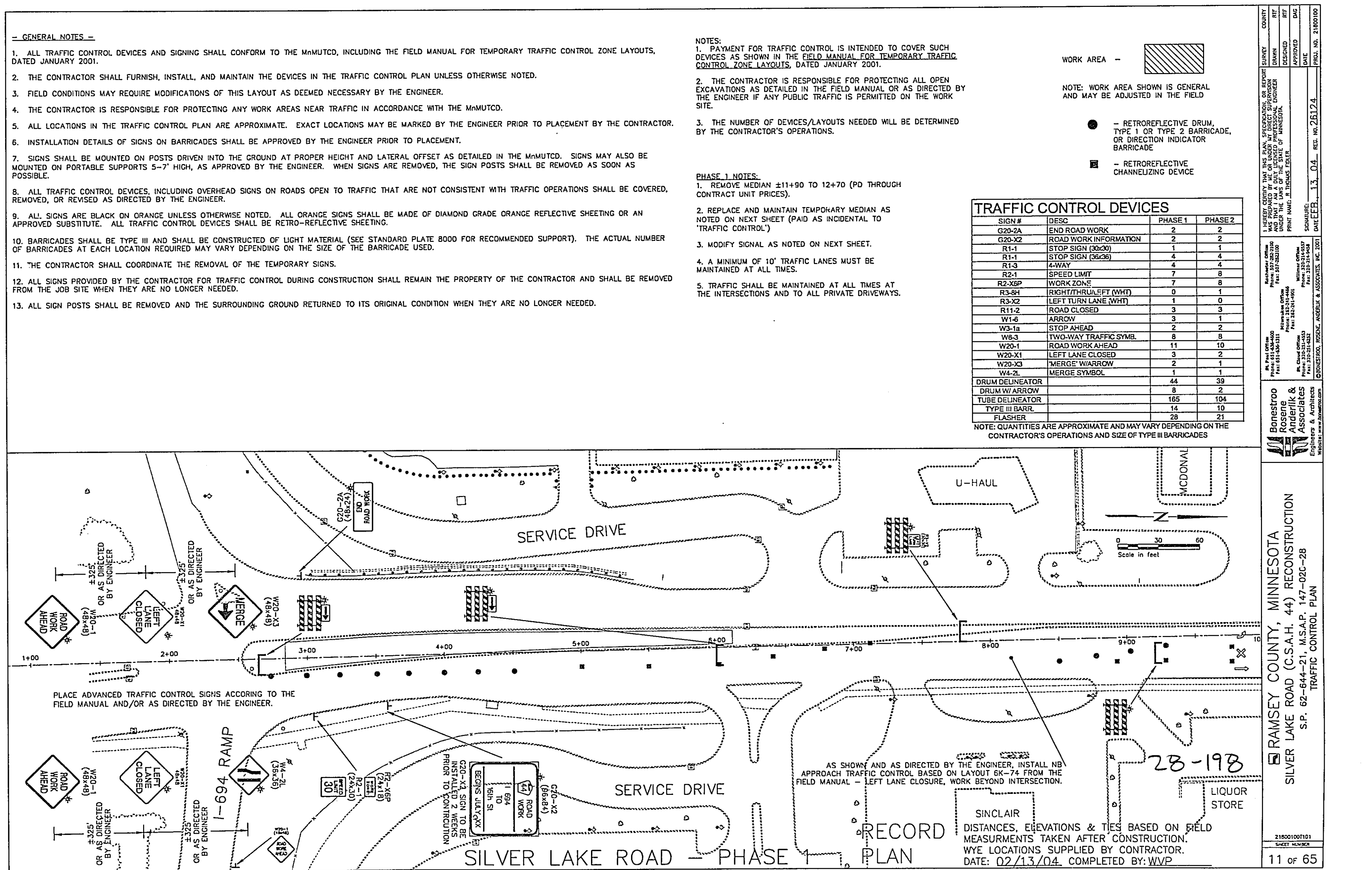
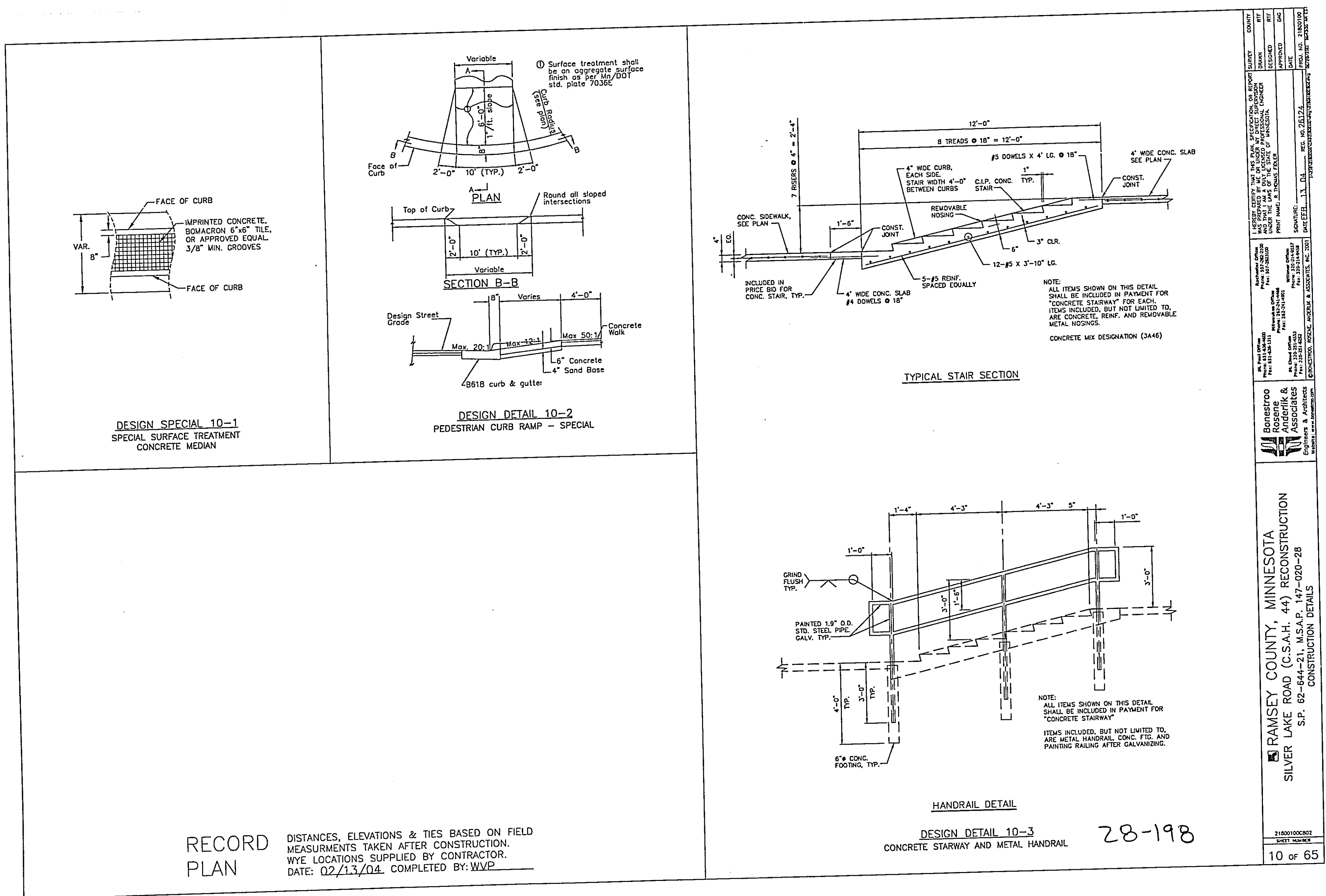
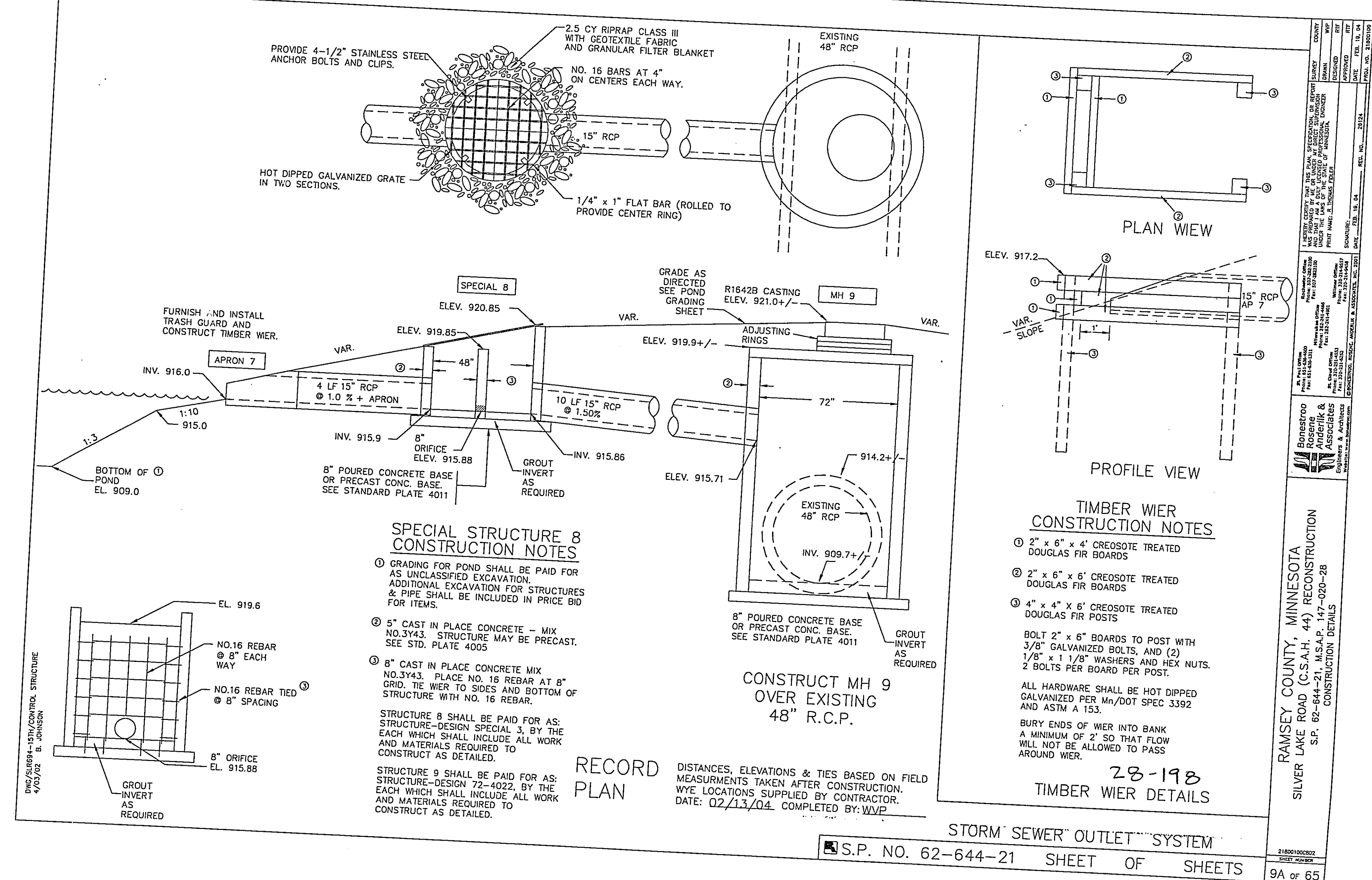
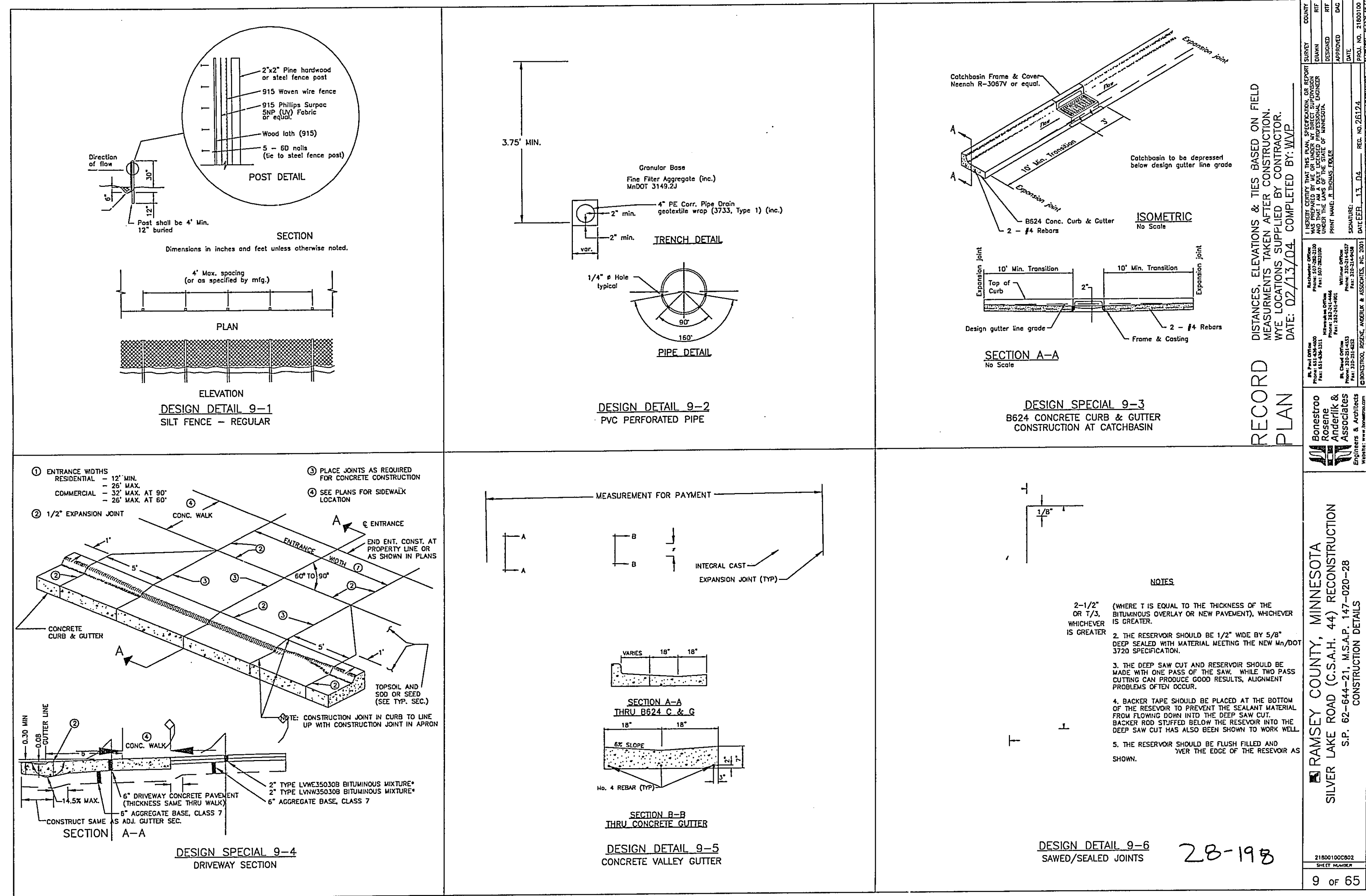
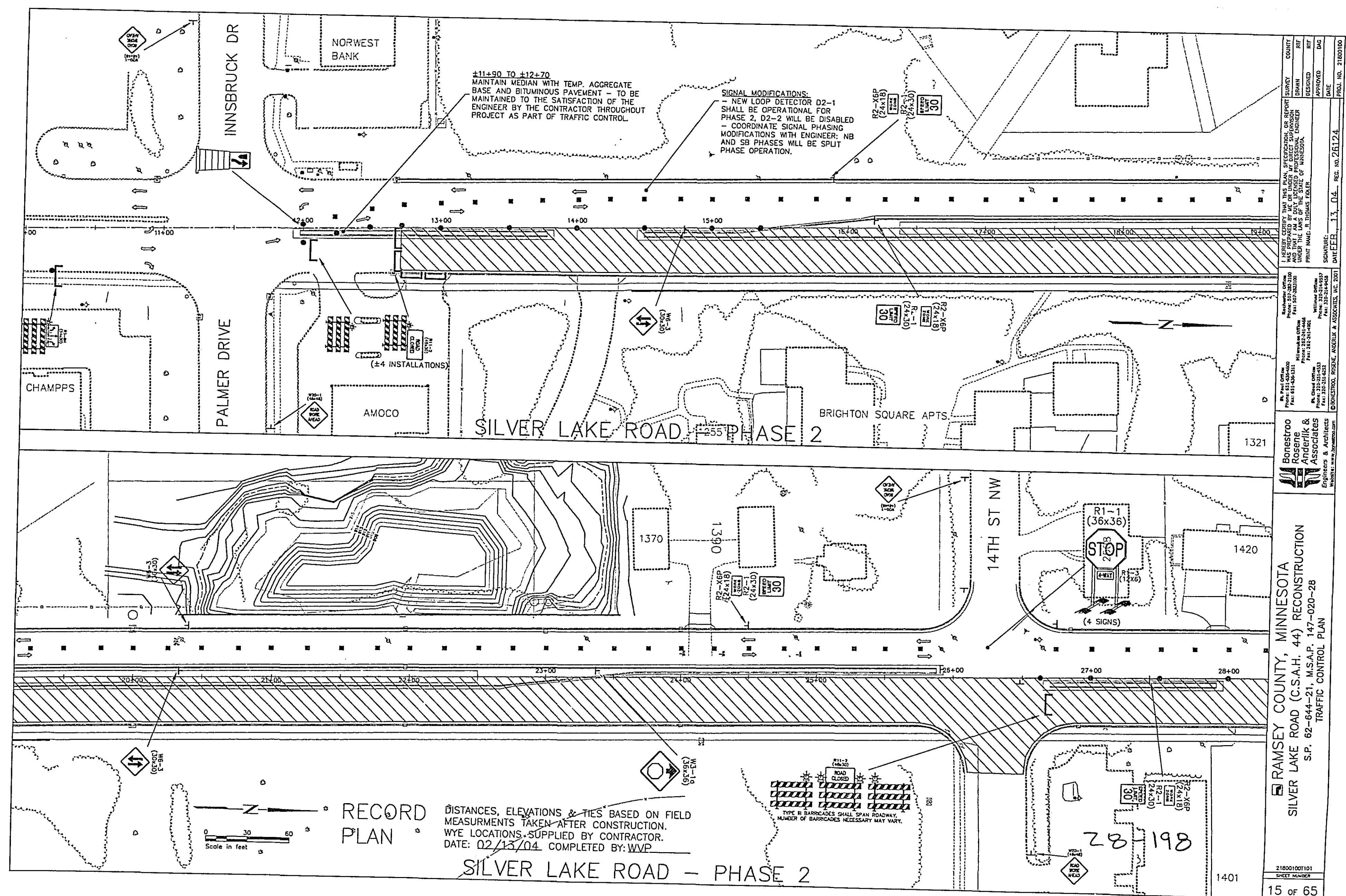
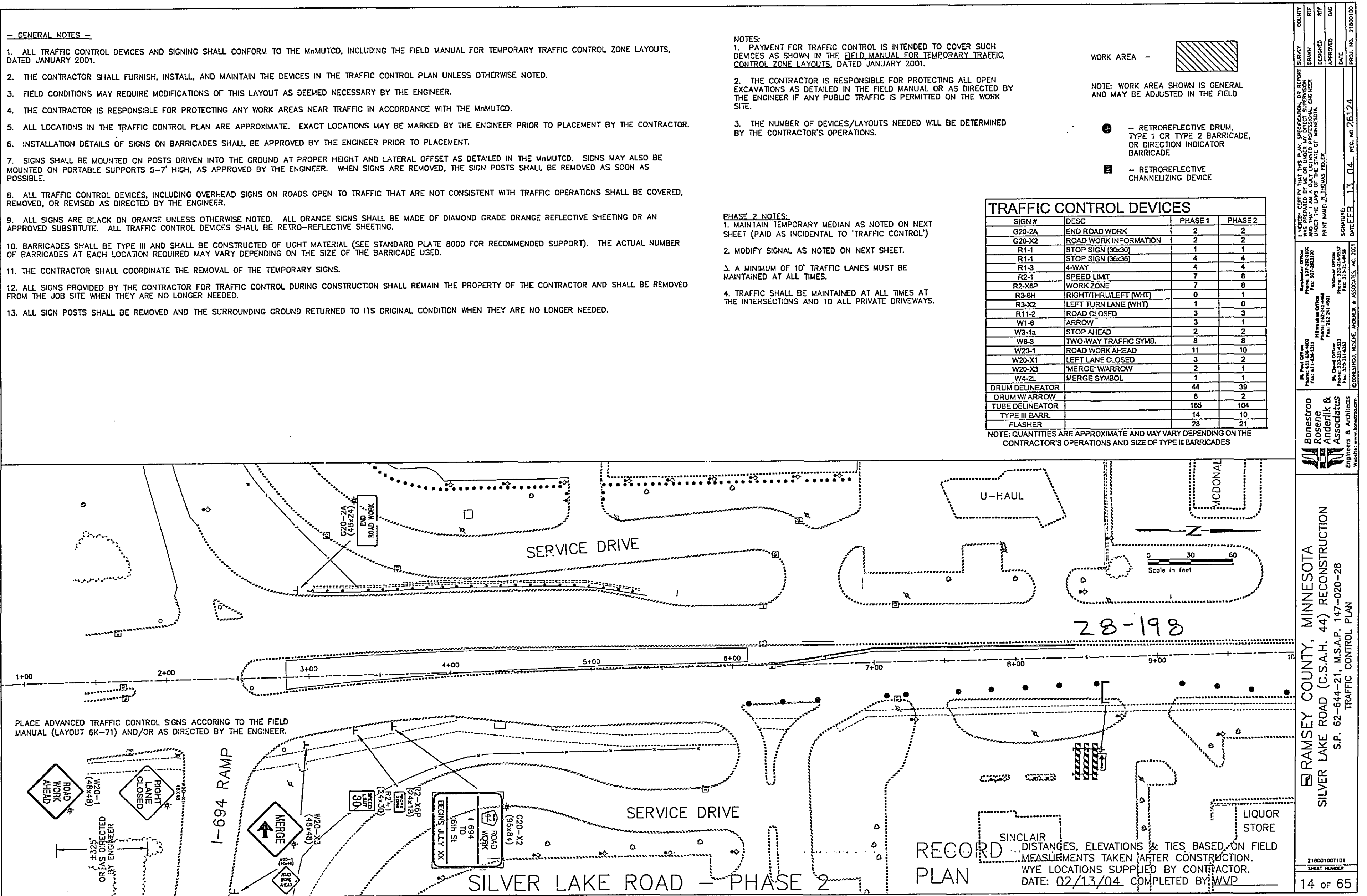
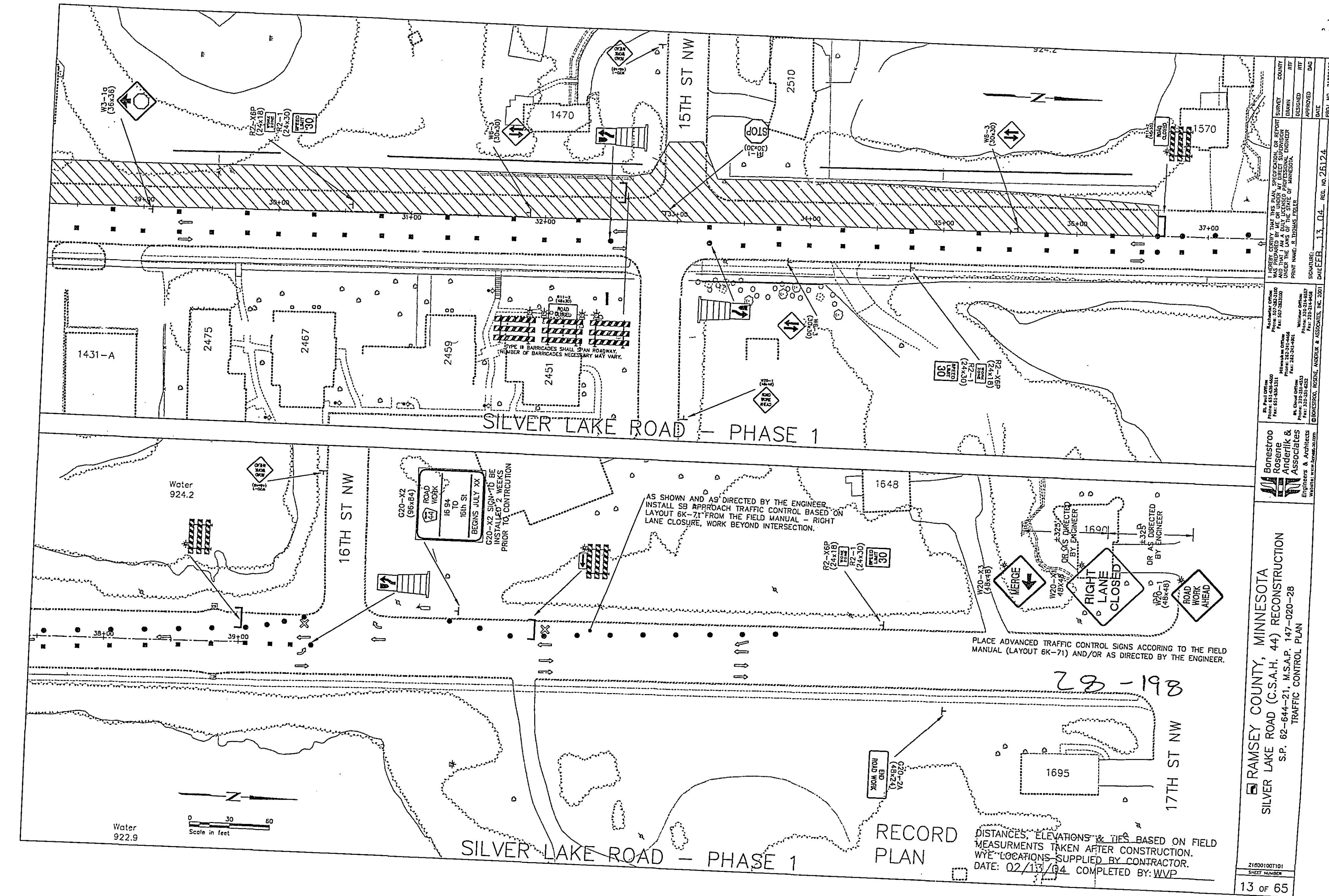
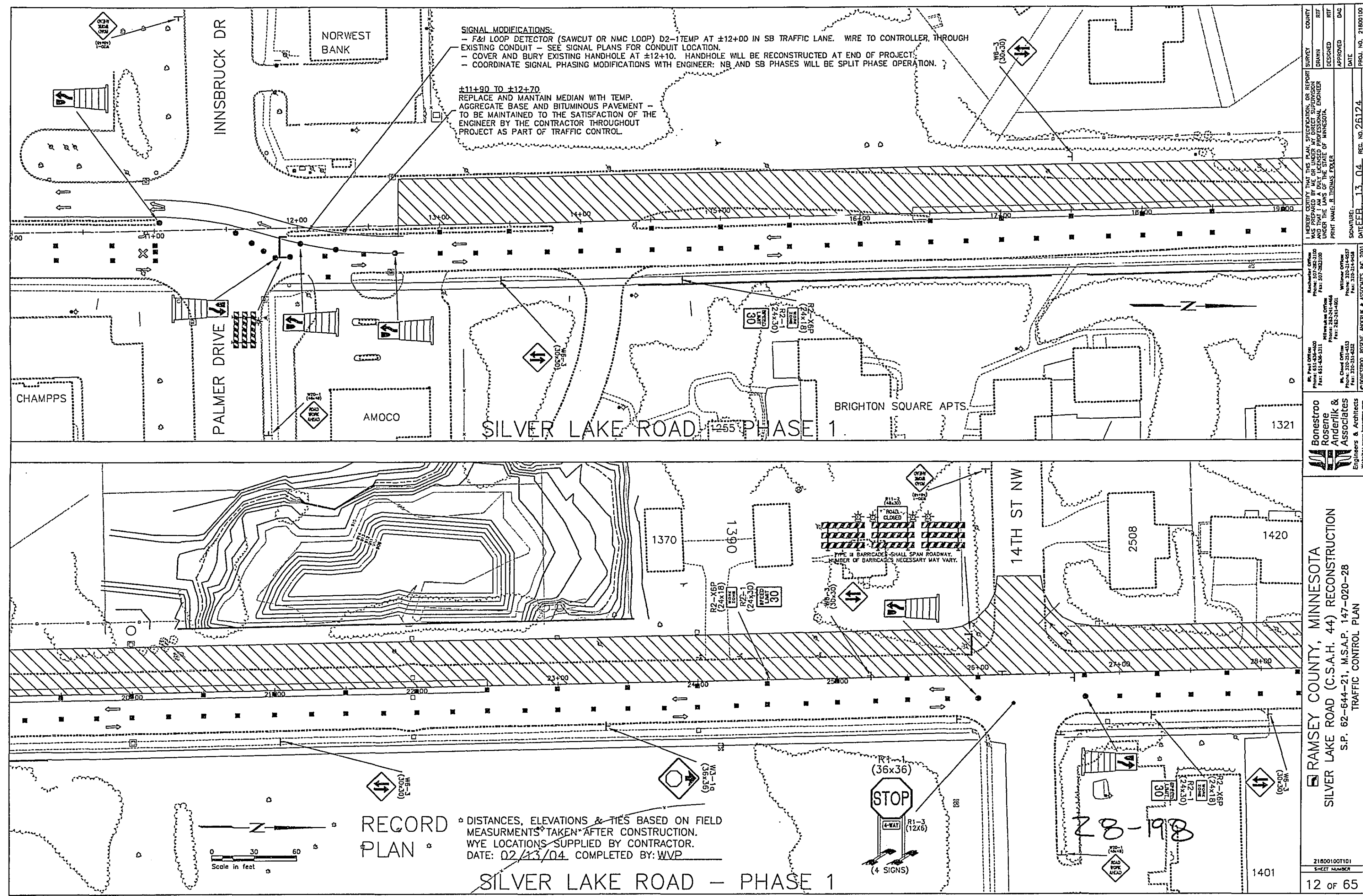
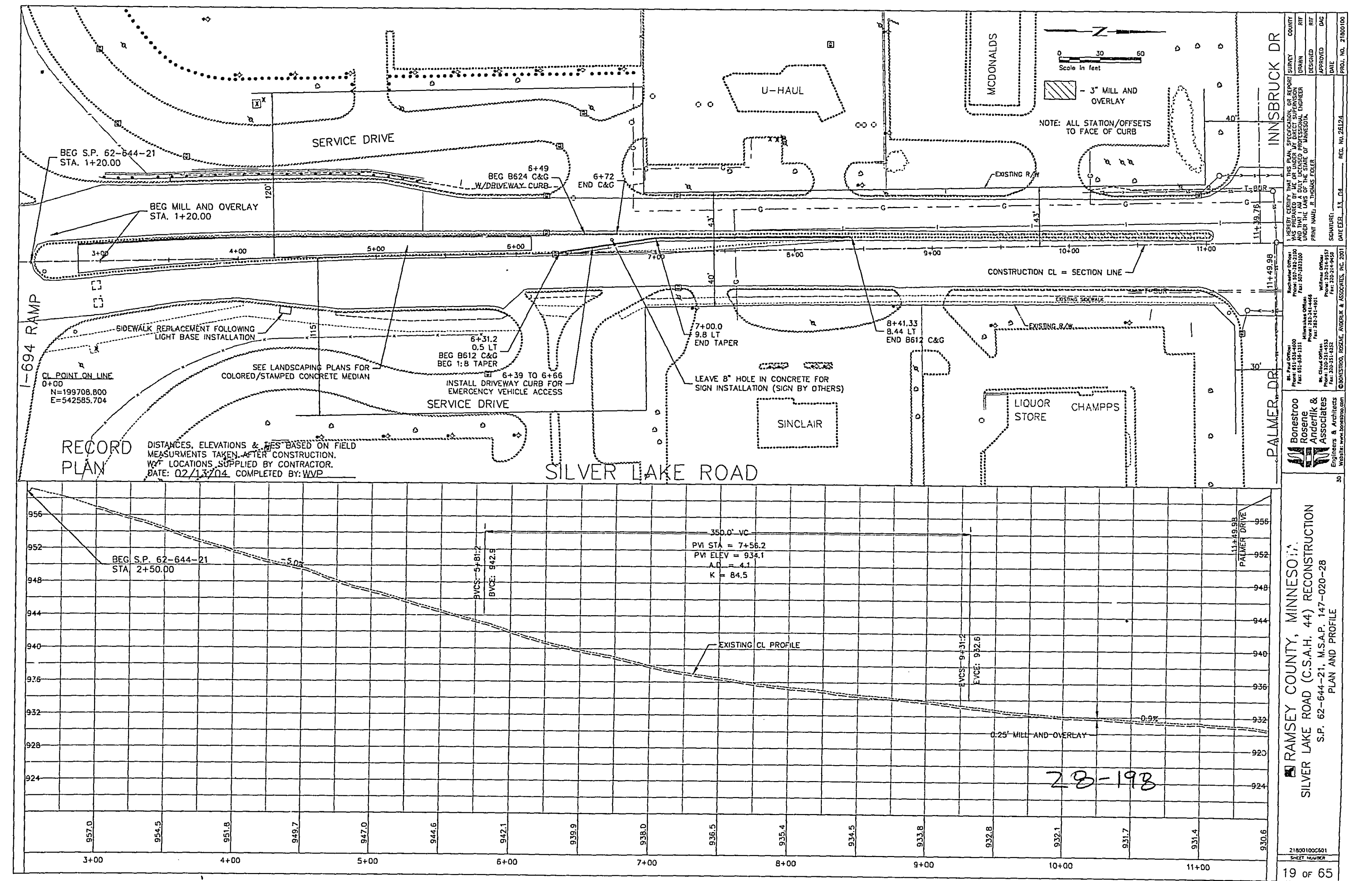
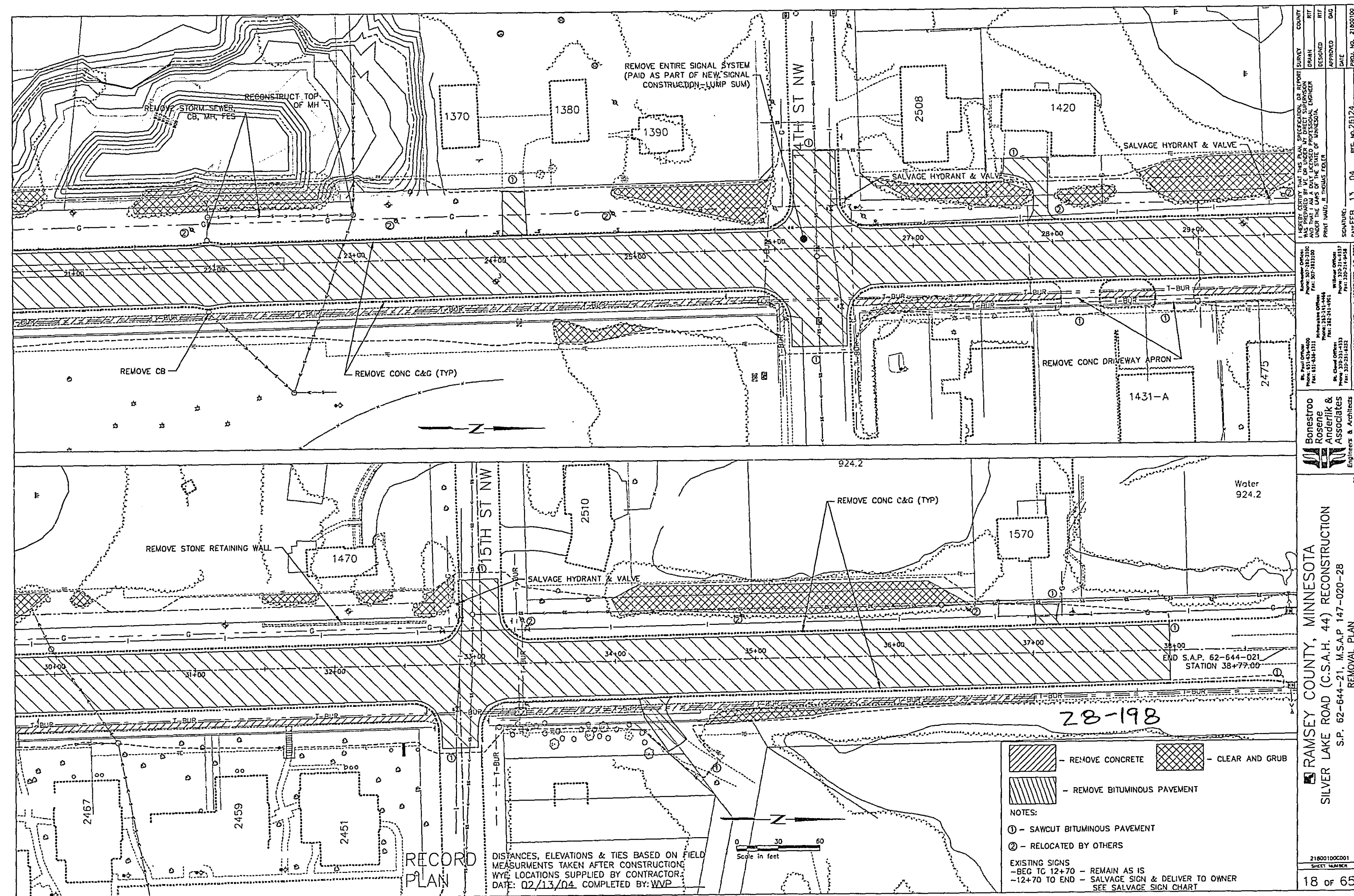
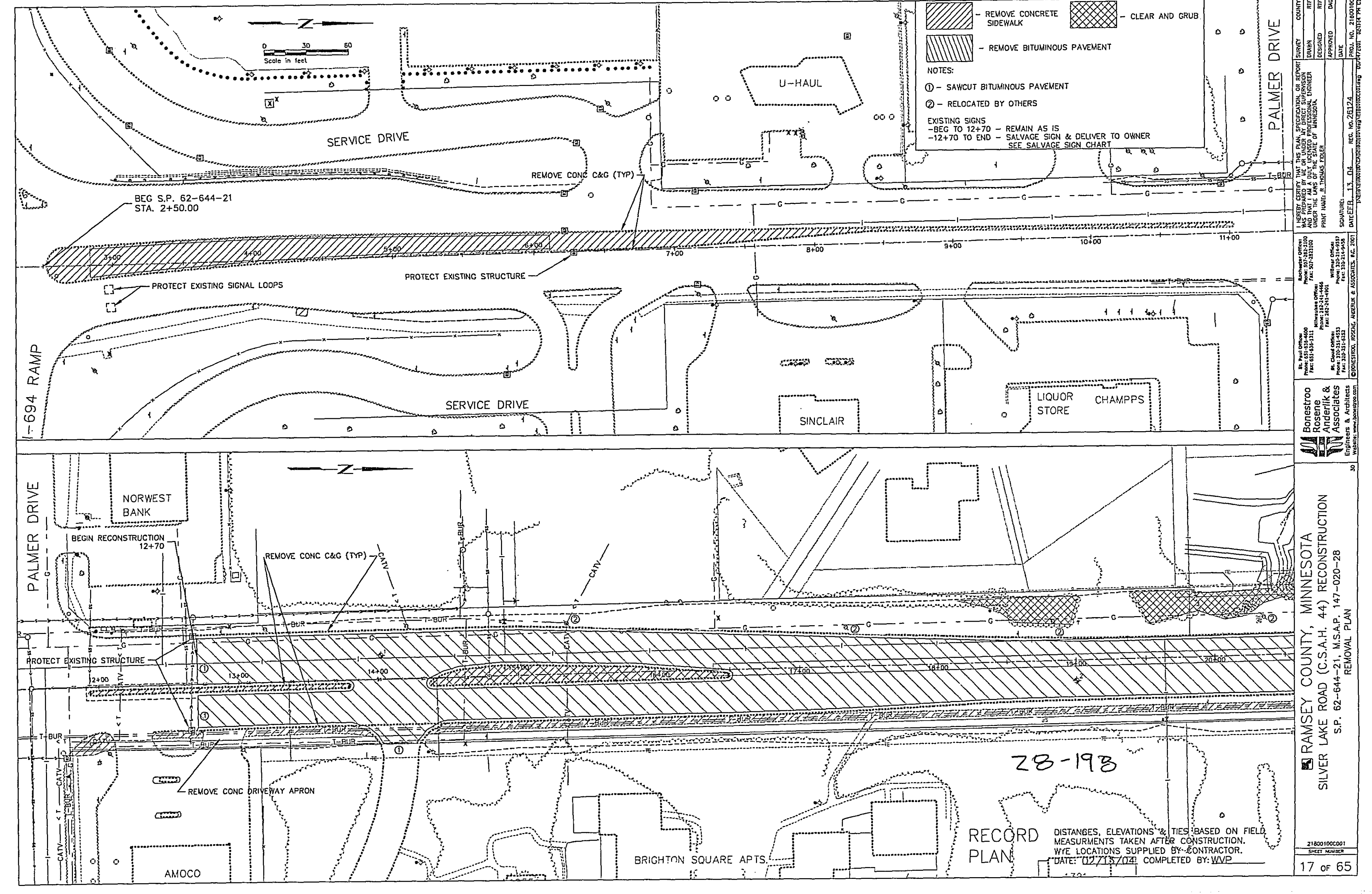
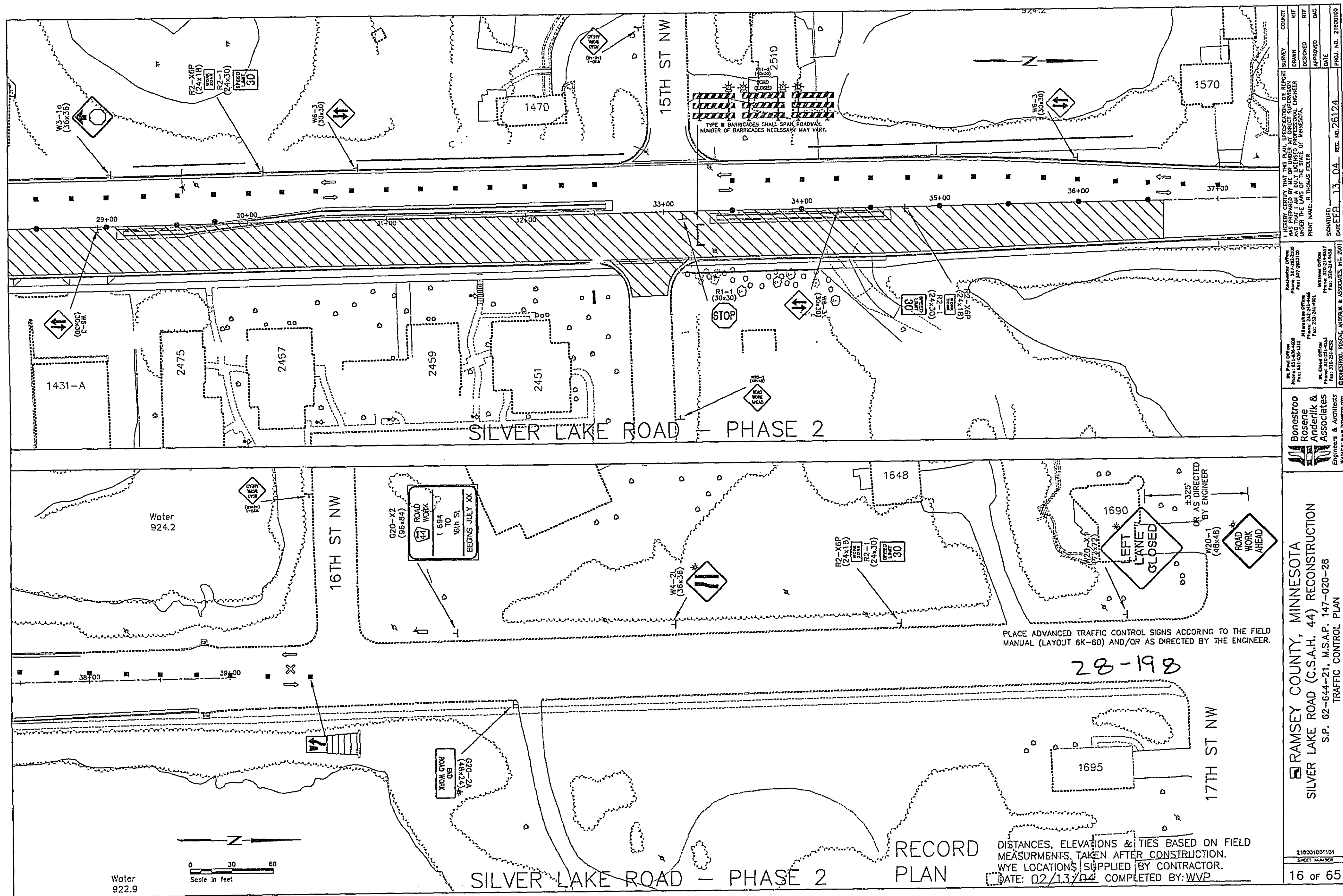


