

BILL OF MATERIALS

ITEM	DESCRIPTION	QTY	POST	PART NO.
1	Bracket	2		SBKS25-1A,-2A,-3A
2	Bracket Hardware Assembly, B525-LP	1		SB-8525LPH
2a	Bolt 12.7mm(1/2")-13UNF-6.35mm(2-1/2"), Hex Head, ASTM A325, Galv. ASTM A153	4		S325R635250
2b	Bolt 12.7mm(1/2")-13UNF-6.85mm(2-3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4		S325R635275
2c	Bolt 12.7mm(1/2")-13UNF-7.62mm(3"), Hex Head, ASTM A325, Galv. ASTM A153	4		S325R635300
2d	Cap Screw 12.7mm(1/2")-13UNF-3.175mm(1-1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4		S3075G5125
2e	Lock Washer 12.7mm(1/2") ANS1 B18-21-1, Galv. ASTM A153	16		S100WGSLS0
2f	Nut 12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	12		S563NGH500
2g	Shim 24.51mm(1") Horsehoe, 18 Gauge, Galv. Steel Sheet	2		S100WGS118
2h	Shim 24.51mm(1") Horsehoe, 14 Gauge, Galv. Steel Sheet	2		S100WGS114
3	Coupling & Bolt Assembly, LP, Type B	1		SB-CBLP
3a	Special Bolt 24.51mm(1")-BUNC, ASTM A449, Galv. ASTM A153/BB95	4		SBCSBB
3b	Coupling 24.51mm(1")-BUNC, LP, AMS 63780*, Galv. ASTM A153, Polyester Coat**	4		SBCB1B
4	Hinge Assembly, Type B525	1		SB-HB1
4a	Hinge Plate Type B525, AISI 4130 Steel, Galv. ASTM A123	4		SBHB1B
5	Hinge Hardware Assembly, Type B	1		SB-HHB
5a	Bolt 19.05mm(3/4")-10UNC-57.15mm(2-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8		S325HG7225
5b	Lock Washer 19.05mm(3/4") ANS1 B18-21-1, Galv. ASTM A153	8		S100WGS170
5c	Nut 19.05mm(3/4")-10UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8		S563NGH700
6	Anchor Assembly, Type B	1		SBABPK
6a	Anchor 24.51mm(1")-BUNC, 304 S.S.Ferrule, AISI 1038 Rod, AISI 1008 Coil	4		SBABP

** 2-4 Mil. Thick Merton Powder Coatings' 20-7037 polyester powder coat.

GENERAL NOTES:

- Meets all requirements of "AASHTO standard specifications for structural supports for highway signs, luminaires and traffic signals".
- All hardware (American Standard) supplied is hot dip galvanized per ASTM A153 or mechanically galvanized per ASTM B695.
- Fasteners, except for special bolt and coupling, are installed with lockwashers or locknuts and do not have specific torque requirements. Fasteners should be made as tight as possible with conventional wrenches unless noted otherwise.
- Square and level individual components to minimize need for shimming.
- Structural steel to be hot dip galvanized per ASTM A123 after fabrication
- No more than two shims underneath any one coupling and no more than three shims underneath any two couplings.
- Select proper post size by referring to post selection tables for medium and large signs
- Refer below for complete installation instructions.

Select correct bracket number from bracket selection table using the proper "L" value as shown in the attached figure.

$$L = L_T - H/2$$

POST WIDTH	BRACKET SELECTION TABLE		
	BRACKET #1	BRACKET #2	BRACKET #3
	MIN. 'L'	MAX. 'L'	MIN. 'L'
152MM(6")	3.6m(12')	8.8m(29')	2.7m(9')
203MM(8")	4.3m(14')	8.8m(29')	3.0m(10')

INSTALLATION NOTES

Wrench sizes required: 9/16", 7/8", 1-1/16", 1-1/4", 1-7/16", 1-5/8"

BRACKET ASSEMBLY:

- Assemble bracket to post with bolts provided.
- Square and tighten (Item 1, 2a, 2b, 2c, 2d, 2e & 2f)

ANCHOR ASSEMBLY:

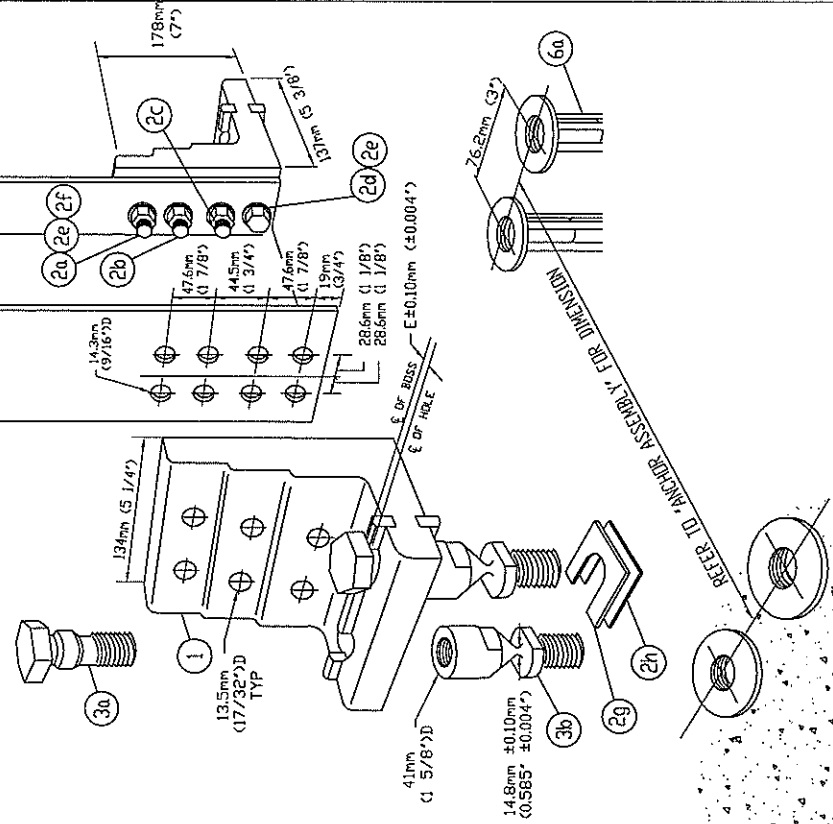
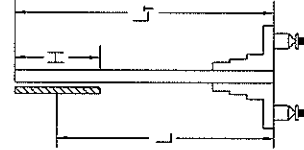
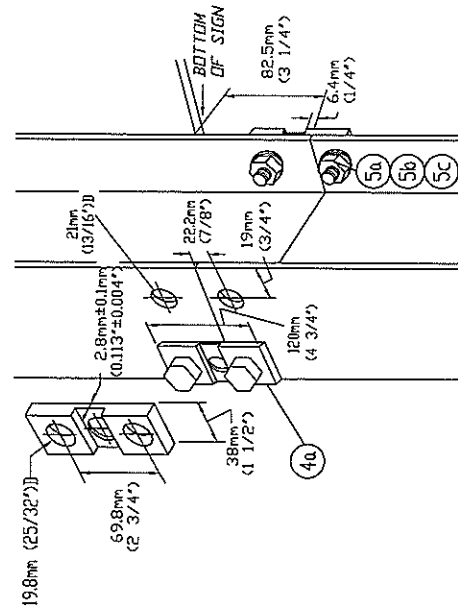
- Assemble coupling anchors 6a to installation template (not shown). Rigid steel template is recommended
- Lower entire anchor assembly into fresh concrete and vibrate into position so that the tops of the individual anchors 6a are flush with the finished top surface of the toolings.

COUPLING ASSEMBLY:

- Suspend post over footing and insert special bolts 3a through bracket 1.
- Below bracket, thread couplings 3b into anchors 6a but leave loose.
- Lower post with special bolts 3a onto loose couplings 3b and thread bolts into couplings.
- Thread couplings all the way in to anchors 6a.
- Tighten special bolts 3a.
- NOTE: do not place torque across necked down portion of coupling-- wrench flats are provided on either side for proper tightening.
- If post is not plumb, insert shims 2g and 2h between couplings 3b and anchor 6a.

HINGE ASSEMBLY:


- Butt upper and lower posts together on flat surface.
- Place hinge plates 4a on outer flanges and secure with bolts 5a, 5b and 5c--snug but do not tighten.
- Make sure upper and lower posts are in alignment; then tighten all nuts 5c to proof load -- 1/2 a turn beyond snug



Computer File Information

Creation Date:	1/28/97	Initials:	SJH
Last Modification Date:	1/28/97	Initials:	SJH
Full Path:	\\STANDARD\		
Drawing File Name:	MULTI-2.dwg		

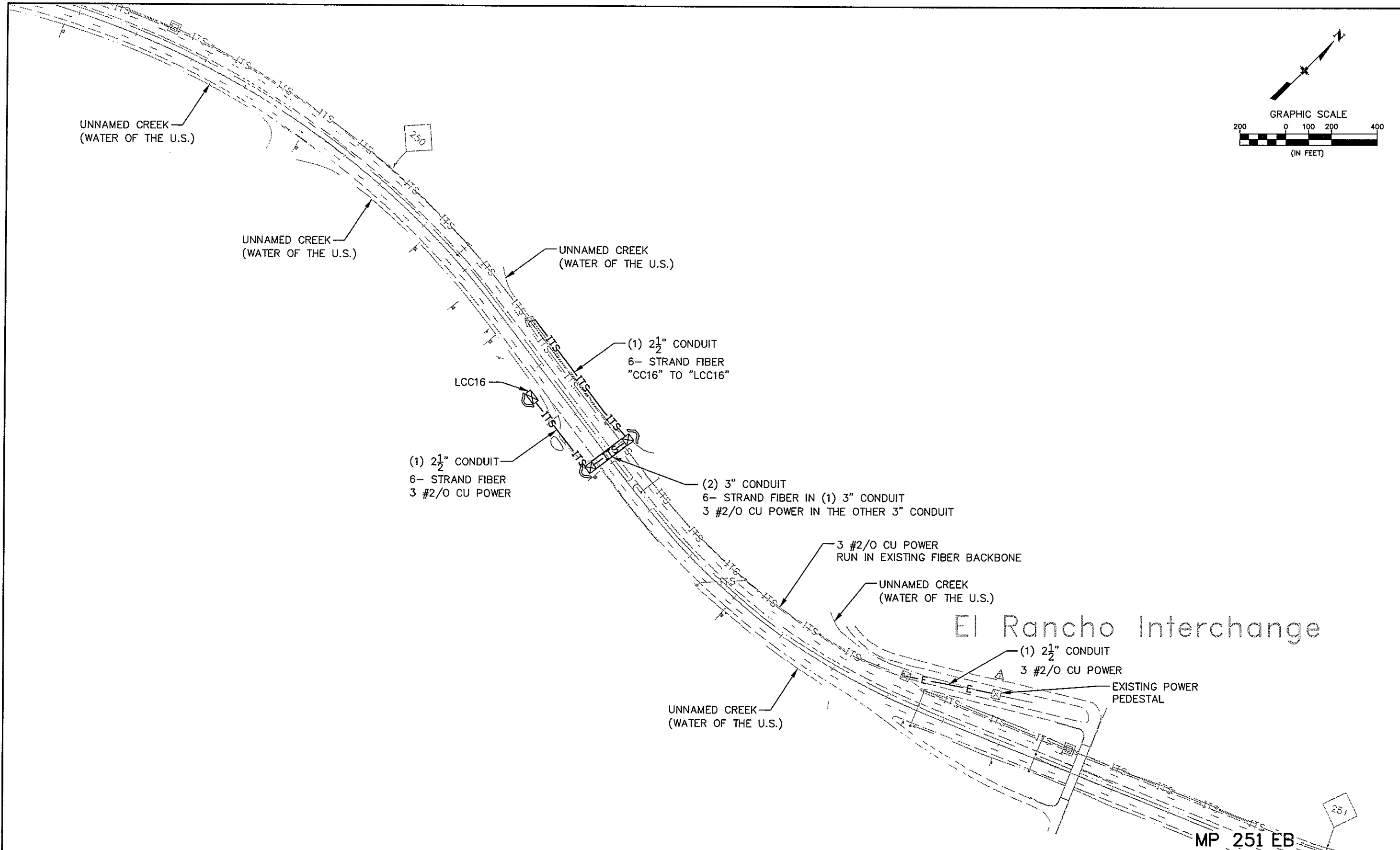
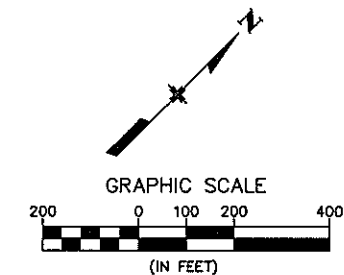
Index of Revisions

Colorado Department of Transportation
 4201 E. Arkansas
 Denver, CO 80222
 Phone: 757-9355 FAX: 757-9219
 Staff Traffic

As Constructed
No Revisions:
Revised:
Void:


Multi-Directional Break-Away Detail	
for 152mm(6") and 203mm(8") WF Sign Post	
Designer:	SJH
Detailer:	SJH
Sheet Subset:	Traffic
Structure Numbers	
Subset Sheet Number:	9 of 11

Project No./Code	IM 070A-003
	16701
Sheet Number	- 74



Computer File Information	
Creation Date: 02/18/08	Initials: SRB
Last Modification Date: 03/25/08	Initials: BEG
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR	
Drawing File Name: conduit016-mp251eb.dgn	
Scale:	Units: ENGLISH

Index of Revisions	



Region 1
18500 East Colfax
Aurora, CO 80011
Phone: (303) 365-7340
FAX: (303) 365-7343

REGION I DW

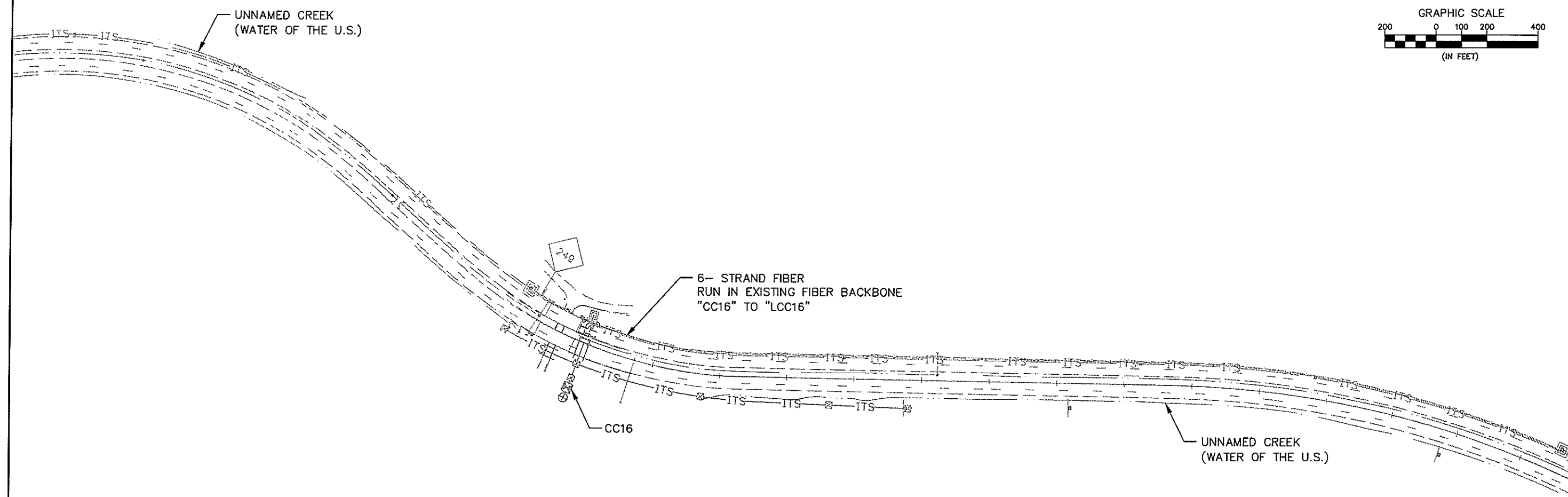
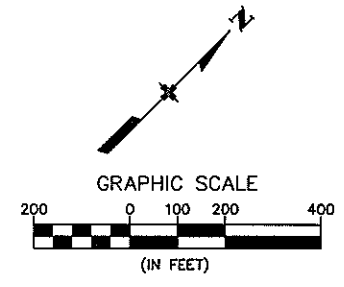


4601 DTC Blvd.
Suite 700
Denver, CO 80237
Phone: (303) 221-7275
Fax: (303) 221-7276



As Constructed
No. Revisions:
Revised:
Void:

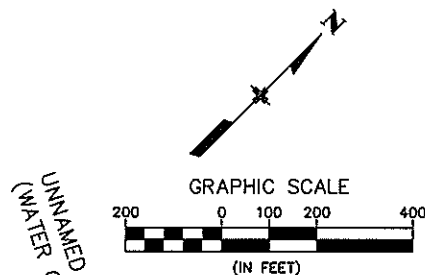
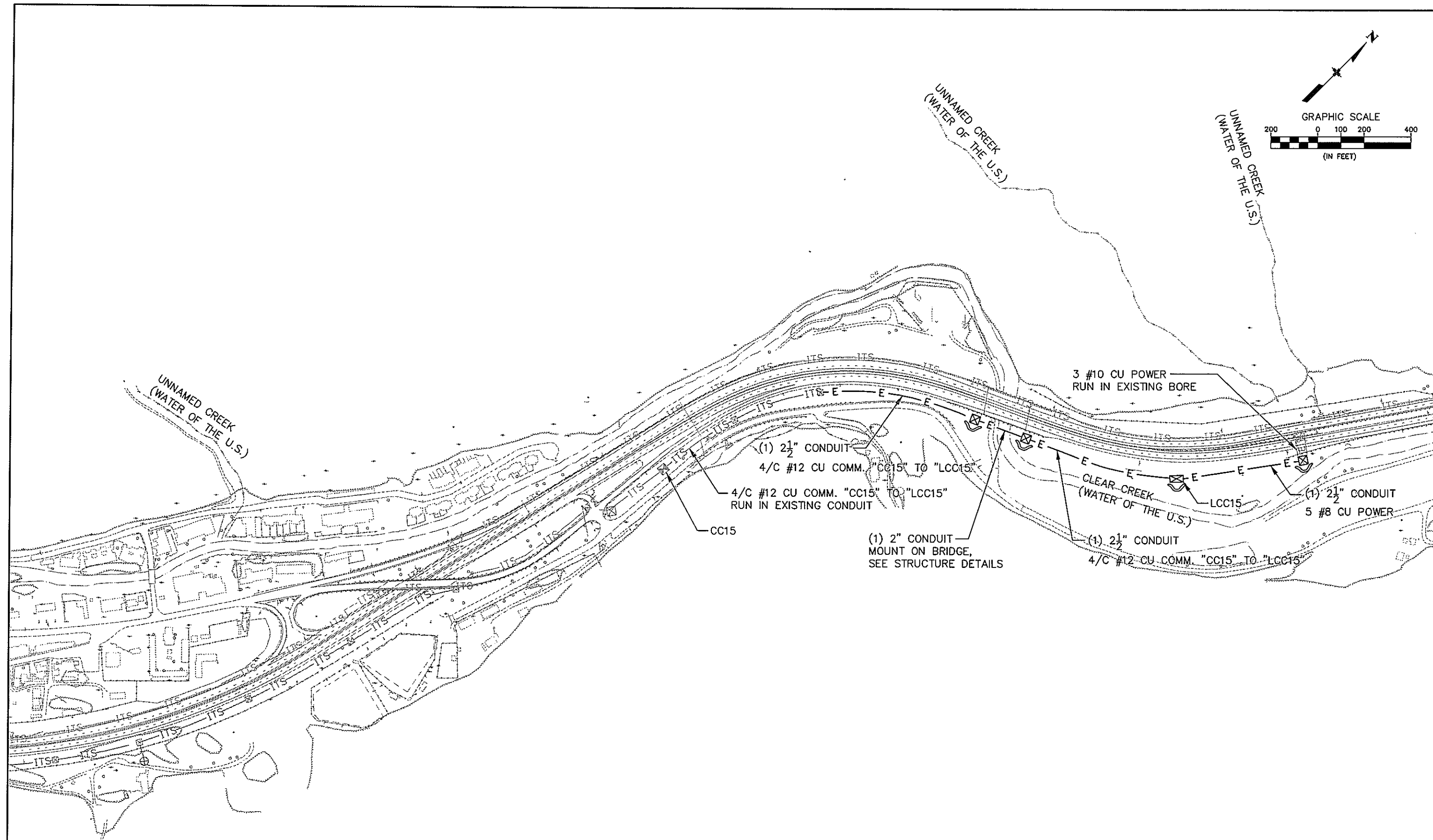
CONDUIT PLAN and SWMP SITE MAP			
Designer:	SRB	Structure Numbers	
Detailer:	BEG	Subset Sheets:	16 of 17
Sheet Subset:	Conduit		

Project No./Code	IM 070A-003
	16701
Sheet Number:	105





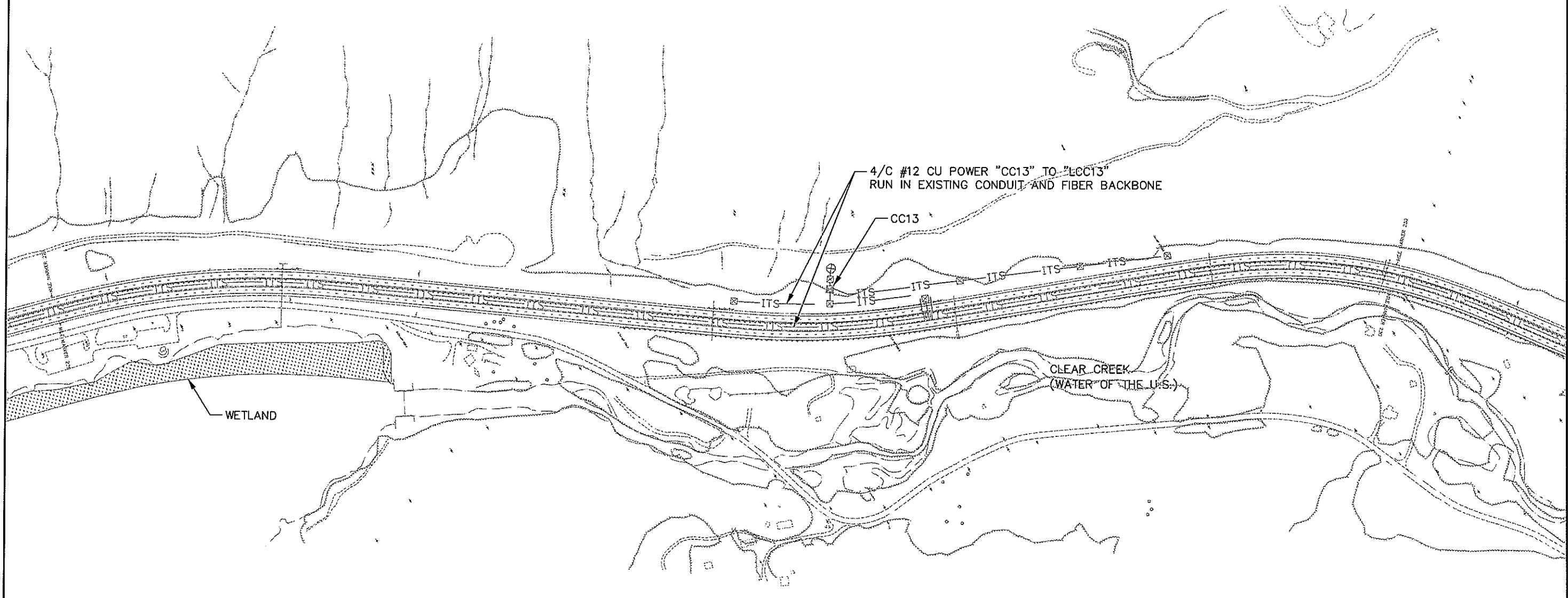
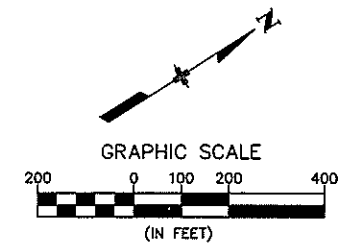
MP 251 EB

Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB	<input type="checkbox"/>				No. Revisions:	Designer: SRB			Structure Numbers:	IM 070A-003
Last Modification Date: 03/25/08	Initials: BEG	<input type="checkbox"/>		Revised:	Detailer: BEG		16701				
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR		<input type="checkbox"/>		Void:	Sheet Subset: Conduit	Subset Sheets: 15 of 17	Sheet Number: 104				
Drawing File Name: conduit015-mp251eb.dgn		<input type="checkbox"/>		REGION I	DW						
Scale:	Units: ENGLISH	<input type="checkbox"/>									





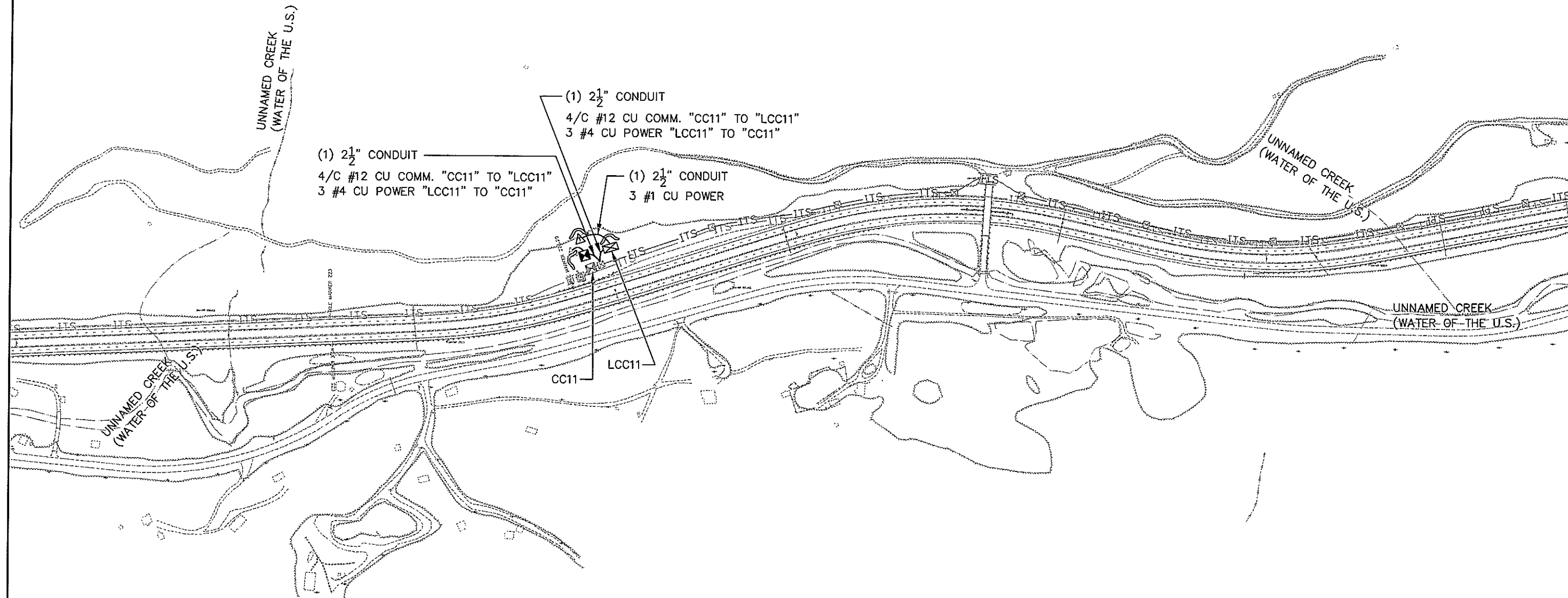
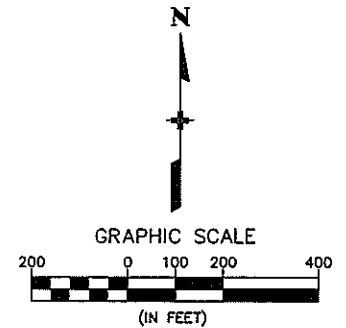
MP 241 EB

Computer File Information Creation Date: 02/18/08 Initials: SRB Last Modification Date: 03/25/08 Initials: BEG Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR Drawing File Name: conduit014-mp241eb.dgn Scale: Units: ENGLISH		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>																	 REGION I DW Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343		 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276		As Constructed No. Revisions: Revised: Void:		CONDUIT PLAN and SWMP SITE MAP Designer: SRB Structure Numbers: Detailer: BEG Sheet Subset: Conduit Subset Sheets: 14 of 17				Project No./Code IM 070A-003 16701 Sheet Number: 103	





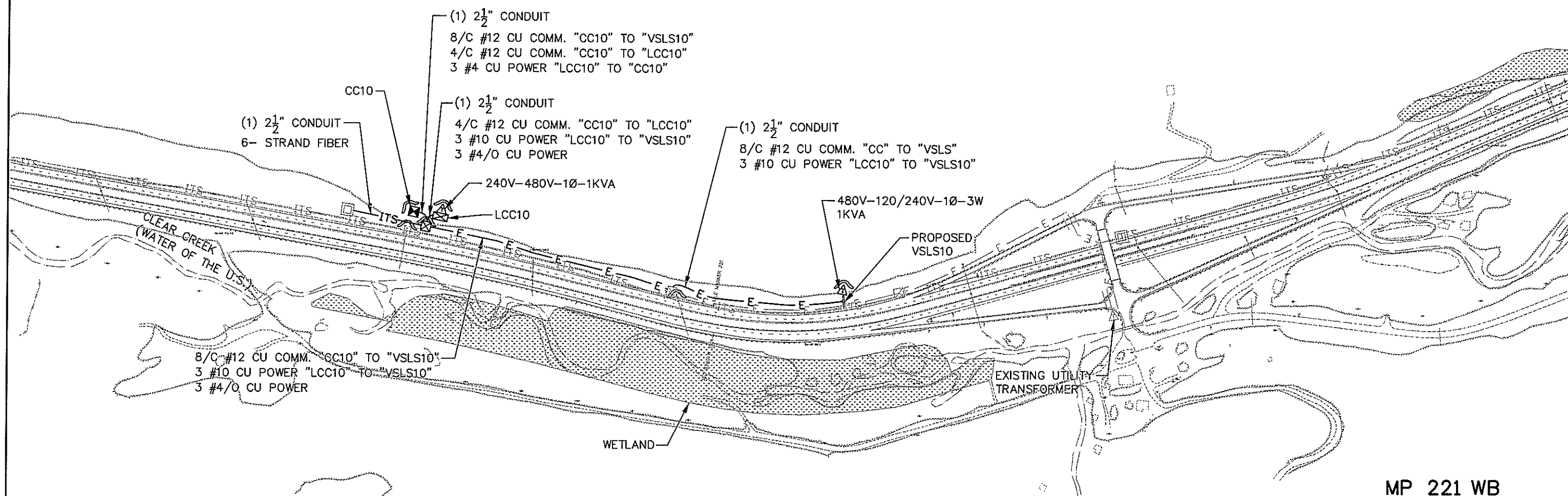
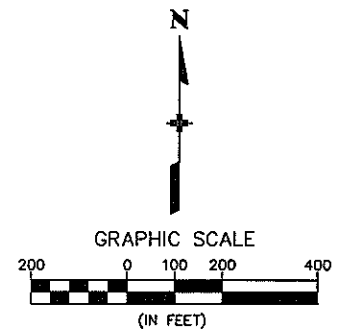
MP 228 EB & WB

Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code		
Creation Date: 02/18/08	Initials: SRB					No. Revisions:			IM 070A-003			
Last Modification Date: 03/25/08	Initials: BEG					Revised:	Designer: SRB	Structure Numbers	16701			
Full Path: S:\Tranpro\100000508\16701\Consultants\Plot_Sets\FOR						Void:	Detailer: BEG		Sheet Subset: Conduit	Subset Sheets: 13 of 17	Sheet Number: 102	
Drawing File Name: conduit013-mp228eb-wb.dgn				REGION I DW								
Scale:	Units: ENGLISH											



MP 223 WB

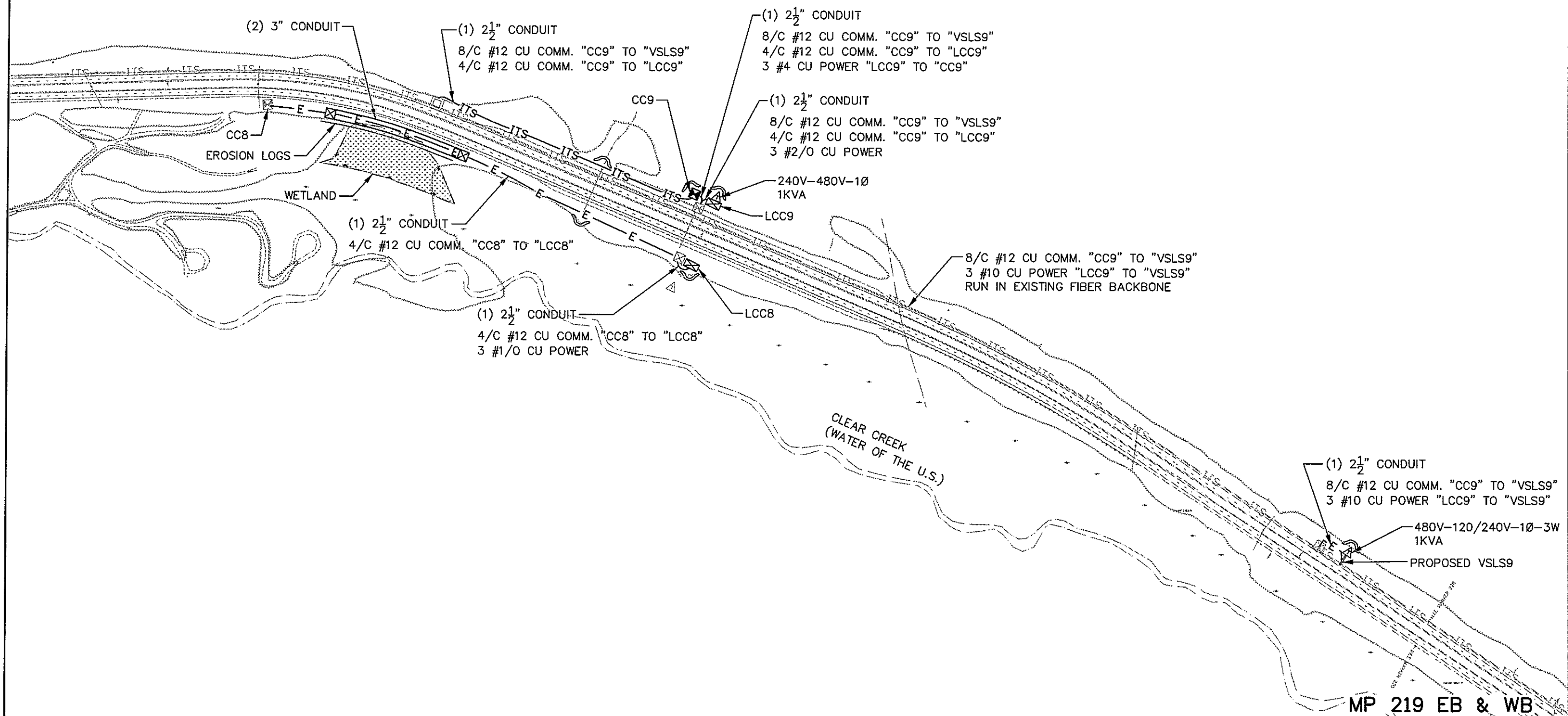
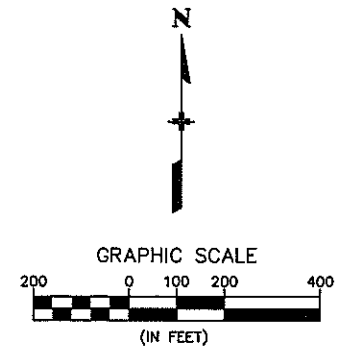
Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343  4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed	CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB				No. Revisions:			IM 070A-003	
Last Modification Date: 03/25/08	Initials: BEG				Revised:	Designer: SRB	Structure Numbers	16701	
Full Path: S:\Tranpro\100000508\16701\Consultants\Plot_Sets\FOR					Void:	Detailer: BEG		Sheet Number: 100	
Drawing File Name: conduit011-mp223wb.dgn					Sheet Subset: Conduit	Subset Sheets: 11 of 17			
Scale: Units: ENGLISH				REGION I DW					





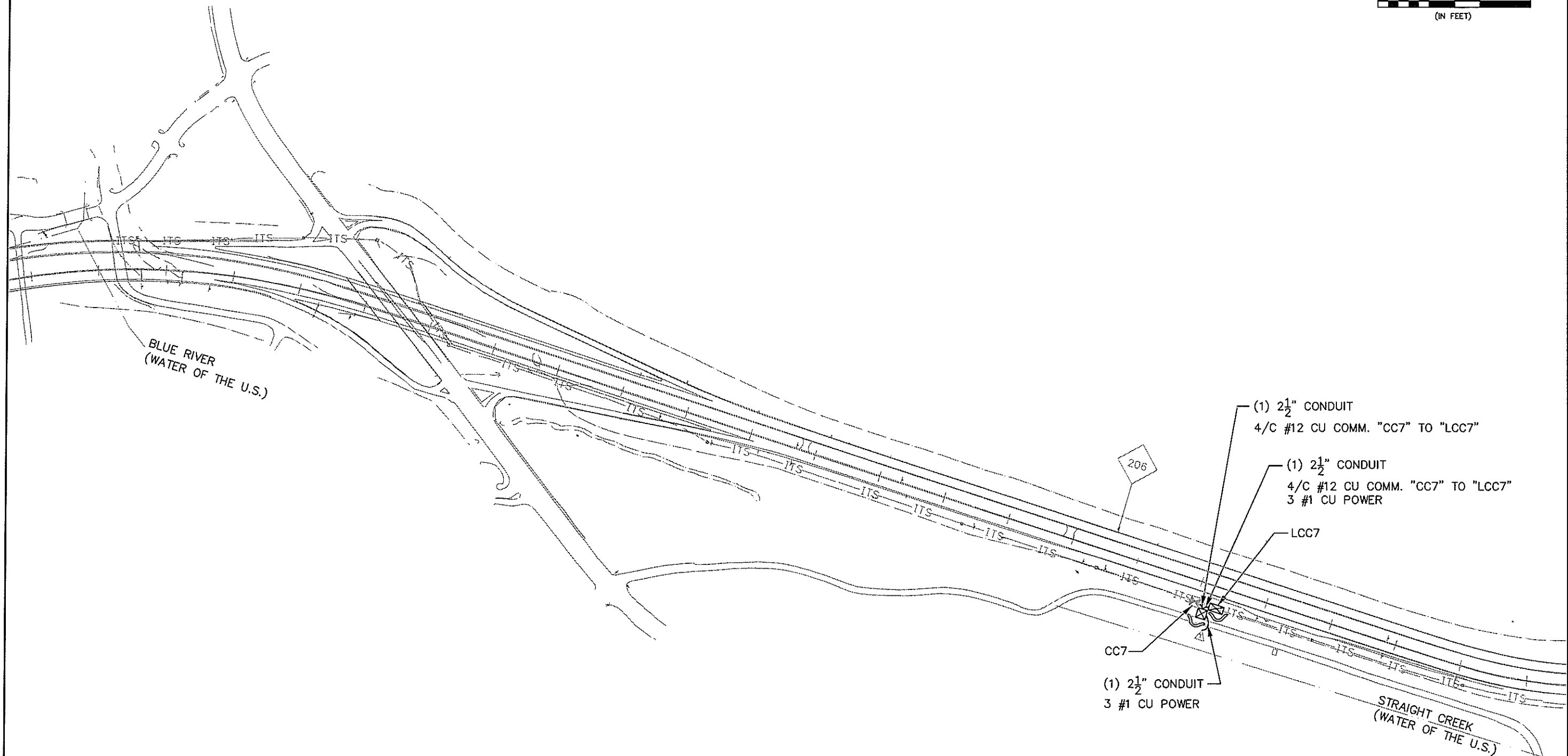
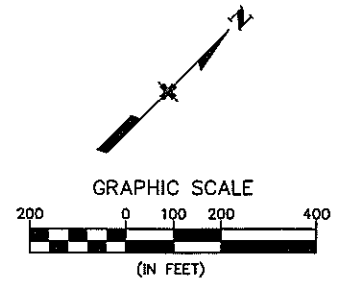
MP 221 WB

Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB	<input type="checkbox"/>				No. Revisions:	Designer: SRB	Structure Numbers	IM 070A-003		
Last Modification Date: 03/25/08	Initials: BEG	<input type="checkbox"/>		Revised:	Detailer: BEG		16701				
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR		<input type="checkbox"/>		Void:	Sheet Subset: Conduit	Subset Sheets: 10 of 17	Sheet Number: 99				
Drawing File Name: conduit010-mp221.dgn		<input type="checkbox"/>									
Scale: Units: ENGLISH		<input type="checkbox"/>									



REGION I DW

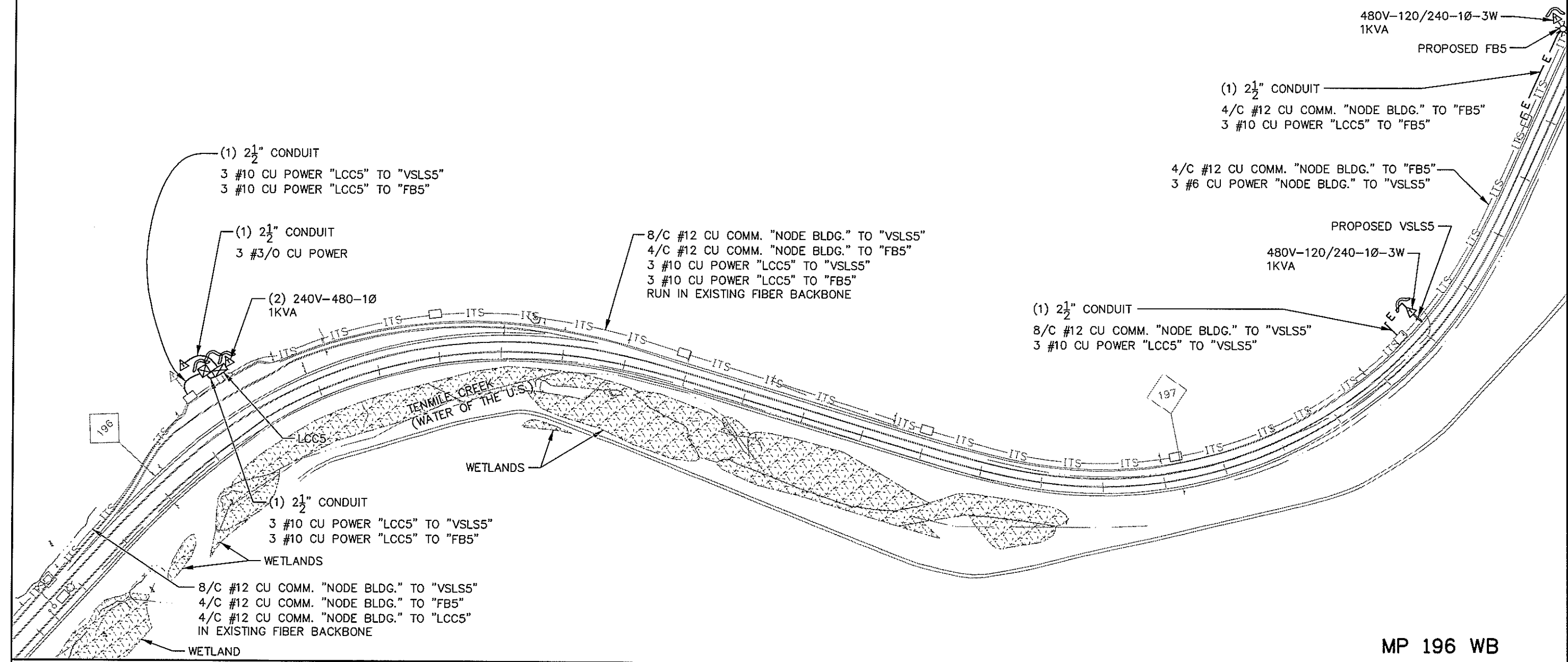
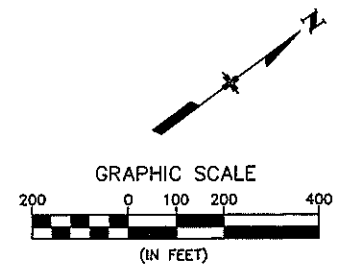


Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB					No. Revisions:					IM 070A-003
Last Modification Date: 03/25/08	Initials: BEG			Revised:	Designer: SRB	Structure Numbers:		16701			
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR				Void:	Detailer: BEG	Sheet Subset: Conduit	Subset Sheets: 9 of 17	Sheet Number: 98			
Drawing File Name: conduit009-mp219.dgn											
Scale:	Units: ENGLISH			REGION I	DW						





