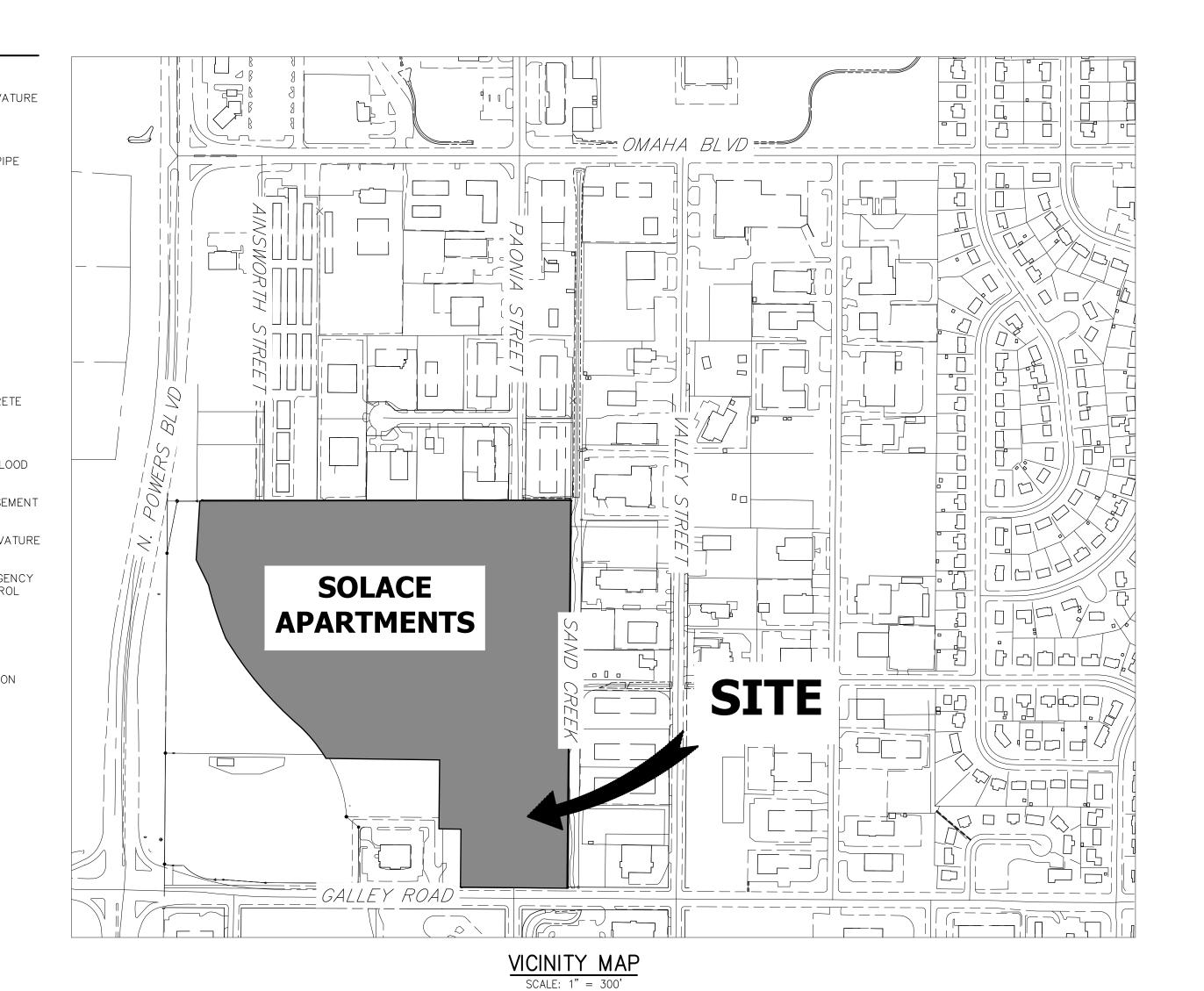
SOLACE APARTMENTS

A PORTION OF SECTION 7, TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE P.M. **EL PASO COUNTY, COLORADO**

GRADING AND EROSION CONTROL PLANS

ABBREVIATIONS

B	BREVIATIONS				
CHE Y PRIVIDENT CO SS OMR	ACRE ALGEBRAIC DIFFERENCE AHEAD ARCHITECT AMERICAN SOCIETY OF CIVIL ENGINEERS ASSEMBLY AVENUE BOX BASE BACK BOUNDARY BOTTOM OF PIPE BLOW OFF VALVE BUTTERFLY VALVE BUTTERFLY VALVE BOULEVARD BOTTOM OF WALL CURB & GUTTER CABLE TELEVISION CATCH BASIN CONCRETE BOX CULVERT COLORADO DEPARTMENT OF TRANSPORTATION CUL—DE—SAC CUBIC FEET PER SECOND CENTER LINE CONDITIONAL LETTER OF MAP REVISION CLEAR CORRUGATED METAL PIPE CLEAN OUT CONCRETE CIRCLE CORRUGATED STEEL PIPE COURT CONCRETE THRUST REDUCER BLOCK CUBIC YARD DRAINAGE BASIN PLANNING STUDY DRAINAGE EASEMENT DIAMETER	FDP FDR FES FH FILO BEES GGPV CCE HDDP HOP IENNR KE LF NOR LF NOR	FINAL DEVELOPMENT PLAN FINAL DRAINAGE REPORT FLARED END SECTION FINISHED GRADE FIRE HYDRANT FLOWLINE FILING FIBER OPTIC CABLE GRADE BREAK GAS EASEMENT GEOGRAPHIC INFORMATION SYSTEM GAS LINE GLOBAL POSITIONING SYSTEM GATE VALVE HANDICAP HIGH DEFLECTION COUPLING HIGH DENSITY POLYETHYLENE HYDRAULIC GRADE LINE HOME OWNERS ASSOCIATION HIGH POINT INLET IRRIGATION EASEMENT INTERSECTION INVERT IRRIGATION KICK (THRUST) BLOCK LANDSCAPE EASEMENT LINEAR FEET LANE LETTER OF MAP REVISION LOW POINT LUMP SUM LEFT MAXIMUM MASTER DEVELOPMENT DRAINAGE PLAN MANHOLE MINIMUM NORTH NON—REINFORCED CONCRETE	PL PRC PT PVC RCP ROW RT STE STA STE STA STY STA STM SY IN TOB TOC TOP TOP TYP	PROPERTY LINE PROPOSED POINT OF REVERSE CURVA POINT OF TANGENCY PLUG VALVE POLYVINYL CHLORIDE RADIUS REINFORCED CONCRETE PIF ROAD RIGHT OF WAY RIGHT SOUTH STEEL SANITARY SEWER SQUARE FEET STREET STATION STORM SEWER SQUARE YARD SQUARE YARD INCH THRUST BLOCK TOP BACK OF CURB TOP BACK OF WALK TELEPHONE TOP OF ASPHALT TOP OF BOX TOP OF CURB OR CONCRE TOP OF FOUNDATION TOP OF PIPE TOP OF WALL TYPICAL
TV	CABLE TELEVISION CATCH BASIN CONCRETE BOX CHILVERT	HDPE HGL HOA	HIGH DENSITY POLYETHYLENE HYDRAULIC GRADE LINE HOME OWNERS ASSOCIATION	STM SY SY-IN	STORM SEWER SQUARE YARD SOLLARE YARD INCH
OT S	COLORADO DEPARTMENT OF TRANSPORTATION CUL-DE-SAC	HP I IE	HIGH POINT INLET IRRIGATION EASEMENT	TB TBC TBW	THRUST BLOCK TOP BACK OF CURB TOP BACK OF WALK
S OMR	CUBIC FEET PER SECOND CENTER LINE CONDITIONAL LETTER OF MAP	INT INV IRR	INTERSECTION INVERT IRRIGATION	TEL TOA TOB	TELEPHONE TOP OF ASPHALT TOP OF BOX
R IP	REVISION CLEAR CORRUGATED METAL PIPE	KB LE LF	KICK (THRUST) BLOCK LANDSCAPE EASEMENT LINEAR FEET	TOC TOF TOP	TOP OF CURB OR CONCRETOR OF FOUNDATION TOP OF PIPE
NC P	CONCRETE CIRCLE CORRUGATED STEEL PIPE	LOMR LP LS	LETTER OF MAP REVISION LOW POINT LUMP SUM	TYP UDFCD	TYPICAL URBAN DRAINAGE AND FLO CONTROL DISTRICT
RB	COURT CONCRETE THRUST REDUCER BLOCK	LT MAX MDDP	LEFT MAXIMUM MASTER DEVELOPMENT	UE U&DE UGE	UTILITY EASEMENT UTILITY & DRAINAGE EASEN UNDERGROUND ELECTRIC
PS	DRAINAGE BASIN PLANNING STUDY DRAINAGE EASEMENT	MH MIN N	MANHOLE MINIMUM NORTH	VCP VPC VPI	VERTICAL POINT OF CURVA VERTICAL POINT OF INTERSECTION
0	DUCTILE IRON PIPE DRIVE	ODP	OFFICIAL DEVELOPMENT PLAN	W	WEST
С	DESIGN REVIEW COMMITTEE DWELLING UNITS EAST EACH	OHE OHU PC PCC	OVERHEAD ELECTRIC OVERHEAD UTILITY POINT OF CURVATURE POINT OF COMPOUND	WL WM WRD	WATER LINE WATER MAIN WATER RESOURCES DEPARTMENT
L EC	ENERGY GRADE LINE ELEVATION ELECTRIC	PCR PDP	CURVATURE POINT OF CURB RETURN PRELIMINARY DEVELOPMENT	WS WSE WTR	WATER SURFACE WATER SURFACE ELEVATION WATER
A MT T	EDGE OF ASPHALT EASEMENT ESTIMATE EXISTING	PE PI PKWY	PLAN PROFESSIONAL ENGINEER POINT OF INTERSECTION PARKWAY	YR	YEAR



