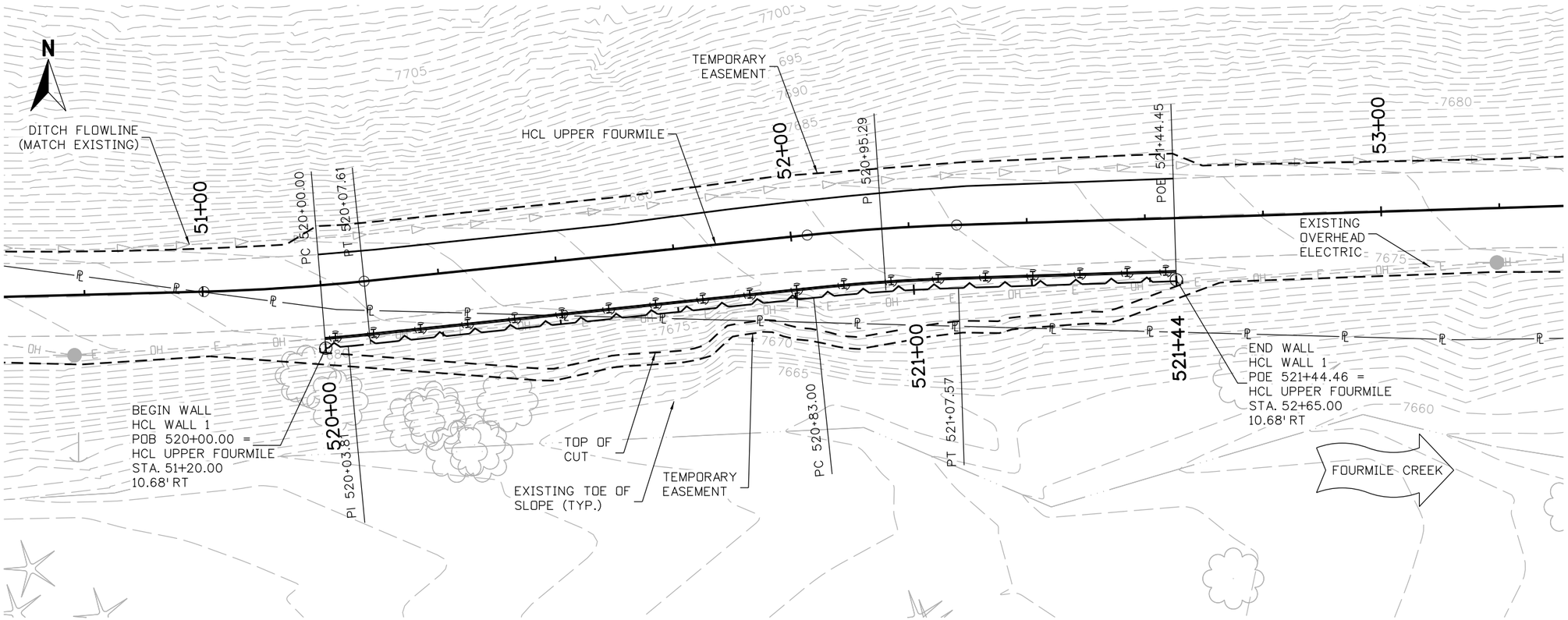
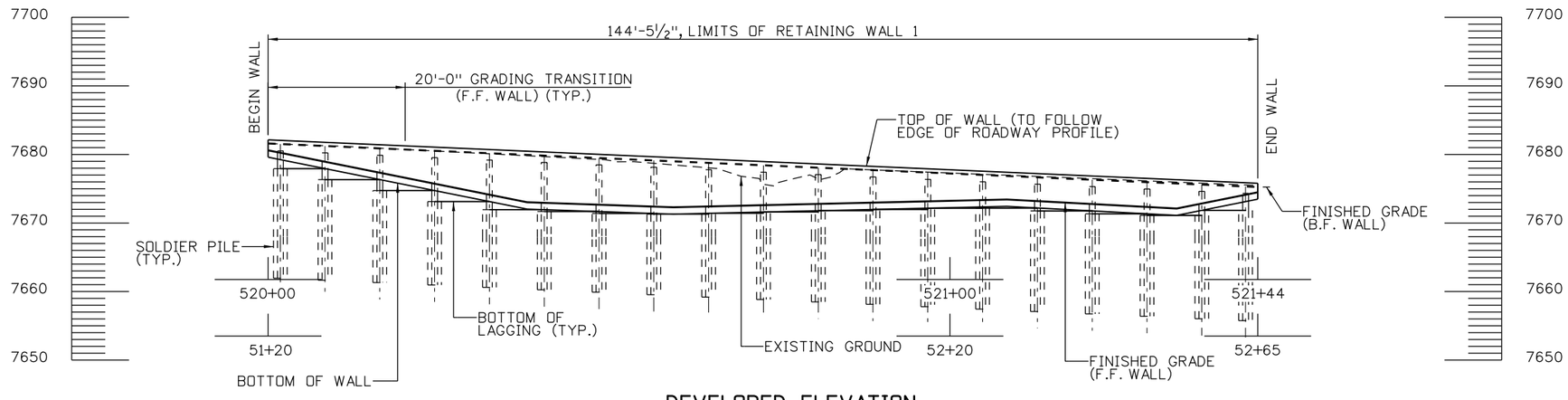


PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

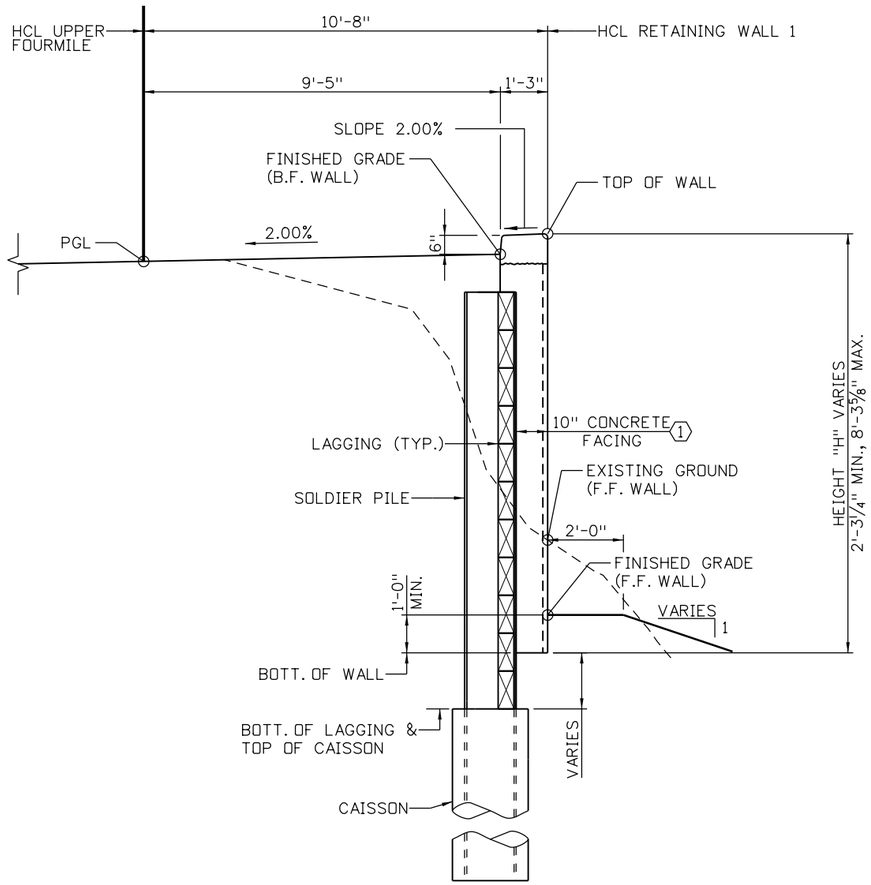
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 1 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 191

Daniel.Hawk 11:18:16 AM pw:\\DOCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN01.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 1

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE:	f'c = 4,500 PSI
REINFORCING STEEL:	fy = 60,000 PSI
SEVERITY OF SULFATE EXPOSURE:	CLASS 0

SOIL PROPERTIES:

ABOVE BOTTOM OF WALL:

SOIL UNIT WEIGHT:	120 PCF
SOIL FRICTION ANGLE:	32°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.238

BELOW BOTTOM OF WALL:

SOIL UNIT WEIGHT:	130 PCF
SOIL FRICTION ANGLE:	35°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.271
PASSIVE HORIZONTAL PRESSURE COEFFICEINT WITH 3:1 FORESLOPE:	1.290

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. FOR LIMITS OF STRUCTURAL CONCRETE COATING AND OTHER AESTHETIC DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
3. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
4. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
5. FOR ADDITIONAL WALL DETAILS, REFER TO SOLDIER PILE WALL DETAIL SHEETS.
6. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

KEYNOTES:

(1) NOMINAL WALL THICKNESS SHOWN TO F.F. WALL INCLUDES 1 1/2" FORMLINER. FINISHED FACE SHALL BE PLUMB.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 1 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 192

Dylan.Brown 12:56:18 PM p:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL01

WALL 1 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	520+00.00	256809.01	11220.91						
C-1	PI	520+03.81	256809.33	11224.70			360.68 FT.	7.61 FT.	1°12'33"	Left
	PT	520+07.61	256809.72	11228.49						
					N84°03'16E	75.39 FT.				
	PC	520+83.00	256817.53	11303.47						
C-2	PI	520+95.29	256818.80	11315.69			339.32 FT.	24.57 FT.	4°08'55"	Right
	PT	521+07.57	256819.19	11327.98						
					N88°12'11E	36.89 FT.				
	POE	521+44.45	256820.34	11364.85						

WALL 1 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7682.09	7679.59	2.50 FT.
DC 1	7682.01	7679.23	2.78 FT.
DC 2	7681.73	7677.93	3.80 FT.
DC 3	7681.37	7676.33	5.05 FT.
DC 4	7681.02	7674.73	6.29 FT.
DC 5	7680.67	7673.13	7.54 FT.
DC 6	7680.32	7672.12	8.21 FT.
DC 7	7679.97	7671.67	8.30 FT.
DC 8	7679.62	7671.40	8.22 FT.
DC 9	7679.27	7671.42	7.85 FT.
DC 10	7678.92	7671.60	7.31 FT.
DC 11	7678.57	7671.79	6.78 FT.
DC 12	7678.22	7671.97	6.25 FT.
DC 13	7677.87	7672.15	5.71 FT.
DC 14	7677.52	7672.34	5.18 FT.
DC 15	7677.17	7672.19	4.98 FT.
DC 16	7676.81	7671.77	5.05 FT.
DC 17	7676.46	7671.34	5.12 FT.
DC 18	7676.11	7671.82	4.29 FT.
DC 19	7675.83	7673.13	2.70 FT.
END WALL	7675.75	7673.48	2.27 FT.

WALL 1 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
520+00.0000	7682.09	144.46 FT.	-4.39 %
521+44.4600	7675.75		

WALL 1 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
520+00.00	7679.59	37.80 FT.	-20.00 %
520+37.80	7672.03		
520+37.80	7672.03	21.36 FT.	-3.42 %
520+59.16	7671.30		
520+59.16	7671.30	48.68 FT.	2.30 %
521+07.84	7672.42		
521+07.84	7672.42	24.79 FT.	-5.28 %
521+32.63	7671.11		
521+32.63	7671.11	11.83 FT.	20.03 %
521+44.46	7673.48		

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60% SET

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

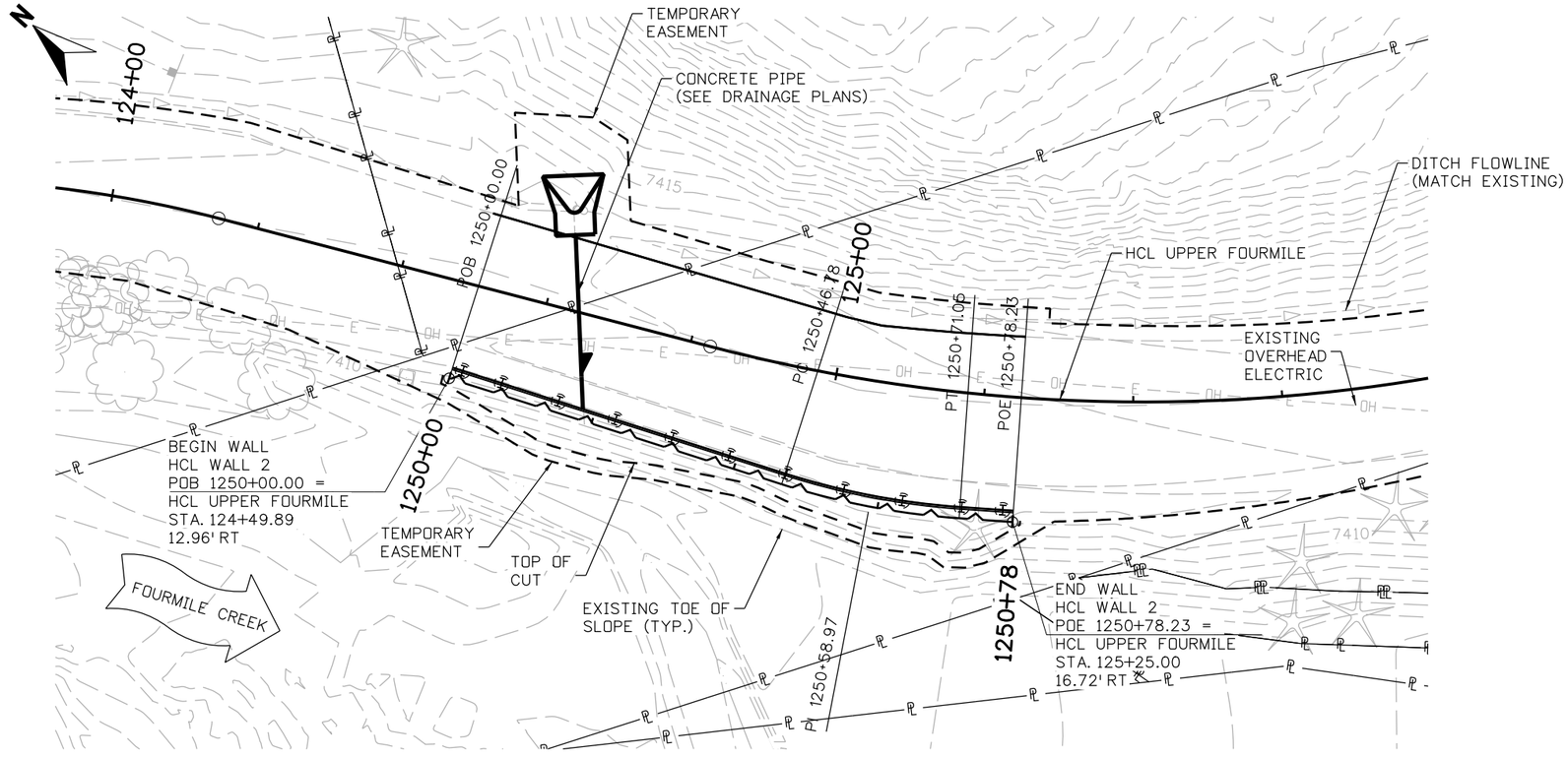
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

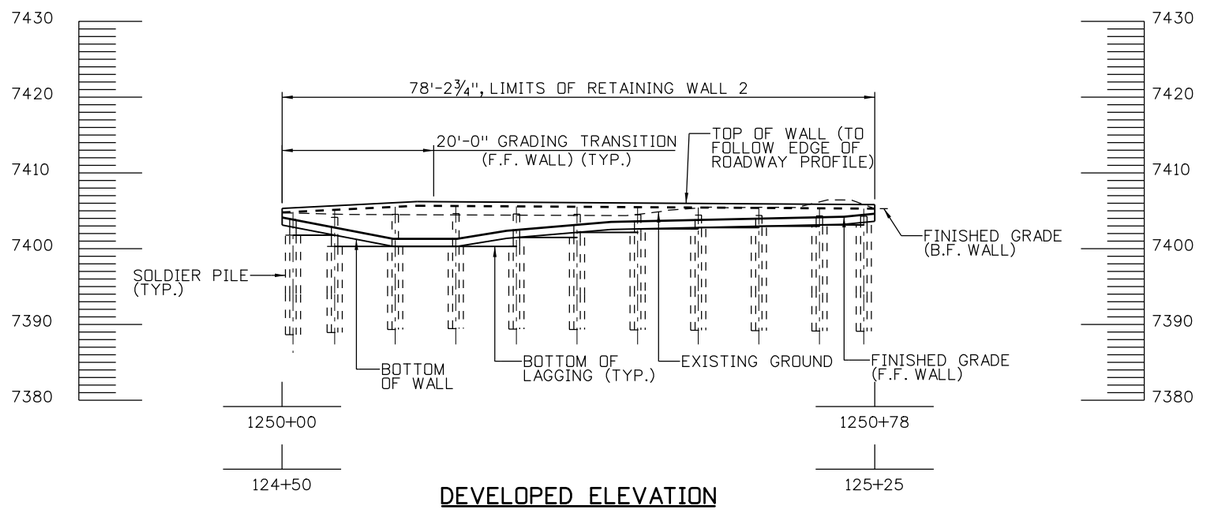
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 1 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 193



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

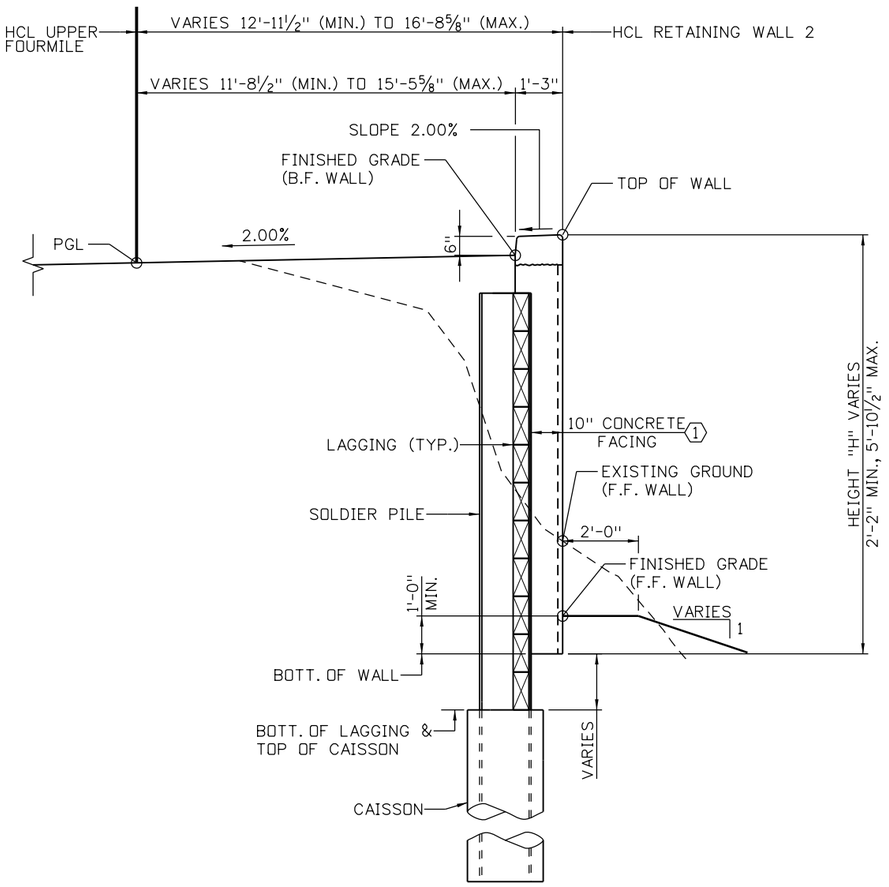
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 2 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 194

