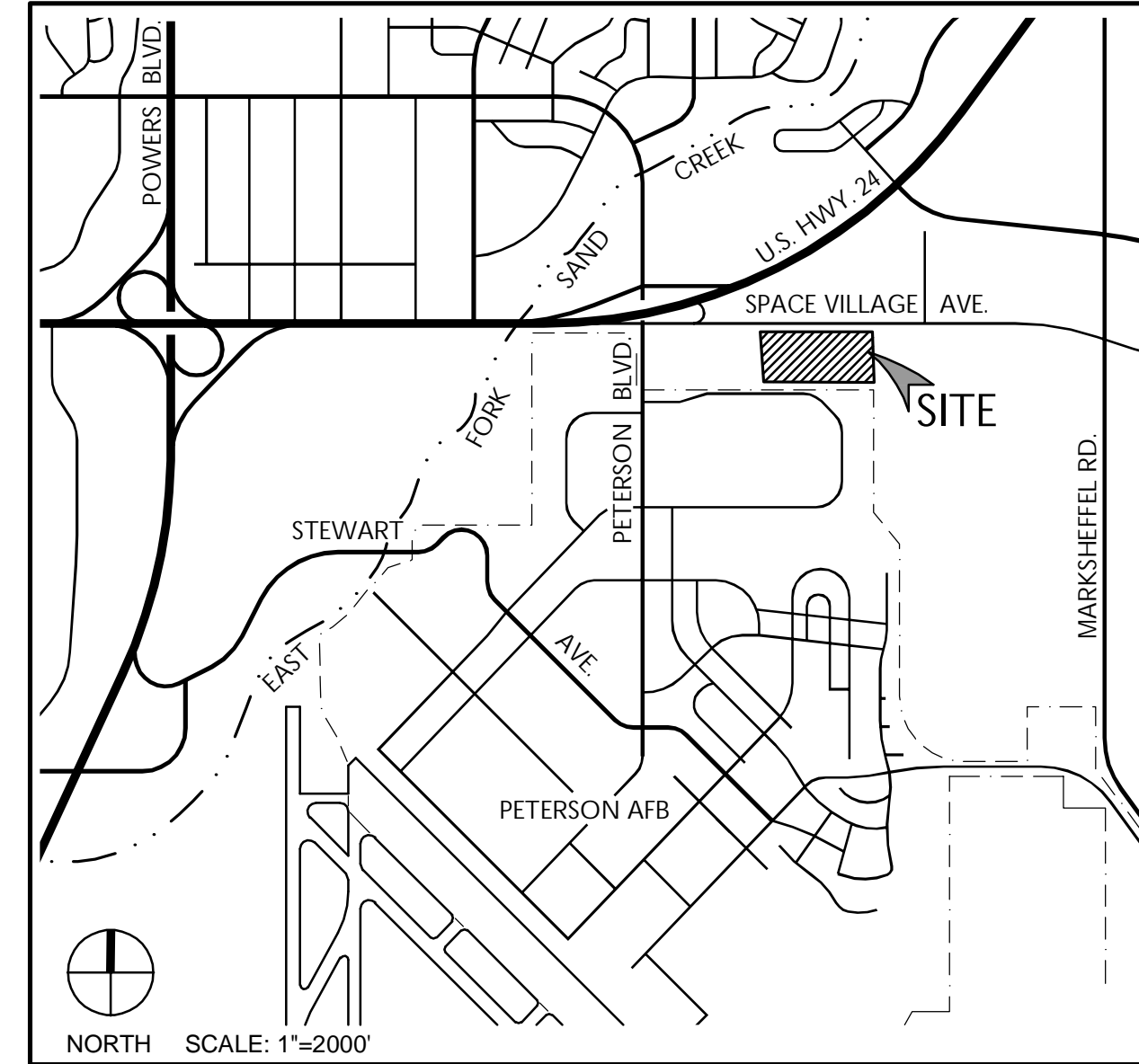


SPACE VILLAGE FILING NO. 4
 A PORTION OF THE NW 1/4 OF SEC. 17, T14S,
 R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
 GRADING & EROSION CONTROL PLAN

EL PASO COUNTY STANDARD NOTES

- 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.
- 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.
- 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 AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- 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.
- 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.
- 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.
- 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.
- 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.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 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 WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- 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 VEGETATIVE CONTROL MEASURES MUST BE LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 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.
- 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.
- DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER 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.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 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.
- 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.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- 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.
- 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 CHEMICALS 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.

VICINITY MAP



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* NOT A PART OF THE EL PASO COUNTY GEC PLAN REVIEW SET

FLOODPLAIN

ZONE X, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN," AS SHOWN ON FEMA FIRM MAP NO. 08041C0754G, EFFECTIVE DATE, DECEMBER 7, 2018.

GENERAL NOTES

- BATCH PLANTS ARE NOT ALLOWED.

EL PASO COUNTY STANDARD NOTES (CONTINUED)

- 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.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 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.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY COLE GARNER GEOTECHNICAL, DATE AUGUST 16, 2022; AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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 THE 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 80246-15330
ATTN: PERMITS UNIT

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 AS APPLICABLE. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARING THIS PLAN FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC.



JAY M. NEWELL, PE
 CO PE #35219
 FOR AND ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

OWNER'S STATEMENT

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

J. Newell
 OWNER/DEVELOPER SIGNATURE
 11/20/23
 DATE

EL PASO COUNTY

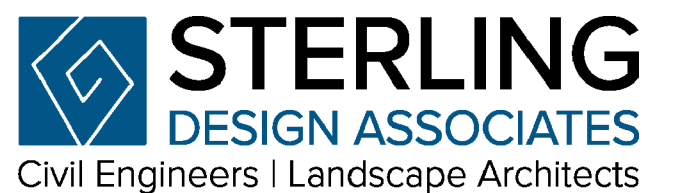
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

COUNTY ENGINEER / ECM ADMINISTRATOR

DATE



2009 W. Littleton Blvd. #300 Littleton, CO 80120
 303.794.4727 | www.SterlingDesignAssociates.com
 PREPARED UNDER THE DIRECT SUPERVISION OF
 JAY M. NEWELL, PE
 COLORADO REGISTRATION 35219
 FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS	
NO: 1	DATE: - BY: -
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NO: 6	DATE: - BY: -
DESCRIPTION: -	

DATE: 6/2023	SCALE: N/A
PROJECT MANAGER: JS	PROJECT NO: -
DRAWN BY: JN	DRAWING FILE: -
PROJECT: -	

**SPACE VILLAGE FILING NO. 4
 EL PASO COUNTY, CO**

CLIENT:
 COMMERCIAL BUILDING SERVICES
 7561 S. GRANT STR., SUITE A-4
 LITTLETON, COLORADO 80122

TEL: (303) 730-3001

**GRADING & EROSION CONTROL
 COVER SHEET (SWMP-SITE MAP)**

SHEET NUMBER:

**1 C900
 PCD # MS227**



CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

SPACE VILLAGE FILING NO. 4
A PORTION OF THE NW 1/4 OF SEC. 17, T14S,
R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
GRADING & EROSION CONTROL PLAN

GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF IMPROVEMENTS SHALL MEET OR EXCEED THE GOVERNING CITY, COUNTY AND/OR STATE AND APPLICABLE UTILITY DISTRICT STANDARDS AND SPECIFICATIONS, AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE CITY AND APPLICABLE UTILITY DISTRICT(S).
2. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON SITE AT ALL TIMES.
3. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARDS, UNLESS SPECIFICALLY STATED OTHERWISE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED, AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, UNLOADING, STORING, AND UNCRATING ALL EQUIPMENT FURNISHED BY THE OWNER/DEVELOPER AND DELIVERED TO THE SITE.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
7. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE GOVERNING CITY, COUNTY, AND/OR STATE AND ALL UTILITY COMPANIES/DISTRICTS INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS, WHETHER SHOWN OR NOT SHOWN ON THE PLANS.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES/DISTRICTS TO OBTAIN TEMPORARY POWER, TELEPHONE AND WATER SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FOR WORK INCLUDING, BUT NOT LIMITED TO DEMOLITION, STREET CUTS, UTILITY INTERFERENCES, TRAFFIC CONTROL, GRADING, AND UTILITY FROM ALL APPLICABLE AGENCIES; AND FOR COMPLYING WITH ALL PROVISIONS INCLUDED THEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION FENCE PRIOR TO, AND THROUGHOUT CONSTRUCTION.
13. UTILITY TRENCHES ARE TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY TO FURNISH SAFE WORKING CONDITIONS FOR THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL HEALTH AND SAFETY RULES AND REGULATIONS.
14. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE M.U.T.C.D. TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY (CITY, COUNTY, OR STATE) FOR APPROVAL PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK, INSPECTIONS, AND CERTIFICATIONS AS REQUIRED BY THE CITY, STATE, OR LOCAL DISTRICTS. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH INSPECTION AND CERTIFICATION UNLESS OTHERWISE ARRANGED WITH THE OWNER/DEVELOPER; AND SHALL COORDINATE ALL CERTIFICATIONS, AND PROVIDE FIELD SURVEYED AS-BUILT INFORMATION FOR REVIEW BY THE OWNER/DEVELOPER AND/OR ENGINEER AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO AVOID POTENTIAL DELAYS.
16. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
17. THE CONTRACTOR SHALL NOTIFY THE GOVERNING CITY, COUNTY, AND/OR STATE AND LOCAL UTILITY COMPANIES/DISTRICTS AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY.
18. ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION, PRIOR TO ANY GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREA IS STABILIZED WITH HARD SURFACE OR PERMANENT LANDSCAPING. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING TO ANY EROSION AND SEDIMENT CONTROL, STORMWATER MANAGEMENT, STORMWATER POLLUTION PREVENTION, OR SIMILAR PLAN AND/OR NARRATIVE AND ASSOCIATED PERMITS INCLUDING, BUT NOT LIMITED TO GRADING PERMITS; AND COMPLYING WITH THE REQUIREMENTS THEREIN.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO STREET PAVEMENT, FENCES, SOD, LANDSCAPING, SPRINKLER SYSTEMS, AND UTILITIES DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL LOCATION AND CONDITION.
21. INCLUDED IN THIS PACKAGE IS THE DEMOLITION AND DISPOSAL OF ALL EXISTING UTILITIES, SITE IMPROVEMENTS AND SITE FURNISHINGS NEEDED FOR CONSTRUCTION OF THE IMPROVEMENTS SHOWN IN THIS SET OF CONSTRUCTION DRAWINGS. ALL QUESTIONS IN REGARD TO DEMOLITION SHALL BE SUBMITTED TO THE OWNER IN WRITING PRIOR TO BID.
22. ALL DEMOLITION, REMOVAL, DISPOSAL AND ABANDONMENT OF UTILITIES, STRUCTURES, SITE IMPROVEMENTS AND SITE FURNISHINGS SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL STANDARDS AND SPECIFICATIONS, AND PERMIT REQUIREMENTS.
23. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE CONSULTING ENGINEER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.
24. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT, AND STEEL SHIMS TO ADJUST THE MANHOLE FRAMES TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE CITY OR UTILITY COMPANY/DISTRICT STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE WHICH SHALL BE AVAILABLE TO THE GOVERNING CITY, COUNTY, AND/OR STATE AND UTILITY DISTRICT INSPECTOR AT ALL TIMES.
26. AS-BUILT PLANS AND FIELD NOTES SHALL BE PROVIDED BY THE CONTRACTOR TO THE CITY, COUNTY, STATE, FEDERAL OR UTILITY DISTRICT; OR TO THE OWNER/DEVELOPER AS REQUIRED BY AND IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S OR OWNER/DEVELOPER'S CRITERIA. THE CONTRACTOR SHALL CONFIRM ANY REQUIREMENTS AS EARLY AS POSSIBLE IN THE CONSTRUCTION SCHEDULE TO ACCOUNT FOR PREPARATION AND REVIEW OF THE INFORMATION TO AVOID POTENTIAL DELAYS.
27. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT THE APPROVAL OF THE OWNER/DEVELOPER AND THE ENGINEER OF RECORD.
28. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER FOR THE OWNER/DEVELOPER AND THE ENGINEER IMMEDIATELY.
29. BENCHMARK VERIFICATION: THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND PROPOSED ELEVATIONS IN THIS CONSTRUCTION PLAN SET AGAINST THE PROJECT BENCHMARK, IDENTIFIED HEREIN, PRIOR TO COMMENCING WORK.
30. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S STANDARDS AND SPECIFICATIONS.
31. THE SITE CONSTRUCTION PLANS LISTED WITHIN THIS PLAN SET ARE NOT FOR CONSTRUCTION UNLESS APPROVED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL CONFIRM SAID APPROVAL PRIOR TO CONSTRUCTION.
32. THE SITE CONSTRUCTION PLANS INDICATE THE WORK TO BE COMPLETED FOR THE PROJECT. THE CONTRACTOR SHALL COORDINATE SAID WORK WITH THE OWNER AND THE TENANT CONSTRUCTION MANAGER(S) TO CONFIRM THE LIMITS AND DETAILS OF THE WORK TO BE PROVIDED AND COMPLETED. CONSTRUCTION SHALL ALSO BE COORDINATED WITH TENANT IMPROVEMENT PLANS AND LANDLORD WORKLETTER.
33. IF, DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER IMMEDIATELY FOR RECOMMENDATIONS.
34. ALL EARTHWORK, GRADING, OVERLOT GRADING, BACKFILLING, FILLING, EXCAVATION, COMPACTION, PAVEMENT, AND FLATWORK CONSTRUCTION WILL BE IN ACCORDANCE WITH THE RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.
35. ALL CONCRETE PAVEMENT, CONCRETE FLATWORK, CONCRETE STRUCTURES AND CONCRETE UTILITIES SHALL BE IN ACCORDANCE WITH THE MATERIAL RECOMMENDATIONS FROM A GEOTECHNICAL INVESTIGATION PREPARED SPECIFICALLY FOR THIS SITE.
36. THE EARTHWORK FOR ANY BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL AND STRUCTURAL PLANS AND SPECIFICATIONS, AND THE GEOTECHNICAL INVESTIGATION.
37. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
38. SPOT ELEVATIONS REPRESENT FLOWLINE (BOTTOM FACE OF CURB) WHERE SHOWN AT CURB AND GUTTER UNLESS OTHERWISE NOTED.
39. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.
40. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
41. THE CONTRACTOR SHALL HAVE FORMS CHECKED BY A SURVEYOR FOR INSTALLATIONS OF CURB & GUTTER OR CROSSPANS ADJACENT TO EXISTING PAVING. THE CROSS SLOPE SHALL NOT BE LESS THAN 2% OR GREATER THAN 4% FROM THE ESTABLISHED SAWCUT LINE TO THE PROPOSED EDGE OF CONCRETE. DO NOT PLACE CONCRETE IN APPLICABLE FORMS THAT HAVE NOT BEEN CHECKED, DO NOT PROVIDE CROSS SLOPES WITHIN THE SPECIFIED RANGE, OR APPEAR IN ANY WAY INCONSISTENT WITH SMOOTH AND CONTINUOUS TRAFFIC AND PEDESTRIAN OPERATIONS. CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATIONS OR CORRECTIONS.
42. THE CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
43. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL LANDSCAPED AND PAVED AREA.
44. ALL DISTURBED AREAS THAT ARE NOT DESIGNATED TO BE PAVED SHALL BE LANDSCAPED OR SEEDED, ACCORDING TO THE LANDSCAPE PLAN.
45. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
46. IF ANY EXISTING STRUCTURES, SIDEWALK, AND/OR CURB AND GUTTER, MODIFIED OR REMAINING, ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER PRIOR TO PROJECT CLOSEOUT.
47. ALL GRATES, MANHOLE RIMS, VALVE BOXES, VALVE COVERS, CLEANOUTS, AND VAULT OR BOX COVERS SHALL BE ADJUSTED TO THE "AS CONSTRUCTED" FINISHED GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
48. NO PROPOSED SLOPE IN LANDSCAPED AREAS OR OPEN SPACE SHALL EXCEED THREE (3) HORIZONTAL FEET TO ONE (1) VERTICAL FOOT, OR AS OTHERWISE SPECIFIED BY LOCAL CRITERIA.
49. THE CONTRACTOR SHALL PROTECT THE PROJECT BENCHMARK THROUGHOUT CONSTRUCTION AND SET ADDITIONAL PROJECT BENCHMARKS AS NECESSARY TO MAINTAIN VERTICAL CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
50. THE CONTRACTOR SHALL FILL AND COMPACT BASEMENTS, CESSPOOLS, AND OTHER LARGE EXCAVATED AREAS WITH CLEAN FILL SUITABLE TO THE OWNER, AND IN ACCORDANCE WITH RECOMMENDATIONS OBTAINED FROM THE GEOTECHNICAL INVESTIGATION OR GEOTECHNICAL ENGINEER AND GRADE TO MATCH EXISTING OR PROPOSED FINISH GRADE; OR CONFIRM SUCH WORK HAS BEEN PERFORMED PRIOR TO CONSTRUCTION.
51. SITE IMPROVEMENTS ARE REQUIRED TO BE COVERED UNDER THE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) GENERAL PERMIT COR400000 FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AS WELL AS EL PASO COUNTY REGULATIONS. STATE PERMIT APPLICATION SHALL BE MADE WITH THE COLORADO DEPARTMENT OF HEALTH & THE ENVIRONMENT THROUGH THE COLORADO ENVIRONMENTAL ONLINE SYSTEM (CEOS) ACCESSIBLE AT [HTTPS://CEOS.COLORADO.GOV/CO/CEOS/PUBLIC](https://ceos.colorado.gov/co/ceos/public). THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING, COMPLETING, AND SUBMITTING ANY EL PASO COUNTY APPLICATION OR RELATED DOCUMENTS.
52. PERMIT(S) COVERAGE REQUIRES THE DEVELOPMENT OF A STORMWATER MANAGEMENT PLAN (PLAN) IDENTIFYING AND ADDRESSING THE FOLLOWING ITEMS SPECIFIC TO THIS CONSTRUCTION ACTIVITY: (A) QUALIFIED STORMWATER MANAGER, (B) SPILL PREVENTION AND RESPONSE PLAN, (C) MATERIALS HANDLING, (D) POTENTIAL SOURCES OF POLLUTION, (E) IMPLEMENTATION OF CONTROL MEASURES, (F) SITE DESCRIPTION, (G) SITE MAP, (H) FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT, AND (I) SITE INSPECTION REPORTS.
53. STERLING DESIGN ASSOCIATES, LLC HAS PREPARED AND MADE AVAILABLE A PLAN FOR THE OWNER PROVIDING FOR LOCAL JURISDICTIONAL ENTITLEMENT REVIEW. ONLY THE PLAN IS INCOMPLETE WITHOUT ADDITIONAL INPUT FROM THE OPERATOR, INCLUDING, BUT NOT LIMITED TO, IDENTIFICATION OF THE PROJECT STORMWATER MANAGER AND INCLUSION OF A DETAILED CONSTRUCTION AND CONTROL MEASURE IMPLEMENTATION SCHEDULE. THE OPERATOR IS SOLELY RESPONSIBLE FOR COMPLETENESS AND IMPLEMENTATION OF A PLAN COMPLIANT WITH THE CDPS COR400000 AND LOCAL PERMIT REQUIREMENTS AT ALL TIMES OF SITE PERMIT COVERAGE.
54. THE OWNER AND OPERATOR MUST IMPLEMENT THE PROVISIONS OF THE PLAN AS WRITTEN AND AS MAY BE UPDATED, FROM COMMENCEMENT OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS COMPLETE.
55. THE OPERATOR SHALL ENSURE ALL MATERIALS IMPORTED OR EXPORTED FROM THE SITE ARE PROPERLY SECURED AND COVERED TO PREVENT LOSS DURING TRANSPORT. ALL HAUL ROUTES SHALL BE DOCUMENTED WITHIN THE PLAN. ALL OFF-SITE SPOIL, BORROW, AND WASTE DISPOSAL FACILITIES SHALL BE PROPERLY PERMITTED FOR OPERATION.



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 303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF
 JAY M. NEWELL, PE
 COLORADO REGISTRATION 35219
 FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS		
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DESCRIPTION:		
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6/2023	N/A
PROJECT MANAGER:	PROJECT NO.:
JS	
DRAWN BY:	DRAWING FILE:
JN	

PROJECT:

SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, CO

CLIENT:
 COMMERCIAL BUILDING SERVICES
 7561 S. GRANT STR., SUITE A-4
 LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:
GRADING & EROSION CONTROL
NOTES (SWMP-SITE MAP)

SHEET NUMBER:

2

C901



Know what's below.
Call before you dig.

CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING IMPROVEMENTS AND UTILITIES AND SHALL REPAIR ANY DAMAGE AT HIS EXPENSE.

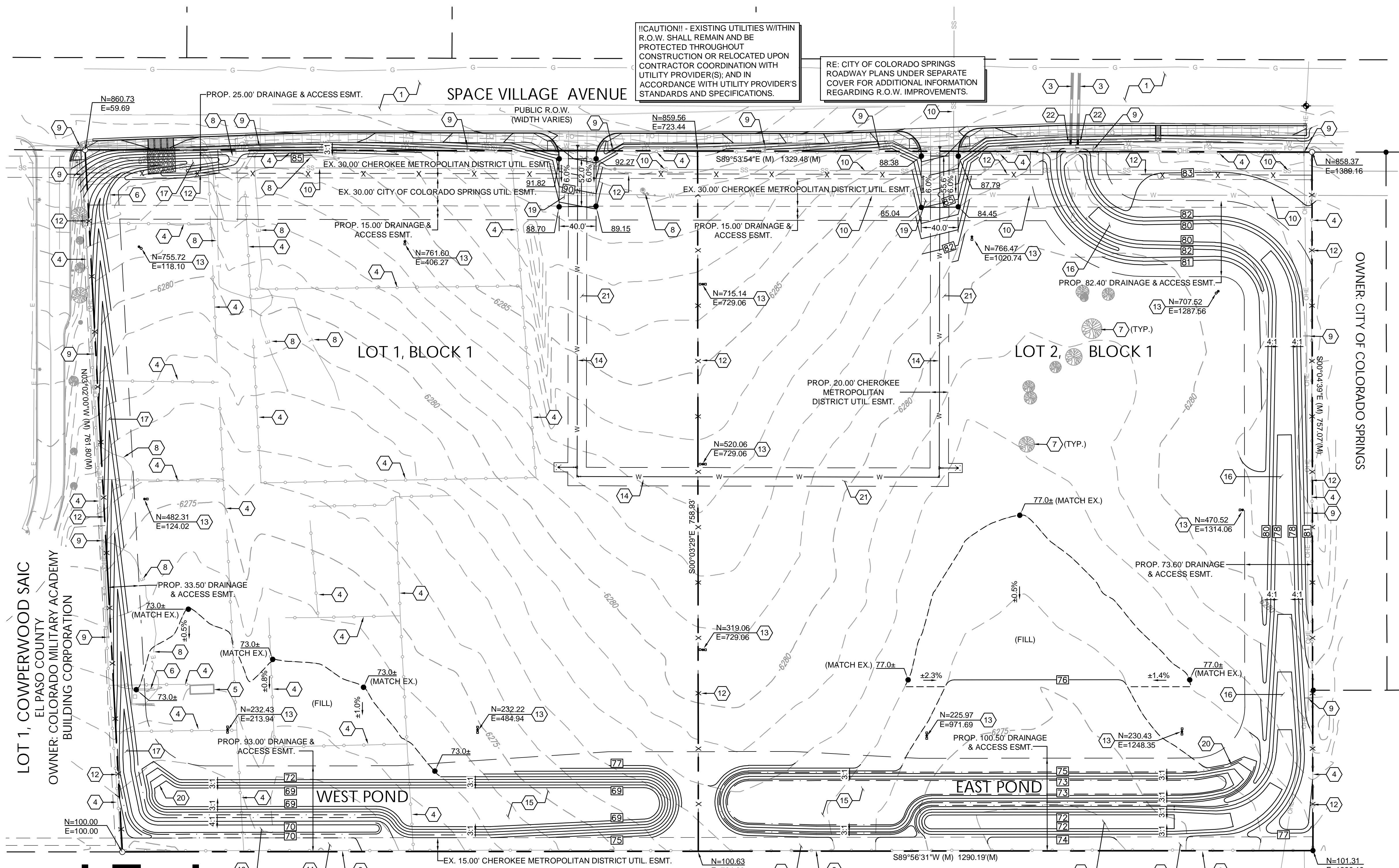
SPACE VILLAGE FILING NO. 4

A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

GRADING & EROSION CONTROL PLAN

CAUTION!!! - EXISTING UTILITIES WITHIN R.O.W. SHALL REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION OR RELOCATED UPON CONTRACTOR COORDINATION WITH UTILITY PROVIDER(S); AND IN ACCORDANCE WITH UTILITY PROVIDER'S STANDARDS AND SPECIFICATIONS.

RE: CITY OF COLORADO SPRINGS ROADWAY PLANS UNDER SEPARATE COVER FOR ADDITIONAL INFORMATION REGARDING R.O.W. IMPROVEMENTS.



BENCHMARK

AS PROVIDED ON ALTA/NSPS LAND TITLE SURVEY PREPARED BY ALTURA LAND CONSULTANTS, DATED APRIL 28, 2022 FOR THIS PROJECT:

"NGS BENCHMARK 'R 76' - LOCATED 0.2 MILE EAST ALONG HIGHWAY 94, FROM PETERSON ROAD, 22 FEET SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF AN ADDITION TO THE BUILDING (SANDY'S RESTAURANT), 48 FEET NORTH OF THE CENTERLINE OF THE HIGHWAY, 3.5 FEET SOUTH OF A POWER POLE AND 3 FEET SOUTH OF A FIBERGLASS WITNESS POST. ELEVATION = 6289.86 FEET (NAVD 1988)"

GENERAL NOTES

- REFER TO SHEETS C900 AND C901 FOR PROJECT GENERAL NOTES.
- THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.

CONSTRUCTION NOTES

- EXISTING ASPHALT TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION. RE: SHEET C903. FOR ADDITIONAL INFORMATION.
- EXISTING FENCE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- EXISTING CULVERT(S) TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- REMOVE EXISTING FENCE.
- REMOVE EXISTING BUILDING.
- REMOVE EXISTING CONCRETE.
- REMOVE EXISTING TREE.
- REMOVE, RELOCATE, OR PROTECT EXISTING UTILITY AND/OR UTILITY APPURTENANCE TO REMAIN. CONTRACTOR SHALL COORDINATE SAID WORK WITH OWNER/DEVELOPER AND UTILITY PROVIDER PRIOR TO COMMENCEMENT OF WORK.
- EXISTING OVERHEAD UTILITY LINE AND ASSOCIATED POLE(S) TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- EXISTING UTILITY TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY EXISTENCE AND LOCATION OF EXISTING SANITARY FORCE MAIN PRIOR TO CONSTRUCTION AND PROTECT SAID LINE THROUGHOUT CONSTRUCTION.
- CONSTRUCT FENCE. RE: LANDSCAPE PLANS UNDER SEPARATE COVER.
- INSTALL SITE LIGHTING, INCLUDING BUT NOT LIMITED TO BASE, POLE, FIXTURE, AND CONNECTION HARDWARE. CONTRACTOR TO PROVIDE AND INSTALL CONDUITS, PULL BOXES, AND WIRING FOR SITE LIGHTING; TYPICAL. REFERENCE SITE ELECTRIC PLANS FOR SIZING, RUN TERMINUS, AND OTHER WIRING REQUIREMENTS. RE: PHOTOMETRIC PLANS.
- CONSTRUCT WATERLINE AND APPURTENANCES. RE: SHEET C904 FOR ADDITIONAL INFORMATION.
- CONSTRUCT DETENTION AND STORMWATER QUALITY POND. RE: SHEET C907.
- CONSTRUCT DRAINAGE CHANNEL. RE: SHEET C905.
- CONSTRUCT DRAINAGE SWALE. RE: SHEET C906.
- CONSTRUCT LEVEL SPREADER. RE: SHEETS C905 AND C906.
- CONSTRUCT HEAVY DUTY CONCRETE PAVEMENT WITH #4 REINFORCING AT 18" O.C.E.W., SEE PAVING NOTE (THIS SHEET) AND SHEET C918 FOR ADDITIONAL JOINT INFORMATION.
- CONSTRUCT POND MAINTENANCE ACCESS. RE: SHEET C907.
- CONSTRUCT FIRE APPARATUS ACCESS ROAD WITH ASPHALT, CONCRETE, OR OTHER DRIVING SURFACE APPROVED BY THE CIMARRON HILLS FIRE DEPARTMENT CAPABLE OF SUPPORTING AN IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 75,000 POUNDS.
- EXTEND CULVERT. INSTALL END SECTION, AND CONSTRUCT TOE WALL. RE: SHEET C913, DETAIL B.

PAVING NOTE

ALL PAVING, INCLUDING CURB, GUTTER, AND SIDEWALK, TO BE INSTALLED OUTSIDE OF THE RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION PAVEMENT RECOMMENDATIONS INCLUDING, BUT NOT LIMITED TO, THE PAVEMENT SECTION, MATERIAL, AND SUBGRADE PREPARATION. THE CONTRACTOR SHALL COORDINATE APPROVAL FOR INSTALLATION OF ANY ALTERNATE RECOMMENDATIONS INCLUDED IN THE INVESTIGATION OR DESIRED MODIFICATIONS TO THE RECOMMENDATIONS WITH THE OWNER/DEVELOPER AND/OR THEIR CONSTRUCTION MANAGER PRIOR TO BID AND PRIOR TO CONSTRUCTION. FOR GEOTECHNICAL INVESTIGATIONS WHICH DO NOT SPECIFICALLY ADDRESS CURB, GUTTER, SIDEWALK AND SIMILAR IMPROVEMENTS NOT SUBJECT TO VEHICULAR LOADS, CONCRETE SHALL BE CDOT CLASS B, IN ACCORDANCE WITH CDOT STANDARDS AND SPECIFICATIONS.



