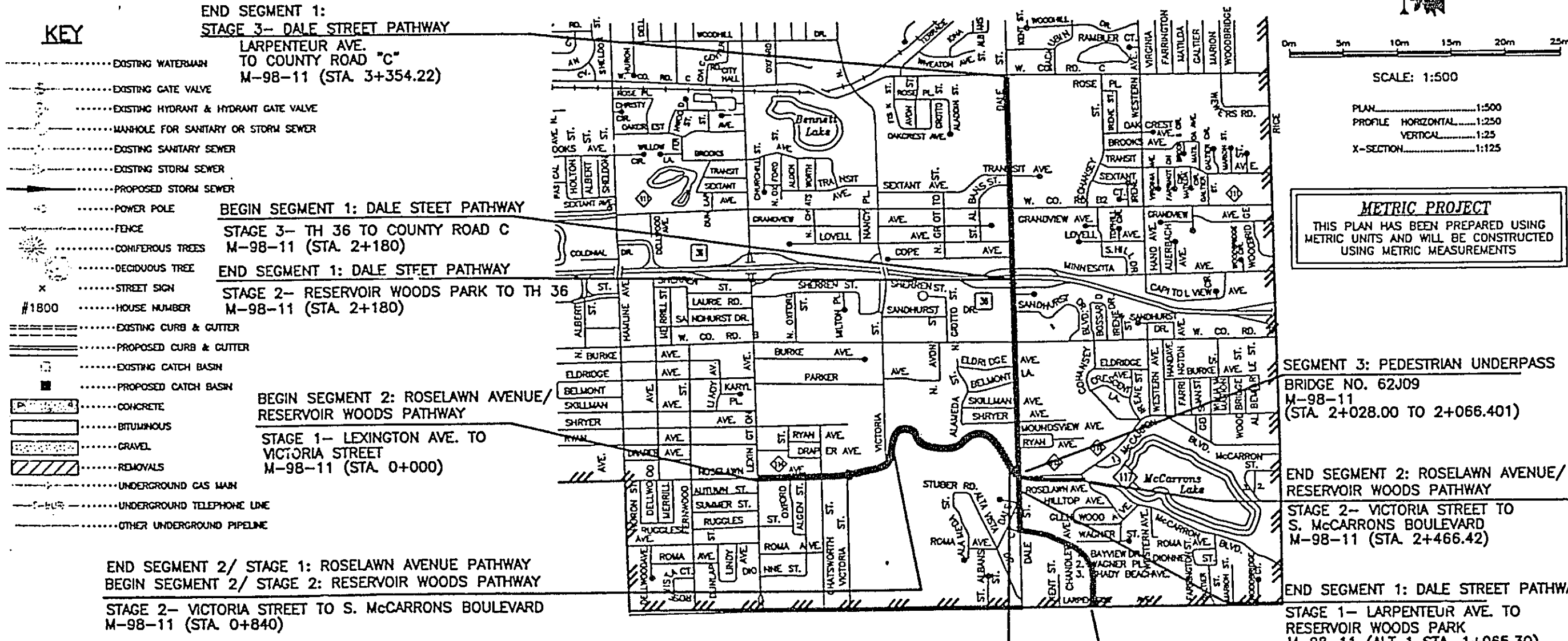


MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF ROSEVILLE, MINNESOTA

CITY PROJECT 98-11: DALE STREET/ ROSELAWN AVE/ RESERVOIR WOODS PATHWAY
2000 CONTRACT A

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, BITUMINOUS SURFACING, STORM SEWER, LANDSCAPING FOR PATHWAYS

LOCATED ON: DALE STREET BETWEEN LARPEUR AVENUE AND COUNTY ROAD "C" (Geographic Description)
LOCATED ON: ROSELAWN AVENUE BETWEEN LEXINGTON AVENUE AND VICTORIA STREET (Geographic Description)
LOCATED ON: RESERVOIR WOODS PARK BETWEEN VICTORIA STREET AND SO. MCCARRONS BLVD. (Geographic Description)



STATE PROJECT 160-090-05
SEGMENT 1: DALE STREET PATHWAY
STAGE 1 - LARPEUR AVE. TO RESERVOIR WOODS PARK
GROSS LENGTH 1065.30 m 1.065 km
BRIDGES - LENGTH 0.000 m 0.000 km
EXCEPTIONS - LENGTH 0.000 m 0.000 km
NET LENGTH 1065.30 m 1.065 km

STATE PROJECT 160-090-05
SEGMENT 2: ROSELAWN AVENUE PATHWAY
STAGES 2 & 3 - (RESERVOIR WOODS PARK TO COUNTY ROAD C)
GROSS LENGTH 2364.22 m 2.364 km
BRIDGES - LENGTH 0.000 m 0.000 km
EXCEPTIONS - LENGTH 0.000 m 0.000 km
NET LENGTH 2364.22 m 2.364 km

CITY OF ROSEVILLE ENGINEERING DEPT., 2660 CMC CENTER DRIVE, ROSEVILLE, MINNESOTA 55113, (651) 490-2226 SP. NO. 160-090-05

MINNESOTA PROJ. NO. TEA 6200 (248)

GOVERNING SPECIFICATIONS

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION
ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH DURING CONSTRUCTION OF THIS PROJECT
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL, ZONE LAYOUTS JAN 1998

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97	DALE STREET PATHWAY, CROSS SECTIONS
98	ROSELAWN/RESERVOIR WOODS PATHWAY, CROSS SECTIONS
99	DALE STREET PATHWAY ALT. 1, CROSS SECTIONS
100	DALE STREET PATHWAY, CROSS SECTIONS

THIS PLAN CONTAINS 120 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 11/15/99 REC. NO. 26429

CITY OF ROSEVILLE PUBLIC WORKS DIRECTOR

APPROVED

REVIEWED FOR COMPLIANCE WITH STATE AID RULES/ POLICY

RECOMMENDED FOR APPROVAL

APPROVED FOR STATE AID FUNDING

SHEET 1 OF 120 SHEET

STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT		FEDERAL PARTICIPATING				CITY OF ROSEVILLE NON-PARTICIPATING
					ESTIMATED	FINAL	DALE STREET PATHWAY*	ROSELAWN AVENUE PATHWAY	BOX CULVERT UNDERPASS	STORM SEWER	
B		2021.501	MOBILIZATION	LS	3						
B		2101.501	CLEARING	ha	1.016		1	1	1		
B		2101.502	CLEARING	EACH	61		0.500	0.516			
B		2101.503	GRUBBING	ha	1.016		0.500	0.516	16		
B		2101.507	GRUBBING	EACH	61		44	1	16		
B		2101.610	TREE TRIMMING	EACH	35		19	16			
		2103.601	BUILDING REMOVAL (GARAGE)	EACH	1						
		2104.501	REMOVE BITUMINOUS CURB	m	156.0		156.0				
		2104.501	REMOVE CONCRETE CURB & GUTTER	m	126.0		126.0				
		2104.501	REMOVE RAILROAD TIES	m	156.0		156.0				
		2104.501	REMOVE WATER MAIN	m	56.0		56.0				
		2104.501	REMOVE METAL CULVERT (CMP)	m	135.0		135.0				
		2104.501	REMOVE WIRE FENCE	m	33.0		66.0	69.0			
		2104.514	REMOVE CHAIN LINK FENCE	m	29.5		29.5	4.0	49.0		
		2104.501	REMOVE GUARD RAIL - PLATE BEAM	m	137.0						
		2104.503	REMOVE CONCRETE SIDEWALK	m	39.5		11.5	64.0	73.0		
		2104.503	REMOVE CONCRETE PAVEMENT	m	60.0		11.5	78.0			
		2104.509	REMOVE REDUCING VALVE AND MANHOLE	m	4010.0		1610.0	1749.0	651.0		
		2104.509	REMOVE MANHOLE	EACH	1						
		2104.509	REMOVE HYDRANT & GATE VALVE	EACH	3		2	1			
		2104.509	REMOVE CONCRETE APRON	EACH	1						
		2104.511	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)	EACH	2		2				
		2104.523	SALVAGE CASTING	m	65.0						
		2104.601	RELOCATE FIRE DEPT WARNING LIGHT	EACH	1			2	65.0		
D		2105.501	COMMON EXCAVATION	m	6891.0		4012.0	2879.0			
D		2105.507	SUBGRADE EXCAVATION	m	450.0		450.0				
E		2211.502	SELECT GRANULAR BASE BORROW (CV) (P)	m	3730.0		450.0	96.0	5184.0		
C	1	2232.501	MILL BITUMINOUS SURFACE (50mm)	m	1754.0		4049.0	3335.0	370.0		
C	1	2350.609	TYPE HVN357540C WEARING COURSE MIXTURE	t	1801.0		918.0	773.0	195.0		
C	1	2350.609	TYPE HVN357540C NON-WEAR COURSE MIXTURE	t	85.0				110.0		
C	1	2350.609	TYPE HVN357540C NON-WEAR COURSE MIXTURE	t	1812.0				85.0		
C	2	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	L	1013.0		920.0	807.0	85.0		
		2401.501	STRUCTURAL CONCRETE (I44)	m	31.0		2097.0	1760.0	390.0		
		2401.501	STRUCTURAL CONCRETE (I44)	m	32				31.0		
		2401.601	STRUT EXCAVATION CLASS E	LS	1.0				32.0		
		2401.541	REINFORCEMENT BARS (EPOXY COATED)	KG	2690.0						
		2401.541	REINFORCEMENT BARS	m	39.0				2690.0		
		2412.511	305mm X 360mm PRECAST CONC BOX CULV	m	39.0				1400.0		
		2411.604	GRANITE VENEER	m	114.9				39.0		
		2502.603	DRAINAGE SYSTEM	LS	1				114.9		
		2503.509	CRUSHED ROCK PIPE BEDDING	m	60.0						
		2501.602	TRASH GUARD FOR 450 mm PIPE APRON	EACH	8				60.0		
		2501.602	TRASH GUARD FOR 450 mm PIPE APRON	EACH	3				8		
		2503.515	450 mm RC PIPE APRON	EACH	10				3		
		2503.541	450 mm RCP DESIGN 3006, CLASS 5	m	1				6		
		2503.541	375 mm RCP DESIGN 3006, CLASS 5	m	314.7				1		
		2503.541	450 mm RCP DESIGN 3006, CLASS 5	m	39.0				314.7		
		2503.541	450 mm RCP DESIGN 3006, CLASS 5	m	87.0				39.0		
		2503.541	600 mm RCP DESIGN 3006, CLASS 5	m	31.0				87.0		

* DALE STREET PATHWAY QUANTITIES INCLUDE DALE STREET ALTERNATE ALIGNMENT 1 QUANTITIES

METRIC CONVERSION FACTORS			
QUANTITY	FROM ENGLISH	MULTIPLY BY	TO METRIC
LENGTH	foot	0.3048	m
	inch	25.4000	mm
	yard	0.9144	m
	ft	0.8361	m
	ft	0.0929	m ²
VOLUME	cubic yard	2.4716	hectare
	ft ³	0.0283	m ³
MASS	ton	0.9072	metric ton
TEMP.	F	(F-32)/1.8	C

The Following Standard Plates As Approved By FHWA Shall Apply

Plate No.	Description
0003A	Specification Reference To Standard Plates
M3000L	Reinforced Concrete Pipe (3 Sheets)
M3006G	Gasket Joint For R.C. Pipe
M3106G	Concrete Apron for Reinforced Concrete Pipe
M3133C	Rip-Rap At RCP Outlets
M3145E	Concrete Pipe Joint Ties
M4180U	Manhole Or Catch Basin Step
M7020U	Concrete Curb
M7036D	Feeder Curb Ramp (For The Handicapped)
M7106G	Concrete Curb and Gutters
M7106C	Bituminous Curb
M7111U	Installation Of Catch Basin Castings
M8000U	Standard Barriercas
M8307P	Steel Plate Beam Guardrail (2 Sheets)
M9322U	Chain Link Fence (2 Sheets)

28-207
METRIC PROJECT
THIS PROJECT HAS BEEN PREPARED USING METRIC UNITS AND WILL BE CONSTRUCTED USING METRIC MEASUREMENTS

ENGINEERING DEPARTMENT
CITY OF ROSEVILLE
PATHWAY CONSTRUCTION
ESTIMATED QUANTITIES AND
STANDARD PLATES

CITY PROJECT NO. 98-11 2000 CONTRACT "A"
SHEET NO. 2 OF 120 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT		FEDERAL PARTICIPATING				CITY OF ROSEVILLE NON-PARTICIPATING
							S.P. 160-090-05				
					ESTIMATED	FINAL	DALE STREET PATHWAY*	ROSELAWN AVENUE PATHWAY	BOX CULVERT UNDERPASS	STORM SEWER	
		2506.501	CONSTRUCT CATCH BASIN (TYPE A)	m	14.8					14.8	
		2506.501	CONSTRUCT MANHOLE (TYPE B)	m	27.6					27.6	
		2506.516	CATCH BASIN CASTING (R-1792 FG)	EACH	20					20	
		2506.516	CATCH BASIN CASTING (R-3250-I)	EACH	7					7	
		2506.516	MANHOLE CASTING (R-1733)	EACH	2					2	
		2506.521	INSTALL SALVAGED CASTING	EACH	3					3	
		2506.522	ADJUST MANHOLE FRAME AND RING	EACH	2					2	
		2506.602	CONNECT TO EXISTING CATCH BASIN	EACH	11					11	
		2504.602	CONNECT TO EXISTING WATERMAIN	EACH	2				2		
		2504.602	PRESSURE REDUCING VALVE W/ MANHOLE	LS	1				1		
		2504.602	200mm GATE VALVE AND BOX	EACH	3				3		
		2504.602	ADJUST GATE VALVE	EACH	3		1	2			
		2504.602	F & I HYDRANT (WB 100) AND VALVE	EACH	4		2	1	1		
		2503.603	150 mm DUCTILE IRON PIPE WATERMAIN CL52	m	8.0		7.0	1.0			
		2504.603	200 mm DUCTILE IRON PIPE WATERMAIN CL52	m	68.0				68.0		
		2504.608	DUCTILE IRON FITTINGS	kg	279.0				279.0		
		2511.502	RIP RAP, CLASS III	t	42.3		35.1	7.2			
		2521.501	100 mm CONCRETE SIDEWALK	m ²	5.2		5.2				
		2521.501	150 mm CONCRETE DRIVEWAY	m ²	82.0		82.0				
		2521.511	75 mm BITUMINOUS WALK	m	98.0				98.0		
		2531.501	CONCRETE C&G, DESIGN B-624	m	278.0		278.0				
		2531.501	CONCRETE C&G, DESIGN B-624	m	13.0				13.0		
		2531.602	PEDESTRIAN CURB RAMP	EACH	5.0		4	1			
		2533.501	BITUMINOUS CURB (150 mm)	m	770.0		495.0	275.0			
		2411.604	MODULAR BLOCK RETAINING WALL	m ²	365.0		118.0	247.0			
		2411.604	HEAVY DUTY MODULAR BLOCK RETAINING WALL	m ²	173.0			173.0			
		2440.604	BOULDER RETAINING WALL	m ²	195.0			195.0			
		2440.604	LIMESTONE RETAINING WALL	m ²	330.0		330.0				
		2545.501	ELECTRICAL LIGHTING SYSTEM	LS	1				1		
		2544.603	F & I STEEL PLATE BEAM GUARDRAIL	m	85.0				85.0		
		2557.603	F & I CHAIN LINK FENCE	m	32.0		32.0				
		2557.603	F & I SPLIT RAIL FENCE	m	78.0			78.0			
		2563.601	TRAFFIC CONTROL	LS	3		1	1	1		
		2564.602	PAVEMENT MESSAGE (HANDICAPPED SYMBOL) PAINT	EACH	1		1				
		2564.602	F & I SIGN PANEL	EACH	4		1	3			
		2564.603	100 mm SOLID LINE WHITE PAINT	m	224.0				224.0		
		2564.603	600 mm STOP LINE WHITE PAINT	m	4.0				4.0		
		2564.604	CROSSWALK STRIPING, POLY PREFORM	m ²	670.0		502.0	168.0			
A		2571.501	CONIFEROUS TREE	TREE	159		58	101			
A		2571.502	DECIDUOUS TREE	TREE	90		46	24			
A		2571.505	DECIDUOUS SHRUB	SHRUB	340		318	22			
A		2571.506	VINES	VINE	50			50			
A		2571.507	PERENNIAL	PLANT	1865		884	981			
B		2571.541	TRANSPLANT TREE	TREE	4						
		2575.402	SILT FENCE, HEAVY DUTY	m	545.0			420.0	125.0		
		2575.523	EROSION CONTROL BLANKET CATEGORY 1	m ²	1330.0				1330.0		
		2105.525	TOPSOIL BORROW (LV)	m ³			587.0	640.0			
		2575.505	SOD, WITH 100 MM TOPSOIL	m ²	13468.0		9731.0	3737.0			
3		2571.501	SEEDING, MIX 3&A	ha	1301		0.622	0.679			
6		SPEC	PRAIRIE SEED MIX AND 3 YEAR MAINTENANCE	LS	1			1			

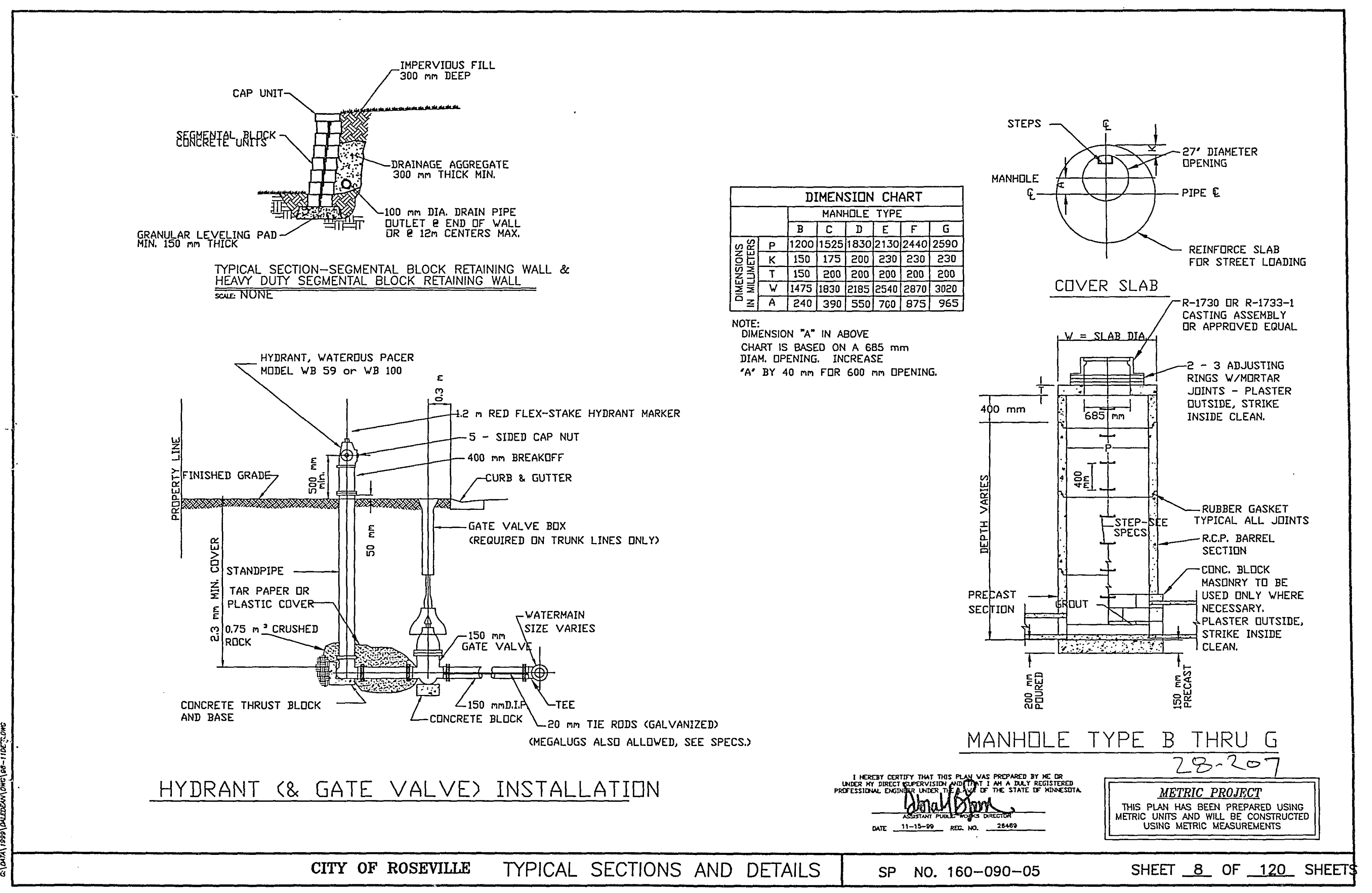
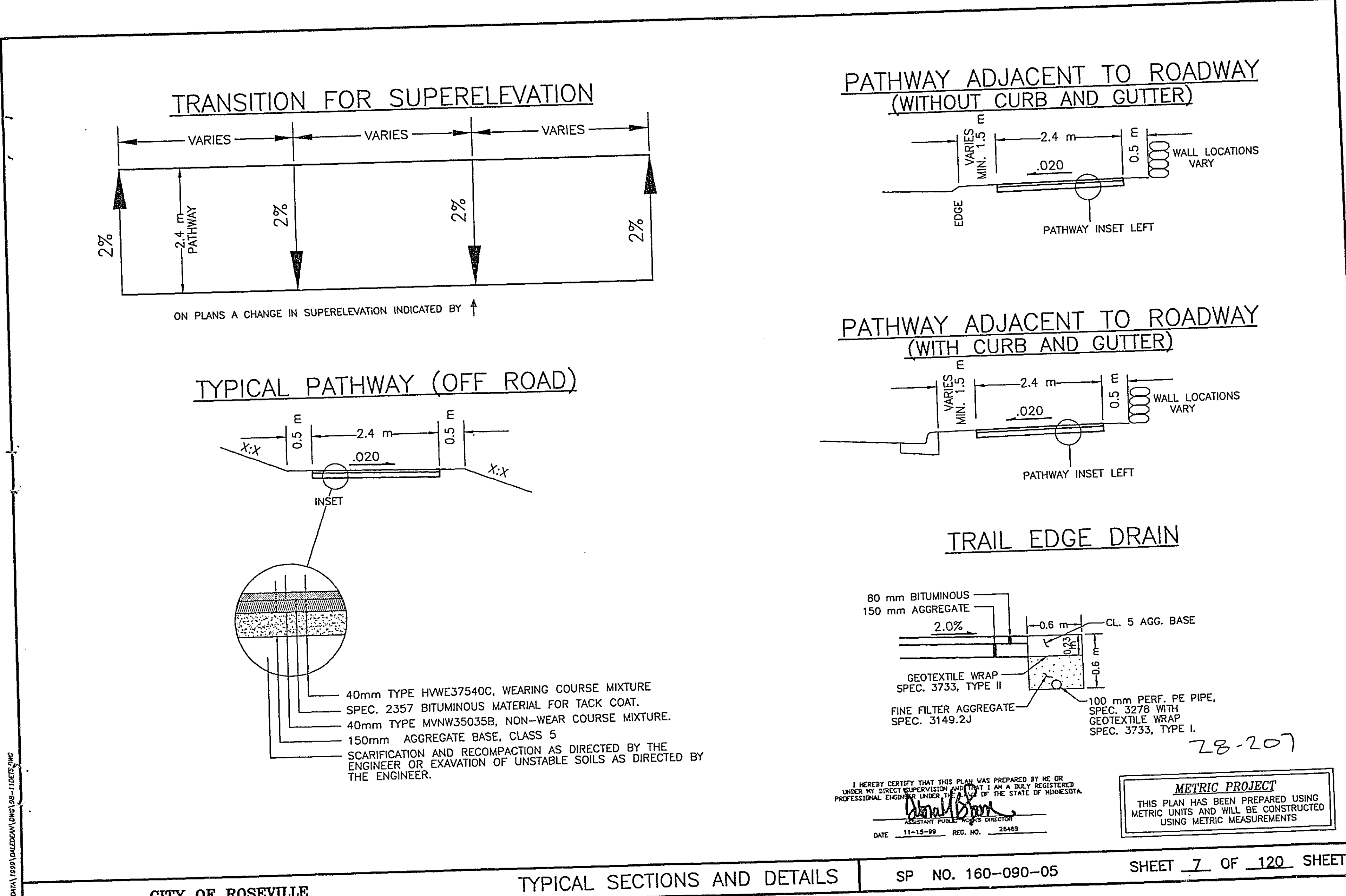
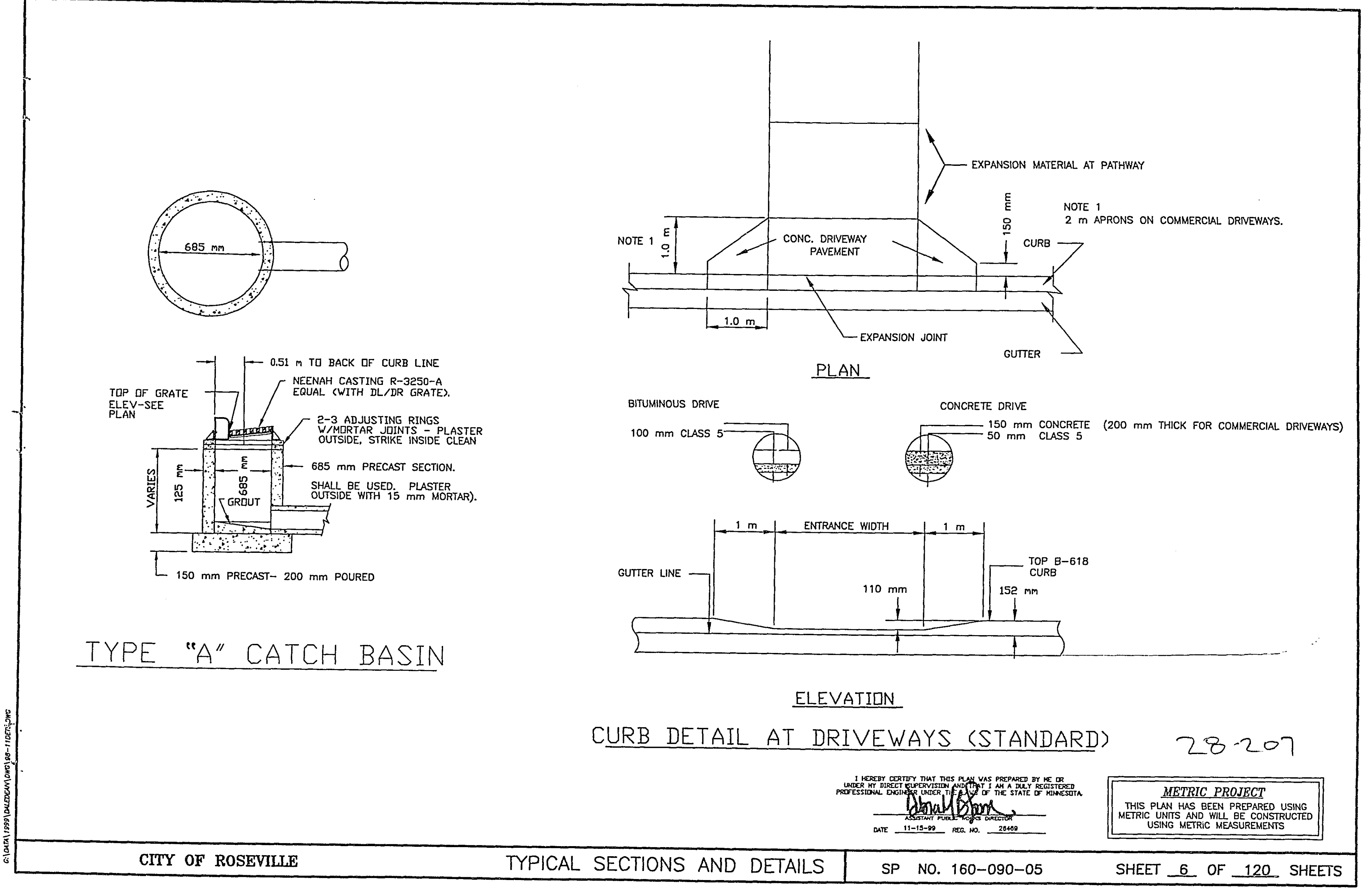
TABULATION B: CLEARING & GRUBBING						
LOCATION (STATION)	DESCRIPTION	CLEARING (ha)	GRUBBING (ha)	CLEARING (EACH)	GRUBBING (EACH)	TRIM TREES (EACH)
DALE STREET ALTERNATE 1 0+000 TO 1+065.30	WOODS	0.297	0.297			
DALE STREET 1+000 TO 1+180	WOODS	0.203	0.203			6
1+220 TO 1+240	CONIFEROUS			5	5	
1+260 TO 1+270	DECIDUOUS			1	1	
1+295	DECIDUOUS			3	3	
1+340 TO 1+350	CONIFEROUS					1
1+350	CONIFEROUS			1	1	
1+442	DECIDUOUS			1	1	
1+517	DECIDUOUS			2	2	
1+622 TO 1+640	CONIFEROUS			1	1	
1+645	DECIDUOUS					
2+810	DECIDUOUS			1	1	
2+818	CONIFEROUS			2	2	
2+890	CONIFEROUS			1	1	
3+290 TO 3+354.22	DECIDUOUS			26	26	
ROSELAWN AVENUE 0+100	CONIFEROUS			1	1	
RESERVOIR WOODS 0+840 TO 2+000	WOODS	0.516	0.516	16	16	16
2+000 TO 2+080	DEC. & CONIF.			1	1	
2+120	DECIDUOUS					
TOTALS		1.016	1.016	61	61	35

