

## GRADING AND EROSION CONTROL PLANS

## JOB NO. 25174.00

Centralia 303-740-9393 • Colorado Springs 719-593-2393  
Fort Collins 970-491-9888 • [www.jrengineering.com](http://www.jrengineering.com)

- CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PLANNING AND COMMUNITY DEVELOPMENT AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS.
2. 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 (SWMP) 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. PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF EROSION 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 TO THE FACILITY 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 AS TO EXPOSE MINIMUM 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 LOOSENEED 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.
21. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT 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.
22. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE 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 BE PROVIDED ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE 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 (E.g., CONSTRUCTION, MINOR, 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 \_\_\_\_\_ AND SHALL BE CONSIDERED A PART OF THESE PLANS.

	EXISTING	PROPOSED
<b>STORM SEWER</b>		
MANHOLE		
STORM INLET		
AREA INLET - SQUARE		
AREA INLET - ROUND		
FLARED END SECTION		
RIPRAP		
<b>SANITARY SEWER</b>		
LINE MARKER	<i>Mkr S</i>	
SERVICE MARKER		
CLEAN-OUT		
MANHOLE W/ DIRECTIONAL FLOW ARROW		
<b>WATER LINE</b>		
LINE MARKER	<i>Mkr W</i>	
SERVICE MARKER		
FIRE HYDRANT		
FIRE CONNECTION		
MANHOLE		
BEND		
BLOW-OFF VALVE		
WELL		
METER		
VALVE		
REDUCER		
THRUST BLOCK		
CROSS		
PLUG W/ THRUST BLOCK		
TEE		
REVERSE ANCHOR		
ANODE		
AIR & VACUUM VALVE ASSEMBLY		
TRANSMISSION BLOW-OFF ASSEMBLY		
<b>GAS LINE</b>		
MARKER	<i>Mkr G</i>	
SERVICE MARKER		
METER		
VALVE		
PLUG		
TEE		
<b>DRY UTILITIES</b>		
CABLE TV MARKER	<i>Mkr TV</i>	
CABLE TELEVISION PEDESTAL		
ELECTRIC MARKER	<i>Mkr E</i>	
ELECTRIC SERVICE MARKER		
ELECTRICAL PEDESTAL		
ELECTRICAL METER		
ELECTRICAL MANHOLE		
FIBER-OPTIC MARKER	<i>Mkr FO</i>	
IRRIGATION PEDESTAL		
TELEPHONE MARKER	<i>Mkr T</i>	
TELEPHONE PEDESTAL		
TELEPHONE MANHOLE		
UTILITY POLE		
GUY ANCHOR		
GUY POLE		

	KEY	SYMBOL
CHECK DAM	(CD)	
CONSTRUCTION ROAD STABILIZATION	(CRS)	
CURB SOCK INLET PROTECTION	(CS)	
CONCRETE WASHOUT AREA	(CWA)	
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)	
DIVERSION CHANNEL, TEMPORARY	(DV)	
DEWATERING	(DW)	
EROSION CONTROL BLANKET	(ECB)	
INLET FILTER	(IF)	
INLET PROTECTION	(IP)	
MULCHING	(MU)	
OUTLET PROTECTION	(OP)	
PAVED FLUME	(PF)	
PERMANENT SEEDING	(PS)	
REINFORCED CONCRETE DAM	(RCD)	
ROUGH CUT STREET CONTROL	(RCS)	
SEDIMENT BASIN	(SB)	
SEDIMENT CONTROL LOG	(SCL)	
SILT FENCE	(SF)	
SURFACE ROUGHENING	(SR)	
STABILIZED STAGING AREA	(SSA)	
SEDIMENT TRAP	(ST)	
STRAW BALE BARRIER	(STB)	
TERRACING	(TER)	
TEMPORARY SEEDING	(TS)	
TEMPORARY STREAM CROSSING CULVERT/BRIDGE	(TSC C)	
TEMPORARY STREAM CROSSING FORD TYPE	(TSC F)	
TEMPORARY SLOPE DRAIN	(TSD)	
VEHICLE TRACKING CONTROL	(VTC)	
VEHICLE TRACKING CONTROL WITH WASH RACK	(WR)	
CONSTRUCTION MARKER	(CM)	
LIMITS OF CONSTRUCTION	(LOC)	

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

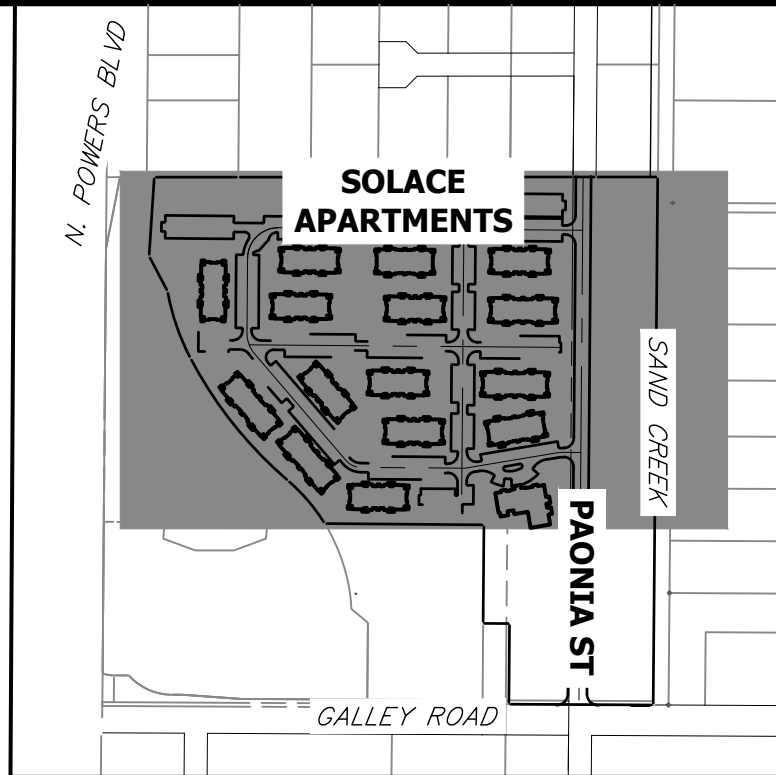
PREPARED FOR  
JACKSON DEARBORN PARTNERS  
404 S. WELLS ST.  
SUITE 400  
CHICAGO, IL 60607  
OFFICE PHONE  
(734) 216-2577

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	V-SCALE	N/A				
	DATE	11/23/20				
	DESIGNED BY	JRM				
	DRAWN BY	JRM				
	CHECKED BY					

## GRADING & EROSION CONTROL DETAILS & LEGEND

JOB NO. 25174.00



LEGEND

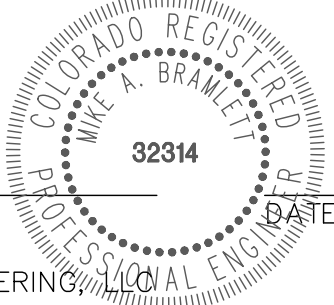
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CONCRETE WASHOUT AREA	CWA		
SEEDING & MULCHING & SURFACE ROUGHENING	SM SR		
TEMPORARY SLOPE DRAIN	TSD		
REINFORCED ROCK BERM	RRB		
ROCK SOCKS	RS		

BMP PHASING

- INITIAL:
- 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 TO 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.



