

# WATERBURY FILING NO. 1 & 2

## EL PASO COUNTY, CO

# GRADING, EROSION AND SEDIMENT CONTROL

## NOVEMBER 2022

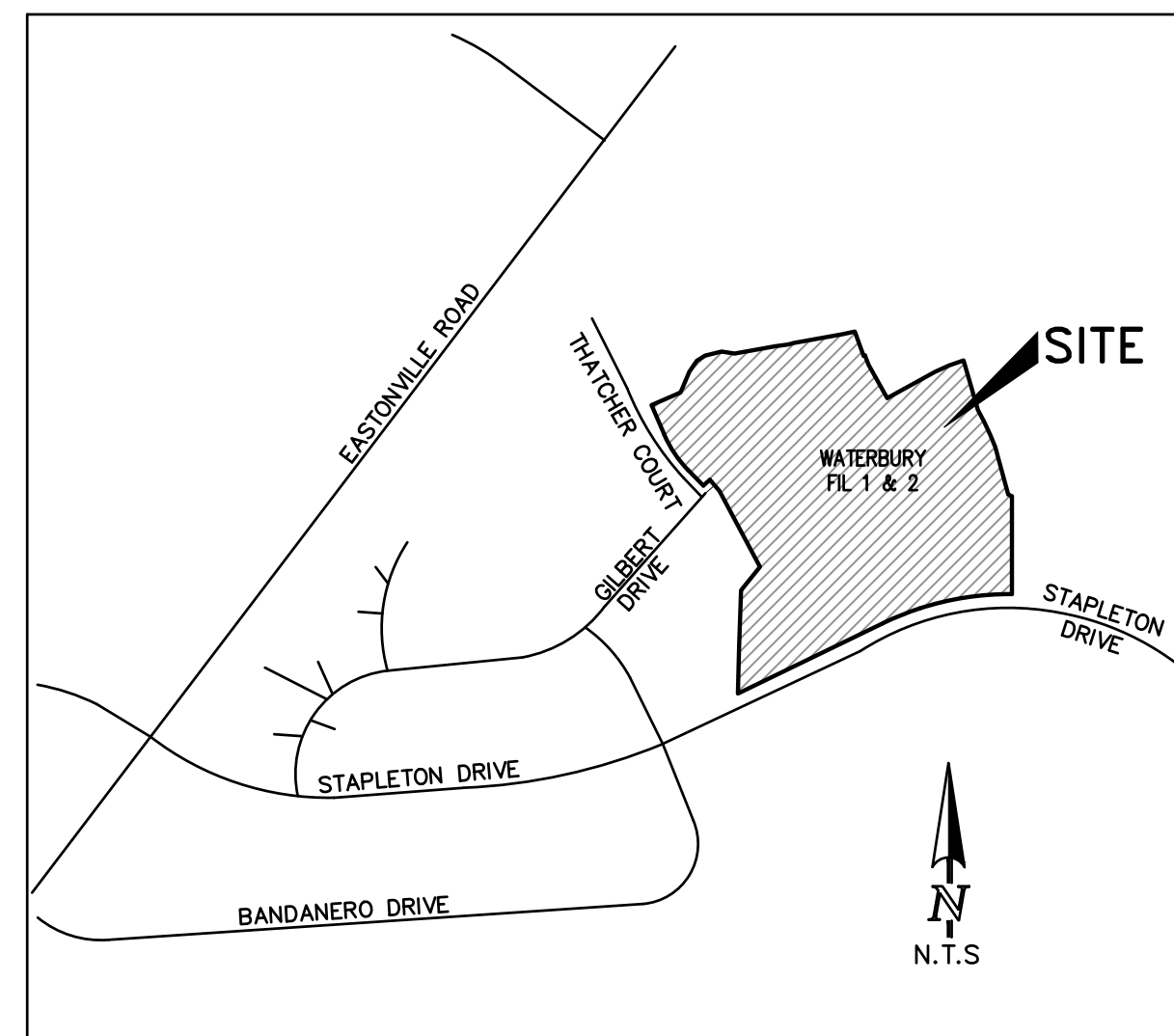
**NOTE:**

ALL EXISTING UNDERGROUND AND ABOVE GROUND UTILITY LOCATIONS, INVERTS AND SIZES ARE APPROXIMATE ONLY AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. THE IN POINTS SHALL BE POTHOLED AND LOCATIONS, INVERTS AND SIZES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

**STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS**

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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).
12. 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.
13. 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.
14. 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.
15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
16. 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.
17. 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.
18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
19. 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.
20. 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.
21. 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.
22. 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 ON SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
24. 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.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. 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.
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY \_\_\_\_\_ AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. 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 CONTACT:

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



VICINITY MAP

**GENERAL NOTES**

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE SITE. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, BUILDINGS, FENCES, AND ROADWAYS FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE ABOVE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. BULK GRADING SHALL BE COMPLETED TO A SUBGRADE TOLERANCE OF PLUS OR MINUS 0.2'.
4. CONTRACTOR TO OBTAIN COPIES OF THE SOILS REPORT FROM THE GEOTECHNICAL ENGINEER AND TO BE KEPT ON SITE DURING ALL EARTHWORK OPERATIONS.
5. MAXIMUM CUT/FILL SLOPES SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
6. ALL BOTTOM OF WALL (BW) CALLOUTS ARE FOR THE BOTTOM OF WALL AT GRADE. THEY DO NOT REPRESENT THE BOTTOM OF THE CONSTRUCTED WALL OR FOOTING, WHICH IS NOT SPECIFIED ON THESE PLANS.

**SOIL TYPES**

ONSITE SOILS ARE HYDROLOGIC GROUPS "A" (COLUMBINE GRAVELLY SANDY LOAM) AND "B" (STAPLETON SANDY LOAM) (PER NRCS WEB SOIL SURVEY MAP)

**AREA OF DISTURBANCE**

ESTIMATED AREA OF DISTURBANCE = 68.70 ACRES

**EARTHWORK VOLUMES**

ESTIMATED CUT = 73,990 CY, ESTIMATED FILL = 287,149\* CY, NET = 213,159 CY <FILL>  
 \*20% COMPACTION ASSUMED FOR PLACEMENT OF FILL

**BLACK SQUIRREL CREEK NOTE:**

IF AN UNDERDRAIN SYSTEMS ARE NEEDED FOR HOMES LOCATED WITH HIGH GROUNDWATER WILL NEED TO DISCHARGE INTO A GROUNDWATER RECHARGE FACILITY, NOT A STORM DRAIN SYSTEM.

**SHEET INDEX**

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FINAL EROSION CONTROL PLAN 1	6 OF 10
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GRADING DETAILS CONT'D	9 OF 10
GRADING DETAILS CONT'D	10 OF 10

**CONTACT INFORMATION:**

OWNER:	4-WAY RANCH JOINT VENTURE P.O. BOX 50223 COLORADO SPRINGS, CO 80949 PETER MARTZ (719) 447-8773
CIVIL ENGINEER:	TERRA NOVA ENGINEERING, INC. 721 S. 23RD STREET COLORADO SPRINGS, COLORADO 80904 QUENTIN ARMUJO, P.E., (719) 635-6422
ENGINEERING DIVISION	EL PASO COUNTY DEVELOPMENT SERVICES 2880 INTERNATIONAL CIRCLE COLORADO SPRINGS, COLORADO 80910 JEFF RICE P.E. (719) 520-6300
METRO DISTRICT	4-WAY RANCH METRO DISTRICT P.O. BOX 50223 COLORADO SPRINGS, CO 80949
GAS DEPARTMENT	BLACK HILLS ENERGY 7060 ALEGRE ST. FOUNTAIN, CO 80817 GEORGE PETERSON (719) 393-6625
ELECTRIC DEPARTMENT	MOUNTAIN VIEW ELECTRIC ASSOCIATION 11140 E. WOODMEN ROAD FALCON, COLORADO 80831 DARYL EDWARDS (719) 495-2283
FIRE DEPARTMENT	STATION 3 / HEADQUARTERS 7030 OLD MERIDIAN ROAD PEYTON, COLORADO 80831 (719) 495-4050
TELEPHONE COMPANY	A.T.&T. LOCATORS (719) 635-3674  CENTURY LINK LOCATORS 811

**BENCHMARKS**

1. THE TOP OF A 1-1/2' ALUMINUM SURVEYORS CAP STAMPED JR LTD PLS 31161, AT THE MOST EASTERLY CORNER OF LOT 36 AS PLATED IN 4-WAY RANCH FILING NO. 1 RECORDED UNDER RECEPTION NO. 206712416 RECORDS OF EL PASO COUNTY, COLORADO ELEV= 6931.92
2. THE TOP OF A 1-1/2' ALUMINUM SURVEYORS CAP STAMPED JR LTD PLS 82820, AT THE MOST NORTHERLY CORNER OF LOT 42 AS PLATED IN 4-WAY RANCH FILING NO. 1 RECORDED UNDER RECEPTION NO. 206712416 RECORDS OF EL PASO COUNTY, COLORADO ELEV= 6973.99

**BASIS OF BEARING**

THE NORTH LINE OF SECTION 28, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO BEING MONUMENTED AT EACH END BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PSINC LS 30087 AND ASSUMED TO BEAR S89°47'04"E A DISTANCE OF 5,285.07 FEET

**ENGINEER'S STATEMENT**

ENGINEER'S STATEMENT (FOR STANDALONE GEC PLAN): 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 PLAN.

QUENTIN ARMUJO, P.E. #37170 DATE \_\_\_\_\_  
 FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

**OWNER/DEVELOPER'S STATEMENT**

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

PETER MARTZ, OWNER DATE \_\_\_\_\_  
 4-WAY RANCH JOINT VENTURE  
 P.O. BOX 50223  
 COLORADO SPRINGS, CO 80949

**EL PASO COUNTY APPROVAL**

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.

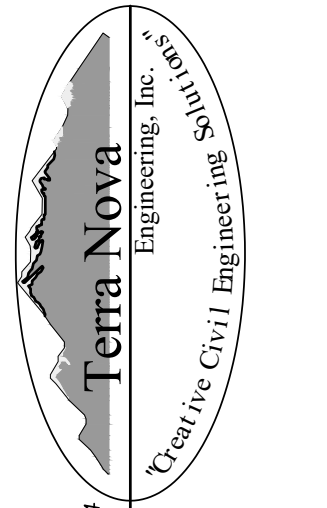
Joshua Palmer

JOSHUA PALMER, P.E.  
 COUNTY ENGINEER/ECM ADMINISTRATOR DATE \_\_\_\_\_

REVISIONS	NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE REVIEWING AGENCIES, THE TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND FOR THE SITE SPECIFIC BY WRITTEN AUTHORIZATION.

4-WAY RANCH JOINT VENTURE  
 ATTN: PETER MARTZ  
 P.O. BOX 50223  
 COLORADO SPRINGS, CO 80949  
 719-491-315



721 S. 23RD STREET  
 COLORADO SPRINGS, CO 80904  
 OFFICE: 719-635-6422  
 FAX: 719-635-6428  
 www.tnecinc.com

WATERBURY FILING NO. 1 & 2

GRADING, EROSION AND SEDIMENT CONTROL COVER SHEET

DESIGNED BY QNA
DRAWN BY QNA
CHECKED BY
H-SCALE AS SHOWN
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 11/22/22
SHEET NO. 1 OF 10

**EROSION CONTROL LEGEND**

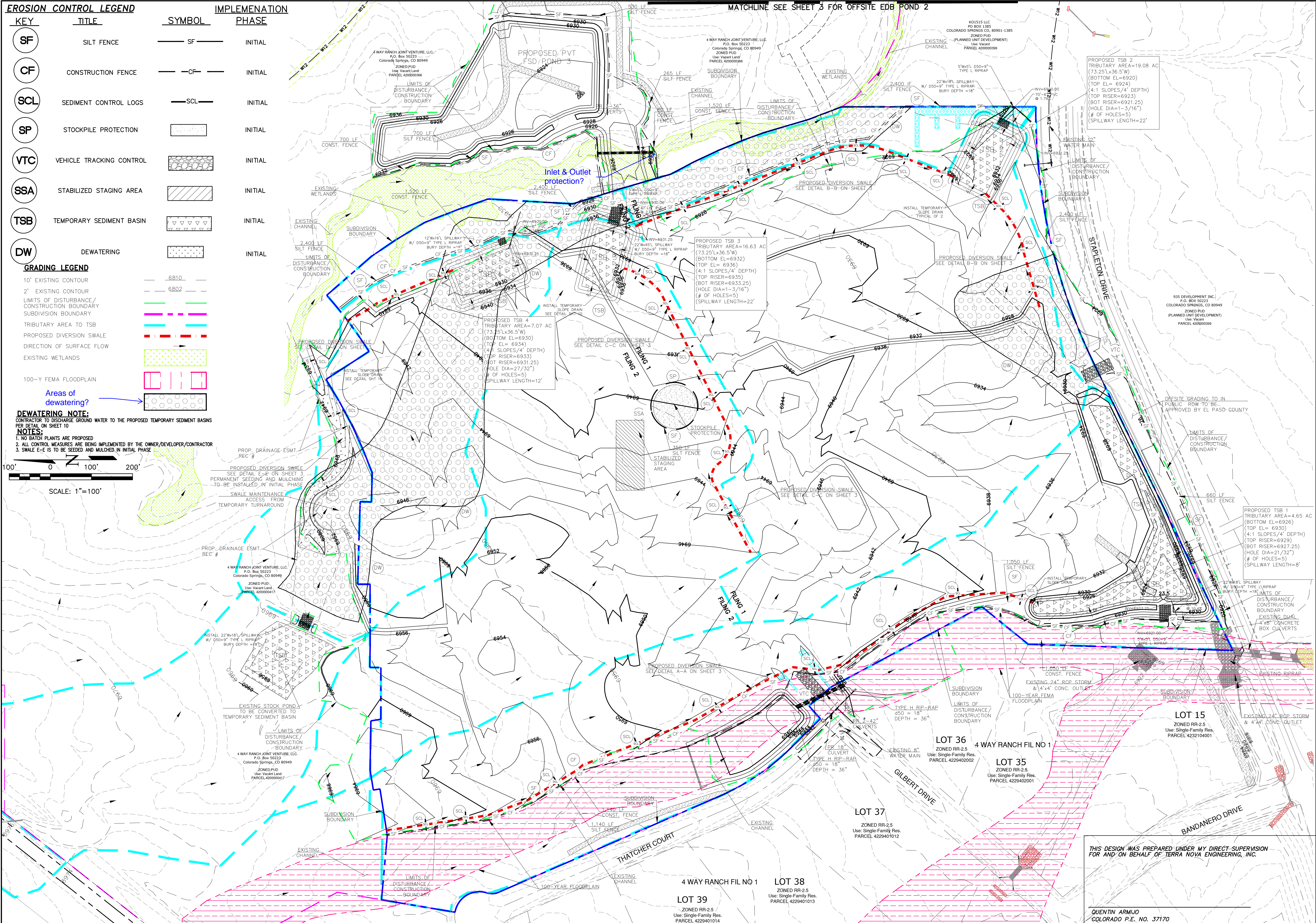
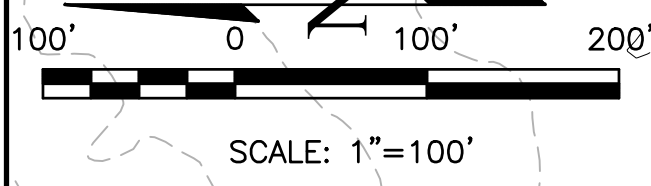
KEY	TITLE	SYMBOL	IMPLEMENTATION PHASE
SF	SILT FENCE	— SF —	INITIAL
CF	CONSTRUCTION FENCE	— CF —	INITIAL
SCL	SEDIMENT CONTROL LOGS	— SCL —	INITIAL
SP	STOCKPILE PROTECTION	[Pattern]	INITIAL
VTC	VEHICLE TRACKING CONTROL	[Pattern]	INITIAL
SSA	STABILIZED STAGING AREA	[Pattern]	INITIAL
TSB	TEMPORARY SEDIMENT BASIN	[Pattern]	INITIAL
DW	DEWATERING	[Pattern]	INITIAL

GRADING LEGEND	
10' EXISTING CONTOUR	— 6810 —
2' EXISTING CONTOUR	— 6802 —
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	[Line Style]
SUBDIVISION BOUNDARY	[Line Style]
TRIBUTARY AREA TO TSB	[Line Style]
PROPOSED DIVERSION SWALE	[Line Style]
DIRECTION OF SURFACE FLOW	[Arrow]
EXISTING WETLANDS	[Pattern]
100-Y FEMA FLOODPLAIN	[Pattern]
Areas of dewatering?	[Pattern]

**DEWATERING NOTE:**  
 CONTRACTOR TO DISCHARGE GROUND WATER TO THE PROPOSED TEMPORARY SEDIMENT BASINS PER DETAIL ON SHEET 10

**NOTES:**  
 1. NO BATCH PLANTS ARE PROPOSED  
 2. ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR  
 3. SWALE E-E IS TO BE SEEDED AND MULCHED IN INITIAL PHASE



MATCHLINE SEE SHEET 3 FOR OFFSITE EDB POND 2

REVISIONS	NO.	DESCRIPTION	DATE
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE RELEVANT AGENCIES AND THE TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND COST AUTHORIZED BY WRITTEN AUTHORIZATION.			