Daniel.Hawk 11:20:37 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN02.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 2

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE:	f'c = 4,500 PSI
REINFORCING STEEL:	fy = 60,000 PSI
SEVERITY OF SULFATE EXPOSURE:	CLASS 0

SOIL PROPERTIES:

ABOVE BOTTOM OF WALL:

SOIL UNIT WEIGHT:	120 PCF
SOIL FRICTION ANGLE:	32°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.238

BELOW BOTTOM OF WALL:

SOIL UNIT WEIGHT:	130 PCF
SOIL FRICTION ANGLE:	35°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.271
PASSIVE HORIZONTAL PRESSURE COEFFICEINT WITH 3:1 FORESLOPE:	1.290

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. FOR LIMITS OF STRUCTURAL CONCRETE COATING AND OTHER AESTHETIC DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
3. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
4. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
5. FOR ADDITIONAL WALL DETAILS, REFER TO SOLDIER PILE WALL DETAIL SHEETS.
6. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

KEYNOTES:

1. NOMINAL WALL THICKNESS SHOWN TO F.F. WALL INCLUDES 1 1/2" FORMLINER. FINISHED FACE SHALL BE PLUMB.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO 811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 2 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 195

Dylan.Brown 3:46:49 PM par:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TOV\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL02

WALL 2 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	1250+00.00	256459.55	18210.05						
					S23° 46'08E	46.78 FT.				
	PC	1250+46.78	256416.74	18228.91						
C-1	PI	1250+58.97	256405.58	18233.82			102.00 FT.	24.27 FT.	13° 38'04"	Left
	PT	1250+71.05	256395.89	18241.23						
					S37° 24'12E	7.18 FT.				
	POE	1250+78.23	256390.19	18245.59						

WALL 2 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7411.29	7409.12	2.17 FT.
DC 1	7411.36	7408.85	2.51 FT.
DC 2	7411.64	7407.79	3.84 FT.
DC 3	7412.18	7406.31	5.87 FT.
DC 4	7412.15	7406.31	5.84 FT.
DC 5	7412.10	7407.49	4.60 FT.
DC 6	7412.05	7408.17	3.87 FT.
DC 7	7411.99	7408.63	3.37 FT.
DC 8	7411.94	7408.80	3.14 FT.
DC 9	7411.89	7408.98	2.91 FT.
DC 10	7411.84	7409.16	2.68 FT.
DC 11	7411.80	7409.48	2.32 FT.
END WALL	7411.79	7409.63	2.17 FT.

WALL 2 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1250+00.0000	7411.29	17.80 FT.	5.00 %
1250+17.8006	7412.18		
1250+17.8006	7412.18	60.43 FT.	-0.64 %
1250+78.2258	7411.79		

WALL 2 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1250+00.00	7409.12	14.67 FT.	-19.20 %
1250+14.67	7406.31		
1250+14.67	7406.31	8.42 FT.	0.00 %
1250+23.09	7406.31		
1250+23.09	7406.31	6.57 FT.	16.40 %
1250+29.66	7407.39		
1250+29.66	7407.39	13.75 FT.	8.45 %
1250+43.41	7408.55		
1250+43.41	7408.55	30.77 FT.	2.19 %
1250+74.18	7409.22		
1250+74.18	7409.22	4.05 FT.	10.00 %
1250+78.23	7409.63		

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
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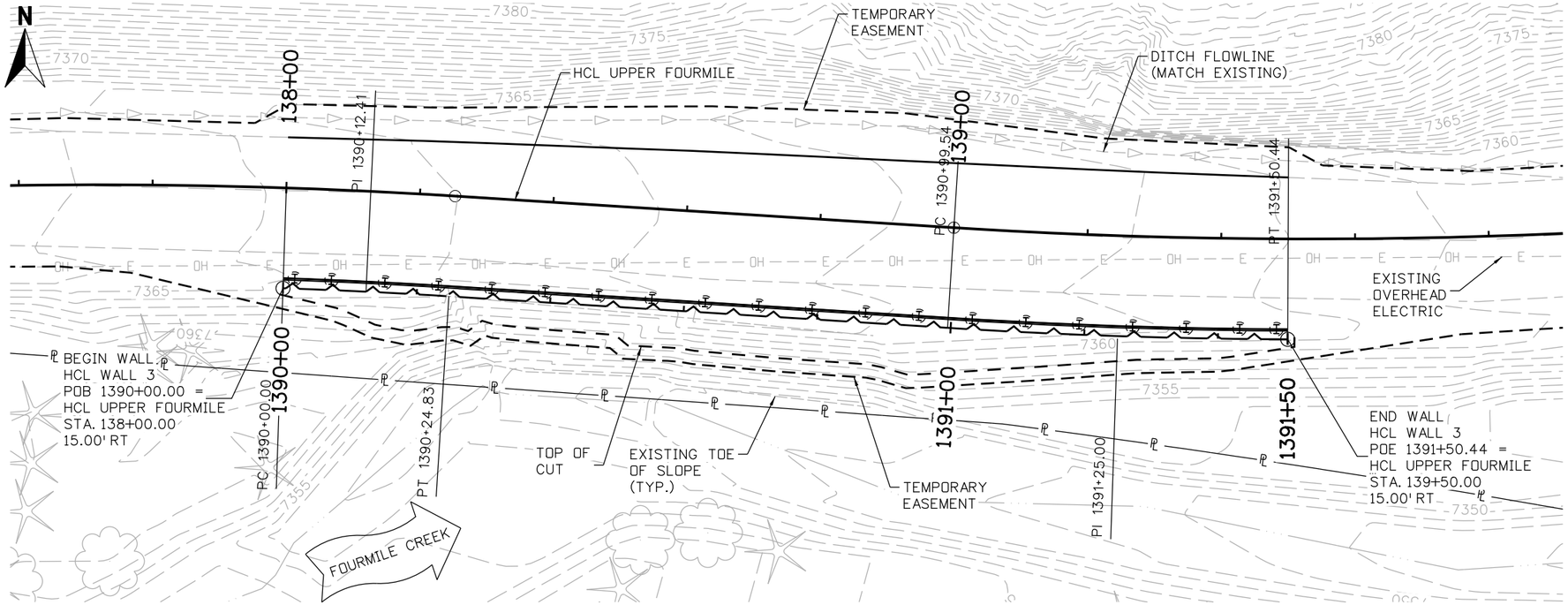
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

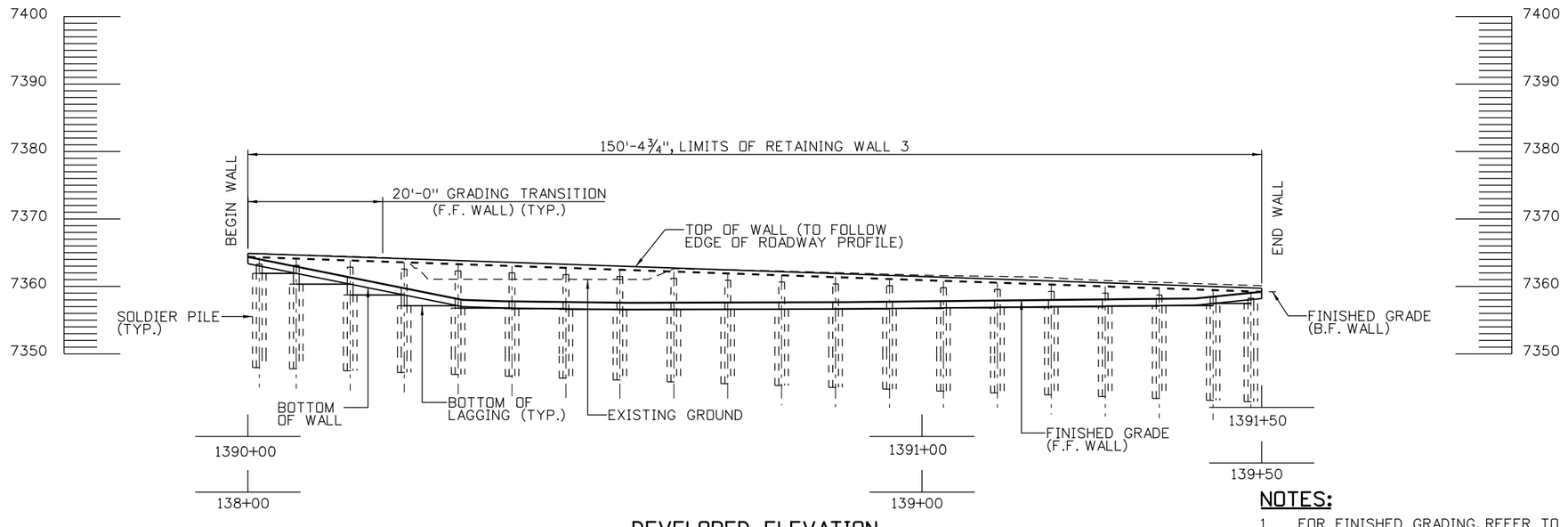
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 2 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 196

Michael.Carpenter 10:50:35 AM per:\\DCPW4PP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA02





DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

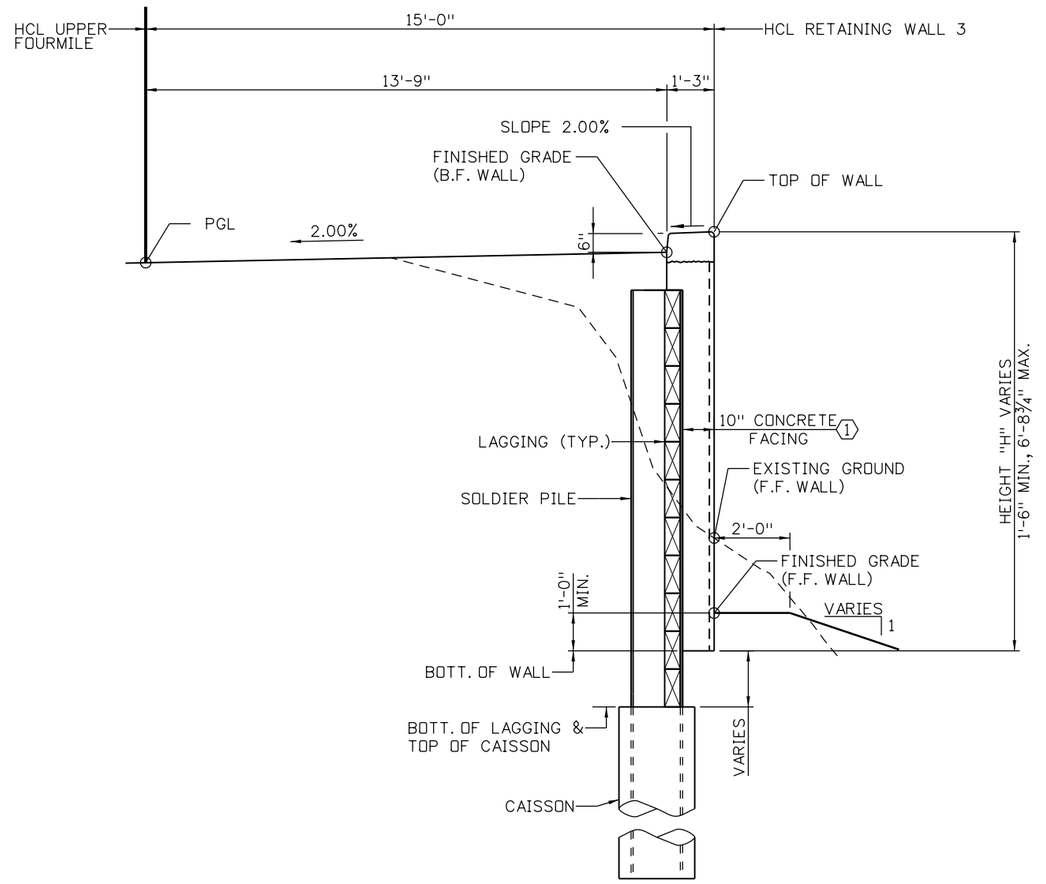
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 3 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 197

Daniel.Hawk 11:22:58 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN03.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 3

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE:	f'c = 4,500 PSI
REINFORCING STEEL:	fy = 60,000 PSI
SEVERITY OF SULFATE EXPOSURE:	CLASS 0

SOIL PROPERTIES:

ABOVE BOTTOM OF WALL:

SOIL UNIT WEIGHT:	120 PCF
SOIL FRICTION ANGLE:	32°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.238

BELOW BOTTOM OF WALL:

SOIL UNIT WEIGHT:	130 PCF
SOIL FRICTION ANGLE:	35°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.271
PASSIVE HORIZONTAL PRESSURE COEFFICEINT WITH 3:1 FORESLOPE:	1.290

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. FOR LIMITS OF STRUCTURAL CONCRETE COATING AND OTHER AESTHETIC DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
3. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
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5. FOR ADDITIONAL WALL DETAILS, REFER TO SOLDIER PILE WALL DETAIL SHEETS.
6. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

KEYNOTES:

(1) NOMINAL WALL THICKNESS SHOWN TO F.F. WALL INCLUDES 1 1/2" FORMLINER. FINISHED FACE SHALL BE PLUMB.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 3 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 198

Dylan.Brown 3:30:09 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL03

WALL 3 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	1390+00.00	256030.68	19437.37						
C-1	PI	1390+12.41	256030.26	19449.78			835.00 FT.	24.83 FT.	1° 42'13"	Right
	PT	1390+24.83	256029.48	19462.17						
					S86° 22'57E	74.72 FT.				
	PC	1390+99.54	256024.76	19536.74						
C-2	PI	1391+25.00	256023.16	19562.14			865.00 FT.	50.89 FT.	3° 22'16"	Left
	PT	1391+50.44	256023.05	19587.59						

WALL 3 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7364.87	7363.37	1.50 FT.
DC 1	7364.81	7363.03	1.78 FT.
DC 2	7364.62	7361.93	2.69 FT.
DC 3	7364.35	7360.33	4.01 FT.
DC 4	7364.07	7358.74	5.33 FT.
DC 5	7363.80	7357.14	6.66 FT.
DC 6	7363.52	7356.79	6.73 FT.
DC 7	7363.25	7356.69	6.56 FT.
DC 8	7362.97	7356.58	6.39 FT.
DC 9	7362.70	7356.58	6.12 FT.
DC 10	7362.42	7356.61	5.81 FT.
DC 11	7362.15	7356.63	5.51 FT.
DC 12	7361.87	7356.66	5.21 FT.
DC 13	7361.60	7356.73	4.86 FT.
DC 14	7361.32	7356.82	4.50 FT.
DC 15	7361.05	7356.91	4.14 FT.
DC 16	7360.77	7356.99	3.78 FT.
DC 17	7360.50	7357.08	3.42 FT.
DC 18	7360.22	7357.16	3.06 FT.
DC 19	7359.95	7357.48	2.46 FT.
DC 20	7359.76	7358.04	1.72 FT.
END WALL	7359.70	7358.20	1.50 FT.

WALL 3 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1390+00.0100	7364.87	150.38 FT.	-3.43 %
1391+50.3900	7359.70		

WALL 3 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1390+00.01	7363.37	31.82 FT.	-20.00 %
1390+31.83	7357.00		
1390+31.83	7357.00	6.02 FT.	-3.22 %
1390+37.85	7356.81		
1390+37.85	7356.81	18.77 FT.	-1.32 %
1390+56.62	7356.56		
1390+56.62	7356.56	32.29 FT.	0.33 %
1390+88.90	7356.67		
1390+88.90	7356.67	51.68 FT.	1.07 %
1391+40.59	7357.22		
1391+40.59	7357.22	9.81 FT.	10.00 %
1391+50.39	7358.20		

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

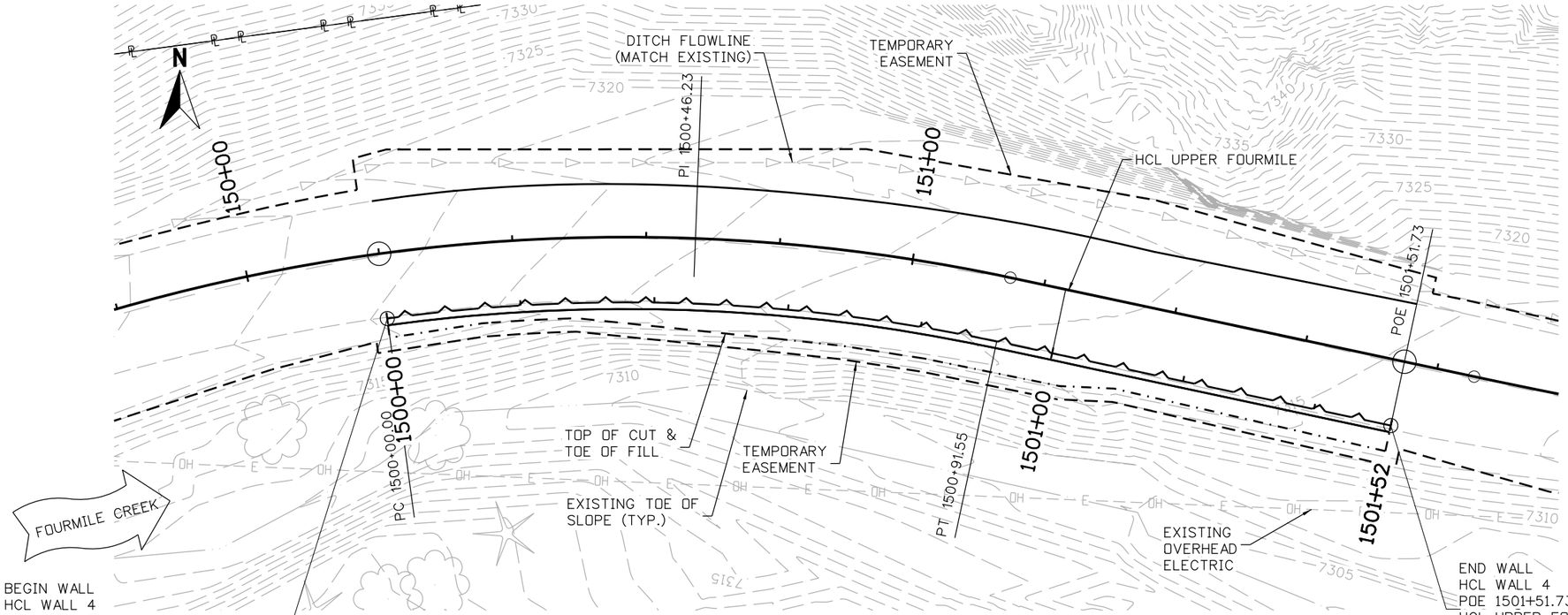
Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

