

# 910 28TH STREET APARTMENTS

910 28TH STREET  
BOULDER, CO 80305

## TECHNICAL DOCUMENT AND FINAL SITE PLAN REVIEW

CASE NUMBER TEC 2011-\_\_\_\_\_

### LEGAL DESCRIPTION

THAT PORTION OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 32, TOWNSHIP 1 NORTH, RANGE 70 WEST OF THE 6TH P.M., DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 0 DEGREES 00'00" WEST, 20.00 FEET ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE TRUE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 56'00" EAST, 215.00 FEET PARALLEL TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 0 DEGREES 01'00" WEST, 80.00 FEET PARALLEL TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 89 DEGREES 56'00" WEST, 215.00 FEET PARALLEL TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE NORTH 0 DEGREES 01'00" EAST, 80.00 FEET ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE TRUE POINT OF BEGINNING.

#### PARCEL B

TOGETHER WITH A 20.00 FOOT WIDE NON-EXCLUSIVE DRIVEWAY EASEMENT DESCRIBED AS FOLLOWS:

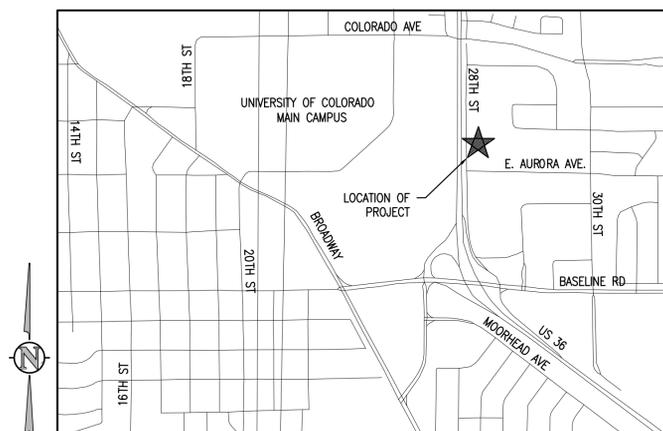
BEGINNING AT THE NORTHWEST CORNER OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 0 DEGREES 01'00" WEST, 20.00 FEET ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE NORTH 89 DEGREES 56'00" EAST, 215.00 FEET PARALLEL TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE NORTH 0 DEGREES 01'00" EAST, 20.00 FEET PARALLEL TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 89 DEGREES 56'00" WEST, 215.00 FEET ALONG THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE POINT OF BEGINNING.

#### PARCEL C

TOGETHER WITH AN EASEMENT FOR PURPOSES OF SEWER SERVICE TO THE FOREGOING PROPERTY DESCRIBED AS FOLLOWS:

AN EASEMENT 10.00 FEET IN WIDTH FOR A SEWER LINE, THE WEST END OF SAID EASEMENT ABUTTING THE EAST LINE OF THAT TRACT OF LAND CONVEYED TO ACACIA FRATERNITY INCORPORATED BY DEED RECORDED ON FILM 634, RECEPTION NO. 878346, AND THE SOUTH END OF SAID EASEMENT ABUTTING THE NORTH LINE OF AURORA AVENUE, SAID EASEMENT BEING 5.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE NORTH 89 DEGREES 56'00" EAST, 215.00 FEET ALONG THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 0 DEGREES 01'00" WEST, 95.00 FEET PARALLEL TO THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE TRUE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 56'00" EAST, 203.74 FEET TO A POINT ON A LINE THAT IS 5.00 FEET WESTERLY AT RIGHT ANGLES FROM THE WEST LINE OF THE EAST 897.00 FEET OF THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE SOUTH 0 DEGREES 00'40" WEST, 206.45 FEET PARALLEL TO THE WEST LINE OF THE EAST 897.00 FEET TO THE SOUTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32 TO THE NORTH LINE OF SAID AURORA AVENUE AND THE POINT OF TERMINATION, COUNTY OF BOULDER, STATE OF COLORADO,



VICINITY MAP  
NTS

### LIST OF AGENCIES

**OWNER / DEVELOPER**  
BRICKSTONE PARTNERS  
228 PARK AVE S #90636  
NEW YORK, NY 10003  
(303) 815-6705  
DAN OTIS

**ARCHITECT**  
SA+R  
1821 BLAKE STREET, SUITE 1A  
DENVER, CO 80202  
(303) 436-9551  
ANDREW J. ROCKMORE

**CIVIL ENGINEER**  
JVA, INC.  
1319 SPRUCE STREET  
BOULDER, CO 80302  
(303) 444-1951  
CHARLIE R. HAGER, PE

**LANDSCAPE ARCHITECT**  
PHASE ONE LANDSCAPES  
2310 S. SYRACUSE WAY  
DENVER, CO 80231  
(303) 750-6060

**MUNICIPALITY**  
CITY OF BOULDER - PLANNING DEPARTMENT  
1739 BROADWAY, THIRD FLOOR  
BOULDER, CO 80302  
(303) 441-1880  
ELAINE McLAUGHLIN

**FIRE DISTRICT**  
CITY OF BOULDER - FIRE DEPARTMENT  
1805 33RD STREET  
BOULDER, CO 80301  
(303) 441-3350  
DAVE LOWREY

### LIST OF DRAWINGS

| DRAWING NO | TITLE                          |
|------------|--------------------------------|
| C0.0       | COVER SHEET                    |
| C0.1       | LEGEND, NOTES, & ABBREVIATIONS |
| C0.2       | EROSION CONTROL PLAN           |
| C0.3       | DEMOLITION PLAN                |
| C1.0       | GRADING & DRAINAGE PLAN        |
| C1.1       | DRAINAGE DETAILS               |
| C1.2       | DRAINAGE DETAILS               |
| C1.3       | SWMP & EROSION CONTROL DETAILS |
| C2.0       | UTILITY PLAN                   |
| C2.1       | UTILITY DETAILS                |
| C2.2       | UTILITY DETAILS                |
| C3.0       | HORIZONTAL CONTROL PLAN        |
| C3.1       | SITE DETAILS                   |
| C3.2       | SITE DETAILS                   |

PREPARED UNDER THE SUPERVISION OF

JVA, Inc.

910 28TH STREET  
BOULDER, CO 80305

2011 Shears Adkins Rockmore

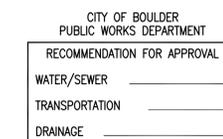
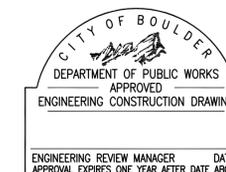
Date: 07.25.2011

Project Name:  
910 28TH STREET  
Issued For / Phase:  
Building Permit &  
Tech Docs

Drawn: MC  
Revisions:

Sheet Name:  
COVER SHEET

Sheet Number:  
C0.0



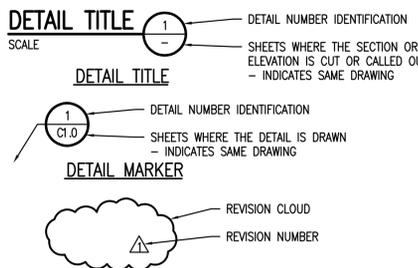
**ABBREVIATIONS**

|        |   |        |   |
|--------|---|--------|---|
| AASHTO | AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS | JTS    | JOINTS  |
| ABAN   | ABANDON   | KB     | KICKBLOCK   |
| AC     | ASPHALTIC CONCRETE PAVING                                     | KO     | KNOCKOUT  |
| ADDL   | ADDITIONAL  |        |   |
| ADDM   | ADDENDUM  | L      | LEFT OR LITER                                     |
| ADJ    | ADJUSTABLE  | LSCAPE | LANDSCAPE(ING)                                    |
| AL     | ALUMINUM  | LF     | LINEAR FOOT                                       |
| ALT    | ALTERNATE   | LP     | LIGHT POLE  |
| AMT    | AMOUNT  | LT     | LIGHT   |
| APPROX | APPROXIMATE   | LWL    | LOW WATER LEVEL                                   |
| ARCH   | ARCHITECT(U)RAL   |        |   |
| ARV    | AIR RELIEF VALVE  | MAINT  | MAINTENANCE                                       |
| ASTM   | AMERICAN SOCIETY FOR TESTING AND MATERIALS                    | MAN    | MANUAL  |
| ASPH   | ASPHALT   | MATL   | MATERIAL  |
| ASSY   | ASSEMBLY  | MAX    | MAXIMUM   |
| AUTO   | AUTOMATIC   | MECH   | MECHANICAL  |
| AVG    | AVERAGE   | MFR    | MANUFACTURER                                      |
|        |   | MH     | MANHOLE   |
|        |   | MISC   | MISCELLANEOUS                                     |
| BC     | BACK OF CURB  |        |   |
| BFV    | BUTTERFLY VALVE   | N      | NORTH   |
| BLDG   | BUILDING  | NA     | NOT APPLICABLE                                    |
| BLK    | BLOCK   | NIC    | NOT IN CONTRACT                                   |
| BM     | BENCH MARK  | NPT    | NATIONAL PIPE THREAD                              |
| BMP    | BEST MANAGEMENT PRACTICE                                      | NTS    | NOT TO SCALE                                      |
| BOT    | BOTTOM  |        |   |
| BSMT   | BASEMENT  | OC     | ON CENTER   |
| BVCE   | BEGIN VERTICAL CURVE ELEVATION                                | OD     | OUTSIDE DIAMETER                                  |
| BVCS   | BEGIN VERTICAL CURVE STATION                                  | OPP    | OPPOSITE  |
| BW     | BOTTOM OF WALL  | OPT    | OPTIONAL  |
| CB     | CATCH BASIN   | PC     | POINT OF CURVATURE                                |
| CCW    | COUNTER CLOCKWISE   | PCD    | PRESSURE CLEAN OUT                                |
| CDOT   | COLORADO DEPT OF TRANSPORTATION                               | PCR    | POINT OF CURVE RETURN                             |
| CIP    | CAST IRON PIPE  | PI     | POINT OF INTERSECTION                             |
| CJ     | CONSTRUCTION JOINT  | PVI    | POINT OF VERTICAL INTERSECTION                    |
| CL     | CENTER LINE OR CHAIN LINK                                     | PL     | PROPERTY LINE                                     |
| CLR    | CLEAR   | PE     | POLYETHYLENE                                      |
| CMP    | CORRUGATED METAL PIPE   | PRELIM | PRELIMINARY                                       |
| CMU    | CONCRETE MASONRY UNIT   | PREP   | PREPARATION                                       |
| CO     | CLEANOUT  | PROP   | PROPOSED  |
| CONC   | CONCRETE  | PRV    | PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE  |
| CONST  | CONSTRUCTION  | PT     | POINT OF TANGENCY                                 |
| CONT   | CONTINUOUS(ATION)   | PV     | PLUG VALVE  |
| COR    | CORNER  | PVC    | POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE |
| CTR    | CENTER  | PVMT   | PAVEMENT  |
| CY     | CUBIC YARDS   | QTY    | QUANTITY  |
| DEMO   | DEMOLITION  | R      | RIGHT   |
| DIA    | DIAMETER  | RAD    | RADIUS  |
| DIAG   | DIAGONAL  | RCP    | REINFORCED CONCRETE PIPE                          |
| DIP    | DUCTILE IRON PIPE   | RD     | ROOF DRAIN  |
| DOM    | DOMESTIC  | RE     | REFERENCE   |
| DR     | DRAIN   | RECT   | RECTANGULAR                                       |
| DRG    | DRAWING   | REINF  | REINFORCE (D) (ING) (MENT)                        |
| DWL    | DOWEL   | REQD   | REQUIRED  |
|        |   | ROW    | RIGHT OF WAY                                      |
| E      | EAST  | SAN    | SANITARY  |
| EA     | EACH  | SD     | STORM DRAIN                                       |
| EJ     | EXPANSION JT  | SECT   | SECTION   |
| EL     | ELEVATION   | SPEC   | SPECIFICATION                                     |
|        |   | SQ     | SQUARE  |
|        |   | SQ FT  | SQUARE FOOT                                       |
|        |   | SQ YD  | SQUARE YARD                                       |
|        |   | SS     | SANITARY SEWER                                    |
|        |   | SST    | STAINLESS STEEL                                   |
|        |   | STA    | STATION   |
|        |   | STD    | STANDARD  |
|        |   | STL    | STEEL   |
|        |   | STRUCT | STRUCTURAL  |
|        |   | SWMP   | STORMWATER MANAGEMENT PLAN                        |
|        |   | SYM    | SYMMETRICAL                                       |
| ELEC   | ELECTRICAL  | TB     | THRUST BLOCK                                      |
| ENGR   | ENGINEER  | TBC    | TOP BACK OF CURB                                  |
| EOP    | EDGE OF PAVEMENT  | TBM    | TEMPORARY BENCH MARK                              |
| EQ     | EQUAL   | TEMP   | TEMPORARY   |
| EQUIP  | EQUIPMENT   | THK    | THICK   |
| EQUIV  | EQUIVALENT  | TOB    | TOP OF BANK                                       |
| ESMT   | EASEMENT  | TOC    | TOP OF CONCRETE OR TOP OF CURB                    |
| EST    | ESTIMATE  | TOT    | TOTAL   |
| EVCE   | END VERTICAL CURVE ELEVATION                                  | TW     | TOP OF WALL                                       |
| EVCS   | END VERTICAL CURVE STATION                                    | TYP    | TYPICAL   |
| EXP JT | EXPANSION JOINT   | UGE    | UNDERGROUND ELECTRIC                              |
| EXIST  | EXISTING  | UTIL   | UTILITY   |
|        |   | VERT   | VERTICAL  |
| FND    | FOUNDATION  | VC     | POINT OF VERTICAL CURVATURE                       |
| FES    | FLARED END SECTION  |        |   |
| FF     | FINISH FLOOR  | W      | WIDE OR WIDTH                                     |
| FG     | FINISH GRADE  | W/     | WITH  |
| FI     | FIRE HYDRANT  | W/O    | WITHOUT   |
| FL     | FLOW LINE   | WOCE   | WATER QUALITY CONTROL ELEVATION                   |
| FN     | FENCE   | WSE    | WATER SURFACE ELEVATION                           |
| FOC    | FACE OF CONCRETE  | X SECT | CROSS SECTION                                     |
| FT     | FEET  |        |   |
| FTG    | FOOTING OR FITTING  | YH     | YARD HYDRANT                                      |
| G      | GAS   |        |   |
| GA     | GAUGE   |        |   |
| GAL    | GALLON  |        |   |
| GALV   | GALVANIZED  |        |   |
| GCO    | GRADE CLEANOUT  |        |   |
| GND    | GROUND  |        |   |
| GV     | GATE VALVE  |        |   |
| H      | HIGH  |        |   |
| HB     | HOSE BIB  |        |   |
| HE     | HORIZONTAL ELLIPTICAL   |        |   |
| HDWL   | HEADWALL  |        |   |
| HNDRL  | HAND RAIL   |        |   |
| HORIZ  | HORIZONTAL  |        |   |
| HP     | HIGH POINT  |        |   |
| HR     | HOUR  |        |   |
| HVAC   | HEATING, VENTILATION, AIR CONDITIONING                        |        |   |
| HWY    | HIGHWAY   |        |   |
| HWL    | HIGH WATER LINE   |        |   |
| HYD    | HYDRANT   |        |   |
| INCL   | INCLUDED  |        |   |
| ID     | INSIDE DIAMETER   |        |   |
| IN     | INLET   |        |   |
| INV    | INVERT  |        |   |
| IRR    | IRRIGATION  |        |   |

