

THE ACADEMY ON MAPLETON HILL

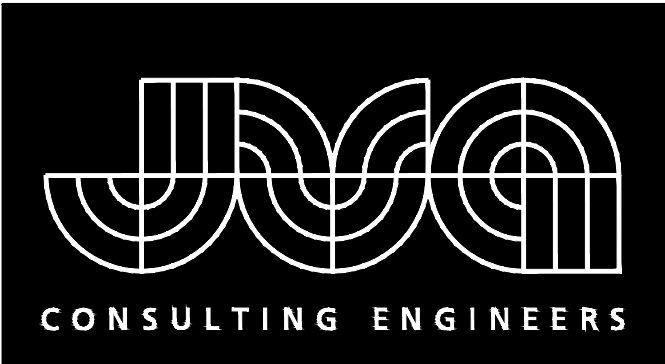
OVERLOT GRADING AND DEMOLITION PLAN

BOULDER, CO 80303

TECHNICAL DOCUMENT REVIEW

CONTACTS

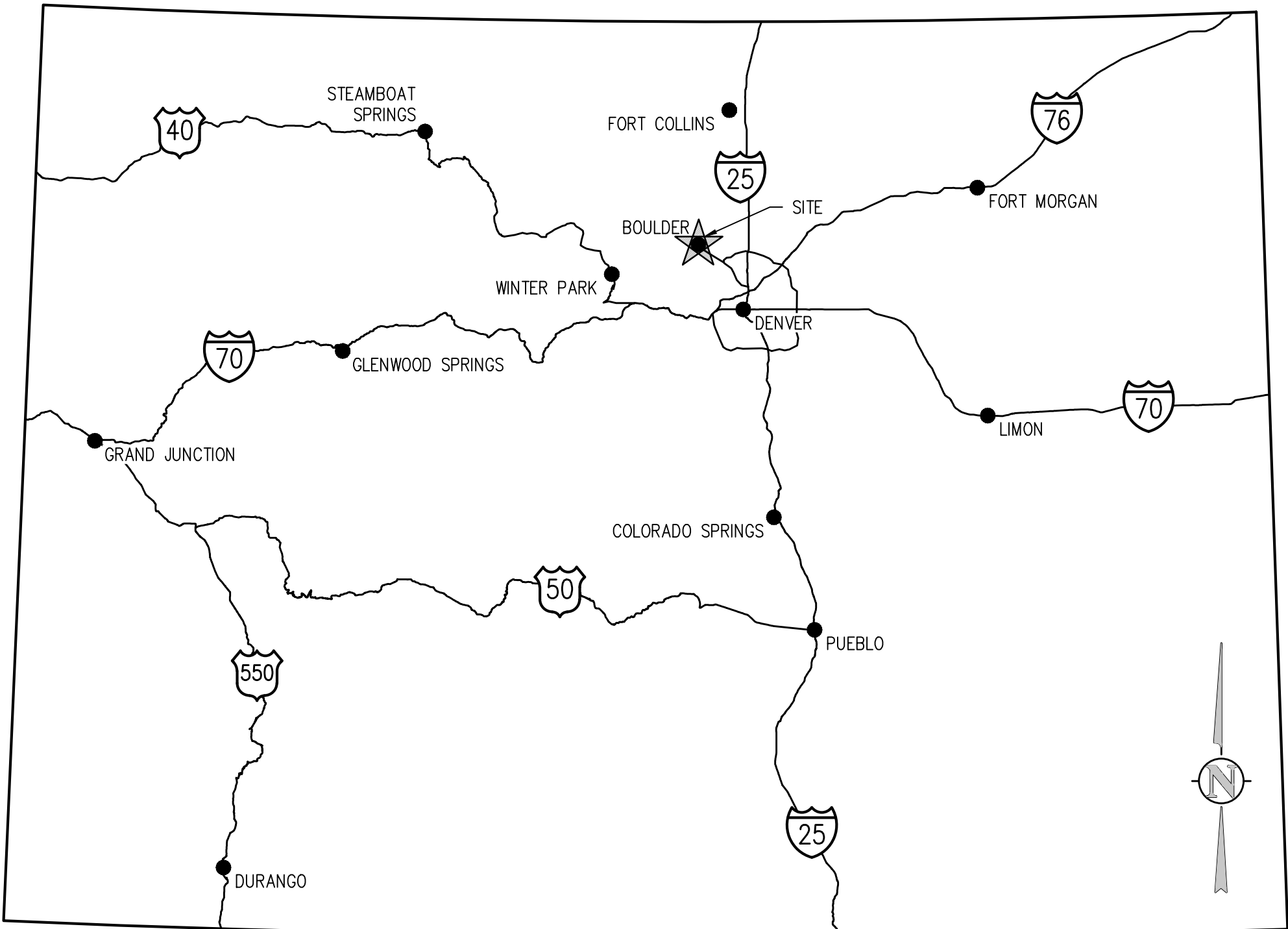
OWNER:	THE ACADEMY BOULDER 970 AURORA AVENUE BOULDER, CO 80302	GARY BERG 303-938-1920 GARY@THEACADEMYBOULDER.COM
CIVIL ENGINEER:	JVA, INC. 1319 SPRUCE STREET BOULDER, CO 80302	DANIELLE I. BREEDLOVE (303) 444-1951 DBREEDLOVE@JVAJVA.COM
DEVELOPER:	MAPLETON HILL INVESTMENT GROUP 1035 PEARL STREET SUITE 205 BOULDER, CO 80302	MICHAEL BOSMA 720-280-7569 MICHAELBOSMA@ME.COM
ARCHITECT:	THE MULHERN GROUP 1400 GLENARM PLACE SUITE 300 DENVER, CO 80202	LIZ PETERSON 303-297-3334 LPETERSEN@THEMULHERNGROUP.COM
LANDSCAPE ARCHITECT:	PCS GROUP, INC. 200 KALAMATH STREET DENVER, CO 80223	PAUL SHOUKAS 720-259-8248 PAUL@PCSGROUPCO.COM



JVA, Inc. 1319 Spruce Street
Boulder, CO 80302 303.444.1951
www.jvajva.com
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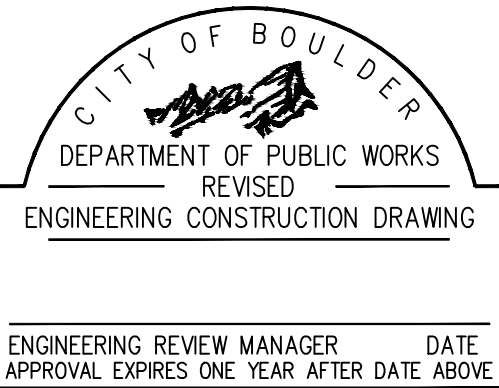
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VICINITY MAP
NTS



LOCATION MAP
NTS



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

JVA, Inc. 1512 Larimer Street, Suite 710
Denver, CO 80202 303.444.1951
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TECHNICAL DOCUMENT SUBMITTAL #02		TW	DW
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MAPLETON HILL DEVELOPMENT GROUP
THE ACADEMY AT MAPLETON HILL
311 MAPLETON AVE., BOULDER, CO 80303

COVER SHEET

SHEET NO.

C0.0

AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	INCL	INCLUDED
ABANDON	ID	INSIDE DIAMETER
ASPHALTIC CONCRETE PAVING	IN	INLET
ADDITIONAL	INSUL	INSULATION
ADDENDUM	INV	INVERT
ADJUSTABLE	IRR	IRRIGATION
ALUMINUM		
ALTERNATE	JTS	JOINTS
AMOUNT		
APPROXIMATE	KO	KNOCKOUT
ARCHITECT(URAL)	KPL	KICK PLATE
AIR RELIEF VALVE	KWY	KEYWAY
AMERICAN SOCIETY FOR TESTING AND MATERIALS		
ASPHALT	L	LEFT OR LITER
ASSEMBLY	LSFACE	LANDSCAPE(ING)
ASYMMETRICAL	LF	LINEAR FOOT
AUTOMATIC	LP	LOW POINT
AVERAGE	LT	LIGHT
AMERICAN WATER WORKS ASSOC.	LWL	LOW WATER LEVEL
BACK OF CURB	MAINT	MAINTENANCE
BUTTERFLY VALVE	MAN	MANUAL
BUILDING	MATL	MATERIAL
BLOCK	MAX	MAXIMUM
BENCH MARK	ME	MATCH EXISTING
BEST MANAGEMENT PRACTICE	MECH	MECHANICAL
BACKSIGHT	MFR	MANUFACTURER
BOTTOM OF STEP	MH	MANHOLE
BOTTOM	MIN	MINIMUM
BASEMENT	MISC	MISCELLANEOUS
BEGIN VERTICAL CURVE ELEVATION	MJ	MECHANICAL JOINT
BEGIN VERTICAL CURVE STATION		
BOTTOM OF WALL	N	NORTH
	NA	NOT APPLICABLE
CATCH BASIN	NCK	NOT IN CONTRACT
COUNTER CLOCKWISE	NPT	NATIONAL PIPE THREAD
COLORADO DEPARTMENT OF TRANSPORTATION	NTS	NOT TO SCALE
CAST IRON PIPE		
CONSTRUCTION JOINT	OC	ON CENTER
CENTER LINE OR CHAIN LINK	OD	OUTSIDE DIAMETER
CLEAR	OPP	OPPOSITE
CORRUGATED METAL PIPE	OPT	OPTIONAL
CONCRETE MASONRY UNIT		
CLEANOUT	PC	POINT OF CURVATURE
CONCRETE	PCO	PRESSURE CLEAN OUT
CONSTRUCTION	PCR	POINT OF CURVE RETURN
CONTINUOUS(ATION)	PI	POINT OF INTERSECTION
CORNER	PVI	POINT OF VERTICAL INTERSECTION
CONCENTRIC REDUCER	PL	PROPERTY LINE
CENTER	PE	POLYETHYLENE
CUBIC YARDS	PREFAB	PREFABRICATED
	PRELIM	PRELIMINARY
DEMOLITION	PREP	PREPARATION
DIAMETER	PROP	PROPOSED
DIAGONAL	PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE
DUCTILE IRON PIPE		
DOMESTIC	PSF	POUNDS PER SQUARE FOOT
DOWN	PSI	POUNDS PER SQUARE INCH
DRAIN	PT	POINT OF TANGENCY
DRAWING	PV	PLUG VALVE
DOWEL	PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE
	PVMT	PAVEMENT
EAST		
EACH		
ECCENTRIC	QTY	QUANTITY
EXPANSION JT		
ELEVATION	R	RIGHT
ELBOW	RAD	RADIUS
ELECTRICAL	RCP	REINFORCED CONCRETE PIPE
ENGINEER	RD	ROOF DRAIN
EDGE OF PAVEMENT	RE	REFERENCE
EQUAL	RECT	RECTANGULAR
EQUIPMENT	REINF	REINFORCE (D) (NC) (MENT)
EQUIVALENT	REQD	REQUIRED
EASEMENT	REQD	REQUIRED
ESTIMATE	ROW	RIGHT OF WAY
END VERTICAL CURVE ELEVATION		
END VERTICAL CURVE STATION	SAN	SANITARY
EACH WAY	SD	STORM DRAIN
EXPANSION JOINT	SECT	SECTION
EXISTING	SPD	STANDARD PROCTOR DENSITY
	SPEC	SPECIFICATION
FOUNDATION	SQ	SQUARE
FLARED END SECTION	SQ IN	SQUARE INCH
FINISH FLOOR	SQ FT	SQUARE FOOT
FINISH GRADE	SQ YD	SQUARE YARD
FIRE HYDRANT	SS	SANITARY SEWER
FLOW LINE	SST	STAINLESS STEEL
FENCE	STA	STATION
FACE OF CONCRETE	STD	STANDARD
FEET PER MINUTE	STL	STEEL
FEET PER SECOND	STRUCT	STRUCTURAL
FEET	SWMP	STORMWATER MANAGEMENT PLAN
FOOTING OR FITTING	SYM	SYMMETRICAL
GAS	TB	THRUST BLOCK
GAUGE	TBC	TOP BACK OF CURB
GALLON	TBM	TEMPORARY BENCH MARK
GALVANIZED	TEMP	TEMPORARY
GRADE CLEANOUT	THK	THICK
GALVANIZED IRON PIPE	TOB	TOP OF BANK
GROUND	TOC	TOP OF CONCRETE OR TOP OF CURB
GALLONS PER DAY	TOS	TOP OF STEP
GALLONS PER MINUTE	TOT	TOTAL
GRATE	TW	TOP OF WALL
GRATING	TY	TYPICAL
GALVANIZED STEEL PIPE		
GATE VALVE		
	UBC	UNIFORM BUILDING CODE
HIGH	UGE	UNDERGROUND ELECTRIC
HOSE BIB	UTIL	UTILITY
HORIZONTAL ELLIPTICAL	VERT	VERTICAL
HEADWALL	VC	POINT OF VERTICAL CURVATURE
HAND RAIL	VCP	VITRIFIED GLAY PIPE
HORIZONTAL	W	WIDE OR WIDTH
HIGH POINT	W/	WITH
HOUR	W/O	WITHOUT
HEATING, VENTILATION, AIR CONDITIONING	WOCE	WATER QUALITY CONTROL ELEVATION
HIGHWAY	WSE	WATER SURFACE ELEVATION
HIGH WATER LINE	WW	WASTEWATER
HYDRANT	X SECT	CROSS SECTION
	YH	YARD HYDRANT

- 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.

ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF BOULDER, COLORADO DEPARTMENT OF TRANSPORTATION, BOULDER FIRE RESCUE 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 BOULDER FIRE RESCUE 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.

2. 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.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE CITY OF BOULDER 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.

4. 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 ENGINEER AND/OR OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS SHOWN ON PLANS. 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 CITY OF BOULDER 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.UNCOC.ORG).

5. 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.

6. 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. GROUNDWATER TO BE PUMPED SHALL BE TESTED, PERMITTED, AND PUMPED PER THE STATE OF COLORADO AND LOCAL GROUNDWATER DISCHARGING PERMIT REQUIREMENTS.

7. 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.

8. THE EXISTING AND PROPOSED ELEVATIONS OF FLATWORK, SIDEWALKS, CURBS, THRESHOLDS, PAVING, ETC. AS SHOWN HEREON ARE BASED ON EXTRAPOLATION OF FIELD SURVEY DATA, EXISTING CONDITIONS, AND DATA PROVIDED BY OTHERS. AT CRITICAL AREAS AND SITE FEATURES, CONTRACTOR SHALL HAVE FORMWORK INSPECTED AND APPROVED BY OWNER, OWNER'S REPRESENTATIVE, OR ENGINEER PRIOR TO PLACING CONCRETE. MINOR ADJUSTMENTS, AS APPROVED, TO PROPOSED GRADES, INVERTS, ETC. MAY BE REQUIRED TO PREVENT PONDING OR SLOPE NOT IN CONFORMANCE WITH MUNICIPAL STANDARDS. 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.