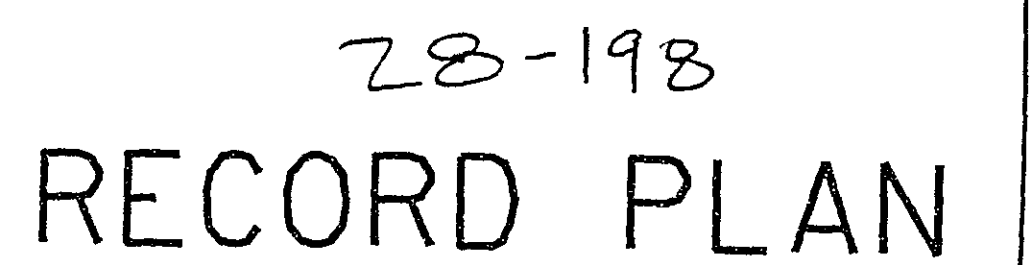
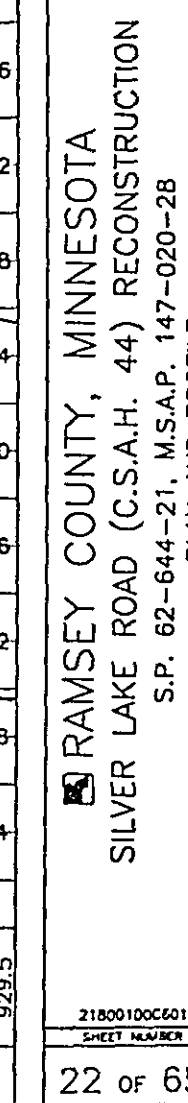
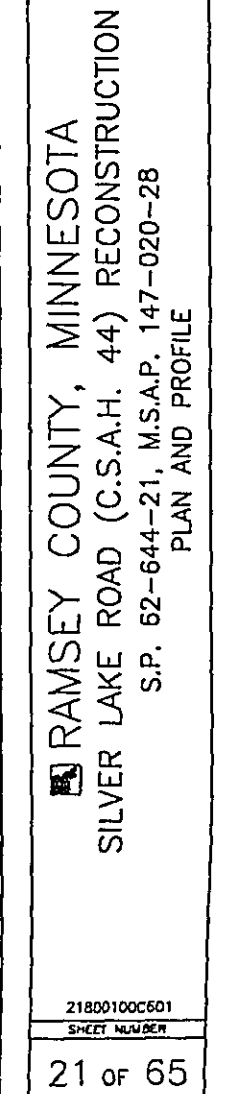
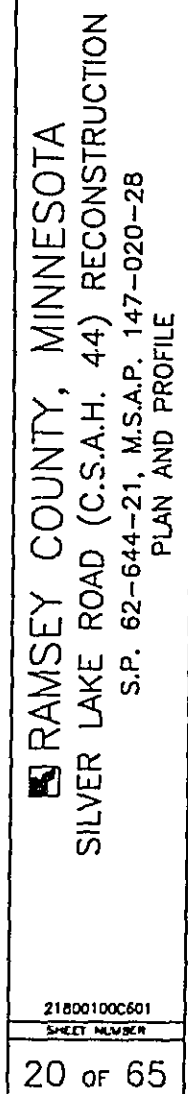
RECORD PLAN

