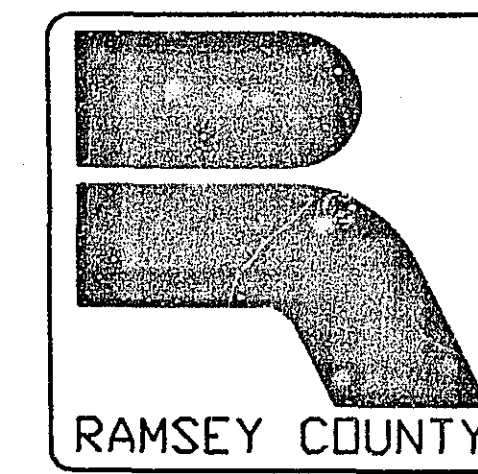


LARPENTEUR AVE.

SAP 62-630-44

MINNESOTA DEPARTMENT OF TRANSPORTATION



RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN FOR: GRADING, AGGREGATE BASE,
CONCRETE SURFACING, STORM SEWER, CONCRETE CURB &
GUTTER, CONCRETE SIDEWALK, UTILITY IMPROVEMENTS, AND
TRAFFIC SIGNAL IMPROVEMENTS.

LARPENTEUR AVE.

C.S.A.H. 30

S.P. 62-630-44

S.P. 124-020-04

BETWEEN: CLEVELAND AVE. (C.S.A.H. 46) AND SNELLING AVE. (S.T.H. 51)

BEGINNING: AT A POINT 15.71 m EAST OF THE SOUTHWEST
CORNER OF SECTION 16; TOWNSHIP 29N;
RANGE 23W

ENDING: AT A POINT 1.23 m EAST OF THE SOUTHEAST
CORNER OF SECTION 16; TOWNSHIP 29N;
RANGE 23W

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	ESTIMATED QUANTITIES
4	INDEX OF TABULATIONS-STANDARD PLATES-CONSTRUCTION NOTES
5	TYPICAL SECTIONS
6-9	CHARTS
10-11	EXISTING STRUCTURE CHARTS
12-13	PROPOSED STORM SEWER CHART
14	ENTRANCE DETAILS
15	MAILBOX, SILT FENCE, PIPE DRAIN
16	CONTROL STRUCTURES & PEDESTRIAN CURB RAMP DETAIL
17-18	ALIGNMENT SHEET
19-21	CONCRETE PAVING & JOINT DETAILS
22-23	CONCRETE PAVING LAYOUT
24-28	LARPENTEUR AVE. PLAN & PROFILE
29-55	X-SECTIONS - LARPENTEUR AVE.
56-62	X-SECTIONS - STORM SEWER LATERALS
63	SIGN POSTS DETAILS
64-65	SIGN & STRIPING DETAILS
66-67	DETAILS SYSTEMS C & D
68-70	TRAFFIC SIGNAL C (GORTNER AVE.)
71-75	TRAFFIC SIGNAL D (FAIRVIEW AVE.)
76-77	INTERCONNECT DETAILS AND MAST ARM SIGNS
78	SIGN TABULATION CHART FOR TRAFFIC CONTROL
79-87	TRAFFIC CONTROL PLANS
88-89	CONCRETE BLOCK RETAINING WALL
90	STATE FAIR STORM WATER POND

THIS PLAN CONTAINS 90 SHEETS

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING RIGHT OF WAY LINE
PROPOSED RIGHT OF WAY LINE
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OF CREEK
CULVERT
GUARDRAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
STONE WALL
HEDGE
RAILROAD CROSSING SIGN
CROSSING GATE
MEANDER CORNER
SLOPE EASEMENT (CONST. LIMITS)

MARSH
DECIDUOUS TREE
CONIFEROUS TREE
WOODS
CATCH BASIN
BRIDGE
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB

UTILITY SYMBOLS

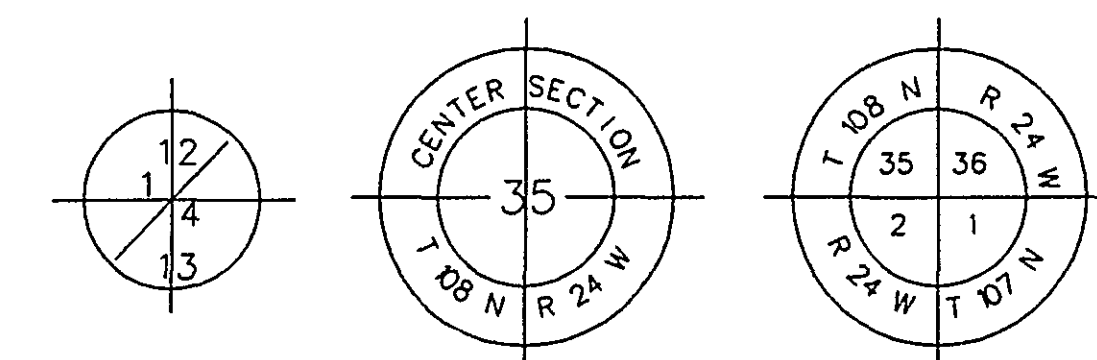
UTILITY POLE
GUY OR ANCHOR
STREET LIGHT
TELEPHONE PEDESTAL
GAS MAIN
WATER MAIN
TELEPHONE VAULT
ELECTRIC VAULT
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
SEWER (SANITARY OR STORM)
SEWER MANHOLE
GATE VALVE
CONTROLLER CABINET
EXISTING HYDRANT
BURIED TELEPHONE CABLE

FOR PLANS AND UTILITIES SYMBOLS SEE
MN/DOT TECHNICAL MANUAL.

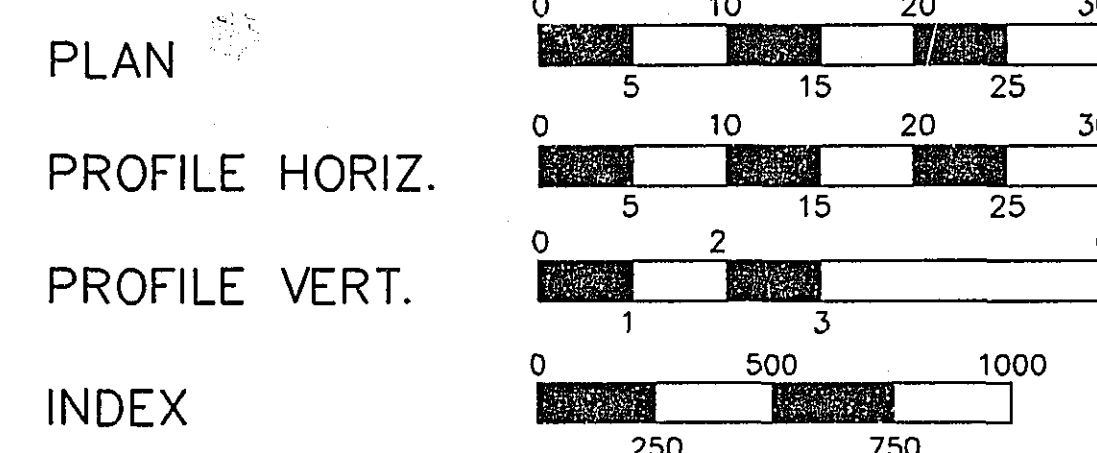
-GOVERNING SPECIFICATIONS-

THE 1995 EDITION OF THE MINNESOTA
DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR
CONSTRUCTION" SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES SHALL
CONFORM TO THE MMUTCD, INCLUDING
"FIELD MANUAL FOR TEMPORARY TRAFFIC
CONTROL ZONE LAYOUTS - APRIL 1995."



SCALES IN METERS



GROSS LENGTH 1586.5 m 1.5865 km

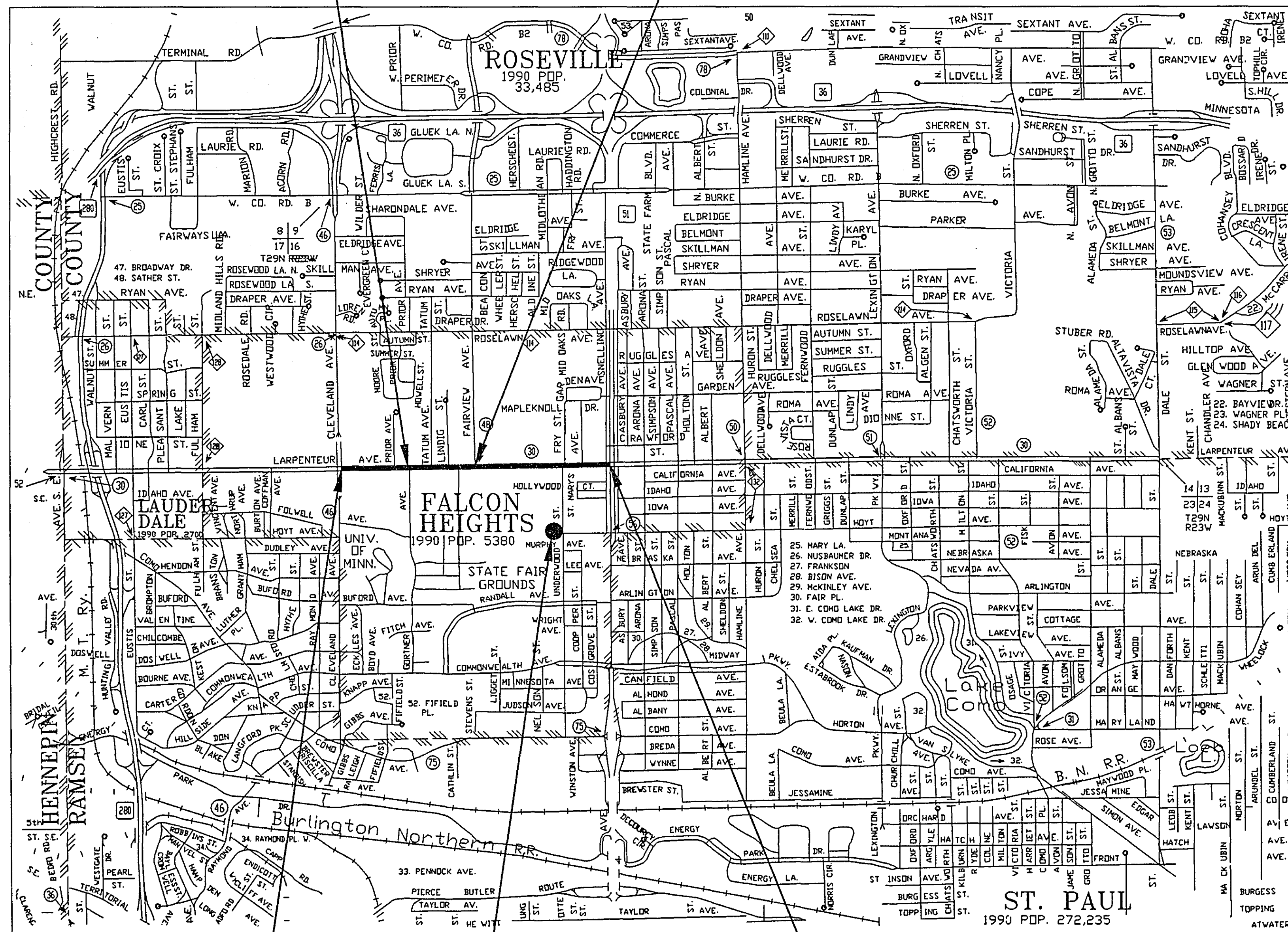
BRIDGE LENGTH -----

EXCEPTIONS -----

NET LENGTH 1586.5 m 1.5865 km

S.P. 62-630-44
SIG. SYS. C E.V.P.

S.P. 62-630-44
SIG. SYS. D E.V.P.



STATE FAIR
POND

END S.P. 62-630-44

S.P. 124-020-04

S.I.A. 3+212.00

BEGIN S.P. 62-630-44

S.P. 124-020-04

S.I.A. 1+625.50

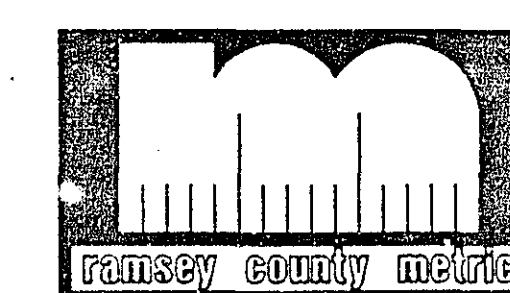
DESIGN DESIGNATION

	CLEVELAND AVE. TO FAIRVIEW AVE.	FAIRVIEW AVE. TO SNELLING AVE.
PRESENT ADT (1997)	15,800	14,250
PROJECTED ADT (2017)	20,000	18,050
FUNCTIONAL CLASS	HIGH DENSITY ARTERIAL	HIGH DENSITY ARTERIAL
TRAFFIC LANES	4	4
PARKING LANES	0	0
DESIGN SPEED	60 km/h	60 km/h
STABILOMETER "R" VALUE (240 PSI)	60	60
DESIGN LOAD	9t	9t
CESALS	2,026,000	1,248,000

BASED ON STOPPING DISTANCE
HEIGHT OF EYE: 1070 millimeter
HEIGHT OF OBJECT: 150 millimeters

ASBUILT PLAN

CONFORMING TO
CONST. RECORDS
DONE BY: MR
DATE: 3-2-99



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.

Katherine Jaselska REG. NO. 21864 DATE 10/16/97

PLAN REVISIONS		
DATE	SHEET NO. & DESCRIPTION	BY
12/15/97		D.H.

RECOMMENDED FOR APPROVAL *Paul K. Kishel* DATE 10/20/97
COUNTY ENGINEER

APPROVED *Sumner* DATE 10/20/97
CITY OF FALCON HEIGHTS

APPROVED _____ DATE _____

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL *Kevin J. Hylton* DATE 10/29/97
METRO-ASSN'T. DIV. ENGR.-STATE AID

RECOMMENDED FOR APPROVAL _____ DATE _____

RECOMMENDED FOR APPROVAL _____ DATE _____

APPROVED FOR STATE AID DIV. *for* DATE 4/13/98
STATE AID ENGINEER

28-158

S.P. 62-630-44

S.P. 124-020-04

Sheet No. 1 of 90 Sheets

STATEMENT OF ESTIMATED QUANTITIES

CHART	NOTE	ITEM NO.	CONTRACT ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES	FEDERAL CSAH (GROUP 1)		FEDERAL CSAH 15% FH MSA (GROUP 2)		FEDERAL CSAH FH (GROUP 3)		FEDERAL CSAH FH (GROUP 4)		FEDERAL CSAH 20% FH MSA (GROUP 5)		STORM SEWER FEDERAL CSAH FH (GROUP 6)			
							ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES		
		2021.501	MOBILIZATION	LS	1		1.0													
B		2101.502	CLEARING	TREE	24		24													
B		2101.507	GRUBBING	TREE	29		29													
P	1	2104.501	REMOVE PIPE SEWERS	m	109		109													
H		2104.501	REMOVE BITUMINOUS CURB	m	103		103													
D	2	2104.501	REMOVE CURB & GUTTER	m	755		755													
J		2104.501	REMOVE RETAINING WALL	m	5		5													
D		2104.503	REMOVE CONCRETE MEDIAN	m ²	1 567		1 567													
D	2	2104.503	REMOVE CONCRETE SIDEWALK	m ²	964		964													
D	3	2104.503	REMOVE CONCRETE PAVEMENT	m ²	22 777		22 777													
H	3	2104.503	REMOVE BITUMINOUS PAVEMENT	m ²	7 854		7 854													
S		2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	9		9													
C	10	2104.511	SAWING CONCRETE PAVEMENT	m	61		61													
I		2104.513	SAWING BITUMINOUS PAVEMENT	m	356		356													
X	5	2104.521	SALVAGE FENCE	m	1 338		1 338													
L		2104.521	SALVAGE WOODEN FENCE	m	10		10													
F	6	2104.602	RELOCATE COMMERCIAL SIGN	EACH	6		6													
S		2104.523	SALVAGE CASTING	EACH	11		11													
	11	2104.523	SALVAGE SIGN TYPE C	EACH	104		104													
Y		2105.501	COMMON EXCAVATION	m ³	40 800(P)		40 800(P)													
Y		2105.522	SELECT GRANULAR BORROW (LV)	m ³	33 945		33 945													
		2105.525	TOPSOIL BORROW (LV)	m ³	800		800													
Y	19	2105.515	UNCLASSIFIED EXCAVATION	m ³	862												862			
Y	18	2105.607	EXCAVATION SPECIAL	m ³	600												600			
	16	2123.610	TRACTOR MOUNTED BACKHOE	HOURL	50		50													
	4	2130.501	WATER	m ³	400		400													
E		2211.503	AGG. BASE (CV) CLASS 6	m ³	7 315(P)		7 315(P)													
A		2301.502	CONCRETE PAVEMENT STANDARD WIDTH 200 mm	m ²	22 622		22 622													
A		2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH 200 mm	m ²	7 922		7 922													
		2301.513	STRUCTURAL CONCRETE HE	m ³	6 204		6 204													
		2301.529	REINFORCEMENT BARS (EPOXY COATED)	kg	5 310		5 310													
		2301.538	DOWEL BAR	EACH	22 262		22 262													
		2211.607	CRUSHED CONCRETE (LV)	m ³	9 440		9 440													
G	12	2340.508	TYPE 31 WEARING COURSE MIXTURE	t	97		97													
G	13	2340.508	TYPE 41 WEARING COURSE MIXTURE	t	33		33													
G	12	2340.510	TYPE 31 BINDER COURSE MIXTURE	t	110		110													
G	14	2340.510	TYPE 41 BINDER COURSE MIXTURE	t	49		49													
G	15	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	LITER	249		249													
		2411.604	CONCRETE BLOCK RETAINING WALL	m ²	342		342													
Y	19	2451.503	GRANULAR BACKFILL (LV)	m ³	426												426			
AA		2540.602	MAIL BOX SUPPORT	EACH	9		9													
AA		2540.602	MAIL BOX SUPPORT-MULTIPLE	EACH	1		1													
Q		2502.541	100 mm PERFORATED P.E. DRAIN PIPE	m	3 314		3 314													
BB		2503.541	375 mm RCP SEWER, DES. 3006, CLV	m	589.0												589.0			
BB		2503.541	450 mm RCP SEWER, DES. 3006, CLV	m	127.4												127.4			
BB		2503.521	725 mm SPAN RC PIPE-ARCH SEWER CL. IIA	m	21.4												21.4			
BB		2503.541	525 mm RCP SEWER, DES. 3006, CLIII	m	273.0												273.0			
BB		2503.541	600 mm RCP SEWER, DES. 3006, CLIII	m	95.0												95.0			
BB		2503.541	750 mm RCP SEWER, DES. 3006, CLIII	m	115.0												115.0			
BB		2503.541	900 mm RCP SEWER, DES. 3006, CLIII	m	354.0												354.0			
M	10	2504.602	ADJUST VALVE BOX	EACH	40		40													
N	10	2504.602	ADJUST CURB BOX	EACH	21		21													
K	10	2504.602	ADJUST HYDRANT	EACH	3		3													
R	7	2504.604	100 mm POLYSTYRENE INSULATION	m ²	180		180													
BB		2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN A OR F	EACH	65												65			
BB		2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN C OR G	EACH	38												38			
BB		2506.502	CONSTRUCT DRAINAGE STRUCTURE, DES. 1350-4020	EACH	1												1			
BB		2506.502	CONSTRUCT DRAINAGE STRUCTURE, DES. 1800-4020	EACH	1												1			
BB		2506.502	CONSTRUCT DRAINAGE STRUCTURE, DES. 2700-4020	EACH	1												1			
	17	2506.602	CONSTRUCT CONTROL STRUCTURE	EACH	2		2													

① 50% CSAH; 50% FALCON HEIGHTS LOCAL FUNDS AFTER FEDERAL SHARE

② 75% CSAH; 25% FALCON HEIGHTS LOCAL FUNDS AFTER FEDERAL SHARE

SEE QUANTITY NOTES AND INDEX TO
TABULATION CHARTS SHEET NO. 4

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
LAWS OF THE STATE OF MINNESOTA.

Kathy Jaschke
R.G. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

ESTIMATED QUANTITIES

28-158

S.P. 62-630-44 S.P. 124-020-04

SHEET NO. 2 OF 90 SHEETS



E:\DWGS\LAPP\CHART2 12/18/97

STATEMENT OF ESTIMATED QUANTITIES

CHART	NOTE	ITEM NO.	CONTRACT ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES	FEDERAL CSAH (GROUP 1)		FEDERAL CSAH 15% FH MSA (GROUP 2)		FEDERAL CSAH FH (GROUP 3)		FEDERAL CSAH FH (GROUP 4)		FEDERAL CSAH 20% FH MSA (GROUP 5)		STORM SEWER FEDERAL CSAH FH (GROUP 6)			
							ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES	ESTIMATED QUANTITIES	FINAL QUANTITIES		
S		2506.516	CASTING ASSEMBLY	EACH	2		2													
S		2506.521	INSTALL CASTING	EACH	8		8													
S		2506.522	ADJUST FRAME & RING CASTING	EACH	39		39													
S	7	2506.602	ADJUST FRAME & RING CASTING-SPEC	EACH	7		7													
S		2506.511	RECONSTRUCT MANHOLE	m	9.256		9.256													
A		2521.501	100 mm CONCRETE WALK	m2	7 779		3 516								4 263					
A		2531.501	CONC. CURB & GUTTER, DES. B624	m	4 714		2 241		2 473											
A		2531.501	CONC. CURB & GUTTER, DES. B612	m	743		743													
A		2531.507	150 mm CONCRETE DRIVEWAY PAVEMENT	m2	528		528													
		2531.602	CONCRETE ENTRANCE NOSE - DESIGN 7113	EACH	23		23													
		2531.602	PEDESTRIAN CURB RAMP	EACH	26		26													
		2557.501	WIRE FENCE DESIGN 1.2 m-9322	m	307		307													
L	6	2557.603	INSTALL WOODEN FENCE	m	10		10													
X	6	2557.603	INSTALL FENCE	m	1 338		1 338													
		2563.601	TRAFFIC CONTROL	LS.	1		1.0													
		2563.613	FLASHER TYPE A (LOW INTENSITY)	UN/DAY	200		200													
		2563.613	TYPE III BARRICADES	UN/DAY	100		100													
		2564.602	PAVEMENT MESSAGE (LEFT ARROW) EPOXY	EACH	14		14													
		2564.602	PAVEMENT MESSAGE (RIGHT ARROW) EPOXY	EACH	3		3													
		2564.603	100 mm SOLID LINE WHITE-EPOXY	m	2837		2837													
		2564.603	100 mm SOLID LINE YELLOW-EPOXY	m	2465		2465													
		2564.603	100 mm BROKEN LINE WHITE-EPOXY	m	529		529													
		2564.603	100 mm BROKEN LINE YELLOW-EPOXY	m	25		25													
		2564.604	CROSSWALK MARKING - EPOXY	m2	88		88													
		2564.531	SIGN PANELS TYPE C	m2	43.5		43.5													
		2564.531	SIGN PANELS TYPE D	m2	9.6		9.6													
	8	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM C	SIG. SYS	1					1										
	9	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM D	SIG. SYS	1								1							
		2565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM C	LS	1										1					
		2565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM D	LS	1										1					
		2565.601	TRAFFIC CONTROL INTERCONNECTION	LS	1		1													
		2565.602	PVC HANDHOLE	EACH	6		6													
		2565.602	ADJUST HANDHOLE	EACH	4		4													
		2565.602	NMC LOOP DETECTOR (1.7 m X 1.7 m)	EACH	2		2													
		2565.603	53 mm NON METALLIC CONDUIT	m	547		547													
		2565.603	6/C FIBER OPTIC CABLE-INTERCONNECT	m	902		902													
B		2571.541	TRANSPLANT TREE (150 mm CAL. DECIDUOUS)	TREE	3				3											
B		2571.541	TRANSPLANT TREE (150 mm CAL. CONIFEROUS)	TREE	4				4											
B		2571.541	TRANSPLANT TREE (1 m HT. CONIFEROUS)	TREE	4				4											
Z		2573.502	SILT FENCE, TYPE HEAVY DUTY	m	1 169		1 169													
		2575.505	SODDING, TYPE LAWN	m2	12 766		12 766													
		2575.532	COMMERCIAL FERT., ANALYSIS 10-20-20	kg	418		418													

① 50% CSAH; 50% FALCON HEIGHTS LOACAL FUNDS AFTER FEDERAL SHARE

② 75% CSAH; 25% FALCON HEIGHTS LOCAL FUNDS AFTER FEDERAL SHARE

SEE QUANTITY NOTES AND INDEX TO
TABULATION CHARTS SHEET NO. 4

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
LAWS OF THE STATE OF MINNESOTA.
Kathy Jaschke
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

ESTIMATED QUANTITIES

28-158



S.P. 62-630-44

S.P. 124-020-04

SHEET NO. 3 OF 90 SHEETS

E:\DWGS\LARP\CHART2 12/18/97

BASIS FOR ESTIMATED QUANTITIES

2211.501 - AGGREGATE BASE - 2242.54 kg PER m3
2340.XXX - BITUMINOUS MIXTURES - 60.0 kg PER 25 mm THICKNESS PER m2
2357.502 - BITUMINOUS MATERIAL FOR TACK COAT ESTIMATED AT 0.23 LITRE PER m2 PER APPLICATION
2575.531 - FERTILIZER 392 kg / ha

QUANTITY NOTES

1. SHALL INCLUDE APRONS
2. REMOVE TO NEAREST JOINT OR SAWCUT AS DIRECTED
3. ALL PAVEMENT REGARDLESS OF THICKNESS
4. FOR DUST CONTROL
5. HIGH TENSILE @ U OF M AGRICULTURAL FIELDS
6. LOCATIONS TO BE DETERMINED BY ENGINEER
7. SEE SPECIAL PROVISIONS - NSP ELECTRIC VAULTS
8. 50% CSAH AND 50% LOCAL
9. 75% CSAH AND 25% LOCAL
10. SAWCUT SHALL BE FULL DEPTH
11. AS DIRECTED BY ENGINEER
12. ENTRANCES-97 TONS
13. SIDESTREETS-33 TONS
14. SIDESTREETS-49 TONS
15. ENTRANCES-186 L, SIDESTREETS-63 L
16. TO BE USED FOR UTILITY LOCATIONS
17. SURVEY MONUMENT HOLE
18. CLEANING STORM WATER POND
19. UNSUITABLE MATERIAL AT STORM SEWER LOCATIONS

INDEX OF TABULATION CHARTS

SHEET NO.	CHART	DESCRIPTION
6	A	CONCRETE QUANTITIES
8	B	CLEAR & GRUB & TRANSPLANT
6	C	SAWCUT CONCRETE
6	D	REMOVE CONC. PAVEMENT, C&G, SIDEWALK
8	E	AGGREGATE BASE, CL.6
9	F	SALVAGE & INSTALL SIGNS
6	G	BITUMINOUS QUANTITIES
8	H	REMOVE BITUMINOUS PAVEMENT
8	I	SAWCUT BITUMINOUS PAVEMENT
9	J	MISCELLANEOUS REMOVALS
7	K	HYDRANTS - ADJUSTS & RELOCATES
9	L	SALVAGE & INSTALL FENCE WOOD
7	M	GATE VALVE ADJUST & RELOCATE
7	N	WATER SERVICES EXISTING
9	P	REMOVE STORM SEWER
7	Q	100mm PE PERFORATTED PIPE
7	R	100 mm POLYSTYRENE INSULATION
10-11	S	EXISTING STRUCTURES
7	U	REPLACE EXISTING SEWER SERVICES
9	V	BENCH MARK CHART
8	W	EXISTING POWER POLES
9	X	SALVAGE & INSTALL WIRE FENCE
8	Y	EARTHWORK SUMMARY
9	Z	SILT FENCE
9	AA	RELOCATE MAILBOX
12-13	BB	PROPOSED DRAINAGE CHART

CONSTRUCTION NOTES

WATER, GAS, ELECTRIC, TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES. OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS.

UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 72 HOURS IN ADVANCE OF DISRUPTION TO SANITARY SEWER AND WATERMAIN SERVICES.

