

CONSTRUCTION PLANS
FOR
PONDEROSA AT LORSON RANCH
FILING NO. 3
FINAL GRADING/EROSION CONTROL PLANS
WITH DETAILED GRADING PLAN



Know what's below.
Call before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE OR
EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES

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VICINITY MAP
NO SCALE

LEGEND	
	STREET R.O.W.
	PVC STORM SEWER BY DEVELOPER (PRIVATE)
	PVC STORM SEWER BY HOME BUILDER (PRIVATE)
	EXISTING RCP STORM SEWER (PUBLIC)
	PROPOSED RCP STORM SEWER (PUBLIC)

WATER / SANITARY
WIDEFIELD WATER AND SANITATION DISTRICT
8495 FONTAINE BLVD.
COLORADO SPRINGS, CO 80925
719-390-7111

CABLE
COMCAST
P.O. BOX 173838
DENVER, CO 80217
970-641-4774

ELECTRIC
MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN RD.
COLORADO SPRINGS, CO 80831
719-495-2283

SECURITY FIRE PROTECTION DISTRICT
400 SECURITY BOULEVARD
SECURITY, CO 80911
719-392-7121

PREPARED FOR:
LORSON, LLC
N. WAHSATCH AVE., SUITE 301
COLORADO SPRINGS, CO 80903
719-635-3200
CONTACT: JEFF MARK

PREPARED BY:
CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
719-570-1100
CONTACT: RICHARD L. SCHINDLER P.E.

TELEPHONE
CENTURYLINK
7925 INDUSTRY ROAD
COLORADO SPRINGS, CO 80939
719-278-4651

GAS
BLACK HILLS ENGERGY
7060 ALLEGRE ST.
FOUNTAIN, CO 80817
719-393-6639

EL PASO COUNTY
PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE
COLORADO SPRINGS, CO 80910
719-520-6300

BASIS OF BEARING
BEARINGS ARE BASED ON THE SOUTH LINE OF THE NORTH HALF OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN AS BEING SOUTH 89°1'52" WEST. THE EAST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 3-1/2" ALUMINUM CAP MONUMENT AND THE WEST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 2-1/2" ALUMINUM CAP MONUMENT

BENCHMARK
FIMS MONUMENT F204 LOCATED AT THE NORTHWEST CORNER OF FONTAINE BLVD AND COTTONWOOD GROVE DR.
ELEVATION 5724.072 (N.G.V.D. 29)

TRAFFIC CONTROL NOTE
THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AND MONITORING NECESSARY TO SAFELY COMPLETE THE WORK SHOWN IN THESE CONSTRUCTION DOCUMENTS IN CONFORMANCE WITH M.U.T.C.D. GUIDELINES. THE CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK FOR PLAN REVIEW, PERMITS AND PROCESSING. TRAFFIC CONTROL WILL NOT BE PAID SEPARATELY BUT IS INCLUDED IN THE COST OF THE PROJECT.

DEVELOPER'S STATEMENT

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

BUSINESS NAME LORSON, LLC

BY Jeff Mark DATE 8/31/20
TITLE MANAGER

ADDRESS 212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, CO 80903

James Byers James Byers, VP of Community Development
Challenger Communities LLC

CONSTRUCTION APPROVAL

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

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, Volumes 1 and 2, and Engineering Criteria Manual as amended. In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Directors discretion.

APPROVED
Engineering Department

10/18/2020 1:38:13 PM
dsdnijkamp
JENNIFER IRVINE, P.E., COUNTY ENGINEER/ECM A
CONDITIONS:
EPC Planning & Community Development Department

ENGINEER'S APPROVAL

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

RICHARD L. SCHINDLER, P.E. # 33997
FOR AND ON BEHALF OF CORE ENGINEERING GROUP

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719-570-7800
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

NO.	DESCRIPTION	DATE
1.		X

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

PROJECT:
PONDEROSA AT LORSON RANCH FILING NO. 3
LITTLE DOGE DR. - OLD GLORY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