TABULATION C: BITUMINOUS				
LOCATION	HWY#3750C WEARING COURSE (t)	MVN#35035B NON-WEAR COURSE (t)	TACK COAT (L)	150 mm CURB (m)
DALE STREET ALTERNATE 1 0+000 TO 1+065.30		346.0	353.0	353.0
DALE STREET 1+000 TO 3+354.22		572.0	567.0	1744.0
ROSELAWN AVENUE 0+000 TO 0+840		678.0	712.0	1545.0
RESERVOIR WOODS 0+840 TO 2+466.42		205.0	180.0	605.0
TOTAL		1801.0	1812.0	4247.0

TABULATION D: COMMON EXCAVATION			
LOCATION	QUANTITY (m ³)		
DALE STREET ALTERNATE 1 0+000 TO 1+065.30	1015.0		
DALE STREET 1+000 TO 3+354.22	2997.0		
ROSELAWN AVENUE 0+000 TO 0+840	1243.0		
RESERVOIR WOODS 0+840 TO 2+466.42	1636.0		
TOTAL	6891.0		

TABULATION E: AGGREGATE BASE			
LOCATION	QUANTITY CLASS 5 (t)		
DALE STREET ALT. ALIGN 1 0+000 TO 1+065.30	1505.0		
DALE STREET 1+000 TO 3+354.22	2544.0		
ROSELAWN AVENUE 0+000 TO 0+840	1371.0		
RESERVOIR WOODS 0+840 TO 2+466.42	1964.0		
PEDESTRIAN UNDERPASS 2+000 TO 2+080	370.0		
TOTAL	7754.0		

TABULATION F: SIGN PANEL			
LOCATION	SIGN TYPE	DESCRIPTION	QUANTITY (m)
DALE STREET ALTERNATE 1 PARKING LOT R7-15	R7-15	HANDICAPPED PARKING	1
ROSELAWN AVENUE 0+545	W3-1	STOP AHEAD	1
0+545	R1-1	STOP	1
0+545	R1-X2	X-TRAFFIC DOES NOT STOP	1
TOTAL			1



[illegible]

$\odot$ NEW ROADWAY
 $R = 91.44 \text{ m}$
 $L = 34.91 \text{ m}$
 $T = 17.67 \text{ m}$
 $\Delta = 21' 52'' 30''$

ROSELAWN AVE.

STREET CONST. LIMITS

PROPOSED DOUBLE YELLOW STRIPING

VICTORIA ST.

PROPOSED STOP SIGN
 PROPOSED STOP BAR

PROPOSED DOUBLE YELLOW STRIPING

$\odot$ NEW ROADWAY
 $R = 91.44 \text{ m}$
 $L = 19.56 \text{ m}$
 $T = 9.92 \text{ m}$
 $\Delta = 12' 15'' 15''$

STREET CONST. LIMITS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

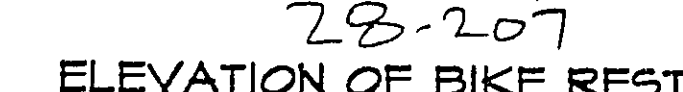
Donald B. Sporn

ASSISTANT PUBLIC WORKS DIRECTOR

DATE 11-15-99 REG. NO. 28469

METRIC PROJECT
THIS PLAN HAS BEEN PREPARED USING
METRIC UNITS AND WILL BE CONSTRUCTED
USING METRIC MEASUREMENTS

SHEET 9 OF 120 SHEETS



NOTE: TYPICAL DIMENSIONING
IMPERIAL [METRIC]

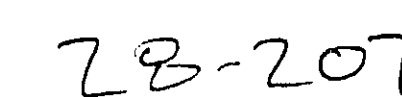
CITY OF ROSEVILLE	
PATHWAY CONSTRUCTION	
CITY PROJ. NO. 98-11	2000 CONTRACT "A"

PROJ. NO. 160-090-05

SHEET 10 OF 120 SHEETS

PROJ. NO. 160-090-05

SHEET 11 OF 120 SHEETS



NOTE: TYPICAL DIMENSIONING
IMPERIAL (METRIC)



12" (304.8) DIA X
48" (1219) EMBEDDED PIERS

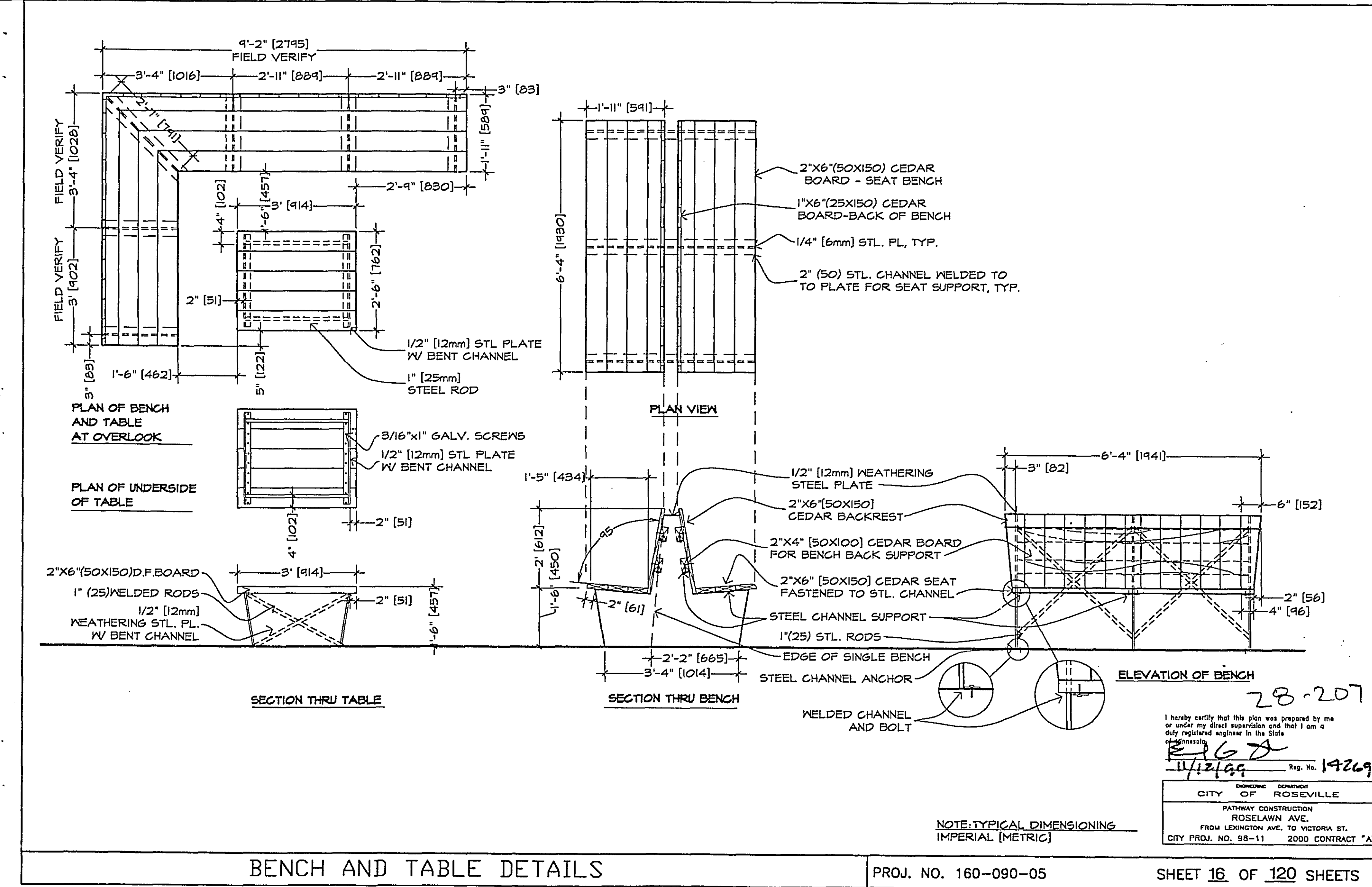
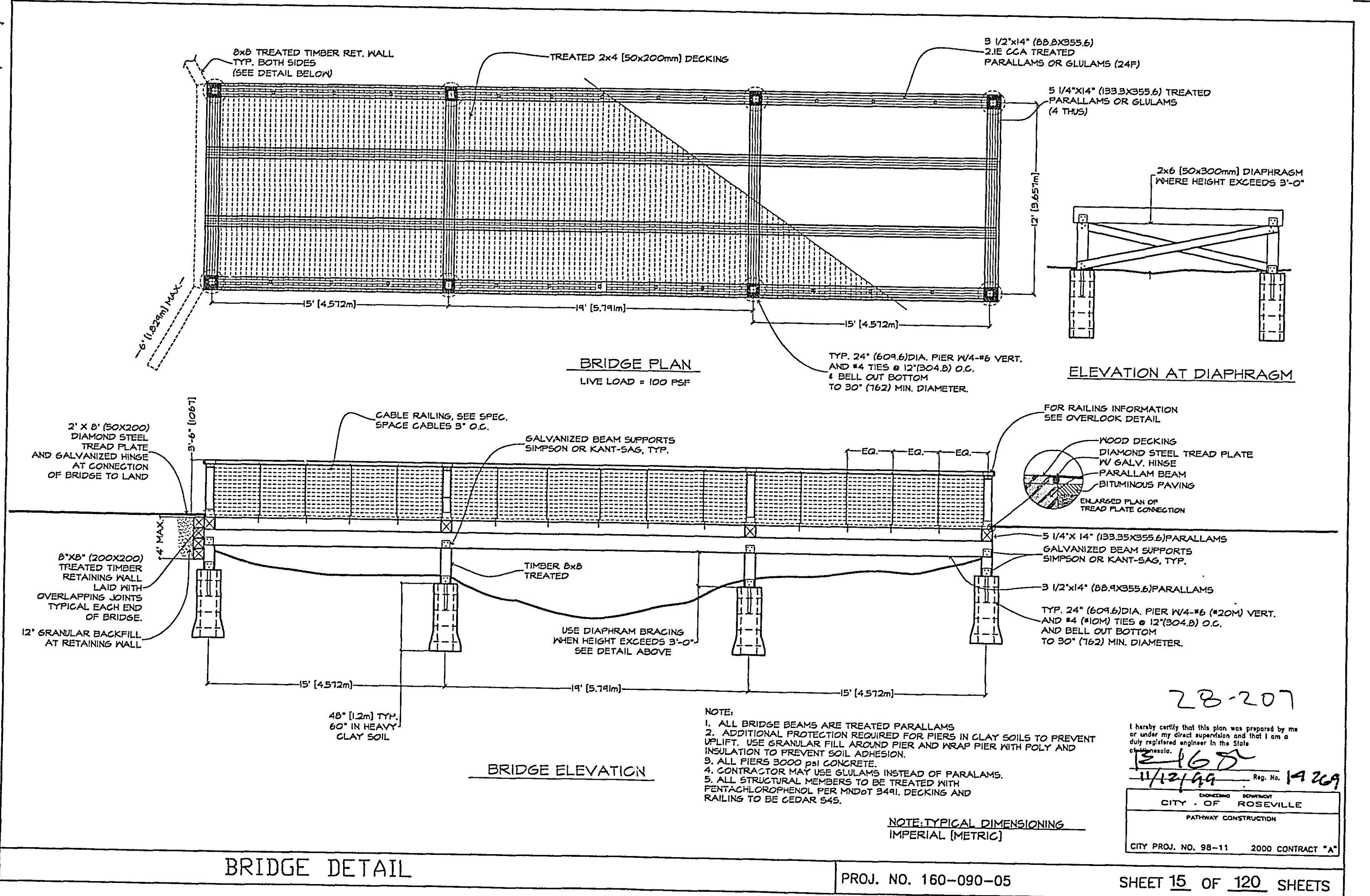
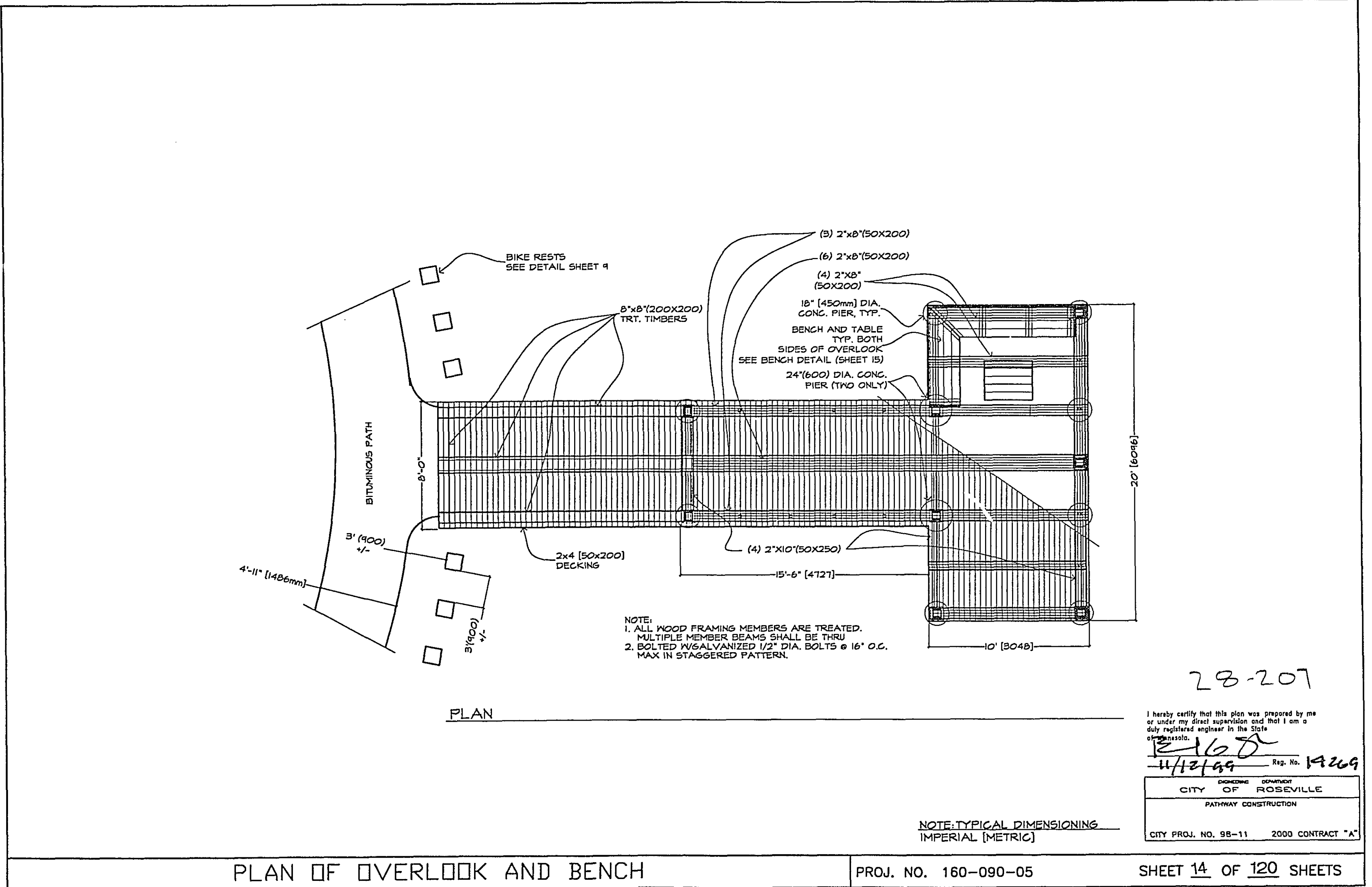
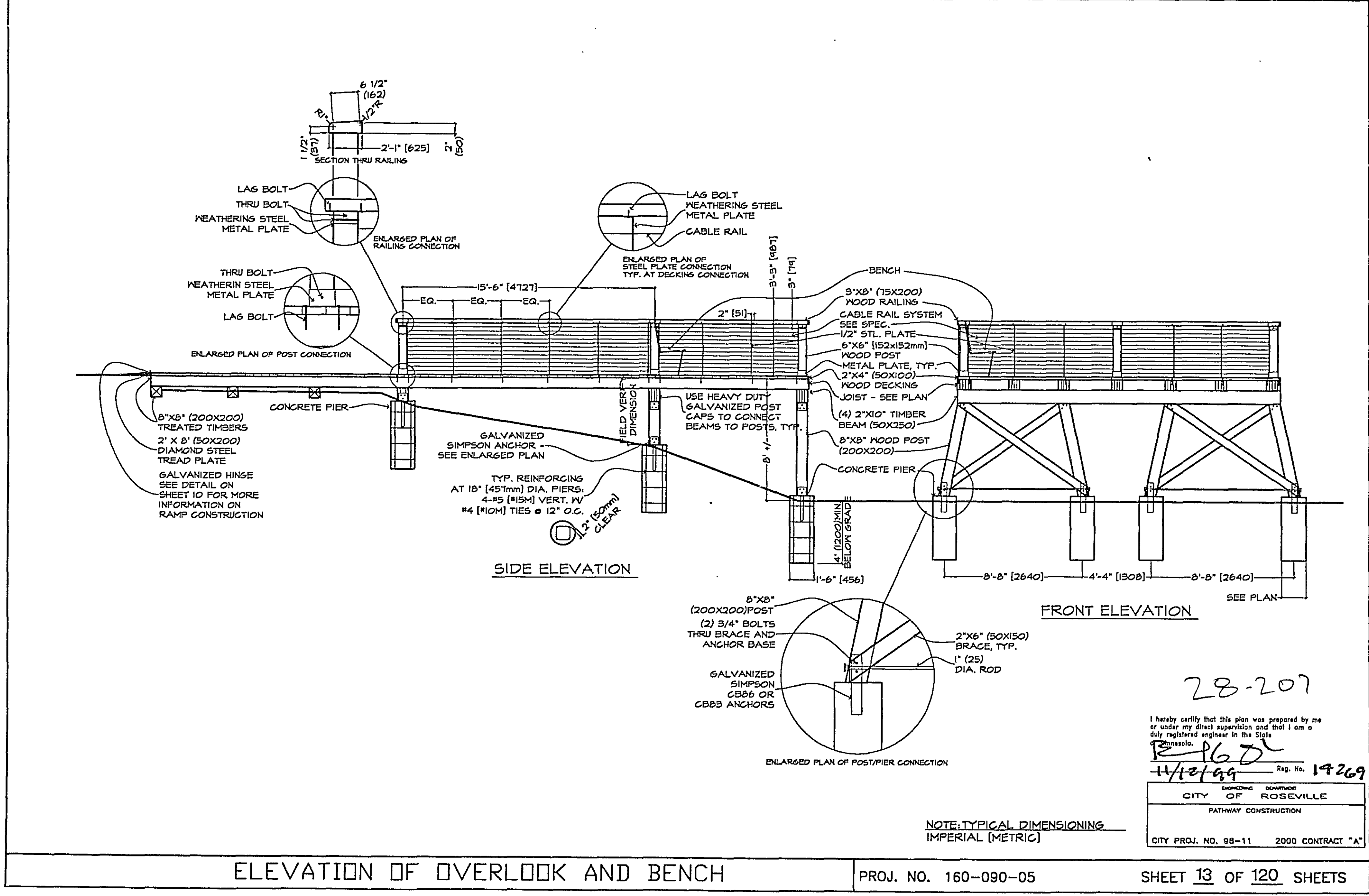
CITY OF ROSEVILLE
PATHWAY CONSTRUCTION

