

WATER DISTRIBUTION SYSTEM IMPROVEMENTS  
TO SERVE

# FLINT HILLS NATIONAL ADDITION

## PHASE 4

THE CITY OF ANDOVER, BUTLER COUNTY, KANSAS

CITY OF WICHITA PRIVATE PROJECT NO. 1054 PPW

OCA NO. 607853

### GENERAL NOTES

- ALL WATER MAINS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF ANDOVER, AND CITY OF WICHITA, KANSAS STANDARD SPECIFICATIONS FOR WATER MAIN INSTALLATIONS.
- CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY-TWO (72) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:  
KANSAS ONE-CALL 1-800-344-7233  
OR LOCAL (WICHITA) 687-2470
- THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF EMERGENCY:  
CITY OF ANDOVER (LES MANGUS) 733-2621  
COX COMMUNICATIONS (CABLE) 262-0661  
WESTAR (ELECTRIC) 261-6512  
KANSAS GAS SERVICE (GAS) 832-3101  
SBC (TELEPHONE) 800-870-8390  
CITY OF WICHITA WATER & SEWER 262-6000  
AQUILA (GAS) 946-0096
- THE WATER MAIN SHALL BE CONSTRUCTED ON THE ALIGNMENT SHOWN ON THE PLANS. TREES AND SHRUBS IN PUBLIC RIGHT OF WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL, AND SHALL BE INCLUDED IN THE PRICE BID FOR THE INSTALLED WATER PIPE. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.
- OPENING AND CLOSING WATER VALVES SHALL BE DONE SLOWLY TO PREVENT DAMAGE TO THE WATER DISTRIBUTION SYSTEM FROM WATER HAMMER. ALL VALVES CLOSED BY THE CONTRACTOR MUST BE REOPENED BY NEW CONSTRUCTION PERMITS. PROJECT INSPECTOR MUST ASCERTAIN THAT ANY VALVE CLOSED BY THE CONTRACTOR IS REOPENED. CONTRACTOR WILL BE PERMITTED TO OPERATE WATER VALVES ONLY WHEN THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT.
- CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED TO THE PROJECT AND IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.
- UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ADJUTING CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO SITE RESTORATION.
- THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.
- NO SERVICES WILL BE INSTALLED AS PART OF THIS PROJECT.
- INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA, AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.
- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS 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.
- ALL DISTURBED AREAS TO BE SEEDED WITH RYE GRASS AT A RATE OF 200 LBS. PER ACRE WITHIN 10 DAYS OF CONSTRUCTION. CONTRACTOR TO PREPARE GROUND PER CITY SPECIFICATIONS. COST IS SUBSIDIARY TO SITE PREPARATION AND RESTORATION.
- THE CONTRACTOR SHALL LAY A TRACER WIRE & SET TEST STATIONS ALONG ALL WATER LINE PIPE INSTALLED IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS & TRACER WIRE DETAIL ON DETAIL SHEET. COST IS SUBSIDIARY TO PIPE INSTALLATION.
- WATER LINE TRENCHES SHALL BE BACKFILLED PER CITY SPEC. SPECIAL CARE SHALL BE TAKEN WHEN BACKFILLING TRENCHES CROSSING PROPOSED STREETS. CROSSINGS SHALL BE COMPACTED TO 95% STD. DENSITY IN 6"-8" MAX LIFTS FOR THE ENTIRE LENGTH OF THE CROSSING PLUS 5' EACH SIDE.

**RECORD DRAWING**  
Contractor: Nowak Construction  
Inspector: J. Dunn  
pdf by: M. Tucker 1-7-09

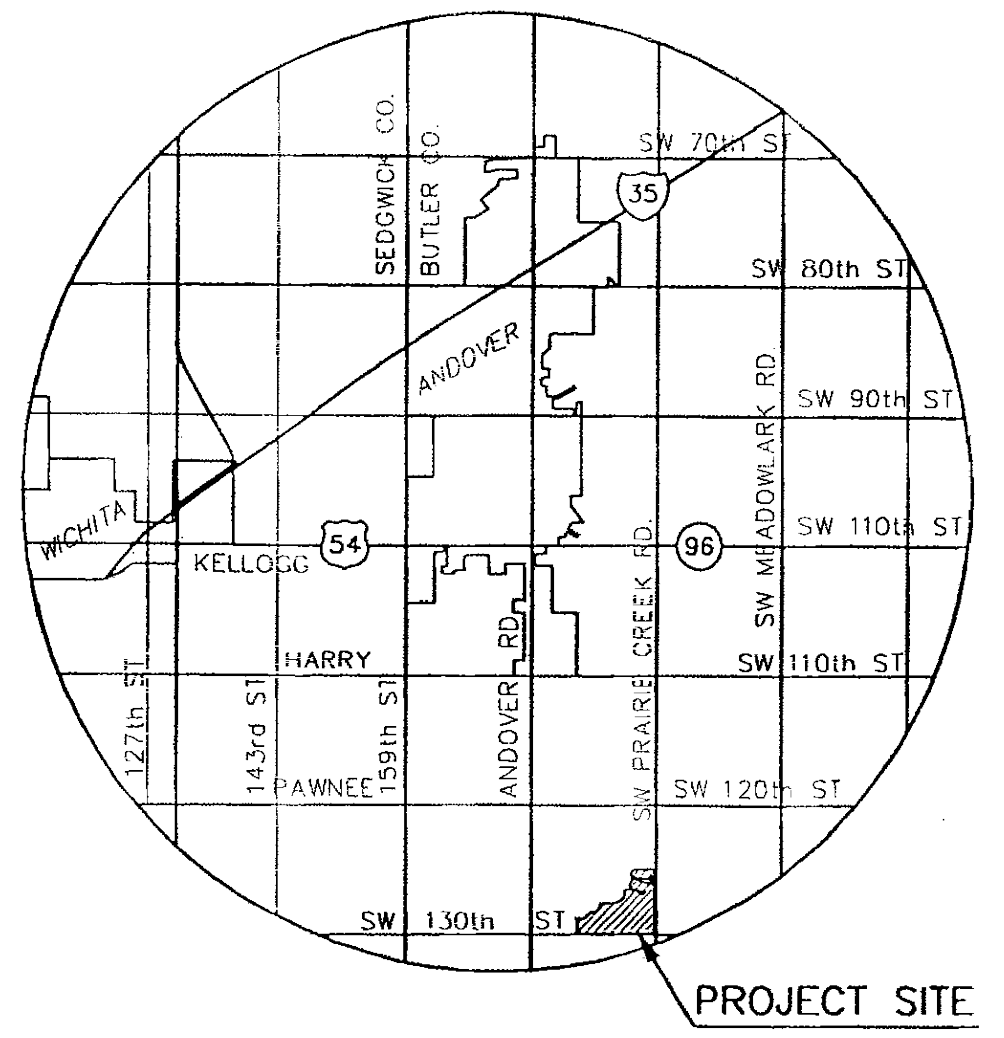
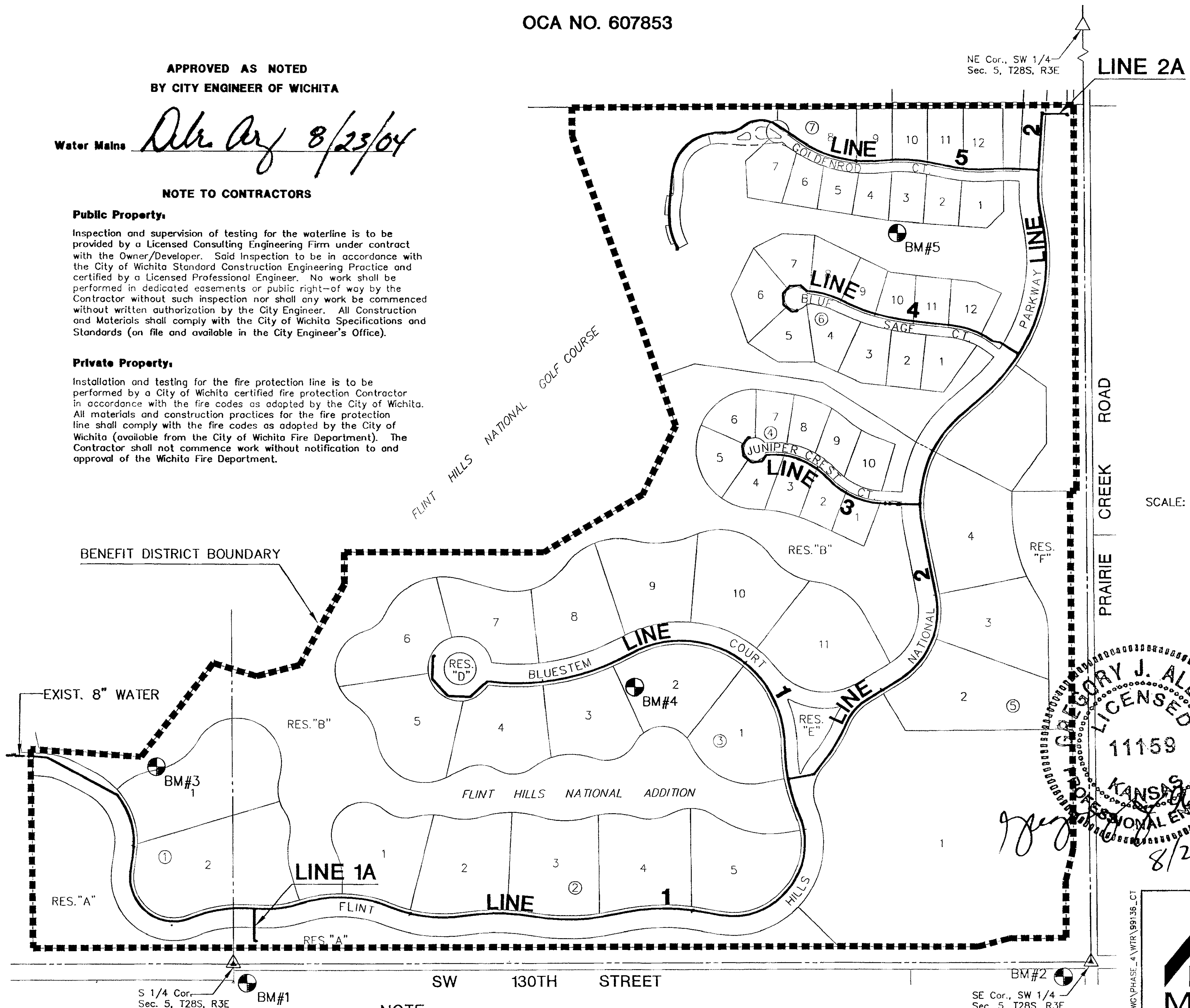
APPROVED AS NOTED  
BY CITY ENGINEER OF WICHITA

Water Mains *Dr. Arj 8/23/04*

**NOTE TO CONTRACTORS**

**Public Property:**  
Inspection and supervision of testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita Standard Construction Engineering Practice and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

**Private Property:**  
Installation and testing for the fire protection line is to be performed by a City of Wichita certified fire protection Contractor in accordance with the fire codes as adopted by the City of Wichita. All materials and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The Contractor shall not commence work without notification to and approval of the Wichita Fire Department.



VICINITY MAP

### INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	DETAILS
3-7	LINE 1
8-10	LINE 2
11	LINE 3
12	LINE 4
13-14	LINE 5
15-16	BMP DETAILS
17	PLAT

SCALE: 1" = 200'

### BENCHMARKS

- BM 1 TOP OF "T" POST NORTH SIDE 31ST. STREET NEAR SOUTH 1/4 CORNER FLINT HILLS NATIONAL ADDITION. ELEV.=1319.47
- BM 2 TOP OF "T" POST BM#26 EAST SIDE SOUTHWEST PRAIRIE CREEK ROAD BY EAST 1/4 CORNER FLINT HILLS NATIONAL ADDITION. ELEV.=1314.765
- BM 3 "T" POST 129' NE OF THE W. MOST CORNER OF LOT 1, BLK. 1 AND LYING 11' EAST OF THE PLATTED CORNER OF RES. "B" (NEAR THE SW CORNER RES. "B") ELEV.= 1311.84
- BM 4 "T" POST 78' SSE OF THE NW CORNER OF LOT 2, BLK. 3, AND LYING 7' EAST OF THE WEST LINE OF SAID LOT 2. ELEV.=1326.37
- BM 5 "T" POST COORD. N3272.49, E7735.93 ELEV.=1327.368

**GREGORY J. ALLISON**  
LICENSED PROFESSIONAL ENGINEER  
11159  
8/23/04

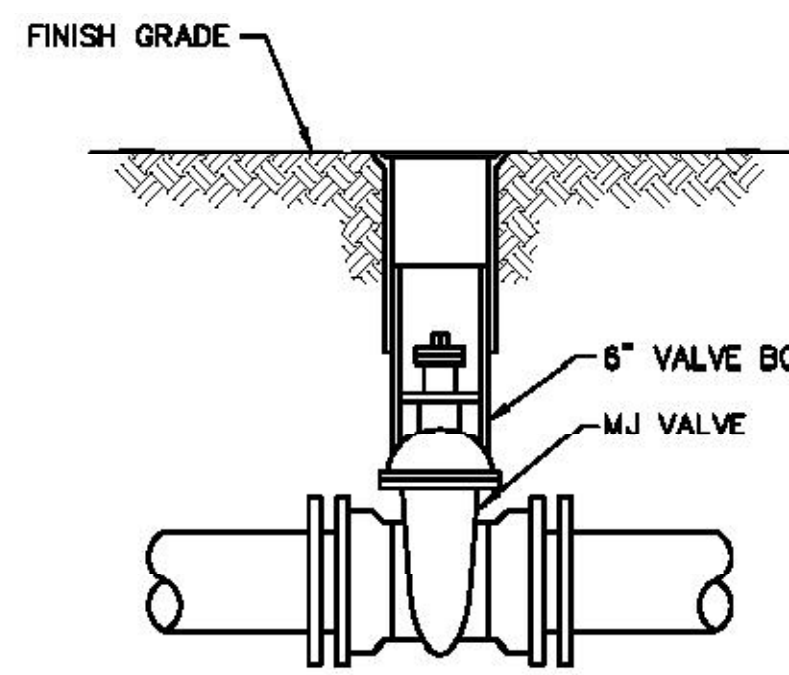
NOTE:  
WATER LINE VALVES TO BE OPERATED BY CONTRACTOR ONLY IF WATER INSPECTOR IS ON SITE.

**MKEC**  
ENGINEERING CONSULTANTS  
411 N. WEBB ROAD  
WICHITA, KS. 67206  
316 - 684 - 9600

**FLINT HILLS NATIONAL ADDITION PHASE 4**  
PROJECT NAME

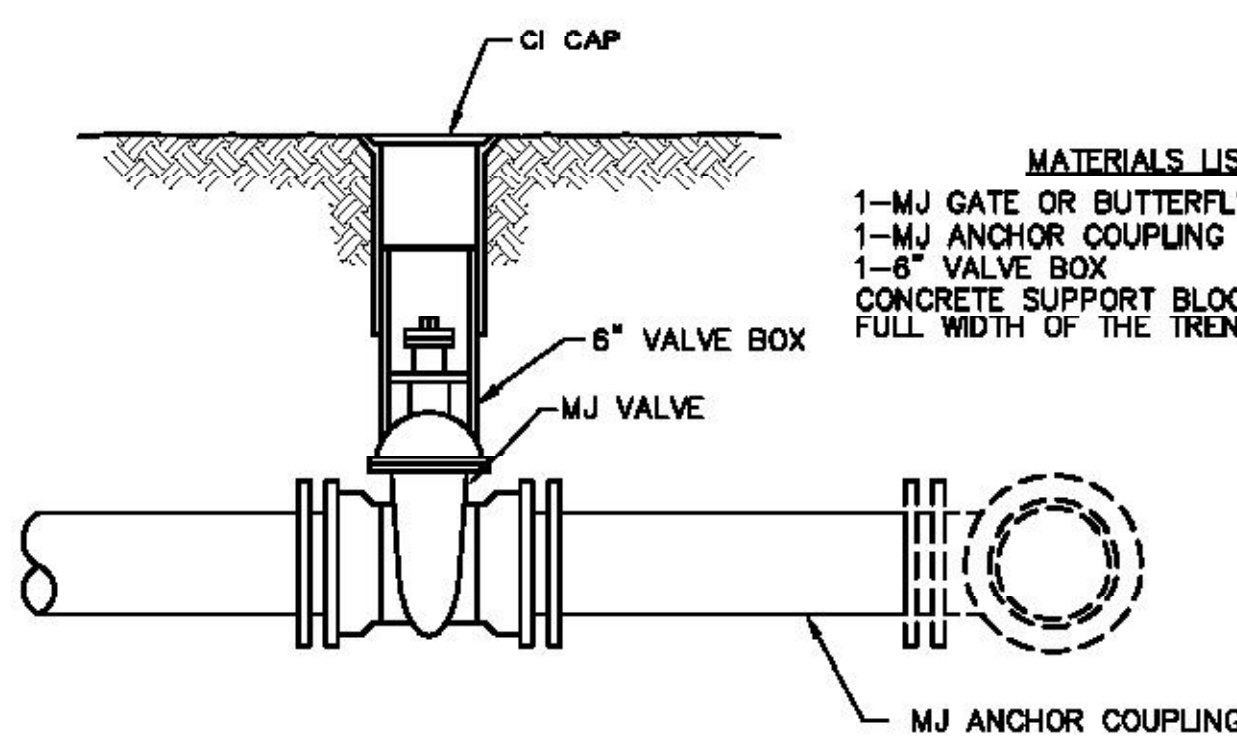
**WATER DISTRIBUTION PLANS**  
SHEET TITLE

DESIGN BY: <i>DFL</i>	DRAWN BY: <i>KKL</i>	CHECKED BY: <i>DFL</i>
JULY 2004	99136_CT	1 / 17
DATE	JOB NO.	SHEET/OF



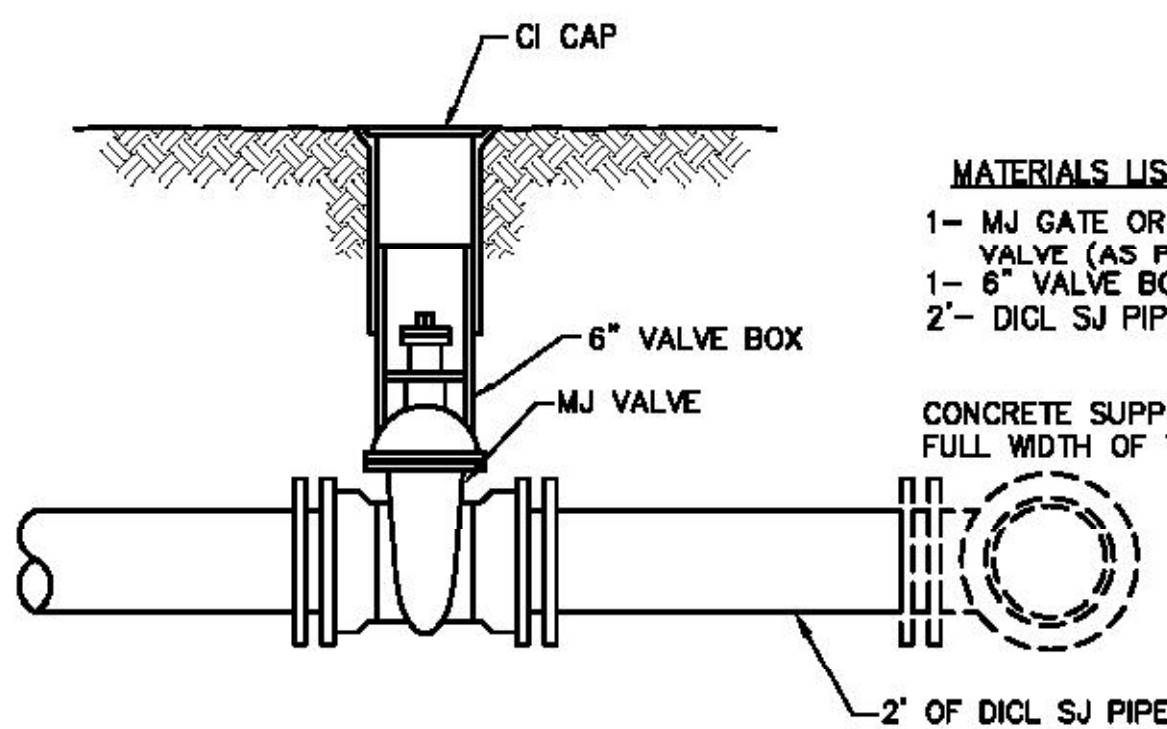
**MATERIALS LIST**  
 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)  
 1-6" VALVE BOX  
 CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

**LINE VALVE ASSEMBLY**



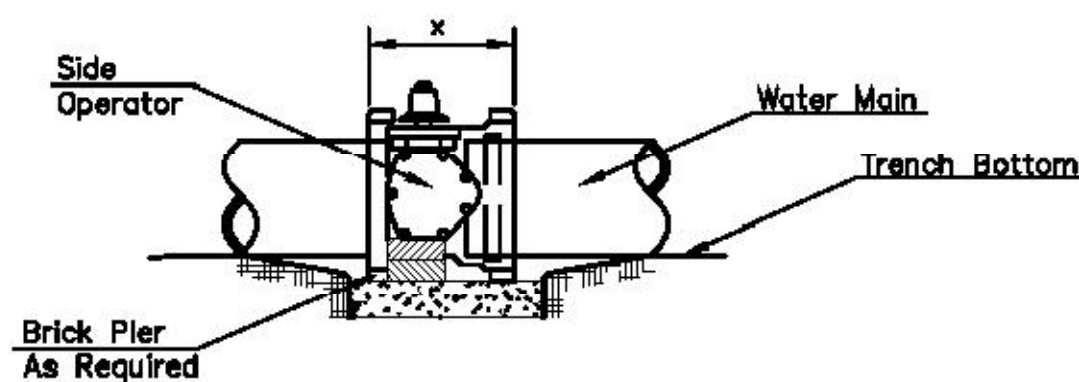
**MATERIALS LIST**  
 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)  
 1-MJ ANCHOR COUPLING (12" OR SMALLER)  
 1-6" VALVE BOX  
 CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

**ANCHORED VALVE ASSEMBLY**



**MATERIALS LIST**  
 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)  
 1- 6" VALVE BOX  
 2- 2" DI. SJ PIPE  
 CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

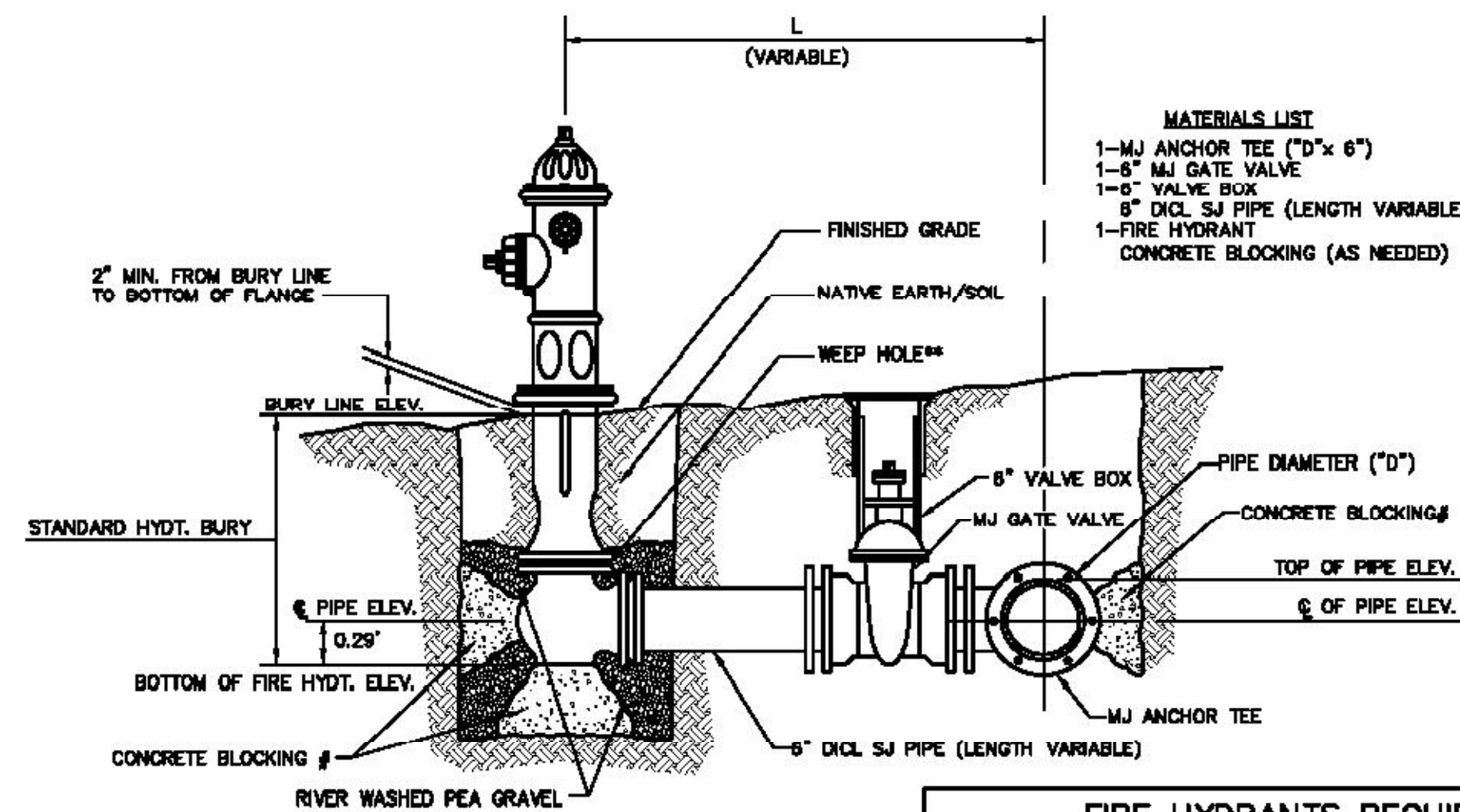
**VALVE ASSEMBLY**



**NOTES**

- This detail covers Butterfly Valve installation. Inclusive, regardless of type of pipe or joint used. Larger lines to be detailed on plans.
- 6" Valve Box and Cover required per City of Wichita Std. Specifications.
- Conc. Support Block to be full width of trench.

**CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION**

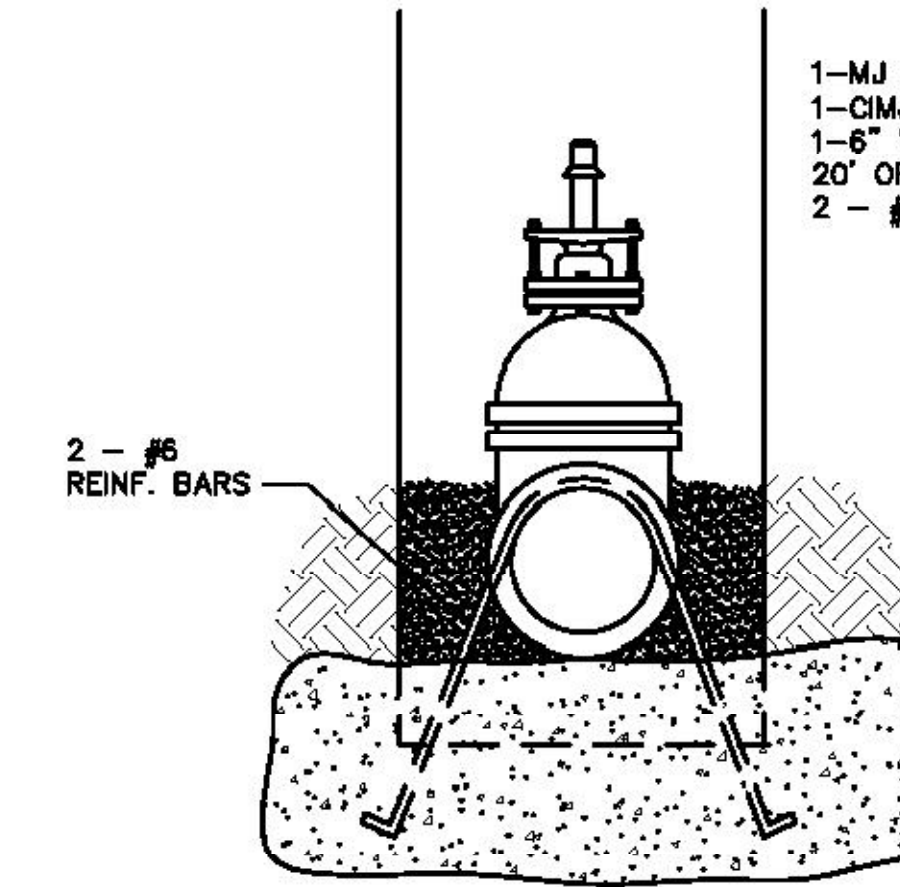


**MATERIALS LIST**  
 1-MJ ANCHOR TEE ("D" x 6")  
 1-6" MJ GATE VALVE  
 1-6" VALVE BOX  
 6" DI. SJ PIPE (LENGTH VARIABLE)  
 1-FIRE HYDRANT  
 CONCRETE BLOCKING (AS NEEDED)

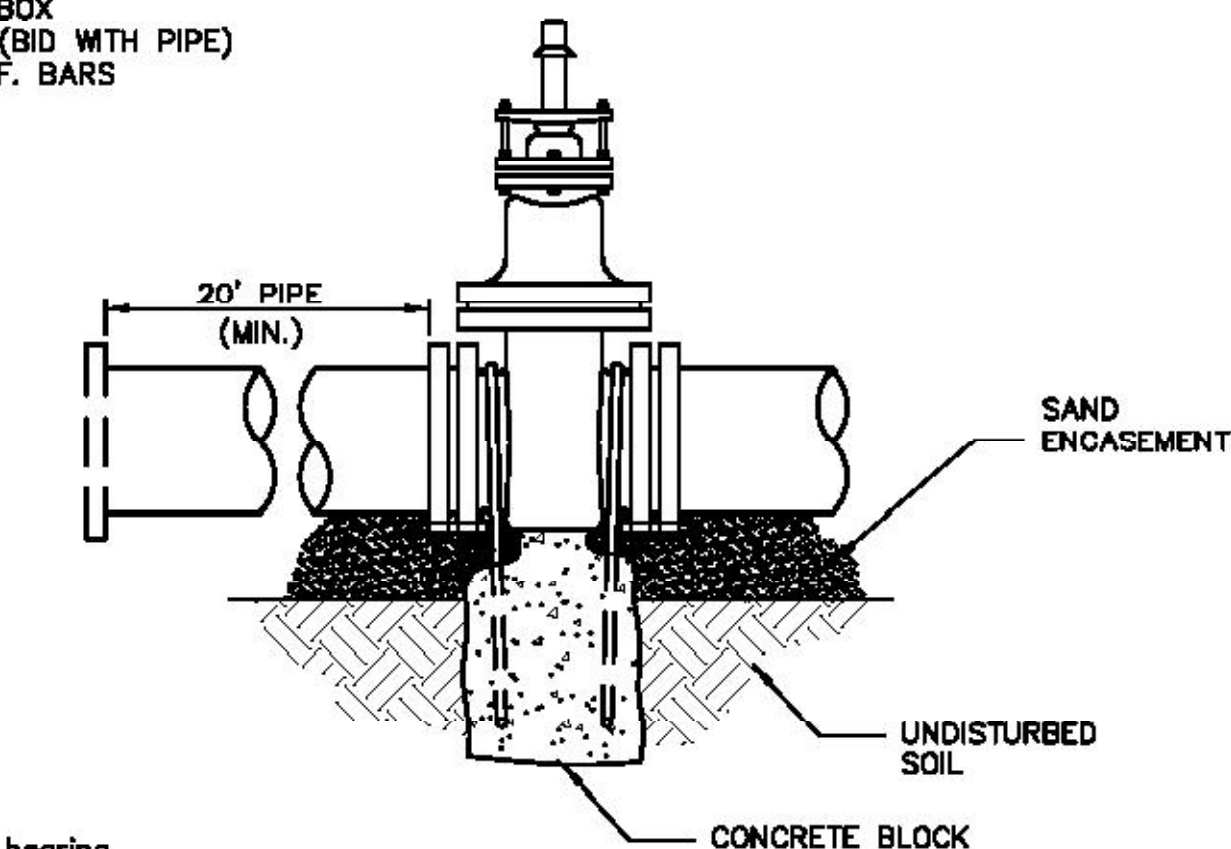
- \*\* CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.
- # CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.
- \* IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.

**FIRE HYDRANT ASSEMBLY**  
 PER CITY OF WICHITA SPECIFICATIONS

FIRE HYDRANTS REQUIRED				
STATION	LINE	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*
14+53.74	LINE 1	1311.59	1306.26	6.0'
20+28.36	LINE 1	1320.63	1315.30	6.0'
34+12.79	LINE 1	1323.89	1318.86	5.5'
39+38.74	LINE 1	1319.83	1315.00	5.5'
40+00.00	LINE 1	1323.88	1318.89	5.5'
51+63.54	LINE 1	1326.95	1322.12	5.5'
24+21.35	LINE 2	1318.00	1313.87	5.0'
27+93.50	LINE 2	1317.75	1310.92	7.5'
32+90.65	LINE 2	1317.81	1312.98	5.5'
33+56.24	LINE 3	1323.51	1319.68	4.5'
41+29.89	LINE 4	1320.80	1316.97	4.5'
44+73.65	LINE 4	1327.25	1323.42	4.5'
50+80.47	LINE 5	1321.22	1316.39	5.5'
55+68.99	LINE 5	1329.00	1325.17	4.5'
63+12.32	LINE 5	1321.31	1317.48	4.5'



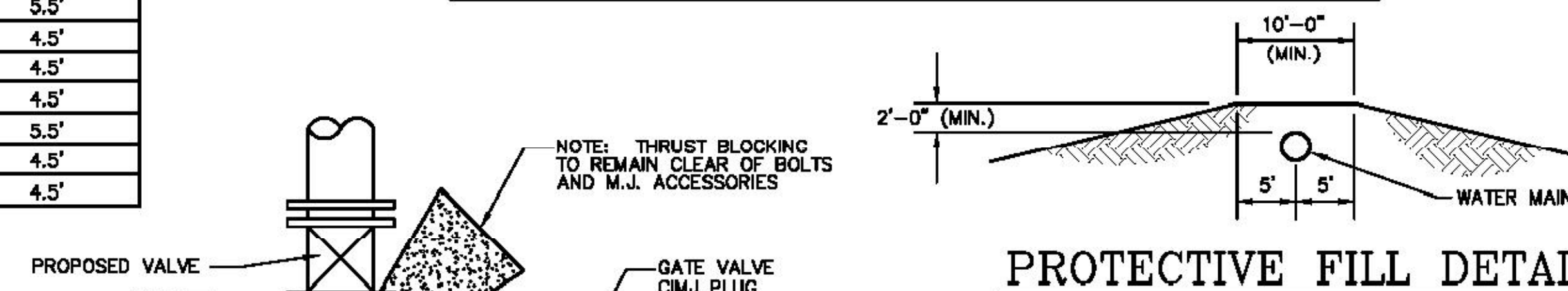
**MATERIALS LIST**  
 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)  
 1-CIMJ CAP WHEN NECESSARY  
 1-6" VALVE BOX  
 20" OF PIPE (BID WITH PIPE)  
 2 - #6 REINF. BARS



- Notes:  
 1. Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.  
 2. The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.  
 3. All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

THRUST AT VALVES	
VALVE	THRUST AT 150 #/sq
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

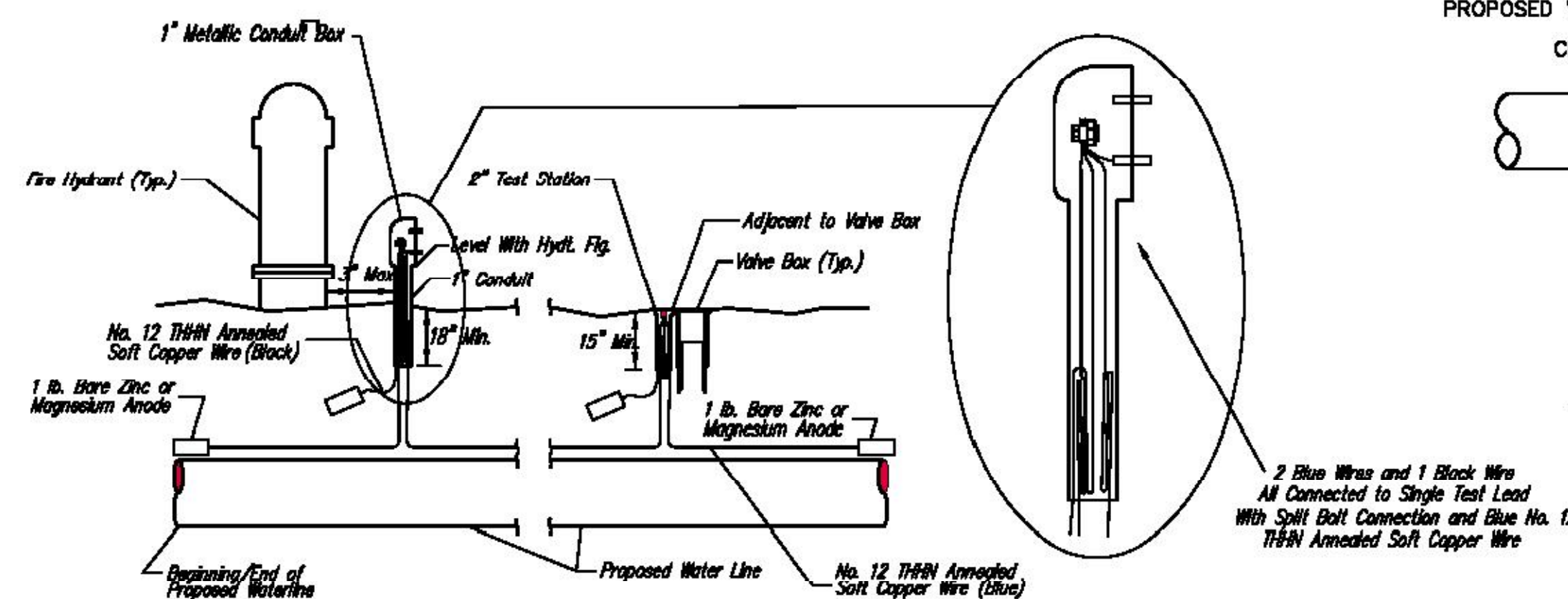
**ANCHORED VALVE ASSEMBLY, SPECIAL**



**KEY BLOCK DETAIL**

**PROTECTIVE FILL DETAIL**

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN (2) FEET. (COST SUBSIDIARY TO PIPE INSTALLATION)



**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. Splice 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.

**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 Block No. 12 THHN annealed soft copper wire which shall be extended to the test station.

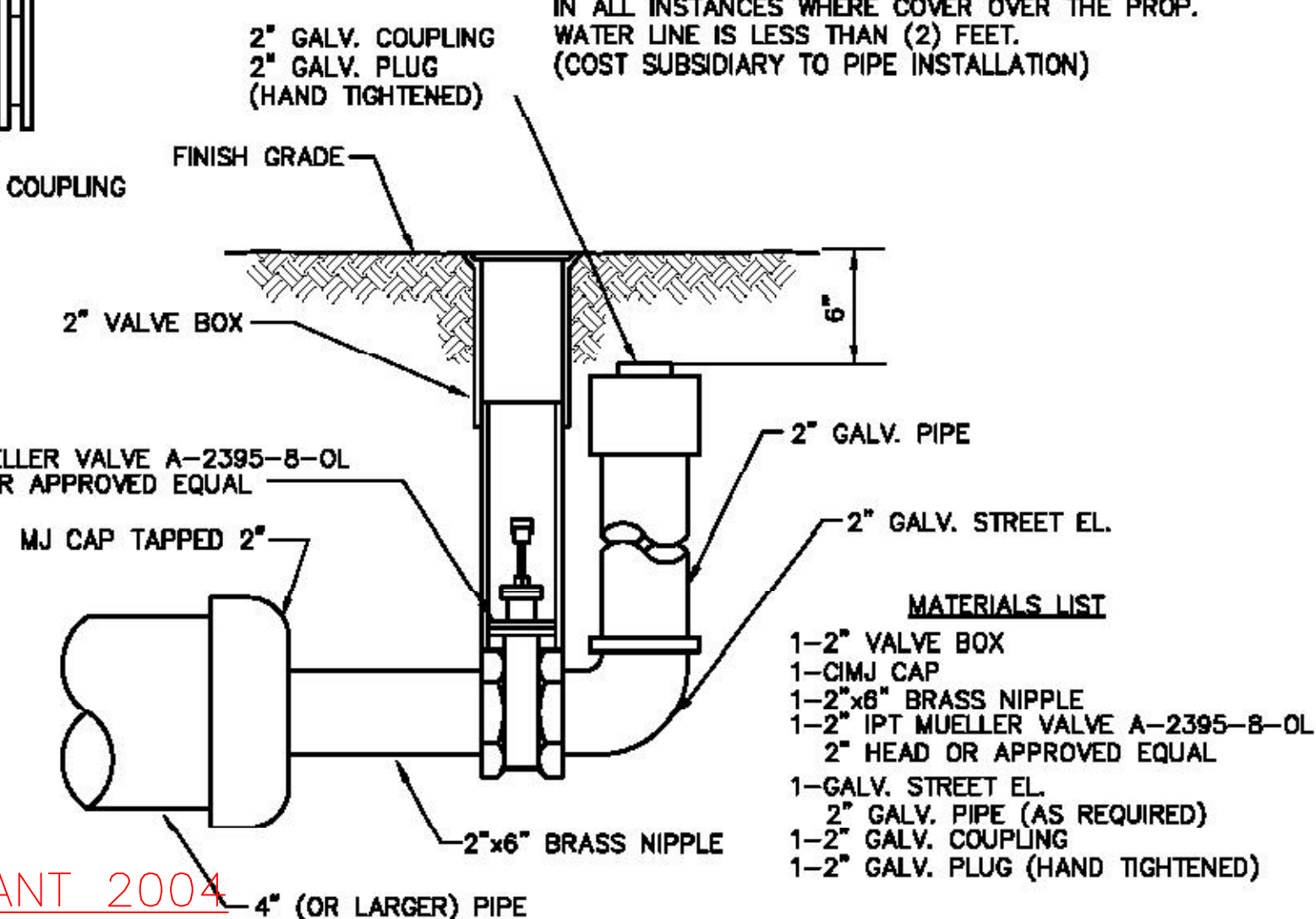
**TRACER WIRE DETAIL**  
 COST IS SUBSIDIARY TO PIPE INSTALLATION

**RECORD DRAWING**  
 M.T. 1-7-09

CLOW MEDALLION FIRE HYDRANT 2004  
 4.5' F-2545  
 CLOW 2"-12" R/W VALVE  
 SMJ ENDS  
 SIGMA VALVE BOX SCREW TYPE  
 2" CATHODIC TEST STATION  
 PVC PLASTIC PIPE SCH. 40  
 ASTM D 1785 A WNA C 900

Revised: 11-13-00, MCG  
 Revised: 6-7-00, MCG

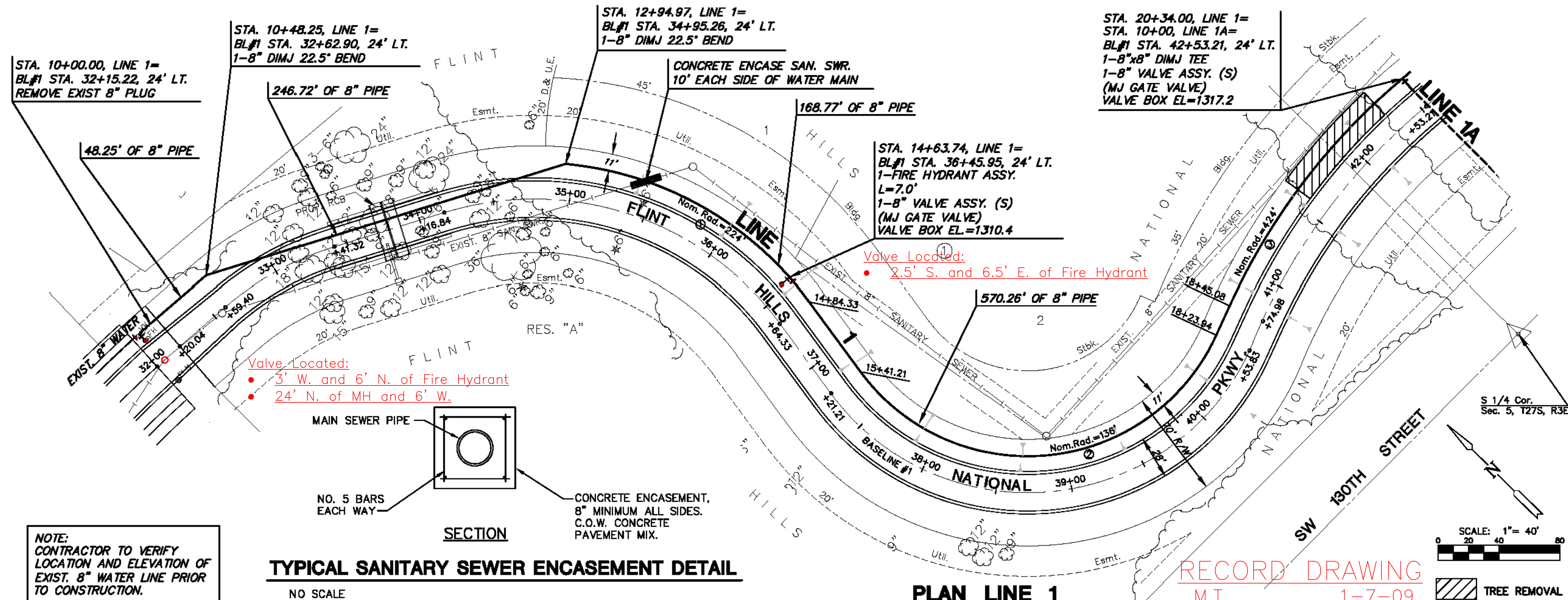
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**2" BLOWOFF ASSEMBLY**

**MATERIALS LIST**  
 1-2" VALVE BOX  
 1-CIMJ CAP  
 1-2"x8" BRASS NIPPLE  
 1-2" IPT MUELLER VALVE A-2395-B-OL  
 2" HEAD OR APPROVED EQUAL  
 1-GALV. STREET EL.  
 2" GALV. PIPE (AS REQUIRED)  
 1-2" GALV. COUPLING  
 1-2" GALV. PLUG (HAND TIGHTENED)

<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE        CITY HALL - SEVENTH FLOOR        205 NORTH MAIN STREET        WICHITA, KANSAS 67202        (316) 268-4500        (316) 268-4114 FAX</p>	<b>STANDARD WATER ASSEMBLY DETAILS</b>	
	NEIL D. CABLE P.E. - CITY ENGINEER	
	PROJECT NUMBER 1054 PFW	INDEX CODE 607853
DATE JUL 04	SHEET 2 OF 17	



**① CURVE TABLE**  
 $\Delta = 48^{\circ}28'05''$  R = 224.00' T = 100.75' L = 189.36' LC = 183.77'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 24^{\circ}13'02''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
1284.87	-	-	-	00'00.00"	00'00.00"
1300.00	5.03'	5.28'	-	00'38.38"	00'38.38"
1325.00	25.00'	28.21'	-	03'11.50"	03'50.28"
1350.00	25.00'	28.21'	-	03'11.50"	07'12.02"
1375.00	25.00'	28.21'	-	03'11.50"	10'33.02"
1400.00	25.00'	28.21'	-	03'11.50"	13'54.02"
1425.00	25.00'	28.21'	-	03'11.50"	17'15.02"
1450.00	25.00'	28.21'	-	03'11.50"	20'36.02"
1475.00	25.00'	28.21'	-	03'11.50"	23'57.02"
1484.33	9.33'	9.78'	-	01'11.32"	24'13.02"

**② CURVE TABLE**  
 $\Delta = 119^{\circ}08'42''$  R = 136.00' T = 231.40' L = 282.73' LC = 234.50'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 59^{\circ}53'21''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
15441.21	-	-	-	00'00.00"	00'00.00"
15500.00	8.78'	8.08'	-	01'01.09"	01'01.09"
15575.00	25.00'	22.85'	-	05'15.58"	07'07.04"
15650.00	25.00'	22.85'	-	05'15.58"	12'23.02"
15725.00	25.00'	22.85'	-	05'15.58"	17'38.00"
15800.00	25.00'	22.85'	-	05'15.58"	22'54.58"
15875.00	25.00'	22.85'	-	05'15.58"	28'10.57"
15950.00	25.00'	22.85'	-	05'15.58"	33'26.55"
16025.00	25.00'	22.85'	-	05'15.58"	38'42.53"
16100.00	25.00'	22.85'	-	05'15.58"	43'58.51"
16175.00	25.00'	22.85'	-	05'15.58"	49'14.48"
16250.00	25.00'	22.85'	-	05'15.58"	54'30.47"
16325.00	23.84'	21.87'	-	05'02.34"	59'33.21"

