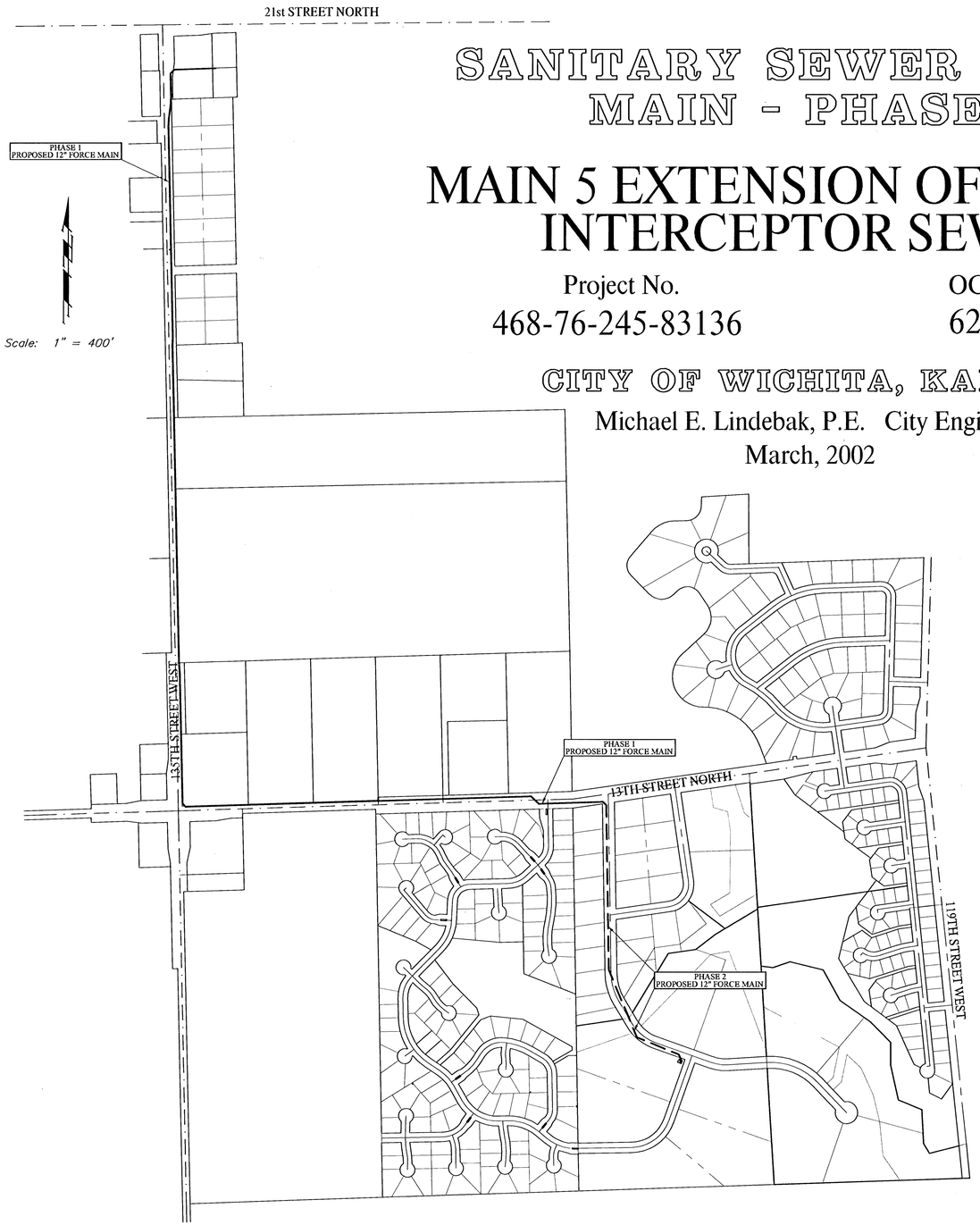


SANITARY SEWER FORCE MAIN - PHASE 1

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

Project No. 468-76-245-83136

OCA No. 624062

CITY OF WICHITA, KANSAS

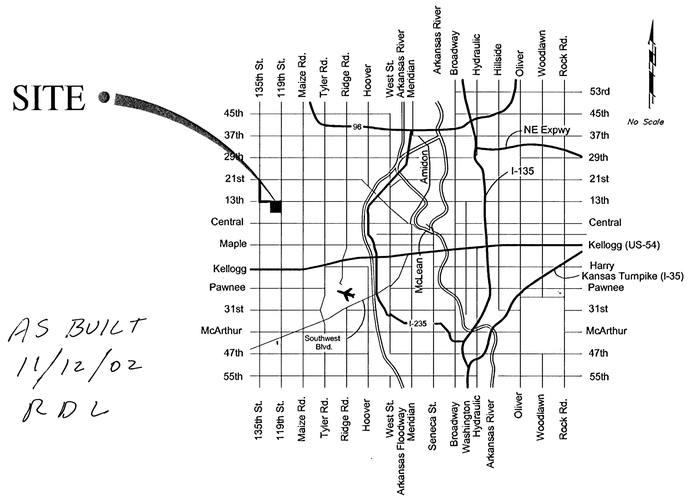
Michael E. Lindebak, P.E. City Engineer

March, 2002

INDEX

Title Sheet	1
Keysheet	2
General Notes	3
Plan/Profile Sheets	4–13
Misc. Details	14
Erosion Control Details	15–18

VICINITY MAP



AS BUILT
11/12/02
RDL

LICENSED
15076
4/2/02
KANSAS
PROFESSIONAL ENGINEER

F:\ENG\NW PLANT\FM TITLE

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

CONTROL POINTS

C.P. #19 N–1698146.906, E–1601691.029
MJH Aluminum Cap Set in Concrete
14.40' South to Chain Link Fence Post
23.40' Northwest to PK Nail in Asphalt Shoulder
29.90' Northeast to PK Nail in Asphalt Shoulder

C.P. #20 N–1698267.324, E–1602389.792
#4 Bar at Northeast Corner of 21st Street North and Forest View Street
22.93' Southwest to PK Nail in Top of East End of Metal Culvert Pipe
28.65' North–Northwest to 2" Steel Post Set in Concrete
44.33' Northeast to PK Nail in West Face of Power Pole

C.P. #21 N–16965 31.225, E–1601900.923
#4 Bar at Southeast Corner of Willoughby Street and 135th Street West
30.30' Southeast to Center of Flag Pole
125.68' Northwest to PK Nail in East Face of Power Pole
92.99' Northeast to PK Nail in West Face of Power Pole

C.P. #22 N–1695060.196, E–1601923.631
#4 Bar on South Edge of Field Entrance on 135th Street West Approximately 400' South of Tree Row
71.55' Southwest to PK Nail in East Face of the 8th Power Pole North of 13th Street North
6' South to South End of Culvert
21' North to North End of Culvert

C.P. #23 N–1692950.261, E–1601756.502
#4 Bar 17' North and 206' West of 135th Street West and 13th Street North
96.30' East to PK Nail in South Face of Power Pole
117.67' West–SouthWest to PK Nail in North Face of Power Pole
154.54' West to PK Nail in South Face of Power Pole

C.P. #24 N–1692902.633, E–1602513.471
#4 Bar
155.89' West–Southwest to Centerline of Northeast Corner Fence of Electrical Substation.
53.00' North to Centerline of 13th Street North.

C.P. #25 N–1691565.692, E–1601948.980
#4 Bar West of 135th Street West and 1/4 Mile South of 13th Street North
56.52' East to PK Nail in South Face of Power Pole
106.24' South to PK Nail in East Face of Power Pole
192.50' North to PK Nail in East Face of Power Pole

C.P. #43 N–1693014.753, E–1604589.749
Found 3/4" Iron Pin at South 1/4 Corner of Section 12, Township 27 South, Range 2 West

C.P. #44 N–1693355.798, E–1606956.420
Found 3/4" Iron Pin in Thimble at Southeast Corner of Section 12, Township 27 South, Range 2 West

C.P. #45 N–1690675.916, E–1604750.164
#4 Bar in Grassed Cul–de–Sac North of 1100 Azure Lane

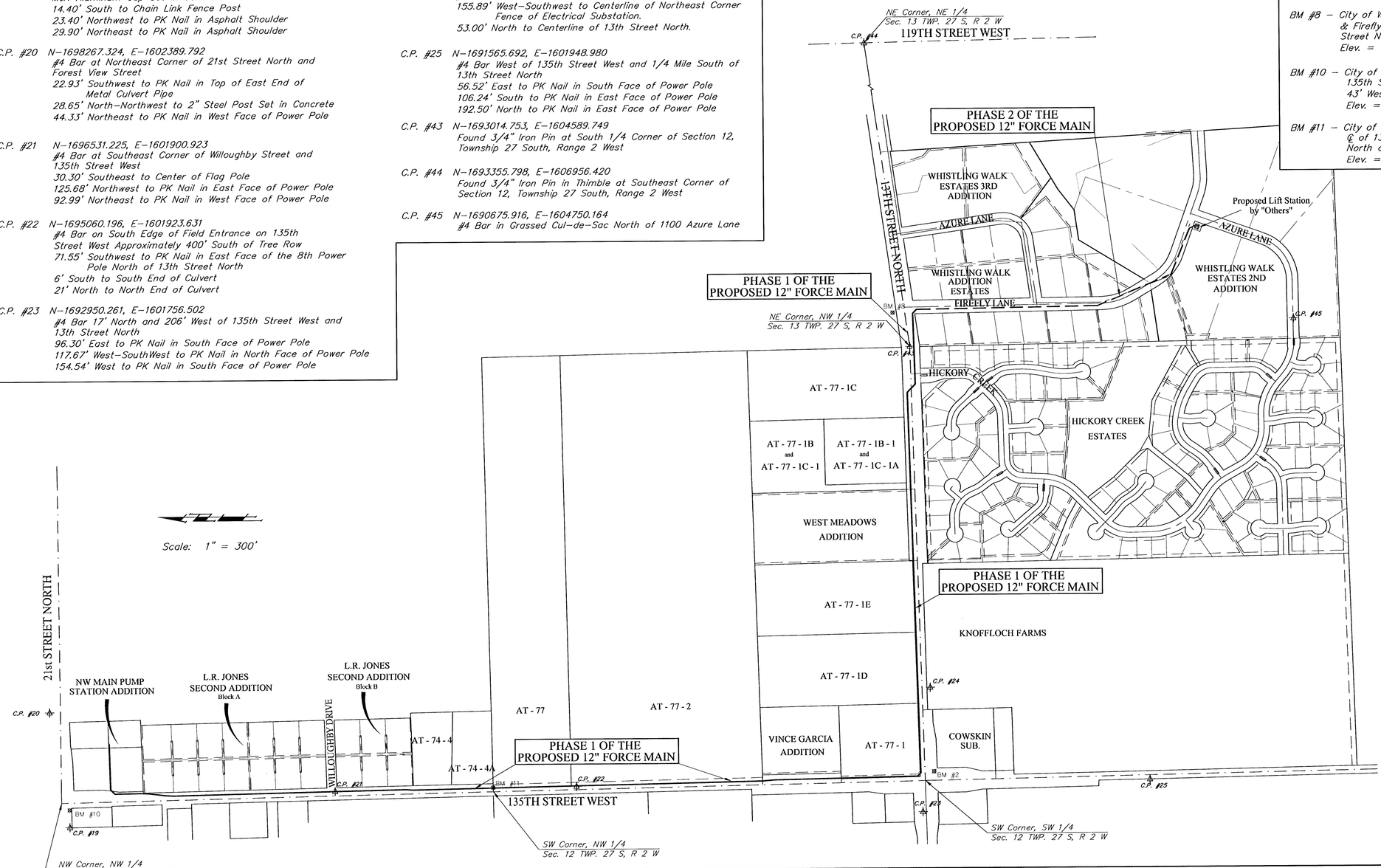
BENCHMARKS

BM #2 – City of Wichita Disc @ SE Corner of 135th Street West & 13th Street North, 56' S and 55' E of ℄ of Both.
Elev. = 1355.23 (MSL Datum)