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

OWNER/DEVELOPER STATEMENT

I, 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

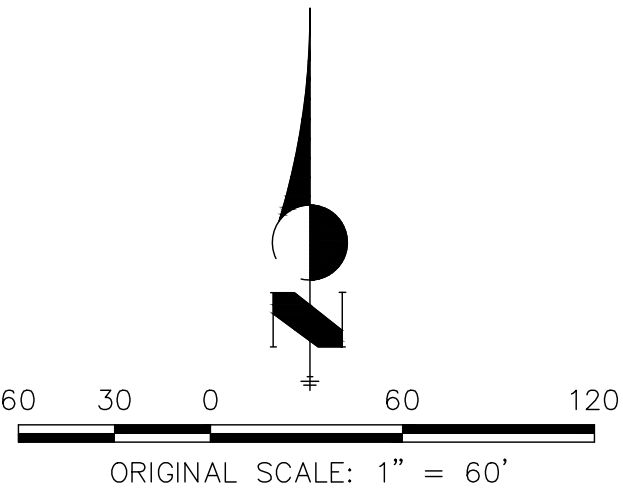
DATE

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 PAMNEE BUTTES SEED INC - "LOW GROW NATIVE MIX" OR APPROVED EQUAL. SEE SHEET 8 FOR SEED MIX DETAILS.
3. P.I.E = PUBLIC IMPROVEMENTS EASEMENT



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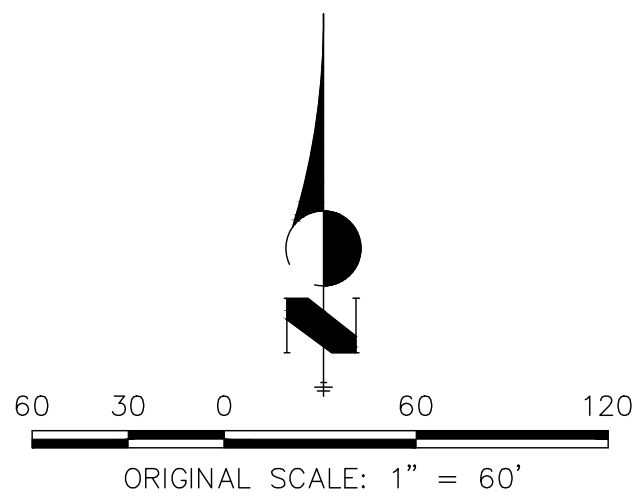
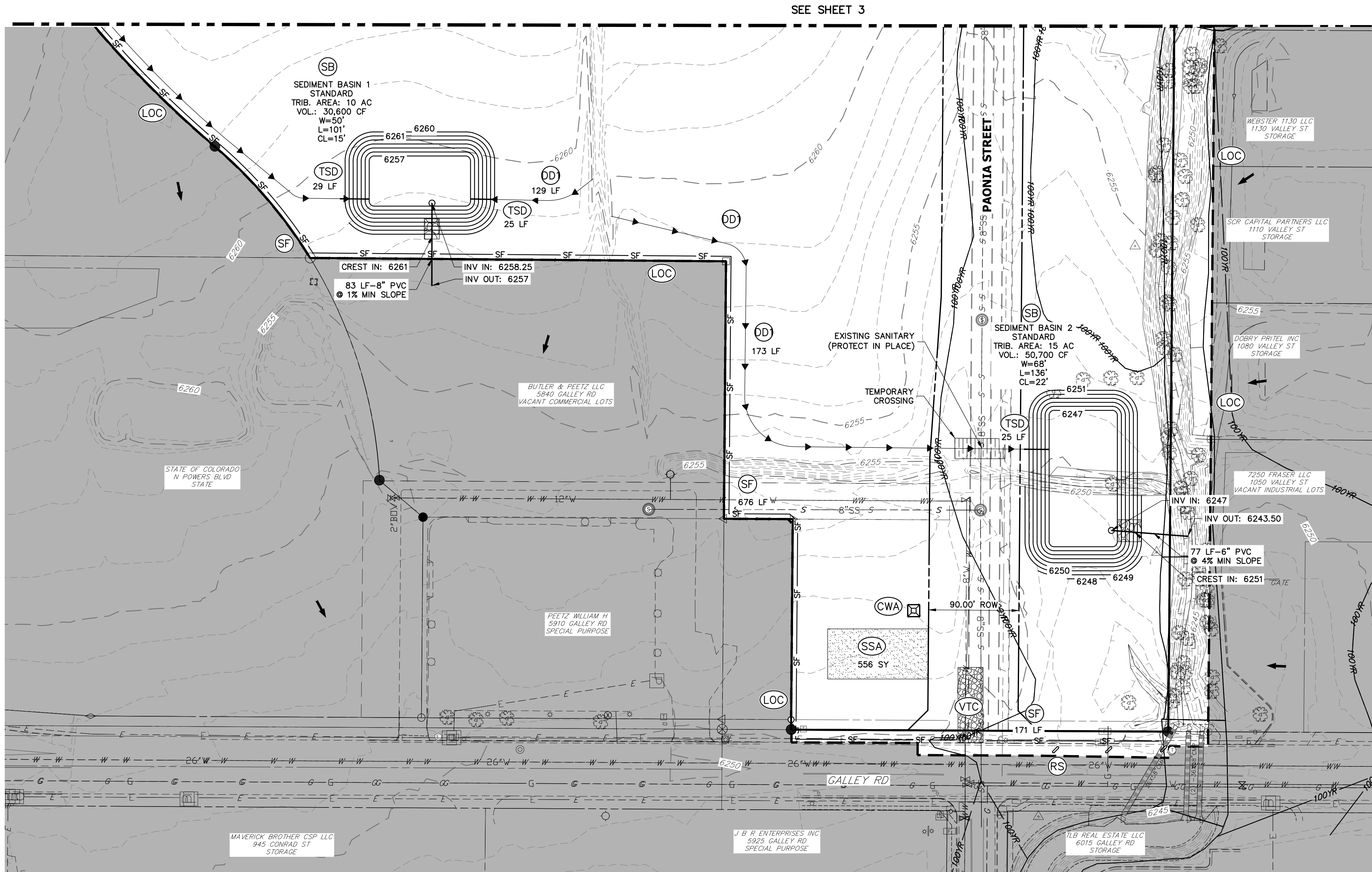
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								11/23/20	JRM	JRM	

SOLACE APARTMENTS

INITIAL GRADING AND EROSION CONTROL PLANS

SHEET 3 OF 10

JOB NO. 25174.00



#### NOTES

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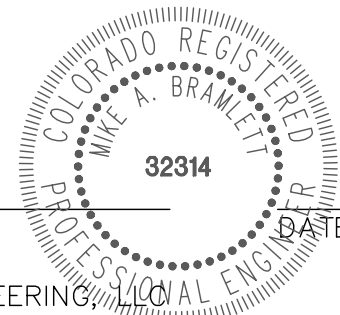
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JACKSON DEARBORN PARTNERS  
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#### LEGEND

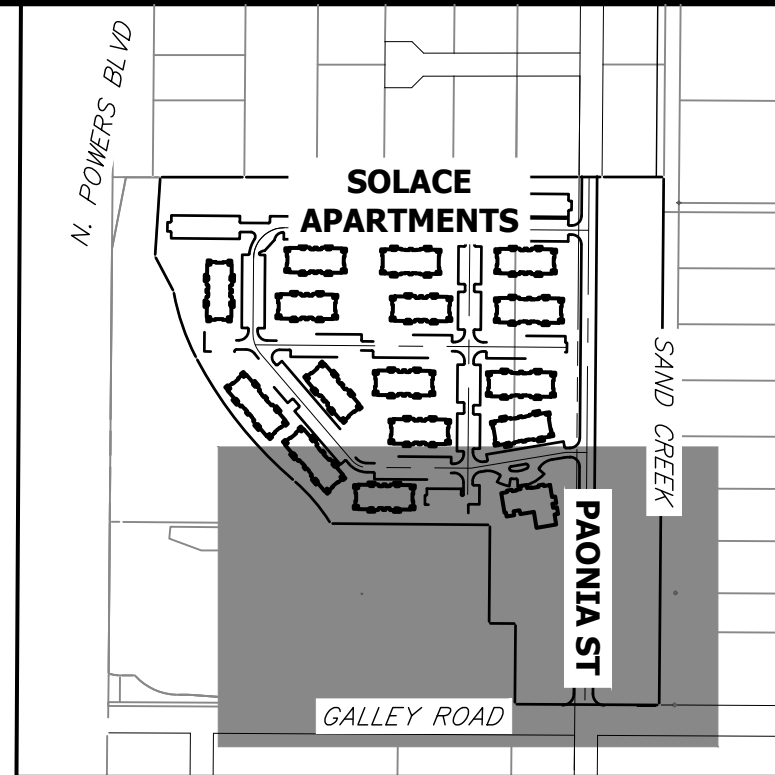
SEDIMENT BASIN	SB		TOE
SILT FENCE	SF		TOP
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- FINAL:
- 1) INSTALL MULCH AND PERMANENT SEEDING IN ALL DISTURBED AREAS
  - 2) REMOVE SILT FENCE AFTER STABILIZED



KEY MAP  
SCALE 1"=500'

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.