PREPARED FOR:  
**4-WAY RANCH JOINT VENTURE**  
 ATTN: PETER MARTZ  
 P.O. BOX 50223  
 COLORADO SPRINGS, CO 80949  
 719-491-3150

**Terra Nova**  
 Engineering, Inc.  
 Civil/Environmental Engineers

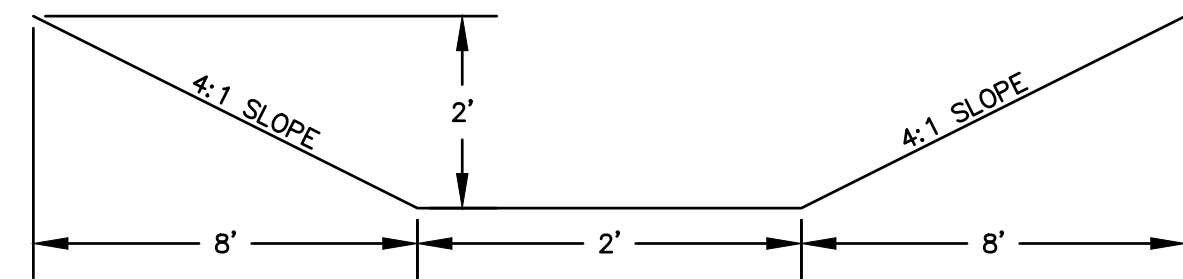
721 S. 23RD STREET  
 COLORADO SPRINGS, CO 80904  
 OFFICE: 719-635-6422  
 FAX: 719-635-6426  
 www.terranovalnc.com

**WATERBURY FILING NO. 1 & 2**  
 GRADING AND EROSION CONTROL PLAN  
 INITIAL EROSION CONTROL PLAN 1

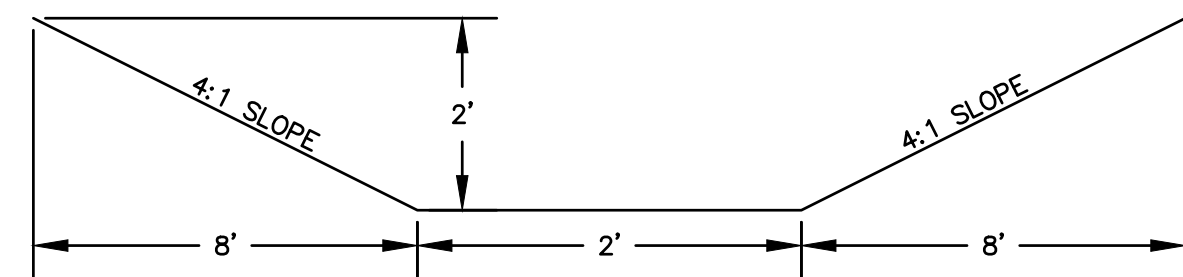
DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	1" = 100'
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	11/22/22
SHEET NO.	2 OF 10

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

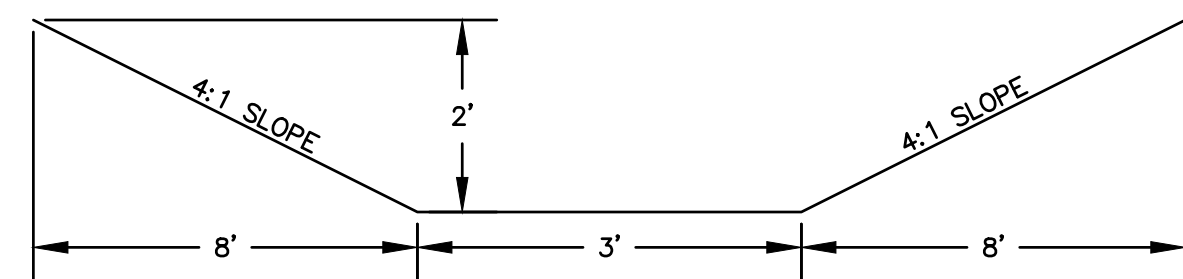
QUENTIN ARMIJO  
 COLORADO P.E. NO. 37170



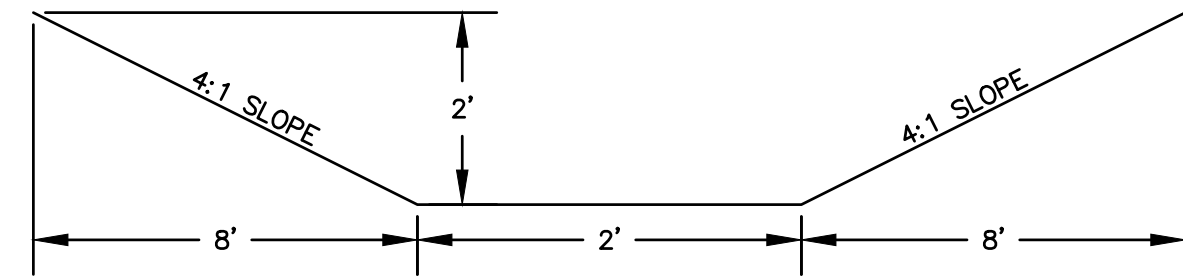
**DIVERSION SWALE A-A**



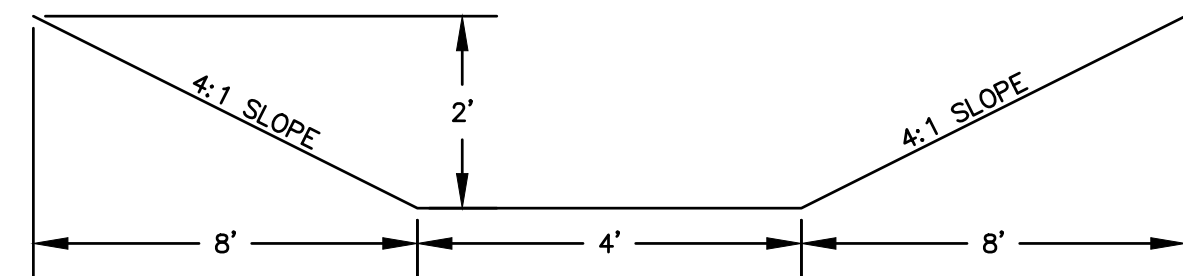
**DIVERSION SWALE B-B**



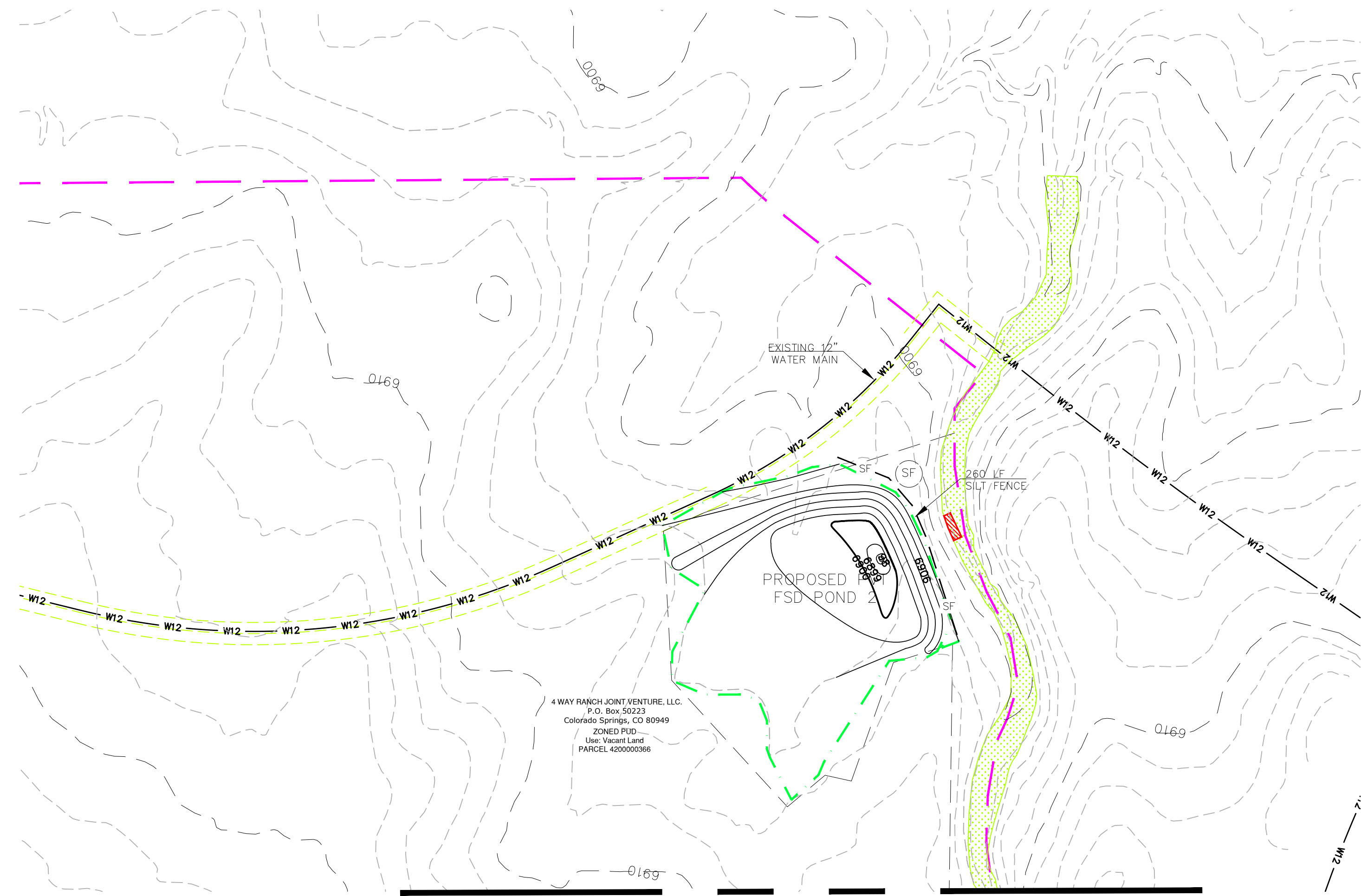
**DIVERSION SWALE C-C**



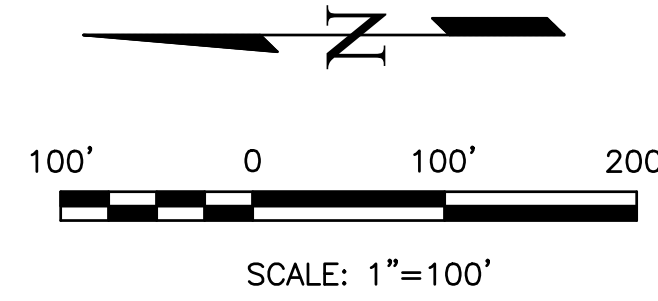
**DIVERSION SWALE D-D**



**DIVERSION SWALE E-E**



MATCHLINE SEE SHEET 2 FOR FILING 1 & FILING 2



SCALE: 1"=100'

**NOTES:**  
NO BATCH PLANTS ARE PROPOSED  
ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR

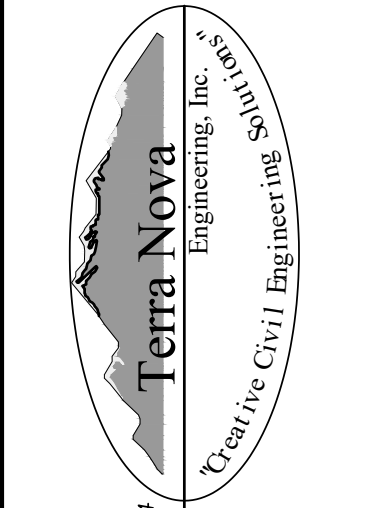
**GRADING LEGEND**

10' EXISTING CONTOUR	---	6810
2' EXISTING CONTOUR	---	6802
LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY	---	
SUBDIVISION BOUNDARY	---	
TRIBUTARY AREA TO TSB	---	
PROPOSED DIVERSION SWALE	---	
DIRECTION OF SURFACE FLOW	---	
EXISTING WETLANDS	---	
100-Y FEMA FLOODPLAIN	---	
Areas of dewatering?	---	

REVISIONS NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE REVIEWING AGENCIES, THE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND FOR THE PURPOSES AUTHORIZED BY WRITTEN AUTHORIZATION.

PREPARED FOR:  
**4-WAY RANCH JOINT VENTURE**  
ATTN: PETER MARTZ  
P.O. BOX 50223  
COLORADO SPRINGS, CO 80949  
719-491-3150



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COLORADO SPRINGS, CO 80904  
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**WATERBURY FILING NO. 1 & 2**

GRADING EROSION CONTROL PLAN  
INITIAL EROSION CONTROL 2

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN ARMIJO  
COLORADO P.E. NO. 37170

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 11/22/22
SHEET NO. 3 OF 10

**EROSION CONTROL LEGEND**

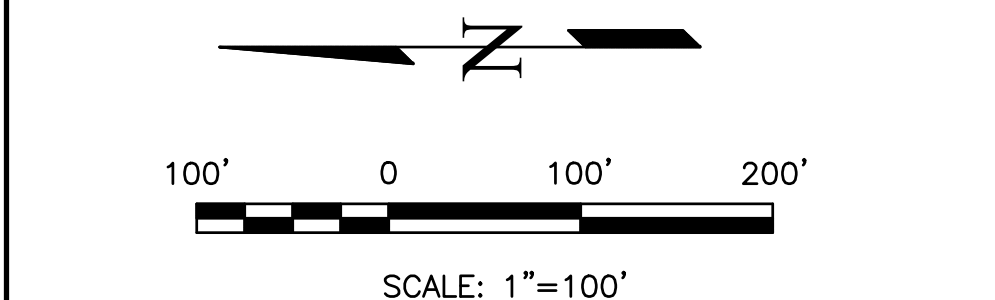
KEY	TITLE	SYMBOL	IMPLEMENTATION PHASE
SF	SILT FENCE	— SF —	INITIAL
CF	CONSTRUCTION FENCE	— CF —	INITIAL
CIP	CULVERT INLET PROTECTION	[Symbol]	INTERIM
IP	INLET PROTECTION	[Symbol]	INTERIM
SBB	STRAW BALE BARRIER	[Symbol]	INTERIM
SP	STOCKPILE PROTECTION	[Symbol]	INITIAL
VTC	VEHICLE TRACKING CONTROL	[Symbol]	INITIAL
CWA	CONCRETE WASHOUT AREA	[Symbol]	INTERIM
SSA	STABILIZED STAGING AREA	[Symbol]	INITIAL
TSM	TEMPORARY SEEDING AND MULCHING	[Symbol]	INTERIM
DW	DEWATERING	[Symbol]	

