

4-WAY RANCH METROPOLITAN DISTRICT  
LIFT STATION – GRADING & EROSION CONTROL PLAN

SHEET INDEX

COVER SHEET/VICINITY MAP

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EC3	EROSION CONTROL DETAILS 2
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EC5	

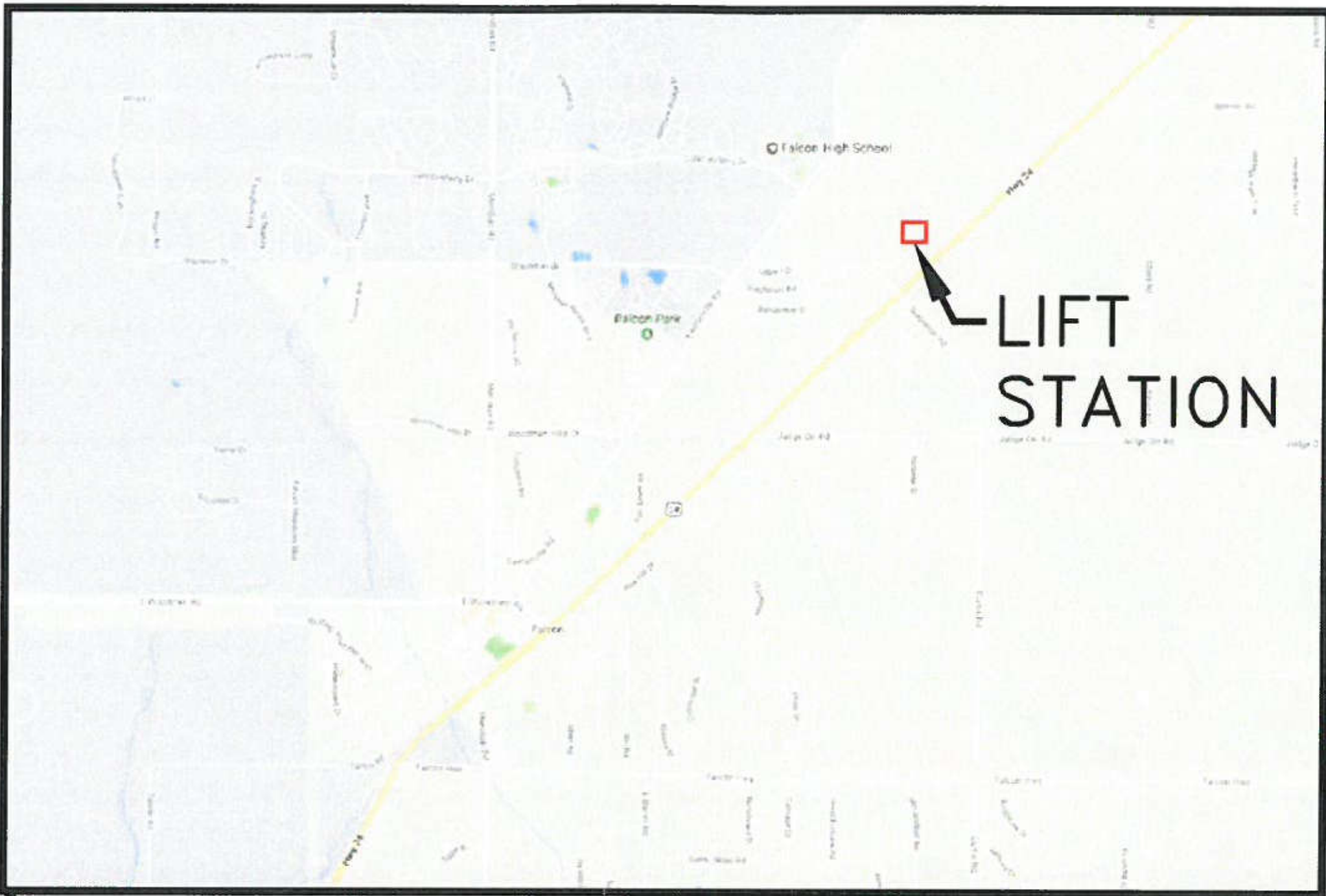
LEGEND

---	BOUNDARY / RIGHT-OF-WAY
---	EXISTING FENCE
---	PROPOSED FENCE
---	EXISTING WATER LINE (W)
---RAV---RAV---RAV---	EXISTING RAW WATER LINE
---SS---SS---SS---	EXISTING SANITARY SEWER LINE
--->>>>>>---	EXISTING ON-SITE SEWER LINE
---	EXISTING STORM SEWER
---UGE---UGE---UGE---	EXISTING UNDERGROUND ELECTRIC
---OHE---OHE---OHE---	EXISTING OVERHEAD ELECTRIC
---GAS---GAS---GAS---	EXISTING GAS LINE
---FDP---FDP---FDP---	EXISTING FIBER OPTIC LINE
⊗	EXISTING VALVE
-----7270-----	EXISTING CONTOURS
-----7270-----	PROPOSED CONTOURS
=====	PROPOSED PIPELINE