9. 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 SLOPES ACCEPTABLE TO THE ENGINEER AND WITHIN MUNICIPAL STANDARDS. CONTRACTOR SHALL PROVIDE ADDITIONAL SAWCUTTING AND PATCHING AT UTILITY RIMS, CONNECTION POINTS TO EXISTING PAVEMENT AND FEATURES, ETC. THAT MAY NOT BE DELINEATED ON PLANS.

10. 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.

11. OWNER TO APPROVE ALL PRIVATE CONCRETE FINISHING, JOINT PATTERNS AND COLORING REQUIREMENTS PRIOR TO CONSTRUCTION. SUBMIT JOINT LAYOUT PLAN TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.

12. 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.

13. 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.

14. 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 LAIDEN 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.

15. ADA COMPLIANCE: THE CROSS-SLOPE OF ALL WALKS MUST BE LESS THAN 1:48 (2.0%) PERPENDICULAR TO DIRECTION OF TRAVEL. RUNNING SLOPE OF ACCESSIBLE WALKS MUST NOT BE STEEPER THAN 1:20 (5.0%) IN DIRECTION OF TRAVEL. MAXIMUM GRADE OF ACCESSIBLE CURB RAMPS AND RAMPS IS 1:12 (8.3%). CURB RAMPS SHALL PROVIDE A LANDING AT THE TOP AND RAMP RUNS PROVIDE LANDINGS AT THE BOTTOM AND TOP OF EACH RAMP RUN AT A SLOPE NOT TO EXCEED 1:48. RAMP RUNS EXCEEDING SIX INCHES SHALL INCLUDE HANDRAILS. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PLACEMENT OF FLATWORK OF SITE CONDITIONS OR DISCREPANCIES WHICH PREVENT TYPICAL REQUIRED GRADES FROM BEING ACHIEVED. ALL RAMPS, STAIRS, EDGE PROTECTION, AND RAILINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ADA STANDARDS. ACCESSIBLE CURB RAMPS SHALL CONFORM TO THE CDOT M-STANDARDS (SEE DETAIL M-608-1, ETC.). ACCESSIBLE FEATURE WITHIN THE PUBLIC RIGHTS-OF-WAY SHALL BE CONSTRUCTED TO CONFORM TO THE LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS.

16. PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WELLS. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES.

17. BENCHMARK INFORMATION: TOPOGRAPHIC INFORMATION WAS PROVIDED BY FLATIRON SURVEYING, INC. SEE TOPOGRAPHIC EXHIBIT FOR A PARCEL OF LAND LOCATED IN THE WEST HALF OF SECTION 25, TOWNSHIP 1 NORTH, RANGE 71 WEST OF THE 6TH P.M., CITY OF BOULDER, COUNTY OF BOULDER, STATE OF COLORADO DATED 8-29-2014. ELEVATIONS ARE BASED ON THE CITY OF BOULDER POINT R-6-2, BEING A SPIKE IN POWER POLE LOCATED NEAR THE NORTHEAST CORNER OF PARCEL B, WITH A PUBLISHED ELEVATION OF 5480.89 FEET (NAV88). NO DIFFERENTIAL LEVELING WAS PERFORMED TO ESTABLISH THIS ELEVATION.

18. HORIZONTAL CONTROL INFORMATION: HORIZONTAL CONTROL COORDINATES ARE BASED ON THE REFERENCED SURVEY AND ARE PROVIDED BY THE FOLLOWING POINTS AS SHOWN ON THE PLANS:

FOUND #5 REBAR W/ 1" ALUM. COLLAR MARKED "LS7635"	N1251546.23	E3057582.21	ELEV 5583.02
FOUND #5 REBAR W/ 1-1/2" ALUM. CAP MARKED "WM STENGAL RLS4846"	N1250463.42	E305767.40	ELEV 5501.66
FOUND #5 REBAR	N1250611.12	E3058428.32	ELEV 5489.12

BASIS OF BEARINGS: SEE PLANS.

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Know what's b
Call before

	BENCHMARK		FENCE
	MANHOLE		FLOW LINE OF DITCH OR WASH
	AREA DRAIN		SLOPE ARROW
	COMBINATION INLET		PROPOSED SPOT ELEVATION
	TYPE R INLET		EXIST SPOT ELEVATION
	TYPE 13 FIELD INLET		EXIST INDEX CONTOUR
	FLARED END SECTION W/ RIPRAP		EXIST INTERMEDIATE CONTOUR
	TEE W/ THRUST BLOCK		PROPOSED INDEX CONTOUR
	BEND W/ THRUST BLOCK		PROPOSED INTERMEDIATE CONTOUR
	END CAP W/ THRUST BLOCK		CURB AND GUTTER
	GATE VALVE		SPILL/CATCH CURB TRANSITION
	REDUCER/INCREASER		SIGN W/ POST
	WATER METER		CURB RAMP
	FIRE HYDRANT		SIDEWALK CHASE
	SD		SIDEWALK
	STORM - 12" AND SMALLER		CONCRETE PAVING
	STORM - LARGER THAN 12"		HEAVY DUTY CONCRETE PAVING
	RD		HEAVY DUTY ASPHALT PAVING
	TD		LIGHT DUTY ASPHALT PAVING
	UD		GRAVEL
	SS		PROPOSED BUILDING
	FM		BUILDING ACCESS
	W		RETAINING WALL
	NPW		BOULDER/ROCK WALL
	PW		LIMITS OF SAWCUT
	IRR		LIMITS OF WORK
	IRRIGATION - LARGER THAN 12"		EASEMENT LINE
	CATV		PROPERTY LINE
	DRAIN		ADJACENT PROPERTY LINE/ROW
	ELECTRIC		MATCHLINE
	UNDERGROUND ELECTRIC		
	OVERHEAD ELECTRIC		
	TELEPHONE		
	FIBER OPTIC		
	FUEL		
	GAS		
	PVC PIPE (MISC)		

DETAIL TITLE		SECTION CALLOUT	
	DETAIL NUMBER IDENTIFICATION		DETAIL NUMBER IDENTIFICATION
	SHEET WHERE THE SECTION OR ELEVATION IS CUT OR CALLED OUT - INDICATES SAME DRAWING		SHEET WHERE THE DETAIL IS 1 - INDICATES SAME DRAWING
	SECTION NUMBER IDENTIFICATION		REVISION COLOR
	SHEET WHERE THE SECTION IS - INDICATES SAME DRAWING		REVISION NUMBER

SURVEY LEGEND			
	WATER LINE		BENCHMARK AS DESCRIBED
	WATER VALVE		FOUND MONUMENT
	WATER METER		FOUND MONUMENT
	FIRE HYDRANT		TEST CP
	SANITARY SEWER LINE		UTILITY LOCATED FROM MAP
	SANITARY SEWER MANHOLE		AS MEASURED AT TIME OF SURVEY
	STORM DRAINAGE LINE		CALCULATED FROM RECORD AND AS MEASURED INFORMATION
	STORM DRAINAGE MANHOLE		PLAT
	CURB INLET		RECORDED
	UNDERGROUND ELECTRICAL LINE		MAILBOX
	OVERHEAD ELECTRICAL LINE		CONCRETE
	ELECTRICAL POLE		EDGE OF ASPHALT
	GUY WIRE		GRAVEL
	ELECTRICAL TRANSFORMER		BOULDER
	ELECTRICAL RISER		
	ELECTRIC VAULT		
	LIGHT POLE		
	DECORATIVE LIGHT		
	FIBEROPTIC LINE		
	TELEPHONE LINE		
	TELEPHONE RISER		
	GAS LINE		
	INDICATION OF ACCESS		
	BUILDING		
	FENCE		
	GUARDRAIL		
	BOLLARD		
	SIGN		
	CONIFEROUS TREE (TRUNK DIAMETER/D RIP LINE RADIUS)		
	DECIDUOUS TREE (TRUNK DIAMETER/D RIP LINE RADIUS)		

NOTE: SHADED ITEMS REPRESENT EXIST FEATURES

ENGINEERING REVIEW MANAGER _____ DATE _____

APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE

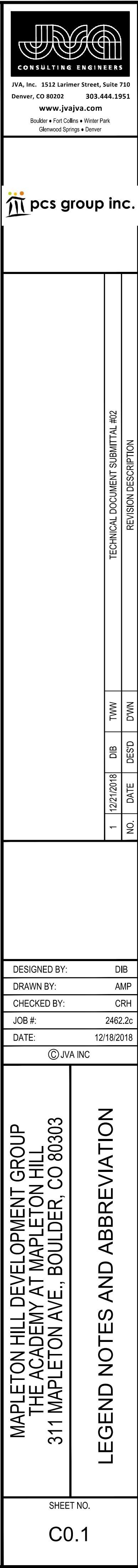
CITY OF BOULDER
PUBLIC WORKS DEPARTMENT

RECOMMENDATION FOR APPROVAL

WATER/SEWER _____

TRANSPORTATION _____

DRAINAGE _____



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DEMOLITION LEGEND

DEMO SUBSURFACE FEATURE

DEMO SURFACE FEATURE

DEMO BUILDING

ABANDON SUBSURFACE FEATURE

LIMITS OF SAWCUT

REMOVE EXISTING TREE

PROTECT EXISTING TREE

RELOCATE EXISTING TREE

DEMOLITION NOTES:

- CONTRACTOR TO FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. REFER TO GENERAL NOTES FOR UTILITY LOCATION AND PROTECTION.
- ACTUAL LIMITS MAY VARY. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING LIMITS OF DEMOLITION AND CONSTRUCTION AS NECESSARY. COORDINATE DEMOLITION REQUIREMENTS, LIMITS OF DEMOLITION, SALVAGE ITEMS, PROTECTION OF ITEMS TO REMAIN, TREES, FENCING, ETC. WITH OWNER, ARCHITECT, ENGINEER, AND RELEVANT CONSTRUCTION AND PHASING PLANS.
- IF BUILDING DEMOLITION IS REQUIRED, REFER TO ARCHITECT AND APPLICABLE ENGINEERS FOR DETAILED DEMOLITION INFORMATION.
- REPLACE EXISTING FLATWORK AT UTILITY TRENCHES AS REQUIRED.
- ALL SAWCUTTING AND PAVEMENT REMOVAL SHOULD BE TO THE NEAREST JOINT.
- ALL DRY UTILITY AND ELECTRIC DEMOLITION OR RELOCATION SHOULD BE COORDINATED WITH PROPERTY OWNER, UTILITY OWNER, MECHANICAL ENGINEER, AND ARCHITECT PRIOR TO CONSTRUCTION.
- ALL NECESSARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION.
- CONTRACTOR TO COMPLY WITH ALL REGULATORY REQUIREMENTS FOR HAZARDOUS MATERIAL REMOVAL AND DISPOSAL.
- REFER TO GENERAL NOTES FOR TREE PROTECTION. COORDINATE WITH LANDSCAPE ARCHITECT FOR TREE REMOVAL.
- CONTRACTOR TO MAINTAIN SAFE PEDESTRIAN ACCESS. PROVIDE TEMPORARY ROUTE AND SIGNAGE AS NEEDED.
- CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN SERVICES DURING CONSTRUCTION.
- LIMITED UNDERGROUND UTILITY INFORMATION ONSITE. CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND COORDINATE WITH OWNER, ARCHITECT, AND ENGINEER. AFTER FIELD LOCATION, TEST ALL EXISTING UTILITIES TO DETERMINE IF CURRENTLY IN USE. COORDINATE WITH OWNER TO MAINTAIN EXISTING UTILITIES/METERS THAT NEED TO REMAIN IN USE AFTER DEMOLITION.
- COORDINATE OFFSITE RIGHT-OF-WAY WORK WITH PROPERTY OWNERS.
- PROVIDE INVERT ELEVATIONS WHERE EXISTING UTILITIES ARE CAPPED AND COORDINATE WITH ENGINEER.
- EXISTING ELECTRICAL AND LIGHTING: CONTRACTOR TO MAP ALL EXISTING ELECTRICAL LINES. COORDINATE ALL ELECTRICAL DEMOLITION WITH XCEL PRIOR TO CONSTRUCTION. PROVIDE ELECTRICAL REWIRING AS REQUIRED FOR PRIVATE ELECTRICAL SYSTEMS SUCH AS LIGHTING.