**GRADING LEGEND**

8' EXISTING CONTOUR	--- 6810 ---
1' EXISTING CONTOUR	--- 6802 ---
5' PROPOSED CONTOUR	--- 6810 ---
1' PROPOSED CONTOUR	--- 6802 ---
LIMITS OF DISTURBANCE/CONSTRUCTION BOUNDARY	[Symbol]
SUBDIVISION BOUNDARY	[Symbol]
CUT/FILL LINE	[Symbol]
DIRECTION OF SURFACE FLOW	[Symbol]
HIGH POINT	HPX
LOW POINT	LPX
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO"
GARDEN LEVEL LOT MODIFIED	"G"
100-Y FEM FLOODPLAIN	[Symbol]
AREAS OF DE-WATERING	[Symbol]

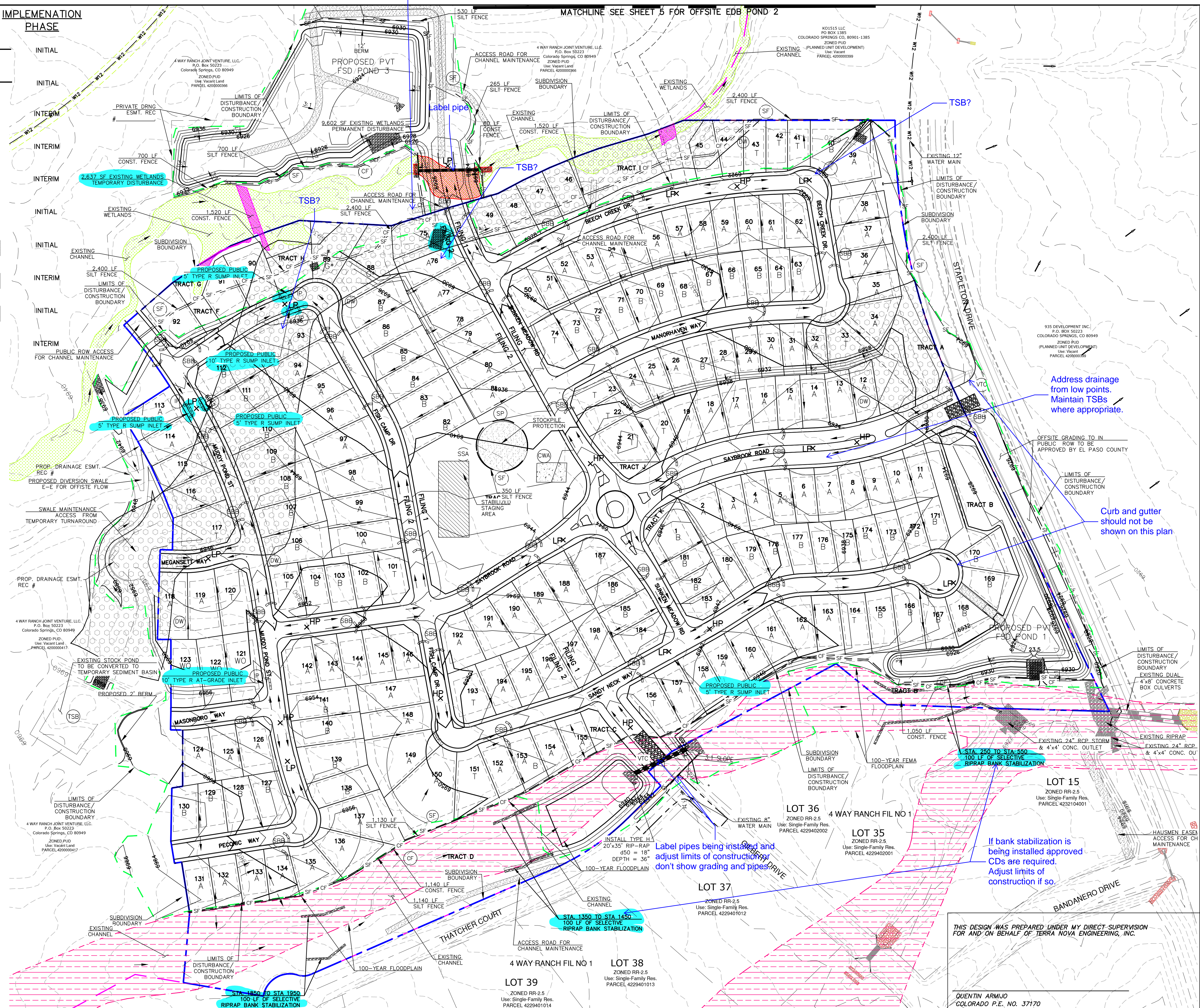
**WETLANDS LEGEND**

EXISTING WETLANDS	[Symbol]
TEMPORARY WETLAND DISTURBANCE	[Symbol]
PERMANENT WETLAND DISTURBANCE	[Symbol]

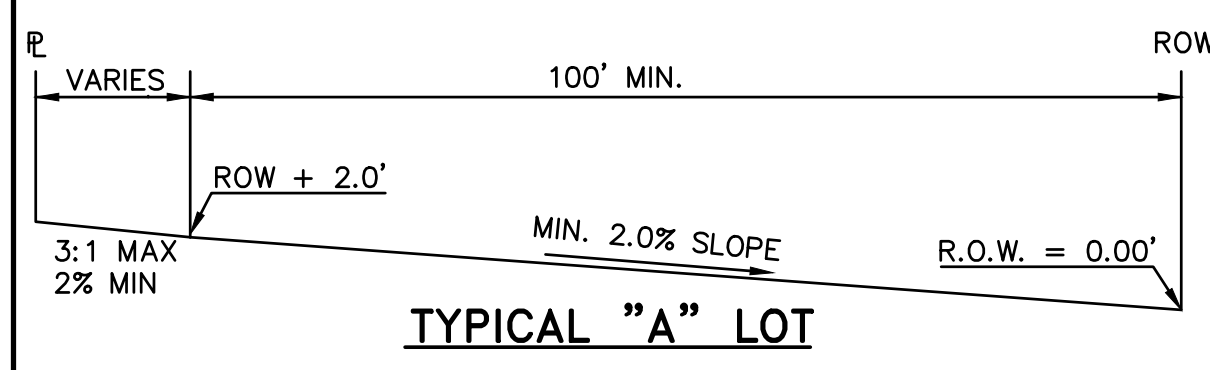


**VEGETATION NOTE:**  
EXISTING VEGETATION CONSISTS OF NATIVE PRAIRIE GRASSES AND SHRUBS WITH FAIR TO GOOD COVERAGE OF 50% TO 70%.

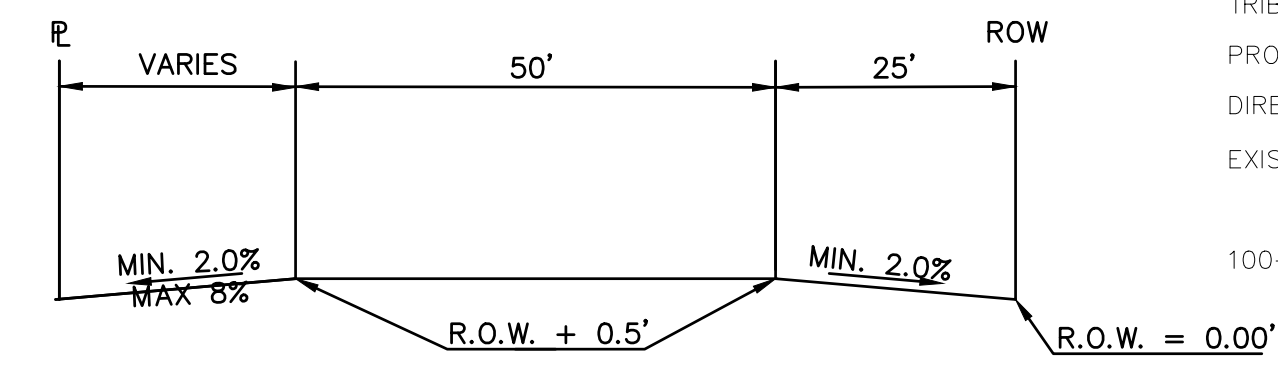
**NOTES:**  
NO BATCH PLANTS ARE PROPOSED  
ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR



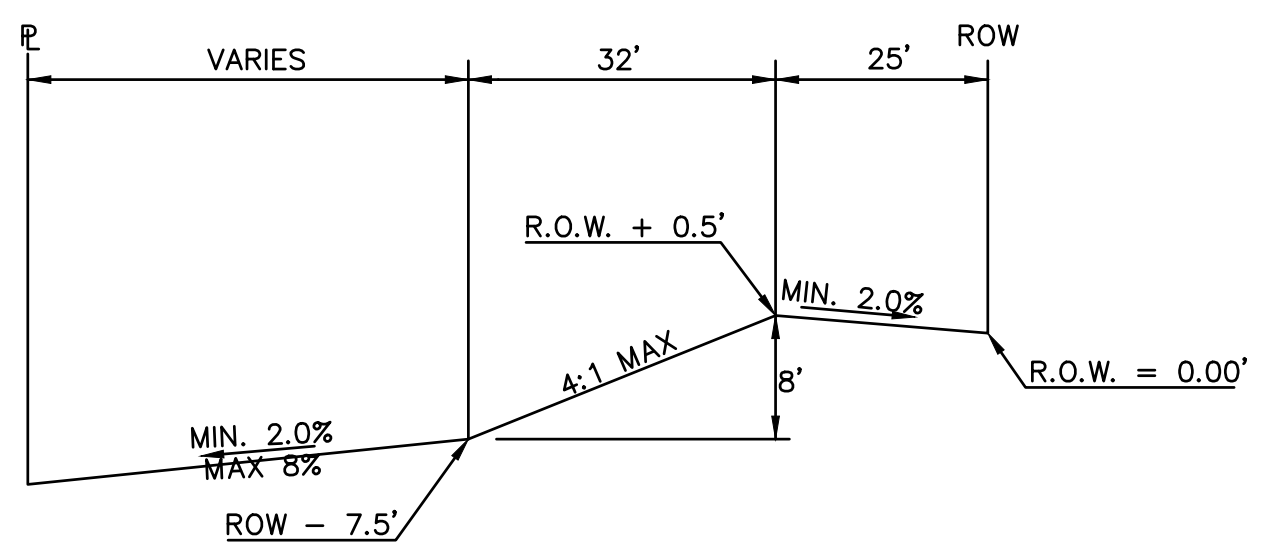
DATE	
REVISIONS	
NO.	DESCRIPTION
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ATTN: PETER MARTZ	
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COLORADO SPRINGS, CO 80949	
719-491-3150	
721 S. 23RD STREET	
COLORADO SPRINGS, CO 80904	
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FAX: 719-635-6426	
www.tnna.com	
<b>WATERBURY FILING NO. 1 &amp; 2</b>	
GRADING AND EROSION CONTROL PLAN	
INTERIM EROSION CONTROL PLAN 1	
DESIGNED BY DLF	
DRAWN BY QNA	
CHECKED BY QNA	
H-SCALE 1" = 100'	
V-SCALE N/A	
JOB NO. 1715.00	
DATE ISSUED 11/22/22	
SHEET NO. 4 OF 10	



