

sarah 2:44:03 PM P:\12021\18370\Drawings\18370DES_StdPlanList.dgn

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
M-100-1		STANDARD SYMBOLS (3 SHEETS).....	1-3
M-100-2		ACRONYMS AND ABBREVIATIONS (4 SHEETS).....	4-7
M-203-1	☐	APPROACH ROADS (REVISED ON JULY 08, 2013).....	8
M-203-2		DITCH TYPES.....	9
M-203-11		SUPERELEVATION CROWNED AND.....	10-12
		DIVIDED HIGHWAYS (3 SHEETS)	
M-203-12		SUPERELEVATION STREETS (2 SHEETS).....	13-14
M-206-1		EXCAVATION AND BACKFILL FOR STRUCTURES	15-16
		(2 SHEETS)	
M-206-2		EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)....	17-18
M-208-1		TEMPORARY EROSION CONTROL (12 SHEETS).....	19-30
M-210-1		MAILBOX SUPPORTS (2 SHEETS)	31-32
M-214-1		PLANTING DETAILS.....	33
M-412-1	☐	CONCRETE PAVEMENT JOINTS (5 SHEETS) (REVISED ON JULY 24, 2012).....	34-38
M-510-1		STRUCTURAL PLATE PIPE H-20 LOADING	39
M-601-1	☐	SINGLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013).....	40-41
M-601-2	☐	DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013).....	42-43
M-601-3	☐	TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON AUGUST 27, 2013).....	44-45
M-601-10		HEADWALL FOR PIPES	46
M-601-11		TYPE "S" SADDLE HEADWALLS FOR PIPE.....	47
M-601-12		HEADWALLS AND PIPE OUTLET PAVING.....	48
M-601-20		WINGWALLS FOR PIPE OR BOX CULVERTS	49
M-603-1		METAL PIPE (4 SHEETS).....	50-53
M-603-2		REINFORCED CONCRETE PIPE	54
M-603-3		PRECAST CONCRETE BOX CULVERT	55
M-603-4		CORRUGATED POLYETHYLENE PIPE (AASHTO M294)	56
M-603-5		POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304)	57
M-603-10		CONCRETE AND METAL END SECTIONS (2 SHEETS)	58-59
M-604-10		INLET, TYPE C	60
M-604-11		INLET, TYPE D	61
M-604-12		CURB INLET TYPE R (2 SHEETS).....	62-63
M-604-13		CONCRETE INLET TYPE 13.....	64
M-604-20		MANHOLES (3 SHEETS).....	65-67
M-604-25		VANE GRATE INLET (5 SHEETS).....	68-72
M-605-1		SUBSURFACE DRAINS	73
M-606-1		GUARDRAIL TYPE 3 W-BEAM (19 SHEETS)	74-92
M-606-13	☐	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS).....	93-96
		(REVISED ON AUGUST 30, 2013)	
M-606-14		PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS)	97-99

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
M-607-1		WIRE FENCES AND GATES (3 SHEETS).....	100-102
M-607-2		CHAIN LINK FENCE (3 SHEETS).....	103-105
M-607-3		BARRIER FENCE.....	106
M-607-4		DEER FENCE AND GATES (3 SHEETS)	107-109
M-607-10		PICKET SNOW FENCE	110
M-607-15		ROAD CLOSURE GATE (9 SHEETS).....	111-119
M-608-1		CURB RAMPS (6 SHEETS)	120-125
M-609-1	☒	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 24, 2012).....	126-129
M-611-1		CATTLE GUARD (2 SHEETS).....	130-131
M-613-1		ROADWAY LIGHTING (4 SHEETS).....	132-135
M-614-1		RUMBLE STRIPS (3 SHEETS).....	136-138
M-614-2		SAND BARREL ARRAYS (2 SHEETS).....	139-140
M-615-1		EMBANKMENT PROTECTOR TYPE 3	141
M-615-2		EMBANKMENT PROTECTOR TYPE 5	142
M-616-1		INVERTED SIPHON.....	143
M-620-1		FIELD LABORATORY CLASS 1.....	144
M-620-2		FIELD LABORATORY CLASS 2 (2 SHEETS)	145-146
M-620-11		FIELD OFFICE CLASS 1	147
M-620-12		FIELD OFFICE CLASS 2.....	148
M-629-1		SURVEY MONUMENTS (2 SHEETS).....	149-150

PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
S-612-1		DELINEATOR INSTALLATIONS (7 SHEETS)	151-157
S-614-1	☒	GROUND SIGN PLACEMENT (2 SHEETS) (REVISED ON MARCH 07, 2014) ...	158-159
S-614-2		CLASS I SIGNS	
S-614-3		CLASS II SIGNS	
S-614-4		CLASS III SIGNS (3 SHEETS)	162-164
S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS	165-166
		FOR GROUND SIGNS (2 SHEETS)	
S-614-6	☐	CONCRETE FOOTINGS AND SIGN ISLANDS.....	167-168
		FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	
S-614-8	☒	TUBULAR STEEL SIGN SUPPORT DETAILS (5 SHEETS).....	169-173
		(REVISED ON MARCH 05, 2013)	
S-614-9		PEDESTRIAN PUSH BUTTON POST ASSEMBLY	
S-614-10		MARKER ASSEMBLY INSTALLATIONS	
S-614-11		MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	
S-614-12		STRUCTURE NUMBER INSTALLATION	
S-614-14		FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS).....	178-180
S-614-20		TYPICAL POLE MOUNT SIGN INSTALLATIONS.....	
S-614-21		CONCRETE BARRIER SIGN POST INSTALLATIONS	
S-614-22		TYPICAL MULTI-SIGN INSTALLATIONS.....	
S-614-40		TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS	184-188
		(5 SHEETS)	
S-614-40A	☐	ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS.....	189-192
		(4 SHEETS) (REVISED ON SEPTEMBER 25, 2012)	
S-614-41		PEDESTAL POLE AND TEMPORARY SPAN WIRE SIGNALS.....	
S-614-42		CABINET FOUNDATION DETAIL (4 SHEETS).....	194-197
S-614-43		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS.....	198-207
		(10 SHEETS)	
S-614-50	☐	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS).....	208-219
		(REVISED ON NOVEMBER 28, 2012)	
S-614-60	☐	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS).....	220-233
		(REVISED ON NOVEMBER 28, 2012)	
S-627-1	☒	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	234-238
S-630-1	☒	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION.....	239-258
		(20 SHEETS) (REVISED ON MARCH 27, 2014)	
S-630-2		BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP).....	259
		AND VERTICAL PANELS	
S-630-3		FLASHING BEACON (PORTABLE) DETAILS	260
S-630-4		STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION.....	261-262
		DETAILS (2 SHEETS)	
S-630-5	☐	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS)	263-264
		(REVISED ON JULY 26, 2013)	
S-630-6		EMERGENCY PULL-OFF AREA (TEMPORARY)	265
S-630-7		ROLLING ROADBLOCKS FOR TRAFFIC CONTROL	266-268
		(3 SHEETS)	

COLORADO
DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
July 04, 2012

Revised on March 27, 2014

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED
AND REVISED, APPLY TO THIS PROJECT WHEN USED
BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

NEW OR REVISED STANDARD PLAN SHEETS APPLICABLE
TO THIS PROJECT, INDICATED BY A MARKED BOX ☒,
WILL BE ATTACHED TO THE PLANS.

Print Date: 5/16/2014
File Name: 18370DES_StdPlanList.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted

Stolfus
3090 DTC BOULEVARD, SUITE 100 W
DENVER, COLORADO 80202
PHONE: 303-221-2330
FAX: 303-221-4331
WWW.STOLFUSANDASSOCIATES.COM

R-X
0000

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions: **6/13/16**

Revised:

Void:

STANDARD PLANS LIST

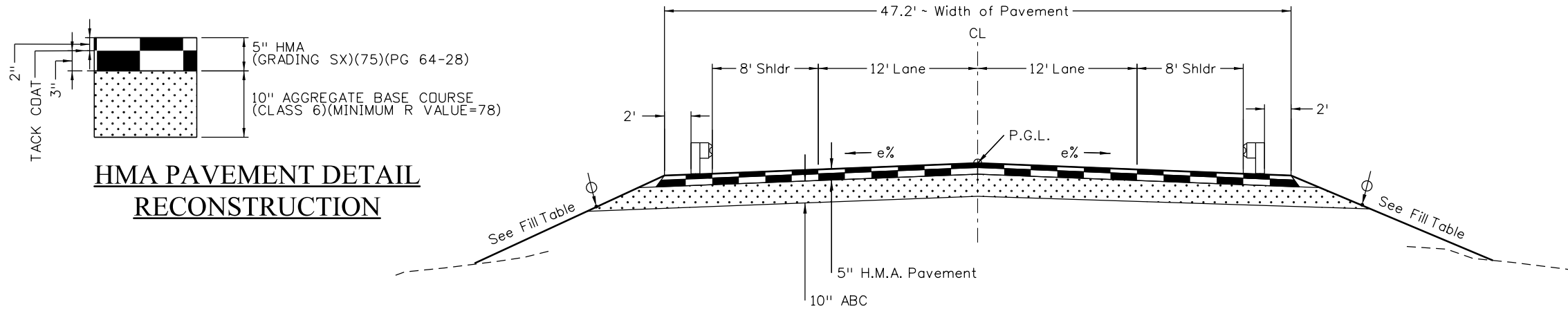
Designer:	MRH	Structure	
Detailer:	SLZ	Numbers	
Sheet Subset:	SPL	Subset Sheets:	1 of 1

Project No./Code

FBR 120A-011

18370

Sheet Number **2**

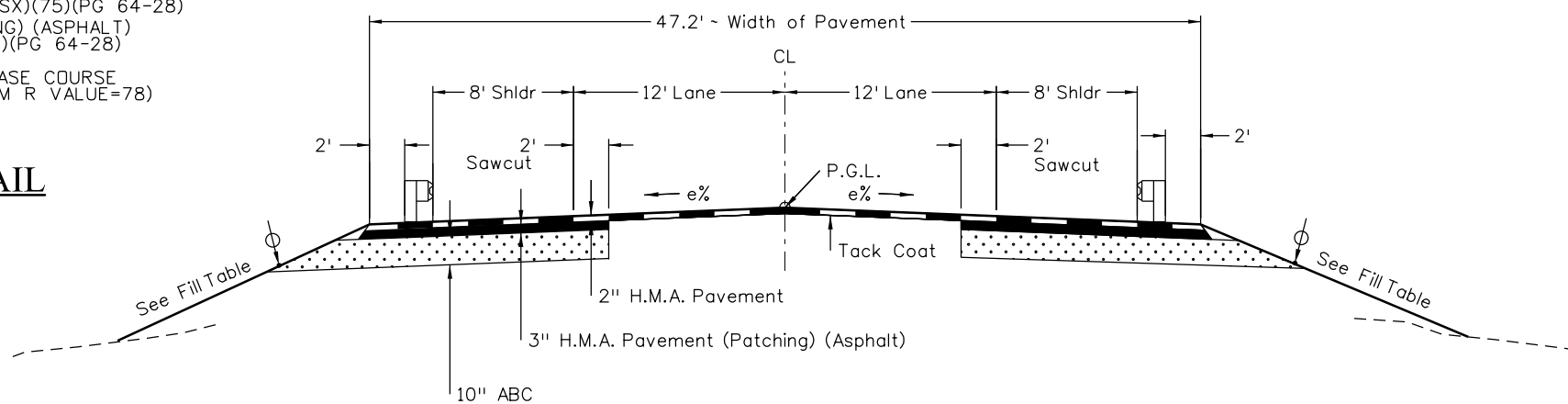
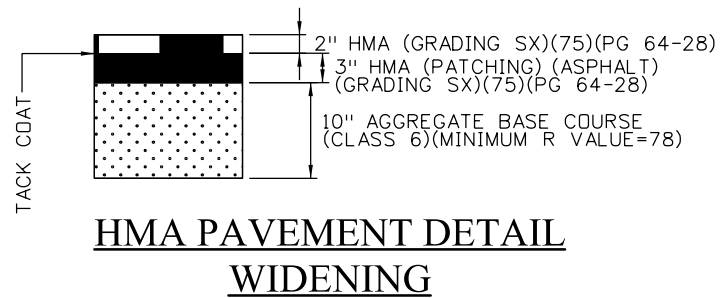


TYPICAL SECTION NO. 3

STA 4+93.25 TO STA 16+10, Transition to Existing

- P.G.L. ~ Profile Grade Line
H.M.A. ~ Hot Mix Asphalt
H.P. ~ Hinge Point
P.O.S.S. ~ Point of Slope Selection
e ~ Maximum Superelevation as Required - See Plan and Profile for Superelevation
~ The Contractor will be required to apply soil conditioners along this line after completing the paving operations.

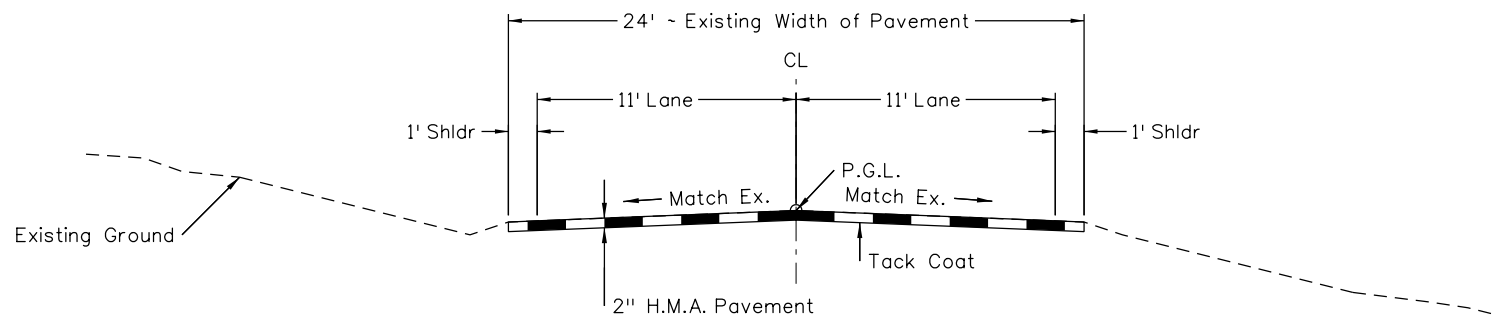
Superelevation Rates			
Station	Description	Left Side	Right Side
3+72.00	Match Existing	+1.00%	-3.00%
5+83.55	Full Super	+5.00%	-5.00%
7+63.29	Full Super	+5.00%	-5.00%
8+21.29	Reverse Crown	+2.00%	-2.00%
11+31.00	Reverse Crown	+2.00%	-2.00%
11+70.00	Level Crown	+0.00%	-2.00%
12+09.00	Normal Crown	-2.00%	-2.00%



TYPICAL SECTION NO. 2

STA 3+72 TO STA 4+93.25, Transition to Typical Section No. 3

Fill Slopes			
Begin Station	End Station	Side	Slope
3+72.00	15+60.00	Left	2:1
3+72.00	11+20.00	Right	2:1
11+20.00	15+40.00	Right	6:1
15+40.00	17+70.00	Left	3:1
15+40.00	17+70.00	Right	3:1



TYPICAL SECTION NO. 1

STA 0+80 TO STA 3+72, Transition to Typical Section No. 2

Pavement Stabilization Data	
Design Life	20 Years
18-kip Design ESAL's	462,808
Reliability Level	95%
Serviceability Index	2.0
Overall Standard Deviation	0.44
Subgrade Resilient Modulus	6,849 psi (R-value of Subgrade = 30)
Effective Structural Number	3.26 (Component Analysis)
Calculated Structural Number	3.70 (5" HMA & 10" ABC Class 6, Minimum R-30 Subgrade)

Print Date: 5/15/2014
File Name: 18370DES_TypISect###.dgn
Horiz. Scale: 1:10 Vert. Scale: As Noted

Sheet Revisions			
Date:	Comments	Init.	

Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

As Constructed		TYPICAL SECTION		Project No./Code	
No Revisions: 6/13/16				FBR 120A-011	
Revised:		Designer: MRH	Structure Numbers	18370	
Void:		Detailer: SLZ	Subset Sheets: 1 of 1	Sheet Number 3	

etyson 10:31:45 AM P:\12021\18370\Design Drawings\18370DES_GenNote.dgn

1. FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
HOT MIX ASPHALT.....@ 110 Lbs./Sq. Yd./Inch
AGGREGATE BASE COURSE.....@ 142 Lbs./Cu. Ft.

2. WHERE IT IS REQUIRED TO SAWCUT EXISTING PAVEMENT OR CONCRETE, THE CUTTING SHALL BE DONE TO A NEAT LINE WITH A CUTTING SAW OR OTHER METHOD APPROVED BY THE ENGINEER. THIS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

3. WHERE HOT MIX ASPHALT (PATCHING) IS REQUIRED FOR PHASING, QUANTITIES WERE ESTIMATED USING 5 INCHES.

4. A TACK COAT OF EMULSIFIED ASPHALT (SLOW SETTING) IS TO BE APPLIED BETWEEN PAVEMENT COURSES TO IMPROVE THE BOND. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER. RATES OF APPLICATION SHALL BE AT 0.05 GALLONS PER SQUARE YARD.

5. THIS PROJECT IS CLASSIFIED AS "NON-SIGNIFICANT". CONTRACTOR'S TRANSPORTATION MANAGEMENT PLAN SHALL CONSIST OF A TRAFFIC CONTROL PLAN AND PUBLIC INFORMATION SERVICES.

6. SEVERITY OF SULFATE EXPOSURE SHALL BE CLASS 2 FOR THIS PROJECT (NO GREATER THAN 2.00 PERCENT). THE CONTRACTOR MAY, AT HIS OWN EXPENSE, HAVE A CERTIFIED LABORATORY TEST THE SUBGRADE PER THE FIELD MATERIALS MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FRQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF SULFATE EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.

7. THE CONTRACTOR SHALL REPAIR OR REPLACE, AT HIS EXPENSE, ANY EXISTING SIGNS DAMAGED BY THE CONTRACTOR.

8. THE CONTRACTOR SHALL MASK ALL SIGNS CONFLICTING WITH CONSTRUCTION SIGNING. THE MASKING OF SIGNS WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

9. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL, EQUIPMENT OR VEHICLES WITHIN 15 FEET OF THE ROAD EDGE WITHOUT PERMISSION OF THE ENGINEER.

10. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
FULL DEPTH OF ALL EMBANKMENTS
BASES OF CUTS AND FILLS - 6 INCHES
FULL DEPTH OF EMBANKMENT SECTIONS USED FOR DITCHES AND CHANNEL CHANGES.
11. DISPOSAL OF EXCESS MATERIAL OFF-SITE OR THE IMPORTING OF MATERIALS ON-SITE, REGARDLESS OF PROPERTY OWNERSHIP, MUST BE DONE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

12. MATERIAL THAT IS LOOSENEED FROM THE ROADWAY WILL BE CLEARED OFF THE ROADWAY (PICKUP BROOM, SWEEP UP) IMMEDIATELY. NONE OF THE MATERIAL SHALL BE ALLOWED TO RUN OFF INTO WATERS OF THE STATE BY ANY MEANS.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL APPLICABLE PERMITS AND COORDINATING WITH THE LOCAL UTILITY COMPANIES.

14. ANY REMAINING SOIL LEFT FROM DRILLING AND ALL REMOVAL ITEMS, EXCEPT AS NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY OFF OF CDOT RIGHT-OF-WAY AND AT THE EXPENSE OF THE CONTRACTOR.

15. MILLINGS SHALL REMAIN THE PROPERTY OF CDOT AND SHALL BE STOCKPILED AT APPROXIMATE STATION 19+00 ON THE NORTH SIDE OF SH 120 NEAR THE FENCE LINE. THE CONTRACTOR SHALL CONFIRM THIS LOCATION WITH THE PROJECT ENGINEER PRIOR TO PLACEMENT.

16. A PRECONSTRUCTION MEETING SHALL BE HELD PRIOR TO ANY WORK. ALL SUBMITTALS SHALL BE DUE AT THAT TIME. CDOT PERSONNEL SHALL BE INCLUDED IN THE PRE-CONSTRUCTION MEETING AND SHALL BE NOTIFIED 5 WORKING DAYS IN ADVANCE OF THE MEETING WITH DATE AND LOCATION.

17. A DEWATERING PERMIT SHALL BE OBTAINED BY THE CONTRACTOR FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE). SHOULD CONTRACTOR INCUR WATER IN CAISSON, ANY DE-WATERING METHODS & NECESSARY PERMITS SHALL BE INCLUDED IN THE COST OF THE CAISSON.

18. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTATION. ANY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.

19. EXISTING UTILITY LINES AS SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION.

20. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 105.11 OF THE STANDARD SPECIFICATIONS AND THE UTILITY PROJECT SPECIAL PROVISIONS CONCERNING UTILITIES. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH UTILITY OWNERS IN THEIR REMOVAL, ADJUSTMENT AND/OR RELOCATION OPERATIONS SO THAT THE UTILITY WORK CAN BE ACCOMPLISHED WITHOUT IMPACTING THE CONSTRUCTION SCHEDULE.
21. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 OR 1-800-922-1987, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. FOR CDOT OWNED UTILITY FACILITIES THE CONTRACTOR SHALL CALL THE CDOT REGION 2 TRAFFIC SECTION, DAVE PIERCE, AT 719-251-3596 TO REQUEST LOCATES. CDOT IS NOT CONTACTED WHEN LOCATES ARE REQUESTED THROUGH THE UNCC. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AS NECESSARY TO ENSURE THE UTILITIES WILL NOT BE IMPACTED BY CONSTRUCTION ACTIVITIES. IT IS ESTIMATED THAT 8 HOURS OF POTHOLING WILL BE REQUIRED ON THIS PROJECT AS DIRECTED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNERS TO BE ONSITE DURING POTHOLING.

23. THERE IS A SMALL POTENTIAL TO ENCOUNTER PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS AS A RESULT OF THE PROJECT. IN THE EVENT THAT KNOWN OR SUSPECT CONTAMINATED SOILS ARE ENCOUNTERED DURING PROJECT EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY HALT WORK AT THAT LOCATION. IF NECESSARY, SPECIAL HANDLING PROCEDURES, AS OUTLINED IN SECTION 250 OF CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SHALL BE IMPLEMENTED AS DIRECTED BY THE PROJECT ENGINEER, OR CDOT ENVIRONMENTAL, AND SHALL BE PAID FOR AS A MINOR CONTRACT REVISION. ON BRIDGE K-16-S, ASBESTOS IS PRESENT IN THE BLACK EXPANSION JOINT MATERIAL AND MUST BE HANDLED PER CDOT SPECIFICATION 250. PAINT CONTAINING LEAD IS PRESENT ON THE WHITE AND SILVER/GRAY PAINTED SURFACES AND MUST BE HANDLED PER CDOT SPECIFICATION 250.

24. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

25. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND / OR TOES OF SLOPE SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS BY THE CONTRACTOR AT HIS / HER OWN EXPENSE. CONSTRUCTION ACTIVITIES, IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES SHALL
26. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER. WATER SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

27. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK IN FRONT OF THEIR PROPERTY. ACCESS MUST BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES.

28. PAVEMENT SMOOTHNESS CATEGORY SHALL BE HRI CATEGORY II FOR RECONSTRUCTION AND HRI CATEGORY I FOR OVERLAY.

29. TYPES OF COMPACTION FOR THIS PROJECT WILL BE AS FOLLOWS:
ITEM 203 – AASHTO T-99
ITEM 206 & 304 – AASHTO T-180

30. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF THE PLANNED START DATE 10 BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION FOR COORDINATION WITH THE CDOT STAFF BIOLOGIST. THE BIOLOGIST WILL SURVEY THE PROJECT CORRIDOR FOR BIRD NESTS 5 BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION. WETLANDS ARE LOCATED SOUTH EAST OF BRIDGE K-16-S. THE WETLANDS BORDER WILL BE DEMARCATED WITH ORANGE CONSTRUCTION FENCE PRIOR TO CONSTRUCTION BEGINNING. NO ACCESS WILL BE PERMITTED TO WETLANDS.

31. NO TEMPORARY RAILROAD CROSSING IS PLANNED FOR CONSTRUCTION.

32. THE CONTRACTOR SHALL CLEAN THE SANITARY FACILITY TWICE PER WEEK. THE COST OF CLEANING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST.

33. THE FOLLOWING ITEMS FOR THIS PROJECT SHALL BE PAID FOR AS:

201-00000	CLEARING AND GRUBBING	LS	1
203-01597	POTHOLING	HR	8
240-00010	REMOVAL OF NESTS	HR	40
240-00020	NETTING	SY	1000
620-00002	FIELD OFFICE (CLASS 2)	EA	1
620-00012	FIELD LABORATORY (CLASS 2)	EA	1
620-00020	SANITARY FACILITY	EA	2
625-00000	CONSTRUCTION SURVEYING	LS	1
626-00000	MOBILIZATION	LS	1
626-01000	PUBLIC INFORMATION SERVICES	LS	1

Print Date: 5/14/2014	
File Name: 18370DES_GenNote.dgn	
Horiz. Scale: 1:1	Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2

DTD

As Constructed	GENERAL NOTES			Project No./Code
No Revisions: 6/13/16				FBR 120A-011
Revised:	Designer: MRH	Structure		18370
	Detailer: SLZ	Numbers		
Void:	Sheet Subset: GEN NOTE	Subset Sheets:	1 of 1	Sheet Number 4

sarah 2:43:43 PM P:\2021\18370\Design\Drawings\18370DES_SAQ01.dgn

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY								STRUCTURES		WALL				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.							PLAN	AS CONST.	PLAN	AS CONST.			PLAN	AS CONST.
			201-00000	Clearing and Grubbing	L S	1	1													1	1
			202-00090	Removal of Delineator	EACH	14	8													14	8
			202-00220	Removal of Asphalt Mat	SY	2,751	2,854													2,751	2,854
			202-00240	Removal of Asphalt Mat (Planing)	SY	1,142	1,764													1,142	1,764
			202-00400	Removal of Bridge	EACH									1	1					1	1
			202-00810	Removal of Ground Sign	EACH	10	7													10	7
			202-01000	Removal of Fence	LF	49	49													49	49
			202-01300	Removal of End Anchorage	EACH	1	1													1	1
			203-00060	Embankment Material (Complete In Place)	CY	12,720	10,812													12,720	10,812
			203-01500	Blading	HOUR	100	13													100	14
			203-01510	Backhoe	HOUR	100	7													100	7
			203-01594	Combination Loader	HOUR	100	4													100	4
			203-01597	Patholing	HOUR	8	11													8	11
			203-02330	Laborer	HOUR	40	6													40	6
			206-00000	Structure Excavation	CY									645	395	370	382			1,015	777
			206-00100	Structure Backfill (Class 1)	CY									530	453	350	355			880	808
			206-00200	Structure Backfill (Class 2)	CY									115	86	140	133			255	219
			206-00360	Mechanical Reinforcement of Soil	CY									530	453					530	453
			206-01781	Sharing (Area 1)	L S									1	1					1	1
			206-01782	Sharing (Area 2)	L S									1	1					1	1
			208-00002	Erosion Log (12 Inch)	LF	1,200	1,730													1,200	1,730
			208-00020	Silt Fence	LF	250	1,758													250	1,758
			208-00035	Aggregate Bag	LF	10	18													10	18
			208-00045	Concrete Washout Structure	EACH	2	2													2	2
			208-00055	Rigid Inlet Protection Device	EACH	2	0													2	0
			208-00070	Vehicle Tracking Pad	EACH	4	5													4	5
			208-00103	Removal and Disposal of Sediment (Labor)	HOUR	120	165													120	165
			208-00105	Removal and Disposal of Sediment (Equipment)	HOUR	120	73													120	73
			208-00106	Sweeping (Sediment Removal)	HOUR	40	103													40	103
			208-00107	Removal of Trash	HOUR	80	85													80	85
			208-00205	Erosion Control Supervisor	HOUR	125	311													125	311
			208-00300	Temporary Berms	LF	2,000	170													2,000	170
			210-00810	Reset Ground Sign	EACH	2	0													2	0

Print Date: 5/16/2014
File Name: 18370DES_SAQ01.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2

DTD

As Constructed

No Revisions:

Revised: **6/13/16**

Void:

SUMMARY OF APPROXIMATE QUANTITIES

Designer: MRH	Structure Numbers
Detailer: SLZ	
Sheet Subset: SOAQ	Subset Sheets: 1 of 4

Project No./Code

FBR 120A-011

18370

Sheet Number **5**

eltyson 2:43:08 PM P:\12021\18370\Drawings\18370DES_SAO02.dgn

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY								STRUCTURES		WALL				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.							PLAN	AS CONST.	PLAN	AS CONST.			PLAN	AS CONST.
			210-01000	Reset Fence	LF	82	378													82	378
			212-00006	Seeding (Native)	ACRE	3	2.1													3	2.1
			212-00009	Seeding (Temporary)	ACRE	1.5	0													1.5	0
			212-00032	Soil Conditioning	ACRE	3	2.1													3	2.1
			213-00003	Mulching (Weed Free)	ACRE	5	0.4													5	0.4
			213-00150	Bonded Fiber Matrix	ACRE	3	0													3	0
			216-00201	Soil Retention Blanket (Straw-Coconut) (Biodegradable Class 1)	SY	6,800	8,347													6,800	8,347
			217-00000	Herbicide Treatment	SY	14,520	0													14,520	0
			240-00010	Removal of Nests	HOUR	40	49													40	49
			240-00020	Netting	SY	1,000	655													1,000	655
			304-06000	Aggregate Base Course (Class 6)	TON	2,925	1,869.67													2,925	1,869.67
			900-00006	ABC Cl. 6 - Overweight Price Adjustment	TON	100	-20													100	16.09
			403-00720	Hot Mix Asphalt (Patching) (Asphalt)	TON		16.09														
			403-34751	Hot Mix Asphalt (Grading SX) (75) (PG 64-28)	TON	1,465	1,579.12							223	223					1,688	1,802.12
			411-10255	Emulsified Asphalt (Slow-Setting)	GAL	625	582													625	582
			420-00112	Geotextile (Drainage) (Class 1)	SY	6	24													6	24
			502-00460	Pile Tip	EACH									12	12					12	12
			502-11489	Steel Piling (HP 14x89)	LF									622	590					622	590
			503-00060	Drilled Caisson (60 Inch)	LF									143	157					143	157
			506-00000	Riprap	CY	3	16													3	16
			507-00100	Concrete Slope and Ditch Paving (Reinforced)	CY									85	83.3					85	83.3
			515-00120	Waterproofing (Membrane)	SY									1,430	1,420					1,430	1,420
			518-01004	Bridge Expansion Device (0-4 Inch)	LF									88	88					88	88
			601-03040	Concrete Class D (Bridge)	CY									645	629					645	629
			601-03050	Concrete Class D (Wall)	CY											173	173			173	173
			601-25730	Precast Concrete Deck Panel (3 Inch)	SY									510	661					510	661
			602-00000	Reinforcing Steel	LB											17,970	18,517			17,970	18,517
			602-00020	Reinforcing Steel (Epoxy Coated)	LB									158,610	145,116					158,610	145,116
			603-10180	18 Inch Corrugated Steel Pipe	LF	137	79													137	79
			605-83001	Geocomposite Drain without Pipe	SY											132	131			132	131
			606-00301	Guardrail Type 3 (6-3 Post Spacing)	LF	2,050	1,950													2,050	1,950
			606-01370	Transition Type 3G	EACH	4	4													4	4
			606-01385	Transition Type 3J	EACH	1	1													1	1

Print Date: 5/15/2014
File Name: 18370DES_SAO02.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2

DTD

As Constructed		SUMMARY OF APPROXIMATE QUANTITIES			Project No./Code
No Revisions:					FBR 120A-011
Revised:	6/13/16	Designer:	MRH	Structure Numbers	18370
Void:		Detailer:	SLZ		
		Sheet Subset:	SOAQ	Subset Sheets:	2 of 4
					Sheet Number 6

sarah 2:50:38 PM P:\2021\18370\Design\Drawings\18370DES_SAQ03.dgn

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY								STRUCTURES		WALL				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.							PLAN	AS CONST.	PLAN	AS CONST.			PLAN	AS CONST.
			606-01390	End Anchorage Type 3K	EACH	1	1													1	1
			606-02003	End Anchorage (Nonflared)	EACH	4	4													4	4
			606-10700	Bridge Rail Type 7	LF									683	696					683	696
			607-00005	End Post	EACH	1	1													1	1
			607-00010	Corner and Line Brace Post	EACH	2	5													2	5
			607-01000	Fence Barbed Wire with Metal Posts	LF	32	40													32	40
			607-11525	Fence (Plastic)	LF	500	0													500	0
			607-53189	Fence Chain Link (Special) (88 Inch)	LF									364	642					364	642
			607-60120	20 Foot Gate	EACH	1	1													1	1
			609-60011	Curb Type 6 (Section M)	LF	84	516													84	516
			612-00041	Delineator (Flexible) (Type I)	EACH	37	38													37	38
			612-00042	Delineator (Flexible) (Type II)	EACH	5	0													5	0
			612-00043	Delineator (Flexible) (Type III)	EACH	5	14													5	14
			613-00300	3 Inch Electrical Conduit	LF									683	683					683	683
			613-07023	Pull Box (24"X36"X24")	EACH	4	2													4	2
			614-00011	Sign Panel (Class I)	SF	19	29													19	29
			614-00012	Sign Panel (Class II)	SF	41	41													41	41
			614-01573	Steel Sign Support (2-1/2 Inch Round NP-40)(Post & Slipbase)	EACH	6	9													6	9
			615-00030	Embankment Protector Type 3	EACH	2	6													2	6
			618-00154	Prestressed Concrete I (BT54)	LF									1,665	1,665					1,665	1,665
			620-00002	Field Office (Class 2)	EACH	1	1													1	1
			620-00012	Field Laboratory (Class 2)	EACH	1	1													1	1
			620-00020	Sanitary Facility	EACH	2	2													2	2
			625-00000	Construction Surveying	L S	1	1													1	1
			626-00000	Mobilization	L S	1	1													1	1
			626-01000	Public Information Services	L S	1	1													1	1
			627-00005	Epoxy Pavement Marking	GAL	21	49													21	49
			627-00012	Pavement Marking Paint (Low VOC Solvent Base)	GAL	21	11													21	11
			630-00000	Flagging	HOUR	1200	2,657													1200	2,657
			630-00007	Traffic Control Inspection	DAY	260	262													260	262
			630-00012	Traffic Control Management	DAY	60	173													60	173
			630-80002	Flashing Beacon (Solar)	EACH	4	4													4	4

Print Date: 5/21/2014
File Name: 18370DES_SAQ03.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions:

Revised: 6/13/16

Void:

SUMMARY OF
APPROXIMATE QUANTITIES

Designer: MRH

Detailer: SLZ

Sheet Subset: SOAQ Subset Sheets: 3 of 4

Project No./Code

FBR 120A-011

18370

Sheet Number 7

eltyson 11:26:23 AM P:\12021\18370\Design\Drawings\18370DES_SAQ04.dgn

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY								STRUCTURES		WALL				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.							PLAN	AS CONST.	PLAN	AS CONST.			PLAN	AS CONST.
			630-80341	Construction Traffic Sign (Panel Size A)	EACH	34	25													34	25
			630-80342	Construction Traffic Sign (Panel Size B)	EACH	16	9													16	9
			630-80344	Construction Traffic Sign (Special)	SF	9	9													9	9
			630-80355	Portable Message Sign Panel	EACH	3	3													3	3
			630-80360	Drum Channelizing Device	EACH	120	29													120	29
			630-80363	Drum Channelizing Device (With Light) (Flashing)	EACH	20	17													20	17
			630-80370	Concrete Barrier (Temporary)	LF	1,600	1,500													1,600	1,500
			630-80380	Traffic Cone	EACH	200	10													200	10
			630-85011	Impact Attenuator (Temporary)	DAY	560	872													560	872
			630-86800	Traffic Signal (Temporary)	L S	1	1													1	1
			700-70010	FORCE ACCOUNT =====	F A	1	0													1	0
			700-70011	F/A Minor Contract Revisions	F A	1	0													1	0
			700-70012	F/A Partnering	F A	1	0													1	0
			700-70012	F/A Asphalt Pavement Incentive	F A	1	-8,654.1													1	-8,654.1
			700-70016	F/A Fuel Cost Adjustment	F A	1	-9,964.534													1	-9,964.534
			700-70018	F/A Roadway Smoothness Incentive	F A	1	0													1	0
			700-70019	F/A Asphalt Cement Cost Adjustment	F A	1	-24,208.325													1	-24,208.325
			700-70021	F/A On-The-Job Trainee	HOUR	640														640	
			700-70380	F/A Erosion Control	F A	1	0													1	0
			900-00006	Repair Highway Lighting	Dol	0	1,178.75														1,178.75
			700-70587	F/A Hazardous Waste Disposal / Contaminated Soil Cleanup	F A	0	19,258.44														19,258.44
			625-00001	Const Surveying (Hour) / Additional Surveying Requested by CDOT	HOUR	0	4														4
			207-00205	Topsoil	CY	0	886														886
			603-10120	12 In CSP	LF	0	119														119
			900-00006	Added Item (Dollar) / EEO Sanction	DOL	0	9,082.79														9,082.79

Print Date: 5/20/2014
File Name: 18370DES_SAQ04.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 **DTD**

As Constructed	SUMMARY OF APPROXIMATE QUANTITIES			Project No./Code
No Revisions:				FBR 120A-011
Revised: 6/13/16	Designer: MRH	Structure Numbers		18370
Void:	Detailer: SLZ	Sheet Subset: SOAQ	Subset Sheets: 4 of 4	Sheet Number 8

etyson 4:38:40 PM P:\12021\18370\Design\Drawings\18370DES_SummaryofEarthwork.dgn

SUMMARY OF EARTHWORK QUANTITIES		
203-00060	EMBANKMENT MATERIAL (COMPLETE IN PLACE)(NET)	CUBIC YARDS
	FROM CROSS SECTIONS	12,720
	TOTAL	12,720

FOR INFORMATION ONLY

UNCLASSIFIED EXCAVATION		CUBIC YARDS
	FROM CROSS SECTIONS	1,850
	FROM STRUCTURE	30
	TOTAL	1,880
COMPACTION		CUBIC YARDS
	TOTAL EMBANKMENT (NET)	12,720
	BASES OF CUTS AND FILLS (6 INCHES X 7361 SY)	1,227
	TOTAL	13,947
EARTHWORK QUANTITIES BALANCE		
UNCLASSIFIED EXCAVATION		CUBIC YARDS
	TOTAL UNCLASSIFIED EXCAVATION (SEE NOTE 2)	1,880
	TOTAL FROM CONTRACTOR'S SOURCE	10,840
	TOTAL	12,720
EMBANKMENT (NET)		
	TOTAL	12,720
EMBANKMENT (NET) TIMES COMPACTION FACTOR (1.00) (SEE NOTE 1)		
	TOTAL	12,720

- NOTES:
- CONTRACTOR IS RESPONSIBLE TO DETERMINE APPROPRIATE SHRINK/SWELL FACTOR.
 - EXCAVATION MAY NOT BE USABLE AS ROADWAY FILL.

Print Date: 5/14/2014			Sheet Revisions			DOT DEPARTMENT OF TRANSPORTATION Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	As Constructed		SUMMARY OF EARTHWORK			Project No./Code	
File Name: 18370DES_SummaryofEarthwork.dgn			Date:	Comments	Init.		No Revisions: 6/13/16					FBR 120A-011	
Horiz. Scale: 1:1 Vert. Scale: As Noted							Revised:		Designer: MRH	Structure	18370		
							Void:		Detailer: SLZ	Numbers			
Stolfus 5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM									Sheet Subset: TABS	Subset Sheets:	1 of 3	Sheet Number 9	

etyson 3:40:47 PM P:\12021\18370\Design\Drawings\18370DES_TabRoadwayGuardrail.dgn

TABULATION OF ROADWAY ITEMS											
STATION	SIDE	304-06000		403-00720		403-34751		411-10255		613-07023	
		AGGREGATE BASE COURSE (CLASS 6)		HOT MIX ASPHALT (PATCHING) (ASPHALT)		HOT MIX ASPHALT (GRADING SX) (75) (PG 64-28)		EMULSIFIED ASPHALT (SLOW-SETTING)		PULL BOX (24"X36"X24")	
		TON		TON		TON		GAL		EACH	
		PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
0+80.00 TO 4+92.78	R/L					150		140			
3+72.00 TO 4+92.78	R/L			50							
4+92.78 TO 8+27.31	R/L	1000				450		170			
8+02.65	R									1	
8+02.65	L									1	
11+07.81 TO 17+70.00	R/L	1925				865		315			
11+32.48	R									1	
11+32.48	L									1	
16+68.00 TO 18+86.00	L			50							
TOTAL		2925		100		1465		625		4	
PROJECT TOTALS		2925	1,869.67	100	16.09	1465	1,579.12	625	582	4	2

TABULATION OF GUARDRAIL ITEMS												
STATION	202-01300		606-00301		606-01370		606-01385		606-01390		606-02003	
	REMOVAL OF END ANCHORAGE		GUARDRAIL TYPE 3 (6-3 POST SPACING)		TRANSITION TYPE 3G		TRANSITION TYPE 3J		END ANCHORAGE TYPE 3K		END ANCHORAGE (NONFLARED)	
	EACH		LF		EACH		EACH		EACH		EACH	
	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
3+69.00 TO 8+06.60 LT			375		1						1	
4+07.10 TO 8+06.60 RT			350		1		1		1			
11+28.52 to 16+10.70 LT			412.5		1						1	
11+28.52 to 16+11.83 RT			412.5		1						1	
SITE B MP 2.5 TO 3.0 LT	1		500								1	
TOTAL	1		2050		4		1		1		4	
PROJECT TOTALS	1	1	2050	1950	4	4	1	1	1	1	4	4

NOTE:

- 1) SITE B GUARDRAIL SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
2) ALL POSTS SHALL BE METAL WITH SYNTHETIC BLOCKS.
3) ALL SEGMENTS SHALL BE 12'6".

Print Date: 5/15/2014

File Name: 18370DES_TabRoadwayGuardrail.dgn

Horiz. Scale: 1:1

Vert. Scale: As Noted



5690 DTC BOULEVARD, SUITE 101W
GREENWOOD VILLAGE, CO 80111
PHONE: 303-221-2330
FAX: 303-221-2331
WWW.STOLFUSANDASSOCIATES.COM

Sheet Revisions

Date:	Comments	Init.



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions:

Revised: 6/13/16

Void:

TABULATION OF ROADWAY AND GUARDRAIL ITEMS

Designer: MRH

Detailer: SLZ

Sheet Subset: TABS

Structure

Numbers

Subset Sheets:

2 of 3

Project No./Code

FBR 120A-011

18370

Sheet Number

10

sarh 11:00:41 AM P:\12021\18370\Design\Drawings\18370DES_TabRemovals\Fencing.dgn

TABULATION OF REMOVALS							
STATION	SIDE	202-00090		202-00220		202-00240	
		REMOVAL OF DELINEATOR		REMOVAL OF ASPHALT MAT		REMOVAL OF ASPHALT MAT (PLANING)	
		EACH		SQUARE YARD		SQUARE YARD	
		PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
0+80.00 TO 4+93.25	L/R					1142	
3+72.00 TO 8+30.40	L/R			951			
10+94.72 TO 17+70.00	L/R			1800			
0+94.40	L	1					
1+72.42	L	1					
3+76.02	L	1					
4+69.33	R	1					
5+57.65	L	1					
6+68.75	R	1					
8+32.47	R	1					
11+00.00	L	1					
12+44.17	L	1					
12+50.94	R	1					
14+64.13	R	4					
TOTAL		14		2751		1142	
PROJECT TOTALS		14	8	2751	2,854	1142	1,764

- NOTES:
- SEE TABULATION OF SIGNS FOR REMOVAL AND RESET OF SIGN ITEMS.
 - SEE TABULATION OF FENCING FOR REMOVAL AND RESET OF FENCE ITEMS.
 - SEE TABULATION OF GUARDRAIL FOR REMOVAL AND RESET OF GUARDRAIL ITEMS.

TABULATION OF FENCING													
STATION	SIDE	202-01000		210-011000		607-00005		607-00010		607-01000		607-60120	
		REMOVAL OF FENCE		RESET FENCE		END POST		CORNER AND LINE BRACE POST		FENCE BARBED WIRE WITH METAL POSTS		20 FOOT GATE	
		LF		LF		EACH		EACH		LF		EACH	
		PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
5+07.80 TO 5+59.30	R			52									
8+54.02 TO 8+70.46	R			30									
14+63.00	R	49				1		2		32		1	
TOTAL		49		82		1		2		32		1	
PROJECT TOTALS		49	49	82	378	1	1	2	5	32	40	1	1

Print Date: 5/16/2014
File Name: 18370DES_TabRemovals\Fencing.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed
No Revisions:
Revised: 6/13/16
Void:

TABULATION OF REMOVALS AND FENCING ITEMS			
Designer:	MRH	Structure	
Detailer:	SLZ	Numbers	
Sheet Subset:	TABS	Subset Sheets:	3 of 3

Project No./Code
IFBR 120A-011
18370
Sheet Number 11

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

☐ Horizontal Control	Plans
☐ Vertical Control	Plans
☐ Roadway Alignment	Plans
☐ Original Terrain Data	Electronic Files
☐ Other:	

The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

☐ Landscaping	☐ Major Reconstruction
☐ Signalization	☐ New Roadway Construction
☐ Safety Improvement	☐ Bridge Replacement
☐ Asphalt Overlay	☐ Bridge Widening
☐ Concrete Overlay	☐ New Bridge
☐ Minor Widening	☐ Other: Widening and Reconstruction of Bridge Approaches

SURVEY WORK TO BE PERFORMED BY OTHERS:_____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 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 (Section 201)	
☐ Removal Limits (Section 202)	
☐ Reset Items (Section 210)	
☐ Excavation and Embankment (Section 203)	
☐ Excavation	
☐ Unclassified	
☐ Stripping	
☐ Muck	
☐ Rock	
☐ Borrow	
☐ Other: _____	
☐ Potholing	
☐ Embankment	
☐ Site Grading	
☐ Erosion Control (Perm)	
☐ Other: _____	
☐ As Staked Earthwork Quantities (See General Notes)	
☐ Landscaping	
☐ Top Soil (Section 207)	
☐ Seeding (Section 212)	
☐ Mulching (Section 213)	
☐ Planting (Section 214)	
☐ Herbicide (Section 217)	
☐ Other: _____	
☐ Erosion Control (Section 208)	
☐ Seeding (Temp)	
☐ Silt Fence	
☐ Erosion Bales	
☐ Erosion Logs	
☐ Riprap (Temp)	
☐ Other: _____	
☐ Roadway Bases	
☐ Untreated Subgrade	
☐ Treated Subgrade	
☐ Aggregate Base Course (Section 304)	
☐ Reconditioning	
☐ PMBB - Plant Mix Bituminous Base	
☐ Other: _____	

Excavation	Slope Staking (Y/N)	Grid (Y/N)	Grade Stakes	Special Interval
	-	-	50'	25'
	-	-	-	-
	-	-	-	-
	-	-	-	-

Embankment	Slope Staking (Y/N)	Grid (Y/N)	Grade Stakes	Special Interval
	-	-	50'	25'
	-	-	-	-
	-	-	-	-
	-	-	-	-

Roadway Bases	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
	-	-	-	-
	-	50'	25'	-
	-	-	-	-
	-	-	-	-

Pavements	☐ HMA - Hot Mix Asphalt (Section 403)
	☐ Concrete (Section 412)
	☐ Heating & Scarifying Treatment
	☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
	☐ Seal Coat or Chip Seal (Section 409)
☐ Other: _____	

Roadway Elements	☐ Curb and Gutter (Section 609)
	☐ Drop inlets - alignment and grades (Section 604)
	☐ Retaining Walls
	☐ Guard Rail (Section 606)
	☐ Sidewalk (Section 608)
☐ Overlay Stationing	
☐ Other: _____	

☐ Riprap (Perm) (Section 506)
☐ Slope and Ditch Paving (Section 507)

Minor Structures	☐ Structure Excavation limits (Section 206)
	☐ Culverts (Section 603)
	☐ Culverts w/ Headwalls and Wingwalls (Section 601)
	☐ Concrete Box Culverts w/ Headwalls and Wingwalls
	☐ Pipes (Section 603)
	☐ Sanitary Sewer
	☐ Storm Sewer
	☐ Water
	☐ Irrigation
	☐ Miscellaneous
	☐ Manholes (Section 604)
	☐ Inlets (Section 604)
	☐ Other: Embankment Protector

Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number	☐ Structure Excavation limits (Section 206)
	☐ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
	☐ Piling locations and cut off elevations (Section 502)
	☐ Caisson locations and elevations (Section 503)
	☐ Footing locations, alignment, and elevations
	☐ Abutment/Pier locations, alignment, and elevations
	☐ Wingwall skew angles/offsets
	☐ Structural concrete form locations
	☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
	☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
	☐ Deck grades at Girder 10th or "n" th point locations and elevations
	☐ Slope and Ditch Paving (Section 507)
	☐ Other: _____

Fencing (Section 607)	☐ Temporary
	☐ Permanent
	☐ Sound Barrier
	☐ Other: _____

Delineators (Section 612)	☐ Temporary
	☐ Permanent

Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)	☐ Signal pole locations and elevations
	☐ Light pole locations and elevations
	☐ Sign locations
	☐ Field verify sign post locations, elevations, and lengths before fabrication.
	☐ Other: _____

Pavements	Grid (Y/N)	Special Interval	Special Offset
	-	-	-
	-	-	-
	-	-	-
	-	-	-

Curb & Gutter	Tangent Interval	Curve Interval	Special Offset
	-	-	-

Stationing	Left Interval	Center Interval	Right Interval
	-	-	-

Pavement Marking (Section 627)	☐ Striping (Temp)
	☐ Striping (Perm)
	☐ Symbols
	☐ Other: _____

Temporary Lighting and Construction Traffic Control Devices (Section 630)	☐ Signal pole locations and elevations (Temp)
	☐ Light pole locations and elevations (Temp)
	☐ Sign Locations (Temp)
	☐ Other: _____

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

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

Monumentation (Section 629)	☐ Control
	☐ Right of Way
	☐ Land corners, Aliquat corners
	☐ Easements
	☐ Reference the specified existing monuments: ** _____
	☐ Replace the specified existing monuments: ** _____
	☐ Locate monuments. It is estimated _____ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

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

GENERAL NOTES:

- Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDDT Survey Manual.
- 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 10 days prior to the Presurvey Conference - Construction Survey.
- 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 CDDT 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 a maximum 500 feet 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 specified tolerance.
- The Contractor's surveyor 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.
- Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
- The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
 - ☐ Horizontal Control (Primary & Secondary)
 - ☐ Vertical Control (i.e. Benchmarks)
 - ☐ Property Pin Ties
 - ☐ Horizontal Alignment
 - ☐ Grading
 - ☐ Slope Staking
 - ☐ Minor Structures
 - ☐ Major Structures
 - ☐ One fieldbook for each work category shown on this sheet
 - ☐ Other Fieldbook(s): _____

Print Date: 5/20/2014
File Name: 18370SURV_Tab.dgn
Horiz. Scale: 1:1 Vert. Scale: As Nated



Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions: 6/13/16

Revised:

Void:

SURVEY TABULATION

Designer:	MRH	Structure	
Detailer:	SLZ	Numbers	
Sheet Subset:	SURVEY	Subset Sheets:	1 of 2

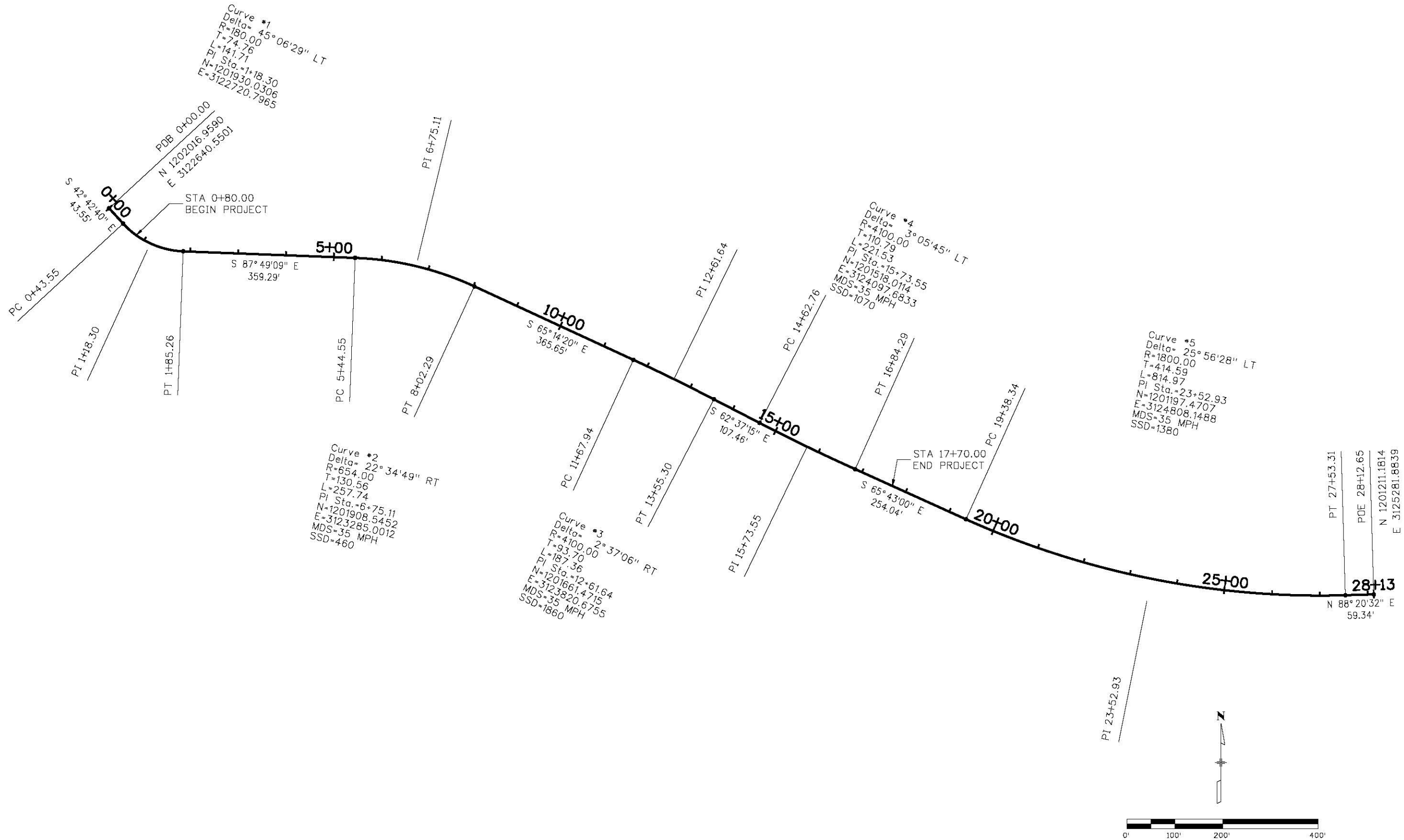
Project No./Code

FBR 120A-011

18370

Sheet Number 12

elyson 10:32:31 AM F:\2021\18370\Design\Drawings\18370_GeometricControlPln.dgn



Print Date: 5/14/2014
File Name: 18370_GeometricControlPln.dgn
Horiz. Scale: 1:200 Vert. Scale: As Nated
 3690 DTC BOULEVARD, SUITE 100 W CHERRYWOOD VILLAGE, CO 80111 PHONE: 303-421-2330 FAX: 303-421-4331 WWW.STOLFUSANDASSOCIATES.COM

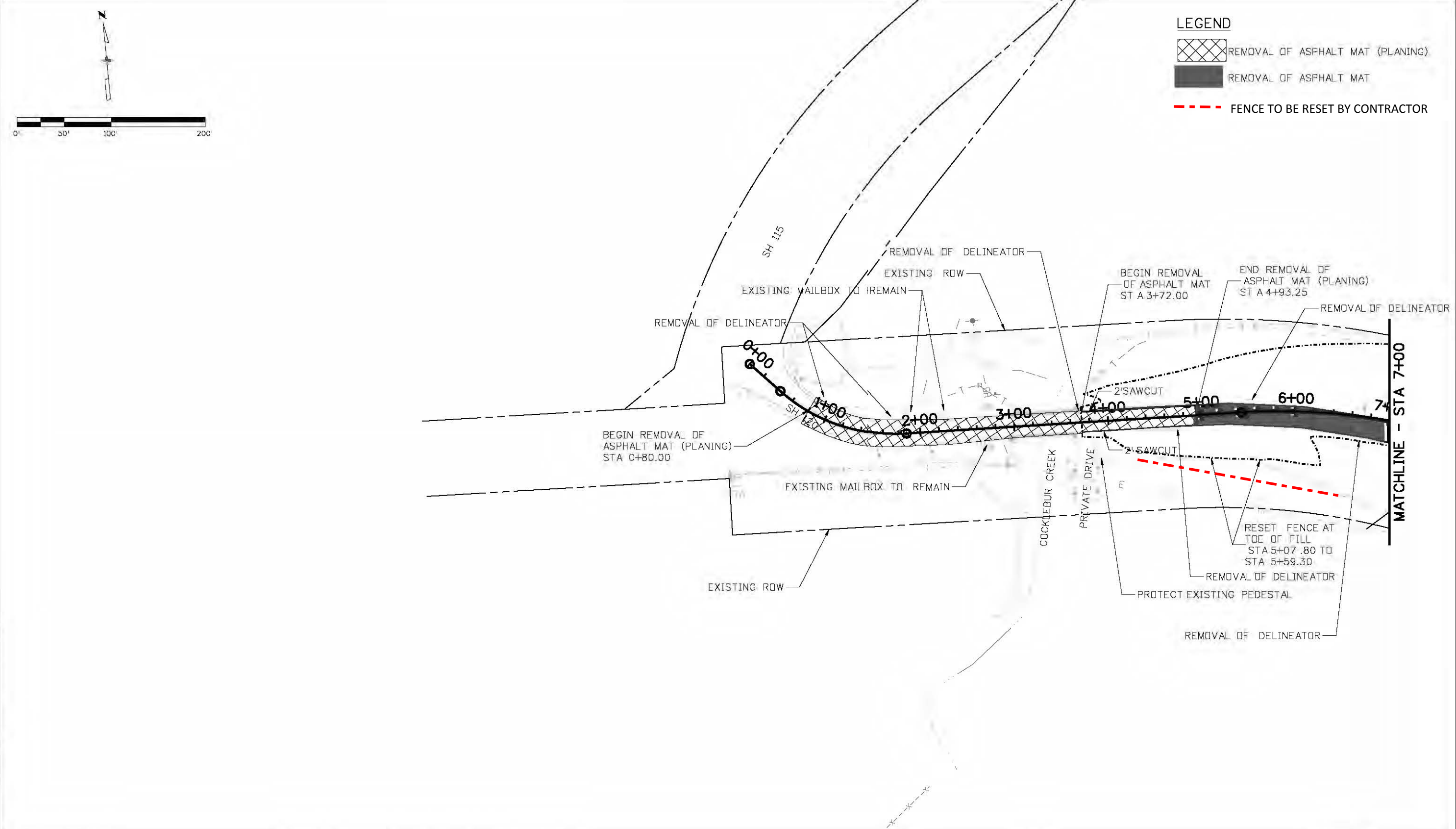
Sheet Revisions		
Date:	Comments	Init.

