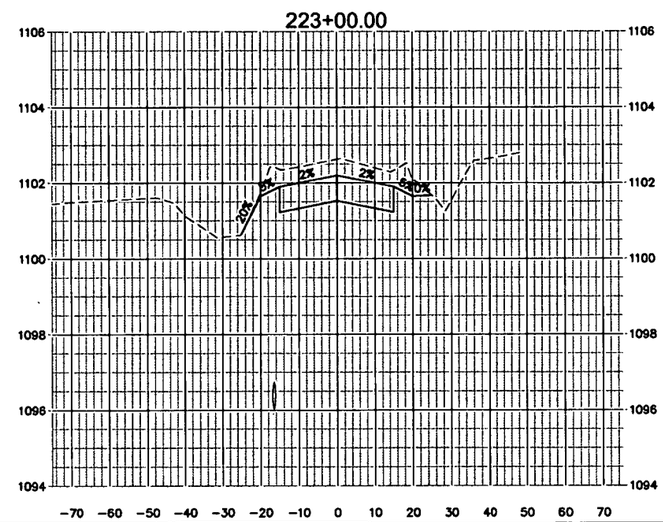


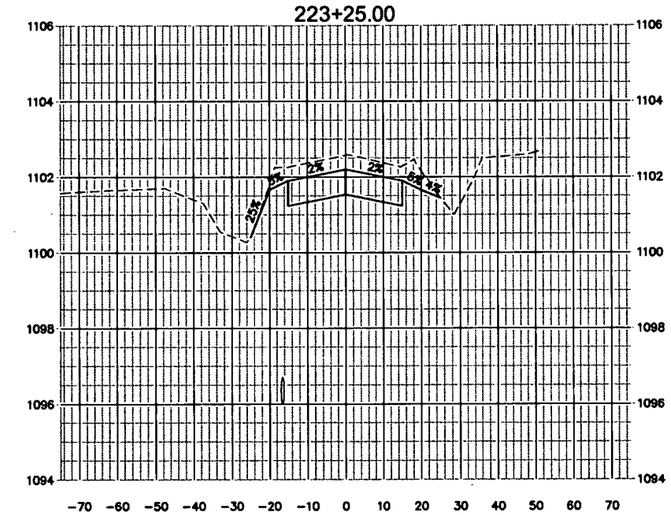


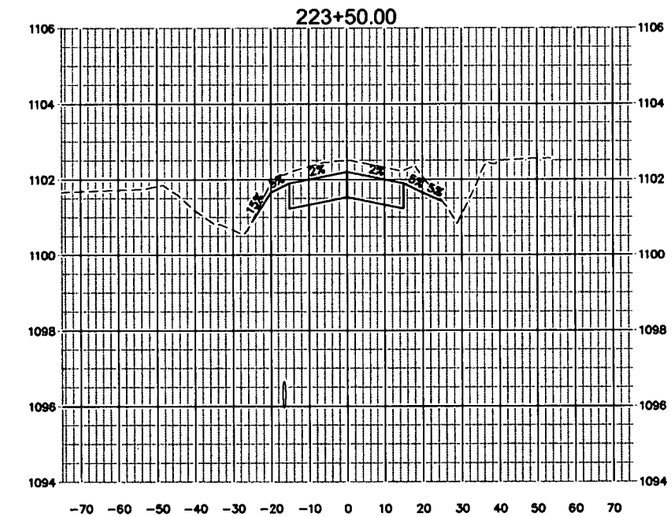


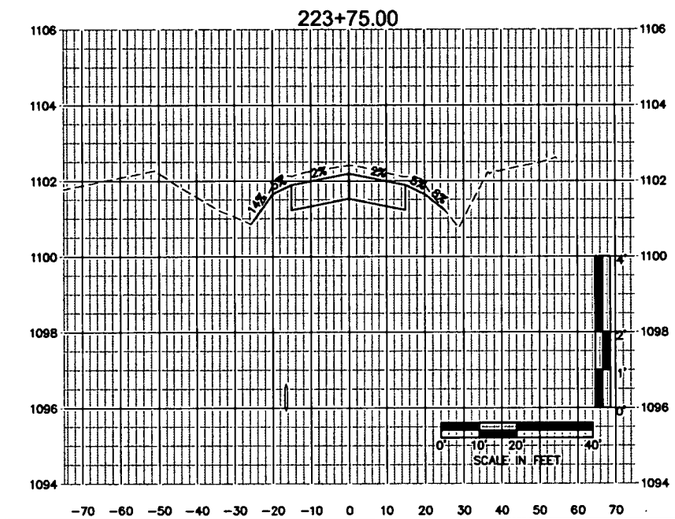












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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3069
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SUPERVISING CIVIL ENGINEER
CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 221+75 TO STA. 223+75

ROTH PARK SANITARY
SEWER IMPROVEMENTS

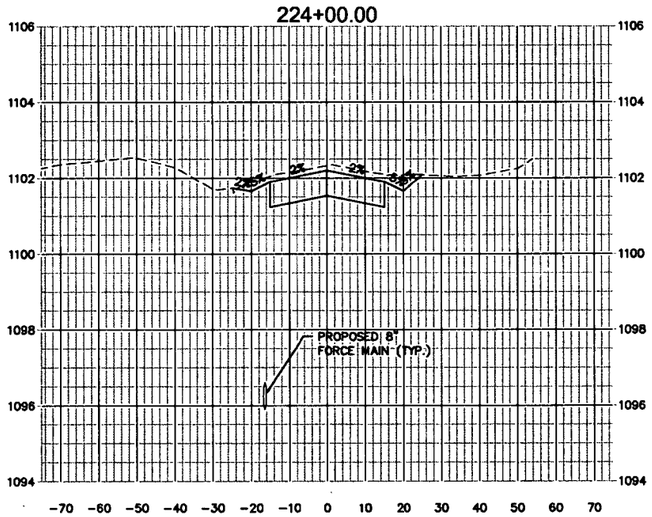
SOUTH SIOUX CITY, NEBRASKA

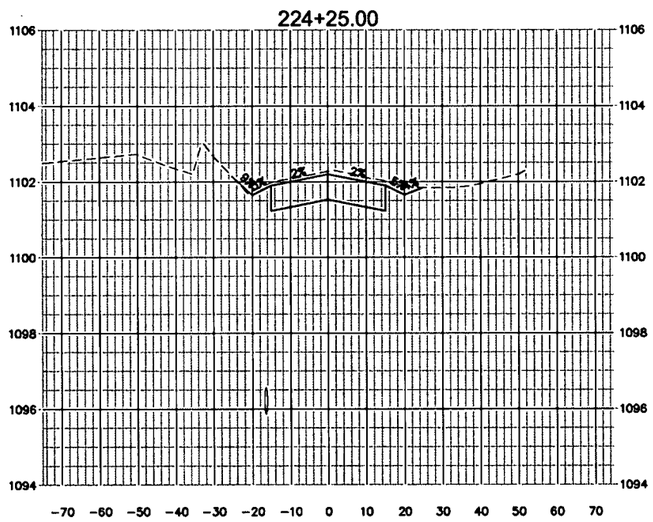
2015

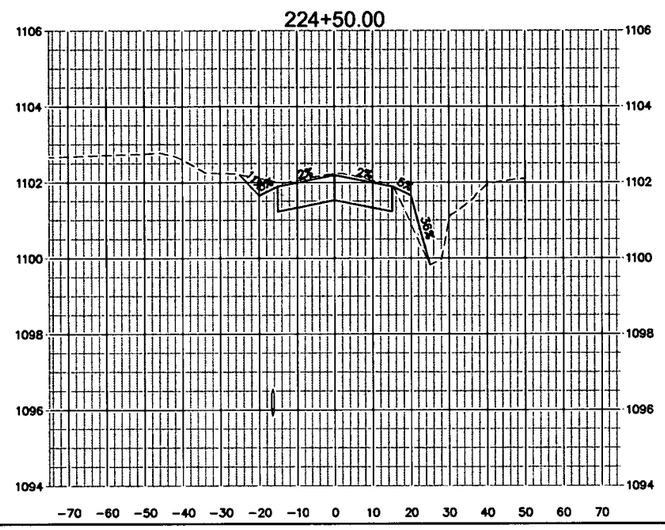
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date	APRIL 2015

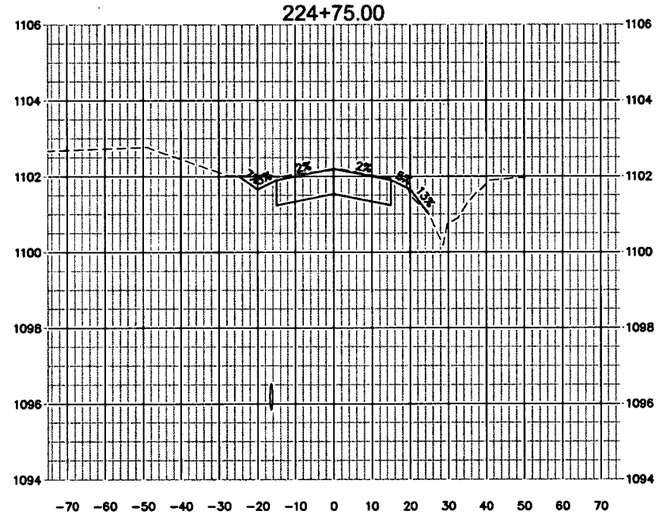
SHEET
74 of 97

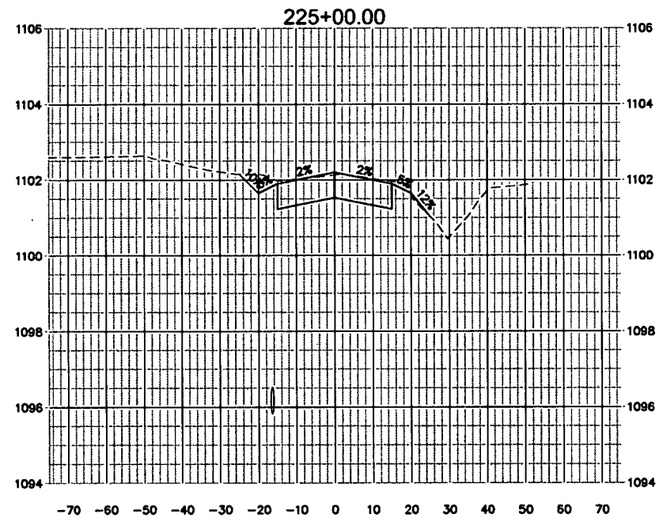
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR.dwg USER: ckuhl
DATE: Apr 21, 2015 3:27pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

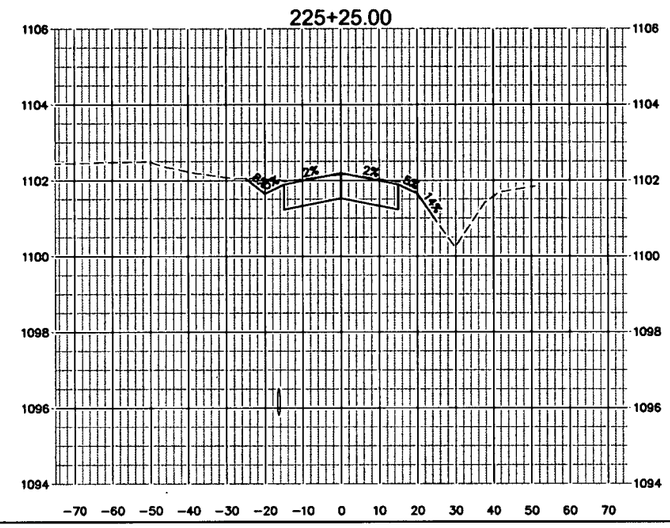


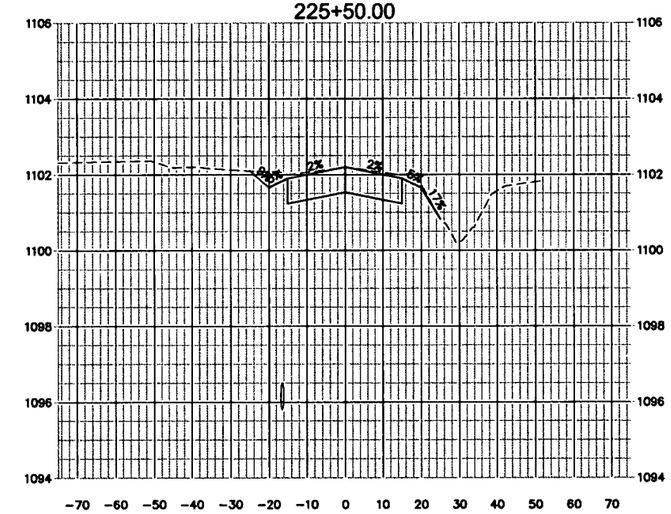


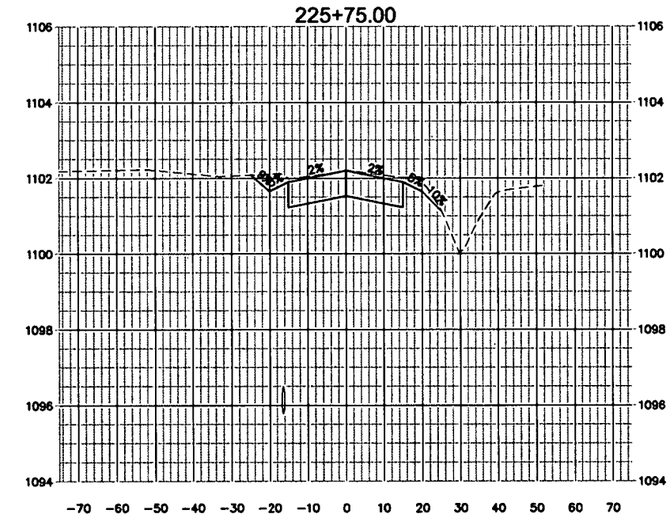


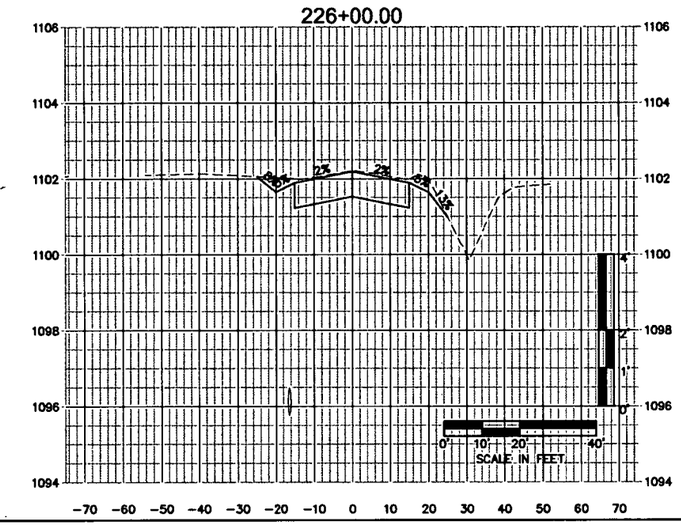












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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
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PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10032
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 224+00 TO STA. 226+00

ROTH PARK SANITARY
SEWER IMPROVEMENTS

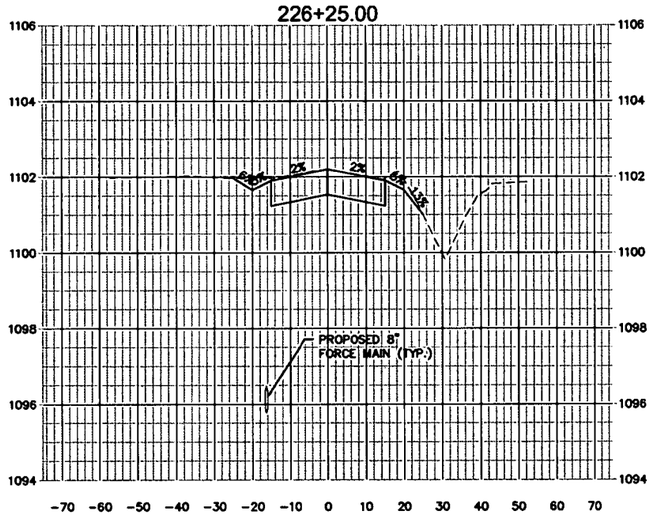
SOUTH SIOUX CITY, NEBRASKA

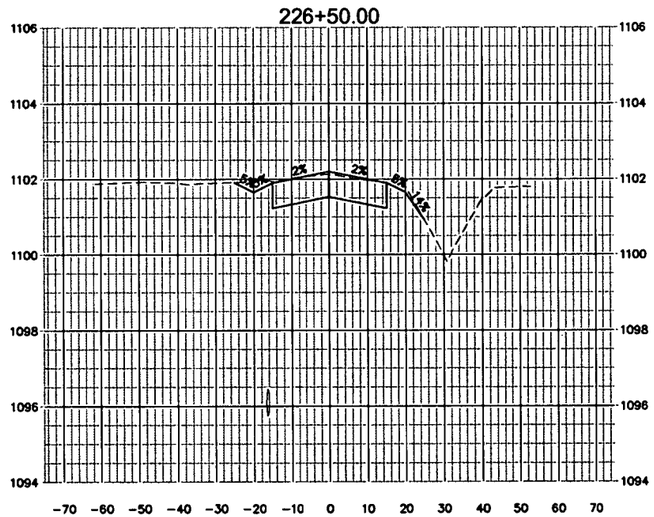
2015

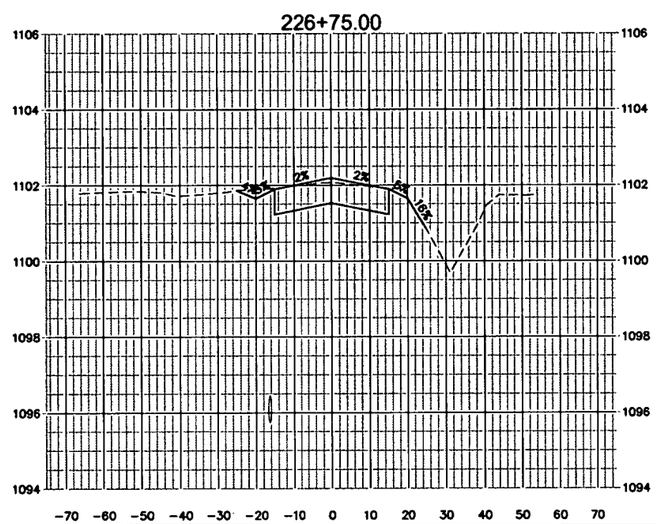
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

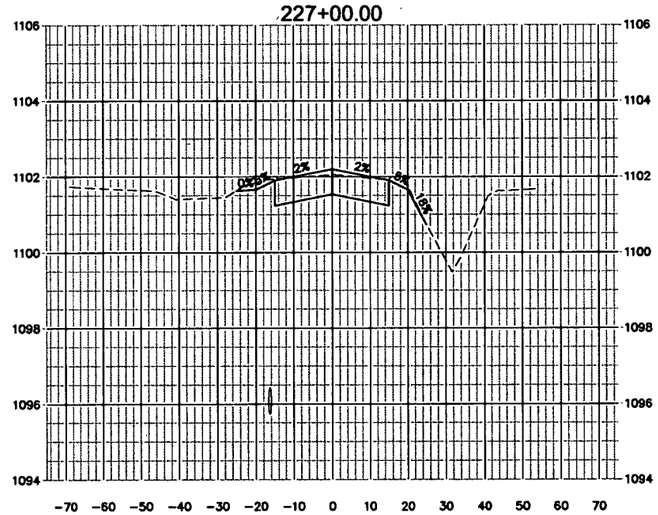
SHEET
75 of 97

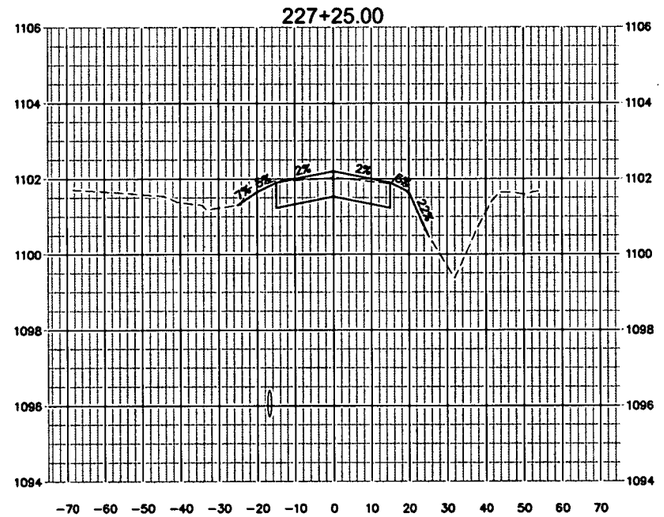
DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_PCORR.dwg USER: ckuhl
DATE: Apr 21, 2015 3:27pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

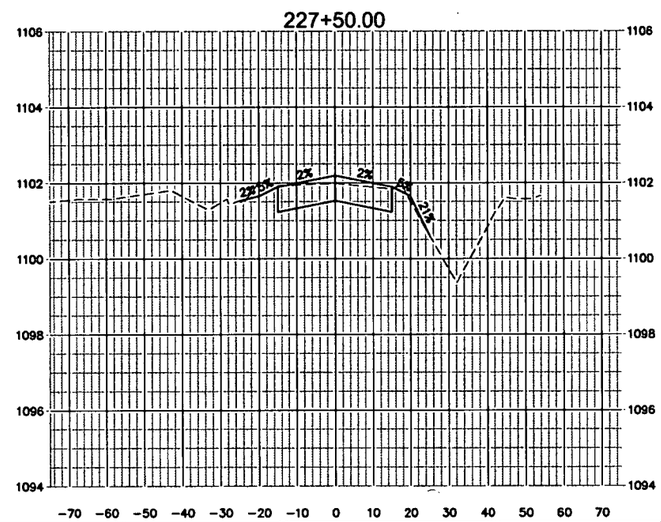


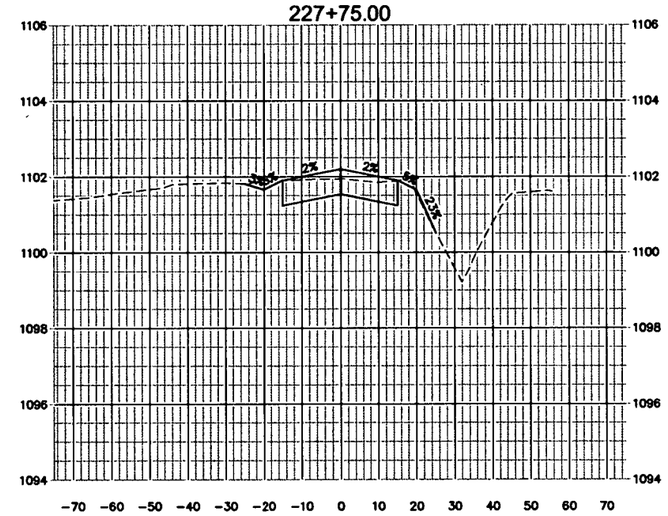


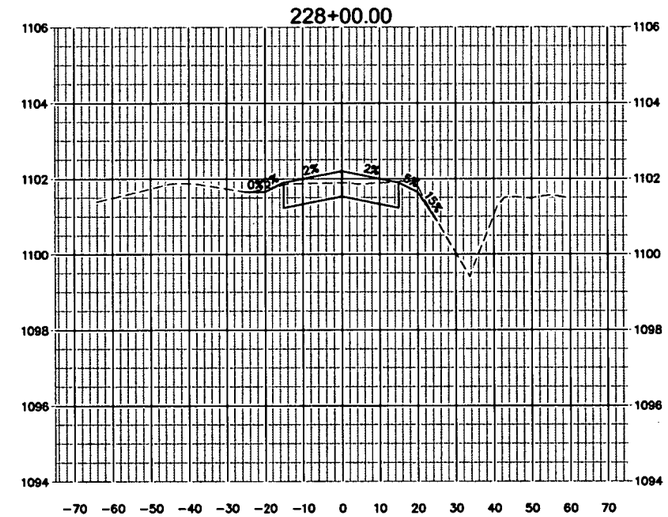


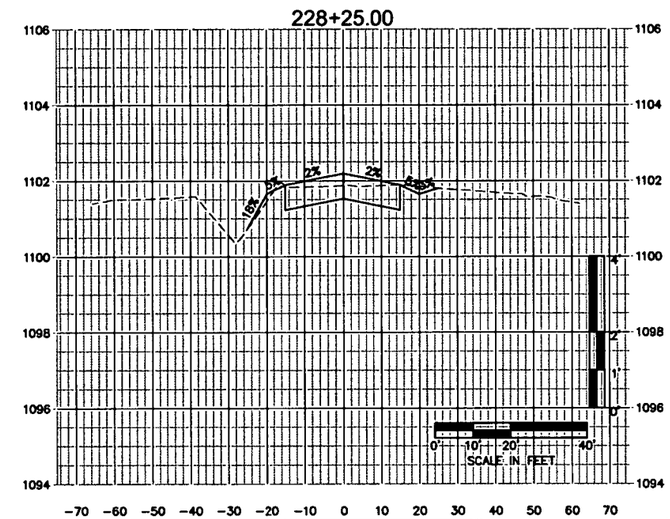












OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
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CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION	NO.	DATE	DESCR.
					REVISIONS

ROADWAY CROSS-SECTIONS
STA. 226+25 TO STA. 228+25

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

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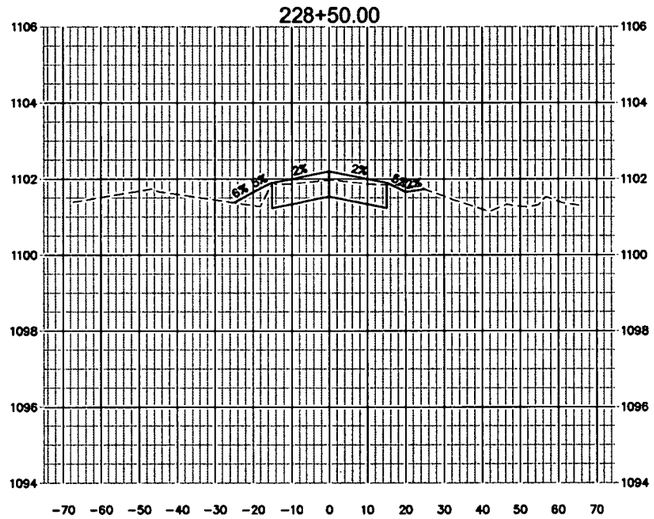
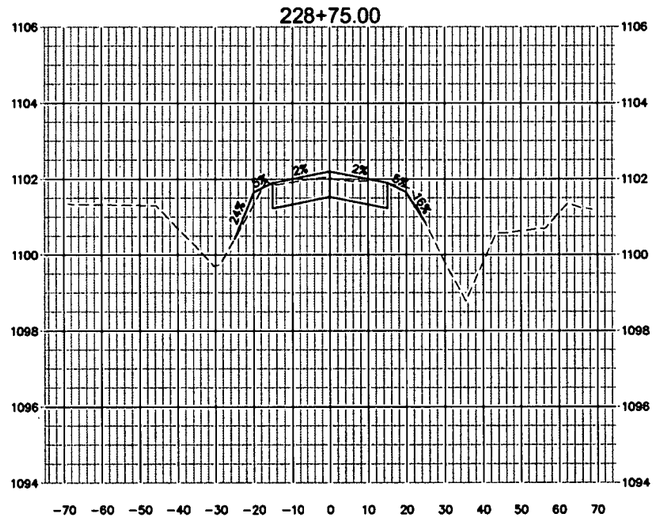
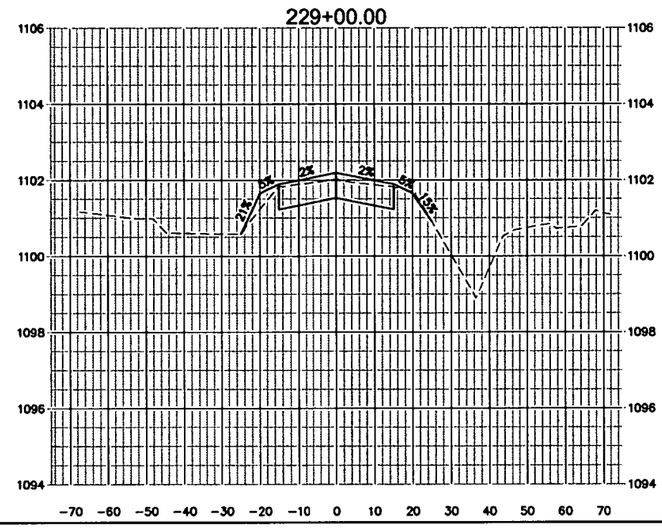
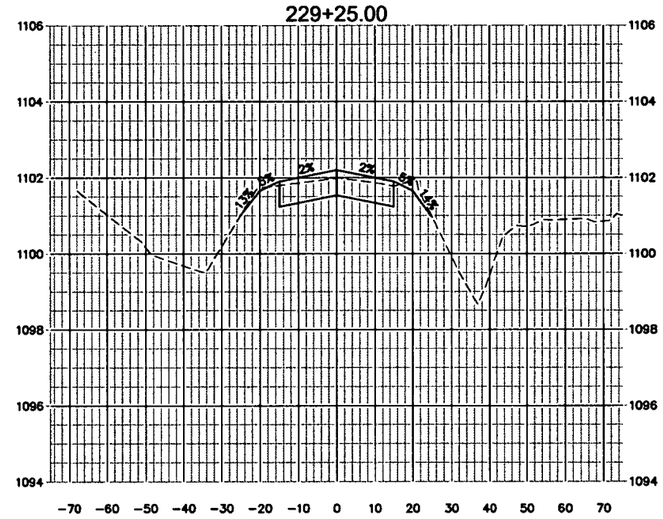
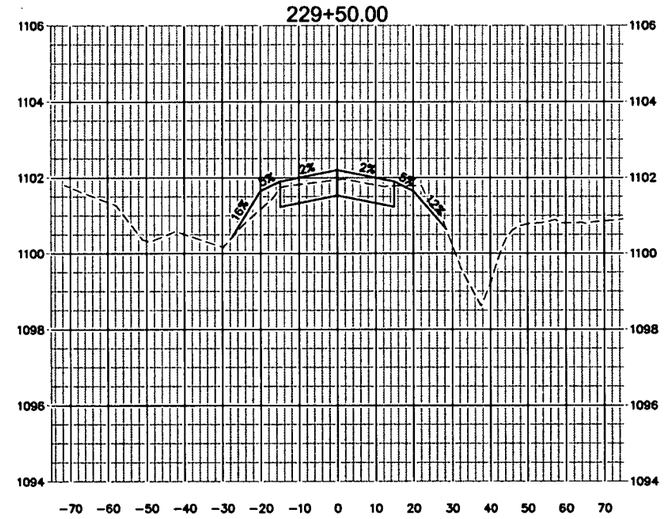
DATE: Apr 21, 2015 3:28pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