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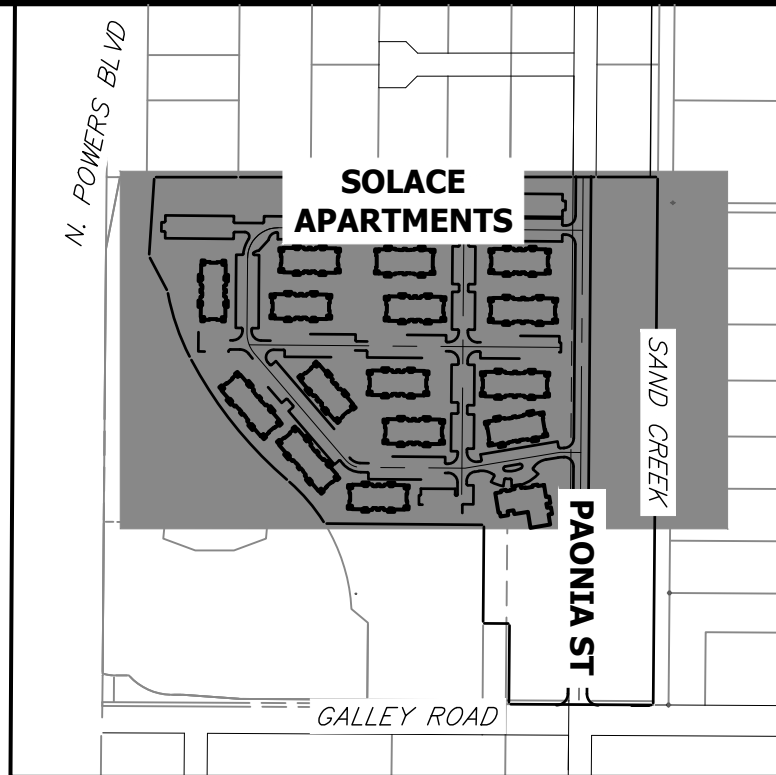
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SOLACE APARTMENTS

INITIAL GRADING AND  
EROSION CONTROL PLANS

SHEET 4 OF 10

JOB NO. 25174.00



LEGEND

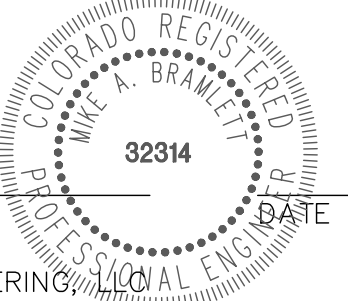
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404 S. WELLS ST.  
CHICAGO, IL 60607

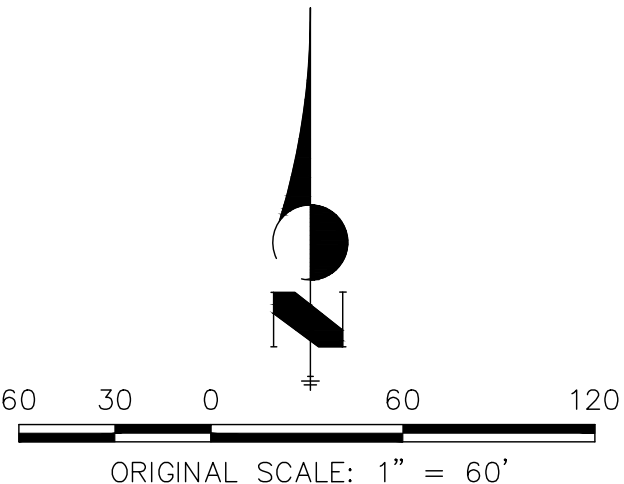
DATE

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



Know what's below.  
Call before you dig.



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USE, DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
**JACKSON DEARBORN PARTNERS**  
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**J.R. ENGINEERING**  
A Western Company

Central 303-740-9888 • Colorado Springs 719-583-2593  
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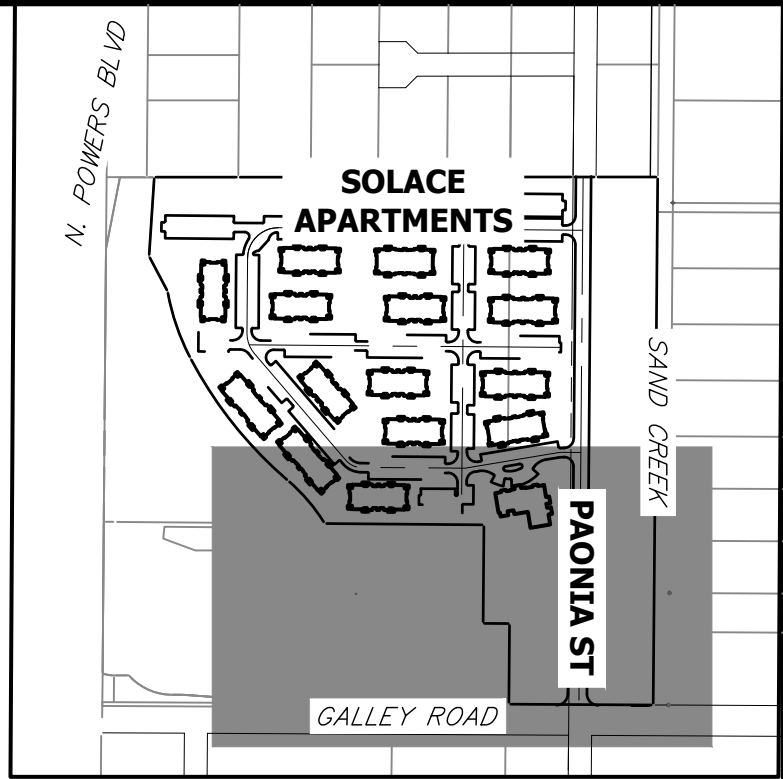
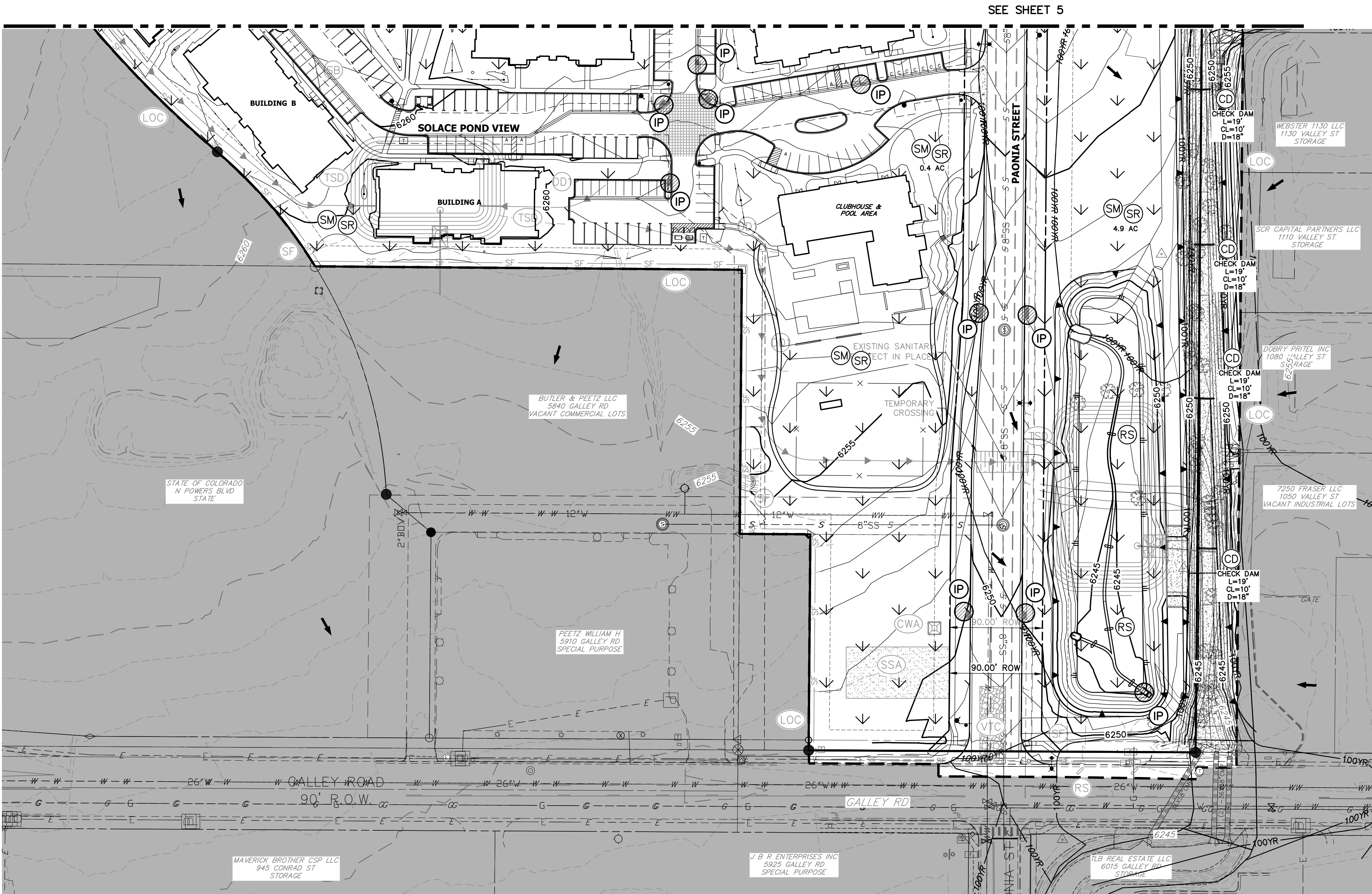
BY	DATE	NO.	REVISION