2009 W. Littleton Blvd. #300 Littleton, CO 80120
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PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



STERLING DESIGN ASSOCIATES, LLC

NO.	DATE	DESCRIPTION	BY
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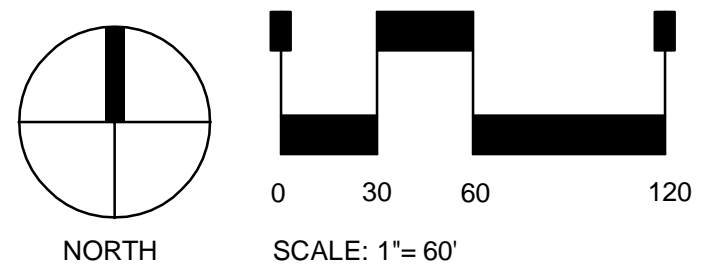
DATE: 6/2023 SCALE: 1" = 60'-0"
PROJECT MANAGER: JS PROJECT NO.:
DRAWN BY: JN DRAWING FILE:

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122
TEL: (303) 730-3001

GRADING & UTILITY PLAN

SHEET NUMBER:
3 C902



CAUTION - NOTICE TO CONTRACTOR

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LEGEND

	PROPERTY LINE		PROP. CONCRETE
	ADJACENT PROPERTY LINE		PROP. FENCE
	EASEMENT LINE		PROP. WATERLINE
	EXIST. MAJOR CONTOUR		PROP. LIGHT POLE
	EXIST. MINOR CONTOUR		PROP. HYDRANT
	PROP. CONTOUR		PROP. BOLLARD
	EXIST. FENCE		PROP. RIPRAP
	EXIST. EDGE OF ASPHALT		
	EXIST. CURB AND GUTTER		
	EXIST. OVERHEAD ELECTRIC		
	EXIST. SANITARY SEWER		
	EXIST. WATERLINE		
	EXIST. GAS LINE		
	EXIST. ELECTRIC		
	EXIST. TELEPHONE		
	EXIST. FIBER OPTIC		

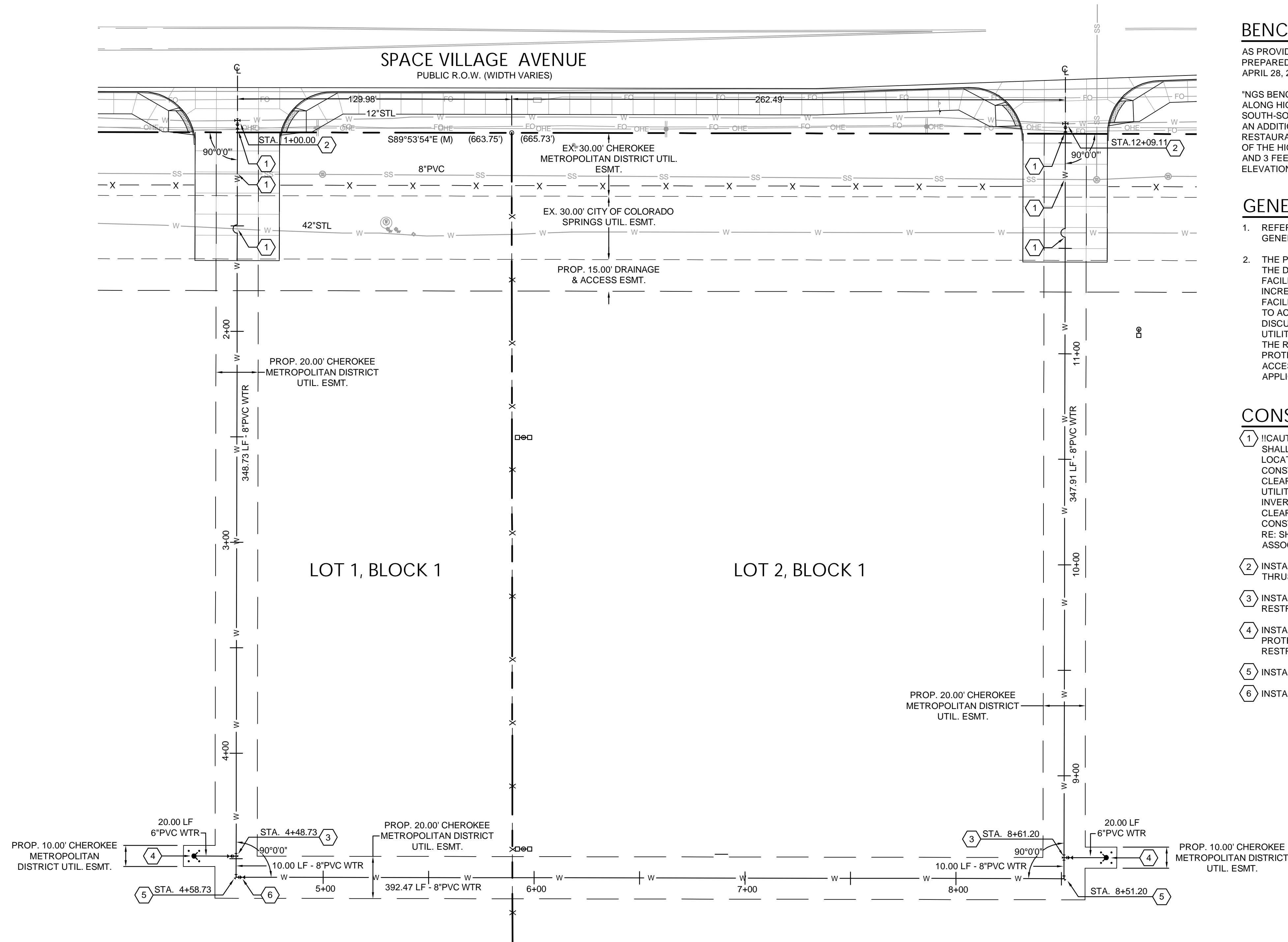
DRY UTILITY NOTE

PRIOR TO CONSTRUCTION - CONTRACTOR TO VERIFY THE EXACT SIZE, ALIGNMENT, AND CONNECTION POINTS WITH THE DRY UTILITY PROVIDERS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PROVISION AND INSTALLATIONS REQUIRED OF ALL DRY UTILITY APPURTENANCES (INCLUDING, BUT NOT LIMITED TO, TRENCHING, CONDUITS, PULL BOXES, ETC.) REQUIRED FOR SERVICE CONNECTION THAT ARE NOT INCLUDED IN THE UTILITY PROVIDER'S SCOPE.

SPACE VILLAGE FILING NO. 4

A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

GRADING & EROSION CONTROL PLAN



BENCHMARK

AS PROVIDED ON ALTA/NSPS LAND TITLE SURVEY PREPARED BY ALTURA LAND CONSULTANTS, DATED APRIL 28, 2022 FOR THIS PROJECT.

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GENERAL NOTES

1. REFER TO SHEETS C900 AND C901 FOR PROJECT GENERAL NOTES.
2. THE PLAN SHALL NOT SUBSTANTIALLY CHANGE THE DEPTH OF COVER, OR ACCESS TO UTILITY FACILITIES. ADDITIONALLY, THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO UTILITY FACILITIES TO ACCOMMODATE THE PLAN, MUST BE DISCUSSED AND AGREED TO BY THE AFFECTED UTILITY PRIOR TO IMPLEMENTING THE PLAN. THE RESULTING COST TO RELOCATE OR PROTECT UTILITIES, OR PROVIDE INTERIM ACCESS IS AT THE EXPENSE OF THE PLAN APPLICANT.

CONSTRUCTION NOTES

1. !!CAUTION!! - UTILITY CROSSING. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF CROSSING UTILITIES PRIOR TO CONSTRUCTION AND PROVIDE ADEQUATE CLEARANCES BETWEEN EXISTING/PROPOSED UTILITY INSTALLATIONS. CONTRACTOR TO CONFIRM INVERTS AND UTILITY PROVIDER ALLOWABLE CLEARANCES PRIOR TO CONSTRUCTION. CONSTRUCT WATERLINE LOWERING AS NECESSARY. RE: SHEET CXXX, DETAILS A7-1 AND A7-2 AND ASSOCIATED CSU STANDARD DETAILS.
2. INSTALL 8"X12" CUT-IN TEE WITH 8" GATE VALVE AND THRUST RESTRAINT.
3. INSTALL 6"X8" TEE WITH 6" GATE VALVE AND THRUST RESTRAINT.
4. INSTALL FIRE HYDRANT ASSEMBLY WITH BOLLARD PROTECTION (4 BOLLARDS) AND THRUST RESTRAINT.
5. INSTALL 8" - 90° BEND AND THRUST RESTRAINT.
6. INSTALL 8" GATE VALVE.



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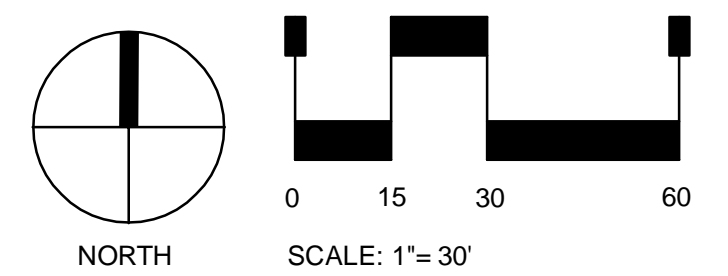


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STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS	
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PROJECT:	



CAUTION - NOTICE TO CONTRACTOR

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LEGEND

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SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

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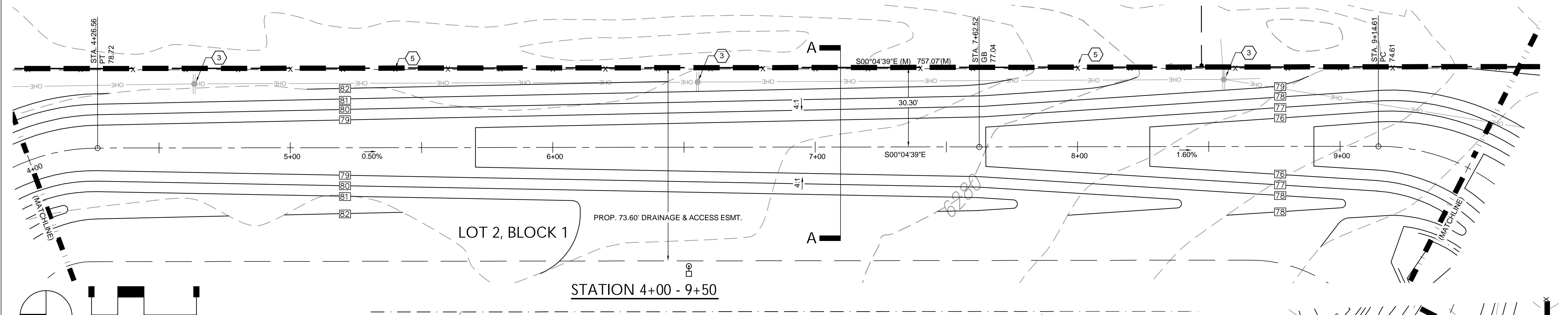
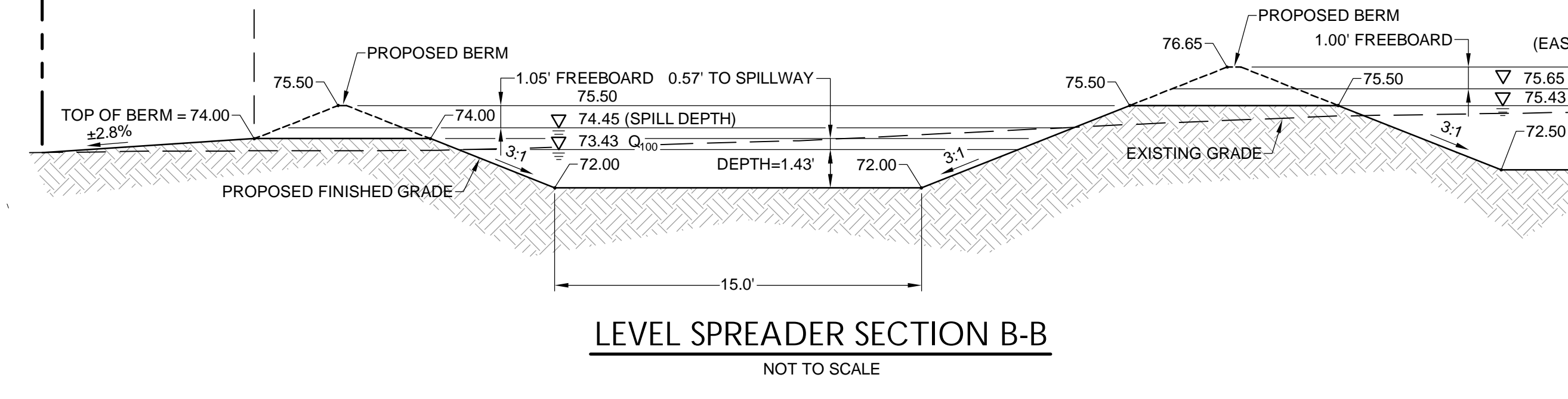
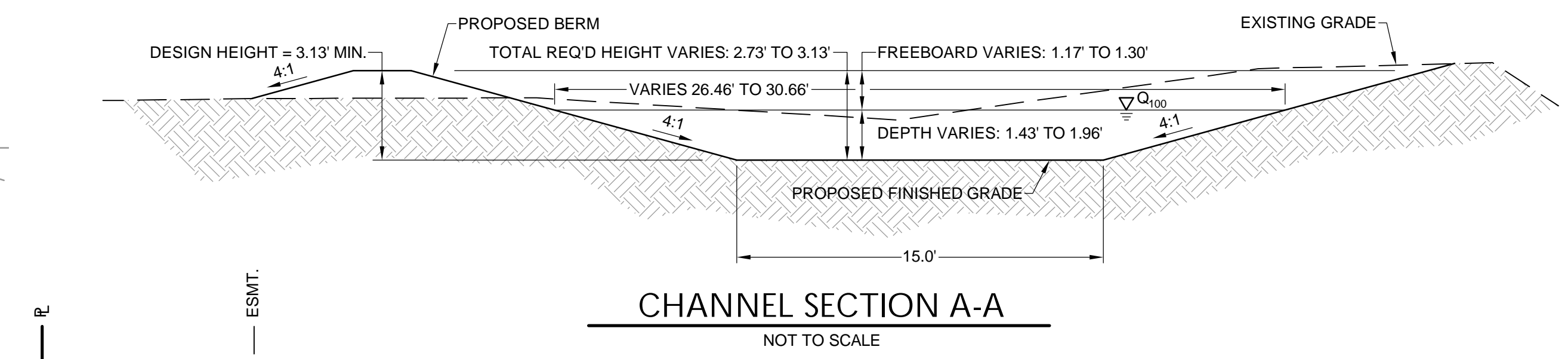
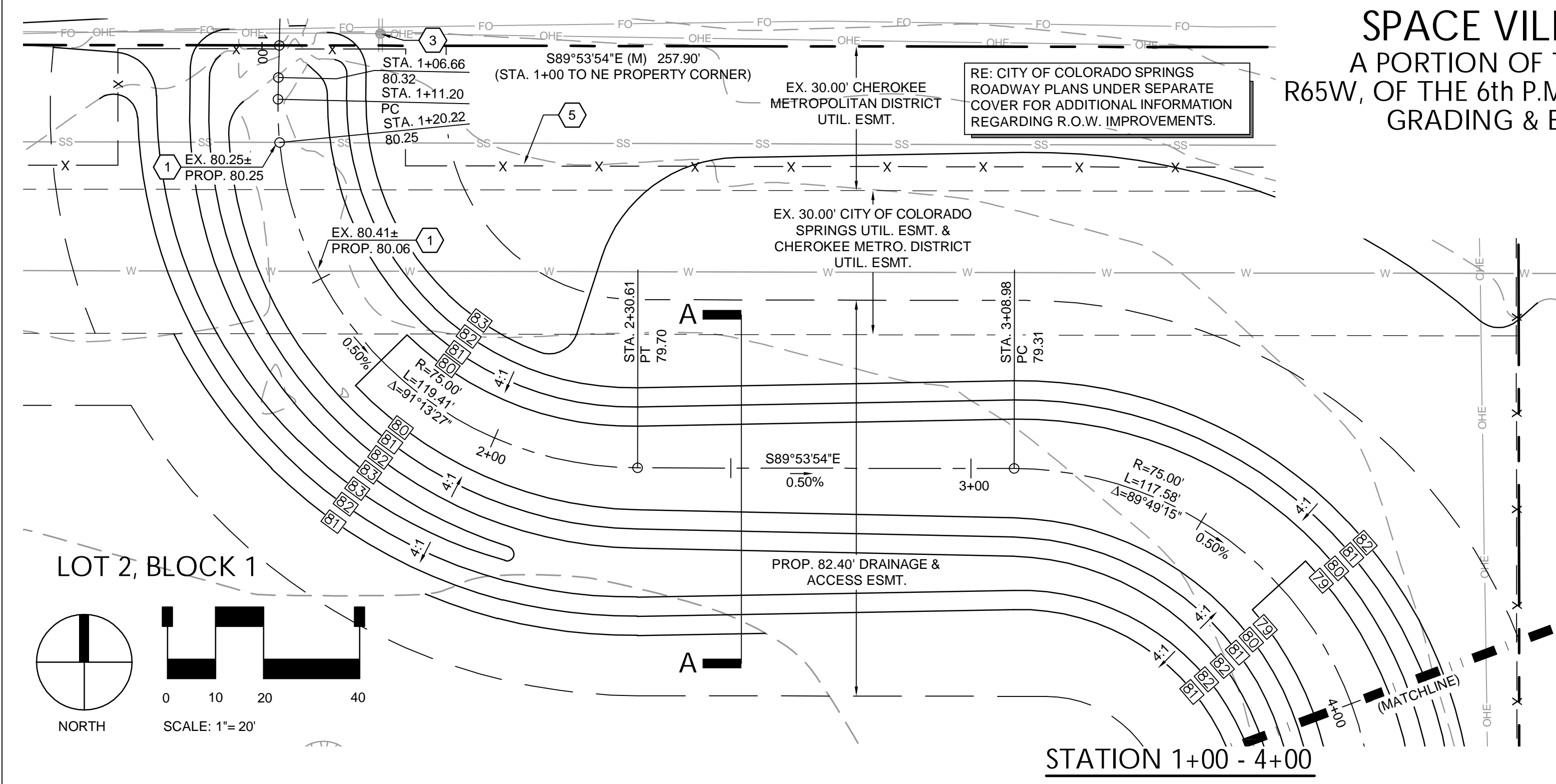
TEL: (303) 730-3001

SHEET TITLE: WATERLINE PLAN

SHEET NUMBER:
4 **C904**

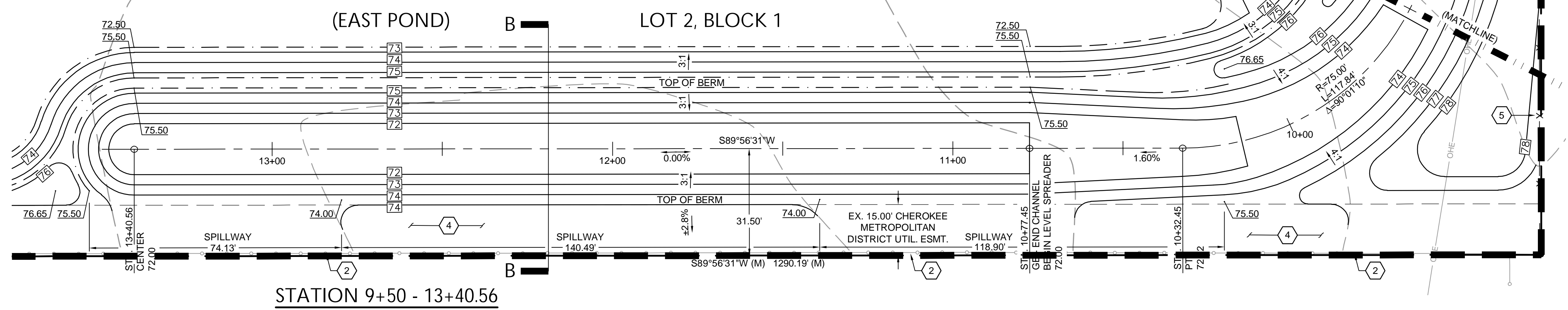
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GRADING & EROSION CONTROL PLAN



BENCHMARK
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GENERAL NOTES

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STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects
2009 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEVELL, P.E.
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS	NO.	DATE	BY	DESCRIPTION
NO. 1	DATE:		BY:	
DESCRIPTION:				
NO. 2	DATE:		BY:	
DESCRIPTION:				
NO. 3	DATE:		BY:	
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NO. 4	DATE:		BY:	
DESCRIPTION:				
NO. 5	DATE:		BY:	
DESCRIPTION:				
NO. 6	DATE:		BY:	
DESCRIPTION:				

DATE:	SCALE:
6/2023	1" = 20'-0"
PROJECT MANAGER:	PROJECT NO.:
JN	
DRAWN BY:	DRAWING FILE:
JN	
PROJECT:	

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122
TEL: (303) 730-3001

SHEET TITLE: DRAINAGE CHANNEL PLAN

SHEET NUMBER:
5 **C905**

CAUTION - NOTICE TO CONTRACTOR

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LEGEND

	PROPERTY LINE		PROP. CONCRETE
	ADJACENT PROPERTY LINE		PROP. FENCE
	EASEMENT LINE		PROP. WATERLINE
	EXIST. MAJOR CONTOUR		PROP. LIGHT POLE
	EXIST. MINOR CONTOUR		PROP. RIPRAP
	PROP. CONTOUR		
	EXIST. FENCE		
	EXIST. EDGE OF ASPHALT		
	EXIST. CURB AND GUTTER		
	EXIST. OVERHEAD ELECTRIC		
	EXIST. SANITARY SEWER		
	EXIST. WATERLINE		
	EXIST. GAS LINE		
	EXIST. ELECTRIC		
	EXIST. TELEPHONE		
	EXIST. FIBER OPTIC		

CONSTRUCTION NOTES

- !!CAUTION!! - UTILITY CROSSING. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF CROSSING UTILITY PRIOR TO CONSTRUCTION AND PROVIDE ADEQUATE COVER IN ACCORDANCE WITH UTILITY PROVIDER CRITERIA. CONSTRUCT WATERLINE LOWERING OR CREEK CROSSING AS NECESSARY AND AS COORDINATED WITH UTILITY PROVIDER. RE: SHEET CXXX, DETAILS A7-1 THROUGH A7-4, A7-7 AND A7-8, AND ASSOCIATED DISTRICT AND CSU STANDARD DETAILS. EXISTING ASPHALT TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION. RE: SHEET C903. FOR ADDITIONAL INFORMATION.
- EXISTING FENCE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- EXISTING OVERHEAD UTILITY LINE AND ASSOCIATED POLE(S) TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY EXISTENCE AND LOCATION OF EXISTING SANITARY FORCE MAIN PRIOR TO CONSTRUCTION AND PROTECT SAID LINE THROUGHOUT CONSTRUCTION.
- CONSTRUCT FENCE. RE: LANDSCAPE PLANS UNDER SEPARATE COVER.

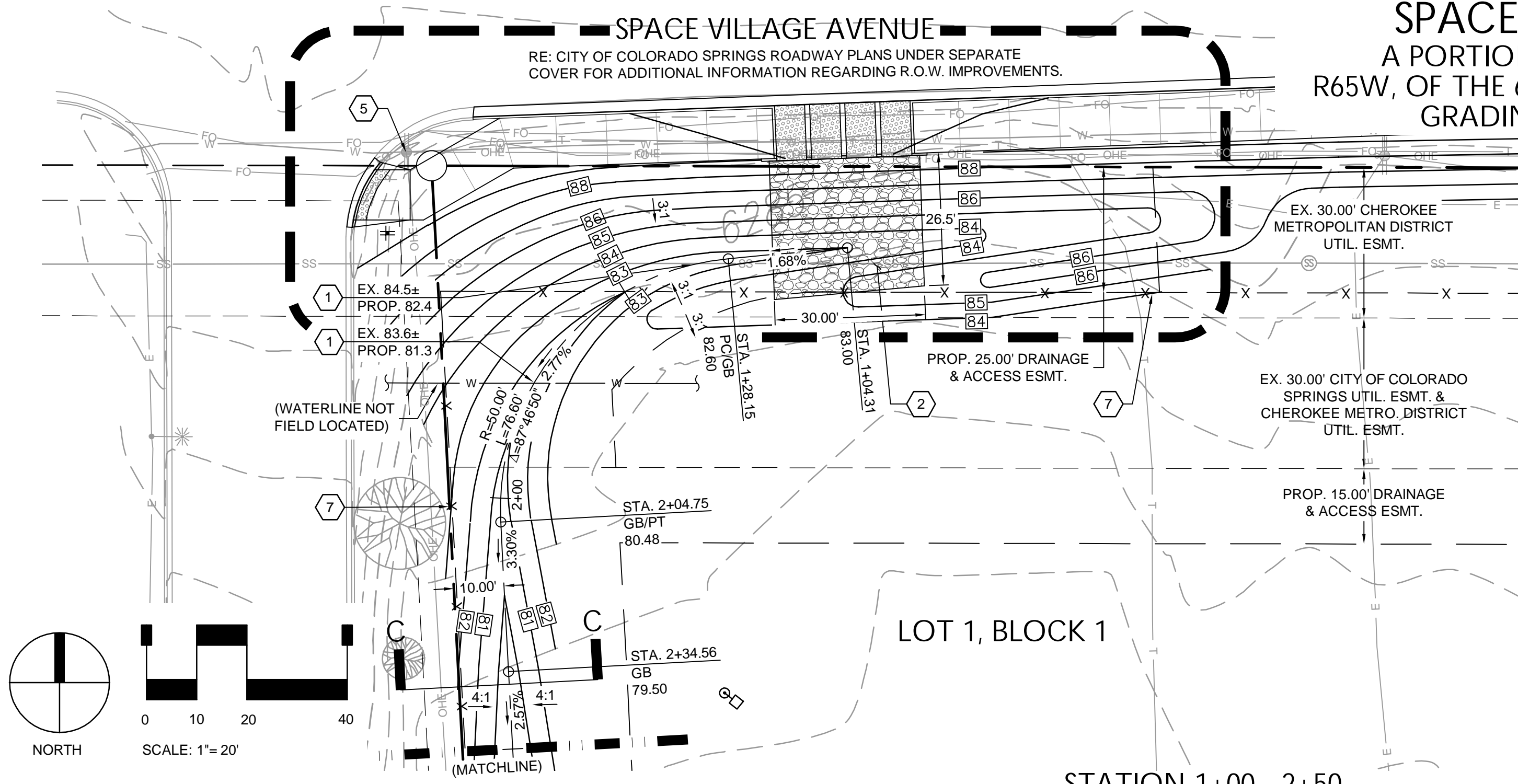


SPACE VILLAGE FILING NO. 4

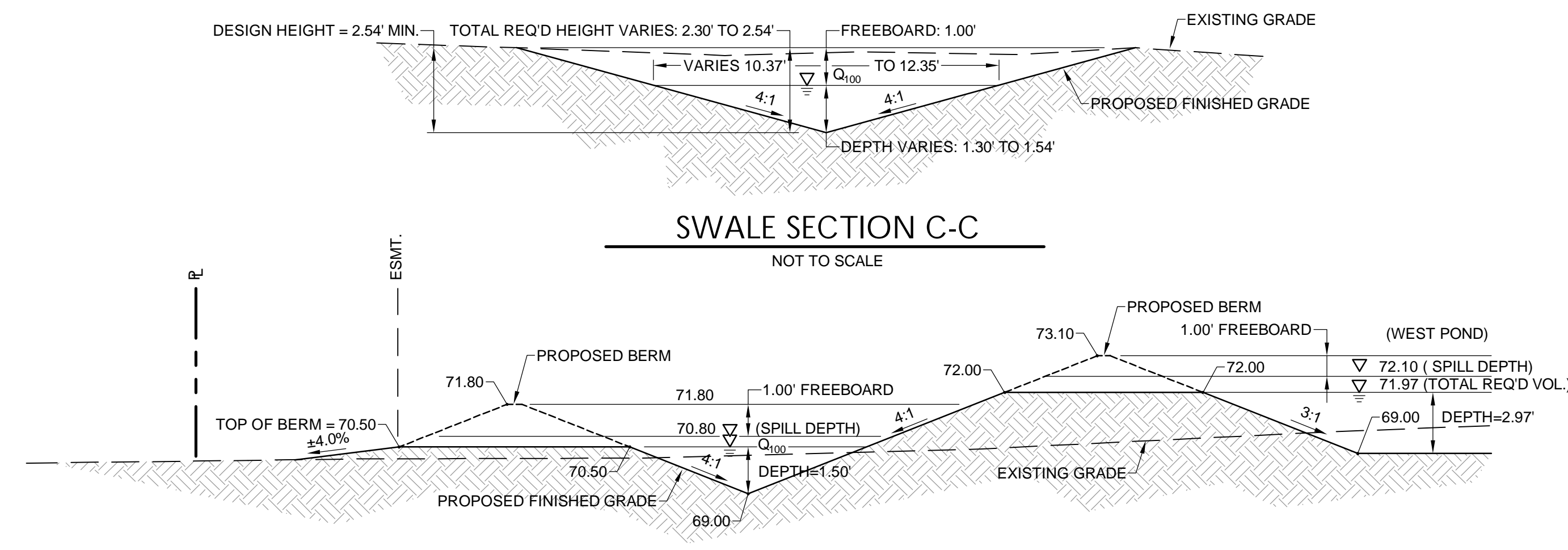
A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

GRADING & EROSION CONTROL PLAN

RE: CITY OF COLORADO SPRINGS ROADWAY PLANS UNDER SEPARATE COVER FOR ADDITIONAL INFORMATION REGARDING R.O.W. IMPROVEMENTS.

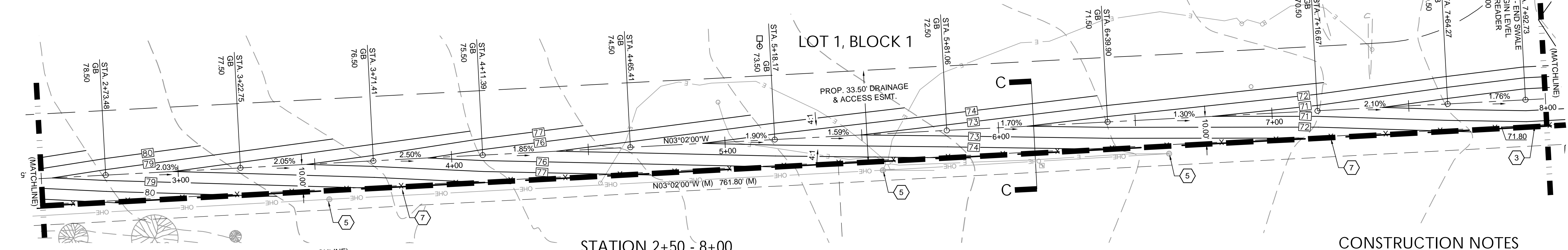


STATION 1+00 - 2+50

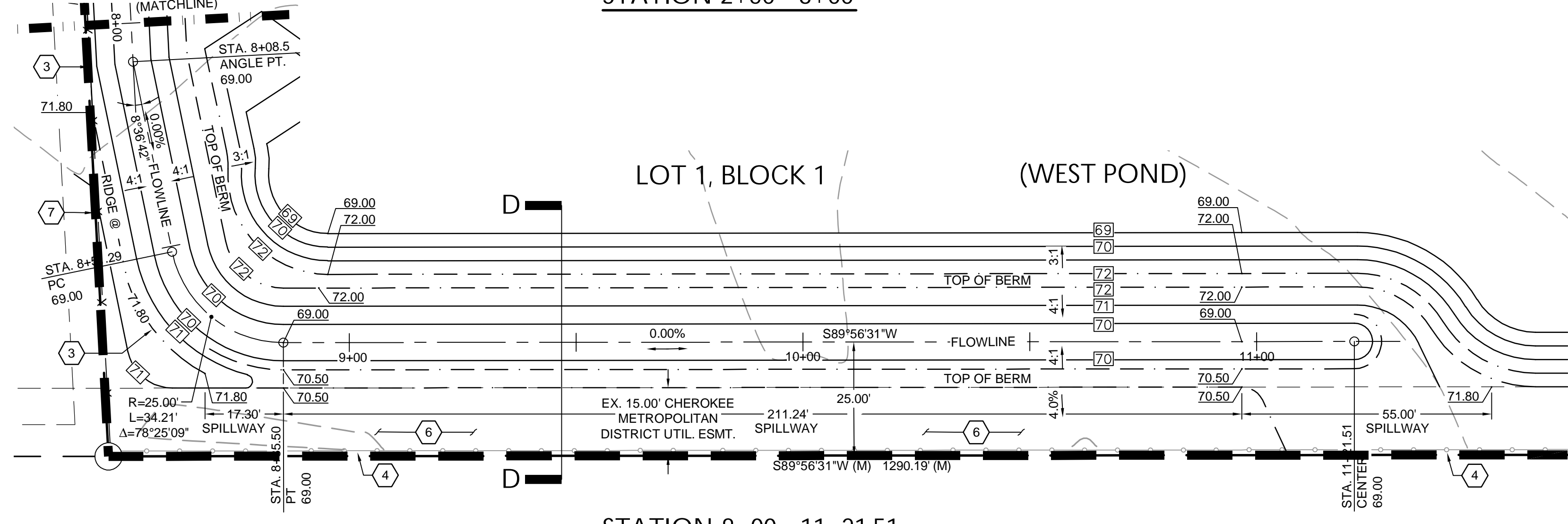
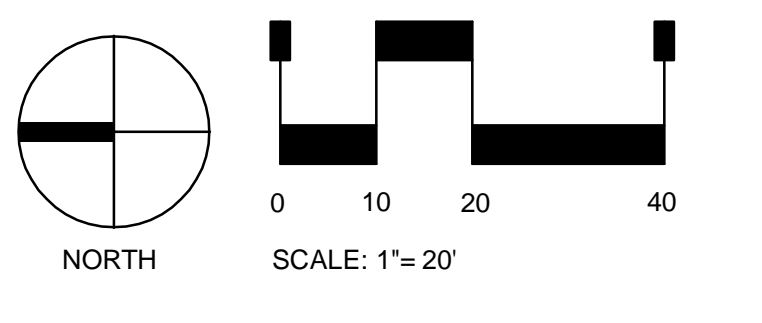


SWALE SECTION C-C

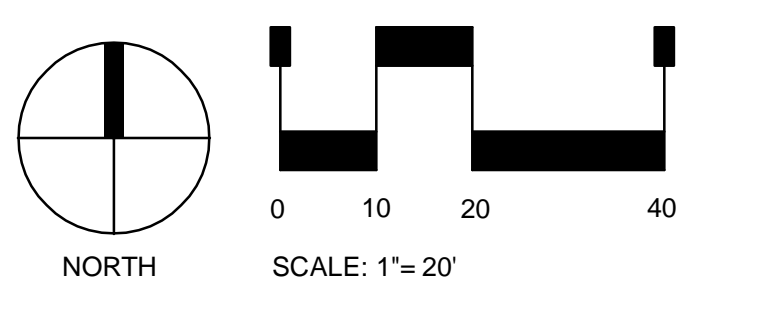
LEVEL SPREADER SECTION D-D



STATION 2+50 - 8+00



STATION 8+00 - 11+21.51



CONSTRUCTION NOTES

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2. CONSTRUCT ±30.0' X 30.0' TYPE L RIPRAP APRON. RE: SHEET C913, DETAIL A.
3. CONSTRUCT RIDGE LINE AT ELEVATION 71.80 (MIN.) TO MATCH EXISTING AT PROPERTY LINE.
4. EXISTING FENCE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
5. EXISTING OVERHEAD UTILITY LINE AND ASSOCIATED POLE(S) TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION.
6. CONTRACTOR SHALL FIELD VERIFY EXISTENCE AND LOCATION OF EXISTING SANITARY FORCE MAIN PRIOR TO CONSTRUCTION AND PROTECT SAID LINE THROUGHOUT CONSTRUCTION.
7. CONSTRUCT FENCE. RE: LANDSCAPE PLANS UNDER SEPARATE COVER.

