

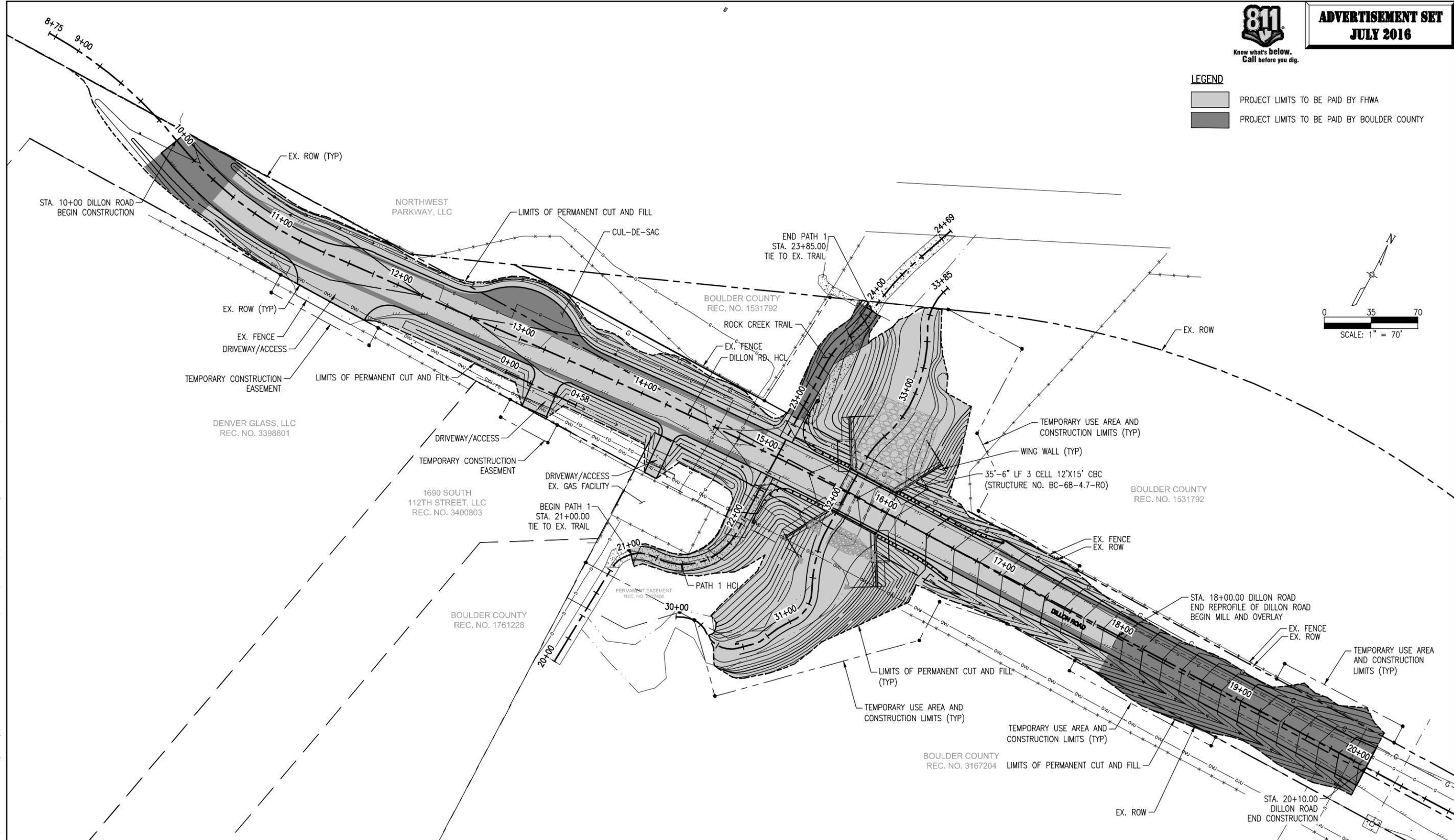
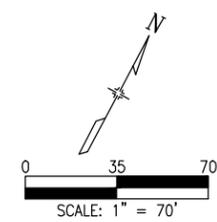


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- PROJECT LIMITS TO BE PAID BY FHWA
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G:\7.2 Clients\006 - BOCC Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (02) Overall Plan.dwg Jul 14, 2016 - 3:01pm

| | | | | | | | | | | | | |
|------------------|--|-----------------------|----------|-------|---|--|----------------|-------------------|---|-------------------|------------------|--------------|
| Print Date: | | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK OVERALL PLAN | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | No Revisions: | | | ER C070-051/20014 | | BC-68-4.7-RO |
| Horiz. Scale: | | Vert. Scale: As Noted | | | Revised: | Designer: | CJB | Structure Numbers | | | | |
| Unit Information | | Unit Leader Initials | | | Void: | Detailer: | CJB | Subset Sheets: | | | | |
| | | | | | | Sheet Subset: | 0P-01 | 1 | Sheet Number | | 2 | |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (03) Standard Plans List.dwg Jul 14, 2016 - 3:02pm

| 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 | <input type="checkbox"/> | APPROACH ROADS (REVISED ON JULY 08, 2013) | 8 |
| M-203-2 | | DITCH TYPES | 9 |
| M-203-11 | | SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS) | 10-12 |
| M-203-12 | | SUPERELEVATION STREETS (2 SHEETS) | 13-14 |
| M-206-1 | | EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS) | 15-16 |
| M-206-2 | | EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS) | 17-18 |
| M-208-1 | <input checked="" type="checkbox"/> | TEMPORARY EROSION CONTROL (10 SHEETS) (REVISED ON MARCH 29, 2016) | 19-30 |
| M-210-1 | | MAILBOX SUPPORTS (2 SHEETS) | 31-32 |
| M-214-1 | | PLANTING DETAILS | 33 |
| M-216-1 | <input type="checkbox"/> | SOIL RETENTION COVERING (2 SHEETS) (NEW ON JULY 16, 2015) | |
| M-412-1 | <input type="checkbox"/> | 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 | <input type="checkbox"/> | SINGLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015) | 40-41 |
| M-601-2 | <input type="checkbox"/> | DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015) | 42-43 |
| M-601-3 | <input type="checkbox"/> | TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015) | 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 | <input type="checkbox"/> | METAL PIPE (4 SHEETS) (REVISED ON OCTOBER 02, 2014) | 50-53 |
| M-603-2 | <input checked="" type="checkbox"/> | REINFORCED CONCRETE PIPE (REVISED ON OCTOBER 02, 2014) | 54 |
| M-603-3 | | PRECAST CONCRETE BOX CULVERT | 55 |
| M-603-4 | <input type="checkbox"/> | CORRUGATED POLYETHYLENE PIPE (AASHTO M294) (REVISED ON OCT. 02, 2014) | 56 |
| M-603-5 | <input type="checkbox"/> | POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) (REVISED ON OCT. 02, 2014) | 57 |
| M-603-6 | <input type="checkbox"/> | STEEL REINFORCED POLYETHYLENE RIBBED PIPE (AASHTO MP 20) (NEW ON APRIL 30, 2015) | |
| 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 | <input checked="" type="checkbox"/> | GUARDRAIL TYPE 3 W-BEAM (20 SHEETS) (REVISED ON OCT. 27, 2014) | 74-92 |
| M-606-1 | <input type="checkbox"/> | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES (20 SHEETS) (REVISED ON DECEMBER 29, 2015) | |
| M-606-13 | <input type="checkbox"/> | GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS) (REVISED ON AUGUST 30, 2013) | 93-96 |
| 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 | <input type="checkbox"/> | DEER FENCE, GATES, AND GAME RAMPS (5 SHEETS) (REVISED ON APRIL 30, 2015) | 107-109 |
| M-607-10 | | PICKET SNOW FENCE | 110 |
| M-607-15 | | ROAD CLOSURE GATE (9 SHEETS) | 111-119 |
| M-608-1 | <input checked="" type="checkbox"/> | CURB RAMPS (7 SHEETS) (REVISED ON JUNE 16, 2014) | 120-125 |
| M-609-1 | <input checked="" type="checkbox"/> | CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 24, 2012) | 126-129 |
| M-611-1 | | CATTLE GUARD (2 SHEETS) | 130-131 |
| M-611-2 | <input type="checkbox"/> | DEER GUARD (2 SHEETS) (NEW ON APRIL 30, 2015) | |
| 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 | <input checked="" type="checkbox"/> | GROUND SIGN PLACEMENT (2 SHEETS) (REVISED ON DECEMBER 12, 2014) | 158-159 |
| S-614-2 | | CLASS I SIGNS | 160 |
| S-614-3 | | CLASS II SIGNS | 161 |
| S-614-4 | <input type="checkbox"/> | CLASS III SIGNS (3 SHEETS) (REVISED ON DECEMBER 17, 2014) | 162-164 |
| S-614-5 | | BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS) | 165-166 |
| S-614-6 | <input type="checkbox"/> | CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013) | 167-168 |
| S-614-8 | <input type="checkbox"/> | TUBULAR STEEL SIGN SUPPORT DETAILS (6 SHEETS) (REVISED ON OCTOBER 23, 2014) | 169-173 |
| S-614-9 | | PEDESTRIAN PUSH BUTTON POST ASSEMBLY (REVISED ON MAY 24, 2016) | 174 |
| S-614-10 | | MARKER ASSEMBLY INSTALLATIONS | 175 |
| S-614-11 | | MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS | 176 |
| S-614-12 | | STRUCTURE NUMBER INSTALLATION | 177 |
| S-614-14 | | FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS) | 178-180 |
| S-614-20 | | TYPICAL POLE MOUNT SIGN INSTALLATIONS | 181 |
| S-614-21 | | CONCRETE BARRIER SIGN POST INSTALLATIONS (REVISED ON MAY 24, 2016) | 182 |
| S-614-22 | | TYPICAL MULTI-SIGN INSTALLATIONS | 183 |
| S-614-40 | <input type="checkbox"/> | TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS) (REVISED ON APRIL 2, 2015) | 184-188 |
| S-614-40A | <input type="checkbox"/> | ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (4 SHEETS) (REVISED ON APRIL 2, 2015) | 189-192 |
| S-614-41 | <input type="checkbox"/> | TEMPORARY SPAN WIRE SIGNALS (REVISED ON APRIL 2, 2015) | 193 |
| S-614-42 | | CABINET FOUNDATION DETAIL (4 SHEETS) | 194-197 |
| S-614-43 | | TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS (10 SHEETS) | 198-207 |
| S-614-44 | <input type="checkbox"/> | PEDESTAL POLE SIGNALS (2 SHEETS) (REVISED ON NOVEMBER 03, 2014) | |
| S-614-50 | <input type="checkbox"/> | STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS) (REVISED ON NOVEMBER 28, 2012) | 208-219 |
| S-614-60 | <input type="checkbox"/> | DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS) (REVISED ON NOVEMBER 28, 2012) | 220-233 |
| S-627-1 | <input checked="" type="checkbox"/> | PAVEMENT MARKINGS (5 SHEETS) (REVISED ON JUNE 10, 2014) | 234-238 |
| S-630-1 | <input checked="" type="checkbox"/> | TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (20 SHEETS) (REVISED ON DECEMBER 08, 2014) | 239-258 |
| S-630-2 | | BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP.) AND VERTICAL PANELS | 259 |
| S-630-3 | | FLASHING BEACON (PORTABLE) DETAILS | 260 |
| S-630-4 | | STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (2 SHEETS) | 261-262 |
| S-630-5 | <input type="checkbox"/> | PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS) (REVISED ON AUGUST 13, 2015) | 263-264 |
| S-630-6 | | EMERGENCY PULL-OFF AREA (TEMPORARY) | 265 |
| S-630-7 | | ROLLING ROADBLOCKS FOR TRAFFIC CONTROL (3 SHEETS) | 266-268 |

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DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
 July 04, 2012
 Revised on May 24, 2016

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 ARE INDICATED BY A MARKED BOX



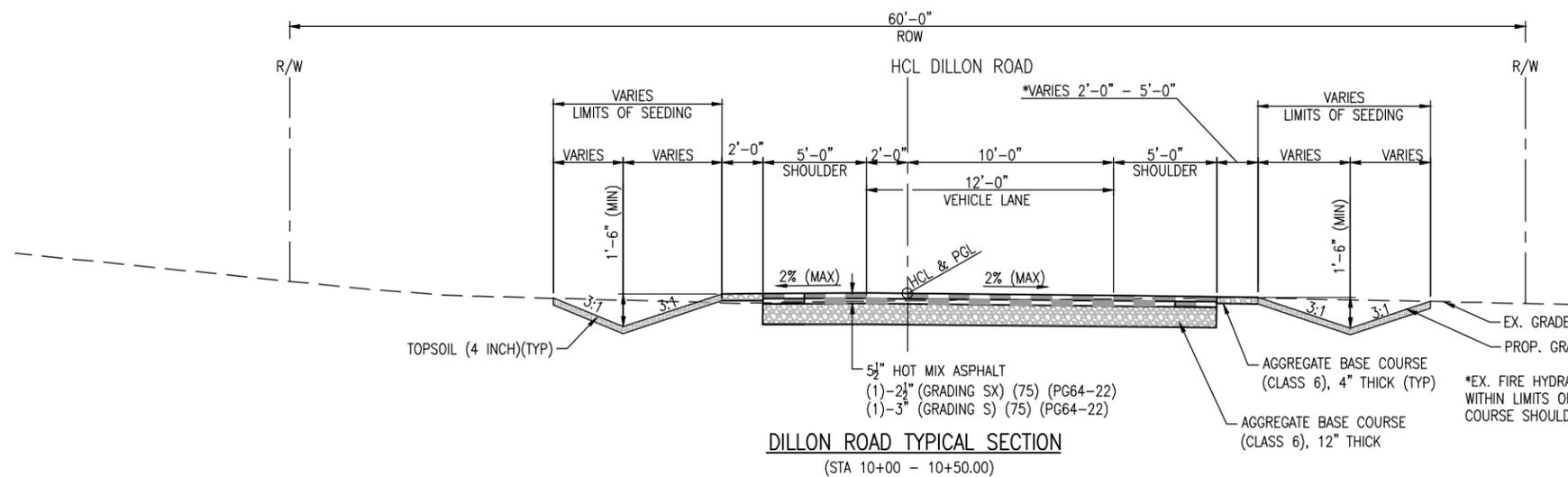
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| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | ER C070-051/20014 | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: | CJB | Structure Numbers: | BC-68-4.7-RO | |
| Unit Information: | Unit Leader Initials | | | | | | | Void: | Detailer: | CJB | Sheet Subset: | SP-01 | Subset Sheets: |



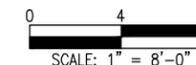
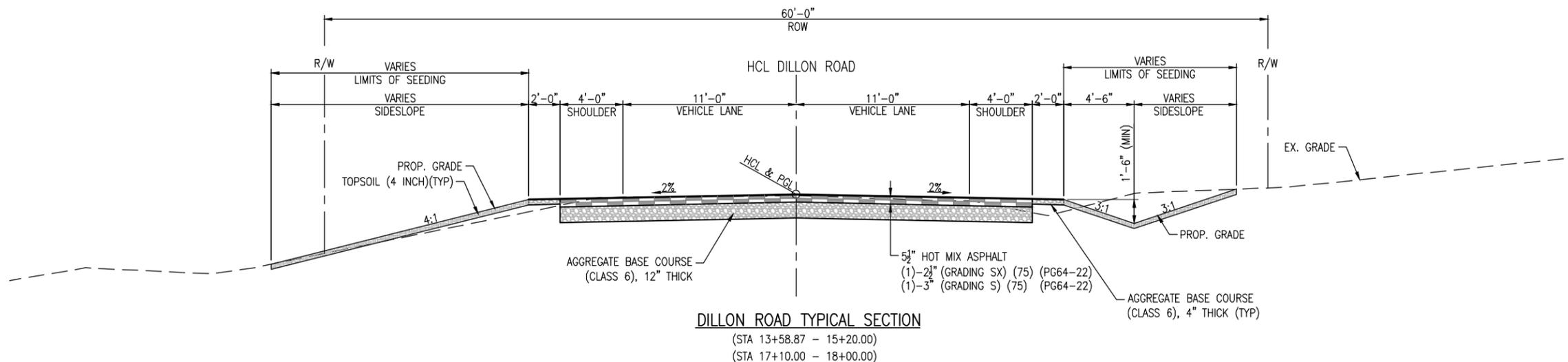
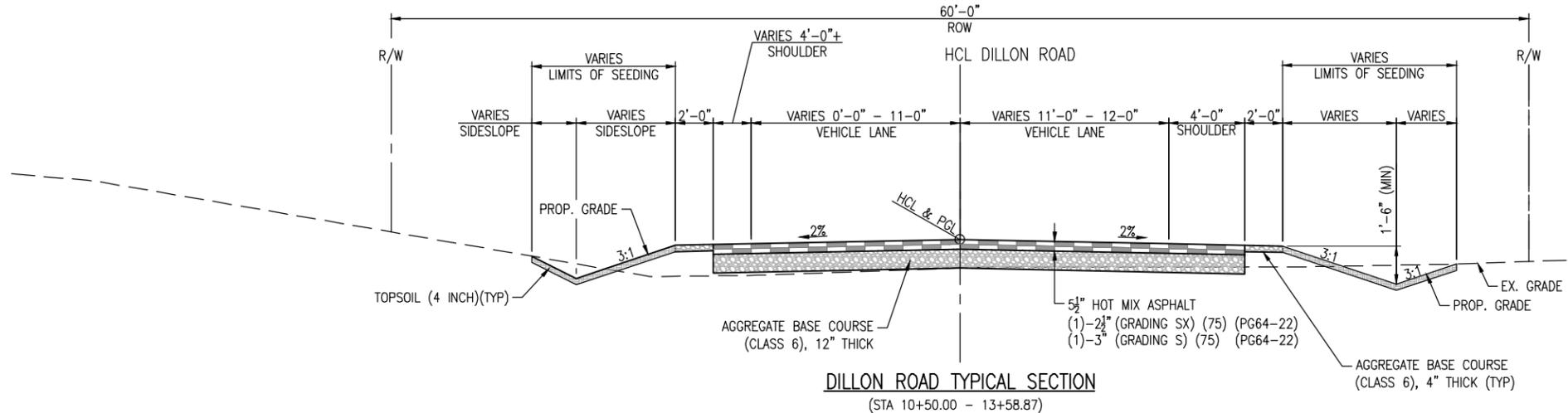
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NOTES:

1. SEE ROADWAY TYPICAL DETAILS, ROADWAY PLANS, AND SIGNING AND STRIPING PLANS FOR ADDITIONAL INFORMATION.
2. SEE PLAN AND PROFILE FOR TYPICAL SECTION STATIONS.
3. AGGREGATE BASE COURSE SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO AT LEAST 95 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
4. GRADING SG OR S IS ACCEPTABLE FOR USE AS THE LOWER LIFT OF THE PAVEMENT SECTION.
5. SEEDING LIMITS ARE TOPSOIL LIMITS SHOWN ON EACH SECTION.
6. REFER TO THE GEOTECHNICAL REPORT BY GROUND ENGINEERING (#13-3068) FOR ADDITIONAL EXCAVATION, BACKFILL, AND PAVING RECOMMENDATIONS.

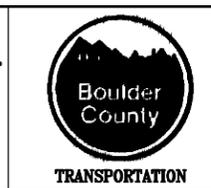


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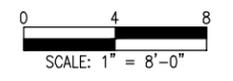
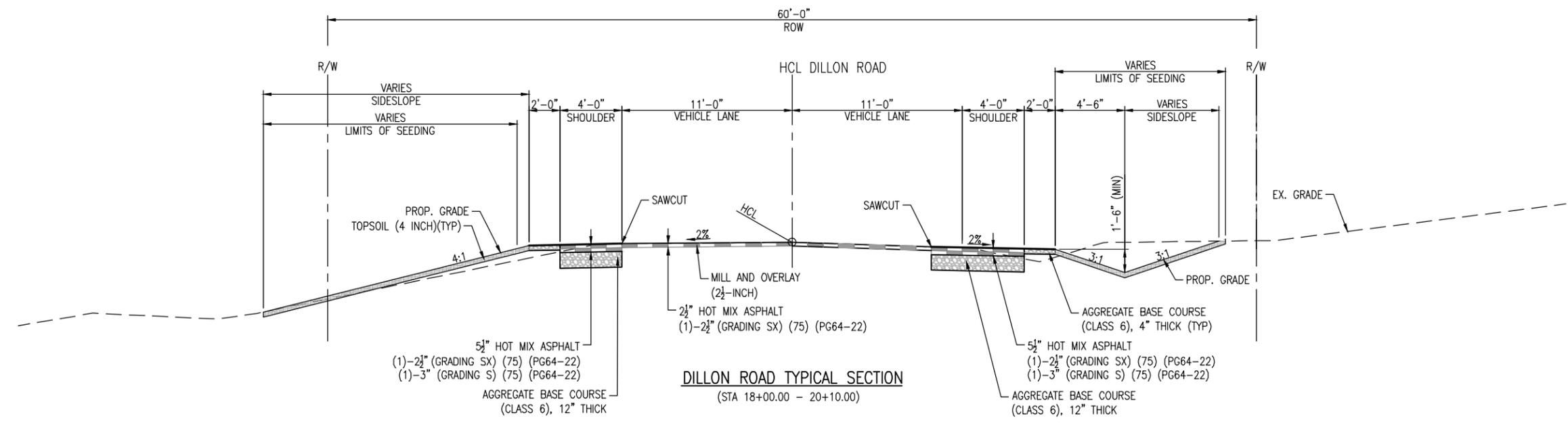
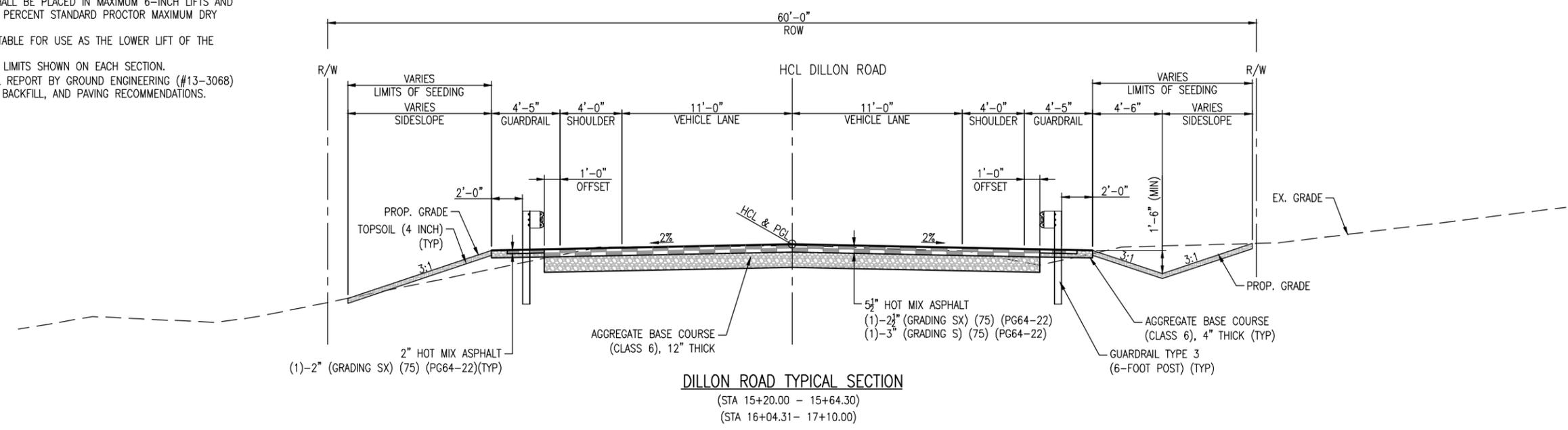
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| DILLON ROAD OVER ROCK CREEK TYPICAL SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure | |
| Detailer: | CJB | Numbers | |
| Sheet Subset: | TS-01 | Subset Sheets: | 4 |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 4 |



- NOTES:**
- SEE ROADWAY TYPICAL DETAILS, ROADWAY PLANS, AND SIGNING AND STRIPING PLANS FOR ADDITIONAL INFORMATION.
 - SEE PLAN AND PROFILE FOR TYPICAL SECTION STATIONS.
 - AGGREGATE BASE COURSE SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO AT LEAST 95 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
 - GRADING SG OR S IS ACCEPTABLE FOR USE AS THE LOWER LIFT OF THE PAVEMENT SECTION.
 - SEEDING LIMITS ARE TOPSOIL LIMITS SHOWN ON EACH SECTION.
 - REFER TO THE GEOTECHNICAL REPORT BY GROUND ENGINEERING (#13-3068) FOR ADDITIONAL EXCAVATION, BACKFILL, AND PAVING RECOMMENDATIONS.

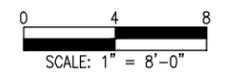
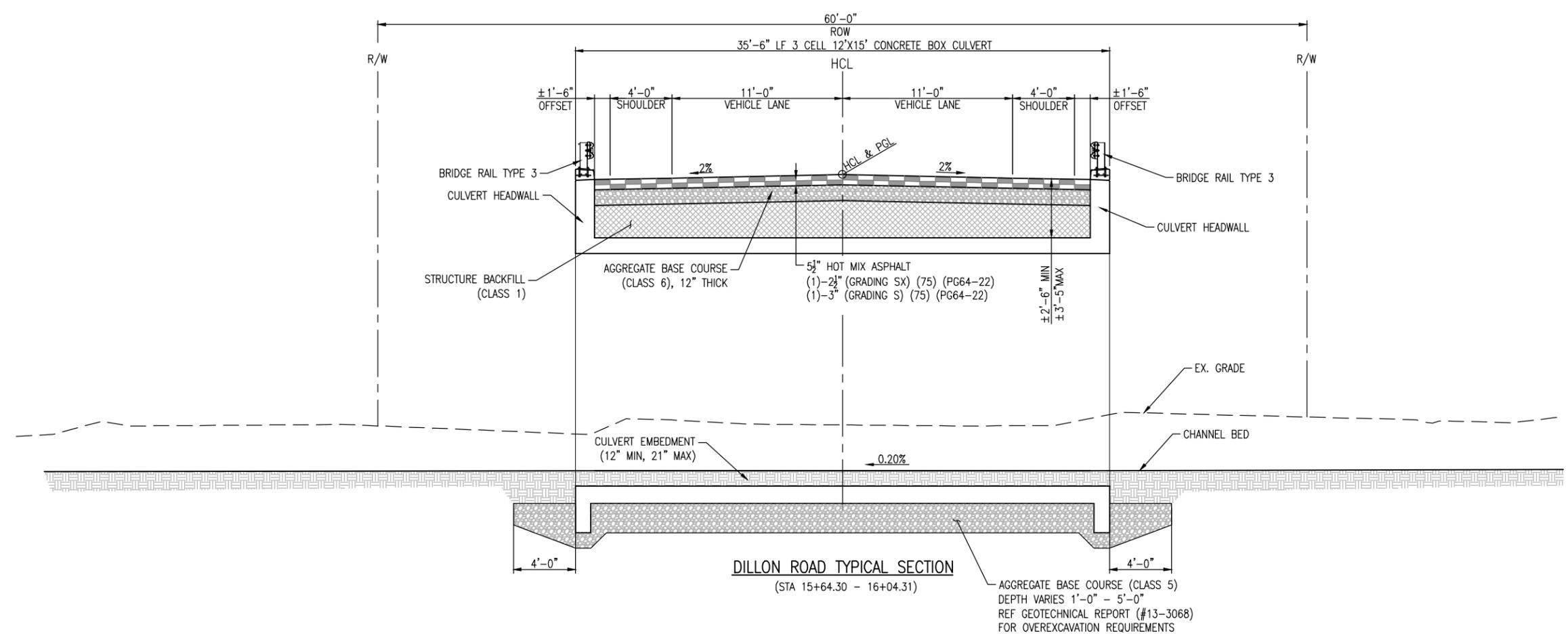


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| File Name: | Date: | Comments | Init. | | | | No Revisions: | | | Designer: CJB | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | Revised: | | | Detailer: | | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | Void: | | | Sheet Subset: TS-2 | | Structure Numbers | |
| | | | | | | | | Subset Sheets: 4 | | Sheet Number 5 | |



- NOTES:**
1. SEE ROADWAY TYPICAL DETAILS, ROADWAY PLANS, AND SIGNING AND STRIPING PLANS FOR ADDITIONAL INFORMATION.
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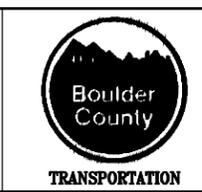


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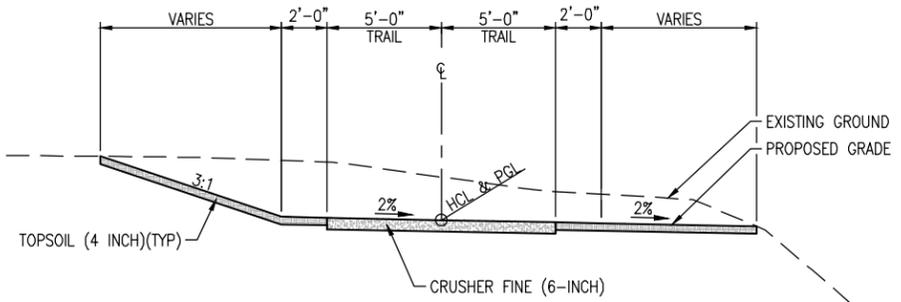
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| DILLON ROAD OVER ROCK CREEK TYPICAL SECTIONS DILLON ROAD | | | |
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| Detailer: | CJB | Subset Sheets: | 4 |
| Sheet Subset: | TS-03 | | |

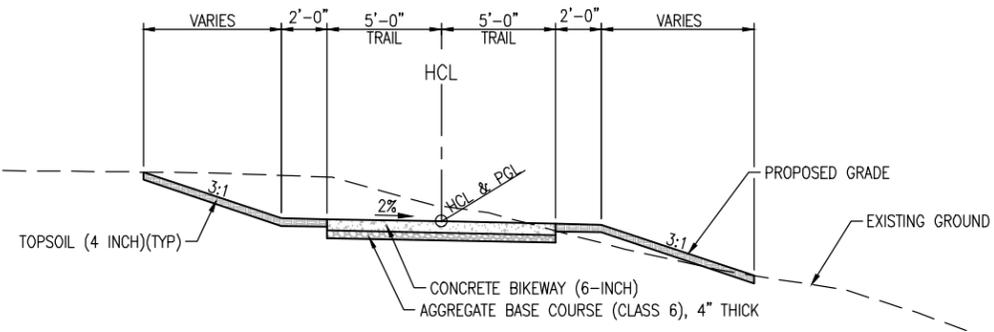
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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 6 |



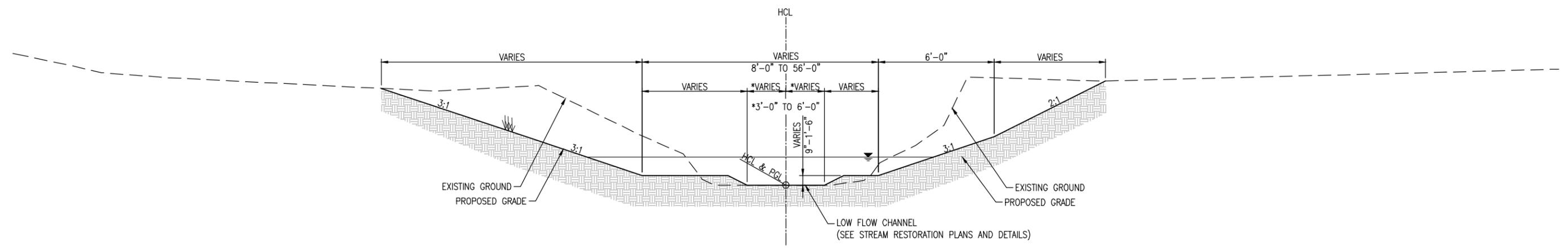
- NOTES:**
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 2. SEE PLAN AND PROFILE FOR TYPICAL SECTION STATIONS.
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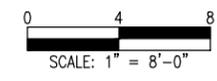
PATH 1 TYPICAL SECTION
(STA 21+00.00 - 22+25.96)



PATH 1 TYPICAL SECTION
(STA 22+25.96 - 22+38.22)
(STA 22+68.23 - 23+85.00)



ROCK CREEK CHANNEL
(STA 30+32.74 - 31+91.66)
(STA 32+27.17 - 33+65.14)



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| File Name: | Date: | Comments: | Init. | | | | No Revisions: | ER C070-051/20014 | | | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | Revised: | Designer: CJB | Structure Numbers: | BC-68-4.7-RO | | Sheet Number: | 7 | |
| Unit Information: | Unit Leader Initials: | | | | Void: | Detailer: CJB | Subset Sheets: | 4 | | | | |
| | | | | | | Sheet Subset: TS-04 | | | | | | |

GENERAL CONSTRUCTION NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2011, THE BOULDER COUNTY MULTIMODAL TRANSPORTATION STANDARDS, AND THE CURRENT STANDARD PLANS M&S STANDARDS, EXCEPT AS REVISED BY THE SPECIAL PROVISIONS OR AS NOTED ON THE PLANS.
- THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THE BOULDER COUNTY RIGHT OF WAY TEMPORARY EASEMENTS AND TEMPORARY USE AREAS SHOWN ON THESE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO BOULDER COUNTY OR PRIVATE PROPERTY OR IMPROVEMENTS. THE REPAIRS SHALL BE COMPLETED IN KIND TO EXISTING CONDITION AND TO THE SATISFACTION OF THE ENGINEER. THE REPAIRS OF DAMAGE CAUSED BY THE CONTRACTOR WILL BE COMPLETED AT NO ADDITIONAL COST TO BOULDER COUNTY OR PROPERTY OWNERS.
- ALL WORK IS TO BE CONSTRUCTED TO EITHER BOULDER COUNTY OR CDOT STANDARDS, WHICHEVER IS STRICTER.

UTILITIES:

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO PARAGRAPH 105.10 OF THE STANDARD SPECIFICATION CONCERNING UTILITIES. FOR UTILITY LOCATES, THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 AT LEAST TWO (2) WORKING DAYS (NOT INCLUDING THE INITIAL DAY OF CONTACT) PRIOR TO DIGGING, GRADING OR EXCAVATING.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS HOWEVER THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCY. ALL CONFLICTING UTILITIES SHALL BE EXPOSED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND INSPECTED BY THE ENGINEER TO VERIFY CONFORMANCE WITH THE PLANS. THIS PARTICULARLY APPLIES TO UNDERGROUND WORK TO BE COMPLETED ON THIS PROJECT BY THE CONTRACTOR. RELOCATION OF EXISTING UTILITIES IS NOT A PART OF THIS CONTRACT EXCEPT AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF UTILITY RELOCATIONS BY UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD BOULDER COUNTY AND CDOT HARMLESS FOR DAMAGES ARISING FROM CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES.
- THE CONTRACTOR SHALL REFERENCE THE PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL ITEMS THE CONTRACTOR SHALL ADHERE TO IN COOPERATION WITH UTILITIES.

UTILITY CONTACT LIST

THE FOLLOWING IS A LIST OF KNOWN UTILITIES WITH SERVICE WITHIN THE PROJECT AREA AND THEIR RESPECTIVE CONTACT INDIVIDUALS. ADDITIONAL UTILITIES MAY BE ENCOUNTERED WITHIN THE PROJECT LIMITS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL THE WORK BEING DONE WITH ALL THE UTILITY COMPANIES WITHIN THE PROJECT AREA.

| ENTITY | CONTACT | PHONE |
|---------------------------------|-----------------|----------------|
| XCEL ENERGY - ELECTRIC | JAMIE ELLIS | (303) 245-2240 |
| XCEL ENERGY - HIGH PRESSURE GAS | DOUG PROPP | (303) 619-2590 |
| COMCAST - FIBER OPTIC | KEVIN YOUNG | (720) 281-8666 |
| CENTURYLINK - TELEPHONE | SHAWN HERMANSON | (303) 619-2590 |
| ZAYO GROUP - FIBER OPTIC | ALEX ABEYTA | (303) 381-4683 |

CONSTRUCTION:

- THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM WATER AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO COST TO THE OWNER. THIS SHALL INCLUDE REMOVAL OF ANY DEBRIS CAUSED BY FLOODING.
- EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED BEFORE CONSTRUCTION BEGINS.
- LIMITS OF CONSTRUCTION SHALL BE CONFINED TO PUBLIC RIGHTS-OF-WAY, EASEMENTS, CONSTRUCTION LIMIT AREAS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.
- REPAIR OF ANY DAMAGE TO EXISTING IMPROVEMENTS, IRRIGATION, ACCESS POINTS OR LANDSCAPING IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL ASSOCIATED COSTS FOR IMPROVEMENTS REPAIR SHALL BE PAID FOR BY THE CONTRACTOR, AT NO EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY, RIGHT-OF-WAY AND SECTION CORNER MONUMENTATION DURING CONSTRUCTION OPERATIONS UNLESS INSTRUCTED OTHERWISE. ANY MONUMENTS DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE RESET BY THE CONTRACTOR AT HIS EXPENSE, IN ACCORDANCE WITH SECTION 629, SURVEY MONUMENTATION AND THE MOST RECENT VERSION OF THE SURVEY MANUAL.
- THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS PRIOR TO THE START OF CONSTRUCTION. A PRECONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE: ONE (1) COPY OF THE PLANS, ONE (1) COPY OF THE CONSTRUCTION SPECIFICATIONS AND ONE (1) COPY OF THE STORMWATER MANAGEMENT PLAN FOR THE PROJECT AT THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPES AS SHOWN ON THE PLANS AND CROSS-SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT CONDUCT ANY OPERATIONS OR STAGING OUTSIDE THE CONSTRUCTION LIMITS SHOWN ON THE PLANS WITHOUT PRIOR APPROVAL.

- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH IMPACTED UTILITIES TO ASSURE THE TIMELY RELOCATION OF THEIR FACILITIES. THIS COORDINATION SHALL INCLUDE ANTICIPATED IMPACTED UTILITIES AND UNFORESEEN UTILITIES.
- DETAILED SIDEWALK ALIGNMENTS MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE ENGINEER PRIOR TO ANY ALIGNMENT ADJUSTMENTS.
- REMOVAL OF ASPHALT MAT, CURB AND GUTTER, CONCRETE PAVEMENT AND SIDEWALK REQUIRED ON THIS PROJECT SHALL BE SAW CUT TO A VERTICAL EDGE TO A NEAT LINE WITH A SAW OR CUTTING WHEEL. AT ALL AREAS OF ASPHALT WIDENING, THE EXISTING OUTER 1' (OR AS DIRECTED BY THE ENGINEER) OF THE PAVEMENT WILL BE SAWCUT AND REMOVED. COST OF SAWING TO BE INCLUDED IN WORK.
- CONTRACTOR SHALL PERFORM WORK ACTIVITIES IN SUCH A MANNER AS TO MINIMIZE DISRUPTION TO BUSINESS OWNERS. ACCESS TO BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.
- OPEN EXCAVATION SHALL NOT BE ALLOWED UNPROTECTED WHEN CONSTRUCTION WORK IS NOT IN PROGRESS (INCLUDING OVERNIGHT, WEEKENDS, AND HOLIDAYS). METHOD(S) OF PROTECTING EXCAVATIONS (IE METAL PLATES OR CONCRETE BARRIER) FROM VEHICLES AND PEDESTRIANS SHALL BE APPROVED BY THE ENGINEER. THE COST OF PROTECTING EXCAVATIONS WILL NOT BE MEASURED AND PAID SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
- THE CONTRACTOR SHALL REPAIR OR REPLACE, AT HIS EXPENSE ANY EXISTING SIGNS DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PRESENT CONDITION OF ANY EXISTING BUILDINGS, LANDSCAPING (E.G. GRASS/SOD), FENCING, EQUIPMENT, WALKS, DRIVES AND ATTACHMENTS. IF ANY DAMAGE OCCURS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE DAMAGE TO A BETTER OR NEW CONDITION AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL, EQUIPMENT OR OTHER MATERIALS ON SITE WITHOUT PERMISSION OF THE ENGINEER.

EARTHWORK:

- WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED AND WILL NOT BE PAID FOR SEPARATELY.
- PRIOR TO MOISTURE DENSITY CONTROL, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SOFT OR DISTURBED SOILS. DEPTH OF MOISTURE - DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
FULL DEPTH OF ALL EMBANKMENTS
BASES OF CUTS AND FILLS - 8 INCHES
- 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.
- THE TYPE OF COMPACTION FOR EARTHWORK ON THIS PROJECT SHALL BE AASHTO T99. (STANDARD PROCTOR). PROOF ROLLING OF ALL SUBGRADE WILL BE REQUIRED PRIOR TO CONCRETE PLACEMENT AND SHALL BE INCLUDED IN COST OF THE WORK.

HOT MIX ASPHALT PAVEMENT:

- SUBGRADE SUB-EXCAVATION REPLACEMENT: SOME HIGH PLASTICITY SOILS, DEBRIS AND OTHERWISE UNSUITABLE MATERIALS MAY BE EXPOSED IN THE PAVEMENT SUBGRADE. THESE SOILS SHALL BE REMOVED AND REPLACED WITH NON-EXPANSIVE SOILS. NEW NON-EXPANSIVE FILL SHALL HAVE A MINIMUM RESILIENT MODULUS OF 9,500 PSI, BE MOISTURE CONDITIONED TO WITHIN 2% OF OPTIMUM MOISTURE CONTENT AND BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (AASHTO T-99).
- ANY LAYER OF HOT MIX ASPHALT PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL LANE WIDTH BEFORE SUCCEEDING LAYER IS PLACED.
- ANY LAYER OF HOT MIX ASPHALT PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE CLEAN AND FREE FROM DIRT AND DEBRIS.
- FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
DILUTED EMULSIFIED ASPHALT (SLOW-SETTING) AT 0.10 GAL. PER SQ. YD. (DILUTED)
HOT MIX ASPHALT AT 110 LBS. PER SQ. YD. PER 1" THICKNESS
AGGREGATE BASE COURSE AT 133 LBS PER CU. FT.
- 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. TACK SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE WORK.

- THE TRAVEL LANE SHALL NOT BE OPENED TO TRAFFIC WITH AN EXPOSED LONGITUDINAL JOINT, A SMOOTH TRANSITION MUST BE PROVIDED WITHIN THE TRAVELED WAY. THE EXPOSED EDGE OF PAVEMENT MAY CONSIST OF A VERTICAL FACE 1 INCH DEEP, AND AT THE BOTTOM OF A VERTICAL FACE, A 3:1 SLOPE TO THE EXISTING PAVEMENT (OR SUBGRADE). THE MAXIMUM DEPTH OF THE 3:1 SLOPE SHALL BE 2 INCHES.
- DURING HMA PAVING OPERATIONS, TEMPORARY PAVEMENT MARKINGS SHALL BE PROVIDED AND PLACED BY THE CONTRACTOR IN ACCORDANCE WITH STANDARD S-627-1. TEMPORARY PAVEMENT MARKING SHALL BE PLACED AND IN FULL COMPLIANCE AT THE END OF EACH WORKING DAY IN THE SECTION OPEN TO TRAFFIC.
- REMOVAL OF TEMPORARY PAVEMENT MARKINGS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

TRAFFIC CONTROL:

- THE CONTRACTOR IS REQUIRED TO PREPARE AND SUBMIT A MHT TO THE ENGINEER FOR EACH PHASE OF WORK. ALL ASPECTS OF TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MUTCD. BASE PHASE CONTROL PLANS ARE PROVIDED IN THE PLAN SET; HOWEVER, THE CONTRACTOR SHALL PREPARE A SEPARATE MHT FOR EACH PHASE EVEN IF THE PHASE AND ELEMENTS THEREIN MATCH THE PROVIDED PLANS.
- EXISTING SIGNS SHALL BE REMOVED AND REINSTALLED AT LOCATIONS DIRECTED BY THE ENGINEER. IN GENERAL, THE EXISTING SIGNS WILL BE PLACED IN THE VICINITY OF CURRENT LOCATIONS; HOWEVER, WILL REQUIRE COORDINATION OF BASE PLACEMENT WITH PROPOSED ENHANCEMENT IMPROVEMENTS.

EROSION CONTROL NOTES:

SEE STORMWATER MANAGEMENT PLAN.

SEEDING AND MULCHING:

SEE STORMWATER MANAGEMENT PLAN

DRAINAGE/STORM SEWER NOTES:

- THE CONTRACTOR IS REQUIRED TO KEEP ALL DRAINAGE FACILITIES FUNCTIONAL AND MAINTAIN DRAINAGE TO THOSE FACILITIES AT ALL TIMES DURING CONSTRUCTION.
- INLET GRATE AND MANHOLE RIM ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR AT TIME OF ADJACENT CURB, OR CONCRETE PAVEMENT CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.

ENVIRONMENTAL NOTES:

- MIGRATORY BIRDS:** THE CONTRACTOR SHALL COMPLY WITH THE MIGRATORY BIRD TREATY ACT (MBTA) AT ALL TIMES, INCLUDING CONDUCTING PRE-CONSTRUCTION SURVEYS FOR NESTING BIRDS SET FORTH BY U.S. FISH AND WILDLIFE SERVICE (USFWS) AND THE COLORADO PARKS AND WILDLIFE (CPW). THE CONTRACTOR SHALL SCHEDULE WORK TO AVOID TAKING (PURSUE, HUNT, TAKE, CAPTURE OR KILL; ATTEMPT TO TAKE, CAPTURE, KILL OR POSSESS) MIGRATORY BIRDS PROTECTED BY THE MBTA. THE INCIDENTAL TAKING OF A MIGRATORY BIRD SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PENALTIES LEVIED BY THE USFWS FOR THE TAKING OF A MIGRATORY BIRD. THE CONTRACTOR SHALL RETAIN A QUALIFIED WILDLIFE BIOLOGIST, WITH A MINIMUM OF THREE YEARS' EXPERIENCE CONDUCTING MIGRATORY BIRD SURVEYS, TO IMPLEMENT THE REQUIREMENTS OF THE MBTA. THE CONTRACTOR SHALL SUBMIT DOCUMENTATION OF THE BIOLOGIST'S EDUCATION AND EXPERIENCE TO THE ENGINEER FOR ACCEPTANCE PRIOR TO COMMENCEMENT OF ANY ASSOCIATED WORK. A BIOLOGIST WITH LESS EXPERIENCE MAY BE USED BY THE CONTRACTOR SUBJECT TO THE ACCEPTANCE OF THE ENGINEER BASED ON REVIEW OF THE BIOLOGIST'S QUALIFICATIONS. DOCUMENTATION OF THE NEST SURVEYS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- THE CONTRACTOR SHALL COMPLETE RAPTOR NEST SURVEYS TO EVALUATE THE PRESENCE OF ACTIVE RAPTOR NESTS WITHIN THE STUDY AREA. IF AN ACTIVE NEST IS LOCATED IN OR NEAR THE STUDY AREA, THE USFWS AND CPW SHALL BE CONTACTED REGARDING USE OF SEASONAL BUFFERS TO PREVENT DISTURBANCE TO NESTING BIRDS DURING CONSTRUCTION. LAND-CLEARING ACTIVITIES, INCLUDING ROCKFALL MITIGATION (IF APPLICABLE), IN NATURAL HABITATS SHALL BE TIMED TO AVOID THE BREEDING SEASON AND TO AVOID IMPACTS TO ACTIVE BIRD NESTS. IF REQUIRED, TREES SHALL BE CLEARED PRIOR TO FEBRUARY 15 OR AFTER AUGUST 31 TO PREVENT RAPTORS (AND OTHER BIRDS) FROM NESTING ON-SITE AND TO AVOID THE TAKING OF, OR DISTURBANCE TO, ACTIVE NESTS DURING THE BREEDING SEASON. WHERE WORK IS TO BE COMPLETED DURING THE NESTING SEASON, MIGRATORY BIRD SURVEYS WILL BE REQUIRED. TO BE PAID FOR AS ITEM 240 - WILDLIFE BIOLOGIST (HR).



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G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (08-09) General Notes.dwg Jul 14, 2016 - 3:03pm

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|------------------|----------------------|----------|-----------------|----------|---|--|--|----------------|---|-------------------|-----|-------------------|--------------|
| Print Date: | | | Sheet Revisions | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2073 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN</p> | As Constructed | DILLON ROAD OVER ROCK CREEK GENERAL NOTES | | | Project No./Code | |
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G:\7.2 Clients\006 - BOCO Troncs\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (08-09) General Notes.dwg Jul 14, 2016 - 3:03pm

EN3. AQUATIC INVASIVE SPECIES: AQUATIC INVASIVE SPECIES MAY BE SPREAD BY CONSTRUCTION EQUIPMENT. SPECIFIC BMPs DEVELOPED BY THE CPW WOULD BE OBSERVED WHERE PRACTICABLE TO MINIMIZE THE RISK OF SPREADING OF NEW ZEALAND MUD SNAILS, ZEBRA MUSSELS, QUAGGA MUSSELS, WHIRLING DISEASE, AND ANY OTHER AQUATIC INVASIVE SPECIES. IF HEAVY EQUIPMENT USED FOR THE PROJECT HAS PREVIOUSLY BEEN USED IN ANOTHER STREAM, RIVER, LAKE, POND, OR WETLAND, THEN ONE OF THE DISINFECTION PRACTICES LISTED BELOW WOULD BE NECESSARY PRIOR TO CONSTRUCTION TO PREVENT THE SPREAD OF INVASIVE AQUATIC SPECIES. THESE PRACTICES WOULD ALSO BE NECESSARY AFTER PROJECT COMPLETION AND PRIOR TO THIS EQUIPMENT BEING USED IN ANOTHER STREAM, RIVER, LAKE, POND, OR WETLAND. ALSO, ANY HAND TOOLS, BOOTS, OR OTHER EQUIPMENT THAT WOULD BE USED IN WATER WOULD BE CLEANED WITH ONE OF THE FOLLOWING METHODS:

REMOVE ALL MUD AND DEBRIS FROM EQUIPMENT (E.G., TRACKS, TURRETS, BUCKETS, DRAGS, TEETH) AND SPRAY/SOAK EQUIPMENT IN A 1:15 SOLUTION OF SPARQUAT INSTITUTIONAL CLEANER AND WATER. KEEP EQUIPMENT MOIST FOR AT LEAST 10 MINUTES.

REMOVE ALL MUD AND DEBRIS FROM EQUIPMENT (E.G., TRACKS, TURRETS, BUCKETS, DRAGS, AND TEETH) AND SPRAY/SOAK EQUIPMENT WITH WATER GREATER THAN 140 DEGREES FAHRENHEIT FOR AT LEAST 10 MINUTES.

EN4. NOXIOUS WEEDS: THE FOLLOWING WEED MANAGEMENT STRATEGIES WILL BE IMPLEMENTED:

VEHICLES SHALL BE INSPECTED BEFORE THEY ARE USED FOR CONSTRUCTION TO ENSURE THAT THEY ARE FREE OF SOIL AND DEBRIS CAPABLE OF TRANSPORTING NOXIOUS WEED SEEDS OR ROOTS. HEAVY CONSTRUCTION EQUIPMENT SHALL BE CLEANED PRIOR TO USE ON THE PROJECT SITE.

MATERIAL FOR EROSION BALES, MULCHING, OR COMPOST SHALL CONSIST OF CERTIFIED WEED-FREE MATERIAL. CERTIFIED WEED-FREE EROSION BALES ARE IDENTIFIED BY BLUE AND ORANGE TWINE BINDING THE BALES (CDOT STANDARD SPECIFICATIONS, PAGE 190). MATERIALS FOR MULCHING SHALL CONSIST OF CERTIFIED WEED-FREE FIELD OR MARSH HAY OR STRAW OF OATS, BARLEY, WHEAT, RYE OR TRITICALE CERTIFIED UNDER THE CDA WEED-FREE FORAGE CERTIFICATION PROGRAM (CDOT STANDARD SPECIFICATIONS, PAGE 231).

FERTILIZER WILL NOT BE USED IN SEEDED AREAS BECAUSE IT CAN ENHANCE THE GROWTH OF NOXIOUS WEEDS AT THE EXPENSE OF DESIRED VEGETATION.

TOPSOIL WILL NOT BE IMPORTED DUE TO THE POTENTIAL FOR SPREAD OF NOXIOUS WEEDS

EN5. THE CONTRACTOR SHALL PREVENT DEBRIS FROM BEING DEPOSITED INTO THE WATERWAY DURING CONSTRUCTION.

EN6. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN EXISTING BMPs AND ENSURE THEIR COMPLETE REMOVAL ONCE 70% OF PRE-EXISTING VEGETATION HAS BEEN RE-ESTABLISHED.

EN7. OTHER ENVIRONMENTAL:

THE CONTRACTOR SHALL ENSURE THAT NO MATERIALS, EQUIPMENT, OR VEHICLES ARE STAGED OR PARKED NEAR WETLANDS OR DRAINAGE AREAS, UNLESS SPECIFICALLY ALLOWED AS NOTED IN THE PLANS.

THE CONTRACTOR SHALL NOT PARK ANY VEHICLES OR EQUIPMENT IN, OR DISTURB ANY AREAS NOT APPROVED BY THE ENGINEER; THE CONTRACTOR SHALL ADHERE TO THE CONSTRUCTION LIMITS AS NOTED IN THE PLANS AND DEMARCATHE THE WORK AREA TO PREVENT GROUND DISTURBANCE OUTSIDE THOSE PRESCRIBED AREAS.

THE CONTRACTOR SHALL REMOVE IN A TIMELY MANNER ALL SEDIMENT, MUD, DEBRIS, OR OTHER POTENTIAL POLLUTANTS WHICH MAY BE DISCHARGED TO, OR ACCUMULATE IN, THE FLOW LINES AND PUBLIC RIGHT-OF-WAYS AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT.

THE CONTRACTOR SHALL PROTECT ALL AREAS FROM WASHOUTS AND SOIL EROSION RESULTING FROM CONSTRUCTION ACTIVITIES.

ALL EROSION/SEDIMENT CONTROL AND STORMWATER RESPONSIBILITIES SHALL BE IMPLEMENTED AS STATED IN THE STORMWATER MANAGEMENT PLAN.

THERE IS A LOW POTENTIAL FOR ENCOUNTERING CONTAMINATED SOIL OR GROUNDWATER DURING THE EXCAVATION ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT. HOWEVER, WORKERS SHALL BE ALERT DURING EXCAVATIONS FOR ANY VISUAL OR OLFACTORY SIGNS OF CONTAMINATION. IF CONTAMINATION IS ENCOUNTERED, WORK SHALL STOP IMMEDIATELY AND THE PROCEDURES OUTLINED IN COLORADO DEPARTMENT OF TRANSPORTATION SPECIFICATION 250 SHALL BE FOLLOWED, AND THE ENGINEER NOTIFIED. METAL COMPONENTS, SUCH AS CORRUGATED METAL PIPING, SHOULD BE REMOVED AND RECYCLED IN ACCORDANCE WITH CDOT SPECIFICATION 250.04

IF PALEONTOLOGICAL (E.G., ANIMAL BONES OR FOSSILS) RESOURCES ARE DISCOVERED OR UNCOVERED DURING CONSTRUCTION, WORK WILL STOP IMMEDIATELY AND THE ENGINEER NOTIFIED SO FURTHER ACTIONS MAY BE TAKEN, INCLUDING RETAINING A CERTIFIED PALEONTOLOGIST.

IF ANY ARCHAEOLOGICAL RESOURCES ARE FOUND (E.G., BURIED STONE TOOLS OR PROJECTILE POINTS), WORK WILL BE IMMEDIATELY HALTED IN THE VICINITY OF THE FIND, THE ENGINEER NOTIFIED, AND A CERTIFIED ARCHEOLOGIST WILL BE PROMPTLY NOTIFIED.

IF BONES OF POTENTIAL HUMAN ORIGIN ARE DISCOVERED DURING CONSTRUCTION, GROUND-DISTURBING WORK MUST BE STOPPED IN THE VICINITY OF THE DISCOVERY, AND THE COUNTY CORONER, THE COUNTY SHERIFF, THE COLORADO STATE HISTORIC PRESERVATION OFFICER (SHPO), AND THE COLORADO STATE ARCHAEOLOGIST WILL BE PROMPTLY NOTIFIED. WORK CANNOT RESUME IN THE VICINITY OF THE FIND UNTIL CLEARANCE IS GRANTED.

PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AS OUTLINED BY THE PROJECT DOCUMENTS, STATE AND FEDERAL REQUIREMENTS, AND BOULDER COUNTY NOT LIMITED TO THE FOLLOWING:

STORMWATER CONSTRUCTION DISCHARGE PERMIT (CDPHE)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CDPS GENERAL PERMIT (REQUIRED) FROM THE COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE). THE CONTRACTOR SHALL NOT COMMENCE PERMIT-RELATED WORK UNTIL THE PERMIT IS RECEIVED. WORK PERFORMED MUST BE CONSISTENT WITH THAT DETAILED IN THE STORM WATER

MANAGEMENT PLAN.

COLORADO DEPARTMENT OF HEALTH CONSTRUCTION DEWATERING (CDPHE)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CONSTRUCTION DEWATERING PERMIT (REQUIRED) FROM THE COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE). THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING AND SUBMITTING THE APPLICATION FORM WITH ALL SUPPORTING INFORMATION. THE CONTRACTOR SHALL NOT COMMENCE PERMIT-RELATED WORK UNTIL THE PERMIT IS RECEIVED.

FLOODPLAIN PERMIT (BOULDER COUNTY, COLORADO)

THIS PROJECT WILL REQUIRE THE ACQUISITION OF THE FLOODPLAIN PERMIT. THE APPLICATION FOR THE PERMIT WILL BE SUBMITTED AND OBTAINED BY BOULDER COUNTY STAFF. THE CONTRACTOR IS TO NOT BEGIN CONSTRUCTION UNTIL THE PERMIT HAS BEEN SUBMITTED AND APPROVED.

ENGINEERING GEOLOGY:

SEE THE PROJECT GEOTECHNICAL REPORT AND ENGINEERING GEOLOGY PLAN FOR FURTHER INFORMATION.



