MAIN 6, NORTHWEST INTERCEPTOR SEWER

SANITARY SEWER EXTENSION

PROJECT NUMBER

468 83423

Neil D. Cable, P.E.
City Engineer

OCA NUMBER

743925

November, 2002

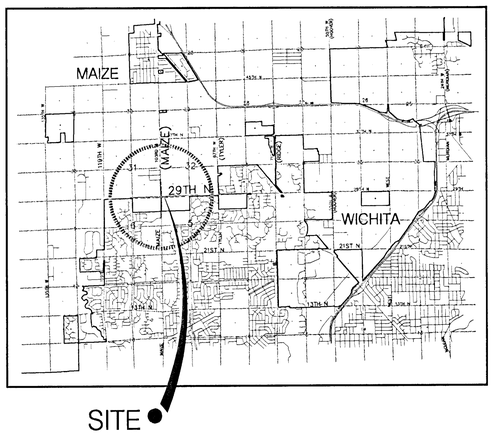
As-Builts 9/5/03

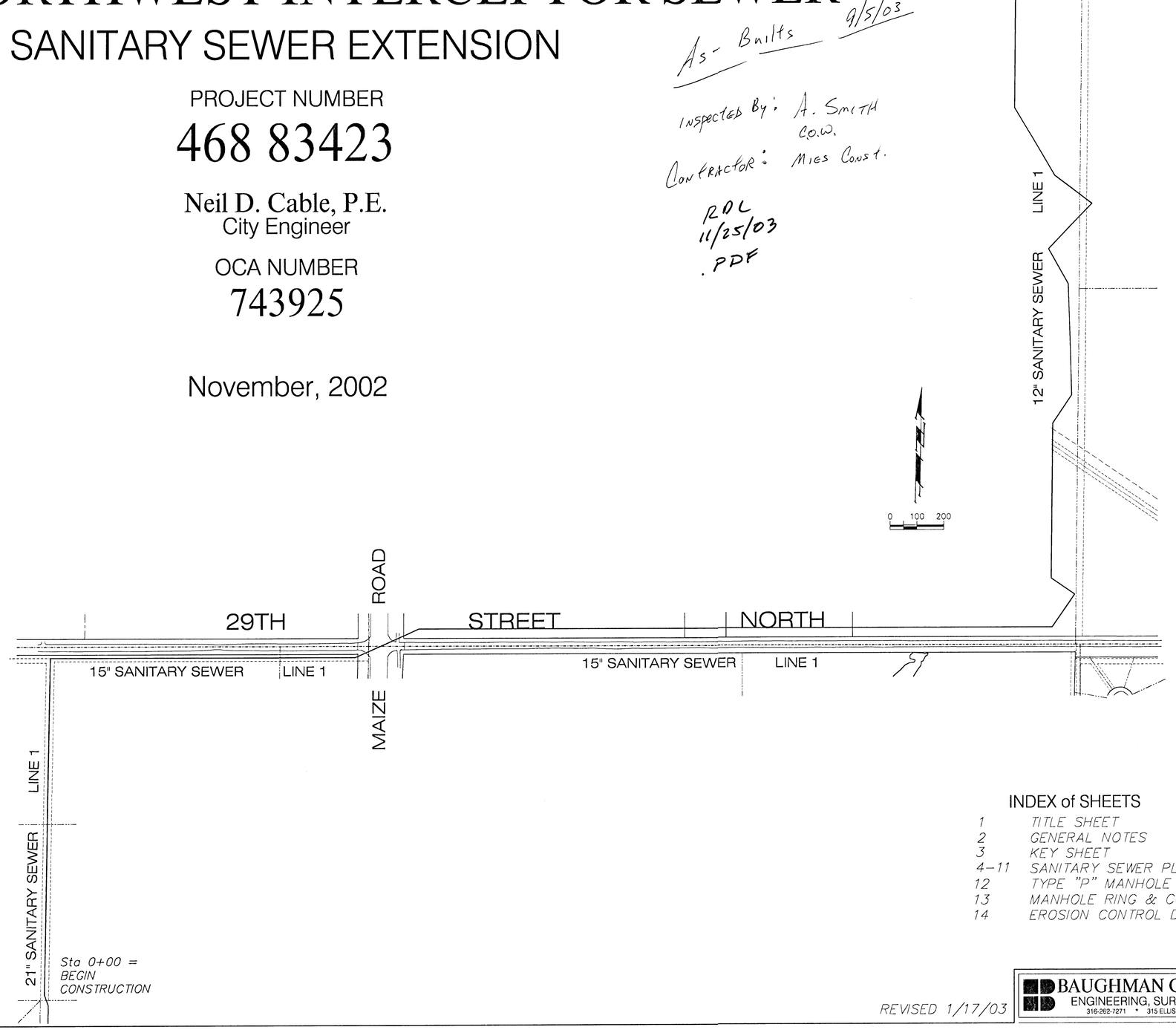
INSPECTED BY: A. SMITH C.O.W.

CONTRACTOR: MIES CONST.

ROL 11/25/03 .PDF

LOCATION MAP





INDEX of SHEETS

REVISED 1/17/03

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

GENERAL NOTES

1. The Contractor shall give all property owners and/or tenants of developed property abutting the project limits a minimum of ten (10) days advance notice prior to start of construction.

2. The Contractor will be required to contact Kansas One Call at 687-2470 to request the local utility companies to mark any existing lines with in the project limits a minimum of forty-eight (48) prior to any excavation or working.

3. Existing utilities and their locations, as shown on the plan, represent the best information obtainable for design. The Contractor shall be aware that construction will occur in close proximity to existing utilities, and any conflicts with such utilities shall be reported to the Engineer.

4. All project waste including any trees, milled asphalt, rubble from miscellaneous structures, abandoned pipes, excess excavation & etc. shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps. of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

5. Prior to bidding the project, each bidder shall visit the site and satisfy himself of surface & subsurface conditions. Each bidder shall also fully inform himself as to the extent of the scope of work to be performed. Each bidder shall also be aware that no additional compensation will be awarded for extra work that should have been evaluated prior to bidding.

6. The Contractor shall not start work on the Project until the Project Inspector is assigned and is present on site. Any work done without inspection will be required to be uncovered for inspection.

7. Contractor shall be responsible for implementing erosion control methods during construction to prevent unnecessary silt/sediment discharge through downstream properties and/or storm sewer systems. Contractor shall install and maintain erosion controls as directed by the Engineer These controls may include but not limited to: hay bales; silt fences, temporary mulching or other controls necessary to inhibit sediment runoff during construction. See Erosion Control Details, Sheet 14.

8. The Contractor shall restore all ditches, swales, and banks to their original slopes and grades. Where existing entrance pipes, drainage pipes, fences, signs, etc. conflict with the proposed work herein, they shall be removed and reset unless otherwise indicated on the plans. Replacement of such items including seeding, fertilizer, and mulching shall be INCIDENTAL to the L.S. Bid Item "Site Restoration".

9. The Contractor shall reseed all areas disturbed by construction with a mixture of Rye grass (applied at a rate of 200 lbs. per acre) and Fescue grass (applied at a rate of 100 lbs. per acre). Pure Nitrogen fertilizer shall also be applied at a rate of 1.5 lbs per thousand square feet. The seed shall be watered with deep soaking every two (2) weeks during dry periods until a mature stand of grass is obtained. Temporary Seeding may be ommitted if planted crops across agricultural land takes precedence over seeding measures. All costs for this work shall be INCIDENTAL to "Site Restoration."

10. Trees and shrubs in the public right-of-way which are in direct conflict with the proposed construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with the proposed construction shall be saved and protected from damage. Tree Removal shall be INCIDENTAL to "Site Clearing and Preparation".

11. The Contractor shall comply with all applicable safety regulations and City of Wichita Specifications and Standards.

12. TRAFFIC CONTROL
The Contractor shall erect warning signs, flashing lights, and barricades in compliance with the Manual on Uniform Traffic Control Devices to ensure safety as directed in the general conditions. The length of trenches that will be allowed to remain open overnight and weekends shall be left to the discretion of the Engineer. Residential Access to properties along 29th shall be maintained at all stages of the Project. Traffic Control shall not be paid for directly, but shall be considered INCIDENTAL to other items in the Project.

BENCHMARKS

BM #1 - City of Wichita Bench Mark Disc, Located 1/2 mile East of Tyler Road, 31.88' North of the South 1/4 Corner of Section 32, TWP 26S, R.1W.
Elev. = 1348.26 MSL (160.86 City Datum)

BM #2 - City of Wichita Bench Mark Disc, Located at the Northwest Corner of Maize Road & 29th Street Intersection, approx 63.4' NW of the Section Corner
Elev. = 1349.32 MSL (161.92 City Datum)

BM #3 - 60d Step Bench in the West Face of the South H frame Pole on the Westar OH Transmisssion line on the East Side of Tyler approx 1/2 mile North of 29th Street.
Elev. = 1363.29 MSL (175.89 City Datum)

BM #4 - 60d Step Bench in the West Face of the North H frame Pole approx 200' East of the Center of Section of Section 32 TWP 26S, R1W.
Elev. = 1354.47 MSL (167.07 City Datum)

LIST OF UTILITY COMPANIES

Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to excavation or working adjacent to utilities.