[illegible]









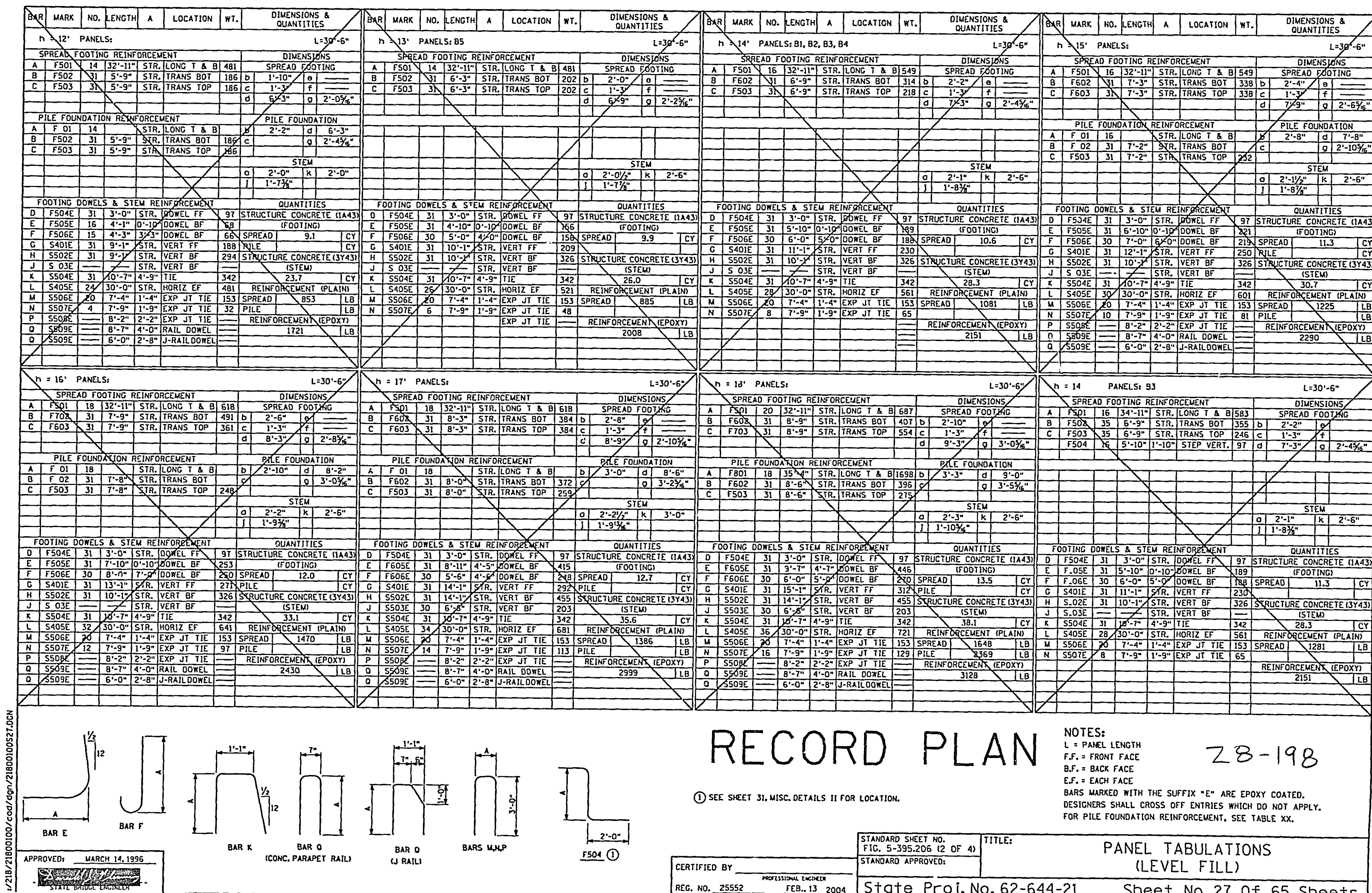
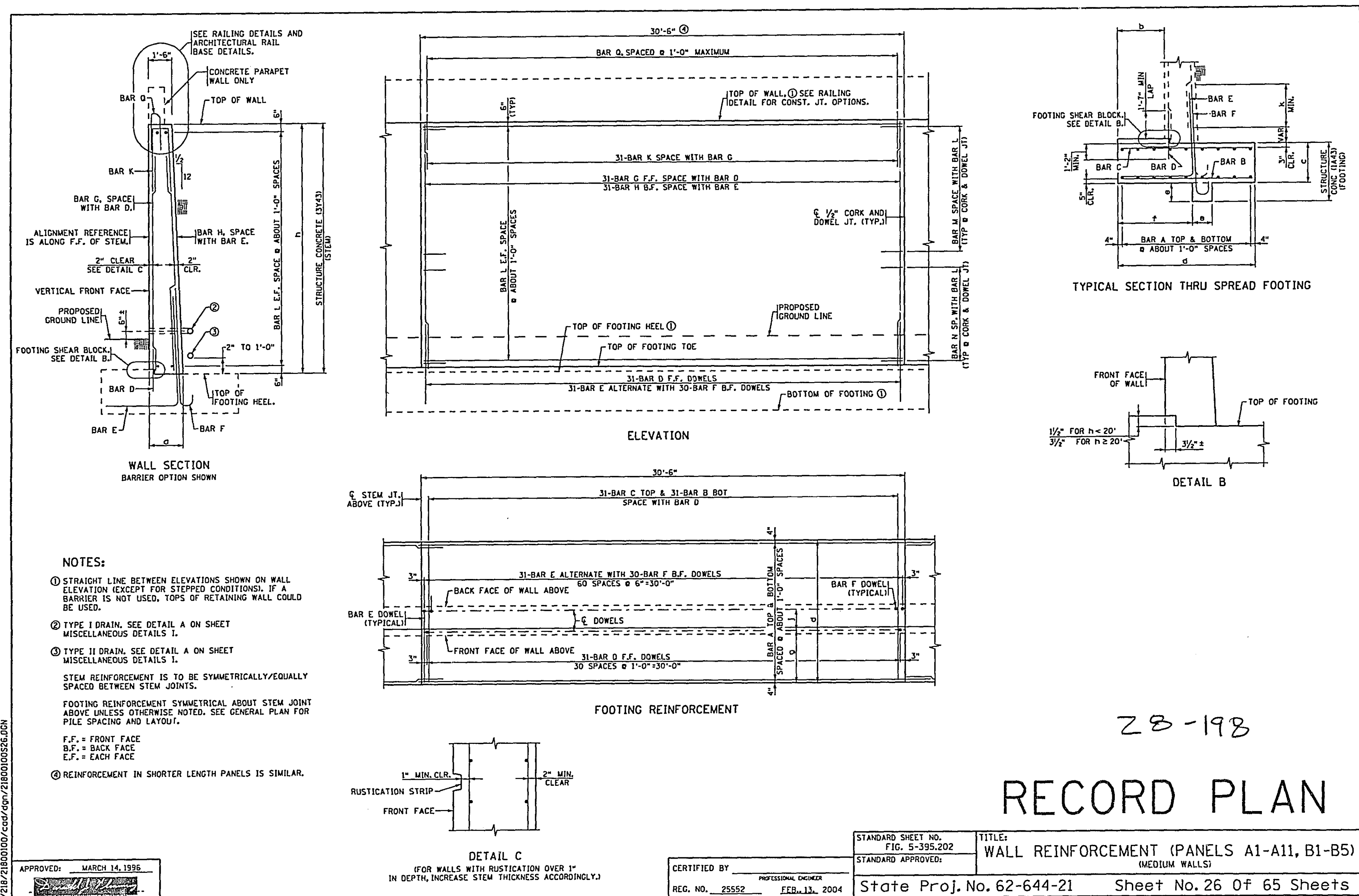
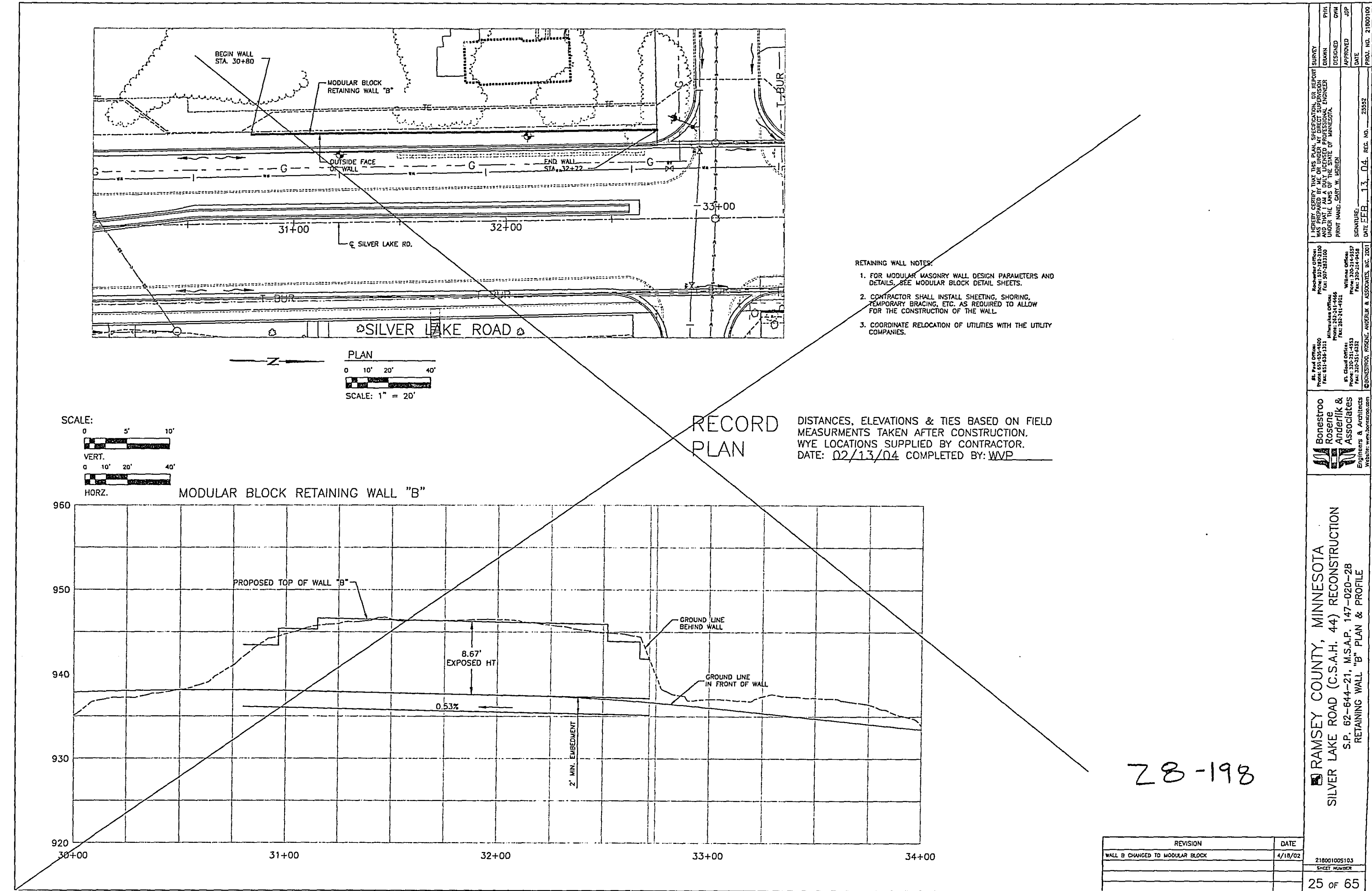
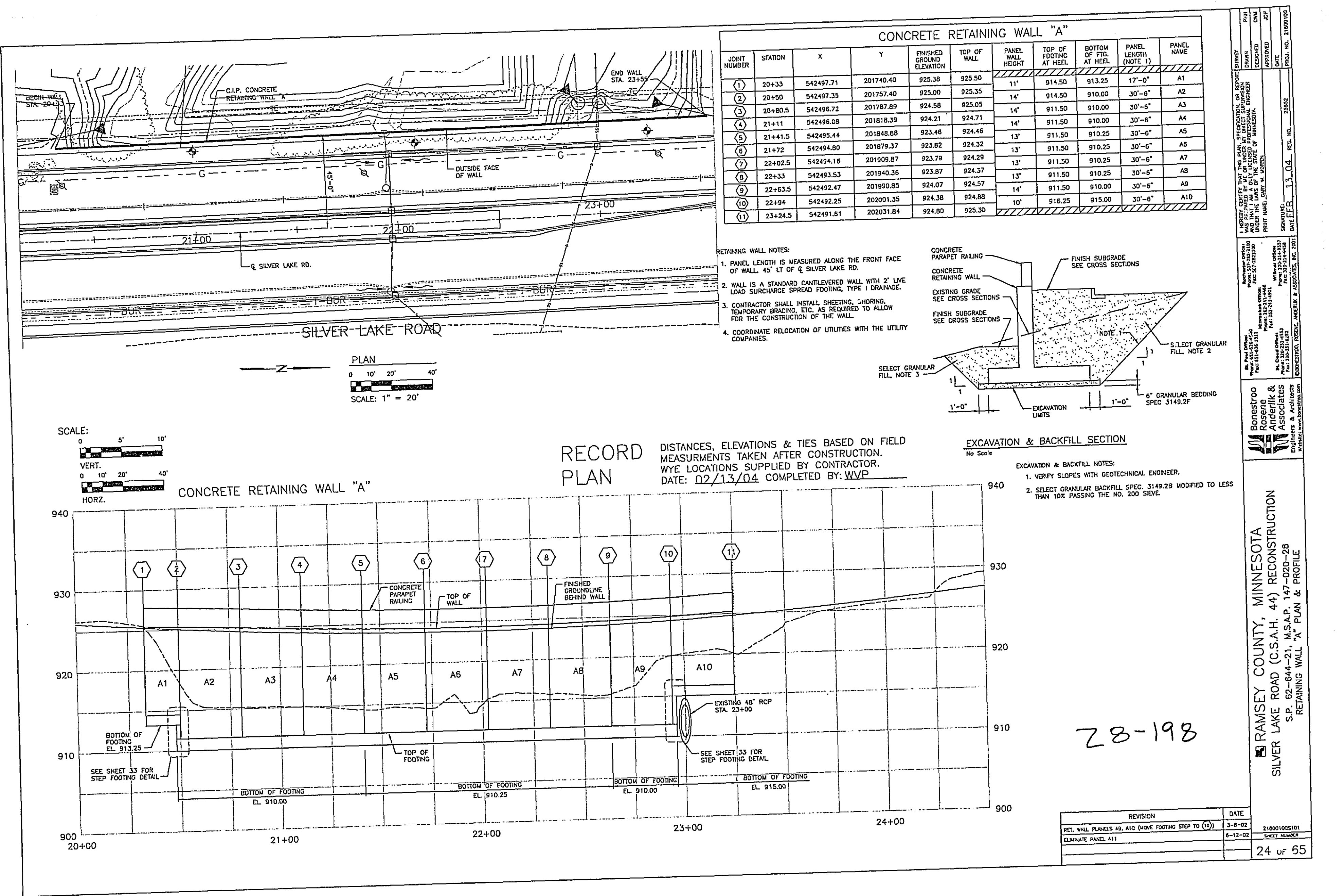


Figure 1: Reinforcement details for retaining wall panels. Details include BAR E, BAR F, BAR G, BAR H, BAR I, BAR J, BAR K, BAR L, and BAR Q (CONC. PARAPET RAIL). Dimensions shown include wall height 'A', panel length 'L', and various reinforcement bar lengths and offsets. A note states: 'BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED. DESIGNERS SHALL CROSS OFF ENTRIES WHICH DO NOT APPLY. FOR FILL FOUNDATION REINFORCEMENT, SEE TABLE XX.'