H-SCALE	1"=60'	N/A	11/23/20
V-SCALE	N/A		
DATE		JRM	
DESIGNED BY		JRM	
DRAWN BY			
CHECKED BY			

**SOLACE APARTMENTS**

**FINAL GRADING AND EROSION CONTROL PLANS**

SHEET	5	OF	10
JOB NO.	25174.00		



**KEY MAP**  
SCALE 1"=500'

**LEGEND**

SEDIMENT BASIN	(SB)		TOE
			TOP
SILT FENCE	(SF)	— SF —	
STABILIZED STAGING AREA	(SSA)		
CONSTRUCTION MARKER	(CM)		
VEHICLE TRACKING CONTROL	(VTC)		
TEMPORARY STOCK PILE	(TSP)		
EROSION CONTROL BLANKET	(ECB)		
INLET PROTECTION	(IP)		
OUTLET PROTECTION	(OP)		
DIVERSION DITCH AND DIKE, TEMPORARY	(DD)	— DD —	
CUT AND FILL LINE		— C/F —	C/F
LIMITS OF CONSTRUCTION	(LOC)	— LOC —	
CONCRETE WASHOUT AREA	(CWA)		
SEEDING & MULCHING & SURFACE ROUGHENING	(SM SR)		
TEMPORARY SLOPE DRAIN	(TSD)	— TSD —	
REINFORCED ROCK BERM	(RRB)	— RRB —	
ROCK SOCKS	(RS)		

**BMP PHASING**

INITIAL:  
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 TO 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.



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

**OWNER/DEVELOPER STATEMENT**

I, 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  
DATE

**NOTES**

- REFER TO THE STORMWATER MANAGEMENT PLAN (SWMP) FOR A DETAILED DESCRIPTION OF THE MAINTENANCE PROGRAMS FOR EROSION CONTROL FACILITIES.
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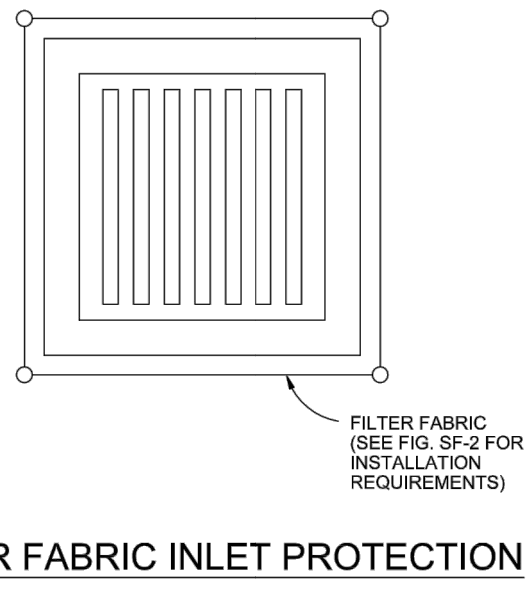
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BY	DATE	No.	REVISION

H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=60'	N/A	11/23/20	JRM	JRM	

SOLACE APARTMENTS	FINAL GRADING AND EROSION CONTROL PLANS
SHEET 6 OF 10	JOB NO. 25174.00



### 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 INSTALLATION REQUIREMENTS.
3. POSTS ARE TO BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.

#### MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. DAMAGED, COLLAPSED, UNTRENCHED 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.
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

Figure IP-1  
Filter Fabric Inlet Protection  
Construction Detail and Maintenance  
Requirements

3-25

### MULCHING NOTES

#### INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED WITHIN 24 HOURS AFTER SEEDING.
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 PER ACRE.
5. MULCH IS TO BE ANCHORED EITHER BY CRAMPING (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.