COVER SHEET
FINAL GRADING
AND EROSION CONTROL PLANS



DATE:	SEPT 2, 2020
PROJECT NO.	100.050
SHEET NUMBER	CO.1
TOTAL SHEETS:	14

PUDSP-19-010
SF-20-016

CONSTRUCTION NOTES

- ALL WORK SHALL COMPLY WITH THE CODES AND POLICIES FOR EL PASO COUNTY.
- EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THIS GRADING PLAN WAS OBTAINED FROM AERIAL CONTOURS AND PREVIOUS CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE THE SITE AND BE FAMILIAR WITH THE EXISTING CONDITIONS.
- DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
BASE OF ALL CUTS AND FILLS - 12 INCHES,
FULL DEPTH OF ALL EMBANKMENTS
- THE CONTRACTOR IS RESPONSIBLE FOR THE RE-ESTABLISHMENT OF ALL SURVEY MONUMENTS DISTURBED WITHIN THE PROJECT LIMITS.
- THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING AT ALL TIMES. AREAS AND FACILITIES SUBJECT TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.
- PRIOR TO PAVING OPERATIONS, THE ENTIRE SUBGRADE SHALL BE PROOF-ROLLED WITH A LOADED 988 FRONT-END LOADER OR SIMILAR HEAVY RUBBER Tired VEHICLE (GVW OF 50,000 POUNDS WITH 18 KIP PER AXLE AT TIRE PRESSURES OF 90 PSI) TO DETECT ANY SOFT OR LOOSE AREAS. IN AREAS WHERE SOFT OR LOOSE SOILS, PUMPING OR EXCESSIVE MOVEMENT IS OBSERVED, THE EXPOSED MATERIALS SHALL BE OVER-EXCAVATED TO A MINIMUM DEPTH OF TWO FEET BELOW PROPOSED FINAL GRADE OR TO A DEPTH AT WHICH SOILS ARE STABLE. AFTER THIS HAS BEEN COMPLETED, THE EXPOSED MATERIALS SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES AND MOISTURE CONDITIONED. THE SUBGRADE SHALL THEN BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D-698) AT 0 TO +4.0% OF OPTIMUM MOISTURE CONTENT FOR A-6 AND A-7-6 SOILS ENCOUNTERED. OTHER SUBGRADE TYPES SHALL BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR DENSITY (ASTM D-1557) AT PLUS OR MINUS 2.0% OF OPTIMUM MOISTURE CONTENT. AREAS WHERE STABLE NATURAL SOILS ARE ENCOUNTERED AT PROPOSED SUBGRADE ELEVATION SHALL ALSO BE SCARIFIED (18 INCHES FOR A-7-6 SOILS BELOW FULL-DEPTH ASPHALT CONCRETE) AND COMPACTED AS OUTLINED ABOVE PRIOR TO PAVING OPERATIONS. SUBGRADE FILL SHALL BE PLACED IN SIX-INCH LIFTS AND UNIFORMLY COMPACTED, MEETING THE REQUIREMENTS AS PREVIOUSLY DESCRIBED.
- SUBGRADE MATERIALS DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED, DISPOSED OF AND REPLACED WITH APPROVED MATERIALS.
- FILL SHALL BE PLACED IN 8-INCH MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED PRIOR TO SUCCESSIVE LIFTS.
- THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DURING CONSTRUCTION ACTIVITIES AT ALL TIMES DURING GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES:
 - HAY BALE BARRIERS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - SILT FENCE WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - TEMPORARY SEDIMENTATION BASINS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - MULCHING AND SEEDING OF EXCESSIVE SLOPED AREAS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
 - TEMPORARY VEHICLE TRACKING CONTROL AS NEEDED AND/OR DIRECTED BY THE ENGINEER.
 - CONCRETE WASH AREAS.
 - INLET PROTECTION.
 THESE AND ALL EROSION CONTROL BEST MANAGEMENT PRACTICES AS SHOWN IN THE GRADING AND EROSION CONTROL PLANS SHALL BE STRICTLY ADHERED TO.
- FINISHED CONTOURS/SPOT ELEVATIONS SHOWN HEREON REPRESENT FINISHED GRADES. ALL PAVEMENT SUBGRADES ARE BASED ON THE COMPOSITE ASPHALT PAVEMENT RECOMMENDATIONS MADE IN THE "GEOTECHNICAL STUDY" FOR THIS PROJECT.

ADDITIONAL SWMP PLAN CONTRACTOR NOTES.

- CONTRACTOR MUST ADD THEIR CONTACT INFORMATION TO THE SWMP PLANS PRIOR TO CONSTRUCTION
- IF THE GRADING IS TO BE PHASED THE CONTRACTOR MUST PROVIDE PHASING MAPS FOR INSERTION INTO THE SWMP PLANS.
- THE CONTRACTOR MUST PROVIDE THE CLIENT THE LOCATION OF ANY POTENTIAL SOURCES OF POLLUTIONS SUCH AS FUELING AREAS, ETC TO BE INSERTED INTO THE SWMP PLANS.
- THE ON-SITE SWMP PLAN SHALL BE LOCATED AT THE SE CORNER OF OLD GLORY DRIVE AND BEARCAT LOOP UNLESS OTHERWISE DOCUMENTED.
- EXISTING VEGETATION WITHIN THE LIMITS OF CONSTRUCTION CONSISTS OF NATIVE GRASSES AND WEEDS. GROUND COVER IS ESTIMATED AT 70% DENSITY

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
 - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
 - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 - CDOT M & S STANDARDS
- 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. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEViate FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PUBLIC WORK DEPARTMENT AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PWD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS (rev. 7/02/2019)

- 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 (SMWP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
- 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 affect 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 a 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 vegetation control measures must be loosened 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 of uncontaminated ground water may be discharged on site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.
- 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 onsite unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.
- Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.
- 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 RMG, "PRELIMINARY SOILS AND GEOLOGY FOR PONDEROSA AT LORSON RANCH FIL NO. 3", DATED NOVEMBER, 2019 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 this Grading and Erosion Control Plan may be a part. For information or application materials contact:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD - Permits
4300 Cherry Creek Drive South
Denver, CO 80246-1530
Attn: Permits Unit

