MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR COLD INPLACE RECYCLING, GRADING, AGGREGATE BASE, AND BITUMINOUS SURFACING.

LOCATED ON CR 72 BETWEEN WEST C.S.A.H. 24 AND EAST C.S.A.H. 24 (GEOGRAPHIC DESCRIPTION)

FROM A POINT 276.95' W. AND 1553.07' S. OF THE N.E. COR. OF SEC. 32, T-34 N. R-24 W. TO A POINT 290.37' N. AND 841.63' E. OF THE N.E. COR. OF SEC. 32, T-34 N. R-24 W. (LEGAL DESCRIPTION)

COLD INPLACE RECYCLING

COUNTY PROJ. NO. 96-18-72

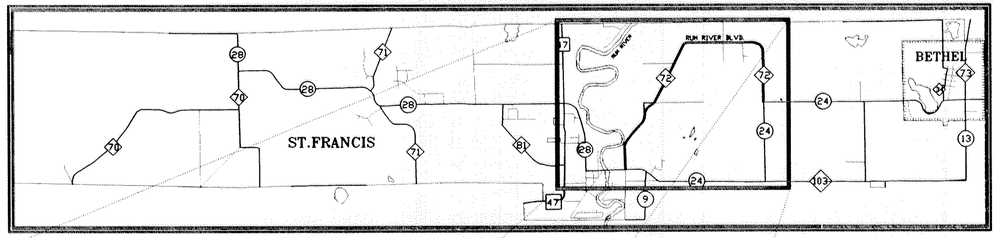
GROSS LENGTH	18,784	FEET	3.558	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	18,784	FEET	3.558	MILES

CONSTRUCTION

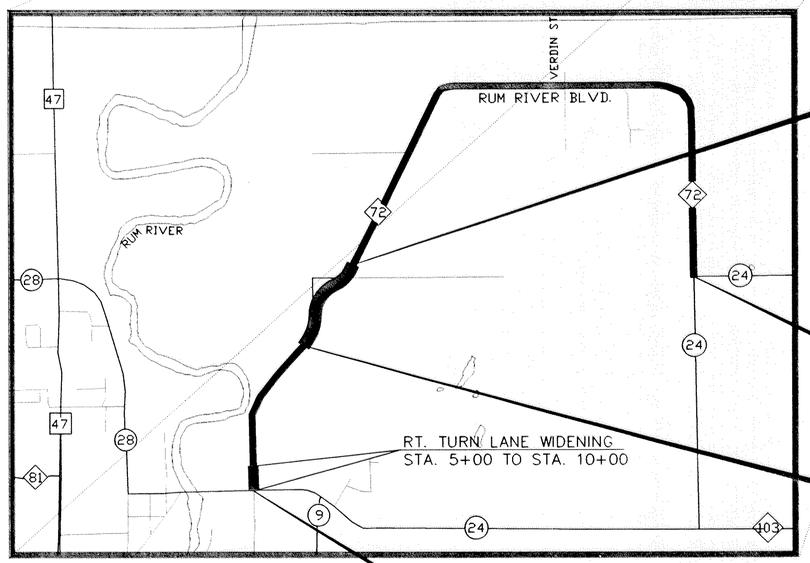
COUNTY PROJ. NO. 96-18-72

GROSS LENGTH	2,280	FEET	0.432	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	2,280	FEET	0.432	MILES

CITIES OF
ST. FRANCIS
BETHEL



INDEX MAP
1"=5000'



VICINITY MAP
1"=1000'

END RECONSTRUCTION
STA. 31+70.00 =
STA. 63+40.94

END C.P. 96-18-72
STA. 192+83.71

RT. TURN LANE WIDENING
STA. 5+00 TO STA. 10+00

BEGIN. RECONSTRUCTION
STA. 37+13.07 =
STA. 8+90.00

BEGIN. C.P. 96-18-72
STA. 5+00.00

MINN. PROJ. NO.
MINN. PROJ. NO. LOCAL FUNDS

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

INDEX

THIS PLAN CONTAINS 19 SHEETS

DESIGN DESIGNATION

$\leq N18_{20}$	297,163
R VALUE	50
ADT (1996)=	783
Proj. ADT (2016)=	1,331
Proj. HCADT (2016)=	91
Soil Factor	N/A
7 TON DESIGN	
Shoulder Width	3 FT.

Functional Classification COLLECTOR
No. of Traffic Lanes 2 No. of Parking Lanes 0
Design Speed 45 MPH
Based on Stopping Sight Distance
Height of eye 3.5' Height of object 0.5
Design Speed not achieved at:
STA. TO STA. MPH
STA. TO STA. MPH
STA. TO STA. MPH

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

DATE 8/30/96 REG. NO. 20235 ENGR. [signature] ASST. COUNTY ENGINEER

DESIGN SQUAD M. GABRCK AND M. NAJI

Approved 8/30, 1996 [signature] ANOKA COUNTY ENGINEER

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
PRESENT RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GAURD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GAURD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE
CATCH BASIN
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
GEOTECHNICAL BORINGS

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE & POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (Cable Terminal)
GAS MAIN
WATERMAIN
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

PLAN 0 50 100
PROFILE HORIZONTAL 0 50 100
VERTICAL 0 5 10
X-SECTIONS HORIZONTAL 0 10 20
VERTICAL 0 10 20
INDEX MAP 0 5000 10000

REVISIONS

DATE	BY	DATE	BY

FILE NAME: \P\96182\TITLE.DWG M.N. (08-16-96)

COUNTY PROJ. NO. 96-18-72
STATE PROJ. NO. SHEET NO. 1 OF 19 SHEETS

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES		ANOKA COUNTY C.P. 93-04-60	ANOKA COUNTY C.P. 93-04-60
				ESTIMATED	FINAL	ESTIMATED	FINAL
	2021.501	MOBILIZATION	LUMP SUM	1			
	2031.501	FIELD OFFICE TYPE-D	EACH	1			
	2101.502	CLEARING	TREE	50			
	2101.507	GRUBBING	TREE	51			
	2104.501	REMOVE CURB & GUTTER	LIN FT	51			
	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	82			
(1)	2104.513	SAWCUT BITUMINOUS PAVEMENT	LIN FT	52			
	2104.521	SALVAGE FENCE	LIN FT	410			
	2104.523	SALVAGE BRICK PILLARS	EACH	2			
	2104.523	SALVAGE SIGN TYPE C	EACH	13			
	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	1			
(2)	2105.501	COMMON EXCAVATION	CU YD	9230 (P)			
	2105.505	MUCK EXCAVATION	CU YD	723			
	2105.525	TOPSOIL BORROW (LV)	CU YD	118			
	0105.603	EXCAVATION SPECIAL	CU YD	3344			
	2123.503	MOTOR GRADER	HOUR	20			
	2130.501	WATER	M-GALLON	50			
(3)	2211.503	AGGREGATE BASE PLACED (CV), CLASS-5A	CU YD	1055(P)			
(4)	2221.501	AGGREGATE SHOULDERING, CLASS 5	TON	979			
(5)	0221.501	AGGREGATE SHOULDERING, CLASS 5, 4" THICK	TON	200			
	2232.501	MILL BITUMINOUS SURFACE	SQ YD	86			
	0331.601	COLD RECYCLE INPLACE BIT MIXTURE	SQ YD	53853			
	0331.602	BITUMINOUS MATERIAL FOR MIXTURE (CIR)	TON	168			
(6)	0331.607	WEARING COURSE MIXTURE	SQ YD-IN	1029			
	2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	7800			
	2340.514	TYPE 31 BASE COURSE MIXTURE	TON	1090			
	2356.505	BITUMINOUS MATERIAL FOR SEAL COAT	GALLON	2693			
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	400			
	0412.602	MAIL BOX SUPPORT	EACH	5			
	2501.511	15" CS PIPE CULVERT	LIN FT	250			
	2501.511	18" CS PIPE CULVERT	LIN FT	62			
	2501.515	24" RC PIPE APRON	EACH	4			
	2501.561	24" RC PIPE CULVERT, DES 3006	LIN FT	116			
	2501.567	15" CS SAFETY APRON & GRATE, DES 3128F	EACH	10			
	2501.567	18" CS SAFETY APRON & GRATE, DES 3128F	EACH	2			
	0504.602	RELOCATE HYDRANT & VALVE	EACH	2			
	2521.501	4" CONCRETE WALK	SQ FT	100			
	2531.501	CONCRETE CURB & GUTTER, DESIGN B618	LIN FT	100			
	0531.602	PEDESTRIAN CURB RAMP	EACH	1			
	0557.603	INSTALL FENCE	LIN FT	339			
	0564.602	INSTALL SIGN TYPE SPECIAL	EACH	1			
	2573.501	BALE CHECK	EACH	65			
	2573.503	SILT FENCE, PREASSEMBLED	LIN FT	785			
	2575.501	SEEDING	ACRE	3.6			
	2575.503	SEED, MIXTURE 700	POUND	126			
(7)	2575.505	SODDING, TYPE SALT RESISTANT	SQ YD	4330			
	2575.511	MULCH MATERIAL TYPE-1	TON	7.2			
	2575.519	DISK ANCHORING	ACRE	3.6			
	2575.524	TURF ESTABLISHMENT BLANKET, TYPE STRAW	SQ YD	172			
(8)	2575.531	COMMERCIAL FERTILIZER ANALYSIS 10-10-10	POUND	1865			
(9)	2580.501	TEMPORARY LANE MARKING	RD STA	211			

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3128 F	SAFETY APRON
8000 I	STANDARD BARRICADES
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

BASIS OF PLANNED QUANTITIES

2340 TYPE 41 PLANT MIXED WEARING COURSE AND BINDER COURSE
BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS

2340 TYPE 31 PLANT MIXED BASE
BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS

2357 BITUMINOUS MATERIAL FOR TACK
0.05 GALLONS PER SQ.YD. PER LIFT APPLIED

2575 MULCH MATERIAL TYPE 1,2 TONS PER ACRE

2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10
500 LBS./ACRE ON ALL SEED AND SOD AREAS

2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT
+10% SEED MIXTURE NO. 700, 35 LBS. PER ACRE

NOTES

(1) FOR ENTRANCE CONSTRUCTION IN RIGHT TURN LANE CONSTRUCTION SECTION STATION 8+00 LT.
(2) INCLUDE 210 CUBIC YARDS FOR THE RIGHT TURN LANE CONSTRUCTION. STA. 5+00 TO 10+00 LT.
(3) INCLUDE 85 CUBIC YARDS FOR THE RIGHT TURN LANE CONSTRUCTION, STA. 5+00 TO 10+00 LT.
(4) FOR AGGEGATE SHOULDERING AFTER THE PLACEMENT OF THE 41 WEAR FOR THE TOTAL LENGTH OF THE PROJECT.
(5) FOR DRIVEWAY CONSTRUCTION IN THE GRADING PORTION OF THE PROJECT, STA. 8+90 TO 31+70.
(6) INCLUDES 90 TONS FOR THE RIGHT TURN LANE CONSTRUCTION, STA. 5+00 TO 10+00 LT.
(7) INCLUDES 630 SQUARE YARDS FOR THE RIGHT TURNLANE CONSTRUCTION, STA. 5+00 TO 10+00 LT.
(8) INCLUDES 65 POUNDS FOR THE RIGHT TURN LANE CONSTRUCTION, STA. 5+00 TO 10+00 LT.
(9) INCLUDES 23 ROAD STATIONS TO BE PLACED ON THE BASE SECTION, STA. 8+90 TO 31+70.