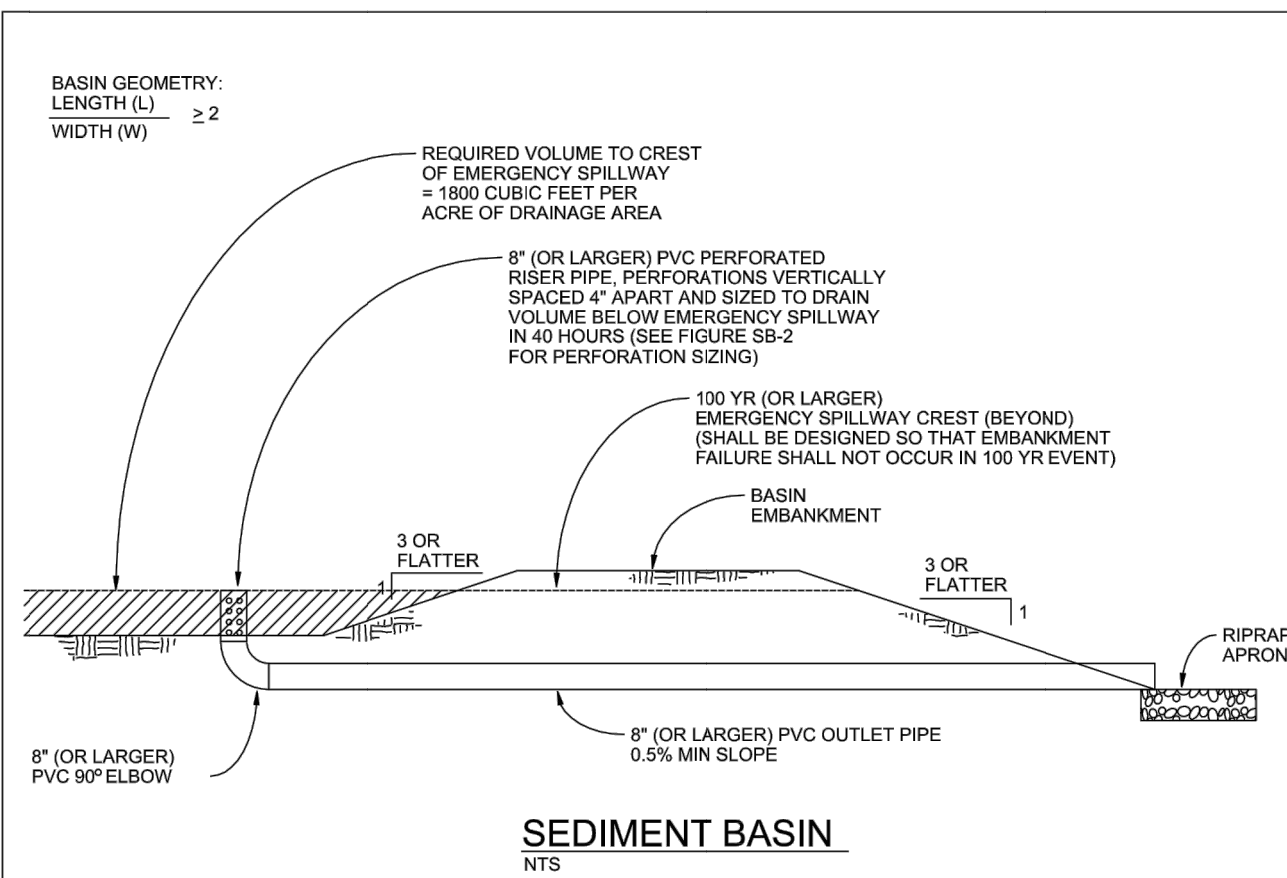
#### MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.
2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDING.

City of Colorado Springs  
Stormwater Quality

Figure MU-1  
Mulching  
Construction Detail and Maintenance  
Requirements

3-30



### SEDIMENT BASIN NOTES

#### INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. Baffles MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

#### MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs  
Stormwater Quality

Figure SB-1  
Sediment Basin  
Construction Detail and Maintenance  
Requirements

3-32

Design Volume (acre-ft)	Depth at Outlet (ft)							
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
2	16.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73
1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87
0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52
0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35
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
0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01

TABLE SB-1

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in <sup>2</sup> )		
		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

TABLE SB-2

City of Colorado Springs  
Stormwater Quality

Figure SB-2  
Outlet Sizing  
Application Techniques and Maintenance  
Requirements

3-33

### SURFACE ROUGHENING NOTES

#### 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 NECESSARY.
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.

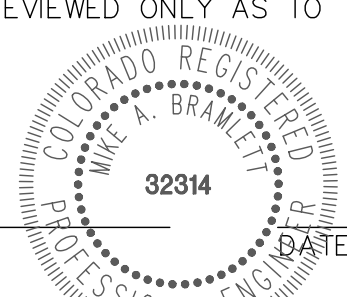
STORMWATER QUALITY BMP MANUAL

3-45

### 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



SOLACE APARTMENTS

GRADING AND EROSION  
CONTROL DETAILS

SHEET 7 OF 10

JOB NO. 25174.00

BY DATE

No. REVISION

H-SCALE V-SCALE

DATE 11/23/20

DESIGNED BY JRM

DRAWN BY JRM

CHECKED BY



Know what's below.  
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RECOMMENDED ANNUAL GRASSES				
SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-50	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1

TEMPORARY SEEDING NOTES

<b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. DISTURBED AREAS ARE TO BE SEEDDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.</li> <li>2. IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.</li> <li>3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.</li> <li>4. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.</li> <li>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, KNAWEED, PURPLE LOOSESTRAFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.</li> <li>6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.</li> <li>7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.</li> <li>8. ALL SEEDDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).</li> <li>9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.</li> </ol>	<b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDDED AREAS TO ENSURE GROWTH.</li> <li>2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.</li> <li>3. SEEDDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES.</li> </ol>
--	---

City of Colorado Springs  
Stormwater Quality

Figure TS-1  
Temporary Seeding  
Construction Detail and Maintenance Requirements

**Case 3**  
At the top of a steep slope.

**Case 4**  
Downstream of a slope drain (see slope drain fact sheet)

**Case 1**  
Placed on perimeter of site  
Drainage area < 1.0 AC  
See Table TSW-1

**Case 2**  
Placed on perimeter of site  
Drainage area > 1.0 AC  
See Table TSW-1

Sediment Basin

Temporary Swale, Typical

5500

5510

Construction Site Perimeter

Table TSW-1

Temporary Swale Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK <sup>(1)</sup>	OK <sup>(1)</sup>
Area of Concentrated Flow	NO <sup>(3)</sup>	NO <sup>(2)</sup>

(1) Silt Fence or Straw Bale Barrier may be used as alternative to a Temporary Swale.

(2) With Temporary Swales Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

(3) Check Dam is required at concentrated flow for drainage areas >1.0 acres.

City of Colorado Springs  
Storm Water Quality

Figure TSW-1  
Temporary Swale  
Application Examples

CDENM153722 CS-03-01/Fig TSW-19-199

3-49

<p>A. EXCAVATED SWALE</p> <p>B. SWALE FORMED BY BERM</p> <p>C. SWALE FORMED BY CUT AND FILL</p>	<p>TEMPORARY SWALE</p> <p>NTS</p> <p>TEMPORARY SWALE NOTES</p> <table> <tr> <td> <b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.</li> <li>2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.</li> <li>3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.</li> <li>4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.</li> <li>5. SWALES WITH SLOPE &gt; 2% SHALL BE LINED, SEE FIGURE TSW-3.</li> <li>6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.</li> <li>7. Z SHALL BE 3 OR GREATER.</li> </ol> </td><td> <b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.</li> <li>2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.</li> <li>3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.</li> <li>4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.</li> </ol> </td></tr> </table> <p>City of Colorado Springs Stormwater Quality</p> <p>Figure TSW-2 Temporary Swale Construction Detail and Maintenance Requirements</p>	<b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.</li> <li>2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.</li> <li>3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.</li> <li>4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.</li> <li>5. SWALES WITH SLOPE &gt; 2% SHALL BE LINED, SEE FIGURE TSW-3.</li> <li>6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.</li> <li>7. Z SHALL BE 3 OR GREATER.</li> </ol>	<b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.</li> <li>2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.</li> <li>3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.</li> <li>4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.</li> </ol>
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<p>A. EROSION CONTROL FABRIC 2% SLOPE &lt; 5% AND VELOCITY &lt; 8 FPS</p> <p>B. RIPRAP SLOPE &lt; 5% OR VELOCITY &gt; 8 FPS</p>	<p>SWALE LINING</p> <p>NTS</p> <p>SWALE LINING NOTES</p> <table> <tr> <td> <b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.</li> <li>2. SWALES WITH EASILY ERODIBLE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.</li> <li>3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.</li> </ol> </td><td> <b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.</li> <li>2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.</li> <li>3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.</li> <li>4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.</li> <li>5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.</li> </ol> </td></tr> </table> <p>City of Colorado Springs Stormwater Quality</p> <p>Figure TSW-3 Swale Linings Construction Detail and Maintenance</p>	<b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.</li> <li>2. SWALES WITH EASILY ERODIBLE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.</li> <li>3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.</li> </ol>	<b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.</li> <li>2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.</li> <li>3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.</li> <li>4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.</li> <li>5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.</li> </ol>
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CASE 2