BM #8 – City of Wichita Disc @ 13th Street North & Firefly Drive, 38.5' N of ℄ of 13th Street North @ the ℄ of Firefly Drive
Elev. = 1332.92 (MSL Datum)

BM #10 – City of Wichita Disc @ SW Corner of 135th Street West & 21st Street North, 43' West and 49' South of ℄ of Both
Elev. = 1356.59 (MSL Datum)

BM #11 – City of Wichita Disc @ 28' East of the ℄ of 135th Street West and .5 miles North of 13th Street North
Elev. = 1357.73 (MSL Datum)



PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136			FM Keysheet	F:\\NW PLANT
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER
KEYSHEET
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENT

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. Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with the new construction. The Contractor will be required to remove and replace to existing working condition all sprinkler systems that conflict with the proposed construction. Portions of underground sprinkler systems not in conflict with the proposed construction shall be protected from damage and shall remain in place. The Contractor shall contact the property owner for location and condition prior to removal. All work in connection with underground sprinkler system shall be INCIDENTAL to "Site Clearing and Preparation."

8. Power Poles in close proximity to the proposed Force Main may require temporary bracing to facilitate construction. Contractor shall contact Kendall Rush with Westar Energy at 262-6771 PRIOR to construction to coordinate pole bracing.

9. 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, Sheets 15 to 18.

10. All lawn/turf areas disturbed by construction shall be restored with the same grass/sod as existing. Restoration of disturbed areas shall include, but not limited to, top soil preparation, seeding, mulch, and/or reseeding. All seeding/sodding work shall be in accordance with City Standard specifications and the City Administrative Regulations No. AR78 which governs cleanup and restoration or replacement following construction. All costs for this work shall be INCIDENTAL to "Site Restoration."

11. 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 Buffalo 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. The temporary seeding may be omitted only if other seeding is required in accordance with General Note 10. All costs for this work shall be INCIDENTAL to "Site Restoration."

12. All ditch slopes disturbed by construction shall be restored to their original slopes and grades. The Contractor shall be responsible for reseeding the disturbed slopes in accordance with General Note 11. All costs for this work shall be INCIDENTAL to "Site Restoration".

13. 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.

14. Gravel roads and driveways that are to be removed during construction shall be replaced to pre-construction condition, including landscaping around drives and entrance pipes, as soon as possible to provide access to local residents. Cost to be INCIDENTAL to "Site Restoration".

15. The Force Main is to be constructed of PVC Pipe C-900, Class 150, or Ductile Iron Pipe, Class 350, that conforms to City of Wichita Specifications and Standards . The directionally drilled portion of the project shall use Certa-Lok C900 or HDPE pipe that also conforms to City of Wichita Specifications and Standards.

16. Operating/Receiving shafts required for trenchless construction methods shall not be paid for directly, but shall be considered INCIDENTAL to other items in the Project. All excavation, disposal, sheeting, shoring, dewatering, materials, labor, backfill, etc. as shown on the plans or required for proper installation shall be considered INCIDENTAL.

17. Tracer Wire shall be Installed with the 12" Force Main throughout the Project. See Detail, Sheet 14. Cost to be INCIDENTAL to Pipe Installation.

18. The Contractor shall provide appropriate signage for the 12" Force Main as shown on the plans. Cost of installation shall be INCIDENTAL to the bid item "Force Main Warning Signs".

19. The Contractor shall note that operation of the force main will begin as soon as the proposed treatment plant is online and fully functioning. The Contractor will be required to test the Force Main in accordance with Water Dept. Specifications to perform line loading. Dewatering and disposal shall be the Contractor's responsibility.

20. Staking Coordinates for this Project will be made available by Baughman Co. at the time of construction.

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

22. TRAFFIC CONTROL
The Contractor shall contain the operations to permit traffic through and across construction at existing roadways at all times. 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.

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	262-4270
Electric	Westar Energy	383-8650
Gas	Kansas Gas Service	832-3169
Gas	Peoples Natural Gas	942-0096
Telephone	Southwestern Bell Telephone Company	268-2245
Rural Water	Rural Water District #4	794-8891
Water	City of Wichita Water Department	268-4563
Sanitary Sewer	City of Wichita Sewer Maintenance	268-4024
Storm Sewer	City of Wichita Storm Sewer Maintenance	268-4090

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	NOTEPAGE	F:\\NW Plant

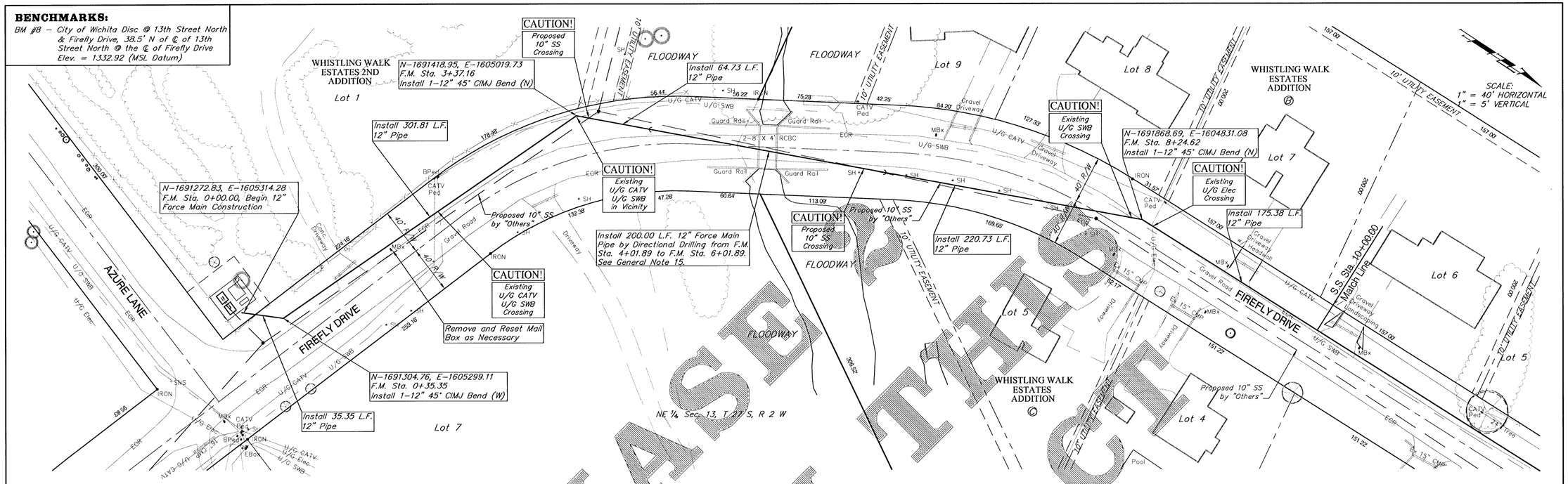
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	None	01-07-E086

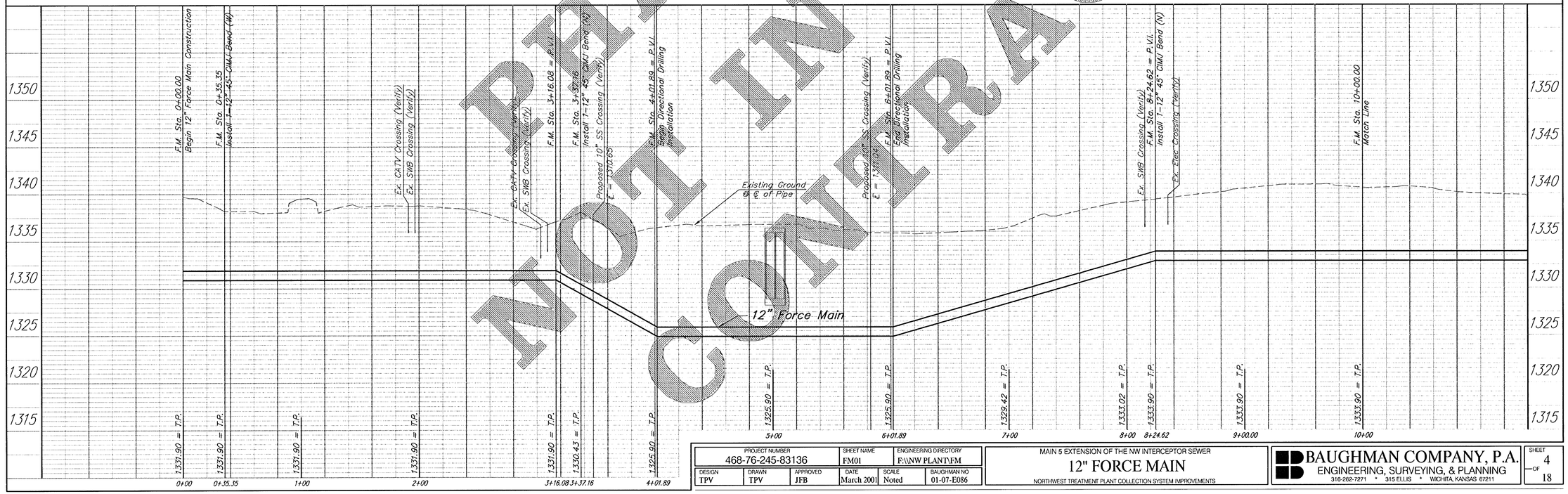
MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER
GENERAL NOTES
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:

BM #8 – City of Wichita Disc @ 13th Street North & Firefly Drive, 38.5' N of ℄ of 13th Street North @ the ℄ of Firefly Drive Elev. = 1332.92 (MSL Datum)





PLEASE NOTE IN CONTRACT

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM01	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2001	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