**LEGEND**

|  |                                |
|--|--------------------------------|
|  | BENCHMARK                      |
|  | MANHOLE                        |
|  | AREA DRAIN                     |
|  | COMBINATION INLET              |
|  | TYPE R INLET                   |
|  | TYPE 13 FIELD INLET            |
|  | FLARED END SECTION W/ RIPRAP   |
|  | TEE W/ THRUST BLOCK            |
|  | BEND W/ THRUST BLOCK           |
|  | END CAP W/ THRUST BLOCK        |
|  | GATE VALVE                     |
|  | REDUCER/INCRASER               |
|  | WATER METER                    |
|  | FIRE HYDRANT                   |
|  | SIGN W/ POST                   |
|  | STORM DRAIN - LARGER PIPE      |
|  | STORM DRAIN - SMALLER PIPE     |
|  | ROOF DRAIN                     |
|  | SANITARY SEWER                 |
|  | WATER                          |
|  | IRRIGATION                     |
|  | UNDERDRAIN                     |
|  | TRENCH DRAIN                   |
|  | FLOOR DRAIN / FOUNDATION DRAIN |
|  | ELECTRIC                       |
|  | UNDERGROUND ELECTRIC           |
|  | OVERHEAD ELECTRIC              |
|  | TELEPHONE                      |
|  | CABLE TV                       |
|  | FIBER OPTIC                    |
|  | GAS                            |
|  | FENCE                          |
|  | FLOW LINE OF DITCH OR WASH     |
|  | SLOPE ARROW                    |
|  | PROPOSED SPOT ELEVATION        |
|  | EXIST SPOT ELEVATION           |
|  | PROPOSED INDEX CONTOUR         |
|  | PROPOSED INTERMEDIATE CONTOUR  |
|  | EXIST INDEX CONTOUR            |
|  | EXIST INTERMEDIATE CONTOUR     |
|  | CURB AND GUTTER                |
|  | SPILL/CATCH CURB TRANSITION    |
|  | SIDEWALK                       |
|  | CONCRETE PAVING                |
|  | ASPHALT PAVING                 |
|  | PROPOSED BUILDING              |
|  | BLDG ACCESS                    |
|  | EXIST BUILDING                 |
|  | DEMO SUBSURFACE FEATURE        |
|  | DEMO SURFACE FEATURE           |
|  | DEMO BUILDING                  |
|  | ABANDON UTILITY                |
|  | DEMO (REMOVE) TREE             |
|  | LIMITS OF SAWCUT               |
|  | LIMITS OF WORK                 |
|  | EASEMENT LINE                  |
|  | PROPERTY LINE / ROW            |

**SYMBOLS**



**GENERAL NOTES:**

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF BOULDER, JURISDICTIONAL FIRE PROTECTION REQUIREMENTS, AND APPLICABLE STATE AND LOCAL STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE IN POSSESSION AT THE JOB SITE AT ALL TIMES ONE (1) SIGNED COPY OF APPROVED PLANS, STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EMERGENCY ACCESS ROUTES TO THE SITE AND STRUCTURE AT ALL TIMES PER THE APPLICABLE JURISDICTIONAL FIRE PROTECTION DISTRICT REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS. NOTIFY ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN THE EVENT OF ANY CONFLICTING STANDARD OR SPECIFICATION, THE MORE STRINGENT OR HIGHER QUALITY STANDARD, DETAIL OR SPECIFICATION SHALL APPLY.
- THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARD SPECIFICATIONS, PERMITS, BONDS, ETC., WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING, BUT NOT LIMITED TO A LOCAL AND STATE GROUNDWATER DISCHARGE AND COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE) STORMWATER DISCHARGE PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE REQUIRED PARTY (OWNER, OWNER'S REPRESENTATIVE, MUNICIPAL/DISTRICT INSPECTOR, GEOTECHNICAL ENGINEER, ENGINEER AND/OR UTILITY OWNER) AT LEAST 48 HOURS PRIOR TO START OF ANY CONSTRUCTION. PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY AND/OR PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL CONTINUE WITH NOTIFICATIONS THROUGHOUT THE PROJECT AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.
- THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION BASED ON INFORMATION BY OTHERS. NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT SIZE, LOCATION AND TYPE OF ALL EXISTING UTILITIES WHETHER SHOWN OR NOT BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO PROCEEDING WITH GRADING AND CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF UTILITIES SHALL BE PERFORMED AND INSPECTED ACCORDING TO THE REQUIREMENTS OF THE UTILITY OWNER. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAPPING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION, AND FOR RELOCATING ENCOUNTERED UTILITIES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONTACT AND RECEIVE APPROVAL FROM ENGINEER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES. CONTRACTOR RESPONSIBLE FOR SERVICE CONNECTIONS, AND RELOCATING AND RECONNECTING AFFECTED UTILITIES AS COORDINATED WITH UTILITY OWNER AND/OR ENGINEER, INCLUDING NON-MUNICIPAL UTILITIES (TELEPHONE, GAS, CABLE, ETC., WHICH SHALL BE COORDINATED WITH THE UTILITY OWNER). THE CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER UPON DISCOVERY OF A UTILITY DISCREPANCY OR CONFLICT. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (1-800-922-1987, WWW.UNCC.ORG).
- THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR OWNER AND/OR CITY APPROVAL AND PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," PART VI, FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL. ALL TEMPORARY AND PERMANENT TRAFFIC SIGNS SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH REGARD TO SIGN SHAPE, COLOR, SIZE, LETTERING, ETC. UNLESS OTHERWISE SPECIFIED. IF APPLICABLE, PART NUMBERS ON SIGNAGE DETAILS REFER TO MUTCD SIGN NUMBERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ADJUTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS.
- RIM AND GRATE ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL ADJUST RIMS AND OTHER IMPROVEMENTS TO MATCH FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS.
- THE EXISTING AND PROPOSED ELEVATIONS OF FLATWORK, SIDEWALKS, CURBS, PAVING, ETC. AS SHOWN HEREON ARE BASED ON EXTRAPOLATION OF FIELD SURVEY DATA AND EXISTING CONDITIONS. AT CRITICAL AREAS AND SITE FEATURES, CONTRACTOR SHALL HAVE FORMWORK INSPECTED AND APPROVED BY OWNER PRIOR TO PLACING CONCRETE. MINOR ADJUSTMENTS, AS APPROVED BY OWNER, TO PROPOSED GRADES, INVERTS, ETC. MAY BE REQUIRED TO PREVENT PONDING. ALL FLATWORK MUST PREVENT PONDING AND PROVIDE POSITIVE DRAINAGE AWAY FROM EXISTING AND PROPOSED BUILDINGS, WALLS, ROOF DRAIN OUTFALLS, ACROSS DRIVES AND WALKS, ETC., TOWARDS THE PROPOSED INTENDED DRAINAGE FEATURES AND CONVEYANCES.
- FINAL LIMITS OF REQUIRED ASPHALT SAWCUTTING AND PATCHING MAY VARY FROM LIMITS SHOWN ON PLANS. CONTRACTOR TO PROVIDE SAWCUT AND PATCH WORK TO ACHIEVE POSITIVE DRAINAGE AND A SMOOTH TRANSITION TO EXISTING ASPHALT WITHIN ACCEPTABLE DRIVE SLOPE STANDARDS PER ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL SAWCUTTING AND PATCHING AT UTILITY WORK, ETC. THAT MAY NOT BE DELINEATED ON PLANS.
- ANY EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. TO BE PROTECTED AND TO REMAIN IN SERVICE. IF FEATURES EXIST, EXTEND OR LOWER TO FINAL SURFACE WITH LIKE KIND CAP WITH STANDARD CAST ACCESS LID WITH SAME MARKINGS. IN LANDSCAPED AREAS PROVIDE A CONCRETE COLLAR (18"x18"x6" THICK) AT ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC.
- OWNER TO APPROVE ALL CONCRETE FINISHING, JOINT PATTERNS AND COLORING REQUIREMENTS PRIOR TO CONSTRUCTION. SUBMIT JOINT LAYOUT PLAN TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
- PIPE LENGTHS AND HORIZONTAL CONTROL POINTS SHOWN ARE FROM CENTER OF STRUCTURES, END OF FLARED END SECTIONS, ETC. SEE STRUCTURE DETAILS FOR EXACT HORIZONTAL CONTROL LOCATION. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ACTUAL PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND LENGTH OF FLARED END SECTIONS.
- ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR. ALL DEBRIS AND RUBBISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED, AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION, WITHIN 48 HOURS OF PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED BY THE MUNICIPALITY OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE LOCAL JURISDICTION, THE STATE OF COLORADO, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3", THE M-STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. JURISDICTIONAL AUTHORITY MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES AT THE CONTRACTOR'S EXPENSE DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED. THE CONTRACTOR IS RESPONSIBLE FOR PROHIBITING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE SITE, AND FOR KEEPING ALL PUBLIC AREAS FREE OF MUD AND DEBRIS. THE CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING FINAL GRADES AND FOR REMOVING ACCUMULATED SEDIMENTATION FROM ALL AREAS INCLUDING SWALES AND DETENTION/WATER QUALITY AREAS. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.
- ADA COMPLIANCE: THE CROSS-SLOPE OF ALL WALKS MUST BE 2.0% MAX. PERPENDICULAR TO DIRECTION OF TRAVEL. MAXIMUM GRADE OF HANDICAPPED ACCESSIBLE WALKS MUST BE 5.0% MAX. IN DIRECTION OF TRAVEL. MAXIMUM GRADE OF ALL HANDICAP RAMPS IS 8.3% OVER A MAXIMUM 6" RISE. MAXIMUM GRADE AT HANDICAP PARKING IS TYPICALLY 2.0% IN ALL DIRECTIONS. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO PLACEMENT OF FLATWORK OF SITE CONDITIONS OR DISCREPANCIES WHICH PREVENT TYPICAL REQUIRED GRADES FROM BEING ACHIEVED. ALL RAMPS, STAIRS AND RAILING SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ADA STANDARDS. HANDICAP RAMPS SHALL CONFORM TO CDOT M-STANDARDS (SEE DETAIL M-608-1, ETC.).
- BENCHMARK INFORMATION: TOPOGRAPHIC INFORMATION WAS PROVIDED BY R&R ENGINEERS SURVEYORS, INC. SEE ALTA/ACSM TILE SURVEY DATED JUNE 29, 2010. PROJECT BENCHMARK: CITY OF BOULDER BENCHMARK G-18, BEING A CHISELED BOX IN TOP OF CURB ON THE SOUTHEAST CORNER OF THE INTERSECTION OF 30TH STREET AND EAST AURORA AVE. ELEVATION = 5304.08' (NGVD 88).
- HORIZONTAL CONTROL INFORMATION: HORIZONTAL CONTROL COORDINATES ARE PROVIDED BY THE FOLLOWING POINTS AS SHOWN ON THE PLANS:  
CP-1: SET PK NAIL N230958.53 E-48920.57 5344.46  
CP-2: FND #5 REBAR N230884.73 E-48692.90 5327.07  
CP-3: FND #5 REBAR W/ 2" ALUM CAP LS 15315 N230964.71 E-48692.94 5330.36
- BASIS OF BEARINGS: THE WEST LINE OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 32, T. 1 N., R. 70 W. OF THE 6TH P.M., MONUMENTED AS SHOWN HEREON AND ASSUMED TO BEAR N 0°01'00" E.
- PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WEEKLY. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES.
- THE CONTRACTOR SHALL FURNISH THE MUNICIPALITY, AND OWNER WITH A SET OF CONSTRUCTION RECORD DRAWINGS MARKED "AS-BUILT", IN ACCORDANCE WITH MUNICIPALITY STANDARDS. THE PLANS SHALL SHOW FINAL PAVEMENT AND, FLOW LINE ELEVATIONS, CONTOURS AT POND/DRAINAGE FEATURES (AS SURVEYED AND CERTIFIED BY A COLORADO P.L.S.), MANHOLE, PIPE, AND INLET LOCATIONS, INVERTS, GRADE ELEVATIONS, AND SIZES OF ALL UTILITIES, AND ANY VARIATIONS FROM THE APPROVED PLAN.
- LOCATIONS OF CLEANOUTS, LIGHTS, SIGNAGE, JUNCTION BOXES, AND OTHER SIGNIFICANT SITE FEATURES TO BE STAKED FOR ENGINEER AND OWNER APPROVAL PRIOR TO WORK. CLEANOUTS, JUNCTION BOXES, AND ADJACENT GRADES TO BE RAISED ONE-HALF INCH AT ASPHALT/CONCRETE (OR 1" AT LANDSCAPING) TO PROVIDE POSITIVE DRAINAGE AWAY FROM FEATURES.
- BASED ON THE CURRENT PROPOSED BUILDING PLAN, IT IS ANTICIPATED THAT THE PROJECT WILL BE SERVED BY A " " DOMESTIC WATER SERVICE, A " " IRRIGATION SERVICE LINE, A " " FIRE SERVICE LINE, AND A " " SANITARY SERVICE. OWNER AND CONTRACTOR TO VERIFY FINAL TAP SIZES, BASED ON FINAL FIXTURE COUNTS, AT THE TIME OF BUILDING PERMIT APPLICATION AND ADJUST TAP SIZES, SERVICE LINES AND FITTINGS, AND TAP FEES ACCORDINGLY.

**CITY OF BOULDER CONSTRUCTION NOTES:**

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE "DESIGN AND CONSTRUCTION STANDARDS" OF THE CITY OF BOULDER, AND SHALL BE COMPLETED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS. IN THE EVENT THAT A DESIGN ELEMENT DOES NOT REFLECT CITY STANDARDS, THE MATTER MUST BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE DIRECTOR OF PUBLIC WORKS. THE ENGINEER SHALL BE RESPONSIBLE FOR RECOMMENDING A SOLUTION OR ALTERNATIVE SOLUTIONS TO THE CITY FOR REVIEW AND APPROVAL.
- THE APPROVAL OF A CONSTRUCTION PLAN DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF CONSTRUCTING WORKABLE PUBLIC IMPROVEMENTS. ALL REVISIONS AND/OR CORRECTIONS REQUIRED WILL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY, AND AT THEIR EXPENSE.
- THESE PLANS HAVE BEEN CHECKED BY THE CITY OF BOULDER ONLY FOR CONFORMANCE WITH THE "DESIGN AND CONSTRUCTION STANDARDS," COMPLIANCE WITH DEVELOPMENT AGREEMENT CONDITIONS, AND FOR GENERAL CONCEPTUAL APPROVAL OF PUBLIC IMPROVEMENTS AS SHOWN. THE CITY'S REVIEW DOES NOT VERIFY OR ENSURE THE ACCURACY OF EXISTING OR PROPOSED DIMENSIONS, LINES, COORDINATES, OR GRADES SHOWN, INCLUDING ALL EXISTING UTILITIES SHOWN OR NOT SHOWN.
- UTILITY LOCATIONS SHOWN REFLECT AVAILABLE RECORD DATA. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT ALL UTILITY LINES SHOWN AND OTHERWISE LOCATED. THE CONTRACTOR SHALL CONTACT THE "UTILITY NOTIFICATION CENTER OF COLORADO" AT 1-800-922-1987 FOR UTILITY LOCATES 24 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- BEFORE WORK BEGINS, THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK IN THE RIGHT-OF-WAY FROM THE CITY AND MUST NOTIFY THE CITY RIGHT-OF-WAY INSPECTION STAFF AT LEAST 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL OBTAIN AND MAINTAIN A COMPLETE AND APPROVED SET OF CONSTRUCTION PLANS. THESE DRAWINGS, AND ANY REQUIRED PERMITS, SHALL BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE TO CITY STAFF UPON REQUEST. IF CONSTRUCTION PLANS ARE NOT READILY AVAILABLE AT THE PROJECT SITE, THE DIRECTOR OF PUBLIC WORKS MAY ISSUE A STOP WORK ORDER AND HALT ALL CONSTRUCTION ACTIVITIES PENDING COMPLIANCE BY THE CONTRACTOR.
- THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," "TEMPORARY TRAFFIC CONTROL," FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL.
- ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR. ALL DEBRIS AND RUBBISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED, AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION, WITHIN 48 HOURS OF PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED BY THE DIRECTOR OF PUBLIC WORKS.
- THE CONTRACTOR SHALL PROVIDE TREE AND LANDSCAPE PROTECTION AS SET FORTH IN CHAPTER 6-6, "PROTECTION OF TREES AND PLANTS," BOULDER REVISED CODE (B.R.C.) 1981 AND THE CITY OF BOULDER DESIGN AND CONSTRUCTION STANDARDS (DCS). ALL LANDSCAPING SHALL BE PROVIDED AND MAINTAINED IN COMPLIANCE WITH THE APPROVED LANDSCAPING PLAN, B.R.C. AND DCS.
- THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3", THE M STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. THE DIRECTOR OF PUBLIC WORKS MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED.
- THE CITY OF BOULDER REQUIRES THAT SIDEWALKS CONSTRUCTED HAVE A CROSS SLOPE OF LESS THAN 2%. SIDEWALKS SHALL BE DESIGNED AND CONSTRUCTED WITH CROSS SLOPES SUFFICIENTLY LESS THAN 2% TO ENSURE THAT THEY DO NOT EXCEED THE 2% MAXIMUM.
- CONTACT THE CITY OF BOULDER SIGN SHOP (303-413-7122) FOR LOCATION OF ALL SIGNS PRIOR TO INSTALLATION AND FOR SIGN LAYOUT/DETAILS PRIOR TO ORDERING.
- ALL SIGNS SHEETING TO BE CLASS XI (DG3 MATERIAL) WITH 3M 1150 OVERLAY FILM.
- ALL SIGNS SHALL BE 0.100 GAUGE ALUMINUM.
- ALL SIGN POST TO BE 12 GAUGE 2 INCH UNISTRUT
- ALL SIGN BASES TO BE 12 GAUGE 2-1/4 INCH UNISTRUT.
- SIGN POST LENGTHS WILL VARY, BUT 7 FOOT MINIMUM CLEARANCE FROM BOTTOM OF SIGN TO GROUND LEVEL IS REQUIRED.
- ALL SIGN MOUNT HARDWARE TO BE GATOR LOCK SYSTEM.