DEVELOPER

JACKSON DEARBORN PARTNERS 404 S. WELLS ST. SUITE 400 CHICAGO, IL 60607 P~734.216.2577

CIVIL ENGINEER

JR ENGINEERING 5475 TECH CENTER DR SUITE 235 COLORADO SPRINGS, CO 80919 CONTACT: MIKE BRAMLETT C~719.659.7679

PLANNER

N.E.S. INC. 619 N. CASCADE AVE SUITE 200 COLORADO SPRINGS, CO 80903 CONTACT: TAMARA BAXTER P~719.471.0073

ARCHITECT

LCM ARCHITECTS 819 S. WABASH AVE, FIFTH FLOOR CHICAGO, IL 60605 P~312.995.5305

GEOTECHNICAL ENGINEER

CTL THOMPSON, INC 5170 MARK DABLING BLVD COLORADO SPRINGS, CO 80918 P~719.528.8300



J·R ENGINEERING

CTLITHOMPSON

SHEET INDEX

COVER SHEET GENERAL NOTES

INITIAL GRADING AND EROSION CONTROL PLANS

FINAL GRADING AND EROSION CONTROL PLANS GRADING AND EROSION CONTROL DETAILS

TOTAL 10

Add EPC Signature Block (GEC Checklist jj)

El Paso County (standalone GEC Plan):

County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document.

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.

County Engineer/ECM Administrator

Know what's below.

Call before you dig.

Add PCD File Number SF-20-032 to each Sheet

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING

THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSIO

CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED

BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN

OWNER/DEVELOPER STATEMENT

, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

DANE OLMSTEAD JACKSON DEARBORN PARTNERS

404 S. WELLS ST. CHICAGO, IL 60607

PREPARING THIS PLANS.

ENGINEER'S STATEMENT

MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING AL

ARTMEN-SHE O

SHEET 1 OF 10 JOB NO. **25174.00**

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.

GRADING AND EROSION CONTROL STANDARD NOTES

- 1) CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PLANNING AND COMMUNITY

 DEVELOPMENT AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PLANING AND COMMUNITY DEVELOPMENT INSPECTIONS.

 2. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION,
- . STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION,

 CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER

 THAT MINIMIZES POLLUTION OF ANY ON—SITE OR OFF—SITE WATERS, INCLUDING WETLANDS.
- 3. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- 4. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- 5. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
- 6. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- 7. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
- 8. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
- 9. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
- 10. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 11. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- 12. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 13. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
- 14. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- 15. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- 16. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 17. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- 18. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- 19. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 20. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON—SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.

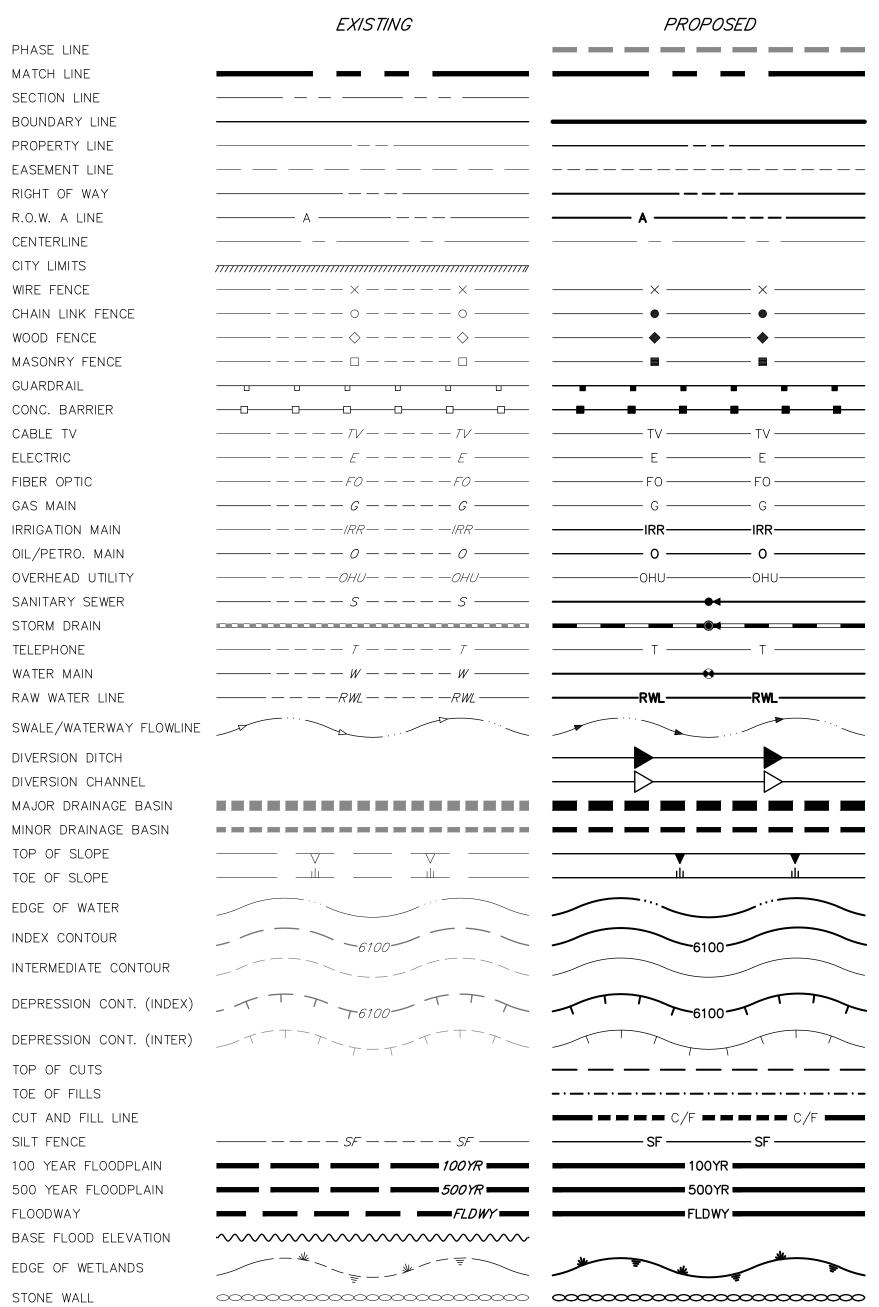
21. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT

- 22. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- 23. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- 24. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 25. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- 26. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- 27. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 28. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- 29. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CONSIDERED A PART OF THESE PLANS.
- 30. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT WATER QUALITY CONTROL DIVISION

WQCD — PERMITS 4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246-1530 ATTN: PERMITS UNIT

LAYER LINETYPE LEGEND



STORMWATER FLOW ARROWS

Fill in with report

the report

AND SHALL BE

Preparer and Date of

<u>UTILITIES LEGEND</u> <u>STORM WATER MANAGEMENT</u>

	EXISTING	PROPOSED		KEY	SYMBOL
STORM SEWER			CHECK DAM	CD	K
MANHOLE STORM INLET	(0)		CONSTRUCTION ROAD STABILIZATION	(CRS)	
AREA INLET — SQUARE AREA INLET — ROUND			CURB SOCK INLET PROTECTION	(CS)	0
FLARED END SECTION	0		CONCRETE WASHOUT AREA	(CWA)	
RIPRAP			DIVERSION DITCH AND DIKE, TEMPORARY	(DD)	<u> </u>
			DIVERSION CHANNEL, TEMPORARY	(DV)	
SANITARY SEWER LINE MARKER	Mkr San ^O		DEWATERING	(DW)	
SERVICE MARKER CLEAN-OUT	<u>\$</u>	•-	EROSION CONTROL BLANKET	(ECB)	
MANHOLE W/ DIRECTIONAL FLOW ARROW	© </td <td>•</td> <td>INLET FILTER</td> <td>(IF)</td> <td></td>	•	INLET FILTER	(IF)	
WATER LINE			INLET PROTECTION	(IP)	
LINE MARKER SERVICE MARKER	Mkr W° ∕₩		MULCHING	(MU)	
FIRE HYDRANT	Q Z m Z	<u>«</u>	OUTLET PROTECTION	(OP)	
FIRE CONNECTION MANHOLE	(W)	•	PAVED FLUME	(PF)	BOYI LIEU
BEND BLOW-OFF VALVE	क्ष	↓	PERMENENT SEEDING	(PS)	·
WELL	o _{well} ₩	●WELL •	REINFORCED CONCRETE DAM	(RCD)	
VALVE	\bowtie	•	ROUGH CUT STREET CONTROL	(RCS)	000000
REDUCER THRUST BLOCK		✓ K	SEDIMENT BASIN	(SB)	
CROSS PLUG W/ THRUST BLOCK	٧Ĺ	-‡- √.	SEDIMENT CONTROL LOG	(SCL)	
TEE REVERSE ANCHOR		 	SILT FENCE	(SF)	
ANODE		*	SURFACE ROUGHENING	(SR)	
AIR & VACUUM VALVE ASSEMBLY TRANSMISSION		• t	STABILIZED STAGING AREA		
BLOW-OFF ASSEMBLY		*	SEDIMENT TRAP	(SSA)	
<i>GAS LINE</i> marker	Mkr G ^O		STRAW BALE BARRIER	(31)	5.0.7
SERVICE MARKER METER	<u> </u>	•		(STB)	
VALVE PLUG		M	TENDODARY CEERING	(TER)	· • • •
TEE		‡ +	TEMPORARY SEEDING	(TS)	Ψ Ψ Ψ
<i>DRY UTILITIES</i> Cable tv marker	Mkr TV ^O		TEMPORARY STREAM CROSSING CULVERT/BRIDGE		
CABLE TELEVISION PEDESTAI	L W Mkr E ⁰		TEMPORARY STREAM CROSSING FORD TYPE	TSC	
ELECTRIC SERVICE MARKER	E		TEMPORARY SLOPE DRAIN	TSD	
ELECTRICAL PEDESTAL ELECTRICAL METER	Ē		VEHICLE TRACKING CONTROL	VTC	
ELECTRICAL MANHOLE	E		VEHICLE TRACKING CONTROL	(WR)	
FIBER-OPTIC MARKER IRRIGATION PEDESTAL	Mkr FO ^O		WITH WASH RACK		61626266
TELEPHONE MARKER	Mkr T ^O		CONSTRUCTION MARKER	(CM)	
TELEPHONE PEDESTAL			LIMITS OF CONSTRUCTION	LOC	
TELEPHONE MANHOLE UTILITY POLE	⊕-				
GUY ANCHOR	@ —				
OLLY DOLE	_				