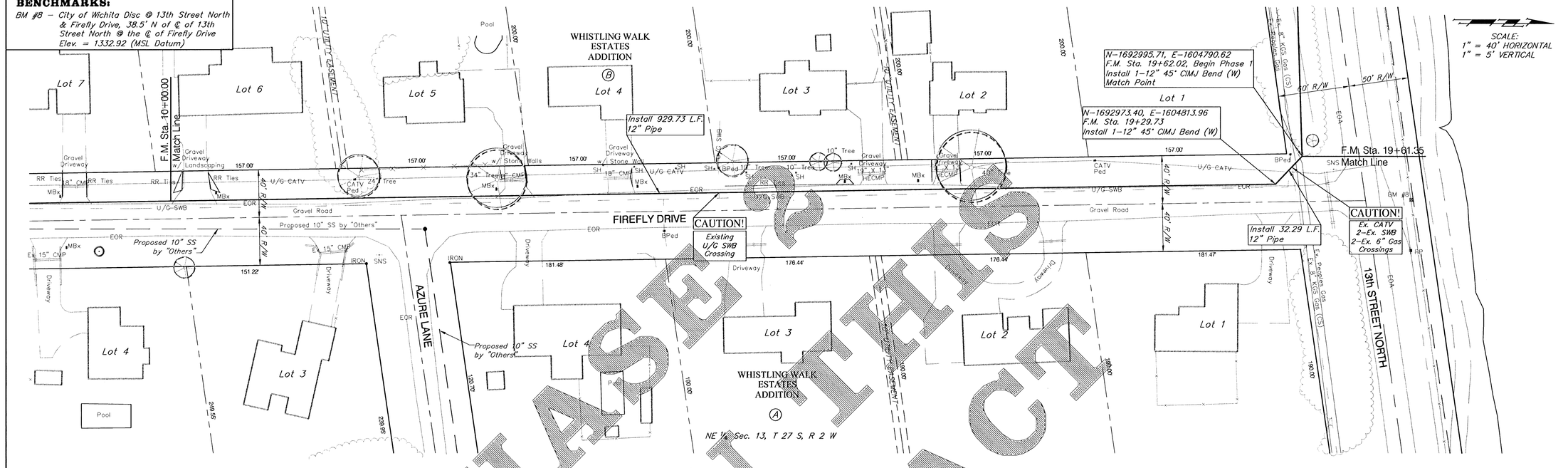
BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

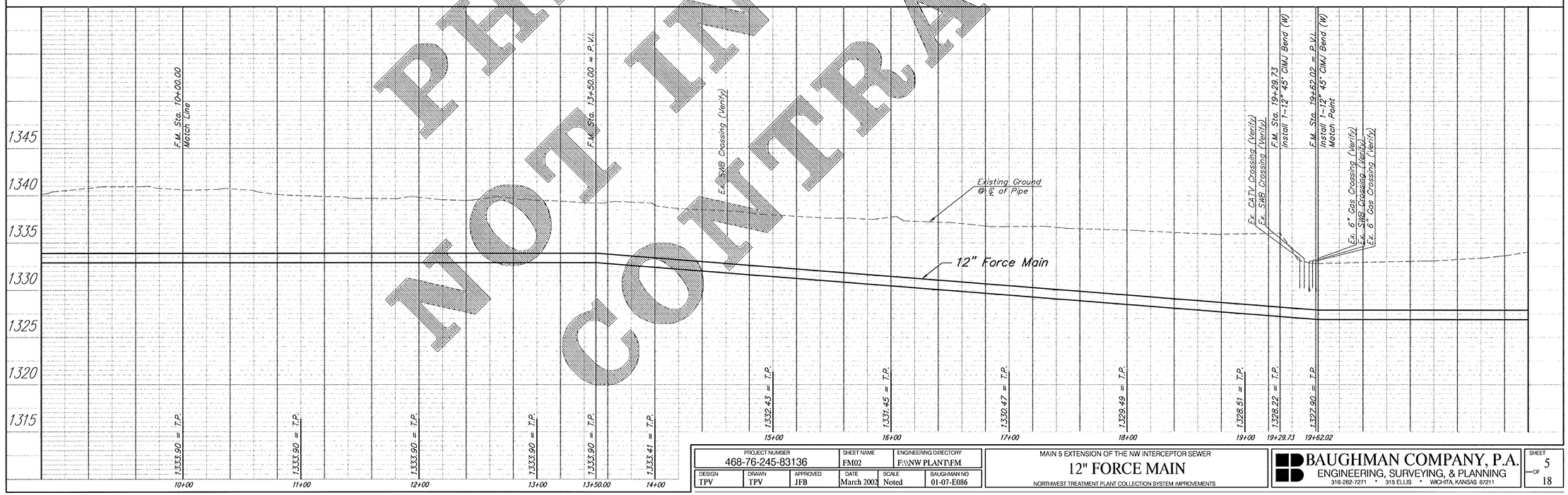
SHEET 4 OF 18

BENCHMARKS:

BM #8 – City of Wichita Disc @ 13th Street North & Firefly Drive, 38.5' N of ℄ of 13th Street North @ the ℄ of Firefly Drive
Elev. = 1332.92 (MSL Datum)

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL





PRELIMINARY
NOT IN CONTRACT

PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY	
468-76-245-83136			FM02	F:\\NW PLANT\FM	
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

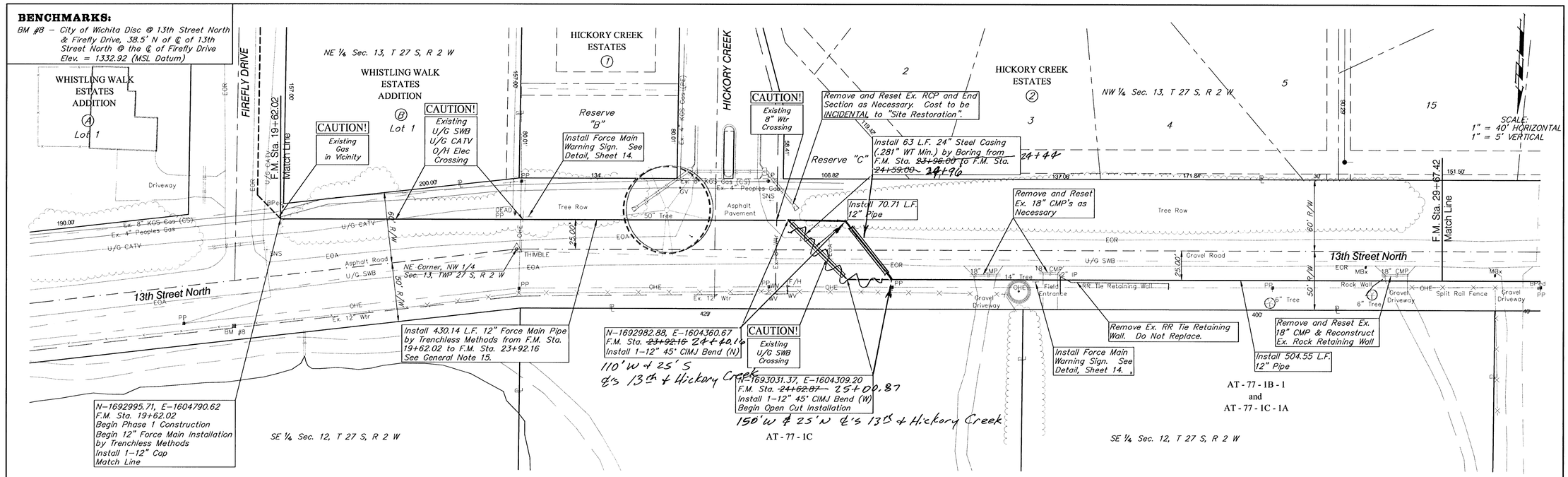
12" FORCE MAIN

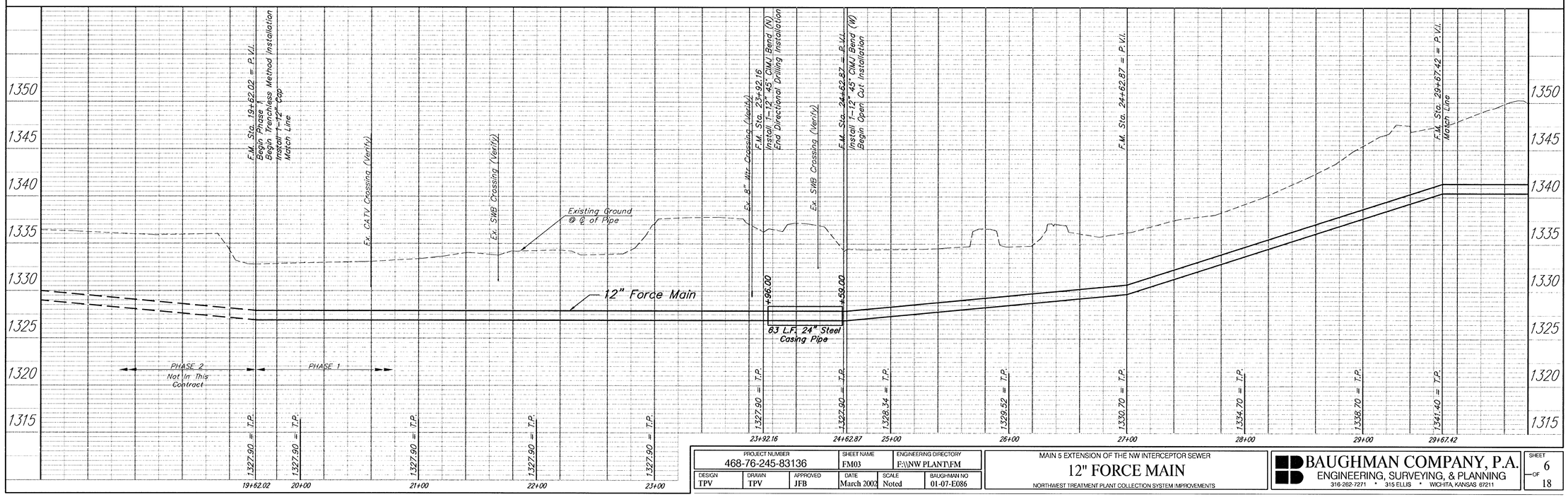
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:

BM #8 – City of Wichita Disc @ 13th Street North & Firefly Drive, 38.5' N of ℄ of 13th Street North @ the ℄ of Firefly Drive Elev. = 1332.92 (MSL Datum)





PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136			FM03	F:\\NW PLANT\FM
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO.
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:
BM #2 – City of Wichita Disc @ SE Corner of 135th Street West & 13th Street North, 56' S and 55' E of ℄ of Both. Elev. = 1355.23 (MSL Datum)

HICKORY CREEK ESTATES
②

5 | 15 | 16 | 17 | 18 | 19 | 20

NW ¼ Sec. 13, T 27 S, R 2 W

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL

KNOFFLOCH FARMS PARTNERSHIP

151.50 | 98.96 | 88.70 | 88 | 174.22 | 26.8

F.M. Sta. 29+67.42 Match Line

F.M. Sta. 40+00.00 Match Line

13th STREET NORTH

Sec. Line

EOR | P.I. | P.T. | P.C. | E.Box | U/G SWB | U/G CATV | OHE | PP | MB | 435

60' R/W | 50' R/W | 30' R/W | 25.00'

Tree Row

Rock Wall | Gravel Driveway | Split Rail Fence | Gravel Driveway | Asphalt Driveway | Asphalt Parking Lot | Gravel Road

6" Tree | 12" Tree | 14" Tree | 30" Clump | 3–60" x 45° CMP | 18" CMP

Remove Ex. Split Rail Fence, Salvage, & Return to Owner.