Fed. Project No. _____

DRAINAGE CHART

STATION	LOC	INPLACE	REMARKS	SODDING CULV.PIPE SQ. YD.	REMOVE CULV.PIPE LIN.FT.	REMOVE CULV.PIPE AP.	SALVAGE CULV.PIPE LIN.FT.	SALVAGE CULV.PIPE AP.	F & I CULV. 15" CMP LIN.FT.	15" CMP AP.	18" CMP LIN.FT.	18" CMP AP.	24" RCP LIN.FT.	24" RCP AP.	LIN.FT.	AP.
9+55	33' LT.		ENT#23400	16					44'	2						
12+40	34' RT.		235th AVE	22							62	2				
13+55	30' LT.		ENT#23520	16					44'	2						
13+85	34' RT.		ENT#23525	16					54'	2						
16+75	℄			28									62	2		
18+50	42' LT.		ENT#23554	16					60'	2						
28+20	34' RT.		ENT#23787	16					48'	2						
30+50	℄			28									54	2		
			TOTALS	158					250	10	62	2	116	4		

TURF ESTABLISHMENT Ⓡ

STATION TO STATION	LOC./DESC.	SODDING SQ.YDS.	SEEDING ACRES	SEED POUND	MULCH TON	FERTILIZER POUND
9+00 - 11+80	RT.	1220				
12+50 - 13+80	LT.	575				
14+00 - 15+80	RT.	780				
17+15 - 18+70	LT.	675				
8+90 - 31+70	LT&RT		3.594	125.8	7.1	1797.4
TOTAL		3250	3.594	125.8	7.1	1797.4

CLEAR AND GRUBBING

STATION TO STATION	LOCATION	CLEARING TREE	CLEARING ACRE	GRUBBING TREE	GRUBBING ACRE
9+44	35' RT	1		1	
9+53	30' RT	1		1	
9+57	29' RT	1		1	
9+76	50' LT	1		1	
9+90	49' LT	1		1	
9+99	49' LT	1		1	
10+09	49' LT	1		1	
10+19	48' LT	1		1	
10+29	48' LT	1		1	
10+40	48' LT	1		1	
10+52	47' LT	1		1	
10+64	46' LT	1		1	
10+76	46' LT	1		1	
10+91	46' LT	1		1	
11+08	44' LT	1		1	
13+93	7' LT	1		1	
13+96	1' LT	1		1	
14+07	57' RT	1		1	
14+16	50' RT	1		1	
14+21	51' RT	1		1	
14+24	54' RT	1		1	
14+32	48' RT	1		1	
14+38	47' RT	1		1	
14+43	46' RT	1		1	
14+48	44' RT	1		1	
14+57	42' RT	1		1	
14+63	43' RT	1		1	
14+69	42' RT	1		1	
14+75	40' RT	1		1	
14+80	40' RT	1		1	
14+87	38' RT	1		1	
14+92	39' RT	1		1	
14+97	38' RT	1		1	
15+03	37' RT	1		1	
15+09	37' RT	1		1	
15+19	36' RT	1		1	
15+24	34' RT	1		1	
15+32	34' RT	1		1	
15+74	32' RT	1		2	
17+38	48' LT	1		1	
17+86	50' LT	1		1	
18+24	56' LT	1		1	
26+77	58' LT	1		1	
26+78	55' LT	1		1	
29+05	44' RT	1		1	
29+19	48' RT	1		1	
29+28	41' RT	1		1	
29+42	40' RT	1		1	
29+55	39' RT	1		1	
29+64	33' RT	1		1	
TOTALS		50		51	

SALVAGE & INSTALL FENCE

STATION	LOC.	SALVAGE	INSTALL	REMARKS
13+80-13+91	4'-44' LT	40	0	LINE FENCE
13+91-16+11	4'-33' LT	218	218	INSTALL AT R/W
16+11-16+10	33'-60' LT	27	0	LINE FENCE
18+69	56'-60' LT	4	0	LINE FENCE
18+69-18+84	56'-60' LT	16	16	INSTALL AT R/W
29+28-30+33	34'-41' LT	105	105	INSTALL AT R/W
TOTALS		410	339	

DRAINAGE CHART
TURF ESTABLISHMENT
CLEAR AND GRUBBING
SALVAGE & INSTALL FENCE

REVISIONS

DATE	BY	DATE	BY

TABULATION CHARTS

CERTIFIED BY Douglas M. Esch P.E. REG NO. 20235 8/30 19 96 | S.P. _____ S.A.P. _____ C.P. 96-18-72 | Sheet No. 3 of 19 Sheets

Fed. Project No. _____

CONCRETE CURB & GUTTER REMOVAL

STATION - STATION	LOCATION	REMARKS	LIN.FT.
5+00	LT		51
TOTAL			51

SAWCUT BITUMINOUS

LOCATION		REMARKS	LIN. FT.
8+00	LT		52
TOTAL			52

BITUMINOUS REMOVAL

STATION - STATION	LOCATION	REMARKS	SQ.YD.
8+00			82
TOTAL			82

BALE CHECKS

STATION	LOCATION	REMARKS	EACH
13+00	LT		5
13+25	LT	CULVERT INLET	1
12+00	RT	CULVERT INLET	1
13+60	RT	CULVERT INLET	1
15+00	RT		5
16+75	LT	CULVERT INLET	1
18+75	LT	CULVERT INLET	1
20+00	RT		5
20+00	LT		5
23+00	RT		5
26+00	LT		5
28+00	LT		5
27+75	RT		5
29+50	LT		5
29+50	RT		5
29+75	RT	CULVERT INLET	1
30+50	LT	CULVERT INLET	1
31+00	LT		5
TOTAL			62

TABULATION CHARTS

CONCRETE CURB & GUTTER REMOVAL
BITUMINOUS REMOVAL
SAWCUT BITUMINOUS
BALE CHECKS

CERTIFIED BY Douglas M. Finch P.E. REG NO. 20235 exp 19 96

S.P. _____ S.A.P. _____ C.P. 96-18-72

Fed. Project No. ________

EARTHWORK SUMMARY

EXCAVATION

COMMON EXCAVATION . . . 9,230 CU. YD.
- REGULAR. . . . 6887 CU. YD. ①
- SUBCUT . . . . 1314 CU. YD. ②
- TOPSOIL . . . . 1029 CU. YD. ②

MUCK EXCAVATION . . . . .723 CU. YD.

EXCAVATION SPECIAL . . . .3344 CU. YD.

EMBANKMENT (CV)

GRANULAR. . . . 4919 CU. YD. ③

SUBCUT . . . . 1314 CU. YD.

TOPSOIL. . . . . 1801 CU. YD.

BALANCE

TOPSOIL
TOPSOIL DRESSING (CV) – [TOPSOIL STRIPPING (EV) x SHRINKAGE FACTOR] = EXCESS(–) OR SHORTAGE(+)

1,801 – (1,493 x 0.85) = 532 CU. YD. SHORTAGE

GRANULAR
GRAN(CV)+SUBCUT – [REGULAR EXCAVATION (EV) x SHRINKAGE FACTOR] – [SUBCUT EXCAVATION x SHRINKAGE FACTOR] = EXCESS(–) OR SHORTAGE(+)

4919+1314 – (6887 x 0.85) – (1314 x 0.90) = –804 CU. YD. EXCESS

MUCK
TOPSOIL SHORTAGE – [MUCK EXCAVATION (EV) x SHRINKAGE FACTOR] = EXCESS(–) OR SHORTAGE(+)

532 – (723 x 0.60) = 98 CU. YD. SHORTAGE
98 x 1.2 = 118 CU. YD. (LV)

SOIL FACTORS:

(1) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV): 85% SHRINKAGE
(2) SUBCUT COMPACTION (EV TO CV): 90% SHRINKAGE
(3) GRANULAR BORROW (CV TO LV): 120% SWELL
(4) MUCK EXCAVATION (EV TO CV): 60% SHRINKAGE

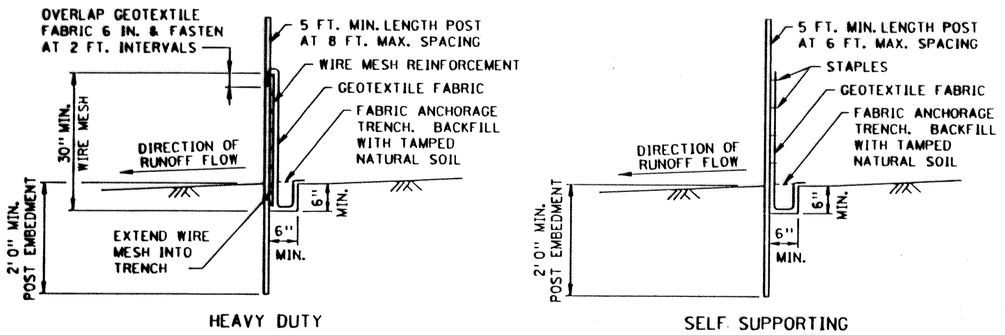
① 6,666 CU. YD. FOR NEW CONSTRUCTION AND 221 CU. YD. FOR TURN LANE CONSTRUCTION
② NEW CONSTRUCTION ONLY
③ 4,862 CU. YD. FOR NEW CONSTRUCTION AND 57 CU. YD. FOR TURN LANE CONSTRUCTION
④ INCLUDES 2880 CU. YD. REGULAR EXCAVATION AND 464 CU. YD. TOPSOIL STRIPPING

SOILS AND CONSTRUCTION NOTES:

1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF SELECT GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B.
5. COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD"
6. TEST ROLLING WILL NOT BE REQUIRED.
7. BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
8. DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D WITH NO DIRECT COMPENSATION THEREFORE.
9. WHERE MATCHING INTO THE INPLACE ROADWAY AT THE ENDS OF CONSTRUCTION, CUT VERTICALLY TO THE TOP OF THE GRADING GRADE, AND THEN AT A 20:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
10. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
11. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE OR BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT UNIFORM RATE OF 0.03 TO 0.05 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY); ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
12. COMPACTION OF ALL OF THE BITUMINOUS COURSES SHALL BE BY THE "MODIFIED SPECIFIED DENSITY METHOD".
13. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD".
14. PLACE MINIMUM 4 INCHES TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 10–10–10, AT A RATE OF 500 POUND PER ACRE.
15. USE MIXTURE 700 SEED AND TYPE 1 MULCH IN AREAS TO BE SEEDED.
16. SOD ALL DISTURBED LAWNS.
17. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2C (SALT RESISTANT SOD).
18. ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1 1/2:1 SLOPE FROM THE BACK OF CURB, OR GRADING P.I.
19. BITUMINOUS REMOVAL QUANTITY BASED ON SQUARE YARDS REMOVED. IN PLACE SURFACE ASSUMED TO BE 5 INCH IN DEPTH.(2" BIT. ENT.) CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.
20. ALL EROSION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.