EPC 10/18/2020

CORE ENGINEERING GROUP
1500 WEST AVENUE, SUITE 300
BOULDER, CO 80501
PH: 719-459-7800
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceng1.com

DATE: _____
DESCRIPTION: _____
NO: _____
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK
PROJECT: **PONDEROSA AT LORSON RANCH FILING NO. 3**
LITTLE DOGIE DR - OLD GLORY DR
COLORADO SPRINGS, COLORADO

DRAWN: **RLS**
DESIGNED: **RLS**
CHECKED: **RLS**

FINAL SITE GRADING AND EROSION CONTROL PLAN NOTES

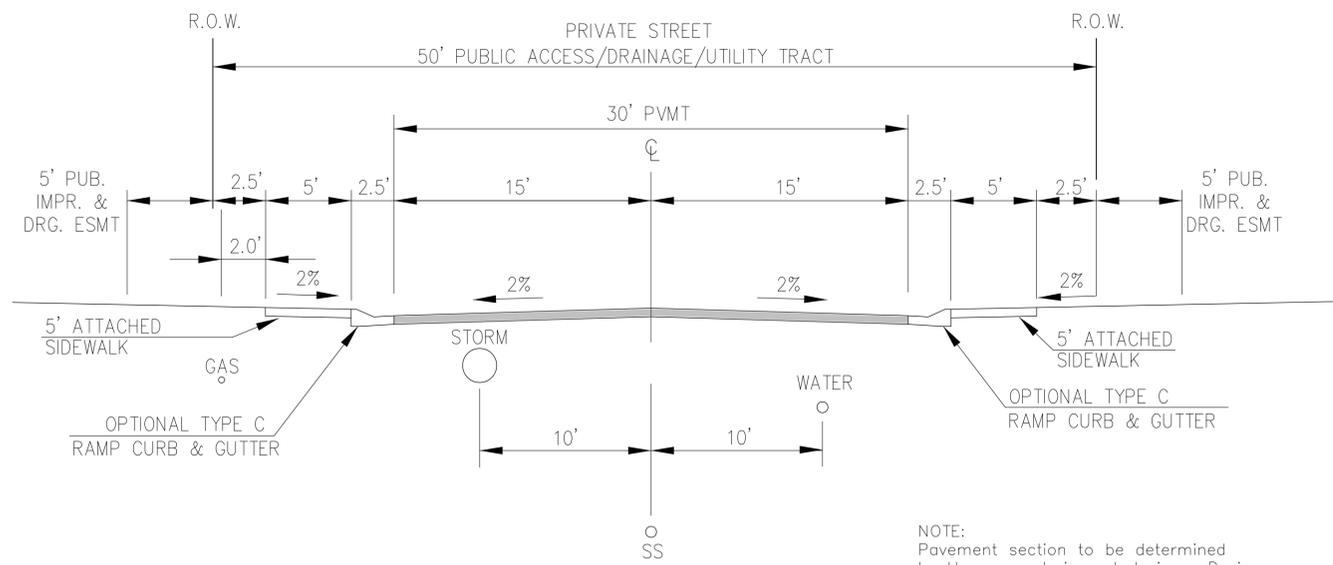


DATE: **SEPT 2, 2020**

PROJECT NO. **100.050**

SHEET NUMBER **C0.2**

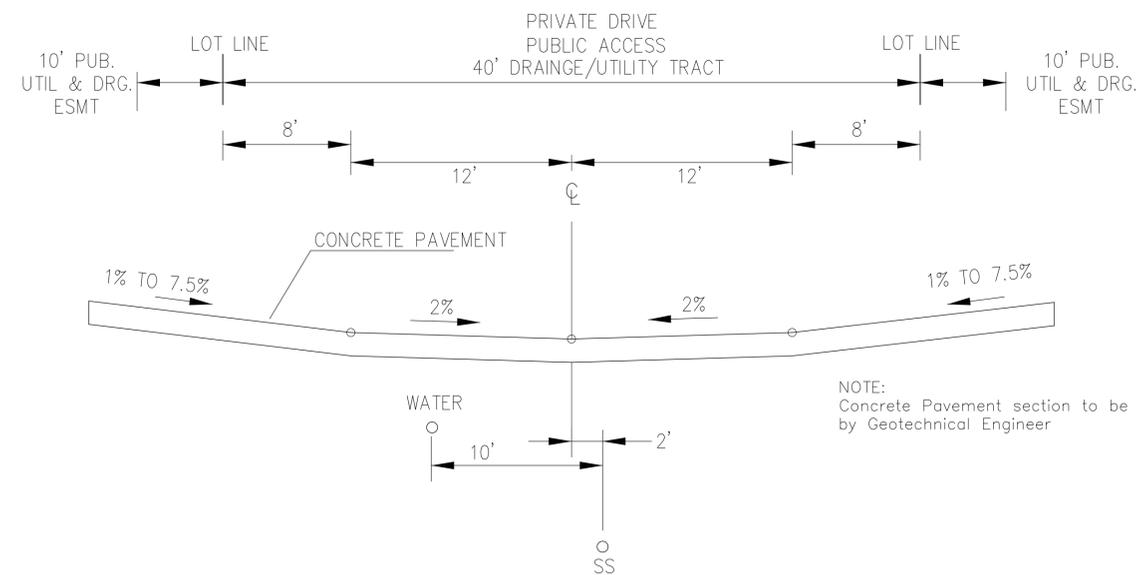
TOTAL SHEETS: 14



TYPICAL SECTION 50' TRACT
RESIDENTIAL URBAN LOCAL
NOT TO SCALE

WINTER GEM GROVE

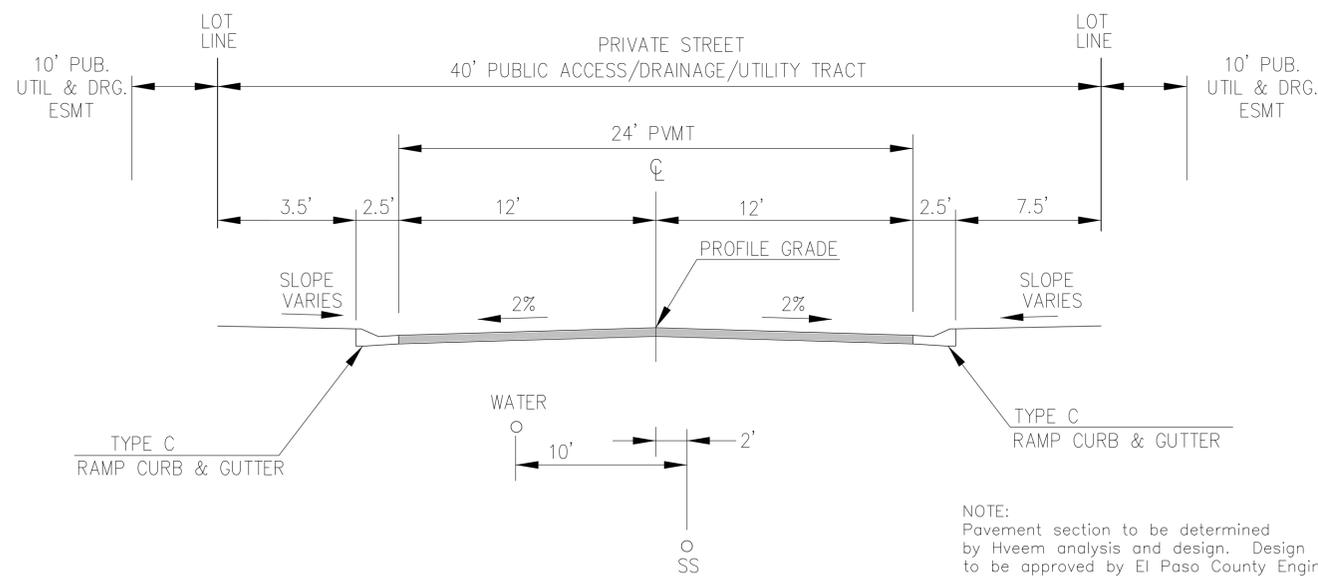