Remove and Reset Ex. 18" CMP as Necessary

Remove and Reset Mail Box as Necessary

CAUTION! Existing U/G SWB in Vicinity

Saw, Remove, and Replace in Kind 24 L.F. Asphalt Drive Pavement

Install Force Main Warning Sign. See Detail, Sheet 14.

CAUTION! Existing O/H CATV U/G CATV Crossing

N–1692999.17, E–1603230.38
Sta. 35+42.17
Install 1–2" Air Release Valve Assembly. See Detail, Sheet 14.
Top Elev. = 1346.76

Install 1032.58 L.F. 12" Pipe

Install 26.7 S.Y. Light Stone Rip Rap as Shown from F.M. Sta. 37+25.32 to F.M. Sta. 37+55.32

10' UTILITY EASEMENT

AT - 77 - 1B - 1
and
AT - 77 - 1C - 1A

AT - 77 - 1B
and
AT - 77 - 1C - 1

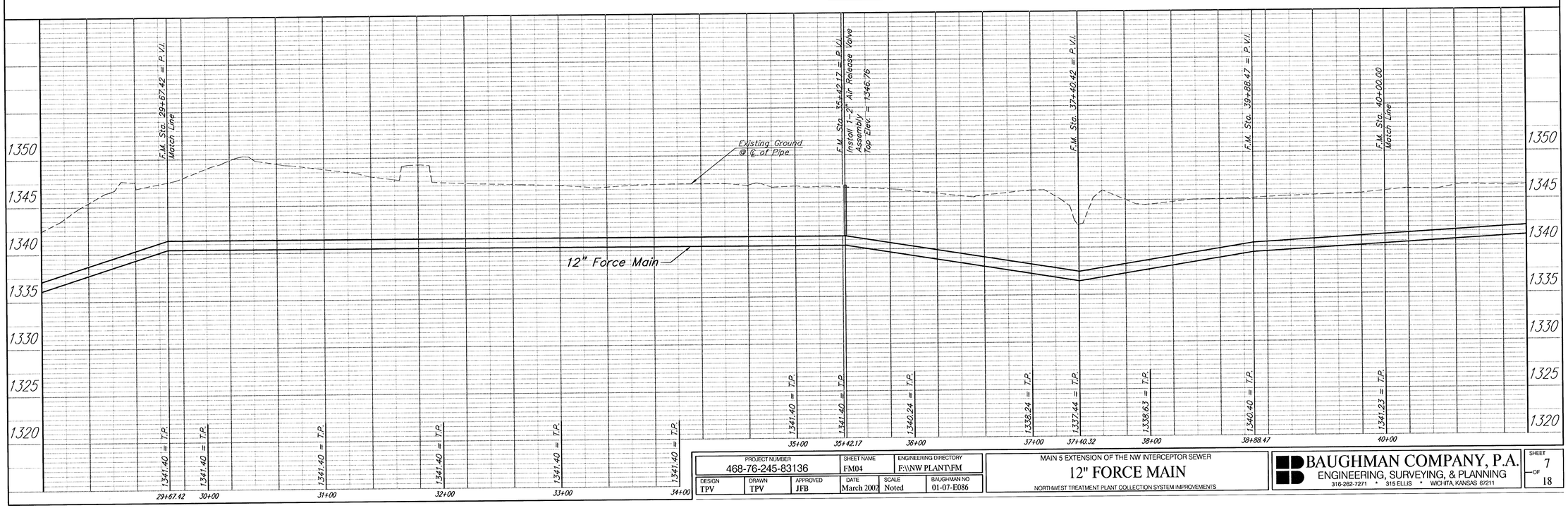
WEST MEADOWS ADDITION
Lot 1
LakeSide Church

SW ¼ Sec. 12, T 27 S, R 2 W

DOROTHY M. MATHEW LIVING TRUST
AT - 77 - 1E

DOROTHY M. MATHEW LIVING TRUST
AT - 77 - 1D

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



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM04	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

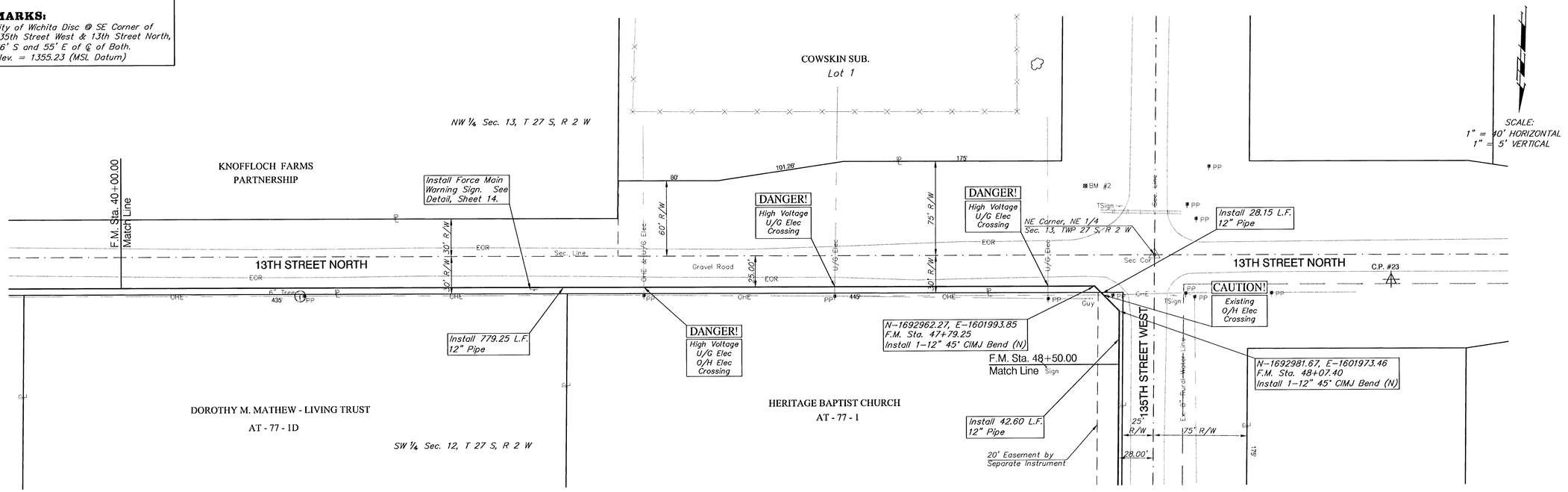
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

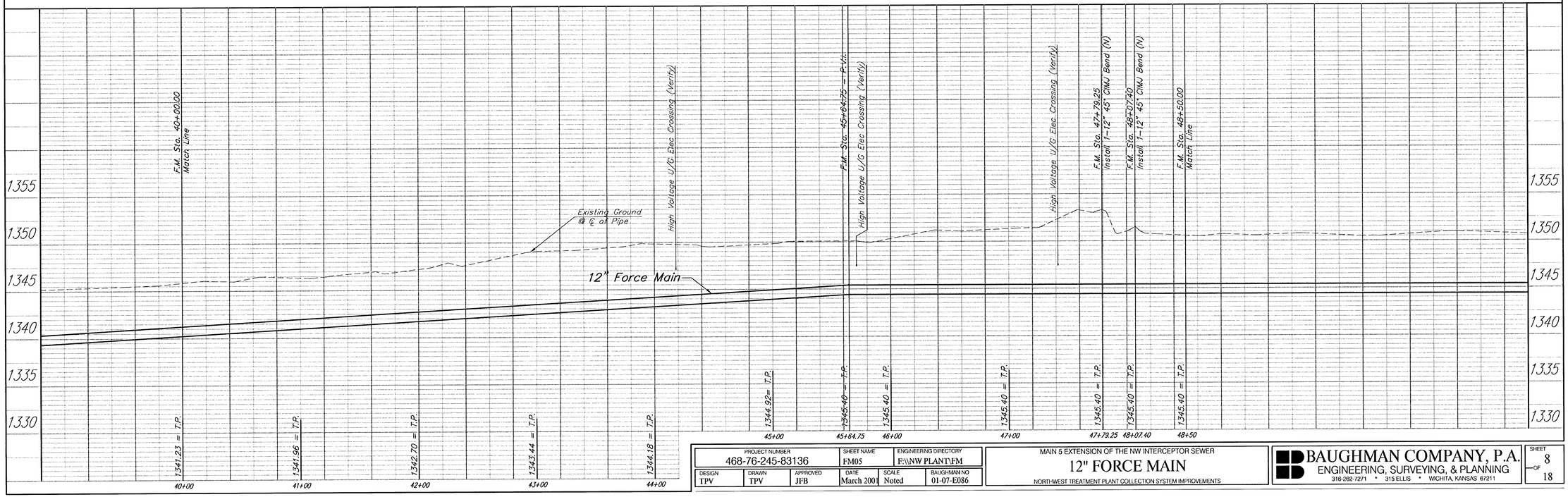
BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

SHEET 7 OF 18

BENCHMARKS:

BM #2 – City of Wichita Disc @ SE Corner of 135th Street West & 13th Street North, 56' S and 55' E of ℄ of Both. Elev. = 1355.23 (MSL Datum)





PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM05	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2001	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

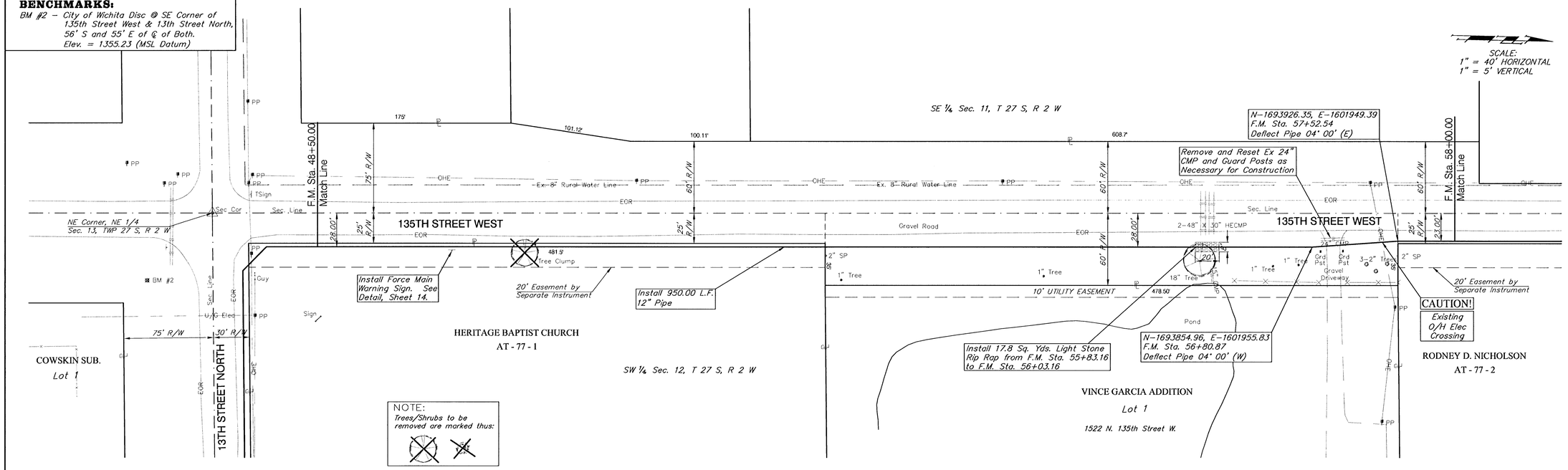
NORTH-WEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