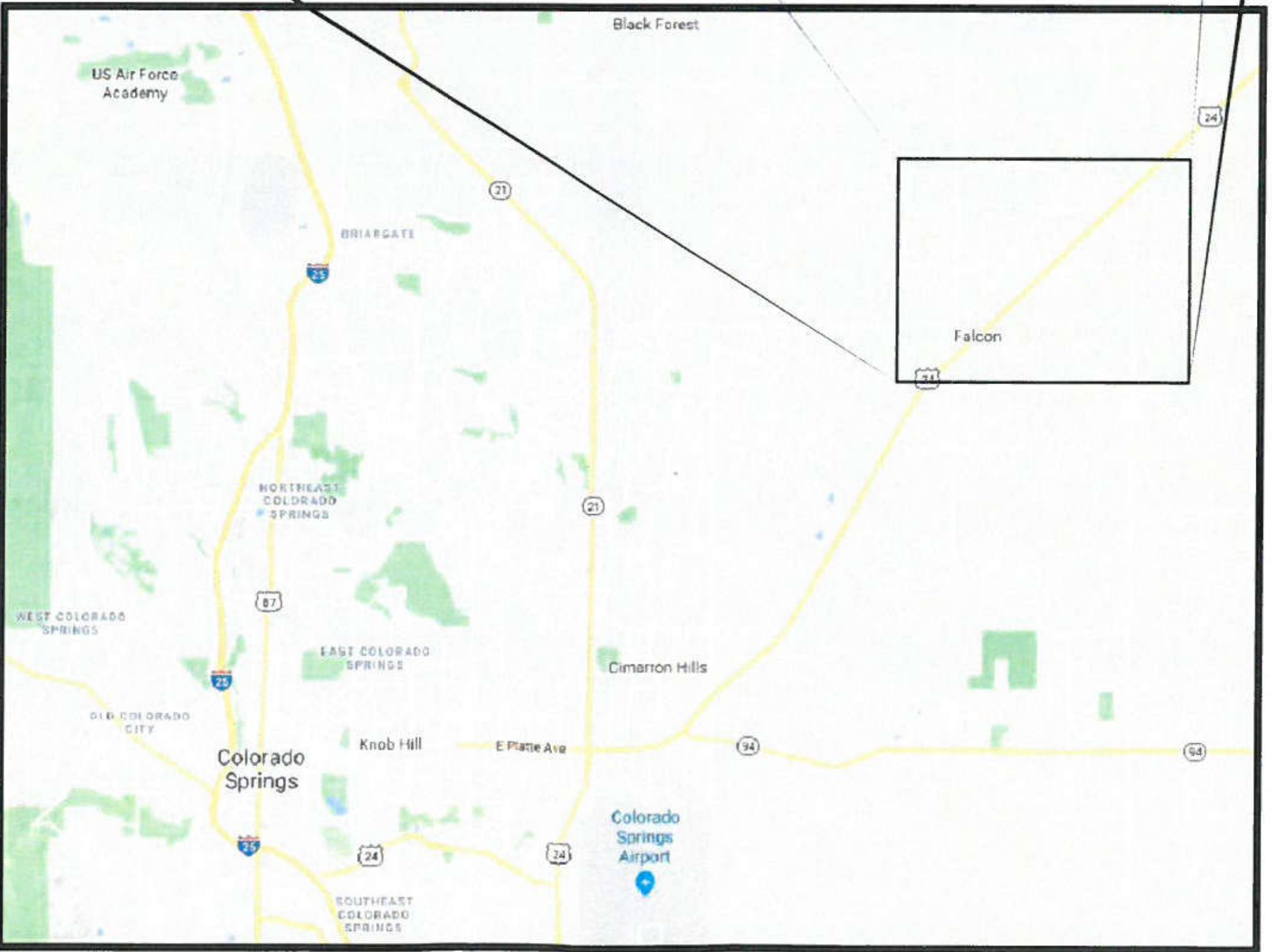
PREPARED BY

**JDS-HYDRO** CONSULTANTS, INC.  
5540 TECH CENTER DR., Suite 100  
Colorado Springs, Colorado 80919  
(719) 227-0072

LOCATION & VICINITY MAPS



VICINITY MAP  
N.T.S.



LOCATION MAP  
N.T.S.

SIGNATURES

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 PLAN.

*Ryan M. Mangino*  
RYAN M. MANGINO, PE #43304



OWNER'S STATEMENT:  
THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING & EROSION CONTROL PLAN.

*1/11/19*  
DATE

EL PASO COUNTY:  
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 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.

JENNIFER IRVINE, P.E.  
COUNTY ENGINEER/ECM ADMINISTRATOR

DATE

PCD FILE NO.: PPR-18-051



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EROSION CONTROL NOTES:

1. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM THE PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT AND A PRE-CONSTRUCTION CONFERENCE IS HELD WITH PCD 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 TO 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. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
5. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE 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 PCD INSPECTIONS STAFF.
6. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
7. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
8. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
9. ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THESWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE 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.
11. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.
12. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
13. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.
14. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER 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. BMP'S MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
15. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
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. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
18. 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.
19. NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
20. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
21. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
22. INDIVIDUALS 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 INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
23. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
24. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
25. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
26. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC., DATED DECEMBER 28, 2015, AND SHALL BE CONSIDERED A PART OF THESE PLANS.

27. AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 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

28. ALL AREAS NOTED TO BE RE-SEEDED SHALL BE SEEDED WITH A NATIVE AND INTRODUCED GRASS MIXTURE. THE SEED WILL BE APPLIED USING MECHANICAL TYPE DRILLS AT 0.25"-0.5" INTO TOPSOIL. AREA NOT ACCESSIBLE TO A DRILL SEEDER AND SLOPES STEEPER THAN 2:1 SHALL BE HAND BROADCAST AT DOUBLE THE ABOVE SEED RATE AND RAKED AT 1/4 TO 1/2 INTO THE TOPSOIL. ALL SEEDED AREAS WILL BE MULCHED: 1-1/2 TONS CERTIFIED WEED FREE NATIVE HAY PER ACRE MECHANICALLY CRIMPED IN TOPSOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER. MAINTENANCE OF ANY SWALES WILL INCLUDE EROSION CONTROL AND PREVENTION, DEBRIS REMOVAL AND OCCASIONAL MOWING. CARE SHALL BE USED DURING THE REMOVAL OF SEDIMENT FROM ANY DRAINAGE WAYS. ANY SEEDING OR EROSION CONTROL MEASURE THAT IS DISTURBED DURING MAINTENANCE SHALL BE IMMEDIATELY REPAIRED. EXISTING VEGETATIVE COVER WHERE DISTURBANCE IS TO TAKE PLACE IS ROUGHLY 80%. THE SEED MIX SHALL BE MADE UP OF THE FOLLOWING AS PER THE EL PASO COUNTY CONSERVATION DISTRICT (RECOMMENDATION OBTAINED APRIL 2015):

TIMING, CONSTRUCTION STAGING AND SEQUENCING:

EXPECTED START DATE: JUNE 2019  
INSTALL TEMPORARY EROSION CONTROL – 2 DAYS  
- PERIMETER SILT FENCING  
- VEHICLE TRACKING CONTROL PAD

ROUGH GRADING – 2 DAYS  
INSTALL FINAL SITE IMPROVEMENTS – 7 MONTHS  
REMOVE TEMPORARY EROSION CONTROL – 2 DAYS

MINIMUM BEST MANAGEMENT PRACTICES ELEMENTS:

- STEP 1- EROSION AND SEDIMENT CONTROL  
INSTALL SEDIMENT TRAPPING DEVICES (PERIMETER CONTROLS) PRIOR TO THE START OF CONSTRUCTION.
- STEP 2- SPILL PREVENTION AND RESPONSE
- STEP 3- MATERIAL MANAGEMENT  
MATERIAL AND EQUIPMENT STORAGE AREAS SHALL BE SECURE AND CONTAINED TO PREVENT DISCHARGE OF ANY MATERIAL IN RUNOFF. WASTE SHALL BE CONTAINED AND DISPOSED OF PROPERLY. MAINTAIN BMP'S DURING BUILDING AND UTILITY CONSTRUCTION.
- STEP 4- INSPECTION AND MAINTENANCE  
(SEE EROSION CONTROL NOTES)
- STEP 5- INSTALL FINAL STABILIZATION – BASE COURSE, LANDSCAPING, EROSION CONTROL BLANKETS, AND SEEDING.
- STEP 6- REMOVE TEMPORARY CONTROLS – SILT FENCING AFTER PERMANENT FEATURES ARE INSTALLED.

FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT:

FINAL STABILIZATION MEASURES INCLUDE BASE COURSE, PARTIAL LANDSCAPE, AND REVEGETATION

EARTHWORK SUMMARY:

PROPOSED LIFT STATION SITE:  
CUT – 1,165 CY (INCLUDES EM TANK, GRAVEL FOR TANK, BASE COURSE, & MANHOLES STRUCTURAL EXCAVATION)  
FILL – 1013 (\*1.15) = 1,165 CY  
NET – 0 CY CUT/FILL

DISTURBED AREA – 0.63 AC

EROSION CONTROL FACILITIES:

SILT FENCE (SF) – 550 LF  
VEHICLE TRACKING PAD (VT) – 1

COMMON NAME (N=NATIVE, I=INTRODUCED)	SCIENTIFIC NAME	LBS PLS/ACRE
WHEATGRASS, SIBERIAN	I AGROPYRON FRAGILE	2.04
WHEATGRASS, SLENDER	N ELYMUS TRACHYCAULUS	10.90
WHEATGRASS, INTERMEDIATE	I THINOPYRUM INTERMEDIUM	3.00
WILDRYE, RUSSIAN	I PSATHYROSTACHYS JUNCEA	2.04
WHEATGRASS, WESTERN	N PASCOPIRUM SMITHII	3.20
CLOVER, RED	I TRIFOLIUM PRATENSE	0.40
FLAX, BLUE-APPAR	I LINUM PERENNE	0.41
SULPHUR-FLOWER BUCKWHEAT	N ERIOGONUM UMBELLATUM	0.55
TOTAL/POUNDS/ACRE		22.54

PCD FILE NO. PPR-18-051

JDS-HYDRO CONSULTANTS, INC.  
545 EAST PIKES PEAK AVENUE, SUITE 300  
COLORADO SPRINGS, COLORADO 80903  
(719) 227-0072

REQUIRE THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO JDS-HYDRO CONSULTANTS, INC. JDS-HYDRO ASSUMES NO LIABILITY FOR UNAUTHORIZED CHANGES AND/OR REVISIONS MADE TO PLANS.

4-WAY RANCH METROPOLITAN DISTRICT  
LIFT STATION SITE DEVELOPMENT PLAN  
GRADING & EROSION CONTROL PLAN  
GENERAL NOTES

REVISIONS						
NO.	DESCRIPTION	BY	APP.	DATE		
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100% DESIGN  
DRAWINGS

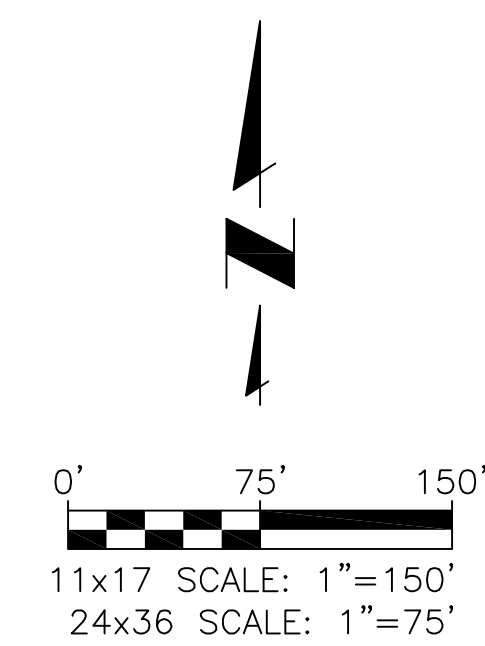


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Date: 10/25/18  
Design: RMM  
Drawn: GGM/RMM  
Check: JPM

EC1  
SHEET 1 OF 5



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LOT (EASEMENT) COVERAGE	
AREA OF EASEMENT	45,733 S.F.
GROSS FLOOR AREA OF BUILDING	600 S.F.
% EASEMENT COVERAGE WITH BUILDING	1.3%
AREA OF DRIVEWAY & PARKING	8,184 S.F.
% EASEMENT COVERAGE WITH DRIVEWAY & PARKING	18%

PROPOSED SILT FENCE

PROPOSED VEHICLE TRACKING PAD

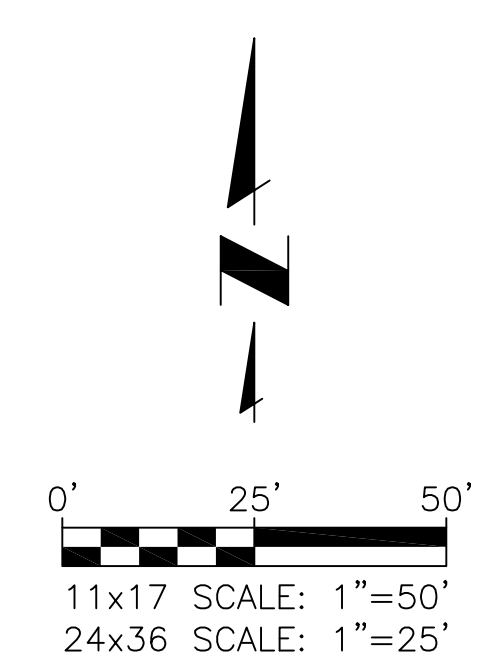
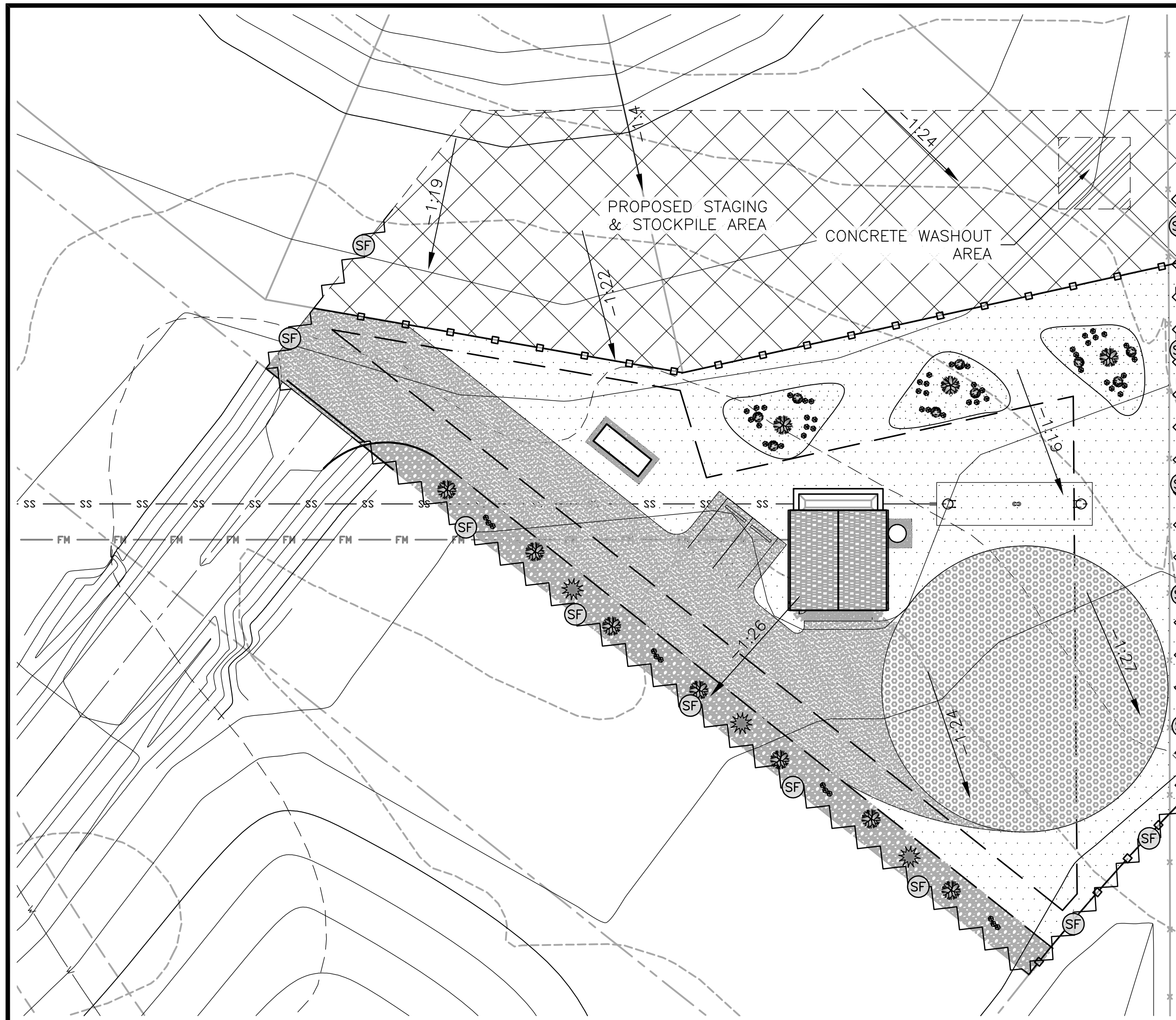
PROPOSED SEDIMENT CONTROL LOG

