

HIGHWAY 44 and ELK VALE ROAD WATER MAIN LOOP

CITY OF RAPID CITY PROJECT NO. W03-1248

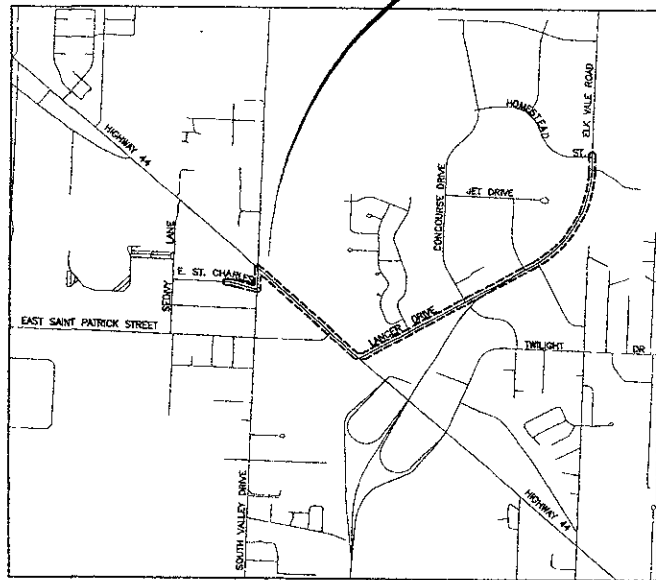
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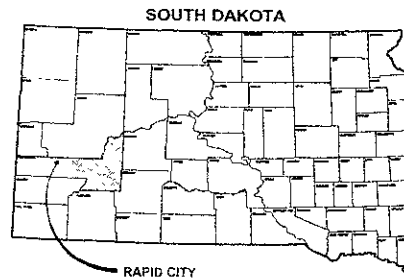
CITY OF RAPID CITY
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES

PROJECT
LOCATION

DREAM DESIGN
INTERNATIONAL, INC.
PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
ONE KANSAS CITY ST., SUITE 4, RAPID CITY, SD 57501
PH. 605-344-0200 FAX. 605-343-0848 EMAIL. engineering@dreamdesign.com



PROJECT LOCATION MAP NOT TO SCALE



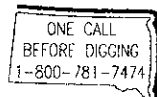
INDEX OF SHEETS

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RECEIVED

Oct. 9. 2006

Rapid City
Public Works Department



Plan Book Number

HIGHWAY 44 and ELK VALE ROAD
WATER MAIN LOOP
CITY OF RAPID CITY PROJECT NO W03-1248

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TABLE OF TREE MOVEMENTS

Table with columns: STATION, OFFSET, APPROXIMATE OF LEAD ELEVATION, GROUND ELEVATION. Lists tree locations and elevations along the project.

LEGEND

- BORE-HOLE
MONITORING WELL
TRAFFIC SIGNAL
DELIMITER
CABLE TV OR TELEPHONE RIVER
DECIDUOUS TREE
BUSH

- HEDGE/TREE LIMP
2 POLE SKIN
1 HOLE SKIN
MANHOLE
POST / BOLLARD
FIRE HYDRANT

- TELEPHONE MANHOLE
SANITARY SEWER MANHOLE
CLEAR WAY
FOUND PROPERTY CORNER
CONTROL POINT

- GAS VALVE
ELECTRICAL MANHOLE
LIGHT POLE
CUT WIRE ANCHOR
POWER POLE

- TYPE 'C' INLET
TYPE 'E' INLET
SANITARY SEWER LINE
STORM SEWER LINE

- STEEL WIRE
WATER LINE
ELEVATION LINE
OVERHEAD LINES

- POWER LINE
GAS LINE
FIBER OPTIC LINE
CABLE TV LINE

- BARBED WIRE FENCE
PROPERTY LINE
SECTION LINE
EASEMENT LINE

- MAJOR CONTOUR
MINOR CONTOUR
PROPOSED FIRE HYDRANT
PROPOSED GATE VALVE

- PROPOSED REDUCER
PROPOSED 1 1/4" BEND
PROPOSED 2 1/2" BEND

- PROPOSED 45 HEND
PROPOSED 90 BEND
PROPOSED HIGH DEFLECTION COUPLER

- PROPOSED CHECK DAM
PROPOSED WATER MAIN
PROPOSED GAS MAIN
PROPOSED SILT FLANGE

- PROPOSED SRAW WALL
1" BOND BREAKER
3" MIN.
UNDISTURBED SOIL

- 1" PVC RESTRAINED LENGTHS
1 1/2" PVC RESTRAINED LENGTHS
2" PVC RESTRAINED LENGTHS
3" PVC RESTRAINED LENGTHS

- APPLICABILITY REQUIREMENTS
ALL JOINTS SHALL BE PROTECTED WITH 1/2" SAND UNDER PIPE JOINTS WHEN EXPOSED TO WEATHER

- VALVES 1" FEET
1 1/2" FEET
2" FEET
3" FEET
4" FEET
6" FEET
8" FEET
10" FEET
12" FEET

- CONCRETE THRUST BLOCKS
11 1/8" x 22 1/2" x 45"
TYPICAL CROSS SECTION
LEG
90° BEND

ESTIMATE OF QUANTITIES

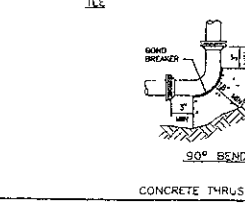
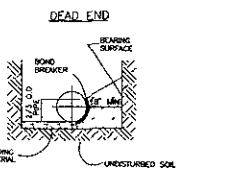
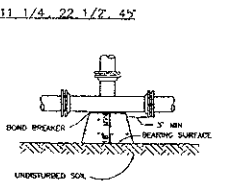
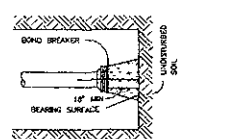
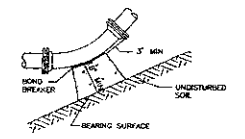
Table with columns: ITEM NO., DESCRIPTION OF ITEM, UNIT, QTY (EST). Lists construction materials and their estimated quantities.

Table with columns: ITEM NO., DESCRIPTION OF ITEM, UNIT, QTY (EST). Continuation of the estimate of quantities table.

TABLE OF CATHODIC PROTECTION ANODE BATHS

Table with columns: STATION, OFFSET, ANODE SIZE, FITTING TYPE. Lists anode bath specifications for various stations.

NEAR INTERSECTION OF SHELLEY DRIVE AND HIGHWAY 44 APPROX 574+00...
ANODE RESTRAINTS SHALL BE CATHODICALLY PROTECTED WITH 12LB WARES AND INSTALLED TO THE LARGEST DIMENSION ON THE JOINT OF PASTY MORTAR.

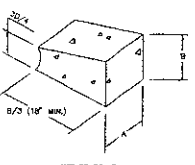


MINIMUM DIMENSIONS FOR THRUST BLOCKS

Table showing minimum dimensions for thrust blocks for various pipe sizes and fittings (tees, reducers, bends, wyes).

GENERAL NOTES

- 1. BEARING SURFACE AREAS SHOWN BY CHART ARE MINIMUM
2. BASED ON 150 P.S.I. INTERNAL PIPE PRESSURE
3. SOIL BEARING CAPACITY = 2000 LB./SQ. FT.



Project information including: DREAM DESIGN INTERNATIONAL, INC., PROJECT NO. 03-254, DATE: 12/06/06, and client details for STORMS.

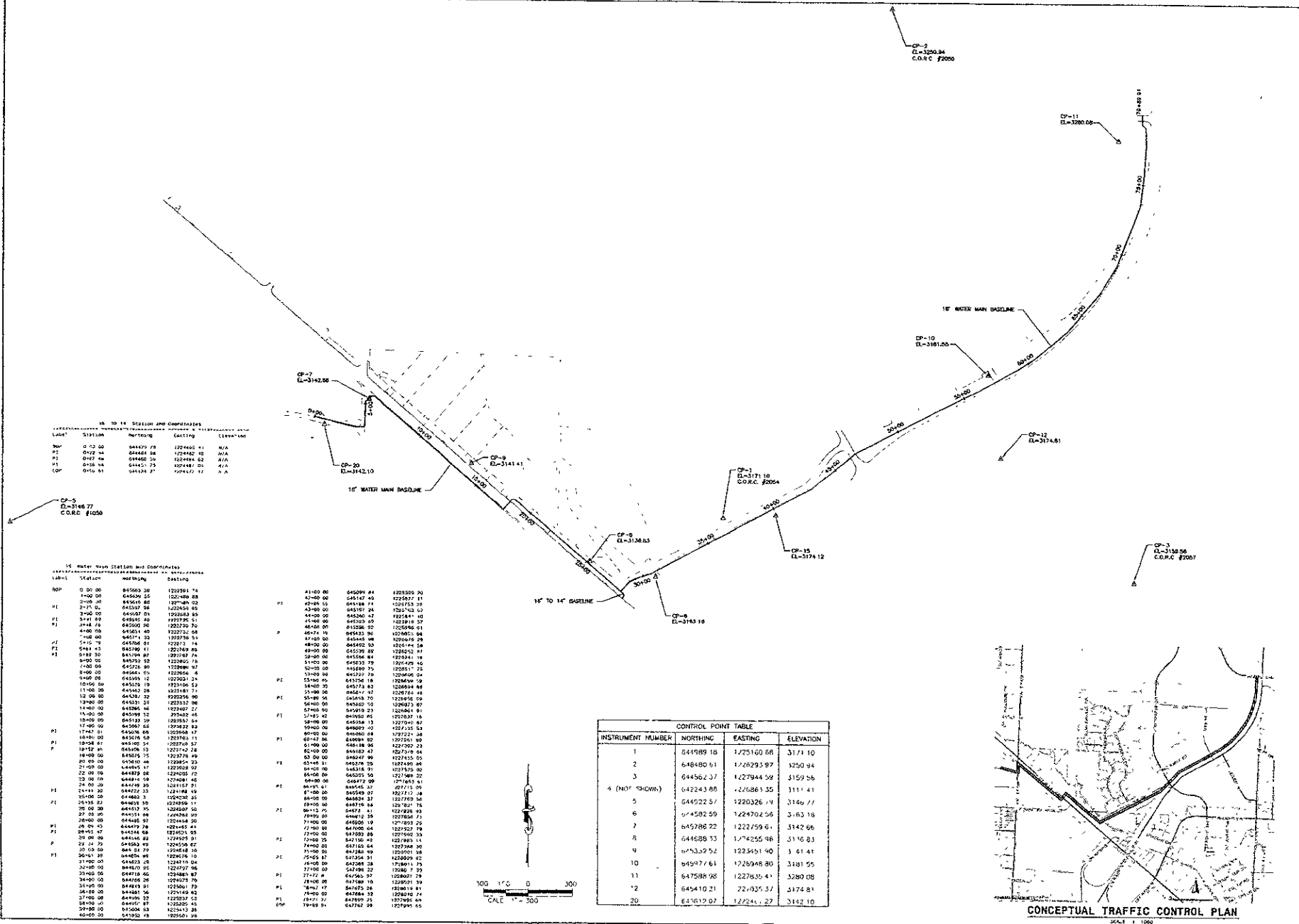


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Scale	AS NOTED
Design	STORMWATER
Design Date	12/5/06
Design Drawn	MDS
Design Check	MS
Checked	MS
Approved	MS

HIGHWAY 44 and ELK VALE ROAD WATER MAIN LOOP

SURVEY CONTROL PLAN



16" to 14" SECTION AND COMPONENTS

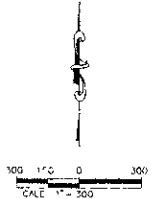
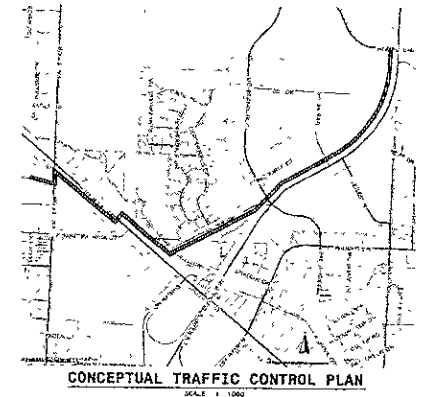
Label	Station	Heighting	Existing	Elevation	Notes
NP	0+00.00	644677.28	1224462.71	N/A	
PI	0+02.54	644461.58	1224462.10	N/A	
PI	0+02.54	644461.58	1224462.10	N/A	
PI	0+05.54	644461.58	1224462.10	N/A	
PI	0+10.54	644461.58	1224462.10	N/A	

16" Water Main Station and Coordinates

Label	Station	Heighting	Existing	Elevation	Notes
NP	0+00.00	645060.26	1222591.74		
PI	0+00.00	645060.26	1222591.74		
PI	0+00.00	645060.26	1222591.74		
PI	0+00.00	645060.26	1222591.74		
PI	0+00.00	645060.26	1222591.74		

CONTROL POINT TABLE

INSTRUMENT NUMBER	NORTHING	EASTING	ELEVATION
1	644989.18	1225160.68	3173.10
2	644860.61	1225293.97	3250.94
3	644562.57	1227944.59	3159.56
4 (NOT SHOWN)	642243.88	1227086.35	3111.41
5	645022.57	1229026.74	3146.77
6	645022.57	1229026.74	3163.18
7	645286.22	1227559.67	3142.66
8	644628.73	1227255.98	3116.83
9	645329.52	1223541.90	3141.41
10	645077.61	1229268.80	3181.55
11	647588.98	1227335.44	3280.08
12	645410.21	1227335.44	3174.81
20	647612.97	1227241.22	3142.10



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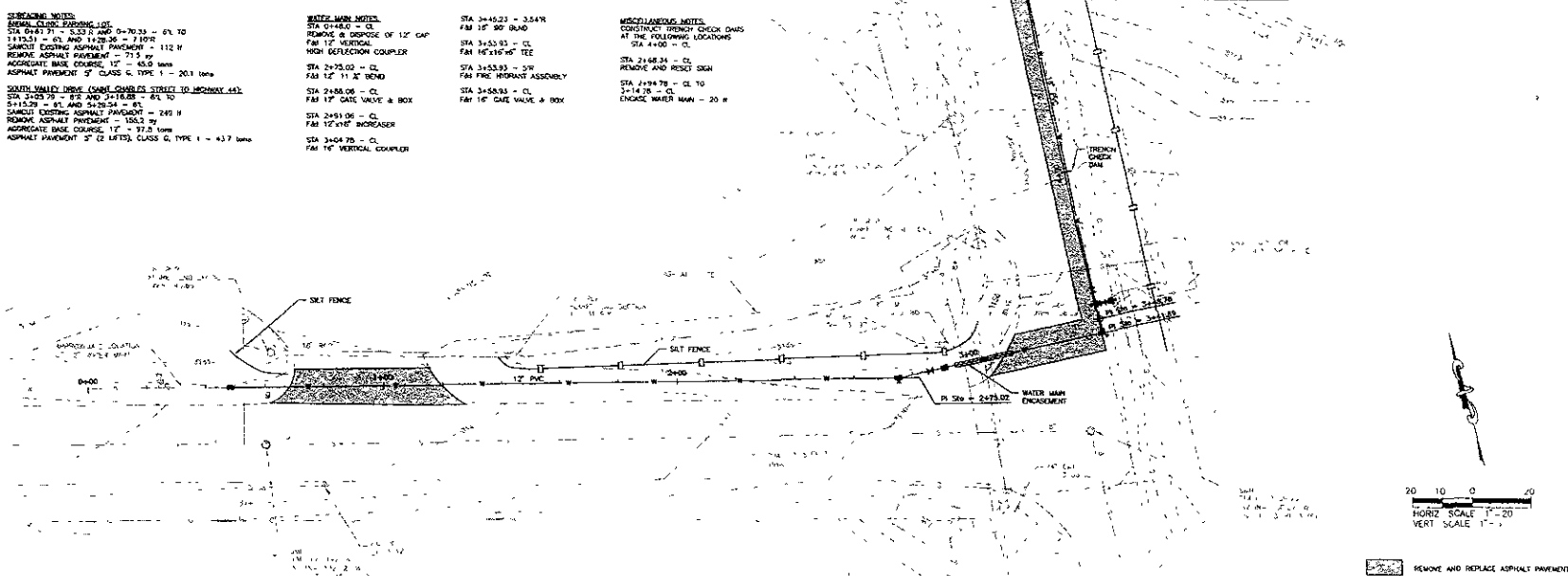
EXISTING NOTES
 EXISTING CURB PAVING 12"
 STA 0+81.71 - 0+83.8 AND 0+70.33 - 87.10
 1+13.31 - 87.800 AND 1+28.36 - 7' FOR
 SANITARY EXISTING ASPHALT PAVEMENT - 112 W
 REMOVE ASPHALT PAVEMENT - 71.5 W
 AGGREGATE BASE COURSE 12" - 65.0 W
 ASPHALT PAVEMENT 2" CLASS C, TYPE 1 - 20.1 W
 SOUTH VALLEY DRIVE (CASE CORRECTS STREET TO HIGHWAY 44)
 STA 3+02.79 - 87.2 AND 3+16.88 - 87.10
 5+13.29 - 87.1 AND 5+29.34 - 87.1
 SANITARY EXISTING ASPHALT PAVEMENT - 249 W
 REMOVE ASPHALT PAVEMENT - 156.2 W
 AGGREGATE BASE COURSE 12" - 97.3 W
 ASPHALT PAVEMENT 2" (2 LOTS), CLASS C, TYPE 1 - 43.7 W

WATER MAIN NOTES
 STA 0+84.0 = CL
 REMOVE & DISPOSE OF 12" CAP
 FM 12" VERTICAL
 HIGH DEFLECTION COUPLER
 STA 2+92.02 = CL
 FM 12" 11" BOND
 STA 2+88.06 = CL
 FM 12" GATE VALVE & BOX
 STA 2+91.06 = CL
 FM 12" 1/2" INCREASER
 STA 3+40.76 = CL
 FM 16" VERTICAL COUPLER

STA 3+45.23 = 3.54R
 STA 3+53.93 = CL
 STA 3+53.93 = CL
 STA 2+92.02 = CL
 STA 3+53.93 = SP
 STA 3+53.93 = CL
 STA 2+88.06 = CL
 STA 2+91.06 = CL
 STA 3+40.76 = CL

MISCELLANEOUS NOTES
 CONSTRUCT FRENCH CHECK DAMS
 AT THE FOLLOWING LOCATIONS
 STA 4+00 = CL
 STA 2+48.34 = CL
 REMOVE AND RESET SIGN
 STA 2+94.78 = CL TO
 3+14.78 = CL
 ENCASE WATER MAIN - 20 W