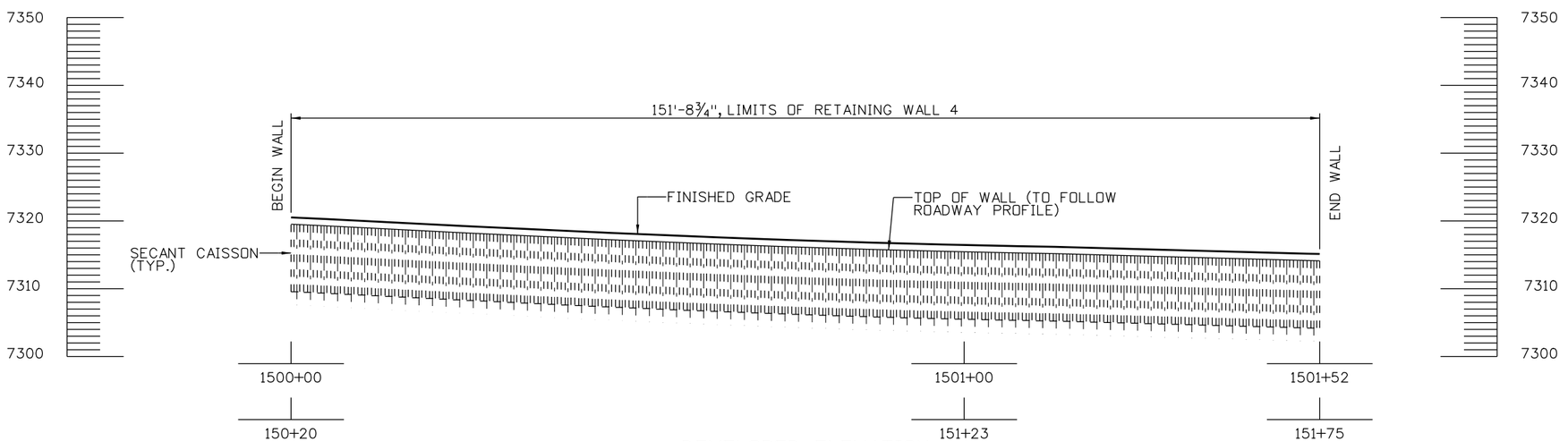
UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 3 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 199

Michael.Carpenter 10:57:24 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DAT.A03



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

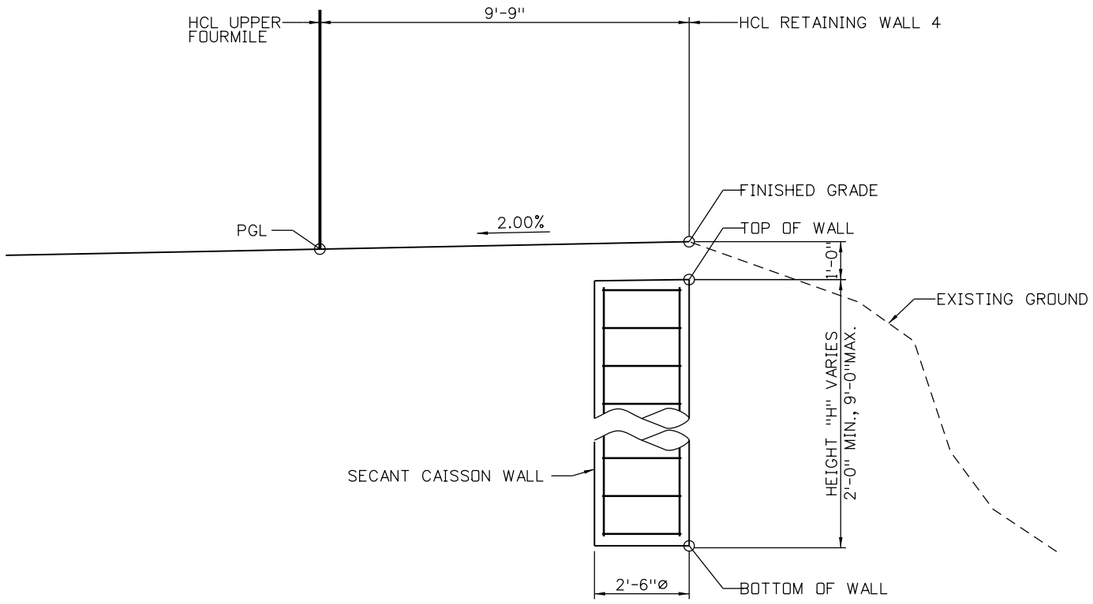
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 4 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 200

Daniel.Hawk 11:25:08 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TOY\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN04.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 4

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION
Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT RETAINING WALL 4 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 201

Dylan.Brown 3:36:41 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL04

WALL 4 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	1500+00.00	256096.01	20601.68						
C-1	PI	1500+46.23	256102.23	20647.50			265.25 FT.	91.55 FT.	19° 46'30"	Right
	PT	1500+91.55	256092.58	20692.71						
					S77° 57'16E	60.18 FT.				
	POE	1501+51.73	256080.02	20751.57						

WALL 4 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7320.52	7318.07	2.45 FT.
END WALL	7316.40	7314.07	2.33 FT.

WALL 4 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1500+00.00	7320.52	25.00 FT.	-4.89 %
1500+25.00	7319.30		
1500+25.00	7319.30	25.00 FT.	-4.70 %
1500+50.00	7318.12		
1500+50.00	7318.12	25.00 FT.	-4.08 %
1500+75.00	7317.11		
1500+75.00	7317.11	25.00 FT.	-2.82 %
1501+00.00	7316.40		
1501+00.00	7316.40	25.00 FT.	-2.21 %
1501+25.00	7315.85		
1501+25.00	7315.85	26.73 FT.	-2.95 %
1501+51.73	7315.06		

WALL 4 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1500+00.00	7318.07	30.00 FT.	-9.67 %
1500+30.00	7315.17		
1500+30.00	7315.17	50.00 FT.	-4.12 %
1500+80.00	7313.11		
1500+80.00	7313.11	50.00 FT.	2.76 %
1501+30.00	7314.49		
1501+30.00	7314.49	21.73 FT.	-1.93 %
1501+51.73	7314.07		

Michael.Carpenter 3/07/46 PM pw:\\DCPW-APP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA04

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

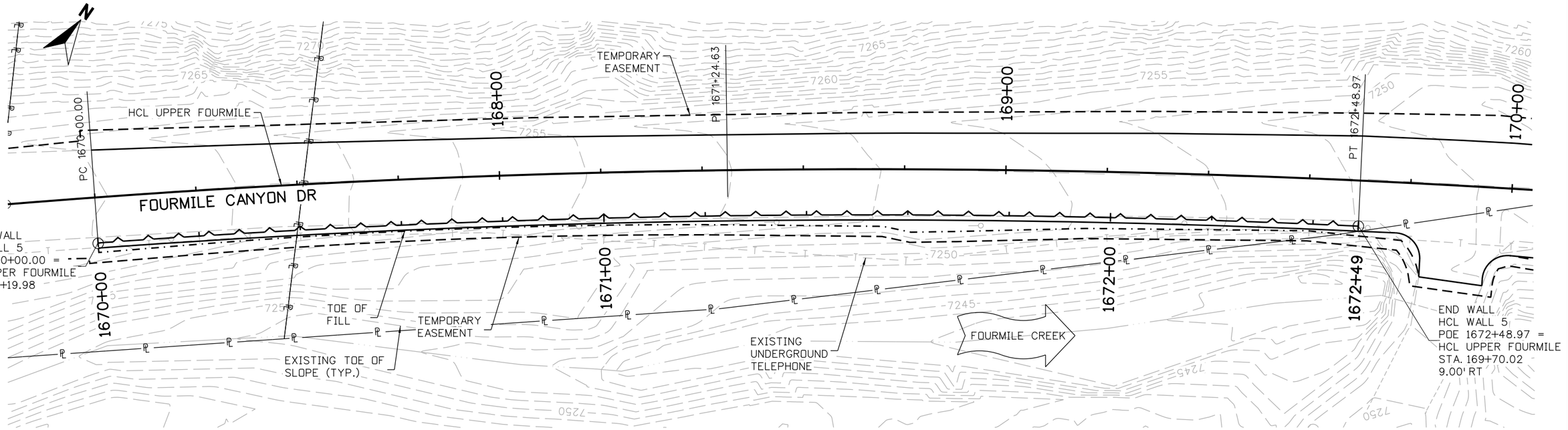
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

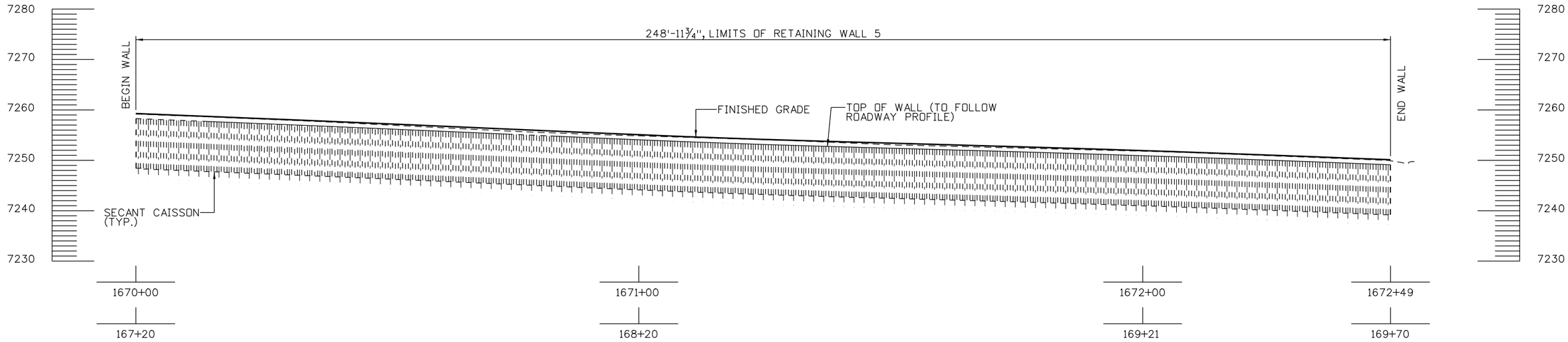
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 4 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 202



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

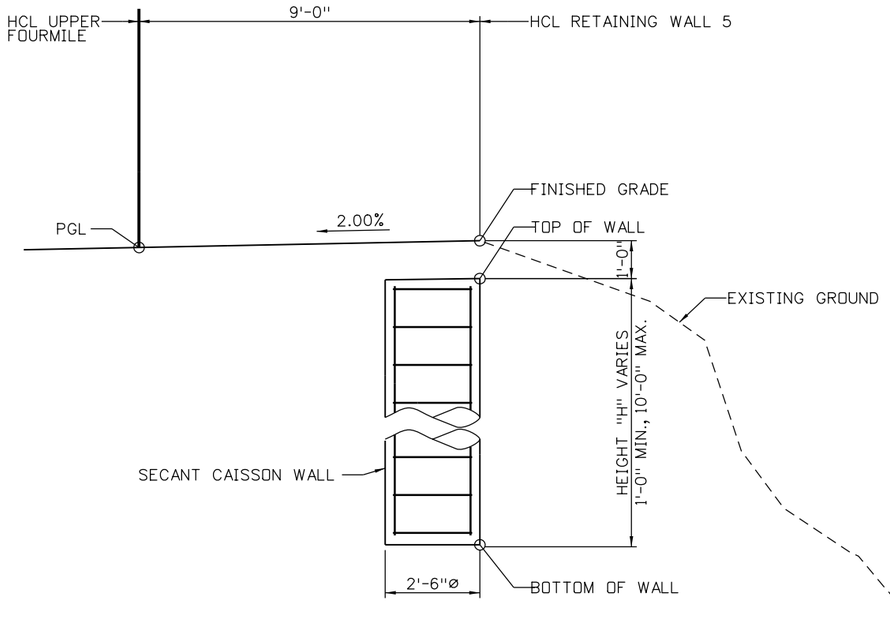
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 5 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 203

Daniel.Hawk 11:27:37 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN05.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 5

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 5 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 204

Dylan.Brown 3:38:28 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwproa\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL05

WALL 5 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	1670+00.00	256803.64	22038.87						
C-1	PI	1671+24.63	256881.18	22136.45			2091.00 FT.	248.97 FT.	2°44'24"	Right
	PT	1672+48.97	256946.58	22242.54						

WALL 5 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7259.28	7258.59	0.69 FT.
END WALL	7258.29	7246.08	12.21 FT.

WALL 5 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1670+00.00	7259.28	25.00 FT.	-3.93 %
1670+25.00	7258.29		
1670+25.00	7258.29	25.00 FT.	-4.22 %
1670+50.00	7257.24		
1670+50.00	7257.24	25.00 FT.	-4.42 %
1670+75.00	7256.13		
1670+75.00	7256.13	25.00 FT.	-4.25 %
1671+00.00	7255.07		
1671+00.00	7255.07	25.00 FT.	-3.77 %
1671+25.00	7254.13		
1671+25.00	7254.13	25.00 FT.	-2.87 %
1671+50.00	7253.41		
1671+50.00	7253.41	25.00 FT.	-2.83 %
1671+75.00	7252.70		
1671+75.00	7252.70	25.00 FT.	-3.03 %
1672+00.00	7251.95		
1672+00.00	7251.95	25.00 FT.	-3.57 %
1672+25.00	7251.05		
1672+25.00	7251.05	23.97 FT.	-3.96 %
1672+48.97	7250.10		

WALL 5 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1670+00.00	7258.59	30.00 FT.	-6.17 %
1670+30.00	7256.74		
1670+30.00	7256.74	50.00 FT.	-3.50 %
1670+80.00	7254.99		
1670+80.00	7254.99	50.00 FT.	-6.38 %
1671+30.00	7251.80		
1671+30.00	7251.80	50.00 FT.	-4.84 %
1671+80.00	7249.38		
1671+80.00	7249.38	50.00 FT.	-4.42 %
1672+30.00	7247.17		
1672+30.00	7247.17	18.97 FT.	-5.75 %
1672+48.97	7246.08		

Michael.Carpenter 11:00:26 AM par:\\DCPWAPP1.bkr.mbakercorp.com\pwproj\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TOY\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA05

60% SET

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811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

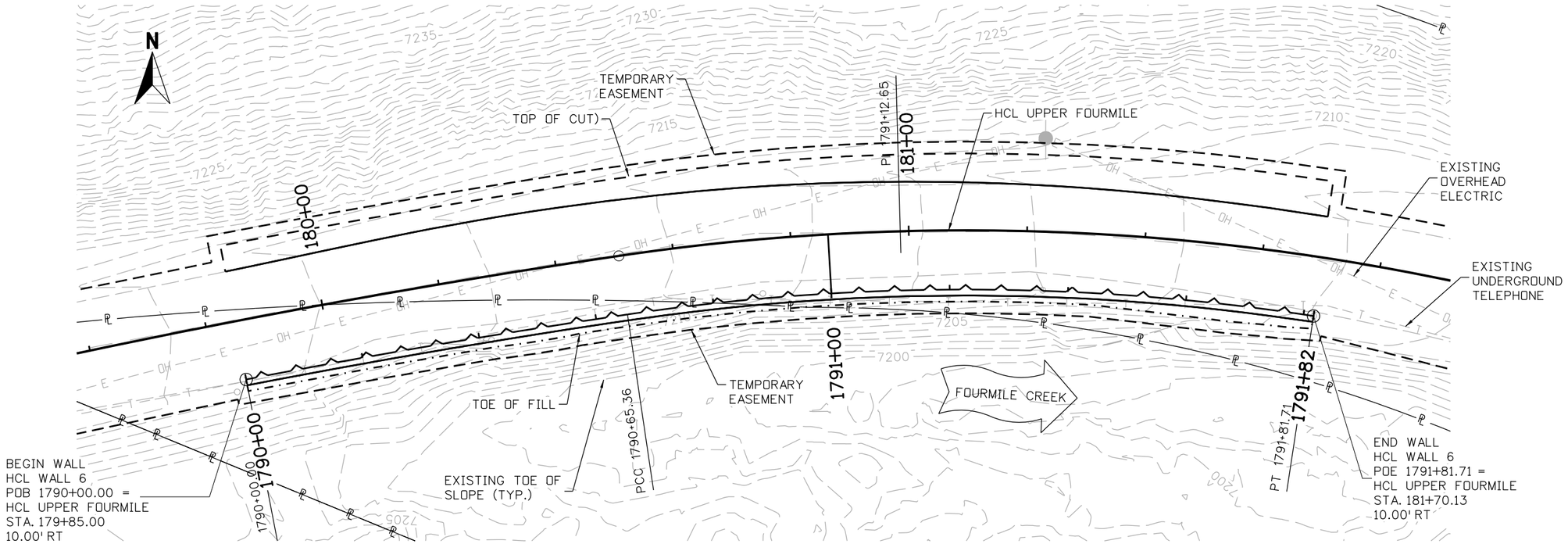
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

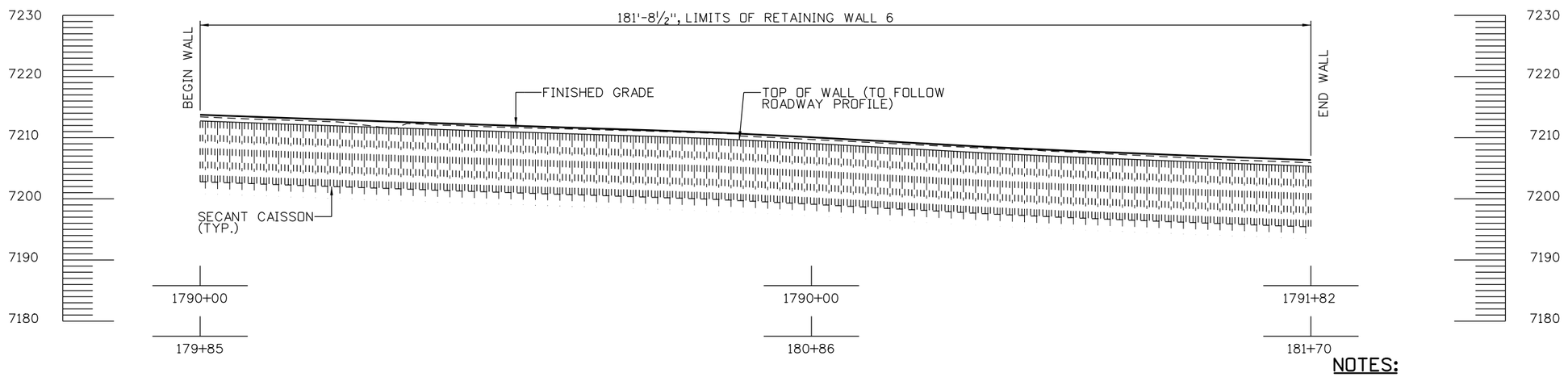
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 5 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 205



