

Oversight / NHS	
FHWA FULL OVERSIGHT?	☒ NO ☐ YES
NATIONAL HIGHWAY SYSTEM?	☒ NO ☐ YES

Related Projects:	
P.E. Under Project:	13983
COST CENTER	4500
R.O.W. Projects:	
R.O.W. Project Description	N/A

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED *As Constructed*

COLORADO PROJECT NO. C 0661-004

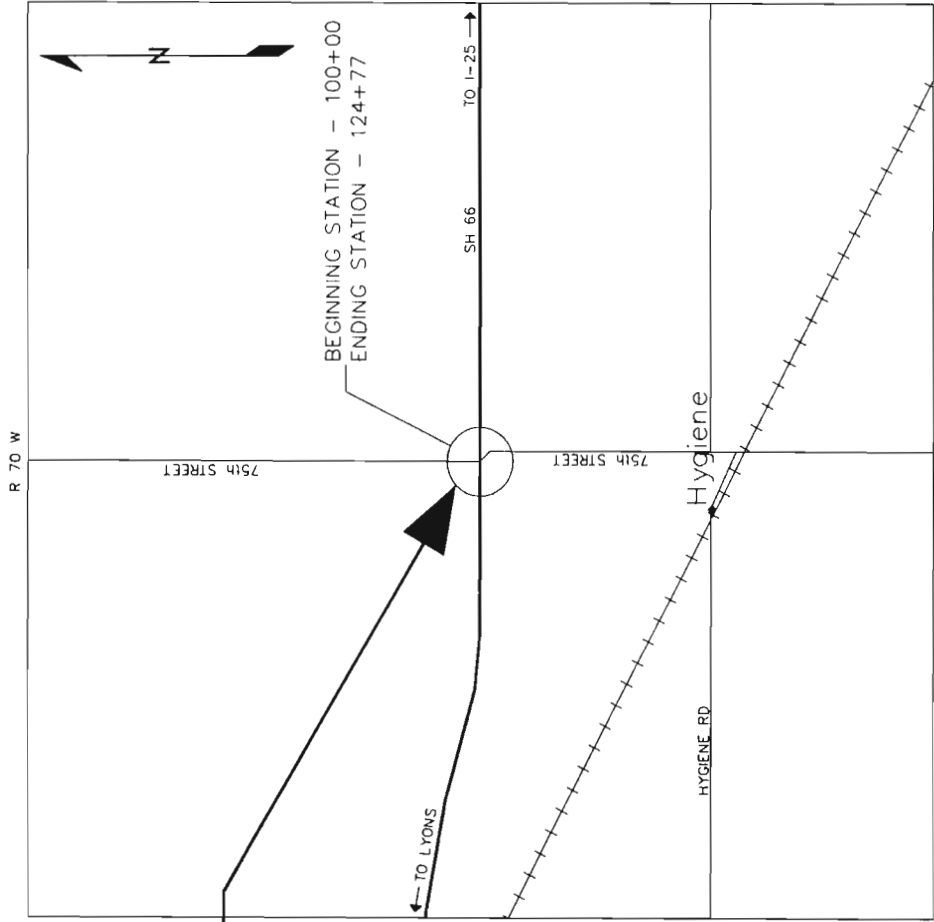
SH 66 & 75th ST. SIGNALS

BOULDER COUNTY

CONSTRUCTION PROJECT CODE NO. 13983

DESIGN DATA	
SH. 66 & 75th Street	
AADT (SH 66)	10,013
DHV (SH 66)	1102
MILEPOINTS	STATIONS
32.36	100+00
32.83	124+77

PROJECT
LOCATION



LOCATION MAP - SH 66

INDEX OF SHEETS

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8	EXISTING UTILITIES
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11	SEED MIX
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15	SCHEDULE OF TRAFFIC CONTROL DEVICES
16	TRAFFIC SIGNAL PLAN
17	SIGNING PLAN
18-19	SIGNING AND STRIPING TABULATION
20	ROADWAY AND STRIPING PLAN
21-24	GROUND MOUNTED SIGN SUPPORT DETAILS

S-614-2	NEW & REVISED STANDARD
S-614-40	NEW & REVISED STANDARD
S-614-40A	NEW & REVISED STANDARD

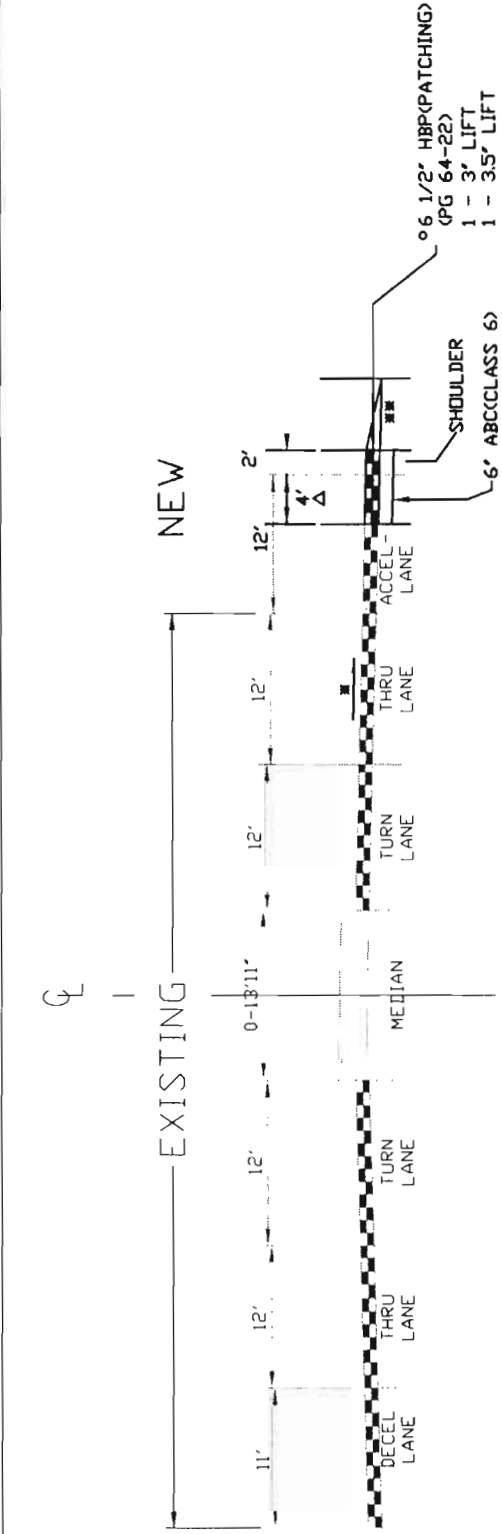
Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Contract Information		Project No./Code	
Creation Date: 10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4		Contractor <i>W.L. Contractors</i>		Contractor		C 0661-004	
Last Modification Date:	Initials:	Resident Engineer -- <i>Doug Pearson</i>				Resident Engineer --					
Full Path:		Project Engineer -- <i>Nicola Upright</i>				Project Engineer --					
Drawing File Name:		PROJECT STARTED				ACCEPTED					
Acad Ver. R2000	Scale: N/A	Units: ENGLISH					Void:	Comments:	Sheet Number 1		

PLAN NUMBER		M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
☒ M-100-1	STANDARD SYMBOLS		1	☐ M-607-1	WIRE FENCES AND GATES	(3 SHEETS) 78-80	☒ S-612-1	TYPICAL DELINEATOR INSTALLATIONS	(5 SHEETS) 109-113
☐ M-203-1	APPROACH ROADS		2	☐ M-607-2	CHAIN LINK FENCE	(3 SHEETS) 81-83	☒ S-614-1	TYPICAL GROUND SIGN PLACEMENT	114
☐ M-203-2	DITCH TYPES		3	☐ M-607-3	BARRIER FENCE	84	☐ S-614-2	CLASS I GROUND SIGN INSTALLATIONS	115
☐ M-203-10	SUPERELEVATION CROWNED HIGHWAYS		4	☐ M-607-4	DEER FENCE AND GATE	(2 SHEETS) 85-86	☒ S-614-3	CLASS II GROUND SIGN INSTALLATIONS	116
☐ M-203-11	SUPERELEVATION DIVIDED HIGHWAYS - SHOULDER PIVOT		5	☐ M-607-10	PICKET SHOW FENCE	87	☒ S-614-4	CLASS III SIGNS, SHEET ALUMINUM PANELS	(3 SHEETS) 117-119
☐ M-203-12	SUPERELEVATION STREETS		6	☐ M-608-1	CURB RAMPS	88	☐ S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS	(2 SHEETS) 120-121
☐ M-203-13	SUPERELEVATION DIVIDED HIGHWAYS - CENTER PIVOT		7	☐ M-609-1	CURBS, GUTTERS, AND SIDEWALK	(2 SHEETS) 89-90	☐ S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS	(2 SHEETS) 122-123
☒ M-206-1	EXCAVATION AND BACKFILL FOR - STRUCTURES		8-9	☐ M-611-1	CATTLE GUARD	(2 SHEETS) 91-92			
☐ M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES		10-11	☒ M-613-1	CONVENTIONAL HIGHWAY LIGHTING	(3 SHEETS) 93-95	☐ S-614-10	TYPICAL MARKER ASSEMBLY INSTALLATIONS	124
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☐ M-510-1	STRUCTURAL PLATE CULVERT PIPE H-20 LOADING		26	☒ M-620-1	FIELD LABORATORY, CLASS 1	26	☐ S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS	130
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☐ M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS		36				☒ S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) & VERTICAL PANELS	164
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☐ M-603-2	REINFORCED CONCRETE PIPE		39						
☐ M-603-3	PRECAST CONCRETE BOX CULVERT		40						
☐ M-603-10	CONCRETE AND METAL END SECTIONS		41-42			(2 SHEETS) 41-42			
☐ M-604-10	INLET, TYPE C		43						
☐ M-604-11	INLET, TYPE D		44						
☐ M-604-12	CURB INLET, TYPE R		45-46			(2 SHEETS) 45-46			
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☒ M-604-20	MANHOLES		48-50			(3 SHEETS) 48-50			
☐ M-604-25	VANE GRATE INLET WITH FRAME AND CONCRETE APRON		51-55			(5 SHEETS) 51-55			
☐ M-605-1	SUBSURFACE DRAINS		56						
☐ M-606-1	GUARDRAIL, TYPE 3, W-BEAM		57-71			(15 SHEETS) 57-71			
☐ M-606-12	GUARDRAIL, TYPE 4, CONCRETE BARRIER		72-73			(2 SHEETS) 72-73			
☐ M-606-13	GUARDRAIL, TYPE 7, F-SHAPE BARRIER		74-77			(4 SHEETS) 74-77			

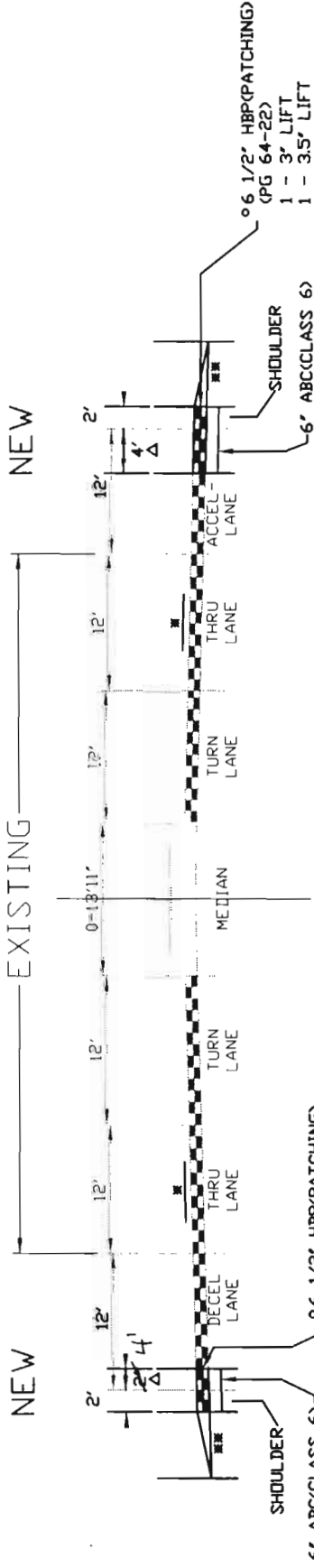
THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

COLORADO
DEPARTMENT OF TRANSPORTATION

STANDARD PLANS LIST
M & S STANDARDS
OCTOBER 1, 2000



TYPICAL SECTION A
FROM STA 112+10 - 116+50
SEE 'NEW ASPHALT'
(PG 13)