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| Print Date: | | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | | Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 REGION 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK GENERAL NOTES | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | ER C070-051/20014 | | |
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| | | | | | | | | | Sheet Subset: GN-02 | Subset Sheets: 2 | Sheet Number 9 | | |



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| | | | 208 | EROSION LOG (12-INCH) | LF | 419 | | 40 | | 459 | |
| | | | 208 | REMOVAL AND DISPOSAL OF SEDIMENT (LABOR) | HR | 120 | | 30 | | 150 | |
| | | | 208 | REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT) | HR | 40 | | 10 | | 50 | |
| | | | 208 | EROSION CONTROL SUPERVISOR | LS | 1 | | - | | 1 | |
| | | | 208 | VEHICLE TACKING PAD | EA | 2 | | - | | 2 | |
| | | | 208 | CONCRETE WASHOUT STRUCTURE | EA | 2 | | - | | 2 | |
| | | | 208 | SOIL BAG | LF | 982 | | - | | 982 | |
| | | | 210 | RESET BOLLARD | EA | - | | 2 | | 2 | |
| | | | 210 | RESET GROUND SIGN | EA | 2 | | 2 | | 4 | |
| | | | 210 | RESET FENCE | LF | 24 | | - | | 24 | |
| | | | 210 | RESET MAILBOX STRUCTURE | EA | 1 | | - | | 1 | |
| | | | 212 | SEEDING (NATIVE) | AC | 0.9 | | 0.2 | | 1.1 | |
| | | | 212 | SEEDING (WETLAND) | AC | 0.1 | | - | | 0.1 | |
| | | | 212 | SEEDING ESTABLISHMENT | AC | 1.1 | | 0.2 | | 1.3 | |
| | | | 212 | SOIL CONDITIONER | AC | 1.1 | | 0.2 | | 1.3 | |
| | | | 213 | MULCHING (WEED FREE HAY) | AC | 0.9 | | 0.2 | | 1.2 | |
| | | | 214 | WETLAND PLANTINGS | EA | 1416 | | - | | 1416 | |
| | | | 214 | DECIDUOUS TREE (4 INCH CALIPER) | EA | 2 | | - | | 2 | |
| | | | 214 | DECIDUOUS SHRUB (5 GALLON) | EA | 54 | | - | | 54 | |
| | | | 216 | SOIL RETENTION BLANKET (BIODEGRADABLE STRAW/COCONUT) | SY | 946 | | 61 | | 1007 | |
| | | | 240 | WILDLIFE BIOLOGIST | HR | 40 | | - | | 40 | |
| | | | 304 | CRUSHER FINE (6-INCH) | SY | 142 | | - | | 142 | |
| | | | 304 | AGGREGATE BASE COURSE (CLASS 5) | CY | 641 | | - | | 641 | |
| | | | 304 | AGGREGATE BASE COURSE (CLASS 6) | CY | 825 | | 343 | | 1168 | |
| | | | 304 | CRUSHED ROCK (1.5-INCH) | CY | 35 | | - | | 35 | |
| | | | 403 | HOT MIX ASPHALT (GRADING S)(75)(PG 64-22) | TON | 412 | | 128 | | 540 | |
| | | | 403 | HOT MIX ASPHALT (GRADING SX)(75)(PG 64-22) | TON | 317 | | 172 | | 489 | |
| | | | 420 | GEOTEXTILE (DRAINAGE)(CLASS 2) | SY | 62 | | - | | 62 | |
| | | | 506 | RIPRAP (9 INCH) | CY | 29 | | - | | 29 | |
| | | | 506 | SOIL RIPRAP (18 INCH) | CY | 116 | | - | | 116 | |
| | | | 506 | BOULDER (SPECIAL) | EA | 36 | | - | | 36 | |
| | | | 601 | CONCRETE CLASS D (WALL) | CY | 173 | | - | | 173 | |
| | | | 601 | CONCRETE CLASS D (BOX CULVERT) | CY | 214 | | - | | 214 | |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (10-11) SQ.dwg Jul 14, 2016 - 3:03pm

| | | | | | | | | | | | | | |
|------------------|-----------------------|-----------------|----------|-------|--|--|---|----------------|-----------|-----------------------------------|-------------------|-------------------|--------------|
| Print Date: | | Sheet Revisions | | | <p>100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2073 www.LorisandAssociates.com</p> | | <p>1420 Second Street Greely, CO 80632 Phone: (970) 350-2103 Fax: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | SUMMARY OF APPROXIMATE QUANTITIES | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: | CJB | Structure Numbers | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: | CJB | Subset Sheets: | 2 | Sheet Number |



| INDEX | | | INDEX ITEM NO. | CONTRACT ITEM | UNIT | FHWA | | BOULDER COUNTY | | PROJECT TOTALS | |
|-------|------|-------|----------------|--|------|--------|-----------|----------------|-----------|----------------|-----------|
| BOOK | PAGE | SHEET | | | | PLAN | AS CONST. | PLAN | AS CONST. | PLAN | AS CONST. |
| | | | 602 | REINFORCING STEEL | LB | 61,804 | | - | | 61,804 | |
| | | | 602 | REINFORCING STEEL (EPOXY COATED) | LB | 3,654 | | - | | 3,654 | |
| | | | 603 | 18 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE) | LF | 163 | | - | | 163 | |
| | | | 603 | 18 INCH RCP END SECTION | EA | 4 | | - | | 4 | |
| | | | 603 | 23x14 INCH REINFORCED CONCRETE PIPE ELLIPTICAL (COMPLETE IN PLACE) | LF | 130 | | - | | 130 | |
| | | | 603 | 23x14 INCH REINFORCED CONCRETE PIPE ELLIPTICAL END SECTION | EA | 4 | | - | | 4 | |
| | | | 604 | INLET TYPE C (10 FOOT) | EA | 1 | | - | | 1 | |
| | | | 604 | INLET TYPE C (15 FOOT) | EA | 1 | | - | | 1 | |
| | | | 606 | BRIDGE RAIL TYPE 3 | LF | 80 | | - | | 80 | |
| | | | 606 | GUARDRAIL TYPE 3 (6-3 POST SPACING) | LF | 25 | | - | | 25 | |
| | | | 606 | TRANSITION TYPE 3L | EA | 4 | | - | | 4 | |
| | | | 606 | TRANSITION TYPE 3J | EA | 2 | | - | | 2 | |
| | | | 606 | END ANCHORAGE (FLARED) | EA | 2 | | - | | 2 | |
| | | | 606 | END ANCHORAGE TYPE 3K | EA | 2 | | - | | 2 | |
| | | | 607 | CONSTRUCTION FENCE (PLASTIC) | LF | 504 | | - | | 504 | |
| | | | 607 | FENCE COMBINATION WIRE WITH METAL POSTS | LF | 220 | | - | | 220 | |
| | | | 608 | CONCRETE BIKEWAY (6 INCH) | SY | 32 | | 110 | | 142 | |
| | | | 608 | DETECTABLE WARNINGS | SF | 40 | | - | | 40 | |
| | | | 614 | STEEL SIGN POST | LF | 71 | | - | | 71 | |
| | | | 614 | SIGN PANEL (CLASS 1) | LF | 53 | | - | | 53 | |
| | | | 620 | FIELD OFFICE (CLASS 1) | LS | 1 | | - | | 1 | |
| | | | 620 | SANITARY FACILITY | LS | 2 | | - | | 2 | |
| | | | 625 | CONSTRUCTION SURVEYING | LS | 1 | | - | | 1 | |
| | | | 626 | MOBILIZATION | LS | 1 | | - | | 1 | |
| | | | 627 | EPOXY PAVEMENT MARKING | GAL | 5 | | 1 | | 6 | |
| | | | 627 | PAVEMENT MARKING PAINT (TEMPORARY) | GAL | 4 | | 0 | | 4 | |
| | | | 627 | THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL) | SF | 16 | | 0 | | 16 | |
| | | | 627 | THERMOPLASTIC PAVEMENT MARKING (XWALK-STOP LINE) | SF | 51 | | 0 | | 51 | |
| | | | 630 | FLAGGING | HR | 416 | | 0 | | 416 | |
| | | | 630 | TRAFFIC CONTROL MANAGEMENT | DAY | 120 | | 0 | | 120 | |
| | | | 630 | TRAFFIC CONTROL INSPECTION | DAY | 24 | | 0 | | 24 | |
| | | | 630 | BARRICADE (TYPE 3 M-A)(TEMPORARY) | EA | 8 | | 0 | | 8 | |
| | | | 630 | CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A) | EA | 14 | | 0 | | 14 | |
| | | | 630 | CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B) | EA | 6 | | 0 | | 6 | |
| | | | 630 | DRUM CHANNELIZING DEVICE | EA | 20 | | 0 | | 20 | |
| | | | | F/A MINOR CONTRACT REVISIONS | F.A | 1 | | - | | 1 | |
| | | | | F/A EROSION CONTROL | F.A | 1 | | - | | 1 | |
| | | | | F/A ON-THE-JOB TRAINEE | HR | 320 | | - | | 320 | |
| | | | | F/A ROADWAY SMOOTHNESS INCENTIVE | F.A | 1 | | - | | 1 | |
| | | | | F/A FUEL COST ADJUSTMENT | F.A | 1 | | - | | 1 | |
| | | | | F/A ASPHALT CEMENT COST ADJUSTMENT | F.A | 1 | | - | | 1 | |

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| | | | | | | | | | | | | | |
|---------------------|-----------------------|-----------------|----------|-------|--|--|--|----------------|-----------|-----------------------------------|-------------------|-------------------|--------------|
| Print Date: | | Sheet Revisions | | | <p>100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2073 www.LorisandAssociates.com</p> | | <p>1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 Fax: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | SUMMARY OF APPROXIMATE QUANTITIES | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: | CJB | Structure Numbers | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: | CJB | Subset Sheets: | 2 | Sheet Number |
| Sheet Subset: SQ-02 | | | | | | | | | | | | | |



TABULATION OF REMOVALS, RESETS & ADJUSTS

| ITEM NO. | OFFSET &/OR SIDE | 201 | | 202 | | | | | 210 | |
|-----------------------|------------------|-----------------------|--|------------------------|----------------------------------|---------------------|-----------------|------------------|---------------|-------------------|
| | | CLEARING AND GRUBBING | REMOVAL OF STRUCTURES AND OBSTRUCTIONS | REMOVAL OF ASPHALT MAT | REMOVAL OF ASPHALT MAT (PLANING) | REMOVAL OF SIDEWALK | REMOVAL OF PIPE | REMOVAL OF FENCE | RESET BOLLARD | RESET GROUND SIGN |
| LOCATION | FT | LS | LS | SY | SY | SY | LF | LF | EA | EA |
| PROJECT SITE | - | 1 | 1 | | | | | | | |
| EAST END OF PROJECT | BOTH | | | 1554 | | | | | | |
| WEST END OF PROJECT | BOTH | | | 623 | | | | | | |
| 9+03 - 10+50 | BOTH | | | | 119 | | | | | |
| 18+00 - 20+10 | BOTH | | | | 484 | | | | | |
| 15+16.0 | LT | | | | | | 106 | | | |
| 15+16.0 | RT | | | | | | 15 | 32 | | |
| 12+82.0 - 15+05.0 | RT | | | | | | | | 220 | |
| 15+21.0 | BOTH | | | | | | | | 2 | |
| 9+94.0 | RT | | | | | | | | | 1 |
| 11+78.0 | RT | | | | | | | | | 1 |
| 14+98.0 | RT | | | | | | | | | 1 |
| 15+33.0 | LT | | | | | | | | | 1 |
| TOTALS | | 1 | 1 | 2177 | 603 | 121 | 32 | 220 | 2 | 4 |
| PROJECT TOTALS | | 1 | 1 | 2177 | 603 | 121 | 32 | 220 | 2 | 4 |

TABULATION OF MISC ITEMS

| ITEM NO. | OFFSET &/OR SIDE | 203 | | | | | 206 | | 207 | 240 | 420 | 506 | | | 620 | | 625 | 626 | 627 | | 700 | |
|-------------------------------------|------------------|-----------|-------------------------|-----------------------------|-----------------|----------------------------|----------------------|------------------------------|---------------|--------------------|---------------------------------|-----------------------|-----------------|-------------------|-------------------|--------------|------------------------|--------------|------------------------|--|---|--------------------------|
| | | POTHOLING | UNCLASSIFIED EXCAVATION | RECOVERED RIVERBED MATERIAL | MUCK EXCAVATION | CULVERT EMBEDMENT MATERIAL | STRUCTURE EXCAVATION | STRUCTURE BACKFILL (CLASS I) | TOPSOIL (CIP) | WILDLIFE BIOLOGIST | GEOTEXTILE (DRAINAGE) (CLASS 2) | SOIL RIPRAP (18-INCH) | RIPRAP (9-INCH) | BOULDER (SPECIAL) | SANITARY FACILITY | FIELD OFFICE | CONSTRUCTION SURVEYING | MOBILIZATION | EPOXY PAVEMENT MARKING | THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL) | THERMOPLASTIC PAVEMENT MARKING (XWALK-STOP) | MINOR CONTRACT REVISIONS |
| LOCATION | FT | EA | CY | CY | CY | CY | CY | CY | HR | SY | CY | CY | EA | EA | EA | LS | LS | GAL | SF | SF | F/A | F/A |
| PROJECT SITE | - | 8 | 2,827 | | | | | 567 | 40 | 62 | | | | 2 | 1 | 1 | 1 | | | | 1 | 1 |
| STRUCTURE CREEK CHANNEL DILLON ROAD | BOTH | | | 101 | 191 | 70 | 3,319 | 1,918 | | | 116 | 29 | 36 | | | | | 6 | 16 | 51 | | |
| TOTALS | | 8 | 2,827 | 101 | 191 | 70 | 3,319 | 1,918 | 40 | 62 | 116 | 29 | 36 | 2 | 1 | 1 | 1 | 6 | 16 | 51 | 1 | 1 |
| PROJECT TOTALS | | 8 | 2,827 | 101 | 191 | 70 | 3,319 | 1,918 | 40 | 62 | 116 | 29 | 36 | 2 | 1 | 1 | 1 | 6 | 16 | 51 | 1 | 1 |

TABULATION CULVERT ITEM

| ITEM NO. | OFFSET &/OR SIDE | 601 | | | |
|-----------------------|------------------|--------------------------------|--------------------------|----------------------------------|-------------------|
| | | CONCRETE CLASS D (BOX CULVERT) | CONCRETE CLASS D (WALLS) | REINFORCING STEEL (EPOXY COATED) | REINFORCING STEEL |
| LOCATION | FT | CY | CY | LB | LB |
| CULVERT | BOTH | 214 | | | 31,910 |
| WINGWALLS | BOTH | | 173 | | 29,894 |
| HEADWALLS | BOTH | | | 3,654 | |
| | LT | | | | |
| TOTALS | | 214 | 173 | 3,654 | 61,804 |
| PROJECT TOTALS | | 214 | 173 | 3,654 | 61,804 |

TABULATION OF SURFACING ITEMS

| ITEM NO. | OFFSET &/OR SIDE | 304 | | | | 403 | | 608 | |
|--|------------------|------------------------|-------------------------|---------------------------------|---------------------------------|---|--|----------------------------|---------------------|
| | | CRUSHER FINES (6 INCH) | CRUSHED ROCK (1.5 INCH) | AGGREGATE BASE COURSE (CLASS 5) | AGGREGATE BASE COURSE (CLASS 6) | HOT MIX ASPHALT (GRADING S) (75) (PG 64-22) | HOT MIX ASPHALT (GRADING SX) (75) (PG 64-22) | CONCRETE SIDEWALK (6-INCH) | DETECTABLE WARNINGS |
| LOCATION | FT | SY | CY | CY | CY | TON | TON | SY | SF |
| PATH 1 STA. 21+00-22+28 UNDER ROADS & PATHS | - | 142 | | | | | | | |
| STRUCTURE DILLON ROAD ROCK CREEK TRAIL 15+12.0 | BOTH | | 35 | 641 | 1168 | 540 | 489 | 142 | 40 |
| TOTALS | | 142 | 35 | 641 | 1168 | 540 | 489 | 142 | 40 |
| PROJECT TOTALS | | 142 | 35 | 641 | 1168 | 540 | 489 | 142 | 40 |

TABULATION OF EROSION CONTROL, SEEDING AND LANDSCAPE ITEMS

| ITEM NO. | OFFSET &/OR SIDE | 208 | | | | | | | | | | 212 | | 213 | 214 | | 216 | | |
|-----------------------------------|------------------|----------------------------|----------------------|----------------------------|--|--|------------------|----------|-----------------------|------------|---------------------|------------------|-------------------|-----------------------|--------------------------|-------------------------------|------------------------|-------------------|--|
| | | EROSION CONTROL SUPERVISOR | VEHICLE TRACKING PAD | CONCRETE WASHOUT STRUCTURE | REMOVAL AND DISPOSAL OF SEDIMENT (LABOR) | REMOVAL AND DISPOSAL OF SEDIMENT (EQUIP) | INLET PROTECTION | SOIL BAG | EROSION LOG (12-INCH) | SILT FENCE | TEMPORARY DIVERSION | SEEDING (NATIVE) | SEEDING (WETLAND) | SEEDING ESTABLISHMENT | MULCHING (WEED FREE HAY) | DECIDUOUS TREE (4-INCH CALP.) | DECIDUOUS SHUB (5 GAL) | WETLAND PLANTINGS | SOIL RETENTION BLANKET (STRAW/COCONUT) |
| LOCATION | FT | LS | EA | EA | HR | EA | EA | LF | LF | LF | LS | AC | AC | AC | AC | EA | EA | EA | SY |
| PROJECT SITE | | 1 | 2 | 2 | 150 | 50 | | | | | | | 1.1 | | 1.3 | 1.1 | | | 1007 |
| DILLON ROAD | | | | | | | 10 | 982 | 459 | 1,848 | | | 0.10 | | | | | | |
| ROCK CREEK AREA ROAD SIDE DITCHES | | | | | | | | | | 1 | | | | | | 2 | 54 | 1416 | |
| TOTALS | | 1 | 2 | 2 | 150 | 50 | 10 | 982 | 459 | 1,848 | 1 | 1.1 | 0.10 | 1.3 | 1.1 | 2 | 54 | 1416 | 1007 |
| PROJECT TOTALS | | 1 | 2 | 2 | 150 | 50 | 10 | 982 | 459 | 1,848 | 1 | 1.1 | 0.10 | 1.3 | 1.1 | 2 | 54 | 1416 | 1007 |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (12-13) Project Tab.dwg Jul 14, 2016 - 3:04pm

| | | | | | | | | | | | | | | | |
|------------------|-----------------------|-----------------|----------|-------|---|--|---|----------------|----------------|--|--------------|-----------|--------------|-------------------|--|
| Print Date: | | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Creely, CO 80632 Phone: (970) 350-2103 Fax: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK PROJECT TABULATIONS | | | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | | | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | | Designer: | CB | Structure | BC-68-4.7-RO | | |
| Unit Information | Unit Leader Initials | | | | | | | Void: | | Detailer: | LX | Numbers | | | |
| | | | | | | | Sheet Subset: | TB-01 | Subset Sheets: | 2 | Sheet Number | | 12 | | |

TABULATION OF SIGNS

| ITEM NO | SIGN NO. | SIGN CODE | LEGEND | SIGN PANEL SIZE | BACK-GROUND COLOR | 210 | | 614 | | | | | | |
|--------------|----------|-----------|---------------------|-----------------|-------------------|------------------------|--------------|----------------|-----------------|--------------|---------------|-------------------------|----|--------------------|
| | | | | | | RESET GROUND SIGN (EA) | NO. OF POSTS | LENGTH OF POST | STEEL SIGN POST | | | POST TYPE (LINEAR FEET) | | SIGN PANEL CLASS I |
| | | | | | | | | | TYPE I (LF) | TYPE II (LF) | TYPE III (LF) | P (LF) | PI | |
| 1 | R5-1 | | DO NOT ENTER | 30" x 30" | WHITE | | 1 | | | | | 11.75 | | 6.25 |
| 2 | R5-1A | | WRONG WAY | 36" x 24" | WHITE | | | | | | | | | 6.0 |
| 3 | R5-1 | | DO NOT ENTER | 30" x 30" | WHITE | | 1 | | | | | 11.75 | | 6.25 |
| 4 | R5-1A | | WRONG WAY | 36" x 24" | WHITE | | | | | | | | | 6.0 |
| 5 | W14-1 | | DEAD END | 30" x 30" | YELLOW | | 1 | | | | | 11.75 | | 6.25 |
| 6 | W11-2 | | PEDESTRIAN CROSSING | 30" x 30" | FLUOR. GREEN | | 2 | | | | | 11.75 | | 2 X 6.25 |
| 7 | W16-7P | | DIAGONAL ARROW | 21" x 15" | FLUOR. GREEN | | | | | | | | | 2 X 2.18 |
| 8 | R2-1 | | SPEED LIMIT 25 | 24"X30" | FLUOR. GREEN | | 1 | | | | | 11.75 | | 5 |
| TOTAL | | | | | | | 5 | | | | | 70.5 | | 52.61 |

TABULATION OF GUARDRAIL AND FENCING

| ITEM NO. | LOCATION | OFFSET &/OR SIDE | 606 | | | | | 607 | | |
|-----------------------|-------------------|------------------|--------------------|--------------------|--------------------|--------------------------------|------------------------|-----------------------|----------------------------------|------------------------------|
| | | | BRIDGE RAIL TYPE 3 | TRANSITION TYPE 3J | TRANSITION TYPE 3L | GUARDRAIL TYPE 3 (3-6 SPACING) | END ANCHORAGE (FLARED) | END ANCHORAGE TYPE 3K | FENCE COMBINATION W/ METAL POSTS | CONSTRUCTION FENCE (PLASTIC) |
| | | FT | LF | EA | EA | LF | EA | EA | LF | LF |
| | PROJECT SITE | BOTH | | | | | | | | |
| | 15+64.3 - 16+04.3 | BOTH | 80 | | | | | | | |
| | 15+20.0 | BOTH | | | | | | 2 | | |
| | 15+40.2-15+47.2 | BOTH | | 2 | | | | | | |
| | 15+41.0 - 15+64.4 | BOTH | | | 2 | | | | | |
| | 16+04.3 - 16+28.0 | BOTH | | | 2 | | | | | |
| | 16+38.0 - 16+53.1 | LT | | | | 25 | | | | |
| | 16+53.1 - 16+92.5 | LT | | | | | | 1 | | |
| | 16+28.0 - 16+67.4 | RT | | | | | | 1 | | |
| TOTALS | | | 80 | 2 | 4 | 25 | 2 | 2 | 220 | 504 |
| PROJECT TOTALS | | | 80 | 2 | 4 | 25 | 2 | 2 | 220 | 504 |

TABULATION OF TRAFFIC CONTROL ITEMS (SIGNAGE)

| ITEM NO. | LOCATION | SIGN NUMBER | SIGN CODE | DESCRIPTION | SIGN PANEL SIZE | 630 | | | TOTAL PANEL SIZE | | |
|---------------|----------|-------------|-----------|-----------------------------|-----------------|-----|---|---|------------------|---|---|
| | | | | | | A | B | C | A | B | C |
| | SIGNAGE | | | | | | | | | | |
| 1 | | G20-11 | | CDOT INFORMATION | 48x48 | | | | | | |
| 2 | | W20-1 | | ROAD WORK AHEAD | 36x36 | | | | 1 | | |
| 3 | | W20-1 | | ROAD WORK 500 FT | 36x36 | | | | 1 | | |
| 4 | | R52-6A | | BEGIN FINES DOUBLE | 36x48 | | | | | 1 | |
| 5 | | G20-5 | | WORK ZONE | 36x24 | | | | 1 | | |
| 6 | | R2-1 | | SPEED LIMIT (25) | 36x36 | | | | 1 | | |
| 7 | | W20-7A | | FLAGGER | 36x36 | | | | 1 | | |
| 8 | | W20-3 | | ROAD CLOSED AHEAD | 36x36 | | | | 1 | | |
| 9 | | W20-3 | | ROAD CLOSED 200 FT | 36x36 | | | | 1 | | |
| 10 | | R11-4 | | ROAD CLOSED THROUGH TRAFFIC | 60x30 | | | | | 1 | |
| 11 | | R11-2 | | ROAD CLOSED | 48x30 | | | | | 1 | |
| 12 | | R11-2 | | ROAD CLOSED | 48x30 | | | | | 1 | |
| 13 | | W20-3 | | ROAD CLOSED 500 FT | 36x36 | | | | 1 | | |
| 14 | | SPECIAL | | CONSTRUCTION TRAFFIC ONLY | 36x36 | | | | 1 | | |
| 15 | | R11-4 | | ROAD CLOSED THROUGH TRAFFIC | 60x30 | | | | | 1 | |
| 16 | | R3-2 | | NO LEFT TURN | 30x30 | | | | 1 | | |
| 17 | | R1-1 | | STOP | 30x30 | | | | 1 | | |
| 18 | | R3-5 | | RIGHT TURN ONLY ARROW | 36x30 | | | | 1 | | |
| 19 | | M4-9A | | BIKE DETOUR (R) | 30x24 | | | | 1 | | |
| 20 | | M4-9A | | BIKE DETOUR (L) | 30x24 | | | | 1 | | |
| TOTALS | | | | | | | | | 14 | 6 | 0 |

TABULATION OF TRAFFIC CONTROL ITEMS (OTHER)

| ITEM NO. | LOCATION | ITEM NUMBER | LEGEND | UNIT | 627, 630 | |
|----------|-------------|-------------|------------------------------------|------|----------|-------|
| | | | | | PHASE 1 | TOTAL |
| | DILLON ROAD | 627 | PAVEMENT MARKING PAINT (TEMPORARY) | GAL | 4 | 4 |
| | | 630 | FLAGGING | HR | 416 | 416 |
| | | 630 | TRAFFIC CONTROL MANAGEMENT | DAY | 120 | 120 |
| | | 630 | TRAFFIC CONTROL INSPECTION | DAY | 24 | 24 |
| | | 630 | BARRICADE (TYPE 3 M-A)(TEMPORARY) | EA | 8 | 8 |
| | | 630 | CONSTRUCTION SIGN (PANEL SIZE A) | EA | 14 | 14 |
| | | 630 | CONSTRUCTION SIGN (PANEL SIZE B) | EA | 6 | 6 |
| | | 630 | DRUM CHANNELIZATION DEVICE | EA | 20 | 20 |

| ITEM NO. | LOCATION | 203 | CY | CY |
|--|--|-------------------------|------|------|
| | | UNCLASSIFIED EXCAVATION | FHWA | BOCO |
| | DILLON ROAD STA. 9+03.03 TO 10+50.00 | FROM COMPUTER MODEL | | 0 |
| | DILLON ROAD STA. 10+50.00 TO 18+00.00 | FROM COMPUTER MODEL | 609 | |
| | DILLON ROAD STA. 18+00.00 TO 20+10.00 | FROM COMPUTER MODEL | | 482 |
| | ROCK CREEK CHANNEL STA. 30+36.69 TO 33+60.00 | FROM COMPUTER MODEL | 1245 | |
| | ROCK CREEK TRAIL STA. 21+00.00 TO 22+86.02 | FROM COMPUTER MODEL | 0 | |
| | ROCK CREEK TRAIL STA. 22+86.02 TO 23+85.00 | FROM COMPUTER MODEL | | 23 |
| TOTAL FOR PAY QUANTITY | | | 1854 | 505 |
| EMBANKMENT (FOR INFORMATION ONLY) | | | | |
| | DILLON ROAD STA. 9+03.03 TO 10+50.00 | FROM COMPUTER MODEL | | 0 |
| | DILLON ROAD STA. 10+50.00 TO 18+00.00 | FROM COMPUTER MODEL | 756 | |
| | DILLON ROAD STA. 18+00.00 TO 20+10.00 | FROM COMPUTER MODEL | | 28 |
| | ROCK CREEK CHANNEL STA. 30+36.69 TO 33+60.00 | FROM COMPUTER MODEL | 156 | |
| | ROCK CREEK TRAIL STA. 21+00.00 TO 22+86.02 | FROM COMPUTER MODEL | 332 | |
| | ROCK CREEK TRAIL STA. 22+86.02 TO 23+85.00 | FROM COMPUTER MODEL | | 9 |
| UNCLASSIFIED EXCAVATION | | | 1854 | 505 |
| TOTAL UNCLASSIFIED EXCAVATION | | | | |
| EMBANKMENT (NET) | | | 1244 | 37 |
| TOTAL EMBANKMENT | | | | |
| EMBANKMENT (NET) TIMES COMPACTION FACTOR (1.15) | | | 1431 | 43 |
| TOTAL | | | | |
| EXCESS EXCAVATION | | | 423 | 462 |
| TOTAL | | | | |
| EMBANKMENT FACTORED PLUS EXCESS EXCAVATION | | | 1854 | 505 |
| TOTAL | | | | |

TABULATION OF DRAINAGE ITEMS

| ITEM NO. | LOCATION | OFFSET &/OR SIDE | 603 | | | | 604 | |
|-----------------------|---------------|------------------|--|---|--|---|------------------------|------------------------|
| | | | REINFORCED CONCRETE PIPE 18 INCH (CIP) | REINFORCED CONCRETE END SECTION 18 INCH | REINFORCED ELLIPTICAL CONCRETE PIPE 24x14 INCH (CIP) | REINFORCED ELLIPTICAL CONCRETE END SECTION 24x14 INCH | INLET TYPE C (10 FOOT) | INLET TYPE C (15 FOOT) |
| | | FT | LF | EA | EA | EA | EA | |
| | 11+19 - 12+18 | RT | | | | 90 | 2 | |
| | 13+13 - 13+50 | RT | 32 | 2 | | | | |
| | 13+58 | BOTH | | | 40 | 2 | | |
| | 14+20 - 14+41 | RT | 21 | 2 | | | | |
| | 14+93 | | | | | | | |
| | 16+72 | | | | | | | |
| | SW WINGWALL | | 65 | | | 1 | | |
| | SE WINGWALL | | 45 | | | | 1 | |
| TOTALS | | | 163 | 4 | 130 | 6 | 1 | |
| PROJECT TOTALS | | | 163 | 4 | 130 | 6 | 1 | |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (12-13) Project Tab.dwg Jul 14, 2016 - 3:04pm



**ADVERTISEMENT SET
JULY 2016**

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| Print Date: | Sheet Revisions | | | Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | | Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN | As Constructed | DILLON ROAD OVER ROCK CREEK PROJECT TABULATIONS | | Project No./Code |
| File Name: | Date: | Comments: | Init. | | | | No Revisions: | Designer: CB | Structure Numbers | ER C070-051/20014 |
| Horiz. Scale: | Vert. Scale: As Noted | | | | Revised: | Detailer: LX | BC-68-4.7-RO | | | |
| Unit Information | Unit Leader Initials | | | | Void: | Sheet Subset: TB-02 | Subset Sheets: 2 | Sheet Number 13 | | |



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

- Horizontal Control
- Vertical Control
- Roadway Alignment
- Original Terrain Data
- Other: _____

Format*
 PLAN SHEET
 PLAN SHEET

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

TYPE OF PROJECT

- Landscaping
- Signalization
- Safety Improvement
- Asphalt Overlay
- Concrete Overlay
- Minor Widening
- Major Reconstruction
- New Roadway Construction
- Bridge Replacement
- Bridge Widening
- Pedestrian Bridges
- Other: CONCRETE BOX CULVERT WITH WINGWALLS

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

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

- Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- Verification and Maintenance of Horizontal and Vertical Control
- Verify or Determine existing grades and alignments
- Verify or Determine existing topography
- Clearing and Grubbing Limits
- Removal Limits
- Reset Items

- Excavation and Embankment
 - Excavation
 - Unclassified
 - Stripping
 - Muck
 - Rock
 - Borrow
 - Other: _____

| | SLOPE STAKING (Y/N) | GRID (Y/N) | GRADE STAKES | SPECIAL INTERVAL |
|------------|---------------------|------------|--------------|------------------|
| Excavation | Y | - | - | 20' |
| | N | - | - | 5' |
| Embankment | - | - | - | - |
| | - | - | - | - |

- Embankment
- Site Grading
- Erosion Control (Perm)
- Other: _____

- As Staked Earthwork Quantities (See General Notes)

- Landscaping
 - Top Soil
 - Seeding
 - Mulching
 - Planting
 - Herbicide
 - Other: TREES, SHRUBS, WETLAND PLANTINGS

- Erosion Control
 - Seeding (Temp)
 - Silt Fences
 - Straw Bales
 - Temporary Berm
 - Riprap (Temp)
 - Other: TEMPORARY DIVERSION, EROSION LOG, ROCK CHECK DAM

- Roadway Bases
 - Untreated Subgrade
 - Treated Subgrade
 - Aggregate Base Course
 - Reconditioning
 - PMBB - Plant Mix Bituminous Base
 - Other: _____

| Roadway Bases | GRID (Y/N) | SPECIAL INTERVAL | SPECIAL OFFSET |
|---------------|------------|------------------|----------------|
| - | - | 20' | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

- Pavements
 - HBP - Hot Bituminous Pavement
 - Concrete
 - Overlay
 - Heating & Scarifying Treatment
 - Prime Coat, Tack Coat & Rejuvenating Agent
 - Seal Coat or Chip Seal
 - Other: MILLING

| Pavements | GRID (Y/N) | SPECIAL INTERVAL | SPECIAL OFFSET |
|-----------|------------|------------------|----------------|
| - | - | 20' | - |
| - | - | - | - |
| - | - | 20' | - |
| - | - | - | - |
| - | - | - | - |
| - | - | 20' | - |

- Roadway Elements
 - Curb and Gutter
 - Drop inlets - alignment and grades
 - Retaining Walls
 - Guard Rail
 - Sidewalk
 - Other: TRAIL, BIKEWAY

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

- Riprap (Perm)
- Slope and Ditch Paving

- Minor Structures
 - Structure Excavation limits
 - Culverts
 - Culverts w/ Headwalls and Wingwalls
 - Concrete Box Culverts w/ Headwalls and Wingwalls
 - Pipes
 - Sanitary Sewer
 - Storm Sewer
 - Water
 - Irrigation
 - Miscellaneous
 - Manholes
 - Inlets
 - Other: _____

- Major Structures - Overhead Signs, Concrete Box Culverts, Bridges - and all other structures assigned a structure number
 - Structure Excavation limits
 - Concrete Box Culverts w/ Headwalls and Wingwalls
 - Piling locations and cut off elevations
 - Caisson locations and elevations
 - Footing locations, alignment, and elevations
 - Abutment/Pier locations, alignment, and elevations
 - Wingwall skew angles/offsets
 - Structural concrete form locations
 - Substructure As-constructed survey (Required by Subsection 601.12 for Bridges and S-614-50 for Overhead signs)
 - 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
 - Other: _____

- Fencing
 - Temporary
 - Permanent
 - Sound Barriers
 - Other: _____

- Delineators
 - Temporary
 - Permanent

- Lighting and Traffic Control Devices (Perm)
 - Signal pole locations and elevations
 - Light pole locations and elevations
 - Signs
 - Field verify sign post locations, elevations, and lengths before fabrication.
 - Other: _____

- Pavement Marking
 - Striping (Temp)
 - Striping (Perm)
 - Symbols
 - Other: _____
- Temporary Lighting and Construction Traffic Control Devices
 - Signal pole locations and elevations (Temp)
 - Light pole locations and elevations (Temp)
 - Signs (Temp)
 - Other: _____
- Easement (Temp)(Staking)(P.L.S. Only)
- Right of Way (Temp) (Staking)(P.L.S. Only)

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

- Monumentation
 - Control
 - Right of Way
 - Land corners, Aliquot corners
 - Easement (Perm)
 - Reference the specified existing monuments: ** _____
 - Relocate the specified existing monuments: ** _____
 - Locate monuments. It is estimated _____ hours are required.

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

GENERAL NOTES:

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 entire CDOT 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 3 days prior to 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 CDOT Survey Manual. A printed copy of the As Staked earthwork data and a computer disk in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at 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.

The Contractor's surveyor shall submit the following fieldbooks to the Engineer:

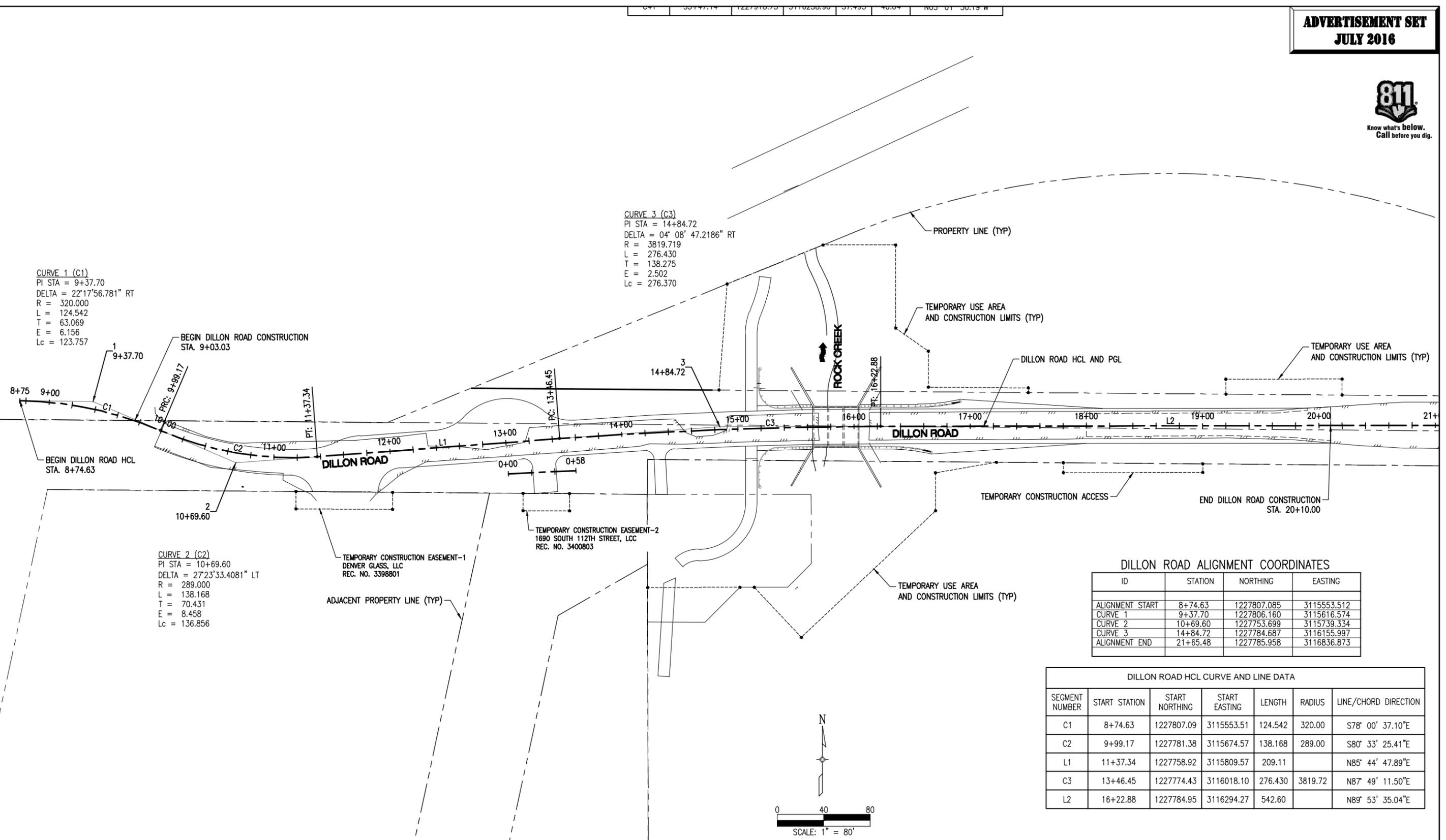
- Horizontal Control (Primary & Secondary)
- Vertical Control (i.e. Benchmarks)
- Property Pin Ties
- Horizontal Alignment
- Grading
- Slope Staking
- Minor Structures
- Major Structures
- One fieldbook for each work category shown on this sheet
- Other Fieldbook(s): _____

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (14) Survey Tab.dwg Jul 14, 2016 - 3:04pm

| | | | | | | | | | | | | | | |
|------------------|-----------------------|------------------------|----------|-------|--|---|---|-----------------------|--|--|----|-------------------------|--------------|--------------|
| Print Date: | | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 200 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 REGION 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK SURVEY TABULATION | | Project No./Code | | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | ER C070-051/20014 | | | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | | Designer: | CB | Structure Numbers | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | | Void: | | Detailer: | LX | Subset Sheets: | 1 | Sheet Number |



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (16-17) Geometric Control Plan.dwg Jul 14, 2016 - 3:05pm



CURVE 1 (C1)
 PI STA = 9+37.70
 DELTA = 22°17'56.781" RT
 R = 320.000
 L = 124.542
 T = 63.069
 E = 6.156
 Lc = 123.757

CURVE 3 (C3)
 PI STA = 14+84.72
 DELTA = 04° 08' 47.2186" RT
 R = 3819.719
 L = 276.430
 T = 138.275
 E = 2.502
 Lc = 276.370

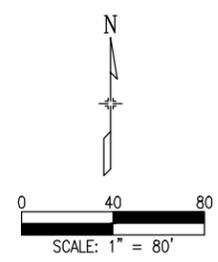
CURVE 2 (C2)
 PI STA = 10+69.60
 DELTA = 27°23'33.4081" LT
 R = 289.000
 L = 138.168
 T = 70.431
 E = 8.458
 Lc = 136.856

DILLON ROAD ALIGNMENT COORDINATES

| ID | STATION | NORTHING | EASTING |
|-----------------|----------|-------------|-------------|
| ALIGNMENT START | 8+74.63 | 1227807.085 | 3115553.512 |
| CURVE 1 | 9+37.70 | 1227806.160 | 3115616.574 |
| CURVE 2 | 10+69.60 | 1227753.699 | 3115739.334 |
| CURVE 3 | 14+84.72 | 1227784.687 | 3116155.997 |
| ALIGNMENT END | 21+65.48 | 1227785.958 | 3116836.873 |

DILLON ROAD HCL CURVE AND LINE DATA

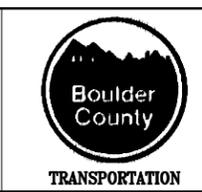
| SEGMENT NUMBER | START STATION | START NORTHING | START EASTING | LENGTH | RADIUS | LINE/CHORD DIRECTION |
|----------------|---------------|----------------|---------------|---------|---------|----------------------|
| C1 | 8+74.63 | 1227807.09 | 3115553.51 | 124.542 | 320.00 | S78° 00' 37.10"E |
| C2 | 9+99.17 | 1227781.38 | 3115674.57 | 138.168 | 289.00 | S80° 33' 25.41"E |
| L1 | 11+37.34 | 1227758.92 | 3115809.57 | 209.11 | | N85° 44' 47.89"E |
| C3 | 13+46.45 | 1227774.43 | 3116018.10 | 276.430 | 3819.72 | N87° 49' 11.50"E |
| L2 | 16+22.88 | 1227784.95 | 3116294.27 | 542.60 | | N89° 53' 35.04"E |



| | |
|------------------|-----------------------|
| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
|-----------------|----------|-------|
| Date: | Comments | Init. |
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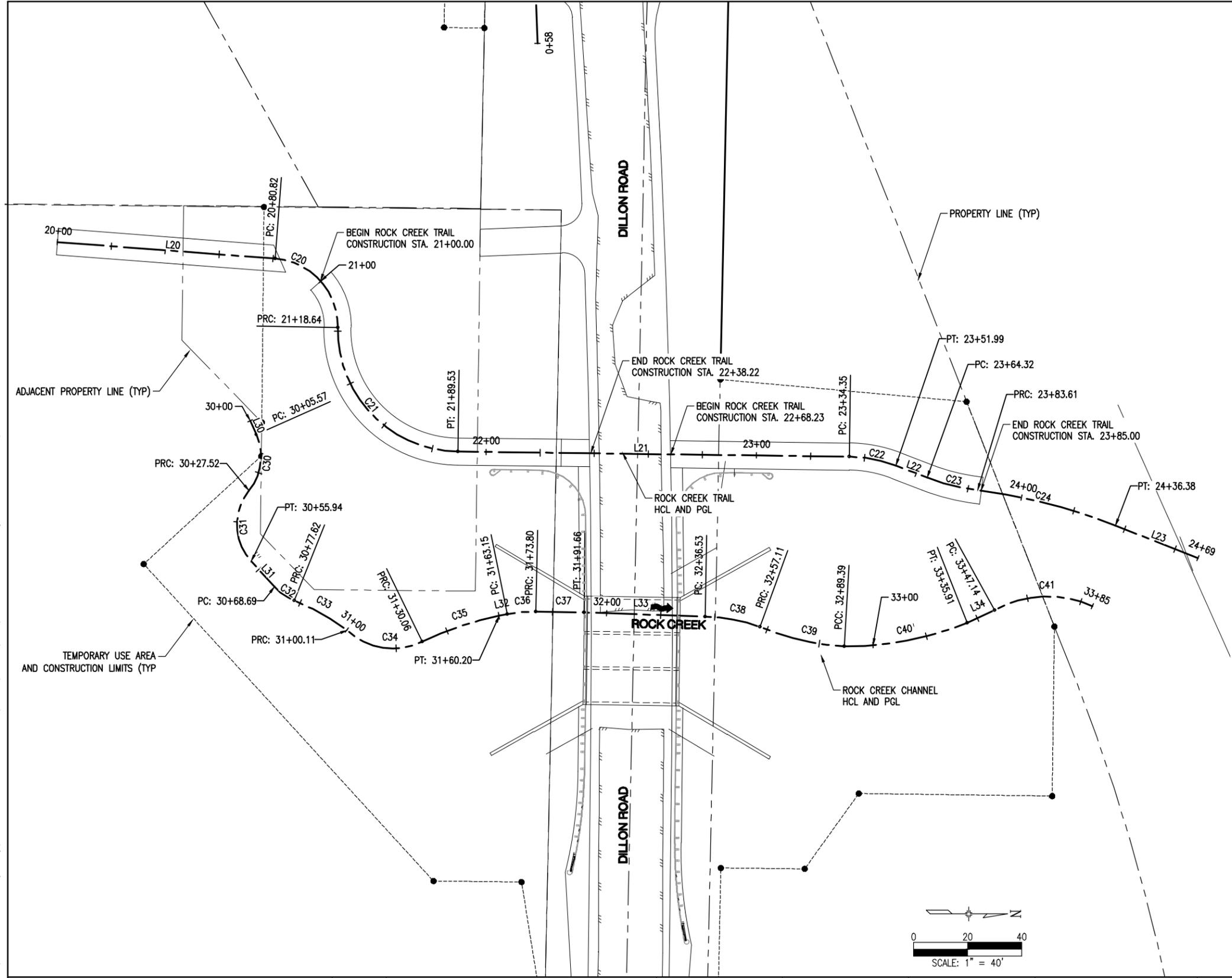
Colorado Department of Transportation
 1420 Second Street
 Greeley, CO 80632
 Phone: (970) 350-2103
 FAX: (970) 350-2198
 REGION 4 LHN

As Constructed
 No Revisions:
 Revised:
 Void:

**DILLON ROAD OVER ROCK CREEK
GEOMETRIC CONTROL PLAN
DILLON ROAD**

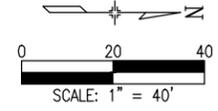
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|---------------|-------|-------------------|---|
| Designer: | CJB | Structure Numbers | |
| Detailer: | CWM | Subset Sheets: | 2 |
| Sheet Subset: | GC-01 | | |

Project No./Code
 ER C070-051/20014
 BC-68-4.7-RO
 Sheet Number **16**



| ROCK CREEK TRAIL HCL CURVE AND LINE DATA | | | | | | |
|--|---------------|----------------|---------------|--------|--------|----------------------|
| SEGMENT NUMBER | START STATION | START NORTHING | START EASTING | LENGTH | RADIUS | LINE/CHORD DIRECTION |
| L20 | 20+00.00 | 1227570.33 | 3116107.64 | 80.82 | | N03° 36' 02.75"E |
| C20 | 20+80.82 | 1227650.99 | 3116112.72 | 37.816 | 25.00 | N46° 56' 04.01"E |
| C21 | 21+18.64 | 1227674.42 | 3116137.79 | 70.896 | 45.00 | N45° 08' 02.64"E |
| L21 | 21+89.53 | 1227719.42 | 3116183.00 | 144.82 | | N00° 00' 00.00"E |
| C22 | 23+34.35 | 1227864.24 | 3116183.00 | 17.638 | 50.00 | N10° 06' 20.09"E |
| L22 | 23+51.99 | 1227881.51 | 3116186.08 | 12.33 | | N20° 12' 40.18"E |
| C23 | 23+64.32 | 1227893.08 | 3116190.34 | 19.291 | 80.00 | N13° 18' 10.49"E |
| C24 | 23+83.61 | 1227911.81 | 3116194.77 | 52.768 | 210.00 | N13° 35' 35.72"E |
| L23 | 24+36.38 | 1227962.97 | 3116207.13 | 32.79 | | N20° 47' 30.64"E |

| ROCK CREEK CHANNEL HCL CURVE AND LINE DATA | | | | | | |
|--|---------------|----------------|---------------|--------|---------|----------------------|
| SEGMENT NUMBER | START STATION | START NORTHING | START EASTING | LENGTH | RADIUS | LINE/CHORD DIRECTION |
| L30 | 30+00.00 | 1227642.48 | 3116172.62 | 5.57 | | N65° 15' 29.22"E |
| C30 | 30+05.57 | 1227644.81 | 3116177.68 | 21.953 | 20.00 | S83° 17' 46.10"E |
| C31 | 30+27.52 | 1227642.37 | 3116198.41 | 28.415 | 20.00 | N87° 26' 50.74"E |
| L31 | 30+55.94 | 1227643.54 | 3116224.47 | 12.75 | | N46° 44' 42.91"E |
| C32 | 30+68.69 | 1227652.27 | 3116233.75 | 8.940 | 20.00 | N33° 56' 23.28"E |
| C33 | 30+77.62 | 1227659.62 | 3116238.70 | 22.489 | 86.40 | N28° 39' 03.97"E |
| C34 | 31+00.11 | 1227679.30 | 3116249.45 | 29.947 | 24.74 | N07° 47' 42.62"E |
| C35 | 31+30.06 | 1227707.20 | 3116253.27 | 30.139 | 120.00 | N19° 16' 31.46"W |
| L32 | 31+60.20 | 1227735.57 | 3116243.35 | 2.95 | | N12° 04' 49.17"W |
| C36 | 31+63.15 | 1227738.45 | 3116242.73 | 10.649 | 48.12 | N05° 54' 54.48"W |
| C37 | 31+73.80 | 1227749.02 | 3116241.64 | 17.864 | 1031.83 | N00° 13' 02.26"E |
| L33 | 31+91.66 | 1227766.89 | 3116241.70 | 44.87 | | N01° 16' 37.12"E |
| C38 | 32+36.53 | 1227811.75 | 3116242.70 | 20.579 | 61.18 | N09° 44' 00.85"E |
| C39 | 32+57.11 | 1227831.94 | 3116246.17 | 32.275 | 95.00 | N12° 17' 04.55"E |
| C40 | 32+89.39 | 1227863.32 | 3116253.00 | 46.525 | 121.42 | N11° 32' 02.68"W |
| L34 | 33+35.91 | 1227908.63 | 3116243.75 | 11.23 | | N25° 37' 11.65"W |
| C41 | 33+47.14 | 1227918.75 | 3116238.90 | 37.495 | 40.04 | N03° 01' 50.19"W |



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| | |
|-------------------|-----------------------|
| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
|-----------------|----------|-------|
| Date: | Comments | Init. |
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| | | |

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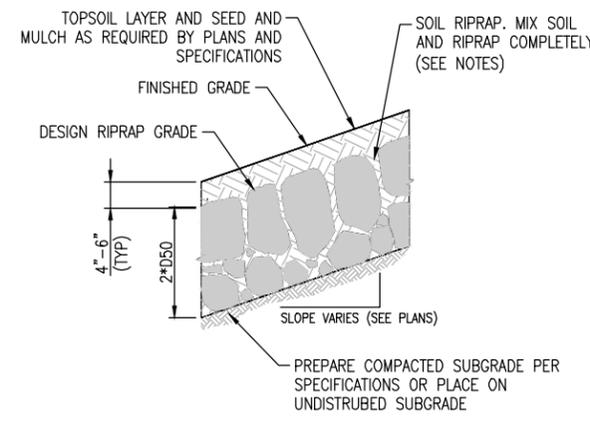


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Denver, CO 80632
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Region 4 LHN

| |
|----------------|
| As Constructed |
| No Revisions: |
| Revised: |
| Void: |

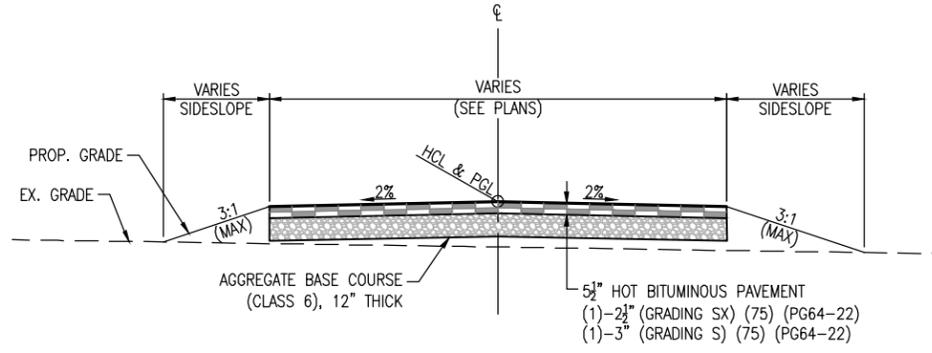
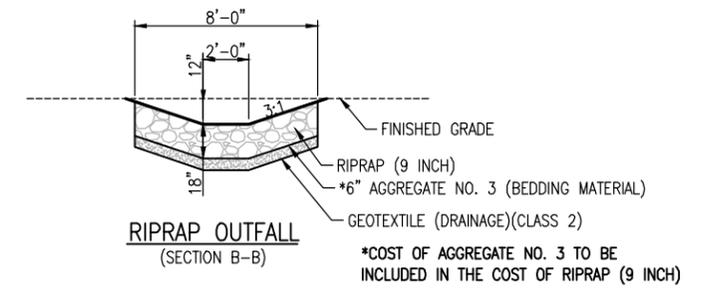
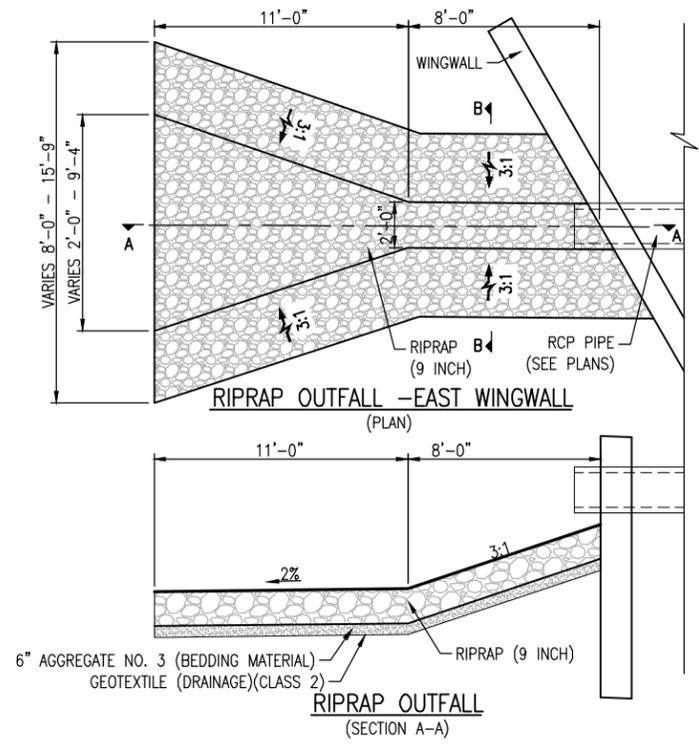
| | | | |
|---|-------|--------------------|---|
| DILLON ROAD OVER ROCK CREEK GEOMETRIC CONTROL PLAN ROCK CREEK TRAIL AND CHANNEL | | | |
| Designer: | CJB | Structure Numbers: | |
| Detailer: | CWM | Subset Sheets: | 2 |
| Sheet Subset: | GC-02 | | |

| | |
|------------------|-------------------|
| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 17 |

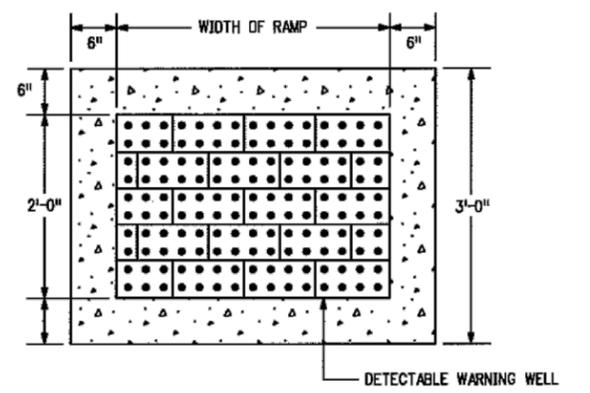


- NOTES:**
1. SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREA. REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
 2. MIX UNIFORMLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
 3. PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
 4. CRIMP OR TACKIFY MULCH.
 5. KEEP MULCH MATERIAL OUT OF CREEK.

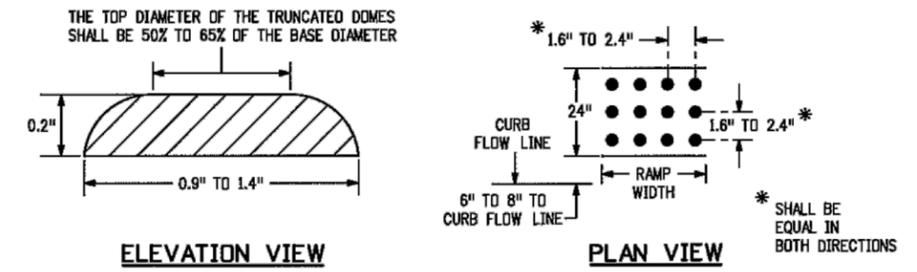
**SOIL RIPRAP DETAIL
N.T.S.**



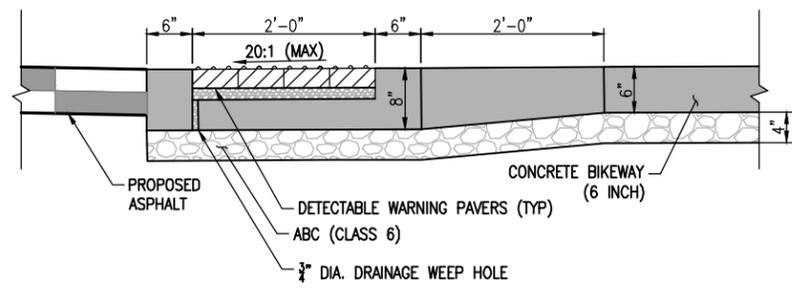
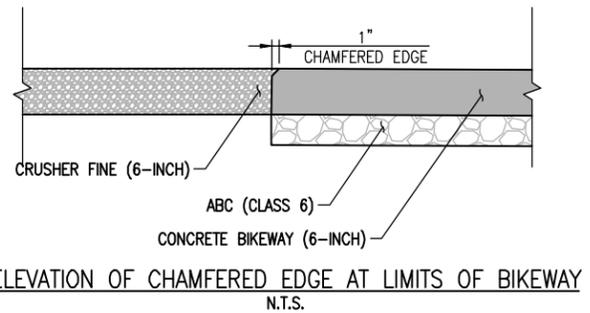
**DRIVEWAY TYPICAL SECTION
N.T.S.**



**PLAN VIEW OF DETECTABLE WARNING AND WELL
N.T.S.**



**DOME AND DETECTABLE WARNING DETAILS
N.T.S.**



**ELEVATION OF DETECTABLE WARNING, WELL, AND BIKEWAY
N.T.S.**

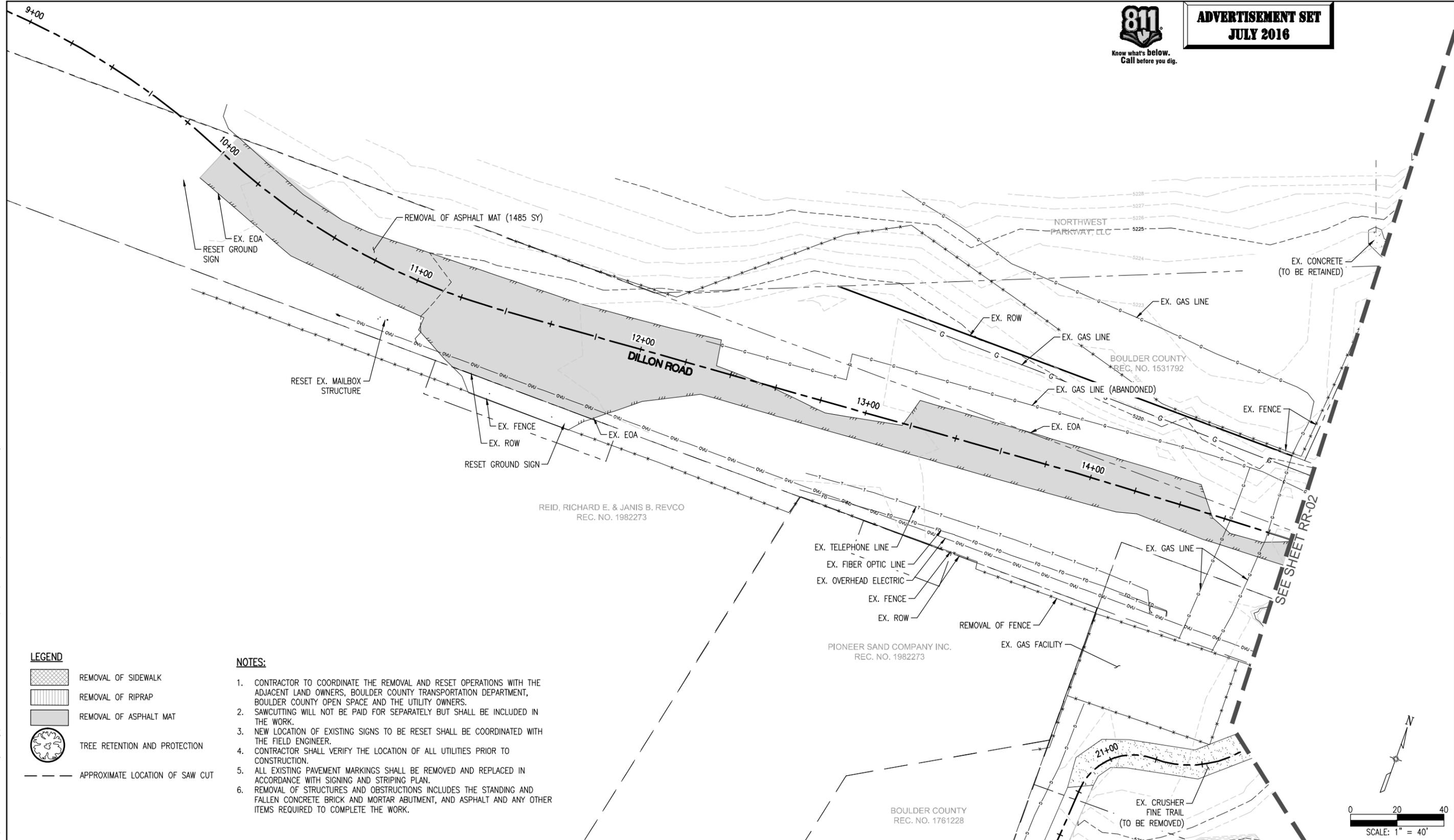
- NOTES:**
1. THE DETECTABLE WARNINGS SHALL BE MADE OF PAVERS WITH A TRUNCATED DOME SURFACE.
 2. THE TOP OF THE DRAINAGE WEEP HOLE SHALL BE LOCATED AT THE LOWEST POINT OF THE DETECTABLE WARNING WELL.
 3. DETECTABLE WARNING AND WELL AREA SLOPES SHALL BE 20:1 OR FLATTER.