**Colorado Department of Transportation**
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 **DTD**

As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

GEOMETRIC CONTROL PLAN			
Designer:	MRH	Structure	
Detailer:	SLZ	Numbers	
Sheet Subset:	GEOM	Subset Sheets:	1 of 1

Project No./Code	
FBR 120A-011	
18370	
Sheet Number	14



elyson 10:40:20 AM P:\12021\18370\Design\Drawings\18370DES_RemovalPlan01.dgn

Print Date: 5/14/2014

File Name: 18370DES_RemovalPlan01.dgn

Horiz. Scale: 1:100 Vert. Scale: As Noted



3690 DTC BUILDING, SUITE 101W
DENVER, COLORADO 80202
PHONE: 303-221-2330
FAX: 303-221-2331
WWW.STOLFUSANDASSOCIATES.COM

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

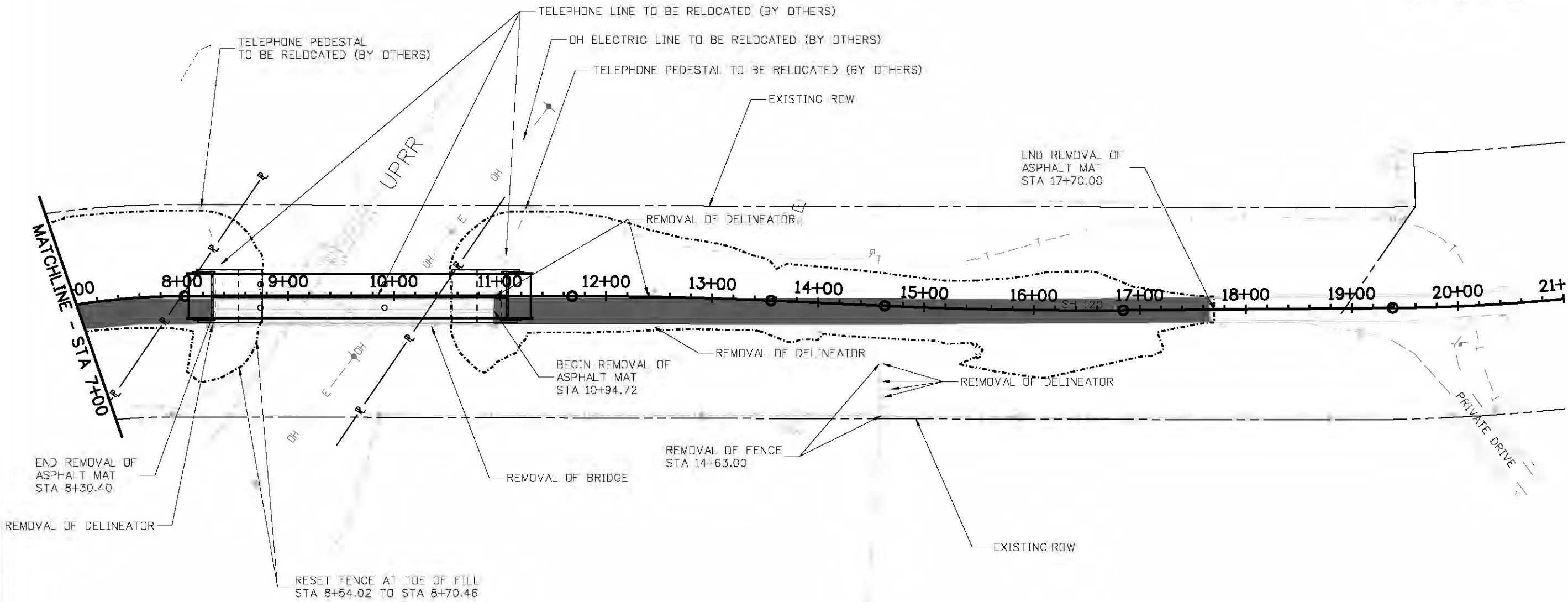
Region 2

DTD

As Constructed		REMOVAL PLAN			Project No./Code
No Revisions:					FBR 120A-011
Revised:	6/13/16	Designer:	MRH	Structure Numbers	18370
Void:		Detailer:	SLZ		
		Sheet Subset:	REMOVAL	Subset Sheets:	1 of 2
					Sheet Number 15

LEGEND

- REMOVAL OF ASPHALT MAT (PLANING)
- REMOVAL OF ASPHALT MAT



Print Date: 5/14/2014
File Name: 18370DES_RemovalPlan02.dgn
Horiz. Scale: 1:100 Vert. Scale: As Noted



Sheet Revisions		
Date:	Comments	Init.

**Colorado Department of Transportation**
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 **DTD**

As Constructed		REMOVAL PLAN		Project No./Code
No Revisions: 6/13/16				FBR 120A-011
Revised:		Designer: MRH	Structure Numbers	18370
Void:		Detailer: SLZ		
		Sheet Subset: REMOVAL	Subset Sheets: 2 of 2	Sheet Number 16

GENERAL NOTES

EXCEPT AS SHOWN IN THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH M-206-1 FOR CAST-IN-PLACE RETAINING WALLS.

STRUCTURE EXCAVATION AND BACKFILL SHALL BE AS SHOWN ON THE PLANS, EXCEPT SHORING MAY BE REQUIRED FOR EXCAVATION ADJACENT TO THE EXISTING ROADWAY. TEMPORARY EXCAVATION SUPPORT SHALL BE PAID FOR BY ITEM 206 SHORING.

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.

THE FINAL FINISH FOR THE SURFACES OF THE TYPE 7 BRIDGE RAIL CURBS SHALL BE CLASS 2. ALL OTHER EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS 1 FINAL FINISH TO ONE FOOT BELOW THE GROUND LINE.

ALL BOLTS SHALL BE 7/8" DIAMETER, HIGH STRENGTH, UNLESS OTHERWISE NOTED.

LEVELING PADS ARE UNLAMINATED BEARINGS. THEY SHALL BE CUT OR MOLDED FROM AASHTO ELASTOMER GRADE 3, 4, OR 5 AS DESCRIBED IN TABLES 705-1 AND 705-2 WITH A DUROMETER (SHORE "A") HARDNESS OF 60.

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.

Ⓝ DENOTES NON COATED REINFORCING STEEL.

ALL THE PROVISIONS FOR BRIDGE DECK CONCRETE SHALL ALSO APPLY TO APPROACH SLAB CONCRETE.

AN EMERGENCY DECK CONSTRUCTION JOINT MAY BE LOCATED AT THE ONE QUARTER SPAN POINT BACK FROM A PIER OR ABUTMENT WITH RESPECT TO THE DIRECTION OF THE DECK PLACEMENT.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20 PERCENT FOR 3 BAR BUNDLES AND 33 PERCENT FOR 4 BAR BUNDLES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

ABBREVIATIONS:	EXP. = EXPANSION	PGL = PROFILE GRADE LINE
ABUT. = ABUTMENT	F.F. = FAR FACE	PROJ. = PROJECTION
AH. = AHEAD	HCL = HORIZONTAL CONTROL LINE	REINF. = REINFORCING
B.F. = BACKFACE	JT. = JOINT	ROW = RIGHT OF WAY
BK. = BACK	LCL = LAYOUT LINE	SHLDR. = SHOULDER
BOT. = BOTTOM	MAT'L = MATERIAL	SPA. = SPACES
BRG. = BEARING	N.F. = NEAR FACE	STA. = STATION
CONST. = CONSTRUCTION	NO. = NUMBER	TOT. = TOTAL
CONT. = CONTINUOUS	NOM. = NOMINAL	TYP. = TYPICAL
E.F. = EACH FACE	OC = ON CENTER	
EQ. = EQUAL		
EL. = ELEVATION		

FOR STRUCTURE NUMBER INSTALLATION, SEE STANDARD S-614-12.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

BRIDGE DESIGN IS IN COMPLIANCE WITH UPRR CLEARANCE REQUIREMENTS.

SULFATE RESISTANCE FOR STRUCTURAL CONCRETE SHALL BE CLASS 2 EXPOSURE.

DESIGN DATA

AASHTO, LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION, 2012.
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

LIVE LOAD: HL-93 (DESIGN TRUCK OR TANDEM, AND DESIGN LANE LOAD)
DEAD LOAD: ASSUMES 36 LBS. PER SQ. FT. FOR BRIDGE DECK OVERLAY
ASSUMES 5 LBS. PER SQ. FT. FOR PERMANENT STEEL DECK FORMS

REINFORCED CONCRETE:
CLASS B CONCRETE: f'c = 4,500 psi
CLASS D CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

CAISSON CONCRETE:
CLASS BZ CONCRETE: f'c = 4,000 psi
REINFORCING STEEL: fy = 60,000 psi

PRECAST PRESTRESSED CONCRETE:
CLASS PS CONCRETE f'c = (SEE DETAILS)
f's = 270,000 psi

RAILROAD NOTES

1. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
2. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
4. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
5. ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
6. ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
7. RAILROAD REQUIREMENTS DO NOT ALLOW WORK WITHIN 50 FEET OF TRACK CENTERLINE WHEN A TRAIN PASSES THE WORK SITE AND ALL PERSONNEL MUST CLEAR THE AREA WITHIN 25 FEET OF THE TRACK CENTERLINE AND SECURE ALL EQUIPMENT.
8. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
9. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.

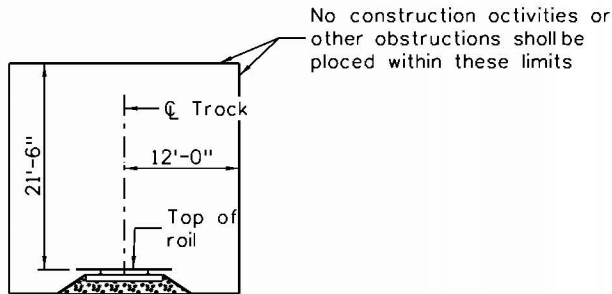
INDEX OF DRAWINGS

B1	GENERAL INFORMATION
B2	SUMMARY OF QUANTITIES
B3	GENERAL LAYOUT
B4	TYPICAL SECTION
B5	SUGGESTED CONSTRUCTION PHASING
B6	ENGINEERING GEOLOGY
B7	BRIDGE HYDRAULIC INFORMATION
B8	CONSTRUCTION LAYOUT (SHEET 1 OF 2)
B9	CONSTRUCTION LAYOUT (SHEET 2 OF 2)
B10	FOUNDATION LAYOUT (SHEET 1 OF 2)
B11	FOUNDATION LAYOUT (SHEET 2 OF 2)
B12	ABUTMENT 1
B13	ABUTMENT 4
B14	WINGWALLS
B15	PIER DETAILS
B16	PIER DIAPHRAGM
B17	SUPERSTRUCTURE DETAILS
B18	DECK REINFORCING PLAN
B19	PRECAST PANEL DECK FORM (SHEET 1 OF 2)
B20	PRECAST PANEL DECK FORM (SHEET 2 OF 2)
B21	PRESTRESSED CONCRETE I
B22	BRIDGE RAIL TYPE 7 (W/GUARDRAIL TYPE 3)
B23	BRIDGE RAIL TYPE 7 GUARDRAIL TRANSITIONS
B24	FENCE CHAIN LINK (SPECIAL) (88 INCH)
B25	APPROACH SLAB
B26	BRIDGE EXPANSION DEVICE (0-4 INCH) (SHEET 1 OF 2)
B27	BRIDGE EXPANSION DEVICE (0-4 INCH) (SHEET 2 OF 2)
B28	EXCAVATION AND BACKFILL
B29	MECHANICALLY STABILIZED BACKFILL
B30	SLOPE PAVING DETAILS
B31	INTERMEDIATE DIAPHRAGM
B32	BRIDGE DECK ELEVATIONS (1 OF 4)
B33	BRIDGE DECK ELEVATIONS (2 OF 4)
B34	BRIDGE DECK ELEVATIONS (3 OF 4)
B35	BRIDGE DECK ELEVATIONS (4 OF 4)

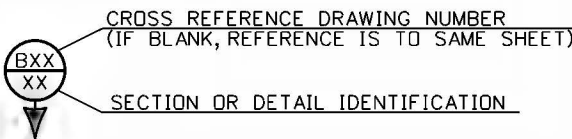
BRIDGE DESCRIPTION

3 SPANS (45'-10", 117'-1", 116'-1") BRIDGE
BT54 BULB TEE GIRDER

OVER RAILROAD
40'-0" ROADWAY CURB TO CURB, 90°00'00" SKEW
1'-6" BRIDGE RAIL TYPE 7 AT CURBS



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE
(Taken normal to railroad)





FOR BURIED UTILITY INFORMATION
**THREE (3) BUSINESS DAYS
BEFORE YOU DIG**
CALL 811
(or 1-800-922-1987)
UTILITY NOTIFICATION
CENTER OF COLORADO (UNCC)
www.uncc.org



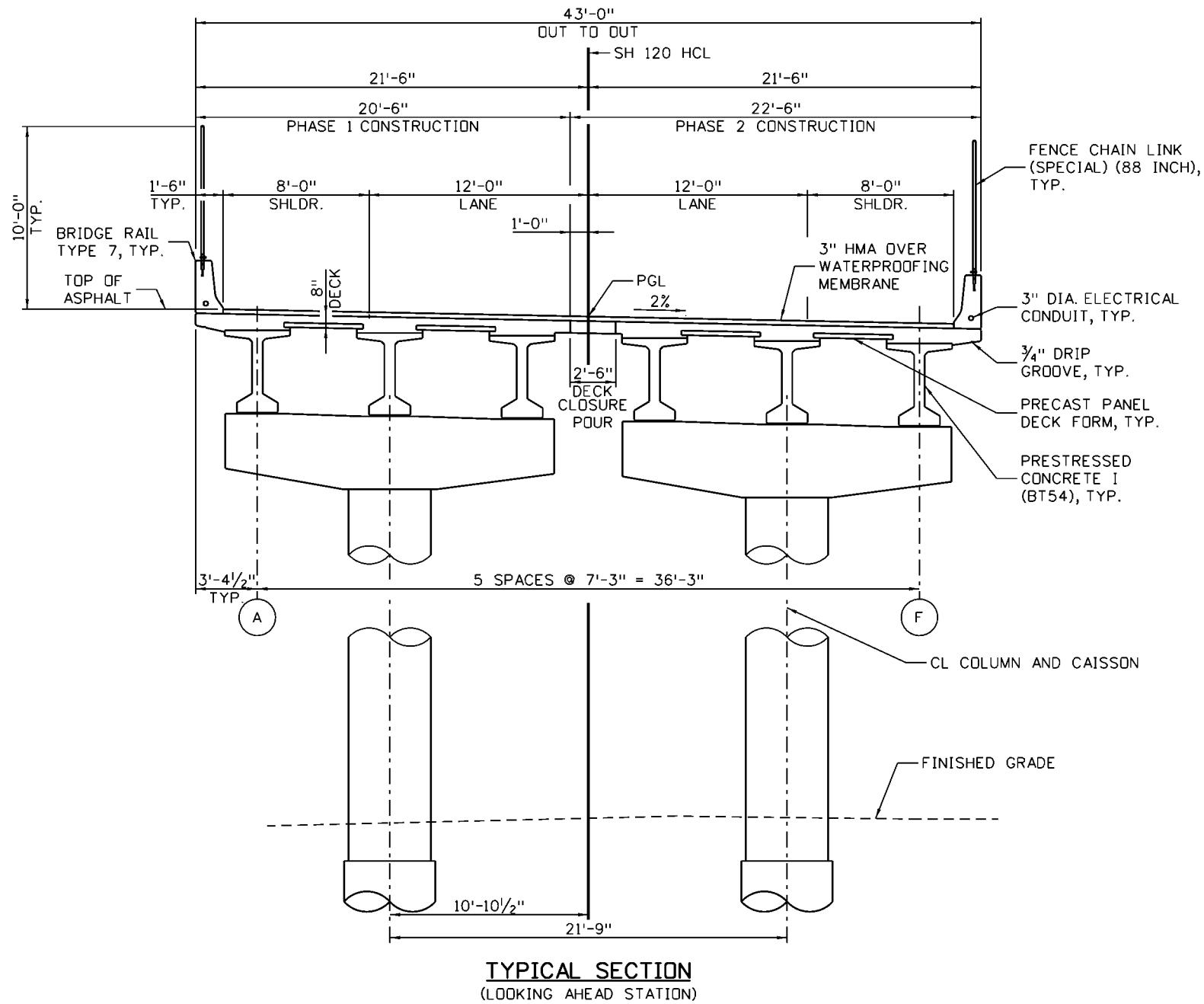
Print Date: 5/14/2014		0000			Sheet Revisions			Colorado Department of Transportation  902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD			As Constructed		SH 120 OVER DRAW & UPRR GENERAL INFORMATION S. ABRAHAM Detailer: E. SCHAWO Numbers Sheet Subset: BRIDGE Subset Sheets: B1 of 35			Project No./Code	
File Name:					Date:	Comments	Init.				No Revisions: 6/13/16					FBR 120A-011	
Horiz. Scale: NONE Vert. Scale: NONE											Revised:					K-16-CI	
Staff Branch - Unit 0226 DDG											Void:					18370	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276																Sheet Number 17	

[illegible]

Print Date: 5/21/2014		Sheet Revisions Date: Comments Init.		 Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD		As Constructed		SH 120 OVER DRAW & UPRR SUMMARY OF QUANTITIES				Project No./Code FBR 120A-011			
No Revisions:															
File Name: 18370BRGGenInfo02.dgn								Revised: 6/13/16		Designer: S. ABRAHAM		Structure		K-16-CI	
Horiz. Scale: NONE Vert. Scale: NONE										Detailer: E. SCHAWD		Numbers			
Staff Bridge Branch - Unit 0226 DDG						Void:		Sheet Subset: BRIDGE		Subset Sheets: B2 of 35					
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276										Sheet Number 18					

S:\Tranproj\100025698\18370\Consultants\Bridge\Drawings\18370BRGTypSec01.dgn

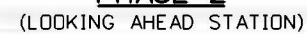
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	ERS	11-12	Quantities By	SA
Checked By	KTZ	KTZ	12-12	Checked By	KTZ

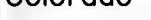
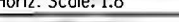


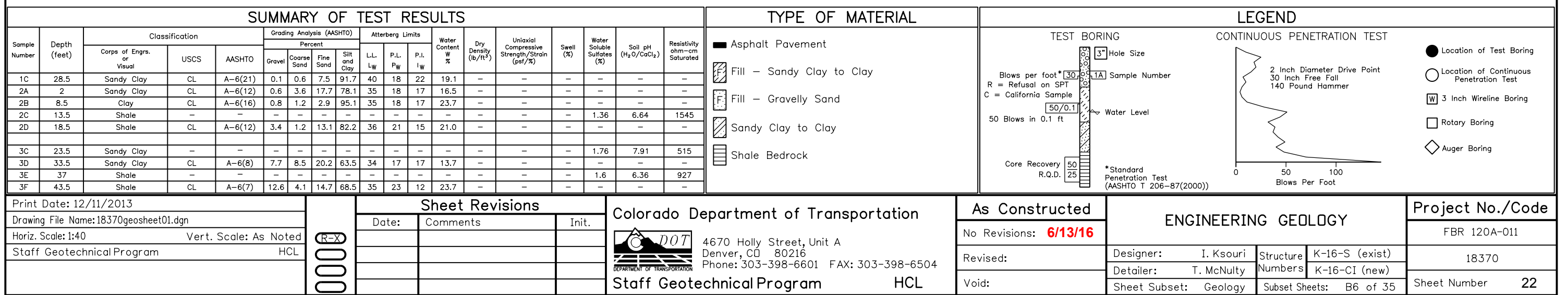
NOTES:

1. FOR SUPERELEVATION DETAILS, SEE ROADWAY PLANS.

Print Date: 5/14/2014		0000	Sheet Revisions			Colorado Department of Transportation			As Constructed		SH 120 OVER DRAW & UPRR TYPICAL SECTION			Project No./Code	
File Name: 18370BRGTypSec01.dgn			Date:	Comments	Init.	 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD			No Revisions: 6/13/16		Designer: S. ABRAHAM Detailer: E. SCHAWO Structure Numbers K-16-CI			FBR 120A-011	
Horiz. Scale: 1:8 Vert. Scale: 1:8									Revised:					18370	
Staff Bridge Branch - Unit 0226 DDG									Void:		Sheet Subset: BRIDGE Subset Sheets: B4 of 35		Sheet Number 20		
 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276															

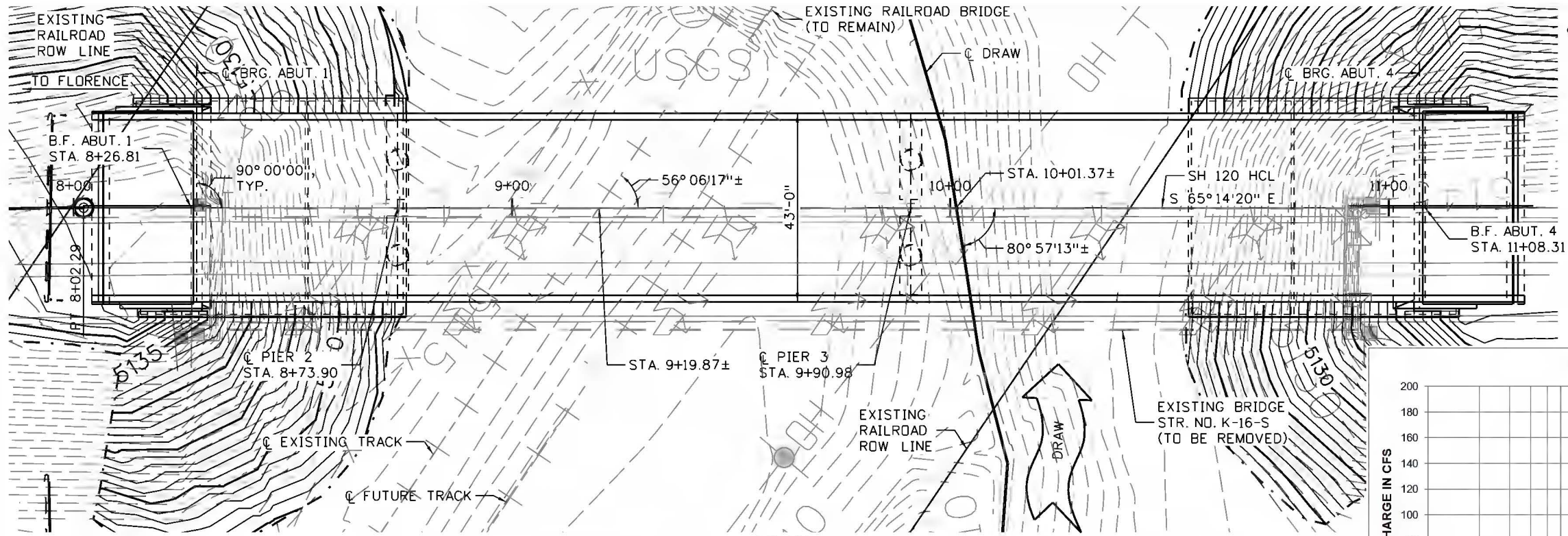


Print Date: 5/14/2014		0000	Sheet Revisions			Colorado Department of Transportation		As Constructed		SH 120 OVER DRAW & UPRR SUGGESTED CONSTRUCTION PHASING		Project No./Code	
File Name:			Date:	Comments	Init.	 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	No Revisions: 6/13/16		S. ABRAHAM		FBR 120A-011		
Horiz. Scale: 1:8 Vert. Scale: 1:8							Revised:		K-16-CI		18370		
Staff Branch - Unit 0226 DDG							Void:		Numbers				
 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276									Detailer: E. SCHAWD		Sheet Number 21		
								Sheet Subset: BRIDGE Subset Sheets: B5 of 35					



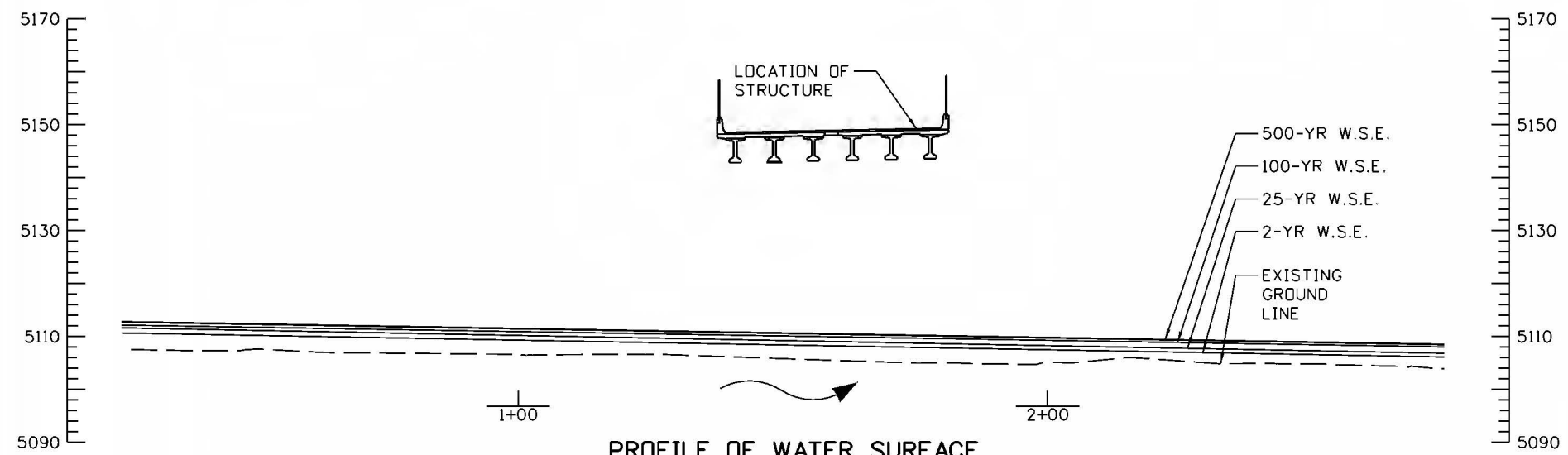
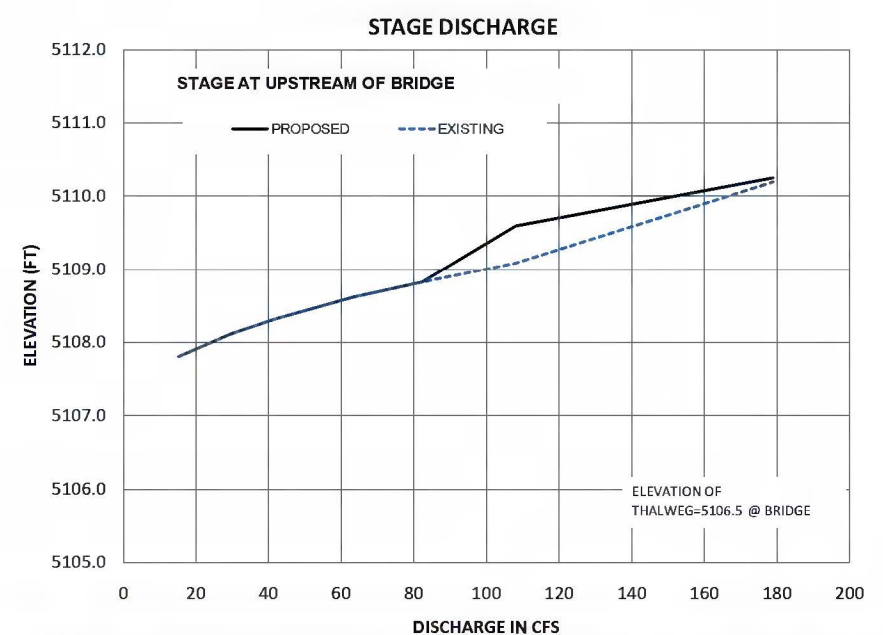
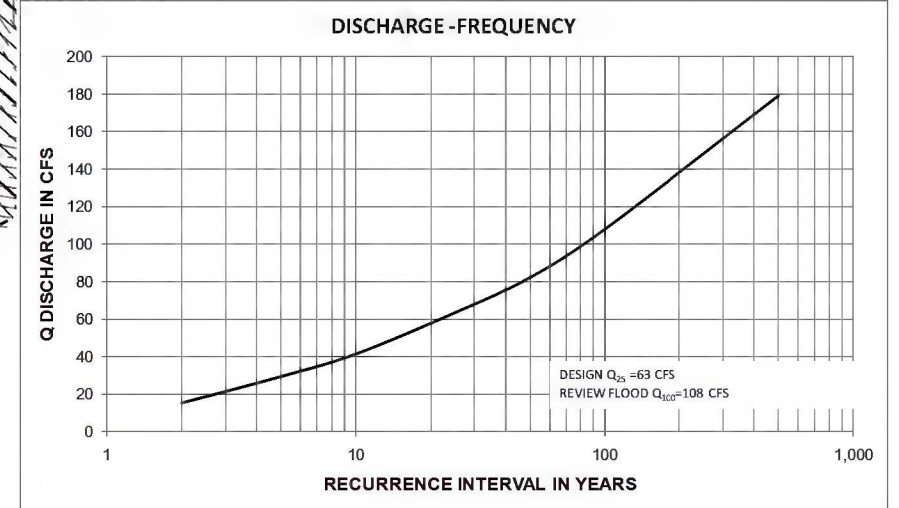
SCHAB026 10:15:37 AM S:\Tranproj\100025698\18370\Consultants\Bridges\Drawings\18370BRGHYDInfo01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
CD	12-12	ERS	12-12	CD	12-12
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By



NOTE:
THE PLAN DRAWING IS ROTATED 90° FROM THE PROFILE OF WATER SURFACE.

PLAN



PROFILE OF WATER SURFACE
(TAKEN ALONG CENTERLINE DRAW)

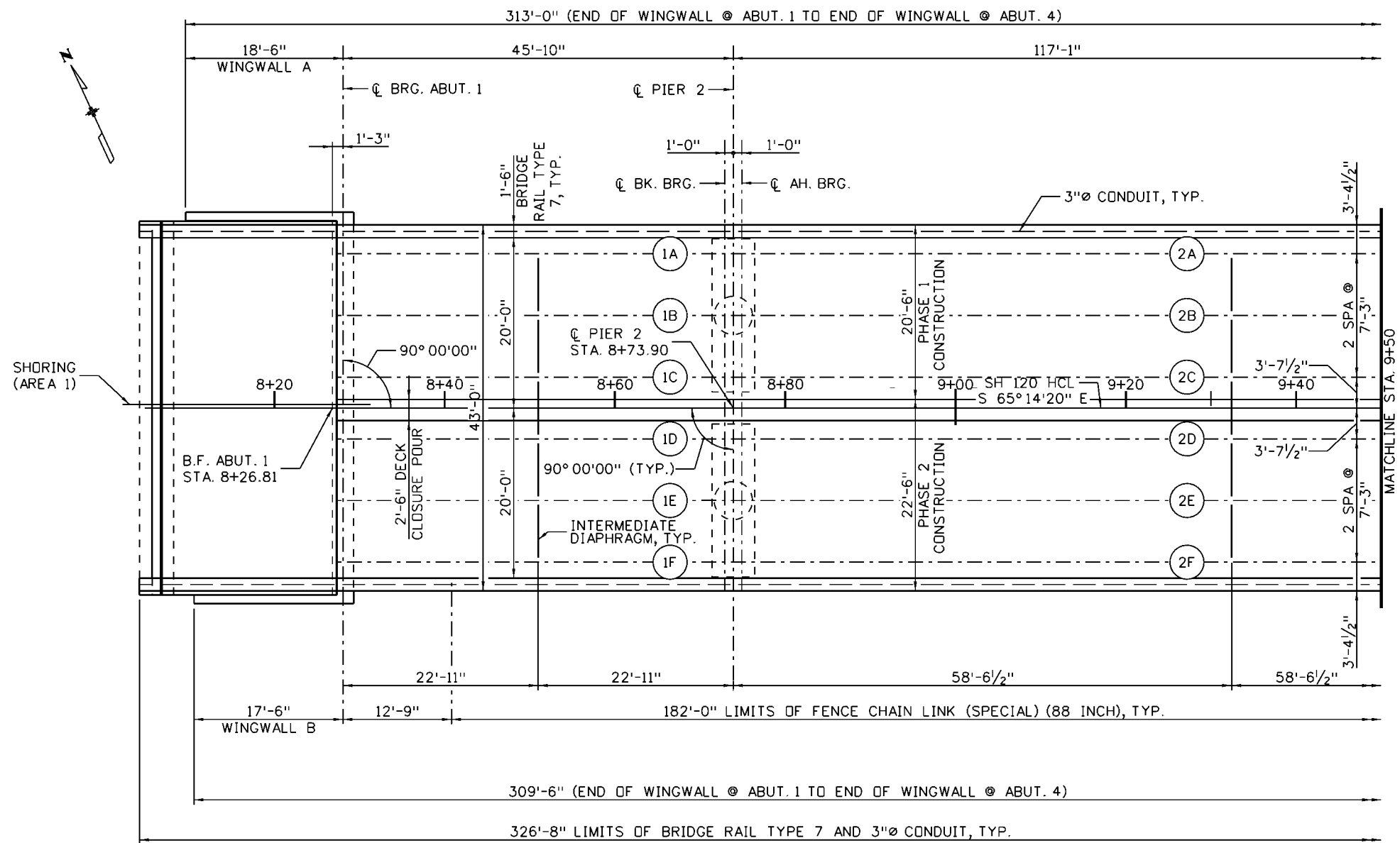
CHANNEL DESCRIPTION

BOTTOM MATERIAL: COHESIVE ☒ NON-COHESIVE ☐
BOTTOM MATERIAL SIZE: CLAY ☒ SILT ☐ SAND ☒ GRAVEL ☐
COBBLES ☐ OTHER ☐
STREAM FORM: STRAIGHT ☐ MEANDERING ☒ BRAIDED ☐
MANNINGS "N" FOR DESIGN: CHANNEL = 0.35 OVERBANK = 0.04
DEBRIS: BRUSH ☒ TREES/LOGS ☐ ICE ☐ OTHER ☐

CHANNEL HYDRAULICS

VELOCITY 4 fps. FREEBOARD 19 FT. MAX. BACKWATER 0.1 FT.

Print Date: 5/14/2014		Sheet Revisions		Colorado Department of Transportation		As Constructed		SH 120 OVER DRAW & UPRR BRIDGE HYDRAULIC INFORMATION		Project No./Code	
File Name: 18370BRGHYDInfo01.dgn						No Revisions: 6/13/16				FBR 120A-011	
Horiz. Scale: 1:30 Vert. Scale: 1:30		Date: Comments Init.		902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702		Revised:		Designer: C. DAS		18370	
Staff Bridge Branch - Unit 0226 DDG				Region 2 DTD		Void:		Detailer: E. SCHAWO		Sheet Number 23	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276								Structure Numbers K-16-CI		Subset Sheets: B7 of 35	



CONSTRUCTION LAYOUT

\\tranpro\o\100025698\18370\Consultants\Bridg\Dr. wings\18370BRGConst\y101.dgn							
Design			Detail		Quantities		
	INITIAL	DATE		INITIAL		DATE	
Designed By	SA	11-12	Detailed By	ERS	11-12	Quantities By	SA
Checked By	KTZ	11-12	Checked By	KTZ	12-12	Checked By	KTZ

Print Date: 5/14/2014

File Name: 18370BRGConstLyt01.dgn

Horiz. Scale: 1:16 Vert. Scale: 1:16

Staff Bridge Branch - Unit 0226 DDG

ATKINS

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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

SH 120 OVER DRAW & UPRR
CONSTRUCTION LAYOUT
(SHEET 1 OF 2)

Designer: S. ABRAHAM

Detailer: E. SCHAWD

Sheet Subset: BRIDGE

Structure Numbers

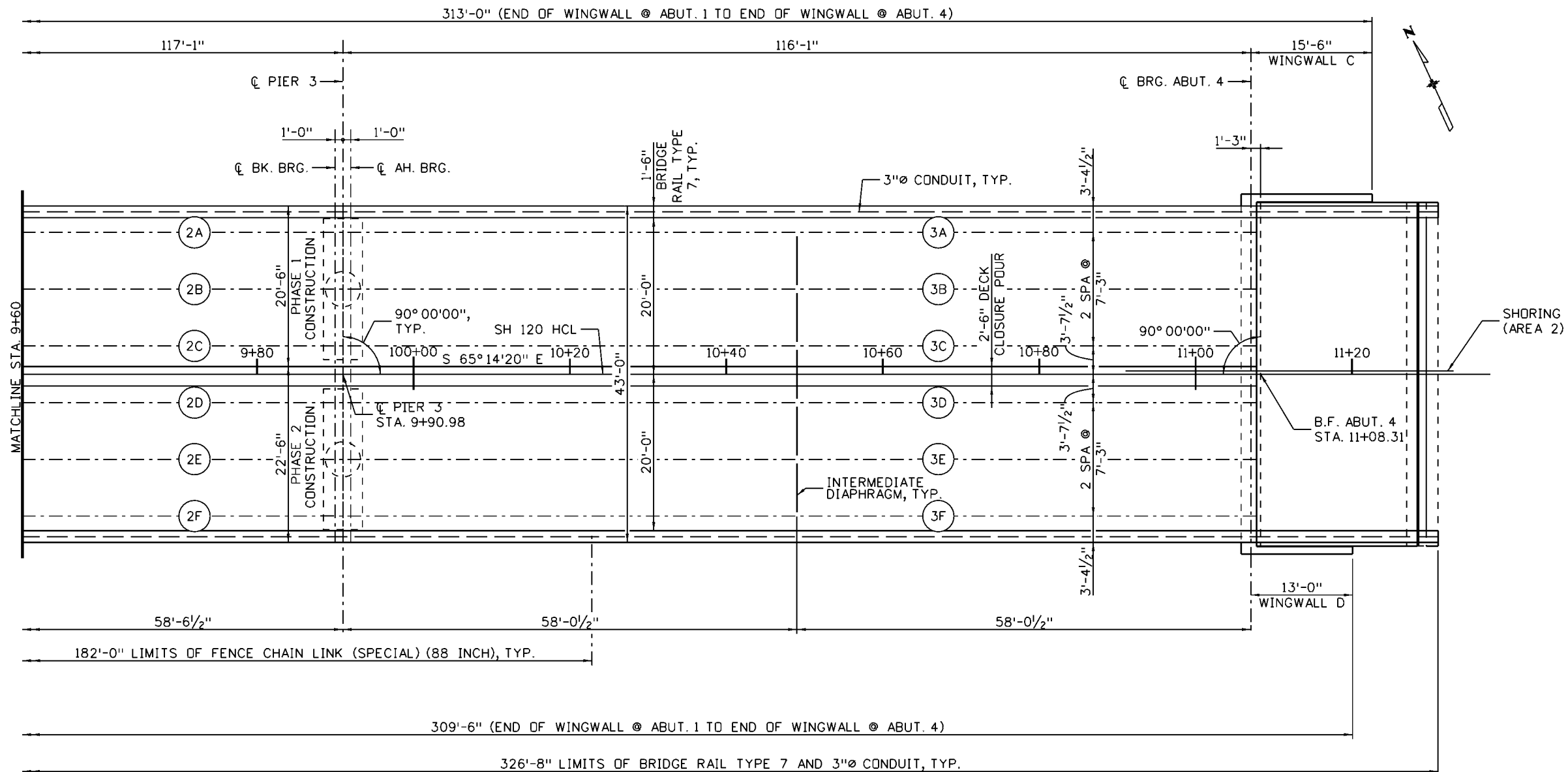
K-16-CI

Subset Sheets: B8 of 35

Project No./Code	
FBR 120A-011	
18370	
Sheet Number	24

S:\CHAB026 10:16:02 AM S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRGConstLyt02.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	ERS	11-12	Quantities By	SA
Checked By	KTZ	KTZ	12-12	Checked By	KTZ



CONSTRUCTION LAYOUT

NOTES:

- DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY AND DO NOT REFLECT VERTICAL CHANGES DUE TO GRADE OR TERRAIN.
- 3"Ø CONDUIT IS FOR FUTURE UTILITIES. PROVIDE EXPANSION/CONTRACTION COUPLERS AT BRIDGE EXPANSION DEVICES. PROJECT 2'-0" AT ENDS.

Print Date: 5/14/2014	0000
File Name: 18370BRGConstLyt02.dgn	
Horiz. Scale: 1:16 Vert. Scale: 1:16	
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

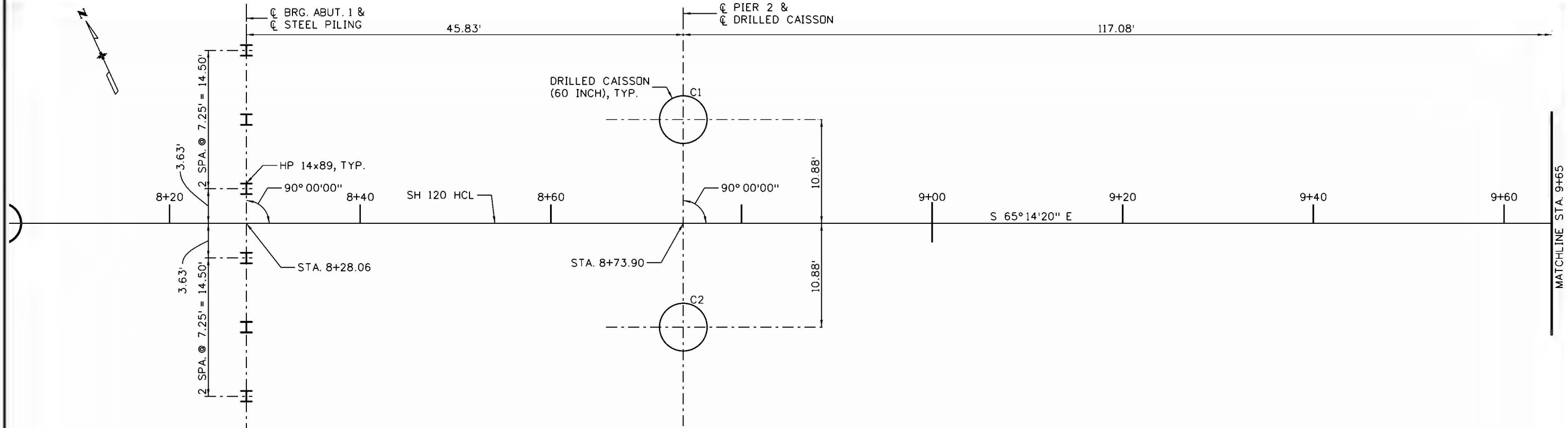
As Constructed
No Revisions: 6/13/16
Revised:
Void:

SH 120 OVER DRAW & UPRR CONSTRUCTION LAYOUT (SHEET 2 OF 2)			
Designer: S. ABRAHAM	Structure Numbers	K-16-CI	
Detailer: E. SCHAWD			
Sheet Subset: BRIDGE	Subset Sheets: B9 of 35		

Project No./Code
FBR 120A-011
18370
Sheet Number 25

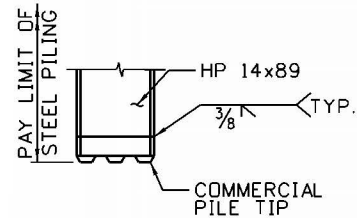
SCHAB026 10:16:08 AM S:\Tranpro\100025698\18370\Consultants\Bridges\Drawings\18370BRGF\ndrlyr101.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	JTF	ERS	11-12	SA	11-12
Checked By	KTZ	KTZ	12-12	KTZ	12-12



FOUNDATION LAYOUT

SCALE: $\frac{3}{32}$ " = 1'-0"



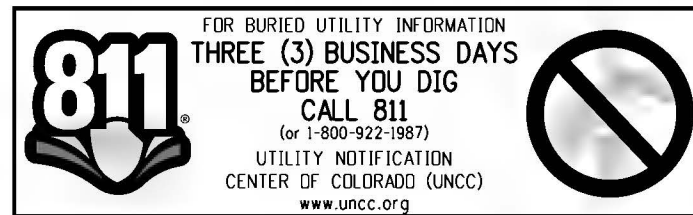
PILE TIP DETAIL
SCALE: NONE

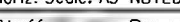
NOTES:

- PORTIONS OF EXISTING STRUCTURE THAT INTERFERE WITH CONSTRUCTION OF NEW PILES SHALL BE REMOVED AS NECESSARY TO INSTALL NEW PILES. METHOD OF REMOVAL AND SUBSURFACE STABILIZATION MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. COST OF REMOVAL OF STRUCTURE AND EXPANSION JOINT AND SUBSURFACE STABILIZATION SHALL BE INCLUDED IN ITEM 202, REMOVAL OF BRIDGE.
- DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY AND DO NOT REFLECT VERTICAL CHANGES DUE TO GRADE OR TERRAIN.
- THE PILING AND CAISSON DIMENSIONS SHOWN ARE AT THE BOTTOM OF THE CONCRETE.
- STRUCTURAL STEEL (PILING):
AASHTO M223 (ASTM A572) GRADE 50: $f_y = 50,000$ psi
- FOR CAISSON SUMMARY AND DETAILS, SEE SHEET B11.

PILE SUMMARY

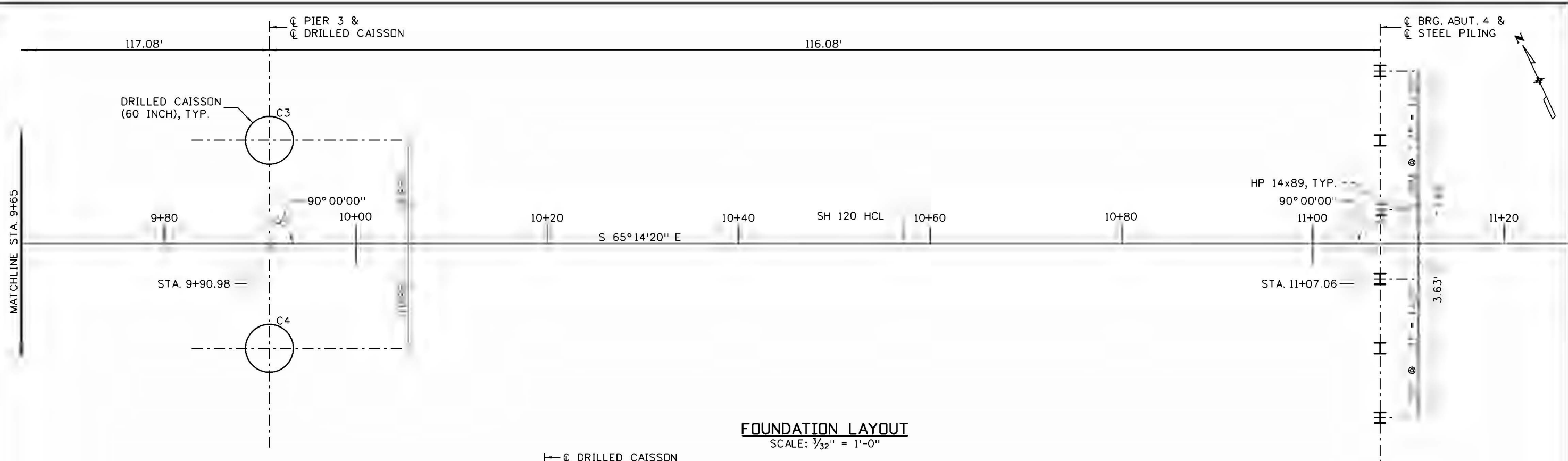
LOCATION	PILE SIZE	PILE CUTOFF ELEV.	ESTIMATED TIP ELEV.	MAXIMUM PILE LOAD (TONS)	TYPE
ABUT. 1	HP 14x89	5134.50	5078.00	58.0	END BEARING
ABUT. 4	HP 14x89	5139.15	5092.00	86.0	END BEARING



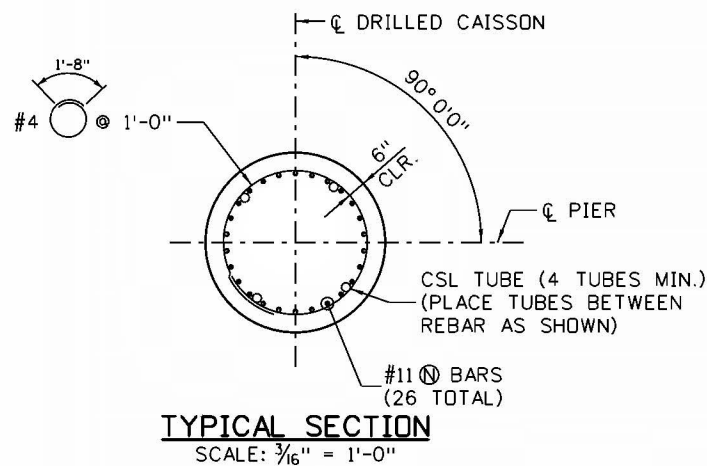
Print Date: 5/14/2014		Sheet Revisions		Colorado Department of Transportation		As Constructed		SH 120 OVER DRAW & UPRR FOUNDATION LAYOUT (SHEET 1 OF 2)		Project No./Code	
File Name:											
Horiz. Scale: AS NOTED Vert. Scale: AS NOTED		Date:	Comments	Init.	 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	No Revisions: 6/13/16		J. FULLER		K-16-CI	
Staff Branch - Unit 0226 DDG						Revised:		E. SCHAWO		Numbers	
 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276						Void:		Sheet Subset: BRIDGE		Subset Sheets: B10 of 35	

S:\CHAB026 10:16:12 AM S:\Tranproj\100025698\18370\Consultants\Bridge\Drawings\18370BRGndLn\y102.dgn

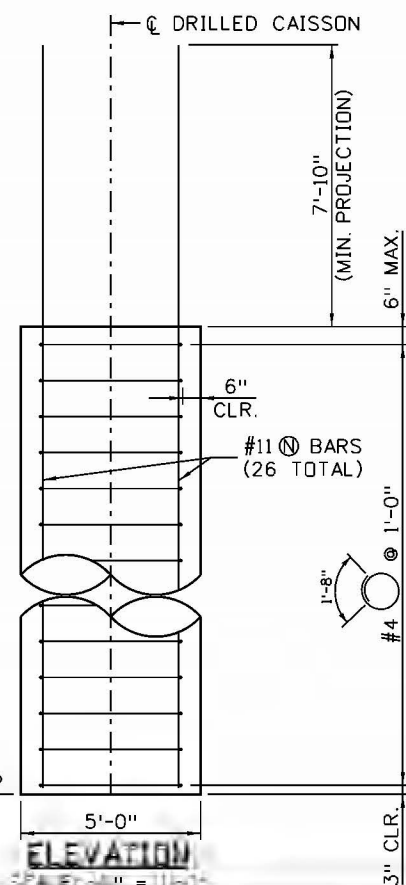
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	JTF	Detailled By	ERS	Quantities By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ



FOUNDATION LAYOUT
SCALE: 3/32" = 1'-0"



TYPICAL SECTION
SCALE: 3/16" = 1'-0"



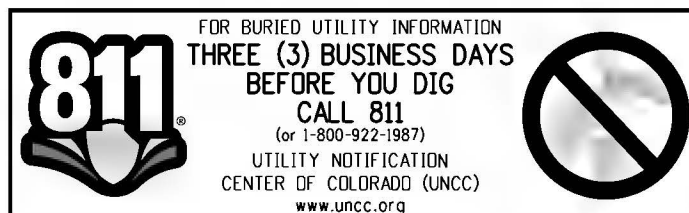
ELEVATION
SCALE: 3/32" = 1'-0"

CAISSON SUMMARY

LOCATION	CAISSON DIAMETER	TOP OF CAISSON ELEV.	ESTIMATED BEDROCK ELEV.	MINIMUM PENETRATION INTO BEDROCK (FT.)	ESTIMATED TIP ELEV.	FACTORED MAXIMUM LOAD (KIPS)	UNFACTORED MAXIMUM LOAD (KIPS)
PIER 2	60"	5110.60	5095.00	20'-0"	5075.00	1503.00	1189.00
PIER 3	60"	5105.82	5095.00	25'-0"	5070.00	1503.00	1189.00

NOTES:

- FOR ADDITIONAL INFORMATION, SEE SHEET B10.
- DRILLED CAISSON CONCRETE SHALL BE CLASS BZ.
- BARS PROJECTING FROM TOP OF CAISSON SHALL BE PLACED TO FIT INSIDE THE REINFORCING CAGE OF THE PIER COLUMN. PROJECTING BARS SHALL BE INCLUDED IN THE COST OF ITEM 503, DRILLED CAISSON.
- FOR MORE INFORMATION REGARDING CSL TUBES, SEE PROJECT SPECIFICATIONS.



Print Date: 5/14/2014
File Name:
Horiz. Scale: AS NOTED Vert. Scale: AS NOTED
Staff: Branch - Unit 0226 DDG
ATKINS 4601 DTC Boulevard, Suite 700
Denver, CO 80237
Phone: (303) 221-7275 Fax: (303) 221-7276

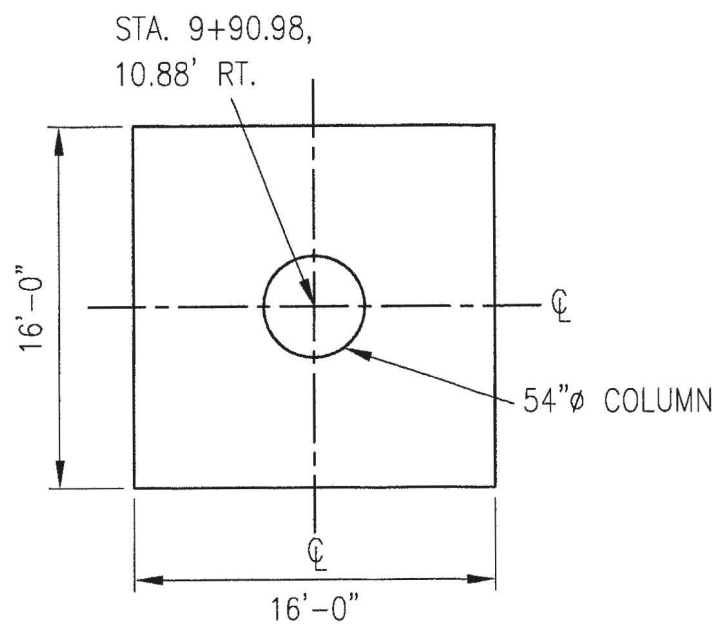
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
 902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

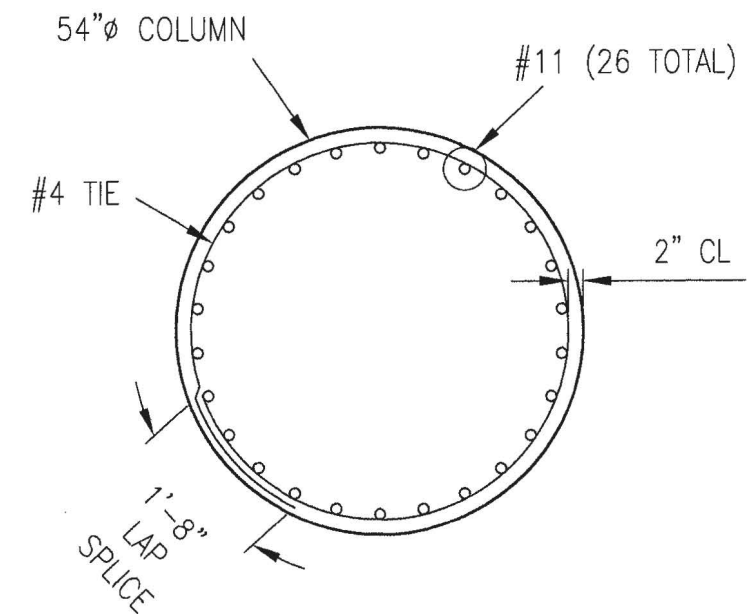
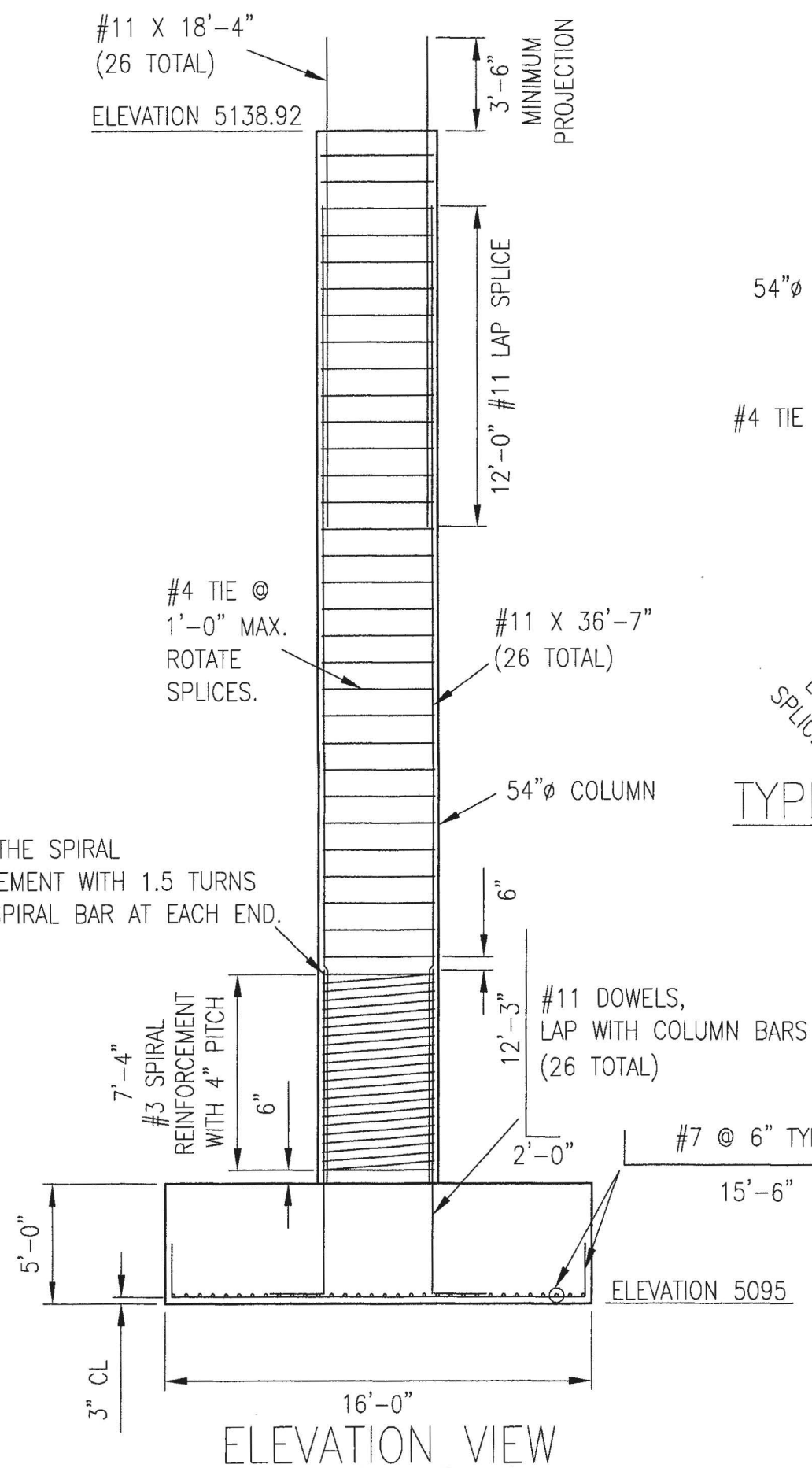
As Constructed
No Revisions: 6/13/16
Revised:
Void:

SH 120 OVER DRAW & UPRR
FOUNDATION LAYOUT
(SHEET 2 OF 2)
Designer: J. FLECHER
Detailer: E. SCHAWO
Sheet Subset: BRIDGE
Subset Sheets: B11 of 35

Project No./Code
FBR 120A-011
18370
Sheet Number 27



CONCRETE SHALL BE CONCRETE CLASS D.



EPOXY COATING IS NOT REQUIRED ON THE SPIRAL REINFORCEMENT, #11 DOWELS, OR THE #7 FOOTING REINFORCEMENT.

LAP SPLICES OF THE SPIRAL
REINFORCEMENT SHALL BE 24".

As Constructed

No Revisions:

Revised: 6/13/16

Void:



**Crimson Engineering
Associates, Inc.**
Denver, Colorado 720.389.6416
www.crimsonengineering.com

[illegible]

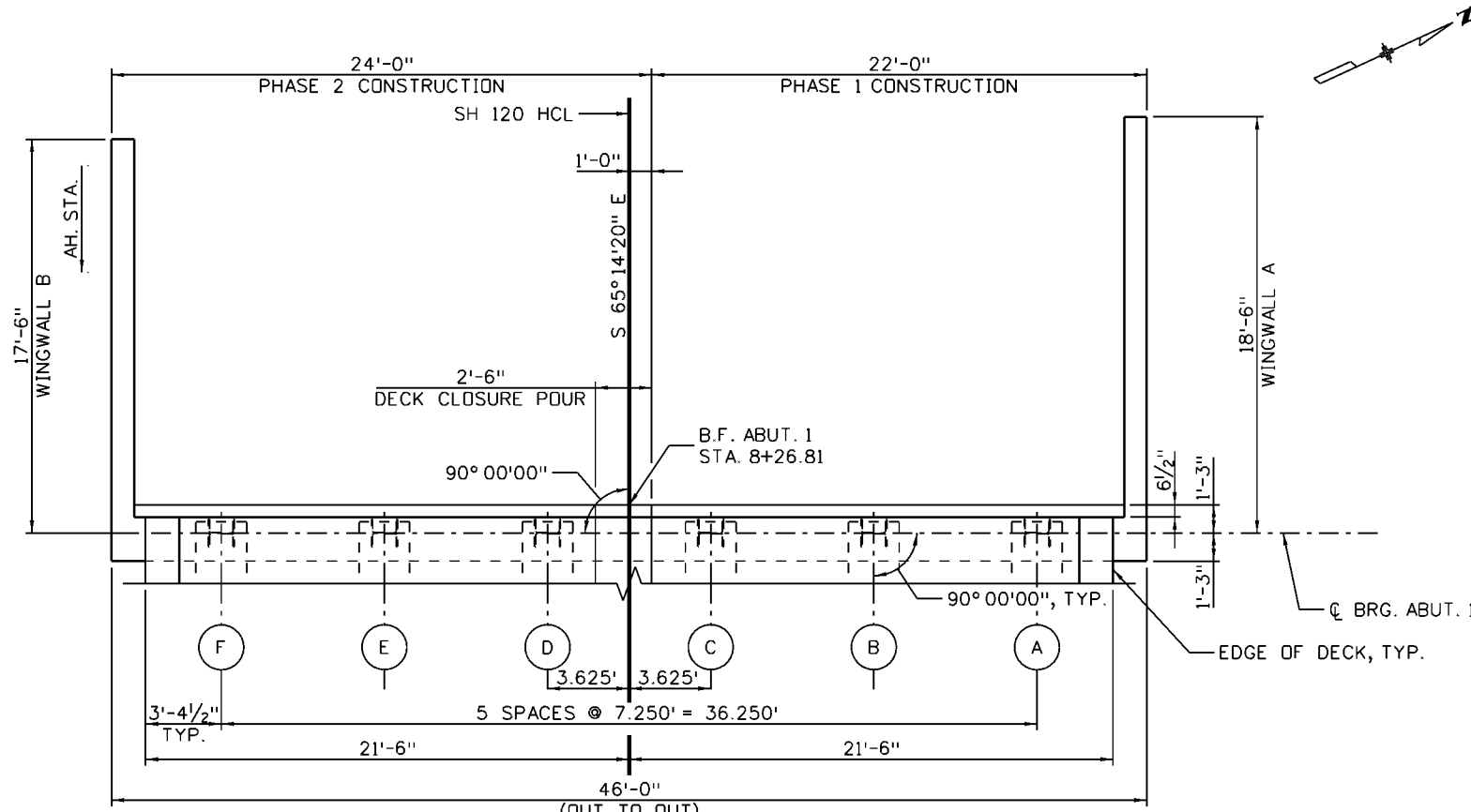
CUSTOMER(S): STRUCTURES, INC

PROJECT: SH 120 OVER DRAW AND UPRR
COLORADO PROJECT NO.