GUY POLE



THESE DRAWINGS ARE
APPROVED BY THE
APPROPRIATE REVIEWING
AGENCIES, UR ENGINEERING
APPROVES THEIR USE
ONLY FOR THE PURPOSES
DESIGNATED BY WRITTEN
AUTHORIZATION.

CHICAGO, IL 60607

A Westrian Company

A West

V-SCALE N/A

DATE 11/23/20
DESIGNED BY JRM

DRAWN BY JRM

CHECKED BY

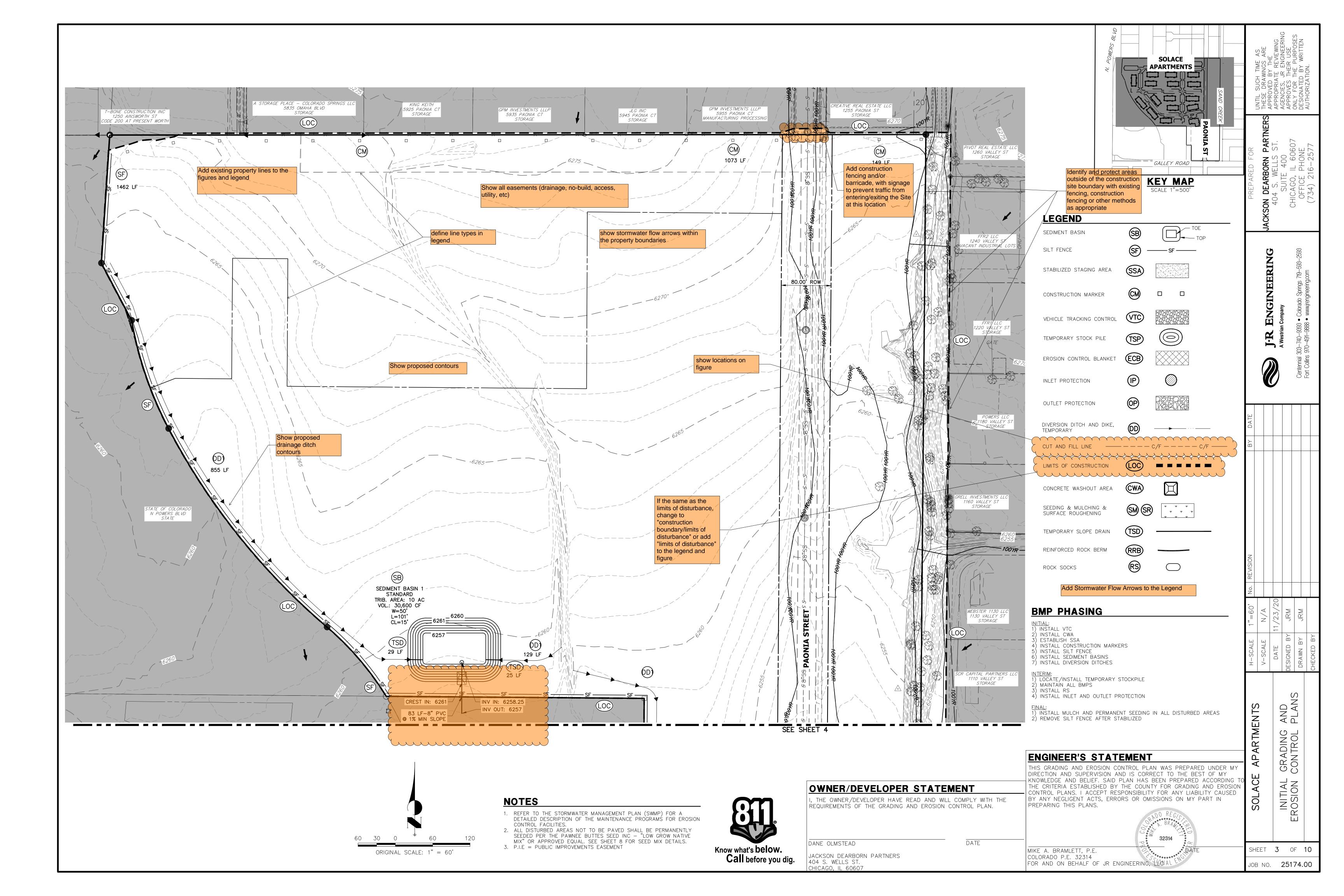
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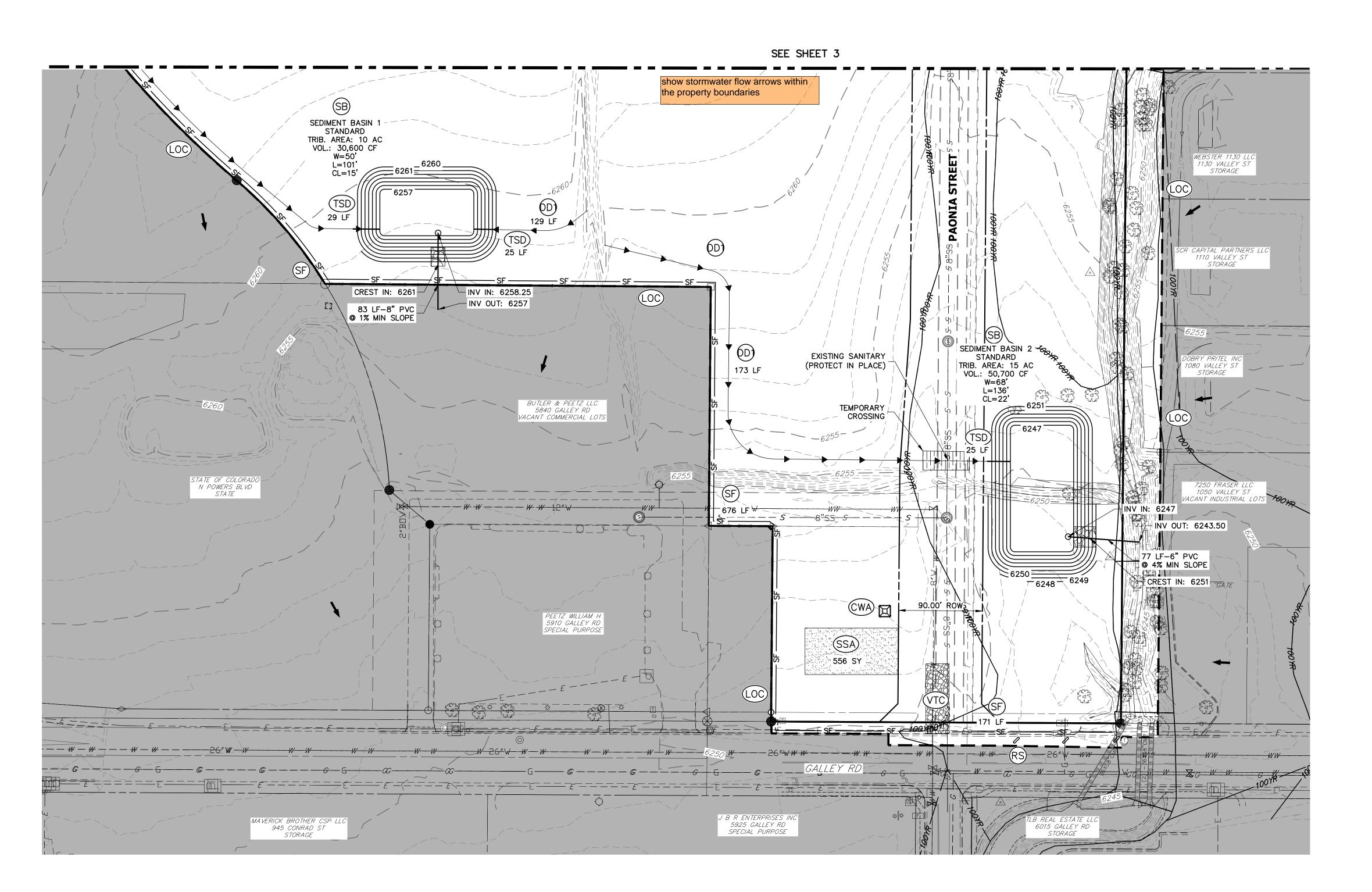
SOLACE APARTMENTS