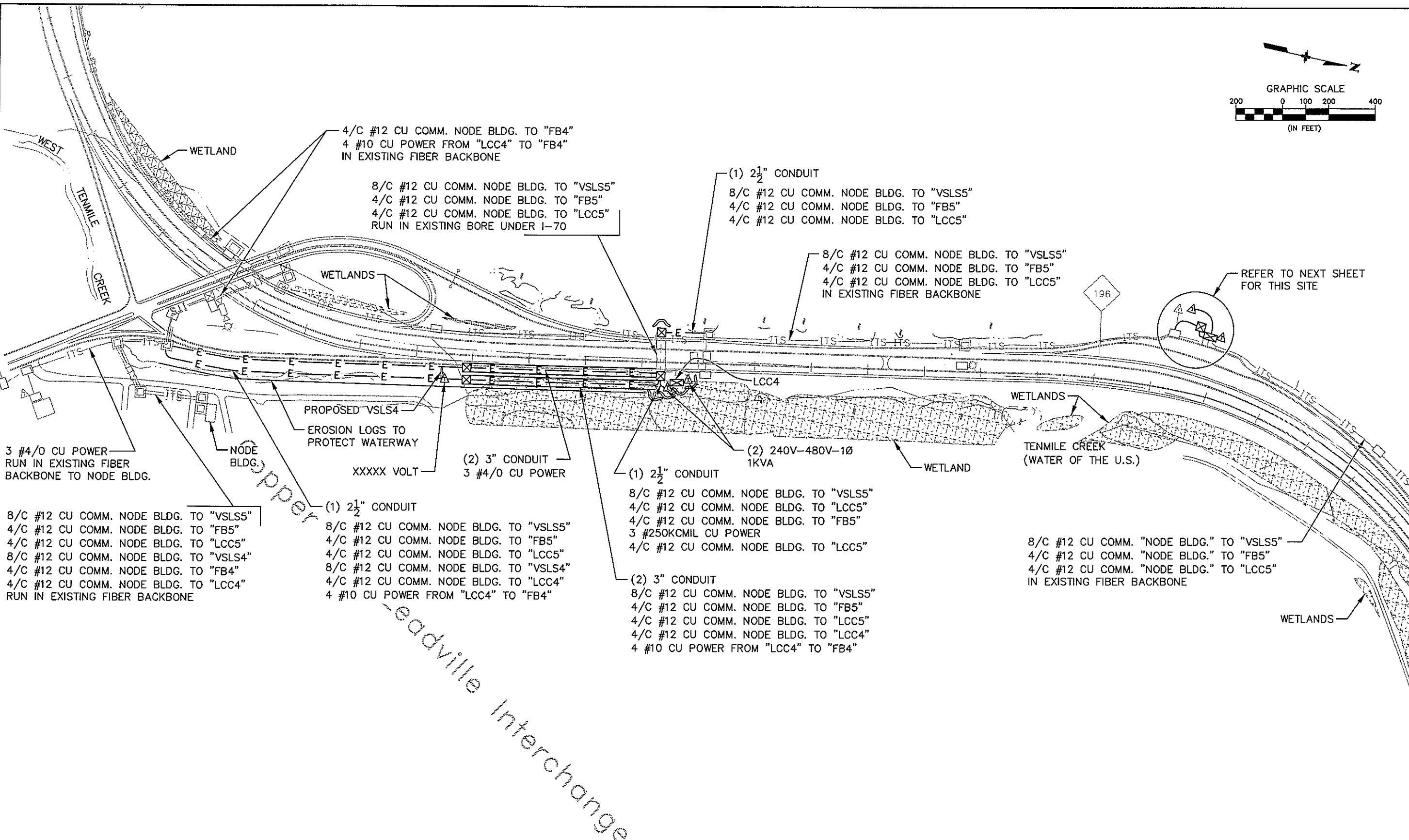
MP 205 EB

Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB					No. Revisions:				IM 070A-003	
Last Modification Date: 03/24/08	Initials: BEG			Revised:		Designer: SRB	Structure Numbers	16701			
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR				Void:		Detailer: BEG		Sheet Number: 97			
Drawing File Name: conduit008-mp205eb.dgn						Sheet Subset: Conduit	Subset Sheets: 8 of 17				
Scale:	Units: ENGLISH			REGION I	DW						



MP 196 WB


Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB					No. Revisions:					
Last Modification Date: 03/25/08	Initials: BEG			Revised:		Designer: SRB	Structure Numbers	16701			
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR				Void:		Detailer: BEG					
Drawing File Name: conduit006-mp196eb.dgn						Sheet Subset: Conduit	Subset Sheets: 6 of 17			Sheet Number: 95	
Scale:	Units: ENGLISH			REGION I	DW						




MP 195 EB

Computer File Information	
Creation Date: 02/18/08	Initials: SRB
Last Modification Date: 03/25/08	Initials: BEG
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR	
Drawing File Name: conduit005-mp195eb2.dgn	
Scale:	Units: ENGLISH

Index of Revisions	

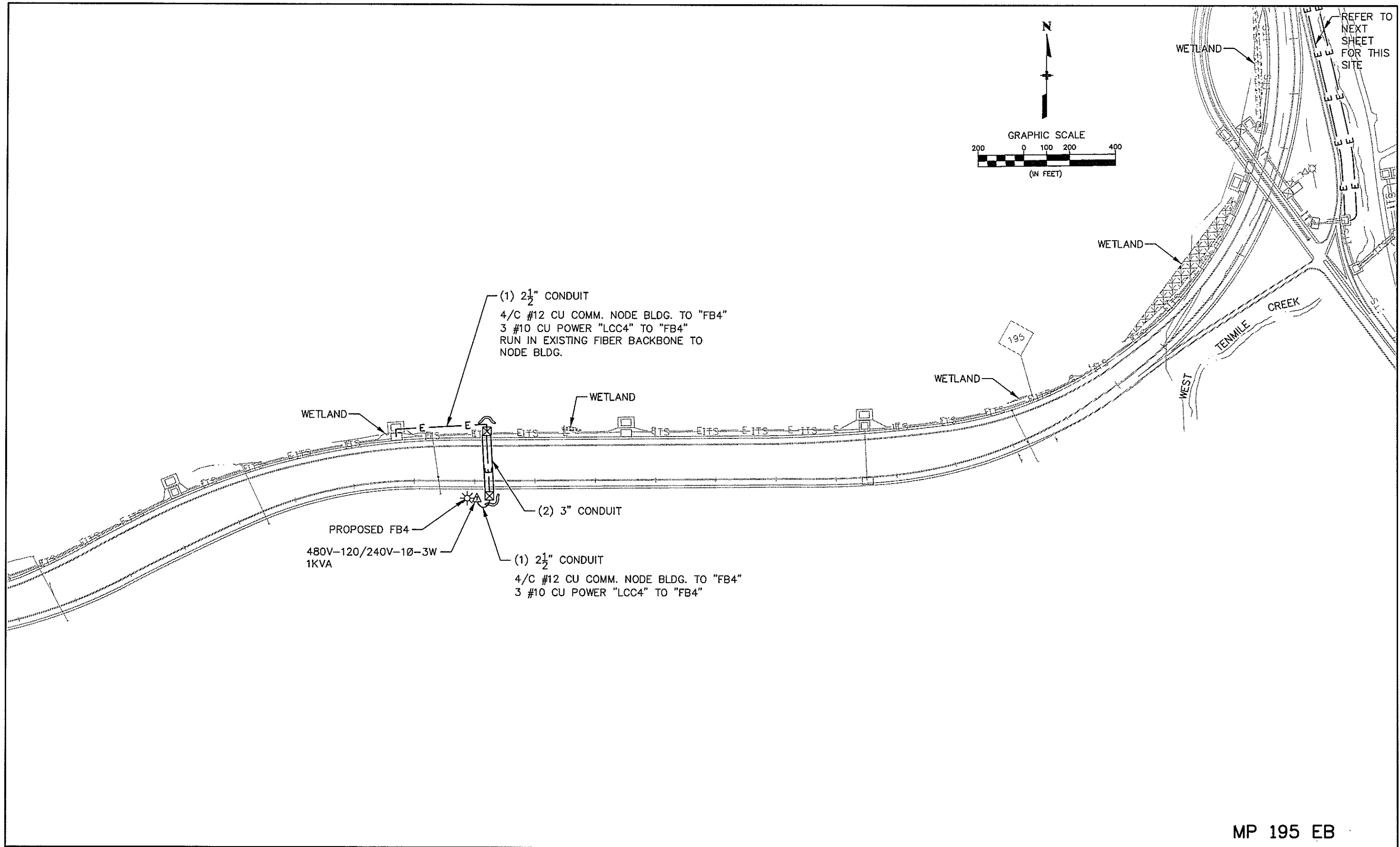

 REGION I
 DW


 4601 DTC Blvd.
 Suite 700
 Denver, CO 80237
 Phone: (303) 221-7275
 Fax: (303) 221-7276

As Constructed
No. Revisions:
Revised:
Void:

CONDUIT PLAN and SWMP SITE MAP			
Designer:	SRB	Structure Numbers	
Detailer:	BEG	Subset Sheets:	5 of 17


Project No./Code	IM 070A-003
	16701
Sheet Number:	94



MP 195 EB

Computer File Information	
Creation Date: 02/18/08	Initials: SRB
Last Modification Date: 03/25/08	Initials: BEG
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR	
Drawing File Name:	conduit004-mp195eb.dgn
Scale:	Units: ENGLISH

Index of Revisions	

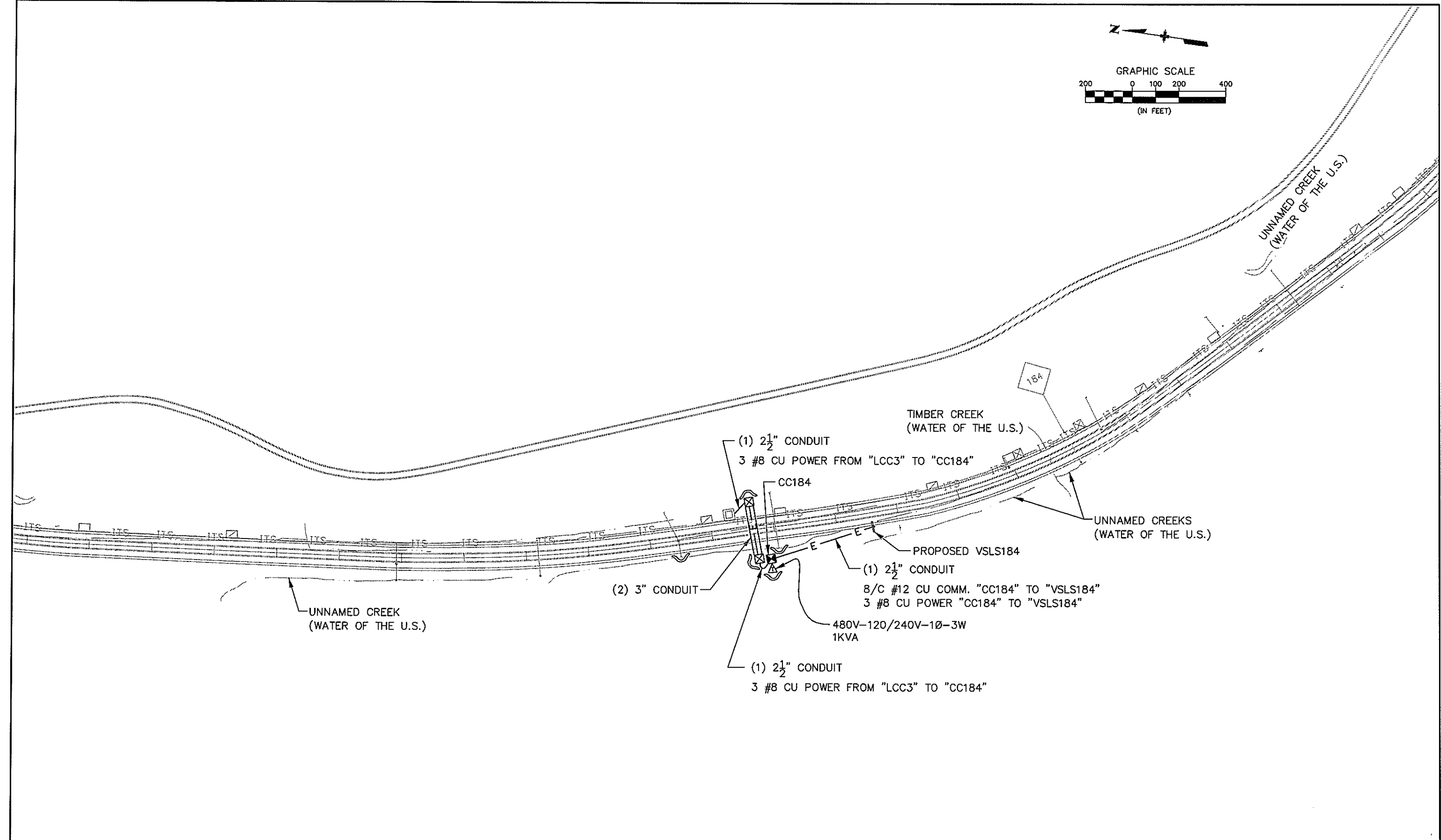
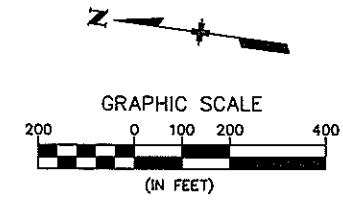

 Region 1
 18500 East Colfax
 Aurora, CO 80011
 Phone: (303) 365-7340
 FAX: (303) 365-7343
REGION I DW


 4601 DTC Blvd.
 Suite 700
 Denver, CO 80237
 Phone: (303) 221-7275
 Fax: (303) 221-7276



As Constructed
No. Revisions:
Revised:
Void:

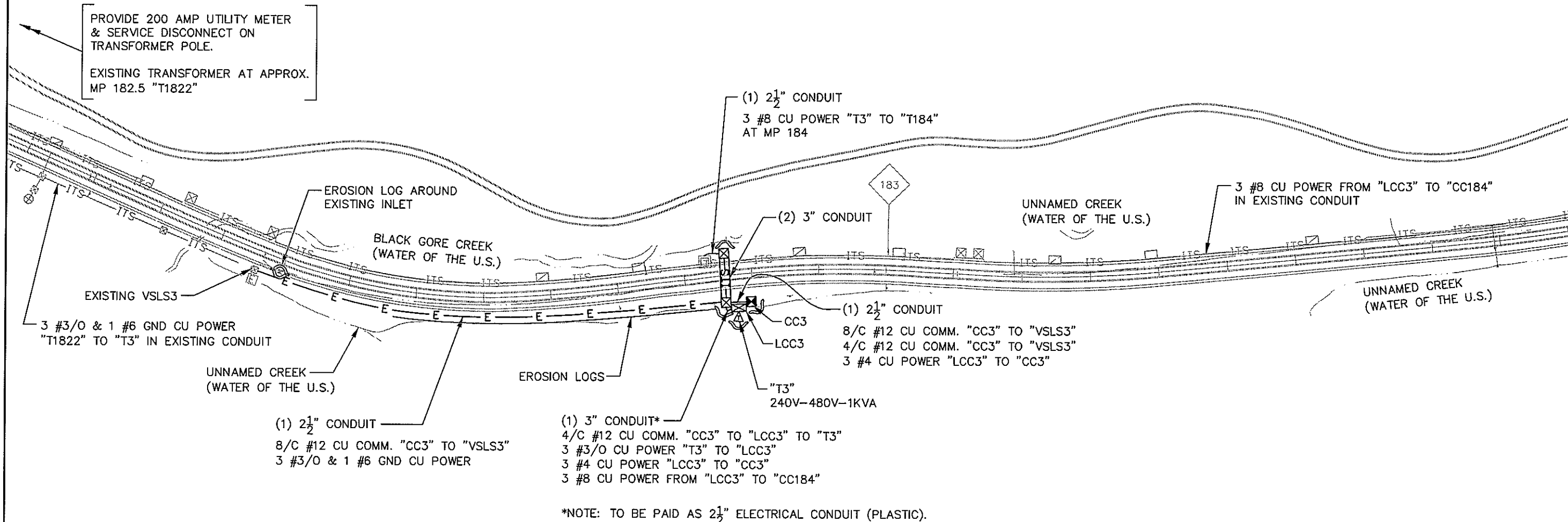
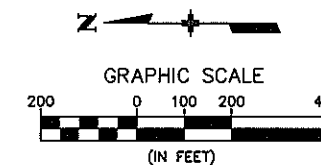
CONDUIT PLAN and SWMP SITE MAP			
Designer:	SRB	Structure Numbers	
Detailer:	BEG	Sheet Subset:	Conduit
Sheet Subset:	Conduit	Subset Sheets:	4 of 17

Project No./Code	IM 070A-003
Sheet Number:	93





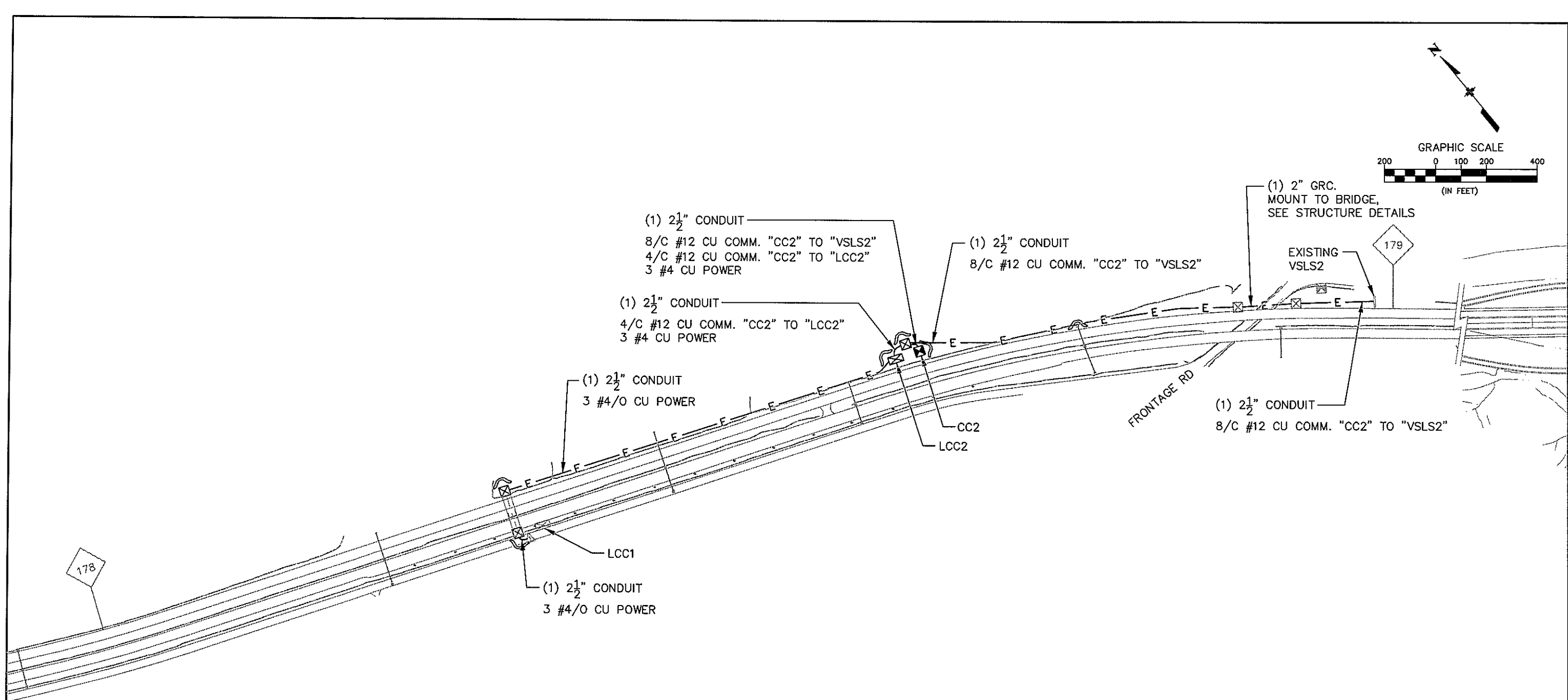
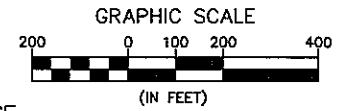
MP 184 EB

Computer File Information Creation Date: 02/18/08 Initials: SRB Last Modification Date: 03/25/08 Initials: BEG Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR Drawing File Name: conduit003-mp184eb.dgn Scale: Units: ENGLISH		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>														 REGION I DW Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343		 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276		As Constructed No. Revisions: Revised: Void:		CONDUIT PLAN and SWMP SITE MAP Designer: SRB Detailer: BEG Sheet Subset: Conduit Structure Numbers: Subset Sheets: 3 of 17			Project No./Code IM 070A-003 16701 Sheet Number: 92	