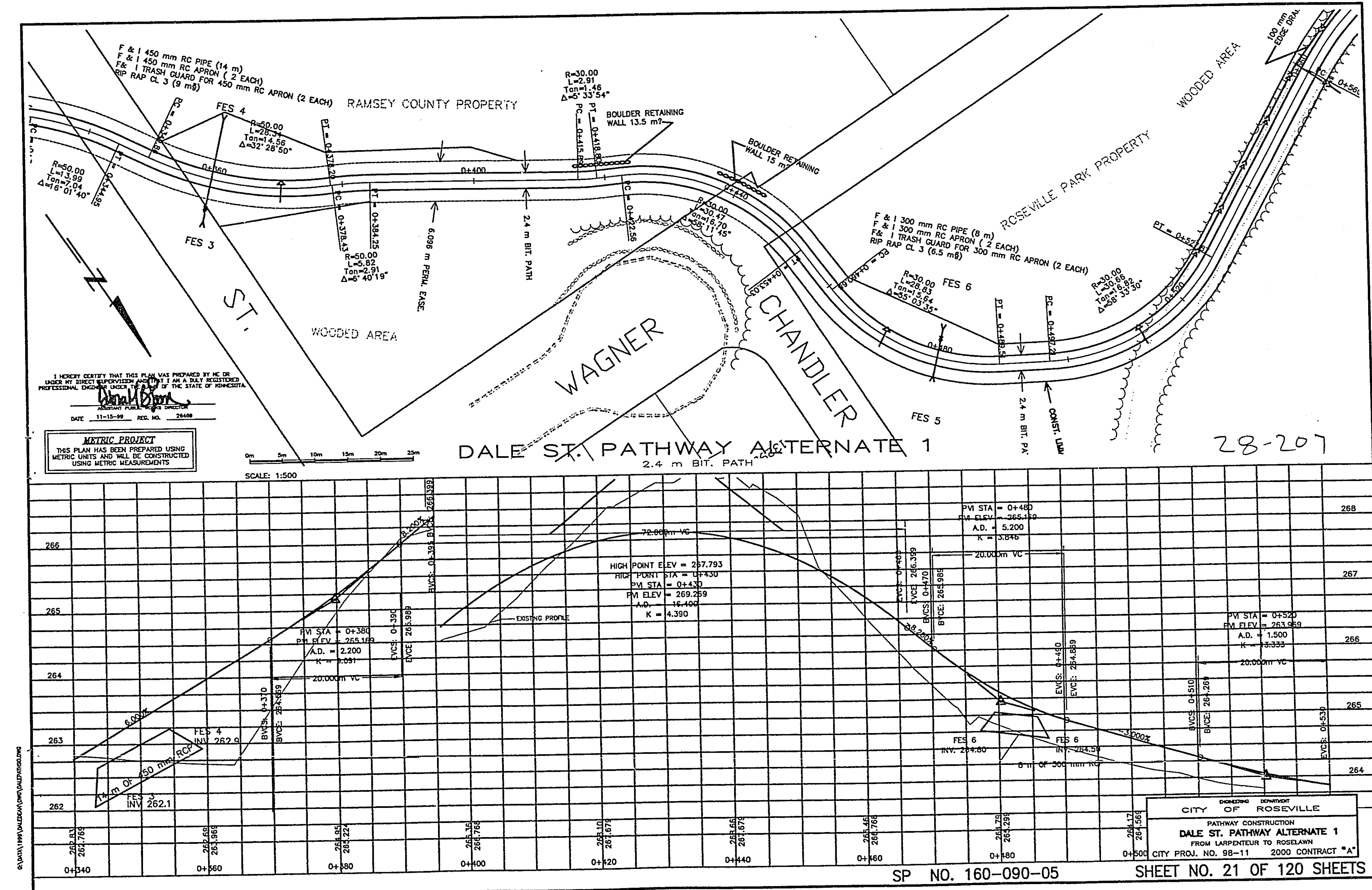
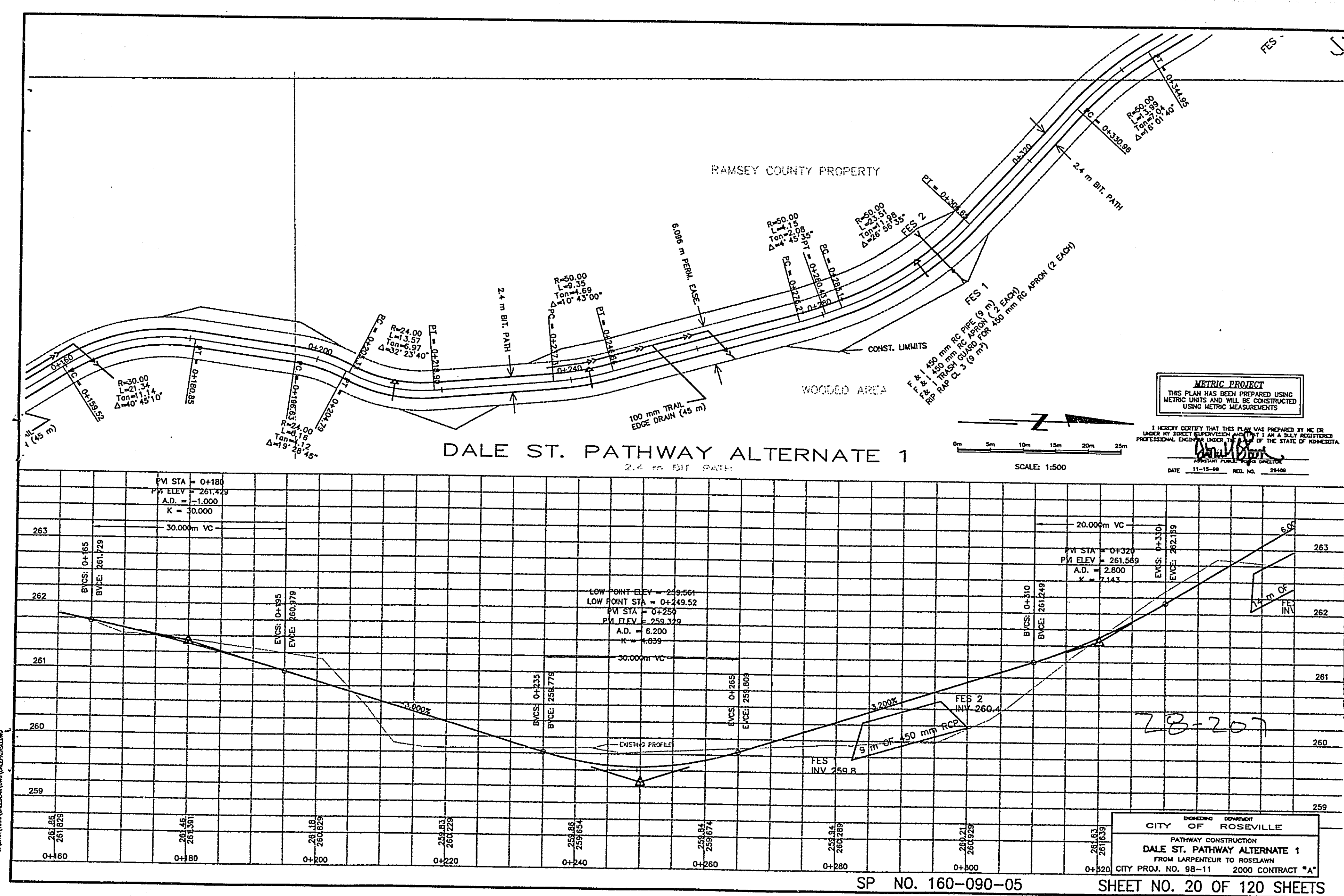
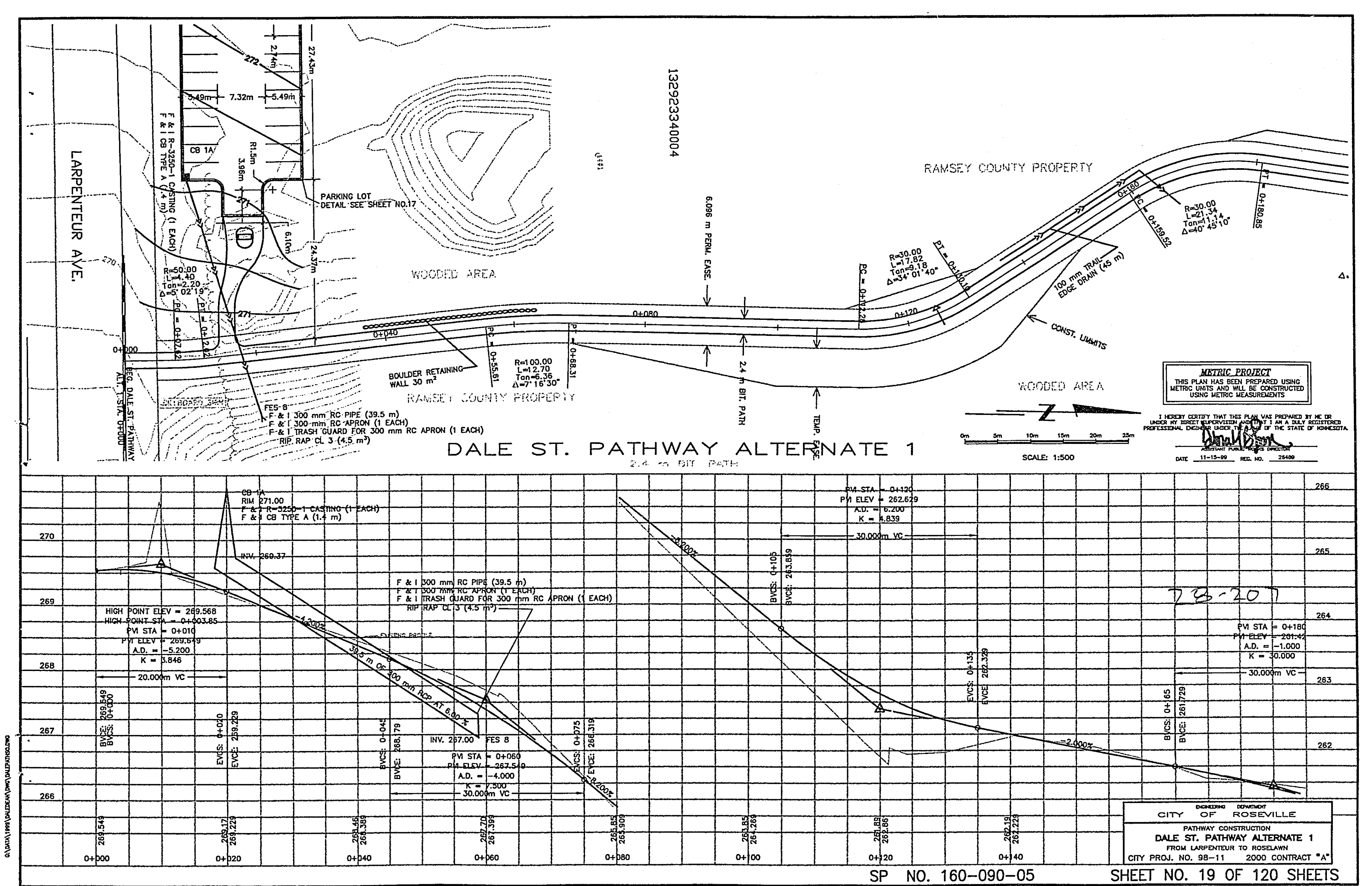
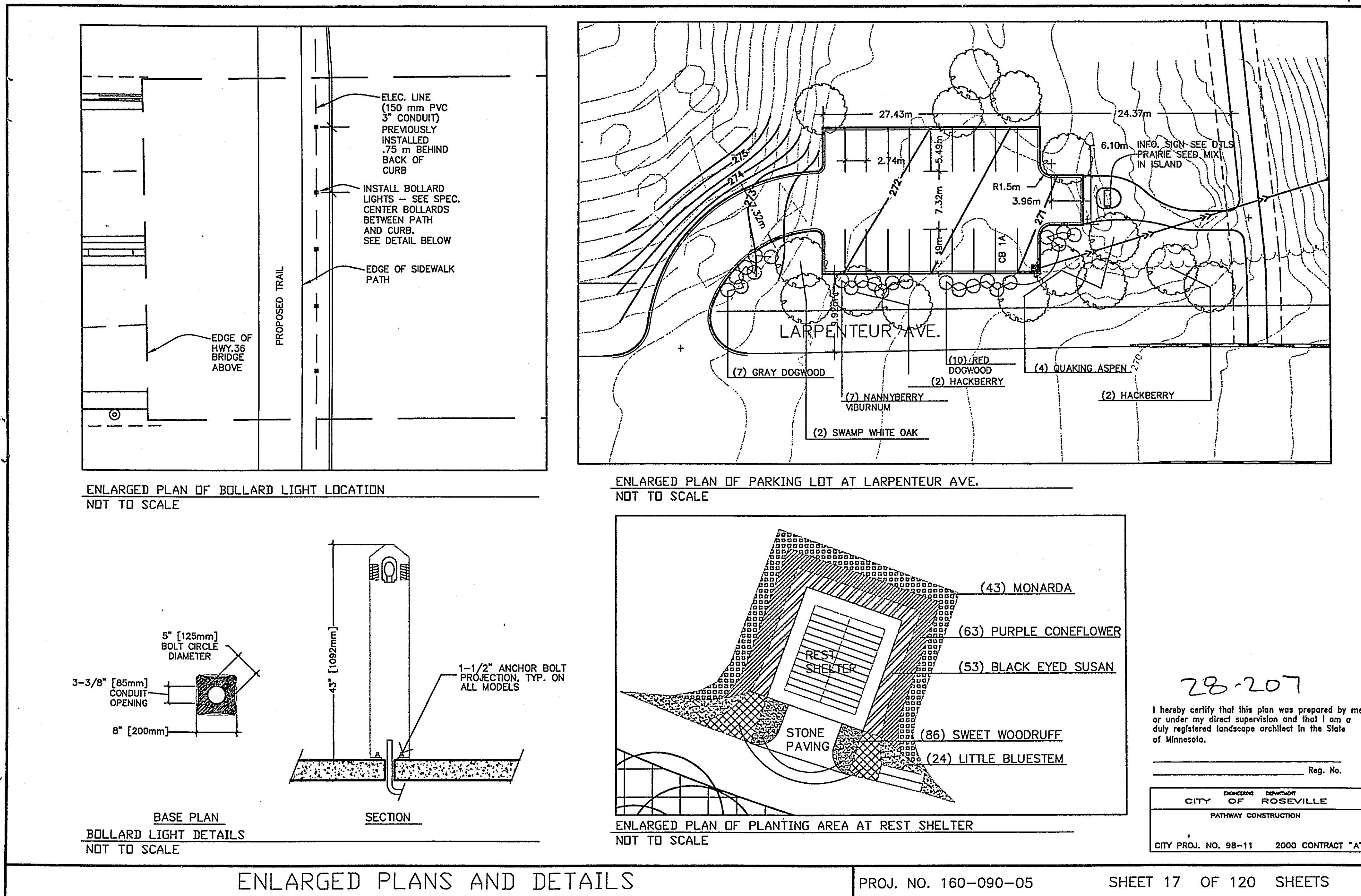
CITY PROJ. NO. 98-11 2000 CONTRACT

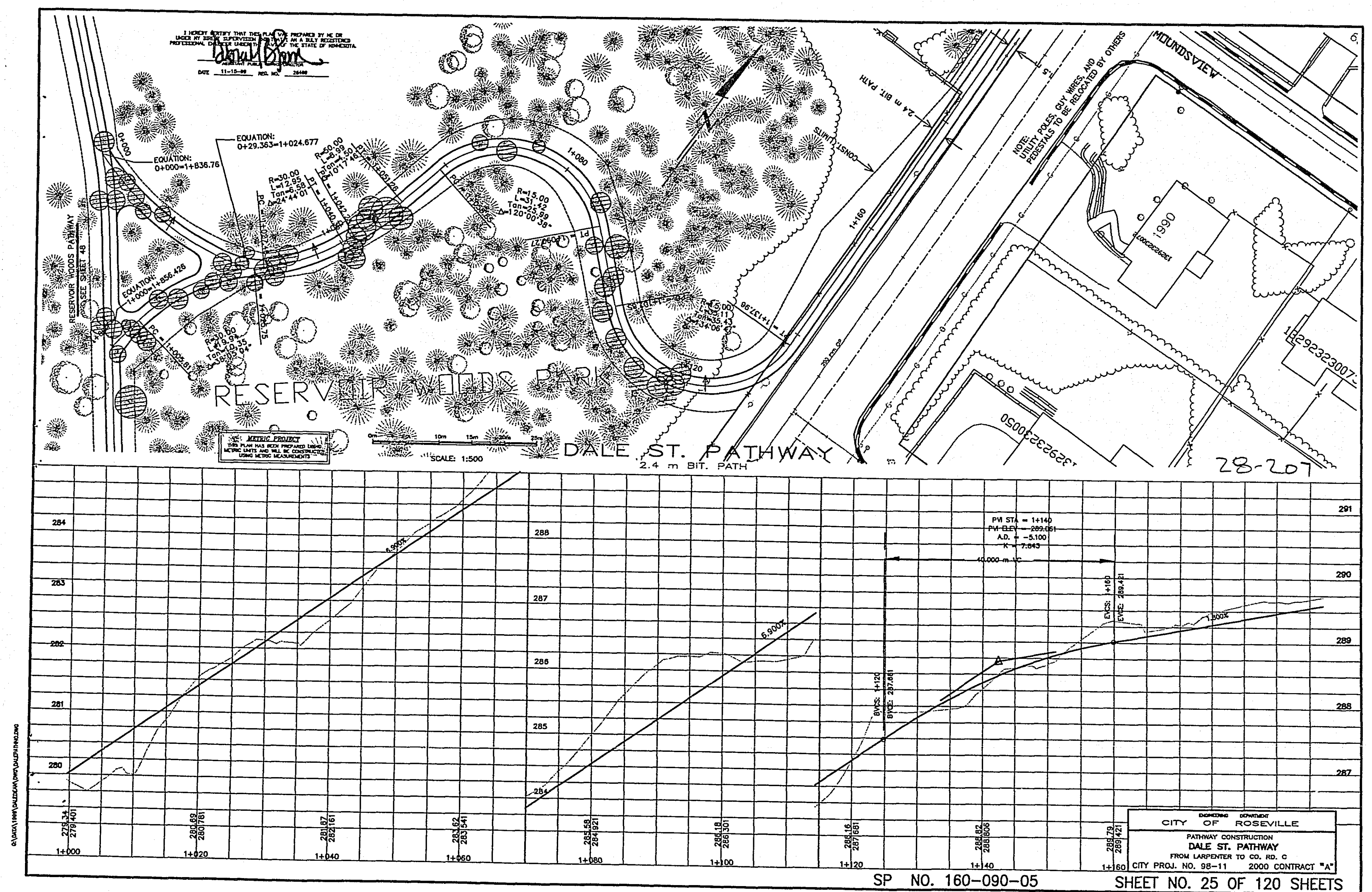
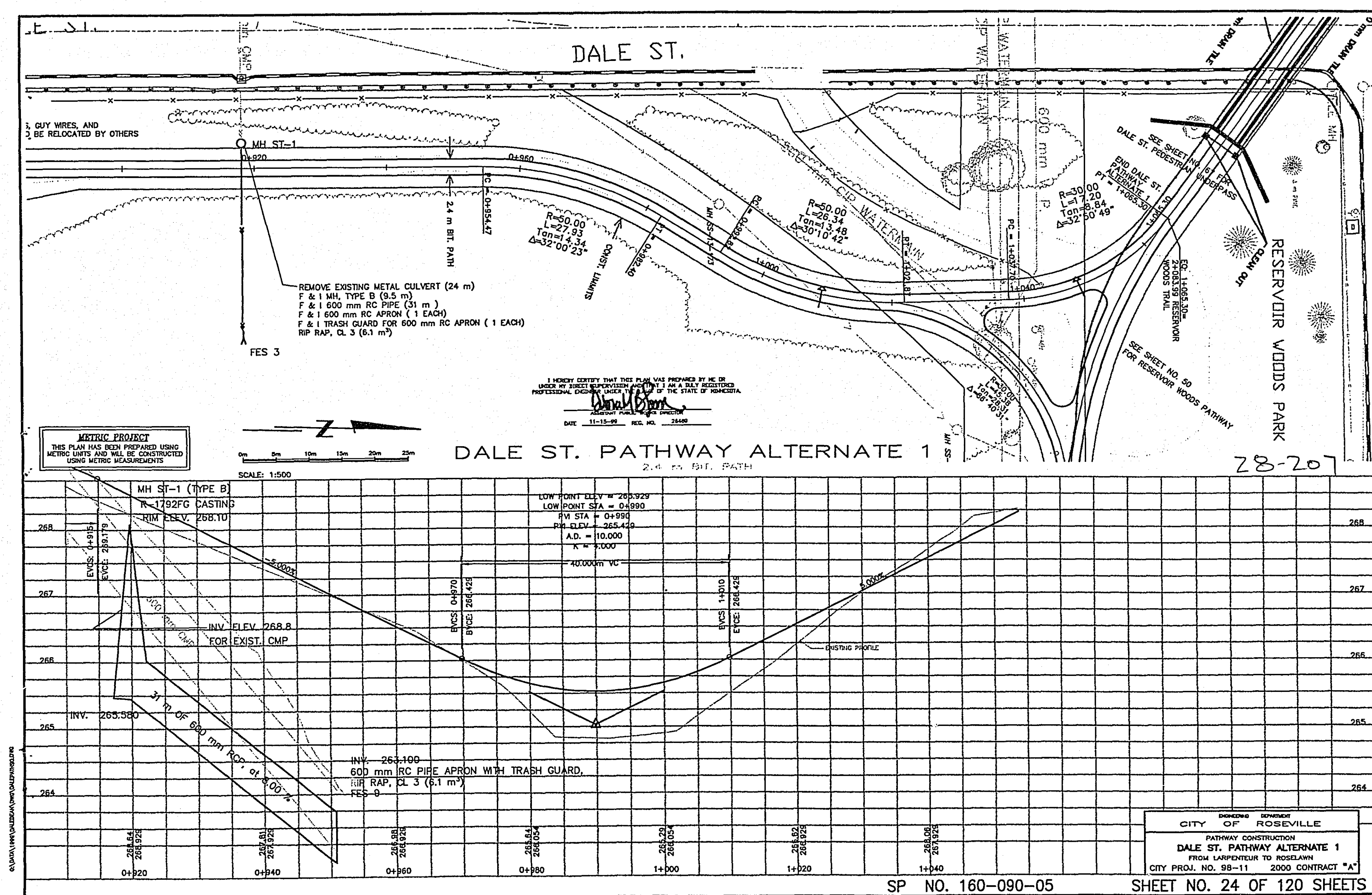
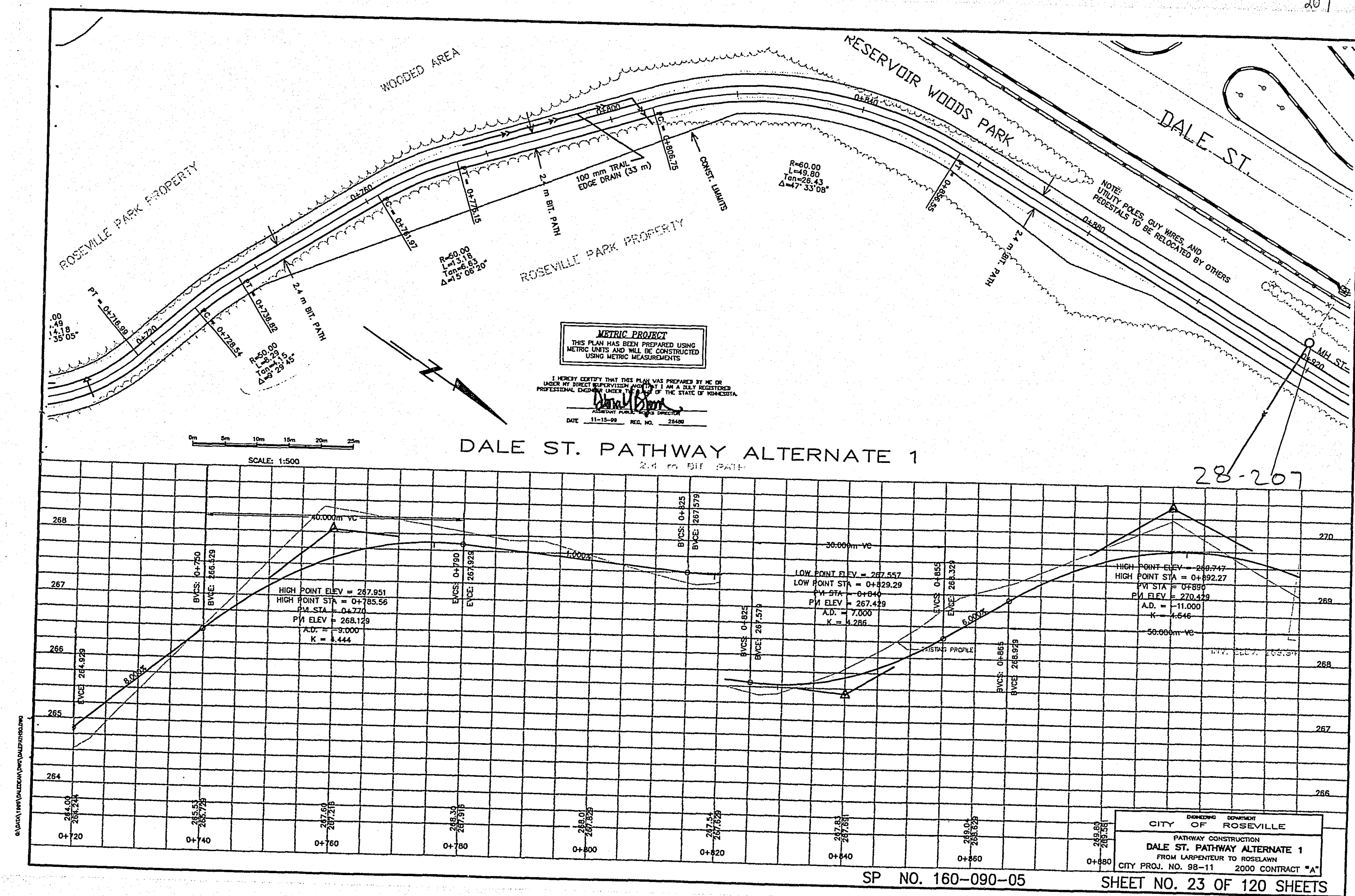
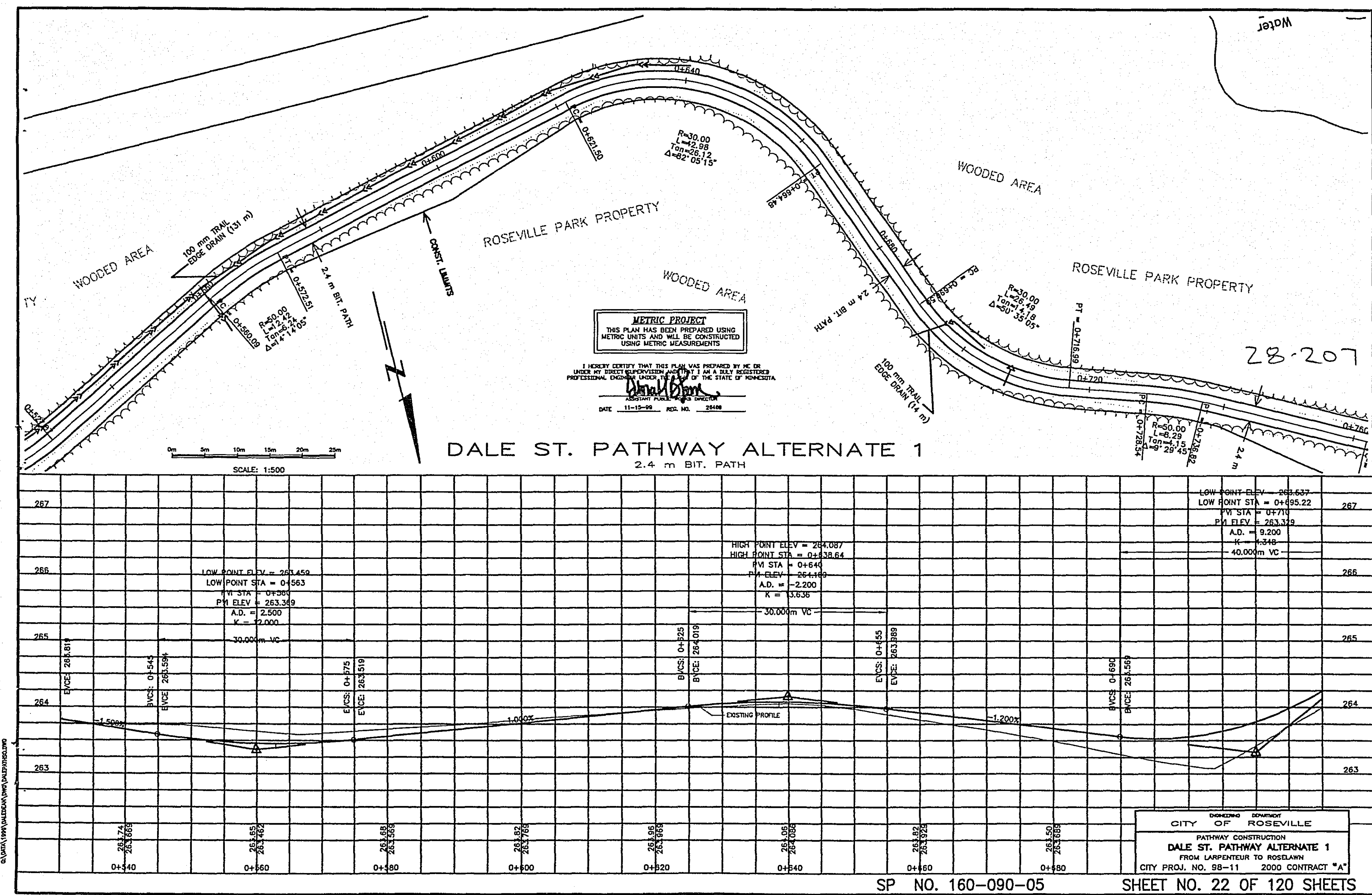
PLAN, SECTION AND DETAIL OF REST AREA SHELTER