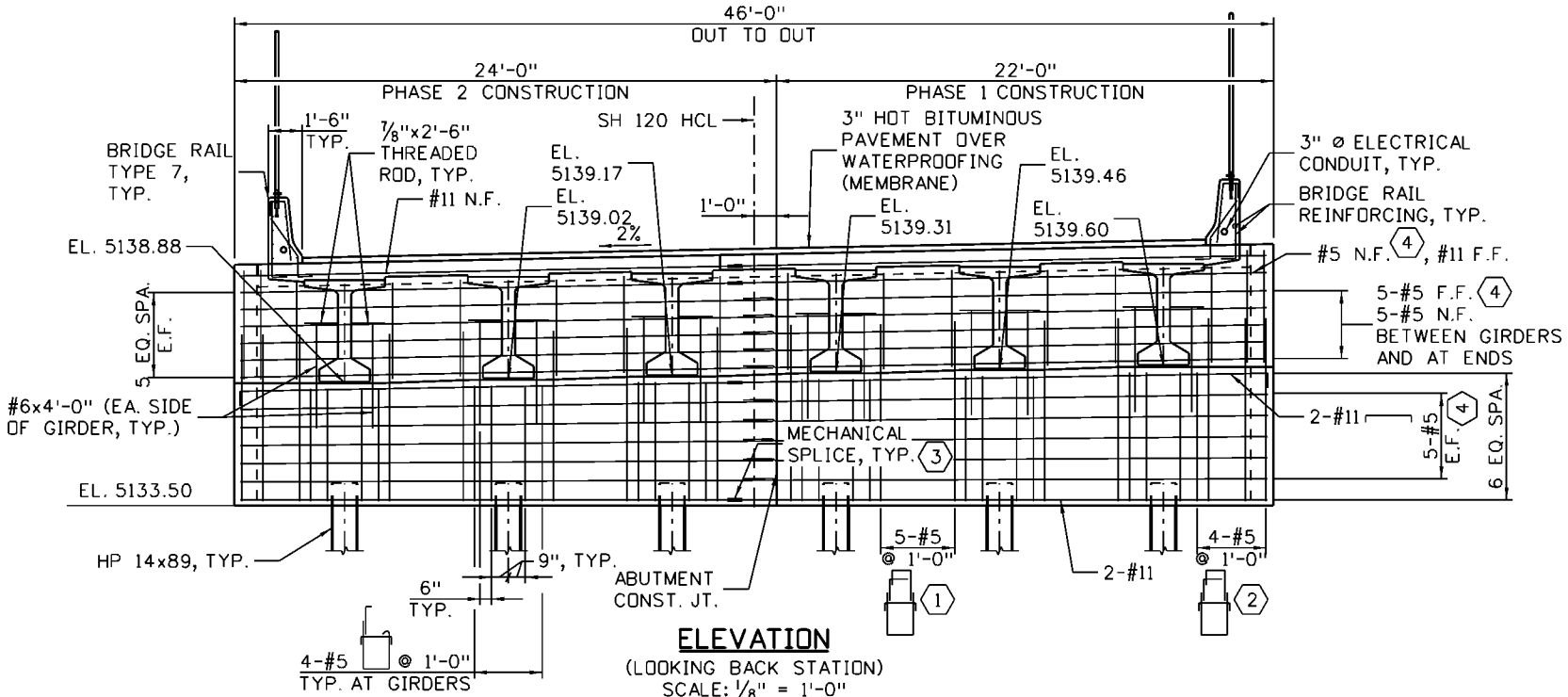
SHEET TITLE:
REDESIGN OF PIER 3, PHASE 2 FOUNDATION

	
DRAWN BY:	D. Deschamp
DATE:	9-25-2015
JOB NO.:	924-150235

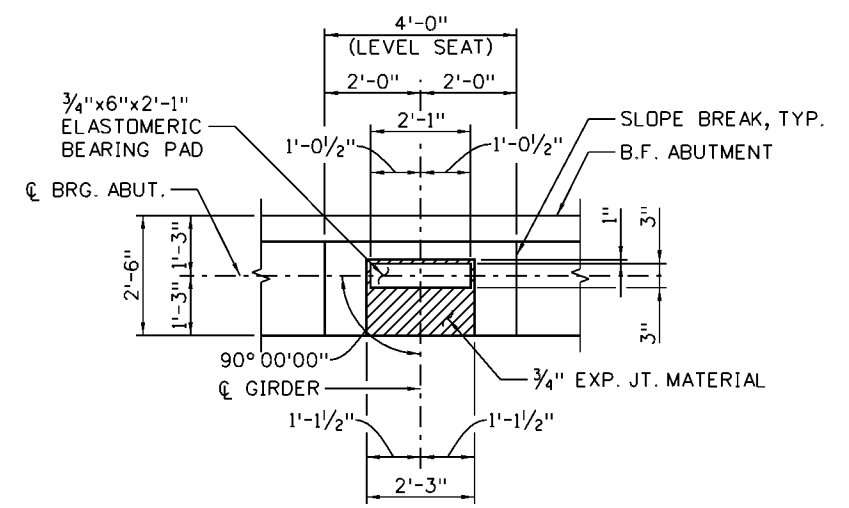
1 of 1



PLAN
SCALE: 1/8" = 1'-0"



ELEVATION
(LOOKING BACK STATION)
SCALE: 1/8" = 1'-0"



BEARING SEAT DETAIL
SCALE: 1/4" = 1'-0"

NOTES:

- ELEVATIONS SHOWN ARE AT ϕ BEARING. GIRDER SEAT ELEVATIONS AT BOTTOM OF LEVELING PAD.
- REINFORCEMENT SHOWN ON THIS SHEET IS FOR CLARITY OF PLACEMENT. FOR DETAILS OF THIS REINFORCEMENT AND ALL OTHER REINFORCEMENT, SEE SECTIONS ON SHEET B13.
- ABUTMENT SHALL BE CONCRETE CLASS D (BRIDGE).
- ABUTMENTS SHALL NOT BE BACKFILLED UNTIL ABUTMENT DIAPHRAGMS ARE PLACED.
- DECK AND PORTION OF ABUTMENT ABOVE BEARING SEAT SHALL BE PLACED MONOLITHICALLY.
- THREADED ROD SHALL BE PLACED IN $7/8"$ ϕ INSERTS PROVIDED IN GIRDERS. PROVIDE TWO BARS PER GIRDER END AT INTERIOR GIRDERS AND ONE BAR PER GIRDER END AT EXTERIOR GIRDERS, AS SHOWN. SEE SHEET B21 FOR ADDITIONAL INFORMATION.
- FOR WINGWALL DETAILS, SEE SHEET B14.
- FOR PILING LOCATIONS, SEE SHEETS B10 AND B11.
- FOR BRIDGE RAIL TYPE 7 DETAILS, SEE SHEETS B22 AND B23.
- FOR NOTES AND ADDITIONAL DETAILS, SEE SHEET B13.

KEYNOTES:

- ① TYPICAL AT INTERIOR BAYS.
- ② TYPICAL AT EXTERIOR BAYS.
- ③ PROVIDE MECHANICAL SPLICE AT ALL #11 BARS. MECHANICAL SPLICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM NO. 602, REINFORCING STEEL.
- ④ PROJECT #5 BARS 1'-6" PAST PHASE 1 CONSTRUCTION JOINT.

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Desig'd By	11-12	Det'd By	11-12	SA	11-12
Checked By	11-12	Checked By	12-12	KTZ	12-12

Print Date: 5/14/2014

File Name: 18370BRGAbut101.dgn

Horiz. Scale: As Noted Vert. Scale: As Noted

Staff Bridge Branch - Unit 0226 DDG

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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

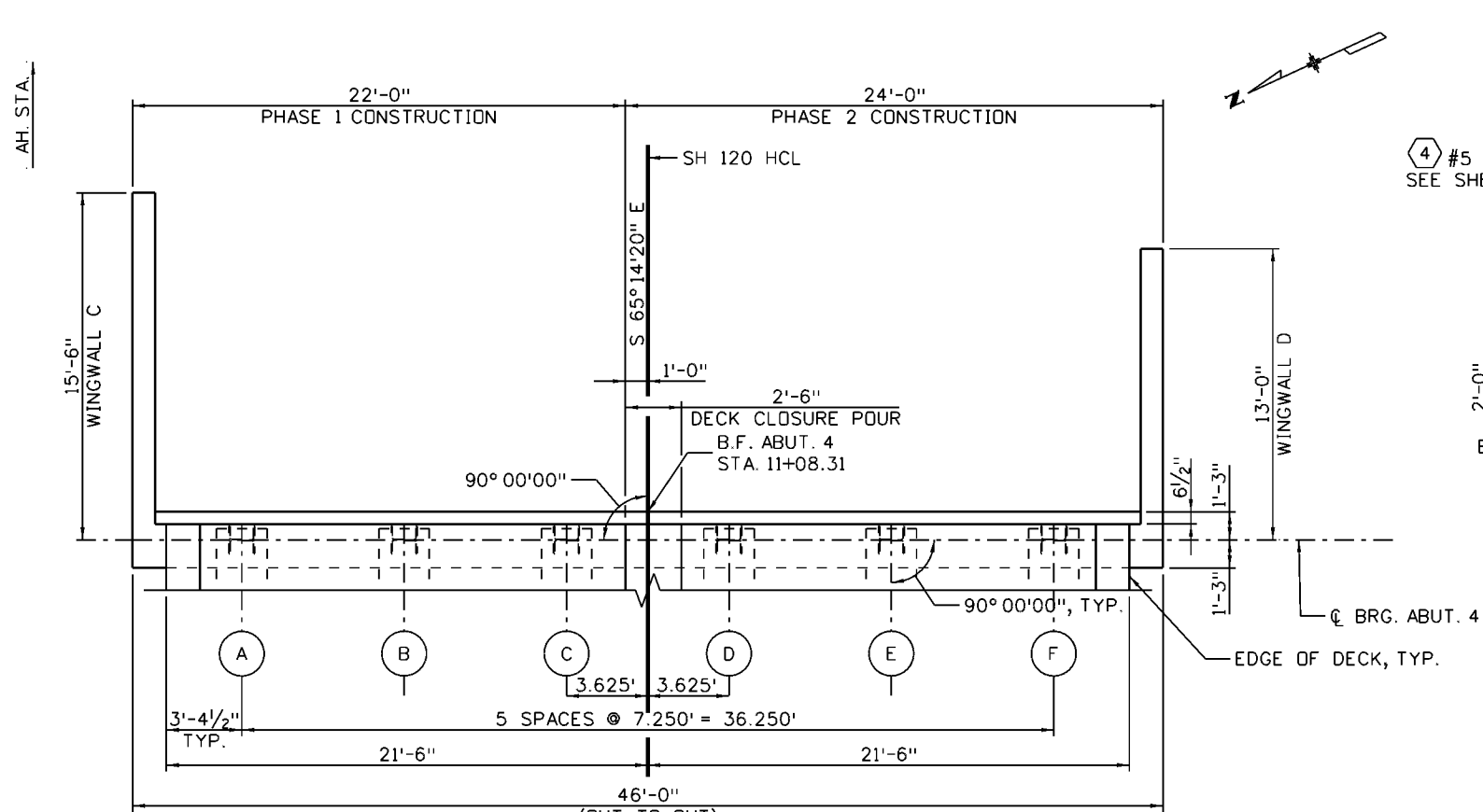
 902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

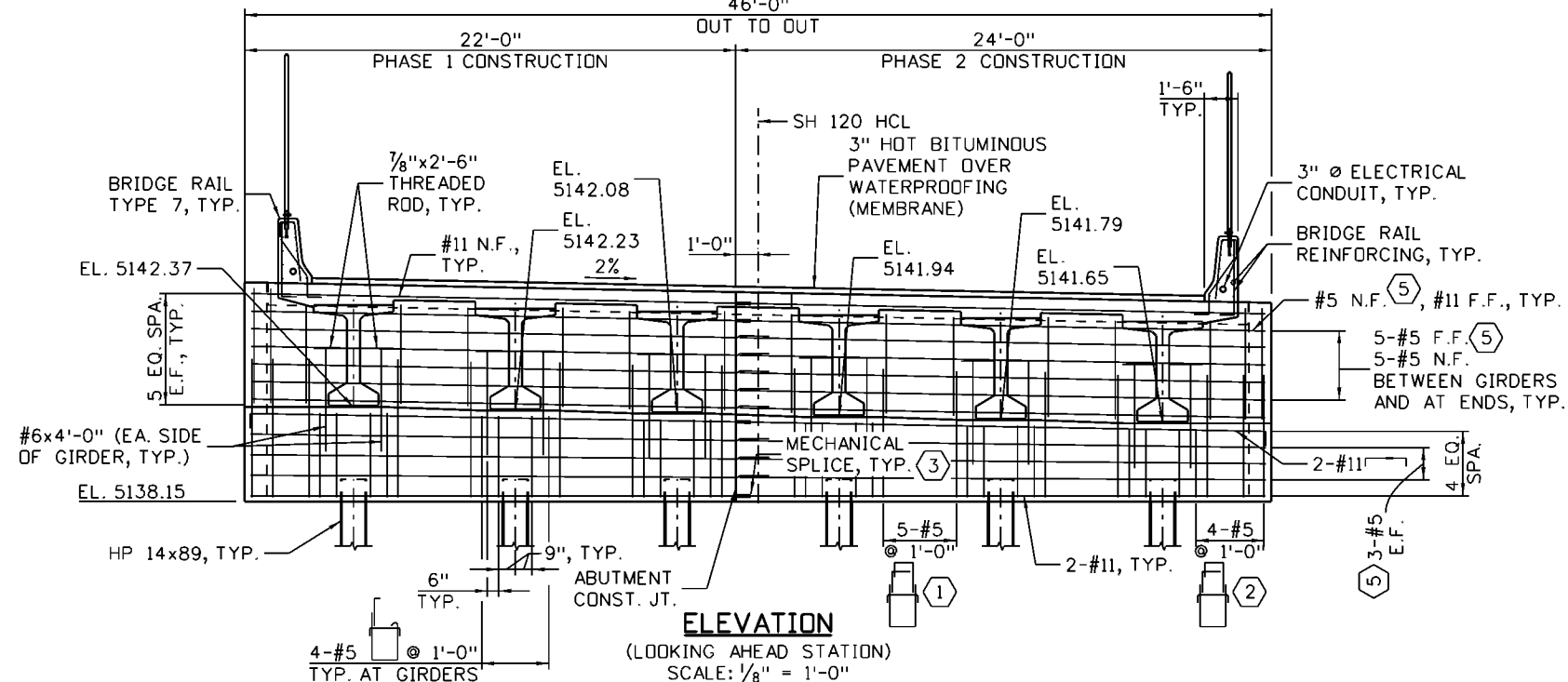
As Constructed		SH 120 OVER DRAW & UPRR ABUTMENT 1			Project No./Code	
No Revisions: 6/13/16					FBR 120A-011	
Revised:	Designer:	S. ABRAHAM	Structure	K-16-CI	18370	
	Detailer:	E. SCHAWD	Numbers			
Void:	Sheet Subset:	BRIDGE	Subset Sheets:	B12 of 35	Sheet Number	28

SC48026 10:16:23 AM \\denfa06\Trans\Tranproj\100025698\18370\Consultants\Bridge\Drawings\18370BRGAbut401.dgn

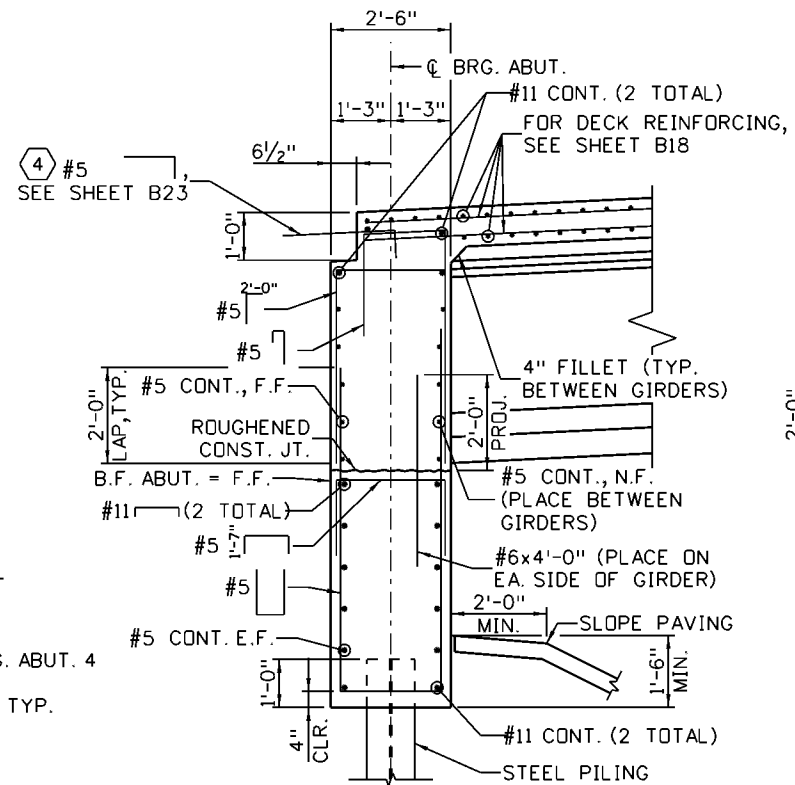
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	Detailled By	ERS	Quantities By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ



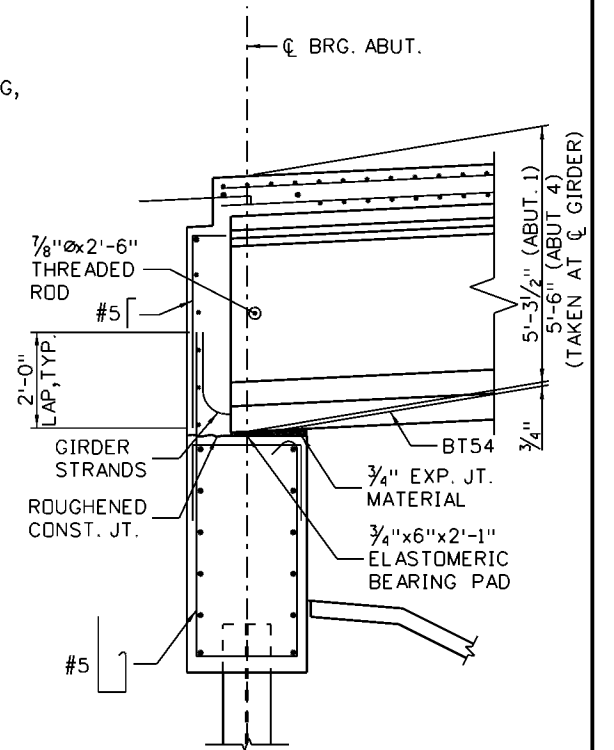
PLAN
SCALE: 1/8" = 1'-0"



ELEVATION
(LOOKING AHEAD STATION)
SCALE: 1/8" = 1'-0"



TYPICAL SECTION
BETWEEN GIRDERS
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
AT GIRDERS
(DETAIL SIMILAR TO "TYPICAL SECTION BETWEEN GIRDERS"
EXCEPT AS SHOWN)
SCALE: 1/4" = 1'-0"

KEYNOTES:

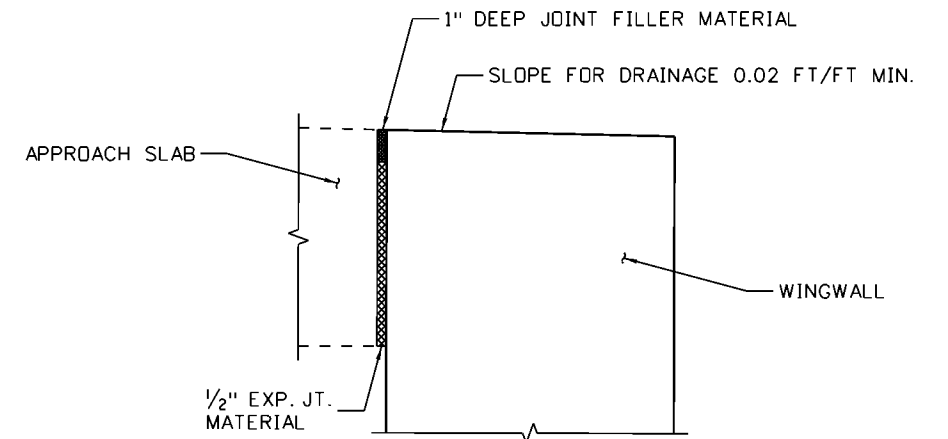
- 1 TYPICAL AT INTERIOR BAYS.
- 2 TYPICAL AT EXTERIOR BAYS.
- 3 PROVIDE MECHANICAL SPLICE AT ALL #11 BARS. MECHANICAL SPLICES SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM NO. 602, REINFORCING STEEL.
- 4 ROTATE LEGS AS NEEDED TO CLEAR GIRDER.
- 5 PROJECT #5 BARS 1'-6" PAST PHASE 1 CONSTRUCTION JOINT.

Print Date: 5/14/2014	
File Name: 18370BRGAbut401.dgn	
Horiz. Scale: 1:8	Vert. Scale: 1:8
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR ABUTMENT 4		Project No./Code
No Revisions: 6/13/16				FBR 120A-011
Revised:		Designer: S. ABRAHAM	Structure K-16-CI	18370
Void:		Detailer: E. SCHAWD	Numbers	
		Sheet Subset: BRIDGE	Subset Sheets: B13 of 35	Sheet Number 29



#9
(EXTEND 2'-0"
INTO ABUT.)

B

#7 CONT. @ 9" (WINGWALL A & B)
#5 CONT. @ 9" (WINGWALL C & D)

ALL A & B)
ALL C & D)

#4 @ 1'-6"

#4

CONST. JT.

1

F.F.

N.F.

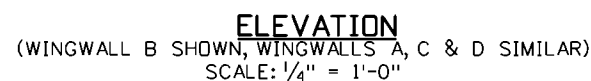
1'-0"

3" CUR.

SECTION
SCALE: $\frac{3}{8}" = 1'-0"$

- ### KEY NOTES:

- 1 CONSTRUCTION JOINT IS AT EXTERIOR BEARING ELEVATION.
- 2 1/2" EXPANSION JOINT MATERIAL AND 1" DEEP JOINT FILLER MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM 601 CONCRETE CLASS D.

ELEVATION

(WINGWALL B SHOWN, WINGWALLS A, C & D SIMILAR)
SCALE: $\frac{1}{4}" = 1'-0"$

0000	Sheet Revisions		
	Date:	Comments	Init.



Region 2

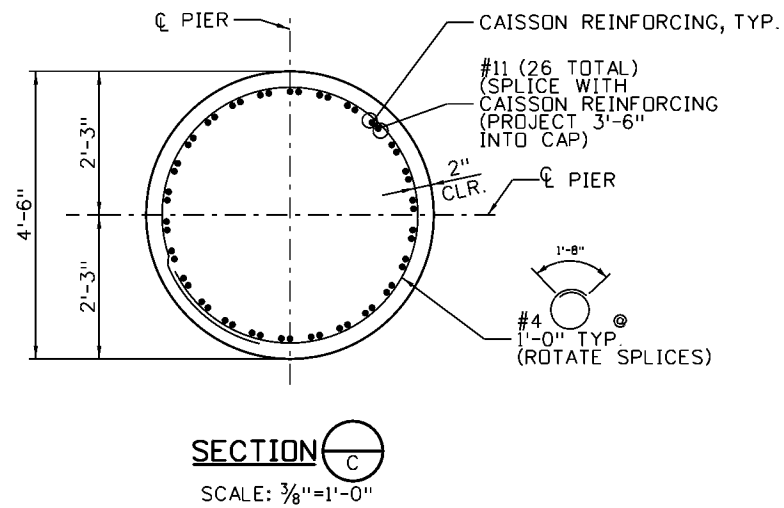
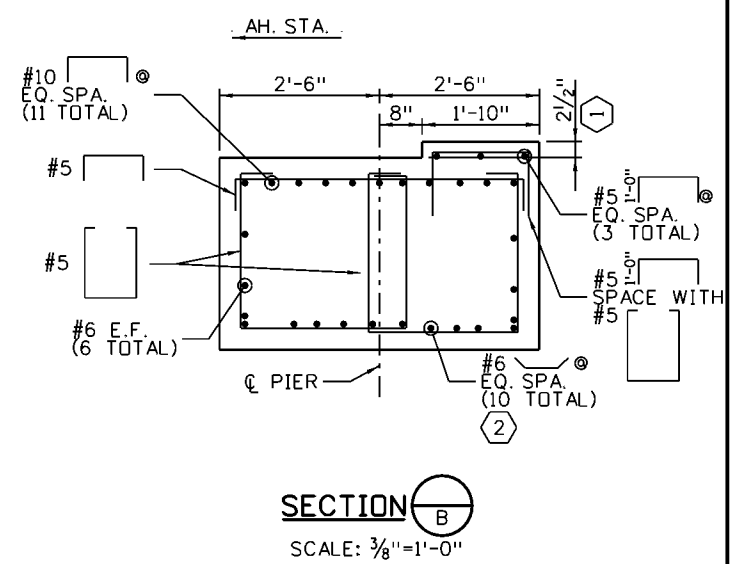
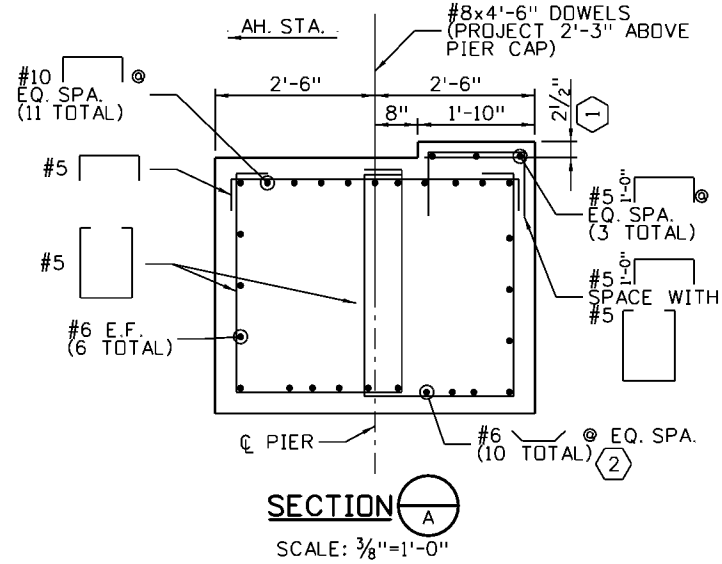
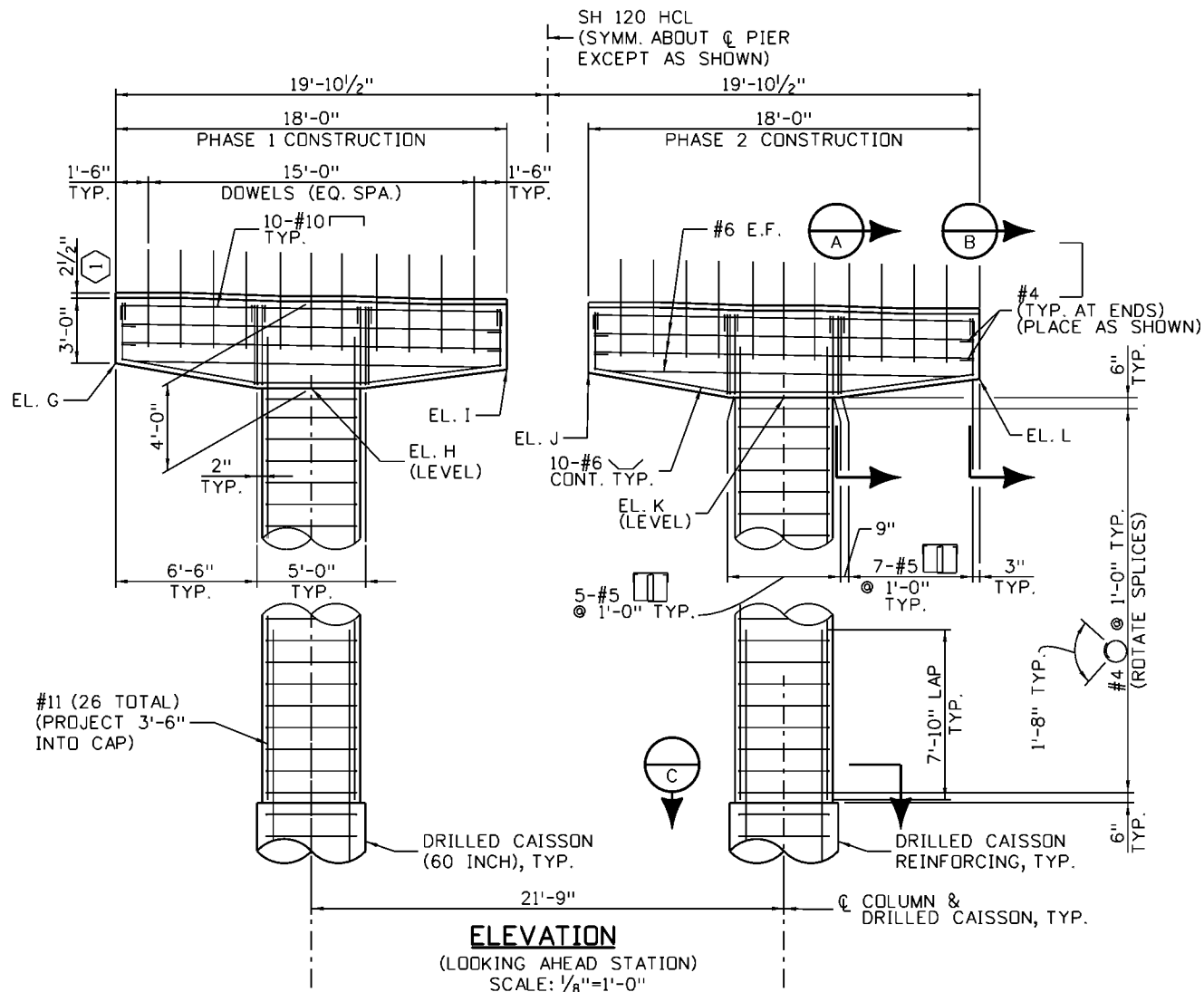
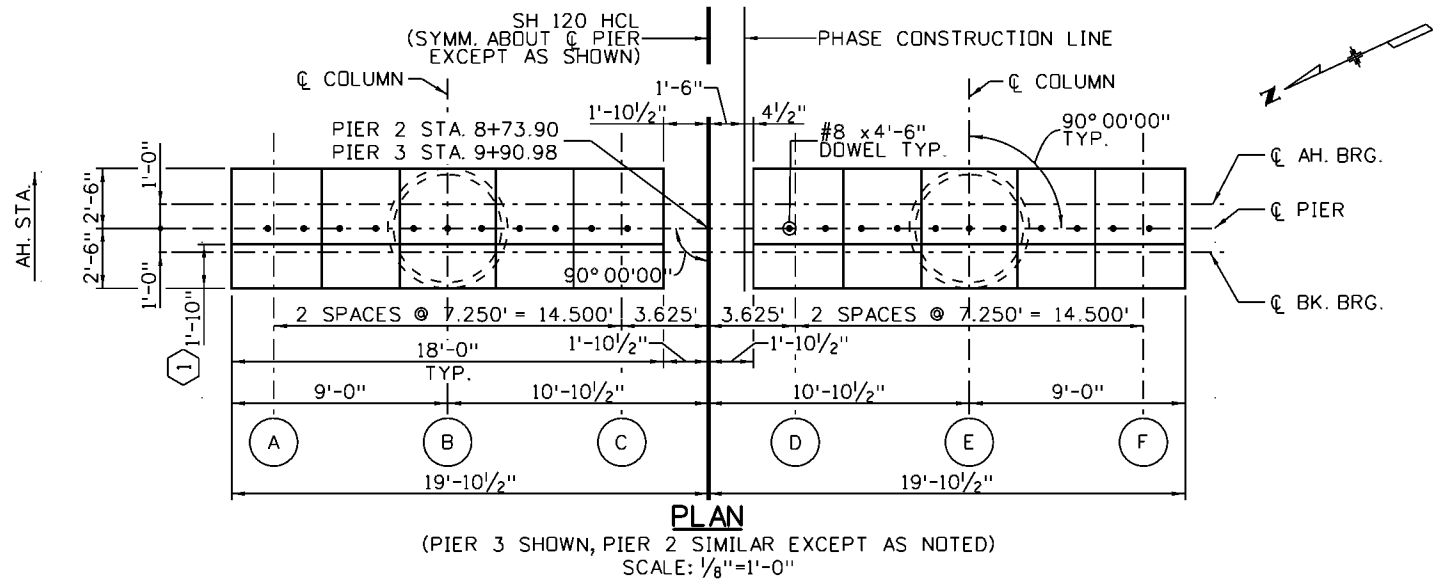
Void:

Designer: S. ABRAHAM	Structure Numbers	K-16-CI
Detailer: E. SCHAWO		
Sheet Subset: BRIDGE	Subset Sheets: B14 of 35	

Sheet Number	30
--------------	----

S:\CHAB026 10:16:40 AM S:\Tranproj\100025698\18370\Consultants\Bridg\Drawings\18370BRGPier01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	JTF	11-12	12-12	Quantities By	SA
Checked By	KTZ	12-12	12-12	Checked By	KTZ



PIER 2		PIER 3	
LOCATION	ELEVATION	LOCATION	ELEVATION
G	5138.70	G	5140.53
H	5137.52	H	5139.35
I	5138.34	I	5140.17
J	5138.26	J	5140.10
K	5137.08	K	5138.92
L	5137.90	L	5139.74

NOTE:
ELEVATIONS SHOWN SHALL BE VERIFIED AT TIME
OF CONSTRUCTION BY THE ENGINEER.

BEARING SEAT ELEVATION TABLE

STRUCTURE	LOCATION	A	B	C	D	E	F
PIER 2	BK. BRG.	5141.63	5141.48	5141.34	5141.19	5141.05	5140.90
	AH. BRG.	5141.70	5141.56	5141.41	5141.27	5141.12	5140.98
PIER 3	BK. BRG.	5143.71	5143.56	5143.42	5143.27	5143.13	5142.98
	AH. BRG.	5143.49	5143.35	5143.20	5143.06	5142.91	5142.77

NOTES:

- PIER SHALL BE CONCRETE CLASS D (BRIDGE).
- ELEVATIONS ARE AT ϕ PIER UNLESS NOTED.

KEYNOTES:

- PIER STEP AT PIER 3 ONLY.
- BOTTOM PIER CAP REINFORCING SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE MAIN COLUMN STEEL PROJECTION.

Print Date: 5/14/2014	0000
File Name: 18370BRGPier01.dgn	
Horiz. Scale: AS NOTED Vert. Scale: AS NOTED	
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

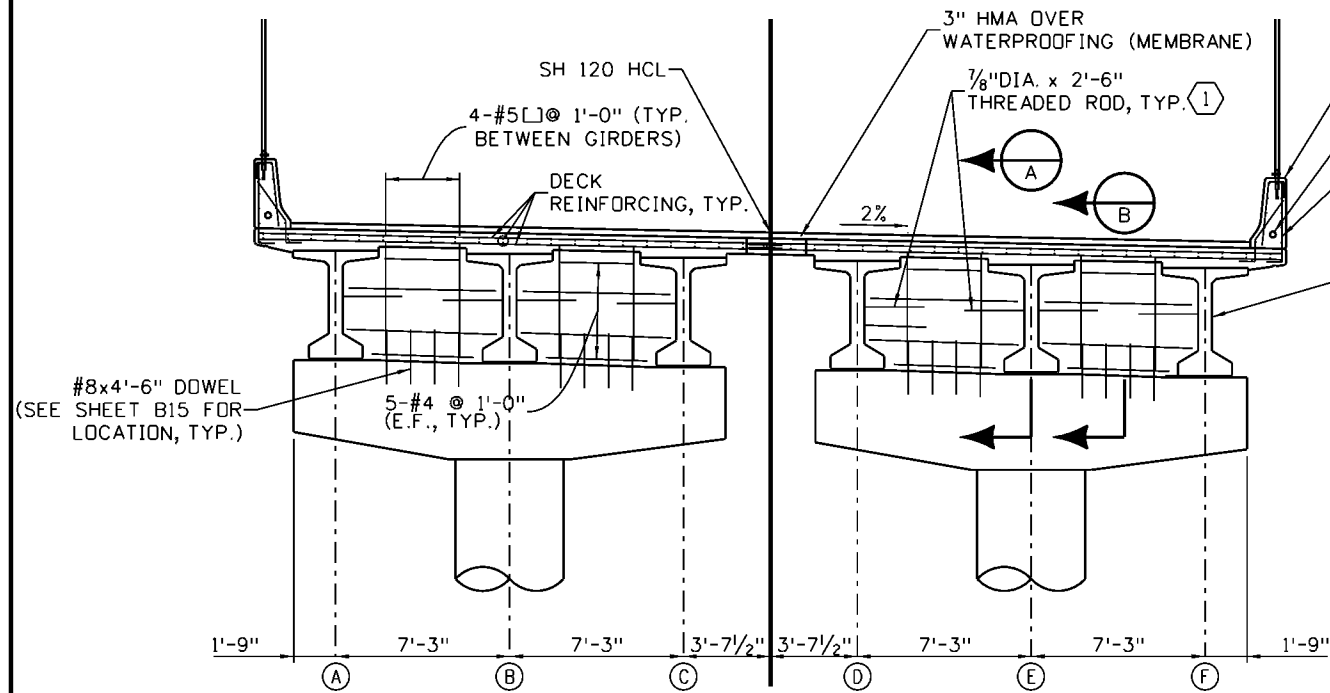
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

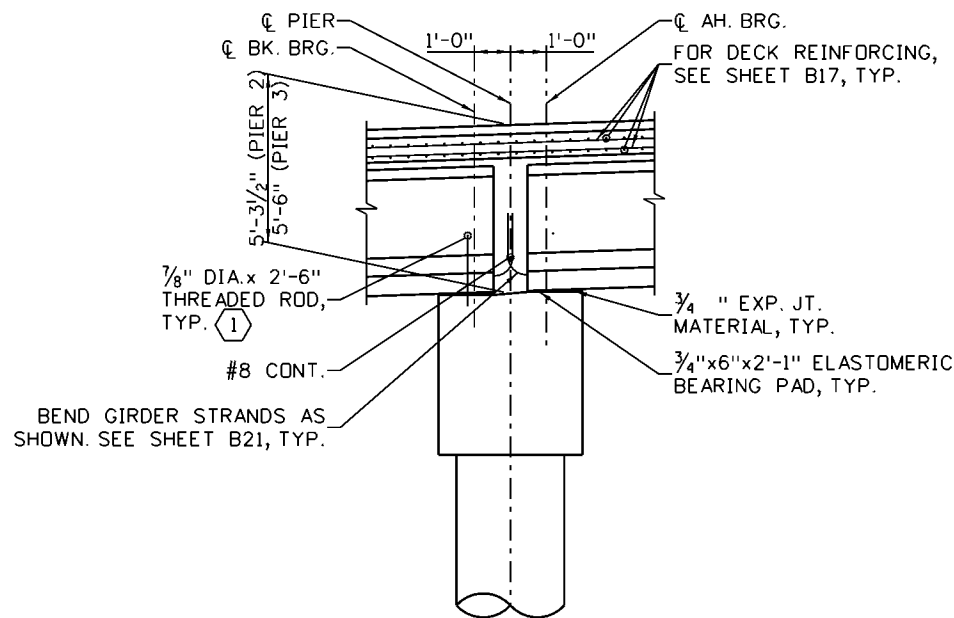
As Constructed		SH 120 OVER DRAW & UPRR PIER DETAILS			Project No./Code	
No Revisions: 6/13/16					FBR 120A-011	
Revised:		Designer: J. FULLER	Structure	K-16-CI		
		Detailer: E. SCHAWD	Numbers			
Void:		Sheet Subset: BRIDGE	Subset Sheets: B15 of 35		Sheet Number	31

S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRGPierD101.dgn

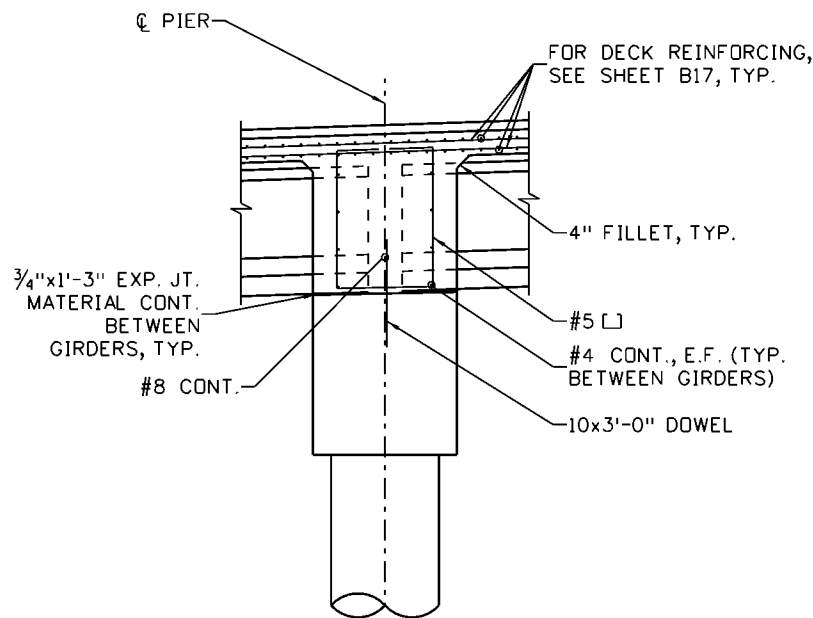
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	11-12	SA	11-12	Quantity By	SA
Checked By	11-12	KTZ	11-12	Checked By	KTZ



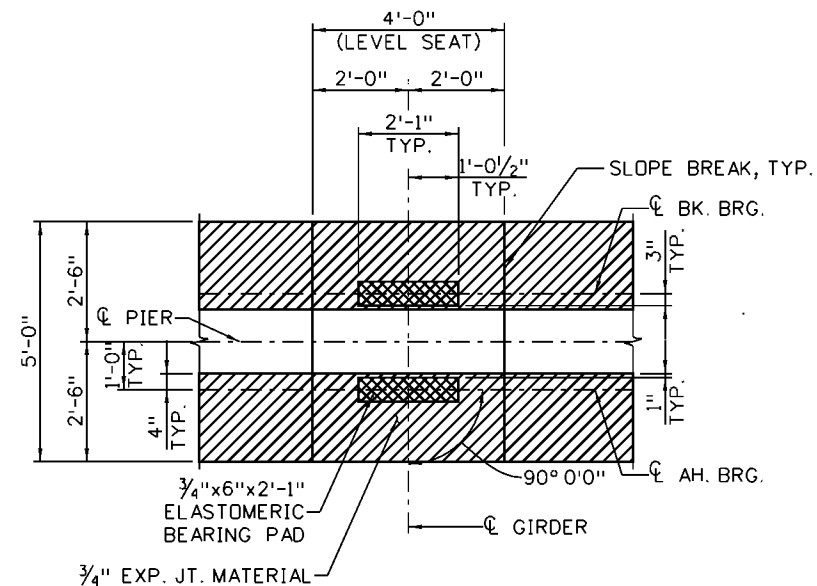
ELEVATION
(TAKEN ALONG C PIER)
(PIER 2 SHOWN, PIER 3 SIMILIAR)
(LOOKING AHEAD STATION)
SCALE: 1/8" = 1'-0"



SECTION A-A
SCALE: 3/16" = 1'-0"



SECTION B-B
SCALE: 3/16" = 1'-0"



BEARING SEAT DETAIL
SCALE: 1/4" = 1'-0"

NOTES:

- PIER DIAPHRAGM SHALL BE CONCRETE CLASS D (BRIDGE).
- DECK AND PIER DIAPHRAGM SHALL BE PLACED MONOLITHICALLY.

KEY NOTES:

- (1) THREADED ROD SHALL BE PLACED IN 7/8" DIA. INSERTS PROVIDED IN GIRDERS. PROVIDE 2 BARS PER GIRDER END AT INTERIOR GIRDERS AND 1 BAR PER GIRDER END AT EXTERIOR GIRDERS, AS SHOWN. FIELD BEND BARS AS NEEDED TO MAINTAIN 2" CLEARANCE. SEE SHEET B19 FOR ADDITIONAL INFORMATION.

Print Date: 5/14/2014	0000
File Name: 18370BRGPierD101.dgn	
Horiz. Scale: As Shown Vert. Scale: As Shown	
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

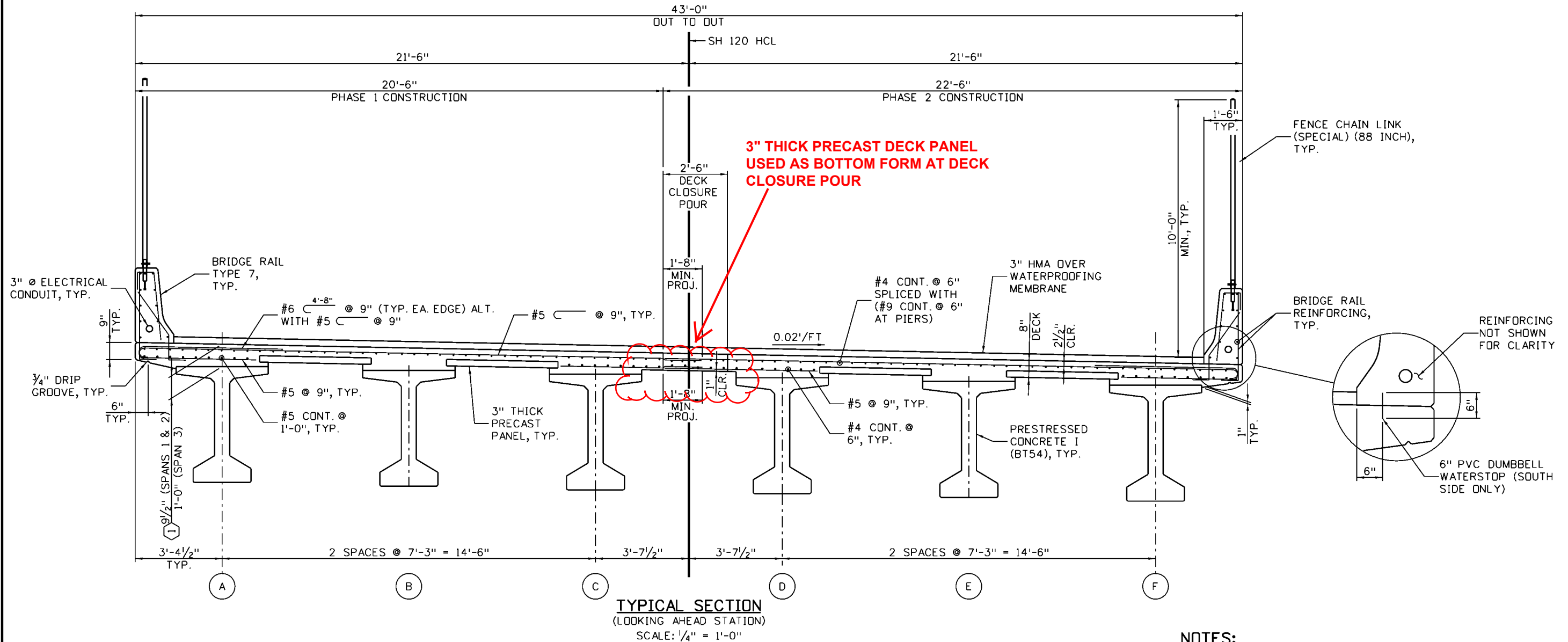
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR PIER DIAPHRAGM		Project No./Code
No Revisions:	6/13/16	Designer: S. ABRAHAM	Structure Numbers	FBR 120A-011
Revised:		Detailer: E. SCHAWD		18370
Void:		Sheet Subset: BRIDGE	Subset Sheets: B16 of 35	Sheet Number 32

S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRGDDeckReinfSec01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	Detailled By	ERS	Quantities By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ



NOTES:

1. CONCRETE FOR DECK SHALL BE CONCRETE CLASS D (BRIDGE).
2. FOR GIRDER DETAILS, SEE SHEET B21.
3. FOR BRIDGE RAIL TYPE 7 DETAILS, SEE SHEETS B22 AND B23.
4. WATERSTOP SHALL BE INCLUDED IN ITEM 601, CONCRETE CLASS D.
5. THE MINIMUM SPLICE LENGTH FOR #5 REINFORCING IS 1'-6\".
6. THE MINIMUM SPLICE LENGTH FOR #4 REINFORCING IS 1'-3\".
7. FOR PRECAST DECK PANEL DETAILS, SEE SHEETS B19 AND B20.

KEYNOTES:

- ① MEASURED ALONG ϕ BEARING.

Print Date: 5/14/2014	
File Name: 18370BRGDDeckReinfSec01.dgn	
Horiz. Scale: AS SHOWN	Vert. Scale: AS SHOWN
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	
902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702	
Region 2	DTD

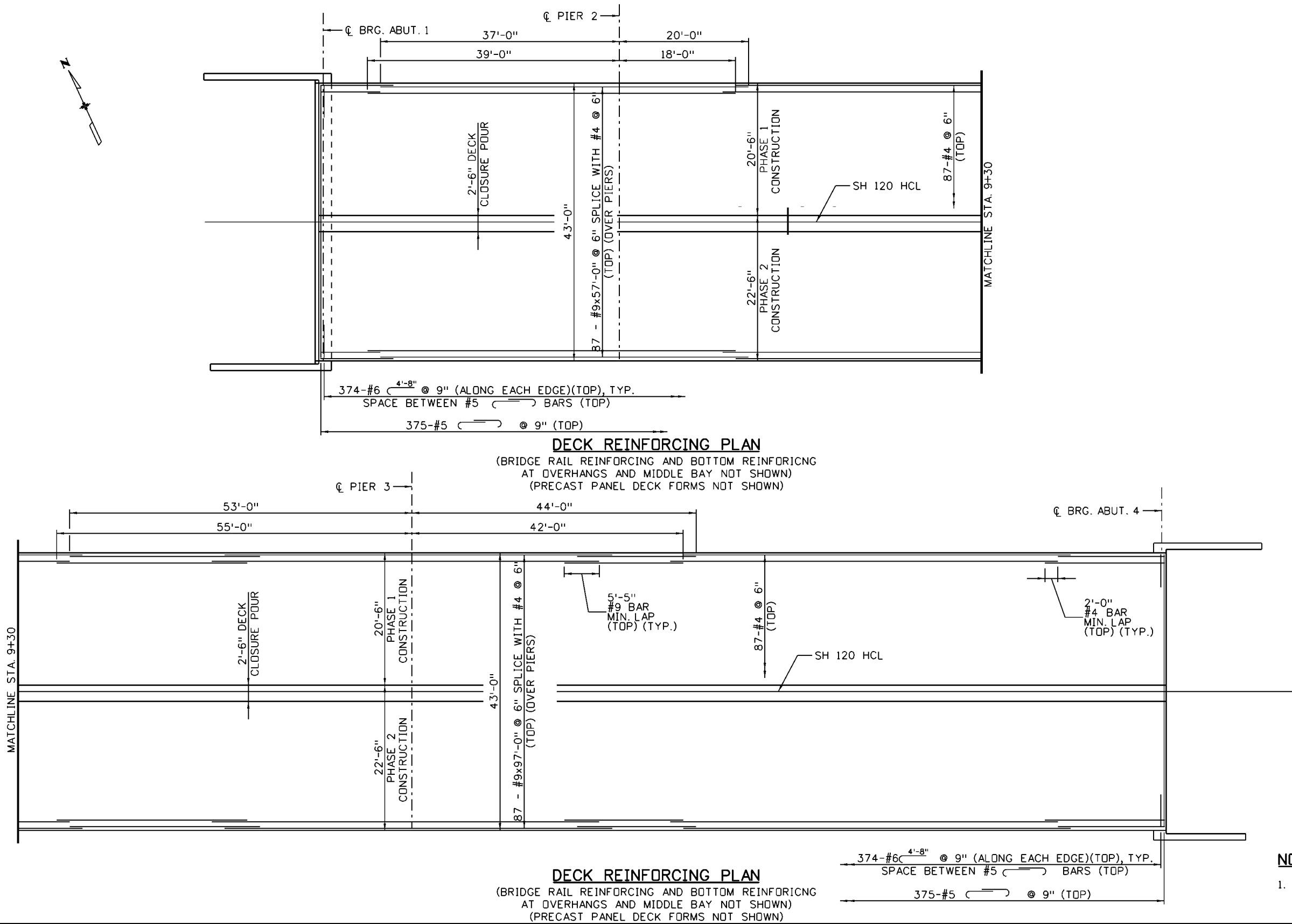
As Constructed
No Revisions:
Revised: 6/13/16
Void:

SH 120 OVER DRAW & UPRR SUPERSTRUCTURE DETAILS			
Designer:	S. ABRAHAM	Structure	K-16-CI
Detailer:	E. SCHAWD	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B17 of 35

Project No./Code
FBR 120A-011
18370
Sheet Number 33

S:\Tranproj\100025698\18370\Consultants\Bridge Drawings\18370BRGDDeckPlan01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	Detailed By	DEW	Quantities By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ

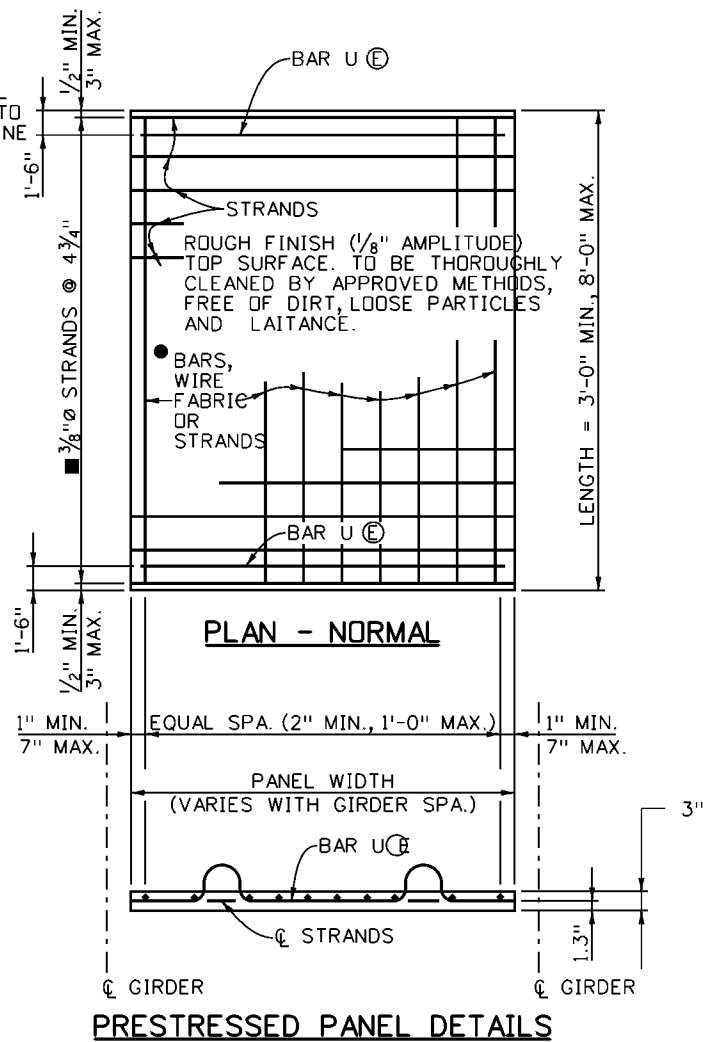
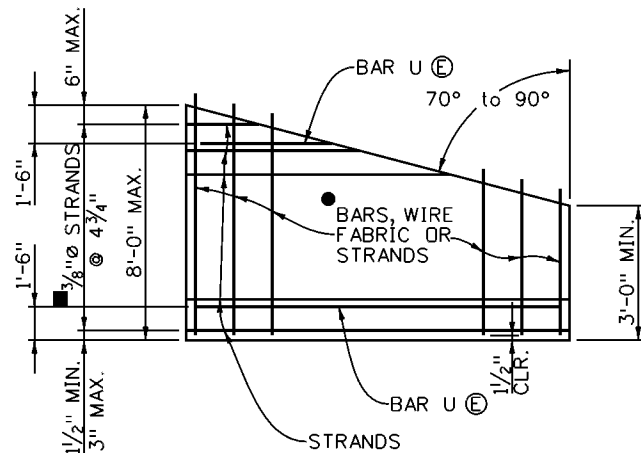
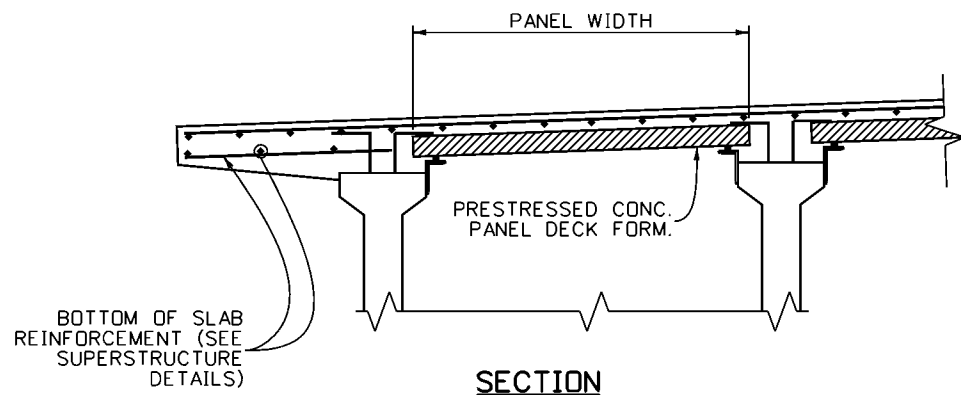
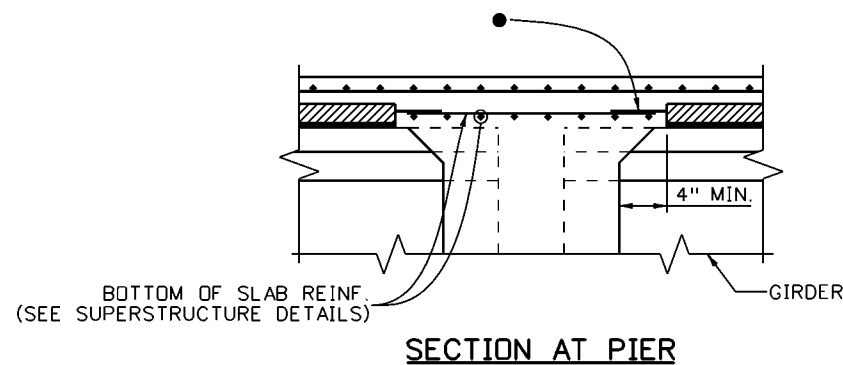
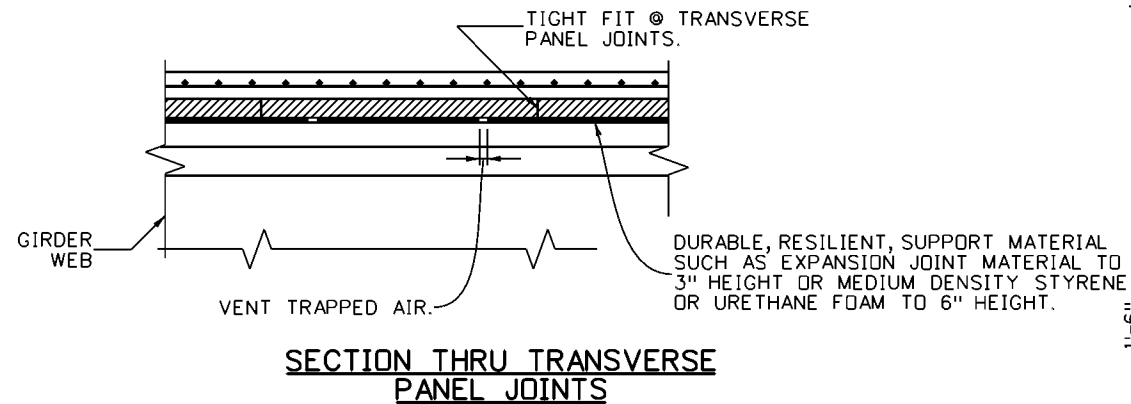
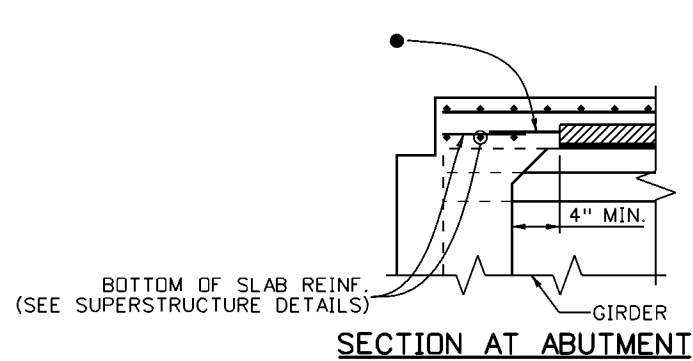


NOTES:
1. STAGGER SPLICES IN ADJACENT LINES.