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LEGEND

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	EXIST. WATERLINE		
	EXIST. GAS LINE		
	EXIST. ELECTRIC		
	EXIST. TELEPHONE		
	EXIST. FIBER OPTIC		

BENCHMARK

AS PROVIDED ON ALTURA'S LAND TITLE SURVEY PREPARED BY ALTURA LAND CONSULTANTS, DATED APRIL 28, 2022 FOR THIS PROJECT.

"NGS BENCHMARK 'R 76' - LOCATED 0.2 MILE EAST ALONG HIGHWAY 94, FROM PETERSON ROAD, 22 FEET SOUTH-SOUTHWEST OF THE SOUTHWEST CORNER OF AN ADDITION TO THE BUILDING (SANDY'S RESTAURANT), 48 FEET NORTH OF THE CENTERLINE OF THE HIGHWAY, 3.5 FEET SOUTH OF A POWER POLE AND 3 FEET SOUTH OF A FIBERGLASS WITNESS POST. ELEVATION = 6289.86 FEET (NAVD 1988)"

GENERAL NOTES

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JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS	NO.	DATE	BY
DESCRIPTION:	NO. 1	DATE:	BY:
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DATE:	SCALE:
6/2023	1" = 20'-0"
PROJECT MANAGER:	PROJECT NO.:
JS	
DRAWN BY:	DRAWING FILE:
JN	

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122
TEL: (303) 730-3001

DRAINAGE SWALE PLAN

SHEET NUMBER:
6 **C906**

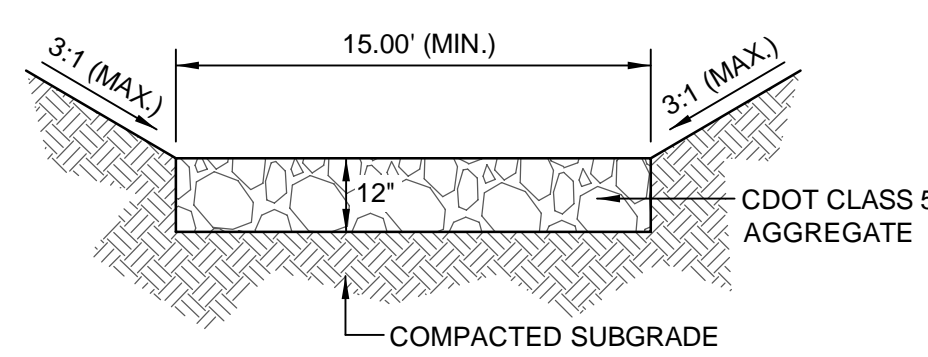


SPACE VILLAGE FILING NO. 4

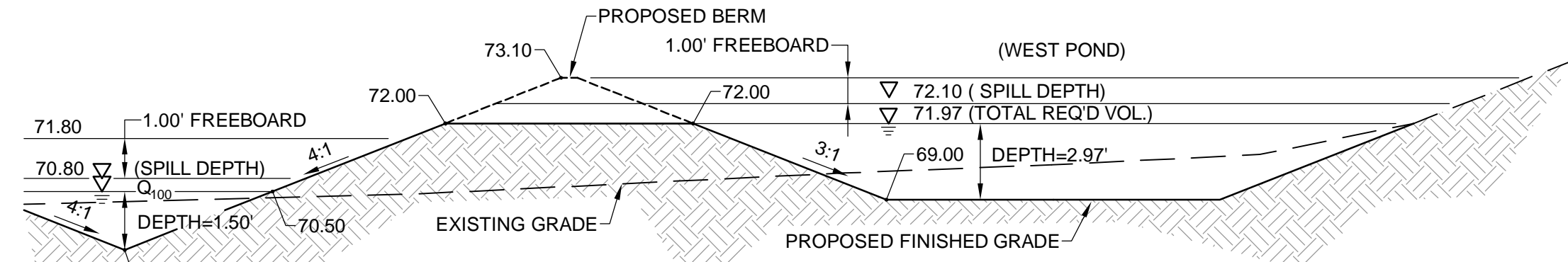
A PORTION OF THE NW 1/4 OF SEC. 17, T14S, R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO

GRADING & EROSION CONTROL PLAN

CDOT CLASS 5	
SIEVE SIZE	MASS % PASSING SQUARE MESH SIEVES
1 1/2 INCHES	100
1 INCHES	95 - 100
3/4 INCHES	-
# 4	30 - 70
# 8	-
# 200	3 - 15

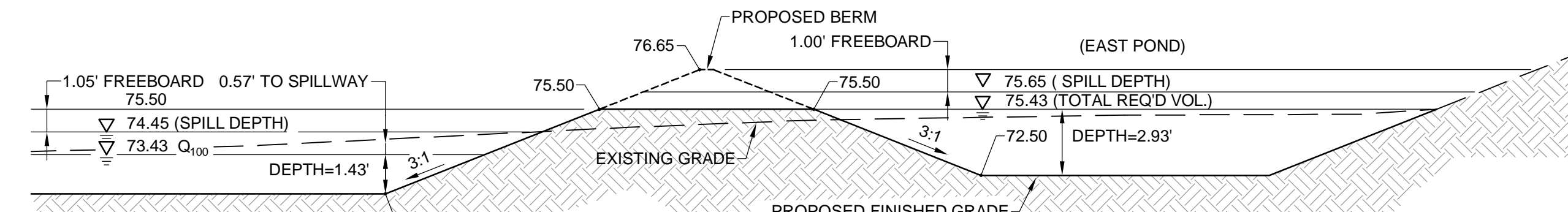


ACCESS ROAD
NOT TO SCALE



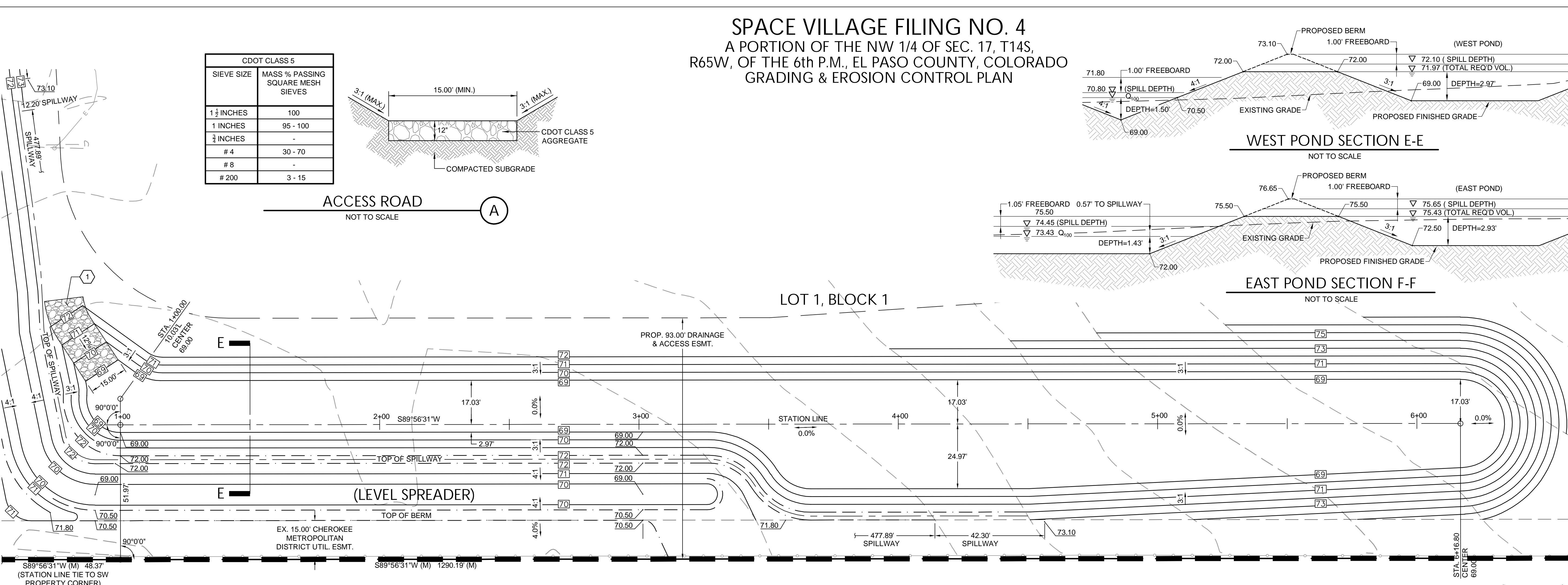
WEST POND SECTION E-E

NOT TO SCALE



EAST POND SECTION F-F

NOT TO SCALE



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9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

NO.	DATE	DESCRIPTION	BY
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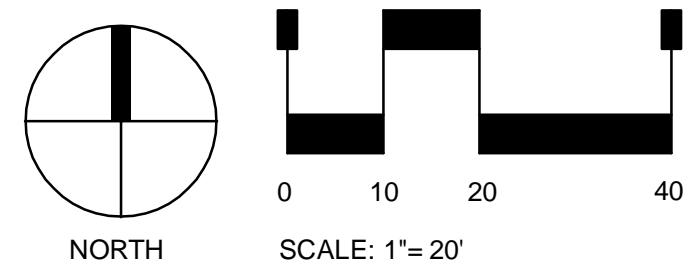
DATE:	6/2023	SCALE:	1" = 20'-0"
PROJECT MANAGER:	JS	PROJECT NO.:	
DRAWN BY:	JN	DRAWING FILE:	
PROJECT:			

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LITTLETON, COLORADO 80122
TEL: (303) 730-3001

DETENTION POND PLAN

SHEET NUMBER:
7 **C907**



WEST POND

LOT 2, BLOCK 1

EAST POND

CONSTRUCTION NOTES

1. CONSTRUCT POND MAINTENANCE ACCESS. RE: DETAIL A, THIS SHEET.

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BENCHMARK

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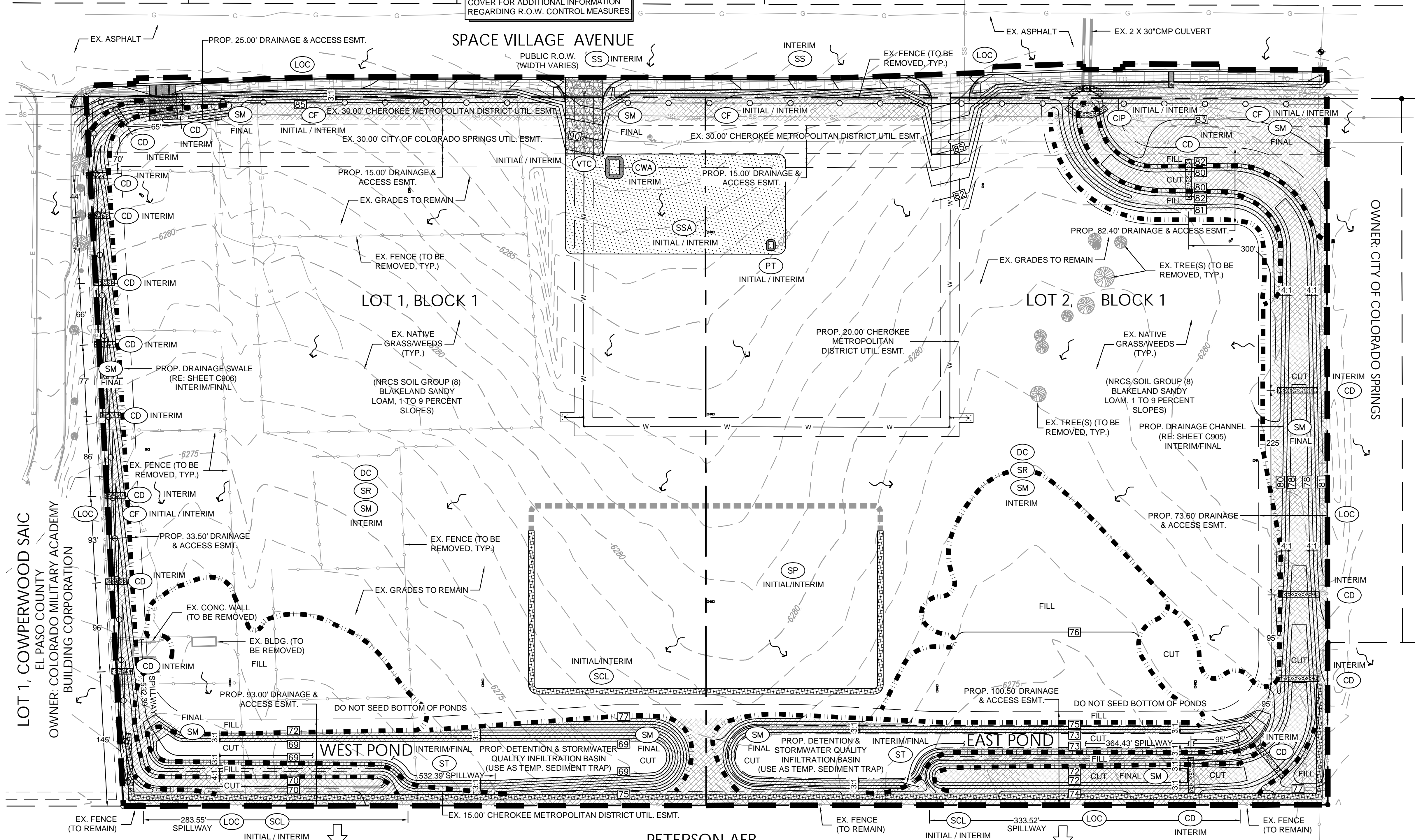
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SPACE VILLAGE FILING NO. 4
 A PORTION OF THE NW 1/4 OF SEC. 17, T14S,
 R65W, OF THE 6th P.M., EL PASO COUNTY, COLORADO
 GRADING & EROSION CONTROL PLAN

RE: CITY OF COLORADO SPRINGS
 ROADWAY PLANS UNDER SEPARATE
 COVER FOR ADDITIONAL INFORMATION
 REGARDING R.O.W. CONTROL MEASURES



BENCHMARK

AS PROVIDED ON ALTA/NPS LAND TITLE SURVEY
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CUT/FILL SUMMARY

CUT	=	± 10,279 CY
FILL	=	± 3,968 CY
EXPORT	=	± 6,311 CY
(EXPORT OVER 20.4 AC. = ± 0.1')		
FINAL EXPORT	=	± 0 CY

CUT AND FILL ANALYSIS IS FROM EXISTING FINISH GRADE TO PROPOSED FINISH GRADE AND DOES NOT ACCOUNT FOR COMPACTION, SHRINK/SWELL, PAVEMENT SECTIONS, ETC., AND IS THEREFORE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.



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 JAY M. NEWELL, PE
 COLORADO REGISTRATION 35219
 FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23
 STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS	NO.	DATE:	DESCRIPTION:	BY:
NO: 1	DATE:	DESCRIPTION:	BY:	
NO: 2	DATE:	DESCRIPTION:	BY:	
NO: 3	DATE:	DESCRIPTION:	BY:	
NO: 4	DATE:	DESCRIPTION:	BY:	
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NO: 6	DATE:	DESCRIPTION:	BY:	

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6/2023	1" = 60'-0"
PROJECT MANAGER:	PROJECT NO.:
JS	
DRAWN BY:	DRAWING FILE:
JN	

**SPACE VILLAGE FILING NO. 4
 EL PASO COUNTY, CO**

CLIENT:
 COMMERCIAL BUILDING SERVICES
 7561 S. GRANT STR., SUITE A-4
 LITTLETON, COLORADO 80122

TEL: (303) 730-3001

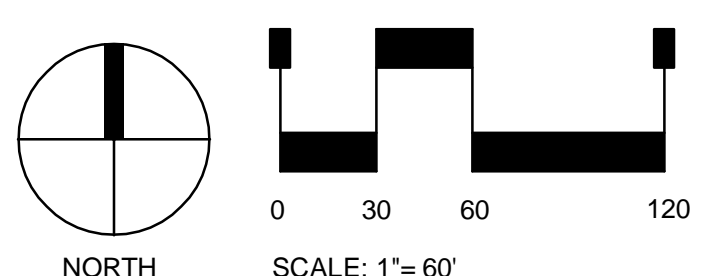
**GRADING & EROSION CONTROL
 PLAN (SWMP-SITE MAP)**

SHEET NUMBER:
8 C909

LOT 1, COWPERWOOD SAIC
 EL PASO COUNTY
 OWNER: COLORADO MILITARY ACADEMY
 BUILDING CORPORATION

OWNER: CITY OF COLORADO SPRINGS

PETERSON AFB
 OWNER: UNITED STATES OF AMERICA



CAUTION - NOTICE TO CONTRACTOR

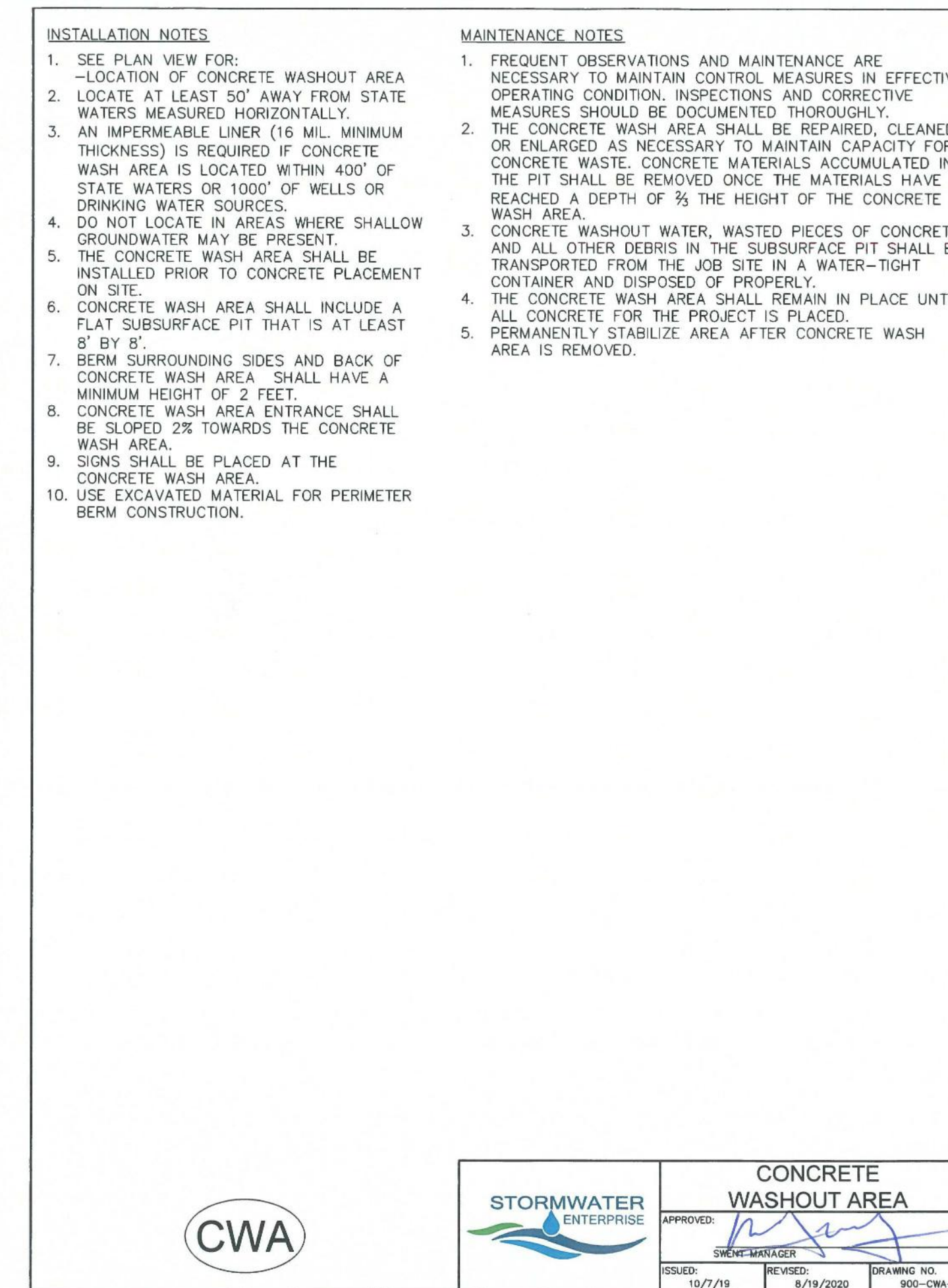
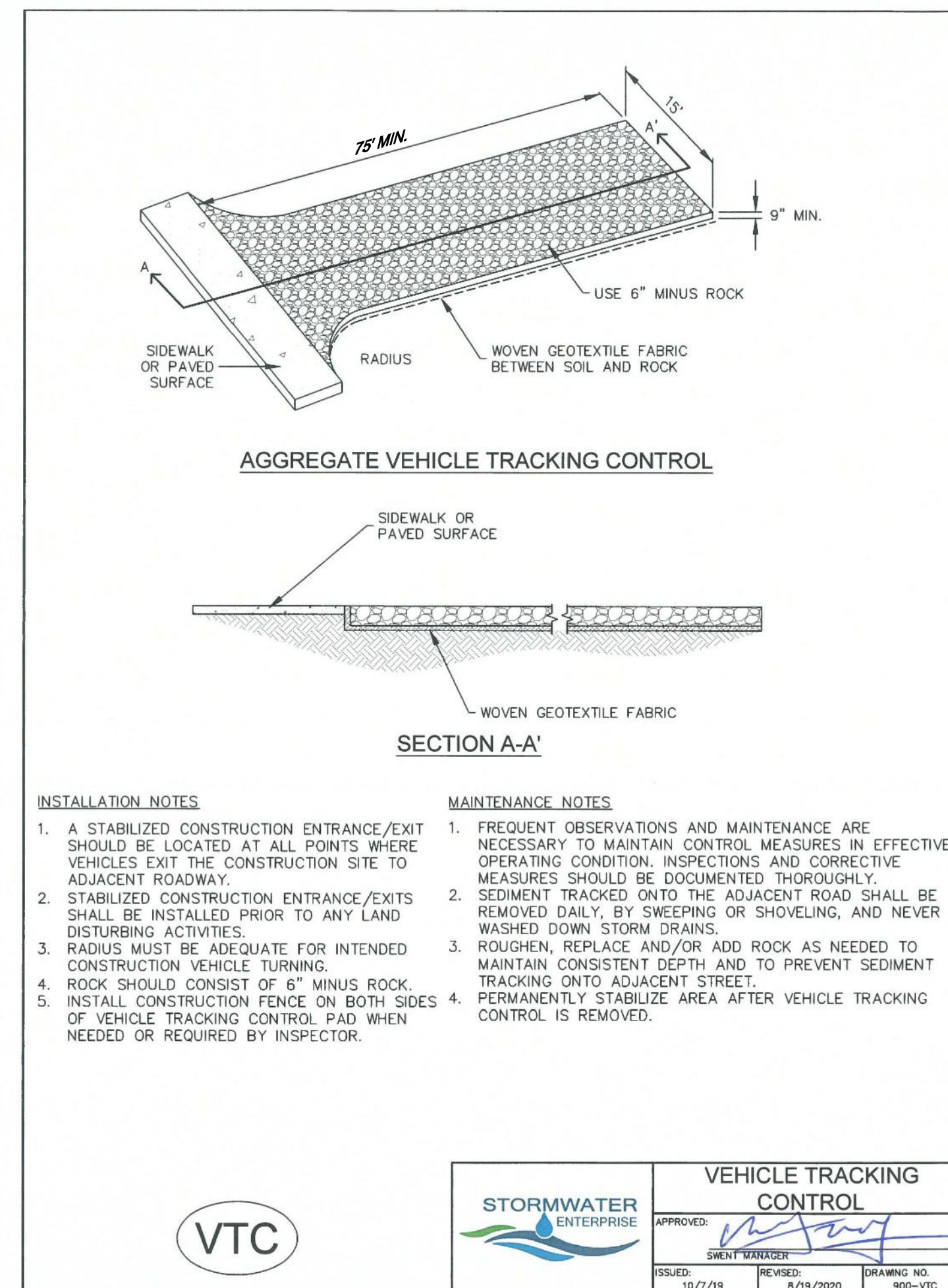
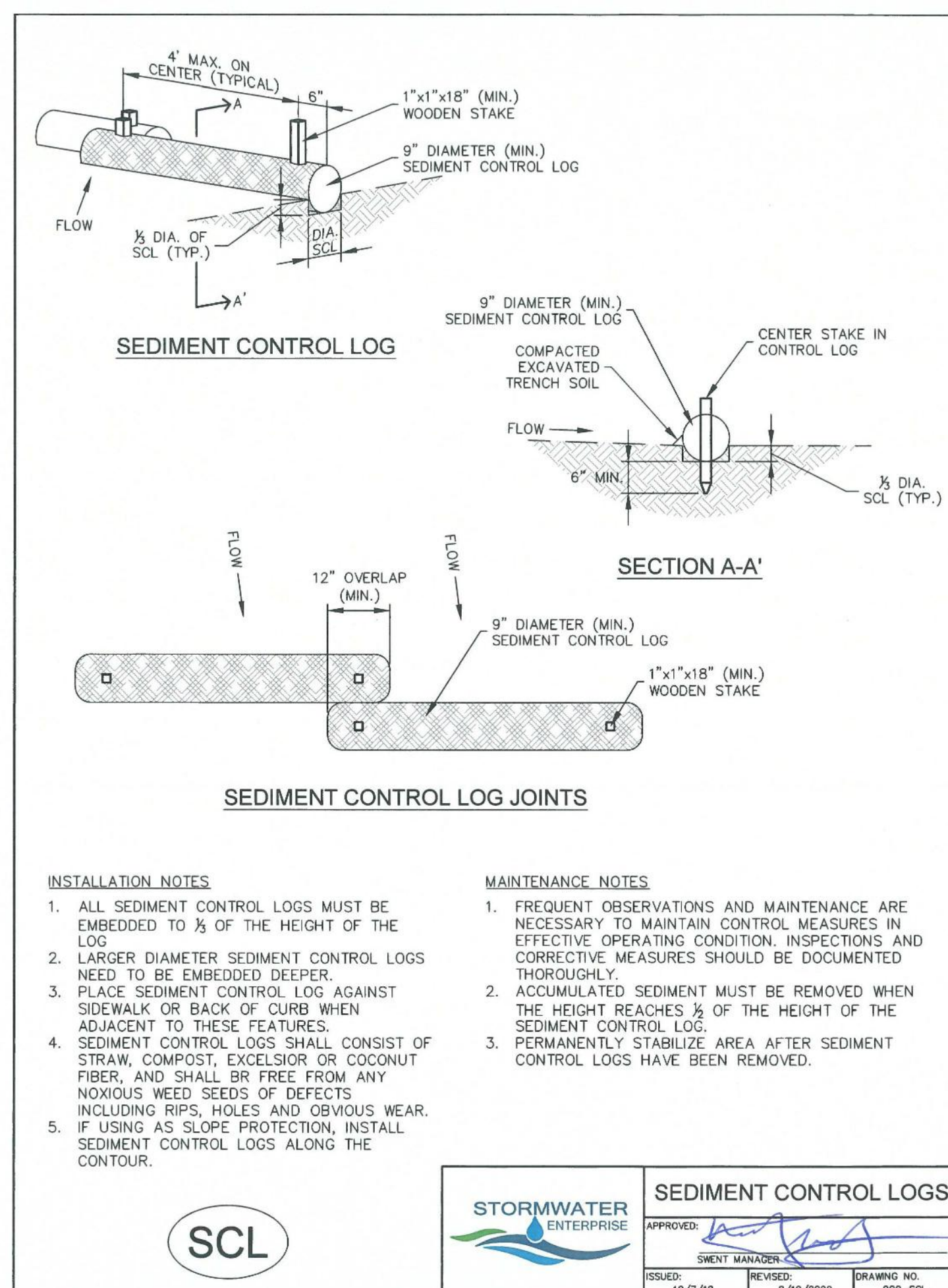
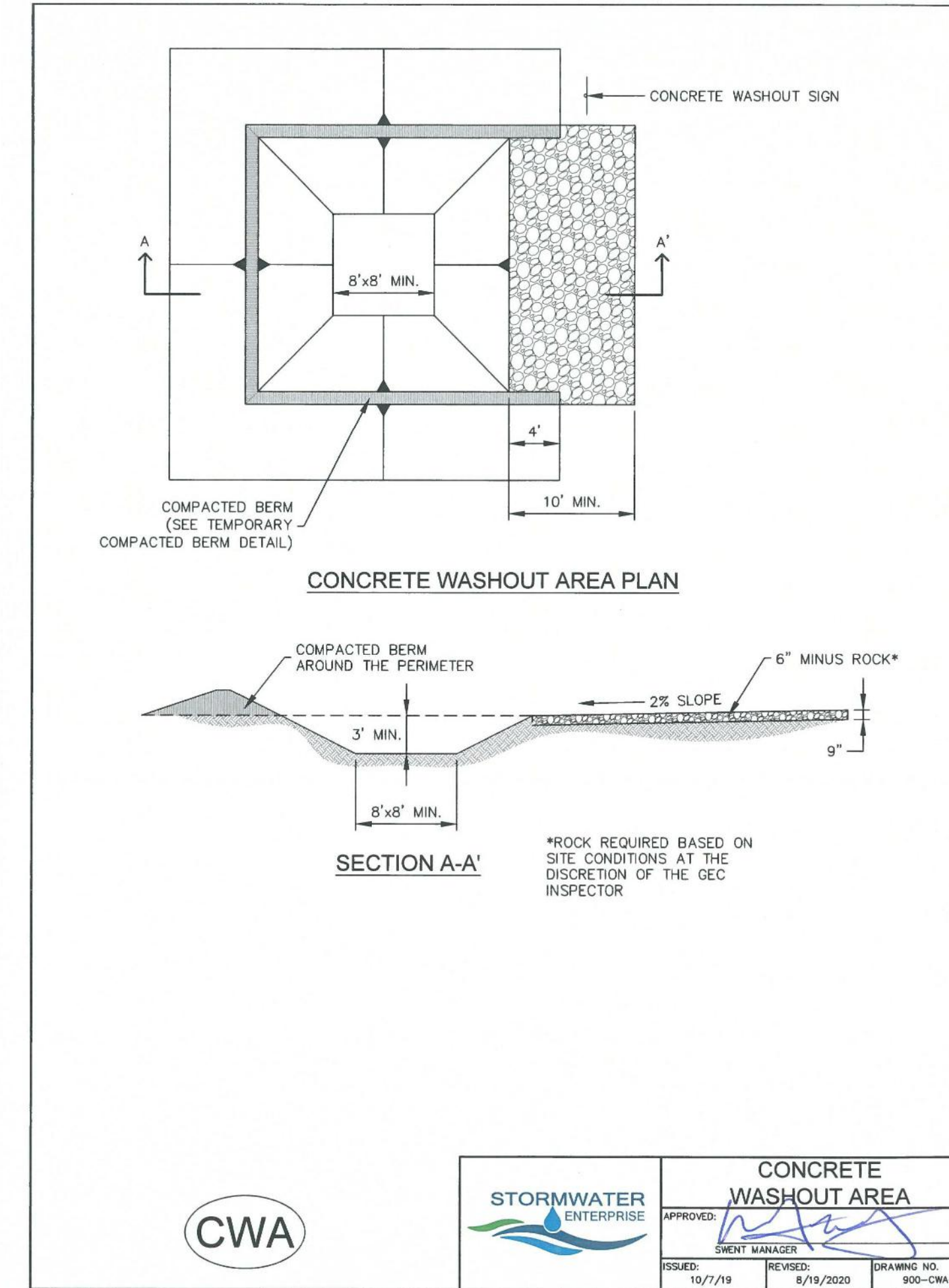
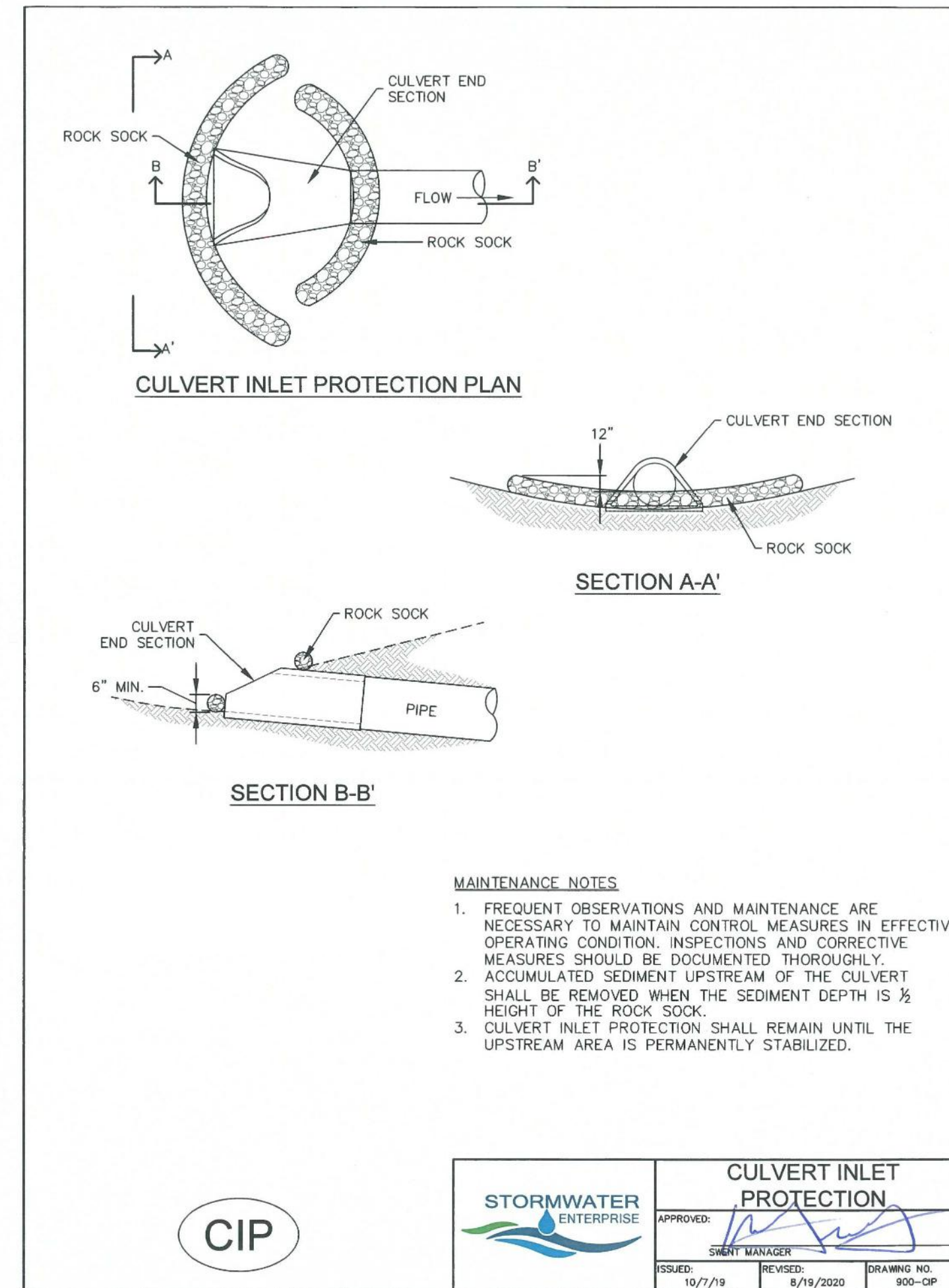
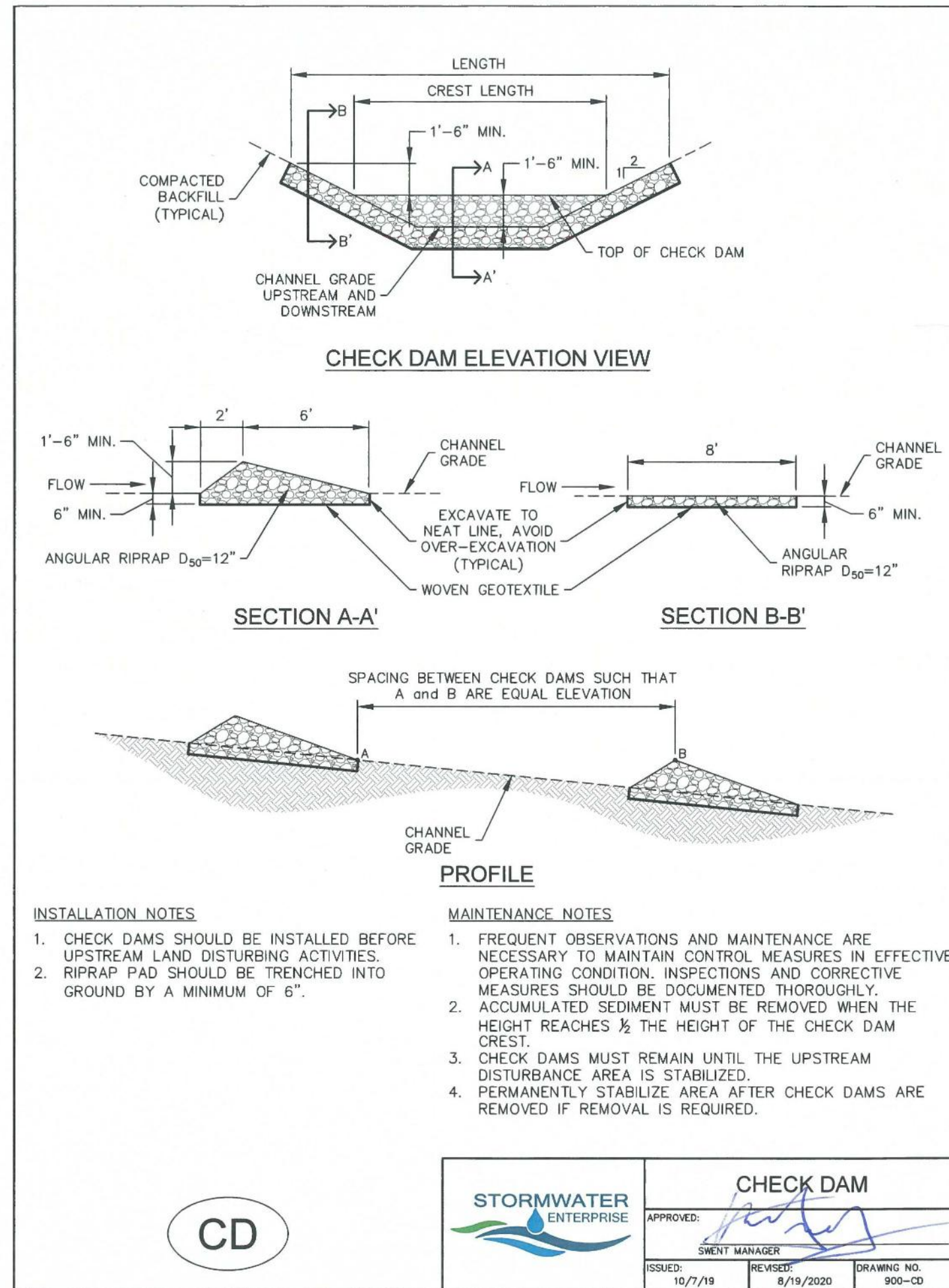
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LEGEND