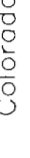
TYPICAL SECTION B
FROM STA 107+25 - 111+55
SEE 'NEW ASPHALT'
(PG 13)

- MATCH EXISTING CROSS SLOPE
- APPROXIMATE THICKNESS HBP GRADING S
- SHOULDER WITH EXISTING MATERIAL
- MATCH SHOULDER SLOPE TO EXISTING SLOPE
- △ ACTUAL WIDTH VARIES

Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		Typical Section		Project No./Code	
Creation Date:	10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4	R/JG	No Revisions:		Designer: 9/8/03 Detailer: Sheet Subst:	Structure Numbers	C 0661-004	13983
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Drawing File Name:												
Acad Ver.	R2000	Scale: N/A	Units: ENGLISH								Sheet Number	3

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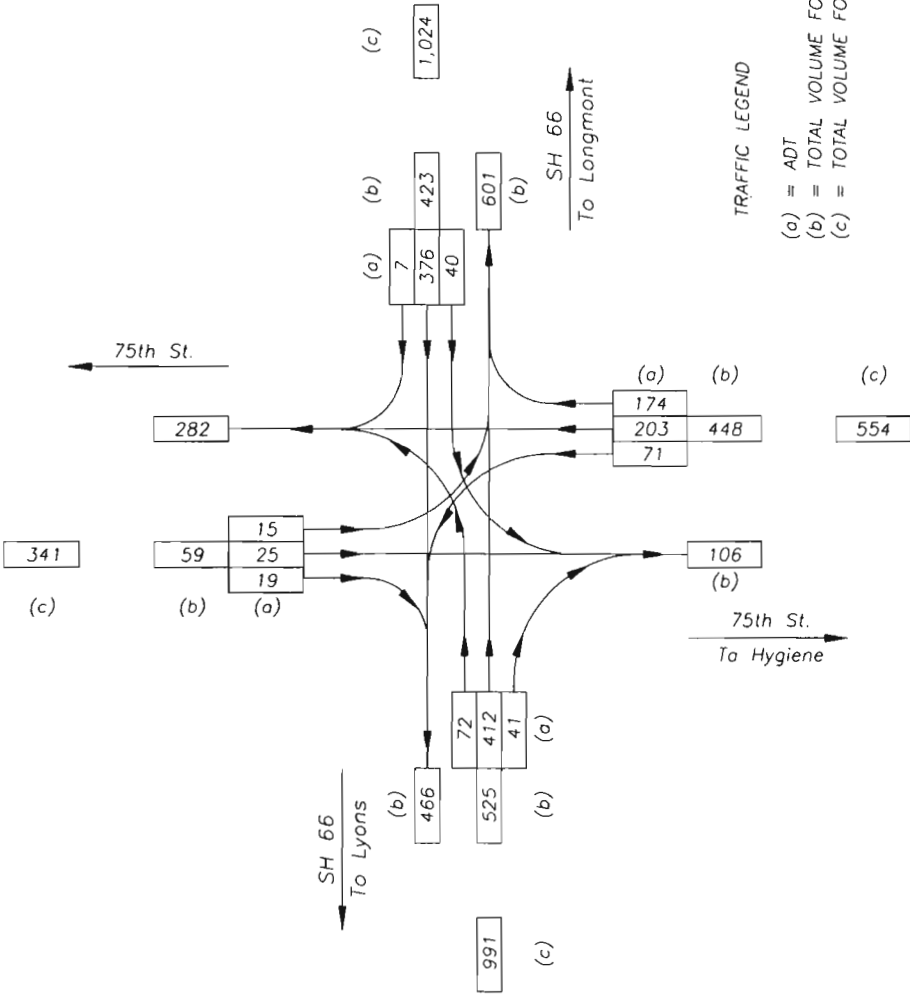
INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY													PROJECT TOTALS	
				PLAN	AS CONST.												PLAN	AS CONST.
	202-00220	Removal of Asphalt Mat	SY	1,765	1765												1,765	1765
	202-00810	Removal of Ground Sign	EACH	6	32												6	32
	202-00821	Removal of Sign Panel	EACH	6	4												6	4
	202-00825	Removal of Flashing Beacon	EACH	2	2												2	2
	203-01100	Proof Rolling - DELETED BY LOS	HOURL	10	0												10	0
	203-01500	Blading	HOURL	90	24												90	24
	203-01597	Potholing	HOURL	10	8												10	8
	203-01597	Potholing (Special) - ADDED BY CMO # 2	HOURL	10	8												10	8
	210-04010	Adjust Manhole	EACH	1	1												1	1
	210-04015	Modify Manhole	EACH	1	1												1	1
	212-00006	Seeding (Native)	ACRE	0.3	.6												0.3	.6
	212-00047	Soil Preparation (Special)	ACRE	0.3	.6												0.3	.6
	213-00002	Mulching (Weed Free Hay)	ACRE	0.3	.6												0.3	.6
	213-00061	Mulch Tackifier	LB	30	60												30	60
	304-06000	Aggregate Base Course (Class 6)	TON	517	497.92												517	497.92
	403-00720	Hot Bituminous Pavement (Patching) (Asphalt)	TON	377	424.57												377	424.57
	900-00006	Price Reduction for overweight truck	DOL		-20													-20
	503-00036	Drilled Caisson (36 Inch)	LF	54	72												54	72
	503-00048	Drilled Caisson (48 Inch) Deleted by CMO # 2	LF	21	0												21	0
	900-00006	Credit for Caisson Drilling-Added by CMO # 2	DOL		-1													-1
	612-00001	Delineator (Type I)	EACH	14	1												14	1
	612-00002	Delineator (Type II)	EACH	15	14												15	14
	613-00201	2 Inch Electrical Conduit (Jacked)	LF	350	320												350	320
	613-00301	3 Inch Electrical Conduit (Jacked)	LF	700	640												700	640
	613-01200	2 Inch Electrical Conduit (Plastic)	LF	140	111												140	111
	613-01200	3 Inch Electrical Conduit (Plastic)	LF	140	242												140	242
	613-10000	Wiring	L S	1	1												1	1
	613-70250	Luminaire High Pressure Sodium (250 Watt)	EACH	4	4												4	4
	614-00011	Sign Panel (Class I)	SF	104	109												104	109
	614-00012	Sign Panel (Class II)	SF	105	105												105	105
	614-00013	Sign Panel (Class III)	SF	47	47												47	47
	614-01502	Steel Sign Post (2 Inch Round)	LF	138	165												138	165
	614-01582	Steel Sign Post (2.5 Inch Round)(Slipbase Sch. 80)	LF	128	138												128	138
	614-70336	Traffic Signal Face (12-12-12)	EACH	12	12												12	12
	614-70560	Traffic Signal Face (12-12-12-12-12)	EACH	2	2												2	2
	614-72860	Pedestrian Push Button	EACH	8	8												8	8
	614-72866	Fire Preemption Unit and Timer	EACH	1	1												1	1

Computer File Information			Sheet Revisions		Colorado Department of Transportation			As Constructed		Summary of Approximate Quantities			Project No./Code		
Creation Date:		12/13/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4			No Revisions:		Designer: 9/8/03 Structure Numbers 13983 Detailer: Sheet Subst: Sheet Number 5			C 0661-004	
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Drawing File Name:															
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									Void:						

INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY															PROJECT TOTALS	
				PLAN	AS CONST.														PLAN	AS CONST.
		614-72886	Intersection Detection System (Camera)	4	4														4	4
		614-81140	Traffic Signal-Light Pole Steel (1-40 Foot Mast Arm)	1	2														1	2
		614-81145	Traffic Signal-Light Pole Steel (1-45 Foot Mast Arm)	2	0														2	0
		614-81150	Traffic Signal-Light Pole Steel (1-50)	0	2														0	2
		614-81165	Traffic Signal-Light Pole Steel (1-65 Foot Mast Arm)	1	0														1	0
		614-86245	Controller (Type 170E)	1	1														1	1
		620-00014	Encom Radio System - Added by CMO#2	0	1														0	1
		620-00011	Field Laboratory (Class 1)	1	1														1	1
		620-00020	Sanitary Facility	1	1														1	1
		625-00000	Construction Surveying	1	1														1	1
		626-00000	Mobilization	1	1														1	1
		627-00001	Pavement Marking Paint	15	29														15	29
		627-00070	Preformed Thermoplastic Pavement Marking	532	428														532	428
		630-00000	Flagging	1,000	387														1,000	387
		630-00007	Traffic Control Inspection	16	15														16	15
		630-00012	Traffic Control Management	40	32														40	32
		630-80342	Construction Traffic Sign (Panel Size B)	19	20														19	20
		630-80343	Construction Traffic Sign (Panel Size C)	4	4														4	4
		630-80358	Advance Warning Flashing or Sequencing Arrow Panel (C Type)	1	2														1	2
		630-80360	Drum Channelizing Device	50	50														50	50
		630-80364	Drum Channelizing Device (With Light) (Steady Burn) DELETED BY LOS	10	0														10	0
		630-80380	Traffic Cone	150	60														150	60
			FORCE ACCOUNT																	
		700-70010	F/A Minor Contract Revisions	1	1														1	1
		700-70022	F/A QJT Pilot	1	0														1	0
		700-70033	F/A Install Phone Service DELETED BY CMO#2	1	0														1	0
		700-70082	F/A Furnish & Install Electrical Service	1	0														1	0
		700-70380	F/A Erosion Control	1	0														1	0

Computer File Information			Sheet Revisions		Colorado Department of Transportation			As Constructed		Summary of Approximate Quantities			Project No./Code	
Creation Date:	12/13/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4			No Revisions:		Designer: Detailer: Sheet Subset:			C 0661-004	
Last Modification Date:		Initials:		Revised: 9/8/03				13983						
Full Path:				Void:				Sheet Number						
Drawing File Name:				RJC				6						
Acad Ver. R2000	Scale: N/A	Units: ENGLISH												

TURNING MOVEMENTS



KNOWN UTILITIES

WATER & SEWER CITY OF LONGMONT
JON ROBB
1100 S SHERMAN STREET
LONGMONT, CO 80501
PHONE: 303-651-8367

WATER LONGS PEAK WATER DISTRICT
GARY ALLEN
9875 VERMILLION RD
LONGMONT, CO 80501
PHONE: 303-776-0198

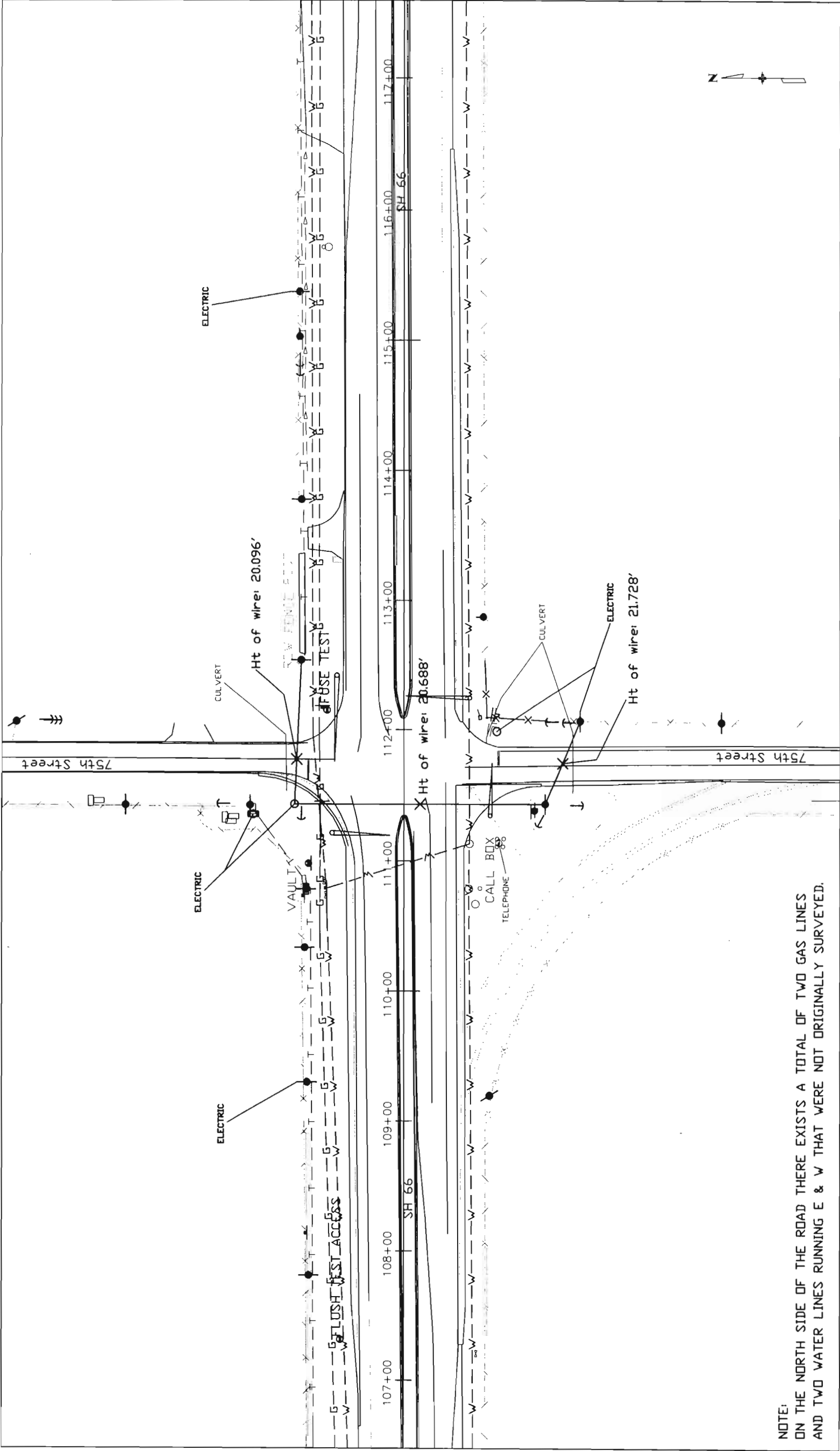
CABLE TV AT&T BROADBAND
DON KAPPERMAN
434 KIMBARK STREET
LONGMONT, CO 80501
PHONE: 303-776-2108 x2021