NOTES:

1. SEED AND MULCH ALL DISTURBED AREAS.

- NOTES:
- ACCESS POINTS AND SITE NOT ACCESSIBLE TO PUBLIC.
  - THE PARTIES RESPONSIBLE FOR THIS PLAN HAVE FAMILIARIZED THEMSELVES WITH ALL CURRENT ACCESSIBILITY CRITERIA AND SPECIFICATIONS AND THE PROPOSED PLAN REFLECTS ALL SITE ELEMENTS REQUIRED BY THE APPLICABLE ADA DESIGN STANDARDS AND GUIDELINES AS PUBLISHED BY THE UNITED STATES DEPARTMENT OF JUSTICE. APPROVAL OF THIS PLAN BY EL PASO COUNTY DOES NOT ASSURE COMPLIANCE WITH THE ADA OR ANY REGULATIONS OR GUIDELINES ENACTED OR PROMULGATED UNDER OR WITH RESPECT TO SUCH LAWS.
  - SITE DRIVEWAY TO BE CONSTRUCTED WITH PERMEABLE PAVERS.

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JDS-HYDRO CONSULTANTS, INC.

5540 TECH CENTER DR., SUITE 100

COLORADO SPRINGS, COLORADO 80919

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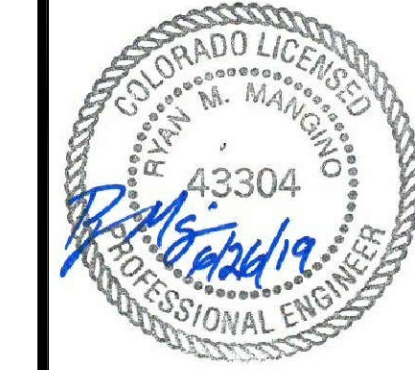
4-WAY RANCH METROPOLITAN DISTRICT

LIFT STATION SITE DEVELOPMENT PLAN

GRADING & EROSION CONTROL PLAN

REVISIONS		
NO.	DESCRIPTION	DATE
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7		

100% DESIGN DRAWINGS



Project No.: 136.23

Date: 06/28/19

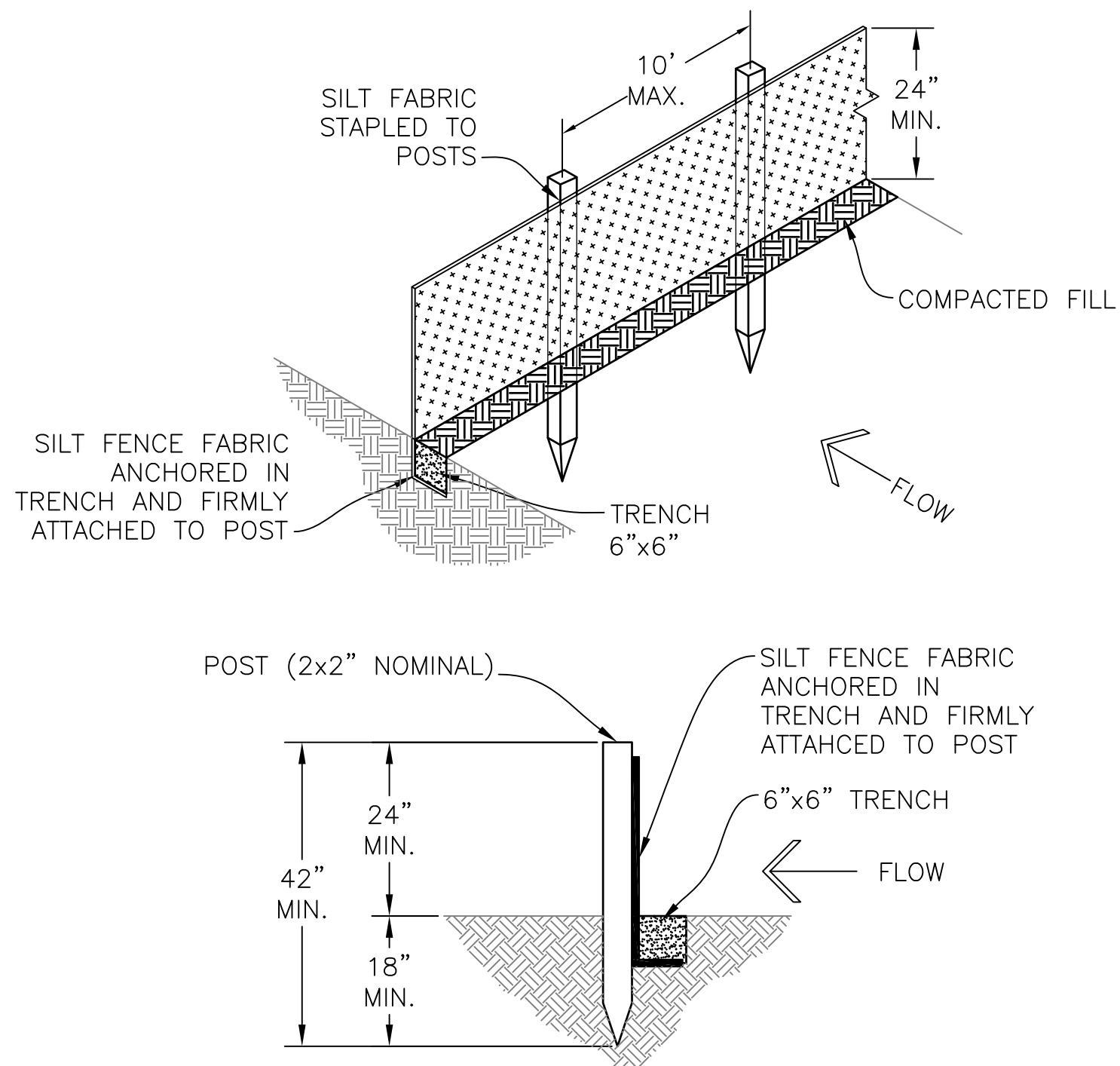
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Drawn: GGM/RMM