	PROPERTY LINE		PROP. CONCRETE		VEHICLE TRACKING CONTROL (PRE-MANUFACTURED MAT) (FOR USE ON TOP OF EXISTING PAVEMENT)		SEDIMENT TRAP
	ADJACENT PROPERTY LINE		LIMITS OF CONSTRUCTION & DISTURBANCE		STABILIZED STAGING AREA		SURFACE ROUGHENING
	EASEMENT LINE		CONSTRUCTION FENCE (TYPE = FENCE (TYP. ALL))		CONCRETE WASHOUT AREA		SEEDING & MULCHING (INTERIM)
	EXIST. MAJOR CONTOUR		SEDIMENT CONTROL LOG		CUT/FILL LIMIT		SEEDING & MULCHING (FINAL)
	EXIST. MINOR CONTOUR		CHECK DAM		PORTABLE TOILET(S)		DUST CONTROL
	PROP. CONTOUR		DISCHARGE POINT		CULVERT INLET PROTECTION		STREET SWEEPING
	EXIST. FENCE		FLOW DIRECTION				STOCKPILE MANAGEMENT
	EXIST. EDGE OF ASPHALT						
	EXIST. CURB AND GUTTER						
	EXIST. OVERHEAD ELECTRIC						
	EXIST. SANITARY SEWER						
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ISSUES & REVISIONS	NO.:	DATE:	BY:
	NO. 1		
	NO. 2		
	NO. 3		
	NO. 4		
	NO. 5		
	NO. 6		

DATE:	SCALE:
6/2023	N/A
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DRAWN BY:	DRAWING FILE:
JN	

PROJECT:

**SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, CO**

CUSTOMER:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

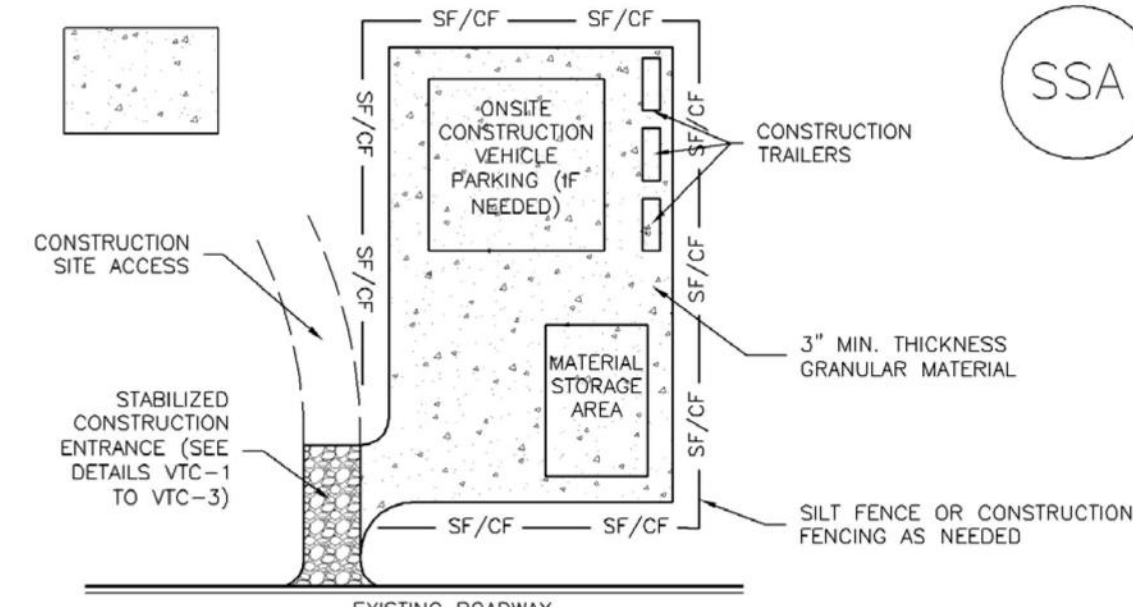
TEL: (303) 730-3001

SHEET TITLE:
**GRADING & EROSION CONTROL
DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:
9 C910

Stabilized Staging Area (SSA)

SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

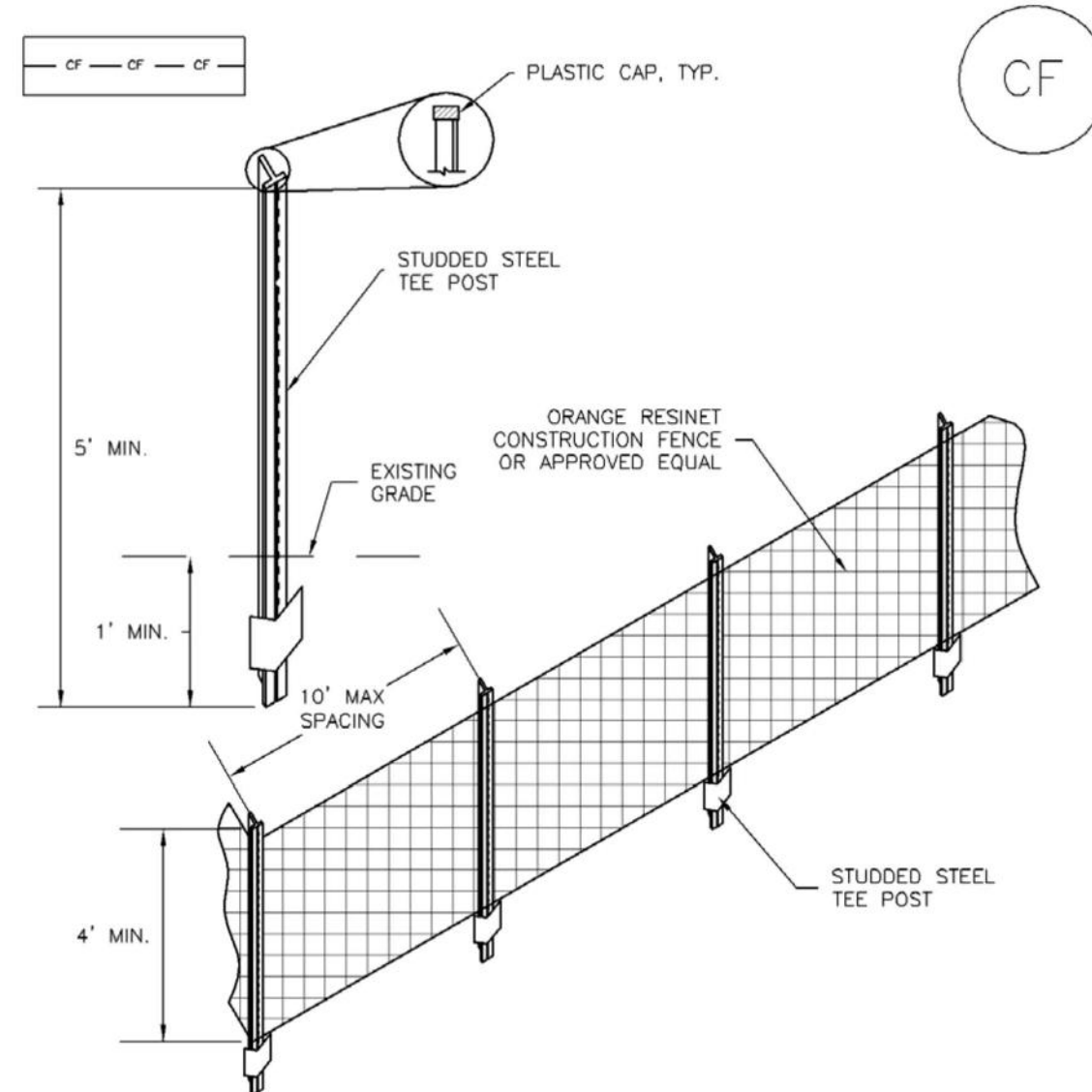
- SEE PLAN VIEW FOR
-LOCATION OF STAGING AREA(S).
CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
- STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
- STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
- THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

SM-3

Construction Fence (CF)



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF CONSTRUCTION FENCE.
- CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
- STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
- CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

SM-6

Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
- THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION, THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

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

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

Construction Fence (CF)

SM-3

CONSTRUCTION FENCE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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

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

Sediment Trap (ST)

SM-3

SEDIMENT TRAP INSTALLATION NOTES

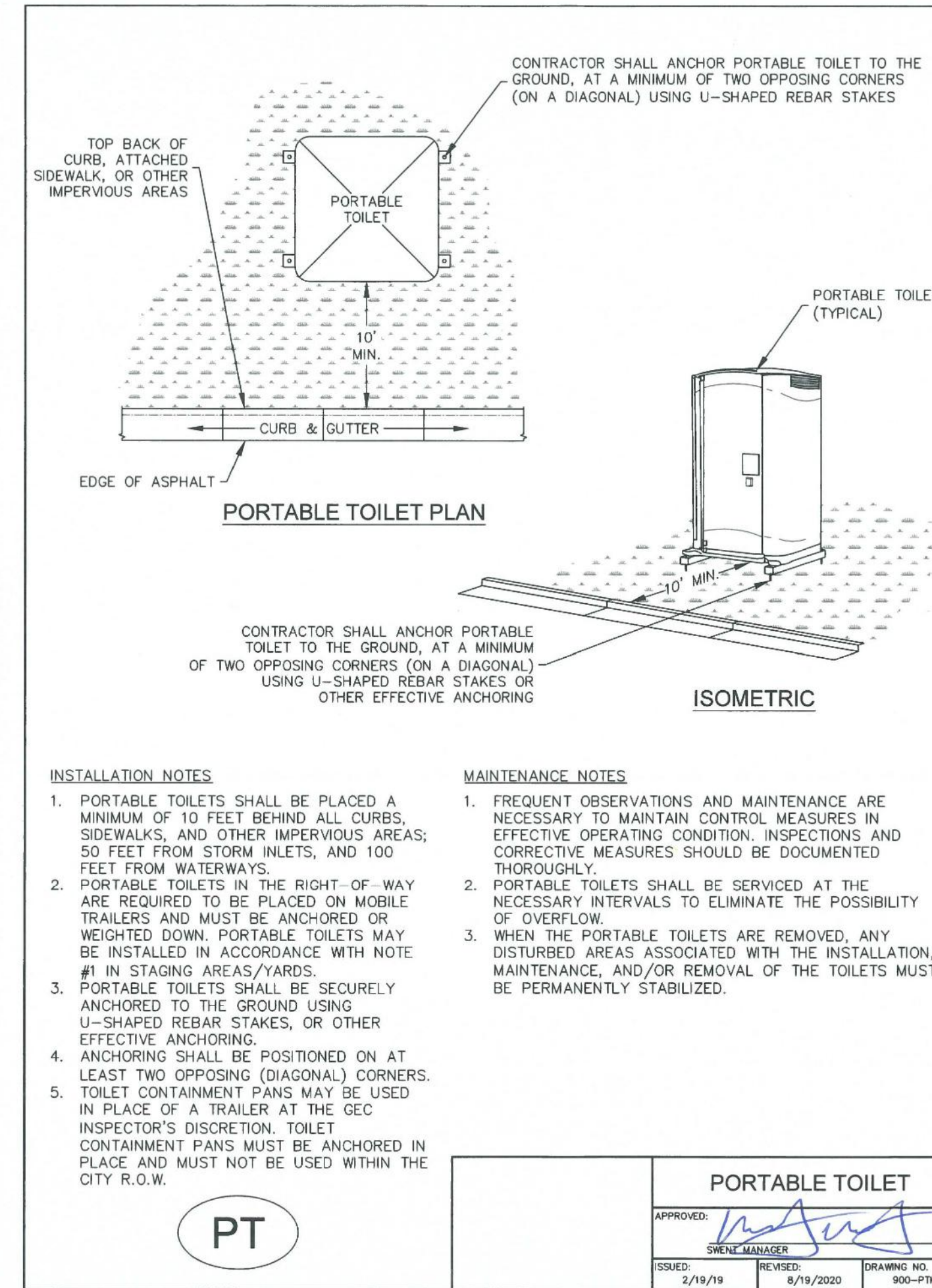
- SEE PLAN VIEW FOR:
-LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
- SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
- SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

SEDIMENT TRAP 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.
- REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN THE SEDIMENT DEPTH REACHES 1/2 THE HEIGHT OF THE RIPRAP OUTLET.
- SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN SEDIMENT TRAPS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED 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.



INSTALLATION NOTES

- PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
- PORTABLE TOILETS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
- PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U-SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
- ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS. TOILET CONTAINMENT PANS MAY BE USED IN PLACE OF A TRAILER AT THE GEC INSPECTOR'S DISCRETION. TOILET CONTAINMENT PANS MUST BE ANCHORED IN PLACE AND MUST NOT BE USED WITHIN THE CITY R.O.W.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
- WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

PORTABLE TOILET

ISSUED:	2/19/19	REVISION:	6/19/2022	DRAWING NO.:	900-07M
APPROVED:	<i>[Signature]</i>				
DESIGN MANAGER:					

PT



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PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

NO.	DATE	BY
NO: 1	DATE: -	BY: -
DESCRIPTION:		
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NO: 5	DATE: -	BY: -
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NO: 6	DATE: -	BY: -
DESCRIPTION:		

DATE:	6/2023	SCALE:	N/A
PROJECT MANAGER:	JS	PROJECT NO.:	
DRAWN BY:	JN	DRAWING FILE:	

PROJECT:

**SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, CO**

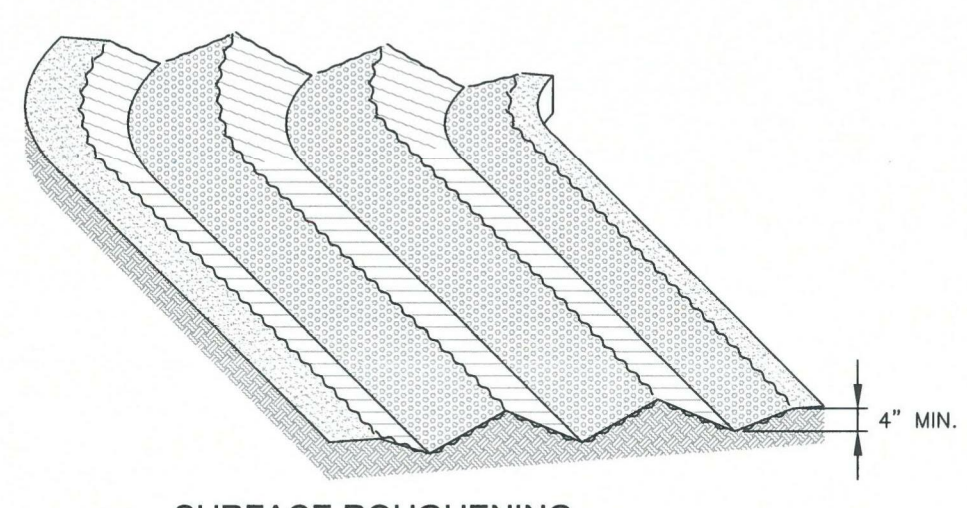
CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

**GRADING & EROSION CONTROL
DETAILS (SWMP-SITE MAP)**

SHEET NUMBER:
10

C911




SURFACE ROUGHENING


INSTALLATION NOTES

1. SURFACE ROUGHENING MAY BE USED IN AREAS FLATTER THAN 3:1. INSTALL FURROWS ALONG CONTOUR TO INTERCEPT SHEET FLOW.
2. SURFACE ROUGHENING MAY BE ACCOMPLISHED BY FURROWING, SCARIFYING, RIPPING OR DISKING THE SOIL.
3. FURROWS MUST BE A MINIMUM OF 4" IN DEPTH.
4. SURFACE ROUGHENING SHALL NOT BE USED ON EXTREMELY SANDY OR ROCKY SOILS. CONTRACTOR SHALL CONFIRM USE OF SURFACE ROUGHENING WITH COUNTY PRIOR TO ANY APPLICATION.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.





SURFACE ROUGHENING

APPROVED: *[Signature]*

ISSUED: 10/7/19 REVISED: 8/19/2020 DRAWING NO. 900-SR

(MODIFIED AUGUST 2022)

SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE, AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

5. APPLY TOPSOIL AND 100 LBS OF DIAMMONIUM PHOSPHATE PER ACRE TO AN APPROVED SUBGRADE. USE A DISK OR HARROW TO PREPARE THE SEED BED AND COMPLETE FINISH GRADING.

SEEDING

1. SEE MIX, THIS SHEET.
2. USE A GRASS DRILL WITH A SEED AGITATOR TO ENSURE THAT THE SEED IS DRILLED EVENLY TO A 1/2" DEPTH.
3. HAND BROADCAST SEED AT TWICE THE RATE IN AREAS WHERE DRILL SEEDING CANNOT BE ACCOMPLISHED.


MULCHING


1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. CRIMP STRAW INTO THE SOIL AT 3,000 LBS PER ACRE.

WATER

1. CONTRACTOR SHALL APPLY 1/2" OF WATER TO SEED AREAS, TWICE PER WEEK, FOR THREE WEEKS. CONTRACTOR TO SUPPLY ALL EQUIPMENT AND LABOR.

RE-SEED AND MULCH BARE OR ERODED AREAS AT ONE (1) MONTH INTERVALS AS NECESSARY.





SEEDING & MULCHING

APPROVED: *[Signature]*

ISSUED: 10/7/19 REVISED: 8/19/2020 DRAWING NO. 900-SM

(MODIFIED AUGUST 2022)

NATIVE SEED USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS) NATIVE SEED MIX

COMMON NAME	SCIENTIFIC NAME	GROWTH SEASON / FORM	% OF MIX	POUNDS PLS
BLUESTEM, BIG	ANDROPOGON GERARDII 'KAW'	WARM, BUNCH	20	2.18
BLUESTEM, LITTLE	SCHIZACHYRIUM SCOPARIUM 'PASTURA'	WARM, BUNCH	10	0.67
GRAMA, BLUE	BOUTELOUA GRACILIS 'HACHITA'	WARM, SOD	20	0.25
GRAMA, SIDEOATS	BOUTELOUA CURTIPENDULA 'VAUGHN'	WARM, SOD	10	0.91
INDIAN GRASS, YELLOW	SORGHASTRUM NUTANS 'CHEYENNE'	WARM, BUNCH/SOD	10	1.02
WHEATGRASS, WESTERN	PASCOPYRUM SMITHII 'ARRIBA'	COOL, SOD	20	3.20
SWITCHGRASS	PANICUM VIRGATUM 'BLACKWELL'	WARM, SOD	10	0.40
SANDSEED, PRAIRIE	CALIMOVILFA LONGIFOLIA 'GOSHEN'	WARM, SOD	10	0.64
SEED RATE (LBS PLS / ACRE)				9.26

Wind Erosion/Dust Control (DC) **EC-14**

Description

Wind erosion and dust control BMPs help to keep soil particles from entering the air as a result of land disturbing construction activities. These BMPs include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered.



Photograph DC-1. Water truck used for dust suppression. Photo courtesy of Douglas County.

Appropriate Uses

Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies.

Design and Installation

The following construction BMPs can be used for dust control:

- An irrigation/sprinkler system can be used to wet the top layer of disturbed soil to help keep dry soil particles from becoming airborne.
- Seeding and mulching can be used to stabilize disturbed surfaces and reduce dust emissions.
- Protecting existing vegetation can help to slow wind velocities across the ground surface, thereby limiting the likelihood of soil particles to become airborne.
- Spray-on soil binders form a bond between soil particles keeping them grounded. Chemical treatments may require additional permitting requirements. Potential impacts to surrounding waterways and habitat must be considered prior to use.
- Placing rock on construction roadways and entrances will help keep dust to a minimum across the construction site.
- Wind fences can be installed on site to reduce wind speeds. Install fences perpendicular to the prevailing wind direction for maximum effectiveness.

Wind Erosion Control/ Dust Control	
Functions	
Erosion Control	Yes
Sediment Control	No
Site/Material Management	Moderate

Maintenance and Removal

When using an irrigation/sprinkler control system to aid in dust control, be careful not to overwater. Overwatering will cause construction vehicles to track mud off-site.

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

DC-1

Street Sweeping and Vacuuming (SS) **SM-7**

Description

Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway.

Appropriate Uses

Use this practice at construction sites where vehicles may track sediment offsite onto paved roadways.

Design and Installation

Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming.

On smaller construction sites, street sweeping can be conducted manually using a shovel and broom. Never wash accumulated sediment on roadways into storm drains.

Maintenance and Removal

- Inspect paved roads around the perimeter of the construction site on a daily basis and more frequently, as needed. Remove accumulated sediment, as needed.
- Following street sweeping, check inlet protection that may have been displaced during street sweeping.
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.



Photograph SS-1. A street sweeper removes sediment and potential pollutants along the curb line at a construction site. Photo courtesy of Tom Gore.