CONTRACTOR SHALL MINIMIZE INTERRUPTION OF SANITARY SEWER AND WATER SERVICE TO ADJACENT PROPERTIES. ANY PROPERTY OUT OF SERVICE LONGER THAN 8 HOURS MUST BE PROVIDED WITH TEMPORARY SERVICE.

NEW SANITARY SEWER AND WATER SERVICE LOCATIONS ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR WITH THE CITY PRIOR TO CONSTRUCTION. SERVICE LOCATIONS MAY BE ADJUSTED AS REQUESTED BY THE CITY AND AS APPROVED BY THE ENGINEER.

ANY DEWATERING AND OR ANY USE OF TRENCH BOX, SHEETING, SHORING OR OTHER METHODS OR MEANS OF CONSTRUCTION NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS OR SLOPE EASEMENTS SHOWN WILL BE CONSIDERED TO BE INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFORE.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.

EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 AND 2105.3D

SODDING QUANTITIES ALONG ROADWAY SLOPES ARE BASED ON SODDING LIMITS FROM THE BACK OF THE CURB TO THE CONSTRUCTION LIMITS.

COMPACTION IN GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 " QUALITY COMPACTION METHOD".

WHEN EXCAVATING ADJACENT TO INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 1/2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE PRIOR TO CONSTRUCTING ASPHALT SURFACING.

STABILIZING AGGREGATE SHALL BE APPLIED IF NECESSARY TO ACHIEVE SATISFACTORY SURFACE STABILITY AS DETERMINED BY THE ENGINEER. THE MATERIAL SHALL SATISFY THE REQUIREMENTS OF SECTION 3149.2C AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 2105.3G OF THE STANDARD SPECIFICATIONS.

USE TACK COAT BETWEEN ALL BITUMINOUS LIFTS. COMPACTION OF ALL BITUMINOUS ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "ORDINARY COMPACTION METHOD".

THE CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 0.3 METER BETWEEN CROSSING OF EXISTING MINOR WATER LINES AND PROPOSED STORM SEWER LINES. WHERE CONFLICTS OCCUR, THE WATER LINE SHALL BE RELOCATED WHERE DIRECTED BY THE ENGINEER. METHOD OF COMPENSATION IS COVERED UNDER THE SPECIAL PROVISIONS.

ALL USES OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION SHALL BE MADE.

ALL EXISTING TRAFFIC SIGNS ON THE PROJECT WILL BE SALVAGED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

PEDESTRIAN CURB RAMPS SHALL BE INSTALLED IN ALL STREET RADII. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. RAMPS SHALL BE PER STANDARD PLATE 7036 AND DETAILED IN THIS PLAN.

STANDARD DETAIL PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

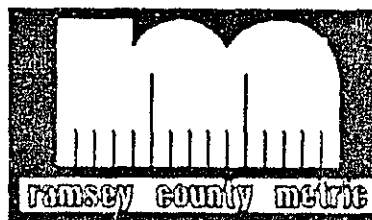
PLATE NO.	DESCRIPTION
1070 K	REINFORCED PANEL OVER CULVERTS
M1103 J	TYPICAL DOWEL BAR ASSEMBLY
M1141 D	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
M1150 Q	CONSTRUCTION OF HEADER JOINTS
M3000 L	REINFORCED CONCRETE PIPE
M3006 G	GASKET JOINT FOR REINFORCED CONCRETE PIPE
M3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3145 E	CONCRETE PIPE TIES
M4000 J	MANHOLE OR CATCH BASIN DESIGN A
M4002 F	MANHOLE OR CATCH BASIN DESIGN C
M4005 L	MANHOLE OR CATCH BASIN DESIGN F
M4006 L	MANHOLE OR CATCH BASIN DESIGN G AND H
M4010 H	CONCRETE SHORT CONE AND ADJUSTING RING
M4011 E	PRECAST CONCRETE BASE
M4020 G	MANHOLE OR CATCH BASIN FOR USE UNDER TRAFFIC LOADS
M4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
M4110 F	COVER CASTING FOR MANHOLE
M4129 G	CB FRAME CASTING
M4140 D	SPECIAL GRATE CASTING FOR CATCH BASIN
M4151 B	GRATE CASTING FOR CATCH BASIN
M4160 D	CURB BOX CASTING FOR CATCH BASIN
M4180 J	MANHOLE OR CATCH BASIN STEP
M7000 E	INTEGRANT CURBS
M7035 J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
M7036 D	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
M7100 G	CONCRETE CURB & GUTTER
M7109 C	MEDIAN NOSE AND ISLAND
M7111 J	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
M7112 C	INSTALLATION & REINFORCEMENT OF CATCH BASINS AND MANHOLES
M7113 A	CONCRETE APPROACH NOSE DETAIL
M8000 I	STANDARD BARRICADE
M8114 A	PVC HANDHOLE
M8120 K	POLE FOUNDATION
M8121 D	TRANSFORMER BASE AND POLE BASE PLATE
M8123 D	POLE AND MAST ARM
M8124 E	MAST ARM SIGNAL HEAD MOUNTS
M8126 F	POLE FOUNDATION
M9102 D	TURF ESTABLISHMENT AREAS
M9322 J	CHAIN LINK FENCE

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 LAWS OF THE STATE OF MINNESOTA.
Kathy Jaschke
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

INDEX OF TABULATIONS
CONSTRUCTION NOTES
STANDARD DETAIL PLATES
QUANTITY NOTES

28-158



E:\DWGS\LAPP\CHART2 12/18/97

A

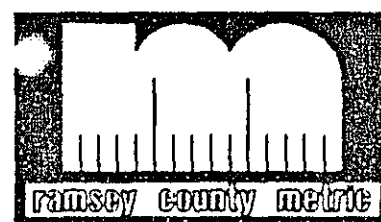
CONCRETE QUANTITIES CHART							
STATION TO STATION	LOCATION	CURB AND GUTTER		SIDEWALK 100 mm m2	DRIVEWAY 150 mm m2	PAVEMENT	
		B612 METER	B624 METER			STANDARD WIDTH	IRREGULAR WIDTH
						200 mm m2	200mm m2
1+661 TO 1+815	LT. AND RT.					2 587.2	329.0
1+661 TO 1+815	MEDIAN	121.0	187.3	374.6			
1+661 TO 1+815	RT		154.1	231.0			
1+661 TO 1+815	LT		154.0	231.0			
1+625 TO 1+661	MEDIAN	36.0	36.0	43.0			
1+815 TO 2+205	LT. AND RT.					6 241.2	2 192.9
1+815 TO 2+205	MEDIAN	257.2	362.4	531.0			
1+815 TO 2+205	LT.		394.5	473.0	70.0		
1+815 TO 2+205	RT.		398.1	585.0			
2+205 TO 2+595	LT. AND RT.					6 392.4	1 252.5
2+205 TO 2+595	MEDIAN	134.4	563.4	1093.9			
2+205 TO 2+595	LT.		395.2	523.0	70.9		
2+205 TO 2+595	RT.		392.3	538.0	50.5		
2+595 TO 2+985	LT. AND RT.					6 325.2	2 257.8
2+595 TO 2+985	MEDIAN	61.0	334.3	358.2			
2+595 TO 2+985	LT.		392.3		60.4		
2+595 TO 2+985	RT.		394.1		175.8		
2+595 TO 2+890	LT.			425.0			
2+595 TO 2+868	RT.			353.0			
2+851 TO 3+210	LT.			864.0			
2+810 TO 3+212	RT.			918.0			
2+950 TO 2+975	RT.	25.0					
2+985 TO 3+128	LT. AND RT.					1 075.2	1 889.5
2+985 TO 3+128	MEDIAN	81.8	122.6	151.2			
2+985 TO 3+128	LT.		143.0		56.1		
2+985 TO 3+128	RT.		146.0		43.4		
3+007 TO 3+020	RT.	13.0					
3+027 TO 3+040	RT.	13.0					
3+128 TO 3+200	MEDIAN		144.0	86.0			
TOTALS		742.4	4 713.6	7 778.9	527.1	22 621.2	7 921.7

6-24-97

D

REMOVE CONCRETE PAVEMENT, C & G, SIDEWALK						
STATION	LOCATION LT/RT	PAVEMENT m ²	CONCRETE C & G m	SIDEWALK m ²	MEDIAN m ²	REMARKS
STA. 1+707 TO 2+410	LT & RT	10426			778	ENT. FALCON HEIGHTS
STA. 1+846	LT		14			PRIOR AVENUE
STA. 1+944	LT		4			ENT. H-P
STA. 2+019	LT		14			TATUM AVENUE
STA. 2+153	LT		10			LINDIG STREET
STA. 2+260	LT		8			
STA. 2+410 TO 2+851	LT & RT	6481			468	
STA. 2+851 TO 2+877	LT & RT	452	27		94	
STA. 2+877 TO 3+128	LT & RT	5418	502		227	
STA. 2+926	LT		16			
STA. 2+947	LT		6			
STA. 3+050	LT		10			
STA. 2+171	LT			4.0		PRIVATE WALK
STA. 2+200	LT			10.8		CONCRETE SPILLWAY
STA. 2+348	LT			8.4		PRIVATE WALK
STA. 2+376	LT			8.4		PRIVATE WALK
STA. 2+434 TO 2+461	RT			27.0		PUBLIC WALK
STA. 2+477	RT			1.5		PRIVATE WALK
STA. 2+468 TO 2+525	RT			57.0		PUBLIC WALK
STA. 2+507	RT			1.5		PRIVATE WALK
STA. 2+530 TO 2+536	RT			6.0		PUBLIC WALK
STA. 2+541 TO 2+600	RT			59.0		PUBLIC WALK
STA. 2+557	RT			1.5		PRIVATE WALK
STA. 2+609 TO 2+654	RT			45.0		PUBLIC WALK
STA. 2+659 TO 2+662	RT			3.0		PUBLIC WALK
STA. 2+670 TO 2+696	RT			26.0		PUBLIC WALK
STA. 2+704 TO 2+719	RT			15.0		PUBLIC WALK
STA. 2+725 TO 2+767	RT			42.0		PUBLIC WALK
STA. 2+775 TO 2+916	RT			141.0		PUBLIC WALK
STA. 2+934 TO 2+945	RT			11.0		PUBLIC WALK
STA. 2+950 TO 2+975	RT			25.0		PUBLIC WALK
STA. 2+981 TO 2+988	RT			7.0		PUBLIC WALK
STA. 3+000 TO 3+020	RT			20.0		PUBLIC WALK
STA. 3+025 TO 3+039	RT			14.0		PUBLIC WALK
STA. 3+050 TO 3+205	RT			310		PUBLIC WALK
STA. 3+128 TO 3+200	MEDIAN		144	86		FOR TRAFFIC CONTROL
STA. 3+184 TO 3+200	LT			34		PUBLIC WALK
TOTALS		22 777	755	964.1	1 567	

5-27-97



G

BITUMINOUS QUANTITIES SUMMARY - TONS OF MIXTURE					
STATION TO STATION	LOCATION	SIDE STREETS		ENTRANCES	
		75 mm TYPE 41 BINDER METRIC TON	50 mm TYPE 41 WEAR METRIC TON	50 mm TYPE 31 BINDER METRIC TON	50 mm TYPE 31 WEAR METRIC TON
1+845 ENT. FALCON HEIGHTS	LT			9.1	9.1
PRIOR AVE	LT	6.6	4.4		
2+020 H.P. ENT.	LT			4.4	4.4
GORTNER AVE	RT	6.6	4.4		
2+087 HOUSE 1957	LT			2.0	2.0
2+108 HOUSE 1907	LT			6.0	6.0
TATUM AVE	LT	5.2	3.5		
2+224 HOUSE 1879	LT			1.0	1.0
LINDIG ST	LT	5.2	3.5		
2+282 HOUSE 1871	LT			13	13
2+308 HOUSE 1867	LT			1.0	1.0
2+333 HOUSE 1865	LT			4.0	4.0
2+409 HOUSE 1840	RT			13	13
FAIRVIEW AVE	LT	21	14		
2+464 HOUSE 1830	RT			2.0	2.0
2+525 HOUSE 1818	RT			1.0	1.0
2+538 HOUSE 1800	RT			1.0	1.0
2+640 HOUSE 1790	RT			11	11
2+700 HOUSE 1750	RT			2.0	2.0
2+720 HOUSE 1750	RT			2.0	2.0
2+770	RT			3.0	3.0
2+871 HOUSE 1687	LT			4.0	4.0
2+884 HOUSE 1687	LT			2.0	2.0
UNDERWOOD ST	RT	1.5	1.0		
FRY ST	LT	1.5	1.0		
2+946 HOUSE 1644	RT			1.0	1.0
2+974 HOUSE 1644	LT			1.0	1.0
2+977 HOUSE 1644	RT			3.0	3.0
2+994 HOUSE 1644	RT			6.0	6.0
3+022	RT			1.0	1.0
3+027 HOUSE 1639	LT			1.0	1.0
3+044	RT			1.0	1.0
ST MARY'S AVE	LT	1.5	1.0		
3+108 HOUSE 1611	LT			1.0	1.0
3+128 to 3+200 ①	MEDIAN			13	
TOTALS		49.1	32.8	109.5	96.5
TACK COAT	LT & RT	63 L		186 L	

7-16-97

① FOR TRAFFIC CONTROL

C

SAWCUT CONCRETE			
STATION	LOCATION	QUANTITY m	REMARKS
STA. 1+846	LT	2	C & G ENT. FALCON HEIGHTS
STA. 1+944	LT	2	C & G PRIOR AVE.
STA. 2+019	LT	2	C & G ENT. HEWLETT PACKARD
STA. 2+126	LT	3	HOUSE # 1905 ENT.
STA. 2+153	LT	2	C & G LINDIG STREET
STA. 2+171	LT	1	SIDEWALK
STA. 2+200	LT	1.2	SPILLWAY
STA. 2+202	LT	6	HOUSE # 1881
STA. 2+260	LT	2	C & G
STA. 2+348	LT	1.2	SIDEWALK
STA. 2+376	LT	1.2	SIDEWALK
STA. 2+477	RT	1.5	SIDEWALK
STA. 2+507	RT	1.5	SIDEWALK
STA. 2+557	RT	1.5	SIDEWALK
STA. 2+936	RT	2	C & G UNDERWOOD ST.
STA. 2+947	LT	2	C & G FRY ST.
STA. 3+050	RT	2	SIDEWALK
STA. 3+050	LT	2	C & G ST. MARY'S AVE.
STA. 3+100	RT.	2	SIDEWALK
STA. 3+128	LT & RT	21	END PROJECT FULL WIDTH
STA. 3+147	RT.	2	SIDEWALK
STA. 3+167	RT.		SIDEWALK
STA. 3+205	RT.		SIDEWALK
STA. 3+200	LT.		SIDEWALK
TOTALS		61.1	

5-27-97

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 LAWS OF THE STATE OF MINNESOTA.
Rachy Jasek
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

CHARTS

28-158

S.P. 62-630-44 S.P. 124-020-04

SHEET NO. 6 OF 90 SHEETS

SAWCUT BITUMINOUS PAVEMENT			
STATION	LOCATION	QUANTITY m	REMARKS
STA. 1+845	LT	8	FALCON HEIGHTS
GORTNER AVE.	RT	8	SIDE STREET
PRIOR AVE.	LT	12	SIDESTREET
STA. 2+019	LT	10	#2025
STA. 2+087	LT	3	#1957
STA. 2+108	LT	3	#1907
STA. 2+127	LT	7	#1905
TATUM AVE.	LT	10	SIDESTREET
STA. 2+201	LT	6	#1897
STA. 2+224	LT	4	#1879
LINDIG ST.	LT	10	SIDESTREET
STA. 2+284	LT	20	BIT. LOT
STA. 2+307	LT	4	#1867
STA. 2+336	LT	6	#1865 & #1855
FAIRVIEW AVE.	LT	15	SIDESTREET
STA. 2+465	RT	8	#1840
STA. 2+525	RT	4	#1818
STA. 2+540	RT	4	#1800
STA. 2+604	RT	17	#1790-CLOSE ENT.
STA. 2+657	RT	8	#1790-CLOSE ENT.
STA. 2+666	RT	7	#1750-CLOSE ENT.
STA. 2+700	RT	8	#1750
STA. 2+721	RT	8	#1740
STA. 2+771	RT	9	#1740
STA. 2+871	LT	3	#1687
STA. 2+883	LT	7	APARTMENTS
UNDERWOOD ST.	RT	14	SIDESTREET & BIT. PATH
FRY ST.	LT	8	SIDESTREET
STA. 2+947	RT	7	#1644
STA. 2+974	LT	7	#1639
STA. 2+979	RT	6	#1644
STA. 2+989	RT	10	#1644
STA. 3+019	RT	8	#1667
STA. 3+026	LT	7	#1639
STA. 2+949 TO 3+040	RT	51	FOR B612 IN BIT. LOT
ST. MARYS AVE.	LT	9	SIDESTREET
STA. 3+044	RT	9	#1667
STA. 3+113	LT	11	#1611
TOTALS		356	

5-27-97

EARTHWORK SUMMARY						
LOCATION	EXCAVATION			EMBANKMENT		
	COMMON m ³ (EV)	SPECIAL m ³ (EV)	UNCLASSIFIED ① m ³ (EV)	SELECT GRANULAR m ³ (CV)	REGULAR m ³ (CV)	① GRANULAR BACKFILL m ³ (LV)
1+661 to 2+040	11 330			5 877	760	
2+040 to 2+340	8 300			4 615	498	
2+340 to 2+720	9 658			5 853	705	
2+720 to 3+020	8 838			4 729	218	
3+020 to 3+128	2 674			1 556	64	
MEDIAN BACKFILL					564	
STATE FAIR POND		600				
STORM SEWER			862			426(LV)
SUBTOTALS	40 800 m ³	600 m ³	862 m ³	22 630 m ³	2 809 m ³	
				X 1.5	X 1.3	
TOTALS				33 945 m ³ (LV)	3 652 m ³ (LV)	426(LV)
COMMON EXCAVATION	40 800 m ³ (EV)					
PAVEMENT REMOVAL	-5 990 m ³ (EV)					
	34 810 m ³ (EV)	BALANCE				
	x 1.2					
	41 772 m ³ (LV)					
EMBANKMENT	-3 652 m ³ (LV)					
	38 120 m ³ (LV)	EXCESS COMMON EXCAVATION				

EXCESS COMMON EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST FOR DISPOSAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND NO ADDITIONAL COMPENSATION WILL BE PAID OUTSIDE THE PRICE BID FOR COMMON EXCAVATION. GRADING QUANTITIES WERE COMPUTED USING THE BASIC MATERIALS MEASUREMENT CONVERSIONS USED IN GRADING AND BASE WORK FROM MN/DOT GRADING AND BASE MANUAL 5-692.430 DATED OCTOBER 1, 1996.

- ① UNCLASSIFIED EXCAVATION (EV) AND GRANULAR BACKFILL (LV) PAY ITEMS SHALL BE USED FOR ANY UNSUITABLE OR UNSTABLE SOILS ENCOUNTERED IN STORM SEWER CONSTRUCTION.

CLEAR & GRUB & TRANSPLANT CHART						
STATION	LOCATION CONST. C.	DESCRIPTION	CLEAR TREE	GRUB TREE	TRANSPLANT TREE	NOTES
1+904.0	LT. 15.0	SHRUB	-	-	-	REMOVE-INCIDENTAL
1+916.8	LT. 15.8	SHRUB	-	-	-	REMOVE-INCIDENTAL
1+921.0	LT. 15.7	STUMP	-	1	-	
1+922.8	LT. 15.3	STUMP	-	1	-	
1+928.7	LT. 15.7	SHRUB	-	-	-	REMOVE-INCIDENTAL
1+931.7	LT. 15.8	SHRUB	-	-	-	REMOVE-INCIDENTAL
1+934.8	LT. 14.9	STUMP	-	1	-	
1+934.8	LT. 17.3	STUMP	-	1	-	
1+973.6	LT. 17.2	200mm ASH	-	-	-	PROTECT
1+982.7	LT. 17.3	300mm ASH	1	1	-	
2+032.7	LT. 14.7-19.4	HEDGE	-	-	-	REMOVE-INCIDENTAL
2+054.5	LT. 17.0	250mm ASH	1	1	-	
2+059.0	LT. 13.7	150mm ASH	1	1	-	
2+064.8	LT. 17.0	250mm ASH	1	1	-	
2+071-2+086	LT. 14.6-15.4	HEDGE ①	-	-	-	REMOVE-INCIDENTAL
2+075.9	LT. 15.4	250mm SPRUCE	1	1	-	
2+079.8	LT. 15.3	250mm SPRUCE	1	1	-	
2+112.1	LT. 14.6	100mm SPRUCE	1	1	-	
2+116.0	LT. 14.3	100mm SPRUCE	1	1	-	
2+160-2+168	LT. 14.7-14.8	HEDGE	-	-	-	REMOVE-INCIDENTAL
2+172-2+184	LT. 14.7	HEDGE	-	-	-	REMOVE-INCIDENTAL
2+206.0	LT. 15.2	400mm SPRUCE	1	1	-	
2+228-2+252	LT. 14.7-15.0	HEDGE	-	-	-	REMOVE-INCIDENTAL
2+243.2	LT. 16.4	100mm ASH	-	-	-	PROTECT
2+310-2+329	LT. 14.8-14.7	HEDGE	-	-	-	REMOVE-INCIDENTAL
2+346.7	LT. 15.1	SHRUB	-	-	-	REMOVE-INCIDENTAL
2+349.8	LT. 15.1	SHRUB	-	-	-	REMOVE-INCIDENTAL
2+653.4	RT. 18.9	200mm ASH	1	1	-	
2+778.0	RT. 16.1	STUMP	-	1	-	
2+808.3	RT. 16.4	350mm ASH	-	-	-	PROTECT
2+820.0	RT. 17.0	150 mm SPRUCE	-	-	1	TRANSPLANT
2+824.5	RT. 19.0	150 mm MAPLE	-	-	-	PROTECT
2+831.0	RT. 19.0	1 m SPRUCE	-	-	1	TRANSPLANT
2+835.0	RT. 19.5	150mm RUSSIAN OLIVE	-	-	-	PROTECT
2+850.7	RT. 19.0	150mm SPRUCE	-	-	-	PROTECT
2+852.8	LT. 15.7	100mm,125mm BUCKTHORN	2	2	-	
2+855.8	LT. 16.6	200mm-300mm POPPLES	7	7	-	
2+858.7	RT. 18.5	150 mm MAPLE	-	-	1	TRANSPLANT
2+867.0	RT. 19.0	150 mm MAPLE	-	-	1	TRANSPLANT
2+871.5	RT. 20.5	150 mm SPRUCE	-	-	-	PROTECT
2+874.5	RT. 18.0	1 m SPRUCE	-	-	1	TRANSPLANT
2+879.0	RT. 19.0	150 mm SPRUCE	-	-	1	TRANSPLANT
2+884.0	RT. 18.0	1m SPRUCE	-	-	1	TRANSPLANT
2+892.0	RT. 17.7	150 mm RUSSIAN OLIVE	1	1	-	
2+895.5	RT. 19.5	150 mm ASH	-	-	-	PROTECT
2+897.7	LT. 15.4	450mm ASH	1	1	-	
2+902.5	RT. 17.0	1m SPRUCE	-	-	1	TRANSPLANT
2+908.7	RT. 17.9	150mm MAPLE	-	-	1	TRANSPLANT
2+913.2	RT. 18.5	150mm SPRUCE	-	-	1	TRANSPLANT
2+913.3	LT. 15.4	500mm ELM	1	1	-	
2+917.0	RT. 20.0	150mm SPRUCE	-	-	1	TRANSPLANT
2+928.0	LT. 15.4	500mm ASH	1	1	-	
2+936.2	RT. 18.3	250mm MAPLE	1	1	-	
		TOTALS	24	29	11	

CLEARING & GRUBBING SHALL BE IN ACCORDANCE WITH ① REMOVE TO CONSTRUCTION LIMITS 7-16-97
SPEC. 2101.502 CLEARING & 2101.507 GRUBBING

AGGREGATE BASE CLASS 6 (CV)		
LOCATION AREA	LOCATION	QUANTITY m ³
CONCRETE ROADWAY	LT & RT	5 539
SIDE STREETS	LT & RT	175
ENTRANCES	LT & RT	208
100mm CONCRETE WALK	LT & RT	1 393
TOTALS		7 315

11-22-96

REMOVE BITUMINOUS PAVEMENT		
STATION	LOCATION	QUANTITY m ²
STA. 1+707 TO 2+410	LT. AND RT.	3 535.0
STA. 2+410 TO 2+851	LT. AND RT.	1 921.0
ENTRANCES	LT. AND RT.	1 554.5
SIDE STREETS	LT. AND RT.	843.5
TOTALS		7 854
REMOVE BITUMINOUS CURB		
STATION	LOCATION	QUANTITY m
STA. 2+027 TO 2+143	LT. AND RT.	102.5
TOTALS		102.5

EXACT LOCATIONS SHALL BE DESIGNATED IN THE FIELD 11-22-96

EXISTING POWER POLES		
STATION	LOCATION CONST. C.L.	REMARKS
1+660	RT. 12.0	
1+698	RT. 12.0	
1+771	RT. 12.0	
1+808	RT. 12.0	
1+845	RT. 12.5	
1+881	RT. 12.5	
1+912	RT. 12.5	
1+955	RT. 12.0	
1+991	RT. 12.0	
1+996	LT. 11.0	
1+998	LT. 11.0	
2+030	RT. 12.0	
2+066	RT. 12.0	
2+102	RT. 12.0	
2+137	RT. 12.0	
2+178	RT. 12.5	
2+215	RT. 12.0	
2+250	RT. 12.0	
2+289	RT. 12.0	
2+291	RT. 12.0	
2+320	RT. 12.0	
2+326	RT. 12.0	
2+359	RT. 12.0	
2+403	RT. 12.0	
2+446	RT. 12.0	
2+491	RT. 12.0	
2+533	RT. 12.0	
2+577	RT. 12.0	
2+621	RT. 12.0	
2+661	RT. 12.0	
2+709	RT. 12.5	
2+752	RT. 12.5	
2+814	RT. 12.5	
2+869	LT. 15.0	
2+877	RT. 11.5	
2+935	RT. 13.0	
2+943	RT. 15.0	
2+950	RT. 15.0	
2+967	RT. 16.0	
3+005	LT. 12.0	
3+007	RT. 14.0	
3+058	LT. 11.0	
3+094	RT. 11.0	
3+146	RT. 11.0	

8-13-96

POWER POLES SHALL BE RELOCATED BY OTHERS. A 0.457 m CLEAR ZONE SHALL BE REQUIRED FROM FACE OF CURB TO FIXED OBJECTS. POWER POLES SHOULD BE 12.16 m. TO THE EDGE OF POLE.