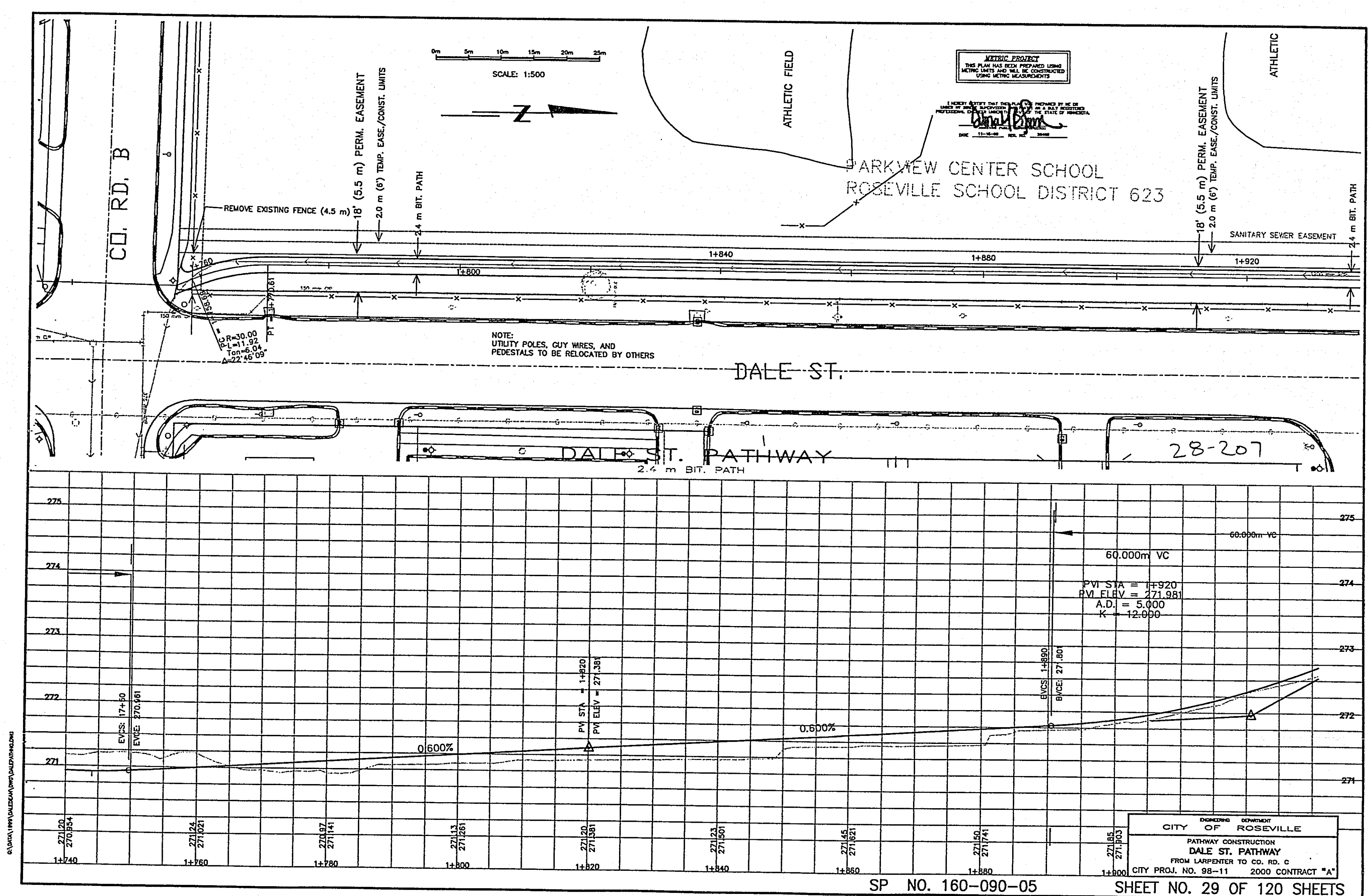
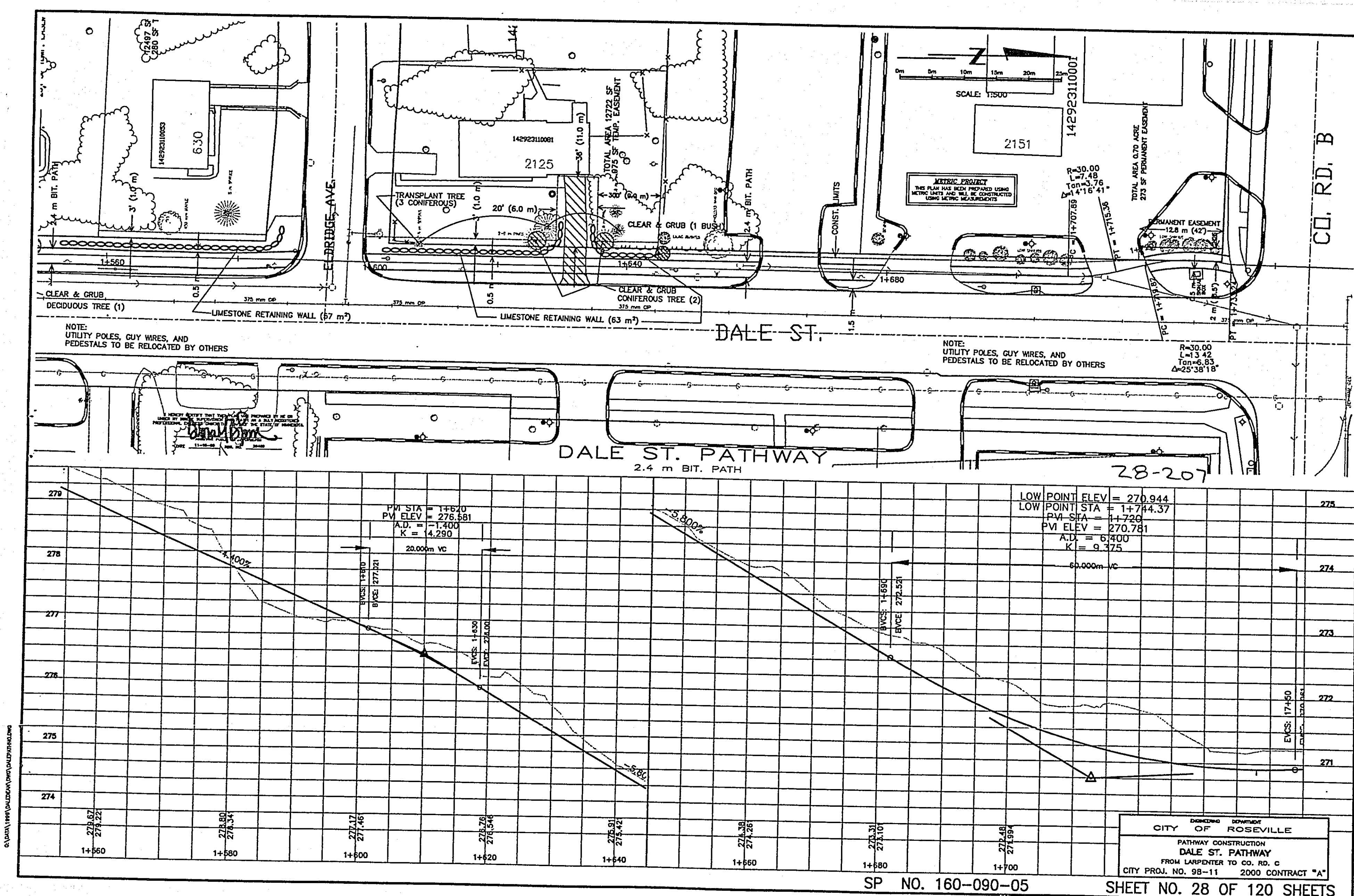
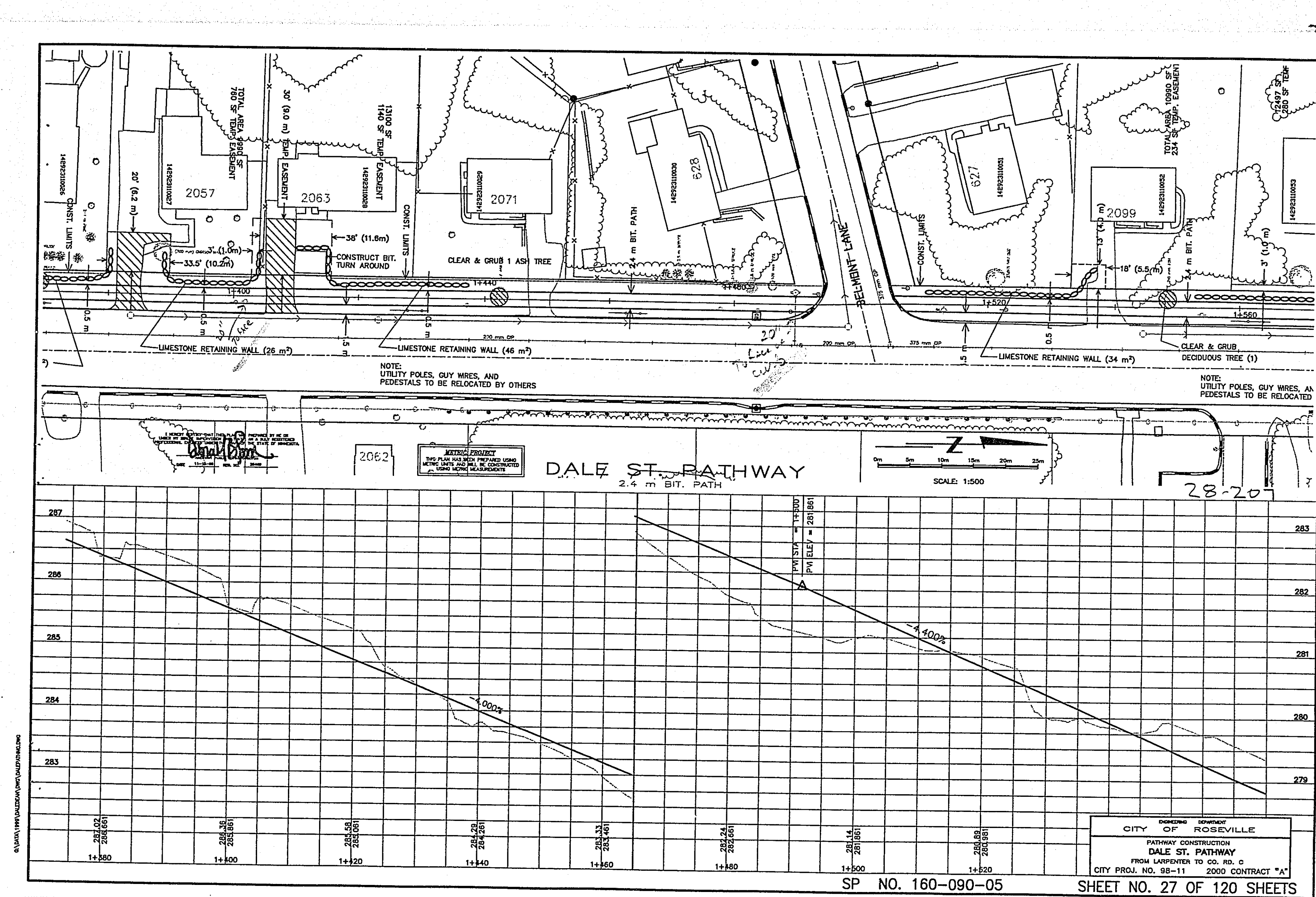
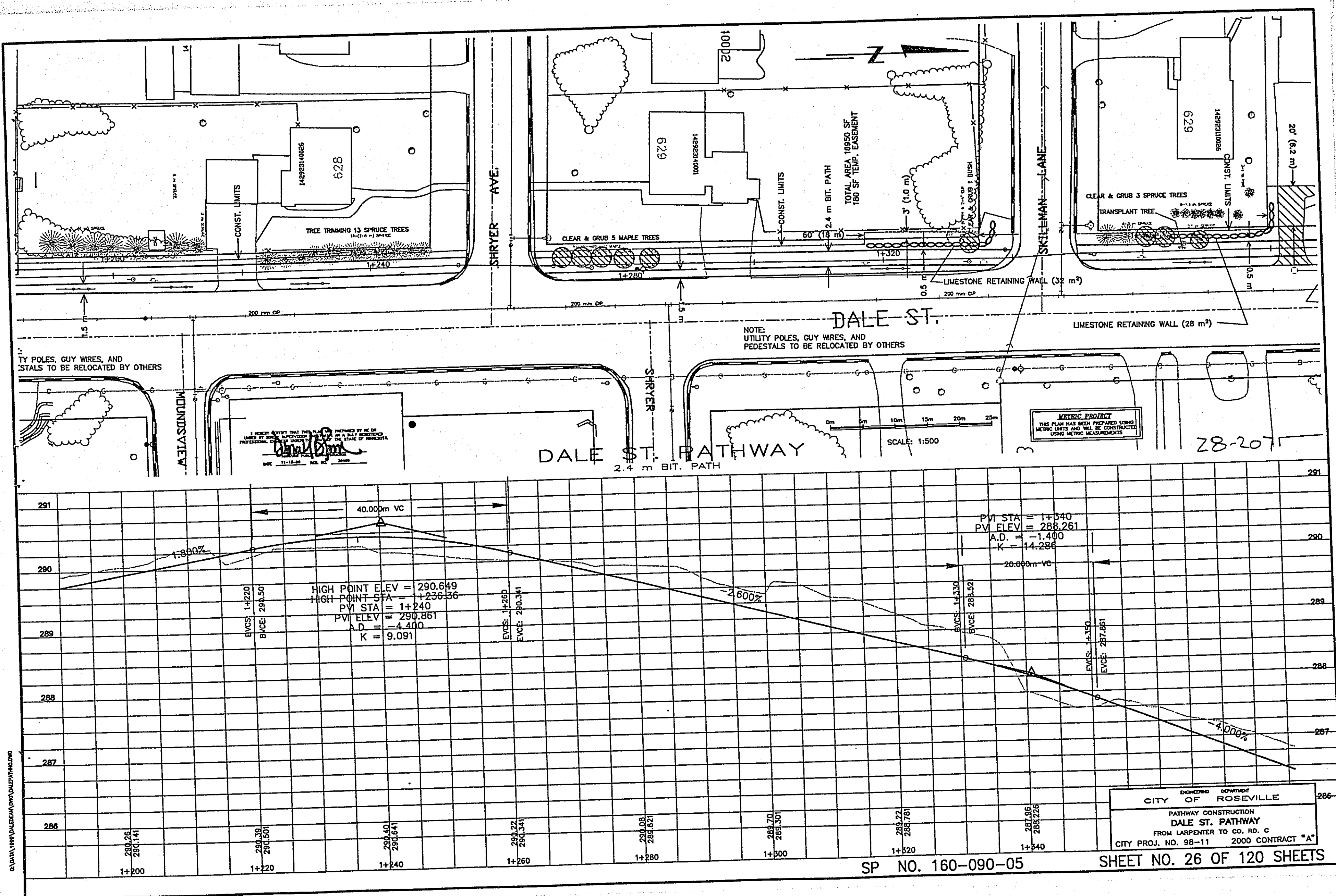
PROJ. NO. 160-090-05

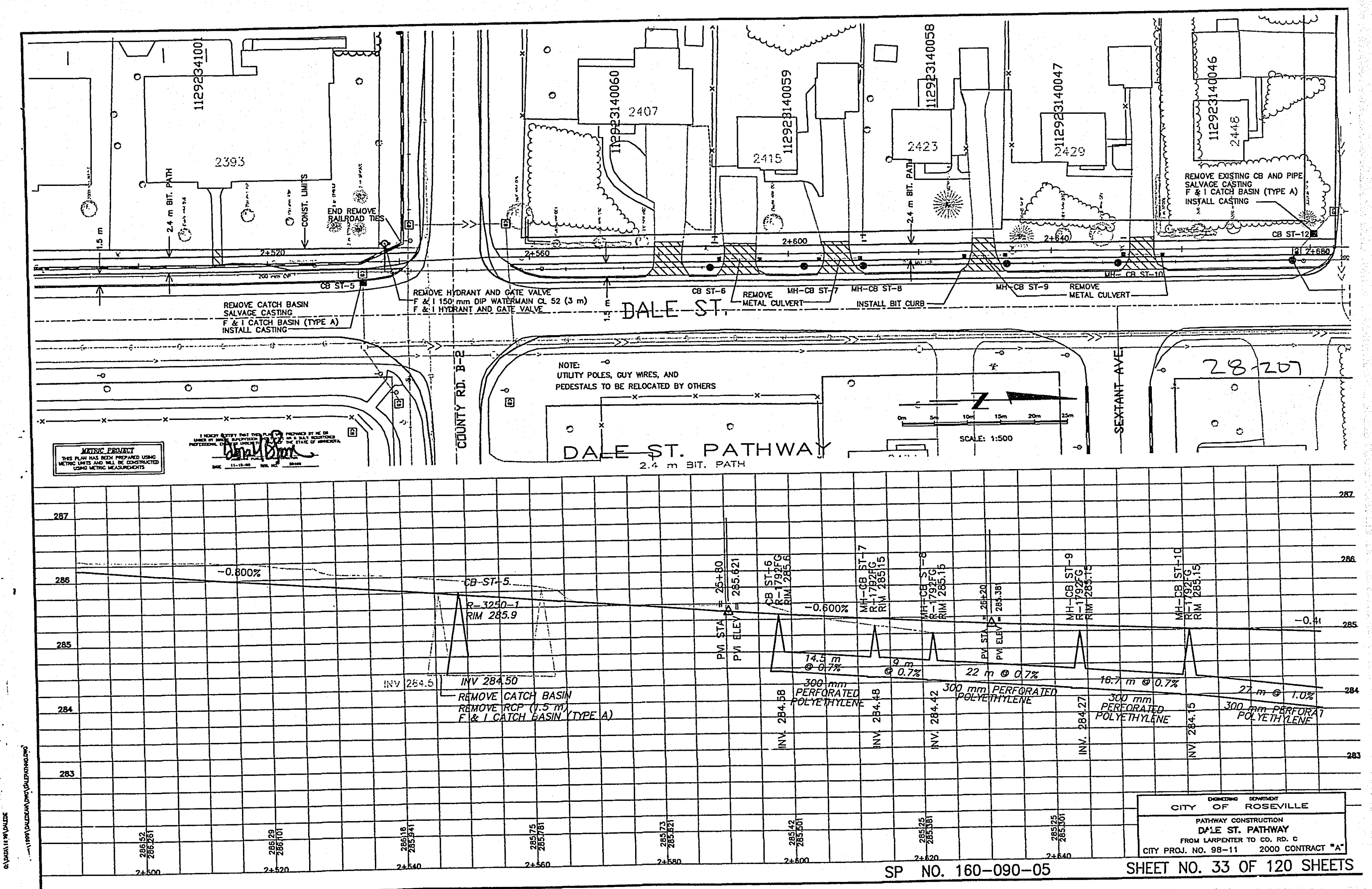
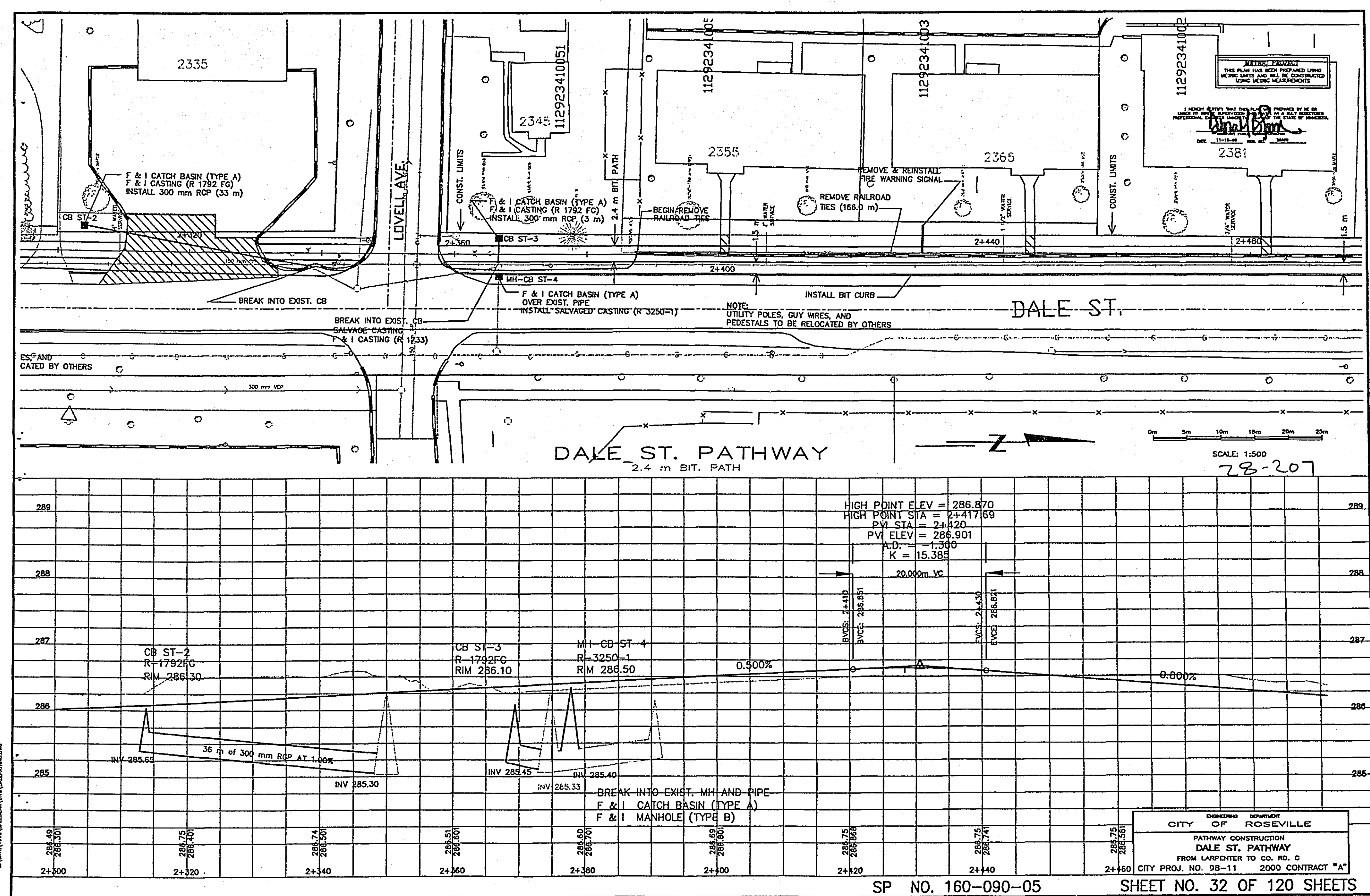
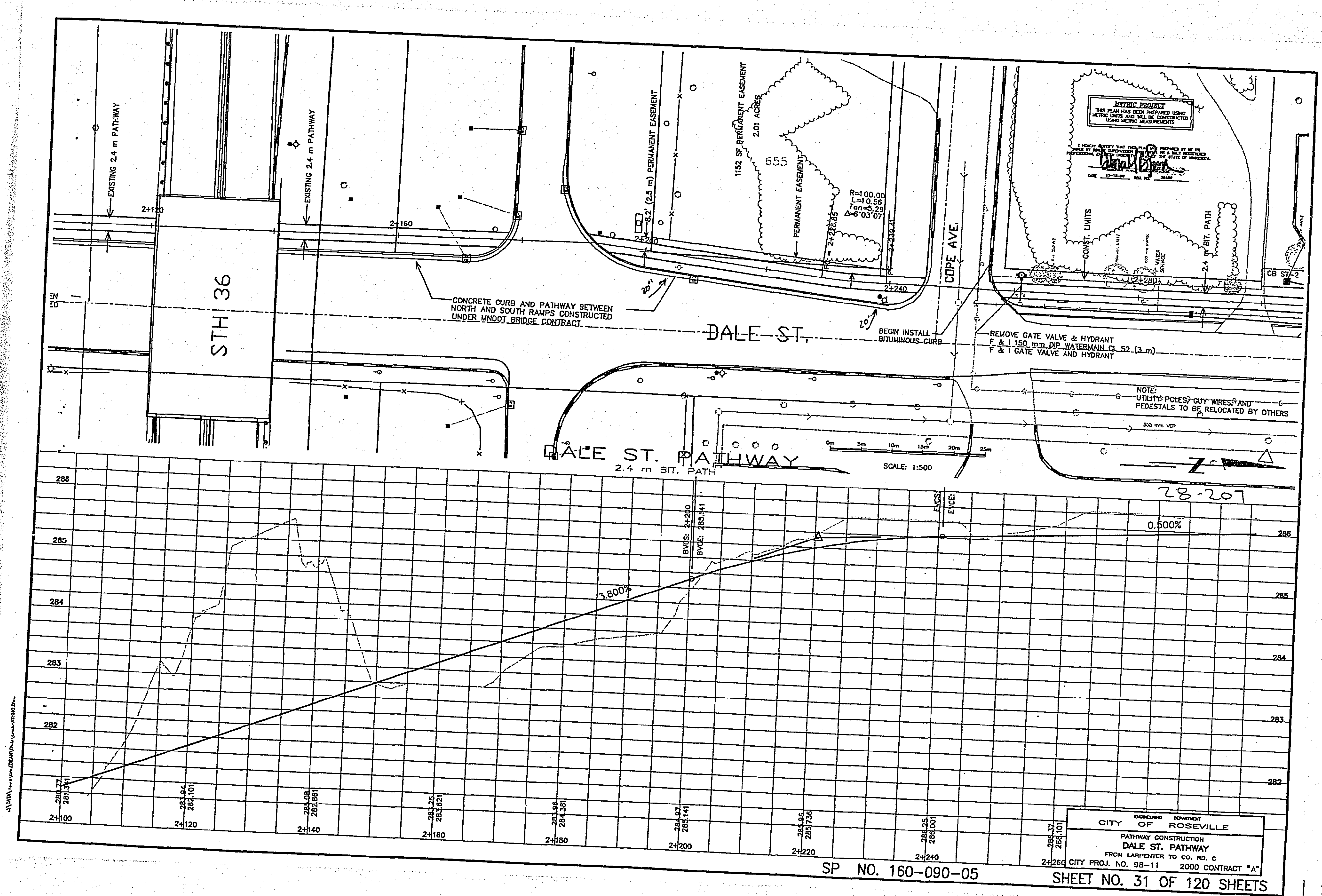
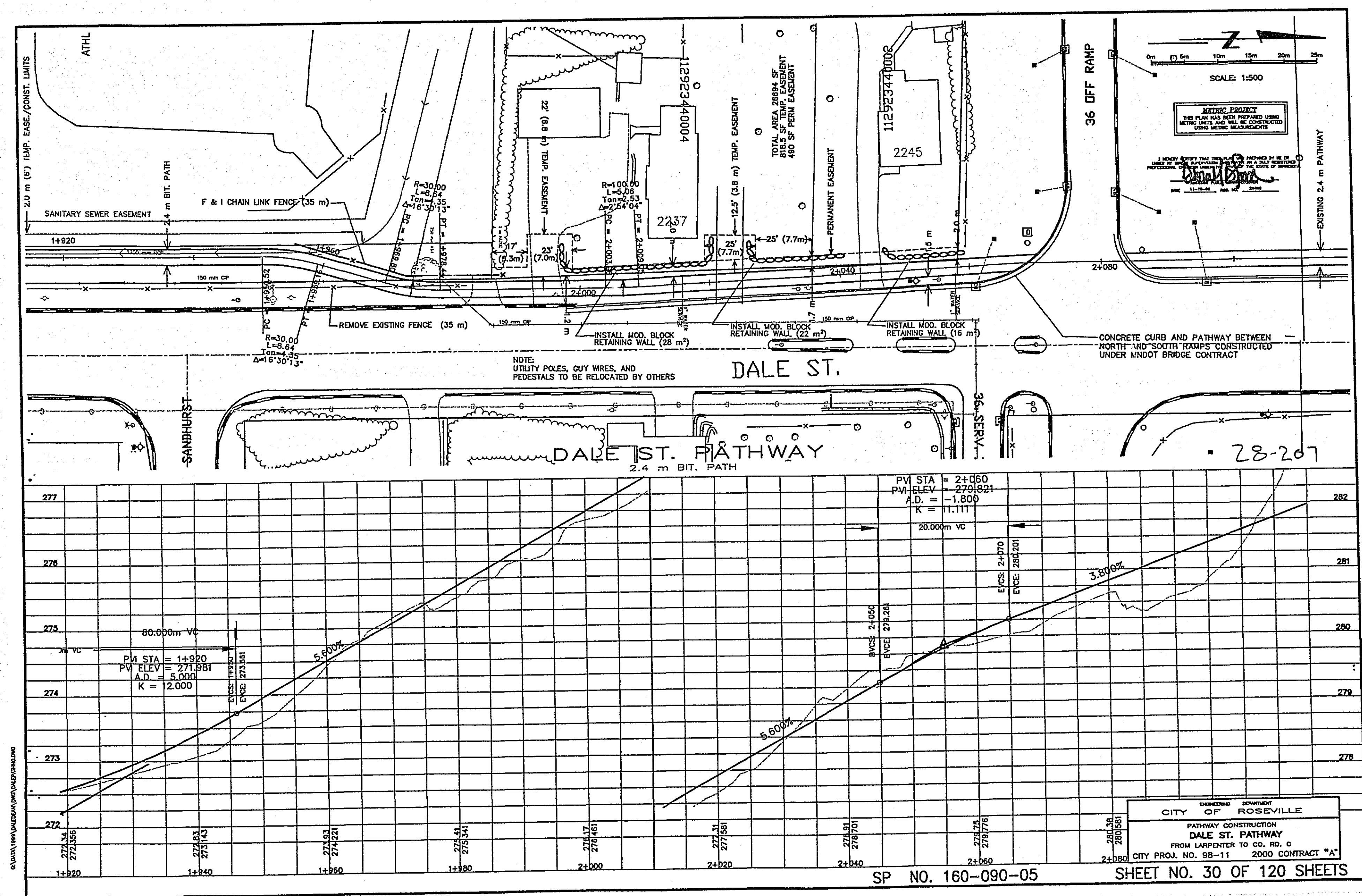
SHEET 12 OF 120 SHEETS