C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (18) Construction Details.dwg Jul 14, 2016 - 3:06pm

| | | | | | | | | | | | | | | | |
|------------------|-----------------------|-----------------|----------|-------|---|--|---|----------------|--|---|--------------|-------------------|---|-------------------|----|
| Print Date: | | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2073 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation</p> <p>1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK CONSTRUCTION DETAILS | | Project No./Code | | | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | Designer: | CJB | Structure Numbers | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | Revised: | CJB | | | BC-68-4.7-RO | | | | |
| Unit Information | Unit Leader Initials | | | | | | Void: | | | Sheet Subset: | CD-01 | Subset Sheets: | 1 | Sheet Number | 18 |

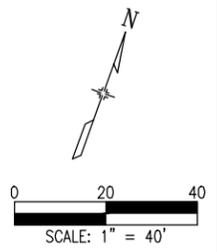


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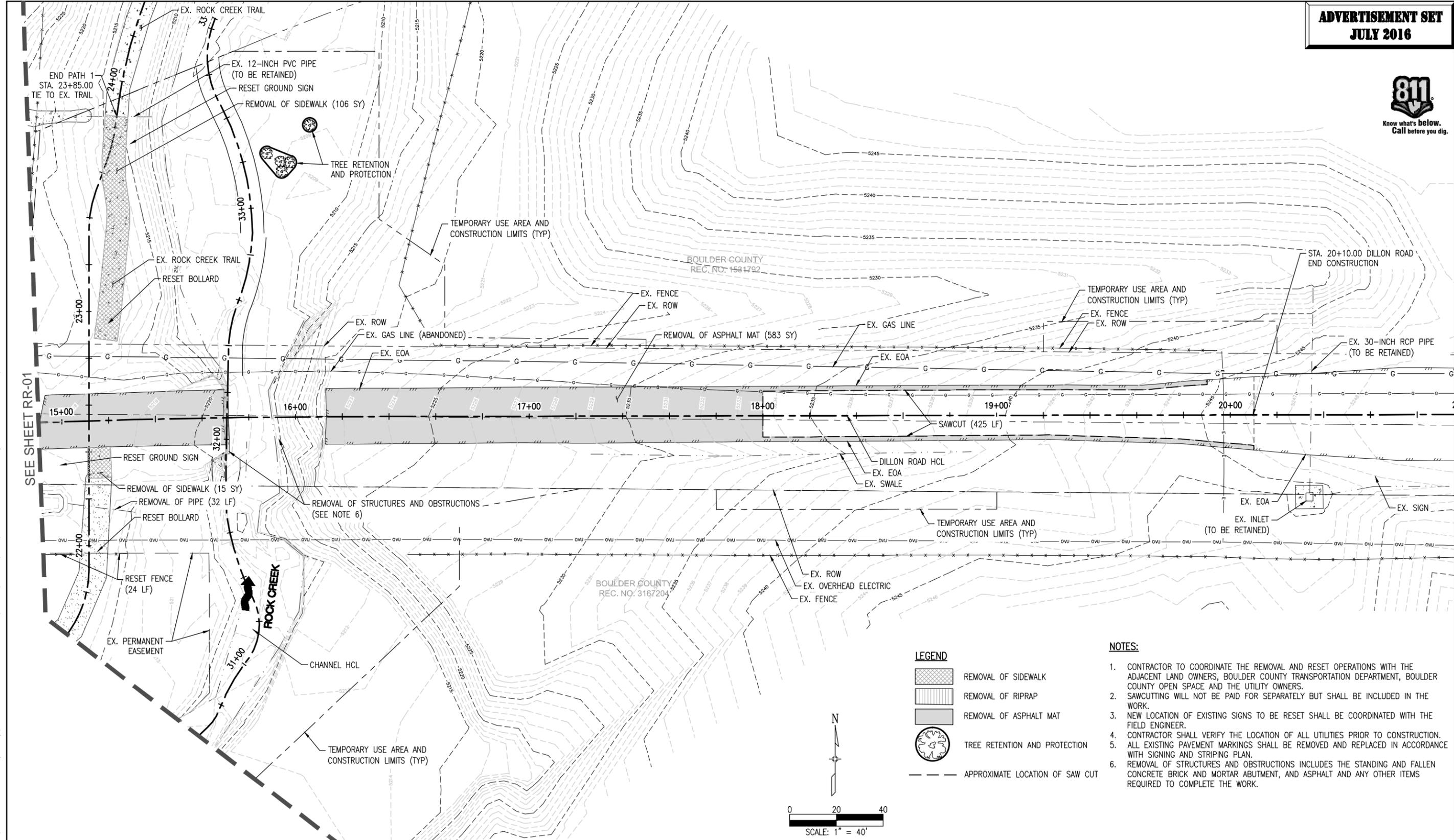
- LEGEND**
- REMOVAL OF SIDEWALK
 - REMOVAL OF RIPRAP
 - REMOVAL OF ASPHALT MAT
 - TREE RETENTION AND PROTECTION
 - APPROXIMATE LOCATION OF SAW CUT

- NOTES:**
1. CONTRACTOR TO COORDINATE THE REMOVAL AND RESET OPERATIONS WITH THE ADJACENT LAND OWNERS, BOULDER COUNTY TRANSPORTATION DEPARTMENT, BOULDER COUNTY OPEN SPACE AND THE UTILITY OWNERS.
 2. SAWCUTTING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
 3. NEW LOCATION OF EXISTING SIGNS TO BE RESET SHALL BE COORDINATED WITH THE FIELD ENGINEER.
 4. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 5. ALL EXISTING PAVEMENT MARKINGS SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH SIGNING AND STRIPING PLAN.
 6. REMOVAL OF STRUCTURES AND OBSTRUCTIONS INCLUDES THE STANDING AND FALLEN CONCRETE BRICK AND MORTAR ABUTMENT, AND ASPHALT AND ANY OTHER ITEMS REQUIRED TO COMPLETE THE WORK.



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (19-20) Removal and Reset Plan.dwg Jul 14, 2016 - 3:06pm

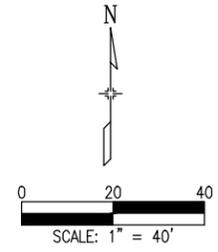
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| Print Date: | | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | Boulder County TRANSPORTATION | Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 REGION 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK REMOVAL AND RESET PLAN | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | Designer: CJB | | Structure Numbers | |
| Horiz. Scale: | | Vert. Scale: As Noted | | | Revised: | | Detailer: CJB | | | | BC-68-4.7-RO | | |
| Unit Information | | Unit Leader Initials | | | Void: | | Sheet Subset: RR-01 | | Subset Sheets: 2 | | Sheet Number 19 | | |



LEGEND

- REMOVAL OF SIDEWALK
- REMOVAL OF RIPRAP
- REMOVAL OF ASPHALT MAT
- TREE RETENTION AND PROTECTION
- APPROXIMATE LOCATION OF SAW CUT

- NOTES:**
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G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (19-20) Removal and Reset Plan.dwg Jul 14, 2016 - 3:06pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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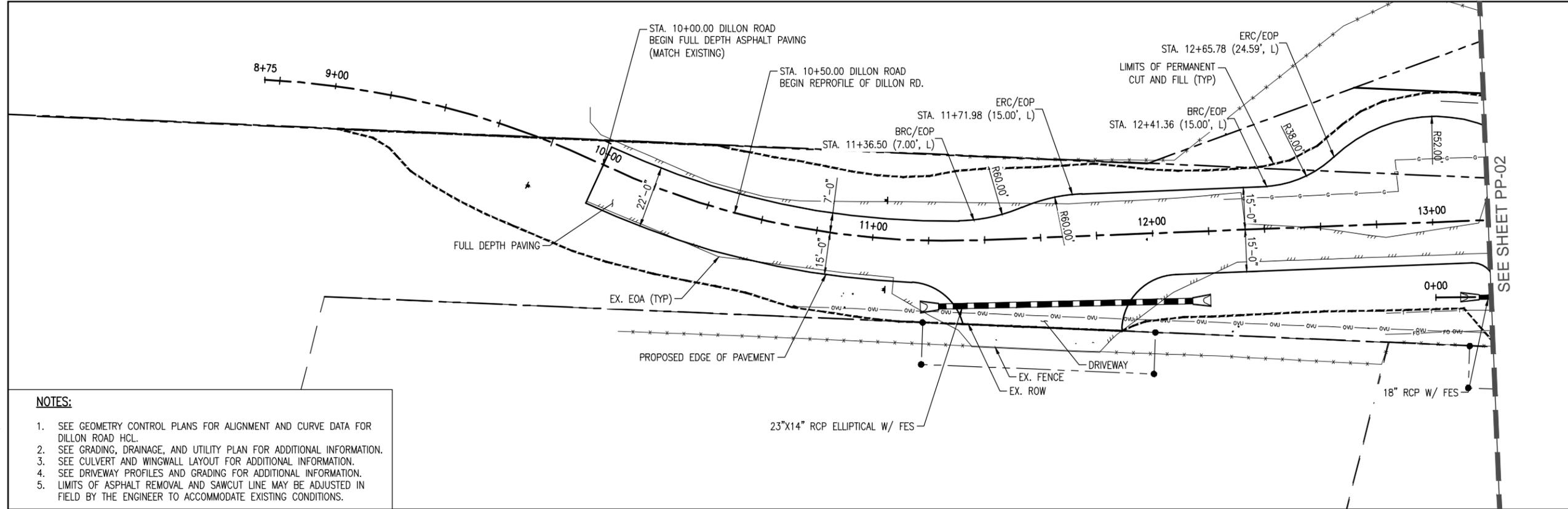
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| As Constructed |
| No Revisions: |
| Revised: |
| Void: |

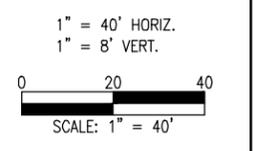
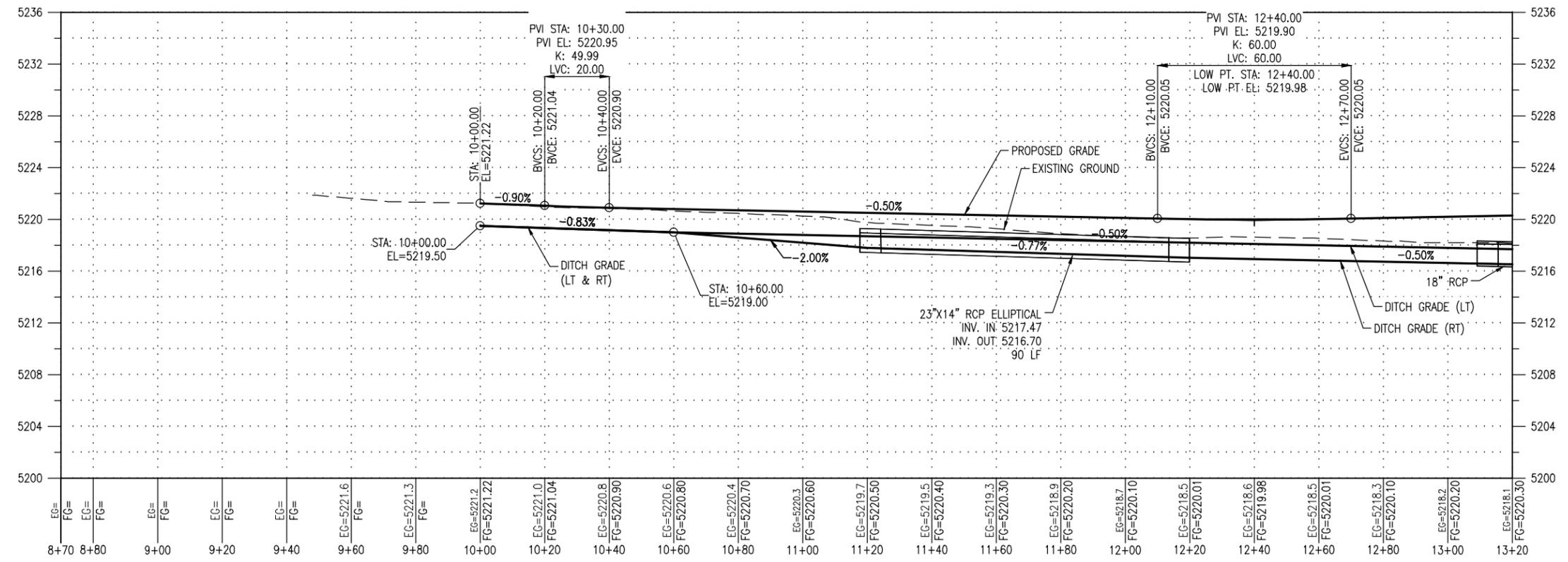
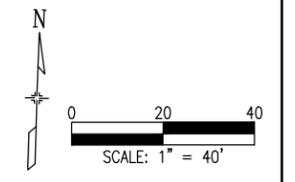
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| DILLON ROAD OVER ROCK CREEK REMOVAL AND RESET PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 2 |
| Sheet Subset: | RR-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 20 |



SEE SHEET PP-02

- NOTES:**
1. SEE GEOMETRY CONTROL PLANS FOR ALIGNMENT AND CURVE DATA FOR DILLON ROAD HCL.
 2. SEE GRADING, DRAINAGE, AND UTILITY PLAN FOR ADDITIONAL INFORMATION.
 3. SEE CULVERT AND WINGWALL LAYOUT FOR ADDITIONAL INFORMATION.
 4. SEE DRIVEWAY PROFILES AND GRADING FOR ADDITIONAL INFORMATION.
 5. LIMITS OF ASPHALT REMOVAL AND SAWCUT LINE MAY BE ADJUSTED IN FIELD BY THE ENGINEER TO ACCOMMODATE EXISTING CONDITIONS.



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (21-23) Plan and Profile (Dillon Road).dwg Jul 14, 2016 - 3:07pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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| As Constructed | | DILLON ROAD OVER ROCK CREEK PLAN AND PROFILE DILLON ROAD | |
| No Revisions: | | Designer: | CJB |
| Revised: | | Detailer: | CJB |
| Void: | | Sheet Subset: | PP-01 |
| | | Structure Numbers: | |
| | | Subset Sheets: | 5 |

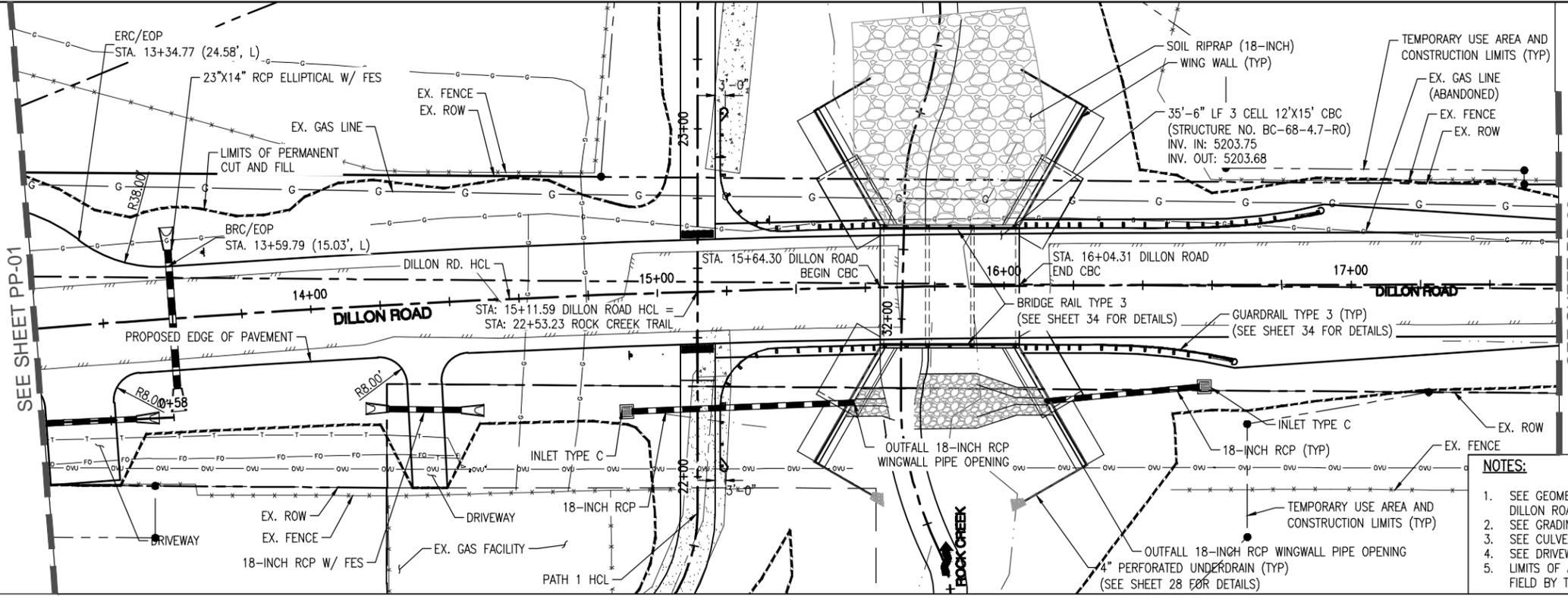
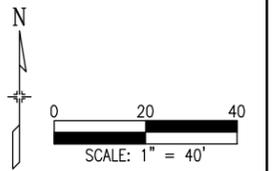
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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 21 |



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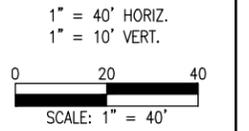
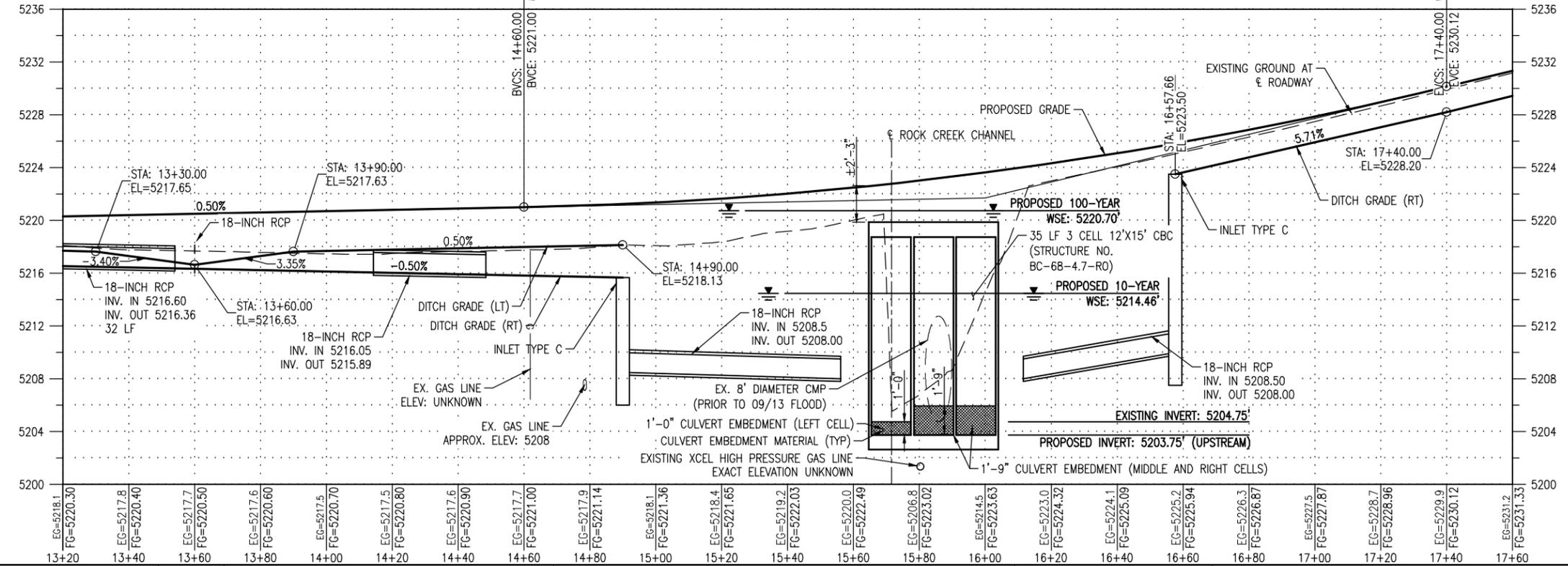
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CONTRACTOR TO CONTACT
EXCEL ENERGY TO FLAG
OVERHEAD ELECTRIC HIGH
VOLTAGE PRIOR TO
CONSTRUCTION



- NOTES:**
- SEE GEOMETRY CONTROL PLANS FOR ALIGNMENT AND CURVE DATA FOR DILLON ROAD HCL.
 - SEE GRADING, DRAINAGE, AND UTILITY PLAN FOR ADDITIONAL INFORMATION.
 - SEE CULVERT AND WINGWALL LAYOUT FOR ADDITIONAL INFORMATION.
 - SEE DRIVEWAY PROFILES AND GRADING FOR ADDITIONAL INFORMATION.
 - LIMITS OF ASPHALT REMOVAL AND SAWCUT LINE MAY BE ADJUSTED IN FIELD BY THE ENGINEER TO ACCOMMODATE EXISTING CONDITIONS.

PVI STA: 16+00.00
PVI EL: 5221.70
K: 50.75
LVC: 280.00



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (21-23) Plan and Profile (Dillon Road).dwg Jul 14, 2016 - 3:07pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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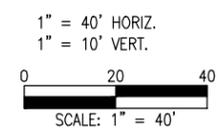
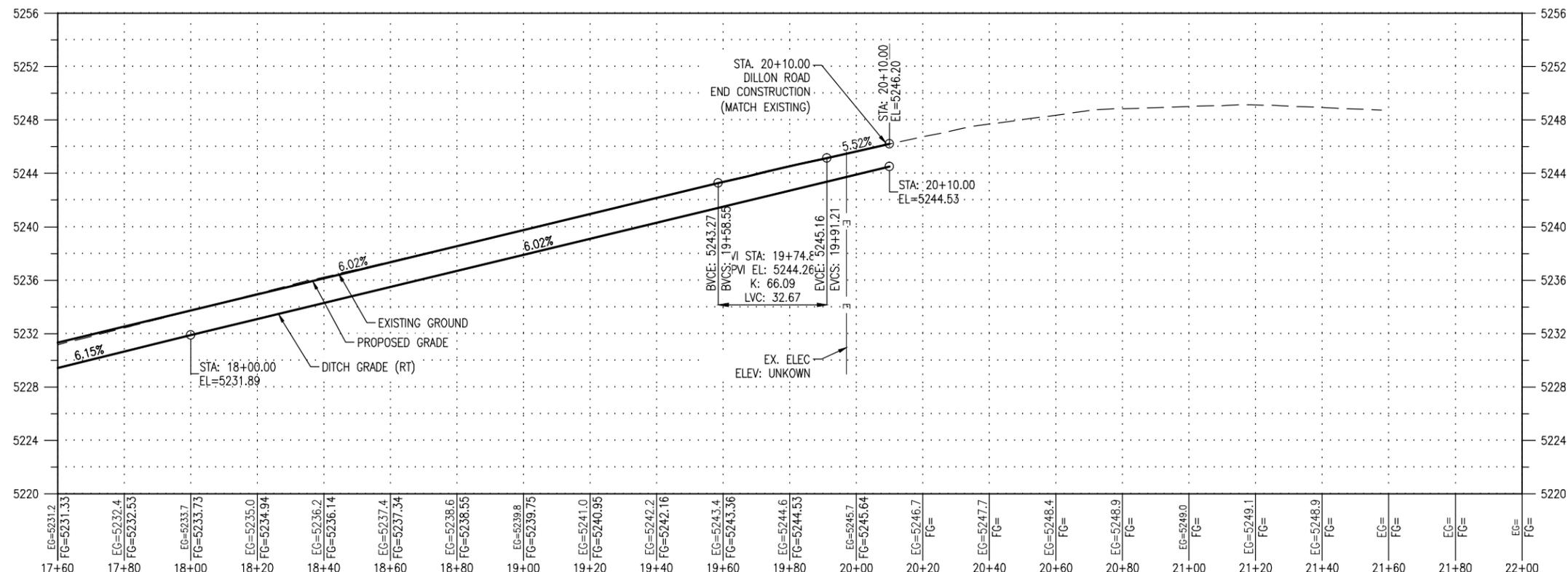
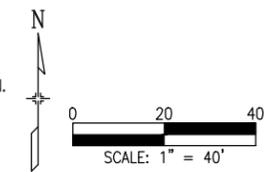
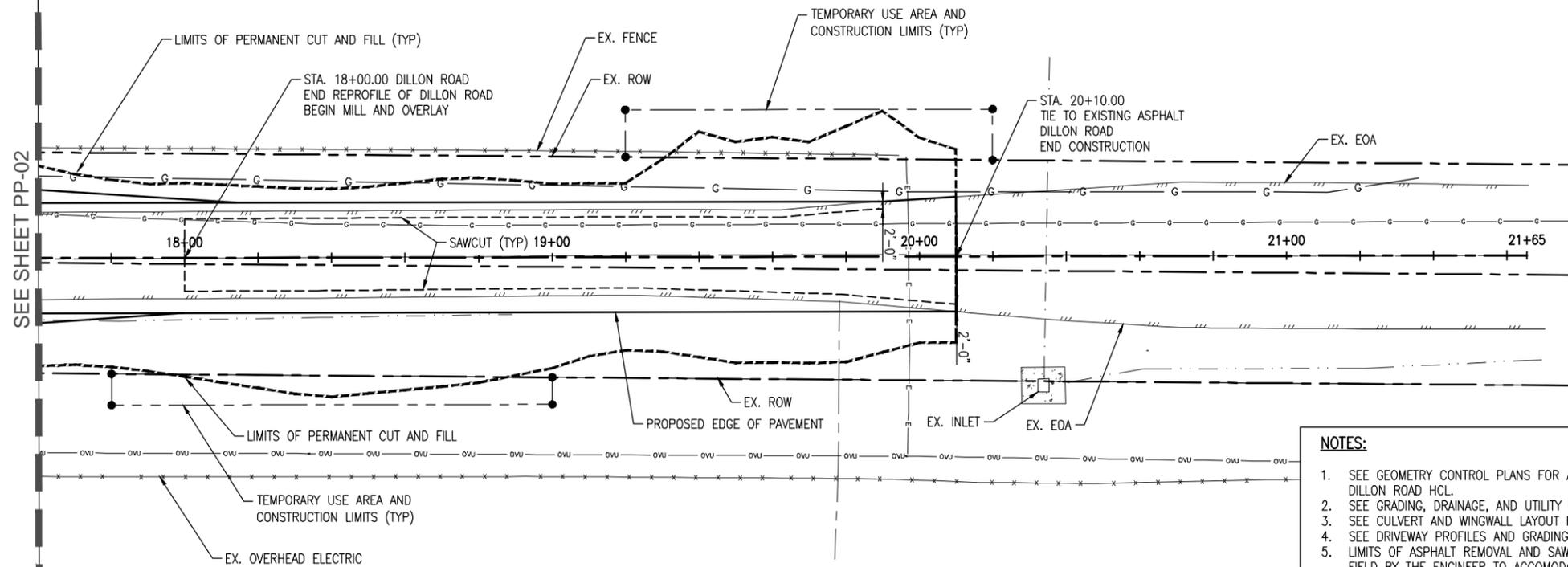
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| Void: |

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| DILLON ROAD OVER ROCK CREEK PLAN AND PROFILE DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers: | |
| Detailer: | CJB | Subset Sheets: | 5 |
| Sheet Subset: | PP-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 22 |



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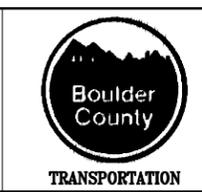


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (21-23) Plan and Profile (Dillon Road).dwg Jul 14, 2016 - 3:07pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
|-----------------|----------|-------|
| Date: | Comments | Init. |
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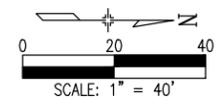
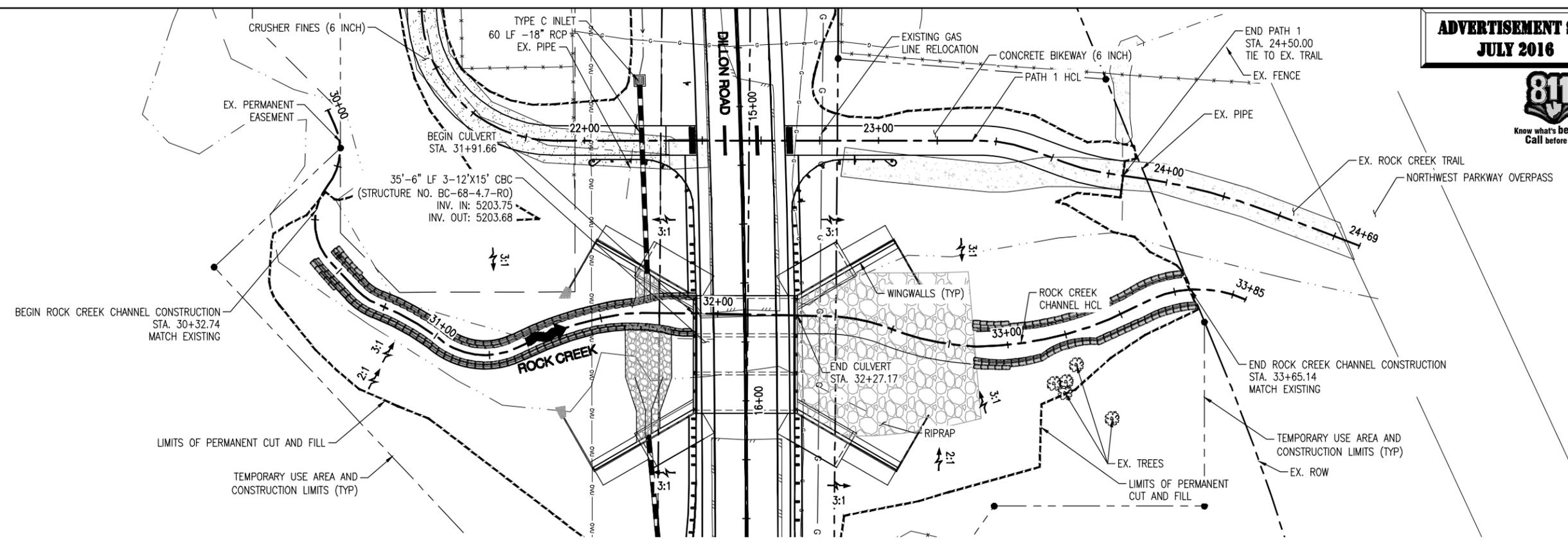


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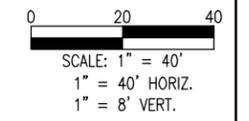
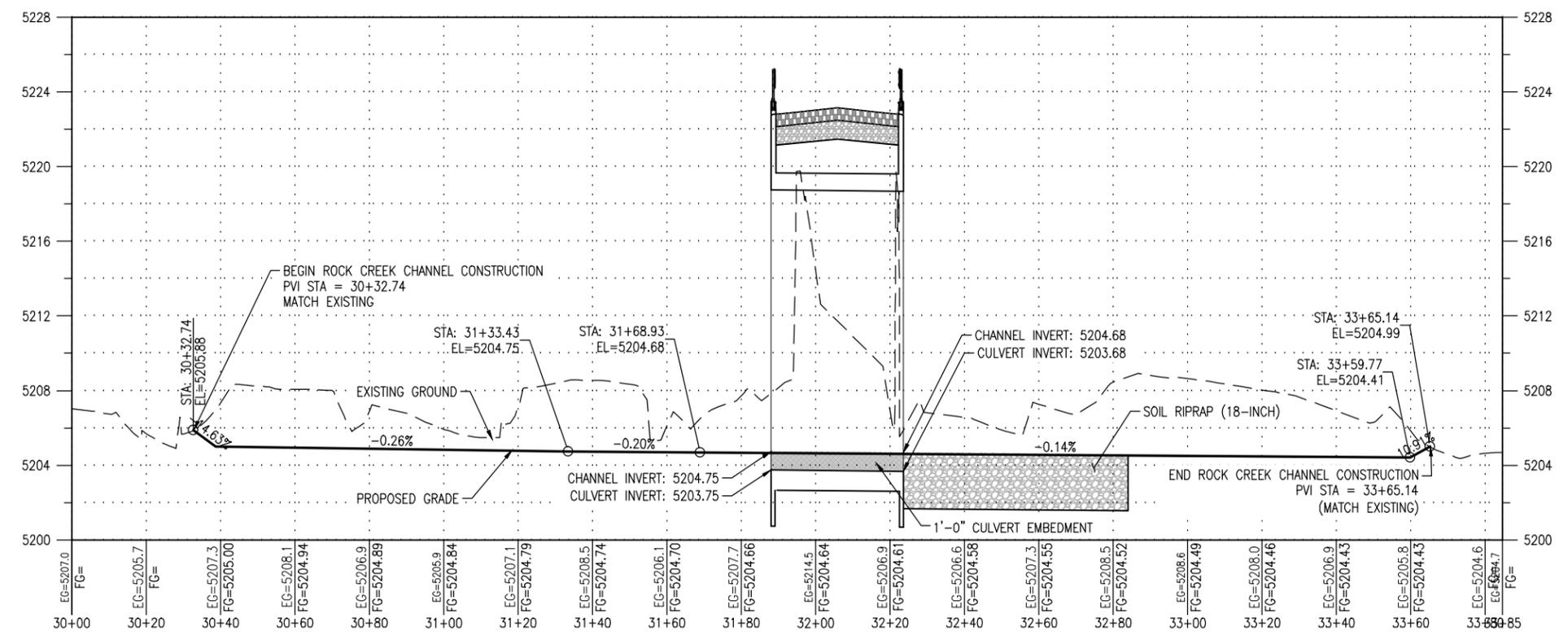
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| DILLON ROAD OVER ROCK CREEK PLAN AND PROFILE DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 5 |
| Sheet Subset: | PP-03 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 23 |



NOTES:
1. SEE GRADING, DRAINAGE, AND UTILITY PLAN FOR ADDITIONAL INFORMATION.



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (25) Plan and Profile (Channel).dwg Jul 14, 2016 - 3:08pm

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|-----------------------|------------------|-----------|--------|---|--|----------------|-------|---|---------------------|------------------|------------------|
| Print Date: | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com | COLORADO DEPARTMENT OF TRANSPORTATION Region 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK PLAN AND PROFILE ROCK CREEK CHANNEL | | Project No./Code | |
| File Name: | Date: | Comments: | Init.: | | | No Revisions: | | | ER C070-051/20014 | | |
| Horiz. Scale: | Unit Information | | | | | Revised: | Void: | Designer: CJB | Structure Numbers: | BC-68-4.7-RO | |
| Unit Leader Initials: | | | | | | | | Detailer: CJB | Sheet Subset: PP-05 | Subset Sheets: 5 | Sheet Number: 25 |

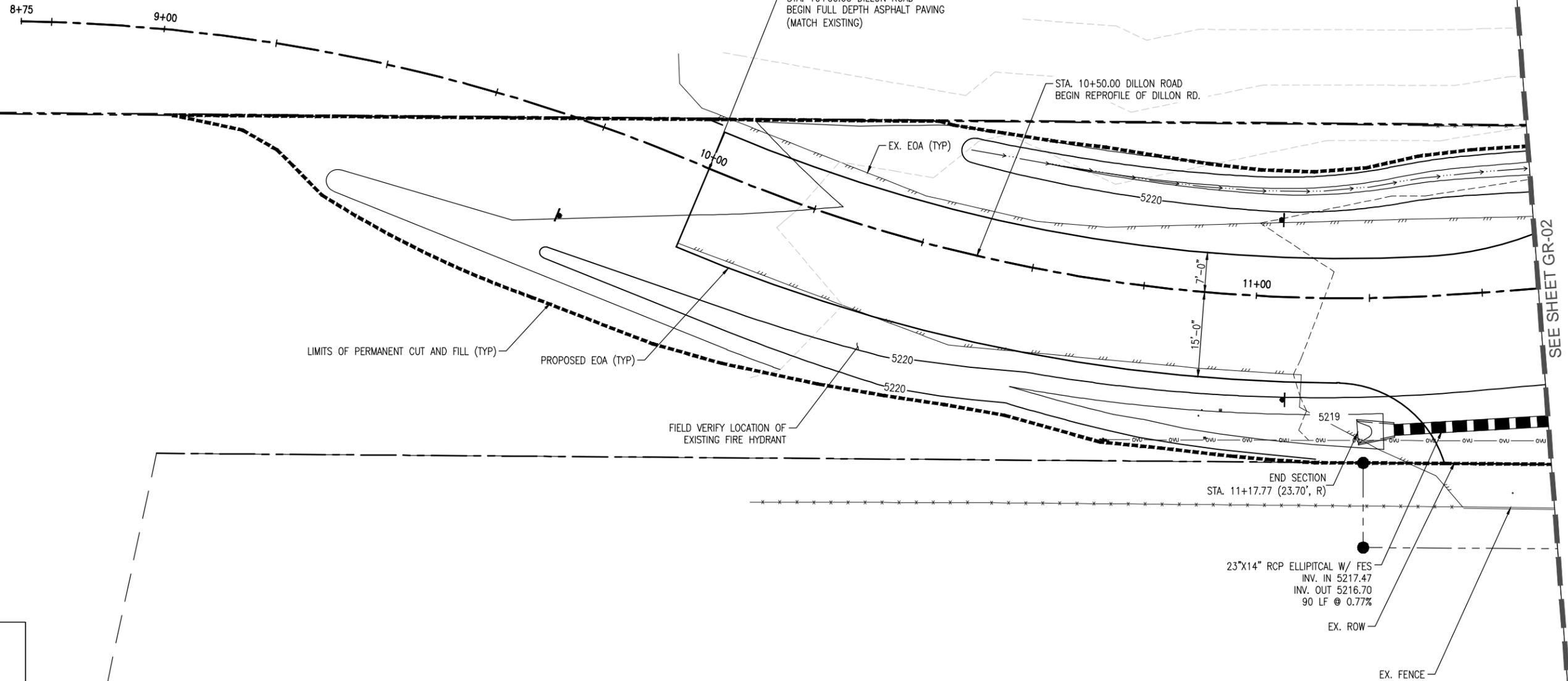
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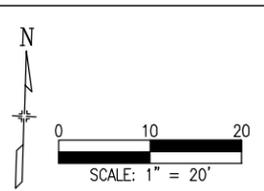
Know what's below.
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UTILITY NOTES

1. CONTRACTOR TO CONTACT OVERHEAD UTILITIES TO HAVE OVERHEAD UTILITIES FLAGGED PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE JOBSITE SIGNAGE FOR WORKERS TO BE AWARE OF OVERHEAD UTILITIES.
2. GAS LINES SHALL BE POTHOLED PRIOR TO CONSTRUCTION TO CONFIRM DEPTH AND CLEARANCE FROM PROPOSED CONSTRUCTION.
3. UTILITIES AT CROSS CULVERTS SHALL BE POTHOLED AND RELOCATED BY THE UTILITY IF NECESSARY.



SEE SHEET GR-02



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (26-29) Grading Plan.dwg Jul 14, 2016 - 3:09pm

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|-------------------|-----------------------|-----------|--------|---|----------|---|--------------------|-------------------|---|--------------|------------------|--|
| Print Date: | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2073 www.LorisandAssociates.com | | 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK GRADING, DRAINAGE AND UTILITY PLAN | | Project No./Code | |
| File Name: | Date: | Comments: | Init.: | | | | No Revisions: | ER C070-051/20014 | | | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | Revised: | Designer: CJB | Structure Numbers: | BC-68-4.7-RO | | Sheet Number | 26 | |
| Unit Information: | Unit Leader Initials: | | | | Void: | Detailer: CJB | Subset Sheets: 4 | | | | | |
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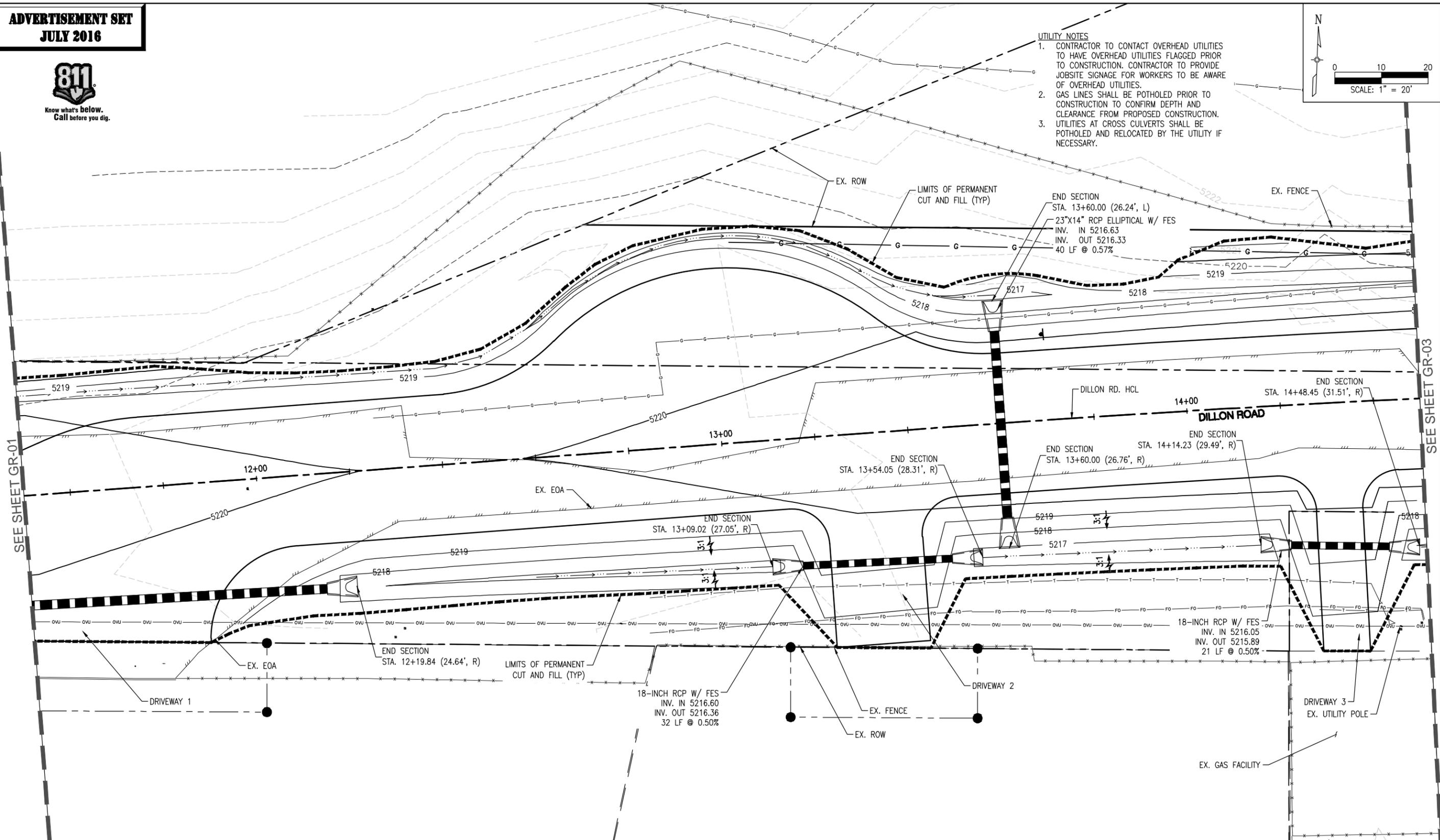
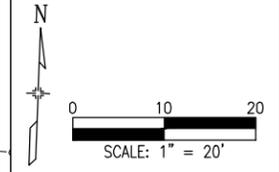
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UTILITY NOTES

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G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (26-29) Grading Plan.dwg Jul 14, 2016 - 3:09pm

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| Print Date: | |
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| Unit Information: | Unit Leader Initials |

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| Revised: |
| Void: |

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| DILLON ROAD OVER ROCK CREEK GRADING, DRAINAGE AND UTILITY PLAN | | | |
| Designer: | CJB | Structure Numbers: | |
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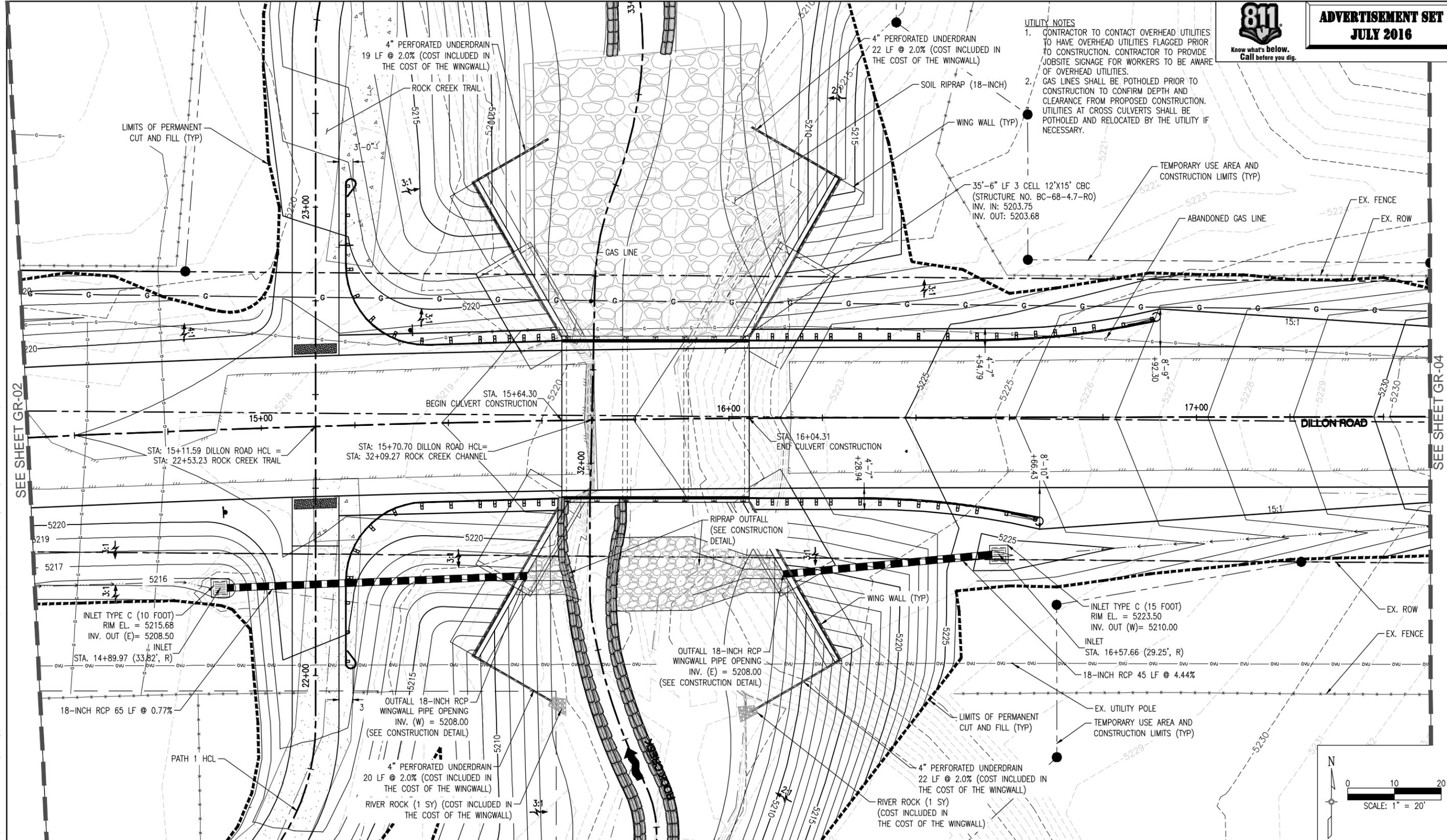
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| Project No./Code | ER C070-051/20014 |
| Sheet Number | 27 |



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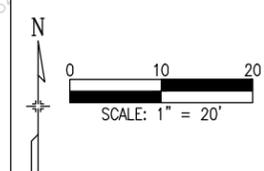
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- UTILITY NOTES**
- CONTRACTOR TO CONTACT OVERHEAD UTILITIES TO HAVE OVERHEAD UTILITIES FLAGGED PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE JOBSITE SIGNAGE FOR WORKERS TO BE AWARE OF OVERHEAD UTILITIES.
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SEE SHEET GR-02

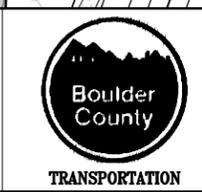
SEE SHEET GR-04



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| Print Date: | |
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| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

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| Date: | Comments | Init. |
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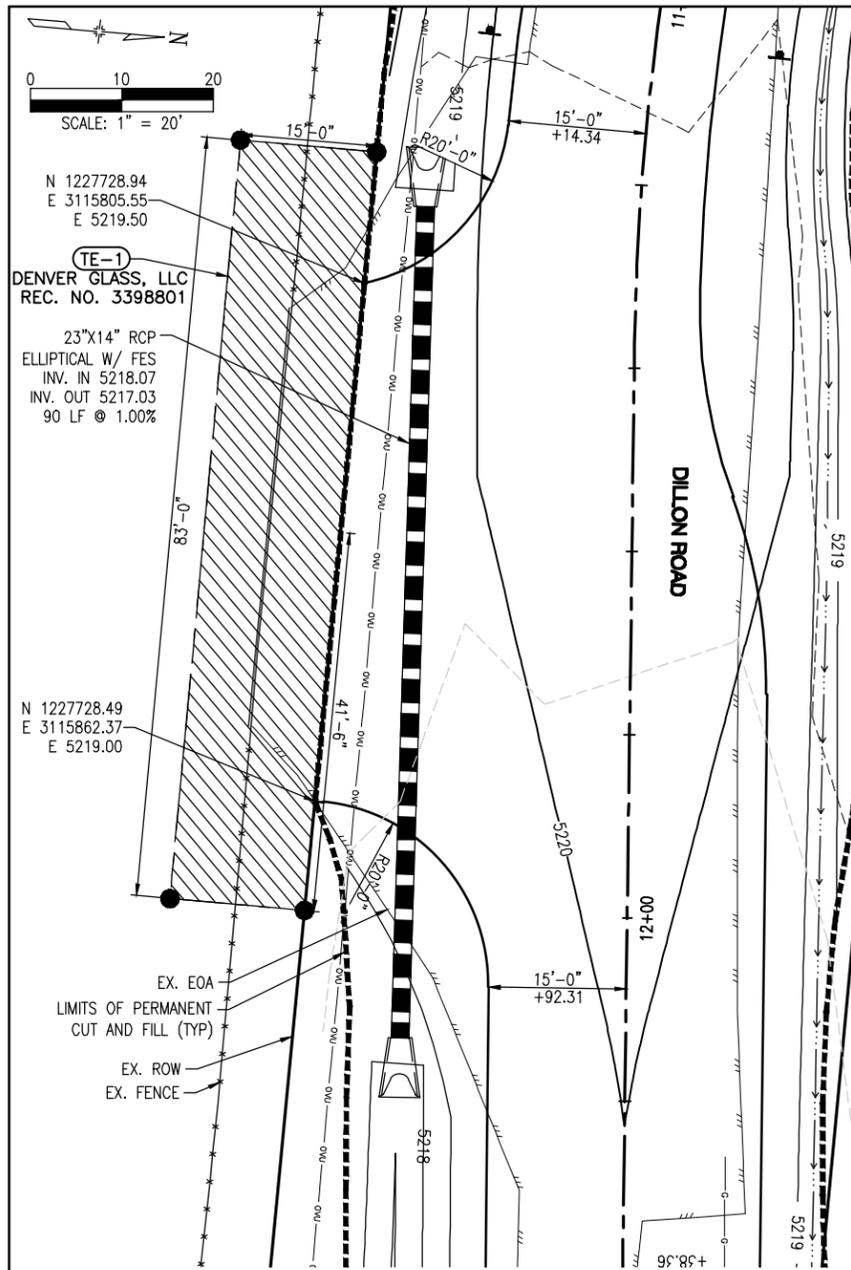
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Region 4 LHN

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|----------------|
| As Constructed |
| No Revisions: |
| Revised: |
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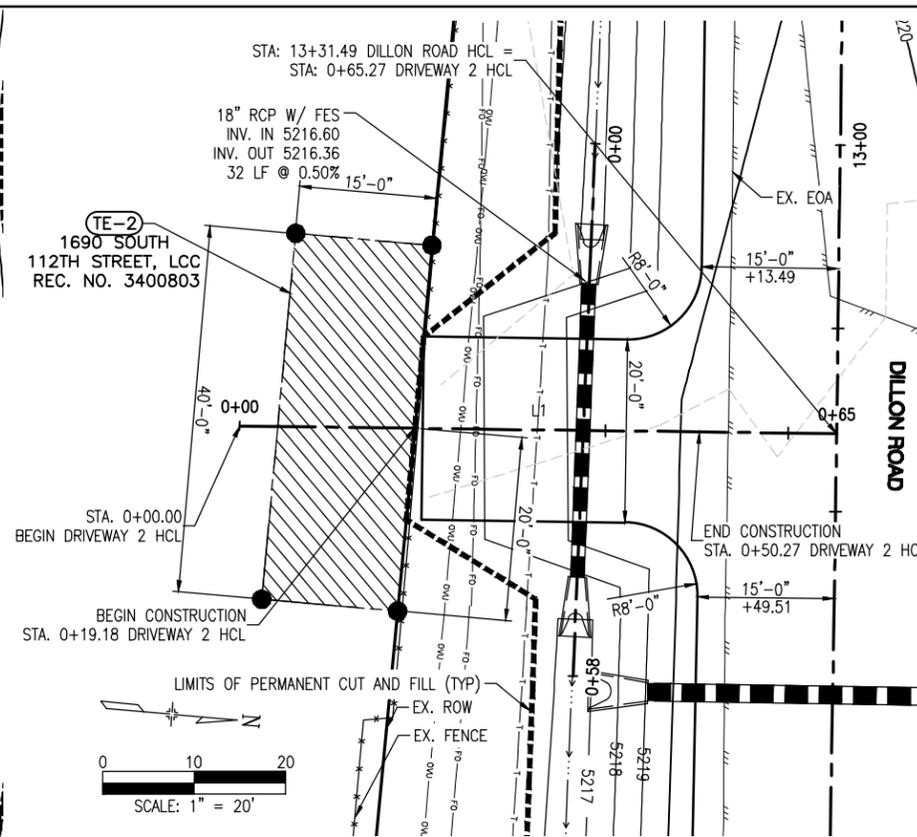
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| DILLON ROAD OVER ROCK CREEK GRADING, DRAINAGE AND UTILITY PLAN | | | |
| Designer: | CJB | Structure | |
| Detailer: | CJB | Numbers | |
| Sheet Subset: | GR-03 | Subset Sheets: | 4 |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 28 |

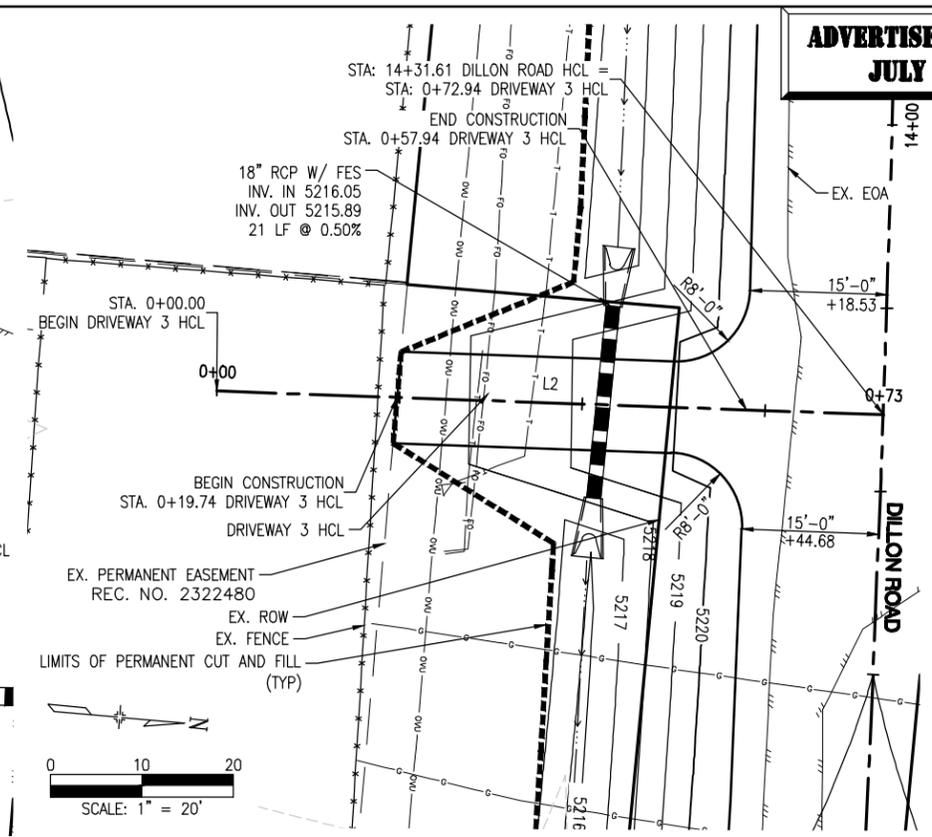
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DRIVEWAY 1 PLAN



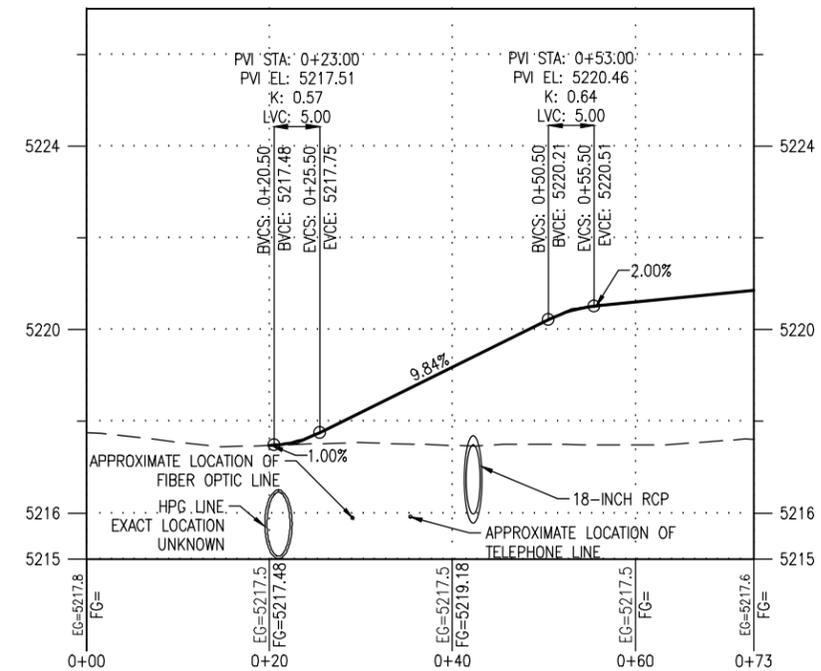
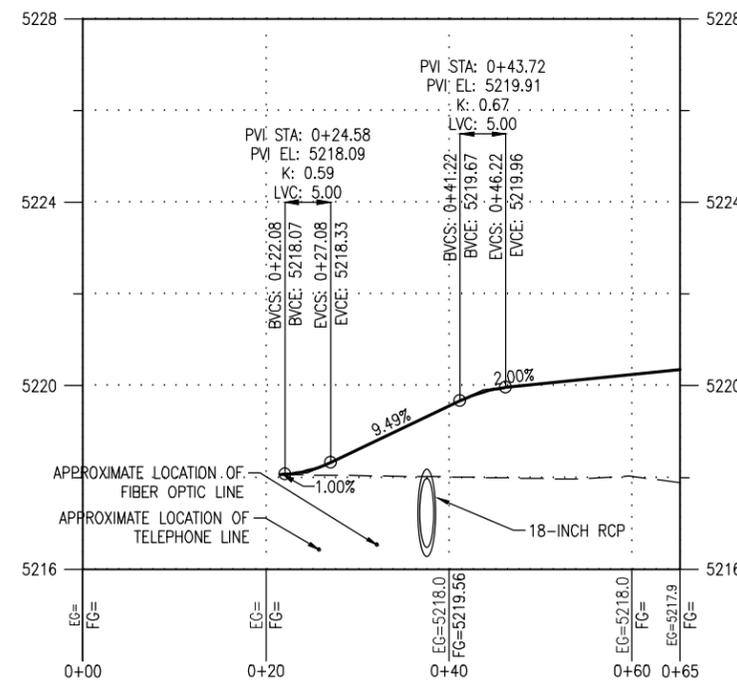
DRIVEWAY 2 PLAN AND PROFILE