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 LAWS OF THE STATE OF MINNESOTA.
Kashu Jarolhe
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H. CHARTS

28-158

REMOVE PIPE SEWERS					
STATION TO STATION	STRUCTURE TO STRUCTURE	METER			
		RCP	PVC	VCP	CMP
1+816 RT 13-	AP 1634-	26.8 m ARCH			
1+815 LT 13	AP 1635	(750 mm)			
1+842 LT 15-	CB 1636-	7.3 m			
1+849 LT 14	CB 1637	(375 mm)			
1+849 LT 14-	CB 1637-	7 m			
1+856 LT 11	MH 1639	(375 mm)			
2+251 LT 13-	AP 1664-				4.4 m
2+256 LT 13	SD 1666				(300 mm)
2+288 LT 13-	AP 1669-				32 m
2+256 LT 13	SD 1666				(300 mm)
2+402 LT 16-	AP 1690A-	18 m ARCH			
2+420 LT 16	MH 1695	(375 mm)			
2+420 LT 16-	MH 1695-	6 m			
2+426 LT 14	AP 1696	(375 mm)			
2+849 LT 13-	AP 1729-	3 m			
2+853 LT 13	MH 1743	(450 mm)			
2+868 RT 12-	AP 1728-	3.6 m			
2+870 RT 12	MH 1728A	(750 mm)			
TOTALS		71.7 m			36.4 m

PAYMENT SHALL BE MADE AS ITEM 2404.501 REMOVE PIPE SEWER BY THE m REGARDLESS OF THE TYPE OF MATERIAL 11-19-96

MISCELLANEOUS REMOVALS			
ITEM	STATION	LOCATION	QUANTITY METER
TIMBER RETAINING WALL	2+130	LT 18-LT 23	5
TOTALS			5

11-22-96

RELOCATE SIGNS				
ITEM	STATION	LOCATION CONST. C/L	QUANTITY EACH	NOTES
METAL SIGN	1+958±	17 LT	-	PROTECT
METAL SIGN/ELECTRIC	2+266±	15 LT	1	WITH ELECTRIC
METAL SIGN	2+272±	17 LT	1	
TOTAL METAL SIGNS			2	
WOOD SIGN	2+008±	14.5 RT	1	
WOOD SIGN	2+364±	15 LT	1	
WOOD SIGN	2+450±	16 RT	-	PROTECT
WOOD SIGN	2+542±	17 RT	-	PROTECT
WOOD SIGN	2+936±	16 LT	1	
TOTAL WOOD SIGNS			3	
BRICK SIGN/ELECTRIC	2+032±	17 LT	1	SEE DETAIL, SHEET 16
ELECTRIC SIGN/PLANTER	2+675±	17 RT	-	PROTECT
BRICK SIGN/ELECTRIC	2+777±	17 RT	-	PROTECT
SIGN	3+192±	15 LT	-	PROTECT
TOTAL BRICK SIGNS			1	

THE FINAL LOCATION OF ALL SIGNS SHALL BE DETERMINED IN THE FIELD. PAYMENT BY THE EACH SHALL BE COMPENSATION IN FULL FOR ALL WORK AND MATERIAL REQUIRED, INCLUDING, BUT NOT LIMITED TO, CONCRETE BASE, REINFORCEMENT BARS, ANCHOR BOLTS, AND WOOD MATERIALS. 9-12-97

SALVAGE & INSTALL WOOD FENCE			
ITEM	STATION	LOCATION	QUANTITY METER
WOOD FENCE	2+070±	LT	5
WOOD FENCE	2+090±	LT	2
WOOD FENCE	2+328±	LT	3
TOTAL			10 m

NOTE: THE EXACT LOCATION OF ALL INSTALL FENCE SHALL BE DETERMINED IN THE FIELD. 11-22-96

MAILBOX SUPPORTS			
HOUSE NUMBER	STATION	LOCATION	QUANTITY EACH
1957	2+084±	LT 12	1
1907	2+103±	LT 12	1
1905	2+122±	LT 12	1
1899	2+168±	LT 12	1
1881	2+192±	LT 12	5
1879	2+218±	LT 12	1
1875	2+246±	LT 12	1
1871	2+288±	LT 12	1
1867	2+302±	LT 12	1
1865	2+317±	LT 12	1
TOTALS		SINGLE MULTIPLE	9 1

NOTE: TEMPORARY MAILBOX LOCATIONS SHALL BE ESTABLISHED PRIOR TO THE START OF CONSTRUCTION. THE LOCATIONS SHALL BE AS DESIGNATED BY THE U.S. POSTAL SERVICE AND THE ENGINEER. WRITTEN PERMISSION SHALL BE OBTAINED FROM THE OWNERS BEFORE ANY MAILBOXES CAN BE RELOCATED. 11-20-96

SILT FENCE HEAVY DUTY		
STATION TO STATION	RT-LT	m
STA. 1+661 TO 2+010	RT.	349 m
STA. 1+661 TO 1+815	LT.	154 m
STA. 2+015 TO 2+335	RT.	340 m
STA. 2+430 TO 2+520	LT.	90 m
SUBTOTAL		933 m
STRUCTURES		
ESTIMATED @ 4 m PER STRUCTURE		
64 STRUCTURES x 4 m		236 m
TOTAL		1 169

11-21-96

CONTRACTOR MAY USE ALTERNATE EROSION CONTROL AT STRUCTURES WITH ENGINEER'S AUTHORIZATION. SILT FENCE SHALL BE INSTALLED PER DETAIL ON SHEET XX. PAYMENT SHALL BE IN ACCORDANCE WITH SPEC. REFERENCE 2573 EXCEPT AS MODIFIED IN SPECIAL PROVISIONS.

SALVAGE & INSTALL WIRE FENCE				
ITEM	STATION	LOCATION	SALVAGE METER	INSTALL METER
WIRE FENCE-HIGH TENSILE	1+661 TO 1+830	LT	169	169
WIRE FENCE-HIGH TENSILE	1+700 TO 2+010	RT	310	310
WIRE FENCE-HIGH TENSILE	2+025 TO 2+456	RT	431	431
WIRE FENCE-HIGH TENSILE	2+423 TO 2+851	LT	428	428
TOTAL			1 338 m	1 338 m

NOTE: THE EXACT LOCATION OF ALL INSTALL FENCE SHALL BE DETERMINED IN THE FIELD. 7-16-97

BENCH MARK CHART		
STATION/LOCATION	ELEVATION	FINAL ELEVATION
STATE POINT A SE COR LARP & CLEVELAND	298.0364	
STATE POINT B SOUTH SIDE LARP	297.4390	
STATE POINT C SOUTH SIDE LARP	297.3080	
STATE POINT D SOUTH SIDE LARP	296.9331	
TOP HYD SOUTH SIDE LARP @ TATUM	297.1098	
STATE POINT E SOUTH SIDE LARP	295.7870	
NW COR CONC BASE SIG CONTROL CABINET @ FAIRVIEW	294.1624	
TOP HYD SOUTH SIDE LARP BETWEEN 1800 @ 1790	293.7357	
TOP HYD SOUTH SIDE LARP BETWEEN 1750 @ 1740	293.0469	
NE COR NORTH CONC BASE SW COR LARP & FRY	291.6113	
SW COR SOUTH CONC BASE BUCK FURNITURE SIGN	291.9740	
NE BOLT SIGN BASE SW COR LARP & SNELLING	291.9709	
SPIKE POWER POLE N.E. CORNER STATE FAIR POND	289.215	

8-26-97

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 LAWS OF THE STATE OF MINNESOTA.
Kathy Joseph
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

CHARTS

28-158



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EXISTING STRUCTURES CHART - PHASE 2

STATION	LOCATION CONST C/L	NUMBER	DESIGN	TYPE	PROFILE ELEVATION	ORIG. GRATE ELEVATION	NEW GRATE ELEVATION	CB/MH INVERT	ADJUST CASTING	RECONST m	INSTALL CASTING	REMOVE APRON	REMOVE MH/CB	SALVAGE CASTING	REMARKS/EXISTING BUILD INFORMATION
1+675.0	RT. 5.4 ALIGN E	MH 163	MH	STORM	298.19	298.2±	298.10	295.65	-0.1						CONSTRUCTED UNDER PREVIOUS CONTRACT - VERIFY ELEVATIONS
1+711.7	RT. 18.3	MH 1631	MH	WATER	298.01	296.970	-----	295.325							OK-OUTSIDE LIMITS OF CONSTRUCTION
1+714.5	RT. 22.2	MH 1632	MH	WATER	297.99	296.900	-----	295.900							OK-OUTSIDE LIMITS OF CONSTRUCTION
1+785.2	RT. 5.2	MH 1633	MH	ELEC VAULT	297.64	297.700	297.59	294.805	-0.09						0.914 m ADJUSTING BRICK & 0.279 m CASTING
1+814.5	LT. 13.4	AP 1635	AP	STORM	297.49	-----	-----	296.240				1			REMOVE - INCLUDE WITH LENGTH OF RC PIPE REMOVAL
1+815.7	RT. 13.4	AP 1634	AP	STORM	297.49	-----	-----	296.100				1			REMOVE - INCLUDE WITH LENGTH OF RC PIPE REMOVAL
1+842.2	LT. 14.6	CB 1636	CB	STORM	297.35	297.400	-----	296.150							REMOVE/SALVAGE CASTING ASSEMBLY
1+849.5	LT. 14.3	CB 1637	CB	STORM	297.32	297.380	-----	296.100				1		1	REMOVE/SALVAGE CASTING ASSEMBLY
1+855.9	LT. 11.3	MH 1639	MH	STORM	297.29	297.270	297.09	295.960	-0.18		①			1	CONVERT TO CB/SALVAGE CASTING ASSEMBLY F & I B-2 CASTING ASSEMBLY
1+888.2	LT. 11.6	SD 1640	SD	STORM	297.17	297.120	296.974	295.810	-0.146		①			1	CONVERT TO CB/SALVAGE CASTING ASSEMBLY F & I B-2 CASTING ASSEMBLY
1+900.4	LT. 8.8	MH 1641	MH	SAN	297.192	297.370	297.078	294.230	-0.29						0.487 m RINGS; 0.228 m CASTING; 1.22 m ECCENTRIC CONE
1+925.4	RT. 5.2	MH 1642	MH	ELEC VAULT	297.313	297.480	297.271	294.615	-0.21						0.4572 m ADJUSTING BRICKS; 0.279 m CASTING
1+938.2	LT. 18.3	CB 1643	CB	STORM	297.377	297.330	297.3±	296.170	-0.03						0.183 m ADJUSTING RINGS; 0.152 m CASTING
1+943.7	LT. 8.5	MH 1646	MH	SAN	297.406	297.440	297.296	294.085	-0.144						0.365 m ADJUSTING RINGS; 0.228 m CASTING
1+947.4	LT. 9.7	MH 1647	MH	STORM	297.423	297.470	297.291	294.940	-0.179						0.275 m ADJUSTING RINGS; 0.228 m CASTING
1+947.7	RT. 11.0	MH 1645	MH	STORM	297.424	297.420	297.264	294.770	-0.156						0.305 m ADJUSTING RINGS; 0.178 m CASTING
1+950.1	LT. 18.3	CB 1644	CB	STORM	297.436	297.340	297.3±	295.115	-0.04						0.488 m ADJUSTING RINGS; 0.152 m CASTING
1+950.1	LT. 40.5	CB 1645A	CB	STORM	297.436	297.480	-----	295.225							OK - OUTSIDE LIMITS OF CONSTRUCTION
1+956.2	LT. 41.1	CB 1644A	CB	STORM	297.467	297.110	-----	296.045							OK - OUTSIDE LIMITS OF CONSTRUCTION
1+967.5	LT. 8.5	MH 1649	MH	SAN	297.523	297.520	297.435	294.045	-0.085						0.183 m ADJUSTING RINGS; 0.279 m CASTING; 1.37 m ECCENTRIC CONE
1+997.3	LT. 8.8	MH 1650	MH	SAN	297.577	297.585	297.463	293.865	-0.122						0.183 m ADJUSTING RINGS; 0.228 m CASTING
2+016.9	RT. 14.6	MH 1651	MH	STORM	297.454	297.355	297.3±	292.205	-0.05						0.213 m ADJUSTING RINGS; 0.178 m CASTING
2+057.7	LT. 27.1	CB 1651A	CB	STORM	297.199	297.110	-----	295.860	-----						OK - OUTSIDE LIMITS OF CONSTRUCTION
2+065.6	RT. 5.2	MH 1652	MH	ELEC VAULT	297.149	297.270	297.11	294.555	-0.16						0.609 m ADJUSTING RINGS; 0.279 m CASTING
2+076.6	LT. 8.8	MH 1653	MH	SAN	297.080	297.175	296.966	293.670		1.25	1				0.091 m ADJUSTING RINGS; 0.228 m CASTING; 1.37 m ECCENTRIC CONE
2+147.9	LT. 18.3	CB 1681	CB	STORM	296.634	296.295	296.5±	295.440	+0.205						0.15 m ADJUSTING RINGS; 0.10 m CASTING
2+149.7	RT. 4.9	MH 1654	MH	ELEC VAULT	296.634	296.655	296.600	294.185	-0.060						0.09 m ADJUSTING BRICK; 0.279 m CASTING
2+152.8	LT. 8.2	MH 1655	MH	SAN	296.603	296.615	296.501	293.110	-0.114						0.24 m ADJUSTING RINGS; 0.228 m CASTING
2+155.5	LT. 16.1	MH 1683	MH	STORM	296.586	296.435	296.5±	292.410		0.522	1				0.0 m ADJUSTING RINGS; 0.178 m CASTING
2+134.0	RT. 13.0	MH 1683A	MH	STORM	296.721	296.483	296.737	292.263		1.834	1				0.51 m ADJUSTING RINGS; 0.177 m CASTING; 1.07 m ECCENTRIC CONE
2+157.1	LT. 18.0	CB 1682	CB	STORM	296.576	296.315	296.5±	295.220	+0.185						0.304 m ADJUSTING RINGS; 0.10 m CASTING
2+205.8	RT. 5.2	MH 1660	MH	ELEC VAULT	296.271	296.250	296.234	293.535	-0.016						0.61 m ADJUSTING BRICK; 0.279 m CASTING
2+321.3	LT. 8.5	MH 1672	MH	SAN	295.173	295.045	295.065	292.515	+0.02						0.09 m ADJUSTING RINGS; 0.228 m CASTING
2+238.7	LT. 8.8	MH 1663	MH	SAN	296.065	295.965	295.951	292.915	-0.014						0.09 m ADJUSTING RINGS; 0.228 m CASTING
2+251.2	LT. 12.8	AP 1664	AP	STORM	295.976	-----	-----	295.265	-----			1			REMOVE - INCLUDE WITH LENGTH OF PIPE REMOVAL
2+255.5	LT. 12.8	SD 1666	SD	STORM	295.938	295.475	-----	295.170	-----					1	REMOVE - SALVAGE CASTING
2+258.9	LT. 8.5	MH 1667	MH	SAN	295.906	295.785	295.798	292.860	+0.013						0.0 m ADJUSTING RINGS; 0.279 m CASTING
2+265.7	LT. 12.7	AP XXXX	AP	STORM	295.836	-----	-----	-----				1			REMOVE - INCLUDE WITH LENGTH OF PIPE REMOVAL
2+287.5	LT. 12.8	AP 1669	AP	STORM	295.578			295.050				1			REMOVE - INCLUDE WITH LENGTH OF PIPE REMOVAL
2+345.7	RT. 5.2	MH 1692	MH	ELEC VAULT	294.882	294.770	294.834	292.210	+0.064						0.37 m ADJUSTING BRICK; 0.279 m CASTING
2+401.8	LT. 16.4	AP 1690A	AP	STORM	294.211			293.340				1			REMOVE INCLUDE WITH LENGTH OF PIPE REMOVAL
2+403.6	RT. 8.5	MH 1694A	MH	SAN	294.190	294.086	294.088	291.360		1.12	1				0.0 m ADJUSTING RINGS; 0.228 m CASTING; 1.22 m ECCENTRIC CONE
2+403.6	LT. 8.2	MH 1694	MH	SAN	294.190	294.060	294.088	291.380	+0.028						0.152 m ADJUSTING RINGS; 0.228 m CASTING
2+419.5	LT. 16.4	MH 1695	MH	STORM	293.999	294.025		293.110					1		REMOVE - SALVAGE CASTING
2+425.6	LT. 14.3	AP 1696	AP	STORM	293.926			293.005				1			REMOVE INCLUDE WITH LENGTH OF PIPE REMOVAL
2+479.8	RT. 8.2	MH 1703	MH	SAN	293.433	293.255	293.331	290.755	+0.076						0.122 m ADJUSTING RINGS; 0.178 m CASTING
2+486.2	RT. 5.5	MH 1704	MH	ELEC VAULT	293.395	293.295	293.343	290.645	+0.048						0.40 m ADJUSTING BRICK; 0.279 m CASTING
2+514.3	RT. 7.6	MH 1705	MH	SAN	293.226	293.090	293.136	290.530	+0.046						0.183 m ADJUSTING RINGS; 0.178 m CASTING
2+622.2	RT. 7.3	MH 1716	MH	SAN	292.577	292.410	292.493	289.665	+0.083						0.09 m ADJUSTING RINGS; 0.228 m CASTING
2+730.7	RT. 7.3	MH 1723	MH	SAN	291.925	291.970	291.841	289.290		1.18	1				0.09 m ADJUSTING RINGS; 0.228 m CASTING; 1.22 m ECCENTRIC CONE
2+768.5	RT. 7.3	MH 1724	MH	SAN	291.698	291.790	291.614	289.110		1.04	1				0.0 m ADJUSTING RINGS; 0.228 m CASTING; 1.22 m ECCENTRIC CONE
2+839.2	RT. 7.3	MH 1727	MH	SAN	291.661	291.530	291.577	288.850		0.81	1				0.152 m ADJUSTING RINGS; 0.228 m CASTING; 0.61 m BRICK
2+848.7	LT. 12.8	AP 1729	AP	STORM	291.629			290.725				1			REMOVE INCLUDE WITH LENGTH OF PIPE REMOVAL
2+851.1	LT. 8.5	MH 1730	MH	SAN	291.617	291.460	291.509	289.050	+0.049						0.152 m ADJUSTING RINGS; 0.228 m CASTING
2+852.6	LT. 12.5	MH 1743	MH	STORM	291.610	291.430		290.060					1	1	REMOVE - SALVAGE CASTING
2+868.2	RT. 12.2	AP 1728	AP	STORM	291.532			290.805				1			REMOVE INCLUDE WITH LENGTH OF PIPE REMOVAL
2+878.22	RT. 12.2	MH 1728A	MH	STORM	291.482	291.302	291.51	290.20	-0.208						

① F & I B-2 CASTING ASSEMBLY. SEE SHEET 12 FOR CASTING DESIGNATIONS.
PAYMENT SHALL BE MADE AS ITEM 2506.516 CASTING ASSEMBLY BY THE EACH

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
LAWS OF THE STATE OF MINNESOTA.
Kathy Sasek
REG. NO. 21564 DATE 10/16/97

REVISED 12/10/97 D.H.

EXISTING STRUCTURES CHART

28-158



S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 10 OF 90 SHEETS

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EXISTING STRUCTURES CHART - PHASE 2

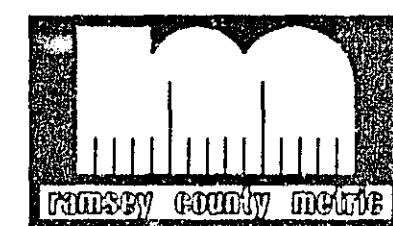
STATION	LOCATION CONST. C/L	NUMBER	DESIGN	TYPE	PROFILE ELEVATION	ORIG. GRATE ELEVATION	NEW GRATE ELEVATION	CB/MH INVERT	ADJUST CASTING	RECONST	INSTALL CASTING	REMOVE APRON	REMOVE MH/CB	SALVAGE CASTING	REMARKS / EXISTING BUILD INFORMATION
2+942.5	LT. 17.7	CB 1737	CB	STORM	291.159	290.945	290.94	290.120	0.00±						0.0 m ADJ. RINGS; 0.279 m CASTING; BLK. CONST
2+942.8	LT. 20.7	CB 1736	CB	STORM	291.157	290.970		290.180							OK - OUTSIDE CONSTRUCTION LIMITS
2+946.8	LT. 11.9	MH 1732	MH	SAN	291.137	291.010	290.961	288.265	-0.049						0.061 m ADJUSTING RINGS; 0.228 m CASTING
2+946.8	RT. 7.6	MH 1731	MH	SAN	291.137	290.990	291.047	288.310	+0.057						0.274 m ADJUSTING RINGS; 0.228 m CASTING
2+947.1	LT. 8.5	MH 1733	MH	SAN	291.136	290.985	291.028	288.305	+0.043						0.0 m ADJUSTING RINGS; 0.228 m CASTING
2+951.4	LT. 17.7	CB 1734	CB	STORM	291.114	290.980	290.98	290.095	0.00±						0.0 m ADJUSTING RINGS; 0.279 m CASTING
2+951.4	LT. 20.4	CB 1735	CB	STORM	291.114	291.000		290.210							OK - OUTSIDE CONSTRUCTION LIMITS
2+964.2	RT. 12.5	MH 1741	MH	STORM	291.064	291.045	291.048	289.645		1.5	1				0.0 m ADJUSTING RINGS; 0.076 m CASTING
2+964.2	RT. 11.0	CB 1740	CB	STORM	291.064	291.000		289.690					1	1	REMOVE - SALVAGE CASTING
2+964.5	LT. 10.4	CB 1738	CB	STORM	291.064	290.850		289.815					1	1	REMOVE - SALVAGE CASTING
2+966.9	LT. 11.0	CB 1739	CB	STORM	291.062	291.045		289.855					1	1	REMOVE - SALVAGE CASTING
3+005.3	RT. 7.3	MH 1742	MH	SAN	291.147	291.045	291.063	288.365	+0.018						0.018 m ADJUSTING RINGS; 0.228 m CASTING
3+044.3	LT. 17.1	CB 1744	CB	STORM	291.240	291.215	291.2±	290.165	0.00±						0.0 m ADJUSTING RINGS; 0.076 m CASTING
3+049.5	LT. 11.3	MH 1746	MH	SAN	291.252	291.065	291.056	287.955	-0.009						0.061 m ADJUSTING RINGS; 0.228 m CASTING
3+053.8	LT. 17.4	CB 1745	CB	STORM	291.262	291.110	291.1±	290.105	0.00±						0.0 m ADJ. RINGS; 0.279 m CASTING; BLK. CONST.
3+060.2	LT. 10.4	CB 1747	CB	STORM	291.277	291.030		290.025					1	1	REMOVE - SALVAGE CASTING
3+060.2	RT. 10.7	CB 1748	CB	STORM	291.277	291.025		289.990					1	1	REMOVE - SALVAGE CASTING
3+121.4	RT. 10.4	CB 1749	CB	STORM	291.43	291.155	291.25	290.210	+0.09						0.0 m ADJUSTING RINGS; 0.279 m CASTING
3+121.8	LT. 10.7	CB 1751	CB	STORM	291.43	291.150	291.26	290.420	+0.11						0.0 m ADJUSTING RINGS; 0.279 m CASTING
3+126.0	LT. 11.9	MH 1756	MH	SAN	291.44	291.495	291.461	287.835	-0.034						0.3048 m ADJUSTING RINGS; 0.228 m CASTING
3+127.2	LT. 10.7	CB 1753	CB	STORM	291.43	291.200	291.27	290.20	+0.08						0.152 m ADJUSTING RINGS; 0.279 m CASTING
3+127.2	RT. 10.7	CB 1750	CB	STORM	291.43	291.215	291.27	290.30	+0.06						0.0 m ADJUSTING RINGS; 0.279 m CASTING
3+195.2	LT. 10.7	CB 1754	CB	STORM		291.295		290.015							OK - OUTSIDE CONSTRUCTION LIMITS
3+195.2	RT. 10.7	CB 1752	CB	STORM		291.290		290.375							OK - OUTSIDE CONSTRUCTION LIMITS
3+202.5	LT. 12.8	MH 1758	MH	SAN		291.480	291.48	287.700	0.00±						0.549 m ADJUSTING RINGS; 0.178 m CASTING
3+202.6	LT. 22.6	MH 1758A	MH	SAN		291.600		287.575							OK - OUTSIDE CONSTRUCTION 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
LAWS OF THE STATE OF MINNESOTA.
Kathy Jaroske
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

EXISTING STRUCTURES CHART

28-158



BB PROPOSED STORM SEWER STRUCTURE CHART

STATION	OFFSET CONST. &	NUMBER	TYPE	DESIGN	CASTING ASSEMBLY	ELEVATION			F & I R.C. PIPE SEWER								DRAINS TO		REMARKS	
						PROFILE	NEW GRATE OR RING	C.B./M.H. OR APRON INVERT	375 mm CLASS V	450 mm CLASS V	460 mm X 725 mm ARCH RCP CLASS IIIA	525 mm CLASS V	600 mm CLASS III	675 mm	750 mm CLASS III	900 mm CLASS III	STRUCT. NO.	INVERT ELEVATION		
1+675.0	LT. 8.1	163A	MH	A or F	A-8	298.19	298.10	295.60				69.0					168	295.40		
1+675.0	LT. 11.4	164	CB	C or G	B-2	298.19	298.00	296.60	3.3								163A	296.62		
1+675.0	RT. 0.6	165	CB	A or F	B-2	298.19	298.24	295.78	8.7								163A	295.60	TYPE B CONE	
1+675.0	RT. 2.4	166	CB	A or F	B-2	298.19	298.15	295.76	1.8								165	295.70	TYPE B CONE	MAKE SUITABLE CONNECTION
1+675.0	RT. 8.1	163	MH	A or F	A-8	298.19	298.10	295.65	5.7								166	295.63		
1+675.0	RT. 13.2	167	CB	A or F	B-2	298.19	297.96	296.30	5.1								163	296.20	MAKE SUITABLE CONNECTION	
1+744.0	LT. 8.1	168	MH	A or F	A-8	297.85	297.76	295.43				71.0					173	295.19		
1+744.0	LT. 11.4	169	CB	C or G	B-2	297.85	297.66	296.21	3.3								168	296.18		
1+744.0	LT. 2.4	170	CB	A or F	B-2	297.85	297.81	295.46	5.7								168	295.43		
1+744.0	RT. 2.4	171	CB	A or F	B-2	297.85	297.81	295.48	4.8								170	295.46		
1+744.0	RT. 11.4	172	CB	C or G	B-2	297.85	297.66	296.53	9.0								171	295.48		
1+815.0	LT. 8.1	173	MH	A or F	A-8	297.50	297.41	295.25				73.5					181	294.97		
1+815.0	LT. 16.6	174	SD	C or G	M-8	297.50	297.25	296.10	5.2								175	296.00	GRADE TO DRAIN	
1+815.0	LT. 11.4	175	CB	C or G	B-2	297.50	297.31	296.00	3.3								173	295.94		
1+815.0	LT. 2.4	176	CB	A or F	B-2	297.50	297.46	295.25	5.7								173	295.19	TYPE B CONE	
1+815.0	LT. 0.6	177	CB	A or F	B-2	297.50	297.55	295.26	1.8								176	295.25	TYPE B CONE	
1+815.0	RT. 11.4	178	CB	A or F	B-2	297.50	297.31	295.32	12.0								177	295.26		
1+842.0	LT. 17.3	179	CB	C or G	B-2	297.36	297.5±	296.20	7.0								180	296.10		
1+849.0	LT. 17.3	180	CB	C or G	B-2	297.33	297.4±	296.10	9.0								1639	295.99	MAKE SUITABLE CONNECTION	
1+888.5	RT. 8.1	181	MH	A or F	A-8	297.17	297.08	295.07				46.8					181A	294.95		
1+888.5	LT. 2.4	182	CB	A or F	B-2	297.17	297.13	295.13	1.8								181	295.10	TYPE B CONE	
1+888.5	LT. 0.6	183	CB	A or F	B-2	297.17	297.22	295.10	8.7								182	294.98	TYPE B CONE	
1+888.5	RT. 11.4	184	CB	C or G	B-2	297.17	296.98	295.60	3.3								183	295.56		
1+935.0	LT. 6.3	181A	MH	A or F	A-8	297.36	297.08	294.95				12.7					181B	294.92		
1+947.7	LT. 6.3	181B	MH	A or F	A-8	297.43	297.08	294.92									1645	294.85	MAKE SUITABLE CONNECTION	
2+012.8	RT. 22.0	241	CB	C or G	B-2	297.49	296.90	295.68	10.0								242	295.63		
2+022.1	RT. 22.0	242	CB	C or G	B-2	297.43	296.90	295.60	10.0								1651	295.10	MAKE SUITABLE CONNECTION	
2+060.0	LT. 13.2	186	CB	C or G	B-2	297.18	296.96	295.75	13.8								187	295.55		
2+060.0	RT. 0.6	187	CB	A or F	B-2	297.18	297.23	294.73	1.8								188	294.70		
2+060.0	RT. 2.4	188	CB	A or F	B-2	297.18	297.14	294.70	9.0								189	294.60		
2+060.0	RT. 11.4	189	CB	A or F	B-2	297.18	296.99	294.60	3.0								190	294.50		
2+060.0	RT. 13.5	190	MH	A or F	A-8	297.18	297.26	292.23									1651	292.20	BUILD OVER EXISTING	
2+134.0	LT. 11.4	191	CB	C or G	B-2	296.68	296.49	295.20		9.0							192	295.13		
2+134.0	LT. 2.4	192	CB	A or F	B-2	296.68	296.64	294.13		1.8							193	294.10	TYPE B CONE	
2+134.0	LT. 0.6	193	CB	A or F	B-2	296.68	296.73	294.10		12.0							194	294.00	TYPE B CONE	
2+134.0	RT. 11.4	194	CB	A or F	B-2	296.68	296.49	294.00		7.0							1683A	293.90	MAKE SUITABLE CONNECTION	
2+214.0	LT. 6.3	195	MH	A or F	A-8	296.22	296.17	293.70	81.0								198	292.75		
2+214.0	LT. 11.4	196	CB	A or F	B-2	296.22	296.03	294.40	5.1								195	294.35		
2+214.0	LT. 2.4	196A	CB	A or F	B-2	296.22	296.18	293.76	9.0								195	293.72	TYPE B CONE	
2+214.0	LT. 0.6	196B	CB	A or F	B-2	296.22	296.27	293.77	1.8								196A	293.76	TYPE B CONE	
2+214.0	RT. 11.4	197	CB	A or F	B-2	296.22	296.03	293.83	12.0								196B	293.77		
2+256.0	LT. 19.3	199A	CB	A or F	B-2	295.93	296.0±	294.10	9.0								199B	294.00		
2+265.0	LT. 19.3	199B	CB	A or F	B-2	295.85	295.8±	294.00	9.0								199C	293.90		
2+265.0	LT. 11.4	199C	MH	A or F	A-8	295.85	295.72	293.90	30.0								199	293.60		
2+295.0	LT. 6.3	198	MH	A or F	A-8	295.49	295.44	292.75				41.5					198A	292.10		
2+295.0	LT. 11.4	199	CB	A or F	B-2	295.49	295.30	293.60	5.1								198	293.50		
2+295.0	LT. 2.4	200	CB	A or F	B-2	295.49	295.45	292.82	4.8								198	292.77		
2+295.0	RT. 2.4	201	CB	A or F	B-2	295.49	295.45	292.85	4.8								200	292.82		
2+295.0	RT. 11.4	202	CB	A or F	B-2	295.49	295.30	292.90	9.0								201	292.85		
2+329.4	LT. 12.4	198C	CB	A or F	B-2	295.07	294.9±	293.13	7.1								198B	293.09		
2+336.5	LT. 12.4	198B	CB	A or F	B-2	294.99	294.8±	293.09	6.1								198A	292.48		
2+336.5	LT. 6.3	198A	MH	A or F	A-8	294.99	294.9±	292.47				53.5					203	292.10		

CASTING ASSEMBLIES-
INCLUDE IN UNIT PRICE BID FOR
STRUCTURE BY THE EACH.
SPEC. REFERENCE 2506.4 A.