Street Sweeping/ Vacuuming	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	Yes

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

SS-1

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COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

NO.	DATE	BY
NO: 1		
NO: 2		
NO: 3		
NO: 4		
NO: 5		
NO: 6		

DATE: **6/2023** SCALE: **N/A**

PROJECT MANAGER: **JS** PROJECT NO.:

DRAWN BY: **JN** DRAWING FILE:

PROJECT:

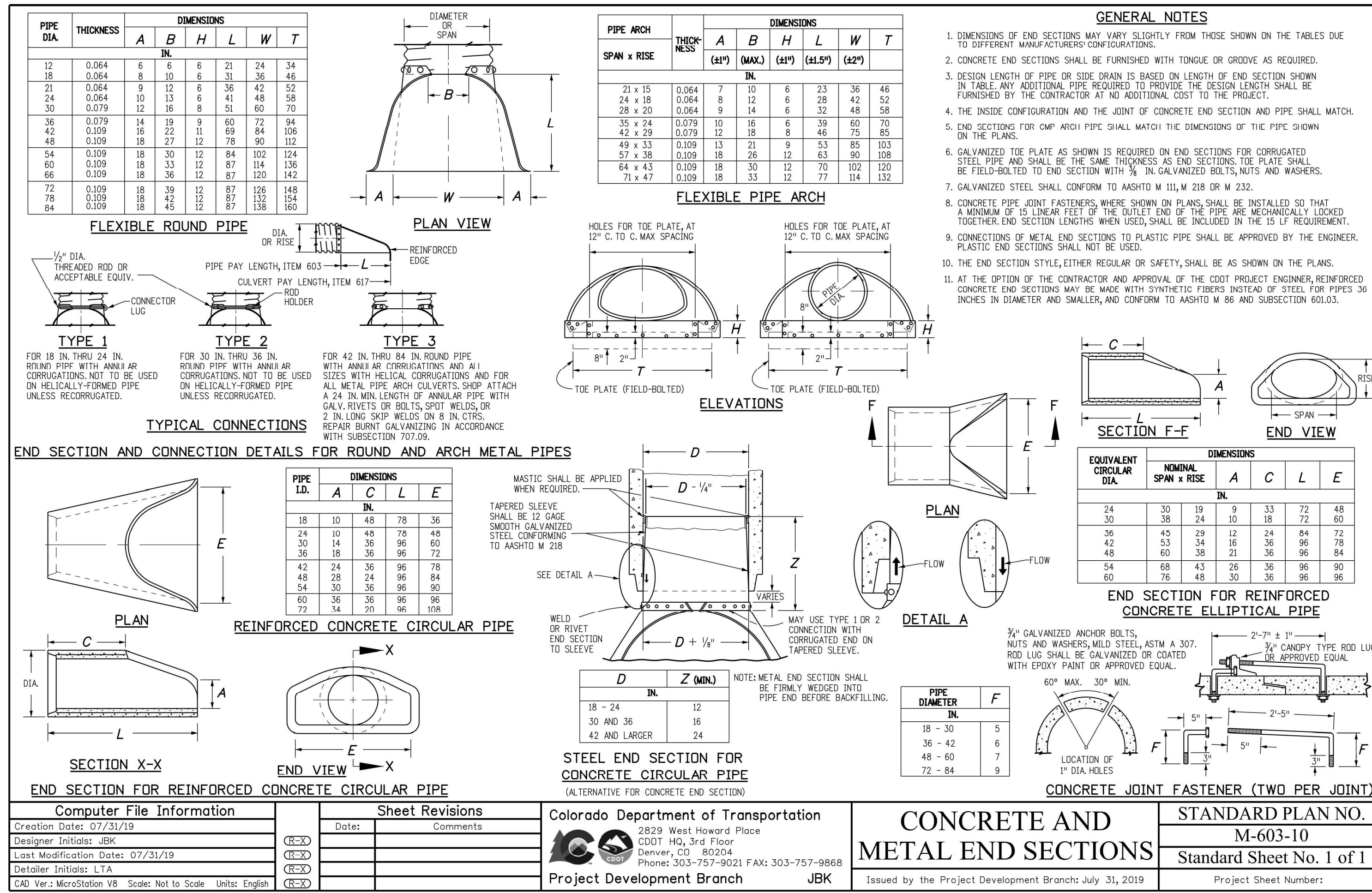
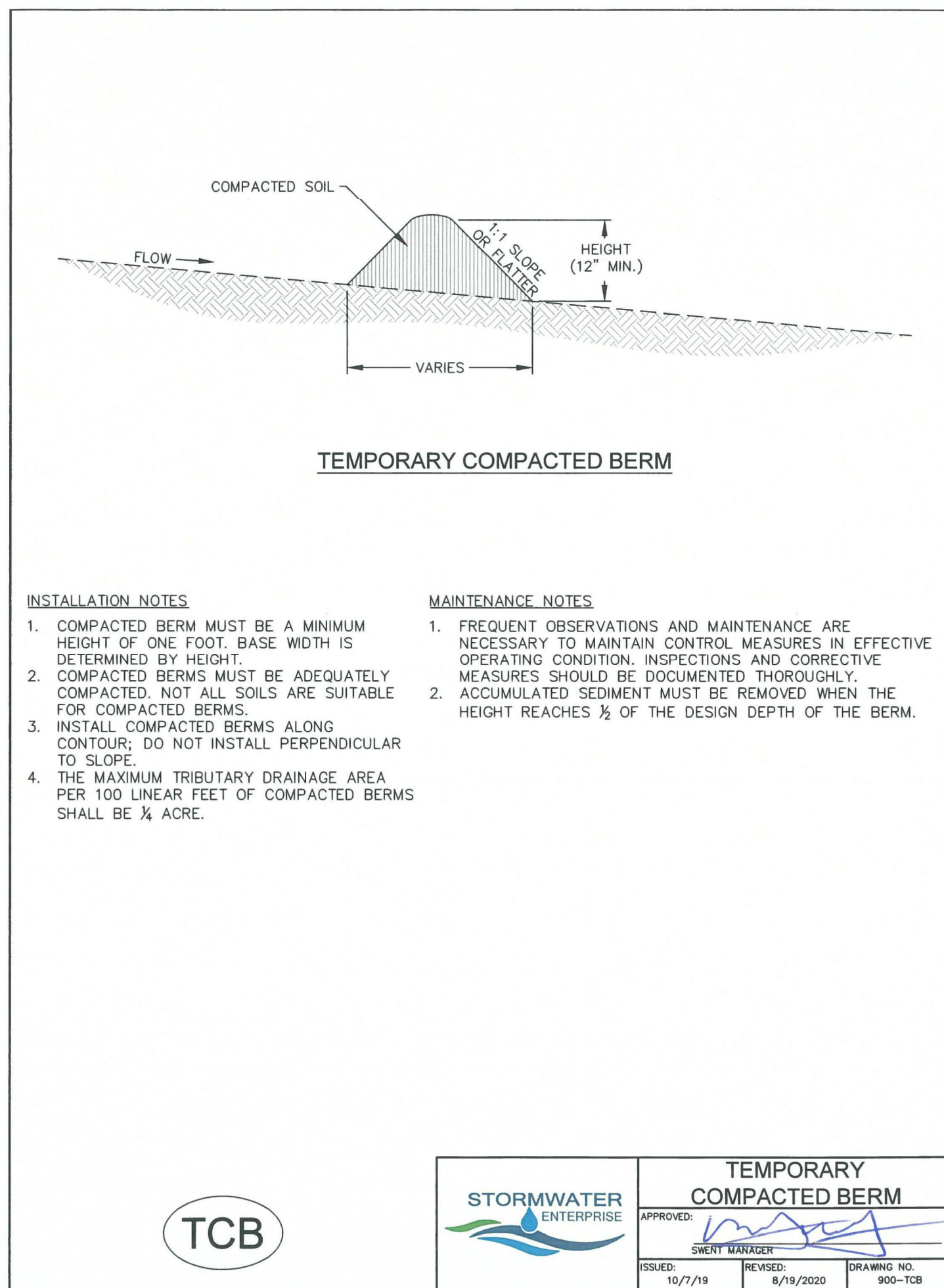
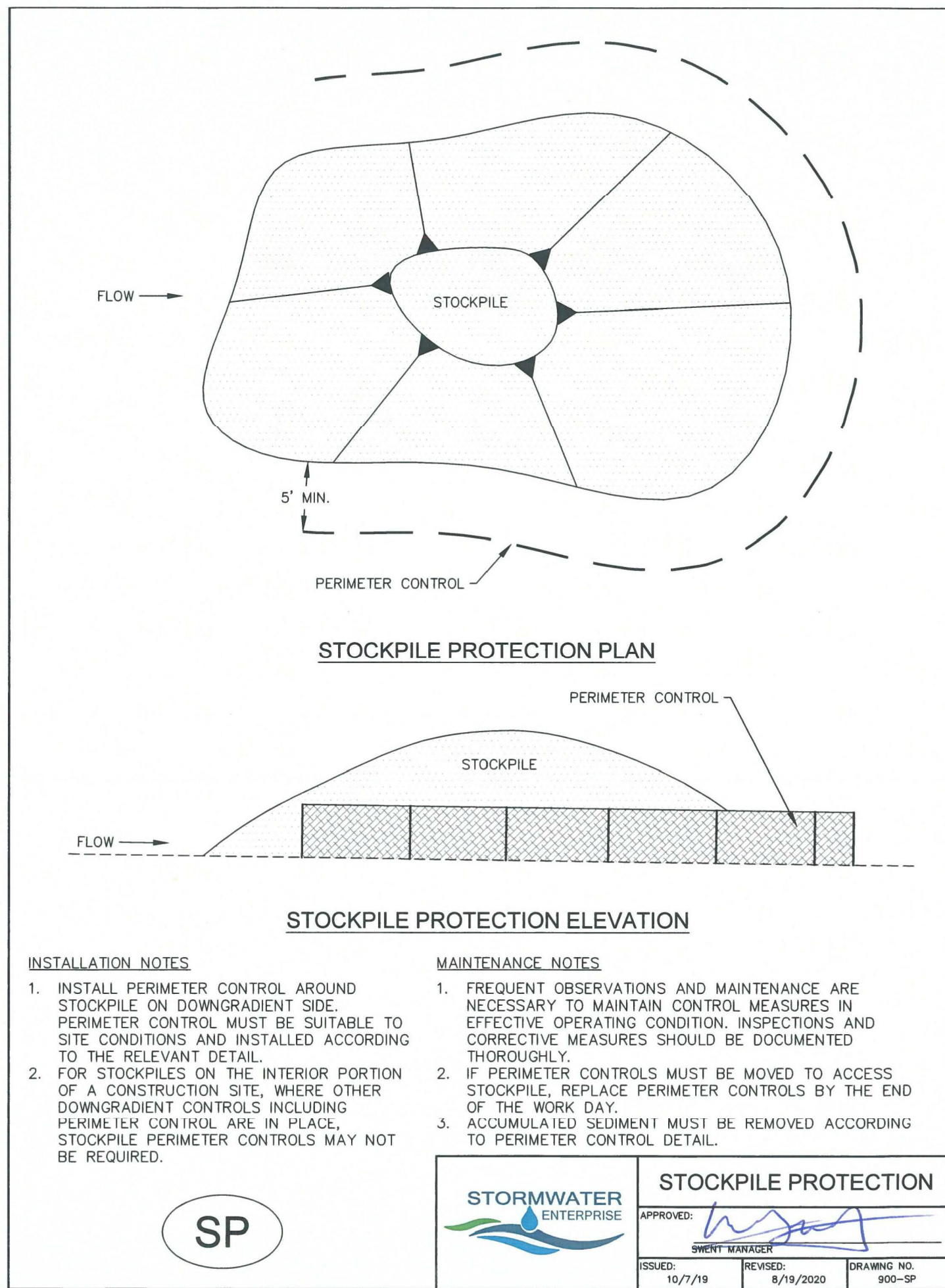
SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, CO

CLIENT:
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TEL: (303) 730-3001

SHEET TITLE:
GRADING & EROSION CONTROL
DETAILS (SWMP-SITE MAP)

SHEET NUMBER:
11 **C912**



RIPRAP SIZE	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	d50 (INCHES)
L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	

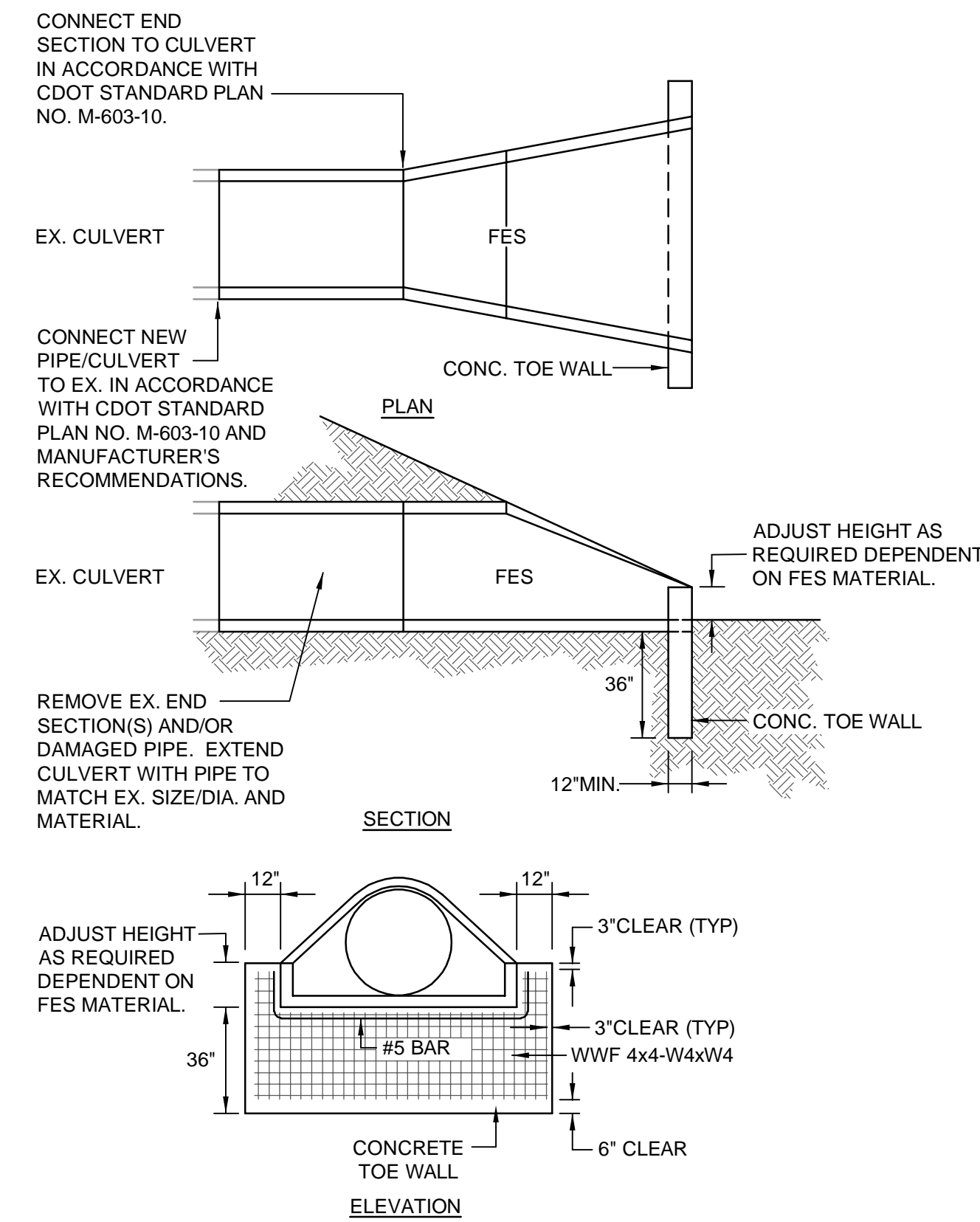
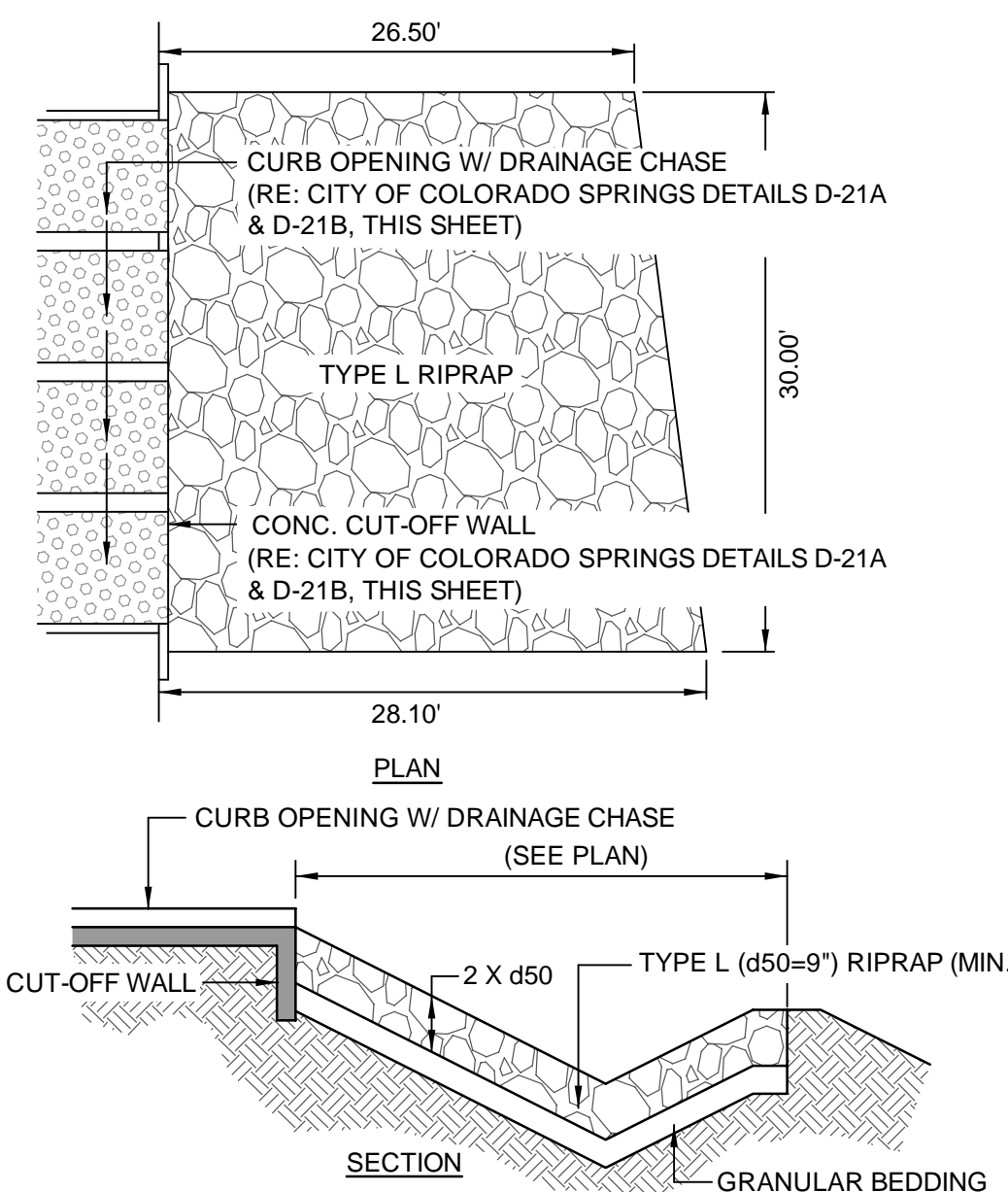
d50 = MEAN ROCK SIZE

RIPRAP DESIGNATION	THICKNESS REQUIREMENTS FOR GRANULAR BEDDING		
	MINIMUM BEDDING THICKNESS (INCHES)		
	FINE-GRAINED SOILS ¹		COARSE-GRAINED SOILS ²
L	TYPE I (LOWER LAYER)	TYPE II (UPPER LAYER)	TYPE II
	4	4	6

¹ MAY SUBSTITUTE ONE 12-INCH LAYER OF TYPE II BEDDING.
² FIFTY PERCENT OR MORE BY WEIGHT RETAINED ON THE # 40 SIEVE.

U.S. STANDARD SIEVE SIZE	GRADATION FOR GRANULAR BEDDING	
	% PASSING BY WEIGHT	
	TYPE I CDOT SECT. 703.01	TYPE II CDOT SECT. 703.09 CLASS A
3 INCHES	-	90 - 100
1 1/2 INCHES	-	-
3/4 INCHES	-	20 - 90
3/8 INCHES	100	-
# 4	95 - 100	0 - 20
# 16	45 - 80	-
# 50	10 - 30	-
# 100	2 - 10	-
# 200	0 - 2	0 - 3

RIPRAP PROTECTION (A)
NOT TO SCALE



CULVERT EXTENSION (B)
NOT TO SCALE

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FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

35219

9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

NO.	DATE	DESCRIPTION	BY
NO: 1	DATE:	DESCRIPTION:	BY:
NO: 2	DATE:	DESCRIPTION:	BY:
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NO: 4	DATE:	DESCRIPTION:	BY:
NO: 5	DATE:	DESCRIPTION:	BY:
NO: 6	DATE:	DESCRIPTION:	BY:

DATE: 6/2023 SCALE: N/A

PROJECT MANAGER: JS PROJECT NO.:

DRAWN BY: JN DRAWING FILE:

PROJECT:

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

SHEET TITLE:
GRADING & EROSION CONTROL DETAILS (SWMP-SITE MAP)

SHEET NUMBER:
12 **C913**

PER SLIP JOINT OF DIP PIPE

PIPE DATA	MFRS DEFL.	DESIGN DEFLECTION (80% MAX.)		APPROX. RADIUS FOR DEFLECTING CURVES WITHOUT BENDS	
		(HORZ. DEFL.)	(VERT. DEFL.)	20'	18'
4"					
6"					
8"	3'00"	4'00"	6.99%	286'	256'
10"					
12"					
14"					
16"	4'00"	3'12"	5.59%	359'	322'
18"					
20"					
24"	3'00"	2'24"	4.19%	477'	430'
30"					
36"					
42"	2'00"	1'36"	2.79%	716'	645'

SHADED COLUMN IS MANUFACTURERS REFERENCE ONLY

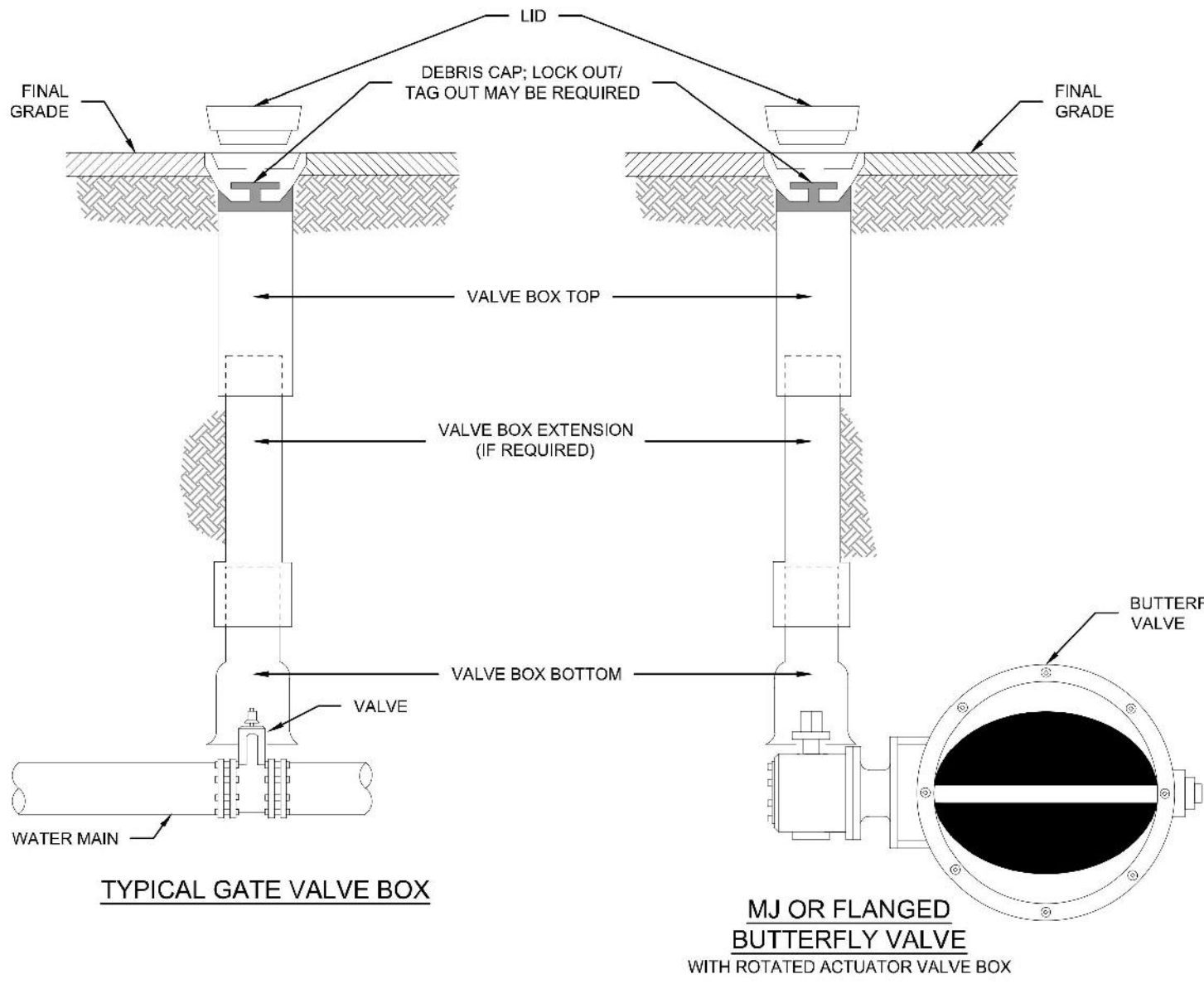
PER SLIP JOINT OF PVC PIPE WITH DEFLECTION COUPLINGS

PIPE DATA	MFRS TOTAL JOINT DEFL. W/ COUPL.	DESIGN DEFLECTION (80% MAX.)		MIN. RADIUS FOR DEFLECTING CURVES WITH HIGH DEFL. COUPLINGS
		(HORZ. DEFL.)	(VERT. DEFL.)	
4"	3'00"	4'00"	6.99%	286'
6"	3'00"	4'00"	6.99%	286'
8"	3'00"	4'00"	6.99%	286'
12"	3'00"	4'00"	6.99%	286'
16"	NO DEFLECTION COUPLINGS FOR 16" OR GREATER			

SHADED COLUMN IS MANUFACTURERS REFERENCE ONLY

- NOTES:
- COLORADO SPRINGS UTILITIES USES A 1.25 SAFETY FACTOR TO AVOID OVER DEFLECTION OF THE PIPE.
 - SLIP JOINT PVC PIPE SHALL NOT BE DEFLECTED WITHOUT THE USE OF HIGH DEFLECTION COUPLINGS (HDC).

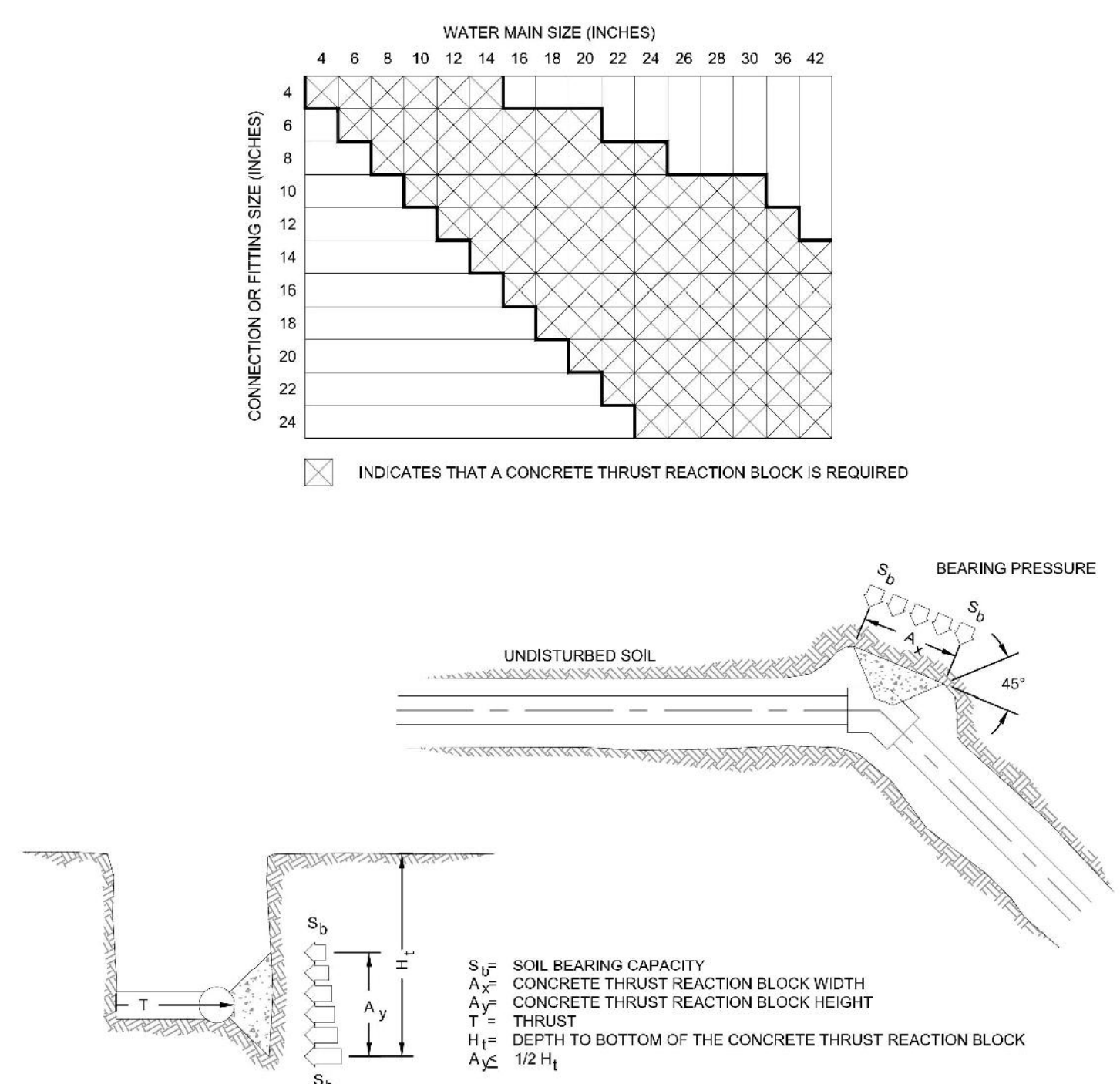
	MAXIMUM PIPELINE DEFLECTION DATA FOR DIP AND PVC PIPE	A4-1
		DATED: 03/2014



- NOTES:
- MAIN AND FIRE HYDRANT VALVES AND VALVE BOXES SHALL NOT BE IN THE CURB PAN, CURB OR SIDEWALK.
 - VALVE BOXES SHALL BE SLIP TYPE PER CHAPTER 4.
 - DEBRIS CAPS SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATIONS.
 - DEBRIS CAPS WITH FLEXIBLE SKIRTS SHALL BE TRIMMED TO PROVIDE A SMOOTH CONTACT WITH THE INTERIOR OF THE VALVE BOX.
 - FOR SERVICE LINES 4" AND GREATER, TRACER WIRE WILL BE BROUGHT UP IN THE SECONDARY VALVE BOX.