GAS & ELECTRIC EXCEL ENERGY
ROBERT VOEGELY
2655 N 63RD STREET
BOULDER, CO 80301
PHONE: 303-938-2395

TELEPHONE QWEST
LEN CROSS
12121 GRANT STREET
RM 501
THORTON, CO 80241
PHONE: 303-451-2983

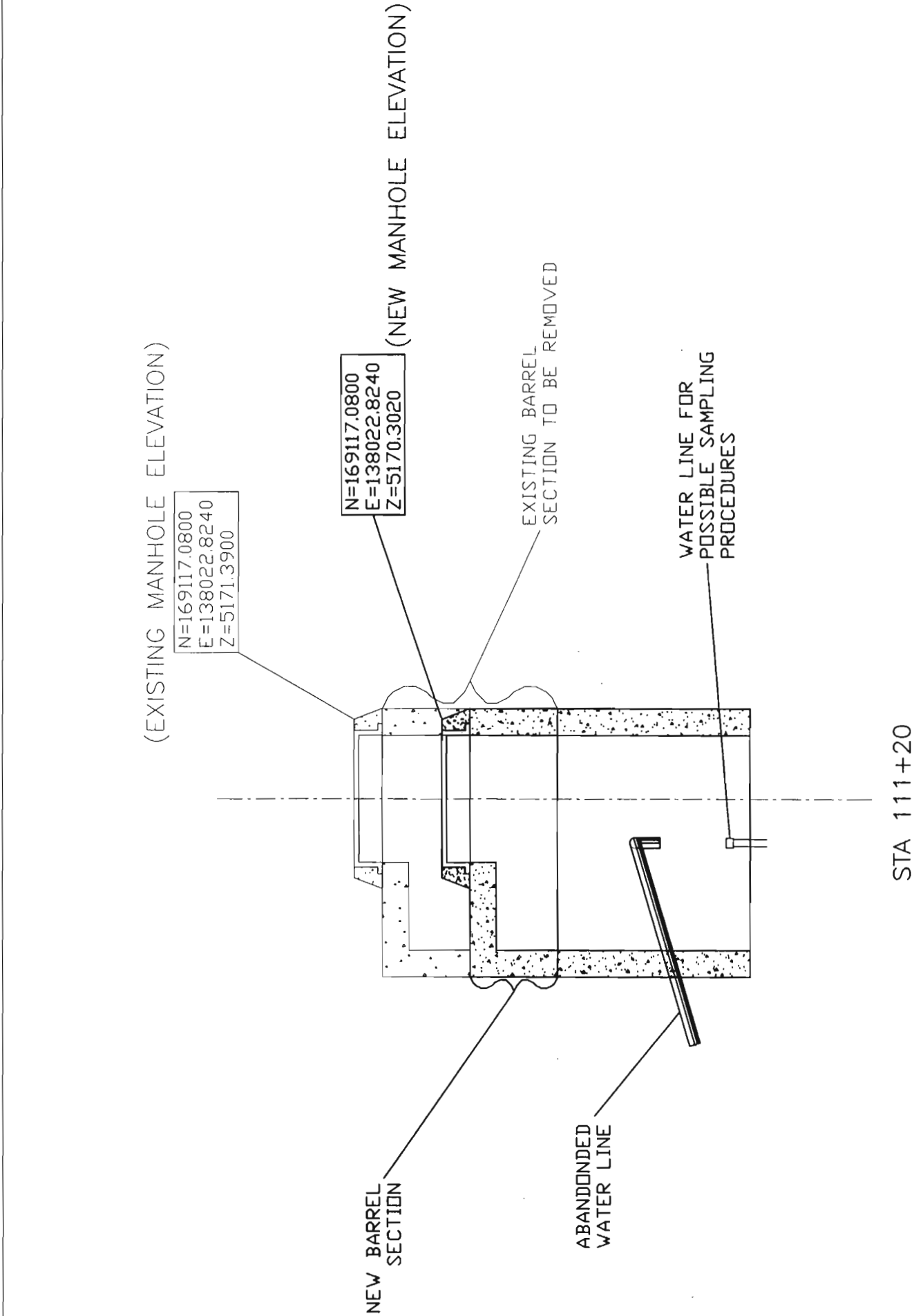
CDOT REGION 4 TRAFFIC OPERATIONS
COBIE GARBISO
10601 HWY 34 BUSINESS RTE.
GREELEY, CO 80634
PHONE: 970-350-2137

Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		Turning Movements & Known Utilities		Project No./Code	
Creation Date:	10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 Fax: (970) 350-2198 Region 4	RUG	No Revisions: 9/8/03				C 0661-004	
Last Modification Date:		Initials:					Revised:		Designer:		13983	
Full Path:							Void:		Detailer:			
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NOTE:
ON THE NORTH SIDE OF THE ROAD THERE EXISTS A TOTAL OF TWO GAS LINES
AND TWO WATER LINES RUNNING E & W THAT WERE NOT ORIGINALLY SURVEYED.

Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		Existing Utilities		Project No./Code	
Creation Date:		10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4	RJG	No Revisions:		9/8/03		C 0661-004
Last Modification Date:		Initials:			Revised:							
Full Path:					Designer:			Structure Numbers		13983		
Drawing File Name:					Detailer:							
Acad Ver.		R2000	Scale: N/A		Units: ENGLISH			Sheet Subset:		Subset Sheets:		Sheet Number
												8



NOTES:
ALL WORK/PARTS ARE TO BE INCLUDED IN THE COST.
NEW BARREL SECTION WILL BE APPROXIMATELY 1' HIGH.
ACTUAL DIMENSIONS OF NEW SECTION SHALL BE FIELD VERIFIED BEFORE ORDERING.

Computer File Information			
Creation Date:	11/5/02	Initials:	SBS
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Drawing File Name:			
Acad Ver.	R2000	Scale:	N/A
		Units:	ENGLISH

Sheet Revisions	

Colorado Department of Transportation



1420 2nd Street
Greeley, CO 80631
Phone: (970) 350-2121
FAX: (970) 350-2198

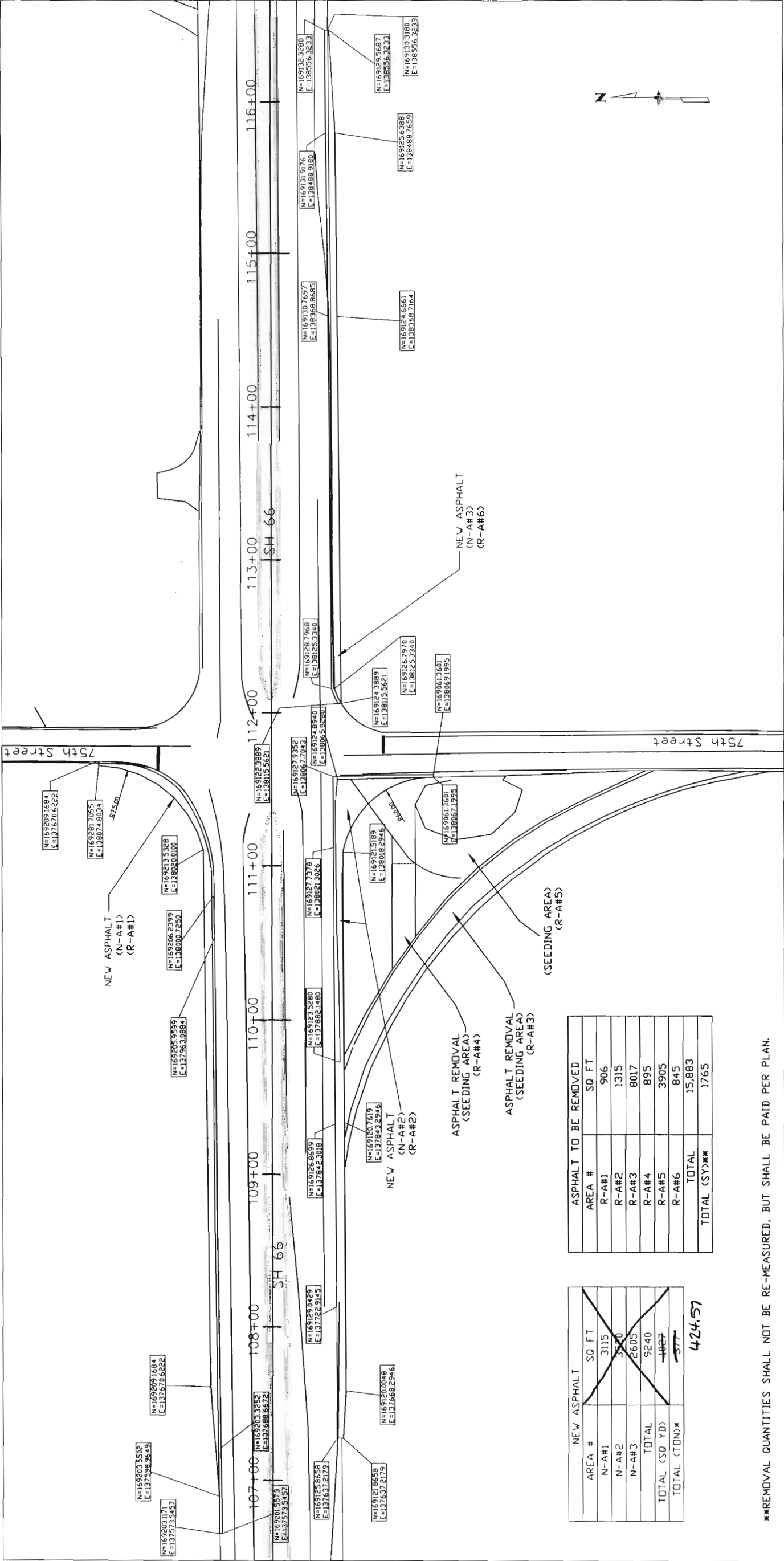
Region 4

RJC

As Constructed	
No Revisions:	9/8/03
Revised:	
Void:	

Modify Manhole Detail			
Designer:		Structure Numbers	
Detailer:			
Sheet Subset:		Subset Sheets:	

Project No./Code	
C 0661-004	
	13983
Sheet Number	9



NEW ASPHALT	
AREA #	SQ. FT.
N-A#1	3115
N-A#2	3240
N-A#3	2605
TOTAL	9240
TOTAL (SQ. YD.)	1067
TOTAL (TON)*	424.57

ASPHALT TO BE REMOVED	
AREA #	SQ. FT.
R-A#1	906
R-A#2	1315
R-A#3	8017
R-A#4	895
R-A#5	3905
R-A#6	845
TOTAL	15,883
TOTAL (SQ. YD.)**	1765

**REMOVAL QUANTITIES SHALL NOT BE RE-MEASURED, BUT SHALL BE PAID PER PLAN.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		New Asphalt & Asphalt Removal		Project No./Code	
Creation Date: 10/6/02		Initials: SBS		 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198		No Revisions:		Designer: Revised: 9/8/03 Detailer: Void:		C 0661-004	
Last Modification Date:		Revised:				Structure Numbers					
Full Path:		Void:				13983					
Drawing File Name:		Scale: N/A		Region 4		RJC		Subset Sheets:		Sheet Number	
Acad Ver. R2000		Units: ENGLISH								10	

NATIVE SEEDING

Soil preparation, seeding, mulching and mulch tackifier will be required for on estimate 0.2 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS PLS/ACRE
Western wheatgrass	Pascopyrum smithii v. Arriba	8.0
Thickspike wheatgrass	Elymus lanceolatus ssp. lanceolatus v. Critana	4.0
Blue grama	Bouteloua gracilis v. Hachita	1.0
Sideoats grama	Bouteloua curtipendula v. Vaughn	3.0
Buffalograss	Buchloe dactyloides v. Texoka	9.0
Little bluestem	Schizachyrium scoparium v. Pastura	2.0
Prairie junegrass	Koeleria cristata	0.3
Gaillardia	Gaillardia aristata	1.0
Blue flax	Linum lewisii	0.5
Dotted gayfeather	Liatrus punctata	0.3
Purple prairie clover	Petalostemum purpureum	0.5
TOTAL		29.6

SEEDING APPLICATION: Drill seed .25" to .5" into the topsoil where possible. In areas not accessible to a drill hand broadcast at triple the above rate and rake .25" to .5" into the topsoil.