**③ CURVE TABLE**  
 $\Delta = 25^{\circ}31'45''$  R = 424.00' T = 96.05' L = 188.92' LC = 187.36'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 12^{\circ}45'52''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
18245.08	-	-	-	00'00.00"	00'00.00"
18275.00	25.83'	34.88'	-	02'01.18"	02'01.18"
18300.00	25.00'	28.84'	-	01'41.21"	03'42.39"
18325.00	25.00'	28.84'	-	01'41.21"	05'23.59"
18350.00	25.00'	28.84'	-	01'41.21"	07'04.80"
18375.00	25.00'	28.84'	-	01'41.21"	08'46.01"
18400.00	25.00'	28.84'	-	01'41.21"	10'27.22"
18425.00	25.00'	28.84'	-	01'41.21"	12'08.43"
18450.00	25.00'	28.84'	-	01'41.21"	13'49.64"
18475.00	25.00'	28.84'	-	01'41.21"	15'30.85"
18500.00	25.00'	28.84'	-	01'41.21"	17'12.06"
18525.00	25.00'	28.84'	-	01'41.21"	18'53.27"
18550.00	9.50'	9.23'	-	00'38.28"	19'31.53"

**TYPICAL SANITARY SEWER ENCASEMENT DETAIL**

NO SCALE

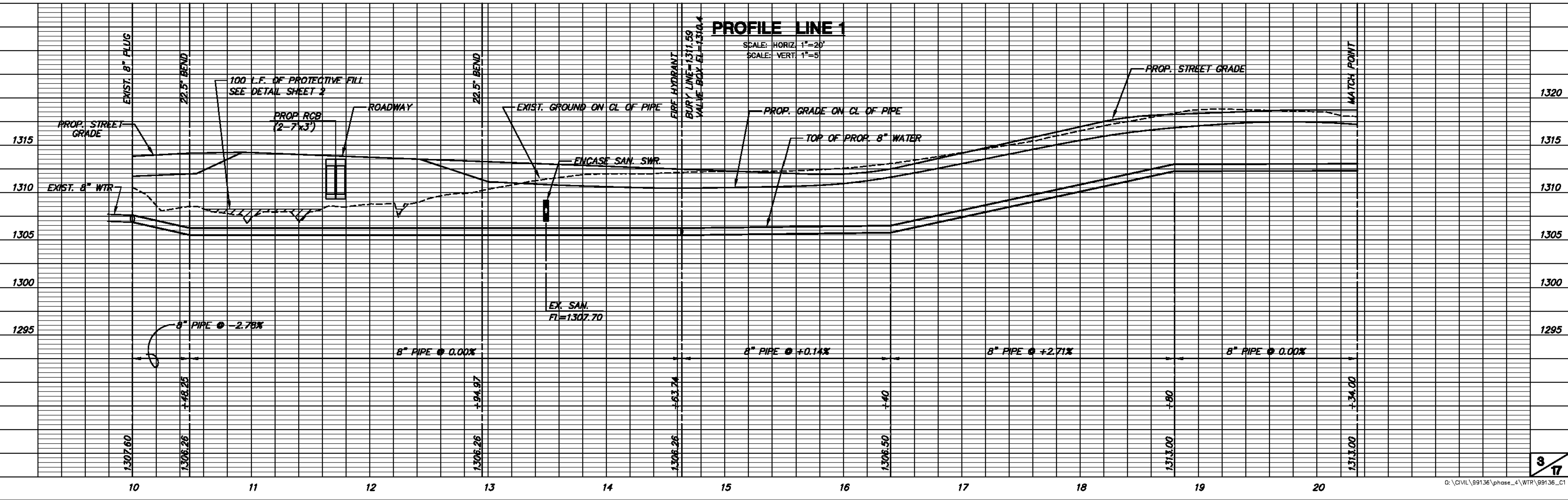
**PLAN LINE 1**

RECORD DRAWING  
M.T. 1-7-09

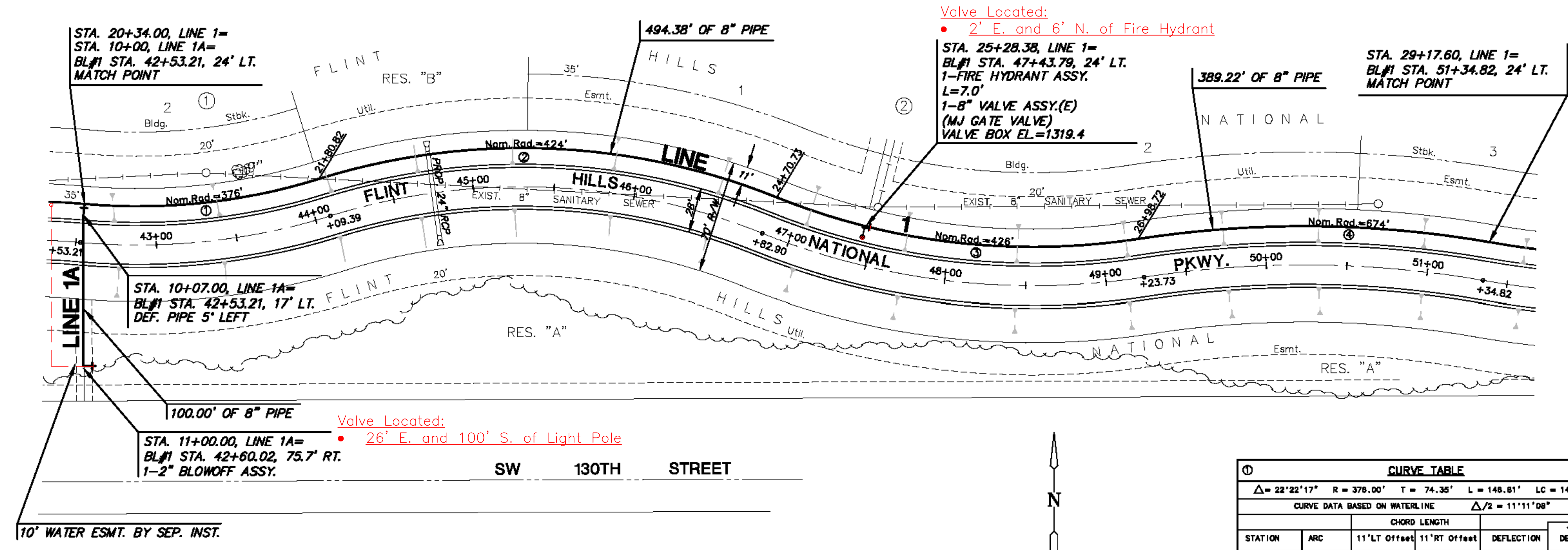
NOTE:  
CONTRACTOR TO VERIFY  
LOCATION AND ELEVATION OF  
EXIST. 8" WATER LINE PRIOR  
TO CONSTRUCTION.

**PROFILE LINE 1**

SCALE: HORIZ 1"=20'  
SCALE: VERT 1"=5'



**FLINT HILLS NATIONAL ADDITION  
WATER DISTRIBUTION PLANS  
PROJ. NO. 1064 PPW**



**② CURVE TABLE**  
 Δ = 39°10'37" R = 424.00' T = 150.88' L = 289.92' LC = 284.30'  
 CURVE DATA BASED ON WATERLINE Δ/2 = 19°39'19"

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
21+380.82	-	-	-	00°00'00"	00°00'00"
22+00.00	19.18'	19.88'	-	01°17'43"	01°17'43"
22+25.00	25.00'	25.84'	-	01°41'21"	02°59'04"
22+50.00	25.00'	25.84'	-	01°41'21"	04°40'25"
22+75.00	25.00'	25.84'	-	01°41'21"	06°21'46"
23+00.00	25.00'	25.84'	-	01°41'21"	08°03'07"
23+25.00	25.00'	25.84'	-	01°41'21"	09°44'28"
23+50.00	25.00'	25.84'	-	01°41'21"	11°25'49"
23+75.00	25.00'	25.84'	-	01°41'21"	13°07'10"
24+00.00	25.00'	25.84'	-	01°41'21"	14°48'31"
24+25.00	25.00'	25.84'	-	01°41'21"	16°29'52"
24+50.00	25.00'	25.84'	-	01°41'21"	18°11'13"
24+75.00	25.00'	25.84'	-	01°41'21"	19°52'34"
25+00.00	20.74'	21.27'	-	01°24'04"	19°55'19"

Def/Ft = 4.05305 Min.

**③ CURVE TABLE**  
 Δ = 30°39'50" R = 428.00' T = 118.80' L = 227.88' LC = 225.28'  
 CURVE DATA BASED ON WATERLINE Δ/2 = 15°19'55"

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
24+20.73	-	-	-	00°00'00"	00°00'00"
24+40.00	29.27'	28.51'	-	01°58'08"	01°58'08"
24+60.00	25.00'	24.35'	-	01°40'32"	03°38'40"
24+80.00	25.00'	24.35'	-	01°40'32"	05°19'12"
25+00.00	25.00'	24.35'	-	01°40'32"	07°00'43"
25+20.00	25.00'	24.35'	-	01°40'32"	08°41'15"
25+40.00	25.00'	24.35'	-	01°40'32"	10°21'47"
25+60.00	25.00'	24.35'	-	01°40'32"	12°03'18"
25+80.00	25.00'	24.35'	-	01°40'32"	13°44'50"
26+00.00	23.72'	23.10'	-	01°24'04"	14°18'54"

Def/Ft = 4.03491 Min.

**④ CURVE TABLE**  
 Δ = 22°22'17" R = 378.00' T = 74.35' L = 148.81' LC = 145.88'  
 CURVE DATA BASED ON WATERLINE Δ/2 = 11°11'08"

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
20+34.00	-	-	-	00°00'00"	00°00'00"
20+54.00	18.00'	18.43'	-	01°13'09"	01°13'09"
20+74.00	25.00'	24.28'	-	01°34'17"	02°47'26"
21+00.00	25.00'	24.28'	-	01°34'17"	04°21'43"
21+25.00	25.00'	24.28'	-	01°34'17"	05°55'00"
21+50.00	25.00'	24.28'	-	01°34'17"	07°29'17"
21+75.00	25.00'	24.28'	-	01°34'17"	09°03'34"
21+80.81	5.81'	5.84'	-	00°28'34"	11°11'09"

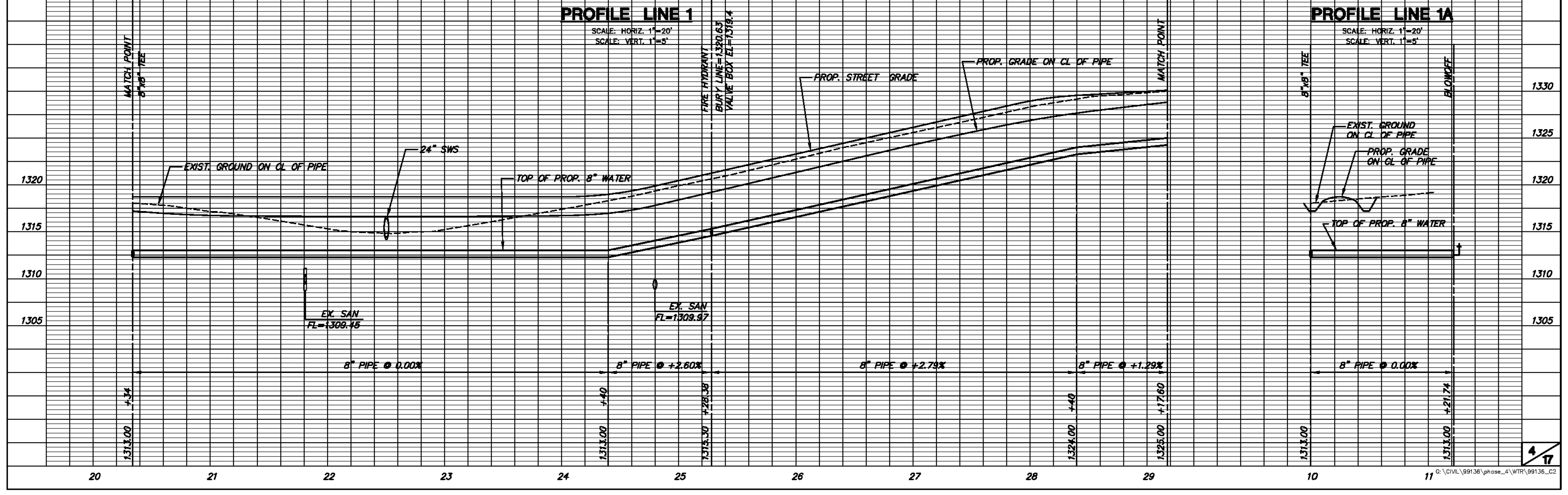
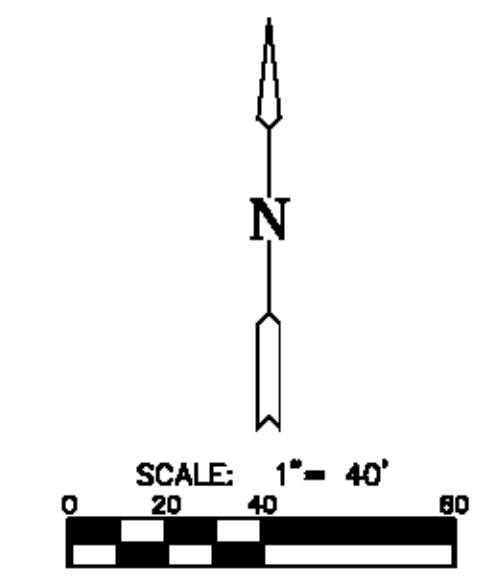
Def/Ft = 4.57147 Min.

**⑤ CURVE TABLE**  
 Δ = 18°36'25" R = 674.00' T = 110.41' L = 218.88' LC = 217.92'  
 CURVE DATA BASED ON WATERLINE Δ/2 = 09°18'12"

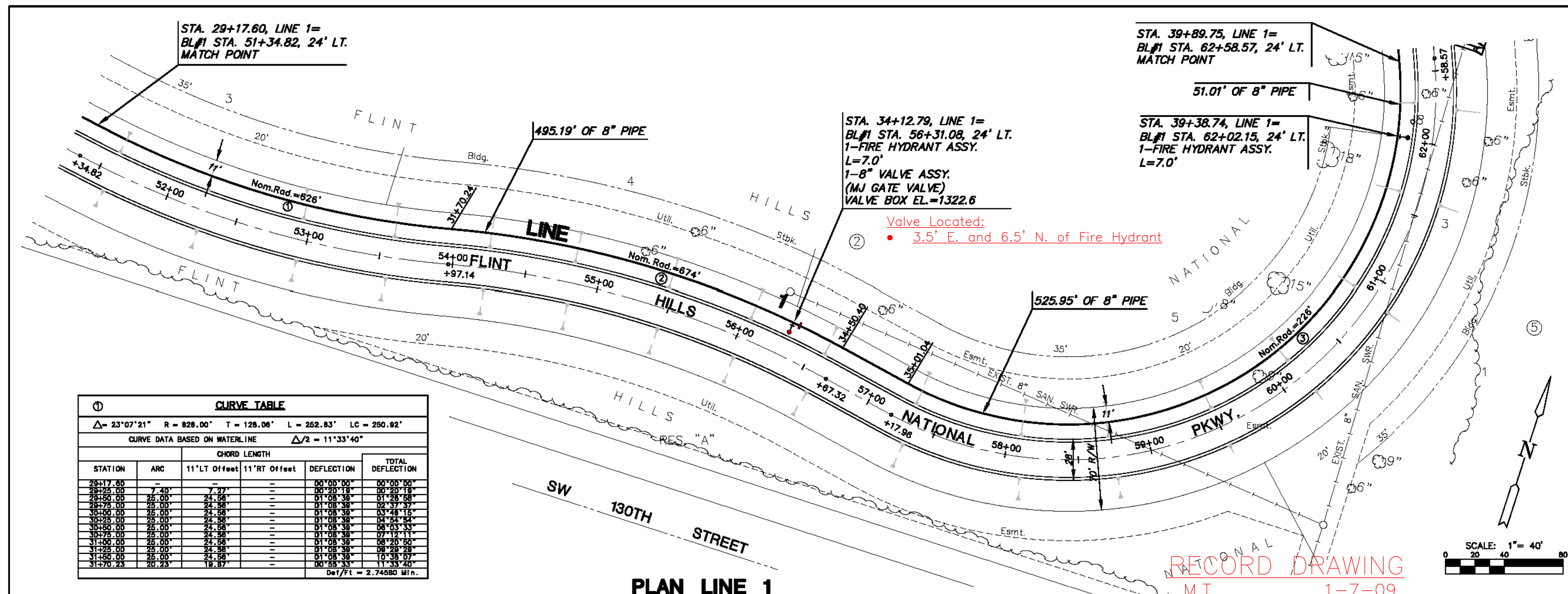
STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
26+288.72	-	-	-	00°00'00"	00°00'00"
27+25.00	25.00'	25.41'	-	01°03'45"	01°03'45"
27+50.00	25.00'	25.41'	-	01°03'45"	02°07'30"
27+75.00	25.00'	25.41'	-	01°03'45"	03°11'15"
28+00.00	25.00'	25.41'	-	01°03'45"	04°15'00"
28+25.00	25.00'	25.41'	-	01°03'45"	05°18'45"
28+50.00	25.00'	25.41'	-	01°03'45"	06°22'30"
28+75.00	25.00'	25.41'	-	01°03'45"	07°26'15"
29+00.00	25.00'	25.41'	-	01°03'45"	08°30'00"
29+17.60	17.80'	17.89'	-	00°44'54"	09°18'13"
29+25.00	25.00'	25.41'	-	01°03'45"	09°52'03"

Def/Ft = 2.55028 Min.

RECORD DRAWING  
M.T. 1-7-09  
PLAN LINE 1



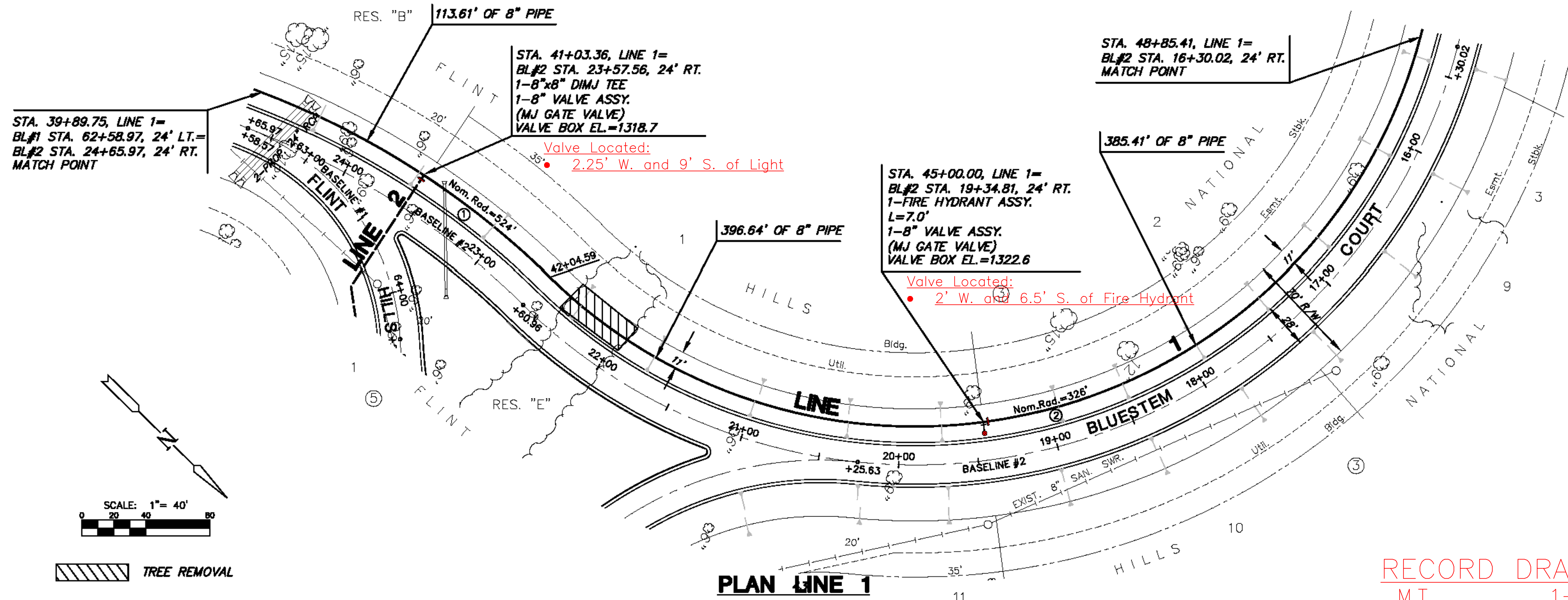
**FLINT HILLS NATIONAL ADDITION  
WATER DISTRIBUTION PLANS  
PROJ. NO. 1054 PPW**