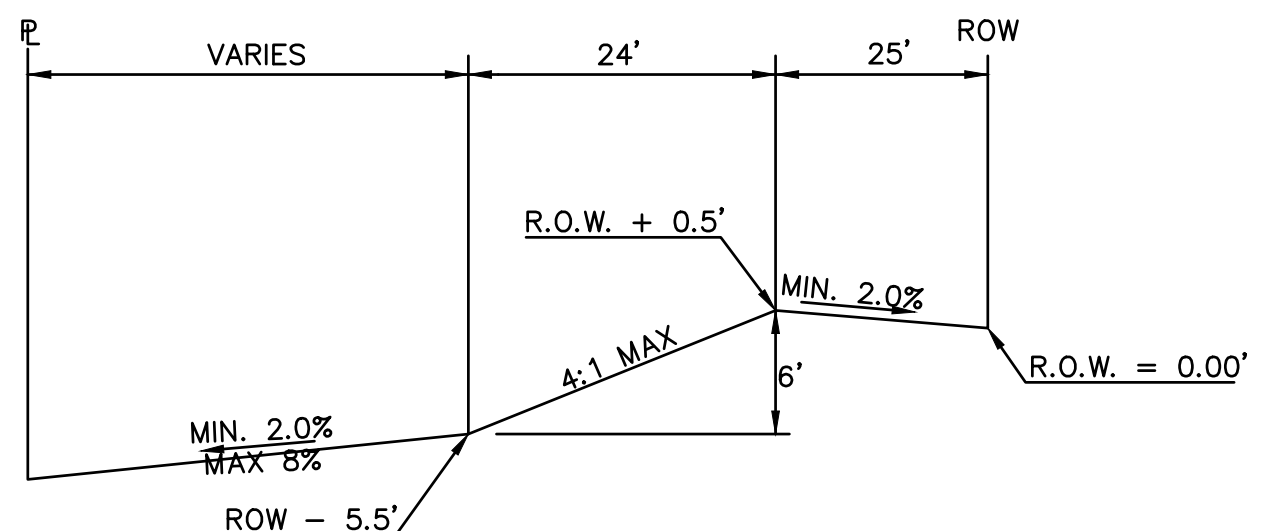
TYPICAL "A" LOT



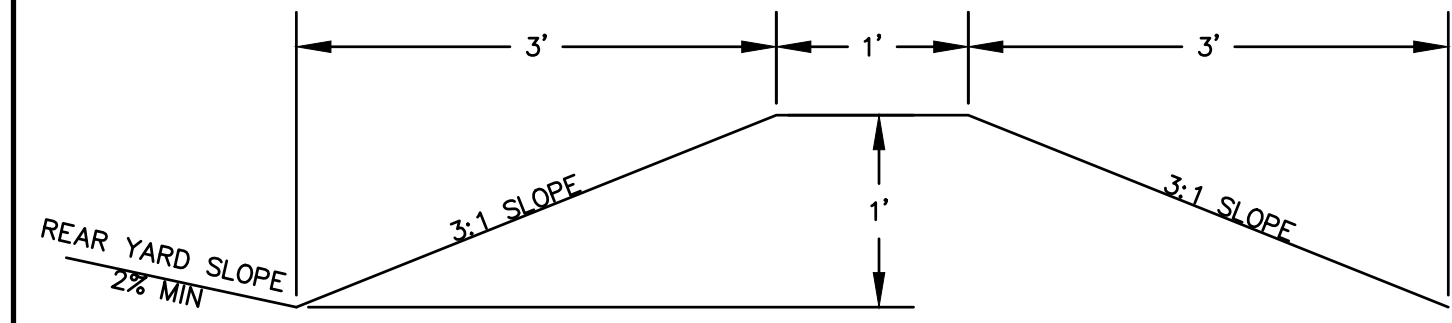
TYPICAL "B" LOT



TYPICAL "WALK-OUT" LOT



TYPICAL "GARDEN LEVEL" LOT

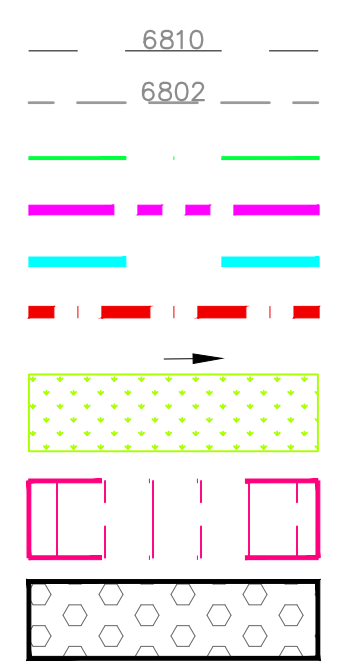


REAR YARD BERM LOTS 43-49 & 88-92

**NOTES:**  
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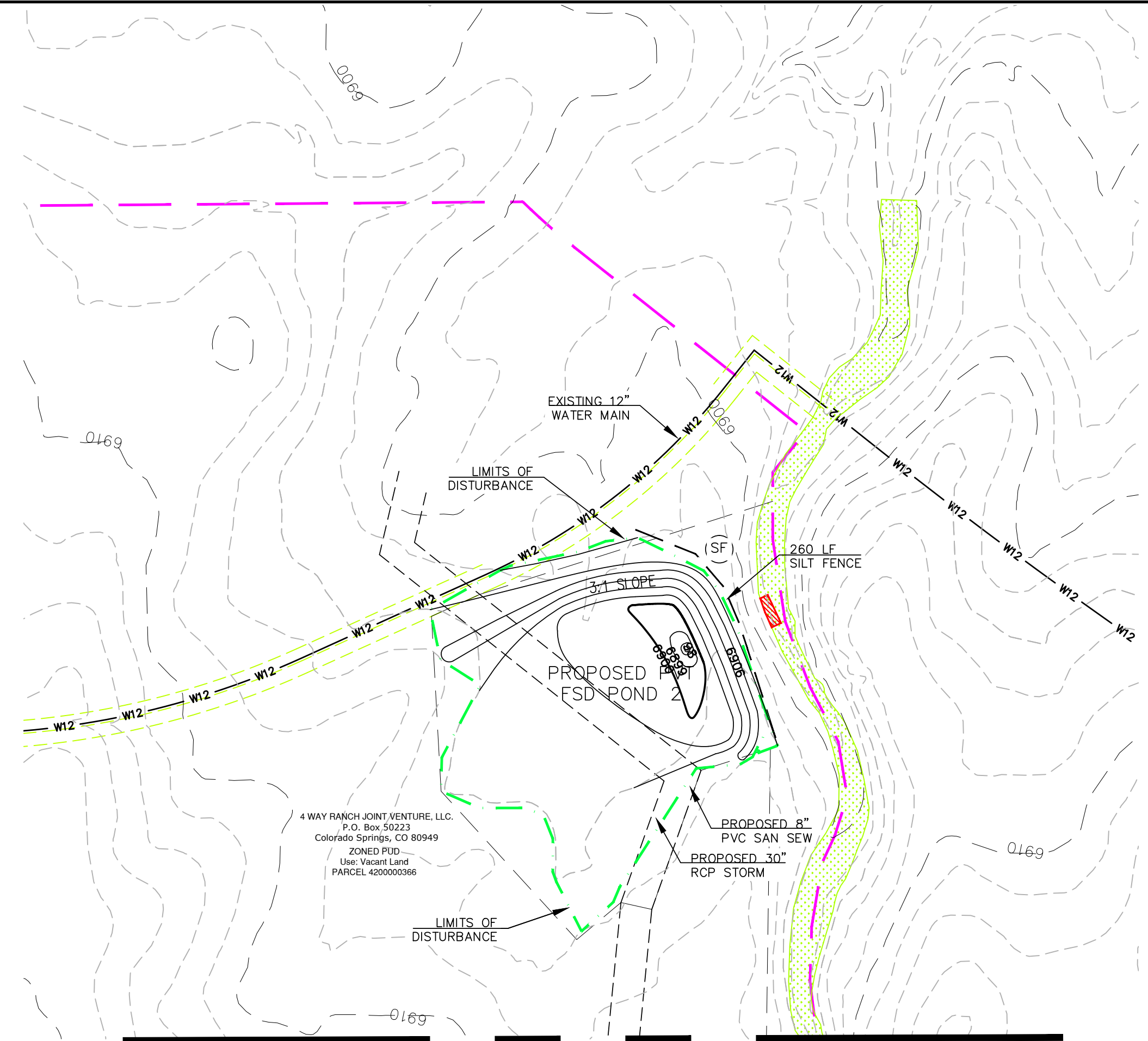
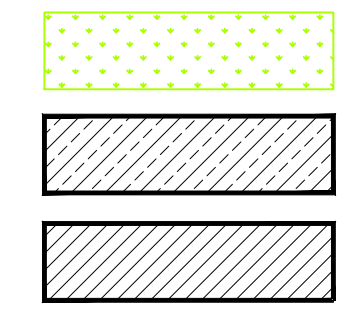
**GRADING LEGEND**

- 10' EXISTING CONTOUR
- 2' EXISTING CONTOUR
- LIMITS OF DISTURBANCE/ CONSTRUCTION BOUNDARY
- SUBDIVISION BOUNDARY
- TRIBUTARY AREA TO TSB
- PROPOSED DIVERSION SWALE
- DIRECTION OF SURFACE FLOW
- EXISTING WETLANDS
- 100-Y FEMA FLOODPLAIN

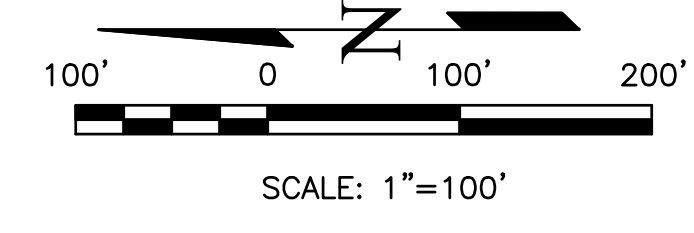


**WETLANDS LEGEND**

- EXISTING WETLANDS
- TEMPORARY WETLAND DISTURBANCE
- PERMANENT WETLAND DISTURBANCE



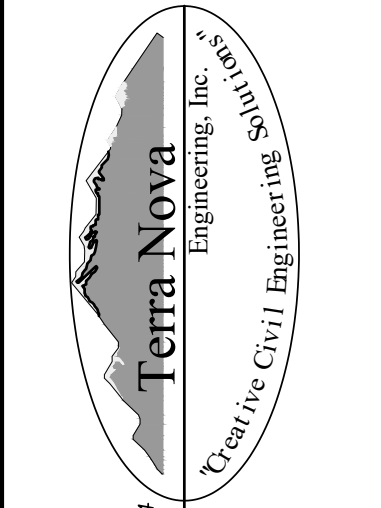
MATCHLINE SEE SHEET 4 FOR FILING 1 & FILING 2



REVISIONS NO.	DESCRIPTION	DATE

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PREPARED FOR:  
**4-WAY RANCH JOINT VENTURE**  
ATTN: PETER MARTZ  
P.O. BOX 50223  
COLORADO SPRINGS, CO 80949  
719-491-3150



721 S. 23RD STREET  
COLORADO SPRINGS, CO 80904  
OFFICE: 719-635-6422  
FAX: 719-635-6426  
www.tneng.com

**WATERBURY FILING NO. 1 & 2**  
GRADING EROSION & STORMWATER CONTROL PLAN  
INTERIM EROSION CONTROL PLAN 2

THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

DESIGNED BY	DLF
DRAWN BY	QNA
CHECKED BY	QNA
H-SCALE	NA
V-SCALE	N/A
JOB NO.	1715.00
DATE ISSUED	11/22/22
SHEET NO.	5 OF 10

QUENTIN ARMIJO  
COLORADO P.E. NO. 37170

**EROSION CONTROL LEGEND**

KEY	TITLE	SYMBOL	IMPLEMENTATION PHASE
SF	SILT FENCE	— SF —	INITIAL
CF	CONSTRUCTION FENCE	— CF —	INITIAL
CIP	CULVERT INLET PROTECTION	[Symbol]	INTERIM
IP	INLET PROTECTION	[Symbol]	INTERIM
SBB	STRAW BALE BARRIER	[Symbol]	INTERIM
SP	STOCKPILE PROTECTION	[Symbol]	INITIAL
VTC	VEHICLE TRACKING CONTROL	[Symbol]	INITIAL
CWA	CONCRETE WASHOUT AREA	[Symbol]	INTERIM
SSA	STABILIZED STAGING AREA	[Symbol]	INITIAL
TSM	TEMPORARY SEEDING AND MULCHING	[Symbol]	INITIAL
PSM	PERMANENT SEEDING AND MULCHING	[Symbol]	FINAL

**GRADING LEGEND**

8' EXISTING CONTOUR	6810
1' EXISTING CONTOUR	6802
5' PROPEL CONTOUR	6810
1' PROPEL CONTOUR	6802
LIMITS OF DISTURBANCE/CONSTRUCTION BOUNDARY	[Symbol]
SUBDIVISION BOUNDARY	[Symbol]
CUT/FILL LINE	[Symbol]
DIRECTION OF SURFACE FLOW	[Symbol]
HIGH POINT	HPX
LOW POINT	LPX
A LOT	"A"
B LOT	"B"
WALK OUT LOT MODIFIED	"WO*"
GARDEN LEVEL LOT MODIFIED	"G*"
100-Y FEMA FLOODPLAIN	[Symbol]
100-Y HWL PER HECRAS ANALYSIS	[Symbol]
AREAS OF DE-WATERING	[Symbol]

**WETLANDS LEGEND**

EXISTING WETLANDS	[Symbol]
TEMPORARY WETLAND DISTURBANCE	[Symbol]
PERMANENT WETLAND DISTURBANCE	[Symbol]

**VEGETATION NOTE:**

EXISTING VEGETATION CONSISTS OF NATIVE PRAIRIE GRASSES AND SHRUBS WITH FAIR TO GOOD COVERAGE OF 50% TO 70%  
**NOTES:**  
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**RUNOFF REDUCTION LEGEND**

UNCONNECTED IMPERVIOUS AREA	[Symbol]
RECEIVING PERVIOUS AREA	[Symbol]
EXCLUDED UNDEVELOPED PERVIOUS AREA PER THE EXCLUSION IN ECM APPENDIX 1.7.1.B.7 - SITES WITH LAND DISTURBANCE TO UNDEVELOPED LAND THAT WILL REMAIN UNDEVELOPED	[Symbol]



MATCHLINE SEE SHEET 7 FOR OFFSITE EDB POND 2

SCALE: 1"=100'

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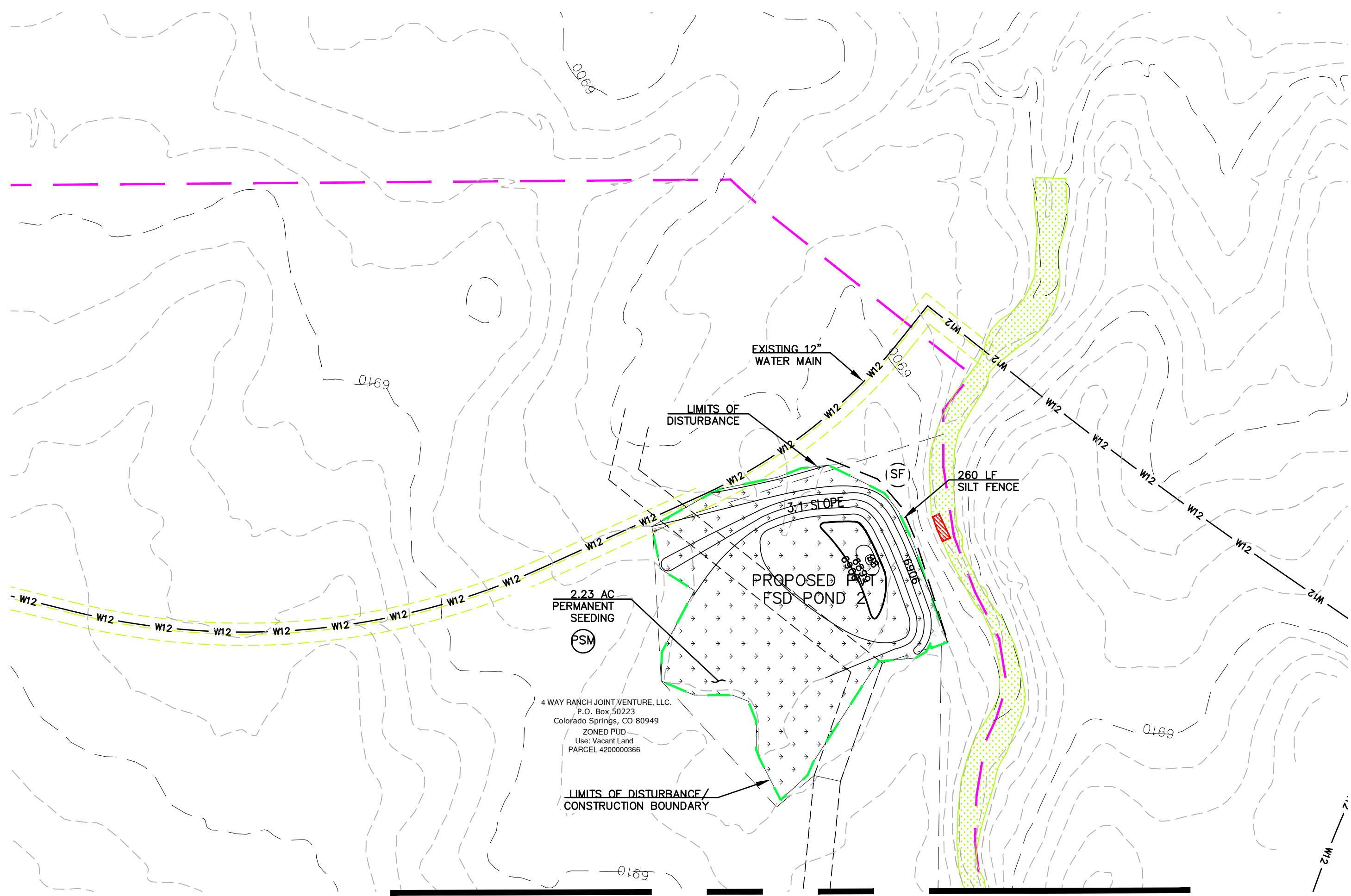
DATE: \_\_\_\_\_

REVISIONS: \_\_\_\_\_

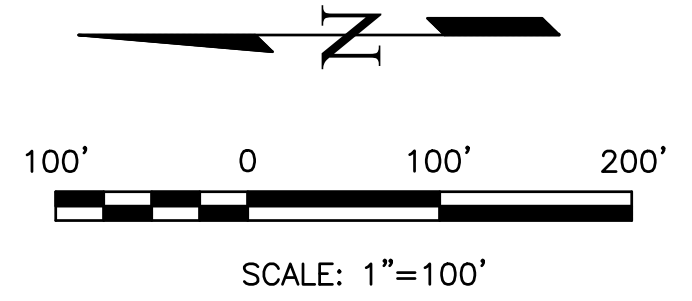
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PREPARED FOR:  
 4-WAY RANCH JOINT VENTURE  
 ATTN: PETER MARTZ  
 COLORADO SPRINGS, CO 80949  
 P.O. BOX 50223  
 COLORADO SPRINGS, CO 80949  
 719-491-3150

DESIGNED BY DLF  
 DRAWN BY QNA  
 CHECKED BY QNA  
 H-SCALE 1" = 100'  
 V-SCALE N/A  
 JOB NO. 1715.00  
 DATE ISSUED 11/22/22  
 SHEET NO. 6 OF 10



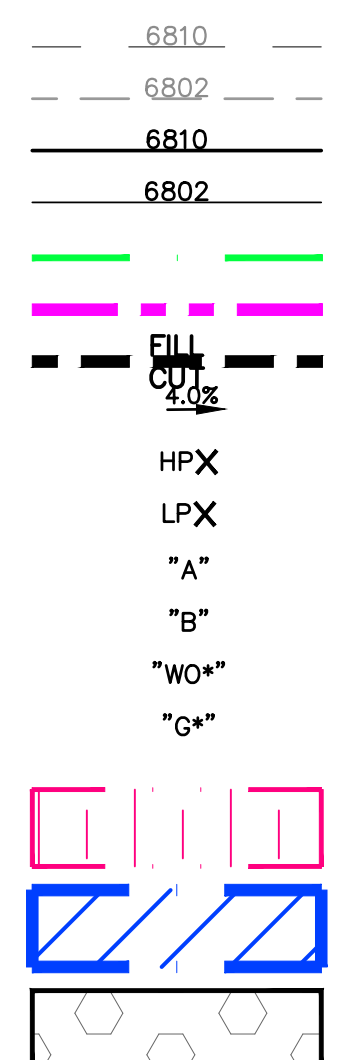
MATCHLINE SEE SHEET 6 FOR FILING 1 & FILING 2



**NOTES:**  
 NO BATCH PLANTS ARE PROPOSED  
 ALL CONTROL MEASURES ARE BEING IMPLEMENTED BY THE OWNER/DEVELOPER/CONTRACTOR

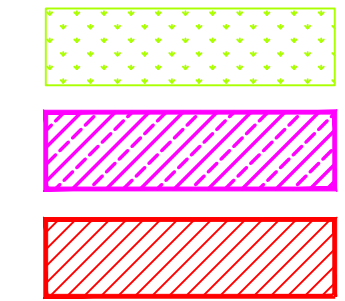
**GRADING LEGEND**

- 8' EXISTING CONTOUR
- 1' EXISTING CONTOUR
- 5' PROPED CONTOUR
- 1' PROPED CONTOUR
- LIMITS OF DISTURBANCE/  
CONSTRUCTION BOUNDARY
- SUBDIVISION BOUNDARY
- CUT/FILL LINE
- DIRECTION OF SURFACE FLOW
- HIGH POINT
- LOW POINT
- A LOT
- B LOT
- WALK OUT LOT MODIFIED
- GARDEN LEVEL LOT MODIFIED
- 100-Y FEMA FLOODPLAIN
- 100-Y HWL PER HECRAS ANALYSIS
- AREAS OF DE-WATERING



**WETLANDS LEGEND**

- EXISTING WETLANDS
- TEMPORARY WETLAND DISTURBANCE
- PERMANENT WETLAND DISTURBANCE



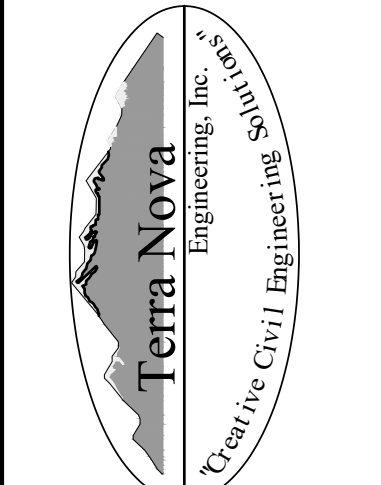
THIS DESIGN WAS PREPARED UNDER MY DIRECT SUPERVISION  
 FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

QUENTIN ARMIJO  
 COLORADO P.E. NO. 37170

REVISIONS NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPLICABLE AGENCIES, THE REVIEWING AGENCIES, OR TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND SITE SPECIFIC AUTHORIZATION. WRITTEN AUTHORIZATION.