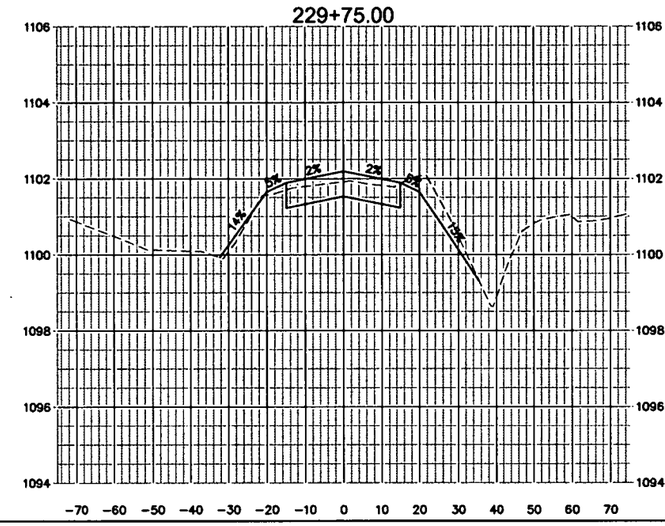


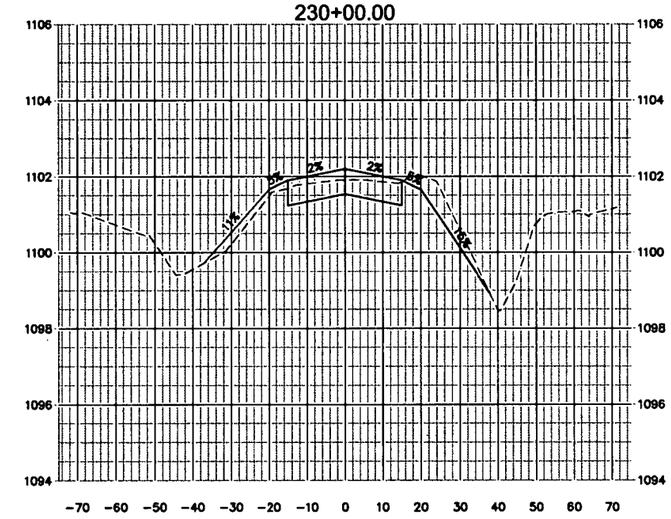


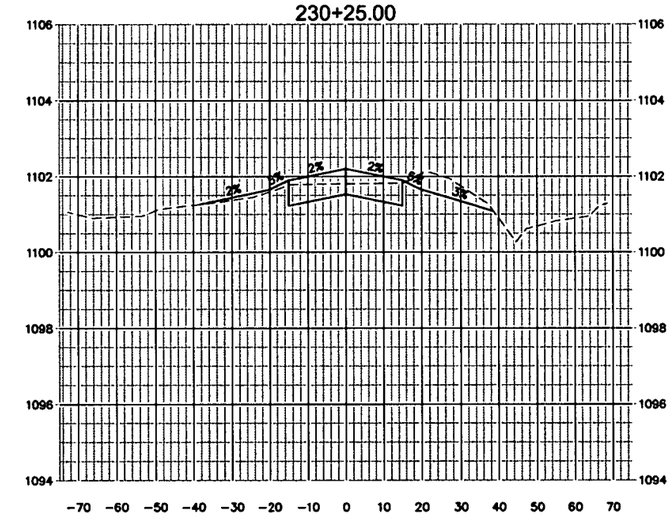


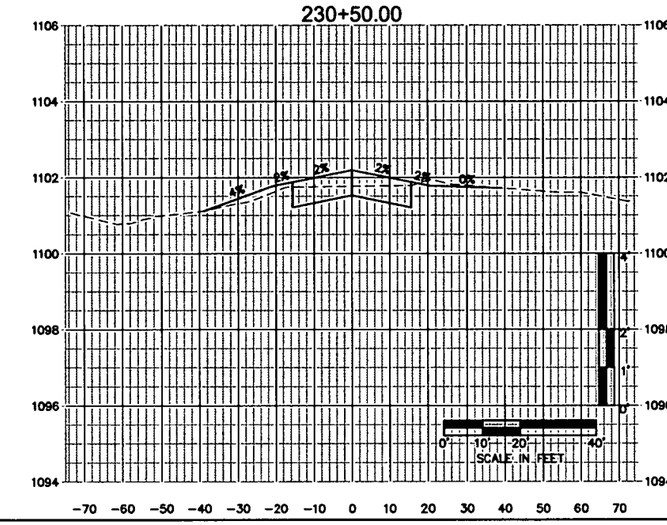












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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3069
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CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS
STA. 228+50 TO STA. 230+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JDB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0083
drawing no.:	
date:	APRIL 2015

SHEET
77 of 97

DWG: F:\Projects\A15-0083_PBIN_SSC\Master\rets\150083_PCORR.dwg USER: ckuhl
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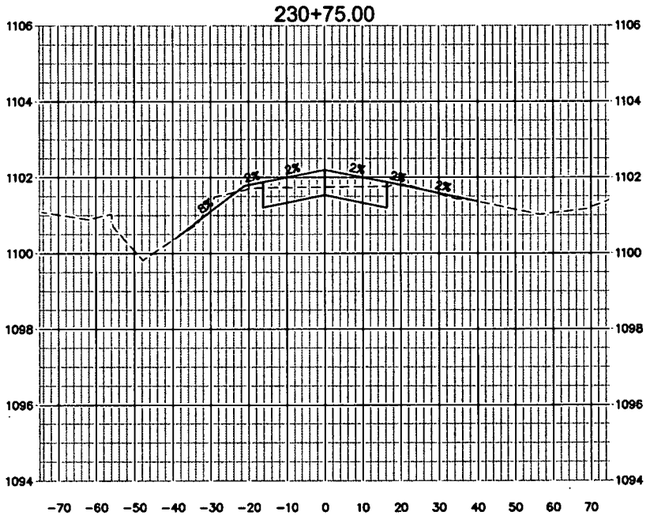

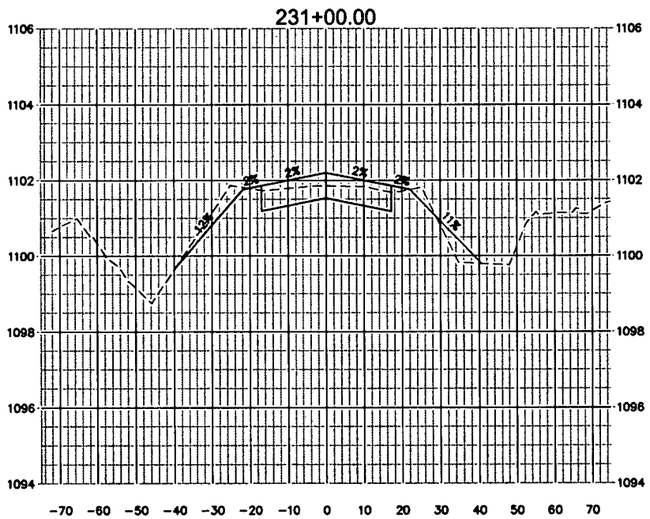

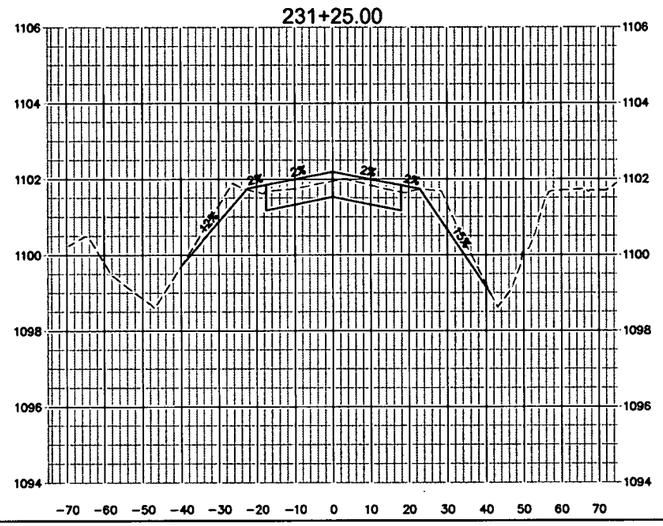

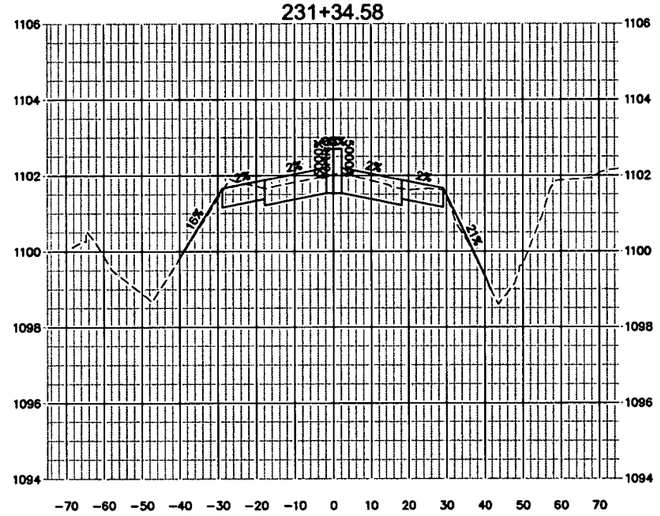

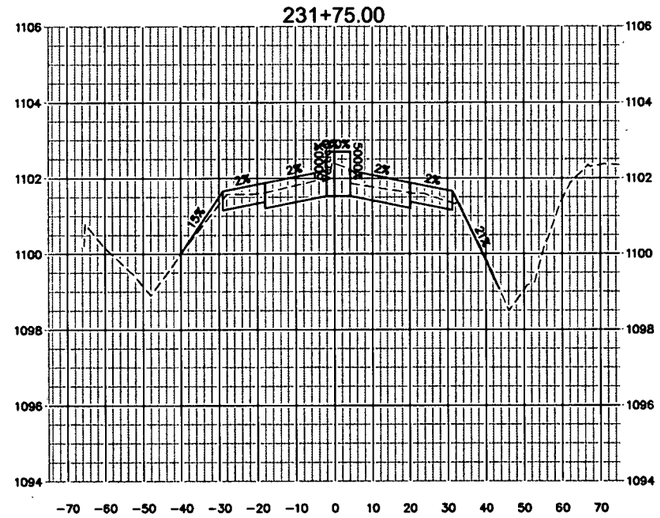

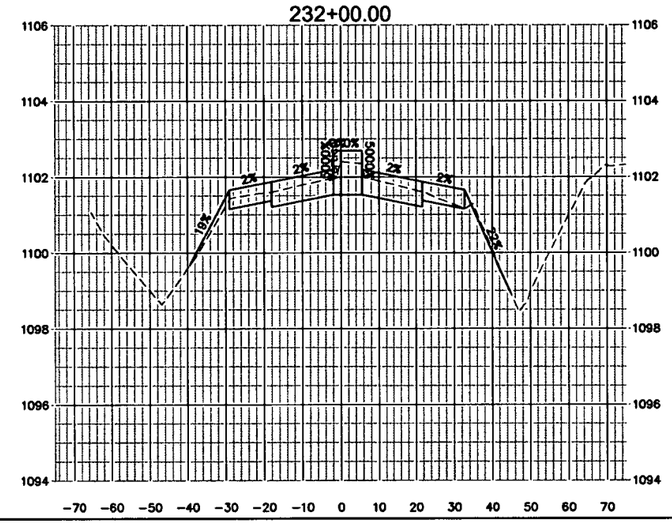

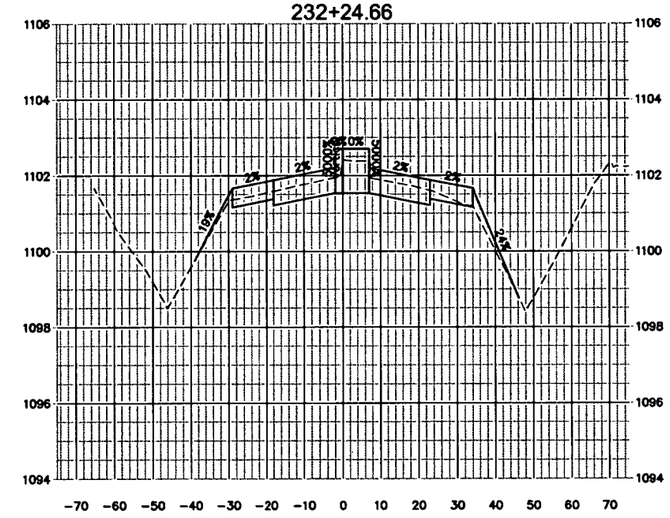

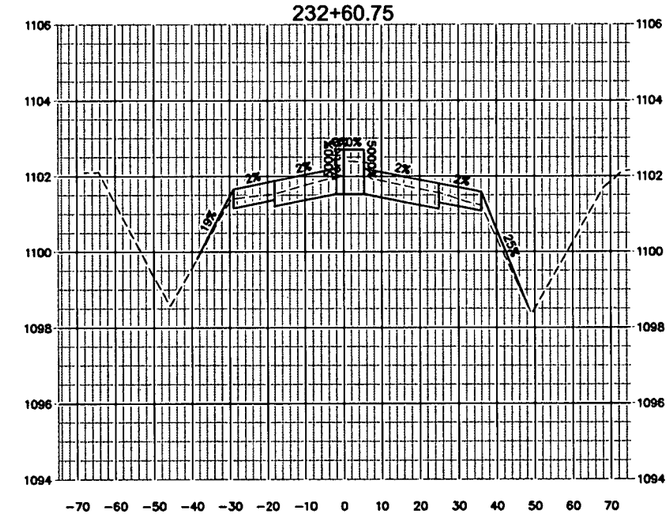

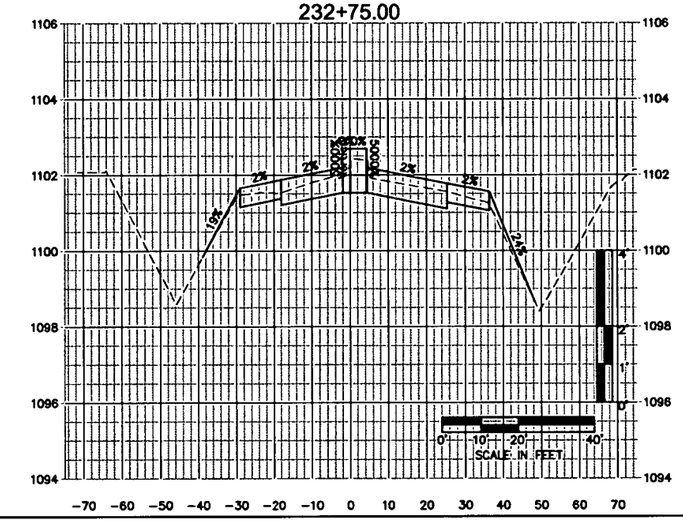

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
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PROFESSIONAL ENGINEER
CHAD P. KEHRT
E-10032
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.
		REVISIONS

ROADWAY CROSS-SECTIONS
STA. 230+75 TO STA. 232+75

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date:	APRIL 2015

SHEET
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DWG: F:\Projects\015-0063_PBIN_SSC\MasterXrefs\150063_PCORR.dwg USER: clohl
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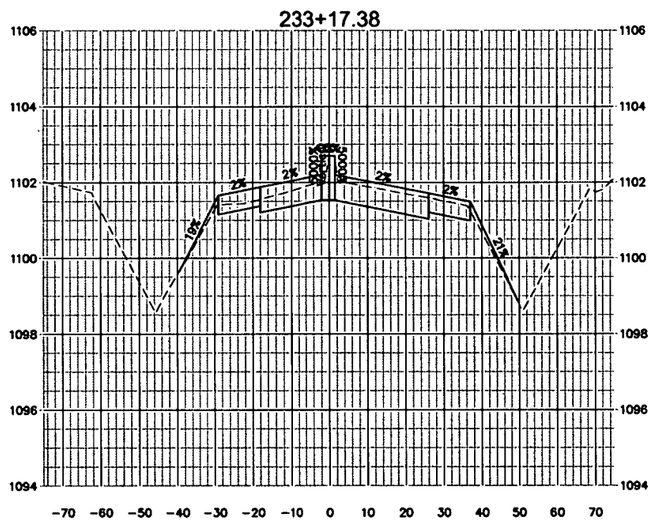

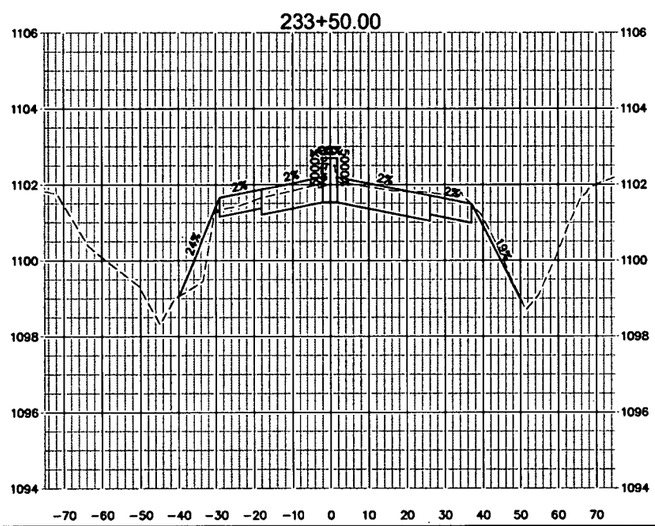

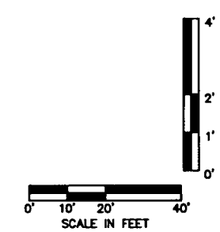

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2069
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL ENGINEER
CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.

REVISIONS

ROADWAY CROSS-SECTIONS
STA. 233+00 TO STA. 233+50

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	JSt., CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date.	APRIL 2015

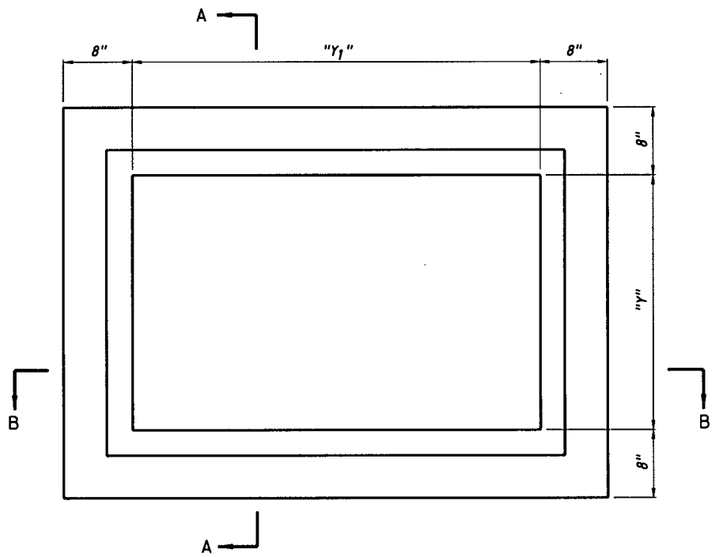
SHEET
79 of 97

DWG: F:\Projects\A15-0063_PBN_SSC\MasterXrefs\150063_PCORR.dwg USER: ckuhl
DATE: Apr 21, 2015 3:29pm XREFS: 150063_XTOPO 150063_PBASE CHAD_KEHRT_PE_NE

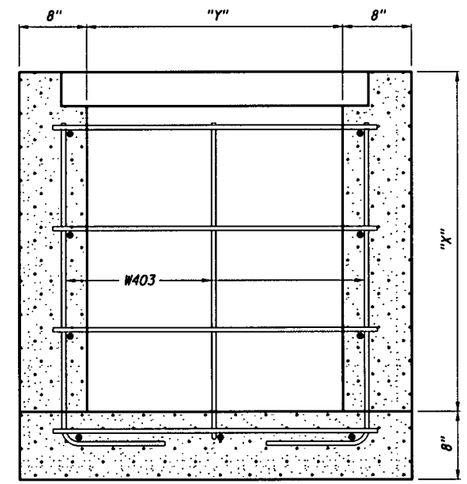
PIPE DIA. (IN.)	MIN. "X" VALUE
15	2'-0"
18	2'-3"
21	2'-9"
24	3'-0"
30	3'-6"
36	4'-0"
42	4'-6"
48	5'-0"

INLET QUANTITIES

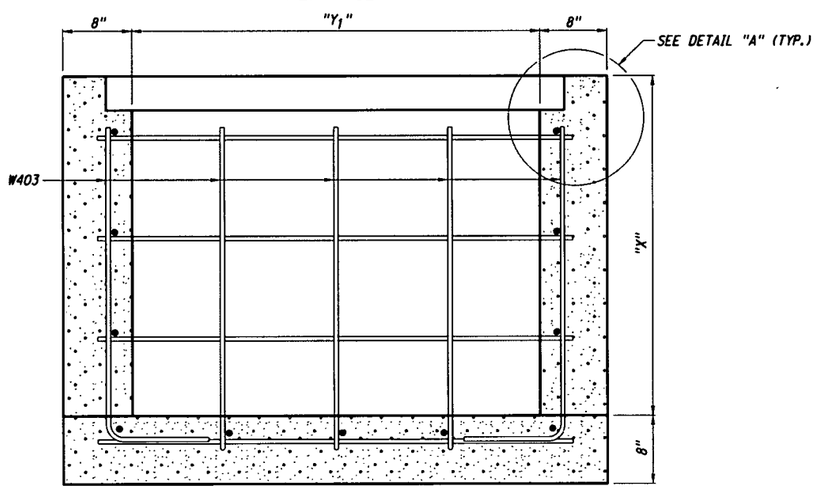
"X" VALUE	GRATE TYPE "A" "Y"=3-0", "Y1"=3'-0"		GRATE TYPE "B" "Y"=3'-6", "Y1"=3'-6"		GRATE TYPE "C" "Y"=2'-6", "Y1"=4'-0"		GRATE TYPE "D" "Y"=1'-8", "Y1"=3'-8"		GRATE TYPE "E" "Y"=2'-0", "Y1"=2'-0"		GRATE TYPE "F" "Y"=1'-6", "Y1"=1'-6"	
	CONCRETE (CU. YDS.)	STEEL (LBS.)	CONCRETE (CU. YDS.)	STEEL (LBS.)	CONCRETE (CU. YDS.)	STEEL (LBS.)	CONCRETE (CU. YDS.)	STEEL (LBS.)	CONCRETE (CU. YDS.)	STEEL (LBS.)	CONCRETE (CU. YDS.)	STEEL (LBS.)
2'-0"	1.2	65	1.4	80	1.3	70	1.0	60	0.8	40	0.6	35
2'-6"	1.4	65	1.6	85	1.5	75	1.2	60	0.9	45	0.7	40
3'-0"	1.6	80	1.8	105	1.7	90	1.4	75	1.1	55	0.8	45
3'-6"	1.7	85	2.0	110	1.9	95	1.5	80	1.2	55	0.9	50
4'-0"	1.9	100	2.2	125	2.1	110	1.7	90	1.3	65	1.1	60
4'-6"	2.1	100	2.4	130	2.2	115	1.9	95	1.5	70	1.2	60
5'-0"	2.3	115	2.6	145	2.4	130	2.0	110	1.6	80	1.3	70
5'-6"	2.5	120	2.8	150	2.6	135	2.2	110	1.7	80	1.4	70
6'-0"	2.6	135	3.0	170	2.8	150	2.3	125	1.9	90	1.5	80
6'-6"	2.8	140	3.3	175	3.0	155	2.5	130	2.0	95	1.6	85
7'-0"	3.0	150	3.5	190	3.2	170	2.7	140	2.1	105	1.7	90



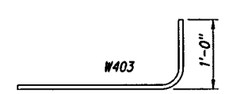
PLAN VIEW



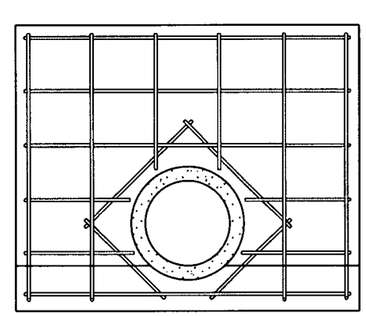
SECTION A-A



SECTION B-B

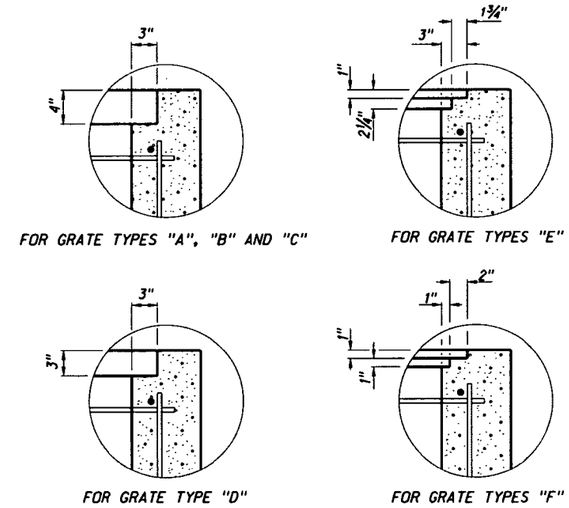


BENDING DIAGRAM



DETAIL "B"

USE FOR PLACEMENT OF DIAGONAL BARS ONLY



DETAIL "A"

NOTES:

IN NO CASE SHALL THE SPAN OF THE PIPE PLUS THE ADDITIONAL ALLOWANCE FOR THE SKEW OF THE PIPE BE GREATER THAN THE "Y" OR "Y1" DIMENSION OF THE INLET WALL IT IS INTENDED TO PENETRATE.

ALL CONCRETE USED SHALL BE CLASS 47B-3000 AND SHALL BE PAID FOR UNDER THE ITEM "CLASS 47B-3000 CONCRETE FOR INLET AND JUNCTION BOX".

ALL REINFORCING STEEL USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615, GRADE 60. ALL REINFORCING STEEL SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) UNLESS NOTED OTHERWISE.

PLACE DIAGONAL REINFORCING AROUND PIPE OPENINGS AS SHOWN IN DETAIL "B".

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR, SHALL BE 2", EXCEPT AS SHOWN.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO ALLOW FOR MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

THE CAST IRON GRATES AND FRAMES SHALL CONFORM TO THE SPECIAL PLAN AND STANDARD SPECIFICATIONS AND SHALL BE PAID FOR UNDER THE ITEM "CAST IRON GRATE AND FRAME".

EXCAVATION, BACKFILL AND DIAGONAL REINFORCING STEEL SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS FOR WHICH PAYMENT IS MADE.

NO DEDUCTIONS HAVE BEEN MADE IN THE QUANTITIES FOR PIPE OPENINGS.

ALL PIPES USED SHALL BE ROUND CORRUGATED METAL, REINFORCED CONCRETE, OR PLASTIC PIPE.

SEE SHEET 2 OF 2 FOR GRATE DETAILS.

AREA INLET WITH GRATE

SHEET 1 OF 2

SPECIAL PLAN C

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402.494.3050
FAX 402.494.4094
www.olssonassociates.com

PROFESSIONAL ENGINEER CHAD P. KEHRT E-10037 STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

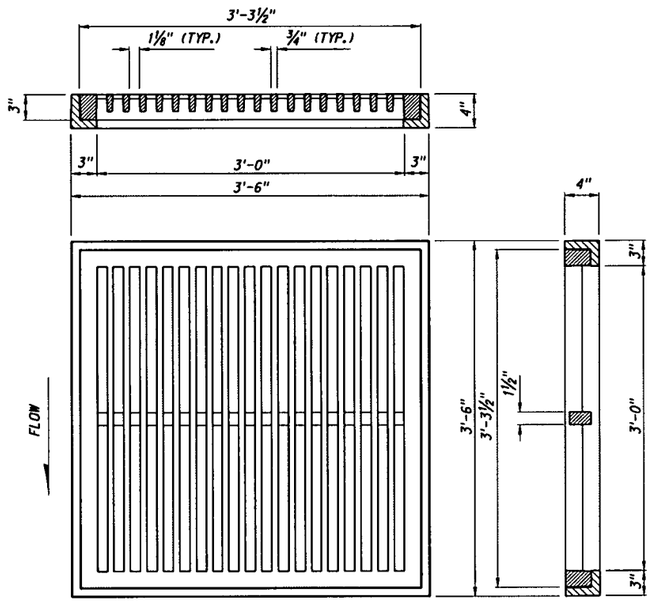
AREA INLET DETAIL

ROTH PARK SANITARY SEWER IMPROVEMENTS

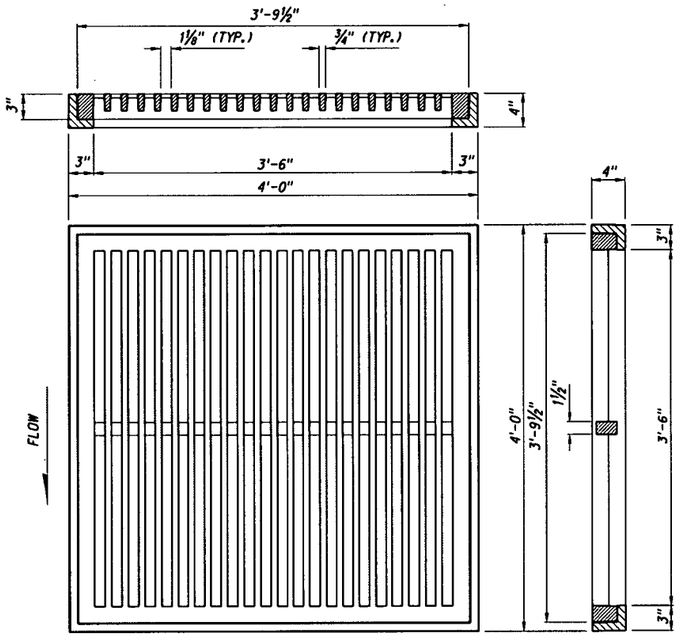
SOUTH SIOUX CITY, NEBRASKA

2015

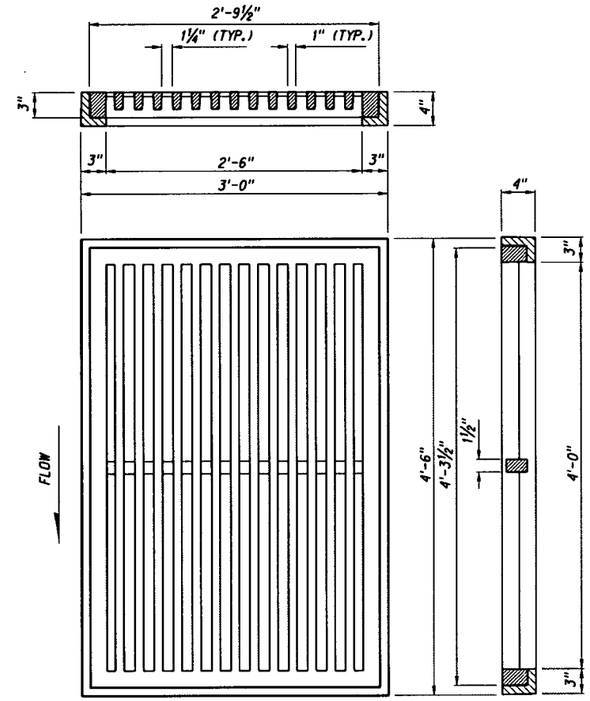
drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no.: 015-0083
drawing no.:
date: APRIL 2015



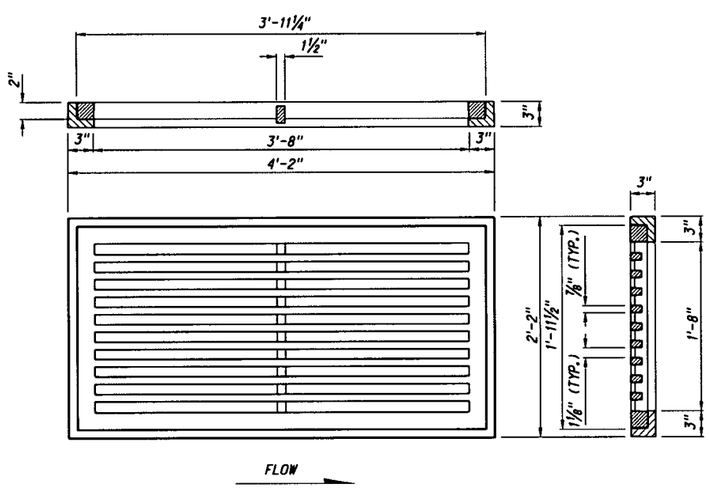
GRATE TYPE "A"
CLEAR OPENING 5.1 SQ. FT.
WEIGHT CAST IRON 745 LBS.



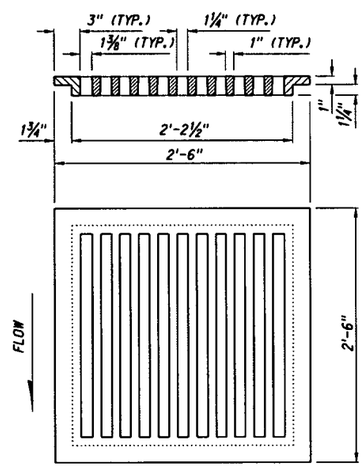
GRATE TYPE "B"
CLEAR OPENING 6.6 SQ. FT.
WEIGHT CAST IRON 990 LBS.



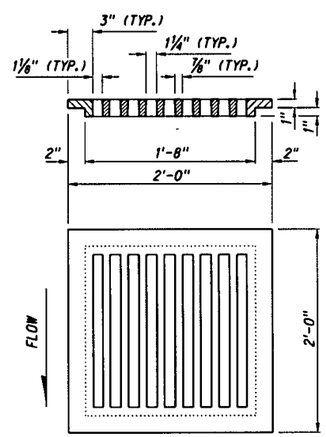
GRATE TYPE "C"
CLEAR OPENING 5.5 SQ. FT.
WEIGHT CAST IRON 825 LBS.