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

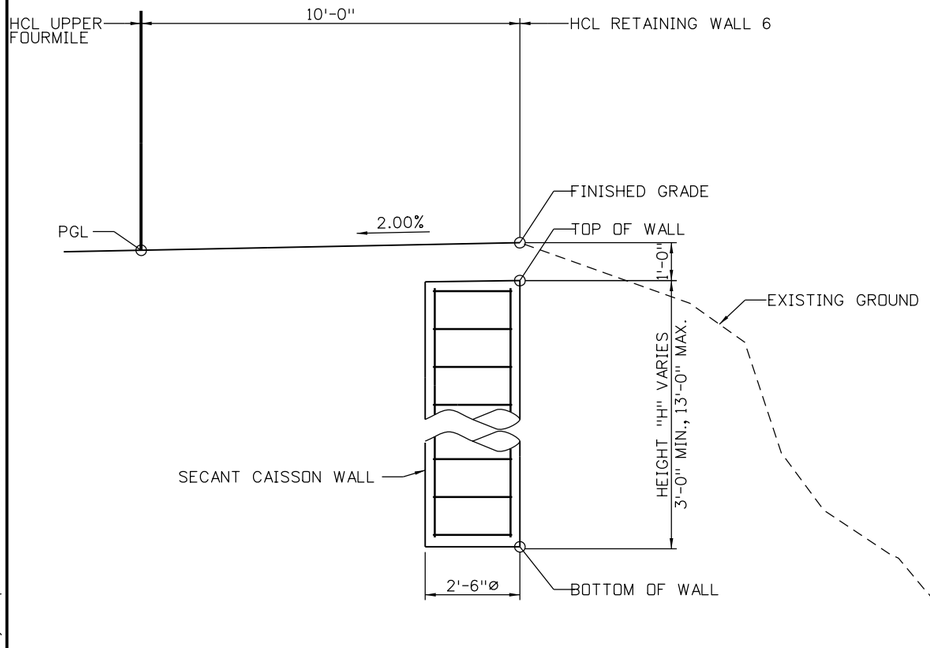
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 6 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 206

Daniel.Hawk 11:30:07 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\06_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN06.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 6

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 6 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 207

Dylan.Brown 3:40:06 PM per:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL06

WALL 6 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	1790+00.00	257122.64	23179.13						
C-1	PI	1790+32.69	257128.84	23211.23			1490.00 FT.	65.36 FT.	2° 30'49"	Right
	PT	1790+65.36	257133.62	23243.56						
	PC	1790+65.36	257133.62	23243.56						
C-2	PI	1791+23.97	257142.20	23301.54			390.00 FT.	116.34 FT.	17° 05'31"	Right
	PT	1791+81.71	257133.35	23359.47						

WALL 6 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7212.75	7212.23	0.52 FT.
END WALL	7211.85	7202.73	9.12 FT.

WALL 6 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1790+00.00	7212.75	25.00 FT.	-3.62 %
1790+25.00	7211.85		
1790+25.00	7211.85	25.00 FT.	-3.44 %
1790+50.00	7210.99		
1790+50.00	7210.99	25.00 FT.	-3.20 %
1790+75.00	7210.19		
1790+75.00	7210.19	25.00 FT.	-4.32 %
1791+00.00	7209.11		
1791+00.00	7209.11	25.00 FT.	-5.34 %
1791+25.00	7207.78		
1791+25.00	7207.78	25.00 FT.	-4.56 %
1791+50.00	7206.64		
1791+50.00	7206.64	25.00 FT.	-4.39 %
1791+75.00	7205.54		
1791+75.00	7205.54	6.71 FT.	-2.87 %
1791+81.71	7205.35		

WALL 6 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1790+00.00	7212.23	15.00 FT.	-10.80 %
1790+15.00	7210.61		
1790+15.00	7210.61	50.00 FT.	-8.78 %
1790+65.00	7206.22		
1790+65.00	7206.22	50.00 FT.	-2.58 %
1791+15.00	7204.93		
1791+15.00	7204.93	50.00 FT.	-2.38 %
1791+65.00	7203.74		
1791+65.00	7203.74	16.71 FT.	-6.05 %
1791+81.71	7202.73		

Michael.Carpenter 11:03:21 AM per:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DAT.A06

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

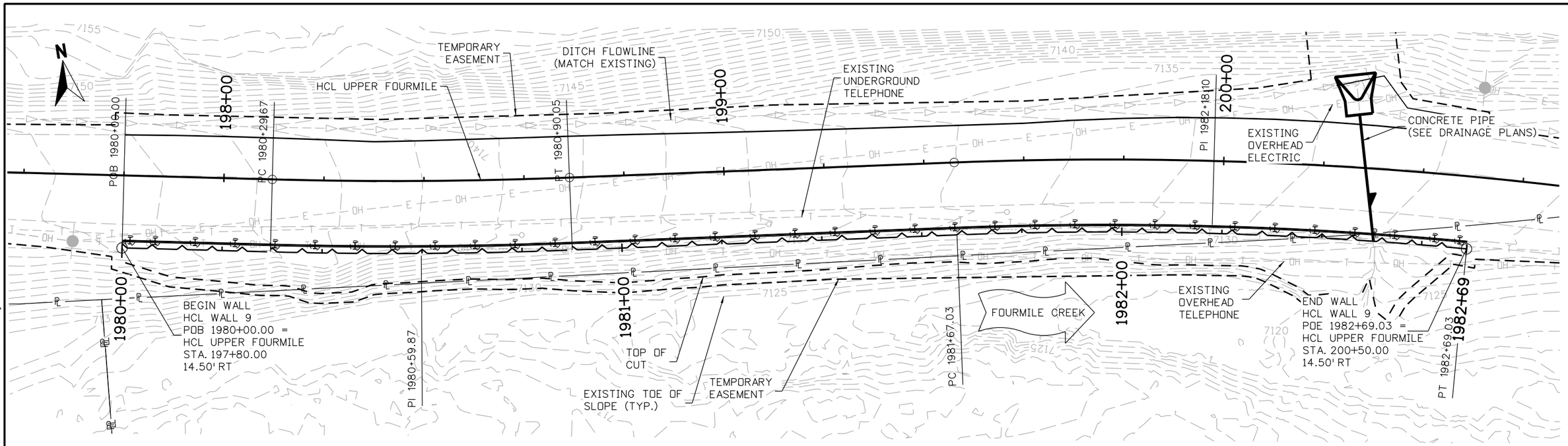
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

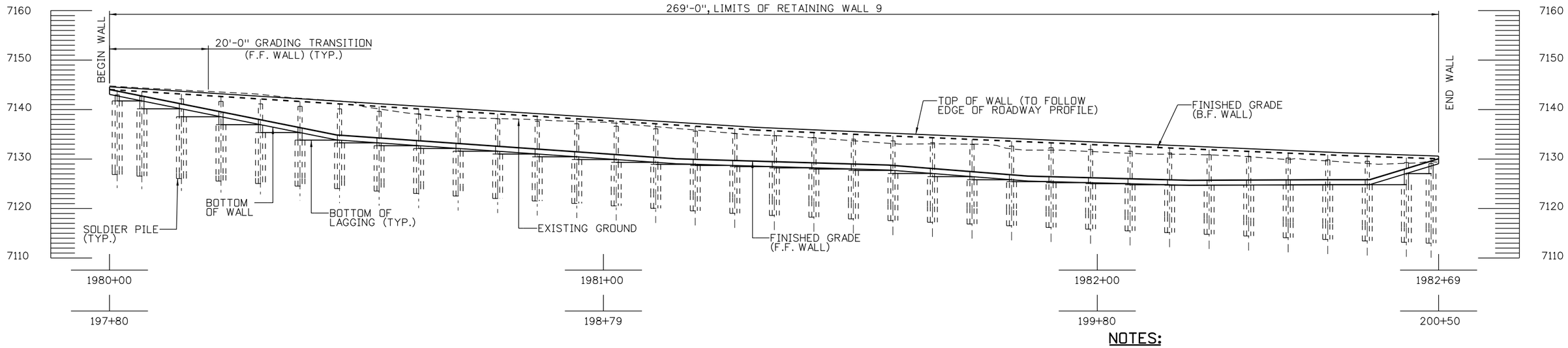
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 6 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 208



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

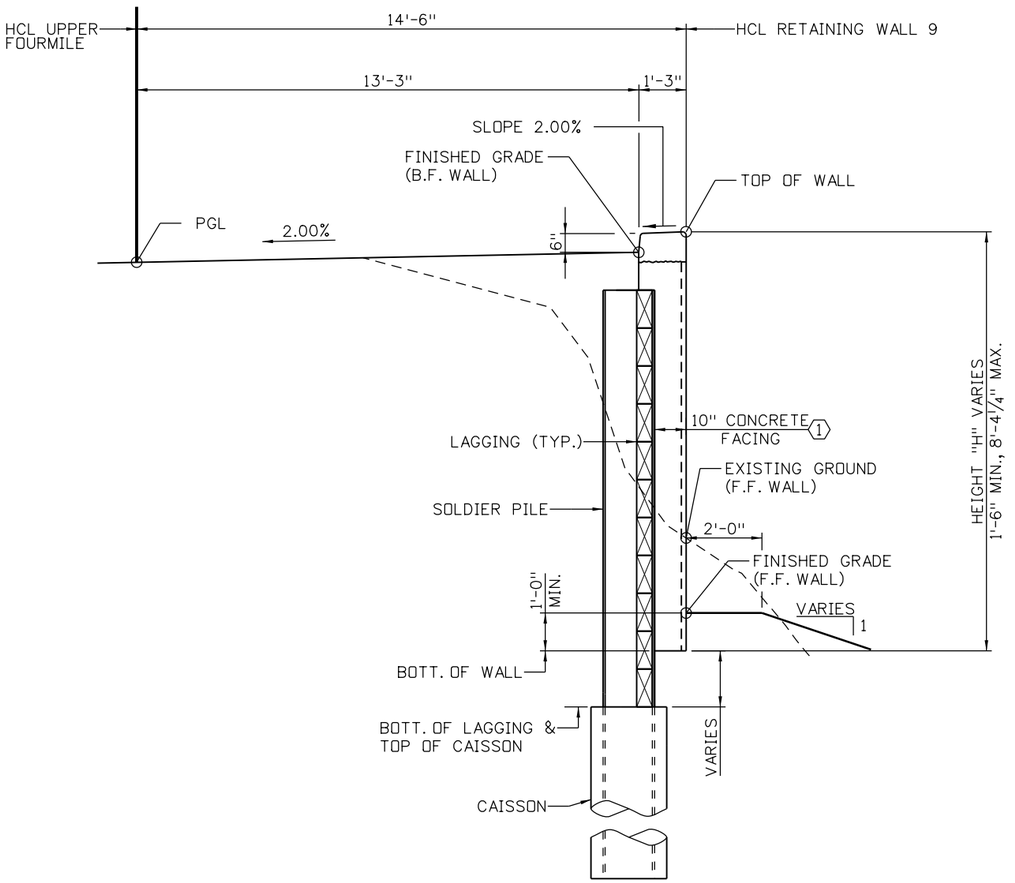
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 9 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 209

Daniel.Hawk 11:31:39 AM p:w:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN09.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 9

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE:	f'c = 4,500 PSI
REINFORCING STEEL:	fy = 60,000 PSI
SEVERITY OF SULFATE EXPOSURE:	CLASS 0

SOIL PROPERTIES:

ABOVE BOTTOM OF WALL:

SOIL UNIT WEIGHT:	120 PCF
SOIL FRICTION ANGLE:	32°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.238

BELOW BOTTOM OF WALL:

SOIL UNIT WEIGHT:	130 PCF
SOIL FRICTION ANGLE:	35°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.271
PASSIVE HORIZONTAL PRESSURE COEFFICEINT WITH 3:1 FORESLOPE:	1.290

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. FOR LIMITS OF STRUCTURAL CONCRETE COATING AND OTHER AESTHETIC DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
3. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
4. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
5. FOR ADDITIONAL WALL DETAILS, REFER TO SOLDIER PILE WALL DETAIL SHEETS.
6. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

KEYNOTES:

(1) NOMINAL WALL THICKNESS SHOWN TO F.F. WALL INCLUDES 1 1/2" FORMLINER. FINISHED FACE SHALL BE PLUMB.

60% SET

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 9 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 210

Dylan.Brown 3:34:03 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL09

WALL 9 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	1980+00.00	256779.14	24884.24						
C-1					S79° 03'21E	29.67 FT.				
	PC	1980+29.67	256773.50	24913.37						
	PI	1980+59.87	256767.77	24943.02			914.50 FT.	60.38 FT.	6° 15'55"	Left
	PT	1980+90.05	256764.00	24972.99						
C-2					S82° 50'21E	76.98 FT.				
	PC	1981+67.03	256754.41	25049.37						
	PI	1982+18.10	256748.04	25100.04			765.50 FT.	101.99 FT.	7° 29'05"	Right
	PT	1982+69.03	256735.00	25149.42						

WALL 9 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7144.56	7143.06	1.50 FT.
DC 1	7144.46	7142.75	1.71 FT.
DC 2	7144.15	7141.75	2.40 FT.
DC 3	7143.65	7140.15	3.50 FT.
DC 4	7143.15	7138.55	4.60 FT.
DC 5	7142.65	7136.95	5.70 FT.
DC 6	7142.14	7135.35	6.80 FT.
DC 7	7141.64	7133.83	7.82 FT.
DC 8	7141.14	7133.26	7.88 FT.
DC 9	7140.64	7132.70	7.94 FT.
DC 10	7140.14	7132.14	8.00 FT.
DC 11	7139.63	7131.58	8.06 FT.
DC 12	7139.13	7131.01	8.12 FT.
DC 13	7138.63	7130.45	8.18 FT.
DC 14	7138.13	7129.89	8.24 FT.
DC 15	7137.63	7129.33	8.30 FT.
DC 16	7137.13	7128.93	8.20 FT.
DC 17	7136.62	7128.69	7.93 FT.
DC 18	7136.20	7128.46	7.74 FT.
DC 19	7135.85	7128.22	7.63 FT.
DC 20	7135.51	7127.99	7.52 FT.
DC 21	7135.16	7127.70	7.46 FT.
DC 22	7134.81	7127.07	7.74 FT.
DC 23	7134.47	7126.44	8.03 FT.
DC 24	7134.12	7125.81	8.31 FT.
DC 25	7133.78	7125.43	8.35 FT.
DC 26	7133.43	7125.22	8.21 FT.
DC 27	7133.08	7125.01	8.07 FT.
DC 28	7132.74	7124.80	7.94 FT.
DC 29	7132.39	7124.71	7.68 FT.
DC 30	7132.05	7124.75	7.30 FT.
DC 31	7131.70	7124.78	6.92 FT.
DC 32	7131.35	7124.82	6.54 FT.
DC 33	7131.05	7124.82	6.24 FT.
DC 34	7130.78	7127.07	3.70 FT.
DC 35	7130.61	7128.59	2.02 FT.
END WALL	7130.55	7129.05	1.50 FT.

WALL 9 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
1980+00.0000	7144.56	130.70 FT.	-6.27 %
1981+30.6989	7136.37		
1981+30.6989	7136.37	118.91 FT.	-4.33 %
1982+49.6098	7131.22		
1982+49.6098	7131.22	19.39 FT.	-3.44 %
1982+69.0007	7130.55		

WALL 9 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
1980+00.00	7143.06	45.95 FT.	-20.00 %
1980+45.95	7133.87		
1980+45.95	7133.87	68.72 FT.	-7.02 %
1981+14.67	7129.05		
1981+14.67	7129.05	42.98 FT.	-2.94 %
1981+57.65	7127.78		
1981+57.65	7127.78	28.26 FT.	-7.88 %
1981+85.91	7125.55		
1981+85.91	7125.55	32.66 FT.	-2.62 %
1982+18.58	7124.70		
1982+18.58	7124.70	27.10 FT.	0.43 %
1982+45.68	7124.82		
1982+45.68	7124.82	9.34 FT.	0.00 %
1982+55.02	7124.82		
1982+55.02	7124.82	13.98 FT.	30.31 %
1982+69.00	7129.05		

Michael.Carpenter 11:05:00 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA09

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

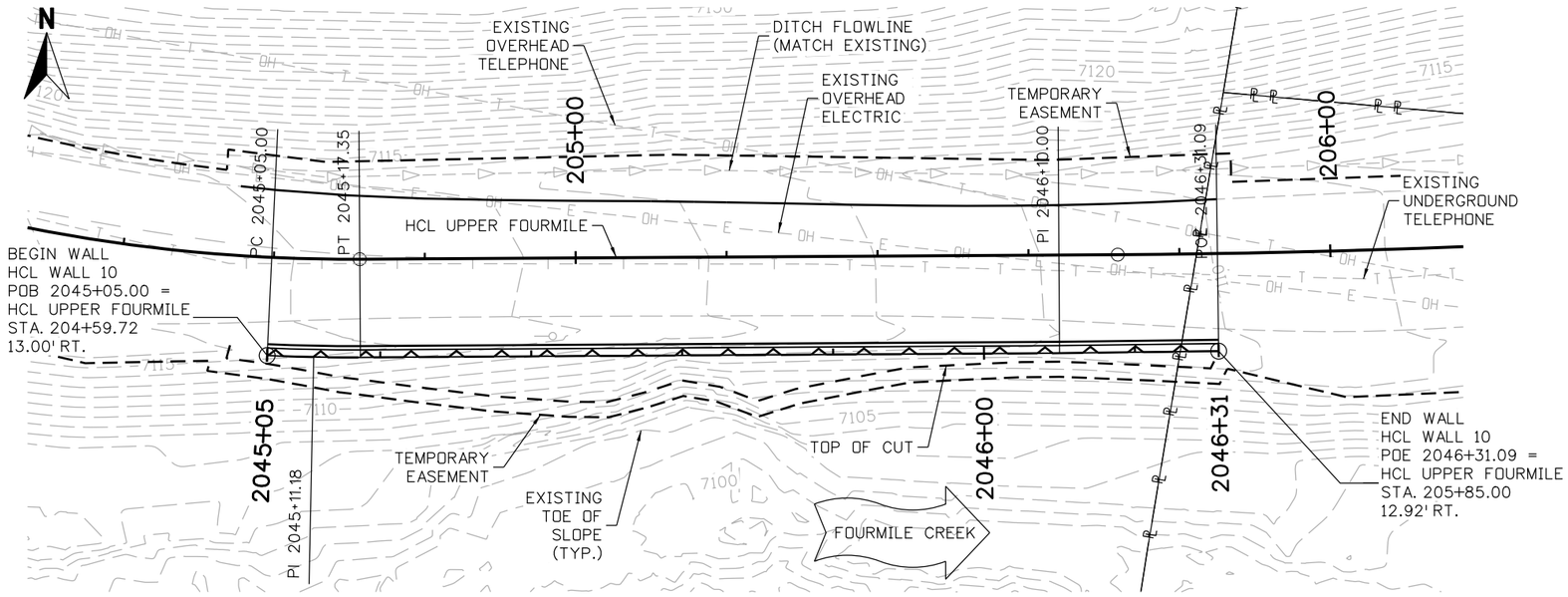
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