RECORD PLAN

28-198

NOTES:
 L = PANEL LENGTH
 F.F. = FRONT FACE
 B.F. = BACK FACE
 E.F. = EACH FACE
 BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.
 DESIGNERS SHALL CROSS OFF ENTRIES WHICH DO NOT APPLY.
 FOR FILL FOUNDATION REINFORCEMENT, SEE TABLE XX.

① SEE SHEET 31, MISC. DETAILS II FOR LOCATION.

APPROVED: MARCH 14, 1996

REVISIONS	DATE	CERTIFIED BY	PROFESSIONAL ENGINEER
RETAINING WALL PANELS A9, A10.	3-0-02	REG. NO. <u>25552</u>	<u>FEB. 13, 2004</u>

STANDARD SHEET NO. F10. 5-395,208 (11 OF 4)

TITLE: PANEL TABULATIONS (2' - LIVE LOAD SURCHARGE)

STANDARD APPROVED: _____

State Proj. No. 62-644-21 Sheet No. 28 of 65 Sheets

PAY LIMITS FOR SELECT GRANULAR BORROW W/ODOT SPEC. 3149.2B MODIFIED TO LESS THAN 10% PASSING A #200 SIEVE COMPACTION EQUAL TO SPEC. 2105.3F1.

TYPE I DRAINAGE, SEE DETAIL ON MISC. DETAILS 1 SHEET.

TYPE II DRAINAGE, SEE DETAIL ON MISC. DETAILS 1 SHEET.

SELECT GRADING MATERIAL

FRONT FACE

1'-6"

1'-0" MIN.

4:1 MAX. SLOPE

CONTRACTOR MAY CONSTRUCT KEYWAY WITHOUT FORMS, AS APPROVED BY ENGINEER.

UNDISTURBED GROUND

TYPICAL SECTION
(INPLACE SOIL OPTION SHOWN)

PAY LIMITS FOR CLASS E EXCAVATION (TYPICAL)

AGGREGATE BACKFILL (CV) COMPACT TO A 100% DENSITY IN ACCORDANCE WITH W/ODOT SPEC. 2105.3F1

BEDROCK SURFACE OR SUBCUT ELEVATION

AGGREGATE BACKFILL OPTION

FOUNDATION OPTIONS

PANEL B2

PANEL B3

BAR C TOP

BAR B BOTTOM

1/2" CORK & DOWEL JOINT ABOVE IN PANEL

EL. 933.00

3'-0" (TYP)

BAR A

F504

CONST. JOINT & 2' x 8" KEYWAY

EL. 931.75

4'-F503 TOP, 4'-F502 BOT. SPACED @ ABOUT 6"

BAR C TOP

BAR B BOTTOM

2'-0"

STEPPED FOOTING DETAIL - LONGIT. SECTION
(SPREAD FOOTING SHOWN)

PANEL A1 OR A10

PANEL A2 OR A9

BAR C TOP

BAR B BOTTOM

1/2" CORK & DOWEL JOINT ABOVE IN PANEL

EL. 933.00

3'-0" (TYP)

BAR A

F503

F504

CONST. JOINT & 2' x 8" KEYWAY

EL. 930.00

4'-F503 TOP, 4'-F502 BOT. SPACED @ ABOUT 6"

BAR C TOP

BAR B BOTTOM

2'-0"

STEPPED FOOTING DETAIL - LONGIT. SECTION
(TYPE I)
(SPREAD FOOTING SHOWN)

NOTES:

① MINIMUM DEPTH 1'-6" OR SHEAR KEY DEPTH, DESIGNER TO DETERMINE MAXIMUM DEPTH.

② REBARS TO BE SAME AS FOOTING TOP AND BOTTOM BARS.

NOTE:
SPECIAL DESIGN REQUIRED, IF STEP HEIGHT IS GREATER THAN 8"

28-198

RECORD PLAN

REVISIONS		DATE	CERTIFIED BY	PROFESSIONAL ENGINEER
RETAINING WALL PANELS A9, A10,		3-8-02	REG. NO. 25552	FEB. 13, 2004

STANDARD SHEET NO. FIG. 5-355-205	TITLE:
STANDARD APPROVED:	MISCELLANEOUS DETAILS II

State Proj. No. 62-644-21 Sheet No. 31 Of 65 Sheets

APPROVED: MARCH 14, 1996

218/2180100/00/cdd/gm/21800000031.dgn

SHORT WALL (5'-12')
MEDIUM WALL (13'-16')
TALL WALL (17'-30')

NOTES:

FOOTING BAR SIZE, #5 BAR MINIMUM, PER MN/DOT

① AREA OF STEEL PROVIDED INCLUDES BACK FACE STEM DOWELS, EXCLUDING #5 DOWELS, SEE STEM REINFORCEMENT.

② BASED ON GROSS SOIL LOAD ON HEEL.

SHORT WALL (5'-9')
MEDIUM WALL (10'-14')
TALL WALL (15'-29')

NOTES:

FOOTING BAR SIZE, #5 BAR MINIMUM, PER MN/DOT

① AREA OF STEEL PROVIDED INCLUDES BACK FACE STEM DOWELS, EXCLUDING #5 DOWELS, SEE STEM REINFORCEMENT.

② BASED ON GROSS SOIL LOAD ON HEEL.

SHORT WALL (5'-11')
MEDIUM WALL (12'-16')
TALL WALL (17'-29')

NOTES:

FOOTING BAR SIZE, #5 BAR MINIMUM, PER MN/DOT

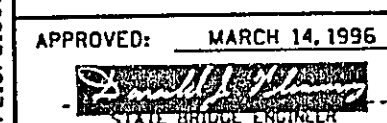
① AREA OF STEEL PROVIDED INCLUDES BACK FACE STEM DOWELS, EXCLUDING #5 DOWELS, SEE STEM REINFORCEMENT.

② BASED ON GROSS SOIL LOAD ON HEEL.



STANDARD SHEET NO. FIG. 5-395.209		TITLE: RETAINING WALL
STANDARD APPROVED:		
CERTIFIED BY	PROFESSIONAL ENGINEER REG. NO. 25552 FEB. 13, 2004	State Proj. No. 62-644-21 Sheet No. 32 Of 65 Sheets

NCN03500100B1/00P/P00/C000081C/01C



NOTES:

BARs MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.

THE GUARDRAIL CONNECTION IS INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

MAXIMUM SPACING OF RAIL DEFLECTION JOINTS SHALL BE 20'-0".

GUARDRAIL CONNECTION SHALL BE STRUCTURAL STEEL, SPEC. 3309 AND GALVANIZED AFTER FABRICATION PER SPEC. 3394.

FOR TYPICAL RETAINING WALL REINFORCEMENT AND DETAILS, SEE STANDARD RETAINING WALL SHEETS.

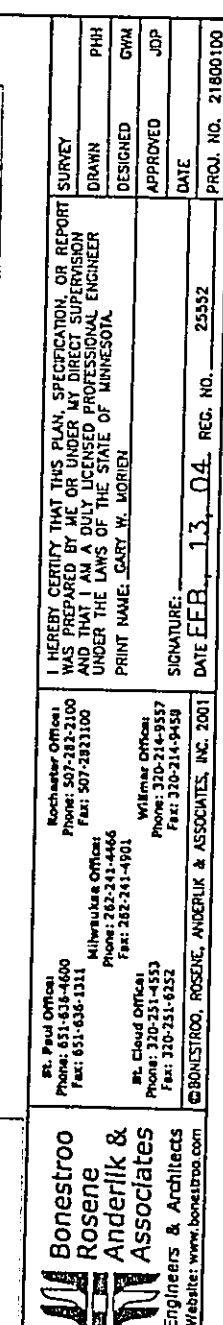
CONCRETE RAILING: 350 LBS./FT.
0.086 CU. YD./FT.

CONCRETE PARAPET RAILING SHALL BE PAID FOR ON A LINEAL FOOT BASIS.

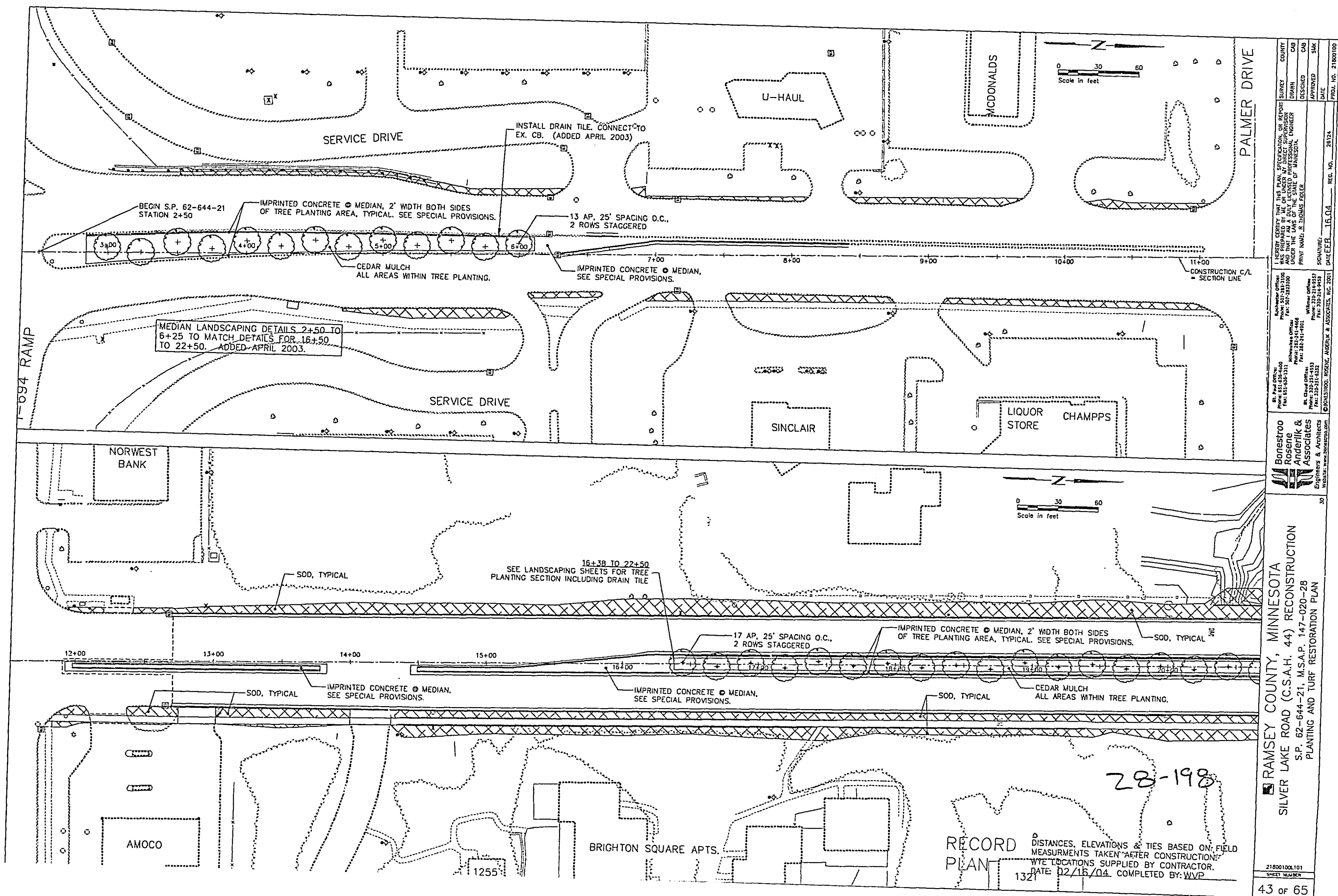
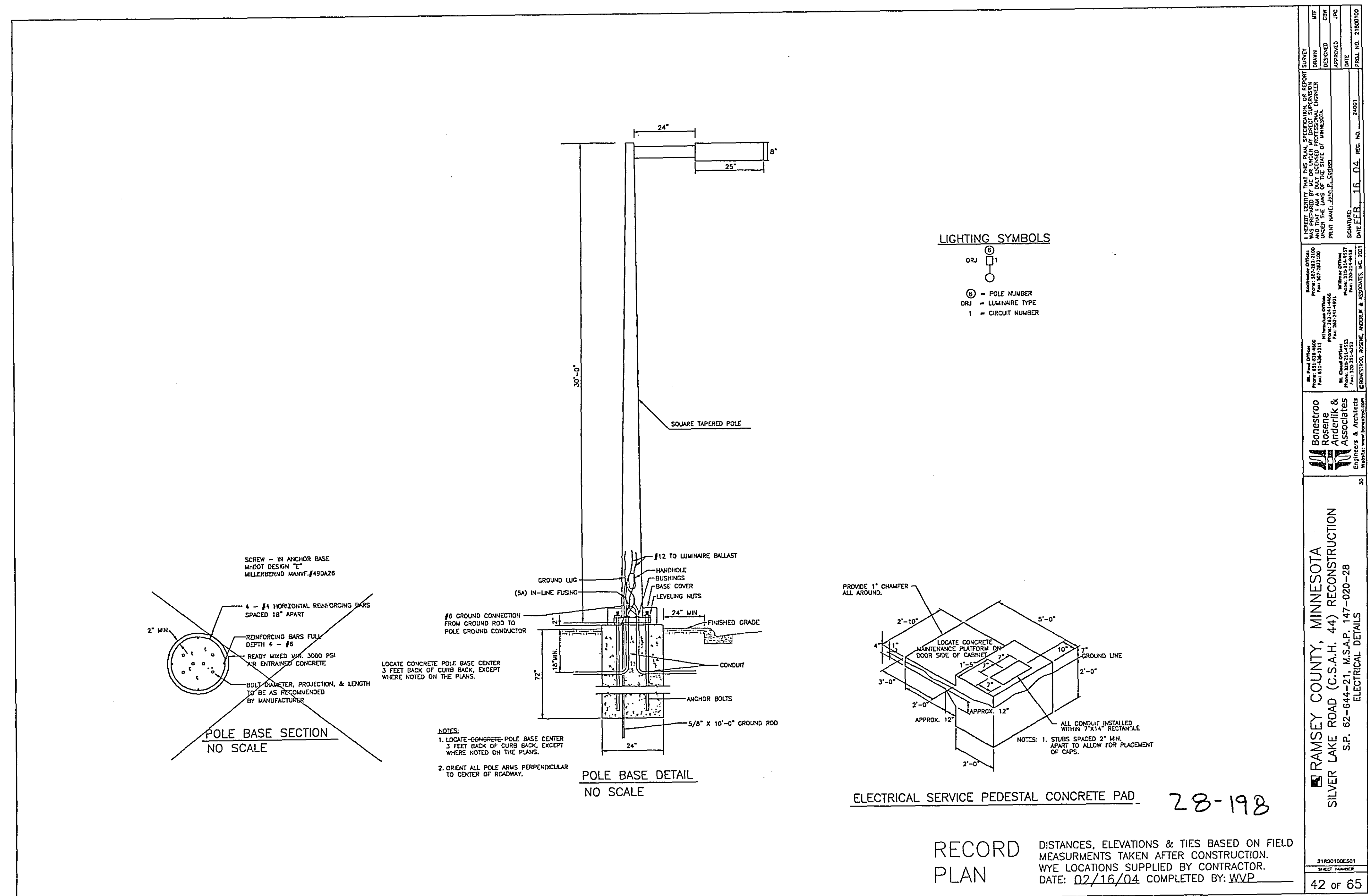
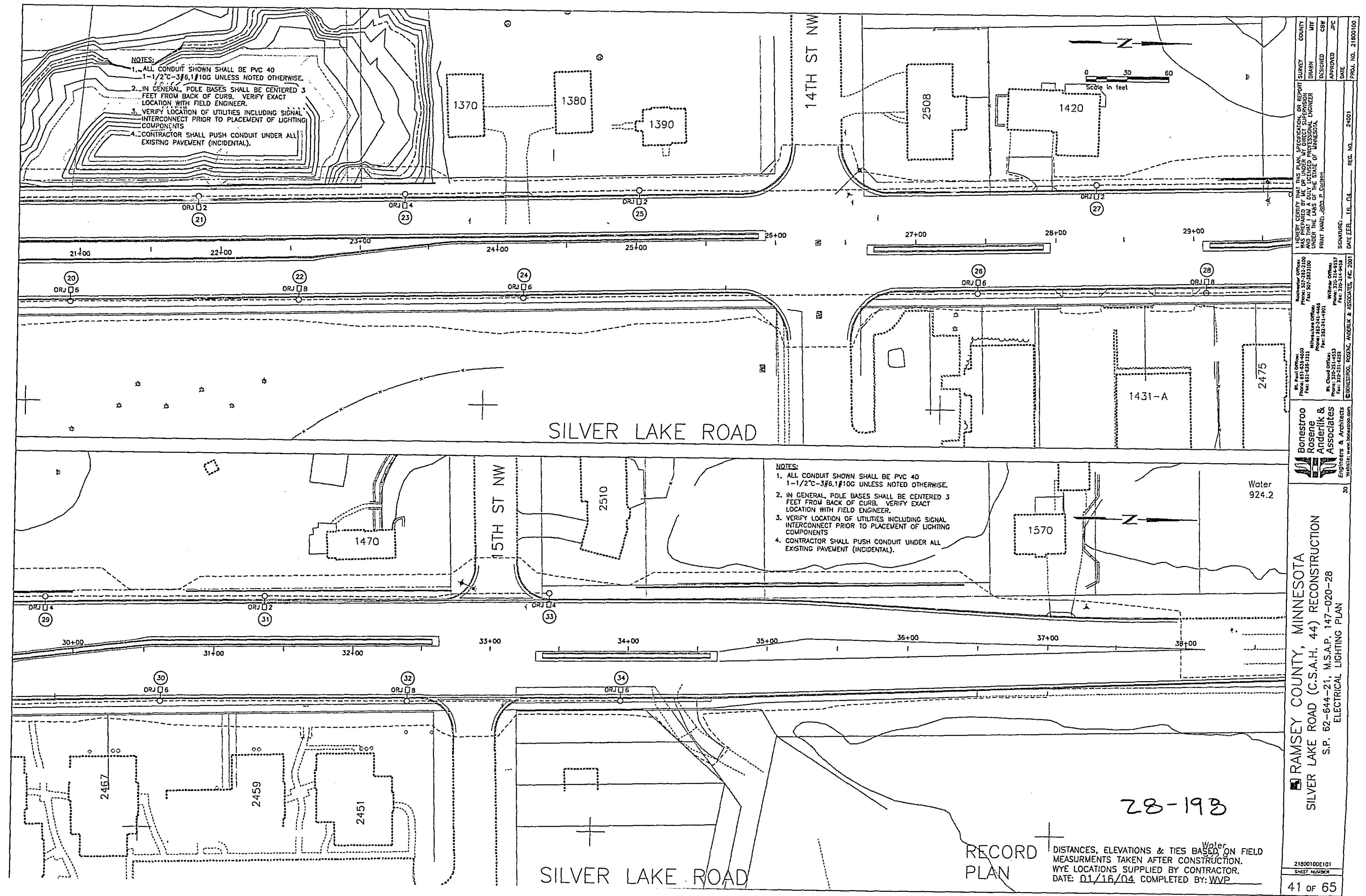
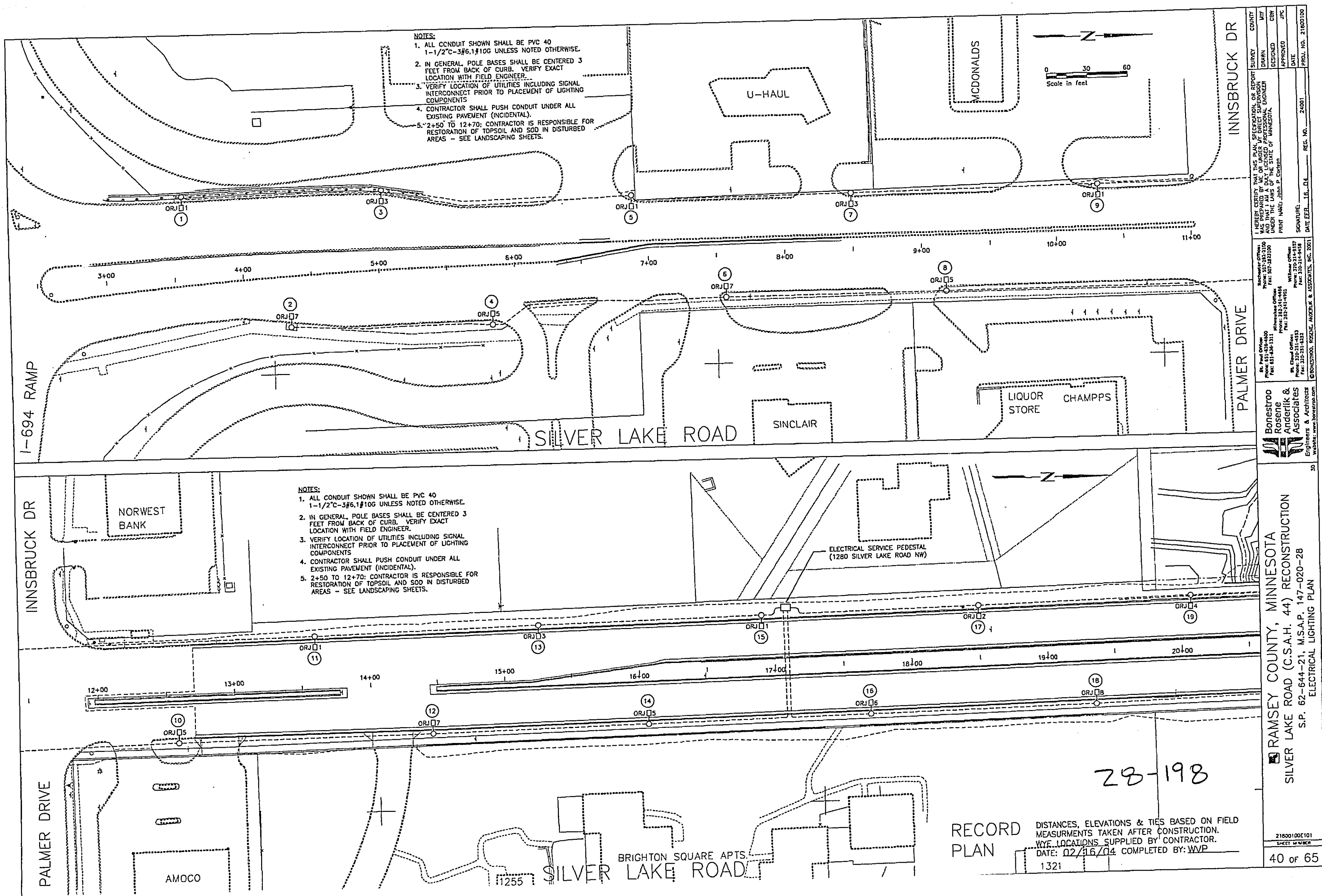
① FOR INFORMATIONAL PURPOSES ONLY.