Parking, Staging and  
Loading/Unloading Area

Public Road

CASE 1

Construction  
Entrance

Table VT-1

	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs  
Storm Water Quality

Figure VT-1  
Vehicle Tracking  
Application Examples

DENR\M153722 CS CS\Pg\VT-1-19-69

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<p>PLAN</p> <p>SECTION</p> <p>VEHICLE TRACKING</p> <p>NTS</p>	<p>VEHICLE TRACKING NOTES</p> <table> <tr> <td> <b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.</li> <li>2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.</li> <li>3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.</li> <li>4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.</li> <li>5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.</li> </ol> </td><td> <b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.</li> <li>2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.</li> <li>3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.</li> <li>4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.</li> <li>5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.</li> </ol> </td></tr> </table> <p>City of Colorado Springs Stormwater Quality</p> <p>Figure VT-2 Vehicle Tracking Application Examples</p>	<b>INSTALLATION REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.</li> <li>2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.</li> <li>3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.</li> <li>4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.</li> <li>5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.</li> </ol>	<b>MAINTENANCE REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.</li> <li>2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.</li> <li>3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.</li> <li>4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.</li> <li>5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.</li> </ol>
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## EC-8 Temporary Outlet Protection (TOP)

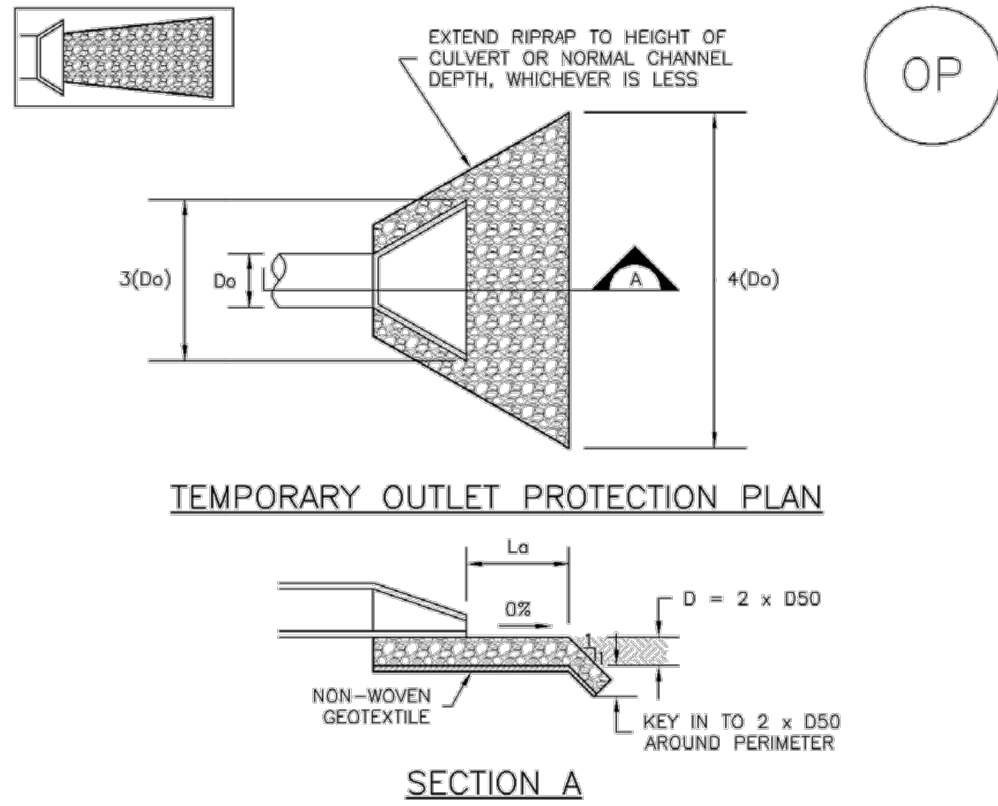


TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE				
PIPE DIAMETER, Dp (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)	
8	2.5	5	4	
	5	10	6	
12	5	10	4	
	10	15	6	
18	10	10	6	
	20	15	9	
	30	23	12	
	40	28	16	
24	30	16	9	
	40	26	9	
	50	28	12	
	60	30	16	

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

1. SEE PLAN VIEW FOR:
  - LOCATION OF OUTLET PROTECTION.
  - DIMENSIONS OF OUTLET PROTECTION.
2. DETAIL IS INTENDED FOR PIPES WITH SLOPE < 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.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

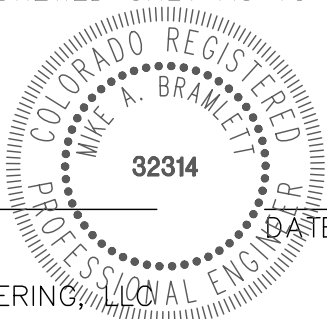
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(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

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

### 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

BY	DATE	REVISION	No.	N/A	N/A	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
						11/23/20	JRM	JRM	

SOLACE APARTMENTS  
GRADING AND EROSION  
CONTROL DETAILS

SHEET 8 OF 10

JOB NO. 25174.00

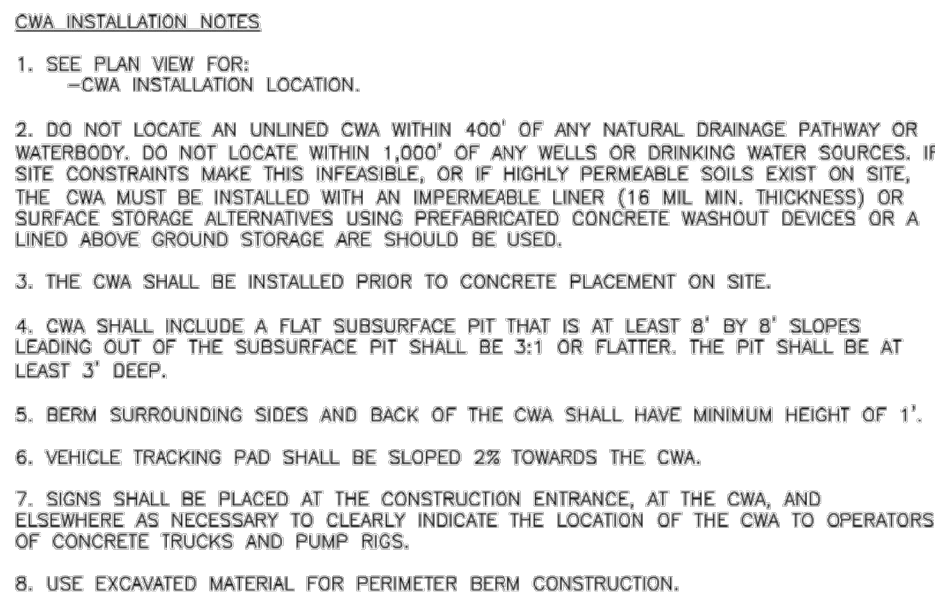
PREPARED FOR  
**JACKSON DEARBORN PARTNERS**  
404 S. WELLS ST.  
SUITE 400  
CHICAGO, IL 60607  
OFFICE PHONE  
(734) 216-2577