Print Date: 5/14/2014			Sheet Revisions			Colorado Department of Transportation			As Constructed		SH 120 OVER DRAW & UPRR DECK REINFORCING PLAN			Project No./Code	
File Name: 18370BRGDDeckPlan01.dgn			Date:	Comments	Init.	DOT DEPARTMENT OF TRANSPORTATION 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD			No Revisions: 6/13/16		FBR 120A-011				
Horiz. Scale: 1:16 Vert. Scale: 1:16									Revised:		Designer: S. ABRAHAM Structure Numbers K-16-CI		18370		
Staff Bridge Branch - Unit 0226 DDG									Void:		Detailer: E. SCHAWD Subsets Sheets: B18 of 35		Sheet Number 34		
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276															

S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRGDckPanel01.dgn

Design	Detail	Quantities	
		INITIAL	DATE
Designed By	SA	01-13	01-13
Checked By			
DATE	01-13	DATE	01-13
Detail		Quantity By	Checked By



NOTES:

SAWING OF PANELS IS ACCEPTABLE IN AREAS WHERE PROJECTING REINFORCEMENT IS NOT REQUIRED. IT IS DESIRABLE TO HAVE THE PRESTRESSING STRANDS PROJECT FROM THE PANELS AS LONG AS THE PROJECTING STRANDS DO NOT INTERFERE WITH OTHER BRIDGE COMPONENTS.

● REINFORCING PERPENDICULAR TO STRANDS MAY BE DEFORMED REINF. BARS, WELDED WIRE FABRIC, OR WELDED DEFORMED BAR MATS, AND SHALL BE PLACED DIRECTLY ABOVE THE STRANDS. MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS SHALL BE 0.11 SQ. IN. PER FT. TENSIONED OR UNTENSIONED STRANDS MAY ALSO BE USED. THESE INDIVIDUAL BARS OR WIRES SHALL BE NO LARGER THAN .375" DIAMETER. FOR LOCATION OF LONGITUDINAL BAR EXTENSIONS, SEE SHEET 2 OF 2.

■ MAY BE REDUCED TO 3/8"Ø STRANDS AT 9 1/2" WHEN THE PANEL WIDTH IS LESS THAN 5'-7" AND THE DESIGN SPAN IS LESS THAN 7'-7".

THE LONGITUDINAL REINFORCING STEEL IN THE CAST-IN-PLACE PORTION OF THE DECK MAY REST DIRECTLY ON THE PANELS AS NECESSARY TO OBTAIN CLEARANCES AT THE TOP OF DECK, UNLESS OTHERWISE NOTED.

ⓔ DENOTES EPOXY COATED REINFORCING.

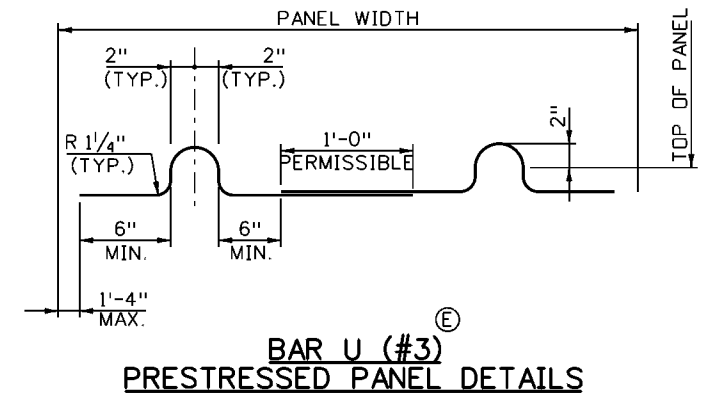
THE TOLERANCE ON STRAND PLACEMENT SHALL NOT EXCEED ±1/4".

THE TOLERANCE ON PANEL THICKNESS SHALL NOT EXCEED ±1/4".

CONCENTRATED CONSTRUCTION LOADS SHALL NOT EXCEED 500 LB UNLESS THE LOAD IS DISTRIBUTED TO LESS THAN 117 PSF.

TOTAL LOADS APPLIED TO ANY PANEL DURING CONSTRUCTION SHALL NOT EXCEED 117 PSF.

BOTTOM FLEXURAL CRACKS, SAGS GREATER THAN .5", OR CAMBERS GREATER THAN .5" WILL BE CONSIDERED EVIDENCE OF MISHANDLING, OVERLOADING, OR EXCEEDING ALLOWABLE TOLERANCES, AND MAY BE CAUSE FOR REJECTING PANELS AT THE ENGINEER'S DISCRETION.



Print Date: 5/14/2014	
File Name: 18370BRGDckPanel01.dgn	
Horiz. Scale: 1:1	Vert. Scale: 1:16
Staff Bridge Branch - Unit 0226	DDG
ATKINS	4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276

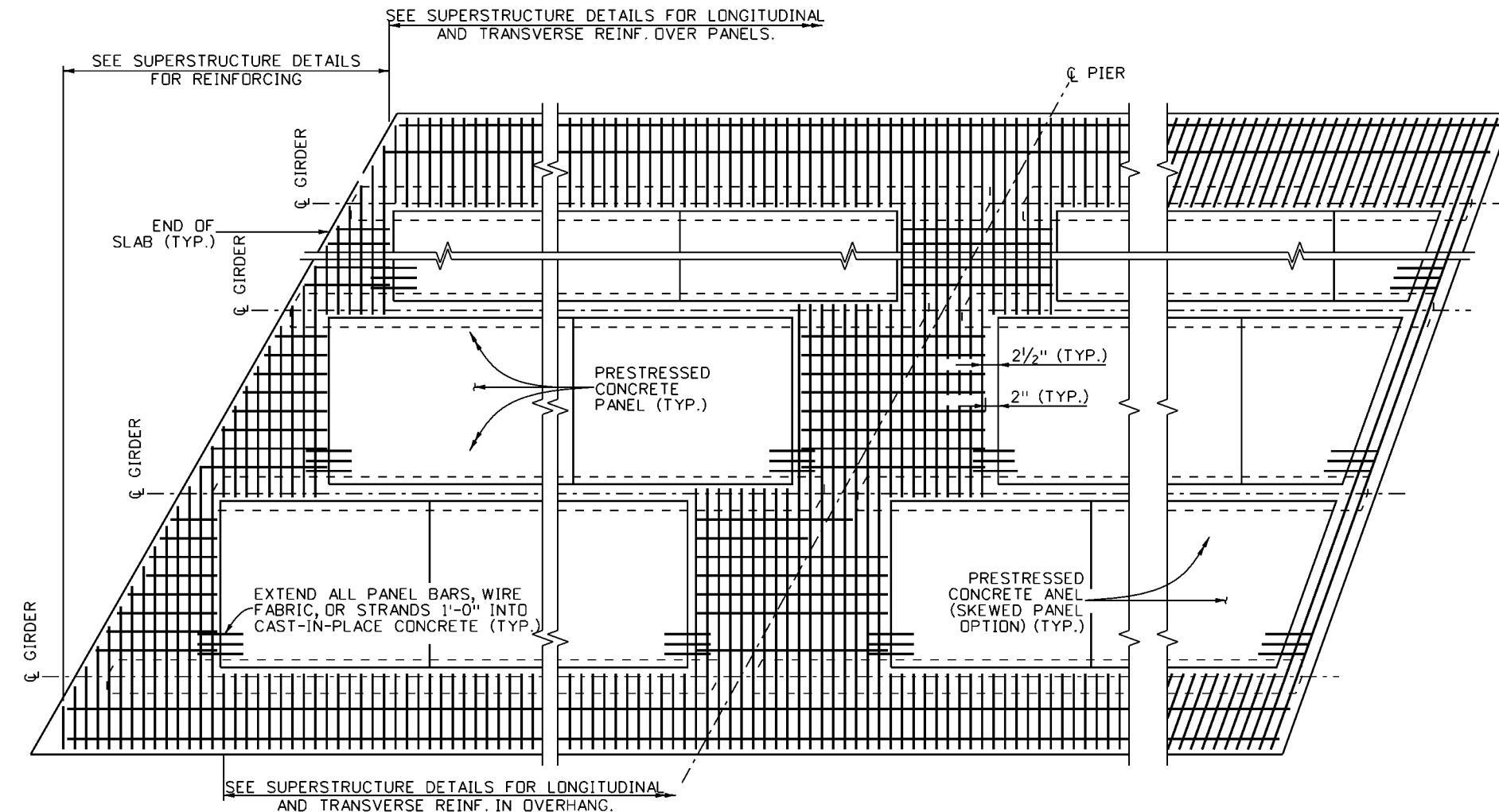
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR PRECAST PANEL DECK FORM (SHEET 1 OF 2)		Project No./Code
No Revisions: 6/13/16		Designer: S. ABRAHAM Detailer: E. SCHAWD		FBR 120A-011
Revised:		Structure Numbers	K-16-CI	18370
Void:		Sheet Subset: BRIDGE	Subset Sheets: B19 of 35	Sheet Number 35

S:\CHAB026 10:17:07 AM S:\Tranproj\100025698\18370\Consultants\Bridges\Drawings\18370BRGDDeckPanel02.dgn

Design		Detail		Quantities	
Designed By	Checked By	INITIAL	DATE	INITIAL	DATE
SA	01-13	ERS	01-13		
Checked By	Checked By				

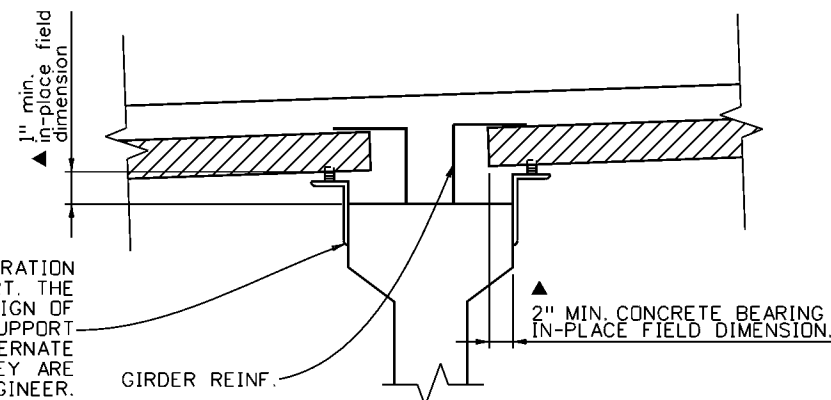


**END OF SLAB
RECTANGULAR PANEL OPTION AND
SKEWS LESS THAN 70°**

RECTANGULAR PANEL OPTION SHALL BE USED FOR SKEWS LESS THAN 70°.

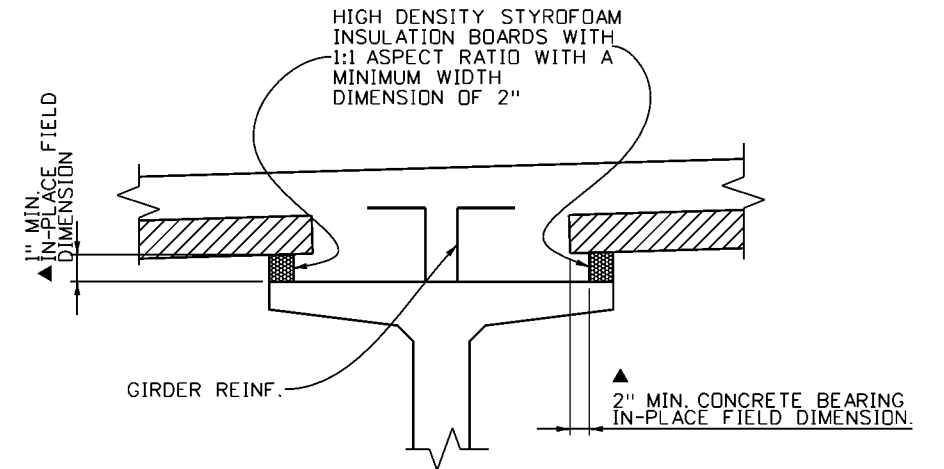
**CONTINUOUS SLAB
OVER PIER
PART PLAN**

**END OF SLAB
SKEWED PANEL OPTION FOR
SKEWS 70° to 90°**



THE ANGLE AND RESILIENT MATERIAL ARE SHOWN FOR ILLUSTRATION AND SHOW ONLY ONE POTENTIAL METHOD OF SUPPORT. THE CONTRACTOR IS RESPONSIBLE FOR THE SELECTION AND DESIGN OF THE PANEL SUPPORT AND ATTACHMENT TO THE GIRDER. SUPPORT DETAILS SHALL BE SHOWN ON THE SHOP PLANS. ALTERNATE METHODS FOR SUPPORT MAY BE USED, PROVIDED THEY ARE SHOWN ON THE SHOP PLANS AND APPROVED BY THE ENGINEER.

SUPPORT DETAIL



ALTERNATE SUPPORT DETAIL

NOTES:

COMPOSITE TOTAL SLAB DESIGNED FOR HL-93 AND CDDT PERMIT VEHICLE.

ALL CONCRETE SHALL BE CLASS PS WITH RELEASE STRENGTH $f_{ci} = 4500$ PSI AND MINIMUM 28 DAY STRENGTH $f_c = 6000$ PSI. ENTRAINED AIR IS NOT REQUIRED FOR PRECAST PANEL DECK FORM CONCRETE. THE STRENGTH SHALL BE AT LEAST 5000 PSI AT THE TIME OF THE DECK POUR.

USE $\frac{3}{8}$ " ϕ LOW RELAXATION STRANDS MEETING THE REQUIREMENTS OF ASTM A416 GRADE 270. JACKING FORCE PER STRAND (F_j) SHALL BE AT LEAST 17.2 KIPS. FINAL FORCE PER STRAND (F_r) IS ESTIMATED TO BE 14.2 KIPS.

INSTALLATION OF BAR U (#3) IS MANDATORY. ALL FOUR BAR U (#3) LOOPS SHALL BE USED SIMULTANEOUSLY FOR LIFTING THE PANELS.

CARE MUST BE TAKEN TO ENSURE PROPER CLEANING OF CONSTRUCTION DEBRIS OFF THE TOPS OF THE PANELS AND CONSOLIDATION OF CONCRETE MORTAR UNDER THE EDGES OF THE PANELS. WATER, DIRT OR OTHER DEBRIS ON TOP OF THE PANELS WILL INHIBIT THE BOND OF THE CAST-IN-PLACE CONCRETE. IT IS ALSO IMPORTANT THAT ADEQUATE SPACE (Δ MIN. 1" X 2") IS PROVIDED FOR THE CONCRETE TO FILL THE SPACE UNDER THE PANEL AS THE SLAB CONCRETE IS PLACED. PANEL LENGTHS AND WIDTH SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP PLANS.

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE PANELS ON THE GIRDERS. ERECTED PANELS SHALL BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE PANEL. THE CONTRACTOR IS RESPONSIBLE FOR MEETING THE TOTAL SLAB THICKNESS SHOWN ON THE SUPERSTRUCTURE DETAILS.

ALL PLANES OF REINFORCING STEEL SHOWN IN THE SUPERSTRUCTURE DETAILS ARE REQUIRED FOR AREAS NOT FORMED WITH PRECAST PANELS.

Print Date: 5/14/2014

File Name: 18370BRGDDeckPanel02.dgn

Horiz. Scale: 1:1 Vert. Scale: 1:16

Staff Bridge Branch - Unit 0226 DDG

ATKINS

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

0000

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions: **6/13/16**

Revised:

Void:

**SH 120 OVER DRAW & UPRR
PRECAST PANEL DECK FORM
(SHEET 2 OF 2)**

Designer:	S. ABRAHAM	Structure	K-16-CI
Detailer:	E. SCHAWD	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B20 of 35

Project No./Code

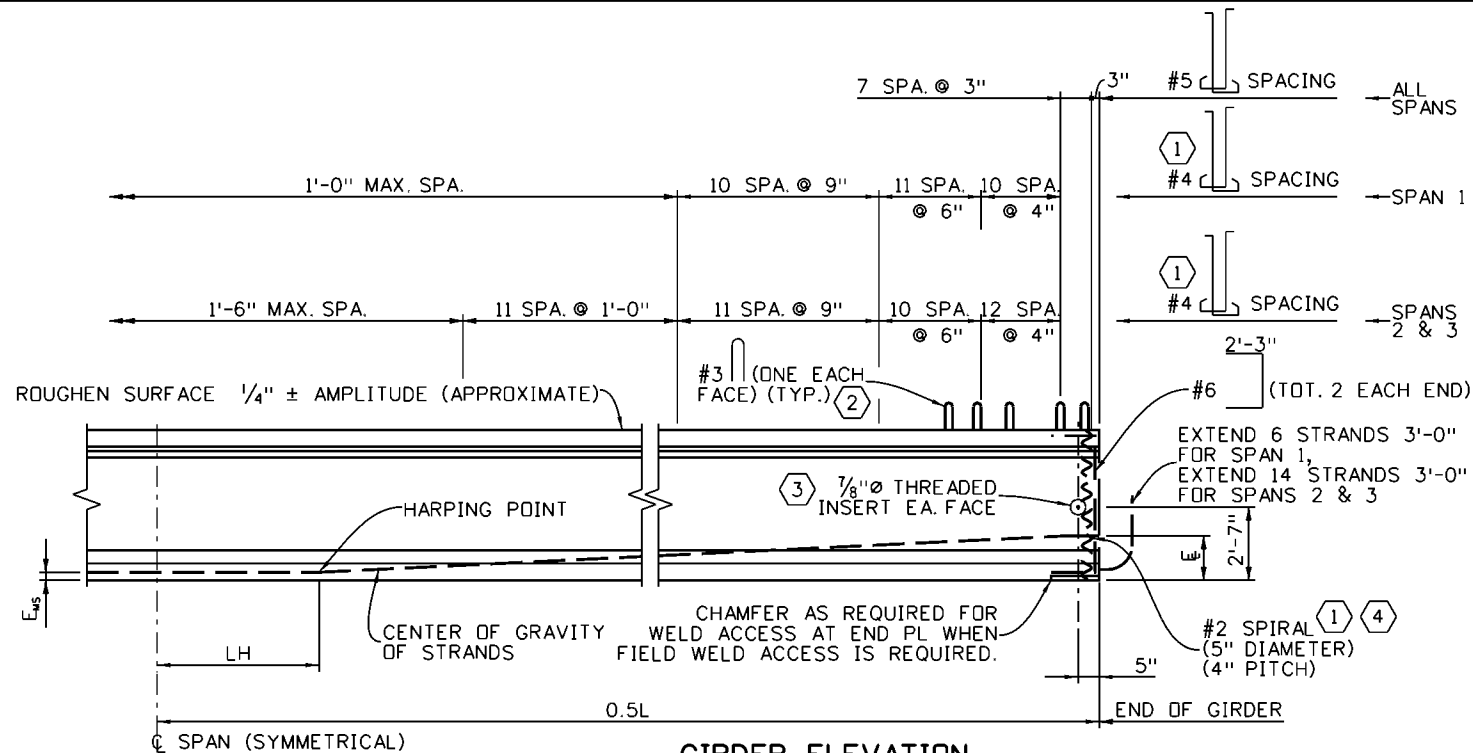
FBR 120A-011

18370

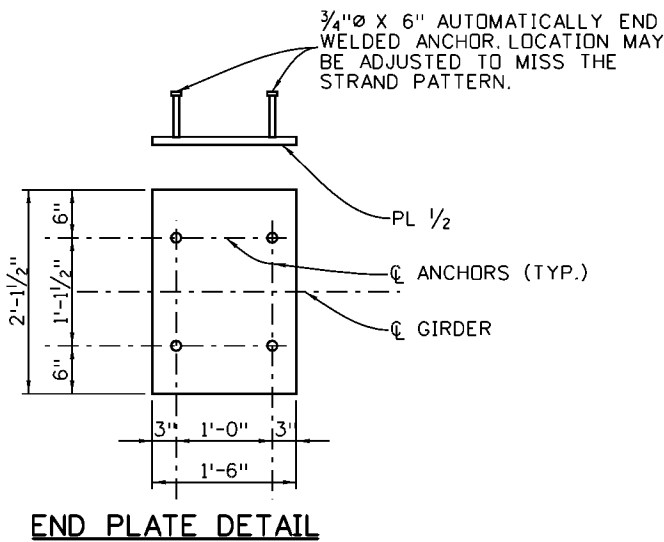
Sheet Number **36**

S:\CHAB026 10:17:11 AM S:\Tranpro\100025698\18370\Consulting\Bridge Drawings\18370BRGB-618-BT01.dgn

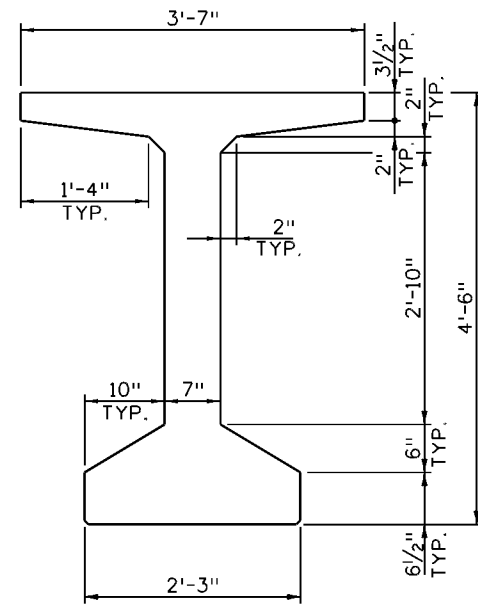
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	11-12	11-12	Quantities By	SA
Checked By	KD	11-12	11-12	Checked By	SA



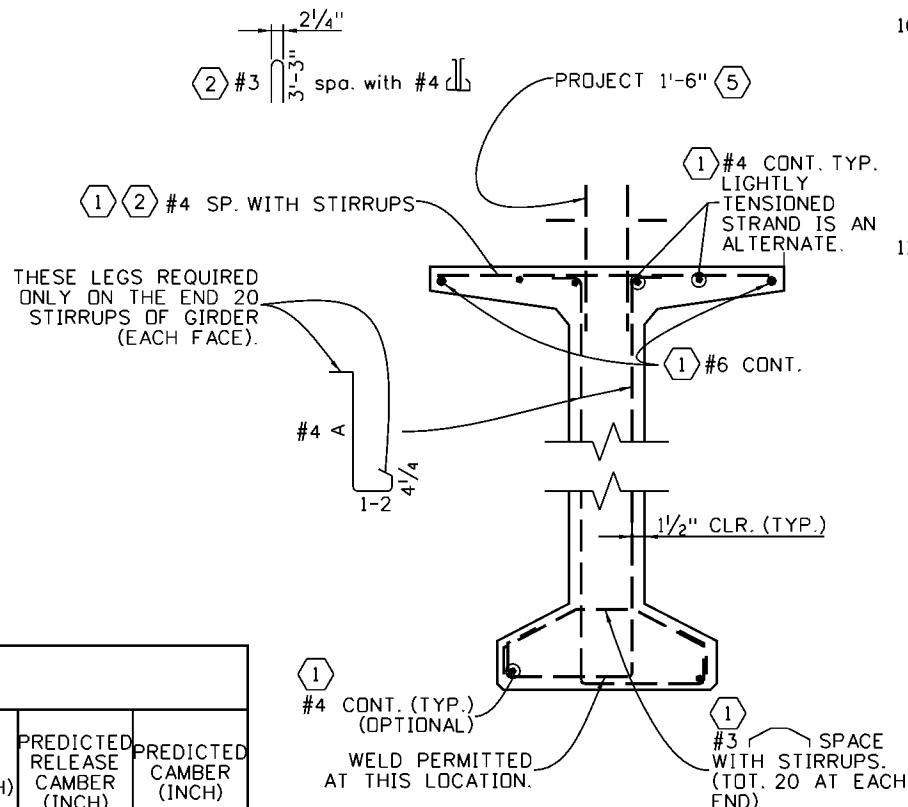
GIRDER ELEVATION



END PLATE DETAIL



TYPICAL GIRDER DIMENSIONS



TYPICAL GIRDER SECTION

NOTES:

- ALL WORK NECESSARY TO FABRICATE AND INSTALL THE INTEGRAL PARTS OF THE GIRDER (INCLUDING INTERMEDIATE DIAPHRAGMS, 7/8"Ø THREADED RODS, AND LEVELING PADS), AS SHOWN ON THE PLANS, SHALL BE INCLUDED IN THE BID PRICE FOR ITEM NO. 618, PRESTRESSED CONCRETE I (BT54), WITH A PAY UNIT OF FEET WHICH SHALL BE MEASURED BY DIMENSION L.
- WHEN APPROVED BY THE ENGINEER, A MINIMUM OF TACK WELDING WILL BE PERMITTED ON ASTM A706 UNCOATED REINFORCING STEEL.
- REINFORCING PROJECTING FROM THE TOP OF THE GIRDER SHALL BE EPOXY COATED. DAMAGED COATING ON GIRDER REINFORCING NEED NOT BE REPAIRED. THE MINIMUM COVER FOR REINFORCING STEEL IS 1".
- AT GIRDER ENDS, CUT STRANDS TO PROJECT 3", EXCEPT AS SHOWN. DO NOT MAKE COSMETIC REPAIRS (DAMAGE LESS THAN 1 1/2" DEEP) TO THE PARTS OF THE GIRDERS EMBEDDED IN CONCRETE.
- USE LOW RELAXATION STRANDS MEETING THE REQUIREMENTS OF ASTM A-416 GRADE 270. THE MINIMUM CLEAR DISTANCE BETWEEN GROUPS OR INDIVIDUAL STRANDS SHALL BE 2.3(d_s) BUT NOT LESS THAN 1 1/4". THE MINIMUM COVER FOR PRESTRESSING STEEL IS 1 1/2".
- A MINIMUM OF TWO HARPING POINTS SHALL BE USED PER GIRDER. HARPED STRANDS SHALL BE WELL DISTRIBUTED AT THE GIRDER ENDS, STARTING WITHIN 4" OF THE TOP OF THE GIRDER AND DISTRIBUTED SUCH THAT THERE IS NO SPACE BETWEEN STRANDS GREATER THAN 1'-0" AT THE END OF THE GIRDER. AS AN ALTERNATE THE CONTRACTOR MAY PLACE #4 (1) X 10'-0" IN THE SIDES OF THE END OF THE WEB PARALLEL TO THE HARPED STRANDS SUCH THAT THERE IS NO SPACE GREATER THAN 1'-0".
- CONCRETE SHALL BE CLASS PS.
- ENTRAINED AIR IS NOT REQUIRED FOR GIRDER CONCRETE.
- USE 1/2" CHAMFER ON ALL CORNERS, EXCEPT AS NOTED.
- PREDICTED CAMBER IS THE CAMBER FOR THE GIRDER ALONE AT 90 DAYS. THE CONTRACTOR SHALL LIMIT THE CAMBER GROWTH TO A VALUE NOT TO EXCEED THE PREDICTED CAMBER PLUS 1" PRIOR TO THE DECK POUR BY WEIGHTING, SCHEDULING FABRICATION, POST TENSIONING, OR OTHER MEANS AND MUST REPORT TO THE ENGINEER VALUES OF CAMBER WHICH EXCEED THE PREDICTED CAMBER PLUS 1". REMEDIAL MEASURES, AS APPROVED BY THE ENGINEER, SHALL BE TAKEN IF THE PREDICTED CAMBER PLUS 1" IS EXCEEDED. THE APPROVED REMEDIAL MEASURES SHALL BE FREE OF ANY ADVERSE IMPACT. THE COSTS ASSOCIATED WITH ALL REMEDIAL MEASURES SHALL BE BORNE BY THE CONTRACTOR.
- GALVANIZE END PLATES AFTER FABRICATION.

ABBREVIATIONS:

A_s = MINIMUM AREA OF THE PRESTRESSING STEEL.
d_s = NOMINAL STRAND DIAMETER.
f_{pu} = ULTIMATE STRENGTH OF PRESTRESSING STEEL.
F_j = JACKING FORCE PER GIRDER.
F_i = FINAL FORCE PER GIRDER AFTER ALL LOSSES.
f_{ci} = REQUIRED CONCRETE STRENGTH AT RELEASE OF PRESTRESS FORCE.
f_c = REQUIRED CONCRETE STRENGTH AT 28 DAYS OF AGE.
L = LENGTH OF GIRDER ALONG THE GRADE OF THE GIRDER.
Δ = DEFLECTION AT CENTERLINE OF SPAN DUE TO CAST-IN-PLACE SLAB, ASPHALT, CURBS, RAILS, AND FENCE.

KEYNOTES:

- D20 WIRES MAY BE USED IN LIEU OF #4.
- SPACE WITH #4 FOR STIRRUP SPACINGS OF 9" OR MORE. SPACE AT 1'-0" FOR STIRRUP SPACINGS LESS THAN 9".
- PROVIDE 2 - 7/8"Ø THREADED INSERTS PER GIRDER FOR 7/8" THREADED RODS EXCEPT AT PIER DIAPHRAGM EXTERIOR GIRDERS. FOR PIER DIAPHRAGM DETAILS SEE SHEET B16.
- THE CONTRACTOR MAY SUBMIT AN ALTERNATE CROSS TIE ARRANGEMENT, AT THE END OF THE WEB, FOR APPROVAL BY THE ENGINEER.
- FIELD BEND OVER TOP MAT OF LONGITUDINAL DECK REINFORCING, TYP. MAINTAIN 2 1/2" COVER.

GIRDER SCHEDULE

GIRDER TYPE	SPAN NO.	GIRDER NO.	L (FEET)	LH (FEET)	A _s (SQUARE INCH)	E _{MS} (INCH)	E _E (INCH)	F _j (KIPS)	F _i (KIPS)	CONCRETE STRENGTH		Δ (INCH)	PREDICTED RELEASE CAMBER (INCH)	PREDICTED CAMBER (INCH)
										f _{ci} (PSI)	f _c (PSI)			
BT54	1	A - F	45.67	-	2.17	3.20	3.20	439.4	396.5	6500	8500	0.05	0.21	0.38
BT54	2 & 3	A - F	115.92	5.79	7.38	3.88	10.94	1494.0	1274.5	6500	8500	1.90	2.75	4.85

Print Date: 5/14/2014

File Name: 18370BRGB-618-BT01.dgn

Horiz. Scale: NONE

Vert. Scale: NONE

Staff Bridge Branch - Unit 0226

DDG

ATKINS

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

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation



Region 2

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

DTD

As Constructed

No Revisions: 6/13/16

Revised:

Void:

SH 120 OVER DRAW & UPRR
PRESTRESSED CONCRETE I

Designer: S. ABRAHAM

Detailer: D. WHITAKER

Sheet Subset: BRIDGE

Structure K-16-CI

Numbers

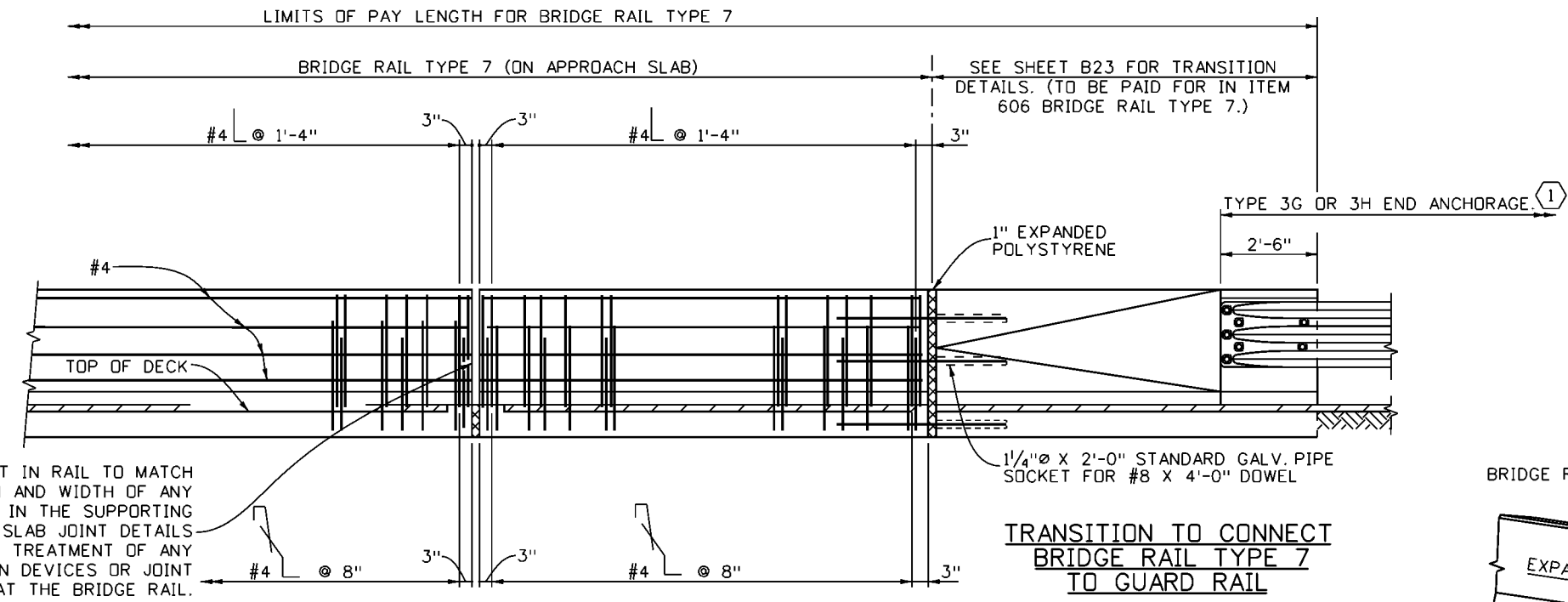
Subset Sheets: B21 of 35

Project No./Code

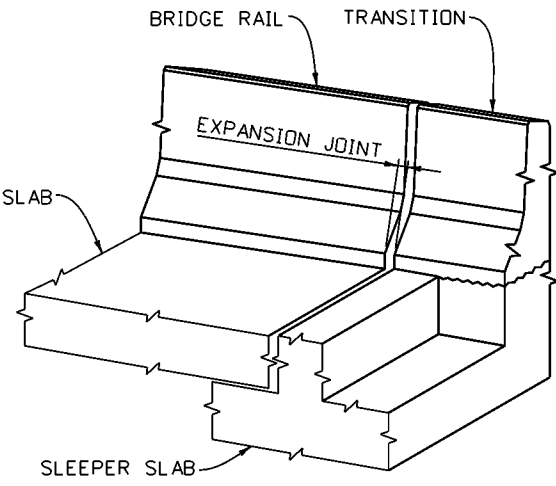
FBR 120A-011

18370

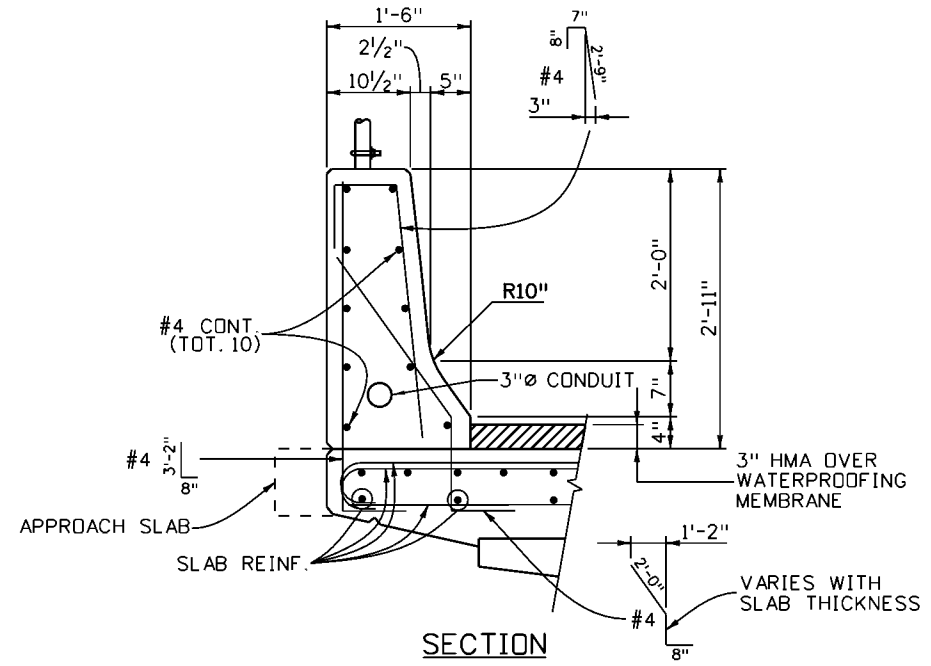
Sheet Number 37



ELEVATION



ISOMETRIC VIEW



SECTION

NOTES:

- BACKFILL WINGWALLS AND RETAINING WALLS BEFORE BARRIER IS PLACED.
- ALL BRIDGE RAIL CONCRETE SHALL BE CLASS D.
- LONGITUDINAL REINFORCEMENT SHALL STOP AT ALL EXPANSION JOINTS.
- BRIDGE RAIL SHALL BE CONSTRUCTED PLUMB.
- SEE STD. M-606-1 AND M-606-13 FOR GUARD RAIL TYPE 3 DETAILS AND DETAILS OF TRANSITION.
- CONCRETE AND REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 601 AND 602. PAYMENT WILL BE MADE UNDER ITEM 606, BRIDGE RAIL TYPE 7.
- THE SURFACE OF THE RAIL SHALL BE TESTED WITH A 10 FOOT STRAIGHT EDGE LAID ALONG THE SURFACE IN THE LONGITUDINAL DIRECTION. DEVIATION OF THE CONCRETE SURFACE FROM THE STRAIGHT EDGE SHALL BE LESS THAN 1/4" PLUS ALLOWANCE FOR ROADWAY HORIZONTAL AND VERTICAL CURVATURE, IF ANY.

DESIGN DATA

REINFORCED CONCRETE:
CLASS D CONCRETE: f_c = 4,500 psi
REINFORCING STEEL: f_y = 60,000 psi

KEYNOTES:

1 FOR GUARDRAIL TRANSITION DETAILS, SEE STD. PLAN NO. M-606-1. SEE ROADWAY PLANS FOR TRANSITION TYPE AND LOCATION.

INFORMATION ONLY

DESCRIPTION	UNIT	PER LIN. FT.
CONCRETE CLASS D	CU. YD.	0.12
REINFORCING STEEL (EPOXY)	LB.	16.2

Design	Detail	Quantities	INITIAL	DATE
Designed By	Checked By	Quantity By	Checked By	Checked By
INITIAL	DATE	INITIAL	DATE	INITIAL
WM	05-13	ERS	05-13	

Print Date: 5/14/2014

File Name: 18370BRGRail01.dgn

Horiz. Scale: NONE Vert. Scale: NONE

Staff Bridge Branch - Unit 0226 DDG

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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

 902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

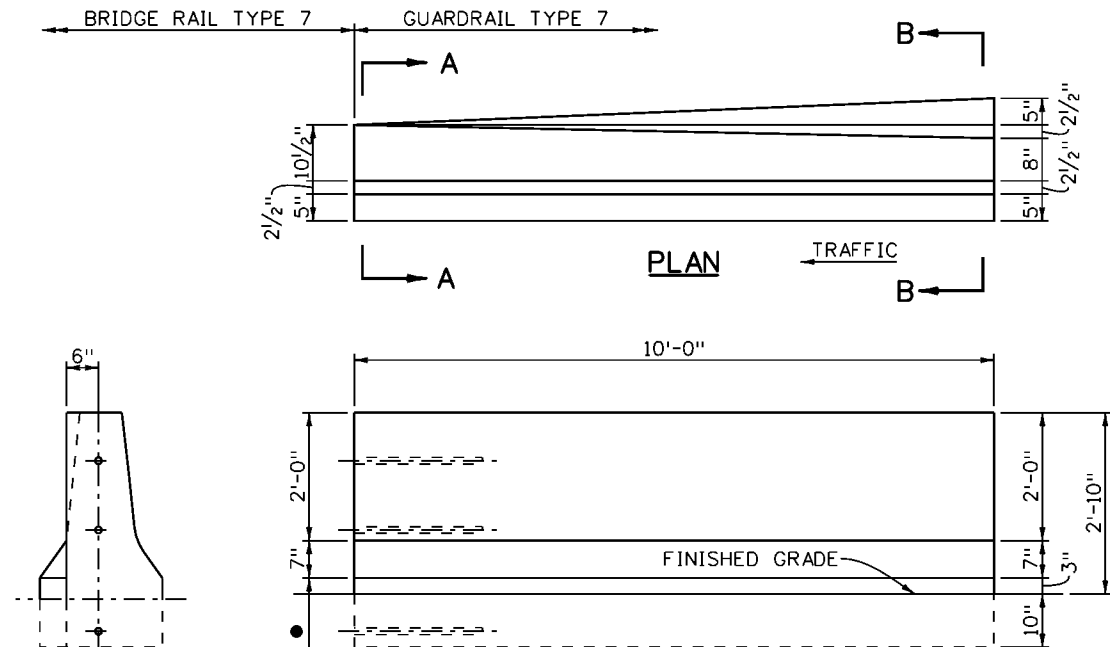
Region 2 DTD

As Constructed
No Revisions: 6/13/16
Revised:
Void:

SH 120 OVER DRAW & UPRR
BRIDGE RAIL TYPE 7
(W/GUARDRAIL TYPE 3)

Designer: W. MOY Structure: K-16-CI
Detailer: E. SCHAWD Numbers:
Sheet Subset: BRIDGE Subset Sheets: B22 of 35

Project No./Code
FBR 120A-011
18370
Sheet Number 38

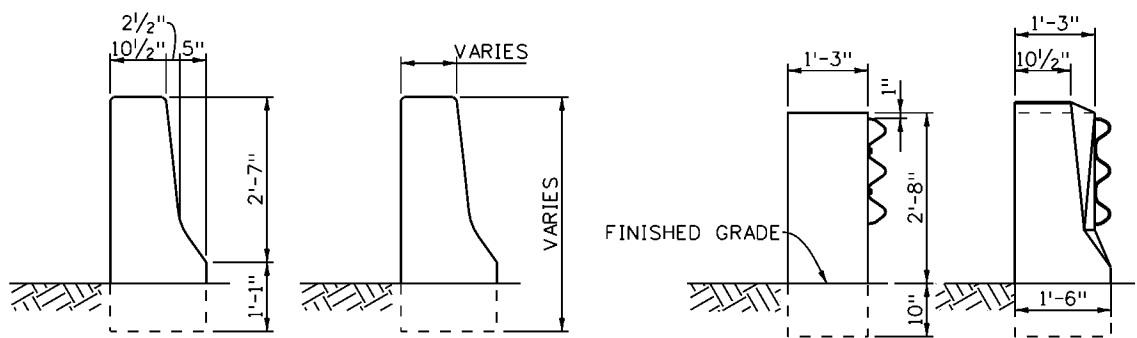


END ● MATCH BRIDGE RAIL. 1" WHEN BRIDGE DECK HAS 3" OVERLAY, 2" WHEN BRIDGE DECK HAS A 2" SILICA FUME OVERLAY AND 4" WHEN BRIDGE DECK DOES NOT HAVE AN OVERLAY.

ELEVATION

BRIDGE RAIL TYPE 7 TO ROADWAY SHOULDER TYPE 7 END TRANSITION

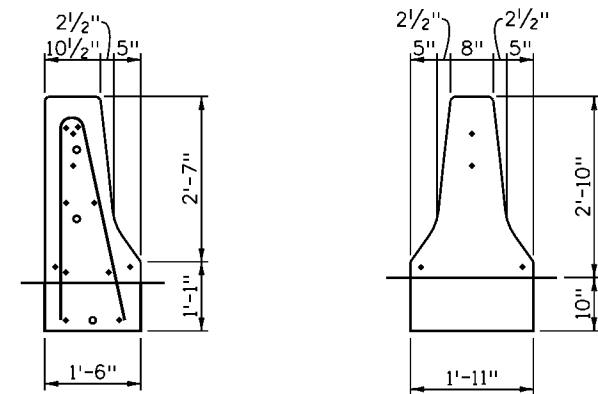
MEASURED AND PAID FOR AS GUARDRAIL TYPE 7. SEE M-606-13 SHEET 2, TRANSITION DETAIL, FOR REINFORCEMENT INFORMATION.



SECTION E-E

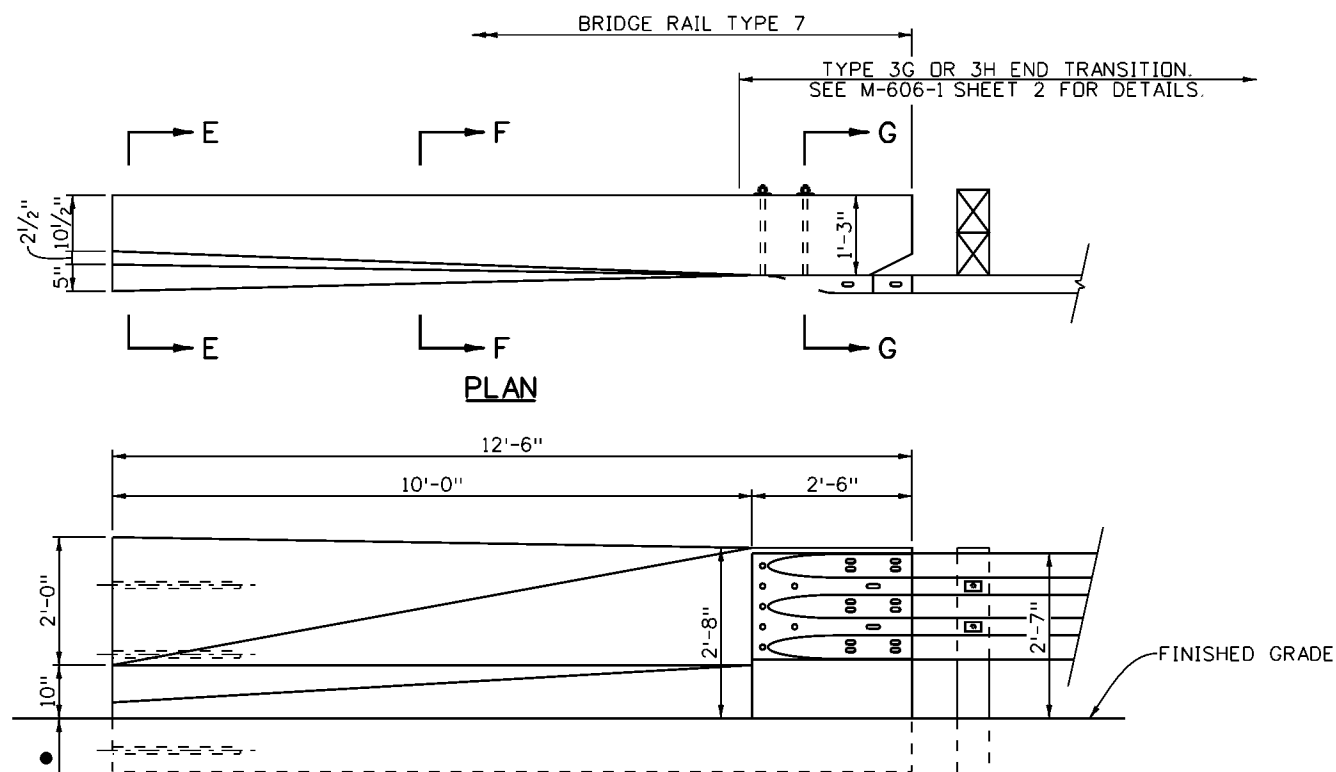
SECTION F-F

SECTION G-G



SECTION A-A

SECTION B-B



● MATCH BRIDGE RAIL. 1" WHEN BRIDGE DECK HAS 3" ASPHALT OVERLAY, 2" WHEN BRIDGE DECK HAS A 2" SILICA FUME OVERLAY AND 4" WHEN BRIDGE DECK DOES NOT HAVE AN OVERLAY.

ELEVATION

BRIDGE RAIL TYPE 7 TO GUARDRAIL TYPE 3 END TRANSITION

Design	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	05-13	WM	Checked By	05-13	ERS
Checked By			Checked By		

Print Date: 5/14/2014	0000
File Name: 18370BRGRail02.dgn	
Horiz. Scale: NONE Vert. Scale: NONE	
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

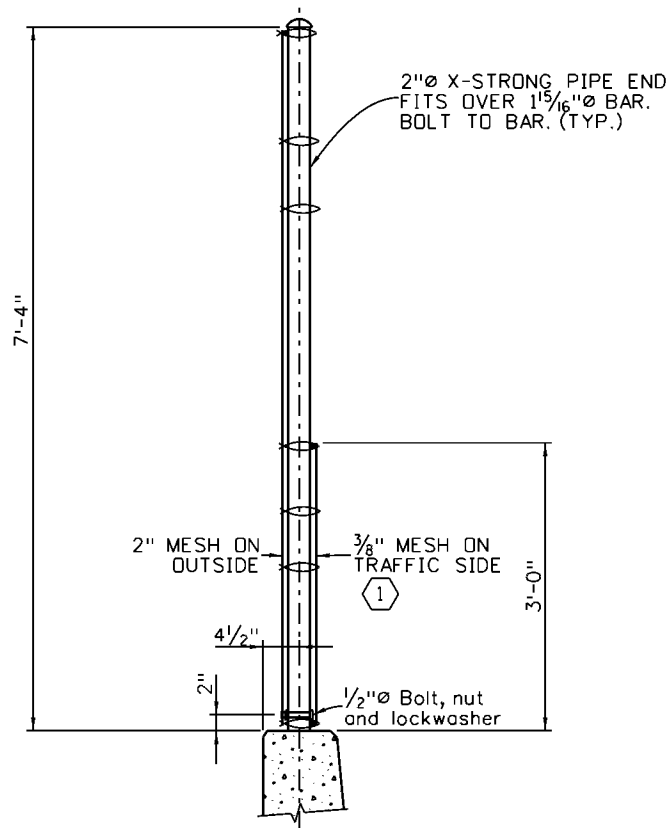
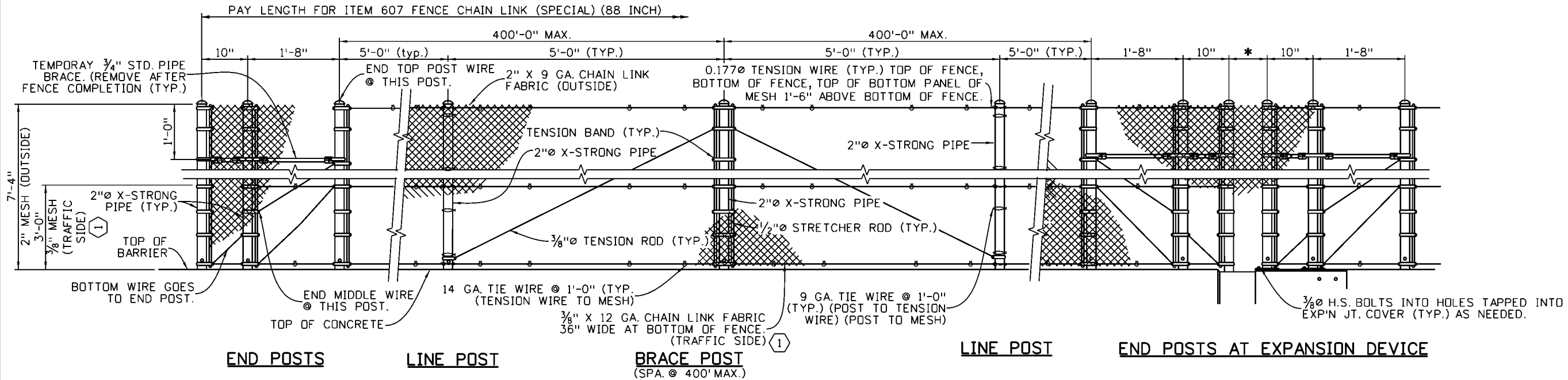
As Constructed
No Revisions: 6/13/16
Revised:
Void:

SH 120 OVER DRAW & UPRR BRIDGE RAIL TYPE 7 GUARDRAIL TRANSITIONS			
Designer:	W. MOY	Structure	K-16-CI
Detailer:	E. SCHAWD	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B23 of 35

Project No./Code
FBR 120A-011
18370
Sheet Number 39

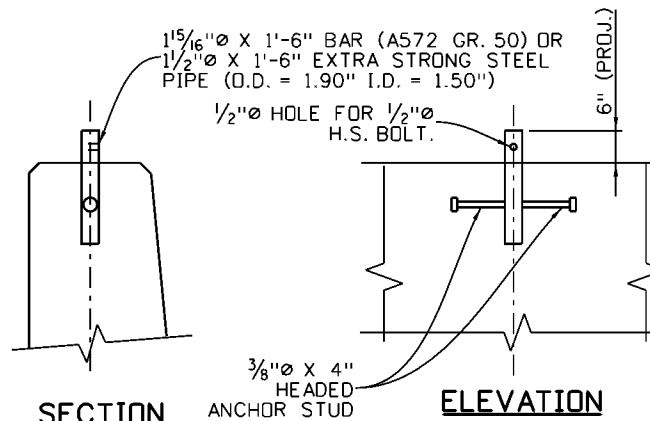
SCHAB026 10:17:24 AM \\den1s06\Trans\Tranproj\100025698\18370_Consultants\Bridge Drawings\18370BRGChainLkSpc01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Desiged By	WM	Detaild By	ERS	Quantities By	
Checked By		Checked By		Checked By	



TYPICAL SECTION

- * FOR STEEL BRIDGES:
USE $\frac{7}{16}$ OF RATED JOINT MOTION +6", 8" MIN. IF NOT KNOWN, RATED MOTION MAY BE ASSUMED TO BE $\frac{1}{4}$ " PER 100' CONTRIBUTING TO MOTION.
- * FOR CONCRETE BRIDGES:
USE $\frac{1}{4}$ OF RATED JOINT MOTION +6", 8" MIN. IF NOT KNOWN, RATED MOTION MAY BE ASSUMED TO BE $\frac{1}{4}$ " PER 100' CONTRIBUTING TO MOTION. IF * EXCEEDS 10" RUN MESH OVER GAP WITH ENOUGH SLACK FOR $\frac{1}{8}$ RATED EXPANSION MOTION.



ANCHORAGE DETAIL

KEYNOTES:

- ① $\frac{3}{8}$ " MESH CHAIN LINK FABRIC IS TO PREVENT DISCHARGE OF PRECIPITATION (SNOW) AND DEBRIS ONTO RAILROAD RIGHT-OF-WAY, DURING ROADWAY CLEARING.

NOTES

ANCHORAGE ASSEMBLY SHALL BE GALVANIZED AFTER FABRICATION. IF VINYL COATING IS SPECIFIED, THE FENCE ASSEMBLY SHALL BE GALVANIZED AND VINYL COATED AFTER FABRICATION. ANCHORAGES SHALL ONLY BE GALVANIZED AFTER FABRICATION.

TENSION RODS AND WIRES SHALL HAVE TURNBUCKLES.

POST SHALL BE VERTICAL.

PIPE SHALL CONFORM TO ASTM A53 TYPE E OR S, GRADE B.

DESIGN DATA

TEST TENSION = 5400 LBS
TEST WITH: MAX MIDBAY DEFLECTION = $\frac{1}{4}$ " FOR LATERAL LOAD OF 160 LBS. ON 1 FT². 1'-6" UP @ CENTER OF BAY.

LIVE LOAD: WIND LOAD = 32 PSF. $\frac{3}{8}$ " MESH
WIND LOAD = 11 PSF. 1" MESH
WIND LOAD = 6 PSF. 2" MESH
OR SNOW IMPACT LOAD = 96 PLF @ 1'-6" UP

STRUCTURAL STEEL: PIPE f_y = 35,000 PSI
ASTM A572 (GR 50) f_y = 50,000 PSI

STANDARD COLOR VINYL COATINGS OVER GALVANIZED WIRE	MUNSELL COLOR SYSTEM NO. (AS PER ASTM)
GALVANIZED ONLY	NONE
X BROWN	7YR 2.4/1.75
GREEN	8.8G 2.63/5.8
BLACK	1.8PB 1.26/0.5

SPECIAL COLOR VINYL COATINGS OVER GALVANIZED WIRE	FEDERAL COLOR NO. / MUNSELL COLOR SYSTEM NO.

IF THE SPECIFIC COLOR OF COATING IS NOT MARKED AND THE FEDERAL COLOR NO. OR THE MUNSELL COLOR SYSTEM NO. IS NOT GIVEN, VINYL COATING IS NOT REQUIRED.