TYPE	OWNER	PHONE #
Notifier Service	Kansas One-Call	687-2470
TV	Cox Communications	262-0661
Electric	Westar Energy	383-8650
Gas	Kansas Gas Service	832-3169
Gas	Aquilla Gas Company	942-8350
Telephone	Southwestern Bell Telephone Company	268-2245
Water	City of Wichita Water Department	268-4563
Sewer	City of Wichita Sewer Maintenance	268-4024

REVISED 1/17/03

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-83423	Notepage	F:\\MAIZE SS

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	TA	JFB	Nov. 2002	None	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER
GENERAL NOTES
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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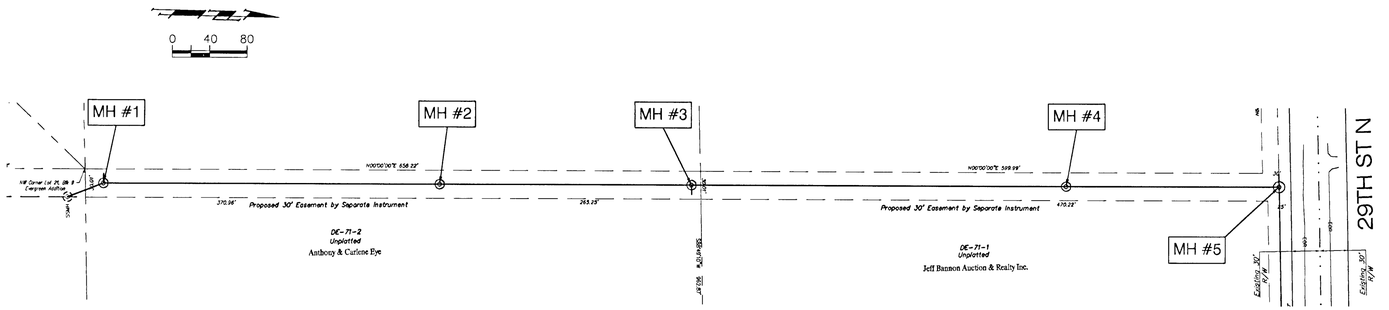
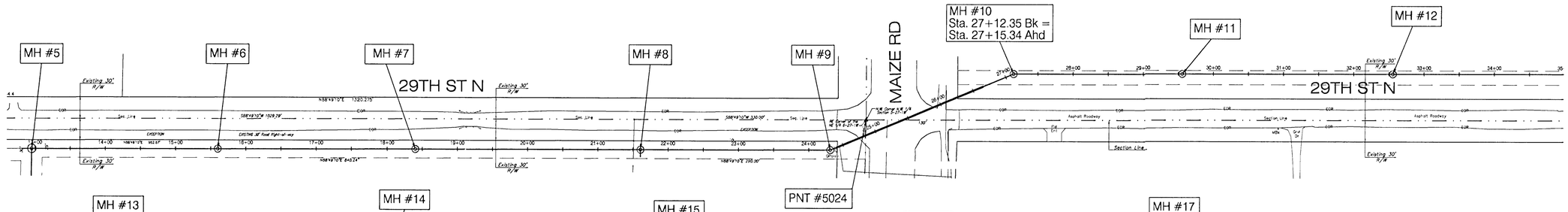
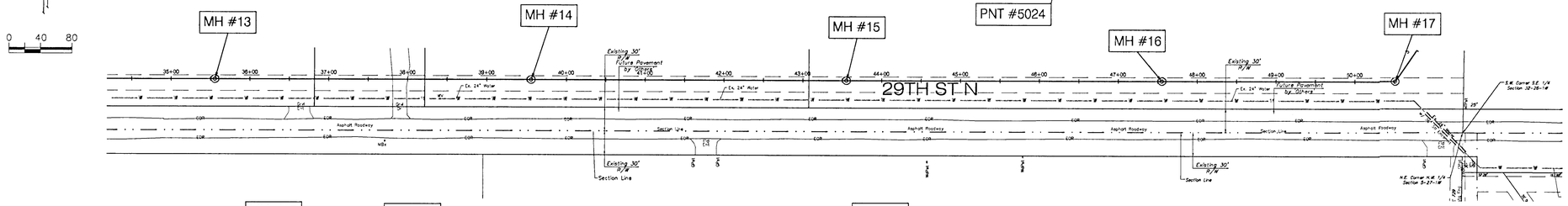
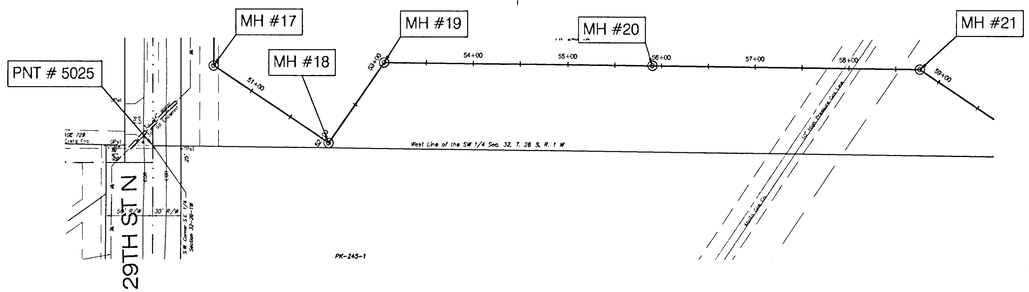
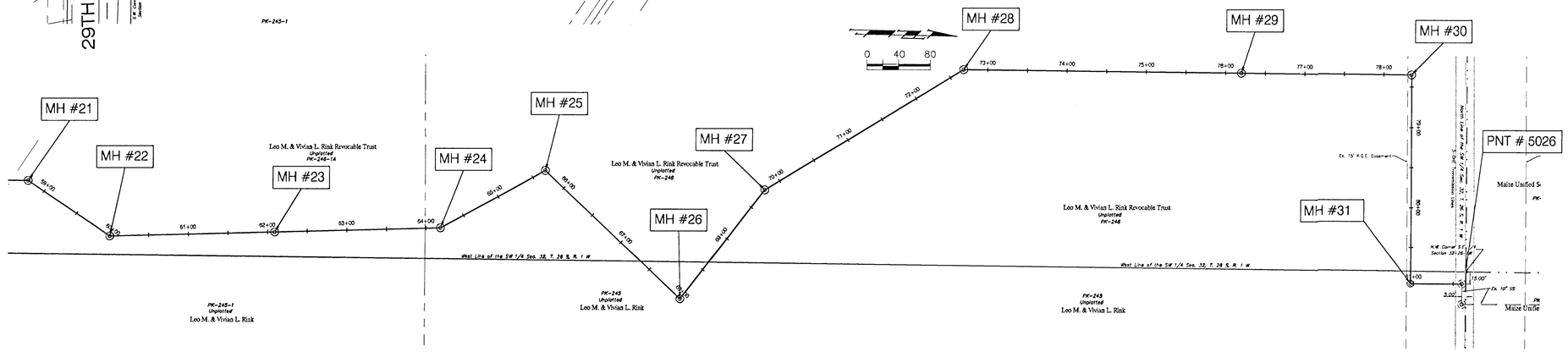
KEY SHEET











Sta	Northing	Easting	Full Desc
0+41.06	3702.40	8789.28	MANHOLE #1
4+00.00	4061.27	8796.33	MANHOLE #2
6+68.00	4329.22	8801.60	MANHOLE #3
10+68.00	4729.14	8809.46	MANHOLE #4
12+95.27	4956.37	8813.93	MANHOLE #5
15+60.00	4956.62	9078.65	MANHOLE #6
18+40.00	4956.89	9358.65	MANHOLE #7
21+60.50	4957.19	9679.15	MANHOLE #8
24+30.50	4957.45	9949.15	MANHOLE #9
27+15.34 Ahd	5065.00	10209.68	MANHOLE #10
29+55.50	5065.00	10749.84	MANHOLE #11
32+55.50	5065.00	11049.84	MANHOLE #12
35+55.50	5065.00	11049.84	MANHOLE #13
39+55.50	5065.00	11449.84	MANHOLE #14
43+55.50	5065.00	11849.84	MANHOLE #15
47+55.00	5065.00	12249.84	MANHOLE #16
50+51.44	5065.00	12647.86	MANHOLE #17
51+99.63	5187.56	12629.09	MANHOLE #18
53+04.99	5246.90	12542.03	MANHOLE #19
55+90.36	5532.25	12544.94	MANHOLE #20
58+75.84	5817.72	12548.11	MANHOLE #21
60+00.84	5921.01	12618.51	MANHOLE #22
62+09.05	6129.14	12613.00	MANHOLE #23
64+17.26	6337.28	12607.48	MANHOLE #24
65+68.05	6469.33	12534.69	MANHOLE #25
68+03.50	6640.13	12696.76	MANHOLE #26
69+78.21	6746.31	12558.00	MANHOLE #27
72+69.77	6996.51	12408.34	MANHOLE #28
76+19.82	7346.54	12412.07	MANHOLE #29
78+35.17	7561.88	12414.36	MANHOLE #30
80+96.01	7562.00	12675.21	MANHOLE #31
Pnt 5024	5000.00	10000.00	NW Cor NW1/4 5-27-1W
Pnt 5025	5000.00	12632.09	SW Cor SE1/4 32-26-1W
Pnt 5026	7632.00	12660.13	NW Cor SE1/4 32-26-1W

REVISED 1/17/03

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	KEYSHEET	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	1" = 80'	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