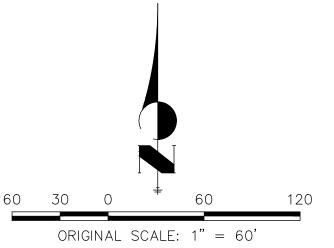
GRADING & EROSION

CONTROL DETAILS & LEGEND

SHEET 2 OF 10 JOB NO. 25174.00







NOTES

- 1. REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) FOR A DETAILED DESCRIPTION OF THE MAINTENANCE PROGRAMS FOR EROSION CONTROL FACILITIES.
- 2. ALL DISTURBED AREAS NOT TO BE PAVED SHALL BE PERMANENTLY SEEDED PER THE PAWNEE BUTTES SEED INC "LOW GROW NATIVE MIX" OR APPROVED EQUAL. SEE SHEET 8 FOR SEED MIX DETAILS. 3. P.I.E = PUBLIC IMPROVEMENTS EASEMENT

Note that this project does not anticipate utilizing batch plants in the SWMP Note the existing on-site vegetation



I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JACKSON DEARBORN PARTNERS 404 S. WELLS ST. CHICAGO, IL 60607

OWNER/DEVELOPER STATEMENT

DANE OLMSTEAD

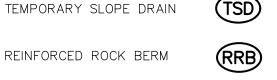
MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING ALCOHAL

APARTMENTS — GALLEY ROAD

KEY MAP











BMP PHASING

ROCK SOCKS

LEGEND

SEDIMENT BASIN

STABILIZED STAGING AREA

CONSTRUCTION MARKER

VEHICLE TRACKING CONTROL

TEMPORARY STOCK PILE

EROSION CONTROL BLANKET

DIVERSION DITCH AND DIKE,

LIMITS OF CONSTRUCTION

CONCRETE WASHOUT AREA

SEEDING & MULCHING &

SURFACE ROUGHENING

INLET PROTECTION

OUTLET PROTECTION

TEMPORARY

SILT FENCE

INITIAL: 1) INSTALL VTC 2) INSTALL CWA

3) ESTABLISH SSA 4) INSTALL CONSTRUCTION MARKERS 5) INSTALL SILT FENCE

S) INSTALL SEDIMENT BASINS 7) INSTALL DIVERSION DITCHES

INTERIM:

1) LOCATE/INSTALL TEMPORARY STOCKPILE 2) MAINTAÍN ALL BMPS

3) INSTALL RS 4) INSTALL INLET AND OUTLET PROTECTION

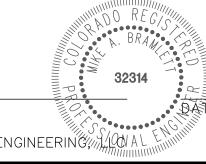
FINAL:

1) INSTALL MULCH AND PERMANENT SEEDING IN ALL DISTURBED AREAS

2) REMOVE SILT FENCE AFTER STABILIZED

ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSIO CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.