A-8: RING CASTING NO. 700-8;
MN/DOT STANDARD PLATE M4101D
COVER CASTING NO. 716;
MN/DOT STANDARD PLATE M4110F

B-2: RING CASTING NO. 802 A;
MN/DOT STANDARD PLATE M4129G
GRATE CASTING NO. 811;
MN/DOT STANDARD PLATE M4151B
CURB BOX NO. 823;
MN/DOT STANDARD PLATE M4160D

B-4: RING CASTING NO. 802 A;
MN/DOT STANDARD PLATE M4129G
GRATE CASTING NO. 815;
MN/DOT STANDARD PLATE M4153B
CURB BOX NO. 823;
MN/DOT STANDARD PLATE M4160D

M-8: RING CASTING NO. 700-8;
MN/DOT STANDARD PLATE M4140D
COVER CASTING NO. 721;
MN/DOT STANDARD PLATE M4140D

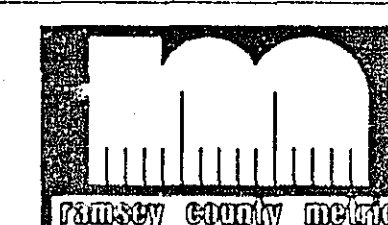
STRUCTURE DESIGN
DESIGN A-MN/DOT STANDARD PLATE M4000J
DESIGN F-MN/DOT STANDARD PLATE M4005L
DESIGN C-MN/DOT STANDARD PLATE M4002F
DESIGN G-MN/DOT STANDARD PLATE M4006L
DESIGN 4020-XX-MN/DOT STANDARD PLATE 4020

I HEREBY CERTIFY THAT THIS PLAN WAS
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Kathy Jaschke
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

PROPOSED STORM SEWER

28-158



S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 12 OF 90 SHEETS

BB

PROPOSED STORM SEWER STRUCTURE CHART

STATION	OFFSET CONST. C	NUMBER	TYPE	DESIGN	CASTING ASSEMBLY	ELEVATION			F & I R.C. PIPE SEWER								DRAINS TO		REMARKS	
						PROFILE	NEW GRATE OR RING	C.B./M.H. OR APRON INVERT	375 mm CLASS V	450 mm CLASS V	460 mm 725 mm ARCH RCP CLASS IIA	525 mm CLASS III	600 mm CLASS III	675 mm	750 mm CLASS III	900 mm CLASS III	STRUCT. NO.	INVERT ELEVATION		
2+390.0	LT. 6.3	203	MH	A or F	A-8	294.35	294.30	292.10									208	292.00		
2+390.0	LT. 11.4	204	CB	C or G	B-2	294.35	294.16	292.71	5.1							28.0	203	292.60		
2+390.0	LT. 2.4	205	CB	A or F	B-2	294.35	294.31	292.14	1.8								203	292.12		
2+390.0	LT. 0.6	206	CB	A or F	B-2	294.35	294.40	292.15	1.8								205	292.14	TYPE B CONE	
2+390.0	RT. 11.4	207	CB	A or F	B-2	294.35	294.16	292.21	12.0								206	292.15	TYPE B CONE	
2+418.0	LT. 6.3	208	MH	A or F	A-8	294.20	294.15	292.00								51.0	208A	291.52		
2+403.0	LT. 22.6	209	CB	A or F	B-2	294.02	294.6±	292.80	15.0								210	292.62		
2+418.0	LT. 22.6	210	CB	A or F	B-2	294.02	294.0±	292.35	14.0								208	292.25		
2+460.3	RT. 12.7	208C	CB	A or F	B-2	293.55	293.5±	292.00	8.7								208B	291.95		
2+469.0	RT. 12.7	208B	CB	A or F	B-2	293.50	293.4±	291.61	19.9								208A	291.51		
2+469.0	LT. 7.4	208A	MH	A or F	A-8	293.50	293.4±	291.51								36.0	211	291.17		
2+505.0	LT. 8.1	211	MH	A or F	A-8	293.28	293.19	291.14									81.0	216	290.88	
2+505.0	LT. 11.4	212	CB	A or F	B-2	293.28	293.09	291.17	3.3								211	291.14		
2+505.0	LT. 2.4	213	CB	A or F	B-2	293.28	293.24	291.30	5.7								211	291.17		
2+505.0	RT. 2.4	214	CB	A or F	B-2	293.28	293.24	291.40	4.8								213	291.30		
2+505.0	RT. 13.2	215	CB	C or G	B-2	293.28	293.03	291.70	10.8								214	291.60		
2+586.0	LT. 8.1	216	MH	A or F	A-8	292.79	292.70	290.88									62.7	216A	290.71	
2+586.0	LT. 11.4	217	CB	A or F	B-2	292.79	292.60	290.92	3.3								216	290.88		
2+586.0	LT. 2.4	218	CB	A or F	B-2	292.79	292.75	291.00	5.7								216	290.88		
2+586.0	RT. 2.4	219	CB	A or F	B-2	292.79	292.75	291.10	4.8								218	291.00		
2+586.0	RT. 11.4	220	CB	C or G	B-2	292.79	292.60	291.20		10.8							219	291.10		
2+630.4	RT. 12.4	216C	CB	A or F	B-2	292.53	292.4±	290.91	18.3								216B	290.80		
2+648.7	RT. 12.4	216B	CB	A or F	B-2	292.42	292.3±	290.80	20.5								216A	290.66		
2+648.7	LT. 8.1	216A	MH	A or F	A-8	292.42	292.3±	290.66								25.3	221	290.59		
2+674.0	LT. 8.1	221	MH	A or F	A-8	292.27	292.18	290.59									63.0	226	290.39	
2+674.0	LT. 11.4	222	CB	C or G	B-2	292.27	292.08	290.63	3.3								221	290.59		
2+674.0	RT. 0.6	223	CB	A or F	B-2	292.27	292.32	290.70		8.7							221	290.59		
2+674.0	RT. 2.4	224	CB	C or G	B-2	292.27	292.23	290.78		1.8							223	290.70		
2+674.0	RT. 11.4	225	CB	C or G	B-2	292.27	292.08	290.85		9.0							224	290.78		
2+696.4	RT. 12.4	230D	CB	C or G	B-2	292.14	292.1±	291.00	7.9								230C	290.96		
2+704.3	RT. 12.4	230C	CB	C or G	B-2	292.09	292.0±	290.93	12.6								230B	290.87		
2+716.9	RT. 12.4	230B	CB	C or G	B-2	292.01	291.8±	290.84	8.3								230A	290.80		
2+725.2	RT. 11.4	230A	CB	C or G	B-2	291.96	291.8±	290.77	12.0								230	290.70		
2+737.0	LT. 8.1	226	MH	C or G	A-8	291.89	291.80	290.39									65.0	231	290.18	
2+737.0	LT. 11.4	227	CB	C or G	B-2	291.89	291.70	290.41	3.3								226	290.39		
2+737.0	LT. 2.4	228	CB	C or G	B-2	291.89	291.85	290.50		5.7							226	290.39		
2+737.0	RT. 2.4	229	CB	C or G	B-2	291.89	291.85	290.60		4.8							228	290.50		
2+737.0	RT. 11.4	230	CB	C or G	B-2	291.89	291.70	290.70		9.0							229	290.60		
2+765.8	RT. 12.4	235B	MH	A or F	A-8	291.72	291.8±	290.18	9.8								235A	290.60		
2+775.6	RT. 12.4	235A	CB	A or F	B-2	291.66	291.8±	290.23	26.4								235	290.43		
2+802.0	LT. 8.1	231	MH	4020	A-8	291.52	291.43	290.18									57.0	236	290.0±	MH231 1350-4020
2+802.0	LT. 11.4	232	CB	C or G	B-2	291.52	291.33	290.23		3.3							231	290.18		
2+802.0	RT. 0.6	233	CB	C or G	B-2	291.52	291.57	290.30		8.7							231	290.18		
2+802.0	RT. 2.4	234	CB	C or G	B-2	291.52	291.48	290.33		1.8							233	290.30		
2+802.0	RT. 11.4	235	CB	C or G	B-2	291.52	291.33	290.43		9.0							234	290.33		
2+859.0	LT. 3.8	236	MH	4020	A-8	291.57	291.55	290.0±									1728A	289.96	BUILD OVER EXIST., MH236 2700-4020	
2+892.0	LT. 11.4	237	CB	C or G	B-2	291.41	291.22	290.10		25.0							238	289.8±		
2+892.0	RT. 13.2	238	CB	4020	B-2	291.41	291.16	289.8±									1741	289.68	BUILD OVER EXIST. CB238 1800-4020	
3+008.0	RT. 11.4	239	CB	C or G	B-2	291.16	290.97	289.8±									1741	289.64	BUILD OVER EXISTING	
3+008.0	RT. 14.7	240	CB	C or G	B-4	291.16	290.85	289.93±	3.3								239	289.8±		
2+964.2	LT. 11.0	243	CB	C or G	B-4	291.06	290.92	289.82			21.4						239	289.8±	BUILD OVER EXIST.	
2+964.5	RT. 10.4	244	CB	C or G	B-4	291.06	291.05	289.64										285.82	OUTLET TO FAIRGROUNDS POND	
3+060.2	LT. 10.4	245	CB	C or G	B-4	291.30	291.11	290.02									246	289.99	BUILD OVER EXIST.	
3+060.2	RT. 10.7	246	CB	C or G	B-4	291.30	291.11	289.99									244	285.82	OUTLET TO FAIRGROUNDS POND	

CASTING ASSEMBLIES-

INCLUDE IN UNIT PRICE BID FOR
STRUCTURE BY THE EACH.
SPEC. REFERENCE 2506.4 A.

- A-8: RING CASTING NO. 700-8;
MN/DOT STANDARD PLATE M4101D
COVER CASTING NO. 716;
MN/DOT STANDARD PLATE M4110F
- B-2: RING CASTING NO. 802 A;
MN/DOT STANDARD PLATE M4129G
GRATE CASTING NO. 811;
MN/DOT STANDARD PLATE M4151B
CURB BOX NO. 823;
MN/DOT STANDARD PLATE M4160D
- B-4: RING CASTING NO. 802 A;
MN/DOT STANDARD PLATE M4129G
GRATE CASTING NO. 815;
MN/DOT STANDARD PLATE M4153B
CURB BOX NO. 823;
MN/DOT STANDARD PLATE M4160D
- M-8: RING CASTING NO. 700-8;
MN/DOT STANDARD PLATE M4140D
COVER CASTING NO. 721;
MN/DOT STANDARD PLATE M4140D

STRUCTURE DESIGN

DESIGN A-MN/DOT STANDARD PLATE M4000J
DESIGN F-MN/DOT STANDARD PLATE M4005L
DESIGN C-MN/DOT STANDARD PLATE M4002F
DESIGN G-MN/DOT STANDARD PLATE M4006L
DESIGN 4020-XX-MN/DOT STANDARD PLATE 4020

I HEREBY CERTIFY THAT THIS PLAN WAS
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Kathy Jaschke
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

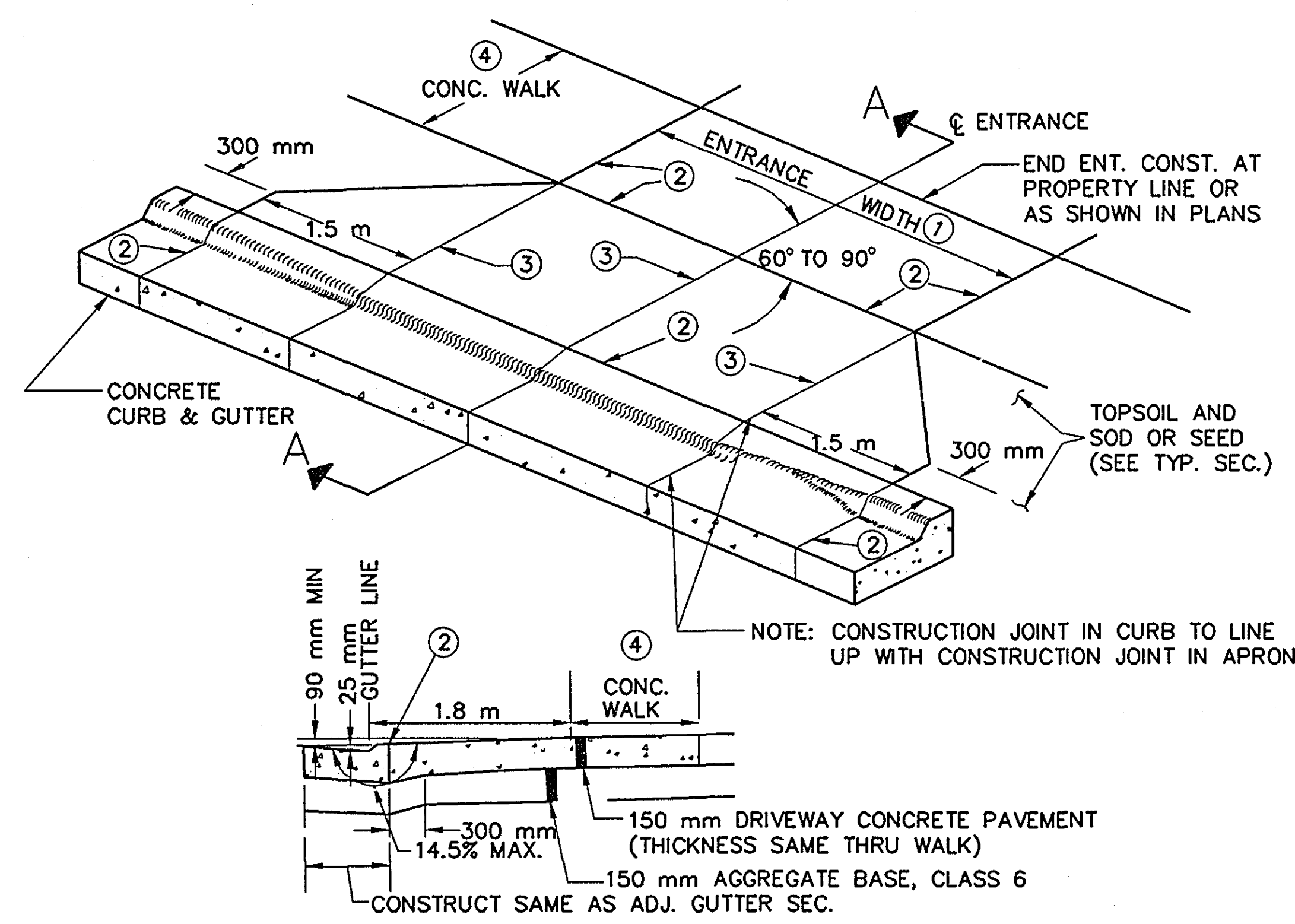
PROPOSED STORM SEWER

28-158



S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 13 OF 90 SHEETS

RESIDENTIAL CONCRETE ENTRANCE DETAIL

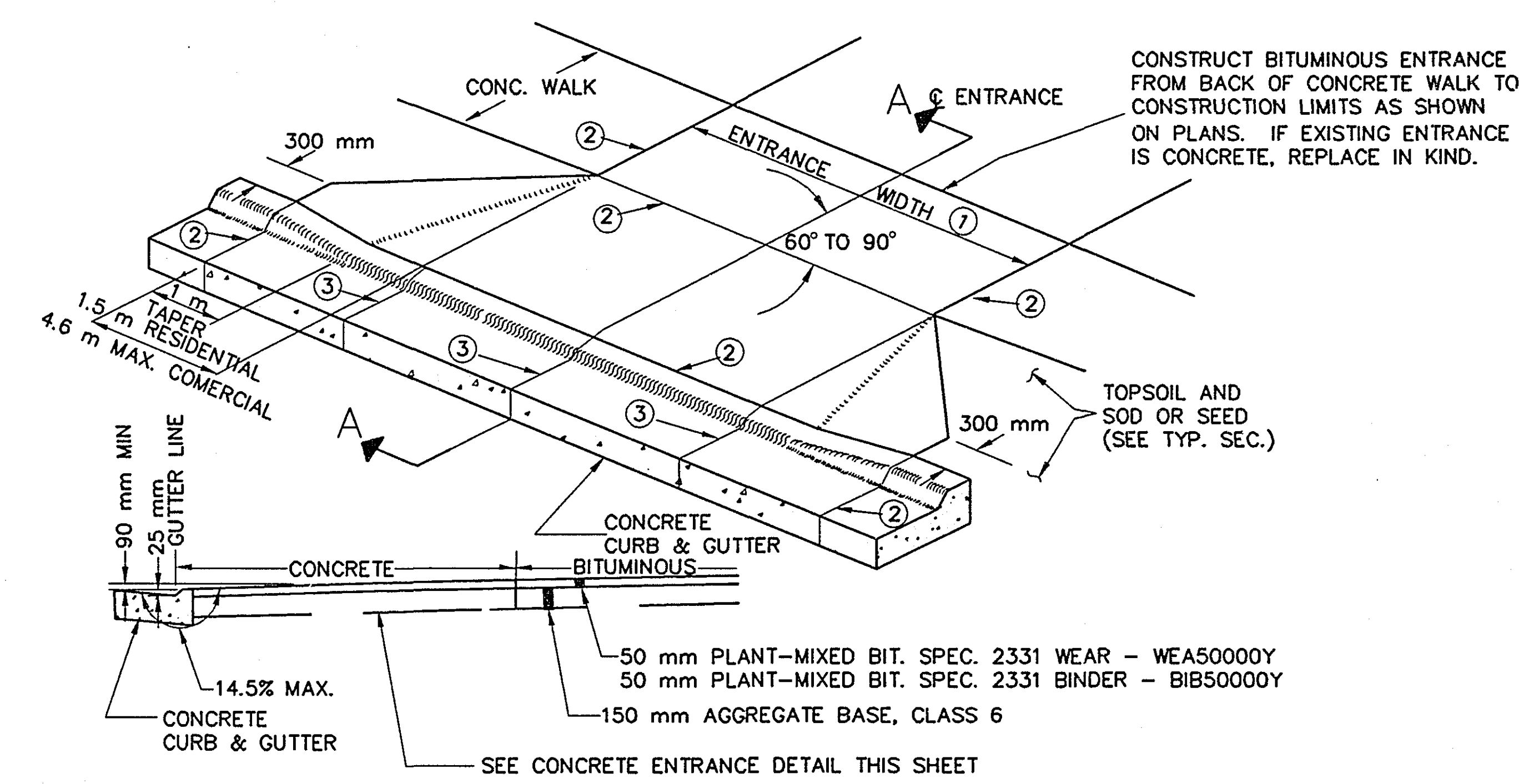


SECTION A-A

NOTES:

- ① ENTRANCE WIDTHS
RESIDENTIAL - 3.6 m MIN.
- 8.0 m MAX.
- ② 12mm EXPANSION JOINT
- ③ PLACE JOINTS AS REQUIRED
FOR CONCRETE CONSTRUCTION
- ④ SEE PLANS FOR SIDEWALK
LOCATION

RESIDENTIAL BITUMINOUS ENTRANCE DETAIL



SECTION A-A

ALL ENTRANCES SHALL BE CONSTRUCTED WITH A CONCRETE SECTION (150 mm)
TO THE BACK OF WALK. SEE CONCRETE ENTRANCE DETAIL.

NOTES:

- ① ENTRANCE WIDTHS - 3.6 m MIN.
RESIDENTIAL - 8 m MAX.
- ② 12 mm EXPANSION JOINT
- ③ PLACE JOINTS AS REQUIRED
FOR CONCRETE CONSTRUCTION

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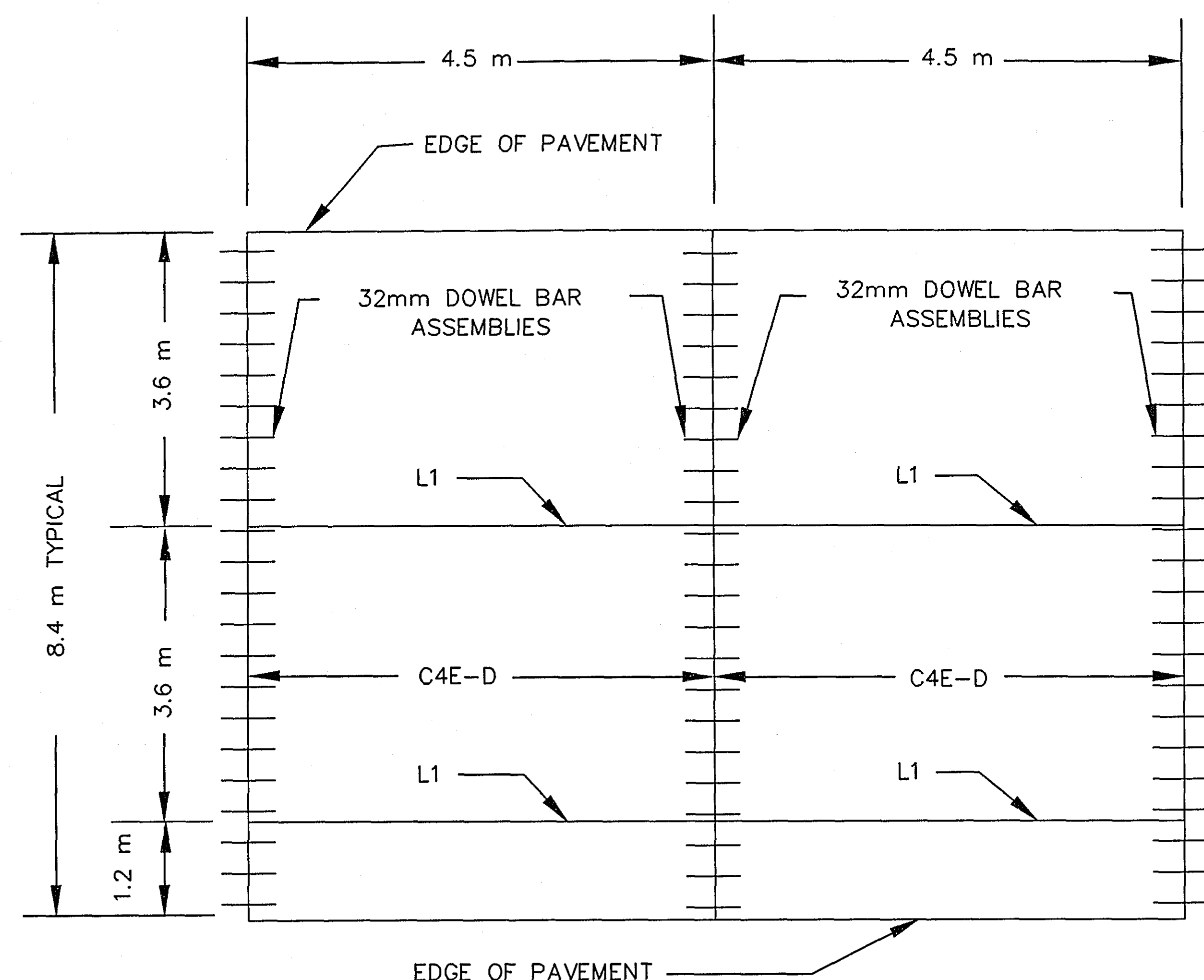
Kathy Joseph
REG. NO. 21864 DATE 10/16/97

REVISED 12/10/97 D.H.