MP 183 EB

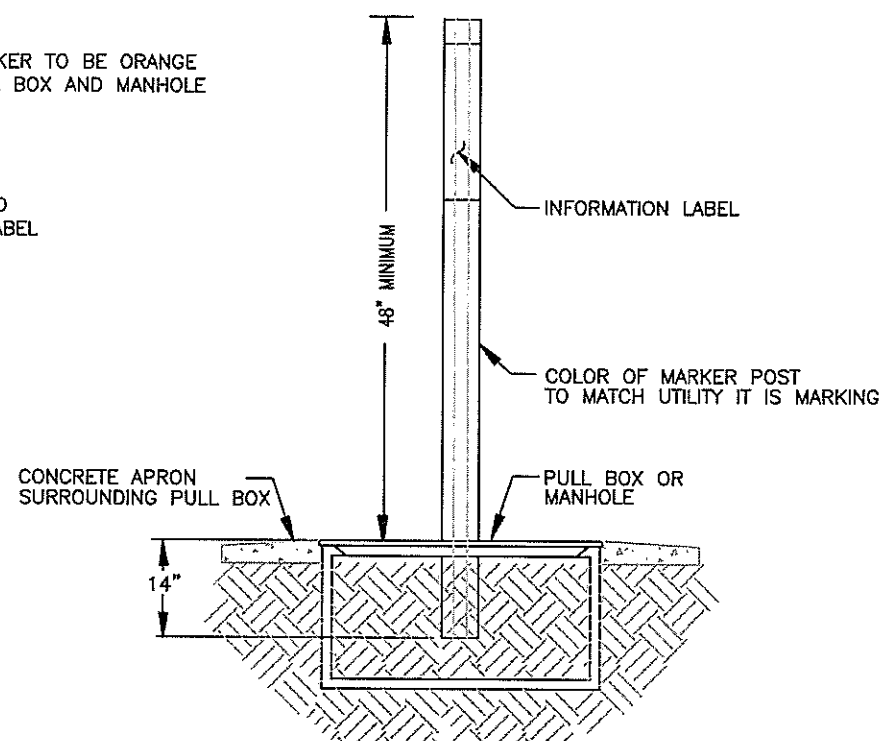
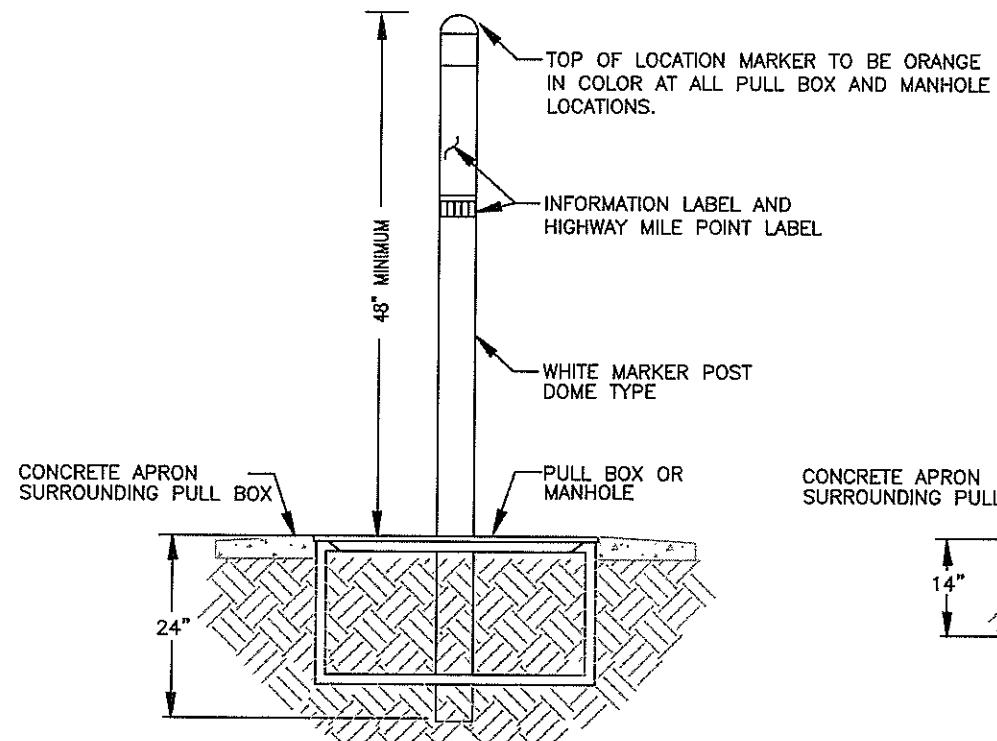
Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB					No. Revisions:					
Last Modification Date: 03/25/08	Initials: BEG								16701		
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR								Designer: SRB	Structure Numbers	Sheet Number: 91	
Drawing File Name: conduit002-mp183eb.dgn								Detailer: BEG			
Scale: Units: ENGLISH								Sheet Subset: Conduit	Subset Sheets: 2 of 17		



LEGEND			
	PROPOSED FLASHING BEACON (FB)		EXISTING ELECTRICAL
	EXISTING MANHOLE		EXISTING ELECTRICAL (BORED)
	PROPOSED MANHOLE		PROPOSED ELECTRICAL
	EXISTING COMMUNICATIONS CABINET (CC)		PROPOSED ELECTRICAL (BORED)
	PROPOSED COMMUNICATIONS CABINET (CC)		EXISTING ITS
	EXISTING PULLBOX		EXISTING ITS (BORED)
	PROPOSED PULLBOX		PROPOSED ITS
	EROSION LOG		PROPOSED ITS (BORED)
	EXISTING VARIABLE SPEED LIMIT SIGN (VLS)		WETLANDS
	PROPOSED VARIABLE SPEED LIMIT SIGN (VLS)		
	EXISTING LIGHTING CONTROL CENTER (LCC)		
	PROPOSED LIGHTING CONTROL CENTER (LCC)		
	EXISTING TRANSFORMER		
	PROPOSED TRANSFORMER		

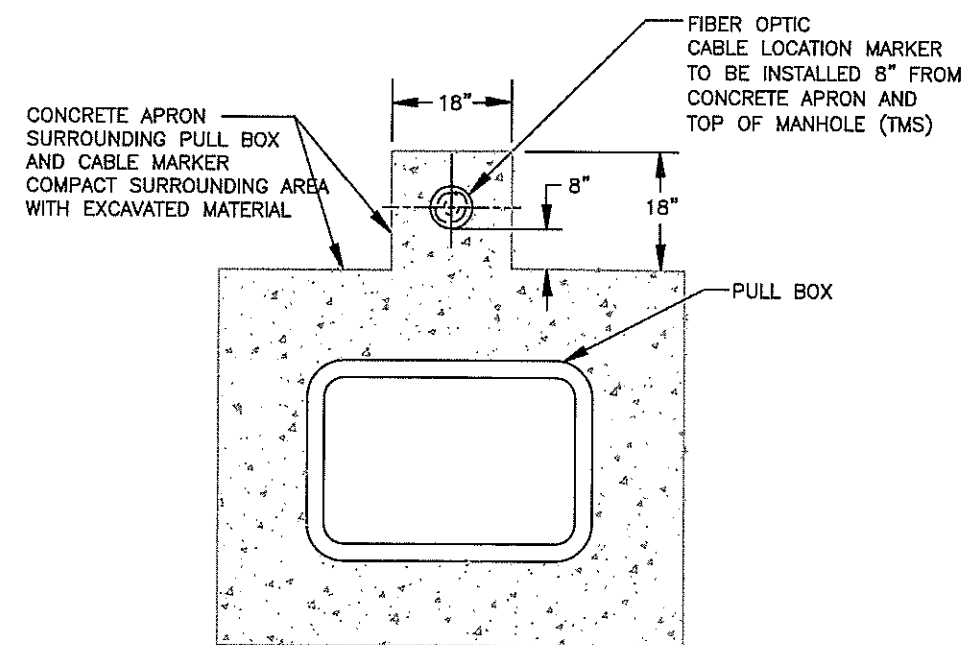
MP 177 WB

Computer File Information Creation Date: 02/18/08 Initials: SRB Last Modification Date: 03/25/08 Initials: BEG Full Path: S:\Tranpro\100000508\16701\Consultants\Plot_Sets\FOR Drawing File Name: conduit001-mp177wb.dgn Scale: Units: ENGLISH		Index of Revisions <table border="1"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>																		Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343 REGION I		4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276 DW		As Constructed No. Revisions: Revised: Void:		CONDUIT PLAN and SWMP SITE MAP Designer: SRB Detailer: BEG Sheet Subset: Conduit Structure Numbers: Subset Sheets: 1 of 17			Project No./Code IM 070A-003 16701 Sheet Number: 90	



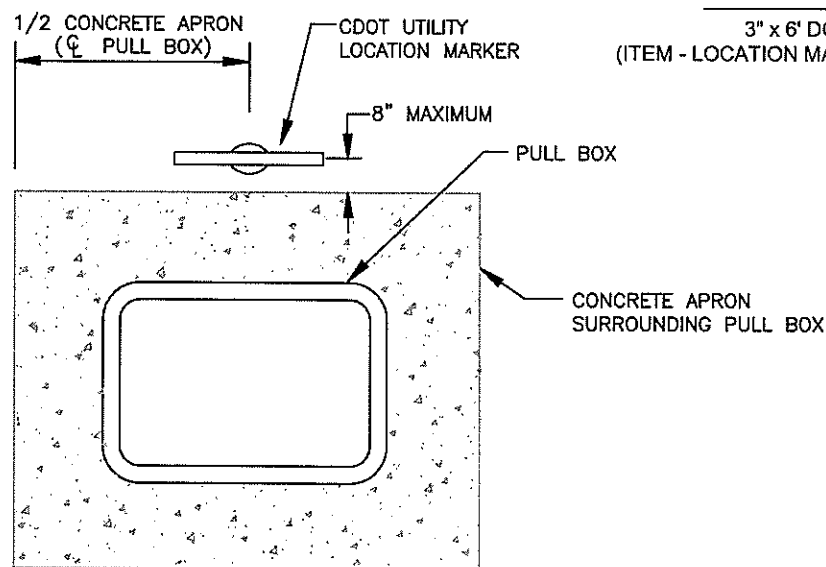
FIBER OPTIC RUNNING LINE LOCATION MARKER

3" x 6" DOME TYPE POST
(ITEM - LOCATION MARKER (FIBER OPTIC)(DOME))



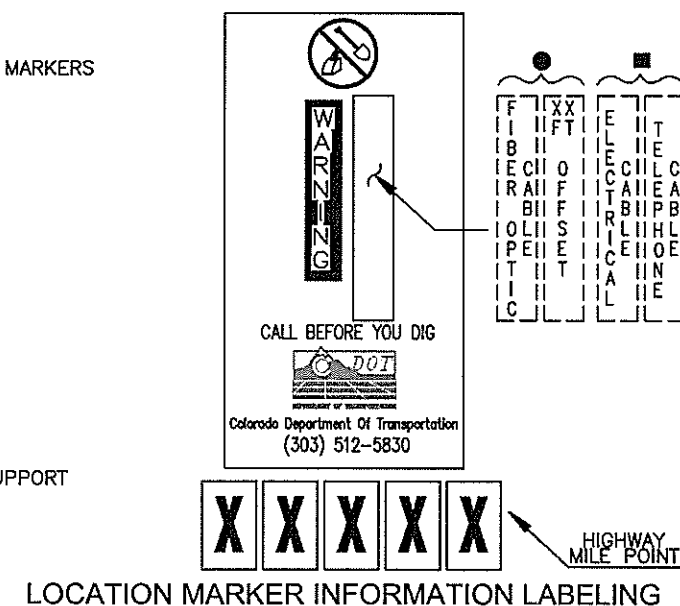
PULL BOX AND MANHOLE FIBER OPTIC LOCATION MARKER

3" x 6" DOME TYPE POST
(ITEM - LOCATION MARKER (FIBER OPTIC)(DOME))



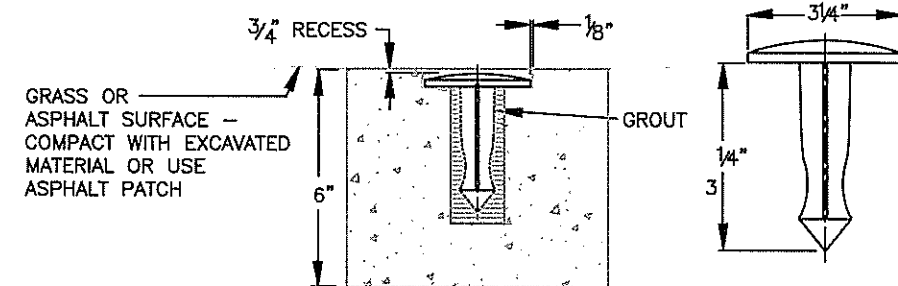
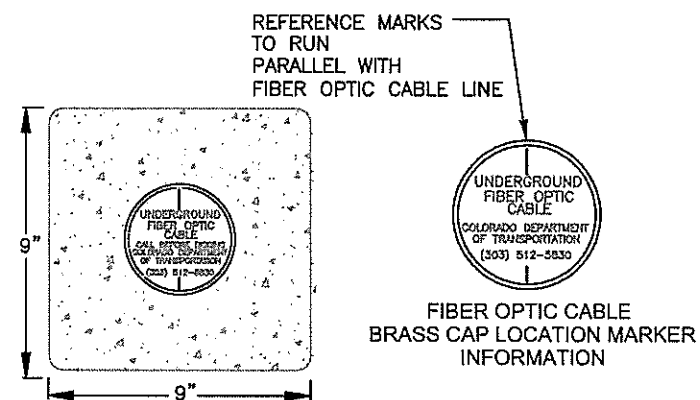
CDOT UTILITY LOCATION MARKER

3 1/2" x 62" FLAT TYPE POST
ELECTRICAL POWER RUNNING LINES AND TELEPHONE RUNNING LINES
ITEM - LOCATION MARKER (UTILITY)(FLAT SLAT)



LOCATION MARKER INFORMATION LABELING


LABEL WITH CDOT CONTACT INFORMATION
BLACK LETTERING ON ORANGE BACKGROUND
● FOR FIBER OPTIC DOME MARKERS
■ FOR CDOT UTILITY FLAT MARKERS
MILE POINT REFERENCE LABEL (5 NUMBERS)
BLACK NUMBERS WITH WHITE BACKGROUND



LANDSCAPE LOCATION MARKER

BRASS CAP SURVEY MONUMENT USED AS FIBER OPTIC CABLE MARKER WITH CONCRETE FOOTING SUPPORT
(ITEM - LOCATION MARKER (FIBER OPTIC)(BRASS CAP))

William Kascek, Set(9/17/2007 4:39 PM)Fiber Marker Sheet 2.dwg

Computer File Information			Index of Revisions			Colorado Department of Transportation			As Constructed			Project Detail			Project No./Code		
Creation Date:	5/12/2003	Initials: WJKjr				 ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 ITS - CTMC With Region 1 Traffic SS			No Revisions:			Fiber Optic / Utility Location Marker			IM 070A-003		
Last Modification Date:	11/13/2006	Initials: WJKjr							Revised:			Sheet 2			16701		
Full Path:	See Side Panel								Void:			Designer: WJKjr			Structure Numbers		
Drawing File Name:												Detailer: WJKjr					
Acad Ver. ACAD 2002 Lt	Scale: NA	Units: English							Sheet Subst: Project Detail			Subst Sheet Number: 2/2			Sheet Number 89		

LEGEND

	FIBER OPTIC CABLE MARKER WITH INFORMATION LABEL
	PULL BOX
	MANHOLE (TMS)
	CONDUIT - (NUMBER AND SIZE AS SHOWN IN PLANS)
	CDOT ELECTRICAL UTILITY LOCATION MARKER
	CDOT TELEPHONE UTILITY LOCATION MARKER

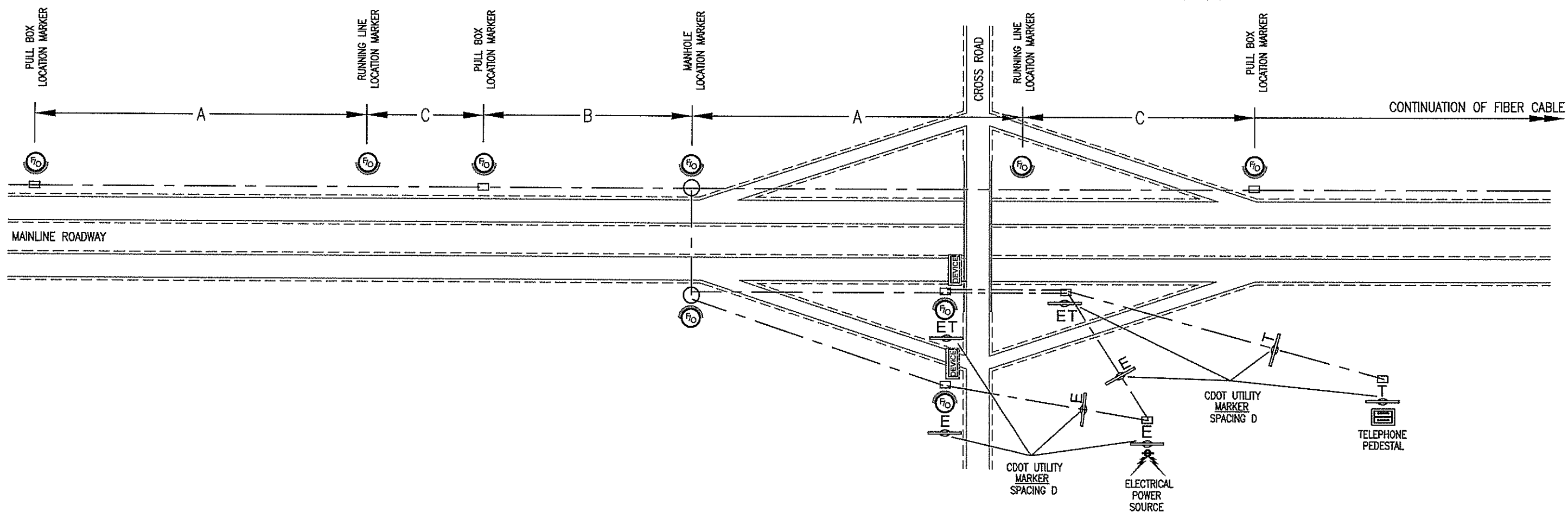
LOCATION MARKER SPACING

MEASUREMENT	DESCRIPTION	DISTANCE (FEET)
A	FIBER OPTIC RUNNING LINE MARKER SPACING	1000
B	HANDHOLE MARKER SPACING	< 1000
C	ADDITIONAL FIBER OPTIC RUNNING LINE MARKER SPACING	C=A-B (WHERE REQUIRED) < 1000
D	UTILITY MARKER SPACING	* ■

- * UTILITY LOCATION MARKERS FOR DEVICE POWER SOURCE ELECTRIC RUNS TO BE INSTALLED AT BEGINNING AND END OF UTILITY CONDUIT. IF RUNNING LINE IS LONGER THAN 500 FEET ONE ADDITIONAL MARKER SHALL BE INSTALLED AT THE MIDPOINT OF CONDUIT RUN.
- UTILITY LOCATION MARKERS FOR RUNNING LINE ELECTRICAL CONDUIT TO BE INSTALLED AT BEGINNING AND END OF UTILITY CONDUIT, AT ALL MANHOLES AND AT A MAXIMUM SPACING OF 1000' ALONG LINE BETWEEN MANHOLES.

FIBER OPTIC AND CDOT UTILITY LOCATION MARKER INSTALLATION NOTES:

1. AREA AROUND LOCATION MARKER INSTALLATION SHALL BE RETURNED TO EXISTING GRADE AND CONDITION. THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT BE INCLUDED IN THE COST OF LOCATION MARKER ITEM.
2. LOCATION MARKERS SHALL BE INSTALLED AT EACH PULL BOX AND MANHOLE ALONG BOTH THE BACKBONE AND LATERAL FIBER OPTIC CABLE RUNS THROUGHOUT THE PROJECT. ADDITIONAL MARKERS SHALL BE INSTALLED ALONG THE RUNNING LINE.
3. UTILITY LOCATION MARKERS SHALL BE INSTALLED AT BOTH THE UTILITY CONNECTION HOOKUP PULL BOX AND THE EQUIPMENT PULL BOX OR MANHOLE AT PROJECT DEVICE. ADDITIONAL MARKERS, IF REQUIRED, SHALL BE INSTALLED AT MID LOCATIONS ALONG THE UTILITY LINE AS SHOWN ON THE PLANS.
4. CONCRETE FOOTING SUPPORT FOR FIBER OPTIC CABLE LOCATION MARKERS AT PULL BOX LOCATIONS SHALL BE INCLUDED IN THE COST OF EACH PULL BOX SHOWN IN THE PROJECT. CONCRETE LOCATION MARKER SUPPORT FOUNDATION AND CONCRETE PULL BOX APRON SHALL BE POURED MONOLITHICALLY.
5. CONCRETE FOOTING SUPPORTS FOR FIBER OPTIC CABLE RUNNING LINE MARKERS ARE TO BE INCLUDED IN LOCATION MARKER ITEM.
6. UTILITY LOCATION MARKERS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. CONCRETE SUPPORT FOUNDATIONS SHALL NOT BE REQUIRED FOR UTILITY LOCATION MARKERS.
7. LANDSCAPE LOCATION MARKERS SHALL BE INSTALLED IN LANDSCAPE AREAS AND AREAS SUCH AS PARKING LOTS WHICH COULD HAVE VEHICULAR TRAFFIC.
8. THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AN AS-BUILT DRAWING SHOWING THE INSTALLED LOCATIONS OF ALL MARKER TYPES.
9. LOCATION MARKERS SHALL HAVE INFORMATION LABELS ATTACHED WITH ADHESIVE TO WITHSTAND HEAT AND COLD. INFORMATION ON LABELS SHALL INCLUDE CDOT CONTACT INFORMATION. NUMBERS INDICATING THE HIGHWAY MILE POINT OF THE PULL BOX OR MANHOLE SHALL BE INSTALLED BENEATH THE INFORMATION LABELS AS SHOWN SHOWN ON SHEET TWO OF THIS PROJECT DETAIL.



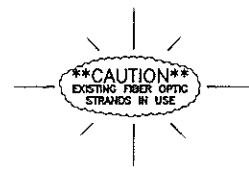
William Kascek, Set(9/17/2007 4:39 PM)Fiber Marker Sheet 1.dwg

Computer File Information			Index of Revisions			Colorado Department of Transportation			As Constructed			Project Detail			Project No./Code	
Creation Date:	5/12/2003	Initials: WjKjr				 ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 ITS - CTMC With Region 1 Traffic SS	No Revisions:		Fiber Optic / Utility Location Marker			Project No./Code				
Last Modification Date:	11/13/2006	Initials: WjKjr					Revised:		Sheet 1			IM 070A-003				
Full Path:							Void:		Designer: WjKjr	Structure Numbers	16701					
Drawing File Name:	See Side Panel								Detailer: WjKjr		Sheet Number 88					
Acad Ver. ACAD 2002 Lt	Scale: NA	Units: English						Sheet Subset: Project Detail	Subset Sheet Number: 1/2							

Georgetown WB Fiber Replacement.dwg

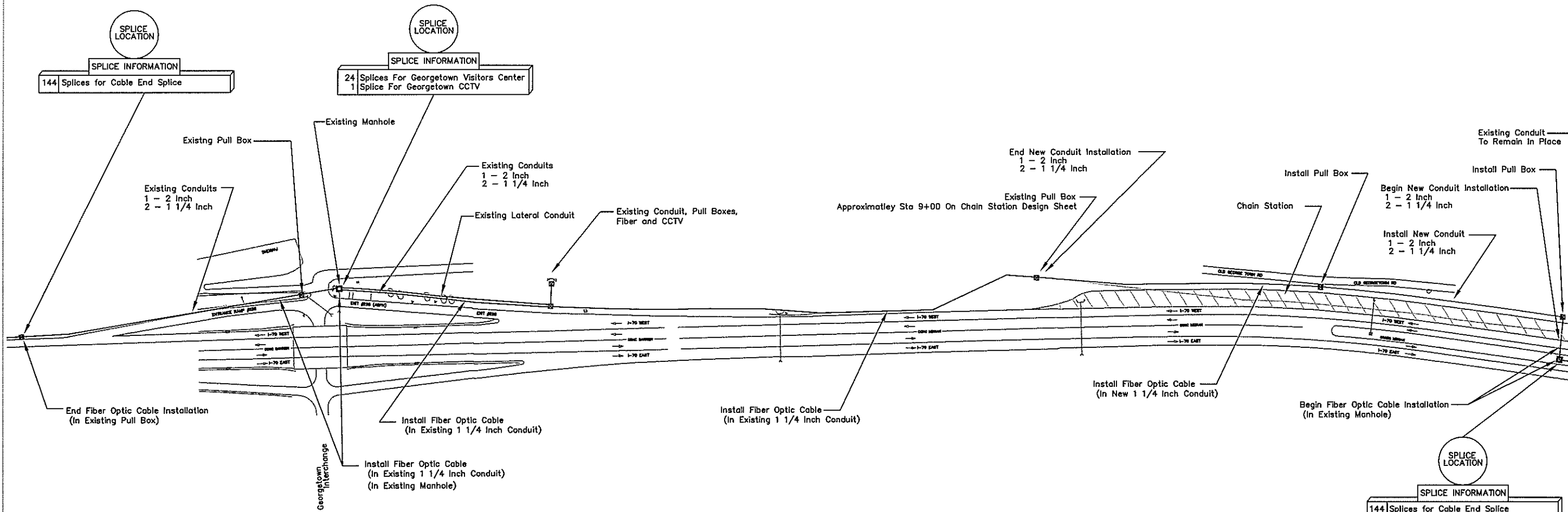
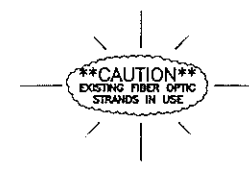
5/14/2007 9:55 AM

William Kascek, Self



NOTES:

1. The Contractor Shall Not Start Construction Work Shown On This Plan Sheet Until A Fiber Optic Meeting Is Conducted To Schedule Device and Network Outages. This Work Shall Be Conducted Prior To Any Work On Chain Station Which Would Interfere And To Protect The Integrity Of The Existing Fiber Optic Data Network.
2. Plan Sheet Is Based On Best Known Design And Field Information Available At Time Of Design. The Contractor Shall Stake New Fiber Optic Line With Project Engineer To Insure Alignment.