**SURVEY LEGEND**

|  |                                    |  |                      |
|--|------------------------------------|--|----------------------|
|  | FOUND SURVEY MONUMENT AS DESCRIBED |  | PROPERTY LINE        |
|  | TELEPHONE PEDESTAL                 |  | RIGHT-OF-WAY LINE    |
|  | WATER VALVE                        |  | ADJOINING LOT LINE   |
|  | WATER METER                        |  | CURB & GUTTER W/ PAN |
|  | FIRE HYDRANT                       |  | WATER LINE           |
|  | SANITARY SEWER MANHOLE             |  | SANITARY SEWER LINE  |
|  | STORM SEWER MANHOLE                |  | ELECTRIC LINE        |
|  | SIGN                               |  | STORM LINE           |
|  | ELECTRIC TRANSFORMER               |  |                      |



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**910 28TH STREET**  
BOULDER, CO 80303

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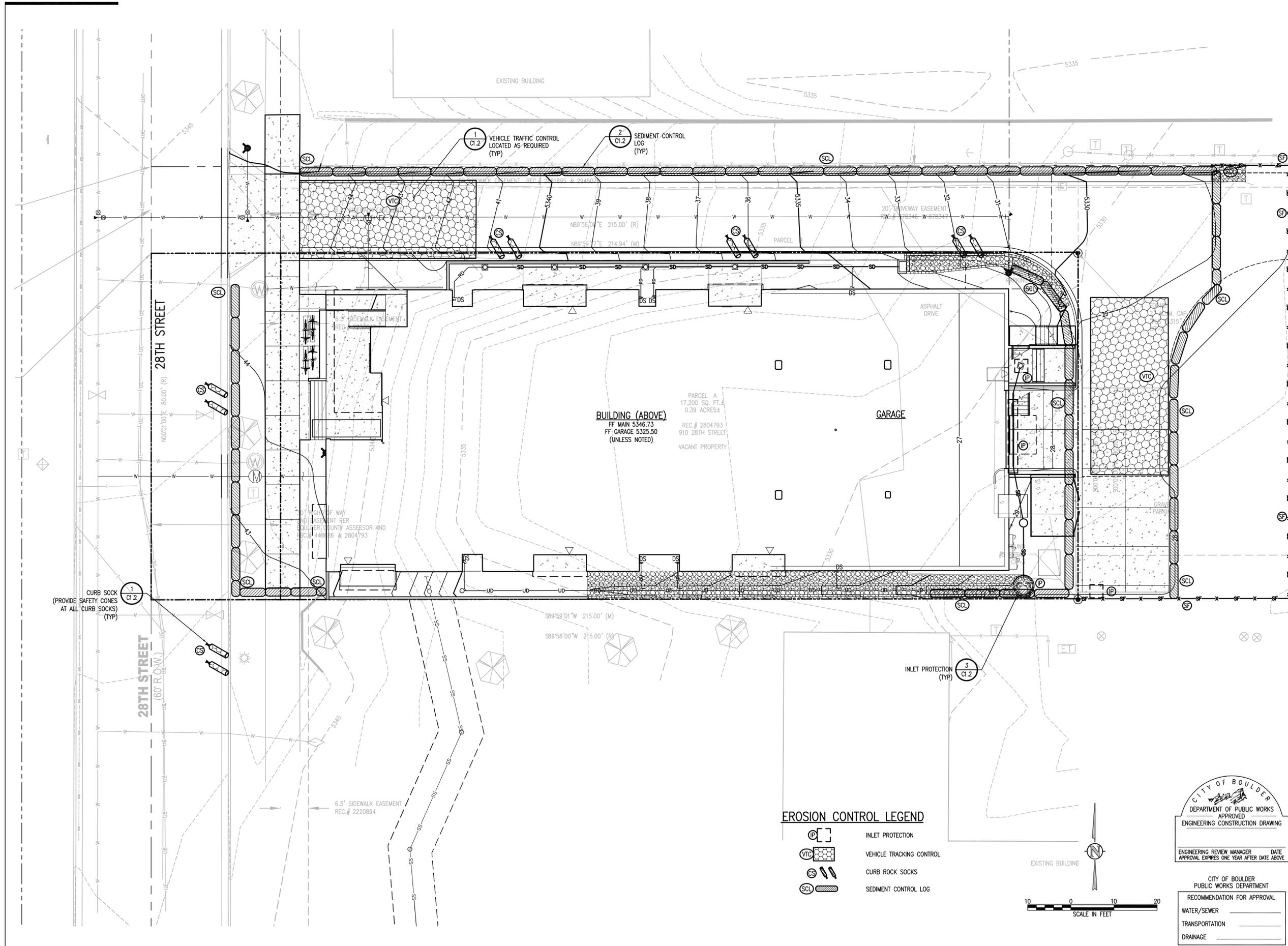
Date: 07.25.2011

Project Name:  
910 28TH STREET  
Issued For / Phase:  
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Revisions:

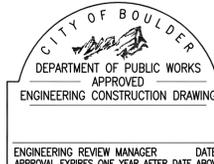
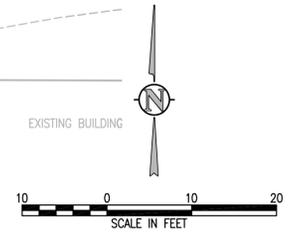
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EROSION CONTROL  
PLAN

Sheet Number:  
**C0.2**



**EROSION CONTROL LEGEND**

- INLET PROTECTION
- VEHICLE TRACKING CONTROL
- CURB ROCK SOCKS
- SEDIMENT CONTROL LOG



|   |       |
|---|-------|
| CITY OF BOULDER<br>PUBLIC WORKS DEPARTMENT<br>RECOMMENDATION FOR APPROVAL |       |
| WATER/SEWER   | _____ |
| TRANSPORTATION  | _____ |
| DRAINAGE  | _____ |



# 910 28TH STREET

## BOULDER, CO 80303

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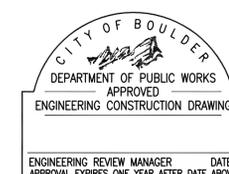
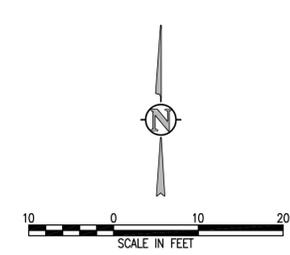
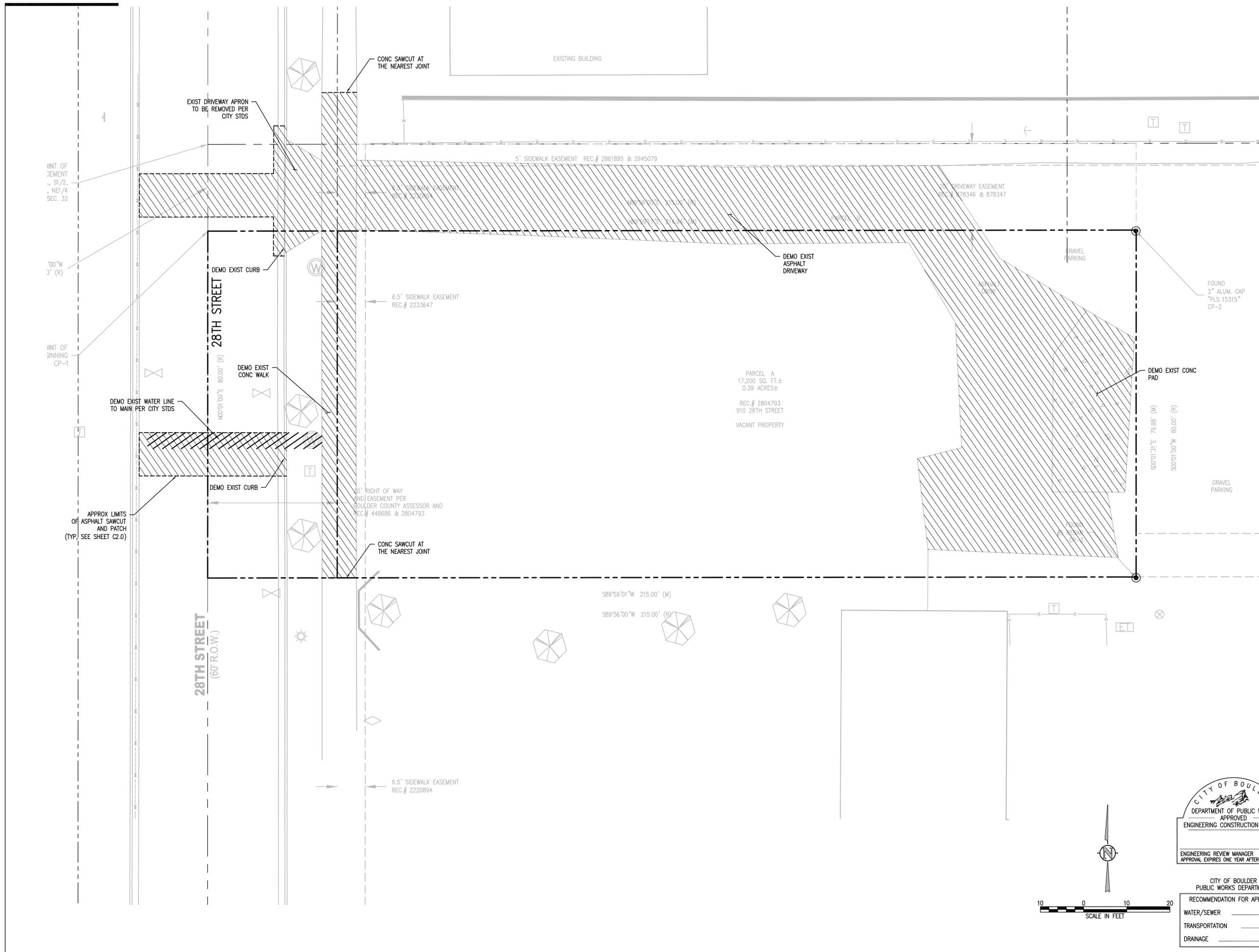
Date: 07.25.2011

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910 28TH STREET  
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DEMOLITION PLAN

Sheet Number:  
**C0.3**



CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL

|                |       |
|----------------|-------|
| WATER/SEWER    | _____ |
| TRANSPORTATION | _____ |
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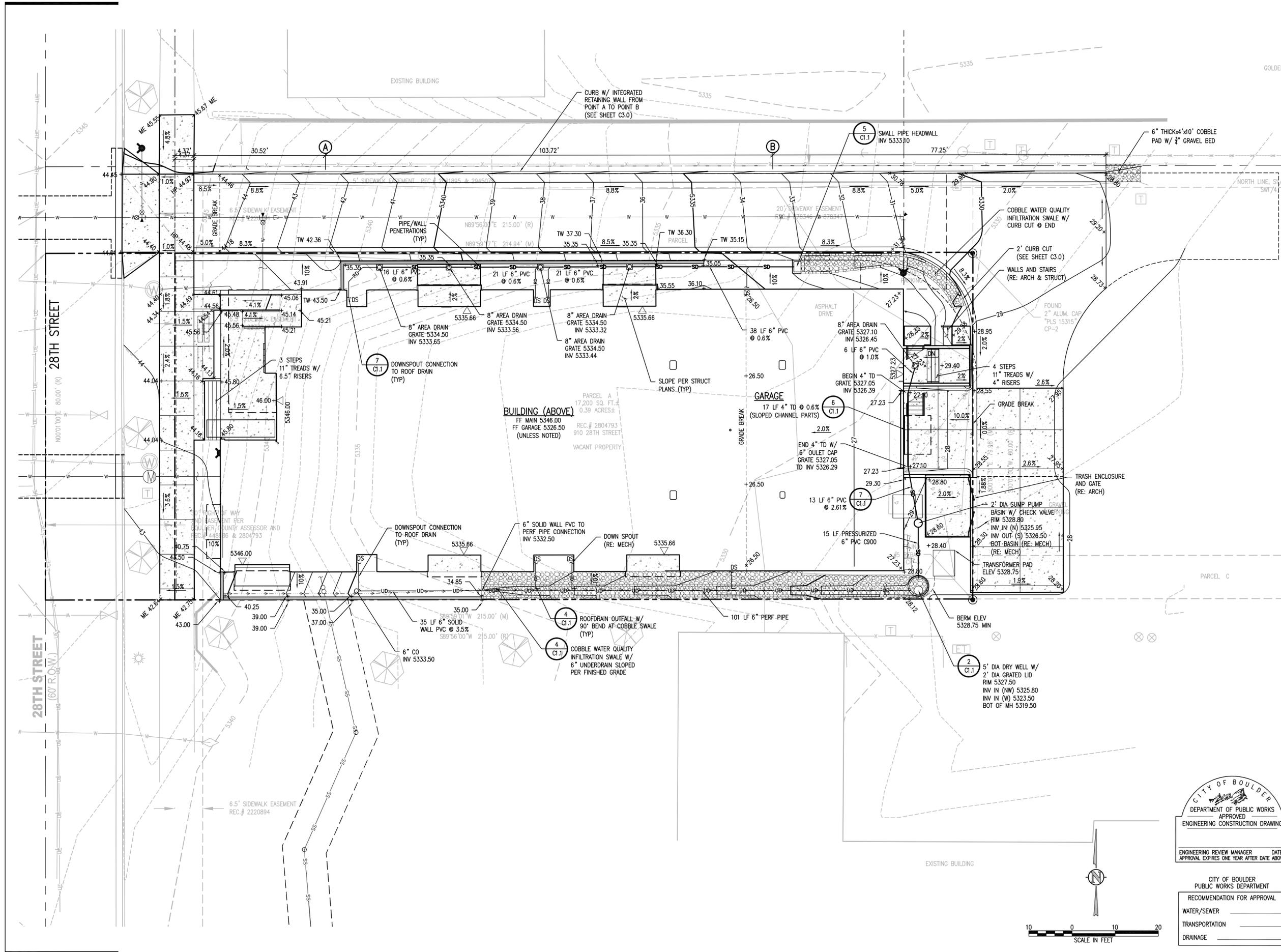
Date: 07.25.2011

Project Name:  
**910 28TH STREET**  
Issued For / Phase:  
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Sheet Name:  
**GRADING AND DRAINAGE PLAN**

Sheet Number:  
**C1.0**



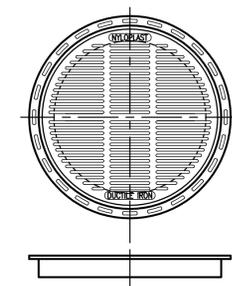
ENGINEERING REVIEW MANAGER DATE  
APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE

CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL  
WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

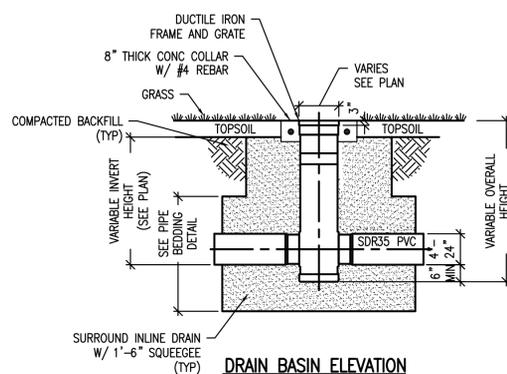


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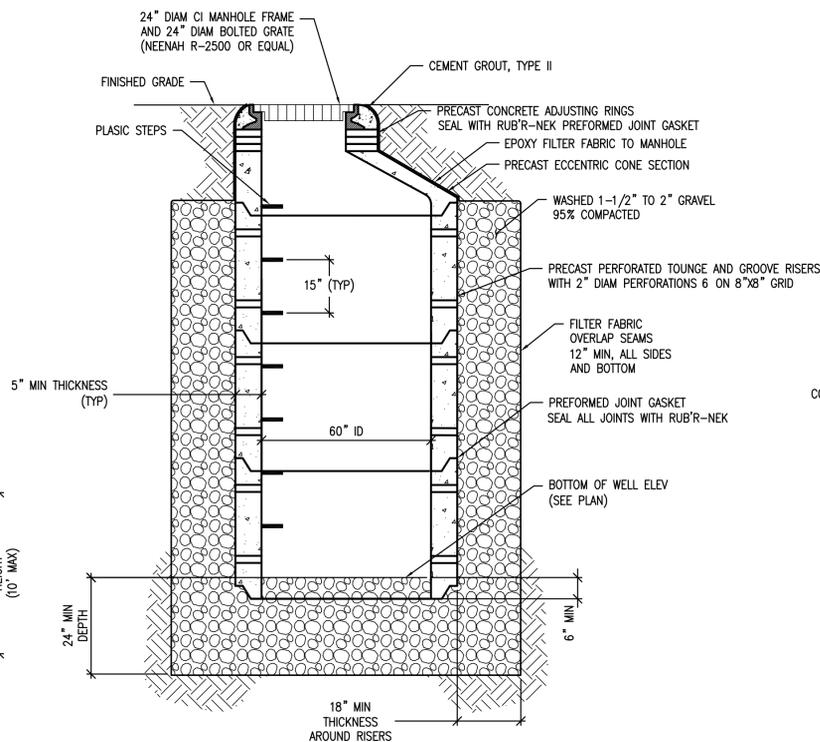