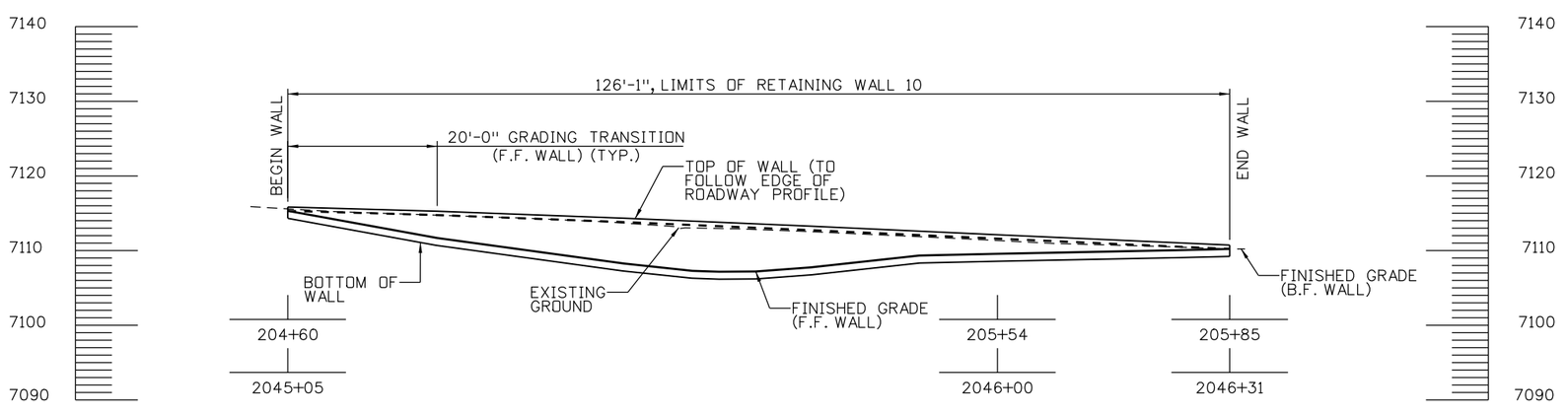
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 9 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 211



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

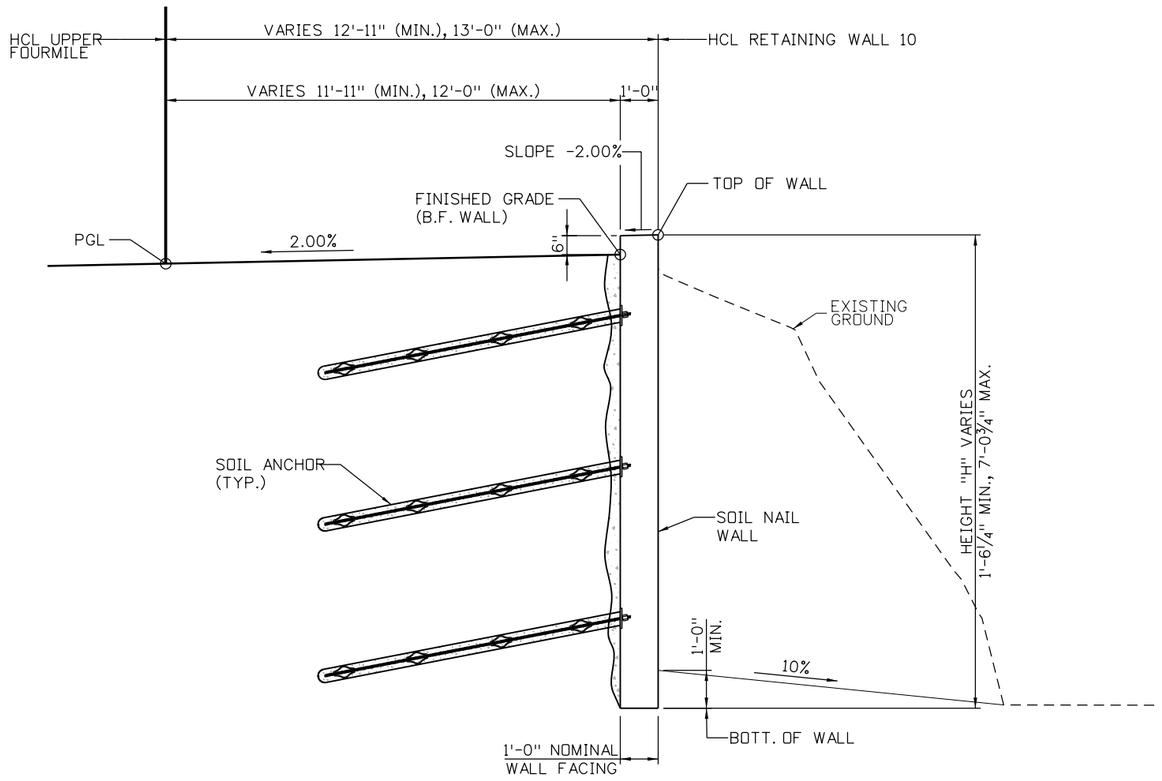
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 10 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 212

Daniel.Hawk 11:34:01 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN10.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 10

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SOIL NAIL WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
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UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 10 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 213

Dylan.Brown 3:08:32 PM p:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TON\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL10

WALL 10 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	2045+05.00	256620.63	25544.48						
C-1	PI	2045+11.18	256620.34	25550.65			1490.00 FT.	65.36 FT.	2° 30'49"	RIGHT
	PT	2045+17.35	256620.38	25556.83						
					N89° 39'17E	92.65 FT.				
					N89° 15'48E	21.09 FT.	390.00 FT.	116.34 FT.	17° 05'31"	RIGHT
	POE	2046+31.09	256621.21	25670.57						

WALL 10 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	7115.97	7114.39	1.59 FT.
END WALL	7115.26	7109.08	6.19 FT.

WALL 10 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2045+00.00	7115.97	25.00 FT.	-2.83 %
2045+25.00	7115.26		
2045+25.00	7115.26	25.00 FT.	-3.73 %
2045+50.00	7114.33		
2045+50.00	7114.33	25.00 FT.	-4.32 %
2045+75.00	7113.25		
2045+75.00	7113.25	25.00 FT.	-4.59 %
2046+00.00	7112.10		
2046+00.00	7112.10	25.00 FT.	-4.45 %
2046+25.00	7110.99		
2046+25.00	7110.99	6.09 FT.	-4.27 %
2046+31.09	7110.73		

WALL 10 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2045+00.00	7114.39	25.00 FT.	-14.79 %
2045+25.00	7110.69		
2045+25.00	7110.69	25.00 FT.	-13.68 %
2045+50.00	7107.27		
2045+50.00	7107.27	25.00 FT.	-2.06 %
2045+75.00	7106.75		
2045+75.00	7106.75	14.53 FT.	10.93 %
2045+89.53	7108.34		
2045+89.53	7108.34	10.47 FT.	2.19 %
2046+00.00	7108.57		
2046+00.00	7108.57	25.00 FT.	2.02 %
2046+25.00	7109.08		
2046+25.00	7109.08	6.09 FT.	2.21 %
2046+31.09	7109.21		

Michael.Carpenter 9:25:54 AM p:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA10

60% SET

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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

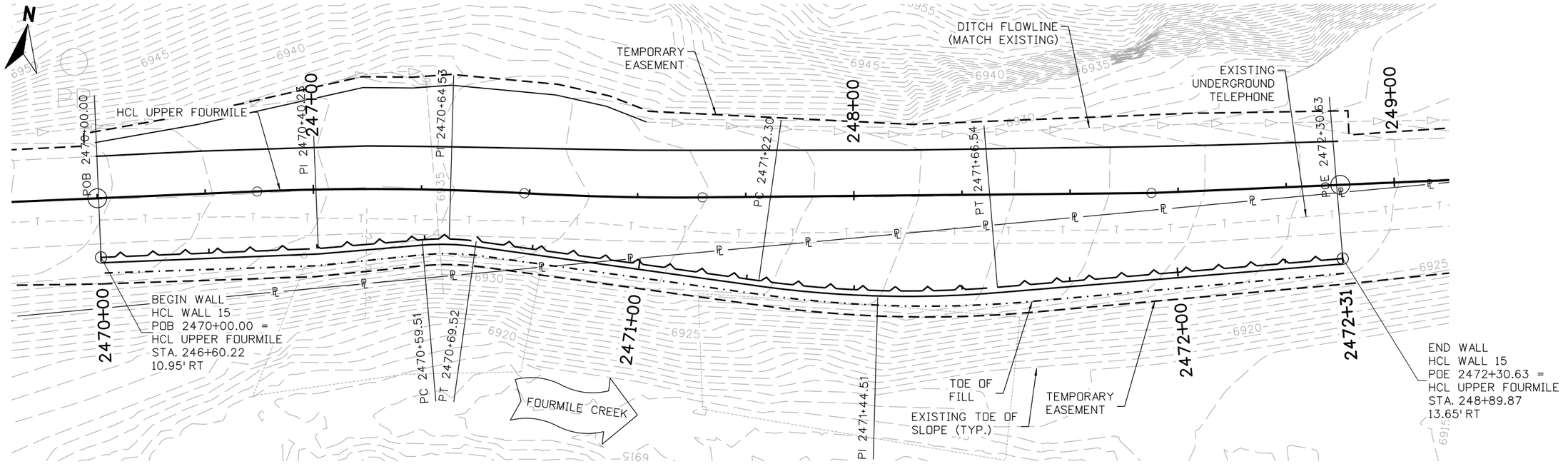
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

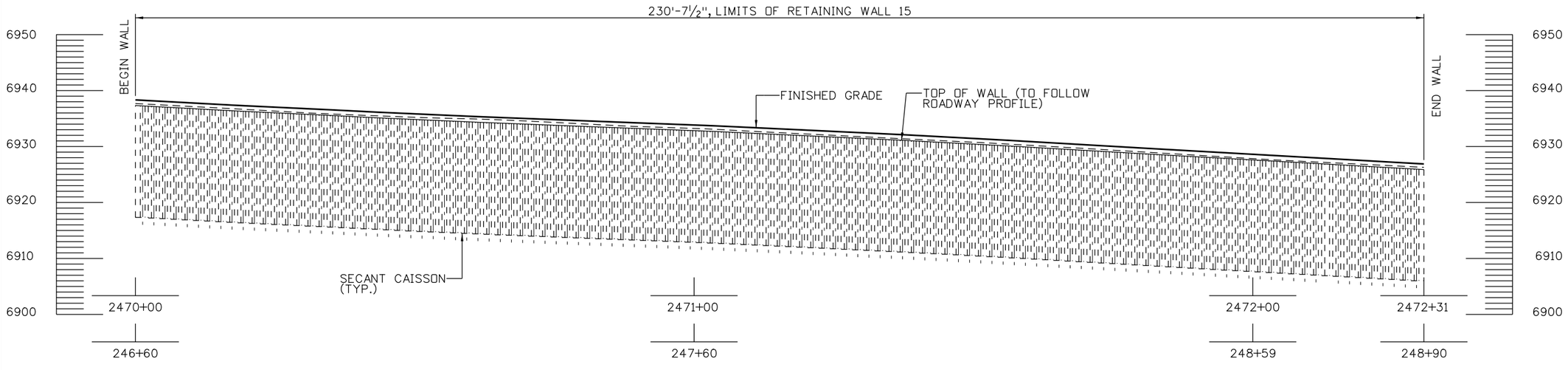
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 10 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 214



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

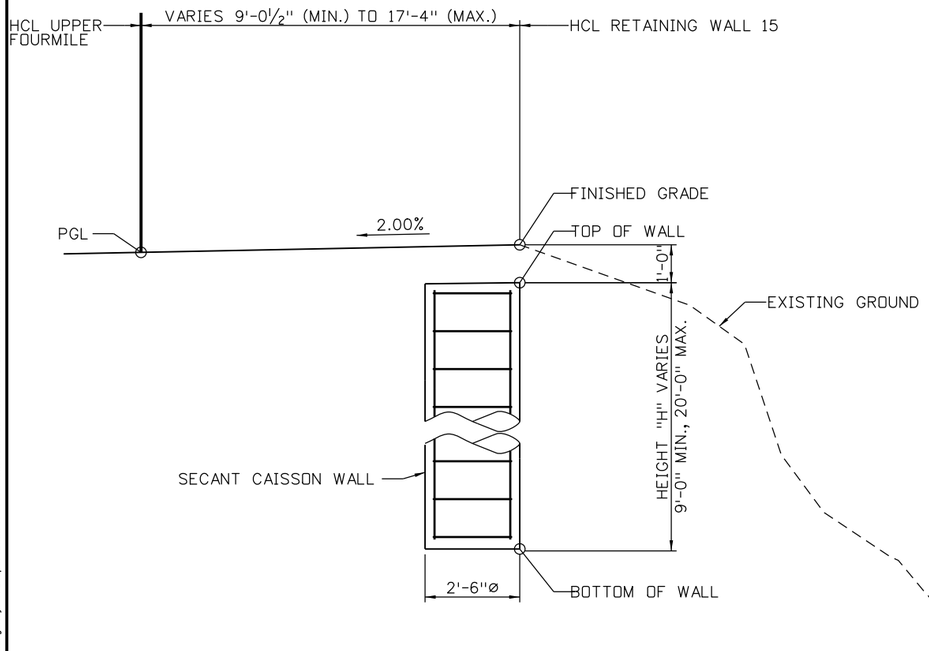
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 15 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 215

Daniel.Hawk 11:35:40 AM p:\1DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN15.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 15

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 15 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 216

Michael.Carpenter 3:39:17 PM per:\\DCPW4PP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL15

WALL 15 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	2470+00.00	257240.37	29435.17						
					N79° 14'42E	40.23 FT.				
					N76° 46'03E	19.28 FT.				
	PC	2470+59.51	257252.29	29493.46						
C-1	PI	2470+64.53	257253.45	29498.35			45.00 FT.	10.01 FT.	12° 45'03"	Right
	PT	2470+69.52	257253.49	29503.38						
					N89° 31'06E	52.78 FT.				
	PC	2471+22.30	257253.93	29556.16						
C-2	PI	2471+44.51	257254.12	29578.36			200.00 FT.	44.23 FT.	12° 40'19"	Left
	PT	2471+66.54	257259.17	29599.99						
					N76° 50'47E	64.10 FT.				
	POE	2472+30.63	257273.76	29662.40						

WALL 15 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6937.34	6934.38	2.96 FT.
END WALL	6936.07	6922.93	13.14 FT.

WALL 15 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2470+00.00	6937.34	25.00 FT.	-5.08 %
2470+25.00	6936.07		
2470+25.00	6936.07	25.00 FT.	-4.82 %
2470+50.00	6934.87		
2470+50.00	6934.87	25.00 FT.	-4.32 %
2470+75.00	6933.79		
2470+75.00	6933.79	25.00 FT.	-3.61 %
2471+00.00	6932.89		
2471+00.00	6932.89	25.00 FT.	-4.98 %
2471+25.00	6931.64		
2471+25.00	6931.64	25.00 FT.	-4.71 %
2471+50.00	6930.46		
2471+50.00	6930.46	25.00 FT.	-5.90 %
2471+75.00	6928.99		
2471+75.00	6928.99	25.00 FT.	-5.66 %
2472+00.00	6927.57		
2472+00.00	6927.57	25.00 FT.	-5.66 %
2472+25.00	6926.16		
2472+25.00	6926.16	5.63 FT.	-4.83 %
2472+30.63	6925.89		

WALL 15 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2470+00.00	6934.38	40.00 FT.	-11.48 %
2470+40.00	6929.79		
2470+40.00	6929.79	50.00 FT.	-7.28 %
2470+90.00	6926.15		
2470+90.00	6926.15	50.00 FT.	-0.18 %
2471+40.00	6926.06		
2471+40.00	6926.06	50.00 FT.	-2.64 %
2471+90.00	6924.74		
2471+90.00	6924.74	40.63 FT.	-4.45 %
2472+30.63	6922.93		

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60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

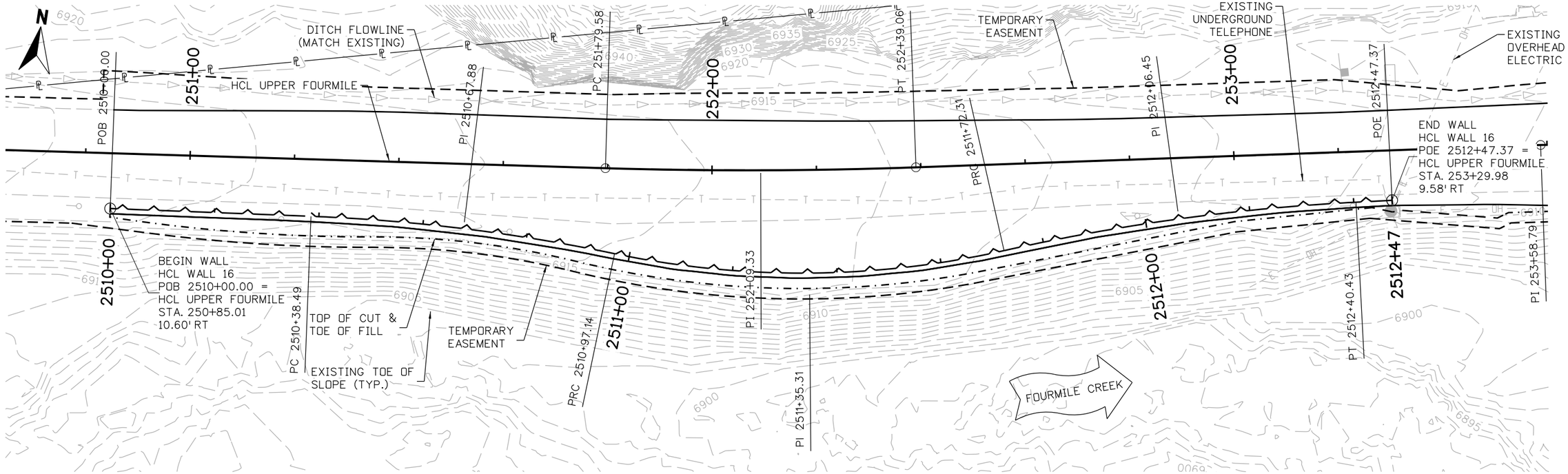
Boulder County
Michael Baker INTERNATIONAL