Print Date: 5/14/2014	
File Name: 18370BRGChainLkSpc01.dgn	
Horiz. Scale: NONE	Vert. Scale: NONE
Staff Bridge Branch - Unit 0226	DDG
ATKINS	4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

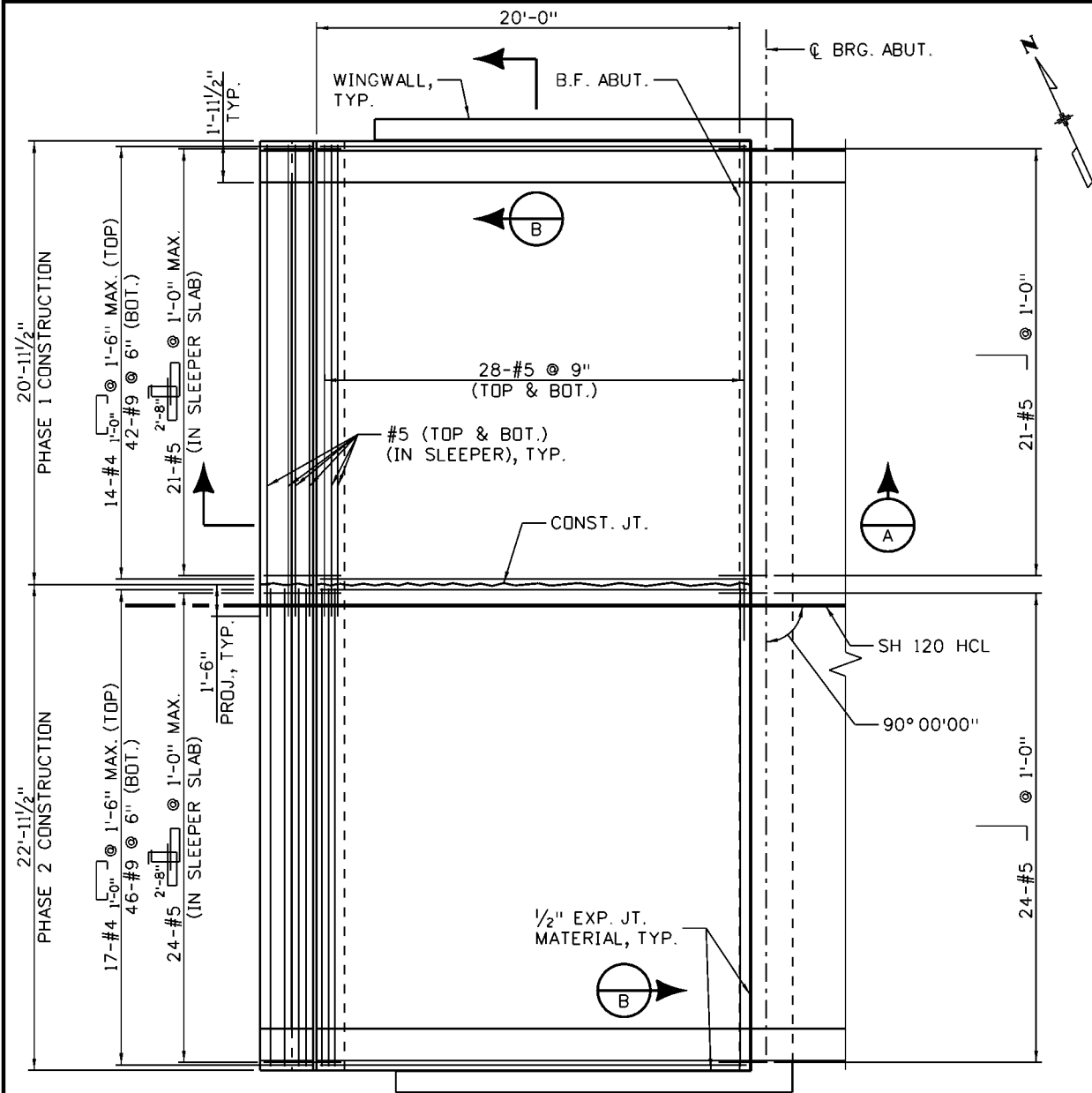
As Constructed
No Revisions: 6/13/16
Revised:
Void:

SH 120 OVER DRAW & UPRR FENCE CHAIN LINK (SPECIAL) (88 INCH)			
Designer:	W. MOY	Structure	K-16-CI
Detailer:	E. SCHAWD	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B24 of 35

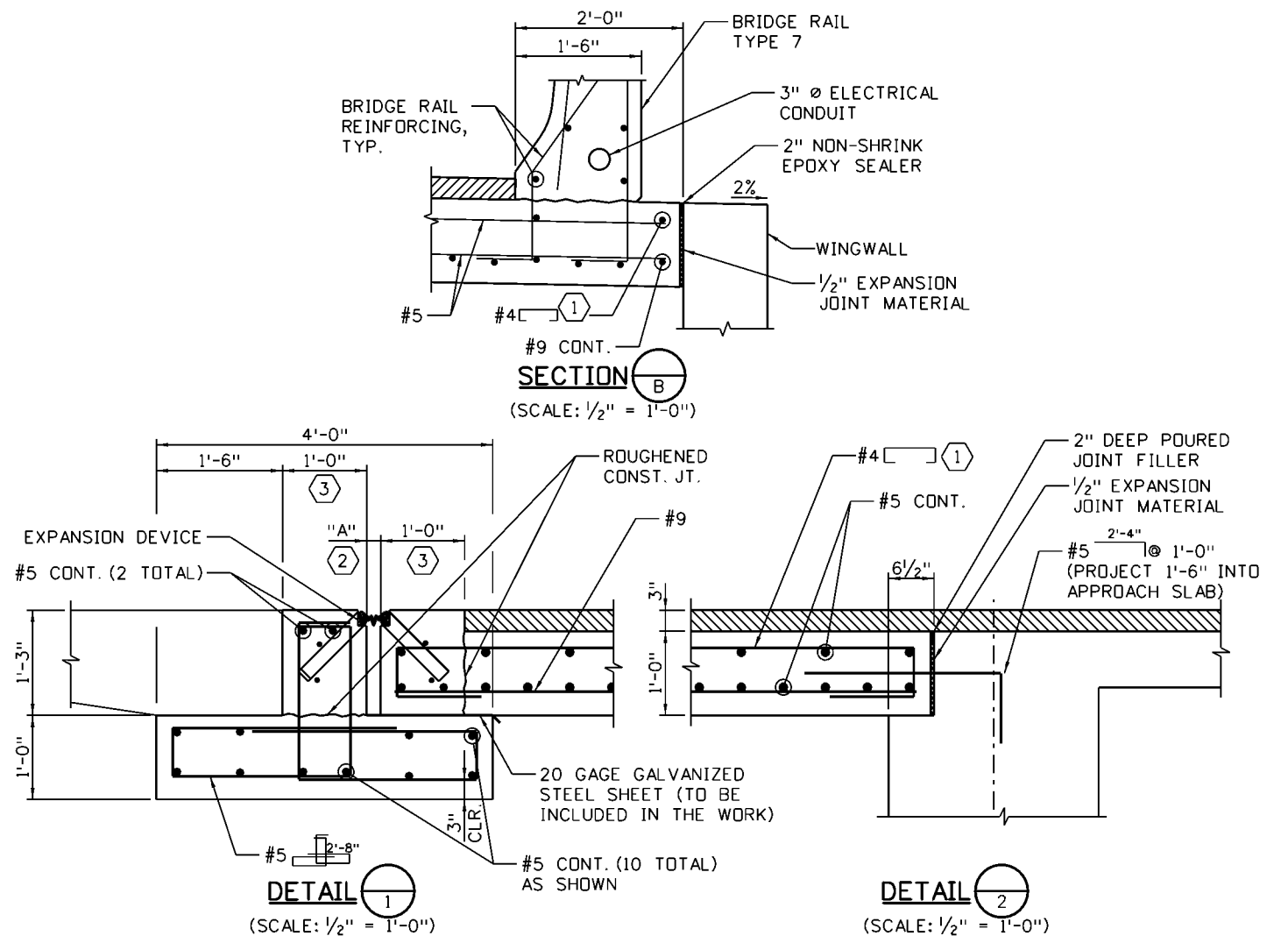
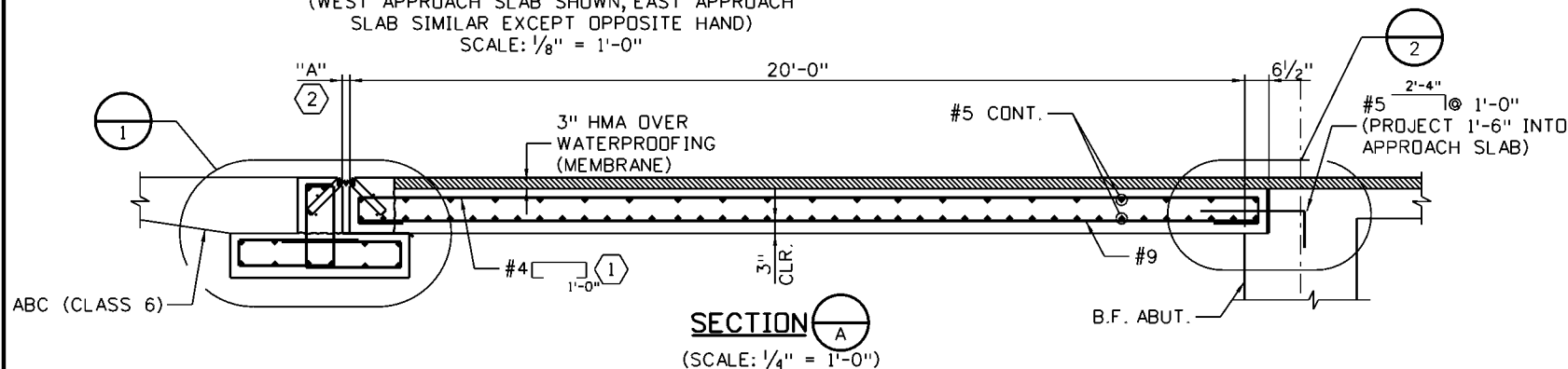
Project No./Code
FBR 120A-011
18370
Sheet Number 40

S:\Transproj\100025698\18370\Consultants\Bridges\Drawings\18370BRGAppSlab01.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Desiged By	SA	ERS	02-12	Quantities By	SA
Checked By	KTZ	KTZ	12-12	Checked By	KTZ



PLAN
(WEST APPROACH SLAB SHOWN, EAST APPROACH
SLAB SIMILAR EXCEPT OPPOSITE HAND)
SCALE: 1/8" = 1'-0"



NOTES:

1. CONCRETE SHALL BE CONCRETE CLASS D (BRIDGE).
2. APPROACH SLAB CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATIONS FOR BRIDGE DECK CONCRETE IN SUBSECTION 601.
3. 1/2" EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPEC. M213.
4. FOR EXPANSION DEVICE DETAILS, SEE SHEETS B26 & B27.
5. FOR CURB AND BRIDGE RAIL DETAILS, SEE SHEETS B22 & B23.
6. JOINT FILLER, DRILLING AND GROUTING, AND EXPANSION JOINT MATERIAL SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM 601, CONCRETE CLASS D (BRIDGE).
7. EARTH SHALL BE COMPACTED PROPERLY BEFORE APPROACH SLAB IS POURED. STRUCTURAL BACKFILL (FLOW FILL) SHALL BE USED AS REQUIRED.

KEYNOTES:

1. CONTRACTOR MAY REPLACE WITH [] 1'-0".
2. FOR DIMENSION "A", SEE SHEET. B26.
3. CONCRETE SURROUNDING EXPANSION DEVICE SHALL BE PLACED AFTER EXPANSION DEVICE HAS BEEN ADJUSTED TO PROPER GRADE AND ACCEPTED BY THE ENGINEER.

Print Date: 5/14/2014	
File Name: 18370BRGAppSlab01.dgn	
Horiz. Scale: AS NOTED	Vert. Scale: AS NOTED
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

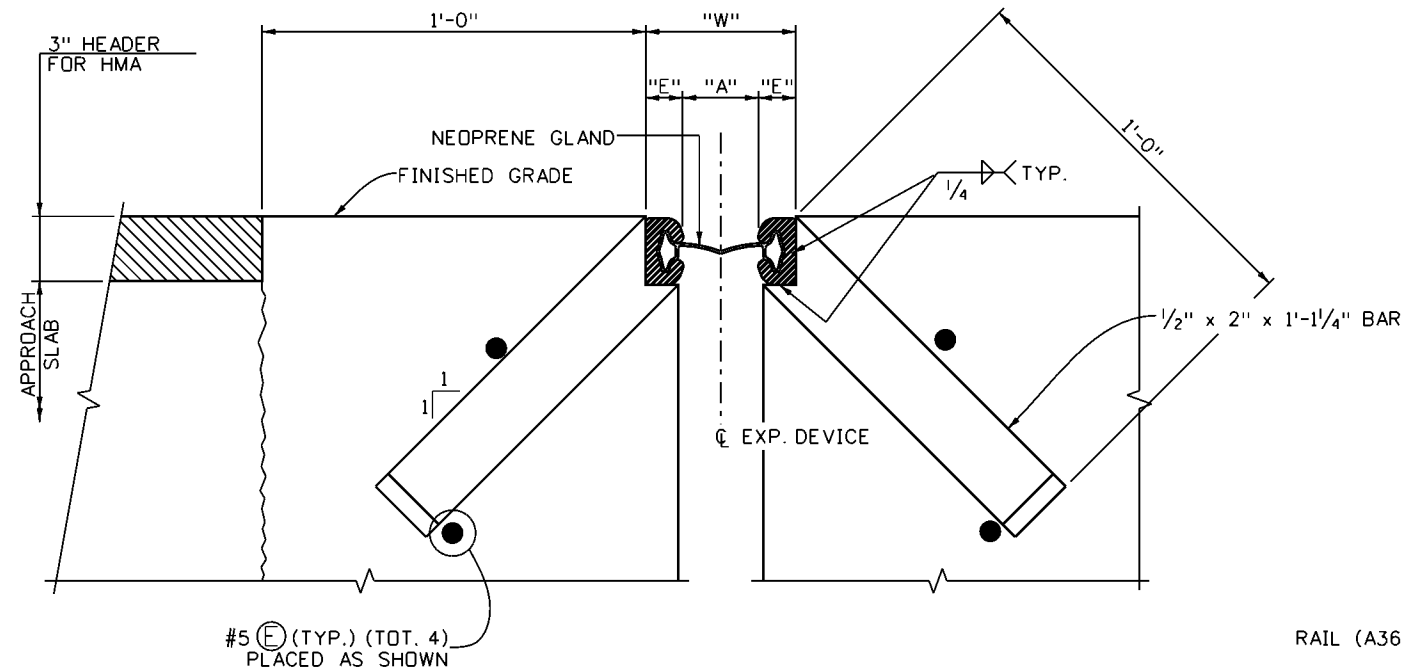
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR APPROACH SLAB		Project No./Code
No Revisions: 6/13/16		Designer: S. ABRAHAM Detailer: E. SCHAWD		FBR 120A-011
Revised:		Structure Numbers: K-16-CI		18370
Void:		Sheet Subset: BRIDGE Subset Sheets: B25 of 35		Sheet Number 41

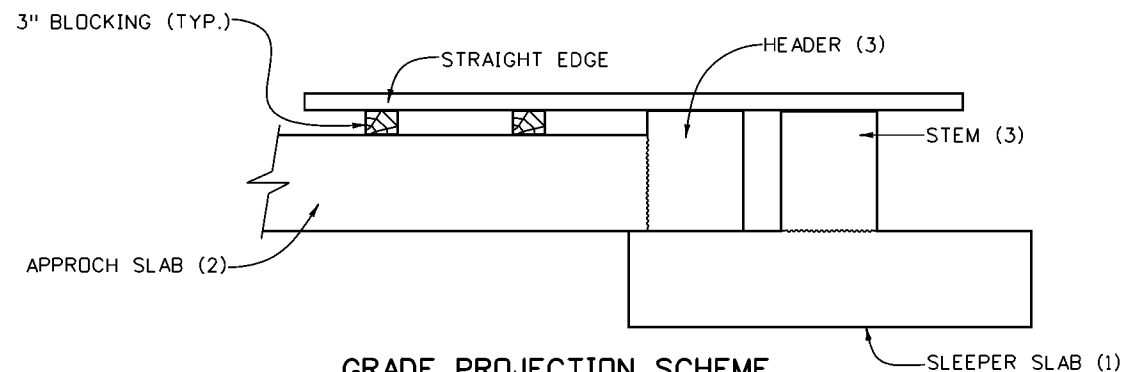
S:\CHAB026 10:17:36 AM S:\Tranpro\100025698\18370-Consultants\Bridge Drawings\18370BRGExpDev01.dgn

Design	Detail	Quantities			
		INITIAL	DATE	INITIAL	DATE
Designed By	SA	KTZ	11-12	Checked By	KTZ
Checked By	KTZ	11-12	12-12	Checked By	KTZ
Checked By	KTZ	11-12	12-12	Checked By	KTZ



SECTION THRU BRIDGE EXPANSION DEVICE

SECTION TAKEN PERPENDICULAR TO ϕ EXP. DEVICE

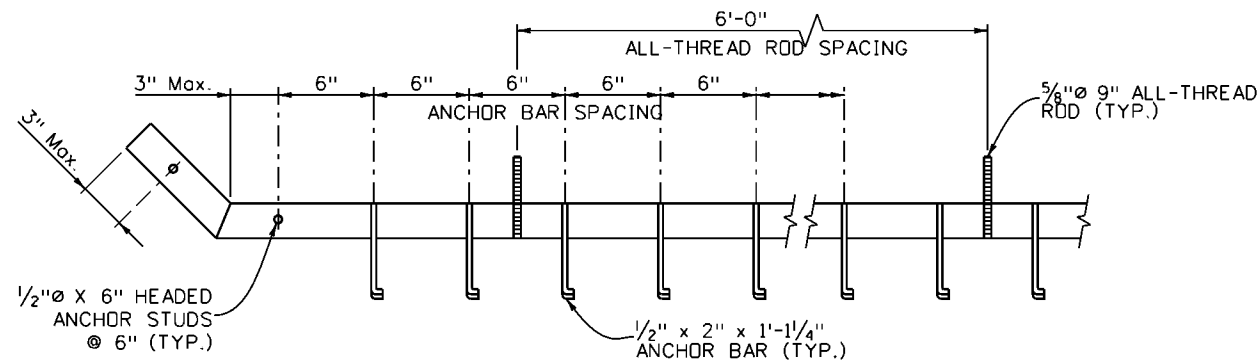


GRADE PROJECTION SCHEME

(NUMBERS IN PARENTHESIS REFER TO FIRST, SECOND AND THIRD CONCRETE POURS)

STR. TEMP	"A"	"W" *
20° F	2 5/16"	4 3/4"
30° F	2 3/16"	4 3/4"
40° F	2 1/8"	4 1/2"
50° F	2"	4 1/2"
60° F	1 7/8"	4 1/2"
70° F	1 5/8"	4 1/4"
80° F	1 1/16"	4 1/4"
90° F	1 5/16"	4"
100° F	1 1/2"	4"

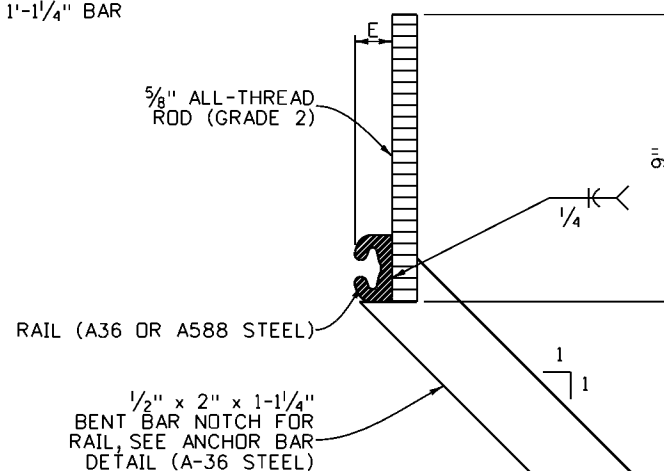
* FOR E = 1 1/4" (MIN.)



ANCHOR BAR SPACING

WELDING NOT ALLOWED IN INTERIOR OF RAIL THAT CONTACTS RUBBER GLAND

RAIL FIELD SPLICE DETAIL



ANCHORAGE DETAIL

NOTES:

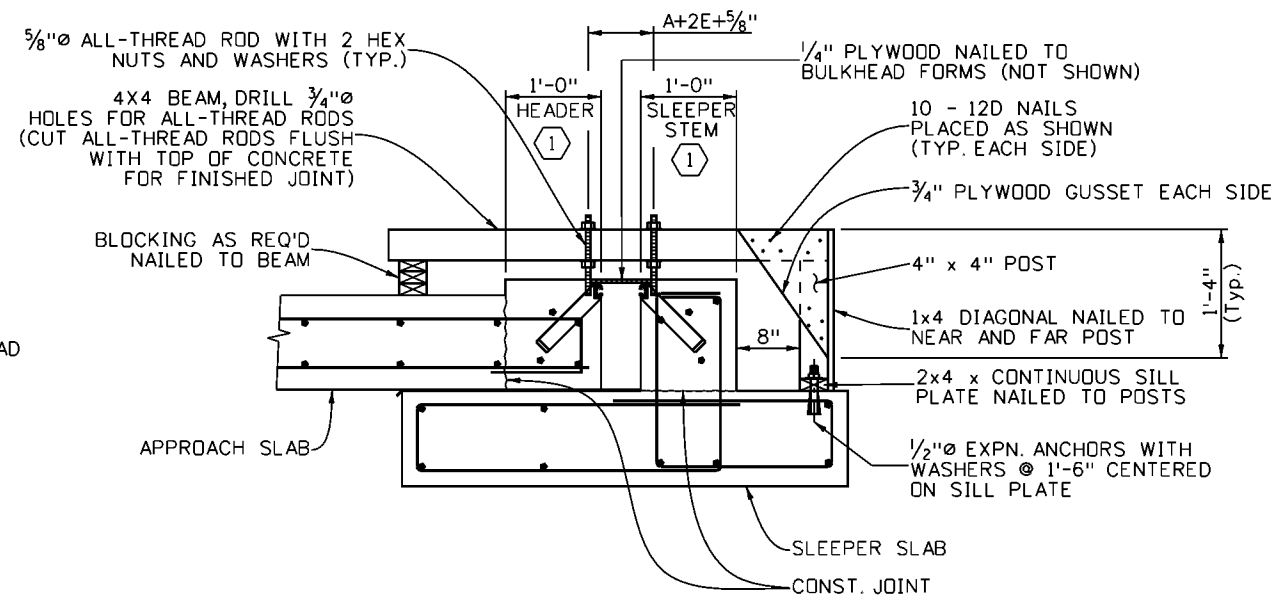
1. THE EXPANSION DEVICE SHALL BE INSTALLED ON GRADE, PARALLEL TO THE SLOPE AND GRADE OF THE DECK.
2. AFTER THE CONCRETE HAS ATTAINED INITIAL SET, THE ATTACHMENTS USED TO HOLD THE EXPANSION DEVICE ASSEMBLY IN ITS PROPER POSITION SHALL BE REMOVED.
3. DO NOT PAINT STEEL SURFACES IN CONTACT WITH EITHER CONCRETE OR SEAL.
4. "W" AND "E" DIMENSIONS ARE DEPENDENT UPON THE PARTICULAR EXPANSION DEVICE SUPPLIED, AND SHALL BE SHOWN ON THE WORKING DRAWINGS. "E" = 1 1/4" MINIMUM.
5. THE NEOPRENE GLAND SHALL BE INSTALLED IN ONE PIECE IN ACCORDANCE WITH SECTION 518 OF THE STANDARD SPECIFICATIONS.
6. SEE SECTION 518 IN THE STANDARD SPECIFICATIONS FOR WATER TIGHT INTEGRITY TESTING REQUIREMENTS.
7. PROVIDE EXPANSION DEVICE SUPPORT AS SHOWN AT 6'-0" INTERVALS.
8. FOR REINFORCING SEE APPROACH SLAB DETAILS.

KEYNOTE:

1. CONCRETE SHALL BE PLACED AFTER EXPANSION DEVICE HAS BEEN ADJUSTED TO PROPER GRADE AND APPROVED BY THE ENGINEER USING THE GRADE PROJECTION SCHEME.

ACCEPTABLE EXPANSION DEVICE ALTERNATES

D.S. BROWN A2R400-SSA2
WABO SE400 TYPE A
E-POXY ENGINEERED MATERIALS S400-A STRIP SEAL



Print Date: 5/14/2014	0000
File Name: 18370BRGExpDev01.dgn	
Horiz. Scale: NONE	Vert. Scale: NONE
Staff Bridge Branch - Unit 0226	DDG
ATKINS	4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR EXPANSION DEVICE (0-4 INCH) (SHEET 1 OF 2)		Project No./Code	
No Revisions:	6/13/16	Designer:	S. ABRAHAM	FBR 120A-011	
Revised:		Detailer:	E. SCHAWD	18370	
Void:		Sheet Subset:	BRIDGE	Subset Sheets:	B26 of 35
				Sheet Number	42

S:\Transportation\100025698\18370\Consultants\Bridges\Drawings\18370BRGExpDev02.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Desig'd By	WM	Detail'd By	ERS	Quantities By	
Checked By		Checked By		Checked By	

Print Date: 5/14/2014	
File Name: 18370BRGExpDev02.dgn	
Horiz. Scale: NONE	Vert. Scale: NONE
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	



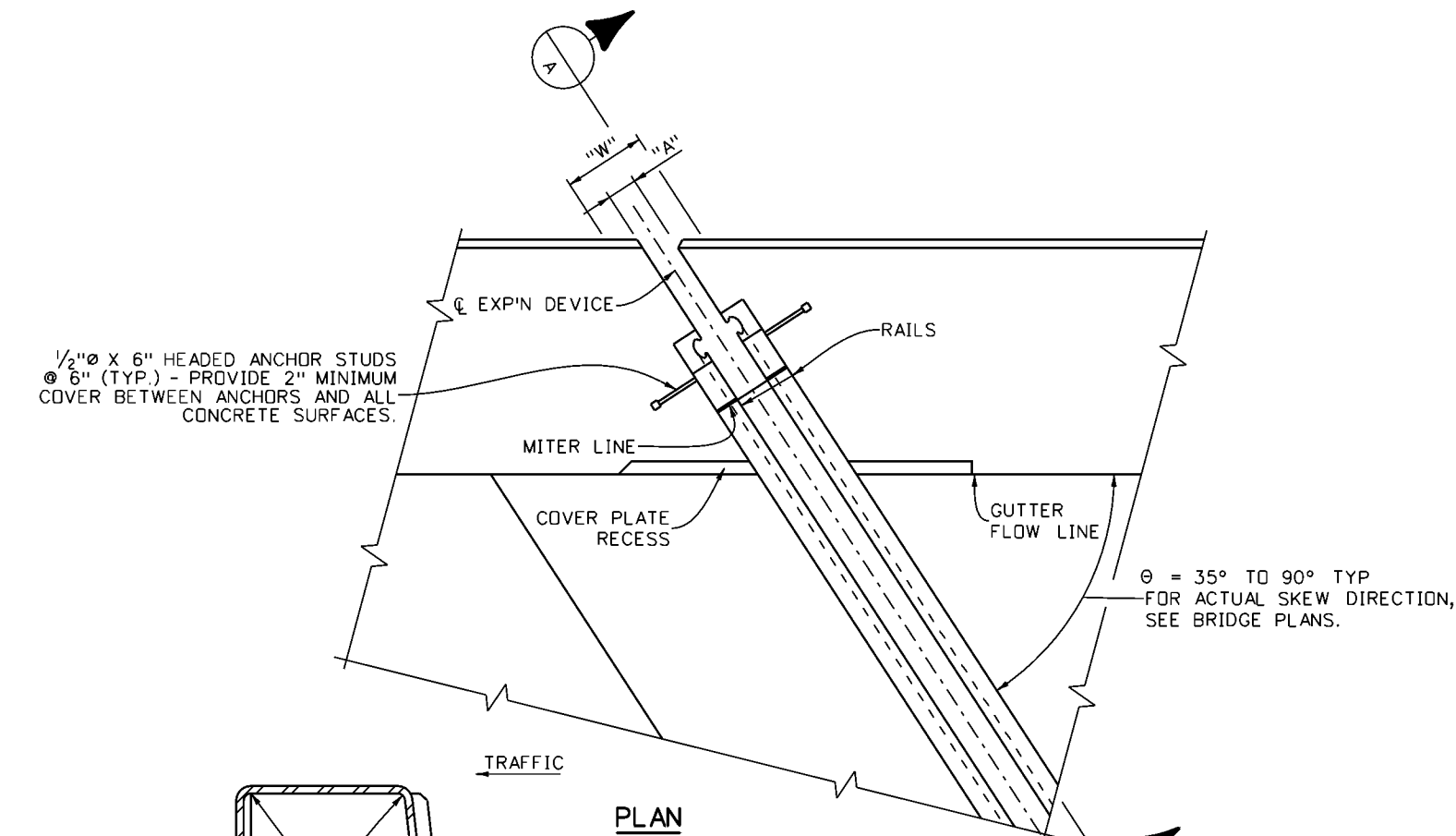
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

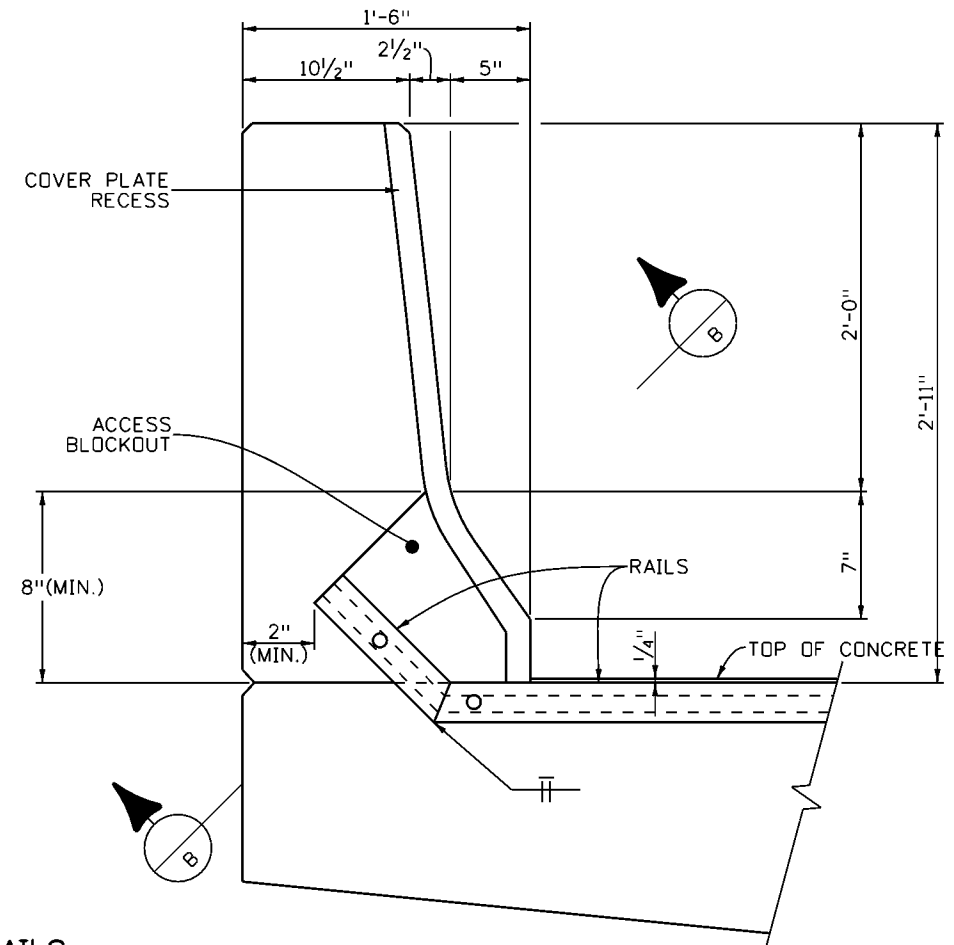
As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

SH 120 OVER DRAW & UPRR EXPANSION DEVICE (0-4 INCH) (SHEET 2 OF 2)			
Designer:	S. ABRAHAM	Structure	K-16-CI
Detailer:	E. SCHAWO	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B27 of 35

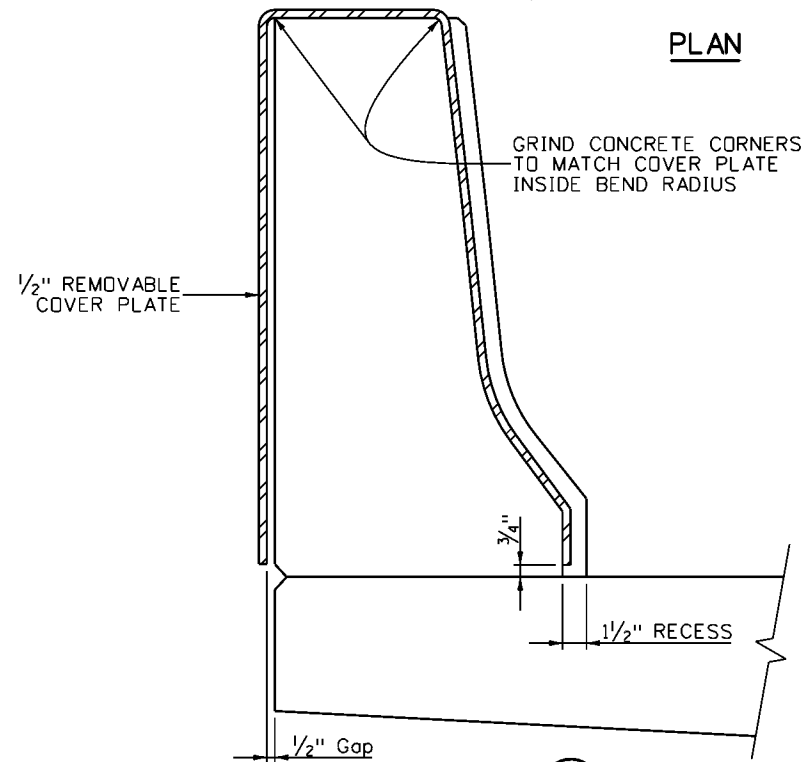
Project No./Code	
FBR 120A-011	
18370	
Sheet Number	43



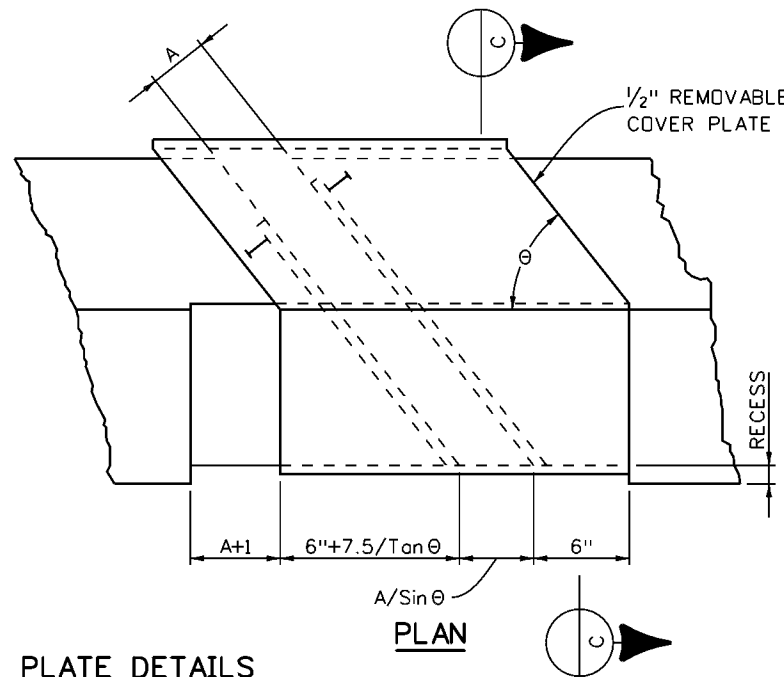
TYPE 7 RAIL DETAILS
(COVER PLATE NOT SHOWN FOR CLARITY)



SECTION A



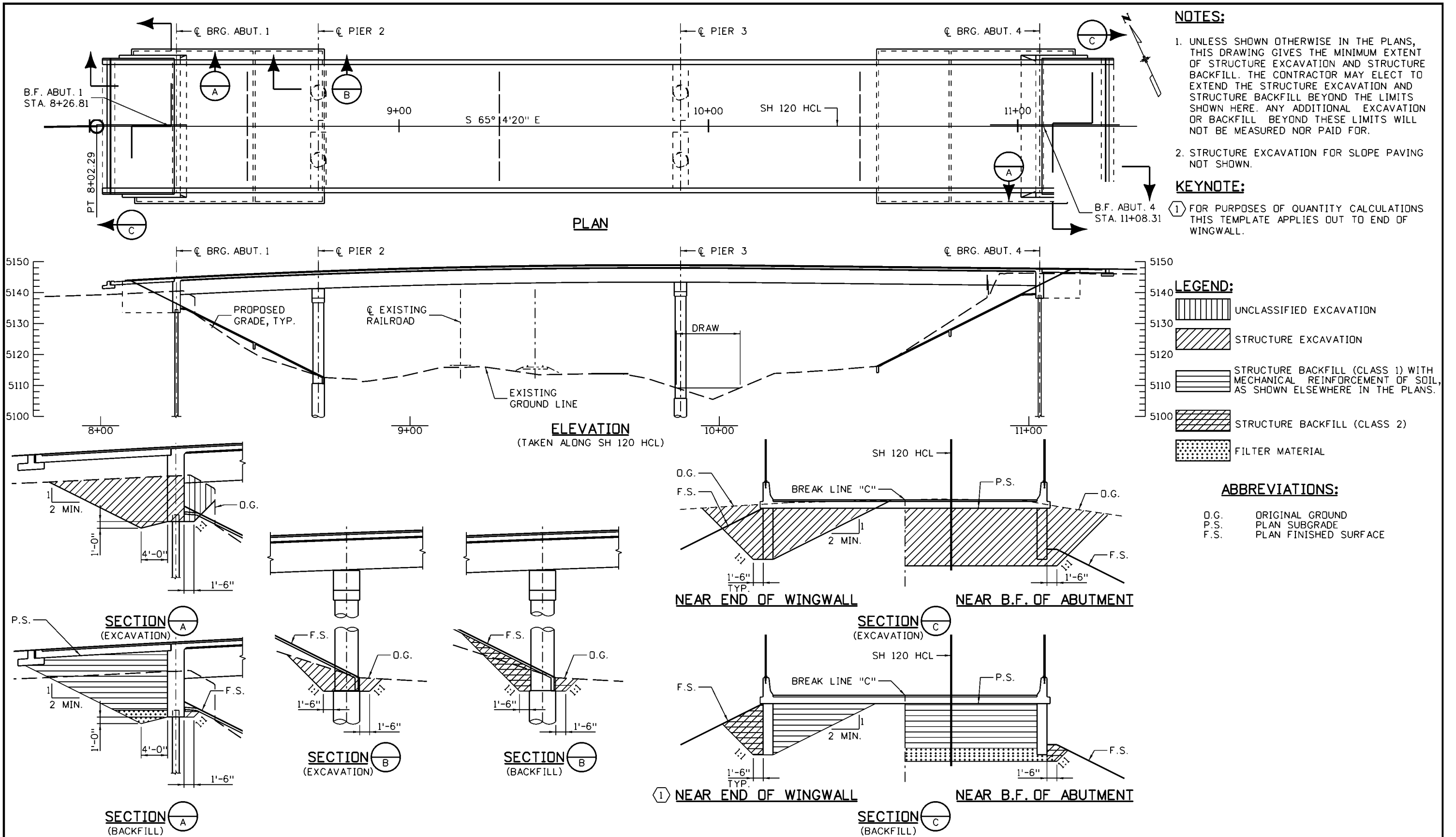
TYPE 7 COVER PLATE DETAILS
(GALVANIZE AFTER FABRICATION)



SECTION B

S:\Transp\100025698\18370\Drawings\18370BRGExBk\101.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Desiged By	SA	Detaild By	ERS	Quantity By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ

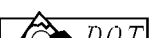


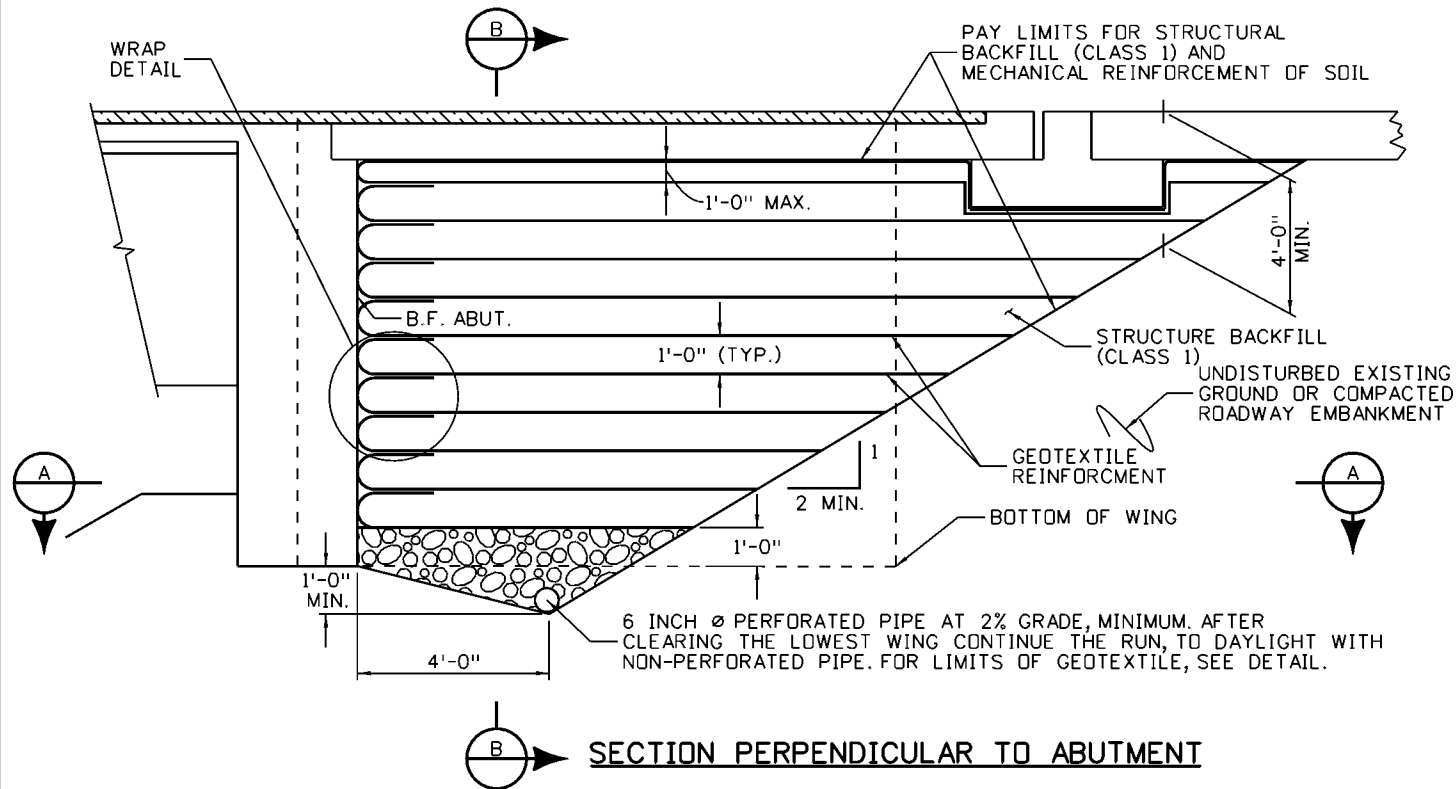
NOTES:

1. UNLESS SHOWN OTHERWISE IN THE PLANS, THIS DRAWING GIVES THE MINIMUM EXTENT OF STRUCTURE EXCAVATION AND STRUCTURE BACKFILL. THE CONTRACTOR MAY ELECT TO EXTEND THE STRUCTURE EXCAVATION AND STRUCTURE BACKFILL BEYOND THE LIMITS SHOWN HERE. ANY ADDITIONAL EXCAVATION OR BACKFILL BEYOND THESE LIMITS WILL NOT BE MEASURED NOR PAID FOR.
2. STRUCTURE EXCAVATION FOR SLOPE PAVING NOT SHOWN.

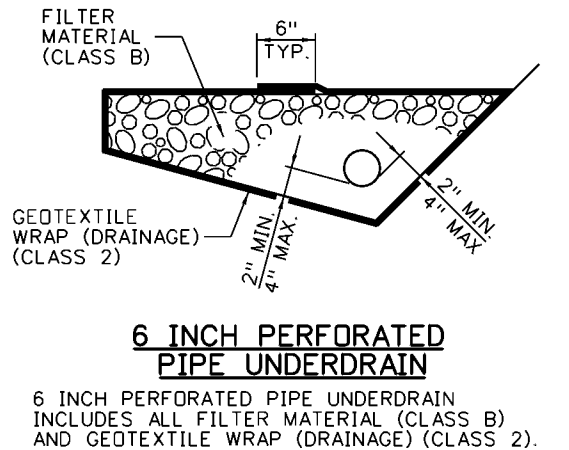
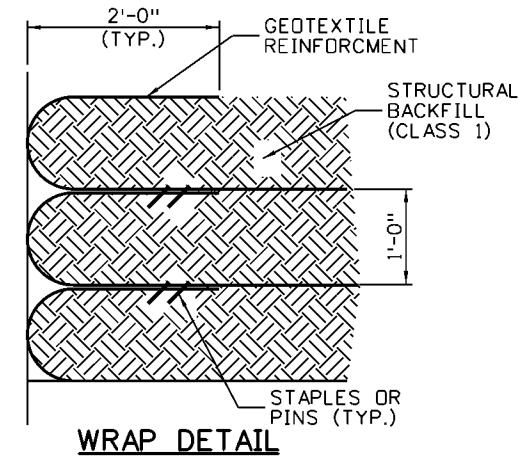
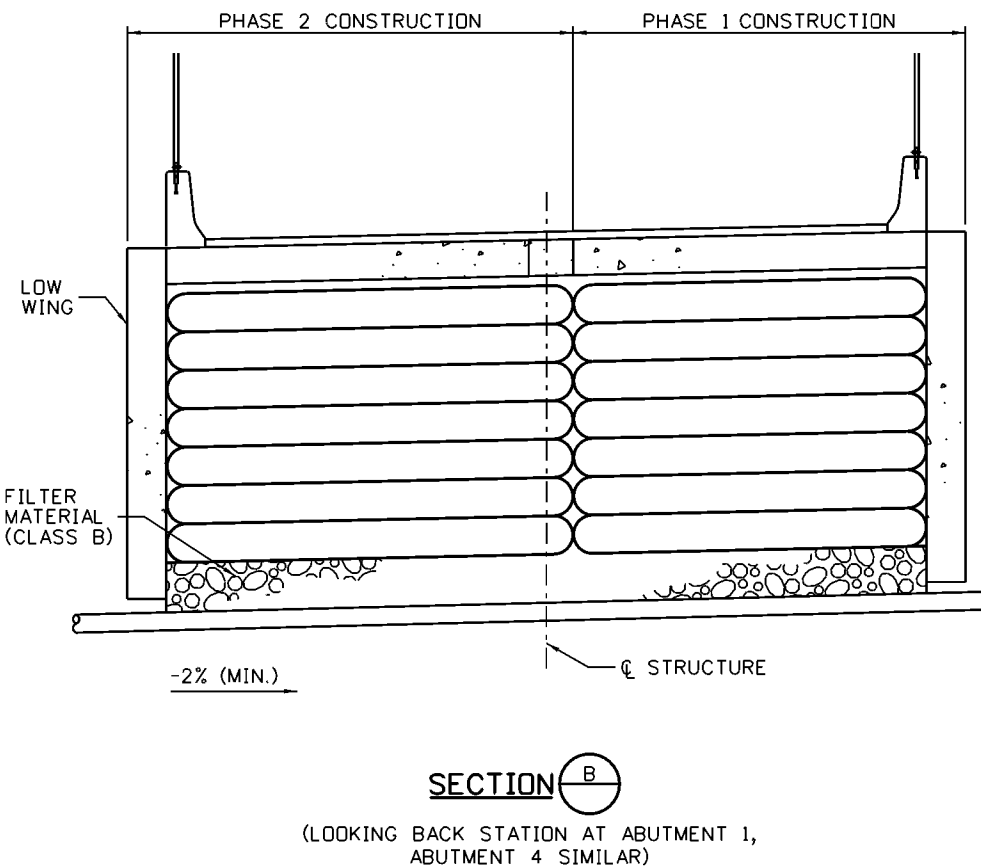
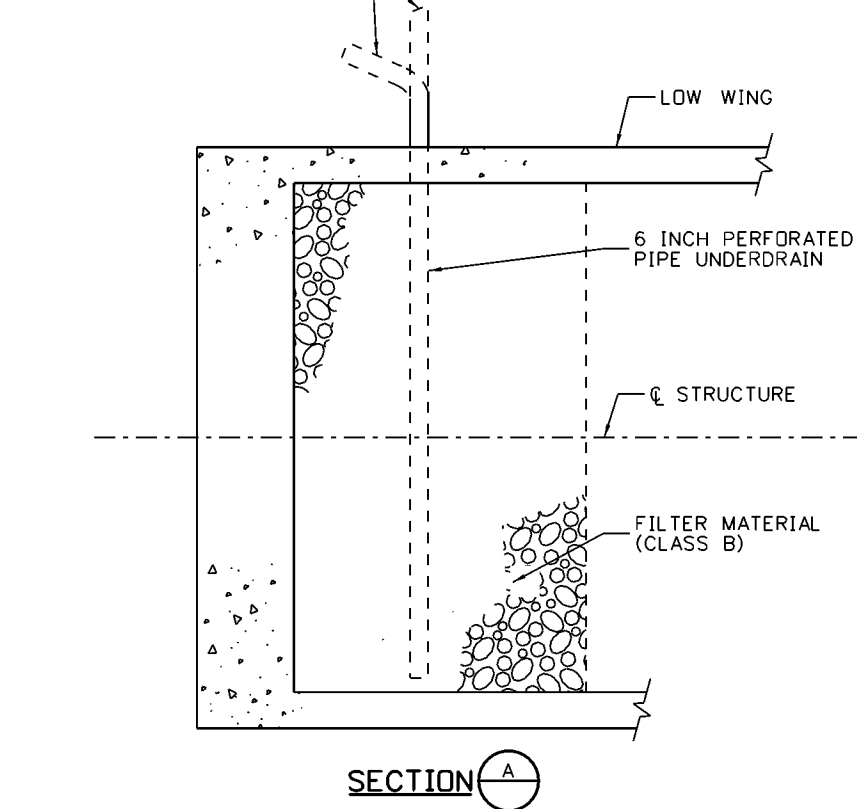
KEYNOTE:

- ① FOR PURPOSES OF QUANTITY CALCULATIONS THIS TEMPLATE APPLIES OUT TO END OF WINGWALL.

Print Date: 5/14/2014				Sheet Revisions		 Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD		As Constructed		SH 120 OVER DRAW & UPRR EXCAVATION AND BACKFILL			Project No./Code			
File Name: 18370BRGExBk\101.dgn								No Revisions: 6/13/16					FBR 120A-011			
Horiz. Scale: NONE				Vert. Scale: NONE						Revised:		Designer: S. ABRAHAM	Structure Numbers	K-16-CI	18370	
Staff Bridge Branch - Unit 0226				DDG								Detailer: E. SCHAWD				Sheet Number 44
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276								Void:		Sheet Subset: BRIDGE	Subset Sheets: B28 of 35					



SUBSURFACE DRAIN OUTLET
(6" Ø NON-PERFORATED PIPE).
MAX. BEND IN PIPE = 45°



NOTES:

1. GEOTEXTILE REINFORCEMENT SHALL BE WOVEN FABRIC WITH A MINIMUM AVERAGE ROLL VALUE OF 2400 LB/FT BASED ON ASTM D4595.
2. GEOTEXTILE REINFORCEMENT SHALL BE PLACED BY ALTERNATING MACHINE DIRECTION (MD) WITH CROSS MACHINE DIRECTION (XD) FROM LAYER TO LAYER.
3. THE GEOTEXTILE REINFORCEMENT WRAP AT BACK FACE OF ABUTMENT SHALL BE PULLED BACK SLACK FREE WITH ITS END ANCHORED TO SOIL UNDERNEATH WITH STAPLES OR PINS.
4. MINIMUM SPLICE OF ALL GEOTEXTILE SHALL CONSIST OF 6" OF OVERLAP.
5. PAYMENT WILL BE MADE UNDER ITEM 206 MECHANICAL REINFORCEMENT OF SOIL (CU.YD.) AND ITEM 206 STRUCTURE BACKFILL (CLASS 1) (CU.YD.) AND SHALL INCLUDE THE COST FOR 6 INCH Ø PERFORATED PIPE UNDERDRAIN AND SUBSURFACE DRAIN OUTLET (6 INCH Ø NONPERFORATED PIPE).
6. INSTALLATION OF PIPE UNDERDRAIN AND SUBSURFACE DRAIN OUTLET WILL CONFORM TO THE CONSTRUCTION REQUIREMENTS OF SECTION 605.03 AND 605.06, RESPECTIVELY.

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	11-12	Detailled By	11-12	Quantity By	11-12
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ

Print Date: 5/14/2014	
File Name: 18370BRGMSEBkfil01.dgn	
Horiz. Scale: None	Vert. Scale: None
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702	
Region 2	DTD

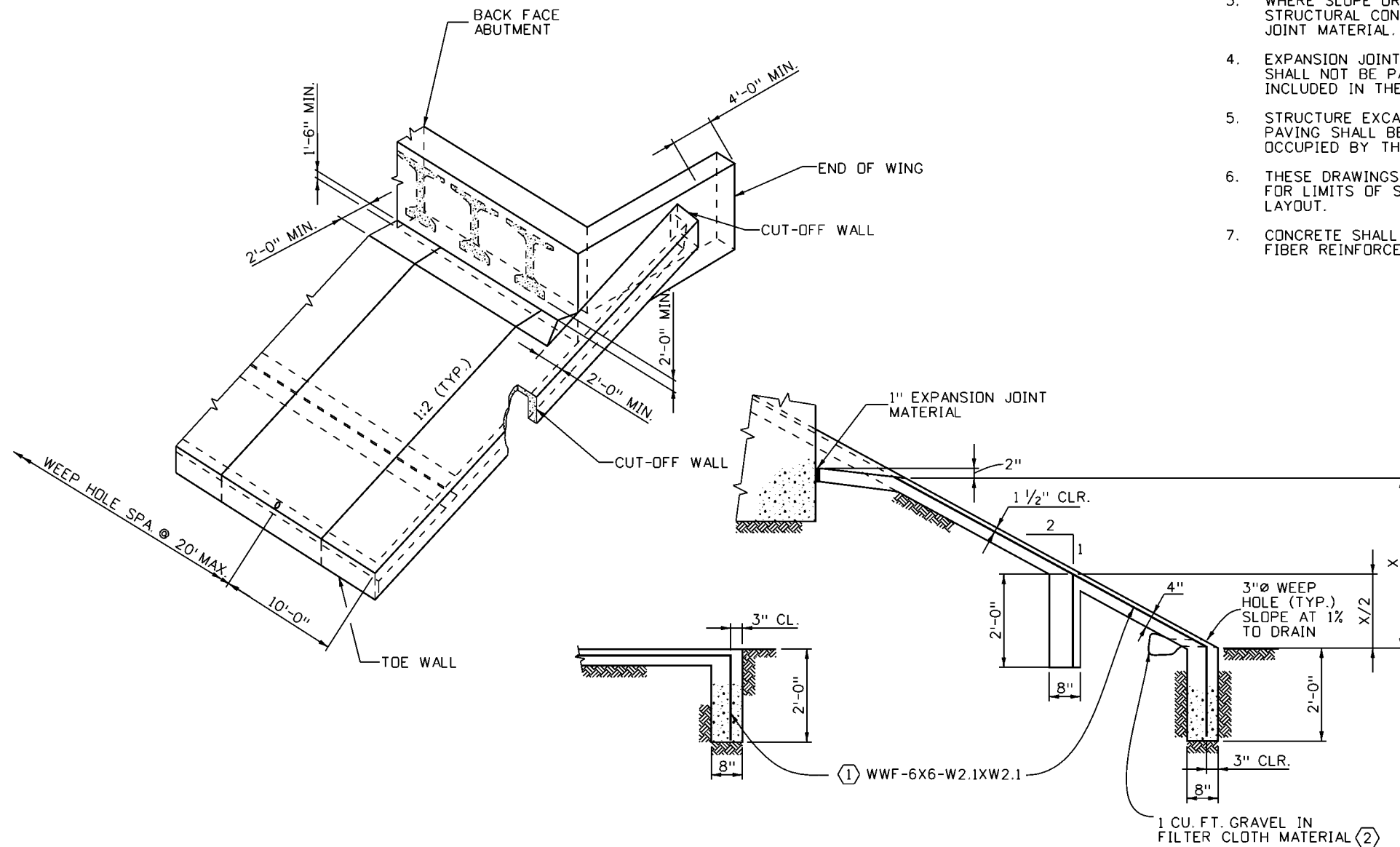
As Constructed		SH 120 OVER DRAW & UPRR MECHANICALLY STABILIZED BACKFILL		Project No./Code	
No Revisions: 6/13/16		Designer: S. ABRAHAM		FBR 120A-011	
Revised:		Detailer: E. SCHAWO		18370	
Void:		Sheet Subset: BRIDGE		Sheet Number 45	
		Structure Numbers: K-16-CI		Subset Sheets: B29 of 35	

SCH48026 10:18:34 AM S:\Tranpro\100025698\18370\Consultants\Bridg\Drawings\18370BRG_B-507-1.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
SA	11-12	DW	11-12	SA	11-12
KTZ	12-12	KTZ	12-12	KTZ	12-12
Designed By		Checked By		Quantities By	
Checked By		Checked By		Checked By	

KEYNOTES:

- ① WELDED WIRE FABRIC SHALL CONFORM TO AASHTO SPEC. M55.
- ② TO BE PAID FOR UNDER ITEM NO. 507, CONCRETE SLOPE AND DITCH PAVING (REINFORCED).



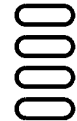
NOTES:

1. SLOPE PAVING SHALL BE POURED IN 10 FT. TRANSVERSE SECTIONS WITH A TOOLED CONSTRUCTION JOINT AT EACH SECTION.
2. WIRE FABRIC SHALL BE 2" FROM THE END OF JOINTS AND SHALL LAP 8" AT SPLICES.
3. WHERE SLOPE OR BERM PAVING BUTTS AGAINST STRUCTURAL CONCRETE, SEPARATE WITH 1" EXPANSION JOINT MATERIAL.
4. EXPANSION JOINT MATERIAL AND WELDED WIRE FABRIC SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
5. STRUCTURE EXCAVATION FOR CONCRETE SLOPE AND DITCH PAVING SHALL BE LIMITED TO THE ACTUAL VOLUME OCCUPIED BY THE SLOPE PAVING CONCRETE.
6. THESE DRAWINGS SHOW GENERAL DETAILS ONLY. FOR LIMITS OF SLOPE PAVING SEE GENERAL LAYOUT.
7. CONCRETE SHALL BE CLASS B. FIBER REINFORCED CONCRETE WILL NOT BE ALLOWED.

TYPICAL SECTION
THRU CUT-OFF WALL

TYPICAL SECTION
THRU SLOPE PAVING

Print Date: 5/14/2014	
File Name: 18370BRG_B-507-1.dgn	
Horiz. Scale: NONE	Vert. Scale: NONE
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	



Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

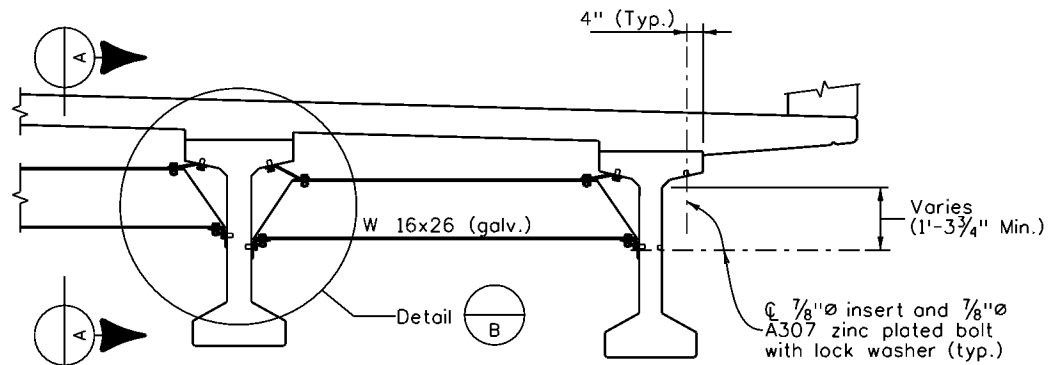
As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

SH 120 OVER DRAW & UPRR SLOPE PAVING DETAILS			
Designer:	S. ABRAHAM	Structure	K-16-CI
Detailer:	D. WHITAKER	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B30 of 35

Project No./Code	
FBR 120A-011	
18370	
Sheet Number	46

S:\Tranpro\100025698\18370\Consultants\Bridge Drawings\18370BRGBIntDiaph01.dgn

Design		Detail		Quantities	
Desiged By	Checked By	INITIAL	DATE	INITIAL	DATE
WM		WM	06-13		
Checked By		Checked By		Checked By	



INTERMEDIATE DIAPHRAGM DETAILS

★ For location of diaphragms, see Construction Layout.

NOTES

All diaphragm materials, including bolts, nuts, and washers shall be galvanized. Galvanize after fabrication.

★ If the construction layout does not specify diaphragms, there shall be at least one diaphragm at mid span.

Bolts, nuts and lock washers may be zinc plated in lieu of being galvanized.

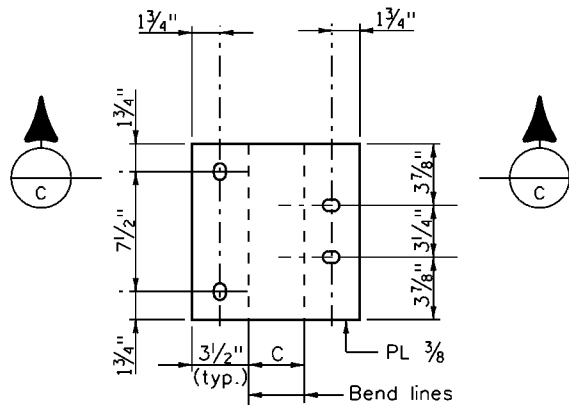
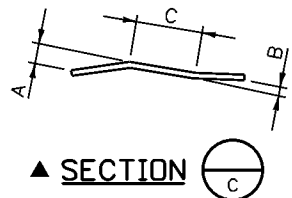
▲ Dimensions A, B and C shall be shown on the shop drawings.