DRIVEWAY 3 PLAN AND PROFILE

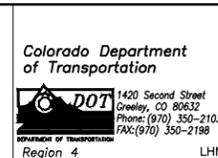
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|-------------------------------|---------------|----------------|---------------|--------|--------|----------------------|
| SEGMENT NUMBER | START STATION | START NORTHING | START EASTING | LENGTH | RADIUS | LINE/CHORD DIRECTION |
| L1 | 0+00.00 | 1227708.23 | 3116008.03 | 65.27 | | N04° 15' 12.11"W |

| DRIVEWAY 3 HCL ALIGNMENT DATA | | | | | | |
|-------------------------------|---------------|----------------|---------------|--------|--------|----------------------|
| SEGMENT NUMBER | START STATION | START NORTHING | START EASTING | LENGTH | RADIUS | LINE/CHORD DIRECTION |
| L2 | 0+00.00 | 1227706.96 | 3116106.88 | 72.94 | | N02° 58' 33.44"W |



Print Date:
File Name:
Horiz. Scale: Vert. Scale: As Noted
Unit Information Unit Leader Initials

| Sheet Revisions | | |
|-----------------|----------|-------|
| Date: | Comments | Init. |
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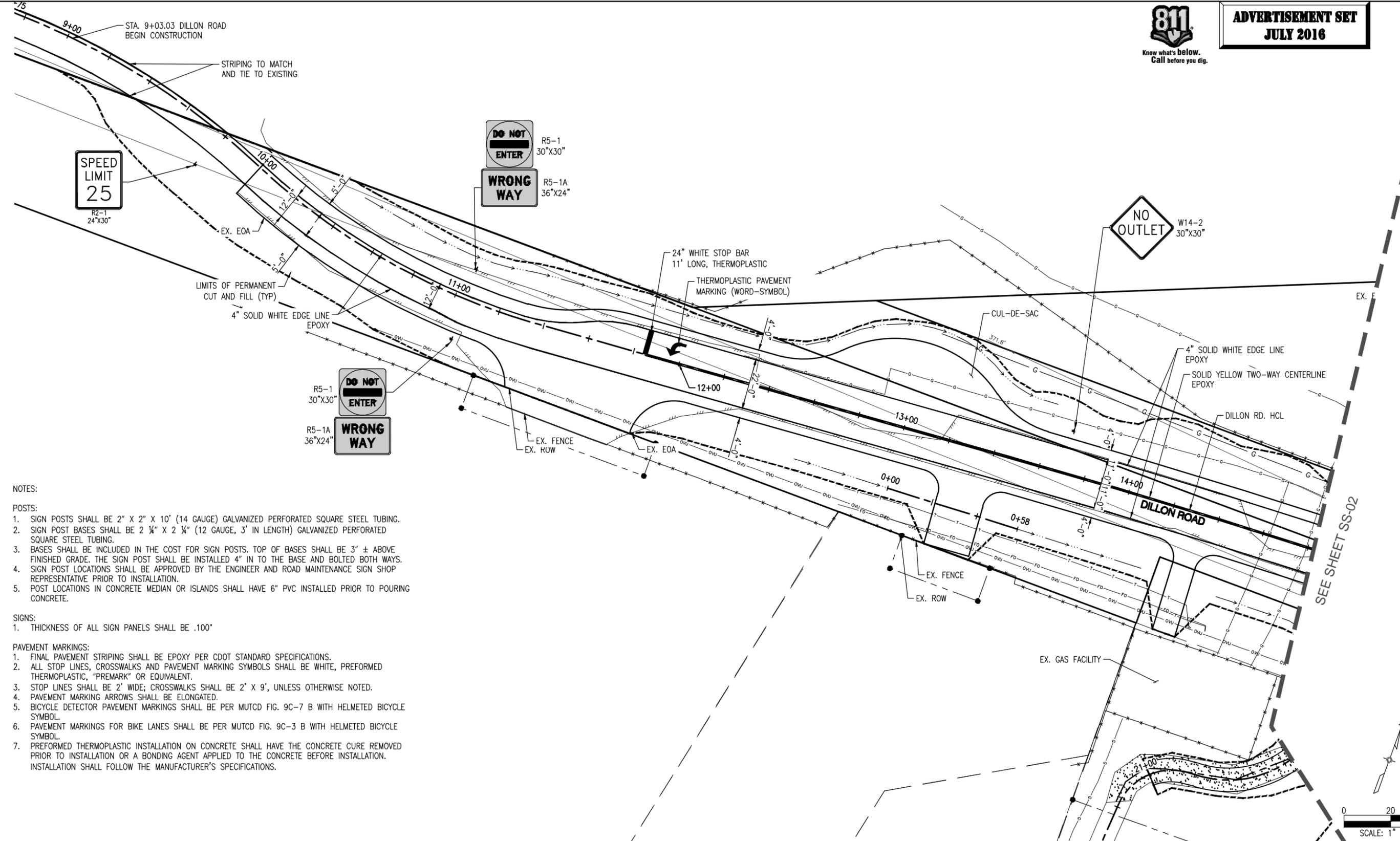
As Constructed
No Revisions:
Revised:
Void:

DILLON ROAD OVER ROCK CREEK
DRIVEWAY PROFILES AND GRADING
Designer: CJB
Detailer: CJB
Sheet Subset: DP-01
Structure Numbers
Subset Sheets:

Project No./Code
ER C070-051/20014
BC-68-4.7-RO
Sheet Number 30



**ADVERTISEMENT SET
JULY 2016**



- NOTES:**
- POSTS:**
- SIGN POSTS SHALL BE 2" X 2" X 10' (14 GAUGE) GALVANIZED PERFORATED SQUARE STEEL TUBING.
 - SIGN POST BASES SHALL BE 2 1/4" X 2 1/4" (12 GAUGE, 3' IN LENGTH) GALVANIZED PERFORATED SQUARE STEEL TUBING.
 - BASES SHALL BE INCLUDED IN THE COST FOR SIGN POSTS. TOP OF BASES SHALL BE 3" ± ABOVE FINISHED GRADE. THE SIGN POST SHALL BE INSTALLED 4" IN TO THE BASE AND BOLTED BOTH WAYS.
 - SIGN POST LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND ROAD MAINTENANCE SIGN SHOP REPRESENTATIVE PRIOR TO INSTALLATION.
 - POST LOCATIONS IN CONCRETE MEDIAN OR ISLANDS SHALL HAVE 6" PVC INSTALLED PRIOR TO POURING CONCRETE.
- SIGNS:**
- THICKNESS OF ALL SIGN PANELS SHALL BE .100"
- PAVEMENT MARKINGS:**
- FINAL PAVEMENT STRIPING SHALL BE EPOXY PER CDOT STANDARD SPECIFICATIONS.
 - ALL STOP LINES, CROSSWALKS AND PAVEMENT MARKING SYMBOLS SHALL BE WHITE, PREFORMED THERMOPLASTIC, "PREMARK" OR EQUIVALENT.
 - STOP LINES SHALL BE 2' WIDE; CROSSWALKS SHALL BE 2' X 9', UNLESS OTHERWISE NOTED.
 - PAVEMENT MARKING ARROWS SHALL BE ELONGATED.
 - BICYCLE DETECTOR PAVEMENT MARKINGS SHALL BE PER MUTCD FIG. 9C-7 B WITH HELMETED BICYCLE SYMBOL.
 - PAVEMENT MARKINGS FOR BIKE LANES SHALL BE PER MUTCD FIG. 9C-3 B WITH HELMETED BICYCLE SYMBOL.
 - PREFORMED THERMOPLASTIC INSTALLATION ON CONCRETE SHALL HAVE THE CONCRETE CURE REMOVED PRIOR TO INSTALLATION OR A BONDING AGENT APPLIED TO THE CONCRETE BEFORE INSTALLATION. INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS.

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (S1-32) Signing and Striping Plan.dwg Jul 14, 2016 - 3:10pm

| | | | | | | | | | | |
|------------------|-----------------------|-----------|--------|---|---------------------------|---|-----------------|--|--------------------|-------------------|
| Print Date: | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com | TRANSPORTATION | 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN | As Constructed | DILLON ROAD OVER ROCK CREEK SIGNING AND STRIPING PLAN | | Project No./Code |
| File Name: | Date: | Comments: | Init.: | | | | No Revisions: | Designer: CJB | Structure Numbers: | ER C070-051/20014 |
| Horiz. Scale: | Vert. Scale: As Noted | | | Revised: | Detailer: CJB | | BC-68-4.7-RO | | | |
| Unit Information | Unit Leader Initials | | | Void: | Sheet Subset: SS-01 | Subset Sheets: 2 | Sheet Number 31 | | | |



NOTES:

POSTS:

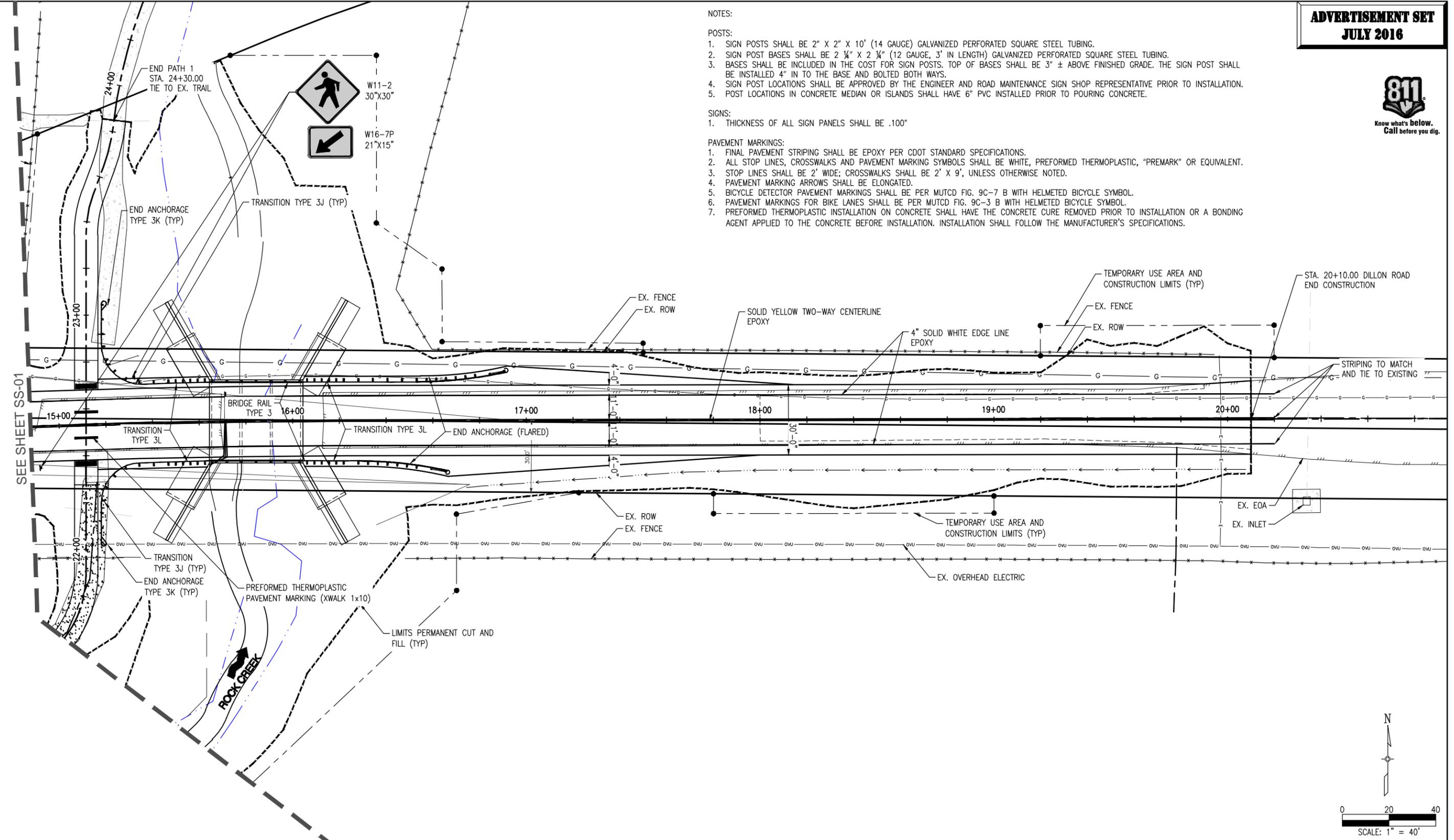
1. SIGN POSTS SHALL BE 2" X 2" X 10' (14 GAUGE) GALVANIZED PERFORATED SQUARE STEEL TUBING.
2. SIGN POST BASES SHALL BE 2 1/4" X 2 1/4" (12 GAUGE, 3' IN LENGTH) GALVANIZED PERFORATED SQUARE STEEL TUBING.
3. BASES SHALL BE INCLUDED IN THE COST FOR SIGN POSTS. TOP OF BASES SHALL BE 3" ± ABOVE FINISHED GRADE. THE SIGN POST SHALL BE INSTALLED 4" IN TO THE BASE AND BOLTED BOTH WAYS.
4. SIGN POST LOCATIONS SHALL BE APPROVED BY THE ENGINEER AND ROAD MAINTENANCE SIGN SHOP REPRESENTATIVE PRIOR TO INSTALLATION.
5. POST LOCATIONS IN CONCRETE MEDIAN OR ISLANDS SHALL HAVE 6" PVC INSTALLED PRIOR TO POURING CONCRETE.

SIGNS:

1. THICKNESS OF ALL SIGN PANELS SHALL BE .100"

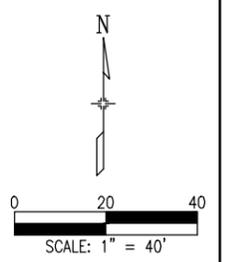
PAVEMENT MARKINGS:

1. FINAL PAVEMENT STRIPING SHALL BE EPOXY PER CDOT STANDARD SPECIFICATIONS.
2. ALL STOP LINES, CROSSWALKS AND PAVEMENT MARKING SYMBOLS SHALL BE WHITE, PREFORMED THERMOPLASTIC, "PREMARK" OR EQUIVALENT.
3. STOP LINES SHALL BE 2' WIDE; CROSSWALKS SHALL BE 2' X 9', UNLESS OTHERWISE NOTED.
4. PAVEMENT MARKING ARROWS SHALL BE ELONGATED.
5. BICYCLE DETECTOR PAVEMENT MARKINGS SHALL BE PER MUTCD FIG. 9C-7 B WITH HELMETED BICYCLE SYMBOL.
6. PAVEMENT MARKINGS FOR BIKE LANES SHALL BE PER MUTCD FIG. 9C-3 B WITH HELMETED BICYCLE SYMBOL.
7. PREFORMED THERMOPLASTIC INSTALLATION ON CONCRETE SHALL HAVE THE CONCRETE CURE REMOVED PRIOR TO INSTALLATION OR A BONDING AGENT APPLIED TO THE CONCRETE BEFORE INSTALLATION. INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS.



SEE SHEET SS-01

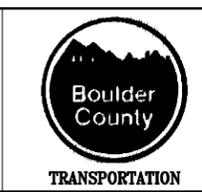
G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (S1-32) Signing and Striping Plan.dwg Jul 14, 2016 - 3:11pm



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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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Colorado Department of Transportation
1420 Second Street
Creely, CO 80632
Phone: (970) 350-2103
FAX: (970) 350-2198
Region 4 LHN

| |
|----------------|
| As Constructed |
| No Revisions: |
| Revised: |
| Void: |

| | | | |
|--|-------|-------------------|---|
| DILLON ROAD OVER ROCK CREEK SIGNING AND STRIPING PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 2 |
| Sheet Subset: | SS-02 | | |

| | |
|------------------|-------------------|
| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 32 |



Know what's below.
Call before you dig.

GENERAL NOTES:

- A. EXCEPT AS SHOWN ON THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH M-206-1. ALL STRUCTURE BACKFILL SHALL BE CLASS 1.
- B. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.
- C. A STRUCTURAL CONCRETE COATING FINISH IS REQUIRED ON THE EXPOSED CONCRETE SURFACES AS SHOWN ON THE PLANS. SEE COLOR TABLE, THIS SHEET FOR COLORS AT VARIOUS LOCATIONS. TEST PANELS SHALL BE SUBMITTED BY CONTRACTOR FOR APPROVAL PRIOR TO CONSTRUCTION. THE FINAL FINISH FOR ALL EXPOSED CONCRETE SURFACES NOT RECEIVING A STRUCTURAL CONCRETE COATING SHALL BE A CLASS 1 FINISH.
- D. ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS.
- E. THE FOLLOWING STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 (ASTM A-588): BRIDGE RAIL TYPE 3.
- F. ALL BOLTS SHALL BE 3/8" DIAMETER, HIGH STRENGTH, UNLESS NOTED OTHERWISE.
- G. GRADE 60 REINFORCING STEEL IS REQUIRED. ALL REINFORCING SHALL NOT BE EPOXY COATED UNLESS OTHERWISE NOTED WITH AN (E).
- H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
- I. 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.
- J. 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.
- K. THE WATER-SOLUBLE SULFATE TESTING OF THE ON-SITE OVERBURDEN SUBSOILS INDICATE SULFATE CONTENTS RANGING FROM 0.01 PERCENT TO 0.26 PERCENT BY WEIGHT. ACCORDINGLY, ALL CONCRETE SHALL MEET CLASS 2 SULFATE SEVERITY EXPOSURE REQUIREMENTS.

DESIGN DATA:

- A. DESIGN SHALL BE IN ACCORDANCE WITH AASHTO, LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION.
- B. DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN.
LIVE LOAD: HL-93 (DESIGN TRUCK OR TANDEM, AND DESIGN LANE LOAD)
DEAD LOAD: ASSUMES 36 POUNDS PER SQUARE FOOT FOR BRIDGE DECK OVERLAY
- C. REINFORCED CONCRETE:
CLASS D CONCRETE: $f'_c = 4,500$ PSI
REINFORCING STEEL: $f_y = 60,000$ PSI
- D. 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.
- E. 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'-5" | 3'-1" | 3'-11" | 4'-10" |
- F. THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20% FOR 3 BAR BUNDLES AND 33% FOR 4 BAR BUNDLES.
- G. THE ABOVE SPLICE LENGTHS MAY BE REDUCED BY 20% WHEN 3" OF CLEAR COVER EXISTS AND BAR SPACING IS 6" OR GREATER ON CENTER.

DESIGN DATA - SOIL PARAMETERS:

- A. CONCRETE BOX CULVERT
MOIST UNIT WT, = 132 PCF
LATERAL EARTH PRESSURE ON SIDEWALLS "AT-REST" PRESSURE, EFD = 59 PCF
- B. WINGWALLS
1. STATIC LOADING
MOIST UNIT WT: 132 PCF
LATERAL EARTH PRESSURE "ACTIVE" EARTH PRESSURE: EFD = 38 PCF
FACTORED FRICTIONAL COEFFICIENT AT BASE: 0.36
FACTORED BEARING CAPACITY: 5040 PSF

SEISMIC DESIGN CRITERIA:

- EARTHQUAKE DESIGN METHOD: FORCE BASED
LATITUDE = 39.9579
LONGITUDE = -105.0853
- C. AASHTO SPECTRUM FOR 7% PE IN 75 YEARS (1000 YR RETURN PERIOD)
PERIOD S_a (sec) (g)
0.0 0.060 PGA - SITE CLASS B
0.2 0.125 S_s - SITE CLASS B
1.0 0.034 S_1 - SITE CLASS B

- D. SPECTRAL RESPONSE ACCELERATIONS:
 $A_s = F_{pga} \cdot PGA$, $S_{ds} = F_a \cdot S_s$, AND $S_{d1} = F_v \cdot S_1$
 $F_{pga} = 1.6$, $F_a = 1.6$, $F_v = 2.4$
PERIOD S_a (sec) (g)
0.0 0.096 A_s - SITE CLASS D
0.2 0.200 S_{ds} - SITE CLASS D
1.0 0.082 S_{d1} - SITE CLASS D
- E. OPERATIONAL CLASS: ESSENTIAL. SEISMIC ZONE = 1

FOUNDATION NOTES:

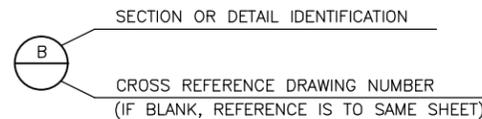
- A. GEOTECHNICAL REPORT: STRUCTURAL FOUNDATION DESIGN FOR THIS PROJECT IS BASED ON THE RECOMMENDATIONS OF A GEOTECHNICAL INVESTIGATION BY GROUND ENGINEERING CONSULTANTS, INC., DATED JULY 22, 2015 (JOB # 13-3068). THE CONTRACTOR SHALL BE FAMILIARIZED WITH THE REQUIREMENTS OF THIS REPORT.
- B. CONCRETE BOX CULVERT AND RETAINING WALL FOOTINGS SHALL BEAR ON 1'-0" MINIMUM LAYER OF AGGREGATE BASE COURSE (CLASS 5) THAT EXTENDS TO WEATHERED CLAY STONE OR CLAY STONE/SILT STONE BEDROCK.

CULVERT DESCRIPTION

3 CELL 12'x15' CAST-IN-PLACE CONCRETE BOX CULVERTS (STRUCTURE NO. BC-68-4.7-RO)

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|-----------|---|
| ST-01 | GENERAL NOTES & SUMMARY OF QUANTITIES |
| ST-02 | CULVERT AND WINGWALL GENERAL LAYOUT |
| ST-03 | ENGINEERING GEOLOGY |
| ST-04-05 | HYDRAULIC DATA |
| ST-06-08 | CULVERT AND WINGWALL (SECTIONS AND DETAILS) |



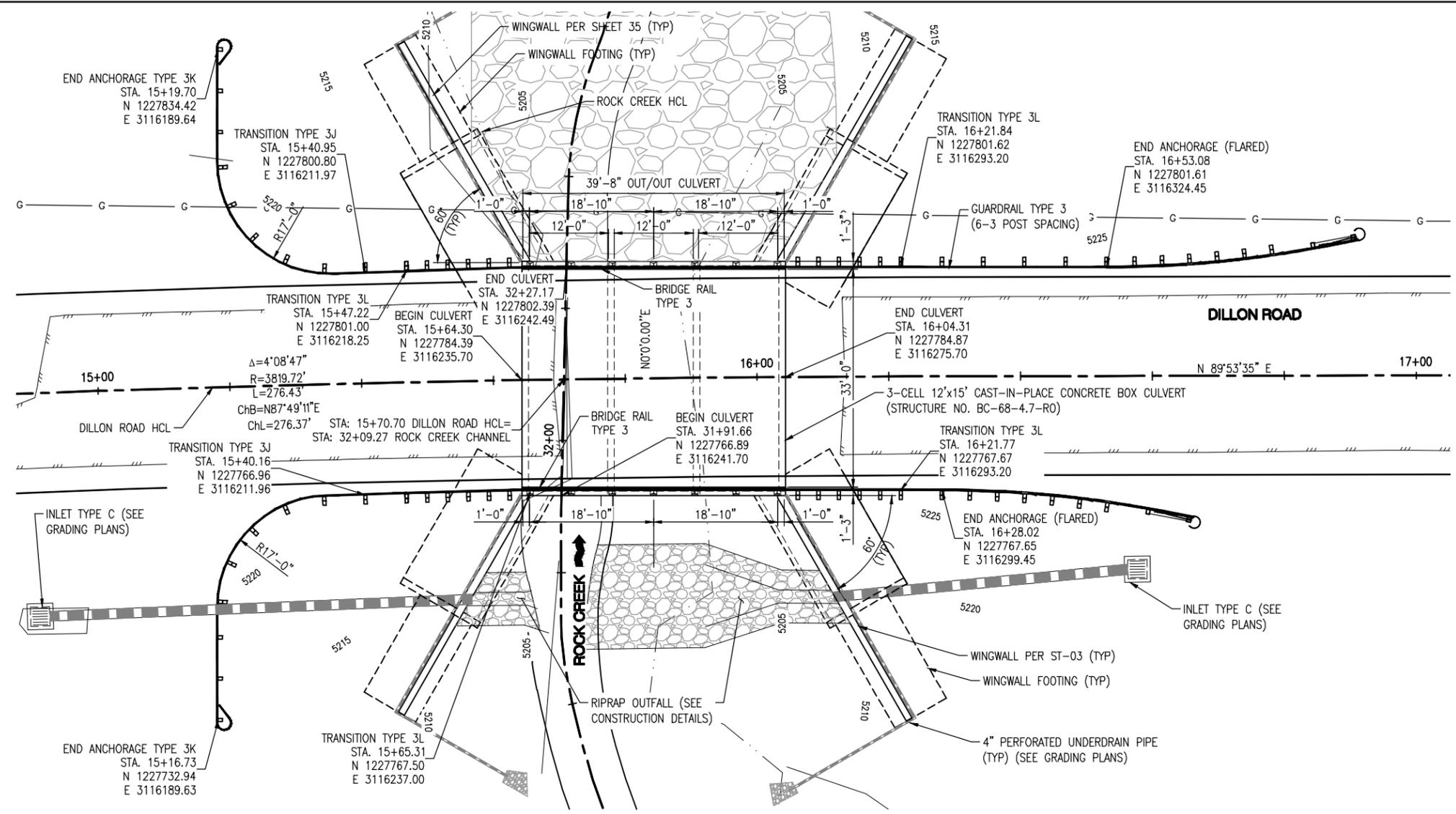
| MUCK EXCAVATION | | SUMMARY OF QUANTITIES | | | |
|-------------------|----------------------------------|-----------------------|-----------------|--|--------|
| CONTRACT ITEM NO. | CONTRACT ITEM DESCRIPTION | UNIT | CULVERT & WALLS | | TOTAL |
| 206 | STRUCTURE EXCAVATION | CY | 3,319 | | 3,319 |
| 203 | MUCK EXCAVATION | CY | 139 | | 139 |
| 206 | STRUCTURE BACKFILL (CLASS 1) | CY | 1,918 | | 1,918 |
| 304 | CRUSHED ROCK (1.5 INCH) | CY | 35 | | 35 |
| 304 | AGGREGATE BASE COURSE (CLASS 5) | CY | 641 | | 641 |
| 601 | CONCRETE CLASS D (WALLS) | CY | 173 | | 173 |
| 601 | CONCRETE CLASS D (BOX CULVERT) | CY | 214 | | 214 |
| 602 | REINFORCING STEEL | LB | 61,804 | | 61,804 |
| 602 | REINFORCING STEEL (EPOXY COATED) | LB | 3,654 | | 3,654 |

BRIDGE & ROADWAY ABBREVIATIONS

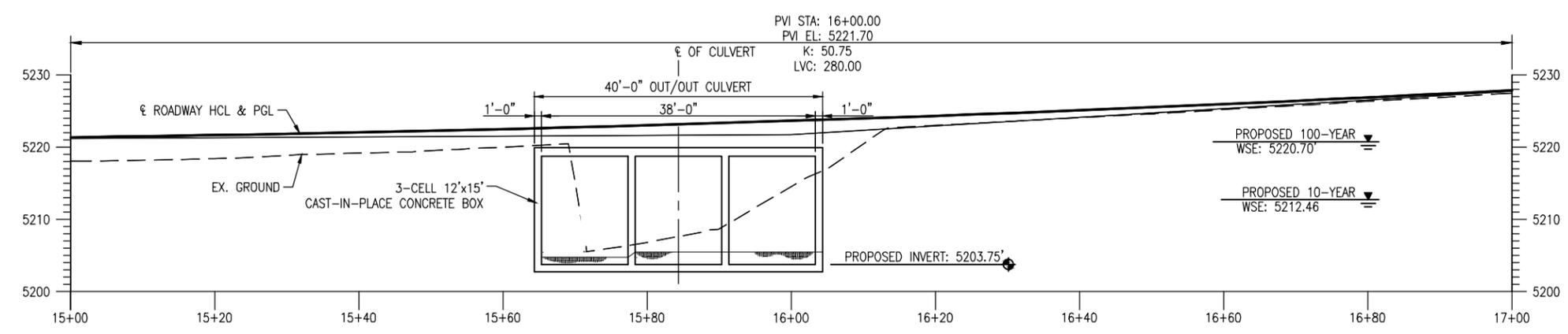
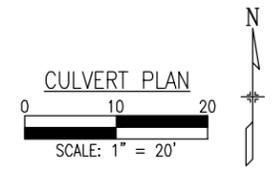
| | | |
|-------------------------------|--------------------------------|------------------------|
| CBC = CONCRETE BOX CULVERT | MAX = MAXIMUM | T&B = TOP AND BOTTOM |
| CLR = CLEAR | MIN = MINIMUM | T.C. = TOP OF CONCRETE |
| CONT = CONTINUOUS | N.T.S. = NOT TO SCALE | T.F. = TOP OF FOOTING |
| (E) = EPOXY COATED | O.C. = ON CENTER | TYP = TYPICAL |
| EA = EACH | PGL = PROFILE GRADE LINE | VAR = VARIES |
| ELEV = ELEVATION | RCP = REINFORCED CONCRETE PIPE | WNGWLL = WINGWALL |
| EX = EXISTING | STA = STATION | |
| HCL = HORIZONTAL CONTROL LINE | | |
| HDWLL = HEADWALL | | |
| IVN = INVERT | | |

C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (33) Culvert General Notes.dwg Jul 14, 2016 - 3:11pm

| | | | | | | | | | | | |
|------------------|-----------------------|-----------|-------|--|----------|--|---------------------|--------------|--|-------------------|------------------|
| Print Date: | Sheet Revisions | | | <p>100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com</p> | | <p>1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK CULVERT AND WINGWALL GENERAL NOTES | | Project No./Code |
| File Name: | Date: | Comments: | Init. | | | | No Revisions: | | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | Revised: | Designer: CB | Structure Numbers: | BC-68-4.7-RO | | | |
| Unit Information | Unit Leader Initials | | | | Void: | Detailer: LX | Subset Sheets: | 8 | | | |
| | | | | | | | Sheet Subset: ST-01 | 8 | | Sheet Number | 33 |



NOTES:
1. SEE GRADING, DRAINAGE, AND UTILITY PLAN FOR ADDITIONAL INFORMATION.



CULVERT SECTION @ UPSTREAM INVERT

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (3) Culvert General Layout.dwg Jul 14, 2016 - 3:11pm

| | | | | | | | | | | | |
|------------------|-----------------------|-----------|--------|---|--|--|----------------|---------------------|---|------------------------|------------------|
| Print Date: | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation</p> <p>1420 Second Street Creely, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK CULVERT AND WINGWALL GENERAL LAYOUT | | Project No./Code |
| File Name: | Date: | Comments: | Init.: | | | | No Revisions: | | | Designer: CJB | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | Revised: | Detailer: LX | | Structure Numbers | |
| Unit Information | Unit Leader Initials | | | | | | Void: | Sheet Subset: ST-02 | | Subset Sheets: 8 | |
| | | | | | | | | | | Sheet Number 34 | |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (5) Engineering Geology.dwg Jul 14, 2016 - 3:12pm

LEGEND:

-  Asphalt
-  Fill: Consisted of slightly sandy to very sandy clay/silt with fine to medium grained sand, moderate to high plasticity, medium stiff to very stiff, moist, brown.
-  Clay: Slightly sandy to sandy with fine to medium grained sand, moderate to high plasticity, moist, soft to medium stiff, brown.
-  Weathered Claystone: Slightly sandy with fine grained sand, high plasticity, moist, firm to medium hard, gray, slight iron staining, thin lignite stringers.
-  Claystone/Siltstone Bedrock: Slightly sandy with fine grained sand, high plasticity, moist, medium hard to very hard, gray to blue-gray, slight iron staining, thin lignite stringers.

 Drive sample, 2-inch I.D. California liner sample

 Large disturbed sample.

 23/12 Drive sample blow count, indicates 23 blows of a 140-pound hammer falling 30 inches were required to drive the sampler 12 inches.

 Caved Hole

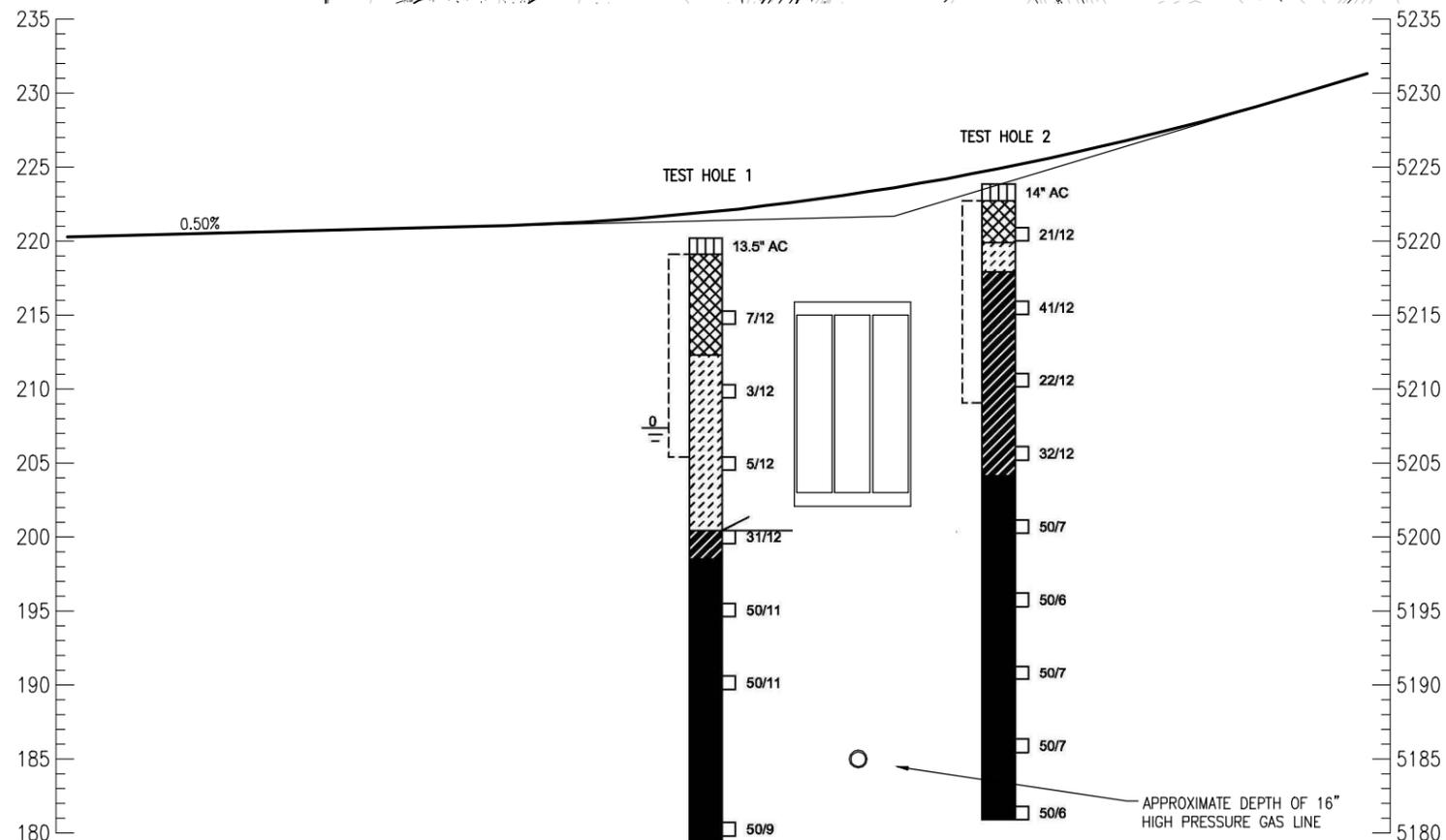
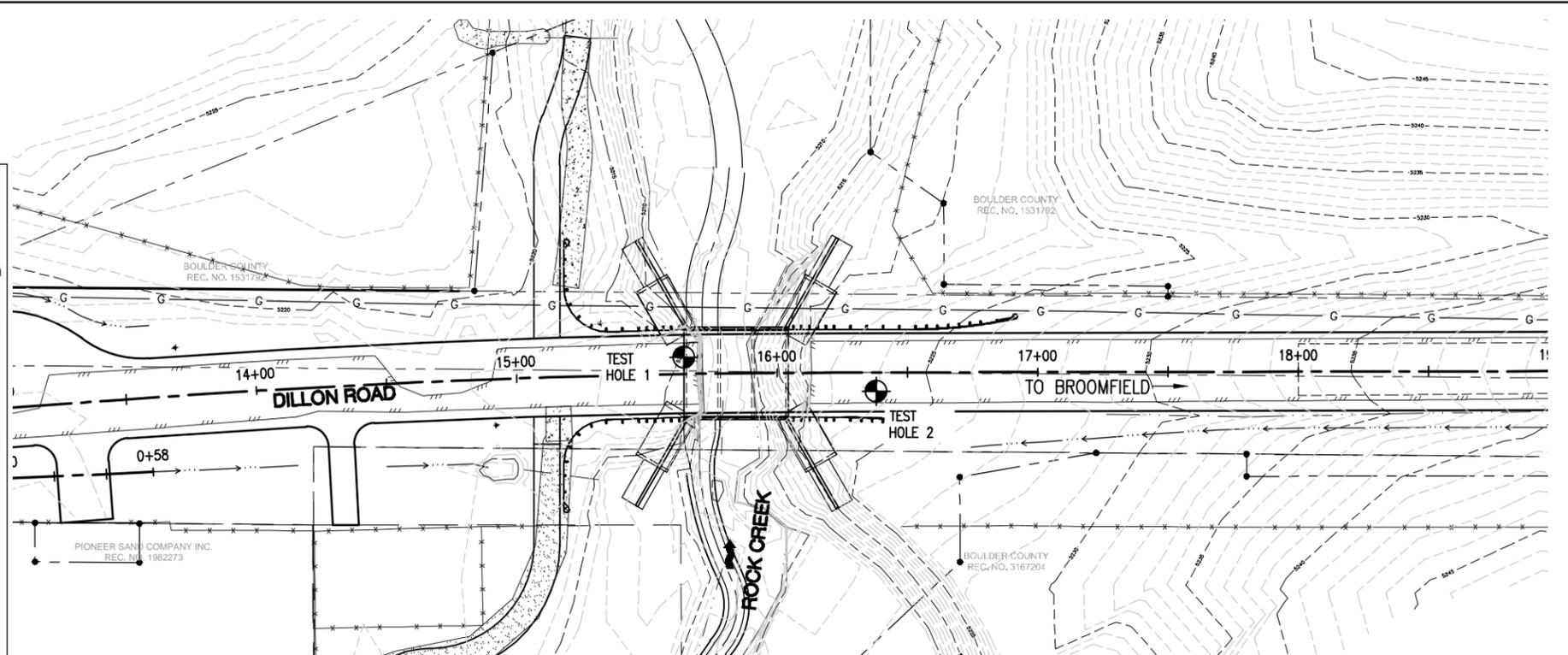
 0 Depth to water level and number of days after drilling that measurement was taken.

NOTES:

- 1) Test holes were drilled on 10/28/2013 with 4-inch diameter continuous flight augers.
- 2) Locations of the test holes were measured approximately by pacing from features shown on the site plan provided.
- 3) Elevations of the test holes were provided by the client and the logs of the test holes are hung to elevation.
- 4) The test hole locations and elevations should be considered accurate only to the degree implied by the method used.
- 5) The lines between materials shown on the test hole logs represent the approximate boundaries between material types and the transitions may be gradual.
- 6) Groundwater level reading shown on the log was made at the time and under the conditions indicated. Fluctuations in the water level may occur with time.
- 7) The material descriptions on this legend are for general classification purposes only. See the full text of this report for descriptions of the site materials and related recommendations.

NOTES:

1. A GEOTECHNICAL INVESTIGATION WAS PERFORMED BY GROUND ENGINEERING CONSULTANTS, INC. DATED JULY 22, 2015; PROJECT NO 13-3068, TITLED "SUBSURFACE EXPLORATION PROGRAM AND GEOTECHNICAL REPORT DILLON ROAD BRIDGE REPAIR TASK ORDER 3 BOULDER COUNTY, COLORADO".
2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE REQUIREMENTS OF THIS REPORT.
3. ELEVATIONS AND BOREHOLE LOCATIONS ARE APPROXIMATE.
4. ALL INFORMATION ON THIS SHEET WAS TAKEN DIRECTLY FROM THE GEOTECHNICAL REPORT.

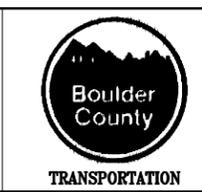


**ADVERTISEMENT SET
JULY 2016**

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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www.LorisandAssociates.com

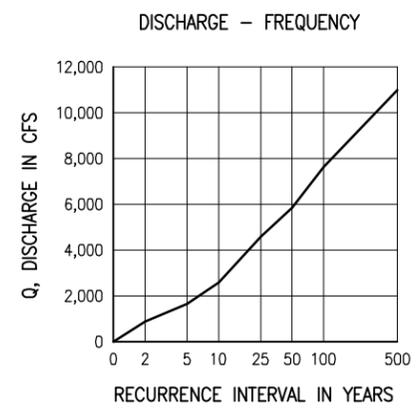


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Phone: (970) 350-2103
Fax: (970) 350-2198
Region 4 LHN

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| As Constructed |
| No Revisions: |
| Revised: |
| Void: |

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|--|-------|-------------------|-------|
| DILLON ROAD OVER ROCK CREEK ENGINEERING GEOLOGY | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Sheet Subset: | ST-03 |
| Sheet Subset: | ST-03 | Subset Sheets: | 8 |

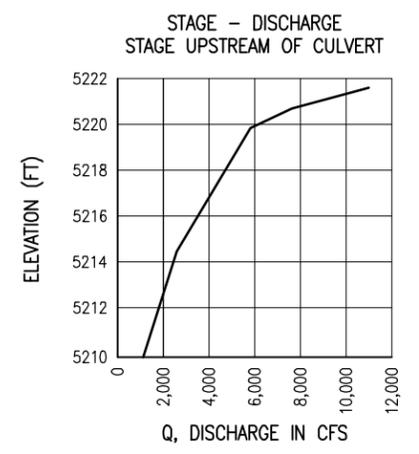
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|------------------|-------------------|
| Project No./Code | ER C070-051/20014 |
| BC-68-4.7-RO | |
| Sheet Number | 35 |



HYDRAULIC DATA

DRAINAGE BASIN: ROCK CREEK BASIN
 STATION: 32+05.81
 REQUIRED: 3 CELL 12FT X 15FT CBC WITH WINGWALLS AT INLET AND OUTLET

D.A. = 16.1 SQ. MI.
 Q₁₀ = 2480.0 CFS
 DHW = 5214.46 FT
 AHW = 5218.75 FT
 Q₁₀₀ = 7,170 CFS
 HW₁₀₀ = 5220.70 FT (OVERTOPPING)



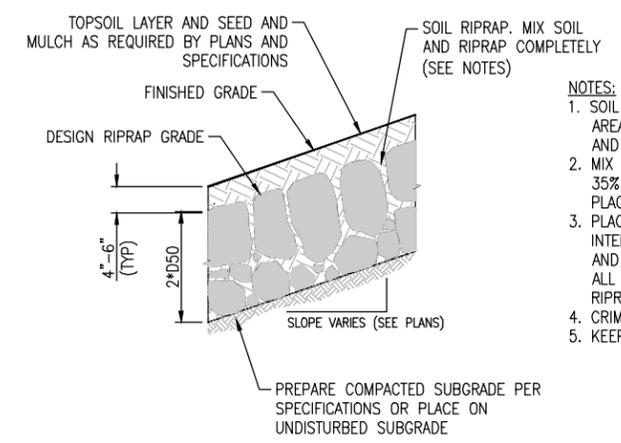
COMPARISON OF HYDRAULICS:

| | 10-YEAR | 100-YEAR |
|------------------------------|------------|------------|
| EXISTING CHANNEL VELOCITY | 14.96 FPS | 12.02 FPS |
| EXISTING CHANNEL OVERTOPPING | 2.02 FT | 3.51 FT |
| EXISTING CHANNEL WSEL | 5219.54 FT | 5221.03 FT |
| PROPOSED CHANNEL VELOCITY | 8.80 FPS | 13.90 FPS |
| PROPOSED CHANNEL OVERTOPPING | N/A | 0.72 FT* |
| PROPOSED CHANNEL WSEL | 5214.46 FT | 5220.70 FT |

* OVERTOPPING OCCURS AT STA. 12+40.00 AT LOW POINT OF DILLON ROAD. NO OVERTOPPING OCCURS AT CULVERT.

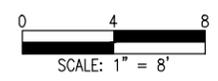
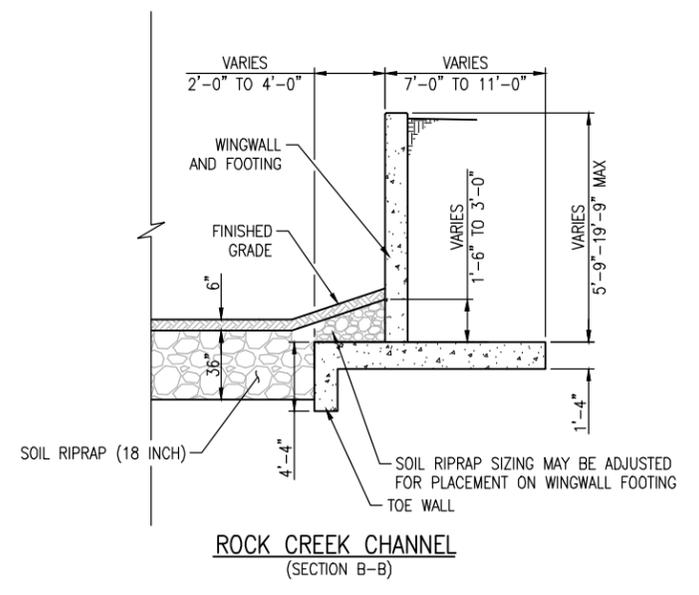
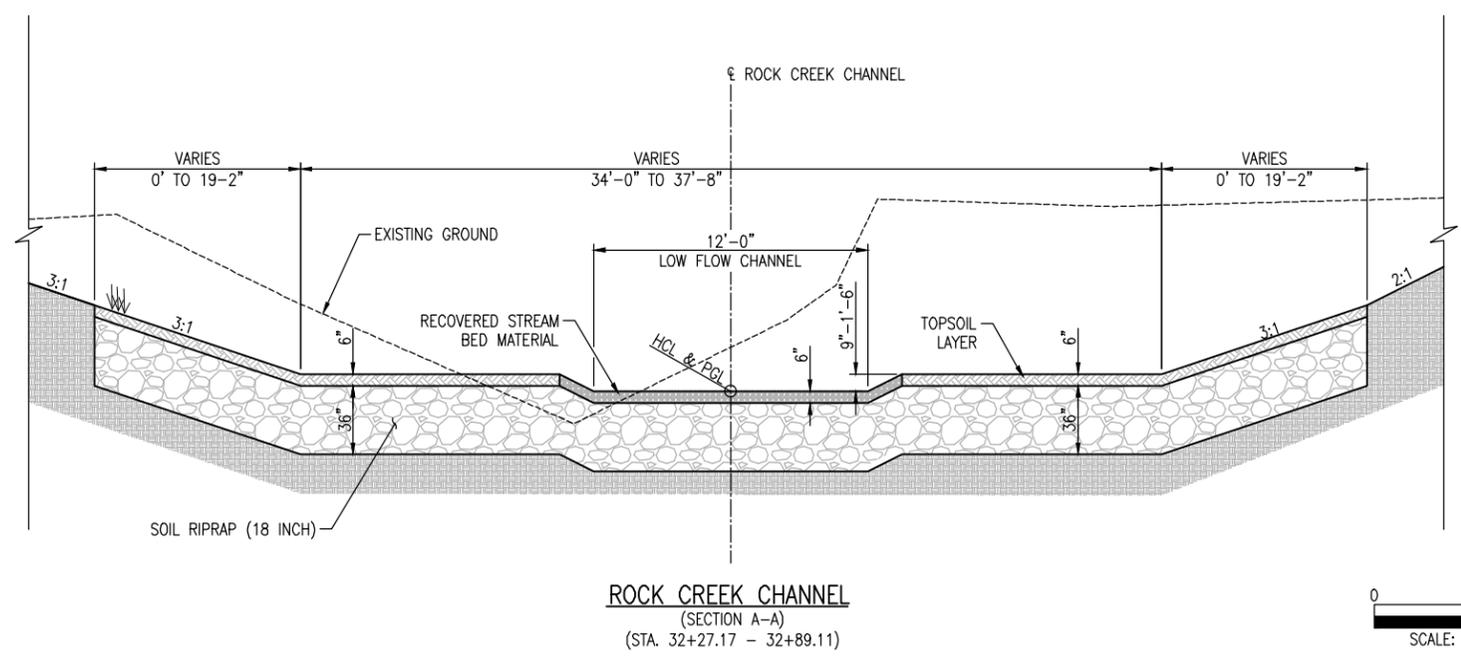
CHANNEL DESCRIPTION:

- BOTTOM MATERIAL:**
- COHESIVE
 - CLAY
 - GRAVEL
 - STRAIGHT
 - STABLE
 - BRUSH
 - NON-COHESIVE
 - SILT
 - COBBLES
 - MEANDERING
 - AGGRADING
 - TREES/LOGS
 - SAND
 - OTHER
 - BRAIDED
 - DEGRADING
 - ICE
 - OTHER
- STREAM FORM:**
- CHANNEL STABILITY:**
- DEBRIS:**



- NOTES:**
- SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREA. REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
 - MIX UNIFORMLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
 - PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
 - CRIMP OR TACKIFY MULCH.
 - KEEP MULCH MATERIAL OUT OF CREEK.

SOIL RIPRAP DETAIL
N.T.S.



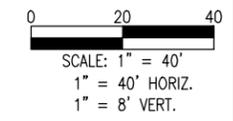
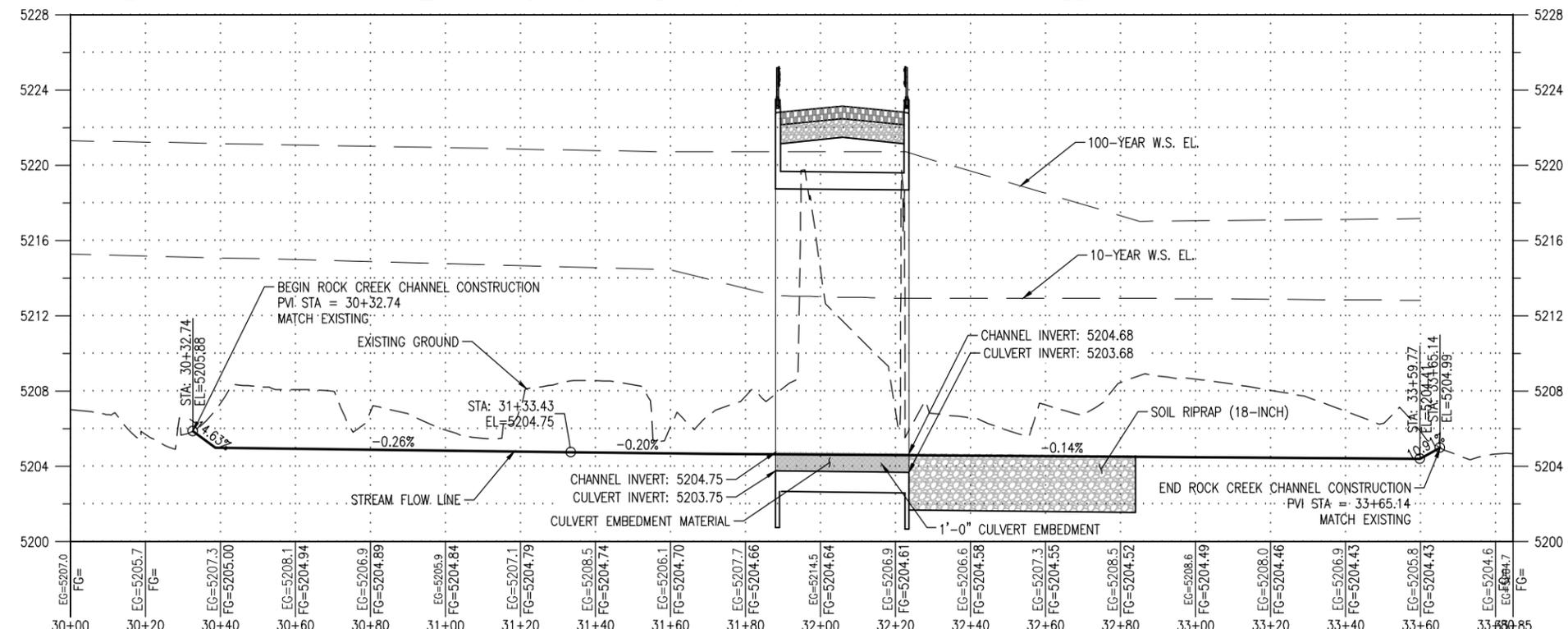
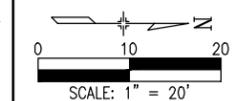
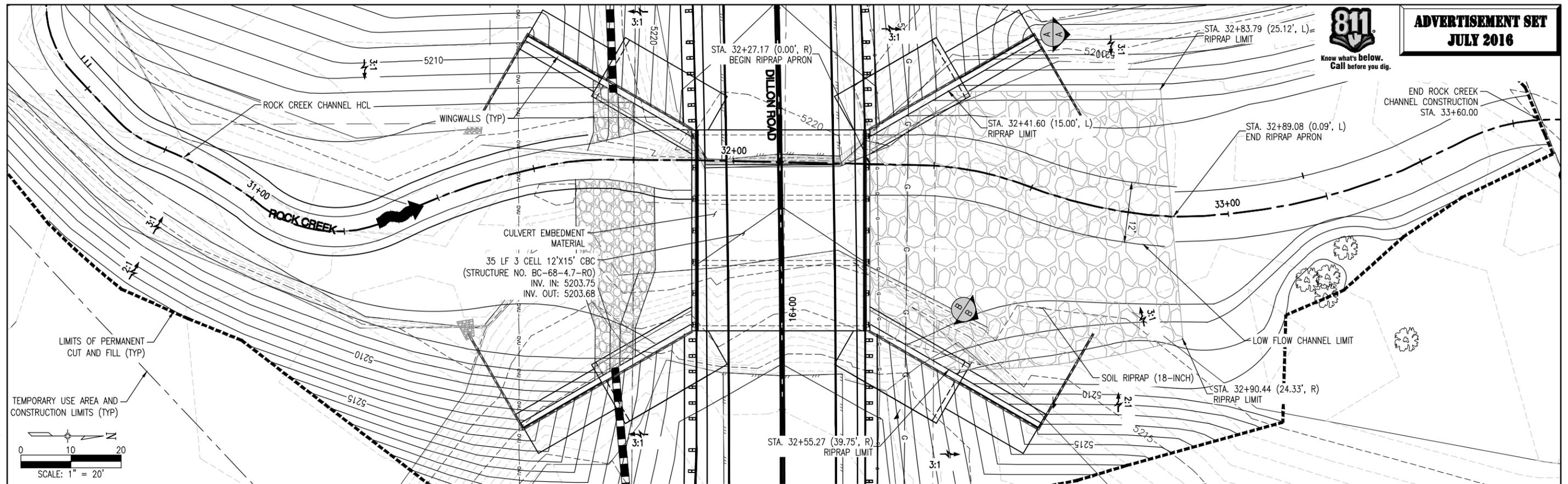
G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-37) Hydraulic Data.dwg Jul 14, 2016 - 3:13pm

| | | | | | | | | |
|------------------|-----------------------|------------------------|----------|-----------------------------------|--|----------------|---|-------------------|
| Print Date: | | Sheet Revisions | | Loris and Associates, Inc. | Colorado Department of Transportation | As Constructed | DILLON ROAD OVER ROCK CREEK HYDRAULIC DATA ROCK CREEK | Project No./Code |
| File Name: | | Date: | Comments | Init. | | No Revisions: | | ER C070-051/20014 |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | Revised: | Designer: CJB | BC-68-4.7-RO |
| Unit Information | Unit Leader Initials | | | | | Void: | Detailer: CJB | Sheet Number |
| | | | | | | | Sheet Subset: ST-04 | 36 |
| | | | | | | | Subset Sheets: 8 | Sheet Number |



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| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
|-----------------|----------|-------|
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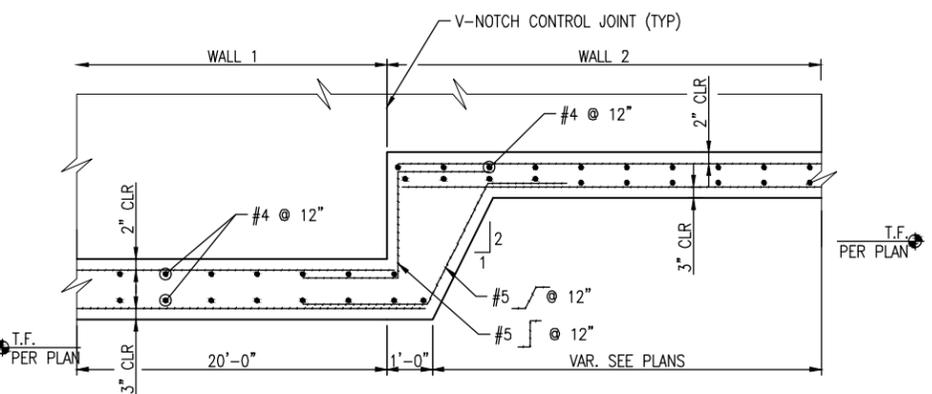
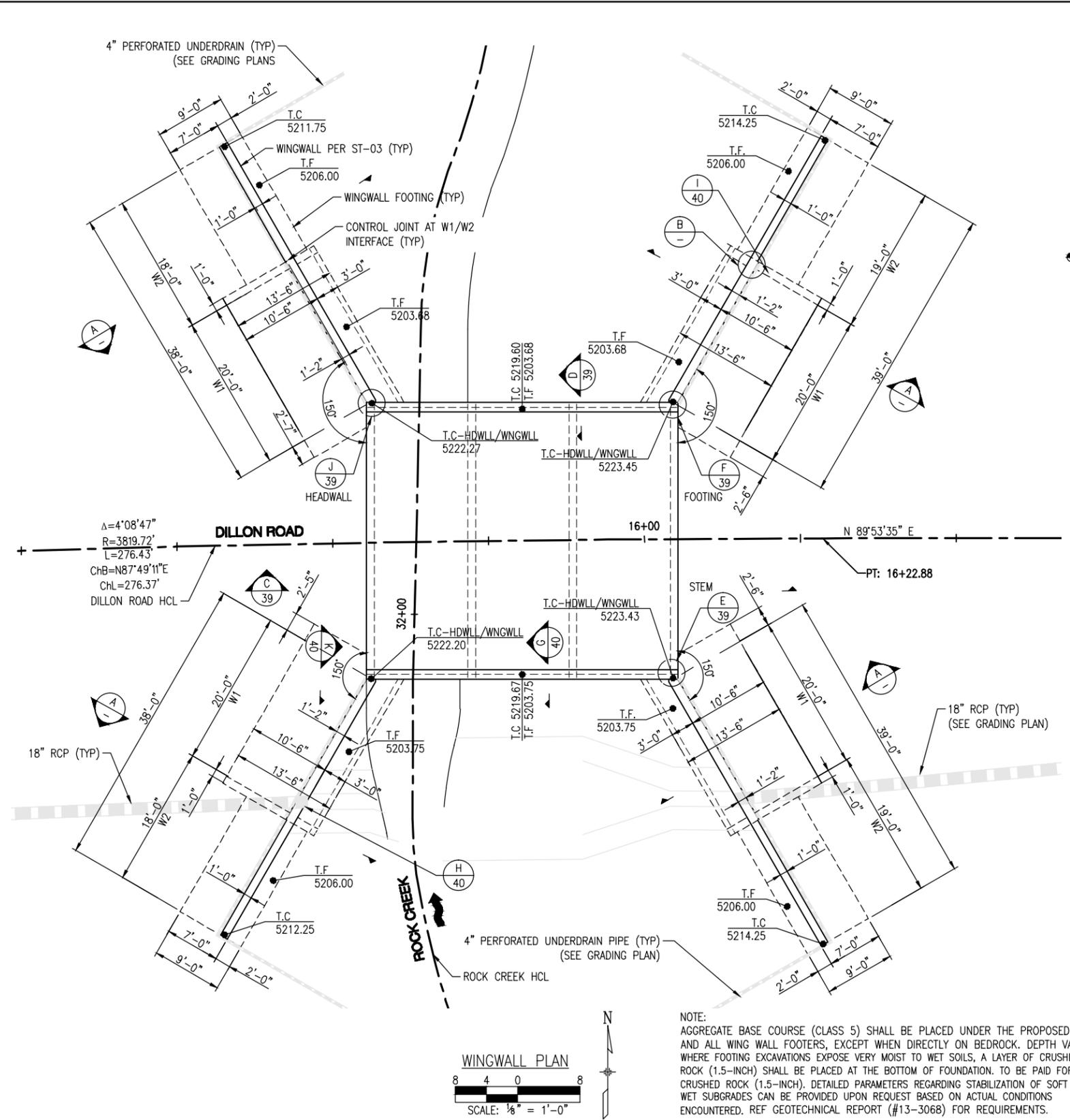
Colorado Department of Transportation
1420 Second Street
Creely, CO 80632
Phone: (970) 350-2103
FAX: (970) 350-2198
Region 4 LHN

| |
|----------------|
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| Revised: |
| Void: |

| | | | |
|---|-------|--------------------|-------|
| DILLON ROAD OVER ROCK CREEK HYDRAULIC DATA ROCK CREEK | | | |
| Designer: | CJB | Structure Numbers: | |
| Detailer: | CJB | Sheet Subset: | ST-05 |
| Sheet Subset: | ST-05 | Subset Sheets: | 8 |

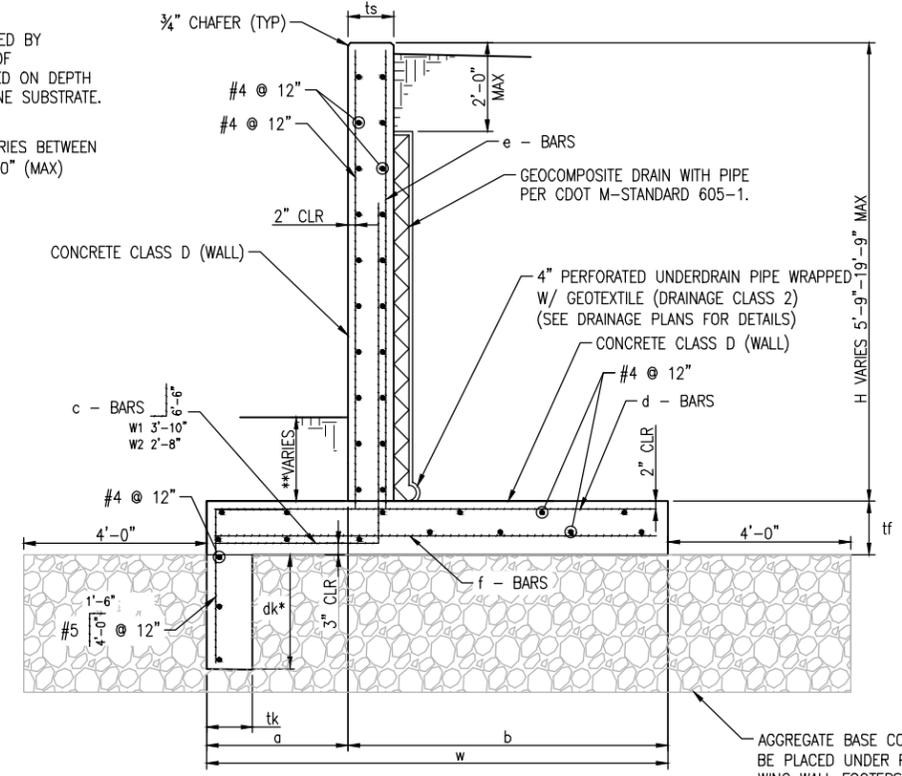
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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 37 |

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* dk MAY BE ADJUSTED BY ENGINEER AT TIME OF CONSTRUCTION BASED ON DEPTH OF HARD CLAY STONE SUBSTRATE.