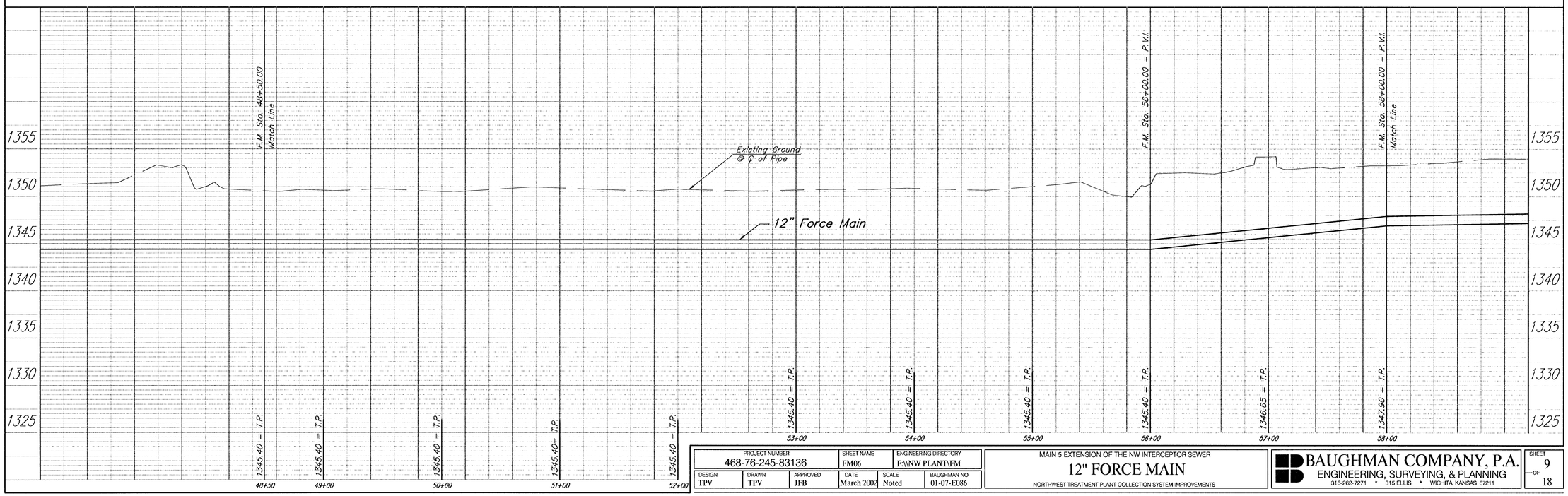
BENCHMARKS:

BM #2 – City of Wichita Disc @ SE Corner of 135th Street West & 13th Street North, 56' S and 55' E of ℄ of Both. Elev. = 1355.23 (MSL Datum)

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL



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



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM06	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

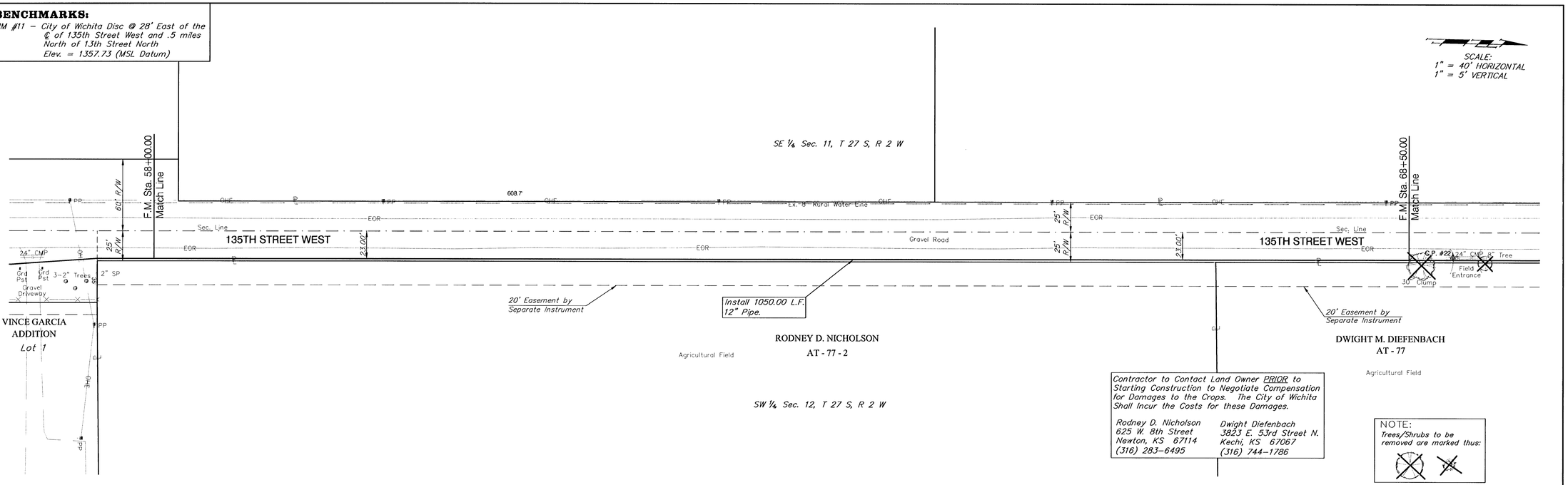
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:

BM #11 – City of Wichita Disc @ 28' East of the ℄ of 135th Street West and .5 miles North of 13th Street North
Elev. = 1357.73 (MSL Datum)

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL

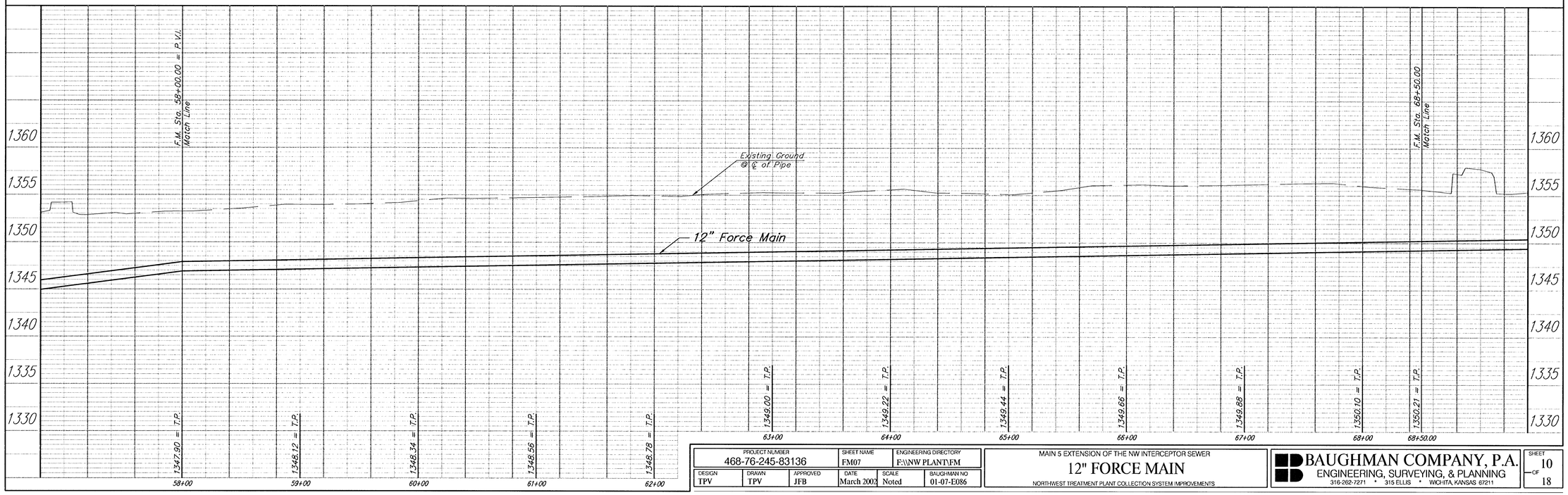


Contractor to Contact Land Owner PRIOR to Starting Construction to Negotiate Compensation for Damages to the Crops. The City of Wichita Shall Incur the Costs for these Damages.

Rodney D. Nicholson
625 W. 8th Street
Newton, KS 67114
(316) 283–6495

Dwight Diefenbach
3823 E. 53rd Street N.
Kechi, KS 67067
(316) 744–1786

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



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM07	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

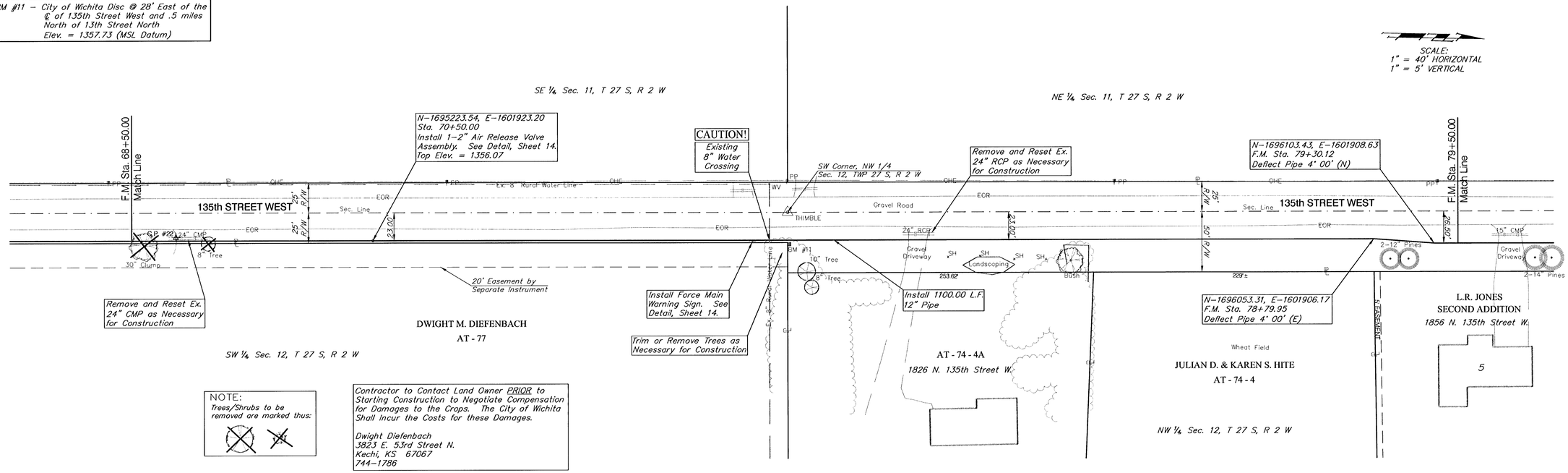
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:

BM #11 – City of Wichita Disc @ 28' East of the ℄ of 135th Street West and .5 miles North of 13th Street North
Elev. = 1357.73 (MSL Datum)

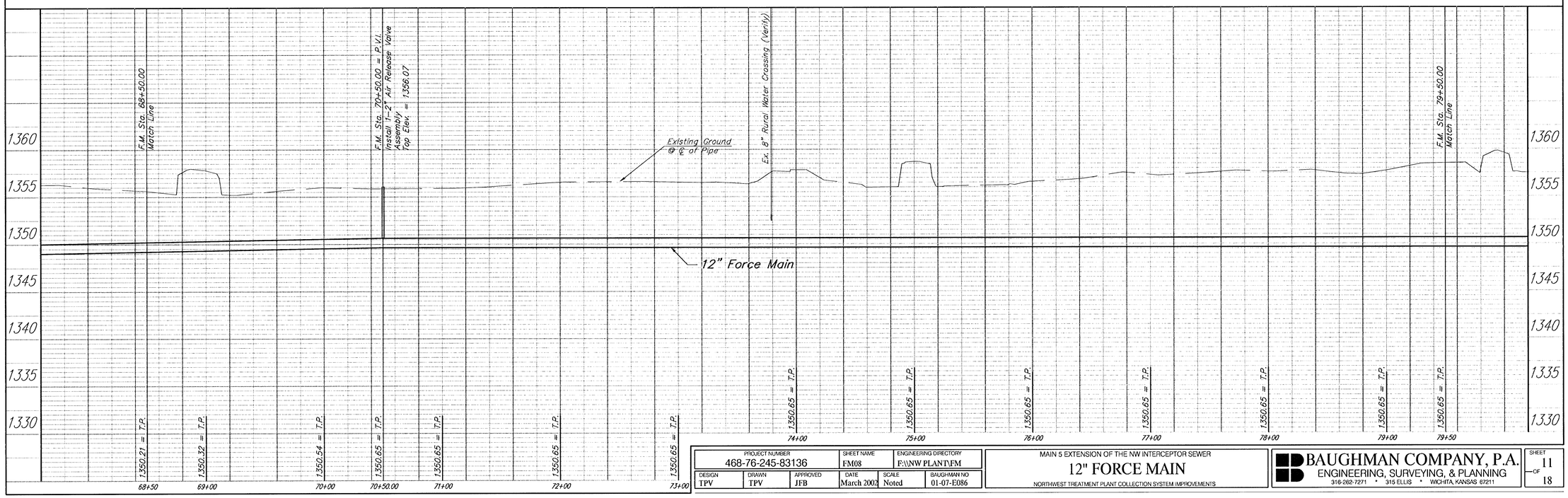
SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL



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

Contractor to Contact Land Owner PRIOR to Starting Construction to Negotiate Compensation for Damages to the Crops. The City of Wichita Shall Incur the Costs for these Damages.

Dwight Diefenbach
3823 E. 53rd Street N.
Kechi, KS 67067
744-1786



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM08	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

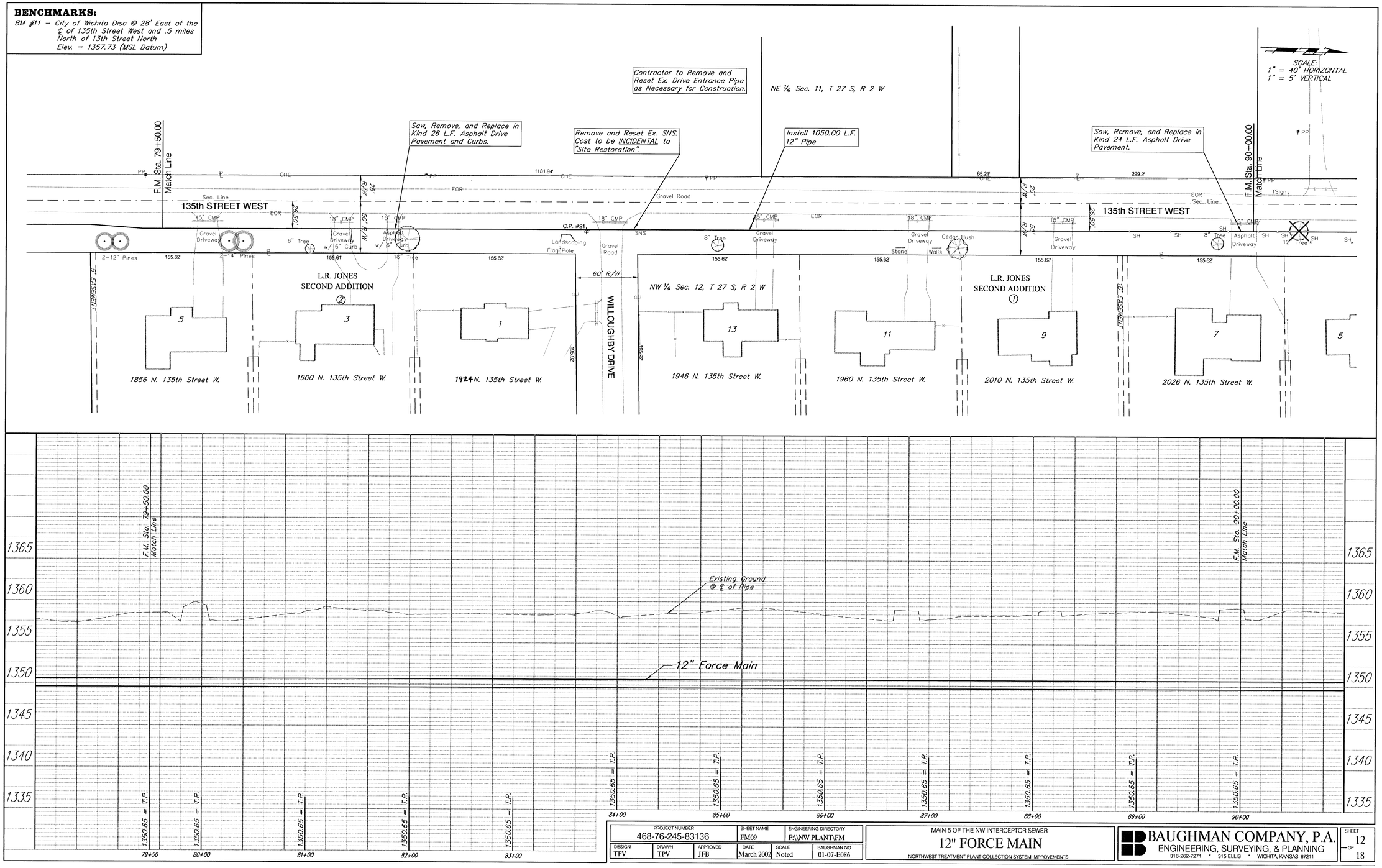
MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

12" FORCE MAIN

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

BENCHMARKS:
BM #11 – City of Wichita Disc @ 28' East of the ℄ of 135th Street West and .5 miles North of 13th Street North
Elev. = 1357.73 (MSL Datum)



PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM09	F:\\NW PLANT\FM

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 OF THE NW INTERCEPTOR SEWER
12" FORCE MAIN
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

SHEET 12 OF 18

BENCHMARKS:
BM #10 – City of Wichita Disc @ SW Corner of 135th Street West & 21st Street North, 43' West and 49' South of ℄ of Both
Elev. = 1356.59 (MSL Datum)

NE ¼ Sec. 11, T 27 S, R 2 W

N–1697718.14, E–1601896.13
F.M. Sta. 95+45.97
Deflect Pipe 4° 00' (N)

N–1697871.92, E–1601892.94
F.M. Sta. 96+99.79
Install 1–12" 45° CIMJ Bend (E)

N–1697668.20, E–1601893.68
F.M. Sta. 94+95.97
Deflect Pipe 4° 00' (N)

N–1697568.14, E–1601881.73
F.M. Sta. 93+95.20
Deflect Pipe 4° 00' (E)

N–1697518.20, E–1601879.28
F.M. Sta. 93+45.20
Deflect Pipe 4° 00' (E)

Contractor to Remove and Reset Ex. Drive Entrance Pipe as Necessary for Construction.

Install 699.79 L.F. 12" Pipe

Saw, Remove, and Replace In Kind 22 L.F. Asphalt Drive Pavement

F.M. Sta. 90+00.00 Match Line

135th STREET WEST

2042 N. 135th Street W.

2060 N. 135th Street W.

2100 N. 135th Street W.

Saw, Remove, and Replace In Kind Decorative Curb. Cost to be INCIDENTAL, to "Site Clearing and Restoration".

Saw, Remove, and Replace in Kind 32 L.F. Asphalt Drive Pavement

CAUTION! Ex. SWB O/H Elec Crossings

Remove and Reset Ex. Fence as Necessary

CAUTION! Proposed 14" Force Main 20" Force Main Crossings

Install Force Main Warning Sign. See Detail, Sheet 14.

Install 278.38 L.F. 12" Pipe

Install 35.54 L.F. 12" Pipe

Remove Trees as Necessary for Construction

N–1697897.69, E–1601917.41
F.M. Sta. 97+35.33
Install 1–12" 45° CIMJ Bend (E)

CITY OF WICHITA, A MUNICIPAL CORP.