60 0 60 120

SCALE IN FEET

CITY OF BOULDER
DEPARTMENT OF PUBLIC WORKS
REVISED
ENGINEERING CONSTRUCTION DRAWING

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

CITY OF BOULDER
PUBLIC WORKS DEPARTMENT

RECOMMENDATION FOR APPROVAL

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TRANSPORTATION _____

DRAINAGE _____

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CHECKED BY:	CRH
JOB #:	2462.2c
DATE:	12/18/2018
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MAPLETON HILL DEVELOPMENT GROUP
THE ACADEMY AT MAPLETON HILL
311 MAPLETON AVE., BOULDER, CO 80303

OVERALL DEMOLITION PLAN

SHEET NO.
C0.2



TECHNICAL DOCUMENT SUBMITTAL #02			
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NO	DATE	DESIN	OWN
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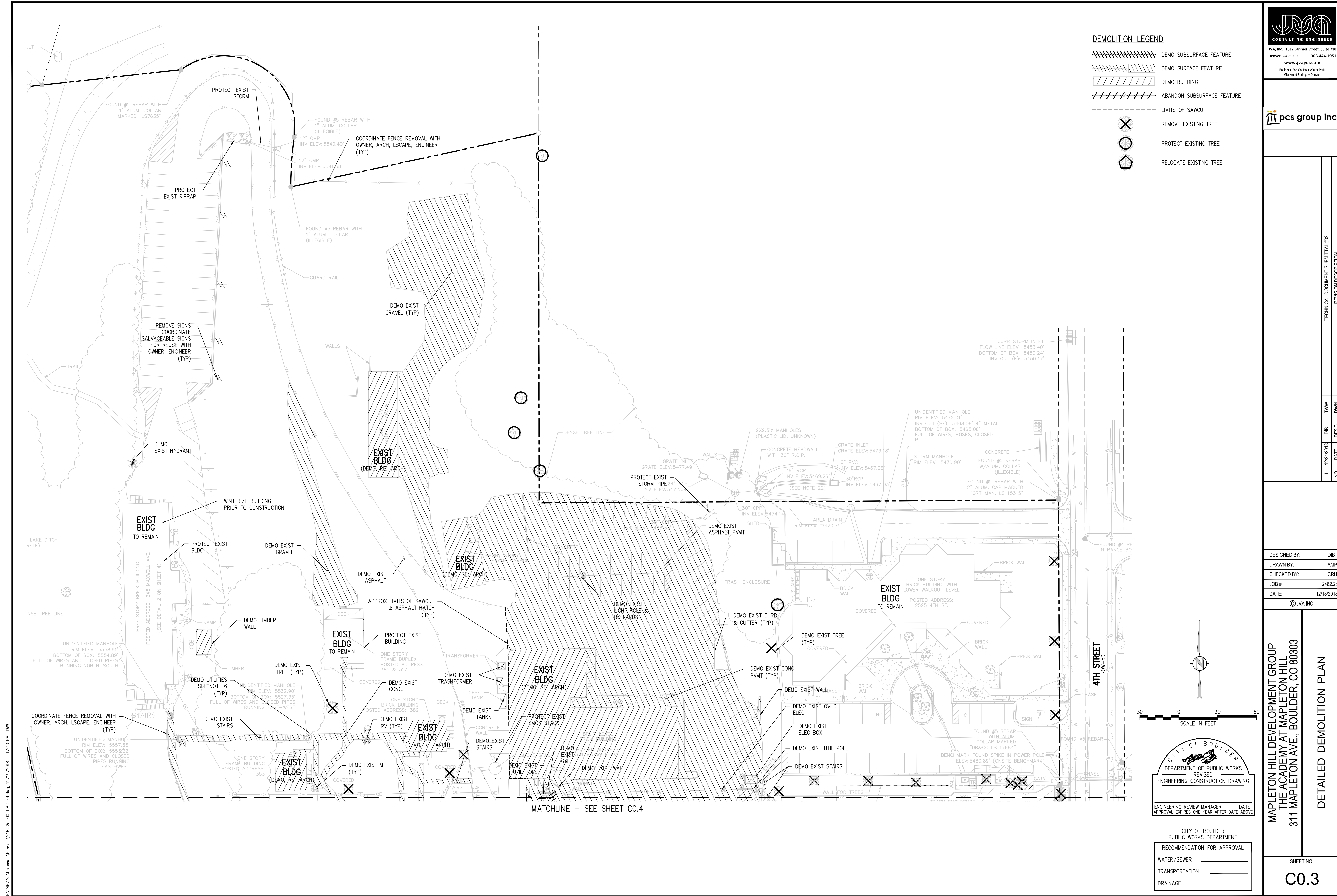
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הכרזת יום העצמאות

SHEET NO.

C0.3





TECHNICAL DOCUMENT SUBMITTAL #02			
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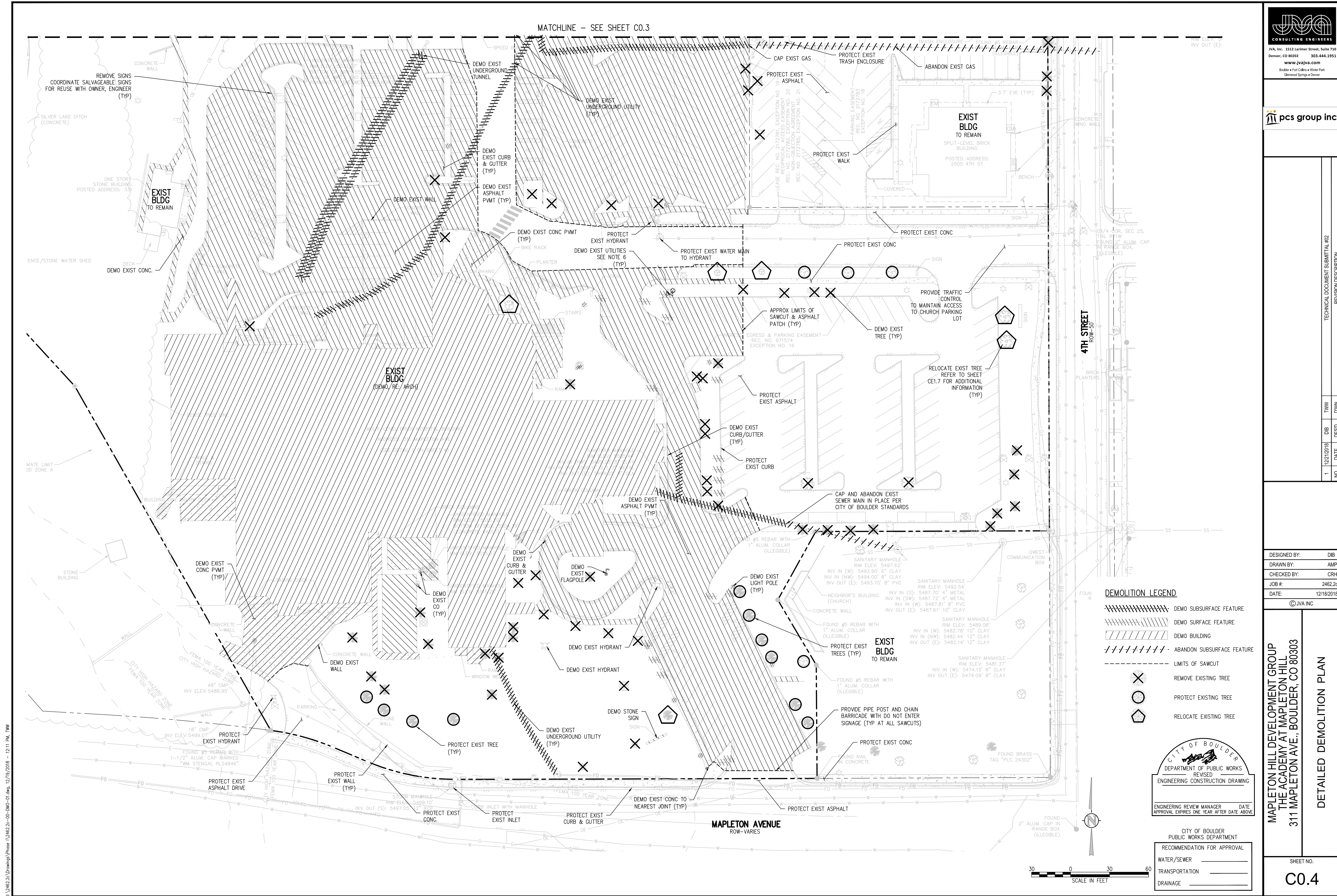
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DATE:	12/18/2018

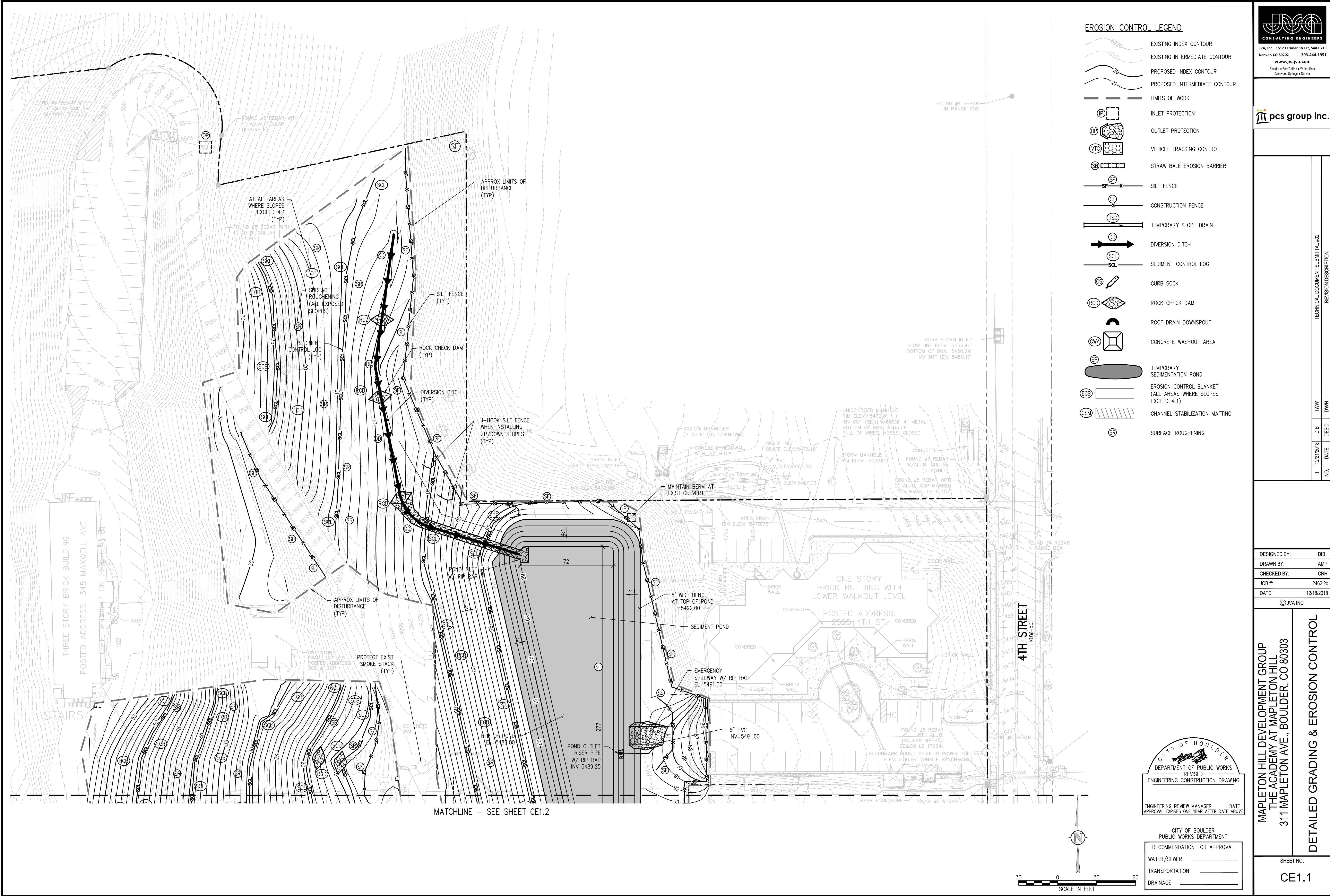
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הכרזת יום העצמאות

ET NO.

C0.4





- EROSION CONTROL LEGEND**
- EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERMEDIATE CONTOUR
 - LIMITS OF WORK
 - INLET PROTECTION
 - OUTLET PROTECTION
 - VEHICLE TRACKING CONTROL
 - STRAW BALE EROSION BARRIER
 - SILT FENCE
 - CONSTRUCTION FENCE
 - TEMPORARY SLOPE DRAIN
 - DIVERSION DITCH
 - SEDIMENT CONTROL LOG
 - CURB SOCK
 - ROCK CHECK DAM
 - ROOF DRAIN DOWNSPOUT
 - CONCRETE WASHOUT AREA
 - TEMPORARY SEDIMENTATION POND
 - EROSION CONTROL BLANKET (ALL AREAS WHERE SLOPES EXCEED 4:1)
 - CHANNEL STABILIZATION MATTING
 - SURFACE ROUGHENING

CITY OF BOULDER
DEPARTMENT OF PUBLIC WORKS
ENGINEERING CONSTRUCTION DRAWING

ENGINEERING REVIEW MANAGER DATE
APPROVAL EXPIRES ONE YEAR AFTER DATE ABOVE

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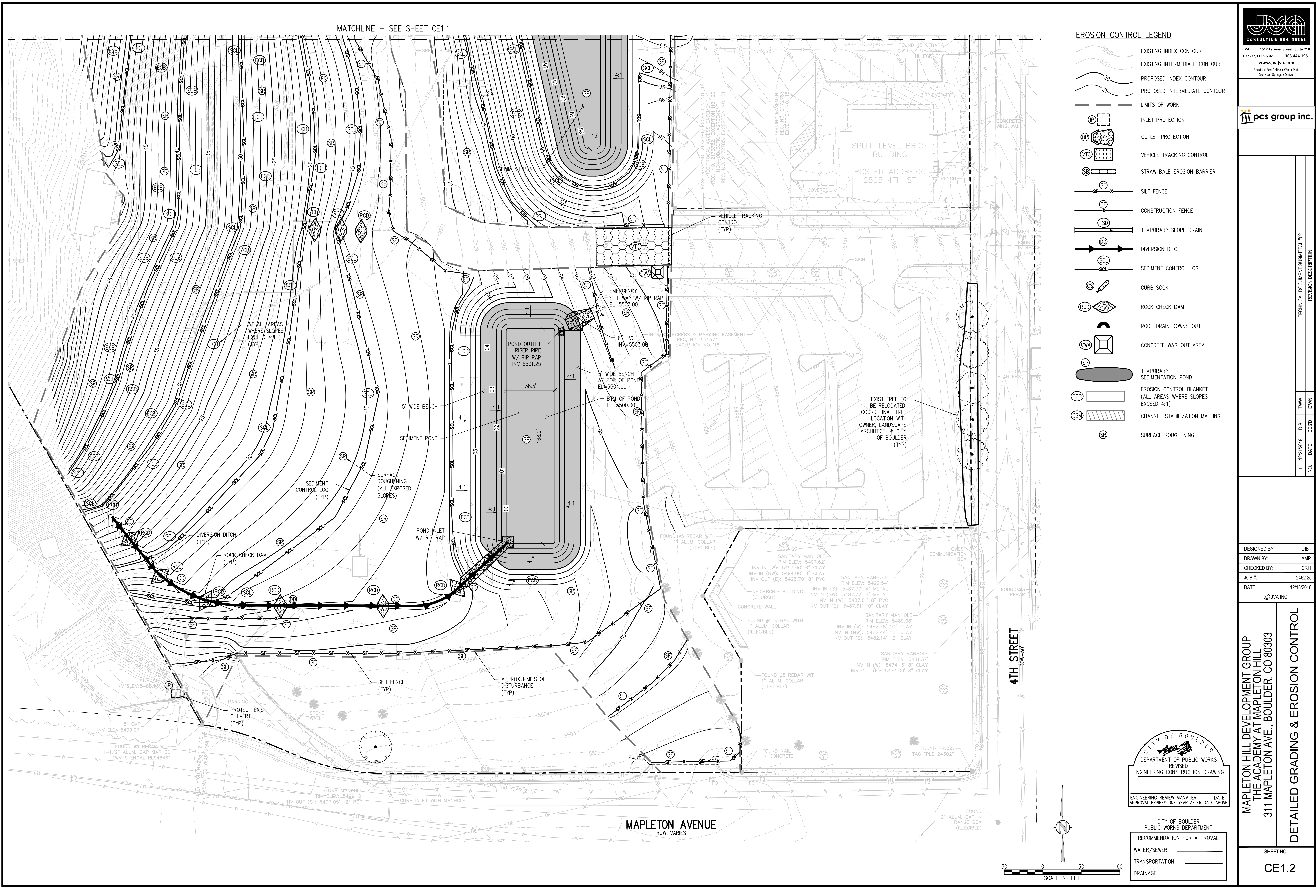
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1 12/21/2018 TWW DWN
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THE ACADEMY AT MAPLETON HILL
311 MAPLETON AVE., BOULDER, CO 80303