**PEDESTRIAN GRATE COVER**



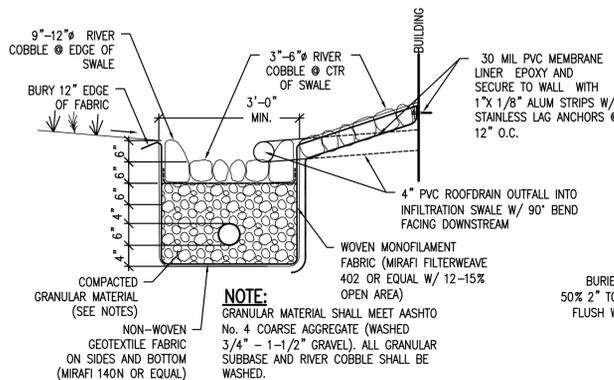
**AREA DRAIN DETAIL**

NTS **1** C1.0



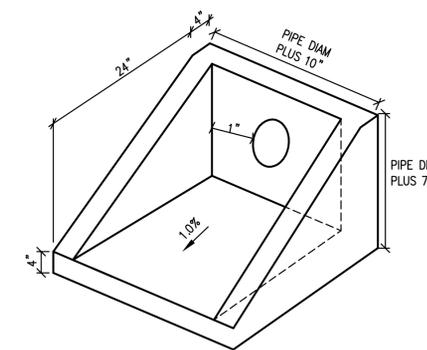
**PRECAST DRY WELL DETAIL**

NTS **2** C1.0



**COBBLE WATER QUALITY INFILTRATION SWALE DETAIL**

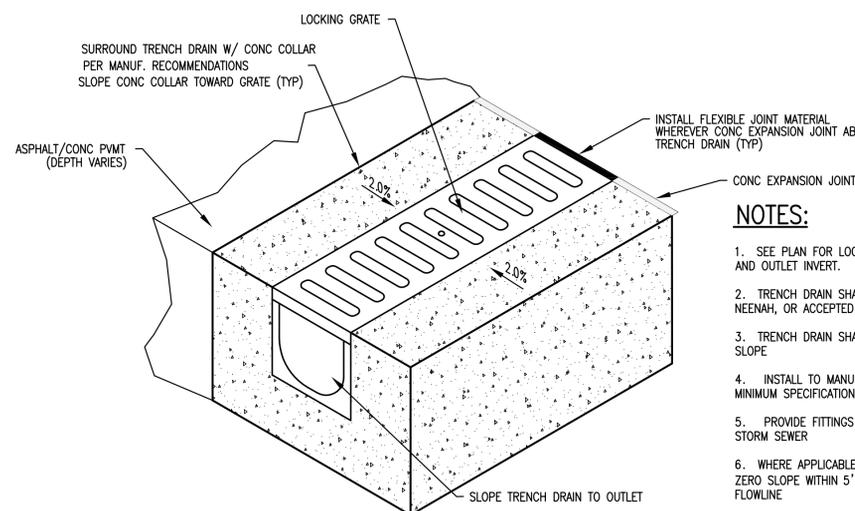
NTS **3** C1.0



**SMALL PIPE HEADWALL**

- NOTES:
1. COMPACT SUBGRADE PER SPECIFICATIONS
  2. CHAMFER ALL EXPOSED EDGES
  3. ALL CONCRETE TO BE FIBER REINFORCED PER SPECIFICATIONS.

NTS **4** C1.0



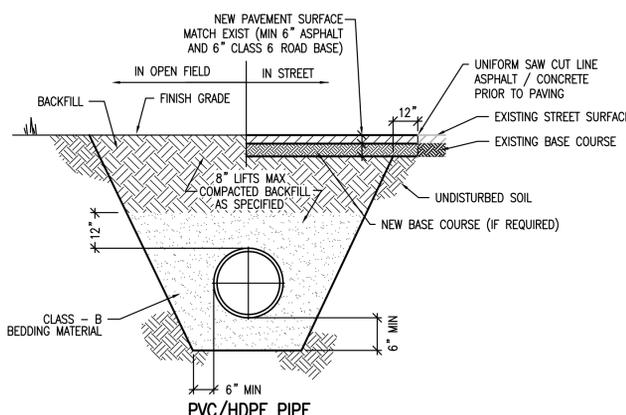
**NOTES:**

1. SEE PLAN FOR LOCATION, LENGTH, INVERTS OF TRENCH AND OUTLET INVERT.
2. TRENCH DRAIN SHALL BE ACO POWERLOCK S100K, NEENAH, OR ACCEPTED SUBSTITUTION
3. TRENCH DRAIN SHALL NOT CONTAIN SECTIONS OF ZERO SLOPE
4. INSTALL TO MANUFACTURERS SPECIFICATIONS AND MINIMUM SPECIFICATIONS PER THIS DETAIL
5. PROVIDE FITTINGS AS REQUIRED TO CONNECT TO STORM SEWER
6. WHERE APPLICABLE, TRANSITION CURB AND GUTTER TO ZERO SLOPE WITHIN 5' OF TRENCH DRAIN AND EXTEND TOP FLOWLINE

**TRENCH DRAIN DETAIL**

NTS **5** C1.0

**NOTES:**  
TRENCH DRAIN TO BE INCORPORATED INTO STRUCTURAL SLAB.  
(SEE ARCH & STRUCT PLANS)



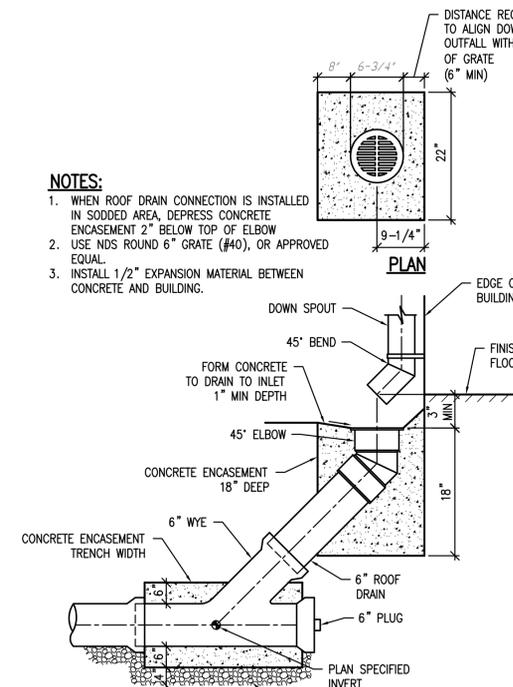
**PVC/HDPE PIPE**

**NOTES:**

1. IF UNSTABLE MATERIALS ARE FOUND IN TRENCH BOTTOM, OVEREXCAVATE PER SPEC OR AS REQUIRED.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES.
3. MINIMUM COVER 18" BELOW FINAL GRADE.

**STORM SEWER PIPE BEDDING DETAIL**

NTS **6** C1.0

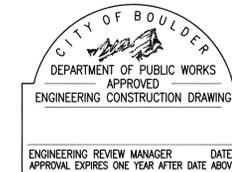


**ROOF DRAIN CONNECTION DETAIL**

NTS **7** C1.0

**NOTES:**

1. WHEN ROOF DRAIN CONNECTION IS INSTALLED IN SODDED AREA, DEPRESS CONCRETE ENCASUREMENT 2" BELOW TOP OF ELBOW
2. USE NDS ROUND 6" GRATE (#40), OR APPROVED EQUAL
3. INSTALL 1/2" EXPANSION MATERIAL BETWEEN CONCRETE AND BUILDING.



|  |       |
|--|-------|
| CITY OF BOULDER<br>DEPARTMENT OF PUBLIC WORKS<br>RECOMMENDATION FOR APPROVAL |       |
| WATER/SEWER  | _____ |
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| DRAINAGE   | _____ |

Date: 07.25.2011

Project Name:  
**910 28TH STREET**  
Issued For / Phase:  
**Building Permit & Tech Docs**

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Revisions:

Sheet Name:  
**DRAINAGE DETAILS**

Sheet Number:

**C1.1**

**STORMWATER MANAGEMENT PLAN (SWMP)**

THE SITE IS LOCATED AT 910 28TH STREET. THE PROPOSED CONSTRUCTION CONSISTS OF PARKING, UTILITY SERVICE CONNECTIONS, BUILDING CONSTRUCTION, PAVING OF SIDEWALKS, PARKING LOTS, ENTRANCE DRIVES, UTILITY INFRASTRUCTURE AND STORMWATER INFRASTRUCTURE CONSTRUCTION IN THE CITY OF BOULDER, COLORADO. THE TOTAL SITE AREA AND TOTAL DISTURBED AREA IS APPROXIMATELY 0.47 ACRES AND 0.47 ACRES RESPECTIVELY. THE SITE IS LOCATED AT APPROXIMATELY 40°00'15"N LATITUDE, 105°15'30" W LONGITUDE

THE ESTIMATED SEQUENCE OF CONSTRUCTION STARTS IS AS FOLLOWS:

|                          |             |
|--------------------------|-------------|
| ROAD & OVERLOT GRADING – | (OCT, 2011) |
| UTILITY CONSTRUCTION –   | (OCT 2011)  |
| BUILDING CONSTRUCTION –  | (NOV 2011)  |
| PAVING –                 | (AUG 2012)  |
| SITE RESTORATION –       | (SEPT 2012) |

THE PRESENT SITE CONSISTS OF GRAVEL DRIVES AND VEGETATION AND IS APPROXIMATELY 97% COVERED WITH VEGETATIVE GROUND COVER. THE ESTIMATED HISTORIC AND DEVELOPED 100YR RUNOFF COEFFICIENTS ARE 0.62 AND 0.88 RESPECTIVELY.

OFFSITE RUNOFF FLOWS ONTO THE PROPERTY. ONSITE FLOWS ARE TREATED IN A WATER QUALITY SWALE. STORMWATER SURFACE DISCHARGED FROM THIS SITE FLOWS TO THE SOUTH AND EAST AND INTO AURORA AVENUE. A DRAINAGE REPORT FOR THIS DEVELOPMENT HAS BEEN SUBMITTED TO THE ENGINEER OF THE CITY OF BOULDER, COLORADO.

OTHER POTENTIAL POLLUTION SOURCES SUCH AS VEHICLE FUELING ARE LOCATED AT CONSTRUCTION ENTRANCES AND EXISTS. (OR DO NOT EXIST AT THIS SITE) NON-STORMWATER COMPONENTS OF THE DISCHARGE DO NOT EXIST ON THIS SITE.

**BEST MANAGEMENT PRACTICES FOR STORMWATER MANAGEMENT**

NON STRUCTURAL BMPs WILL BE IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE. THE UTILIZATION OF NON STRUCTURAL BMPs WILL BE AN ONGOING PROCESS DIRECTED AT PREVENTING EROSION. THE NON STRUCTURAL BMPs WILL RECEIVE CONTINUOUS EMPHASIS THROUGHOUT CONSTRUCTION BECAUSE THEY AVERT PROBLEMS BEFORE THEY OCCUR AND REDUCE THE NEED FOR STRUCTURAL BMPs. NON STRUCTURAL BMPs WILL CONSIST PRIMARILY OF PRESERVATION OF EXISTING MATURE VEGETATION AND TREES, PLANNING AND SCHEDULING CONSTRUCTION ACTIVITIES AIMED AT ACHIEVING THE GOAL OF MINIMIZING EROSION. FURTHERMORE, CONSTRUCTION PERSONNEL WILL BE INSTRUCTED AND SUPERVISED IN CONSTRUCTION METHODS CONSISTENT WITH EROSION PREVENTION PRACTICES.

PLANNED STRUCTURAL BMPs FOR EROSION AND SEDIMENT CONTROL ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. IMPLEMENTING THESE MEASURES SHOULD MINIMIZE NUISANCE SILT AND SEDIMENTATION EXITING THE SITE AND PREVENT CLOGGING EXISTING STORM SEWERS AND STREET GUTTERS.

APPLICATION OF THESE BMPs FOR STORMWATER MANAGEMENT ARE FOR CONSTRUCTION PERIODS AND ARE CONSIDERED TEMPORARY. POST-DEVELOPMENT STORMWATER MANAGEMENT IS PROVIDED THROUGH VEGETATED LANDSCAPED AREAS, GRASSED SWALES, STORM COLLECTION SYSTEM, AND THE UTILIZATION OF COBBLE INFILTRATION SWALES AND POROUS LANDSCAPED DETENTION FACILITIES.

**VEHICLE TRACKING CONTROL (VTC):**

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED AT MORREHEAD AVENUE. THE CONSTRUCTION ACCESS AND PARKING WILL BE GRADED AND COVERED WITH A CRUSHED STONE BASE COURSE DURING CONSTRUCTION. THE VEHICLE TRACKING CONTROL WILL BE RELOCATED WITH THE CONSTRUCTION ACCESS AS NECESSARY.

**SILT FENCING (SF):**

SILT FENCING SHALL BE INSTALLED WITH RESPECT TO PROPOSED DRAINAGE PATTERNS. SILT FENCE SHALL BE CONSTRUCTED ALONG THE PORTIONS OF THE NORTH, SOUTH AND EAST SIDE OF THE PROPERTY AND ALONG ANY DRAINAGE AREAS SUBJECT TO EROSION. THE FENCE SHALL BE INSTALLED AT THE DOWNHILL SIDE OF THE EXISTING SLOPES ACROSS THE SITE AND AT ALL POINT DISCHARGE AREAS WHETHER SHOWN OR NOT, SILT FENCE SHALL BE MAINTAINED AS NEEDED THROUGHOUT THE CONSTRUCTION PROCESS. THE TEMPORARY SILT FENCE WILL REMAIN UNTIL THE STORM SEWER STRUCTURES ARE COMPLETED AND GROUND COVER IS EFFECTIVE.

**INLET PROTECTION (IP):**

THE INLET PROTECTION WILL BE INSTALLED AS THE STORM SEWER STRUCTURES ARE CONSTRUCTED. EACH INLET ON THE PROPOSED STORM SEWER SYSTEM WILL HAVE A TEMPORARY INLET SEDIMENT TRAP CONSTRUCTED AROUND IT. IN PAVED AREAS, THIS TRAP CONSISTS OF WIRE MESH SOCKS TO FILTER THE STORM RUNOFF AND ALLOW ANY SILT TO SETTLE OUT. IN FIELDS OR LANDSCAPED AREAS THIS TRAP CONSISTS OF WIRE MESH SOCKS.

**STRAW BALE DROP STRUCTURES DAMS (SB):**

STRAW BALE BARRIERS WILL BE INSTALLED TO PROTECT THE PROPOSED SWALE(S) PRIOR TO LANDSCAPING THE SITE. THESE BARRIERS WILL REDUCE THE FLOW VELOCITY IN THE SWALE(S) AND ALLOW THE DISTURBED SOIL TO SETTLE OUT.

**OUTLET PROTECTION (OP):**

THE STORM SEWER OUTLETS WILL BE PROTECTED WITH RIPRAP. PLACING RIPRAP AT PIPE OUTFALLS REDUCES EXIT VELOCITIES AND REDUCES SCOUR. THIS RIPRAP WILL BE LEFT IN PLACE AS PART OF THE PERMANENT STORMWATER MANAGEMENT PLAN.

**DUST CONTROL MEASURES:**

DISTURBED AREAS NOT YET READY TO BE SEEDED, LANDSCAPES, PAVED, OR OTHERWISE STABILIZED SHALL BE WATERED, OR RIPPED AS NECESSARY TO PRECLUDE VISIBLE DUST EMISSIONS.