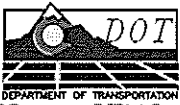
SHEET QUANTITIES

ELECTRICAL CONDUIT (PLASTIC)(1-1/4 INCH) (LIN. FT.)	ELECTRICAL CONDUIT (PLASTIC)(2 INCH) (LIN. FT.)	PULL BOX (24 X 36 X 18) (EACH)	FIBER OPTIC CABLE (SINGLE MODE)(144 STRAND) (LIN. FT.)
5000	2500	2	4400

IT IS ESTIMATED THAT 313 FIBER OPTIC SPLICES WILL BE REQUIRED AT THIS LOCATION. TO BE PAID FOR WITH FIBER OPTIC CABLE ITEM.

Computer File Information	
Creation Date:	4/13/2007 Initials: Wjkjr
Last Modification Date:	See Side Panel Initials: Wjkjr
Full Path:	
Drawing File Name:	See Side Panel
ACAD Ver. ACAD 200LT	Scale: NTS Units: English

Sheet Revisions	


Colorado Department of Transportation
 ITS - Colorado Traffic Management Center
 425C Corporate Circle
 Golden, Colorado 80401
 Phone: 303-512-5834 FAX: 303-512-5878
 ITS - CTMC With Region 1 Traffic CBR

As Constructed
No Revisions:
Revised:
Void:

Interstate 70 West Corridor
 Chain Stations (Location "I")
Georgetown Conduit/Fiber Replacement

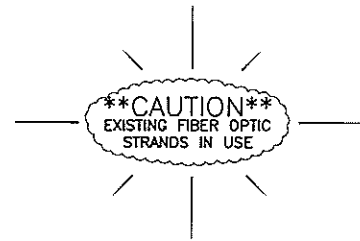
Designer: Wjkjr	Structure Numbers
Detailer: Wjkjr	
Sheet Subset: Fiber Plan	Subset Sheets: 2 of 2

Project No./Code
I R100-128
16221
Sheet Number <i>285/29</i>

Bakerville VMS Fiber Replacement.dwg

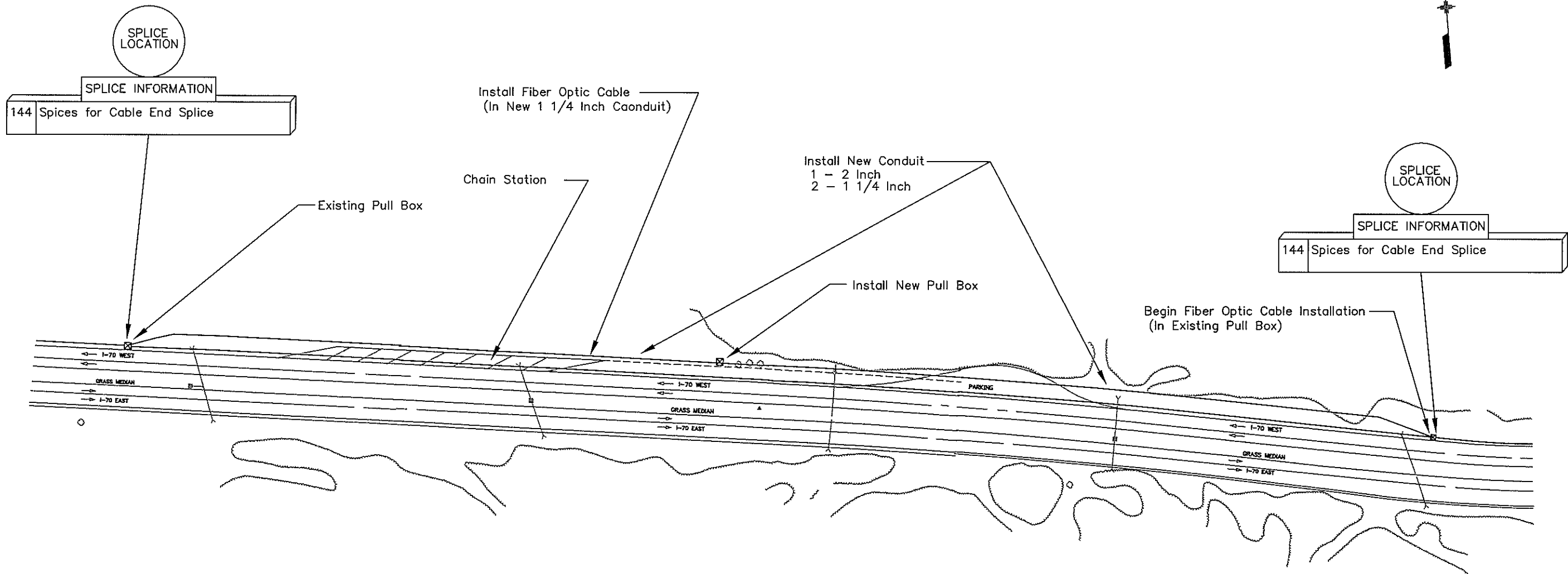
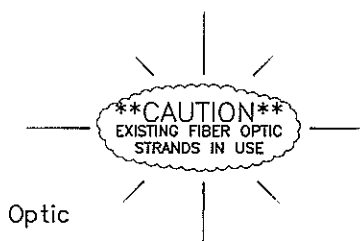
5/14/2007 10:44 AM

William Kascek, Self



NOTES:

1. The Contractor Shall Not Start Construction Work Shown On This Plan Sheet Until A Fiber Optic Meeting Is Conducted To Schedule Device and Network Outages. This Work Shall Be Conducted Prior To Any Work On Chain Station To Protect The Integrity Of The Fiber Optic Data Network.
2. Plan Sheet Is Based On Best Known Design And Field Information Available At Time Of Design. The Contractor Shall Stake New Fiber Optic With Project Engineer To Insure Alignment.



ELECTRICAL CONDUIT (PLASTIC)(1-1/2 INCH) (LIN. FT.)	ELECTRICAL CONDUIT (PLASTIC)(2 INCH) (LIN. FT.)	PULL BOX (24 X 36 X 18) (EACH)	FIBER OPTIC CABLE (SINGEL MODE)(144 STRAND) (LIN. FT.)
2400	1200	1	1500

IT IS ESTIMATED THAT 288 FIBER OPTIC SPLICES WILL BE REQUIRED AT THIS LOCATION. TO BE PAID FOR WITH FIBER OPTIC CABLE ITEM.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Interstate 70 West Corridor		Project No./Code.	
Creation Date:	4/13/2007	Initials:	WJKjr			ITS - Colorado Traffic Management Center		Chain Stations (Location "F")		I R100-128	
Last Modification Date:	See Side Panel	Initials:	WJKjr			425C Corporate Circle		Bakerville VMS Conduit/Fiber Replacement			
Full Path:						Golden, Colorado 80401		Designer: WJKjr		Structure Numbers	
Drawing File Name:	See Side Panel					Phone: 303-512-5834		Detailer: WJKjr		16221	
ACAD Ver.:	ACAD 200LT	Scale:	NTS	Units:	English	FAX: 303-512-5878		Sheet Subset: Fiber Plan		Subset Sheets: 1 of 2	
						ITS - CTMC With Region 1 Traffic		CBR		Sheet Number 20266	

Pull Box (Special) Standard Revised Rev 1.dwg

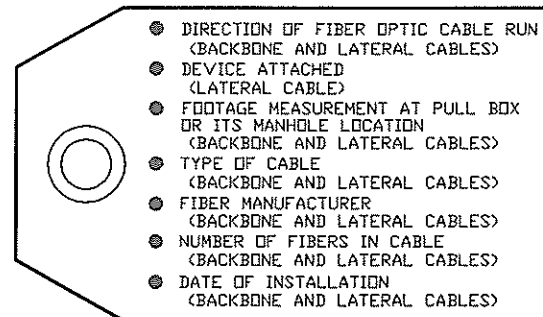
5/13/2007 7:38 PM

William Kascek, Self

PULL BOX (SPECIAL) NOTES:

1. CONDUITS DEPICTED ON THIS SHEET ARE REPRESENTATIVE ONLY. EXACT NUMBER OF CONDUITS INSTALLED AND CONDUIT SIZE SHALL BE AS TABULATED AND SHOWN ON THE PLANS.
2. CONDUIT CENTERLINE SHALL BE ALIGNED WITHIN THE PULL BOX TO FACILITATE FIBER OPTIC CABLE PULLING.
3. CONDUIT PLUGS SHALL BE INSTALLED IN ALL CONDUITS, BOTH WITH AND WITHOUT WIRE OR CABLE AND SHALL BE INCLUDED IN THE COST OF ELECTRICAL CONDUIT ITEM.
4. TRACER WIRE AND PULL ROPE SHALL BE INCLUDED IN THE COST OF ELECTRICAL CONDUIT ITEM.
 - MAIN BACKBONE AND LATERAL FIBER CABLE CONDUIT -
 - IF INSTALLATION INCLUDES MULTIPLE RUNS OF CONDUIT, PULL ROPE SHALL BE INSTALLED IN EACH INDIVIDUAL CONDUIT. TRACER WIRE SHALL BE INSTALLED IN ONLY ONE CONDUIT. ANY CONDUIT CONTAINING FIBER OPTIC CABLE SHALL NOT HAVE TRACER WIRE INSTALLED.
 - IF INSTALLATION INCLUDES ONLY ONE RUN OF CONDUIT, PULL ROPE AND TRACER WIRE SHALL BE INSTALLED IN SAME CONDUIT AS FIBER CABLE.

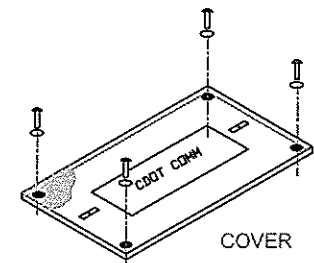
5. ALL PULL BOX TYPES SHALL BE PAID FOR UNDER THE ITEM 614 PULL BOX, AND SHALL BE SIZED AS TABULATED AND SHOWN IN THE PLANS.
6. PULL BOXES SHALL HAVE 12" WIDE X 6" DEEP CONCRETE APRONS SLOPED AWAY FROM PULL BOX OPENING. THE COST OF THE CONCRETE APRON SHALL BE PAID FOR AS PART OF PULL BOX ITEM.
7. CONCRETE FOOTING SUPPORT FOR LOCATION MARKERS AT PULL BOX LOCATIONS ARE PAID FOR AS PART OF PULL BOX AND SHALL BE POURED MONOLITHICALLY WITH CONCRETE APRON.
8. FIBER OPTIC CABLE COILS WITHIN PULL BOXES SHALL BE TIED TO EACH CABLE RACK WITH PLASTIC CABLE TIES. CAUTION SHALL BE TAKEN TO COIL THE FIBER CABLE PER MANUFACTURER'S RECOMMENDATIONS.
9. ALL WORK TO INSTALL PULL BOX SHALL INCLUDE BUT NOT BE LIMITED TO SAW CUTTING OF PAVEMENT, REMOVAL OF PAVEMENT, CONCRETE, EARTHWORK. ALL LANDSCAPE RESTORATION AND SHALL BE PAID FOR AS PART OF PULL BOX.



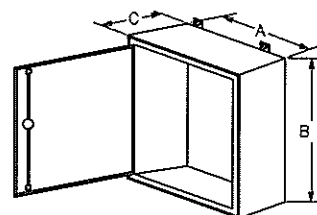
FIBER CABLE LABEL

TO BE ATTACHED TO EACH FIBER OPTIC CABLE LOCATED IN ALL PULL BOX AND ITS MANHOLES

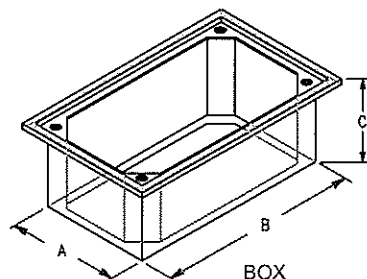
- DIRECTION OF FIBER OPTIC CABLE RUN (BACKBONE AND LATERAL CABLES)
- DEVICE ATTACHED (LATERAL CABLE)
- FOOTAGE MEASUREMENT AT PULL BOX OR ITS MANHOLE LOCATION (BACKBONE AND LATERAL CABLES)
- TYPE OF CABLE (BACKBONE AND LATERAL CABLES)
- FIBER MANUFACTURER (BACKBONE AND LATERAL CABLES)
- NUMBER OF FIBERS IN CABLE (BACKBONE AND LATERAL CABLES)
- DATE OF INSTALLATION (BACKBONE AND LATERAL CABLES)



COVER



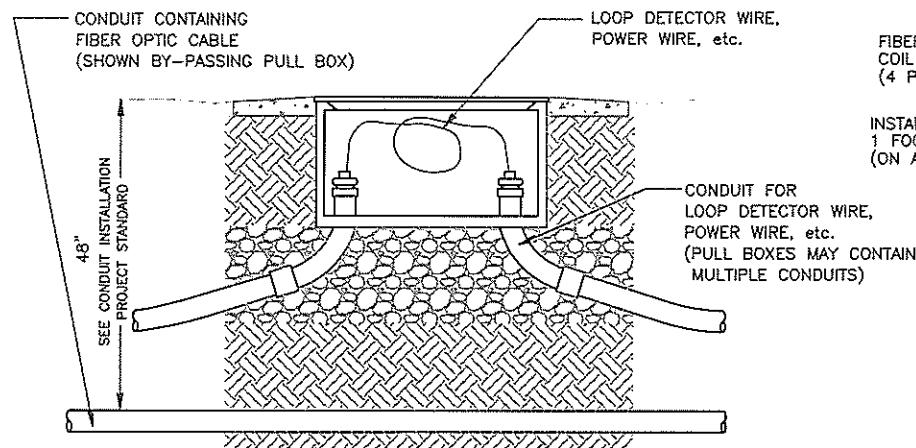
SURFACE MOUNTED TYPE WEATHER TIGHT WITH LOCK



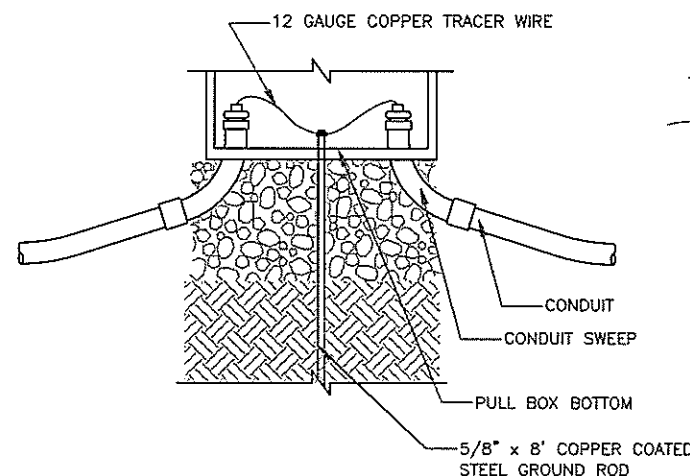
BOX

ITS PULL BOX TYPE	MINIMUM DIMENSIONS (Inches)		
	A	B	C
PULL BOX (SPECIAL) - (Small Size)	13	24	18
PULL BOX (SPECIAL) - (Large Size)	24	36	18
PULL BOX (SPECIAL) - (Surface Mounted)	24	24	8

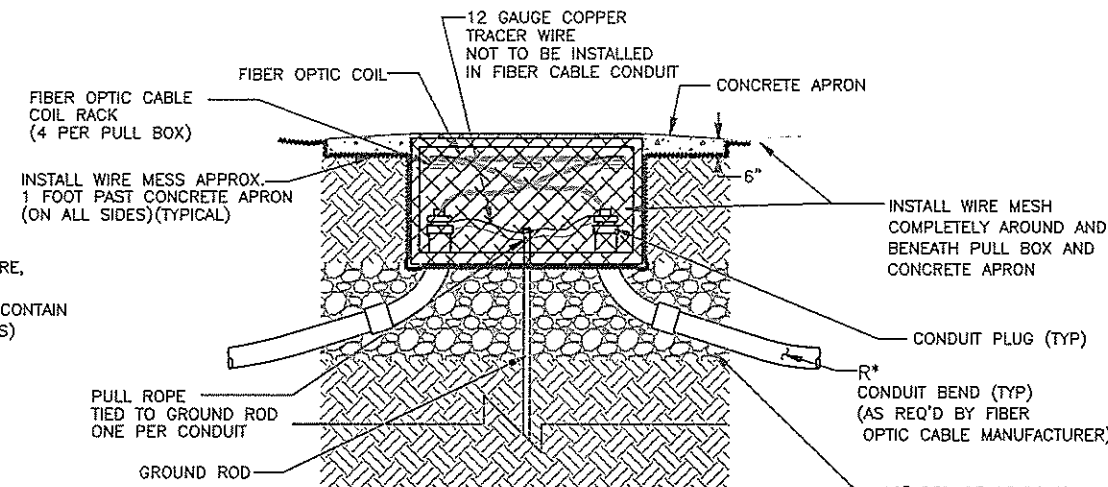
PULL BOX DIMENSIONS



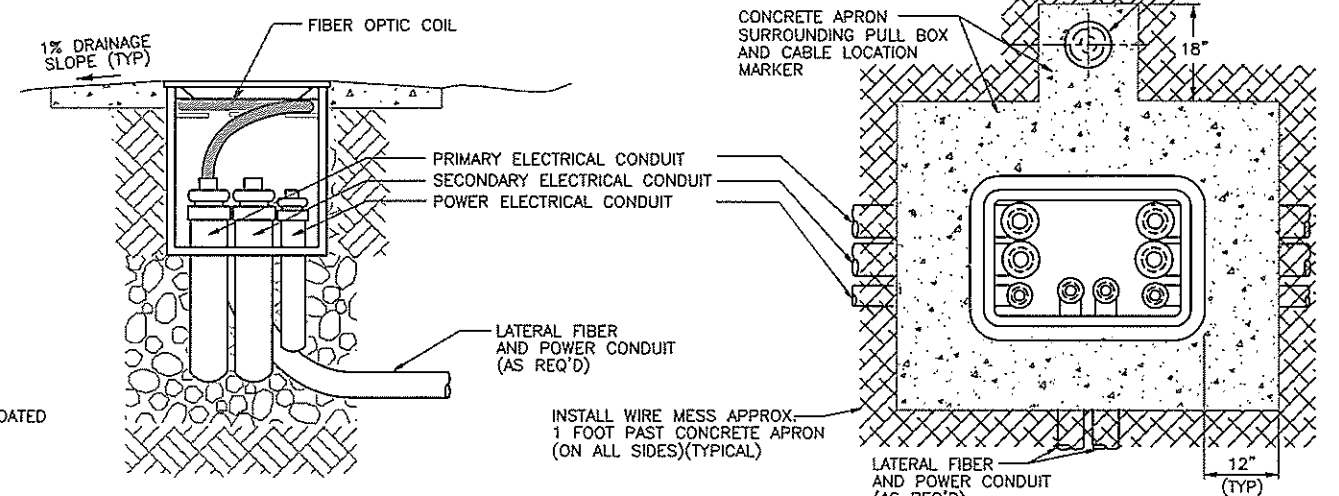
CONDUIT BYPASS DETAIL



GROUNDING DETAIL



- * CONDUIT BEND NOTES:
1. MINIMUM RADIUS "R" MUST NOT BE LESS THAN 32"
 2. MINIMUM SWEEP MUST NOT BE GREATER THAN 90 DEGREES