NOTE:
Pavement section to be determined
by Hveem analysis and design. Design
to be approved by El Paso County Engineering



TYPICAL SECTION 40' TRACT
PRIVATE ROAD (lots 1-6, 37-44, 65-68)
NOT TO SCALE

WHITEWOLF POINT

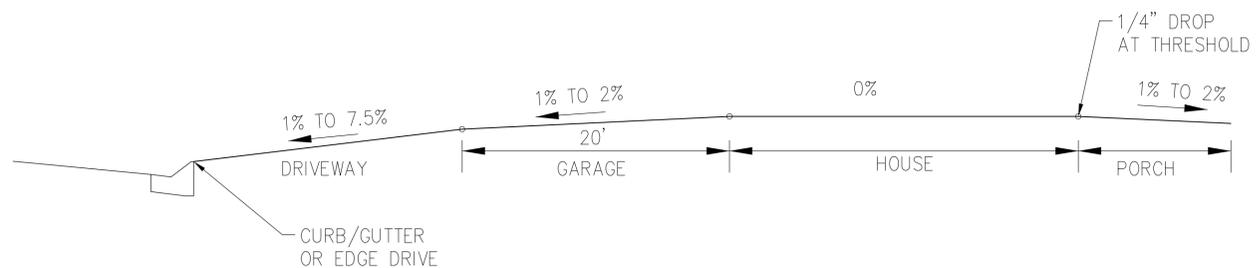
NOTE:
Concrete Pavement section to be determined
by Geotechnical Engineer



TYPICAL SECTION 40' TRACT
RESIDENTIAL URBAN LOCAL LOW VOLUME
NOT TO SCALE

WHITEWOLF POINT
PRIVATE STREET

NOTE:
Pavement section to be determined
by Hveem analysis and design. Design
to be approved by El Paso County Engineering



TYPICAL HOUSE LAYOUT

CORE
ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
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CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