	VALVE BOX INSTALLATION	A9-1
		DATED: 03/2014

CONCRETE THRUST REACTION BLOCK REQUIREMENTS FOR TEES OR TAPS



- NOTES:
- A SITE SPECIFIC DESIGN SHALL BE REQUIRED FOR CONNECTIONS OR FITTING SIZE COMBINATIONS NOT SHOWN ABOVE.
 - THE CONCRETE THRUST REACTION BLOCK SHALL BEAR AGAINST UNDISTURBED SOIL.
 - THE CONCRETE THRUST REACTION BLOCK SHALL BE INSTALLED WITH A 45° ANGLE FROM THE FITTING TO THE UNDISTURBED SOIL AS SHOWN IN THE DRAWING ABOVE.
 - REFER TO DETAIL DRAWING A4-2 FOR STANDARD CONCRETE THRUST REACTION BLOCK DIMENSIONS AND VOLUMES.
 - DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

	CONCRETE THRUST REACTION BLOCKS	A4-3
		DATED: 03/2014

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PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEWELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

NO.	DATE	DESCRIPTION	BY
NO. 1	DATE: -	DESCRIPTION: -	BY: -
NO. 2	DATE: -	DESCRIPTION: -	BY: -
NO. 3	DATE: -	DESCRIPTION: -	BY: -
NO. 4	DATE: -	DESCRIPTION: -	BY: -
NO. 5	DATE: -	DESCRIPTION: -	BY: -
NO. 6	DATE: -	DESCRIPTION: -	BY: -

DATE: 6/2023	SCALE: N/A
PROJECT MANAGER: JS	PROJECT NO.:
DRAWN BY: JN	DRAWING FILE:

PROJECT:

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

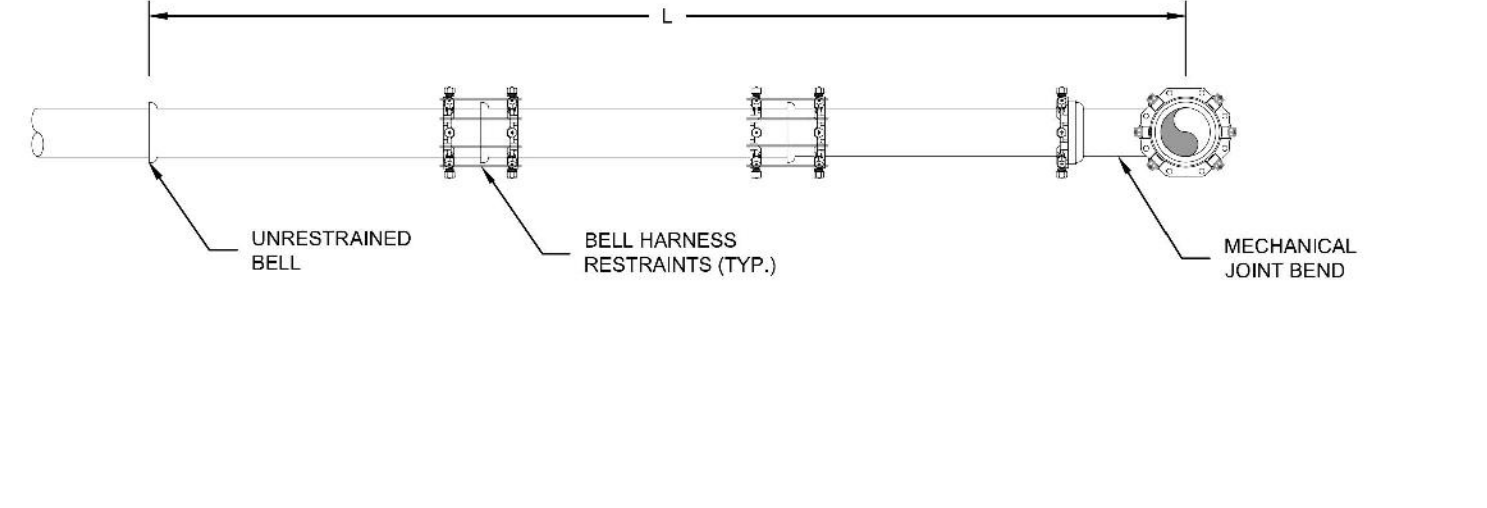
TEL: (303) 730-3001

SHEET TITLE:
UTILITY DETAILS

SHEET NUMBER:
13 C915

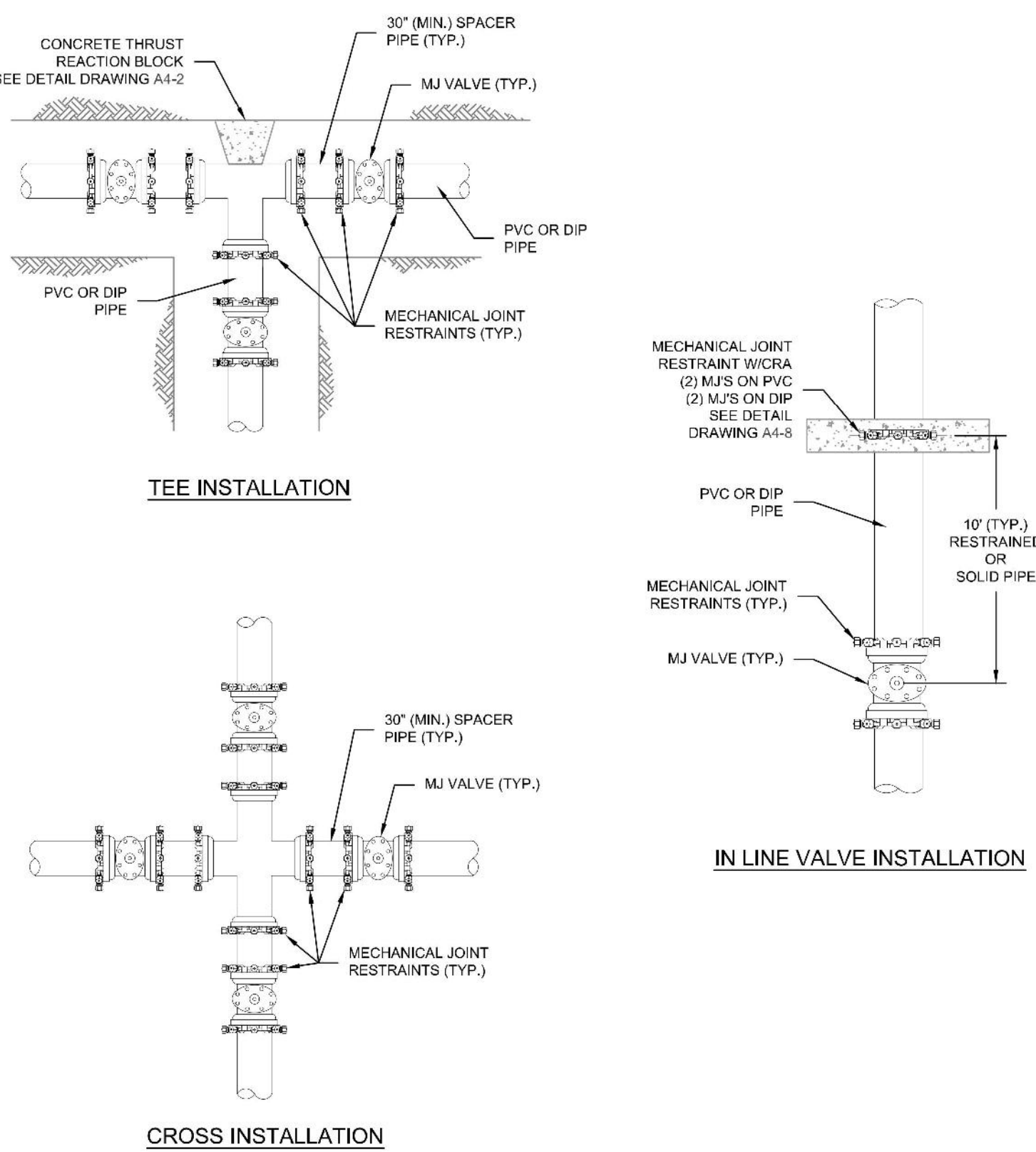
L = MINIMUM RESTRAINED PIPE LENGTH (FEET)

PIPE DIAMETER	MAX. STATIC PRESSURE (PSI)	45° BEND			22-12° BEND			11-14° BEND			DEAD END VALVE OR PLUG TO INCLUDE FLANGE VALVES (SEE NOTE 9)		
		<100	100-150	150-200	<100	100-150	150-200	<100	100-150	150-200			
6 INCH DUCTILE IRON AND PVC		6	9	12	3	5	6	2	3	3	49	73	97
8 INCH DUCTILE IRON AND PVC		8	12	16	4	6	8	2	3	4	63	94	125
12 INCH DUCTILE IRON AND PVC		12	17	23	6	8	11	3	4	6	89	133	177
18 INCH DUCTILE IRON AND PVC		15	22	29	7	11	14	4	5	7			
20 INCH DUCTILE IRON AND PVC		18	26	35	9	13	17	4	6	8	USE CONCRETE REVERSE ANCHOR	USE CONCRETE REVERSE ANCHOR	USE CONCRETE REVERSE ANCHOR
24 INCH DUCTILE IRON AND PVC		20	30	40	10	15	20	5	7	10			
30 INCH DUCTILE IRON AND PVC		24	36	48	12	18	24	6	9	12			
36 INCH DUCTILE IRON AND PVC		28	42	56	14	20	27	7	10	14			



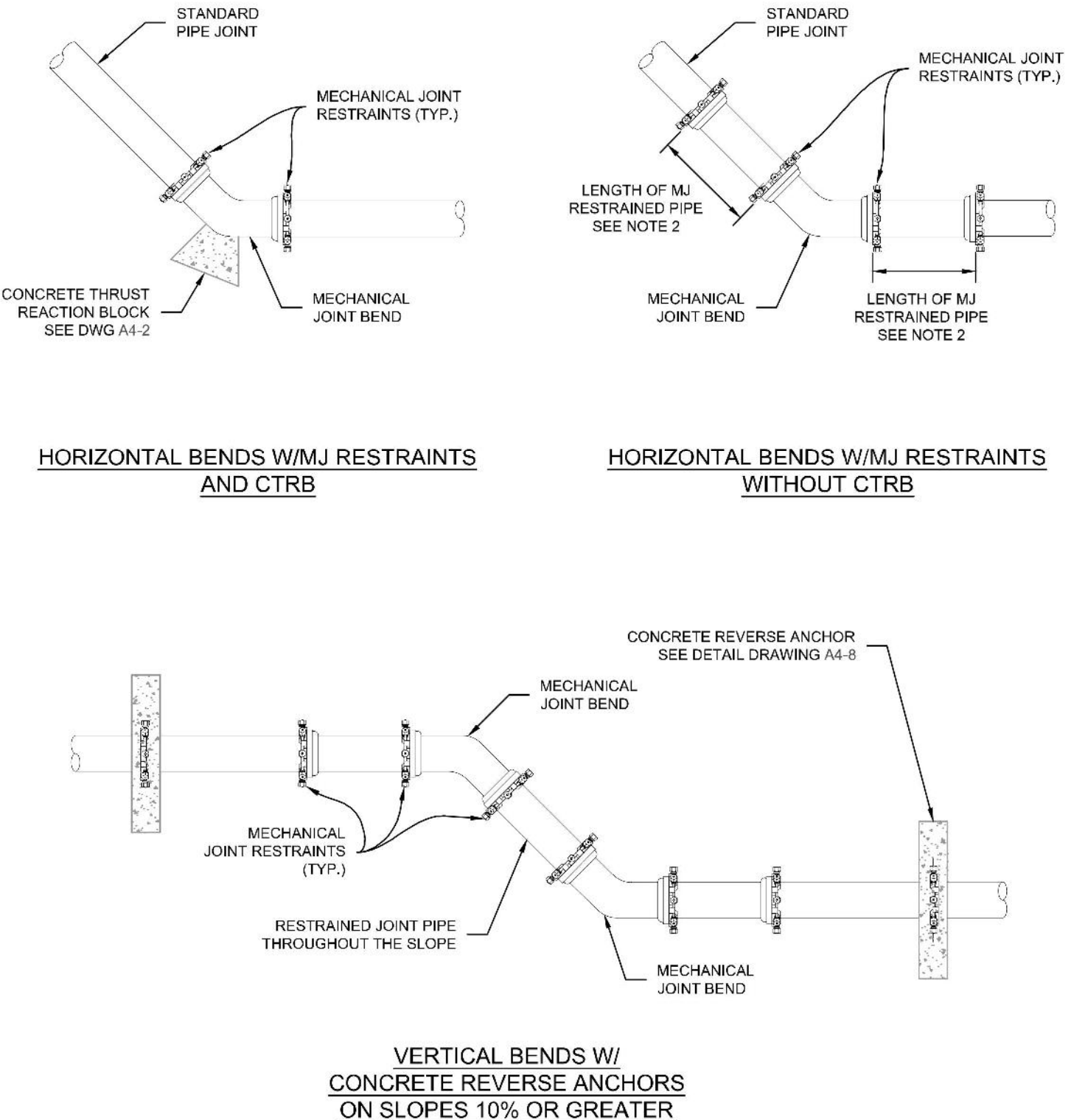
- NOTES:
- PRESSURE GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY SPRINGS UTILITIES. APPROVED BY COLORADO SPRINGS UTILITIES.
 - LENGTH IS BASED ON MINIMUM 5 FEET OF GROUND COVER AND SOIL COMPACTED ACCORDING TO CHAPTER 5 OF THESE WATER LESS, IF THE DEPTH IS LESS THAN 5 FEET RESTRAINED LENGTH MUST BE DESIGNED BY THE DESIGN ENGINEER.
 - APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE IN ACCORDANCE WITH CHAPTER 4.
 - RESTRAINED PIPE LENGTH APPLIES TO CONDITIONS WHERE NO CONCRETE THRUST REACTION BLOCK IS PRESENT.
 - CALCULATIONS ARE BASED ON A POORLY GRADED SANDS, GRAVEL AND GRAVEL-SAND MIXTURE, LITTLE OR NO FINES, TYPE 4 BEDDING CONDITIONS - PIPE BEDDED IN SAND, GRAVEL OR CRUSHED STONE TO A DEPTH OF 18 PIPE DIAMETER (4" MIN.), FACTOR OF SAFETY 2:1. FIGURES ARE BASED ON DIP WRAPPED IN POLYETHYLENE MATERIAL.
 - MEASUREMENTS ARE IN FEET.
 - USE CRA FOR DOWN TURNING BENDS.
 - RESTRAINED LENGTH FOR DEAD END MAY BE USED AT THE DISCRETION OF COLORADO SPRINGS UTILITIES.

	RESTRAINED PIPE LENGTH (FEET) W/MECHANICAL JOINT RESTRAINTS	A4-4
		DATED: 03/2014



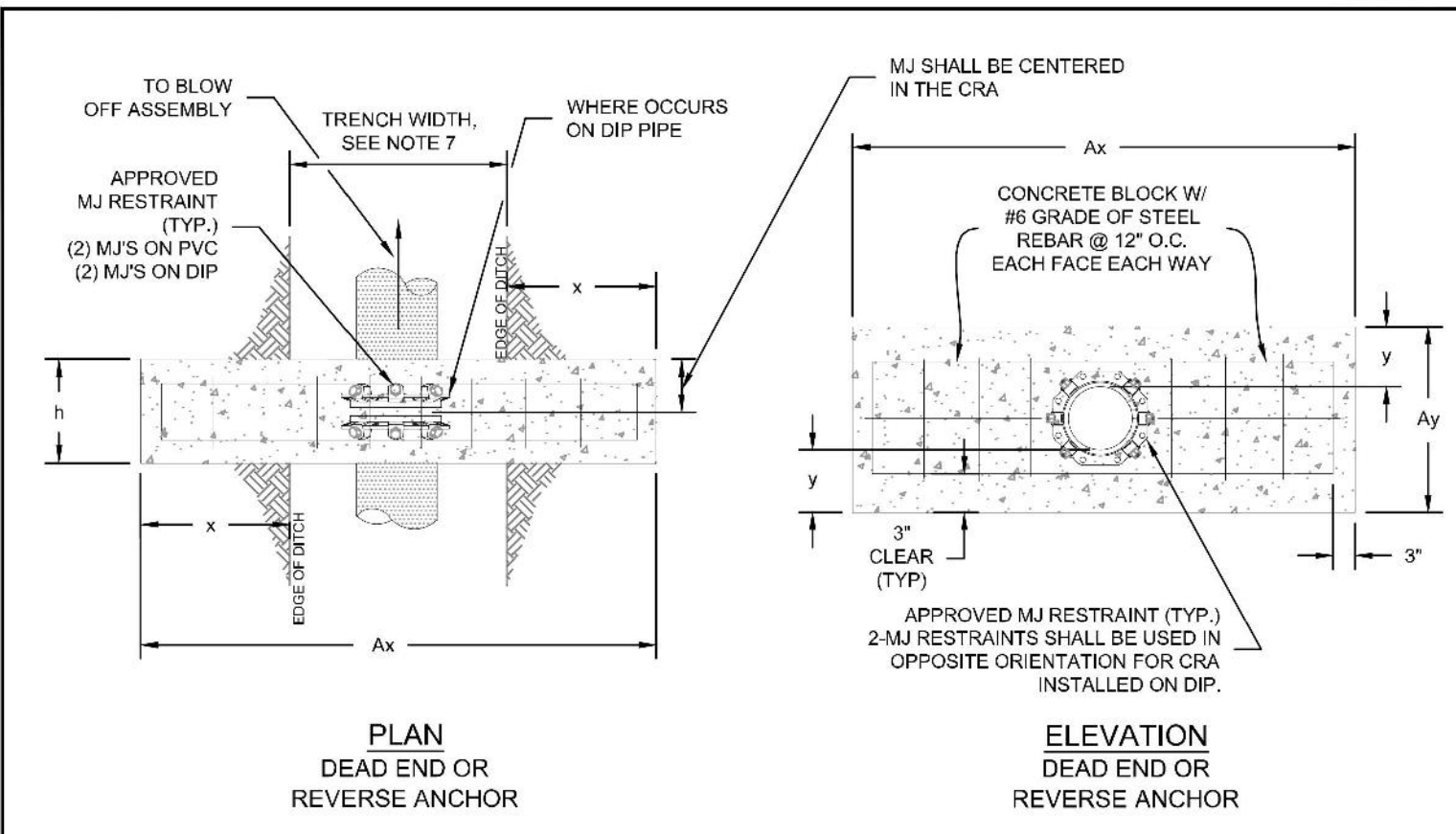
- NOTES:
- MECHANICAL JOINT RESTRAINTS SHALL BE APPROVED ACCORDING TO CHAPTER 4 FOR DIP AND PVC PIPE.
 - DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

	VALVE AND FITTINGS W/ MECHANICAL JOINT RESTRAINTS	A4-5
		DATED: 06/2015



- NOTES:
- MECHANICAL JOINT RESTRAINTS SHALL BE APPROVED ACCORDING TO CHAPTER 4 FOR DIP AND PVC PIPE.
 - LENGTH OF PIPE REQUIRING JOINT RESTRAINT SHALL BE DETERMINED FROM CHART ON DETAIL DRAWING A4-4.
 - DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

	BEND CONFIGURATIONS AND RESTRAINTS	A4-6
		DATED: 06/2015



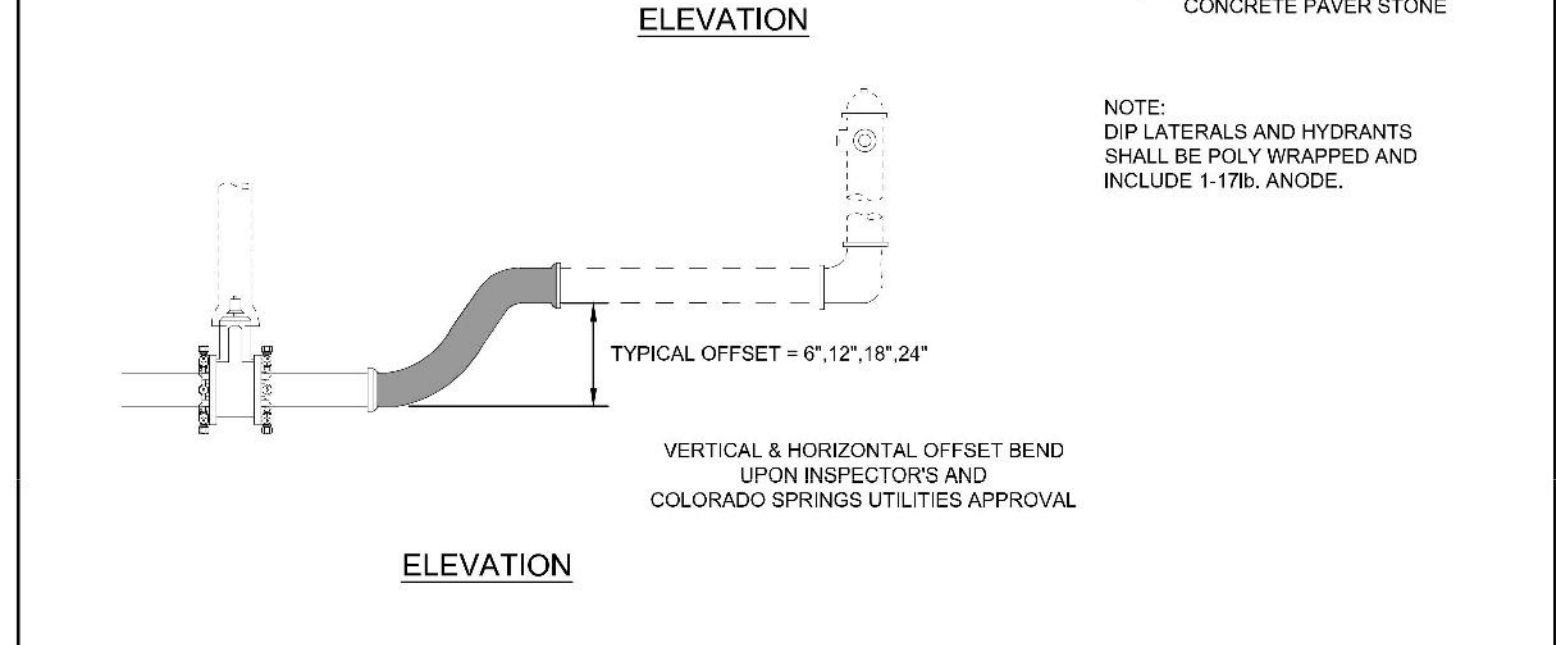
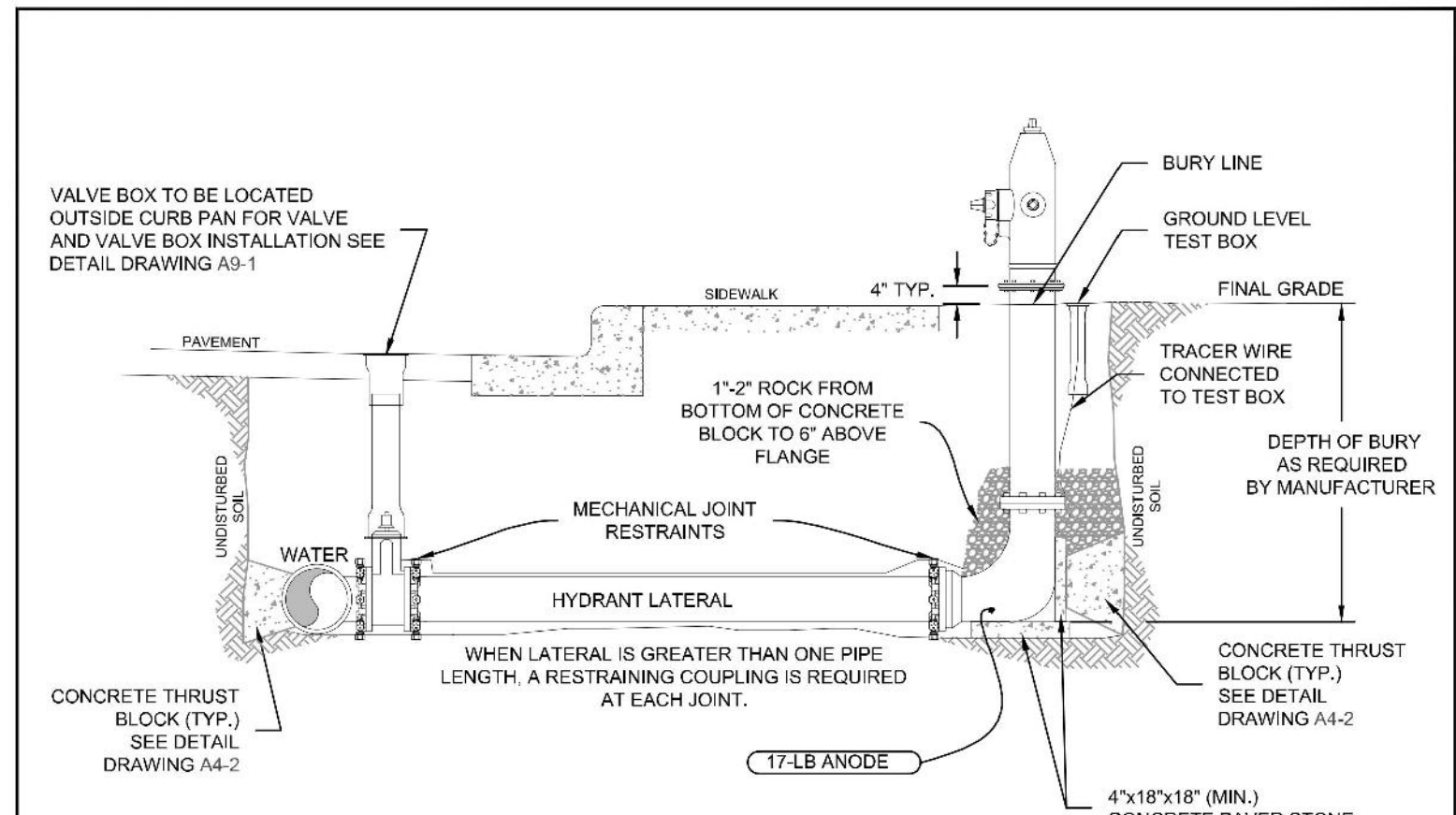
DIAMETER (in)	PRESSURE (psi)	x (in)	Ax (in)	y (in)	Ay (in)	Ab (sq ft)	h (in)	Vol (cy)
4	250	12	72	12	28.80	6.80	18	1.0
6	250	18	84	12	30.90	9.73	18	1.0
8	250	36	120	12	33.05	18.53	18	1.5
12	170	36	120	15	43.20	24.60	18	2.0
12	250	48	144	18	49.20	36.80	24	3.75
16	170	54	156	18	53.40	44.05	24	4.25
16	250	60	168	24	65.40	60.50	36	8.5

- NOTES:**
- THE MINIMUM BEARING SURFACE AREAS SHOWN ARE BASED ON A MAX STATIC PIPE PRESSURE OF 170/250 POUNDS PER SQUARE INCH PLUS A SAFETY FACTOR OF 1.5, AND AN ALLOWABLE SOIL BEARING CAPACITY OF 1500 POUNDS PER SQUARE FOOT. FOR HDPE ADDITIONAL ASSUMPTIONS INCLUDE A MAX 50°F TEMPERATURE CHANGE AND A POISSON RATIO OF 0.45. REFERENCE AWWA M-23, M-41 AND M-55.
 - THE DESIGN ENGINEER IS RESPONSIBLE FOR VERIFYING ASSUMPTIONS BASED ON ACTUAL SITE CONDITIONS. IF SITE VARY FROM THE ASSUMPTIONS THE DESIGN ENGINEER SHALL PROVIDE A SITE SPECIFIC DESIGN THAT SHALL BE IN ACCORDANCE WITH AWWA M-23, PVC PIPE DESIGN AND INSTALLATION AND AWWA M-41 DUCTILE-IRON PIPE AND FITTINGS. SITE SPECIFIC DESIGNS USING GEOTECHNICAL INFORMATION SHALL BE SUBMITTED TO COLORADO SPRINGS UTILITIES FOR APPROVAL.
 - THE MINIMUM LATERAL BEARING SURFACE AREA (Ab) AND APPROXIMATE VOLUME OF CONCRETE (Vol) SHALL BE SHOWN ON THE CONSTRUCTION PLANS FOR ALL CONCRETE REVERSE ANCHORS.
 - THE APPROXIMATE VOLUMES SHOWN ARE BASED ON THE MINIMUM DIMENSIONS IN THE TABLE. THE APPROXIMATE VOLUME IS ROUNDED UP TO THE NEAREST 0.25 CUBIC YARDS.
 - A SITE SPECIFIC DESIGN SHALL BE REQUIRED FOR PIPES LARGER THAN 16 INCHES OR MAX STATIC PIPE PRESSURES GREATER THAN 250 POUNDS PER SQUARE INCH. THE DESIGN ENGINEER HAS THE OPTION OF PROVIDING A SITE SPECIFIC DESIGN FOR PIPES SMALLER THAN 16 INCHES OR MAX STATIC PRESSURES LESS THAN THE PRESSURE LISTED IN THE TABLE.
 - FOR CORROSION PROTECTION OF THE RODS SEE DETAIL DRAWING A8-11.
 - A TRENCH WIDTH OF 4 FEET AND 6" BEDDING UNDER THE PIPE ARE ASSUMED FOR BEARING CALCULATIONS. (Ax, Ay, x and y).
 - THE DESIGN ENGINEER SHALL ENSURE THE CONSTRUCTION OF THE CONCRETE REVERSE ANCHOR SHALL NOT CONFLICT WITH OTHER UTILITIES.
 - DUCTILE IRON FITTINGS AND PIPE SHALL BE WRAPPED IN POLYETHYLENE TUBING WHERE ADJACENT TO CONCRETE.

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CONCRETE REVERSE ANCHOR FOR MECHANICAL JOINT RESTRAINTS

A4-8
DATED 06/2015

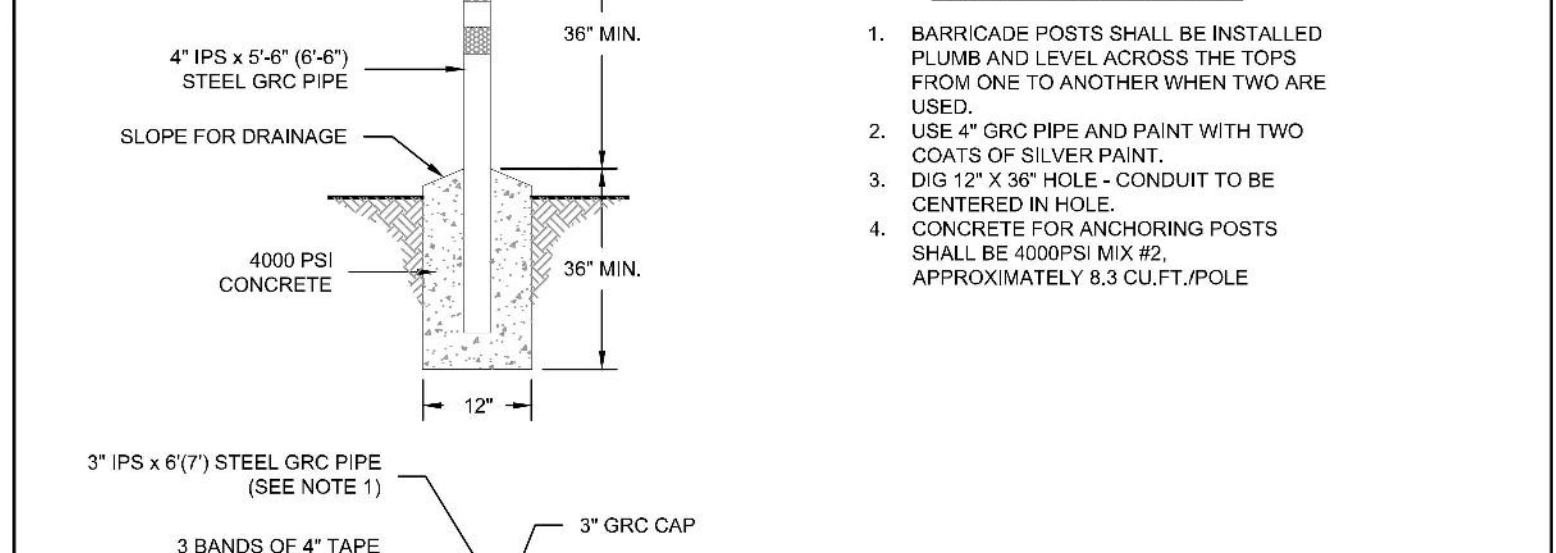
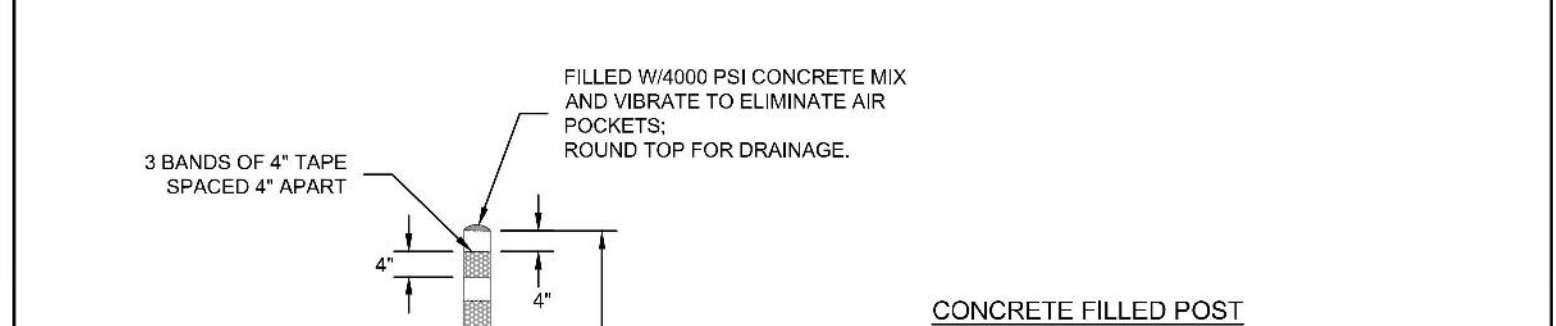
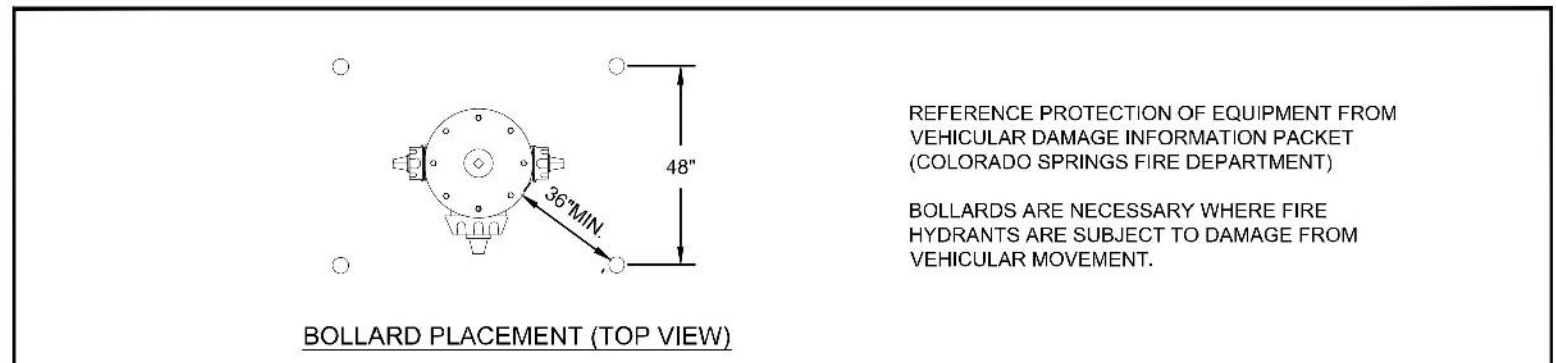


- NOTES:**
- MECHANICAL JOINT RESTRAINTS SHALL BE INSTALLED PER DETAIL DRAWINGS A4-4, A4-5, & CHAPTER 5.
 - TRACER WIRE AND GROUND LEVEL TEST BOX TO BE INSTALLED WITH EACH FIRE HYDRANT. PLACE TEST BOX WITHIN 6" FROM THE HYDRANT.
 - REFERENCE DETAIL DRAWINGS A5-1 & A5-2 FOR FIRE HYDRANT LOCATION.
 - INSTALLATION OF A PRIVATE FIRE HYDRANT WILL REQUIRE A SECONDARY VALVE INSTALLED AT THE PROPERTY LINE.
 - HYDRANT BASE BLOCK SHALL BE PLACED ON UNDISTURBED EARTH.
 - DO NOT BLOCK WEEP HOLE WITH POLYWRAP.
 - COVER DRAIN ROCK WITH POLYWRAP PRIOR TO BACKFILL.
 - FOR HDPE HYDRANT CONNECTION SEE DETAIL DRAWING A10-B.
 - FOR PRIVATE FIRE HYDRANTS A SECONDARY VALVE SHALL BE INSTALLED ON THE PROPERTY LINE OR RIGHT-OF-WAY LINE.