** COVER DEPTH VARIES BETWEEN 2'-0" (MIN) TO 7'-0" (MAX)



WINGWALL BAR SCHEDULE AND DIMENSION TABLE

| | a | b | w | tf | ts | dk | tk | c | d | e | f |
|----|-------|--------|--------|-------|-------|-------|-------|----------|----------|----------|----------|
| W1 | 3'-0" | 10'-6" | 13'-6" | 1'-4" | 1'-2" | 3'-0" | 1'-0" | #8 @ 5" | #8 @ 5" | #6 @ 5" | #5 @ 10" |
| W2 | 2'-0" | 7'-0" | 9'-0" | 1'-0" | 1'-0" | - | - | #7 @ 12" | #7 @ 12" | #5 @ 12" | - |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (38-40) Culvert and Wingwall Details.dwg Jul 14, 2016 - 3:13pm

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|------------------|-----------------------|
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| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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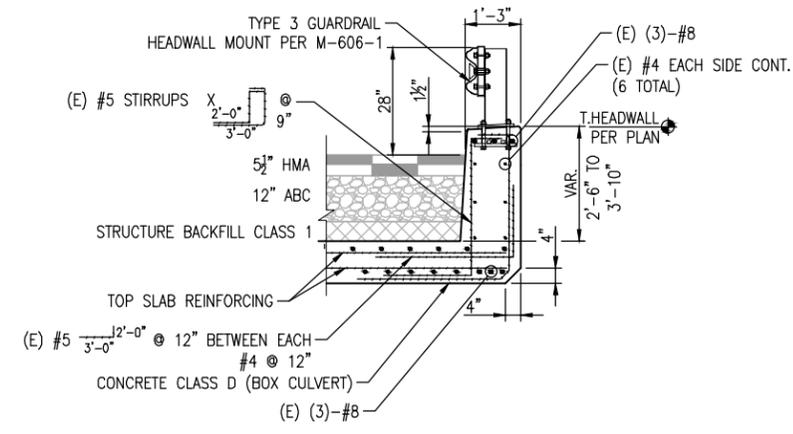
Colorado Department of Transportation
1420 Second Street
Creely, CO 80632
Phone: (970) 350-2103
Fax: (970) 350-2198
Region 4

As Constructed
No Revisions:
Revised:
Void:

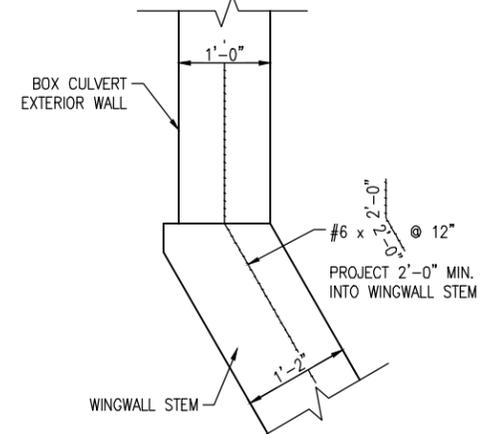
DILLON ROAD OVER ROCK CREEK
**CULVERT AND WINGWALL
SECTIONS AND DETAILS**

Designer: CJB
Detailer: LX
Sheet Subset: ST-06
Subset Sheets: 8

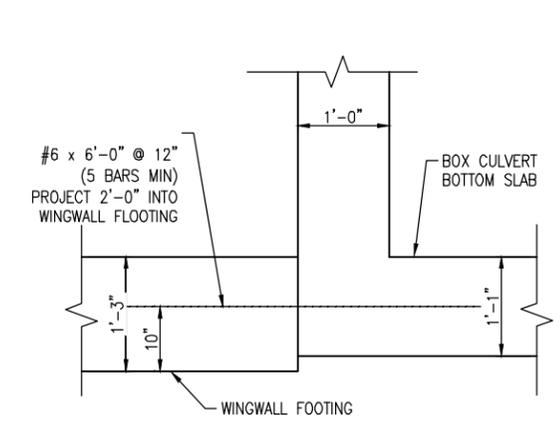
Project No./Code
ER C070-051/20014
BC-68-4.7-RO
Sheet Number **38**



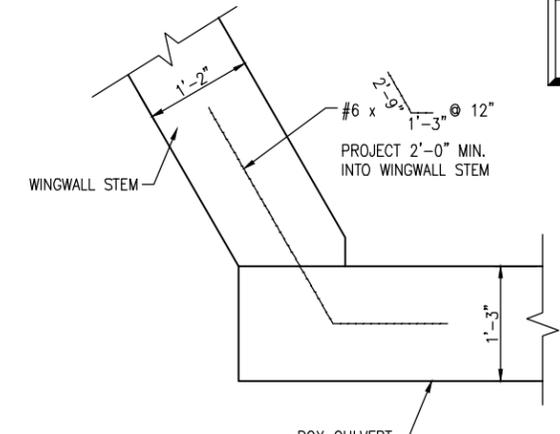
D HEADWALL DETAIL
38 N.T.S.



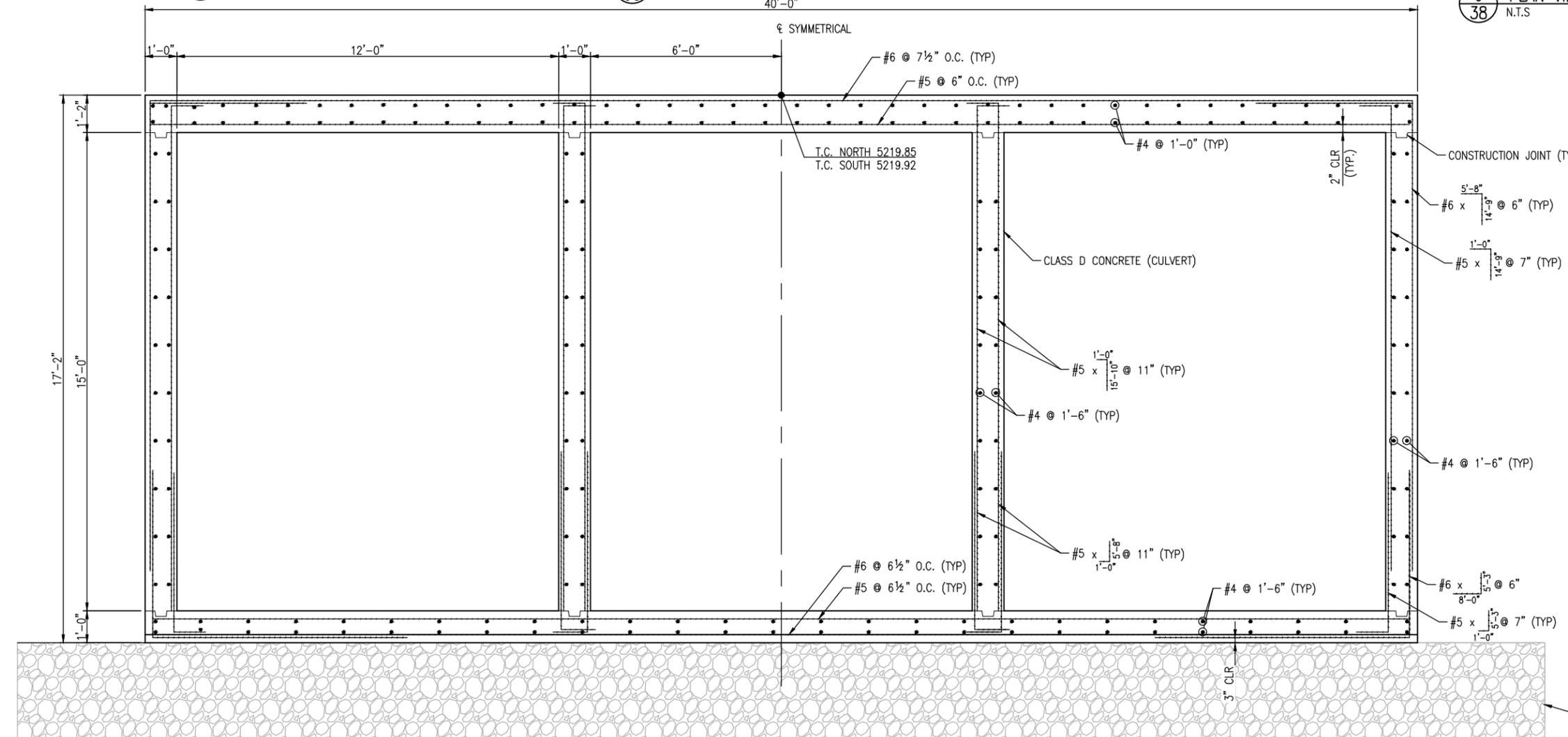
E PLAN VIEW - STEM CONNECTION
38 N.T.S.



F ELEVATION VIEW - FOOTING CONNECTION
38 N.T.S.



J PLAN VIEW - HEADWALL CONNECTION
38 N.T.S.



C CAST-IN-PLACE CONCRETE BOX CULVERT
38 N.T.S.

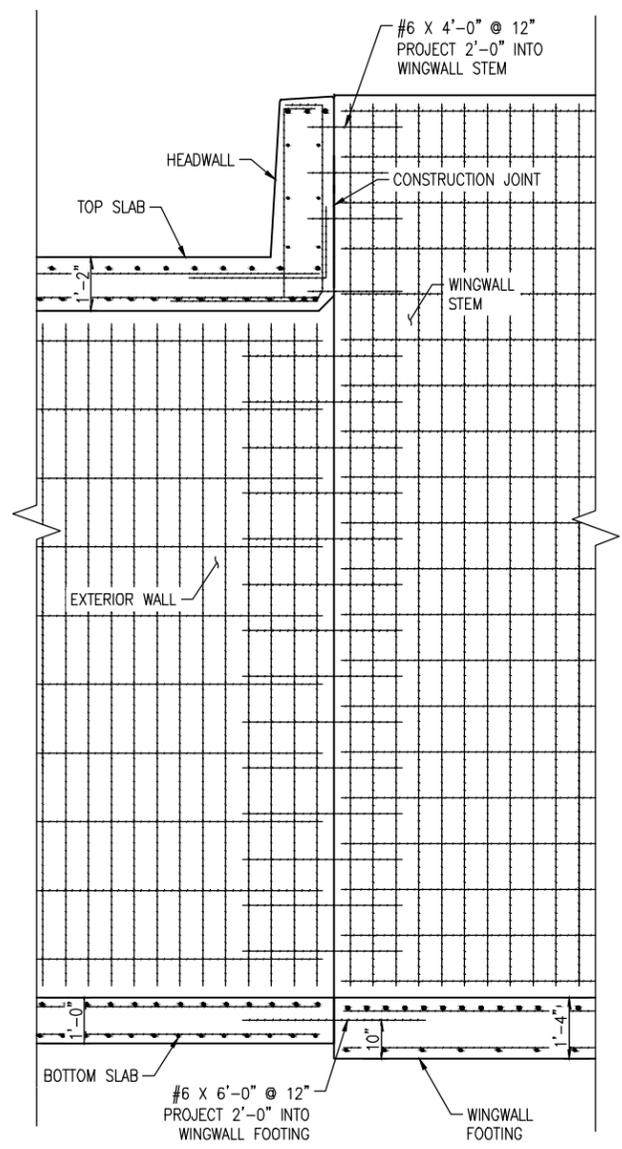
- DEWATERING NOTES:
1. DEWATERING IS REQUIRED TO FACILITATE THE PROPOSED CONSTRUCTION.
 2. ALL DEWATERING SHALL OUTLET INTO A SEDIMENT TRAP/DEWATERING STRUCTURE PER STANDARD DRAWING M-208-1, AS APPROVED.
 3. A CONSTRUCTION DEWATERING PERMIT IS REQUIRED FOR THIS PROJECT AND SHALL BE OBTAINED BY THE CONTRACTOR. CONSTRUCTION WATER QUALITY TESTING IS PART OF THIS PERMIT AND SHALL BE PERFORMED IN ACCORDANCE WITH THE PERMIT.
 4. THE LUMP SUM COST FOR DEWATERING SHALL BE INCLUSIVE OF ALL THE VARIOUS PHASES OF DEWATERING, AND SHALL INCLUDE THE COST OF CONSTRUCTION WATER QUALITY TESTING.

NOTE:
1. CBC AND WINGWALL STEEL IS NOT EPOXY COATED. HEADWALL STEEL IS EPOXY COATED.

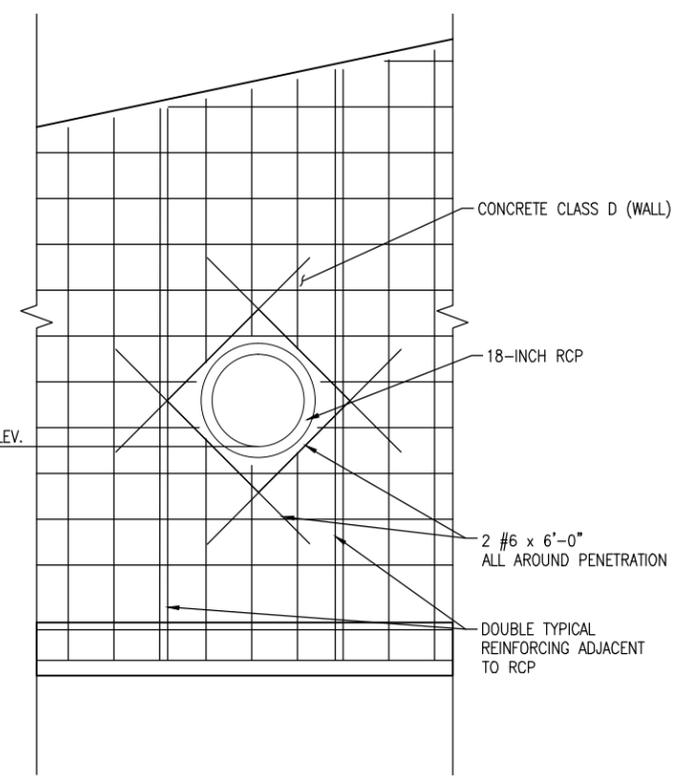
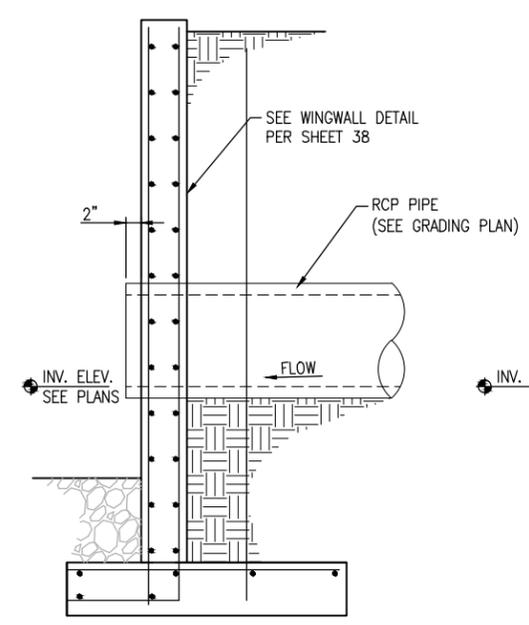
AGGREGATE BASE COURSE (CLASS 5) SHALL BE PLACED UNDER PROPOSED BOX AND WING WALL FOOTERS, EXCEPT WHEN DIRECTLY ON BEDROCK. DEPTH VARIES. REF GEOTECHNICAL REPORT (#13-3068) FOR OVEREXCAVATION REQUIREMENTS

C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (38-40) Culvert and Wingwall Details.dwg Jul 14, 2016 - 3:13pm

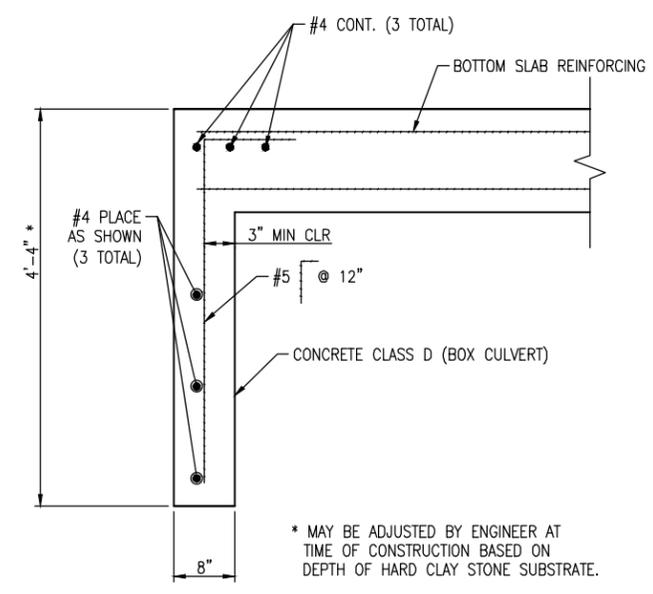
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|-------------------|-----------------------|----------|-------|---|--|---|---------------------|------------------|---|---------------|-------------------|-------------------|
| Print Date: | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Creely, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK CULVERT AND WINGWALL SECTIONS AND DETAILS | | Project No./Code | |
| File Name: | Date: | Comments | Init. | | | | No Revisions: | Revised: | Void: | Designer: CJB | Structure Numbers | ER C070-051/20014 |
| Horiz. Scale: 1:4 | Vert. Scale: As Noted | | | | | | Detailer: LX | | BC-68-4.7-RO | | | |
| Unit Information | Unit Leader Initials | | | | | | Sheet Subset: ST-07 | Subset Sheets: 8 | Sheet Number | | 39 | |



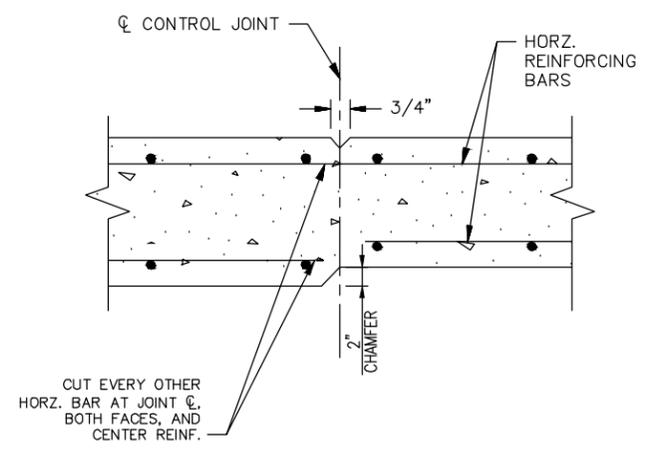
K
38 WINGWALL ELEVATION - CONNECTION DETAIL
N.T.S.



H
38 WINGWALL PENETRATION DETAIL
N.T.S.



G
38 TOE WALL DETAIL
N.T.S.



I
38 TYP. CONCRETE WALL CONTROL JOINT
N.T.S.

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| File Name: | Date: | Comments: | Init.: | | | | No Revisions: | Designer: | | | CJB | Structure Numbers: |
| Horiz. Scale: 1:4 | Unit Information | | | Unit Leader Initials | | Revised: | Detailer: | LX | BC-68-4.7-RO | Sheet Number | | |
| | | | | | | | Void: | Sheet Subset: | ST-08 | Subset Sheets: | 8 | 40 |



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1. SITE DESCRIPTION

- FOR INFORMATION ONLY TO FULFILL THE CDPS-SCP (COLORADO DISCHARGE PERMIT SYSTEM – STORMWATER CONSTRUCTION PERMIT)
- A. **PROJECT SITE DESCRIPTION:** THE PROJECT IS LOCATED AT DILLON ROAD AT ROCK CREEK, EAST OF US 287 IN BOULDER COUNTY, COLORADO AND IS TO INCLUDE THE REPLACEMENT OF CULVERT WASHED OUT DURING THE FLOODING OF SEPTEMBER 2013. THE PROJECT WILL INCLUDE THE CONSTRUCTION OF THREE 12' X 15' CBC, REPROFILING OF DILLON ROAD, REPLACEMENT OF THE MULTI-USE PATH, INSTALLATION OF GUARDRAIL, GRADING AND SEEDING.
- B. **PROPOSED SEQUENCING FOR MAJOR ACTIVITIES:**
1. MOBILIZATION / CONSTRUCTION SURVEYING
 2. DRAINAGE/EROSION CONTROL
 3. CLEARING AND GRUBBING
 4. GRADING
 5. CONSTRUCTION OF CONCRETE BOX CULVERT
 6. CONSTRUCTION OF CONCRETE WINGWALLS
 7. CHANNEL GRADING
 8. CONCRETE TRAILS
 9. ASPHALT PAVING
 10. SITE RESTORATION, GRADING AND WETLAND MITIGATION
- C. **ACRES OF DISTURBANCE:**
1. TOTAL AREA OF CONSTRUCTION SITE: 1.82 ACRES
 2. TOTAL AREA OF DISTURBANCE: 1.82 ACRES
 3. ACREAGE OF SEEDING: 1.0 ACRES
- D. **EXISTING SOIL DATA:**
SILTY TO CLAYEY SAND WITH GRAVEL. SEE SUBSURFACE EXPLORATION PROGRAM AND GEOTECHNICAL REPORT DILLON ROAD BRIDGE REPAIR TASK ORDER 3 BOULDER COUNTY, COLORADO, DATED DECEMBER 04, 2013 BY GROUND ENGINEERING CONSULTANTS INC.
- E. **EXISTING VEGETATION, INCLUDING PERCENT COVER:** THE SIDESLOPES OF DILLON ROAD AND THE SURROUNDING EXISTING GROUND IS COVERED BY APPROXIMATELY 85% NATIVE GRASS, AND 15% BARE GROUND.
- 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.

DISTURBED AND STORED SOILS

DISTURBED AND STORED SOILS ARE A POTENTIAL POLLUTION SOURCE FOR THE SITE. THE DISTURBED AND STORED SOILS WILL BE CONTROLLED BY IMPLEMENTING DUST MITIGATION, SURFACE ROUGHENING, SILT FENCE AND SEEDING AND MULCHING.

VEHICLE TRACKING OF SEDIMENTS

VEHICLE TRACKING OF SEDIMENTS IS A POTENTIAL POLLUTION SOURCE FOR THE SITE AND WILL BE CONTROLLED BY VEHICLE TRACKING CONTROL PADS LOCATED AT ALL CONSTRUCTION ENTRANCES.

CONTAMINATED SOILS

IT IS NOT ANTICIPATED THAT CONTAMINATED SOILS WILL BE A POTENTIAL POLLUTION SOURCE FOR THE SITE. THE CONTRACTOR IS RESPONSIBLE TO MONITOR CONTAMINATED SOILS, AND NOTIFY THE ENGINEER IF DISCOVERED.

LOADING AND UNLOADING OPERATIONS

LOADING AND UNLOADING OPERATIONS IS A POTENTIAL POLLUTION SOURCE FOR THE SITE. LOADING AND UNLOADING OPERATIONS SHALL TAKE PLACE WITHIN THE STAGING AREA.

OUTDOOR STAGING ACTIVITIES

OUTDOOR STAGING ACTIVITIES ARE A POTENTIAL POLLUTION SOURCE FOR THE SITE. MATERIALS ARE SOMETIMES USED AT A CONSTRUCTION SITE THAT PRESENT A POTENTIAL FOR CONTAMINATION OF STORMWATER RUNOFF. THESE MAY INCLUDE, BUT ARE NOT LIMITED TO: BUILDING MATERIALS, FUEL, OIL, LUBRICANTS, PAINTS, SOLVENTS, CONCRETE CURING COMPOUNDS, PESTICIDES, FERTILIZERS, CHEMICALS, HERBICIDES, ETC. THE CONTRACTOR SHALL DESIGNATE AN AREA WHERE THESE PRODUCTS SHOULD BE STORED IN AN ENCLOSURE, CONTAINER, OR LINED EARTHEN DIKE, CONSTRUCTED TO PREVENT DISCHARGE OF THESE MATERIALS IN RUNOFF FROM THE SITE. THESE BARRIERS WILL ALSO FUNCTION TO CONTAIN SPILLED MATERIALS FROM CONTACT WITH SURFACE RUNOFF. STANDARD OPERATING PROCEDURES FOR MATERIAL SPILL CONTAINMENT AND CLEAN UP ARE PROVIDED ON SHEET 4 – 5 OF THIS SUBSET

VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING

VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING IS A POTENTIAL POLLUTION SOURCE FOR THE SITE MEASURES SHALL ALSO BE TAKEN TO PREVENT SPILLS OR LEAKS OF FUEL, OILS, LUBRICANTS, ANTIFREEZE, AND OTHER CONTAMINANT FLUIDS FROM CONSTRUCTION VEHICLES TO PROTECT GROUNDWATER AND STORMWATER RUNOFF. ALL EQUIPMENT MAINTENANCE SHALL BE PERFORMED IN A DESIGNATED AREA, AND MEASURES SUCH AS DRIP PANS SHALL BE USED TO

CONTAIN PETROLEUM PRODUCTS. SPILLS OF CONSTRUCTION MATERIALS SHOULD BE CLEANED UP IMMEDIATELY AND DISPOSED OF PROPERLY. THE CONTRACTOR SHALL ROUTINELY INSPECT EQUIPMENT FOR LEAKS THAT COULD LEAD TO DISCHARGE OF PETROLEUM PRODUCTS INTO SURFACE RUNOFF.

DUST OR PARTICULATE GENERATING PROCESSES

SIGNIFICANT DUST OR PARTICULATE GENERATING PROCESSES ARE NOT A POTENTIAL POLLUTION SOURCE FOR THE SITE, HOWEVER MINOR DUST OR PARTICULATE MAY BE GENERATED DURING THE GRADING PROCESS. DUST MITIGATION, SURFACE ROUGHENING, AND SEEDING AND MULCHING SHALL BE IMPLEMENTED TO MITIGATE AIRBORNE POLLUTANTS.

ROUTINE MAINTENANCE ACTIVITIES

ROUTINE MAINTENANCE ACTIVITIES ARE A POTENTIAL POLLUTION SOURCE FOR THE SITE. REFER TO OUTDOOR STORAGE ACTIVITIES ABOVE FOR SPECIFIC IMPLEMENTATION CRITERIA.

ON-SITE WASTE MANAGEMENT PRACTICES

ON-SITE WASTE MANAGEMENT PRACTICES (WASTE PILES, LIQUID WASTE, DUMPSTERS, ETC.) ARE A POTENTIAL POLLUTION SOURCE FOR THE SITE. THE CONTRACTOR SHALL DESIGNATE AN AREA WHERE THESE PRACTICES OCCUR AND SHALL ROUTINELY INSPECT AND MAINTAIN THE AREAS TO ELIMINATE THE POLLUTION SOURCE

CONCRETE TRUCK/EQUIPMENT WASHING

CONCRETE TRUCK/EQUIPMENT WASHING IS A POTENTIAL POLLUTION SOURCE FOR THE SITE AND SHOULD OCCUR ONLY AT THE DESIGNATED CONCRETE WASHOUT AREAS SHOWN ON THE STORMWATER MANAGEMENT PLAN.

DEDICATED ASPHALT AND CONCRETE BATCH PLANTS

DEDICATED ASPHALT AND CONCRETE BATCH PLANTS ARE NOT ANTICIPATED TO BE A POTENTIAL POLLUTION SOURCE FOR THE SITE. THERE WILL NOT BE ANY DEDICATED ASPHALT OR CONCRETE BATCH PLANTS ON SITE.

NON-INDUSTRIAL WASTE SOURCES

NON-INDUSTRIAL WASTE SOURCES SUCH AS WORKERS TRASH AND PORTABLE TOILETS ARE A POTENTIAL POLLUTION SOURCE FOR THE SITE. THE CONTRACTOR SHALL DESIGNATE AN AREA WHERE THESE PRACTICES OCCUR AND SHALL ROUTINELY INSPECT AND MAINTAIN THE AREAS TO ELIMINATE THE POLLUTION SOURCE. OTHER AREAS OR PROCEDURES WHERE POTENTIAL SPILLS OCCUR ARE NOT A POTENTIAL POLLUTION SOURCE FOR THE SITE.

G. RECEIVING WATER:

1. **OUTFALL LOCATIONS:** SITE OUTFALLS CONSIST OF ROADSIDE DITCHES AND INLETS TO BE MAINTAINED BY BOULDER COUNTY
2. **NAMES OF RECEIVING WATER(S) ON SITE AND THE ULTIMATE RECEIVING WATER:** ROCK CREEK
3. **DISTANCE ULTIMATE RECEIVING WATER IS FROM PROJECT:** 0.00 FEET

H. ALLOWABLE NON-STORMWATER DISCHARGES:

1. GROUNDWATER AND STORMWATER CONSTRUCTION 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**
2. STREAM IMPACTS: **YES**
3. THREATENED AND ENDANGERED SPECIES: **NONE**

2. SITE MAP COMPONENTS:

PRE-CONSTRUCTION

- A. **PROJECT CONSTRUCTION POTENTIAL SITE BOUNDARIES**
SEE SWMP SHEETS
- B. **ALL AREAS OF GROUND SURFACE DISTURBANCE**
SEE SWMP SHEETS
- C. **AREAS OF CUT AND FILL**
SEE GRADING AND DRAINAGE SHEETS
- D. **LOCATION OF ALL STRUCTURAL BMPs IDENTIFIED IN THE SWMP**
SEE SWMP SHEETS

E. LOCATION OF NON-STRUCTURAL BMPs AS APPLICABLE IN THE SWMP

- A. **SEE SWMP SHEETS**
- B. **SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER**
SEE SWMP SHEETS
- C. **PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION**
SEE REMOVAL AND RESET SHEETS
- D. **AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (FIELD TRAILER, FUELING, ETC) AND BATCH PLANTS**
SEE SWMP SHEETS

3. SWMP ADMINISTRATOR FOR DESIGN:

PETER J. LORIS, P.E.; PROJECT ENGINEER, LORIS AND ASSOCIATES

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 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.

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

PHASED BMP IMPLEMENTATION DURING DESIGN: "BMP AS DESIGNED" BOXES ARE MARKED WHEN USED IN THE SWMP. DURING CONSTRUCTION: THE ECS SHALL 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.

STRUCTURAL BMP PRACTICES FOR EROSION AND SEDIMENT CONTROL (SEE CHART, NEXT SHEET)

NON-STRUCTURAL BMP PRACTICES FOR EROSION AND SEDIMENT CONTROL (SEE CHART, NEXT SHEET)

1. EROSION CONTROL DEVICES ARE USED TO LIMIT THE AMOUNT OF EROSION ONSITE
2. SEDIMENT CONTROL DEVICES ARE DESIGNATED TO CAPTURE SEDIMENT ON THE PROJECT SITE.
3. CONSTRUCTION CONTROL ARE BMPs RELATED TO CONSTRUCTION ACCESS AND STAGING.
4. BMP LOCATIONS ARE INDICATED ON THE SITE MAP
5. BMP INSTALLATION DETAILS AND GENERAL NARRATIVES ARE IN THE SWMP NOTEBOOK.

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.

E. VEHICLE TRACKING PAD/VEHICLE TRACKING CONTROL

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.

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (41-45) SWMP.dwg Jul 14, 2016 - 3:14pm

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| Print Date: | | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 200 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Greely, CO 80632 Phone: (970) 350-2103 Fax: (970) 350-2198 Region 4 LHN</p> | As Constructed | DILLON ROAD OVER ROCK CREEK STORMWATER MANAGEMENT PLAN | | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: | CJB | Structure Numbers | | BC-68-4.7-RO |
| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: | CJB | Subset Sheets: | 5 | Sheet Number |
| | | | | | | | | | Sheet Subset: | SW-01 | | | 41 |

STRUCTURAL BMPS THAT MAY BE POTENTIALLY USED ON THE PROJECT FOR EROSION AND SEDIMENT CONTROL; PRACTICES MAY INCLUDE, BUT ARE NOT LIMITED TO:

| BMP | TYPE OF CONTROL | BMP AS DESIGNED | IN USE ON SITE | FIRST CONSTRUCTION ACTIVITIES | DURING CONSTRUCTION | FINAL STABILIZATION |
|---|-----------------|-----------------|----------------|-------------------------------|---------------------|---------------------|
| EARTH BERM/DIVERSION | EROSION | | | | | |
| *CHECK DAMS | SEDIMENT | X | | | X | X |
| SILT FENCE | SEDIMENT | X | | X | X | |
| EROSION LOGS | SEDIMENT | X | | X | X | |
| TEMPORARY SEDIMENT TRAP/BASIN | SEDIMENT | | | | | |
| PERMANENT SEDIMENT TRAP/BASIN (USED AS TEMPORARY BMP) | SEDIMENT | X | | | X | |
| EMBANKMENT PROTECTOR | EROSION | | | | | |
| INLET PROTECTION | EROSION | X | | X | X | X |
| OUTLET PROTECTION | EROSION | X | | X | X | X |
| CONCRETE WASHOUTS | CONSTRUCTION | X | | | X | |
| VEHICLE TRACKING PAD | CONSTRUCTION | X | | X | X | |
| DEWATERING | SEDIMENT | X | | | X | |
| TEMPORARY STREAM CROSSING | EROSION | | | | | |
| CLEAN WATER DIVERSION | | | | | | |
| OTHER | RIPRAP | 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.

NON-STRUCTURAL BMPS THAT MAY BE POTENTIALLY USED ON THE PROJECT FOR EROSION AND SEDIMENT CONTROL; PRACTICES MAY INCLUDE, BUT ARE NOT LIMITED TO:

| BMP | TYPE OF CONTROL | BMP AS DESIGNED | IN USE ON SITE | FIRST CONSTRUCTION ACTIVITIES | DURING CONSTRUCTION | FINAL STABILIZATION |
|---------------------------------------|-----------------|-----------------|----------------|-------------------------------|---------------------|---------------------|
| SURFACE ROUGHENING/GRADING TECHNIQUES | EROSION | X | | | X | |
| SEEDING PERMANENT | EROSION | X | | | X | X |
| SEEDING TEMPORARY | EROSION | | | | | |
| MULCH/MULCH TACKIFIER | EROSION | X | | | X | X |
| SOIL BINDER | EROSION | | | | | |
| SOIL RETENTION BLANKET | EROSION | | | | X | X |
| TURF REINFORCEMENT MAT | EROSION | | | | | |
| VEGETATIVE BUFFER STRIPS | EROSION | | | | | |
| PROTECTION OF TREES | EROSION | X | | X | X | |
| PRESERVATION OF MATURE VEGETATION | EROSION | X | | X | X | |
| SPRAY-ON MULCH BLANKET | EROSION | | | | | |

SEED MIX (UPLAND NATIVE)

| COMMON NAME | BOTANICAL NAME | VARIETY | POUNDS PLS/ACRE |
|--------------------|-------------------------|---------------------|-----------------|
| SIDEOTS GRAMA | BOUTELOUA CURTIPENDULA | VAUGHN | 2.74 |
| BLUE GRAMA | BOUTELOUA GRACILIS | NATIVE OR BAD RIVER | 0.84 |
| BUFFALOGRASS | BUCHLOE DACTYLOIDES | VNS - NATIVE | 9.33 |
| SLENDER WHEATGRASS | ELYMUS TRACHYCAULUS | SAN LUIS OR PRYOR | 2.19 |
| WESTERN WHEATGRASS | PASCOPYRUM SMITHII | ARRIBA | 3.17 |
| WESTERN WHEATGRASS | PASCOPYRUM SMITHII | VNS - NATIVE | 3.17 |
| LITTLE BLUESTEM | SCHIZACHYRIUM SCOPARIUM | CIMARRON OR PASTURA | 1.34 |
| GREEN NEEDLEGRASS | STIPA VIRIDULA | NATIVE | 1.16 |
| BLUE FLAX | LINUM LEWISII | NATIVE | 0.34 |
| BLANKET FLOWER | GAILLARDIA ARISTATA | | 0.53 |
| TOTAL | | | 24.81 |

SEED MIX (WETLAND)

| COMMON NAME | BOTANICAL NAME | VARIETY | POUNDS PLS/ACRE |
|----------------------------|-----------------------|-------------|-----------------|
| ALKALI SACATON | SPOROBOLUS AIRODES | SALADO | 0.06 |
| AMERICAN MANNAGRASS | GLYCERIA GRANDIS | | 0.27 |
| NEBRASKA SEDGE | CAREX NEBRASCENSIS | | 0.76 |
| MEADOW SEDGE | CAREX PRAEGRACILIS | | 0.38 |
| WOOLLY SEDGE | CAREX LANUGINOSA | | 2.95 |
| CREeping SPIKERUSH | ELEOCHARIS PALUSTRIS | | 0.56 |
| BALTIC RUSH | JUNCUS ARCTICUS | | 0.09 |
| TORRY'S RUSH | JUNCUS TORREYI | | 0.02 |
| INLAND SALTGRASS | DISTICHLIS SPICATA | | 0.27 |
| COMMON THREESQUARE | SCHOENOPLECTUS PUNGEN | | 0.87 |
| PANICLED BULRUSH | SCIRPUS RUBROTINCTUS | | 0.08 |
| FORBS | | | |
| MARSH MILKWEED | ASCLEPIAS INCARNATA | | 3.42 |
| ROCKY MTN. BEEPLANT | CLEOME SERRULATA | | 3.17 |
| BLUE VERVAIN | VERBENA HASTATA | | 0.12 |
| WETLAND TALLGRASSES | | | |
| SWITCHGRASS | PANICUM VIRGATUM | TRAILBLAZER | 0.90 |
| INDIAN GRASS | SORGHASTRUM NUTANS | NATIVE | 2.05 |
| PRAIRIE CORDGRASS | SPARTINA PECTINATA | NATIVE | 4.65 |
| TOTAL | | | 20.62 |

.7 LBS PER 1000 SF, 26 LBS PER ACRE

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 107.25 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 107.25, 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).

9. INTERIM AND FINAL STABILIZATION

- A. SEEDING PLAN
SOIL PREPARATION, SOIL CONDITIONING, TOPSOIL, SEEDING (NATIVE), MULCHING (WEED FREE) AND MULCH TACKIFIER, AND SOIL RETENTION BLANKET WILL BE REQUIRED FOR DISTURBED AREAS WITHIN THE RIGHT-OF-WAY LIMITS WHICH ARE NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:
- 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 1/2 TONS OF CERTIFIED WEED FREE NATIVE HAY PER ACRE AND IN ACCORDANCE WITH SECTION 212, 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:
FERTILIZER MAY BE REQUIRED, BUT WILL BE INCLUDED IN THE WORK AND WILL NOT BE PAID SEPARATELY.
- F. BLANKET APPLICATION
ON SLOPE AND DITCHES REQUIRING A BLANKET, THE BLANKET SHALL BE PLACED IN LIEU OF MULCH AND MULCH TACKIFIER. SEE SWMP FOR BLANKET LOCATIONS
- G. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION
PRIOR TO FINAL ACCEPTANCE
 - 1. 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 OF GULLY EROSION, BLOWN AWAY MULCH, ETC. SHALL BE REGRADED, SEEDED, MULCHED AND HAVE TACKIFIER (ON BLANKET) APPLIED AS NECESSARY.
 - 2. AREAS WHERE SEED HAS NOT GERMINATED SHALL HAVE SEED, MULCH AND MULCH TACKIFIER (ON BLANKET) REAPPLIED. WORK SHALL BE PAID FOR AS THE APPROPRIATE BID ITEM
 - 3. THE CONTRACTOR SHALL MAINTAIN SEEDING/MULCH/TACKIFIER, MOW TO CONTROL WEEDS OR APPLY HERBICIDE TO CONTROL WEEDS IN THE SEEDED AREAS UNTIL ACCEPTANCE.

10. RECORD KEEPING

- A. FINAL ACCEPTANCE SHALL BE IN ACCORDANCE WITH SUBSECTION 208.10.

| SOIL CONDITIONER PAID FOR AS ITEM 212-SOIL CONDITIONER (AC) | | |
|---|------------------|-----------------------------------|
| BIOLOGICAL NUTRIENT ORGANIC BASED FERTILIZER (LBS/ACRE) | HUMATE (CY/ACRE) | SUPER TRIPLE PHOSPHATE (LBS/ACRE) |
| 500-1,800 | 1000 | 60 |

* BIOLOGICAL NUTRIENT SHALL NOT EXCEED 8-8-8 (N-P-K). PLACING COMPOST WHEN REQUIRED TO AMEND EMBANKMENT AND AS SOIL CONDITIONER MAY BE COMBINED AS A SINGLE APPLICATION.

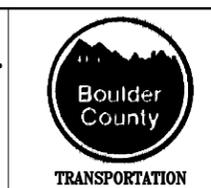


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| Unit Information | Unit Leader Initials |

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| Revised: | |
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| DILLON ROAD OVER ROCK CREEK STORMWATER MANAGEMENT PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 5 |
| Sheet Subset: | SW-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 42 |

11. TABULATION OF EROSION CONTROL QUANTITIES

| PAY ITEM | DESCRIPTION | PAY UNIT | *QUANTITY | |
|----------|--|----------|-----------|------|
| | | | FHWA | BOCO |
| 207 | TOPSOIL (CIP) | CY | 484 | 83 |
| 208 | INLET PROTECTION | EA | 10 | 0 |
| 208 | SILT FENCE | LF | 1281 | 567 |
| 208 | EROSION LOG (12 INCH) | LF | 419 | 40 |
| 208 | REMOVAL AND DISPOSAL OF SEDIMENT (LABOR) | HR | 120 | 30 |
| 208 | REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT) | HR | 40 | 10 |
| 208 | EROSION CONTROL SUPERVISOR | LS | 1 | 0 |
| 208 | VEHICLE TRACKING PAD | EA | 2 | 0 |
| 208 | CONCRETE WASHOUT STRUCTURE | EA | 2 | 0 |
| 208 | SOIL BAG | LF | 938 | 0 |
| 212 | SEEDING (NATIVE) | AC | 0.8 | 0.2 |
| 212 | SEEDING (WETLAND) | AC | 0.1 | 0.0 |
| 212 | SOIL CONDITIONER | AC | 0.9 | 0.2 |
| 212 | SEEDING ESTABLISHMENT | AC | 0.9 | 0.2 |
| 213 | MULCHING (WEED FREE HAY) | AC | 0.5 | 0.2 |
| 216 | SOIL RETENTION BLANKET (STRAW/COCONUT) | SY | 946 | 214 |
| 700 | F/A EROSION CONTROL | LS | 1 | 0 |

*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 HAVE BEEN INCREASED FOR UNFORESEEN PROJECT CONDITIONS.

A. IT IS ESTIMATED THAT 150 HOURS OF LABOR, BLADING, DOZING, COMBINATION LOADER AND/OR BACKHOE MAY BE REQUIRED FOR MISCELLANEOUS EROSION CONTROL WORK AS DIRECTED BY THE ENGINEER. WORK SHALL BE PAID FOR AS:
 208- REMOVAL AND DISPOSAL OF SEDIMENT (LABOR)
 208- REMOVAL AND DISPOSAL OF SEDIMENT (EQUIPMENT)

INTENT OF THE SWMP

THE INTENT OF THE STORMWATER MANAGEMENT PLAN (SWMP) IS TO MINIMIZE ENVIRONMENTAL IMPACTS FROM THE PROJECT. THE BMPs SHOWN ON THE SITE MAP, AND THE MATERIALS CONTAINED IN THE PROJECT SWMP NOTEBOOK ARE INTENDED TO MINIMIZE THE ENVIRONMENTAL IMPACTS OF THE PROJECT, AND MUST BE IMPLEMENTED. THE PRIMARY POTENTIAL CONTAMINANT OF CONCERN FOR THE PROJECT IS SEDIMENT, AND MOST BMP'S ARE INTENDED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. AS THE PROJECT PROGRESSES, CONDITION WILL CHANGE AND OTHER BMPs WILL BE NECESSARY TO PREVENT ENVIRONMENTAL IMPACTS. THE PROJECT ECS MUCH CONTINUALLY EVALUATE CONSTRUCTION ACTIVITIES AND SITE CONDITIONS, AND IMPLEMENT APPROPRIATE MEASURE AS NECESSARY TO ADAPT TO THE CHANGING CONDITIONS. IF BMPs ARE NOT EFFECTIVE, THEY SHOULD BE REPLACED OR SUPPLEMENTED WITH OTHER BMPs, AND THE SWMP SHOULD BE UPDATED TO REFLECT THE CHANGES.

NARRATIVES

SILT FENCE

WHAT: FILTER FABRIC STRETCHED BETWEEN ANCHORING POSTS, SPACED AT REGULAR INTERVALS
 WHERE: TYPICALLY AT THE TOE OF SLOPES, IN TRANSITION AREAS BETWEEN CUT & FILL, AND ADJACENT TO STREAMS.
 WHEN: BEFORE COMMENCEMENT OF CLEARING & GRUBBING OR GRADING.
 HOW: PRIOR TO CLEARING & GRUBBING, INSTALL IN ACCORDANCE WITH M-208-1.
 WHY: SILT FENCE IS USED TO FILTER SEDIMENT LADEN RUNOFF FROM DISTURBED AREAS DURING CONSTRUCTION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.

EROSION LOGS

WHAT: EROSION LOGS ON THIS PROJECT WILL BE STRAW WATTLES (12-INCH DIAMETER).
 WHERE: TYPICALLY AT THE TOE OF SLOPES, IN TRANSITION AREAS BETWEEN CUT & FILL, AND ADJACENT TO STREAMS. ALSO USED AROUND DROP INLETS AS APPLICABLE.
 WHEN: BEFORE COMMENCEMENT OF CLEARING & GRUBBING OR GRADING. AFTER COMPLETION OF GRADING ON SLOPES, OR AS CHECK DAMS IN DITCHES.
 HOW: PRIOR TO CLEARING & GRUBBING, INSTALL IN ACCORDANCE WITH M-208-1 AND MANUFACTURER'S INSTRUCTIONS. LOGS SHALL BE PLACED ON THE CONTOUR OF SLOPES WITH THE ENDS OF LOGS J-HOOKED TO PREVENT WATER FROM RUNNING AROUND THE ENDS, CAUSING EROSION.
 WHY: EROSION LOGS ARE USED TO FILTER SEDIMENT LADEN RUNOFF FROM DISTURBED AREAS DURING CONSTRUCTION TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.

INLET PROTECTION

WHAT: INLET PROTECTION
 WHERE: GRATED INLETS DRAINING PAVED AREAS.
 WHEN: AT EXISTING INLETS, BEFORE COMMENCEMENT OF CLEARING & GRUBBING OR GRADING IN AREAS THAT DRAIN TO THE INLET, OR WHEN OTHER ACTIVITIES MAY CAUSE DEBRIS TO ENTER THE INLET. AT NEW INLETS AS THEY ARE INSTALLED AND BROUGHT ON-LINE.
 HOW: INSTALL ROCK SOCKS AROUND THE PERIMETER OF THE INLET GRATE, TIGHTLY ABUTTING EACH OTHER.
 WHY: INLET PROTECTION IS USED TO PREVENT SEDIMENT AND OTHER DEBRIS FROM ENTERING INLETS AND LEAVING THE CONSTRUCTION SITE.

INLET PROTECTION

WHAT: EROSION LOG CULVERT INLET PROTECTION
 WHERE: INLET & OUTLET ENDS OF EXISTING & PROPOSED CULVERTS.
 WHEN: AT EXISTING CULVERTS, BEFORE COMMENCEMENT OF CLEARING & GRUBBING OR GRADING IN AREAS THAT DRAIN TO THE INLET, OR WHEN OTHER ACTIVITIES MAY CAUSE DEBRIS TO ENTER THE INLET. AT NEW CULVERTS AS THEY ARE INSTALLED.
 HOW: INSTALL EROSION LOGS AROUND THE ENTRANCE TO THE CULVERT, IN ACCORDANCE WITH M-208-1.
 WHY: INLET PROTECTION IS USED TO PREVENT SEDIMENT AND OTHER DEBRIS FROM ENTERING CULVERTS AND LEAVING THE CONSTRUCTION SITE.

EARTH BERM/DIVERSION

WHAT: EARTH BERM/DIVERSION. A TEMPORARY BERM OR RIDGE MADE OF SOIL (COARSE AGGREGATE), WITH OR WITHOUT A DIVERSION CHANNEL. BERMS AND DIVERSIONS SHOULD BE CONSTRUCTED OF COMPACTED SOIL OR COURSE MATERIAL.
 WHERE: APPROPRIATE LOCATIONS SHOULD BE DETERMINED BY CONSIDERING OUTLET CONDITIONS, TOPOGRAPHY, LAND USE, SOIL TYPE, LENGTH OF SLOPE, AND AREAS WHERE SEEPAGE MIGHT BE A PROBLEM.
 WHEN: DURING GRADING OPERATIONS.
 HOW: ALL BERMS SHALL HAVE AN UNINTERRUPTED POSITIVE GRADE TO A STABILIZED OUTLET. THE OUTLET SHOULD BE CAPABLE OF CONVEYING CONCENTRATED RUNOFF INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY. BERMS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT. ALL TREES, BRUSHES, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION. BERMS AND DIVERSION CHANNELS SHOULD BE STABILIZED WITH RIPRAP, TURF REINFORCEMENT OR APPROPRIATE MEASURE FOR PROTECTION AGAINST EROSION.
 WHY: USED TO INTERCEPT AND DIVERT RUNOFF TO A DESIRED LOCATION SUCH AS TOWARDS A SEDIMENT TRAP OR A SLOPE DRAIN. USED TO DIVERT RUNOFF FROM AREAS WHERE IT MIGHT DAMAGE PROPERTY, CAUSE EROSION, OR INTERFERE WITH THE ESTABLISHMENT OF VEGETATION. USED ALONG THE TOP EDGES OF CUTS AND FILLS TO PROTECT THE EMBANKMENT.

CHECK DAM

WHAT: CHECK DAM. SMALL DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH.
 WHERE: USED ON TEMPORARY OR PERMANENT DITCHES OR SWALES TO REDUCE EROSION. THE CHECK DAM SHOULD BE PLACED IN REASONABLY STRAIGHT DITCH SECTIONS TO MINIMIZE THE POTENTIAL FOR EROSION IN THE CHANNEL BEND. IN LOCATING THE CHECK DAM, CONSIDERATION SHOULD BE GIVEN TO THE EFFECTS AND REACH OF THE IMPOUNDED WATER AND SEDIMENT.
 WHEN: DURING GRADING OPERATION. CHECK DAMS SHOULD BE REMOVED WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED. IN TEMPORARY DITCHES AND SWALES, CHECK DAMS SHOULD BE REMOVED AND THE DITCH FILLED IN WHEN IT IS NO LONGER NEEDED. IN THE CASE OF GRASSES LINED DITCHES, CHECK DAMS SHOULD BE SEEDED AND MULCHED IMMEDIATELY AFTER THE CHECK DAMS ARE REMOVED.
 HOW: INSTALL IN ACCORDANCE WITH WITH M-208-1. HAND OR MECHANICAL PLACEMENT WILL BE NECESSARY TO ACHIEVE COMPLETE COVERAGE OF THE DITCH OR SWALE AND TO INSURE THAT CENTER OF THE DAM IS LOWER THAN THE EDGES.
 WHY: USED FOR THE PURPOSE OF REDUCING THE VELOCITY OF CONCENTRATED STORMWATER FLOWS TO NON-EROSIVE VELOCITIES, THEREBY REDUCING EROSION IN SWALES OR DITCHES.

VEHICLE TRACKING PAD

WHAT: VEHICLE TRACKING PAD (STABILIZED CONSTRUCTION ENTRANCE)
 WHERE: AT LOCATIONS WHERE EQUIPMENT WILL EXIT FROM WORK AREAS ON TO EXISTING PAVEMENTS.
 WHEN: PRIOR TO EQUIPMENT ENTERING WORK AREAS.
 HOW: IN ACCORDANCE WITH M-208-1, THE AREA OF THE ENTRANCE MUST BE EXCAVATED A MINIMUM OF 6 INCHES. GEOTEXTILE IS PLACED AND COVERED WITH A 6 INCH LAYER OF AGGREGATE. THE AGGREGATE SHALL BE EQUAL OR GREATER THAN 3 INCHES. THE ENTRANCE MUST EXTEND THE FULL WIDTH OF THE INGRESS/EGRESS AREA, HAVE A MINIMUM WIDTH OF 12 FEET, AND A MINIMUM LENGTH OF 40 FEET IN THE DIRECTION OF TRAVEL.
 WHY: USED TO REDUCE THE AMOUNT OF MUD AND SEDIMENT TRACKED ONTO PAVED ROADS BY VEHICLES OR RUNOFF LEAVING THE CONSTRUCTION SITE.

CONCRETE WASHOUT STRUCTURE

WHAT: A STURDY, WATERTIGHT STRUCTURE WILL BE USED.
 WHERE: AT LOCATIONS WHERE CONCRETE WASTE IS GENERATED FROM CONCRETE USED AS A CONSTRUCTION MATERIAL. SPECIFIC LOCATIONS WILL VARY AT THE TIME OF CONSTRUCTION AND INDICATED BY THE SWMP MANAGER ON THE SITE MAP. DO NOT PLACE CONCRETE WASHOUTS IN LOW AREAS, DITCHES, OR ADJACENT TO STATE WATERS.
 WHEN: DURING OPERATIONS WHERE CONCRETE WASTE IS GENERATED FROM CONCRETE USED AS A CONSTRUCTION MATERIAL.
 HOW: IN ACCORDANCE WITH THE SWMP NOTEBOOK SECTION 5. PROPER SIGNAGE SUCH AS "CONCRETE WASHOUT" OR "CONCRETE SAW WATER DISPOSAL" SHALL BE VISIBLY PLACED NEAR CONCRETE WASHOUT FACILITIES.
 WHY: USED TO PREVENT CONCRETE WASTE ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM ENTERING STORM DRAINS AND WATER COURSES.

GRADING TECHNIQUES

WHAT: SOIL SURFACE ROUGHENING, TERRACING AND ROUNDING AT TOPS OF CUT, TRANSITIONS, AND ROADWAY DITCHES. GRADING TECHNIQUES ARE BMPs THAT MUST BE IMPLEMENTED IN CONJUNCTION WITH OTHER BMPs SUCH AS MULCHING OR SOIL BINDERS. USES OF ONLY GRADING TECHNIQUES ARE NOT ADEQUATE EROSION BMPs.
 WHERE: DISTURB AREAS IF BARE SOIL.
 WHEN: WHEN GRADING IN THE AREA IS COMPLETED.
 HOW: ROUGHENING, TERRACE, SCARIFY OR DISC PARALLEL TO THE CONTOURS. SCARIFY OR DISC TO MAINTAIN 1-TO 3-INCH MINIMUM VARIATION IN SOIL SURFACE.
 WHY: USED TO TEMPORARILY STABILIZE DISTURBED AREAS AND PROTECT FROM WIND AND WATER EROSION. TO REDUCE THE SPEED OF RUNOFF, INCREASE INFILTRATION, REDUCE EROSION, TRAP SEDIMENT, AND PREPARE THE SOIL FOR SEEDING AND PLANTING BY CAPTURING MOISTURE FOR SEED.