DETAILED GRADING & EROSION CONTROL

SHEET NO.
CE1.1



- EROSION CONTROL LEGEND**
- EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERMEDIATE CONTOUR
 - LIMITS OF WORK
 - INLET PROTECTION
 - OUTLET PROTECTION
 - VEHICLE TRACKING CONTROL
 - STRAW BALE EROSION BARRIER
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DETAILED GRADING & EROSION CONTROL

SHEET NO.
CE1.2

STORMWATER MANAGEMENT PLAN (SWMP)

THIS STORMWATER MANAGEMENT PLAN IS TO BE RETAINED AND MAINTAINED ONSITE INCLUDING FINAL LANDSCAPING PLANS AND ANY OTHER EROSION CONTROL DOCUMENTATION. A SWMP ADMINISTRATOR WILL BE DESIGNATED BY THE CONTRACTOR AND IS RESPONSIBLE FOR DEVELOPING, IMPLEMENTING, MAINTAINING, AND REVISING THIS SWMP. THE SWMP ADMINISTRATOR IS THE CONTACT FOR ALL SWMP-RELATED ISSUES AND IS RESPONSIBLE FOR ITS ACCURACY, COMPLETENESS, AND IMPLEMENTATION. THE FOLLOWING HAS BEEN DESIGNATED AS THE SWMP ADMINISTRATOR FOR THIS PROJECT:

NAME: _____
CONTACT INFO: _____

THE SITE IS LOCATED AT 311 MAPLETON AVE, BOULDER CO 80304 AND AT APPROXIMATELY 40° 01' 21" LATITUDE, 105° 17' 33" LONGITUDE. THE PROPOSED PROJECT CONSISTS OF DEMO OF EXISTING STRUCTURES AND OVERLOT GRADING IN THE CITY OF BOULDER. THE TOTAL SITE AREA IS APPROXIMATELY 15.77 ACRES WITH AT TOTAL DISTURBANCE OF 8 ACRES. NO AREAS GREATER THAN 40 ACRES SHALL BE DISTURBED AT ANY GIVEN TIME. NO CONSTRUCTION ACTIVITIES SHALL OCCUR OFFSITE OR OUTSIDE OF THE CONSTRUCTION LIMITS SHOWN ON THE CONSTRUCTION DOCUMENTS. THE SEQUENCE OF CONSTRUCTION STARTS IS AS FOLLOWS:

PHASE	ESTIMATED	ACTUAL
CONSTRUCTION START	MARCH, 2019	_____
SITE RESTORATION	SEPTEMBER, 2019	_____

THE EXISTING SITE IS CURRENTLY DEVELOPED. THE CURRENT USE OF THE PROPERTY IS PRIMARY FOR A MEDICAL HOSPITAL BUILDING AND SEVERAL SMALL MEDICAL OFFICE BUILDINGS AND GARAGES/STORAGE BUILDINGS THAT HAVE BEEN CONSTRUCTED IN PHASES OVER MANY YEARS. A PORTION OF THE SITE IS STABILIZED. HOWEVER, DUE TO EXISTING STEEP SLOPES SOME AREAS OF THE SITE ARE SUBJECT TO EROSION. THE ESTIMATED HISTORIC RUNOFF COEFFICIENT FOR THE SITE IS 0.70 AND THE ESTIMATED DEVELOPED RUNOFF COEFFICIENT FOR THE SITE IS 0.68.

OFFSITE RUNOFF FLOWS ONTO THE PROPERTY FROM THE EXISTING OPEN SPACE AREAS TO THE WEST OF THE SITE. ONSITE FLOWS ARE GENERALLY DIRECTED WEST TO EAST. ONSITE DETENTION AND WATER QUALITY IS PROVIDED IN THREE DETENTION BASINS AND ONE RAINGARDEN LOCATED THROUGHOUT THE SITE. STORMWATER IS DISCHARGED FROM THE NORTHERN PORTION OF THE SITE TO 4TH STREET. STORMWATER IS DISCHARGED FROM THE SOUTHERN PORTION OF THE SITE TO MAPLETON STREET. THE SITE IS PART OF THE BOULDER CREEK WATERSHED. A DRAINAGE REPORT FOR THE DEVELOPMENT HAS BEEN SUBMITTED TO THE CITY OF BOULDER ENGINEER.

OTHER POTENTIAL POLLUTION SOURCES SUCH AS VEHICLE FUELING, STORAGE OF FERTILIZER OR CHEMICAL, VEHICLE WASHING, WASTE INCINERATION, HAUL-ROADS, AND LOADING/UNLOADING AREAS ARE LOCATED ONSITE IN CONTAINED AREAS. NON-STORMWATER COMPONENTS OF THE DISCHARGE, SUCH AS SPRINGS AND LANDSCAPE IRRIGATION RETURN FLOWS ARE NOTE LOCATED ONSITE.

THE MAJORITY OF SOILS FOUND ONSITE ARE TERRACE ESCARPMENTS WITH A NATURAL RESOURCES CONSERVATION SERVICE (NRCS) HYDROLOGIC SOILS GROUP (HGS) OF A. SOILS WITH AN HSG OF A HAVE A VERY HIGH INFILTRATION RATE WHEN THOROUGHLY WET AND THEREFORE HAVE LOW RUNOFF POTENTIAL.

OTHER POTENTIAL POLLUTION SOURCES DO NOT EXIST ON THIS SITE. NON-STORMWATER COMPONENTS OF THE DISCHARGE, SUCH AS SPRINGS, LANDSCAPE IRRIGATION RETURN FLOW, ARE NOT ANTICIPATED

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 STORM COLLECTION SYSTEM

VEHICLE TRACKING CONTROL (VTC):

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED WITHIN THE SITE WITH ACCESS TO 4TH STREET. 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) AND SEDIMENT CONTROL LOGS (SCL):

SILT FENCING AND SEDIMENT CONTROL LOGS SHALL BE INSTALLED WITH RESPECT TO PROPOSED DRAINAGE PATTERNS. SILT FENCE AND SEDIMENT CONTROL LOGS SHALL BE CONSTRUCTED ALONG THE PORTIONS OF THE EAST SIDE OF THE PROPERTY AND ALONG ANY DRAINAGE AREAS SUBJECT TO EROSION. THE SILT FENCING AND SEDIMENT CONTROL LOGS 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 AND SEDIMENT CONTROL LOGS SHALL BE MAINTAINED AS NEEDED THROUGHOUT THE CONSTRUCTION PROCESS. THE TEMPORARY SILT FENCE AND SEDIMENT CONTROL LOGS 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 AND/OR CONCRETE BLOCKS TO FILTER THE STORM RUNOFF AND ALLOW ANY SILT TO SETTLE OUT. IN FIELDS OR LANDSCAPED AREAS THIS TRAP CONSISTS OF (WIRE MESH SOCKS OR STRAW BALE BARRIERS.

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.

ROCK CHECK DAMS (RCD):

ROCK CHECK DAMS WILL BE INSTALLED AS SHOWN AND MAINTAINED AT LOCATIONS AROUND THE SITE WHERE FUTURE GRASS LINES SWALES WILL CARRY THE STORM RUNOFF. PRIOR TO LANDSCAPING OF THE SITE, THESE BARRIERS WILL REDUCE THE FLOW VELOCITIES IN THESE SWALES AND ALLOW THE DISTURBED SOIL TO SETTLE OUT. THE ROCK CHECK DAMS WILL BE LEFT IN PLACE AS PART OF THE PERMANENT STORMWATER MANAGEMENT PLAN.

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.

DIVERSIONS DIKES (DD):

SEVERAL DIVERSION DIKES ARE TO BE INSTALLED TO DIRECT STORMWATER TO PROPOSED SWALES OR PROPOSED GUTTER PLANS. THESE TEMPORARY DIVERSIONS WILL BE NECESSARY UNTIL ALL INLETS BECOME FUNCTIONAL, SURROUNDED WITH PAVEMENT.

OVERLOT GRADING:

ALL OPEN AREAS WILL BE TREATED WITHIN 14 DAYS OF COMPLETION OF THE OVERLOT GRADING. ALL OVERLOT GRADING IN THE NON-IRRIGATED AREAS WILL HAVE THE SURFACE ROUGHENED AND WILL BE PERMANENTLY LANDSCAPED OR TEMPORARILY SEEDED UNTIL THE PLANNED INSTALLATIONS ARE COMPLETED. AT THE COMPLETION OF THE MASS GRADING, ALL EXPOSED SOIL AREAS WILL HAVE THE SURFACE ROUGHENED AND PLANTED WITH A REVEGETATION SEED MIX. VEGETATION IS TO BE MAINTAINED THROUGHOUT CONSTRUCTION BY THE CONTRACTOR UNTIL AREAS ARE PERMANENTLY LANDSCAPED. ALTERNATELY, ROUGH-CUT DRIVEWAYS OR PROPOSED PAVED AREAS CAN BE COVERED WITH A LAYER OF AGGREGATE, ROAD BASE OR ASPHALT PAVING.

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 GROUNDCOVER 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 DEPARTMENT OF HIGHWAYS AND TRANSPORTATION, OWNER'S ENGINEER, COUNTY ENGINEERING INSPECTORS, MUNICIPALITY, OR ITS AUTHORIZED REPRESENTATIVE AS FIELD CONDITIONS WARRANT.

STORMWATER DETENTION AND WATER QUALITY:

NO FORMAL STORMWATER DETENTION OR WATER QUALITY IS PROVIDED FOR THIS PHASE OF THE PROJECT. SEDIMENT BASINS WILL BE CONSTRUCTED AS SHOWN ON THE PLANS

TEMPORARY SEEING AND MULCHING:

ALL SEEDS FURNISHED SHALL BE FREE FROM NOXIOUS SEEDS (SUCH AS RUSSIAN OR CANADIAN THISTLE, COURSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAWEED, 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

ALL SEEDS SHALL BE DRILLED NOT HYDROSEEDED. ALL DISTURBED AREAS SHALL BE SEEDED AND CRIMP MULCHED IF PERMANENT VEGETATION IS NOT IMMEDIATELY INSTALLED. AFTER SEEING HAS BEEN COMPLETED, A RATE OF 4,000 LBS. OF STRAW PER ACRE SHALL BE APPLIED UNIFORMLY, CRIMPED IN 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 SEEING. AREAS NOT MULCHED AND ATTACHED WITHIN TWENTY-FOUR (24) HOURS AFTER SEEING MUST BE RESEEDED 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 OF BOULDER 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, SEEING, TREES, SHRUBS, OR OTHER VEGETATIVE COVER TO OPEN AREAS. NATIVE PERENNIAL SEEING 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 RESEEDED. 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 OF BOULDER 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:

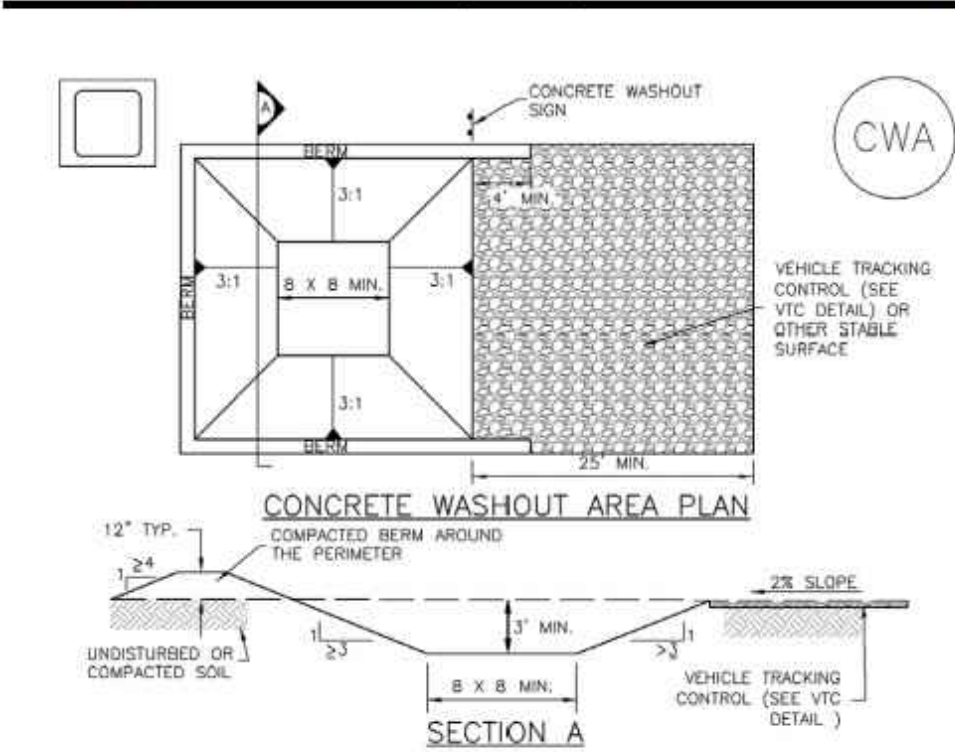
FINAL STABILIZATION IS REACHED WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% OR PRE-DISTURBANCE LEVELS OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED. FINAL STABILIZATION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

CITY OF BOULDER

STORMWATER MANAGEMENT NOTES

- (i) ALL TEMPORARY EROSION CONTROL FACILITIES SHALL BE INSTALLED BEFORE ANY CONSTRUCTION ACTIVITIES TAKE PLACE.
- (ii) SOLID WASTE, INDUSTRIAL WASTE, YARD WASTE AND ANY OTHER POLLUTANTS OR WASTE ON ANY CONSTRUCTION SITE SHALL BE CONTROLLED THROUGH THE USE OF BMPs. WASTE AND/OR RECYCLING CONTAINERS SHALL BE PROVIDED AND MAINTAINED BY THE OWNER OR CONTRACTOR ON CONSTRUCTION SITES WHERE THERE IS THE POTENTIAL FOR RELEASE OF WASTE. UNCONTAINED WASTE THAT MAY BLOW, WASH OR OTHERWISE BE RELEASED FROM THE SITE IS PROHIBITED. SANITARY WASTE FACILITIES SHALL BE PROVIDED AND MAINTAINED BY THE OWNER OR CONTRACTOR.
- (iii) READY-MIXED CONCRETE, OR ANY MATERIALS RESULTING FROM THE CLEANING OF VEHICLES OR EQUIPMENT CONTAINING OR USING IN TRANSPORTING OR APPLYING IT, SHALL BE CONTAINED ON CONSTRUCTION SITES FOR PROPER DISPOSAL. RELEASE OF THESE MATERIALS IS PROHIBITED.
- (iv) COVER SHALL BE APPLIED WITHIN 14 DAYS TO INACTIVE SOIL STOCKPILES, AND SHALL BE MAINTAINED FOR STOCKPILES THAT ARE PROPOSED TO REMAIN IN PLACE LONGER THAN 30 CALENDAR DAYS.
- (v) BMPs SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF SEDIMENT FROM CONSTRUCTION SITES. VEHICLE TRACKING OF MUD SHALL NOT BE ALLOWED TO ENTER THE STORM WATER SYSTEM OR WATERS OF THE STATE. SEDIMENT TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED.
- (vi) TECHNIQUES SHALL BE USED TO PREVENT DUST, SEDIMENT OR DEBRIS BLOWING FROM THE SITE.
- (vii) STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION OR DEGRADATION OF WATERS OF THE STATE.
- (viii) ALL EARTH DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED AND COMPLETED TO LIMIT THE EXPOSED AREA OF ANY DISTURBED LAND TO THE SHORTEST POSSIBLE PERIOD OF TIME. EFFECTIVE: NOVEMBER 16, 2000 DESIGN AND CONSTRUCTION STANDARDS 7-53
- (ix) BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING THE STORM WATER SYSTEM OR WATERS OF THE STATE.
- (x) ANY DISTURBANCE TO TEMPORARY AND PERMANENT BMPs SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS.
- (xi) THE PROPERTY OWNER AND SUBSEQUENT PROPERTY OWNERS WILL BE RESPONSIBLE FOR CONTINUED COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION, DURING CONSTRUCTION ACTIVITY ON THE SITE.
- (xii) ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND DISPOSED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED, OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, WHICHEVER OCCURS FIRST.