**② CURVE TABLE**  
 $\Delta = 23^\circ 48' 58''$  R = 674.00' T = 142.13' L = 280.16' LC = 278.15'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 11^\circ 54' 29''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
31+70.24	-	-	-	00°00'00"	00°00'00"
32+00.00	29.76	29.24	-	01°13'24"	01°13'24"
32+25.00	25.00	25.00	-	01°03'45"	02°17'09"
32+50.00	25.00	25.00	-	01°03'45"	03°20'54"
32+75.00	25.00	25.00	-	01°03'45"	04°24'39"
33+00.00	25.00	25.00	-	01°03'45"	05°28'24"
33+25.00	25.00	25.00	-	01°03'45"	06°32'09"
33+50.00	25.00	25.00	-	01°03'45"	07°35'54"
33+75.00	25.00	25.00	-	01°03'45"	08°39'39"
34+00.00	25.00	25.00	-	01°03'45"	09°43'24"
34+25.00	25.00	25.00	-	01°03'45"	10°47'09"
34+50.00	25.00	25.00	-	01°03'45"	11°50'54"
34+75.00	25.00	25.00	-	01°03'45"	12°54'39"
35+00.00	25.00	25.00	-	01°03'45"	13°58'24"
35+25.00	25.00	25.00	-	01°03'45"	15°02'09"
35+50.00	25.00	25.00	-	01°03'45"	16°05'54"
35+75.00	25.00	25.00	-	01°03'45"	17°09'39"
36+00.00	25.00	25.00	-	01°03'45"	18°13'24"
36+25.00	25.00	25.00	-	01°03'45"	19°17'09"
36+50.00	25.00	25.00	-	01°03'45"	20°20'54"
36+75.00	25.00	25.00	-	01°03'45"	21°24'39"
37+00.00	25.00	25.00	-	01°03'45"	22°28'24"
37+25.00	25.00	25.00	-	01°03'45"	23°32'09"
37+50.00	25.00	25.00	-	01°03'45"	24°35'54"
37+75.00	25.00	25.00	-	01°03'45"	25°39'39"
38+00.00	25.00	25.00	-	01°03'45"	26°43'24"
38+25.00	25.00	25.00	-	01°03'45"	27°47'09"
38+50.00	25.00	25.00	-	01°03'45"	28°50'54"
38+75.00	25.00	25.00	-	01°03'45"	29°54'39"
39+00.00	25.00	25.00	-	01°03'45"	30°58'24"
39+25.00	25.00	25.00	-	01°03'45"	32°02'09"
39+50.00	25.00	25.00	-	01°03'45"	33°05'54"
39+75.00	25.00	25.00	-	01°03'45"	34°09'39"
40+00.00	25.00	25.00	-	01°03'45"	35°13'24"
40+25.00	25.00	25.00	-	01°03'45"	36°17'09"
40+50.00	25.00	25.00	-	01°03'45"	37°20'54"
40+75.00	25.00	25.00	-	01°03'45"	38°24'39"
41+00.00	25.00	25.00	-	01°03'45"	39°28'24"
41+25.00	25.00	25.00	-	01°03'45"	40°32'09"
41+50.00	25.00	25.00	-	01°03'45"	41°35'54"
41+75.00	25.00	25.00	-	01°03'45"	42°39'39"
42+00.00	25.00	25.00	-	01°03'45"	43°43'24"
42+25.00	25.00	25.00	-	01°03'45"	44°47'09"
42+50.00	25.00	25.00	-	01°03'45"	45°50'54"
42+75.00	25.00	25.00	-	01°03'45"	46°54'39"
43+00.00	25.00	25.00	-	01°03'45"	47°58'24"
43+25.00	25.00	25.00	-	01°03'45"	49°02'09"
43+50.00	25.00	25.00	-	01°03'45"	50°05'54"
43+75.00	25.00	25.00	-	01°03'45"	51°09'39"
44+00.00	25.00	25.00	-	01°03'45"	52°13'24"
44+25.00	25.00	25.00	-	01°03'45"	53°17'09"
44+50.00	25.00	25.00	-	01°03'45"	54°20'54"
44+75.00	25.00	25.00	-	01°03'45"	55°24'39"
45+00.00	25.00	25.00	-	01°03'45"	56°28'24"
45+25.00	25.00	25.00	-	01°03'45"	57°32'09"
45+50.00	25.00	25.00	-	01°03'45"	58°35'54"
45+75.00	25.00	25.00	-	01°03'45"	59°39'39"
46+00.00	25.00	25.00	-	01°03'45"	60°43'24"
46+25.00	25.00	25.00	-	01°03'45"	61°47'09"
46+50.00	25.00	25.00	-	01°03'45"	62°50'54"
46+75.00	25.00	25.00	-	01°03'45"	63°54'39"
47+00.00	25.00	25.00	-	01°03'45"	64°58'24"
47+25.00	25.00	25.00	-	01°03'45"	66°02'09"
47+50.00	25.00	25.00	-	01°03'45"	67°05'54"
47+75.00	25.00	25.00	-	01°03'45"	68°09'39"
48+00.00	25.00	25.00	-	01°03'45"	69°13'24"
48+25.00	25.00	25.00	-	01°03'45"	70°17'09"
48+50.00	25.00	25.00	-	01°03'45"	71°20'54"
48+75.00	25.00	25.00	-	01°03'45"	72°24'39"
49+00.00	25.00	25.00	-	01°03'45"	73°28'24"
49+25.00	25.00	25.00	-	01°03'45"	74°32'09"
49+50.00	25.00	25.00	-	01°03'45"	75°35'54"
49+75.00	25.00	25.00	-	01°03'45"	76°39'39"
50+00.00	25.00	25.00	-	01°03'45"	77°43'24"
50+25.00	25.00	25.00	-	01°03'45"	78°47'09"
50+50.00	25.00	25.00	-	01°03'45"	79°50'54"
50+75.00	25.00	25.00	-	01°03'45"	80°54'39"
51+00.00	25.00	25.00	-	01°03'45"	81°58'24"
51+25.00	25.00	25.00	-	01°03'45"	83°02'09"
51+50.00	25.00	25.00	-	01°03'45"	84°05'54"
51+75.00	25.00	25.00	-	01°03'45"	85°09'39"
52+00.00	25.00	25.00	-	01°03'45"	86°13'24"
52+25.00	25.00	25.00	-	01°03'45"	87°17'09"
52+50.00	25.00	25.00	-	01°03'45"	88°20'54"
52+75.00	25.00	25.00	-	01°03'45"	89°24'39"
53+00.00	25.00	25.00	-	01°03'45"	90°28'24"
53+25.00	25.00	25.00	-	01°03'45"	91°32'09"
53+50.00	25.00	25.00	-	01°03'45"	92°35'54"
53+75.00	25.00	25.00	-	01°03'45"	93°39'39"
54+00.00	25.00	25.00	-	01°03'45"	94°43'24"
54+25.00	25.00	25.00	-	01°03'45"	95°47'09"
54+50.00	25.00	25.00	-	01°03'45"	96°50'54"
54+75.00	25.00	25.00	-	01°03'45"	97°54'39"
55+00.00	25.00	25.00	-	01°03'45"	98°58'24"
55+25.00	25.00	25.00	-	01°03'45"	100°02'09"
55+50.00	25.00	25.00	-	01°03'45"	101°05'54"
55+75.00	25.00	25.00	-	01°03'45"	102°09'39"
56+00.00	25.00	25.00	-	01°03'45"	103°13'24"
56+25.00	25.00	25.00	-	01°03'45"	104°17'09"
56+50.00	25.00	25.00	-	01°03'45"	105°20'54"
56+75.00	25.00	25.00	-	01°03'45"	106°24'39"
57+00.00	25.00	25.00	-	01°03'45"	107°28'24"
57+25.00	25.00	25.00	-	01°03'45"	108°32'09"
57+50.00	25.00	25.00	-	01°03'45"	109°35'54"
57+75.00	25.00	25.00	-	01°03'45"	110°39'39"
58+00.00	25.00	25.00	-	01°03'45"	111°43'24"
58+25.00	25.00	25.00	-	01°03'45"	112°47'09"
58+50.00	25.00	25.00	-	01°03'45"	113°50'54"
58+75.00	25.00	25.00	-	01°03'45"	114°54'39"
59+00.00	25.00	25.00	-	01°03'45"	115°58'24"
59+25.00	25.00	25.00	-	01°03'45"	117°02'09"
59+50.00	25.00	25.00	-	01°03'45"	118°05'54"
59+75.00	25.00	25.00	-	01°03'45"	119°09'39"
60+00.00	25.00	25.00	-	01°03'45"	120°13'24"
60+25.00	25.00	25.00	-	01°03'45"	121°17'09"
60+50.00	25.00	25.00	-	01°03'45"	122°20'54"
60+75.00	25.00	25.00	-	01°03'45"	123°24'39"
61+00.00	25.00	25.00	-	01°03'45"	124°28'24"
61+25.00	25.00	25.00	-	01°03'45"	125°32'09"
61+50.00	25.00	25.00	-	01°03'45"	126°35'54"
61+75.00	25.00	25.00	-	01°03'45"	127°39'39"
62+00.00	25.00	25.00	-	01°03'45"	128°43'24"
62+25.00	25.00	25.00	-	01°03'45"	129°47'09"
62+50.00	25.00	25.00	-	01°03'45"	130°50'54"
62+75.00	25.00	25.00	-	01°03'45"	131°54'39"
63+00.00	25.00	25.00	-	01°03'45"	132°58'24"
63+25.00	25.00	25.00	-	01°03'45"	134°02'09"
63+50.00	25.00	25.00	-	01°03'45"	135°05'54"
63+75.00	25.00	25.00	-	01°03'45"	136°09'39"
64+00.00	25.00	25.00	-	01°03'45"	137°13'24"
64+25.00	25.00	25.00	-	01°03'45"	138°17'09"
64+50.00	25.00	25.00	-	01°03'45"	139°20'54"
64+75.00	25.00	25.00	-	01°03'45"	140°24'39"
65+00.00	25.00	25.00	-	01°03'45"	141°28'24"
65+25.00	25.00	25.00	-	01°03'45"	142°32'09"
65+50.00	25.00	25.00	-	01°03'45"	143°35'54"
65+75.00	25.00	25.00	-	01°03'45"	144°39'39"
66+00.00	25.00	25.00	-	01°03'45"	145°43'24"
66+25.00	25.00	25.00	-	01°03'45"	146°47'09"
66+50.00	25.00	25.00	-	01°03'45"	147°50'54"
66+75.00	25.00	25.00	-	01°03'45"	148°54'39"
67+00.00	25.00	25.00	-	01°03'45"	149°58'24"
67+25.00	25.00	25.00	-	01°03'45"	151°02'09"
67+50.00	25.00	25.00	-	01°03'45"	152°05'54"
67+75.00	25.00	25.00	-	01°03'45"	153°09'39"
68+00.00	25.00	25.00	-	01°03'45"	154°13'24"
68+25.00	25.00	25.00	-	01°03'45"	155°17'09"
68+50.00	25.00	25.00	-	01°03'45"	156°20'54"
68+75.00	25.00	25.00	-	01°03'45"	157°24'39"
69+00.00	25.00	25.00	-	01°03'45"	158°28'24"
69+25.00	25.00	25.00	-	01°03'45"	159°32'09"
69+50.00	25.00	25.00	-	01°03'45"	160°35'54"
69+75.00	25.00	25.00	-	01°03'45"	161°39'39"
70+00.00	25.00	25.00	-	01°03'45"	162°43'24"
70+25.00	25.00	25.00	-	01°03'45"	163°47'09"
70+50.00	25.00	25.00	-	01°03'45"	164°50'54"
70+75.00	25.00	25.00	-	01°03'45"	165°54'39"
71+00.00	25.00	25.00	-	01°03'45"	166°58'24"
71+25.00	25.00	25.00	-	01°03'45"	168°02'09"
71+50.00	25.00	25.00	-	01°03'45"	169°05'54"
71+75.00	25.00	25.00	-	01°03'45"	170°09'39"
72+00.00	25.00	25.00	-	01°03'45"	171°13'24"
72+25.00	25.00	25.00	-	01°03'45"	172°17'09"
72+50.00	25.00	25.00	-	01°03'45"	173°20'54"
72+75.00	25.00	25.00	-	01°03'45"	174°24'39"
73+00.00	25.00	25.00	-	01°03'45"	175°28'24"
73+25.00	25.00	25.00	-	01°03'45"	

**FLINT HILLS NATIONAL ADDITION  
WATER DISTRIBUTION PLANS  
PROJ. NO. 1054 PPW**



**① CURVE TABLE**  
 $\Delta = 23^{\circ}29'31''$  R = 524.00' T = 108.85' L = 214.85' LC = 213.34'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 11^{\circ}44'48''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
39+89.75	-	-	-	00°00'00"	00°00'00"
40+00.00	10.25	10.27	-	01°33'37"	01°33'37"
40+50.00	25.00	25.32	-	01°22'00"	01°55'36"
41+00.00	25.00	25.32	-	01°22'00"	03°17'36"
41+50.00	25.00	25.32	-	01°22'00"	04°39'36"
42+00.00	25.00	25.32	-	01°22'00"	06°01'36"
42+50.00	25.00	25.32	-	01°22'00"	07°23'36"
43+00.00	25.00	25.32	-	01°22'00"	08°45'36"
43+50.00	25.00	25.32	-	01°22'00"	10°07'36"
44+00.00	25.00	25.32	-	01°22'00"	11°29'36"
44+50.00	25.00	25.32	-	01°22'00"	12°51'36"
45+00.00	25.00	25.32	-	01°22'00"	14°13'36"
45+00.00	4.89	4.89	-	00°15'08"	11°28'44"

Dist/Ft = 3.28026 Min.

**② CURVE TABLE**  
 $\Delta = 119^{\circ}39'24''$  R = 328.00' T = 560.76' L = 680.82' LC = 583.67'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 59^{\circ}49'42''$

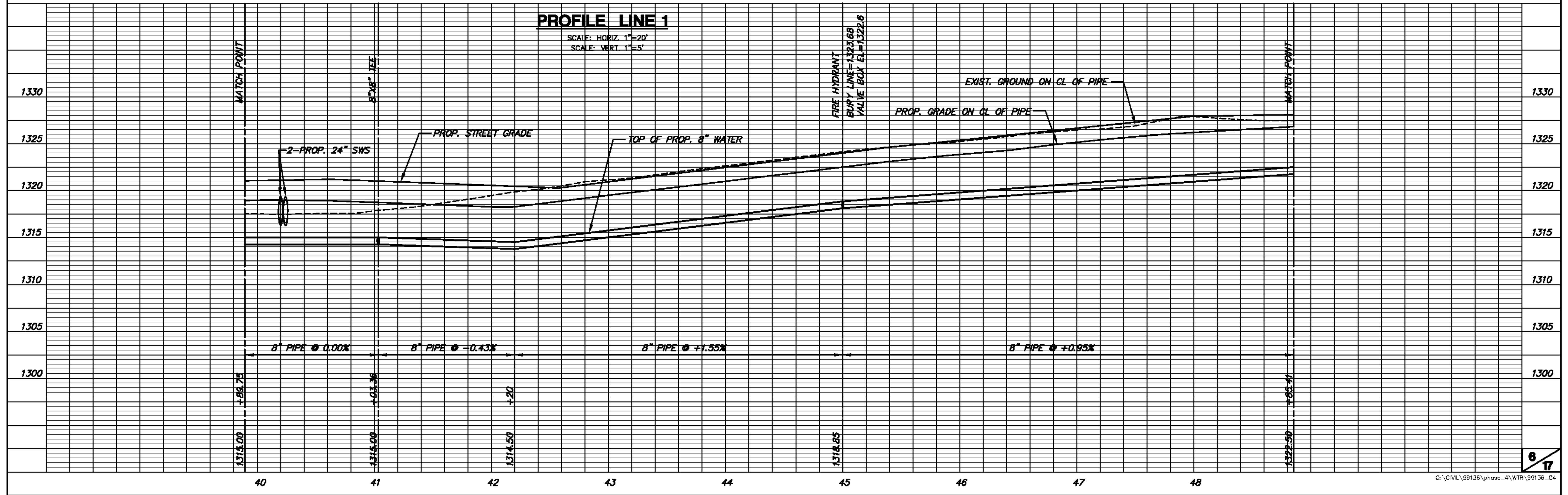
STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
45+00.00	-	-	-	00°00'00"	00°00'00"
45+50.00	20.41	19.72	-	01°47'37"	01°47'37"
46+00.00	25.00	24.15	-	02°11'48"	03°59'25"
46+50.00	25.00	24.15	-	02°11'48"	06°11'13"
47+00.00	25.00	24.15	-	02°11'48"	08°23'01"
47+50.00	25.00	24.15	-	02°11'48"	10°34'53"
48+00.00	25.00	24.15	-	02°11'48"	12°46'45"
48+50.00	25.00	24.15	-	02°11'48"	14°58'37"
49+00.00	25.00	24.15	-	02°11'48"	17°10'29"
49+50.00	25.00	24.15	-	02°11'48"	19°22'21"
50+00.00	25.00	24.15	-	02°11'48"	21°34'13"
50+00.00	25.00	24.15	-	02°11'48"	23°46'05"
50+50.00	25.00	24.15	-	02°11'48"	25°57'57"
51+00.00	25.00	24.15	-	02°11'48"	28°09'49"
51+50.00	25.00	24.15	-	02°11'48"	30°21'41"
52+00.00	25.00	24.15	-	02°11'48"	32°33'33"
52+50.00	25.00	24.15	-	02°11'48"	34°45'25"
53+00.00	25.00	24.15	-	02°11'48"	36°57'17"
53+50.00	25.00	24.15	-	02°11'48"	39°09'09"
54+00.00	25.00	24.15	-	02°11'48"	41°21'01"
54+50.00	25.00	24.15	-	02°11'48"	43°32'53"
55+00.00	25.00	24.15	-	02°11'48"	45°44'45"
55+00.00	10.08	10.08	-	00°52'23"	39°48'22"

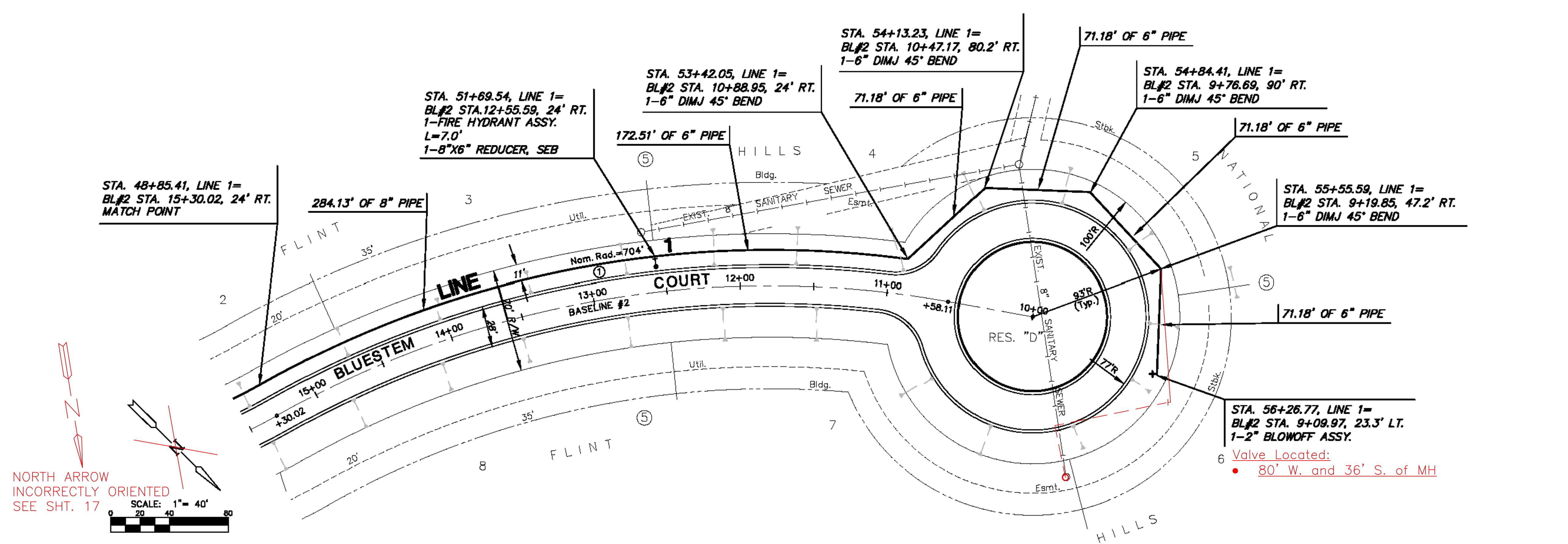
Dist/Ft = 5.27282 Min.

RECORD DRAWING  
M.T. 1-7-09

**PROFILE LINE 1**

SCALE: HORIZ. 1"=20'  
SCALE: VERT. 1"=5'





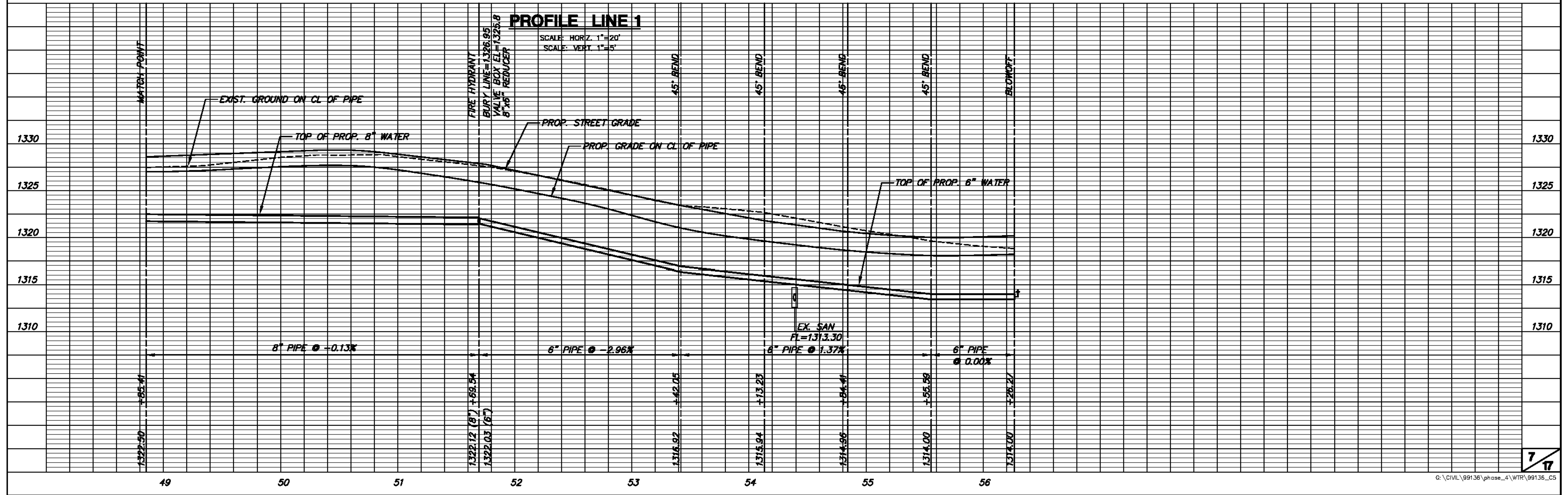
**CURVE TABLE**  
 $\Delta = 37^{\circ}09'51''$   $R = 704.00'$   $T = 236.86'$   $L = 458.64'$   $LC = 448.88'$   
 CURVE DATA BASED ON WATERLINE  $\Delta / 2 = 18^{\circ}34'55''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11' LT Offset	11' RT Offset		
48+85.41	-	-	-	00°00'00"	00°00'00"
48+00.00	14.58'	14.82'	-	00°36'37"	00°36'37"
48+25.00	25.00'	25.39'	-	01°01'02"	01°38'40"
48+50.00	25.00'	25.39'	-	01°01'02"	02°37'42"
48+75.00	25.00'	25.39'	-	01°01'02"	03°38'44"
50+00.00	25.00'	25.39'	-	01°01'02"	04°39'47"
50+25.00	25.00'	25.39'	-	01°01'02"	05°40'49"
50+50.00	25.00'	25.39'	-	01°01'02"	06°41'52"
50+75.00	25.00'	25.39'	-	01°01'02"	07°42'54"
51+00.00	25.00'	25.39'	-	01°01'02"	08°43'56"
51+25.00	25.00'	25.39'	-	01°01'02"	09°44'59"
51+50.00	25.00'	25.39'	-	01°01'02"	10°46'01"
51+75.00	25.00'	25.39'	-	01°01'02"	11°47'03"
52+00.00	25.00'	25.39'	-	01°01'02"	12°48'05"
52+25.00	25.00'	25.39'	-	01°01'02"	13°49'08"
52+50.00	25.00'	25.39'	-	01°01'02"	14°50'11"
52+75.00	25.00'	25.39'	-	01°01'02"	15°51'13"
53+00.00	25.00'	25.39'	-	01°01'02"	16°52'15"
53+25.00	25.00'	25.39'	-	01°01'02"	17°53'18"
53+42.05	17.05'	17.32'	-	00°41'38"	18°34'58"

Def/Ft = 2.44158 Min.

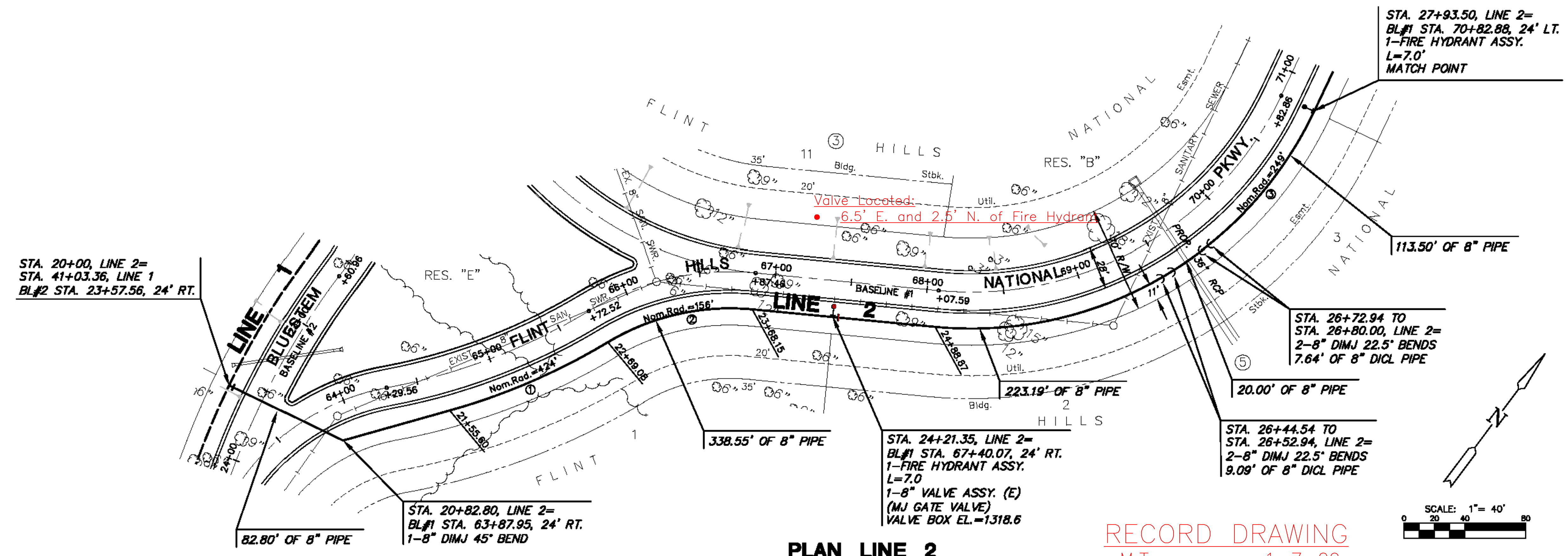
**PLAN LINE 1**

RECORD DRAWING  
M.T. 1-7-09



**PROFILE LINE 1**

**FLINT HILLS NATIONAL ADDITION  
WATER DISTRIBUTION PLANS  
PROJ. NO. 1054 PPW**



**PLAN LINE 2**

RECORD DRAWING  
M.T. 1-7-09

**① CURVE TABLE**  
 $\Delta = 15^{\circ}20'07''$  R = 424.00' T = 57.08' L = 113.48' LC = 113.15'  
 CURVE DATA BASED ON CENTERLINE  $\Delta / 2 = 07^{\circ}40'03''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11'Lt Offset	11'Rt Offset		
21+55.80	-	-	-	00'00"00"	00'00"00"
21+75.00	19.40'	18.25'	20.54'	01'18"36"	01'18"36"
22+00.00	25.00'	23.32'	26.47'	01'41"21"	03'00"00"
22+25.00	25.00'	23.32'	26.47'	01'41"21"	04'41"21"
22+50.00	19.08'	17.98'	20.21'	01'17"22"	06'22'42"
22+69.08	-	-	-	01'17"22"	07'40'04"

Def/Ft = 4.05365 Min.