GRATE TYPE "D"
CLEAR OPENING 3.4 SQ. FT.
WEIGHT CAST IRON 555 LBS.



GRATE TYPE "E"
CLEAR OPENING 2.3 SQ. FT.
WEIGHT CAST IRON 265 LBS.



GRATE TYPE "F"
CLEAR OPENING 1.3 SQ. FT.
WEIGHT CAST IRON 175 LBS.

NOTE:
THESE GRATES ARE NOT TO BE USED IN AREAS THAT ALLOW BICYCLE TRAFFIC.

AREA INLET WITH GRATE
SHEET 2 OF 2

SPECIAL PLAN C

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2059
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10037
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

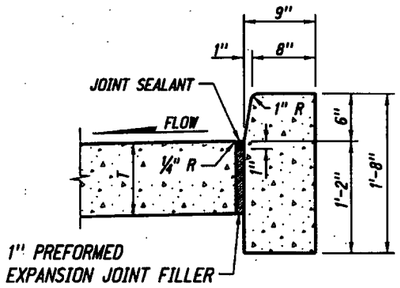
AREA INLET DETAIL

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

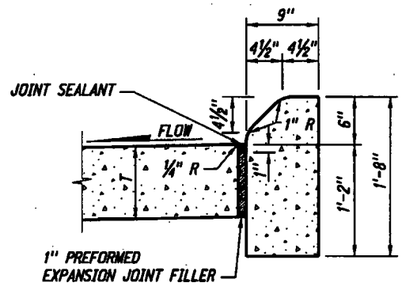
drawn by:	JSL, CKK
checked by:	JCB
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015



CONCRETE BARRIER CURB *

QUANTITIES

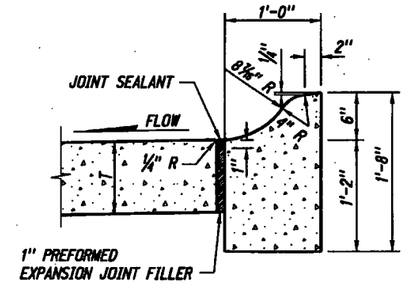
CONCRETE 4.55 CU. YDS./STA.
AREA 1.228 SQ. FT.



CONCRETE MEDIAN CURB *

QUANTITIES

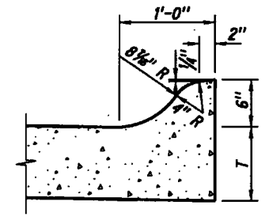
CONCRETE 4.42 CU. YDS./STA.
AREA 1.192 SQ. FT.



CONCRETE CURB, * TYPE I

QUANTITIES

CONCRETE 5.22 CU. YDS./STA.
AREA 1.408 SQ. FT.

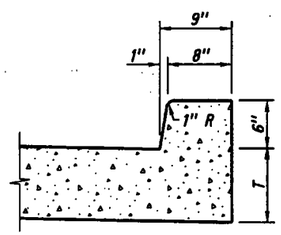


INTEGRAL CONCRETE CURB

QUANTITIES

CONCRETE 0.89 CU. YDS./STA.
AREA 0.239 SQ. FT.

NOTE: * ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 100' THRU CONCRETE BARRIER CURB, CONCRETE MEDIAN CURB, AND CONCRETE CURB, TYPE I.

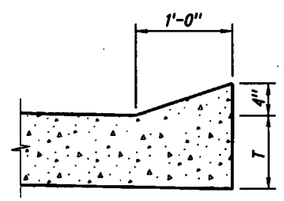


NOTE: MAY BE USED WHEN T IS LESS THAN 12"

INTEGRAL CONCRETE BARRIER CURB

QUANTITIES

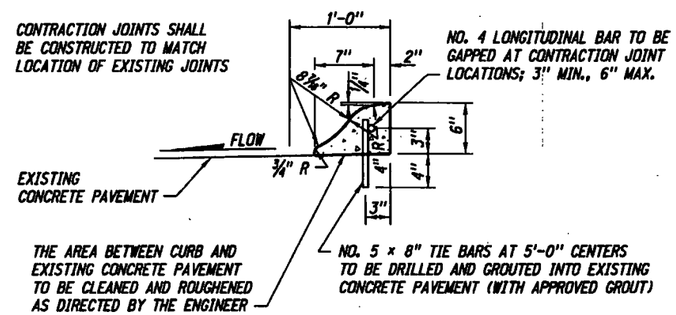
CONCRETE 1.33 CU. YDS./STA.
AREA 0.359 SQ. FT.



INTEGRAL CONCRETE SLOPING CURB

QUANTITIES

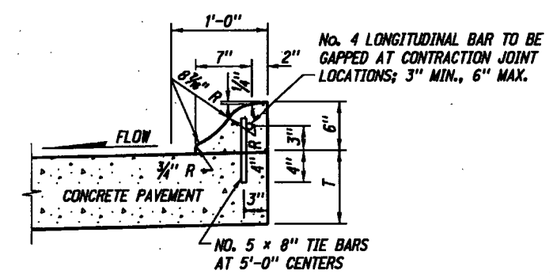
CONCRETE 0.62 CU. YDS./STA.
AREA 0.167 SQ. FT.



CONCRETE CURB, TYPE II

QUANTITIES

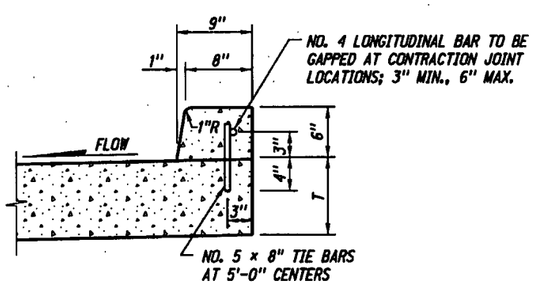
CONCRETE 0.87 CU. YDS./STA.
AREA 0.234 SQ. FT.



INTEGRAL CONCRETE CURB ALTERNATE TYPE

QUANTITIES

CONCRETE 0.87 CU. YDS./STA.
AREA 0.234 SQ. FT.

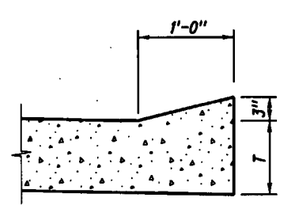


NOTE: USE WHEN T IS 12" OR GREATER

INTEGRAL CONCRETE BARRIER CURB ALTERNATE TYPE

QUANTITIES

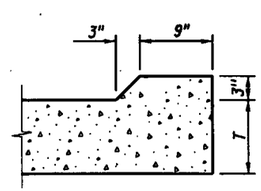
CONCRETE 1.33 CU. YDS./STA.
AREA 0.359 SQ. FT.



INTEGRAL CONCRETE SLOPING CURB

QUANTITIES

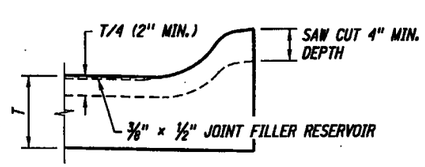
CONCRETE 0.46 CU. YDS./STA.
AREA 0.123 SQ. FT.



EROSION CONTROL CURB

QUANTITIES

CONCRETE 0.81 CU. YDS./STA.
AREA 0.219 SQ. FT.



CONTRACTION JOINT THRU CURB

NOTE: T = PAVEMENT THICKNESS

REV. NO.	DATE	DESCRIPTION OF REVISION
R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS

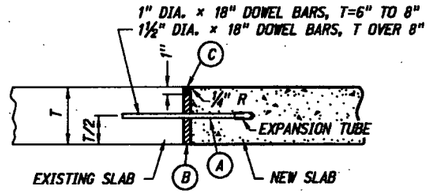
NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 301-R10

PAVEMENT DETAILS

PROFESSIONAL CIVIL ENGINEER
JAMES J. KNOTT
E-6035
STATE OF NEBRASKA

ORIGINAL:
JANUARY 31, 1974
DATE

1
3



(A) GREASE DOWELBAR ON EXPANSION TUB SIDE

(B) 1" PREFORMED EXPANSION JOINT FILLER

(C) JOINT SEALANT

NOTES:

DOWEL BARS SHALL BE DRILLED TO A DEPTH OF 8" INTO EXISTING SLAB AND GROUTED.

DOWEL BARS SHALL BE PLACED AT 1'-0" CENTERS. THE OUTSIDE DOWEL BAR SHALL BE PLACED 6" FROM THE EDGE OF THE SLAB.

THIS JOINT SHALL BE CONSTRUCTED TRANSVERSE TO THE ROADWAY WHERE THE NEW CONCRETE ABUTS THE EXISTING CONCRETE.

DOWEL BARS SHALL BE PLACED PARALLEL TO THE ROADWAY ℄ AND TO THE ROADBED.

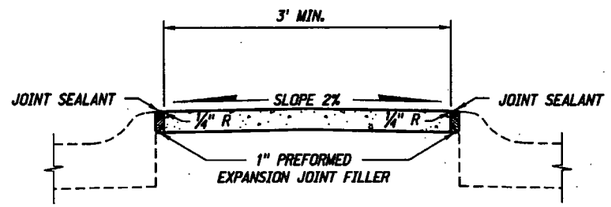
EXPANSION JOINT (SUBSIDIARY)

ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED ACROSS THE FULL WIDTH OF THE MEDIAN SURFACING AT INTERVALS OF NOT MORE THAN 49'-0'.

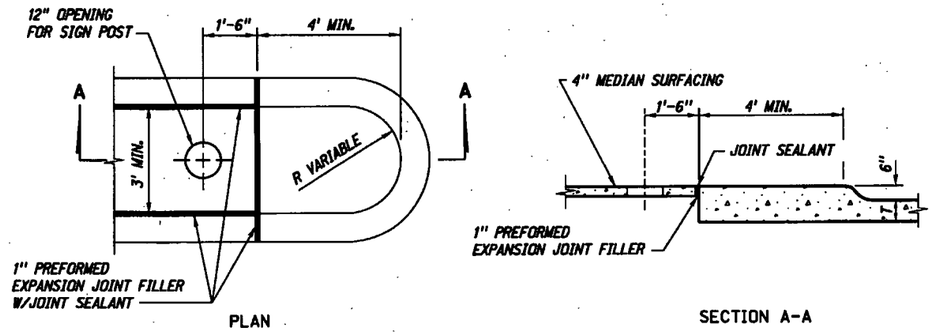
LONGITUDINAL JOINTS ONE INCH DEEP SHALL BE MADE IN ALL MEDIANS WHEN SURFACING WIDTH IS 16' OR GREATER.

TRANSVERSE JOINTS ONE INCH DEEP SHALL BE MADE IN ALL MEDIANS AT INTERVALS OF NOT MORE THAN 8'.

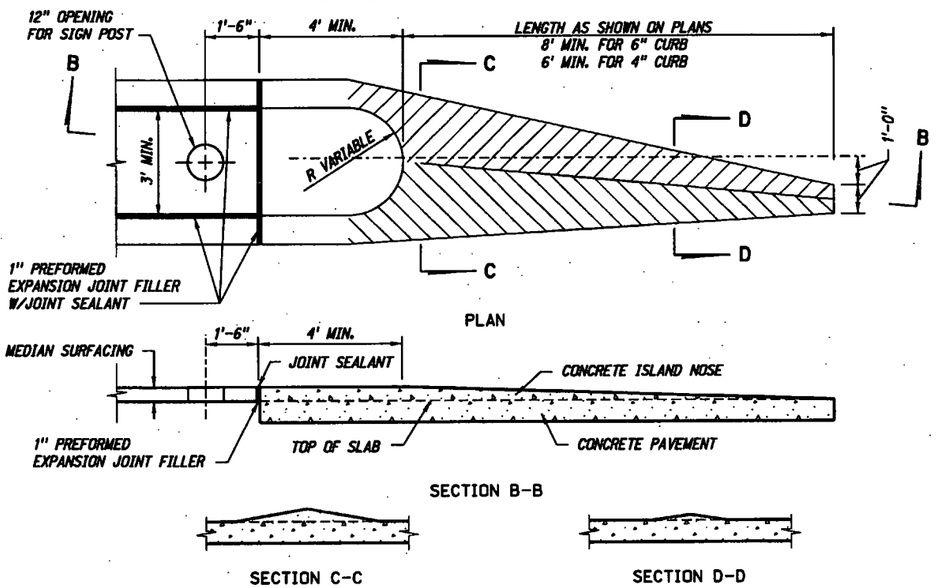
TRANSVERSE AND LONGITUDINAL JOINTS SHALL NOT BE FILLED.



DETAILS OF CONCRETE MEDIAN SURFACING

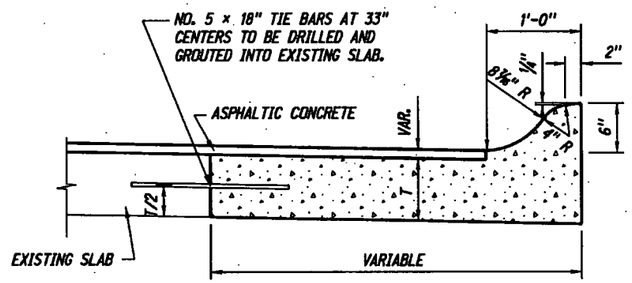


DETAIL AT END OF MEDIAN ISLAND

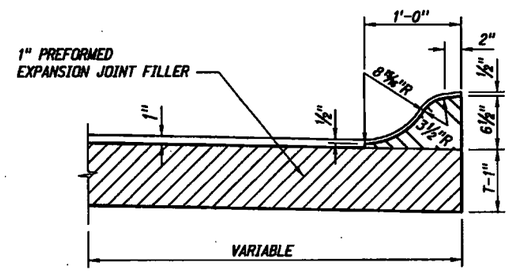


NOTE:
EXISTING CONCRETE PAVEMENT IS TO BE REMOVED IN AREA COVERED BY CONCRETE ISLAND NOSE.

DETAILS OF CONCRETE ISLAND NOSE



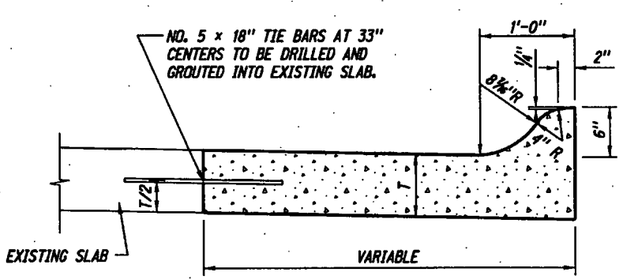
CONCRETE BASE COURSE W/INTEGRAL CURB



ONE INCH PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED AT INTERSECTION RETURNS AND WHERE SHOWN ON THE PLANS. TRANSVERSE JOINTS SHALL BE PROVIDED EVERY 8' OR WHERE SHOWN ON THE PLANS.

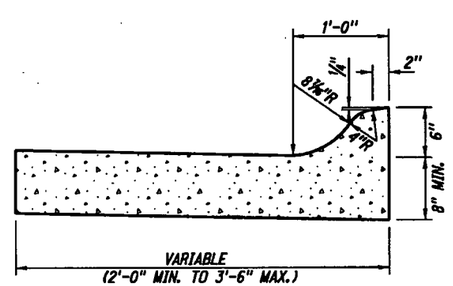
NOTE: RECESS THE EXPANSION JOINT FILLER ½" FROM THE TOP SURFACE OF THE CURB TYPE UNDER CONSTRUCTION

DETAIL FOR CUTTING EXPANSION JOINT FILLER

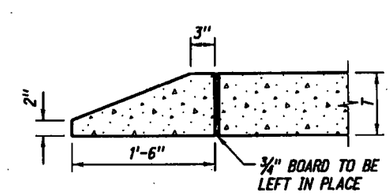


THE FOLLOWING NOTE IS TYPICAL FOR CONCRETE BASE COURSE W/INTEGRAL CURB AND CONCRETE PAVEMENT WIDENING: CONTRACTION AND EXPANSION JOINTS SHALL BE CONSTRUCTED TO MATCH LOCATIONS OF EXISTING JOINTS.

CONCRETE PAVEMENT WIDENING



COMBINATION CONCRETE CURB & GUTTER



CONCRETE HEADER

NOTE: T = PAVEMENT THICKNESS

REV. NO.	DATE	DESCRIPTION OF REVISION
R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS

NEBRASKA DEPARTMENT OF ROADS

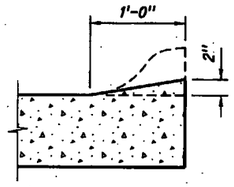
STANDARD PLAN NO. 301-R10

PAVEMENT DETAILS

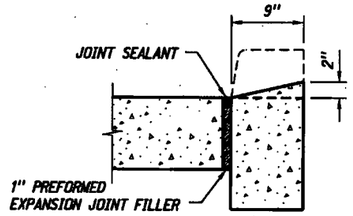
PROFESSIONAL CIVIL ENGINEER — JAMES A. KNOLL — E-6035 — STATE OF NEBRASKA

ORIGINAL:
JANUARY 31, 1974
DATE

2/3

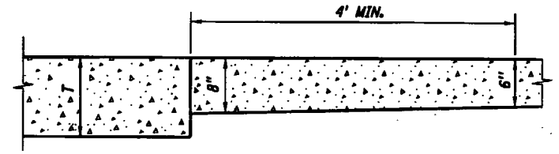


INTEGRAL CURB

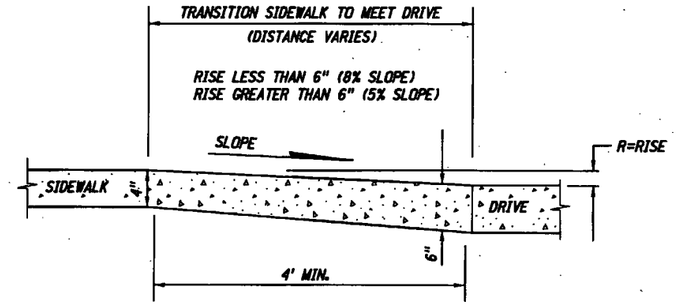


BARRIER CURB

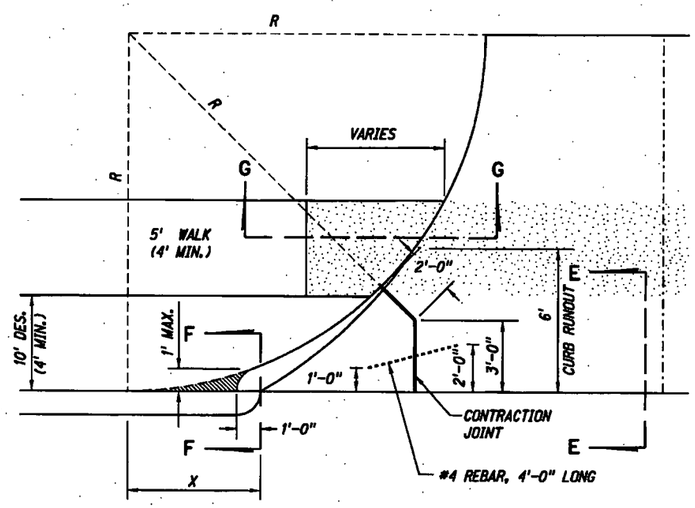
DETAILS OF CURB DROPS



SECTION E-E (RURAL DRIVEWAY)



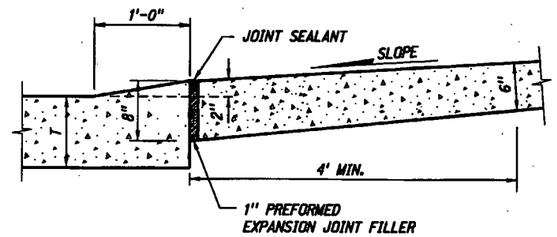
SECTION G-G



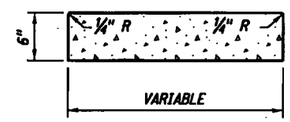
DRIVEWAY PLAN

R	X
5'	3.00'
10'	4.36'
15'	5.38'
20'	6.24'
25'	7.00'
30'	7.68'
35'	8.31'
40'	8.89'

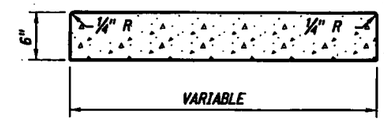
R = RADIUS
$X = \sqrt{(2R-1)}$
(X & R IN FEET)



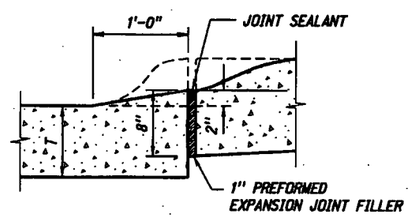
SECTION E-E (URBAN DRIVEWAY)



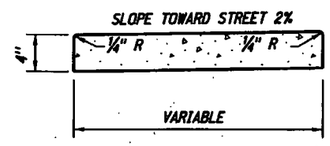
CROSSWALK



DRIVEWAY



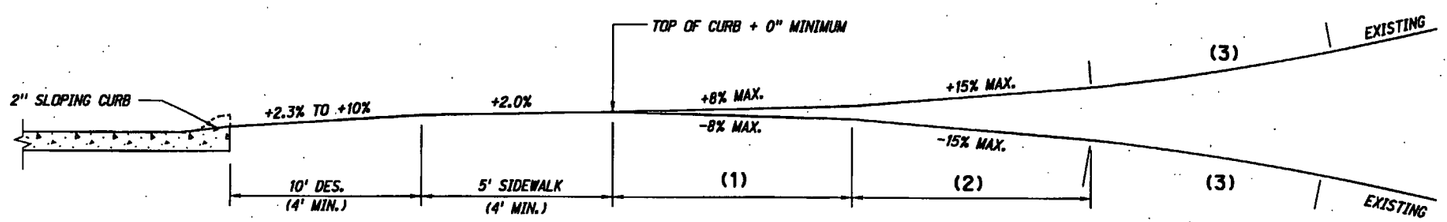
SECTION F-F (URBAN DRIVEWAY)



SIDEWALK

NOTE:

1" PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED IN ALL SIDEWALKS OR CROSSWALKS AT INTERVALS OF NOT MORE THAN 50'-0", AND AT ALL POINTS WHERE SIDEWALKS OR CROSSWALKS ARE ADJACENT TO CURB. IF SIDEWALK OR CROSSWALK TO BE CONSTRUCTED IS LESS THAN 50'-0" IN LENGTH, ONE SUCH EXPANSION JOINT SHALL BE PLACED AS DIRECTED BY THE ENGINEER.



PROFILE URBAN DRIVEWAY WITH SIDEWALK
(MAXIMUM PERCENT OF GRADE)

NOTE: T = PAVEMENT THICKNESS

(1) 10' MIN. IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±8%
(2) 10' MIN. IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±15%
(3) 10' MIN. ROUNDING IS REQUIRED WHEN THE EXISTING GRADE IS GREATER THAN ±22%

REV. NO.	DATE	DESCRIPTION OF REVISION
R10	FEB 09	MULTIPLE REVISIONS
R9	MAR.05	MULTIPLE REVISIONS
R8	MAY 01	MULTIPLE REVISIONS

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 301-R10

PAVEMENT DETAILS

ORIGINAL:
JANUARY 31, 1974
DATE

3
3

30100e10.dgn
10001
SHEET 3 OF 3

ROADWAY DESIGN DIVISION
Computer: DRDESIGN55
User: dor13017
Date: 02-MAY-2014 11:16
3030-0-E-02
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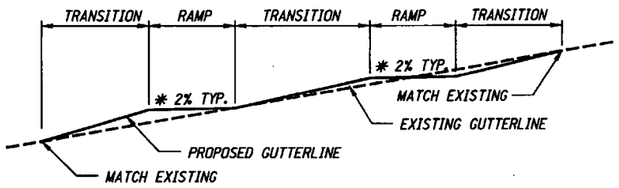
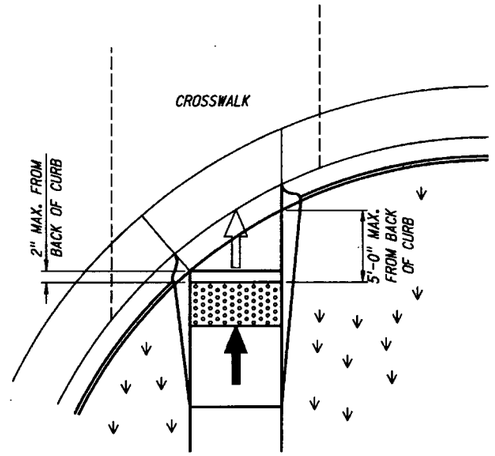
SHEET 1 OF 4

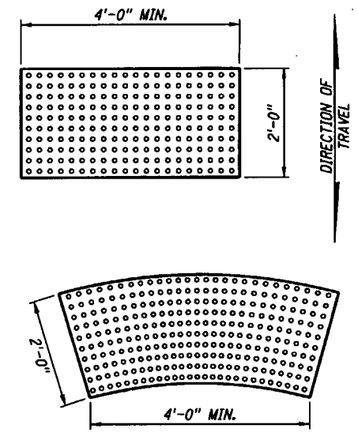


* 2% PREFERRED WHERE TRAFFIC STOPS, UP TO 5% ALLOWED WHERE TRAFFIC CONTINUES THROUGH THE CROSSWALK WITHOUT STOPPING (INCLUDING TRAFFIC SIGNALS).

GUTTER PROFILE DETAIL



DETECTABLE WARNING PANEL PLACEMENT DETAIL



DETECTABLE WARNING PANELS

NOTES:

1. THE SURFACE OF ALL CURB RAMPS SHALL BE BROOMED PERPENDICULAR TO THE SLOPE OF THE CURB RAMP.

2. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE CURB RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.

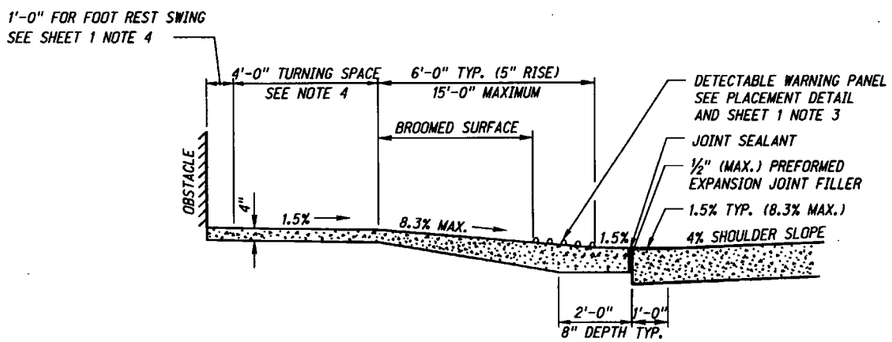
3. ALL CURB RAMPS SHALL BE CONSTRUCTED WITH A DETECTABLE WARNING PANEL (DWP), 2 FT. × 4 FT. MINIMUM. PLACED WITHIN 2" OF THE BACK OF CURB.

   DETECTABLE WARNING PANEL:
   - SHALL BE PAID FOR BY THE SQ. FT.
   - SHALL BE FROM THE APPROVED PRODUCT LIST
   - SHALL BE A CONTRASTING COLOR TO THE SURROUNDING SURFACING.
   - SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP.

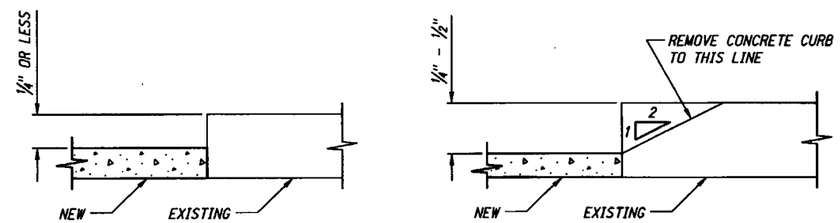
   NEW CURB RAMPS SHALL HAVE CAST IN CONCRETE DETECTABLE WARNING PANELS.

4. TURNING SPACE SHALL HAVE MINIMUM DIMENSIONS OF 4 FT. × 4 FT. AND SHALL BE A MINIMUM OF 1 FT. FROM ANY OBSTACLE SUCH AS A CURB OR RETAINING WALL FOR SWING OF WHEELCHAIR FOOT REST. THE SLOPE SHALL BE 2% MAXIMUM IN ANY DIRECTION.

5. THE WORK OF CONSTRUCTING CURB RAMPS SHALL BE INCLUDED IN THE QUANTITIES FOR "CONCRETE SIDEWALKS", "CONCRETE MEDIAN SURFACING" OR "CONCRETE BIKEWAY". THE WORK OF MODIFICATION OF NEW OR EXISTING CURB WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK FOR WHICH DIRECT PAYMENT IS MADE.



TYPICAL RAMP PROFILE



NO BEVELING

BEVEL AS REQUIRED

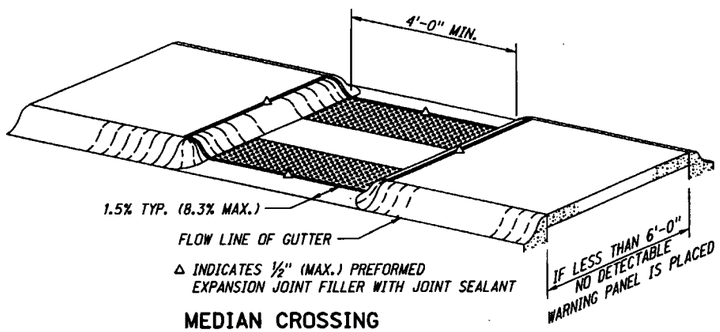
WHEN EXISTING SIDEWALK DOES NOT MEET THE 2% CROSS SLOPE, BEVELING TO MEET PROWAG IS REQUIRED.

THE SIDEWALK PANEL ABUTTING THE EXISTING SIDEWALK (WHICH MAY NOT BE 2% SLOPE): BUILD FULL WIDTH OF THE NEW SIDEWALK, ON 2% MAXIMUM CROSS SLOPE AND BEVEL THE EXISTING SIDEWALK EDGE WHERE IT DOES NOT MEET THE NEW WITHIN ¼". THIS WORK IS SUBSIDIARY.

BEVELING DETAIL

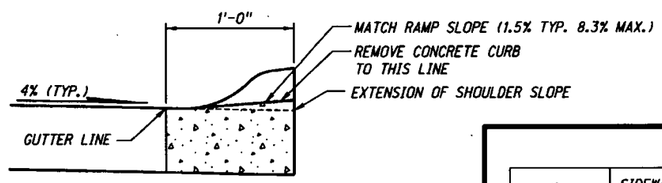
LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORZ.



△ INDICATES ½" (MAX.) PREFORMED EXPANSION JOINT FILLER WITH JOINT SEALANT

MEDIAN CROSSING



NOTE:
COMBINATION CONCRETE CURB AND GUTTER MAY BE REMOVED AND REPLACED IN LIEU OF MILLING.