MULCHING APPLICATION: 1.5 tons of certified weed free hay per acre mechanically crimped into the topsoil in combination with an organic mulch tackifier.

NOTE: Due to dry conditions hydroseeding and hydromulching shall not be allowed.

FERTILIZER	*FOR INFORMATION ONLY	
	AVAILABLE (%)	LBS/ACRE
Nitrogen	18	27
Phosphorus	46	59
Potassium	0	0
Nitrogen Phosphorus		5.4 lbs 13.8 lbs

PROJECT TOTALS:

PAY ITEM	DESCRIPTION	UNIT	QUANTITY
212	SOIL PREP (SPECIAL)	ACRE	0.5
212	SEEDING (NATIVE)	ACRE	0.5
213	MULCHING (WEED FREE HAY)	ACRE	0.5
213	MULCH TACKIFIER	LB	300
700	EROSION CONTROL	FA	0

EROSION CONTROL NOTES

Disturbed surfaces shall be left in a roughened condition at all times.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Seeding Mix		Project No./Code	
Creation Date: 10/6/02				1420 2nd Street		No Revisions:		Designer:		C 0661-004	
Initials: SBS				Greeley, CO 80631		Revised: 9/8/03		Detailer:		13983	
Last Modification Date:				Phone: (970) 350-2121		Void:		Sheet Subst:		Sheet Number	
Full Path:				FAX: (970) 350-2198		RJC		Structure Numbers		11	
Drawing File Name:				Region 4				Subset Sheets:		Sheet Number	
Acad Ver. R2000		Scale: N/A		Units: ENGLISH						11	



Region 4

1420 2nd Street

Greeley, CO 80631

Phone: (970) 350-2173 FAX: (970) 350-2223

Survey Unit: Mark D. Guerrero

Sheet Revisions	

Sec. 24 and Sec. 25, T 3 N, R 69 W, 6th P.M.
BOULDER COUNTY, COLORADO

Survey Control Diagram

Title Sheet

Project Number: C 0661-004

Project Location: SH 66 & 75th Street Signals

Project Location:

Project Code: 13983

Last Mod. Date: 11-18-02

Subest Sheets: 1

Sheet No.: 2

Total No. of Sheets: 12

PROJECT COORDINATES SUMMARY TABLE (FEET)

POINT NAME	PROJECT COORDINATES		ELEV (NAVD 88)	DESCRIPTION
	NORTHING	EASTING		
CP 3246 (MP 32.46)	169114.650	137365.882	5182.96	CDOT Type II Control Monument
CP 3258 (MP 32.58)	169168.304	138006.819	5172.08	CDOT Type II Control Monument
CP 3270 (MP 32.70)	169173.292	138688.255	5156.34	CDOT Type II Control Monument

GPS COORDINATE SUMMARY TABLE (METRIC)
(ADJUSTED FIELD DATA)

POINT NAME	GEODETTIC COORDINATES NAD-83(92) (CHARN)		ELLIPSOID (NAVD 88)	MAPPING ANGLE	SCALE	NAD 83(92) ZONE	
	LATITUDE(N)	LONGITUDE(W)				NORTHING(m)	EASTING(m)
CP 3246 (MP 32.46)	40°12'11.47279"	105°10'50.09505"	1563.622	0°12'22.99206"	0.999957189	401429.742	941595.926
CP 3258 (MP 32.58)	40°12'11.97997"	105°10'41.83428"	1560.286	0°12'28.32962"	0.999957187	401446.091	941791.228
CP 3270 (MP 32.70)	40°12'12.00473"	105°10'33.05395"	1555.470	0°12'34.00288"	0.999957186	401447.611	941998.869
T320 (Densification Pt.)	40°10'22.60497"	105°15'41.79550"	1690.325	0°09'04.51464"	0.999957763	398050.285	934706.550
W410 (Densification Pt.)	40°12'12.78066"	105°09'16.79420"	1542.821	0°13'23.27686"	0.999957183	401478.350	943802.230

BASIS OF BEARINGS: Bearings used in the calculation of coordinates are based on a grid bearing of S 69°20'57" W from Densification Point "W 410" (flanged encased stainless steel rod) Section 19, Township 3 North, Range 69 West, Sixth P.M. and the Densification Point "T 320 RESET" (Brass cap in concrete post) Section 5, Township 2 North, Range 70 West, Sixth P.M. as obtained from a Global Positioning System (GPS) survey based on the Colorado High Accuracy Reference Network (CHARN).

BASIS OF ELEVATIONS: Project is based on a NAVD 88 elevation of 1559.168m on Densification Point "W 410" (flanged encased stainless steel deep rod). All other project elevations were GPS derived.

COORDINATE DATUM: Project Coordinates are modified Colorado State Plane North Zone NAD 83(92) coordinates. State Plane Coordinates were modified to mean project elevation of 1576.452m. The combined elevation/scale factor used to modify the coordinates was 0.9997098554. Project Coordinates are truncated by 350,000 in the Northing and 900,000 in the Easting. The CHARN is based on NAD 83(92) datum.



Typical Control Monument Cap
Not to Scale

▲ CP - Control Point Monuments set by CDOT. They are CDOT Type 2 monuments a 3-1/4" dia. aluminum control monument cap (as shown) on a 3' X 3/4" dia. finned aluminum security rod on a 3' X 3/4" dia. smooth aluminum rod.

NOTE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the statement shown.

NOTE: No guarantee as to the accuracy of the information contained on the attached drawing is either stated or implied unless this copy bears an original signature of the professional land surveyor hereon named.

SURVEYORS STATEMENT: I, Jerry R. Johnson, a Professional Land Surveyor in the State of Colorado, hereby state that this Control Survey Diagram was prepared under my direct supervision this _____ day of _____, from a field survey performed under my supervision and checking for and on behalf of the Department of Transportation, State of Colorado, and is not a Land Survey Plat or Right-of-Way Survey Plat and to the best of my knowledge and belief this control survey, as shown, meets the minimum horizontal control tolerances of a CDOT Type B Survey and this topographic survey, as shown, meets the minimum horizontal control tolerances of a CDOT Type D Survey as listed in the Colorado Department of Transportation Survey Manual Chapter Three (Revised 4/29/92).

Jerry R. Johnson L.S. 29417



Region 4

1420 2nd Street

Greeley, CO 80631

Phone: (970) 350-2173

FAX: (970) 350-2223

COLORADO DEPARTMENT OF TRANSPORTATION

Survey Unit: Mark D. Guerrero

Sheet Revisions	

Sec. 24 and Sec. 25, T 3 N, R 69 W, 6th P.M.
BOULDER COUNTY, COLORADO

66 MP 32.4 to MP 32.75

Survey Control Diagram

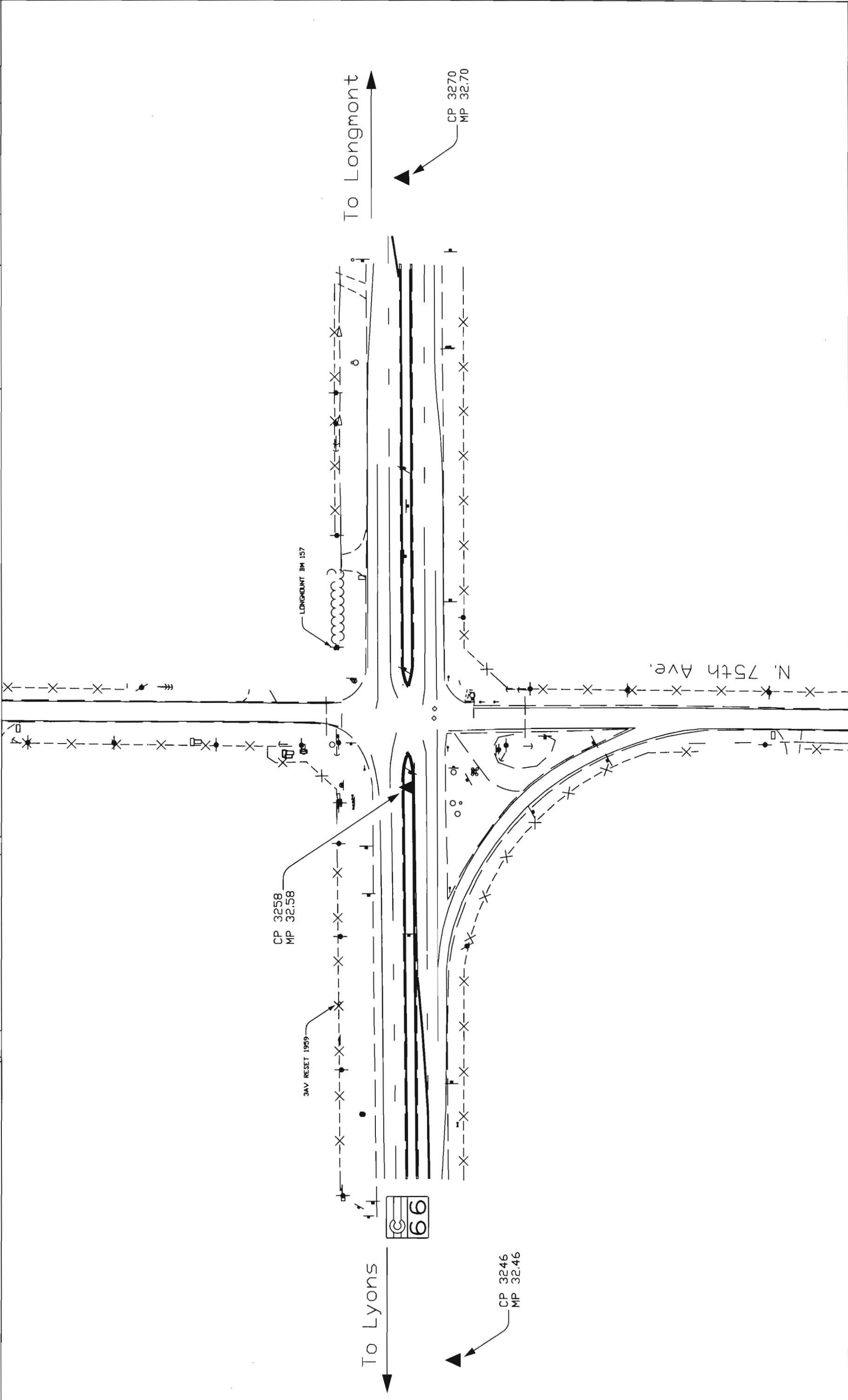
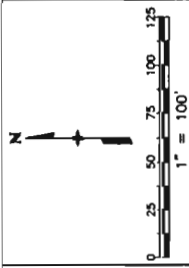
Plan Sheet

Project Number: C 0661-004

Project Location: SH 66 & 75th Street Signals

Project Location:

Project Code:	13983	Last Mod. Date:	11-18-02	Sheet No.	2 of 2	Total No. of Sheets	13
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TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

Format*

☒ Horizontal Control

☐ Vertical Control

☐ Roadway Alignment

☐ Original Terrain Data

☐ Other:

*Specify the information format, ie., plan sheet, computer disk, computer printout, or other.
The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

☐ Landscaping

☒ Signalization

☒ Safety Improvement

☐ Asphalt Overlay

☐ Concrete Overlay

☐ Minor Widening

☐ Major Reconstruction

☐ New Roadway Construction

☐ Bridge Replacement

☐ Bridge Widening

☐ New Bridge

☐ Other:

SURVEY WORK TO BE PERFORMED BY OTHERS:

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 625:

☐ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)

☐ Verification and Maintenance of Horizontal and Vertical Control

☐ Verify or Determine existing grades and alignments

☐ Verify or Determine existing topography

☐ Clearing and Grubbing Limits

☐ Removal Limits

☐ Excavation and Embankment

☐ Excavation

☐ Unclassified

☐ Stripping

☐ Muck

☐ Rock

☐ Borrow

☐ Other:

SLOPE STAKING	GRID	GRADE STAKES	SPECIAL INTERVAL
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

☐ Embankment

☐ Site Grading

☐ Erosion Control (Perm)

☐ Other:

☐ As Staked Earthwork Quantities

☐ Landscaping

☐ Top Soil

☐ Seeding

☐ Mulching

☐ Planting

☐ Other:

☐ Erosion Control

☐ Seeding (Temp)

☐ Silt Fences

☐ Straw Boles

☐ Temporary Berm

☐ Riprap (Temp)

☐ Other (Temp

Diversion, Temp Slope Drain, Bush Barrier, Check Dam, Other:

Computer File Information

Creation Date: 31/Jul/96 Initials: (R-1)

Last Modification Date: 16/May/02 13:11 Initials:MDG (R-2)

Full Path: C:\Common\SurveyTab\ (R-3)

Drawing File Name: Final_surveytab.dwg (R-4)

Acad Ver.: R2002 Scale: N/A Units: English (R-5)

Colorado Department of Transportation



1420 2nd Street
Greeley, CO 80631
Phone: (970) 350-2121
Fax: (970) 350-2198

Region 4

RJG

As Constructed

No Revisions: 9/8/03

Revised:

Void:

Survey Tabulation Sheet

Project No./Code C 0661-004

13983

Sheet Number 14

☐ Temporary Lighting and Construction Traffic Control Devices

☐ Signal pole locations and elevations (Temp)

☐ Light pole locations and elevations (Temp)

☐ Signs (Temp)

☐ Other:

☐ Easement (Temp)(Staking)(P.L.S. Only)

☐ Right of Way (Temp)(Staking)(P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 629:

☐ Monumentation

☐ Control

☐ Right of Way

☐ Land corners, Aliquot corners

☐ Easement (Perm)

☐ Reference the specified existing monuments: **

☐ Relocate the specified existing monuments:

☐ Locate monuments. It is estimated hours are required.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

All work shall be done in accordance with the latest edition of the entire CDOT Survey Manual including all revisions to date:
- Chapter 5 - Construction Surveying, revised 02/07/96.

Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.

The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 3 days prior to the Presurvey Conference.

The following surveying notebooks are required:
☒ Alignment & Grades Notebook
☐ Benchmark Notebook
☐ Control Survey/Monumentation Notebook
☐ Minor Structure Notebook
☐ Major Structure Notebook
☐ Slope Staking & Miscellaneous Notebook
☒ Grade Notebook
☐ Other Notebook(s):

Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.

The Contractor shall furnish an As Staked earthwork quantity to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual.
A printed copy of the As Staked earthwork data and a computer disk in the specified format shall be submitted to the Engineer.
The Contractor shall field verify original ground cross sections at maximum 160 m (500 ft) intervals.

Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within the specified tolerance.

The Contractor shall perform all field surveying and calculations necessary to tie plan grades into field grades.

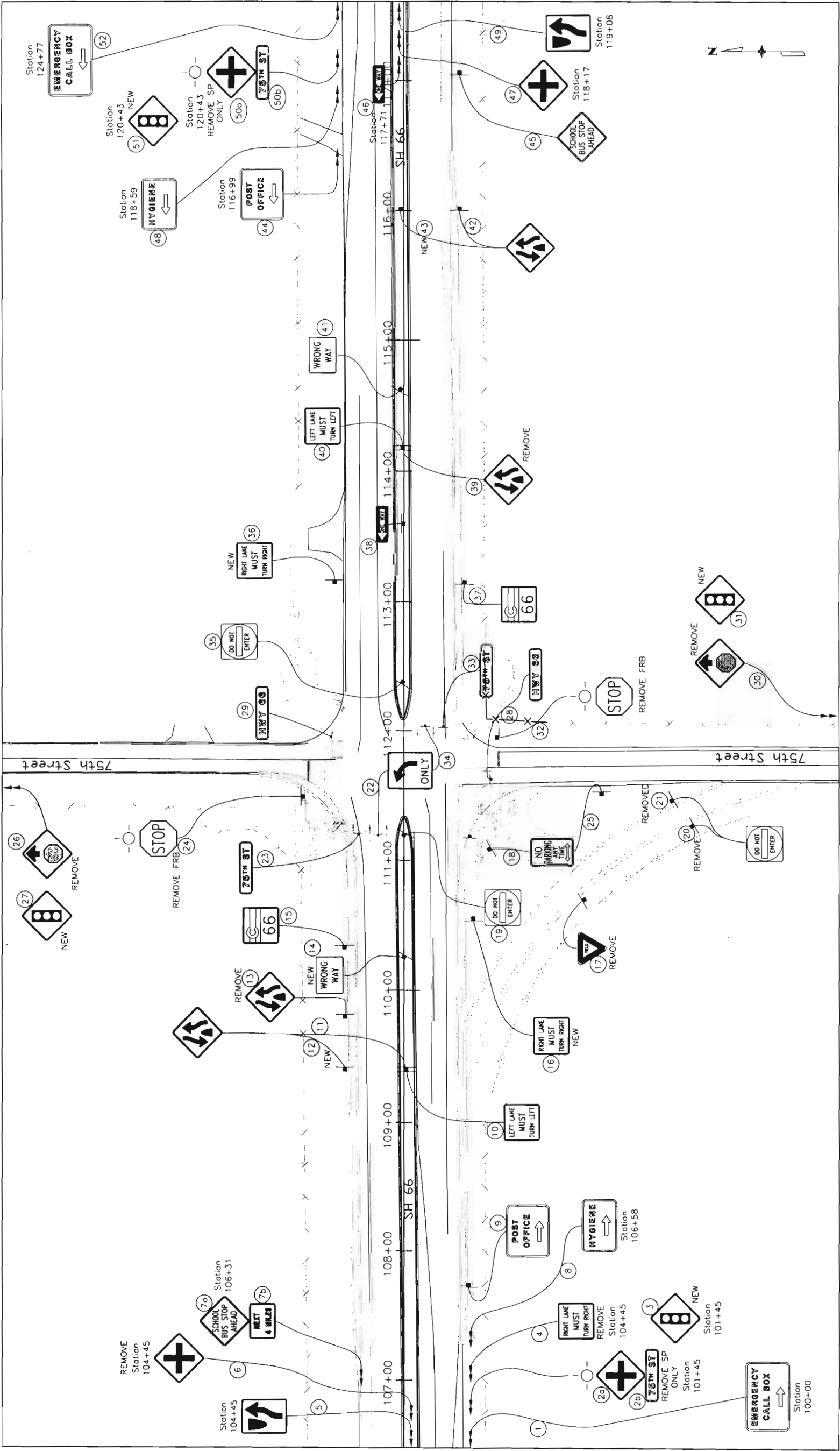
The Contractor shall coordinate construction staking on the project with any utility work.

SIGN CODE	CONTRACT ITEM	SIGN PANEL SIZE	PANEL SIZE			OTHER DEVICES		
				B	C	ITEM	UNITS	PLAN
W20-1	ROAD/WORK/AHEAD	48"x48"		4		FLAGGING	HR	1000 387
W20-7a	FLAGGER SYMBOL	48"x48"		4		TRAFFIC CONTROL INSPECTION	DAY	16 15
W20-5a	RIGHT/SHOULDER/CLOSED	48"x48"		2 2		TRAFFIC CONTROL MANAGEMENT	DAY	40 32
W20-5R/L	R-L/LANE/CLOSED	48"x48"		2		ADVANCE WARNING FLASHING ARROW (C TYPE)	EA	1 2
R52-4	BEGIN/FINES/DOUBLED/FOR/SPEEDING	48"x60"			2	DRUM CHANNELIZING DEVICE	EA	50
R52-5	END/FINES/DOUBLED/FOR/SPEEDING	48"x60"			2	DRUM CHANNELIZING DEVICE(WITH LIGHT) (STEADY BURN)	EA	10 0
R2-1	SPEED LIMIT 35	36"x48"		2		TRAFFIC CONE	EA	150 60
R1-1	STOP	48"x48"		2				
G20-10	THANK YOU	48"x48"		2				
W4-2	Lane transition (12)	48"x48"		2				
W8-9a	Shoulder drop off	48"x48"		4				
	SIGN TOTALS			18 20	4			

NOTES:

- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ROAD APPROACHES DURING ALL PHASES OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- THE TRAFFIC CONTROL ITEMS LISTED ABOVE ARE ONLY FOR ONE SITE. IF MORE THAN ONE SITE IS USED BY TRAFFIC CONTROL, THE CONTRACTOR SHALL PAY FOR IT AT HIS OWN COST.
- CONTRACTOR SHALL MASK ALL SIGNS CONFLICTING WITH CONSTRUCTION SIGNING.
- ALL ROAD WORK AHEAD SIGNS (W20-1) AND BOTH STOP SIGNS (R1-1) SHALL BE POST MOUNTED.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		SCHEDULE OF TRAFFIC CONTROL ITEMS		Project No./Code	
Creation Date: 10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198 Region 4		No Revisions:		Designer: Detailer: Structure Numbers		C 0661-004	
Last Modification Date:	Initials:	Revised: 9/8/03				13983					
Full Path:		Void:									
Drawing File Name:	Units: ENGLISH					Sheet Number					
Acad Ver. R2000	Scale: N/A							Sheet Subset:	Subset Sheets:	15	



Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		Signing Plan		Project No./Code	
Creation Date:	10/6/02	Initials: SBS			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198	Region 4	R/JG	No Revisions: 9/18/03 Revised: Void:	Designer: Detainer: Sheet Subset:	Structure Numbers Subst Sheets:	C 0661-004	13983
Last Modification Date:		Initials:										
Full Path:												
Drawing File Name:												
Acad Ver.	R2000	Scale:	N/A	Units:	ENGLISH						Sheet Number	17

TABULATION OF PAVEMENT MARKINGS

STATION	LOCATION	EDGE		LANE		CENTER	CHANNELIZING		CROSSWALK		STOP LINE		PVMT MARKING (ONLY) (SQ FT)	PVMT MARKING (ARROW) (SQ FT)
		WHITE SOLID 4 INCH	YELLOW SOLID 4 INCH	WHITE BROKEN 4 INCH	YELLOW BROKEN 4 INCH		WHITE SOLID 8 INCH	WHITE SOLID 24 INCH	WHITE SOLID 24 INCH	WHITE SOLID 24 INCH				
	NORTH LEG	-	-	-	-	-	-	-	-	-	48' x 12'	-	-	
	SOUTH LEG	100'	-	-	-	-	-	-	-	-	32' x 12'	-	-	
	EAST LEG	536'	233'	-	-	-	683'	-	-	-	32' x 32'	45	62	
	WEST LEG	1185'	200'	-	-	-	324'	-	-	-	40' x 32'	45	62	
PROJECT TOTALS		1841'	433'				1007'				188'	90	124	

NOTE: ALL STOP LINES, ARROWS, AND ONLY SHALL BE PRE-FORMED THERMOPLASTIC.