Check: JPM



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SILT FENCE DETAIL  
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INSTALLATION REQUIREMENTS:

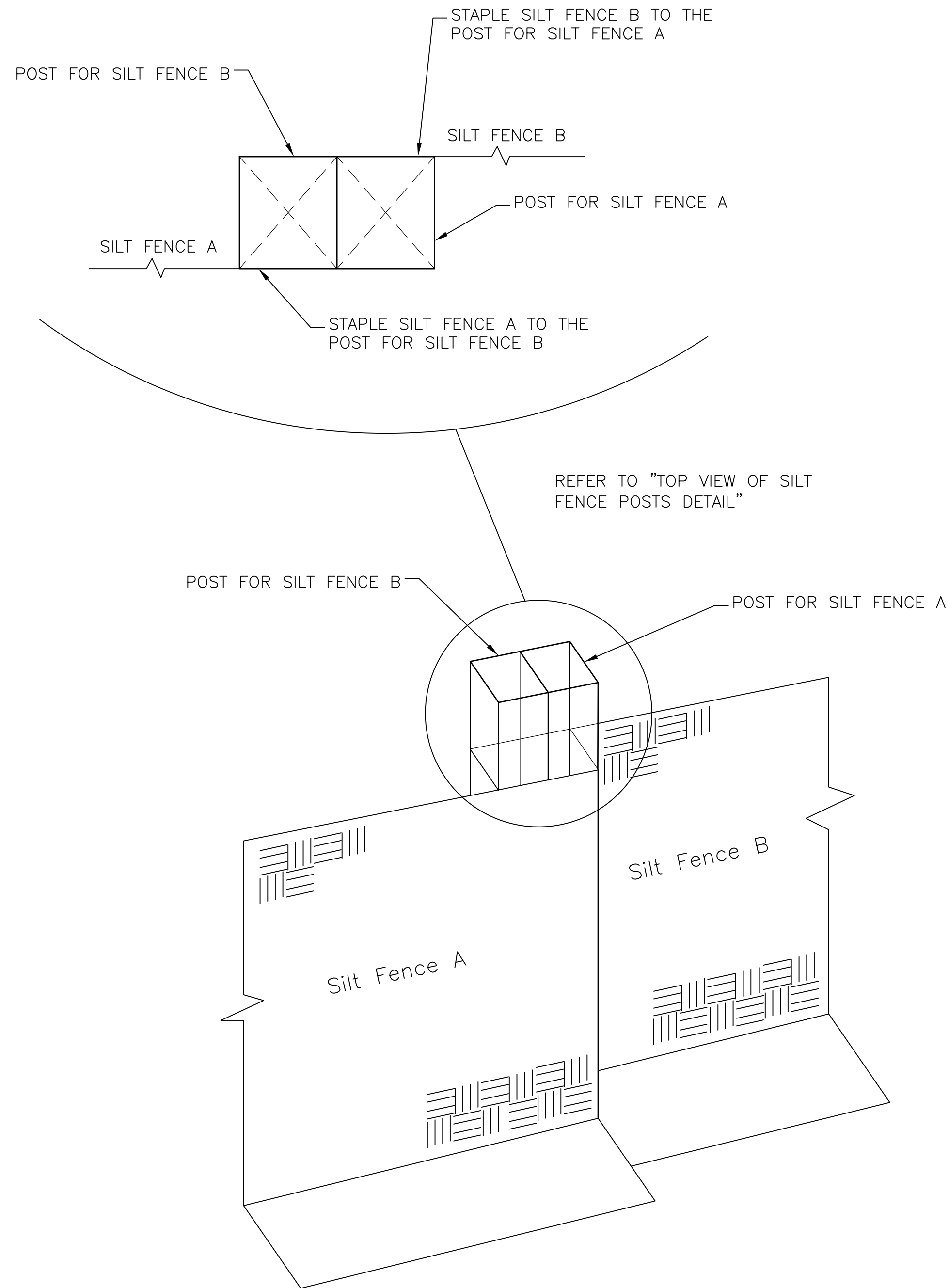
1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6 INCHES AND SHALL NOT EXTEND MORE THAN 3 FEET ABOVE THE ORIGINAL GROUND SURFACE.

6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES. HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS:

1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED.