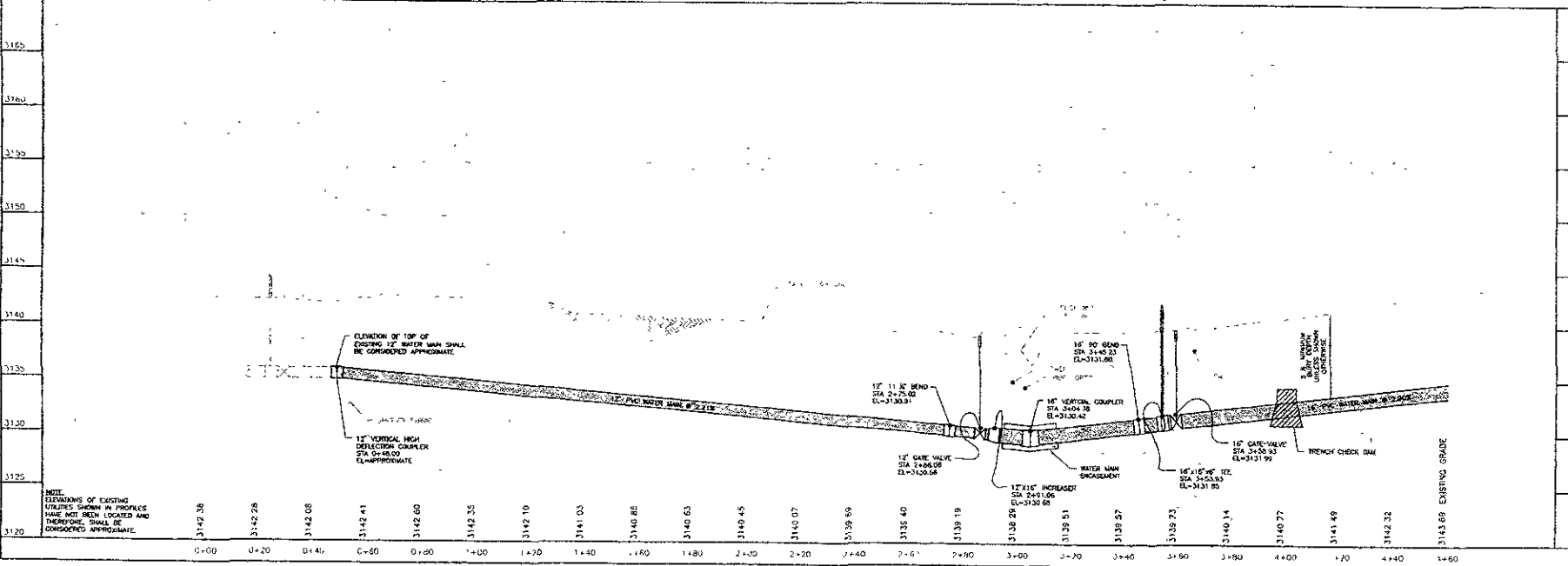
MATCHLINE - SEE SHEET 6



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Scale	As Noted
Designed By	Drawn By
Checked By	Checked By
Design Date	Print Date
10/06	12/8/06
Revised Date No	
06 0417	
Revised By	Survey Date
AD:ETH	4/06
Revised	

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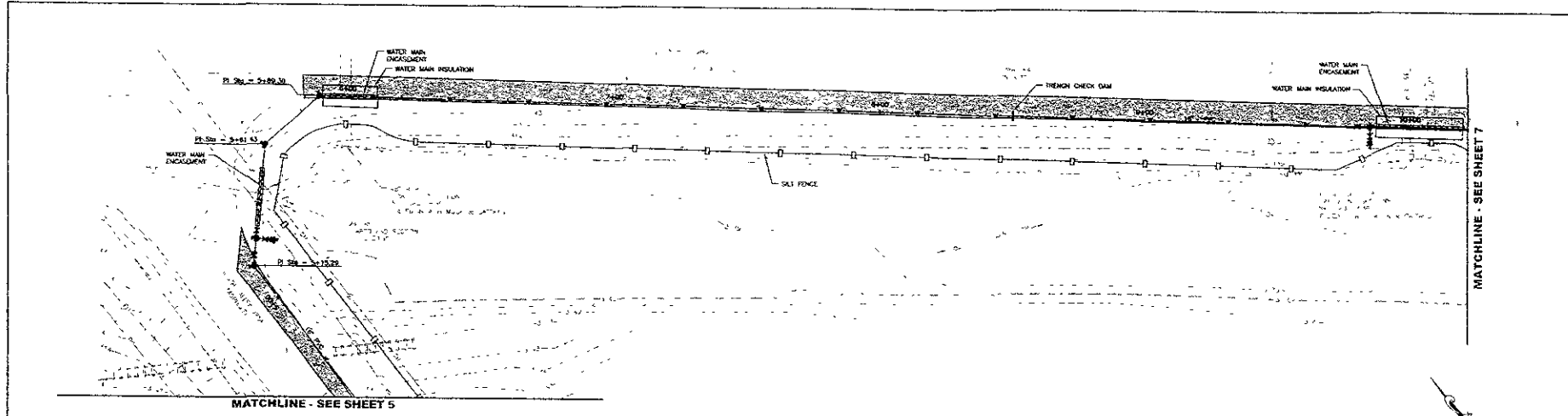
**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

16" WATER MAIN
 PLAN / PROFILE
 STA 0+00 TO 4+60

CITY OF RAPID CITY PROJECT NO. W-1248



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REVISIONS

No.	Description
1	AS NOTED

GENERAL NOTES

1. EXISTING WATER MAINS TO REMAIN.
2. ALL NEW WATER MAINS TO BE 16" DIAMETER.
3. ALL NEW WATER MAINS TO BE 16" X 16" TEE.
4. ALL NEW WATER MAINS TO BE 16" X 16" TEE.
5. ALL NEW WATER MAINS TO BE 16" X 16" TEE.

WATER MAIN NOTES

- STA 5+20.76 - 6" FIBER OPTIC ASSEMBLY
- STA 5+19.25 - CL FIBER OPTIC ASSEMBLY
- STA 5+25.76 - CL FIBER OPTIC ASSEMBLY
- STA 5+28.76 - CL FIBER OPTIC ASSEMBLY
- STA 5+61.43 - CL FIBER OPTIC ASSEMBLY

MISCELLANEOUS NOTES

- STA 5+20.76 - CL FIBER OPTIC ASSEMBLY
- STA 5+19.25 - CL FIBER OPTIC ASSEMBLY
- STA 5+25.76 - CL FIBER OPTIC ASSEMBLY
- STA 5+28.76 - CL FIBER OPTIC ASSEMBLY
- STA 5+61.43 - CL FIBER OPTIC ASSEMBLY

WATER MAIN ENCASEMENT

- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE

WATER MAIN INSULATION

- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE

WATER MAIN VALVES

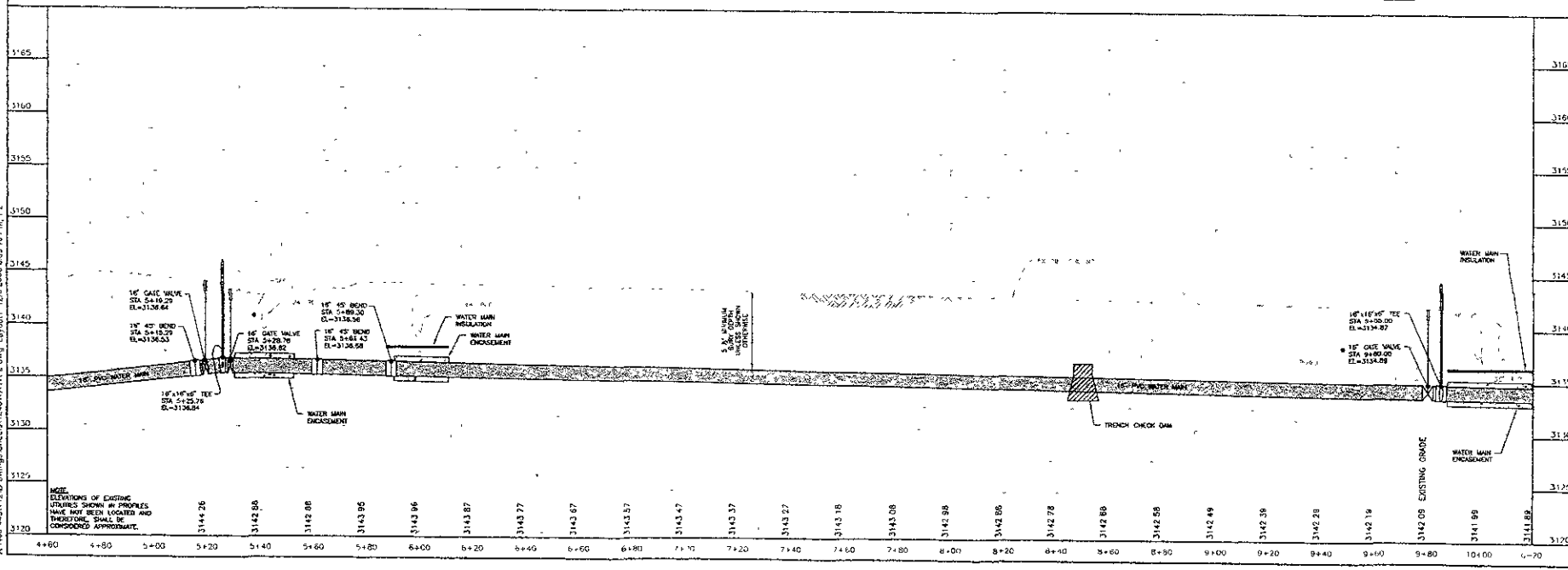
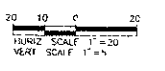
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE

WATER MAIN BENDS

- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE

WATER MAIN ENCASEMENT

- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE
- 16" X 16" TEE



Scale	AS NOTED
Designed By	Checked By
Drawn By	8/05
Design Date	12/26/06
Project No.	10006
Sheet No.	6 of 26
Drawn By	Survey Date
AS/ELTH	4/06

HIGHWAY 44 and ELK VALE ROAD WATER MAIN LOOP

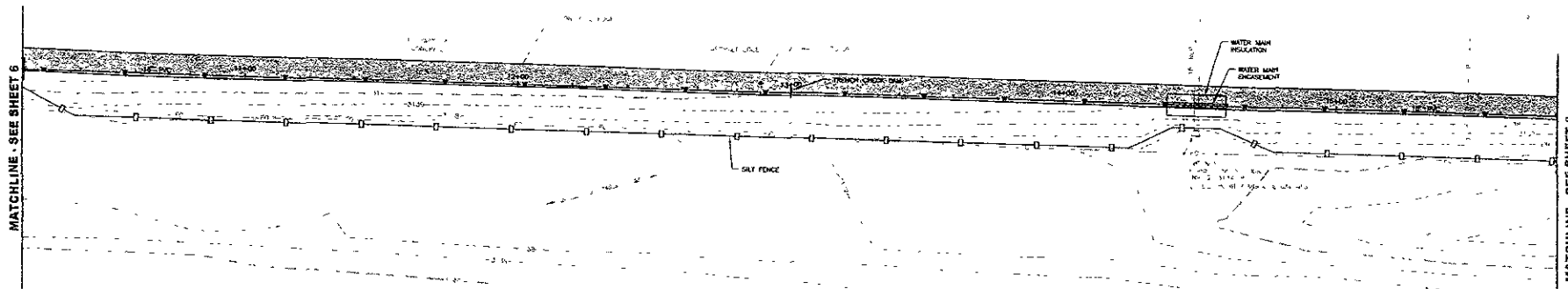
16" WATER MAIN PLAN / PROFILE
 STA 4+60 TO 10+20

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Scale AS NOTED
 Checked By: STONARDS
 Design Date: 12/6/06
 Drawn By: AMS
 Print Date: 12/6/06
 Title: 18" WATER MAIN PLAN / PROFILE
 Project: HIGHWAY 44 AND ELK VALE ROAD WATER MAIN LOOP

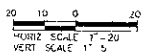


MISCELLANEOUS NOTES:
 STA 12+42.74 = 6.27' RR
 COORDINATE OVERLAP WITH WEST RIVER ELECTRIC DURING CONSTRUCTION NEXT TO LIGHT POLE

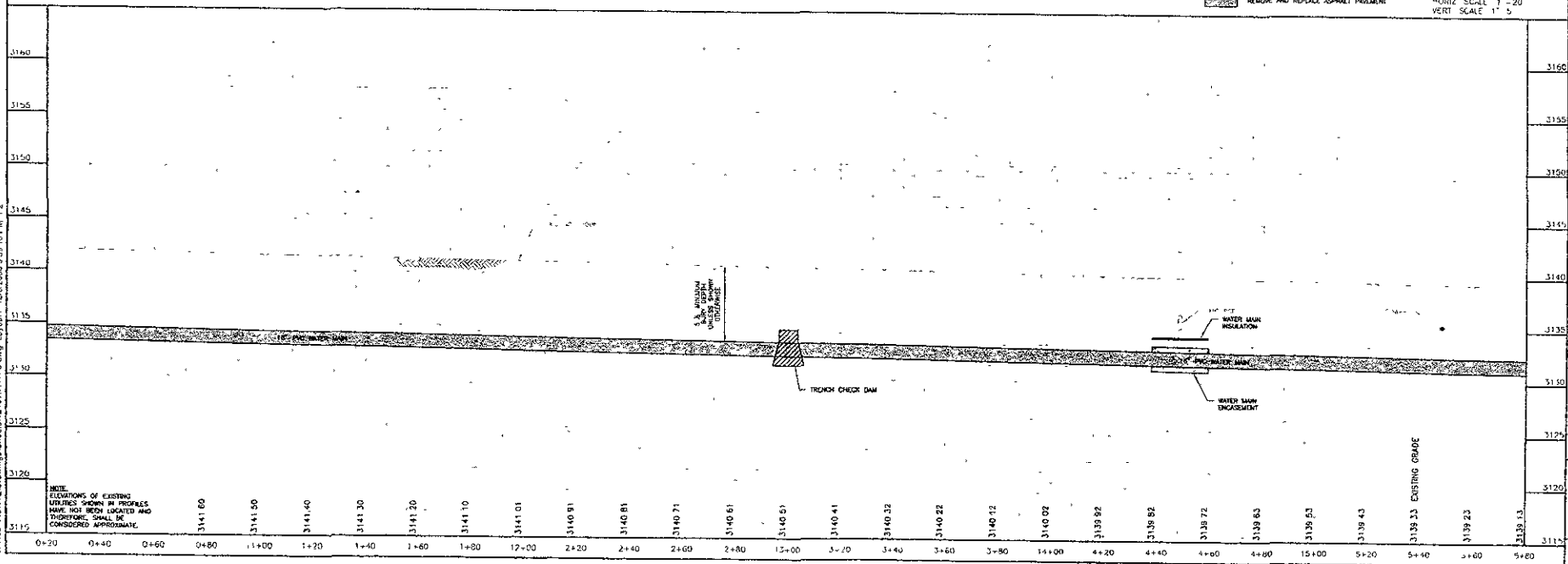
STA 14+37.66 = CL TO 14+59.36 = CL
 CONSTRUCT WATER MAIN - 22 ft 22'x8" C₂ - 176 sf

STA 14+46.49 = CL
 CONSTRUCT WATER MAIN INSULATION

CONSTRUCT TRENCH CHECK DAM AT THE FOLLOWING LOCATIONS:
 STA 13+00 = CL



REMOVE AND REPLACE ASPHALT PAVEMENT



**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

18" WATER MAIN
 PLAN / PROFILE
 STA 10+20 TO 15+80

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 REGISTERED PROFESSIONAL ENGINEER

MATCHLINE - SEE SHEET 7

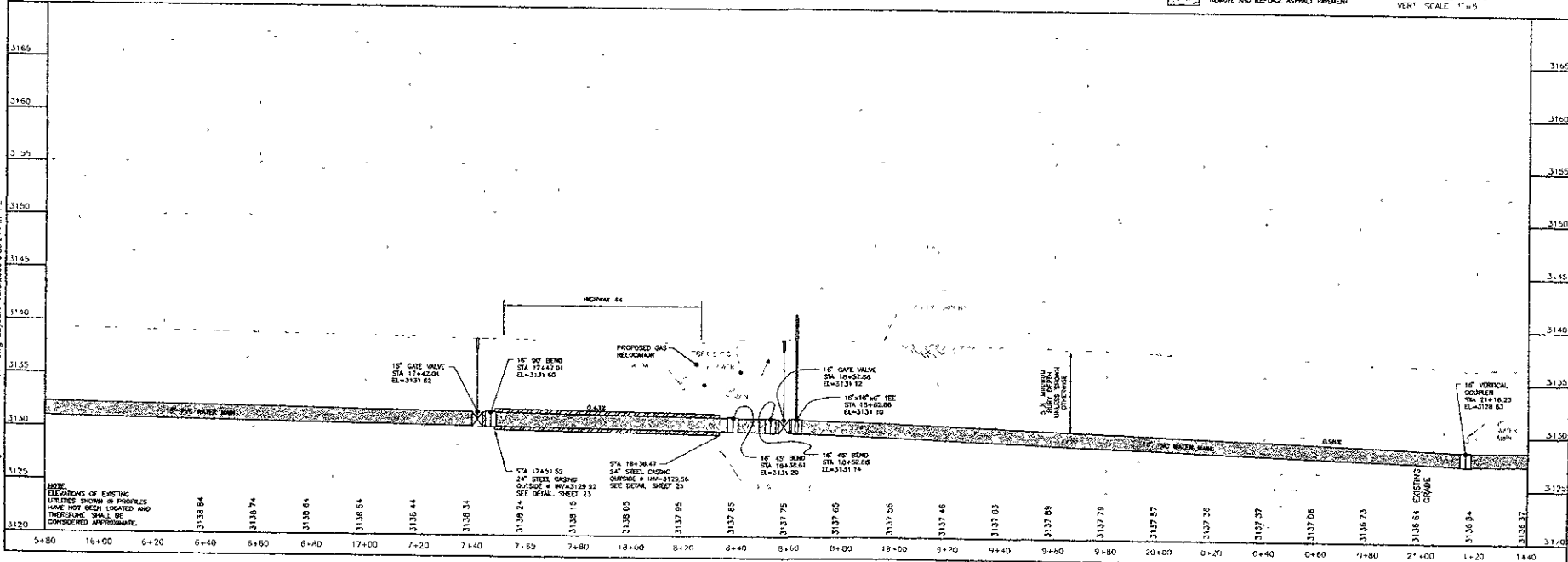
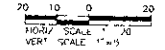
MATCHLINE - SEE SHEET 8

- WATER MAIN NOTES**
- STA 17+42.01 - CL
 - 16" 90° GATE VALVE & BOX
 - STA 17+47.01 - CL
 - 16" 90° BEND
 - STA 17+51.50 - CL TO 18+35.47 - CL
 - JACK & BORE, 24" STEEL SLEEVE - 85 ft
 - STA 18+36.61 - CL
 - 16" 45° BEND
 - STA 18+52.66 - CL
 - 16" 45° BEND
 - STA 18+57.86 - CL
 - 16" 90° GATE VALVE & BOX
 - STA 18+62.06 - CL
 - 16" 90° WYE TEE
 - STA 18+62.26 - 61'
 - 7.5" FIRE HYDRANT ASSEMBLY
 - STA 21+16.23 - CL
 - 16" 90° VERTICAL 90° COUPLER
 - CONTRACTOR TO DEPOSE IF ROAD LINE TO VERIFY DEPTH
- CONCRETE NOTES**
- CONCRETE SIDEWALK**
- STA 20+31.04 - 6" AND 20+56.17 - 6" 15'L TO 21+44.87 - 8" 6" R/W AND 21+00.23 - 6"
 - 1/2" SAWCUT CURBOUT CONCRETE SIDEWALK - 10' IF REMOVE EXISTING CONCRETE SIDEWALK - 85.90' of CONCRETE SIDEWALK - 4' - 85.90' ft
- ASPHALT PAVEMENT NOTES**
- STA 18+44.87 - 10' R/W REMOVE AND RESET SIGN
 - STA 21+17.73 - 2' R/W REMOVE AND RESET SIGN