The diaphragms may be placed on a skew such that they are between 80° and 100° to the girders. Additionally, all diaphragms shall be installed level.

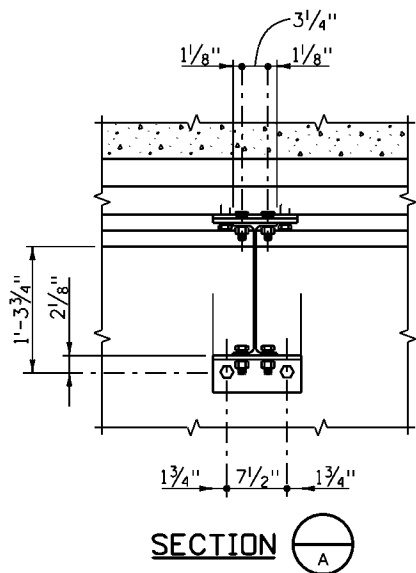
The Contractor is responsible for determining necessary bracing requirements and for providing adequate bracing for the specific wind and weather conditions to be encountered for each specific project.

When bracing or diaphragms are required, no girders shall be erected and left unbraced. The intermediate diaphragms (when used) shall be connected to the adjacent girders simultaneously with the erection of the girders.

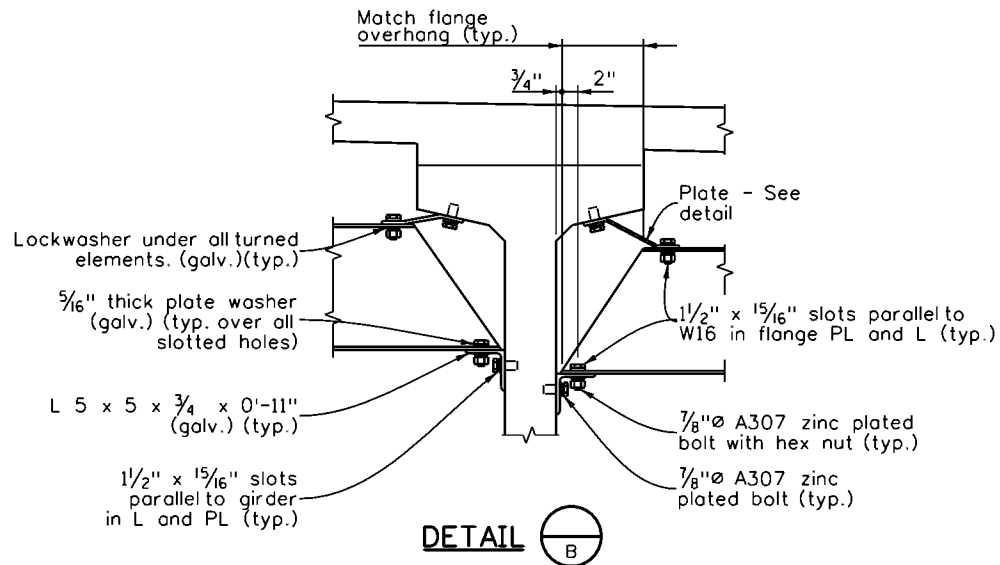
Use and installation of the intermediate diaphragms shall not relieve the Contractor of full responsibility to construct the Work in a manner which provides all necessary rigidity, supports all loads imposed, and provides in the finished structure the lines and grades indicated on the plans.



PLAN
(Before bending)
PLATE DETAIL



SECTION A



DETAIL B

Print Date: 5/14/2014	
File Name: 18370BRGBIntDiaph01.dgn	
Horiz. Scale: NONE	Vert. Scale: NONE
Staff Bridge Branch - Unit 0226	DDG
ATKINS	4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation	
	902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702
Region 2	DTD

As Constructed		SH 120 OVER DRAW & UPRR INTERMEDIATE DIAPHRAGM		Project No./Code	
No Revisions:				FBR 120A-011	
Revised: 6/13/16		Designer: W. MOY	Structure: K-16-CI	18370	
Void:		Detailer: E. SCHAWD	Numbers:	Sheet Number 47	
		Sheet Subset: BRIDGE	Subset Sheets: B31 of 35		

S:\Tranpro\100025698\18370\Consultants\Bridg\Drawings\18370BRGDDeckElev01.dgn

Design		Detail		Quantities			
				INITIAL	DATE	INITIAL	DATE
Designed By	SA	Checked By	SA	11-12	11-12	11-12	11-12
Checked By	KTZ	Checked By	KTZ	12-12	12-12	12-12	12-12

State of Colorado
Department of Transportation
Staff Bridge Design
Bridge Geometry Project Coordinate Converter
Version 1.00
Run date & time = Fri Jan 25 07:30:27 2013

Input Northing Offset = 1201843.590000
Input Easting Offset = 3123425.830000
Input Bearing = S 65 14 20.0000 E

DESCRIPTION

Units: feet;
Project: 100025698; Subaccount:;
Designer: SA; Detailer: ERS;
Location: CD;
SH120 over Draw and UPRR
Bridge Deck and Approach Slab Elevations

HORIZONTAL ALIGNMENT DATA

HORIZONTAL TANGENT

VERTICAL ALIGNMENT DATA

	ELEVATION AT PI	ELEVATION AT GRADE	STATION	ELEVATION AT GRADE	ELEVATION AT PI	PERCENT GRADE
6.73			7+85.0000 PC	5142.2605		
			9+00.0000 PI	5147.7632	5150.0000	
			10+15.0000 PT	5148.7925		

-1.05

TABLE OF ROADWAY CROSS-SLOPES (SUPERELEVATION: E= -NC-)

STATION (ON TANGENT)	SLOPE LEFT 0.0200	SLOPE RIGHT -0.0200	VC LENGTH 0.00 (MAX)
7+63.2900	0.0500	-0.0500	0.00 -U-
8+21.2900	0.0200	-0.0200	0.00 -U-
11+31.0000	0.0200	-0.0200	0.00 -U-
11+70.0000	0.0000	0.0000	0.00 -U-

OFFSET PROFILE CONTROL TO PIVOT POINT = 0.0000 FEET

LIMITS OF VALID ELEVATION AND CROSS-SLOPE DATA

BEGIN
7+63.2900
SUPERELEVATION

END
11+70.0000
SUPERELEVATION

LAYOUT LINE DATA

LAYOUT LINE DEFINED TO BE COINCIDENT WITH HORIZONTAL CONTROL

LAYOUT LINE INTERSECTS REF LINE AT

HCL STA 8+26.8100

OFFSET 0.00000000

X 0.0000

Y 0.0000

DEAD LOAD DEFLECTION DATA

DEFLECTIONS AT TENTH POINTS FROM FITTED CURVE

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
FOR BENT LINE: ABUT 1 CL					07 CARD(S): 1							GIRDER LINES REFERENCED BY: A
INCH 0.0000	0.0142	0.0281	0.0397	0.0475	0.0509	0.0496	0.0437	0.0334	0.0189	0.0000	INCH	A4= 0.00000
FOOT 0.0000	0.0012	0.0023	0.0033	0.0040	0.0042	0.0041	0.0036	0.0028	0.0016	0.0000	FOOT	A3=-.152150
												A2=0.350906
												A1=-.278396
SLOPE 0.011081										-0.017718	SLOPE	A0=-.132974
FOR BENT LINE: PIER 2 AH					07 CARD(S): 1							GIRDER LINES REFERENCED BY: A
INCH 0.0000	0.6128	1.0378	1.4100	1.7120	1.8703	1.8229	1.5567	1.1152	0.5762	0.0000	INCH	A4=-41.4165
FOOT 0.0000	0.0511	0.0865	0.1175	0.1427	0.1559	0.1519	0.1297	0.0929	0.0480	0.0000	FOOT	A3= 101.618
												A2=-78.2061
												A1= 20.2036
SLOPE 0.678767										-0.495511	SLOPE	A0=-8.14521
FOR BENT LINE: PIER 3 AH					07 CARD(S): 1							GIRDER LINES REFERENCED BY: A
INCH 0.0000	0.6672	1.2777	1.7658	2.0840	2.2023	2.1088	1.8093	1.3274	0.7045	0.0000	INCH	A4= 0.00000
FOOT 0.0000	0.0556	0.1065	0.1472	0.1737	0.1835	0.1757	0.1508	0.1106	0.0587	0.0000	FOOT	A3= 0.00000
												A2= 7.42842
												A1=-7.94594
SLOPE 0.557785										-0.600913	SLOPE	A0=-6.69342
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	

BENT LINE : INTERSECTION POINT : FROM LAYOUT LINE : PROJECT COORDINATES BENT LINE : GIRDER LINE : ROADWAY
DESCRIPTION : : OFFSET : ORDINATE : NORTHING : EASTING LENGTH FROM : SKEW : LENGTH FROM : CROSS-
: STATION : OFFSET : ELEVATION : X : Y : EASTING : Y-AXIS : D M S : REF LINE : SLOPE

* HORIZONTAL CONTROL LINE *

AT FINISHED GRADE

ABUT 1 BF	8+26.8100	0.0000	5144.7787	0.0000	0.0000	1201843.5900	3123425.8300	0.0000	0 00 00.00	0.0000	+/- .020000
ABUT 1 CL	8+28.0600	0.0000	5144.8448	10	0.0000	1.2500	1201843.0865	3123426.9651	0.0000	1.2500	+/- .020000
PIER 2 BK	8+72.8930	0.0000	5146.8691	1	0.0000	46.0830	1201824.2888	3123467.6762	0.0000	46.0830	+/- .020000
PIER 2 CL	8+73.8930	0.0000	5146.9065	1	0.0000	47.0830	1201823.8700	3123468.5843	0.0000	47.0830	+/- .020000
PIER 2 AH	8+74.8930	0.0000	5146.9436	10	0.0000	48.0830	1201823.4511	3123469.4923	0.0000	48.0830	+/- .020000
PIER 3 BK	9+89.9770	0.0000	5148.9493	1	0.0000	163.1670	1201775.2498	3123573.9957	0.0000	163.1670	+/- .020000
PIER 3 CL	9+90.9770	0.0000	5148.9471	1	0.0000	164.1670	1201774.8310	3123574.9038	0.0000	164.1670	+/- .020000
PIER 3 AH	9+91.9770	0.0000	5148.9446	10	0.0000	165.1670	1201774.4121	3123575.8119	0.0000	165.1670	+/- .020000
ABUT 4 CL	11+07.0600	0.0000	5147.8259	1	0.0000	280.2500	1201726.2113	3123680.3144	0.0000	280.2500	+/- .020000
ABUT 4 BF	11+08.3100	0.0000	5147.8127	0.0	0.0000	281.5000	1201725.6877	3123681.4494	0.0000	281.5000	+/- .020000

LEFT OUT DECK

PARALLEL TO HORIZONTAL CONTROL

0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
ABUT 1 BF	8+26.8100	-21.5000	5144.9587	-21.5000	0.0000	1201863.1133	3123434.8350	-21.5000	0 00 00.00	0.0000	+0.020000	
ABUT 1 CL	8+28.0600	-21.5000	5145.0248	-21.5000	1.2500	1201862.5898	3123435.9700	-21.5000	0 00 00.00	1.2500	+0.020000	

F-1	8+32.5433	-21.5000	5145.2579	-21.5000	5.7333	1201860.7120	3123440.0412				5.7333	+0.020000
F-2	8+37.0266	-21.5000	5145.4841	-21.5000	10.2166	1201858.8343	3123444.1123				10.2166	+0.020000
F-3	8+41.5099	-21.5000	5145.7035	-21.5000	14.6999	1201856.9565	3123448.1834				14.6999	+0.020000
F-4	8+45.9932	-21.5000	5145.9161	-21.5000	19.1832	1201855.0787	3123452.2545				19.1832	+0.020000
F-5	8+50.4765	-21.5000	5146.1220	-21.5000	23.6665	1201853.2010	3123456.3256				23.6665	+0.020000
F-6	8+54.9598	-21.5000	5146.3210	-21.5000	28.1498	1201851.3232	3123460.3967				28.1498	+0.020000
F-7	8+59.4431	-21.5000	5146.5132	-21.5000	32.6331	1201849.4454	3123464.4678				32.6331	+0.020000
F-8	8+63.9264	-21.5000	5146.6987	-21.5000	37.1164	1201847.5677	3123468.5390				37.1164	+0.020000
F-9	8+68.4097	-21.5000	5146.8773	-21.5000	41.5997	1201845.6899	3123472.6101				41.5997	+0.020000
PIER 2 BK	8+72.8930	-21.5000	5147.0491	-21.5000	46.0830	1201843.8121	3123476.6812	-21.5000	0 00 00.00		46.0830	+0.020000
PIER 2 CL	8+73.8930	-21.5000	5147.0865	-21.5000	47.0830	1201843.3933	3123477.5893	-21.5000	0 00 00.00		47.0830	+0.020000
PIER 2 AH	8+74.8930	-21.5000	5147.1236	-21.5000	48.0830	1201842.9744	3123478.4973	-21.5000	0 00 00.00		48.0830	+0.020000
F-1	8+86.4014	-21.5000	5147.5258	-21.5000	59.5914	1201838.1543	3123488.9477				59.5914	+0.020000
F-2	8+97.9098	-21.5000	5147.8831	-21.5000	71.0998	1201833.3342	3123499.3980				71.0998	+0.020000
F-3	9+09.4182	-21.5000	5148.1957	-21.5000	82.6082	1201828.5141	3123509.8483				82.6082	+0.020000
F-4	9+20.9266	-21.5000	5148.4635	-21.5000	94.1166	1201823.6939	3123520.2987				94.1166	+0.020000
F-5	9+32.4350	-21.5000	5148.6865	-21.5000	105.6250	1201818.8738	3123530.7490				105.6250	+0.020000
F-6	9+43.9434	-21.5000	5148.8646	-21.5000	117.1334	1201814.0537	3123541.1994				117.1334	+0.020000
F-7	9+55.4518	-21.5000	5148.9980	-21.5000	128.6418	1201809.2335	3123551.6497				128.6418	+0.020000
F-8	9+66.9602	-21.5000	5149.0866	-21.5000	140.1502	1201804.4134	3123562.1000				140.1502	+0.020000
F-9	9+78.4686	-21.5000	5149.1304	-21.5000	151.6586	1201799.5933	3123572.5504				151.6586	+0.020000
PIER 3 BK	9+89.9770	-21.5000	5149.1293	-21.5000	163.1670	1201794.7731	3123583.0007	-21.5000	0 00 00.00		163.1670	+0.020000
PIER 3 CL	9+90.9770	-21.5000	5149.1271	-21.5000	164.1670	1201794.3543	3123583.9088	-21.5000	0 00 00.00		164.1670	+0.020000
PIER 3 AH	9+91.9770	-21.5000	5149.1246	-21.5000	165.1670	1201793.9355	3123584.8168	-21.5000	0 00 00.00		165.1670	+0.020000
F-1	10+03.4853	-21.5000	5149.0710	-21.5000	176.6753	1201789.1154	3123595.2671				176.6753	+0.020000
F-2	10+14.9936	-21.5000	5148.9726	-21.5000	188.1836	1201784.2953	3123605.7173				188.1836	+0.020000
F-3	10+26.5019	-21.5000	5148.8517	-21.5000	199.6919	1201779.4752	3123616.1676				199.6919	+0.020000
F-4	10+38.0102	-21.5000	5148.7309	-21.5000	211.2002	1201774.6551	3123626.6178				211.2002	+0.020000
F-5	10+49.5185	-21.5000	5148.6101	-21.5000	222.7085	1201769.8350	3123637.0681				222.7085	+0.020000
F-6	10+61.0268	-21.5000	5148.4892	-21.5000	234.2168	1201765.0149	3123647.5183				234.2168	+0.020000
F-7	10+72.5351	-21.5000	5148.3684	-21.5000	245.7251	1201760.1949	3123657.9686				245.7251	+0.020000
F-8	10+84.0434	-21.5000	5148.2475	-21.5000	257.2334	1201755.3748	3123668.4188				257.2334	+0.020000
F-9	10+95.5517	-21.5000	5148.1267	-21.5000	268.7417	1201750.5547	3123678.8691				268.7417	+0.020000
ABUT 4 CL	11+07.0600	-21.5000	5148.0059	-21.5000	280.2500	1201745.7346	3123689.3193	-21.5000	0 00 00.00		280.2500	+0.020000
ABUT 4 BF	11+08.3100	-21.5000	5147.9927	-21.5000	281.5000	1201745.2110	3123690.4544	-21.5000	0 00 00.00		281.5000	+0.020000

LEFT FLOW LINE

PARALLEL TO HORIZONTAL CONTROL

0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
ABUT 1 BF	8+26.8100	-20.0000	5144.9287	-20.0000	0.0000	1201861.7512	3123434.2067	-20.0000	0 00 00.00		0.0000	+0.020000
ABUT 1 CL	8+28.0600	-20.0000	5144.9948	-20.0000	1.2500	1201861.2277	3123435.3418	-20.0000	0 00 00.00		1.2500	+0.020000
F-1	8+32.5433	-20.0000	5145.2279	-20.0000	5.7333	1201859.3499	3123439.4129	-20.0000			5.7333	+0.020000
F-2	8+37.0266	-20.0000	5145.4541	-20.0000	10.2166	1201857.4722	3123443.4840	-20.0000			10.2166	+0.020000
F-3	8+41.5099	-20.0000	5145.6735	-20.0000	14.6999	1201855.5944	3123447.5551	-20.0000			14.6999	+0.020000
F-4	8+45.9932	-20.0000	5145.8861	-20.0000	19.1832	1201853.7166	3123451.6263	-20.0000			19.1832	+0.020000
F-5	8+50.4765	-20.0000	5146.0920	-20.0000	23.6665	1201851.8389	3123455.6974	-20.0000			23.6665	+0.020000
F-6	8+54.9598	-20.0000	5146.2910	-20.0000	28.1498	1201849.9611	3123459.7685	-20.0000			28.1498	+0.020000
F-7	8+59.4431	-20.0000	5146.4832	-20.0000	32.6331	1201848.0833	3123463.8396	-20.0000			32.6331	+0.020000
F-8	8+63.9264	-20.0000	5146.6687	-20.0000	37.1164	1201846.2056	3123467.9107	-20.0000			37.1164	+0.020000
F-9	8+68.4097	-20.0000	5146.8473	-20.0000	41.5997	1201844.3278	3123471.9818	-20.0000			41.5997	+0.020000
PIER 2 BK	8+72.8930	-20.0000	5147.0191	-20.0000	46.0830	1201842.4500	3123476.0529	-20.0000	0 00 00.00		46.0830	+0.020000
PIER 2 CL	8+73.8930	-20.0000	5147.0565	-20.0000	47.0830	1201842.0312	3123476.9610	-20.0000	0 00 00.00		47.0830	+0.020000
PIER 2 AH	8+74.8930	-20.0000	5147.0936	-20.0000	48.0830	1201841.6124	3123477.8691	-20.0000	0 00 00.00		48.0830	+0.020000
F-1	8+86.4014	-20.0000	5147.4958	-20.0000	59.5914	1201836.7922	3123488.3194	-20.0000			59.5914	+0.020000
F-2	8+97.9018	-20.0000	5147.8531	-20.0000	71.0998	1201831.9721	3123498.7697	-20.0000			71.0998	+0.020000
F-3	9+09.4182	-20.0000	5148.1657	-20.0000	82.6082	1201827.1520	3123509.2201	-20.0000			82.6082	+0.020000
F-4	9+20.9266	-20.0000	5148.4335	-20.0000	94.1166	1201822.3318	3123519.6704	-20.0000			94.1166	+0.020000
F-5	9+32.4350	-20.0000	5148.6565	-20.0000	105.6250	1201817.5117	3123530.1208	-20.0000			105.6250	+0.020000
F-6	9+43.9434	-20.0000	5148.8346	-20.0000	117.1334	1201812.6916	3123540.5711	-20.0000			117.1334	+0.020000
F-7	9+55.4518	-20.0000	5149.0160	-20.0000	128.6417	1201807.8714	3123551.0214	-20.0000			128.6417	+0.020000
F-8	9+66.9602	-20.0000	5149.0566	-20.0000	140.1502	1201803.0513	3123561.9218	-20.0000			140.1502	+0.020000
F-9	9+78.4686	-20.0000	5149.1004	-20.0000	151.6586	1201798.2312	3123571.0211	-20.0000			151.6586	+0.020000
PIER 3 BK	9+89.9770	-20.0000	5149.0933	-20.0000	163.1670	1201793.4111	3123582.3725	-20.0000	0 00 00.00		163.1670	+0.020000
PIER 3 CL	9+90.9770	-20.0000	5149.0971	-20.0000	164.1670	1201792.9922	3123583.2805	-20.0000	0 00 00.00		164.1670	+0.020000
PIER 3 AH	9+91.9770	-20.0000	5149.0946	-20.0000	165.1670	1201792.5734	3123584.1886	-20.0000	0 00 00.00		165.1670	+0.020000
F-1	10+03.4853	-20.0000	5149.0410	-20.0000	176.6753	1201787.7533	3123594.6388	-20.0000			176.6753	+0.020000
F-2	10+14.9936	-20.0000	5148.9426	-20.0000	188.1836	1201782.9332	3123605.0891	-20.0000			188.1836	+0.020000
F-3	10+26.5019	-20.0000	5148.8217	-20.0000	199.6919	1201778.1131	3123615.5393	-20.0000			199.6919	+0.020000
F-4	10+38.0102	-20.0000	5148.7009	-20.0000	211.2002	1201773.2930	3123625.9896	-20.0000			211.2002	+0.020000
F-5	10+49.5185	-20.0000	5148.5801	-20.0000	222.7085	1201768.4729	3123636.4398	-20.0000			222.7085	+0.020000
F-6	10+61.0268	-20.0000	5148.4592	-20.0000	234.2168	1201763.6528	3123646.8901	-20.0000			234.2168	+0.020000
F-7	10+72.5351	-20.0000	5148.3384	-20.0000	245.7251	1201758.8328	3123657.3403	-20.0000			245.7251	+0.020000
F-8	10+84.0434	-20.0000	5148.2175	-20.0000	257.2334	1201754.0127	3123667.7906	-20.0000			257.2334	+0.020000
F-9	10+95.5517	-20.0000	5148.0967	-20.0000	268.7417	1201749.1926	3123678.2408	-20.0000			268.7417	+0.020000
ABUT 4 BF	11+07.0600	-20.0000	5147.9759	-20.0000	280.2500	1201744.3725	3123688.6911	-20.0000	0 00 00.00		280.2500	+0.020000
ABUT 4 CL	11+08.3100	-20.0000	5147.9627	-20.0000	281.5000	1201743.8489	3123689.8262	-20.0000	0 00 00.00		281.5000	+0.020000

Design	Checked By	INITIAL	DATE	Quantities			
				SA	DEW	KTZ	DATE
Detail	Checked By	INITIAL	DATE	11-12	12-12	12-12	12-12
				11-12	12-12	12-12	12-12

F-7	8+59.4431	-18.1250	5146.4457	146.4494	-18.1250	32.6331	1201846.3807	3123463.0543	32.6331	+0.020000										
F-8	8+63.9264	-18.1250	5146.6312	146.6340	-18.1250	37.1164	1201844.5029	3123467.1254	37.1164	+0.020000										
F-9	8+68.4097	-18.1250	5146.8098	146.8114	-18.1250	41.5997	1201842.6252	3123471.1965	41.5997	+0.020000										
PIER 2 BK	8+72.8930	-18.1250	5146.9816	146.9816	-18.1250	46.0830	1201840.7474	3123475.2676	46.0830	+0.020000	-18.1250	0.00	00.00	0.00						
PIER 2 CL	8+73.8930	-18.1250	5147.0190		-18.1250	47.0830	1201840.3286	3123476.1757	47.0830	+0.020000	-18.1250	0.00	00.00	0.00						
PIER 2 AH	8+74.8930	-18.1250	5147.0561	147.0561	-18.1250	48.0830	1201839.9097	3123477.0837	48.0830	+0.020000	-18.1250	0.00	00.00	0.00						
F-1	8+86.4014	-18.1250	5147.4583	147.5093	-18.1250	59.5914	1201835.0896	3123487.5341	59.5914	+0.020000										
F-2	8+97.9098	-18.1250	5147.8156	147.9021	-18.1250	71.0998	1201830.2695	3123497.9844	71.0998	+0.020000										
F-3	9+09.4182	-18.1250	5148.1282	148.2457	-18.1250	82.6082	1201825.4493	3123508.4348	82.6082	+0.020000										
F-4	9+20.9266	-18.1250	5148.3960	148.5387	-18.1250	94.1166	1201820.6292	3123518.8851	94.1166	+0.020000										
F-5	9+32.4350	-18.1250	5148.6190	148.7748	-18.1250	105.6250	1201815.8091	3123529.3354	105.6250	+0.020000										
F-6	9+43.9434	-18.1250	5148.7971	148.9491	-18.1250	117.1334	1201810.9890	3123539.7858	117.1334	+0.020000										
F-7	9+55.4518	-18.1250	5148.9305	149.0602	-18.1250	128.6418	1201806.1688	3123550.2361	128.6418	+0.020000										
F-8	9+66.9602	-18.1250	5149.0191	149.1120	-18.1250	140.1502	1201801.3487	3123560.6865	140.1502	+0.020000										
F-9	9+78.4686	-18.1250	5149.0629	149.1109	-18.1250	151.6586	1201796.5286	3123571.1368	151.6586	+0.020000										
PIER 3 BK	9+89.9770	-18.1250	5149.0618	149.0618	-18.1250	163.1670	1201791.7084	3123581.5871	163.1670	+0.020000	-18.1250	0.00	00.00	0.00						
PIER 3 CL	9+90.9770	-18.1250	5149.0596		-18.1250	164.1670	1201791.2896	3123582.4952	164.1670	+0.020000	-18.1250	0.00	00.00	0.00						
PIER 3 AH	9+91.9770	-18.1250	5149.0571	149.0571	-18.1250	165.1670	1201790.8708	3123583.4033	165.1670	+0.020000	-18.1250	0.00	00.00	0.00						
F-1	10+03.4853	-18.1250	5149.0035	149.0591	-18.1250	176.6753	1201786.0507	3123593.8535	176.6753	+0.020000										
F-2	10+14.9936	-18.1250	5148.9051	149.0115	-18.1250	188.1836	1201781.2306	3123604.3038	188.1836	+0.020000										
F-3	10+26.5019	-18.1250	5148.7842	148.9314	-18.1250	199.6919	1201776.4105	3123614.7540	199.6919	+0.020000										
F-4	10+38.0102	-18.1250	5148.6634	148.8371	-18.1250	211.2002	1201771.5904	3123625.2043	211.2002	+0.020000										
F-5	10+49.5185	-18.1250	5148.5426	148.7261	-18.1250	222.7085	1201766.7703	3123635.6545	222.7085	+0.020000										
F-6	10+61.0268	-18.1250	5148.4217	148.5975	-18.1250	234.2168	1201761.9502	3123646.1048	234.2168	+0.020000										
F-7	10+72.5351	-18.1250	5148.3009	148.4517	-18.1250	245.7251	1201757.1301	3123656.5550	245.7251	+0.020000										
F-8	10+84.0434	-18.1250	5148.1800	148.2907	-18.1250	257.2334	1201752.3101	3123667.0053	257.2334	+0.020000										
F-9	10+95.5517	-18.1250	5148.0592	148.1179	-18.1250	268.7417	1201747.4900	3123677.4555	268.7417	+0.020000										
ABUT 4 CL	11+07.0600	-18.1250	5147.9384	147.9384	-18.1250	280.2500	1201742.6699	3123687.9058	280.2500	+0.020000	-18.1250	0.00	00.00	0.00						
ABUT 4 BF	11+08.3100	-18.1250	5147.9252		-18.1250	281.5000	1201742.1463	3123689.0408	281.5000	+0.020000	-18.1250	0.00	00.00	0.00						

CL GIRDER B			PARALLEL TO HORIZONTAL CONTROL						0.250000 FEET BELOW FINISHED GRADE					
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKREW	GIRDER LNTH	CRS-SLP		
ABUT 1 BF	8+26.8100	-10.8750	5144.7462		-10.8750	0.0000	1201853.4652	3123430.3848	-10.8750	0 00 00.00	0.0000	+0.020000		
ABUT 1 CL	8+28.0600	-10.8750	5144.8123	144.8123	-10.8750	1.2500	1201852.9416	3123431.5199	-10.8750	0 00 00.00	1.2500	+0.020000		
F-1	8+32.5433	-10.8750	5145.0454	145.0465	-10.8750	5.7333	1201851.0639	3123435.5910			5.7333	+0.020000		
F-2	8+37.0266	-10.8750	5145.2716	145.2739	-10.8750	10.2166	1201849.1861	3123439.6621			10.2166	+0.020000		
F-3	8+41.5099	-10.8750	5145.4910	145.4943	-10.8750	14.6999	1201847.3083	3123443.7333			14.6999	+0.020000		
F-4	8+45.9932	-10.8750	5145.7036	145.7076	-10.8750	19.1832	1201845.4306	3123447.8044			19.1832	+0.020000		
F-5	8+50.4765	-10.8750	5145.9095	145.9137	-10.8750	23.6665	1201843.5528	3123451.8755			23.6665	+0.020000		
F-6	8+54.9598	-10.8750	5146.1085	146.1126	-10.8750	28.1498	1201841.6750	3123455.9466			28.1498	+0.020000		
F-7	8+59.4431	-10.8750	5146.3007	146.3044	-10.8750	32.6331	1201839.7973	3123460.0177			32.6331	+0.020000		
F-8	8+63.9264	-10.8750	5146.4862	146.4890	-10.8750	37.1164	1201837.9195	3123464.0888			37.1164	+0.020000		
F-9	8+68.4097	-10.8750	5146.6648	146.6664	-10.8750	41.5997	1201836.0417	3123468.1599			41.5997	+0.020000		
PIER 2 BK	8+72.8930	-10.8750	5146.8366	146.8366	-10.8750	46.0830	1201834.1640	3123472.2311	-10.8750	0 00 00.00	46.0830	+0.020000		
PIER 2 CL	8+73.8930	-10.8750	5146.8740		-10.8750	47.0830	1201833.7451	3123473.1391	-10.8750	0 00 00.00	47.0830	+0.020000		
PIER 2 AH	8+74.8930	-10.8750	5146.9111	146.9111	-10.8750	48.0830	1201833.3263	3123474.0472	-10.8750	0 00 00.00	48.0830	+0.020000		
F-1	8+86.4014	-10.8750	5147.3133	147.3643	-10.8750	59.5914	1201828.5062	3123484.4975			59.5914	+0.020000		
F-2	8+97.9098	-10.8750	5147.6706	147.7571	-10.8750	71.0998	1201823.6860	3123494.9479			71.0998	+0.020000		
F-3	9+09.4182	-10.8750	5147.9832	148.1007	-10.8750	82.6082	1201818.8659	3123505.3982			82.6082	+0.020000		
F-4	9+20.9266	-10.8750	5148.2510	148.3937	-10.8750	94.1166	1201814.0458	3123515.8485			94.1166	+0.020000		
F-5	9+32.4350	-10.8750	5148.4740	148.6298	-10.8750	105.6250	1201809.2256	3123526.2989			105.6250	+0.020000		
F-6	9+43.9434	-10.8750	5148.6521	148.8041	-10.8750	117.1334	1201804.4055	3123536.7492			117.1334	+0.020000		
F-7	9+55.4518	-10.8750	5148.7855	148.9152	-10.8750	128.6418	1201799.5854	3123547.1996			128.6418	+0.020000		
F-8	9+66.9602	-10.8750	5148.8741	148.9670	-10.8750	140.1502	1201794.7652	3123557.6499			140.1502	+0.020000		
F-9	9+78.4686	-10.8750	5148.9179	148.9659	-10.8750	151.6586	1201789.9451	3123568.1002			151.6586	+0.020000		
PIER 3 BK	9+89.9770	-10.8750	5148.9168	148.9168	-10.8750	163.1670	1201785.1250	3123578.5506	-10.8750	0 00 00.00	163.1670	+0.020000		
PIER 3 CL	9+90.9770	-10.8750	5148.9146		-10.8750	164.1670	1201784.7062	3123579.4586	-10.8750	0 00 00.00	164.1670	+0.020000		
PIER 3 AH	9+91.9770	-10.8750	5148.9121	148.9121	-10.8750	165.1670	1201784.2873	3123580.3667	-10.8750	0 00 00.00	165.1670	+0.020000		
F-1	10+03.4853	-10.8750	5148.8585	148.9141	-10.8750	176.6753	1201779.4672	3123590.8170			176.6753	+0.020000		
F-2	10+14.9936	-10.8750	5148.7601	148.8665	-10.8750	188.1836	1201774.6471	3123601.2672			188.1836	+0.020000		
F-3	10+26.5019	-10.8750	5148.6392	148.7864	-10.8750	199.6919	1201769.8270	3123611.7175			199.6919	+0.020000		
F-4	10+38.0102	-10.8750	5148.5184	148.6921	-10.8750	211.2002	1201765.0070	3123622.1677			211.2002	+0.020000		
F-5	10+49.5185	-10.8750	5148.3976	148.5811	-10.8750	222.7085	1201760.1869	3123632.6180			222.7085	+0.020000		
F-6	10+61.0268	-10.8750	5148.2767	148.4525	-10.8750	234.2168	1201755.3668	3123643.0682			234.2168	+0.020000		
F-7	10+72.5351	-10.8750	5148.1559	148.3067	-10.8750	245.7251	1201750.5467	3123653.5185			245.7251	+0.020000		
F-8	10+84.0434	-10.8750	5148.0350	148.1457	-10.8750	257.2334	1201745.7266	3123663.9687			257.2334	+0.020000		
F-9	10+95.5517	-10.8750	5147.9142	147.9729	-10.8750	268.7417	1201740.9065	3123674.4190			268.7417	+0.020000		
ABUT 4 CL	11+07.0600	-10.8750	5147.7934	147.7934	-10.8750	280.2500	1201736.0864	3123684.8692	-10.8750	0 00 00.00	280.2500	+0.020000		
ABUT 4 BF	11+08.3100	-10.8750	5147.7802		-10.8750	281.5000	1201735.5629	3123686.0043	-10.8750	0 00 00.00	281.5000	+0.020000		

F-4	8+45.9932	20.0000	5145.0861	20.0000	19.1832	1201817.3941	3123434.8728				19.1832	-0.020000
F-5	8+50.4765	20.0000	5145.2920	20.0000	23.6665	1201815.5164	3123438.9439				23.6665	-0.020000
F-6	8+54.9598	20.0000	5145.4910	20.0000	28.1498	1201813.6386	3123443.0150				28.1498	-0.020000
F-7	8+59.4431	20.0000	5145.6832	20.0000	32.6331	1201811.7608	3123447.0862				32.6331	-0.020000
F-8	8+63.9264	20.0000	5145.8687	20.0000	37.1164	1201809.8831	3123451.1573				37.1164	-0.020000
F-9	8+68.4097	20.0000	5146.0473	20.0000	41.5997	1201808.0053	3123455.2284				41.5997	-0.020000
PIER 2 BK	8+72.8930	20.0000	5146.2191	20.0000	46.0830	1201806.1275	3123459.2995	20.0000	0.00	00.00	46.0830	-0.020000
PIER 2 CL	8+73.8930	20.0000	5146.2565	20.0000	47.0830	1201805.7087	3123460.2076	20.0000	0.00	00.00	47.0830	-0.020000
PIER 2 AH	8+74.8930	20.0000	5146.2936	20.0000	48.0830	1201805.2899	3123461.1156	20.0000	0.00	00.00	48.0830	-0.020000
F-1	8+86.4014	20.0000	5146.6958	20.0000	59.5914	1201800.4697	3123471.5660				59.5914	-0.020000
F-2	8+97.9098	20.0000	5147.0531	20.0000	71.0998	1201795.6496	3123482.0163				71.0998	-0.020000
F-3	9+09.4182	20.0000	5147.3657	20.0000	82.6082	1201790.8295	3123492.4666				82.6082	-0.020000
F-4	9+20.9266	20.0000	5147.6335	20.0000	94.1166	1201786.0094	3123502.9170				94.1166	-0.020000
F-5	9+32.4350	20.0000	5147.8565	20.0000	105.6250	1201781.1892	3123513.3673				105.6250	-0.020000
F-6	9+43.9434	20.0000	5148.0346	20.0000	117.1334	1201776.3691	3123523.8177				117.1334	-0.020000
F-7	9+55.4518	20.0000	5148.1680	20.0000	128.6418	1201771.5490	3123534.2680				128.6418	-0.020000
F-8	9+66.9602	20.0000	5148.2566	20.0000	140.1502	1201766.7288	3123544.7183				140.1502	-0.020000
F-9	9+78.4686	20.0000	5148.3004	20.0000	151.6586	1201761.9087	3123555.1687				151.6586	-0.020000
PIER 3 BK	9+89.9770	20.0000	5148.2993	20.0000	163.1670	1201757.0886	3123565.6191	20.0000	0.00	00.00	163.1670	-0.020000
PIER 3 CL	9+90.9770	20.0000	5148.2971	20.0000	164.1670	1201756.6697	3123566.5270	20.0000	0.00	00.00	164.1670	-0.020000
PIER 3 AH	9+91.9770	20.0000	5148.2946	20.0000	165.1670	1201756.2509	3123567.4352	20.0000	0.00	00.00	165.1670	-0.020000
F-1	10+03.4853	20.0000	5148.2410	20.0000	176.6753	1201751.4308	3123577.8854				176.6753	-0.020000
F-2	10+14.9936	20.0000	5148.1426	20.0000	188.1836	1201746.6107	3123588.3357				188.1836	-0.020000
F-3	10+26.5019	20.0000	5148.0217	20.0000	199.6919	1201741.7906	3123598.7859				199.6919	-0.020000
F-4	10+38.0102	20.0000	5147.9009	20.0000	211.2002	1201736.9705	3123609.2362				211.2002	-0.020000
F-5	10+49.5185	20.0000	5147.7801	20.0000	222.7085	1201732.1505	3123619.6864				222.7085	-0.020000
F-6	10+61.0268	20.0000	5147.6592	20.0000	234.2168	1201727.3304	3123630.1367				234.2168	-0.020000
F-7	10+72.5351	20.0000	5147.5384	20.0000	245.7251	1201722.5103	3123640.5869				245.7251	-0.020000
F-8	10+84.0434	20.0000	5147.4175	20.0000	257.2334	1201717.6902	3123651.0372				257.2334	-0.020000
F-9	10+95.5517	20.0000	5147.2967	20.0000	268.7417	1201712.8701	3123661.4874				268.7417	-0.020000
ABUT 4 CL	11+07.0600	20.0000	5147.1759	20.0000	280.2500	1201708.0505	3123671.9376	20.0000	0.00	00.00	280.2500	-0.020000
ABUT 4 BF	11+08.3100	20.0000	5147.1627	20.0000	281.5000	1201707.5265	3123673.0727	20.0000	0.00	00.00	281.5000	-0.020000

		RIGHT OUT DECK		PARALLEL TO HORIZONTAL CONTROL				0.250000 FEET BELOW FINISHED GRADE					
BENT LINE		STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKREW	GIRDER LNTH	CRS-SLP
ABUT 1 BL		8+26.8100	21.5000	5144.0987		21.5000	0.0000	1201824.0667	3123416.8250	21.5000	0 00 00.00	0.0000	-0.020000
ABUT 1 CF		8+28.0600	21.5000	5144.1648		21.5000	1.2500	1201823.5431	3123417.9601	21.5000	0 00 00.00	1.2500	-0.020000
F-1		8+32.5433	21.5000	5144.3979		21.5000	5.7333	1201821.6654	3123422.0312			5.7333	-0.020000
F-2		8+37.0266	21.5000	5144.6241		21.5000	10.2166	1201819.7876	3123426.1023			10.2166	-0.020000
F-3		8+41.5099	21.5000	5144.8435		21.5000	14.6999	1201817.9098	3123430.1734			14.6999	-0.020000
F-4		8+45.9932	21.5000	5145.0561		21.5000	19.1832	1201816.0321	3123434.2446			19.1832	-0.020000
F-5		8+50.4765	21.5000	5145.2620		21.5000	23.6665	1201814.1543	3123438.3157			23.6665	-0.020000
F-6		8+54.9598	21.5000	5145.4610		21.5000	28.1498	1201812.2765	3123442.3867			28.1498	-0.020000
F-7		8+59.4431	21.5000	5145.6532		21.5000	32.6331	1201810.3988	3123446.4579			32.6331	-0.020000
F-8		8+63.9264	21.5000	5145.8387		21.5000	37.1164	1201808.5210	3123450.5290			37.1164	-0.020000
F-9		8+68.4097	21.5000	5146.0173		21.5000	41.5997	1201806.6432	3123454.6001			41.5997	-0.020000
PIER 2 BK		8+72.8930	21.5000	5146.1891		21.5000	46.0830	1201804.7655	3123458.6712	21.5000	0 00 00.00	46.0830	-0.020000
PIER 2 AL		8+73.8930	21.5000	5146.2265		21.5000	47.0830	1201804.3466	3123459.5793	21.5000	0 00 00.00	47.0830	-0.020000
PIER 2 CH		8+74.8930	21.5000	5146.2636		21.5000	48.0830	1201803.9278	3123460.4874	21.5000	0 00 00.00	48.0830	-0.020000
F-1		8+86.4014	21.5000	5146.6658		21.5000	59.5914	1201799.1077	3123470.9377			59.5914	-0.020000
F-2		8+97.9098	21.5000	5147.0231		21.5000	71.0998	1201794.2875	3123481.3881			71.0998	-0.020000
F-3		9+09.4182	21.5000	5147.3357		21.5000	82.6082	1201789.4674	3123491.8384			82.6082	-0.020000
F-4		9+20.9266	21.5000	5147.6035		21.5000	94.1166	1201784.6473	3123502.2887			94.1166	-0.020000
F-5		9+32.4350	21.5000	5147.8265		21.5000	105.6250	1201779.8271	3123512.7391			105.6250	-0.020000
F-6		9+43.9434	21.5000	5148.0046		21.5000	117.1334	1201775.0070	3123523.1898			117.1334	-0.020000
F-7		9+55.4518	21.5000	5148.1380		21.5000	128.6418	1201770.1869	3123533.6398			128.6418	-0.020000
F-8		9+66.9602	21.5000	5148.2268		21.5000	140.1502	1201765.3667	3123544.4930			140.1502	-0.020000
F-9		9+78.4686	21.5000	5148.3004		21.5000	151.6586	1201760.5466	3123554.5404			151.6586	-0.020000
PIER 3 BK		9+89.9770	21.5000	5148.2693		21.5000	163.1670	1201755.7265	3123564.9908	21.5000	0 00 00.00	163.1670	-0.020000
PIER 3 CL		9+90.9770	21.5000	5148.2671		21.5000	164.1670	1201755.3076	3123565.8808	21.5000	0 00 00.00	164.1670	-0.020000
PIER 3 AH		9+91.9770	21.5000	5148.2646		21.5000	165.1670	1201754.8888	3123566.8069	21.5000	0 00 00.00	165.1670	-0.020000
F-1		10+03.4853	21.5000	5148.2110		21.5000	176.6753	1201750.0687	3123577.2572			176.6753	-0.020000
F-2		10+14.9936	21.5000	5148.1126		21.5000	188.1836	1201745.2486	3123587.7074			188.1836	-0.020000
F-3		10+26.5019	21.5000	5147.9917		21.5000	199.6919	1201740.4285	3123598.1576			199.6919	-0.020000
F-4		10+38.0102	21.5000	5147.8709		21.5000	211.2002	1201735.6085	3123608.6079			211.2002	-0.020000
F-5		10+49.5185	21.5000	5147.7501		21.5000	222.7085	1201730.7884	3123619.0581			222.7085	-0.020000
F-6		10+61.0268	21.5000	5147.6292		21.5000	234.2168	1201725.9683	3123629.5084			234.2168	-0.020000
F-7		10+72.5351	21.5000	5147.5084		21.5000	245.7251	1201721.1482	3123639.9586			245.7251	-0.020000
F-8		10+84.0434	21.5000	5147.3875		21.5000	257.2334	1201716.3281	3123650.4089			257.2334	-0.020000
F-9		10+95.5517	21.5000	5147.2675		21.5000	268.7417	1201711.5080	3123660.8591			268.7417	-0.020000
ABUT 4 BL		11+07.0600	21.5000	5147.1459		21.5000	280.2500	1201706.6879	3123671.3094	21.5000	0 00 00.00	280.2500	-0.020000
ABUT 4 CF		11+08.3100	21.5000	5147.1327		21.5000	281.5000	1201706.1644	3123672.4445	21.5000	0 00 00.00	281.5000	-0.020000

Print Date: 5/14/2014		Sheet Revisions <table><thead><tr><th>Date:</th><th>Comments</th><th>Init.</th></tr></thead><tbody><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></tbody></table>		Date:	Comments	Init.																Colorado Department of Transportation  902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD		As Constructed		SH 120 OVER DRAW & UPRR BRIDGE DECK ELEVATIONS (3 OF 4)		Project No./Co	
Date:	Comments			Init.																									
File Name: 18370BRGDeckElev03.dgn		No Revisions: 6/13/16		Designer: S. ABRAHAM Detailer: E. SCHAWO		FBR 120A-011																							
Horiz. Scale: NONE Vert. Scale: NONE		Revised:		Structure: K-16-CI		18370																							
Staff Bridge Branch - Unit 0226 DDG		Void:		Numbers		Sheet Number 5																							
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276				Sheet Subset: BRIDGE Subset Sheets: B34 of 35																									

S:\Tranproj\100025698\18370\Consultants\Bridge\Drawings\18370BRGDDeckElev04.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	SA	DEW	11-12	Quantities By	SA
Checked By	KTZ	Checked By	KTZ	Checked By	KTZ

* ROADWAY APPROACHES *							
STATION	OFFSET	ELEVATION	CROSS-SLOPE	STATION	OFFSET	ELEVATION	CROSS-SLOPE
7+70	-21.5000	5142.2514	+0.046529	11+10	-21.5000	5148.2250	+0.020000
7+80	-21.5000	5142.8132	+0.041357	11+20	-21.5000	5148.1200	+0.020000
7+90	-21.5000	5143.3707	+0.036184	11+30	-21.5000	5148.0150	+0.020000
8+00	-21.5000	5143.8987	+0.031012	11+40	-21.5000	5147.8108	+0.015385
8+10	-21.5000	5144.3928	+0.025840	11+50	-21.5000	5147.5955	+0.010256
8+20	-21.5000	5144.8532	+0.020667	11+60	-21.5000	5147.3803	+0.005128
				11+70	-21.5000	5147.1650	+0.000000
				11+10	-20.0000	5148.1950	+0.020000
7+70	-20.0000	5142.1816	+0.046529	11+20	-20.0000	5148.0900	+0.020000
7+80	-20.0000	5142.7511	+0.041357	11+30	-20.0000	5147.9850	+0.020000
7+90	-20.0000	5143.3165	+0.036184	11+40	-20.0000	5147.7877	+0.015385
8+00	-20.0000	5143.8522	+0.031012	11+50	-20.0000	5147.5801	+0.010256
8+10	-20.0000	5144.3541	+0.025840	11+60	-20.0000	5147.3726	+0.005128
8+20	-20.0000	5144.8222	+0.020667	11+70	-20.0000	5147.1650	+0.000000
				11+10	0.0000	5147.7950	+/- .020000
7+70	0.0000	5141.2510	+/- .046529	11+20	0.0000	5147.6900	+/- .020000
7+80	0.0000	5141.9240	+/- .041357	11+30	0.0000	5147.5850	+/- .020000
7+90	0.0000	5142.5928	+/- .036184	11+40	0.0000	5147.4800	+/- .015385
8+00	0.0000	5143.2319	+/- .031012	11+50	0.0000	5147.3750	+/- .010256
8+10	0.0000	5143.8373	+/- .025840	11+60	0.0000	5147.2700	+/- .005128
8+20	0.0000	5144.4088	+/- .020667	11+70	0.0000	5147.1650	+/- .000000
				11+10	20.0000	5147.3950	-0.020000
7+70	20.0000	5140.3204	-0.046529	11+20	20.0000	5147.2900	-0.020000
7+80	20.0000	5141.0969	-0.041357	11+30	20.0000	5147.1850	-0.020000
7+90	20.0000	5141.8691	-0.036184	11+40	20.0000	5147.1723	-0.015385
8+00	20.0000	5142.6117	-0.031012	11+50	20.0000	5147.1699	-0.010256
8+10	20.0000	5143.3205	-0.025840	11+60	20.0000	5147.1674	-0.005128
8+20	20.0000	5143.9955	-0.020667	11+70	20.0000	5147.1650	+0.000000
				11+10	21.5000	5147.3650	-0.020000
7+70	21.5000	5140.2506	-0.046529	11+20	21.5000	5147.2600	-0.020000
7+80	21.5000	5141.0348	-0.041357	11+30	21.5000	5147.1550	-0.020000
7+90	21.5000	5141.8148	-0.036184	11+40	21.5000	5147.1492	-0.015385
8+00	21.5000	5142.5652	-0.031012	11+50	21.5000	5147.1545	-0.010256
8+10	21.5000	5143.2817	-0.025840	11+60	21.5000	5147.1597	-0.005128
8+20	21.5000	5143.9645	-0.020667	11+70	21.5000	5147.1650	+0.000000

Print Date: 5/14/2014

File Name: 18370BRGDDeckElev04.dgn

Horiz. Scale: NONE Vert. Scale: NONE

Staff Bridge Branch - Unit 0226 DDG

ATKINS

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

0000

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed

No Revisions: **6/13/16**

Revised:

Void:

SH 120 OVER DRAW & UPRR
BRIDGE DECK ELEVATIONS (3 OF 4)

Designer:	S. ABRAHAM	Structure	K-16-CI
Detailer:	E. SCHAWD	Numbers	
Sheet Subset:	BRIDGE	Subset Sheets:	B35 of 35

Project No./Code

FBR 120A-011

18370

Sheet Number 51

SCH48026 10:32:51 AM S:\Tranprojo\100025698\18370.Consultants\Bridge Drawings\18370BRG_RWallGenInfo01.dgn

Design		Detail		Quantities	
Designed By	Checked By	INITIAL	DATE	INITIAL	DATE

GENERAL NOTES

STRUCTURE EXCAVATION AND BACKFILL SHALL BE AS SHOWN ON THE PLANS.

STRUCTURE BACKFILL CLASS 1 FRICTION ANGLE SHALL BE VERIFIED PER CDOT FIELD MATERIALS MANUAL (AASHTO T-236) AT FREQUENCY OF ONE TEST PER SOURCE. VERIFICATION TEST SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN ITEM 206, STRUCTURAL BACKFILL (CLASS 1).

ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS 1 FINAL FINISH TO ONE FOOT BELOW THE GROUND LINE.

ALL REINFORCING STEEL SHALL BE NON-COATED UNLESS OTHERWISE NOTED.

ⓔ DENOTES EPOXY COATED REINFORCING STEEL.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
----------	----	----	----	----	----	----	-----	-----

SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"
------------------------------------	-------	-------	-------	--------	-------	-------	--------	-------

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
----------	----	----	----	----	----	----	-----	-----

SPLICE LENGTH FOR CLASS D CONCRETE	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"
------------------------------------	-------	-------	-------	--------	-------	-------	--------	--------

THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20 PERCENT FOR 3 BAR BUNDLES AND 33 PERCENT FOR 4 BAR BUNDLES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

CONSTRUCTION JOINTS NOT SHOWN ON PLANS MAY BE CONSTRUCTED ONLY IF APPROVED BY THE ENGINEER.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.

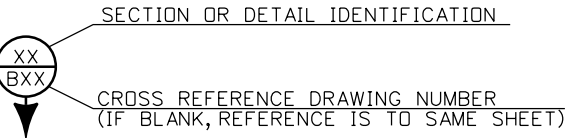
ABBREVIATIONS:

B.F. = BACK FACE	EMBED. = EMBEDMENT	MIN. = MINIMUM
BOT. = BOTTOM	EQ. = EQUALLY	NO. = NUMBER
CIP = CAST-IN-PLACE	EXP. = EXPANSION	PROJ. = PROJECTION
CLR. = CLEAR	F.F. = FRONT FACE	R = RADIUS
CONST. = CONSTRUCTION	JT. = JOINT	RT. = RIGHT
CONT. = CONTINUOUS	LOL = LAYOUT LINE	SHLDR. = SHOULDER
E.F. = EACH FACE	LT. = LEFT	SHT. = SHEET
EL. = ELEVATION	MAX. = MAXIMUM	SPA. = SPACED
		STA. = STATION
		STD. = STANDARD
		STR. = STRUCTURE
		TOT. = TOTAL
		TYP. = TYPICAL

FOR STRUCTURE NUMBER INSTALLATION, SEE STANDARD S-614-12.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY ESCAVATION OR OTHER EARTHWORK.



① ← DENOTES KEYNOTE REFERENCE

DESIGN DATA

AASHTO, LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION, 2012.