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FIRE HYDRANT INSTALLATION

A5-3
DATED 03/2014

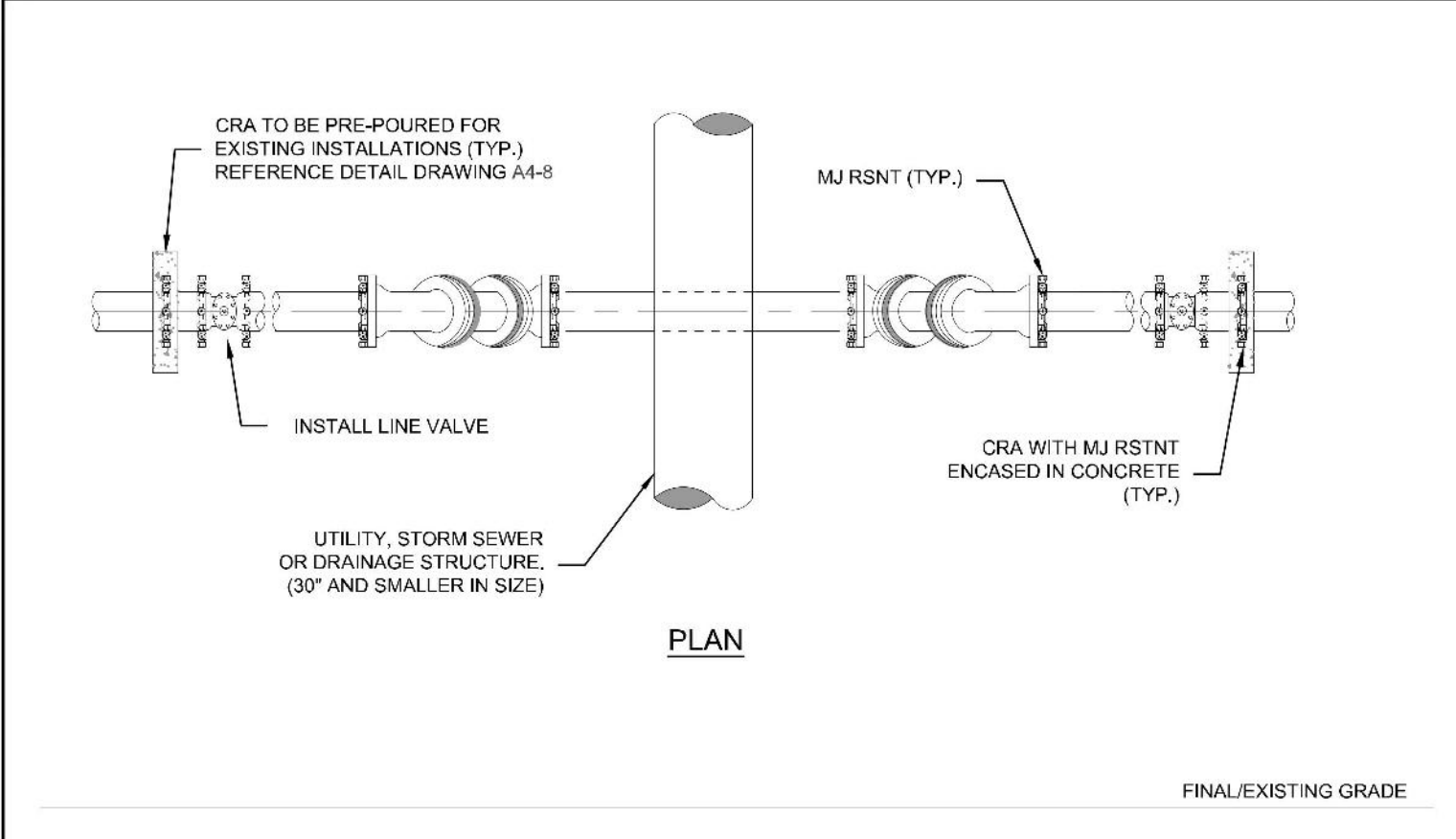


- REFERENCE PROTECTION OF EQUIPMENT FROM VEHICULAR DAMAGE INFORMATION PACKET (COLORADO SPRINGS FIRE DEPARTMENT)**
- BOLLARD PLACEMENT (TOP VIEW)**
- CONCRETE FILLED POST**
- BARRICADE POSTS SHALL BE INSTALLED PLUMB AND LEVEL ACROSS THE TOPS FROM ONE TO ANOTHER WHEN TWO ARE USED.
 - USE 4\"/>
- REMOVABLE CAPPED - PIPE POST (WITH APPROVAL OF CSFD)**
- POST, REMOVABLE, AND ASSEMBLE WITH SCRAP 4\"/>

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FIRE HYDRANT PROTECTION POSTS (BOLLARDS)

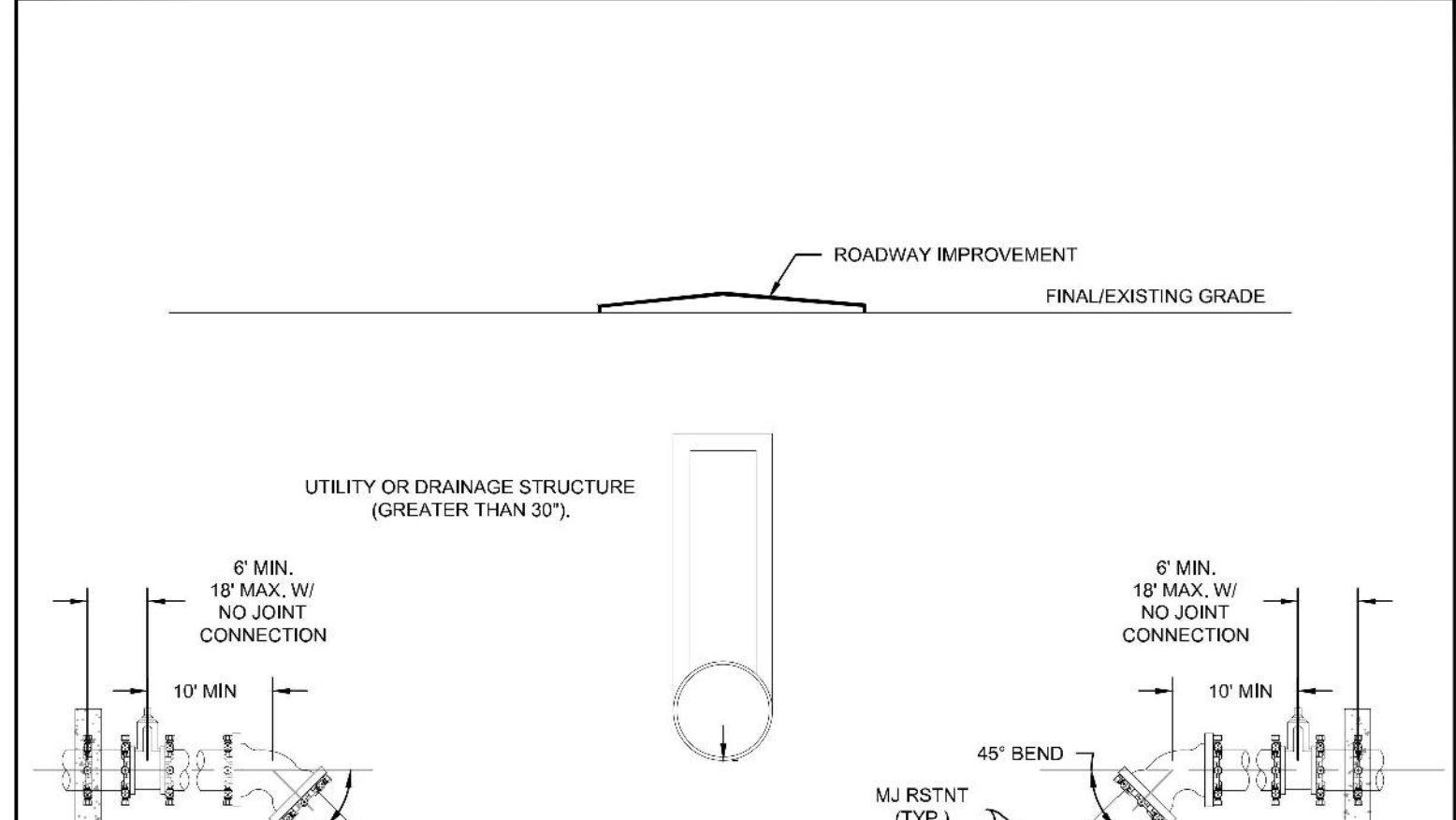
A5-4
DATED 03/2014



- NOTES:**
- ALL DUCTILE IRON FITTINGS AND PIPE SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.H.
 - ALL FITTINGS SHALL HAVE MJ RESTRAINTS IN ACCORDANCE WITH CHAPTER 5.
 - EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION.
 - RESTRAINED JOINTS ARE REQUIRED WITHIN LOWERING.
 - NO TAPS OR TEES ARE ALLOWED WITHIN THE LOWERING.
 - WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, A MINIMUM OF 9 FEET REQUIRED BETWEEN THE CENTERLINE OF THE CROSSING AND THE FIRST JOINT. THIS MEETS THE REQUIREMENTS FOR SECONDARY CONTAINMENT AS DESCRIBED IN SECTION 2.6.F.2.

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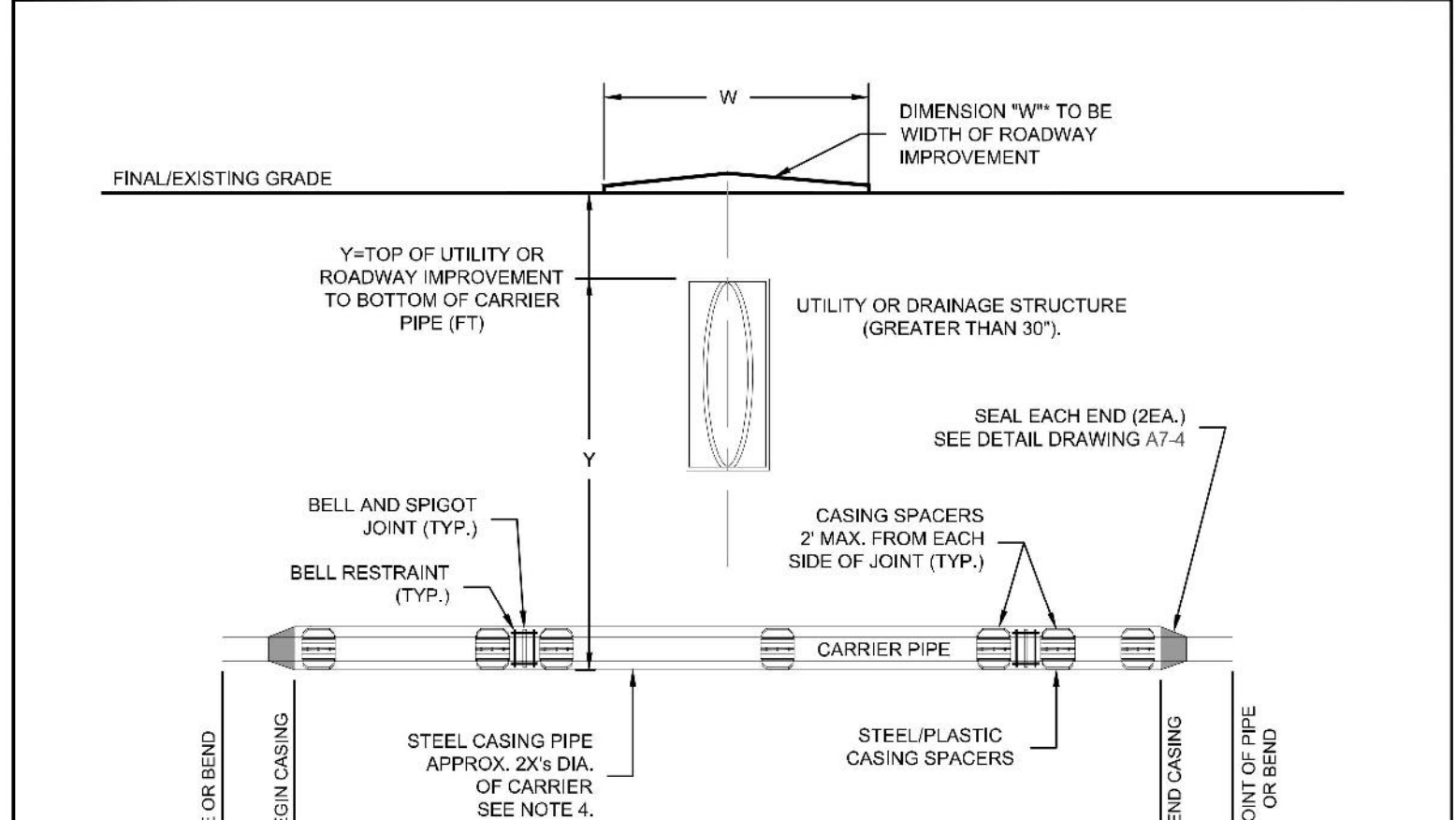
LOWERING DETAIL UTILITY CROSSING 30\"/>



- NOTES:**
- ALL DUCTILE IRON FITTINGS AND PIPE SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.H.
 - ALL FITTINGS SHALL HAVE MJ RESTRAINTS IN ACCORDANCE WITH CHAPTER 5.
 - EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION.
 - RESTRAINED JOINTS ARE REQUIRED WITHIN LOWERING.
 - NO TAPS OR TEES ARE ALLOWED WITHIN THE LOWERING.
 - WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, REFERENCE SECTION 2.6.F.2.

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LOWERING DETAIL W/CASING UTILITY CROSSING GREATER THAN 30\"/>



- NOTES:**
- ALL FITTINGS AND BELLS SHALL BE RESTRAINED IN THE CASING PIPE.
 - LOCATE CASING SPACERS AT \"HOMING\" LOCATION FOR SLEEVES GREATER THAN 50 FEET IN LENGTH TO PREVENT DAMAGE TO BELL DURING INSTALLATION AND EXTRACTION OF PIPE, IF REMOVED.
 - CASING SHALL BE STEEL PIPE WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI, CASING THICKNESS SHALL BE SPECIFIED BY THE DESIGN ENGINEER ON THE PLANS BASED ON THE ANTICIPATED LOADS. SEE DETAIL DRAWING A7-4.
 - THE DIAMETER OF THE CASING SHALL BE SPECIFIED BY THE DESIGN ENGINEER, THE DIAMETER SHALL TAKE INTO ACCOUNT THE MAXIMUM O.D. WITH THE USE OF RESTRAINED JOINT PIPE.
 - SEE DETAIL DRAWING A7-4 FOR CASING SPACER DETAILS.
 - LOCATE SPACERS ON BOTH SIDES OF JOINTS TO ELIMINATE DEFLECTION OF THE JOINT IN THE SLEEVE.
 - WHERE WATER MAIN CROSSES UNDER STORM SEWER, WASTEWATER OR NON-POTABLE WATER INFRASTRUCTURE, REFERENCE SECTION 2.6.F.2.
 - WHEN CROSSING A ROADWAY IMPROVEMENT, THE WIDTH OF THE IMPROVEMENT SHALL BE ADDED TO THE LENGTH OF THE SLEEVE.

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TYPICAL STEEL CASING INSTALLATION

A7-3
DATED 06/2015

STERLING DESIGN ASSOCIATES
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PREPARED UNDER THE DIRECT SUPERVISION OF
JAY M. NEVELL, PE
COLORADO REGISTRATION 35219
FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC

9 / 28 / 23

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DESCRIPTION: -	NO. 6	DATE: -	BY: -
DESCRIPTION: -	NO. 7	DATE: -	BY: -

DATE: **6/2023** SCALE: **N/A**

PROJECT MANAGER: **JS** PROJECT NO.:

DRAWN BY: **JN** DRAWING FILE:

PROJECT:

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CUSTOMER:
COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
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TEL: (303) 730-3001

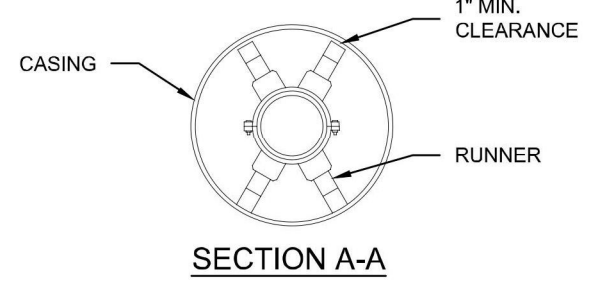
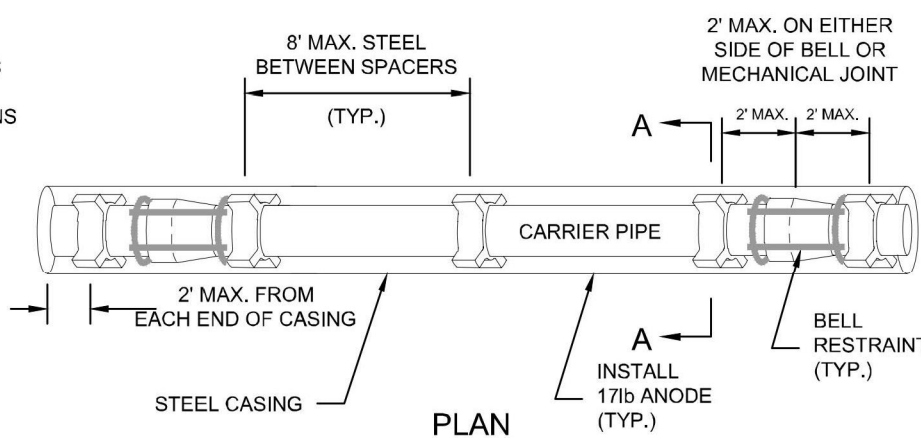
SHEET TITLE:
UTILITY DETAILS

SHEET NUMBER:
14 **C916**

CASING PIPE MINIMUM SIZES AND THICKNESSES (TO BE VERIFIED BY THE DESIGN ENGINEER) BASED ON ACTUAL LOADING AND SITE CONDITIONS

CASING PIPE NOMINAL SIZE (IN)	MIN. THICKNESS (IN)
12	0.250
14	0.312
16	0.312
18	0.312
20	0.375
24	0.500
32	0.500
36	0.625

CASING PIPE MINIMUM SIZES AND THICKNESSES ARE BASED ON E90 LOADING. VARIANCES TO THESE MINIMUMS MAY BE ALLOWED WITH SUPPORTING CALCULATIONS FROM THE DESIGN ENGINEER



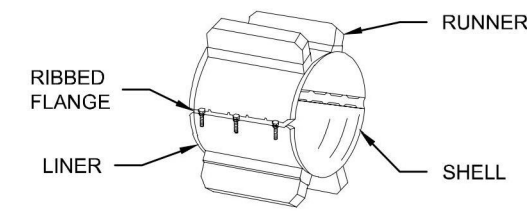
TYPICAL PIPE SUPPORT CASING ARRANGEMENT (CENTERED/RESTRAINED)

CARRIER PIPE:

- CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY USE OF APPROVED STAINLESS STEEL CASING SPACERS AS MANUFACTURED BY APPROVED MANUFACTURER BY COLORADO SPRINGS UTILITIES. (REFERENCE CHAPTER 2)

PLACEMENT OF SPACERS ON CARRIER PIPE:

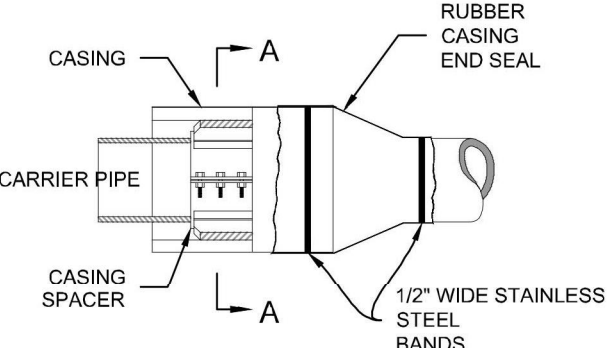
- GENERAL - ONE SPACER SHALL BE PLACED MAX. 2' FROM EACH END OF CASING AND ON EITHER SIDE OF EACH BELL OR MECHANICAL JOINT. SUBSEQUENT SPACERS SHALL BE PLACED AT 8' INTERVALS WITHIN THE CASING, OR IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS.



SPACER

END SEALS:

- END SEALS SHALL BE USED TO ENSURE A WATER TIGHT SEAL ON EITHER END OF THE CASING.



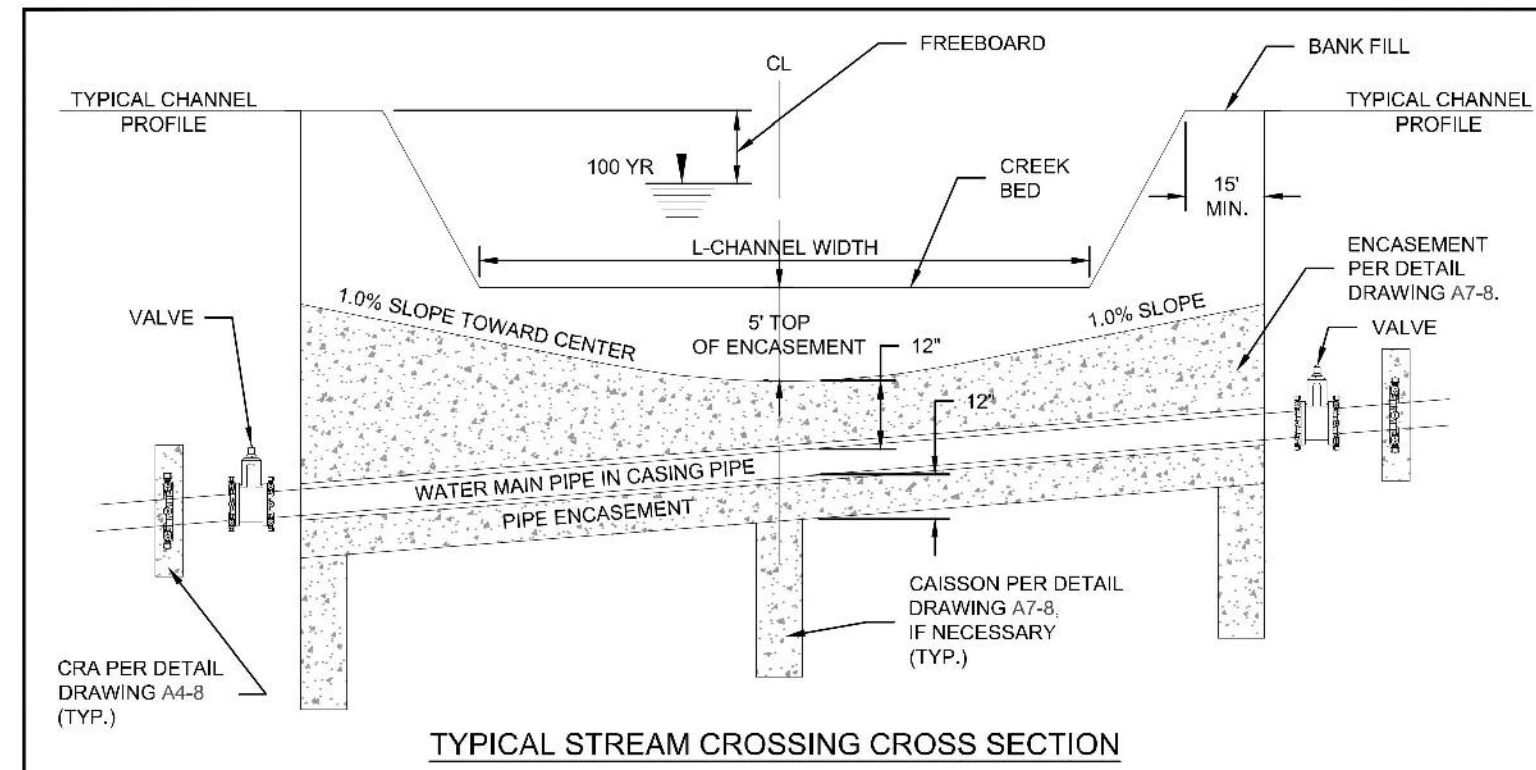
CATHODIC PROTECTION:

- CASING SHALL BE CATHODICALLY PROTECTED PER SECTION 2.6.H.