PERMANENT SEEDING

WHAT: GRASS AND FORB SPECIES PLANTED FOR PERMANENT COVER ON DISTURBED SURFACES.
 WHERE: DISTURBED AREAS OF BARE SOIL.
 WHEN: SEEDING SHOULD OCCUR THROUGHOUT THE DURATION OF THE PROJECT AS CONSTRUCTION IS COMPLETED. SEEDING SHOULD NOT BE APPLIED WHEN THE GROUND IS FROZEN OR DURING THE SUMMER WHEN MOISTURE IS NOT AVAILABLE TO THE SEED.
 HOW: SEE SECTION 9 OF THIS SWMP.
 WHY: USED TO CONTROL RUNOFF AND EROSION FROM DISTURBED AREAS BY ESTABLISHING VEGETATIVE COVER. IT REDUCES SEDIMENT LOSS AND PROVIDES PERMANENT STABILIZATION.



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|------------------|-----------------------|-----------------|----------|-------|---|--|--|----------------|---|-----|-------------------|-------------------|-----------------|
| Print Date: | | Sheet Revisions | | | <p>Loris and Associates, Inc. 100 Superior Plaza Way Suite 200 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | <p>Boulder County TRANSPORTATION</p> | <p>Colorado Department of Transportation 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 Fax: (970) 350-2198 Region 4 LHN</p> | As Constructed | DILLON ROAD OVER ROCK CREEK STORMWATER MANAGEMENT PLAN | | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | | ER C070-051/20014 | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: | CJB | Structure Numbers | | BC-68-4.7-RO |
| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: | CJB | Subset Sheets: | 5 | Sheet Number 43 |



SOIL RETENTION BLANKET

WHAT: ORGANIC OR SYNTHETIC BLANKETS INSTALLED ON STEEP SLOPES OR CHANNELS TO PREVENT EROSION UNTIL FINAL VEGETATION IS ESTABLISHED.
WHERE: TYPICALLY INSTALLED ON STEEP SLOPES OR CHANNELS. SEE SITE MAPS FOR CURRENT LOCATIONS.
WHEN: IMMEDIATELY AFTER GRADING IN THE AREA COMPLETED.
HOW: INSTALL IN ACCORDANCE WITH M-208-1. AREAS WHERE BLANKETS ARE TO BE USED SHALL BE PROPERLY PREPARED WITH TOPSOIL OR SOIL CONDITIONING, AND FERTILIZER IF REQUIRED, AND SEEDING BEFORE THE BLANKETS ARE PLACED.
WHY: USED TO CONTROL EROSION, RETAIN SEDIMENT RESULTING IN SHEET FLOW RUNOFF, AND PROMOTE THE ESTABLISHMENT OF VEGETATION. USED TO PROTECT CHANNELS AGAINST EROSION FROM CONCENTRATED RUNOFF.

STREET SWEEPING AND VACUUMING

WHAT: PRACTICES TO REMOVE SEDIMENT TRANSPORTED ONTO STREETS OR WASTE PARTICLES GENERATED FROM BRIDGE DECK REHABILITATION.
WHERE: ANYWHERE SEDIMENT IS TRACKED FROM THE PROJECT SITE ONTO PUBLIC OR PRIVATE ROADS, TYPICALLY AT POINTS OF EGRESS, AND AT BRIDGE DECK REHABILITATION SITES.
WHEN: INSPECT INGRESS/EGRESS ACCESS POINTS DAILY AND SWEEP TRACKED SEDIMENT AS NEEDED. VISIBLE SEDIMENT TRACKING OR WASTE PARTICLES FROM BRIDGE DECK REHABILITATION SHALL BE SWEEPED AND VACUUMED ON A DAILY BASIS, AND MORE FREQUENTLY IF NEEDED TO LIMIT MIGRATION OF MATERIAL.
HOW: DO NOT USE KICK BROOM OR SWEEPER ATTACHMENTS. BE CAREFUL NOT TO SWEEP UP ANY UNKNOWN SUBSTANCE OR OBJECT THAT MAY BE POTENTIALLY HAZARDOUS. AFTER SWEEPING IS COMPLETED, PROPERLY DISPOSE OF SWEEPER WASTES AT AN APPROVED DUMP SITE IN CONFORMANCE WITH CDOT STANDARDS SPECIFICATION.
WHY: TO PREVENT THE SEDIMENT OR PARTICLES FROM ENTERING A STORM DRAIN OR WATERCOURSE.

*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.

STANDARD OPERATING PROCEDURE (SOP)

MINOR SPILL MATERIAL (PAINT, STAIN, SOLVENT, GLUE) (LESS THAN REPORTABLE QUANTITY)

- A. **PURPOSE**
THE PURPOSE OF THIS STANDARD OPERATING PROCEDURE IS TO ESTABLISH UNIFORM PROCEDURES FOR CLEAN UP AND DISPOSAL OF MATERIAL FROM MINOR ACCIDENTAL SPILL OF PAINT, STAIN, SOLVENT, OR GLUE. THE PROCEDURES OUTLINED IN THIS SOP ARE APPLICABLE TO ALL PERSONNEL WORKING THE DILLON ROAD CULVERT REPLACEMENT CONSTRUCTION SITE. CLEAN UP AND PROPER DISPOSAL OF SPILLED MATERIAL IN TO THE SOIL OR ONTO THE GROUND SURFACE IS REQUIRED TO ENSURE THE MATERIAL OR CONTAMINATED SOIL DOES NOT ENTER OR IMPACT THE WATERS OF THE STATE OF THE SANITARY SEWER SYSTEM.
- B. **SUMMARY OF METHOD**
THIS PROCEDURE OUTLINES THE STEPS TO BE TAKEN TO PREVENT SPILLED MATERIAL FROM IMPACTING WATERS OF THE STATE AND DISPOSAL OF THE RESULTING CONTAMINATED CLEANUP MATERIAL.
- C. **DEFINITIONS**
1. MATERIAL SAFETY DATA SHEET (MSDS). THE STANDARD INDUSTRY LIST FOR A PRODUCT DETAILING THE CHEMICAL MAKE-UP, SAFETY HAZARD, FIRST AID, FIRE FIGHTING, AND SPILL CLEANUP MEASURES, HANDLING, STORAGE AND DISPOSAL METHODS.
- D. **HEALTH AND SAFETY WARNINGS**
MANY CONSTRUCTION MATERIALS MAY BE FLAMMABLE, CAUSE SKIN AND EYE IRRITATION, AND MAY BE HARMFUL OR FATAL IF SWALLOWED. CAUTION SHOULD BE USED DURING CLEAN UP OPERATIONS. THE MSDS FOR THE SPILLED MATERIAL SHOULD BE CONSULTED TO ENSURE PERSONNEL SAFETY DURING CLEANUP OPERATIONS.
- E. **EQUIPMENT AND SUPPLIES**
1. ABSORBENT PADS AND BOOMS
2. HAND EQUIPMENT (SHOVELS, BROOMS)
3. WASTE CONTAINERS (5 GALLON BUCKETS, DRUMS)
4. PERSONAL PROTECTIVE EQUIPMENT
- F. **PROCEDURAL STEPS**
1. SHUT DOWN ALL EQUIPMENT OPERATING IN THE AREA TO PREVENT IGNITION OF THE SPILL.
2. QUICKLY CONTROL THE SPILL BY STOPPING OR SECURING THE SPILL SOURCE. THIS COULD BE AS SIMPLE AS UP-RIGHTING A TIPPED CONTAINER OR SHUTTING DOWN A PIECE OF EQUIPMENT PRODUCING THE SPILL.
3. CONTACT THE RESPONSIBLE PERSON ON SITE TO ENACT THE EMERGENCY RESPONSE CONTACT PROCEDURE.
A. RESPONSIBLE PERSON SHALL CONSULT THE MSDS FOR PROPER SPILL PROCEDURES AND DETERMINATION OF REPORTABLE QUANTITY FOR SPILL.

IN THE EVENT THE SPILL QUANTITY EXCEEDS THE REPORTABLE QUANTITY THE RESPONSIBLE PERSON SHALL CONTACT:

1. CALL 911 FOR FIRE CONTROL IF NECESSARY.
 2. COLORADO ENVIRONMENTAL RELEASE AND INCIDENT REPORTING HOTLINE (1-877-518-5608)
 3. PREVENT MIGRATION OF THE SPILL BY USING AN ADSORBENT. THIS COULD INCLUDE ABSORBENT PADS OR BOOMS, FLOOR DRY, CAT LITTER, OR DIRT. THE ADSORBENT SHOULD BE SPREAD ACROSS THE SPILL AND ALONG THE DOWNHILL SIDE TO STOP ANY FLOW.
 4. IF NECESSARY TO PREVENT THE MATERIAL FROM ENTERING A STORM DRAIN INLET OR MANHOLE A DAM OF ADSORBENT MATERIAL SHOULD BE PLACED IN THE GUTTER UPSTREAM FROM THE INLET.
 5. BEGIN CLEANUP OF THE SPILLED MATERIAL AND ADSORBENTS BY PLACING THE MATERIALS IN 5 GALLON, PLASTIC BUCKETS WITH LIDS OR INTO PROVIDED DRUM.
 6. CONTINUE CLEANUP UNTIL ALL SPILLED MATERIAL AND CONTAMINATED ADSORBENTS ARE REMOVED. ON A HARD SURFACE THIS SHOULD INCLUDE SWEEPING THE AREA. MATERIALS SPILLED ON DIRT SHOULD BE REMOVED DOWN TO WHERE A DISCOLORATION OF THE SOIL HAS BEEN REMOVED. WATER SHALL NEVER BE USED TO FLUSH MATERIAL OFF A SURFACE.
 7. ALL MATERIAL SHALL BE PROPERLY STORED IN A LOCATION DESIGNATED BY THE RESPONSIBLE PERSON ON SITE.
 8. THE RESPONSIBLE PERSON SHALL CONTACT THE SITE CONTRACTED EMERGENCY RESPONSE AND DISPOSAL CO. TO COLLECT AND PROPERLY DISPOSE OF THE MATERIAL.
 9. LOCATION OF THE SPILL WILL BE DOCUMENTED ON THE STORMWATER MAINTENANCE PLAN (SWMP) IN THE CONSTRUCTION TRAILER.
- G. **RECORD MANAGEMENT**
ALL DOCUMENTATION FROM THE INCIDENT, INCLUDING INCIDENT REPORT AND INCIDENTAL DISPOSAL MANIFESTS, SHALL BE MAINTAINED AT BOULDER COUNTY TRANSPORTATION, 2525 13TH STREET 80302. (303) 441-3900 FOR A PERIOD OF 3 YEARS FROM THE DATE OF THE SPILL.
- H. **AFTER INCIDENT BRIEFING**
ALL PERSONNEL INVOLVED IN THE INCIDENT SHALL ATTEND A DEBRIEFING TO DETERMINE THE CAUSE OF THE SPILL, PROCEDURES FOLLOWED, AND CORRECTIVE ACTIONS TO PREVENT FUTURE SPILLS. ALL PERTINENT DATA SHALL BE DOCUMENTED. ALL FINDINGS FROM THE DEBRIEFING SHOULD BE DISCUSSED AT THE NEXT SAFETY MEETING.

MINOR FUEL OR OIL SPILLS (LESS THAN 5 GALLONS)

- A. **PURPOSE**
THE PURPOSE OF THIS STANDARD OPERATING PROCEDURE IS TO ESTABLISH A UNIFORM PROCEDURE FOR CLEAN UP AND DISPOSAL OF MATERIAL FROM MINOR ACCIDENTAL SPILL OF FUEL (GASOLINE OR DIESEL OR OIL (HYDRAULIC OR MOTOR). THE PROCEDURES OUTLINED IN THIS SOP ARE APPLICABLE TO ALL PERSONNEL WORKING THE DILLON ROAD CULVERT REPLACEMENT CONSTRUCTION SITE. CLEAN UP AND PROPER DISPOSAL OF SPILLED FUEL OR OIL IN TO THE SOIL OR ONTO THE GROUND SURFACE IS REQUIRED TO ENSURE THE MATERIAL OR CONTAMINATED SOIL DOES NOT ENTER OR IMPACT THE WATERS OF THE STATE OF THE SANITARY SEWER SYSTEM.
- B. **SUMMARY OF METHOD**
THIS PROCEDURE OUTLINES THE STEPS TO BE TAKEN TO PREVENT SPILLED FUEL OR OIL FROM IMPACTING WATERS OF THE STATE AND DISPOSAL OF THE RESULTING CONTAMINATED CLEANUP MATERIAL.
- C. **DEFINITIONS**
1. MATERIAL SAFETY DATA SHEET (MSDS). THE STANDARD INDUSTRY LIST FOR A PRODUCT DETAILING THE CHEMICAL MAKE-UP, SAFETY HAZARD, FIRST AID, FIRE FIGHTING, AND SPILL CLEANUP MEASURES, HANDLING, STORAGE AND DISPOSAL METHODS.
- D. **HEALTH AND SAFETY WARNINGS**
FUELS AND OILS MAY BE MAY BE FLAMMABLE, CAUSE SKIN AND EYE IRRITATION, AND MAY BE HARMFUL OR FATAL IF SWALLOWED. CAUTION SHOULD BE USED DURING CLEAN UP OPERATIONS. THE MSDS FOR THE SPILLED MATERIAL SHOULD BE CONSULTED TO ENSURE PERSONNEL SAFETY DURING CLEANUP OPERATIONS.
- E. **EQUIPMENT AND SUPPLIES**
1. ABSORBENT PADS AND BOOMS
2. HAND EQUIPMENT (SHOVELS, BROOMS)
3. WASTE CONTAINERS (5 GALLON BUCKETS, DRUMS)
4. PERSONAL PROTECTIVE EQUIPMENT
- F. **PROCEDURAL STEPS**
1. SHUT DOWN ALL EQUIPMENT OPERATING IN THE AREA TO PREVENT IGNITION OF THE SPILL.
2. QUICKLY CONTROL THE SPILL BY STOPPING OR SECURING THE SPILL SOURCE. THIS COULD BE AS SIMPLE AS UP-RIGHTING A TIPPED CONTAINER OR SHUTTING DOWN A PIECE OF EQUIPMENT PRODUCING THE SPILL.
3. CONTACT THE RESPONSIBLE PERSON ON SITE TO ENACT THE EMERGENCY RESPONSE CONTACT PROCEDURE.
A. RESPONSIBLE PERSON SHALL CONSULT THE MSDS FOR PROPER SPILL PROCEDURES.

4. PREVENT MIGRATION OF THE SPILL BY USING AN ADSORBENT. THIS COULD INCLUDE ABSORBENT PADS OR BOOMS, FLOOR DRY, CAT LITTER, OR DIRT. THE ADSORBENT SHOULD BE SPREAD ACROSS THE SPILL AND ALONG THE DOWNHILL SIDE TO STOP ANY FLOW.
 5. IF NECESSARY TO PREVENT THE MATERIAL FROM ENTERING A STORM DRAIN INLET OR MANHOLE A DAM OF ADSORBENT MATERIAL SHOULD BE PLACED IN THE GUTTER UPSTREAM FROM THE INLET.
 6. BEGIN CLEANUP OF THE SPILLED MATERIAL AND ADSORBENTS BY PLACING THE MATERIALS IN 5 GALLON, PLASTIC BUCKETS WITH LIDS OR INTO PROVIDED DRUM.
 7. CONTINUE CLEANUP UNTIL ALL SPILLED MATERIAL AND CONTAMINATED ADSORBENTS ARE REMOVED. ON A HARD SURFACE THIS SHOULD INCLUDE SWEEPING THE AREA. MATERIALS SPILLED ON DIRT SHOULD BE REMOVED DOWN TO WHERE A DISCOLORATION OF THE SOIL HAS BEEN REMOVED. WATER SHALL NEVER BE USED TO FLUSH MATERIAL OFF A SURFACE.
 8. ALL MATERIAL SHALL BE PROPERLY STORED IN A LOCATION DESIGNATED BY THE RESPONSIBLE PERSON ON SITE.
 9. THE RESPONSIBLE PERSON SHALL CONTACT THE SITE CONTRACTED EMERGENCY RESPONSE AND DISPOSAL CO. TO COLLECT AND PROPERLY DISPOSE OF THE MATERIAL.
 10. LOCATION OF THE SPILL WILL BE DOCUMENTED ON THE STORMWATER MAINTENANCE PLAN (SWMP) IN THE CONSTRUCTION TRAILER.
- G. **RECORD MANAGEMENT**
ALL DOCUMENTATION FROM THE INCIDENT, INCLUDING INCIDENT REPORT AND INCIDENTAL DISPOSAL MANIFESTS, SHALL BE MAINTAINED AT BOULDER COUNTY TRANSPORTATION, 2525 13TH STREET 80302. (303) 441-3900 FOR A PERIOD OF 3 YEARS FROM THE DATE OF THE SPILL.
- H. **AFTER INCIDENT BRIEFING**
ALL PERSONNEL INVOLVED IN THE INCIDENT SHALL ATTEND A DEBRIEFING TO DETERMINE THE CAUSE OF THE SPILL, PROCEDURES FOLLOWED, AND CORRECTIVE ACTIONS TO PREVENT FUTURE SPILLS. ALL PERTINENT DATA SHALL BE DOCUMENTED. ALL FINDINGS FROM THE DEBRIEFING SHOULD BE DISCUSSED AT THE NEXT SAFETY MEETING.

SMALL FUEL OR OIL SPILL (5 GALLONS TO LESS THAN 25 GALLONS)

- A. **PURPOSE**
THE PURPOSE OF THIS STANDARD OPERATING PROCEDURE IS TO ESTABLISH A UNIFORM PROCEDURE FOR CLEAN UP AND DISPOSAL OF MATERIAL FROM SMALL ACCIDENTAL SPILL OF FUEL (GASOLINE OR DIESEL OR OIL (HYDRAULIC OR MOTOR). THE PROCEDURES OUTLINED IN THIS SOP ARE APPLICABLE TO ALL PERSONNEL WORKING THE DILLON ROAD CULVERT REPLACEMENT CONSTRUCTION SITE. CLEAN UP AND PROPER DISPOSAL OF SPILLED FUEL OR OIL IN TO THE SOIL OR ONTO THE GROUND SURFACE IS REQUIRED TO ENSURE THE MATERIAL OR CONTAMINATED SOIL DOES NOT ENTER OR IMPACT THE WATERS OF THE STATE OF THE SANITARY SEWER SYSTEM.
- B. **SUMMARY OF METHOD**
THIS PROCEDURE OUTLINES THE STEPS TO BE TAKEN TO PREVENT SPILLED FUEL OR OIL FROM IMPACTING WATERS OF THE STATE AND DISPOSAL OF THE RESULTING CONTAMINATED CLEANUP MATERIAL.
- C. **DEFINITIONS**
1. MATERIAL SAFETY DATA SHEET (MSDS). THE STANDARD INDUSTRY LIST FOR A PRODUCT DETAILING THE CHEMICAL MAKE-UP, SAFETY HAZARD, FIRST AID, FIRE FIGHTING, AND SPILL CLEANUP MEASURES, HANDLING, STORAGE AND DISPOSAL METHODS.
- D. **HEALTH AND SAFETY WARNINGS**
FUELS AND OILS MAY BE MAY BE FLAMMABLE, CAUSE SKIN AND EYE IRRITATION, AND MAY BE HARMFUL OR FATAL IF SWALLOWED. CAUTION SHOULD BE USED DURING CLEAN UP OPERATIONS. THE MSDS FOR THE SPILLED MATERIAL SHOULD BE CONSULTED TO ENSURE PERSONNEL SAFETY DURING CLEANUP OPERATIONS.
- E. **EQUIPMENT AND SUPPLIES**
1. ABSORBENT PADS AND BOOMS
2. HAND EQUIPMENT (SHOVELS, BROOMS)
3. WASTE CONTAINERS (5 GALLON BUCKETS, DRUMS)
4. PERSONAL PROTECTIVE EQUIPMENT
- F. **PROCEDURAL STEPS**
1. SHUT DOWN ALL EQUIPMENT OPERATING IN THE AREA TO PREVENT IGNITION OF THE SPILL.
2. CONTACT THE RESPONSIBLE PERSON ON SITE TO ENACT THE EMERGENCY RESPONSE CONTACT PROCEDURE.
A. THE RESPONSIBLE PERSON BEGINS CONTACTING EMERGENCY RESPONSE AGENCIES
B. FOR GASOLINE OR DIESEL SPILL CALL 911 FOR FIRE CONTROL
C. RESPONSIBLE PERSON MUST CONSULT THE MSDS FOR PROPER SPILL PROCEDURES.

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| Print Date: | | Sheet Revisions | | | <p>100 Superior Plaza Way Suite 200 Superior, Colorado 80027 303.444.2078 www.LorisandAssociates.com</p> | | <p>1420 Second Street Greely, CO 80632 Phone (970) 350-2103 Fax (970) 350-2198 Region 4 LHN</p> | As Constructed | | DILLON ROAD OVER ROCK CREEK STORMWATER MANAGEMENT PLAN | | Project No./Code | |
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| Horiz. Scale: | Vert. Scale: As Noted | | | | | | | Revised: | Designer: CJB | Structure Numbers | | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: CJB | Sheet Subset: SW-04 | Subset Sheets: 5 | Sheet Number 44 | |



1. ATTEMPT TO CONTROL THE SPILL BY STOPPING OR SECURING THE SPILL SOURCE. THIS COULD BE AS SIMPLE AS UP-RIGHTING A TIPPED CONTAINER OR SHUTTING DOWN A PIECE OF EQUIPMENT PRODUCING THE SPILL.
2. PREVENT MIGRATION OF THE SPILL BY USING AN ADSORBENT. THIS COULD INCLUDE ABSORBENT PADS OR BOOMS, FLOOR DRY, CAT LITTER, OR DIRT. THE ADSORBENT SHOULD BE SPREAD ACROSS THE SPILL AND ALONG THE DOWNHILL SIDE TO STOP ANY FLOW.
3. IF NECESSARY TO PREVENT THE MATERIAL FROM ENTERING A STORM DRAIN INLET OR MANHOLE A DAM OF ADSORBENT MATERIAL SHOULD BE PLACED IN THE GUTTER UPSTREAM FROM THE INLET.
4. BEGIN CLEANUP OF THE SPILLED MATERIAL AND ADSORBENTS BY PLACING THE MATERIALS IN 5 GALLON, PLASTIC BUCKETS WITH LIDS OR INTO PROVIDED DRUM.
5. CONTINUE CLEANUP UNTIL ALL SPILLED MATERIAL AND CONTAMINATED ADSORBENTS ARE REMOVED. ON A HARD SURFACE THIS SHOULD INCLUDE SWEEPING THE AREA. MATERIALS SPILLED ON DIRT SHOULD BE REMOVED DOWN TO WHERE A DISCOLORATION OF THE SOIL HAS BEEN REMOVED. WATER SHALL NEVER BE USED TO FLUSH MATERIAL OFF A SURFACE.
6. ALL MATERIAL SHALL BE PROPERLY STORED IN A LOCATION DESIGNATED BY THE RESPONSIBLE PERSON ON SITE.
7. THE RESPONSIBLE PERSON SHALL CONTACT THE SITE CONTRACTED EMERGENCY RESPONSE AND DISPOSAL CO. TO COLLECT AND PROPERLY DISPOSE OF THE MATERIAL.
8. LOCATION OF THE SPILL WILL BE DOCUMENTED ON THE STORMWATER MAINTENANCE PLAN (SWMP) IN THE CONSTRUCTION TRAILER.

6. IF IT CAN BE SAFELY ACCOMPLISHED, ATTEMPT TO CONTROL THE SPILL BY STOPPING OR SECURING THE SPILL SOURCE.
7. IF IT CAN SAFELY BE ACCOMPLISHED, ATTEMPT TO PREVENT MIGRATION OF THE SPILL BY USING AN ADSORBENT. THIS COULD INCLUDE ABSORBENT PADS OR BOOMS, FLOOR DRY, CAT LITTER, OR DIRT. THE ADSORBENT SHOULD BE SPREAD ALONG THE DOWNHILL SIDE TO STOP ANY FLOW.
8. IF IT CAN SAFELY BE ACCOMPLISHED, ATTEMPT TO PREVENT THE MATERIAL FROM ENTERING A STORM INLET OR MANHOLE BY CONSTRUCTING A DAM OF ADSORBENT MATERIAL IN THE GUTTER UP STREAM FROM THE INLET.
9. EMERGENCY RESPONSE PERSONNEL SHOULD HANDLE STABILIZATION OF THE SPILL AND INITIAL CLEANUP.
10. FINAL CLEANUP AND DISPOSAL OF CONTAMINATED MATERIAL SHOULD BE HANDLED BY THE SITE CONTRACTED EMERGENCY RESPONSE AND DISPOSAL CO..
11. LOCATION OF THE SPILL WILL BE DOCUMENTED ON THE STORMWATER MAINTENANCE PLAN (SWMP) IN THE CONSTRUCTION TRAILER.

G. RECORD MANAGEMENT

ALL DOCUMENTATION FROM THE INCIDENT, INCLUDING INCIDENT REPORT AND INCIDENTAL DISPOSAL MANIFESTS, SHALL BE MAINTAINED AT BOULDER COUNTY TRANSPORTATION, 2525 13TH STREET 80302. (303) 441-3900 FOR A PERIOD OF 3 YEARS FROM THE DATE OF THE SPILL.

G. RECORD MANAGEMENT

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H. AFTER INCIDENT BRIEFING

ALL PERSONNEL INVOLVED IN THE INCIDENT SHALL ATTEND A DEBRIEFING TO DETERMINE THE CAUSE OF THE SPILL, PROCEDURES FOLLOWED, AND CORRECTIVE ACTIONS TO PREVENT FUTURE SPILLS. ALL PERTINENT DATA SHALL BE DOCUMENTED. ALL FINDINGS FROM THE DEBRIEFING SHOULD BE DISCUSSED AT THE NEXT SAFETY MEETING.

H. AFTER INCIDENT BRIEFING

ALL PERSONNEL INVOLVED IN THE INCIDENT SHALL ATTEND A DEBRIEFING TO DETERMINE THE CAUSE OF THE SPILL, PROCEDURES FOLLOWED, AND CORRECTIVE ACTIONS TO PREVENT FUTURE SPILLS. ALL PERTINENT DATA SHALL BE DOCUMENTED. ALL FINDINGS FROM THE DEBRIEFING SHOULD BE DISCUSSED AT THE NEXT SAFETY MEETING.

SIGNIFICANT FUEL OR OIL SPILL (25 GALLONS OF MORE)

A. PURPOSE

THE PURPOSE OF THIS STANDARD OPERATING PROCEDURE IS TO ESTABLISH A UNIFORM PROCEDURE FOR CLEAN UP AND DISPOSAL OF MATERIAL FROM SIGNIFICANT ACCIDENTAL SPILL OF FUEL (GASOLINE OR DIESEL OR OIL (HYDRAULIC OR MOTOR). THE PROCEDURES OUTLINED IN THIS SOP ARE APPLICABLE TO ALL PERSONNEL WORKING THE DILLON ROAD CULVERT REPLACEMENT CONSTRUCTION SITE. CLEAN UP AND PROPER DISPOSAL OF SPILLED FUEL OR OIL IN TO THE SOIL OR ONTO THE GROUND SURFACE IS REQUIRED TO ENSURE THE MATERIAL OR CONTAMINATED SOIL DOES NOT ENTER OR IMPACT THE WATERS OF THE STATE OF THE SANITARY SEWER SYSTEM.

B. SUMMARY OF METHOD

THIS PROCEDURE OUTLINES THE STEPS TO BE TAKEN TO PREVENT SPILLED FUEL OR OIL FROM IMPACTING WATERS OF THE STATE AND DISPOSAL OF THE RESULTING CONTAMINATED CLEANUP MATERIAL.

C. DEFINITIONS

1. MATERIAL SAFETY DATA SHEET (MSDS). THE STANDARD INDUSTRY LIST FOR A PRODUCT DETAILING THE CHEMICAL MAKE-UP, SAFETY HAZARD, FIRST AID, FIRE FIGHTING, AND SPILL CLEANUP MEASURES, HANDLING, STORAGE AND DISPOSAL METHODS.

D. HEALTH AND SAFETY WARNINGS

FUELS AND OILS MAY BE MAY BE FLAMMABLE, CAUSE SKIN AND EYE IRRITATION, AND MAY BE HARMFUL OR FATAL IF SWALLOWED. CAUTION SHOULD BE USED DURING CLEAN UP OPERATIONS. THE MSDS FOR THE SPILLED MATERIAL SHOULD BE CONSULTED TO ENSURE PERSONNEL SAFETY DURING CLEANUP OPERATIONS.

E. EQUIPMENT AND SUPPLIES

1. ABSORBENT PADS AND BOOMS
2. HAND EQUIPMENT (SHOVELS, BROOMS)
3. WASTE CONTAINERS (5 GALLON BUCKETS OR DRUMS)
4. PERSONAL PROTECTIVE EQUIPMENT

F. PROCEDURAL STEPS

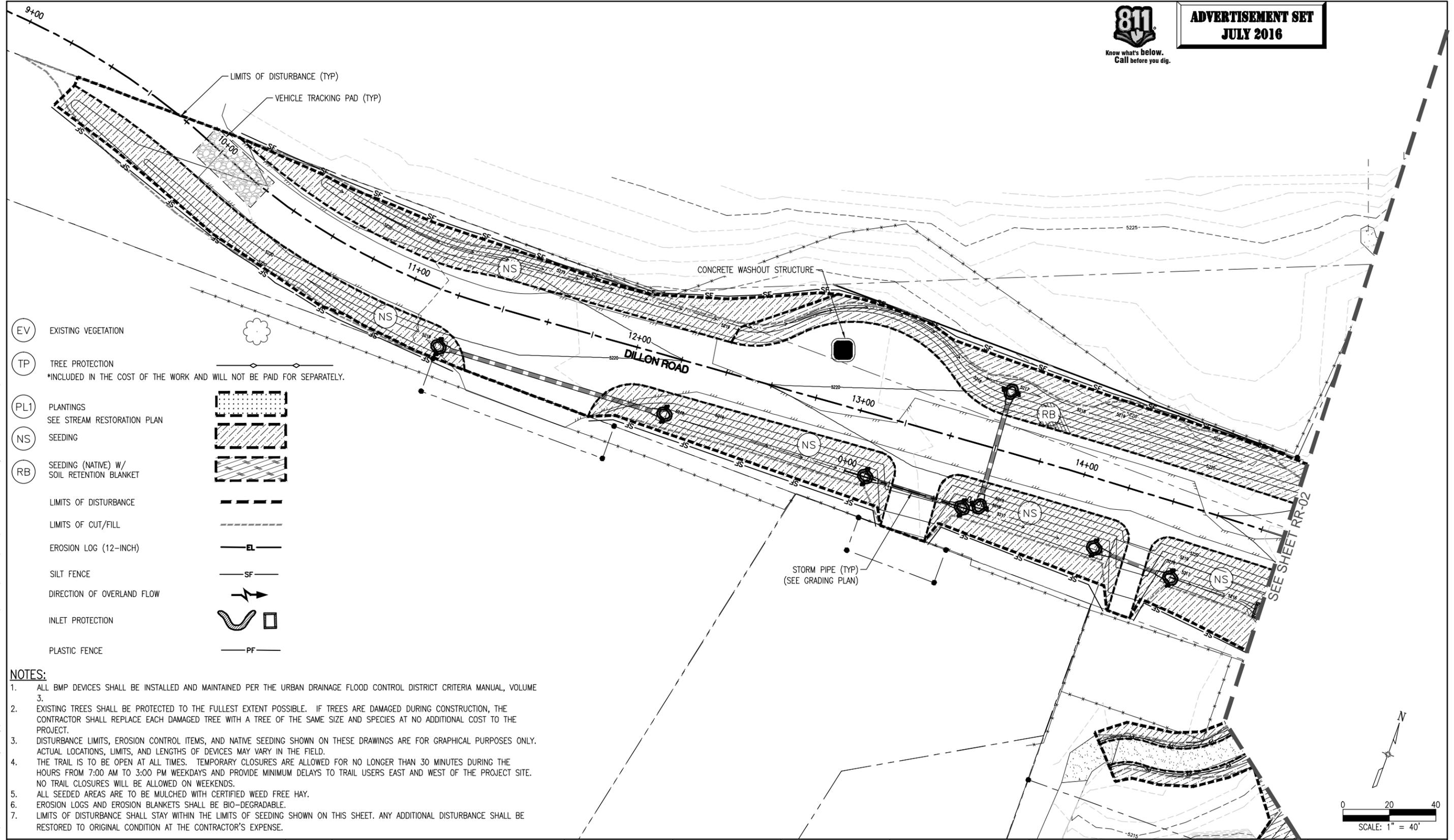
1. SHUT DOWN ALL EQUIPMENT OPERATING IN THE AREA TO PREVENT IGNITION OF THE SPILL.
2. ENSURE THE SAFETY OF PERSONNEL IN THE AREA. IF NEEDED EVACUATE THE AREA AND WAIT FOR EMERGENCY RESPONSE PERSONNEL.
3. CONTACT THE CHAIN OF COMMAND ON SITE TO ENACT THE EMERGENCY RESPONSE CONTACT PROCEDURE
 - A. RESPONSIBLE PERSON BEGINS CONTACTING EMERGENCY RESPONSE AGENCIES
4. CALL 911 FOR FIRE CONTROL
5. COLORADO ENVIRONMENTAL RELEASE AND INCIDENT REPORTING HOTLINE 1-(887)-518-5608.
 - A. RESPONSIBLE PERSON CONSULTS THE MSDS FOR SPILL PROCEDURE

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| Unit Information | Unit Leader Initials | | | | | | | Void: | Detailer: CJB | Subset Sheets: | 5 | | Sheet Number 45 | |
| | | | | | | | | | Sheet Subset: SW-05 | | | | | |

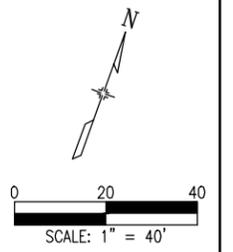


**ADVERTISEMENT SET
JULY 2016**



- (EV) EXISTING VEGETATION
- (TP) TREE PROTECTION
*INCLUDED IN THE COST OF THE WORK AND WILL NOT BE PAID FOR SEPARATELY.
- (PL1) PLANTINGS
SEE STREAM RESTORATION PLAN
- (NS) SEEDING
- (RB) SEEDING (NATIVE) W/
SOIL RETENTION BLANKET
- LIMITS OF DISTURBANCE
- LIMITS OF CUT/FILL
- EROSION LOG (12-INCH)
- SILT FENCE
- DIRECTION OF OVERLAND FLOW
- INLET PROTECTION
- PLASTIC FENCE

- NOTES:**
- ALL BMP DEVICES SHALL BE INSTALLED AND MAINTAINED PER THE URBAN DRAINAGE FLOOD CONTROL DISTRICT CRITERIA MANUAL, VOLUME 3.
 - EXISTING TREES SHALL BE PROTECTED TO THE FULLEST EXTENT POSSIBLE. IF TREES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE EACH DAMAGED TREE WITH A TREE OF THE SAME SIZE AND SPECIES AT NO ADDITIONAL COST TO THE PROJECT.
 - DISTURBANCE LIMITS, EROSION CONTROL ITEMS, AND NATIVE SEEDING SHOWN ON THESE DRAWINGS ARE FOR GRAPHICAL PURPOSES ONLY. ACTUAL LOCATIONS, LIMITS, AND LENGTHS OF DEVICES MAY VARY IN THE FIELD.
 - THE TRAIL IS TO BE OPEN AT ALL TIMES. TEMPORARY CLOSURES ARE ALLOWED FOR NO LONGER THAN 30 MINUTES DURING THE HOURS FROM 7:00 AM TO 3:00 PM WEEKDAYS AND PROVIDE MINIMUM DELAYS TO TRAIL USERS EAST AND WEST OF THE PROJECT SITE. NO TRAIL CLOSURES WILL BE ALLOWED ON WEEKENDS.
 - ALL SEEDED AREAS ARE TO BE MULCHED WITH CERTIFIED WEED FREE HAY.
 - EROSION LOGS AND EROSION BLANKETS SHALL BE BIO-DEGRADABLE.
 - LIMITS OF DISTURBANCE SHALL STAY WITHIN THE LIMITS OF SEEDING SHOWN ON THIS SHEET. ANY ADDITIONAL DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (46-47) Erosion Control Plan.dwg Jul 14, 2016 - 3:15pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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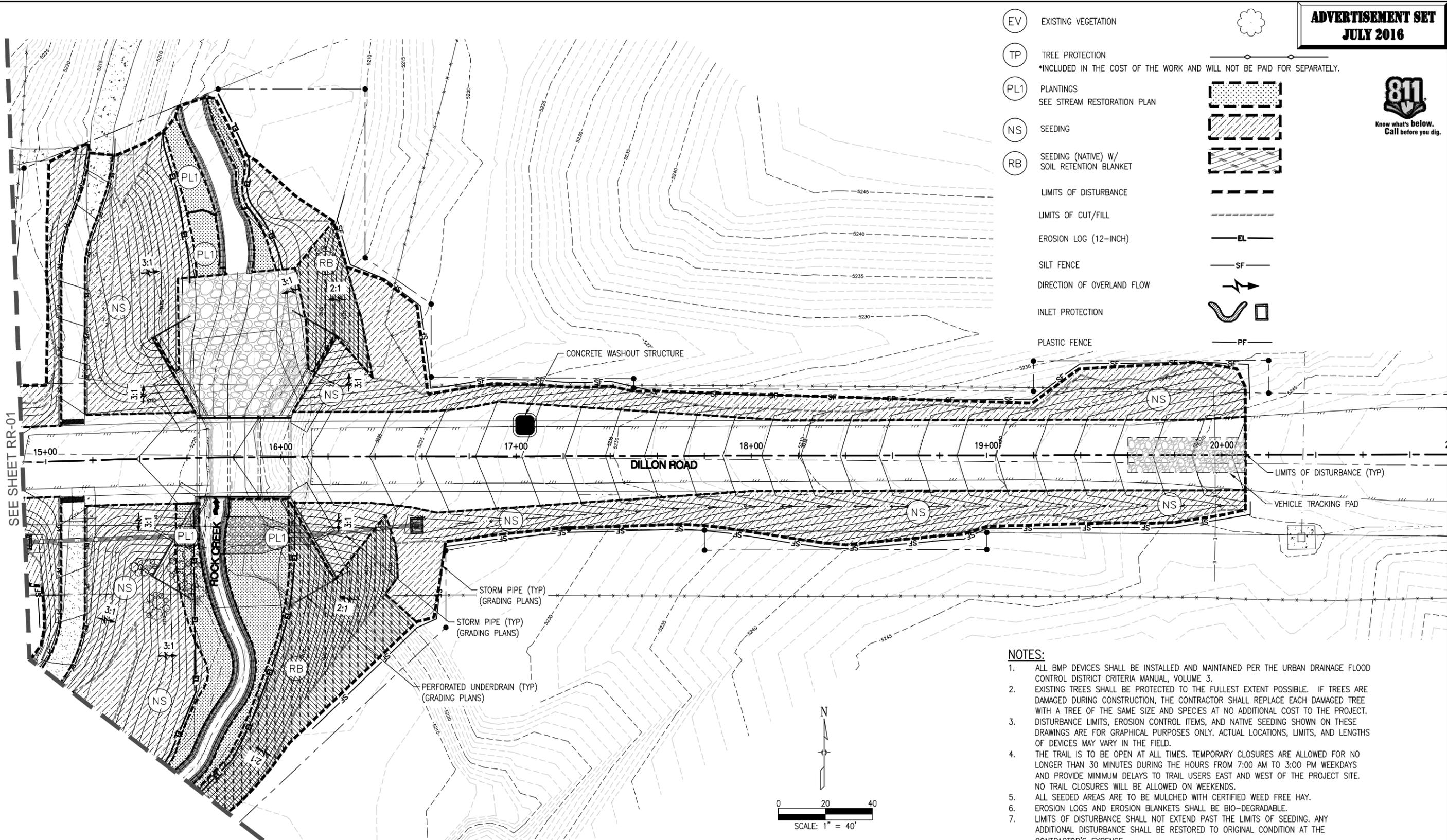
As Constructed
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| DILLON ROAD OVER ROCK CREEK EROSION CONTROL PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 2 |
| Sheet Subset: | EC-01 | | |

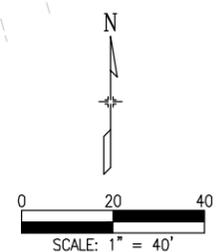
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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 46 |



- (EV) EXISTING VEGETATION
- (TP) TREE PROTECTION
*INCLUDED IN THE COST OF THE WORK AND WILL NOT BE PAID FOR SEPARATELY.
- (PL1) PLANTINGS
SEE STREAM RESTORATION PLAN
- (NS) SEEDING
- (RB) SEEDING (NATIVE) W/
SOIL RETENTION BLANKET
- LIMITS OF DISTURBANCE
- LIMITS OF CUT/FILL
- EROSION LOG (12-INCH)
- SILT FENCE
- DIRECTION OF OVERLAND FLOW
- INLET PROTECTION
- PLASTIC FENCE



- NOTES:**
1. ALL BMP DEVICES SHALL BE INSTALLED AND MAINTAINED PER THE URBAN DRAINAGE FLOOD CONTROL DISTRICT CRITERIA MANUAL, VOLUME 3.
 2. EXISTING TREES SHALL BE PROTECTED TO THE FULLEST EXTENT POSSIBLE. IF TREES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE EACH DAMAGED TREE WITH A TREE OF THE SAME SIZE AND SPECIES AT NO ADDITIONAL COST TO THE PROJECT. DISTURBANCE LIMITS, EROSION CONTROL ITEMS, AND NATIVE SEEDING SHOWN ON THESE DRAWINGS ARE FOR GRAPHICAL PURPOSES ONLY. ACTUAL LOCATIONS, LIMITS, AND LENGTHS OF DEVICES MAY VARY IN THE FIELD.
 3. THE TRAIL IS TO BE OPEN AT ALL TIMES. TEMPORARY CLOSURES ARE ALLOWED FOR NO LONGER THAN 30 MINUTES DURING THE HOURS FROM 7:00 AM TO 3:00 PM WEEKDAYS AND PROVIDE MINIMUM DELAYS TO TRAIL USERS EAST AND WEST OF THE PROJECT SITE. NO TRAIL CLOSURES WILL BE ALLOWED ON WEEKENDS.
 4. ALL SEEDED AREAS ARE TO BE MULCHED WITH CERTIFIED WEED FREE HAY.
 5. EROSION LOGS AND EROSION BLANKETS SHALL BE BIO-DEGRADABLE.
 6. LIMITS OF DISTURBANCE SHALL NOT EXTEND PAST THE LIMITS OF SEEDING. ANY ADDITIONAL DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

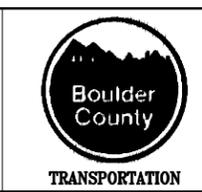


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (46-47) Erosion Control Plan.dwg Jul 14, 2016 - 3:15pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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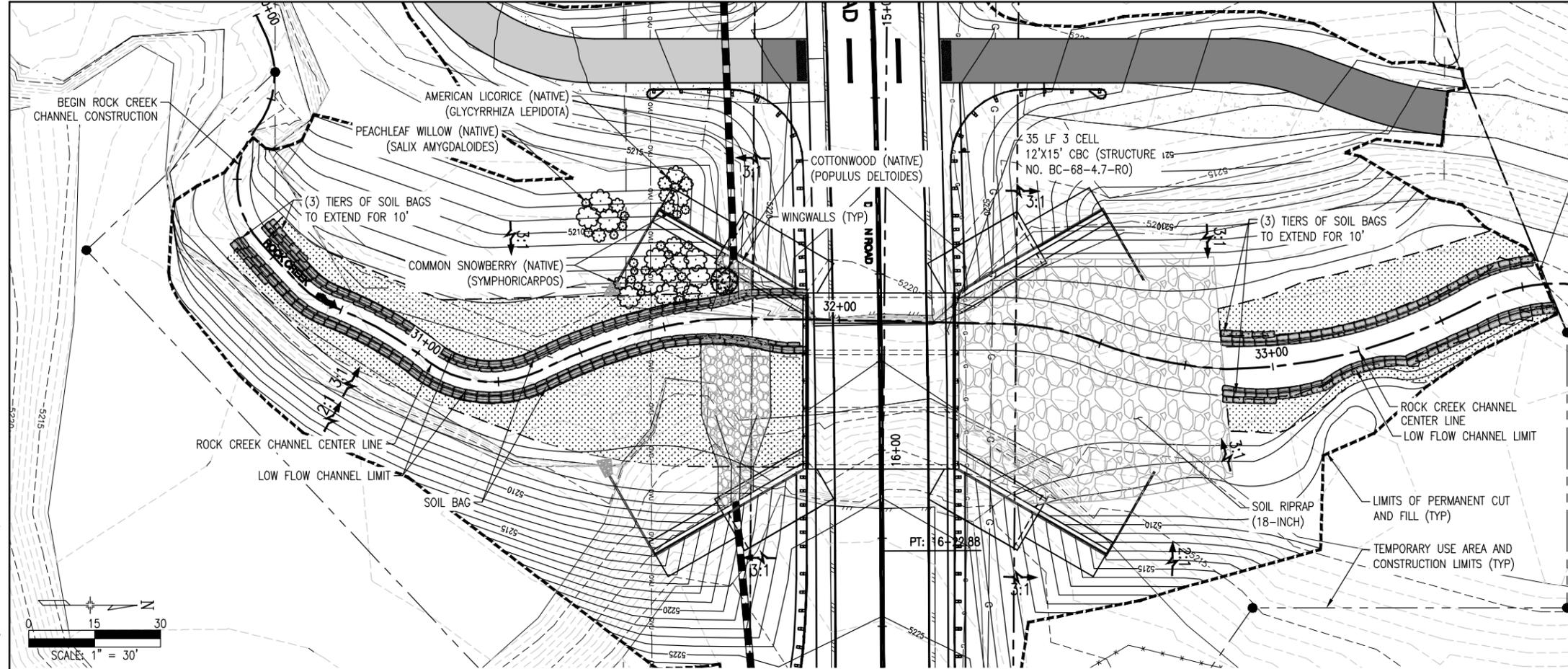
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| DILLON ROAD OVER ROCK CREEK EROSION CONTROL PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 2 |
| Sheet Subset: | EC-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 47 |



**ADVERTISEMENT SET
JULY 2016**

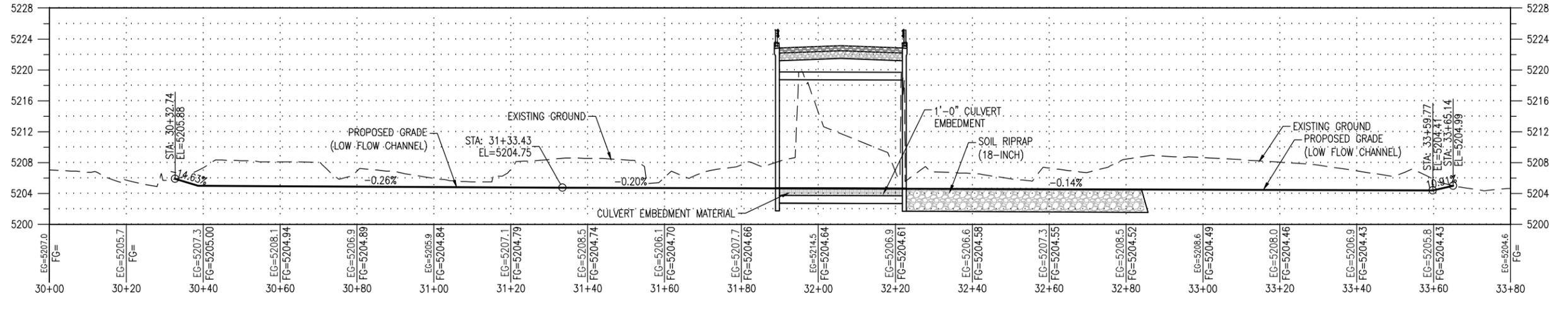
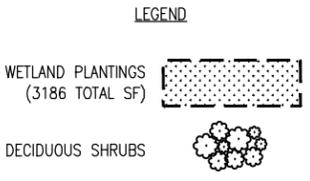
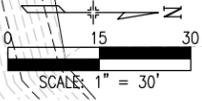


| RECOMMENDED PLANTINGS | | | |
|-----------------------|----------------------|---------|-------------|
| COMMON NAME | BOTANICAL NAME | IMPACT | REPLACED BY |
| PEACHLEAF WILLOW* | SALIX AMYGDALOIDES | 38.0 SF | 18 EA |
| COMMON SNOWBERRY* | SYMPHORICARPOS | 62.5 SF | 18 EA |
| AMERICAN LICORICE* | GLYCYRRHIZA PEPIDOTA | 45.2 SF | 18 EA |
| COTTONWOOD** | POPULUS DELTOIDES | 1 EA | 2 EA |

| RECOMMENDED WETLAND PLANTINGS*** | | |
|----------------------------------|--------------------------|----------------------|
| COMMON NAME | BOTANICAL NAME | PLANTING WATER DEPTH |
| THREE-SQUARE BULRUSH | SCHOENOPLECTUS PUNGENS | 5 CM |
| SOFT-STEM BULRUSH | SCHOENOPLECTUS LACUSTRIS | 15 CM |
| SPIKERUSH | ELEOCHARIS PALUSTRIS | 2 CM |
| PRAIRIE CORDGRASS | SPARTINA PECTINATA | 0 CM |
| ALKALI BULRUSH | BOLBOSCHOENUS MARITIMUS | 10 CM |

*TO BE PAID FOR AS ITEM 214 DECIDUOUS SHRUB (5 GALLON)
 **TO BE PAID FOR AS ITEM 214 DECIDUOUS TREE (4 INCH CALIPER)
 ***TO BE PAID FOR AS ITEM 214 WETLAND PLANTINGS

- NOTES:**
- AT TOTAL OF 1416 WETLAND PLANTINGS ARE TO BE PLACED 1 PER 2.25 SF THROUGHOUT THE 3186 SF OF TOTAL PLANTING AREA.
 - PLANTINGS ARE TO INCLUDE WILLOW CUTTINGS APPLIED AT 1 CUTTING PER 2.25 SF OR 18 INCH ON CENTER AREAS SHOWN ON PLANS OUTSIDE OF STREAM BANK. PLANTINGS ARE TO INCLUDE LIVE CLUMPS IN AREAS LOCATED INSIDE OF STREAM BANK.
 - PLANTING AREAS SHOWN ON THESE DRAWINGS ARE FOR GRAPHICAL PURPOSES ONLY. ACTUAL LOCATIONS AND LIMITS MAY VARY IN THE FIELD. CONTRACTOR TO VERIFY ALL LOCATIONS WITH THE COUNTY ENGINEER.



Print Date:
 File Name:
 Horiz. Scale: Vert. Scale: As Noted
 Unit Information Unit Leader Initials

| Sheet Revisions | | |
|-----------------|----------|-------|
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 Revised:
 Void:

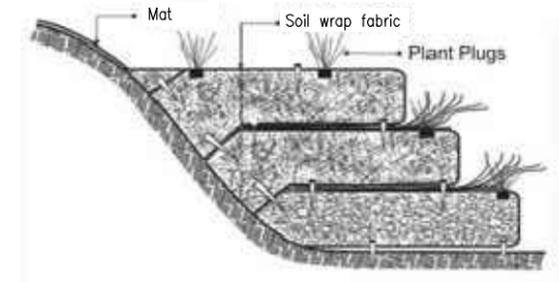
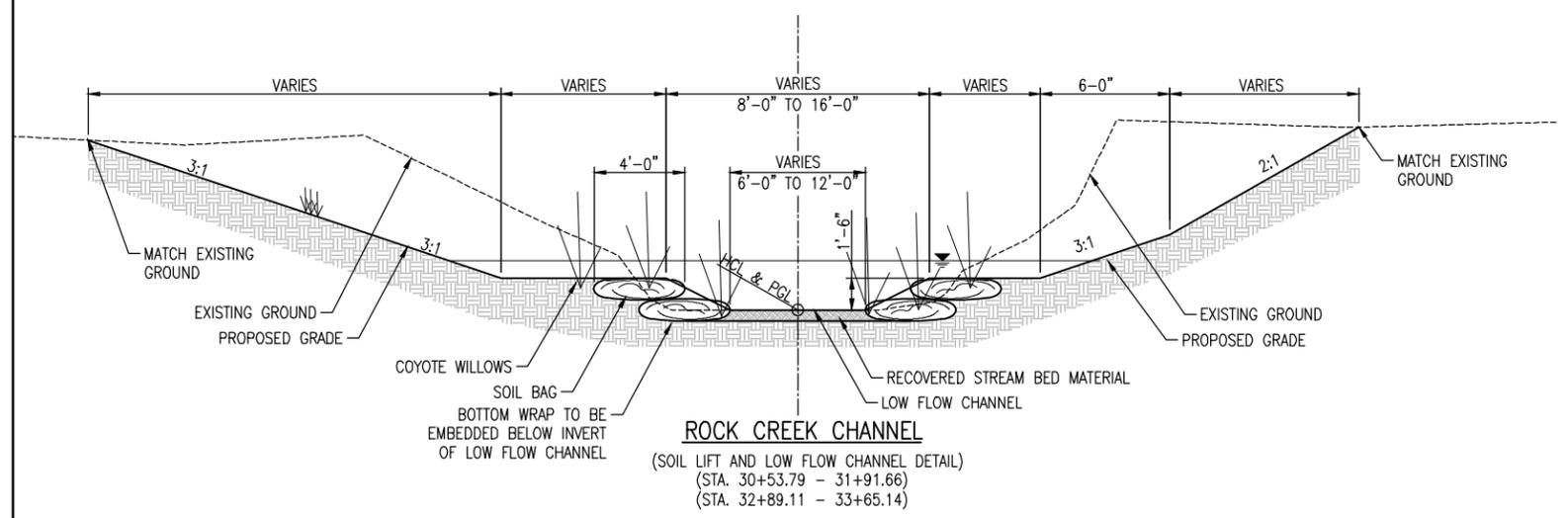
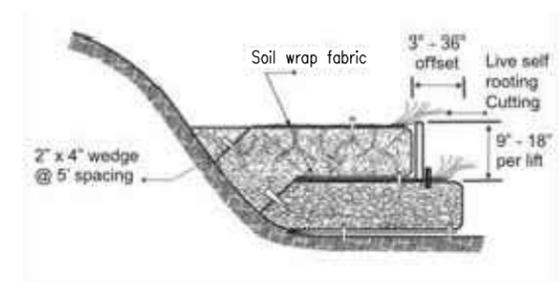
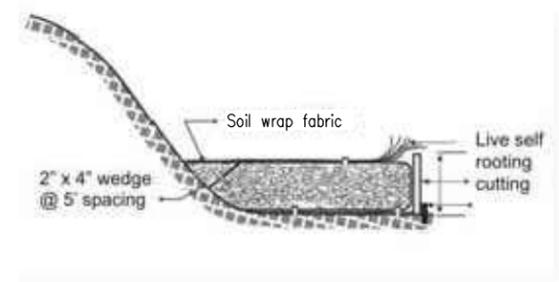
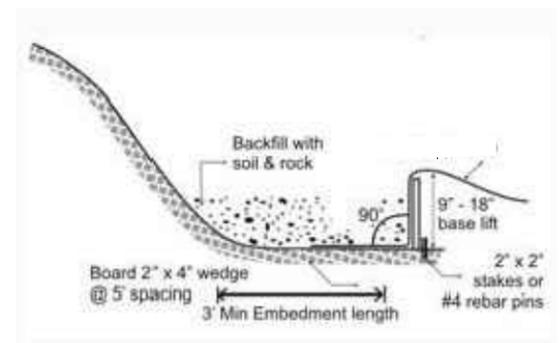
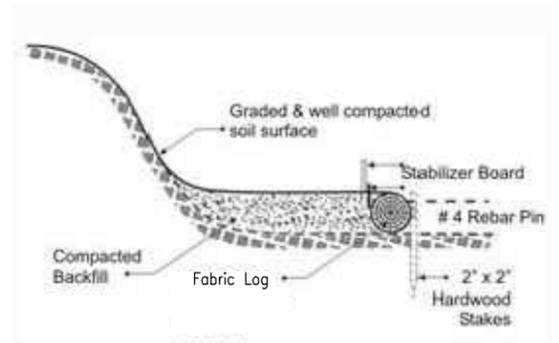
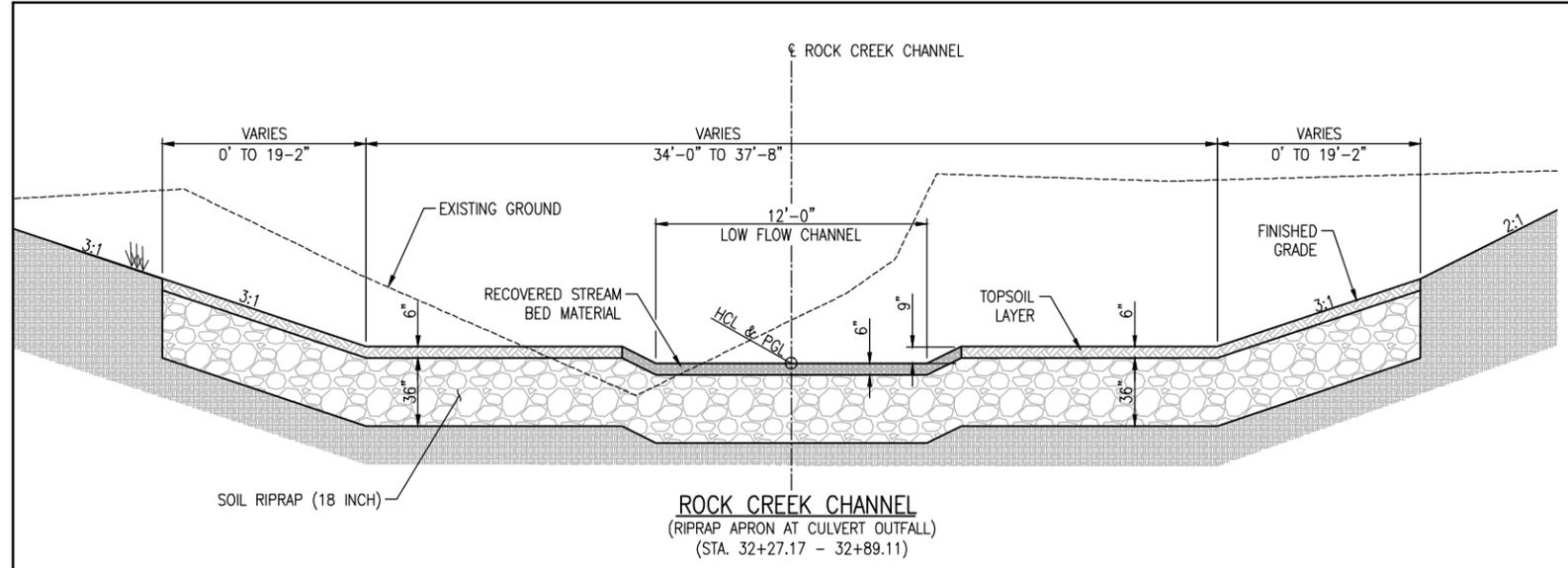
DILLON ROAD OVER ROCK CREEK
STREAM RESTORATION PLAN
 Designer: CJB
 Detailer: CJB
 Sheet Subset: SR-01
 Structure Numbers
 Subset Sheets: 2

Project No./Code
 ER C070-051/20014
 BC-68-4.7-RO
 Sheet Number **48**

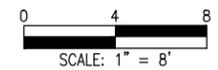
G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (48-49) Stream Restoration Plan.dwg Jul 14, 2016 - 3:16pm



**ADVERTISEMENT SET
JULY 2016**



INSTALLATION GUIDE FOR FOR SOIL BAGS



NOTES:
1. SOIL BAG IS TO BE CLEAN, WELL GRADED, ON-SITE MATERIAL WRAPPED IN APPROVED GEOTEXTILE FABRIC WITH SEED. SEED TYPE AND PLACEMENT ARE TO BE COORDINATED WITH THE BOULDER COUNTY ENGINEER.