RELOCATE GAS MARK FROM UNDER PROPOSED 16" PVC WATER MAIN (BY OTHERS)

SILT FENCE

- REMOVE AND REPLACE CONCRETE SIDEWALK
- REMOVE AND REPLACE ASPHALT PAVEMENT

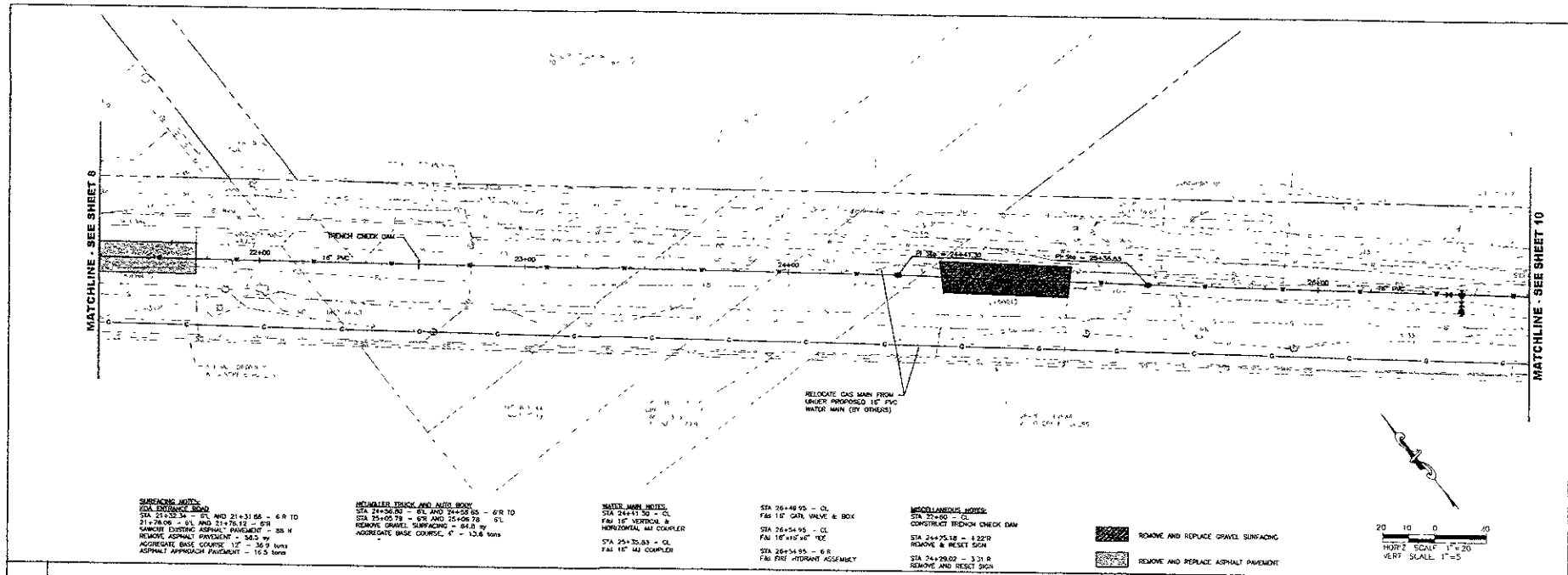



**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

Sheet File: 15" WATER MAIN
 PLAN / PROFILE
 STA 15+60 TO 21+40

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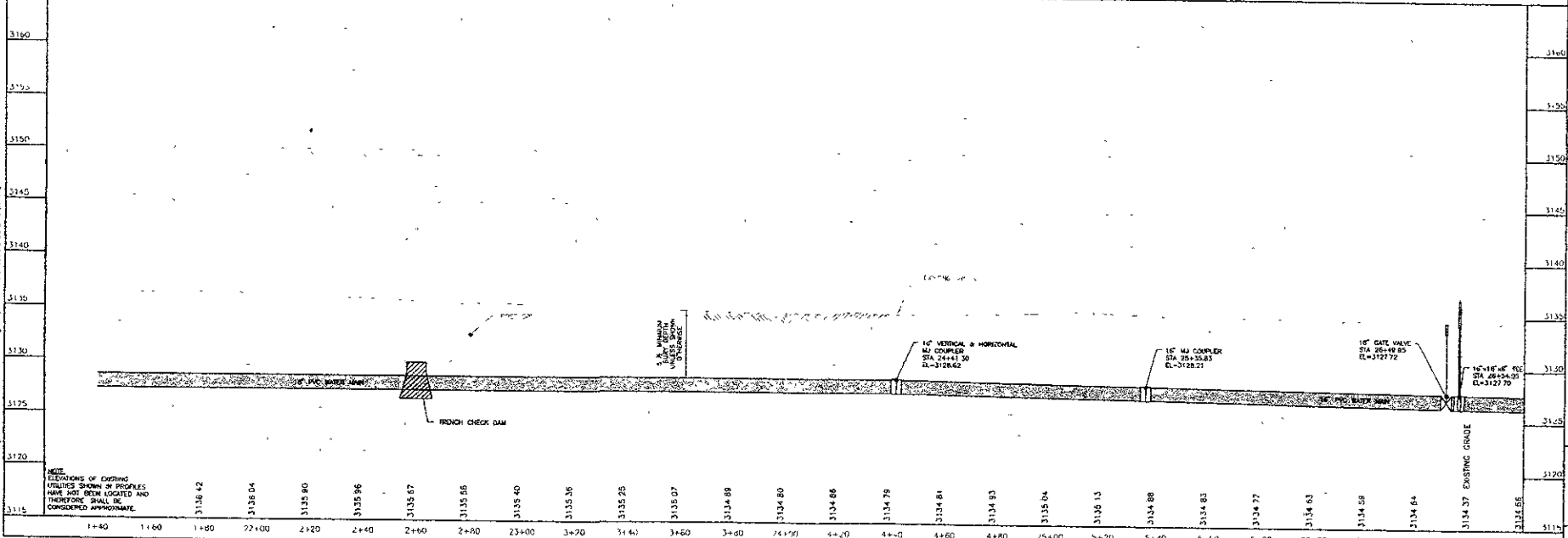



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Scale: AS NOTED

Designed By	Checked By
STC/MDS	MDS
Drawn Date	Plot Date
10/06	12/9/06
Project Job No	
05-04-12	
Submitted By	Survey Date
ATHLETH	4/06
Revisions	

20 10 0 10
HORIZ SCALE 1"=20'
VERT SCALE 1"=5'

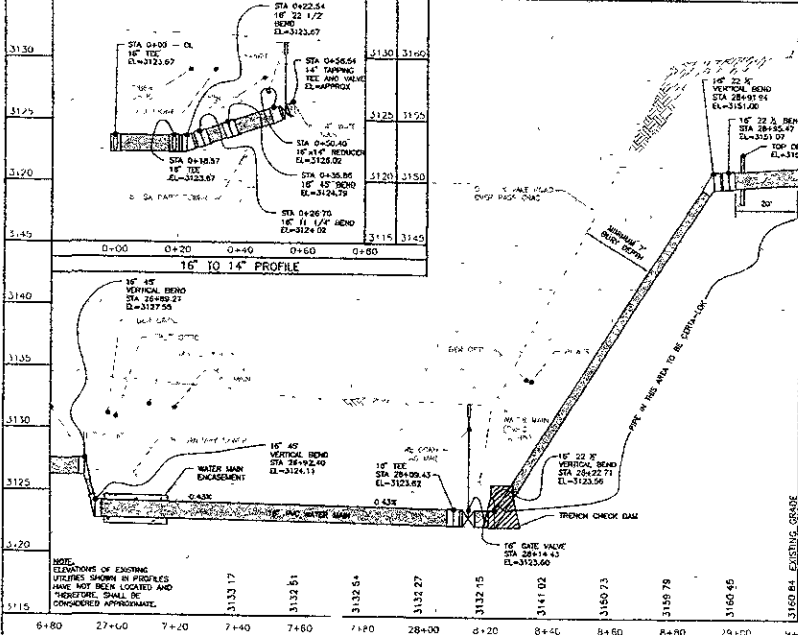
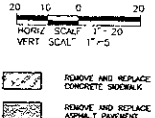
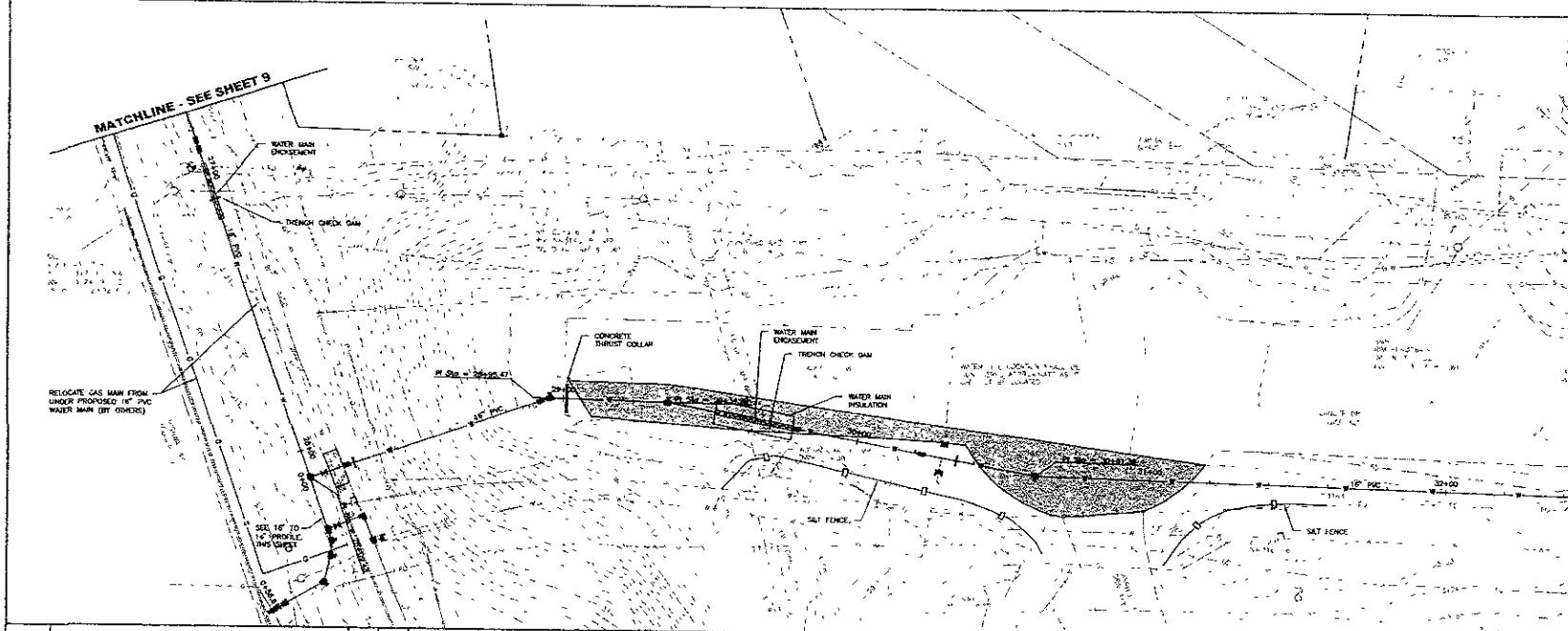


**HIGHWAY 44 and ELK VALE ROAD
WATER MAIN LOOP**

Sheet Title: 18" WATER MAIN PLAN / PROFILE STA 21+40 TO 26+80

9 of 26

MATCHLINE - SEE SHEET 11



Station	Notes
3181.71	16" 11 1/2" BOND
3181.93	16" 12 1/2" BOND
3182.23	16" 14" BOND
3182.57	16" 15" BOND
3182.37	16" 16" BOND
3182.70	16" 17" BOND
3183.19	16" 18" BOND
3183.85	16" 19" BOND
3184.08	16" 20" BOND
3183.24	16" 21" BOND
3183.16	16" 22" BOND
3183.40	16" 23" BOND
3183.50	16" 24" BOND
3183.76	16" 25" BOND
3184.16	16" 26" BOND
3184.47	16" 27" BOND
3184.67	16" 28" BOND
3184.87	16" 29" BOND
3185.07	16" 30" BOND
3185.27	16" 31" BOND
3185.47	16" 32" BOND
3185.67	16" 33" BOND
3185.87	16" 34" BOND
3186.07	16" 35" BOND
3186.27	16" 36" BOND
3186.47	16" 37" BOND
3186.67	16" 38" BOND
3186.87	16" 39" BOND
3187.07	16" 40" BOND
3187.27	16" 41" BOND
3187.47	16" 42" BOND
3187.67	16" 43" BOND
3187.87	16" 44" BOND
3188.07	16" 45" BOND
3188.27	16" 46" BOND
3188.47	16" 47" BOND
3188.67	16" 48" BOND
3188.87	16" 49" BOND
3189.07	16" 50" BOND
3189.27	16" 51" BOND
3189.47	16" 52" BOND
3189.67	16" 53" BOND
3189.87	16" 54" BOND
3190.07	16" 55" BOND
3190.27	16" 56" BOND
3190.47	16" 57" BOND
3190.67	16" 58" BOND
3190.87	16" 59" BOND
3191.07	16" 60" BOND
3191.27	16" 61" BOND
3191.47	16" 62" BOND
3191.67	16" 63" BOND
3191.87	16" 64" BOND
3192.07	16" 65" BOND
3192.27	16" 66" BOND
3192.47	16" 67" BOND
3192.67	16" 68" BOND
3192.87	16" 69" BOND
3193.07	16" 70" BOND
3193.27	16" 71" BOND
3193.47	16" 72" BOND
3193.67	16" 73" BOND
3193.87	16" 74" BOND
3194.07	16" 75" BOND
3194.27	16" 76" BOND
3194.47	16" 77" BOND
3194.67	16" 78" BOND
3194.87	16" 79" BOND
3195.07	16" 80" BOND
3195.27	16" 81" BOND
3195.47	16" 82" BOND
3195.67	16" 83" BOND
3195.87	16" 84" BOND
3196.07	16" 85" BOND
3196.27	16" 86" BOND
3196.47	16" 87" BOND
3196.67	16" 88" BOND
3196.87	16" 89" BOND
3197.07	16" 90" BOND
3197.27	16" 91" BOND
3197.47	16" 92" BOND
3197.67	16" 93" BOND
3197.87	16" 94" BOND
3198.07	16" 95" BOND
3198.27	16" 96" BOND
3198.47	16" 97" BOND
3198.67	16" 98" BOND
3198.87	16" 99" BOND
3199.07	16" 100" BOND

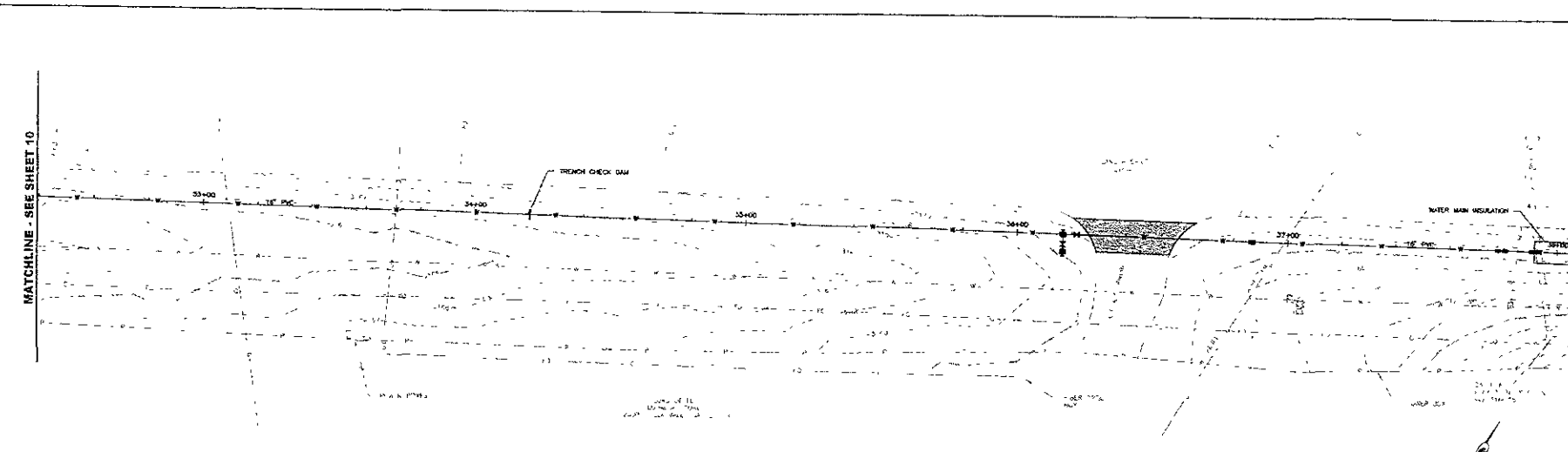
**HIGHWAY 44 and ELK VALE ROAD
WATER MAIN LOOP**



DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
 408 LARKS CREEK ST. SUITE 1000 • FORT COCKER, CO 80131
 PH: 801-338-0353 FAX: 801-338-5349 EMAIL: info@dreamdesigninc.com

MATCHLINE - SEE SHEET 12

MATCHLINE - SEE SHEET 10



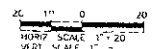
REWORKING NOTES
 CHECK ADDRESS
 STA 36+20.33 - 41 AND 36+29.23 - 6 R TO
 36+61.11 - 85 AND 36+64.24 - 90
 REMOVE EXISTING ASPHALT PAVEMENT - 72 #
 REMOVE ASPHALT PAVEMENT - 45.4 #
 APPROPRIATE BASE COURSE 12" - 2#6 bars
 ASPHALT PAVEMENT 3" CLASS C, TYPE 1 12.8 tons