PREPARED FOR:  
**4-WAY RANCH JOINT VENTURE**  
 ATTN: PETER MARTZ  
 P.O. BOX 50223  
 COLORADO SPRINGS, CO 80949  
 719-491-3150

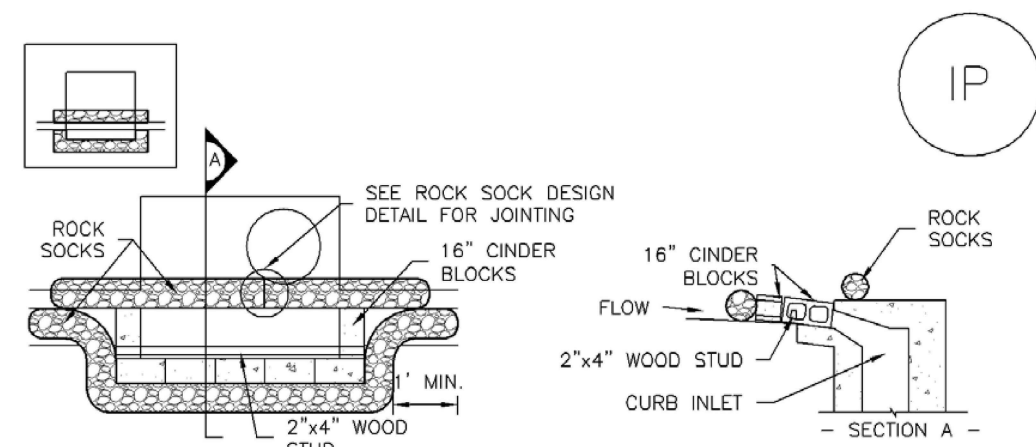


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 FAX: 719-635-6426  
 www.tnecinc.com

**WATERBURY FILING NO. 1**  
 GRADING EROSION & CONTROL PLAN  
 FINAL EROSION CONTROL PLAN 2

DESIGNED BY DLF
DRAWN BY QNA
CHECKED BY QNA
H-SCALE NA
V-SCALE N/A
JOB NO. 1715.00
DATE ISSUED 11/22/22
SHEET NO. 7 OF 10

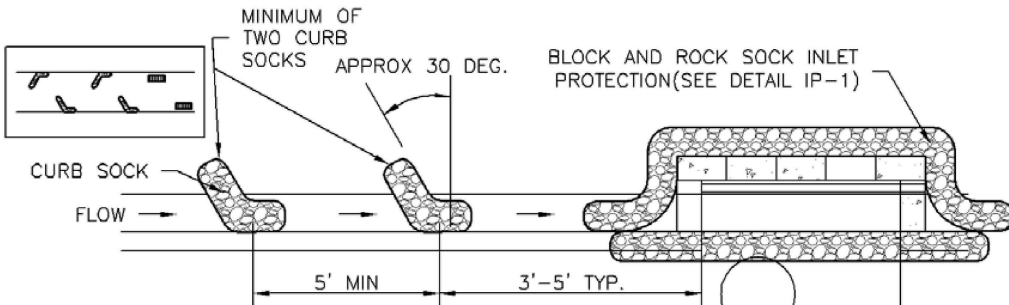
**SC-6 Inlet Protection (IP)**



**IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION**

**BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES**

- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
- CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
- GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



**IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION**

**CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES**

- SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
- PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
- SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
- AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

**SC-6 Inlet Protection (IP)**

**GENERAL INLET PROTECTION INSTALLATION NOTES**

- SEE PLAN VIEW FOR:  
- LOCATION OF INLET PROTECTION.  
- TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
- INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
- 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.

**INLET PROTECTION 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 INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
- INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
- WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISAPPROVES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, THE EXISTING PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

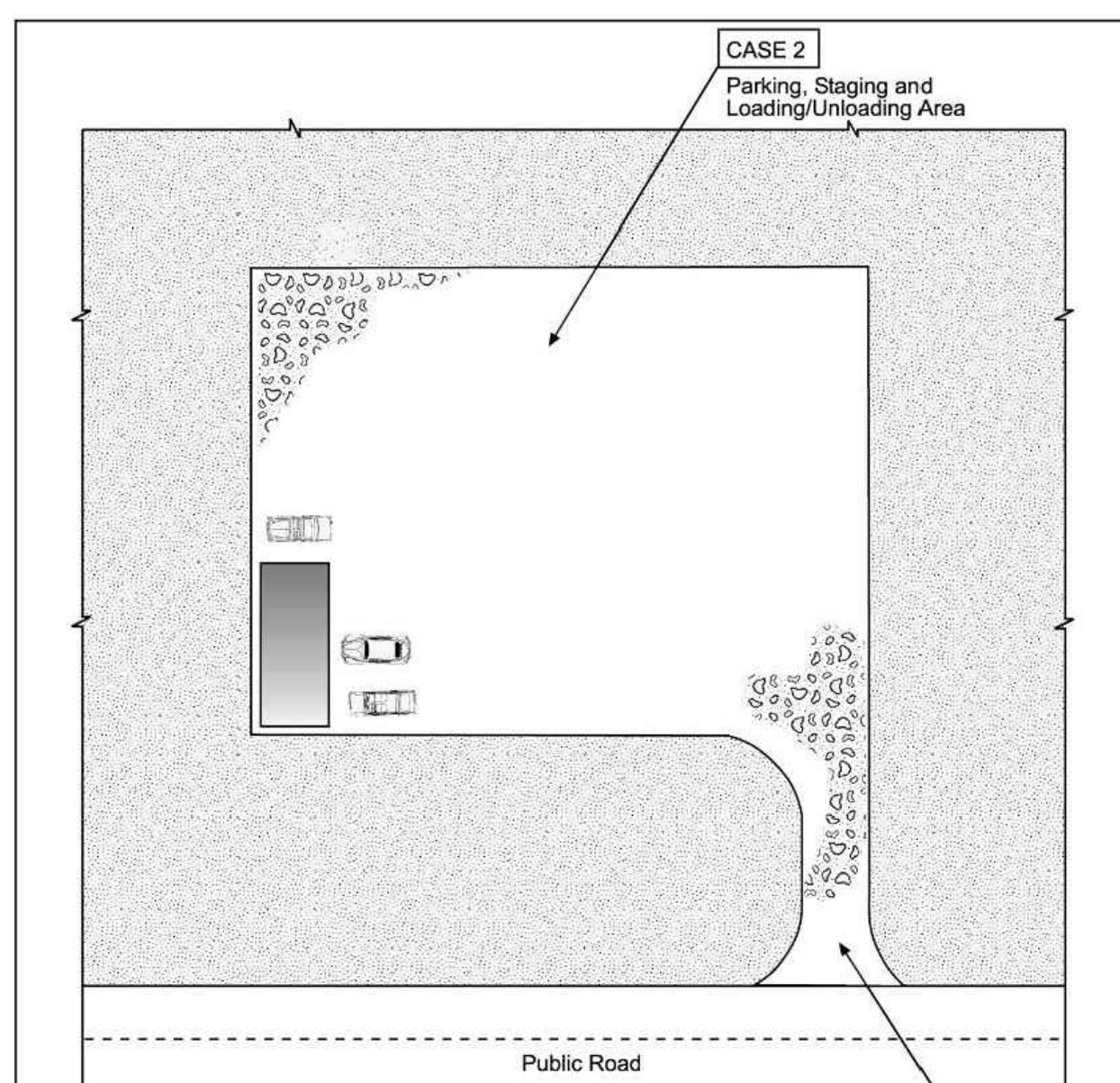
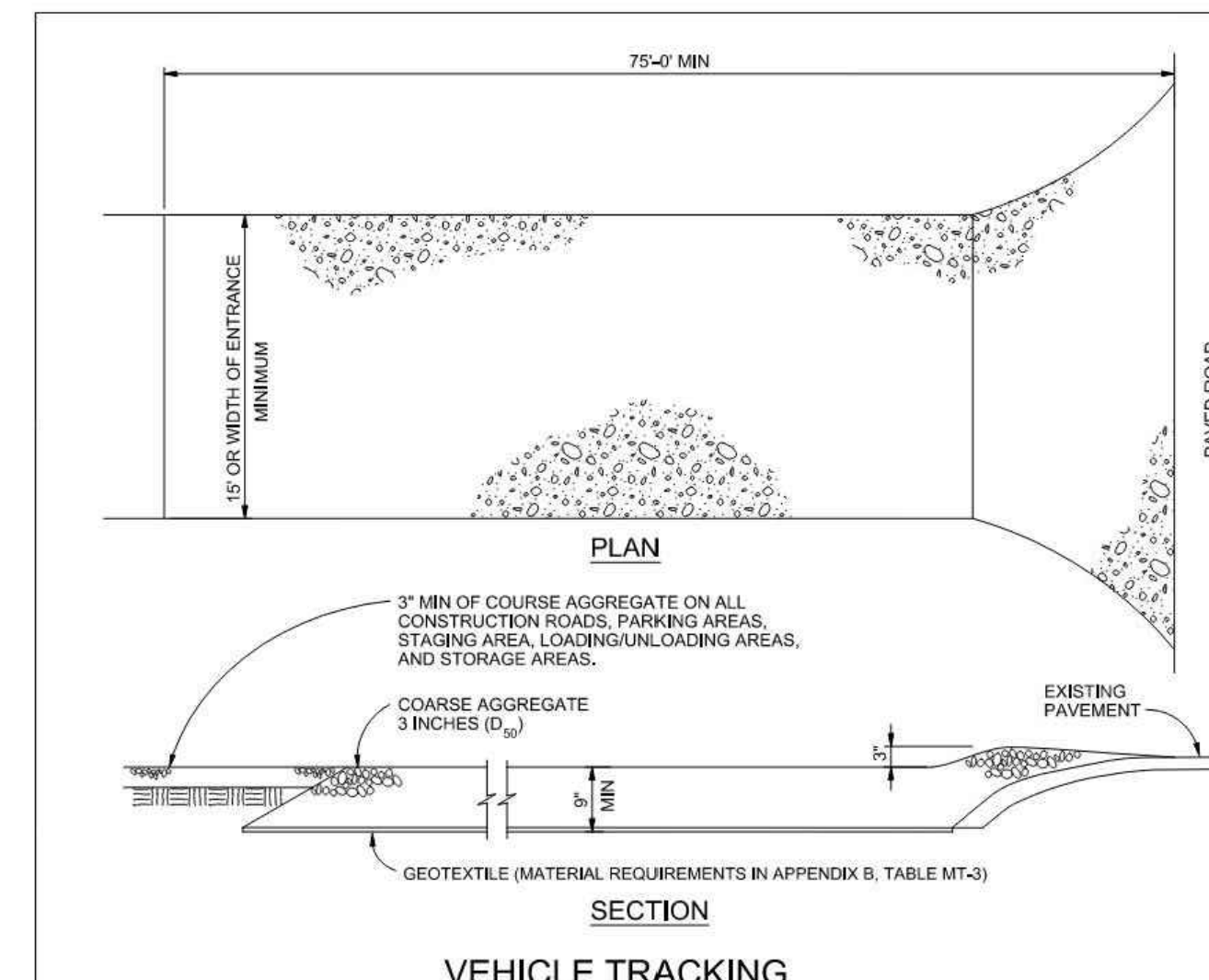


Table VT-1

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



**VEHICLE TRACKING INSTALLATION REQUIREMENTS**

- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
- 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.
- AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
- CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
- CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

**MAINTENANCE REQUIREMENTS**

- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
- STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
- STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
- OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

**Revegetation Chapter 14**

**Table 14-10. Recommended Seed Mix for Transition Areas<sup>1</sup>**

Common Name (Variety)	Scientific Name	Growth Season	Growth Form	Seeds/Lb	Lbs PLS/Acre Drilled	Lbs PLS/Acre Broadcast or Hydroseeded
Sheep fescue (Duras)	<i>Festuca ovina</i>	Cool	Bunch	680,000	1.3	2.6
Western wheatgrass (Arriba)	<i>Pascopyrum smithii</i>	Cool	Sod	110,000	7.9	15.8
Alkali sacaton	<i>Sporobolus airoides</i>	Warm	Bunch	1,758,000	0.5	1.0
Slender wheatgrass	<i>Elymus trachycaulus</i>	Cool	Bunch	159,000	5.5	11.0
Canadian bluegrass (Ruebens)	<i>Poa compressa</i>	Cool	Sod	2,500,000	0.3	0.6
Switchgrass (Pathfinder)	<i>Panicum virgatum</i>	Warm	Sod/Bunch	389,000	1.3	2.6
Annual rye	<i>Lolium multiflorum</i>	Cool	Cover crop	227,000	10.0	20.0
			<b>TOTAL</b>		<b>26.8</b>	<b>53.6</b>
<b>Wildflowers</b>						
Blanket flower	<i>Faillardia aristata</i>	---	---	132,000	0.25	0.50
Prairie coneflower	<i>Ratibida columnaris</i>	---	---	1,230,000	0.20	0.40
Purple prairie clover	<i>Petalostemum purpurea</i>	---	---	210,000	0.20	0.40
Gayfeather	<i>Liatris punctata</i>	---	---	138,000	0.06	0.12
Flax	<i>Linum lewisii</i>	---	---	293,000	0.20	0.40
Penstemon	<i>Penstemon strictus</i>	---	---	592,000	0.20	0.40
Yarrow	<i>Achillea millefolium</i>	---	---	2,770,000	0.03	0.06
			<b>TOTAL</b>		<b>1.14</b>	<b>2.28</b>

<sup>1</sup>For side slopes or between wet and dry areas.  
<sup>2</sup>Substitute 1.7 lbs PLS/acre of inland saltgrass (*Distichlis spicata*) in salty soils.