NW MAIN PUMP STATION ADDITION

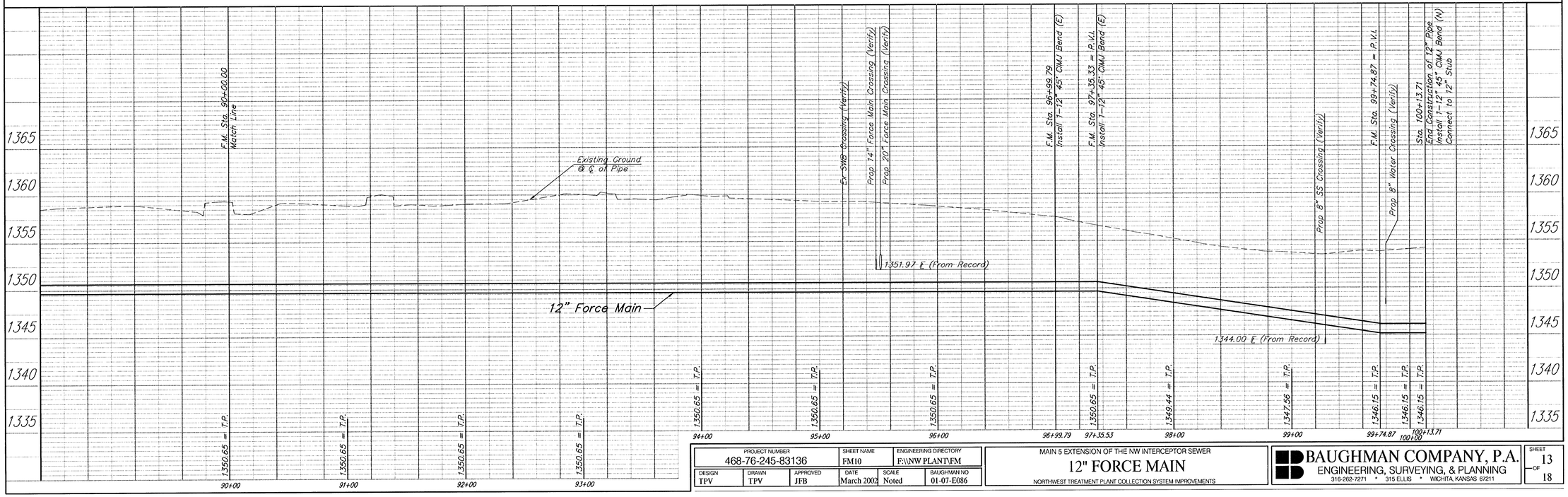
CAUTION! Proposed 8" SS 8" Water Crossings

N–1697906.28, E–1602195.68
Sta. 100+13.71
End Construction of 12" Pipe
Install 1–12" 45° CIMJ Bend (N)
Connect to 12" Stub
Contractor to Coordinate Connection with the Main Pump Station Contractor.
(C.O.W. Project #533–651005)

L.R. JONES SECOND ADDITION
(1)
NW ¼ Sec. 12, T 27 S, R 2 W

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

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL

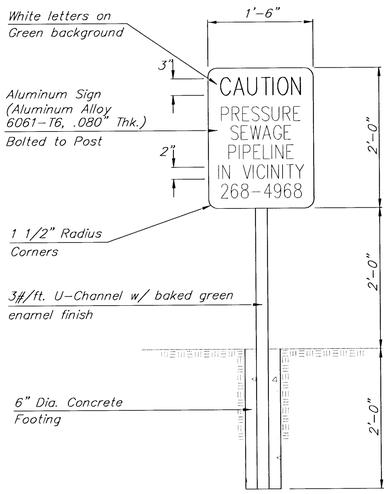


PROJECT NUMBER			SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136			FM10	F:\\NW PLANT\FM
DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	Noted	01-07-E086

MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER
12" FORCE MAIN
NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

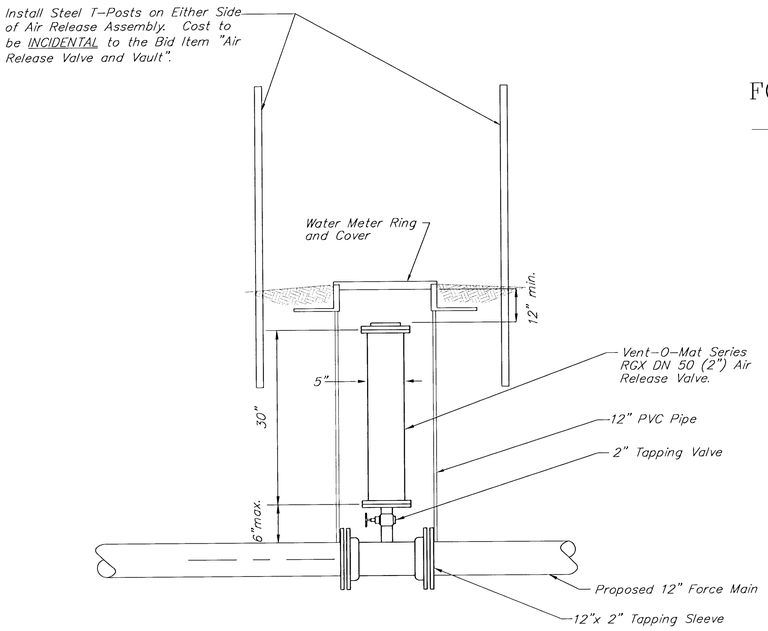
BAUGHMAN COMPANY, P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

SHEET 13 OF 18

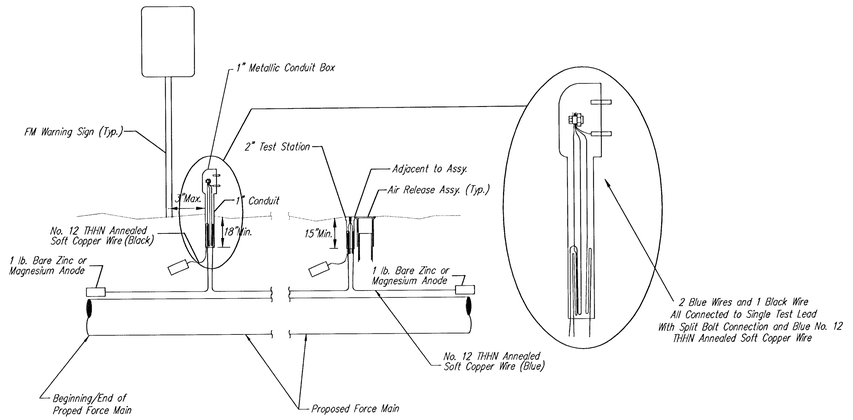


FORCE MAIN WARNING SIGN DETAIL

Note: Install Metal Warning Signs at Locations as Shown on the Plans. Exact Locations of Warning Signs shall be Approved by the Engineer.



AIR RELEASE VALVE AND VAULT



TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of the waterlines. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 1 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed waterline. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE

The tracer wire shall be Blue No. 12 THHN annealed soft copper wire with thermal plastic insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire is exposed at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

TEST STATIONS

The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PS3B as manufactured by HANDLEY Industries or approved equal. The conduit style shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "Force Main" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

ANODES

The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

TRACER WIRE DETAIL

COST IS SUBSIDIARY TO PIPE INSTALLATION

PROJECT NUMBER	SHEET NAME	ENGINEERING DIRECTORY
468-76-245-83136	FM Details	F:\\NW Plant\Details

DESIGN	DRAWN	APPROVED	DATE	SCALE	BAUGHMAN NO
TPV	TPV	JFB	March 2002	None	01-07-E086

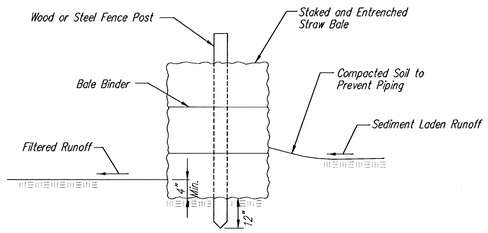
MAIN 5 EXTENSION OF THE NW INTERCEPTOR SEWER

MISCELLANEOUS DETAILS

NORTHWEST TREATMENT PLANT COLLECTION SYSTEM IMPROVEMENTS

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

SHEET 14 OF 18



STRAW BALE BARRIERS

Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow.
Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

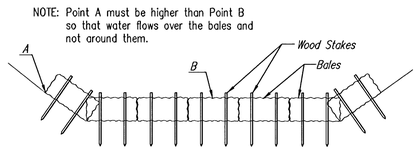
List of common placement/installation mistakes to avoid:

When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails.
Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out.
Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale slope barriers 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:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the slope barrier?



STRAW BALE DITCH CHECKS

Material Specification:

Bale ditch checks may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch.
The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. 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.
Bales 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 Check Spacing

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 4" deep and a bale's width 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-it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

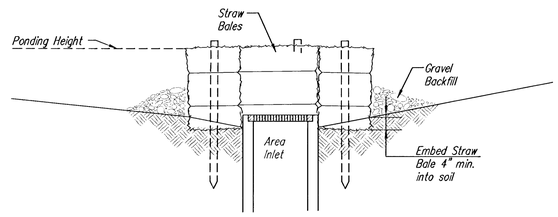
List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place bale 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 check is higher than the top of the lowest center bale.
Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.
Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

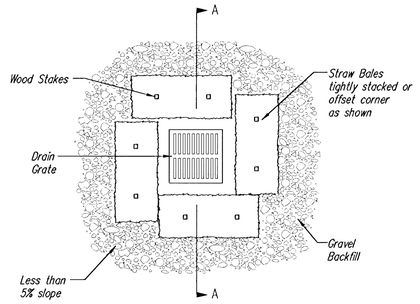
Inspection and Maintenance:

Bale 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 water flow through spaces between abutting bales?
Are any bales and/or scour aprons (optional) dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the ditch check?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

Bale area inlet barriers should be placed directly around the perimeter of a drop inlet.
When a bale area inlet barrier 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 4" deep by a bale's width wide.
Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, approximately 6" to 8" in from the bale ends.
Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep.
Note: When a bale area inlet barrier 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.

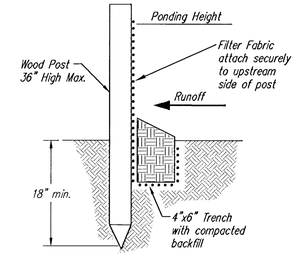
List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour.
Bale area inlet barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

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

Does water flow under the area inlet barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age andlor water damage?
Does sediment need to be removed from behind the area inlet barrier?



SILT FENCE BARRIERS

SILT FENCE BARRIERS

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:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, silt fence slope barriers should be placed along contours to avoid a concentration of flow.
Silt fence slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 6" deep by 4" wide.
Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downslope side of the trench.
Place the edge of the fabric in the trench starting at the top upslope edge. 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.
Lay the exposed silt fence upslope of the trench to clear an area for driving in the posts.
Just downslope of the trench, drive posts into the ground to a depth of at least 18".
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:

When practicable, do not place silt fence slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier and the silt fence slope barrier quickly deteriorates.
Do not place silt-fence posts on the upslope 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, liails, etc.). The silt fence will rip and fail.
Do not place silt fence slope barriers in areas with shallow soils underlain by rock. If the barrier is not sufficiently anchored, it will wash out.
Silt fence slope barriers must be dug into the ground-silt fence at ground level does not work because water will flow underneath.

Inspection and Maintenance:

Silt fence slope barriers 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:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

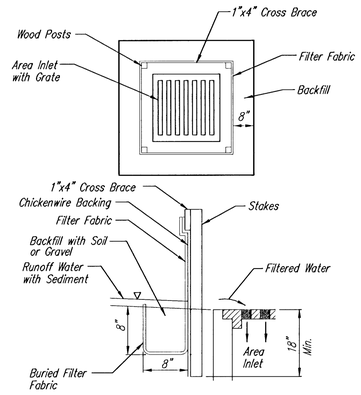
CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83136	624062

DATE: March 2002



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.