WATER MAIN NOTES
 STA 36+8.74 - CL
 FBI 10" 45' BEND
 STA 36+16.74 - 6'R
 FBI FIRE HYDRANT ASSEMBLY

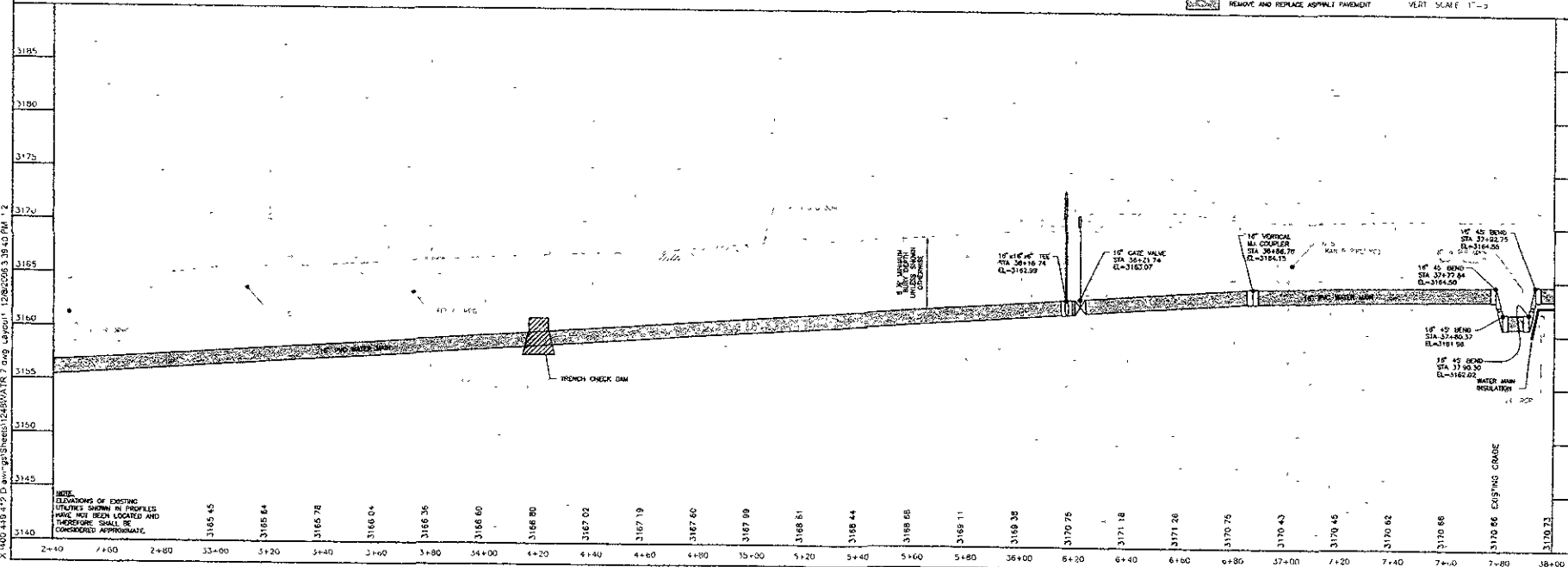
STA 36+21.74 - CL
 FBI 16" GATE VALVE & BOX
 STA 36+26.78 - CL
 FBI 16" VERTICAL AIR COUPLER

STA 37+77.64 - CL TO
 STA 37+82.75 - CL
 FBI WATER MAIN LOWERING
 FBI WATER MAIN LOWERING
 (+/- 18" 45' BEND)
 CONTRACTOR TO VERIFY DEPTH
 WATER MAIN TO VERIFY DEPTH
 PRIOR TO CONSTRUCTION AND
 MODIFY LOWERING IF NECESSARY

MISCELLANEOUS NOTES
 STA 34+20 - CL
 CONSTRUCT TRENCH CHECK DAM
 STA 37+45.26 - CL
 CONSTRUCT WATER
 MAIN HOUSING
 15'x8" - 120 #



REMOVE AND REPLACE ASPHALT PAVEMENT



NOTE
 ELEVATIONS OF EXISTING
 UTILITIES SHOWN IN PROFILES
 HAVE NOT BEEN LOCATED AND
 THEREFORE SHALL BE
 CONSIDERED APPROXIMATE.

HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP

16" WATER MAIN
 PLAN / PROFILE
 STA 32+40 TO 38+00



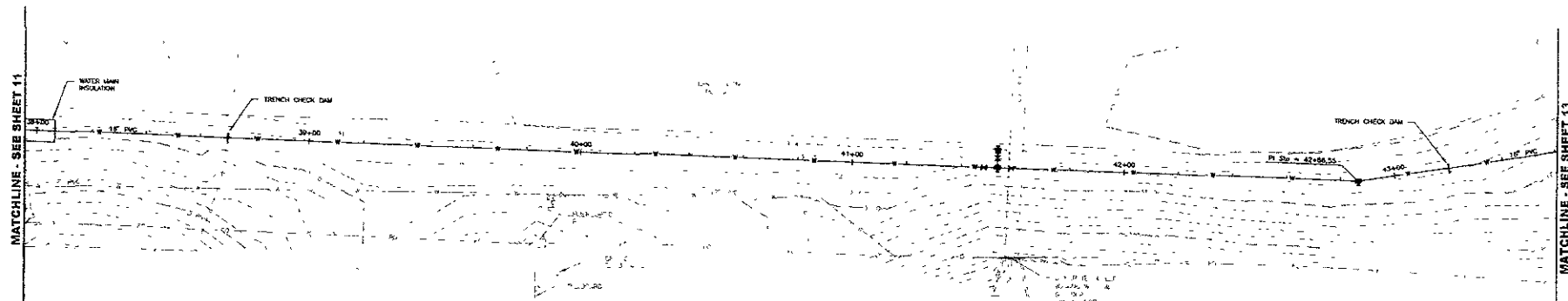
DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
 200 JACOBS CENTER DRIVE, SUITE 400, WEST GAITHERSBURG, MD 20894
 TEL: 301-947-0000 FAX: 301-947-0000

Project No: **AS NOTED**
 Drawn by: **MS**
 Check Date: **12/8/06**
 Issue Date: **02-04-12**
 Surveyed by: **MS**
 Survey Date: **4/05**

Scale: **AS NOTED**
 Date: **AS NOTED**
 Revision: **AS NOTED**

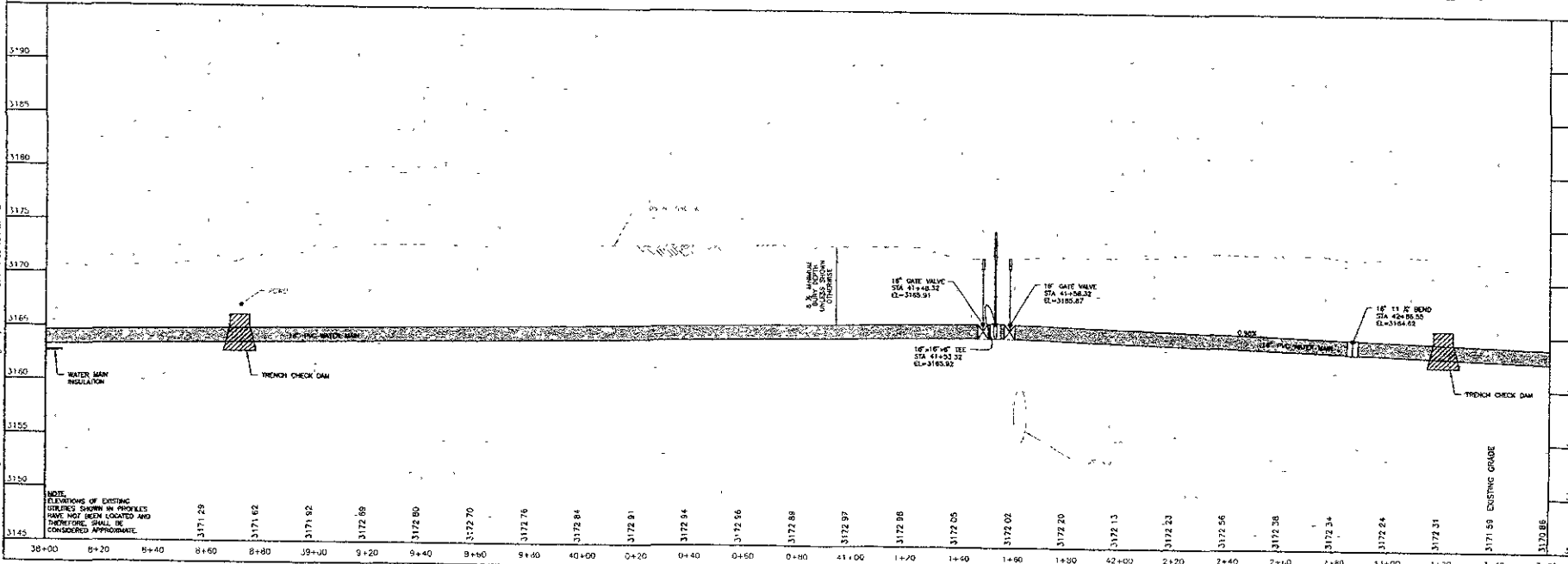
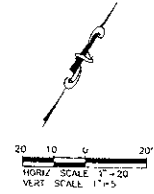
**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

Sheet Title: **16" WATER MAIN PLAN / PROFILE**
 STA 38+00 TO 43+60



MISC. NOTES:
 STA 41+45.32 - CL
 FAC 16" GATE VALVE & BOX
 STA 41+53.33 - CL
 FAC 15" 180° TEE
 STA 41+53.32 - CL
 FAC FIRE HYDRANT ASSEMBLY
 STA 41+58.02 - CL
 FAC 16" GATE VALVE & BOX
 STA 42+06.55 - CL
 FAC 16" 11 1/2" BEND

MISCELLANEOUS NOTES:
 CONSTRUCT TRENCH CHECK DAM AT THE FOLLOWING LOCATIONS:
 STA 38+20 - CL
 STA 43+20 - CL



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DRAINAGE NOTES
 STA 44+11.12 - 44+11 TO 44+28.84 - 3.5' R
 REMOVE CONCRETE CURB & CUTTER - 12" P
 CONCRETE CURB & CUTTER TYPE 866 - 12" P
 STA 34+20.33 - 44 AND 36+29.23 - 6' R TO
 34+48.11 - 6' R AND 36+36.24 - 6' R TO
 SMOOTH EXISTING ASPHALT PAVEMENT - 78" H
 REMOVE ASPHALT PAVEMENT - 31.4' BY
 AGGREGATE BASE COURSE 12" - 32.4' LONG
 ASPHALT PAVEMENT 5" CLASS C TYPE 1 - 14.8' LONG

STA 46+71.00 - 61' TO 46+71.33 - 6" R
 REMOVE CONCRETE CURB & CUTTER - 12" P
 CONCRETE CURB & CUTTER TYPE 866 - 12" P

WATER MAIN NOTES
 STA 44+32.86 - CL
 18" 10' VERTICAL 1/4" COUPLER

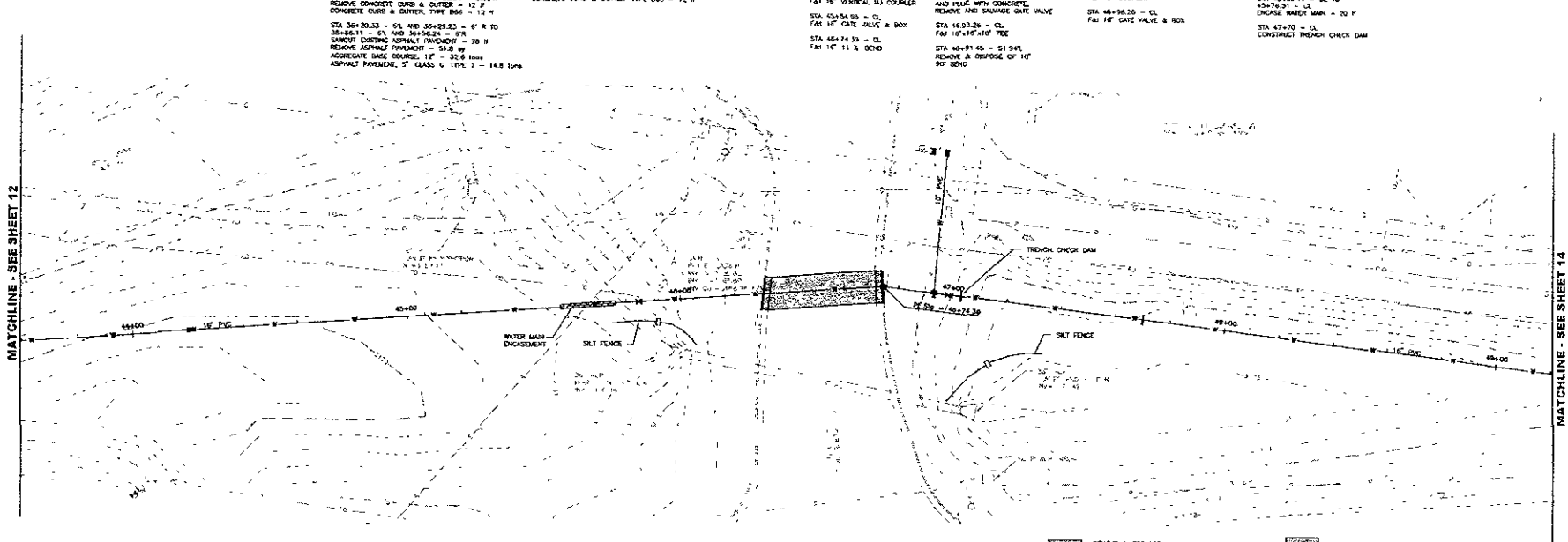
STA 46+59.35 - 51' 7/8"
 ABANDON 10" WATER MAIN
 AND FILL WITH CONCRETE
 REMOVE 10" GATE VALVE & BOX

STA 46+91.45 - 51' 9/8"
 18" 10' COUPLER
 STA 46+94.25 - CL
 18" 10' GATE VALVE & BOX

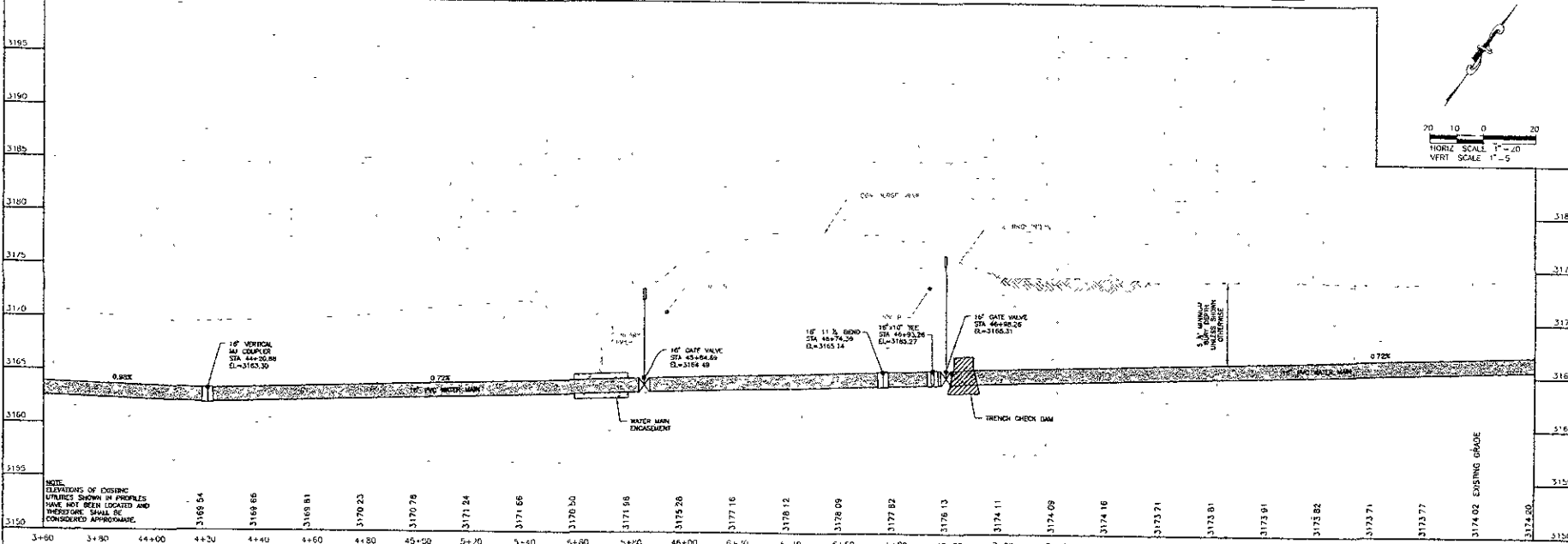
MISCELLANEOUS NOTES
 STA 45+20.11 - CL TO
 45+76.31 - CL
 DISCARD WATER MAIN - 20' P
 STA 47+70 - CL
 CONCRETE TRENCH CHECK DAM

MATCHLINE - SEE SHEET 12

MATCHLINE - SEE SHEET 14



REMOVE AND REPLACE CURB & CUTTER
 REMOVE AND REPLACE ASPHALT PAVEMENT



NOTE:
 ELEVATIONS OF EXISTING UTILITIES SHOWN IN PROFILES HAVE NOT BEEN LOCATED AND THEREFORE SHALL BE CONSIDERED APPROXIMATE.

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Scale: AS NOTED
 Drawn by: S.FORMETS
 Design Date: 8/25
 Plot Date: 10/26
 Internal Job No: 2412
 External Job No: 4106

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

16" WATER MAIN
 PLAN / PROFILE
 STA 43+60 TO 49+20

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DREAM DESIGN INTERNATIONAL, INC.
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 1000 N. 10th St. Ste. 1100
 PO Box 100000, Salt Lake City, Utah 84110

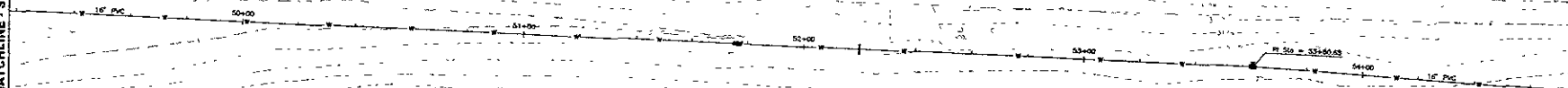
Scale: AS NOTED
 Designed By: STOMAS
 Checked By: MDS
 Issue Date: 10/06
 Issue No: 1273/06
 Drawn By: ARLETH
 Survey Date: 4/06

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

Sheet Title:
**16" WATER MAIN
 PLAN / PROFILE
 STA 49+20 TO 54+00**

MATCHLINE - SEE SHEET 13

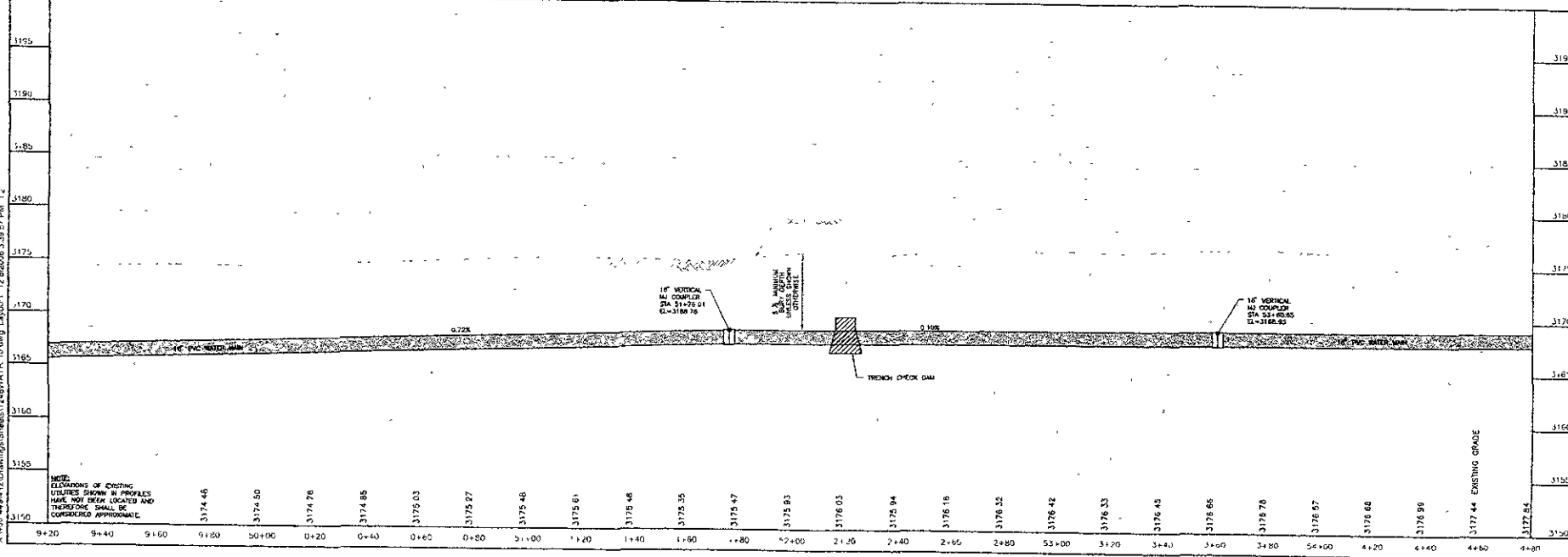
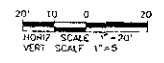
MATCHLINE - SEE SHEET 16



WATER MAIN NOTES:
 STA 51+76.01 - CL
 F&I 16" VERTICAL MI COUPLER

STA 53+60.65 - CL
 F&I 16" MI COUPLER

MISCELLANEOUS NOTES:
 STA 53+20 - CL
 CONSTRUCT TRENCH CHECK DAM



NOTE:
 ELEVATIONS OF EXISTING UTILITIES SHOWN IN PROFILES HAVE NOT BEEN LOCATED AND THEREFORE SHALL BE CONSIDERED APPROXIMATE.