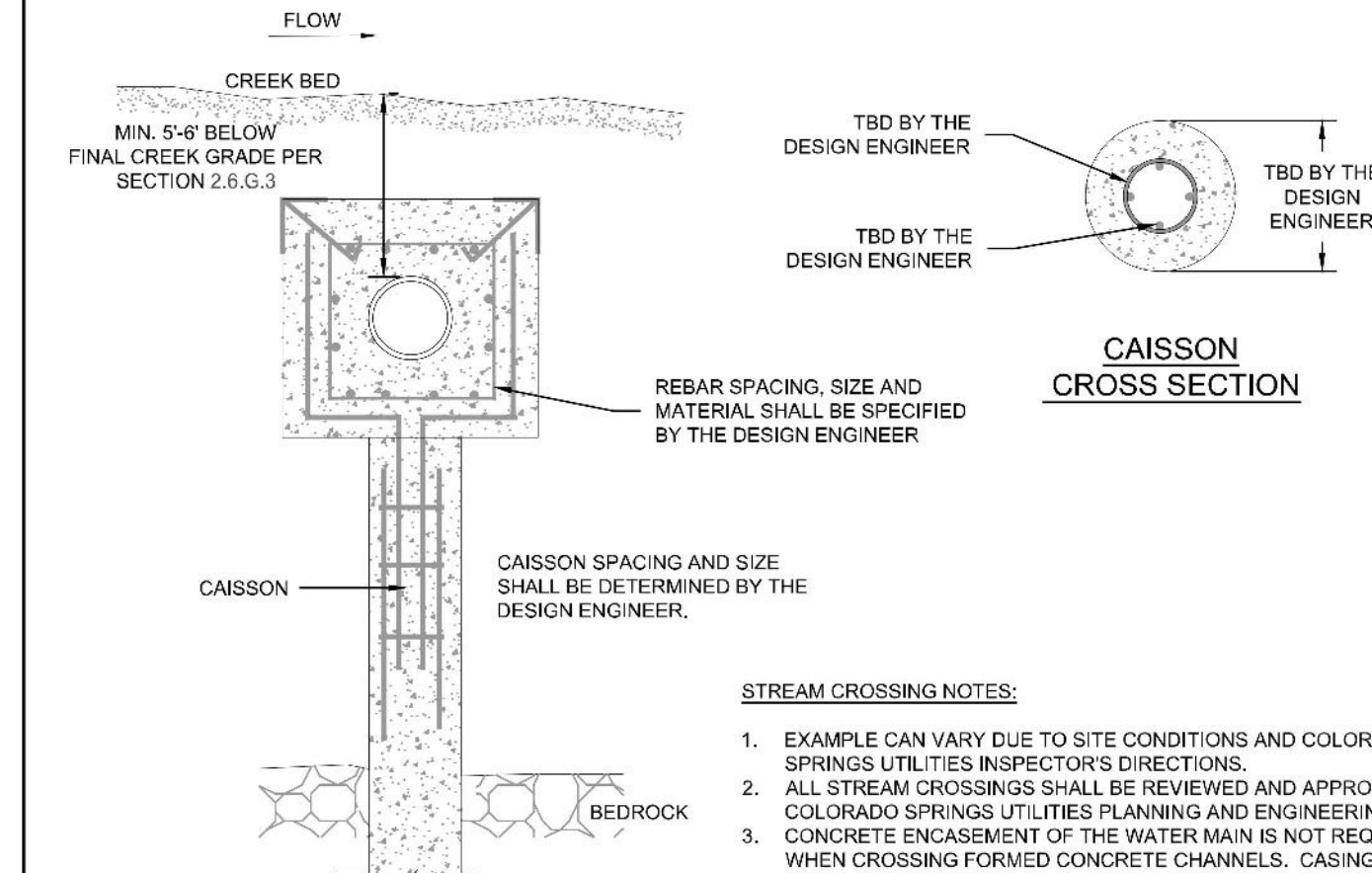


TYPICAL STEEL CASING INSTALLATION

A7-4
DATED 09/2018



TYPICAL STREAM CROSSING CROSS SECTION

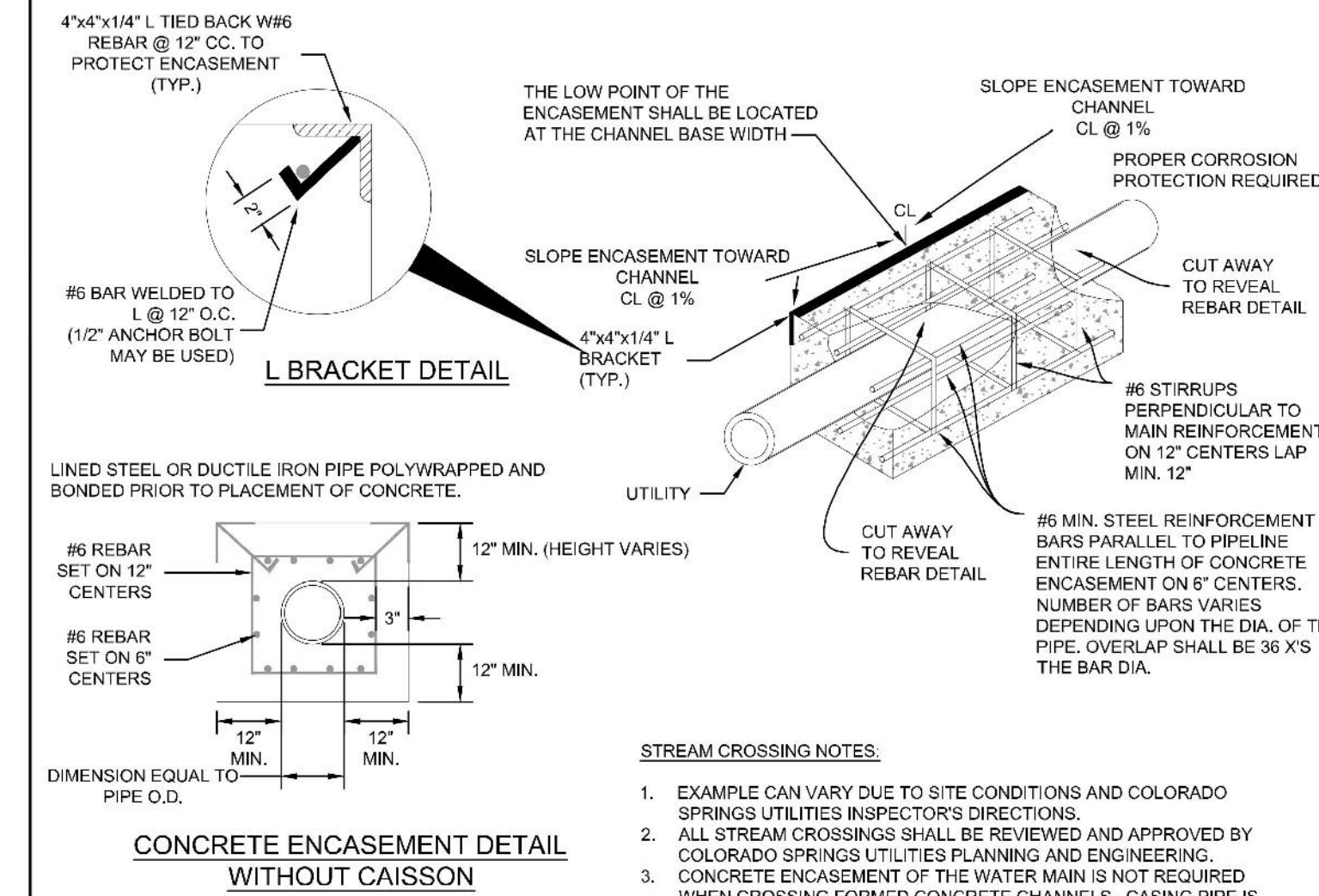


CONCRETE ENCASUREMENT DETAIL WITH CAISSON



TYPICAL CREEK CROSSING

A7-7
DATED 01/2017



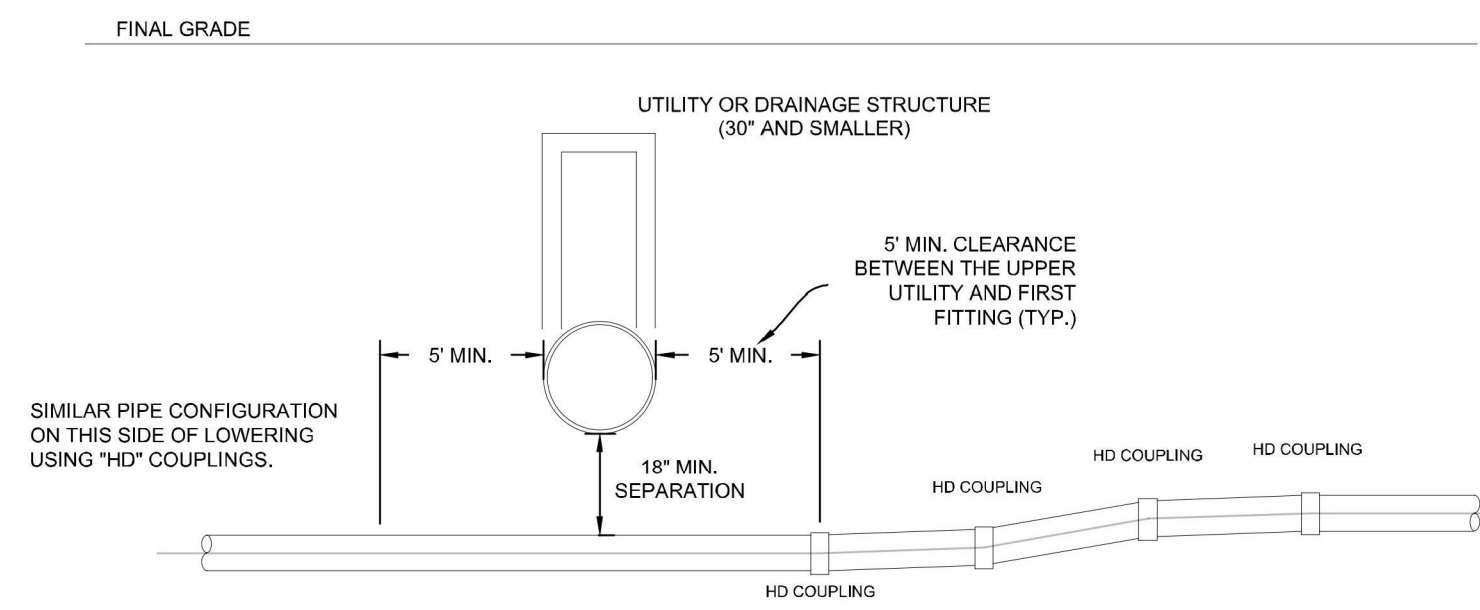
CONCRETE ENCASUREMENT DETAIL WITHOUT CAISSON



PIPE ENCASUREMENT DETAIL

A7-8
DATED 01/2017

EXAMPLE OF A SLIP JOINT OF PVC PIPE WITH HIGH DEFL. COUPLINGS



ELEVATION

PER SLIP JOINT OF PVC PIPE WITH HIGH DEFLECTION COUPLINGS

PIPE DATA	MIN. TOTAL JOINT DEFLECT. (IN)	DESIGN DEFLECTION (80% MAX.) (HORIZ. DEF.)	DESIGN DEFLECTION (80% MAX.) (VERT. DEF.)	MIN. RADIOS FOR DEFLECTING CURVES WITH HIGH DEFLECT. COUPLINGS
PIPE SIZE				20'
4"	5'00"	4'00"	0.99%	299'
6"	5'00"	4'00"	0.99%	299'
8"	5'00"	4'00"	0.99%	299'
12"	5'00"	4'00"	0.99%	299'

NO DEFLECTION COUPLINGS FOR 18" OR GREATER

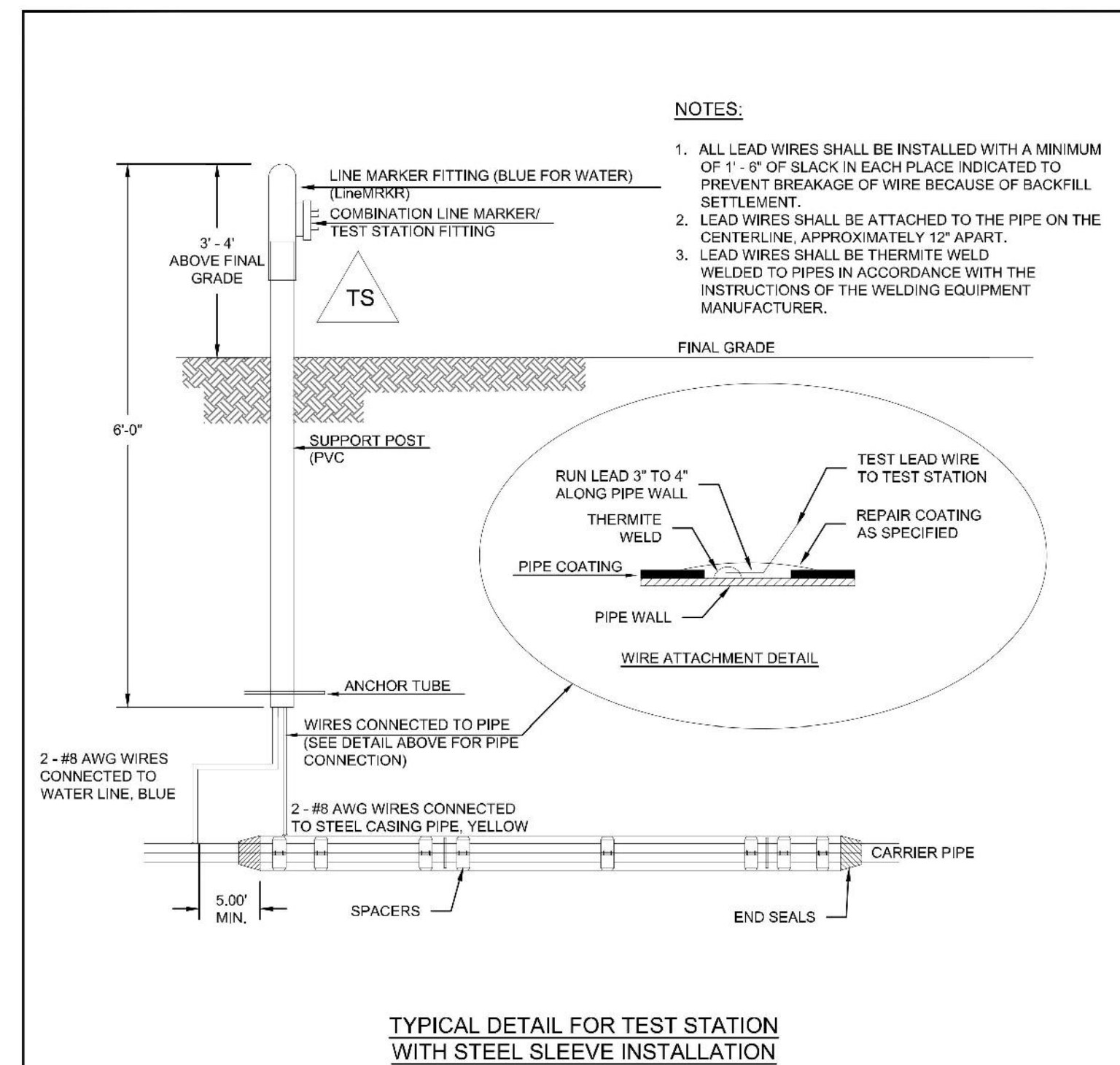
NOTES:

- SEE DETAIL DRAWING A4-1 DETAIL FOR HORIZONTAL RADIUS.



LOWERING WITH HIGH DEFLECTION COUPLINGS

A7-9
DATED 03/2014



TYPICAL DETAIL FOR TEST STATION WITH STEEL SLEEVE INSTALLATION

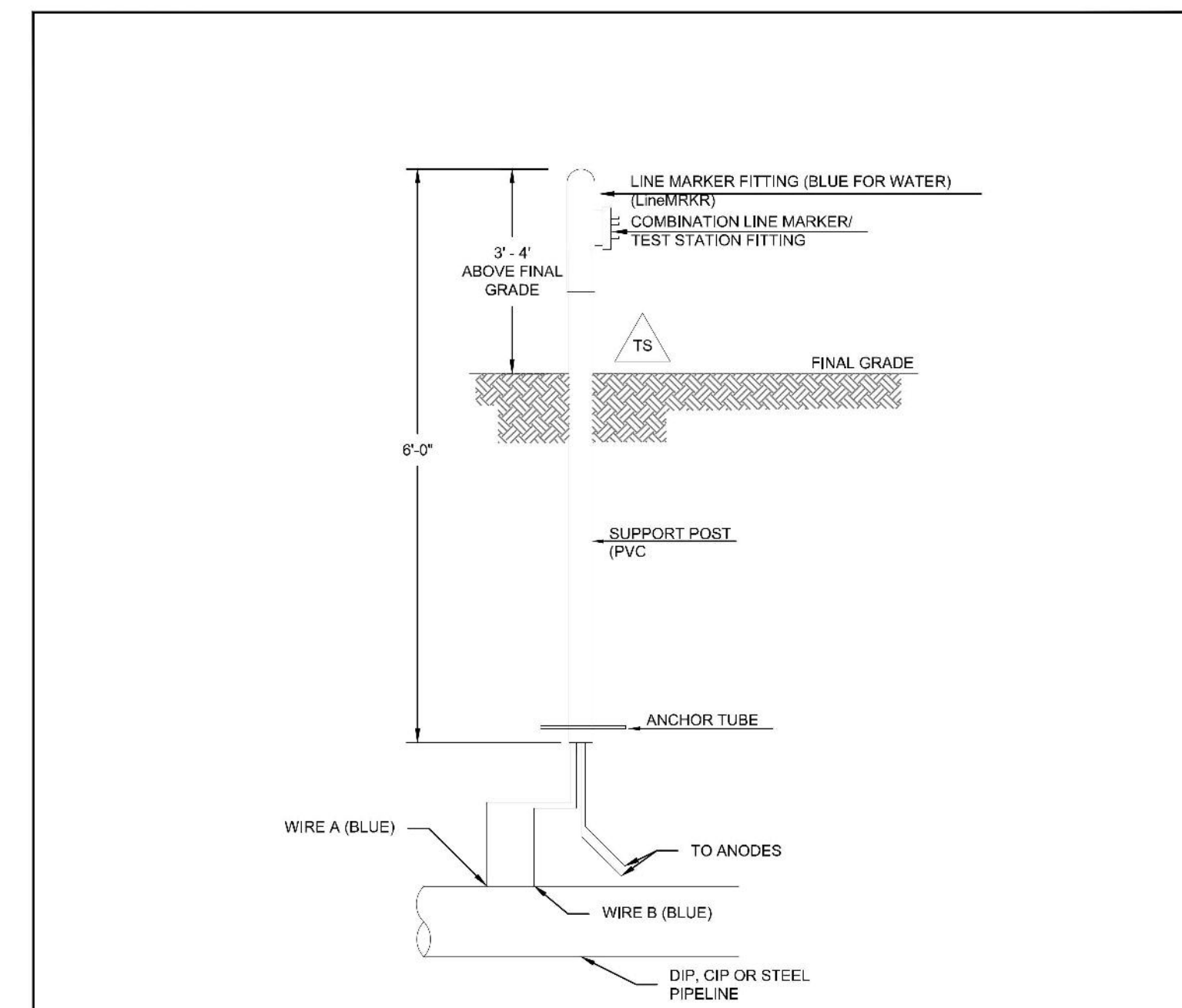
NOTES:

- THE CASING SHALL BE CATHODICALLY PROTECTED UNDER THE DIRECTION OF THE COLORADO SPRINGS UTILITIES INSPECTOR. SEE SECTION 2.6.H.
- EXAMPLE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION.
- REFERENCE STANDARD DETAIL DRAWING A7-3 - STEEL CASING INSTALLATION.
- CONTRACTOR TO COORDINATE W/ COLORADO SPRINGS UTILITIES TO WIRE TERMINAL BOARD.
- THERMITE WELD WIRES TO DIP/CIP PIPE W/ 15 GRAM CHARGE. INSTALL COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD WIRES TO STEEL PIPE W/ 25 GRAM CHARGE. INSTALL COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD CONNECTIONS AND ANY BARE METAL SHALL BE COVERED WITH PRIMERLESS HANDICAP OR CORROSION TAPE.
- CONTRACTOR TO VERIFY CONTINUITY OF ALL WIRES TO TERMINAL BOARD PRIOR TO FINAL ACCEPTANCE.



INSTALLATION OF CATHODIC PROTECTION TEST STATION AT A CASING PIPE

A8-5
DATED 07/2022



INSTALLATION OF POST MOUNT TEST STATION IN UNIMPROVED AREAS

NOTES:

- THE CONTRACTOR SHALL COORDINATE WITH COLORADO SPRINGS UTILITIES TO WIRE TERMINAL BOARD.
- THERMITE WELD WIRES TO DIP/CIP PIPE WITH A 15 GRAM CHARGE. INSTALL A COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD WIRES TO STEEL PIPE WITH A 25 GRAM CHARGE. INSTALL A COPPER SLEEVE WHEN WIRE IS #10 AWG OR SMALLER.
- THERMITE WELD CONNECTIONS AND ANY BARE METAL SHALL BE COVERED WITH PRIMERLESS HANDICAP OR CORROSION TAPE.
- THE CONTRACTOR SHALL VERIFY CONTINUITY OF ALL WIRES TO TERMINAL BOARD PRIOR TO FINAL ACCEPTANCE.
- COLOR CODE WIRE INSULATION AS SHOWN IN APPLICABLE TEST STATION DETAILS. CONNECT EACH TEST WIRE TO SEPARATE TERMINAL.
- WIRE CONFIGURATION FOR FLUSH MOUNT STYLE TEST STATIONS SIMILAR TO POST MOUNT STYLE TEST STATIONS.
- PROVIDE 18 INCHES SLACK IN TEST WIRES. MINIMUM.



INSTALLATION OF POST MOUNT TEST STATION IN UNIMPROVED AREAS

A8-11
DATED 01/2018



Civil Engineers | Landscape Architects

2099 W. Littleton Blvd. #300 Littleton, CO 80120
303.794.4727 | www.SterlingDesignAssociates.com

PREPARED UNDER THE DIRECT SUPERVISION OF

JAY M. NEWELL, P.E.

COLORADO REGISTRATION 35219

FOR & ON BEHALF OF STERLING DESIGN ASSOCIATES, LLC



9 / 28 / 23

STERLING DESIGN ASSOCIATES, LLC

ISSUES & REVISIONS

NO.	DATE	BY
NO: 1	DATE: -	BY: -
DESCRIPTION: -		
NO: 2	DATE: -	BY: -
DESCRIPTION: -		
NO: 3	DATE: -	BY: -
DESCRIPTION: -		
NO: 4	DATE: -	BY: -
DESCRIPTION: -		
NO: 5	DATE: -	BY: -
DESCRIPTION: -		
NO: 6	DATE: -	BY: -
DESCRIPTION: -		

DATE: 6/2023	SCALE: N/A
PROJECT MANAGER: JS	PROJECT NO.:
DRAWN BY: JN	DRAWING FILE:

PROJECT:

SPACE VILLAGE FILING NO. 4 EL PASO COUNTY, CO

CLIENT:

COMMERCIAL BUILDING SERVICES
7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

TEL: (303) 730-3001

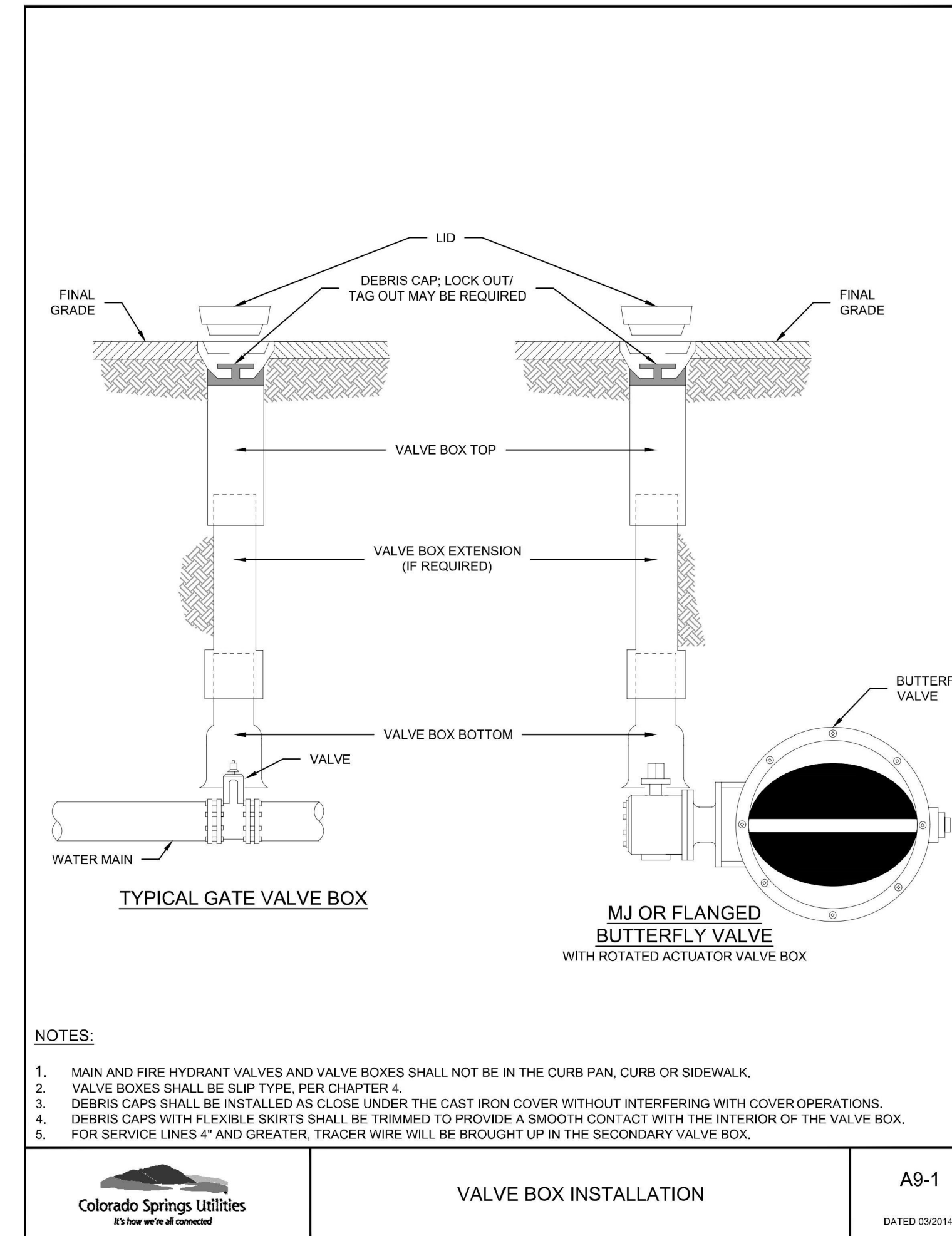
SHEET TITLE:

UTILITY DETAILS

SHEET NUMBER:

15

C917



STERLING DESIGN ASSOCIATES
Civil Engineers | Landscape Architects

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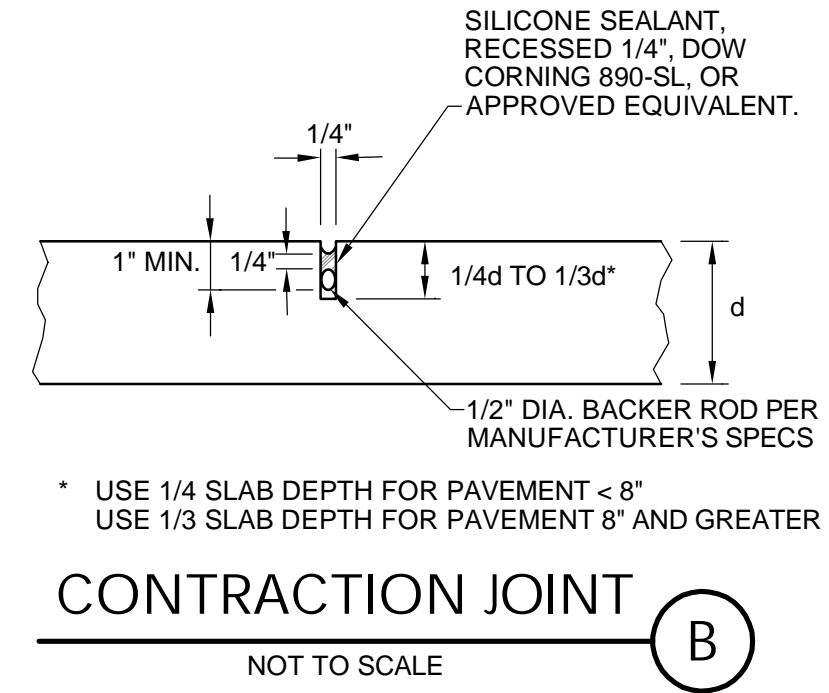
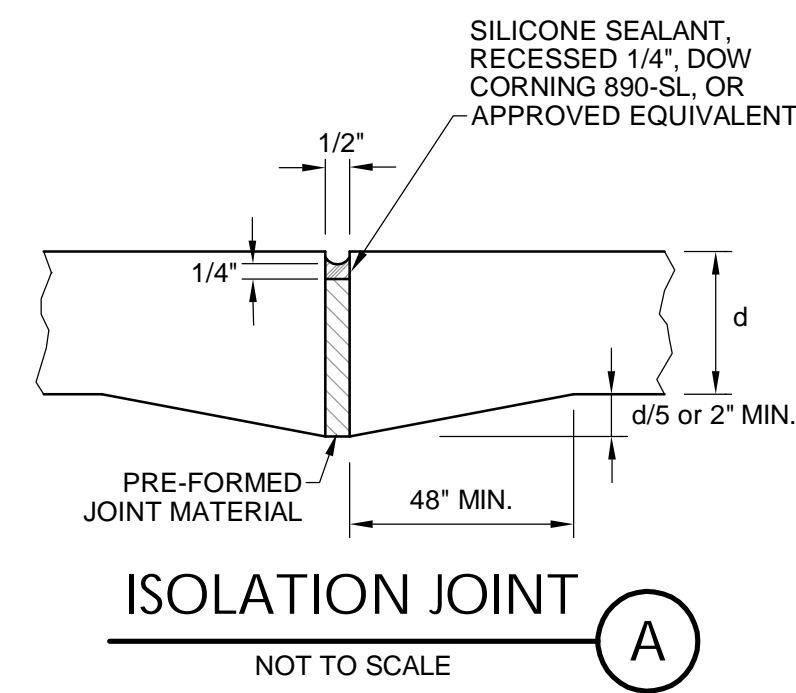
STERLING DESIGN ASSOCIATES, LLC

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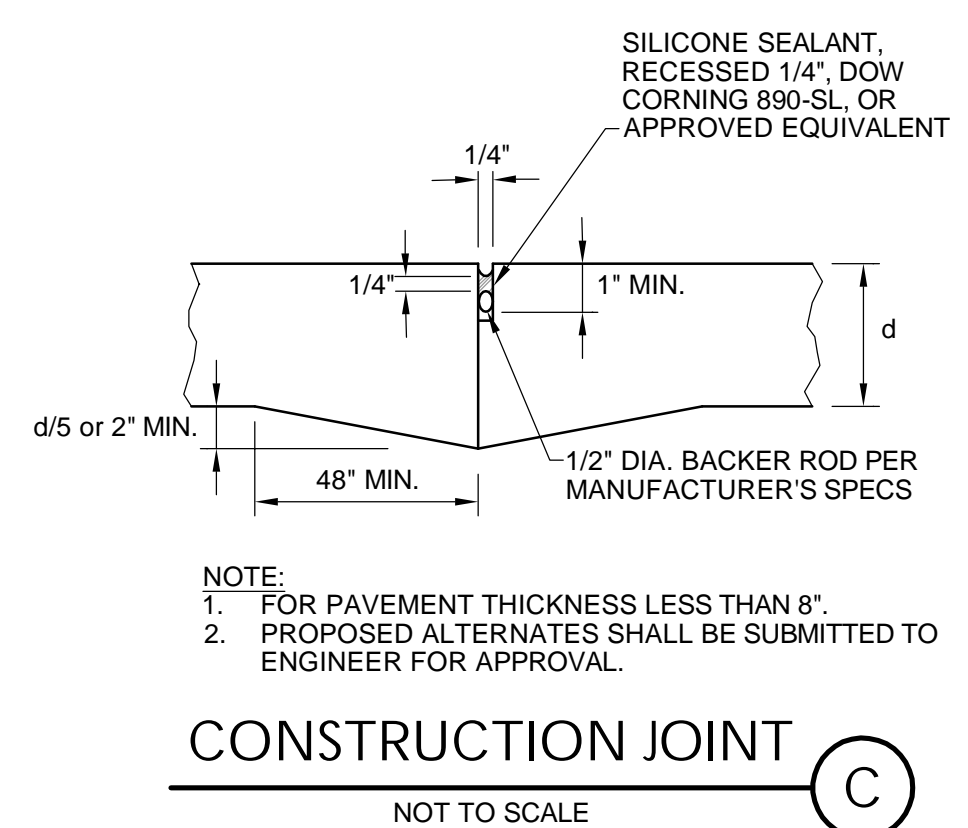
DATE: 6/2023	SCALE: N/A
PROJECT MANAGER: JS	PROJECT NO.:
DRAWN BY: JN	DRAWING FILE:

PROJECT:

- NOTES:**
1. REFER TO SHEET C901 FOR ADDITIONAL PROJECT GENERAL NOTES.
 2. PROVIDE JOINTS AT 30 X DEPTH OF CONCRETE MAXIMUM SPACING IN VEHICULAR AREAS UNLESS OTHERWISE INDICATED. JOINTS SHALL EXTEND THROUGH THE ADJACENT CURB.
 3. MAXIMUM JOINT SPACING IN PEDESTRIAN AREAS (I.E. SIDEWALKS AND PATIOS) SHALL BE 5' UNLESS OTHERWISE INDICATED. CONTRACTION JOINTS THEREIN SHALL BE TOOL FINISHED.
 4. PANELS FOR VEHICULAR PAVEMENT AND IN PEDESTRIAN AREAS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.25:1.
 5. THE CONTRACTOR SHALL SELECT AND USE A BOND BREAKER AT INLETS, MANHOLES, AND SIMILAR SIZE STRUCTURES. SMALLER STRUCTURES SUCH AS VALVE COVERS AND MONUMENT BOXES SHALL NOT REQUIRE A BOND BREAKER, UNLESS SPECIFIED OTHERWISE.
 6. PROVIDE A CONTINUOUS ISOLATION JOINT AT THE BUILDING FOUNDATION. REFERENCE THE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
 7. REFER TO DETAILS A THROUGH C, THIS SHEET, FOR CONCRETE PAVEMENT JOINTS IN VEHICULAR AREAS UNLESS NOTED OTHERWISE.
 8. SEAL JOINTS IN VEHICULAR PAVEMENT AND IN PEDESTRIAN AREAS AS SHOWN IN THE REFERENCED DETAILS UNLESS NOTED OTHERWISE IN THE PLANS OR GEOTECHNICAL INVESTIGATION.



9. WHERE SLABS OF DIFFERENT THICKNESS COME TOGETHER, THE SUBGRADES UNDER THE THINNER PAVEMENTS SHOULD BE SHAPED TO PROVIDE GRADUAL PAVEMENT THICKNESS TRANSITION OVER A DISTANCE OF 3' OR MORE.
10. PROPOSED JOINTS SHALL MATCH EXISTING JOINT LOCATIONS AND INTERSECT CURVES RADIALLY AND EDGES PERPENDICULARLY.
11. ADJUST SPACING TO AVOID SMALL PANELS OR ANGLES (E.G. PANELS <1' AND ANGLES <60°, 90° PREFERRED).
12. AVOID ODD SHAPES (SQUARE PREFERRED), AND OFFSET (STAGGERED) JOINTS.



**SPACE VILLAGE FILING NO. 4
EL PASO COUNTY, CO**

CLIENT:
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7561 S. GRANT STR., SUITE A-4
LITTLETON, COLORADO 80122

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SHEET TITLE:
UTILITY DETAILS

SHEET NUMBER:
16

C918