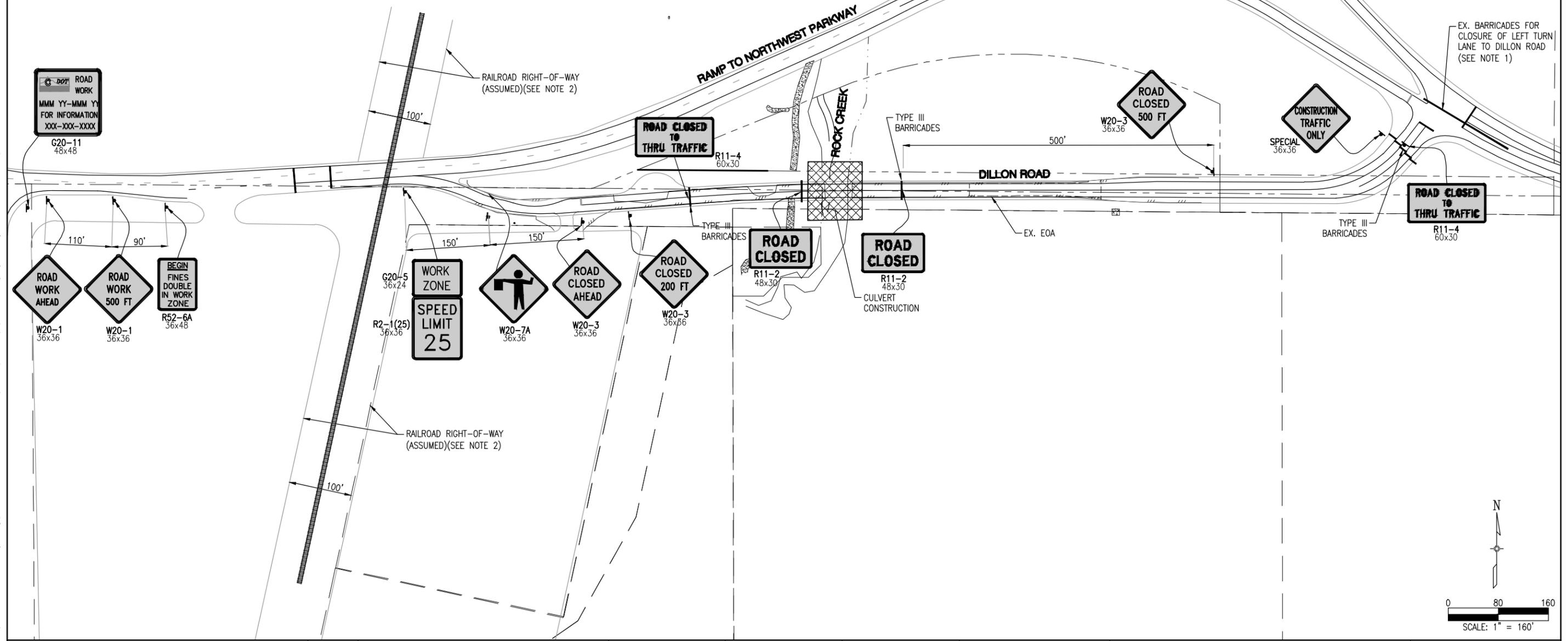
G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (48-49) Stream Restoration Plan.dwg Jul 14, 2016 - 3:16pm

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|------------------|-----------------------|-----------------|----------|-------|---|---|----------------|----------------|--|-------------------|------------------|-----------------|--|
| Print Date: | | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | COLORADO DEPARTMENT OF TRANSPORTATION Region 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK STREAM RESTORATION PLAN | | Project No./Code | | |
| File Name: | | Date: | Comments | Init. | | | No Revisions: | | | ER C070-051/20014 | | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | Revised: | Designer: | CJB | Structure | | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | Void: | Detailer: | CJB | Numbers | | Sheet Number 49 | |
| | | | | | | Sheet Subset: | SR-02 | Subset Sheets: | 2 | | | | |

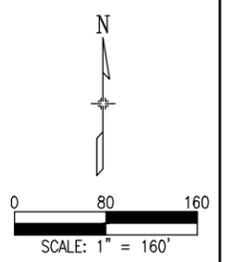


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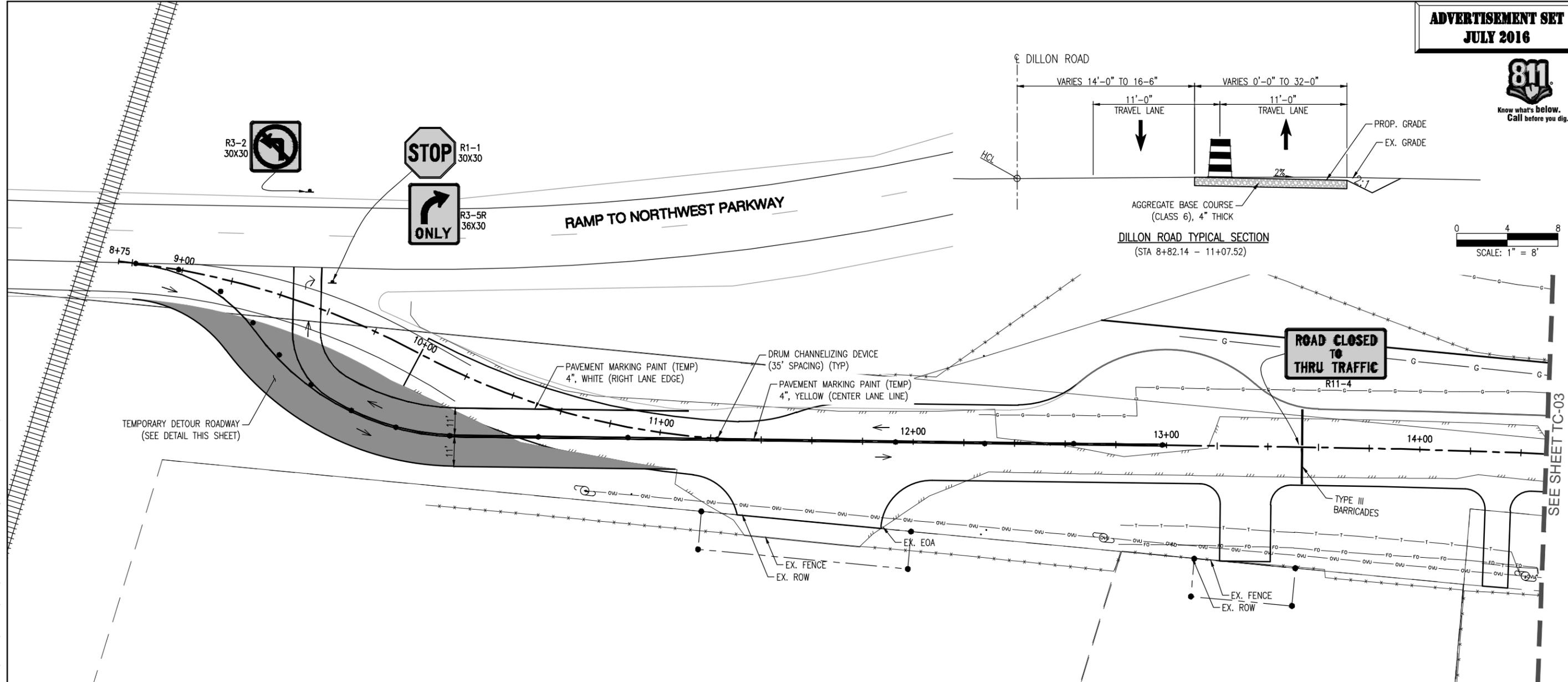
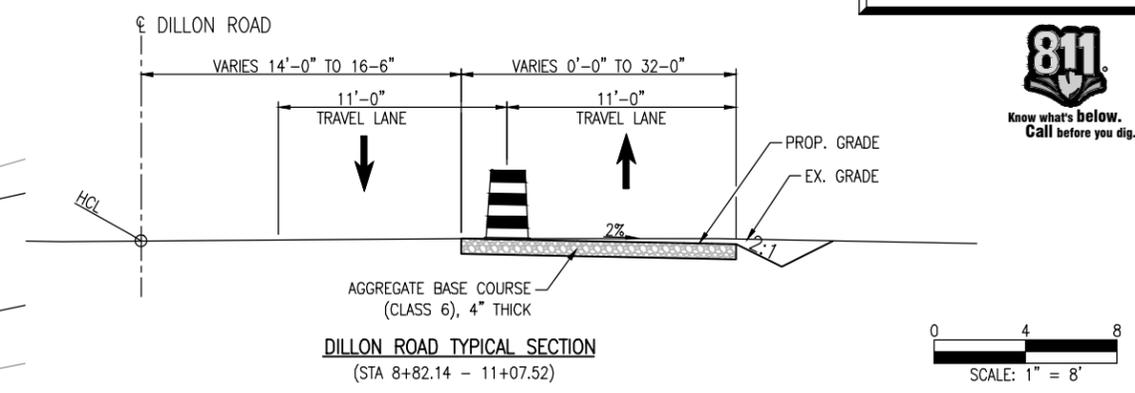
1. THE CONTRACTOR IS TO COORDINATE THE ADVANCED SIGNING, MAINTENANCE OF TRAFFIC AND CLOSURE OF DILLON ROAD WITH THE CITY AND COUNTY OF BROOMFIELD AND BOULDER COUNTY.
2. THE CONTRACTOR SHALL NOT PLACE ANY SIGNS OR ITEMS ASSOCIATED WITH MAINTENANCE OF TRAFFIC WITHIN THE RAILROAD RIGHT OF WAY.



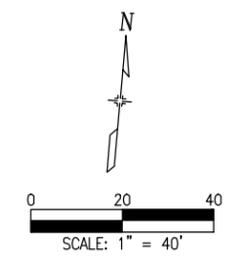
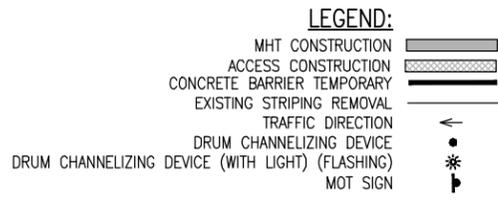
G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (50) Advanced Signing Plan.dwg Jul 14, 2016 - 3:16pm



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| Print Date: | | Sheet Revisions | | | 100 Superior Plaza Way Suite 220 Superior, Colorado 80027 303.444.2075 www.LorisandAssociates.com | | 1420 Second Street Greeley, CO 80632 Phone: (970) 350-2103 FAX: (970) 350-2198 Region 4 LHN | As Constructed | | DILLON ROAD OVER ROCK CREEK ADVANCED SIGNING PLAN | | Project No./Code | |
| File Name: | | Date: | Comments | Init. | | | | No Revisions: | | | ER C070-051/20014 | | |
| Horiz. Scale: | Vert. Scale: As Noted | | | | | | Revised: | Designer: | CJB | Structure Numbers: | | BC-68-4.7-RO | |
| Unit Information | Unit Leader Initials | | | | | | Void: | Detailer: | CJB | Subset Sheets: | 3 | Sheet Number 50 | |
| | | | | | | | | Sheet Subset: | TC-01 | | | | |



- NOTES:**
- SEE THE ADVANCED SIGNING PLANS FOR THE TYPE AND LOCATION OF SIGNAGE TO BE INSTALLED AND MAINTAINED DURING THE WORK ZONE TRAFFIC CONTROL.
 - PHASING SHOWN ON THESE DRAWINGS ARE FOR GRAPHICAL PURPOSES ONLY AND PRESENT MINIMUM CRITERIA FOR THE PHASING AND ARE USED TO ESTABLISH COSTS FOR THE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. ACTUAL PHASING AND THE CONSTRUCTION PHASING MAY VARY.
 - THE CONTRACTOR IS REQUIRED TO PROVIDE A DETAILED MAINTENANCE OF TRAFFIC PLAN, PREPARED BY A CERTIFIED TRAFFIC CONTROL MANAGER THAT CONFORMS TO ALL MUTCD, COUNTY OF BOULDER, CDOT AND AASHTO SPECIFICATIONS AT LEAST 14 DAYS PRIOR TO PLACING TRAFFIC ON TO TEMPORARY ALIGNMENTS. ANY DEVIATIONS OF THE CONTRACTOR'S MAINTENANCE OF TRAFFIC PLAN FROM THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND/OR ENGINEER DURING THAT TIME.
 - EXISTING AND TEMPORARY SIGNING AND STRIPING SHALL BE MAINTAINED AT ALL TIMES.
 - ALL EXISTING AND TEMPORARY SIGNS & DELINEATORS USED DURING EACH PHASE OF CONSTRUCTION SHALL BE REMOVED, PROTECTED, AND RESET BY THE CONTRACTOR.
 - EXISTING STRIPING AND EDGE OF PAVEMENT SHOWN AT THE BEGINNING AND END OF THE TEMPORARY DETOUR ARE APPROXIMATE. THE CONTRACTOR SHALL TIE IN THE TEMPORARY STRIPING AT THE NEAREST LOCATION OF THE EXISTING PAINT SHOWN AT THE BEGINNING AND ENDING OF EACH PHASE OF CONSTRUCTION.
 - THE CONTRACTOR SHALL COORDINATE THE PROPOSED RELOCATION OF UTILITIES WITH THE MHT AND CONSTRUCTION PHASING PLAN.
 - TEMPORARY ONE-LANE CLOSURES OF DILLON ROAD EAST OF ROCK CREEK ARE ALLOWED DURING REGULAR WORKING HOURS.
 - THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC ACCESS TO DILLON ROAD AND ROCK CREEK FROM THE WEST SIDE OF THE PROJECT AND MAKE ALL EFFORT TO ACCESS THE PROJECT SITE FROM THE EAST SIDE.



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| Print Date: | |
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| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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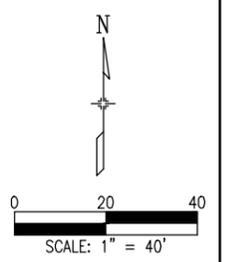
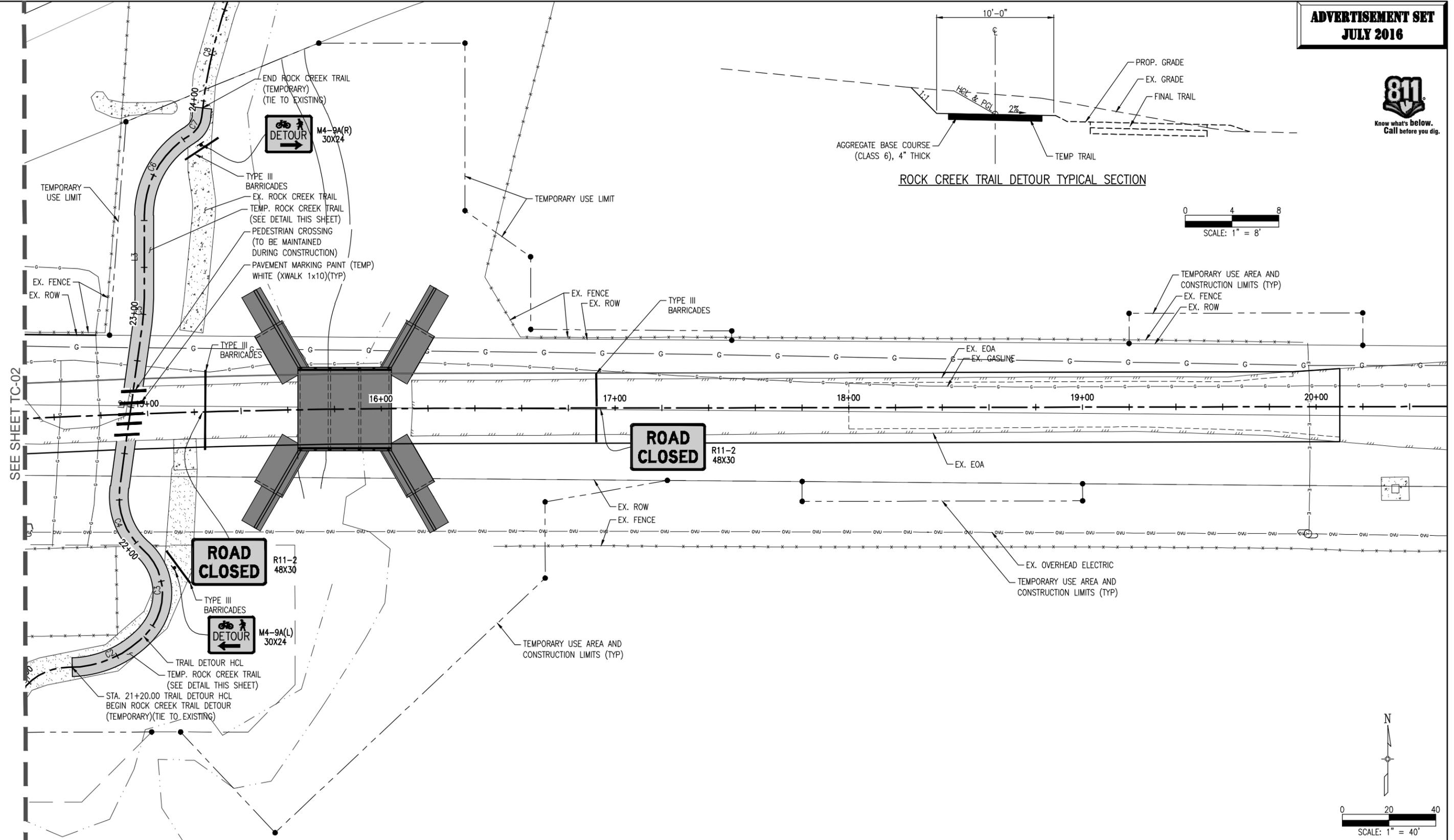
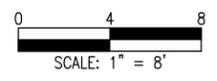
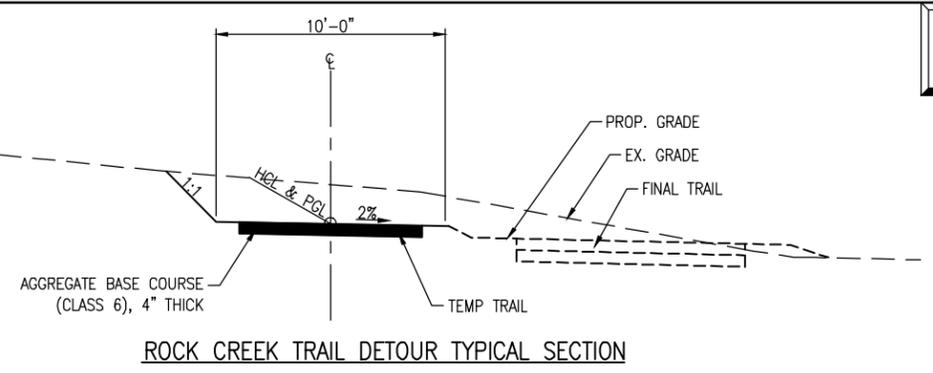
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| DILLON ROAD OVER ROCK CREEK TRAFFIC CONTROL PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 3 |
| Sheet Subset: | TC-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 51 |

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (51-52) Traffic Control Plan.dwg Jul 14, 2016 - 3:17pm

SEE SHEET TC-03

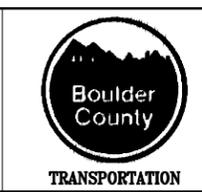


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (51-52) Traffic Control Plan.dwg Jul 14, 2016 - 3:17pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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| As Constructed |
| No Revisions: |
| Revised: |
| Void: |

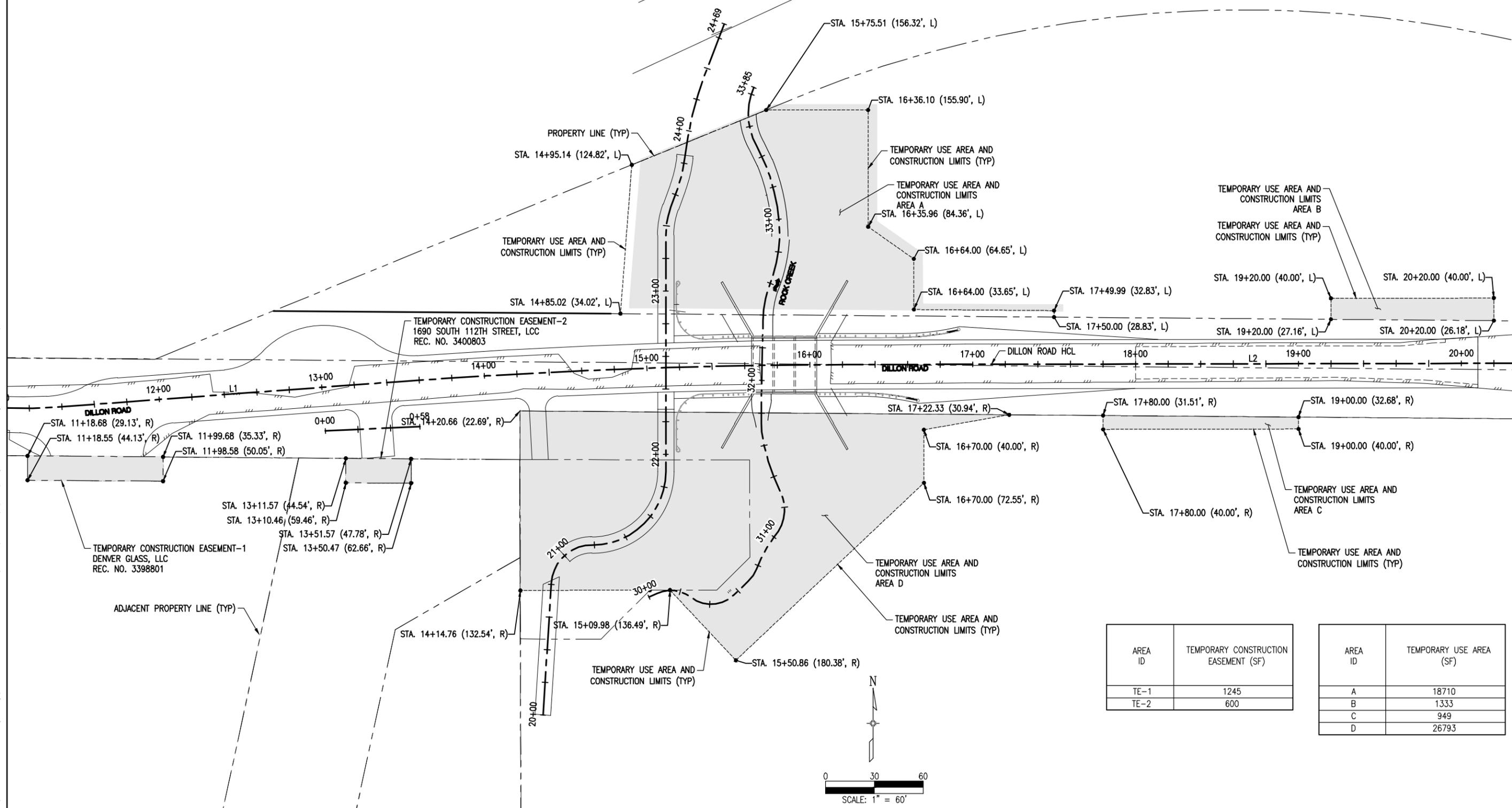
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| DILLON ROAD OVER ROCK CREEK TRAFFIC CONTROL PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 3 |
| Sheet Subset: | TC-03 | | |

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| Project No./Code | ER C070-051/20014 |
| BC-68-4.7-RO | |
| Sheet Number | 52 |



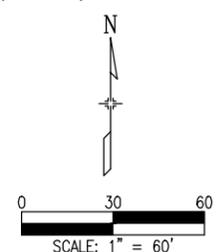
**ADVERTISEMENT SET
JULY 2016**

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (5) Temporary Use Area Planning Jul 14, 2016 - 3:18pm



| AREA ID | TEMPORARY CONSTRUCTION EASEMENT (SF) |
|---------|--------------------------------------|
| TE-1 | 1245 |
| TE-2 | 600 |

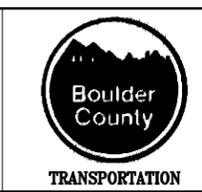
| AREA ID | TEMPORARY USE AREA (SF) |
|---------|-------------------------|
| A | 18710 |
| B | 1333 |
| C | 949 |
| D | 26793 |



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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information: | Unit Leader Initials |

| Sheet Revisions | | |
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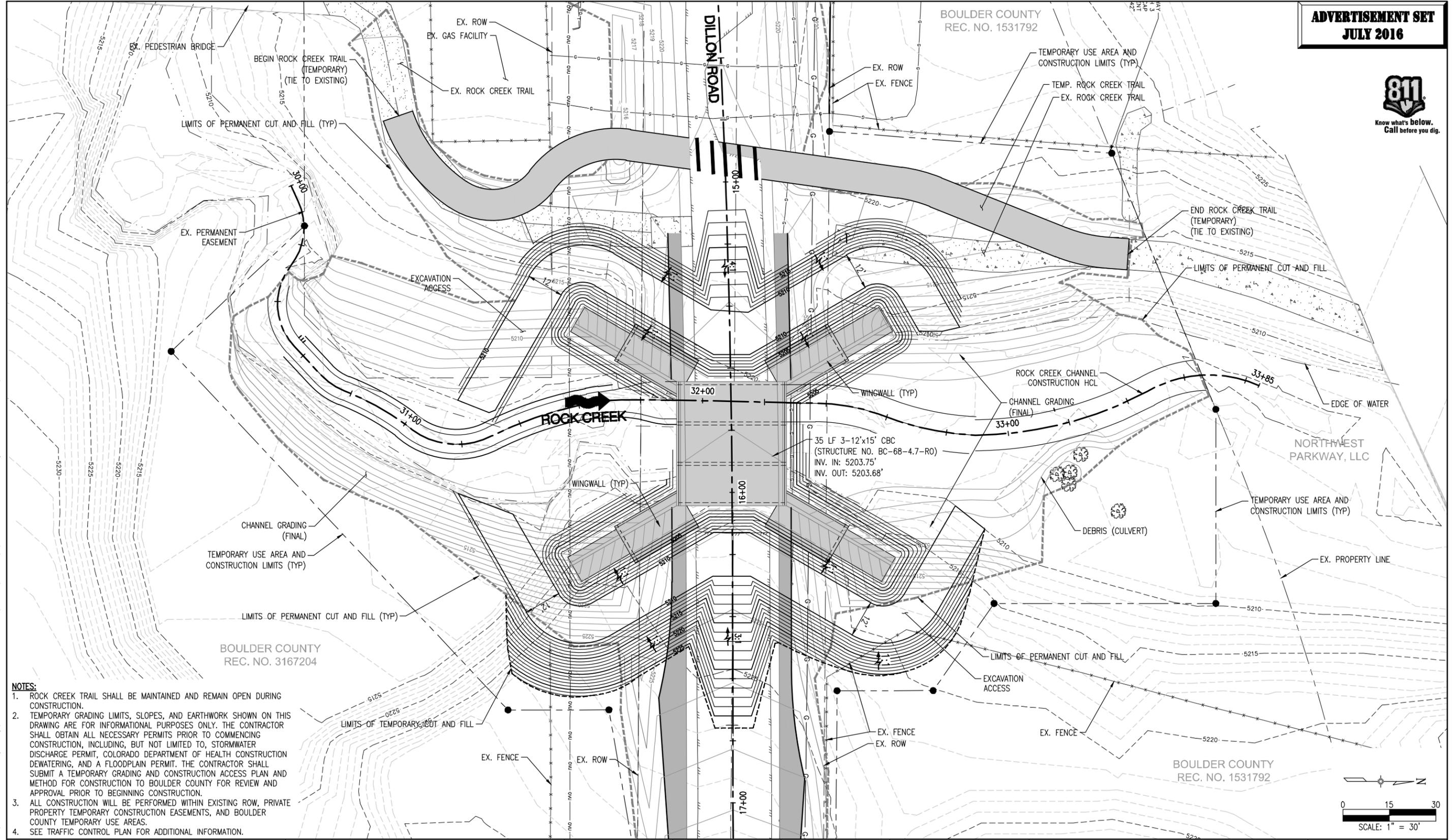


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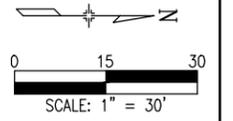
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| DILLON ROAD OVER ROCK CREEK TEMPORARY USE AREA PLAN | | | |
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| Designer: | CJB | Structure Numbers: | |
| Detailer: | CJB | Sheet Subset: | EP-01 |
| Sheet Subset: | EP-01 | Subset Sheets: | 1 |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 53 |



- NOTES:**
1. ROCK CREEK TRAIL SHALL BE MAINTAINED AND REMAIN OPEN DURING CONSTRUCTION.
 2. TEMPORARY GRADING LIMITS, SLOPES, AND EARTHWORK SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO COMMENCING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, STORMWATER DISCHARGE PERMIT, COLORADO DEPARTMENT OF HEALTH CONSTRUCTION DEWATERING, AND A FLOODPLAIN PERMIT. THE CONTRACTOR SHALL SUBMIT A TEMPORARY GRADING AND CONSTRUCTION ACCESS PLAN AND METHOD FOR CONSTRUCTION TO BOULDER COUNTY FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
 3. ALL CONSTRUCTION WILL BE PERFORMED WITHIN EXISTING ROW, PRIVATE PROPERTY TEMPORARY CONSTRUCTION EASEMENTS, AND BOULDER COUNTY TEMPORARY USE AREAS.
 4. SEE TRAFFIC CONTROL PLAN FOR ADDITIONAL INFORMATION.



G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (54) Construction Access Plan.dwg Jul 14, 2016 - 3:18pm

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| Print Date: | |
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| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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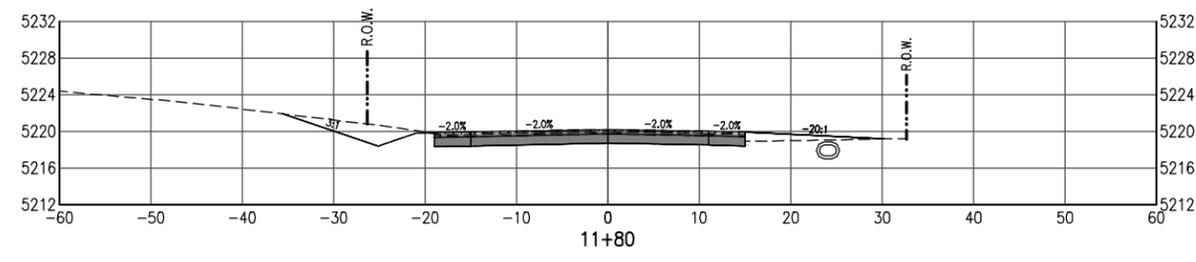
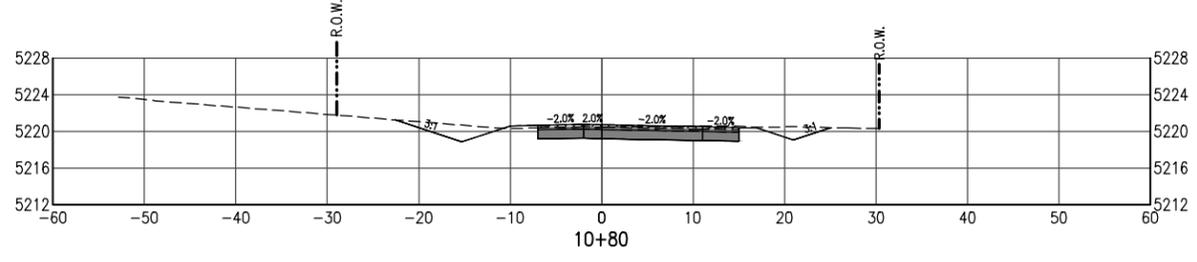
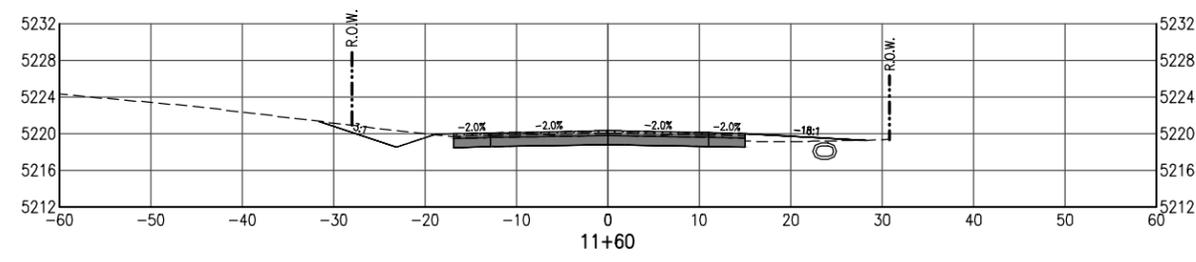
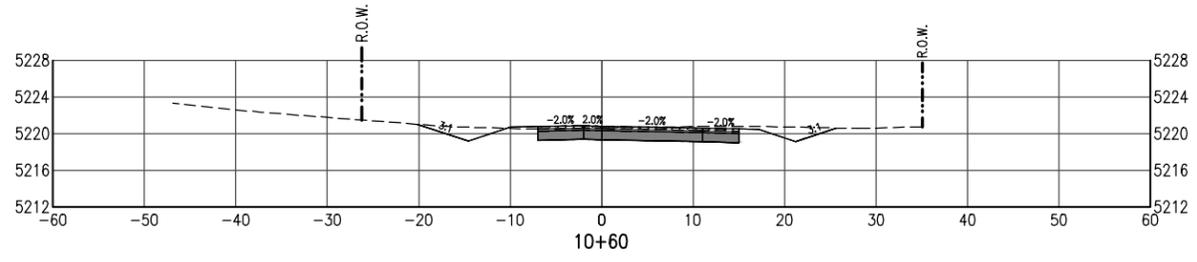
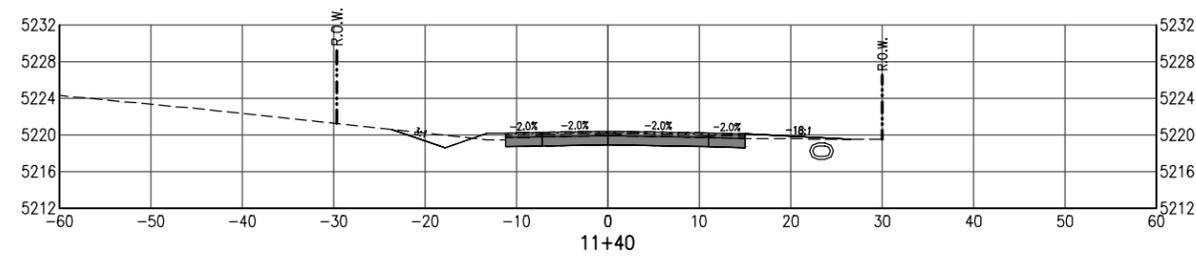
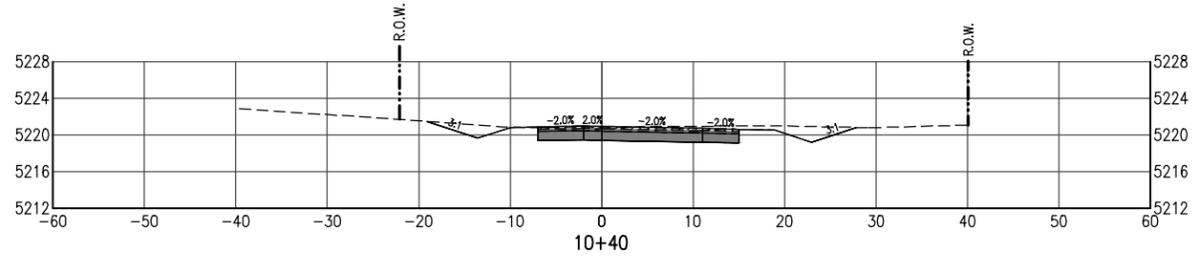
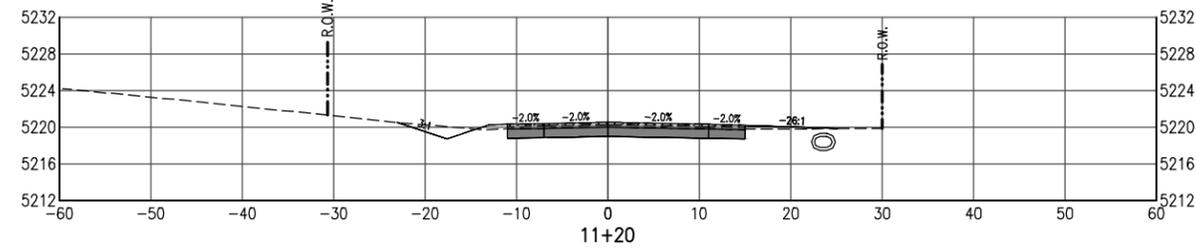
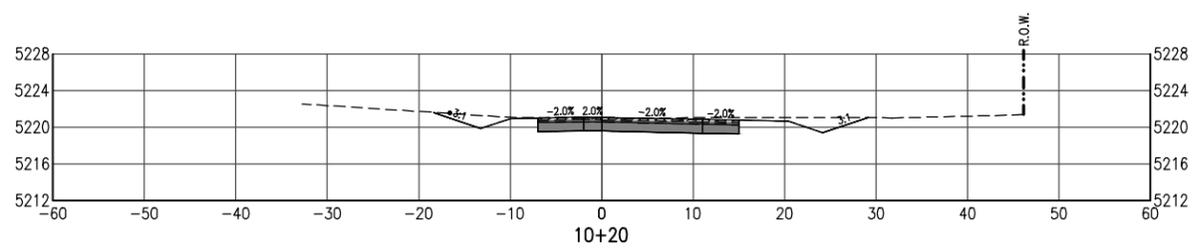
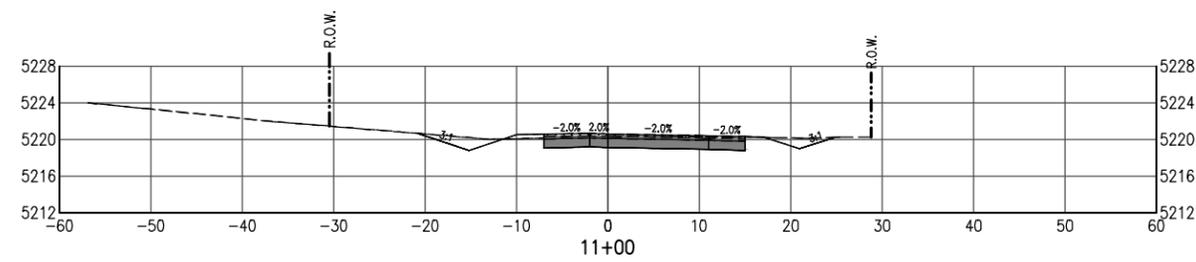
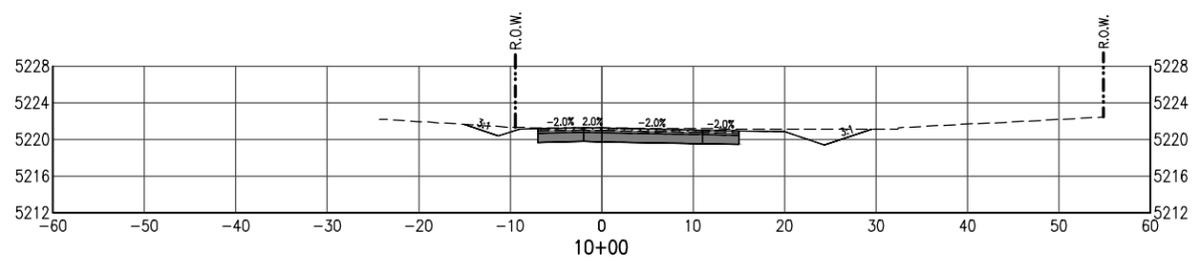


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| DILLON ROAD OVER ROCK CREEK CONCEPTUAL CONSTRUCTION ACCESS PLAN | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 2 |
| Sheet Subset: | CP-1 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 54 |

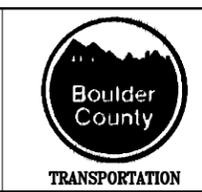


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:20pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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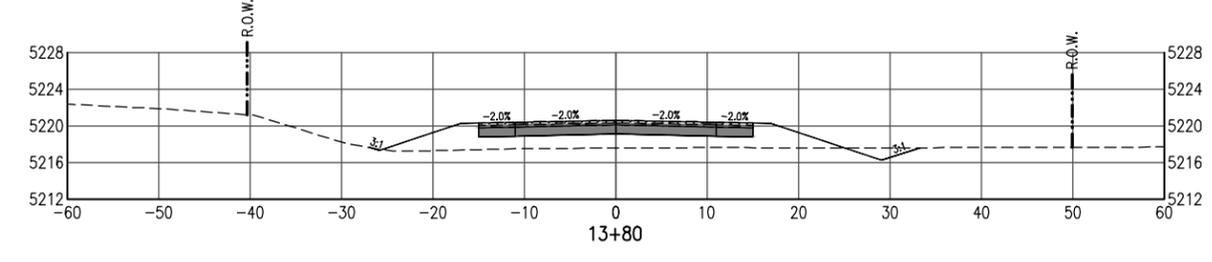
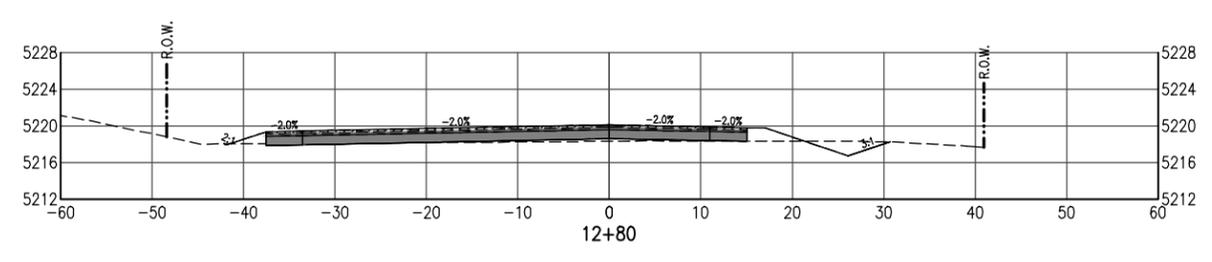
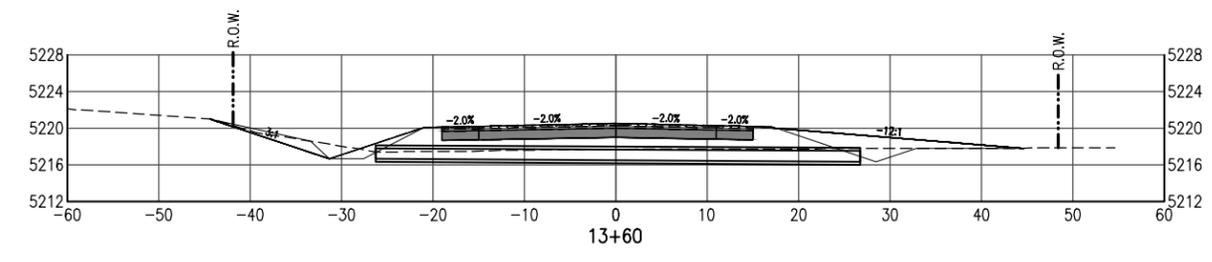
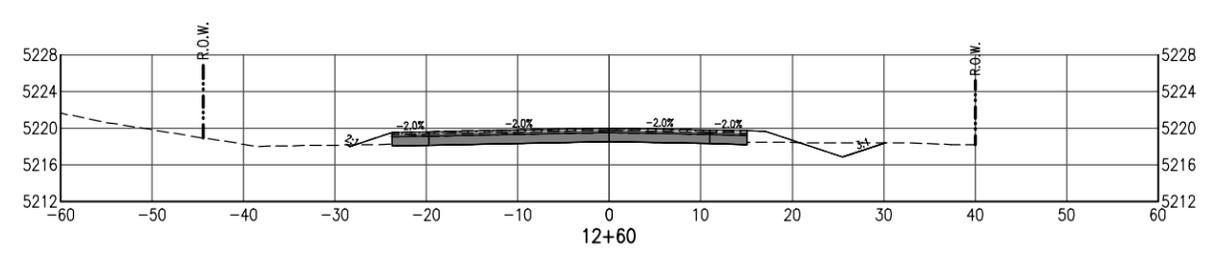
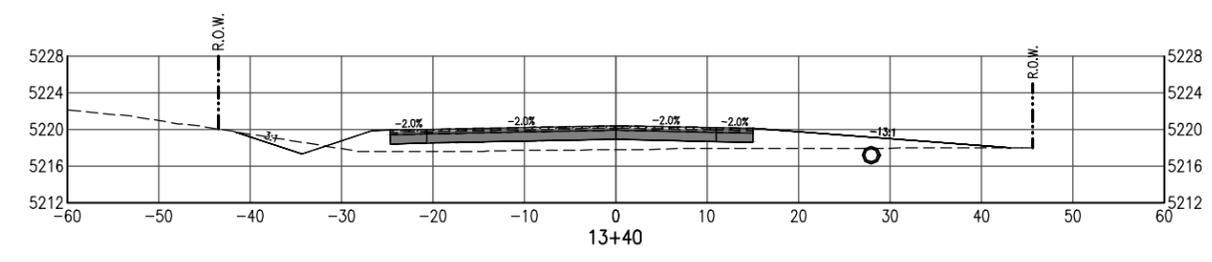
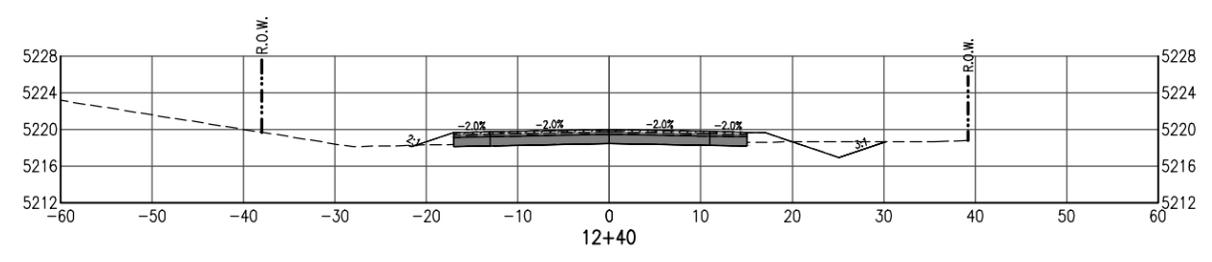
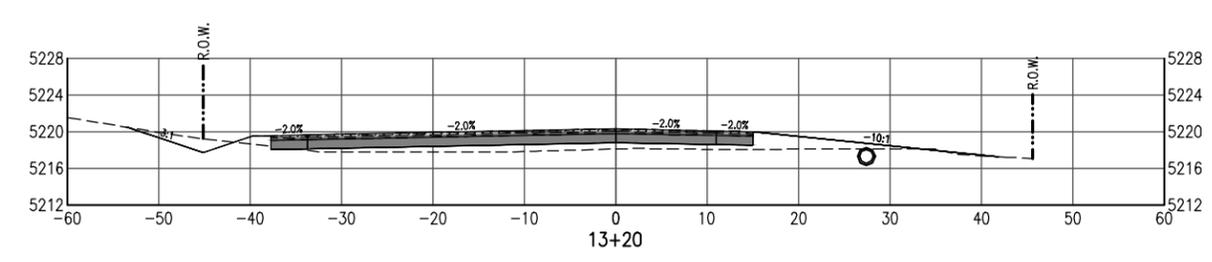
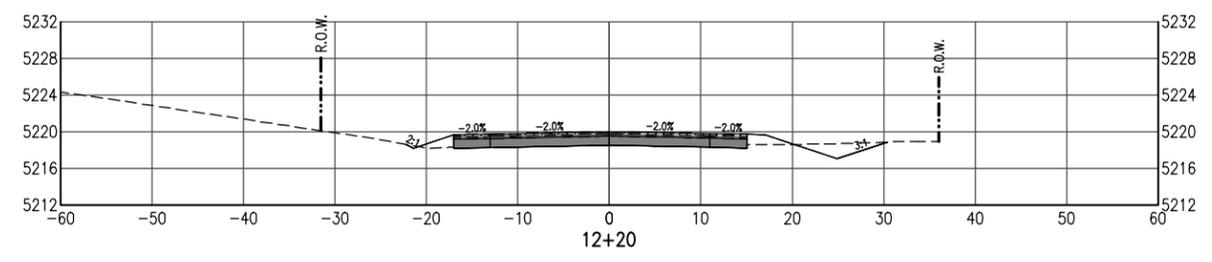
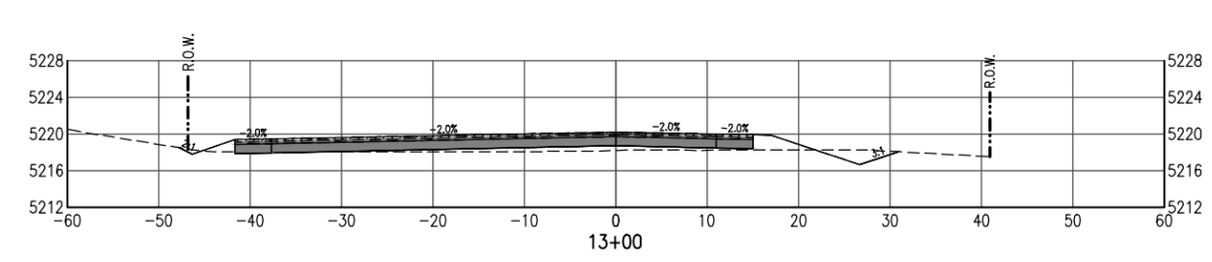
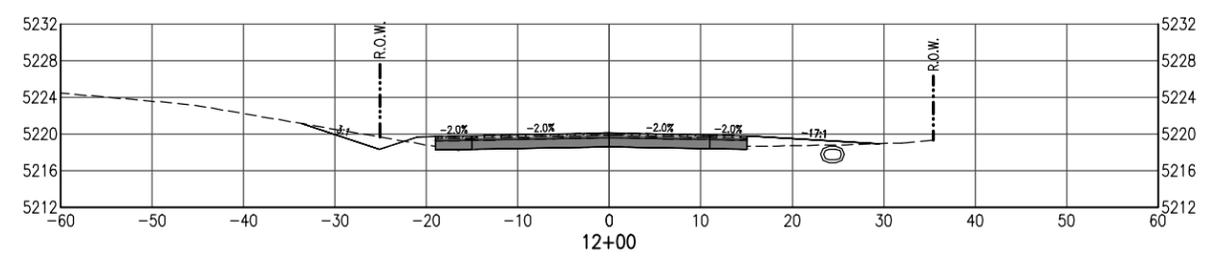


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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Sheet Subset: | XS-01 |
| Sheet Subset: | XS-01 | Subset Sheets: | 10 |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 56 |

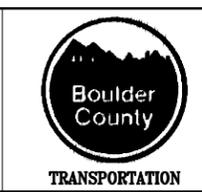


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:21 pm

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| Print Date: | |
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| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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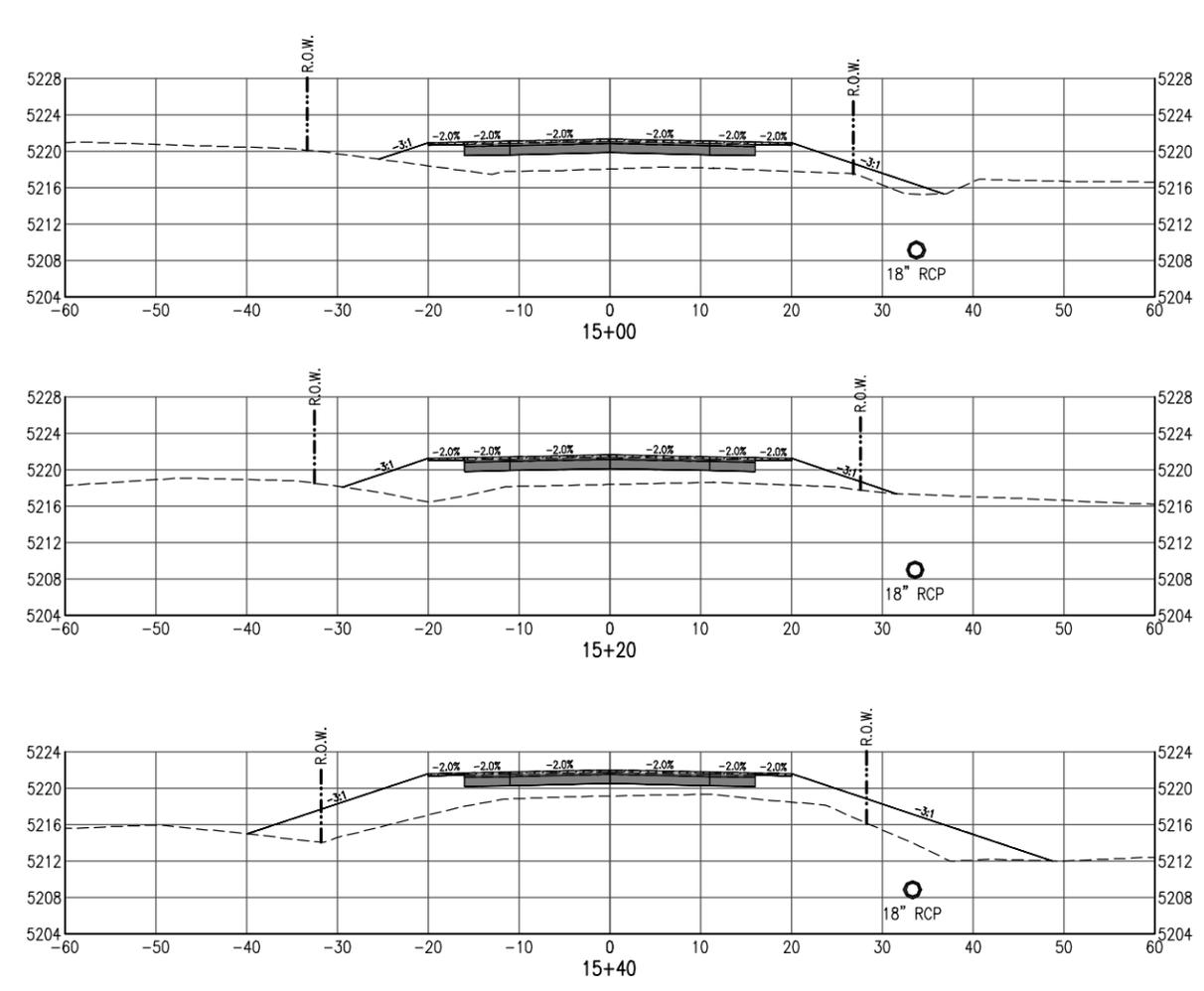
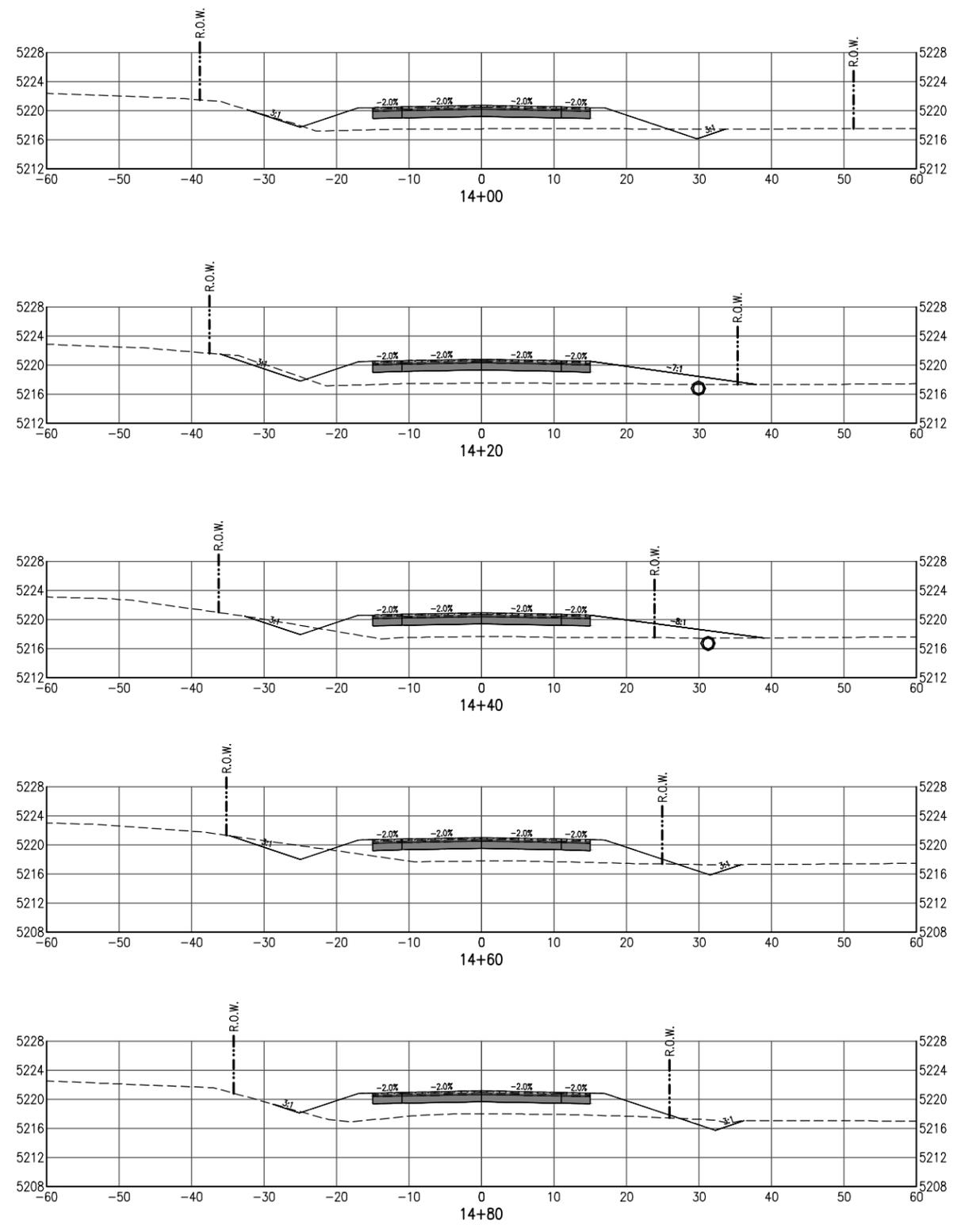
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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-02 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 57 |



Know what's below.
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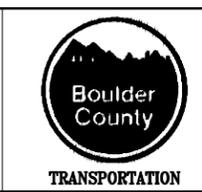