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CITY OF SALT LAKE CITY PROJECT NO. 1245



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INTERNATIONAL, INC.**
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10000 W. 10th Ave., Suite 1000, Denver, CO 80202
Tel: 303.755.8888 Fax: 303.755.8889 Email: info@dreamdesigninc.com

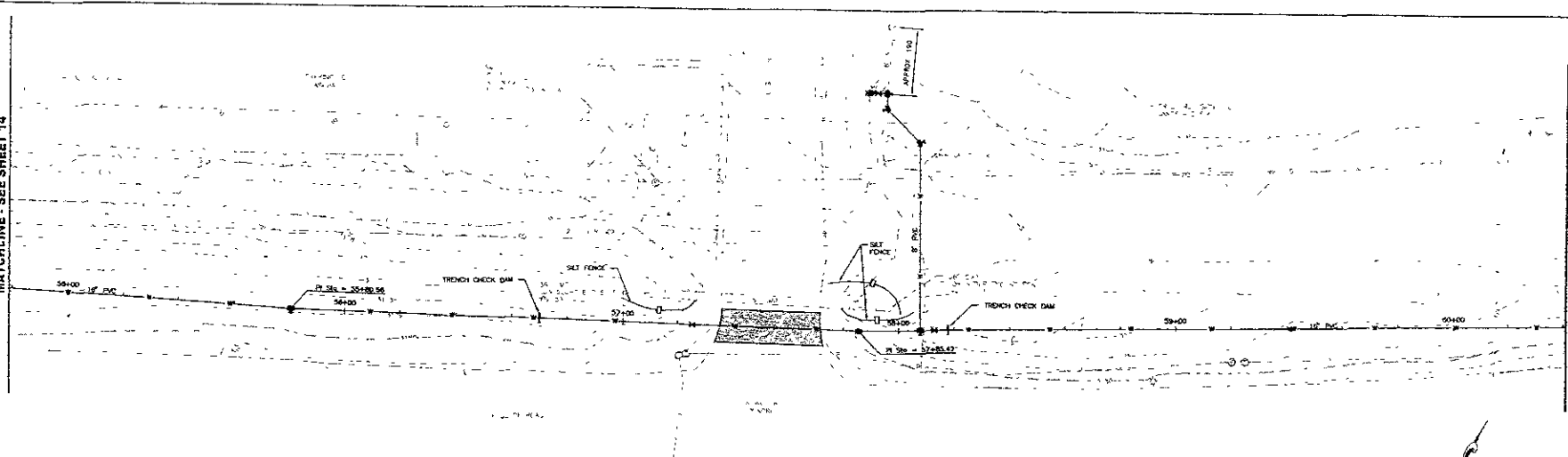
Drawn By: AS NOTED
Checked By: S. THOMAS
Design Date: 10/06
Permit Date: 12/28/06
Issue No: 06-04-12
Scale: Safety Date: 4/06

**HIGHWAY 44 and ELK VALE ROAD
WATER MAIN LOOP**

16" WATER MAIN
PLAN / PROFILE
STA 54+80 TO 80+40

MATCHLINE - SEE SHEET 14

MATCHLINE - SEE SHEET 16



SURFACING NOTES:

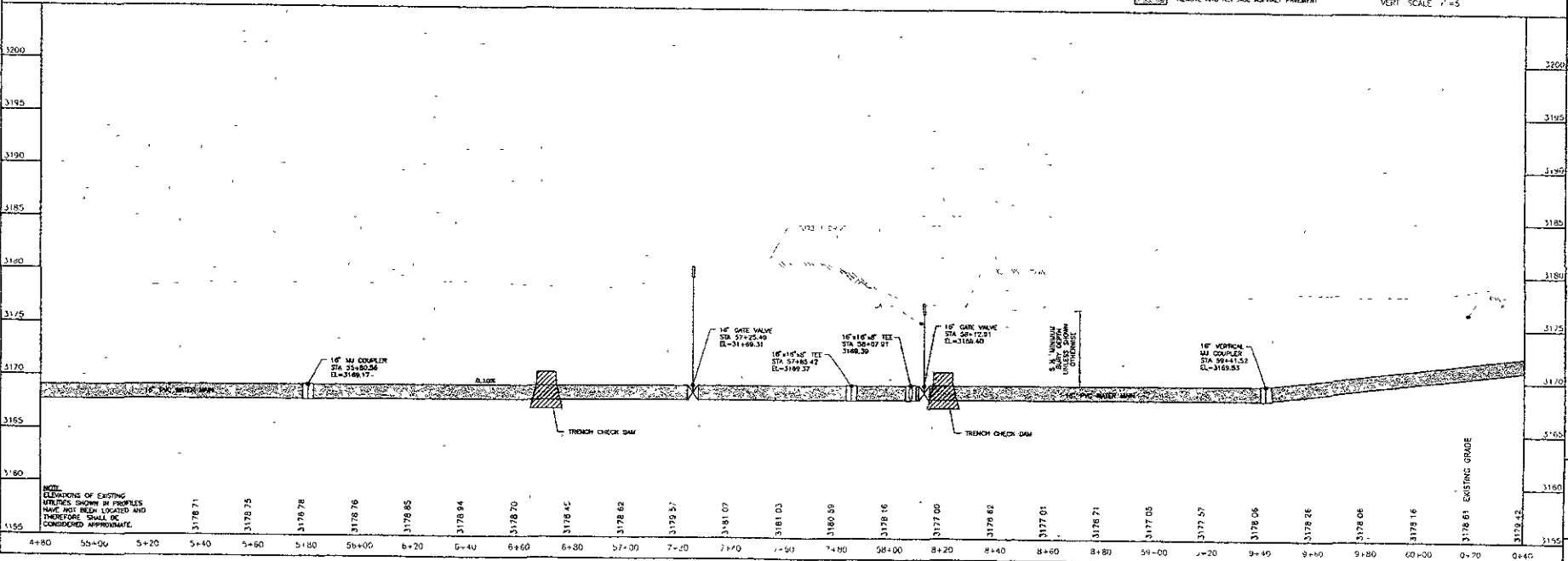
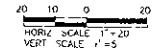
REMOVE ASPHALT PAVEMENT
STA 55+80.00 - EL AND 57+33.74 - 618' RD
57+71.55 - 87' AND 57+73.06 - 87'
REMOVE EXISTING ASPHALT PAVEMENT - 75' W
REMOVE ASPHALT PAVEMENT - 45.8' W
AGGREGATE BASE COURSE, 12" - 30.8' LONG
ASPHALT PAVEMENT, 5" CLASS G, TYPE 1 - 13.7' LONG

WATER MAIN NOTES:

STA 55+80.00 - CL
FAM 16" MJ COUPLER
STA 57+25.45 - CL
FAM 16" GATE VALVE & BOP
STA 57+85.42 - CL
FAM 16" MJ COUPLER
STA 58+07.91 - CL
FAM 16" 45° TEE
STA 58+08.62 - 60.32'
FAM 16" 45° BEND
STA 57+56.75 - 60.00'
FAM 8" 45° BEND
STA 57+95.99 - 80.34'
REMOVE AND DISPOSE OF
8" 90° BEND
STA 57+56.09 - 80.34'
FAM 8" 45° TEE

MISCELLANEOUS NOTES:

REMOVE AND REPLACE ASPHALT PAVEMENT
STA 58+07.91 - 80.32'
REMOVE AND REPLACE ASPHALT PAVEMENT
CONSTRUCT TRENCH CHECK DAM
STA 57+91.00 - 80.32'
FAM FIRE HYDRANT ASSEMBLY
STA 58+12.91 - CL
FAM 16" GATE VALVE
STA 58+41.52 - CL
FAM 16" VERTICAL MJ COUPLER



NOTE:
ELEVATIONS OF EXISTING
UTILITIES SHOWN IN PROFILES
HAVE NOT BEEN LOCATED AND
THEREFORE SHALL BE
CONSIDERED APPROXIMATE.

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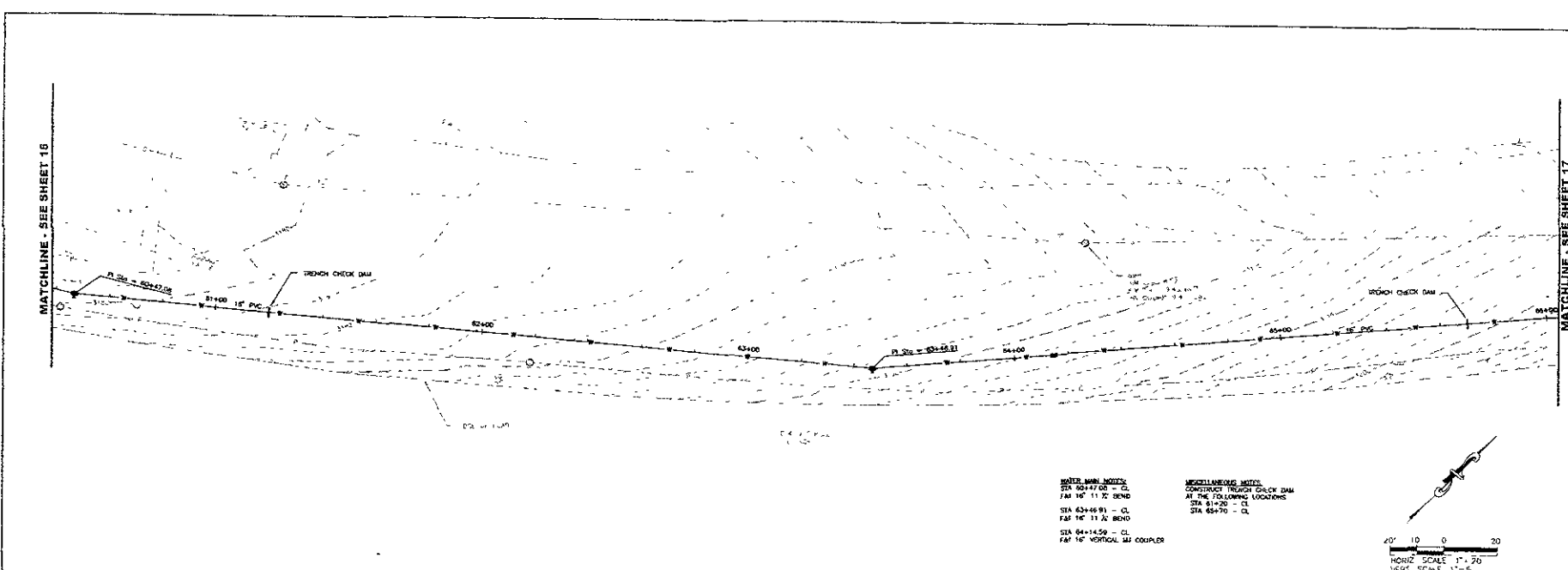
DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL SURVEYING & CIVIL ENGINEERING CONSULTANTS
 509 KAMAHU DRIVE, SUITE 4, WAHIO, HI 96791
 P: 808-943-1031 FAX: 808-943-5415 EMAIL: info@dreamdesign.com

Project No.

Scale	AS NOTED
Designed By	Drawn By
STGWMS	MDS
Checked Date	Plot Date
1/20/06	12/26/06
Project No.	
Sheet No.	
Surveyed By	Survey Date
AMLETH	4/04
Revised	

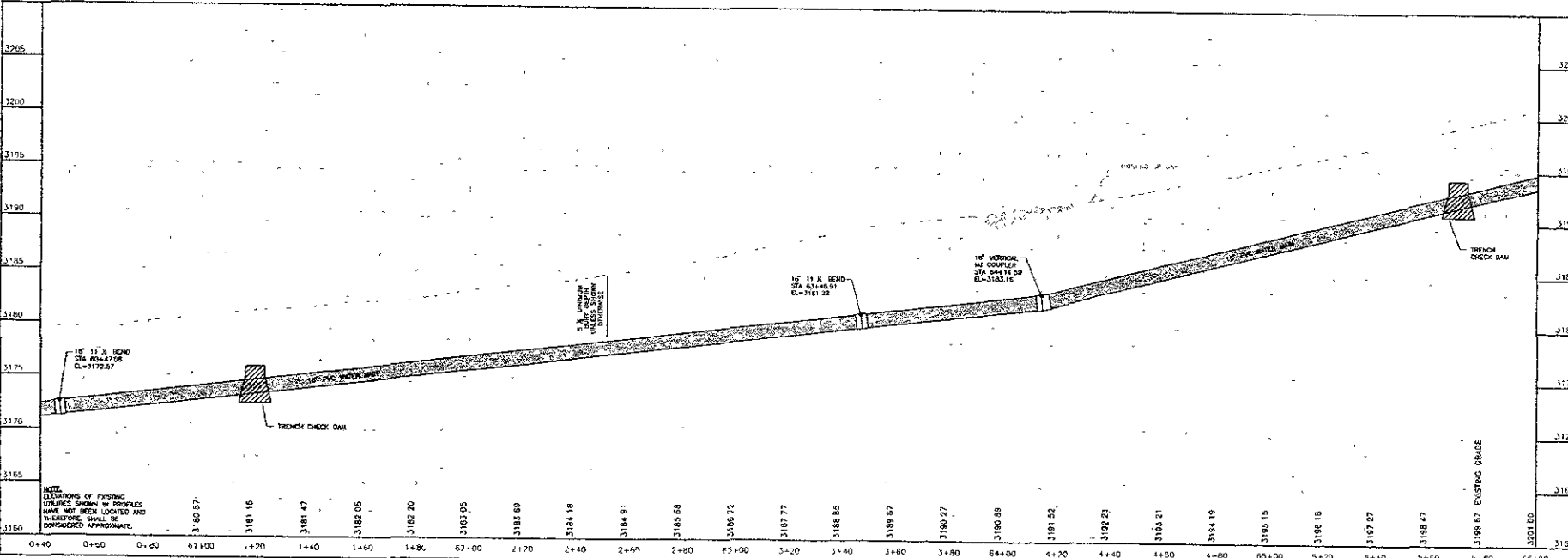
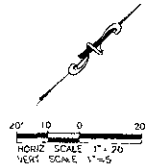
**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

Drawn Title
**16" WATER MAIN
 PLAN / PROFILE**
 STA 60+40 TO 66+00



WATER MAIN NOTES:
 STA 60+47.68 = CL
 745 16' 11 1/2' BEND
 STA 62+66.91 = CL
 745 16' 11 1/2' BEND
 STA 64+14.59 = CL
 745 16' VERTICAL ALIGNMENT

MISCELLANEOUS NOTES:
 CONSTRUCT THROUGH GULCH DAM
 AT THE FOLLOWING LOCATIONS:
 STA 61+20 = CL
 STA 65+70 = CL



NOTE:
 DIMENSIONS OF EXISTING
 UTILITIES SHOWN IN PROFILES
 HAVE NOT BEEN LOCATED AND
 THEREFORE SHALL BE
 CONSIDERED APPROXIMATE.