CURB DETAIL

SLOPE LEGEND

⇦	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
⬅	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
⇦	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE ROADWAY DESIGN ENGINEER. AN EXCEPTION TO THIS IS THE TRANSITIONAL SEGMENT TO EXISTING SIDEWALK MUST CONNECT TO THE EXISTING SIDEWALK PANEL; THIS DOES NOT REQUIRE A STATEMENT OF TECHNICAL INFEASIBILITY. (REF. PROWAG CHAPTER R3 TECHNICAL REQUIREMENTS)

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	OCT 14	CHANGE PM TO ROADWAY DESIGN ENGINEER
R1	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 303-R2

CURB RAMPS

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

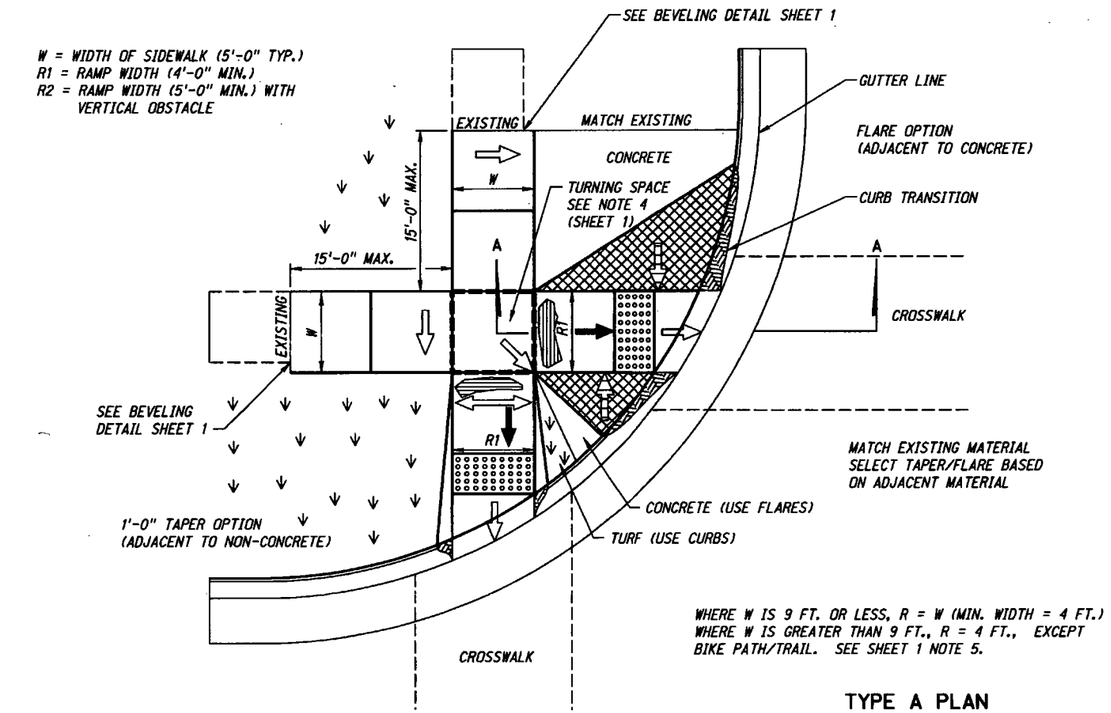
Howard A. Christy 6/2/14

OCT 2014
DATE

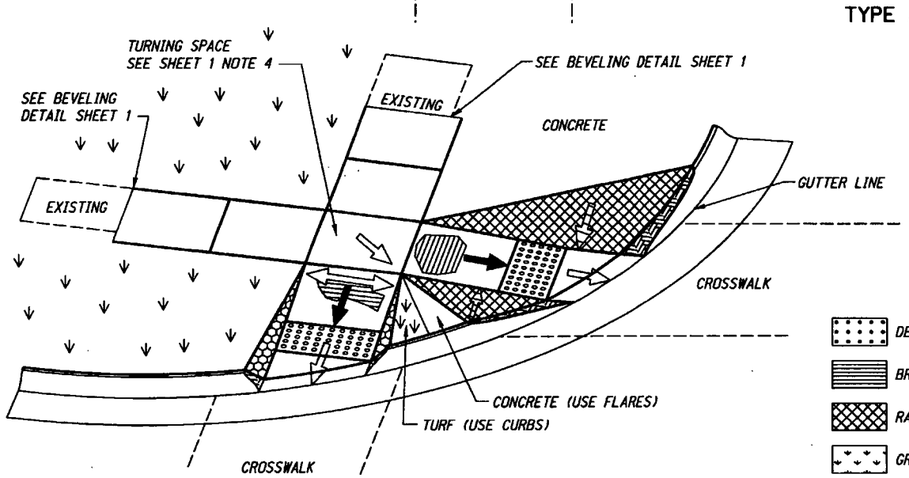
ORIGINAL:
MARCH 22, 2010
DATE

PROFESSIONAL CIVIL ENGINEER — HOWARD A. CHRISTY — NDOR 6035 — STATE OF NEBRASKA

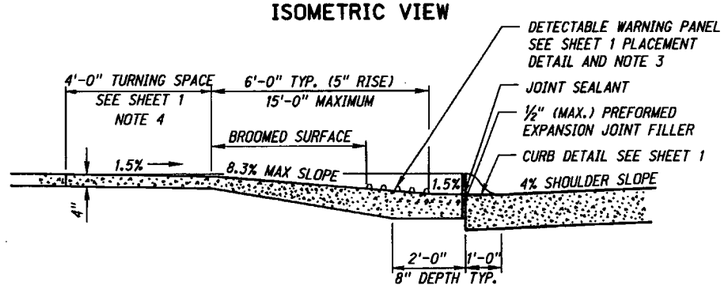
ROADWAY DESIGN DIVISION
Computer: DRDESIGN55
User: dor13017
Date: 02-MAY-2014 11:16
3030-0-F-02
File: 30300e02.dgn
Scale: 1:100
SHEET 2 OF 4



TYPE A PLAN



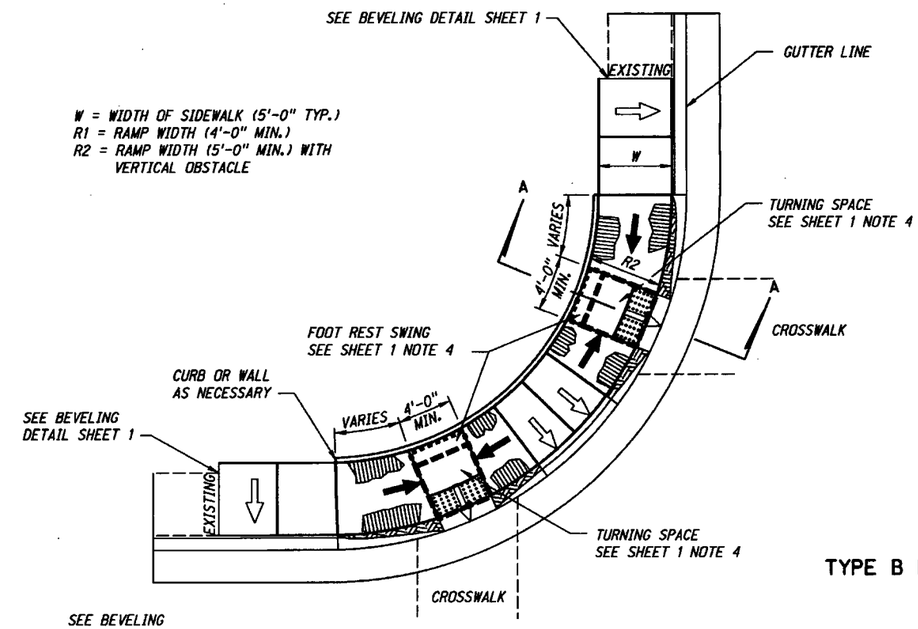
ISOMETRIC VIEW



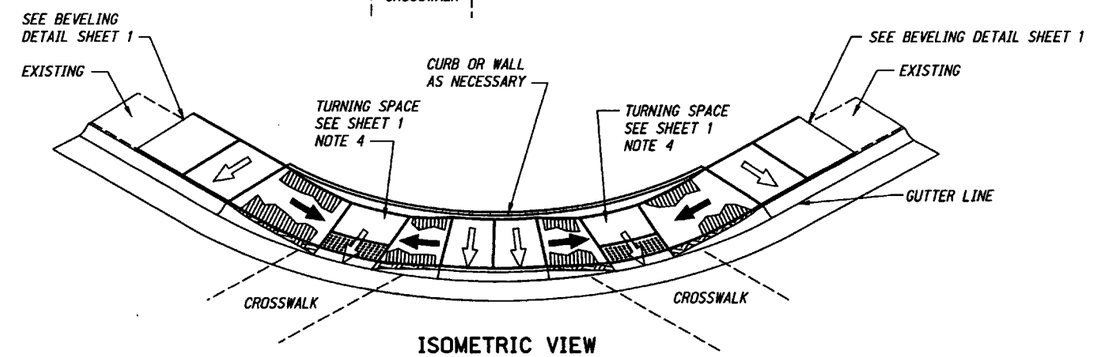
TYPE A CROSS SECTION
SECTION A-A

LEGEND

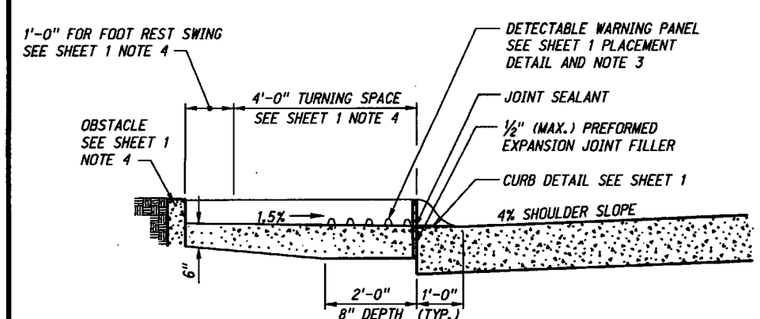
- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORZ.



TYPE B PLAN



ISOMETRIC VIEW



TYPE B CROSS SECTION
SECTION A-A

SLOPE LEGEND

⇦	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
⬅	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
⇦	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE ROADWAY DESIGN ENGINEER. AN EXCEPTION TO THIS IS THE TRANSITIONAL SEGMENT TO EXISTING SIDEWALK MUST CONNECT TO THE EXISTING SIDEWALK PANEL; THIS DOES NOT REQUIRE A STATEMENT OF TECHNICAL INFEASIBILITY. (REF. PROWAG CHAPTER R3 TECHNICAL REQUIREMENTS)

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	OCT 14	CHANGE PM TO ROADWAY DESIGN ENGINEER
R1	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R2

CURB RAMPS

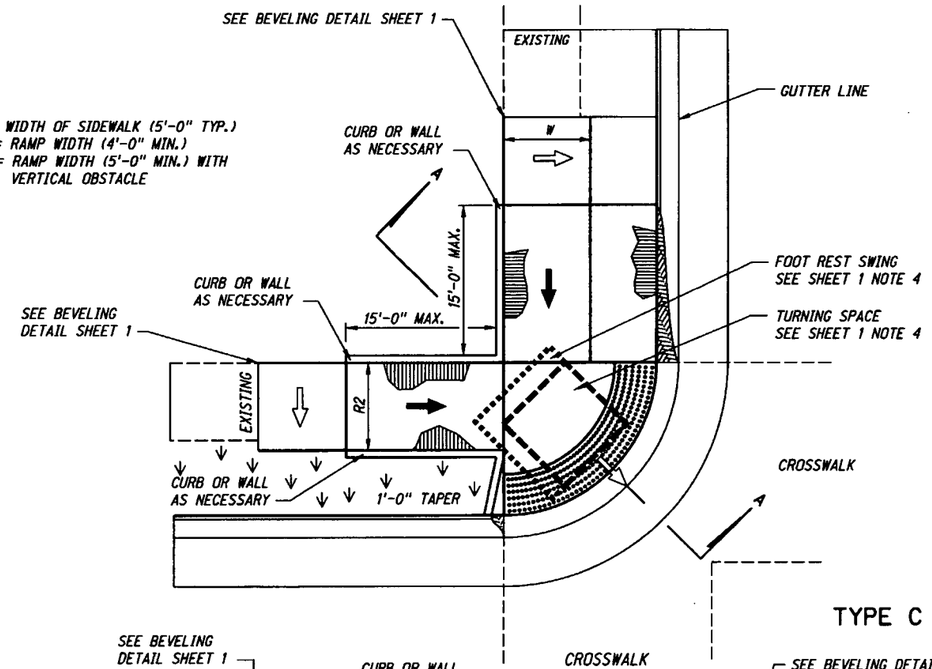
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

OCT 2014
DATE

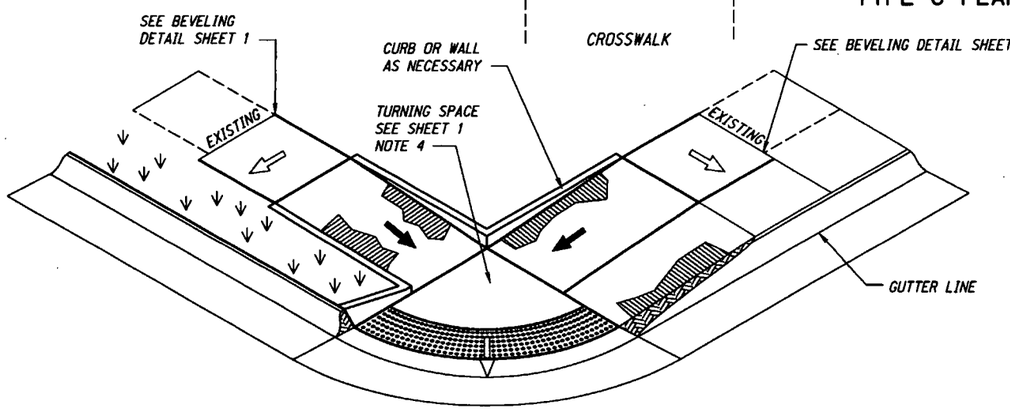
ORIGINAL:
MARCH 22, 2010
DATE

ROADWAY DESIGN DIVISION
Computer: DRDESIGN55
User: dor13017
Date: 02-MAY-2014 11:16
3030-0-E-02
File: 3030Oe02.dgn
Scale: 1:100
SHEET 3 OF 4

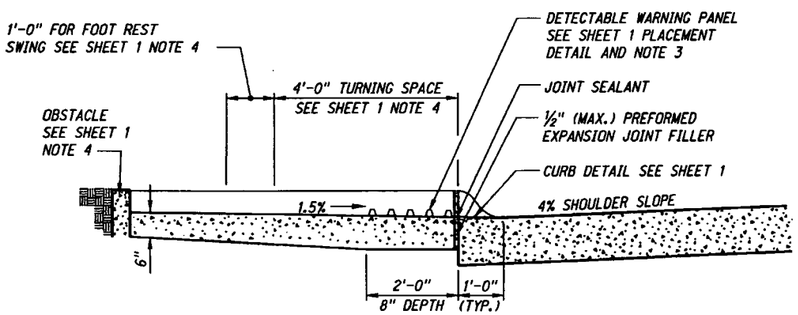
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE C PLAN

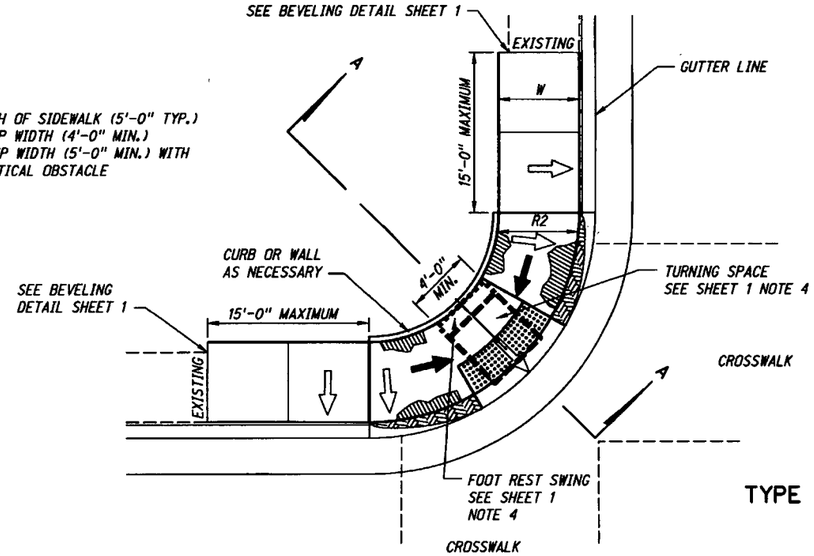


ISOMETRIC VIEW

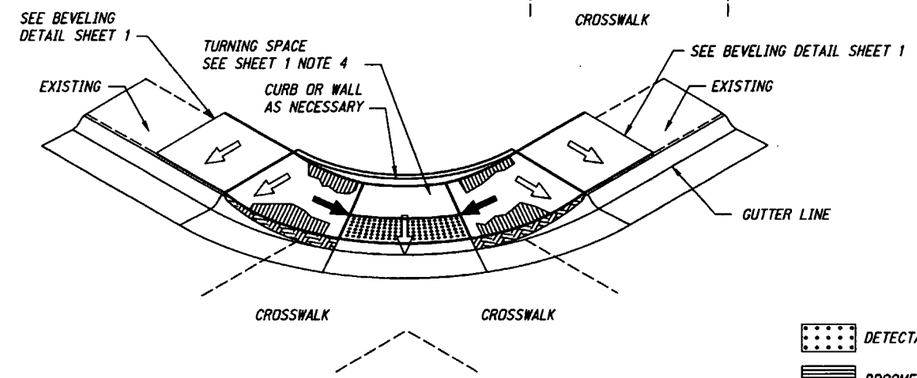


TYPE C CROSS SECTION
SECTION A-A

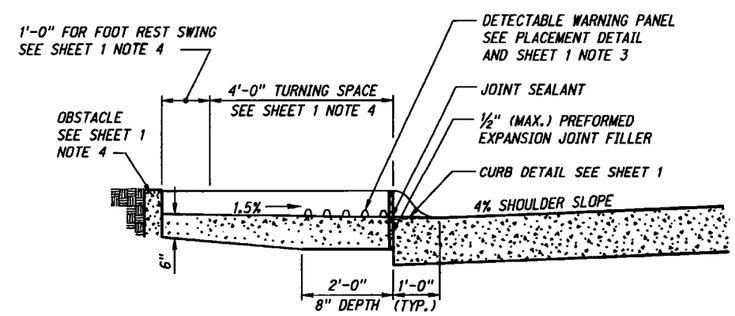
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE D PLAN



ISOMETRIC VIEW



TYPE D CROSS SECTION
SECTION A-A

LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORZ.

SLOPE LEGEND

⇦	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
⬅	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
⇦	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE ROADWAY DESIGN ENGINEER. AN EXCEPTION TO THIS IS THE TRANSITIONAL SEGMENT TO EXISTING SIDEWALK MUST CONNECT TO THE EXISTING SIDEWALK PANEL; THIS DOES NOT REQUIRE A STATEMENT OF TECHNICAL INFEASIBILITY. (REF. PROWAG CHAPTER R3 TECHNICAL REQUIREMENTS)

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	OCT 14	CHANGE PM TO ROADWAY DESIGN ENGINEER
R1	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 303-R2

CURB RAMPS

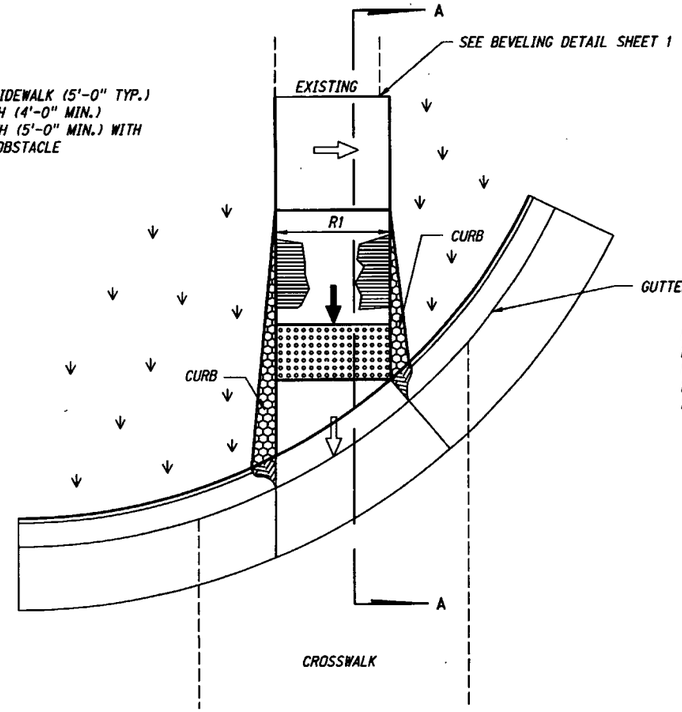
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

Richard A. Schwarz 5/6/14
OCT 2014
DATE

ORIGINAL:
MARCH 22, 2010
DATE

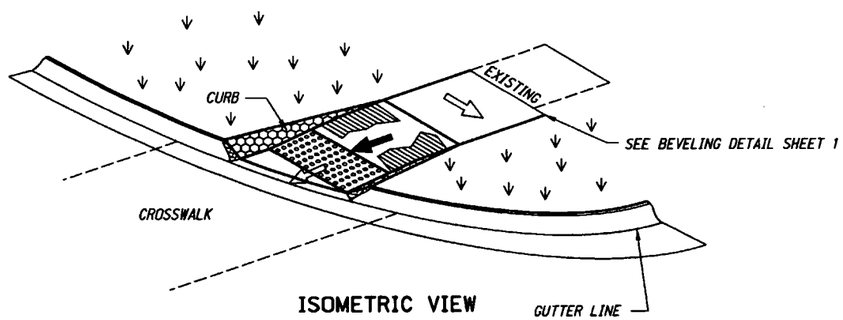
3
4

W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE

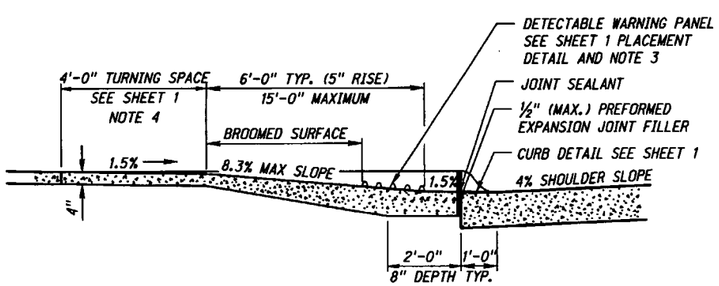


WHERE W IS 9 FT. OR LESS, R = W (MIN. WIDTH = 4 FT.) WHERE W IS GREATER THAN 9 FT., R = 4 FT., EXCEPT BIKE PATH/TRAIL. SEE NOTE 5 (SHEET 1)

TYPE E PLAN



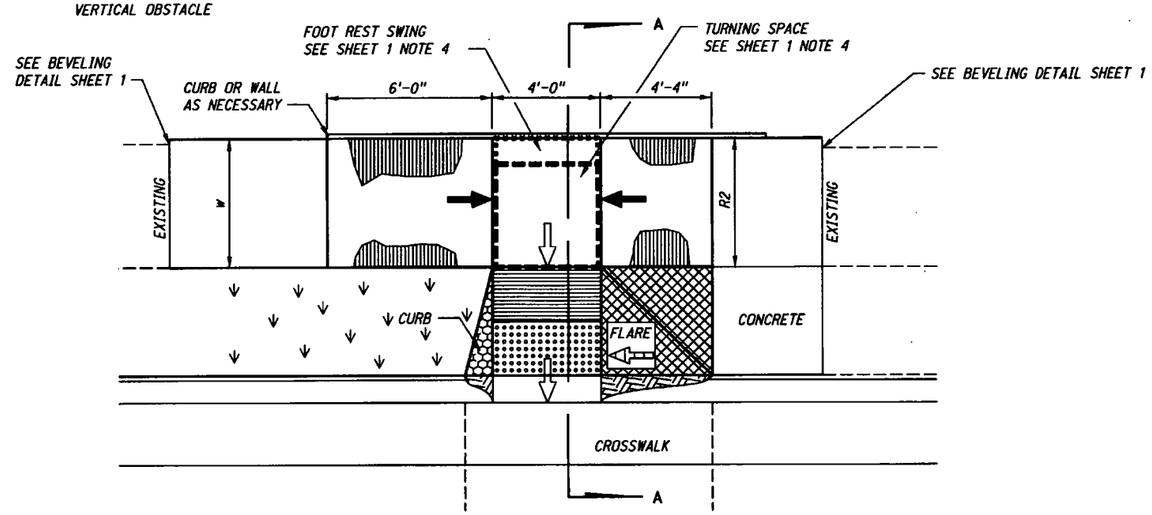
ISOMETRIC VIEW



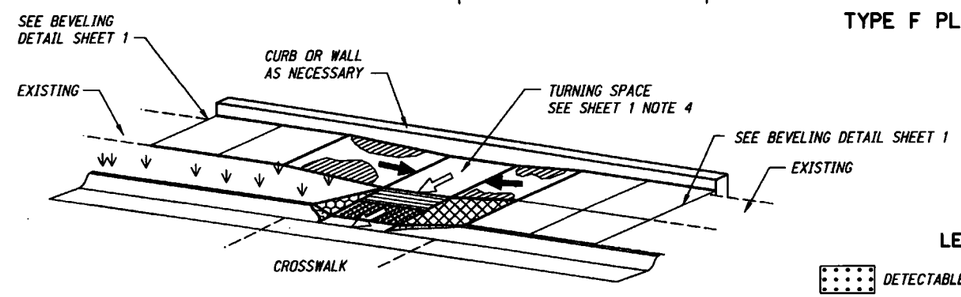
TYPE E CROSS SECTION

SECTION A-A

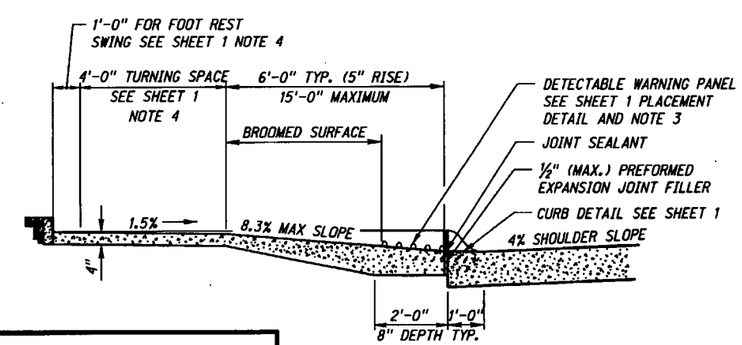
W = WIDTH OF SIDEWALK (5'-0" TYP.)
R1 = RAMP WIDTH (4'-0" MIN.)
R2 = RAMP WIDTH (5'-0" MIN.) WITH VERTICAL OBSTACLE



TYPE F PLAN



ISOMETRIC VIEW



TYPE F CROSS SECTION

SECTION A-A

LEGEND

- DETECTABLE WARNING PANEL (DWP)
- BROOMED CURB RAMP WHEN 5% TO 8.3%
- RAMP FLARE
- GRASS OR NON WALKING SURFACE
- CURB TRANSITION
- CURB FACE SLOPE 1 VERT. : 2 HORZ.

SLOPE LEGEND

⇦	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
←	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
⇦	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE ROADWAY DESIGN ENGINEER. AN EXCEPTION TO THIS IS THE TRANSITIONAL SEGMENT TO EXISTING SIDEWALK MUST CONNECT TO THE EXISTING SIDEWALK PANEL; THIS DOES NOT REQUIRE A STATEMENT OF TECHNICAL INFEASIBILITY. (REF. PROWAG CHAPTER R3 TECHNICAL REQUIREMENTS)

REV. NO.	DATE	DESCRIPTION OF REVISION
R2	OCT 14	CHANGE PM TO ROADWAY DESIGN ENGINEER
R1	FEB 13	ALL OF PLAN REWORKED (PROWAG)

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 303-R2

CURB RAMPS

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER — JAMES J. KNOTT — E-6035 — STATE OF NEBRASKA

OCT 2014
DATE

ORIGINAL:
MARCH 22, 2010
DATE

4
4

ROADWAY DESIGN DIVISION

Computer: DRDESIGN55 User: dcr13017 Date: 02-MAY-2014 11:16

File: 3030e02.dgn 3030-0-E-02
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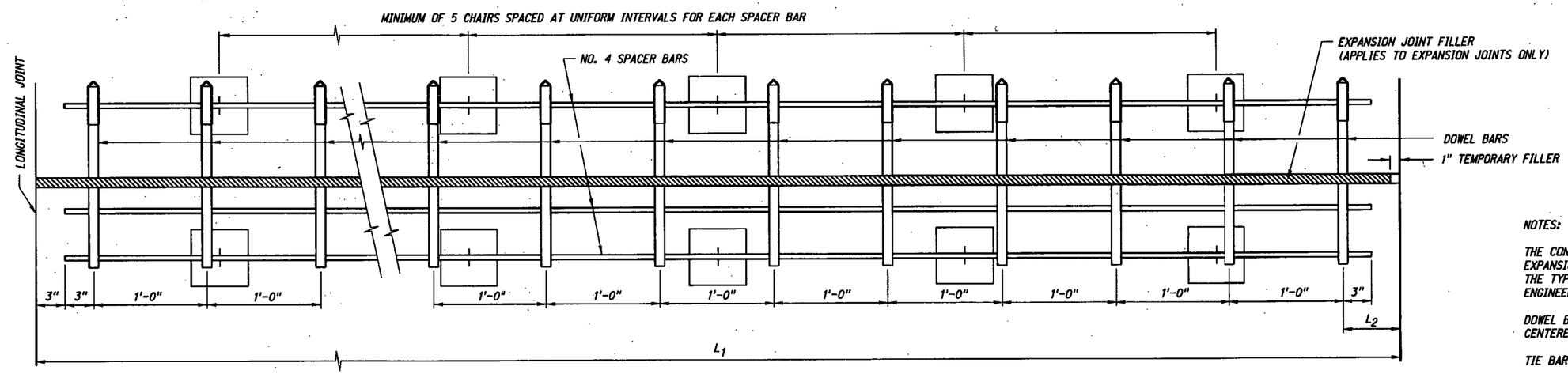
SHEET 4 OF 4



ASSEMBLY PLAN

DOWEL BAR HEIGHT AND DIAMETER			
PAVEMENT THICKNESS (T)	MINIMUM BAR DIA.	DOWEL BAR HEIGHT (T/2)	SKEW TOLERANCE
LESS THAN 10"	1¼"	T/2 ± ½"	¼"
10" OR MORE	1½"	T/2 ± ½"	¼"

DOWEL BAR LOCATION TABLE				
L_1	L_2	L_3	#BARS	DESCRIPTION
12'-0"	6"	5"	12	12'-0" PAVEMENT
15'-0"	2'-6"	2'-5"	13	15'-0' PAVEMENT (INCLUDES 3'-0" SHOULDER)
16'-0"	3'-6"	3'-5"	13	16'-0" PAVEMENT (INCLUDES 4'-0" SHOULDER)
16'-0"	6"	5"	16	16'-0" RAMP & LOOPS
≥14'-6"	1'-6"	1'-5"	VARIES	PAVEMENT WITH CURB
≥14'-6"	2'-6"	2'-5"	VARIES	PAVEMENT WITH CURB
* ≥ 6'-0"	6"	5"	VARIES	IRREGULAR AREAS (WIDEN, FILLETS, GORE .....)

NOTES:

THE CONTRACTOR MAY SUBSTITUTE OTHER DESIGNS FOR EXPANSION AND CONTRACTION JOINT SUPPORTS IN LIEU OF THE TYPE SHOWN WITH PRIOR WRITTEN APPROVAL BY THE ENGINEER.

DOWEL BARS SHALL BE A MINIMUM OF 17¾" IN LENGTH, CENTERED ON JOINTS AND BE SMOOTH BARS.

TIE BARS SHALL BE DEFORMED BARS.

FOR LOAD TRANSFER DEVICES AT EXPANSION JOINTS IN LANES OTHER THAN THE LANES SHOWN, MAINTAIN THE SPACING OF THE 1'-6" DOWEL BARS AT 1'-0" INTERVALS.

THE ENDS OF THE NO. 4 SPACER BARS SHALL NOT BE LESS THAN 3" FROM THE EDGES OF THE PAVEMENT OR THE LONGITUDINAL JOINT.

THE CONTRACTOR MAY USE A MACHINE FOR PLACING THE LONGITUDINAL TIE BARS IN LIEU OF THE TIE BAR PINS. IF A MECHANICAL TIE BAR PLACEMENT MACHINE IS NOT USED, TIE BAR PINS AS SHOWN SHALL BE USED.

TIE, DOWEL & SPACER BARS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

KEY TYPE LONGITUDINAL JOINTS AND TRANSVERSE CONSTRUCTION JOINTS SHALL BE EDGED WITH ¼" R. AT TIME OF CONCRETE PLACEMENT.

CONCRETE PAVEMENT SHALL BE TINED UNLESS OTHERWISE SHOWN IN THE PLANS.