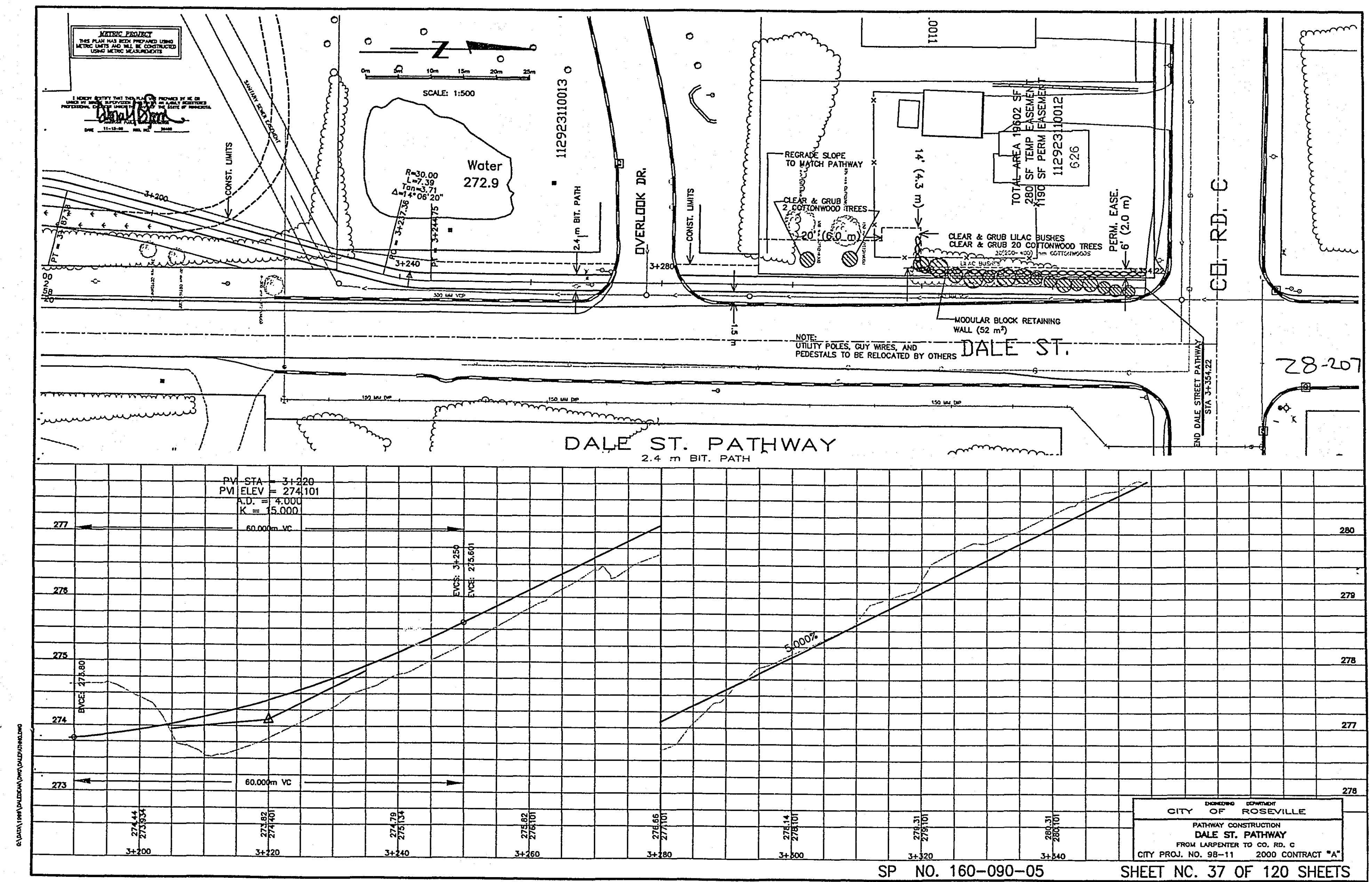
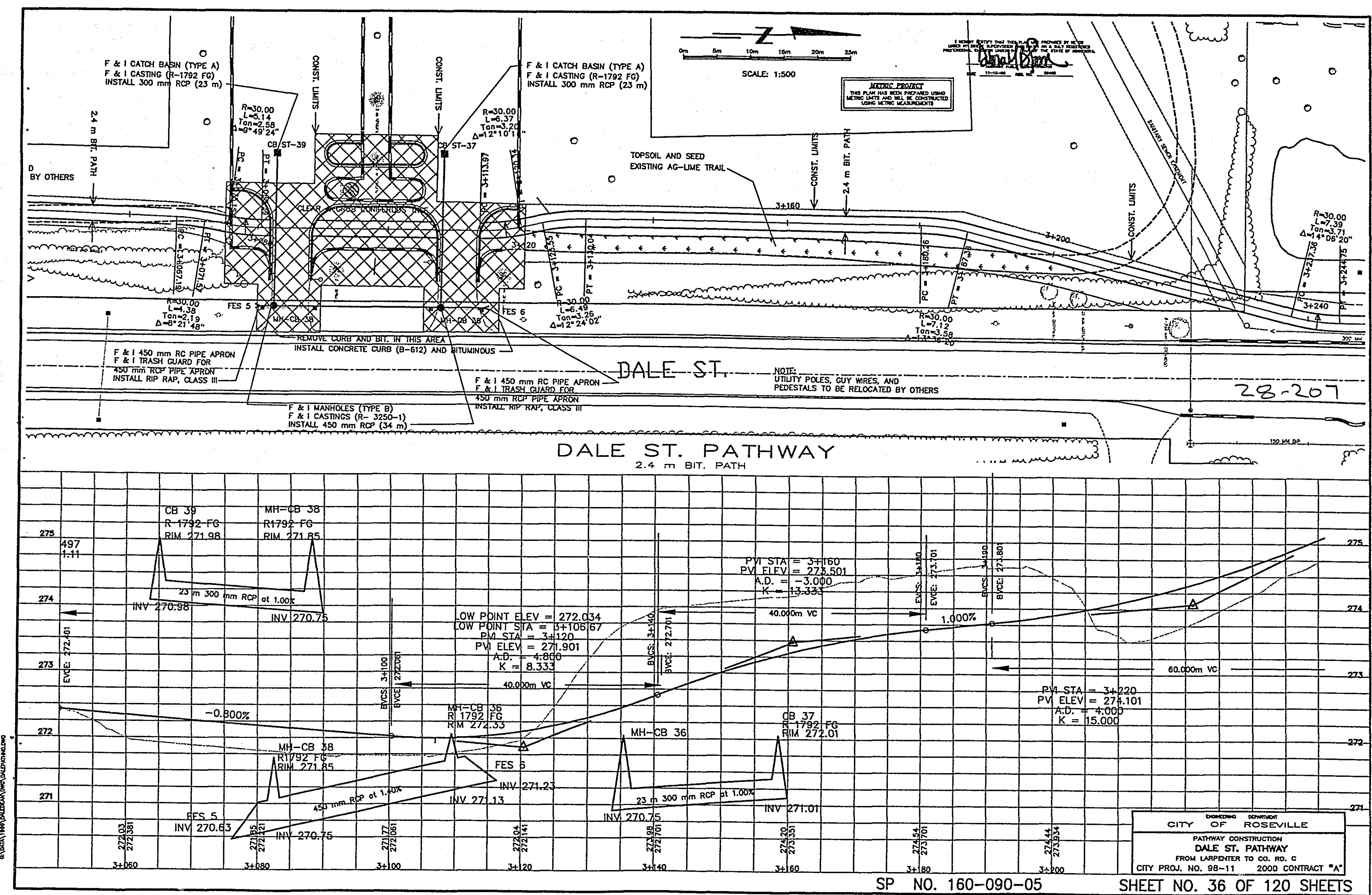
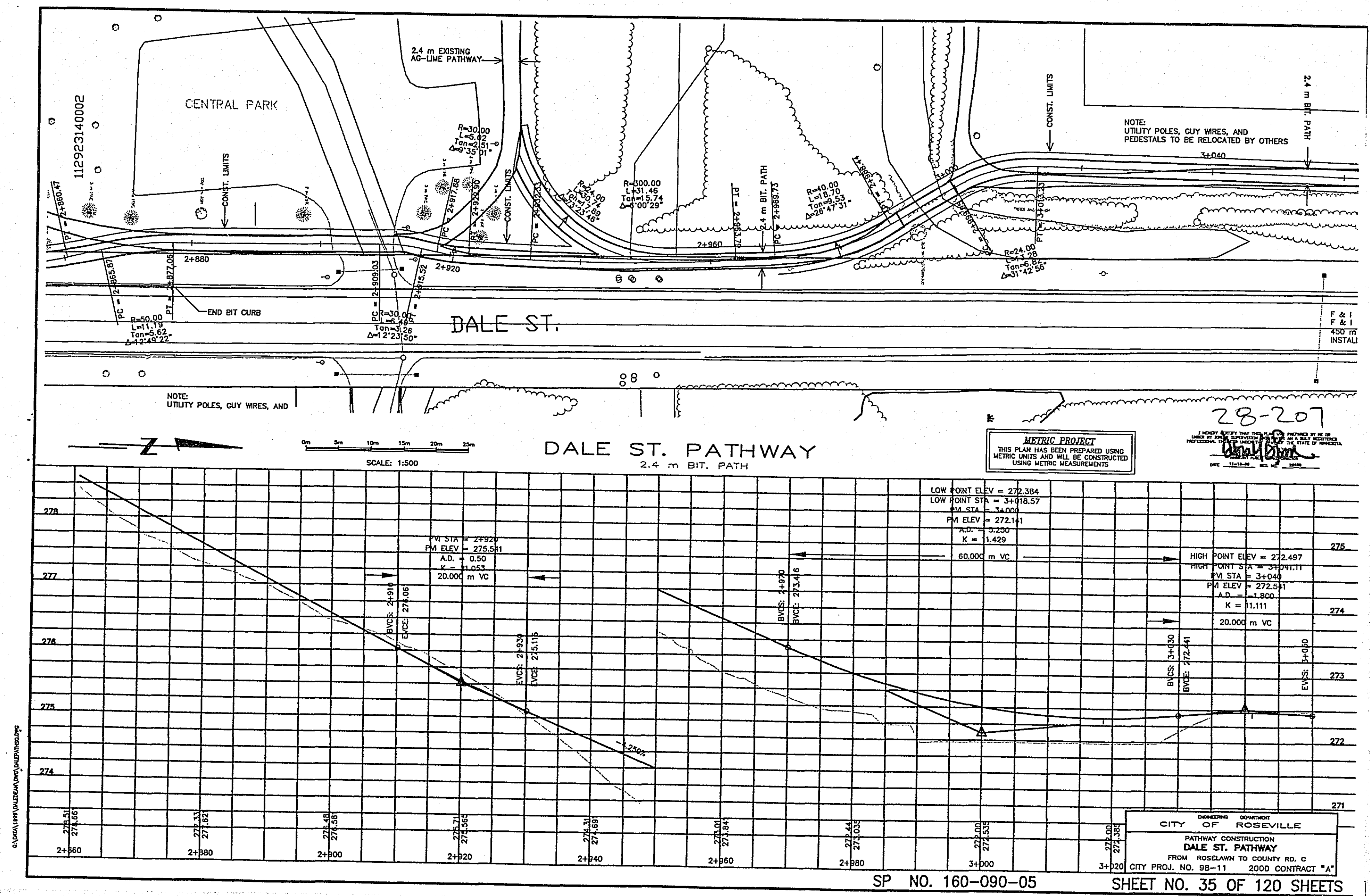
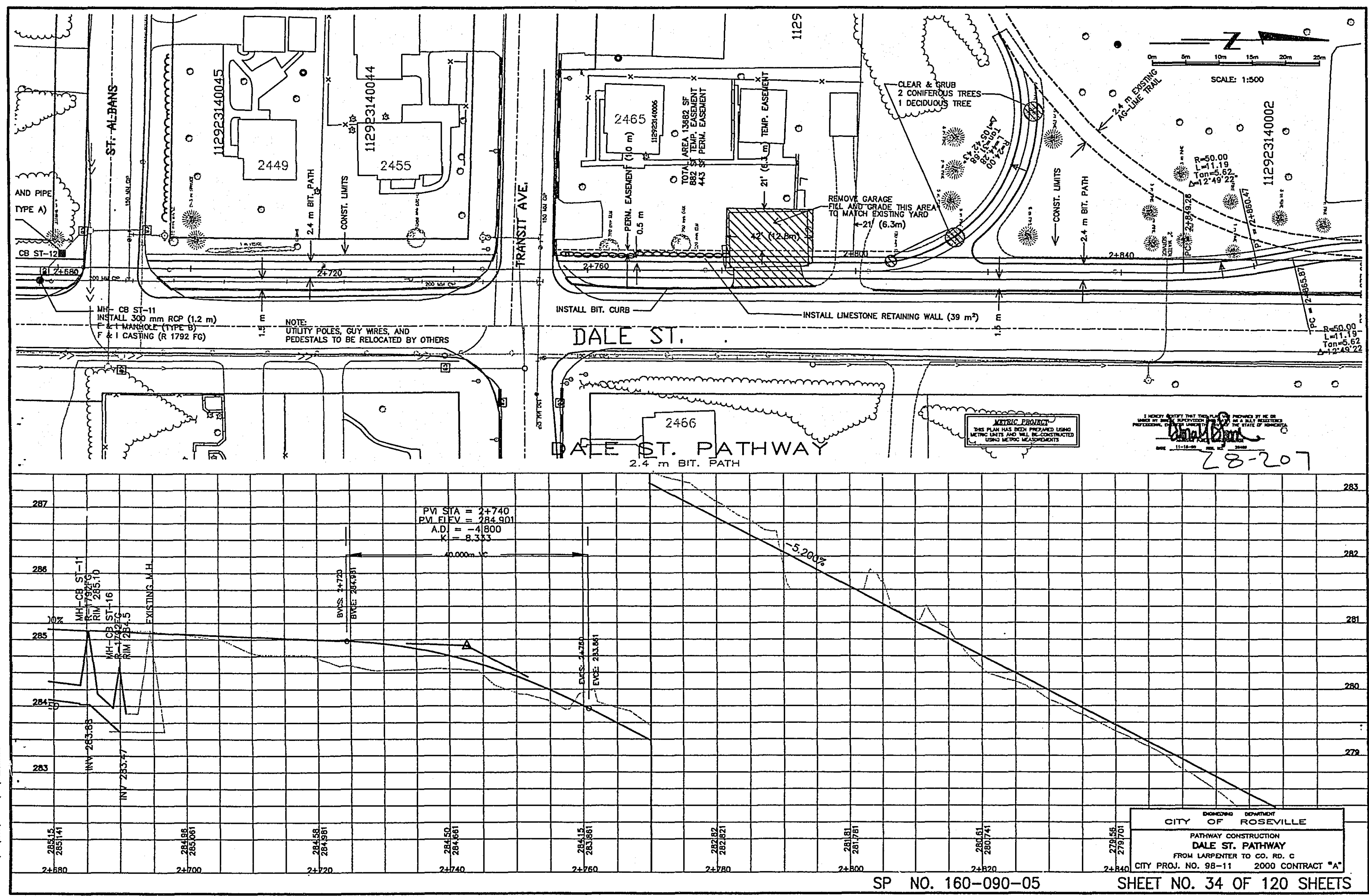