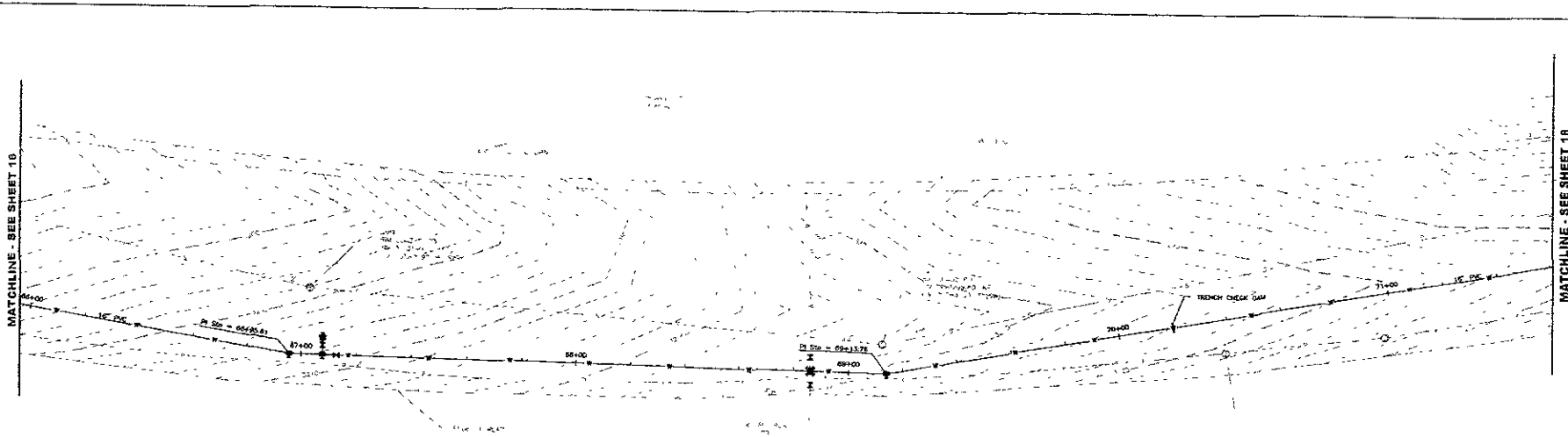
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MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 10



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10000 W. 10th Ave., Suite 100, Denver, CO 80202
TEL: 303-751-8888 FAX: 303-751-8855 EMAIL: info@dreamdesign.com

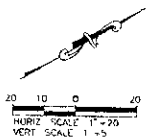


WATER MAIN NOTES:
 STA 66+95.81 = CL
 F&I 16" 11 1/2" BOND
 STA 67+07.74 = CL
 F&I 16"X16" TEE
 STA 67+07.74 = CL
 F&I FIRE HYDRANT ASSEMBLY

STA 67+12.74 = CL
 F&I 16" GATE VALVE & BOX
 STA 68+68.00 = CL
 F&I 16"X16" 45° CROSS
 STA 68+96.00 = 5'L
 F&I 16" GATE VALVE

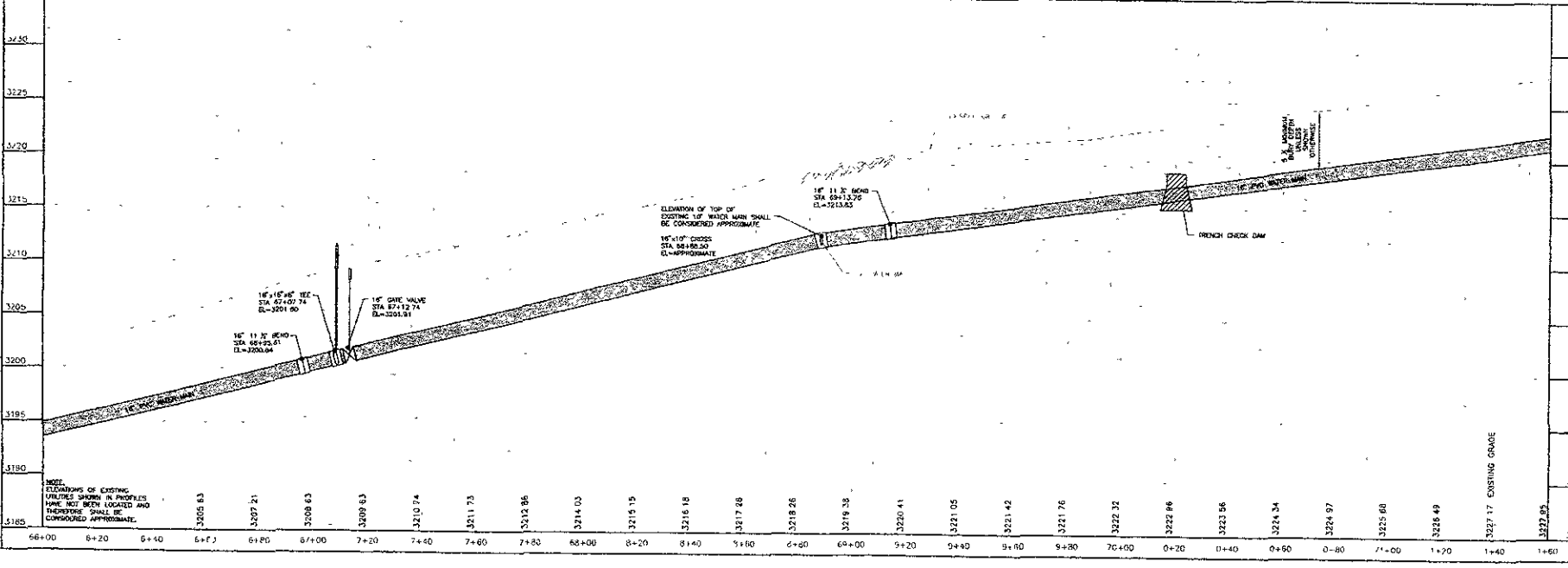
STA 69+86.19 = 5'R
 F&I 16" GATE VALVE
 STA 69+13.78 = CL
 F&I 16" 11 1/2" BOND

MISCELLANEOUS NOTES:
 STA 70+20 = CL
 CONSTRUCT TRENCH CHECK DAM



Scale	AS NOTED
Designed By	Q-10/DF
Checked By	STC/MES
Design Date	MUS
10/20/06	Plan Date
1/2/2007	1/2/2007
1/2/2007	1/2/2007
06/04/12	06/04/12
Checked By	ASLETH
Drawn By	406
Revised	

X:\300-449412\Drawings\12\HWTR\13.dwg [PLOT] 12/20/06 3:40:16 PM 12



NOTE:
 ELEVATIONS OF EXISTING UTILITIES SHOWN IN PROFILES HAVE NOT BEEN LOCATED AND THEREFORE SHALL BE CONSIDERED APPROXIMATE.

ELEVATION OF TOP OF EXISTING 16" WATER MAIN SHALL BE CONSIDERED APPROXIMATE.
 16"X16" CROSS
 STA 68+86.00
 CL=6993.041

16" 11 1/2" BOND
 STA 69+13.78
 CL=3213.85

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

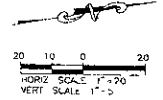
Sheet Title
**16" WATER MAIN
 PLAN / PROFILE**
 STA 66+00 TO 71+60



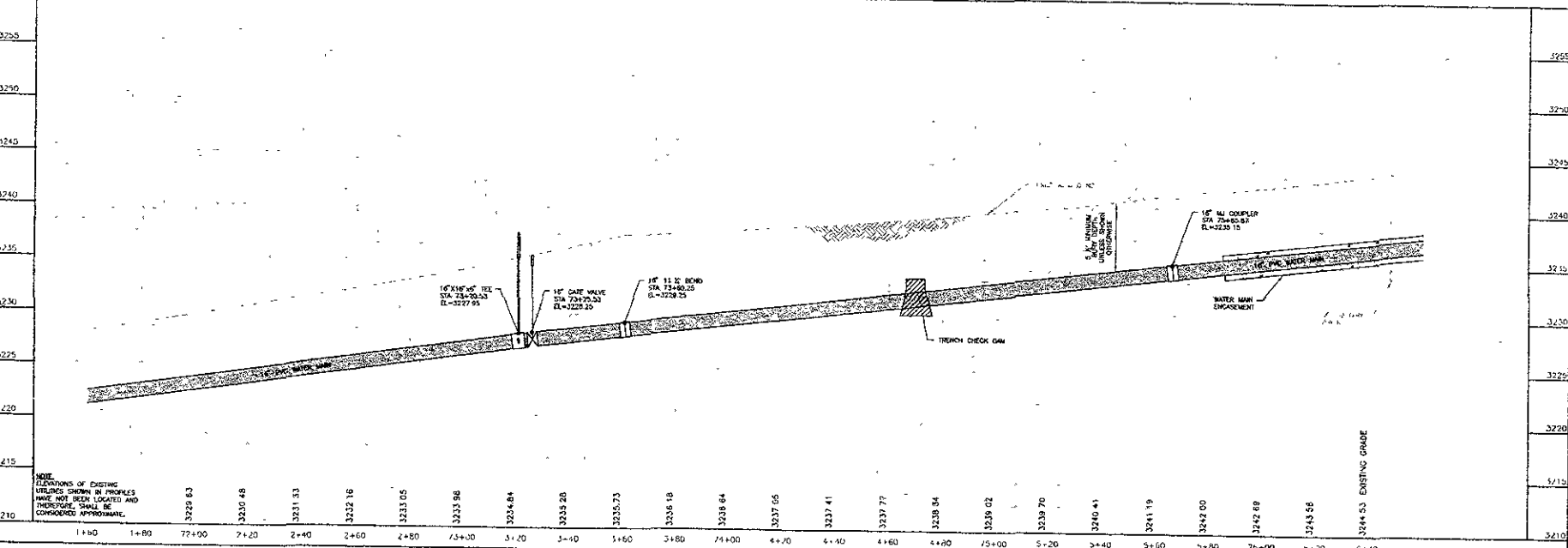
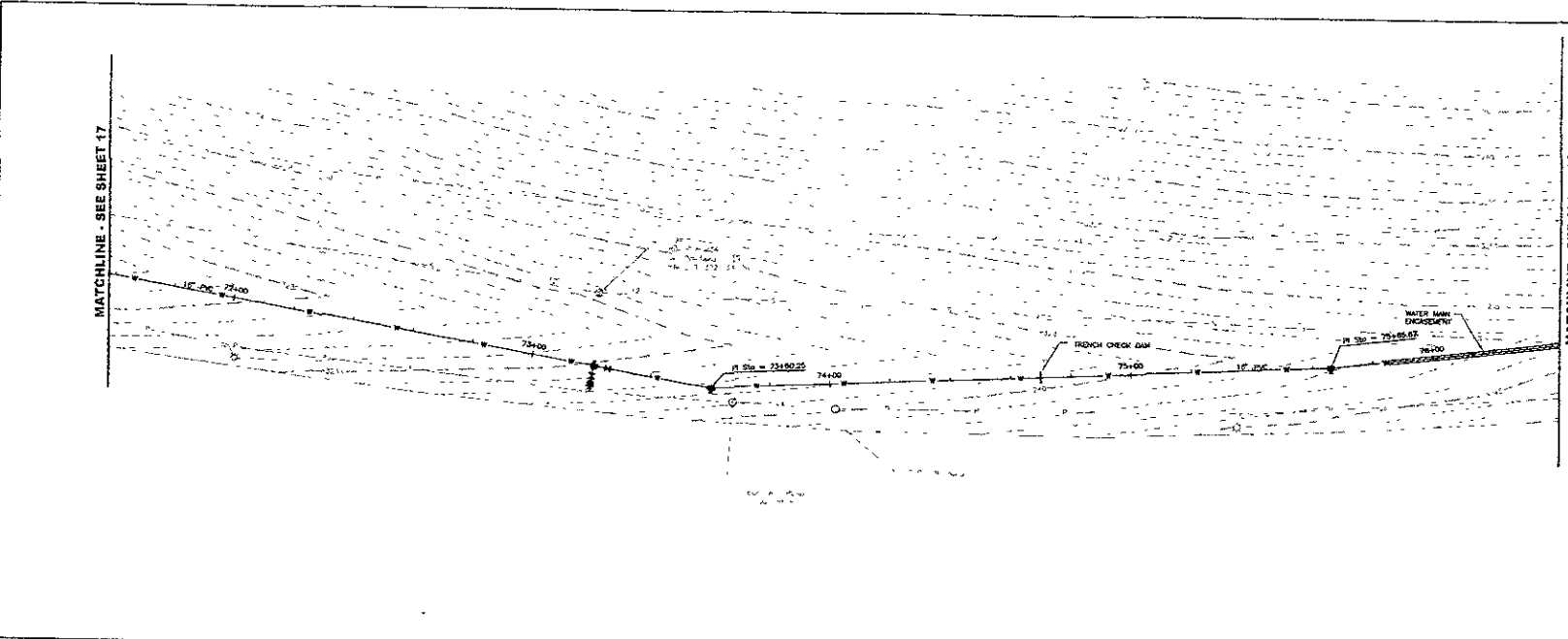
DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
 503 MARSH CREEK ST. SUITE 4 JARVIS CITY, IA 50130
 PH 562-344-8554 FAX 562-344-8143 EMAIL info@dreamdesigninc.com

MAJOR MARK NOTES
 STA 73+25.53 = CL
 F&I 16" 11' X 16" TEL
 STA 73+70.53 = 8" F&I
 F&I 19" WATERWAY ASSEMBLY
 STA 73+25.53 = CL
 F&I 16" GATE VALVE & BOX
 STA 75+60.25 = CL
 F&I 16" 11' X BEND
 STA 75+55.87 = CL
 F&I 16" 4" COMPUSER
 STA 75+55.87 = CL TO
 77+44.54 = CL
 ENCASE WATER MAIN

INCIDENTAL NOTES
 SEE 74+70 = CL
 CONSTRUCT TRENCH CHECK DAM
 STA 75+55.87 = CL
 77+44.54 = CL
 ENCASE WATER MAIN



Drawn By	AS NOTED
STOVANDS	AMDC
Design Date	12/5/06
Project No.	12/5/06
Original Add No.	05/24/15
Checked By	AMDC
Reviewed	4/16



NOTE:
 ELEVATIONS OF EXISTING
 UTILITIES SHOWN IN PROFILES
 HAVE NOT BEEN LOCATED AND
 THEREFORE, SHALL BE
 CONSIDERED APPROXIMATE.

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

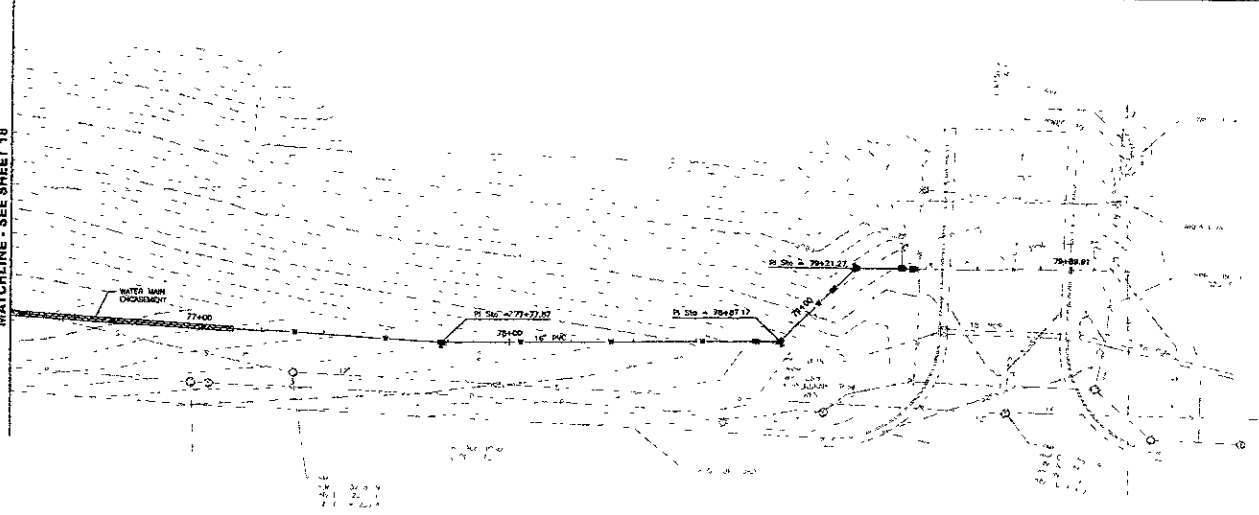
16" WATER MAIN
 PLAN / PROFILE
 STA 71+60 TO 76+40

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DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
 5200 W. 120th Street, Suite 100, Overland Park, KS 66204
 PH 816-341-0334 FAX 816-341-0343 EMAIL info@dreamdesigninc.com

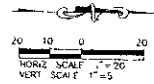
MATCHLINE - SEE SHEET 18



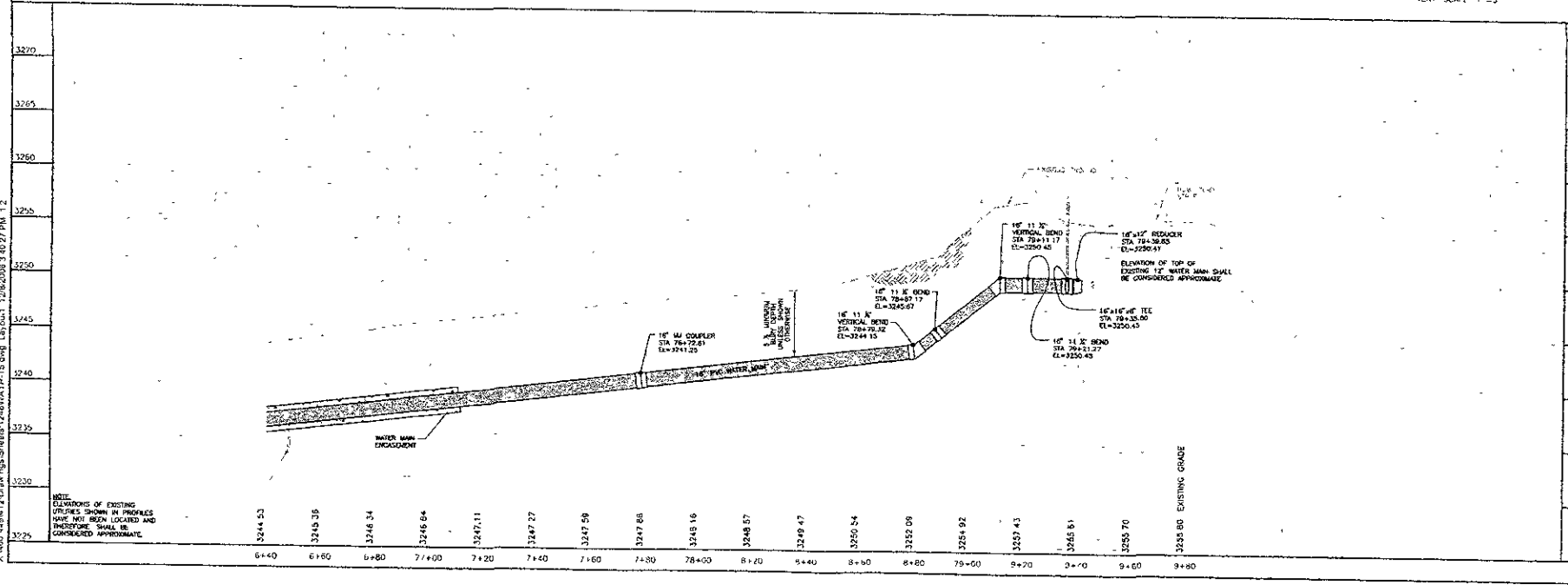
- WATER MAIN NOTES**
- STA 75+72.87 - CL
 - FAI 16" MI COUPLER
 - STA 76+31.32 - CL
 - FAI 16" VERTICAL 11' X 10'00"
 - STA 76+07.17 - CL
 - FAI 12" X 8' BEND
 - STA 76+11.17 - CL
 - FAI 16" VERTICAL 11' X BEND
 - STA 76+21.27 - CL
 - FAI 12" X 8' BEND
 - STA 76+32.67 - CL
 - REMOVE AND EXPOSE OF 12" CAP
 - STA 76+35.00 - CL
 - FAI 12" X 16" TEE AND CONNECT TO EXISTING 4" HYDRANT LEAD
 - STA 76+36.65 - CL
 - FAI 16" X 12" REDUCER AND CONNECT TO EXISTING 12" WATER MAIN

MECHANICAL NOTES

- STA 76+32.67 - CL
- REMOVE AND RESECTION



DATE	AS NOTED
DESIGNED BY	DMB
DESIGNED BY	MDG
DESIGN DATE	12/28/05
PROJECT NO.	05-0412
DATE	05-04-12
APPROVED BY	ASL/ETM
DATE	4/06



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NOTE: ELEVATIONS OF EXISTING UTILITIES SHOWN IN PROFILES HAVE NOT BEEN LOCATED AND THEREFORE SHALL BE CONSIDERED APPROXIMATE.