**J.R. ENGINEERING**  
A Westman Company  
  
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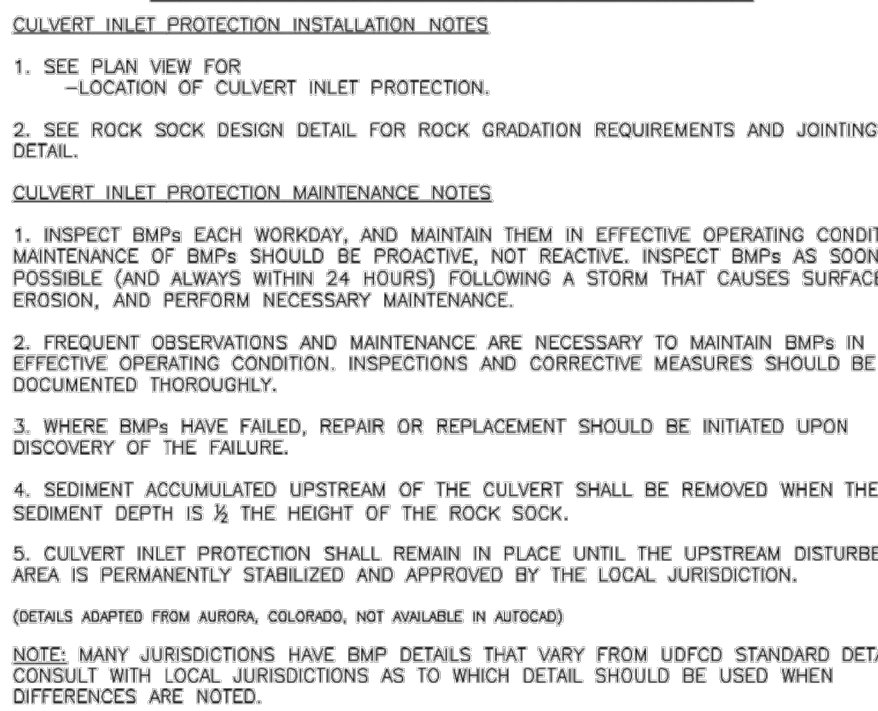


Know what's below.  
Call before you dig.

**MM-1**

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## SC-6



August 2013	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	IP-7
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### Concrete Washout Area (CWA)

### 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 WATER FLOW AND PERFORMS 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. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN SUFFICIENCY FOR CONCRETE, CURB, CONCRETE MATERIALS, INCLUDING IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PILES OF CONCRETE AND ALL OTHER DEBRIS IN THE SURFACEPIT 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 JURISDICTION.

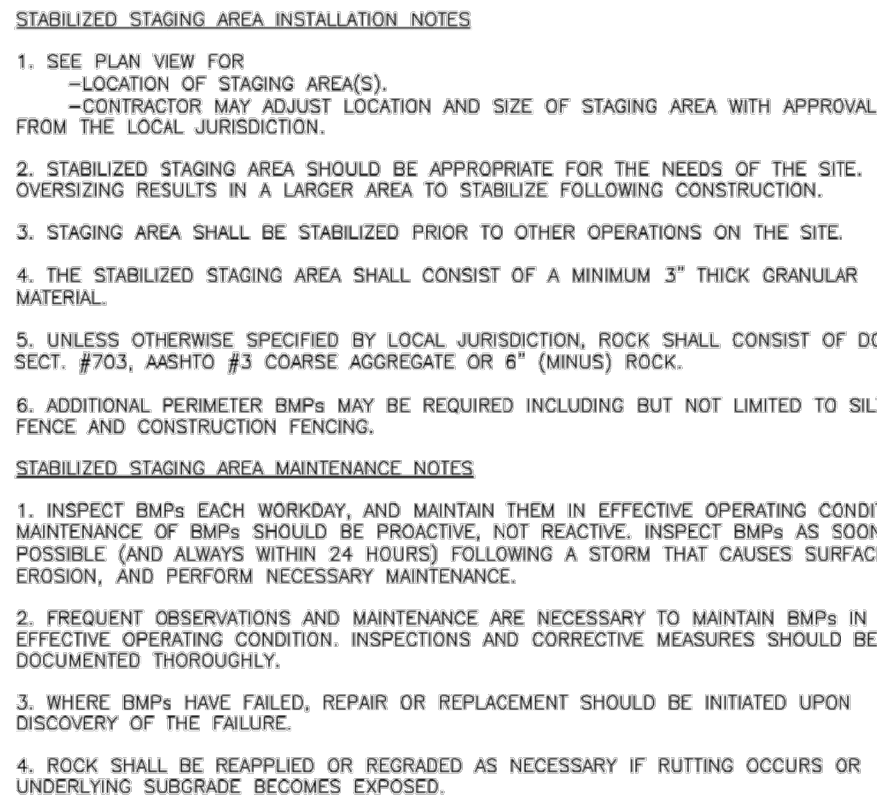
(LOCAL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PAVNER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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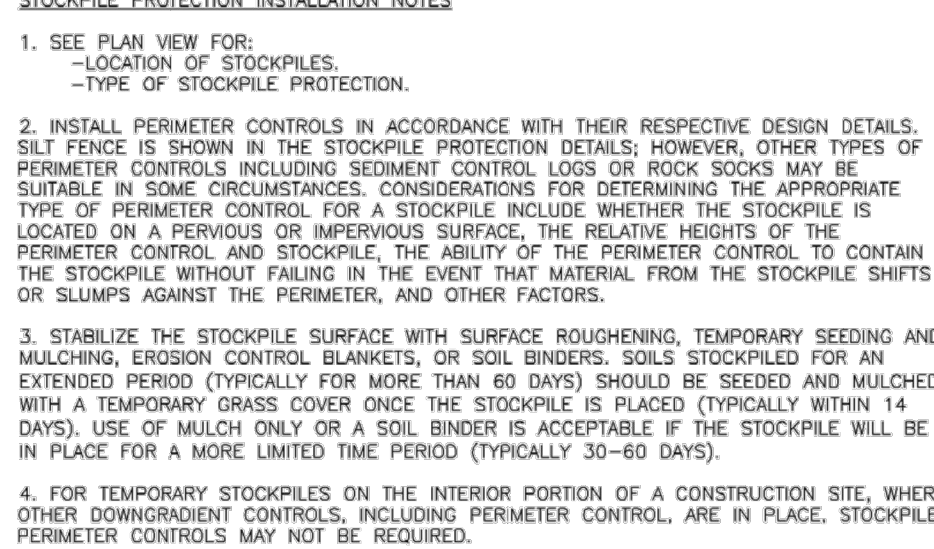
CWA-4
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 3
November 2010

## SM-6



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## MM-2



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### Stabilized Staging Area (SSA)

**STABILIZED STAGING AREA MAINTENANCE NOTES:**

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, THE EXISTING SITE AND/OR EXISTING PAVED SURFACES SHALL BE REPAVED, 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 USFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

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### Stockpile Management (SM)

**STOCKPILE PROTECTION 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 IMMEDIATELY FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

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**STOCKPILE PROTECTION MAINTENANCE NOTES**