Concrete Washout Area (CWA)

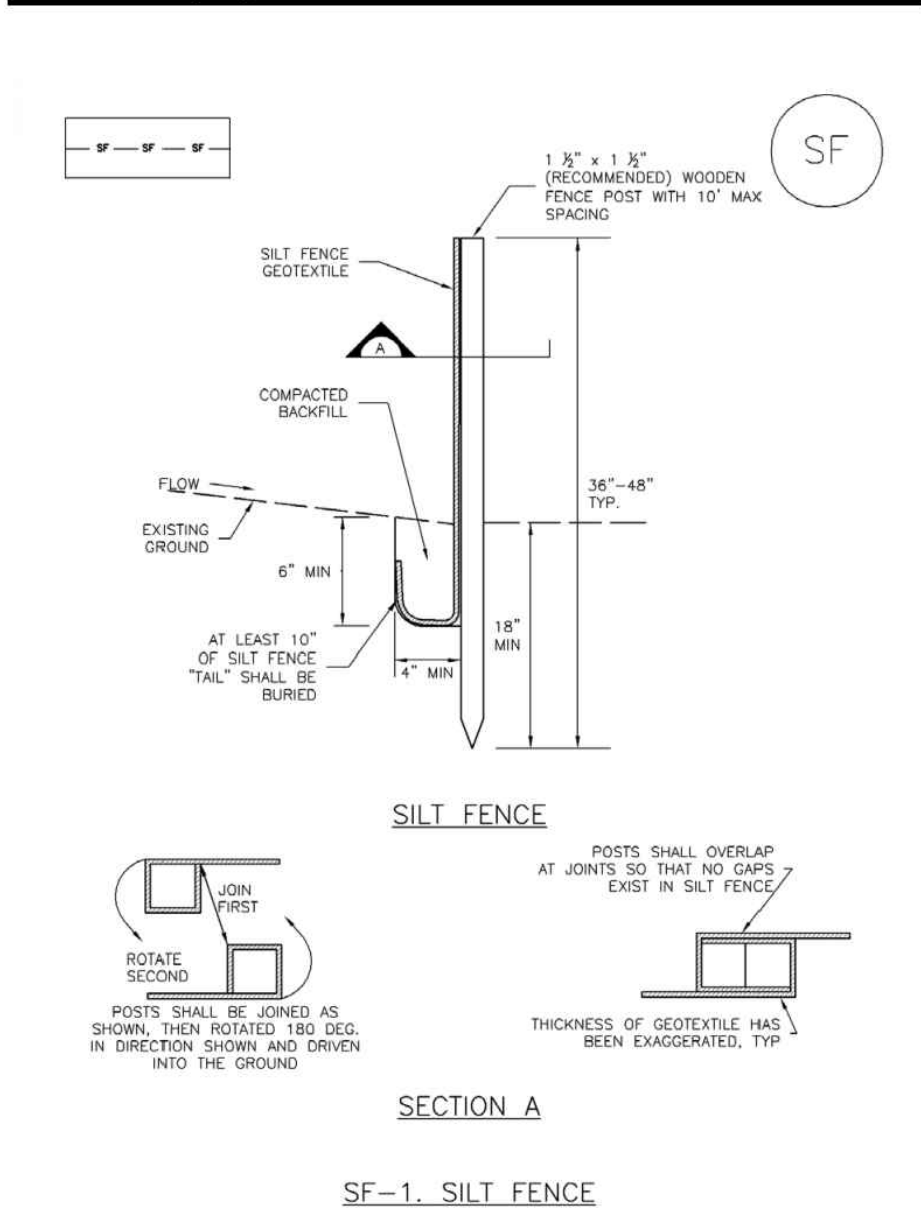


CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: "CWA INSTALLATION LOCATION."
- 2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS UNFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
- 3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- 4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8" BY 8" SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- 5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
- 6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- 7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
- 8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

Silt Fence (SF)



SF-1. SILT FENCE

SC-1



SILT FENCE INSTALLATION NOTES

- 1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVEN FEET (2+3 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- 2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
- 3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
- 4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- 5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
- 6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 25').
- 7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- 4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
- 5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
- 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
- 7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USDCO STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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JVA, Inc. 1512 Larimer Street, Suite 710
Denver, CO 80202 303.444.1951
www.jvajva.com
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1	1/22/2018								

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DRAWN BY:	AMP
CHECKED BY:	CRH
JOB #:	2462.2c
DATE:	12/18/2018
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EROSION CONTROL NOTES

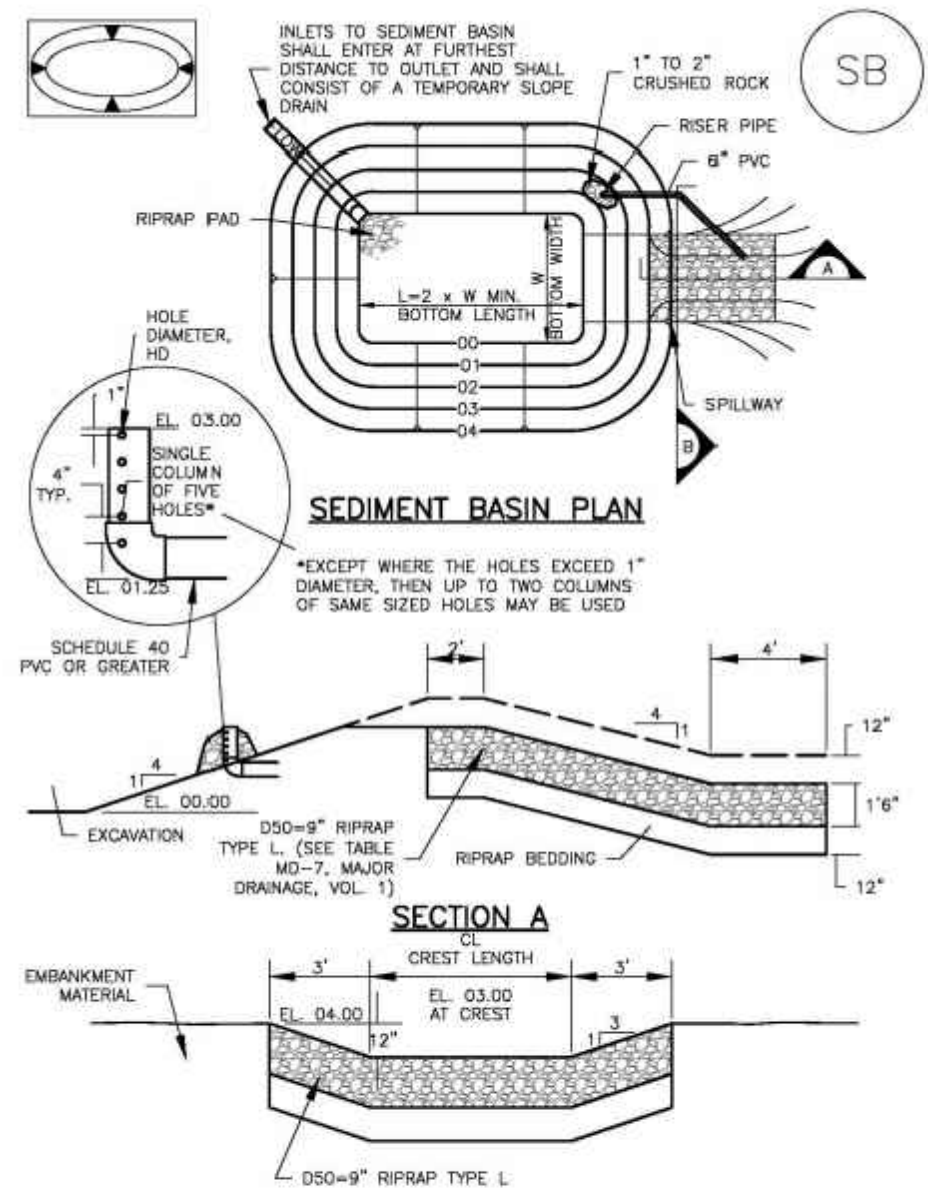
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Sediment Basin (SB)

SC-7 SC-7



Sediment Basin (SB) Sediment Basin (SB)

TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN				
Upstream Drainage Area (Acres)	Basin Bottom Width (ft)	Spillway Crest Length (ft)	Hole Diameter (in)	
1	12 1/2	2	3/8	
2	21	3	1/2	
3	28	4	5/8	
4	33 1/2	5	3/4	
5	38 1/2	6	7/8	
6	43	7	1	
7	47 1/2	8	1 1/8	
8	51	9	1 1/4	
9	55	10	1 1/2	
10	58 1/2	11	1 5/8	
11	61	12	1 3/4	
12	64	13	1 7/8	
13	67	14	2	
14	70 1/2	15	2 1/8	
15	73 1/2	16	2 1/4	

SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF SEDIMENT BASIN.
 - TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
 - FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
 - FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.
- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON OR BASING AS A STORMWATER CONTROL.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

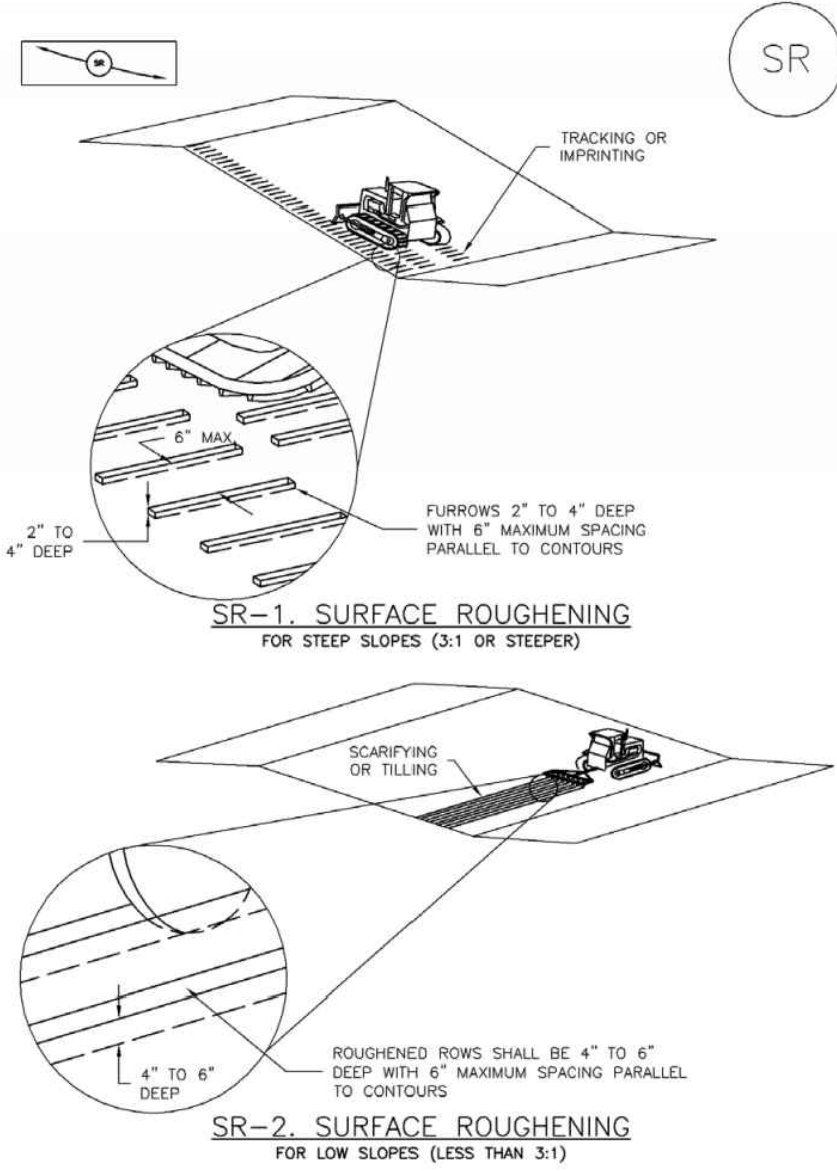
SEDIMENT BASIN MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).
 - SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
 - WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Sediment Basin (SB) SC-7

Surface Roughening (SR)

EC-1



November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SR-3

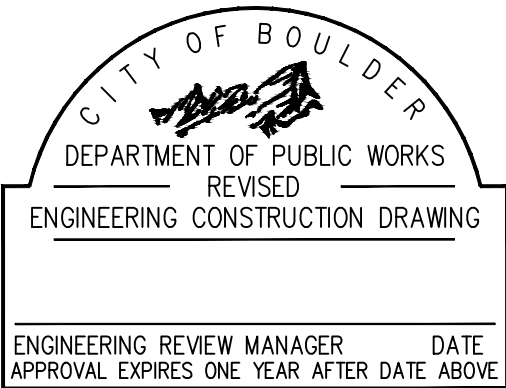
EC-1

Surface Roughening (SR)

SURFACE ROUGHENING INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION(S) OF SURFACE ROUGHENING.
 - SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED RAIN EVENT.
 - AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.
 - DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILTING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.
 - A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.
- ### SURFACE ROUGHENING MAINTENANCE NOTES
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACE UPON DISCOVERY OF THE FAILURE.
 - VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
 - IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
 - IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER FILL EROSION.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SR-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010



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

JVA, Inc. 1512 Larimer Street, Suite 710
Denver, CO 80202 303.444.1951
www.jvajva.com
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Sediment Basin (SB) SC-7

Description

A sediment basin is a temporary pond built on a construction site to capture eroded or disturbed soil transported in storm runoff prior to discharge from the site. Sediment basins are designed to capture site runoff and slowly release it to allow time for settling of sediment prior to discharge. Sediment basins are often constructed in locations that will later be modified to serve as post-construction stormwater basins.