HIGHWAY 44 and ELK VALE ROAD WATER MAIN LOOP

16" WATER MAIN
 PLAN / PROFILE
 STA 76+40 TO END



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INTERNATIONAL, INC.**
PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
308 KANSAS CITY ST. SUITE 400 • KANSAS CITY, MO 64108
PH: 816-342-0555 FAX: 816-342-0545 EMAIL: info@ddiinc.com

Prepared by

Scale AS NOTED

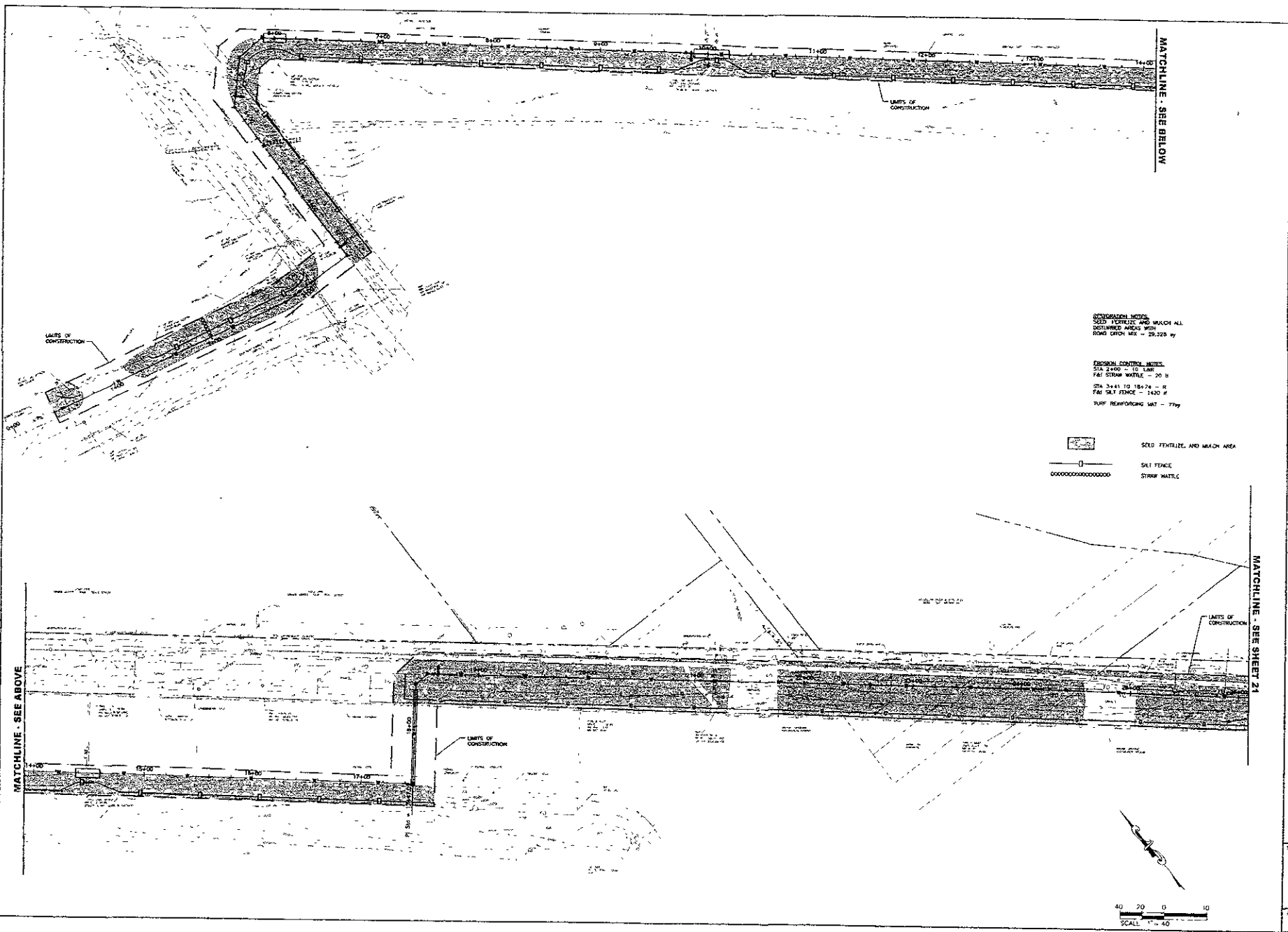
Prepared for STORMS
Prepared Date 10/08
Project Name NDS
Project No. 128406

Revised for 10-04-12
Submitted by JARLEIGH
Checked Date 8/08
Reviewed

**HIGHWAY 44 and ELK VALE ROAD
WATER MAIN LOOP**

CITY OF KANSAS CITY, PROJECT NO. 103-1248

Sheet Title
**EROSION CONTROL &
RESTORATION PLAN**
STA 0+00 TO 26+00



GENERAL NOTES
SEED, FERTILIZE AND MOW ALL DISTURBED AREAS WITH ROAD CRUSH MIX - 29.228 yd

EROSION CONTROL NOTES
STA 2+00 - 10 LWB
F&S STRAW WATTLE - 20 ft
STA 3+45 TO 18+74 - R
F&S SILT FENCE - 1420 ft
TURF REPAIRING MAT - 77sq

SEED, FERTILIZE, AND MOW AREA
 SILT FENCE
 STRAW WATTLE

MATCHLINE - SEE BELOW

MATCHLINE - SEE SHEET 21

MATCHLINE - SEE ABOVE

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MATCHLINE - SEE SHEET 20

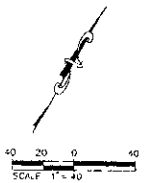
MATCHLINE - SEE BELOW



MATCHLINE - SEE ABOVE

MATCHLINE - SEE SHEET 22

- EROSION CONTROL NOTES:**
- STA 28+21 - 8' LUMP TO 28+40 - 8' LUMP
 - F&I TURF REINFORCING MAT - 77 sq
 - STA 28+25 - 20' L&R F&I STRAW WATTLE - 40 lf
 - STA 28+45 - 20' L&R F&I STRAW WATTLE - 40 lf
 - STA 28+70 - 20' L&R F&I STRAW WATTLE - 40 lf
 - STA 28+58 TO 30+85 - 8' F&I SALT FENCE - 122 lf
 - STA 31+05 TO 31+80 - 8' F&I SALT FENCE - 63 lf
 - STA 43+00 - CL TO 38 R F&I STRAW WATTLE - 34 lf
 - STA 45+75 TO 48+00 - 8' F&I SALT FENCE - 34 lf
 - STA 47+05 TO 47+20 - 8' F&I SALT FENCE - 41 lf
 - STA 45+00 - CL TO 50W F&I STRAW WATTLE 20 lf



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 628 BLACKSBURY ST. SUITE 200, SUITE 200, SUITE 200
 PE 002-544-0008 FAX 002-544-0015 EMAIL: info@dreamdesign.com

Scale	AS NOTED
Drawn by	STW/MS
Design Date	12/28/06
Internal Job No	06-0412
Drawn by	ARLETH
Checked by	4/06

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

**EROSION CONTROL &
 RESTORATION PLAN**

STA 28+00 TO 49+00

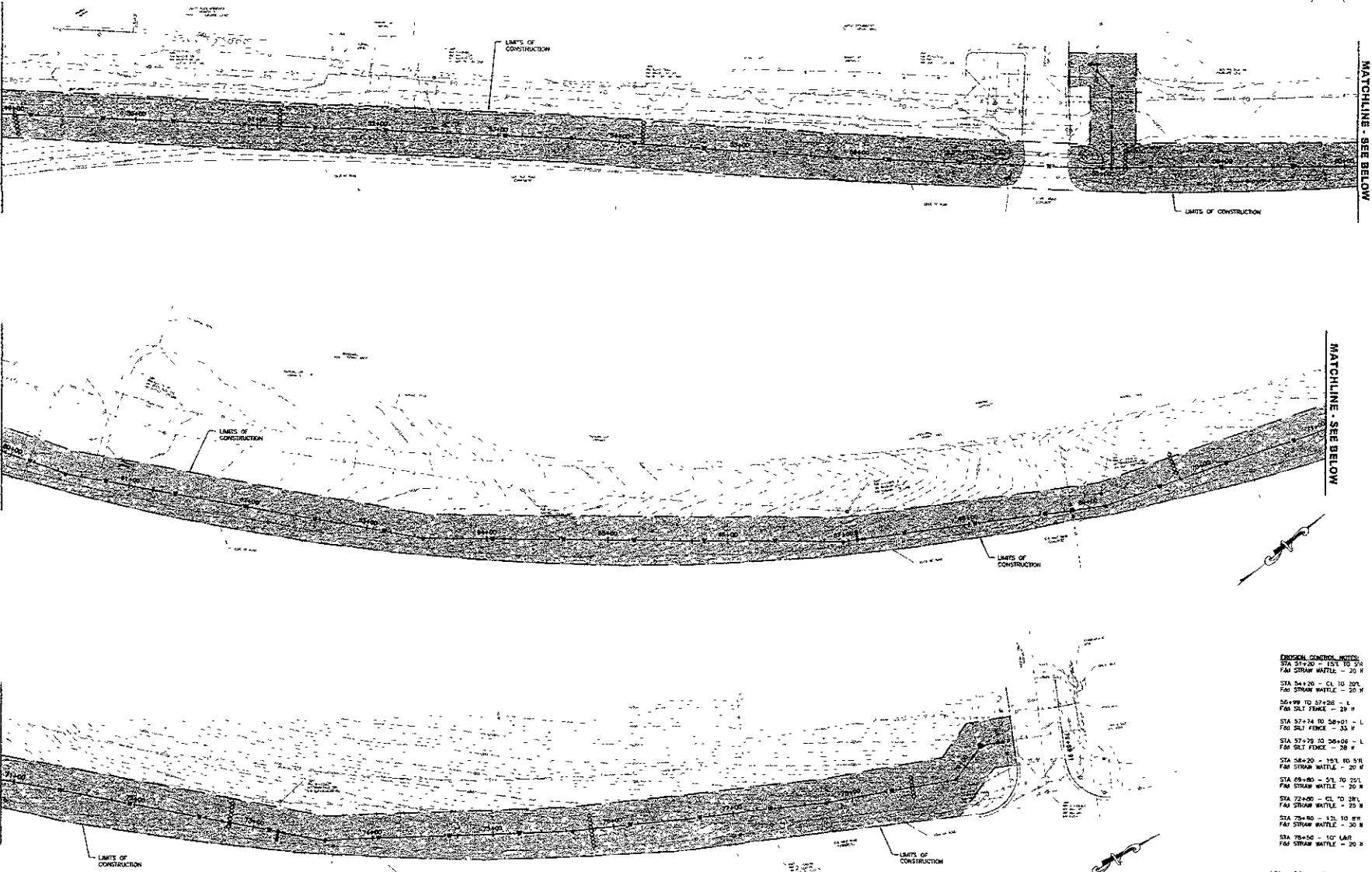
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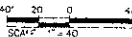
MATCHLINE - SEE SHEET 21

MATCHLINE - SEE ABOVE

MATCHLINE - SEE ABOVE



- EROSION CONTROL NOTES:**
- STA 54+20 = 15% TO 5% F&M STRAW MATTE - 20 #
 - STA 54+20 - CL TO 25% F&M STRAW MATTE - 20 #
 - STA 57+26 = 1% F&M S&L FENCE - 20 #
 - STA 57+24 TO 58+01 = 1% F&M S&L FENCE - 35 #
 - STA 57+29 TO 58+06 = 1% F&M S&L FENCE - 28 #
 - STA 58+20 = 15% TO 5% F&M STRAW MATTE - 20 #
 - STA 69+80 = 5% TO 25% F&M STRAW MATTE - 30 #
 - STA 72+80 - CL TO 38% F&M STRAW MATTE - 25 #
 - STA 75+80 = 1% TO 8% F&M STRAW MATTE - 30 #
 - STA 78+80 = 10% L&S F&M STRAW MATTE - 20 #

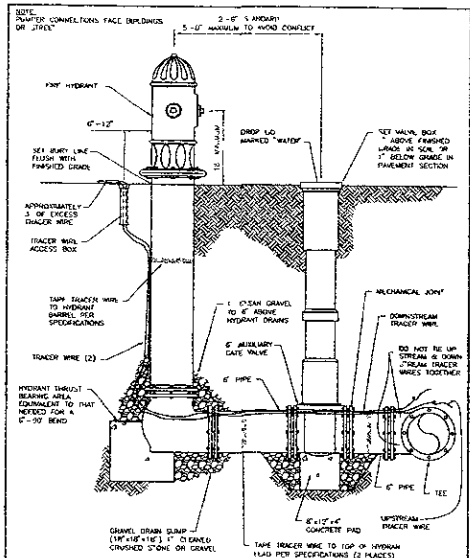


DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL STRUCTURE & CIVIL ENGINEERING CONSULTANTS
 4330 W. 12TH AVE. SUITE 100
 DENVER, CO 80202
 TEL: 303-758-2000 FAX: 303-758-2005 EMAIL: info@dreamdesignintl.com

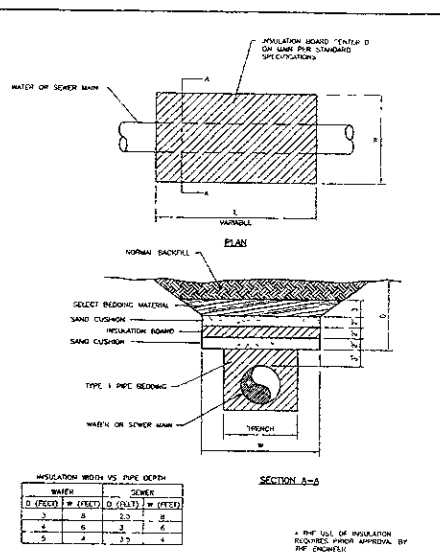
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STORAKS	MS
Design Date	Plot Date
10/06	12/5/06
Issued on	
06/04/07	
Submitted by	Survey Date
ARLEY/MS	ASD
Revisions	

**HIGHWAY 44 and ELK VALE ROAD
 WATER MAIN LOOP**

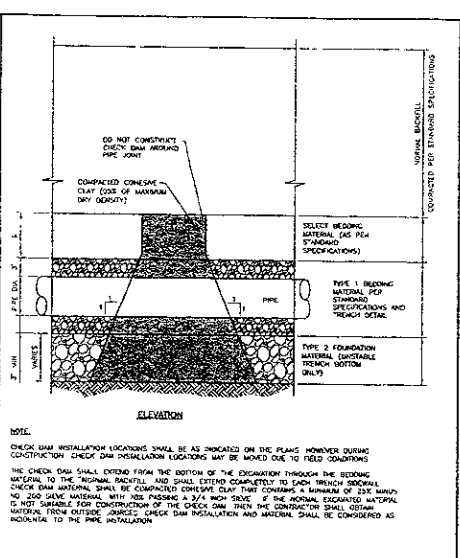
CITY OF BROADVIEW, COLORADO
 EROSION CONTROL & RESTORATION PLAN
 STA 49+00 TO END



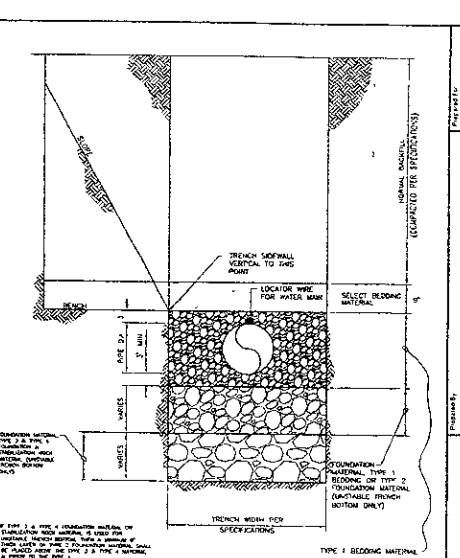
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 DATE 11-20-03
 SEC 8-1 SH 1
HYDRANT SETTING DETAIL



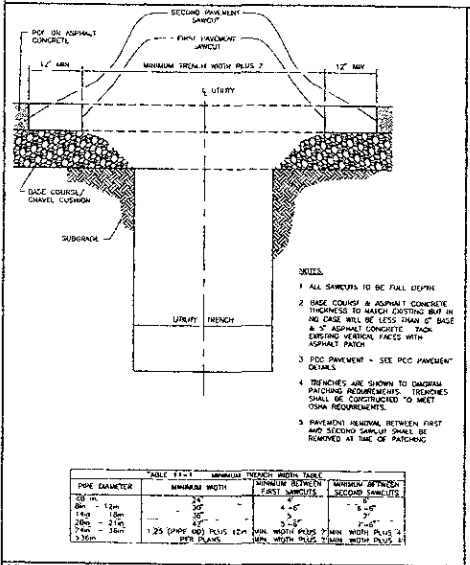
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 DATE 11-20-03
 SEC 11-1 SH 1
WATER & SEWER MAIN INSULATION DETAIL



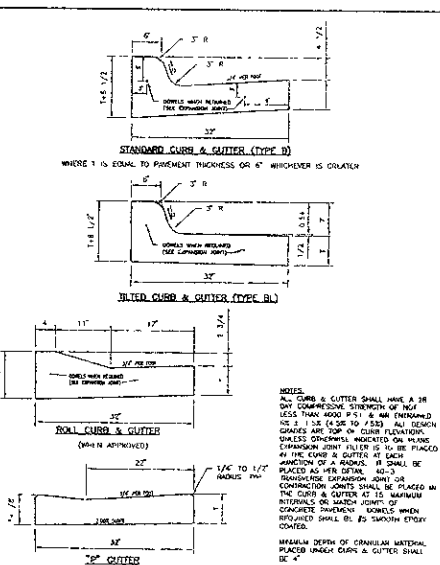
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 DATE 11-15-02
 SEC 11-2 SH 2
TYPICAL TRENCH CHECK DAM DETAIL FOR WATER & SEWER MAINS



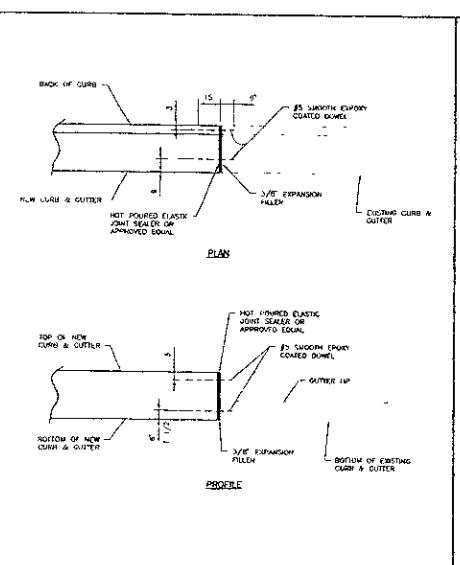
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 DATE 11-20-03
 SEC 11-3 SH 2
TRENCH DETAIL FOR WATER & SEWER MAIN



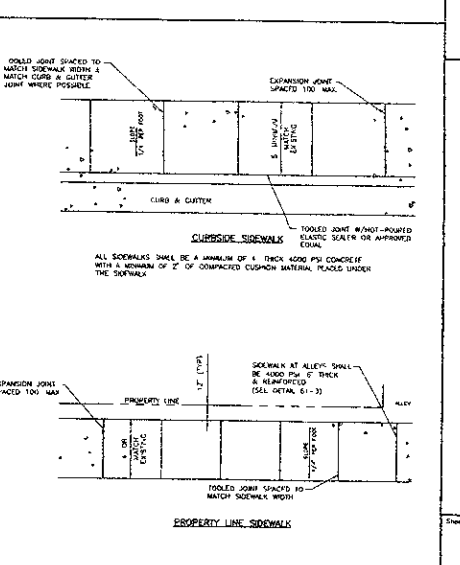
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 5-2-05
 SEC 41-1 SH 1
UTILITY TRENCH PATCH DETAIL




CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 11-20-03
 SEC 60-2 SH 2
CURB & GUTTER



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 11-20-03
 SEC 60-7 SH 2
CURB & GUTTER EXPANSION JOINT



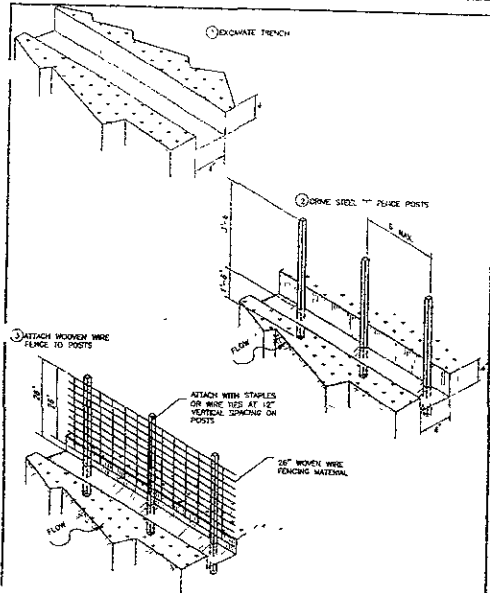
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 1-20-05
 SEC 61-2 SH 1
SIDEWALKS


 Prepared by:
DREAM DESIGN INTERNATIONAL, INC.
 PROFESSIONAL SURVEYING & CIVIL ENGINEERING CONSULTANTS
 1000 W. 10TH ST. SUITE 200
 RAPID CITY, SD 57701
 TEL: 605-342-0000 FAX: 605-342-0001
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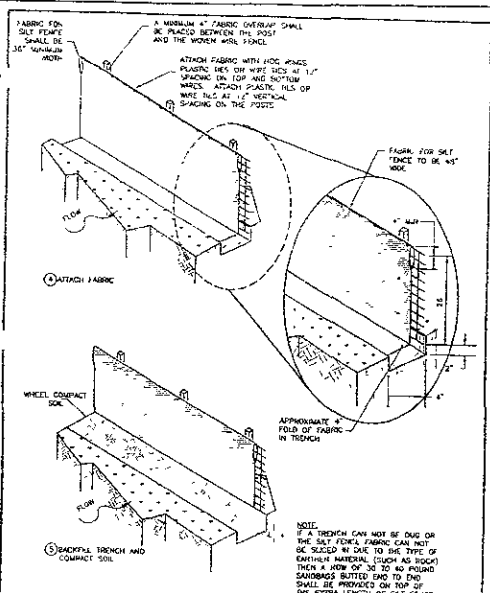
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 Issue No: 12/20/06
 Date of Job: 08/04/02
 Computer: JEFFREY
 Plotter: 4106

HIGHWAY 44 & ELK VALE ROAD
WATER MAIN LOOP
 CITY OF RAPID CITY PROJECT NO. 0303-0248

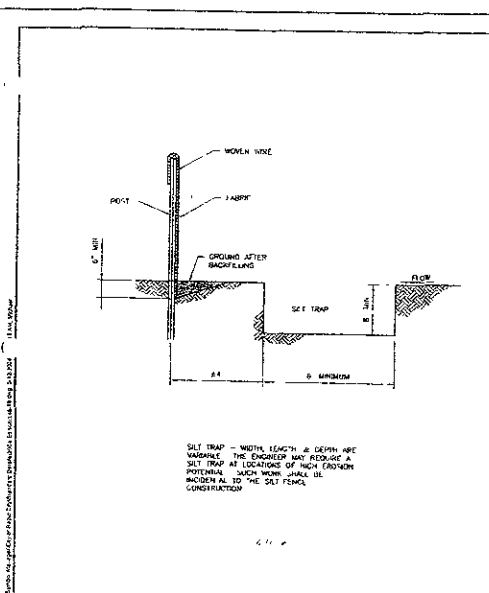
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 STANDARD DETAILS



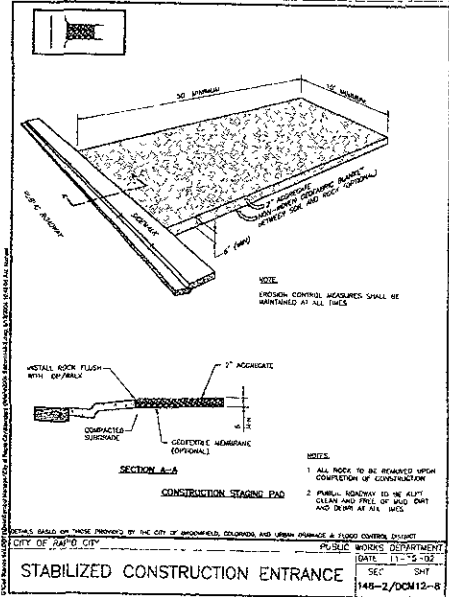
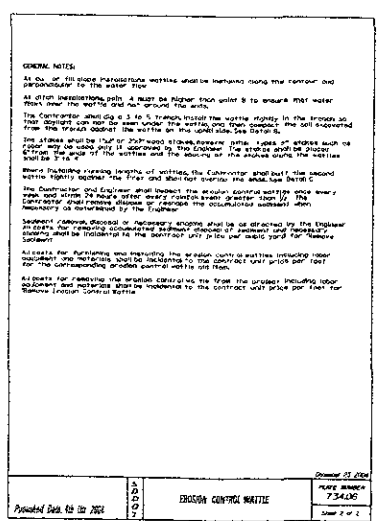
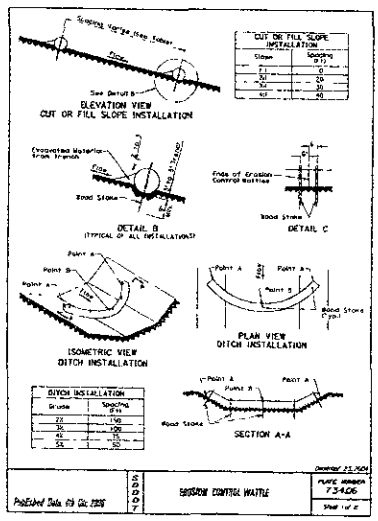
CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 7-5-05
SILT FENCE INSTALLATION
 SEC. SHIT
 146-1



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 7-5-05
SILT FENCE INSTALLATION
 SEC. SHIT
 146-1a



CITY OF RAPID CITY PUBLIC WORKS DEPARTMENT
 DATE 7-5-05
SILT FENCE INSTALLATION
 SEC. SHIT
 146-1b



Project For: Public Works Department

DREAM DESIGN INTERNATIONAL, INC.
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 PH. 816-441-0444 FAX 816-441-0448 MAIL: info@dreamdesign.com

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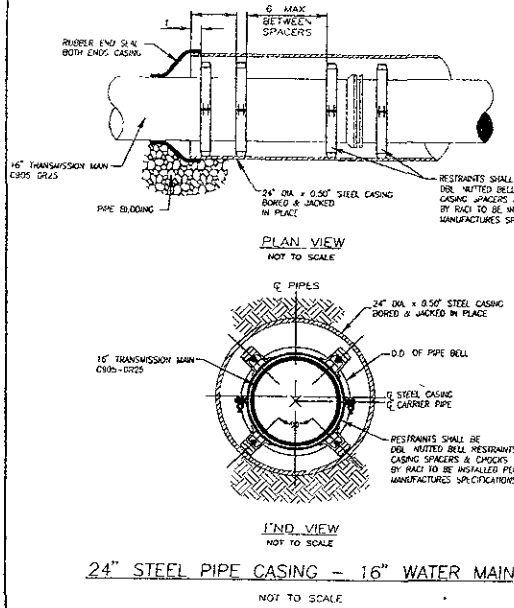
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 2/10/05 MDC
 Check Date: 12/1/06
 Printed Job No: 08-08-012
 Checked By: ARLETH
 Status Date: 11/03

HIGHWAY 44 & ELK VALE ROAD WATER MAIN LOOP

CITY OF RAPID CITY PROJECT NO. AND 1248

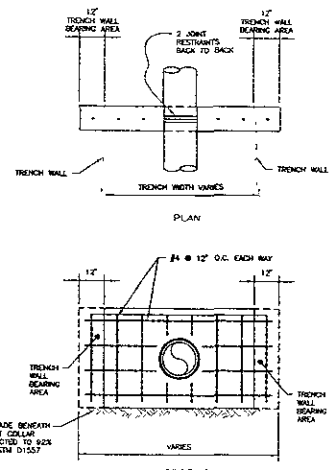
STANDARD DETAILS

24 of 26



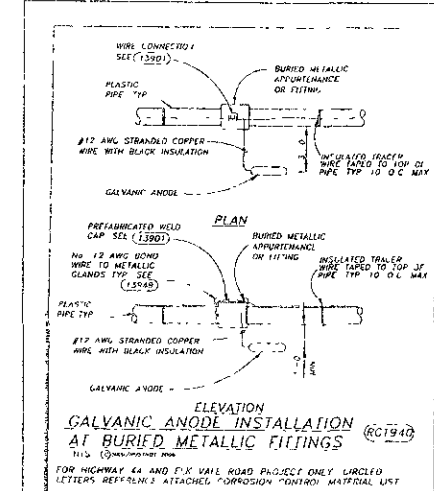
24" STEEL PIPE CASING - 16" WATER MAIN

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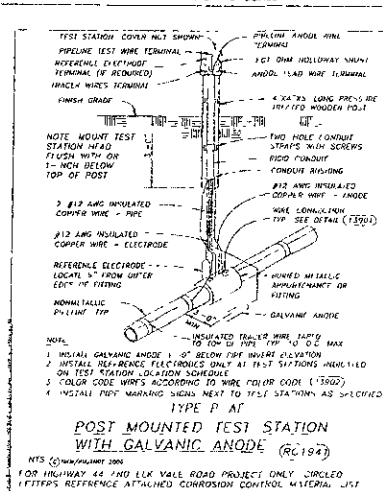


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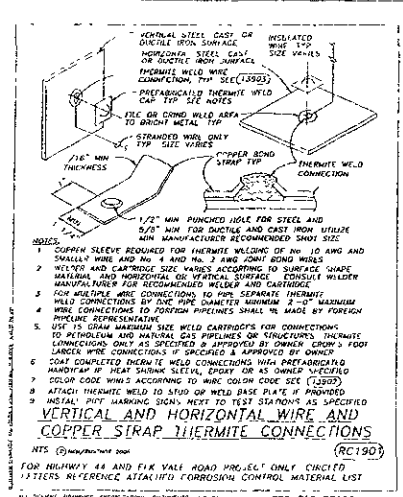
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STD DET R1940

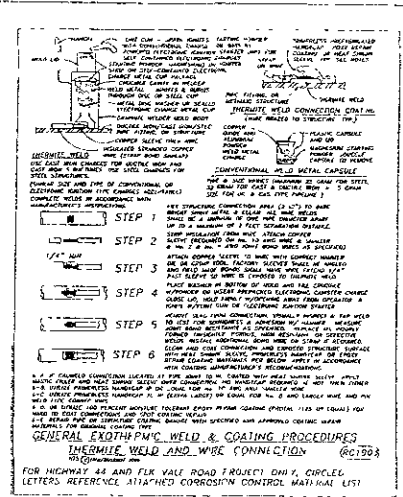


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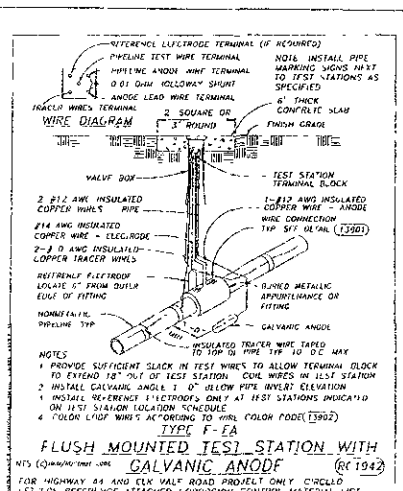
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STD DET R1901

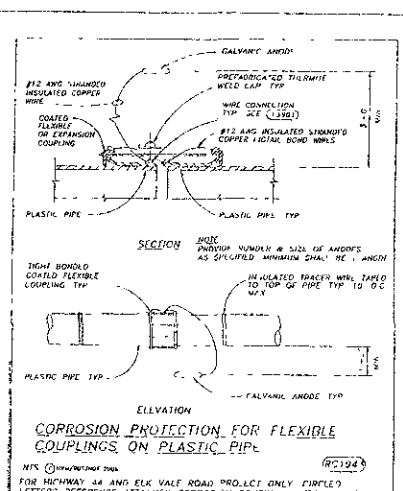


FOR HIGHWAY 44 AND ELK VALLE ROAD PROJECT ONLY CIRCLED LETTERS REFERENCE ATTACHED CORROSION CONTROL MATERIAL LIST

STD DET 1905



STD DET R1942



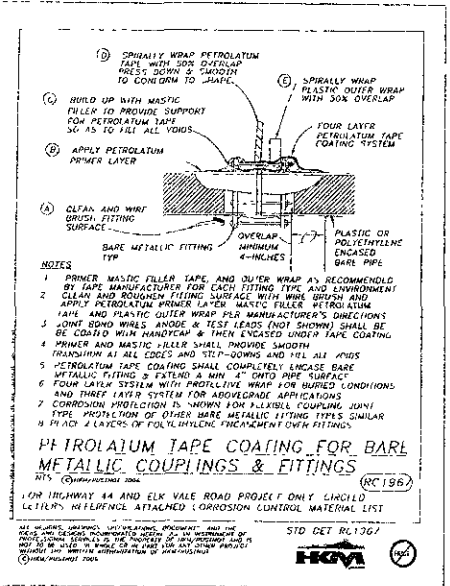
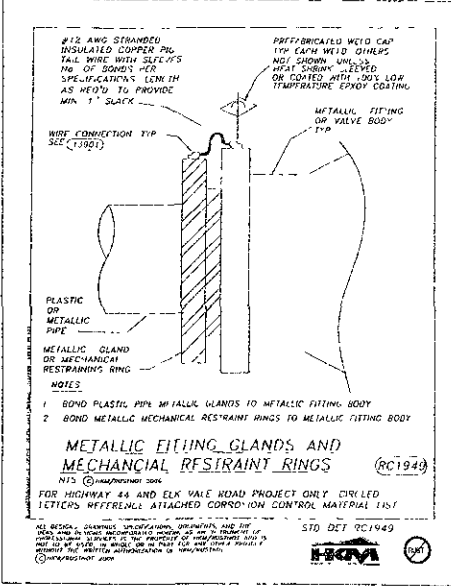
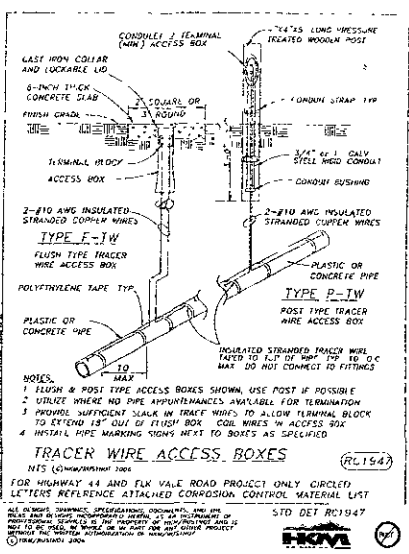
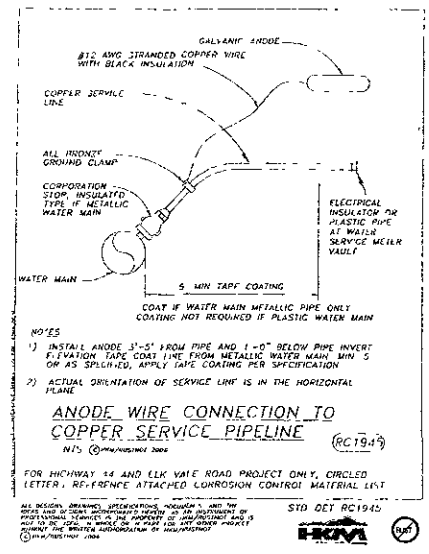
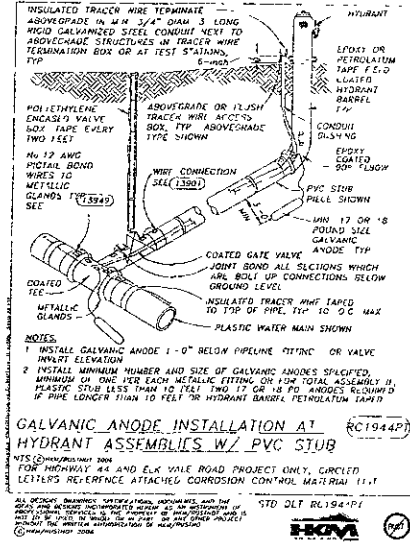
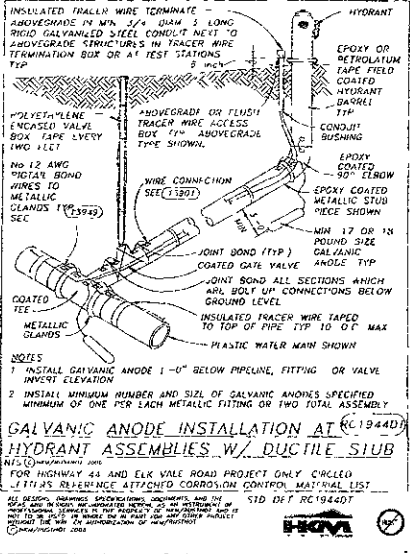
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PROJECT: Highway 44 and Elk Valle Road Project
 PUBLIC WORKS DEPARTMENT
 PROFESSIONAL STRUCTURAL & CIVIL ENGINEERING CONSULTANTS
 100 W. BROADWAY, SUITE 400, DENVER, CO 80202
 TEL: 303.733.1100 FAX: 303.733.1101
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DRAWING TITLE: HIGHWAY 44 & ELK VALLE ROAD WATER MAIN LOOP
 SHEET NO: 25 OF 26

STANDARD & CAOTHS PROTECTION DETAILS

Scale:	NOT TO SCALE
Drawn By:	Drewn By
Checked By:	MDS
Design Date:	1/28/06
Revision No.:	1/28/06
Checked By:	ARLETH
Drawn Date:	1/28/06



Scale: NOT TO SCALE

Designed by: S.TOMCIS
 Checked by: MDS
 Drawn by: L. POUL
 Date: 12/06/07
 Project No.: 06-0412
 Drawing No.: 426

City of Prairie City, Project No. 003 1246

Public Works Department
 Professional Seal of Civil Engineering Consultant
 DREAM DESIGN INTERNATIONAL, INC.
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 E-mail: info@dreamdesigninc.com

Highway 44 & Elk Vale Road
 Water Main Loop

CATHODIC PROTECTION DETAILS

Sheet 26 of 26

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