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

DEAD LOAD: VERTICAL EARTH LOAD = 135 LBS./CU. FT.
HORIZONTAL EARTH LOAD = 35.1 LBS./CU. FT. (ACTIVE PRESSURE)

LIVE LOAD SURCHARGE = 2 FT. OF EARTH

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

MAX. ULTIMATE BEARING PRESSURE - 7.5 ksf

INDEX OF DRAWINGS

W01 GENERAL INFORMATION
W02 WEST RETAINING WALL GENERAL LAYOUT
W03 EAST RETAINING WALL GENERAL LAYOUT
W04 TYPICAL SECTIONS
W05 MISCELLANEOUS DETAILS



FOR BURIED UTILITY INFORMATION
**THREE (3) BUSINESS DAYS
BEFORE YOU DIG**
CALL 811
(or 1-800-922-1987)
UTILITY NOTIFICATION
CENTER OF COLORADO (UNCC)
www.uncc.org



SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	STR. NO. WALL-K-16-A WEST WALL	EAST WALL	TOTAL
206-00000	STRUCTURE EXCAVATION	CY	270	100	370
206-00100	STRUCTURE BACKFILL (CLASS 1)	CY	280	70	350
206-00200	STRUCTURE BACKFILL (CLASS 2)	CY	100	40	140
601-03050	CONCRETE CLASS D (WALL)	CY	133	40	173
602-00000	REINFORCING STEEL	LB	14,670	3,300	17,970
605-83001	GEOCOMPOSITE DRAIN WITHOUT PIPE	SY	120	12	132

Print Date: 5/14/2014

File Name: 18370BRG_RWallGenInfo01.dgn

Horiz. Scale: NONE Vert. Scale: NONE

Staff Bridge Branch - Unit 0226 DDG



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

0000

Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation

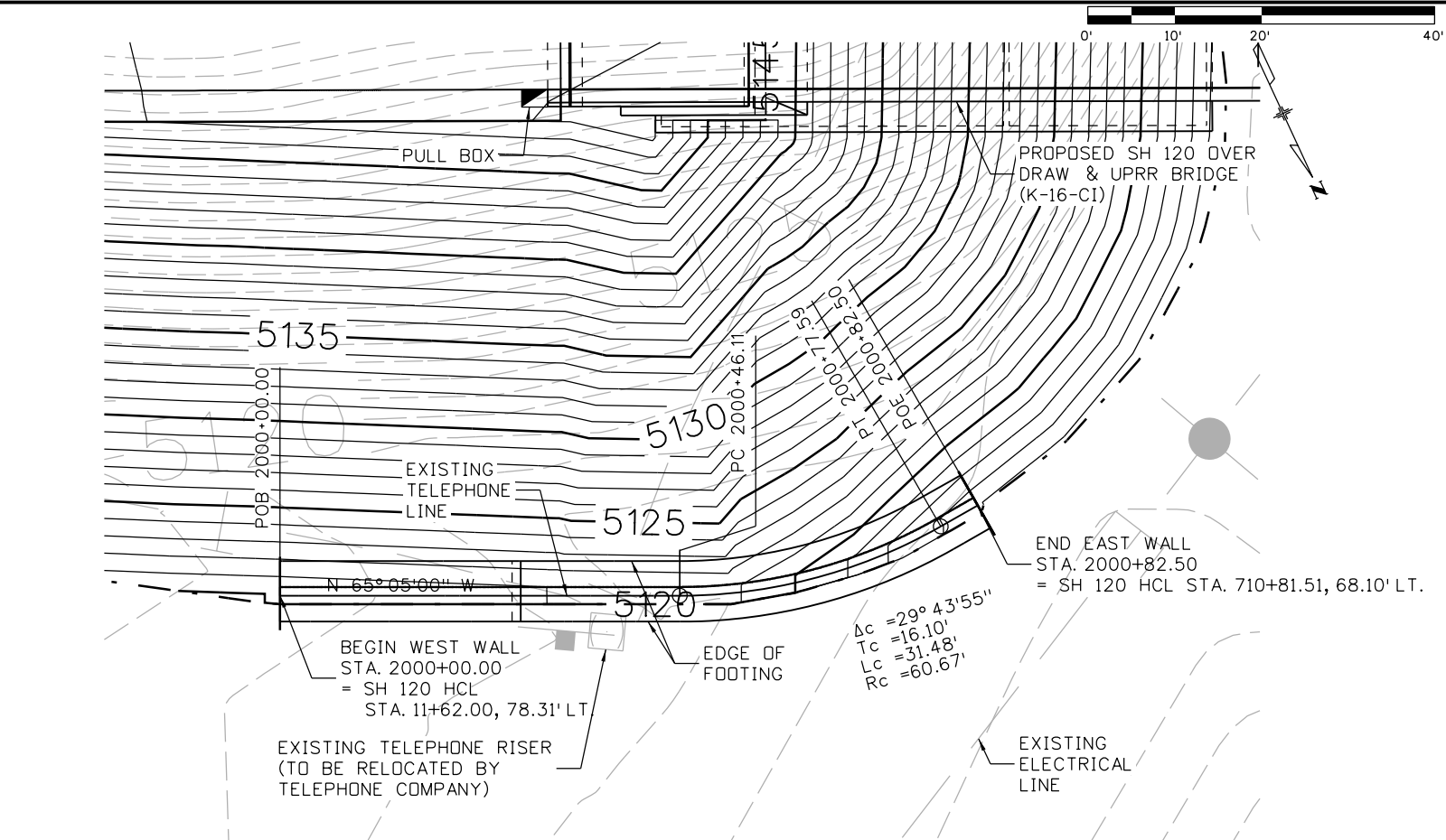
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

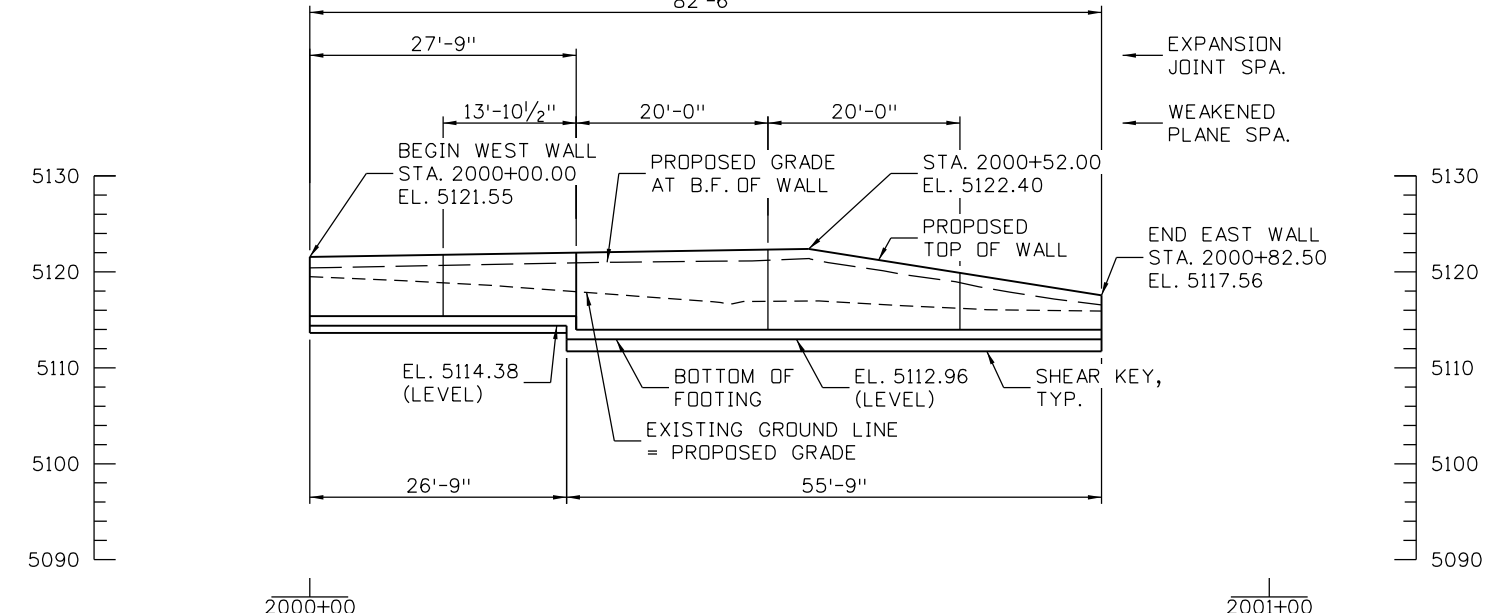
As Constructed		SH 120 OVER DRAW & UPRR RETAINING WALL GENERAL INFORMATION			Project No./Code
No Revisions:		Designer: P. Fernandez Structure Numbers WALL-K-16-A			FBR 120A-011
Revised: 6/13/16		Detailer: E. Schawo			18370
Void:		Sheet Subset: Wall Subset Sheets: W01 of 5			Sheet Number 52

S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRG_RWallGenLyt02.dgn

Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	01-13	Checked By	01-13	Checked By	01-13
Checked By		Checked By		Checked By	



PLAN
82'-6"



ELEVATION

(TAKEN ALONG WALL LOL)

Print Date: 5/14/2014	
File Name: 18370BRG_RWallGenLyt02.dgn	
Horiz. Scale: 1:20	Vert. Scale: 1:20
Staff Bridge Branch - Unit 0226 DDG	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276	

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

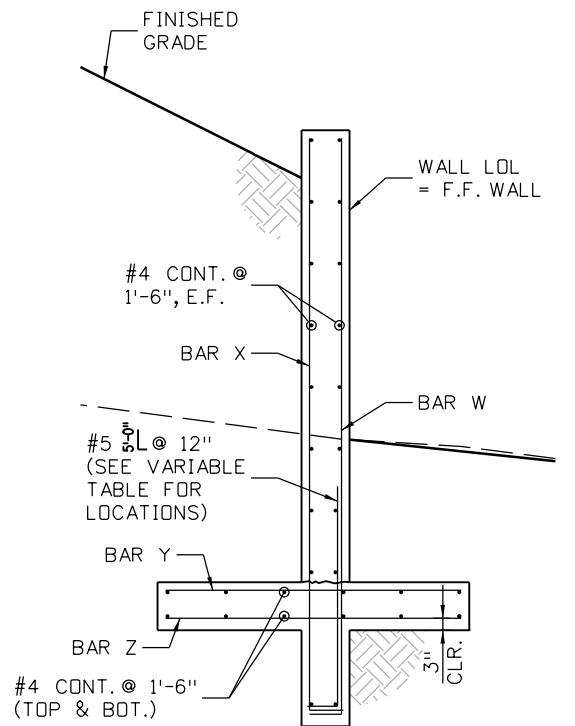
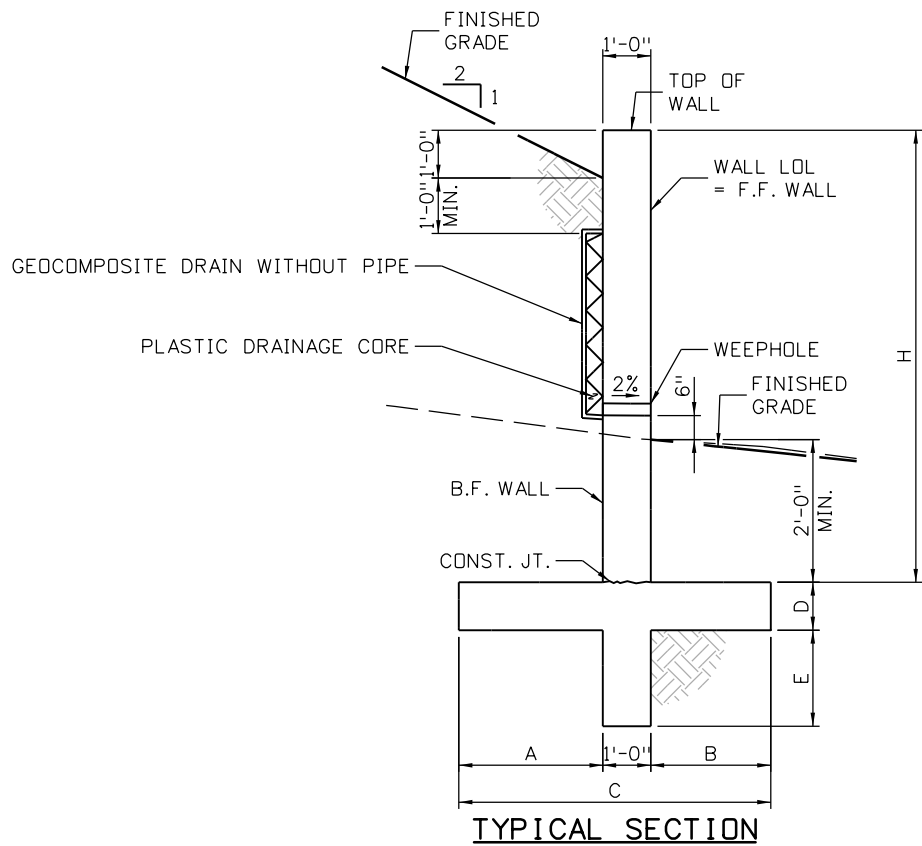
Region 2

DTD

As Constructed		SH 120 EAST RETAINING WALL GENERAL LAYOUT		Project No./Code
No Revisions: 6/13/16		Designer: P. Fernandez		FBR 120A-011
Revised:		Detailer: E. Schawo	Structure Numbers	18370
Void:		Sheet Subset: Wall	Subset Sheets: W03 of 5	Sheet Number 54

S:\Tranpro\100025698\18370\Consultants\Bridge\Drawings\18370BRG_RWallDet01.dgn

Design		Detail		Quantities	
DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
01-13	PF	01-13	ERS	01-13	PF
Designed By		Detailed By		Quantities By	
Checked By		Checked By		Checked By	
				KTZ	12-12



TYPICAL REINFORCING SECTION

WEST WALL (WALL K-16-A) VARIABLE TABLE

WEST WALL STATION RANGE	DESIGN HEIGHT H (FT)	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	REBAR (W)	REBAR (X)	REBAR (Y)	REBAR (Z)
1000+00.00 TO 1001+31.67	10.5	3.00	2.50	6.50	1.00	2.00	#4 L @ 12" ALT. WITH #5 @ 12"	#6 J @ 6"	#5 @ 12"	#4 @ 12"
1001+31.67 TO 1002+15.25	8.0	2.00	2.00	5.00	1.00	1.25	#4 L @ 12"	#4 J @ 6"	#5 @ 12"	#4 @ 12"

EAST WALL VARIABLE TABLE

EAST WALL STATION RANGE	DESIGN HEIGHT H (FT)	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	REBAR (W)	REBAR (X)	REBAR (Y)	REBAR (Z)
2000+00.00 TO 2000+27.75	5.5	2.00	2.00	5.00	1.00	0.75	#4 L @ 12"	#4 J @ 6"	#4 @ 12"	#4 @ 1'-6"
2000+27.75 TO 2000+82.25	8.0	2.00	2.00	5.00	1.00	1.25	#4 L @ 12"	#4 J @ 6"	#4 @ 12"	#4 @ 1'-6"

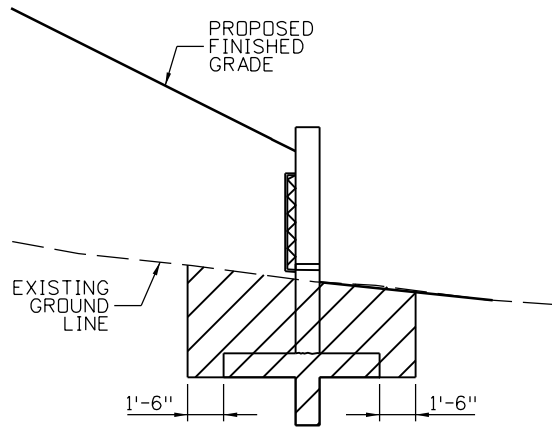
NOTES:

1. CONCRETE SHALL BE CONCRETE CLASS D (WALL).
2. WEEPHOLES SHALL BE 3"Ø PVC PIPE.
3. FOR GEOCOMPOSITE DRAIN WITHOUT PIPE DETAILS, SEE STD. PLAN M-605-1.
4. FOR ROADWAY PROFILES, SEE ROADWAY PLANS.

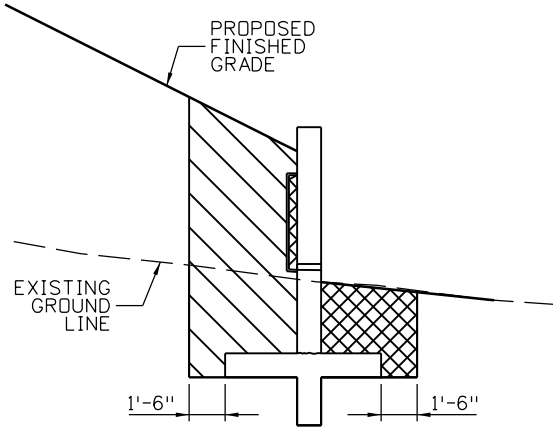
Print Date: 5/14/2014			Sheet Revisions			Colorado Department of Transportation DOT DEPARTMENT OF TRANSPORTATION 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD			As Constructed		SH 120 OVER DRAW & UPRR RETAINING WALL TYPICAL SECTIONS				Project No./Code	
File Name: 18370BRG_RWallDet01.dgn			Date:	Comments	Init.				No Revisions: 6/13/16		FBR 120A-011					
Horiz. Scale: 1:4 Vert. Scale: 1:4									Revised:		Designer: P. Fernandez		Structure		WALL-K-16-A	
Staff Bridge Branch - Unit 0226 DDG									Void:		Detailer: E. Schawo		Numbers		18370	
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276											Sheet Subset: Wall		Subset Sheets: W04 of 5		Sheet Number 55	

SCH48026 10:33:00 AM S:\Tranpro\100025698\18370-Consultants\Bridges\Drawings\18370BRG_RWalldet02.dgn

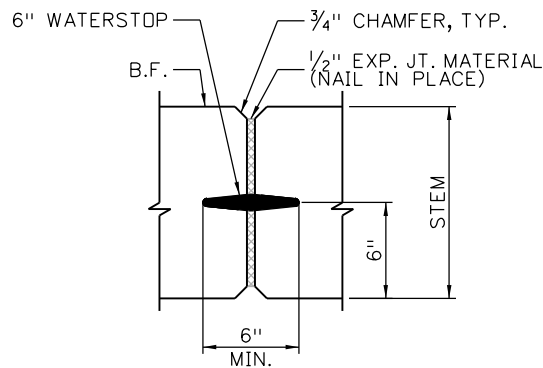
Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
Designed By	PF	01-13	ERS	01-13	PF
Checked By				Checked By	KTZ
					12-12



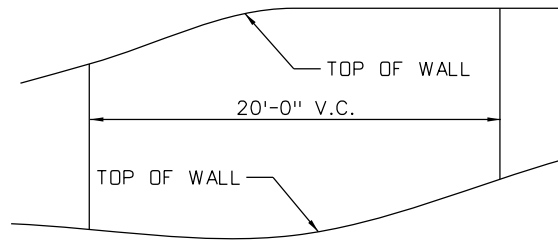
EXCAVATION TYPICAL SECTION



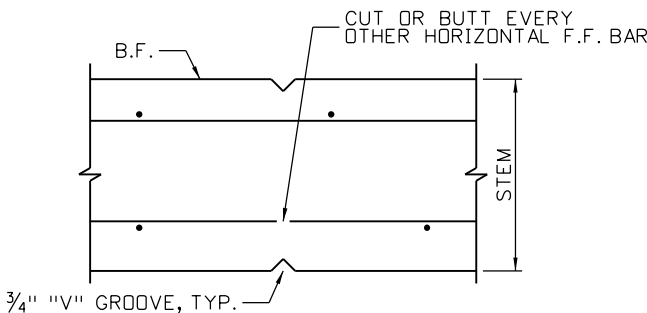
BACKFILL TYPICAL SECTION



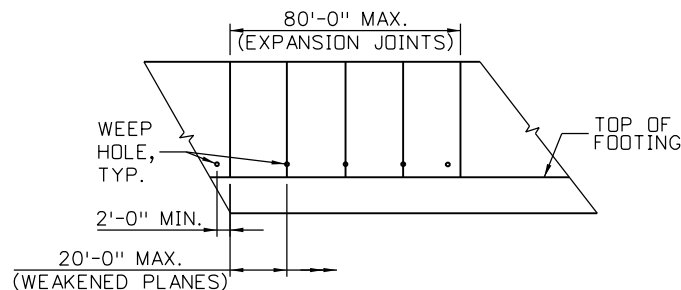
EXPANSION JOINT
JOINTS IN STEM ONLY



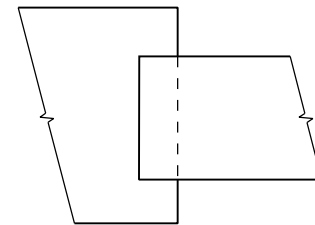
TOP OF WALL SLOPE CHANGE



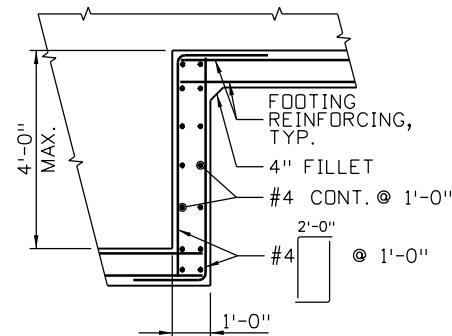
WEAKENED PLANE



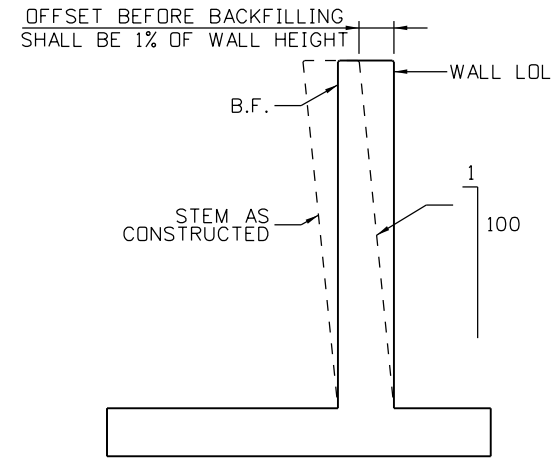
WALL EXPANSION JOINTS
AND WEAKENED PLANES
DO NOT EXTEND JOINTS THROUGH FOOTING.



PLAN



ELEVATION
FOOTING STEP



WALL OFFSETS

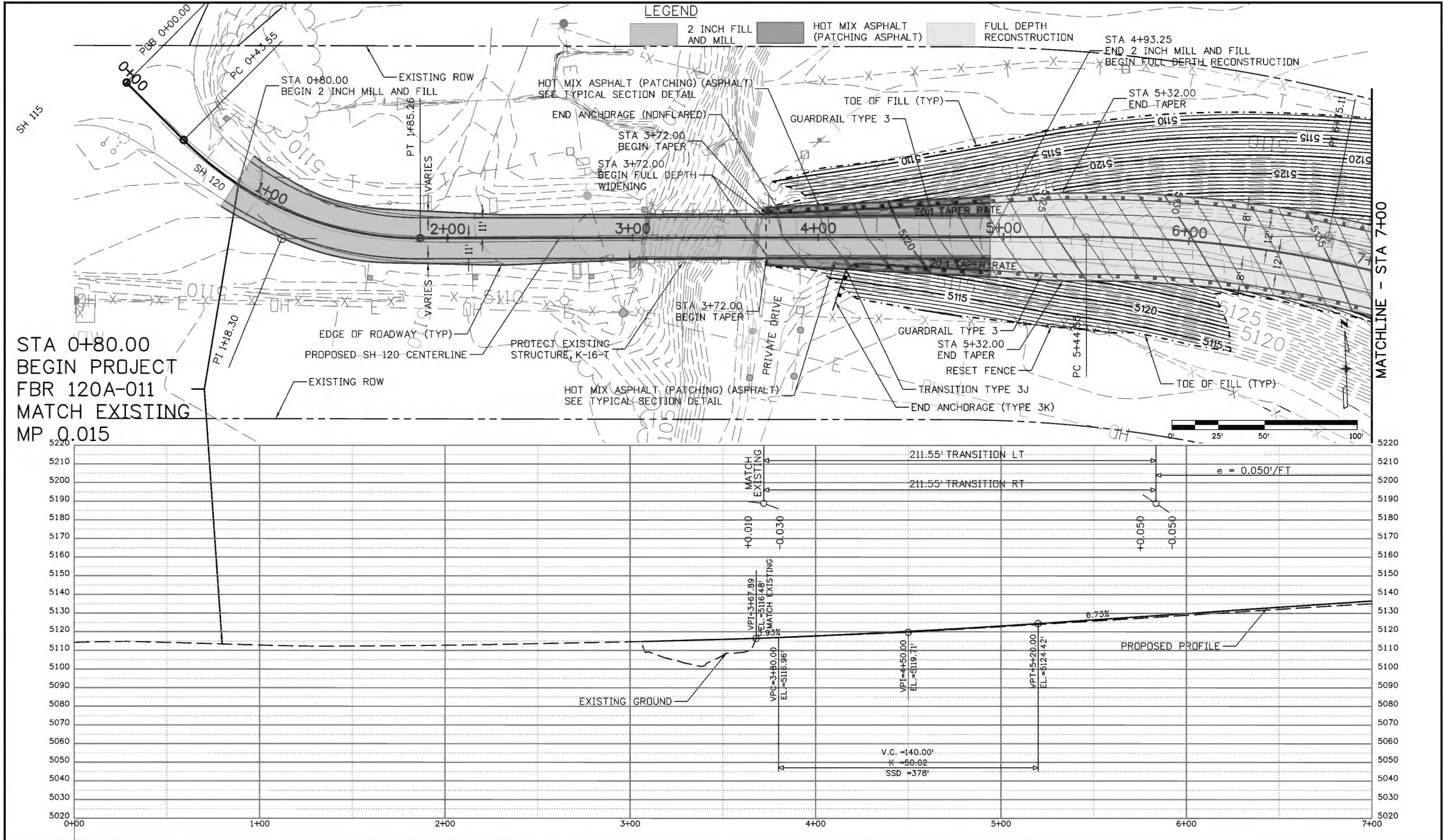
LEGEND:

	STRUCTURE EXCAVATION		STRUCTURAL BACKFILL (CLASS 2)
	STRUCTURAL BACKFILL (CLASS 1)		

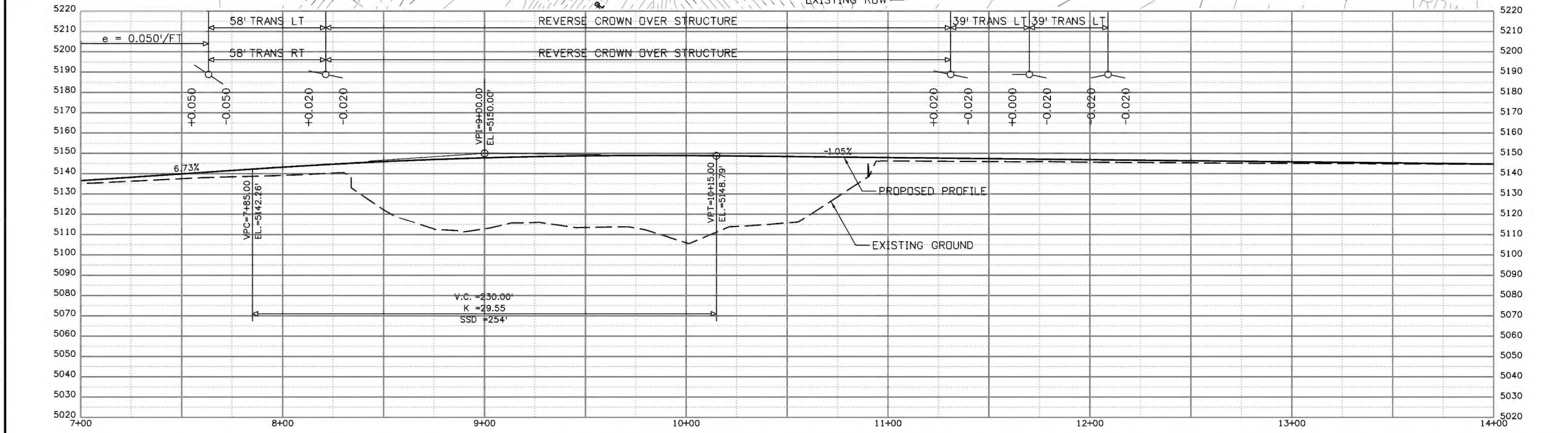
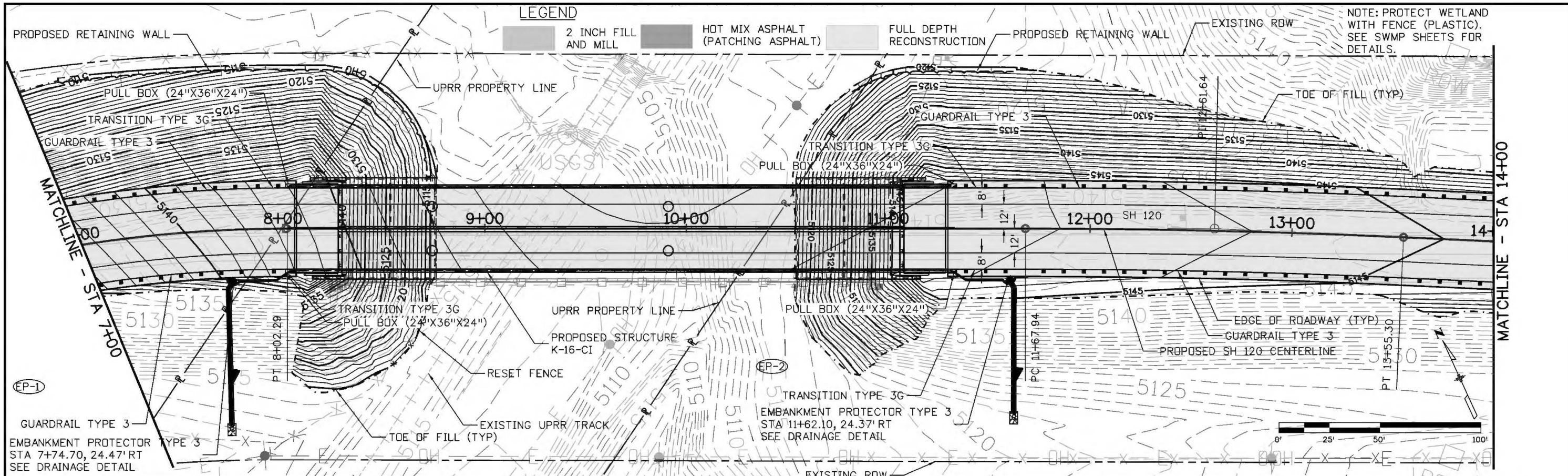
NOTES:

- FOR EXPANSION JOINT AND WEAKEND PLANE SPACING AND LOCATION, SEE WALL LAYOUTS.
- FOR ROADWAY PROFILES, SEE ROADWAY PLANS.
- MATERIALS AND WORK NECESSARY FOR FABRICATION AND INSTALLATION OF WATERSTOP, WEEPHOLE AND EXPANSION MATERIAL SHALL NOT BE MEASURED AND PAID FOR, BUT SHALL BE INCLUDED IN ITEM 601, CONCRETE CLASS D (WALL). WEEPHOLES SHALL BE 3" DIA. PVC PIPE.

Print Date: 5/14/2014		0000	Sheet Revisions			 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	As Constructed		SH 120 OVER DRAW & UPRR RETAINING WALL MISCELLANEOUS DETAILS				Project No./Code	
File Name: 18370BRG_RWalldet02.dgn			Date:	Comments	Init.		No Revisions: 6/13/16		FBR 120A-011					
Horiz. Scale: NONE Vert. Scale: NONE							Revised:		Designer: P. Fernandez		Structure		WALL-K-16-A	
Staff Bridge Branch - Unit 0226 DDG							Void:		Detailer: E. Schawo		Numbers		18370	
4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276									Sheet Subset: Wall		Subset Sheets: W05 of 5		Sheet Number 56	



Print Date: 5/15/2014		Sheet Revisions <table><thead><tr><th>Date:</th><th>Comments</th><th>Init.</th></tr></thead><tbody><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></tbody></table>			Date:	Comments	Init.																Colorado Department of Transportation  902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD		As Constructed No Revisions: 6/13/16 Revised: Void:		PLAN & PROFILE SHEET <table><tr><td>Designer:</td><td>MRH</td><td>Structure</td><td></td></tr><tr><td>Detailer:</td><td>SLZ</td><td>Numbers</td><td></td></tr><tr><td>Sheet Subset:</td><td>ROADWAY</td><td>Subset Sheets:</td><td>1 of 3</td></tr></table>				Designer:	MRH	Structure		Detailer:	SLZ	Numbers		Sheet Subset:	ROADWAY	Subset Sheets:	1 of 3	Project No./Code FBR 120A-011 18370 Sheet Number 57	
Date:	Comments				Init.																																							
Designer:	MRH	Structure																																										
Detailer:	SLZ	Numbers																																										
Sheet Subset:	ROADWAY	Subset Sheets:	1 of 3																																									
File Name: 18370DES_RoadwayPn01.dgn																																												
Horiz. Scale: 1:50 Vert. Scale: As Noted																																												
 5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM		(R-X) 																																										



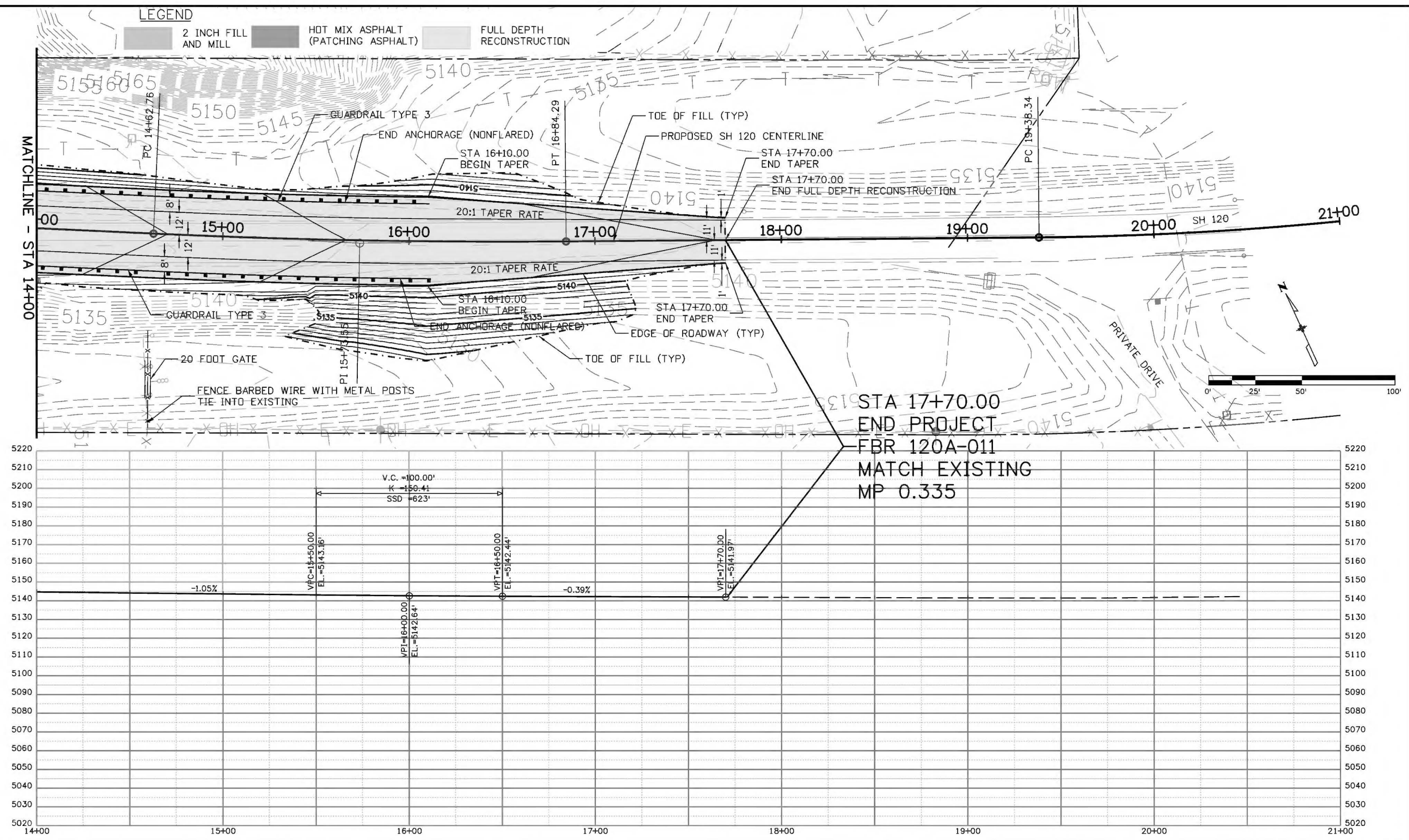
Print Date: 5/15/2014		Sheet Revisions Date: Comments Init.		Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2		As Constructed No Revisions: 6/13/16		PLAN & PROFILE SHEET		Project No./Code FBR 120A-011	
File Name: 18370DES_RoadwayPn02.dgn						Revised:				Designer: MRH Detailer: SLZ	
Horiz. Scale: 1:50 Vert. Scale: As Noted						Void:		Sheet Subset: ROADWAY Subset Sheets: 2 of 3		Sheet Number 58	

5690 DTC BOULEVARD, SUITE 101W
GREENWOOD VILLAGE, CO 80111
Phone: 303-221-2330
Fax: 303-221-2331
WWW.STOLFUSANDASSOCIATES.COM

Region 2 DTD

sarah 4:02:58 PM P:\2021\18370\Design\Drawings\18370DES_RoadwayPn02.dgn

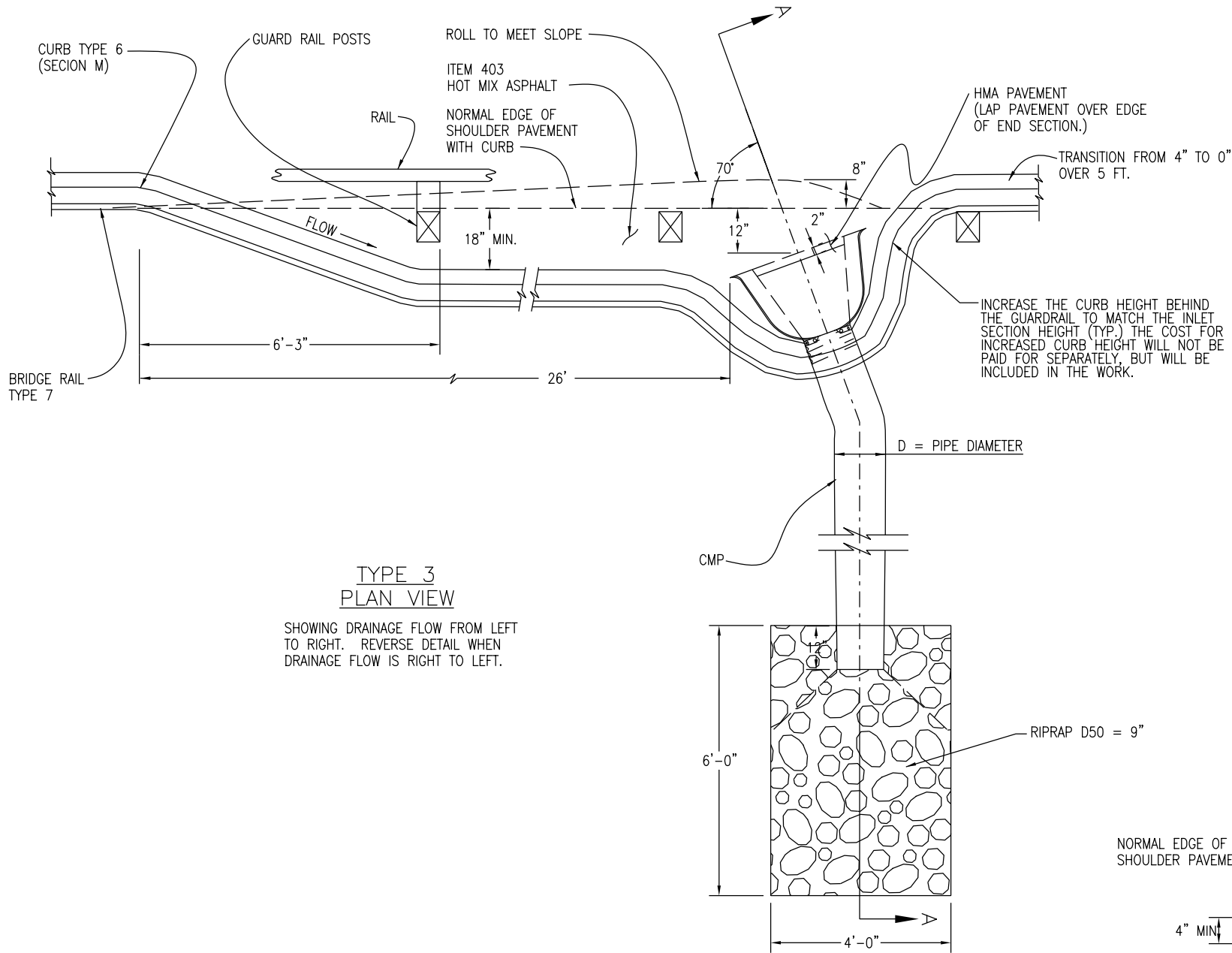
sarah 11:06:17 AM P:\12021\18370\Drawings\18370DES_RoadwayPn03.dgn



STA 17+70.00
END PROJECT
FBR 120A-011
MATCH EXISTING
MP 0.335

Print Date: 5/16/2014		Sheet Revisions		Colorado Department of Transportation		As Constructed		Project No./Code									
File Name: 18370DES_RoadwayPn03.dgn						No Revisions: 6/13/16											
Horiz. Scale: 1:50		Vert. Scale: As Noted		R-X		Revised:		Designer: MRH		Structure Numbers		18370					
Stolfus		5690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2330 FAX: 303-221-2331 WWW.STOLFUSANDASSOCIATES.COM		0000		Region 2		DTE		Detailer: SLZ		Sheet Subset: ROADWAY		Subset Sheets: 3 of 3		Sheet Number 59	

Design		Detail		Quantities	
DATE	INITIAL	DATE	INITIAL	DATE	INITIAL
11-12	TL	11-12	TL	11-12	TL
12-12	CD	12-12	CD	12-12	CD
Designed By		Detailed By		Quantities By	
Checked By		Checked By		Checked By	



- GENERAL NOTES**
1. IF THE EMBANKMENT PROTECTOR IS LOCATED IN THE BOTTOM OF A VERTICAL CURVE, FLARE BITUMINOUS CURB ON EACH SIDE OF INLET TO ALLOW FOR FLOW FROM BOTH DIRECTIONS.
 2. DETAILS OF GUARD RAIL INSTALLATION ARE SHOWN IN STANDARD PLAN M-606-1.
 3. THE END SECTION-TO-PIPE STUB JOINT FOR CORRUGATED METAL PIPE SHALL BE IN ACCORDANCE WITH THE TYPE 3 TYPICAL CONNECTION DETAILED IN STANDARD PLAN M-603-10. THE TYPE 1 OR TYPE 2 TYPICAL CONNECTIONS ARE NOT ACCEPTABLE. (AS AN OPTION, THE END SECTION MAY BE CONNECTED DIRECTLY TO A SECTION OF PIPE). JOINTS BETWEEN THE STUB AND PIPE, OR SECTIONS OF PIPE, SHALL BE IN ACCORDANCE WITH SECTION 603. CONNECTIONS FOR PLASTIC PIPE SHALL PROVIDE A FIRM DIRECT CONNECTION SIMILAR TO THE TYPE 3. PLASTIC END SECTIONS ARE NOT ALLOWED. ALL PLASTIC PIPE JOINTS SHALL BE AS RECOMMENDED BY THE PIPE MANUFACTURER AND APPROVED BY THE ENGINEER.
 4. PLASTIC PIPE SHALL CONFORM TO AASHTO M 294 TYPE C.
 5. DETAILS OF BITUMINOUS CURBING ARE SHOWN IN STANDARD PLAN M-609-1.
 6. STRUCTURE BACKFILL MATERIAL SHALL NOT BE USED WITH THE EMBANKMENT PROTECTOR (TYPE 3). EMBANKMENT MATERIAL SHALL BE USED WITH CONSTRUCTION REQUIREMENTS IN ACCORDANCE WITH SECTION 203. PAYMENT FOR THIS EMBANKMENT MATERIAL SHALL BE INCLUDED IN THE PAY ITEM FOR EMBANKMENT PROTECTOR (TYPE 3).

PAYMENT FOR THE QUANTITIES SHOWN ON THE PLANS FOR THIS WORK SHALL BE AS FOLLOWS:

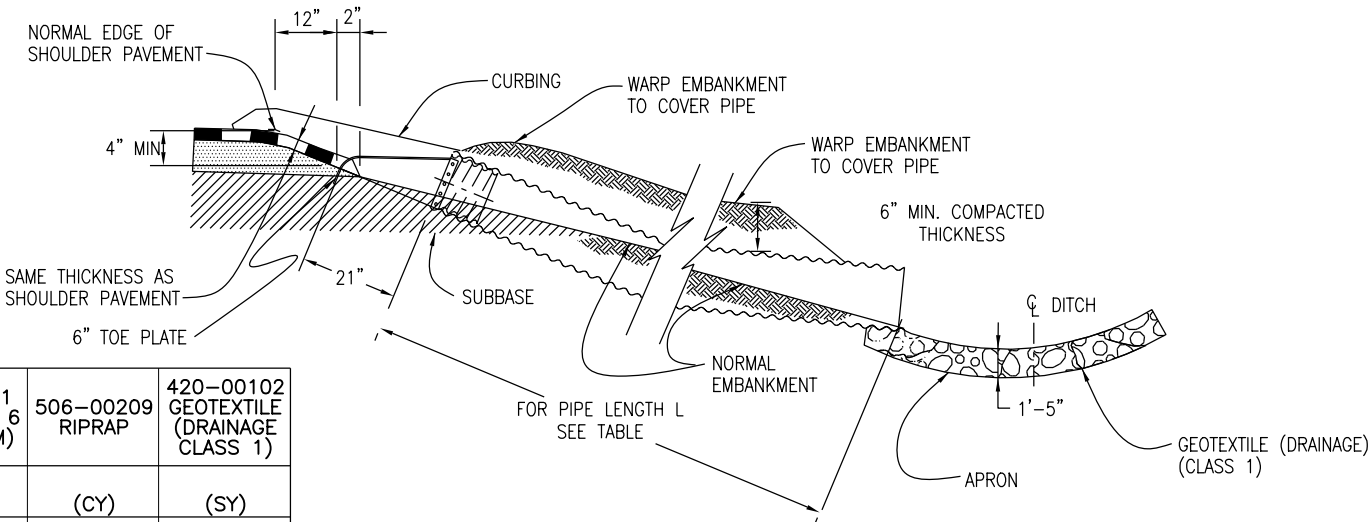
403 - PAY ITEMS AS SPECIFIED ON THE PLANS.

609 - CURB, TYPE 6 (SECTION M)LINEAR FT

615 - EMBANKMENT PROTECTOR (TYPE 3)EACH
(NOTE: THIS PAYMENT INCLUDES THE END SECTION, PIPE CONNECTION, STRUCTURE EXCAVATION, EMBANKMENT MATERIAL AND ANY EXTRA WORK REQUIRED TO MODIFY OTHER PAY ITEMS.)

603 - 18 IN. CORRUGATED STEEL PIPELINEAR FT

TABULATION OF EMBANKMENT PROTECTOR ITEMS									
	615-00030 EMBANKMENT PROTECTOR TYPE 3 ID	STA-OFF		PIPE SIZE	603-10180 CORRUGATED STEEL PIPE	RIPRAP SIZE	609-60011 CURB TYPE 6 (SECTION M)	506-00209 RIPRAP	420-00102 GEOTEXTILE (DRAINAGE CLASS 1)
	(EACH)	BEGIN	END	D (INCHES)	L (FT)	d50 (INCHES)	(LF)	(CY)	(SY)
EP-1	1	SH120 7+74.7, RT 24.47	SH120 7+69.7, RT 101.3	18	71	9	42	1.33	2.67
EP-2	1	SH120 11+62.1, RT 24.37	SH120 11+62.1, RT 96.1	18	66	9	42	1.33	2.67
PROJECT TOTALS	2				137		84	2.66	5.34



Print Date: 5/16/2014

Drawing File Name: 18370_EMBNK01.dgn

Horiz. Scale: 1:1 Vert. Scale: As Noted

Unit Information Unit Leader DDG

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

0000

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

 4201 East Arkansas Avenue
Room 107
Denver, CO 80222-3407
Phone: 303-757-9352 FAX: 303-757-9197

Staff Bridge Branch DTD

As Constructed

No Revisions: **6/13/16**

Revised:

Void:

SH 120 OVER DRAW & UPRR EMBANKMENT PROTECTOR TYPE 3

Designer: C. Das Structure Numbers

Detailer: T. Lyle

Sheet Subset: DRAINAGE Subset Sheets:

Project No./Code

Project Number

18370

Sheet Number 60

1. SITE DESCRIPTION

For Information Only to fulfill the CDPS-SCP (Colorado Discharge Permit System - Stormwater Construction Permit). Update to reflect current project site conditions.

A. PROJECT SITE DESCRIPTION: The project is located on and adjacent to State Highway (SH) 120, east of the Town of Florence within Fremont County. Specifically, the project is located in Section 23, Township 19 South, Range 69 West of the 6th Principal Meridian. This project includes road removal and bridge replacement, retaining wall, road and bridge construction and embankment improvements. Construction for this project starts near the intersection of SH 115 and SH 120 east of the Town of Florence. The construction continues for approximately 1,500 feet east along SH 120. The existing SH 120 bridge that crosses the Union Pacific Railroad (UPRR) will be replaced with a new bridge. The existing roadway will be widened at the bridge location. New fill slopes will be constructed adjacent to the roadway widening. Asphalt will be removed and replaced along SH 120 both west and east of the existing bridge.

B. PROPOSED SEQUENCING FOR MAJOR ACTIVITIES:

1. Install perimeter control and pre-construction Best Management Practices (BMPs) (Phase 1 BMPs), including installation of temporary earthen berms, sediment control logs and silt fence.
2. Civil construction Phase 1 includes: Construct north potion of bridge and wingwalls.
3. Civil construction Phase 2 includes:
 - a) Install temporary barrier
 - b) Shift traffic to north single temporary light controlled lane.
 - c) Remove existing bridge and wingwalls.
 - d) Construct remaining portion of bridge and wingwalls.
 - e) Construct deck closure pour.
 - f) Place HMA over waterproofing membrane.
 - g) Open traffic to final lane configuration.
4. Stabilize disturbed areas.
5. Remove BMPs upon site stabilization and CDOT approval.

C. ACRES OF DISTURBANCE:

1. Total area of construction site: 5.5 acres
2. Total area of disturbance: 5.5 acres
3. Acreage of seeding: 3.0 acres

D. EXISTING SOIL DATA: The surficial soils on the site include Limon silty clay loam with 0 to 1 percent slopes. This soil occurs mainly on stream terraces. It is moderately well drained and is more than 80 inches to a restrictive layer. It has a moderately low to moderately high capacity to transmit water and is typically 30 to 48 inches to the water table. The typical profile is silty clay loam from 0 to 3 inches and, clay from 3 to 60 inches. Also, Limon-Gaynor silty clay loams, with 3 to 12 percent slopes. This soil occurs mainly on hills. It is well drained and is more than 80 inches to paralithic bedrock. It has a moderately low to moderately high capacity to transmit water and is more than 80 inches deep to the water table. The typical profile is silty clay loam from 0 to 3 inches, silty clay from 3 to 46 inches, and weathered bedrock from 46 to 50 inches. In addition there is Midway clay loam with 10 to 40 percent slopes. This soil occurs mainly on plains, knolls and hills. It is well drained and is 6 to 20 inches to paralithic bedrock. It has a moderately low to moderately high capacity to transmit water and is more than 80 inches deep to the water table. The typical profile is silty clay loam from 0 to 3 inches, clay from 3 to 16 inches, and weathered bedrock from 16 to 20 inches. And finally the site contains Midway-Cascajo complex with 10 to 40 percent slopes. This soil occurs mainly on fan terraces, knobs and hills. It is well drained and is 6 to 20 inches to paralithic bedrock. It has a moderately low to moderately high capacity to transmit water and is more than 80 inches deep to the water table. The typical profile is very gravelly clay loam from 0 to 3 inches, clay from 3 to 15 inches, and weathered bedrock from 15 to 19 inches. The hydrologic soil group for the project site is C and D.

E. EXISTING VEGETATION, INCLUDING PERCENT COVER: Vegetation consists of grasses, weeds and shrubs and native plants. The site is partially bare and unvegetated near the UPRR tracks under the bridge. The Site percent cover is approximately 25%. Date of survey: August 27, 2012 - See Section 1 of the SWMP Notebook for transect sheets.

F. POTENTIAL POLLUTANTS SOURCES: See First Construction Activities under Potential Pollutant Sources. The ECS shall prepare a list of all potential pollutants and their locations in accordance with subsection 107.25.

G. RECEIVING WATER:

1. Outfall locations: No man-made outfalls are located in the project area. Roadway widening at the bridge location will impact roadway drainage minimally at the north-west and north-east corner of the roadway. Embankment protectors are proposed at the four corners of the bridge to protect slopes from erosion. No separate drainage facilities are required for deck drainage. Historic drainage patterns will remain unchanged.
2. Names of receiving water(s) on site and the ultimate receiving water: Cocklebur Creek is on site. Arkansas River is the ultimate receiving water.
3. Distance ultimate receiving water is from project: Cocklebur Creek joins the Arkansas River 1700 feet downstream from the Site.

H. ALLOWABLE NON-STORMWATER DISCHARGES:

1. Groundwater and stormwater dewatering: Discharges to the ground of water from construction dewatering activities may be authorized provided that:
 - a. the source is groundwater and/or groundwater combined with stormwater that does not contain pollutants
 - b. the source and BMPs are identified in the SWMP
 - c. discharges do not leave the site as surface runoff or to surface waters.
2. If discharges do not meet the above criteria a separate permit from the Department of Health will be required. Contaminated groundwater requiring coverage under a separate permit may include groundwater contaminated with pollutants from a landfill, mining activities, industrial pollutant plumes, underground storage tank, etc.

I. ENVIRONMENTAL IMPACTS:

1. Wetland Impacts: YES NO
Wetlands are located southeast of Bridge K-16-5. The wetlands border will be demarcated with orange construction fence prior to construction beginning. No access will be permitted to wetlands.
2. Stream Impacts: YES NO
3. Threatened and Endangered Species: YES NO

2. SITE MAP COMPONENTS:

Pre-construction

- A. PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES
- B. ALL AREAS OF GROUND SURFACE DISTURBANCE
- C. AREAS OF CUT AND FILL
- D. LOCATION OF ALL STRUCTURAL BMPs IDENTIFIED IN THE SWMP
- E. LOCATION OF NON-STRUCTURAL BMPs AS APPLICABLE IN THE SWMP
- F. SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER
- G. PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION
- H. AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer,fueling,etc) and BATCH PLANTS

Revise site maps in accordance to 208.03

3. SWMP ADMINSTRATOR FOR DESIGN: Karlene R. Thomas, P.E., Pinyon Environmental Resources, Inc.

4. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. DESIGNATE A SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR (To be filled out at time of construction; designate the individual(s) responsible for implementing, maintaining and revising the SWMP, including the title and contact information. The activities and responsibilities of the administrator shall address all aspects of the projects SWMP.)

Name/Title: Contact information:

B. POTENTIAL POLLUTANT SOURCES

Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place in the SWMP notebook. All BMPs related to potential pollutants shall be shown on the SWMP site map by the contractor's ECS.



9100 West Jewell Avenue, Suite 200
Lakewood, CO 80232
Phone: (303) 980-5200

Print Date: 05/13/2014

File Name: SH-120-SWMP.DWG

Horiz. Scale: 1" = 50' Vert. Scale: NA



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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed		SH 120 SWMP			Project No./Code
No Revisions: 6/13/16					Project Number
Revised:		Designer: K. Thomas	Structure Numbers		18370
Void:		Detailer: J. Curnutte			
		Sheet Subset: SWMP	Subset Sheets: 1 of 6		Sheet Number 61

C. BEST MANAGEMENT PRACTICES (BMPs) FOR STORMWATER POLLUTION PREVENTION

PHASED BMP IMPLEMENTATION, APPLICATION AND NARRATIVE:
During Design: "BMP as Designed" boxes are marked when used in the SWMP. During construction: the ECS shall update the narratives, include new narratives and update the "In use on site" boxes to match which BMPs are currently in use on site. Clearly describe the relationship between the phases of construction and the implementation of BMP controls.

A staging area will be constructed on the east end of the site to store construction vehicles and equipment. Construction access will be contained within the limits of disturbance. Two stabilized construction entrances will be constructed on the east end of the project and one on the west side to prevent vehicles from tracking sediment off the site. Silt fence will be placed adjacent to Cocklebur Creek at the intersection of SH 120 as well as adjacent to the existing wetlands south of the bridge replacement. Erosion control logs will be placed adjacent to SH 120 west of Cocklebur Creek. An earthen berm will be constructed at the base of the proposed fill slopes east of Cocklebur Creek. Both the erosion control logs and earthen berm will reduce the velocity of the runoff and to prevent sediment from flowing offsite. An orange plastic construction fence will be placed adjacent to the wetlands. After fill slopes have been finalized seed and mulch will be placed on proposed slopes to reduce runoff and control erosion. Any slopes 2:1 or steeper or 3:1 slopes facing south or west that are not part of a ditch will be stabilized with soil retention blanket (straw/coconut) (Biodegradable Class 1).

STRUCTURAL and NONSTRUCTURAL BMPs that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

Structural BMPs and Application	Narrative	BMP as Designed	In use on site	FIRST CONSTRUCTION ACTIVITIES	DURING CONSTRUCTION	INTERIM/FINAL STABILIZATION
Earth Berm/Toe of fill	Placed prior to earthwork within specified distance of toe to capture sediment and protect undisturbed areas	X			X	
Silt Fence/Sediment Control	Placed on contour to contain construction runoff	X		X	X	
Erosion Logs/Ditch Checks	Erosion Control checks in ditches placed immediately after ditch grading to reduce flow velocity of runoff in ditch	X			X	
Erosion Logs/culvert Inlet or outlet	Placed on culvert to filter or prevent sediment from entering pipe. If disturbance occurs above pipe then erosion logs are placed above pipe	X		X	X	X
Erosion Logs/Sediment Control	Placed to protect undisturbed area and delineate boundary of protected area	X		X	X	
Outlet Protection	Material placed as energy dissipation device to prevent erosion at outlet structure	X			X	X
Vehicle tracking Pad/Construction Control	Placed to prevent tracking of sediment from disturbance to offsite surface	X		X	X	
Sweeping/Construction or Source Control	Utilized to remove sediment on pavement surface and to prevent sediment from entering drainage system	X		X	X	X
Embankment Protection or Temp Slope Drain (TSD)	Placed as a conduit or chute to drain runoff down slope and prevent erosion of slope	X			X	X
Concrete Washouts/Construction Control	Construction waste management of concrete washout material	X			X	
Other						
Non Structural BMPs and Application	Narrative	BMP As Designed	In Use On Site	First Construction Activities	During Construction	Interim/ Final Stabilization
Surface Roughening/Grading Techniques	Interim and temp stabilization of disturbance and to minimize wind and erosion	X			X	X
Seeding Permanent/Final Stabilization	Reduce runoff and control erosion on disturbed areas	X			X	X
Seeding Temporary	Over wintering of disturbance or used to control erosion for areas scheduled for future construction	X			X	
Mulch/Mulch Tackifier/Temp or Final Stabilization	Placed as a surface cover for erosion control and or seeding establishment	X			X	X
Bonded Fiber Matrix/Temp Stabilization	Placed as surface treatment to provide temp erosion control	X			X	x
Soil Retention Blanket /Temp or Final Stabilization	Placed as surface cover for erosion control and seeding establishment	x			x	x

*Check dams may be rock, erosion logs, silt dike, silt berm, etc. as indicated in the narratives and SWMP site map. Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site. Construction control are BMPs related to construction access and staging. BMP locations are indicated on the SWMP site map. BMP details and narratives not covered by the SWMP or Standard Plan M-208-1 shall be added to the SWMP notebook by the ECS.

D. OFFSITE DRAINAGE (RUN ON WATER)

1. Describe and record BMPs on the SWMP site map that has been implemented to address off site run-on water in accordance with subsection 208.03. The run-on water that will be encountered on the project is from surrounding up-slope areas. See the SWMP Erosion and Sediment Control Site Map in Section 2 of the SWMP Notebook.

E. VEHICLE TRACKING PAD

1. BMPs shall be implemented in accordance with subsection 208.04.

F. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
2. Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs as approved.
3. Perimeter control shall be in accordance with subsection 208.04.

5. DURING CONSTRUCTION

RESPONSIBILITIES OF THE SWMP ADMINISTRATOR/EROSION CONTROL SUPERVISOR DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator/Erosion Control Supervisor (ECS) in accordance with Section 208.

During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP notebook indicate below what section the discussion takes place.

A. STOCKPILE MANAGEMENT - shall be done in accordance with subsection 101.95 and 208.07

B. CONCRETE WASHOUT - Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

C. SAW CUTTING - shall be done in accordance with subsection 101.95, 208.04, 208.05

D. STREET CLEANING - shall be done in accordance with subsection 208.04

6. INSPECTIONS

A. Inspections shall be in accordance with subsection 208.03 (c).

7. BMP MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04 (f).

8. RECORD KEEPING

A. Records shall be kept in accordance with subsection 208.03 (c).



9100 West Jewell Avenue, Suite 200
Lakewood, CO 80232
Phone: (303) 980-5200

Print Date: 05/13/2014

File Name: SH-120-SWMP.DWG

Horiz. Scale: 1" = 50' Vert. Scale: NA



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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed		SH 120 SWMP		Project No./Code
No Revisions: 6/13/16				Project Number
Revised:		Designer: K. Thomas	Structure Numbers	18370
Void:		Detailer: J. Curnutte		
		Sheet Subset: SWMP	Subset Sheets: 2 of 6	Sheet Number 62

9. INTERIM AND FINAL STABILIZATON

A. SEEDING PLAN

Soil preparation, soil conditioning or topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated 3.0 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 PER ACRE
Green needlegrass	<i>Nassela viridula</i> “Lordam”	2.0
Sideoats grama	<i>Bouteloua curtipendula</i> “Vaughn”	3.0
Western wheatgrass	<i>Pascopyrum smithii</i> “Arribi”	6.0
Saltgrass	<i>Distichlis spicata</i>	2.0
Blue grama	<i>Bouteloua gracilis</i> “Hachita”	2.0
Saltbush	<i>Atriplex confertafolia</i>	0.5
Alkalai sacaton	<i>Sporobolus airoides</i>	2.0
Galleta	<i>Hiaria jamsii</i> “Viva”	1.0
American Vetch	<i>Vicia americana</i>	2.0
Blue flax	<i>Linum lewissii</i>	1.0
Oats	<i>Avena sativa</i>	3.0
TOTAL		24.5

PLS = Pure Live Seed

B. SEEDING APPLICATION: Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25 inch to 0.5 inch into the soil.

C. MULCHING APPLICATION: Apply a minimum of 1 ½ tons of certified weed free native hay per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

D. SPECIAL REQUIREMENTS: Due to high failure rates, hydromulching and/or hydroseeding will not be allowed

E. Soil conditioning and fertilizer requirements:

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)		
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	Compost (cys/acre) (1/2 inch depth)
600	200	65

*Biological nutrient shall not exceed 8-8-8 (N-P-K). Humate based material shall be in accordance to Section 212 and compost shall be in accordance to Special Provision 212. Refer to Project Special- Topsoil for additional topsoil amendments. [Include topsoil project special provision] Placing compost when required to amend embankment and as soil conditioner may be combined as a single application.

F. BLANKET APPLICATION: On slopes and ditches requiring a blanket, Soil Retention Blanket (straw/coconut) (Biodegradable Class 1) shall be placed in lieu of mulch and mulch tackifier. See SWMP for blanket locations.

G. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION

Prior to final acceptance.

- Seeded areas shall be reviewed during the 14 day inspections by the Erosion Control Supervisor for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be regraded, seeded, mulched and have mulch tackifier (or blanket) applied as necessary, at no additional cost to the project.
- Areas where seed has not germinated after one season shall be evaluated by the Engineer and CDOT Landscape Architect. Areas that have not germinated shall have seed, mulch and mulch tackifier (or blanket) reapplied. Work shall be paid for by the appropriate bid item.
- The Contractor shall maintain seeding/mulch/tackifier, mow to control weeds or apply herbicide to control weeds in the seeded areas until Final Acceptance.

10. PRIOR TO FINAL ACCEPTANCE

A. Final Acceptance shall be in accordance with subsection 208.10.

11. TABULATION OF STORMWATER QUANTITIES

Pay Item	Description	Pay Unit	*Quantity
203 – 01510	Backhoe	Hour	100
203 – 01594	Combination Loader	Hour	100
203 – 01500	Blading	Hour	100
203 – 02330	Laborer	Hour	40
208 – 00106	Sweeping (Sediment Removal)	Hour	40
208 – 00107	Removal of Trash	Hour	80
208 – 00002	Erosion Log (12 Inch)	LF	1,200
208 – 00020	Silt Fence	LF	250
208 – 00045	Concrete Washout Structure	Each	2
208 – 00055	Rigid Inlet Protection Device	Each	2
208 – 00070	Vehicle Tracking Pad	Each	4
208 – 00105	Removal and Disposal of Sediment (Equipment)	Hour	120
208 – 00103	Removal and Disposal of Sediment (Labor)	Hour	120
208 – 00205	Erosion Control Supervisor	Hour	125
208 – 00300	Temporary Berm	LF	2,000
208 – 00035	Aggregate Bag	LF	10
212 – 00006	Seeding (Native)	Acre	3.0
212 – 00009	Seeding (Temporary)	Acre	1.5
212 – 00032	Soil Conditioning	Acre	3.0
213 – 00003	Mulching (Weed Free)	Acre	5.0
213 – 00150	Bonded Fiber Matrix	Acre	3.0
216 – 00201	Soil Retention Blanket (Straw/Coconut) (Biodegradable Class 1)	SY	6,800
217 – 00000	Herbicide Treatment	SY	14,520
607 – 11525	Fence (plastic)	LF	500
700 – 70380	Erosion Control	FA	1

*It is anticipated that additional BMPs and BMP quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.03 and 208.04 (e). Quantities for all BMPs shown above are estimated, and may need to be increased for unforeseen Project conditions.

- A. Payment for each BMP item will be full compensation for all work and materials required to furnish, install, maintain, remove and dispose of it (See Subsection 208.12).
- B. BMP sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP maintenance shall be included in the cost of the BMP Device.
- C. It is estimated that 100 hours of backhoe, 100 hours of combination loader, 100 hours of blading and 40 hours of laborer may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: 203 Backhoe, 203 Combination Loader, 203 Blading and 203 Laborer.
- D. Maintenance of seeded areas shall be included in the price of the work.