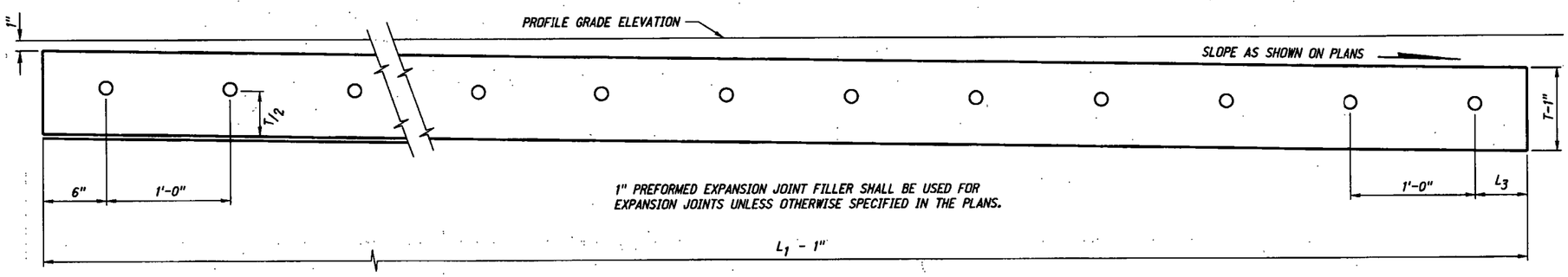
EXPANSION JOINTS SHALL BE INSTALLED AT LOCATIONS SHOWN IN THE PLANS.

PAVEMENT PLACED ADJACENT TO R.R. TRACKS REQUIRES 3-EXPANSION JOINTS SPACED AT APPROX. 49'-6" INTERVALS.

EXPANSION JOINTS SHALL NOT BE SKEWED.

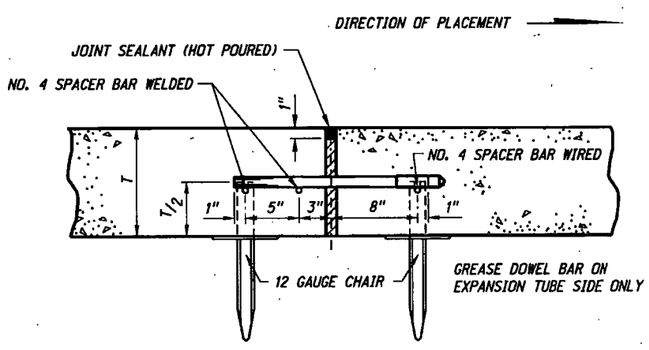
T= PAVEMENT THICKNESS

* THE DEPARTMENT REQUIRES THAT DOWEL BASKETS BE PLACED IN ALL CONTRACTION JOINTS WHICH ARE 6'-0" OR WIDER. THE DOWEL BASKETS SHALL BE PLACED TRANSVERSE TO THE DIRECTION OF THE PREDOMINANT TRAFFIC DIRECTION.

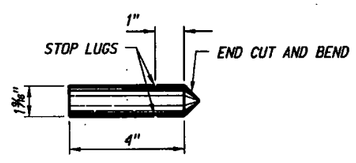


PREFORMED EXPANSION JOINT FILLER

(TO BE USED AT EXPANSION JOINTS ONLY)



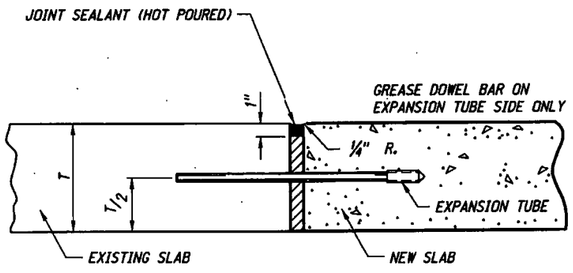
SECTION



EXPANSION TUBE

EXPANSION JOINT

(SUBSIDIARY)



NOTES:
DOWEL BARS SHALL BE DRILLED TO A DEPTH OF 8" INTO EXISTING SLAB AND GROUTED.

SECTION

REV. NO.	DATE	DESCRIPTION OF REVISION
R9	JUL. 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 329-R9

8 TO 16 INCH CONCRETE PAVEMENT

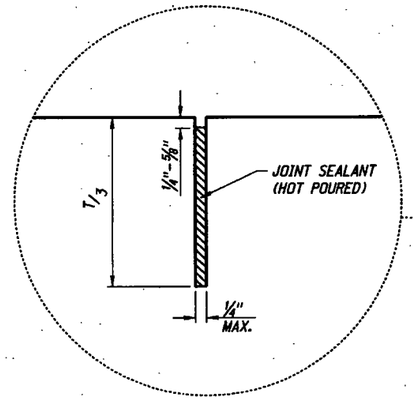
PROFESSIONAL CIVIL ENGINEER — STATE OF NEBRASKA — E-6574

FHWA APPROVED:

3/30/2011
DATE

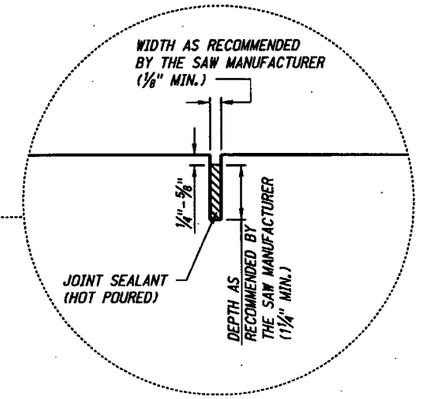
ORIGINAL:
OCTOBER 25, 1994
DATE

1/4



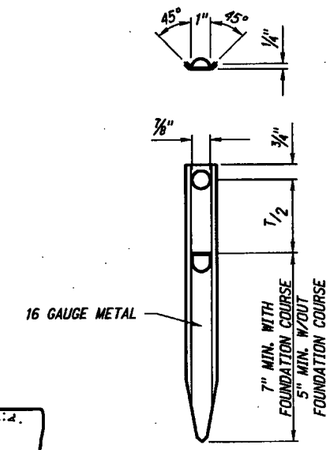
CONVENTIONAL SAWING

OR

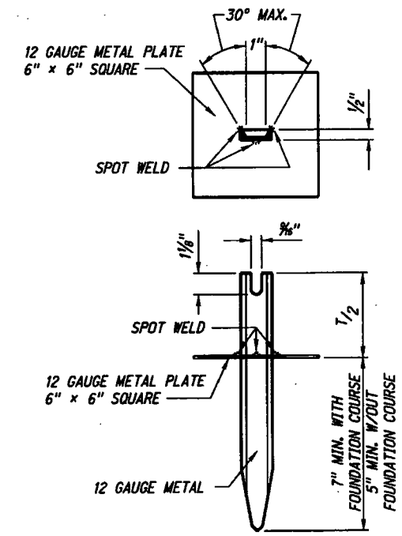


EARLY-SAW CUT

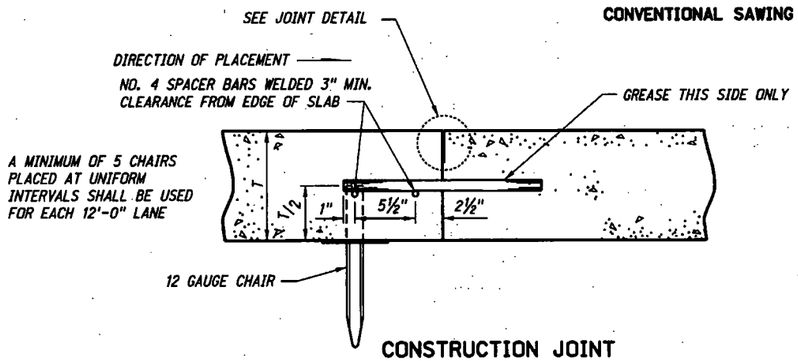
JOINT DETAIL



TIE BAR PIN

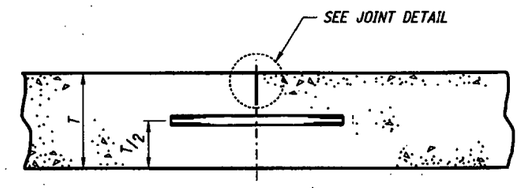


CHAIR

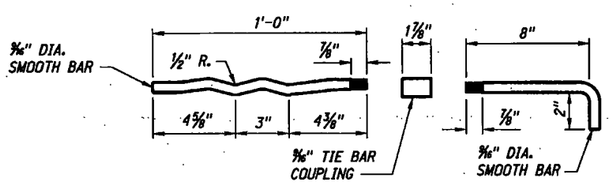


CONSTRUCTION JOINT

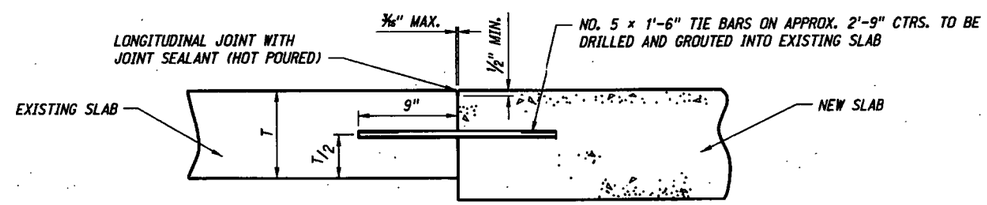
THE DOWEL BAR SPACING SHALL BE THE SAME AS SHOWN FOR THE EXPANSION JOINT. REFER TO BAR LOCATION TABLE AND THE DOWEL BAR HEIGHT AND DIAMETER TABLE ON SHEET 1 OF 4.



CONTRACTION JOINT

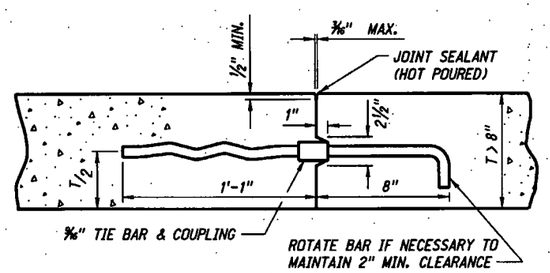


DETAILS OF "W" BAR



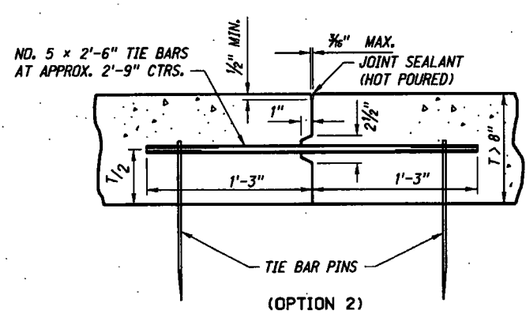
TIE BARS ARE TO BE INSTALLED WHERE NEW CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT

DETAILS OF TIE BAR



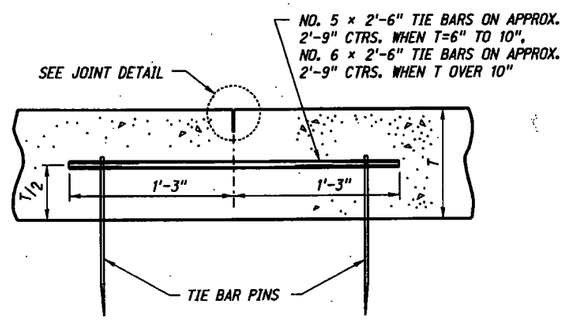
(OPTION 1)
KEY TYPE

NO. 5 HOOK AND W-BARS AT APPROX. 2'-9" CTRS.
OR 9/16" HOOK AND W-BARS AT APPROX. 2'-9" CTRS.



(OPTION 2)
KEY TYPE

KEY TYPE JOINT SHALL BE USED ON ALL LONGITUDINAL CONSTRUCTION JOINTS WHEN THE ADJACENT LANE IS NOT PLACED AT THE SAME TIME



SAWED

WHEN TWO ADJACENT LANES ARE PLACED AT THE SAME TIME, THE LONGITUDINAL JOINT COMMON TO THE LANES SHALL BE SAWED

LONGITUDINAL JOINTS

NOTE:
NO TIE BARS SHALL BE CLOSER THAN 1'-3" TO A TRANSVERSE JOINT. ALL LONGITUDINAL JOINTS BETWEEN LANES AND BETWEEN LANES AND SHOULDERS MUST BE TIED. MEDIAN SHOULD NOT BE TIED.

NOTE: T = PAVEMENT THICKNESS

REV. NO.	DATE	DESCRIPTION OF REVISION
R9	JUL. 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 329-R9

8 TO 16 INCH CONCRETE PAVEMENT

PROFESSIONAL CIVIL ENGINEER
JAMES R. JOSTAD
E-6574
STATE OF NEBRASKA

FHWA APPROVED:
3/30/2011
DATE

ORIGINAL:
OCTOBER 25, 1994
DATE

2/4

Roadway Design Division
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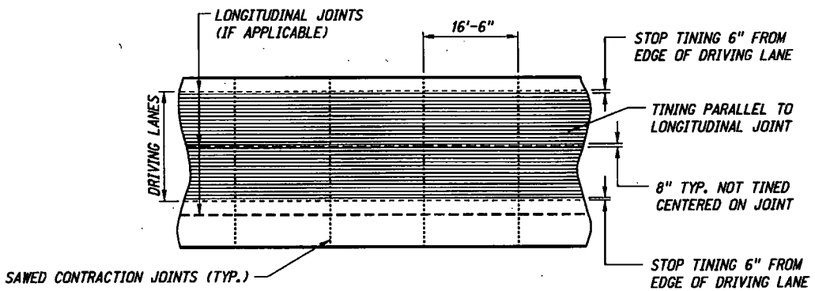
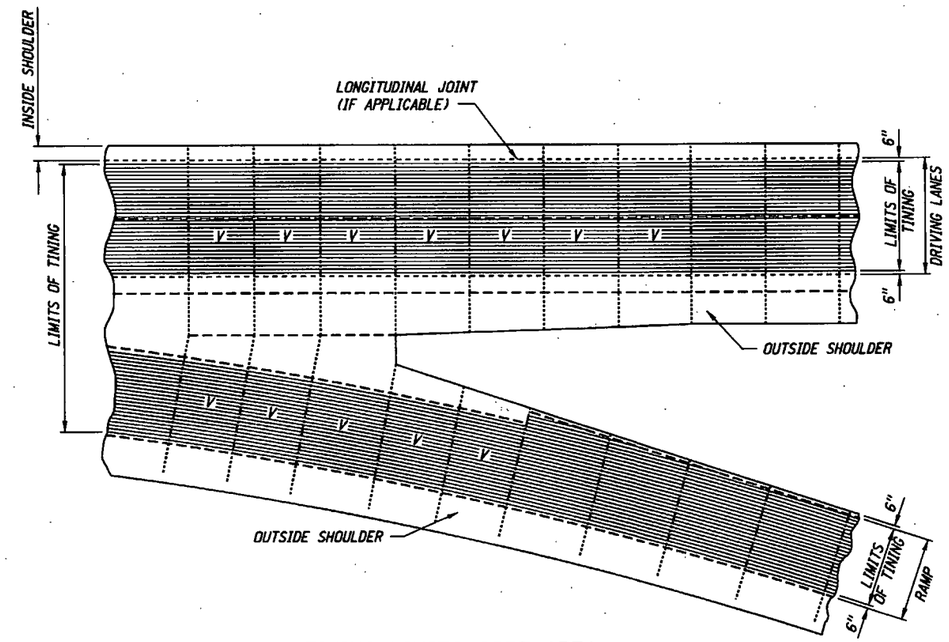
10011
SHEET 3 OF 4



TINING WITH CONCRETE SHOULDER



TINING LIMITS GORE AREA

NOTES:

16'-6" TRANSVERSE JOINT SPACING IS THE STANDARD JOINT SPACING REGARDLESS OF THE PAVEMENT THICKNESS.

V VARIES FROM 10'-0" TO MAX. 16'-6".

THE LONGITUDINAL JOINT BETWEEN THE SHOULDER AND THE 12'-0" DRIVING LANE IS NOT REQUIRED FOR SHOULDER WIDTHS OF 4'-0" OR LESS.

TRANSVERSE JOINTS FOR DOWELED CONCRETE PAVEMENT SHALL BE CONSTRUCTED PERPENDICULAR TO THE ROADWAY.

ALL CONCRETE SURFACES, NOT TINED, WILL REQUIRE TRANSVERSE BROOMING OR BURLAP DRAG. (NOT APPLICABLE TO SHOULDERS)

REV. NO.	DATE	DESCRIPTION OF REVISION
R9	JUL. 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 329-R9

8 TO 16 INCH CONCRETE PAVEMENT

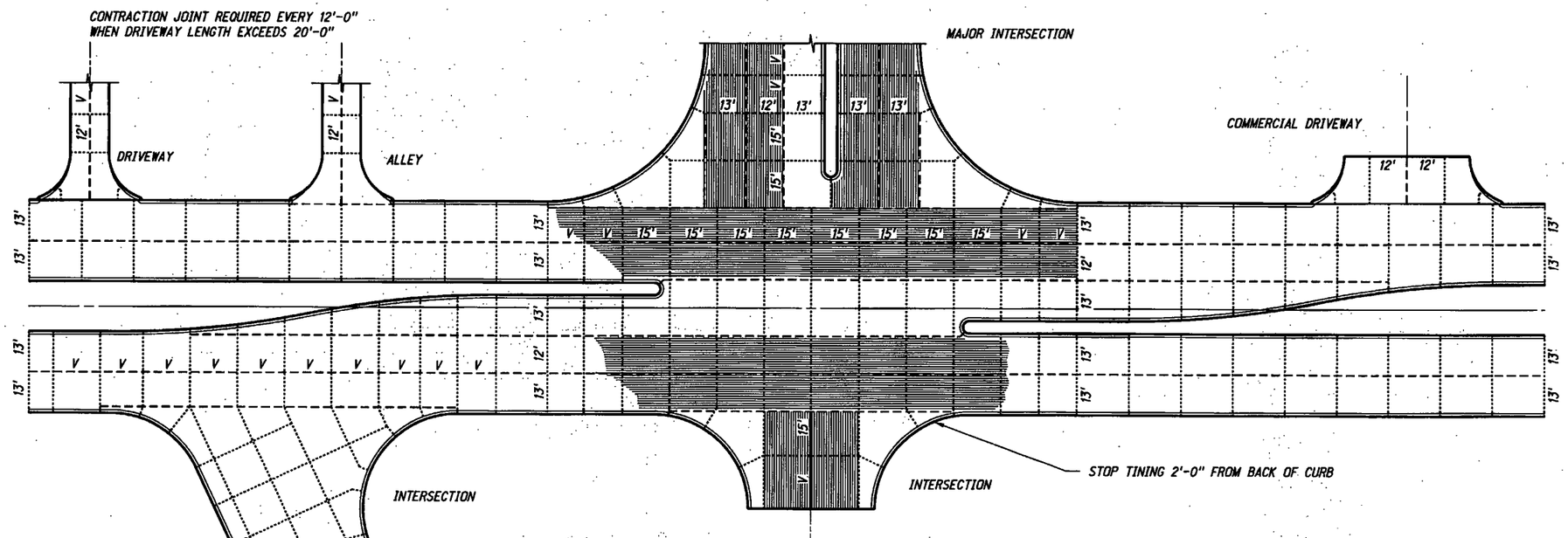
PROFESSIONAL CIVIL ENGINEER
MOSTAFA JAMSHIDI
E-6514
STATE OF NEBRASKA

FHWA APPROVED:

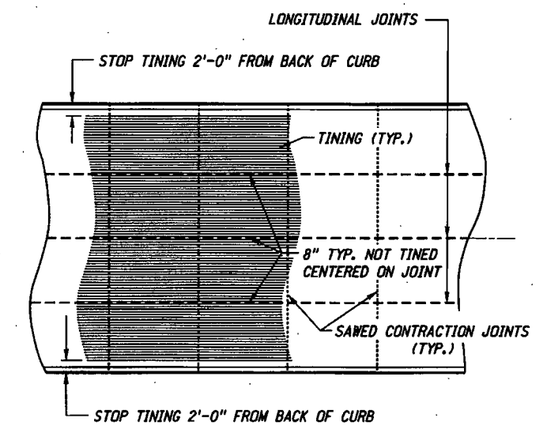
3/30/2011
DATE

ORIGINAL:
OCTOBER 25, 1994
DATE

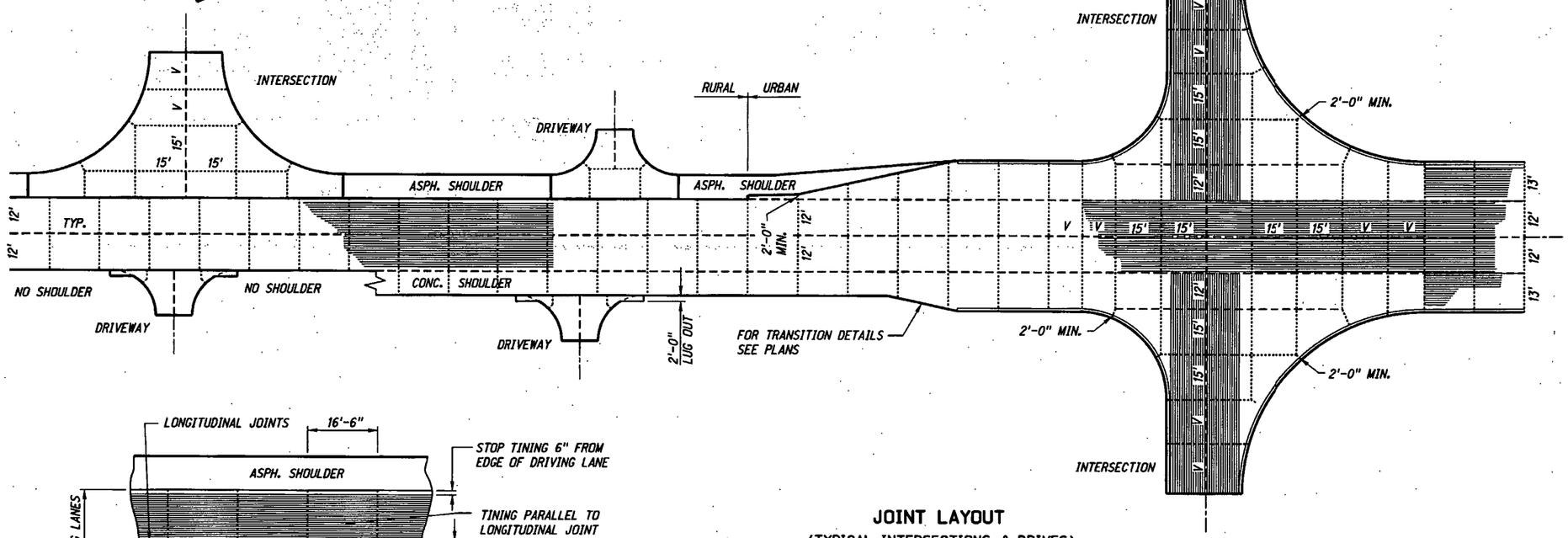
3
4



JOINT LAYOUT
(TYPICAL INTERSECTIONS WITH RAISED ISLANDS)



TINING LIMITS



JOINT LAYOUT
(TYPICAL INTERSECTIONS & DRIVES)

LEGEND
- SAWED CONTRACTION JOINT
- LONGITUDINAL JOINT

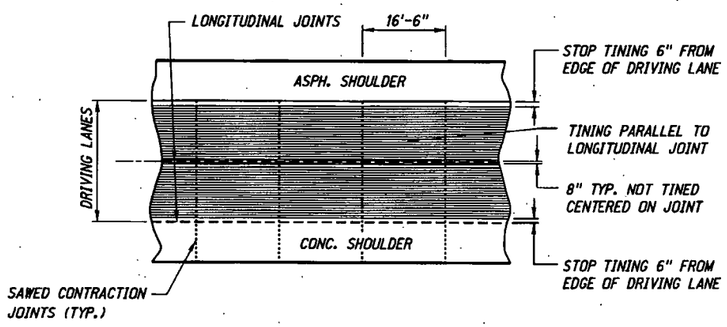
NOTES:

16'-6" TRANSVERSE JOINT SPACING IS THE STANDARD JOINT SPACING REGARDLESS OF THE PAVEMENT THICKNESS.

V VARIES FROM 10'-0" TO MAX. 16'-6".

VARIABLE SPACING IS USED AROUND INTERSECTIONS AND LARGE DRIVEWAYS WHICH IS TIED TO THE CONCRETE LANES OR SHOULDERS TO MATCH THE JOINTS.

ALL CONCRETE SURFACES, NOT TINED, WILL REQUIRE TRANSVERSE BROOMING OR BURLAP DRAG. (NOT APPLICABLE TO SHOULDERS)



RURAL TINING LIMITS WITH SURFACED SHOULDERS

REV. NO.	DATE	DESCRIPTION OF REVISION
R9	JUL. 11	JOINT: EARLY SAW CUT
R8	OCT. 10	CHANGED TINING INFORMATION
R7	MAR. 05	MULTIPLE CHANGES

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 329-R9

8 TO 16 INCH CONCRETE PAVEMENT

PROFESSIONAL CIVIL ENGINEER — GHOLAMREZA JAMSHIDI — E-6574 — STATE OF NEBRASKA

FHWA APPROVED:

3/30/2011
DATE

ORIGINAL:
OCTOBER 25, 1994
DATE

4 / 4

Roadway Design Division

DRDESIGN55
dcr13017
24-FEB-2011 09:46

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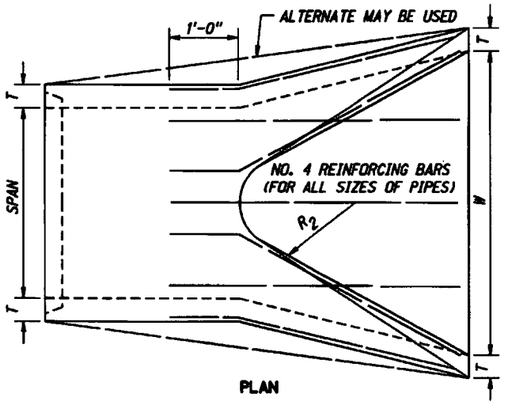
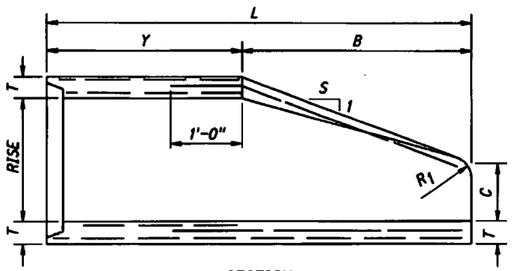


PLAN

EQUIV. DIA.	NOMINAL DIMENSIONS										
	SPAN	RISE	L ± 6"	B	Y ± 4½"	C	W ± 2"	R_1	R_2	S APPROX.	T MIN.
18"	23"	14"	6'-0"	2'-3"	3'-9"	8½"	3'-0"	3"	6"	2.3	2½"
24"	30"	19"	6'-0"	3'-3"	2'-9"	9"	4'-0"	3"	7"	2.9	3"
30"	38"	24"	6'-0"	4'-6"	1'-6"	10"	5'-0"	3"	9"	3	3½"
36"	45"	29"	8'-0"	5'-0"	3'-0"	11"	6'-0"	3"	1'-0"	2.7	4"
42"	53"	34"	8'-0"	5'-0"	3'-0"	1'-4"	6'-6"	6"	1'-1"	2.6	4½"
48"	60"	38"	8'-0"	5'-0"	3'-0"	1'-9"	7'-0"	6"	1'-2"	2.7	5"
54"	68"	43"	8'-0"	5'-0"	3'-0"	2'-1"	7'-6"	6"	1'-4"	2.5	5½"
60"	76"	48"	8'-0"	5'-0"	3'-0"	2'-6"	8'-0"	6"	1'-6"	2.5	6"



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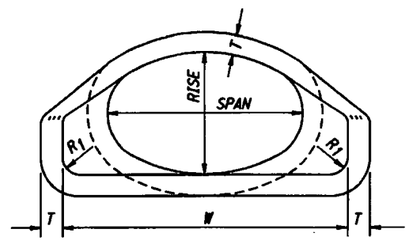
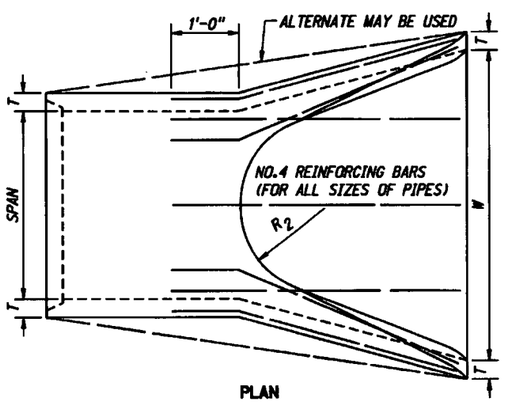


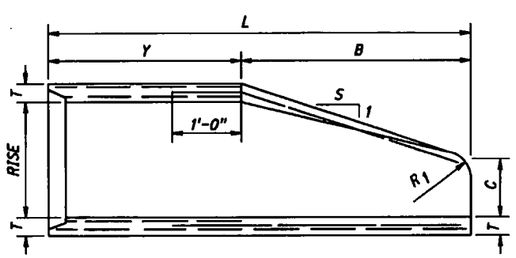
ELEVATION

DETAILS OF CONCRETE FLARED END SECTION
(FOR REINFORCED CONCRETE ELLIPTICAL PIPE)



PLAN

EQUIV. DIA.	NOMINAL DIMENSIONS										
	SPAN	RISE	L ± 6"	B	Y ± 4½"	C	W ± 2"	R_1	R_2	S APPROX.	T MIN.
18"	22"	14"	6'-0"	2'-3"	3'-9"	7"	3'-0"	2"	1'-0"	2.2	2½"
24"	29"	18"	6'-0"	3'-3"	2'-9"	9"	4'-0"	3"	1'-2"	2.4	3"
30"	36"	23"	8'-0"	4'-0"	4'-0"	10"	5'-0"	3"	1'-3"	2.3	3½"
36"	44"	27"	8'-0"	5'-0"	3'-0"	11"	6'-0"	6"	1'-8"	2.4	4"
42"	51"	32"	8'-0"	5'-0"	3'-0"	1'-4"	6'-6"	6"	1'-10"	2.4	4½"
48"	59"	36"	8'-0"	5'-0"	3'-0"	1'-9"	7'-0"	6"	1'-10"	2.3	5"
54"	65"	40"	8'-0"	5'-0"	3'-0"	2'-0"	7'-6"	6"	2'-0"	2.1	5½"
60"	74"	45"	8'-0"	5'-0"	3'-0"	2'-3"	8'-0"	6"	1'-9"	2	6"
72"	88"	54"	8'-4"	6'-6"	1'-10"	2'-11"	10'-0"	6"	2'-0"	2	7"



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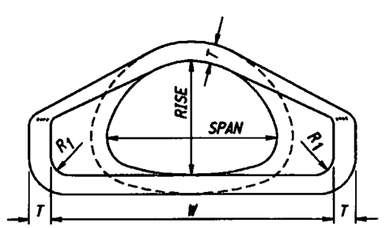
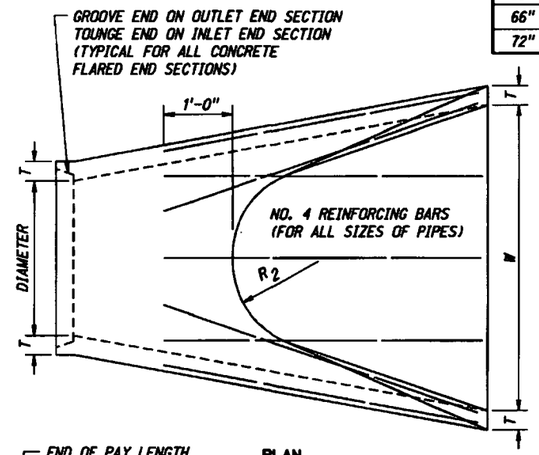


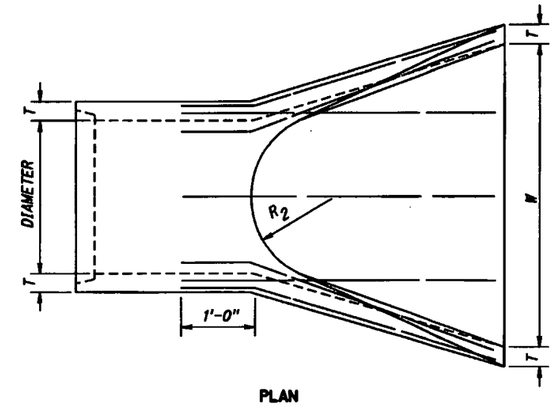
ELEVATION

DETAILS OF CONCRETE FLARED END SECTION
(FOR REINFORCED CONCRETE PIPE-ARCH)

PIPE DIA.	NOMINAL DIMENSIONS								
	L ± 6"	B	Y ± 4½"	C	W ± 2"	R_1	R_2	S APPROX.	T MIN.
12"	6'-0⅞"	2'-0"	4'-0⅞"	4"	2'-0"	1'-0⅛"	9"	3	2"
15"	6'-1"	2'-3"	3'-10"	6"	2'-6"	1'-0½"	11"	3	2¼"
18"	6'-1"	2'-3"	3'-10"	9"	3'-0"	1'-3½"	1'-0"	3	2½"
24"	6'-1½"	3'-7½"	2'-6"	9½"	4'-0"	1'-4 13/16"	1'-2"	3	3"
30"	6'-1¾"	4'-6"	1'-7¾"	1'-0"	5'-0"	1'-6½"	1'-3"	3	3½"
36"	8'-1¾"	5'-3"	2'-10¾"	1'-3"	6'-0"	2'-0 5/16"	1'-8"	3	4"
42"	8'-2"	5'-3"	2'-11"	1'-9"	6'-6"	2'-3½"	1'-10"	3	4½"
48"	8'-2"	6'-0"	2'-2"	2'-0"	7'-0"	2'-4½"	1'-10"	3	5"
54"	8'-4"	5'-5"	2'-11"	2'-3"	7'-6"	2'-9⅛"	2'-0"	2.4	5½"
60"	8'-3"	5'-0"	3'-3"	2'-6"	8'-0"	3'-0 11/16"	2'-0"	2	6"
66"	8'-3"	6'-6"	1'-9"	2'-6"	9'-0"	3'-0⅛"	2'-0"	2	6½"
72"	8'-3"	6'-6"	1'-9"	2'-6"	9'-0"	3'-2 5/16"	2'-0"	2	7"



PLAN



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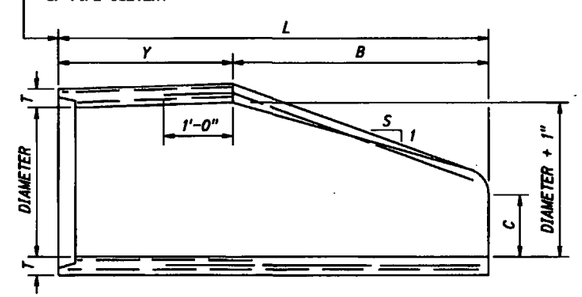

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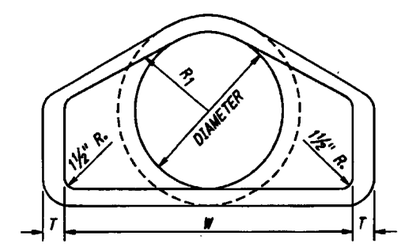

ELEVATION

DETAILS OF CONCRETE FLARED END SECTION
(FOR REINFORCED CONCRETE PIPE)

NOTES

CONCRETE FOR FLARED END SECTIONS SHALL BE IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M170, M206, AND M207, FOR CLASS II PIPE.