**② CURVE TABLE**  
 $\Delta = 38^{\circ}23'08''$  R = 156.00' T = 51.27' L = 99.07' LC = 97.41'  
 CURVE DATA BASED ON CENTERLINE  $\Delta / 2 = 19^{\circ}11'34''$

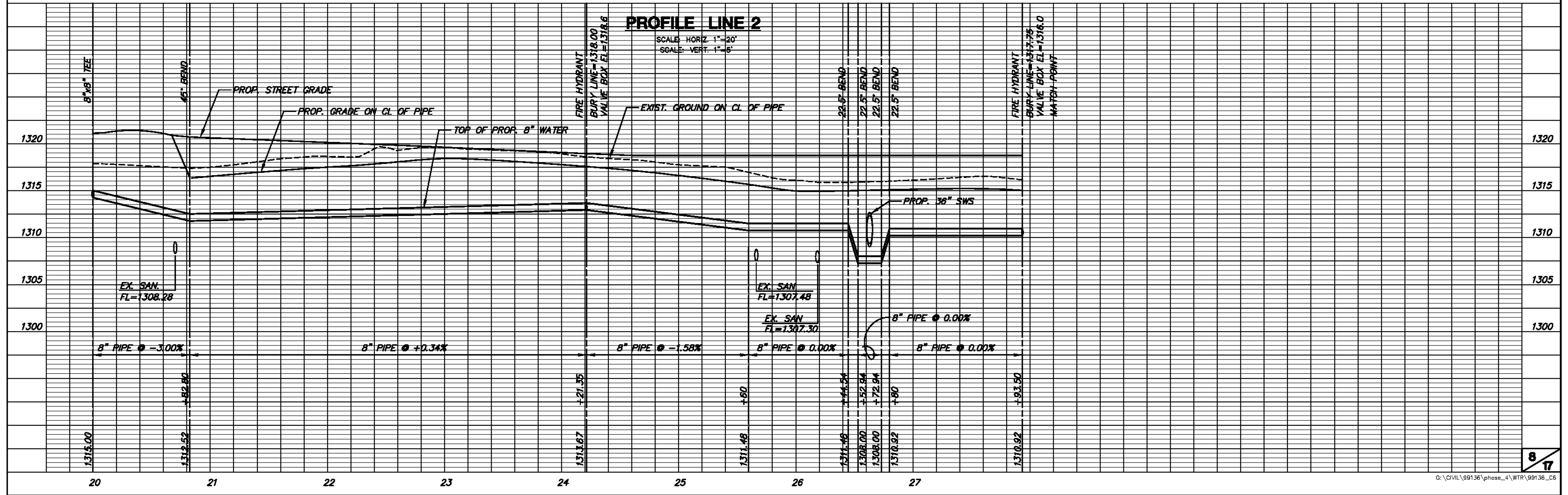
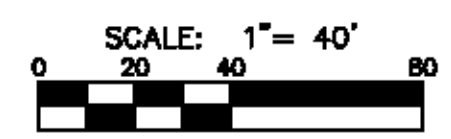
STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11'Lt Offset	11'Rt Offset		
22+89.08	-	-	-	00'00"00"	00'00"00"
22+75.00	6.92'	6.03'	6.81'	01'08"14"	01'08"14"
22+70.00	25.00'	23.45'	27.49'	01'52"35"	03'00'50"
22+50.00	25.00'	23.45'	27.49'	01'52"35"	04'53'25"
22+25.00	25.00'	23.45'	27.49'	01'52"35"	06'46'00"
22+00.00	18.19'	16.49'	17.79'	01'19'41"	08'11'41"

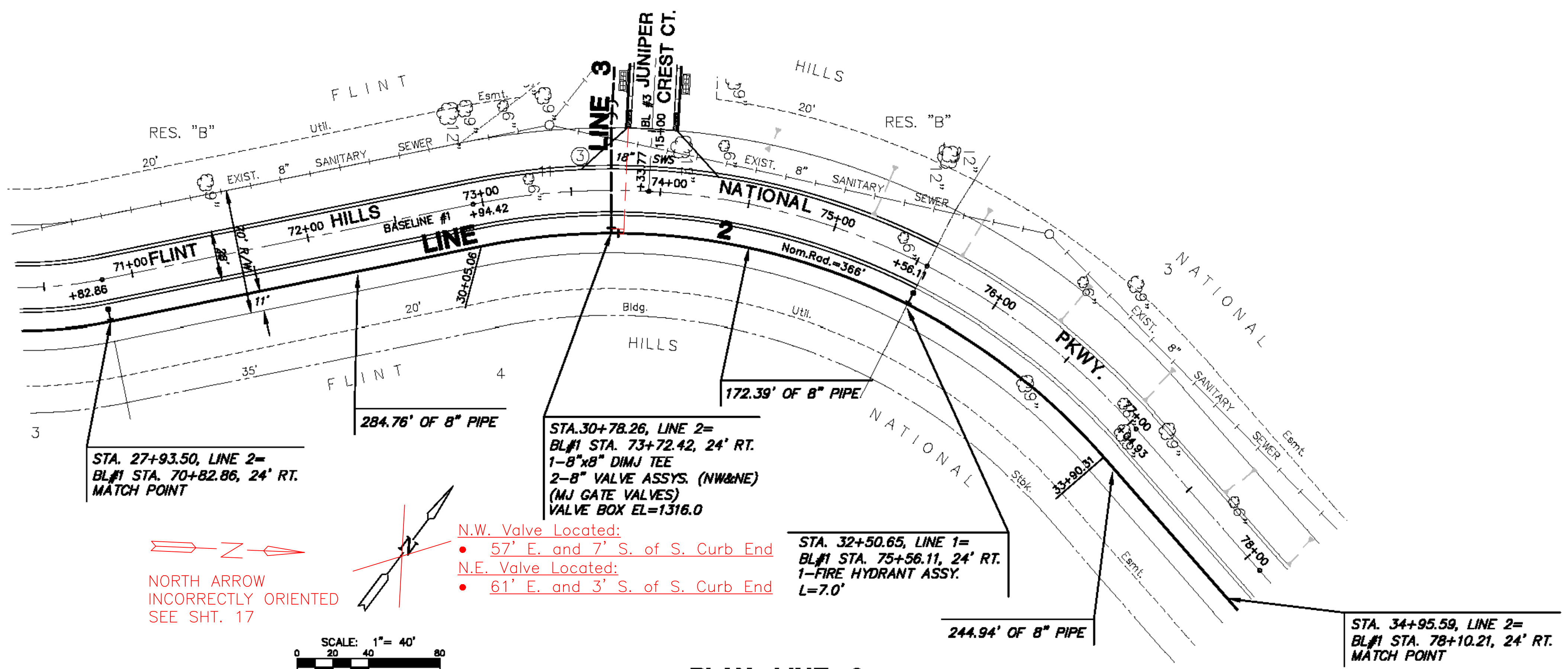
Def/Ft = 11.01842 Min.

**③ CURVE TABLE**  
 $\Delta = 70^{\circ}05'47''$  R = 249.00' T = 174.66' L = 304.63' LC = 285.68'  
 CURVE DATA BASED ON CENTERLINE  $\Delta / 2 = 35^{\circ}02'54''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11'Lt Offset	11'Rt Offset		
24+88.87	-	-	-	00'00"00"	00'00"00"
25+00.00	11.31'	10.01'	12.25'	01'18'50"	01'18'50"
25+25.00	25.00'	22.48'	27.50'	02'52'35"	04'08'25"
25+50.00	25.00'	22.48'	27.50'	02'52'35"	07'01'00"
25+75.00	25.00'	22.48'	27.50'	02'52'35"	09'53'35"
26+00.00	25.00'	22.48'	27.50'	02'52'35"	12'46'10"
26+25.00	25.00'	22.48'	27.50'	02'52'35"	15'38'45"
26+50.00	25.00'	22.48'	27.50'	02'52'35"	18'31'20"
26+75.00	25.00'	22.48'	27.50'	02'52'35"	21'23'55"
27+00.00	25.00'	22.48'	27.50'	02'52'35"	24'16'30"
27+25.00	25.00'	22.48'	27.50'	02'52'35"	27'09'05"
27+50.00	25.00'	22.48'	27.50'	02'52'35"	30'01'40"
27+75.00	25.00'	22.48'	27.50'	02'52'35"	32'54'15"
27+93.50	18.50'	16.84'	20.35'	02'07'42"	35'02'54"

Def/Ft = 6.90311 Min.





**CURVE TABLE**

$\Delta = 60^{\circ}18'37''$     $R = 366.00'$     $T = 212.63'$     $L = 385.26'$     $LC = 367.72'$

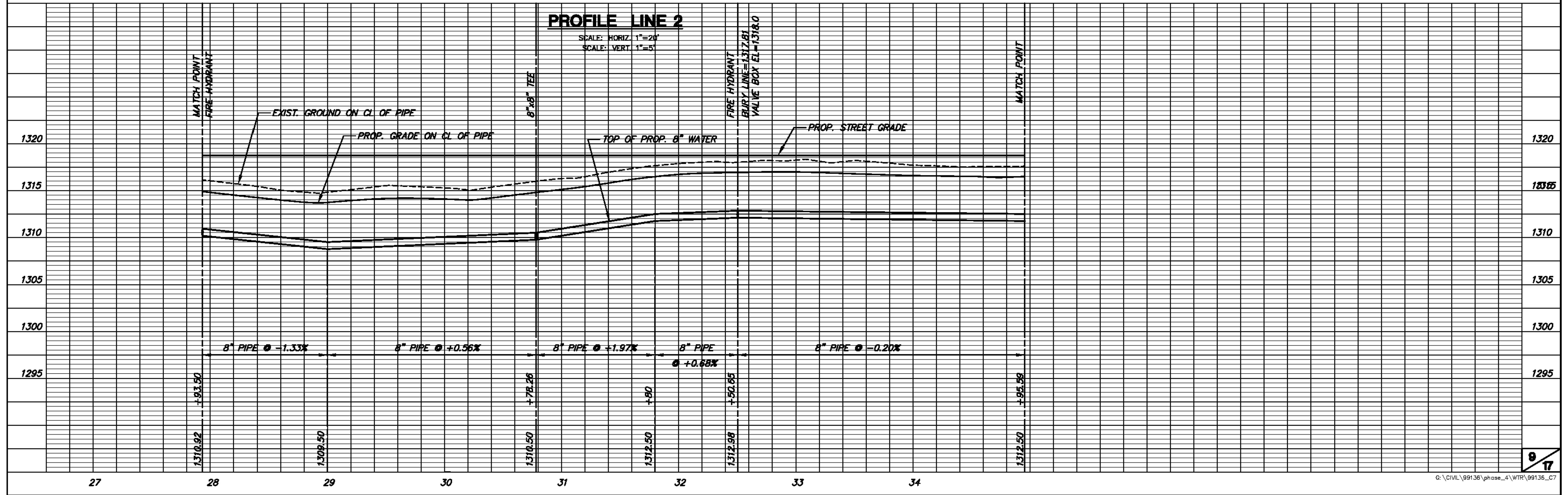
CURVE DATA BASED ON CENTERLINE    $\Delta / 2 = 30^{\circ}09'18''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11'Lt Offset	11'Rt Offset		
30+05.06	—	—	—	00°00'00"	00°00'00"
30+25.00	19.84'	20.10'	19.77'	01°33'39"	01°33'39"
30+50.00	25.00'	25.20'	24.79'	01°57'25"	03°31'03"
30+75.00	25.00'	25.20'	24.79'	01°57'25"	05°28'28"
30+78.26	3.25'	3.29'	3.23'	00°15'19"	05°43'46"
31+00.00	21.74'	21.91'	21.56'	01°42'06"	07°25'52"
31+25.00	25.00'	25.20'	24.79'	01°57'25"	09°23'17"
31+50.00	25.00'	25.20'	24.79'	01°57'25"	11°20'42"
31+75.00	25.00'	25.20'	24.79'	01°57'25"	13°18'06"
32+00.00	25.00'	25.20'	24.79'	01°57'25"	15°15'31"
32+25.00	25.00'	25.20'	24.79'	01°57'25"	17°12'55"
32+50.00	25.00'	25.20'	24.79'	01°57'25"	19°10'20"
32+50.65	65'	66'	64'	00°03'03"	19°13'23"
32+75.00	24.35'	24.55'	24.15'	01°54'21"	21°07'44"
33+00.00	25.00'	25.20'	24.79'	01°57'25"	23°05'09"
33+25.00	25.00'	25.20'	24.79'	01°57'25"	25°02'34"
33+50.00	25.00'	25.20'	24.79'	01°57'25"	26°59'58"
33+75.00	25.00'	25.20'	24.79'	01°57'25"	28°57'23"
33+90.32	15.32'	15.44'	15.19'	01°11'56"	30°09'18"

Def/Ft = 4.68638 Min.

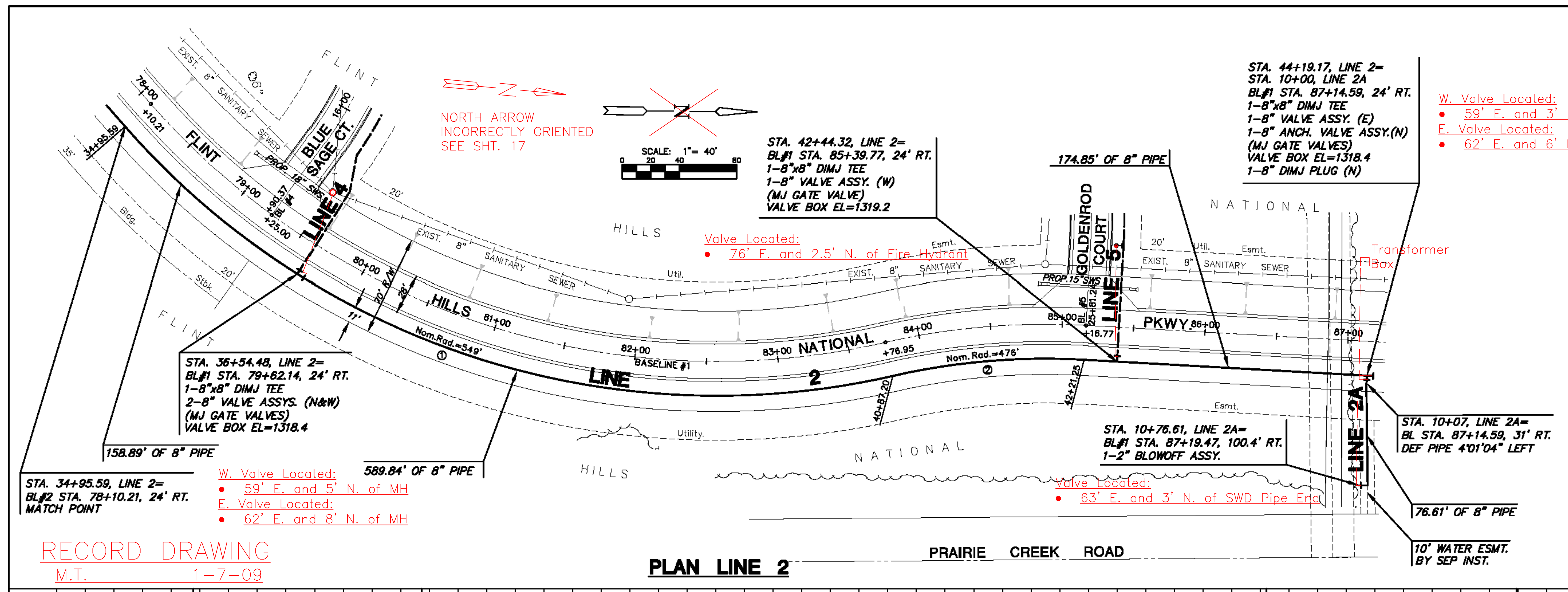
**PLAN LINE 2**

RECORD DRAWING  
M.T. 1-7-09



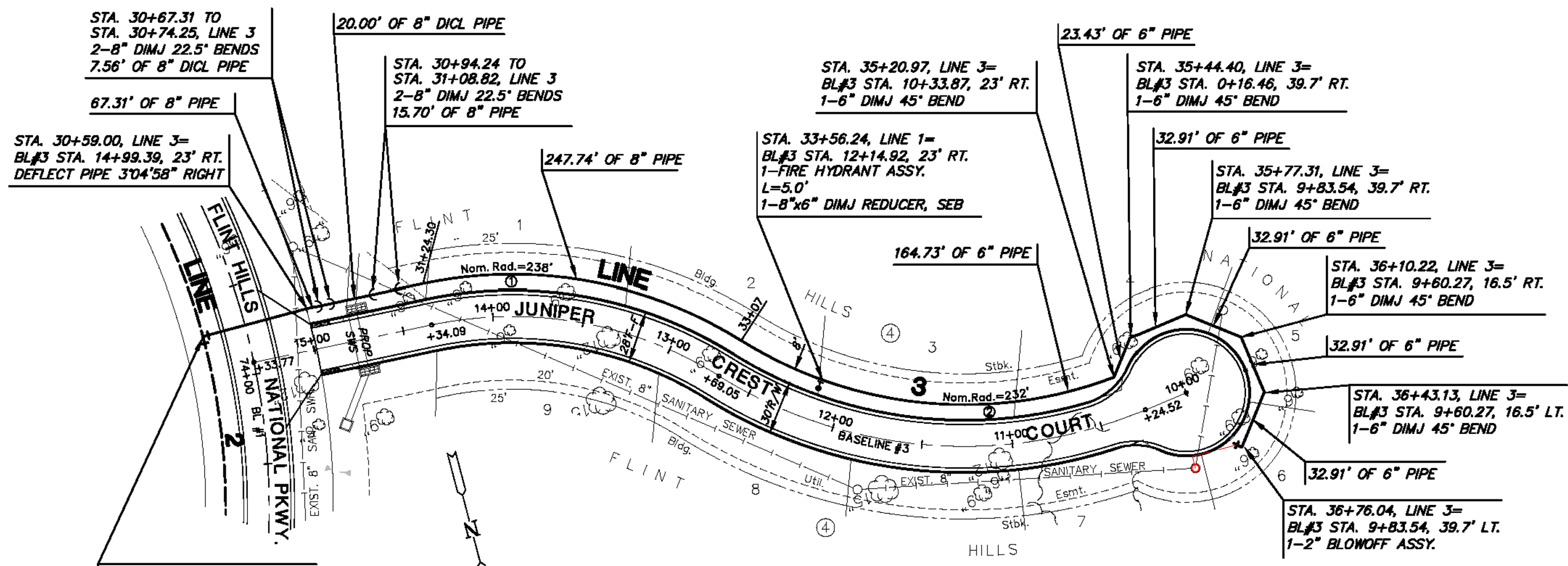
**PROFILE LINE 2**

**FLINT HILLS NATIONAL ADDITION  
WATER DISTRIBUTION PLANS  
PROJ. NO. 1054 PPW**



**① CURVE TABLE**  
 $\Delta = 81^{\circ}44'32''$  R = 548.00' T = 328.19' L = 501.81' LC = 583.39'  
 CURVE DATA BASED ON CENTERLINE  $\Delta / 2 = 30^{\circ}52'16''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		11'Lt Offset	11'Rt Offset		
34+95.59	-	-	-	00°00'00"	00°00'00"
35+00.00	25.41	28.07	30.75	01°32'06"	01°32'06"
35+05.00	25.00	23.89	26.14	01°18'16"	02°50'21"
35+10.00	25.00	23.89	26.14	01°18'16"	04°08'37"
35+15.00	25.00	23.89	26.14	01°18'16"	05°26'53"
35+20.00	25.00	23.89	26.14	01°18'16"	06°45'09"
35+25.00	25.00	23.89	26.14	01°18'16"	08°03'25"
35+30.00	25.00	23.89	26.14	01°18'16"	09°21'41"
35+35.00	25.00	23.89	26.14	01°18'16"	10°39'57"
35+40.00	25.00	23.89	26.14	01°18'16"	11°58'13"
35+45.00	25.00	23.89	26.14	01°18'16"	13°16'29"
35+50.00	25.00	23.89	26.14	01°18'16"	14°34'45"
35+55.00	25.00	23.89	26.14	01°18'16"	15°53'01"
35+60.00	25.00	23.89	26.14	01°18'16"	17°11'17"
35+65.00	25.00	23.89	26.14	01°18'16"	18°29'33"
35+70.00	25.00	23.89	26.14	01°18'16"	19°47'49"
35+75.00	25.00	23.89	26.14	01°18'16"	21°06'05"
35+80.00	25.00	23.89	26.14	01°18'16"	22°24'21"
35+85.00	25.00	23.89	26.14	01°18'16"	23°42'37"
35+90.00	25.00	23.89	26.14	01°18'16"	25°00'53"
35+95.00	25.00	23.89	26.14	01°18'16"	26°19'09"
36+00.00	25.00	23.89	26.14	01°18'16"	27°37'25"
36+05.00	25.00	23.89	26.14	01°18'16"	28°55'41"
36+10.00	25.00	23.89	26.14	01°18'16"	30°13'57"
36+15.00	25.00	23.89	26.14	01°18'16"	31°32'13"
36+20.00	25.00	23.89	26.14	01°18'16"	32°50'29"
36+25.00	25.00	23.89	26.14	01°18'16"	34°08'45"
36+30.00	25.00	23.89	26.14	01°18'16"	35°27'01"
36+35.00	25.00	23.89	26.14	01°18'16"	36°45'17"
36+40.00	25.00	23.89	26.14	01°18'16"	38°03'33"
36+45.00	25.00	23.89	26.14	01°18'16"	39°21'49"
36+50.00	25.00	23.89	26.14	01°18'16"	40°40'05"
36+55.00	25.00	23.89	26.14	01°18'16"	41°58'21"
36+60.00	25.00	23.89	26.14	01°18'16"	43°16'37"
36+65.00	25.00	23.89	26.14	01°18'16"	44°34'53"
36+70.00	25.00	23.89	26.14	01°18'16"	45°53'09"
36+75.00	25.00	23.89	26.14	01°18'16"	47°11'25"
36+80.00	25.00	23.89	26.14	01°18'16"	48°29'41"
36+85.00	25.00	23.89	26.14	01°18'16"	49°47'57"
36+90.00	25.00	23.89	26.14	01°18'16"	51°06'13"
36+95.00	25.00	23.89	26.14	01°18'16"	52°24'29"
37+00.00	25.00	23.89	26.14	01°18'16"	53°42'45"
37+05.00	25.00	23.89	26.14	01°18'16"	55°01'01"
37+10.00	25.00	23.89	26.14	01°18'16"	56°19'17"
37+15.00	25.00	23.89	26.14	01°18'16"	57°37'33"
37+20.00	25.00	23.89	26.14	01°18'16"	58°55'49"
37+25.00	25.00	23.89	26.14	01°18'16"	60°14'05"
37+30.00	25.00	23.89	26.14	01°18'16"	61°32'21"
37+35.00	25.00	23.89	26.14	01°18'16"	62°50'37"
37+40.00	25.00	23.89	26.14	01°18'16"	64°08'53"
37+45.00	25.00	23.89	26.14	01°18'16"	65°27'09"
37+50.00	25.00	23.89	26.14	01°18'16"	66°45'25"
37+55.00	25.00	23.89	26.14	01°18'16"	68°03'41"
37+60.00	25.00	23.89	26.14	01°18'16"	69°21'57"
37+65.00	25.00	23.89	26.14	01°18'16"	70°40'13"
37+70.00	25.00	23.89	26.14	01°18'16"	71°58'29"
37+75.00	25.00	23.89	26.14	01°18'16"	73°16'45"
37+80.00	25.00	23.89	26.14	01°18'16"	74°35'01"
37+85.00	25.00	23.89	26.14	01°18'16"	75°53'17"
37+90.00	25.00	23.89	26.14	01°18'16"	77°11'33"
37+95.00	25.00	23.89	26.14	01°18'16"	78°29'49"
38+00.00	25.00	23.89	26.14	01°18'16"	79°48'05"
38+05.00	25.00	23.89	26.14	01°18'16"	81°06'21"
38+10.00	25.00	23.89	26.14	01°18'16"	82°24'37"
38+15.00	25.00	23.89	26.14	01°18'16"	83°42'53"
38+20.00	25.00	23.89	26.14	01°18'16"	85°01'09"
38+25.00	25.00	23.89	26.14	01°18'16"	86°19'25"
38+30.00	25.00	23.89	26.14	01°18'16"	87°37'41"
38+35.00	25.00	23.89	26.14	01°18'16"	88°55'57"
38+40.00	25.00	23.89	26.14	01°18'16"	90°14'13"
38+45.00	25.00	23.89	26.14	01°18'16"	91°32'29"
38+50.00	25.00	23.89	26.14	01°18'16"	92°50'45"
38+55.00	25.00	23.89	26.14	01°18'16"	94°09'01"
38+60.00	25.00	23.89	26.14	01°18'16"	95°27'17"
38+65.00	25.00	23.89	26.14	01°18'16"	96°45'33"
38+70.00	25.00	23.89	26.14	01°18'16"	98°03'49"
38+75.00	25.00	23.89	26.14	01°18'16"	99°22'05"
38+80.00	25.00	23.89	26.14	01°18'16"	100°40'21"
38+85.00	25.00	23.89	26.14	01°18'16"	101°58'37"
38+90.00	25.00	23.89	26.14	01°18'16"	103°16'53"
38+95.00	25.00	23.89	26.14	01°18'16"	104°35'09"
39+00.00	25.00	23.89	26.14	01°18'16"	105°53'25"
39+05.00	25.00	23.89	26.14	01°18'16"	107°11'41"
39+10.00	25.00	23.89	26.14	01°18'16"	108°29'57"
39+15.00	25.00	23.89	26.14	01°18'16"	109°48'13"
39+20.00	25.00	23.89	26.14	01°18'16"	111°06'29"
39+25.00	25.00	23.89	26.14	01°18'16"	112°24'45"
39+30.00	25.00	23.89	26.14	01°18'16"	113°43'01"
39+35.00	25.00	23.89	26.14	01°18'16"	115°01'17"
39+40.00	25.00	23.89	26.14	01°18'16"	116°19'33"
39+45.00	25.00	23.89	26.14	01°18'16"	117°37'49"
39+50.00	25.00	23.89	26.14	01°18'16"	118°56'05"
39+55.00	25.00	23.89	26.14	01°18'16"	120°14'21"
39+60.00	25.00	23.89	26.14	01°18'16"	121°32'37"
39+65.00	25.00	23.89	26.14	01°18'16"	122°50'53"
39+70.00	25.00	23.89	26.14	01°18'16"	124°09'09"
39+75.00	25.00	23.89	26.14	01°18'16"	125°27'25"
39+80.00	25.00	23.89	26.14	01°18'16"	126°45'41"
39+85.00	25.00	23.89	26.14	01°18'16"	128°03'57"
39+90.00	25.00	23.89	26.14	01°18'16"	129°22'13"
39+95.00	25.00	23.89	26.14	01°18'16"	130°40'29"
40+00.00	25.00	23.89	26.14	01°18'16"	131°58'45"
40+05.00	25.00	23.89	26.14	01°18'16"	133°17'01"
40+10.00	25.00	23.89	26.14	01°18'16"	134°35'17"
40+15.00	25.00	23.89	26.14	01°18'16"	135°53'33"
40+20.00	25.00	23.89	26.14	01°18'16"	137°11'49"
40+25.00	25.00	23.89	26.14	01°18'16"	138°30'05"
40+30.00	25.00	23.89	26.14	01°18'16"	139°48'21"
40+35.00	25.00	23.89	26.14	01°18'16"	141°06'37"
40+40.00	25.00	23.89	26.14	01°18'16"	142°24'53"
40+45.00	25.00	23.89	26.14	01°18'16"	143°43'09"
40+50.00	25.00	23.89	26.14	01°18'16"	145°01'25"
40+55.00	25.00	23.89	26.14	01°18'16"	146°19'41"
40+60.00	25.00	23.89	26.14	01°18'16"	147°37'57"
40+65.00	25.00	23.89	26.14	01°18'16"	148°56'13"
40+70.00	25.00	23.89	26.14	01°18'16"	150°14'29"
40+75.00	25.00	23.89	26.14	01°18'16"	151°32'45"
40+80.00	25.00	23.89	26.14	01°18'16"	152°51'01"
40+85.00	25.00	23.89	26.14	01°18'16"	154°09'17"
40+90.00	25.00	23.89	26.14	01°18'16"	155°27'33"
40+95.00	25.00	23.89	26.14	01°18'16"	156°45'49"
41+00.00	25.00	23.89	26.14	01°18'16"	158°04'05"
41+05.00	25.00	23.89	26.14	01°18'16"	159°22'21"
41+10.00	25.00	23.89	26.14	01°18'16"	160°40'37"
41+15.00	25.00	23.89	26.14	01°18'16"	161°58'53"
41+20.00	25.00	23.89	26.14	01°18'16"	163°17'09"
41+25.00	25.00	23.89	26.14	01°18'16"	164°35'25"
41+30.00	25.00	23.89	26.14	01°18'16"	165°53'41"
41+35.00	25.00	23.89	26.14	01°18'16"	167°11'57"
41+40.00	25.00	23.89	26.14	01°18'16"	168°30'13"
41+45.00	25.00	23.89	26.14	01°18'16"	169°48'29"
41+50.00	25.00	23.89	26.14	01°18'16"	171°06'45"
41+55.00	25.00	23.89	26.14	01°18'16"	172°25'01"
41+60.00	25.00	23.89	26.14	01°18'16"	173°43'17"
41+65.00	25.00	23.89	26.14	01°18'16"	175°01'33"
41+70.00	25.00	23.89	26.14	01°18'16"	176°19'49"
41+75.00	25.00	23.89	26.14	01°18'16"	177°38'05"
41+80.00	25.00	23.89	26.14	01°18'16"	178°56'21"
41+85.00	25.00	23.89	26.14	01°18'16"	180°14'37"
41+90.00	25.00	23.89	26.14	01°18'16"	181°32'53"
41+95.00	25.00	23.89	26.14	01°18'16"	182°51'09"
42+00.00	25.00	23.89	26.14	01°18'16"	184°09'25"
42+05.00	25.00	23.89	26.14	01°18'16"	185°27'41"
42+10.00	25.00	23.89	26.14	01°18'16"	186°45'57"
42+15.00	25.00	23.89	26.14	01°18'16"	188°04'13"
42+20.00	25.00	23.89	26.14	01°18'16"	189°22'29"
42+25.00	25.00	23.89	26.14	01°18'16"	190°40'45"
42+30.00	25.00	23.89	26.14	01°18'16"	191°59'01"
42+35.00	25.00	23.89	26.14	01°18'16"	193°17'17"
42+40.00	25.00	23.89	26.14	01°18'16"	194°35'33"
42+45.00	25.00	23.89	26.14	01°18'16"	195°53'49"
42+50.00	25.00	23.89	26.14	01°18'16"	197°12'05"