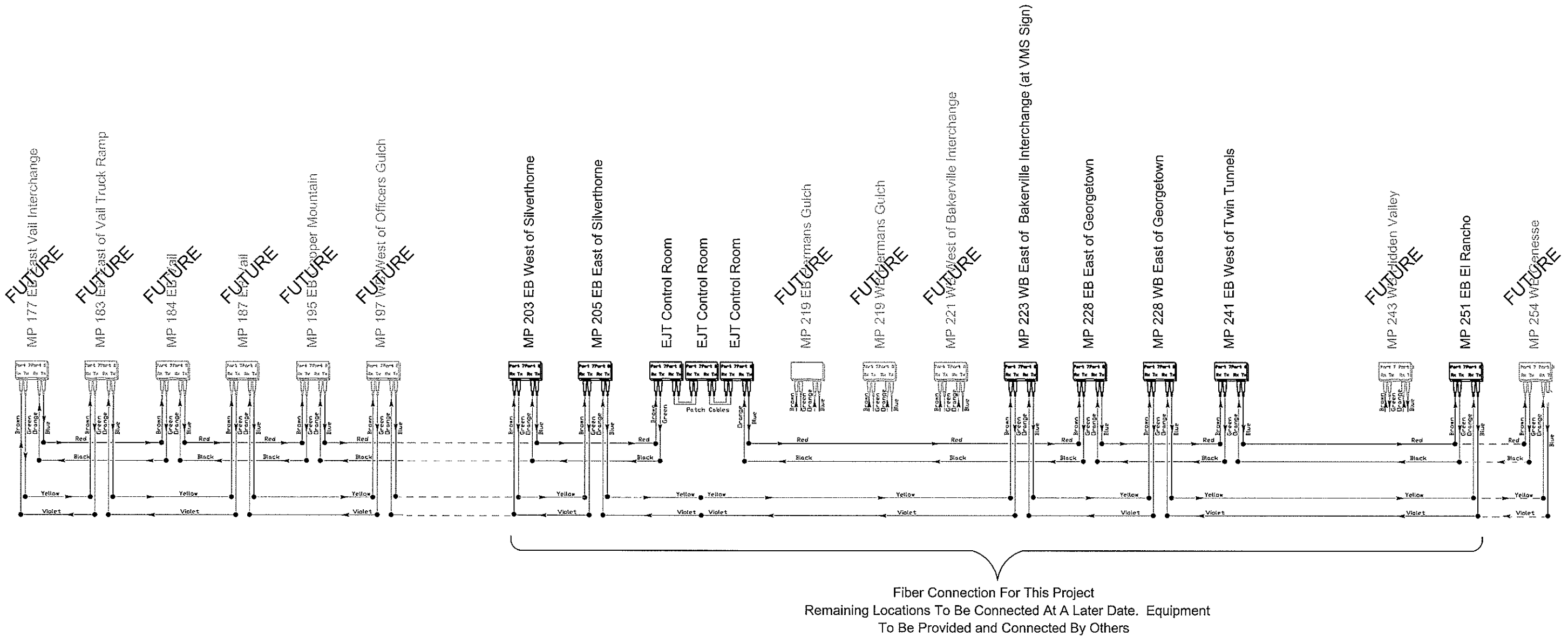


ITS PULL BOX INSTALLATION

Computer File Information		Index of Revisions		Colorado Department of Transportation		As Constructed		PLAN SHEET Project Detail ITS Pull Box		Project No./Code	
Creation Date:	5/12/2003	Initials:	WJKjr	XX	xx/xx/xxxx	XXXXXXXXXXXX	XXX	Designer: WJKjr Detailer: WJKjr Sheet Subset: Subset Sheet Number:		I R100-128	
Last Modification Date:	11/13/2006	Initials:	WJKjr	XX	xx/xx/xxxx	XXXXXXXXXXXX	XXX			16221	
Full Path:	Pull Box (Special) Standard.DWG			XX	xx/xx/xxxx	XXXXXXXXXXXX	XXX			Sheet Number	
Drawing File Name:	Pull Box (Special) Standard.DWG			XX	xx/xx/xxxx	XXXXXXXXXXXX	XXX			20185	
Scale:	NA	Units:	English	XX	xx/xx/xxxx	XXXXXXXXXXXX	XXX				
				ITS - CTMC With Region 1 Traffic CBR							

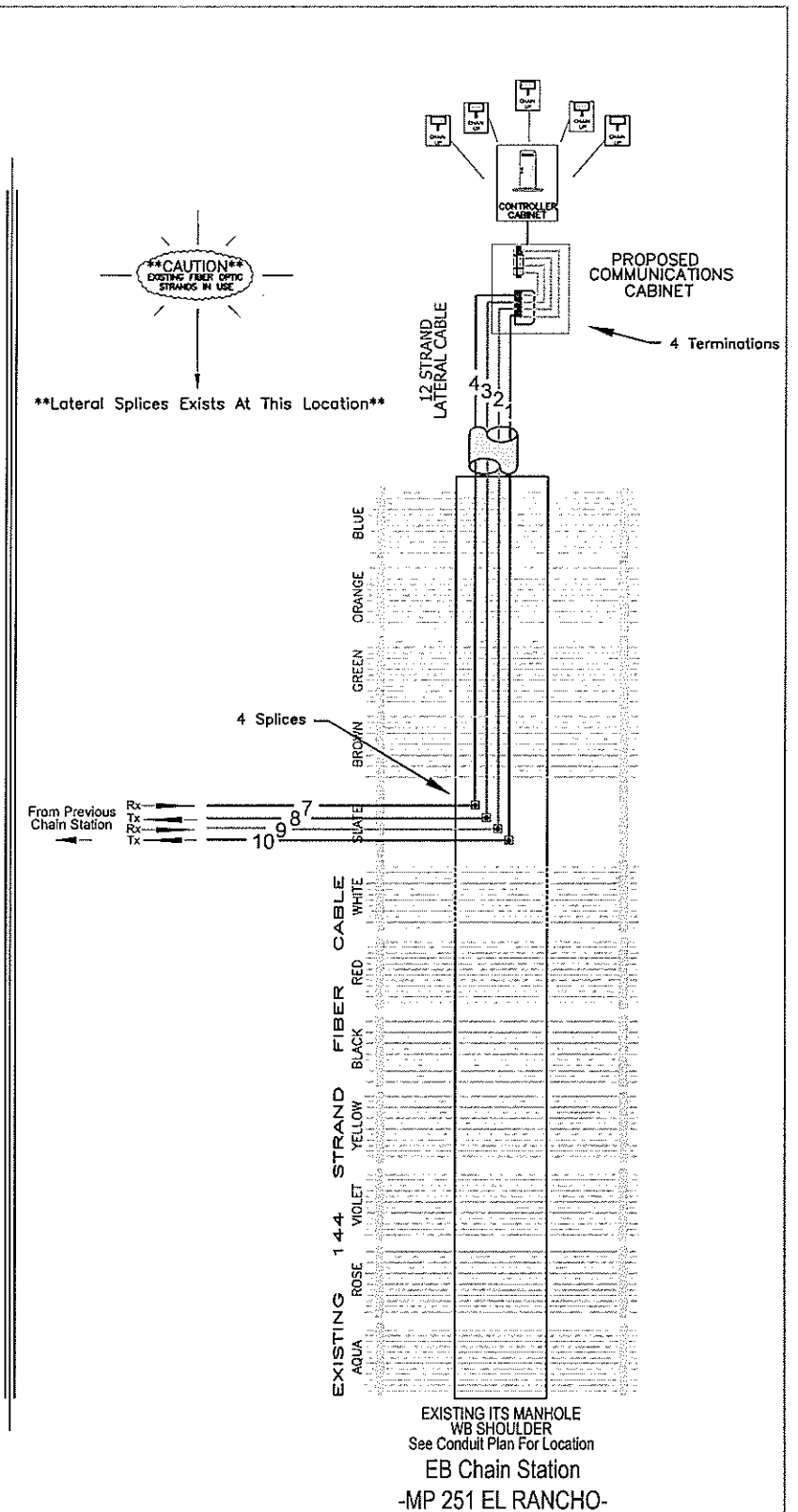
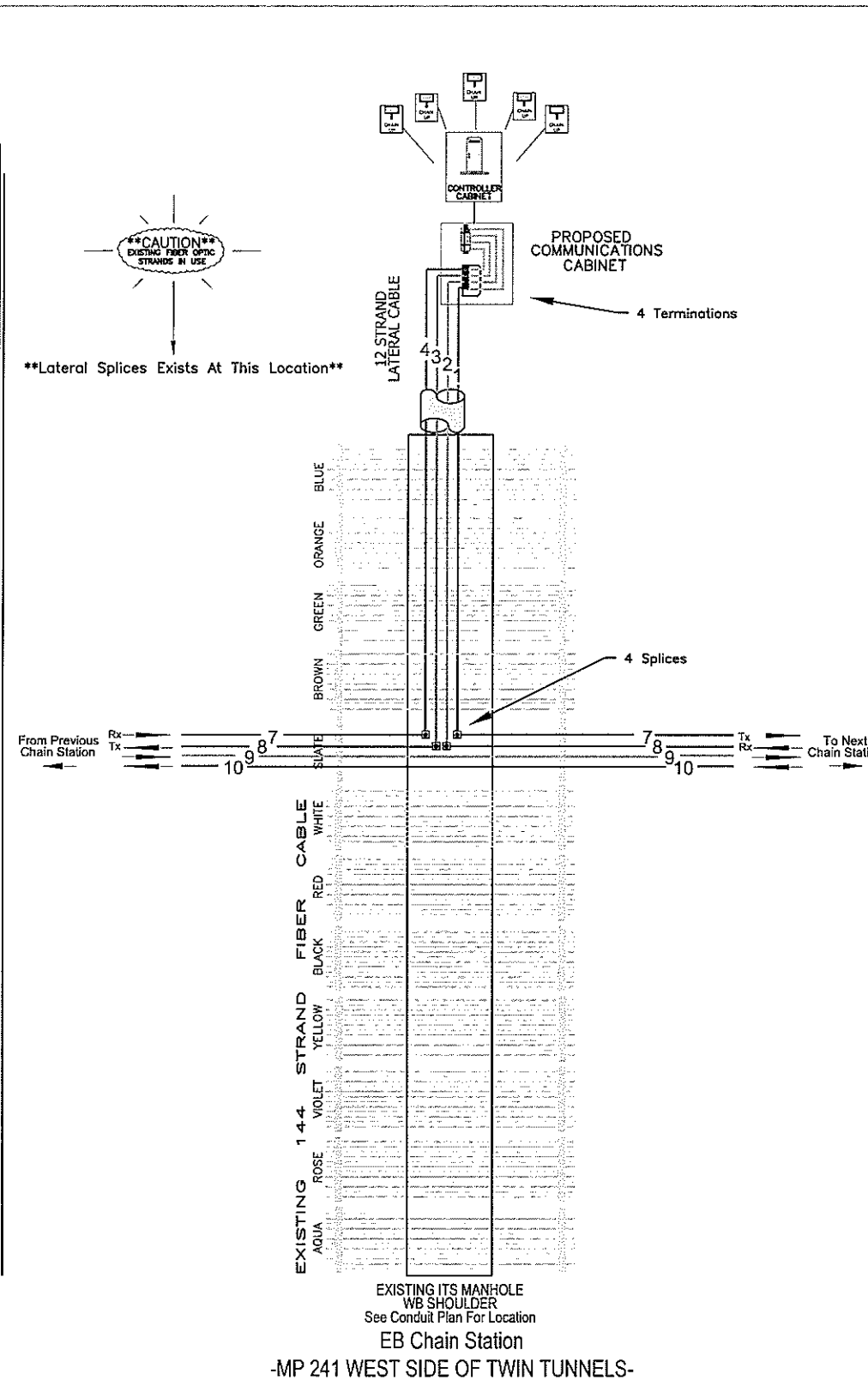
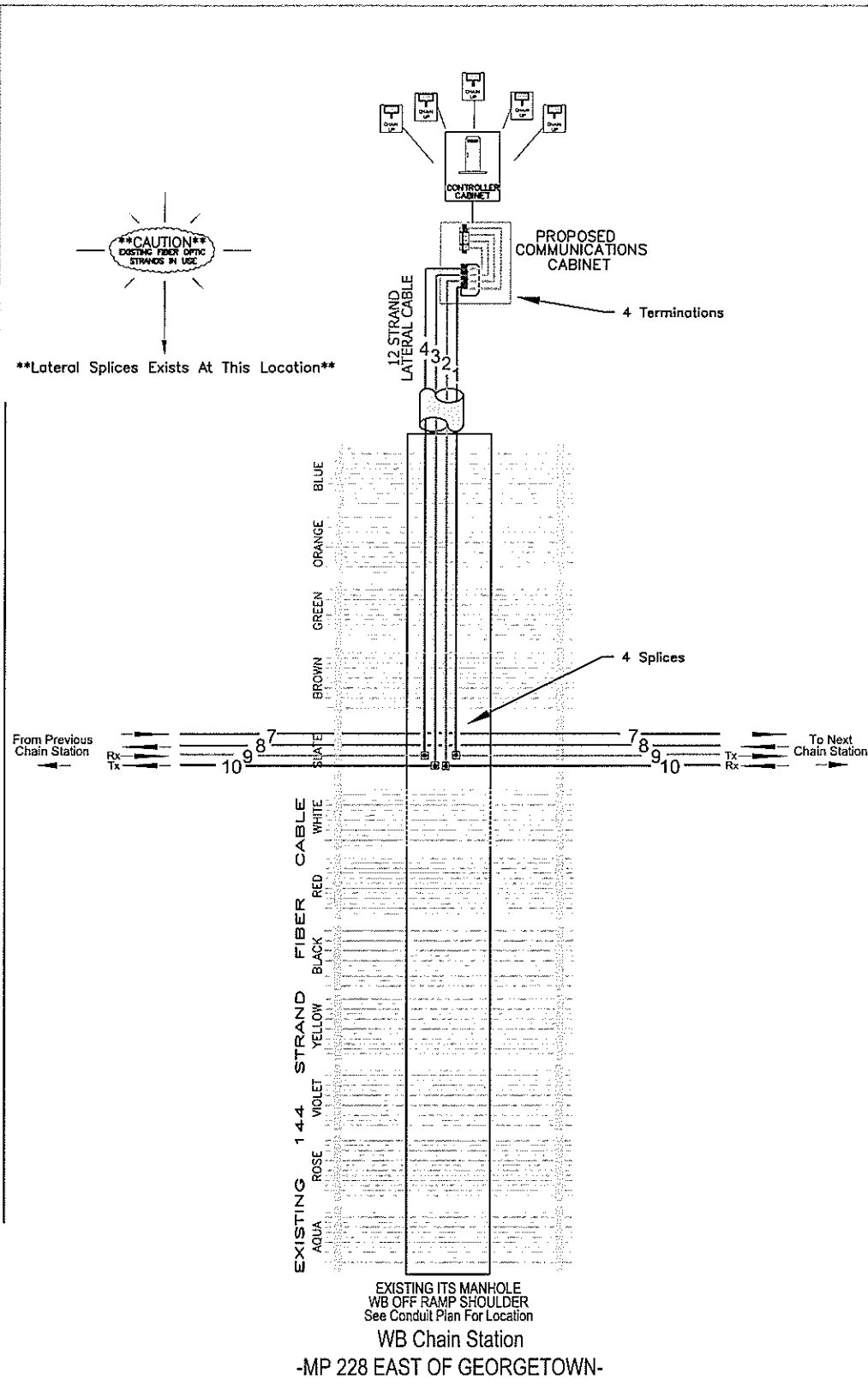
NOTE:

ALL EQUIPMENT SHOWN ON THIS PLAN SHEET IS SHOWN FOR INFORMATION ONLY.
 PROPOSED WORK ON THIS PROJECT IS FIBER INSTALLATION, SPLICING,
 TERMINATION AND ALL ASSOCIATED MATERIALS AND LABOR.




Fiber Connection For This Project
 Remaining Locations To Be Connected At A Later Date. Equipment
 To Be Provided and Connected By Others

Computer File Information Creation Date: 4/13/2007 Initials: WJKjr Last Modification Date: See Side Panel Initials: WJKjr Full Path: Drawing File Name: See Side Panel ACAD Ver. ACAD 200LT Scale: NTS Units: English		Sheet Revisions <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										 Colorado Department of Transportation ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 ITS - CTMC With Region 1 Traffic CBR		As Constructed No Revisions: Revised: Void:		Intrastate 70 West Corridor Chain Stations Proposed Project Logic Data Flow Designer: WJKjr Structure Numbers: Detailer: WJKjr Sheet Subset: Fiber Allocation Subset Sheets: 5 of 5		Project No./Code I R100-128 16211 Sheet Number 2084	



Computer File Information	
Creation Date:	4/13/2007 Initials: Wjkjr
Last Modification Date:	See Side Panel Initials: Wjkjr
Full Path:	
Drawing File Name:	See Side Panel
ACAD Ver. ACAD 200LT	Scale: NTS Units: English

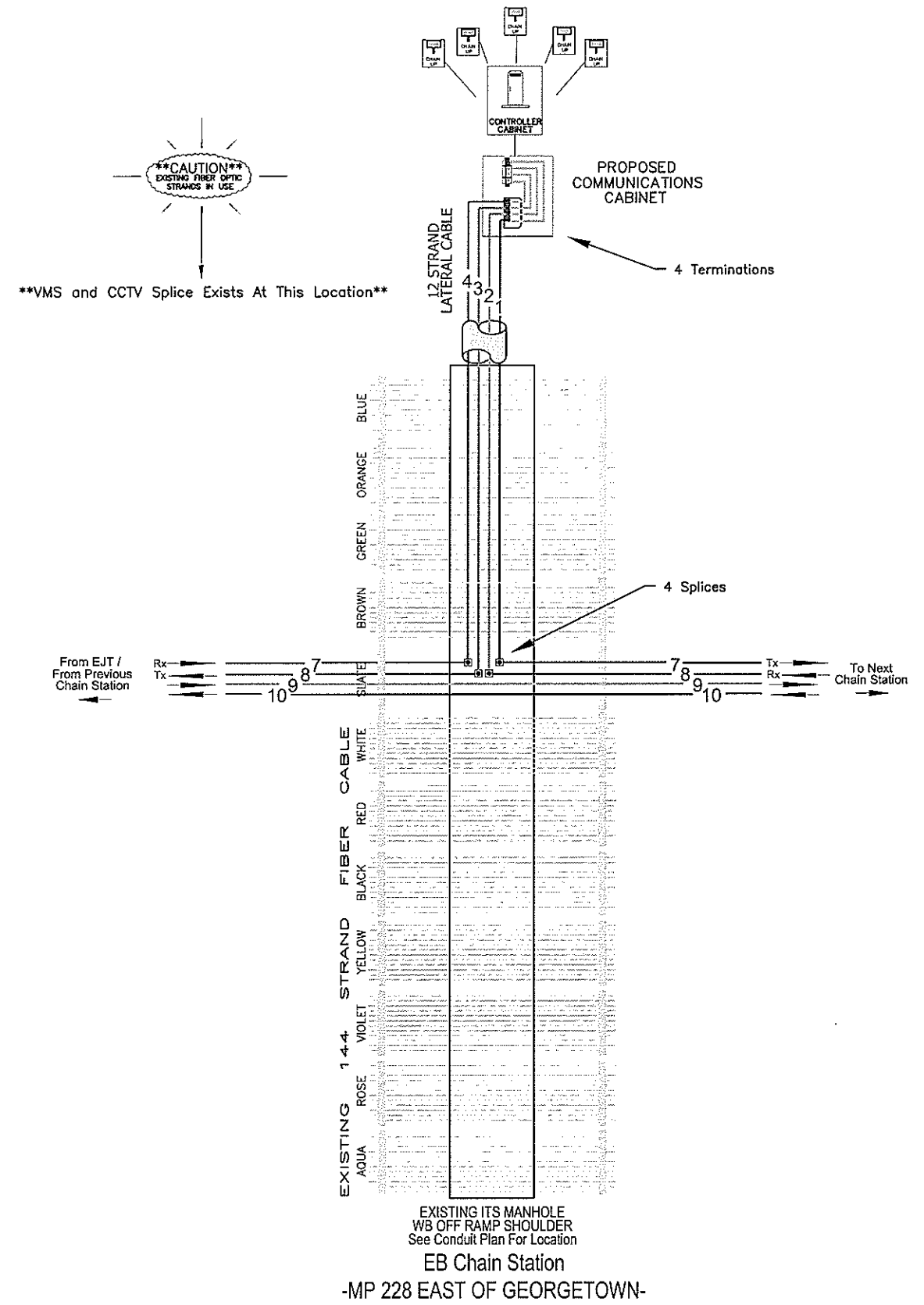
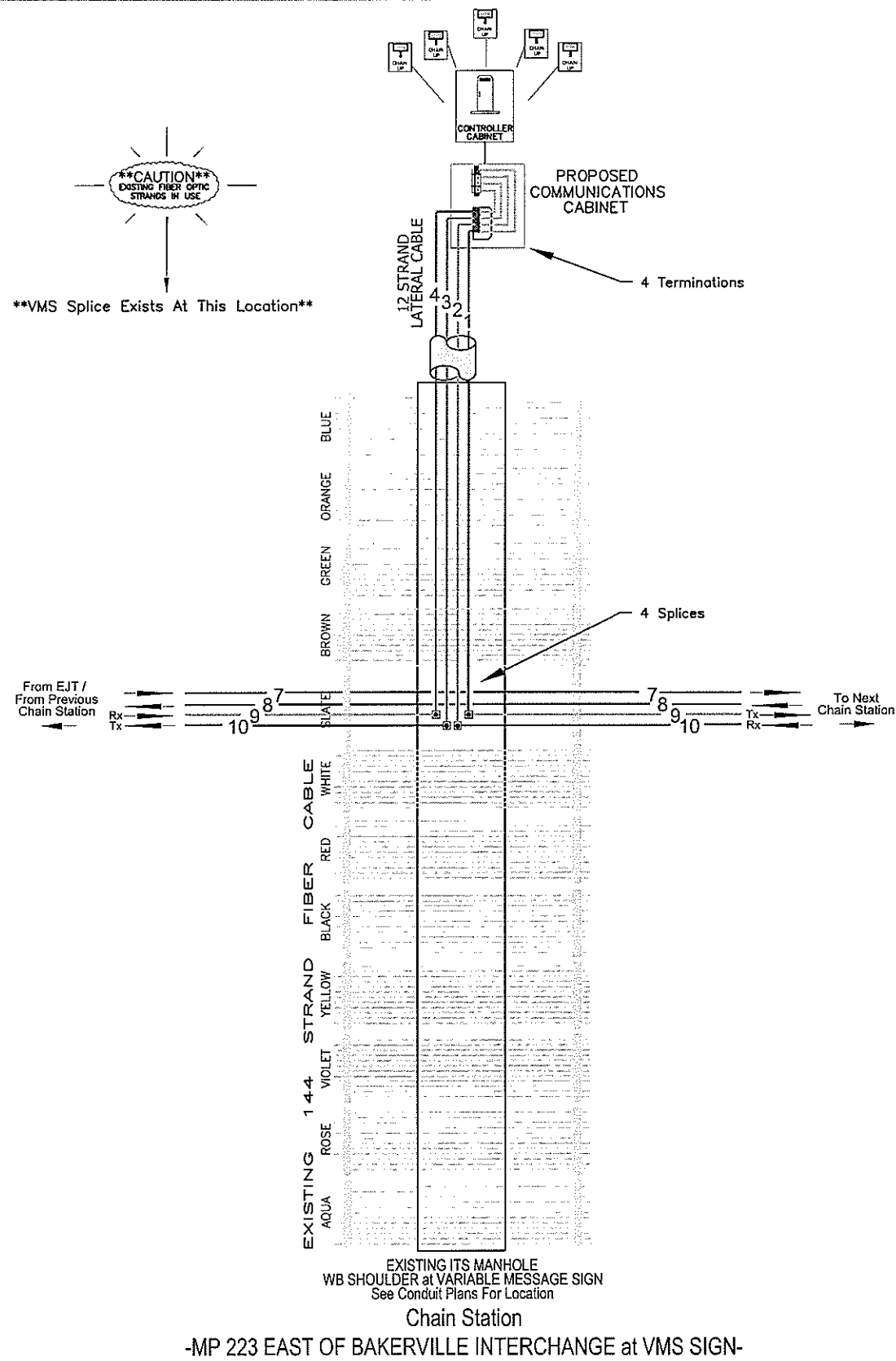
Sheet Revisions	

Colorado Department of Transportation

 ITS - Colorado Traffic Management Center
 425C Corporate Circle
 Golden, Colorado 80401
 Phone: 303-512-5834 FAX: 303-512-5878
 ITS - CTMC With Region 1 Traffic CBR