9100 West Jewell Avenue, Suite 200
Lakewood, CO 80232
Phone: (303) 980-5200

Print Date: 05/13/2014

File Name: SH-120-SWMP.DWG

Horiz. Scale: 1" = 50' Vert. Scale: NA



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

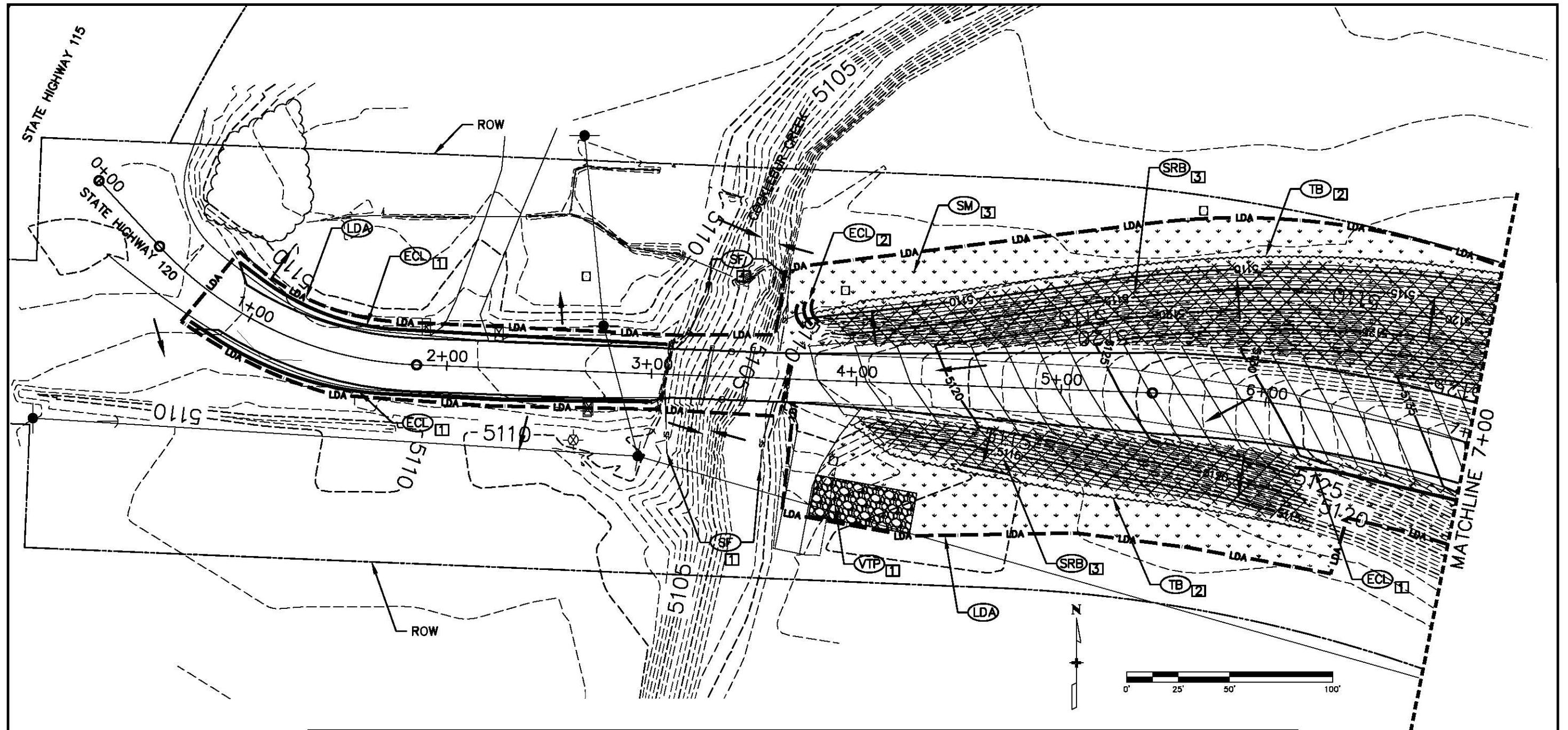
Sheet Revisions		
Date:	Comments	Init.



902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed		SH 120 SWMP			Project No./Code
No Revisions: 6/13/16					Project Number
Revised:		Designer: K. Thomas	Structure Numbers		18370
Void:		Detailer: J. Curnutte			
		Sheet Subset: SWMP	Subset Sheets: 3 of 6		Sheet Number 63



PHASING LEGEND

[f] INDICATES PHASE OF CONSTRUCTION TO INSTALL ASSOCIATED BMP (INITIAL, INTERIM OR FINAL)

[1] INITIAL BMP TO BE INSTALLED PRIOR TO CONSTRUCTION

[2] INTERIM BMP TO BE INSTALLED DURING CONSTRUCTION

[3] FINAL BMP TO BE INSTALLED AFTER CONSTRUCTION

BMP LEGEND

(LDA) LIMITS OF DISTURBED AREA

(SRB) SOIL RETENTION BLANKET

(PF) PLASTIC FENCE

(SF) SILT FENCE

(ECL) EROSION CONTROL LOG

(AB) AGGREGATE BAG

(TB) TEMPORARY BERM

(SM) SEED AND MULCH

(VTP) VEHICLE TRACKING PAD

(SSA) STABILIZED STAGING AREA

(DW) DEWATERING

(CWA) CONCRETE WASHOUT AREA

(IP) INLET PROTECTION

EXISTING WETLAND BOUNDARY

EXISTING WETLANDS

FLOW ARROW

EXISTING CONTOUR 1'

EXISTING CONTOUR 5'

PROPOSED CONTOUR 1'

PROPOSED CONTOUR 5'

Pinyon Environmental, Inc.

9100 West Jewell Avenue, Suite 200
Lakewood, CO 80232
Phone: (303) 980-5200

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed

No Revisions: **6/13/16**

Revised:

Void:

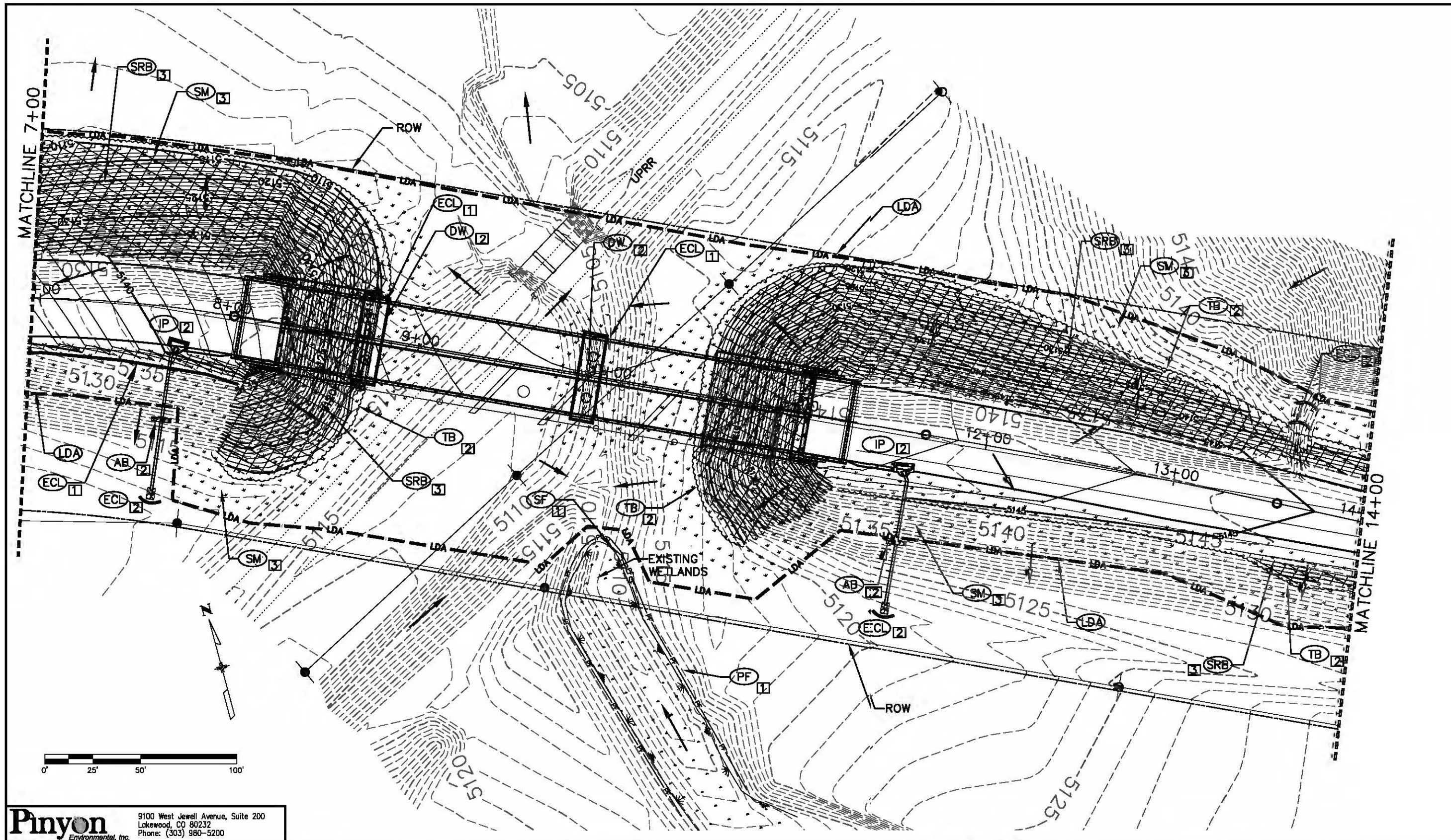
SH 120 SWMP SITE MAP

Designer: K. Thomas	Structure Numbers
Detailer: J. Curnutte	
Sheet Subset: SWMP	Subset Sheets: 4 of 6

Project No./Code

Project Number: 18370

Sheet Number: 64



9100 West Jewell Avenue, Suite 200
 Lakewood, CO 80232
 Phone: (303) 980-5200

Print Date: 05/13/2014

File Name: SH-120-SWMP.DWG

Horiz. Scale: 1" = 50'
 Vert. Scale: NA

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

Sheet Revisions		
Date:	Comments	Init.

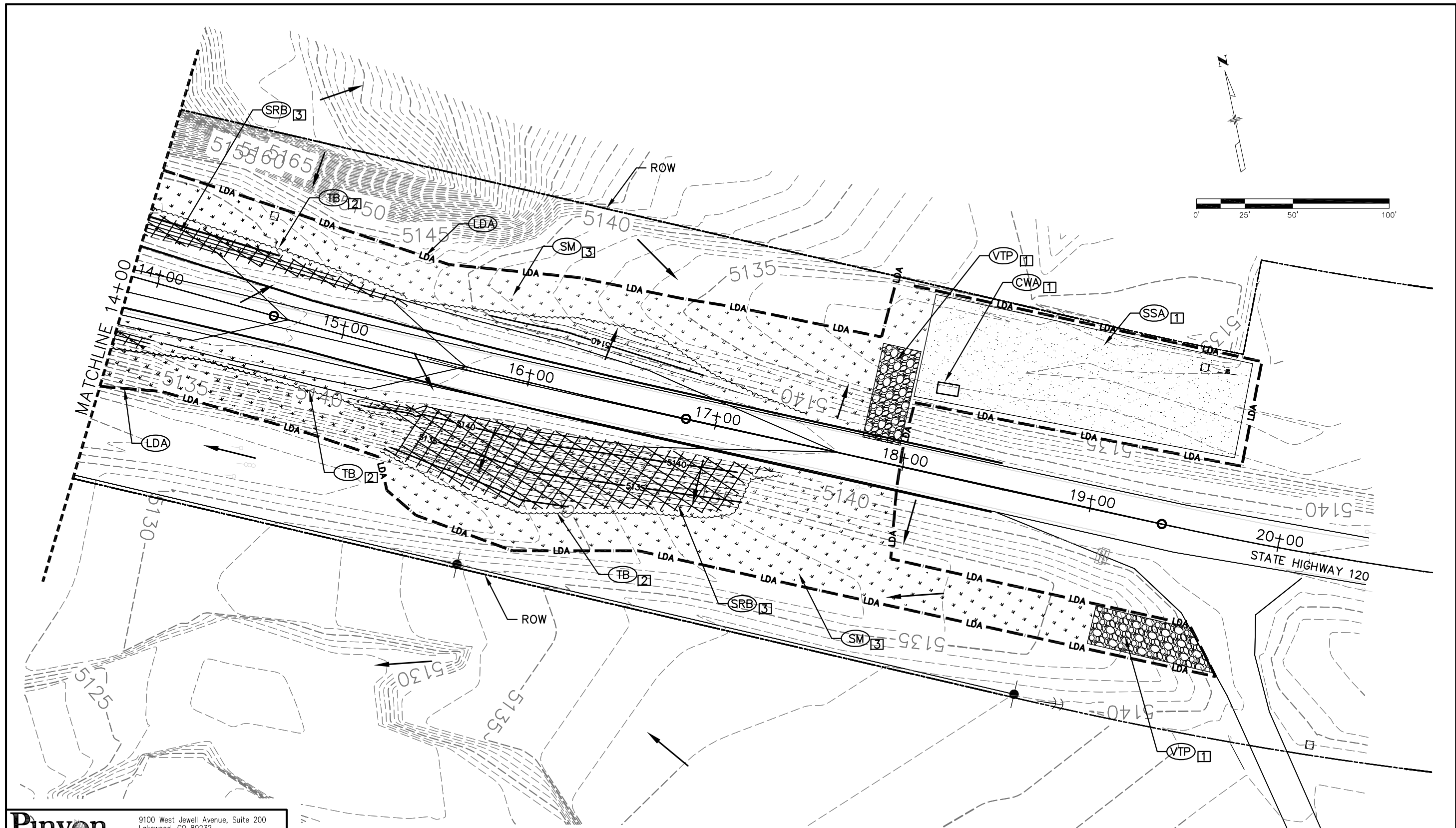
Colorado Department of Transportation
 902 Erie Avenue
 Pueblo, CO 81001
 Phone: 719-562-5509 FAX: 719-546-57012
Region 2

DTD

As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

SH 120 SWMP SITE MAP		
Designer:	K. Thomas	Structure Numbers
Detailer:	J. Curnutte	
Sheet Subset:	SWMP	Subset Sheets: 5 of 6

Project No./Code	
Project Number	
18370	
Sheet Number 65	



Pinyon
Environmental, Inc.
9100 West Jewell Avenue, Suite 200
Lakewood, CO 80232
Phone: (303) 980-5200

Print Date: 05/13/2014

File Name: SH-120-SWMP.DWG

Horiz. Scale: 1" = 50' Vert. Scale: NA

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

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 **DTD**

As Constructed
No Revisions: **6/13/16**
Revised:
Void:

**SH 120 SWMP
SITE MAP**

Designer: K. Thomas	Structure Numbers
Detailer: J. Curnutte	
Sheet Subset: SWMP	Subset Sheets: 6 of 6

Project No./Code
Project Number
18370
Sheet Number **66**

TABULATION OF DELINEATORS							
STATION FROM	STATION TO	SIDE	SPACING	612-00041	612-00042	612-00043	REMARKS
				DELINEATOR (FLEXIBLE)			
				TYPE I EACH	TYPE II EACH	TYPE III EACH	
0+80	1+83	LT	34	4			
		RT	34	4			
2+51	2+51	LT		1			
		RT		1			
3+02	3+02	RT				1	
3+73	5+52	LT	90		2	1	
4+01	8+04	RT	38	9		2	
6+26	7+86	LT	74	3			
8+04	8+04	RT		1			
11+31	16+10	LT	38	13		1	
		RT		1			
16+10	17+70	RT	80		3		
TOTAL				37	5	5	
PROJECT TOTALS				37	5	5	

NOTES:
1. SEE TABULATION OF REMOVALS FOR REMOVAL OF DELINEATORS.

TABULATION OF PAVEMENT MARKINGS					
STATION		627-00005			REMARKS
		EPOXY PAVEMENT MARKING			
		EDGE	CENTER	CENTER	
		4" SOLID	4" DOUBLE SOLID	4" SOLID BROKEN	
		WHITE	YELLOW	YELLOW	
FROM	TO	LF	LF	LF	
0+80	11+69	2176	1088		
11+69	18+50	1204		602	
TOTALS (LINEAR FEET)		3380	1088	602	
TOTALS (SQUARE FEET)		1127	725	251	
TOTALS (GALLON)		11	7	3	
PROJECT TOTALS (GALLON)		21			
		26			

TABULATION OF SIGNS														
SIGN NO.	STATION	SIDE	SIGN CODE	SIGN PANEL SIZE			BACKGROUND COLOR	LEGEND	202-00810	210-00810	614-00011	614-00012	614-01573	REMARKS
									REMOVAL OF GROUND SIGN	RESET GROUND SIGN	SIGN PANEL		STEEL SIGN SUPPORT (2-1/2 INCH ROUND NP-40) (POST & SLIPBASE)	
				W"	X	H"			EACH	EACH	CLASS I	CLASS II	SF	
1	2+78	RT	R2-1	24"	X	30"	WHITE	SPEED/LIMIT/35			5		1	
2		RT						SPEED/LIMIT/40	1					
3	6+75	LT	W3-1				YELLOW	UP ARROW/STOP SYMBOL		1				RESET TO 4+31
4	7+91	LT	D1-2	108"	X	30"	GREEN	LEFT ARROW Florence/ Colorado Springs RIGHT ARROW				23	2	
5		LT						LEFT ARROW FLORENCE/ COLORADO SPRINGS RIGHT ARROW	1					
6	8+25	RT	S-614-12	12"	X	18"	WHITE	K/16/C/0.17						FOR INFORMATION ONLY
7		RT						K/16/S	1					
8		RT	OM-3r						1					
9		LT	OM-3l						1					
10	10+97	LT	S-614-12	12"	X	18"	WHITE	K/16/C/0.17						FOR INFORMATION ONLY
11		LT						K/16/S	1					
12		LT	OM-3l						1					
13		RT	OM-3r						1					
14	12+46	LT						SPEED/LIMIT/35	1					
15	14+02	RT	R2-1				WHITE	SPEED/LIMIT/50		1				RESET AT EXISTING LOCATION
16	14+58	LT	M2-1	30"	X	21"	WHITE	JCT			4		1	
			M1-5A	30"	X	24"	WHITE	STATE HIGHWAY 115			5			
17	15+49	LT	S3-1				YELLOW	SCHOOL BUS STOP AHEAD	1					
18	15+49	LT	S3-1	36"	X	36"	FL. YELLOW	SCHOOL BUS STOP AHEAD (SYMBOL)				9	1	
19	16+85	LT	R2-1	24"	X	30"	WHITE	SPEED/LIMIT/35			5		1	
20	18+49	LT	W3-5	36"	X	36"	YELLOW	35 MPH SPEED ZONE AHEAD				9	1	
PROJECT TOTALS									10	0	29	41	9	

NOTE: PROPOSED STRUCTURE NUMBER SIGNS SHALL BE INCLUDED IN THE COST OF THE WORK. SEE S STANDARD S-614-12.

Print Date: 5/16/2014
File Name: 18370TRAF_TabSigns01.dgn
Horiz. Scale: 1:100 Vert. Scale: As Noted



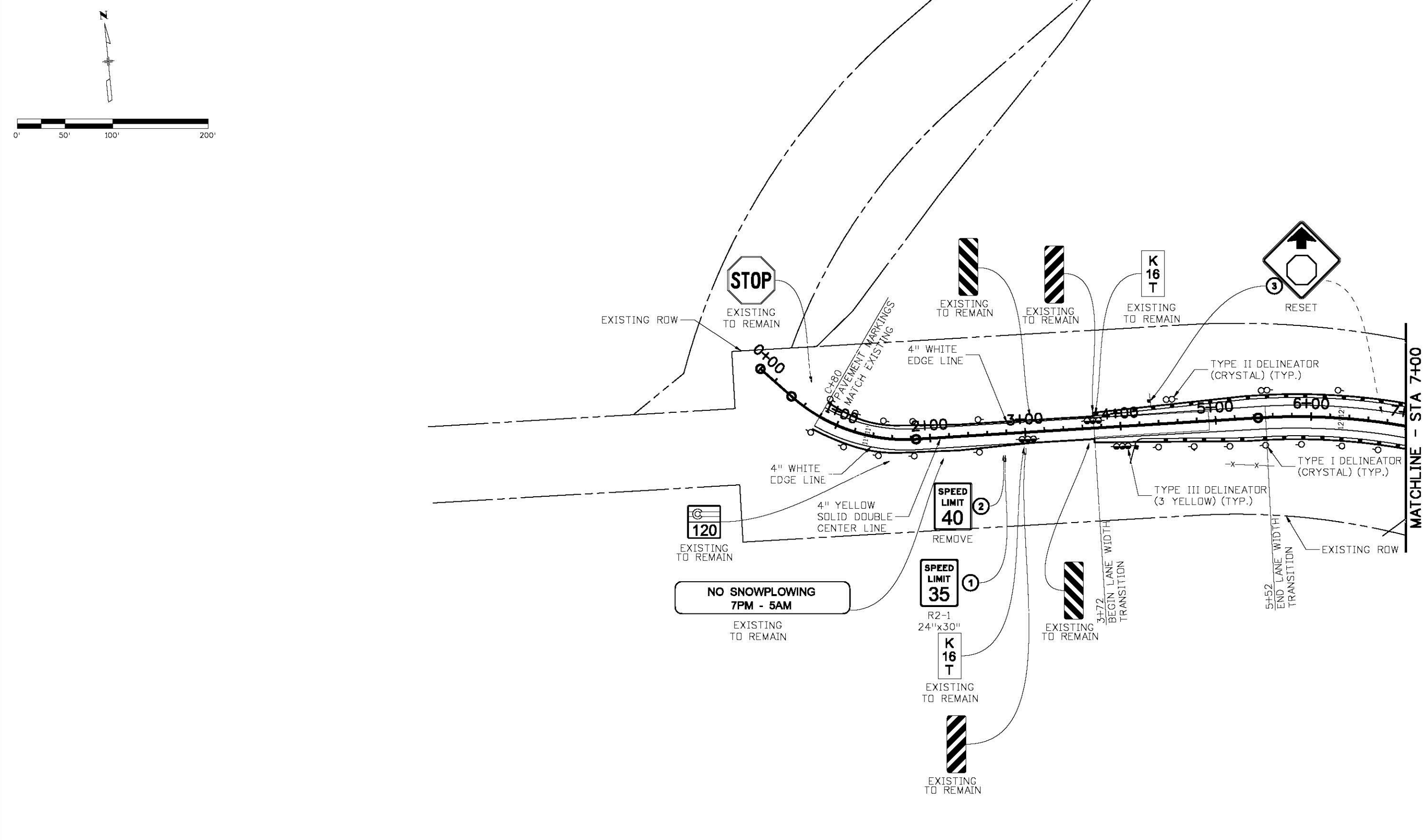
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

As Constructed	
No Revisions:	6/13/16
Revised:	
Void:	

TABULATION OF TRAFFIC ITEMS			
Designer:	APA	Structure	
Detailer:	APA	Numbers	
Sheet Subset	SIGNSTRIFE	Subset Sheets:	1 of 3

Project No./Code	
FBR 120A-011	
18370	67
Sheet Number	



elyson 10:51:14 AM F:\2021\18370\Traffic_ITS\Drawings\18370\TRAF_Sign-StripePlan01.dgn

Print Date: 5/14/2014

File Name: 18370TRAF_Sign-StripePlan01.dgn

Horiz. Scale: 1:100 Vert. Scale: As Nated

5090 DTC BOULEVARD, SUITE 100 W
GREENWOOD VILLAGE, CO 80111
PHONE: 303-221-2330
FAX: 303-221-2331
WWW.STOLFUSANDASSOCIATES.COM

Sheet Revisions			
Date:	Comments	Init.	

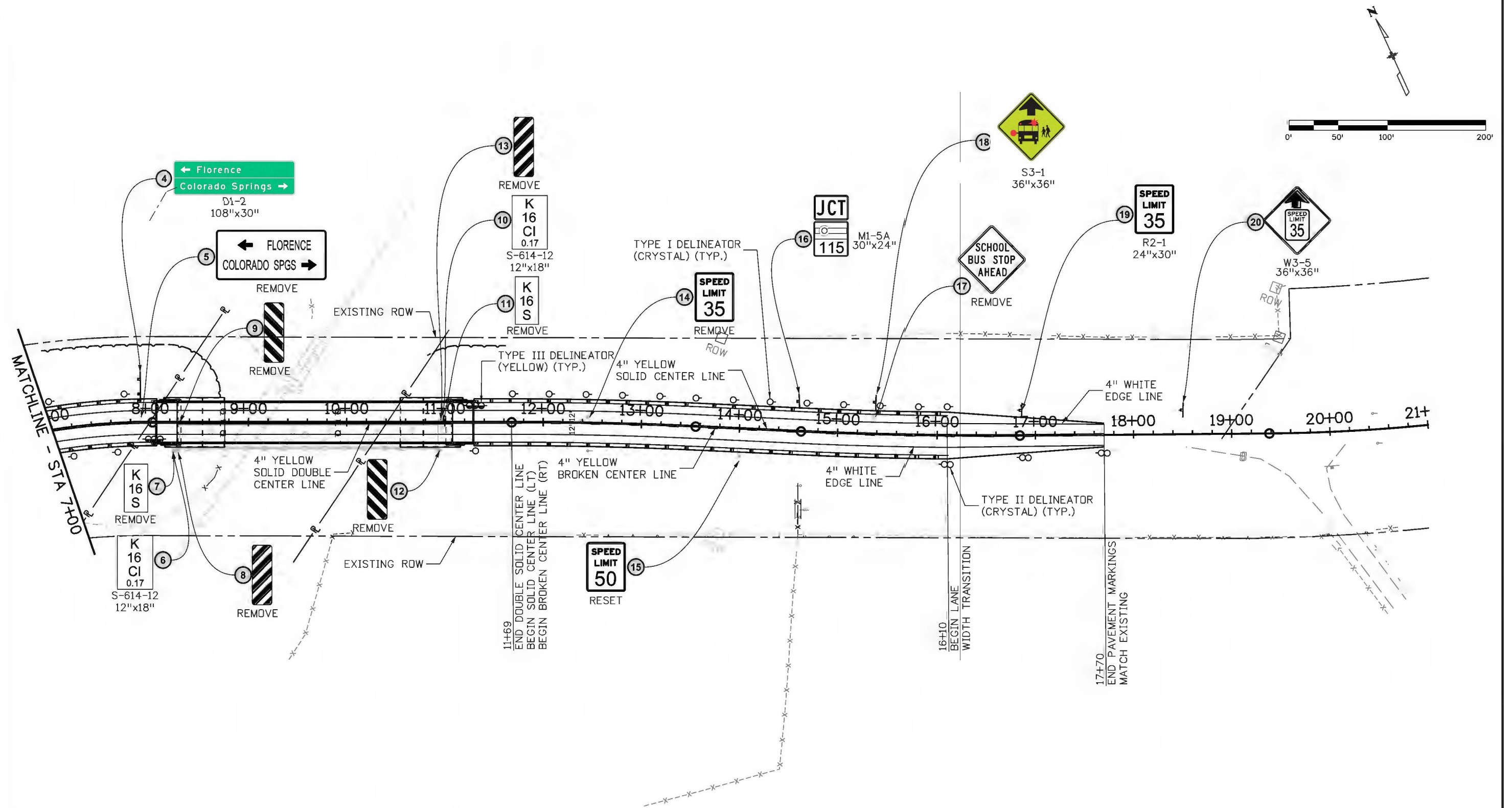
Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 DTD

As Constructed		SIGNING & STRIPING PLAN			Project No./Code	
No Revisions:					FBR 120A-011	
Revised:		Designer: APA	Structure		18370	
Void:		Detailer: APA	Numbers		Sheet Number 68	
		Sheet SubsetSIGNSTRIP	Subset Sheets:	2 of 3		

sarh 11:13:48 AM P:\2021\18370\Traffic\ITS\Drawings\18370TRAF_Sign-StripePlan02.dgn



Print Date: 5/16/2014	
File Name: 18370TRAF_Sign-StripePlan02.dgn	
Horiz. Scale: 1:100	Vert. Scale: As Noted
 15690 DTC BOULEVARD, SUITE 101W GREENWOOD VILLAGE, CO 80111 PHONE: 303-221-2530 FAX: 303-221-2531 WWW.STOLFUSANDASSOCIATES.COM	

Sheet Revisions		
Date:	Comments	Init.



Colorado Department of Transportation
902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

As Constructed
No Revisions:
Revised:
Void:

SIGNING & STRIPING PLAN			
Designer:	APA	Structure	
Detailer:	APA	Numbers	
Sheet Subset	SIGNSTRIP	Subset Sheets:	3 of 3

Project No./Code
FBR 120A-011
18370
69
Sheet Number

TABULATION OF TRAFFIC ENGINEERING ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	PROJECT TOTALS
627-00012	PAVEMENT MARKING PAINT (LOW VOC SOLVENT BASE)	GAL	21 26
630-00000	FLAGGING	HOUR	1200 2657
630-00007	TRAFFIC CONTROL INSPECTION	DAY	260 262
630-00012	TRAFFIC CONTROL MANAGEMENT	DAY	60 173
630-80002	FLASHING BEACON (SOLAR)	EACH	4 4
630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	34 25
630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	16 9
630-80344	CONSTRUCTION TRAFFIC SIGN (SPECIAL)	SF	9 9
630-80355	PORTABLE MESSAGE SIGN PANEL	EACH	3 3
630-80360	DRUM CHANNELIZING DEVICE	EACH	120 29
630-80363	DRUM CHANNELIZING DEVICE (WITH LIGHT) (FLASHING)	EACH	20 17
630-80370	CONCRETE BARRIER (TEMPORARY)	LF	1600 1500
630-80380	TRAFFIC CONE	EACH	200 10
630-85011	IMPACT ATTENUATOR (TEMPORARY)	DAY	560 872
630-86800	TRAFFIC SIGNAL (TEMPORARY)	LS	1 1

NOTE:

1. ITEM 630 CONCRETE BARRIER (TEMPORARY), ITEM 630 IMPACT ATTENUATOR (TEMPORARY), AND ITEM 630 TRAFFIC SIGNAL (TEMPORARY) WILL REQUIRE MULTIPLE SETUPS; THIS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE ITEM.

2. CALCULATION OF IMPACT ATTENUATOR (TEMPORARY) IS BASED ON 280 CALENDAR DAYS PER IMPACT ATTENUATOR (TEMPORARY). IT IS ANTICIPATED THAT 2 IMPACT ATTENUATORS (TEMPORARY) WILL BE REQUIRED.

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES

SIGNS						
SIGN CODE	LEGEND	DIMENSION	PANEL SIZE			
			A	B	C	SPECIAL
			EA	EA	EA	SF
G20-5P	WORK ZONE	36x12	5			
G20-10	XYZ/CONSTRUCTION/THANKS YOU/555-555-5555	48x48		3		
G20-11	ROAD/WORK/MMYY-MMYY/FOR INFORMATION/555-555-5555	48x48		3		54
R2-1(35)	SPEED/LIMIT/35	24x30	5			
R2-1(50)	SPEED/LIMIT/50	24x30	5			
R10-6	STOP/HERE ON RED/(ARROW)	24x30	2			
R52-6a	BEGIN/FINES/DOUBLE/IN WORK/ZONE	36x48		5		
R52-6b	END/FINES/DOUBLE/IN WORK/ZONE	36x48		5		
W3-3	SIGNAL AHEAD	36x36	2			
W20-1	ROAD/WORK/AHEAD	36x36	4			
W20-2	END/ROAD/WORK	36x18	2			
W20-4	ONE LANE/ROAD/(AHEAD)	36x36	5			
W20-7a	FLAGGER (SYMBOL)	36x36	4			
SPECIAL	ON/S.H. 120	18x18				9
TOTALS			34	16	0	9
			25	9	9	

Print Date: 5/20/2014
File Name: 18370DES_Traffic-Schedule.dgn
Horiz. Scale: 1:100 Vert. Scale: As Noted

Stolfus
5699 DTC BOULEVARD, SUITE 101W
GREENWOOD VILLAGE, CO 80111
PHONE: 303-221-2330
FAX: 303-221-2331
WWW.STOLFUSANDASSOCIATES.COM

R-X
000

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation

902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702
Region 2 DTD

As Constructed

No Revisions:
Revised: 6/13/16
Void:

SCHEDULE OF TRAFFIC CONTROL ITEMS

Designer: J. COLIP
Detailer: J. COLIP
Sheet Subset: PHASING
Structure Numbers
Subset Sheets: 1PT-01 of 01

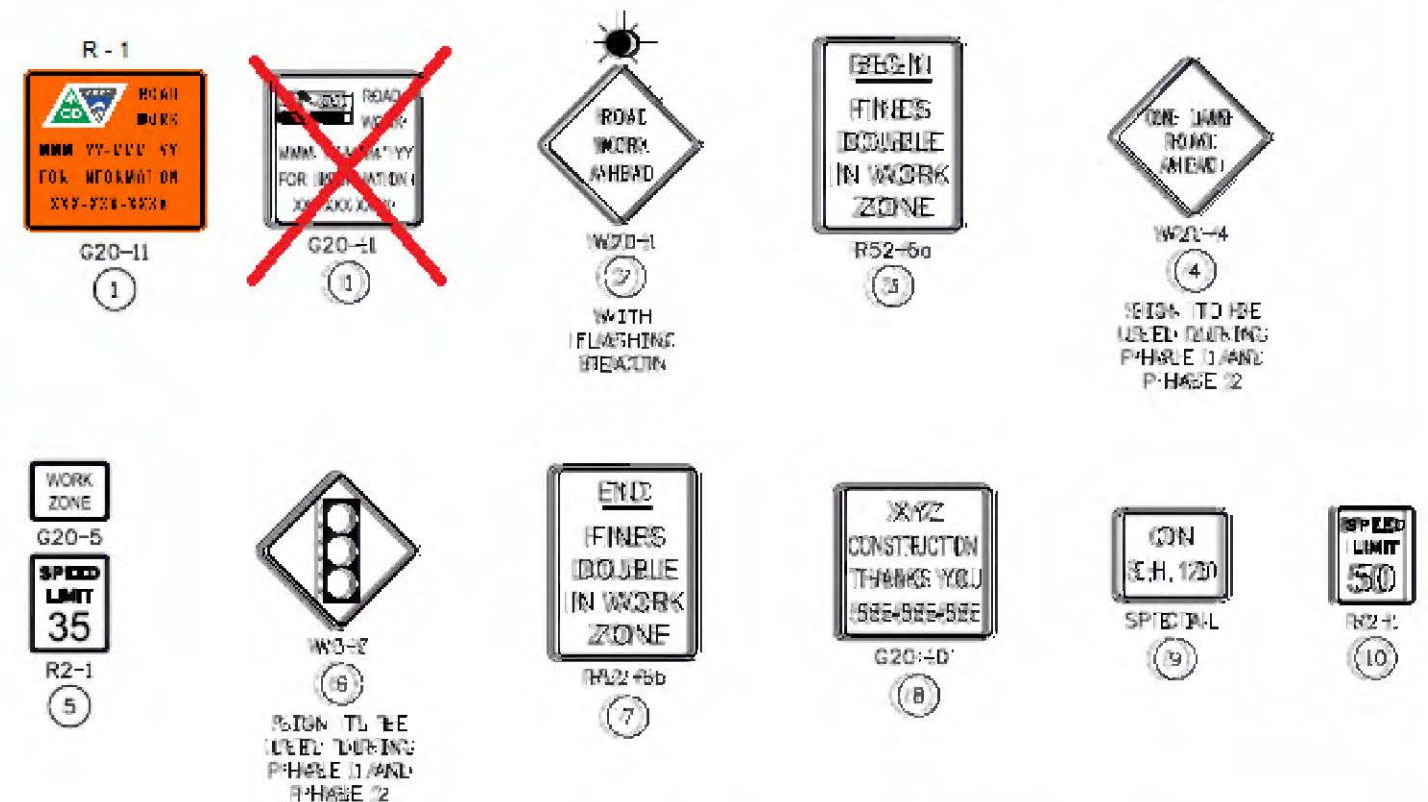
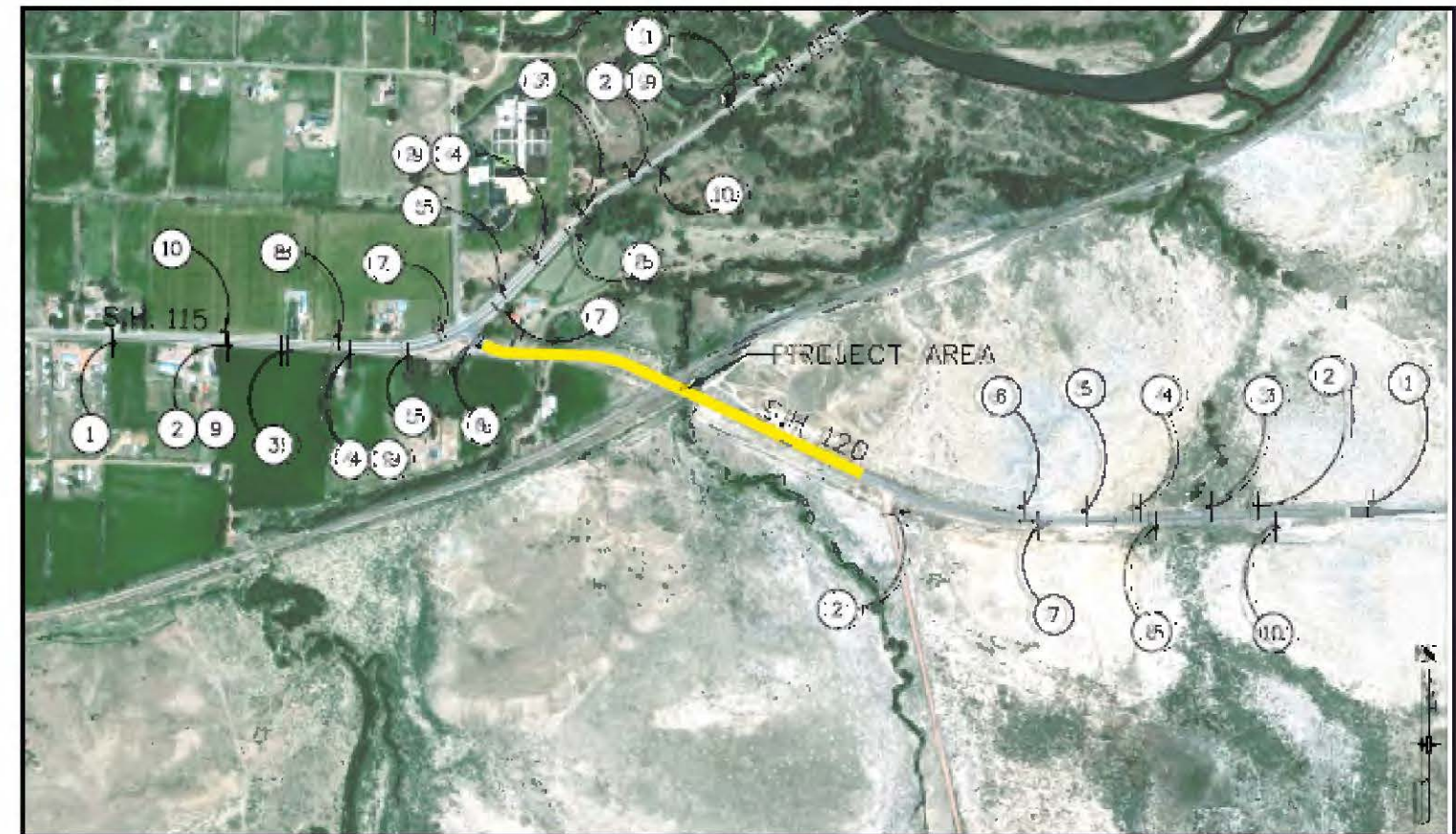
Project No./Code

FBR 120A-011
18370
Sheet Number 70

sarah 2:22:13 PM P:\12021\18370_Design\Drawings\18370DES_Traffic-Schedule.dgn

1. ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AND ITS SUPPLEMENTS.
2. ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CDOT LATEST EDITION OF THE STANDARD PLANS (M & S STANDARDS), AND APPROVED PLANS AND SPECIFICATIONS.
3. ALL WORK ZONE TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, THE CURRENT COLORADO SUPPLEMENTS, AND THE APPROVED PLANS AND SPECIFICATIONS.
4. ALL WORK ZONE TRAFFIC CONTROL DEVICES USED IN CONSTRUCTION ZONES SHALL BE REFLECTIVE AND IN ACCORDANCE WITH CDOT'S LATEST SPECIFICATIONS. ADDITIONAL SIGNING MAY BE REQUIRED AS CONDITIONS DICTATE.
5. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE PAID FOR AS PAVEMENT MARKING PAINT (LOW VOC SOLVENT BASE.)
6. DROP-OFFS OF MORE THAN ONE INCH ARE PROHIBITED AT NIGHT, ON WEEKENDS, AND DURING HOLIDAYS WITHOUT APPROVAL OF THE ENGINEER. A MINIMUM OF A 3:1 TAPER OF FILL MATERIAL SHALL BE USED TO FILL ALL DROP-OFFS DURING THESE TIMES.
7. ALL DRUMS SHALL BE MOVED TO THE OUTSIDE EDGE OF THE ROADWAY WHEN NOT IN USE.
8. IMPACT ATTENUATOR (TEMPORARY) SHALL CONFORM TO A DESIGN SPEED OF 35 MPH IF A SAND BARREL ARRAY IS USED.
9. IMPACT ATTENUATOR (TEMPORARY) MAY BE OMITTED IF THE CONCRETE BARRIER (TEMPORARY) CAN BE FLARED AND THE END SECTION MOVED OUTSIDE OF THE CLEAR ZONE.
10. THE CONTRACTOR SHALL REMOVE ANY AND ALL CONFLICTING STRIPING AND REMOVE OR MASK ANY AND ALL CONFLICTING SIGNAGE. SUCH WORK, IF REQUIRED, SHALL NOT BE MEASURED OR PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE CONSTRUCTION TRAFFIC CONTROL ITEMS.
11. MINIMUM LANE WIDTHS FOR TRAFFIC THROUGH THE DURATION OF CONSTRUCTION SHALL BE NO LESS THAN 11 FOOT LANES.
12. THE TOP LIFT OF HOT MIX ASPHALT SHALL BE PAVED FULL WIDTH.
13. TRAFFIC SHALL BE MAINTAINED ON ASPHALT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

14. WHEN CONSTRUCTION TRAFFIC CONTROL SIGNS ARE NOT IN USE, THEY SHALL BE MASKED, TURNED AWAY FROM TRAFFIC, OR REMOVED.
15. BASED UPON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATION OF SIGNS AND TRAFFIC CONTROL IS SUBJECT TO THE APPROVAL OF THE ENGINEER.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY STRIPING THROUGH THE DURATION OF THE PROJECT AND SHALL RESTRIPE AS NEEDED TO SAFELY AND ADEQUATELY ACCOMMODATE TRAFFIC. AS DETERMINED BY THE ENGINEER, FINAL SIGNING AND STRIPING SHALL BE INSTALLED ON THOSE COMPLETED ROADWAY SECTIONS IN ORDER TO COMPLEMENT CONSTRUCTION TRAFFIC CONTROL SIGNING & STRIPING. MULTIPLE MOBILIZATIONS ARE INCLUDED IN THE COST OF THE WORK.
17. THE CONSTRUCTION PHASING AND CONSTRUCTION TRAFFIC CONTROL GRAPHICALLY DEPICTED IN THESE PLANS IS SUGGESTED ONLY. THE CONTRACTOR MAY SUBMIT A REVISED PLAN, BUT IMPLEMENTATION OF ANY REVISED PLAN MUST HAVE PRIOR APPROVAL OF THE ENGINEER.
18. NO WORK WITHIN THE PUBLIC RIGHT OF WAY IS PERMITTED ON HOLIDAYS AS DESCRIBED IN CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
19. ACCESS MUST BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL AFFECTED PROPERTY OWNERS IN ADVANCE OF ANY WORK IN FRONT OF THEIR PROPERTY.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ADJACENT BUSINESSES, CDOT, POLICE DEPARTMENT(S), FIRE DEPARTMENT(S), EMERGENCY SERVICES, AND THE PUBLIC OF UPCOMING CONSTRUCTION ACTIVITIES INCLUDING, BUT NOT LIMITED TO, LANE CLOSURES.
17. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING FEATURES NOT DESIGNATED FOR REMOVAL INCLUDING, BUT NOT LIMITED TO, LANDSCAPING, IRRIGATION SYSTEMS, UTILITIES, FENCES, AND ENTRY SIGNS. DAMAGED FEATURES WILL BE REPLACED "IN KIND" BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
18. CONTRACTOR SHALL PROVIDE THE TRAVELING PUBLIC WITH TWO WEEKS NOTICE PRIOR TO COMMENCEMENT OF WORK AND ANY TEMPORARY ROAD CLOSURES. PRIOR NOTICE SHALL BE PROVIDED USING VARIABLE MESSAGE SIGNS.



Print Date: 5/20/2014
 File Name: 18370DES_Phase_Notes_AppSigning.dgn
 Horiz. Scale: 1:100 Vert. Scale: As Noted

Sheet Revisions		
Date:	Comments	Init.
8/13/14	New Road Work Sign	RTA

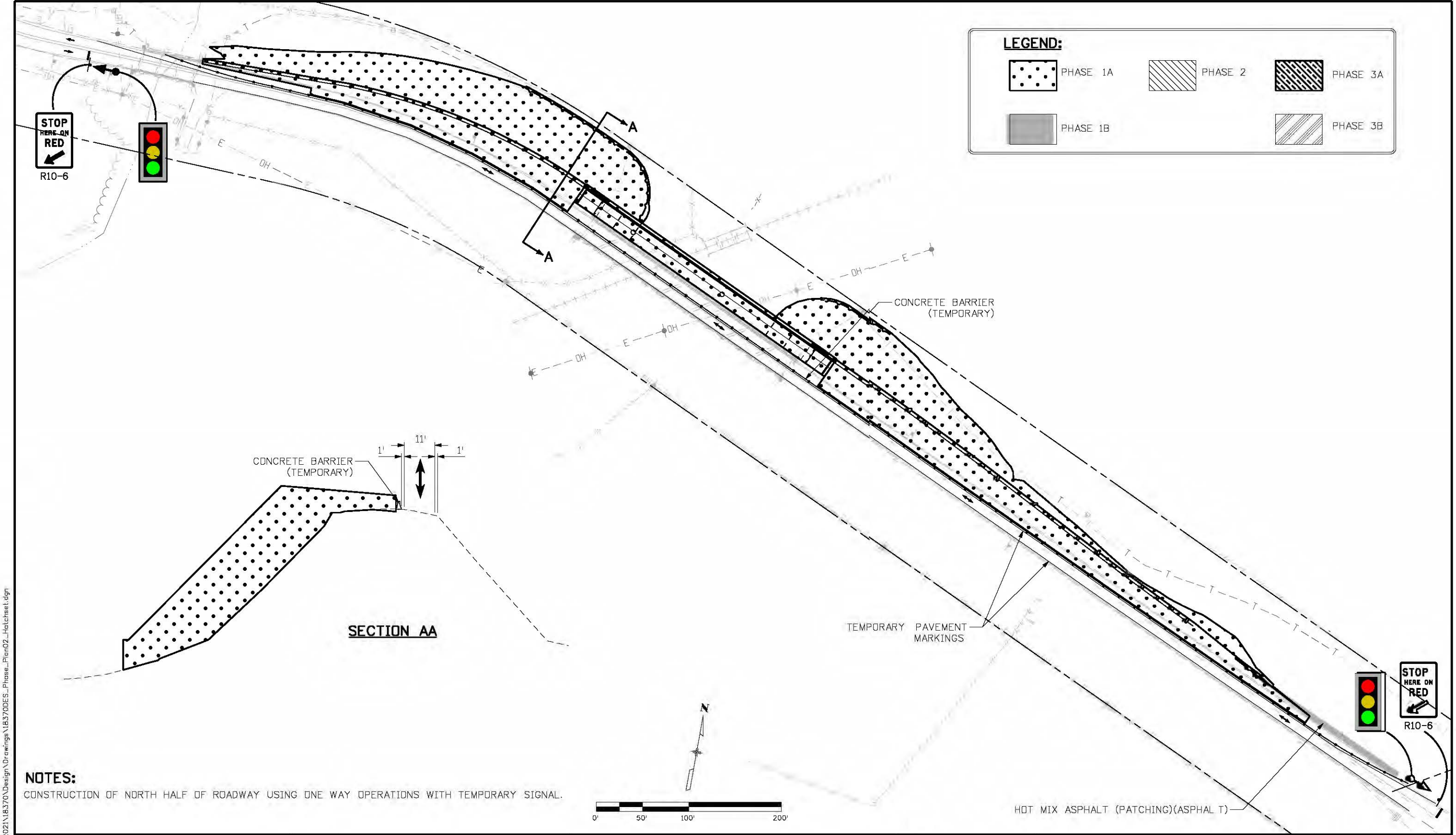
Colorado Department of Transportation

 902 Erie Avenue
 Pueblo, CO 81001
 Phone: 719-562-5509 FAX: 719-546-5702
 Region 2 DTD

As Constructed
 No Revisions:
 Revised: 6/13/16
 With:

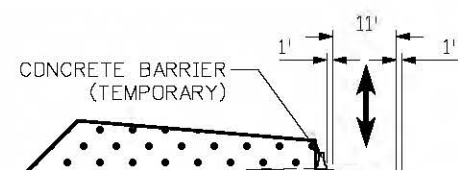
PHASING AND TRAFFIC CONTROL PLAN APPROACH SIGNING AND NOTES	
Designer: J. COLIP	Structure Numbers
Detainer: J. COLIP	
Sheet Subset: PHASING	Subset Sheets: PH-01 of 04

Project No./Code
 FEF 1224-011
 118370
 Sheet Number 71

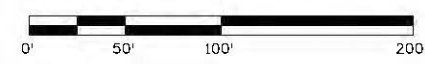


LEGEND:

PHASE 1A	PHASE 2	PHASE 3A
PHASE 1B	PHASE 3B	

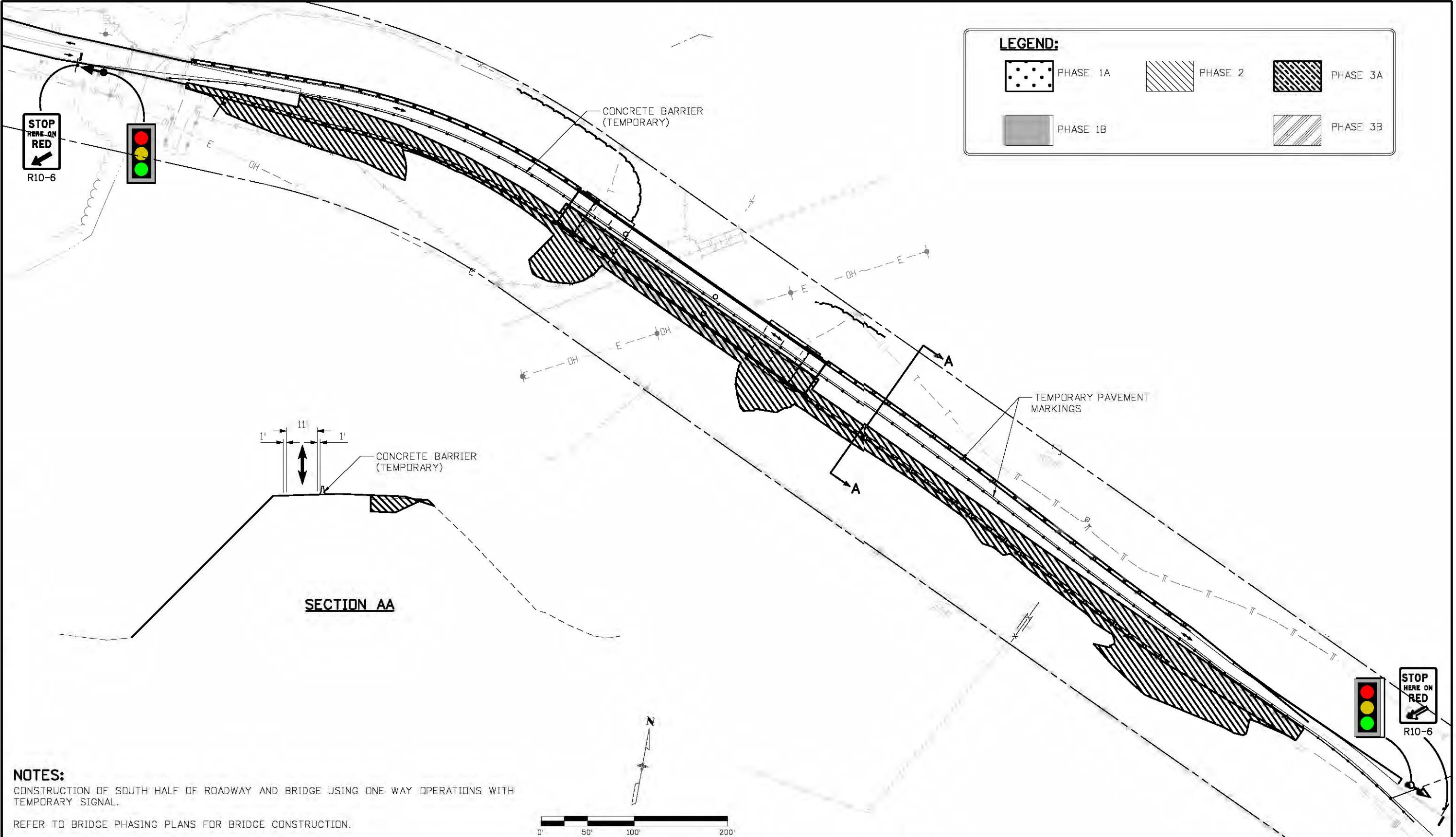


NOTES:
CONSTRUCTION OF NORTH HALF OF ROADWAY USING ONE WAY OPERATIONS WITH TEMPORARY SIGNAL.



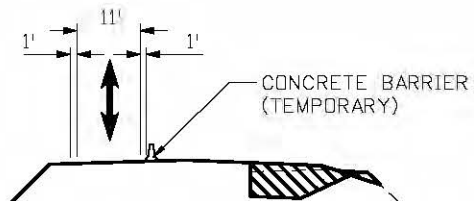
Print Date: 5/15/2014 File Name: 18370DES_Phase_Plan02_Hatchset.dgn Horiz. Scale: 1:100 Vert. Scale: As Noted 5090 DTC BOULEVARD, SUITE 100 W CHERRYWOOD VILLAGE, CO 80101 PHONE: 303-421-2530 FAX: 303-421-4331 WWW.STOLFUSANDASSOCIATES.COM		Sheet Revisions	Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	As Constructed	PHASING AND TRAFFIC CONTROL PLAN		Project No./Code FBR 120A-011 18370 Sheet Number: 72
				PHASE 1			
		No Revisions: 6/13/16		Designer: J. COLIP	Structure Numbers		
		Revised:		Detailer: J. COLIP			
		Sheet Subset: PHASING	Subset Sheets: PH-02 of 04				

sarah 11:55:51 AM P:\12021\18370\Drawings\18370DES_Phase_Plan03_Hatchset.dgn



LEGEND:

 PHASE 1A	 PHASE 2	 PHASE 3A
 PHASE 1B	 PHASE 3B	



NOTES:
CONSTRUCTION OF SOUTH HALF OF ROADWAY AND BRIDGE USING ONE WAY OPERATIONS WITH TEMPORARY SIGNAL.
REFER TO BRIDGE PHASING PLANS FOR BRIDGE CONSTRUCTION.

Print Date: 5/16/2014
File Name: 18370DES_Phase_Plan03_Hatchset.dgn
Horiz. Scale: 1:100 Vert. Scale: As Noted

 5090 DTC BOULEVARD, SUITE 100 W
CHERRYWOOD VILLAGE, CO 80101
PHONE: 303-421-2530
FAX: 303-421-4331
WWW.STOLFUSANDASSOCIATES.COM

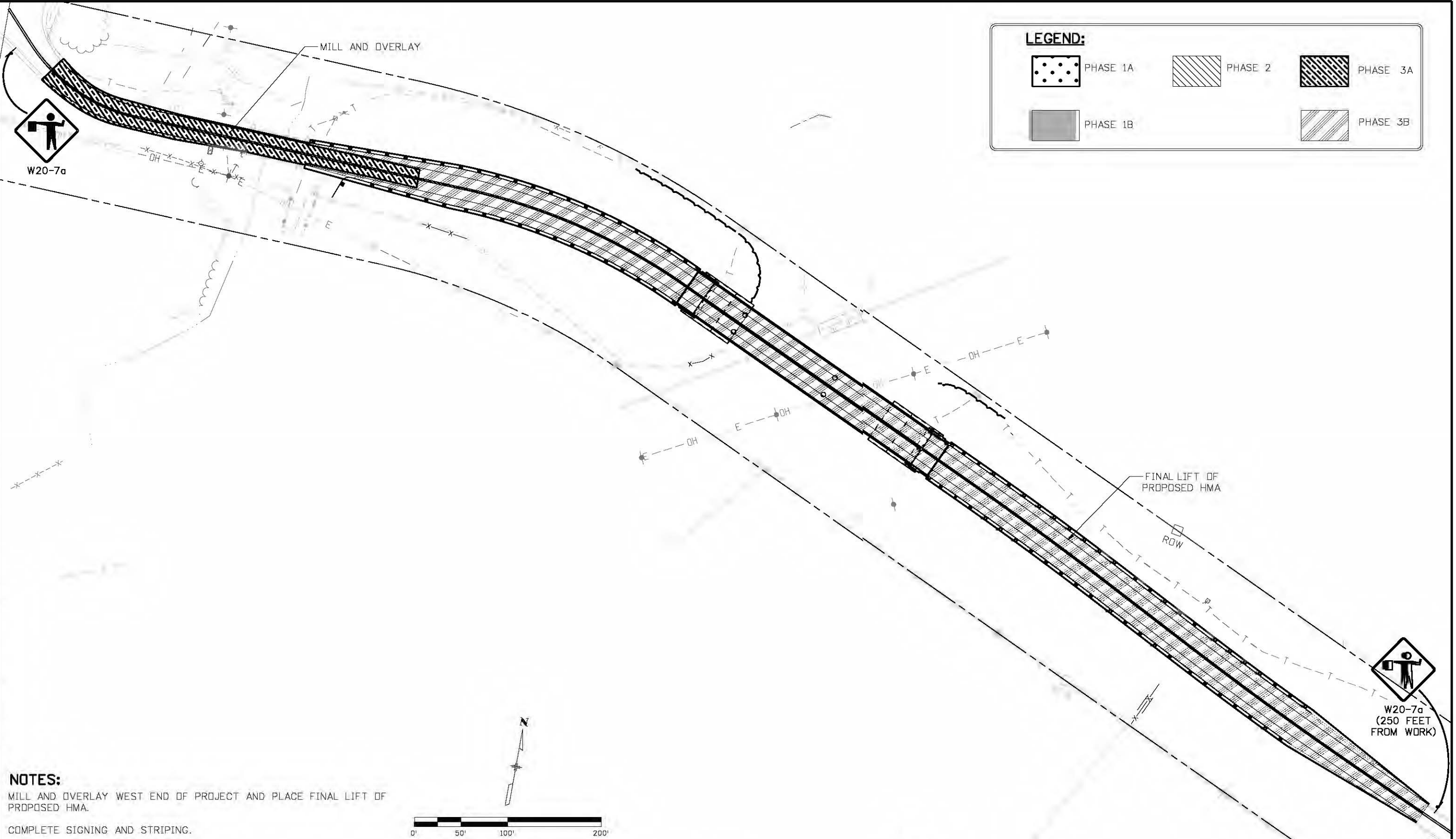
Sheet Revisions			
Date:	Comments	Init.	

Colorado Department of Transportation

 902 Erie Avenue
Pueblo, CO 81001
Phone: 719-562-5509 FAX: 719-546-5702

Region 2 **DTD**

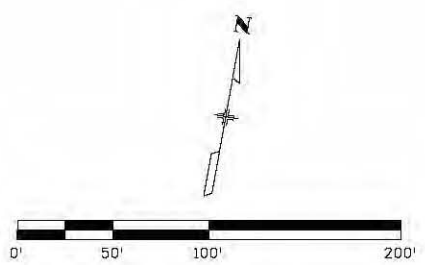
As Constructed	PHASING AND TRAFFIC CONTROL PLAN PHASE 2			Project No./Code
No Revisions: 6/13/16	Designer: J. COLIP	Structure Numbers		FBR 120A-011
Revised:	Detailer: J. COLIP			18370
Void:	Sheet Subset: PHASING	Subset Sheets: PH-03 of 04		Sheet Number 73



LEGEND:

PHASE 1A	PHASE 2	PHASE 3A
PHASE 1B	PHASE 3B	

NOTES:
MILL AND OVERLAY WEST END OF PROJECT AND PLACE FINAL LIFT OF PROPOSED HMA.
COMPLETE SIGNING AND STRIPING.



elyson 4:16:57 PM P:\2020\18370\Drawings\18370DES_Phase_Plan04_Hatchset.dgn

Print Date: 5/15/2014 File Name: 18370DES_Phase_Plan04_Hatchset.dgn Horiz. Scale: 1:100 Vert. Scale: As Noted 5090 DTC BOULEVARD, SUITE 100 W CHERRYWOOD VILLAGE, CO 80101 PHONE: 303-421-2330 FAX: 303-421-4331 WWW.STOLFUSANDASSOCIATES.COM		Sheet Revisions	Colorado Department of Transportation 902 Erie Avenue Pueblo, CO 81001 Phone: 719-562-5509 FAX: 719-546-5702 Region 2 DTD	As Constructed	PHASING AND TRAFFIC CONTROL PLAN			Project No./Code	
		Date:		Comments:	Init.	No. Revisions: 6/13/16	PHASE 3		FBR 120A-011
						Revised:	Designer: J. COLIP	Structure Numbers	18370
						Void:	Detailer: J. COLIP	Subset Sheets: PH-04 of 04	Sheet Number 74