1448

1071

TABULATION OF SIGNS

SIGN NO.	SIGN CODE	STATION	LOCATION	DIRECTION OF TRAVEL	SIGN PANEL SIZE (INCHES)	BACK-GROUND COLOR	REMOVE SIGN PANEL (EACH)	REMOVE GROUND SIGN (EACH)	NO. OF POSTS	P POST	P2 POST	POST TYPE (LIN. FT.)								LEGEND	SIGN PANEL (SQ. FT.)		
												WB12	WB15	WB18	WB21	WB22	WB26	WB26	CLASS I		CLASS II	CLASS III	
1	SPEC	100+00	RIGHT	EAST	48 X 30	BLUE		1	1		100								EMERGENCY CALL BOX RA				10
2a	W2-1	101+45	RIGHT	EAST	-	YELLOW	1												CROSSROAD (SYMBOL)				
2b	SPEC	101+45	RIGHT	EAST	-	YELLOW	1												75th STREET				
3	W3-3	101+45	RIGHT	EAST	36 X 36	YELLOW			SIGN PANEL SHALL BE PLACED ON THE EXISTING FLASHING YELLOW BEACON								SIGNAL AHEAD (SYMBOL)		9				
5	R4-7	104+45	MEDIAN	EAST	30 X 36	WHITE		1	1		10								KEEP RIGHT		57.5		
7a	SPEC	106+31	RIGHT	WEST	36 X 36	FL YLW GRN		1	1		12								SCHOOL BUS STOP AHEAD			9	
7b	S3-1	106+31	RIGHT	WEST	24 X 18	FL YLW GRN													NEXT 4 MILES			3	
8	SPEC	106+58	RIGHT	EAST	36 X 24	GREEN		1	1	11									HYGIENE RA				6
9	SPEC	107+74	RIGHT	EAST	36 X 30	GREEN		1	1	11.5									POST OFFICE RA				57.5
10	R3-7L	109+40	MEDIAN	EAST	30 X 30	WHITE			1		57.5								LEFT LANE MUST TURN LEFT		6.25		5
11	W6-2	109+40	MEDIAN	WEST	36 X 36	YELLOW													DIVIDED HIGHWAY ENDS			9	
12	W6-2	109+40	RIGHT	WEST	36 X 36	YELLOW			1		11								DIVIDED HIGHWAY ENDS			9	
13	W6-2	109+80	RIGHT	WEST	36 X 36	YELLOW		1											DIVIDED HIGHWAY ENDS				
14	R5-1a	110+25	MEDIAN	WEST	36 X 24	RED		1	1	10									WRONG WAY			6	
15	M1-6A	110+33	RIGHT	WEST	24 X 24	WHITE		1	1	10									SH ROUTE MARKER		4		
16	R3-7R	110+60	RIGHT	EAST	30 X 30	WHITE			1	10									RIGHT LANE MUST TURN RIGHT		6.25		
18	R7-1	111+09	RIGHT	WEST	12 X 18	WHITE		1	1	10									NO PARKING ANYTIME		1.5		
19	R5-1	111+20	MEDIAN	WEST	30 X 30	WHITE		1	1	10.5									DO NOT ENTER		6.25		
22	R3-5L	111+30	OVERHEAD	WEST	30 X 36	WHITE			MOUNT ON MAST ARM										LEFT TURN ONLY		7.5		
23	SPEC	111+30	OVERHEAD	WEST	48 X 18	GREEN			MOUNT ON MAST ARM										75th STREET		6		
25	R7-1	111+54	RIGHT	NORTH	12 X 18	WHITE		1	1	10									NO PARKING ANYTIME		1.5		
26	W3-1a	111+55	RIGHT	SOUTH	-	YELLOW	1												STOP AHEAD (SYMBOL)				
27	W3-3	111+55	RIGHT	SOUTH	36 X 36	YELLOW			1		12								SIGNAL AHEAD (SYMBOL)			9	
COMPLETE REMOVALS																							
4	R3-7R	104+45	RIGHT	EAST	-	WHITE		1											RIGHT LANE MUST TURN RIGHT				
6	W2-1	105+37	MEDIAN	EAST	-	YELLOW		1											CROSSROAD (SYMBOL)				
17	R1-2	110+70	LEFT	EAST	-	WHITE		1											YIELD				
20	R5-1	111+30	LEFT	NORTH	-	WHITE		1											DO NOT ENTER				
21	R5-1	-	RIGHT	NORTH	-	WHITE			ALREADY REMOVED										DO NOT ENTER				
24	R1-1	111+50	RIGHT	SOUTH	-	RED			INCLUDED WITH FLASHING BEACON REMOVAL										STOP		54		23.5
SHEET TOTALS						22	2516		57.5	75											46.75		

NOTE: POST LENGTHS ARE APPROXIMATE. EXACT LENGTHS TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD.

Computer File Information		As Constructed		Project No./Code	
Creation Date: 10/6/02	Initials: SBS	No Revisions:		C 0661-004	
Last Modification Date:	Initials:	Revised: 9/8/03		13983	
Full Path:		Void:		Structure Numbers	
Drawing File Name:		RJC		Sheet Subst:	
Acad Ver. R2000	Scale: N/A	Region 4		Sheet Number 18	

Tabulation of Signing and Striping

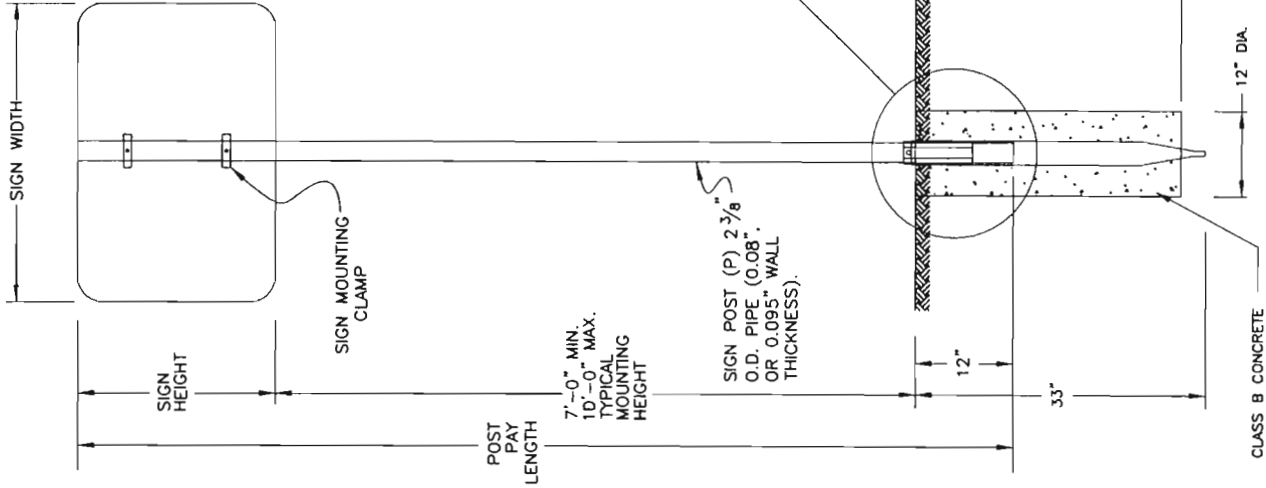
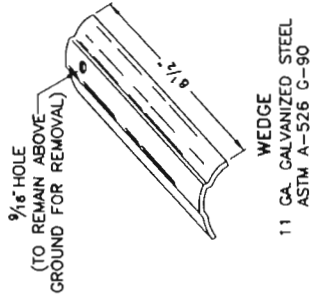
TABULATION OF SIGNS																						
SIGN NO.	SIGN CODE	STATION	LOCATION	DIRECTION OF TRAVEL	SIGN PANEL SIZE (INCHES)	BACK-GROUND COLOR	REMOVE SIGN PANEL (EACH)	REMOVE GROUND SIGN (EACH)	NO. OF POSTS	P POST	P2 POST	POST TYPE (LIN. FT.)						SIGN PANEL (SQ. FT.)				
												WB-12	WB-15	WB-18	WB-21	WB-22	WB-26	WT-26	CLASS I	CLASS II	CLASS III	
28	SPEC	111+60	OVERHEAD	SOUTH	48 X 18	GREEN			MOUNT	ON MAST	ARM							HIGHWAY 66	6			
29	SPEC	111+95	OVERHEAD	NORTH	48 X 18	GREEN			MOUNT	ON MAST	ARM							HIGHWAY 66	6			
30	W3-1a	111+95	RIGHT	NORTH	36 X 36	YELLOW	1											STOP AHEAD (SYMBOL)				
31	W3-3	111+95	RIGHT	NORTH	36 X 36	YELLOW			1		12							SIGNAL AHEAD (SYMBOL)	9			
33	SPEC	112+05	OVERHEAD	EAST	48 X 18	GREEN			MOUNT	ON MAST	ARM							75th STREET	6			
34	R3-5L	112+05	OVERHEAD	EAST	30 X 36	WHITE			MOUNT	ON MAST	ARM							LEFT TURN ONLY	7.5			
35	R5-1	112+37	MEDIAN	WEST	30 X 30	WHITE		1	1	10.5	10							DO NOT ENTER	6.25			
36	R3-7R	113+15	RIGHT	EAST	30 X 30	WHITE			1	10.5	11							RIGHT LANE MUST TURN RIGHT	6.25			
37	M1-6A	113+15	RIGHT	EAST	24 X 24	WHITE		1	1	10								SH ROUTE MARKER	4			
38	R6-1L	113+60	MEDIAN	SOUTH	36 X 12	WHITE		1	1	8	10							ONE WAY (SYMBOL)	3			
40	R3-7L	114+18	MEDIAN	WEST	30 X 30	WHITE				10.5	11							LEFT LANE MUST TURN LEFT	6.25			
41	R5-1a	114+62	MEDIAN	EAST	36 X 24	RED		1	1	10								WRONG WAY	6			
42	W6-2	116+01	RIGHT	EAST	36 X 36	YELLOW		1	1		11							DIVIDED HIGHWAY ENDS	9			
43	W6-2	116+01	MEDIAN	EAST	36 X 36	YELLOW			1		11							DIVIDED HIGHWAY ENDS	9			
44	SPEC	116+99	RIGHT	WEST	36 X 30	GREEN		1	1	10.5								POST OFFICE LA		7.5		
45	S3-1	117+06	RIGHT	EAST	36 X 36	FL YLW GRN		1	1		11							SCHOOL BUS STOP AHEAD	9			
46	R6-1L	117+71	MEDIAN	SOUTH	36 X 12	WHITE		1	1	10.5								ONE WAY (SYMBOL)	3			
48	SPEC	118+59	RIGHT	WEST	36 X 24	GREEN		1	1	10								HYGIENE LA		6		
49	R4-7	119+08	MEDIAN	WEST	30 X 36	WHITE		1	1		9.5							KEEP RIGHT	87.5			
50a	W2-1	120+43	RIGHT	WEST	-	YELLOW	1											CROSSROAD (SYMBOL)				
50b	SPEC	120+43	RIGHT	WEST	-	YELLOW	1											75th STREET				
51	W3-3	120+43	RIGHT	WEST	36 X 36	YELLOW			SIGN PANEL SHALL BE PLACED ON THE EXISTING FLASHING YELLOW BEACON											SIGNAL AHEAD (SYMBOL)	9	
52	SPEC	124+77	RIGHT	WEST	48 X 30	BLUE		1	1		8.5	10						EMERGENCY CALL BOX LA		10		
COMPLETE REMOVALS																						
32	R1-1	111+95	RIGHT	NORTH	-	RED			INCLUDED WITH FLASHING BEACON REMOVAL									STOP				
39	W6-2	114+18	MEDIAN	EAST	-	YELLOW		1										DIVIDED HIGHWAY ENDS				
47	W2-1	118+17	MEDIAN	WEST	-	YELLOW		1										CROSSROAD (SYMBOL)				
SHEET TOTALS						32	1314		92	42	63									61.75	51	23.5
PROJECT TOTALS						54	2839		153.5	104.5	148									104.5	105	47

NOTE: POST LENGTHS ARE APPROXIMATE. EXACT LENGTHS TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Tabulation of Signing and Striping		Project No./Code	
Creation Date:	10/6/02			1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 FAX: (970) 350-2198		No Revisions:		Designer:		C 0661-004	
Last Modification Date:						Revised: 9/8/03		Detailer:		13983	
Full Path:				Region 4		Void:		Structure Numbers		Sheet Number	
Drawing File Name:								Sheet Subset:		2 of 2	
Acad Ver.	R2000	Scale:	N/A	Units:	ENGLISH			Subset Sheets:		19	

TUBULAR STEEL POSTS
(SOCKET SYSTEM)
(SINGLE OR DOUBLE POST)

SIGNPOST SELECTION GUIDE



POST NOTES:
THE POST MAY BE PRE-PUNCHED WITH 3/8" HOLES AND THE SIGN MOUNTED DIRECTLY TO THE POST, OR AN APPROVED MOUNTING CLAMP MAY BE USED TO MOUNT THE SIGN TO THE POST. IF THE POST IS PRE-PUNCHED, THE HOLES SHALL BE SPACED THE FOLLOWING DISTANCES FROM THE TOP:
1", 3", 10", 16", 21", 23", 24", 27", 33", 37", 39", & 45".