As Constructed
No Revisions:
Revised:
Void:

Interstate 70 West Corridor	
Chain Stations	
Fiber Splice Diagrams	
Designer: Wjkjr	Structure Numbers
Detailer: Wjkjr	
Sheet Subset: Fiber Allocation	Subset Sheets: 4 of 5

Project No./Code
I R100-128
16221
Sheet Number 10083



Computer File Information	
Creation Date:	4/13/2007 Initials: Wjkjr
Last Modification Date:	See Side Panel Initials: Wjkjr
Full Path:	
Drawing File Name:	See Side Panel
ACAD Ver.:	ACAD 200LT Scale: NTS Units: English

Sheet Revisions	

Colorado Department of Transportation
 ITS - Colorado Traffic Management Center
 425C Corporate Circle
 Golden, Colorado 80401
 Phone: 303-512-5834 FAX: 303-512-5878
 ITS - CTMC With Region 1 Traffic CBR

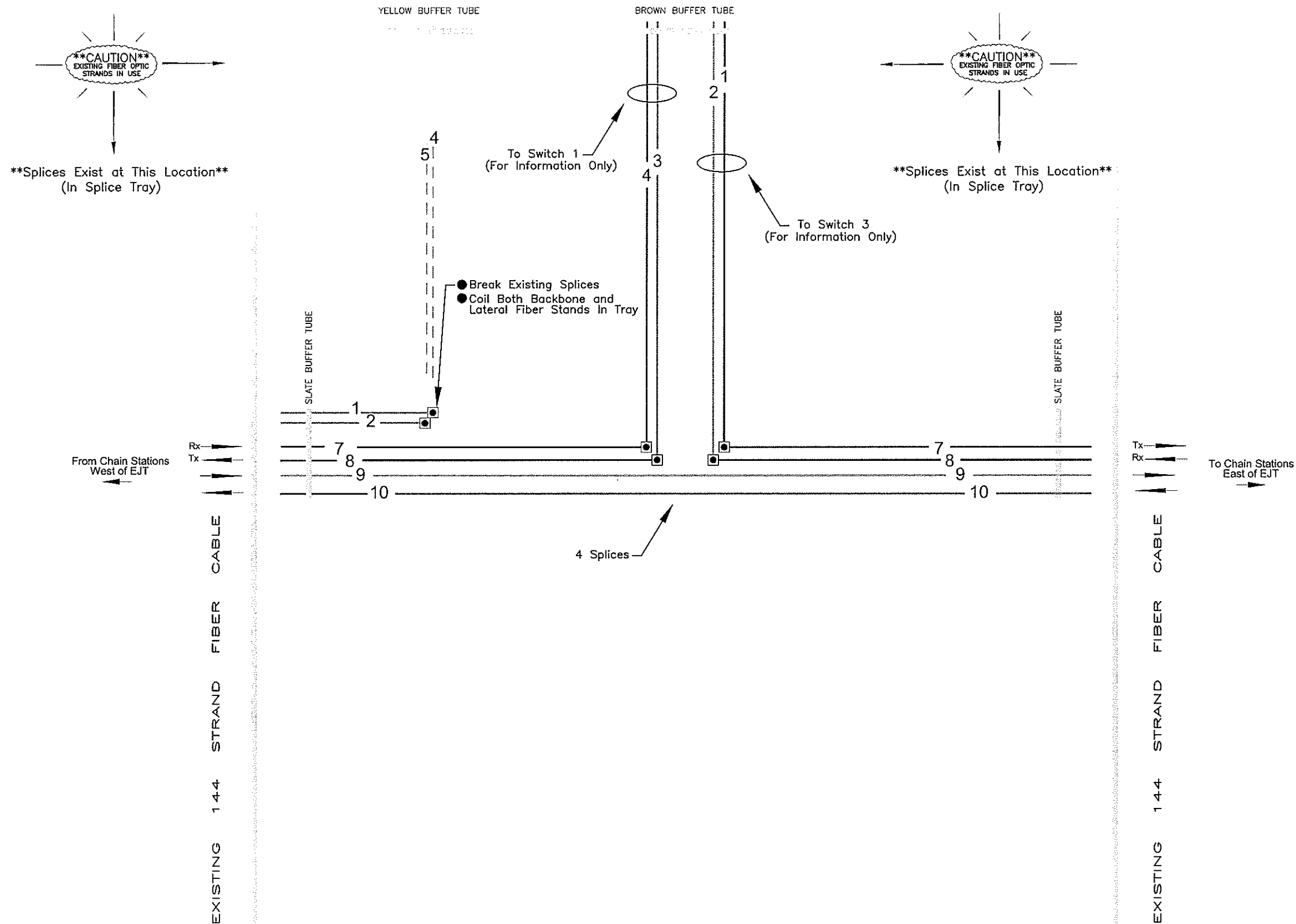
As Constructed
No Revisions:
Revised:
Void:

Interstate 70 West Corridor	
Chain Stations	
Fiber Splice Diagrams	
Designer: Wjkjr	Structure Numbers:
Detailer: Wjkjr	
Sheet Subset: Fiber Allocation	Subset Sheets: 3 of 5

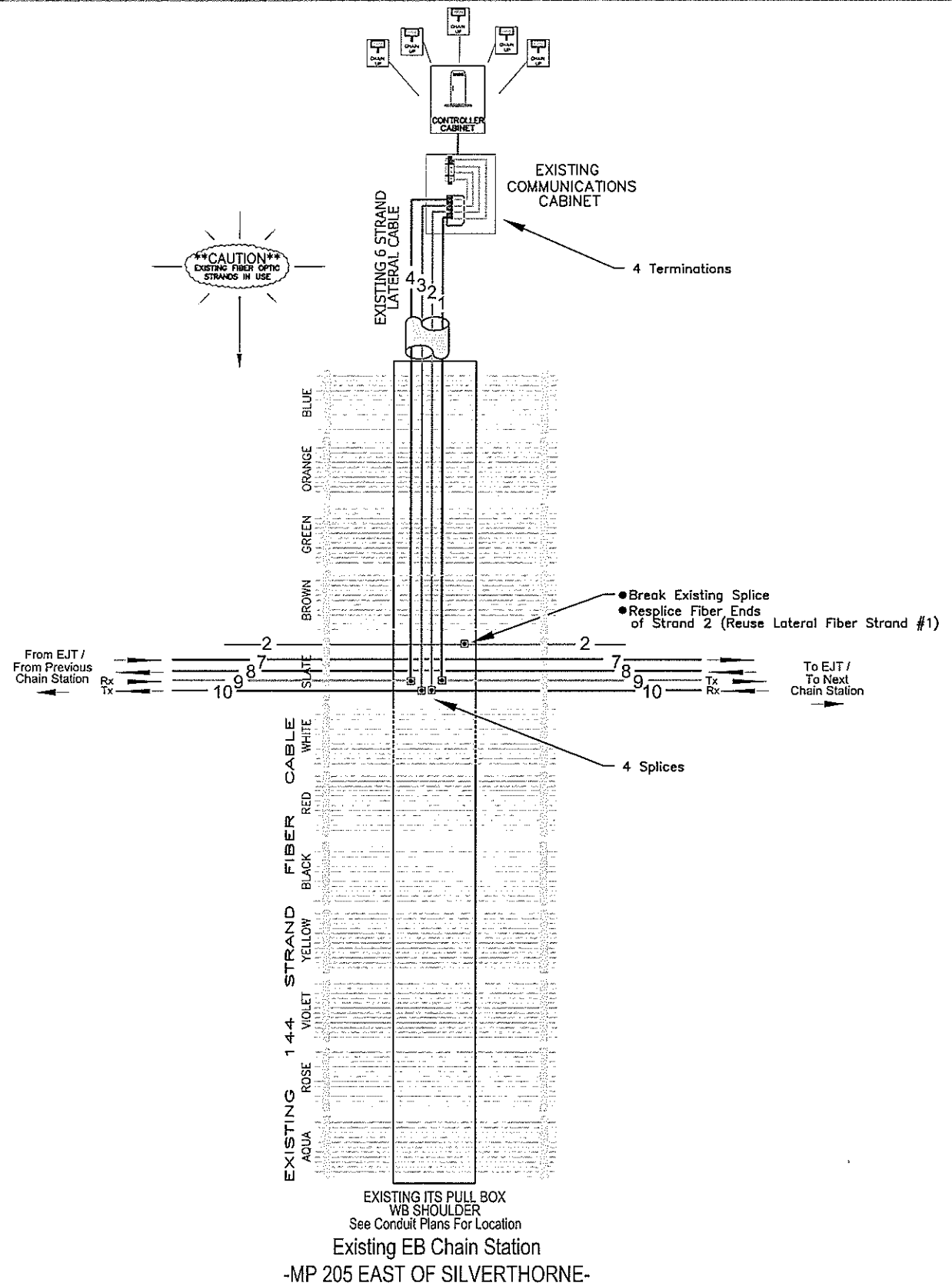
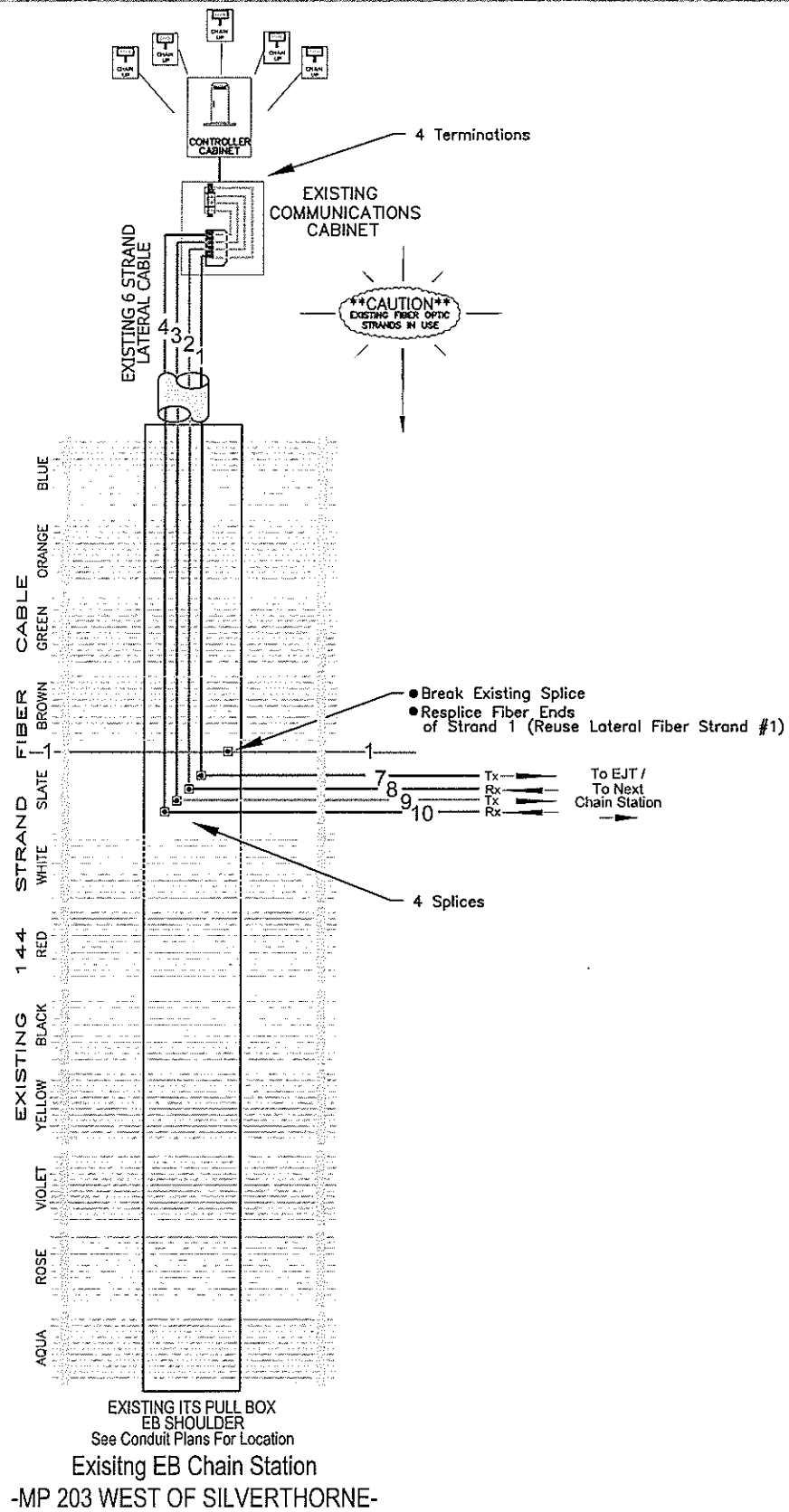
Project No./Code	I R100-128
Sheet Number	16221

188/82

EXISTING 144 STRAND LATERAL FIBER CABLE



Computer File Information Creation Date: 4/13/2007 Initials: WJKjr Last Modification Date: See Side Panel Initials: WJKjr Full Path: Drawing File Name: See Side Panel ACAD Ver. ACAD 200LT Scale: NTS Units: English		Sheet Revisions <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>														Colorado Department of Transportation ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 ITS - CTMC With Region 1 Traffic CBR		As Constructed No Revisions: Revised: Void:		Interstate 70 West Corridor Chain Stations Fiber Splice Diagram at EJT-East Vent Building Designer: WJKjr Structure: Detailer: WJKjr Numbers: Sheet Subset: Fiber Allocation Subset Sheets: 2 of 5		Project No./Code I R100-128 16221 Sheet Number 101	



Computer File Information	
Creation Date:	4/13/2007 Initials: Wjkjr
Last Modification Date:	See Side Panel Initials: Wjkjr
Full Path:	
Drawing File Name:	See Side Panel
ACAD Ver. ACAD 200LT	Scale: NTS Units: English

Sheet Revisions	

Colorado Department of Transportation

ITS - Colorado Traffic Management Center
425C Corporate Circle
Golden, Colorado 80401
Phone: 303-512-5834 FAX: 303-512-5878

ITS - CTMC With Region 1 Traffic CBR

As Constructed
No Revisions:
Revised:
Void:

Interstate 70 West Corridor	
Chain Stations	
Fiber Splice Diagrams	
Designer: Wjkjr	Structure Numbers
Detailer: Wjkjr	
Sheet Subset: Fiber Allocation	Subset Sheets: 1 of 5


Project No./Code
I R100-128
16221
Sheet Number 196 80

Fiber Resplice Splice Table

Interstate 70 - 144 Strand Backbone Fiber Cable

DEVICE	144 Strand Backbone Cable				SPLICE LOCATION	NODE LOCATION
	FIBER No.	FIBER COLOR	BUFFER COLOR	FIBER DIRECTION		
<i>EXISTING CHAIN STATION - MP 203 WEST OF SILVERTHORNE</i>	1	BLUE	SLATE	EAST and WEST	<i>EXISTING ITS PULL BOX</i>	<i>EJT TUNNEL</i>
<i>EXISTING CHAIN STATION - MP 205 EAST OF SILVERTHORNE</i>	2	ORANGE	SLATE	EAST and WEST	<i>EXISTING ITS PULL BOX</i>	<i>EJT TUNNEL</i>
<i>EXISTING CHAIN STATION - MP 203 WEST OF SILVERTHORNE</i>	1	BLUE	SLATE	EAST and WEST	<i>EJT VENT BUILDING SPLICE CABINET</i>	<i>EJT TUNNEL</i>
<i>EXISTING CHAIN STATION - MP 205 EAST OF SILVERTHORNE</i>	2	ORANGE	SLATE	EAST and WEST	<i>EJT VENT BUILDING SPLICE CABINET</i>	<i>EJT TUNNEL</i>

William Kaseck, Self5/13/2007 7:15 PM Splice Table 02 Rev 3.dwg

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Chain Up Stations		Project No./Code	
Creation Date:	06/07/06	Initials:	WJKjr	<input type="checkbox"/>	 ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 Colo Traf. Management Cntr for Region 1 - Traffic CBR	No Revisions:	Interstate 70 West Corridor <i>Fiber Allocation Tables</i>		I R100-128		
Last Modification Date:	See Side Panel	Initials:	WJKjr	<input type="checkbox"/>		Revised:	Designer:	WJKjr	Structure:	16221	
Full Path:				<input type="checkbox"/>		Void:	Detailer:	WJKjr	Numbers:	Sheet Number 1079	
Drawing File Name:	See Side Panel			<input type="checkbox"/>		Sheet Subset:	Splice Tab	Subset Sheets:	2 of 2		
Acad Ver. Lite 2002	Scale: NTS	Units:	English	<input type="checkbox"/>							

Regeneration Node Splice Table

Interstate 70 – 144 Strand Fiber Cable
144 Strand Lateral Fiber Cable

DEVICE	144 Strand Lateral Fiber Cable				Spliced To	144 Strand Backbone Cable				SPLICE LOCATION	NODE LOCATION
	CABLE NUMBER	FIBER No.	FIBER COLOR	BUFFER COLOR		FIBER No.	FIBER COLOR	BUFFER COLOR	FIBER DIRECTION		
FROM CHAIN STATION WEST OF EJT	1	1	BLUE	BROWN		7	RED	SLATE	FROM EAST	EJT VENT BUILDING SPLICE CABINET	EJT TUNNEL
FROM CHAIN STATION WEST OF EJT	1	2	ORANGE	BROWN		8	BLACK	SLATE	FROM EAST	EJT VENT BUILDING SPLICE CABINET	EJT TUNNEL
FROM CHAIN STATION WEST OF EJT	1	3	GREEN	BROWN		8	BLACK	SLATE	FROM WEST	EJT VENT BUILDING SPLICE CABINET	EJT TUNNEL
FROM CHAIN STATION WEST OF EJT	1	4	BROWN	BROWN		7	RED	SLATE	FROM WEST	EJT VENT BUILDING SPLICE CABINET	EJT TUNNEL


Field Device Splice Table

Interstate 70 – 144 Strand Fiber Cable
12 Strand Lateral Fiber Cable

DEVICE LOCATION	12 Strand Lateral Fiber Cable				Spliced To	144 Strand Backbone Cable				SPLICE LOCATION	NODE LOCATION
	CABLE NUMBER	FIBER No.	FIBER COLOR	BUFFER COLOR		FIBER No.	FIBER COLOR	FIBER * DIRECTION	BUFFER COLOR		
EXISTING EB CHAIN STATION – MP 203 WEST OF SILVERTHORNE	1	1	BLUE	BLUE		7	RED	EAST	SLATE	EXISTING ITS PULL BOX	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		8	BLACK	EAST	SLATE		
	1	3	GREEN	BLUE		9	YELLOW	EAST	SLATE		
	1	4	BROWN	BLUE		10	VIOLET	EAST	SLATE		
EXISTING EB CHAIN STATION – MP 205 EAST OF SILVERTHORNE	1	1	BLUE	BLUE		9	YELLOW	EAST	SLATE	EXISTING ITS PULL BOX	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		10	VIOLET	EAST	SLATE		
	1	3	GREEN	BLUE		10	VIOLET	WEST	SLATE		
	1	4	BROWN	BLUE		9	YELLOW	WEST	SLATE		
WB CHAIN STATION – MP 223 EAST OF BAKERVILLE INTERCHANGE AT VMS SIGN	1	1	BLUE	BLUE		9	YELLOW	EAST	SLATE	EXISTING ITS MANHOLE	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		10	VIOLET	EAST	SLATE		
	1	3	GREEN	BLUE		10	VIOLET	WEST	SLATE		
	1	4	BROWN	BLUE		9	YELLOW	WEST	SLATE		
EB CHAIN STATION – MP 228 EAST OF GEORGETOWN	1	1	BLUE	BLUE		7	RED	EAST	SLATE	EXISTING ITS MANHOLE	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		8	BLACK	EAST	SLATE		
	1	3	GREEN	BLUE		8	BLACK	WEST	SLATE		
	1	4	BROWN	BLUE		7	RED	WEST	SLATE		
WB CHAIN STATION – MP 228 EAST OF GEORGETOWN	1	1	BLUE	BLUE		9	YELLOW	EAST	SLATE	EXISTING ITS MANHOLE	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		10	VIOLET	EAST	SLATE		
	1	3	GREEN	BLUE		10	VIOLET	WEST	SLATE		
	1	4	BROWN	BLUE		9	YELLOW	WEST	SLATE		
EB CHAIN STATION – MP241 WEST SIDE OF TWIN TUNNELS	1	1	BLUE	BLUE		7	RED	EAST	SLATE	EXISTING ITS MANHOLE	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		8	BLACK	EAST	SLATE		
	1	3	GREEN	BLUE		8	BLACK	WEST	SLATE		
	1	4	BROWN	BLUE		7	RED	WEST	SLATE		
EB CHAIN STATION – MP251 EL RANCHO	1	1	BLUE	BLUE		10	VIOLET	WEST	SLATE	EXISTING ITS MANHOLE	EJT CONTROL ROOM
	1	2	ORANGE	BLUE		9	YELLOW	WEST	SLATE		
	1	3	GREEN	BLUE		8	BLACK	WEST	SLATE		
	1	4	BROWN	BLUE		7	RED	WEST	SLATE		

* Indicates Direction of Backbone Fiber Strand From Lateral Splice, (Towards Associated Regeneration Node For Data Flow).