TABULATION CHARTS,
EARTHWORK SUMMARY

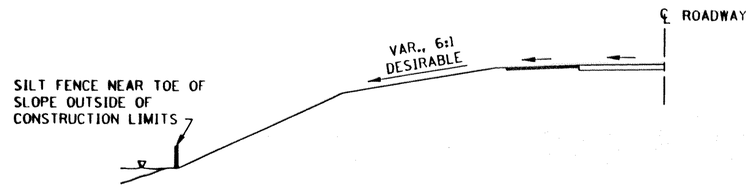
CERTIFIED BY Douglas W. [signature] P.E. REG NO. 20235 5/30 19 96 | S.P. ________ S.A.P. ________ C.P. 96-18-72 | Sheet No. 5 of 19 Sheets



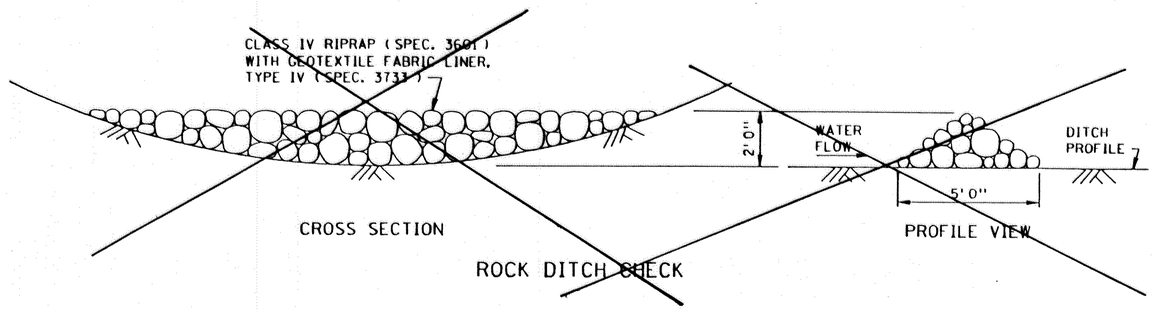
SILT FENCE DETAILS

TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)

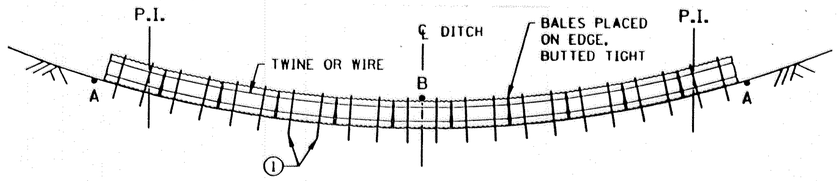
DESIGN CRITERIA:
MAXIMUM CONTRIBUTING AREA: 3 ACRES



ROADWAY EMBANKMENT

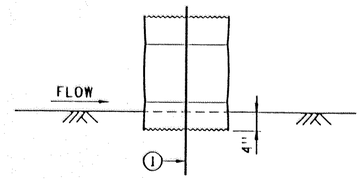


ROCK DITCH CHECK

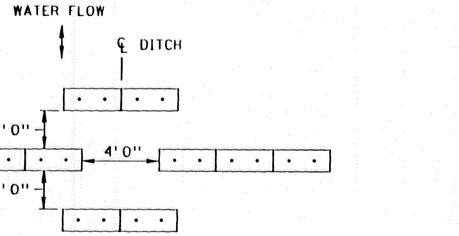


NOTE:
POINT A MUST BE HIGHER THAN POINT B

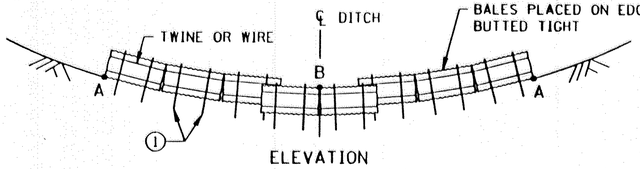
BALE DITCH SEDIMENT CHECK



BALE CHECK DETAIL



PLAN VIEW



ELEVATION

NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(WILL REQUIRE A MINUMUM OF 10 BALES PER SITE)

RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE (%)	SPACING (FT.)
2	100
4	75
6	50
8	40
10	25

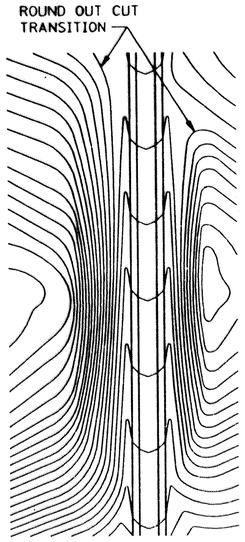
DESIGN CRITERIA:

	BALE	ROCK
STORM FREQUENCY:	2 YR. - 24 HR.	10 YR. - 24 HR.
MAX. FLOW VELOCITY:	5 FT./SEC.	12 FT./SEC.
MAX. DITCH GRADE:	5%	—
MAX. DRAINAGE AREA:	2 ACRES	5 ACRES

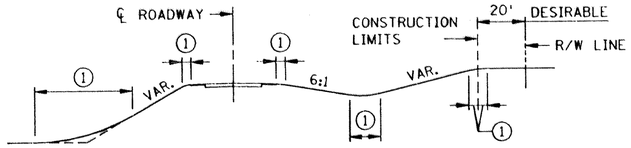
NOTE:
① TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

STANDARD SHEET NO. 5-297.405 (2 OF 3)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: MAY 1, 1995	
STATE PROJ. NO. ~~GP 96-18-72~~	SHEET NO. 6 OF 19 SHEETS

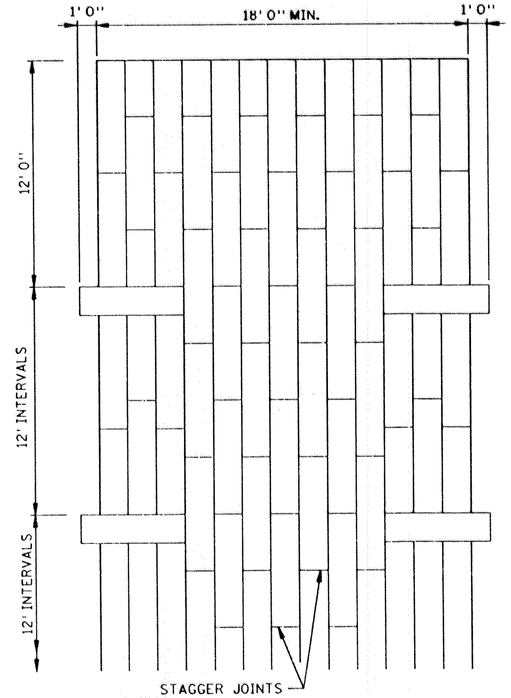
SERVER CA64S1s/USR/STANDARDS FILE NAME S4052E95.SPN