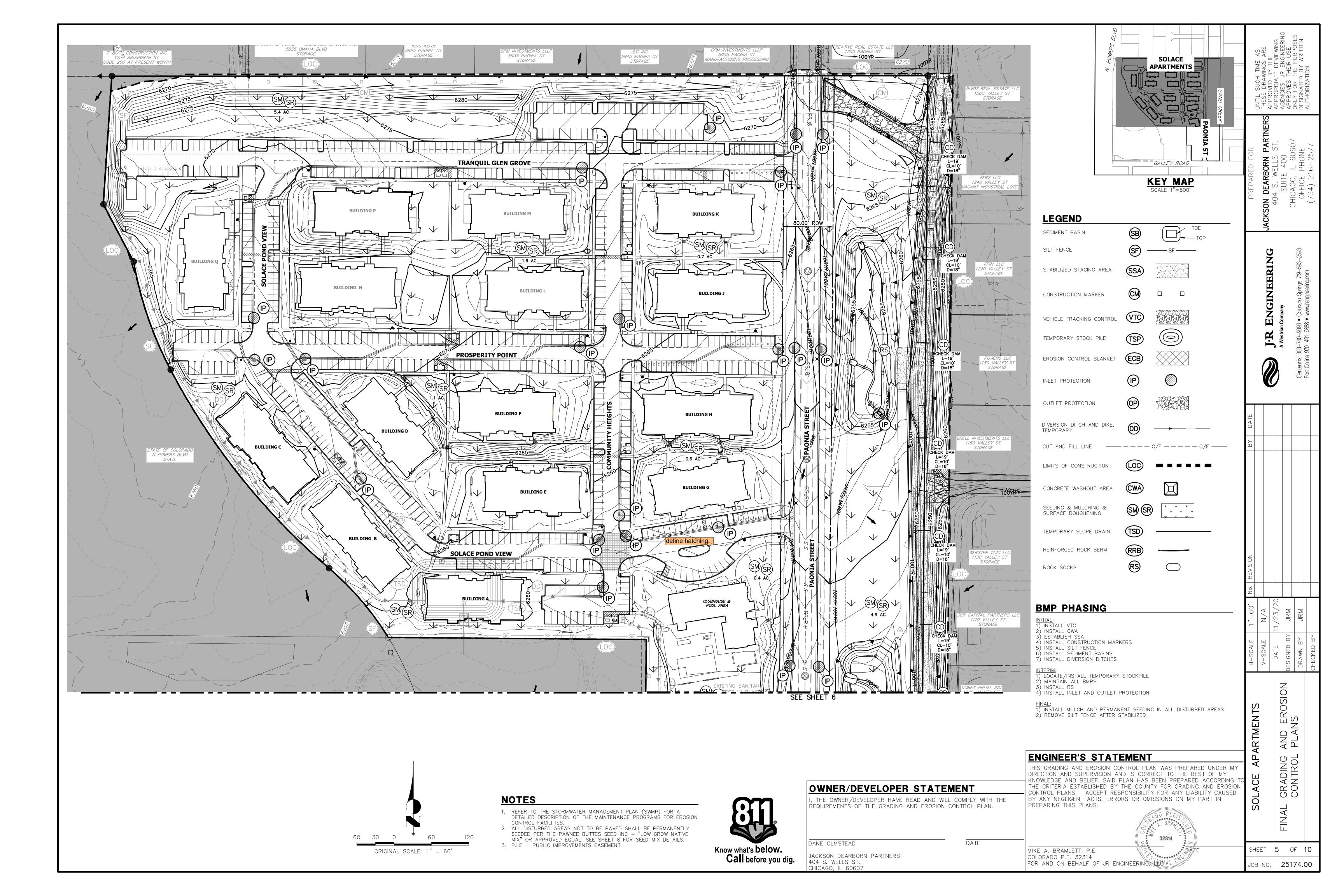


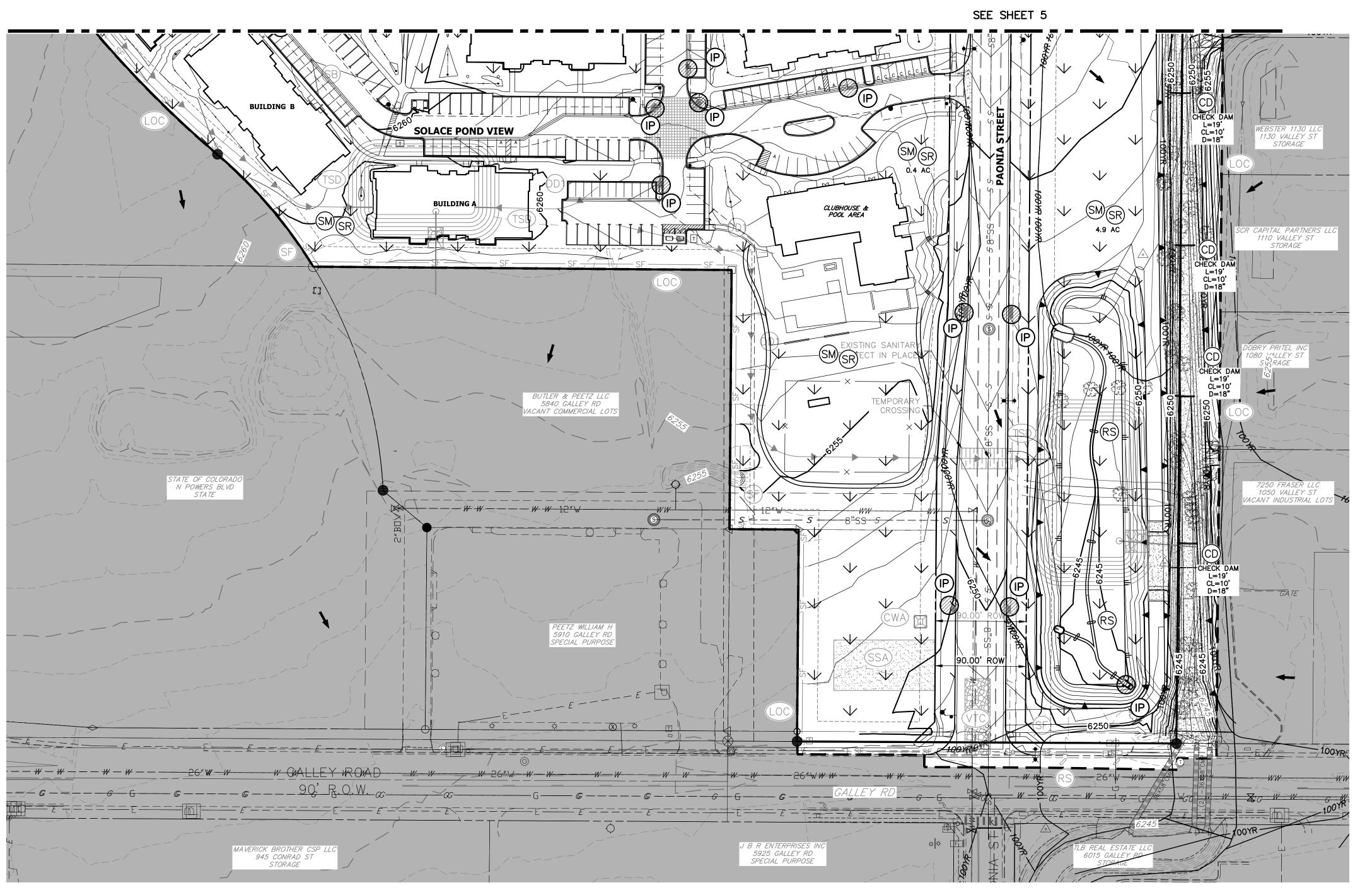
INITIAL EROSION

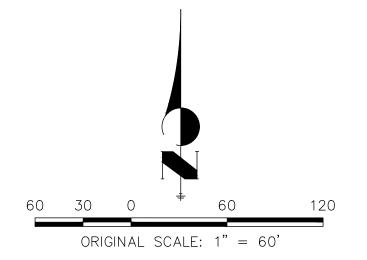
AND PLANS

GRADING CONTROL

SHEET **4** OF **10** JOB NO. **25174.00**







NOTES

- REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) FOR A DETAILED DESCRIPTION OF THE MAINTENANCE PROGRAMS FOR EROSION CONTROL FACILITIES.
- 2. ALL DISTURBED AREAS NOT TO BE PAVED SHALL BE PERMANENTLY SEEDED PER THE PAWNEE BUTTES SEED INC - "LOW GROW NATIVE MIX" OR APPROVED EQUAL. SEE SHEET 8 FOR SEED MIX DETAILS. 3. P.I.E = PUBLIC IMPROVEMENTS EASEMENT



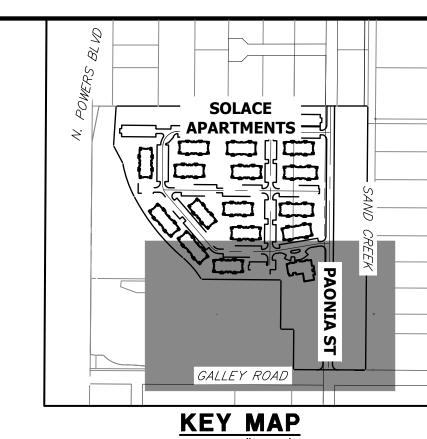
DANE OLMSTEAD

JACKSON DEARBORN PARTNERS 404 S. WELLS ST. CHICAGO, IL 60607

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING ON ALL



LEGEND

CONSTRUCTION MARKER

INLET PROTECTION

SEDIMENT BASIN SILT FENCE

STABILIZED STAGING AREA

VEHICLE TRACKING CONTROL

TEMPORARY STOCK PILE

EROSION CONTROL BLANKET

OUTLET PROTECTION DIVERSION DITCH AND DIKE,

TEMPORARY

LIMITS OF CONSTRUCTION

CONCRETE WASHOUT AREA

SEEDING & MULCHING & SURFACE ROUGHENING

TEMPORARY SLOPE DRAIN

REINFORCED ROCK BERM ROCK SOCKS

BMP PHASING

I<u>NITIAL</u>: 1) INSTALL VTC 2) INSTALL CWA

3) ESTABLISH SSA 4) INSTALL CONSTRUCTION MARKERS
5) INSTALL SILT FENCE
6) INSTALL SEDIMENT BASINS

7) INSTALL DIVERSION DITCHES

INTERIM:

1) LOCATE/INSTALL TEMPORARY STOCKPILE

2) MAINTAIN ALL BMPS

3) INSTALL RS 4) INSTALL INLET AND OUTLET PROTECTION

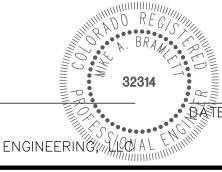
FINAL:

1) INSTALL MULCH AND PERMANENT SEEDING IN ALL DISTURBED AREAS

2) REMOVE SILT FENCE AFTER STABILIZED

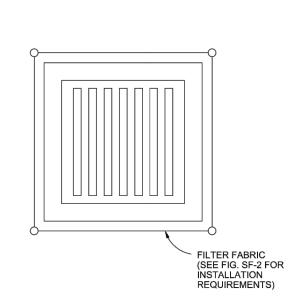
ENGINEER'S STATEMENT

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLANS.



AND EROSION PLANS ARTMENTS GRADING CONTROL

SHEET 6 OF 10 JOB NO. **25174.00**



FILTER FABRIC INLET PROTECTION

FILTER FABRIC INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS 1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET. 2. SEE SILT FENCE FIGURE SF-2 FOR

3. POSTS ARE TO BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM

IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL. 2. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE INLET PROTECTION SHALL BE PROMPTLY REPAIRED OR REPLACED. 3. SEDIMENT SHALL BE REMOVED FROM BEHIND FILTER FABRIC WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION

4. FILTER FABRIC PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED IN THE DRAINAGE AREA AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality

Filter Fabric Inlet Protection Construction Detail and Maintenance Requirements

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED

2. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED- AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM. 3. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL.

GRAVEL CAN ALSO BE USED. 4. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS

5. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL). USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES), OR WITH A TACKIFIER.

6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS 1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED

IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD

Figure MU-1 City of Colorado Springs Mulching Stormwater Quality Construction Detail and Maintenance Requirements

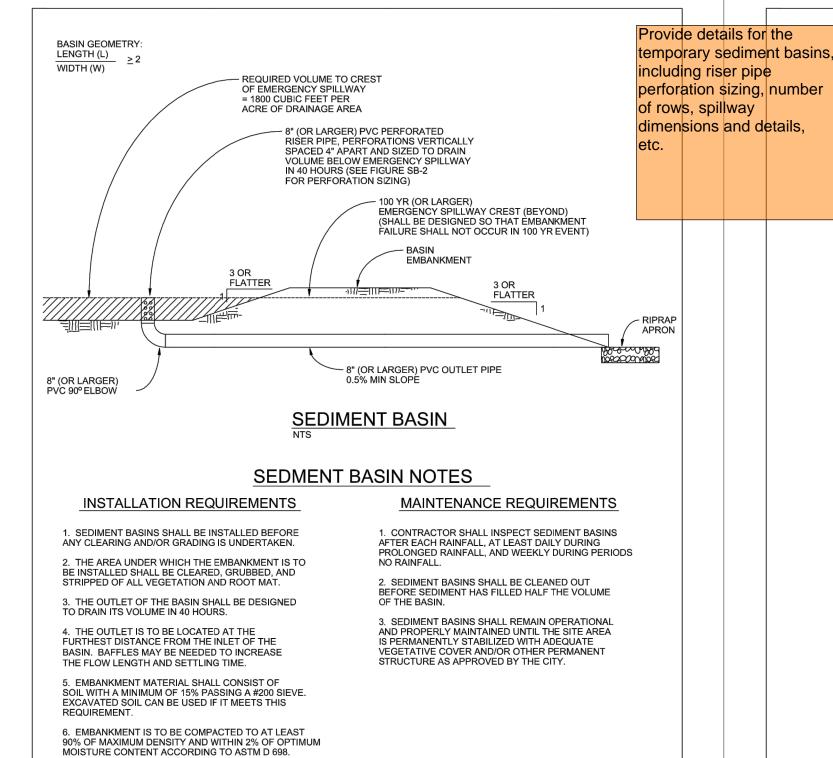


Figure SB-1

Sediment Basin

Construction Detail and Maintenance Requirements

RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

City of Colorado Springs

Stormwater Quality

Required Area per Row (in²) Depth at Outlet (ft)
 0.2
 1.50
 0.77
 0.51
 0.38
 0.30
 0.24
 0.20
 0.17

 0.1
 0.75
 0.39
 0.26
 0.19
 0.15
 0.12
 0.10
 0.09

 0.06
 0.45
 0.23
 0.15
 0.11
 0.09
 0.07
 0.06
 0.05

 0.04
 0.30
 0.15
 0.10
 0.08
 0.06
 0.05
 0.04
 0.03

 0.02
 0.15
 0.08
 0.05
 0.04
 0.03
 0.02
 0.02
 0.02
 0.02

 0.01
 0.08
 0.04
 0.03
 0.02
 0.01
 0.01
 0.01
 0.01
 TABLE SB-1

Hole Diameter	Hole Diameter	Α	rea per Row (in ²)	
(in)	(in)	n = 1	n = 2	n = 3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.39	0.59
9/16	0.563	0.25	0.50	0.75
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.15	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.76	5.52	8.28
2	2.000	3.14	6.28	9.42
1	n = Numbe	r of columns of per	forations	

TABLE SB-2

City of Colorado Springs

Stormwater Quality

Figure SB-2 Outlet Sizing Application Techniques and Maintenance Requirements

Case 3 Case 5 Case 4 Placed around inlet. / Placed on contour At the top See Inlet Protection Drainage area up to 1.0 Ac/100ft. Fact Sheet. a steep Construction Site Case 1 Placed on perimeter Placed on perimeter Drainage area >1.0 AC See Table SF-1 Drainage area <1.0 AC See Table SF-1