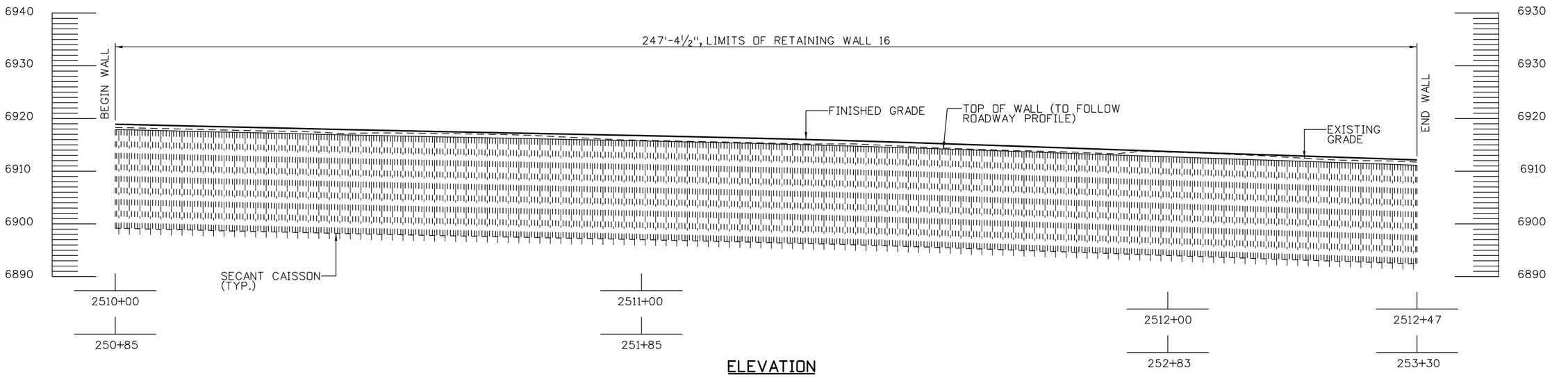
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 15 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 217





60% SET

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Boulder County

Michael Baker INTERNATIONAL

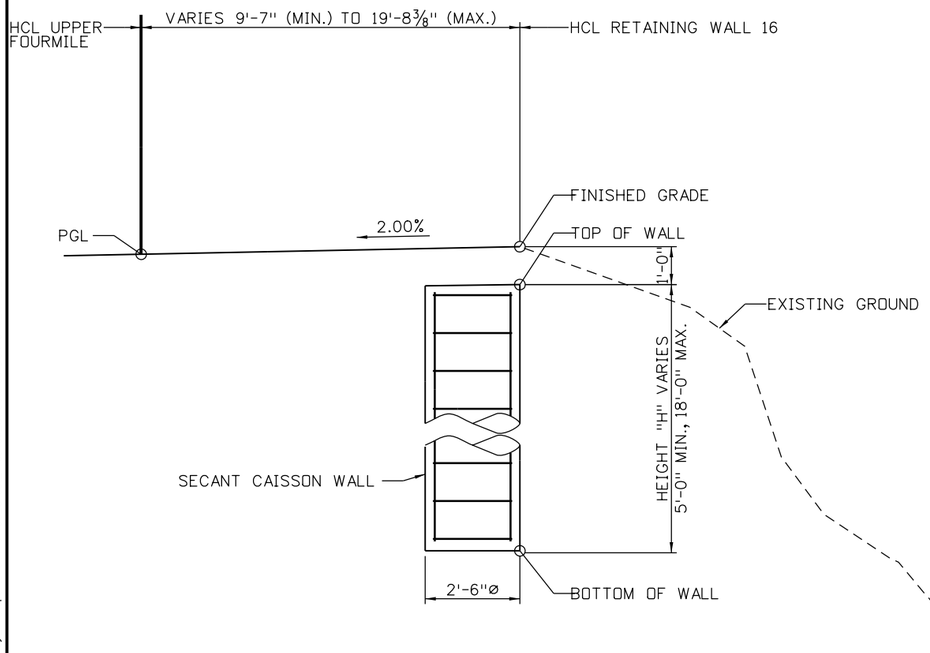
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 16 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 218

Daniel.Hawk 11:37:38 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN16.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 16

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

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Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 16 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 219

Dylan.Brown 4:01:08 PM per:\\DCPWAPP1.bkr.mbakercorp.com:pwproot\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL16

WALL 16 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	2510+00.00	257307.66	29853.58						
					N83° 48'28E	38.49 FT.				
	PC	2510+38.49	257311.81	29891.84						
C-1	PI	2510+67.88	257314.98	29921.07			350.00 FT.	58.65 FT.	9° 36'07"	Right
	PT	2510+97.14	257313.23	29950.41						
	PC	2510+97.14	257313.23	29950.41						
C-2	PI	2511+35.31	257310.96	29988.51			175.49 FT.	75.17 FT.	24° 32'28"	Left
	PT	2511+72.31	257324.72	30024.12						
	PC	2511+72.31	257324.72	30024.12						
C-3	PI	2512+06.45	257337.03	30055.97			400.00 FT.	68.12 FT.	9° 45'28"	Right
	PT	2512+40.43	257343.77	30089.44						
					N78° 37'35E	6.93 FT.				
	POE	2512+47.37	257345.13	30096.24						

WALL 16 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6917.87	6916.56	1.31 FT.
END WALL	6917.26	6906.60	10.66 FT.

WALL 16 TOP OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2510+00.00	6917.87	25.00 FT.	-2.46 %
2510+25.00	6917.26		
2510+25.00	6917.26	25.00 FT.	-2.21 %
2510+50.00	6916.71		
2510+50.00	6916.71	25.00 FT.	-1.98 %
2510+75.00	6916.21		
2510+75.00	6916.21	25.00 FT.	-2.10 %
2511+00.00	6915.69		
2511+00.00	6915.69	25.00 FT.	-2.27 %
2511+25.00	6915.12		
2511+25.00	6915.12	25.00 FT.	-2.74 %
2511+50.00	6914.43		
2511+50.00	6914.43	25.00 FT.	-3.39 %
2511+75.00	6913.58		
2511+75.00	6913.58	25.00 FT.	-3.60 %
2512+00.00	6912.68		
2512+00.00	6912.68	25.00 FT.	-3.32 %
2512+25.00	6911.86		
2512+25.00	6911.86	22.37 FT.	-3.44 %
2512+47.37	6911.09		

WALL 16 BOTTOM OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2510+00.00	6916.56	15.00 FT.	-11.67 %
2510+15.00	6914.81		
2510+15.00	6914.81	50.00 FT.	-8.80 %
2510+65.00	6910.41		
2510+65.00	6910.41	50.00 FT.	-0.36 %
2511+15.00	6910.23		
2511+15.00	6910.23	50.00 FT.	-5.72 %
2511+65.00	6907.37		
2511+65.00	6907.37	50.00 FT.	1.32 %
2512+15.00	6908.03		
2512+15.00	6908.03	32.37 FT.	-4.42 %
2512+47.37	6906.60		

Michael.Carpenter 9:31:32 AM pw:\\DOCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA16

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

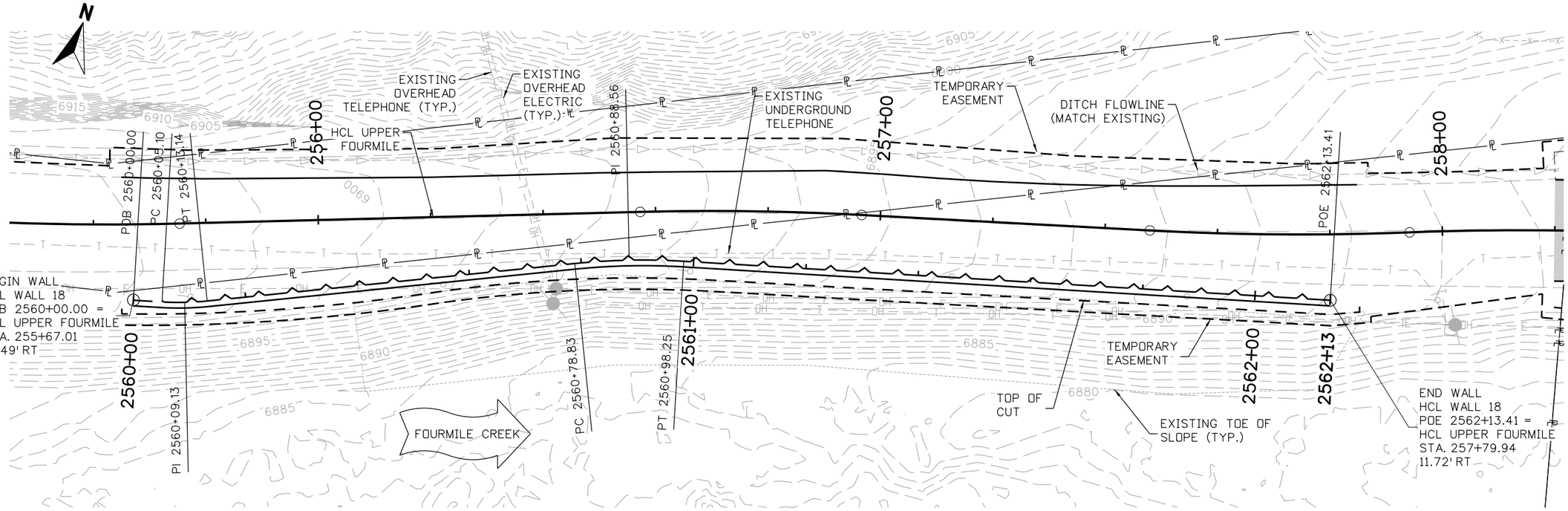
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

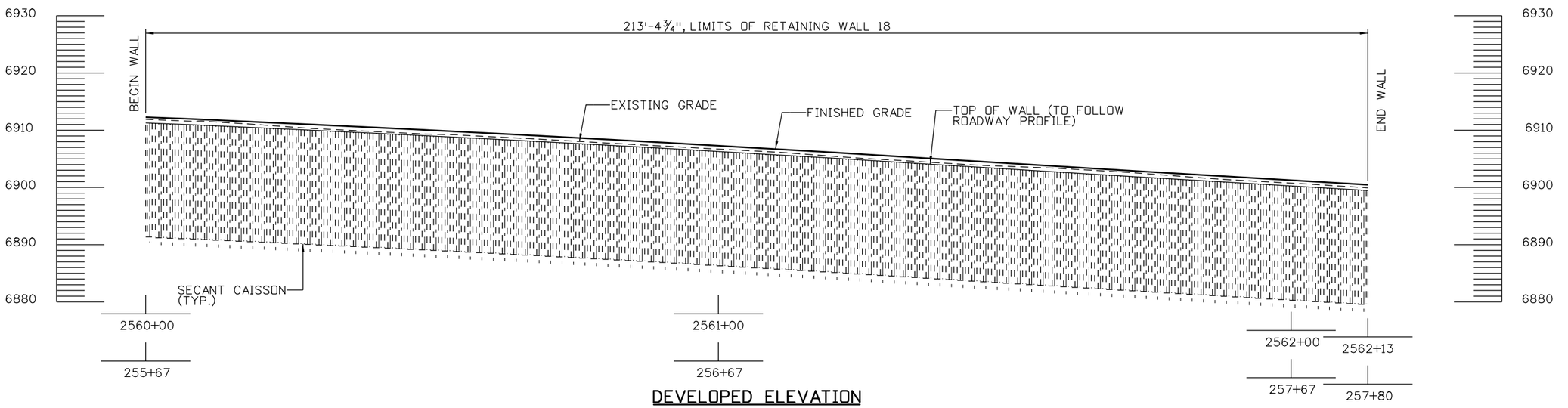
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 16 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 220



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

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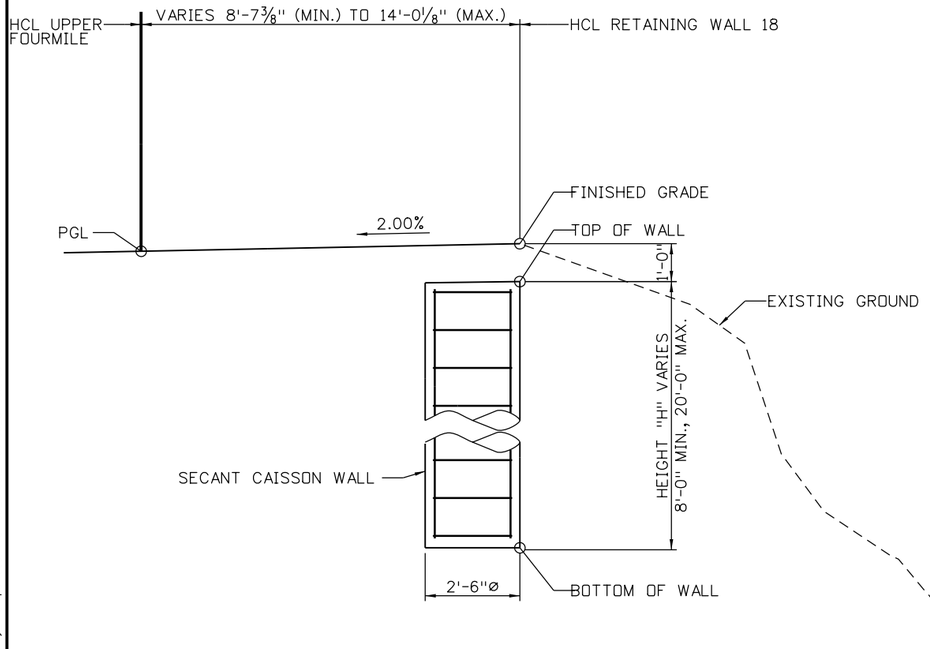
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 18 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 221

Daniel.Hawk 11:39:47 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN18.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 18

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SECANT CAISSON WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

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BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 18 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 222

Dylan.Brown 4:03:22 PM p:w:\\DCPWAPP1.bkr.mbakercorp.com\pwproot\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL18

WALL 18 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	2560+00.00	257390.56	30330.42						
					N76° 03'40E	5.10 FT.				
	PC	2560+05.10	257391.79	30335.36						
C-1	PI	2560+09.13	257392.76	30339.28			50.00 FT.	8.05 FT.	9° 13'17"	Left
	PT	2560+13.14	257394.35	30342.98						
					N66° 50'23E	65.69 FT.				
	PC	2560+78.83	257420.19	30403.38						
C-2	PI	2560+88.56	257424.01	30412.32			120.00 FT.	19.42 FT.	9° 16'14"	Right
	PT	2560+98.25	257426.35	30421.77						
					N76° 06'37E	115.16 FT.				
	POE	2562+13.41	257453.99	30533.56						

WALL 18 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6901.28	6895.92	5.36 FT.
END WALL	6900.22	6886.95	13.27 FT.

WALL 18 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2560+00.00	6902.28	25.00 FT.	-4.26 %
2560+25.00	6901.22		
2560+25.00	6901.22	25.00 FT.	-5.01 %
2560+50.00	6899.97		
2560+50.00	6899.97	25.00 FT.	-4.96 %
2560+75.00	6898.73		
2560+75.00	6898.73	25.00 FT.	-5.88 %
2561+00.00	6897.26		
2561+00.00	6897.26	25.00 FT.	-5.92 %
2561+25.00	6895.78		
2561+25.00	6895.78	25.00 FT.	-6.10 %
2561+50.00	6894.25		
2561+50.00	6894.25	25.00 FT.	-6.16 %
2561+75.00	6892.71		
2561+75.00	6892.71	25.00 FT.	-5.85 %
2562+00.00	6891.25		
2562+00.00	6891.25	13.41 FT.	-5.73 %
2562+13.41	6890.48		

WALL 18 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2560+00.00	6895.92	35.00 FT.	-6.37 %
2560+35.00	6893.69		
2560+35.00	6893.69	50.00 FT.	-7.34 %
2560+85.00	6890.02		
2560+85.00	6890.02	50.00 FT.	-2.78 %
2561+35.00	6888.63		
2561+35.00	6888.63	50.00 FT.	0.16 %
2561+85.00	6888.71		
2561+85.00	6888.71	28.41 FT.	-6.20 %
2562+13.41	6886.95		

Michael.Carpenter 9:45:38 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TOI\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA18

60% SET

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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

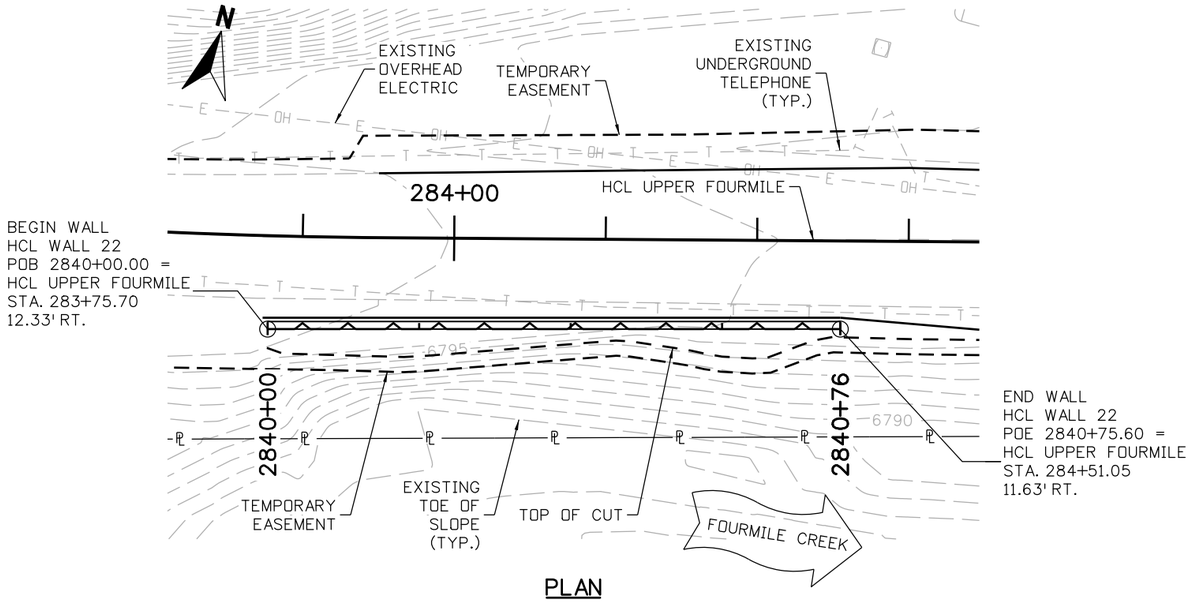
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