Appropriate Uses

Most large construction sites (typically greater than 2 acres) will require one or more sediment basins for effective management of construction site runoff. On linear construction projects, sediment basins may be impractical; instead, sediment traps or other combinations of BMPs may be more appropriate.

Sediment basins should not be used as stand-alone sediment controls. Erosion and other sediment controls should also be implemented upstream.

When feasible, the sediment basin should be installed in the same location where a permanent post-construction detention pond will be located.

Design and Installation

The design procedure for a sediment basin includes these steps:

- Basin Storage Volume:** Provide a storage volume of at least 3,600 cubic feet per acre of drainage area. To the extent practical, undisturbed and/or off-site areas should be diverted around sediment basins to prevent "clean" runoff from mixing with runoff from disturbed areas. For undisturbed areas (both on-site and off-site) that cannot be diverted around the sediment basin, provide a minimum of 500 ft³/acre of storage for undeveloped (but stable) off-site areas in addition to the 3,600 ft³/acre for disturbed areas. For stable, developed areas that cannot be diverted around the sediment basin, storage volume requirements are summarized in Table SB-1.
- Basin Geometry:** Design basin with a minimum length-to-width ratio of 2:1 (L:W). If this cannot be achieved because of site space constraints, baffling may be required to extend the effective distance between the inflow point(s) and the outlet to minimize short-circuiting.
- Dam Embankment:** It is recommended that embankment slopes be 4:1 (H:V) or flatter and no steeper than 3:1 (H:V) in any location.

Sediment Basins	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

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Sediment Basin (SB) SC-7

- Inflow Structure:** For concentrated flow entering the basin, provide energy dissipation at the point of inflow.

Table SB-1. Additional Volume Requirements for Undisturbed and Developed Tributary Areas Draining through Sediment Basins

Imperviousness (%)	Additional Storage Volume (ft ³) Per Acre of Tributary Area
Undeveloped	500
10	800
20	1230
30	1600
40	2030
50	2470
60	2900
70	3360
80	4360
90	5300
100	6460

- Outlet Works:** The outlet pipe shall extend through the embankment at a minimum slope of 0.5 percent. Outlet works can be designed using one of the following approaches:
 - Riser Pipe (Simplified Detail):** Detail SB-1 provides a simplified design for basins treating no more than 15 acres.
 - Orifice Plate or Riser Pipe:** Follow the design criteria for Full Spectrum Detention outlets in the EDD Fact Sheet provided in Chapter 4 of this manual for sizing of outlet perforations with an emptying time of approximately 72 hours. In lieu of the trash rack, pack uniformly sized 1½ to 2-inch gravel in front of the plate or surrounding the riser pipe. This gravel will need to be cleaned out frequently during the construction period as sediment accumulates within it. The gravel pack will need to be removed and disposed of following construction to reclaim the basin for use as a permanent detention facility. If the basin will be used as a permanent extended detention basin for the site, a trash rack will need to be installed once contributing drainage areas have been stabilized and the gravel pack and accumulated sediment have been removed.
 - Floating Skimmer:** If a floating skimmer is used, install it using manufacturer's recommendations. Illustration SB-1 provides an illustration of a Faircloth Skimmer Floating Outlet™, one of the more commonly used floating skimmer outlets. A skimmer should be designed to release the design volume in no less than 48 hours. The use of a floating skimmer outlet can increase the sediment capture efficiency of a basin significantly. A floating outlet continually decants cleanest water off the surface of the pond and releases cleaner water than would discharge from a perforated riser pipe or plate.

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Sediment Basin (SB) SC-7

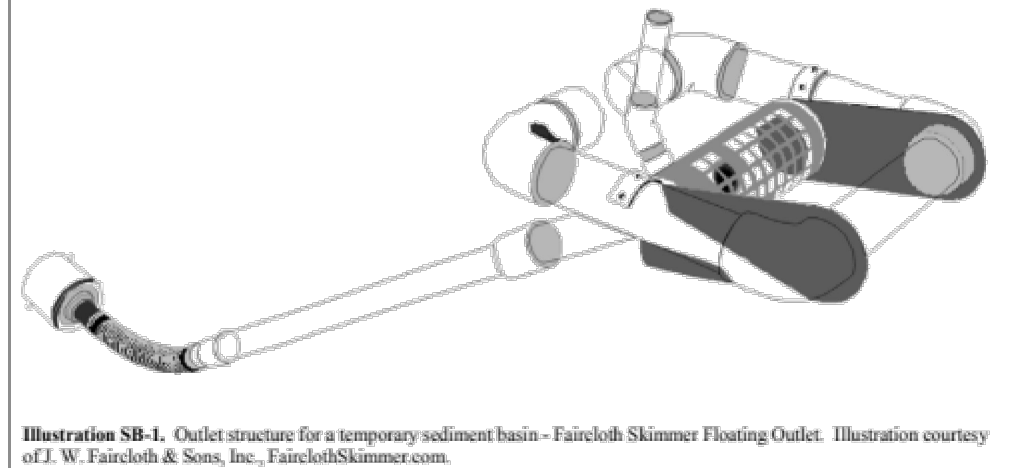


Illustration SB-1. Outlet structure for a temporary sediment basin - Faircloth Skimmer Floating Outlet. Illustration courtesy of J. W. Faircloth & Sons, Inc., FairclothSkimmer.com.

- Outlet Protection and Spillway:** Consider all flow paths for runoff leaving the basin, including protection at the typical point of discharge as well as overtopping.
 - Outlet Protection:** Outlet protection should be provided where the velocity of flow will exceed the maximum permissible velocity of the material of the waterway into which discharge occurs. This may require the use of a riprap apron at the outlet location and/or other measures to keep the waterway from eroding.
 - Emergency Spillway:** Provide a stabilized emergency overflow spillway for rainstorms that exceed the capacity of the sediment basin volume and its outlet. Protect basin embankments from erosion and overtopping. If the sediment basin will be converted to a permanent detention basin, design and construct the emergency spillway(s) as required for the permanent facility. If the sediment basin will not become a permanent detention basin, it may be possible to substitute a heavy polyvinyl membrane or properly bedded rock cover to line the spillway and downstream embankment, depending on the height, slope, and width of the embankments.

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Sediment Basin (SB) SC-7

Maintenance and Removal

Maintenance activities include the following:

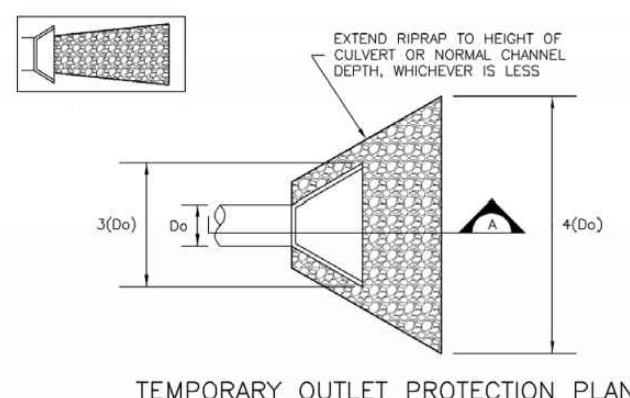
- Dredge sediment from the basin, as needed to maintain BMP effectiveness, typically when the design storage volume is no more than one-third filled with sediment.
- Inspect the sediment basin embankments for stability and seepage.
- Inspect the inlet and outlet of the basin, repair damage, and remove debris. Remove, clean and replace the gravel around the outlet on a regular basis to remove the accumulated sediment within it and keep the outlet functioning.
- Be aware that removal of a sediment basin may require dewatering and associated permit requirements.
- Do not remove a sediment basin until the upstream area has been stabilized with vegetation.

Final disposition of the sediment basin depends on whether the basin will be converted to a permanent post-construction stormwater basin or whether the basin area will be returned to grade. For basins being converted to permanent detention basins, remove accumulated sediment and reconfigure the basin and outlet to meet the requirements of the final design for the detention facility. If the sediment basin is not to be used as a permanent detention facility, fill the excavated area with soil and stabilize with vegetation.

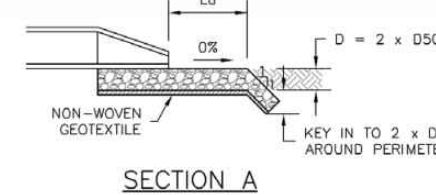
August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SB-4

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EC-8 Temporary Outlet Protection (TOP) Temporary Outlet Protection (TOP) EC-8



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

PIPE DIAMETER, D _p (INCHES)	DISCHARGE, Q (CFS)	APPROX. LENGTH, L _a (FT)	RRIPAP D50 DIAMETER, MIN. (INCHES)
8	2.5	5	4
10	5	10	6
12	10	15	8
14	15	20	10
16	20	25	12
18	25	30	14
20	30	35	16
22	35	40	18
24	40	45	20

OP-1. TEMPORARY OUTLET PROTECTION

TOP-2 Urban Drainage and Flood Control District November 2010 November 2010 Urban Drainage and Flood Control District TOP-3 Urban Storm Drainage Criteria Manual Volume 3 Urban Storm Drainage Criteria Manual Volume 3

SM-8 Temporary Diversion Methods (TDM) SM-8

in accordance with the Major Drainage chapter in Volume 1.

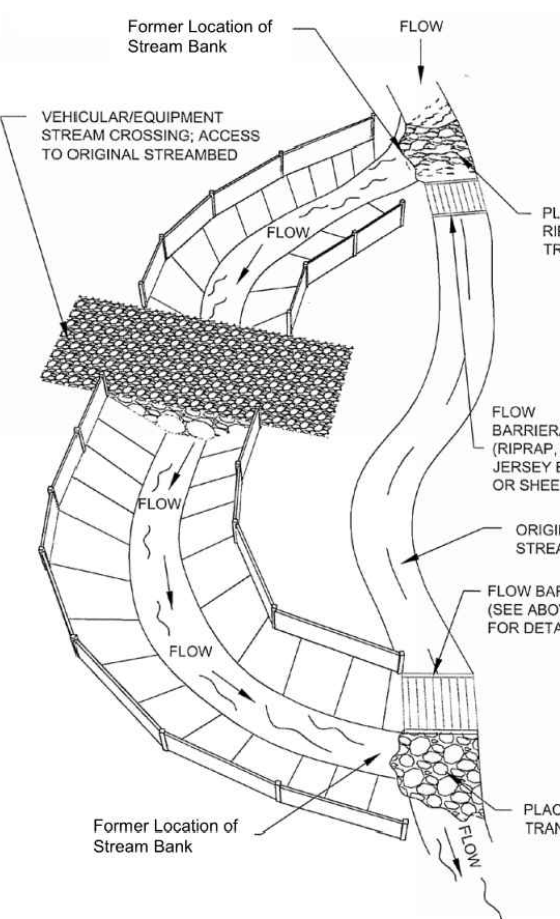
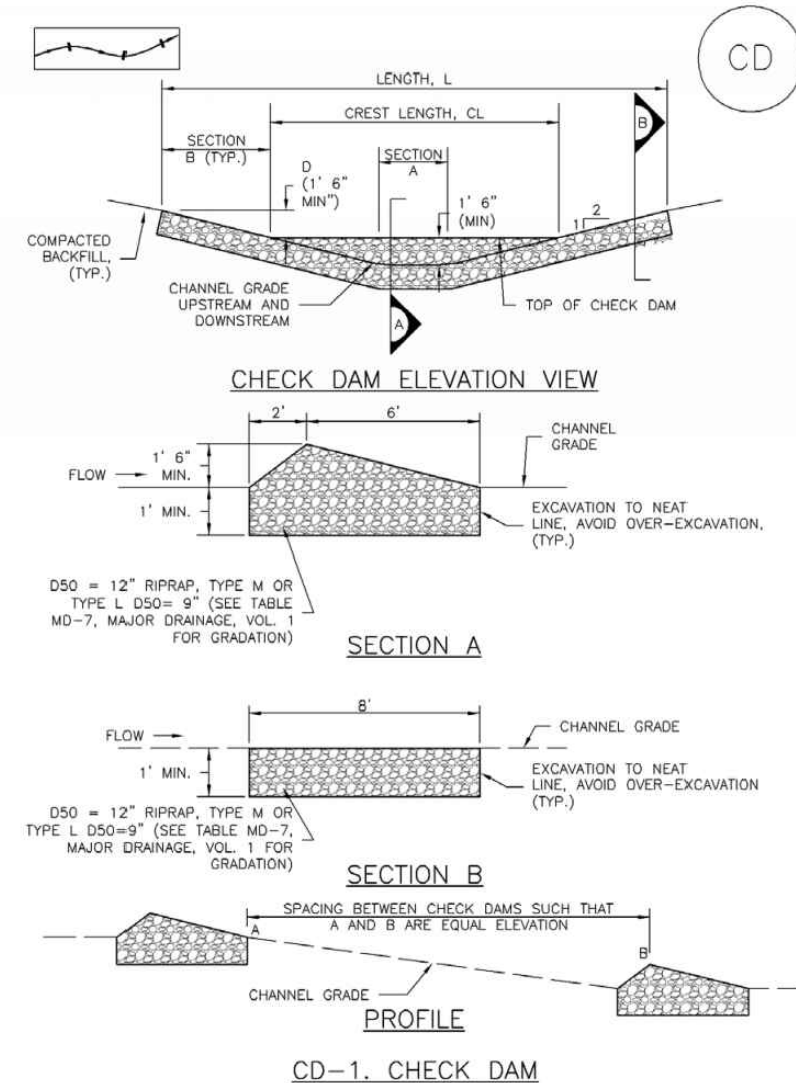