**SEED MIX FOR POND BOTTOMS**

THE CITY OF COLORADO SPRINGS ENGINEERING DEPARTMENT GENERAL SPECIFICATIONS SHOULD BE USED AS A RESOURCE WHEN DEVELOPING SPECIFICATIONS FOR RE-VEGETATION. GENERAL GUIDELINES AND RECOMMENDATIONS FOR RE-VEGETATION INCLUDE:

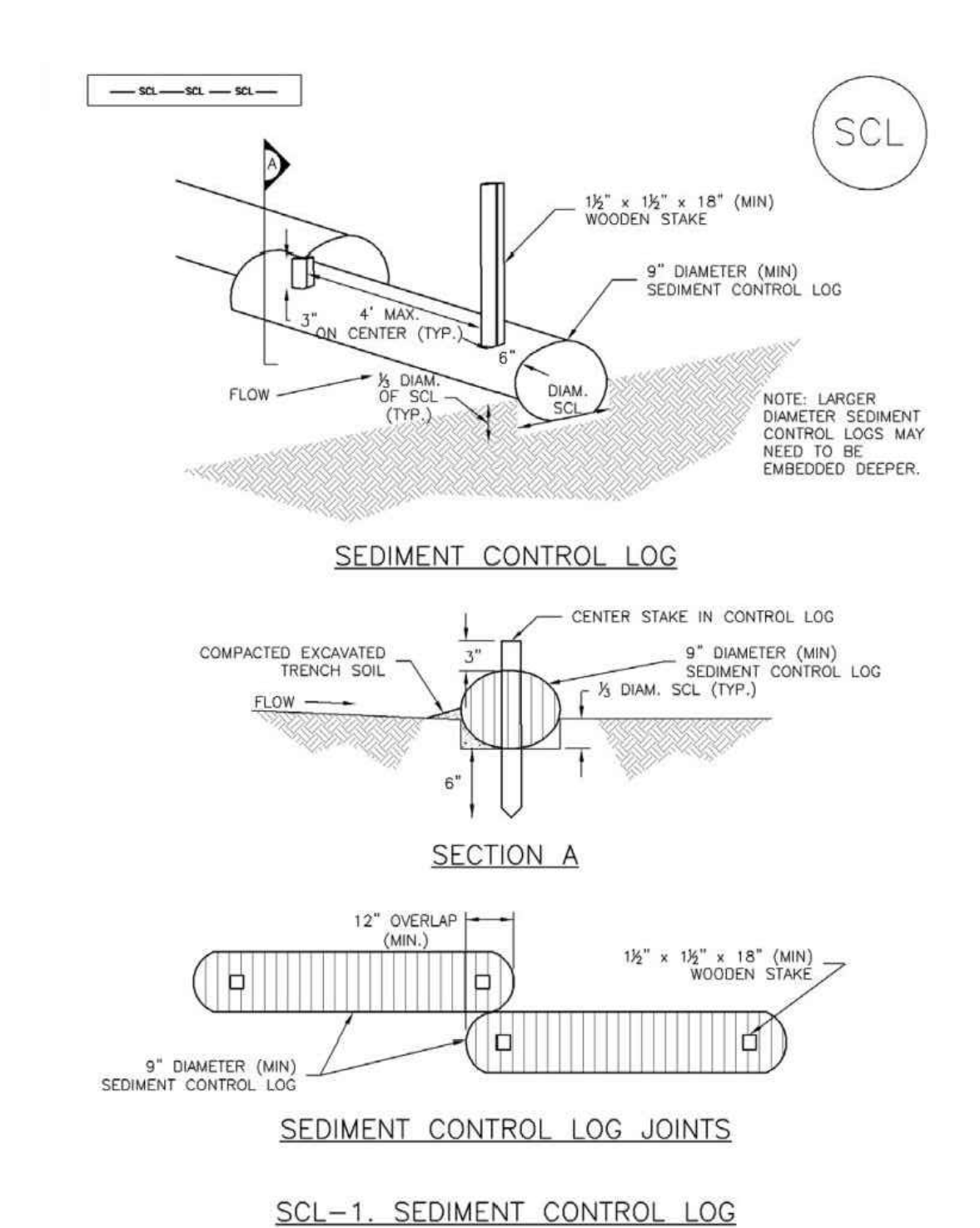
- SEED MIXTURES SHOULD BE SOWN AT THE PROPER TIME OF YEAR FOR THE MIXTURE. GENERALLY, THERE ARE TWO OPTIMAL SEEDING PERIODS DURING THE YEAR. THE FIRST PERIOD IS IN THE SPRING, MARCH TO MAY. THE SECOND PERIOD IS IN LATE SUMMER TO EARLY FALL, AUGUST TO SEPTEMBER.
- SEED SHOULD BE DRILL-SEEDED, WHENEVER POSSIBLE.
- BROADCAST SEEDING OR HYDRO-SEEDED MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
- SEEDING RATES SHOULD BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDED.
- BROADCAST SEED SHOULD BE LIGHTLY HAND-RAKED INTO THE SOIL.
- SEED DEPTH SHOULD BE 1/3 TO 1/2 INCH FOR MOST MIXTURES.
- SEEDED AREAS SHOULD BE MULCHED, AND THE MULCH SHOULD BE ADEQUATELY SECURED.
- IF HYDRO-SEEDED IS CONDUCTED, MULCHING SHOULD BE CONDUCTED AS A SEPARATE, SECOND OPERATION.
- CONTAINERIZED NURSERY STOCK SHOULD BE KEPT IN A LIVE AND HEALTHY CONDITION PRIOR TO INSTALLATION.
- CONTAINERIZED TREES AND SHRUBS SHOULD BE INSTALLED ACCORDING TO THE PLANTING DETAILS PROVIDED IN THE COLORADO SPRINGS LANDSCAPE CODE AND POLICY MANUAL, UNIT FOUR, APPENDICES FOR TREE AND SHRUB PLANTING DETAILS.
- LIVE STAKES, POLES AND WILLOW BUNDLES SHOULD BE INSTALLED WHEN DORMANT (LATE WINTER AND EARLY SPRING).
- IF BEAVER ARE KNOWN TO BE IN THE AREA, BEAVER PROTECTION SHOULD BE PROVIDED FOR TREES AND SHRUBS.

**ALLOWABLE PLANT VARIETIES (SEE DRAINAGE CRITERIA MANUAL, VOLUME 1, CHAPTER 14, TABLE 14-5)**

- SPECIES**
- WESTERN WHEATGRASS (PASCOPYRUM SMITHII)
  - SWITCHGRASS (PANICUM VIRGATUM)
  - SLENDER WHEATGRASS (ELYMUS TRACHYCAULUS SSP. TRACHYCAULUS)
  - PUBESCENT WHEATGRASS (TRIGIA INTERMEDIA SSP. TRICHOPHORUM)
  - INDIAN GRASS (ACHNATHERUM HYMENOIDES)
  - BIG BLUESTEM (POA AMPLA)
  - BLUE GRAMA (BOUTELOUA GRACILIS)
  - SWITCHGRASS (PANICUM VIRGATUM)
  - SIDE-OATS GRAMA (BOUTELOUA CURTIPENDULA)
  - NEEDLE AND THREAD (HESPEROSTIPA COMATA SSP. COMATA)

\*SEED MIX SHOULD BE APPROVED BY THE COUNTY

**Sediment Control Log (SCL) SC-2**



**Sediment Control Log (SCL) SC-2**

- SEDIMENT CONTROL LOG INSTALLATION NOTES**
- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
  - SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADING LAND-DISTURBING ACTIVITIES.
  - SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
  - SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
  - IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
  - THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
  - FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

**SEDIMENT CONTROL LOG 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 SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/3 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOGS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, 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.

REVISIONS

NO.	DESCRIPTION	DATE

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**WATERBURY FILING NO. 1 & 2**  
GRADING EROSION & STORMWATER CONTROL PLAN  
EROSION CONTROL DETAILS

DESIGNED BY DLF  
DRAWN BY QNA  
CHECKED BY QNA

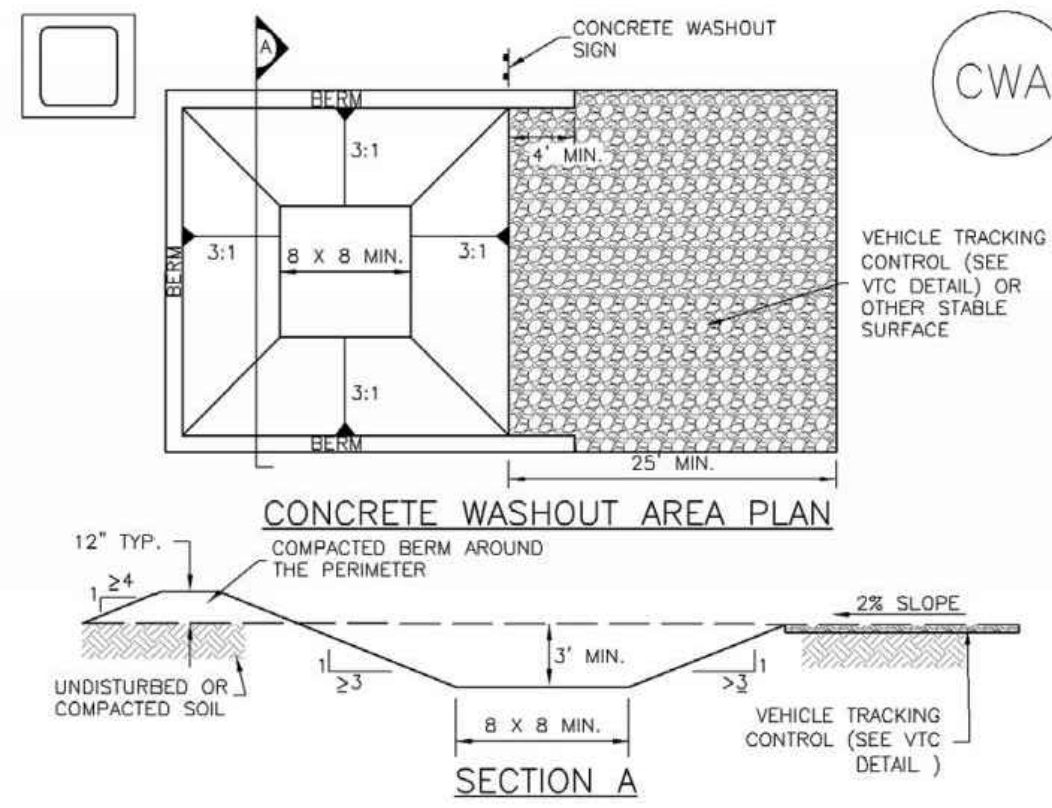
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JOB NO. 1715.00  
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SHEET NO. 8 OF 10



Concrete Washout Area (CWA)

MM-1



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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MM-1

Concrete Washout Area (CWA)

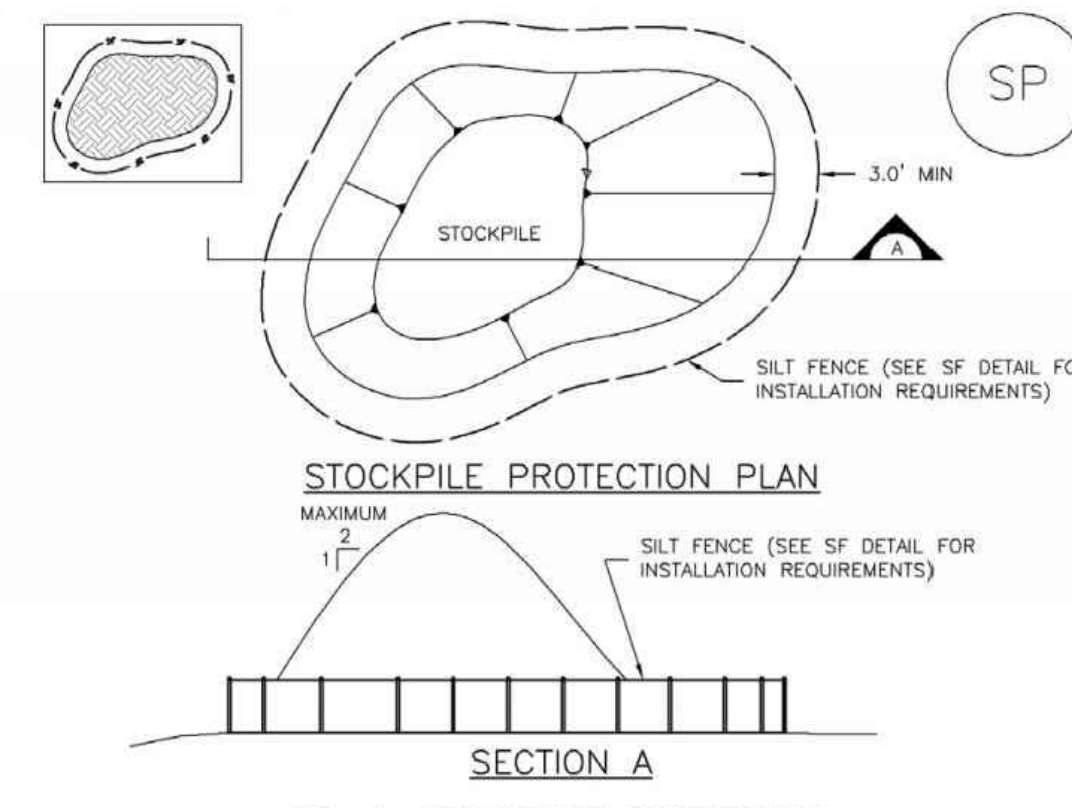
CWA MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION.
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.
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 JURISDICTION.
8. 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.

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Urban Storm Drainage Criteria Manual Volume 3

Stockpile Management (SP)

MM-2



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION OF STOCKPILES -TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS.
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS.
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

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MM-2

Stockpile Management (SM)

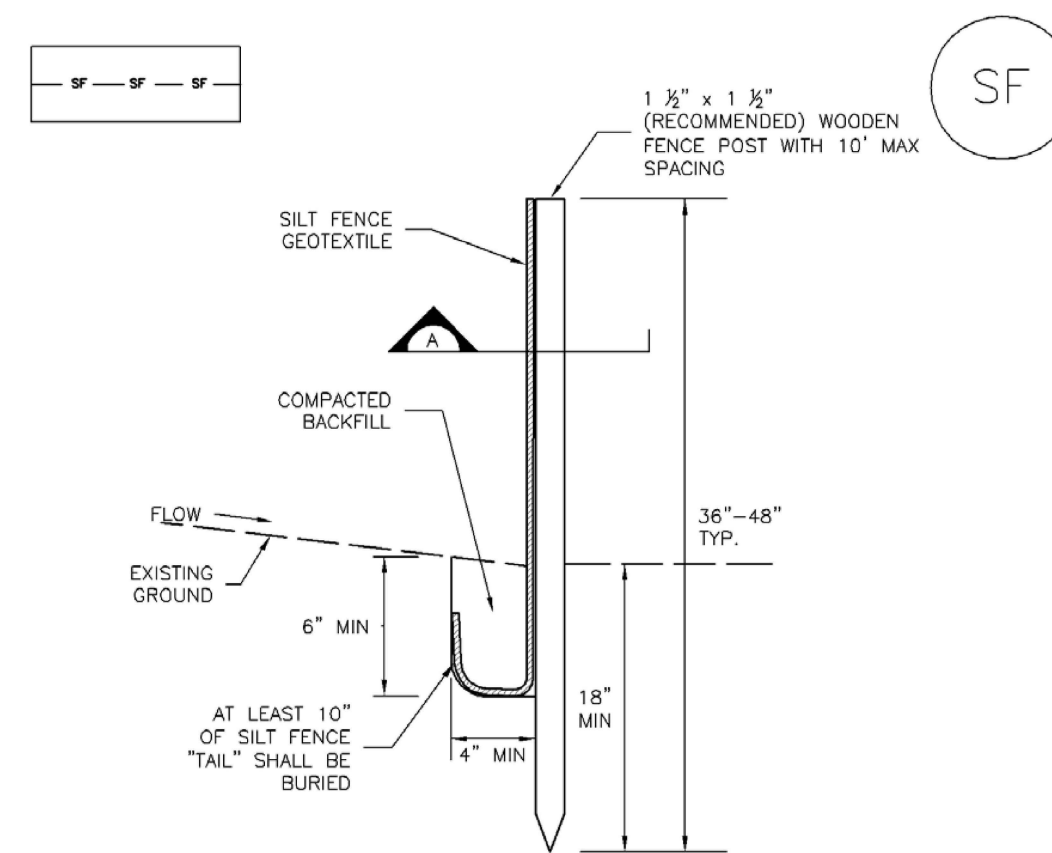
STOCKPILE PROTECTION MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
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.