MOUNTING HEIGHT (FT)	SIGN WIDTH (FT) / MOUNTING HEIGHT (FT)																	
	1	2	2.5	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	7	8	9	10	7	8	9	10	7	8	9	10	7	8	9	10	7	8
2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2.5	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

GENERAL NOTES:

- SIGN POSTS SHALL BE COLD FORMED STEEL WITH A MINIMUM YIELD STRENGTH OF 55 KSI. POST COLOR SHALL BE GALVANIZED.
- STEEL TUBE SIGN SUPPORTS SHALL BE INSTALLED UNDER THE SUPERVISION OF AN ON-SITE INDIVIDUAL TRAINED BY THE MANUFACTURER OF THE SUPPORTS. PRIOR TO INSTALLATION OF THE SIGN SUPPORTS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER WRITTEN CERTIFICATION FROM THE MANUFACTURER THAT THE INDIVIDUAL SUPERVISING THE INSTALLATION HAS BEEN TRAINED TO PROPERLY INSTALL THE SUPPORTS. UPON COMPLETION OF SIGN SUPPORT INSTALLATION, THE CONTRACTOR SHALL SUBMIT WRITTEN CERTIFICATION, SIGNED BY THE TRAINED INSTALLER, THAT THE SUPPORTS WERE INSTALLED ACCORDING TO THE MANUFACTURER'S REQUIREMENTS.
- SIGNS AND POSTS SHALL INCLUDE ALL HARDWARE NECESSARY FOR COMPLETE INSTALLATION. POST TYPE P SHALL BE PAID FOR AS 614 STEEL SIGN POST (2 INCH ROUND), LIN. FT.
- SIGNS BETWEEN 37" AND 60" WIDTH WITH ONE POST INSTALLATION REQUIRE T SIGN SUPPORT BRACKET IN ADDITION TO THE BACKING ZEE REQUIREMENTS.
- MULTIPLE SIGNS MAY USE THE U SIGN SUPPORT BRACKET.
- FOR BACKING ZEE REQUIREMENTS AND DETAILS, SEE COLORADO STANDARD PLANS S-614-3 AND S-614-4.
- CLASS B CONCRETE MAY BE SUBSTITUTED WITH A COMPARABLE PRODUCT THAT MEETS SPECIFICATIONS AS NOTED IN THE STANDARD SPECIFICATIONS.

CHART NOTES:

- WIND LOAD DESIGN = 80 MPH.
- TYPICAL POST MOUNTING HEIGHTS FROM GROUND TO BOTTOM OF SIGN PANEL ARE 7, 8, 9, 10 FEET.
- FOR SIGNS MOUNTED ON TWO POSTS, MINIMUM DISTANCE BETWEEN POSTS SHALL BE 2 FEET AND MAXIMUM DISTANCE SHALL BE 8 FEET. MAXIMUM DISTANCE FROM POST TO EDGE OF SIGN PANEL(S) SHALL BE 0 TO 4 INCHES. WHEN BACKING ZEES ARE USED, POSTS SHALL BE INSTALLED WITH A MINIMUM OF 2" FROM EDGE OF THE BACKING ZEE.

*** SIZES NOT USED. REFER TO COLORADO STANDARD PLANS SECTION 614 FOR LARGER SIGN SUPPORTS.

MAXIMUM ALLOWABLE MOMENT PER POST:

P (2", 2.375" OD) 1.46 KIP FT

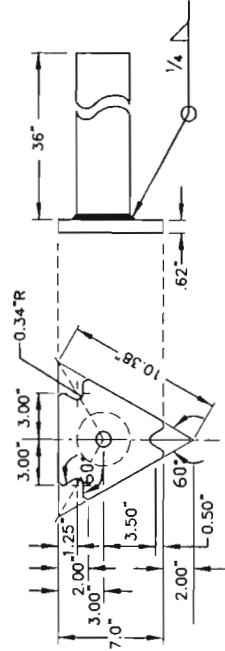
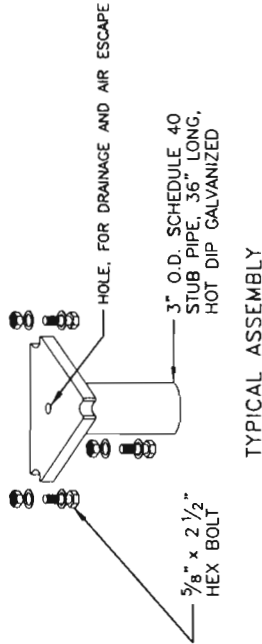
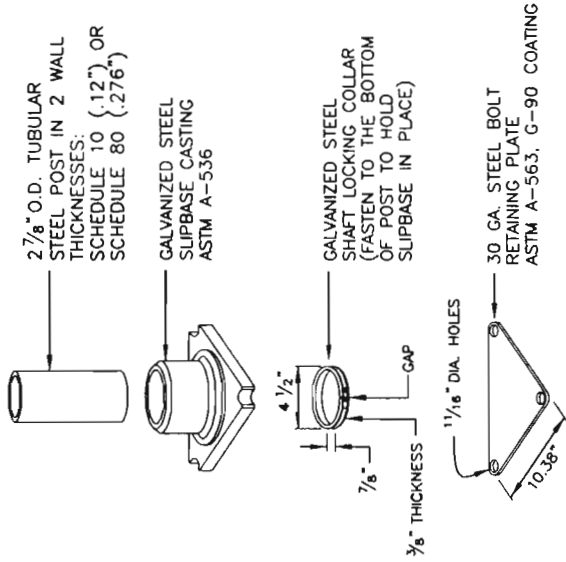
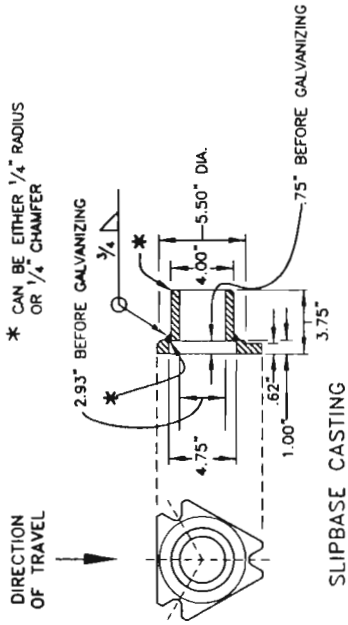
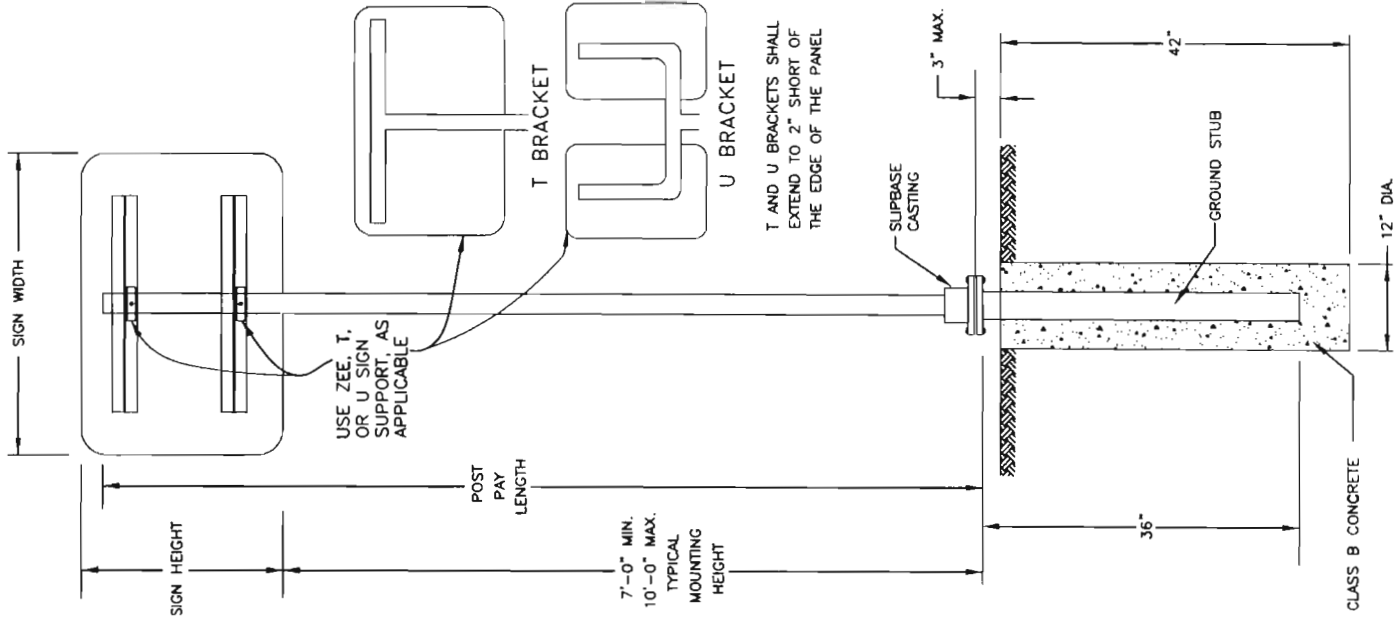
P2 (2 1/2", 2.875" OD, SCHEDULE 80) 4.68 KIP FT

COLORADO
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TRAFFIC ENGR BRANCH
REG 4, JAN 2002

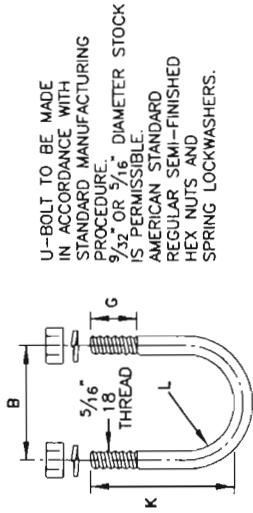
GROUND MOUNTED
SIGN SUPPORT DETAILS
SHEET 1 OF 2 (ENGLISH)

TUBULAR STEEL POSTS
(WITH SLIPBASE)
(SINGLE OR DOUBLE POST)



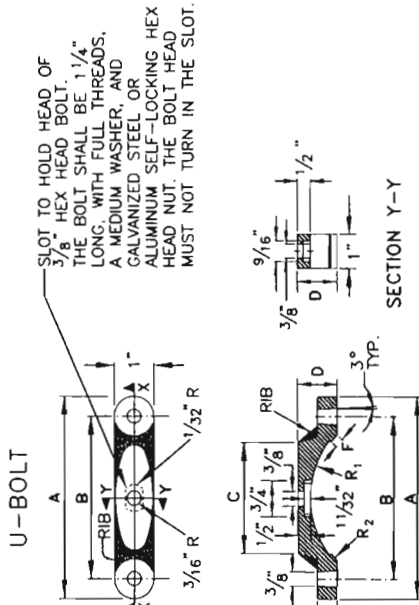
STANDARD PIPE SIZE	A	B	C	D	E	F	G	K	L	R ₁	R ₂
2	3 3/4	2 3/4	1 1/2	1 1/8	1/2	3/16	1	2 11/16	1 7/32	1 1/4	1 3/16
2 1/2	4 1/4	3 1/4	2	1 1/4	1/2	1/4	1	3 3/16	1 5/32	1 1/2	1 7/16