KEYSHEET

NORTWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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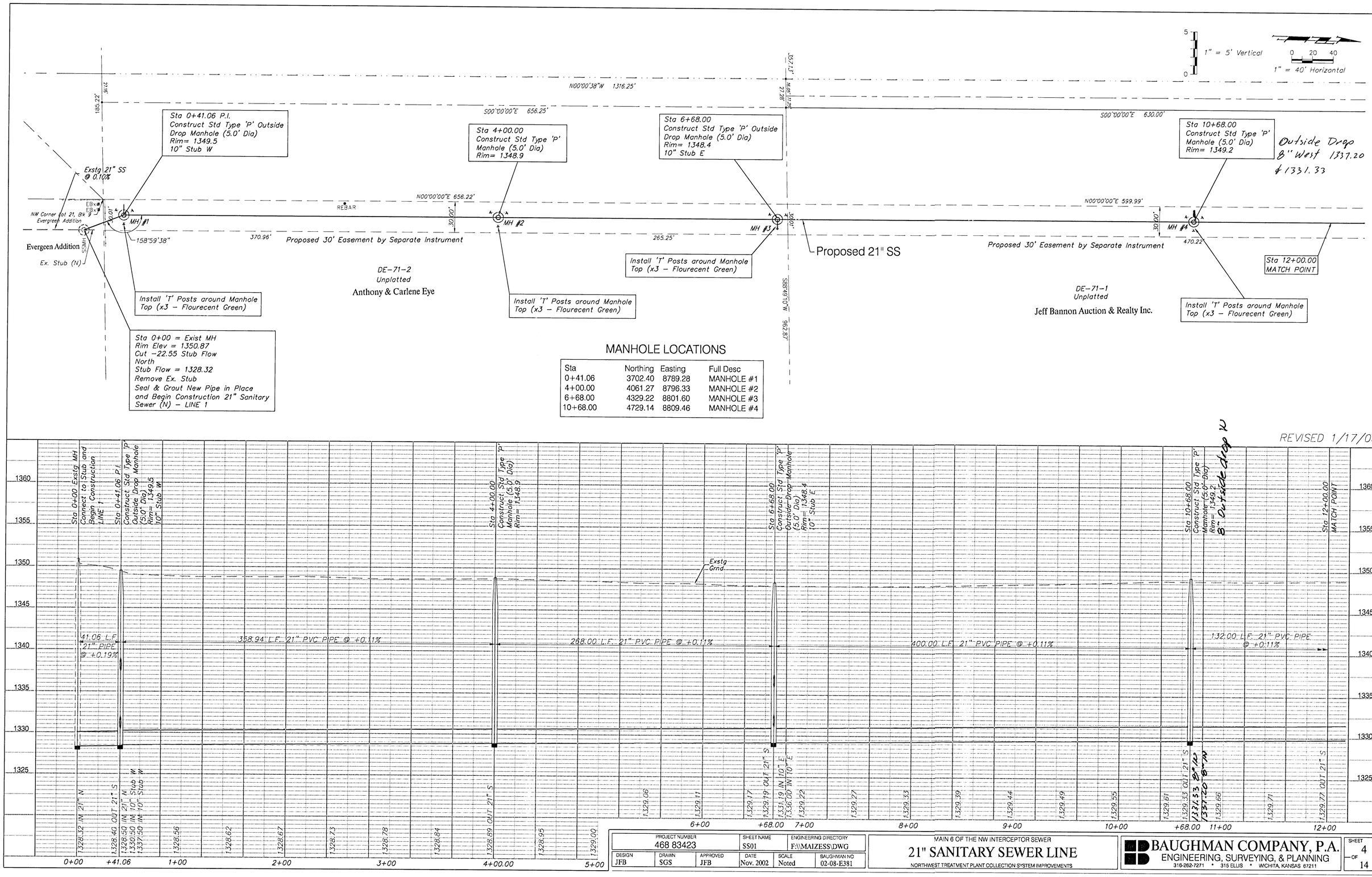
SHEET 3 OF 14



MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
0+41.06	3702.40	8789.28	MANHOLE #1
4+00.00	4061.27	8796.33	MANHOLE #2
6+68.00	4329.22	8801.60	MANHOLE #3
10+68.00	4729.14	8809.46	MANHOLE #4

REVISED 1/17/03

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS01	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

21" SANITARY SEWER LINE

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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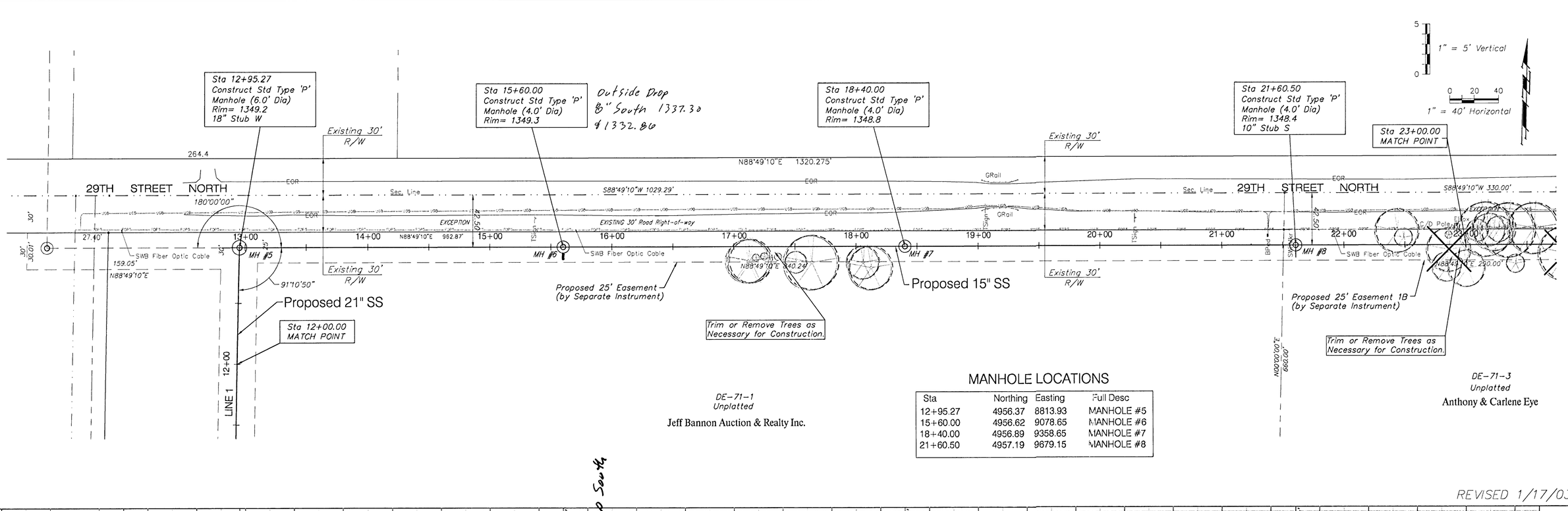
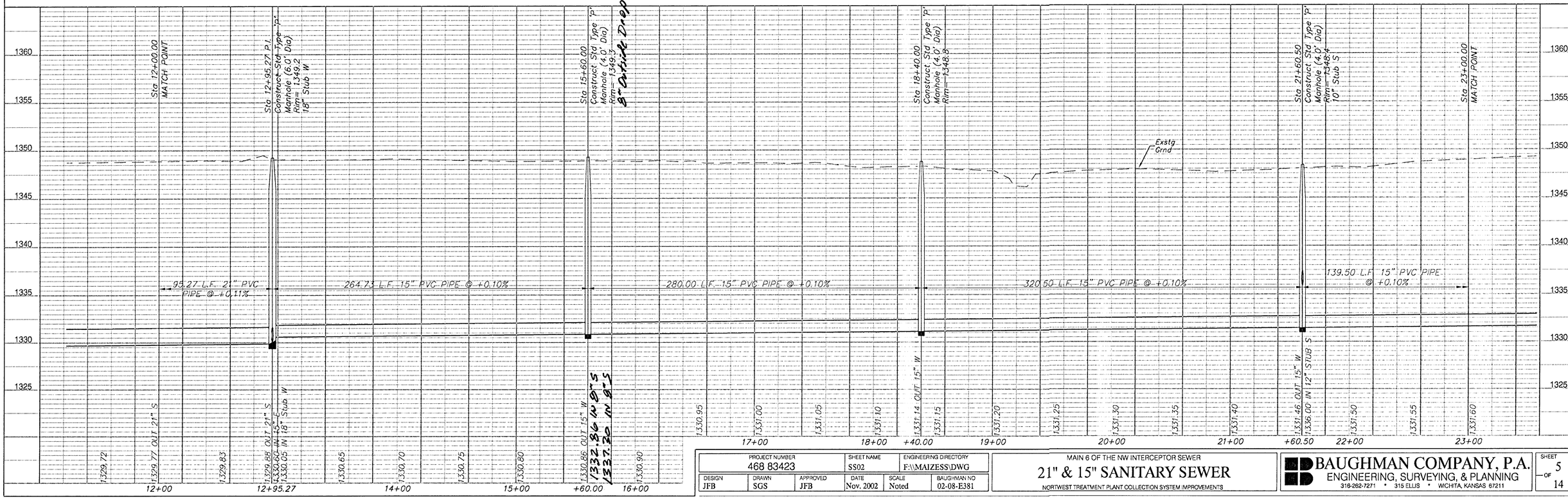
SHEET 4 OF 14



MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
12+95.27	4956.37	8813.93	MANHOLE #5
15+60.00	4956.62	9078.65	MANHOLE #6
18+40.00	4956.89	9358.65	MANHOLE #7
21+60.50	4957.19	9679.15	MANHOLE #8

REVISED 1/17/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS02	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