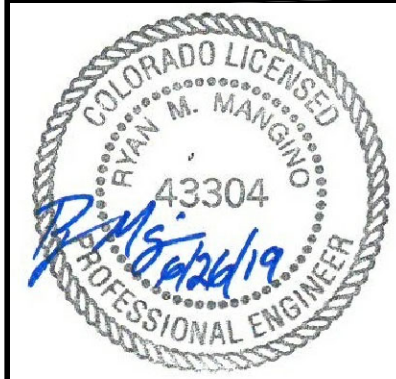
TOP VIEW OF SILT FENCE POSTS DETAIL



PCD FILE NO. PPR-18-051

NO.	REVISIONS		DATE
	DESCRIPTION	BY APP.	
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DRAWINGS



Project No.: 136.23  
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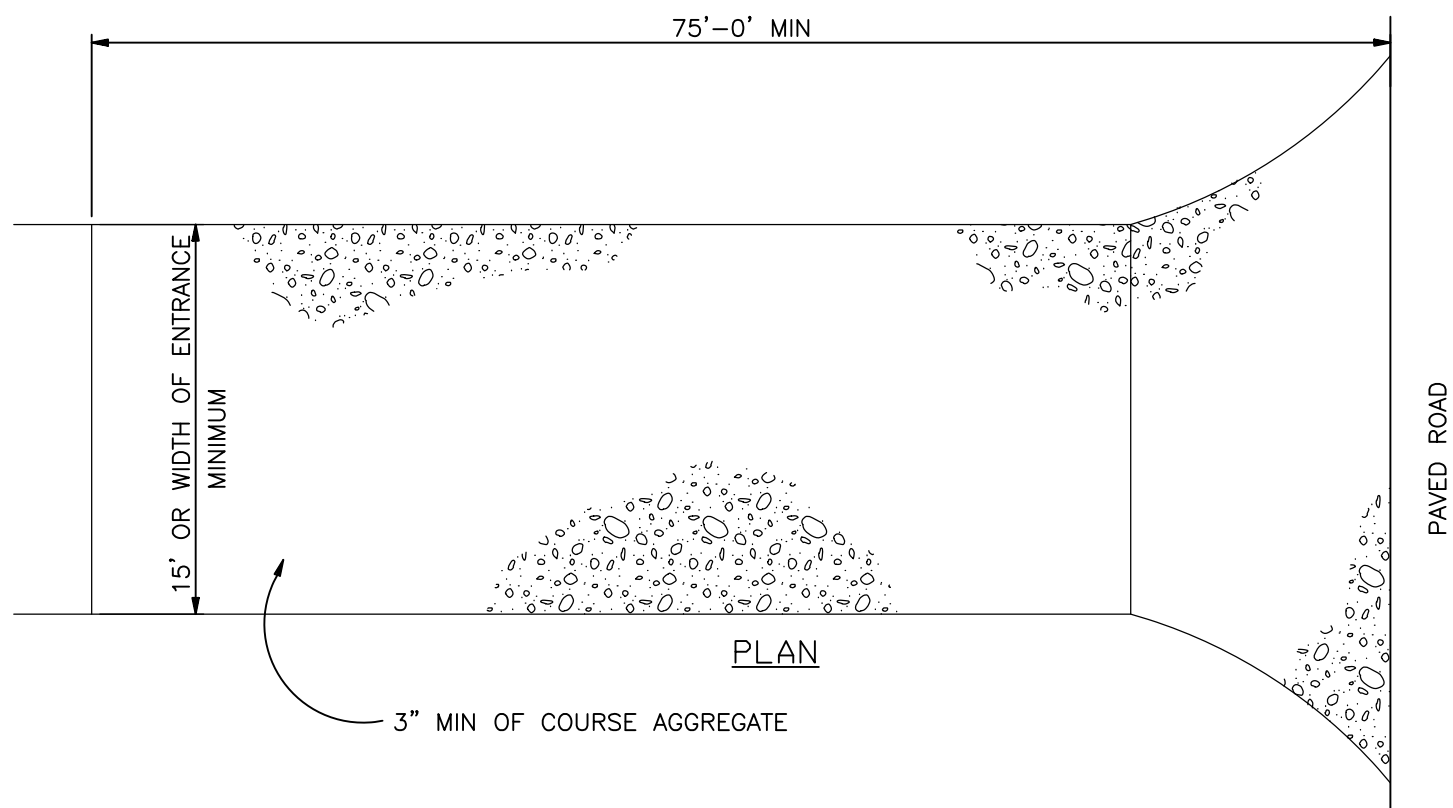
EC3  
SHEET 3 OF 5

4-WAY RANCH METROPOLITAN DISTRICT  
LIFT STATION SITE DEVELOPMENT PLAN  
GRADING & EROSION CONTROL PLAN  
EROSION CONTROL DETAILS 1

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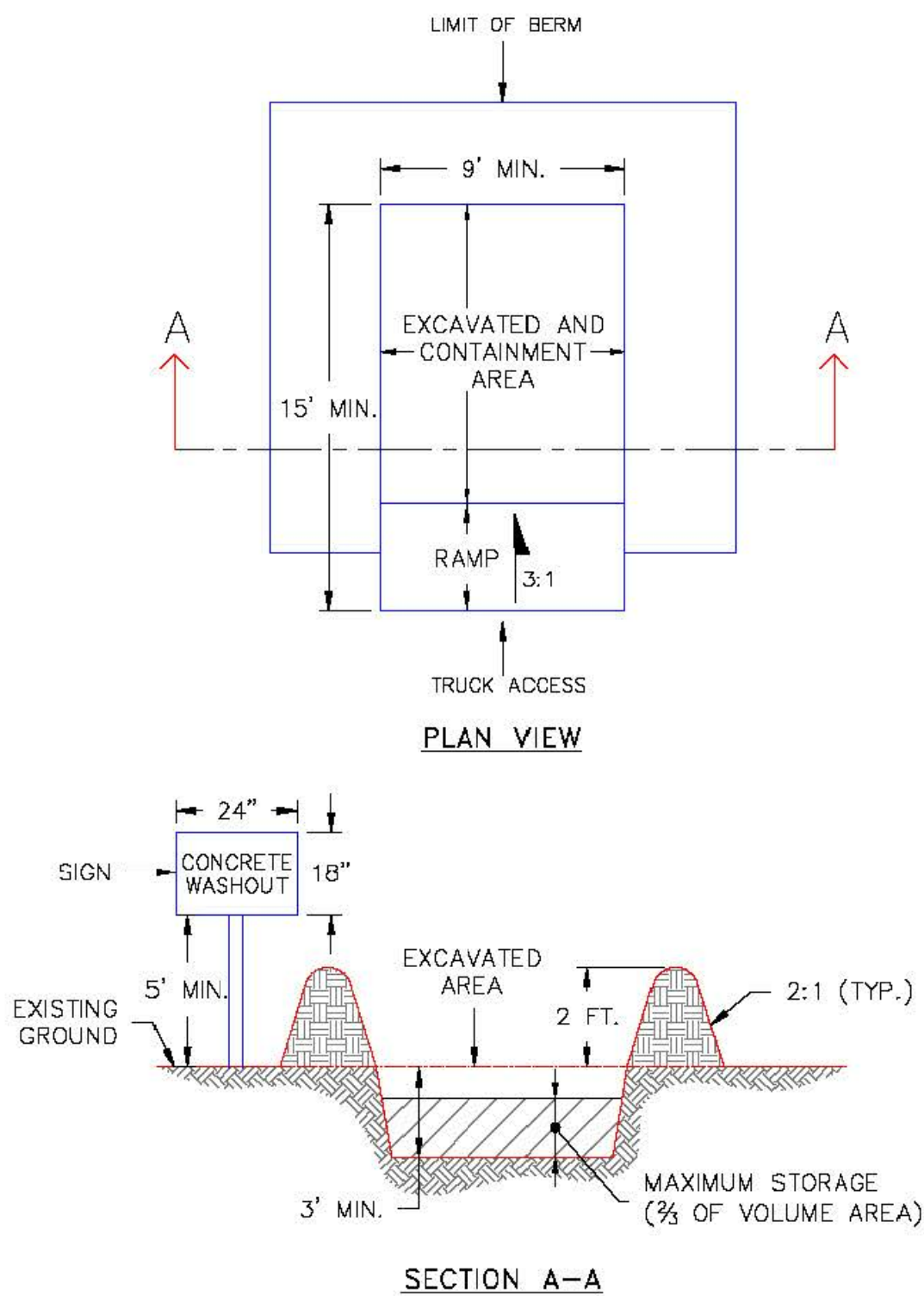
VEHICLE TRACKING PAD DETAIL  
N.T.S.