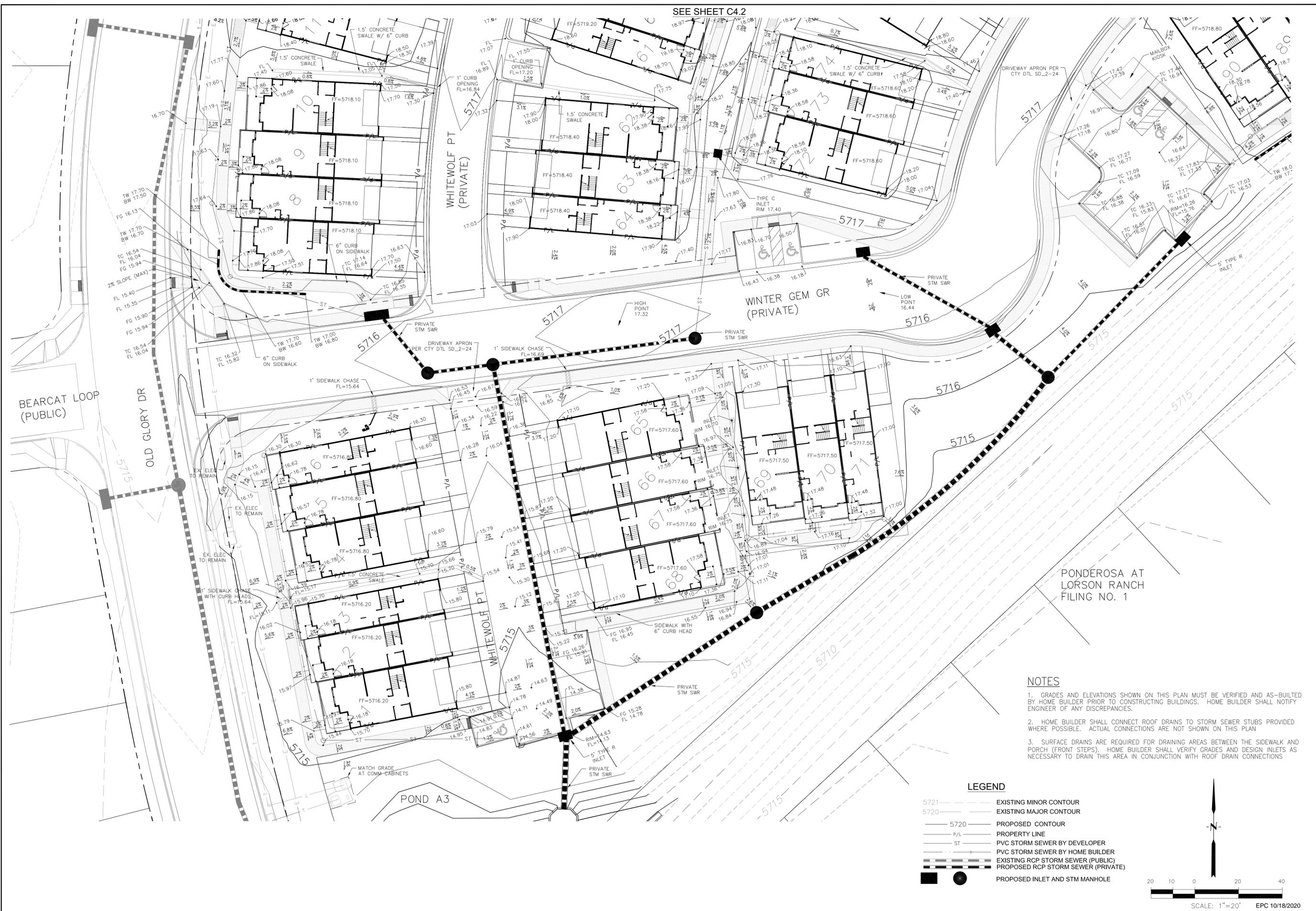
DATE: _____
DESCRIPTION: _____
NO. _____
PROJECT: PONDEROSA AT LORSON RANCH FILING NO. 3
LITTLE DOGIE DR. OLD GLOXY DR.
COLORADO SPRINGS, COLORADO
PREPARED FOR: LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

TYPICAL STREET/DRIVEWAY
SECTIONS AND
TYPICAL SECTIONS



DATE: SEPT 2, 2020
PROJECT NO. 100.050
SHEET NUMBER C0.3
TOTAL SHEETS: 14



SEE SHEET C4.2

PONDEROSA AT LORSON RANCH
FILING NO. 1

NOTES

1. GRADES AND ELEVATIONS SHOWN ON THIS PLAN MUST BE VERIFIED AND AS-BUILT BY HOME BUILDER PRIOR TO CONSTRUCTING BUILDINGS. HOME BUILDER SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. HOME BUILDER SHALL CONNECT ROOF DRAINS TO STORM SEWER STUBS PROVIDED WHERE POSSIBLE. ACTUAL CONNECTIONS ARE NOT SHOWN ON THIS PLAN
3. SURFACE DRAINS ARE REQUIRED FOR DRAINING AREAS BETWEEN THE SIDEWALK AND PORCH (FRONT STEPS). HOME BUILDER SHALL VERIFY GRADES AND DESIGN INLETS AS NECESSARY TO DRAIN THIS AREA IN CONJUNCTION WITH ROOF DRAIN CONNECTIONS