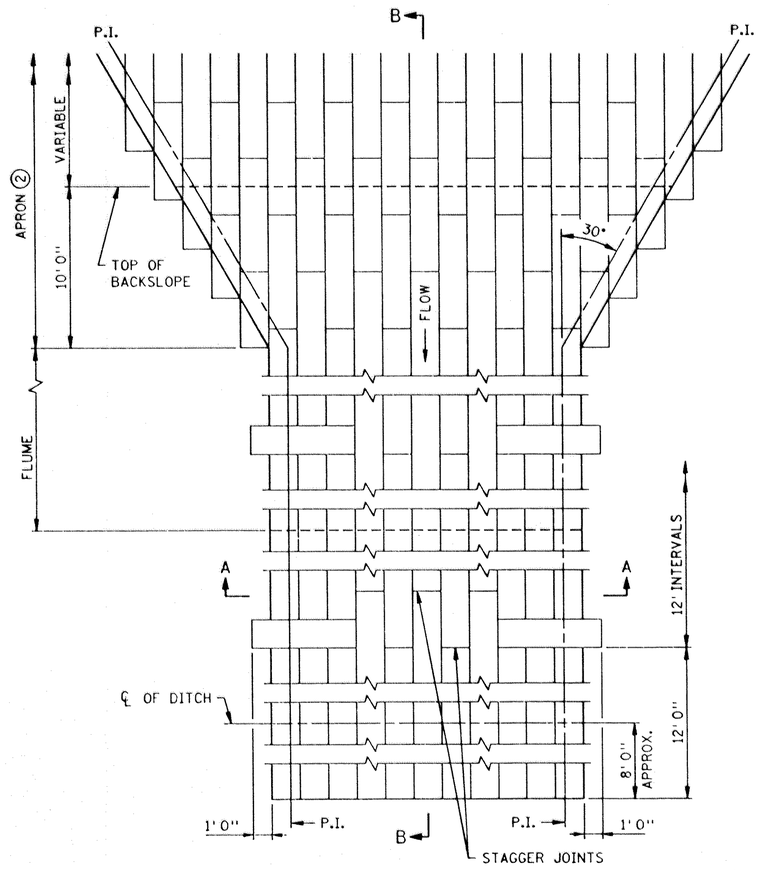
CONTOURING ROAD CUTS



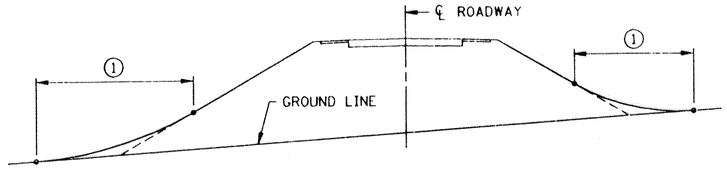
ROUNDING SHOULDERS AND BACKSLOPES



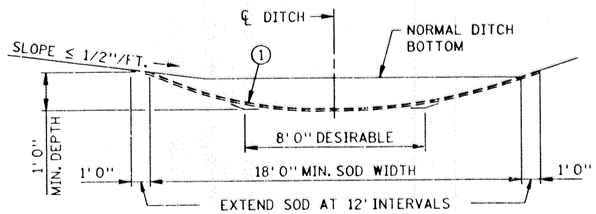
PLAN VIEW



PLAN VIEW

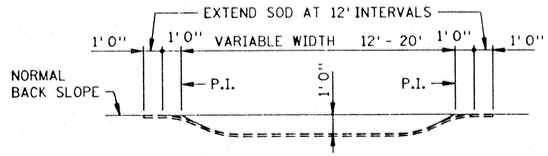


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

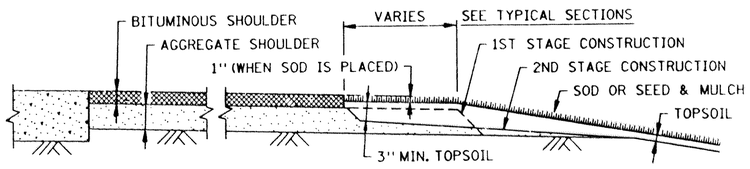


SODDED DITCH CROSS SECTION

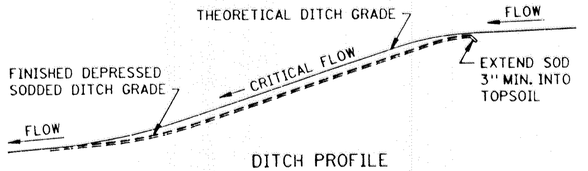
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THAN PROVIDE ROUNDING.



SECTION A-A

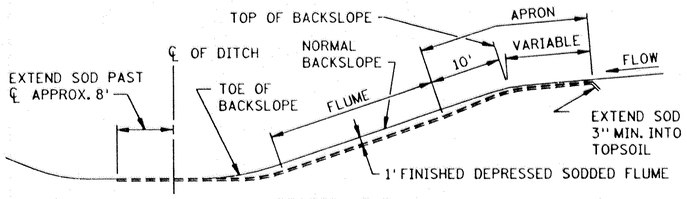


SHAPING AND TOPSOILING INSLOPES



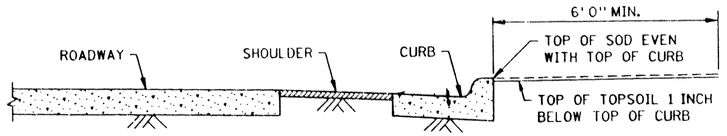
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B-B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① FOR ROUNDING, SEE ROAD DESIGN MANUAL.

② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. CP 96-18-72	SHEET NO. 7 OF 19 SHEETS

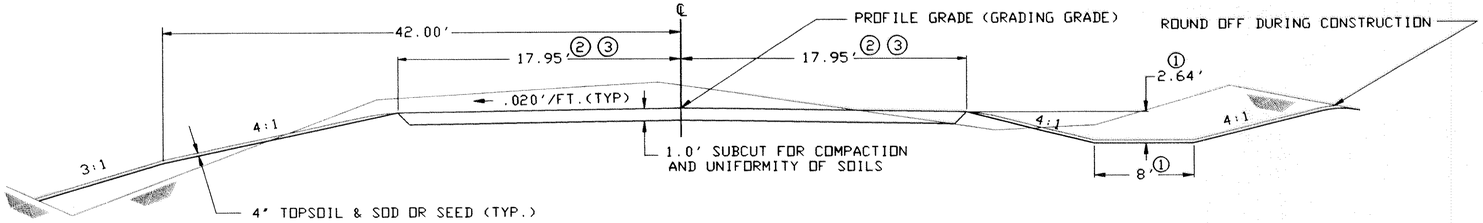
/AX780 QSA3:[45,100] FILE NAME S404L90.SPN

Fed. Project No. _____

GRADING SECTION

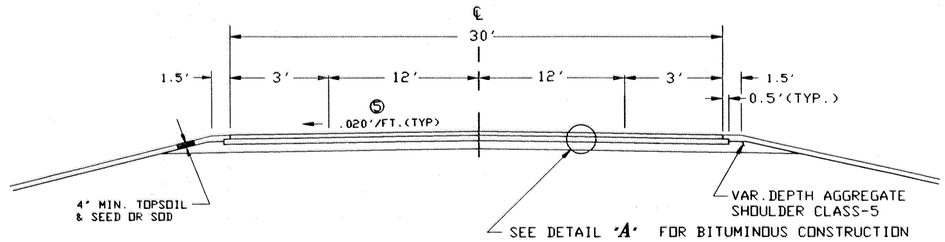
(STA.37+13.07=STA.8+90.00)
STA.8+90.00 - STA.31+70.00
(STA.31+70.00=STA.63+40.94)

NEW CONSTRUCTION TYPICAL



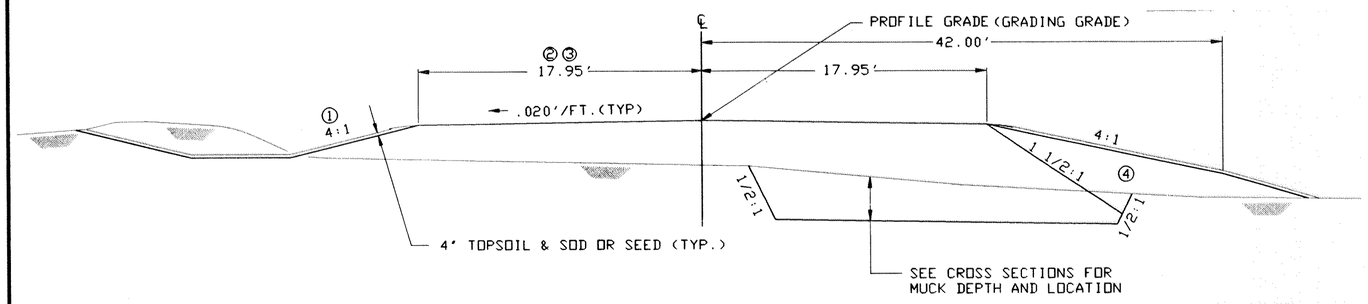
TYPICAL BASE & SURFACING SECTION

STA.8+90.00 - STA.31+70.00

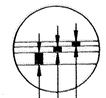


GRADING SECTION

MUCK EXCAVATION AREAS
STA.15+50 - STA.18+00
STA.28+70 - STA.31+33



DETAIL 'A'



2' TYPE-41 WEARING COURSE-SPEC.2340
BITUMINOUS MIX DESIGNATION 41WE50055Y
2' TYPE-31 BASE COURSE - SPEC 2340
BITUMINOUS MIX DESIGNATION 31BIB50000Y
4' AGGREGATE BASE CL-5A, SPEC. 2211

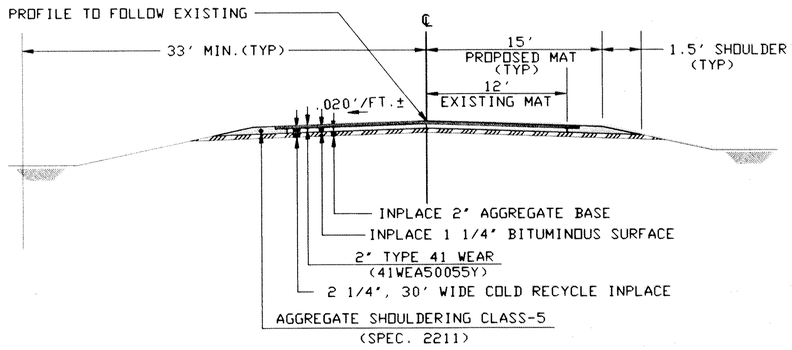
① FOR SPECIAL DITCHES & SLOPES SEE PLAN AND PROFILE AND CROSS SECTION SHEETS.
② 17.58' ON LOW SIDE IN SUPERELEVATION 29.4' IN LOW SIDE OF SUPERELEVATION IN RIGHT TURN LANE.
③ 18.25' ON HIGH SIDE SUPERELEVATION.
④ FILL WITH SWAMP EXCAVATION MATERIAL.
⑤ SHOULDER SLOPE TO MATCH DRIVING LANE SLOPE.