REINFORCEMENT IN THE "Y" SECTION SHALL BE IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M170, M206, AND M207, FOR CLASS II PIPE.

IN ADDITION TO THE REINFORCING BARS SHOWN, REINFORCEMENT IN THE "B" SECTION SHALL HAVE A CROSS-SECTIONAL AREA EQUAL TO THAT OF ONE LAYER OF STEEL IN THE "Y" SECTION.

REV. NO.	DATE	DESCRIPTION OF REVISION
R3	AUG.99	CHANGED NOTES
R2	MAR. 89	SPAN.RISE SIZES FOR C.M.PIPE-ARCH
R1	MAR. 85	MULTIPLE CHANGES

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 410-R3

FLARED END SECTIONS FOR CULVERT PIPES

PROFESSIONAL STRUCTURAL ENGINEER — STATE OF NEBRASKA

APPROVED:

FEBRUARY 22, 1974
DATE

2
2

ROADWAY DESIGN DIVISION
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User: dor13017
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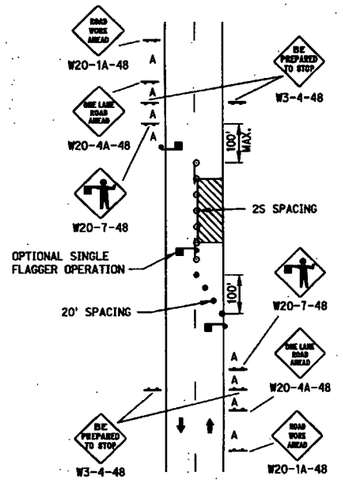
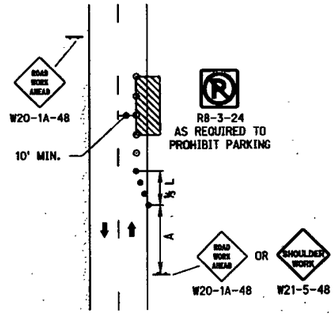
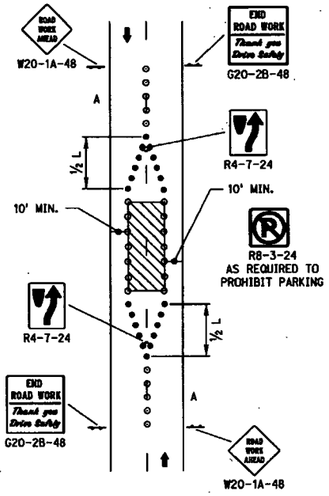


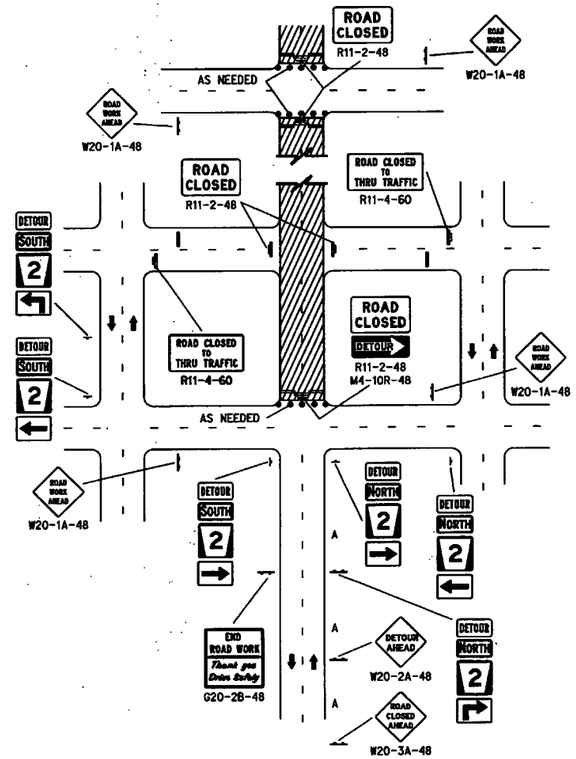
ONE LANE CLOSED WITH FLAGGER



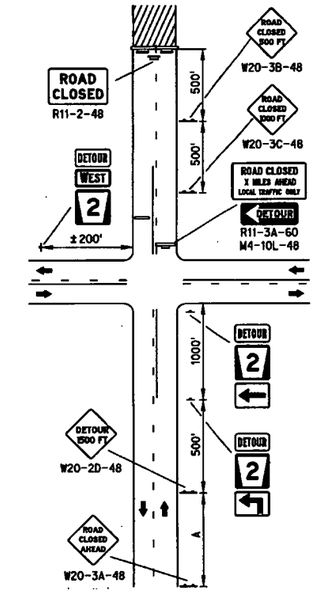
SHOULDER OR PARKING LANE CLOSED



WORK IN CENTER OF ROAD WITH LOW TRAFFIC VOLUMES



ROAD CLOSED AT DETOUR



ROAD CLOSED BEYOND DETOUR

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

L = MINIMUM LENGTH OF TAPER.

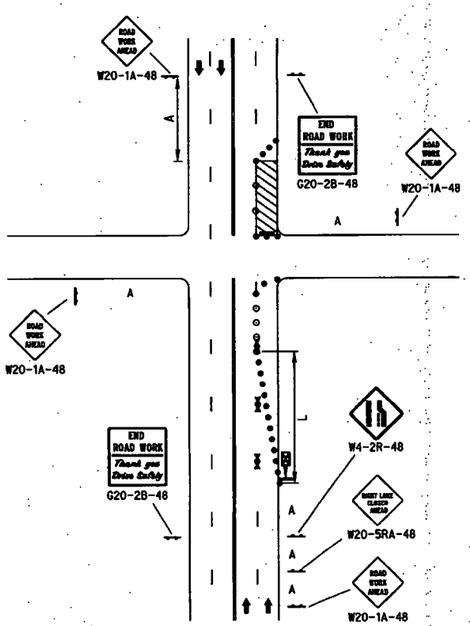
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

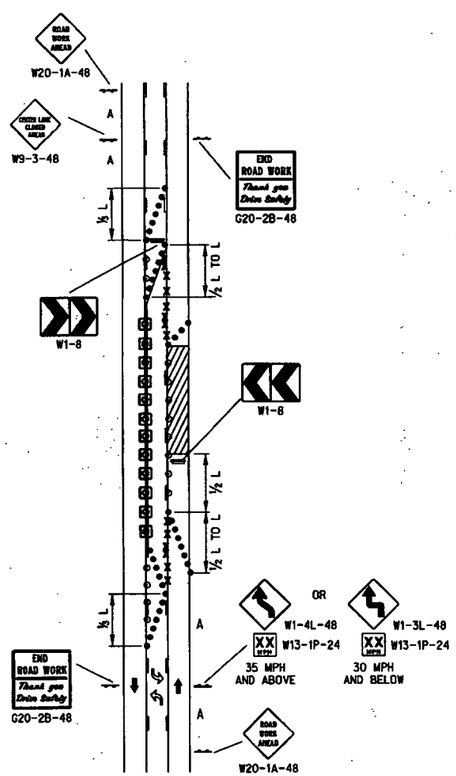
NOTES

1. ALL BARRICADE AND SIGN LOCATIONS ON THIS PLAN ARE APPROXIMATE, AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS. THE SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE THE VIEW OF OTHER TRAFFIC CONTROL DEVICES.
2. MINIMUM WIDTH OF TRAVELLED LANE SHALL BE AS REQUIRED BY THE ENGINEER.
3. FLASHING ARROW PANEL REQUIRED ON ALL ROADWAYS WITH POSTED SPEED LIMIT 45 MPH OR HIGHER. THE USE OF A FLASHING ARROW PANEL IS OPTIONAL ON ROADWAYS WITH A POSTED SPEED OF 40 MPH OR LOWER.
4. LONG-TERM FLASHING ARROW PANELS IN URBAN RESIDENTIAL AREAS WHERE DIESEL ENGINE NOISE WILL BE DISRUPTIVE TO RESIDENTS, MAY BE REQUIRED TO OPERATE BY 120 VAC, OR IF SIGHT DISTANCE ALLOWS, A SOLAR POWERED ARROW PANEL MAY BE USED.
5. FOR SHORT-TERM WORK (LESS THAN 24 HOURS) SIGN G20-2B-48 (END ROAD WORK, THANK YOU, DRIVE SAFELY) MAY BE OMITTED.
6. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT (S). WHERE CHANNELIZING DEVICES ARE USED ALONG THE WORK AREA, THE SPACING MAY BE INCREASED TO THE DISTANCE IN FEET EQUAL TO THE SPEED LIMIT, DOUBLED (2 × S). SEE "TAPER FORMULA" TABLE FOR MORE INFORMATION.
7. FOR LANE CLOSURES OVER 72 HOURS, ALL CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED. ON ASPHALT SURFACES, DURABLE PAVEMENT MARKINGS MAY BE COVERED WITH APPROVED BLACK TEMPORARY PAVEMENT MARKING TAPE.
8. DESIGNATION OF SPEED SHOWN ON ADVISORY SPEED SIGNS W13-1P SHALL BE DETERMINED BY THE ENGINEER IN ACCORDANCE WITH MUTCD. THE SPEED DESIGNATION SHALL BE AS HIGH AS PRACTICAL AND FEASIBLE.

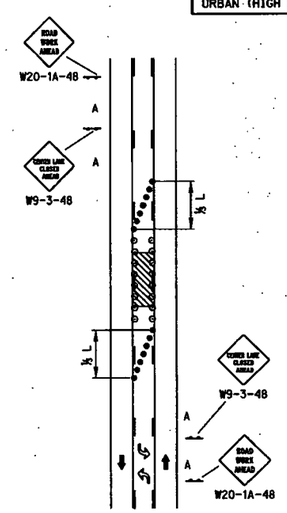
ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'



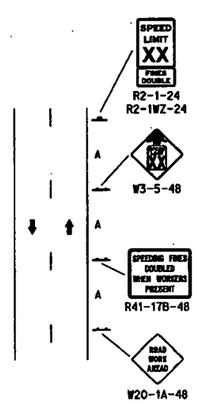
LANE CLOSED NEAR INTERSECTION (RIGHT LANE CLOSED)



3-LANE ROADWAY ONE LANE CLOSED



TWO-WAY LEFT TURN LANE CLOSED



TYPICAL ADVANCED SIGNING

REV. NO.	DATE	DESCRIPTION OF REVISION
R1	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF ROADS

STANDARD PLAN NO. 924-R1

URBAN TRAFFIC CONTROL PLAN

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER DANIEL J. WADDLE E-6289 STATE OF NEBRASKA

JUNE 2014
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

1
3

ROADWAY DESIGN DIVISION
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User: dor13017
Date: 21-FEB-2014 15:31
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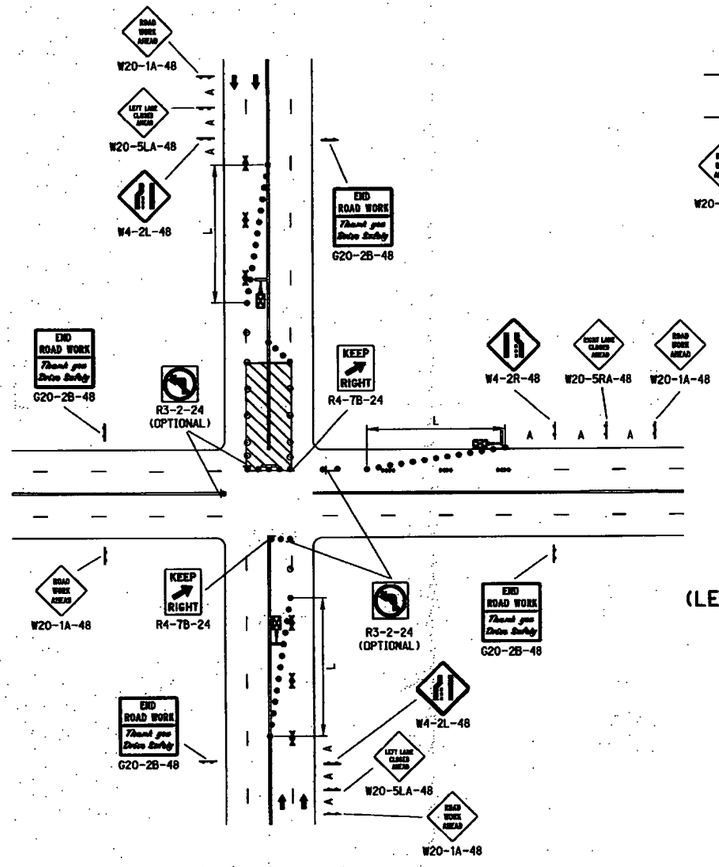
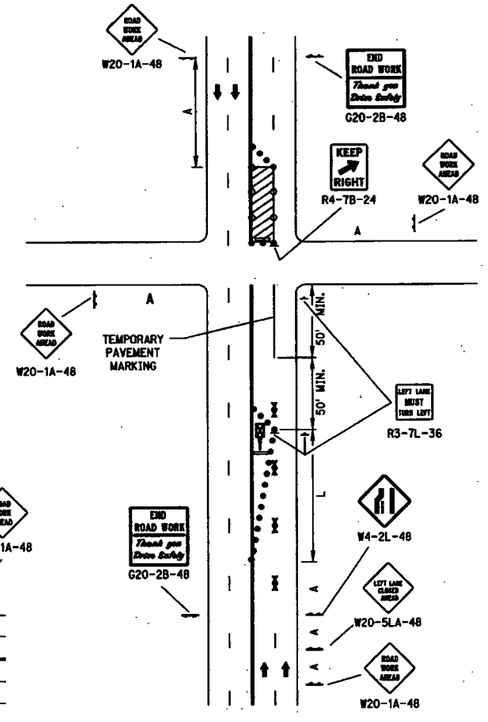
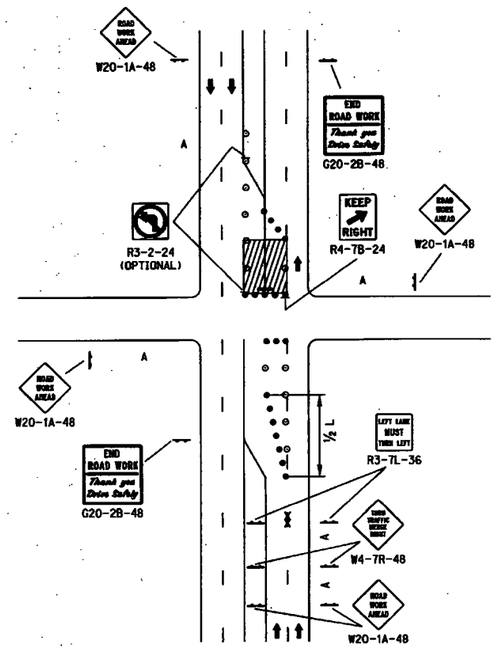


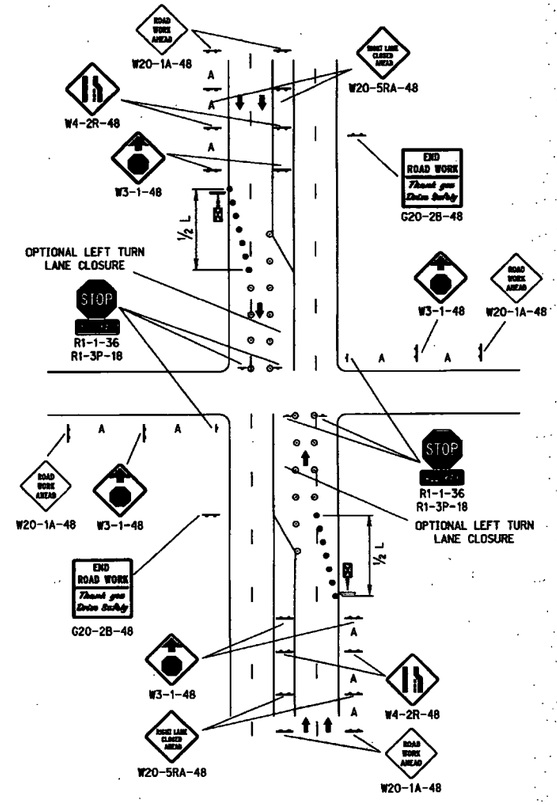
4 LANE UNDIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION



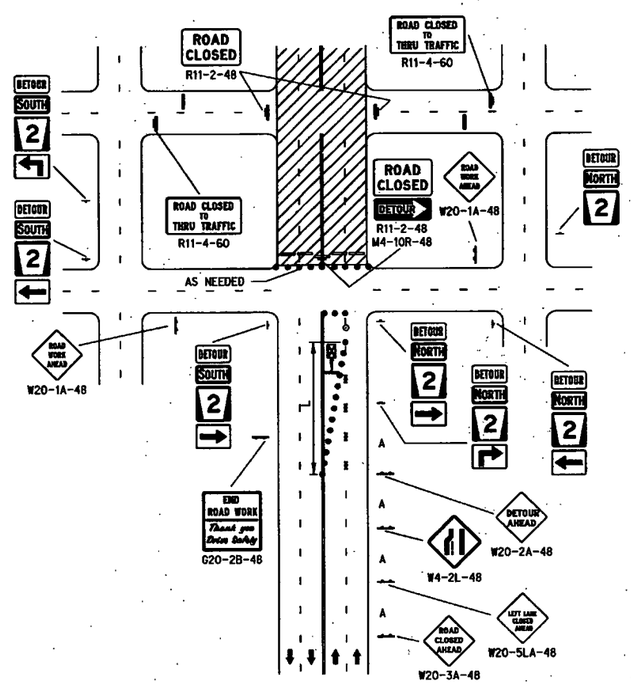
LANE CLOSED NEAR INTERSECTION
(LEFT LANE CLOSURE FORMING A TURNBAY)



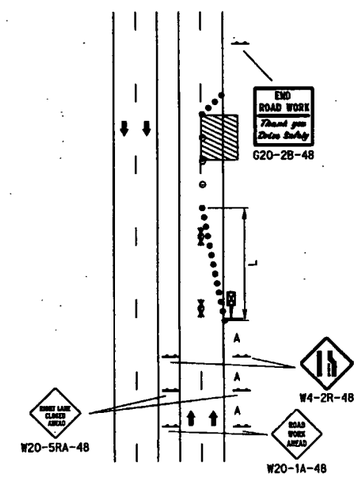
4 LANE DIVIDED ROADWAY
CENTER LANES CLOSED
NEAR INTERSECTION



TEMPORARY ALL-WAY STOP
FOR SIGNAL WORK



ROAD CLOSED AT DETOUR
(OPTIONAL LANE CLOSURE)



DIVIDED ROADWAY
ONE LANE CLOSED

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

L = S x W FOR SPEEDS OF 45 MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).

REV. NO.	DATE	DESCRIPTION OF REVISION
R1	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 924-R1

URBAN TRAFFIC CONTROL PLAN

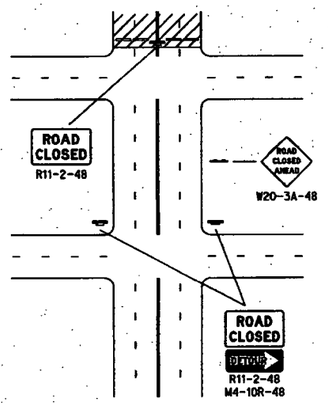
ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER DANIEL J. WADDLE E-6289 STATE OF NEBRASKA

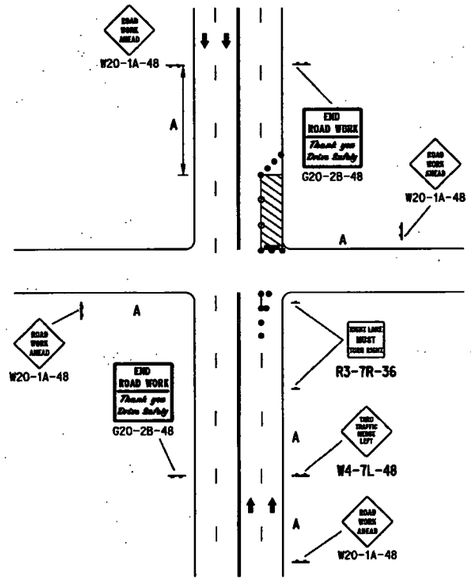
JUNE 2014
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

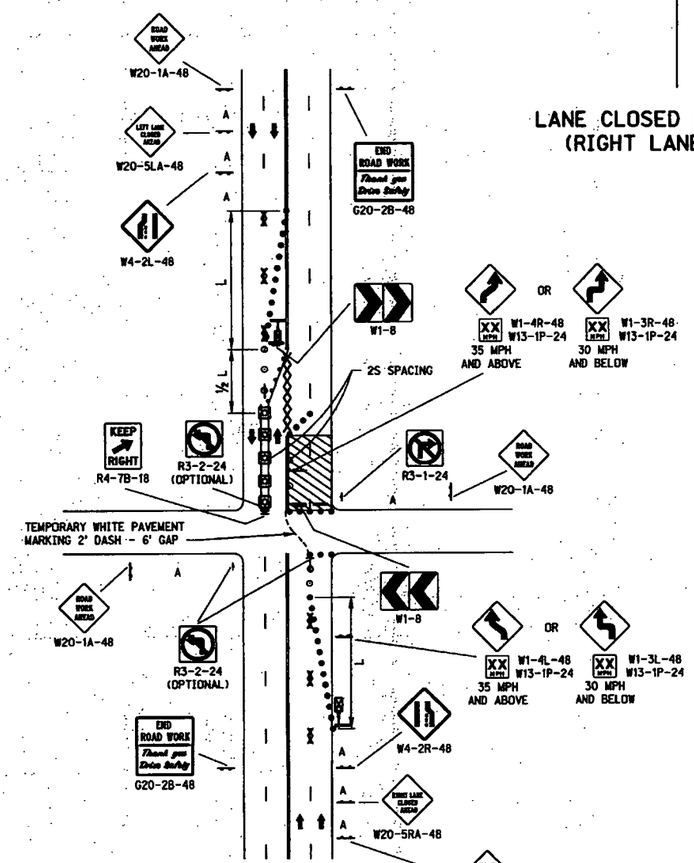
2/3



ROAD CLOSED
BEYOND DETOUR



LANE CLOSED NEAR INTERSECTION
(RIGHT LANE REMAINS OPEN)



4 LANE UNDIVIDED ROADWAY
TWO LANES CLOSED NEAR INTERSECTION

LEGEND

- FLASHING ARROW PANEL
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM
- TUBULAR POST
- REFLECTORIZED PLASTIC DRUM OR 42" CONE
- SINGLE POSTED SIGN
- DOUBLE POSTED SIGN
- FLAGGER
- xxxx PAVEMENT MARKING REMOVAL

TAPER FORMULA

$L = S \times W$ FOR SPEEDS OF 45 MPH OR MORE.

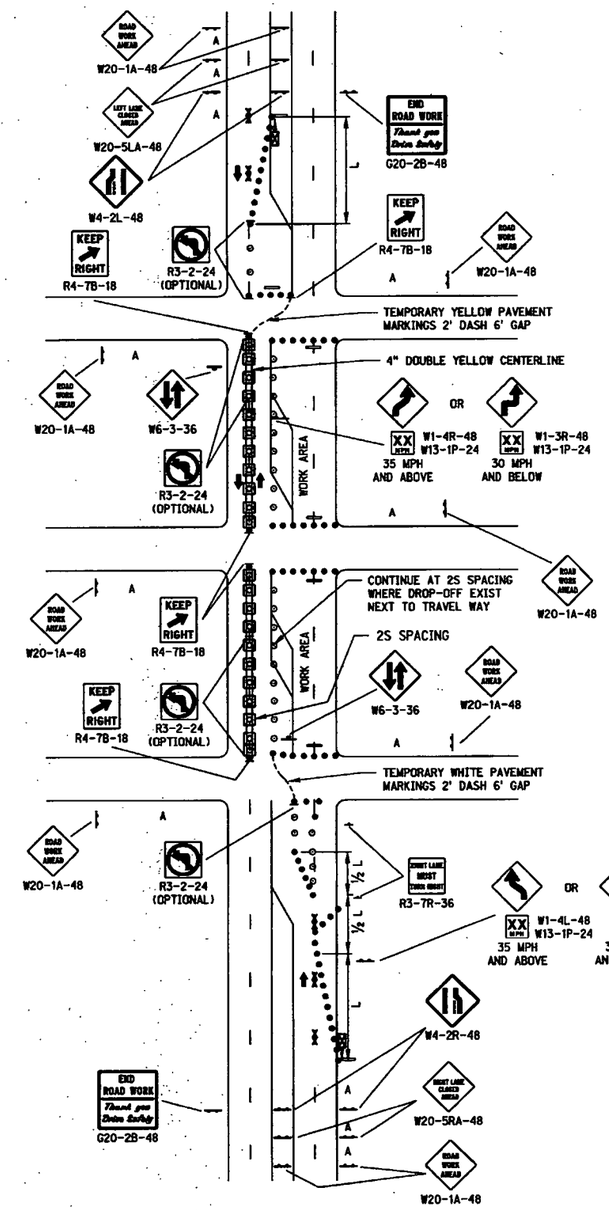
$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40 MPH OR LESS.

WHERE:

L = MINIMUM LENGTH OF TAPER.

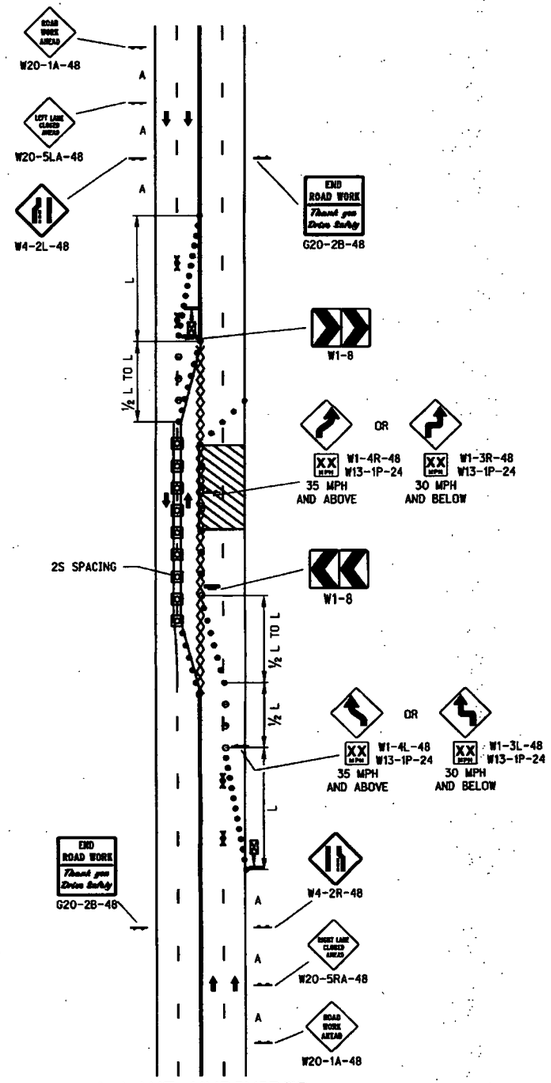
S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK.

W = WIDTH OF OFFSET (LANE WIDTH).



4-LANE DIVIDED
HALF CLOSED

ROAD TYPE	MINIMUM DISTANCE BETWEEN SIGNS
	A
URBAN (LOW SPEED - 25 MPH TO 40 MPH)	100'
URBAN (HIGH SPEED - 45 MPH OR HIGHER)	350'



4-LANE UNDIVIDED
2 LANES CLOSED

REV. NO.	DATE	DESCRIPTION OF REVISION
R1	JUN 14	2009 MUTCD UPDATES

NEBRASKA DEPARTMENT OF ROADS
STANDARD PLAN NO. 924-R1

URBAN TRAFFIC CONTROL PLAN

ACCEPTED BY FHWA FOR USE ON THE NATIONAL HIGHWAY SYSTEM:

PROFESSIONAL CIVIL ENGINEER DANIEL J. WADDLE E-6289 STATE OF NEBRASKA

JUNE 2014
DATE

ORIGINAL:
FEBRUARY 1, 2010
DATE

3
3

ROADWAY DESIGN DIVISION

Computer: DRDESIGN55 User: dor13017 Date: 21-FEB-2014 15:31

File: 92400e01.dgn Scale: 1:100

STORMWATER AND EROSION CONTROL

1. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL EROSION CONTROL MEASURES NECESSARY TO PROVIDE PROTECTION FOR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INSTALL SILT FENCE ON THE DOWN SLOPE SIDE OF THE CONSTRUCTION ACTIVITIES AND SHALL INSTALL INLET PROTECTION WHERE NECESSARY.
2. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT STABILIZATION IS ESTABLISHED ON 95% OF THE SITE, OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES INCLUDING SILT FENCE, CONSTRUCTION ENTRANCES, CONCRETE WASHOUT PIT, ETC. SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE PART OF THE EROSION CONTROL PAY ITEM.
3. CONTRACTOR SHALL CLEAN CONSTRUCTION RELATED MUD OR DEBRIS FROM STREETS ON A DAILY BASIS.
4. CONTRACTOR SHALL USE A DESIGNATED AREA FOR A CONCRETE WASHOUT. THIS AREA SHALL BE A CONTAINMENT AREA WHERE THE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
5. CONTRACTOR SHALL INSTALL SILT FENCE OR OTHER APPROVED EROSION CONTROL MEASURES AROUND THE PERIMETER OF ALL MATERIAL STOCKPILES. SILT FENCE SHALL BE COMPRISED OF MIRAFI 1120N. OR APPROVED EQUAL.