LEGEND

- 5721 ——— EXISTING MINOR CONTOUR
- 5720 ——— EXISTING MAJOR CONTOUR
- 5720 ——— PROPOSED CONTOUR
- P/L ——— PROPERTY LINE
- ST ——— PVC STORM SEWER BY DEVELOPER
- PVC STORM SEWER BY HOME BUILDER
- EXISTING RCP STORM SEWER (PUBLIC)
- PROPOSED RCP STORM SEWER (PRIVATE)
- ——— PROPOSED INLET AND STM MANHOLE

CORE ENGINEERING GROUP
1500S 151ST AVENUE, SUITE 100
DENVER, CO 80202
PH: 719-659-7800
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

DATE: _____
DESCRIPTION: _____
NO: _____
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
PROJECT: **PONDEROSA AT LORSON RANCH FILING NO. 3**
LITTLE DOGIE DR - OLD GLORY DR
COLORADO SPRINGS, COLORADO
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

**PONDEROSA AT LORSON RANCH
FILING NO. 3
DETAILED GRADING PLAN**



DATE: SEPT 2, 2020
PROJECT NO: 100.050
SHEET NUMBER: C4.1
TOTAL SHEETS: 14

SCALE: 1"=20' EPC 10/18/2020

NOTES

- GRADES AND ELEVATIONS SHOWN ON THIS PLAN MUST BE VERIFIED AND AS-BUILT BY HOME BUILDER PRIOR TO CONSTRUCTING BUILDINGS. HOME BUILDER SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
- HOME BUILDER SHALL CONNECT ROOF DRAINS TO STORM SEWER STUBS PROVIDED WHERE POSSIBLE. ACTUAL CONNECTIONS ARE NOT SHOWN ON THIS PLAN
- SURFACE DRAINS ARE REQUIRED FOR DRAINING AREAS BETWEEN THE SIDEWALK AND PORCH (FRONT STEPS). HOME BUILDER SHALL VERIFY GRADES AND DESIGN INLETS AS NECESSARY TO DRAIN THIS AREA IN CONJUNCTION WITH ROOF DRAIN CONNECTIONS

LEGEND

- 5721 ——— EXISTING MINOR CONTOUR
- 5720 ——— EXISTING MAJOR CONTOUR
- 5720 PROPOSED CONTOUR
- P/L PROPERTY LINE
- ST PVC STORM SEWER BY DEVELOPER
- PVC STORM SEWER BY HOME BUILDER
- EXISTING RCP STORM SEWER (PUBLIC)
- PROPOSED RCP STORM SEWER (PRIVATE)
- PROPOSED INLET AND STM MANHOLE



SEE SHEET C4.1

SEE SHEET C4.3

SEE SHEET C4.3

SEE SHEET C4.3

SEE SHEET C4.4

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PROJECT: **PONDEROSA AT LORSON RANCH FILING NO. 3**
 LITTLE DOGIE DR - OLD GLORY DR
 COLORADO SPRINGS, COLORADO

PREPARED FOR: **LORSON, LLC**
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 CONTACT: JEFF MARK

NO.	DESCRIPTION	DATE

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

PONDEROSA AT LORSON RANCH
FILING NO. 3
DETAILED GRADING PLAN



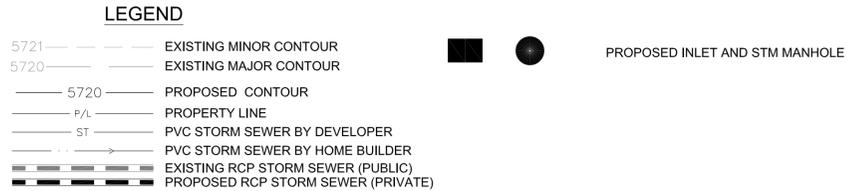
DATE: SEPT 2, 2020
 PROJECT NO: 100.050
 SHEET NUMBER: C4.2
 TOTAL SHEETS: 14





NOTES

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SEE SHEET C4.4



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DATE: _____
 DESCRIPTION: _____
 NO. _____

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PROJECT:
PONDEROSA AT LORSON RANCH FILING NO. 3
 LITTLE DOGIE DR - OLD GLORY DR
 COLORADO SPRINGS, COLORADO