21" & 15" SANITARY SEWER

NORTWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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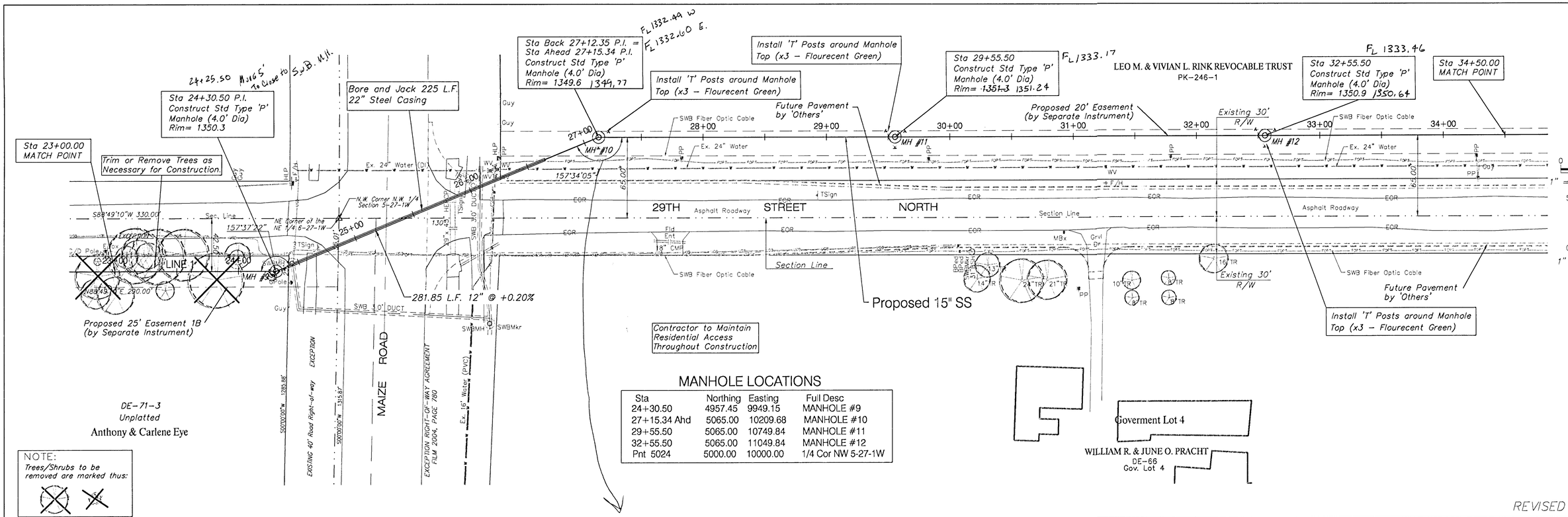
SHEET 5 OF 14



MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
24+30.50	4957.45	9949.15	MANHOLE #9
27+15.34 Ahd	5065.00	10209.68	MANHOLE #10
29+55.50	5065.00	10749.84	MANHOLE #11
32+55.50	5065.00	11049.84	MANHOLE #12
Pnt 5024	5000.00	10000.00	1/4 Cor NW 5-27-1W

DE-71-3
Unplatted
Anthony & Carlene Eye

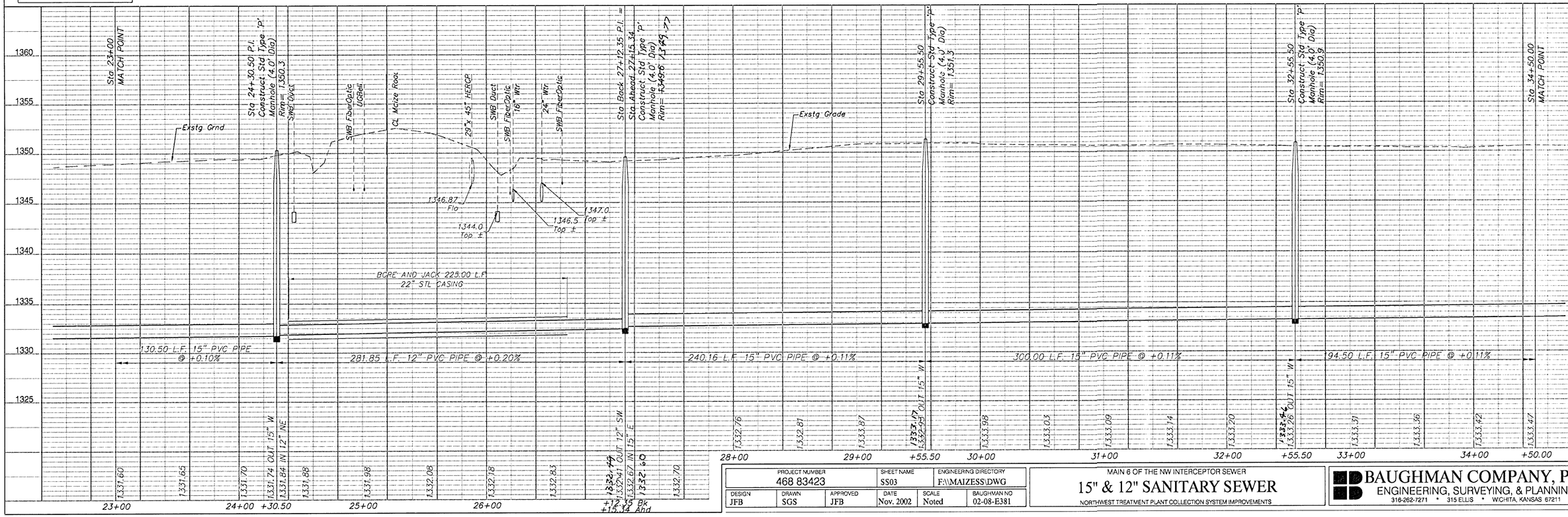
NOTE:
Trees/Shrubs to be removed are marked thus:

EXISTING 40' Road Right-of-way EXCEPTION
S00°00'00"W 1295.88'
S00°00'00"W 1315.81'
MAIZE ROAD
EXCEPTION RIGHT-OF-WAY AGREEMENT
FILM 2004, PAGE 780
Ex. 16" Water (PVC)

Goverment Lot 4

WILLIAM R. & JUNE O. PRACHT
DE-66
Gov. Lot 4

REVISED 1/17/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS03	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

15" & 12" SANITARY SEWER

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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LEO M. & VIVIAN L. RINK REVOCABLE TRUST
PK-246-1
RICKY D. AND DARLENE D. BARTON
PK-246-1B
FL 1333.83
FL 1334.27
Sta 39+55.50
Construct Std Type 'P'
Manhole (4.0' Dia)
Rim= 1351.1 1350.89
RICKY D. AND DARLENE D. BARTON
PK-246-1A-1
Contractor to Maintain
Residential Access
Throughout Construction
LEO M. & VIVIAN L. RINK REVOCABLE TRUST
PK-246-1A
1" = 5' Vertical
1" = 40' Horizontal
Sta 34+50.00
MATCH POINT
Sta 35+55.50
Construct Std Type 'P'
Manhole (4.0' Dia)
Rim= 1350.7 1350.95
CAUTION:
U/G Electric Crossing
Field Verify Exact
Location and Depth
Proposed 15" SS
Install 'T' Posts around Manhole
Top (x3 – Flourecent Green)
Existing 30'
R/W
Future Pavement
by Others
Proposed 20' Easement
(by Separate Instrument)
Sta 46+32.00
MATCH POINT
MH #13
MH #14
MH #15
LINE 1
SWB Fiber Optic Cable
Ex. 24" Water
1" Gas Service Line (Peoples)
Bushes
18" CMP
Asphalt Roadway
29TH STREET NORTH
Section Line
BWire Fnc
Install 'T' Posts around Manhole
Top (x3 – Flourecent Green)
Install 'T' Posts around Manhole
Top (x3 – Flourecent Green)
Existing 30'
R/W
Section Line
SWB Fiber Optic Cable
Sta 43+55.50
Construct Std Type 'P'
Manhole (4.0' Dia)
Rim= 1349.6 1349.42
FL 1334.72
Water Way
Goverment Lot 3
WILLIAM R. & JUNE O. PRACHT
DE-66
Gov. Lot 4
WILLIAM R. & JUNE O. PRACHT
DE-66
Gov. Lot 3
REVISED 1/17/03
Sta 34+50.00 MATCH POINT
Sta 35+55.50 Std Type 'P' Manhole Rim= 1350.7
Sta 39+55.50 Construct Std Type 'P' Manhole (4.0' Dia) Rim= 1351.1
Sta 43+55.50 Construct Std Type 'P' Manhole (4.0' Dia) Rim= 1349.6
Sta 46+32.00 MATCH POINT
U/G Elec
Exstg Grade
105.50 L.F. 15" PVC PIPE @ +0.11%
400.00 L.F. 15" PVC PIPE @ +0.11%
400.00 L.F. 15" PVC PIPE @ +0.11%
276.50 L.F. 15" PVC PIPE @ +0.11%
1360
1355
1350
1345
1340
1335
1330
1325
1333.83 1333.59 OUT 15" W
1334.27 1334.03 OUT 15" W
1334.72 1334.47 OUT 15" W
1333.47 1333.53 1333.64 1333.69 1333.75 1333.81 1333.86 1333.91 1333.97
1334.08 1334.13 1334.19 1334.24 1334.30 1334.35 1334.41
1334.52 1334.57 1334.63 1334.68 1334.74 1334.77
+50.00 35+00 +55.50 36+00 37+00 38+00 39+00
+55.50 40+00 41+00 42+00 43+00 +55.50 44+00 45+00 46+00 +32.00

MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
35+55.50	5065.00	11049.84	MANHOLE #13
39+55.50	5065.00	11449.84	MANHOLE #14
43+55.50	5065.00	11849.84	MANHOLE #15