ITEMS ARE SCHEDULED TO BE IMPLEMENTED ACCORDING TO THE CONSTRUCTION SCHEDULE. AS WORK PROCEEDS, IMPLEMENTATION OF INDIVIDUAL BMPs IS TO COINCIDE WITH THE CONSTRUCTION THEREBY MINIMIZING THE EXPOSURE OF UNPROTECTED AREAS. THE SILT FENCE, INLET PROTECTION (FOR EXISTING INLETS), AND GRAVELING OF THE CONSTRUCTION ENTRANCE WILL BE PERFORMED WHEN THE GRADING BEGINS. THE INLET PROTECTION WILL BE INSTALLED AS THE STORM SEWER STRUCTURES ARE CONSTRUCTED. THE RIPRAP PROTECTION WILL BE INSTALLED AS THE STORM SEWER OUTFALLS OR CULVERTS ARE CONSTRUCTED. THE STRUCTURAL BMPs THAT DO NOT BECOME PART OF THE PERMANENT STORMWATER MANAGEMENT PLAN ARE TO BE REMOVED, AS THE PAVING, LANDSCAPING, AND OTHER PERMANENT GROUND COVER INSTALLATIONS ARE COMPLETED. FUGITIVE DUST EMISSIONS RESULTING FROM GRADING ACTIVITIES AND/OR WIND SHALL BE CONTROLLED USING THE BEST AVAILABLE CONTROL TECHNOLOGY AS DEFINED BY THE COLORADO DEPARTMENT OF HEALTH AT THE TIME OF GRADING. THE GRAVELING IS TO BE MAINTAINED AND EXTENDED CONSTRUCTION PROGRESSES ESPECIALLY AROUND THE BUILDING SITE. THE STRUCTURAL BMPs ARE TO BE REMOVED, AS THE PERMANENT LANDSCAPING INSTALLATIONS ARE COMPLETED.

THE EROSION AND SEDIMENT CONTROL PLAN MAY BE MODIFIED BY THE OWNER'S ENGINEER, CITY OR STATE ENGINEERING INSPECTORS OR ITS AUTHORIZED REPRESENTATIVE AS FIELD CONDITIONS WARRANT.

**STORMWATER DETENTION AND WATER QUALITY:**

STORMWATER DETENTION AND ONSITE WATER QUALITY IS PROVIDED ONSITE IN DETENTION AREA. WATER QUALITY TREATMENT IS PROVIDED. THE PROPOSED DETENTION AREA WILL BE UTILIZED AS A SEDIMENT BASIN.

**TEMPORARY SEEDING AND MULCHING:**

ALL SEEDS FURNISHED SHALL BE FREE FROM NOXIOUS SEEDS SUCH AS RUSSIAN OR CANADIAN THISTLE, COURSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAPWEED, AND LEAFY SPURGE. THE FORMULA USED FOR DETERMINING THE QUALITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS). SEEDING RECOMMENDATIONS ARE PROVIDED BELOW, BUT MAY BE MODIFIED WITH THE OWNER'S APPROVAL TO MAKE THE BEST USE OF EXISTING CLEARINGS AND GRUBBINGS:

| SPECIES              | COMMON NAME        | VARIETY  | LBS/ACRE |
|----------------------|--------------------|----------|----------|
| AGROPYRON SMITHI     | WESTERN WHEATGRASS | ARRIBA   | 8.0      |
| ARRHENATHERUM ELATES | TALL OATGRASS      |          | 3.0      |
| LOLIUM PERENNE       | PERENNIAL RYEGRASS | PENNFINE | 2.0      |

**TEMPORARY SEEDING AND MULCHING (CONT):**

ALL SEEDS SHALL BE DRILLED NOT HYDROSEEDED. ALL DISTURBED AREAS SHALL BE SEEDED AND CRIMP MULCHED IF PERMANENT VEGETATION IS NOT IMMEDIATELY INSTALLED. AFTER SEEDING HAS BEEN COMPLETED, A RATE OF 4,000 LBS. OF STRAW PER ACRE SHALL BE APPLIED UNIFORMLY, CRIMPED WITH A CRIMPER OR OTHER APPROVED EQUIPMENT OR OTHERWISE ATTACHED. A TACKIFIER OR JUTE NETTING TO ATTACH MULCH MAY BE USED WITH THE OWNER'S APPROVAL. THE SEEDED AREA SHALL BE CRIMPED MULCHED AND THE MULCH ATTACHED WITHIN TWENTY-FOUR (24) HOURS AFTER SEEDING. AREAS NOT MULCHED AND ATTACHED WITHIN TWENTY-FOUR (24) HOURS AFTER SEEDING MUST BE RESEDED WITH THE SPECIFIED MIX AT THE CONTRACTOR'S EXPENSE, PRIOR TO MULCHING AND ATTACHING. ON STEEP SLOPES OR OTHER SPECIFIED AREAS AS SHOWN ON THE PLANTING PLAN, WHICH ARE DIFFICULT TO MULCH AND ATTACH BY CONVENTIONAL METHOD, BURLAP OR OTHER BLANKETING MATERIALS PROPERLY ANCHORED AND SECURED MAY BE USED WHEN APPROVED BY THE CITY ENGINEER.

**PERMANENT STABILIZATION MEASURES:**

RIPRAP FOR STORM DRAIN OUTFALLS AND ROCK CHECK DAMS WILL BECOME PART OF THE PERMANENT STORMWATER MANAGEMENT PLAN AND WILL NOT BE REMOVED. PERMANENT LANDSCAPING WILL INCLUDE SODDING, SEEDING, TREES, SHRUBS, CRUSHER FINES OR OTHER VEGETATIVE COVER. TO OPEN AREAS. NATIVE PERENNIAL SEEDING WILL BE ESTABLISHED IN NON-IRRIGATED AREAS AND SOD OR OTHER VEGETATIVE COVER WILL BE ESTABLISHED IN IRRIGATED OPEN AREAS. ALL PERMANENT STABILIZATION MEASURES WILL BE SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER.

**MATERIALS AND SPILL PREVENTION:**

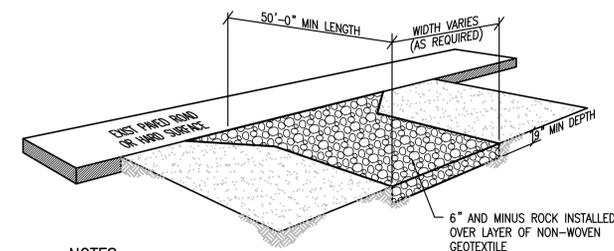
THE CONTRACTOR WILL STORE CONSTRUCTION MATERIALS AND EQUIPMENT IN CONFINED AREAS ON SITE FROM WHICH RUNOFF WILL BE CONTAINED AND FILTERED. MATERIALS WILL BE STORED OFF THE GROUND AND PROTECTED FROM THE WEATHER BY A COVER OR STORED IN A CONTAINER SUCH AS A VAN OR TRAILER. AN EARTHEN DIKE WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE FUEL STORAGE AREA TO PREVENT MATERIALS FROM CONTACT WITH SURFACE RUNOFF. EQUIPMENT MAINTENANCE WILL BE PERFORMED IN A DESIGNATED AREA AND STANDARD MAINTENANCE PROCEDURES, SUCH AS THE USE OF DRIP PANS, WILL BE USED TO CONTAIN PETROLEUM PRODUCTS.

**INSPECTION AND MAINTENANCE:**

THE EROSION CONTROL MEASURES WILL BE INSPECTED DAILY DURING CONSTRUCTION BY THE CONTRACTOR AND AFTER EACH RAIN EVENT. ALL INSPECTIONS SHALL BE DOCUMENTED AND SHALL INCLUDE THE DATE OF INSPECTION, ANY INCIDENCE OF NON-COMPLIANCE, SIGNED CERTIFICATION THAT THE SITE IS IN COMPLIANCE, AND ANY NOTES, DRAWINGS, MAPS, ETC. PERTAINING TO REPAIRS. COPIES OF ALL DOCUMENTATION SHALL BE DISTRIBUTED TO MUNICIPALITIES AND OWNER ON A REGULAR BASIS AS SPECIFIED BY OWNER. SILT FENCE AND STRAW BALE BARRIERS WILL BE CHECKED FOR UNDERMINING AND BYPASS AND REPAIRED OR EXPANDED AS NEEDED. SEDIMENT SHOULD BE REMOVED FROM INLET FILTERS AND SILT FENCING BEFORE ONE HALF OF THE DESIGN DEPTH HAS BEEN FILLED. SEDIMENTS DEPOSITED IN THE PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY. THE TEMPORARY VEGETATION OF BARE SOILS WILL BE CHECKED REGULARLY AND AREAS WHERE IT IS LOST OR DAMAGED WILL BE RESEDED. AT MINIMUM THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL BMPs EVERY 14 DAYS AND AFTER SIGNIFICANT PRECIPITATION OR SNOWMELT EVENTS. INSTALLATIONS AND MODIFICATIONS AS REQUIRED BY THE CITY WILL BE IMPLEMENTED WITHIN 48 HOURS OF NOTIFICATION. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.

**FINAL STABILIZATION AND LONG-TERM STORMWATER QUALITY:**

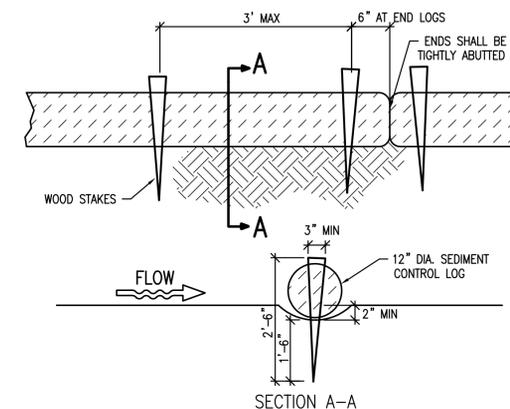
FINAL STABILIZATION IS REACHED WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% OR PRE-DISTURBANCE LEVELS OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED. FINAL STABILIZATION WILL BE ACHIEVED USING SOD, NATIVE SEEDING, PERMANENT BMP'S, AND OTHER METHODS. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL STABILIZATION REGARDLESS OF ACCEPTANCE BY OWNER OF THE CONTRACTOR ITEM.



**NOTES:**

1. VEHICLE TRACKING CONTROL PADS SHALL BE INSTALLED AT ALL INGRESS/EGRESS POINTS WHERE VEHICULAR ACCESS TRANSITIONS FROM PAVED SURFACES TO DISTURBED SURFACES.
2. THE VTC PAD SHALL CONSIST OF HARD, ANGULAR, DENSE, AND DURABLE STONE. ROUNDED STONE, BOULDERS, RECYCLED ASPHALT, AND RECYCLED CONCRETE ARE NOT ACCEPTABLE.
3. ANY CRACKED OR DAMAGED CURB AND/OR GUTTER SHALL BE REPLACED BY THE CONTRACTOR.
4. PAD WILL BE REPAIRED AND REFRESHED AS NEEDED TO MAINTAIN FUNCTION AND INTEGRITY.
5. VTC PADS SHALL BE INSTALLED AT ALL CONCRETE WASHOUT AREAS AND AT STABILIZED STAGING/STORAGE AREAS.

**VTC VEHICLE TRACKING CONTROL DETAIL** (1) CO.2



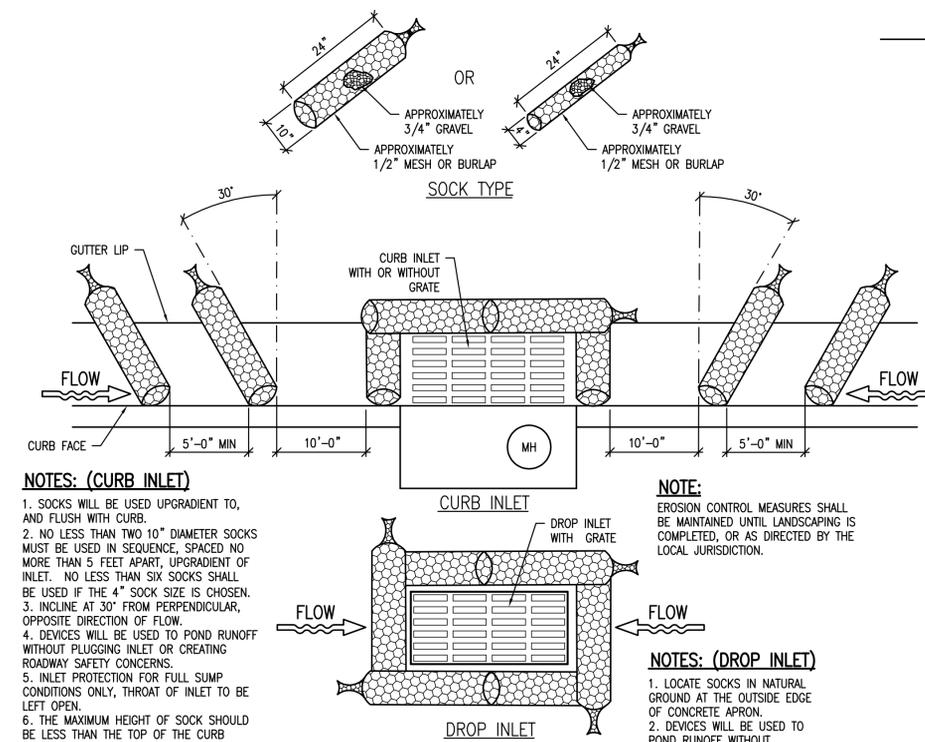
**SEDIMENT CONTROL LONG INSTALLATION NOTES:**

1. SEE PLAN VIEW FOR LOCATION AND EXTENT OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

**SEDIMENT CONTROL LOG MAINTENANCE:**

1. THE SEDIMENT CONTROL LOGS SHALL BE INSPECTED DAILY, DURING AND AFTER ANY STORM EVENT, AND REPAIRED OR HAVE ANY UPSTREAM SEDIMENT REMOVED.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 1/2 THE HEIGHT OF THE CREST OF LOG.
3. ALL SEDIMENT CONTROL LOGS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE ACCEPTABLY STABILIZED.

**SCL SEDIMENT CONTROL LOG** (2) CO.2



**NOTES: (CURB INLET)**

1. SOCKS WILL BE USED UPGRADIENT TO, AND FLUSH WITH CURB.
2. NO LESS THAN TWO 10" DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN 5 FEET APART, UPGRADIENT OF INLET. NO LESS THAN SIX SOCKS SHALL BE USED IF THE 4" SOCK SIZE IS CHOSEN.
3. INCLINE AT 30° FROM PERPENDICULAR, OPPOSITE DIRECTION OF FLOW.
4. DEVICES WILL BE USED TO POND RUNOFF WITHOUT PLUGGING INLET OR CREATING ROADWAY SAFETY CONCERNS.
5. INLET PROTECTION FOR FULL SUMP CONDITIONS ONLY, THROAT OF INLET TO BE LEFT OPEN.
6. THE MAXIMUM HEIGHT OF SOCK SHOULD BE LESS THAN THE TOP OF THE CURB OPENING TO ALLOW OVERFLOW DURING LARGER EVENTS.

**NOTE:**

EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL LANDSCAPING IS COMPLETED, OR AS DIRECTED BY THE LOCAL JURISDICTION.

**NOTES: (DROP INLET)**

1. LOCATE SOCKS IN NATURAL GROUND AT THE OUTSIDE EDGE OF CONCRETE APRON.
2. DEVICES WILL BE USED TO POND RUNOFF WITHOUT PLUGGING INLET OR CREATING ROADWAY SAFETY CONCERNS.

**CS IP GRAVEL SOCK INLET PROTECTION DETAIL** (3) CO.2

910 28TH STREET  
BOULDER, CO 80303

2011 Shears Adkins Rockmore

Date: 07.25.2011

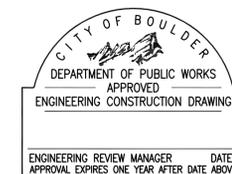
Project Name:  
910 28TH STREET  
Issued For / Phase:  
Building Permit &  
Tech Docs

Drawn: MC  
Revisions:

Sheet Name:  
SWMP AND EROSION  
CONTROL DETAILS

Sheet Number:

C1.2



ENGINEERING REVIEW MANAGER \_\_\_\_\_ DATE \_\_\_\_\_  
APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE.

CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL

WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

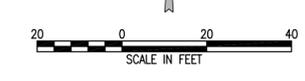
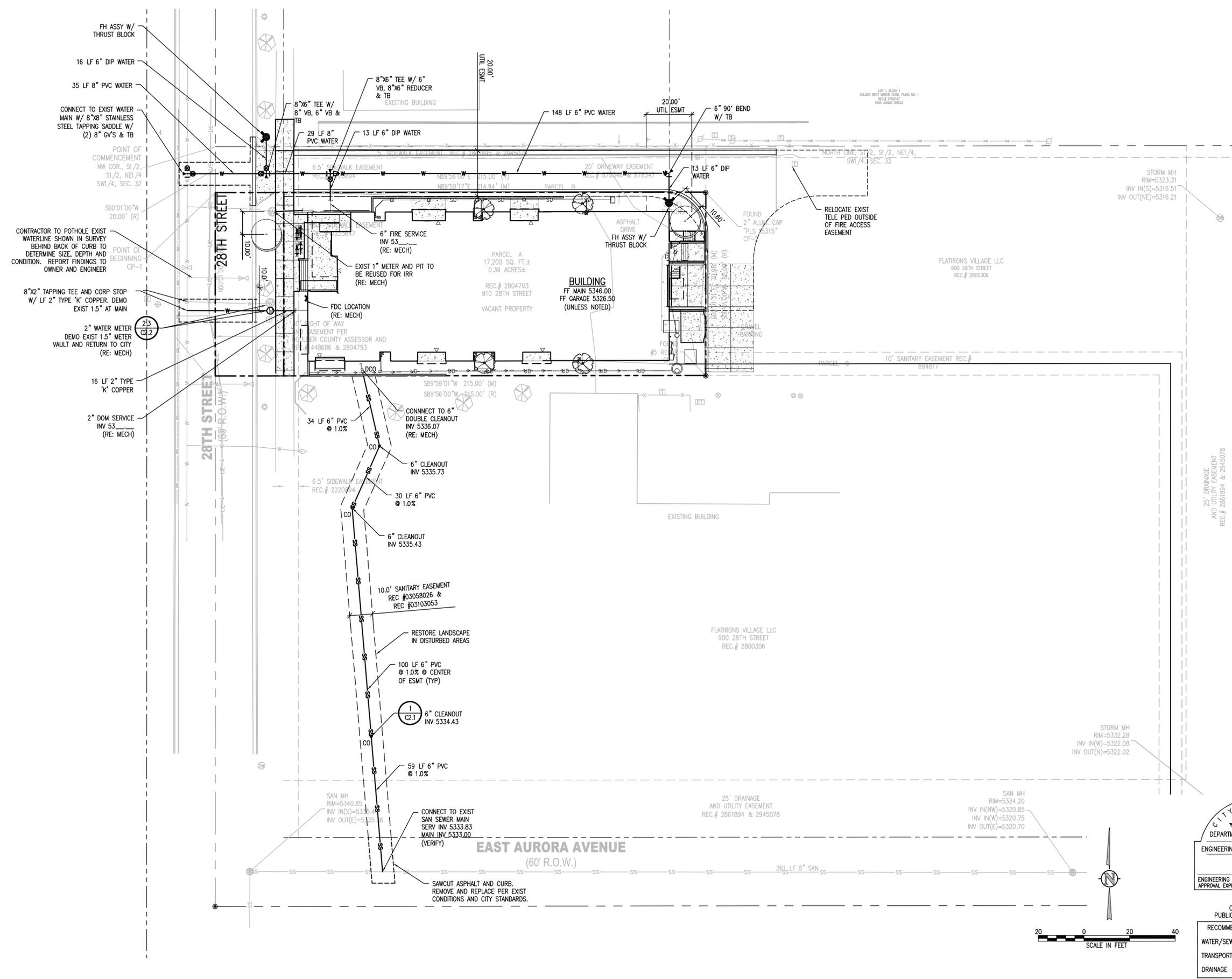


**910 28TH STREET**  
BOULDER, CO 80303

2011 Shears Adkins Rockmore

Date: 07.25.2011  
Project Name:  
910 28TH STREET  
Issued For / Phase:  
Building Permit &  
Tech Docs  
Drawn: MC  
Revisions:

Sheet Name:  
UTILITY PLAN  
Sheet Number:  
**C2.0**



CITY OF BOULDER  
DEPARTMENT OF PUBLIC WORKS  
APPROVED  
ENGINEERING CONSTRUCTION DRAWING

ENGINEERING REVIEW MANAGER DATE  
APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE

CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL  
WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

PAVEMENT, (MIN THICKNESS 6") OR MATCH EXISTING DEPTH WHICHEVER IS GREATER

18" MIN

6"

30" MIN DEPTH 48" MAX

FLOWABLE FILL (REQUIRED UNDER PAVED SURFACES)

UTILITY PIPE OR CABLE (GAS, ELECTRIC, TELECOMMUNICATION)

16" OR LESS

CONCRETE ENCASEMENT (WHERE REQUIRED BY THE SPECIFICATIONS)

NOTE: IF TRENCH WIDTH IS WIDER THAN 16" USE UTILITY TRENCH DRAWING NO. 4.02

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**UTILITY TRENCH 16" OR LESS**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 4.01

42" MINIMUM FINAL PAVEMENT WIDTH, ROTOMILLING IS AN ACCEPTABLE ALTERNATIVE TO MINIMUM PAVEMENT WIDTH

IN OPEN FIELD | IN STREET

NEW STREET SURFACE AS SPECIFIED, 6" MIN OR MATCH EXIST

UNIFORM CUT LINE ASPHALT/CONCRETE

EXISTING STREET SURFACE

SAWCUT 6" BEYOND TRENCH WALL EACH SIDE PRIOR TO PAVING

COVER AS SPECIFIED

COMPACTED BACKFILL AS SPECIFIED

WIDTH SEE TABLE

12"

FOR TRENCHES GREATER THAN 5 FEET IN DEPTH, SIDEWALLS SHALL BE SLOPED AT 45° ANGLE OR SUITABLY BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES AS REQUIRED BY OSHA.

SEE BEDDING DETAIL DRAWING NO. 4.03

**TYPICAL TRENCH SECTION**

NOTES:

- PAVING SHALL COMPLY WITH CITY OF BOULDER SPECIFICATIONS.
- MINIMUM COVER TO BE BELOW OFFICIAL STREET GRADE.
- MINIMUM DISTANCE BETWEEN EDGE OF TRENCH AND EDGE OF ASPHALT, OR LIP OF CURBLINE, SHALL BE 3 FEET.
- REFER TO DRAWING NO. 4.04 FOR PAVEMENT RESTORATION FOR PAVEMENT LESS THAN 3 YEARS OLD.
- ON STATE HIGHWAYS, REFER TO CDOT UTILITY REQUIREMENTS.

| PIPE DIAMETER | MINIMUM WIDTH | MAXIMUM WIDTH |
|---------------|---------------|---------------|
| 6"            | 1'-6"         | 2'-6"         |
| 8"            | 1'-8"         | 2'-8"         |
| 12"           | 2'-0"         | 3'-0"         |
| 16"           | 2'-4"         | 3'-4"         |
| 20"           | 2'-8"         | 3'-8"         |
| 24"           | 3'-0"         | 4'-0"         |

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**UTILITY TRENCH WIDER THAN 16"**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 4.02

FINISHED GRADE

SEWER ABOVE WATER ALWAYS PROVIDE PROTECTION

PROVIDE PROTECTION AS DETAILED BELOW IF THIS DIMENSION IS LESS THAN 18"

SECTION

SEWER LINE

PLAN

ADAPTOR COUPLINGS (WATER TIGHT FLEXIBLE COUPLINGS CONFORMING TO ASTM C-425 BANDED WITH TWO SERIES 300 STAINLESS STEEL BANDS EACH)

10" MIN

10" MIN

REPLACE SEWER LINE W/ AWWA C-900 CLASS 200 PVC OR AWWA C-150 CLASS 52 DUCTILE IRON PIPE IF WATER LINE PROTECTION IS REQUIRED, (SEE ABOVE)

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**SEWER CROSSING**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.02

MECHANICAL JOINT RESTRAINT

WEDGE DETAIL

BOLT HOLE DETAIL

DIMENSIONS

| NOMINAL PIPE SIZE | NO. OF BOLTS | NO. OF WEDGES | K2 INCHES | J INCHES | F INCHES | M INCHES |
|-------------------|--------------|---------------|-----------|----------|----------|----------|
| 4"                | 4            | 2             |           |          |          |          |
| 6"                | 6            | 3             | 11.12     | 9.50     | 7.00     | 0.88     |
| 8"                | 6            | 4             | 13.37     | 11.75    | 9.15     | 1.00     |
| 10"               | 8            | 6             | 15.62     | 14.00    | 11.20    | 1.00     |
| 12"               | 8            | 8             | 17.88     | 16.25    | 13.30    | 1.25     |

NOTE: REFER TO MS-28 OR SECTION 6.05 PARAGRAPH D. IN THE DENVER WATER DEPARTMENT SPECIFICATIONS.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**MECHANICAL JOINT RESTRAINT DETAILS**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.09

TOP OF VALVE BOX SHALL BE SET 1/8" - 1/4" BELOW SURROUNDING ASPHALT

"WATER" CAST IN TOP OF VALVE BOX COVER

PAVED SURFACE OR FINAL GRADE

6"

SURFACE ELEVATION

VALVE BOX SHALL BE SCREWED DOWN AND BURIED 6" BELOW GRADE IF INSTALLED IN A NONPAVED ROADWAY

BACKFILL TO BE HAND PLACED AND COMPACTED

4" MIN

4" MIN

2" OPERATING NUT

3 - PIECE VALVE BOX

VALVE

PLACE 3/4" OR 1 1/2" WASHED ROCK AROUND VALVE TO TOP OF VALVE BONNET

NOTES:

- OPERATING NUT SHALL BE EXTENDED WITHIN 4 FEET OF SURFACE.
- EXTENSION STEMS REQUIRED WHERE VALVE IS AT DEPTH GREATER THAN 5 FEET.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**VALVE BOX**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.11

18" MIN

2' MIN

5' MAX

18" MIN

SIDEWALK

CURB AND GUTTER

BURY LINE

4" MIN

CONCRETE REACTION BLOCK

UNDISTURBED MATERIAL

BOND BREAKER TO PREVENT REACTION BLOCK FROM BLOCKING DRAIN HOLES

FLAGSTONE OR CONCRETE BLOCK

1/3 CUBIC YD

1 1/2" GRAVEL OR CRUSHED ROCK

1' MIN

18" MIN

3' MAX

CURB/WALK

BURY LINE

NOTE: FOR FIRE HYDRANT INSTALLATION, SEE DETAIL DRAWING NO. 5.13.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**FIRE HYDRANT PLACEMENT**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.12

UNDISTURBED SOIL

BOND BREAKER (TYP)

BEARING SURFACE

DEAD END

UNDISTURBED SOIL

TEE

BEARING SURFACE

UNDISTURBED SOIL

2/3 PIPE OD

UNDISTURBED SOIL

BEARING SURFACE

BEDDING MATERIAL

UNDISTURBED SOIL

11 1/4", 22 1/2", 45° AND 90° BENDS

MINIMUM BEARING SURFACE AREA IN SQUARE FEET

| SIZE | TEE AND PLUG | 90° BEND | 45° BEND | 22 1/2° BEND | 11 1/4° BEND |
|------|--------------|----------|----------|--------------|--------------|
| 4"   | 2.0          | 2.5      | 1.5      | 1.0          | 1.0          |
| 6"   | 4.0          | 5.5      | 3.0      | 1.5          | 1.0          |
| 8"   | 6.5          | 9.0      | 5.0      | 2.5          | 1.5          |
| 10"  | 10.0         | 14.0     | 7.5      | 4.0          | 2.0          |
| 12"  | 14.0         | 20.0     | 11.0     | 5.5          | 3.0          |
| 14"  | 19.0         | 27.0     | 14.5     | 7.5          | 4.0          |
| 16"  | 25.0         | 35.0     | 19.0     | 10.0         | 5.0          |
| 18"  | 31.5         | 44.5     | 24.0     | 12.5         | 6.5          |
| 20"  | 38.0         | 54.5     | 29.5     | 15.0         | 7.5          |
| 24"  | 55.5         | 78.5     | 42.5     | 22.0         | 11.0         |

NOTES:

- BASED ON 250 PSI MAXIMUM PRESSURE AND 2000 LBS/FT<sup>2</sup> BEARING CAPACITY.
- ALL FITTINGS MUST BE WRAPPED WITH POLYETHYLENE TO PREVENT CONCRETE FROM ADHERING TO BOLTS OR PIPES.
- MAXIMUM JOINT DEFLECTION WITHOUT REACTION BLOCK IS 1+1/2".
- CONCRETE SHALL DEVELOP 3,000 PSI AT 28 DAYS.
- JOINTS AND BOLTS SHALL BE ACCESSIBLE FOR REPAIRS.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO

**HORIZONTAL THRUST BLOCK**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.14

CAST IRON COVER IN PAVEMENT AND LANDSCAPE AREAS BRASS COVER IN WALKS AND PLAZAS

CIRCULAR #4 REBAR

PLAN VIEW

CONC COLLAR IN LANDSCAPE AREAS ONLY

6"

2" CLR

CAST IRON FRAME AND COVER

THREADED ADAPTOR AND CAP 4" BELOW BOTTOM OF COVER

SAME DIAMETER AS SERVICE LINE

PLUG IF TERMINUS CLEANOUT

MIRROR LINE FOR DOUBLE CLEANOUT

SERVICE LINE

CONCRETE GRADLE TO SPRING LINE FULL TRENCH WIDTH

COMPACTED GRANULAR BEDDING

FLOW

**SANITARY CLEANOUT DETAIL**

1  
C2.0

CITY OF BOULDER  
DEPARTMENT OF PUBLIC WORKS  
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ENGINEERING CONSTRUCTION DRAWING

ENGINEERING REVIEW MANAGER DATE APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE.

CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL

WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

DRAWN BY: JSH  
CHECKED BY: RJH  
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CITY OF BOULDER, COLORADO

**SANITARY CLEANOUT DETAIL**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000

DRAWING NO. 5.14

**PLAN**  
TEE TYPE SERVICE CONNECTION  
WYE SERVICE TAP  
90°

**CROSS SECTION**  
MINIMUM TRENCH WIDTH SHALL BE THE DIAMETER OF THE PIPE PLUS 8"  
1/4" MIN  
SEE NOTE 3  
1/4" MIN

**PROFILE**  
11 1/4" BEND  
SANITARY SEWER MAIN  
MIN 1/4" PER FT  
45°  
TABLE NO. 1

**MARKER POST**  
GREEN FLAGGING OR PAINTED GREEN  
2' MIN  
EXIST GROUND SURFACE  
3' MIN  
#6 REBAR OR WOOD 2"x4" OR 4"x4"  
(AT SERVICE STUB OUT)

| MAIN SIZE | 4" SERVICE | 6" SERVICE |
|-----------|------------|------------|
| 8"        | 6"         | 10"        |
| 10"       | 11"        | 12"        |
| 12"       | 12"        | 13"        |
| 15"       | 15"        | 16.5"      |

**NOTES:**  
1. ALL SERVICE LINES SHALL BE 4" MINIMUM IN DIAMETER.  
2. THE MINIMUM SLOPE FOR 4" OR 6" SERVICE LINES SHALL BE 1/4" PER FOOT.  
3. BEDDING FOR HOUSE CONNECTION WITHIN CITY ROW SHALL BE THE SAME AS FOR SEWER MAIN, LAID TO A MINIMUM DEPTH OF 4" BELOW THE PIPE INVERT AND 4" ABOVE THE TOP OF THE PIPE.  
4. ALL TAPS ARE TO BE MADE BY THE CITY OF BOULDER, UNLESS OTHERWISE AUTHORIZED BY THE UTILITY DIVISION.  
5. SERVICE LINES LARGER THAN 6" MUST BE CONNECTED TO THE MAIN AT A MANHOLE.  
6. SERVICE LINE WILL BE PLUGGED AT THE PROPERTY LINE WITH APPROPRIATE PLUG FOR TYPE OF LINE INSTALLED UNTIL CONNECTED TO BUILDING. AFTER ABANDONMENT OF A SERVICE LINE IT MUST BE PLUGGED 5' INSIDE THE PROPERTY LINE.  
7. COMPACTION OF BACKFILL SHALL BE AS STATED IN THE CITY OF BOULDER, STANDARD SPECIFICATIONS.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**SEWER SERVICE LINE**

ISSUED: JULY 2, 1998  
REVISED: OCT. 17, 2000  
DRAWING NO. 6.06

NOTE: PRECAST VAULT CAN BE USED FOR ALL 3" AND 4" COMPOUND METERS.