NOTE: NOT TO SCALE

COLD INPLACE RECYCLE TYPICAL CONSTRUCTION

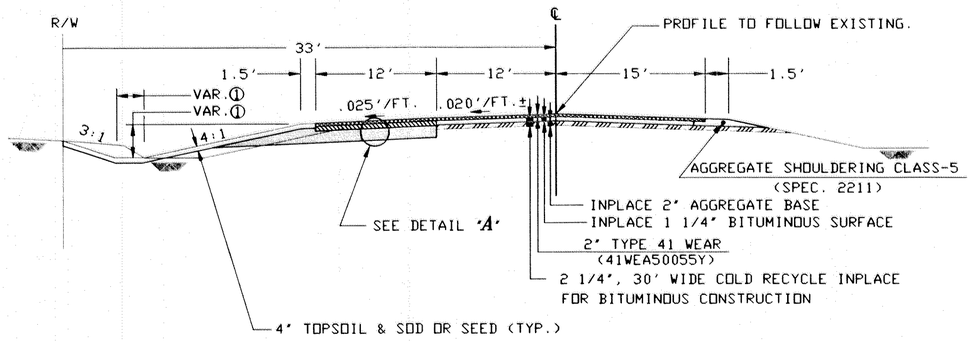
COLD INPLACE TYPICAL

STA.5+00 - STA.37+13.07
STA.63+40.94 - STA.192+83.71



COLD INPLACE TYPICAL

(RT.TN.LN.CONSTRUCTION)
STA.5+00 - STA.10+00



NOTE: NOT TO SCALE

TYPICAL SECTIONS

REVISIONS

DATE	BY	DATE	BY

CERTIFIED BY Douglas W. Finch P.E. REG NO. 20235 8/30 19 96

S.P. _____ S.A.P. _____ C.P. 96-18-72

Sheet No. 8 of 19 Sheets

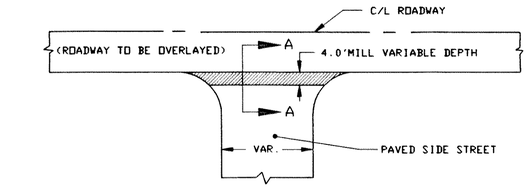
Fed. Project No. _____

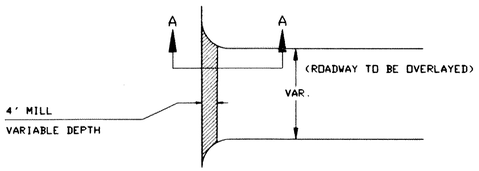
TYPICAL SECTIONS

STREET MILLING DETAIL

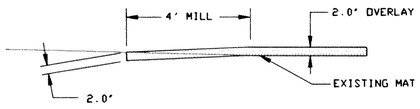
PLAN VIEW

BUTT JOINTS

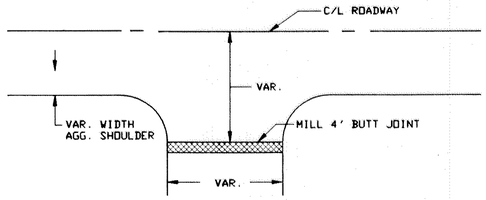




SECTION A-A

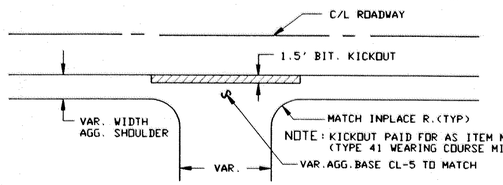


PAVED SIDE ROADS & STREETS



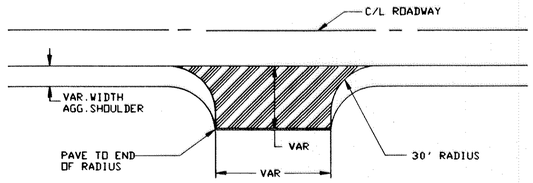
NOTE: KICKOUT PAID FOR AS ITEM NO. 2340.508
(TYPE 41 WEARING COURSE MIXTURE)

UNPAVED DRIVEWAY AND FIELD ENTRANCES



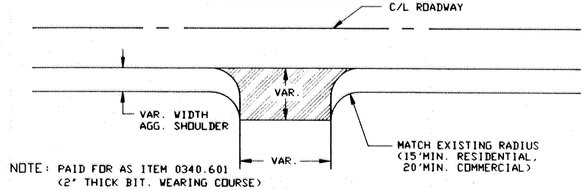
NOTE: KICKOUT PAID FOR AS ITEM NO. 2340.508
(TYPE 41 WEARING COURSE MIXTURE)

UNPAVED SIDE ROADS & STREETS



NOTE: PAID FOR AS ITEM 0340.601
(2" THICK BIT. WEARING COURSE)

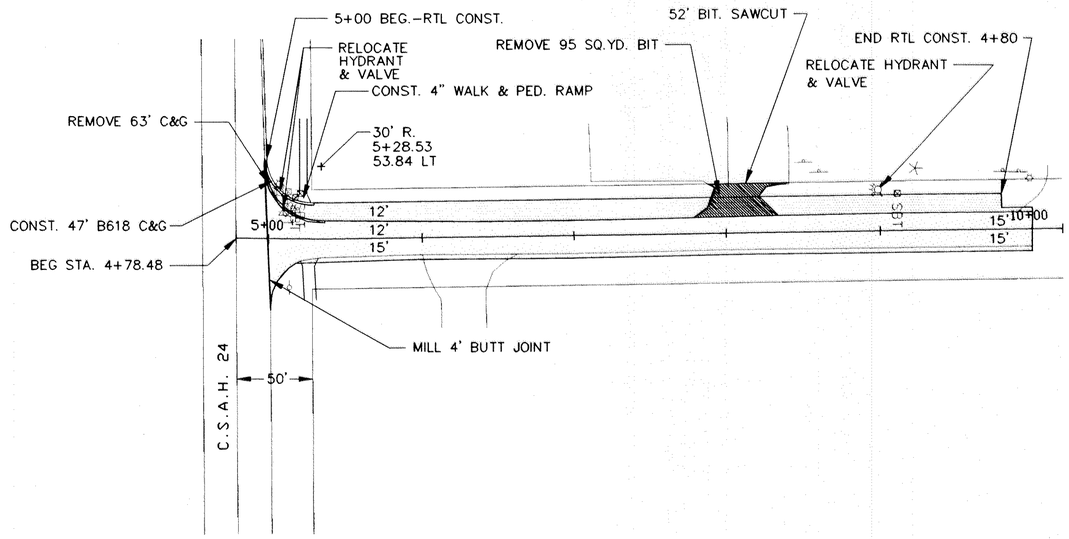
PAVED ENTRANCES



NOTE: PAID FOR AS ITEM 0340.601
(2" THICK BIT. WEARING COURSE)

NOTE: NOT TO SCALE

PLAN VIEW RIGHT TURN CONSTRUCTION



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REVISIONS

DATE	BY	DATE	BY

TYPICAL SECTIONS

CERTIFIED BY _____ P.E. REG NO. 20235 8/30 19 96

S.P. _____ S.A.P. _____ C.P. 96-18-72

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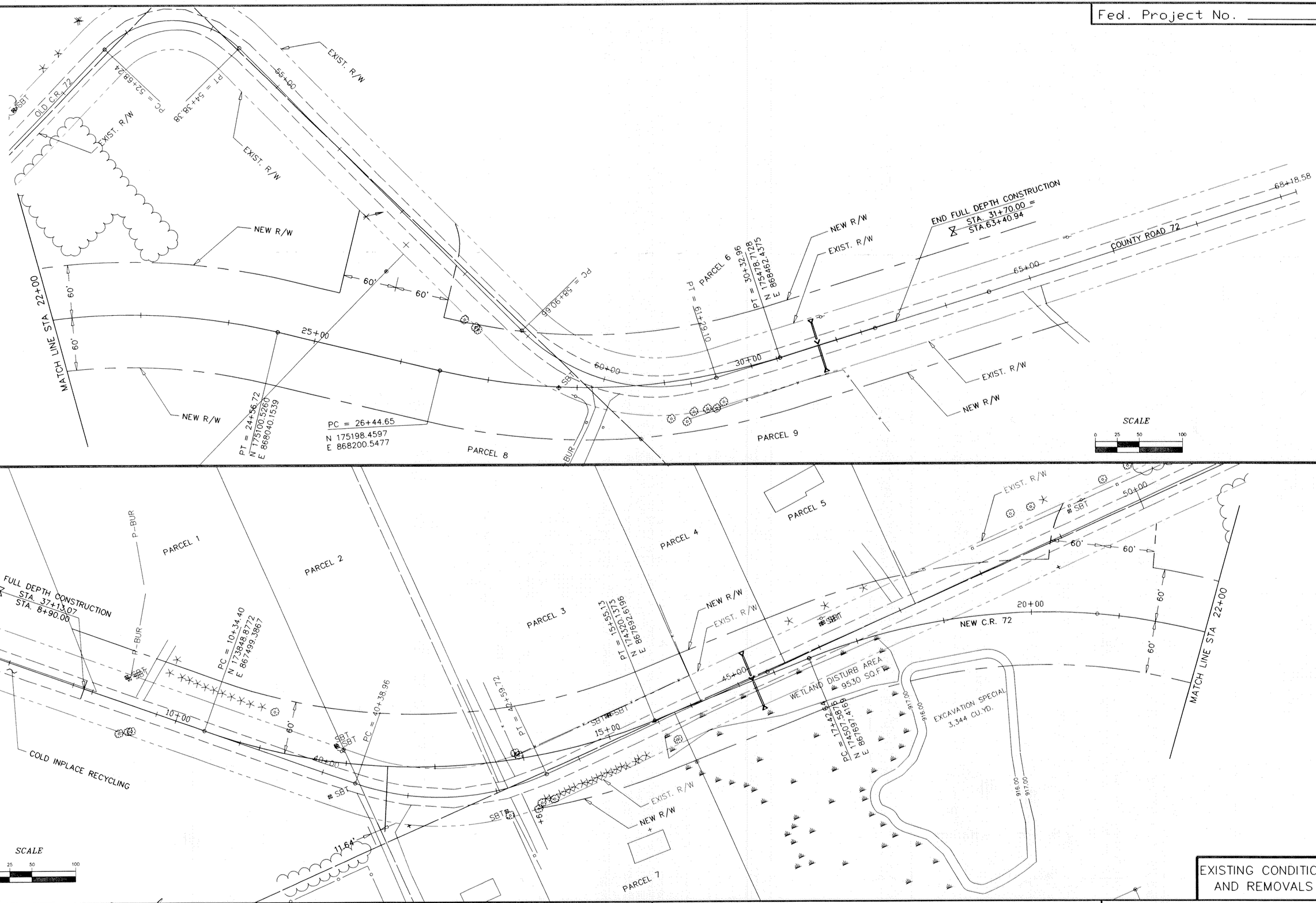

REVISIONS

DATE	BY	DATE	BY

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CERTIFIED BY _____ P.E. REG NO. 20235 8/30 19 96

S.P. 02-601-35 S.A.P. _____ C.P. 96-18-72

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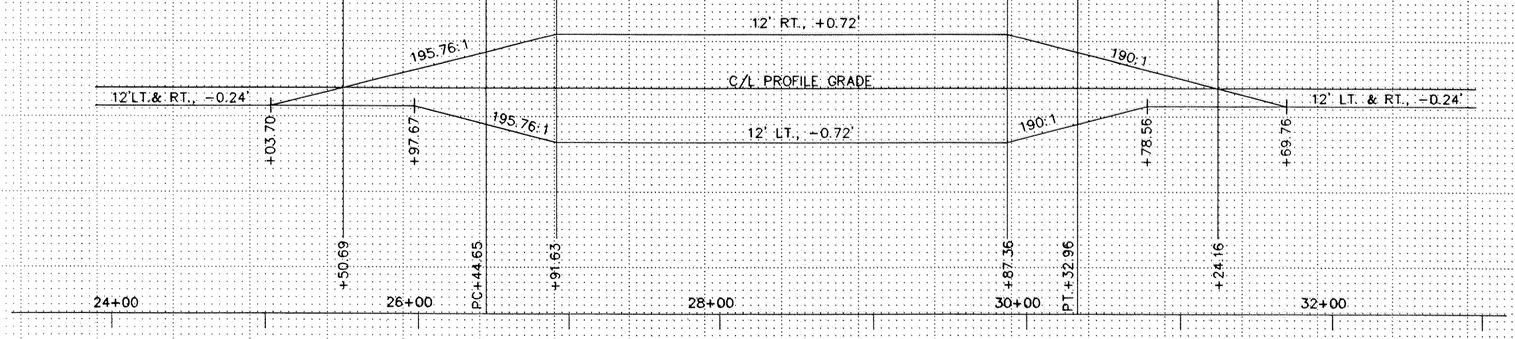
Fed. Project No. _____