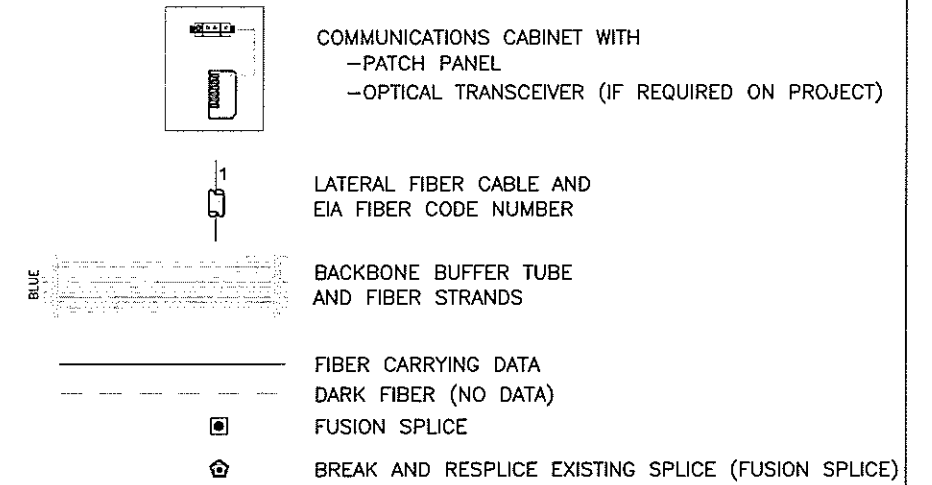
William Koscek, Self5/14/2007 11:29 AM Splice Table 01 Rev 3.dwg

Computer File Information		Sheet Revisions		 Colorado Department of Transportation ITS – Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 Colo Traf. Management Cntr for Region 1 – Traffic		As Constructed		Chain Up Stations Interstate 70 West Corridor Fiber Allocation Tables		Project No./Code	
Creation Date: 06/07/06	Initials: WJKjr					No Revisions:				Designer: WJKjr	Structure Numbers:
Last Modification Date: See Side Panel	Initials: WJKjr			Revised:		Detailer: WJKjr		16221			
Full Path:				Void:		Sheet Subset: Splice Tab	Subset Sheets: 1 of 2	Sheet Number 18			
Drawing File Name: See Side Panel											
Acad Ver. Lite 2002	Scale: NTS										
	Units: English										

FIBER OPTIC GENERAL NOTES:

1. Abbreviations used to describe the regeneration node location on the fiber optic splice sheets is as follows;
EJT - EISENHOWER JOHNSON MEMORIAL TUNNEL
2. Existing fiber usage exists on fiber optic backbone cable. When splices exist in pull boxes and manholes, they will be shown on splice sheets for current devices transmitting data to and from the respective regeneration nodes.
3. The Contractor MUST submit to the Project Engineer, cut sheets and/or material descriptions for all fiber optic materials prior to purchase for approval by CDOT. In addition, copies of all manufacturer's recommended installation instructions and procedures for materials shall be provided to CDOT prior to the start of any fiber or electronic installation work.
4. All fiber optic work shall be per the manufacturer's instructions and recommendations. This shall include all splicing, termination, fiber optic closure management and all other materials provided.
5. Work in existing backbone fiber pull boxes and manholes;
 - a. Coil 25 feet of lateral fiber cable in pull boxes and 100 feet in manholes
 - b. Attach cable label for lateral fiber cable per Project Special Detail, ITS Pull Box Sheet.
 - c. Install cable management hardware in pull box per Project Special Detail, ITS Pull Box Sheet. (both proposed and existing pull boxes).
6. Interior of communications cabinets
 - a. Secure patch panel, all associated device equipment and all associated electrical equipment to complete the work.
 - b. Install lateral fiber cable in a location which will not damage cable or patch cords and not be disturbed by future routine maintenance, install strain relief and cable label.
 - c. Fiber strands shall be labeled with corresponding transmit (Tx), receive (Rx) and data direction from device location as part of required cable labeling.
7. The Contractor's responsibility will be to furnish and install materials as part of this project and provide a "path of light" and data communications from the various field cabinets to the regeneration nodes. The Contractor shall not be responsible for the integrity of the existing fiber backbone cable that this work is connecting to, outside of individual project splice locations and work conducted by the Contractor. If existing cable is damaged do to the Contractor's work, it shall be replaced by the Contractor at no additional cost to the project per the project specification.
8. Prior to installing the splice closure and fiber cable, the Contractor shall clean the interior of the existing pull box or manhole and along the rim where the respective lid rests to remove any dirt, sand or debris. After cleaning, the pea gravel shall be raked level in the bottom of the box.
9. Prior to attaching and bolting the pull box and manhole lids, the Contractor shall install conduit plugs in all conduit openings. Material shall be approved by CDOT per note 3 above prior to installation. This work shall not be paid for separately, but included in the conduit items.
10. It is estimated that 637 fiber splices and 28 terminations shall be required on this project. This work shall be paid for as part of fiber optic cable item.
11. The Contractor shall notify the Project Engineer 1 working day prior to work at each splicing location to have a CDOT representative on site while splicing is performed. In the event that the representative cannot be on site, 8 digital pictures, (taken at varying angles showing all completed work) shall be taken of the interior of the splice closure prior to reassembling and sealing, and all materials installed in the pull box in the final condition.
12. The Contractor shall schedule a pre fiber installation and a pre splicing meeting to ensure that all work will be conducted according to the plans and manufacturer's recommendations.
13. Testing of fiber optic cable shall be bi-directional and shall be conducted from the respective regeneration node. Testing shall be paid for as part of fiber optic cable item.

LEGEND FOR FIBER OPTIC CABLE AND SPLICE DIAGRAM SHEETS

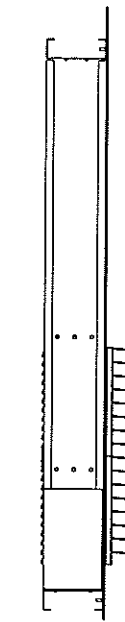


Fiber General Notes Rev 1.dwg

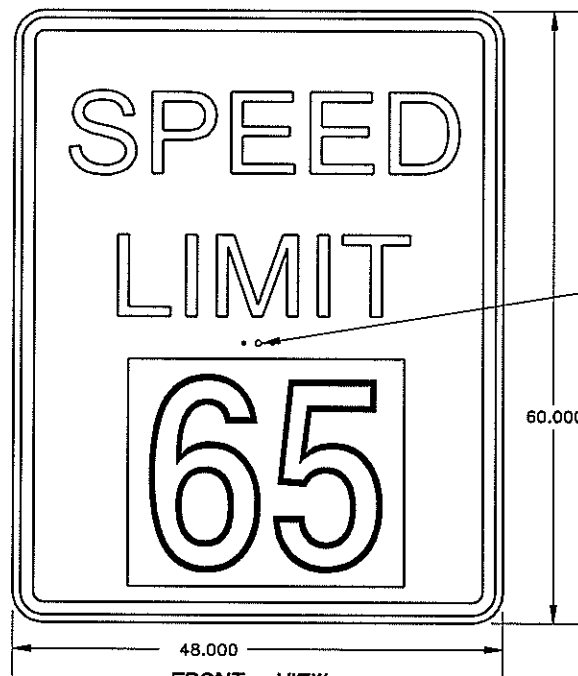
5/14/2007 11:27 AM

William Koscek, Self

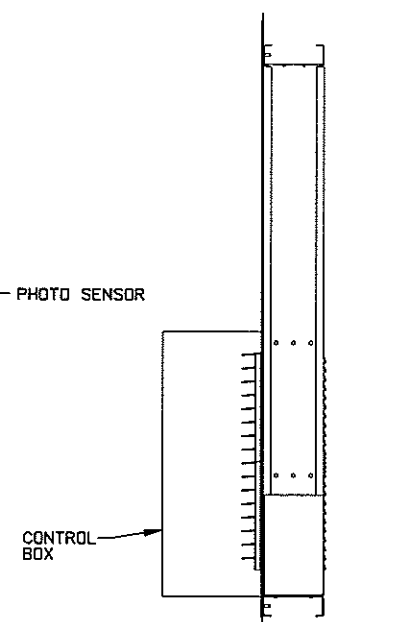
Computer File Information Creation Date: 4/16/2007 Initials: WJKjr Last Modification Date: See Side Panel Initials: WJKjr Full Path: Drawing File Name: See Side Panel ACAD Ver. ACAD 200LT Scale: NTS Units: English		Sheet Revisions [] [] [] []		Colorado Department of Transportation ITS - Colorado Traffic Management Center 425C Corporate Circle Golden, Colorado 80401 Phone: 303-512-5834 FAX: 303-512-5878 ITS - CTMC With Region 1 Traffic CRB		As Constructed No Revisions: Revised: Void:		PLAN SHEET Fiber General Notes Designer: WJKjr Structure Numbers Detailer: WJKjr Sheet Subset: Fiber Gen Notes Subset Sheets: 1 of 1		Project No./Code I R100-128 16221 Sheet Number 198/77	
---	--	--	--	---	--	---	--	---	--	--	--



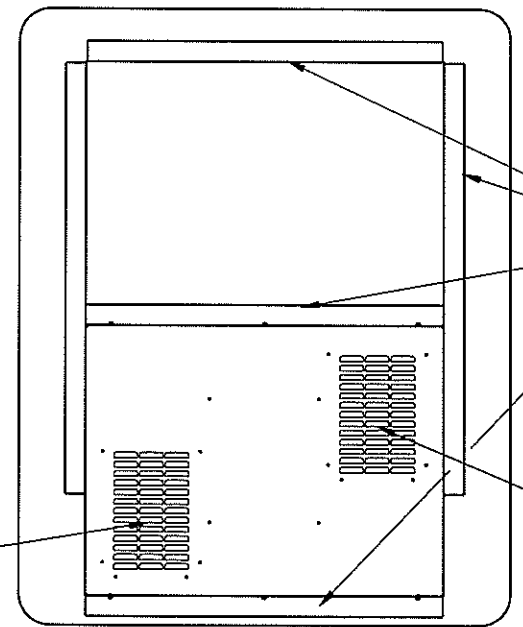
SIDE VIEW



FRONT VIEW



SIDE VIEW



REAR VIEW

NOTES:

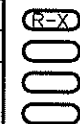
- 1) REVERSE FONT USED FOR BLACK LETTERING ON WHITE BACKGROUND.
- 2) REFLECTIVE FACE.
- 3) DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 4) ALL ALUMINUM CONSTRUCTION WITH STAINLESS STEEL HARDWARE.
- 5) POWER CALCS: 450 MAX WATTS 375 TYP WATTS
- 6) DISPLAY SHALL BE EITHER: 65, 55, 45 OR 60, 50, 40.

AIR INTAKE

CHANNEL USED FOR BOLTING TO STRUCTURE

AIR EXHAUST (TYPICAL)

Print Date: 3/18/2008
 File Name: 12_16701VarSpdLimitSign-Detail.dgn
 Horiz. Scale: N.T.S. Vert. Scale: As Noted
 Unit Information CBR



Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
 18500 East Colfax Avenue
 Aurora, CO 80011
 Phone: 303-365-7330 FAX: 303-365-7350
 Region 1 CBR

As Constructed
 No Revisions:
 Revised:
 Void:

VARIABLE SPEED LIMIT SIGN - DETAIL			
Designer:	WCD	Structure	
Detailer:	WCD	Numbers	
Sheet Subset:	Traffic	Subset Sheets:	11 of 11

Project No./Code
 IM 070A-003
 16701
 Sheet Number 76 -

BILL OF MATERIALS

ITEM	DESCRIPTION	QTY	PART NO.
1	Bracket	2	SBK650-1A, -2A, -3A
2	Bracket Hardware Assembly, B650-LP	1	SB-B650LPH
2a	Bolt	4	S325B06275
2b	Bolt	4	S325B06300
2c	Bolt	4	S325B06325
2d	Cap Screw	4	S307S05125
2e	Nut	16	S100W0SL60
2f	Shim	2	S565NGRH00
2g	Shim	2	S100W0SH18
2h	Shim	2	S100W0SH14
3	Coupling & Bolt Assembly, LP, Type B	1	SB-CBLP
3a	Special Bolt	4	S6C5BB
3b	Coupling	4	S6C5B1B
4	Hinge Assembly, Type B650	4	SB-HBZ
4a	Hinge Plate	1	SB-HBZ
5	Hinge Hardware Assembly, Type B	4	SB-HHB
5a	Bolt	8	S325B07225
5b	LockWasher	8	S100W0SL70
5c	Nut	8	S565NGH70D
6	Anchor Assembly, Type B	1	SBABPK
6a	Anchor	4	SBABP

* With exception to decarburization and macrostructure clauses.

** 2-4 Mil. Thick Moflon Powder Coatings* 20-7037 polyester powder coat.

GENERAL NOTES:

- 1 Meets all requirements of "AASHTO standard specifications for structural supports for highway signs, luminaires and traffic signals."
- 2 All hardware (American Standard) supplied is hot dip galvanized per ASTM A153 or mechanically galvanized per ASTM B695.
- 3 Fasteners, except for special bolt and coupling, are installed with lockwashers or locknuts and do not have specific torque requirements. Fasteners should be made as tight as possible with conventional wrenches unless noted otherwise.
- 4 Square and level individual components to minimize need for shimming.
- 5 Structural steel to be hot dip galvanized per ASTM A123 after fabrication
- 6 No more than two shims underneath any one coupling and no more than three shims underneath any two couplings.
- 7 Select proper post size by referring to post selection tables for medium and large signs
- 8 Refer below for complete installation instructions.

Select correct bracket number from bracket selection table using the proper "L" value as shown in the attached figure.

$$L = L_T - H/2$$

POST WIDTH	BRACKET SELECTION TABLE					
	BRACKET #1	BRACKET #2	BRACKET #3	BRACKET #4	BRACKET #5	BRACKET #6
	MIN. 'L'	MAX. 'L'	MIN. 'L'	MAX. 'L'	MIN. 'L'	MAX. 'L'
254MM(10")	4.9M(16')	8.8M(29')	3.3M(11')	4.9M(16')	-	3.3M(11')
305MM(12")	5.5M(18')	8.8M(29')	4.0M(13')	5.5M(18')	-	4.0M(13')
356MM(14")	5.8M(19')	8.8M(29')	4.3M(14')	5.8M(19')	-	4.3M(14')
406MM(16")	6.4M(21')	8.8M(29')	4.6M(16')	6.4M(21')	-	4.6M(16')
457MM(18")	7.0M(23')	8.8M(29')	4.9M(16')	7.0M(23')	-	4.9M(16')
533MM(21")	7.6M(25')	8.8M(29')	5.5M(18')	7.6M(26')	-	5.5M(18')

INSTALLATION NOTES

Wrench sizes required: 9/16", 7/8", 1-1/16", 1-1/4", 1-7/16", 1-5/8"

BRACKET ASSEMBLY:

- * Assemble bracket to post with bolts provided.
- * Square and tighten (Item 1, 2a, 2b, 2c, 2d, 2e & 2f)

ANCHOR ASSEMBLY:

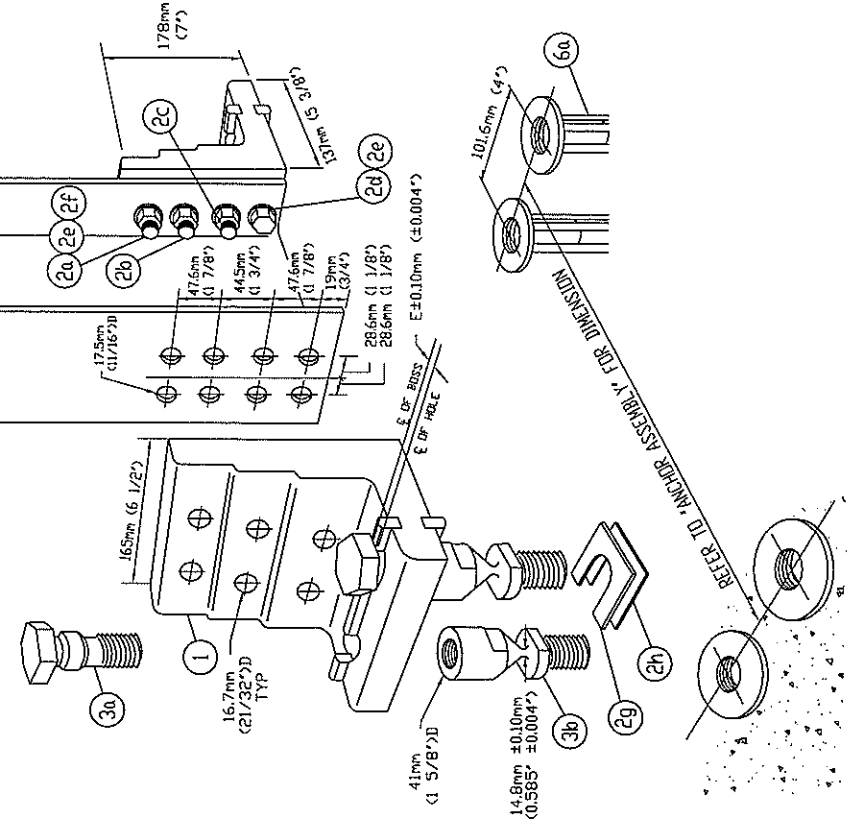
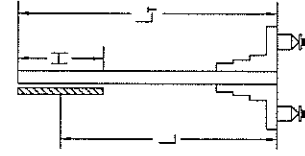
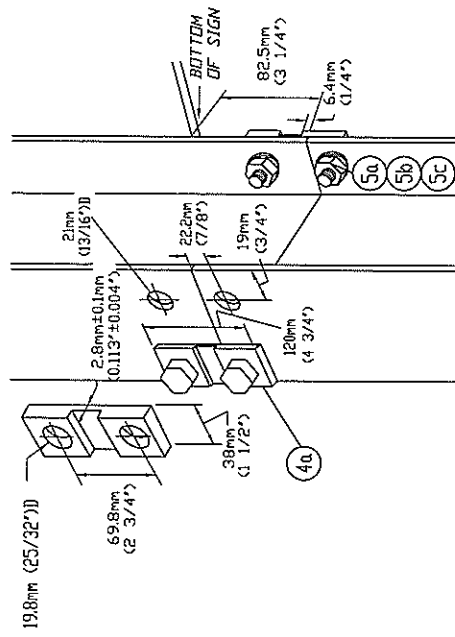
- * Assemble coupling anchors 6a to installation template (not shown). Rigid steel template is recommended
- * Lower entire anchor assembly into fresh concrete and vibrate into position so that the tops of the individual anchors 6a are flush with the finished top surface of the toolings.

COUPLING ASSEMBLY:

- * Suspend post over footing and insert special bolts 3a through bracket 1.
- * Below bracket, thread couplings 3b into anchors 6a but leave loose.
- * Lower post with special bolts 3a onto loose couplings 3b and thread bolts into couplings.
- * Thread couplings all the way in to anchors 6a.
- * Tighten special bolts 3a.
- * NOTE: do not place torque across necked down portion of coupling-- wrench flats are provided on either side for proper tightening.
- * If post is not plumb, insert shims 2g and 2h between couplings 3b and anchor 6a.

HINGE ASSEMBLY:


- * Butt upper and lower posts together on flat surface.
- * Place hinge plates 4a on outer flanges and secure with bolts 5a, 5b and 5c--snug but do not tighten.
- * Make sure upper and lower posts are in alignment; then tighten all nuts 5c to proof load --- 1/2 a turn beyond snug



Computer File Information	
Creation Date:	1/28/97 Initials: SJH
Last Modification Date:	1/28/97 Initials: SJH
Full Path:	\\STANDARD\
Drawing File Name:	MULTI-3.dwg

Index of Revisions	

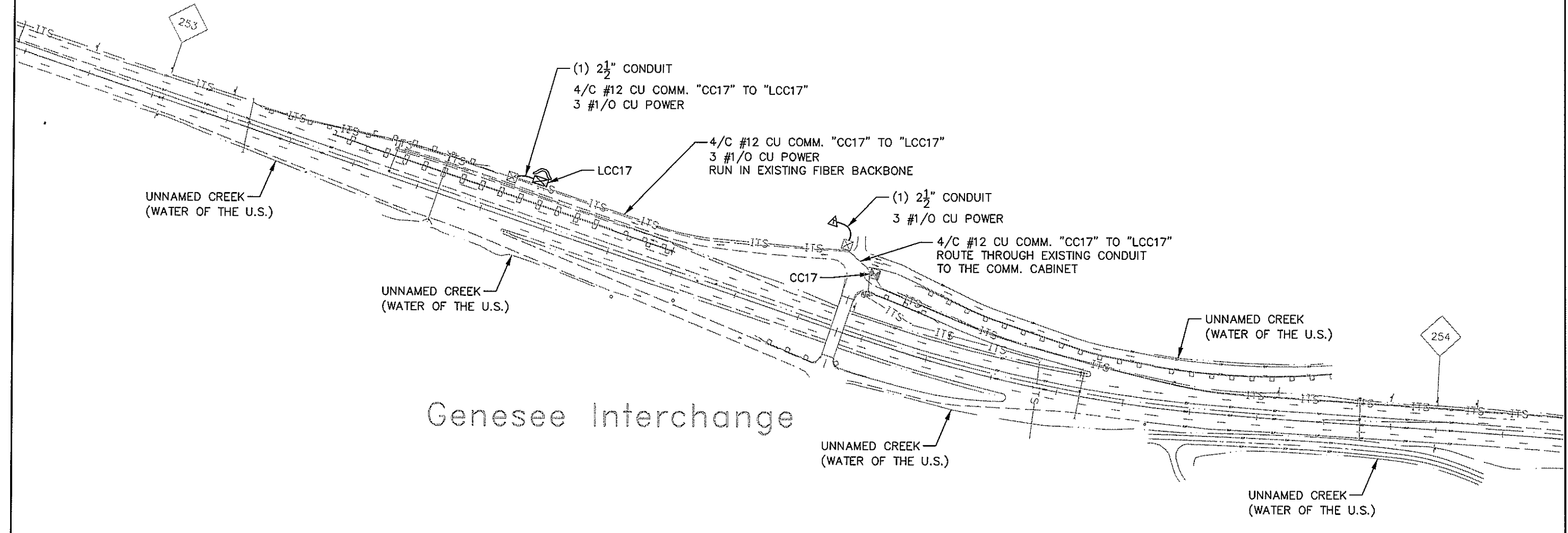
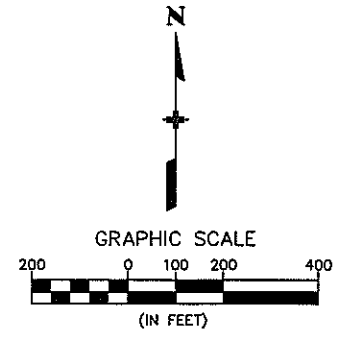
Colorado Department of Transportation



4201 E. Arkansas
Denver, CO 80222
Phone: 757-9355 FAX: 757-9219



Staff Traffic

As Constructed		Multi-Directional Break-Away Detail		Project No./Code	
No Revisions:		for 254mm(10"), 305mm(12"), 356mm(14"), 406mm(16"), 457mm(18") and 533mm(21") WF Sign Post		IM 070A-003	
Revised:		Designer: SJH	Structure Numbers	16701	
Void:		Detailer: SJH		Sheet Number - 75	
		Sheet Subset: Traffic	Subset Sheet Number: 10 of 11		



Genesee Interchange

MP 254 WB

Computer File Information		Index of Revisions		 Region 1 18500 East Colfax Aurora, CO 80011 Phone: (303) 365-7340 FAX: (303) 365-7343	 4601 DTC Blvd. Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	As Constructed		CONDUIT PLAN and SWMP SITE MAP		Project No./Code	
Creation Date: 02/18/08	Initials: SRB					No. Revisions:	Designer: SRB			Structure Numbers	IM 070A-003
Last Modification Date: 03/25/08	Initials: BEG			Revised:	Detailer: BEG		16701				
Full Path: S:\Tranproj\100000508\16701\Consultants\Plot_Sets\FOR				Void:	Sheet Subset: Conduit	Subset Sheets: 17 of 17	Sheet Number: 106				
Drawing File Name: conduit017-mp254wb.dgn				REGION I	DW						
Scale: Units: ENGLISH											