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS04	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

15" SANITARY SEWER

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
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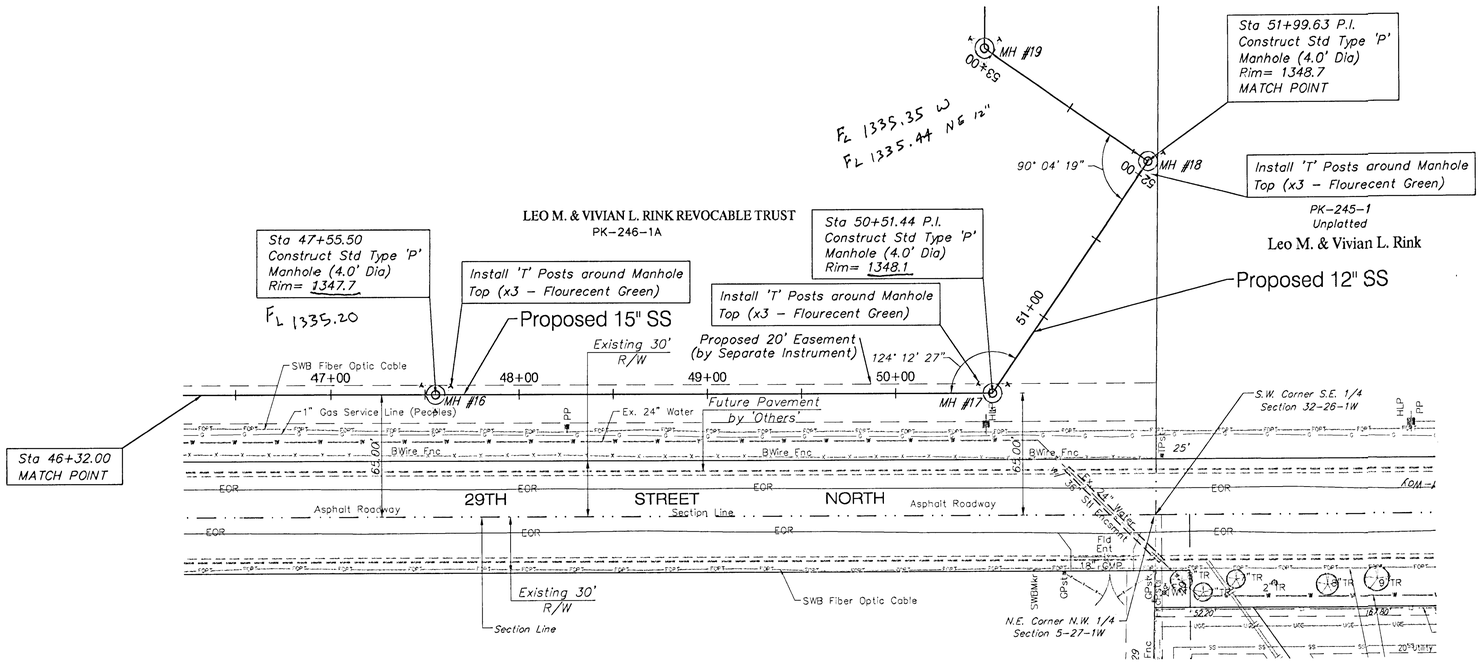
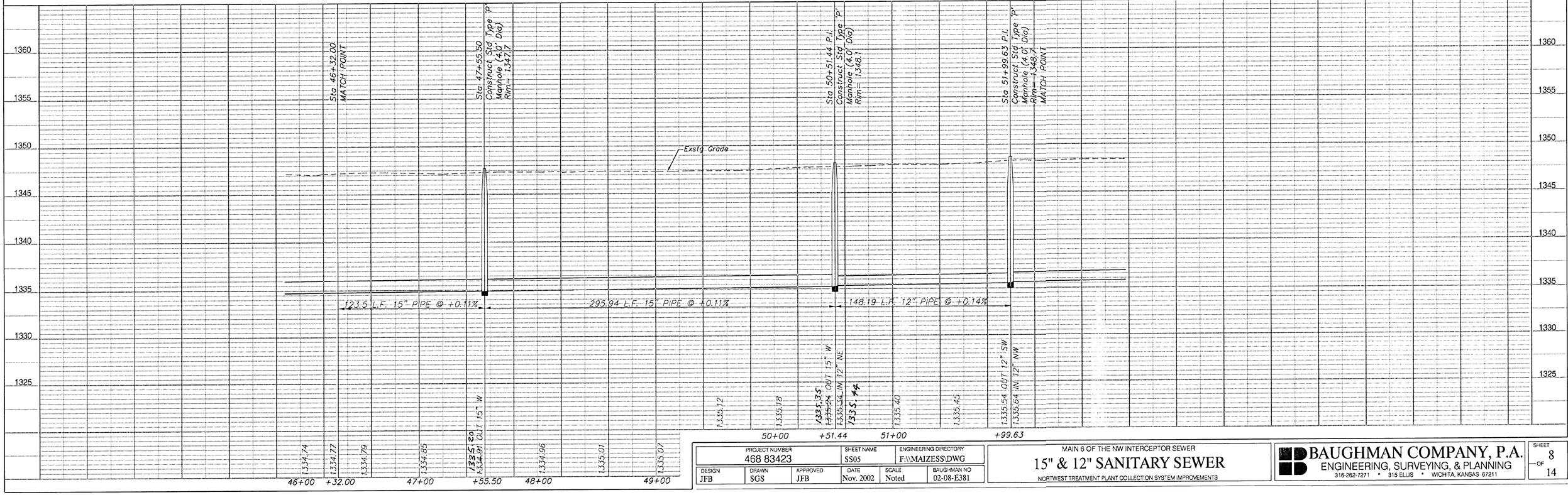
MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
47+55.00	5065.00	12249.84	MANHOLE #16
50+51.44	5065.00	12647.86	MANHOLE #17
51+99.63	5187.56	12629.09	MANHOLE #18
Pnt 5025	5000.00	12632.09	1/4Cor SE 32-26-1W



REVISED 1/17/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS05	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

15" & 12" SANITARY SEWER

NORTWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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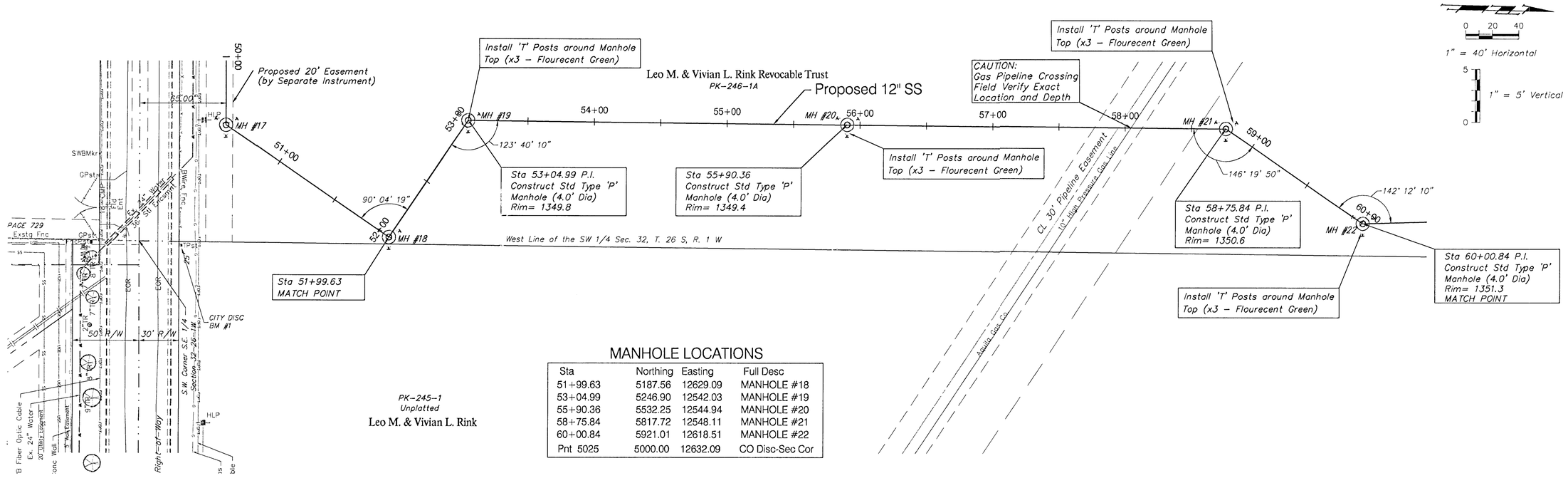
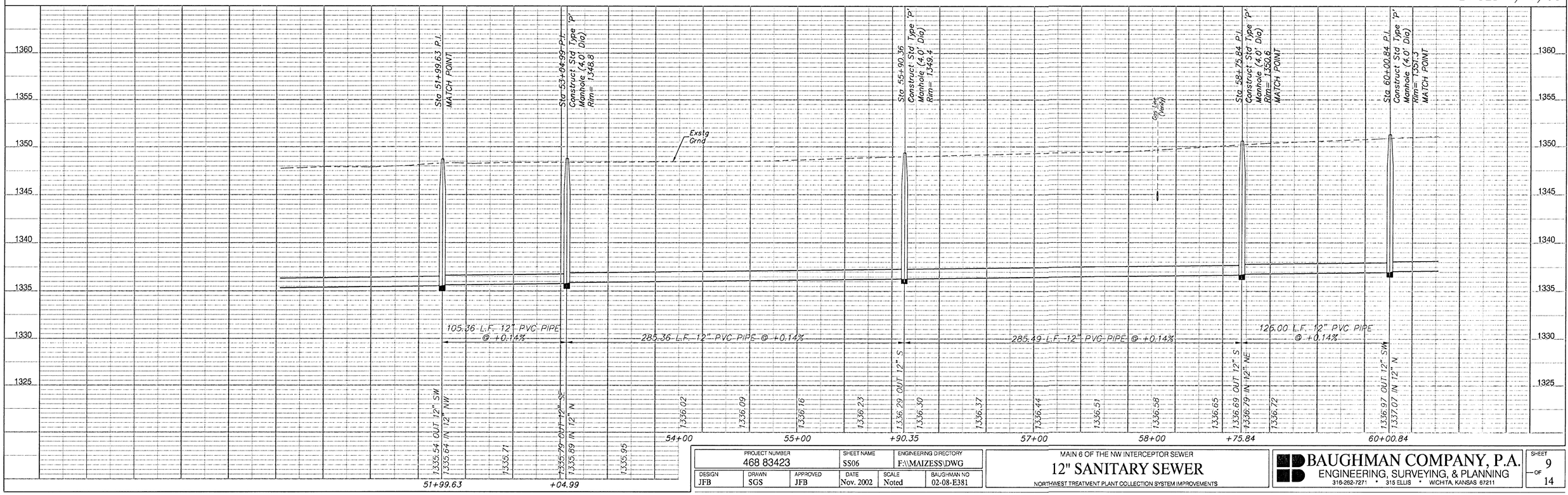


MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
51+99.63	5187.56	12629.09	MANHOLE #18
53+04.99	5246.90	12542.03	MANHOLE #19
55+90.36	5532.25	12544.94	MANHOLE #20
58+75.84	5817.72	12548.11	MANHOLE #21
60+00.84	5921.01	12618.51	MANHOLE #22
Pnt 5025	5000.00	12632.09	CO Disc-Sec Cor

REVISED 1/17/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS06	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER

12" SANITARY SEWER

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
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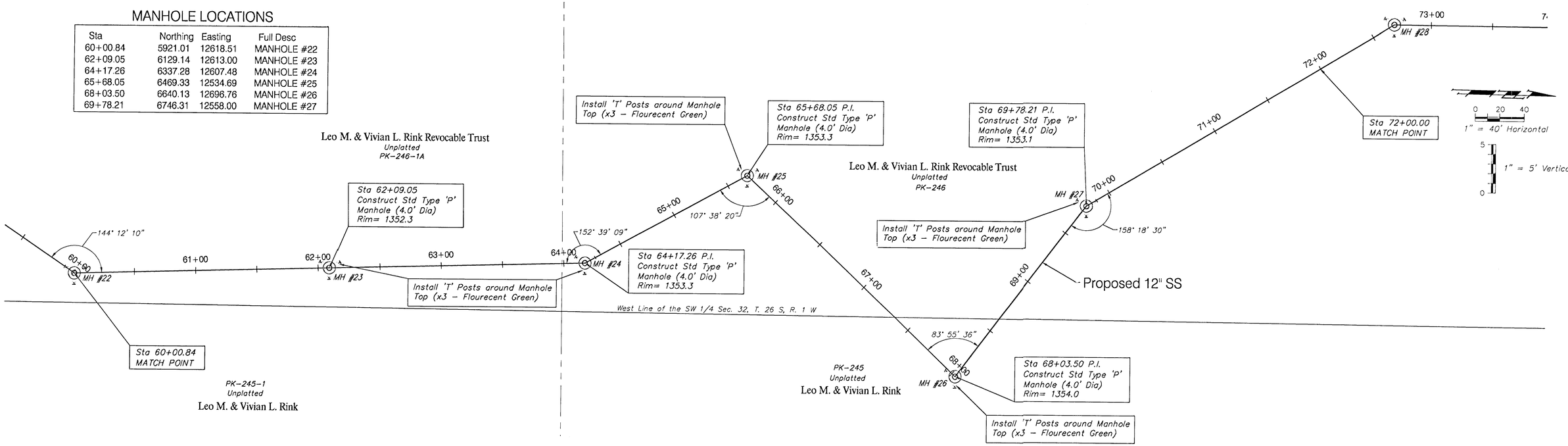
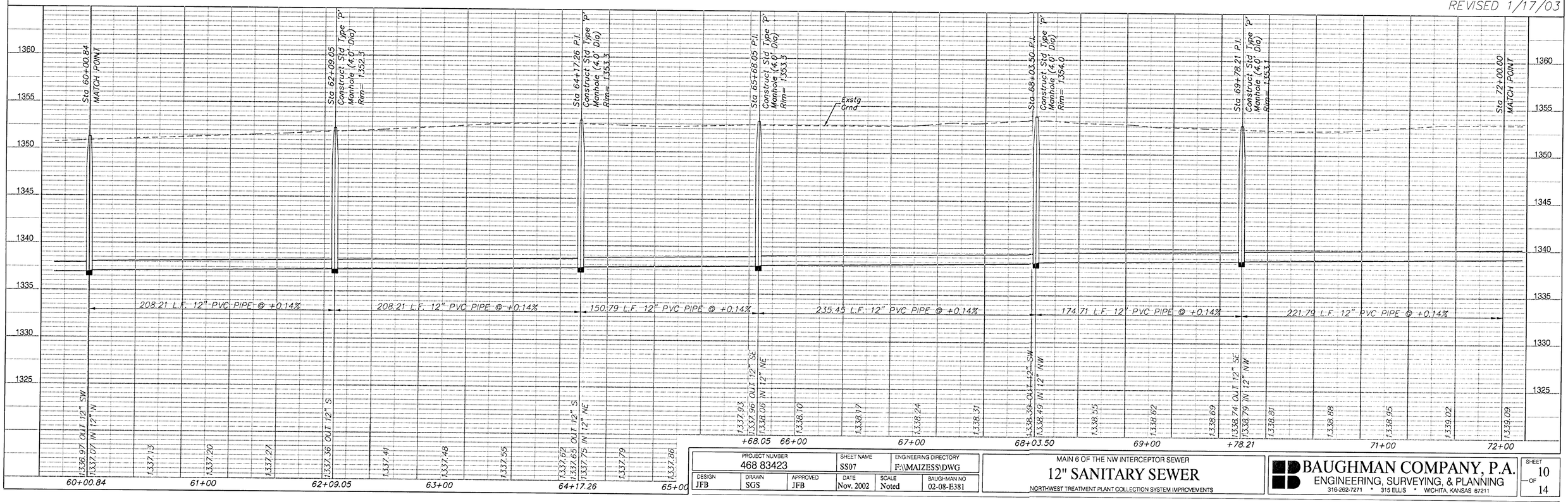
MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
60+00.84	5921.01	12618.51	MANHOLE #22
62+09.05	6129.14	12613.00	MANHOLE #23
64+17.26	6337.28	12607.48	MANHOLE #24
65+68.05	6469.33	12534.69	MANHOLE #25
68+03.50	6640.13	12696.76	MANHOLE #26
69+78.21	6746.31	12558.00	MANHOLE #27



REVISED 1/17/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS07	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

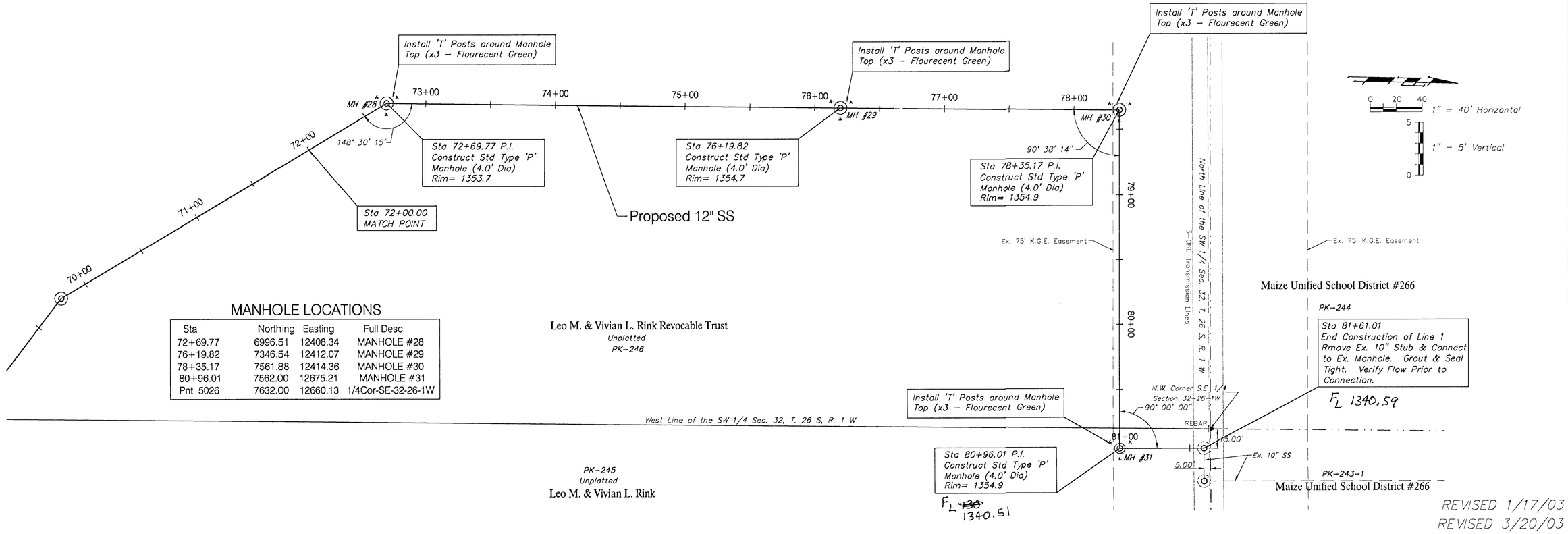
MAIN 6 OF THE NW INTERCEPTOR SEWER

12" SANITARY SEWER

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 * 315 ELLIS * WICHITA, KANSAS 67211