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Silt Fence (SF)

SC-1



SILT FENCE

SECTION A

SF-1. SILT FENCE

SILT FENCE INSTALLATION NOTES

- 1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING.
2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS.
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK".
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

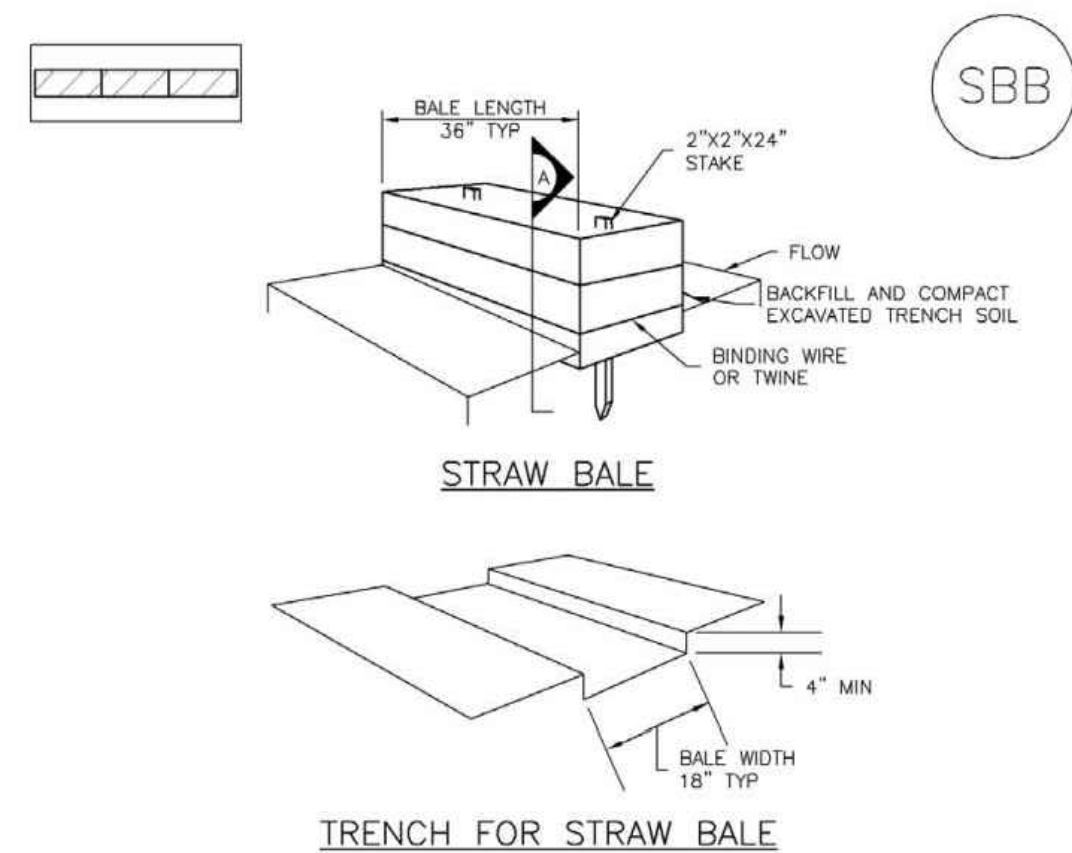
SILT FENCE MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP.
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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SC-3

Straw Bale Barrier (SBB)



STRAW BALE

TRENCH FOR STRAW BALE

SECTION A

SBB-1. STRAW BALE

Straw Bale Barrier (SBB)

SC-3

STRAW BALE INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION(S) OF STRAW BALES.
2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY.
3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
4. WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.
5. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"X18"X18".
6. A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4".
7. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE.

STRAW BALE MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
5. SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP.
6. STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
7. WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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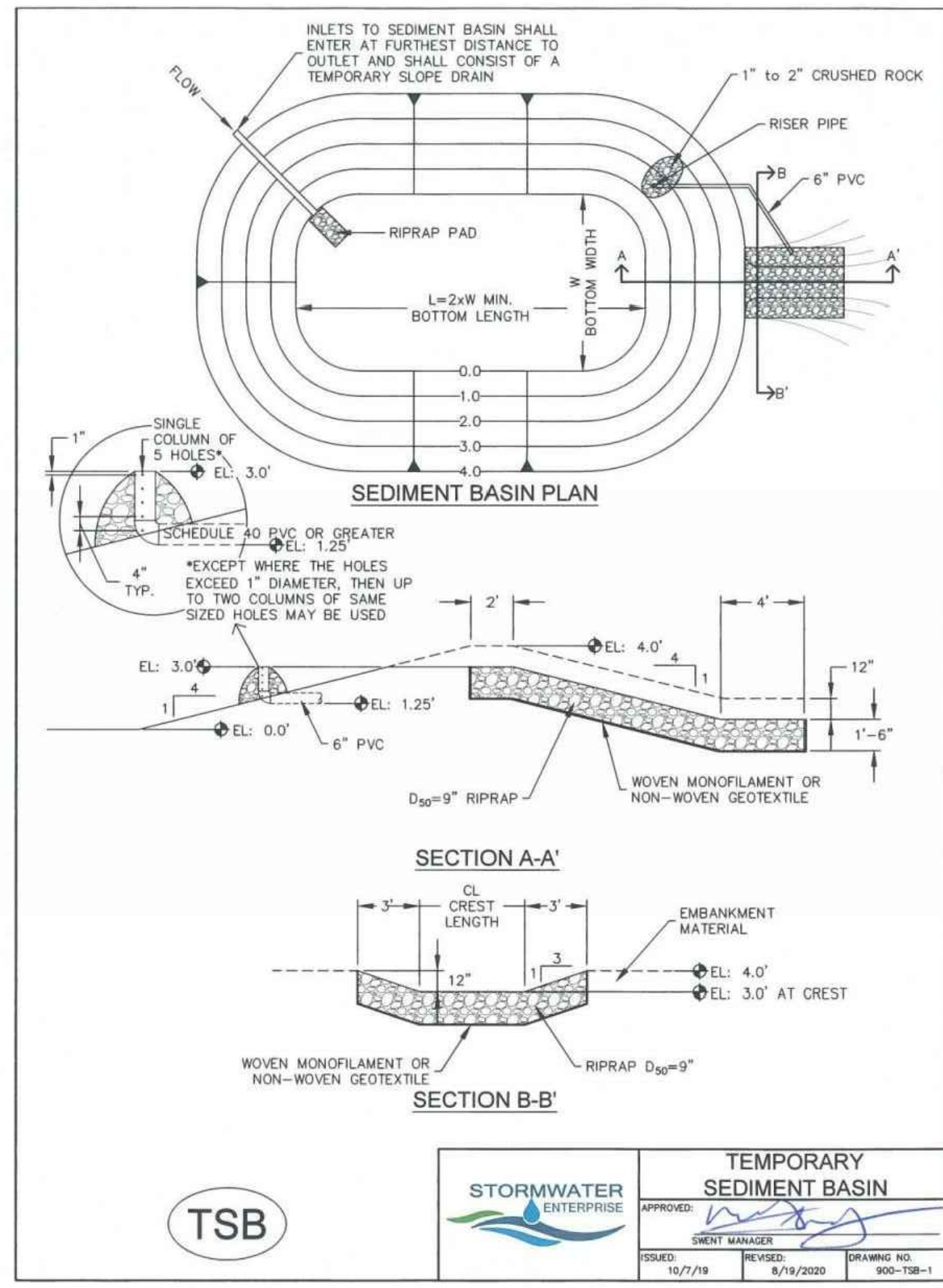
Table with columns: REVISIONS, NO., DESCRIPTION, DATE. Includes a note: UNTIL SUCH TIME AS APPROVED DRAWINGS ARE APPROVED BY TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND BY WRITTEN AUTHORIZATION.

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**TABLE SB-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN**