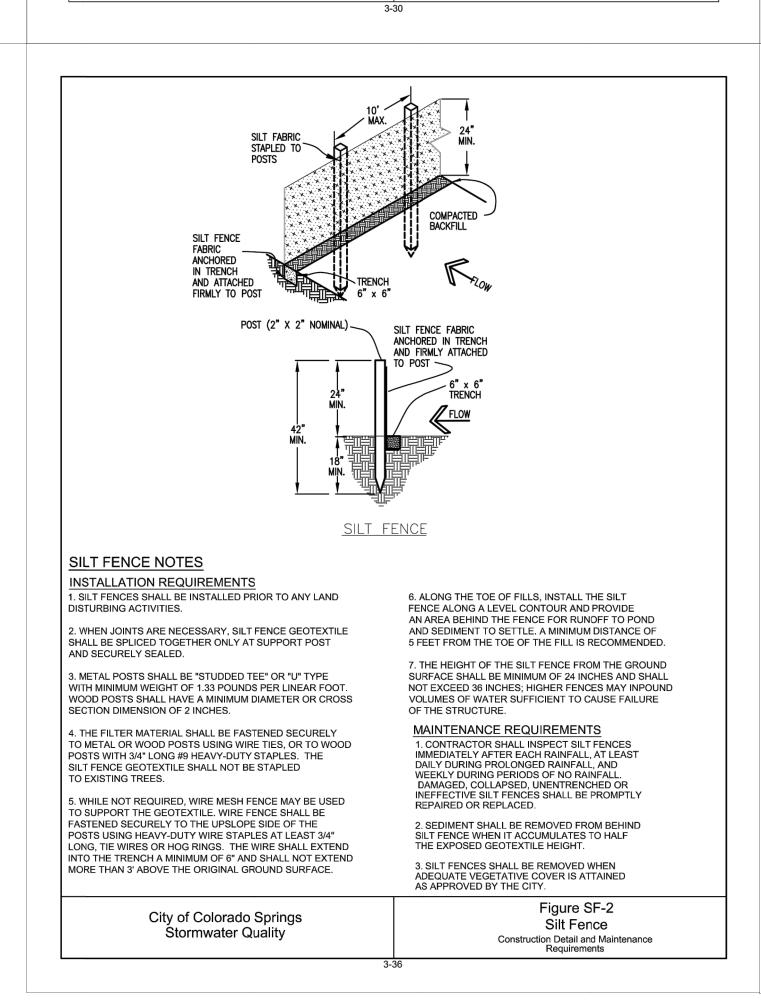
3-25

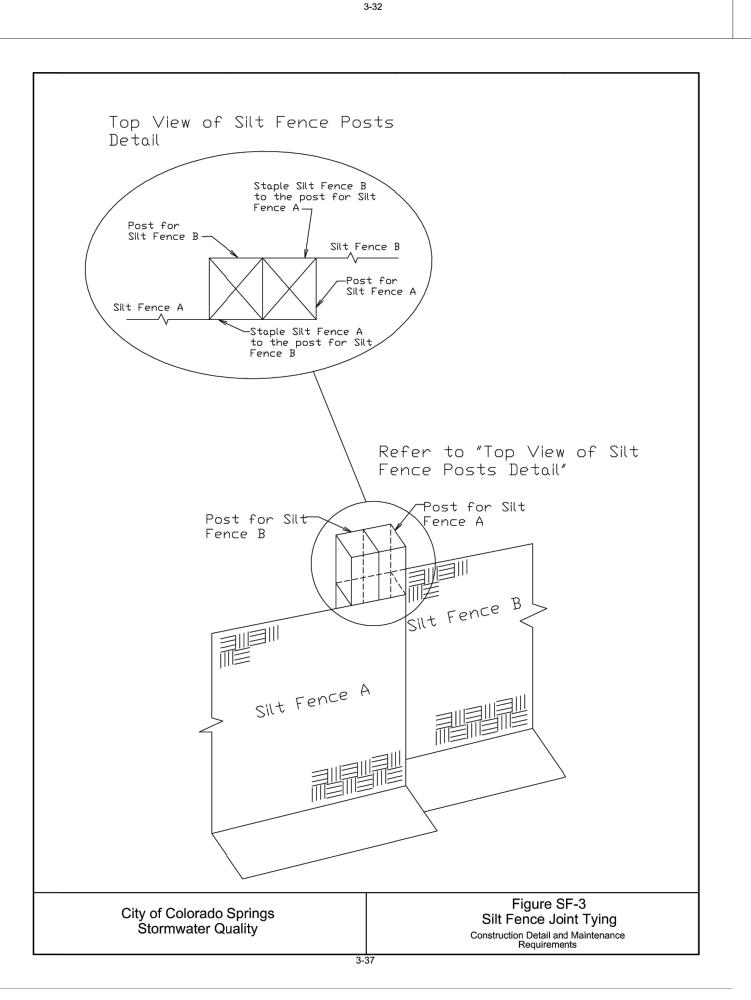
Silt Fence Used as		Case 2		
Perimeter Control	DA < 0.25 AC	0.25 < DA < 1 AC	DA > 1.0 AC	
Continuous Grade	OK ⁽¹⁾	ок ⁽¹⁾	OK ⁽¹⁾	
Area of Concentrated Flow	ОК	NO ⁽²⁾	NO ⁽³⁾	

(2) Check Dam may also be used as alternative to Silt Fence at low point. (3) Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

DEN/M/153722.CS.CB/FigSF-1/9-99

Figure SF-1 City of Colorado Springs Silt Fence Storm Water Quality Application Examples





SURFACE ROUGHENING NOTES

3-33

APPLICATION TECHNIQUES

- 1. STAIR STEP GRADING USED ON SLOPES WITH GRADIENTS BETWEEN 3:1 AND 2:1 AND FOR SOIL CONTAINING A LARGE AMOUNT OF SMALL ROCKS. STAIRS ARE TO BE WIDE ENOUGH TO WORK WITH STANDARD EARTH MOVING EQUIPMENT.
- 2. GROOVE CUTTING USED ON SLOPES WITH GRADIENTS BETWEEN 3:1 AND 2:1. GROOVES ARE TO BE AT LEAST 3 INCHES DEEP AND NO MORE THAN 15 INCHES APART.
- 3. TRACKING USED ON SOILS WITH HIGHER SAND CONTENT DUE TO COMPACTION BY HEAVY MACHINERY.

MAINTENANCE REQUIREMENTS

- 1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SURFACE ROUGHENED AREAS.
- 2. SURFACE ROUGHENING IS TO BE REPEATED AS OFTEN AS
- 3. VEHICLES OR EQUIPMENT IS NOT TO BE DRIVEN OVER AREAS THAT HAVE BEEN ROUGHENED.
- 4. AS SURFACE ROUGHENING IS ONLY A TEMPORARY CONTROL, ADDITIONAL TREATMENTS MAY BE NECESSARY TO MAINTAIN THE SOIL SURFACE IN A ROUGHENED CONDITION.

STORMWATER QUALITY BMP MANUAL

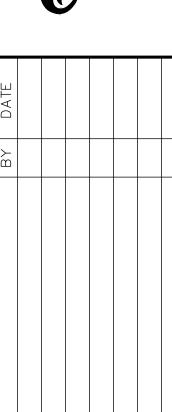


ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING ALLOWAL

PARTNERS ST.



APARTMEN ERO! AND OL DE ADING CONTR(

SHEET **7** OF **10** JOB NO. **25174.00**



THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC

TABLE TS-1

TEMPORARY SEEDING NOTES

INSTALLATION REQUIREMENTS 1. DISTURBED AREAS ARE TO BE SEEDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR 2. IF NECESSARY, SOIL IS TO BE CONDITIONED

SEED MIX IS REQUESTED AND APPROVED.

FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.

APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED. 4. SEEDBED DEPTH IS TO BE 4 INCHES FOR

3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO

SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1. 5. ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED

SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE. 6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL

7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY

8. ALL SEEDED AREAS ARE TO BE MULCHED (SEE

SEEDS BECOMING ENCAPSULATED IN THE MULCH.

FACTSHEET ON MULCHING). 9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID

> Figure TS-1 City of Colorado Springs Temporary Seeding Stormwater Quality

> > 3-47

Construction Detail and Maintenance Requirements

MAINTENANCE REQUIREMENTS

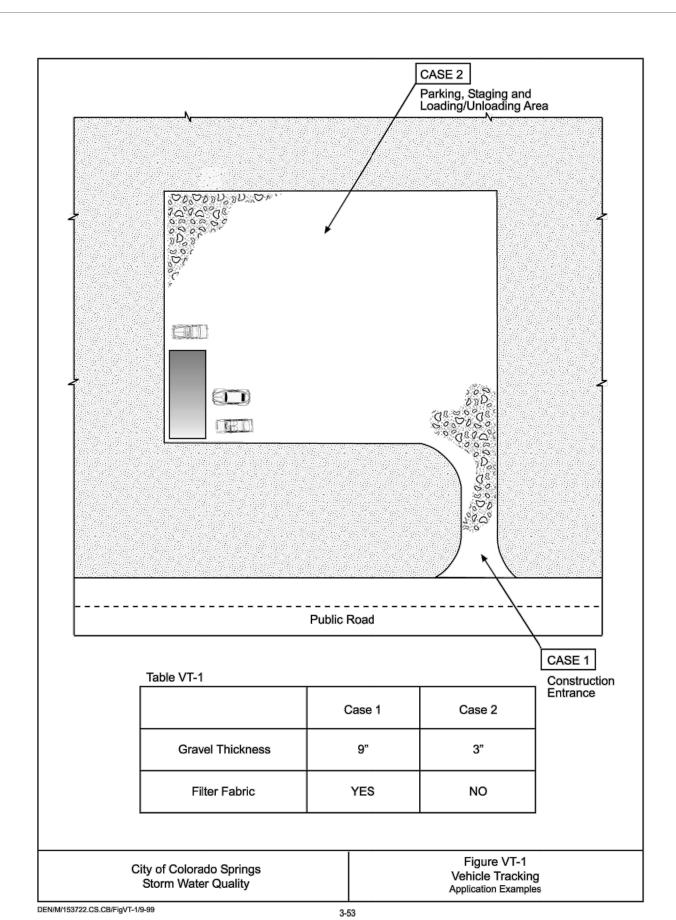
1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDED AREAS TO ENSURE GROWTH.