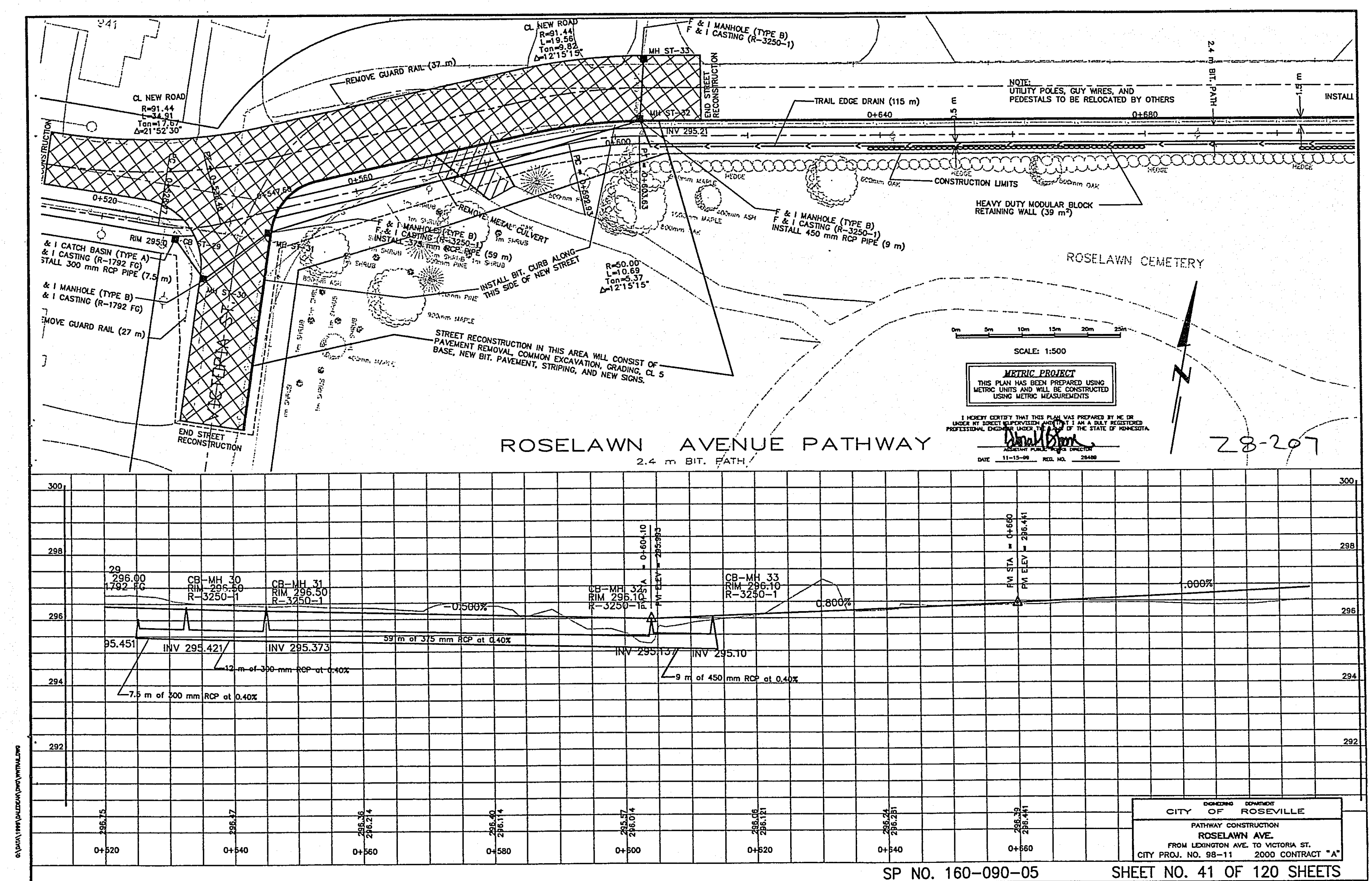
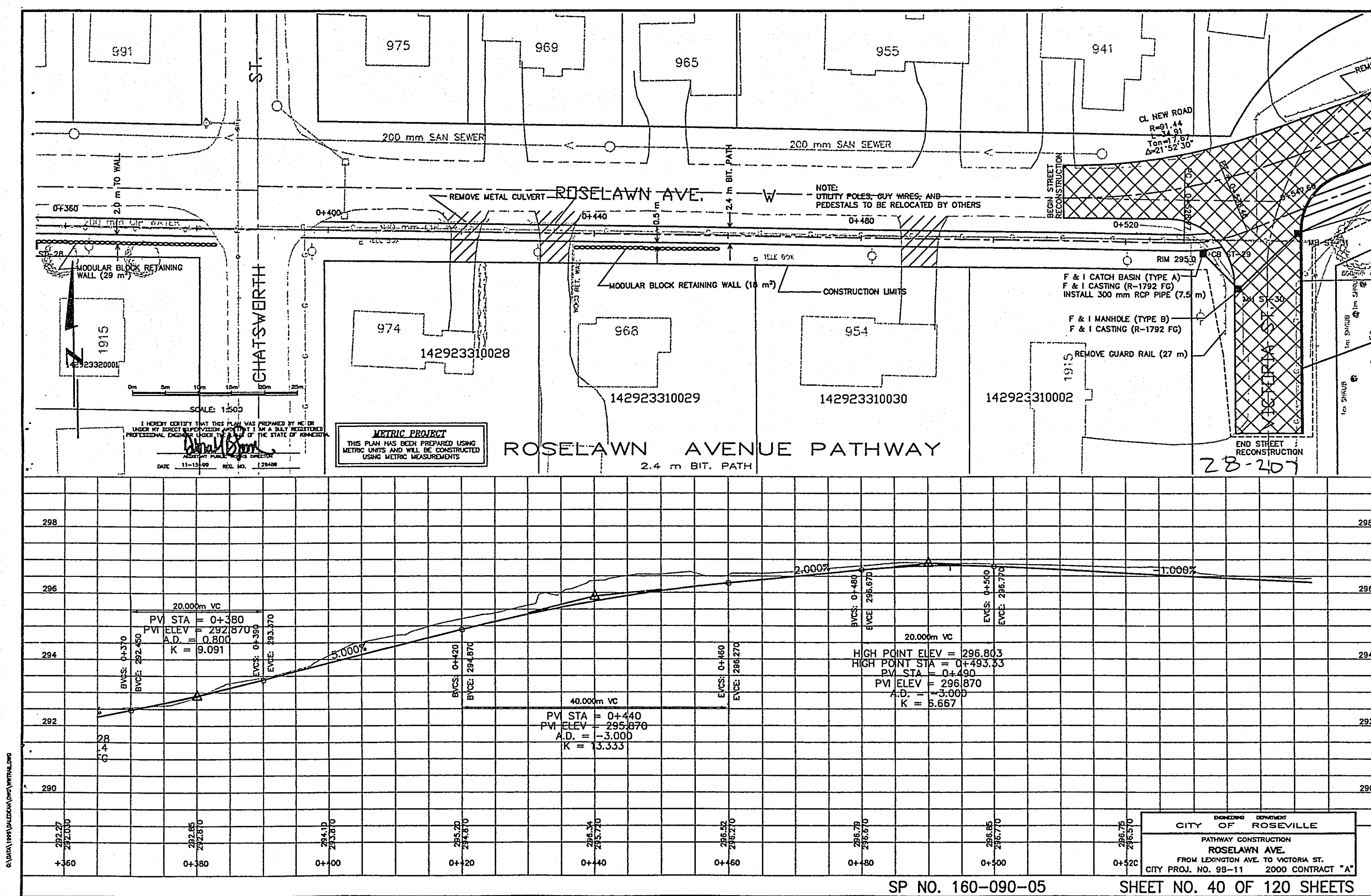
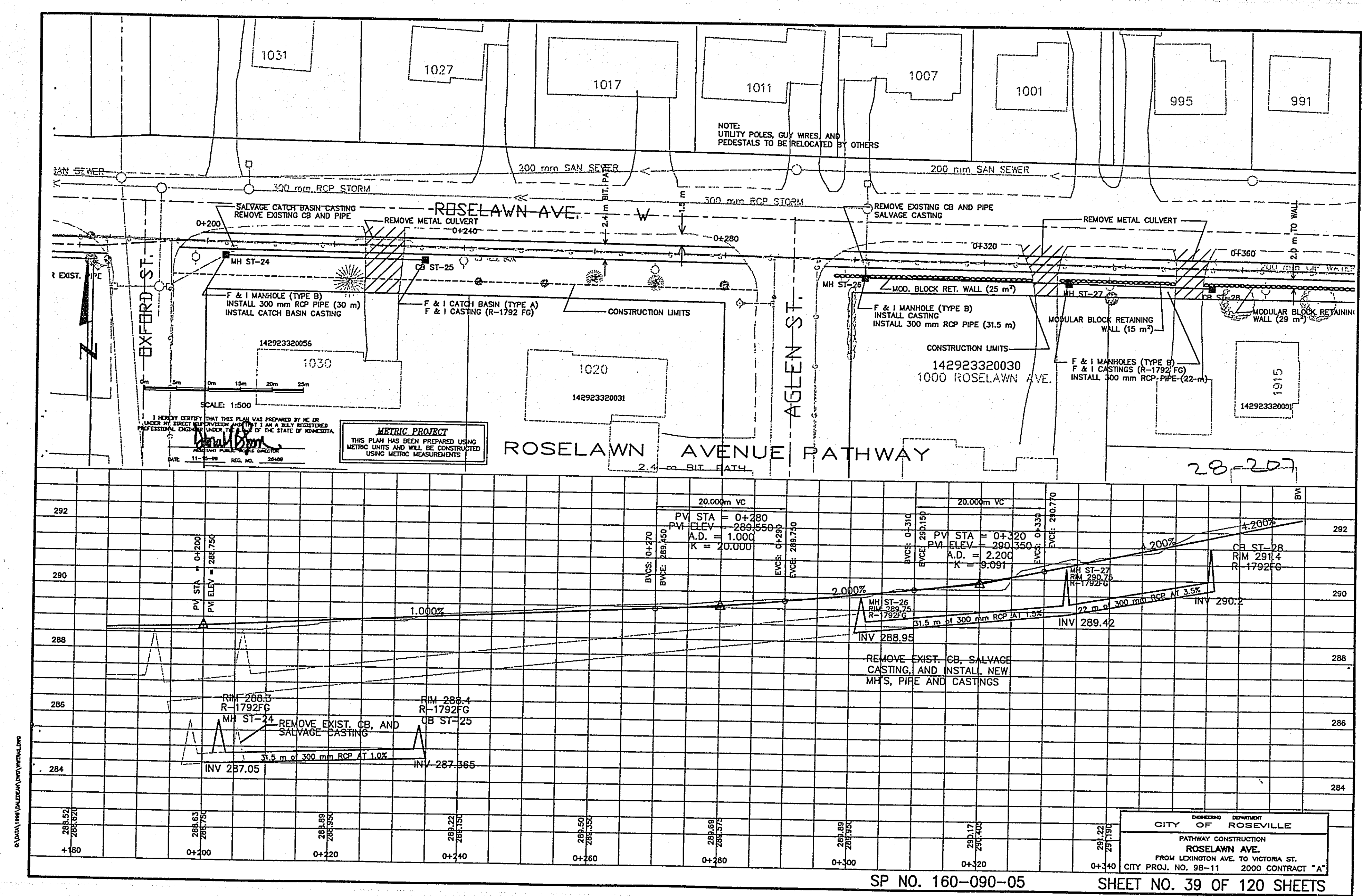
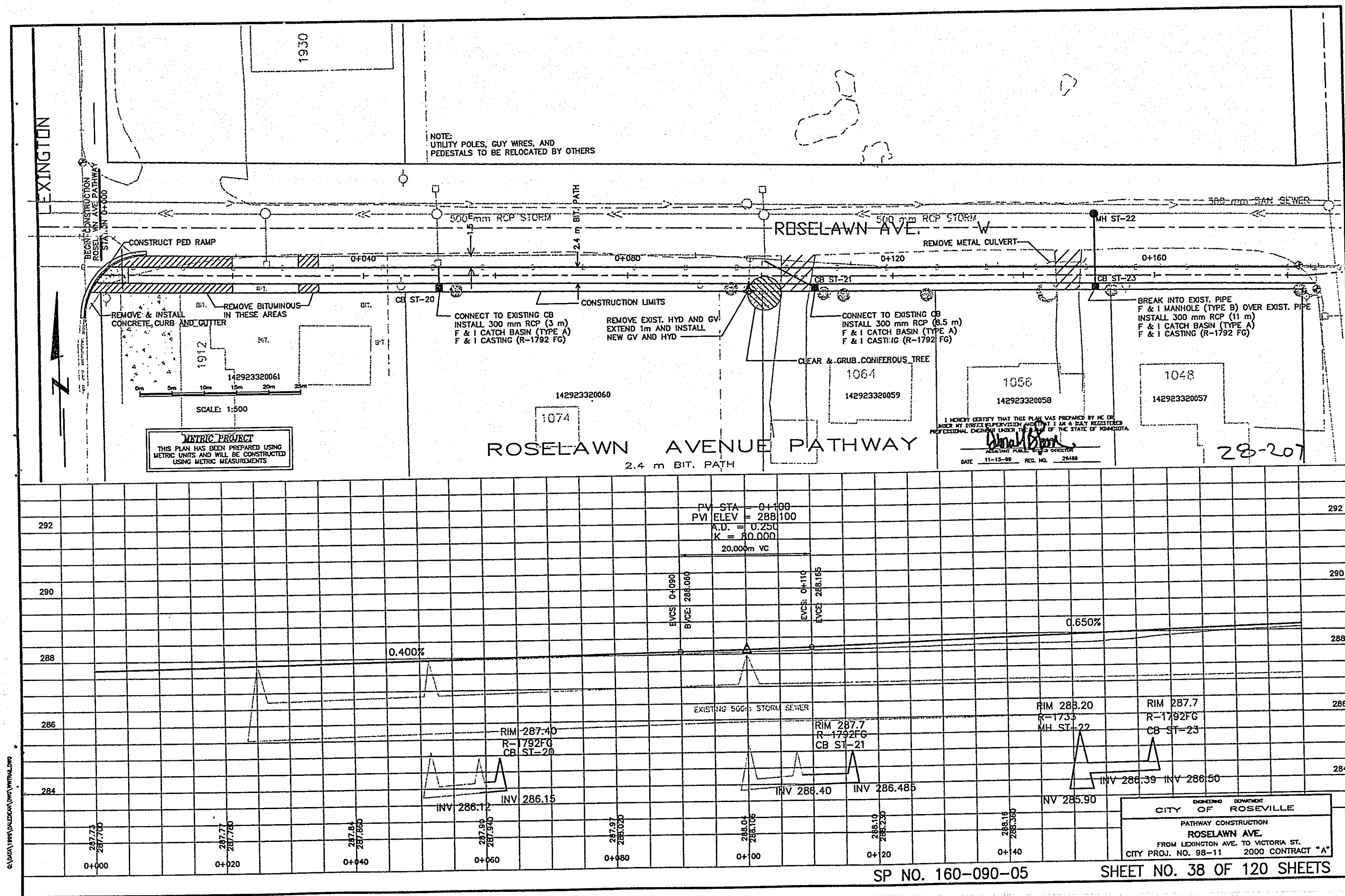


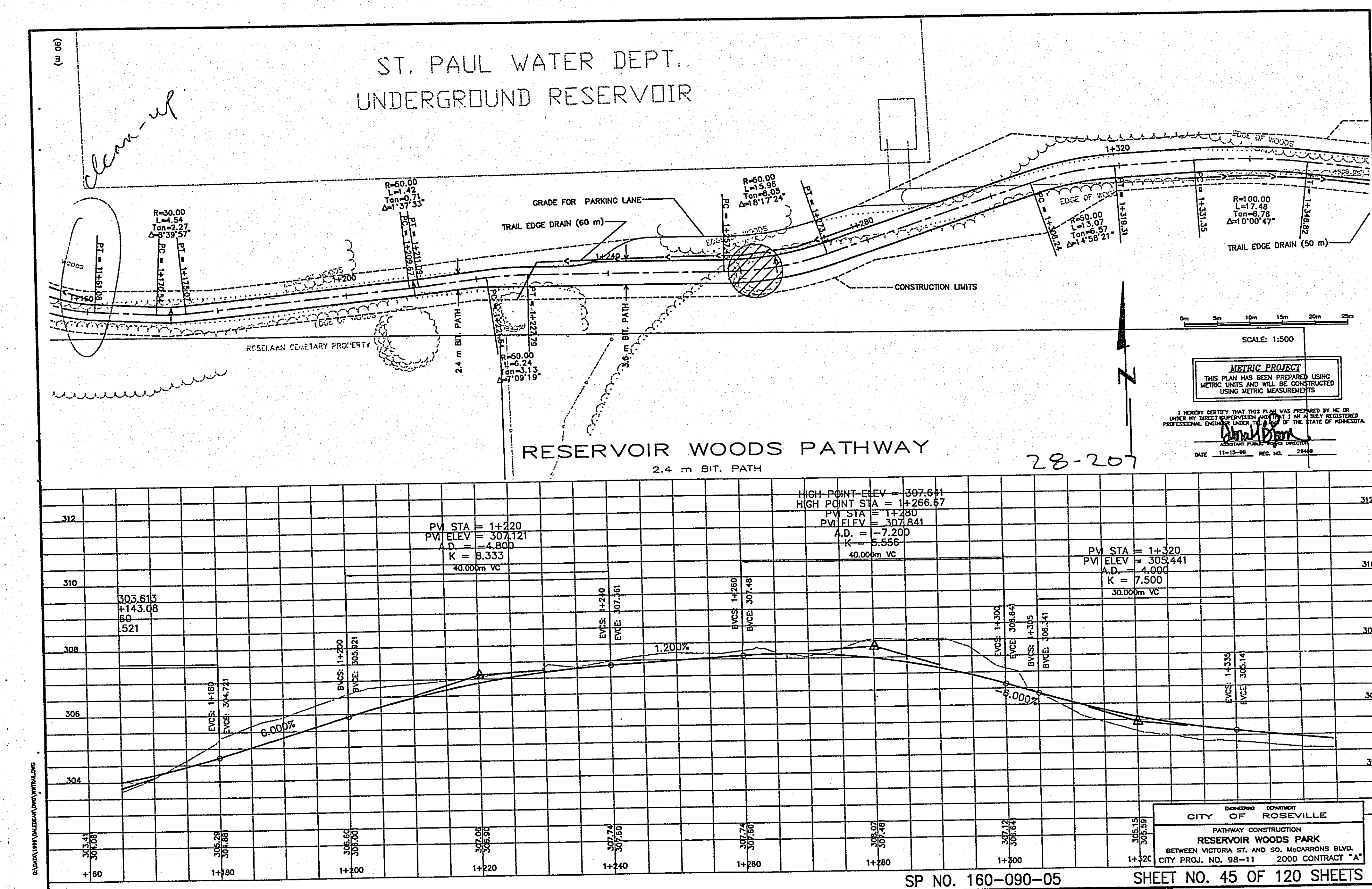
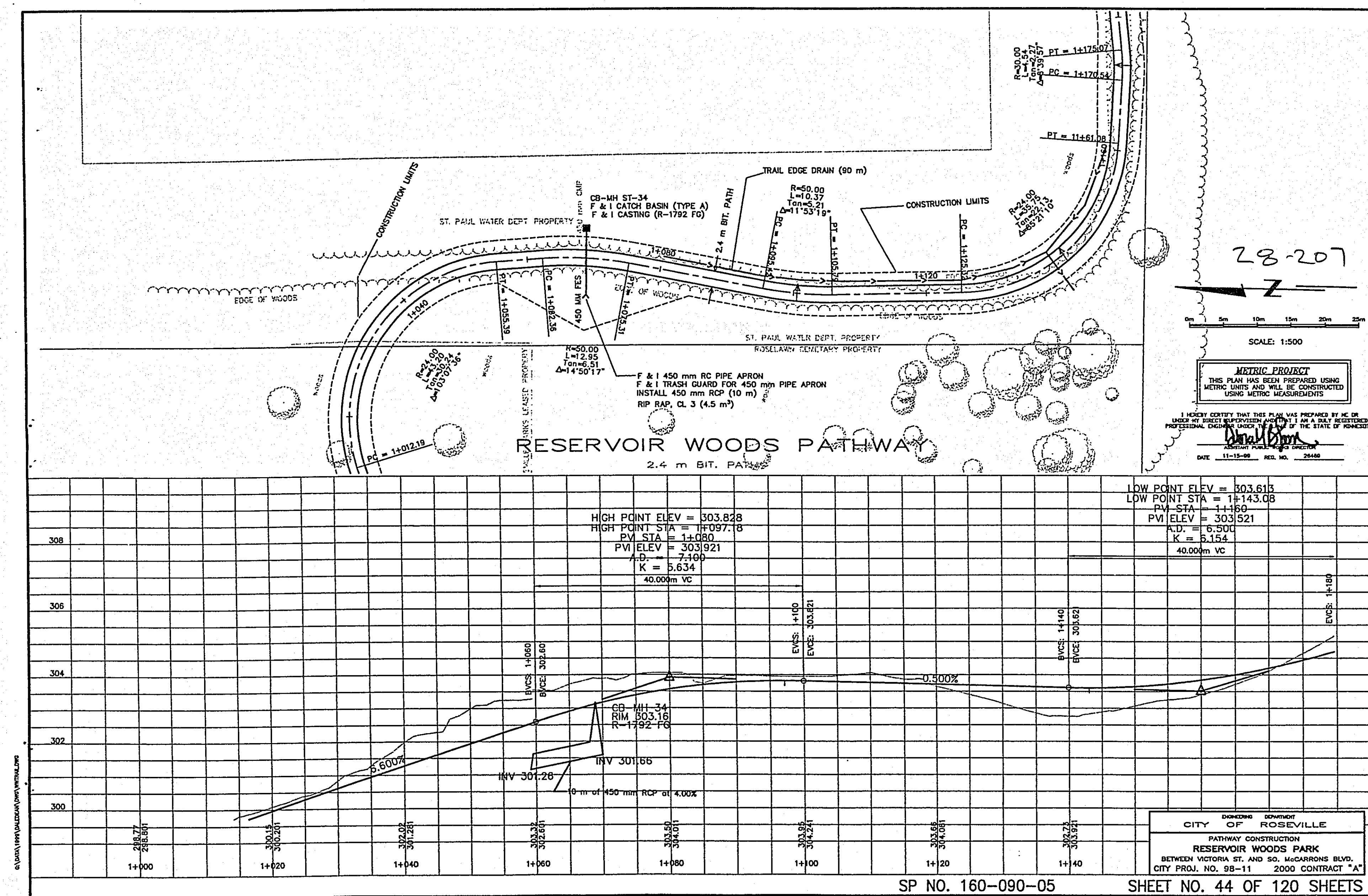
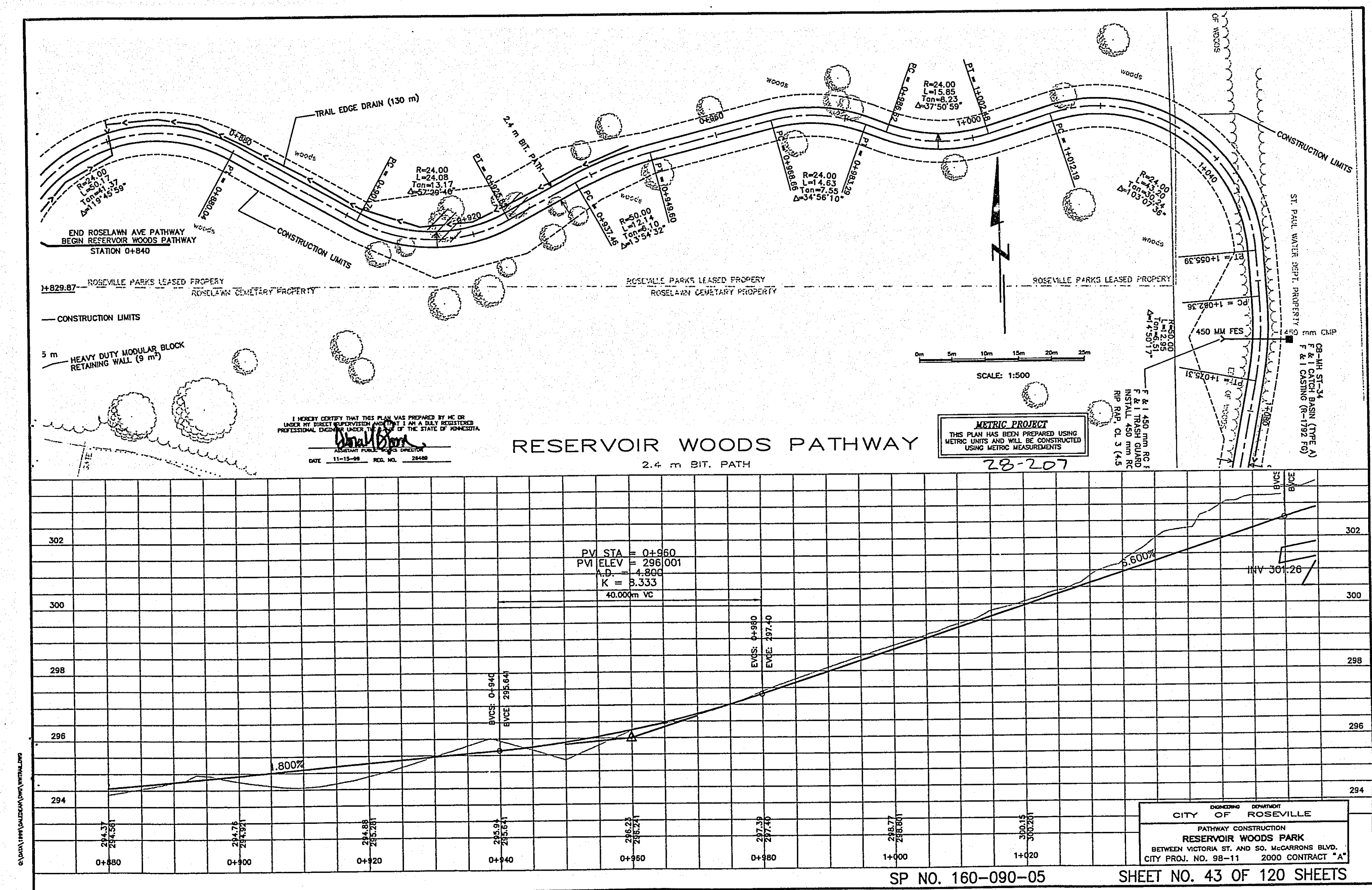
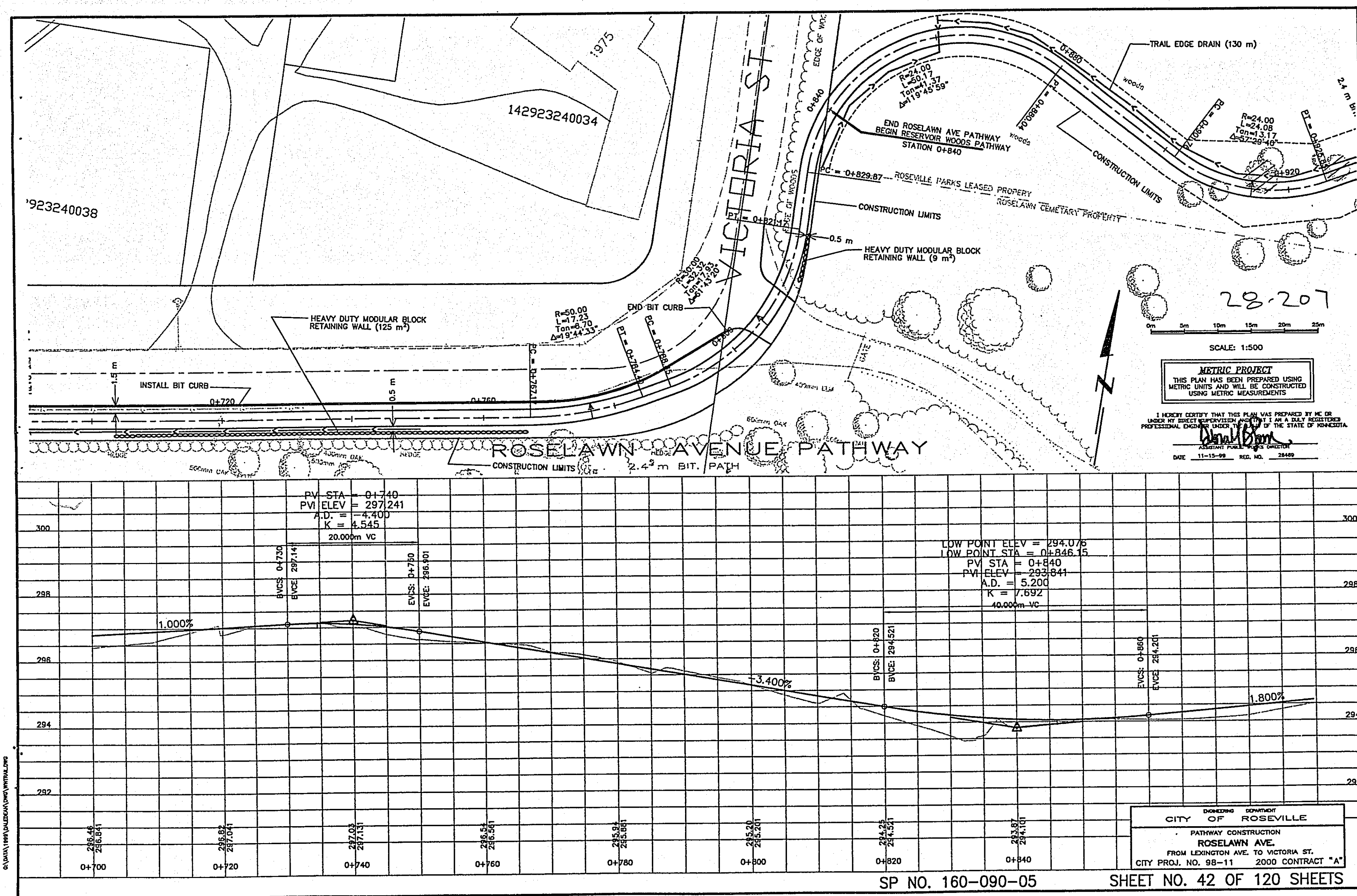