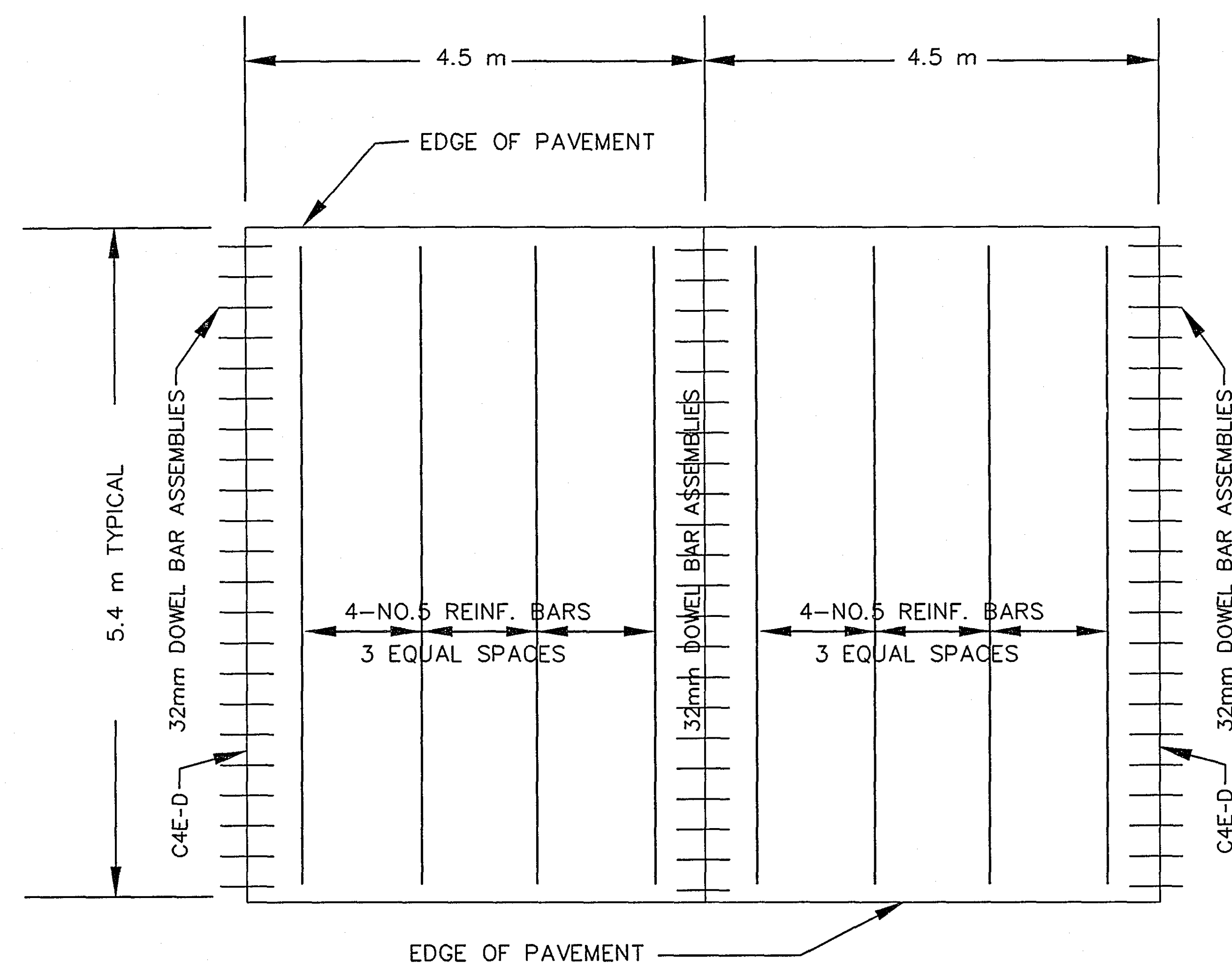
28-158
ENTRANCE DETAILS

NO SHEET

#15-18



MAINLINE PAVEMENT
DOWELED



SUPPLEMENTAL PANEL REINFORCEMENT

- SEE CONCRETE PAVING LAYOUT FOR LOCATIONS -
CONSTRUCT WITH CROWN AT C/L FOR DRAINAGE.
STA. 2+832 TO 3+002

GENERAL NOTES:

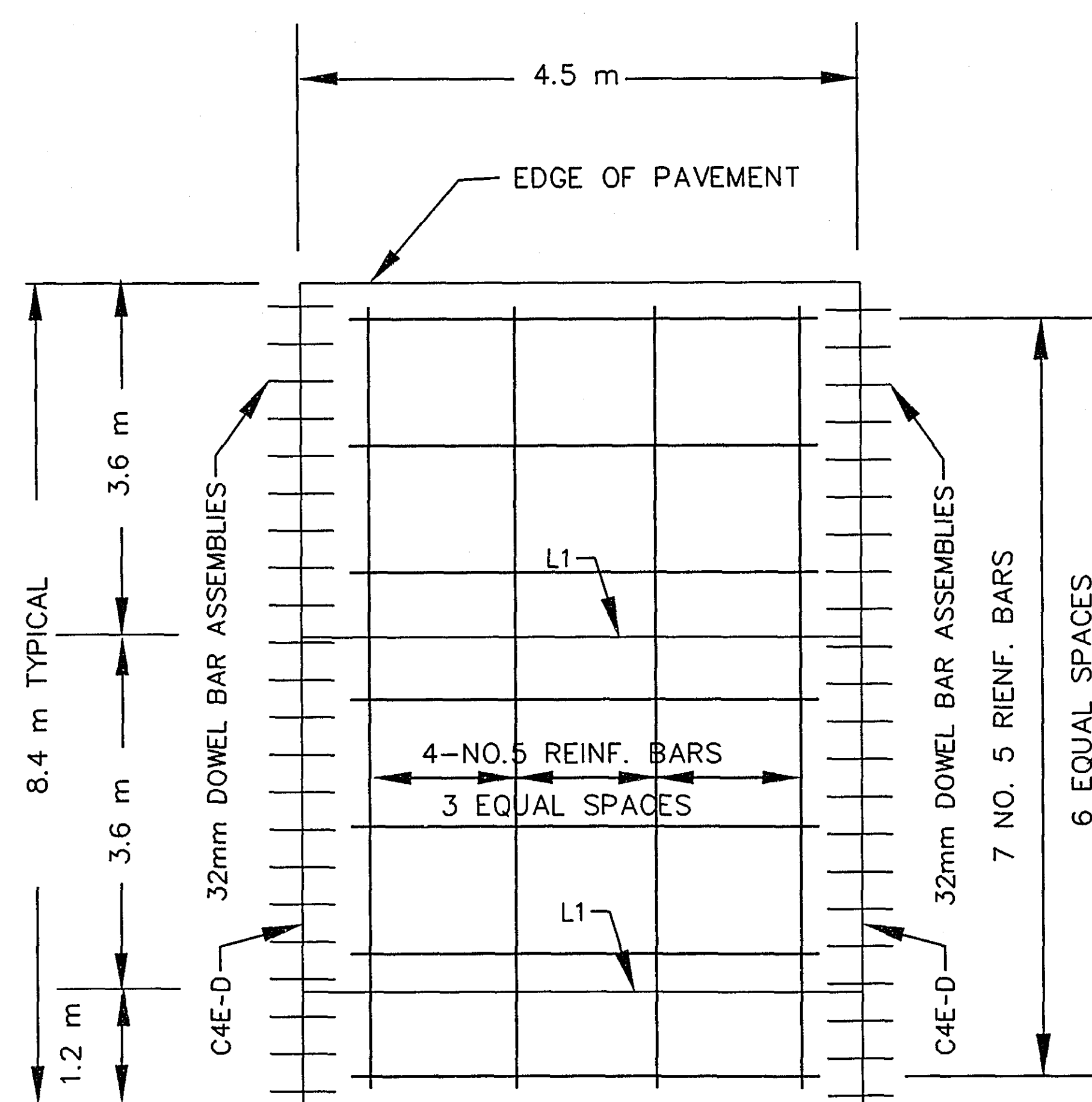
SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS T.

ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301
AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.
FOR ADDITIONAL REINFORCEMENT OVER CULVERTS, SEE STANDARD PLATE 1070.

DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE
SHOWN ON STANDARD PLATE 1103.

SUPPLEMENTAL PANEL REINFORCEMENT:

PLACE NO. 5 BARS IN PANELS WHERE PAVEMENT WIDTHS EXCEED 5.0 m WITHOUT A
LONGITUDINAL JOINT, AND IN THE MIDDLE LANE WHERE TIED PAVEMENT WIDTHS
EXCEED 9.1 m. PLACEMENT DEPTH SHALL BE PLANNED $T/2 + OR - 25 \text{ mm}$.



SUPPLEMENTAL PANEL REINFORCEMENT
AT STORM SEWER CROSSINGS

NON-REINFORCED CONCRETE MAINLINE PAVEMENT
WITH PERPENDICULAR JOINTS

28-158

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
LAWS OF THE STATE OF MINNESOTA.

Kathy Jaschke
REG. NO. 21864 DATE 10/10/97

REVISED 12/10/97 D.H.



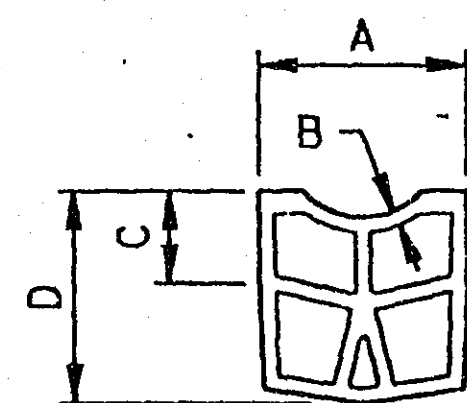
S.P. 62-630-44

S.P. 124-020-04

SHEET NO. 19 OF 90 SHEETS

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	21 mm
A	20 mm +3.6 -1.3
B	2 mm ±0.5
C	15 mm MIN.
D	20 mm MIN.
WEB AND WALL THICKNESS, UNLESS NOTED	0.8 mm MIN.



TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

SPEC. REFERENCE 3721

CONTRACTION JOINT SEALER PREFORMED ELASTIC TYPE

NOTES:

"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 3 mm, NOR MORE THAN 7 mm BELOW THE PAVEMENT SURFACE.

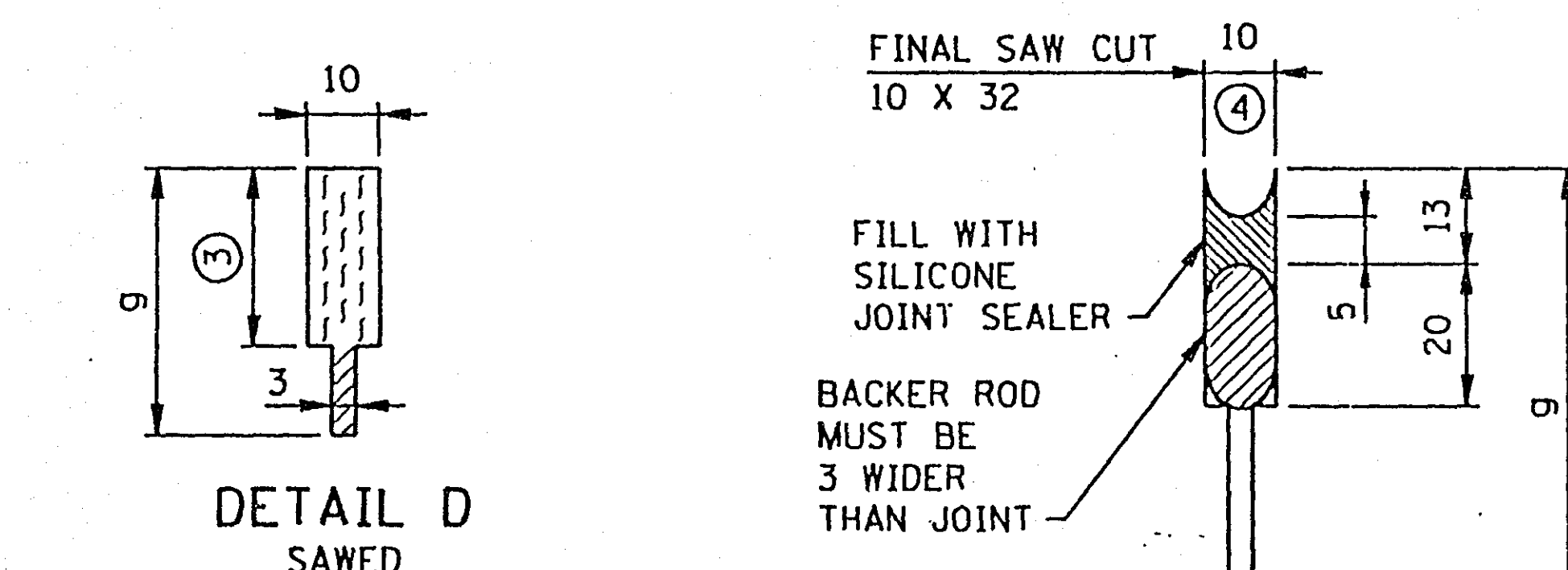
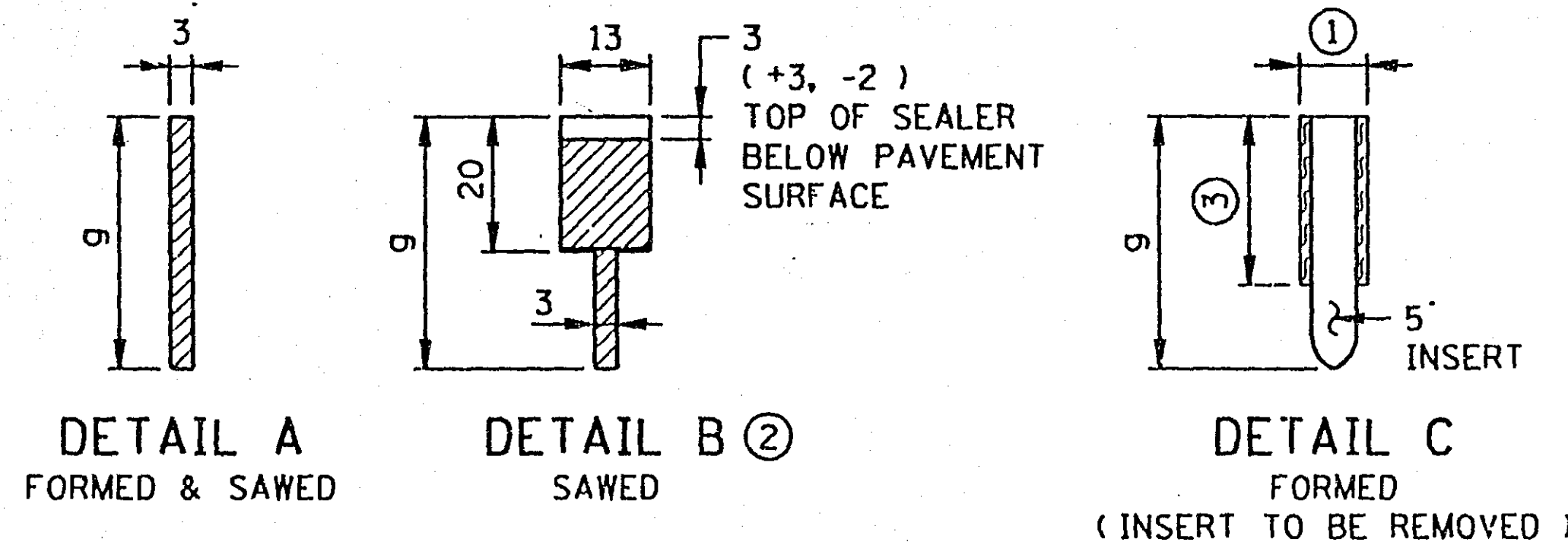
SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.

CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION	JOINT DETAIL	JOINT SEALER SPEC.
C1A	A	UNSEALED
C2B	B	3723
C2X	B OR C	3723
C3D	D	3721
C3X	C OR D	3721
C4E	E	SILICONE

CONTRACTION JOINT DEPTH & DOWEL BAR TABLE

PAVEMENT THICKNESS +	CONCRETE PAVEMENT JOINT DEPTH 9 ⑤	CONCRETE BASE JOINT DEPTH 9	DOWEL BAR DIAMETER
150-170	45	35	20
180-210	50	40	25
220-270	65	50	35
280-320	80	—	40
330-360	90	—	45



LEGEND

C = CONTRACTION JOINT

NO. = SEALANT TYPE

1 = UNSEALED

2 = 3723

3 = 3721

4 = SILICONE

LETTER = DETAIL

X = MORE THAN 1 DETAIL

-D = DOWEL BARS

EXAMPLE C2B-D

CONTRACTION JOINT NOTES:

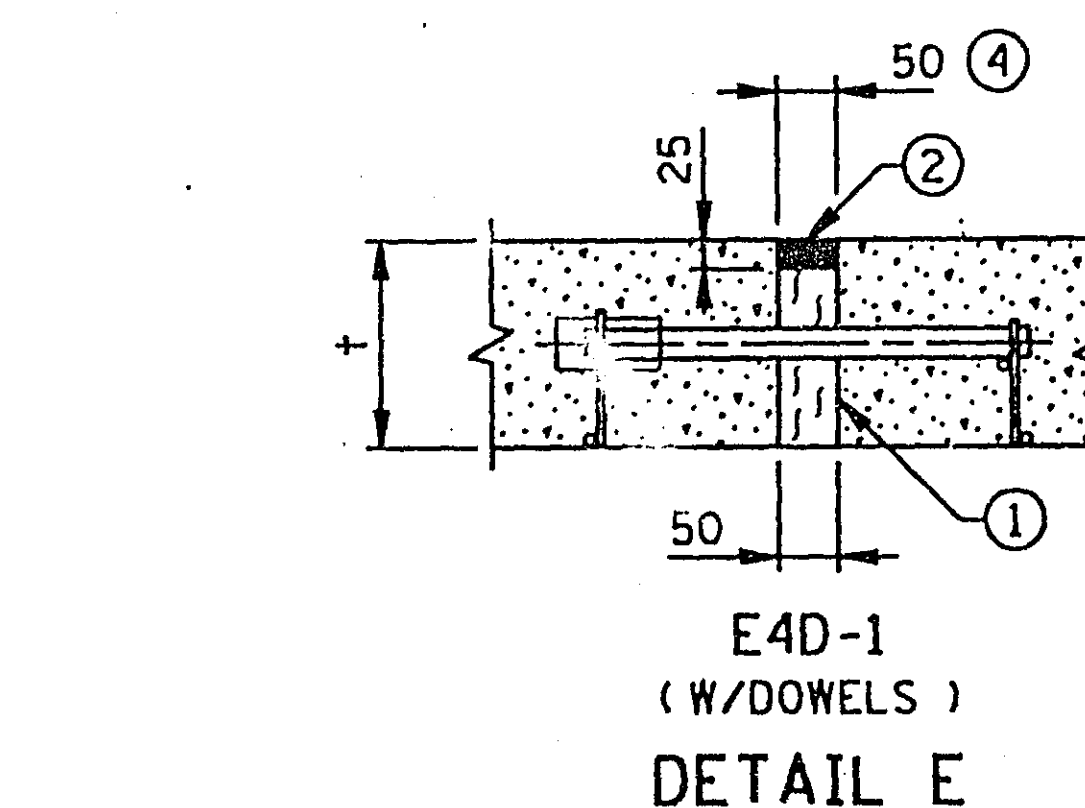
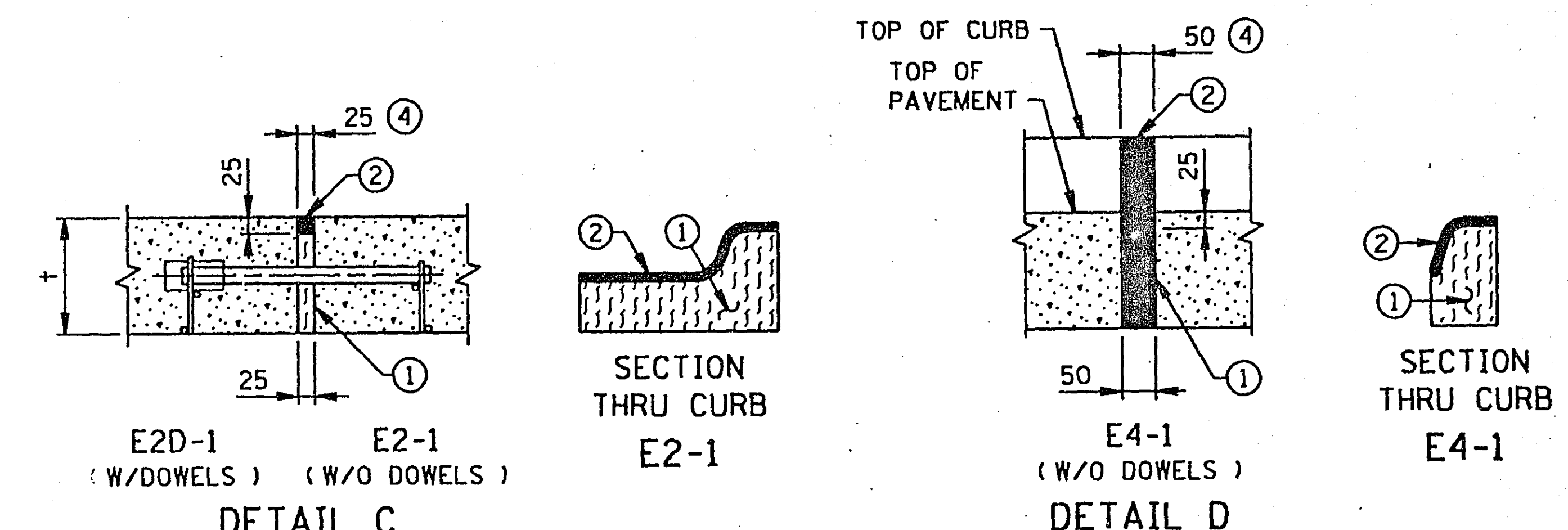
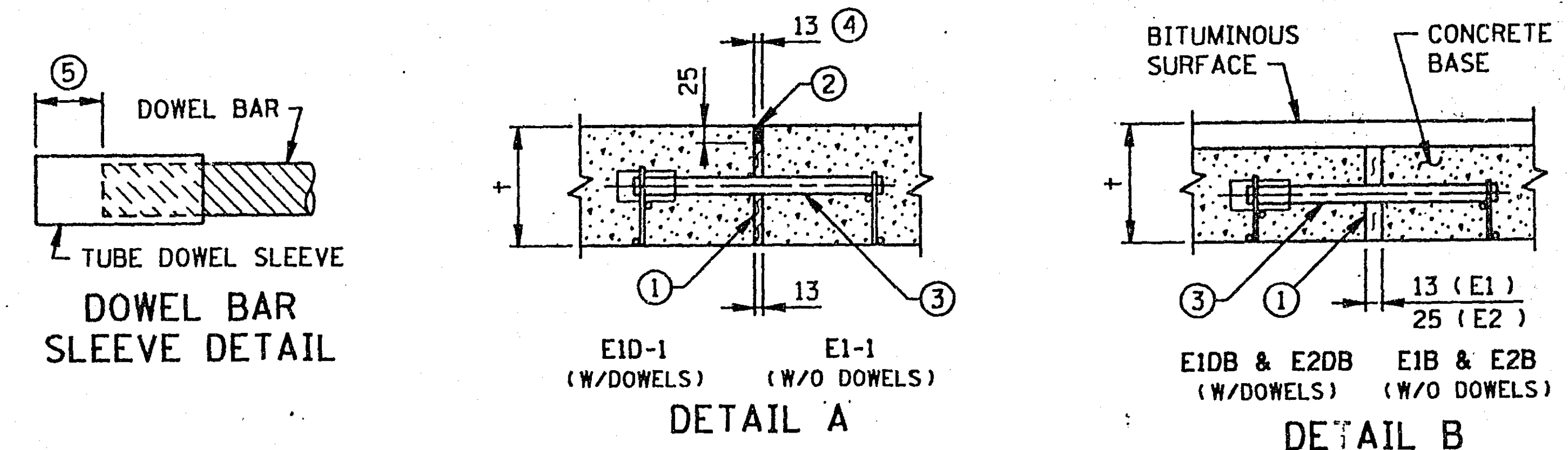
IN CONCRETE BASE CONSTRUCTION THE CONTRACTION JOINTS SHALL BE SPACED AT 9 m INTERVALS AND AT RIGHT ANGLES TO THE LONGITUDINAL JOINTS, EXCEPT AS NOTED BELOW. WHERE THE CONCRETE BASE IS CONSTRUCTED ADJACENT TO EXISTING PAVEMENT OR BASE, THE CONTRACTION JOINTS IN THE NEW BASE SHALL MATCH THOSE IN THE EXISTING PAVEMENT OR BASE, EXCEPT THAT THE SPACING SHALL NOT BE LESS THAN 4.6 m, NOR MORE THAN 9 m. JOINT WIDTH TOLERANCES: + 2 mm AND - 1 mm.

GENERAL NOTES:

SEE THE FOLLOWING STANDARD PLATES AND STANDARD PLAN SHEET FOR ADDITIONAL DETAILS: DOWEL BAR ASSEMBLY, M1103; CONSTRUCTION OF HEADER JOINTS, M1150; AND CONCRETE PAVEMENT WITH SKEWED JOINTS, 5-297.215M - .219M.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

CONTRACTION JOINTS DESIGN C



EXPANSION JOINTS

CLASS DESIGNATION	JOINT DETAIL	JOINT SEALER SPEC.
E1D-1	A	②
E1DB	B	UNSEALED
E2D-1	C	②
E2DB	B	UNSEALED
E4D-1	D	②
	E	②

LEGEND

= EXPANSION JOINT

E = JOINT REFERENCE

NO. = HOT POURED SEAL

-1 = DOWEL BARS

D = CONCRETE BASE

B = CONCRETE SILL

EXAMPLE E1D-1

② HOT POURED SEAL

② DOWEL BARS

② JOINT REFERENCE

② EXPANSION JOINT

NOTES:

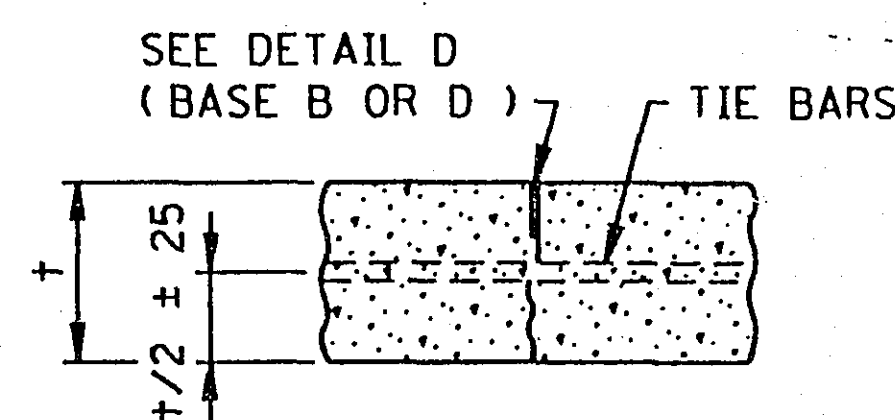
- PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
- JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 3 mm BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE (0 IN.) ± 3 mm.
- DOWEL BAR ASSEMBLY, SEE STANDARD PLATE M1103.
- JOINT WIDTH IS EQUAL TO HALF OF THE JOINT NUMBER IN 13 mm. INTERVALS (i.e. E1 = 13 mm, E2 = 25 mm, E3 = 38 mm, E4 = 50 mm, E8 = 100 mm).
- SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.

EXPANSION JOINTS DESIGN E

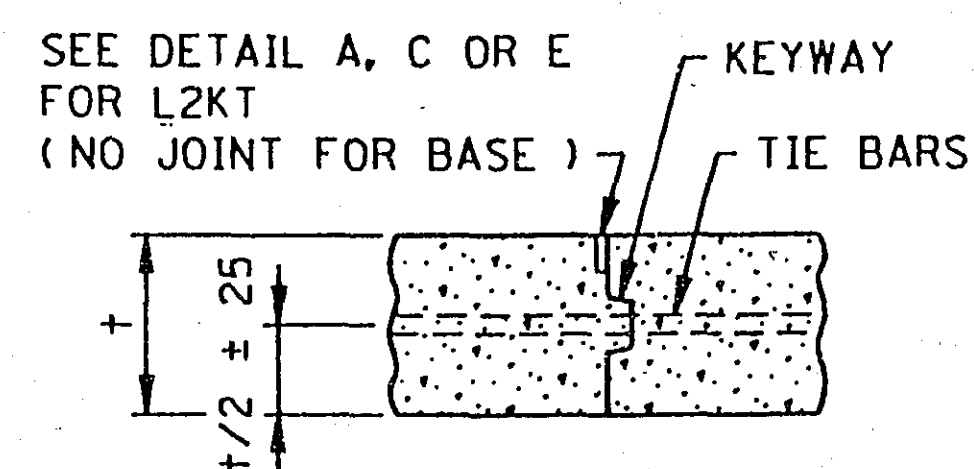
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT AS NOTED.