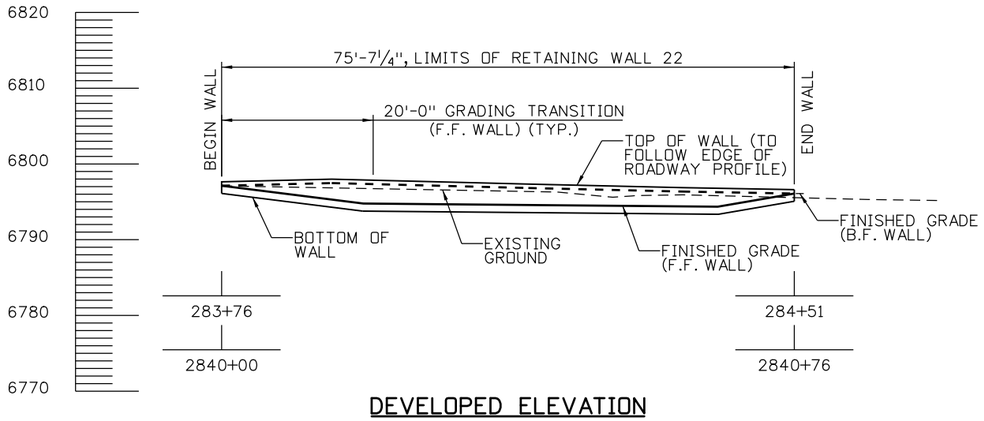
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 18 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 223



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

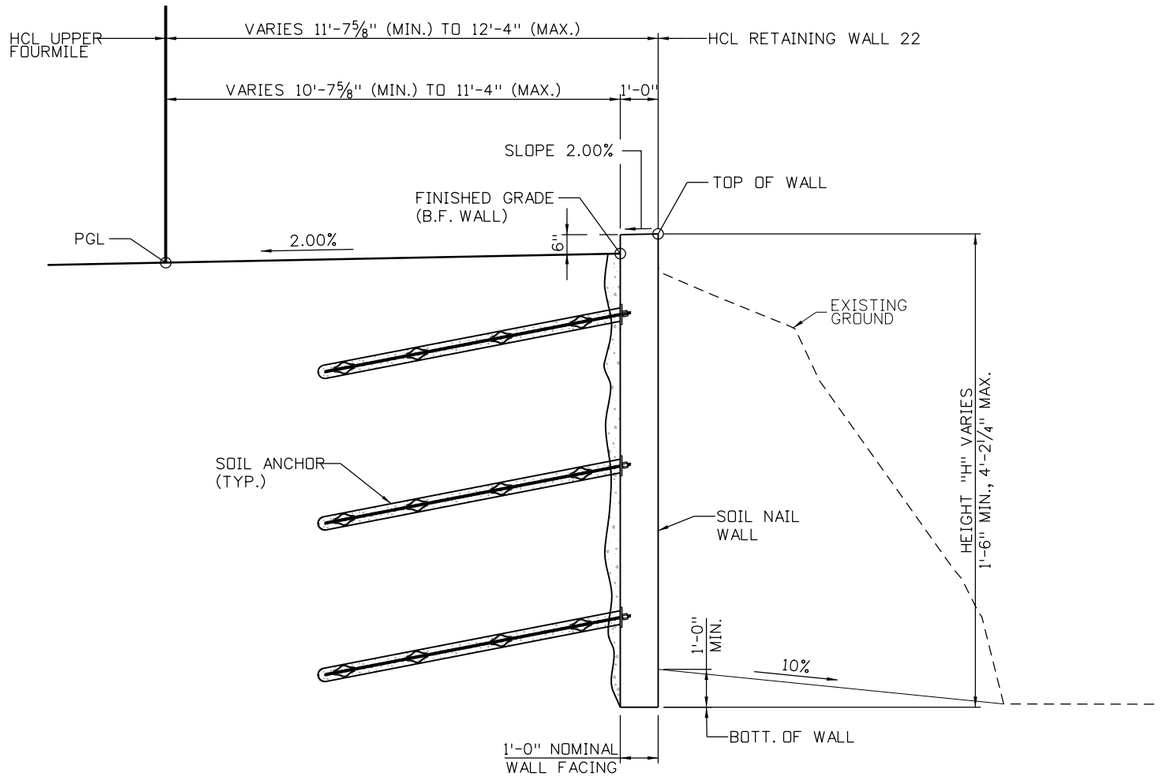
Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT RETAINING WALL 22 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 224

Daniel.Hawk 11:43:36 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN22.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 22

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SOIL NAIL WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 22 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 225

Dylan.Brown 2:55:39 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL22

WALL 22 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	2840+00.00	258068.39	33030.37						
					N74° 32'22E	75.60 FT.				
	POE	2840+75.60	258088.54	33103.24						

WALL 22 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6797.62	6796.12	1.50 FT.
END WALL	6797.98	6795.09	2.89 FT.

WALL 22 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2840+00.00	6797.62	14.54 FT.	2.46 %
2840+14.54	6797.98		
2840+14.54	6797.98	25.94 FT.	-2.56 %
2840+40.49	6797.32		
2840+40.49	6797.32	20.26 FT.	-2.29 %
2840+60.74	6796.85		
2840+60.74	6796.85	14.86 FT.	-1.75 %
2840+75.60	6796.59		

WALL 22 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2840+00.00	6796.12	14.54 FT.	-16.11 %
2840+14.54	6793.78		
2840+14.54	6793.78	46.20 FT.	-0.91 %
2840+60.74	6793.36		
2840+60.74	6793.36	14.86 FT.	11.68 %
2840+75.60	6795.09		

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60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

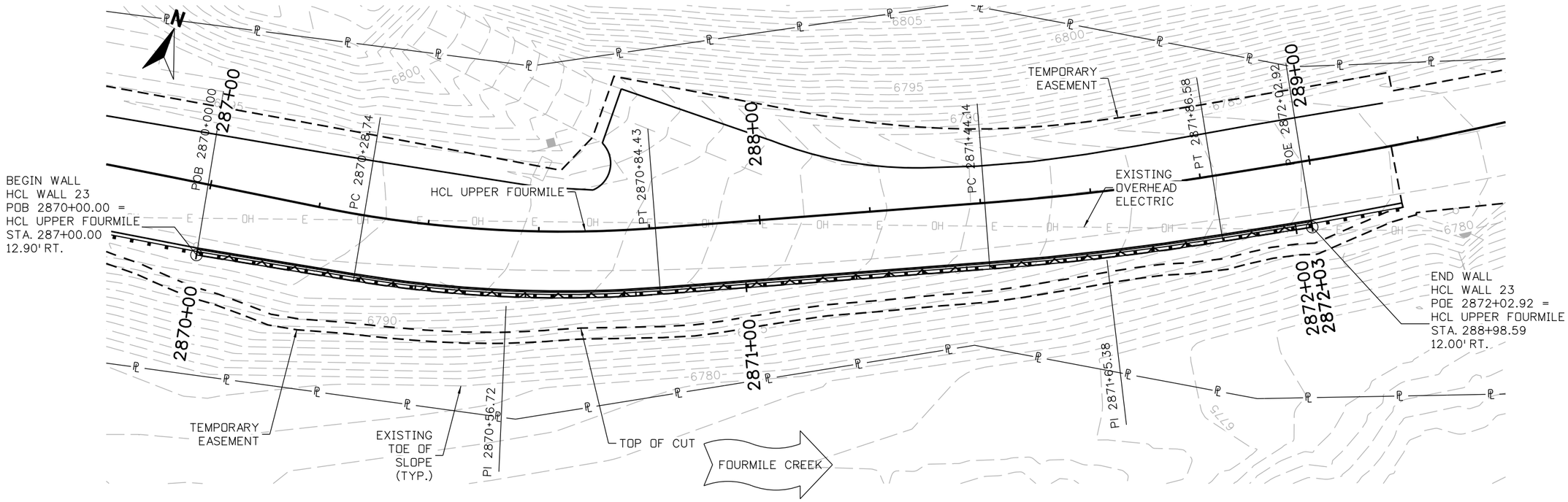
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

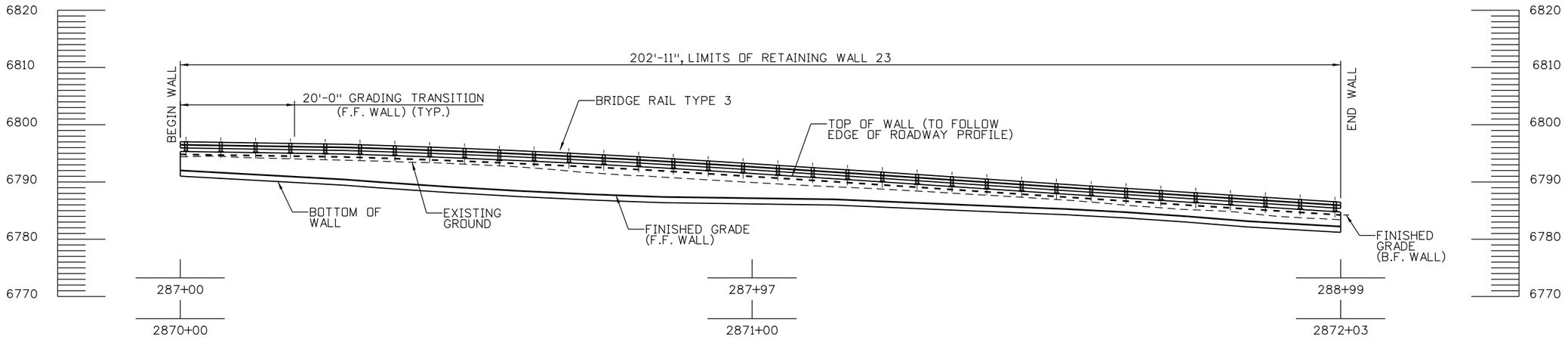
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 22 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 226



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

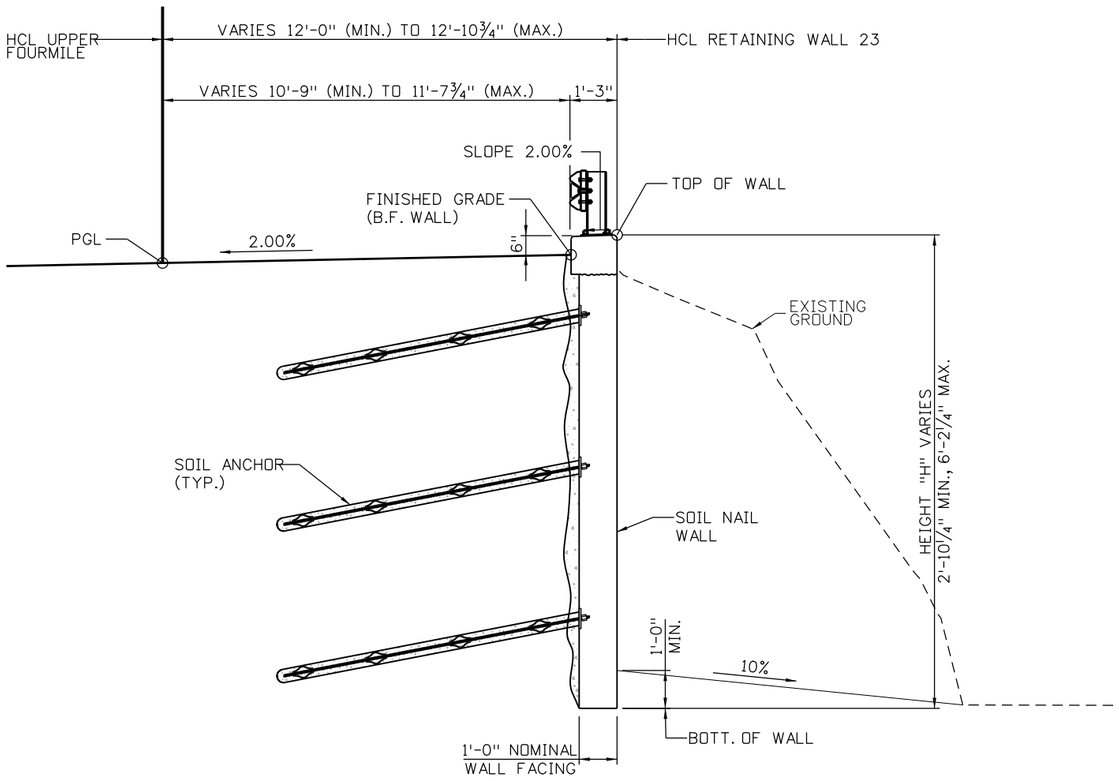
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 23 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 227

Daniel.Hawk 11:45:55 AM p:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN23.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 23

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SOIL NAIL WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 23 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 228

Michael.Carpenter 3:31:08 PM p:w:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL23

WALL 23 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	POB	2870+00.00	258151.44	33343.80						
					N74° 10'43E	28.74 FT.				
	PC	2870+28.74	258159.28	33371.45						
C-1	PI	2870+56.72	258166.91	33398.37			232.00 FT.	55.69 FT.	13° 45'13"	Left
	PT	2870+84.43	258180.72	33422.70						
					N60° 25'29E	59.71 FT.				
	PC	2871+44.14	258210.19	33474.64						
C-2	PI	2871+65.38	258220.67	33493.10			512.00 FT.	42.44 FT.	4° 44'57"	Left
	PT	2871+86.58	258232.64	33510.64						
					N55° 40'33E	16.34 FT.				
	POE	2872+02.92	258241.85	33524.13						

WALL 23 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6795.31	6791.92	3.39 FT.
END WALL	6792.82	6781.21	11.61 FT.

WALL 23 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
2870+00.00	6795.31	25.00 FT.	-1.56 %
2870+25.00	6794.92		
2870+25.00	6794.92	25.00 FT.	-3.16 %
2870+50.00	6794.13		
2870+50.00	6794.13	25.00 FT.	-5.26 %
2870+75.00	6792.82		
2870+75.00	6792.82	25.00 FT.	-4.10 %
2871+00.00	6791.80		
2871+00.00	6791.80	25.00 FT.	-8.74 %
2871+25.00	6789.61		
2871+25.00	6789.61	25.00 FT.	-5.46 %
2871+50.00	6788.25		
2871+50.00	6788.25	25.00 FT.	-7.07 %
2871+75.00	6786.48		
2871+75.00	6786.48	25.00 FT.	-5.91 %
2872+00.00	6785.00		
2872+00.00	6785.00	2.92 FT.	-5.91 %
2872+02.92	6784.83		

WALL 23 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
2870+00.00	6791.92	25.00 FT.	-6.38 %
2870+25.00	6790.33		
2870+25.00	6790.33	25.00 FT.	-9.34 %
2870+50.00	6788.00		
2870+50.00	6788.00	25.00 FT.	-5.47 %
2870+75.00	6786.63		
2870+75.00	6786.63	25.00 FT.	-0.97 %
2871+00.00	6786.39		
2871+00.00	6786.39	25.00 FT.	-1.66 %
2871+25.00	6785.97		
2871+25.00	6785.97	25.00 FT.	-5.08 %
2871+50.00	6784.70		
2871+50.00	6784.70	25.00 FT.	-6.78 %
2871+75.00	6783.01		
2871+75.00	6783.01	25.00 FT.	-3.43 %
2872+00.00	6782.15		
2872+00.00	6782.15	2.92 FT.	-32.12 %
2872+02.92	6781.21		

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60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

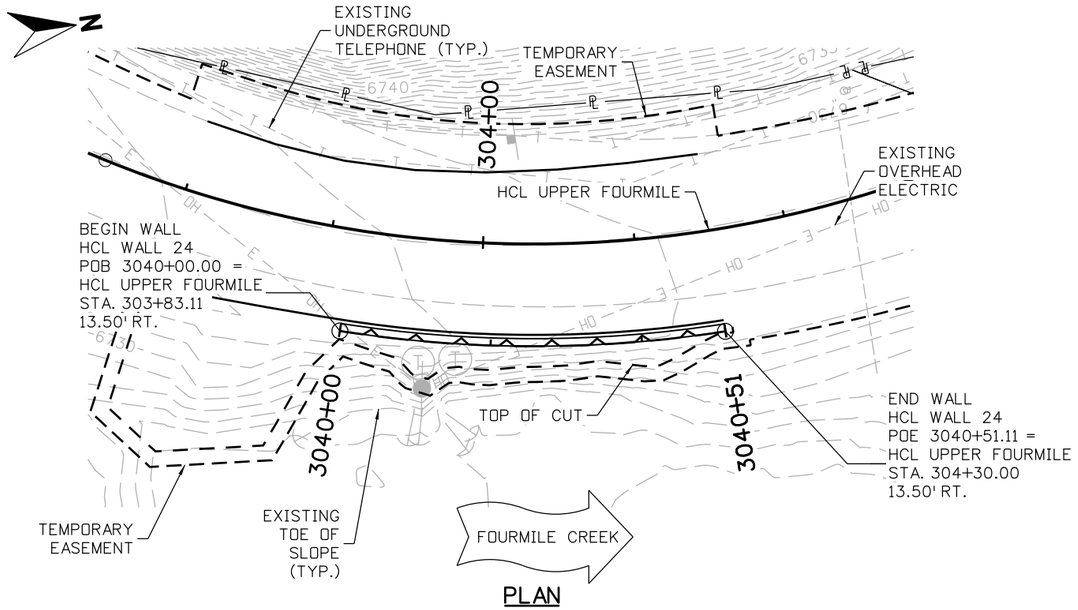
Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

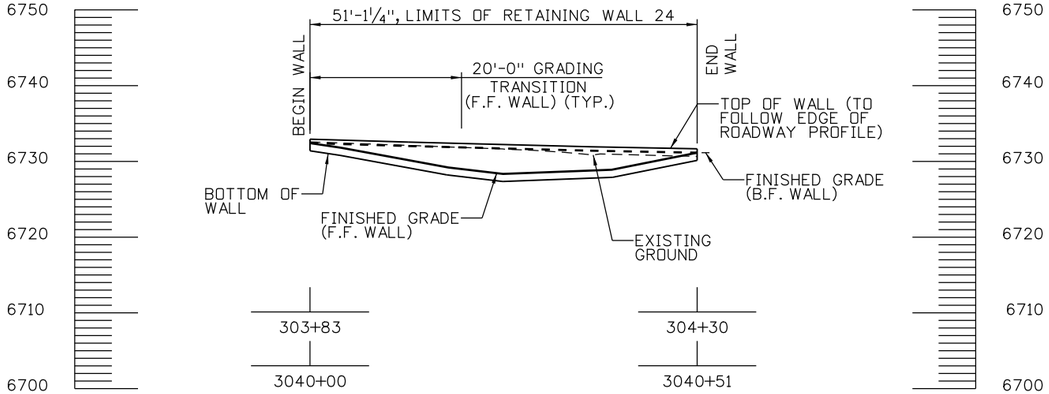
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 23 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 229