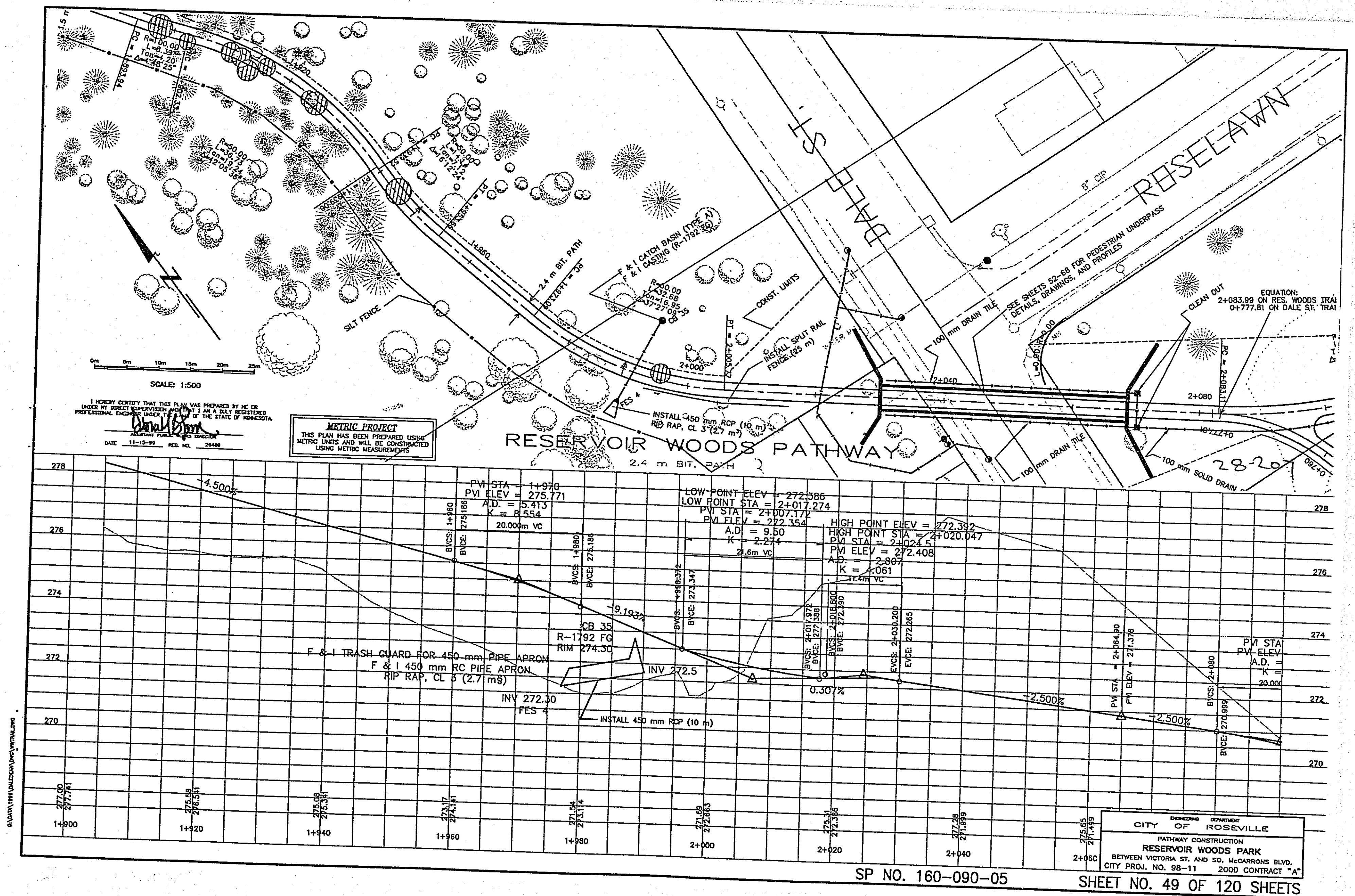
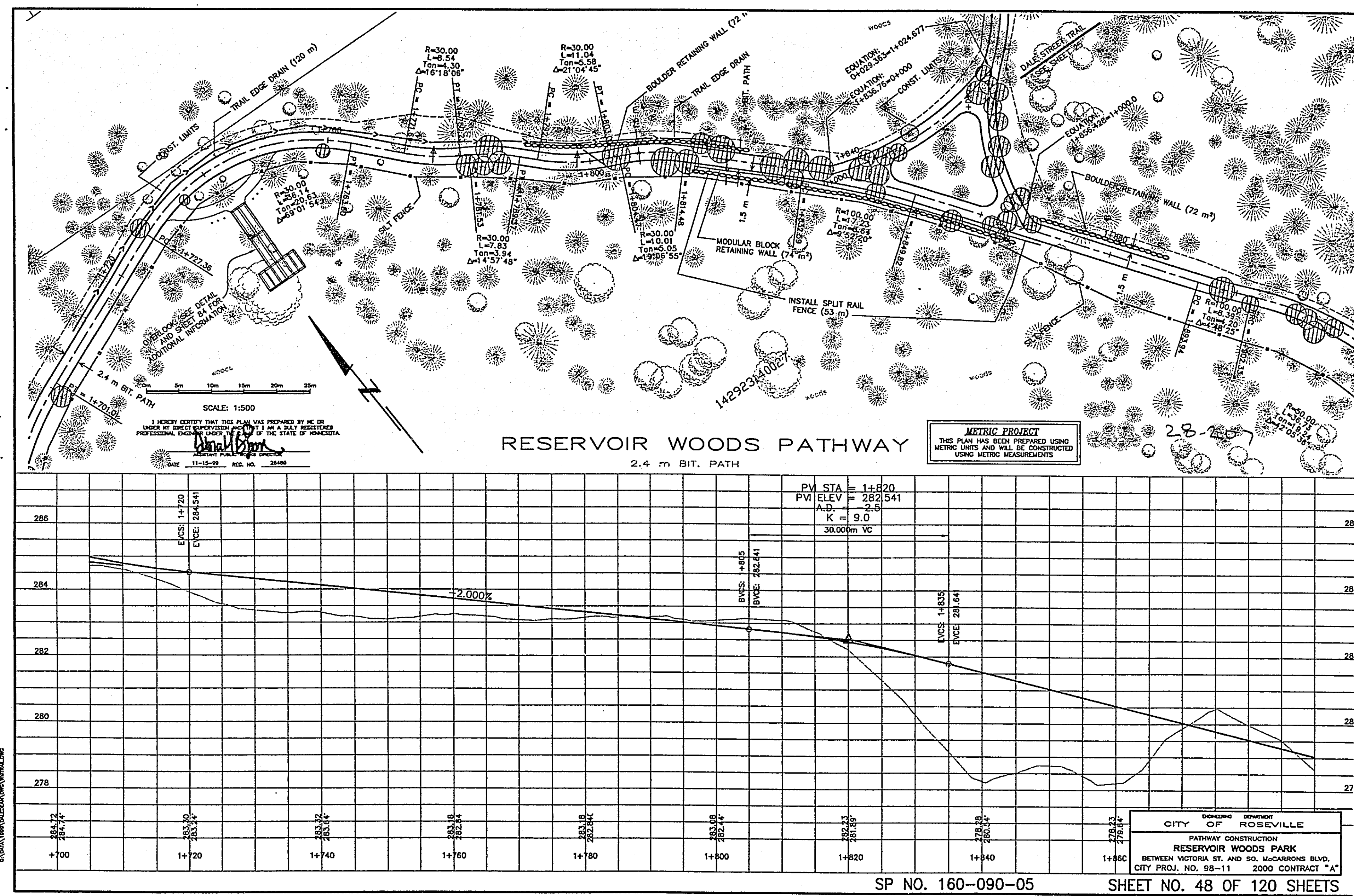
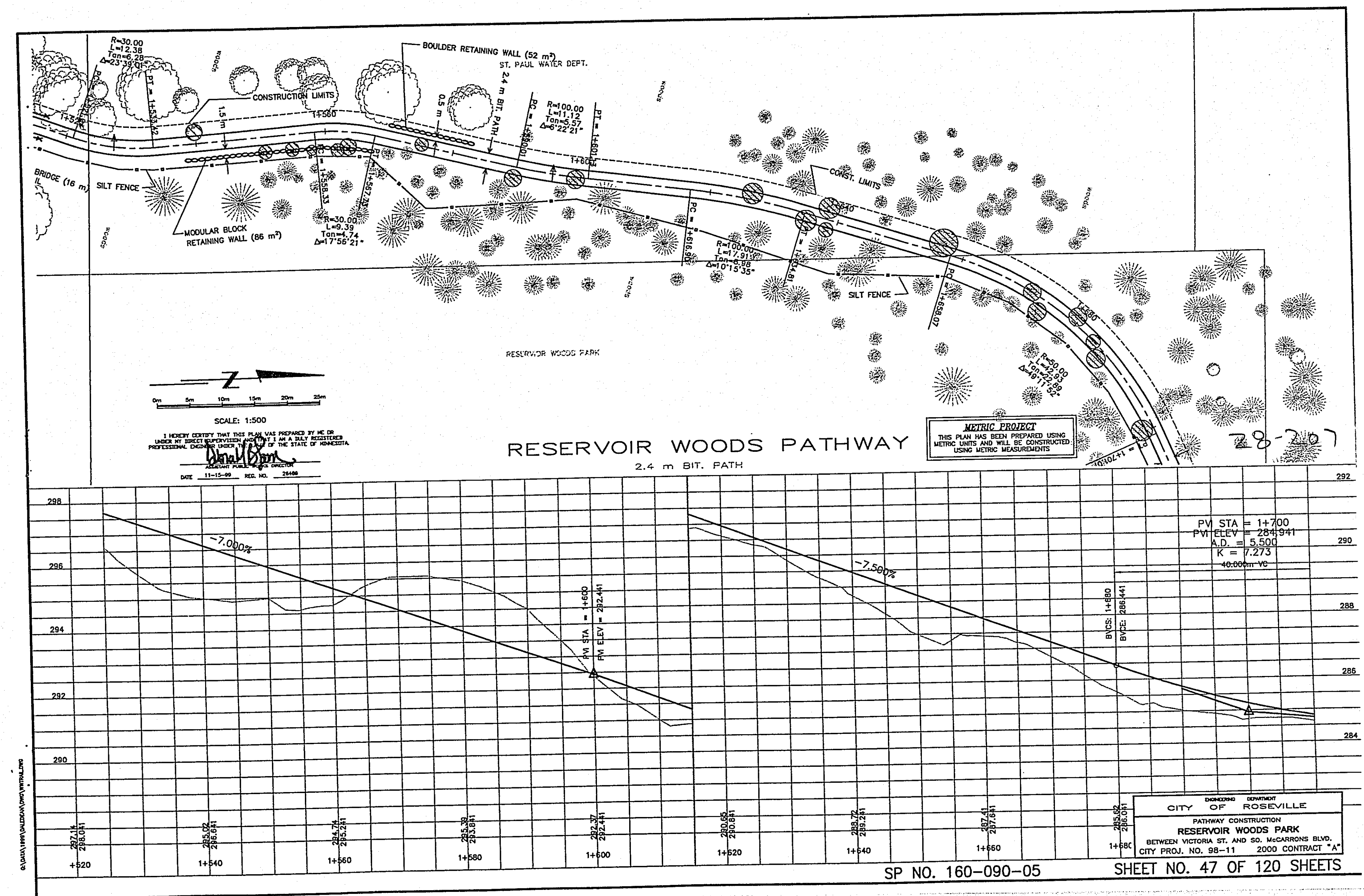
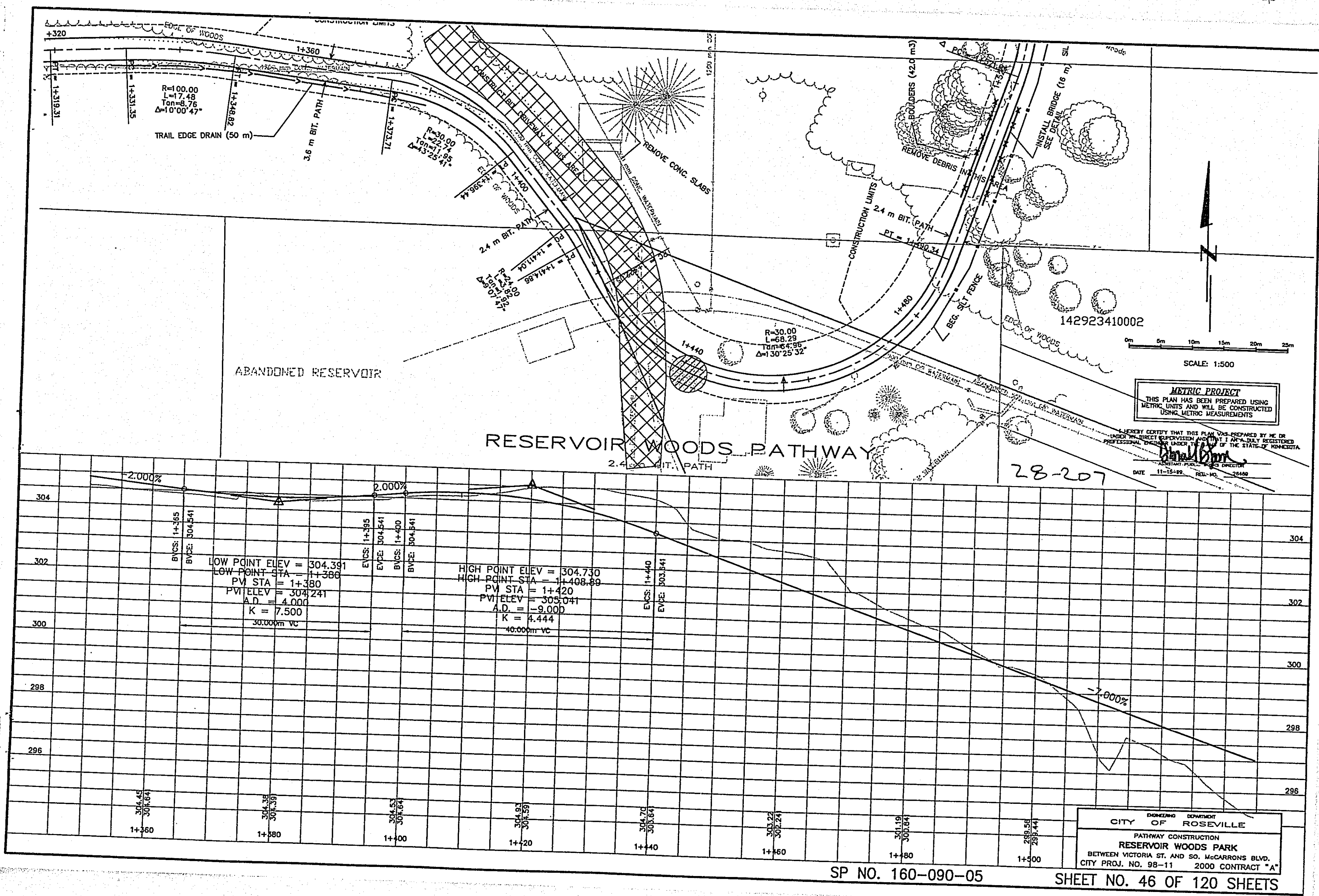


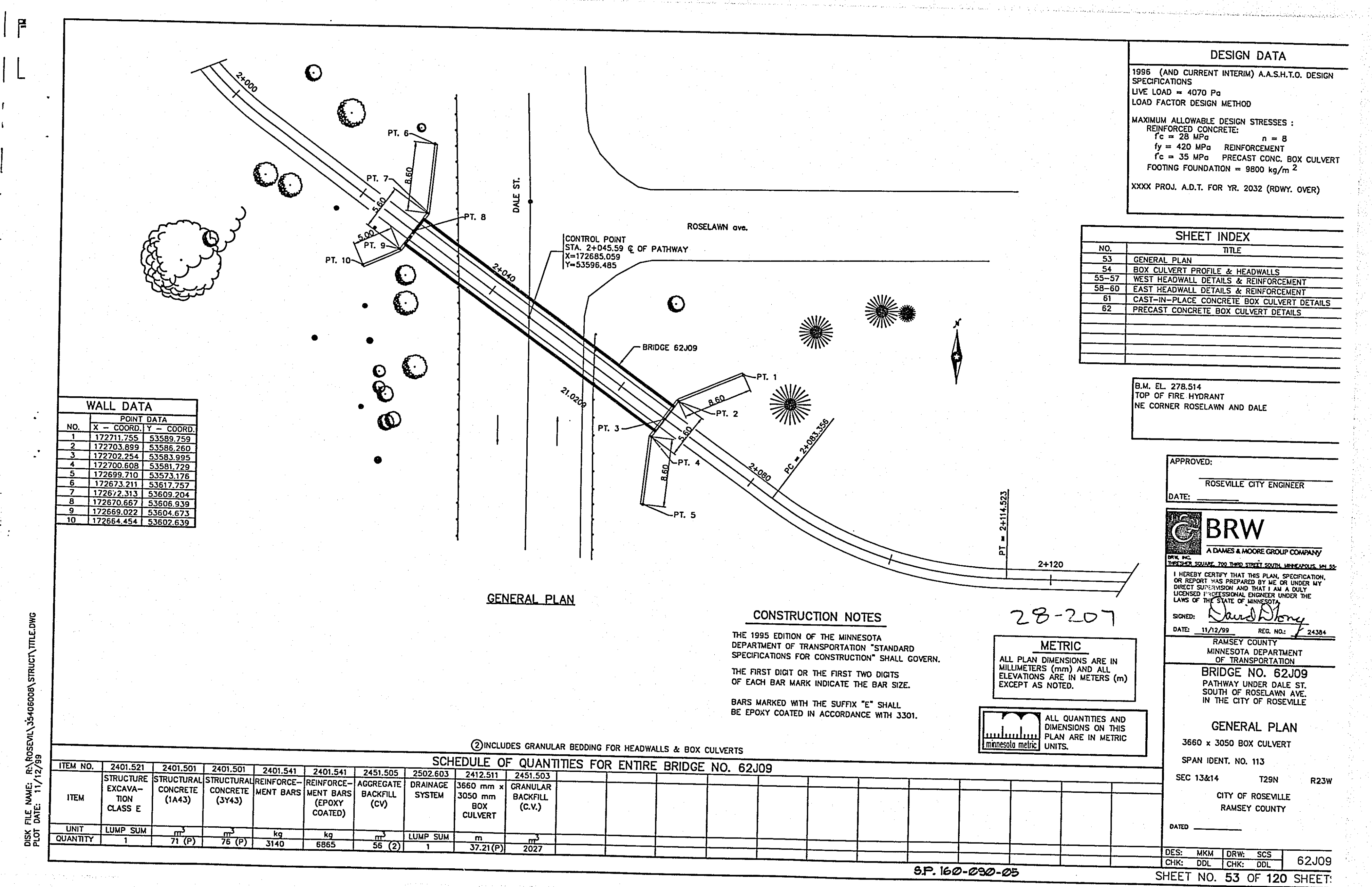
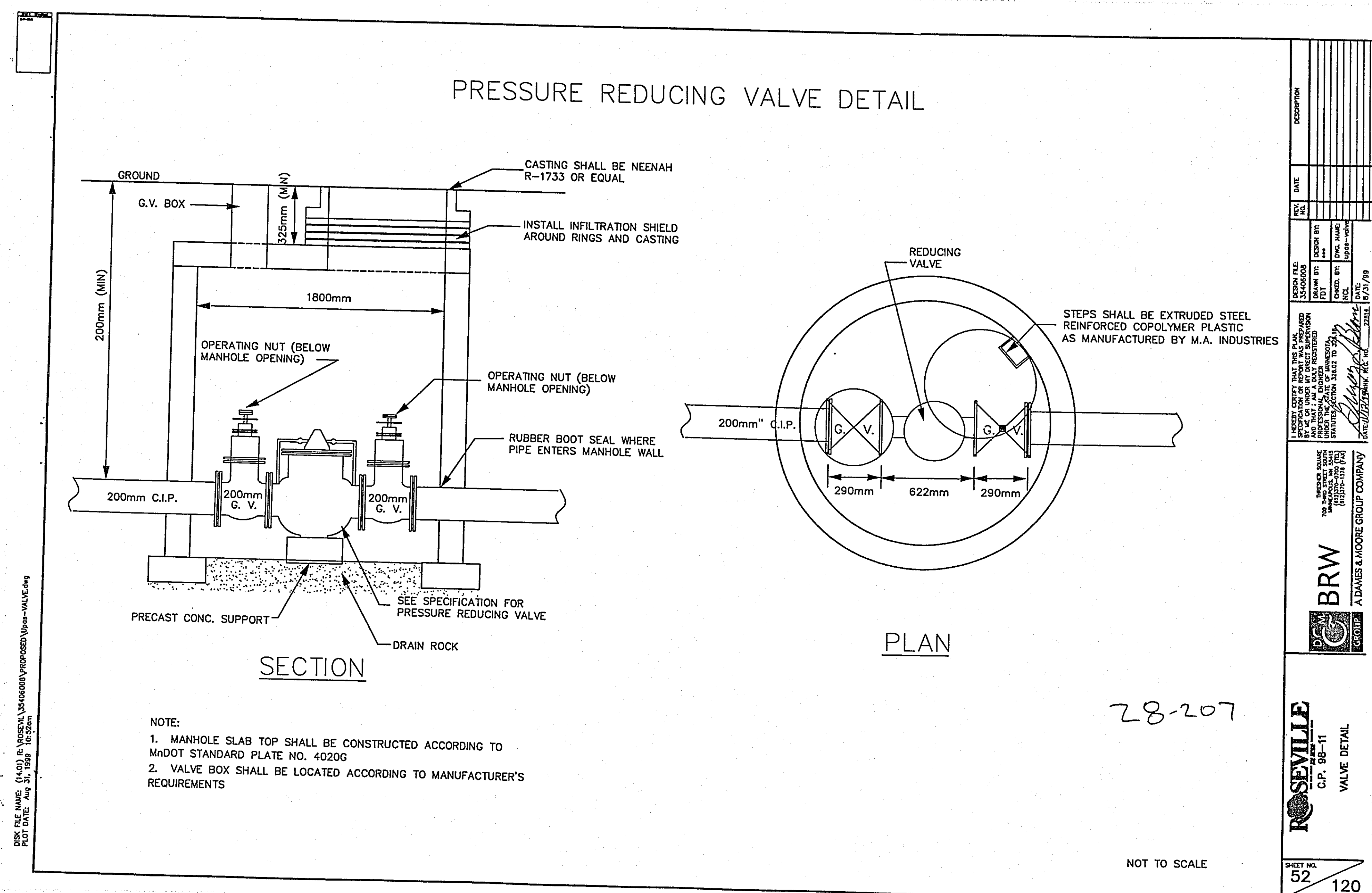
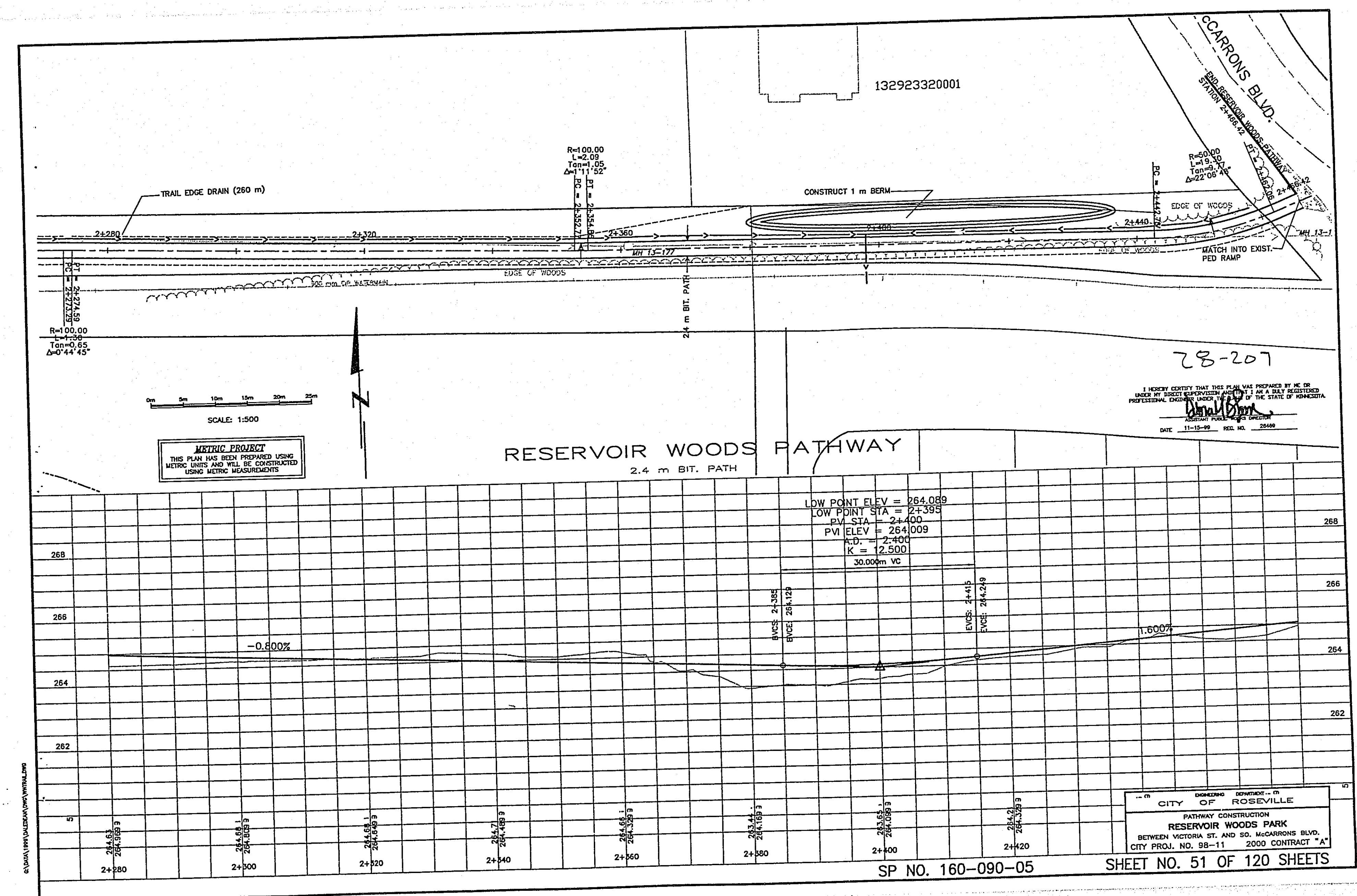