**① CURVE TABLE**  
 $\Delta = 43^\circ 58' 55''$  R = 238.00' T = 96.11' L = 182.70' LC = 178.24'  
 CURVE DATA BASED ON WATERLINE  $\Delta / 2 = 21^\circ 59' 27''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		8'LT Offset	8'RT Offset		
31+24.30	-	-	-	00°00'00"	00°00'00"
31+50.00	25.70'	-	24.82'	03°05'37"	03°05'37"
31+75.00	25.00'	-	24.15'	03°00'33"	06°06'10"
32+00.00	25.00'	-	24.15'	03°00'33"	09°06'43"
32+25.00	25.00'	-	24.15'	03°00'33"	12°07'16"
32+50.00	25.00'	-	24.15'	03°00'33"	15°07'50"
32+75.00	25.00'	-	24.15'	03°00'33"	18°08'23"
33+00.00	25.00'	-	24.15'	03°00'33"	21°08'56"
33+07.00	7.00'	-	6.76'	00°50'32"	21°59'27"

Def/Ft = 7.22216 Min.

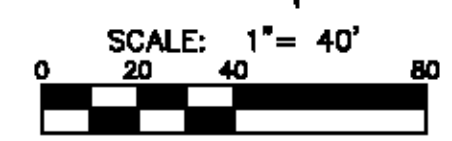
**② CURVE TABLE**  
 $\Delta = 52^\circ 50' 33''$  R = 232.00' T = 115.27' L = 213.97' LC = 206.46'  
 CURVE DATA BASED ON WATERLINE  $\Delta / 2 = 26^\circ 25' 17''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		8'LT Offset	8'RT Offset		
33+07.00	-	-	-	00°00'00"	00°00'00"
33+25.00	18.00'	-	18.62'	02°13'22"	02°13'22"
33+50.00	25.00'	-	25.85'	03°05'13"	05°18'35"
33+75.00	25.00'	-	25.85'	03°05'13"	08°23'48"
34+00.00	25.00'	-	25.85'	03°05'13"	11°29'02"
34+25.00	25.00'	-	25.85'	03°05'13"	14°34'15"
34+50.00	25.00'	-	25.85'	03°05'13"	17°39'29"
34+75.00	25.00'	-	25.85'	03°05'13"	20°44'42"
35+00.00	25.00'	-	25.85'	03°05'13"	23°49'55"
35+20.97	20.97'	-	21.68'	02°35'21"	26°25'17"

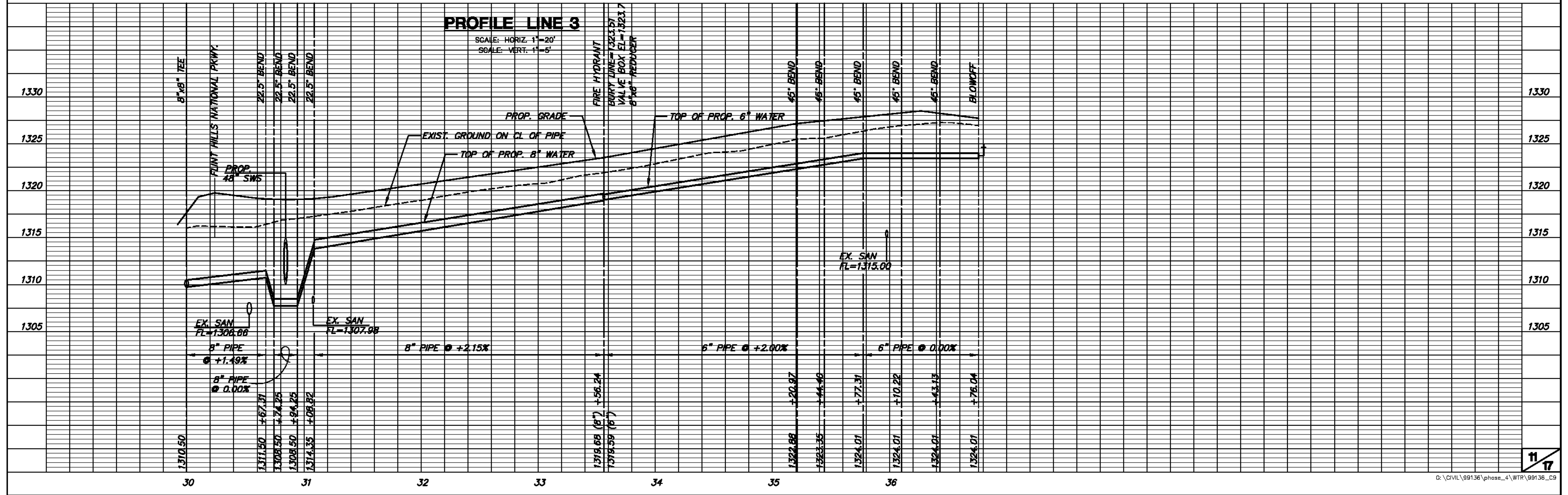
Def/Ft = 7.40894 Min.

Valve Located:  
 • 28' W. and 9' S. of MH  
 • 1.5' E. of House Water Meter

RECORD DRAWING  
 M.T. 1-7-09

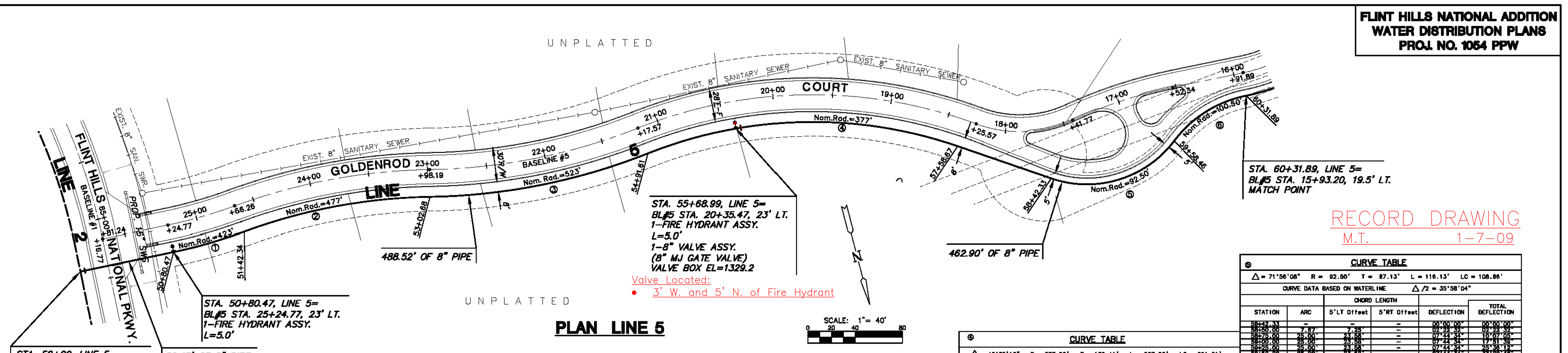


**PLAN LINE 3**





UNPLATTED

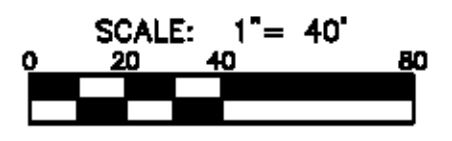


STA. 60+31.89, LINE 5=  
BL#5 STA. 15+93.20, 19.5' LT.  
MATCH POINT

RECORD DRAWING  
M.T. 1-7-09

STA. 55+68.99, LINE 5=  
BL#5 STA. 20+35.47, 23' LT.  
1-FIRE HYDRANT ASSY.  
L=5.0'  
1-8" VALVE ASSY.  
(8" MJ GATE VALVE)  
VALVE BOX EL=1329.2  
Valve Located:  
• 3' W. and 5' N. of Fire Hydrant

**PLAN LINE 5**



**① CURVE TABLE**  
 $\Delta = 08^{\circ}22'50''$  R = 423.00' T = 30.00' L = 81.87' LC = 81.82'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 04^{\circ}11'25''$

STATION		CHORD LENGTH		DEFLECTION		TOTAL DEFLECTION
STATION	ARC	B'LT Offset	B'RT Offset	DEFLECTION	DEFLECTION	DEFLECTION
50+80.47	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00
51+00.00	19'28"34	19'18"	19'18"	01'19'22"	01'19'22"	01'19'22"
51+25.00	39'00"00	38'32"	38'32"	01'41'54"	03'00'57"	03'00'57"
51+42.34	17'00"00	17'01"	17'01"	01'10'28"	04'11'25"	04'11'25"

Def/Ft = 4.08353 Min.

**② CURVE TABLE**  
 $\Delta = 19^{\circ}15'35''$  R = 477.00' T = 80.93' L = 160.34' LC = 159.99'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 09^{\circ}37'48''$

STATION		CHORD LENGTH		DEFLECTION		TOTAL DEFLECTION
STATION	ARC	B'LT Offset	B'RT Offset	DEFLECTION	DEFLECTION	DEFLECTION
51+42.34	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00
51+68.99	07'28"38	07'28"	07'28"	01'30'08"	01'30'08"	01'30'08"
51+75.00	25'00"00	25'00"	25'00"	01'30'08"	03'00'16"	03'00'16"
51+90.00	25'00"00	25'00"	25'00"	01'30'08"	04'30'24"	04'30'24"
52+00.00	25'00"00	25'00"	25'00"	01'30'08"	06'00'32"	06'00'32"
52+15.00	25'00"00	25'00"	25'00"	01'30'08"	07'30'40"	07'30'40"
52+30.00	25'00"00	25'00"	25'00"	01'30'08"	09'00'48"	09'00'48"
52+45.00	25'00"00	25'00"	25'00"	01'30'08"	10'30'56"	10'30'56"
52+60.00	25'00"00	25'00"	25'00"	01'30'08"	12'01'04"	12'01'04"
52+75.00	25'00"00	25'00"	25'00"	01'30'08"	13'31'12"	13'31'12"
52+90.00	25'00"00	25'00"	25'00"	01'30'08"	15'01'20"	15'01'20"
53+00.00	25'00"00	25'00"	25'00"	01'30'08"	16'31'28"	16'31'28"
53+15.00	25'00"00	25'00"	25'00"	01'30'08"	18'01'36"	18'01'36"
53+30.00	25'00"00	25'00"	25'00"	01'30'08"	19'31'44"	19'31'44"
53+45.00	25'00"00	25'00"	25'00"	01'30'08"	21'01'52"	21'01'52"
53+60.00	25'00"00	25'00"	25'00"	01'30'08"	22'32'00"	22'32'00"
53+75.00	25'00"00	25'00"	25'00"	01'30'08"	24'02'08"	24'02'08"
53+90.00	25'00"00	25'00"	25'00"	01'30'08"	25'32'16"	25'32'16"
54+00.00	25'00"00	25'00"	25'00"	01'30'08"	27'02'24"	27'02'24"
54+15.00	25'00"00	25'00"	25'00"	01'30'08"	28'32'32"	28'32'32"
54+30.00	25'00"00	25'00"	25'00"	01'30'08"	30'02'40"	30'02'40"
54+45.00	25'00"00	25'00"	25'00"	01'30'08"	31'32'48"	31'32'48"
54+60.00	25'00"00	25'00"	25'00"	01'30'08"	33'02'56"	33'02'56"
54+75.00	25'00"00	25'00"	25'00"	01'30'08"	34'33'04"	34'33'04"
54+90.00	25'00"00	25'00"	25'00"	01'30'08"	36'03'12"	36'03'12"
55+00.00	25'00"00	25'00"	25'00"	01'30'08"	37'33'20"	37'33'20"
55+15.00	25'00"00	25'00"	25'00"	01'30'08"	39'03'28"	39'03'28"
55+30.00	25'00"00	25'00"	25'00"	01'30'08"	40'33'36"	40'33'36"
55+45.00	25'00"00	25'00"	25'00"	01'30'08"	42'03'44"	42'03'44"
55+60.00	25'00"00	25'00"	25'00"	01'30'08"	43'33'52"	43'33'52"
55+75.00	25'00"00	25'00"	25'00"	01'30'08"	45'04'00"	45'04'00"
55+90.00	25'00"00	25'00"	25'00"	01'30'08"	46'34'08"	46'34'08"
56+00.00	25'00"00	25'00"	25'00"	01'30'08"	48'04'16"	48'04'16"
56+15.00	25'00"00	25'00"	25'00"	01'30'08"	49'34'24"	49'34'24"
56+30.00	25'00"00	25'00"	25'00"	01'30'08"	51'04'32"	51'04'32"
56+45.00	25'00"00	25'00"	25'00"	01'30'08"	52'34'40"	52'34'40"
56+60.00	25'00"00	25'00"	25'00"	01'30'08"	54'04'48"	54'04'48"
56+75.00	25'00"00	25'00"	25'00"	01'30'08"	55'34'56"	55'34'56"
56+90.00	25'00"00	25'00"	25'00"	01'30'08"	57'05'04"	57'05'04"
57+00.00	25'00"00	25'00"	25'00"	01'30'08"	58'35'12"	58'35'12"
57+15.00	25'00"00	25'00"	25'00"	01'30'08"	60'05'20"	60'05'20"
57+30.00	25'00"00	25'00"	25'00"	01'30'08"	61'35'28"	61'35'28"
57+45.00	25'00"00	25'00"	25'00"	01'30'08"	63'05'36"	63'05'36"
57+60.00	25'00"00	25'00"	25'00"	01'30'08"	64'35'44"	64'35'44"
57+75.00	25'00"00	25'00"	25'00"	01'30'08"	66'05'52"	66'05'52"
57+90.00	25'00"00	25'00"	25'00"	01'30'08"	67'36'00"	67'36'00"
58+00.00	25'00"00	25'00"	25'00"	01'30'08"	69'06'08"	69'06'08"
58+15.00	25'00"00	25'00"	25'00"	01'30'08"	70'36'16"	70'36'16"
58+30.00	25'00"00	25'00"	25'00"	01'30'08"	72'06'24"	72'06'24"
58+45.00	25'00"00	25'00"	25'00"	01'30'08"	73'36'32"	73'36'32"
58+60.00	25'00"00	25'00"	25'00"	01'30'08"	75'06'40"	75'06'40"
58+75.00	25'00"00	25'00"	25'00"	01'30'08"	76'36'48"	76'36'48"
58+90.00	25'00"00	25'00"	25'00"	01'30'08"	78'06'56"	78'06'56"
59+00.00	25'00"00	25'00"	25'00"	01'30'08"	79'37'04"	79'37'04"
59+15.00	25'00"00	25'00"	25'00"	01'30'08"	81'07'12"	81'07'12"
59+30.00	25'00"00	25'00"	25'00"	01'30'08"	82'37'20"	82'37'20"
59+45.00	25'00"00	25'00"	25'00"	01'30'08"	84'07'28"	84'07'28"
59+60.00	25'00"00	25'00"	25'00"	01'30'08"	85'37'36"	85'37'36"
59+75.00	25'00"00	25'00"	25'00"	01'30'08"	87'07'44"	87'07'44"
59+90.00	25'00"00	25'00"	25'00"	01'30'08"	88'37'52"	88'37'52"
60+00.00	25'00"00	25'00"	25'00"	01'30'08"	90'08'00"	90'08'00"

Def/Ft = 3.60351 Min.

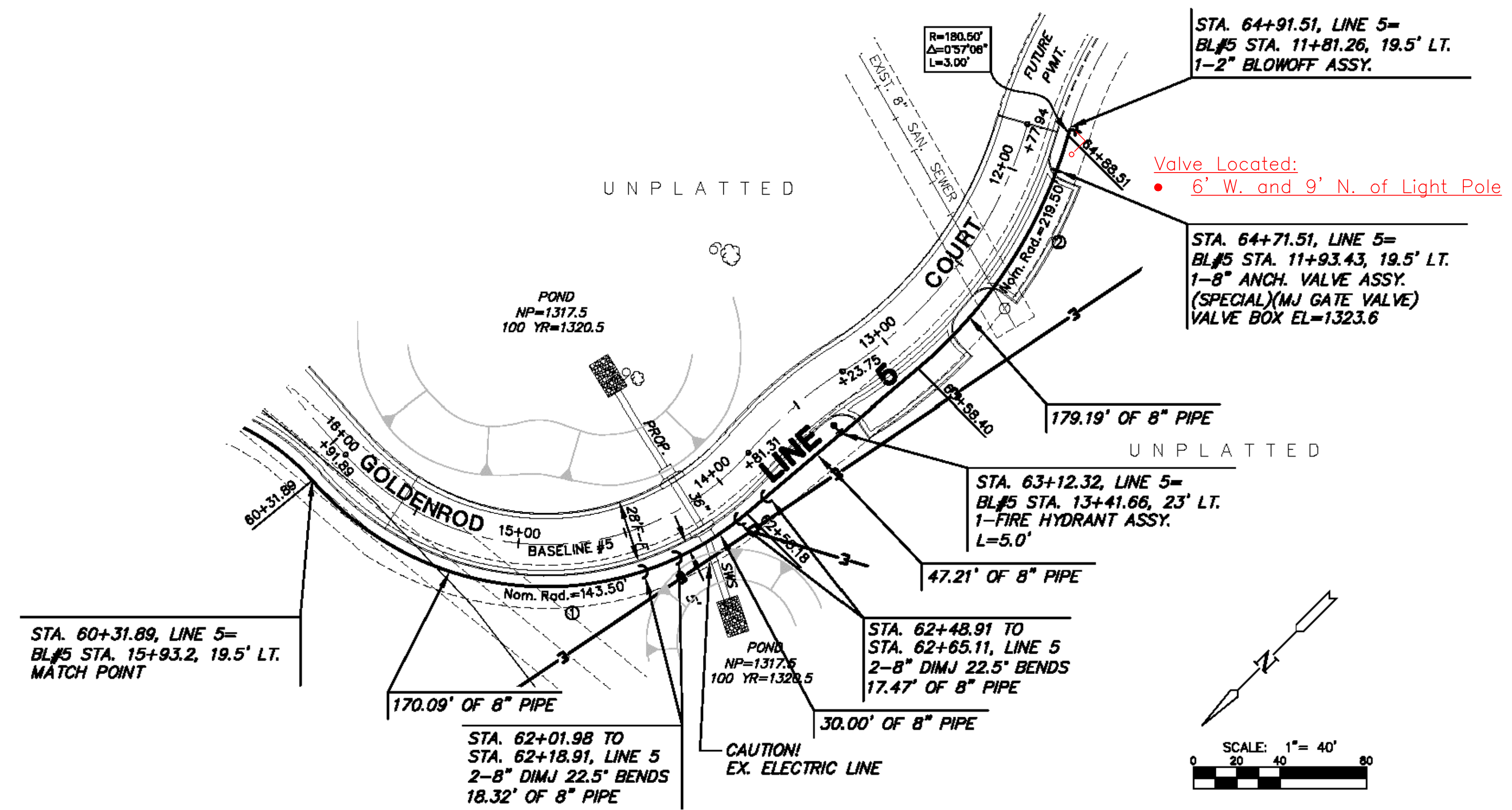
**③ CURVE TABLE**  
 $\Delta = 20^{\circ}41'50''$  R = 523.00' T = 95.50' L = 186.93' LC = 187.90'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 10^{\circ}20'55''$

STATION		CHORD LENGTH		DEFLECTION		TOTAL DEFLECTION
STATION	ARC	B'LT Offset	B'RT Offset	DEFLECTION	DEFLECTION	DEFLECTION
53+00.00	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00
53+26.88	21'32"21	21'32"	21'32"	01'13'21"	01'13'21"	01'13'21"
53+50.00	25'00"00	25'00"	25'00"	01'22'10"	02'35'31"	02'35'31"
53+75.00	25'00"00	25'00"	25'00"	01'22'10"	03'57'41"	03'57'41"
54+00.00	25'00"00	25'00"	25'00"	01'22'10"	05'19'51"	05'19'51"
54+25.00	25'00"00	25'00"	25'00"	01'22'10"	06'42'01"	06'42'01"
54+50.00	25'00"00	25'00"	25'00"	01'22'10"	08'04'11"	08'04'11"
54+75.00	25'00"00	25'00"	25'00"	01'22'10"	09'26'21"	09'26'21"
55+00.00	25'00"00	25'00"	25'00"	01'22'10"	10'48'31"	10'48'31"
55+25.00	25'00"00	25'00"	25'00"	01'22'10"	12'10'41"	12'10'41"
55+50.00	25'00"00	25'00"	25'00"	01'22'10"	13'32'51"	13'32'51"
55+75.00	25'00"00	25'00"	25'00"	01'22'10"	14'55'01"	14'55'01"
56+00.00	25'00"00	25'00"	25'00"	01'22'10"	16'17'11"	16'17'11"
56+25.00	25'00"00	25'00"	25'00"	01'22'10"	17'39'21"	17'39'21"
56+50.00	25'00"00	25'00"	25'00"	01'22'10"	19'01'31"	19'01'31"
56+75.00	25'00"00	25'00"	25'00"	01'22'10"	20'23'41"	20'23'41"
57+00.00	25'00"00	25'00"	25'00"	01'22'10"	21'45'51"	21'45'51"
57+25.00	25'00"00	25'00"	25'00"	01'22'10"	23'08'01"	23'08'01"
57+50.00	25'00"00	25'00"	25'00"	01'22'10"	24'30'11"	24'30'11"
57+75.00	25'00"00	25'00"	25'00"	01'22'10"	25'52'21"	25'52'21"
58+00.00	25'00"00	25'00"	25'00"	01'22'10"	27'14'31"	27'14'31"
58+25.00	25'00"00	25'00"	25'00"	01'22'10"	28'36'41"	28'36'41"
58+50.00	25'00"00	25'00"	25'00"	01'22'10"	29'58'51"	29'58'51"
58+75.00	25'00"00	25'00"	25'00"	01'22'10"	31'21'01"	31'21'01"
59+00.00	25'00"00	25'00"	25'00"	01'22'10"	32'43'11"	32'43'11"
59+25.00	25'00"00	25'00"	25'00"	01'22'10"	34'05'21"	34'05'21"
59+50.00	25'00"00	25'00"	25'00"	01'22'10"	35'27'31"	35'27'31"
59+75.00	25'00"00	25'00"	25'00"	01'22'10"	36'49'41"	36'49'41"
60+00.00	25'00"00	25'00"	25'00"	01'22'10"	38'11'51"	38'11'51"

Def/Ft = 3.28636 Min.