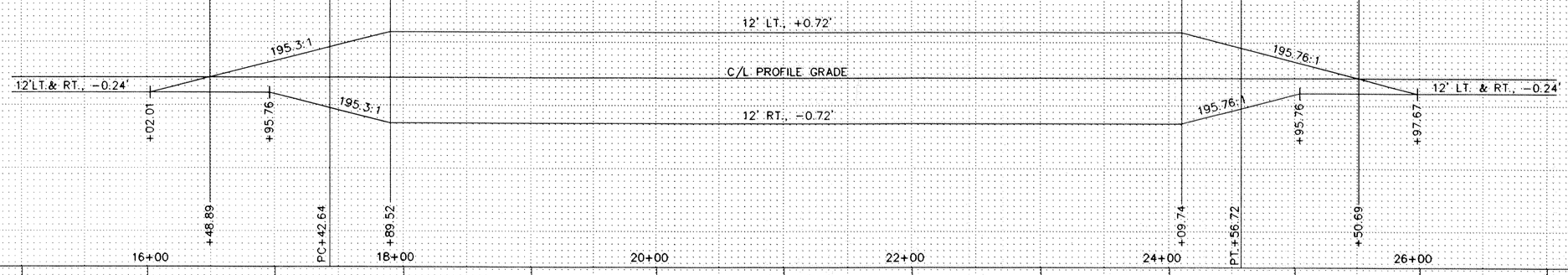
CURVE NO. 3

DEGREE= 8° 0' 0"
MAX. e= 0.060'/FT.
SPEED LIMIT 45 MPH



CURVE NO. 2

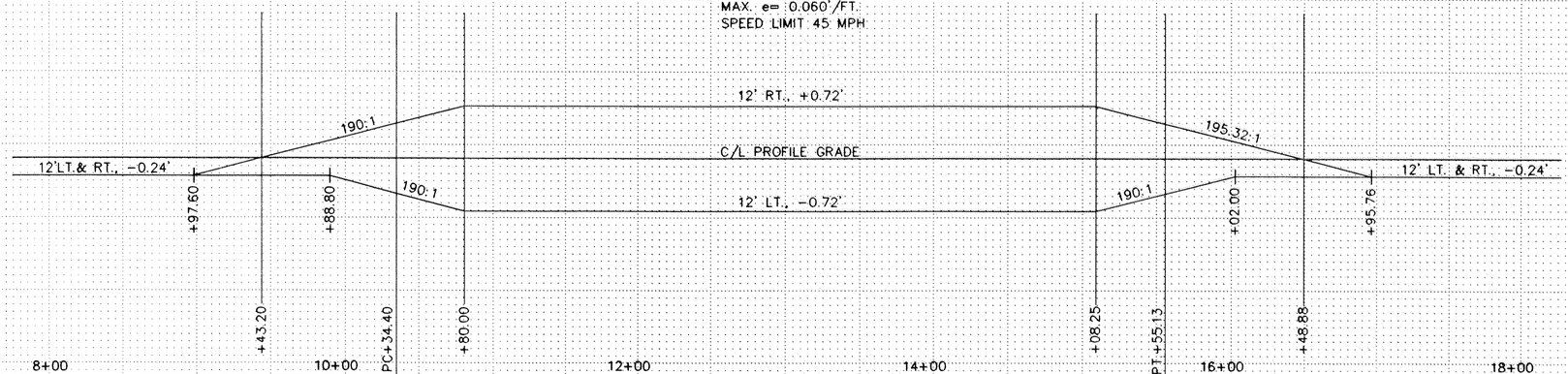
DEGREE= 8° 0' 0"
MAX. e= 0.060'/FT.
SPEED LIMIT 45 MPH



NOTE: SHOULDER SLOPE MATCH WITH DRIVING LINE SLOPE

CURVE NO. 1

DEGREE= 8° 0' 0"
MAX. e= 0.060'/FT.
SPEED LIMIT 45 MPH



FILE NAME: P:\96187Z\SUPER.DWG MN (08-16-96)

REVISIONS			
DATE	BY	DATE	BY

SUPERELEVATION CHARTS

CERTIFIED BY _____ P.E. REG NO. 20735 8/20 19 96

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Fed. Project No. _____

BEGIN FULL DEPTH CONSTRUCTION
STA. 37+13.07
STA. 8+90.00

C.R. 72

COLD INPLACE RECYCLING

P-BUR

PARCEL 1

PARCEL 2

PARCEL 3

PARCEL 4

PARCEL 5

PARCEL 7

PC = 10+34.40
N 1738488772
E 867499.3867

PC = 10+38.96

PT = 42+59.72

PT = 15+55.13
N 1743201.1373
N 174320.1373
E 867692.6196

PC = 17+42.64
N 1745075876
N 174507.5876
E 867697.4168

NEW R/W

EXIST. R/W

SBT

WETLAND DISTURB AREA
9530 SQ.FT.

EXCAVATION SPECIAL
3,344 CU.YD.

916.00

917.00

MATCH LINE STA 51+00

MATCH LINE STA 22+00

NEW C.R. 72

+43
72 LT.

+35
30'R

+15
30'R

+12
25'R

+82
25'R

+75

+6

10+00

15+00

20+00

12'

14'

16'

24'

11.64'

60'

75'

FULL DEPTH CONSTRUCTION

COLD INPLACE RECYCLING

C:\P\961872\SH1.DWG M.N. (08-16-96)

PVI STA = 8+90
PVI ELEV = 923.85

PVI STA = 8+90
PVI ELEV = 923.35

BEGIN FULL CONSTRUCTION
CP. 96-18-72
STA 8+90.00

-0.61%

-0.58%

PROFILE GRADING GRADE

EXISTING GROUND PROFILE

1' SUBCUT

LOW POINT ELEV = 919.75
LOW POINT STA = 15+21.17
PVI STA = 15+25
PVI ELEV = 919.67
A.D. = -1.37
50' VC

PVC 15+00
ELEV 919.81

PVT 15+50
ELEV 919.87

0.79%

PVI STA = 20+00
PVI ELEV = 923.42
A.D. = 0.29
50' VC

PVC 19+75
ELEV 923.22

PVT 20+25
ELEV 923.55

0.50%

STA. 16+75
F. & I.
24"x 62' RCP @ 1.70%
2 x 24" RCP APRON
INLT 915.34
OUTLT 916.60

930
925
920
915
910

924.40
924.1 924.09
923.8 923.29
923.5 923.00
923.2 922.71
10+00
922.9 922.42
922.7 922.13
922.1 921.84
921.4 921.55
920.4 921.26
920.2 920.97
920.0 920.68
920.3 920.39
920.7 920.10
920.5 919.81
15+00
920.0 919.87
919.7 920.26
919.3 920.66
919.1 921.05
919.3 921.45
919.5 921.84
919.4 922.24
919.8 922.63
920.4 923.03
921.1 923.40
20+00
921.4 923.67
921.7 923.92
922.0 924.17
922.3