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

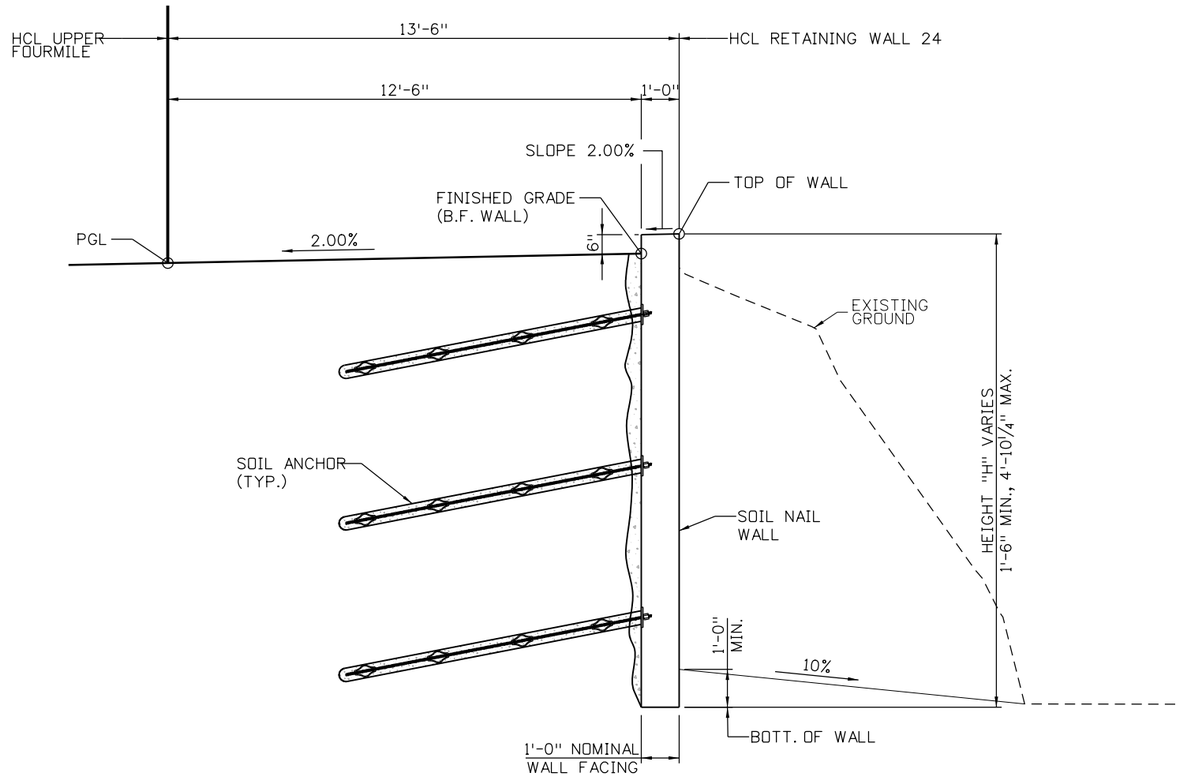
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 24 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 230

Daniel.Hawk 11:47:33 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO1\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN24.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 24

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 PSI

REINFORCING STEEL: fy = 60,000 PSI

SEVERITY OF SULFATE EXPOSURE: CLASS 0

SOIL PROPERTIES:

SOIL UNIT WEIGHT: 120 PCF

SOIL FRICTION ANGLE: 32°

COHESION: 75 PSF

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
4. FOR ADDITIONAL WALL DETAILS, REFER TO SOIL NAIL WALL DETAIL SHEETS.
5. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 24 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 231

Dylan.Brown 3:06:37 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL24

WALL 24 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
	PC	3040+00.00	258867.70	34791.50						
C-1	PI	3040+25.76	258892.24	34799.35			163.50 FT.	51.11 FT.	17° 54'38"	Left
	PT	3040+51.11	258918.01	34799.27						

WALL 24 FACING DATA TABLE

LOCATION	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6732.90	6731.40	1.50 FT.
END WALL	6731.64	6730.14	1.50 FT.

WALL 24 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
3040+00.00	6732.90	12.96 FT.	-2.95 %
3040+12.96	6732.52		
3040+12.96	6732.52	24.03 FT.	-2.55 %
3040+36.99	6731.91		
3040+36.99	6731.91	13.67 FT.	-1.97 %
3040+50.66	6731.64		
3040+50.66	6731.64	0.45 FT.	0.02 %
3040+51.11	6731.64		

WALL 24 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
3040+00.00	6731.40	4.11 FT.	-14.94 %
3040+04.12	6730.79		
3040+04.12	6730.79	14.13 FT.	-18.34 %
3040+18.25	6728.20		
3040+18.25	6728.20	7.23 FT.	-11.72 %
3040+25.48	6727.35		
3040+25.48	6727.35	14.33 FT.	3.77 %
3040+39.81	6727.89		
3040+39.81	6727.89	11.29 FT.	19.92 %
3040+51.11	6730.14		

Michael.Carpenter 10:20:48 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DAT24

60% SET

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

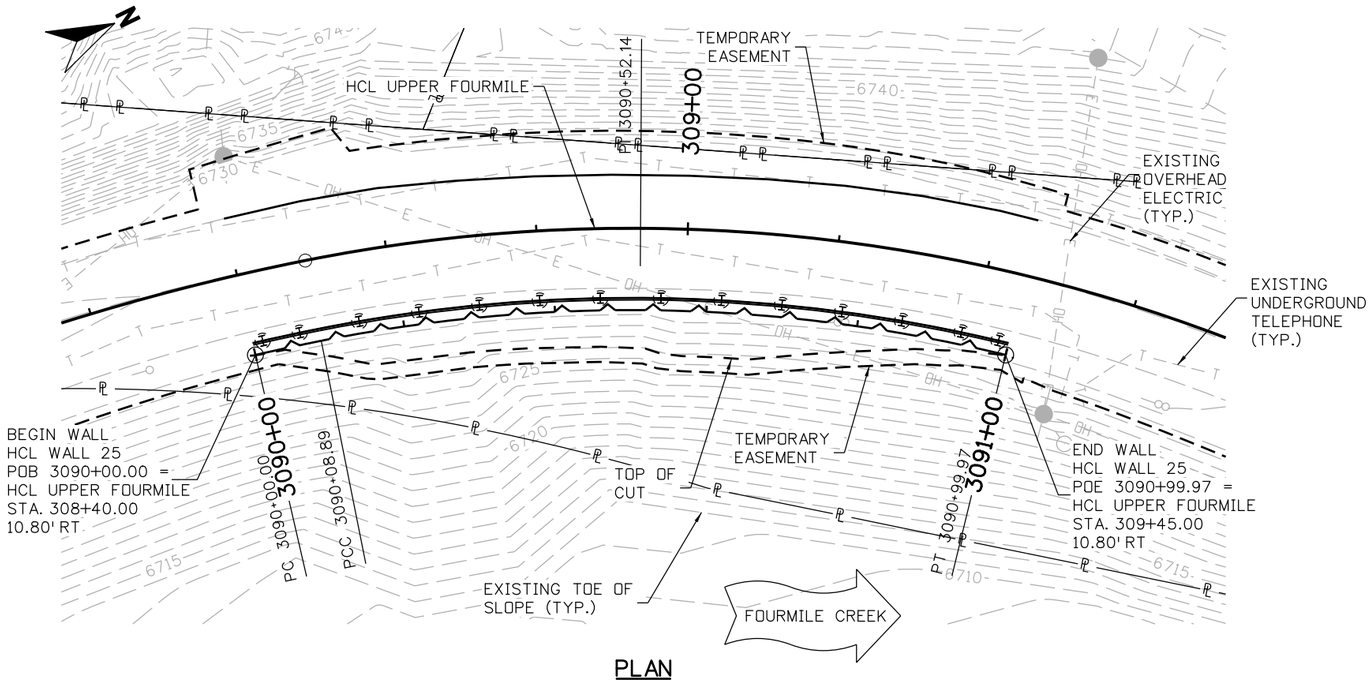
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

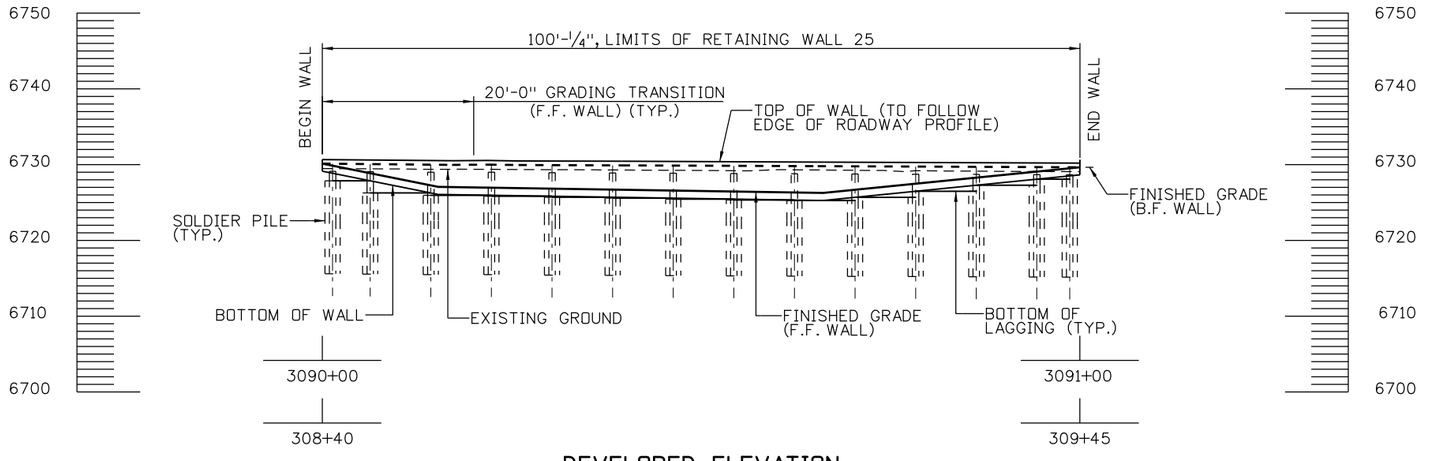
DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 24 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 232



PLAN



DEVELOPED ELEVATION

TAKEN AT FRONT FACE OF WALL

NOTES:

1. FOR FINISHED GRADING, REFER TO _____.
2. FOR ROADWAY ALIGNMENT DATA, REFER TO ROADWAY PLANS.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

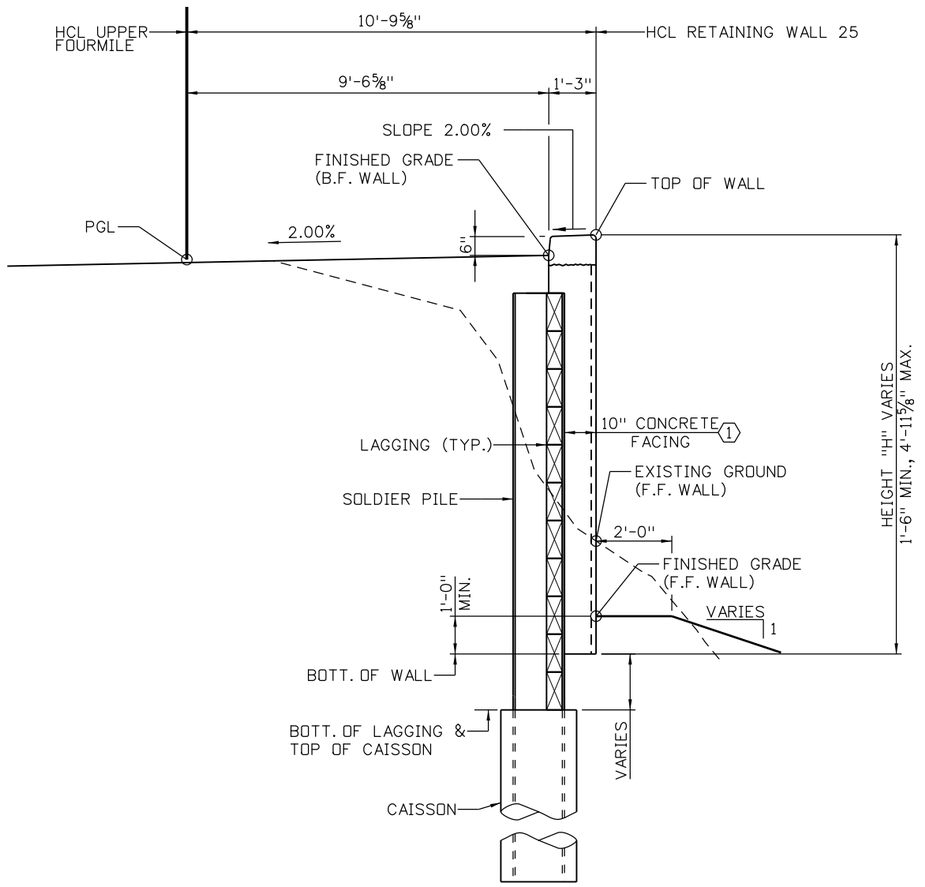
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 25 (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 233

Daniel.Hawk 11:54:16 AM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\06_Structures\DGN\UFM_WALL_PLAN25.dgn



TYPICAL SECTION

LOOKING AHEAD STATION ALONG HCL WALL 25

DESIGN DATA:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION WITH INTERIMS THROUGH 2015

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

LIVE LOAD: HL-93 (DESIGN TRUCK OR DESIGN TANDEM, AND DESIGN LANE LOAD)

DEAD LOAD: N/A

VEHICULAR COLLISION FORCE: N/A

SEISMIC ZONE 1

REINFORCED CONCRETE:

CLASS D CONCRETE:	f'c = 4,500 PSI
REINFORCING STEEL:	fy = 60,000 PSI
SEVERITY OF SULFATE EXPOSURE:	CLASS 0

SOIL PROPERTIES:

ABOVE BOTTOM OF WALL:

SOIL UNIT WEIGHT:	120 PCF
SOIL FRICTION ANGLE:	32°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.238

BELOW BOTTOM OF WALL:

SOIL UNIT WEIGHT:	130 PCF
SOIL FRICTION ANGLE:	35°
ACTIVE HORIZONTAL PRESSURE COEFFICEINT WITH LEVEL BACKSLOPE:	0.271
PASSIVE HORIZONTAL PRESSURE COEFFICEINT WITH 3:1 FORESLOPE:	1.290

NOTES:

1. FOR UTILITY INFORMATION, REFER TO ROADWAY PLANS.
2. FOR LIMITS OF STRUCTURAL CONCRETE COATING AND OTHER AESTHETIC DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
3. ROAD MAY BE CLOSED TO THRU-TRAFFIC DURING CONSTRUCTION, EXCEPT ACCESS TO ALL PRIVATE RESIDENCES SHALL REMAIN OPEN AT ALL TIMES. REFER TO PROJECT SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
4. WALL SHALL BE CONSTRUCTED FROM THE TOP-DOWN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS. EXCEPT AS NECESSARY TO INSTALL FOUNDATIONS AND COMPLETE FINISHED GRADING.
5. FOR ADDITIONAL WALL DETAILS, REFER TO SOLDIER PILE WALL DETAIL SHEETS.
6. GEOTECHNICAL INFORMATION AND RECOMMENDATIONS CAN BE FOUND IN THE FINAL GEOTECHNICAL INVESTIGATION REPORT, UPPER FOURMILE DRIVE, JANUARY, 2016.

KEYNOTES:

(1) NOMINAL WALL THICKNESS SHOWN TO F.F. WALL INCLUDES 1 1/2" FORMLINER. FINISHED FACE SHALL BE PLUMB.

60% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
MSC	DRH	DNB	01/29/16

UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 25 (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 234

Michael.Carpenter 3:29:00 PM par:\\DCPWAPP1.bkr.mbakercorp.com\pwroot\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation.TOT\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DETAIL25

WALL 25 HORIZONTAL CONTROL LINE TABLE

CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE	RADIUS	LENGTH	CURVE DELTA	CURVE DIRECTION
C-1										
	PC	3090+00.00	259313.77	34723.44						
	PI	3090+04.45	259318.10	34724.43			299.20 FT.	8.89 FT.	1° 42'11"	Right
C-2										
	PCC	3090+08.89	259322.41	34725.55						
	PI	3090+55.17	259367.19	34737.22			209.20 FT.	91.08 FT.	24° 56'45"	Right
	PT	3090+99.97	259402.86	34766.69						

WALL 25 FACING DATA TABLE

DRILLED CAISSON NUMBER	TOP OF WALL ELEVATION	BOTTOM OF WALL ELEVATION	WALL HEIGHT ("H")
BEGIN WALL	6730.63	6729.13	1.50 FT.
DC 1	6730.62	6728.86	1.76 FT.
DC 2	6730.57	6727.87	2.71 FT.
DC 3	6730.50	6726.28	4.22 FT.
DC 4	6730.51	6725.96	4.54 FT.
DC 5	6730.44	6725.84	4.60 FT.
DC 6	6730.41	6725.71	4.70 FT.
DC 7	6730.38	6725.59	4.79 FT.
DC 8	6730.35	6725.46	4.88 FT.
DC 9	6730.31	6725.34	4.97 FT.
DC 10	6730.28	6725.65	4.63 FT.
DC 11	6730.25	6726.44	3.81 FT.
DC 12	6730.22	6727.23	2.98 FT.
DC 13	6730.18	6728.03	2.16 FT.
DC 14	6730.17	6728.52	1.64 FT.

WALL 25 TOP OF WALL TABLE

HCL OR V.P.I. STATION	V.P.I. ELEVATION	SEGMENT LENGTH	SLOPE
3090+00.00	6730.13	17.14 FT.	-0.95 %
3090+17.14	6729.97		
3090+17.14	6729.97	4.78 FT.	0.82 %
3090+21.91	6730.01		
3090+21.91	6730.01	4.00 FT.	-1.53 %
3090+25.91	6729.95		
3090+25.91	6729.95	13.62 FT.	-0.31 %
3090+39.53	6729.91		
3090+39.53	6729.91	25.86 FT.	-0.43 %
3090+65.40	6729.80		
3090+65.40	6729.80	34.63 FT.	-0.40 %
3091+00.02	6729.66		

WALL 25 BOTTOM OF WALL TABLE

HCL STATION	ELEVATION	SEGMENT LENGTH	SLOPE
3090+00.00	6729.13	15.31 FT.	-20.00 %
3090+15.31	6726.07		
3090+15.31	6726.07	50.83 FT.	-1.57 %
3090+66.14	6725.27		
3090+66.14	6725.27	33.88 FT.	10.00 %
3091+00.02	6728.66		

Michael.Carpenter 10:23:16 AM p:\\DCPWAPP1.bkr.mbakercorp.com\pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\TO\08_Sheet_Files\06_Structures\DGN\UFM_WALL_DATA25

60% SET

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UPPER FOURMILE CANYON DRIVE
GENERAL LAYOUT
RETAINING WALL 25 (3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 235