STANDARD SHEET NO. 5-297.221M (1 OF 2)	TITLE: PAVEMENT JOINTS
STANDARD APPROVED: JANUARY 25, 1993	CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

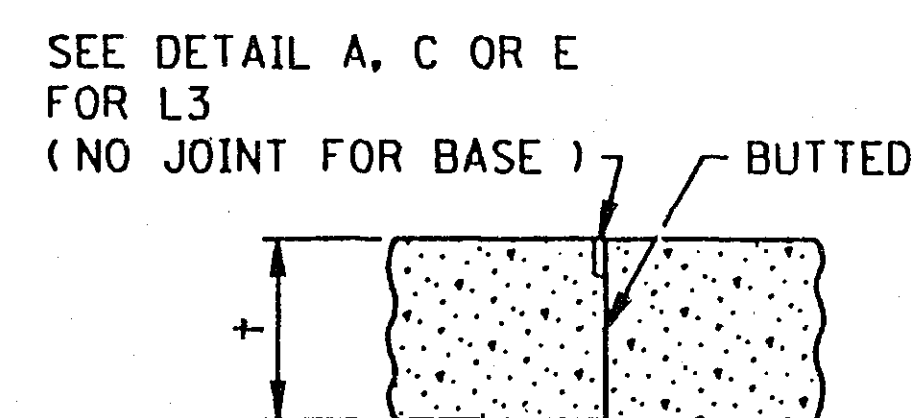
S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 20 OF 90 SHEETS



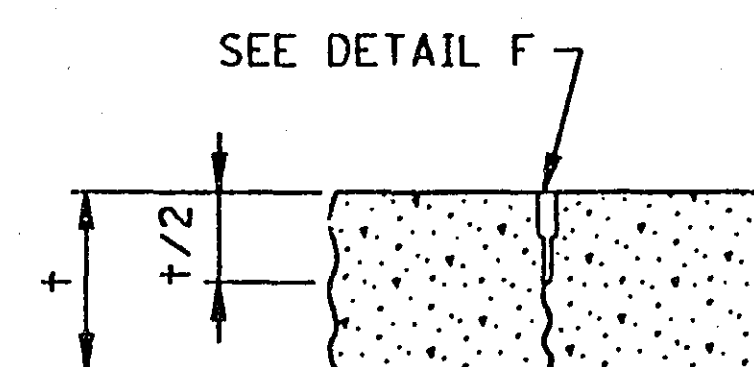
L1, L1T, L1B & L1TB



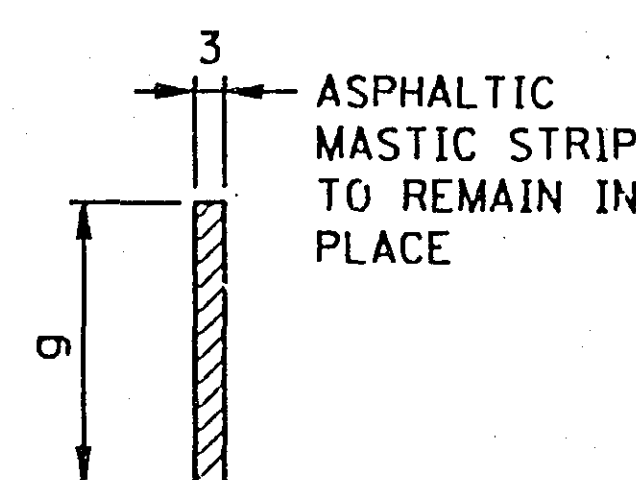
L2KT & L2KTB



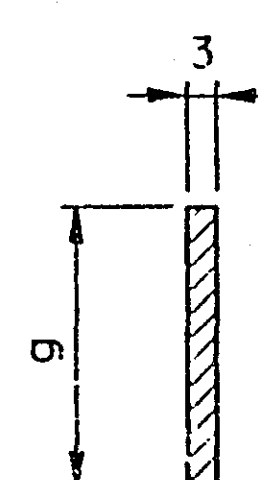
L3 & L3B



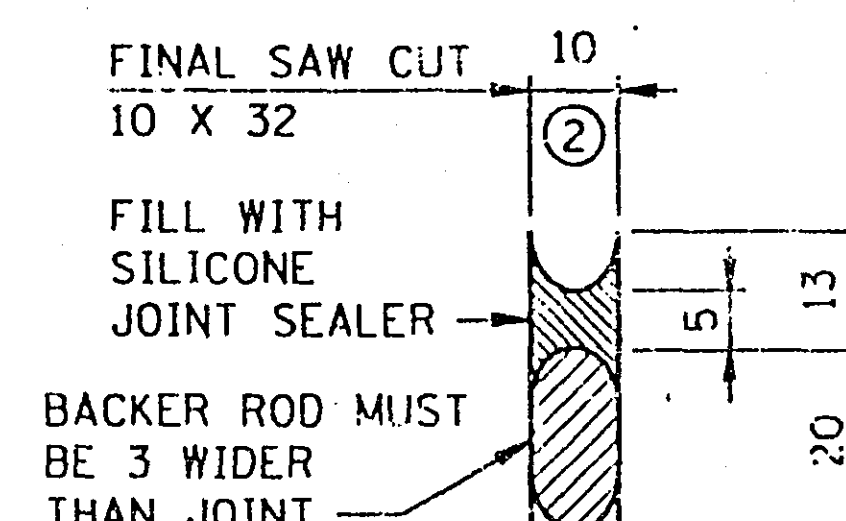
L4



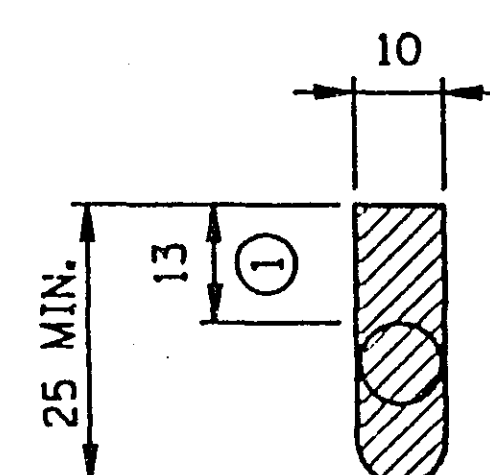
DETAIL A
(FORMED & UNSEALED)



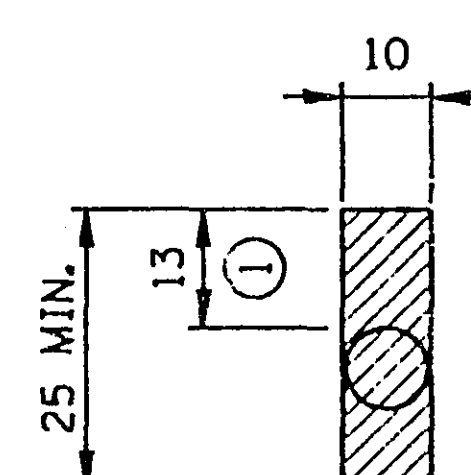
DETAIL B
(SAWED & SEALER, SPEC. 3723)
(BASE JOINTS UNSEALED)



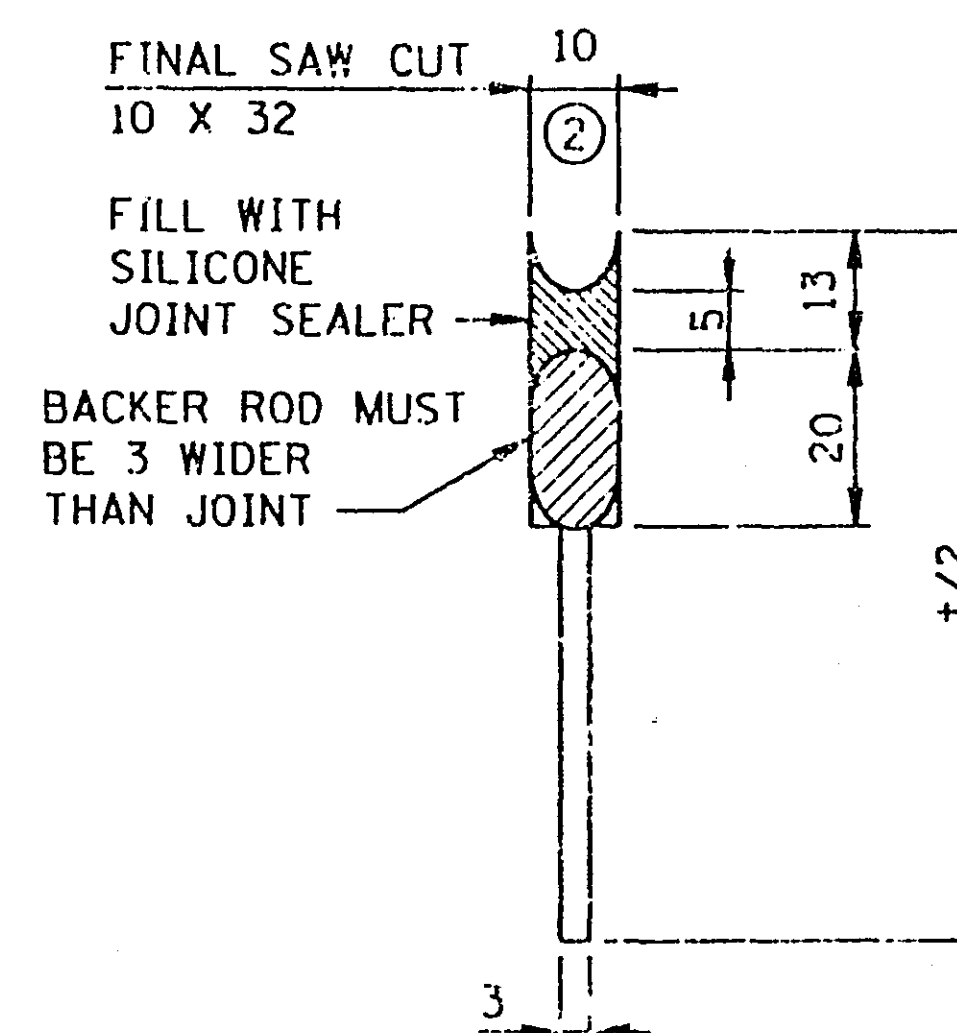
DETAIL C
(SAWED)



DETAIL D
(FORMED & SEALED
SPEC. 3723)



DETAIL E
(SAWED & SEALER
SPEC. 3723)



DETAIL F
(SAWED)

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H L1BU	L1TH L1TBU	L2KTH L2KTS		B A OR B D OR E C D OR E C F	3723 UNSEALED 3723 SILICONE 3723 SILICONE SILICONE
L4S			L3H L3S		

LEGEND

L = LONGITUDINAL JOINT
NO. = JOINT REFERENCE
K = KEYWAY
T = TIE BARS
B = CONCRETE BASE
U = UNSEALED
H = HOT POUR
S = SILICONE

JOINT REFERENCE NUMBERS

1 = SAWED TO A DEPTH OF +1/3
2 = KEYED CONSTRUCTION JOINT
3 = BUTTED CONSTRUCTION JOINT
4 = SAWED TO A DEPTH OF +1/2

LONGITUDINAL JOINT DEPTH TABLE

PAVEMENT THICKNESS +	CONCRETE PAVEMENT JOINT DEPTH 9	CONCRETE BASE JOINT DEPTH 9
150	50	50
165	55	50
180	57	57
190	65	57
205	68	65
215	73	65
230	75	70
240	83	75
255	86	
265	90	
280	93	
290	98	
300	100	
315	105	
330	113	
345	115	
355	118	

LONGITUDINAL JOINT NOTES:

TIE BARS FOR L1TB JOINTS SHALL BE THE SAME SIZE AND SPACING AS SHOWN ON STANDARD PLAN SHEETS 5-297.216M - .219M.

EXCEPT WHEN NOTED OTHERWISE IN THE PLANS, THE TIE BAR SPACING FOR ALL L2KT AND L2KTB JOINTS SHALL BE 0.8 m C. TO C. AND BENT 60° AS SHOWN.

TIE BARS IN THE L2KT AND L2KTB JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T OR L1TB JOINTS, WHEN TYING PAVEMENT TO PAVEMENT OR BASE TO BASE. TIE BARS IN THE L2KT OR L2KTB JOINTS SHALL BE NO. 4 X 0.8 m, WHEN TYING CURB & GUTTER TO PAVEMENT OR BASE.

ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED 8 METERS, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 2 mm TO - 1 mm.

SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 4 mm BELOW TOP OF PAVEMENT SURFACE.

- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 205 DEGREES C, WITH A DIAMETER 3 mm LARGER THAN THE JOINT OPENING, MAY BE PLACED 13 mm BELOW THE TOP OF THE PAVEMENT.
- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 13 mm DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 13 mm BELOW THE SURFACE OF THE PAVEMENT. SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 5 mm.

GENERAL NOTES:

SEE THE FOLLOWING STANDARD PLATES AND STANDARD PLAN SHEETS FOR ADDITIONAL DETAILS: DOWEL BAR ASSEMBLY M1103, PAVEMENT KEYWAY M1141 AND CONCRETE PAVEMENT WITH SKEWED JOINTS 5-297.216M - .219M.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT AS NOTED.

STANDARD SHEET NO.
5-297.221M (2 OF 2)
STANDARD APPROVED:
JANUARY 25, 1993

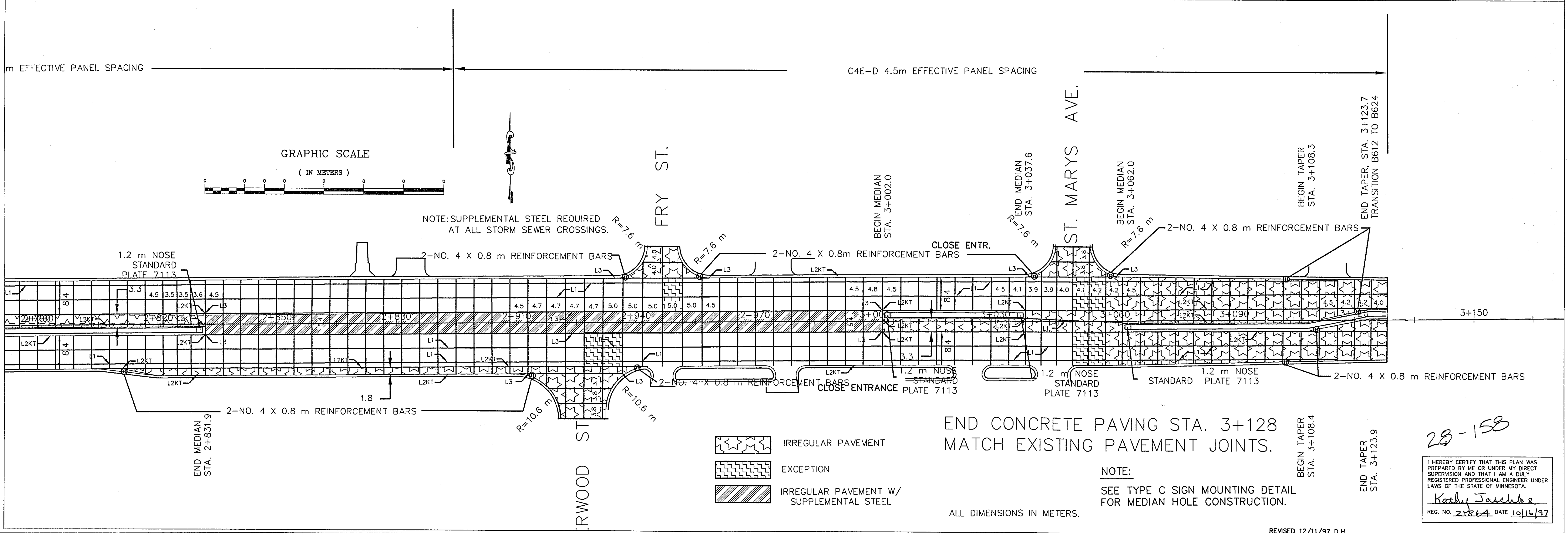
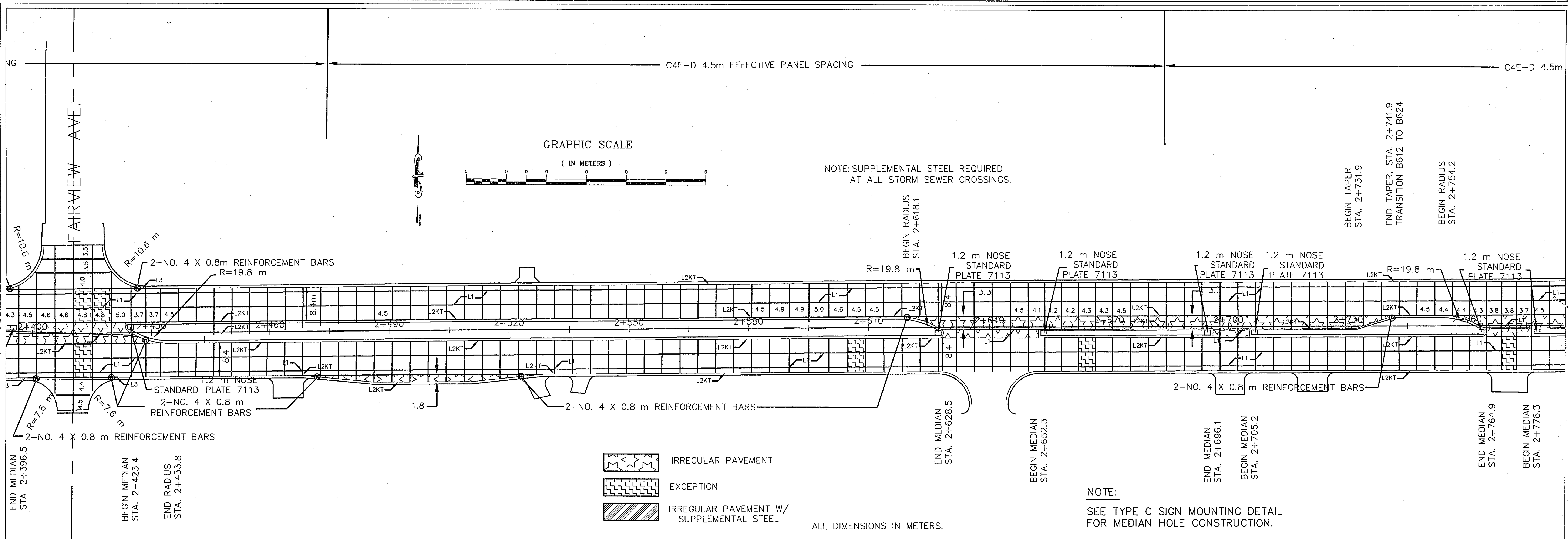
S.P. 62-630-44

S.P. 124-020-04

PAVEMENT JOINTS
LONGITUDINAL (DESIGN L.)

SHEET NO. 21 OF 90 SHEETS

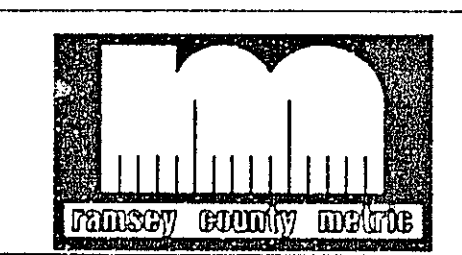
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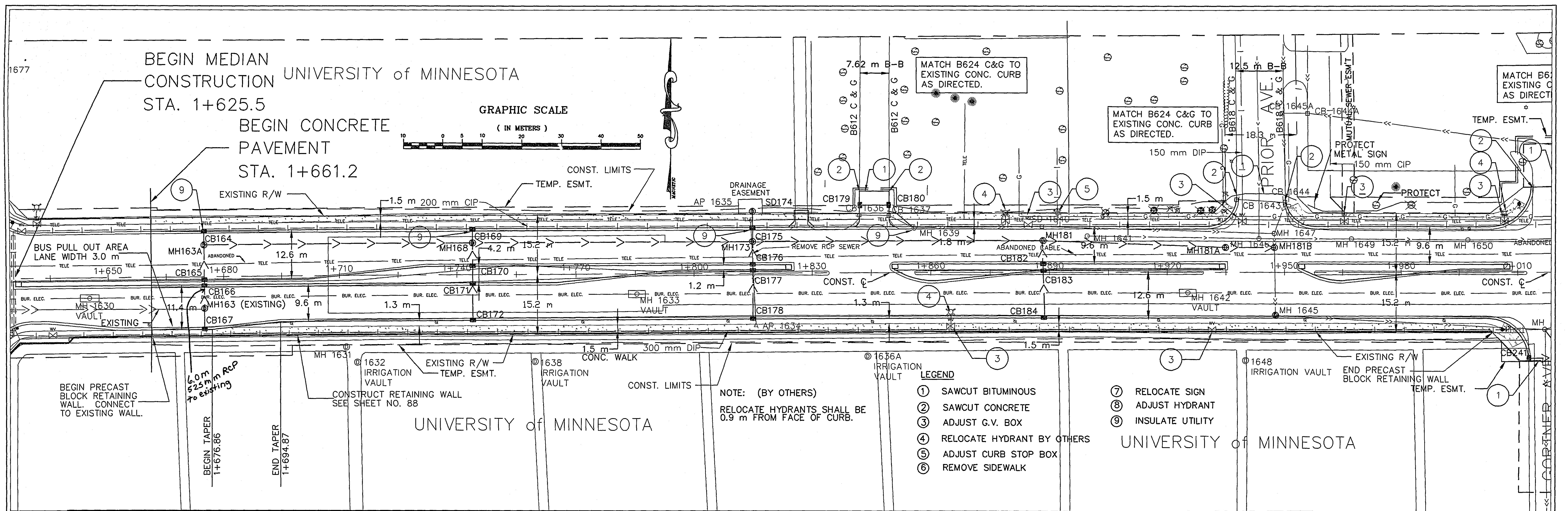
28-158

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 LAWS OF THE STATE OF MINNESOTA.

Kathy Jaschke
REG. NO. 22864 DATE 10/16/97



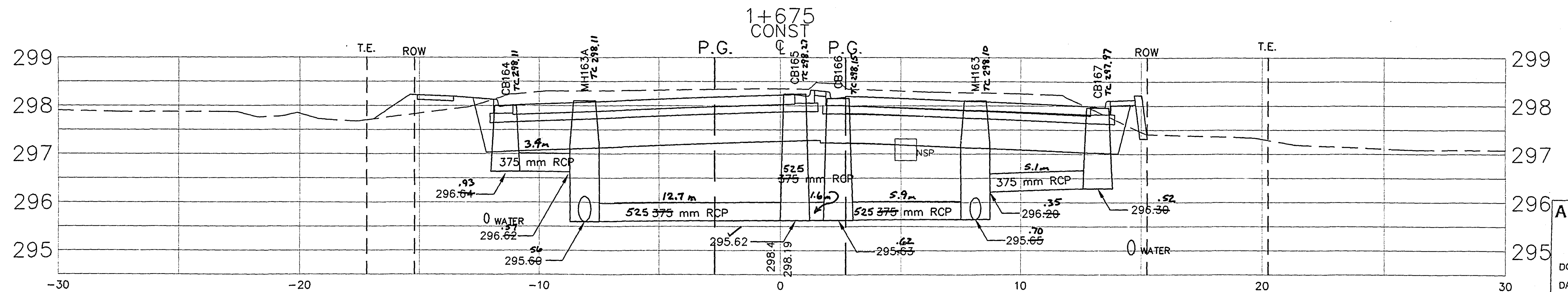
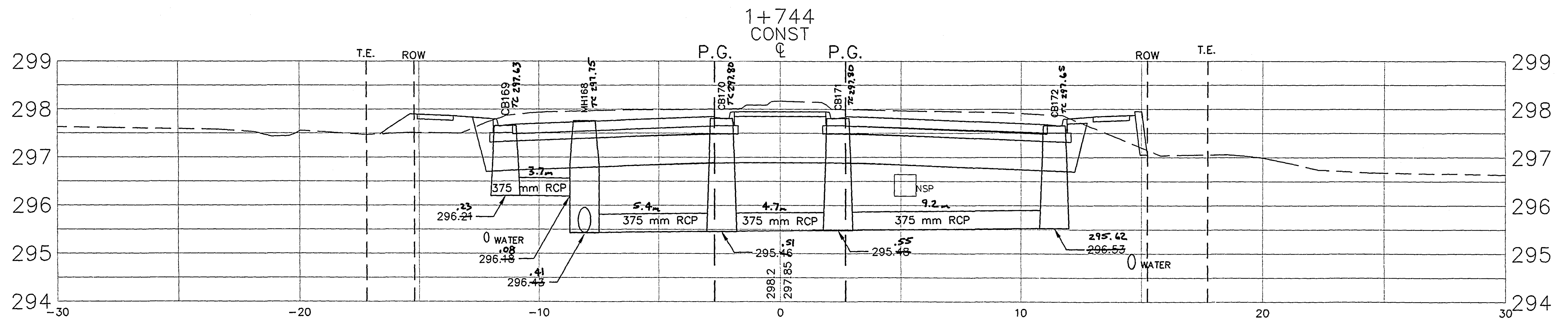
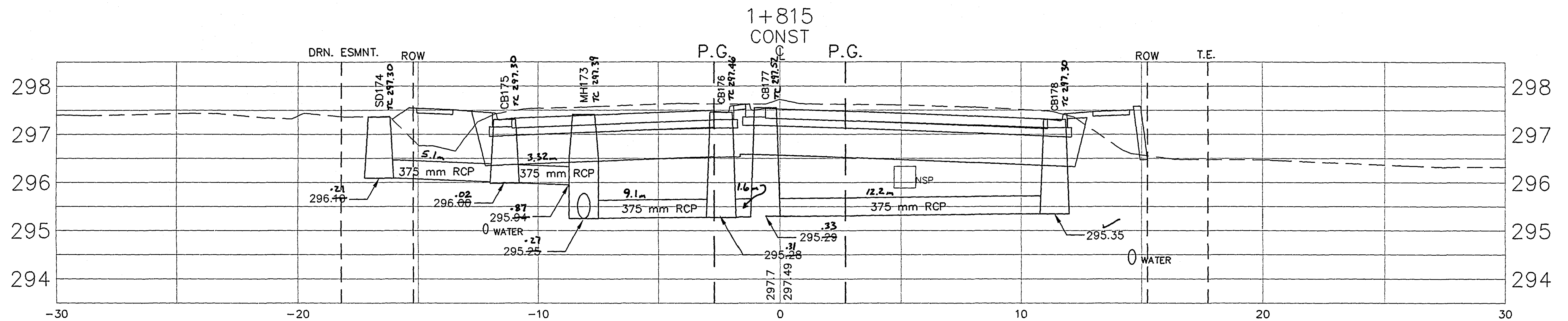
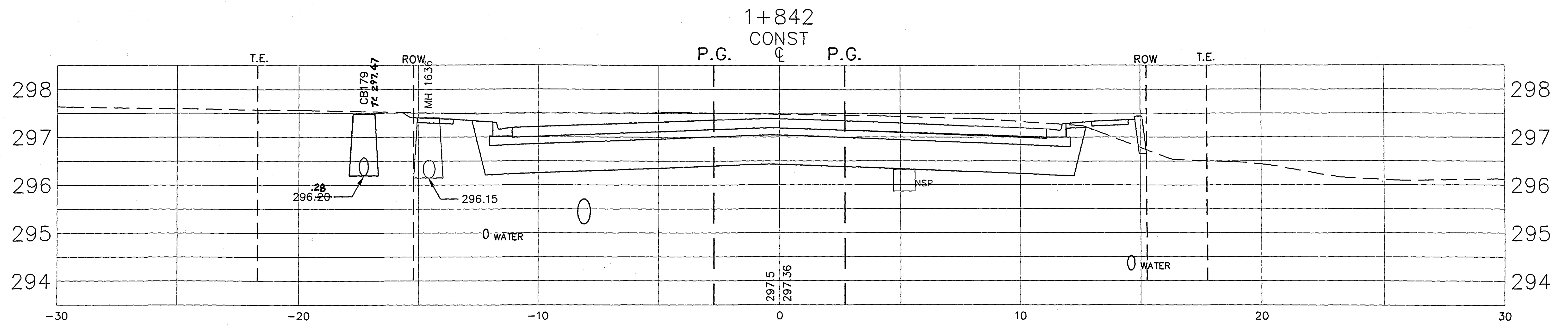
G:\DWGS\LRP\WCONST2 12/18/97