REVISIONS

DATE	BY	DATE	BY

CERTIFIED BY _____ P.E. REG NO. 20235 8/30 19 96

S.P. _____ S.A.P. _____ C.P. 96-18-72

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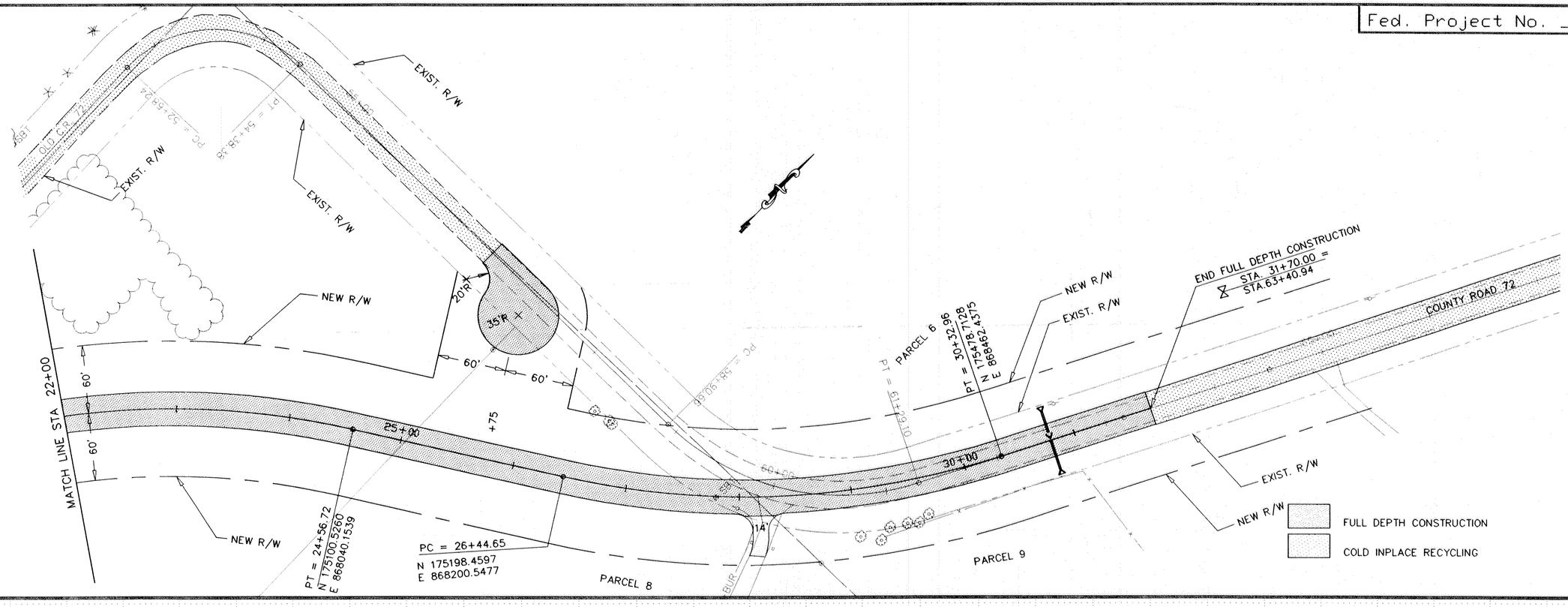
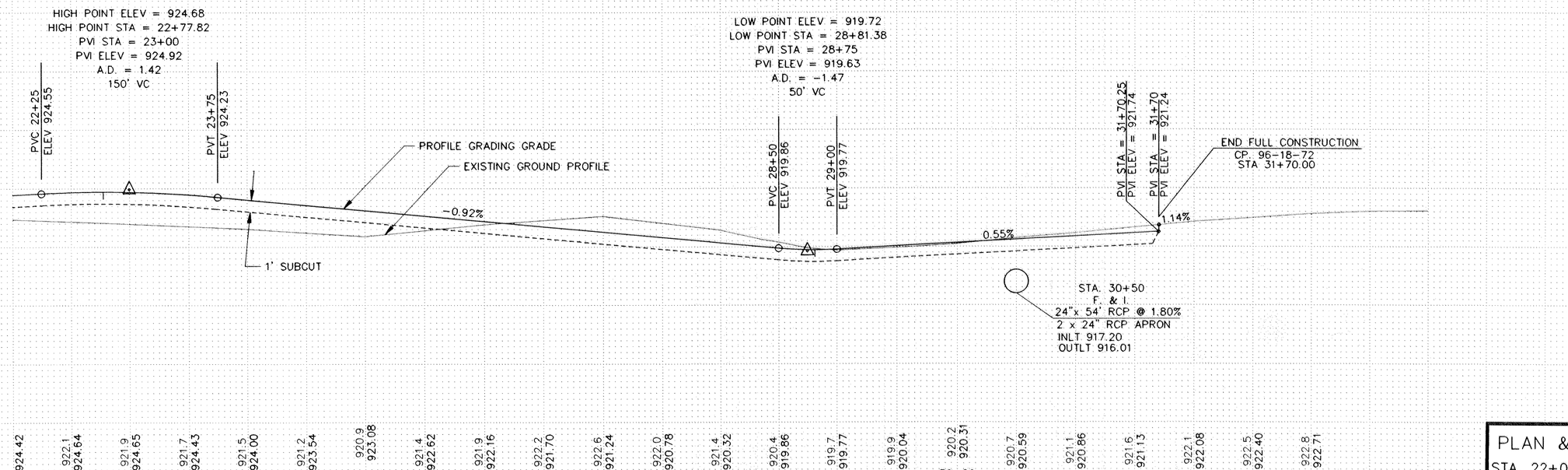
PLAN & PROFILE
STA. 8+90 TO 22+00

Fed. Project No. _____





C:\P\961872\SH2.DWG M.N. (08-16-96)

REVISIONS			
DATE	BY	DATE	BY

PLAN & PROFILE
STA. 22+00 TO 31+70

CERTIFIED BY _____ P.E. REG NO. 20235 8/30 19 96

S.P. _____ S.A.P. _____ C.P. 96-18-72

Sheet No. 13 of 19 Sheets

Fed. Proj. No.

EXCAVATION SUB-TOTALS CU.YDS.	EMBANKMENT SUB-TOTALS CU.YDS.
COMMON	
SUB	
MUCK	

EXIST. RW

920.15 7+00 920.15

3 : 25 : 1

4	22
0	0
0	0

919.04 6+00 919.04

3 : 4 : 1

23	13
0	0
0	0

919.53 5+24 919.53

3 : 25 : 1

10	0
0	0
0	0

919.81 5+11 919.81

3 : 0.1 : 1

10	0
0	0
0	0

920.24 5+00 920.24

3 : 0.1 : 1

10'

10'

EXCAVATION SUB-TOTALS CU.YDS.	EMBANKMENT SUB-TOTALS CU.YDS.
COMMON	
SUB	
MUCK	

EXIST. RW

922.24 10+00 922.24

3 : 15 : 1

56	4
0	0
0	0

921.85 9+00 921.85

2.5 : 15 : 1

39	3
0	0
0	0

921.37 8+50 921.37

2.5 : 15 : 1

37	4
0	0
0	0

920.91 8+00 920.91

3 : 15 : 1

31	11
0	0
0	0

RIGHT TURN LANE AT C.S.A.H. 24

CROSS - SECTIONS
STA. 5+00 TO STA. 10+00

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Fed. Proj. No.

EXCAVATION SUB-TOTALS CU.YDS.	EMBANKMENT SUB-TOTALS CU.YDS.

CROSS - SECTIONS

STA. 7+00 TO STA. 14+00

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EXCAVATION SUB-TOTALS CU.YDS. — **EMBANKMENT** SUB-TOTALS CU.YDS.

COMMON / SUB / MUCK

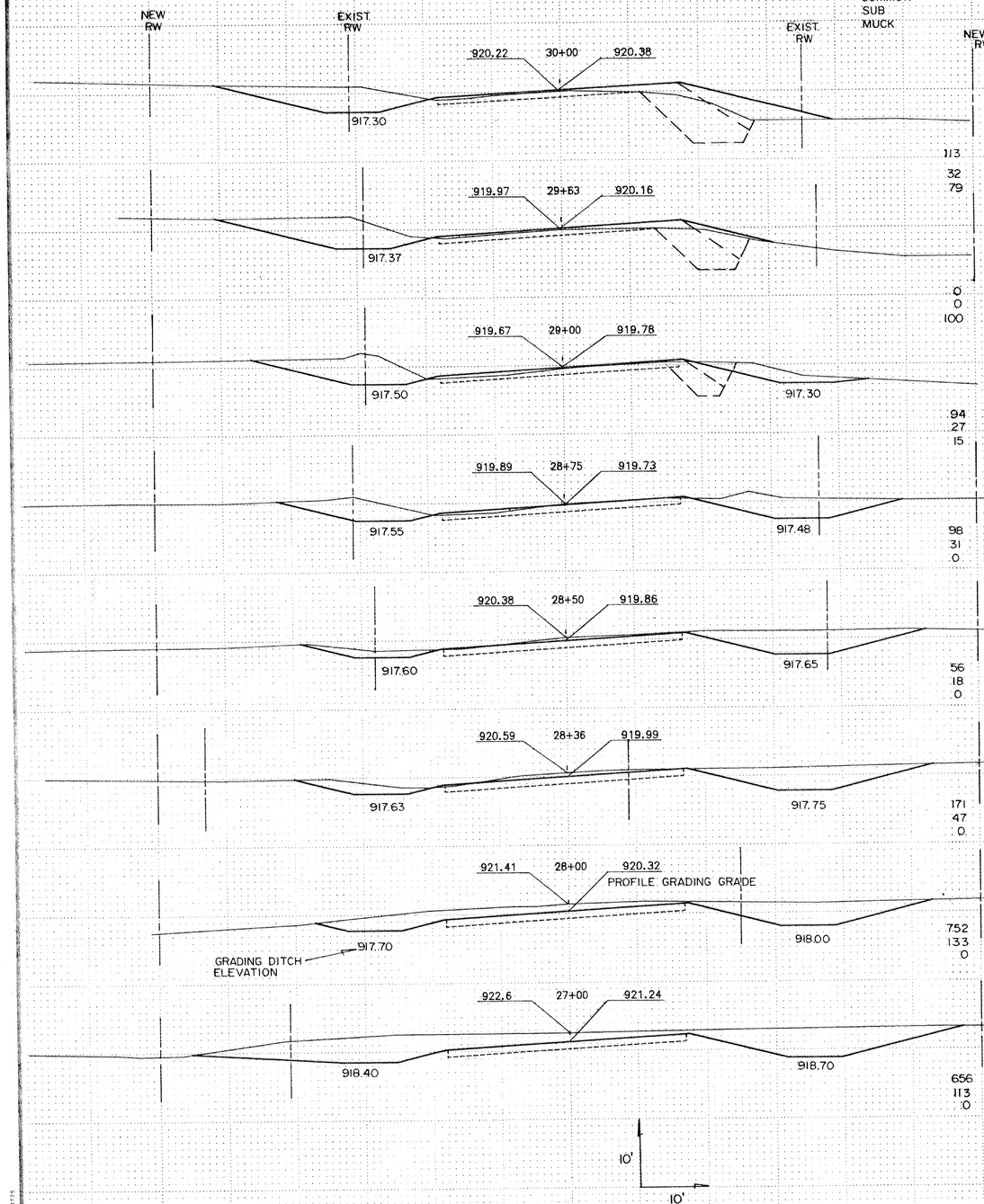
Station	Excavation (Common / Sub / Muck)	Embankment
18+66	143 / 0 / 0	346 / 0 / 0
18+00	89 / 0 / 93	587 / 0 / 56
17+00	14 / 0 / 117	379 / 0 / 74
16+23	5 / 3 / 23	72 / 0 / 16
16+00	31 / 30 / 19	81 / 0 / 15
15+50	99 / 55 / 0	20 / 0 / 0
15+00	178 / 63 / 0	4 / 0 / 0
14+50	208 / 56 / 0	10 / 0 / 0

Station	Excavation (Common / Sub / Muck)	Embankment
26+00	246 / 46 / 0	200 / 0 / 0
25+00	189 / 0 / 0	381 / 0 / 0
24+00	337 / 0 / 0	433 / 0 / 0
23+00	469 / 0 / 0	406 / 0 / 0
22+00	504 / 0 / 0	346 / 0 / 0
21+00	469 / 0 / 0	369 / 0 / 0
20+00	391 / 0 / 0	433 / 0 / 0
19+00	111 / 0 / 0	163 / 0 / 0