| METER SIZE | WALLS |       |      |       |      |       |      |       | WALL DOWELS |       |                 |                 | ROOF SLAB       |                 |      |       |      |       |      |       | FLOOR SLAB |      |      |       |      |       |       |      |       |      |       |      |       |      |       |
|------------|-------|-------|------|-------|------|-------|------|-------|-------------|-------|-----------------|-----------------|-----------------|-----------------|------|-------|------|-------|------|-------|------------|------|------|-------|------|-------|-------|------|-------|------|-------|------|-------|------|-------|
|            | AA    |       | BB   |       | CC   |       | DD   |       | EE & FF     |       | GG              |                 | HH              |                 | JJ   |       | KK   |       | LL   |       | MM         |      | NN   |       | OO   |       | PP    |      | QQ    |      |       |      |       |      |       |
|            | BAR   | Dist  | BAR  | Dist  | BAR  | Dist  | BAR  | Dist  | BAR         | Dist  | EE <sub>1</sub> | EE <sub>2</sub> | FF <sub>1</sub> | FF <sub>2</sub> | BAR  | Dist  | BAR  | Dist  | BAR  | Dist  | BAR        | Dist | TOP  | Bot   | Bot  | BAR   | Dist  | BAR  | Dist  | BAR  | Dist  | BAR  | Dist  |      |       |
| 3"         | No 4  | 1'-4" | No 4 | 1'-0" |      |       |      |       | No 5        | 1'-0" | 2'-6"           | 2'-0"           | 3'-0"           | 2'-0"           |      |       | No 7 | 1'-0" | No 7 | 1'-0" | No 7       | No 7 | No 5 | 1'-0" | No 5 | 1'-0" |       |      |       |      |       |      |       |      |       |
| 4"         | No 4  | 1'-4" | No 4 | 1'-0" |      |       |      |       | No 5        | 1'-0" | 2'-6"           | 2'-0"           | 3'-0"           | 2'-0"           |      |       | No 7 | 1'-0" | No 7 | 1'-0" | No 7       | No 7 | No 5 | 1'-0" | No 5 | 1'-0" |       |      |       |      |       |      |       |      |       |
| 6"         | No 4  | 1'-4" | No 4 | 1'-0" |      |       |      |       | No 5        | 1'-0" | 2'-6"           | 2'-0"           | 3'-0"           | 2'-0"           |      |       | No 7 | 1'-0" | No 7 | 1'-0" | No 7       | No 7 | No 5 | 1'-0" | No 5 | 1'-0" |       |      |       |      |       |      |       |      |       |
| 8"         | No 4  | 1'-4" | No 4 | 1'-0" | No 4 | 1'-4" | No 5 | 1'-0" | No 5        | 1'-0" | 3'-0"           | 2'-6"           | 3'-0"           | 2'-6"           | No 5 | 1'-0" | No 5 | 1'-0" | No 7 | 1'-0" | No 8       | 9"   | No 5 | No 7  | No 7 | No 5  | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" |
| 10"        | No 4  | 1'-4" | No 4 | 1'-0" | No 4 | 1'-4" | No 5 | 1'-0" | No 5        | 1'-0" | 3'-0"           | 2'-6"           | 3'-0"           | 2'-6"           | No 5 | 1'-0" | No 5 | 1'-0" | No 7 | 1'-0" | No 8       | 9"   | No 5 | No 7  | No 7 | No 5  | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" | No 5 | 1'-0" |

SEE SHEET 60 FOR DRAWINGS CORRESPONDING TO THESE DIMENSIONS

| METER SIZE | PIPE SIZE Ø | VAULT DIMENSIONS |        |       |     |       |        |       |        |       |       |       |       |       |       |       |          | MANHOLE | SUMP |
|------------|-------------|------------------|--------|-------|-----|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|----------|---------|------|
|            |             | A                | B      | C*    | D   | E     | F      | G     | H      | J     | K     | L     | M     | N     | W     | X     | Y        |         |      |
| 3"         | 3"          | 8'-6"            | 10'-0" | 6'-0" | 8"  | 9'-2" | 10'-8" | 2'-3" | 4'-8"  | 1'-9" | 2'-8" | 3'-3" | 5'-3" | 2'-6" | 2'-0" | 3'-0" | 24"x 36" | 1'-0"   |      |
| 4"         | 4"          | 8'-6"            | 10'-0" | 6'-0" | 8"  | 9'-2" | 10'-8" | 2'-3" | 5'-4"  | 1'-9" | 3'-4" | 3'-3" | 5'-3" | 2'-6" | 2'-6" | 3'-0" | 24"x 36" | 1'-0"   |      |
| 6"         | 6"          | 8'-6"            | 11'-0" | 6'-0" | 8"  | 9'-2" | 11'-8" | 2'-3" | 5'-8"  | 1'-9" | 3'-8" | 3'-3" | 5'-3" | 2'-6" | 2'-6" | 3'-0" | 24"x 36" | 1'-0"   |      |
| 8"         | 8"          | 8'-6"            | 14'-0" | 6'-0" | 10" | 9'-2" | 14'-8" | 2'-3" | 5'-3"  | 2'-3" | 3'-0" | 3'-3" | 5'-3" | 2'-6" | 2'-6" | 3'-0" | 24"x 36" | 1'-6"   |      |
| 10"        | 10"         | 8'-6"            | 14'-0" | 6'-0" | 10" | 9'-2" | 14'-8" | 2'-3" | 4'-11" | 2'-3" | 3'-0" | 3'-3" | 5'-3" | 2'-6" | 2'-6" | 3'-0" | 24"x 36" | 1'-6"   |      |

\*NOTE: DIMENSION C IS A MINIMUM SUGGESTED HEIGHT.

**COMPOUND METER DIMENSIONS DETAIL 1**  
NTS

**NOTE:**  
THE ABOVE CITY 3" METER DETAILS ARE FOR LAYOUT AND GENERAL METER/VAULT INFORMATION ONLY AND NOT FOR VAULT CONSTRUCTION. THE DETAILS SHOWN ON THIS SHEET ARE FOR RECTANGULAR 3" VAULT AND METER (BADGER METER) CONSTRUCTION.

**NOTES:**

- EACH METER (WWW.BADGERMETER.COM) REQUIRES AN ELECTRONIC DIGITAL ENCODER OR MECHANICALLY ENCODED REGISTER WITH AN ITRON ERT EXCEPT FOR MASTER METER DISTRIBUTORS DENVER WATER WILL DETERMINE TYPE OF ERT AND LOCATION PRIOR TO VAULT INSTALLATION. PROVIDE BACKFLOW PREVENTER AND OTHER REQUIRED MECH EQUIPMENT INSIDE BUILDING.
- THE DISTANCE BETWEEN RUNGS, CLEATS AND STEPS SHALL NOT EXCEED 12 INCHES AND SHALL UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.
- CHECK VALVES ARE NOT REQUIRED WHERE A BACKFLOW PREVENTION DEVICE IS INSTALLED.

**PLAN OF PIPING**  
KICKBLOCK  
RODS & CLAMPS  
GATE VALVE  
BADGER COMPOUND METER  
COUPLING ADAPTOR  
CHECK VALVE (SEE NOTE 3)  
CONCRETE SUPPORT  
NO BYPASS FOR IRRIGATION METERS  
1" MASTIC TYP @ ALL RODS THRU WALLS.

**PLAN OF VAULT**  
SUMP Z  
LADDER RUNGS  
CONCRETE SUPPORT  
PIPE  
#5 BAR 2'-0" x 2'-0" CORNER DOWELS AT 12" OC (TYP)

**SECTION "A"**  
EXISTING GRADE  
CONC EXTENSION COLLARS  
LADDER RUNGS  
SIGNAL WIRE TO ERT  
STEEL PIPE SUPPORT  
CONCRETE SUPPORT  
MINIMUM OF FIVE DIAMETERS OF STRAIGHT PIPE

**SECTION "B"**  
Y-MH RING AND COVER WITH 2" HOLE FOR EACH ERT  
LADDER RUNGS  
SUMP Z  
CONCRETE SUPPORT

**ROOF SLAB**  
LL= TOP OR BOTTOM MM= BOTTOM ONLY  
HH TOP & BOTTOM JJ TOP & BOTTOM

**FLOOR SLAB**  
FOR REINFORCING STEEL SEE SECTION "A" & "B"  
2 x 4 KEY

**COMPOUND METER WITH BOTH CHECK VALVE AND BYPASS DETAIL 2**  
NTS

CITY OF BOULDER  
DEPARTMENT OF PUBLIC WORKS  
APPROVED  
ENGINEERING CONSTRUCTION DRAWING

ENGINEERING REVIEW MANAGER DATE  
APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE

CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL

WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

**910 28TH STREET**  
BOULDER, CO 80303

2011 Shears Adkins Rockmore

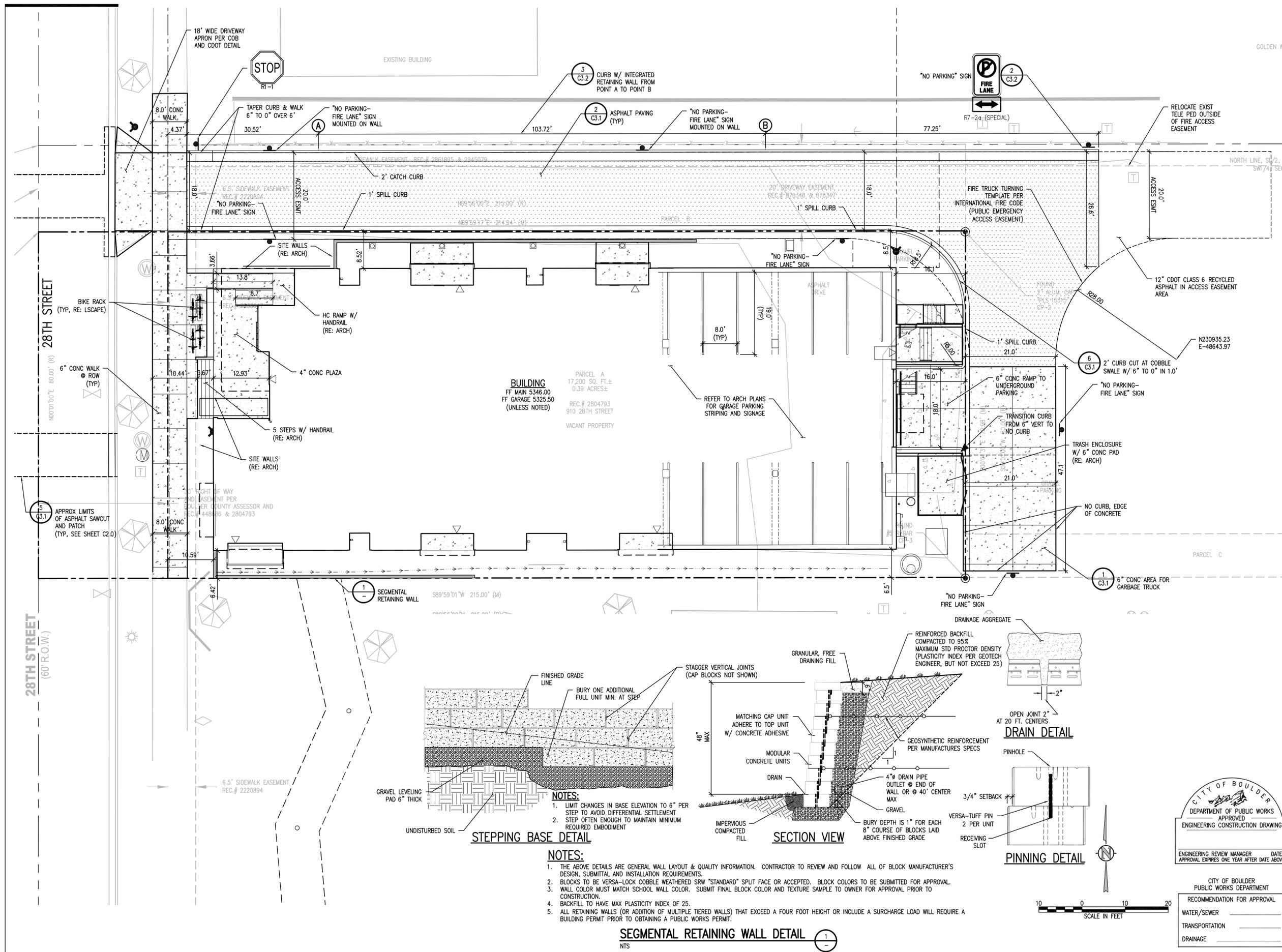
Date: 07.25.2011

Project Name:  
910 28TH STREET  
Issued For / Phase:  
Building Permit & Tech Docs

Drawn: MC  
Revisions:

Sheet Name:  
SITE AND HORIZONTAL CONTROL PLAN

Sheet Number:  
**C3.0**



**NOTES:**  
1. LIMIT CHANGES IN BASE ELEVATION TO 6" PER STEP TO AVOID DIFFERENTIAL SETTLEMENT  
2. STEP OFFEN ENOUGH TO MAINTAIN MINIMUM REQUIRED EMBODIMENT

**NOTES:**  
1. THE ABOVE DETAILS ARE GENERAL WALL LAYOUT & QUALITY INFORMATION. CONTRACTOR TO REVIEW AND FOLLOW ALL OF BLOCK MANUFACTURER'S DESIGN, SUBMITTAL AND INSTALLATION REQUIREMENTS.  
2. BLOCKS TO BE VERSA-LOCK COBBLE WEATHERED SRW "STANDARD" SPLIT FACE OR ACCEPTED. BLOCK COLORS TO BE SUBMITTED FOR APPROVAL.  
3. WALL COLOR MUST MATCH SCHOOL WALL COLOR. SUBMIT FINAL BLOCK COLOR AND TEXTURE SAMPLE TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.  
4. BACKFILL TO HAVE MAX PLASTICITY INDEX OF 25.  
5. ALL RETAINING WALLS (OR ADDITION OF MULTIPLE TIERED WALLS) THAT EXCEED A FOUR FOOT HEIGHT OR INCLUDE A SURCHARGE LOAD WILL REQUIRE A BUILDING PERMIT PRIOR TO OBTAINING A PUBLIC WORKS PERMIT.

CITY OF BOULDER  
DEPARTMENT OF PUBLIC WORKS  
APPROVED  
ENGINEERING CONSTRUCTION DRAWING

ENGINEERING REVIEW MANAGER DATE APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE  
CITY OF BOULDER  
PUBLIC WORKS DEPARTMENT  
RECOMMENDATION FOR APPROVAL  
WATER/SEWER \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_

**STANDARD 6"**

**OUTFALL/MEDIAN**

**DOWELLED BARRIER CURB**

**MOUNTABLE CURB**

NOTES:  
1. ALL EXPOSED CONCRETE SHALL HAVE A BROOM FINISH.  
2. EXPANSION JOINTS SHALL BE INSTALLED AT 500 FOOT MAXIMUM INTERVALS SEE EXPANSION JOINT DETAIL.  
3. CONTRACTION JOINTS SHALL BE INSTALLED AT 10 FOOT MAXIMUM INTERVALS - SEE CURB CONTRACTION JOINT DETAIL.  
4. WHEN JOINING EXISTING CURB, PROVIDE A MINIMUM OF THREE #4 x 18" DOWELS (9" EMBEDMENT) EVENLY SPACED.  
5. WHEN PLACING CURB ADJACENT TO CONCRETE PAVEMENT, THICKEN GUTTER TO MATCH PAVEMENT DEPTH.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CURB AND GUTTER**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.01.A

**CURB CONTRACTION JOINT**

**CURB EXPANSION JOINT**

NOTES:  
1. ALL EXPOSED CONCRETE SHALL HAVE A BROOM FINISH.  
2. EXPANSION JOINTS SHALL BE INSTALLED AT 500 FOOT MAXIMUM INTERVALS AND AT FIXED STRUCTURES (INLETS, BUILDINGS). SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
3. CONTRACTION JOINTS SHALL BE INSTALLED AT 5 FOOT INTERVALS OR INTERVALS EQUAL TO SIDEWALK WIDTH. SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
4. IF SIDEWALK IS PLACED ADJACENT TO CURB AND GUTTER, CONTRACTION JOINTS SHALL LINE UP WITH CURB AND GUTTER JOINTS.  
5. LONGITUDINAL JOINTS ARE NOT ALLOWED IN CONCRETE WALK OR MULTI-USE PATH.

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CURB AND GUTTER JOINTS**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.01.B

**CONCRETE WALK AND MULTI-USE PATHS**

NOTES:  
1. ALL EXPOSED CONCRETE SHALL HAVE A BROOM FINISH.  
2. EXPANSION JOINTS SHALL BE INSTALLED AT 500 FOOT MAXIMUM INTERVALS AND AT FIXED STRUCTURES (INLETS, BUILDINGS). SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
3. CONTRACTION JOINTS SHALL BE INSTALLED AT 5 FOOT INTERVALS OR INTERVALS EQUAL TO SIDEWALK WIDTH. SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
4. IF SIDEWALK IS PLACED ADJACENT TO CURB AND GUTTER, CONTRACTION JOINTS SHALL LINE UP WITH CURB AND GUTTER JOINTS.  
5. LONGITUDINAL JOINTS ARE NOT ALLOWED IN CONCRETE WALK OR MULTI-USE PATH.