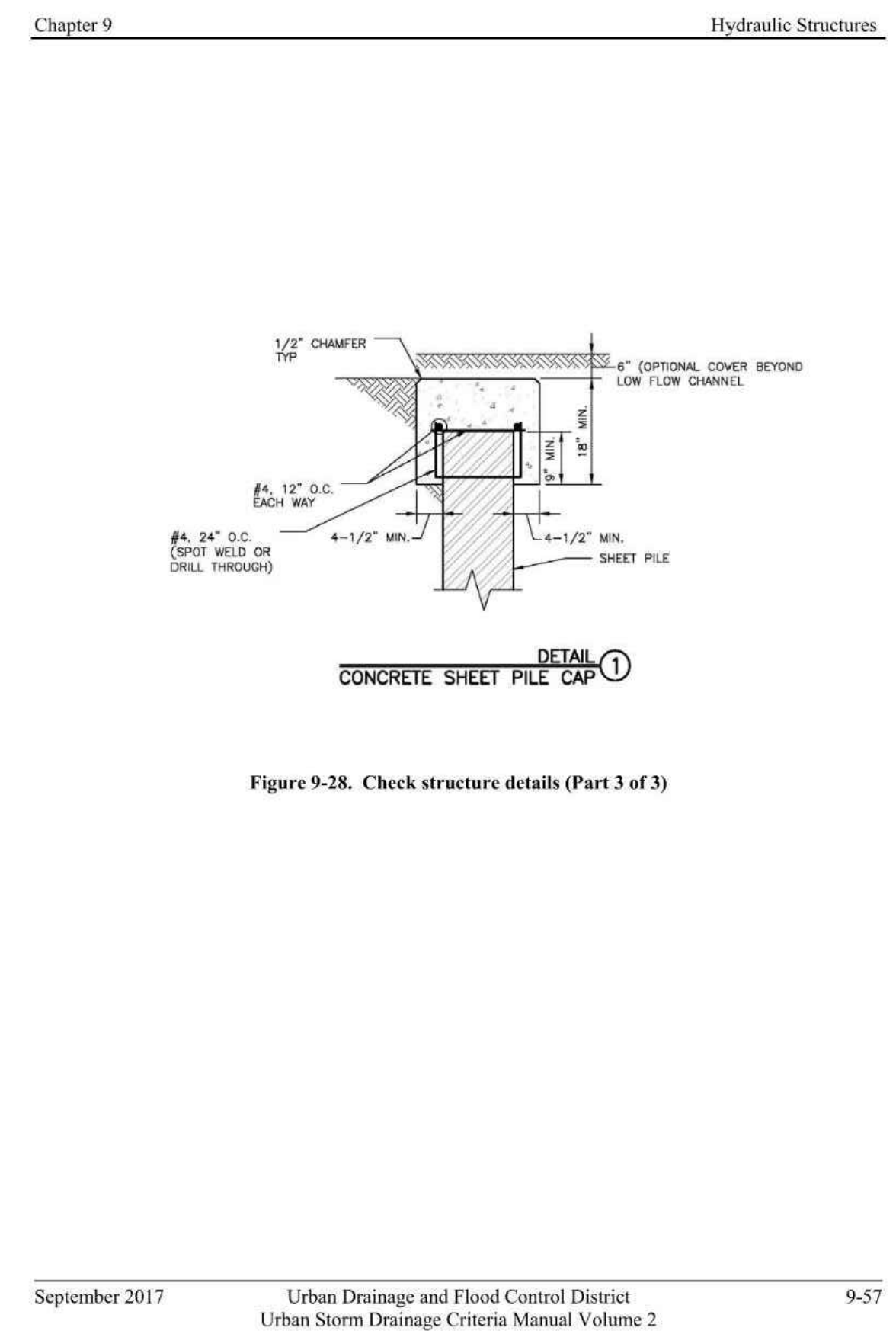
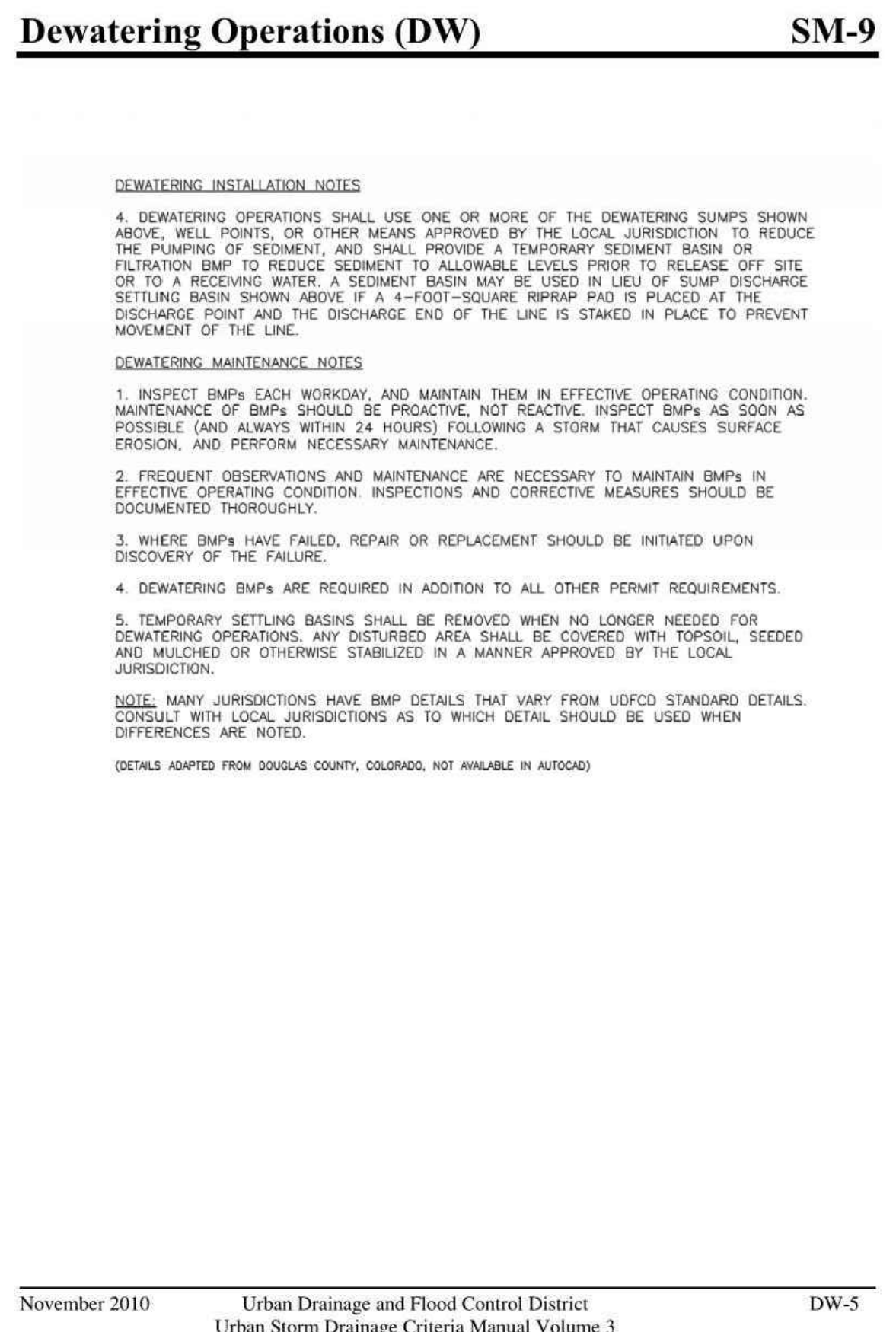
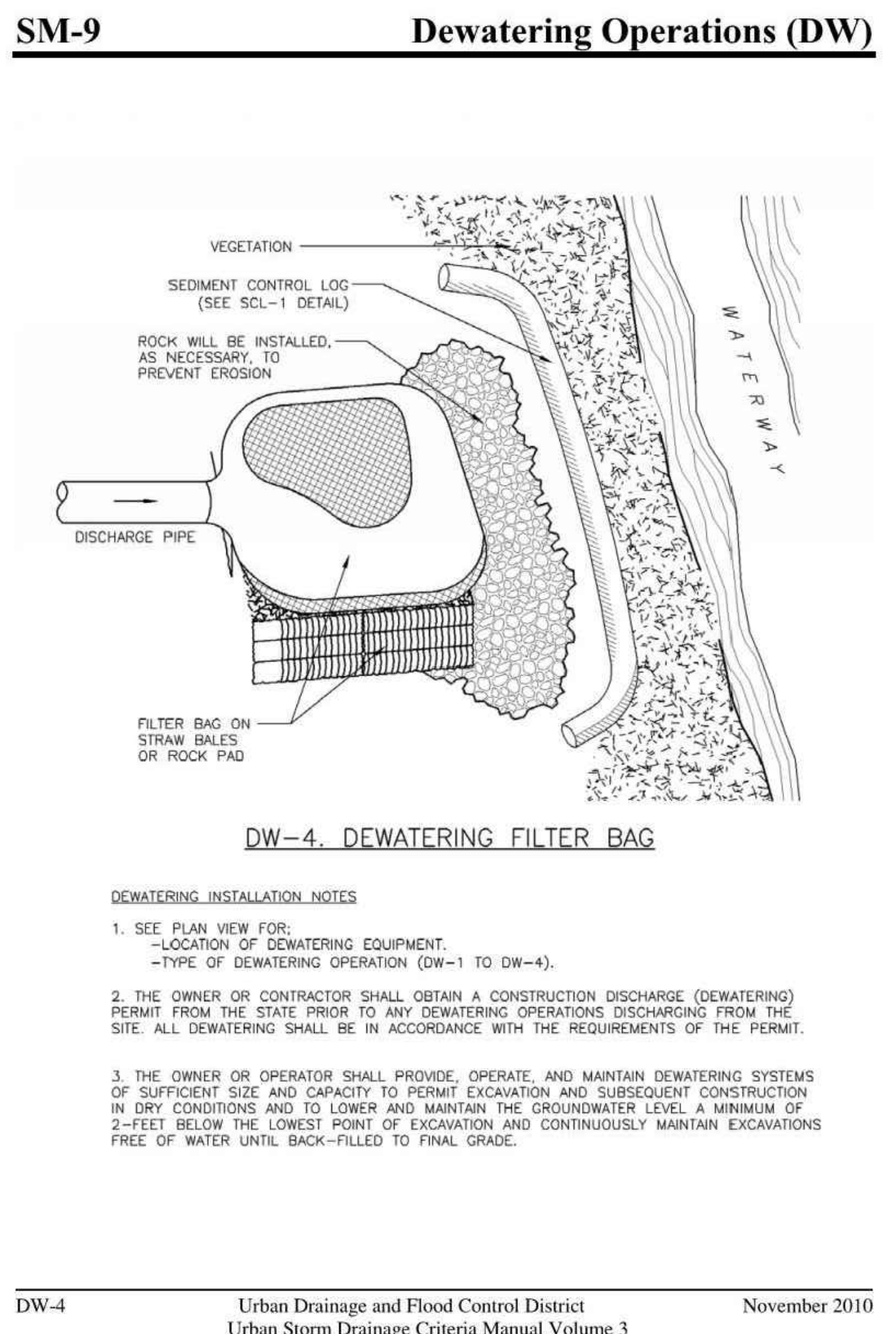
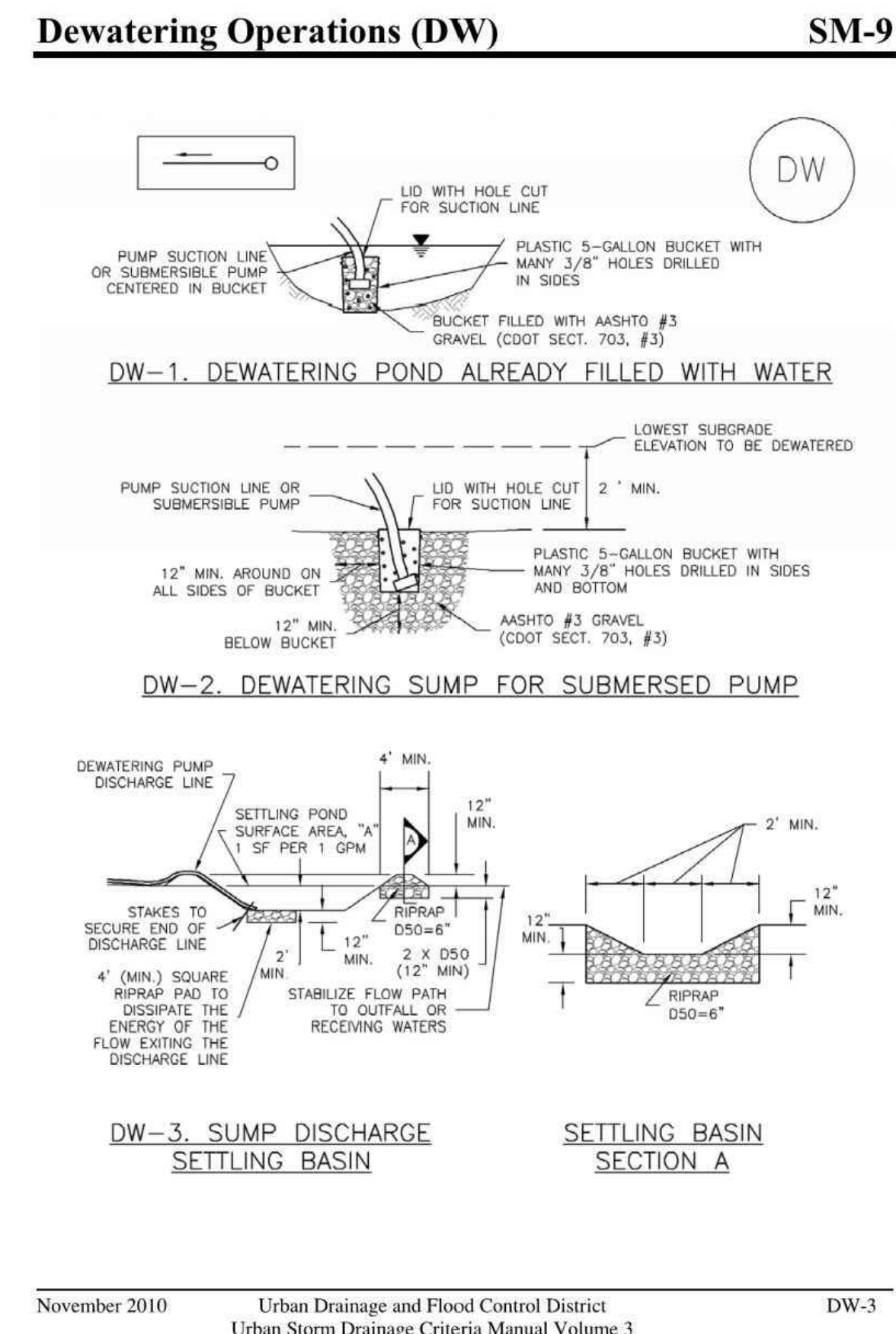
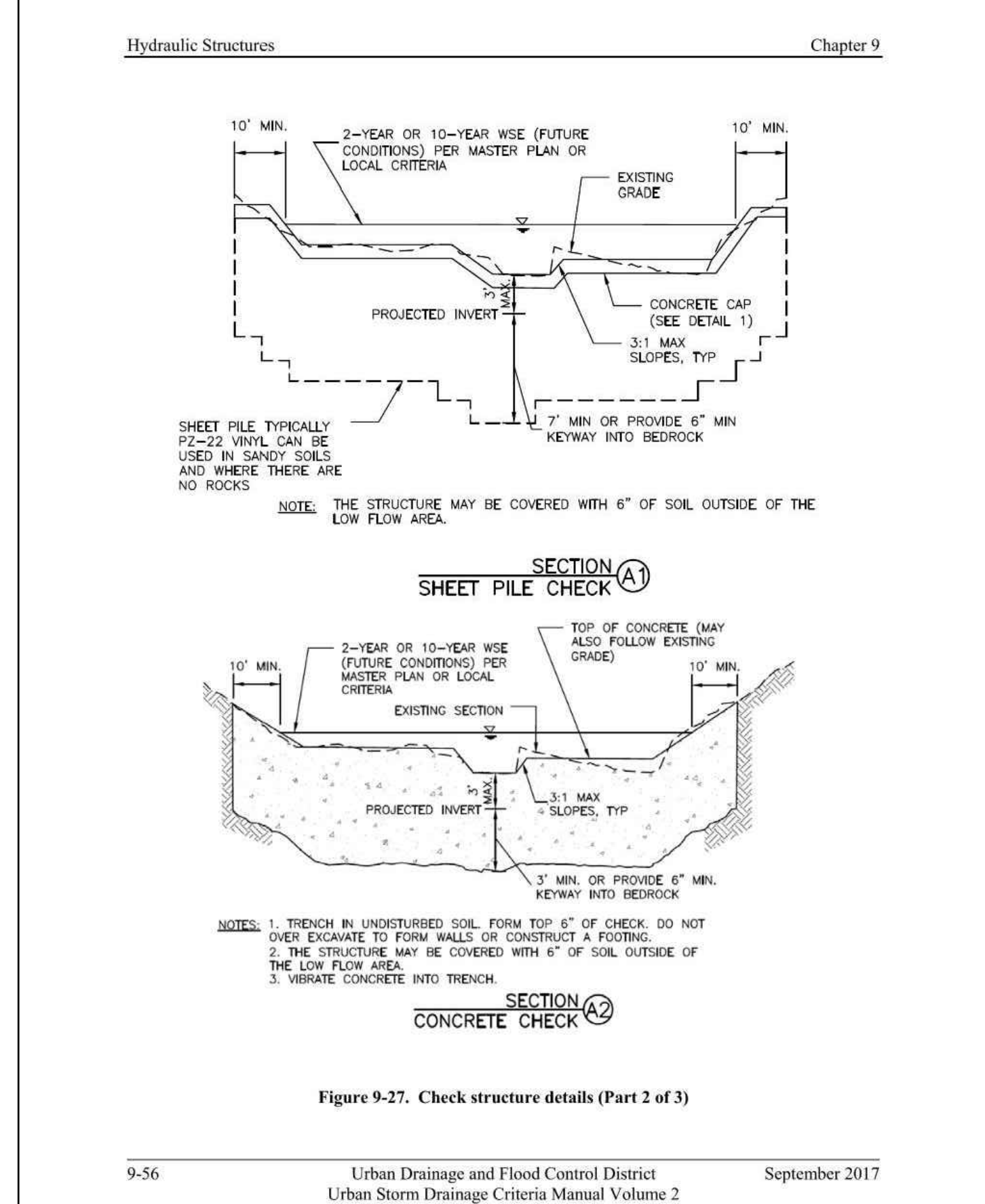
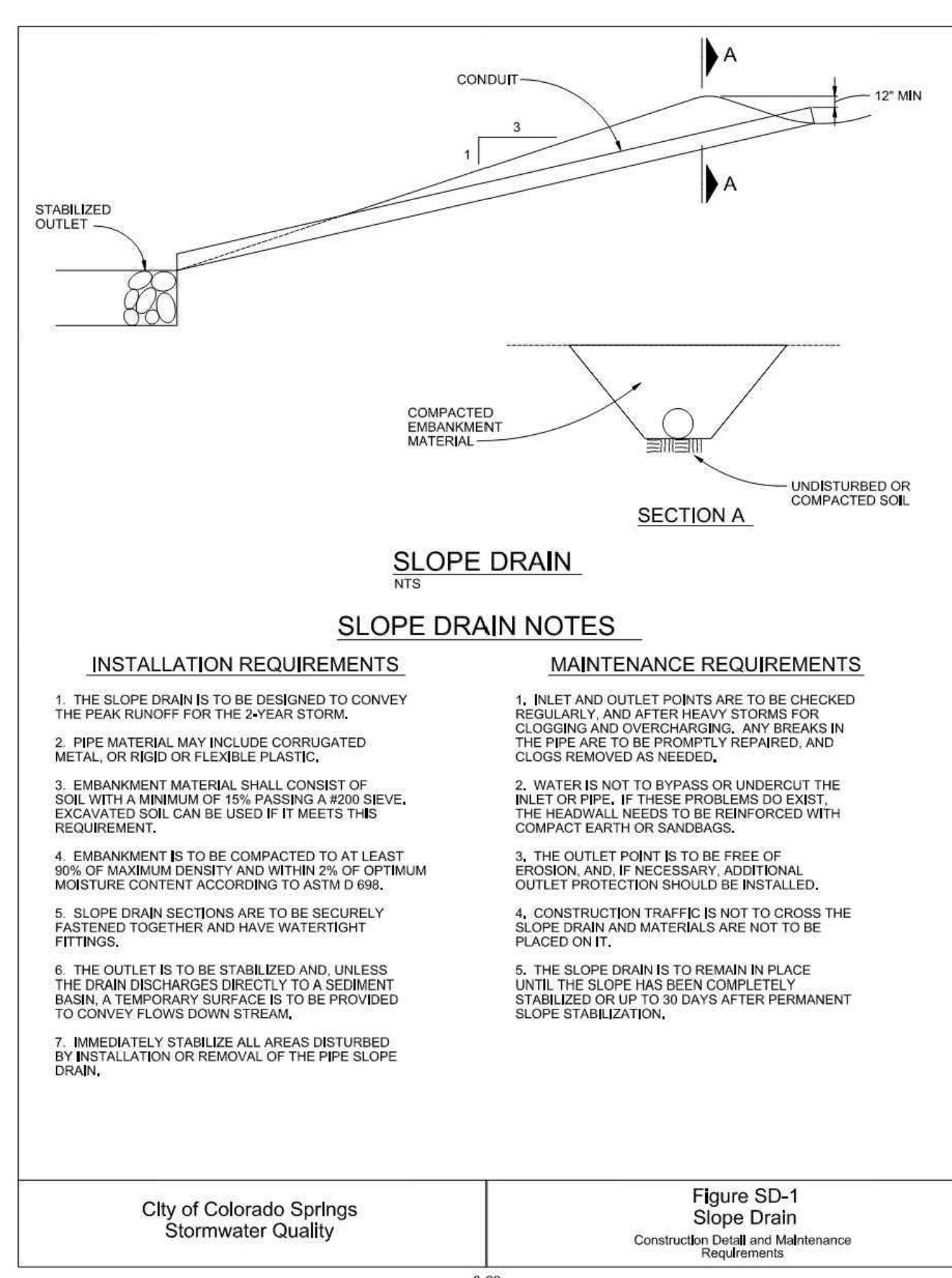
UPSTREAM DRAINAGE AREA (ROUNDED TO NEAREST ACRE), (AC)	Basin Bottom Width (W), (FT)	Spillway Crest Length (CL), (FT)	Hole Diameter (HD), (IN)
1	12 1/2"	2	3/2"
2	21	3	1 1/8"
3	28	4	1 1/4"
4	33 1/2	5	1 1/2"
5	38 1/2	6	1 3/4"
6	43	7	1 7/8"
7	47 1/2	8	2"
8	51	9	2 1/8"
9	55	10	2 1/4"
10	59 1/2	11	2 3/8"
11	61	12	2 1/2"
12	64	13	2 5/8"
13	67 1/2	14	2 3/4"
14	70 1/2	15	2 7/8"
15	73 1/2	16	3"

**INSTALLATION NOTES**

- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE, GREATER THAN 3 INCHES, AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE No. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698.
- PIPE SCHEDULE 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES. DESIGN CALCULATIONS MUST BE APPROVED PRIOR TO IMPLEMENTATION.

**MAINTENANCE NOTES**

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
- SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
- PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.



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DRAWN BY QNA  
CHECKED BY QNA

H-SCALE NA  
V-SCALE N/A

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