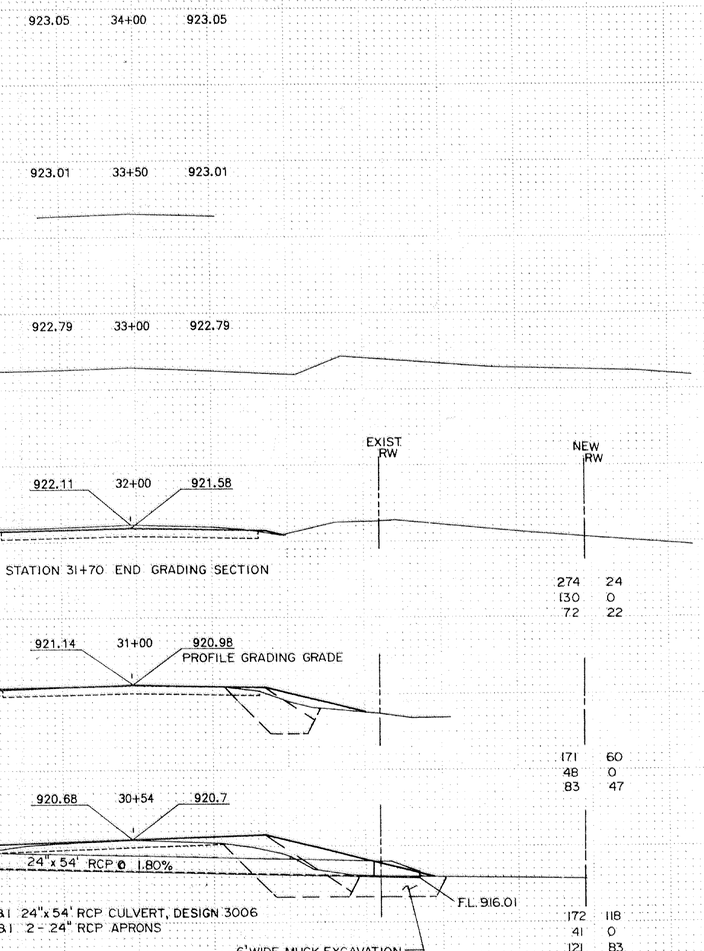
CROSS-SECTIONS
STA. 14+50 TO STA. 26+00

Fed. Proj. No.

	EXCAVATION	EMBANKMENT
SUB-TOTALS CU.YDS.	SUB-TOTALS CU.YDS.	
COMMON		
SUB		
MUCK		



	EXCAVATION	EMBANKMENT
SUB-TOTALS CU.YDS.	SUB-TOTALS CU.YDS.	
COMMON		
SUB		
MUCK		



CROSS-SECTIONS

STA. 27+00 TO STA. 34+00

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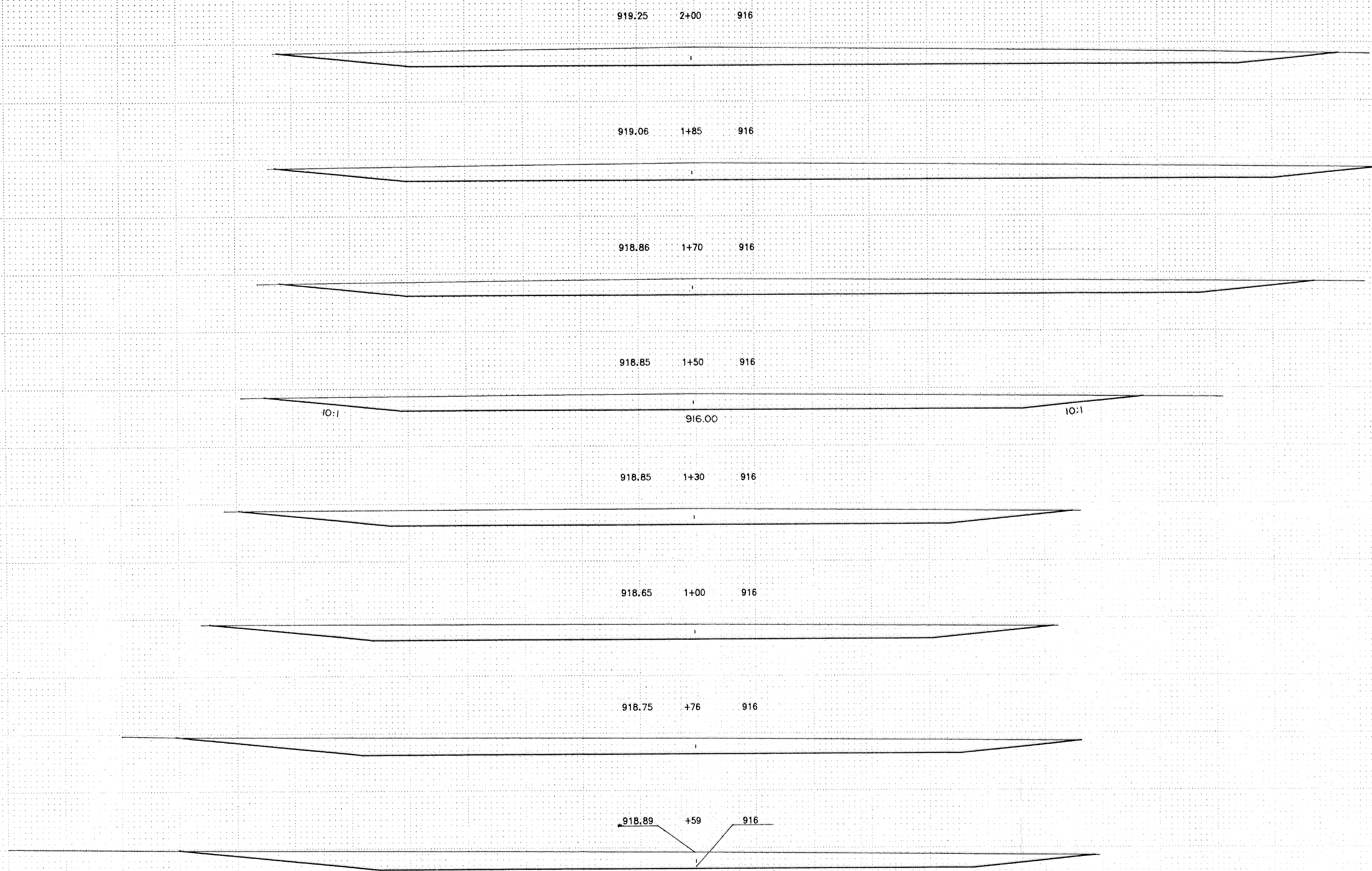
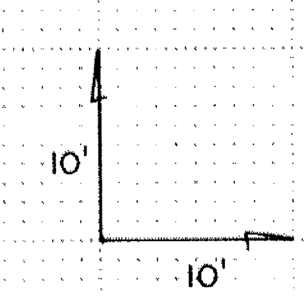
CP 96-18-72 8/12/96 JTB

Fed. Proj. No.





NOTE: WETLAND LIMITS AS PER PLAN
BOTTOM ELEV. TO MATCH 916.00 CONTOUR
10:1 SLOPES TO WETLAND LIMITS

WETLAND MITIGATION SITE

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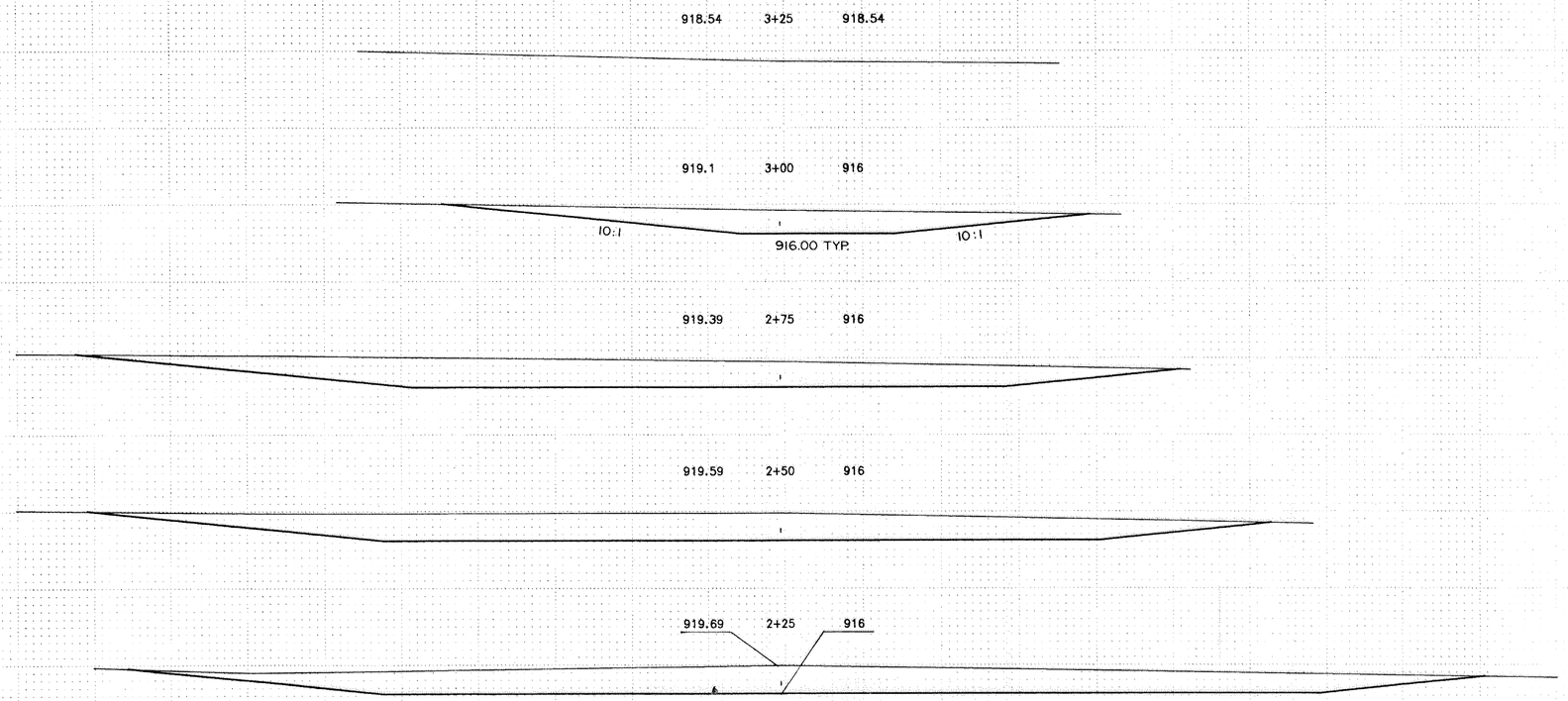
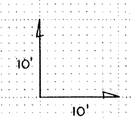


NOTE: WETLAND LIMITS AS PER PLAN
BOTTOM ELEV. TO MATCH 916.00 CONTOUR
10:1 SLOPES TO WETLAND LIMITS



WETLAND MITIGATION SITE

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