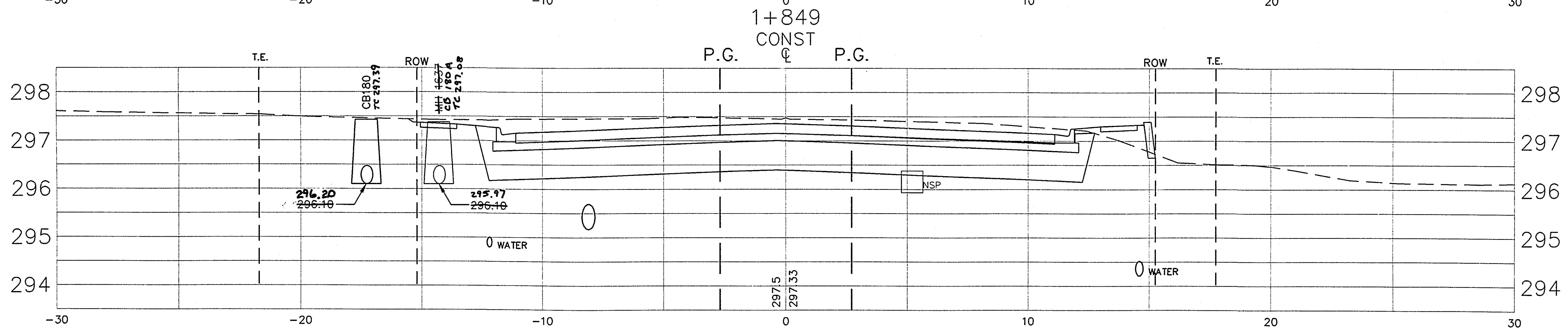
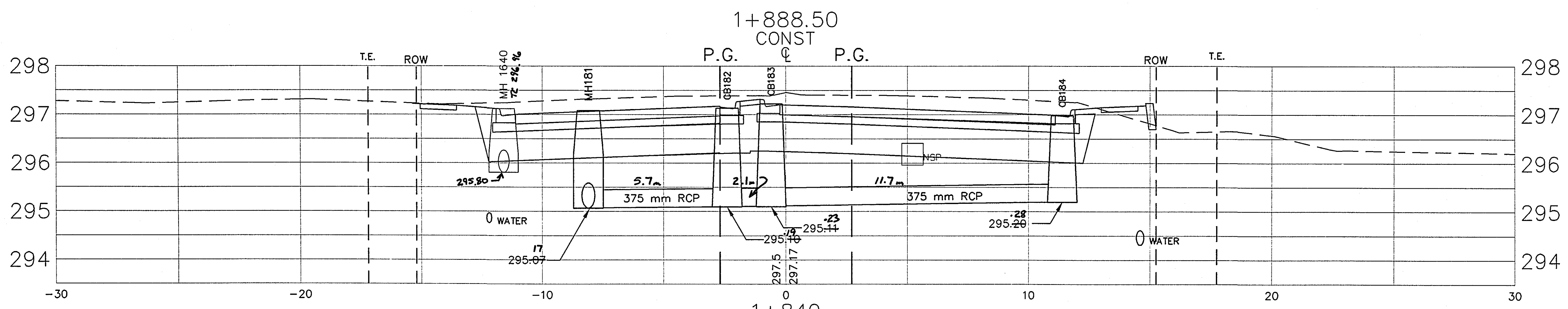
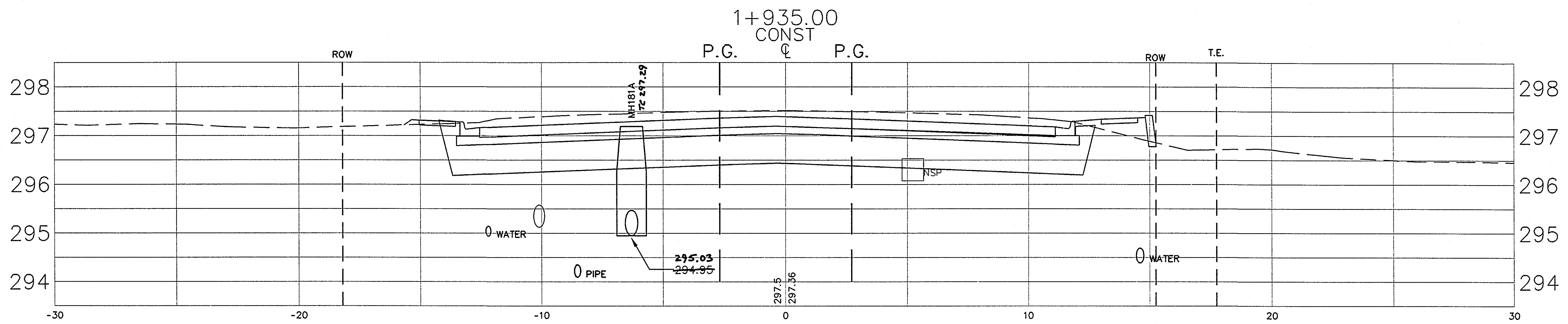
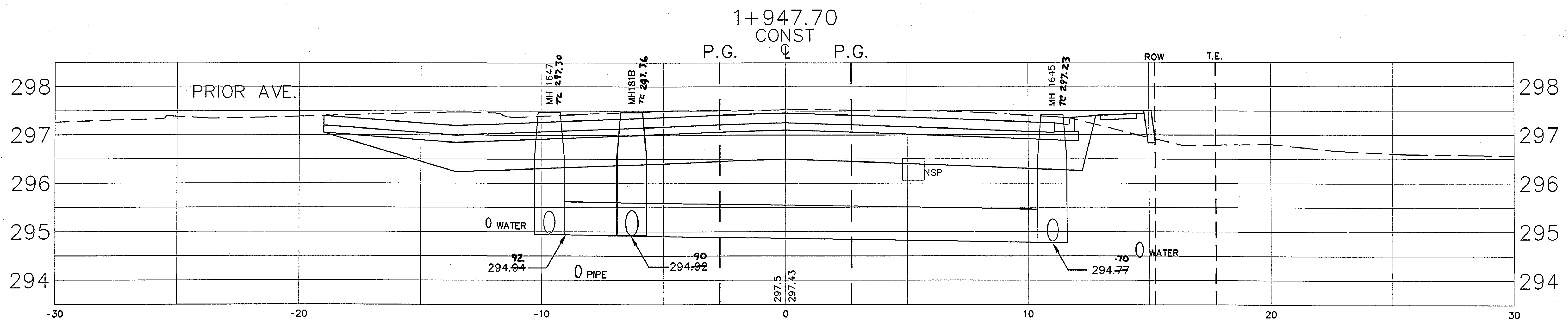
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#29-#55



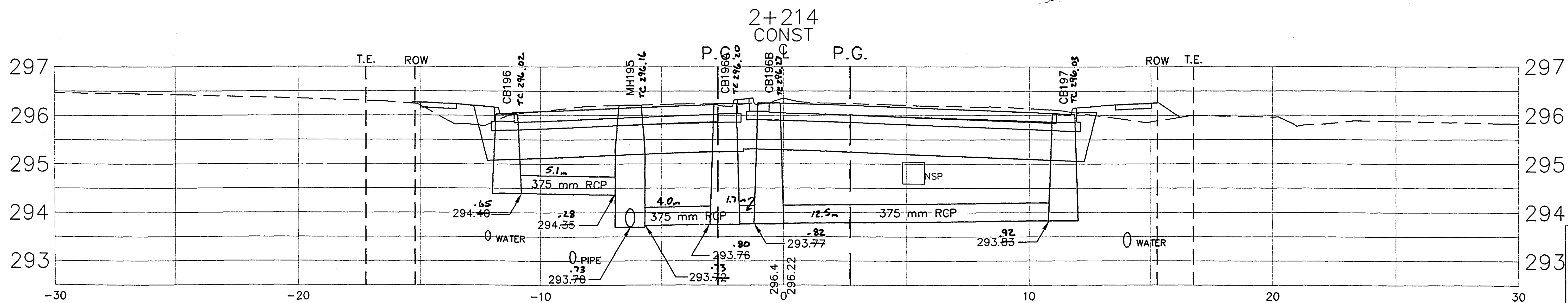
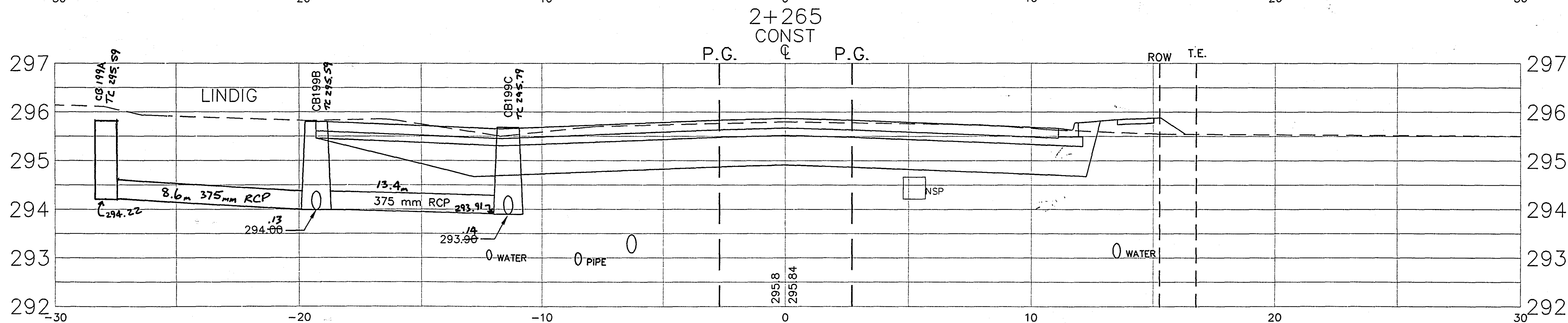
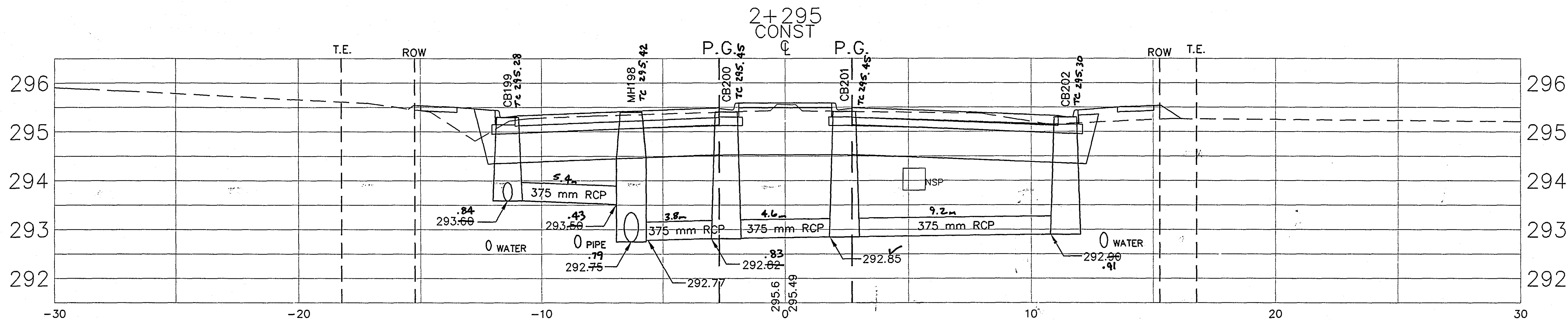
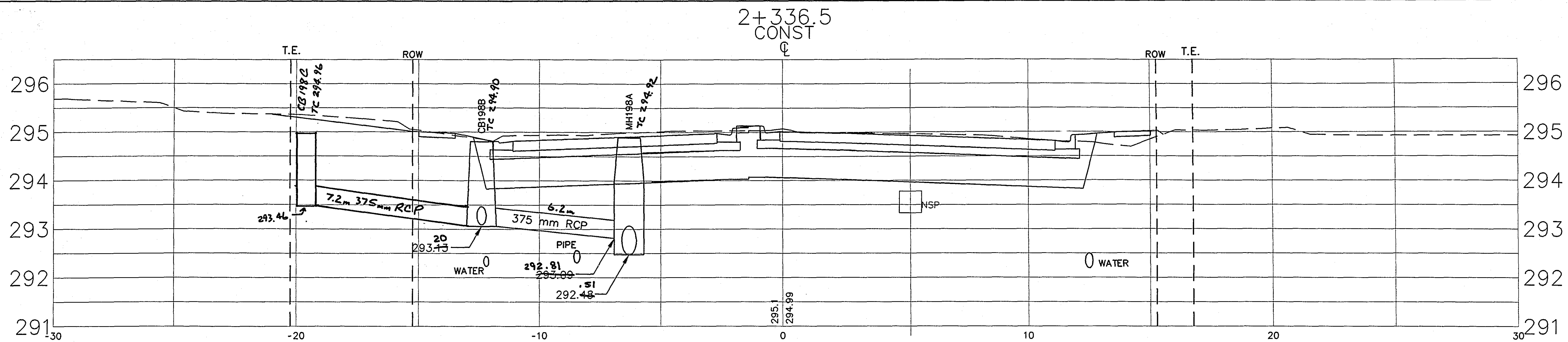
28-158



28-158

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *AR*
DATE: 3-8-99





28-158

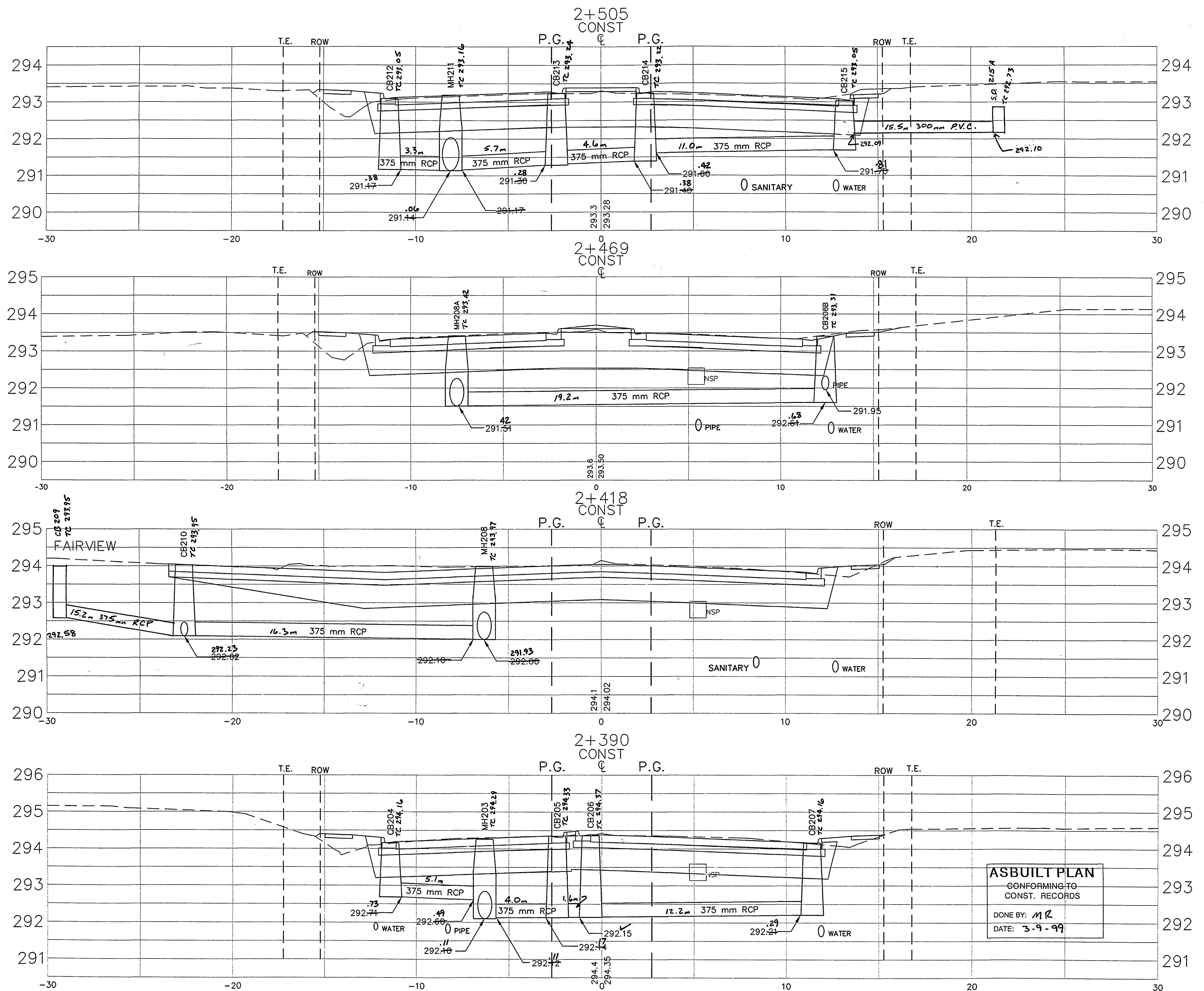
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DATE: 3-8-99

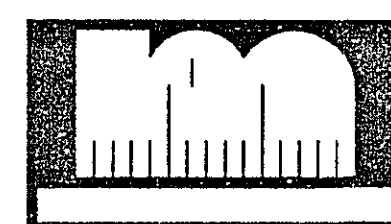


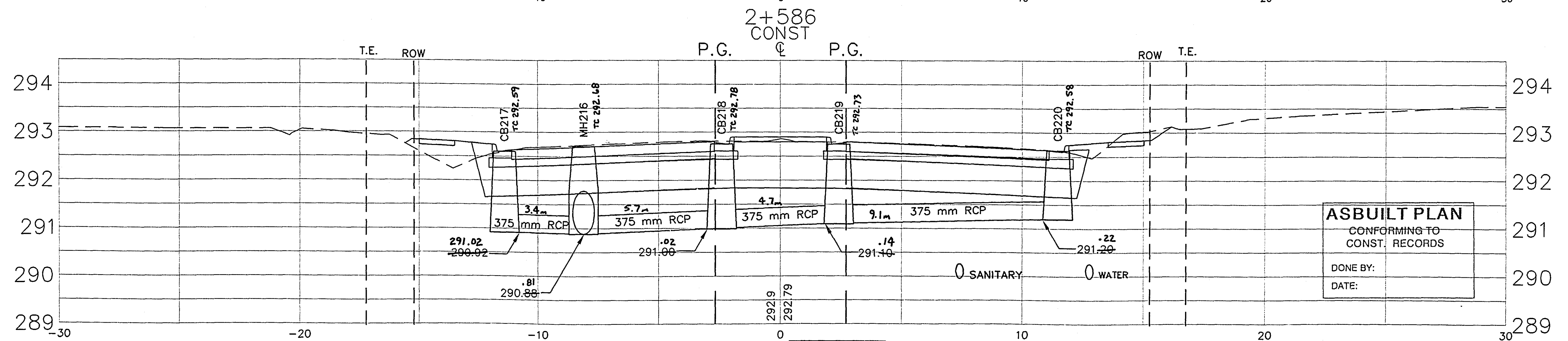
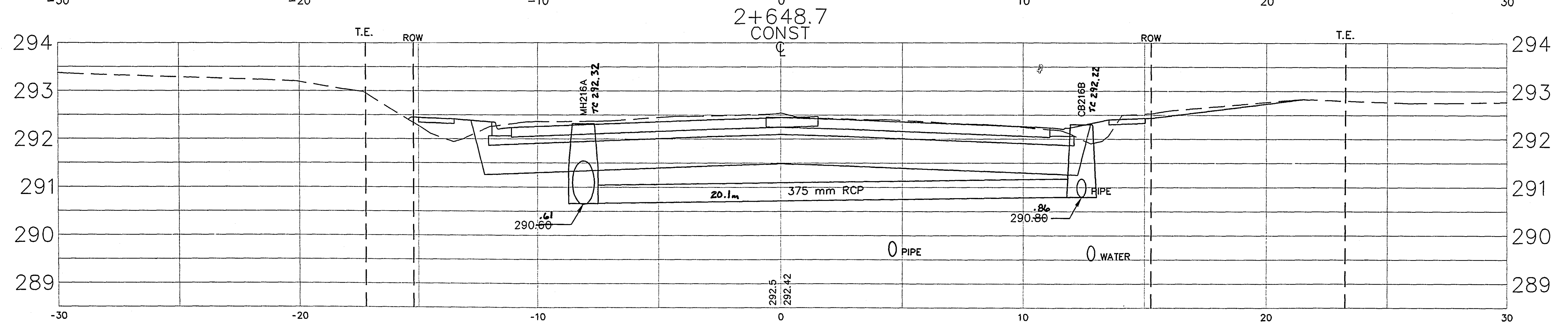
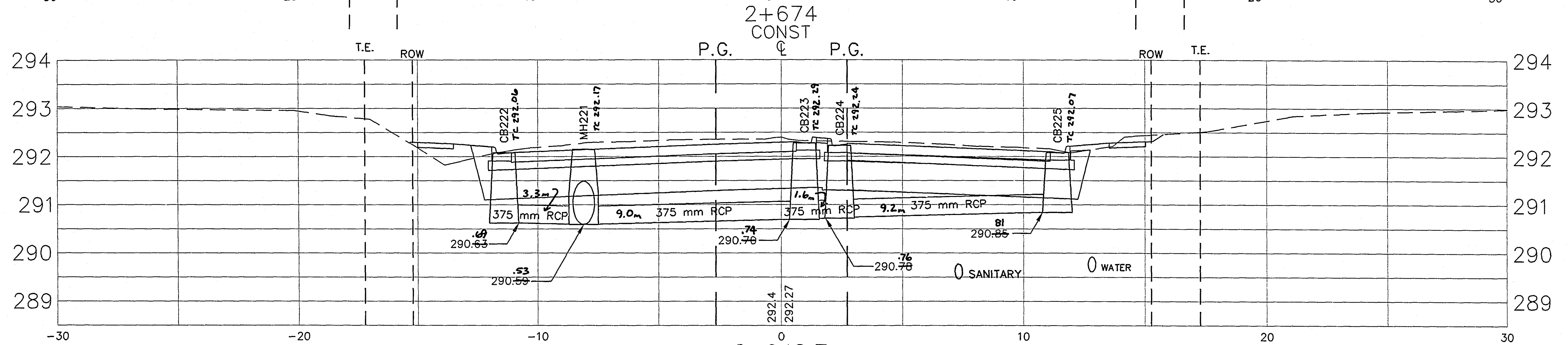
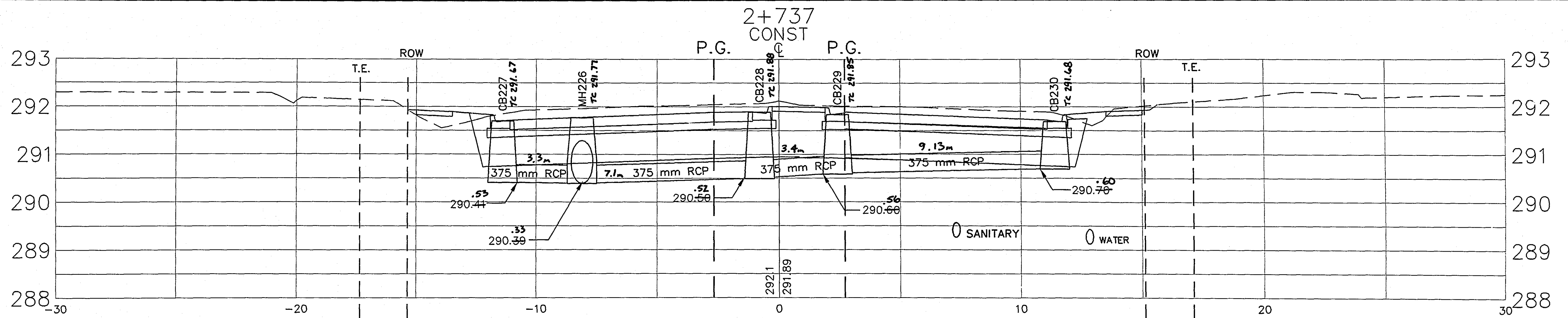
STA. 2+214 TO STA. 2+336.5

S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 59 OF 90 SHEETS



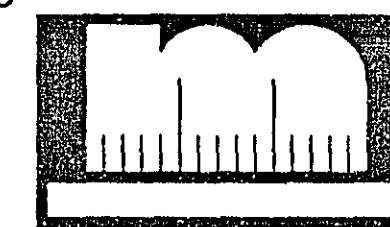
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CONFORMING TO
CONST. RECORDS
DONE BY: MR
DATE: 3-9-99

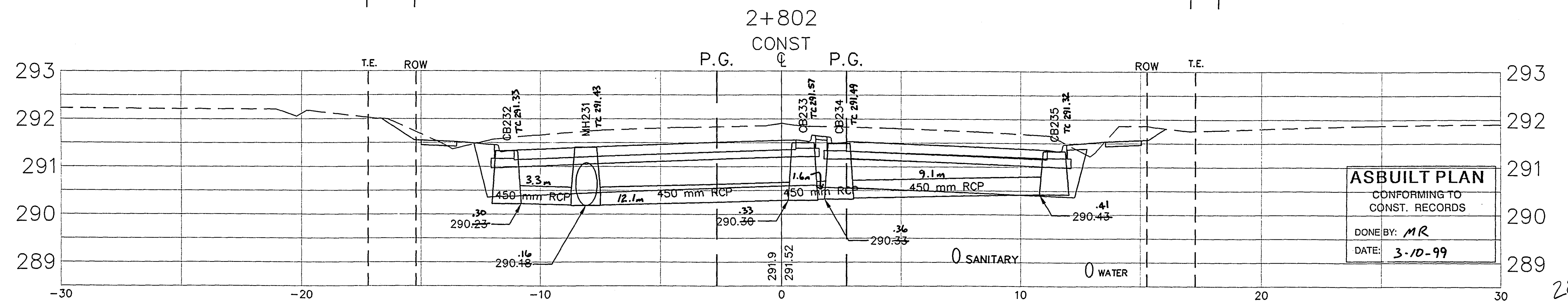
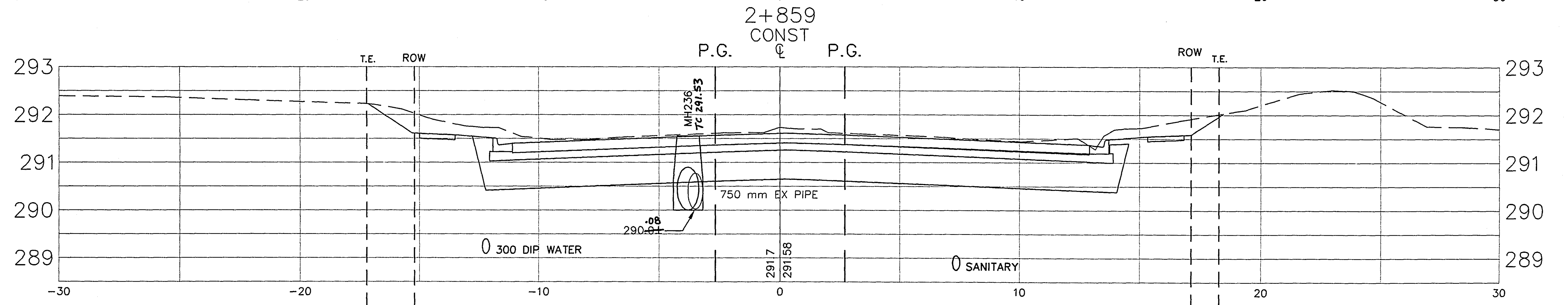
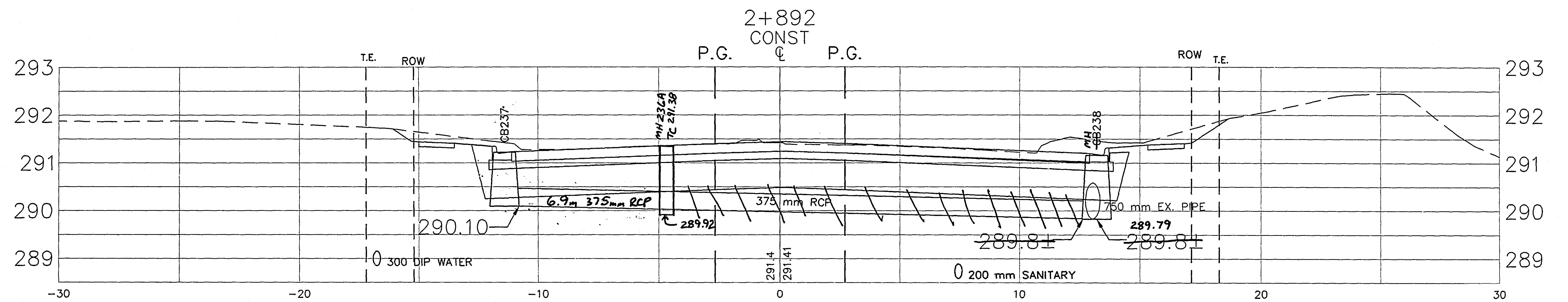
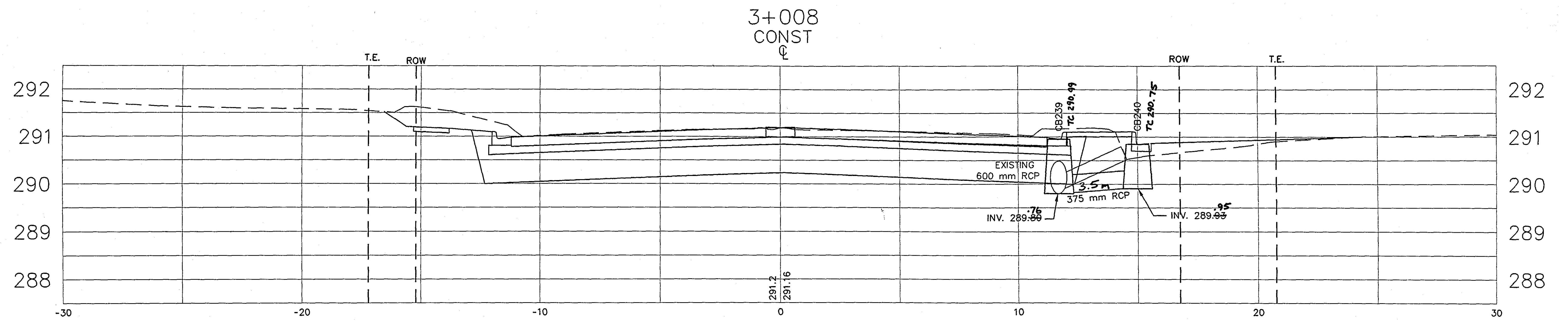




ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY:
DATE:





ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *MR*
DATE: *3-10-99*



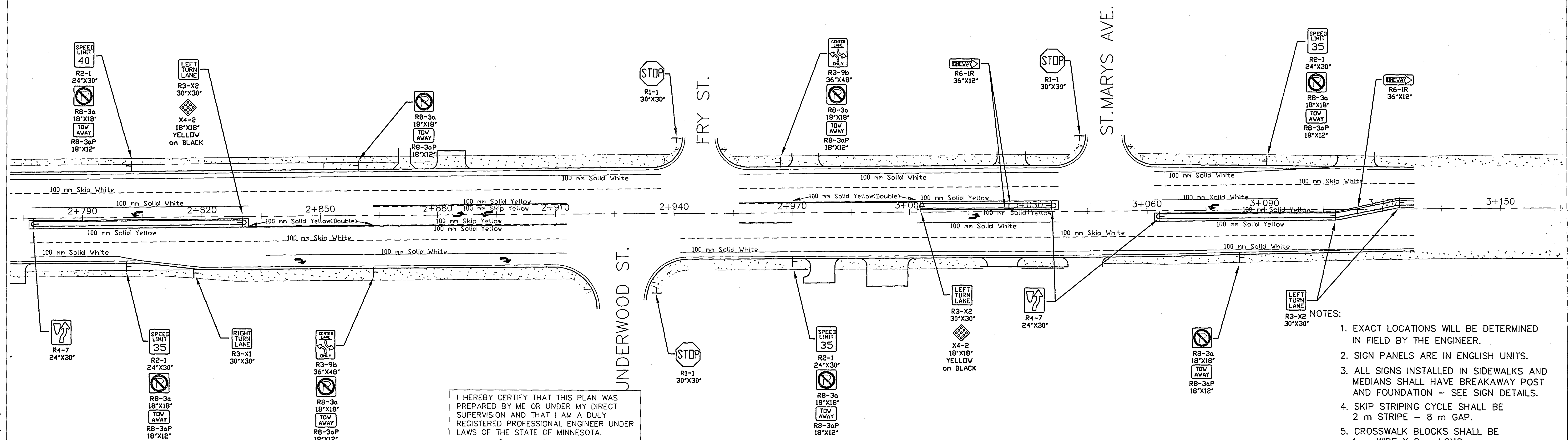
28-158

NO SHEET

#63

PERMANENT SIGNING & STRIPING LAYOUT

 S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 64 OF 90 SHEETS



Daniel E. Sohn
REG. NO. 20452 DATE 10-16-97

1. EXACT LOCATIONS WILL BE DETERMINED IN FIELD BY THE ENGINEER.
2. SIGN PANELS ARE IN ENGLISH UNITS.
3. ALL SIGNS INSTALLED IN SIDEWALKS AND MEDIANS SHALL HAVE BREAKAWAY POST AND FOUNDATION - SEE SIGN DETAILS.
4. SKIP STRIPING CYCLE SHALL BE
2 m STRIPE - 8 m GAP.
5. CROSSWALK BLOCKS SHALL BE
1 m WIDE X 2 m LONG.
6. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - APRIL 1995."
7. ALL TRAFFIC CONTROL DEVICES SHALL HAVE RETROREFLECTIVE SHEETING.

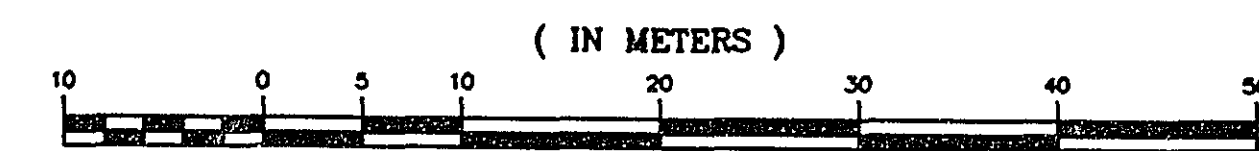
28-158


 S.P. 62-630-44 S.P. 124-020-04 SHEET NO. 65 OF 90 SHEETS

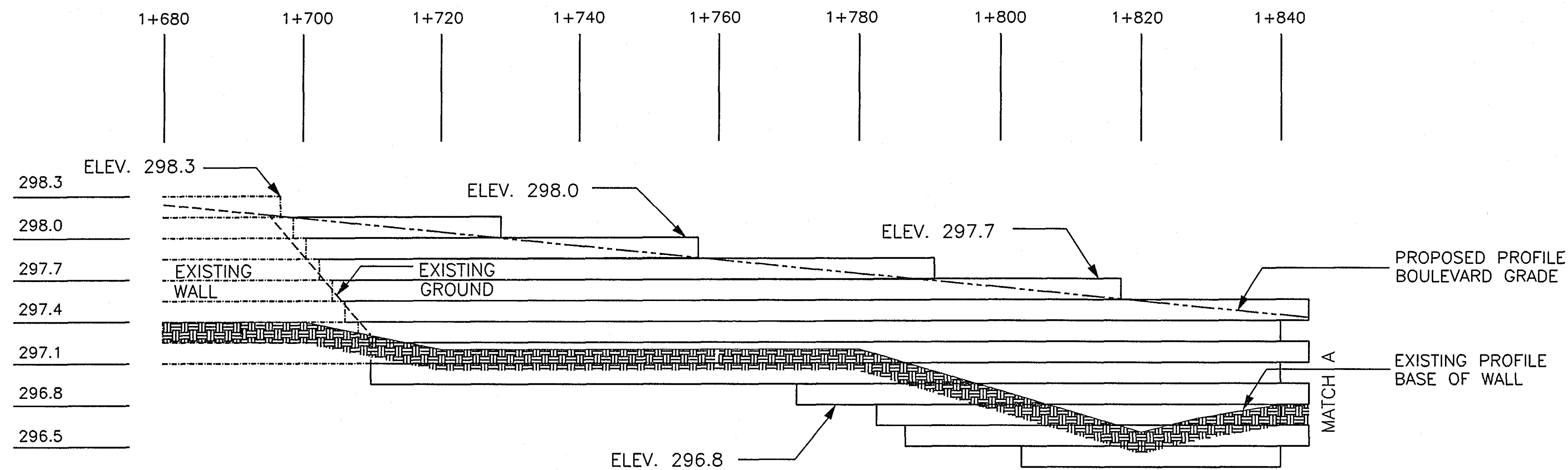
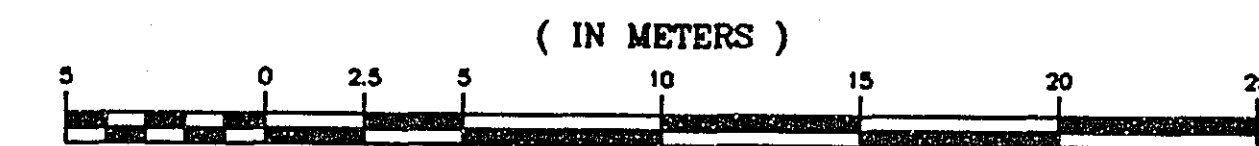
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#66-87

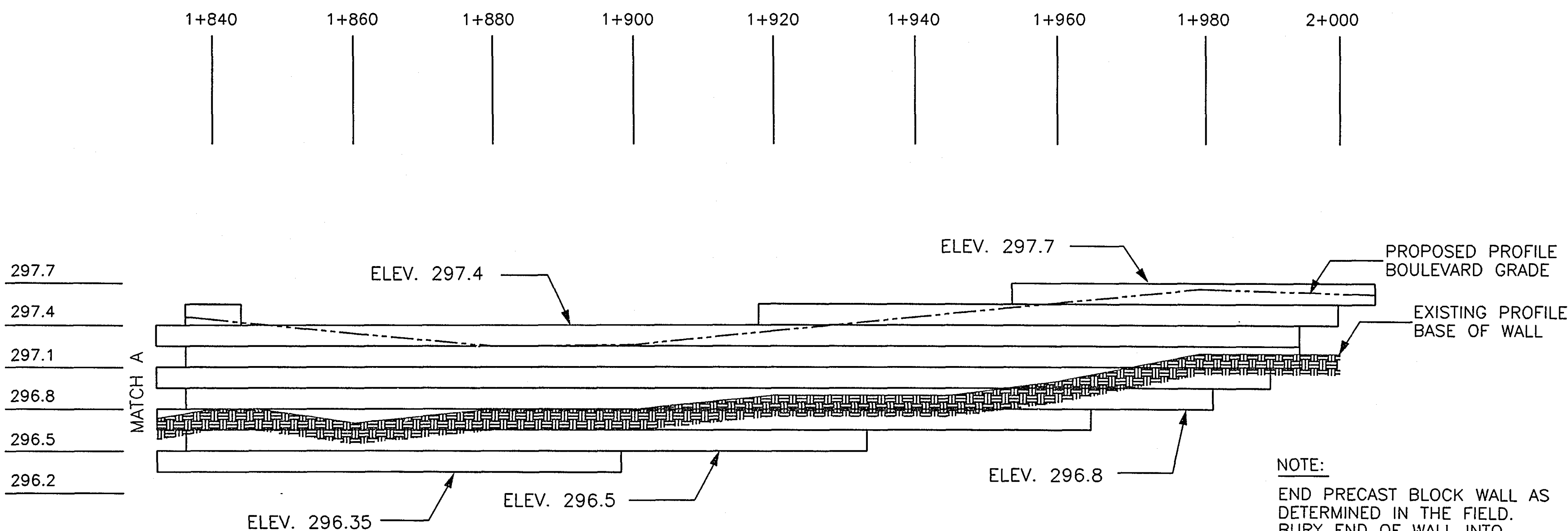
HORIZONTAL GRAPHIC SCALE



VERTICAL GRAPHIC SCALE



NOTE:
MATCH CONCRETE BLOCK
WALL TO EXISTING WALL.

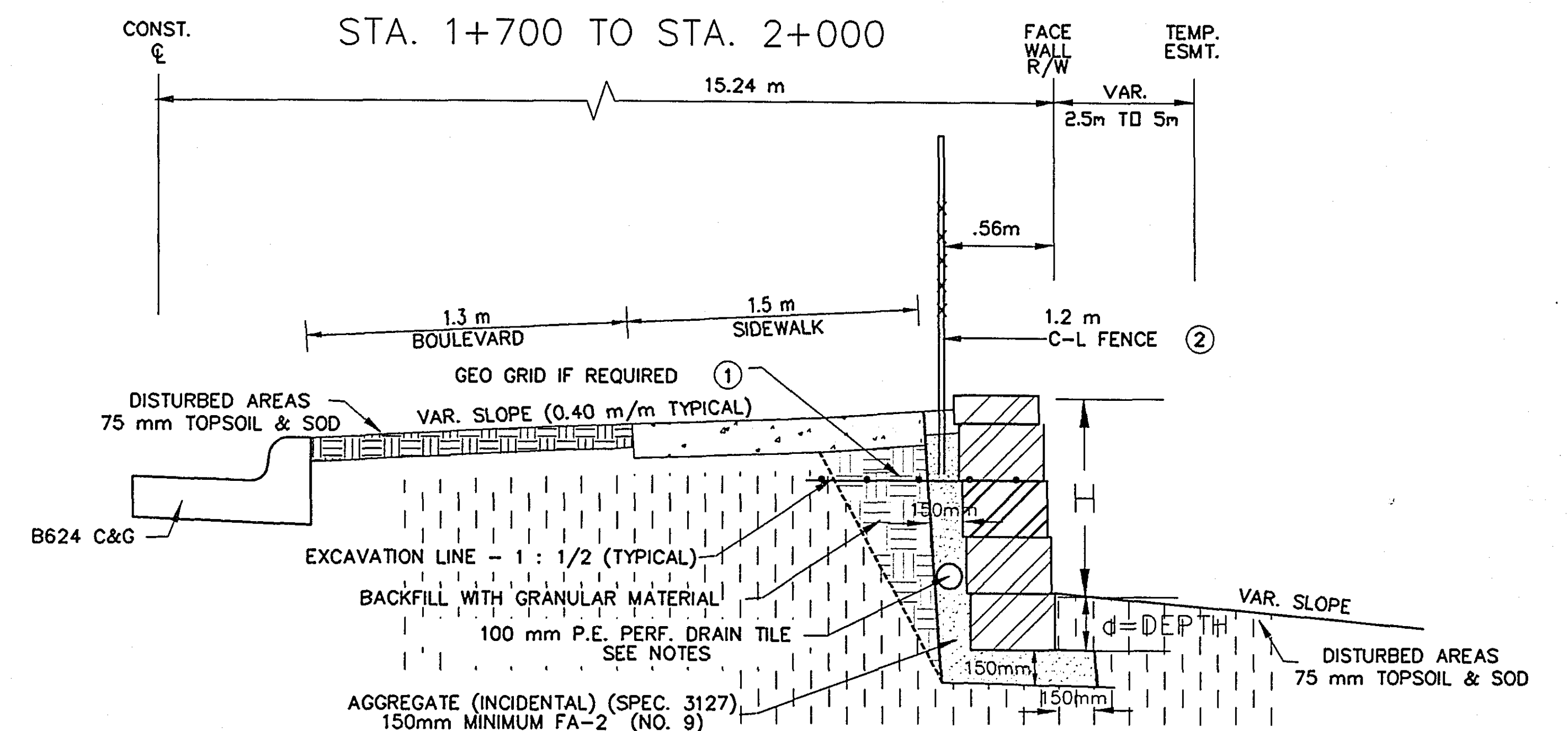


NOTE:
END PRECAST BLOCK WALL AS
DETERMINED IN THE FIELD.
BURY END OF WALL INTO
SLOPE AS DIRECTED.

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
LAWS OF THE STATE OF MINNESOTA.
Kathy Juschke
REG. NO. 21864 DATE 10/16/97

REVISED 12/15/97 D.H.

WALL DETAIL



NOTE:

THIS IS A TYPICAL DRAWING OF A PRECAST CONCRETE WALL.
WALL DRAWINGS MUST BE DONE BY A QUALIFIED ENGINEER.
SEE SPECIAL PROVISIONS.

- ① PLACE GEOGRID IF STRUCTURAL ANALYSIS INDICATES IT IS REQUIRED. SEE SPECIAL PROVISION.
- ② PLACE CHAIN LINK FENCE AS CLOSE TO WALL AS POSSIBLE.
- ③ MINIMUM 1 COURSE BURIED FOR MANUFACTURERS SPECIFICATIONS.
- ④ FURNISH & INSTALL 100 mm (4") P.E. PREFORATED DRAIN TILE BEHIND ALL WALLS PER. MANUFACTURERS RECOMMENDATION. OUTLET 100 mm P.E. DRAIN TILE IN STORM SEWER SYSTEM AT CB 1840 CONTRACTOR SHALL MAKE SUITABLE CONNECTION TO EXISTING CB AS APPROVED BY THE ENGINEER. THE UPSTREAM ENDS OF DRAIN TILE SHALL BE CAPPED. 100 mm DRAIN TILE SHALL BE PAID FOR BY THE LINEAR METER WHICH SHALL BE PAYMENT IN FULL FOR ALL WORK AND MATERIALS REQUIRED IN THE PERFORMANCE OF THIS WORK.

ESTIMATED QUANTITY:
307 m² GROSS

STA. 1+700± TO STA. 2+000±
PRECAST CONCRETE BLOCK WALL #1

28-158



THIS IS A TYPICAL DRAWING OF A PRECAST CONCRETE WALL.
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SEE SPECIAL PROVISIONS.

-
- A cross-section diagram showing the relationship between existing ground, a retaining wall, and a boulevard grade. The diagram includes the following elements:
- Stationing:** Vertical lines at the top are labeled with station numbers: 3+040, 3+060, 3+080, 3+100, 3+120, and 3+140.
 - Elevations:** On the left, horizontal lines are labeled with elevations: 291.7, 291.4, 291.1, and 290.8.
 - Existing Ground:** A dashed line represents the existing ground profile.
 - Retaining Wall:** A solid line represents the wall structure. A label "STA. 3+063± BEGIN WALL" points to its starting point.
 - Boulevard Grade:** A dashed line represents the proposed boulevard grade, which is labeled "BOULEVARD GRADE (EDGE OF CONC. WALK)".
 - Other Labels:**
 - "ELEV. 297.1±" points to a specific point on the existing ground.
 - "ELEV. 291.1±" points to the top of the retaining wall.
 - "ELEV. 291.± © STA. 3+140" points to the boulevard grade at station 3+140.
 - A circled number "1" is located near the top of the wall.

(IN METERS)

1 : 500

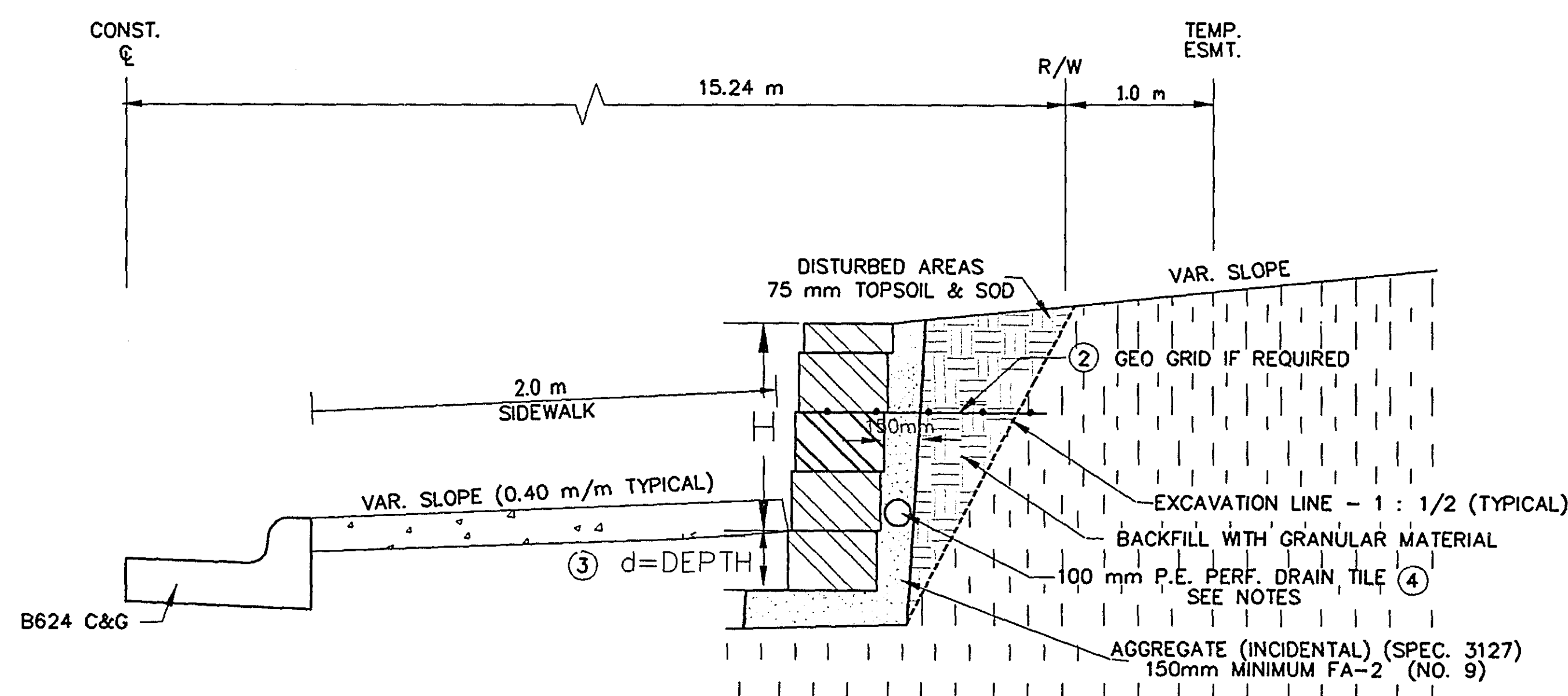
(IN MILLIMETERS)

1 : 250

- BLOCKS SHALL BE NOMINAL 204 mm H X 457 mm W X 305 mm D AND HAVE ROCK FACE (OR APPROVED EQUAL).
- BLOCKS SHALL BE 22.68 kg MINIMUM
- CAP UNITS SHALL BE USED ON TOP COURSE OF WALL.
- CAP UNITS MAY BE EITHER 102 mm OR 204 mm IN HEIGHT.
- GEOTEXTILE GRID SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATION
- PLACE 75 mm TOPSOIL & SOD IN DISTURBED AREAS.
- GRADE TO ELEVATIONS INDICATED.
- PAYMENT SHALL BE MADE BY m2 OF GROSS FACE.

35 m2 BLOCK WALL
75 m OF 100 mm P.E. PIPE

STA. 3+040 TO STA. 3+140 RIGHT



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STA. 3+040 TO STA. 3+140
PRECAST CONCRETE BLOCK WALL #2

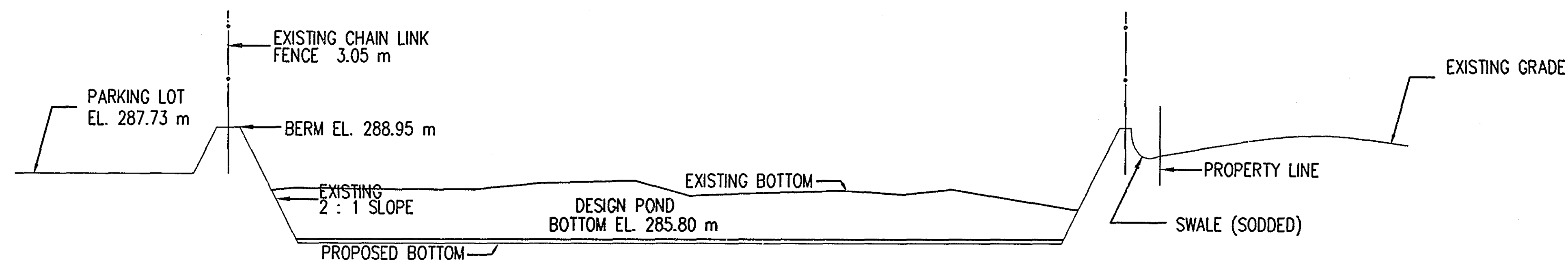
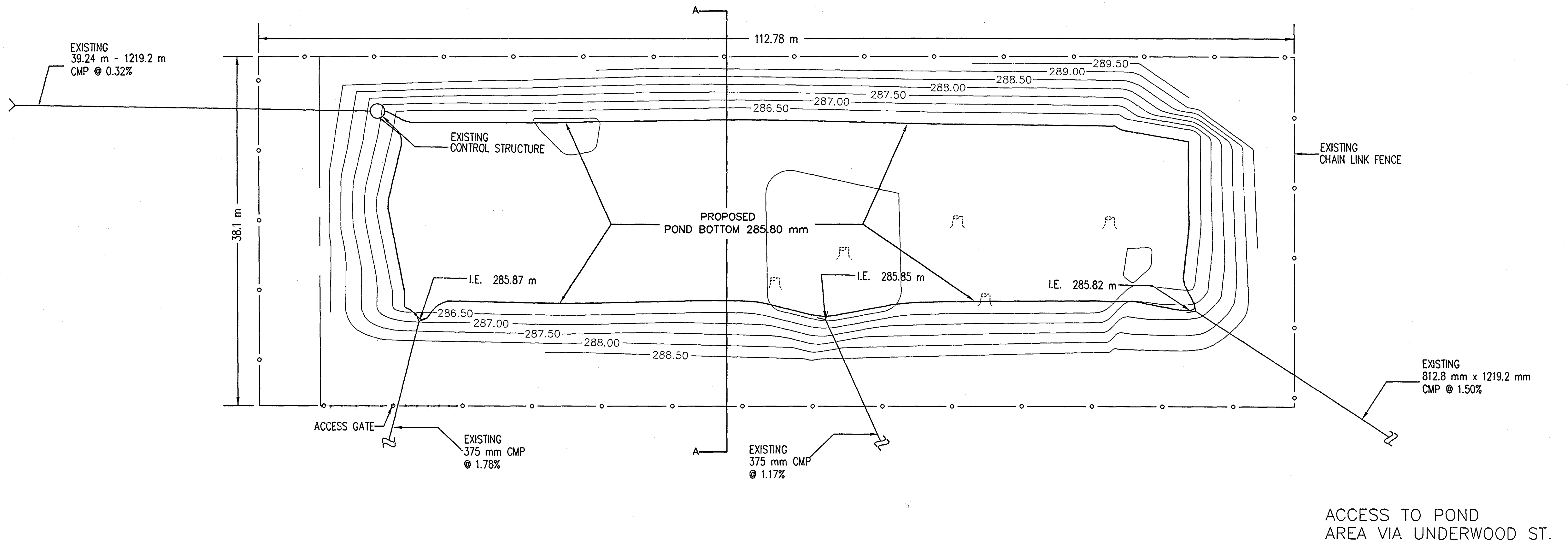
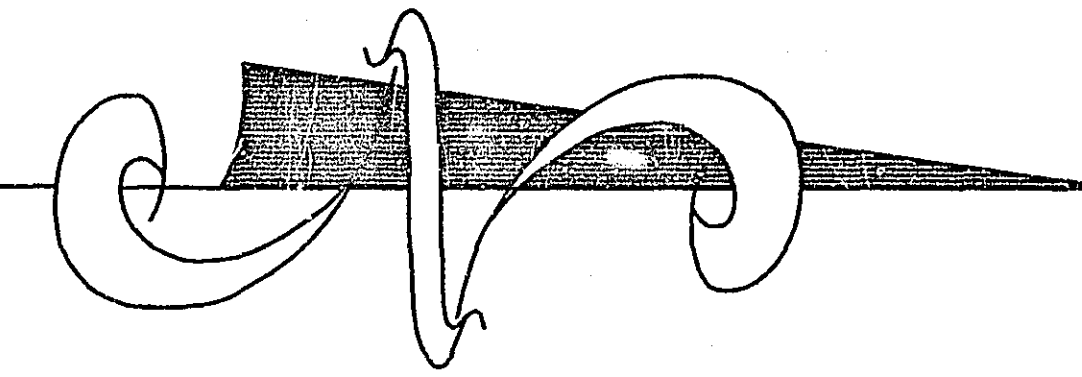


GRAPHIC SCALE

(IN METERS)



MAGNETIC



POND CROSS SECTION AA
(SCALE 1:100)

CONSTRUCTION NOTE:
EXCAVATION-SPECIAL SHALL
INCLUDE REMOVAL OF VEGETATION,
DEBRIS, AND STUMPS WITHIN THE
BOTTOM AREA OF THE POND.
CONTRACTOR SHALL EXCAVATE TO
EL. 285.80 . PAYMENT SHALL BE
MADE AS ITEM 2105.607 WHICH SHALL
INCLUDE ALL WORK INCLUDING REMOVAL
OF STUMPS.
ESTIMATED VOLUME = 600 CUBIC METERS.

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Kathy J. Schae
REG. NO. 21864 DATE 10/16/97

REVISED 12/15/97 D.H.

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