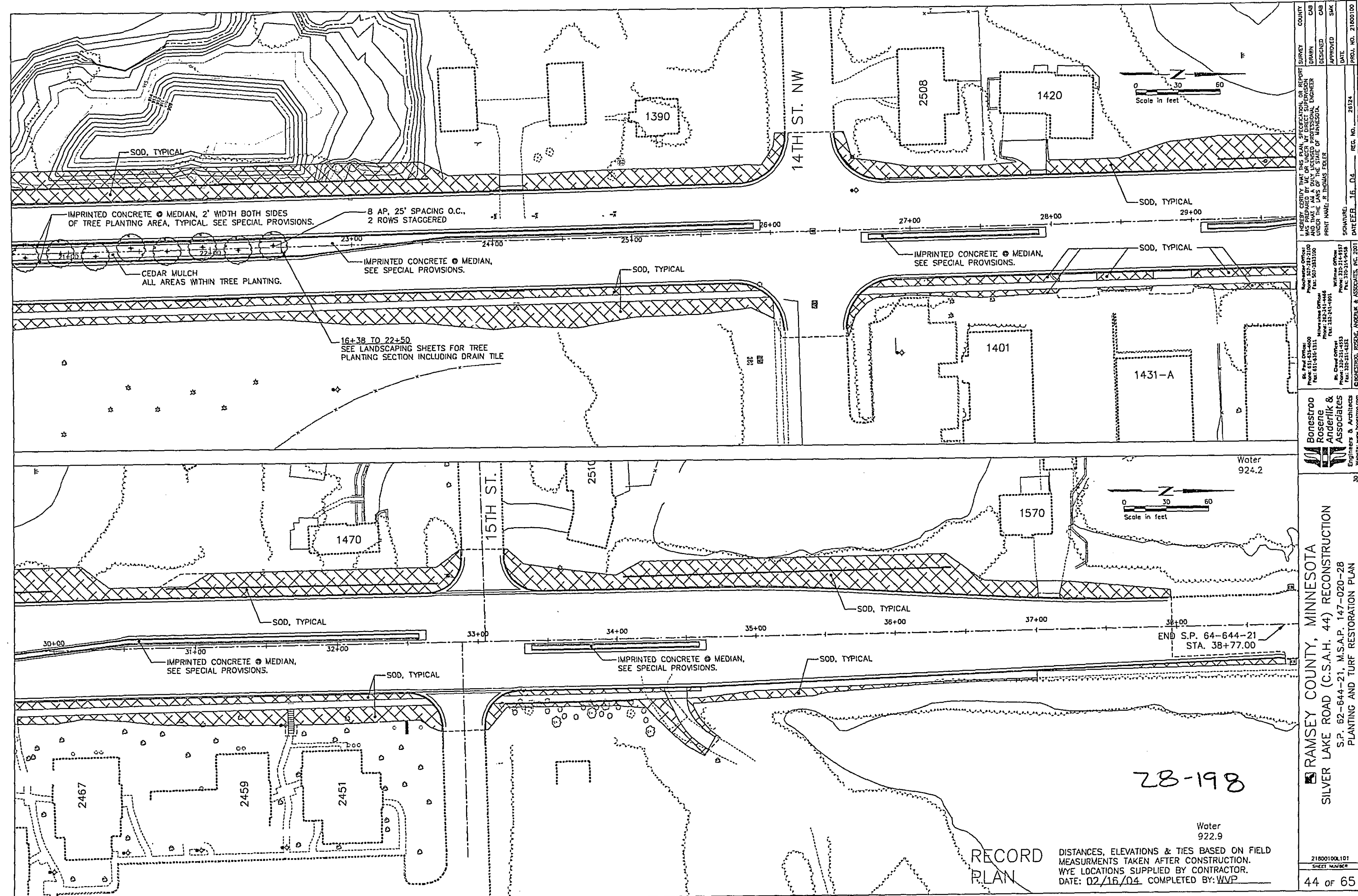
② REINFORCEMENT SHOWN ASSUMES RAIL DEFLECTION JOINT CENTER OF PANEL.

STANDARD SHEET NO. FIG. 5-395.213	TITLE: CONCRETE PARAPET RAILING FOR RETAINING WALLS
STANDARD APPROVED:	
State Proj. No. 62-644-21 Sheet No. 33 Of 65 Sheets	



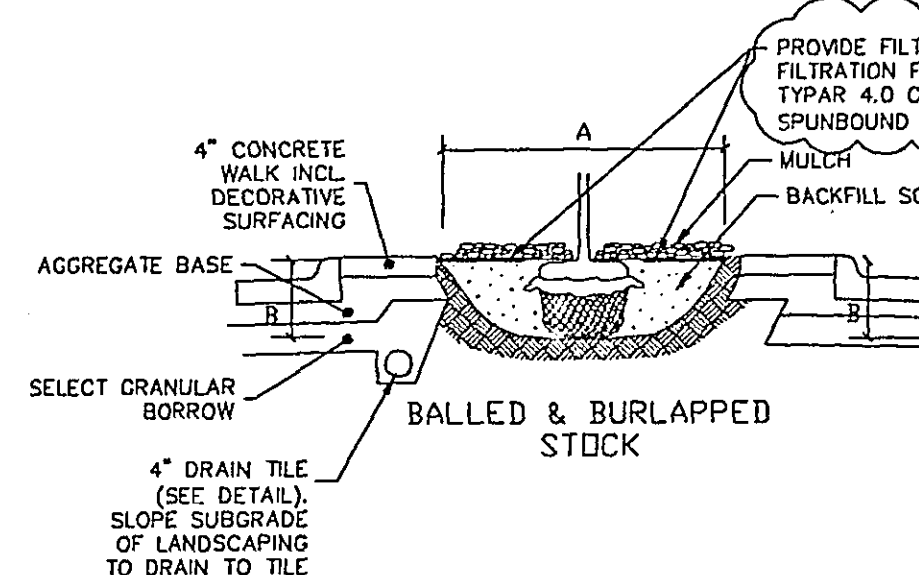
RAMSEY COUNTY, MINNESOTA
 LAKE ROAD (C.S.A.H. 44) RECONSTRUCTION
 S.P. 62-644-21, M.S.A.P. 147-020-28
 RETAINING WALL "C" AND "D" PLAN & PROFILE





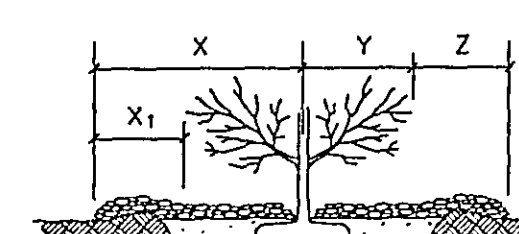
PLANT STOCK TABULATION						
ITEM NO.	CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
ROADWAY DECIDUOUS TREES						
2571.502/06200	AP	25	AZER PLATANOIDES EMERALD LUSTRE	EMERALD LUSTRE NORWAY MAPLE	3.5" CAL.	BAB

NOTE:
1. BACKFILL SOIL, FERTILIZER, COMPOST, AND MULCH ARE INCIDENTAL TO THE TREE PLANTING.



PROVIDE FILTRATION/SEPARATION FABRIC IN ISLANDS AT PLANTING AREAS. A WATER PERMEABLE FILTRATION FABRIC OF FIBERGLASS OR POLYPROPYLENE FABRIC, MANUFACTURED BY DUPONT TYPAR 4.0 OUNCE SPUNBOND FABRIC OR HOSCHOT FIBERS INDUSTRIES TREVIA 4.5 OUNCE SPUNBOND FABRIC, CUT 3'-6" DIAMETER HOLES IN FABRIC AT TREES. STAPLE FABRIC.

PLANT TYPE	PLANT SIZE (UP TO AND INCLUDING)	MINIMUM APPROPRIATE PLANTING HOLE DIMENSIONS (INCHES)	
		A	B
SHADE & FLOWERING TREES	1" B.R.	54	14
	1 1/4" B.R.	60	14
	1 1/2" B.R.	66	15
	1 3/4" B.R.	72	16
	2" B.R.	84	19
	2 1/2" B.R.	84	19
BARE ROOT TREES	2" B.B.	72	16
	2 1/2" B.B.	84	19
	3" B.B.	96	20
BARE ROOT OR CONTAINER SHRUBS	3 1/2" B.B.	114	23
	4" B.B.	126	25



TYPE OF PLANT	X CENTER OF PLANT TO MULCH LINE	Y EDGE OF PLANT TO MULCH LINE	Z DEPTH OF PLANT TO MULCH LINE
DECIDUOUS TREES	3' MIN.	N/A	4" 6" 4" 6"

NOTE:
REMOVE MULCH PLACED TO A DEPTH GREATER THAN THAT SPECIFIED WHEN DIRECTED BY THE ENGINEER.

TREE PLANTING SECTION INCLUDING DRAIN TILE

MULCH PLACEMENT DETAIL

GENERAL NOTES - SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS

SELECT TOPSOIL BORROW, FERTILIZER, COMPOST, MULCH MATERIAL, TREE STAKES, WATER, AND RELATED ITEMS ARE INCIDENTAL TO TREE PLANTING

BACKFILL SOIL: SELECT TOPSOIL BORROW - MN/DOT 3877, TABLE 3877-2

FERTILIZER: NONE

COMPOST: NONE

MULCH MATERIAL: CEDAR MULCH

TREE STAKING: TREE STAKING (ALL SIZES) WILL NOT BE REQUIRED UNLESS SPECIFIED OR NECESSARY TO MAINTAIN TREES IN A PLUMB CONDITION WHERE VANDALISM, SOIL, OR WIND CONDITIONS ARE A PROBLEM OR AS REQUESTED BY THE ENGINEER.

PLANT TYPE	AVERAGE AMOUNT OF WATER PER APPLICATION (GALLONS)
MACHINE TRANSPLANTED TREES (3" CALIPER+)	50-100
BALLED & BURLAPPED TREES	±20
BARE ROOT TREES	±15
BALLED & BURLAPPED SHRUBS	±10
BARE ROOT OR CONTAINER SHRUBS	±7
WOODY SEEDLINGS	±4
HERBACEOUS GROUNDCOVERS AND VINES	±3

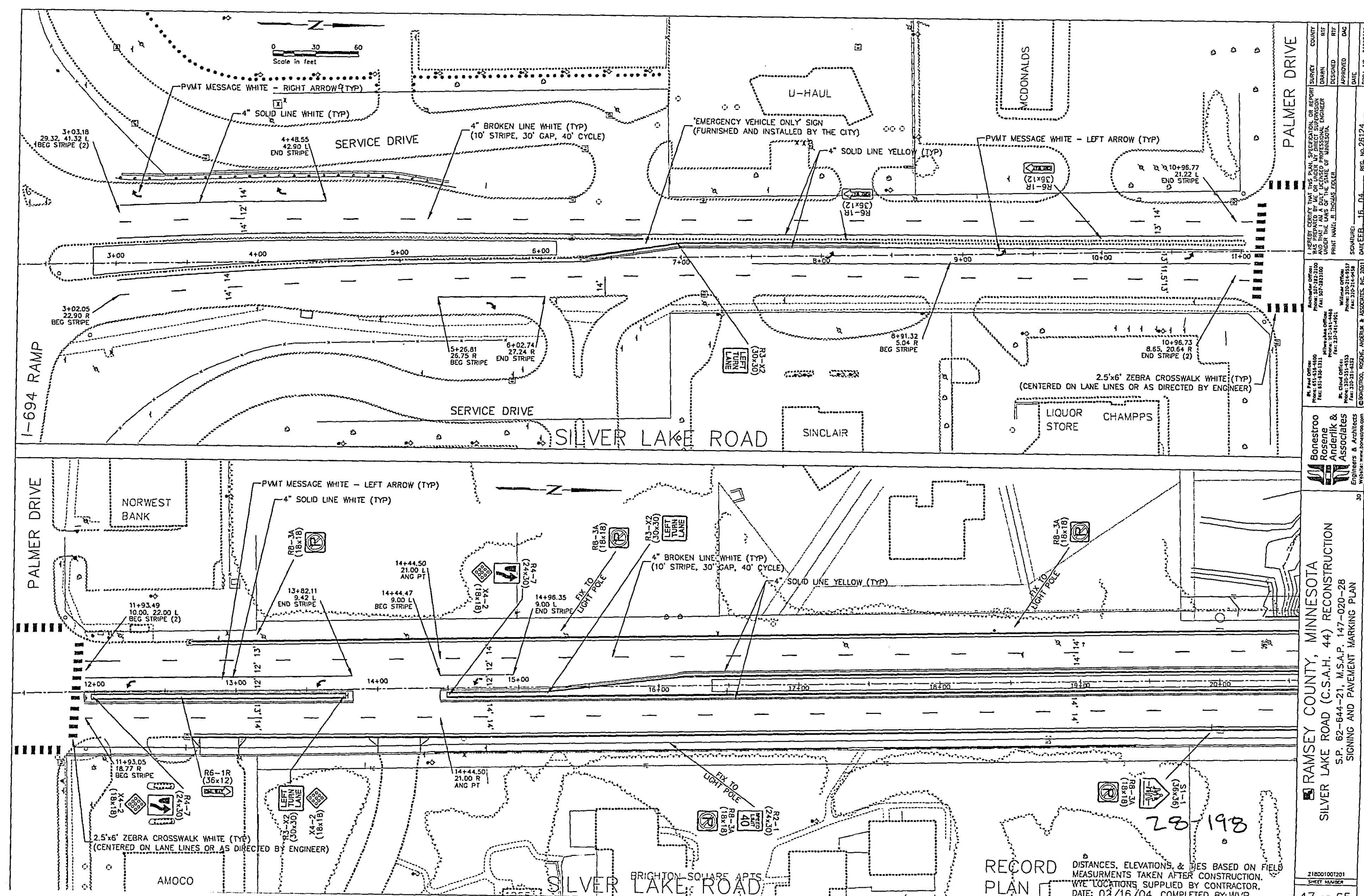
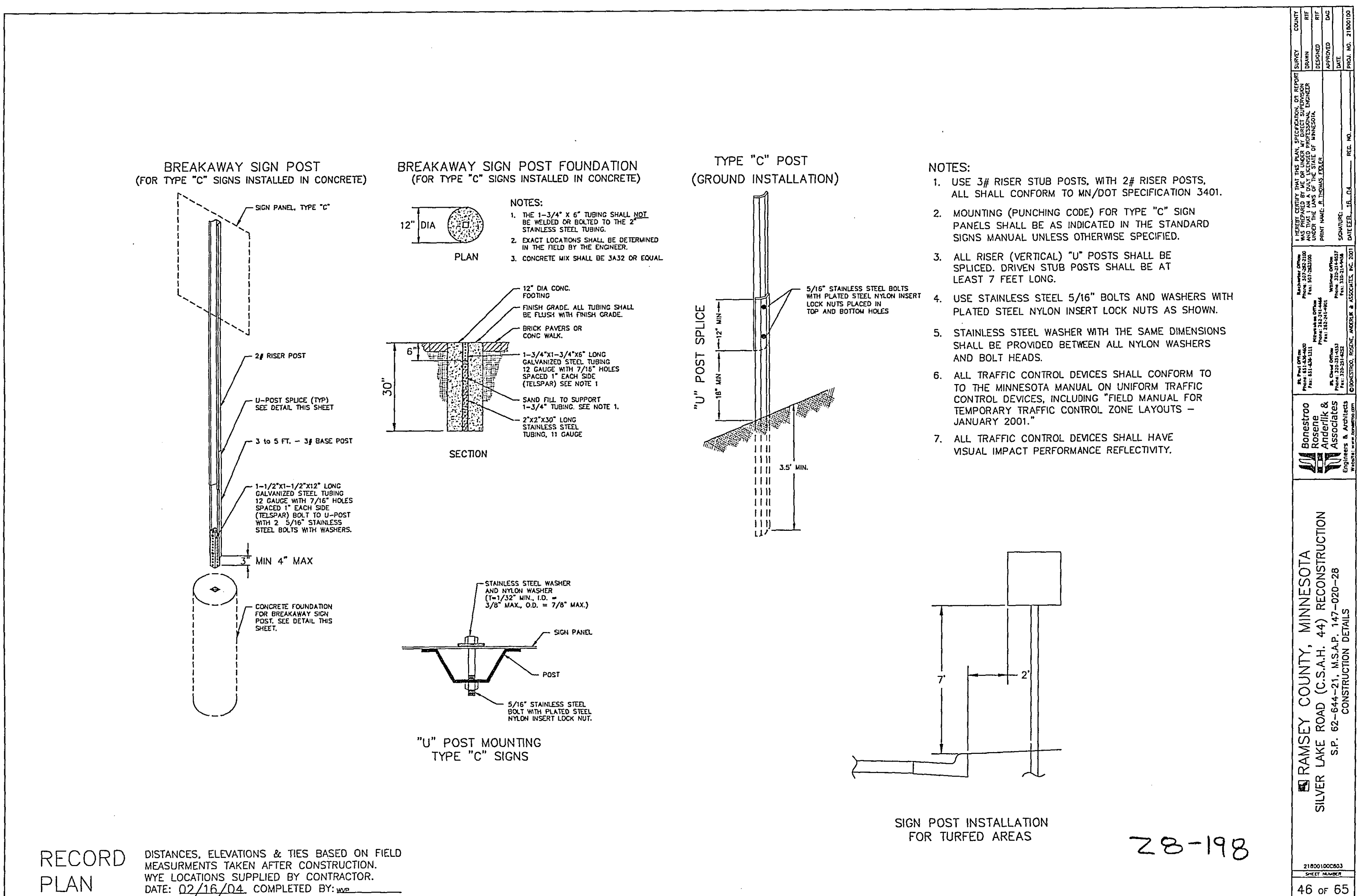
1) THE WATERING GUIDELINES ASSUME A SOIL CONDITION WITH ADEQUATE BUT NOT EXCESSIVE OR POOR DRAINAGE. WATERING INTERVALS AND AMOUNT OF APPLICATION MUST BE VARIED ACCORDING TO PREVAILING SOIL MOISTURE AND WEATHER CONDITIONS THROUGHOUT THE GROWING SEASON. ADEQUATE BUT NOT EXCESSIVE SOIL MOISTURE IN THE ROOT ZONE OF NEW PLANTINGS MUST BE MAINTAINED AT ALL TIMES THROUGHOUT THE GROWING SEASON FOR THE FIRST TWO YEARS FOLLOWING PLANTING. WATERING MAY BE REQUIRED WEEKLY OR INFREQUENTLY. THIS DETERMINATION SHALL BE MADE BY THE CONTRACTOR.