**④ CURVE TABLE**  
 $\Delta = 40^{\circ}35'16''$  R = 377.00' T = 139.41' L = 287.06' LC = 281.51'  
 CURVE DATA BASED ON WATERLINE  $\Delta/2 = 20^{\circ}17'38''$

STATION		CHORD LENGTH		DEFLECTION		TOTAL DEFLECTION
STATION	ARC	B'LT Offset	B'RT Offset	DEFLECTION	DEFLECTION	DEFLECTION
54+81.81	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00	00'00"00
55+00.00	8'36"	8'36"	8'36"	01'53'58"	01'53'58"	01'53'58"
55+25.00	25'00"00	25'00"	25'00"	01'53'58"	03'47'56"	03'47'56"
55+50.00	25'00"00	25'00"	25'00"	01'53'58"	05'41'54"	05'41'54"
55+75.00	25'00"00	25'00"	25'00"	01'53'58"	07'35'52"	07'35'52"
56+00.00	25'00"00	25'00"	25'00"	01'53'58"	09'29'50"	09'29'50"
56+25.00	25'00"00	25'00"	25'00"	01'53'58"	11'23'48"	11'23'48"
56+50.00	25'00"00	25'00"	25'00"	01'53'58"	13'17'46"	13'17'46"
56+75.00	25'00"00	25'00"	25'00"	01'53'58"	15'11'44"	15'11'44"
57+00.00	25'00"00	25'00"	25'00"	01'53'58"	17'05'42"	17'05'42"
57+25.00	25'00"00	25'00"	25'00"	01'53'58"	18'59'40"	18'59'40"
57+50.00	25'00"00	25'00"	25'00"	01'53'58"	20'53'38"	20'53'38"
57+75.00	25'00"00	25'00"				



**① CURVE TABLE**

$\Delta = 89^{\circ}08'31''$  R = 143.50' T = 141.37' L = 223.26' LC = 201.41'

CURVE DATA BASED ON WATERLINE  $\Delta / 2 = 44^{\circ}34'16''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		5'LT Offset	5'RT Offset		
60+31.89	-	-	-	00°00'00"	00°00'00"
60+50.00	18.11'	17.47'	-	03°36'56"	03°36'56"
60+75.00	25.00'	24.10'	-	04°59'27"	08°36'23"
61+00.00	25.00'	24.10'	-	04°59'27"	13°35'50"
61+25.00	25.00'	24.10'	-	04°59'27"	18°35'17"
61+50.00	25.00'	24.10'	-	04°59'27"	23°34'45"
61+75.00	25.00'	24.10'	-	04°59'27"	28°34'12"
62+00.00	25.00'	24.10'	-	04°59'27"	33°33'39"
62+25.00	25.00'	24.10'	-	04°59'27"	38°33'07"
62+50.00	25.00'	24.10'	-	04°59'27"	43°32'34"
62+55.18	5.18'	4.97'	-	01°01'41"	44°34'15"

Def/Ft = 11.97821 Min.

**② CURVE TABLE**

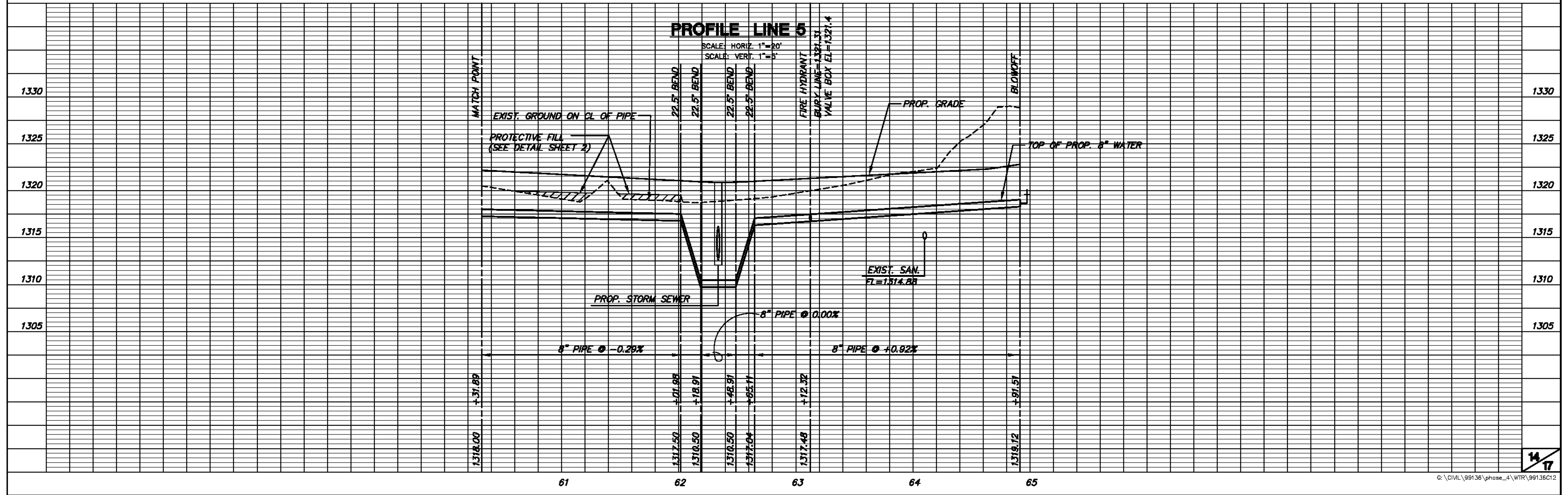
$\Delta = 33^{\circ}57'41''$  R = 219.50' T = 67.03' L = 130.11' LC = 128.21'

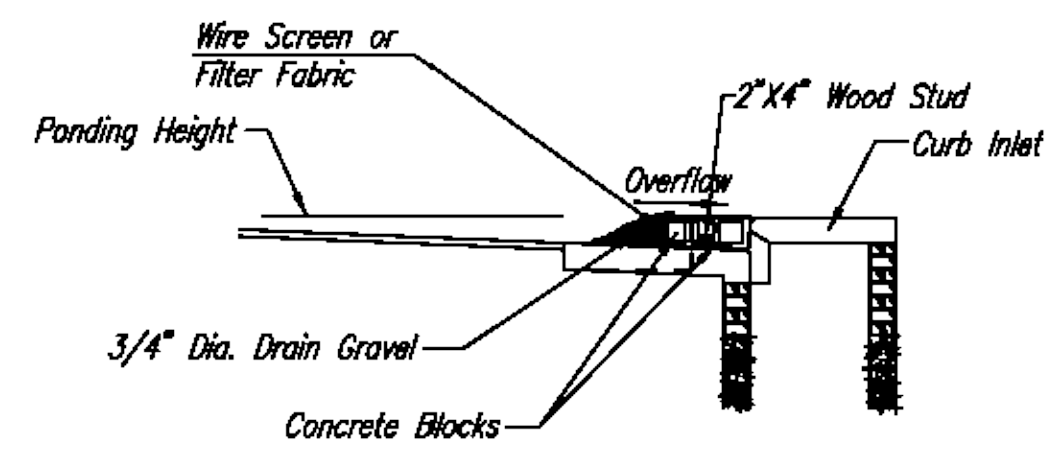
CURVE DATA BASED ON WATERLINE  $\Delta / 2 = 16^{\circ}58'51''$

STATION	ARC	CHORD LENGTH		DEFLECTION	TOTAL DEFLECTION
		5'LT Offset	5'RT Offset		
63+58.40	-	-	-	00°00'00"	00°00'00"
63+75.00	16.60'	16.22'	-	02°10'00"	02°10'00"
64+00.00	25.00'	24.42'	-	03°15'48"	05°25'48"
64+25.00	25.00'	24.42'	-	03°15'48"	08°41'32"
64+50.00	25.00'	24.42'	-	03°15'48"	11°57'18"
64+75.00	25.00'	24.42'	-	03°15'48"	15°13'05"
64+88.51	13.51'	13.20'	-	01°45'48"	16°58'51"

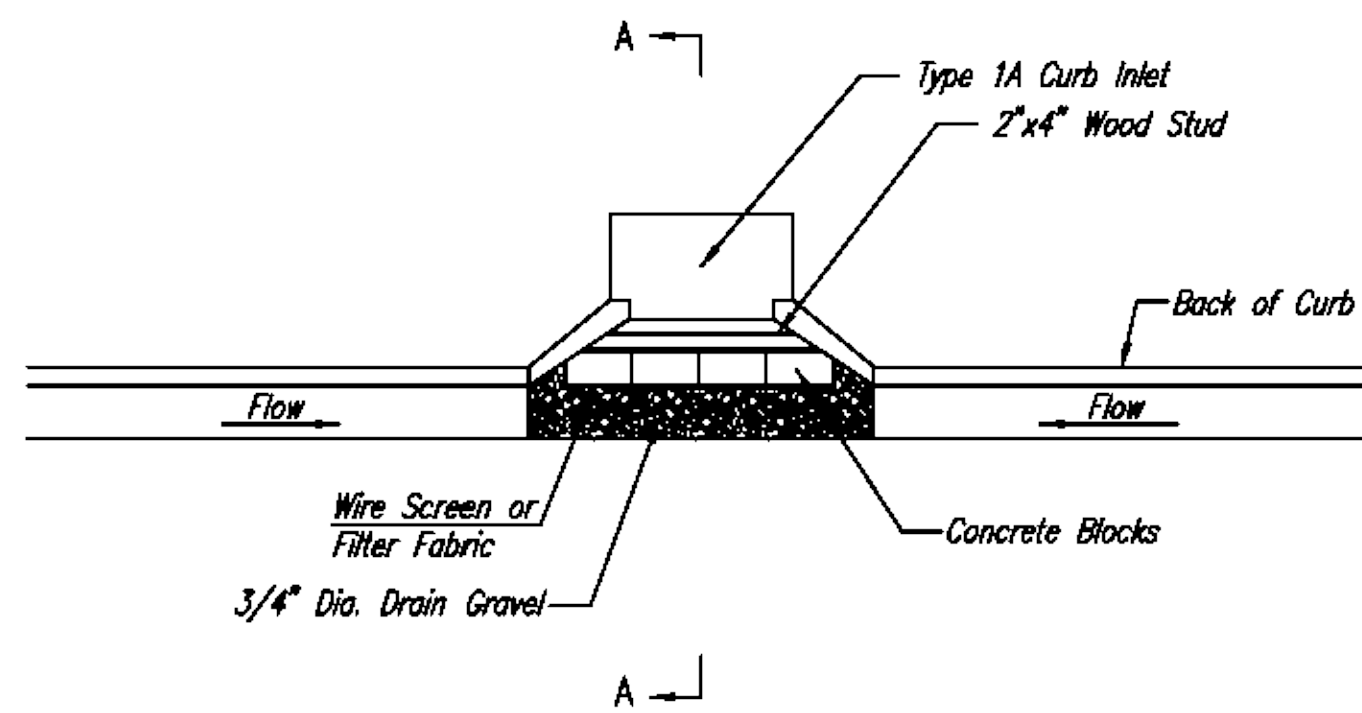
Def/Ft = 7.83086 Min.

RECORD DRAWING  
M.T. 1-7-09





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.

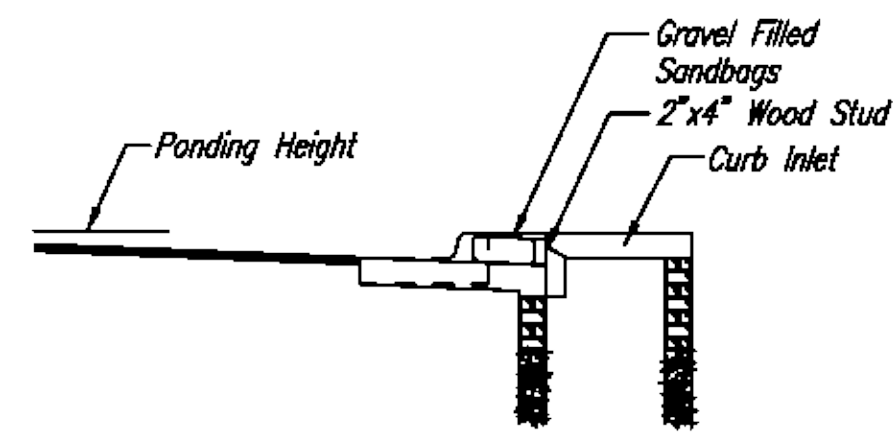
**Instructions for Installing:**

- 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.

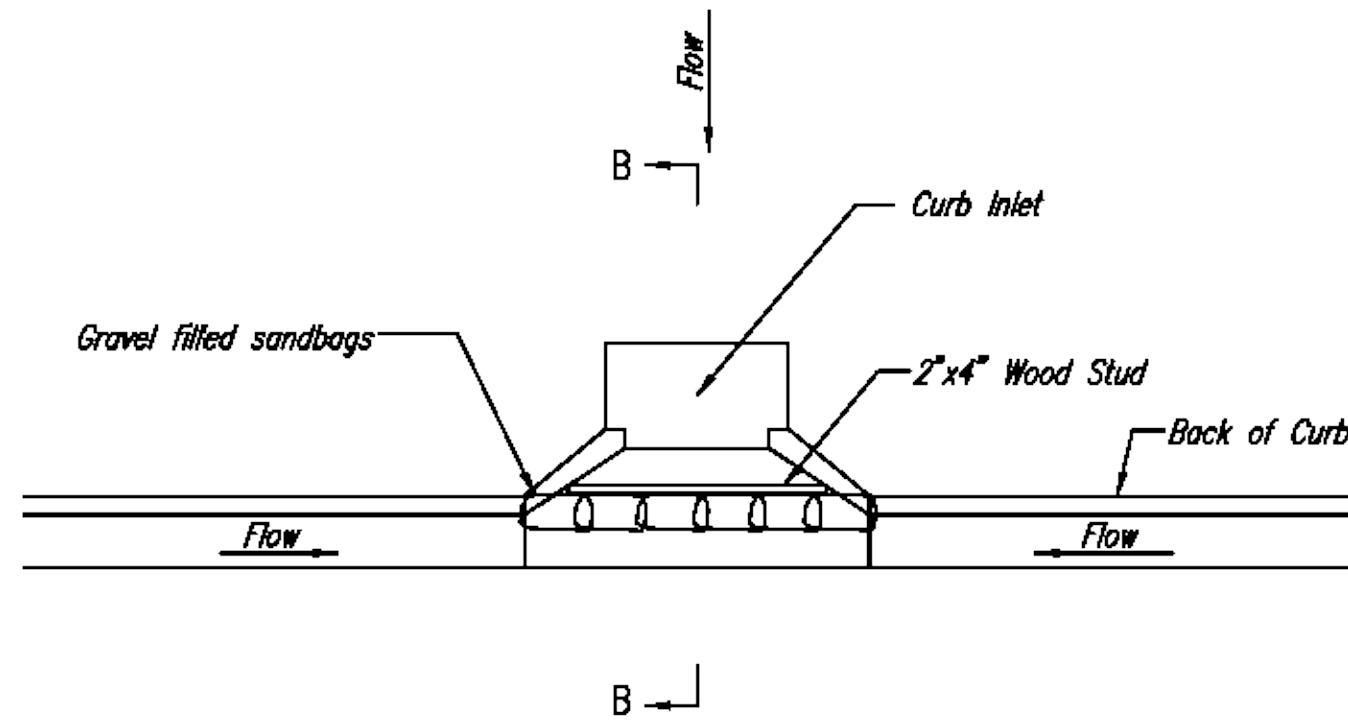
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

**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.

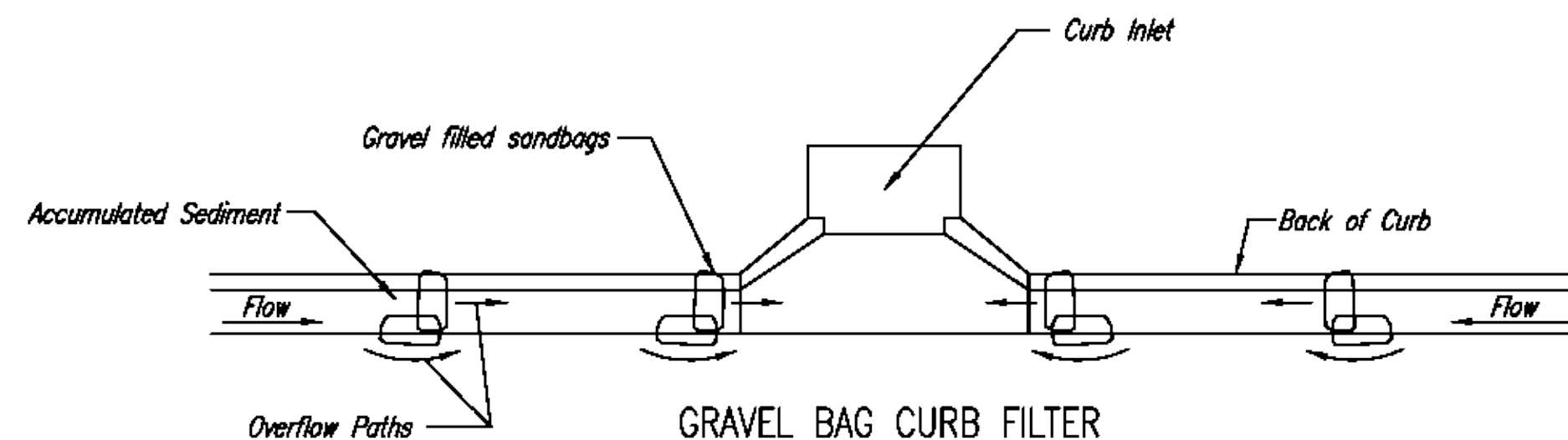


SECTION B-B



**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.

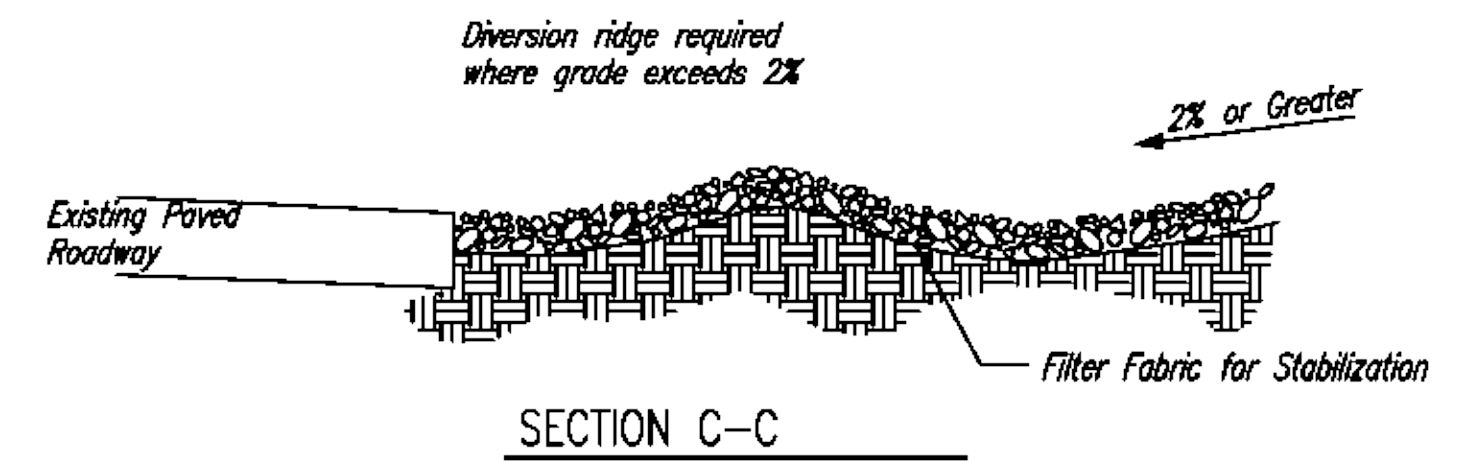
**Spacing:**

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

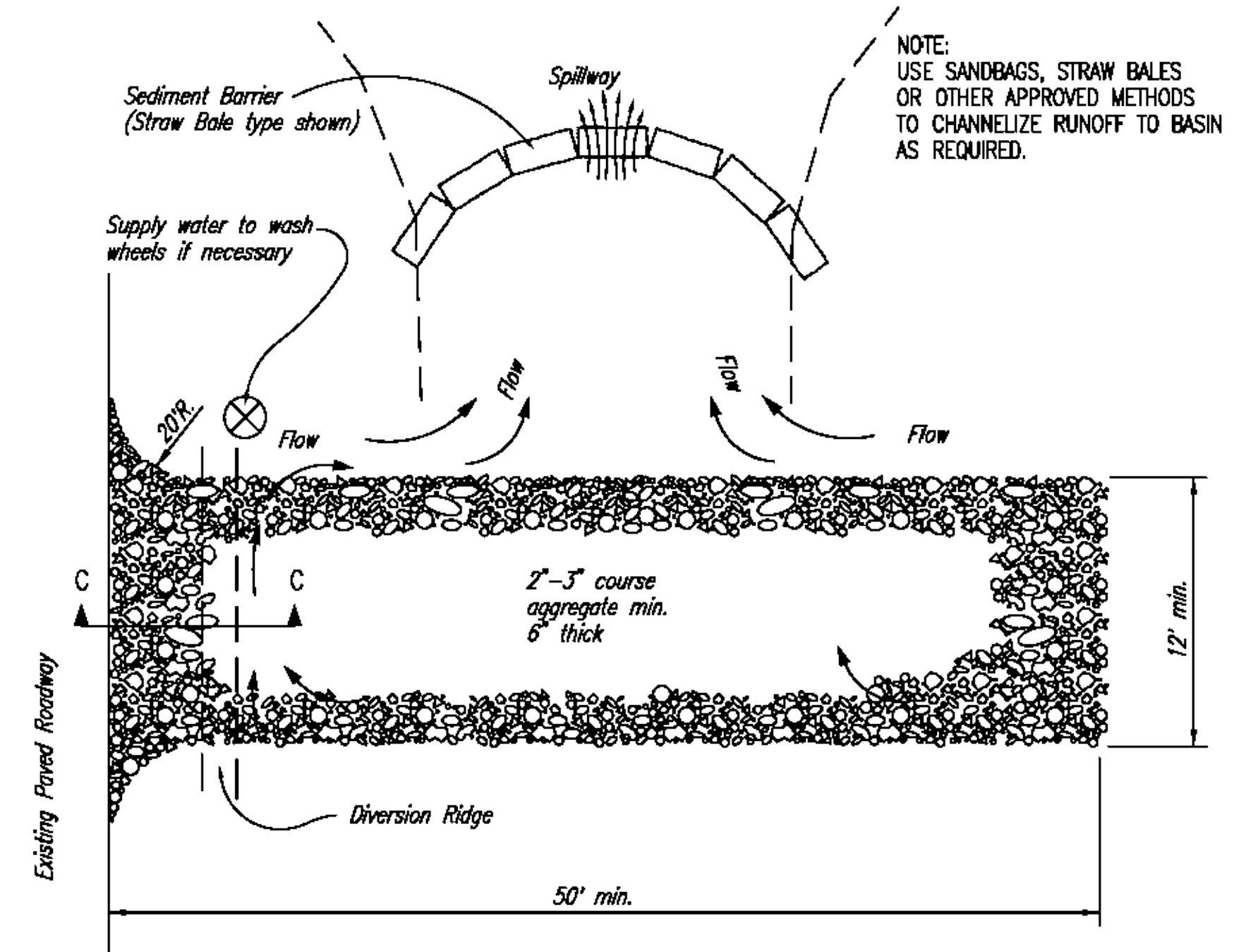
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

**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 STABILIZED 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.