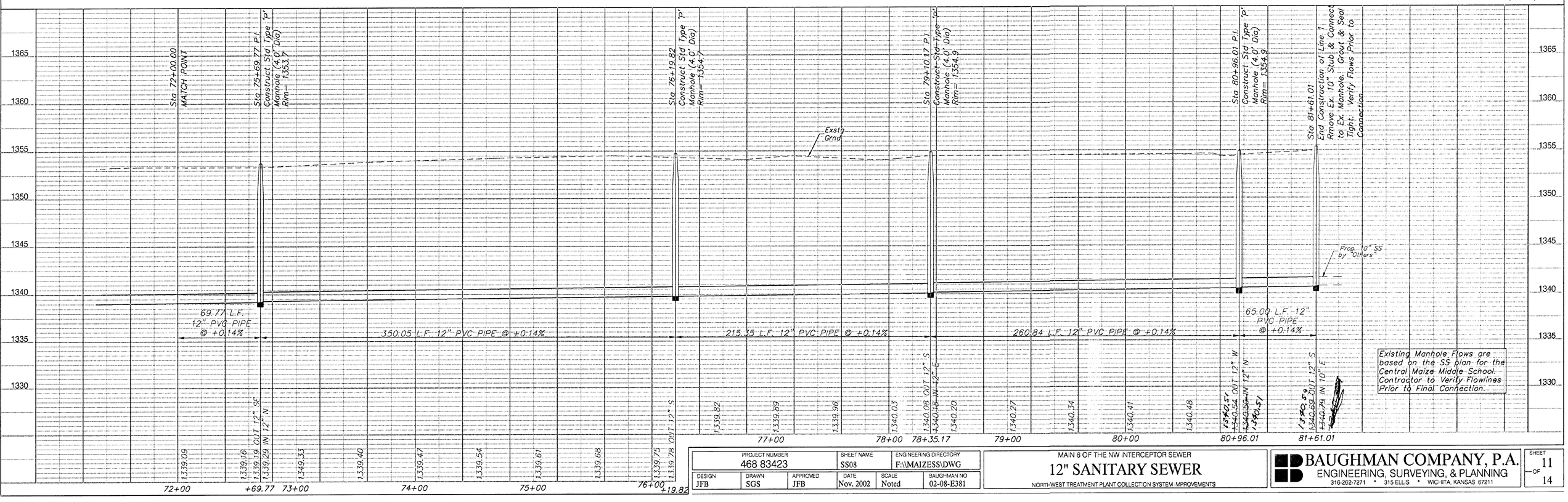
SHEET 10 OF 14



MANHOLE LOCATIONS

Sta	Northing	Easting	Full Desc
72+69.77	6996.51	12408.34	MANHOLE #28
76+19.82	7346.54	12412.07	MANHOLE #29
78+35.17	7561.88	12414.36	MANHOLE #30
80+96.01	7562.00	12675.21	MANHOLE #31
Pnt 5026	7632.00	12660.13	1/4Cor-SE-32-26-1W

REVISED 1/17/03
REVISED 3/20/03



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468 83423	SS08	F:\\MAIZESS\DWG

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
JFB	SGS	JFB	Nov. 2002	Noted	02-08-E381

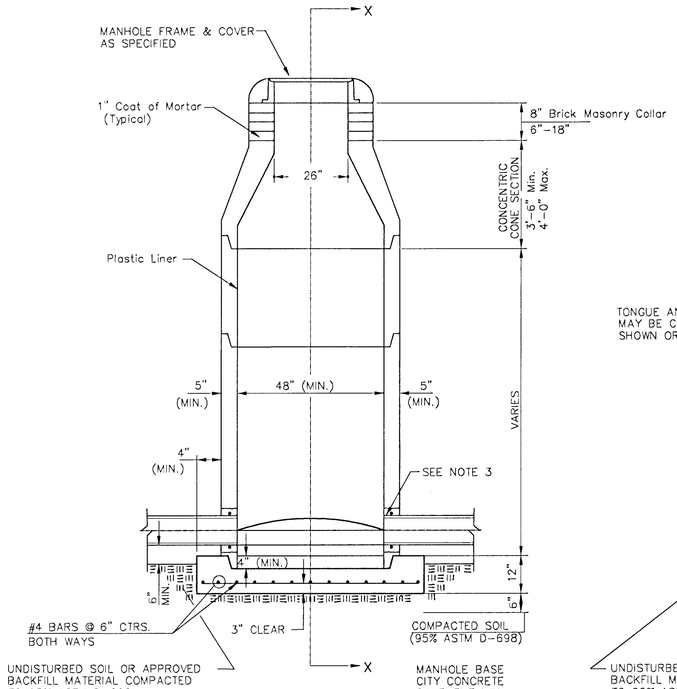
MAIN 6 OF THE NW INTERCEPTOR SEWER

12" SANITARY SEWER

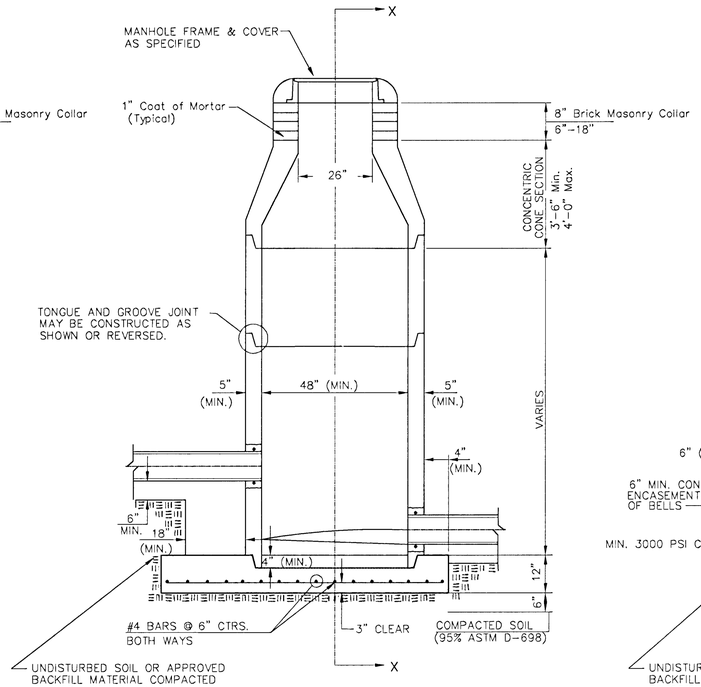
NORTH-WEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

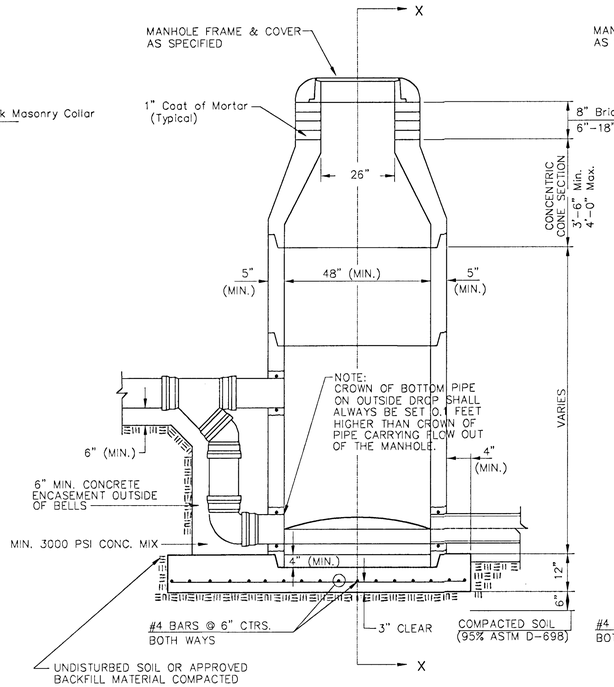
SEWER APPURTENANCES DETAILS



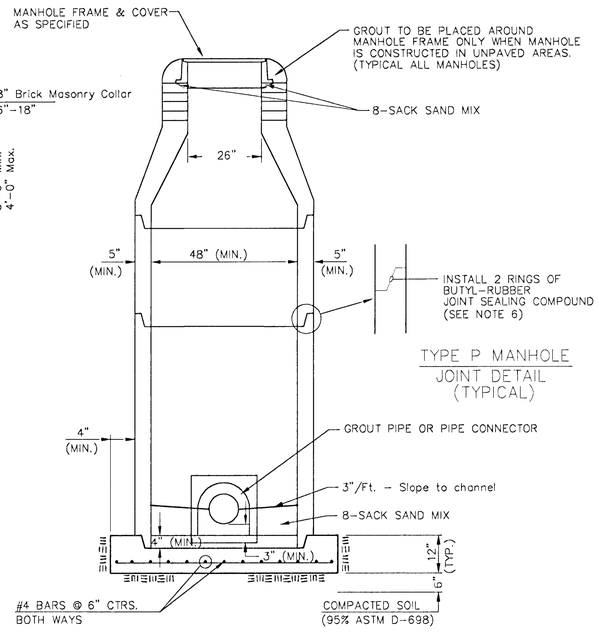
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE

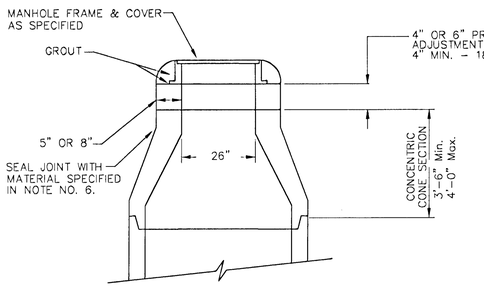


SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE LINED WITH A PLASTIC LINER PER THE CITY OF WICHITA STANDARD SPECIFICATIONS.
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NON-SHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY	
468 83423			PMH	F:\MAIZE SS\DETAILS	
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
ENGINEER	STAFF	JFB	Nov. 2002	NONE	02-08-E381

MAIN 8 OF THE NW INTERCEPTOR SEWER
TYPE "P"
MANHOLE DETAIL
NORTHWEST TREATMENT PLANT SYSTEM IMPROVEMENTS

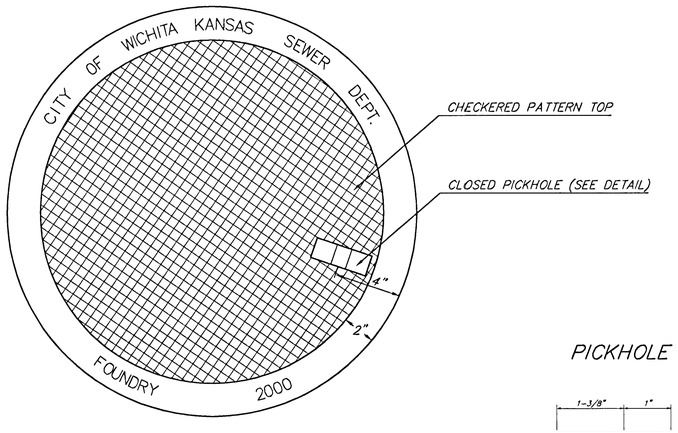
BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 * 315 ELLIS * WICHITA, KANSAS 67211

SHEET 12 OF 14

MANHOLE FRAME AND COVER DETAIL

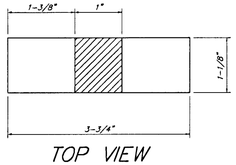
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

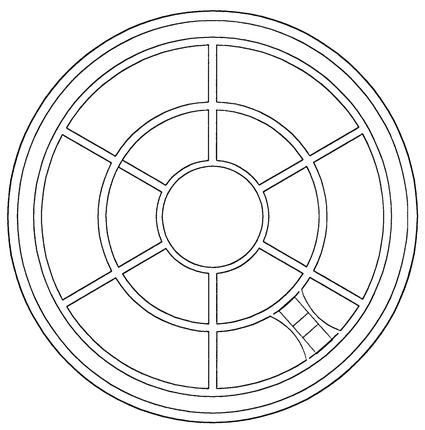


TOP VIEW

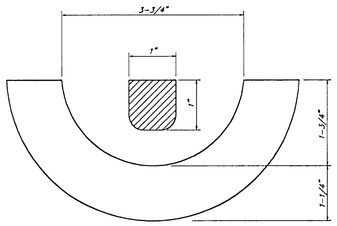
PICKHOLE DETAIL



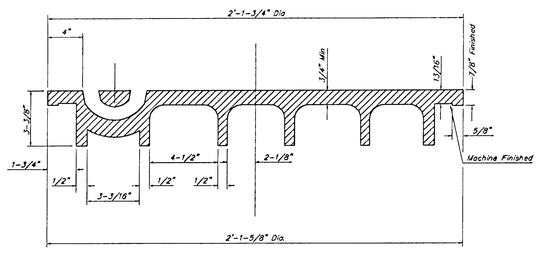
TOP VIEW



BOTTOM VIEW

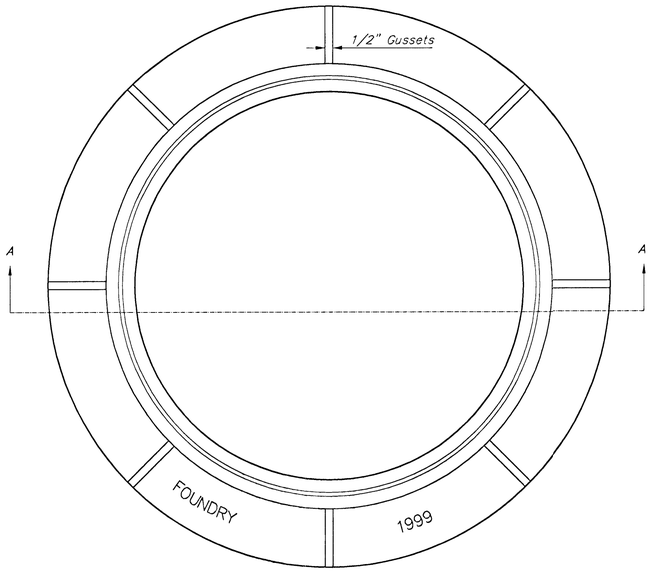


SECTION VIEW



SECTION VIEW

MANHOLE FRAME
Weight = 145 Lbs.



TOP VIEW

GENERAL NOTES

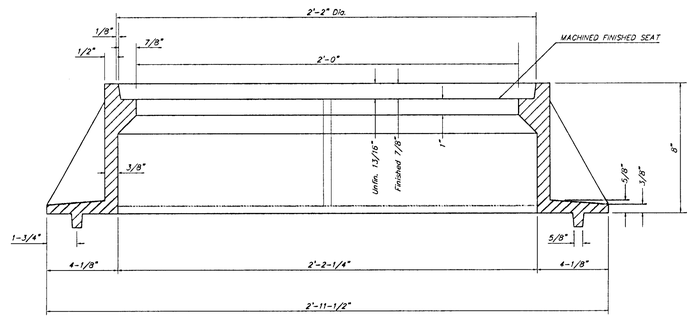
MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH AS THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

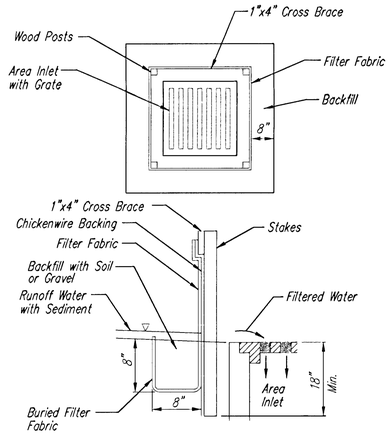


SECTION A-A

PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY	
468 83423			MHRING	F:\MAIZESS\DETAILS	
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
C.O.W	STAFF		Nov. 2002	NONE	02-08-E381

MAIN 6 OF THE NW INTERCEPTOR SEWER
STANDARD DETAILS for
MANHOLE RING AND COVER
NORTHWEST TREATMENT COLLECTION SYSTEM IMPROVEMENTS

BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
The material used to frame the tops of the posts should be 1" by 4" boards.
Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped.
Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped.
When used as a barrierfor area inlets, silt fence fabric and posts must be supported at the top by a wooden frame.
When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide.
Drive posts to a depth of at least 18" around the perimeter of the area inlet.
The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them.
Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening.
Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

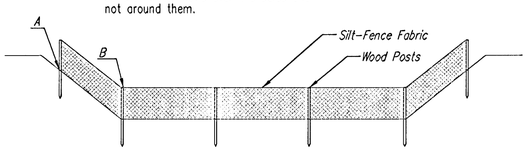
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet-not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip-ties, nails, etc.). The silt fence will rip and fail.
Do not install silt fence barrier for area inlets without framing the top of the posts.
The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped.
Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped.
Silt fence ditch checks should be placed perpendicular to the flowline of the ditch.
The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check.
Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

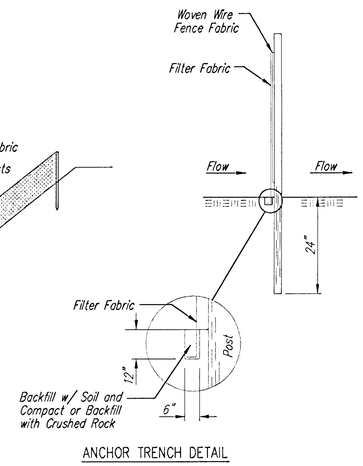
Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downstream side of the trench.
Place the edge of the fabric in the trench starting at the top upstream edge of the trench.
Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence.
Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

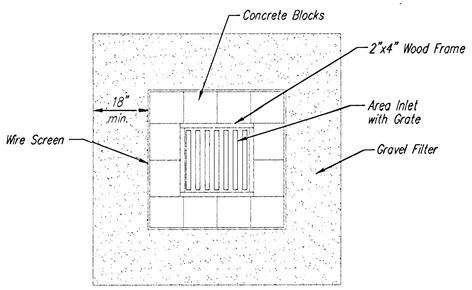


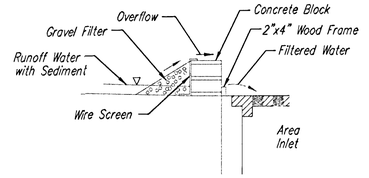
ANCHOR TRENCH DETAIL

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the ditch check?





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collapsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

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PROJECT NUMBER	OCA NO.
468-83423	743925
DATE: Nov. 2002	SHEET 14 of 14