PERMANENT EROSION CONTROL NOTES:

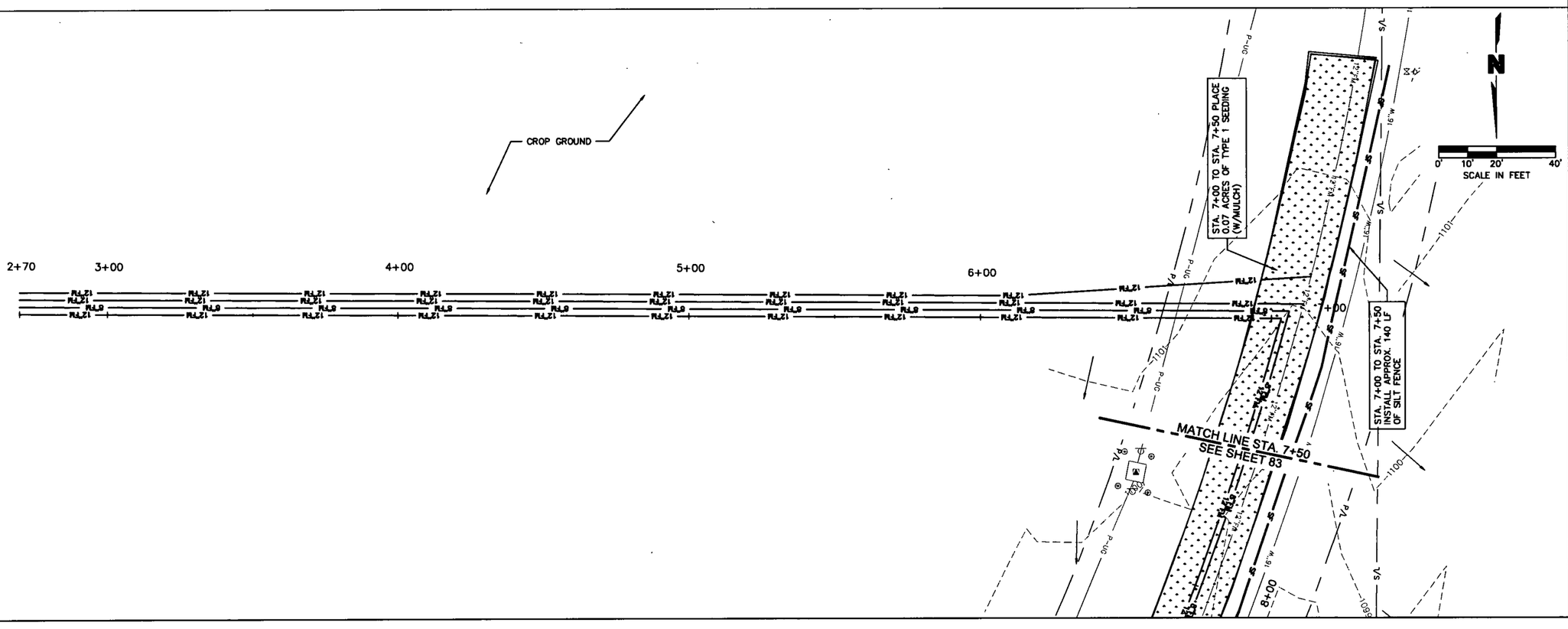
1. ALL DISTURBED AREAS IDENTIFIED AS "SEEDED AND MULCHED" SHALL BE SEEDED, MULCHED AND FERTILIZED BY CONTRACTOR.
2. TOTAL AREA TO BE SEEDED IS APPROXIMATELY 6.28 ACRES. TOTAL AREA DISTURBED IS APPROXIMATELY 10.42 ACRES.
3. ALL SEEDED AREAS SHALL ACHIEVE A MINIMUM COVERING OF 70% GROUND COVER PRIOR TO COMPLETING THE NOTICE OF TERMINATION. THIS INCLUDES ANY WATERING AND RESEEDING THAT MAY BE REQUIRED TO ACHIEVE THESE RESULTS.
4. ALL AREAS SHALL BE GRADED TO DRAIN.
5. SLOPES STEEPER THAN 4:1 SHALL BE COVERED WITH EROSION CONTROL BLANKET OR AS SPECIFIED IN PLANS.

TEMPORARY EROSION CONTROL NOTES

1. ALL TEMPORARY EROSION CONTROL PRODUCTS SHALL BE SELECTED FROM THE PRODUCTS LISTED ON THE NEBRASKA DEPARTMENT OF ROADS APPROVED PRODUCT LIST. THIS LIST CAN BE FOUND AT HTTP://WWW.NEBRASKATRANSPORTATION.ORG/MAT-N-TESTS/EROSION-CONTROL.HTM
2. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATION. ADDITIONAL DETAILS CAN BE FOUND FROM THE NDOR STANDARD PLANS AT HTTP://WWW.DOR.STATE.NE.US/LETTING.HTM#STANPLANS
3. SILT PROTECTION SHALL BE ONE OF THE FOLLOWING TYPES OF PRODUCTS AS INDICATED ON THE NDOR WEB SITE:
   - 3.1. SILT FENCE
     - 3.1.1. HIGH POROSITY
     - 3.1.2. LOW POROSITY
     - 3.1.3. LOW PROFILE
     - 3.1.4. COIR
   - 3.2. TEMPORARY
     - 3.2.1. TYPE-SYNTHETHIC
     - 3.2.2. TYPE-WATTLE
     - 3.2.3. TYPE-COIR
4. CONTRACTOR SHALL CLEAN PUBLIC ROADWAYS FROM SOIL TRACKED FROM SITE.
5. A CONSTRUCTION ENTRANCE MAY BE NEEDED. IF SO IT SHALL BE INSTALLED ACCORDINGLY TO NDOR STANDARD PLANS.
6. ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE ADDRESSED TO ACCOMMODATE CONSTRUCTION.
7. LOCATION OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND UTILITIES INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREAS OF THE UNDERGROUND FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES.

EROSION AND SEDIMENT CONTROL LEGEND

- CULVERT PROTECTION
- GRATE INLET PROTECTION
- SILT FENCE
- EXISTING CONTOUR
- GRAVEL SURFACING
- AREA TO BE RESEEDED & MULCHED
- P.C. CONCRETE
- ASPHALT PAVING
- DIRECTION OF FLOW



OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2560
FAX 402.494.4064
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PROFESSIONAL CIVIL ENGINEER CARLOS J. MUNOZ 9596 STATE OF NEBRASKA 4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

EROSION CONTROL PLAN
STA. 2+70 TO STA. 7+50

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by:	FJS / MKC
checked by:	JCB
approved by:	CJM
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date	APRIL 2015

SHEET
82 of 97

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1707 Dakota Avenue
South Sioux City, NE 68776-2356

TEL 402.494.3050
FAX 402.494.4004
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CARLOS J. BORGMEIER
NEBRASKA
4/21/15

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

EROSION CONTROL PLAN
STA. 7+50 TO STA. 16+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no: 015-0063
drawing no.:
date: APRIL 2015

SHEET
83 of 97

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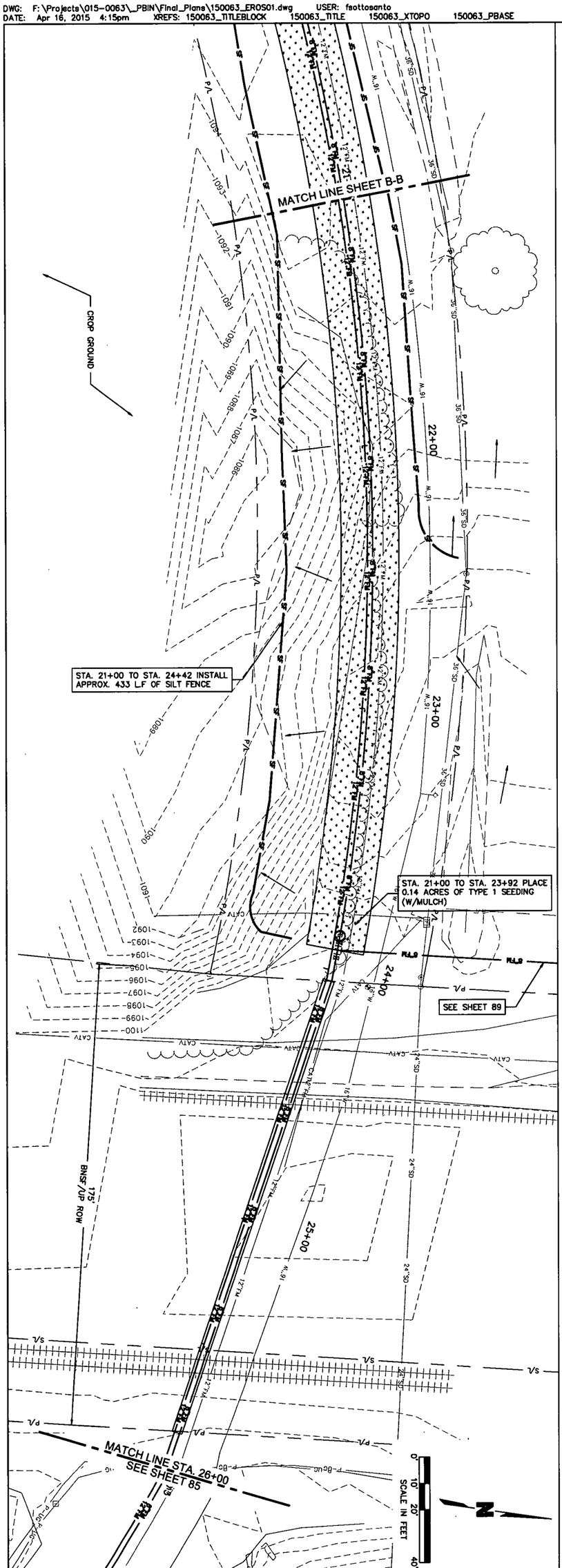

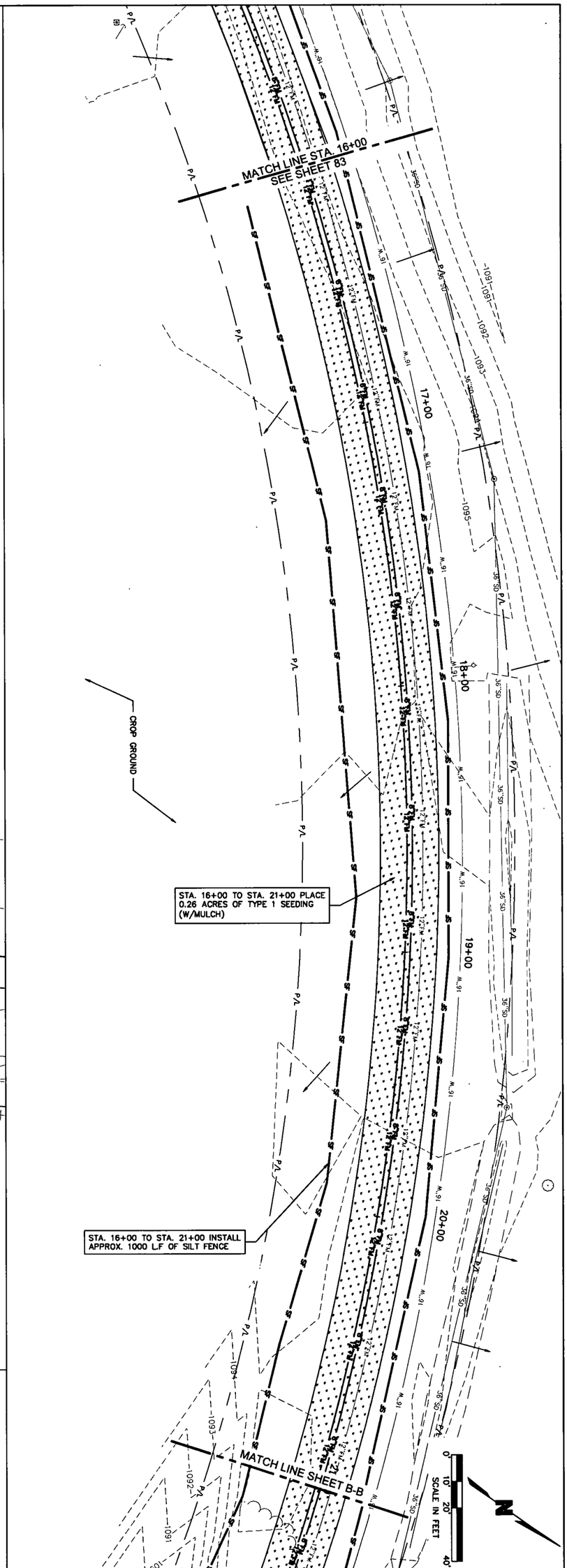

SHEET 84 of 97

drawn by: FSB/MKC
checked by: JSB
approved by: GMA
QA/QC by: MAT
project no.: 015-0063
date: APRIL 2015

EROSION CONTROL PLAN
STA. 16+00 TO STA. 26+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4084
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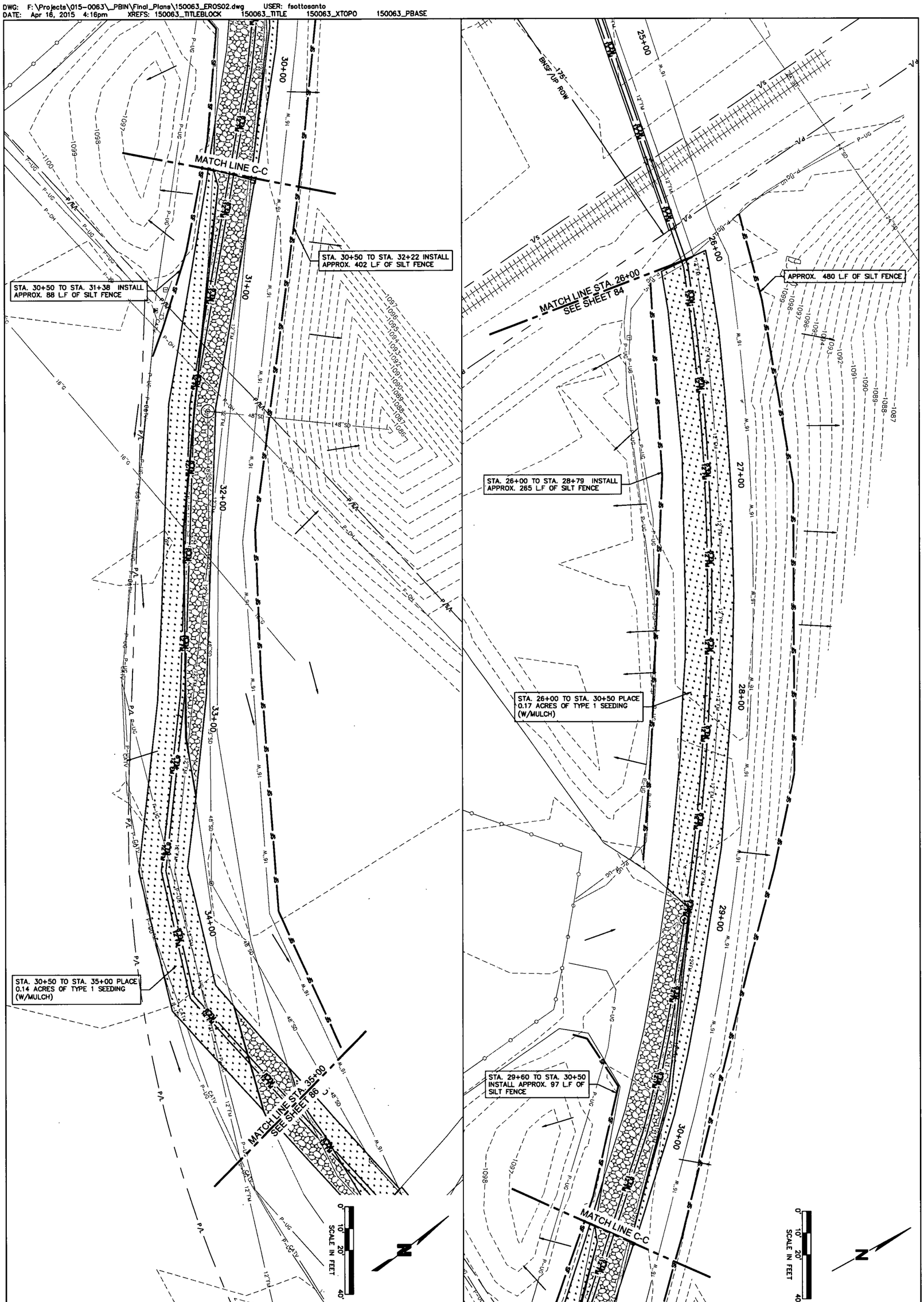

drawn by: FJS / MKG	EROSION CONTROL PLAN STA. 26+00 TO STA. 35+00	REV. NO.	DATE	REVISIONS DESCRIPTION
checked by: JGB				
approved by: CIM	ROTH PARK SANITARY SEWER IMPROVEMENTS			
QA/QC by: MJY				
project no.: 015-0063				
drawing no.:	SOUTH SIOUX CITY, NEBRASKA	2015		REVISIONS
date: APRIL 2015				

SHEET 85 of 97

PROFESSIONAL CIVIL ENGINEER CARLOS A. MEDINA 4-16-1998 STATE OF NEBRASKA 4/21/15

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064 www.olssonassociates.com

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3053
FAX 402.494.4064
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REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

EROSION CONTROL PLAN STA. 35+00 TO STA. 45+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

2015

SOUTH SIOUX CITY, NEBRASKA

drawn by:	FJS / MKC
checked by:	JCB
approved by:	CIM
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date:	APRIL 2015

SHEET 86 of 97

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EROSION CONTROL PLAN
STA. 45+00 TO STA. 55+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 87 of 97

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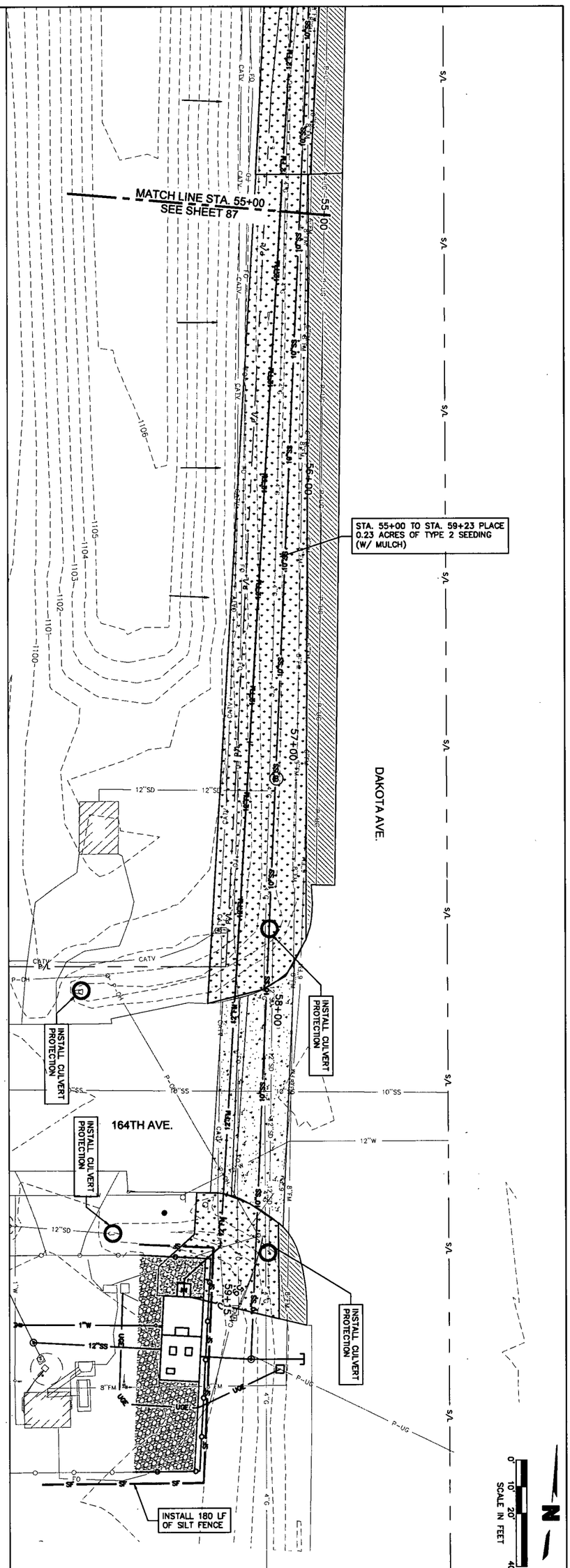

SHEET 88 of 97	drawn by: FJS / MKC checked by: JCB approved by: CIM QA/QC by: MJY project no.: 015-0063 drawing no.: date: APRIL 2015	EROSION CONTROL PLAN STA. 55+00 TO STA. 59+15 ROTH PARK SANITARY SEWER IMPROVEMENTS SOUTH SIOUX CITY, NEBRASKA 2015	REV. NO. / DATE / REVISIONS DESCRIPTION REVISIONS

PROFESSIONAL CIVIL ENGINEER CARLOS A. MEDINA JR. STATE OF NEBRASKA 4/21/15

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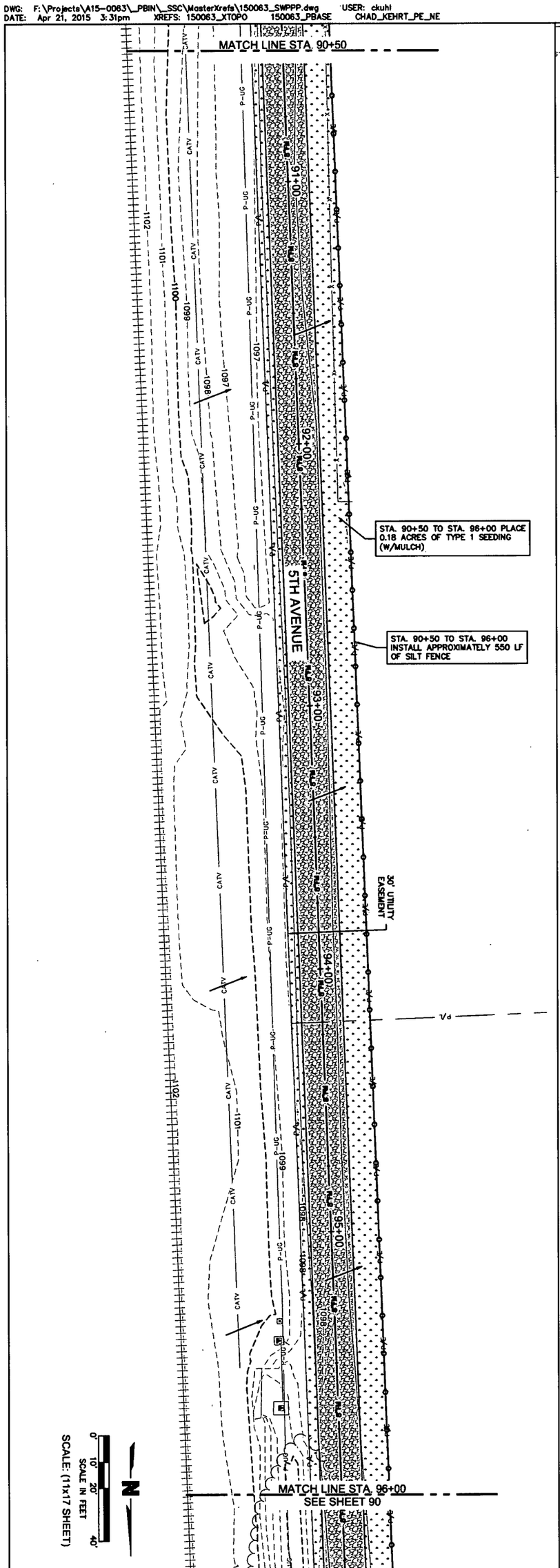

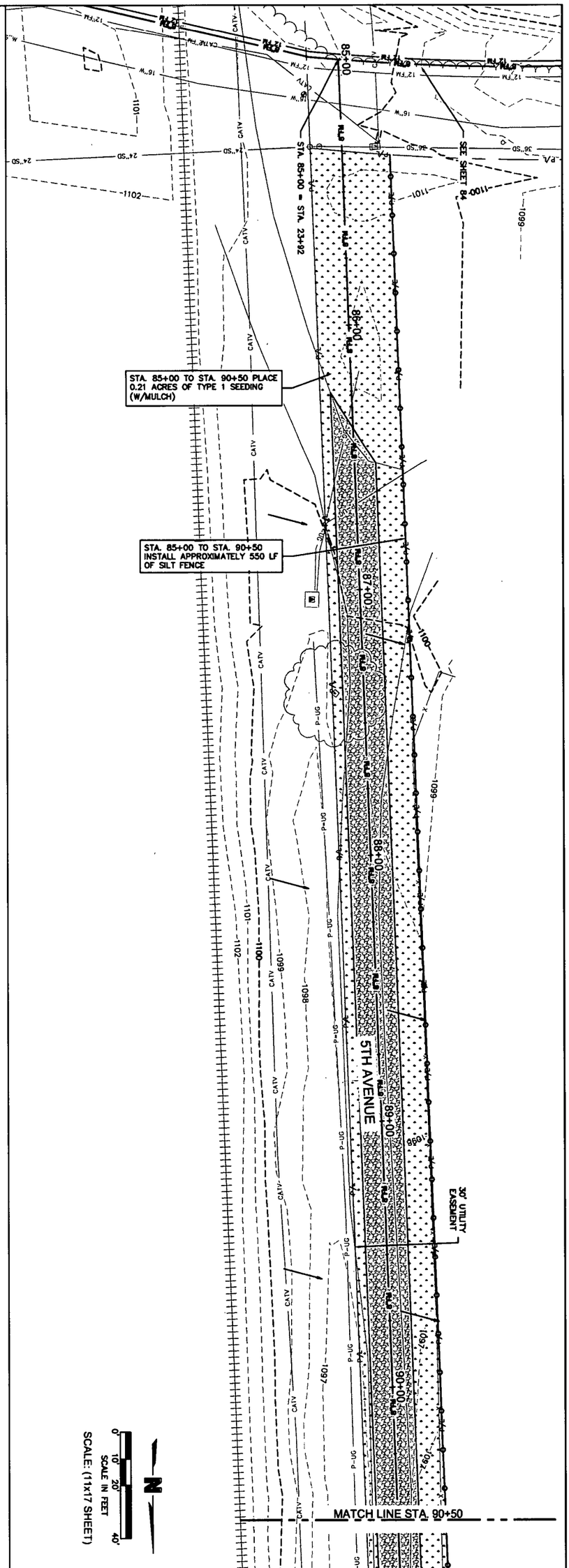

SHEET 89 of 97

drawn by: JEL
checked by: EGS
approved by: CKK
QA/QC by: CPK
project no: A15-0063
date: APRIL 2015

EROSION CONTROL PLAN
STA. 85+00 TO STA. 96+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.

REVISIONS

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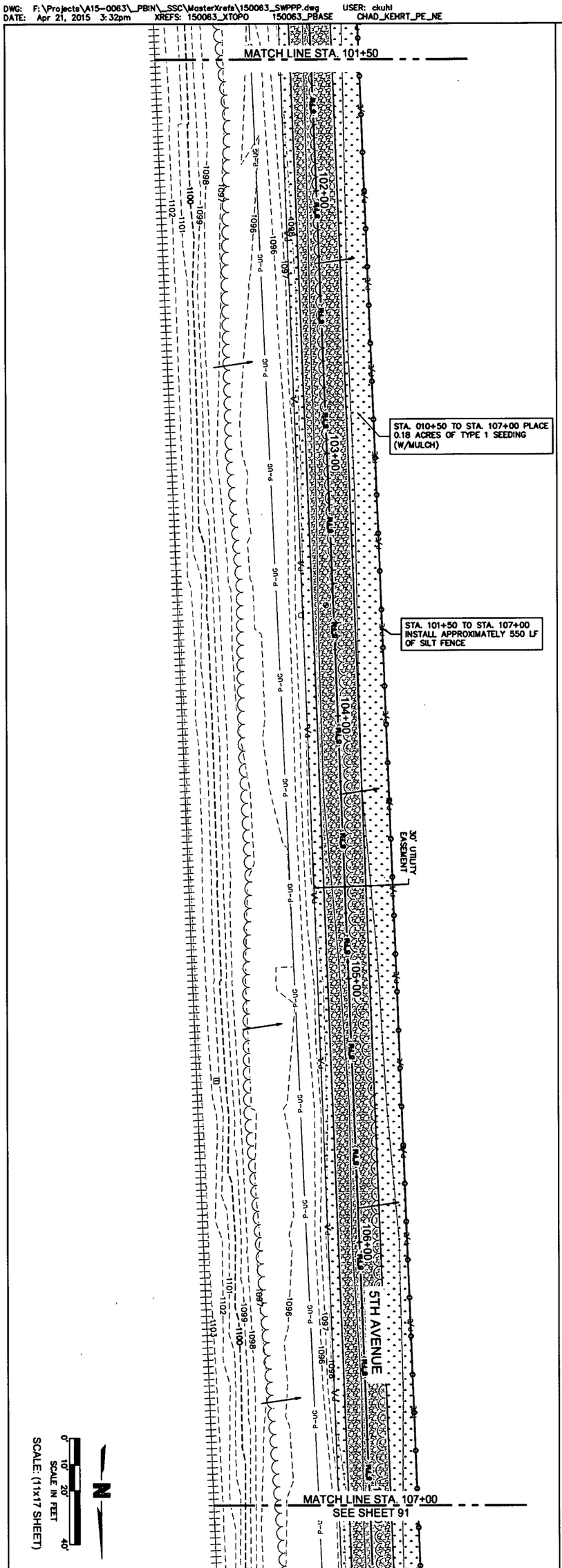

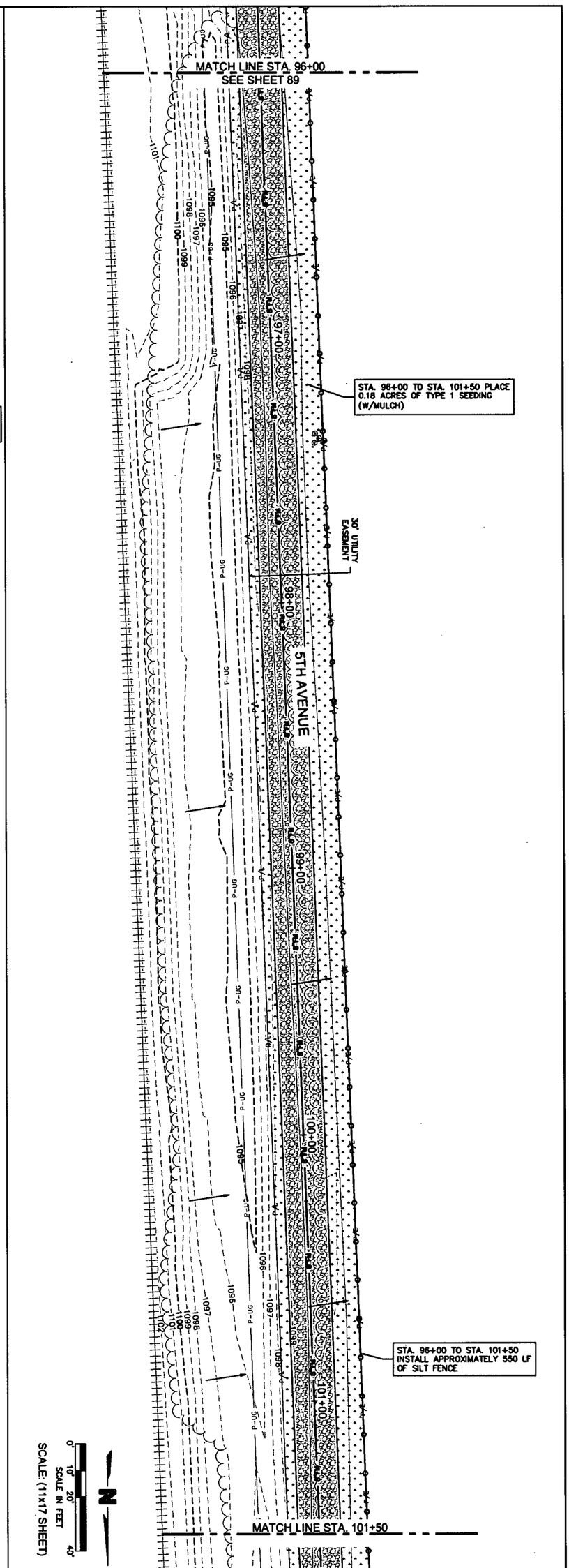

drawn by: JSL CKK	EROSION CONTROL PLAN STA. 96+00 TO STA. 107+00	REV. NO. / DATE / REVISIONS DESCRIPTION	OLSSON ASSOCIATES
checked by: JCB	ROTH PARK SANITARY SEWER IMPROVEMENTS		1707 Dakota Avenue South Sioux City, NE 68776-2356 TEL 402.494.3059 FAX 402.494.4064 www.olssonassociates.com
approved by: CPK	SOUTH SIOUX CITY, NEBRASKA 2015	NO. / DATE / DESCR.	
OAOC by: MJY		REVISIONS	
project no.: 015-0063			
date: APRIL 2015			