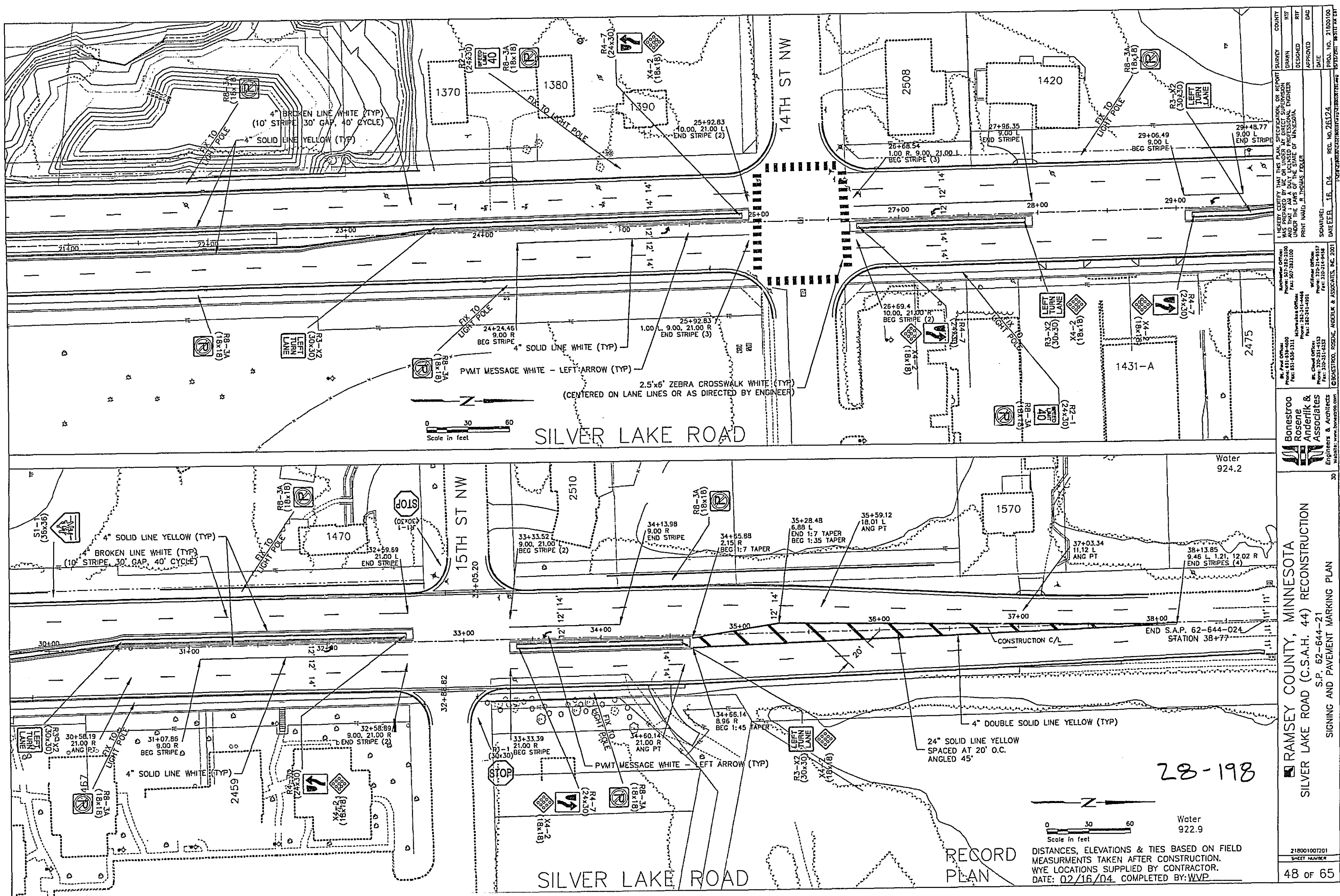
2) THE CONTRACTOR IS ADVISED THAT THE WATERING GUIDELINES ARE NOT REQUIREMENTS OF THE CONTRACT ALTHOUGH FAILURE TO CORRECT WATER DEFICITS BY SUPPLEMENTAL WATERING OR FAILURE TO COMPENSATE FOR EXCESSIVE SOIL MOISTURE AND DRAINAGE PROBLEMS MAY RESULT IN UNACCEPTABLE PLANTS LEADING TO REDUCED OR NO PAYMENT.

RECORD PLAN

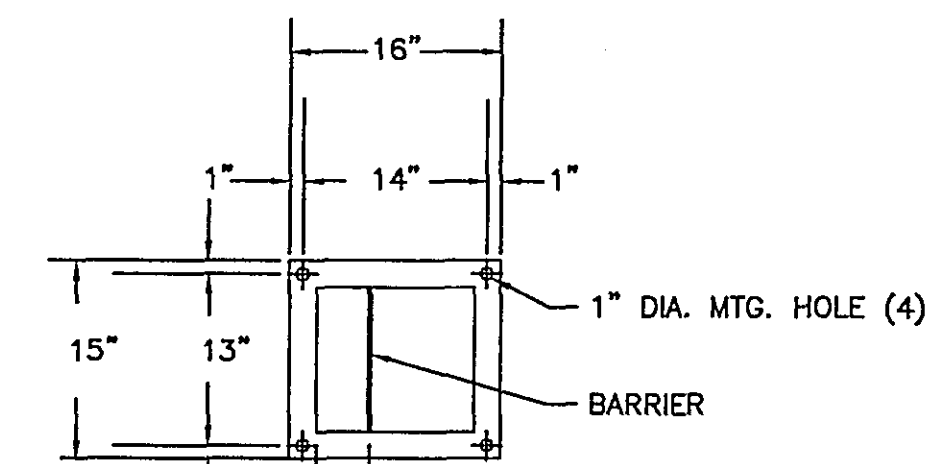
Distances, elevations & ties based on field measurements taken after construction. Wye locations supplied by contractor. DATE: 02/16/04. COMPLETED BY: WMP

REVISION	DATE
1	4-22-02
2	2-28-03
3	4-22-03
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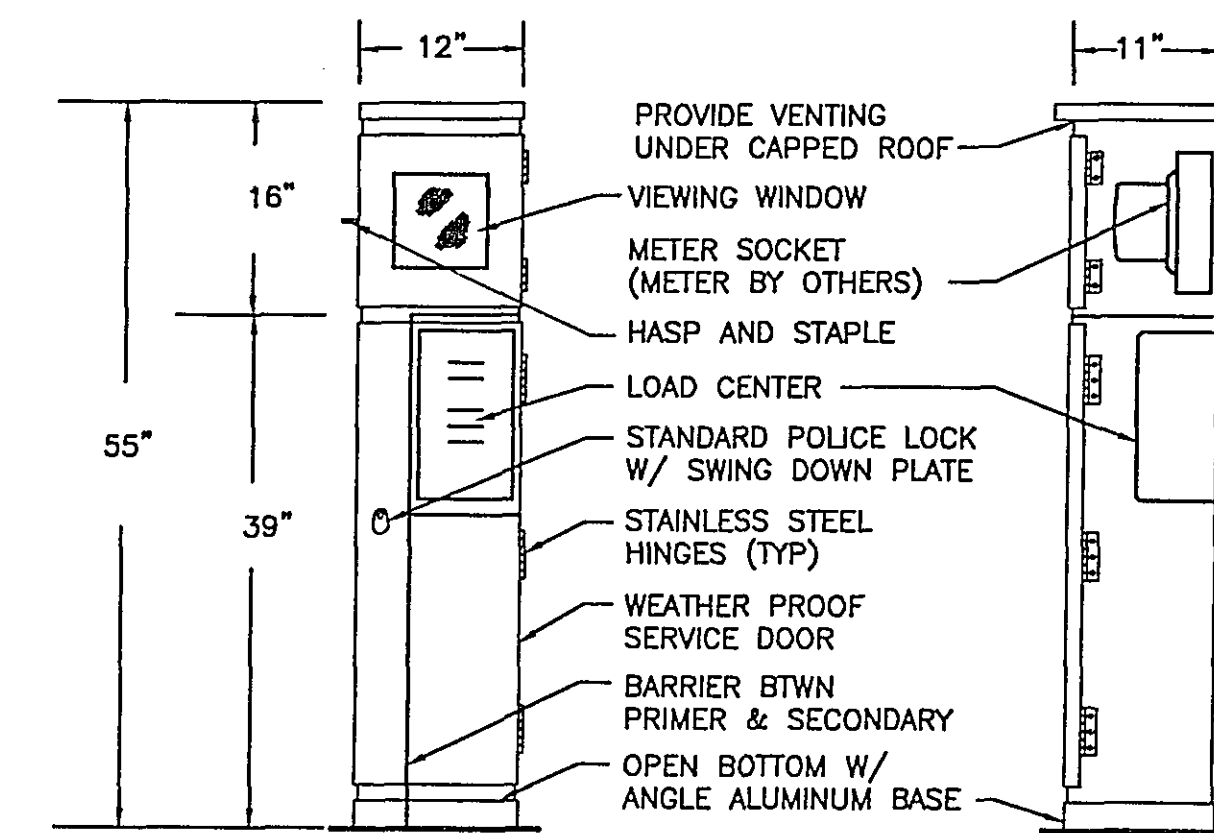




Ramsey County, Minnesota
 Silver Lake Road (C.S.A.H. 44) RECONSTRUCTION
 S.P. 02-64-21, M.S.A.P. 147-020-28
 SIGNAL PLAN - DETAILS
 48 of 65

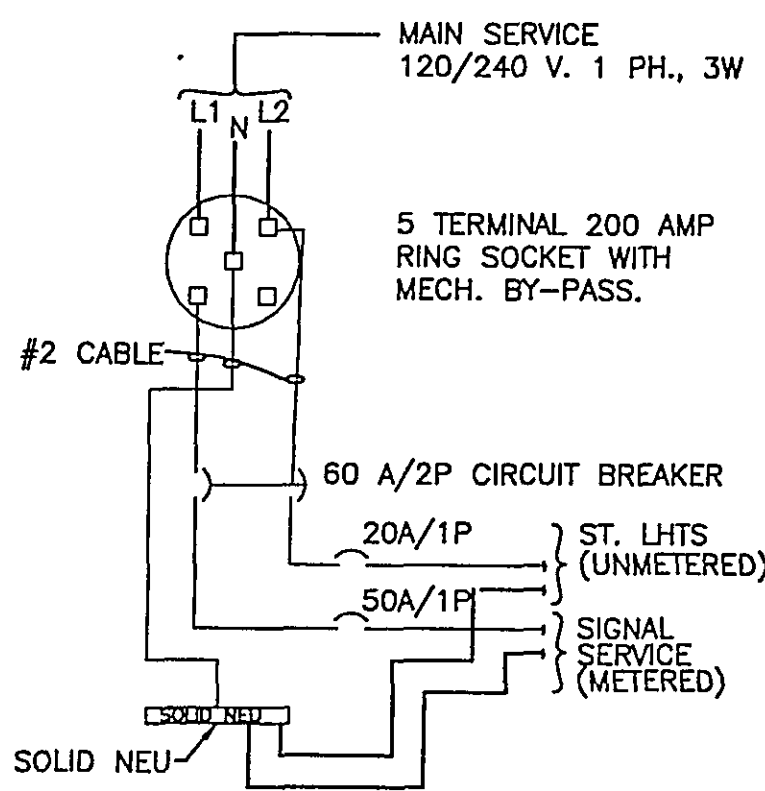


BASE LAYOUT



FRONT ELEVATION

SIDE ELEVATION



WIRING DIAGRAM

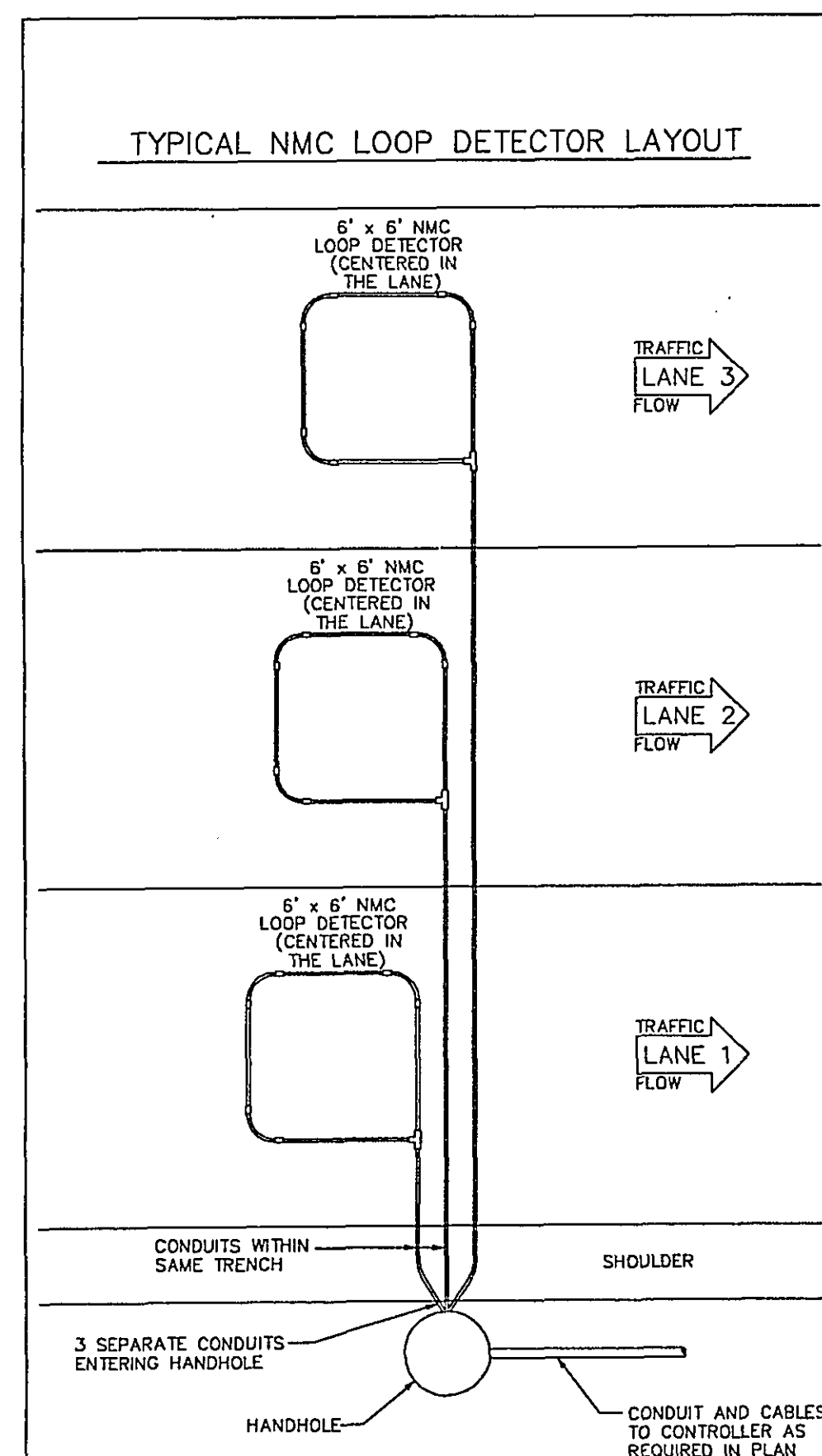
PEDESTAL SHALL BE FABRICATED FROM 0.125 INCH ALUMINUM WITH WELDED SEAMS FOR USE AS AN OUTDOOR WEATHER PROOF SERVICE.
 DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKET.
 ALL HINGES, HINGE PINS AND LOCKS SHALL BE MADE FROM NON-CORRODING MATERIALS.
 THE VIEWING WINDOW SHALL BE LEXAN MATERIAL - 7\"/>

ANCHOR RODS, NUTS & WASHERS - SEE EQUIPMENT PAD NOTE No. 1.

RECORD
 PLAN

DISTANCES, ELEVATIONS & TIES BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION.
 WYE LOCATIONS SUPPLIED BY CONTRACTOR.
 DATE: 02/16/04 COMPLETED BY: WVP

Ramsey County, Minnesota
 Silver Lake Road (C.S.A.H. 44) RECONSTRUCTION
 S.P. 02-64-21, M.S.A.P. 147-020-28
 SIGNAL PLAN - SERVICE CABINET DETAILS
 49 of 65

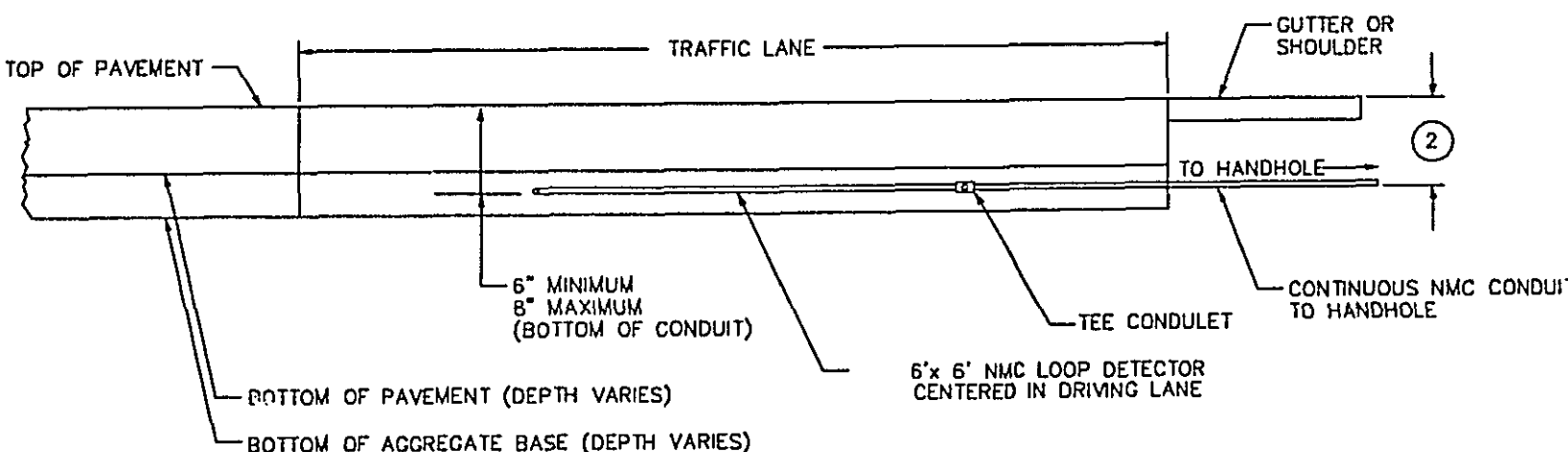


GENERAL NOTES:

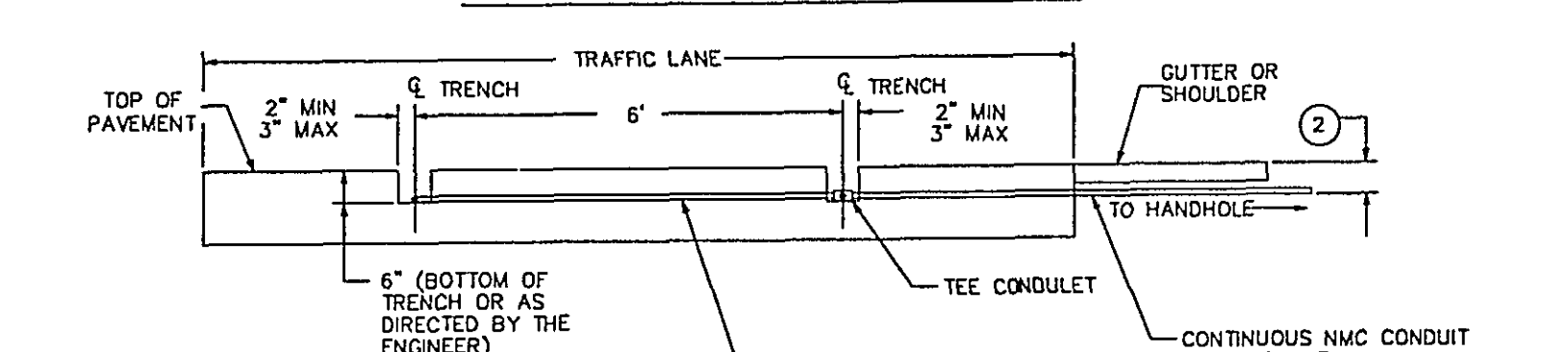
- SEE SPECIAL PROVISIONS FOR REQUIRED LOOP DETECTOR CONDUCTORS AND SPLICE KITS.
- THE 3/4\"/>