Figure TDM-1. Typical Temporary Diversion Channel

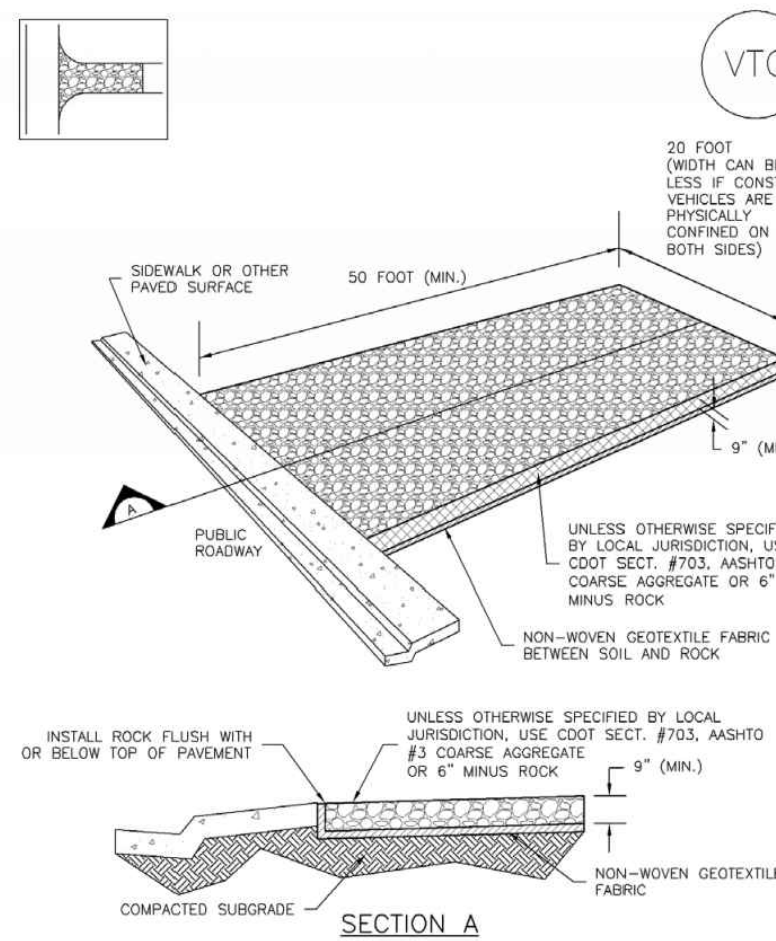
TDM-10 Urban Drainage and Flood Control District June 2012 Urban Storm Drainage Criteria Manual Volume 3

Check Dams (CD) EC-12



November 2010 Urban Drainage and Flood Control District CD-3 Urban Storm Drainage Criteria Manual Volume 3

Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

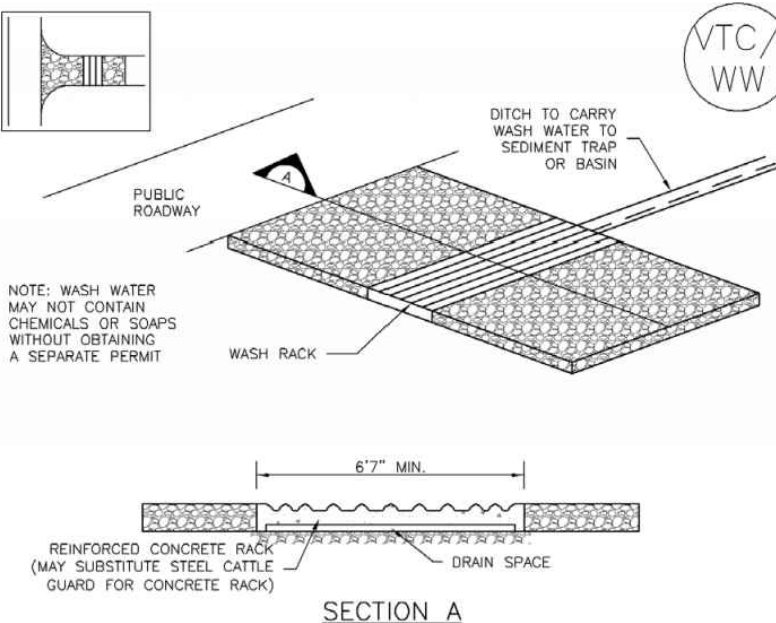
November 2010 Urban Drainage and Flood Control District VTC-3 Urban Storm Drainage Criteria Manual Volume 3

Check Dams (CD) EC-12

- CHECK DAM INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF CHECK DAMS
 - TYPE OF CHECK DAM (CHECK DAM OR REINFORCED CHECK DAM)
 - LENGTH (L), CREST LENGTH (CL), AND DEPTH (D)
 - CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
 - RRIPAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RRIPAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").
 - RRIPAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1".
 - THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.
- CHECK DAM MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN 3/4 OF THE HEIGHT OF THE CREST.
 - CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDS AND MULCHED OR COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION. (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)
 - NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

CD-4 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

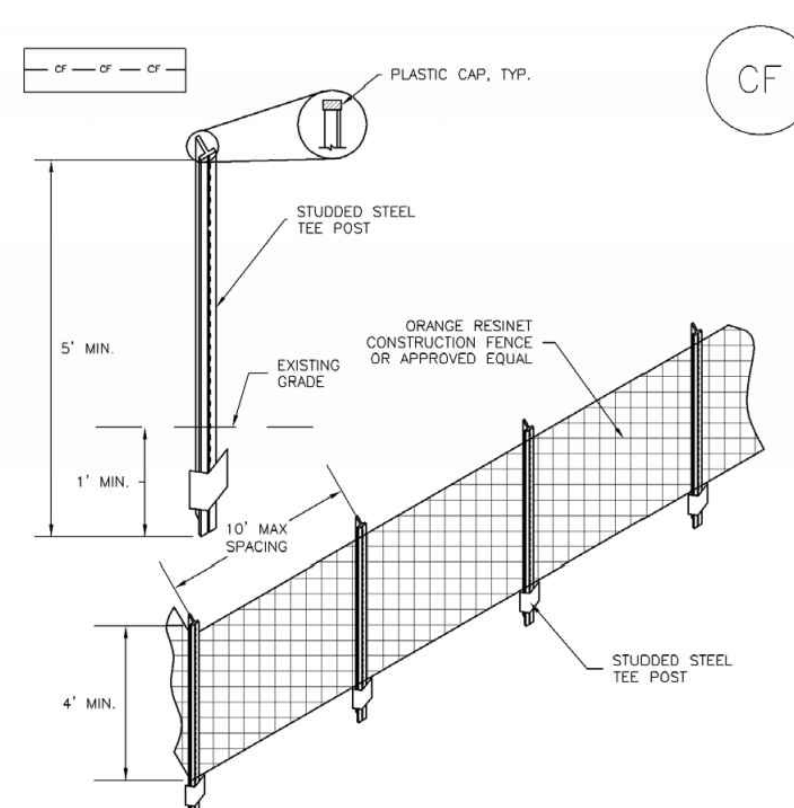
Vehicle Tracking Control (VTC) SM-4



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

November 2010 Urban Drainage and Flood Control District VTC-4 Urban Storm Drainage Criteria Manual Volume 3

Construction Fence (CF) SM-3



CF-1. PLASTIC MESH CONSTRUCTION FENCE

- CONSTRUCTION FENCE INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION FENCE
 - CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
 - CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY. MAXIMUM SPACING FOR STEEL TIE POSTS SHALL BE 16'.
 - STUDDED STEEL TIE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE.
 - CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

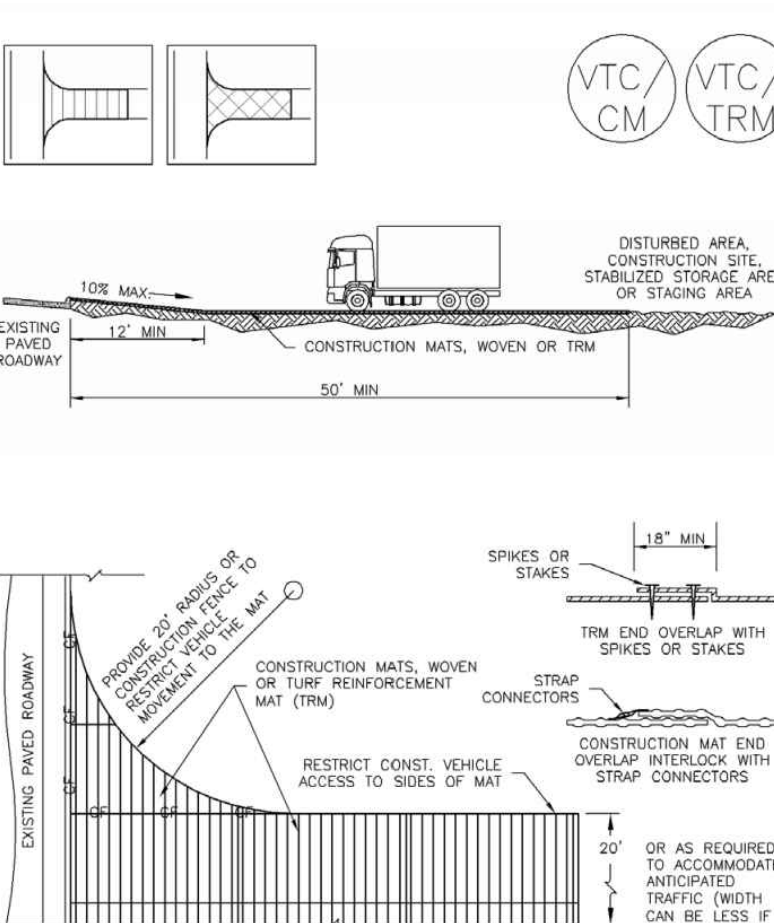
CF-2 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

Construction Fence (CF) SM-3

- CONSTRUCTION FENCE MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDS AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
 - NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

CF-3 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

Vehicle Tracking Control (VTC) SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

November 2010 Urban Drainage and Flood Control District VTC-5 Urban Storm Drainage Criteria Manual Volume 3

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S)
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM)
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WORN, GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, MASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

- STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SHALL BE REPLISHED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
 - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.
 - NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-6 Urban Drainage and Flood Control District November 2010 Urban Storm Drainage Criteria Manual Volume 3

Temporary Diversion Methods (TDM) SM-8

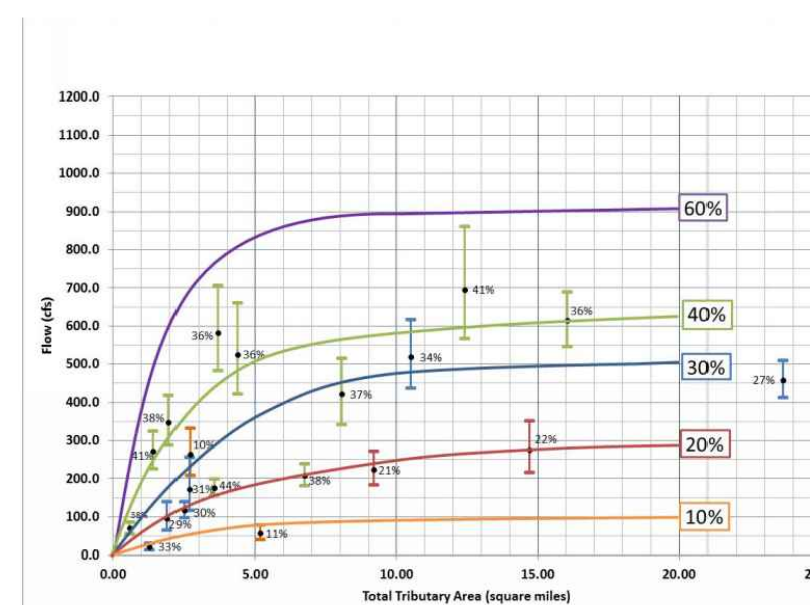
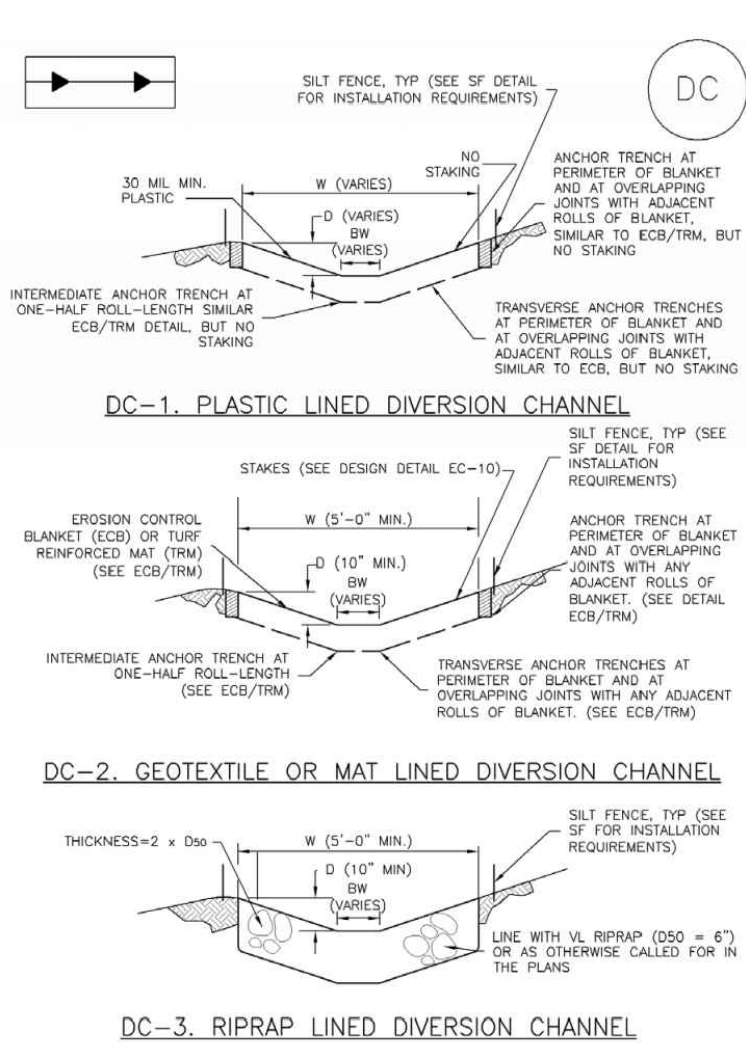


Figure TDM-2. Temporary Diversion Facility Sizing Nomograph for Long Duration Projects (Duration in excess of three months) Based on 2-year Peak Flows - Denver Metropolitan and Adjacent Areas, Updated April 2012