RECORD DRAWING  
M.T. 1-7-09



**CITY OF WICHITA**

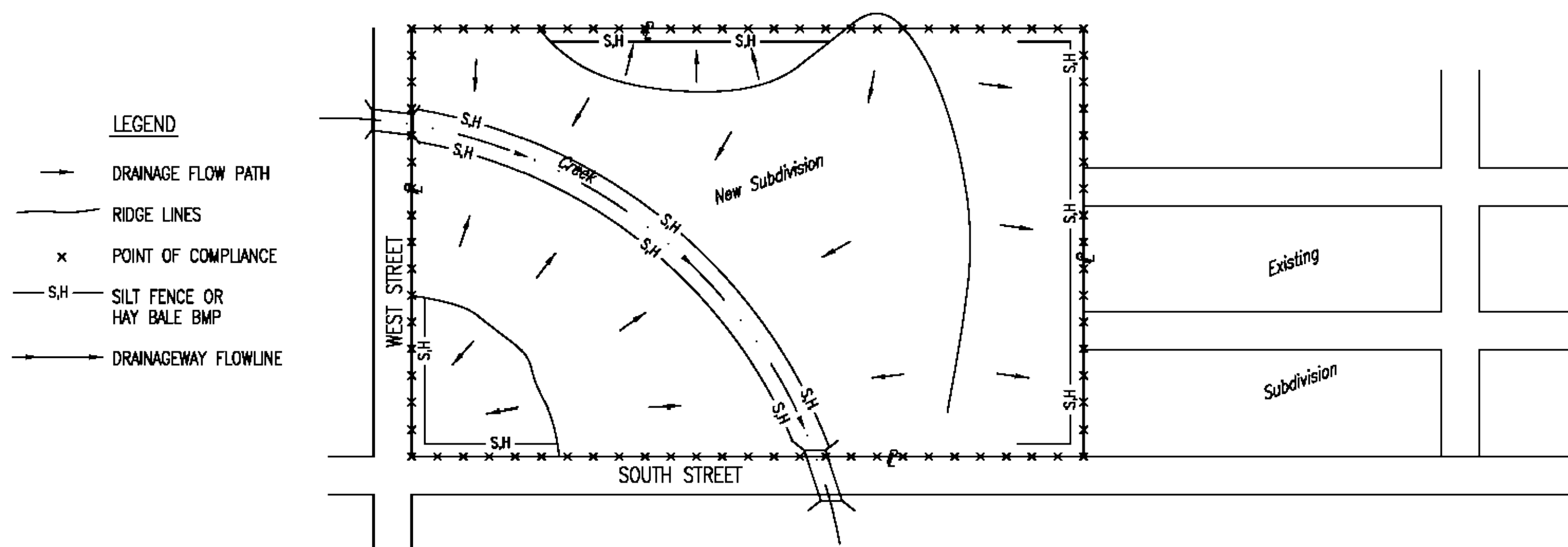
**SOIL EROSION  
BMP DETAILS**

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

PROJECT NUMBER: 1054 PPW    OCA NO.: 607853

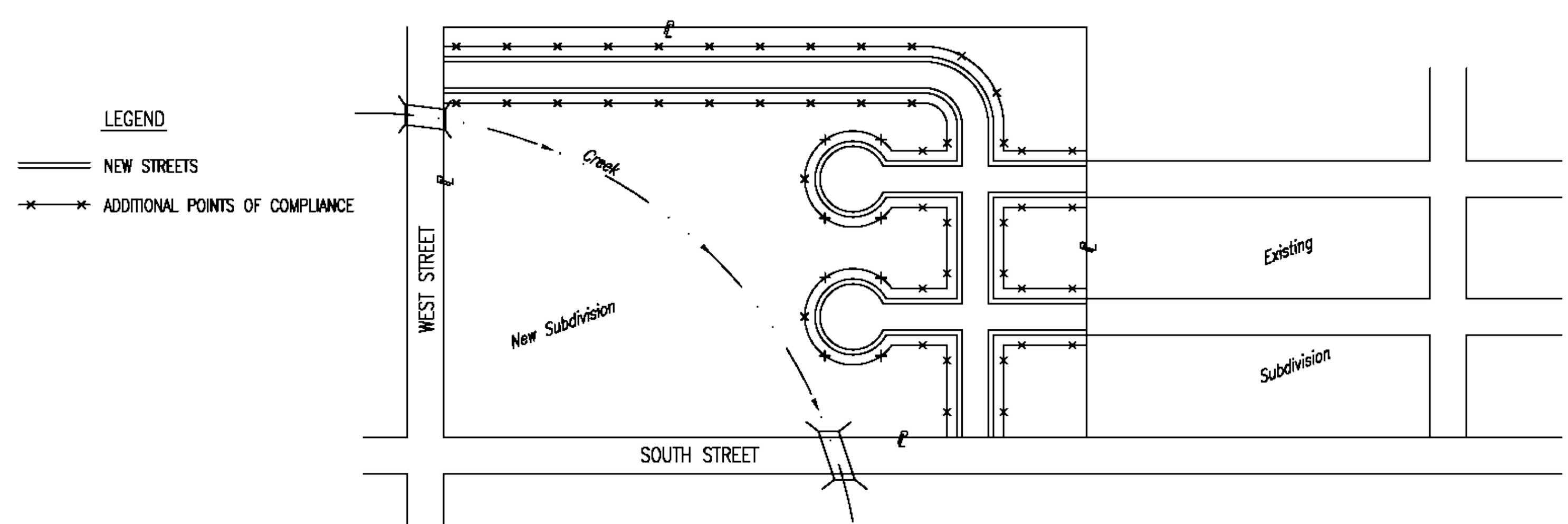
DATE: JUL 2004    SHEET 15 OF 17

PHASE 1 - INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



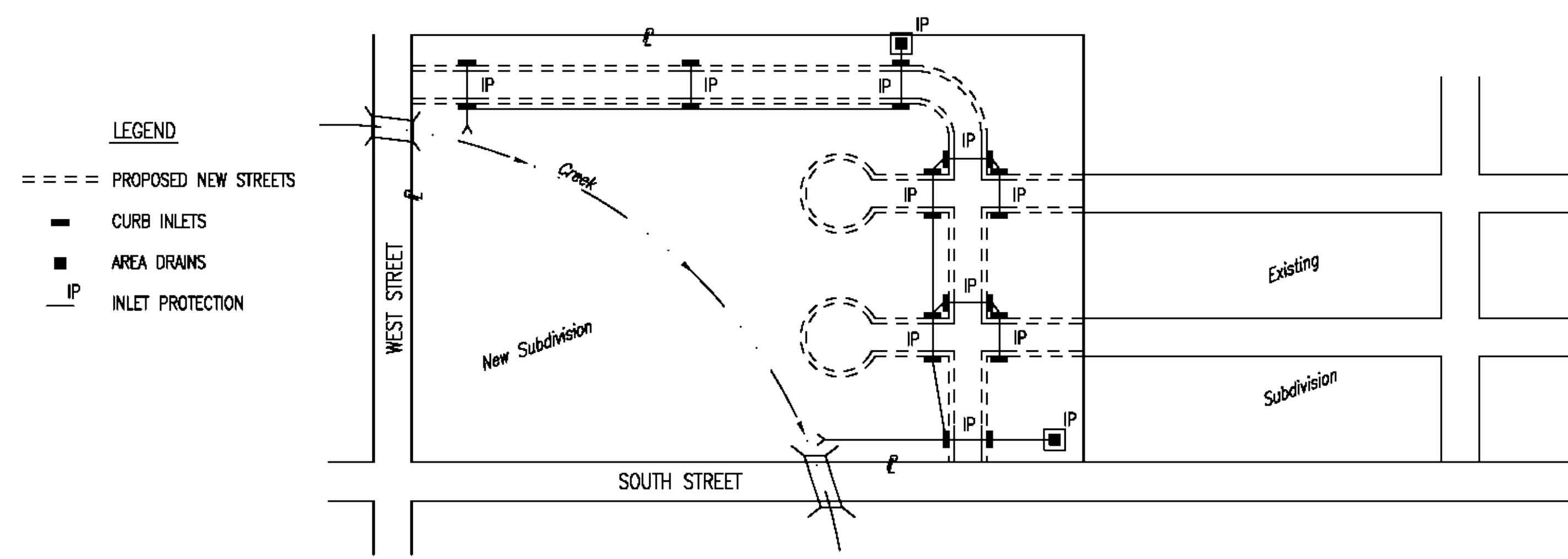
- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
- HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
- SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
- ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
- CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
- UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
- THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.

PHASE 3 - STREET CONSTRUCTION



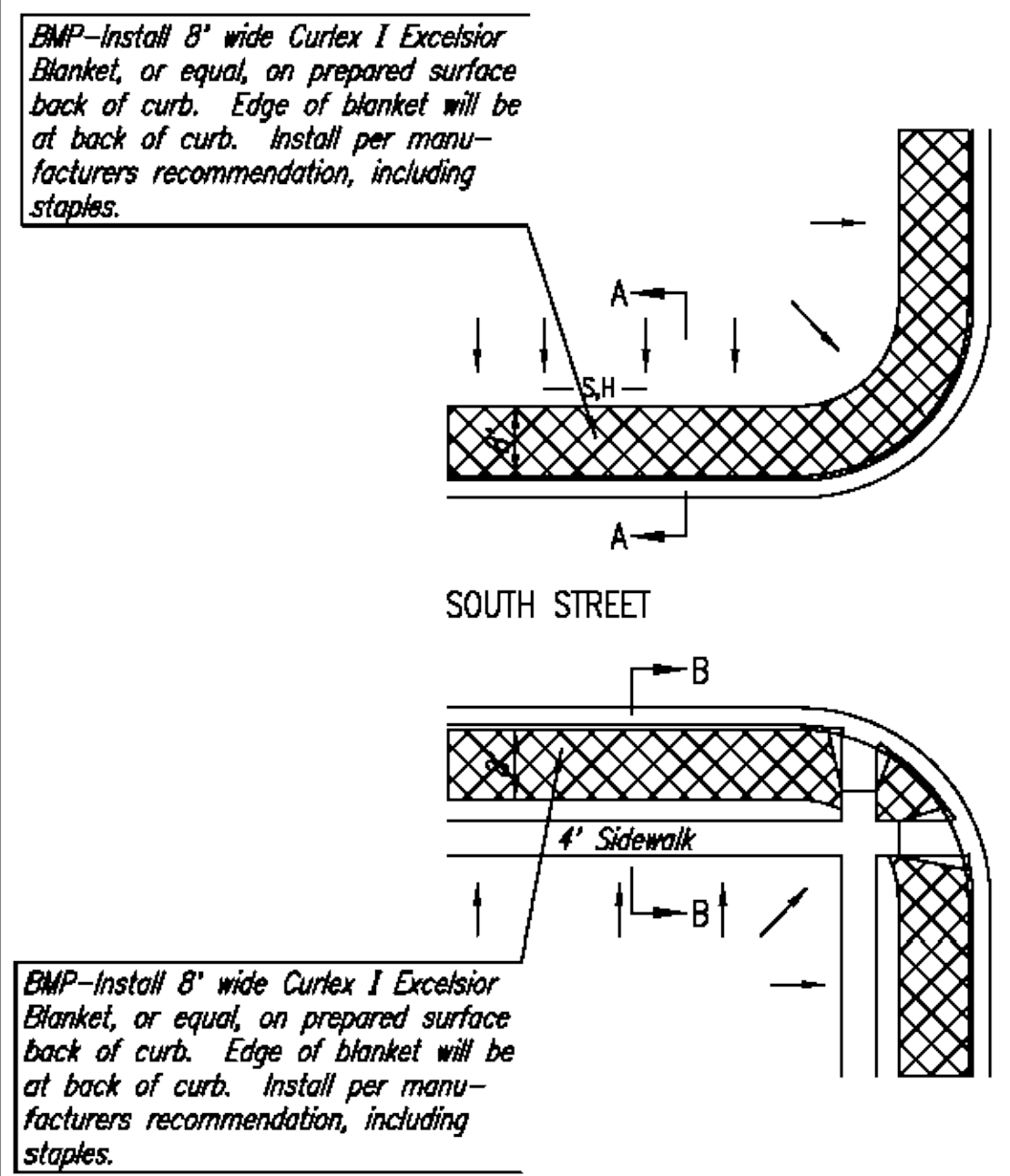
- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
- CURB OPENING INLET PROTECTION:
  - SUMP AREAS - INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
  - NON-SUMP LOCATIONS - PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
- BMP'S WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), BMP'S WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
- SEE DETAIL THIS SHEET ON BACK OF CURB PROTECTION.
- THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAYBALE OR SILT FENCE BMP'S AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
- THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB BMP'S.
- THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB BMP'S IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

PHASE 2 - INSTALLATION OF STORM SEWER

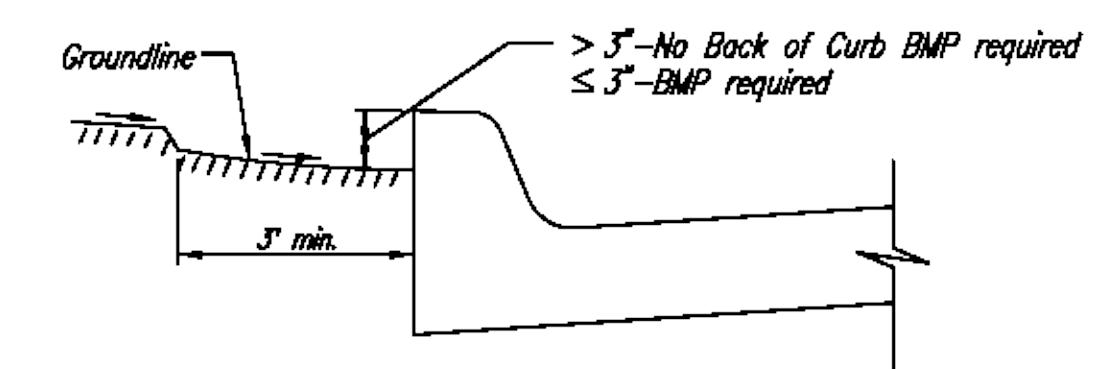


- DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
- AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
- AREA DRAINS - AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAYBALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
- CURB OPENING INLETS - AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION BMP'S MUST BE INSTALLED. SEE PHASE 3 - STREET CONSTRUCTION.
- THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE BMP'S. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION.
- THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE BMP'S ONCE INSTALLED.
- ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

RECORD DRAWING  
M.T. 1-7-09



BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL

- GENERAL NOTES:
- THE INTENT OF ALL BEST MANAGEMENT PRACTICES (B.M.P.'S) IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, OR ANY OTHER DRAINAGE FEATURE.
  - THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
  - BMP'S SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON THE BMP DETAIL SHEETS.
  - PERSONS DESTROYING BMP'S SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT BMP'S.
  - THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 5 ACRES OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL BMP'S ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLAN.
  - FOR SUBDIVISIONS SMALLER THAN 5 ACRES, SOIL EROSION BMP'S ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
  - FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
  - 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 THAT SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
  - A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

		<b>SOIL EROSION BMP'S SUBDIVISION DEVELOPMENT PROCESS</b>	
		CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
PROJECT NUMBER	1054 PPW	OGA NO.	607853
DATE	JUL 2004	SHEET 16 OF 17	

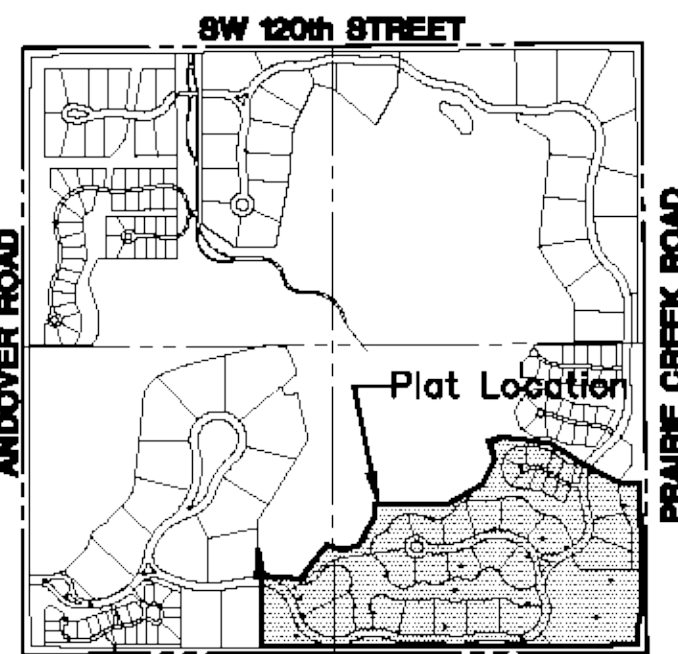
G:\CIVIL\99\38\PHASE-1\WTR\BMP-2

FINAL P.U.D. PHASE 4

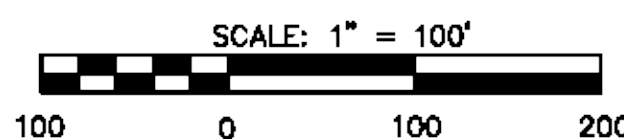
# FLINT HILLS NATIONAL ADDITION

A PORTION OF THE SOUTH HALF OF SECTION 5, TOWNSHIP 28 SOUTH, RANGE 3 EAST, 6TH. P.M.  
AN ADDITION TO THE CITY OF ANDOVER, BUTLER COUNTY, KANSAS

CURVE TABLE			
CURVE	DELTA	LENGTH	RADIUS
C1	9°52'43"	83.71'	485.50'
C2	23°16'12"	148.04'	364.50'
C3	141°12'42"	4.93'	2.00'
C4	39°25'42"	164.81'	239.50'
C5	134°58'56"	4.71'	2.00'
C6	11°29'33"	39.01'	194.50'
C7	20°28'36"	137.77'	385.50'
C8	22°02'22"	63.28'	164.50'
C9	149°40'52"	5.22'	2.00'



VICINITY MAP  
NOT TO SCALE



**BENCH MARKS**

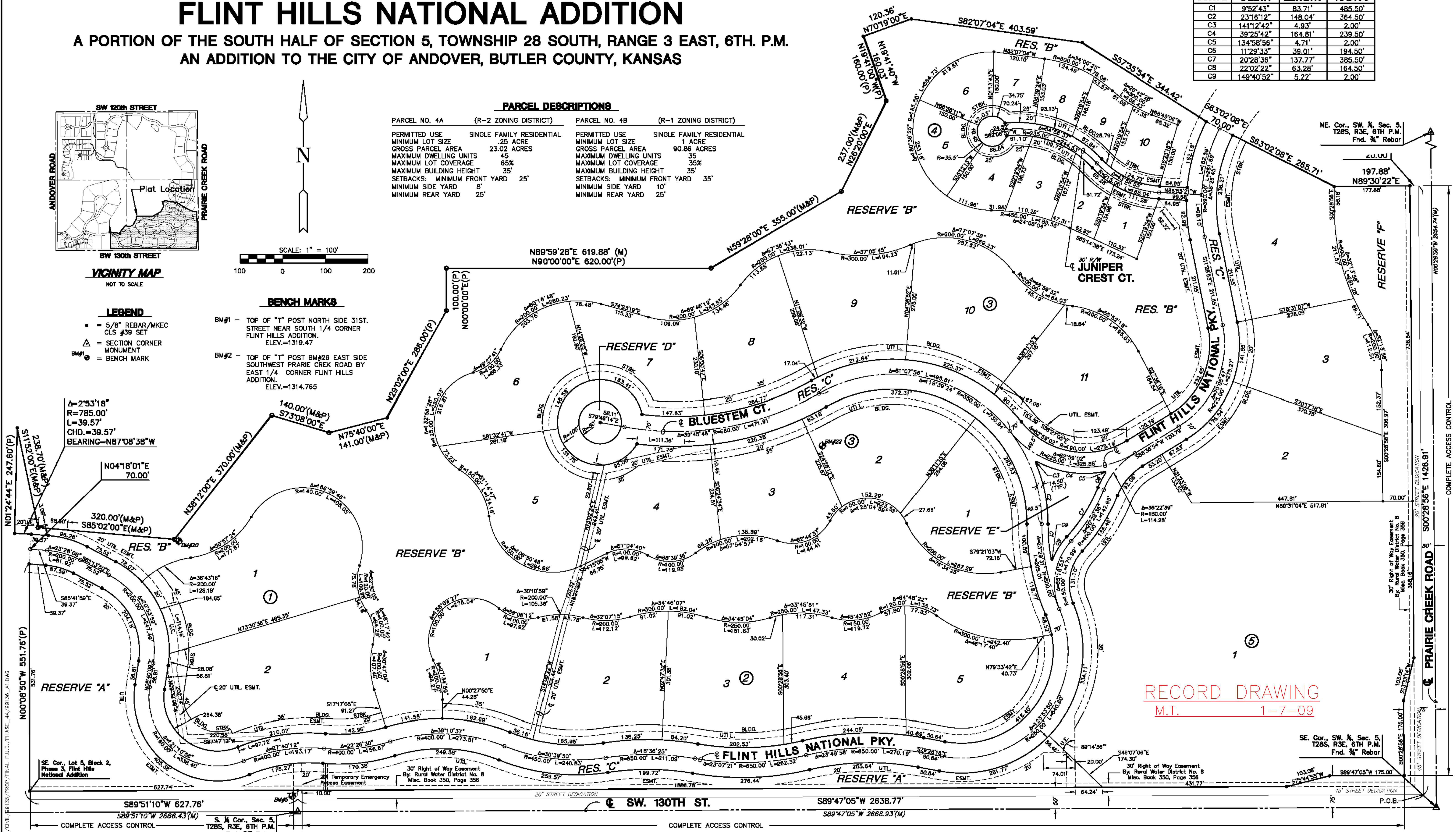
- BM#1 - TOP OF "T" POST NORTH SIDE 31ST. STREET NEAR SOUTH 1/4 CORNER FLINT HILLS ADDITION. ELEV.=1319.47
- BM#2 - TOP OF "T" POST BM#26 EAST SIDE SOUTHWEST PRAIRIE CREEK ROAD BY EAST 1/4 CORNER FLINT HILLS ADDITION. ELEV.=1314.765

**LEGEND**

- = 5/8" REBAR/MKEC CLS #39 SET
- △ = SECTION CORNER MONUMENT
- BM# = BENCH MARK

**PARCEL DESCRIPTIONS**

PARCEL NO. 4A	(R-2 ZONING DISTRICT)	PARCEL NO. 4B	(R-1 ZONING DISTRICT)
PERMITTED USE	SINGLE FAMILY RESIDENTIAL	PERMITTED USE	SINGLE FAMILY RESIDENTIAL
MINIMUM LOT SIZE	.25 ACRE	MINIMUM LOT SIZE	1 ACRE
GROSS PARCEL AREA	23.02 ACRES	GROSS PARCEL AREA	90.86 ACRES
MAXIMUM DWELLING UNITS	45	MAXIMUM DWELLING UNITS	35
MAXIMUM LOT COVERAGE	65%	MAXIMUM LOT COVERAGE	35%
MAXIMUM BUILDING HEIGHT	35'	MAXIMUM BUILDING HEIGHT	35'
SETBACKS: MINIMUM FRONT YARD	25'	SETBACKS: MINIMUM FRONT YARD	35'
MINIMUM SIDE YARD	8'	MINIMUM SIDE YARD	10'
MINIMUM REAR YARD	25'	MINIMUM REAR YARD	25'



RECORD DRAWING  
M.T. 1-7-09

SE. Cor., SW. 1/4, Sec. 5,  
T28S, R3E, 6TH P.M.  
Fnd. 3/4" Rebar

COMPLETE ACCESS CONTROL

30' STREET DEDICATION  
30' STREET DEDICATION  
30' STREET DEDICATION

P.O.B.