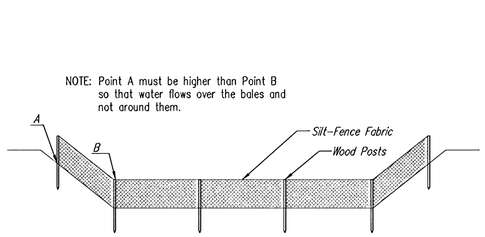
List of common placement/installation mistakes to avoid:

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:

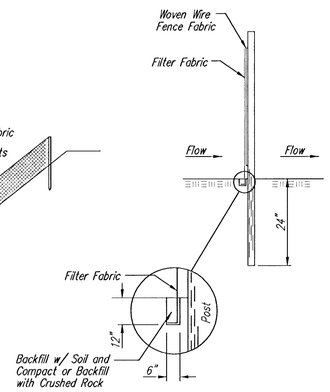
Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

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)



ANCHOR TRENCH DETAIL

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 Check Ditch grade (%)	Spacing 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.

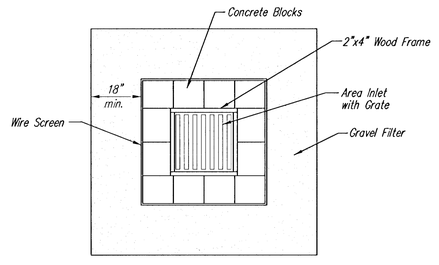
List of common placement/installation mistakes to avoid:

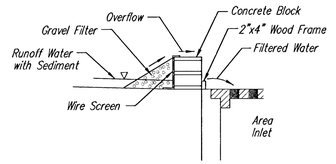
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, 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.

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 collopsing.

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:

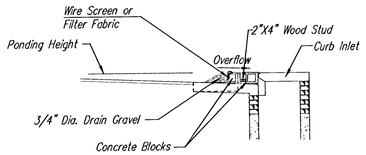
All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment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

CITY OF WICHITA

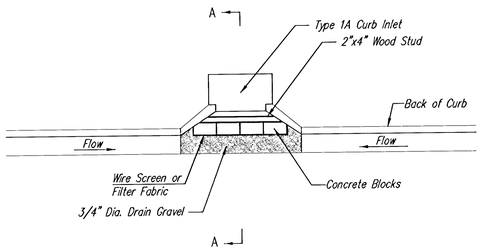
SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83136	624062
DATE: March 2002	SHEET 16 OF 18



SECTION A–A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION–RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

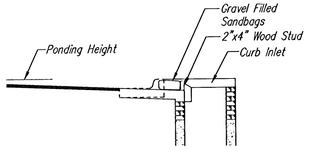
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
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 installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

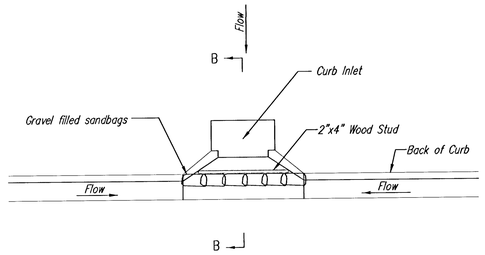
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

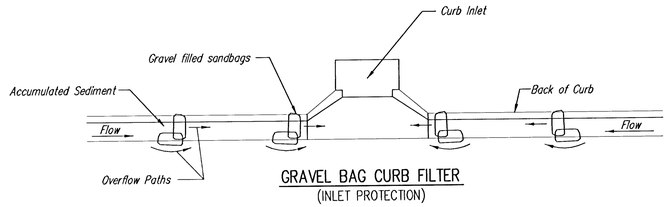


SECTION B–B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

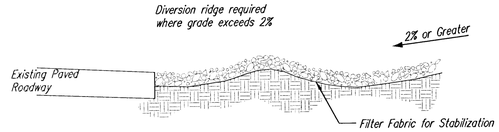
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

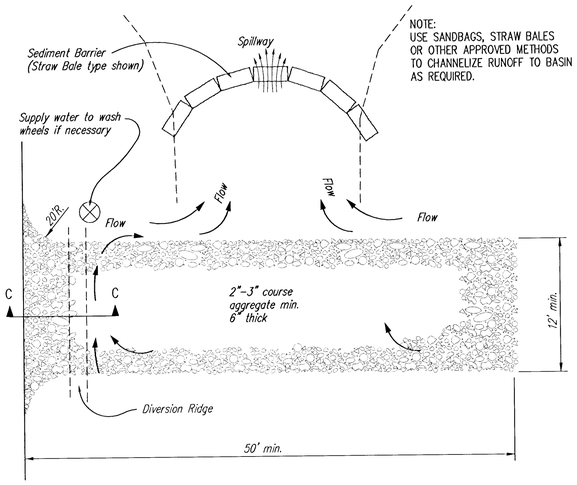
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABLIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468–83136	624062
DATE: March 2002	SHEET 17 OF 18

GENERAL NOTES:

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.

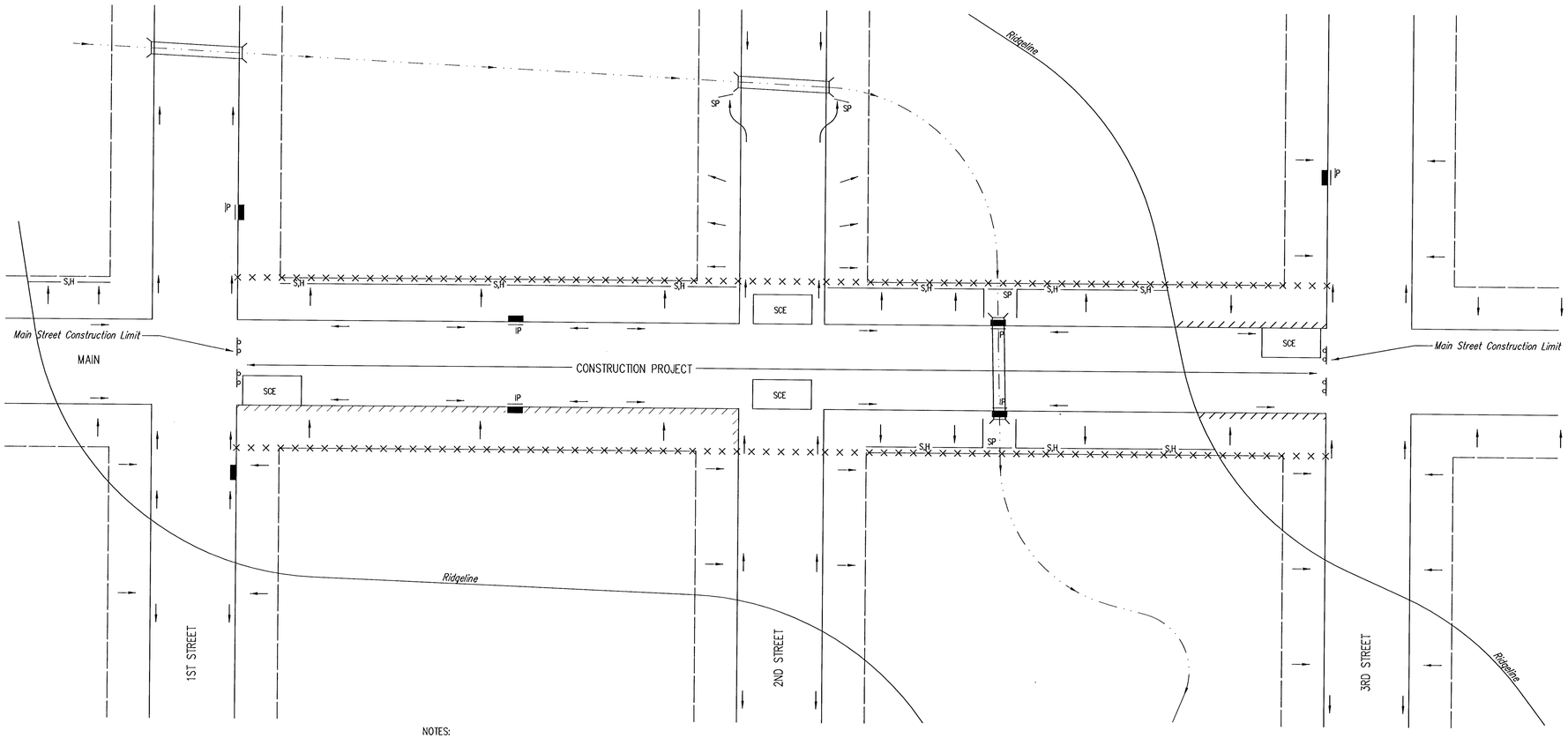
2. BMP'S MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS.

3. IF THE PROJECT WILL DISTURB 5 ACRES OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE BMP'S SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 5 ACRES, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION.

5. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.

6. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THOSE SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.



LEGEND

- R-O-W LIMITS
- DRAINAGE FLOW PATH
- R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP — INLET PROTECTION
- S,H — SILT FENCE OR HAYBALE BMP
- SP — STREAM PROTECTION
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- BACK OF CURB PROTECTION

NOTES:

1. GENERAL BMP GOAL IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, AND OTHER DRAINAGE FACILITIES.

2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.

3. BMP'S WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.

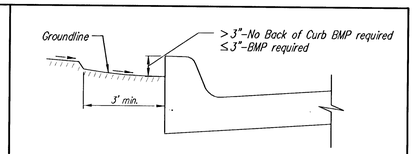
4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.

5. BMP'S SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.

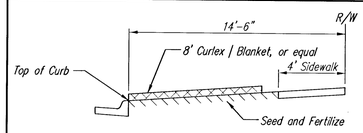
6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.

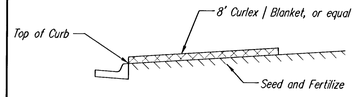
8. THE CONTACTOR WILL BE REQUIRED TO PLACE BMP'S BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE BMP REQUIRED WILL BE CURLEX I EXCELSIOR BLANKET, OR EQUAL. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE BACK OF CURB PROTECTION DETAIL)
   B. THIS BMP SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   C. ADDITIONALLY, OTHER BMP'S (HAYBALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE DETAIL)



CURB BACKFILL DETAIL

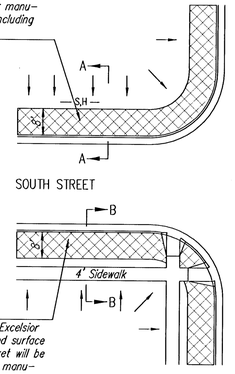


SECTION B-B



SECTION A-A

BMP-Install 8' wide Curlex I Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.



BMP-Install 8' wide Curlex I Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturers recommendation, including staples.

BACK OF CURB PROTECTION DETAIL

NOTES:

1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.

2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLIMENTAL BMP'S WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

CITY OF WICHITA

SOIL EROSION BMPS STREET IMPROVEMENT PROJECTS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83136	624062
DATE: March 2002	SHEET 18 OF 18

18-05-05-12