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

PONDEROSA AT LORSON RANCH
FILING NO. 3
DETAILED GRADING PLAN



DATE: SEPT 2, 2020
 PROJECT NO. 100.050
 SHEET NUMBER **C4.3**
 TOTAL SHEETS: 14

SEE SHEET C4.5 FOR END SECTION AND OUTLET PROTECTION



SEE SHEET C4.3

SEE SHEET C4.2

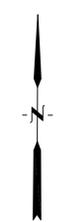
SEE SHEET C4.1

NOTES

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LEGEND

- 5721 ——— EXISTING MINOR CONTOUR
- 5720 ——— EXISTING MAJOR CONTOUR
- 5720 ——— PROPOSED CONTOUR
- P/L ——— PROPERTY LINE
- ST ——— PVC STORM SEWER BY DEVELOPER
- PVC STORM SEWER BY HOME BUILDER
- EXISTING RCP STORM SEWER (PUBLIC)
- PROPOSED RCP STORM SEWER (PRIVATE)
- ——— PROPOSED INLET AND STM MANHOLE



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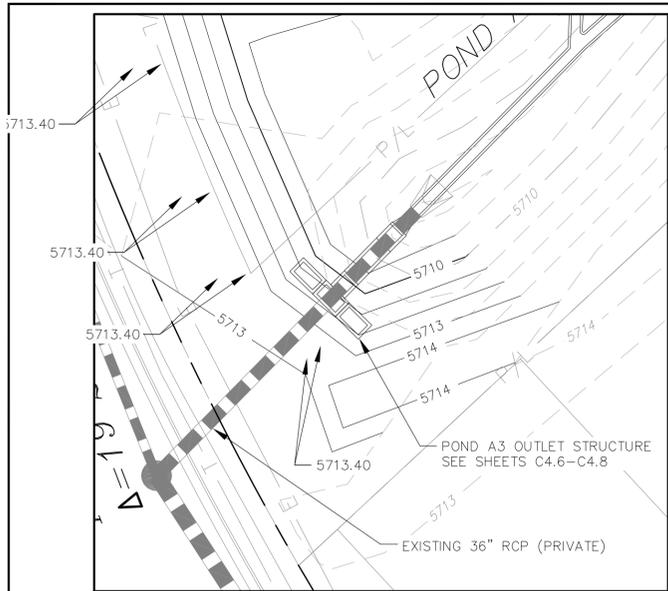
DATE: _____
 DESCRIPTION: _____
 NO. _____
 PREPARED FOR: **LORSON, LLC**
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

PONDEROSA AT LORSON RANCH
FILING NO. 3
DETAILED GRADING PLAN



DATE: SEPT 2, 2020
 PROJECT NO. 100.050
 SHEET NUMBER **C4.4**
 TOTAL SHEETS: 14



DETAIL A
SCALE: 1"=20'

- INITIAL BMP'S:**
1. PERIMETER SILT FENCE
 2. VEHICLE TRACKING CONTROL PADS
 3. INLET PROTECTION FOR EXISTING INLETS ON OLD GLORY DRIVE AND THE EXISTING STORM SEWER FOR POND A3
 4. ROCK SOCKS ALONG OLD GLORY DRIVE
 5. PLACEMENT OF ON-SITE SWMP MANUAL
- INTERIM BMP'S:**
1. TEMPORARY SEDIMENT BASINS AS GRADING PROGRESSES
 2. TEMPORARY SEEDING/MULCHING AS NEEDED
 3. STRAW BALE CHECKS AS NEEDED DURING GRADING
- FINAL BMP'S:**
1. FINAL SEEDING AND MULCHING
 2. STRAW ECB ON PERMANENT SLOPES 6:1 OR STEEPER
 3. POND OUTLET STRUCTURE

- NOTE:**
1. SLOPES SHALL BE 4:1 MAX. UNLESS OTHERWISE NOTED
 2. STRAW ECB SHALL BE PLACED ON ALL SIDE SLOPES AND PERMANENT SLOPES 6:1 OR STEEPER.
 3. TEMPORARY SEEDING REQUIRED ON DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED AND SEEDED WITHIN 21 DAYS AFTER INTERIM GRADING.
 4. THE GRADING AREAS SHOWN ON THIS PLAN ARE IN FILL EXCEPT GRADING FOR EXPANSION OF POND A3.
 5. THERE ARE NO ASPHALT BATCH PLANTS OR CONSTRUCTION OFFICE TRAILERS PLANNED FOR THIS SITE OR CONTRACTOR SHALL OBTAIN PERMIT IF DESIRED.
 6. CONTRACTOR TO DETERMINE STOCKPILE AREAS AND STAGING AREAS AND SHOW THEM ON THE WORKING MAPS.
 7. EXISTING VEGETATION CONSISTS OF GRASSES AND WEEDS. GROUND COVER ESTIMATED AT 70% DENSITY AND SHALL BE VISUALLY VERIFIED PRIOR TO ACTIVITY.
 8. THERE ARE NO STREAMS OR WETLANDS WITHIN THIS SITE.
 9. NO DEWATERING OPERATIONS ARE ANTICIPATED.
 10. ALL TRACTS ARE PLATTED WITH DRAINAGE EASEMENTS