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CONCRETE WALK AND MULTI-USE PATHS**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.02.A

**CONCRETE WALK AND MULTI-USE PATH JOINTS**

NOTES:  
1. ALL EXPOSED CONCRETE SHALL HAVE A BROOM FINISH.  
2. EXPANSION JOINTS SHALL BE INSTALLED AT 500 FOOT MAXIMUM INTERVALS AND AT FIXED STRUCTURES (INLETS, BUILDINGS). SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
3. CONTRACTION JOINTS SHALL BE INSTALLED AT 5 FOOT INTERVALS OR INTERVALS EQUAL TO SIDEWALK WIDTH. SEE CONCRETE WALK AND MULTI-USE PATH JOINT DETAILS.  
4. IF SIDEWALK IS PLACED ADJACENT TO CURB AND GUTTER, CONTRACTION JOINTS SHALL LINE UP WITH CURB AND GUTTER JOINTS.  
5. LONGITUDINAL JOINTS ARE NOT ALLOWED IN CONCRETE WALK OR MULTI-USE PATH.

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CONCRETE WALK AND MULTI-USE PATH JOINTS**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.02.C

**MULTI-USE PATH SECTION DETAIL**

6" THICK MINIMUM CONCRETE. APPLY BROOM FINISH PERPENDICULAR TO PATH. SAWCUT 1/4" JOINTS 1 1/2" DEEP MINIMUM EVERY 10' ALONG TRAIL. NO TOOLED JOINTS ALLOWED ON MULTI-USE PATH.

DRAINAGE SWALE WHERE NECESSARY

BACKFILL EDGE WITH TOPSOIL. FINISH GRADE TO BE FLUSH WITH PATH EDGE (TYP) AND RESTORE TO PRE-EXISTING LANDSCAPING

PREPARED SUBGRADE: COMPACT ROADBASE OR USE ON-SITE GRAVEL MATERIAL WHERE APPROVED BY ENGINEER. OVER EXCAVATE IF UNSTABLE SUB SOILS ARE ENCOUNTERED AND REPLACE WITH SUITABLE FILL MATERIAL. COMPACT ALL FILL AREAS TO 95% STANDARD PROCTOR AT 2% OPTIMUM. REMOVE ALL TOPSOIL PRIOR TO SUBGRADE PREPARATION.

DRAWN BY: JSH  
CHECKED BY: RJH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**MULTI-USE PATH SECTION DETAIL**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.02.D

**DRIVEWAY RAMP DETACHED WALK**

SECTION A-A

NOTE: CONTRACTION JOINTS ARE REQUIRED AT EACH SIDE OF WARPED SECTION AND EVERY 10 FEET (MAXIMUM) ALONG RAMP DRIVE.

GUTTER SECTION

CHAMFER

NO LIP AT FL

\* 6" RESIDENTIAL  
8" COMMERCIAL AND PUBLIC ALLEYS

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**DRIVEWAY RAMP DETACHED WALK**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.21

**CONCRETE PAVING SECTION DETAIL**

NOTES:  
1. COMPACT SUBGRADE TO 95% STD PROCTOR (ASTM D698) 2% ABOVE OPTIMUM MOISTURE CONTENT

**ASPHALT PAVING SECTION DETAIL**

NOTES:  
1. COMPACT SUBGRADE TO 95% STD PROCTOR (ASTM D698) 2% ABOVE OPTIMUM MOISTURE CONTENT

**CONTRACTION JOINT DETAIL**

NOTE: CONTRACTION JOINTS AT INTERVAL TO MATCH WIDTH OF SIDEWALK (TYP).

**EXPANSION JOINT DETAIL**

NOTE: EXPANSION JOINTS EVERY 100' MAX AND WHEREVER SIDEWALK ABUTS EXISTING & PROPOSED CONCRETE STRUCTURES (TYP) - SEE PLAN

**ASPHALT PATCH DETAIL**

NOTES:  
1. MATCH EXIST ASPHALT DEPTH UNLESS OTHERWISE SPECIFIED  
2. COMPACT SUBGRADE TO 95% STD PROCTOR (ASTM D698) 2% OPTIMUM MOISTURE CONTENT

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CONCRETE PAVING SECTION DETAIL**

ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.02.E

**CURB CUT**

PLAN (NTS)

DEPRESS CURB HEAD TO FLOWLINE AS SHOWN

FLOWLINE

LIP OF GUTTER

BOTTOM OF GUTTER

DRAWN BY: JSH  
CHECKED BY: WGH  
APPROVED BY: DIRECTOR OF PUBLIC WORKS

CITY OF BOULDER, COLORADO  
**CURB CUT**

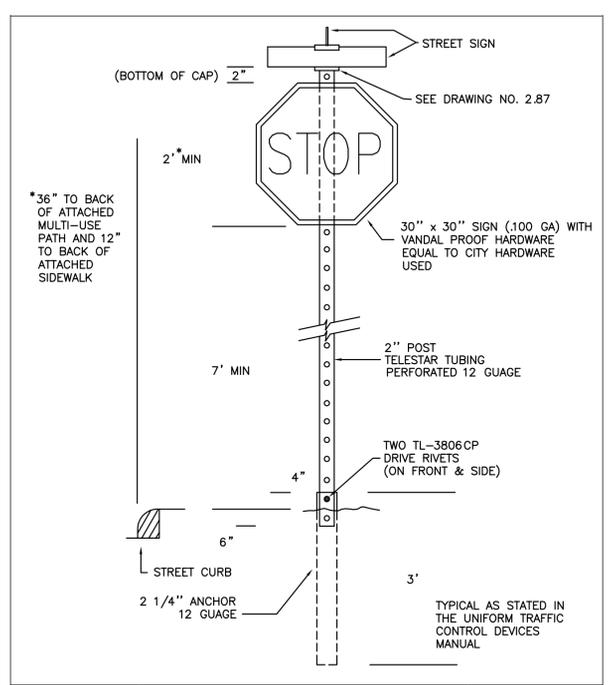
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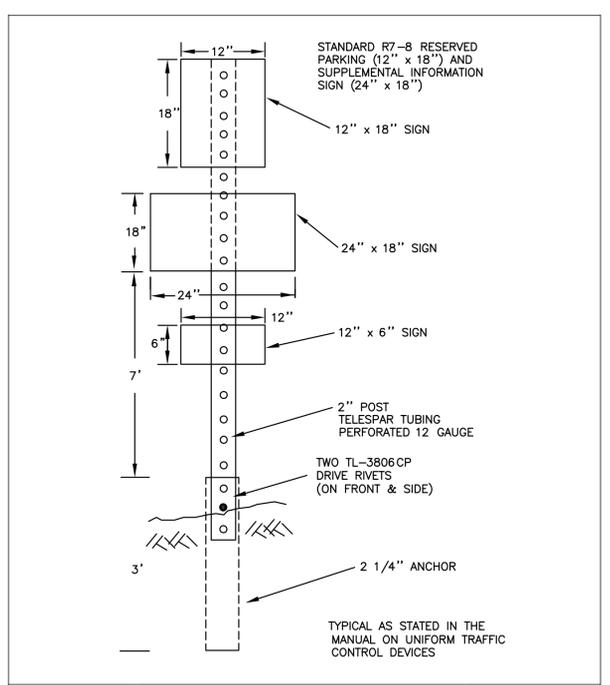
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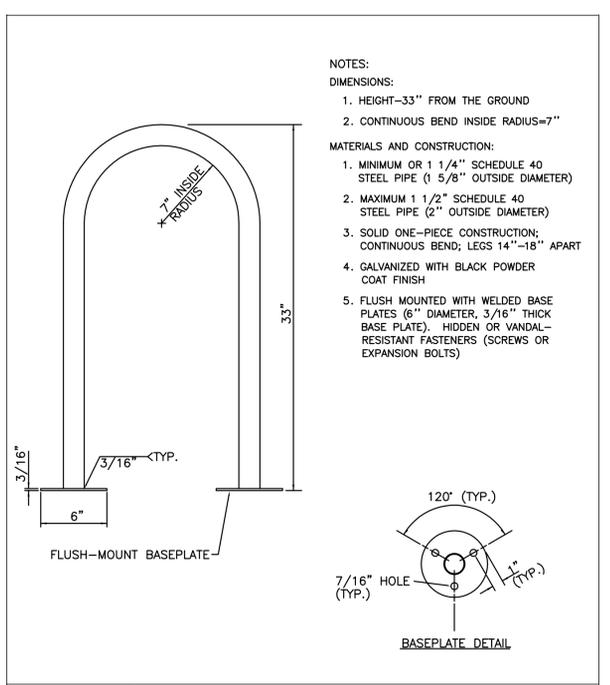
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TRANSPORTATION \_\_\_\_\_  
DRAINAGE \_\_\_\_\_



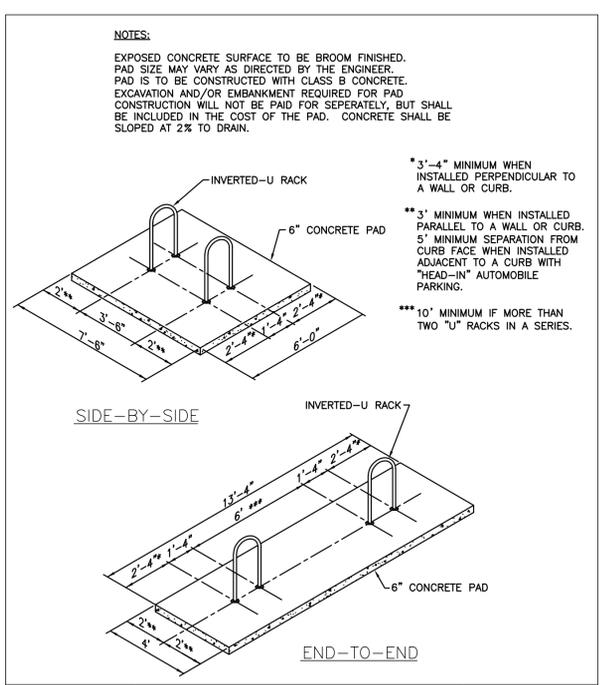
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CITY OF BOULDER, COLORADO  
**SIGN INSTALLATION DETAILS**



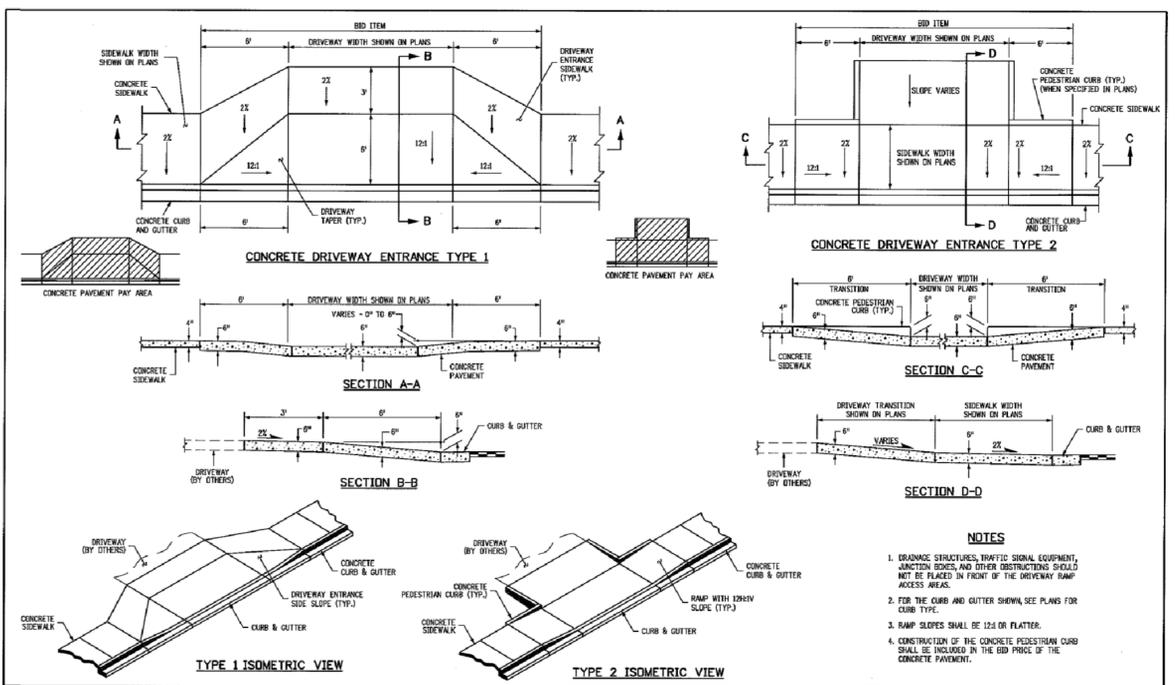
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DRAWING NO. 2.86  
CITY OF BOULDER, COLORADO  
**ACCESSIBLE PARKING SIGN DETAILS**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.52.A  
CITY OF BOULDER, COLORADO  
**INVERTED \"U\" BICYCLE RACKS**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2.52.B  
CITY OF BOULDER, COLORADO  
**INVERTED \"U\" BICYCLE RACKS**

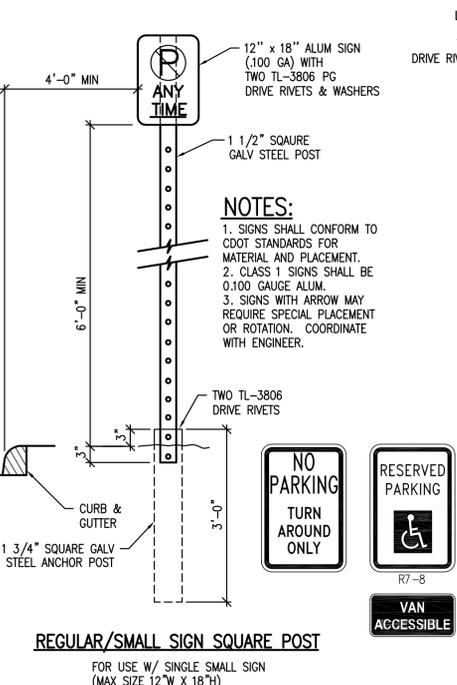


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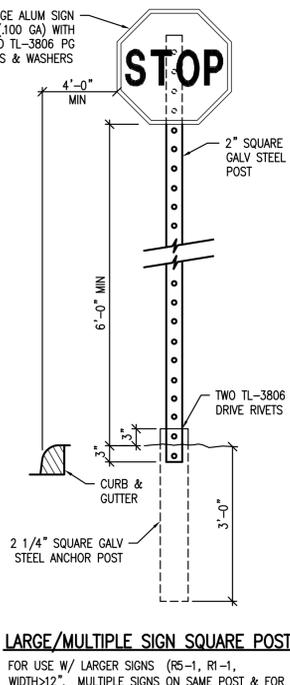
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Comments: \_\_\_\_\_

Colorado Department of Transportation  
4201 East Arkansas Avenue  
Denver, Colorado 80222  
Phone: (303) 757-9083  
Fax: (303) 757-9030  
Project Development Branch DD/LTA  
Issued By: Project Development Branch on July 04, 2008

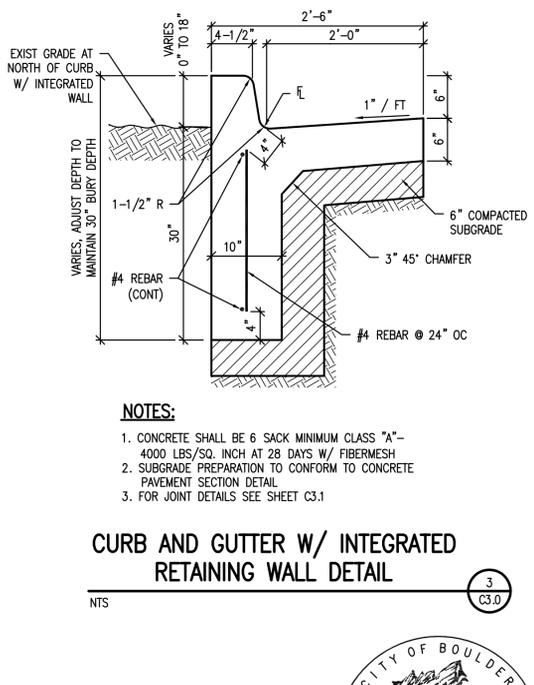
**CURB, GUTTERS, AND SIDEWALKS**  
STANDARD PLAN NO. M-609-1  
Sheet No. 3 of 4



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 2  
CITY OF BOULDER, COLORADO  
**SIGN DETAIL**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 3  
CITY OF BOULDER, COLORADO  
**SIGN DETAIL**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 3  
CITY OF BOULDER, COLORADO  
**SIGN DETAIL**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 1  
CITY OF BOULDER, COLORADO  
**DRIVEWAY APRON DETAILS**



ISSUED: JULY 2, 1998  
REVISED: OCT 6, 2009  
DRAWING NO. 3  
CITY OF BOULDER, COLORADO  
**SIGN DETAIL**

CITY OF BOULDER  
DEPARTMENT OF PUBLIC WORKS  
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