SHEET 90 of 97

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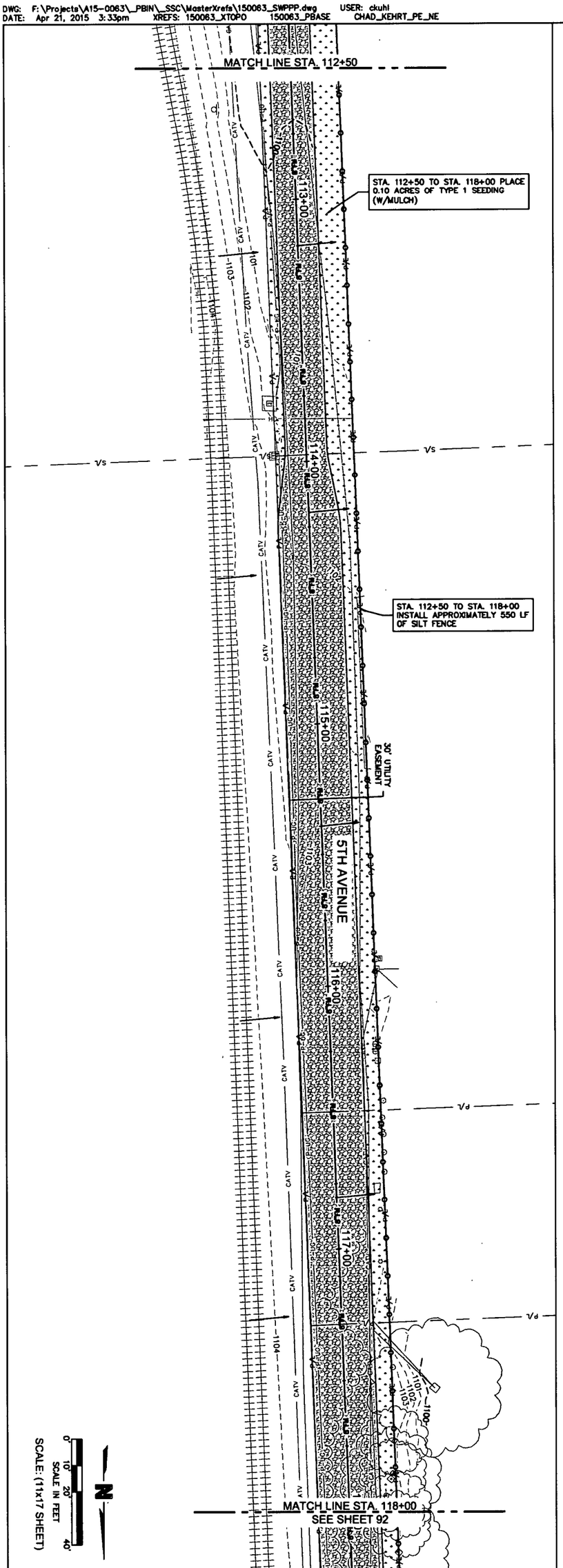

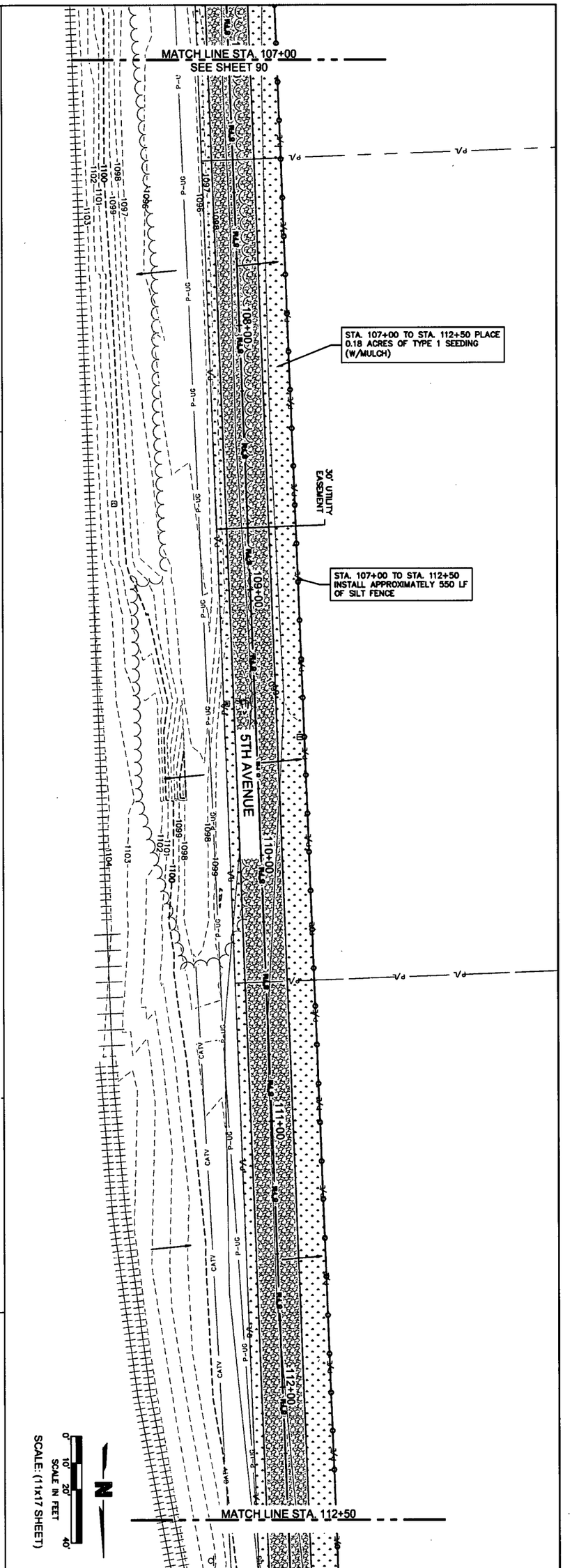

SHEET 91 of 97

drawn by: JSE
checked by: RDE
approved by: CRK
CADD by: MAV
project no.: 015-0063
drawing no.:
date: APRIL 2015

EROSION CONTROL PLAN
STA. 107+00 TO STA. 118+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA 2015

REV. NO.	DATE	REVISIONS DESCRIPTION

NO.	DATE	DESCR.

REVISIONS

CHAD P. KEHRT E-13375 NEBRASKA

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South Sioux City, NE 68776-2356
TEL 402.494.3059
FAX 402.494.4064
www.olssonassociates.com

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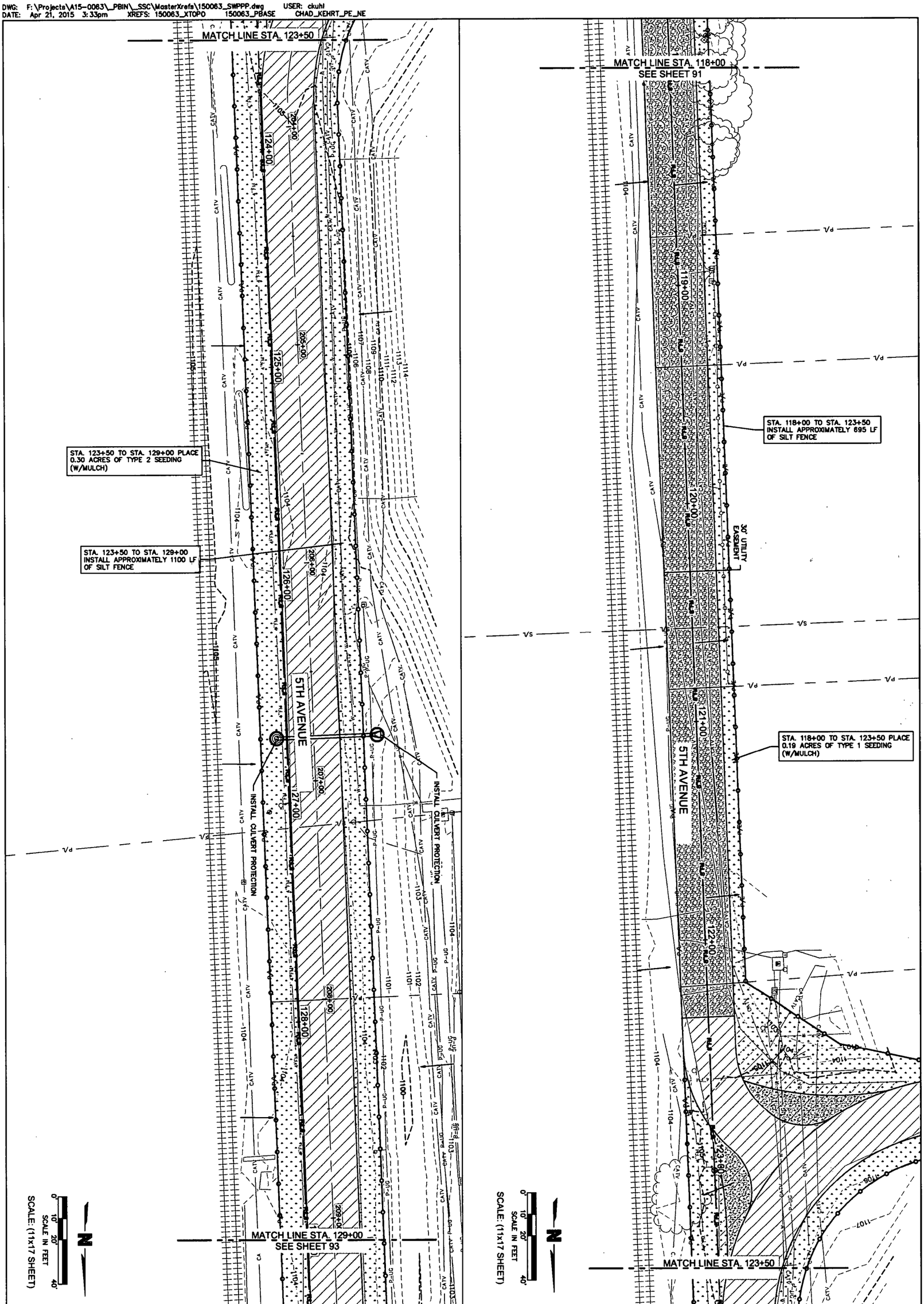

drawn by: JSL CKK	EROSION CONTROL PLAN STA. 118+00 TO STA. 129+00	REV. NO. / DATE / REVISIONS DESCRIPTION	OLSSON ASSOCIATES
checked by: JCB	ROTH PARK SANITARY SEWER IMPROVEMENTS		1707 Dakota Avenue South Sioux City, NE 68776-2356 TEL 402.494.3059 FAX 402.494.4064 www.olssonassociates.com
approved by: CKK	SOUTH SIOUX CITY, NEBRASKA 2015	NO. / DATE / DESCR. REVISIONS	
QA/QC by: MJY			
project no.: 015-0063			
drawing no.:			
date: APRIL 2015			

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STA. 129+00 TO STA. 134+50 PLACE 0.51 ACRES OF TYPE 2 SEEDING (W/MULCH)

STA. 129+00 TO STA. 134+50 INSTALL APPROXIMATELY 1050 LF OF SILT FENCE

INSTALL CULVERT PROTECTION

INSTALL CULVERT PROTECTION

5TH AVENUE

39TH STREET

MATCH LINE STA. 129+00 SEE SHEET 92

MATCH LINE STA. 134+50

130+00 131+00 132+00 133+00 134+00

SCALE: (11x17 SHEET)

0' 10' 20' 40'
SCALE IN FEET

STA. 134+50 TO STA. 140+00 PLACE 0.77 ACRES OF TYPE 2 SEEDING (W/MULCH)

MATCH LINE STA. 134+50

135+00 136+00 137+00 138+00 139+00

39TH STREET

66' R.O.W

MATCH LINE STA. 140+00 SEE SHEET 94

INSTALL CULVERT PROTECTION

INSTALL CULVERT PROTECTION

SCALE: (11x17 SHEET)

0' 10' 20' 40'
SCALE IN FEET

OLSSON ASSOCIATES
1707 Dakota Avenue
South Sioux City, NE 68776-2350
TEL 402.494.3059
FAX 402.494.4064
www.olssonassociates.com

PROFESSIONAL CIVIL ENGINEER
CHAD P. KEHRT
E-10032
4-21-15
STATE OF NEBRASKA

REV. NO.	DATE	REVISIONS DESCRIPTION
NO.	DATE	DESCR.

REVISIONS

EROSION CONTROL PLAN
STA. 129+00 TO STA. 140+00

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

DWG: F:\Projects\A15-0063_PBIN_SSC\MasterXrefs\150063_SWPPP.dwg USER: ckuhl
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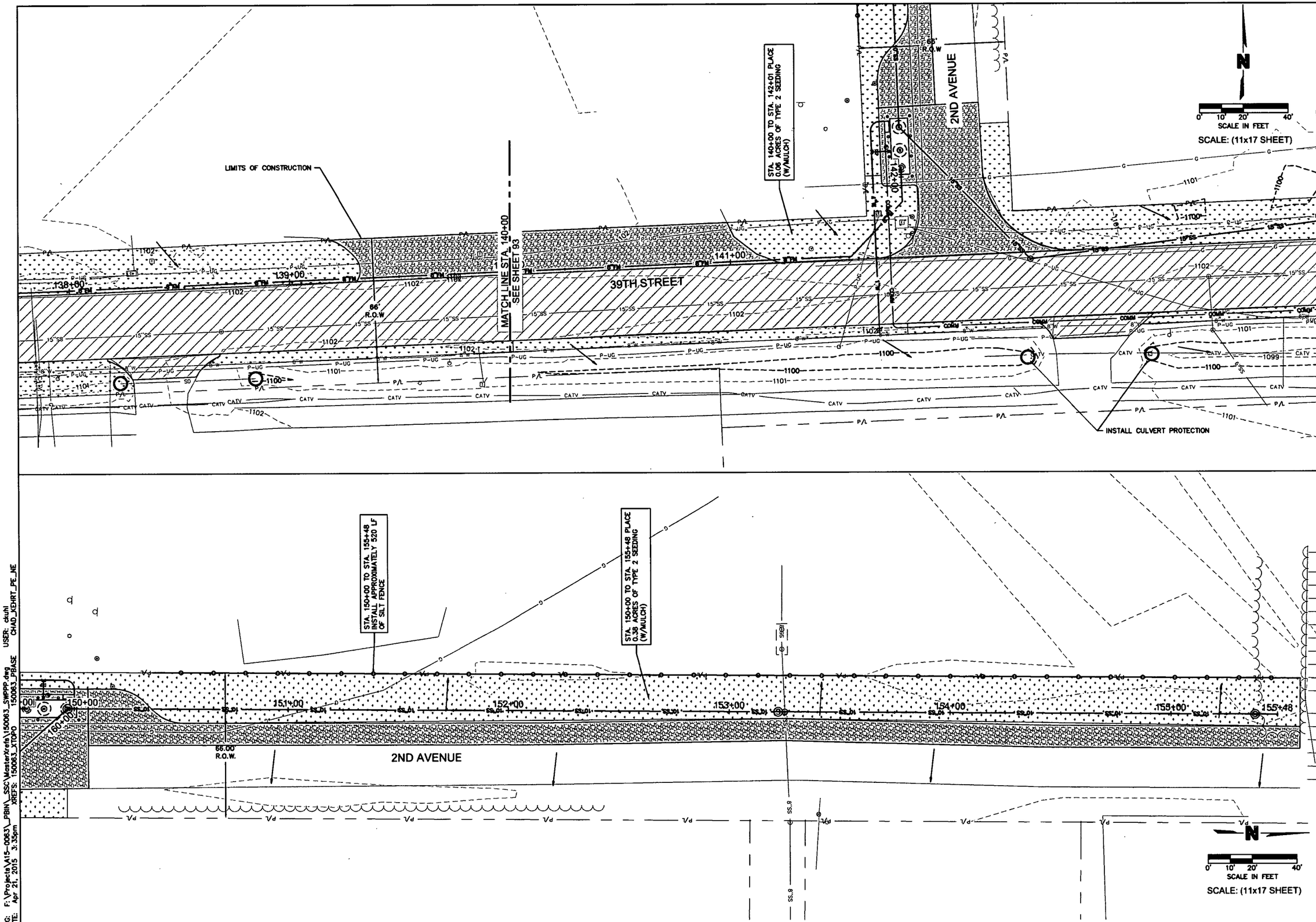

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1707 Dakota Avenue
South Sioux City, NE 68776-2358
TEL 402-494-2050
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www.olssonassociates.com

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CHAD P. KEHRT
E-10037
STATE OF NEBRASKA

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EROSION CONTROL PLAN STA. 140+00 TO STA. 155+48

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: JSL, CKK
checked by: JCB
approved by: CPK
QA/QC by: MJY
project no.: 015-0063
drawing no.:
date: APRIL 2015

SHEET 94 of 97

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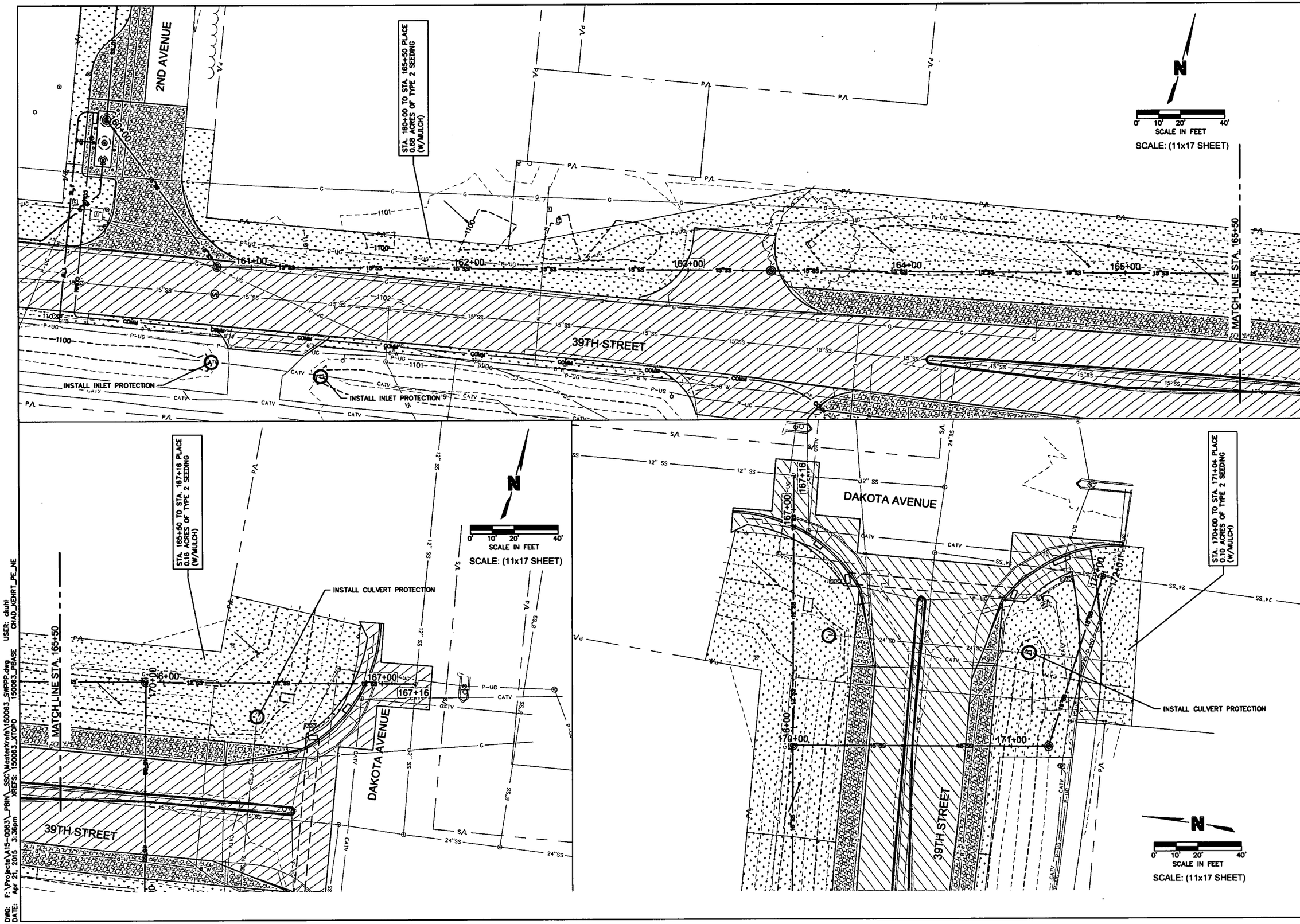

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.3069
FAX 402.494.4084
www.olssonassociates.com

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CHAD P. KEHRT
E-10032
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REV. NO.	DATE	REVISIONS DESCRIPTION

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EROSION CONTROL PLAN
STA. 160+00 TO STA. 172+04

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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approved by:	CPK
QA/QC by:	MJY
project no :	015-0063
drawing no :	
date.	APRIL 2015

SHEET
95 of 97

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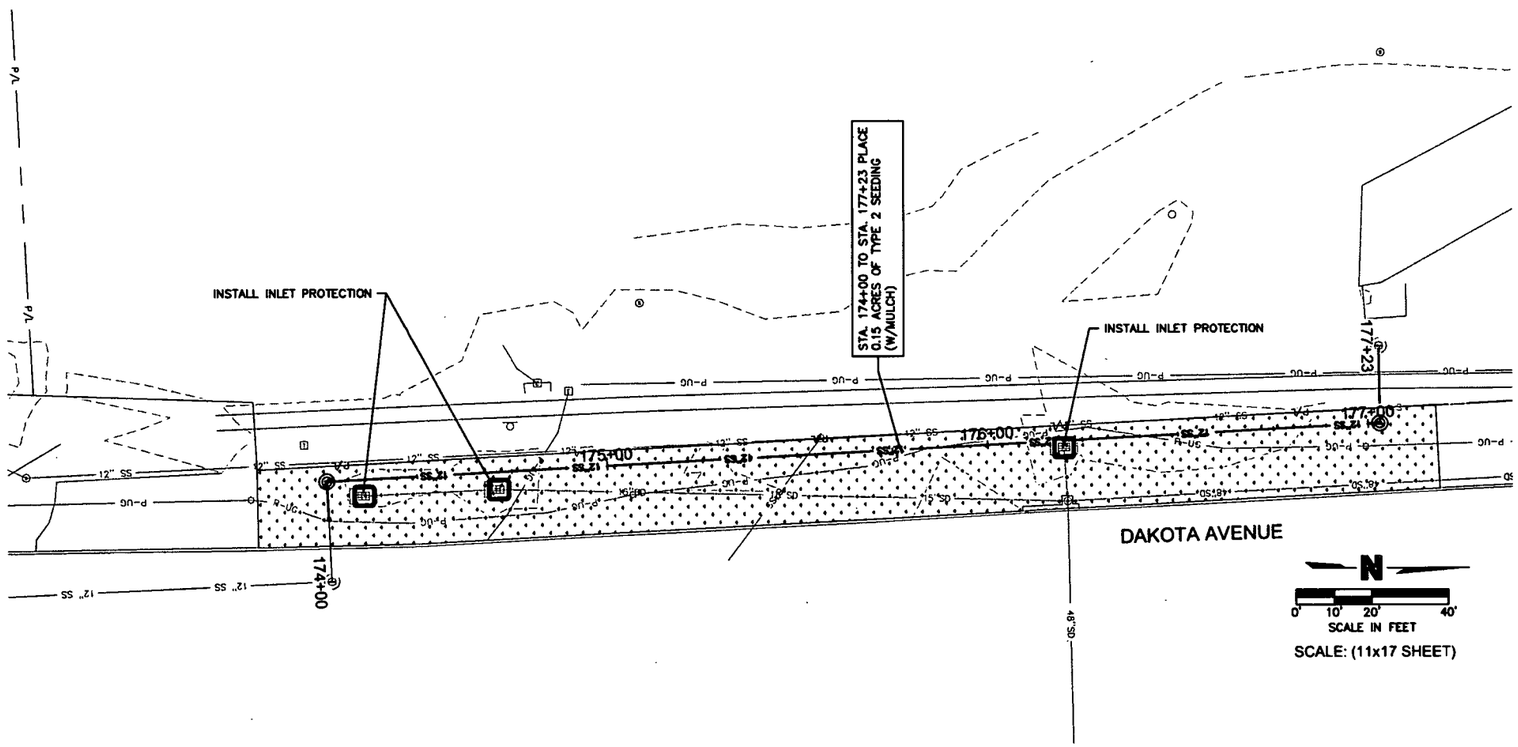

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
TEL 402.494.2050
FAX 402.494.4064
www.olssonassociates.com

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E-10032
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NO.	DATE	DESCR.
		REVISIONS

EROSION CONTROL PLAN
STA. 173+00 TO STA. 177+23

ROTH PARK SANITARY
SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

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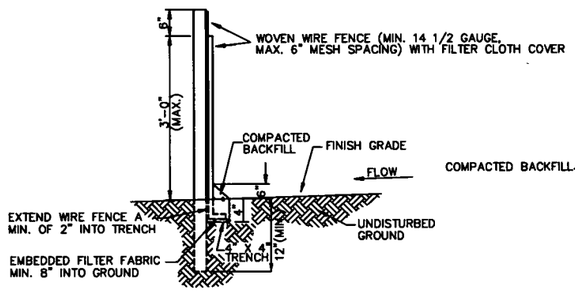
approved by:	CPK
QA/QC by:	MJY
project no.:	015-0063
drawing no.:	
date:	APRIL 2015

SHEET
96 of 97

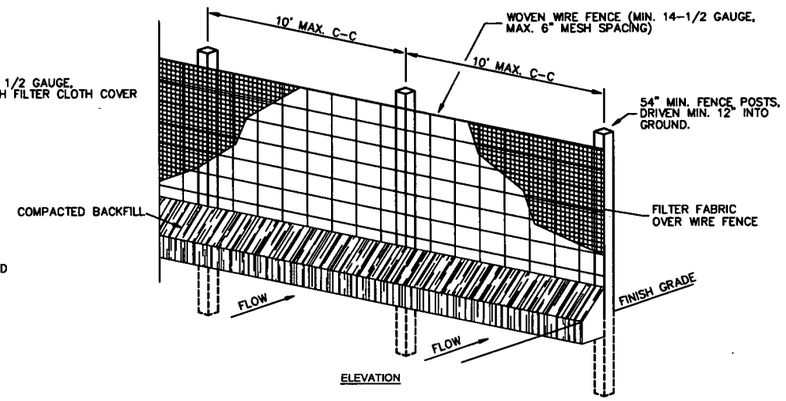
NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN. COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2"x2" HARDWOOD
FENCE: WOVEN WIRE, 14-1/2 GA. 6" MAX. MESH OPENING
FILTER FABRIC: 1. MIRAFI 140N
2. DUPONT TYPAR 3341
3. OR APPROVED EQUAL.

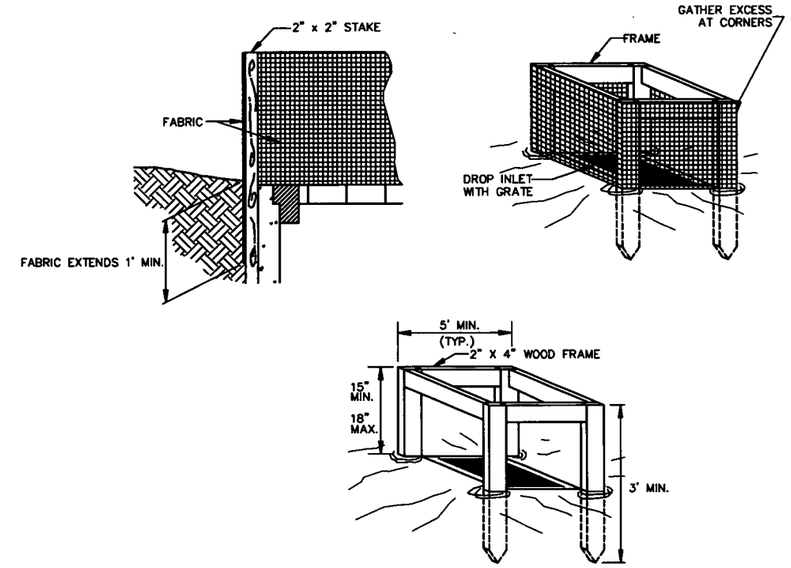


CROSS-SECTION

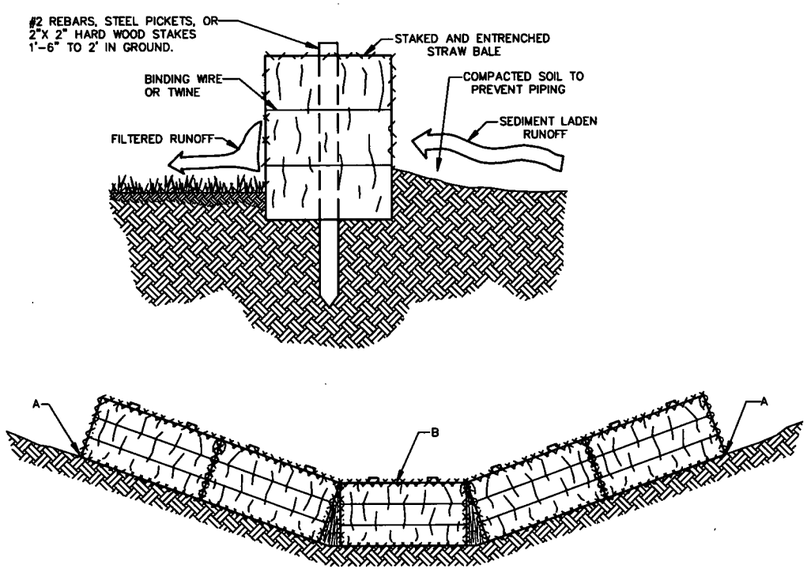


ELEVATION

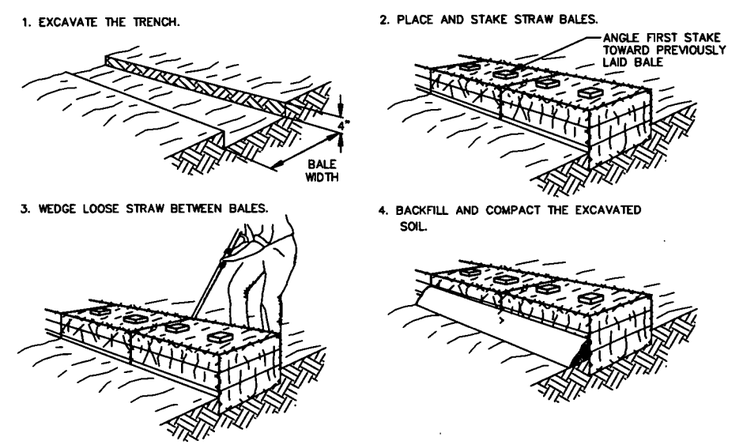
SEDIMENTATION/SILT FENCE WITH WIRE SUPPORT
NOT TO SCALE



SILT FENCE INLET PROTECTION
NOT TO SCALE



POINT "A" SHALL BE HIGHER THAN POINT "B"



PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY
NOT TO SCALE

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1707 Dakota Avenue
South Sioux City, NE 68776-2356
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FAX 402.494.4064
www.olssonassociates.com

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REVISIONS

SEDIMENT AND EROSION CONTROL DETAILS

ROTH PARK SANITARY SEWER IMPROVEMENTS

SOUTH SIOUX CITY, NEBRASKA

2015

drawn by: FJS / MKC
checked by: JCB
approved by: CIM
QA/QC by: MJY
project no.: 015-0063
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date: APRIL 2015

DWG: F:\Projects\015-0063_PBW\Final_Plans\150063_DTLS01.dwg USER: fsottosanto
DATE: Apr 16, 2015 4:17pm XREFS: 150063_TITLEBLOCK