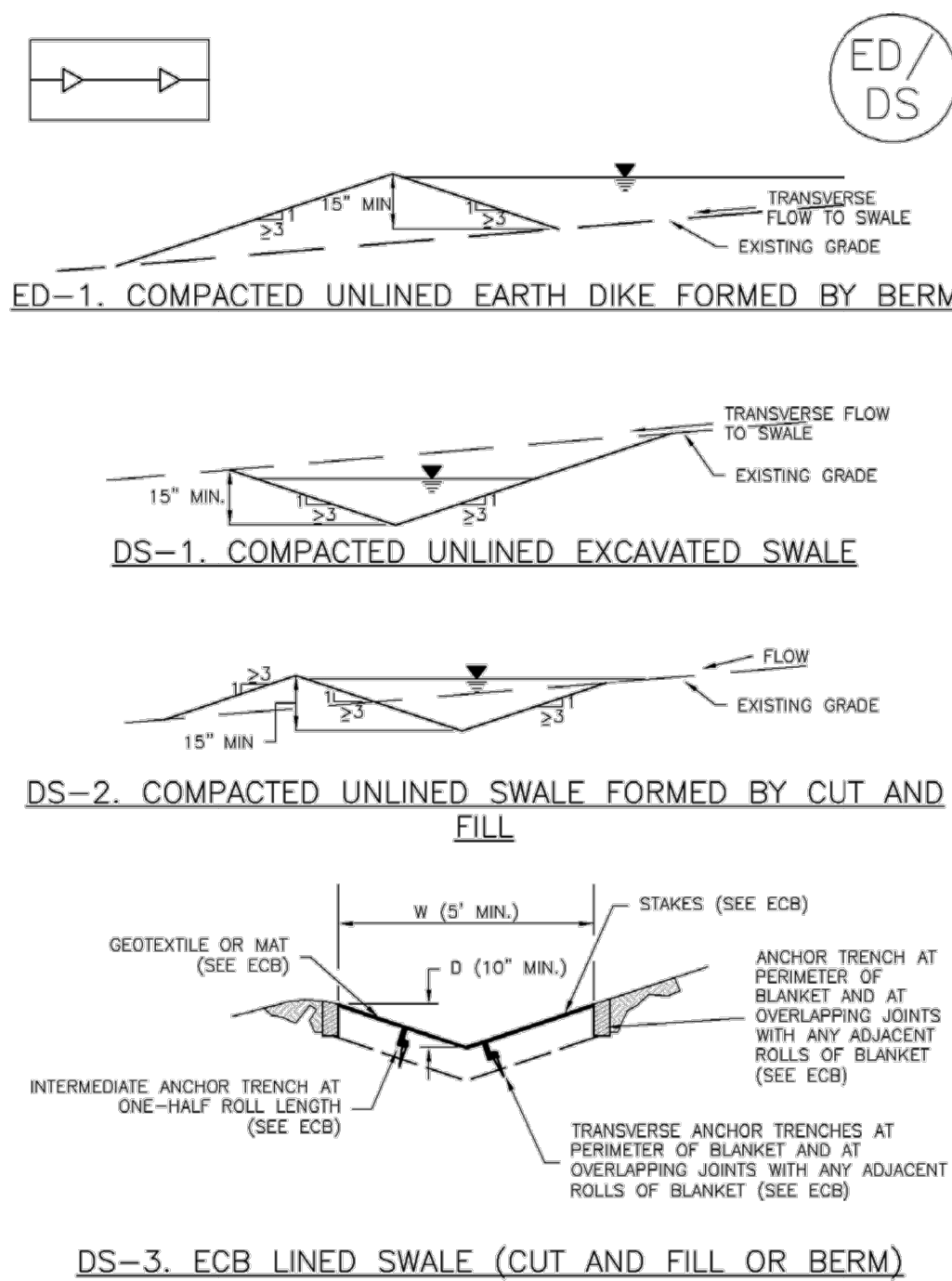
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

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

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

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

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 Urban Storm Drainage Criteria Manual Volume 3

**EC-10**

November 2010	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	ED/DS-3
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STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

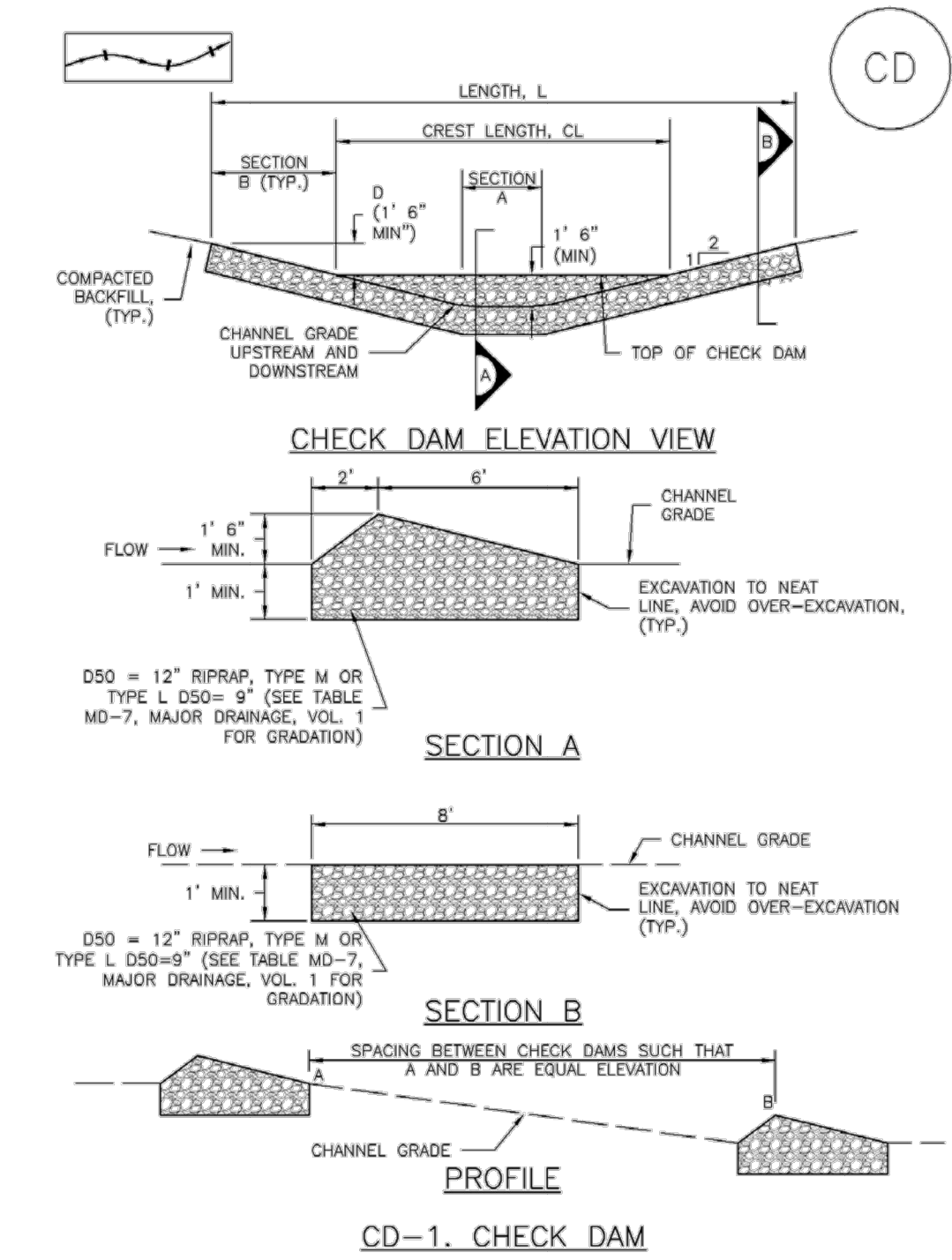
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FOR AND ON BEHALF OF JR ENGINEERING, LLC

PREPARED FOR  
JACKSON DEARBORN PARTNERS

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SHEET	9	OF	10
JOB NO. 25174.00			
SOLACE APARTMENTS		H-SCALE	N/A
		V-SCALE	N/A
		DATE	11/23/20
GRADING AND EROSION		DESIGNED BY	JRM
CONTROL DETAILS		DRAWN BY	JRM
		CHECKED BY	
		No.	REVISION
		BY	DATE



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).
- CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
- 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") OR TYPE L (D50 9").
- RIPRAP 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 1/2 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 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)
- 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.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, OR ENGINEERING APPROVES THEIR USES DESIGNATED BY WRITTEN AUTHORIZATION.

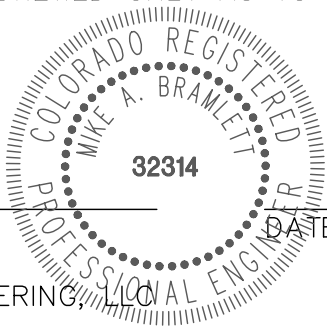
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SOLACE APARTMENTS GRADING AND EROSION CONTROL DETAILS	H-SCALE	N/A	No.	REVISION	BY	DATE
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ENGINEER'S STATEMENT

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Know what's below.  
Call before you dig.