TYPICAL NMC LOOP DETECTOR INSTALLATION

NEW BITUMINOUS OR CONCRETE PAVEMENT



INPLACE BITUMINOUS PAVEMENT



NOTES:

- USE THE ACTUAL LOOP DETECTOR TO BE PLACED FOR MARKING THE PAVEMENT FOR MILLING LOCATION.
- MILL PAST THE CENTER OF THE CONDUIT TO BE PLACED.
- ACHIEVE A MINIMUM 2\"/>

RECORD
 PLAN

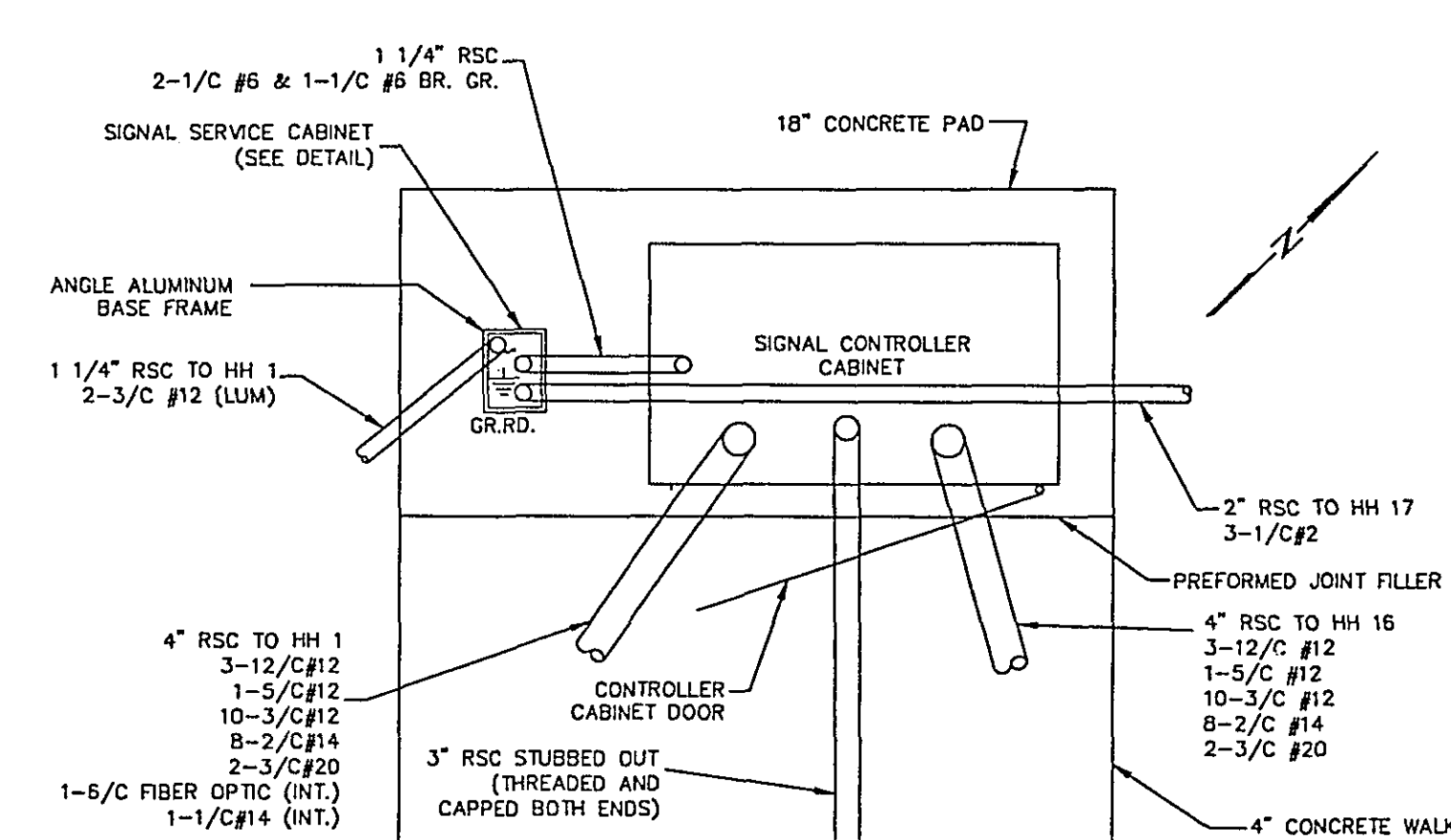
DISTANCES, ELEVATIONS & TIES BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION.
 WYE LOCATIONS SUPPLIED BY CONTRACTOR.
 DATE: 02/16/04 COMPLETED BY: WVP

Ramsey County, Minnesota
 Silver Lake Road (C.S.A.H. 44) RECONSTRUCTION
 S.P. 02-64-21, M.S.A.P. 147-020-28
 SIGNAL PLAN - DETAILS
 50 of 65

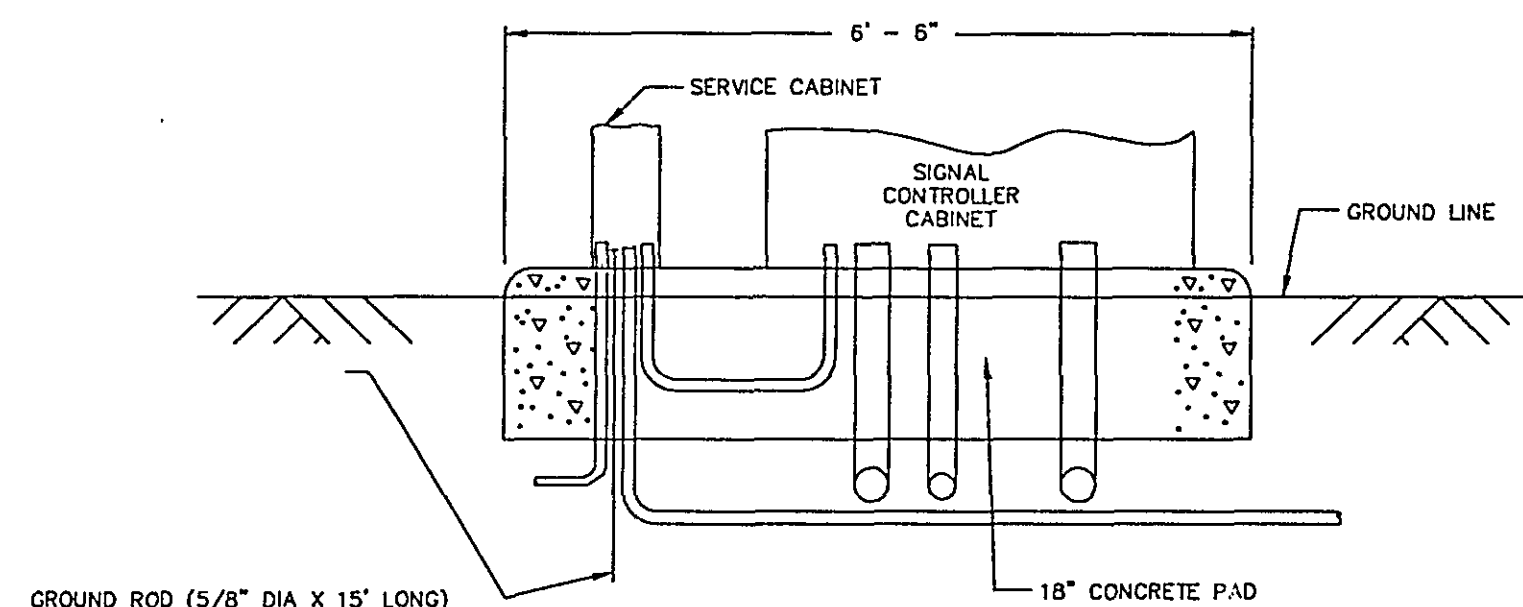
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

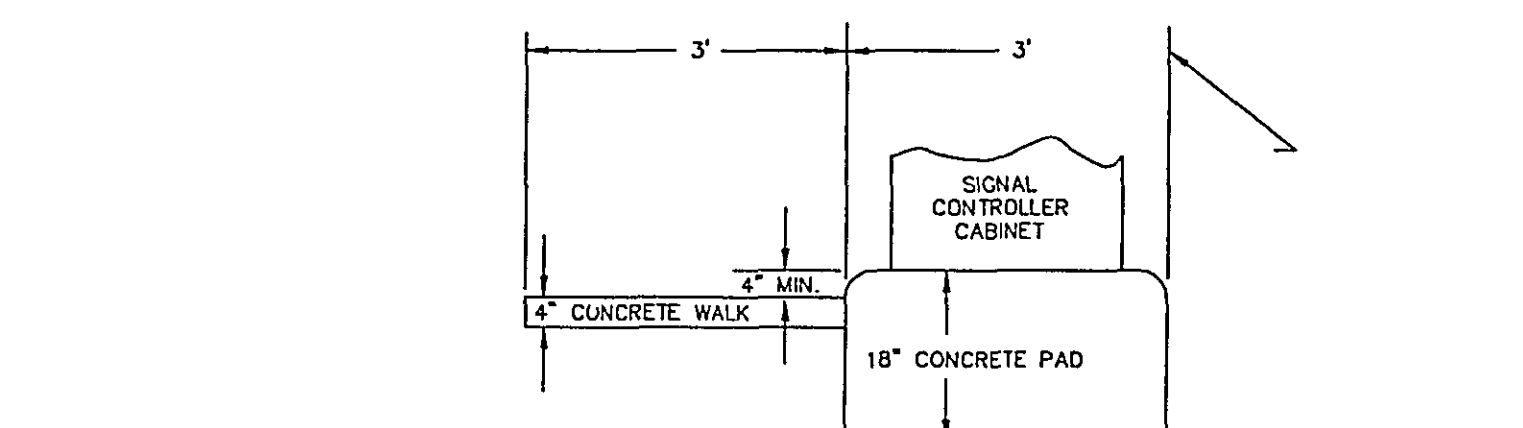
PLAN VIEW



FRONT VIEW



SIDE VIEW

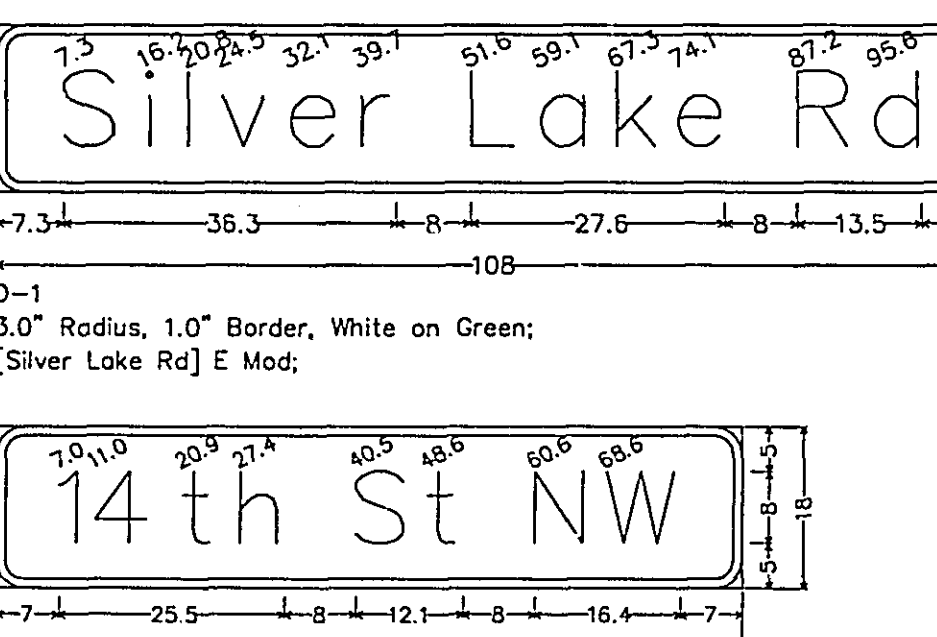
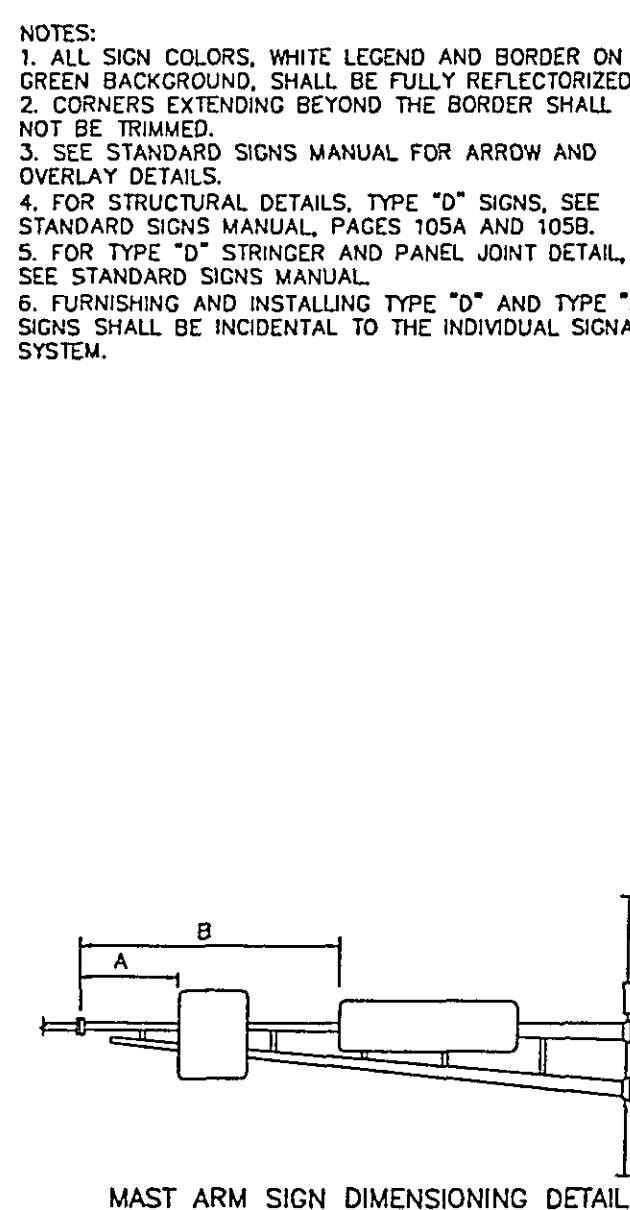


NOTES:

- THE ANCHOR RODS, NUTS AND WASHERS PER MN/DOT 3385 OR APPROVED EQUAL SET AS RECOMMENDED BY THE MANUFACTURER (NUMBER, SIZE, AND LENGTH OF ANCHOR RODS) SHALL BE AS REQUIRED BY THE CABINET (MANUFACTURER).
- THE UPPER PART OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
- THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
- CONDUIT SHALL PROJECT A MINIMUM OF 2\"/>