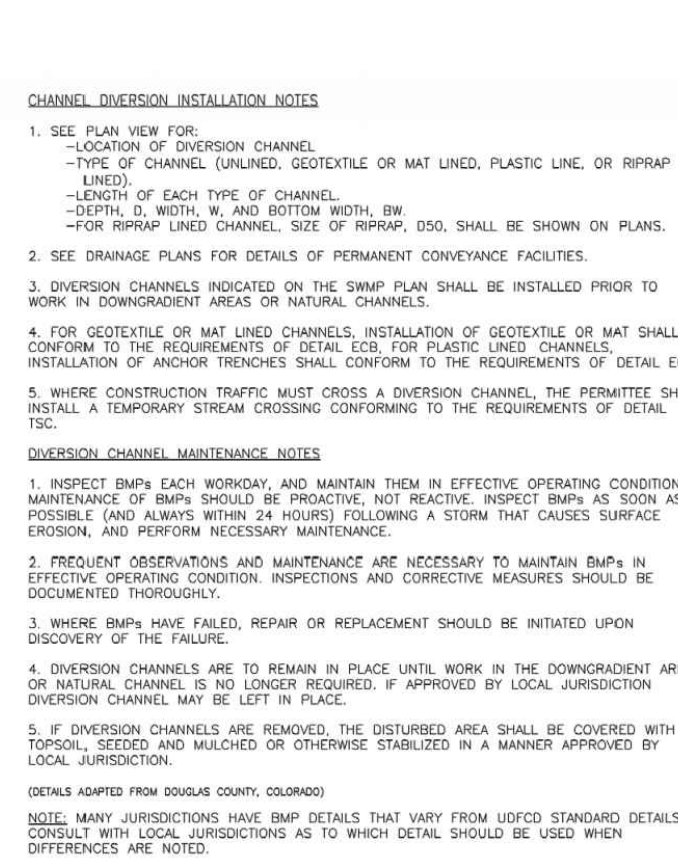
TDM-11 Urban Drainage and Flood Control District June 2012 Urban Storm Drainage Criteria Manual Volume 3

Temporary Diversion Methods (TDM) SM-8



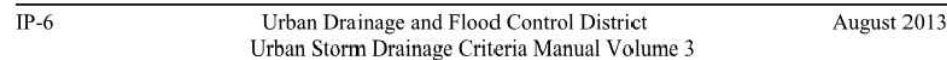
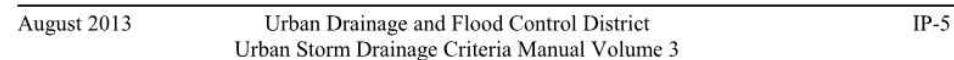
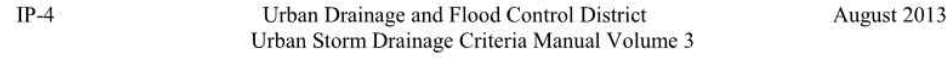
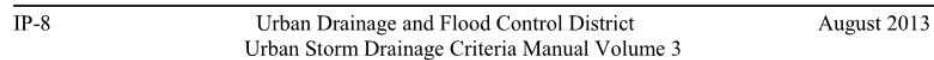
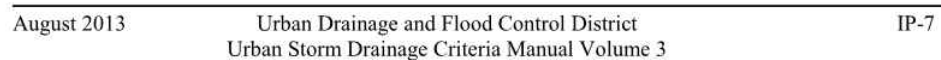
TDM-12 Urban Drainage and Flood Control District June 2012 Urban Storm Drainage Criteria Manual Volume 3

Temporary Diversion Methods (TDM) SM-8

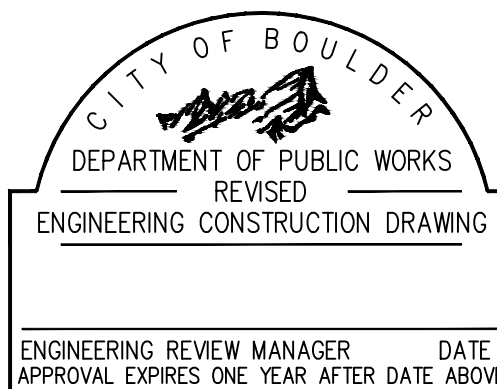
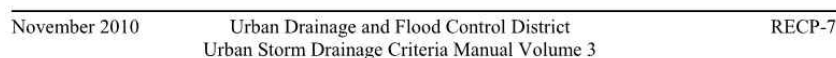
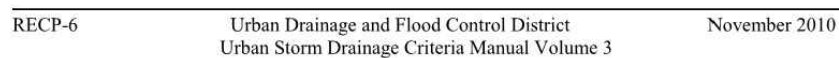


TDM-13 Urban Drainage and Flood Control District June 2012 Urban Storm Drainage Criteria Manual Volume 3

Inlet Protection (IP)



Rolled Erosion Control Products (RECP) **EC-6**

CITY OF BOULDER
PUBLIC WORKS DEPARTMENT

RECOMMENDATION FOR APPROVAL

WATER/SEWER _____

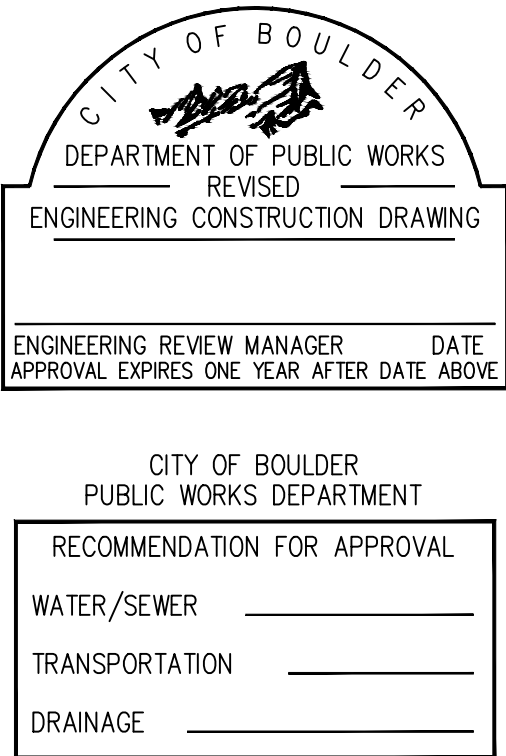
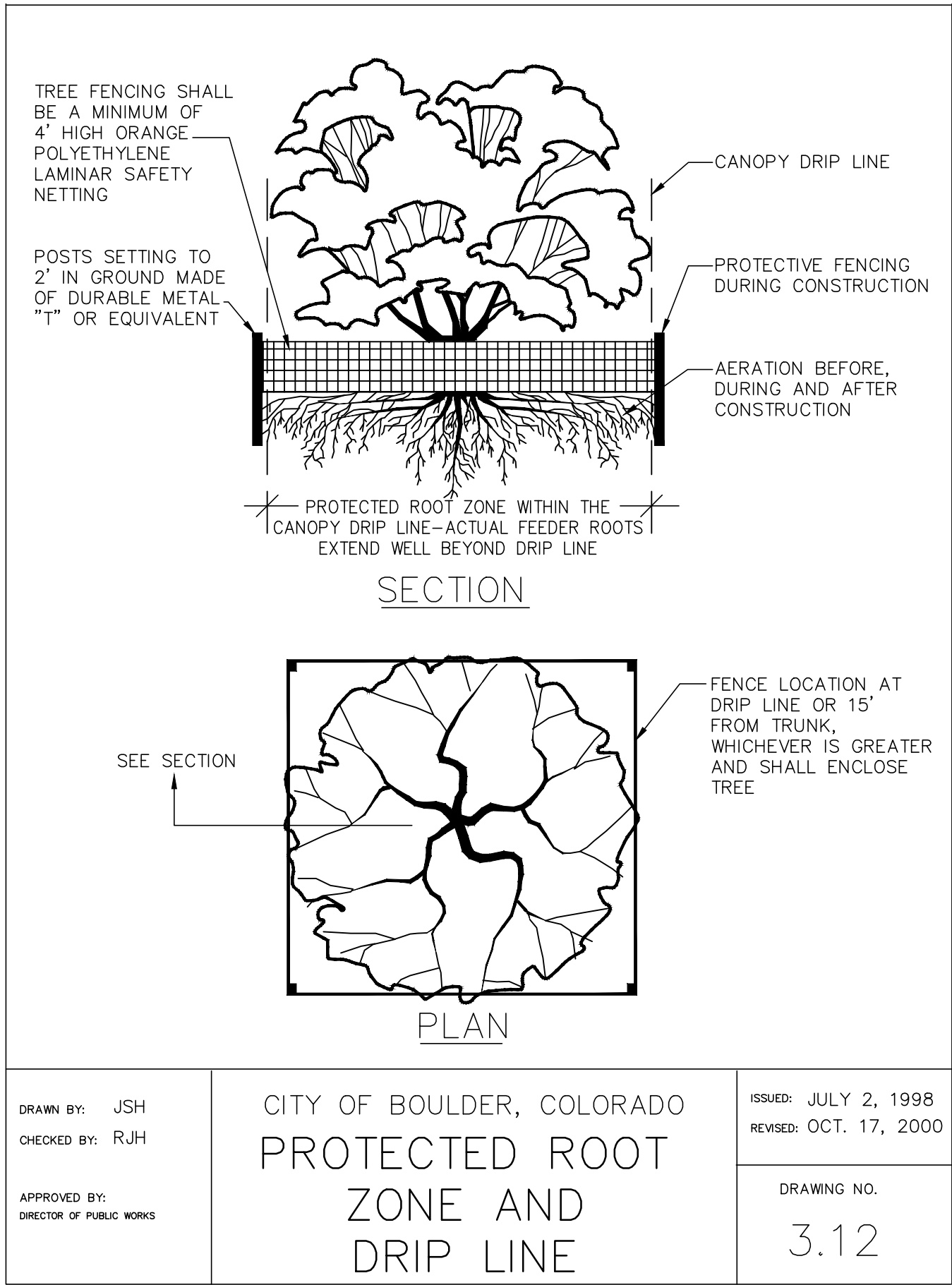
TRANSPORTATION _____
DRAINAGE _____

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TREE PRESERVATION, RELOCATION AND REMOVAL NOTES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, INSTALL BARRICADE FENCING AROUND ALL EXISTING TREES TO REMAIN. LOCATED FENCING AT OR OUTSIDE OF THE DRIP LINE OF THE TREES. BARRICADE FENCING SHALL BE 4' HEIGHT, ORANGE MESH FENCING ATTACHED TO "T" POSTS.
2. FENCING SHALL BE MAINTAINED DAILY. CONTRACTORS SHALL BE RESPONSIBLE FOR ALL OF THEIR WORKERS, SUBCONTRACTORS AND MATERIAL MEN UNDER THIS REQUIREMENT.
3. CONSTRUCTION WITHIN THE ROOT ZONE OF TREES TO REMAIN SHALL BE RESTRICTED TO AGREED-UPON LIMITS WITH REGARD TO EXCAVATION, ACCESS, DIRT STOCKPILING, AND BACKFILL.
4. DAMAGE TO THE MAIN TRUNKS OF TREES IS PROHIBITED. DAMAGE NOT PREVIOUSLY APPROVED SHALL RESULT IN A FINE BASED ON THE PERCENTAGE OF THE CIRCUMFERENCE AFFECTED.
5. LIMB DAMAGE IS PROHIBITED, UNLESS APPROVED PRIOR TO CONSTRUCTION OR AS AUTHORIZED BY THE CITY OF BOULDER. PRUNING OF AFFECTED BRANCHES SHALL BE DONE PRIOR TO START OF CONSTRUCTION. DAMAGED BRANCHES SHALL BE PRUNED WITHIN 10 DAYS OF OCCURRENCE UTILIZING INTERNATIONAL SOCIETY OF ARBORICULTURE STANDARDS.
6. CONCRETE TRUCK WASHOUT AREAS SHALL BE IN DESIGNATED AREAS ONLY. WASHOUT RUNOFF SHALL NOT FLOW INTO OR ACROSS ROOT ZONES OF TREES.
7. TREE PROTECTION MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND INSPECTED BY THE CITY OF BOULDER.
8. AS A GENERAL RULE, WHEN TRANSPLANTING TREES THE ROOT BALL SIZE SHOULD BE 1 FOOT FOR EVERY INCH OF THE TRUNK CALIPER, EVENLY DISTRIBUTED ON ALL SIDES FROM THE CENTER OF THE TRUNK.
9. THE CONTRACTOR SHALL ENSURE THAT THE TRANSPLANTED TREE SURVIVES WITHOUT SIGNIFICANT LOSS OF TREE VALUE FOR 1 YEAR.
10. IN GENERAL, TRANSPLANTING SHALL BE DONE BETWEEN MARCH 1ST AND APRIL 30TH UNLESS DEEMED UNSUITABLE FOR EARLY SPRING TRANSPLANTING WHICH THEN SHOULD BE TRANSPLANTED BETWEEN SEPTEMBER 15TH AND OCTOBER 30TH.
11. ROOT PROTECTION SHALL BE EMPLOYED DURING CONSTRUCTION, AND NOT BE CUT UNLESS UNAVOIDABLE. TRENCHES SHALL BE HAND DUG WITHIN THE DRIP LINE WHERE ROOTS ARE 2 INCHES AND LARGER TO PREVENT DEHYDRATION AND EXPOSED ROOTS SHALL BE COVERED IMMEDIATELY WITH SOL OR BURLAP TO KEEP MOIST.
12. TREES SHALL ONLY BE REMOVED IN COMPLIANCE WITH THIS LANDSCAPE PLAN, APPROVED BY THE CITY AS SET FORTH. ALL TREES REMOVED SHALL BE MARKED WITH AN "X" IN BLUE PERMANENT MARKING AND APPROVED BY THE CITY PRIOR TO REMOVAL.
13. ALL TREES REMOVED SHALL INCLUDE STUMP GRINDING TO A MINIMUM DEPTH OF 12 INCHES.



JVA CONSULTING ENGINEERS
JVA, Inc. 1512 Larimer Street, Suite 710
Denver, CO 80202 303.444.1951
www.jvajva.com
Boulder • Fort Collins • Windsor Park
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REVISION DESCRIPTION

1 12/21/2018
NO. DATE

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DRAWN BY: AMP
CHECKED BY: CRH
JOB #: 2462.2c
DATE: 12/18/2018
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MAPLETON HILL DEVELOPMENT GROUP
THE ACADEMY AT MAPLETON HILL
311 MAPLETON AVE., BOULDER, CO 80303

LANDSCAPING DETAILS

SHEET NO.
CE1.7