INSTALLATION REQUIREMENTS:


1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
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.
3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED.
4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
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.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
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.
4. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.
5. TO BE REMOVED JUST PRIOR TO FINAL SURFACING AND STABILIZATION.



- NOTES:
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.
  2. EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM.

1/1/08		Concrete Washout Structure		
DATE APPROVED:		Standard Drawing		
John A. McCarty		REVISION DATE:	FILE NAME:	
DEPARTMENT OF TRANSPORTATION		7/17/07	SD_3-84	

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDING 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 CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES), OR WITH A TACKIFIER.
6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED 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

REVISIONS		DESCRIPTION	BY	DATE
NO.	1			
	2			
	3			
	4			
	5			
	6			
	7			

100% DESIGN  
DRAWINGS



Project No.: 136.23  
Date: 10/25/18  
Design: RMM  
Drawn: GGM/RMM  
Check: JPM

EC4

SHEET 4 OF 5

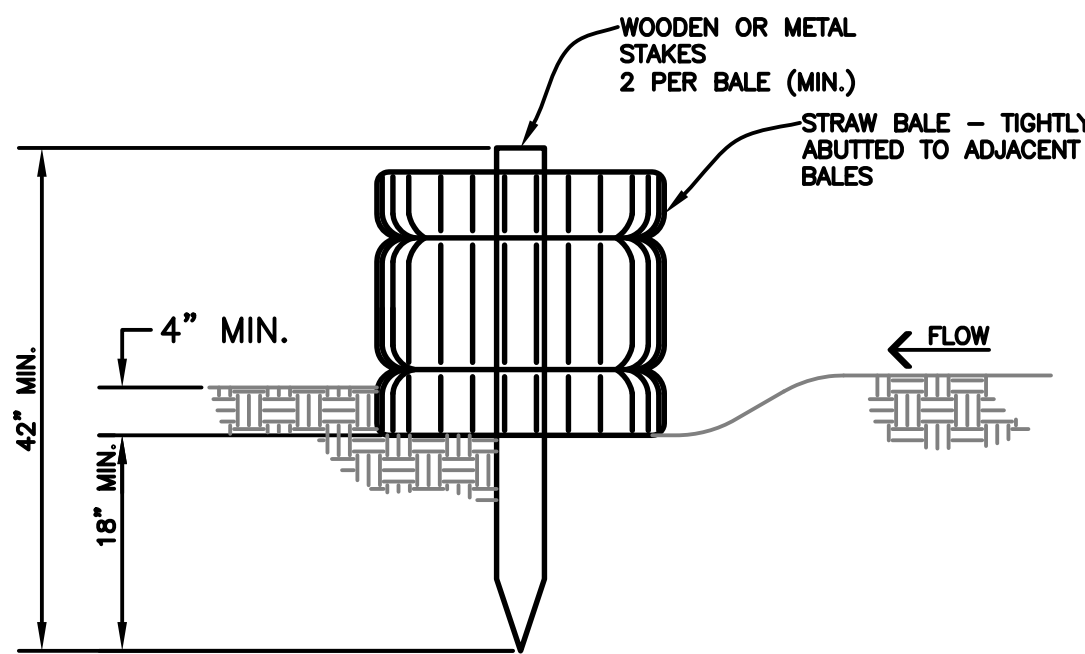
4-WAY RANCH METROPOLITAN DISTRICT  
LIFT STATION SITE DEVELOPMENT PLAN  
GRADING & EROSION CONTROL PLAN  
EROSION CONTROL DETAILS 2

JDS-HYDRO CONSULTANTS, INC.  
545 EAST PIKES PEAK AVENUE, SUITE 300  
COLORADO SPRINGS, COLORADO 80903  
(719) 227-0072  
BECAUSE THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ANY ERRORS OR OMISSIONS SHOULD BE REPORTED TO JDS-HYDRO CONSULTANTS, INC. JDS-HYDRO ASSUMES NO LIABILITY FOR UNAUTHORIZED CHANGES AND/OR REVISIONS MADE TO PLANS.

PCD FILE NO. PPR-18-051



2019/06/28 12:46 PM By: Tisha J:\JDS-Hydro\Project Files\136 4-Way Ranch\136-23 LS Site Development Plan\Drawings\13623\_2\_EC.DWG



STRAW BALE BARRIER  
N.T.S.

SB

STRAW BALE BARRIER NOTES

INSTALLATION REQUIREMENTS

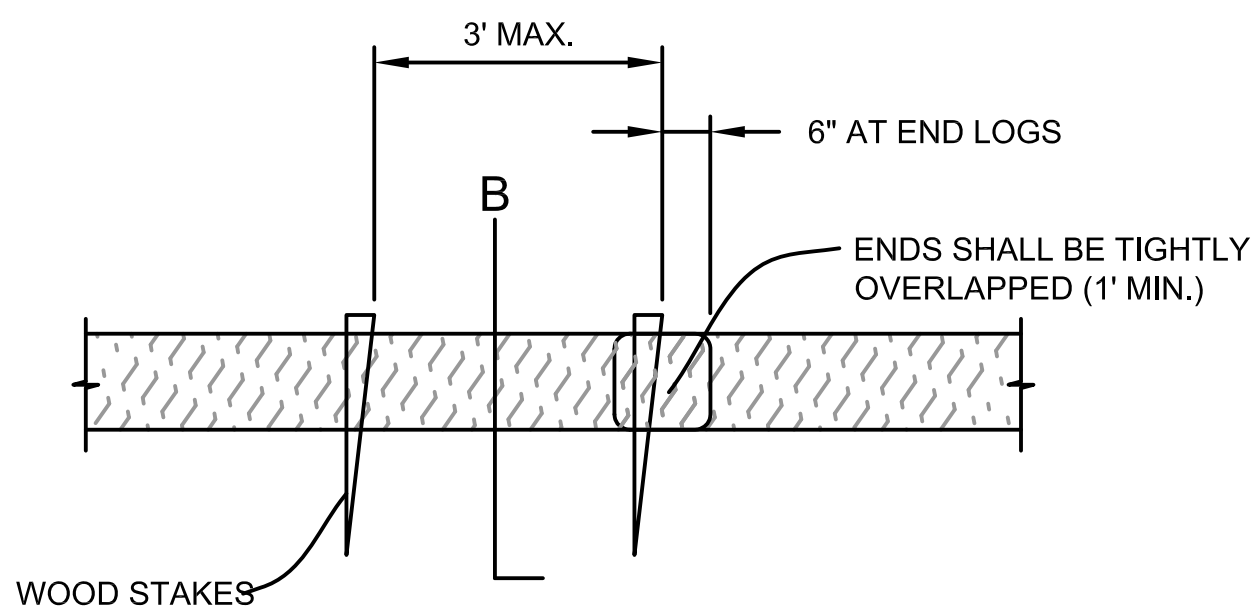
1. STRAW BALE BARRIERS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF CERTIFIED WEED FREE HAY OR STRAW AND WEIGH NOT LESS THAN 35 POUNDS.
3. BALES ARE TO BE PLACED IN A SINGLE ROW WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
4. EACH BALE IS TO BE SECURELY ANCHORED WITH AT LEAST TWO STAKES AND THE FIRST STAKE IS TO BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
5. STAKES ARE TO BE A MINIMUM OF 42 INCHES LONG. METAL STAKES SHALL BE STANDARD "T" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD STAKES SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
6. BALES ARE TO BE BOUND WITH EITHER WIRE OR STRING AND ORIENTED SUCH THAT THE BINDINGS ARE AROUND THE SIDES AND NOT ALONG THE TOPS AND BOTTOMS OF THE BALE.
7. GAPS BETWEEN BALES ARE TO BE CHINKED (FILLED BY WEDGING) WITH STRAW OR THE SAME MATERIAL OF THE BALE.
8. END BALES ARE TO EXTEND UPSLOPE SO THE TRAPPED RUNOFF CANNOT FLOW AROUND THE ENDS OF THE BARRIER.