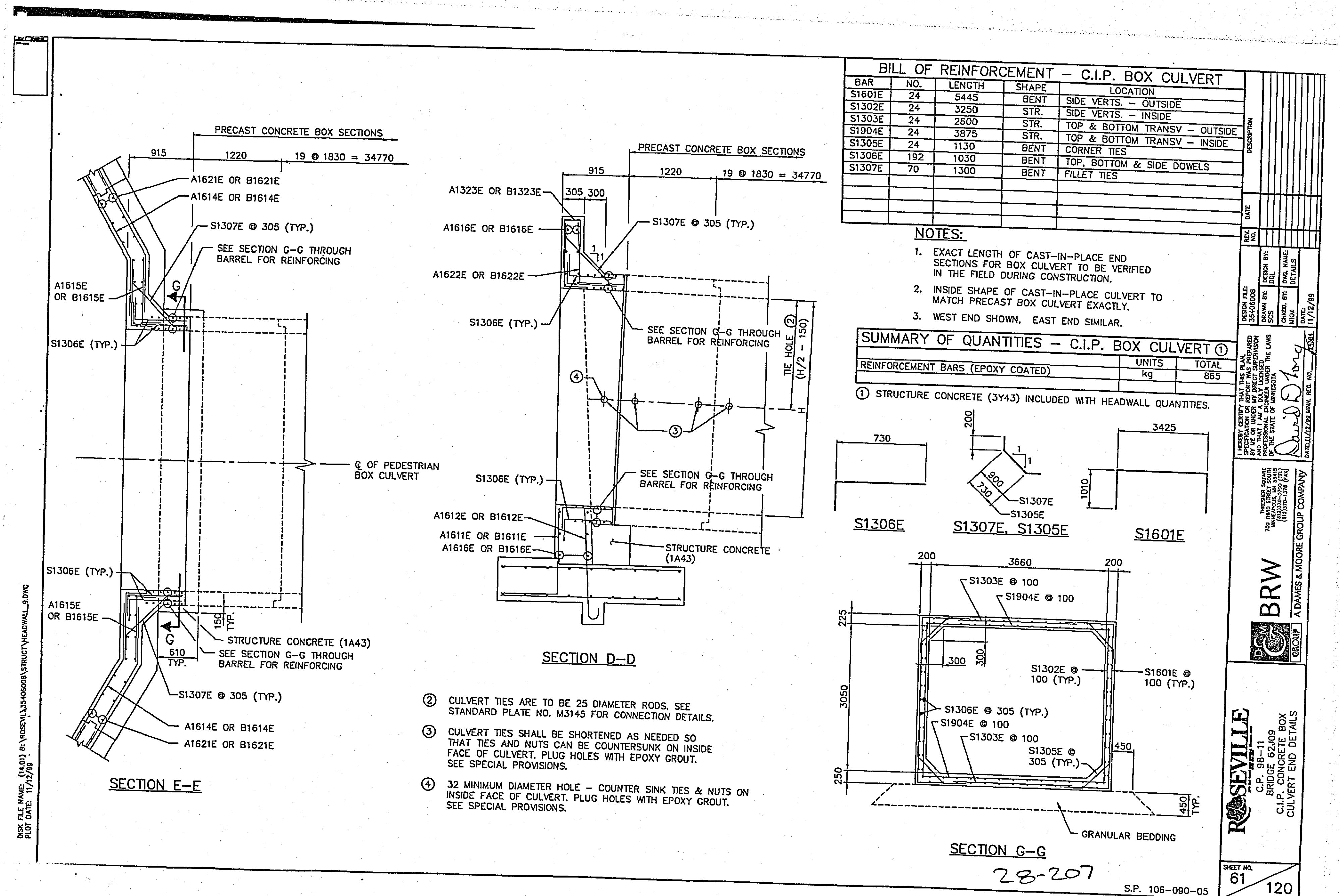
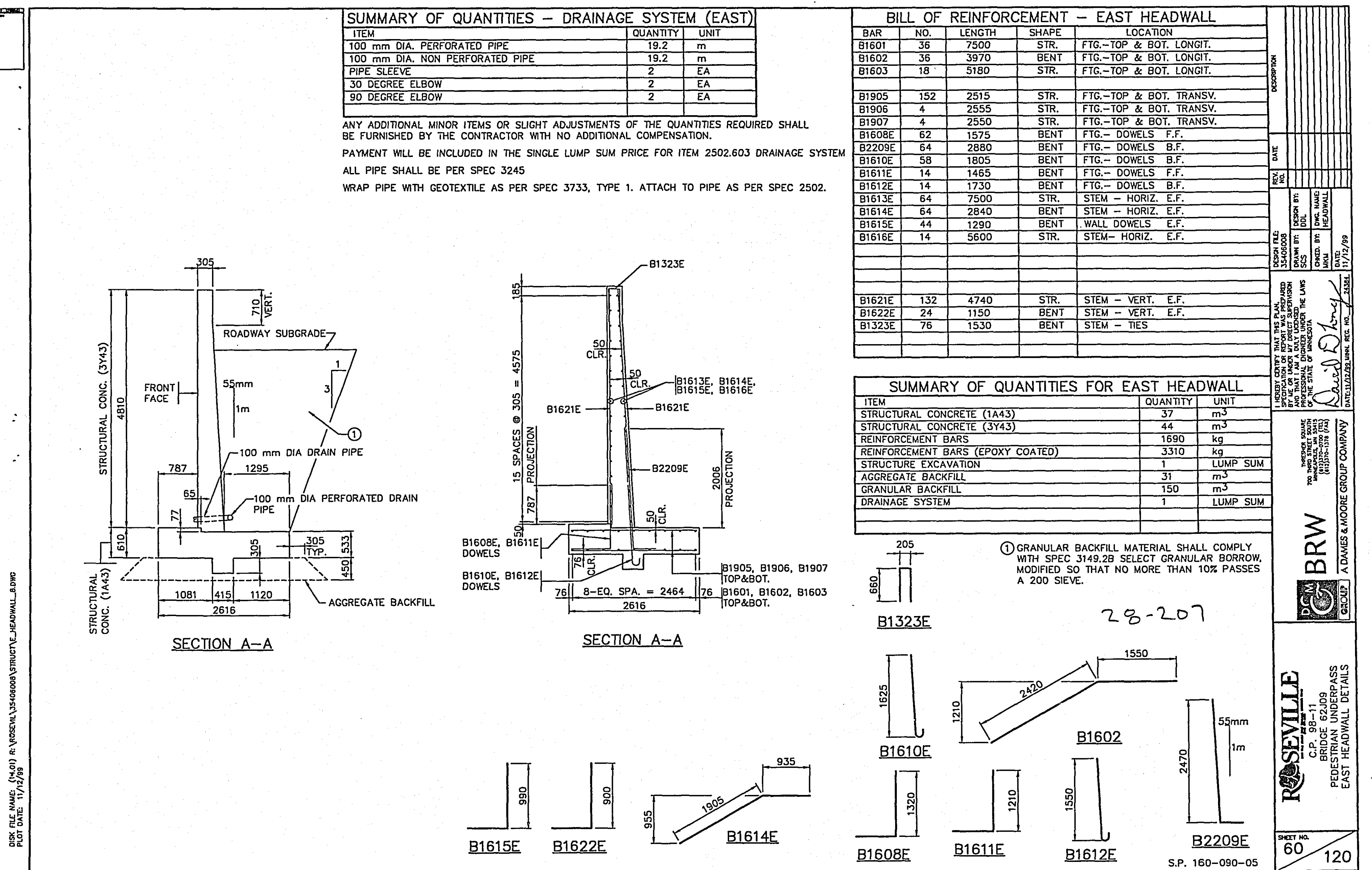
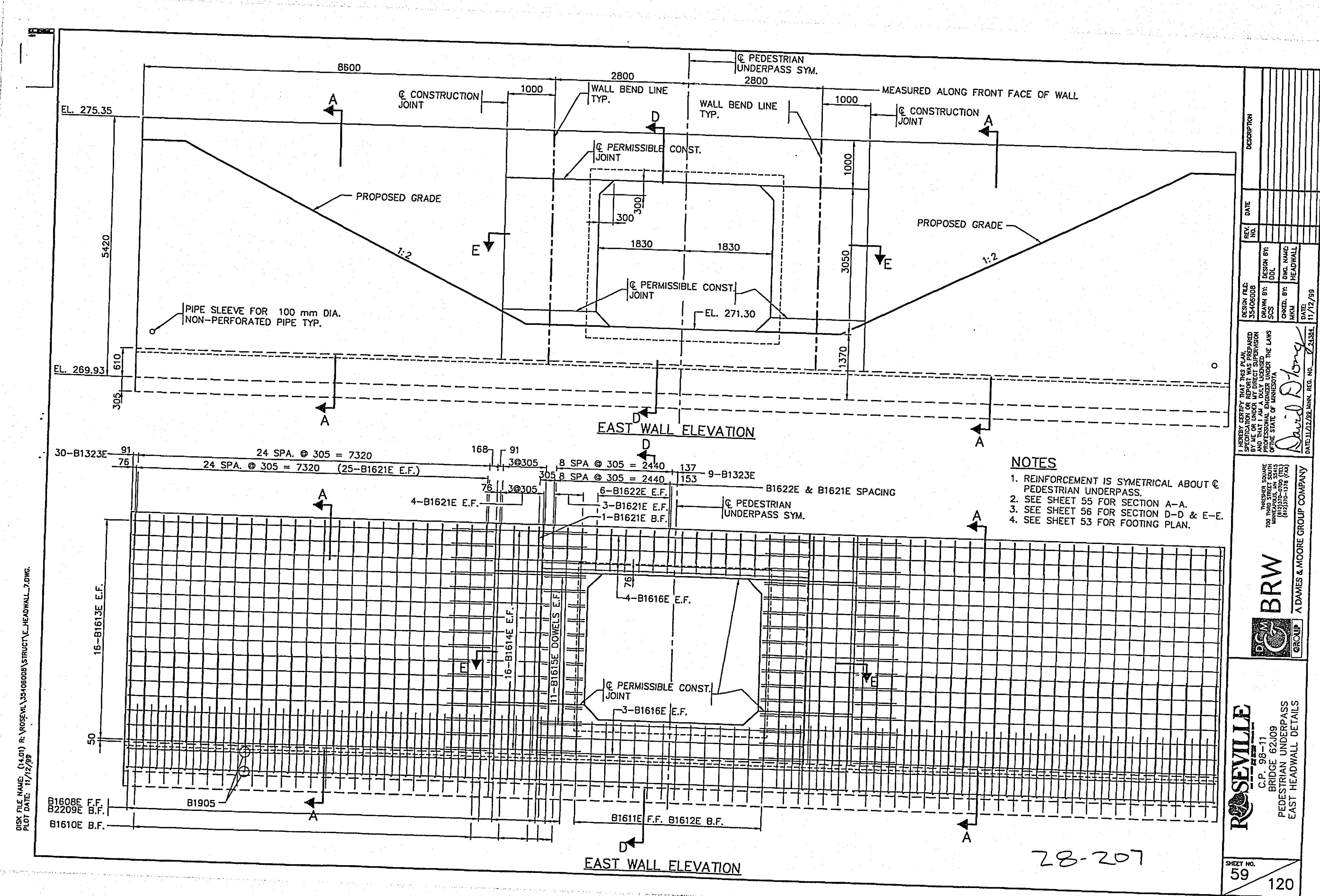
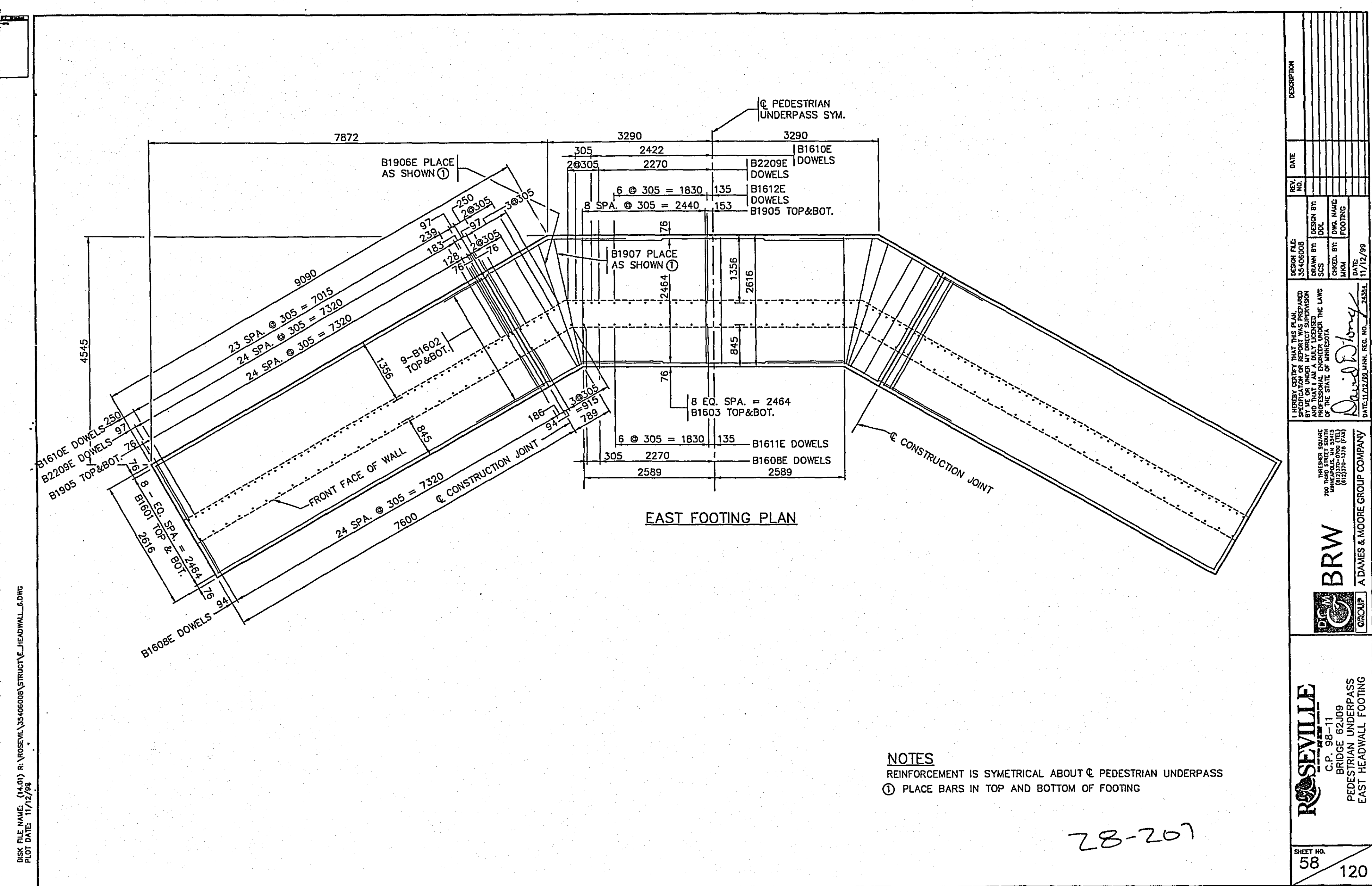


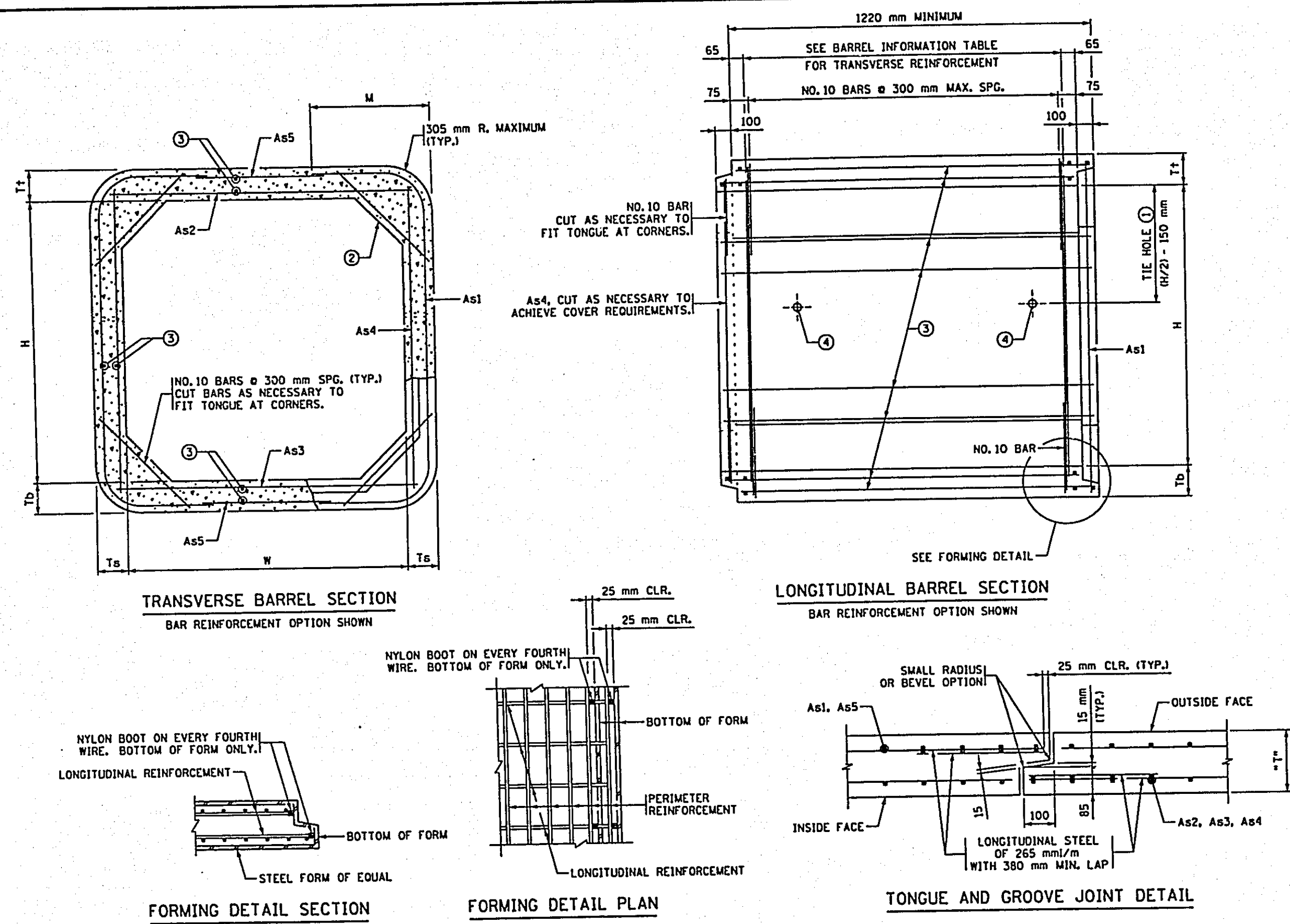












CONSTRUCTION NOTES

CULVERTS TO BE CONSTRUCTED AS PER SPEC. 2412 EXCEPT AS NOTED.

FILL HEIGHTS OF LESS THAN 600 mm REQUIRE A DISTRIBUTION SLAB.

THE STEEL FABRIC, SHEAR REINFORCEMENT AND REINFORCEMENT BARS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF AASHTO M259.

40 mm MINIMUM AND 50 mm MAXIMUM CONCRETE COVER ON ALL REINFORCEMENT, INCLUDING SHEAR REINFORCEMENT, EXCEPT FOR TONGUE AND GROOVE DETAIL.

ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED:

- (a) 1 LAYER OF MESH AND 1 LAYER OF REINFORCEMENT BARS, OR
- (b) 1 LAYER OF REINFORCEMENT BARS.

THE REINFORCEMENT SHALL BE DEVELOPED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WIRE MESH, THE AREAS OF DEVELOPMENT SHALL BE INCREASED BY 50%.

THE MAXIMUM SIZE OF REINFORCEMENT BARS SHALL BE NO. 19. THE MAXIMUM MESH SIZE SHALL BE 15 mm DIAMETER PER LAYER (MAXIMUM OF 2 LAYERS).

THE SPACING CENTER TO CENTER OF THE TRANSVERSE WIRES SHALL NOT BE LESS THAN 50 mm NOR MORE THAN 100 mm. THE SPACING CENTER TO CENTER OF THE LONGITUDINAL WIRES SHALL NOT BE MORE THAN 200 mm.

WELDING WILL NOT BE ALLOWED ON REINFORCEMENT BARS OR STEEL FABRIC, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE FABRIC IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, ADDITIONAL REINFORCEMENT SHALL BE ADDED ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT STEEL.

CONCRETE SHALL BE MIX NO. 3W36 WITH NO CALCIUM CHLORIDE ALLOWED.

① CULVERT TIES ARE TO BE 25 mm DIAMETER RODS. SEE STANDARD PLATE NO. M3145 FOR CONNECTION DETAILS.

② HAUNCH SIZE AS FOLLOWS:

1800 mm AND 2400 mm WIDTHS - 150 mm TO 305 mm
3050 mm WIDTH - 250 mm TO 305 mm
3600 mm WIDTH - 305 mm

③ MINIMUM LONGITUDINAL STEEL SHALL BE 130 mm²/m.

④ CULVERT TIES SHALL BE SHORTENED AS NEEDED SO THAT TIES AND NUT CAN BE COUNTERSUNK ON INSIDE FACE OF CULVERT BARREL. PLUG HOLES WITH EPOXY GROUT. SEE SPECIAL PROVISIONS.

SHOP DRAWING APPROVAL PER SPEC. 3238.2A IS NOT REQUIRED UNLESS OPENINGS OR ATTACHMENTS ARE PLACED ON A BARREL SEGMENT.

THE JOINTS IN THE PRECAST CONCRETE BOX CULVERT SHALL BE EFFECTIVELY SEALED TO PROVIDE A FLEXIBLE WATERPROOF JOINT USING AN APPROVED JOINT SEALER MATERIAL (PREFORMED RUBBER, PREFORMED PLASTIC OR BITUMINOUS MASTIC).

FABRIC LAYER DETAIL

WHEN MORE THAN ONE LAYER OF STEEL FABRIC IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, THE WIRES OF THE STEEL FABRIC SHALL BE PLACED AS SHOWN.

BARREL INFORMATION																					
LOCATION	SIZE	CLASS	F ^o C	FILL HEIGHT RANGE (mm)	DIMENSIONS					MASS (kg/m)	STEEL FABRIC REINFORCEMENT										
					W	H	T ₁	T ₂	T ₃		As1		As2		As3		As4		As5		
			(MPa)		(mm)	(mm)	(mm)	(mm)	(mm)		AREA (mm ² /m)	LENGTH (mm)	M (mm)	AREA (mm ² /m)	LENGTH (mm)	AREA (mm ² /m)	LENGTH (mm)	AREA (mm ² /m)	LENGTH (mm)	AREA (mm ² /m)	LENGTH (mm)
DALE STREET/ROSELAWN	3600x3050	2	35	600-2400	3600	3050	225	250	200	7800	1440	5210	1050	2480	3800	2240	3800	420	3200	130	2600

STATE PROJ. NO. 106-090-05		FIG. 5-395.101M	
CERTIFIED BY: <i>David Wong</i>	TITLE: BARREL DETAILS	DESIGNED BY: CHS/MJM	APPROVED BY: CHS/SCS
REG. NO. 24384	11/12/99	BRIDGE NO. 62J09	
SHEET NO. 62 OF 120 SHEETS			