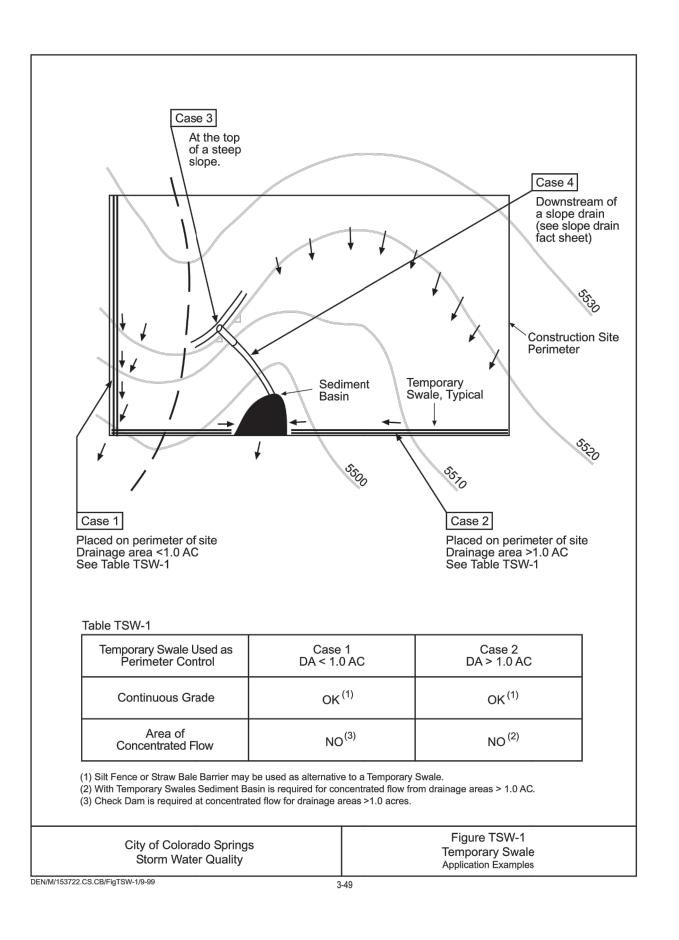
2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDED AS SOON AS POSSIBLE

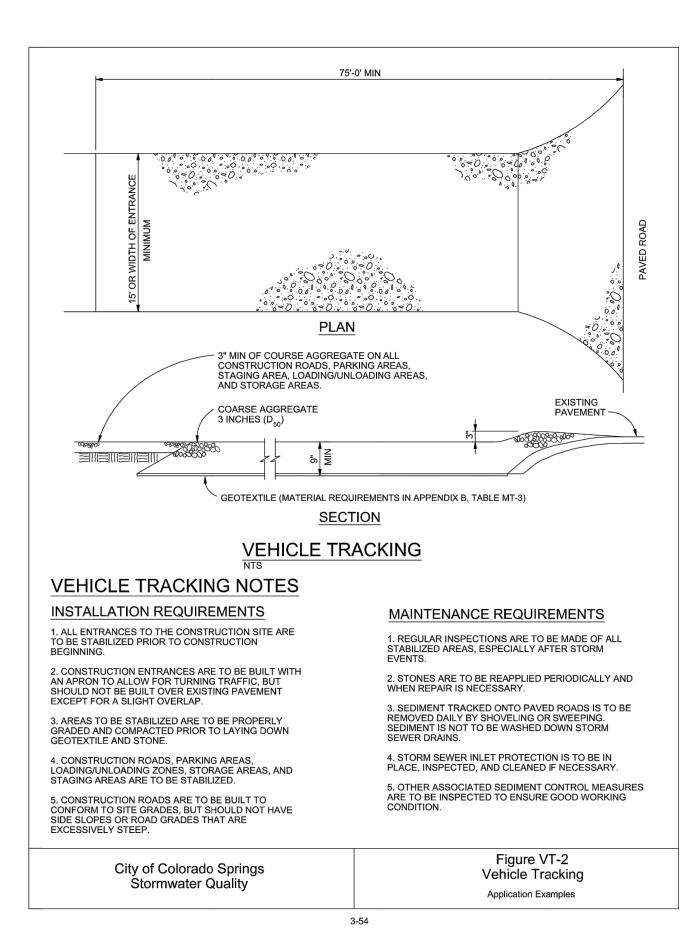
3. SEEDED AREAS ARE NOT TO BE DRIVEN OVER

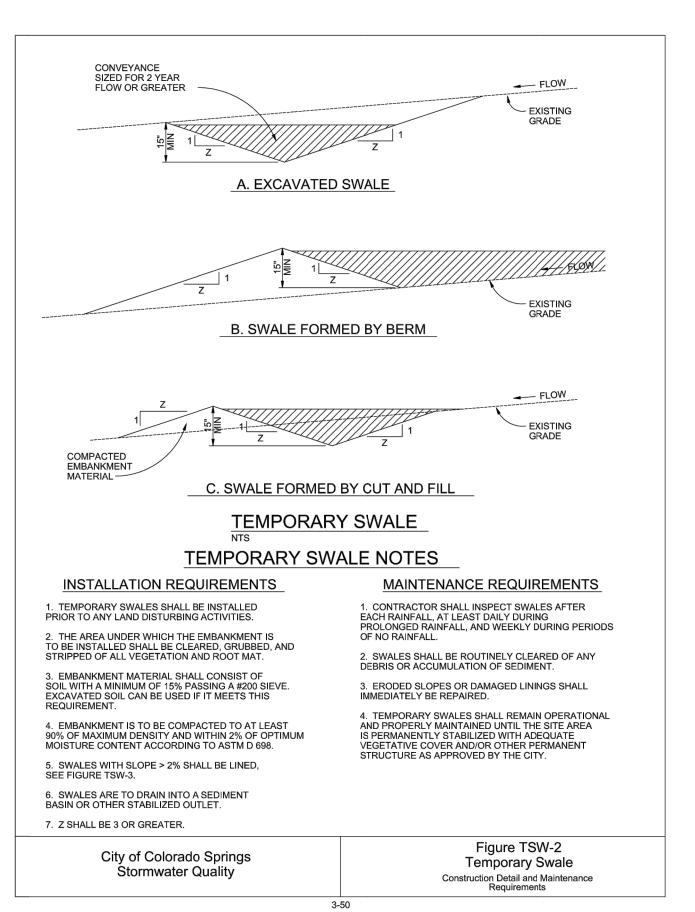
WITH CONSTRUCTION EQUIPMENT OR VEHICLES.

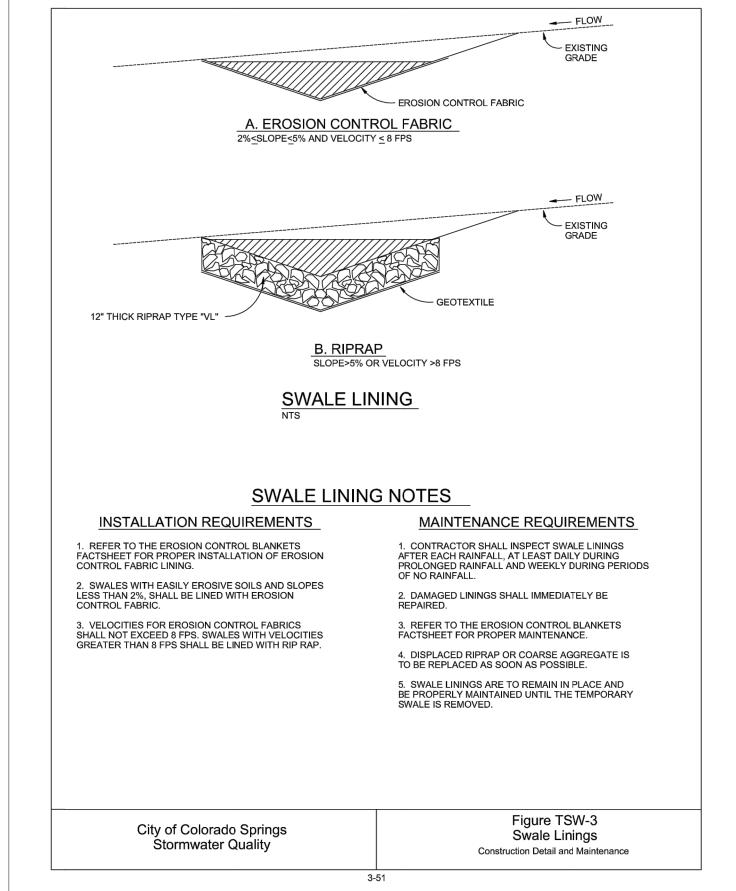
AND RE-MULCHED IF NEEDED.