DIMENSIONS FOR MOUNTING CLAMP



PIPE CLAMP CASTING

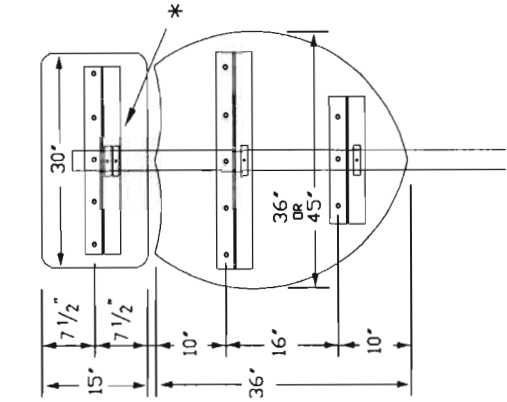
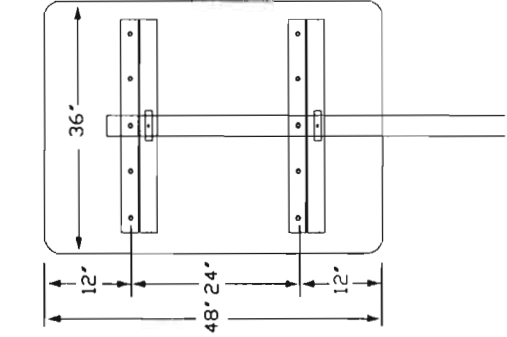
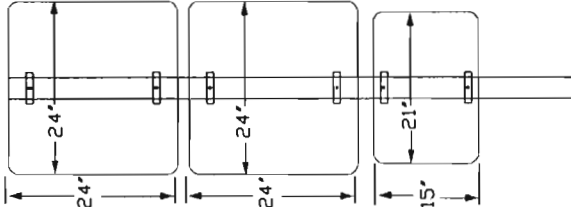
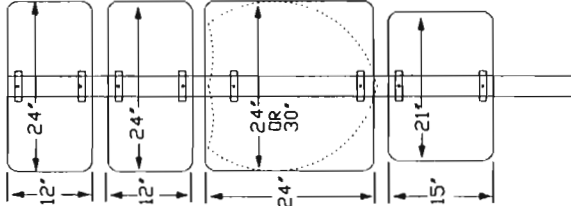
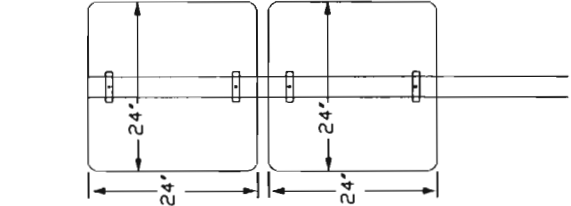
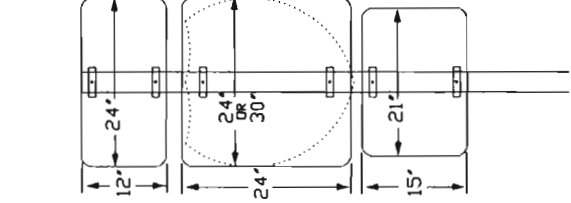
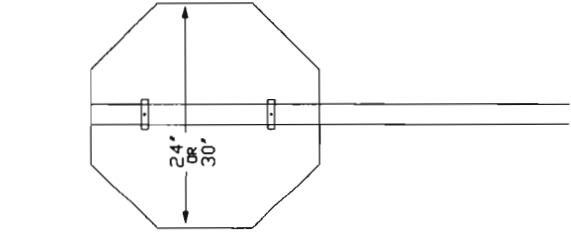
PIPE CLAMP CASTING SHALL BE ASTM B26 OR B108 ALUMINUM ALLOY A444.0-T4 OR 356.0-F. ALL SIGN MOUNTING CLAMP PARTS NOT MADE FROM ALUMINUM SHALL BE GALVANIZED STEEL IN CONFORMANCE WITH ASTM A153 OR STAINLESS STEEL.



MOUNTING CLAMP FOR SOCKET OR SLIPBASE

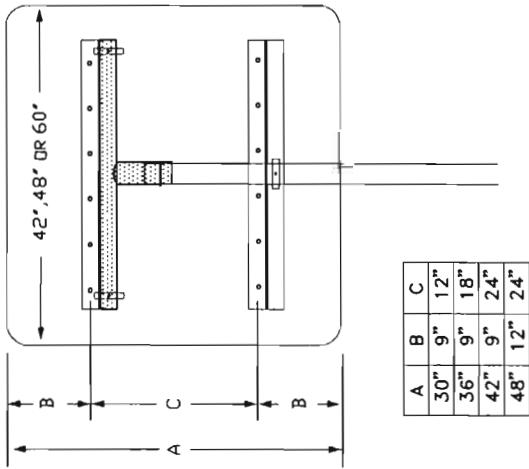
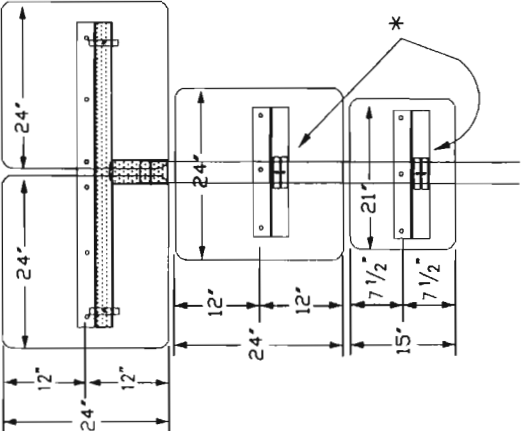
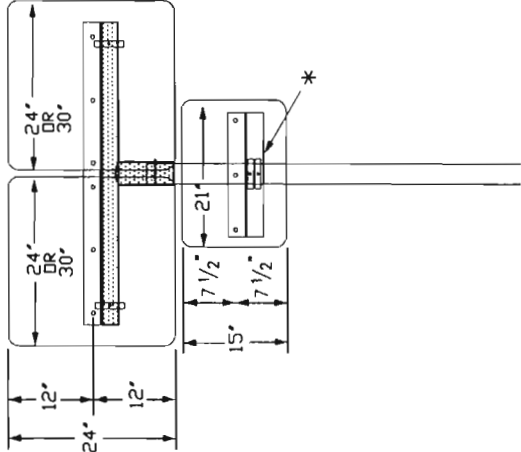
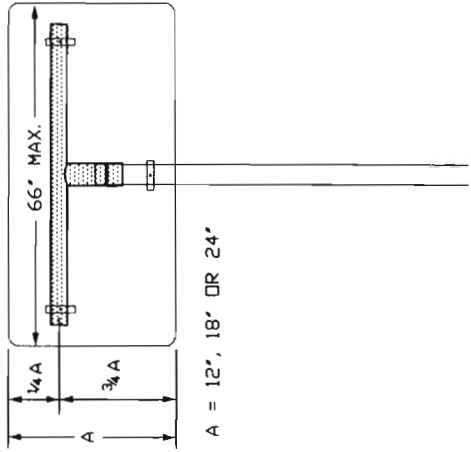
- GENERAL NOTES:
- SIGNS AND POSTS SHALL INCLUDE THE FOOTING, SLIPBASE, AND ALL HARDWARE NECESSARY FOR COMPLETE INSTALLATION. POST TYPE P1 AND P2, INCLUDING T AND U MOUNTINGS, SHALL BE PAID FOR AS 614 STEEL SIGN POST (2.5 INCH ROUND)(SLIPBASE) AND (2.5 INCH ROUND)(SLIPBASE SCH. 80), LIN. FT.
 - ALSO SEE NOTES 1, 2, 4, 5, 6, AND CHART NOTES ON PAGE 1.

Computer File Information			Sheet Revisions			Colorado Department of Transportation		As Constructed	Ground Mounted Sign Support Details		Project No./Code
Creation Date:	02\01\96	Initials: SS	(R-1)			 1420 2nd Street Greeley, CO 80631 City, State Zip Code Fax: 970-350-2198 Region 4		No Revisions: 9/8/03	Sign Support Details		C 0661-004
Last Modification Date:		Initials:	(R-2)					Revised:			
Full Path:			(R-3)					Designer:			
Drawing File Name:			(R-4)					Detailer:			
Acad Ver. 2000	Scale: N/A	Units: English	(R-5)			RUG		Sheet Subset:	Sheet Sheets: 2 of 4		Sheet Number 22



SINGLE POST CLASS II SIGNS USING Z-BAR

CLASS I SIGN COMBINATIONS (DIRECT ATTACHMENT)

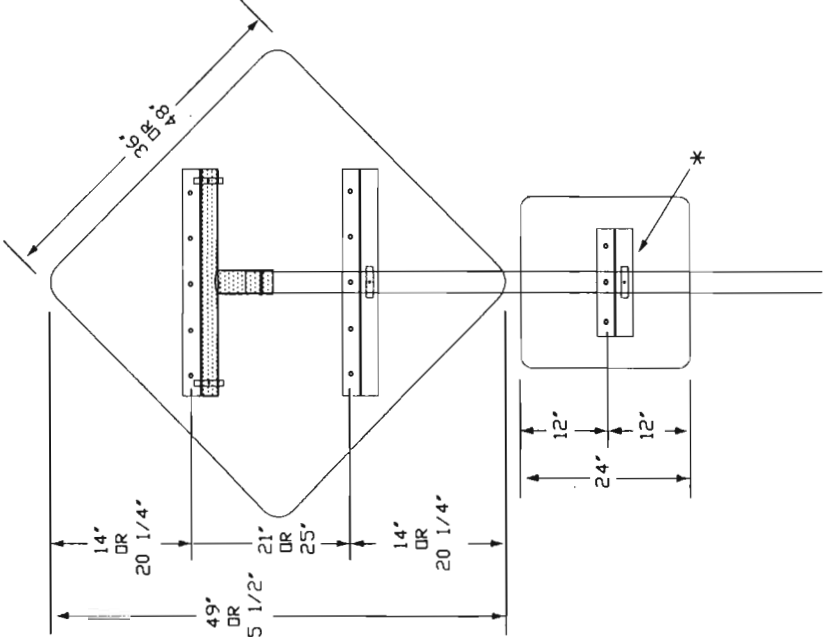


A	B	C
30"	9"	12"
36"	9"	18"
42"	9"	24"
48"	12"	24"

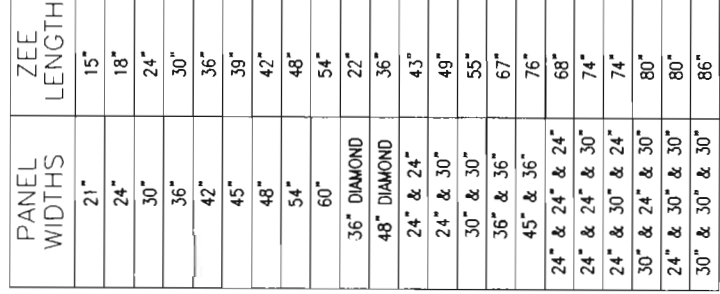
SIGNS USING T-BRACE ONLY

*SEE NOTE 4 ON SHEET 4

SIGN COMBINATIONS USING T-BRACES WITH Z-BAR



Computer File Information			Sheet Revisions		Colorado Department of Transportation		As Constructed		GROUND MOUNTED SIGN SUPPORT DETAIL		Project No./Code	
Creation Date:	1/25/02	Initials: JW			 1420 2nd Street Greeley, CO 80631 Phone: (970) 350-2121 Fax: (970) 350-2198 Region 4	RJG	No Revisions:	9/8/03	Designer:		C 0661-004	
Last Modification Date:	10/9/02	Initials: SBS		Revised:				Detailer:				
Full Path:				Void:				Sheet Subset:				
Drawing File Name:												
Acad Ver.	R2000	Scale: N/A										
Units: ENGLISH											Sheet Number	23



Technical drawing of a 2x2 grid of rectangular panels with rounded corners, showing dimensions and assembly details. The drawing includes a top view and a side view.

Top View Dimensions:

- Overall width: 36"
- Overall height: 36"
- Panel width: 15"
- Panel height: 15"
- Gap width: 1"
- Gap height: 1"
- Panel width (including gap): 16"
- Panel height (including gap): 16"
- Panel width (including gap and rounded corner): 17 1/2"
- Panel height (including gap and rounded corner): 17 1/2"
- Panel width (including gap and rounded corner, dashed line): 18"
- Panel height (including gap and rounded corner, dashed line): 18"

Side View Dimensions:

- Overall width: 24"
- Overall height: 24"
- Panel width: 12"
- Panel height: 12"
- Gap width: 1"
- Gap height: 1"
- Panel width (including gap): 13"
- Panel height (including gap): 13"
- Panel width (including gap and rounded corner): 14"
- Panel height (including gap and rounded corner): 14"
- Panel width (including gap and rounded corner, dashed line): 15"
- Panel height (including gap and rounded corner, dashed line): 15"

Assembly Details:

- Panel width (including gap and rounded corner, dashed line): 18"
- Panel height (including gap and rounded corner, dashed line): 18"
- Panel width (including gap and rounded corner, dashed line): 18"
- Panel height (including gap and rounded corner, dashed line): 18"
- Panel width (including gap and rounded corner, dashed line): 18"
- Panel height (including gap and rounded corner, dashed line): 18"
- Panel width (including gap and rounded corner, dashed line): 18"
- Panel height (including gap and rounded corner, dashed line): 18"

Sheet Revisions

Computer File Information			
Creation Date:	11/4/02	Initials:	SBS
Last Modification Date:		Initials:	
Full Path:			
Drawing File Name:			
Acad Ver.	R2000	Scale:	N/A
		Units:	ENGLISH

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As Constructed
No Revisions: 9/8/03
Revised:
Void:

Project No./Code	
C 0661-004	
13983	
Sheet Number	24