MAINTENANCE REQUIREMENTS

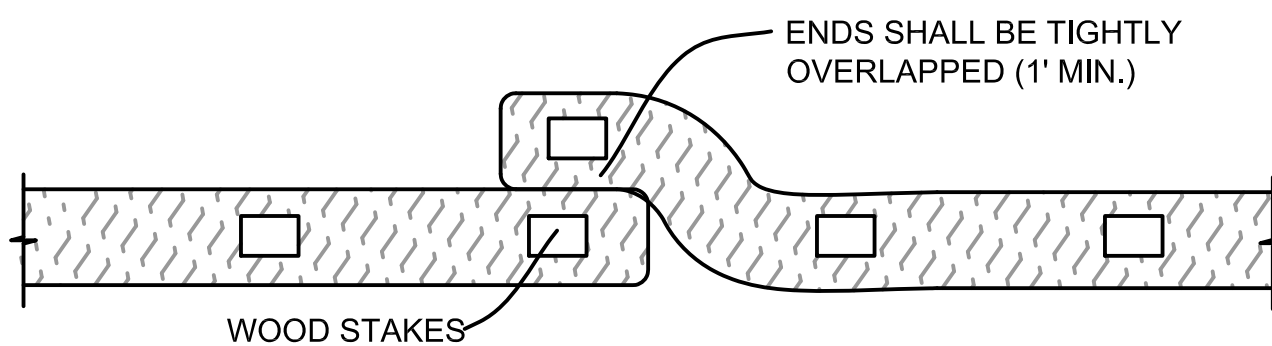
1. CONTRACTOR SHALL INSPECT STRAW BALE BARRIERS IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.
2. DAMAGED OR INEFFECTIVE BARRIERS SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALE BARRIERS WHEN IT ACCUMULATES TO APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.
4. STRAW BALE BARRIERS SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED

HAY BALE SPACING REQUIREMENTS

SLOPE	SPACING
0.5%	300'
1.0%	150'
2.0%	75'
3.0%	50'



DETAIL A  
SCALE: NTS



PLAN VIEW  
SCALE: NTS

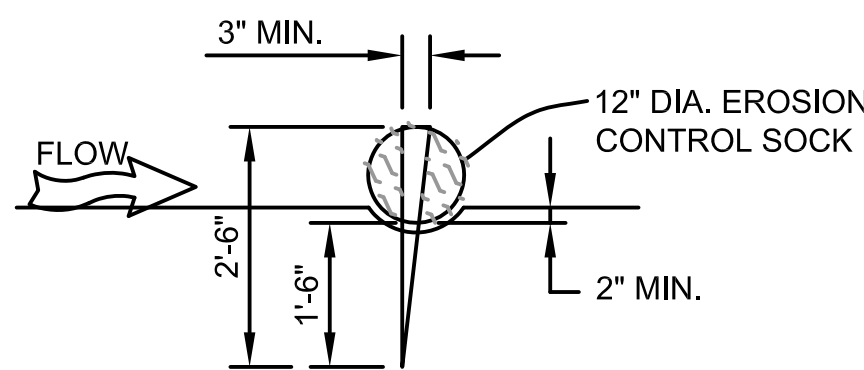
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR THE LOCATION AND LENGTH OF EROSION CONTROL SOCK.
2. EROSION CONTROL SOCKS INDICATED ON THE PLANS SHALL BE INSTALLED AFTER ANY LAND-DISTURBING ACTIVITIES OCCUR.
3. EROSION CONTROL SOCKS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE EROSION CONTROL SOCK SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1/3 OF THE DIAMETER OF THE ECS.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. CONTRACTOR SHALL INSPECT EROSION CONTROL SOCKS DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF EROSION CONTROL SOCKS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 1/2 THE HEIGHT OF THE CREST OF LOG.
3. EROSION CONTROL SOCKS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE OWNER.

**B**  
**C22** **SEDIMENT CONTROL LOG**  
SCALE: N.T.S.



SECTION B  
SCALE: NTS

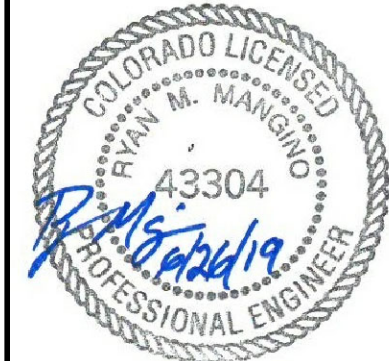
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COLORADO SPRINGS, COLORADO 80903  
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THE CONSULTOR SHALL VERIFY ALL DIMENSIONS AND ERRORS OR OMISSIONS SHALL BE REPORTED TO JDS-HYDRO CONSULTANTS, INC. JDS-HYDRO ASSUMES NO LIABILITY FOR UNAUTHORIZED CHANGES AND/OR REVISIONS MADE TO PLANS.

4-WAY RANCH METROPOLITAN DISTRICT  
LIFT STATION SITE DEVELOPMENT PLAN  
GRADING & EROSION CONTROL PLAN  
EROSION CONTROL DETAILS 3

NO.	REVISIONS			DATE
	DESCRIPTION	BY	APP.	
1				
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100% DESIGN  
DRAWINGS



Project No.: 136.23  
Date: 10/25/18  
Design: RMM  
Drawn: GGM/RMM  
Check: JPM

EC5

SHEET 5 OF 5