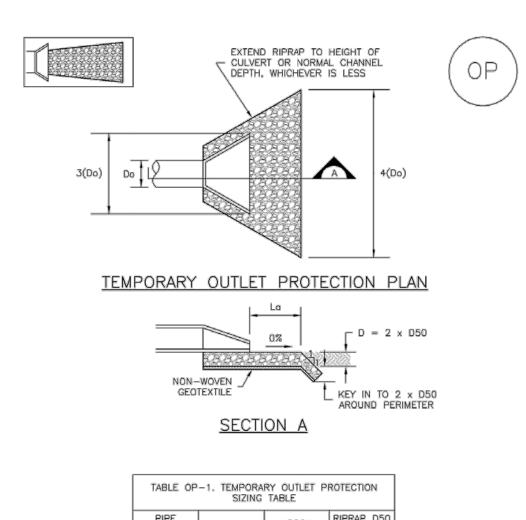


	TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE					
	PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)		
	8	2,5 5	5 10	4 6		
	12	5 10	10 13	4 6		
	18	10 20 30 40	10 16 23 26	6 9 12 16		
	24	30 40 50 60	16 26 26 30	9 9 12 16		
OP-1. TEMPORARY OUTLET PROTECTION						

TOP-2

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

November 2010

Temporary Outlet Protection (TOP)

EC-8

TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

SEE PLAN VIEW FOR
 -LOCATION OF OUTLET PROTECTION.
 -DIMENSIONS OF OUTLET PROTECTION.

2. DETAIL IS INTENDED FOR PIPES WITH SLOPE \leq 10%, ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES. 3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

TEMPORARY OUTLET PROTECTION INSPECTION AND 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.

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

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

DIFFERENCES ARE NOTED. (DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

November 2010

Urban Drainage and Flood Control District Urban

TOP-3

n Storm Drainage Criteria Manual Volume 3	101-3
ENGINEER'S STATE	MENT
STANDARD DETAILS SHOWN WERE APPLICATION ON THIS PROJECT	REVIEWED ONLY AS TO THEIR
MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGII	NEERING, SACONAL ENGINEERING,

ARTMEN $\circ =$ \tilde{A} AND OL DE DING \triangleleft SHEET **8** OF **10**

JOB NO. **25174.00**

PARTN

Know what's below. Call before you dig. COMPACTED BERM AROUND

8 X 8 MIN.

CWA-1. CONCRETE WASHOUT AREA

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 INFEASIBLE, 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

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

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND

Urban Drainage and Flood Control District

Urban Storm Drainage Criteria Manual Volume 3

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

END SECTION

- ROCK SOCK

PLAN I 10" MIN.

CULVERT INLET PROTECTION INSTALLATION NOTES

SEE PLAN VIEW FOR
 -LOCATION OF CULVERT INLET PROTECTION.

CULVERT INLET PROTECTION MAINTENANCE NOTES

EROSION, AND PERFORM NECESSARY MAINTENANCE.

DOCUMENTED THOROUGHLY.

CULVERT INLET PROTECTION

THE PERIMETER

UNDISTURBED OR

CWA INSTALLATION NOTES

-CWA INSTALLATION LOCATION.

OF CONCRETE TRUCKS AND PUMP RIGS.

LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

VEHICLE TRACKING CONTROL (SEE

VTC DETAIL) OR OTHER STABLE SURFACE

CONTROL (SEE VTC -

D (12" MIN.) -

BACKFILL UPSTREAM

SECTION A

KEY IN ROCK SOCK O" ON BEDROCK, PAVEMENT OR RIPRAP

KEY IN ROCK SOCK 2" ON EARTH

SECTION B

CIP-1. CULVERT INLET PROTECTION

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

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

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

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Urban Storm Drainage Criteria Manual Volume 3

EFFECTIVE OPERATING CONDITION, INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE

MM-2

STOCKPILE PROTECTION MAINTENANCE NOTES

STOCKPILE PROTECTION MAINTENANCE NOTES

PERIMETER CONTROLS BY THE END OF THE WORKDAY.

(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

DOCUMENTED THOROUGHLY.

DISCOVERY OF THE FAILURE.

STOCKPILE HAS BEEN USED.

EROSION, AND PERFORM NECESSARY MAINTENANCE.

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

EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE

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

MM-2

SILT FENCE (SEE SF DETAIL FOR

INSTALLATION REQUIREMENTS)

SILT FENCE (SEE SF DETAIL FOR

INSTALLATION REQUIREMENTS)

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FIL SUCH SE DRA PROVED PROPRIA ENCIES, PROVES

ARTMEN. $\bigcirc =$ Ğ.≺ A O L DING \triangleleft

32314

ED/DS-3

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

STAKES (SEE ECB)

ANCHOR TRENCH AT PERIMETER OF

OVERLAPPING JOINTS

ROLLS OF BLANKET

(SEE ECB)

PERIMETER OF BLANKET AND AT OVERLAPPING JOINTS WITH ANY ADJACENT

ROLLS OF BLANKET (SEE ECB)

ENGINEER'S STATEMENT

DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)

Urban Drainage and Flood Control District

COLORADO P.E. 32314

Urban Storm Drainage Criteria Manual Volume 3

MIKE A. BRAMLETT, P.E.

FOR AND ON BEHALF OF JR ENGINEERING ON AL

CWA 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.

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. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE

REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'. 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.

6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED. 7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JÚRISDICTION. (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY 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.

SECTION A SP-1. STOCKPILE PROTECTION STOCKPILE PROTECTION INSTALLATION NOTES

STOCKPILE

STOCKPILE PROTECTION PLAN

 SEE PLAN VIEW FOR: -LOCATION OF STOCKPILES -TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).

4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE

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ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM

DS-1. COMPACTED UNLINED EXCAVATED SWALE

Earth Dikes and Drainage Swales (ED/DS)

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- EXISTING GRADE

Inlet Protection (IP)

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SC-6 Stabilized Staging Area (SSA)

CONSTRUCTION

SITE ACCESS

CONSTRUCTION

ENTRANCE (SEE DETAILS VTC-1 TO VTC-3)

CWA-4

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SM-6

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SSA

3" MIN. THICKNESS

GRANULAR MATERIAL

SM-6

Stabilized Staging Area (SSA)

SP-3

STABILIZED STAGING AREA MAINTENANCE NOTES

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE

GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION. NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF

VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED. 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.

SILT FENCE OR CONSTRUCTION FENCING AS NEEDED EXISTING ROADWAY

— SF/CF —— SF/CF —

AREA

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____ SF/CF ____ SF/CF ___

ONSITE CONSTRUCTION

VEHICLE

PARKING (IF NEEDED)

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SSA-1. STABILIZED STAGING AREA STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR -LOCATION OF STAGING AREA(S). -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE. 4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK. 6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA 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

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

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SSA-3

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Know what's **below**. Call before you dig.

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INTERMEDIATE ANCHOR TRENCH AT

ONE-HALF ROLL LENGTH

SHEET **9** OF **10** IOB NO. **25174.00**

DISCOVERY OF THE FAILURE. 4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/2 THE HEIGHT OF THE ROCK SOCK. 5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION. (DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

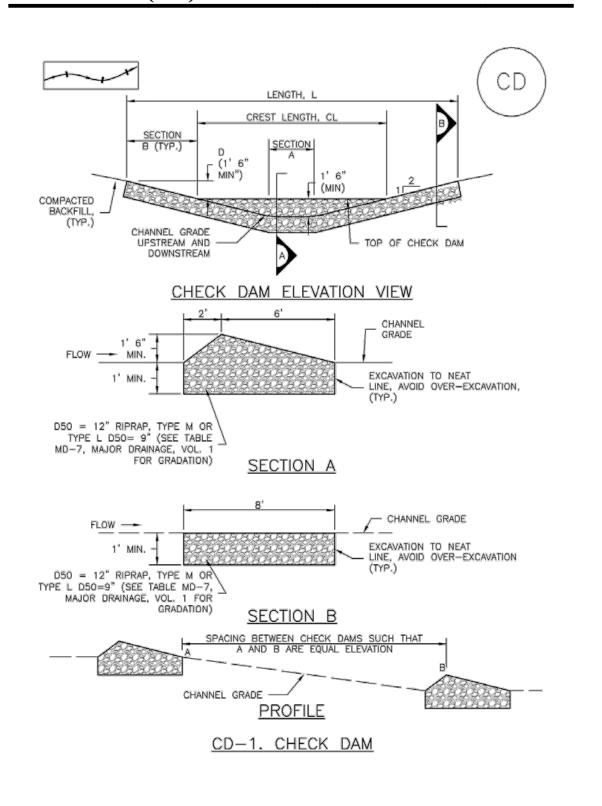
August 2013

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.

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SSA-4

CD-3



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CHECK DAM INSTALLATION NOTES

SEE PLAN VIEW FOR:
 -LOCATION OF CHECK DAMS.
 -CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
 -LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

Check Dams (CD)

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12")

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 11. 5. 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

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.

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 CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

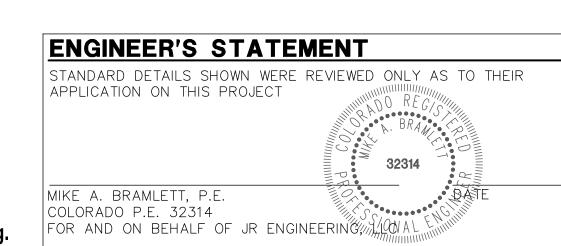
6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD) <u>NOTE:</u> 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

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PARTNERS ST.