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:21 pm

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| Print Date: | |
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| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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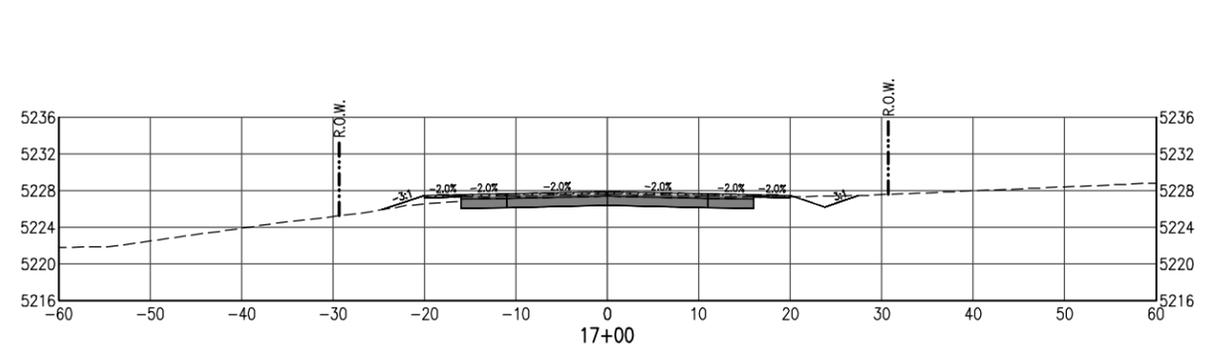
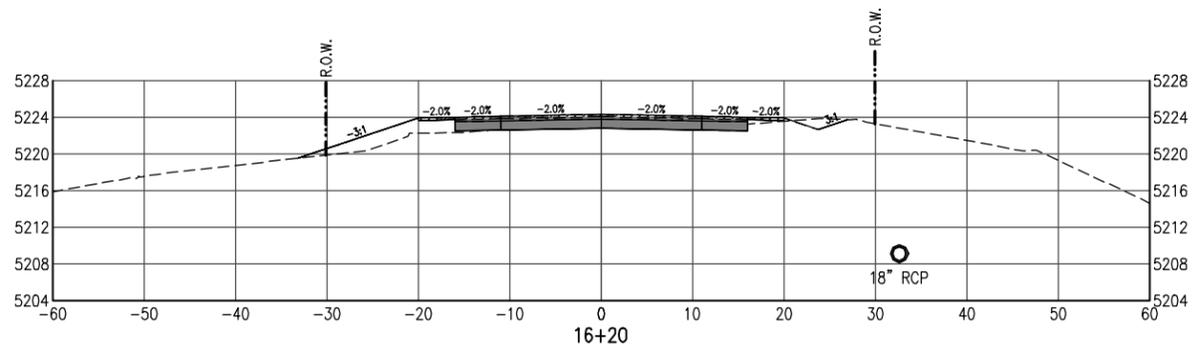
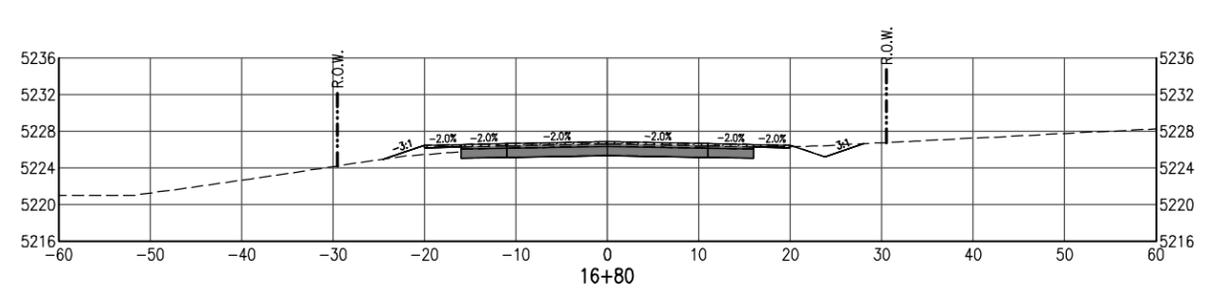
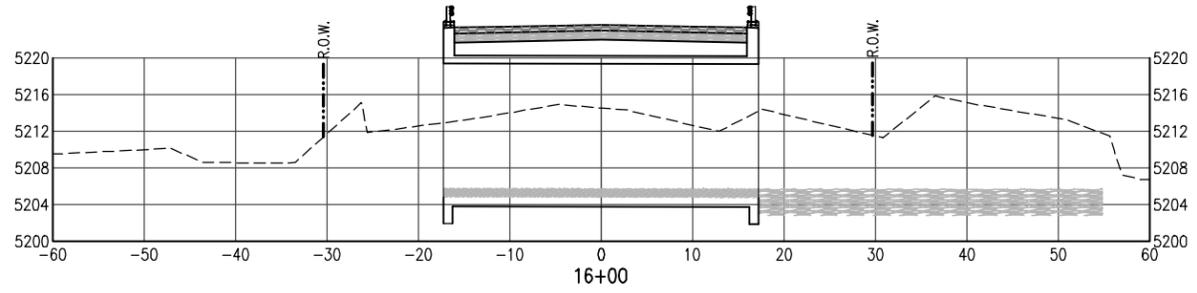
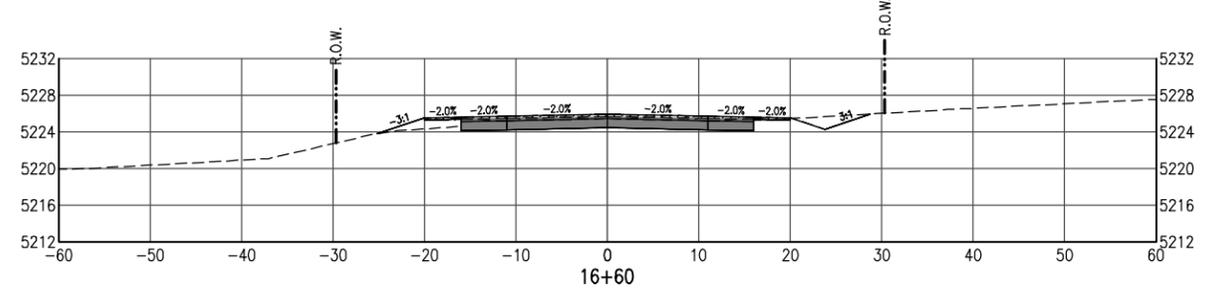
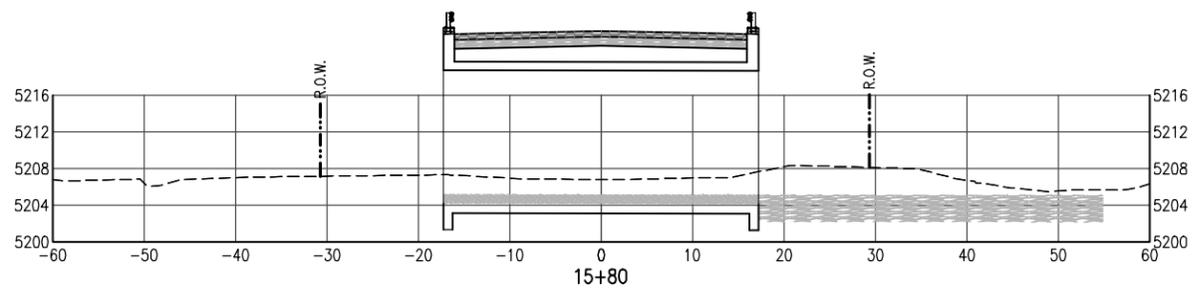
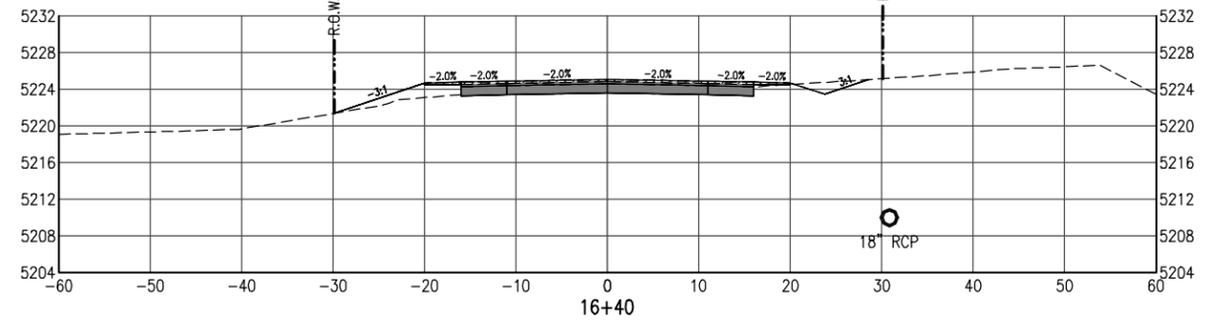
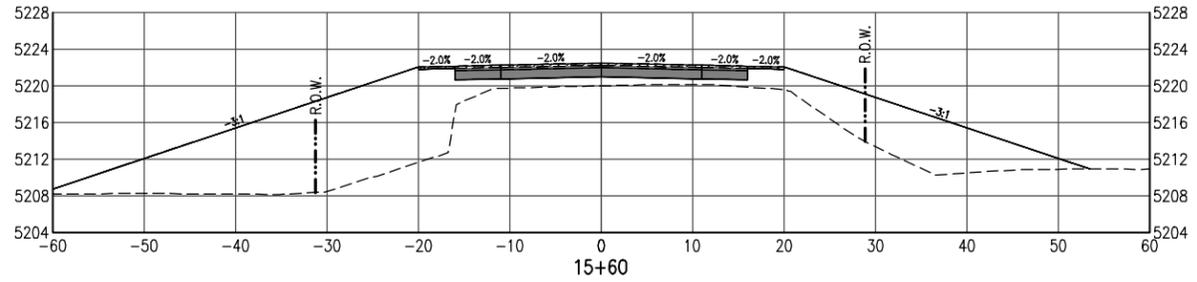


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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-03 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 58 |

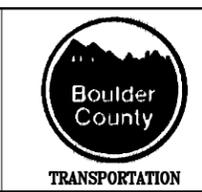


C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:21 pm

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| Print Date: | |
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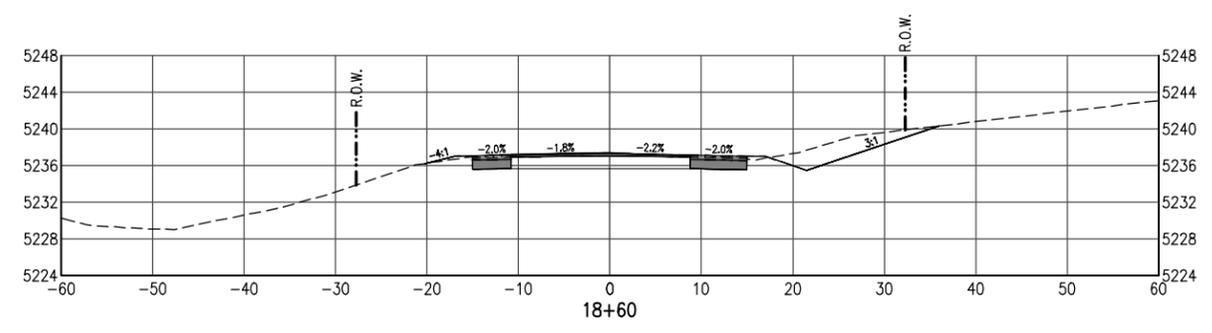
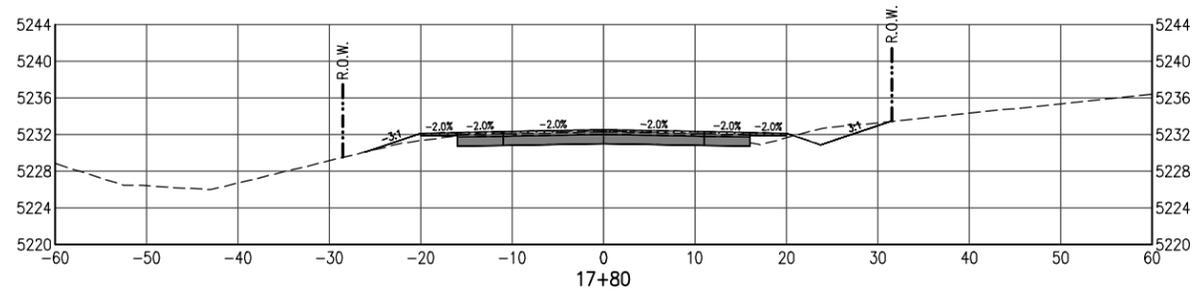
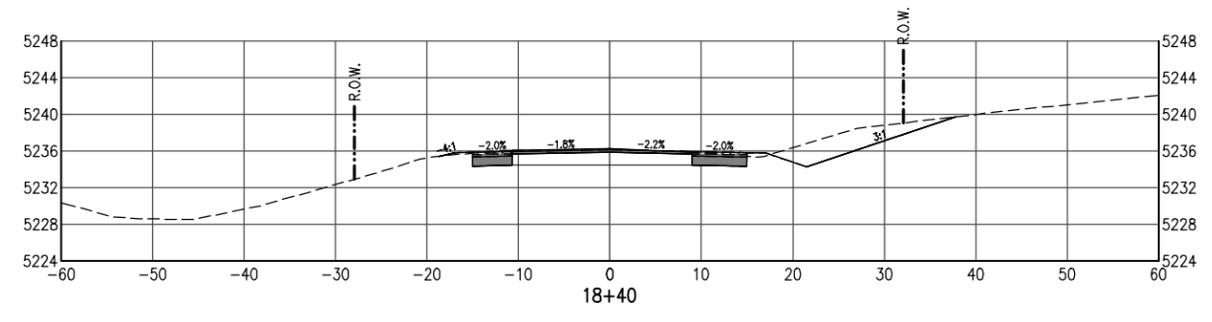
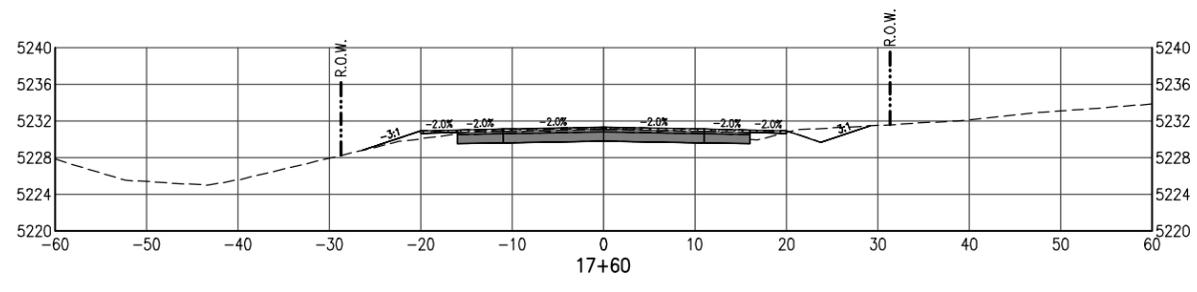
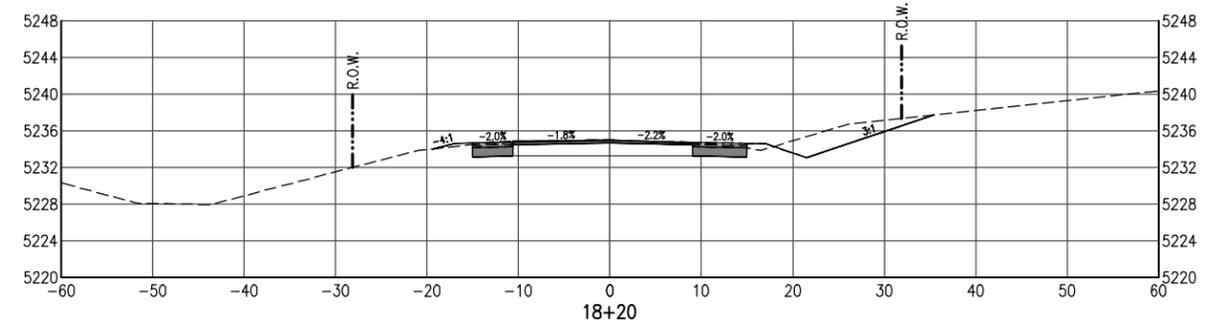
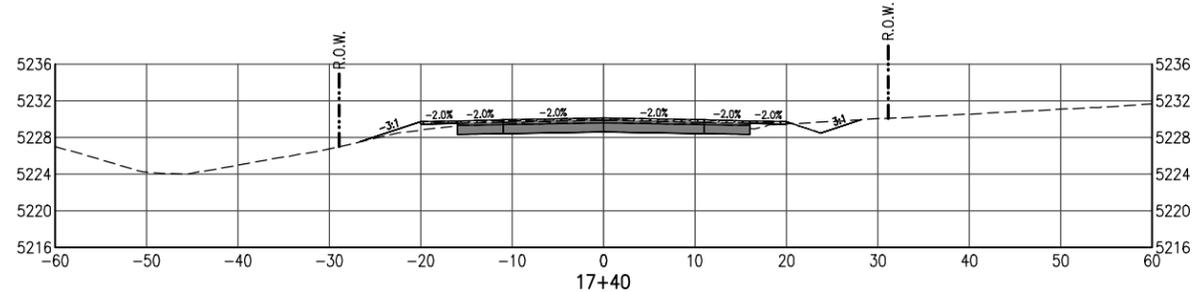
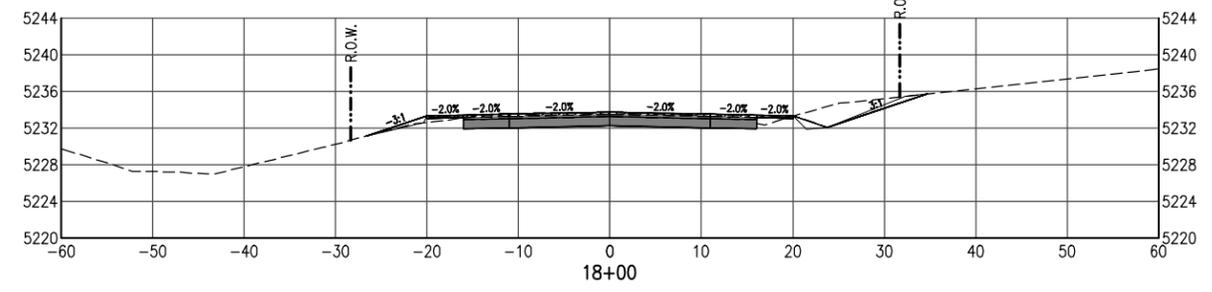
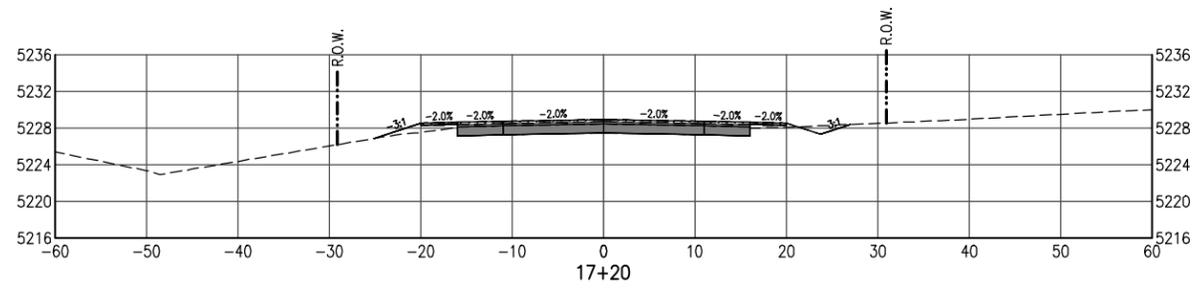


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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-04 | | |

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| | BC-68-4.7-RO |
| Sheet Number | 59 |

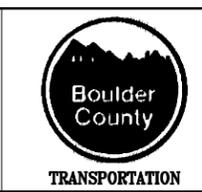


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| Print Date: | |
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| Unit Information | Unit Leader Initials |

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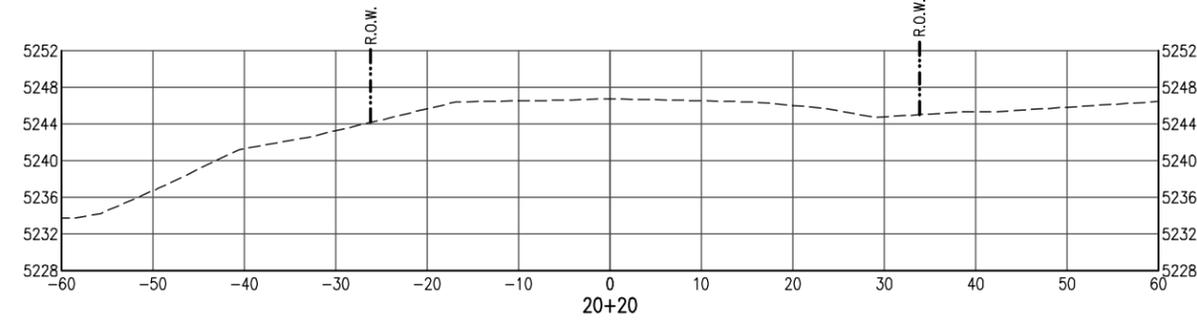
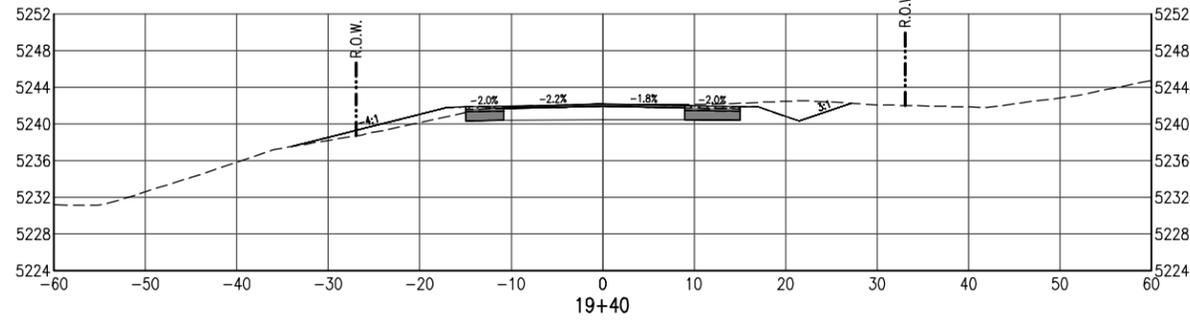
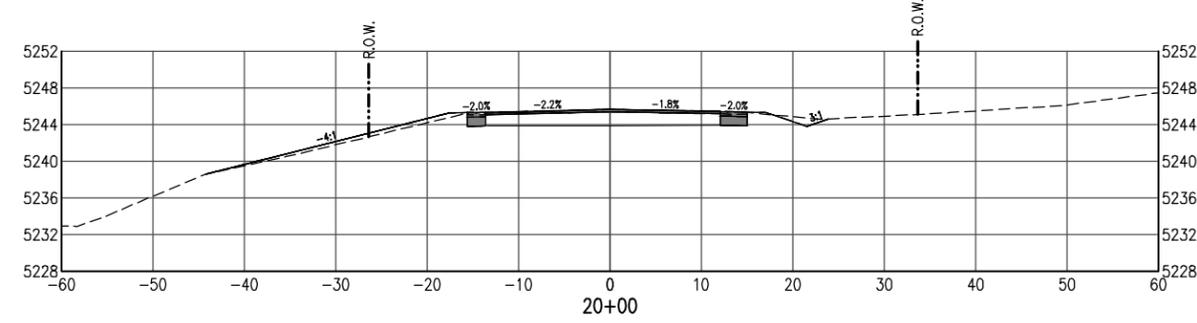
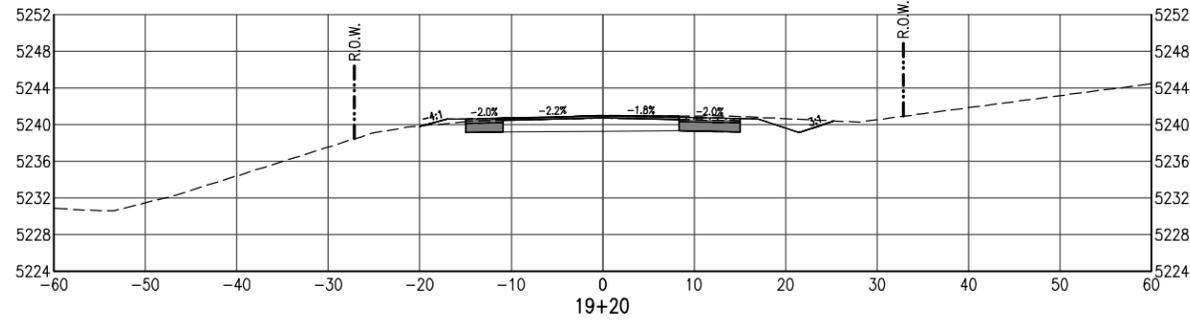
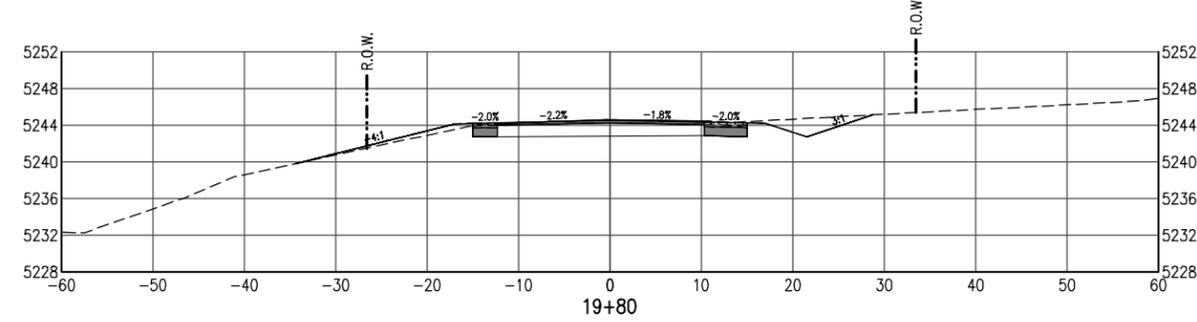
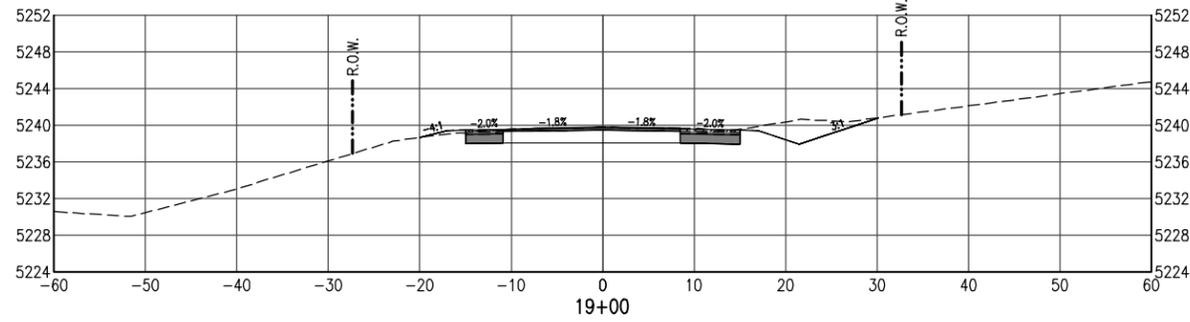
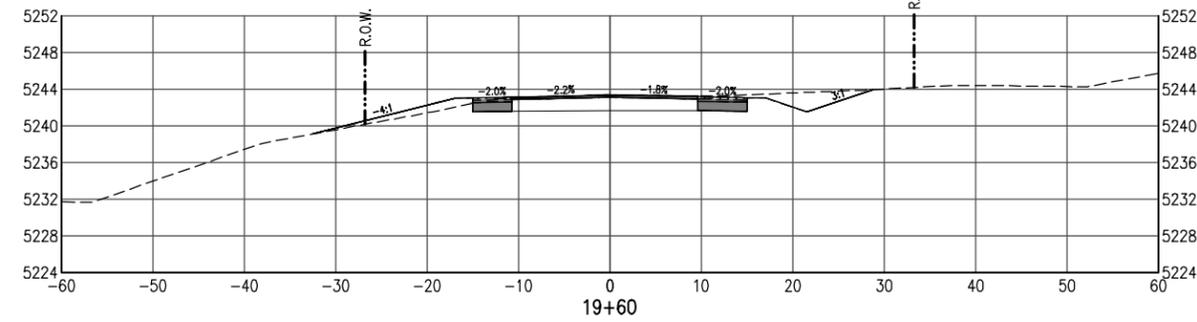
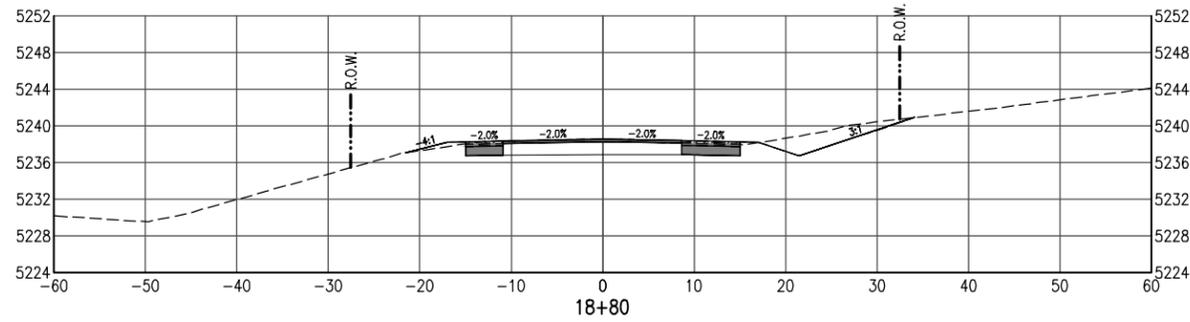


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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-05 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 60 |

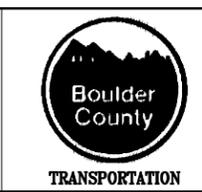


G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:22pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
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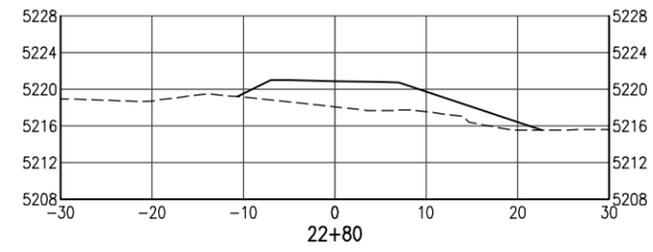
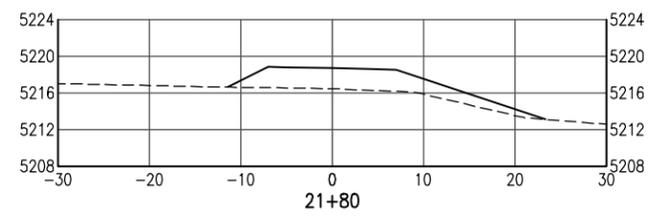
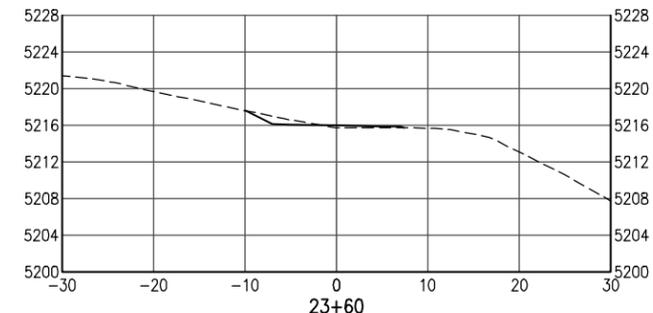
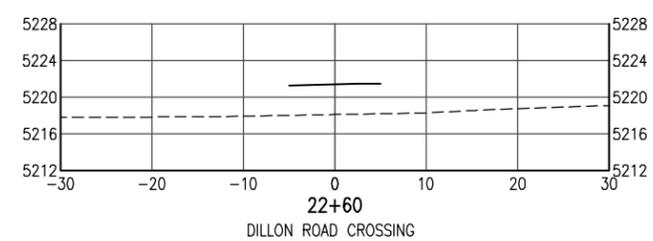
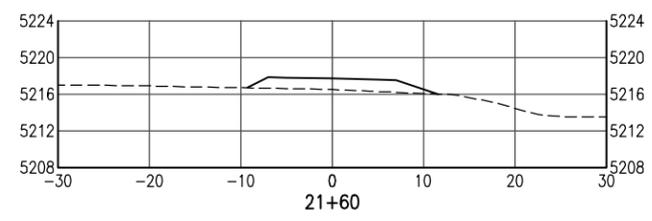
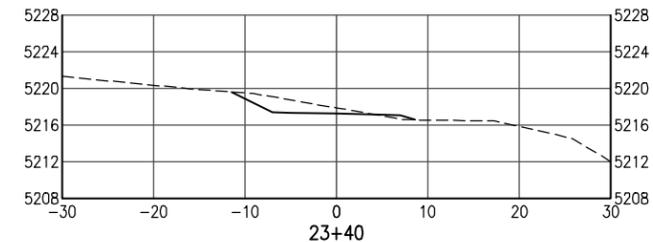
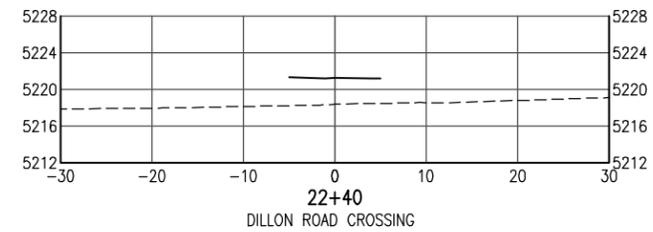
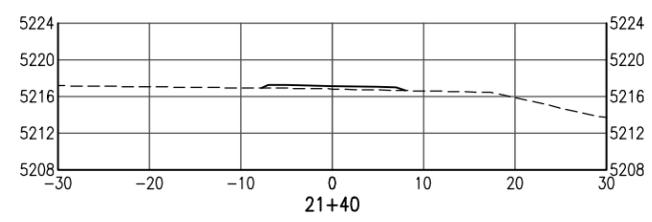
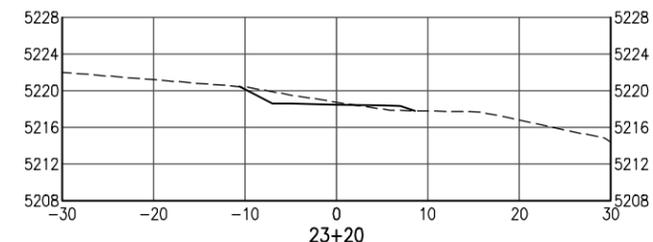
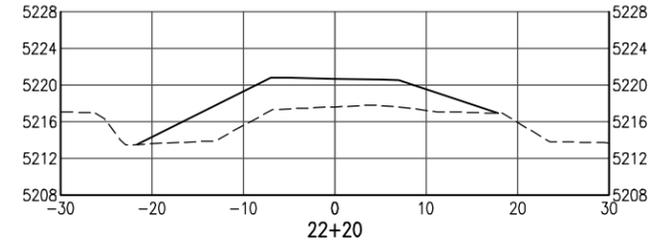
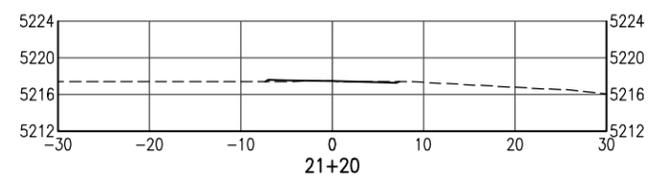
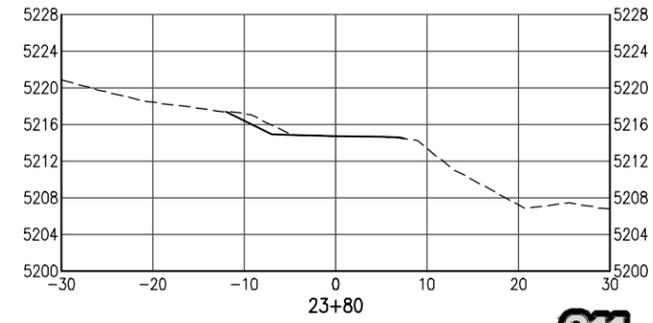
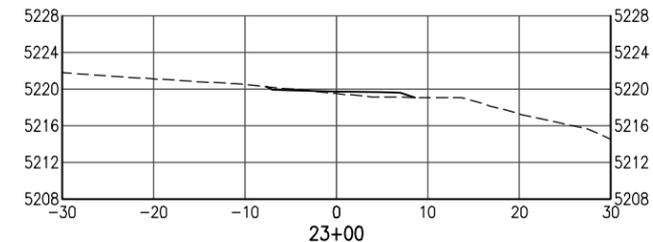
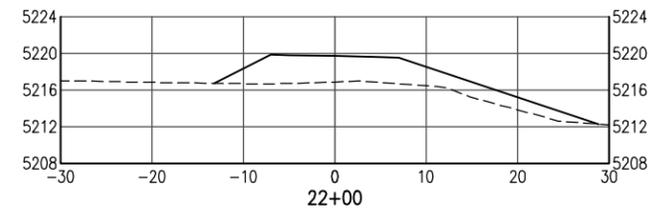
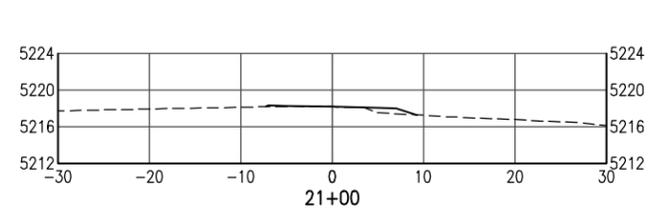


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| Revised: |
| Void: |

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| DILLON ROAD OVER ROCK CREEK ROADWAY CROSS SECTIONS DILLON ROAD | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-06 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 61 |

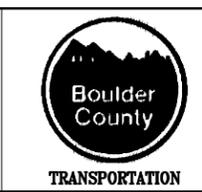


C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:22pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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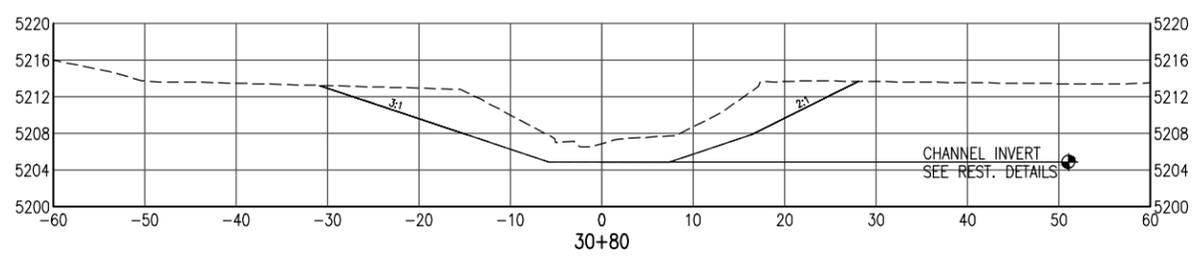
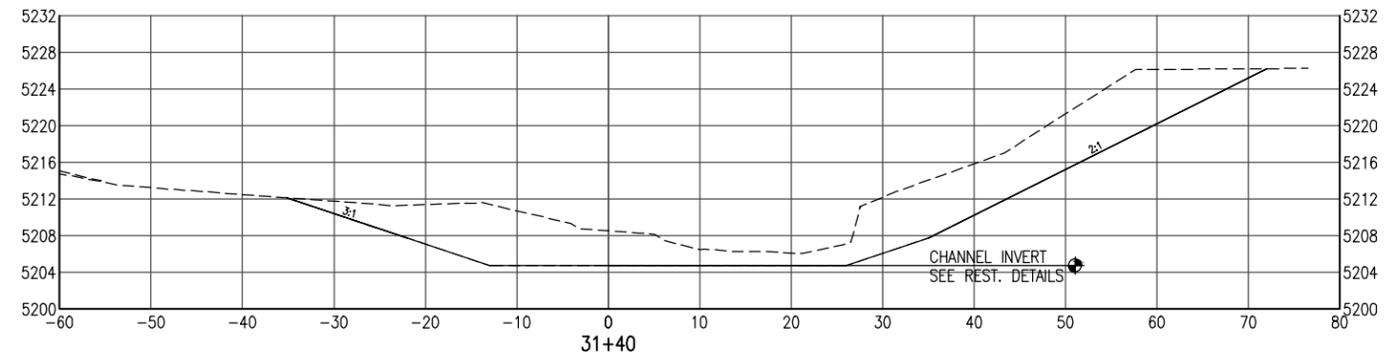
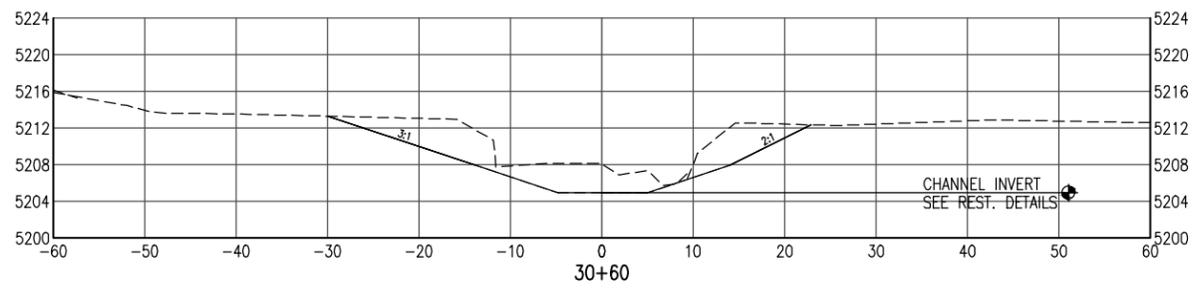
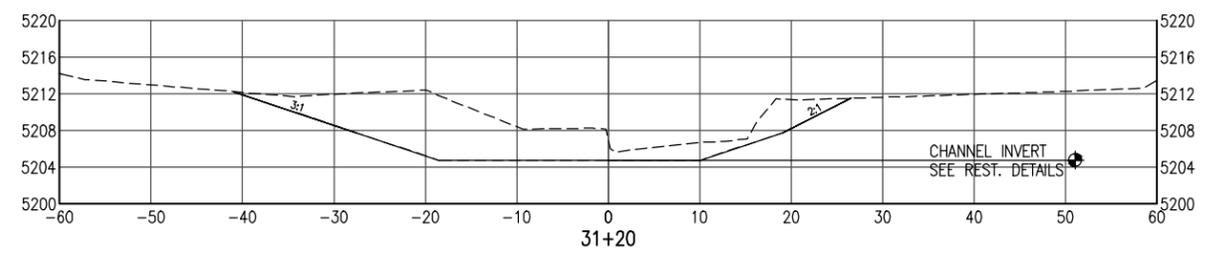
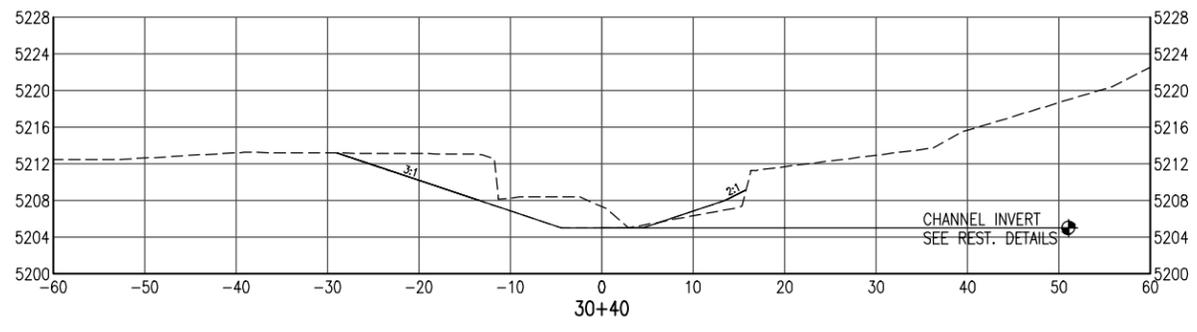
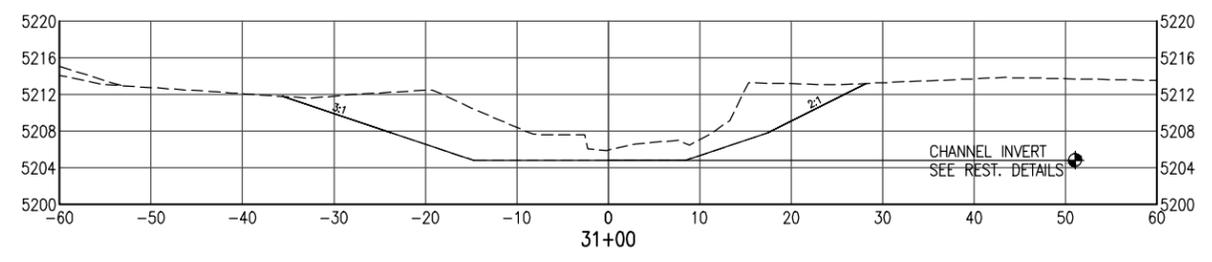
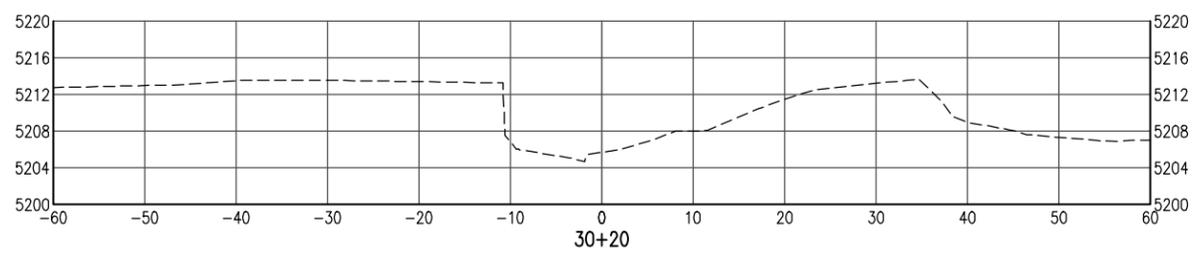


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| DILLON ROAD OVER ROCK CREEK TRAIL CROSS SECTIONS ROCK CREEK TRAIL | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-07 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 62 |



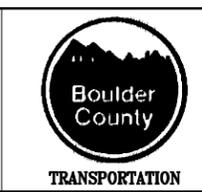
NOTE:
ROCK CREEK CHANNEL CROSS SECTIONS FOR INFORMATION ONLY

C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:22pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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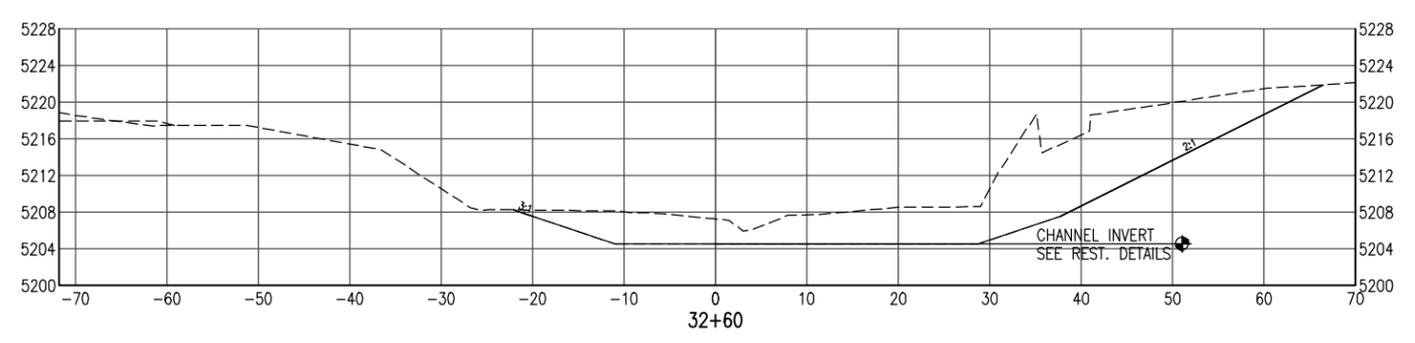
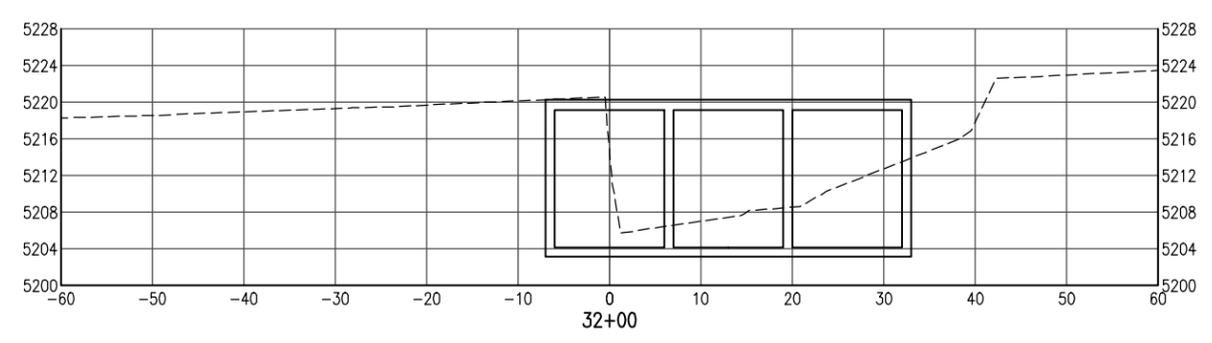
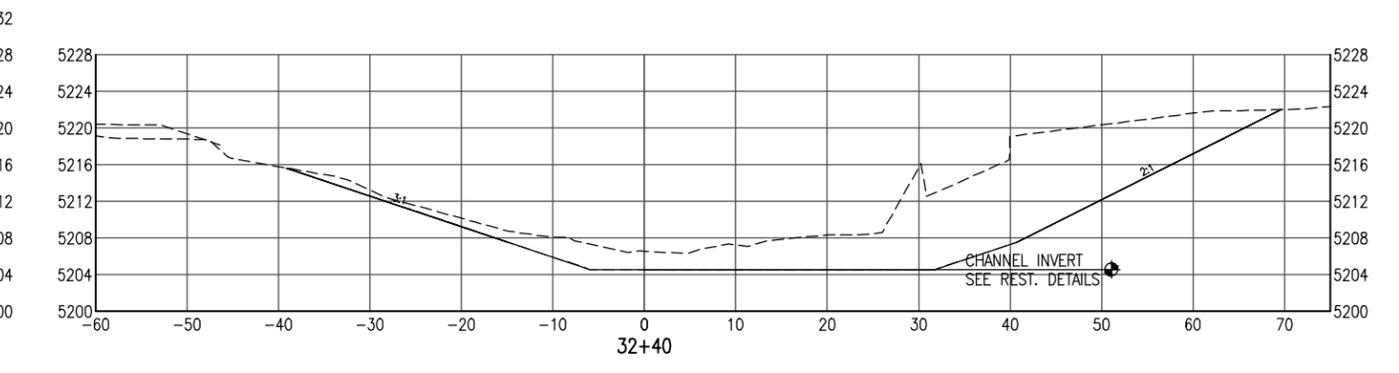
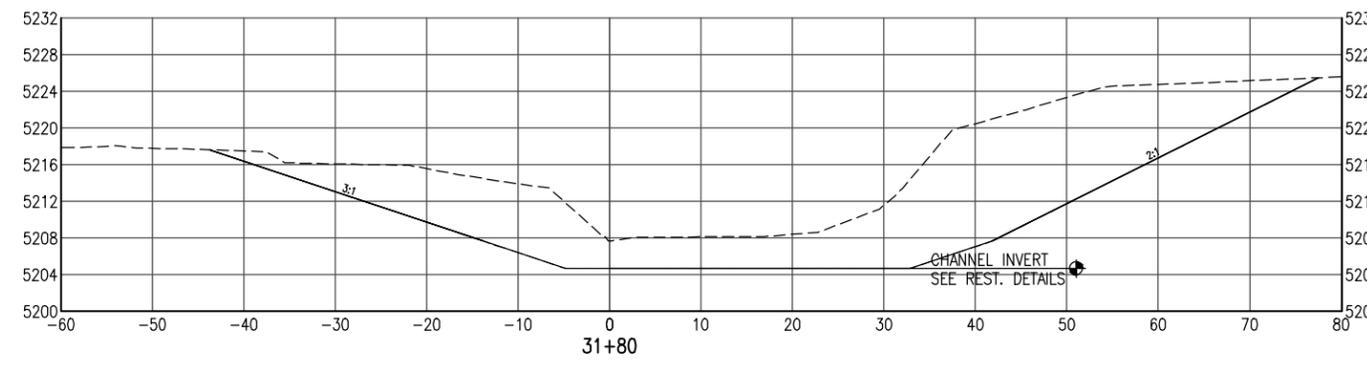
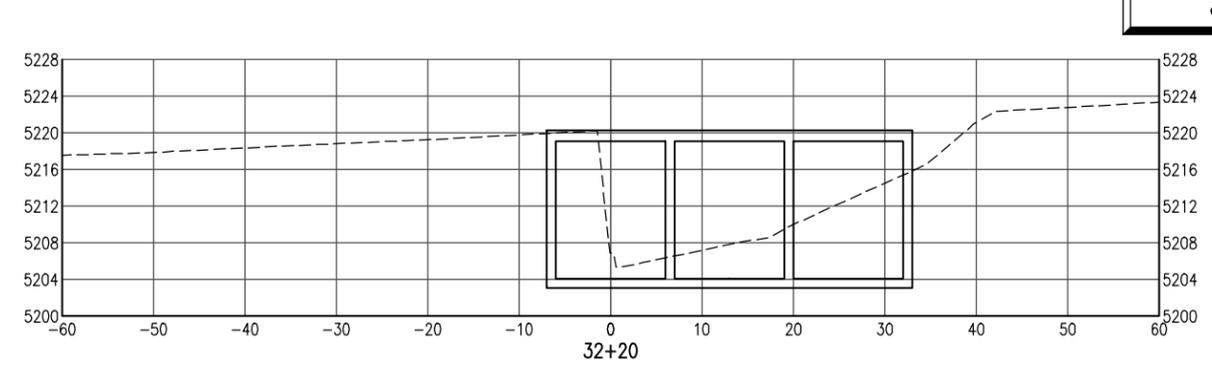
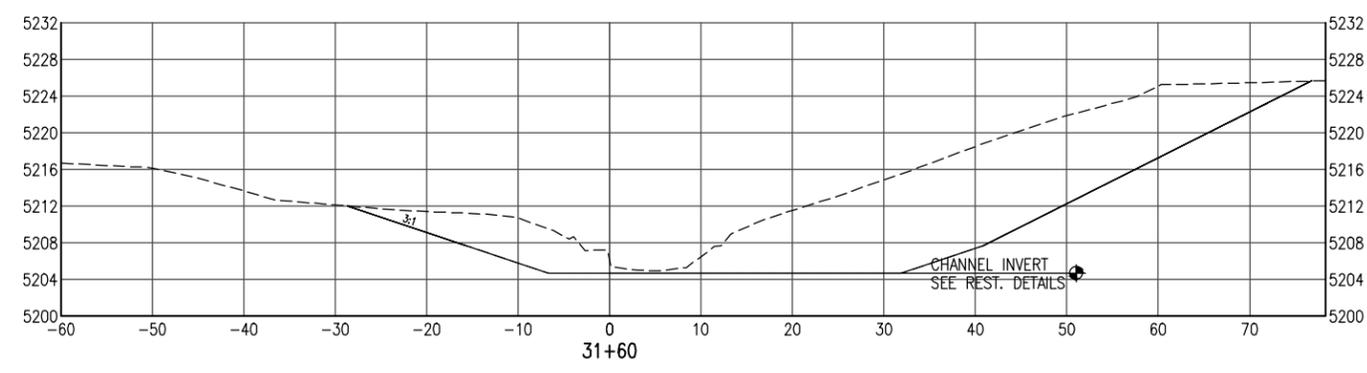


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| Void: |

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| DILLON ROAD OVER ROCK CREEK CREEK CROSS SECTIONS ROCK CREEK CHANNEL | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-08 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 63 |



NOTE:
ROCK CREEK CHANNEL CROSS SECTIONS FOR INFORMATION ONLY

C:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (66-66) Cross Sections.dwg Jul 14, 2016 - 3:22pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

| Sheet Revisions | | |
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| Date: | Comments | Init. |
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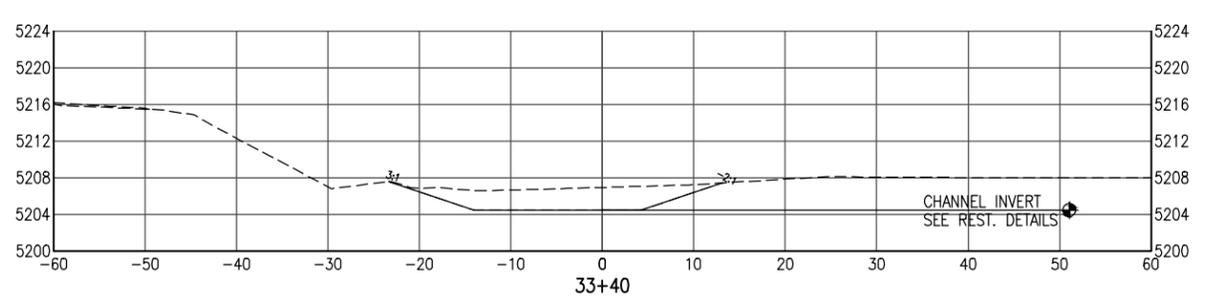
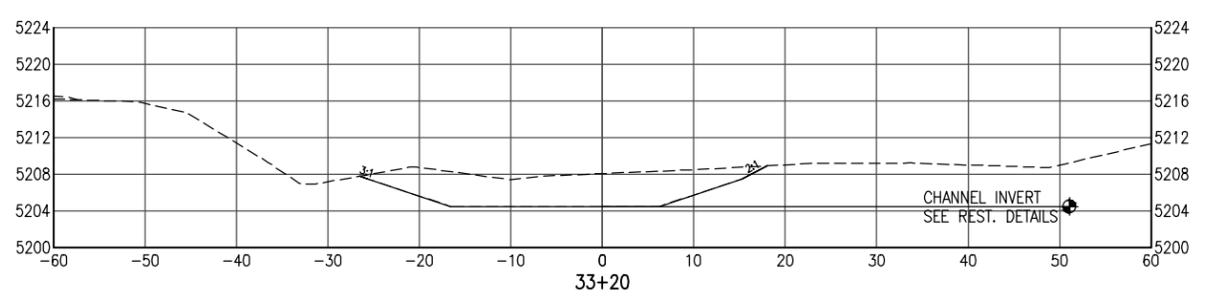
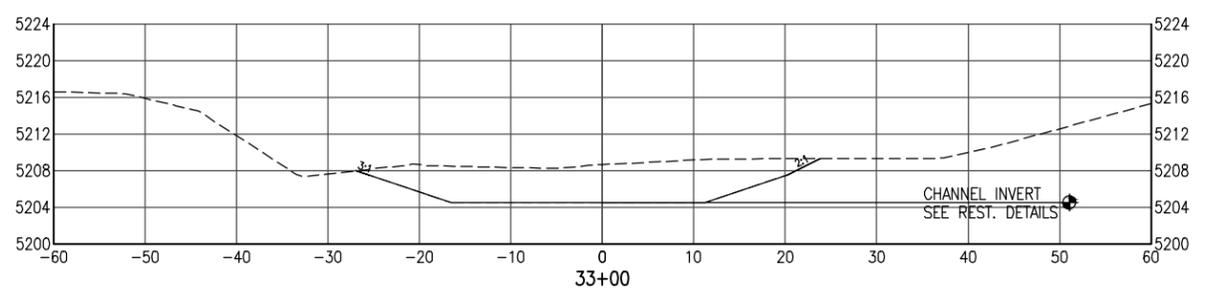
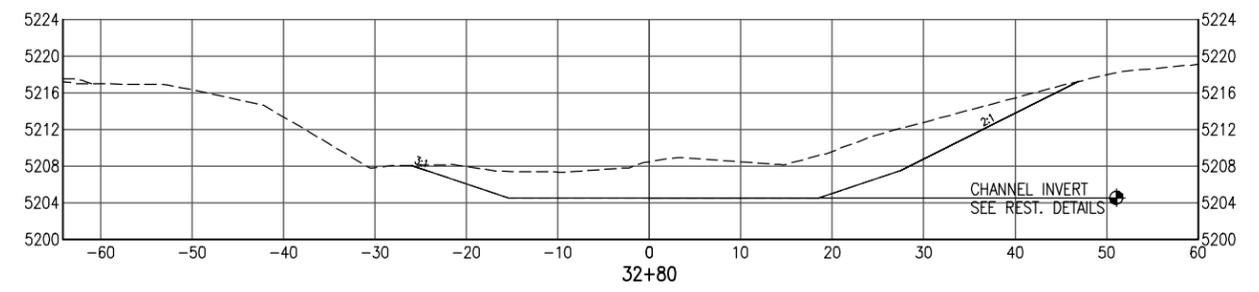


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| DILLON ROAD OVER ROCK CREEK CREEK CROSS SECTIONS ROCK CREEK CHANNEL | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Subset Sheets: | 10 |
| Sheet Subset: | XS-09 | | |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 64 |



NOTE:
ROCK CREEK CHANNEL CROSS SECTIONS FOR INFORMATION ONLY

G:\7.2 Clients\006 - BOCO Trans\13140 - 2013 Flood Engineering\13140.3 - Dillon Rd over Rock Creek\50 DWG\13140.3 (56-65) Cross Sections.dwg Jul 14, 2016 - 3:23pm

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| Print Date: | |
| File Name: | |
| Horiz. Scale: | Vert. Scale: As Noted |
| Unit Information | Unit Leader Initials |

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| DILLON ROAD OVER ROCK CREEK CREEK CROSS SECTIONS ROCK CREEK CHANNEL | | | |
| Designer: | CJB | Structure Numbers | |
| Detailer: | CJB | Sheet Subset: | XS-10 |
| Sheet Subset: | XS-10 | Subset Sheets: | 10 |

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| Project No./Code | ER C070-051/20014 |
| | BC-68-4.7-RO |
| Sheet Number | 65 |