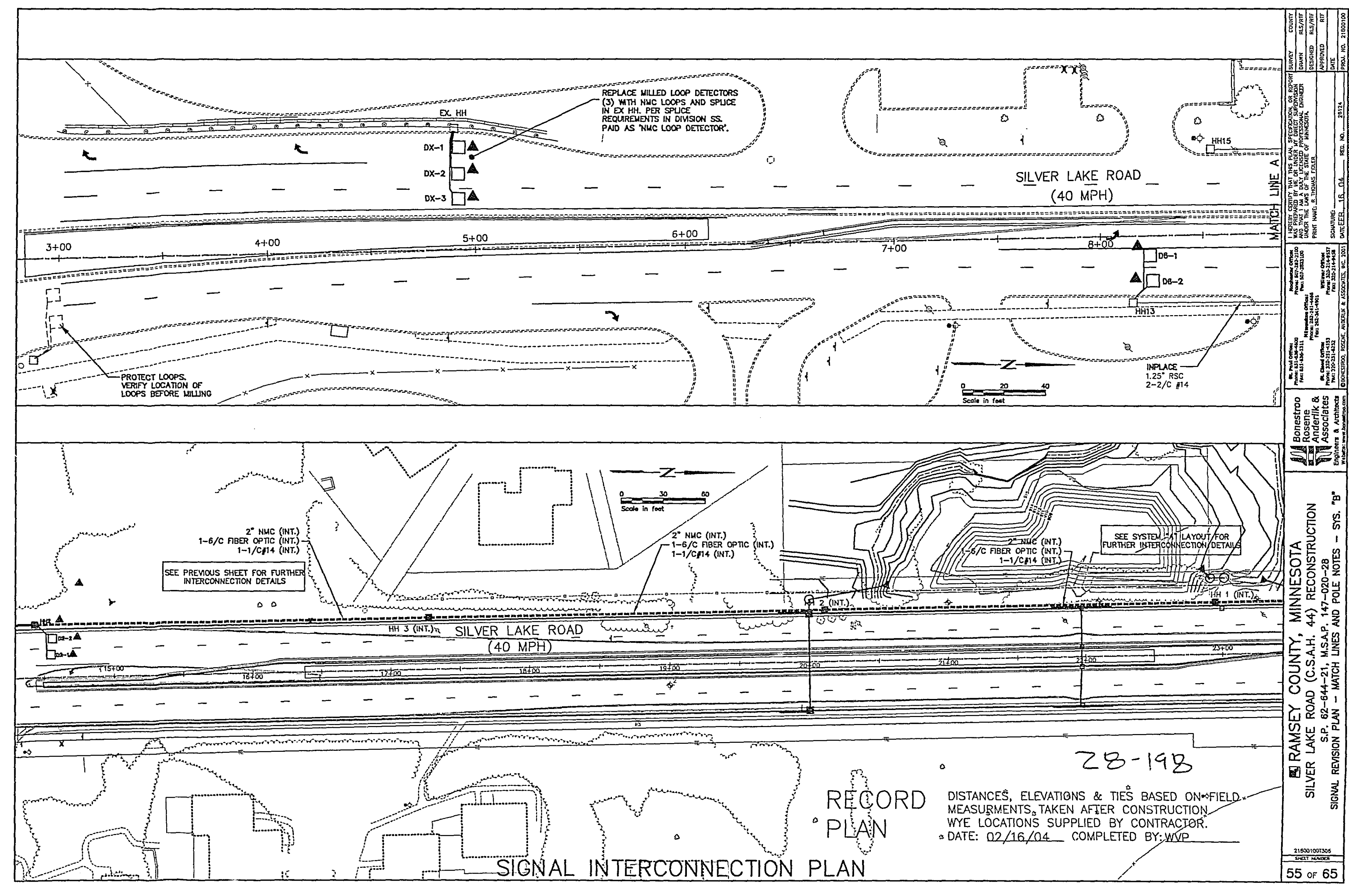
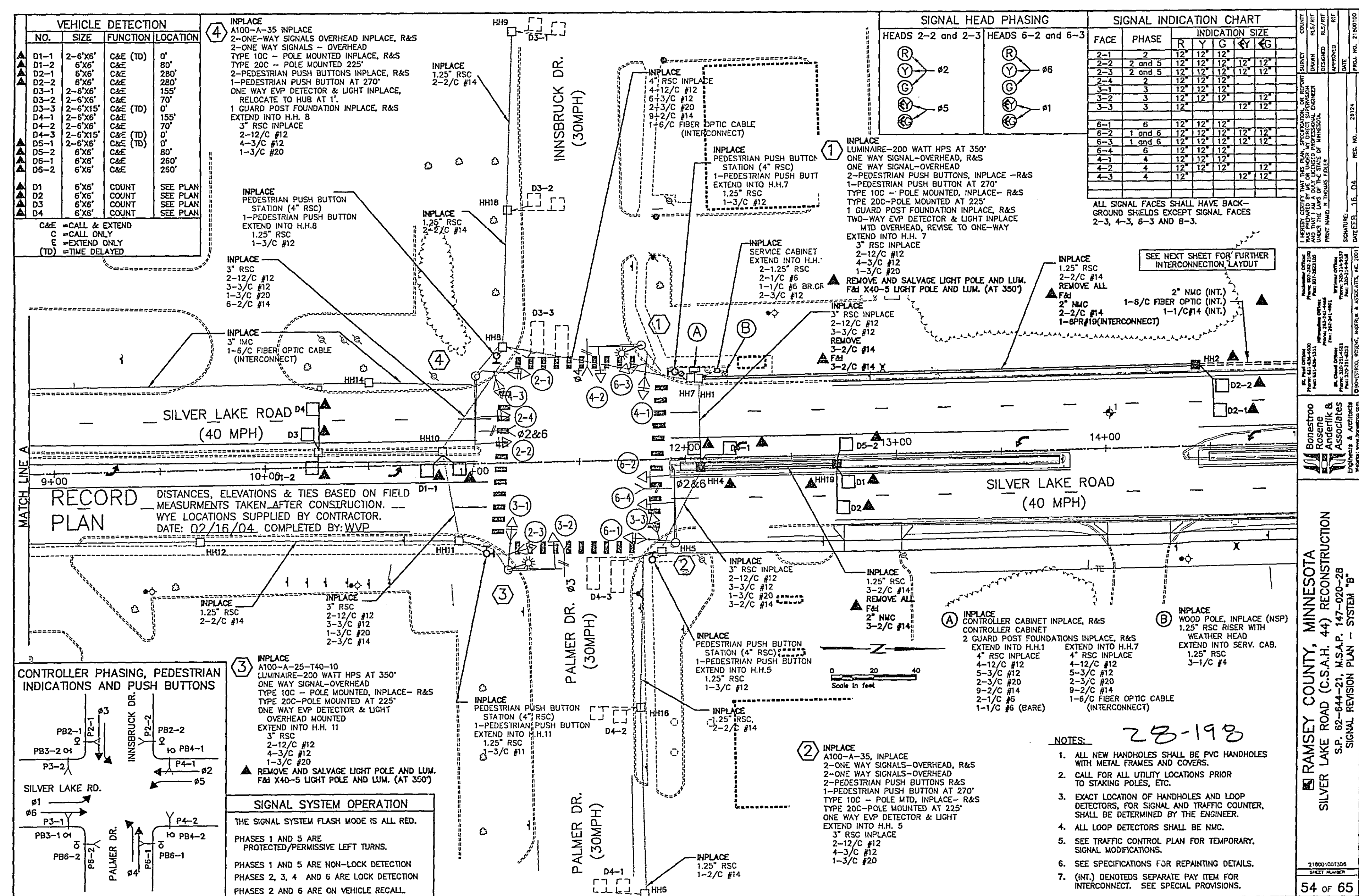
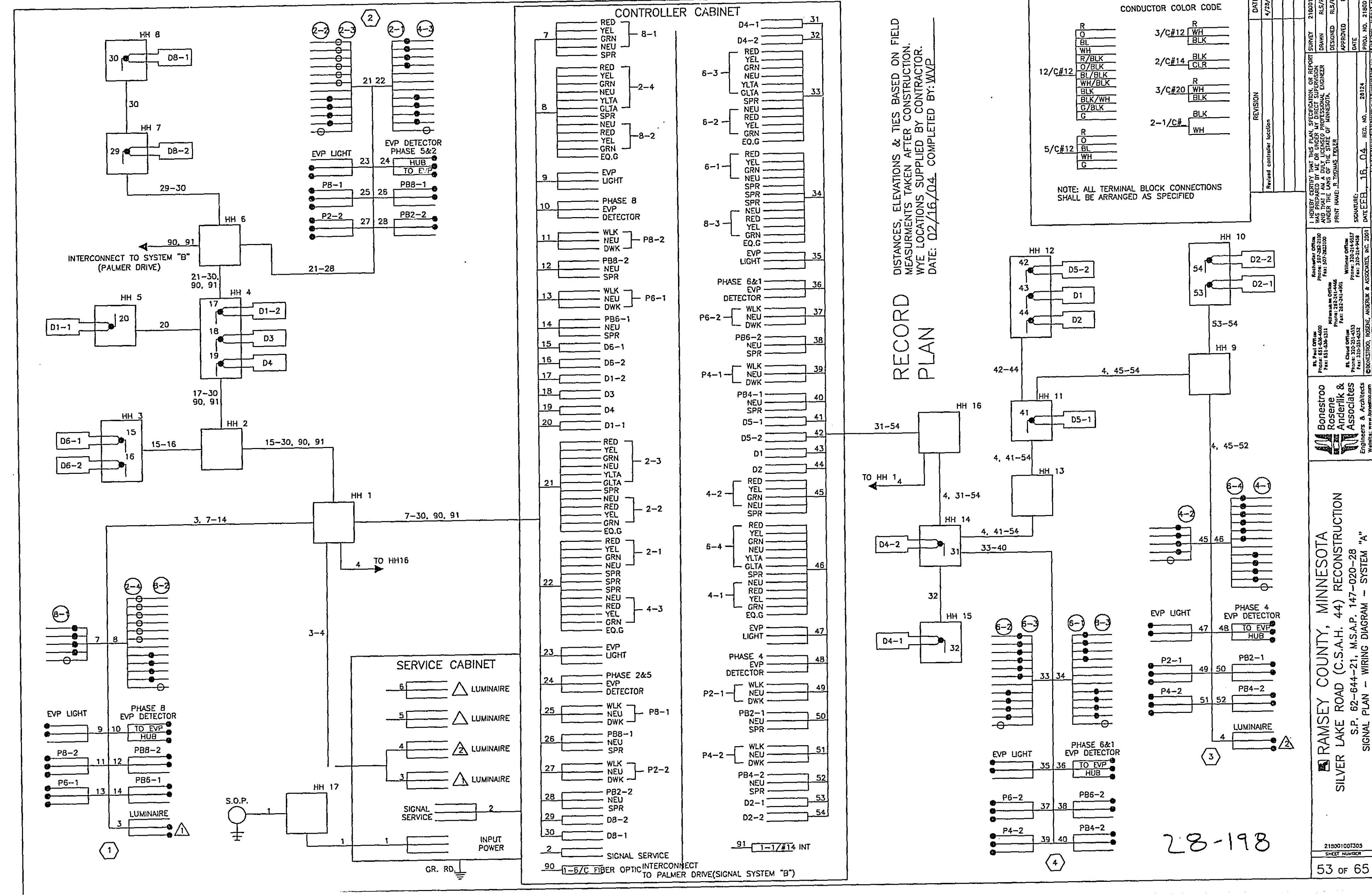
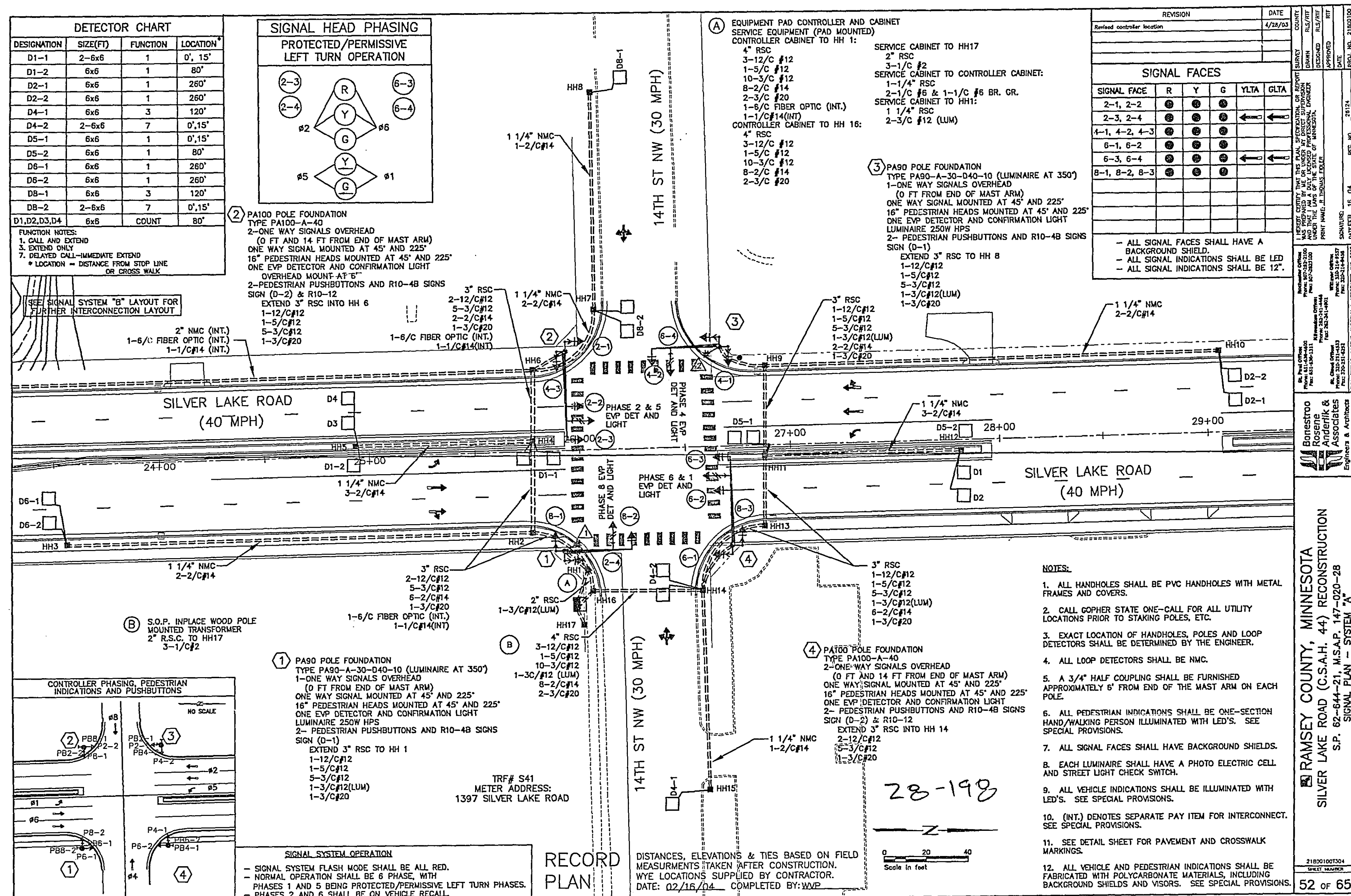
RECORD
 PLAN

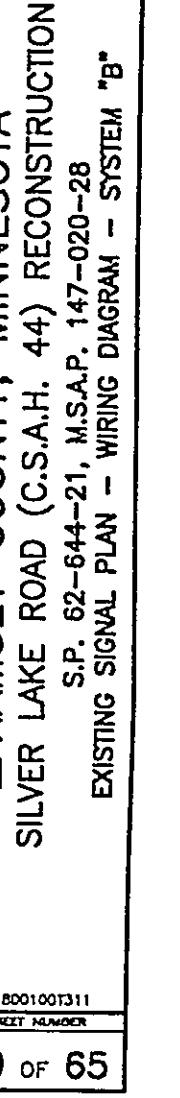
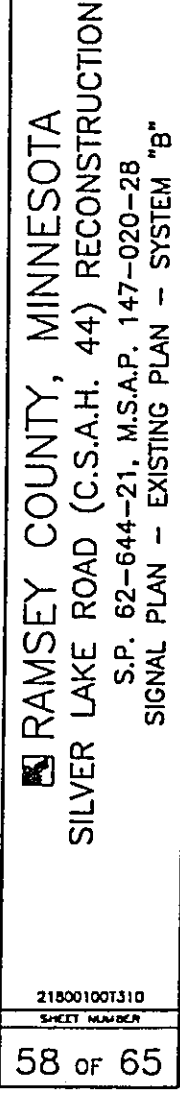
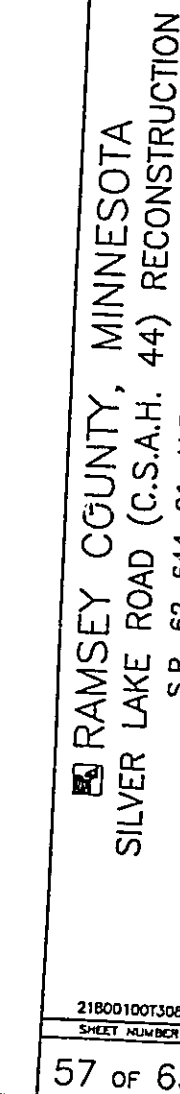
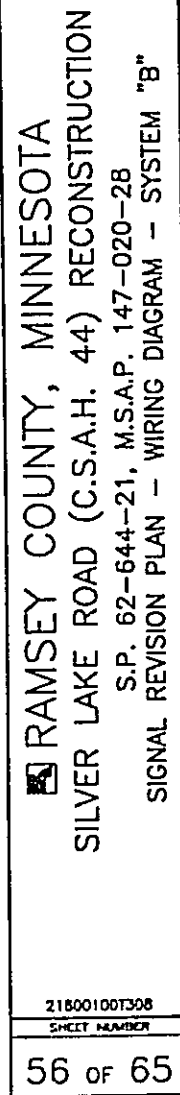
DISTANCES, ELEVATIONS & TIES BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION.
 WYE LOCATIONS SUPPLIED BY CONTRACTOR.
 DATE: 02/16/04 COMPLETED BY: WVP

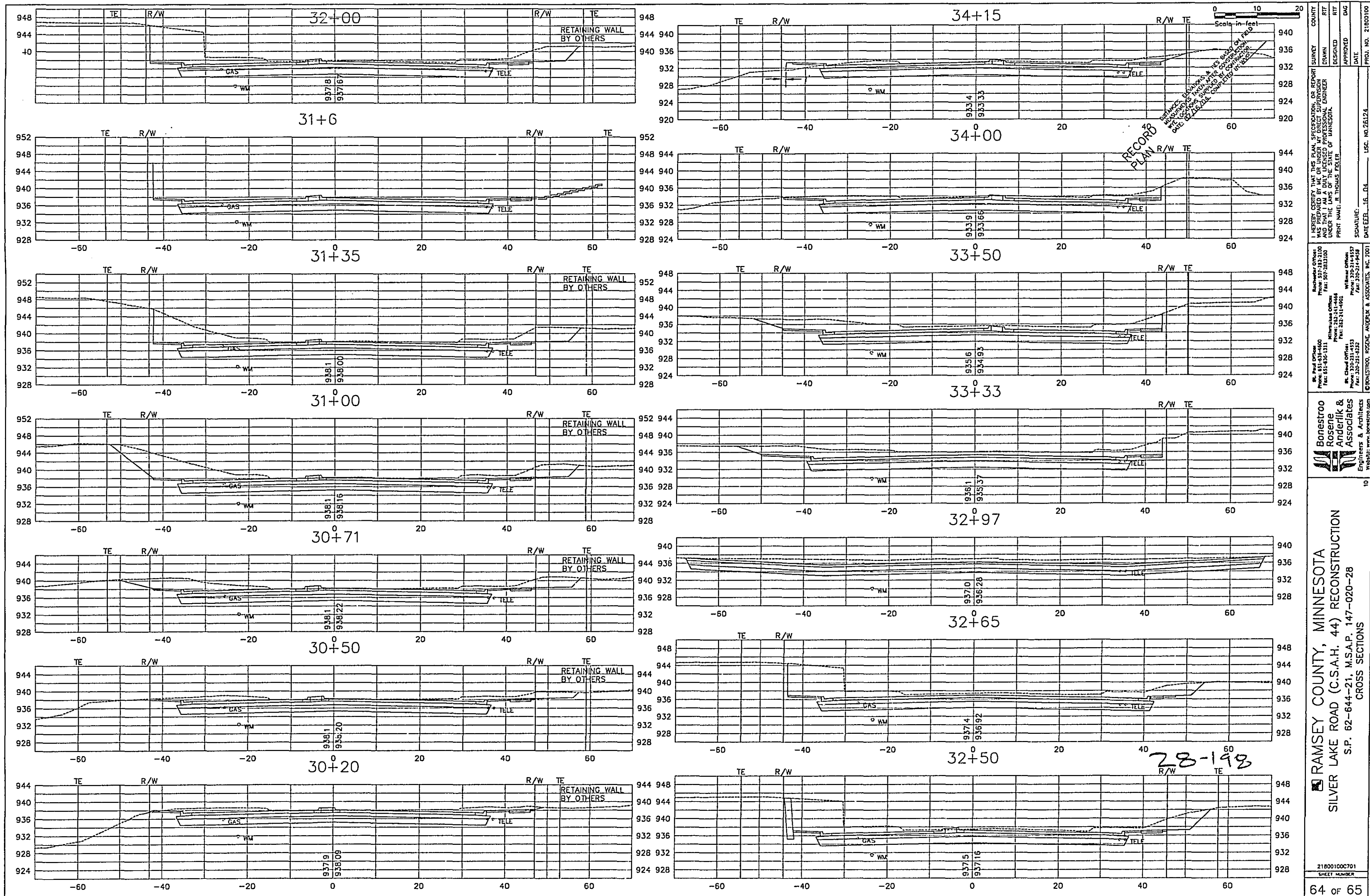


SIGN PANEL	SIZE	NO. OF SIGNS	SPACING (FEET)	SP. TO SIDEWALK (FEET)	A	B	NO. OF HOLES
D-1	108" X 18"	1	13.5	-	4.0'	(1)	
D-2	60" X 18"	1	10.5	-	21.0'	(2)	
D-1	108" X 18"	1	13.5	-	5.5'	(3)	
D-2	60" X 18"	1	10.5	-	21.0'	(4)	
R10-12	36" X 48"	1	12.0	-	-	(2)	
R10-12	36" X 48"	1	12.0	-	-	(4)	

Ramsey County, Minnesota
 Silver Lake Road (C.S.A.H. 44) RECONSTRUCTION
 S.P. 02-64-21, M.S.A.P. 147-020-28
 SIGNAL CABINET DETAIL - SYSTEM "A"
 51 of 65

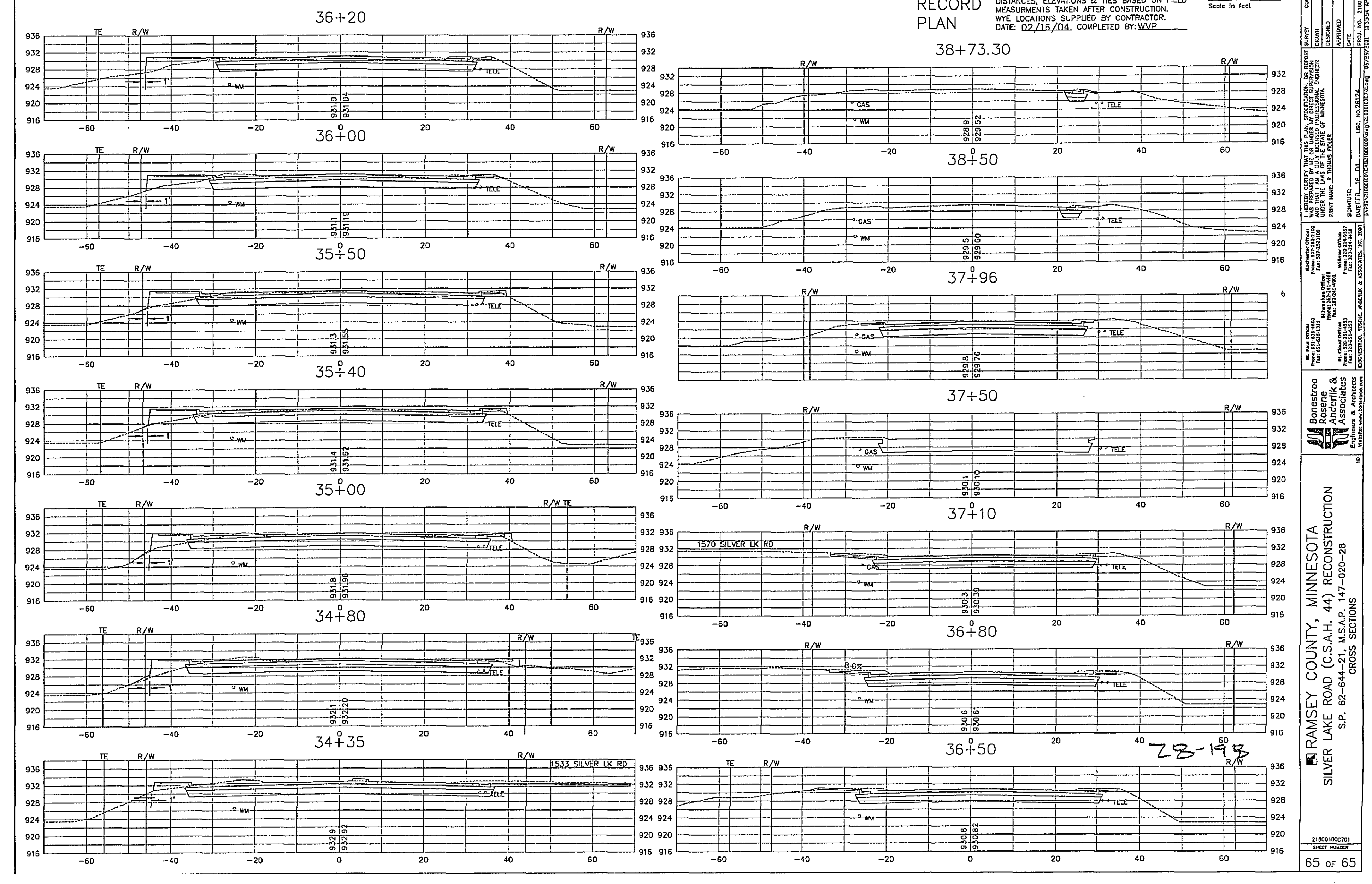






RAMSEY COUNTY, MINNESOTA
SILVER LAKE ROAD (C.S.A.H. 44) RECONSTRUCTION
S.P. 62-644-21, M.S.A.P. 147-020-28

Bonestroo
Rosenberg
Associates
Engineers & Architects
218001000701
SHEET NUMBER
64 OF 65



RECORD PLAN

DISTANCES, ELEVATIONS & TIES BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION. WYE LOCATIONS SUPPLIED BY CONTRACTOR. DATE: 02/16/04. COMPLETED BY: WVP

Scale in feet

Bonestroo
Rosenberg
Associates
Engineers & Architects
218001000701
SHEET NUMBER
65 OF 65