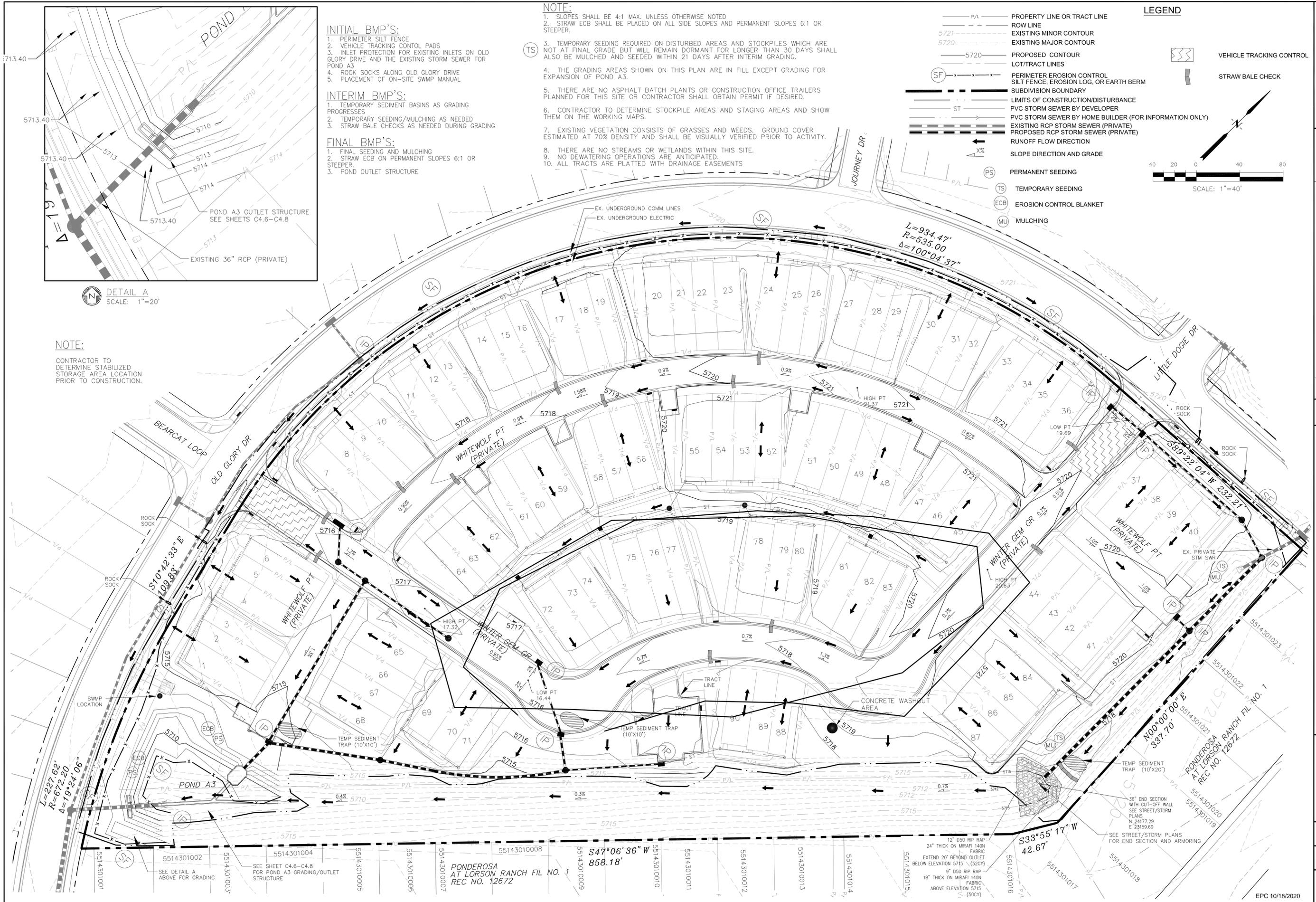
LEGEND

- P/L — PROPERTY LINE OR TRACT LINE
- — — — — ROW LINE
- 5721 — EXISTING MINOR CONTOUR
- 5720 — EXISTING MAJOR CONTOUR
- 5720 — PROPOSED CONTOUR
- — — — — LOT/TRACT LINES
- (SF) — PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- — — — — SUBDIVISION BOUNDARY
- — — — — LIMITS OF CONSTRUCTION/DISTURBANCE
- — — — — PVC STORM SEWER BY DEVELOPER
- — — — — PVC STORM SEWER BY HOME BUILDER (FOR INFORMATION ONLY)
- — — — — EXISTING RCP STORM SEWER (PRIVATE)
- — — — — PROPOSED RCP STORM SEWER (PRIVATE)
- — — — — RUNOFF FLOW DIRECTION
- X% — SLOPE DIRECTION AND GRADE
- (PS) — PERMANENT SEEDING
- (TS) — TEMPORARY SEEDING
- (ECB) — EROSION CONTROL BLANKET
- (MU) — MULCHING
- (X) — VEHICLE TRACKING CONTROL
- (S) — STRAW BALE CHECK

SCALE: 1"=40'

NOTE:

CONTRACTOR TO DETERMINE STABILIZED STORAGE AREA LOCATION PRIOR TO CONSTRUCTION.



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PROJECT: **PONDEROSA AT LORSON RANCH FILING NO. 3**
LITTLE DOGIE DR - OLD GLORY DR
COLORADO SPRINGS, COLORADO

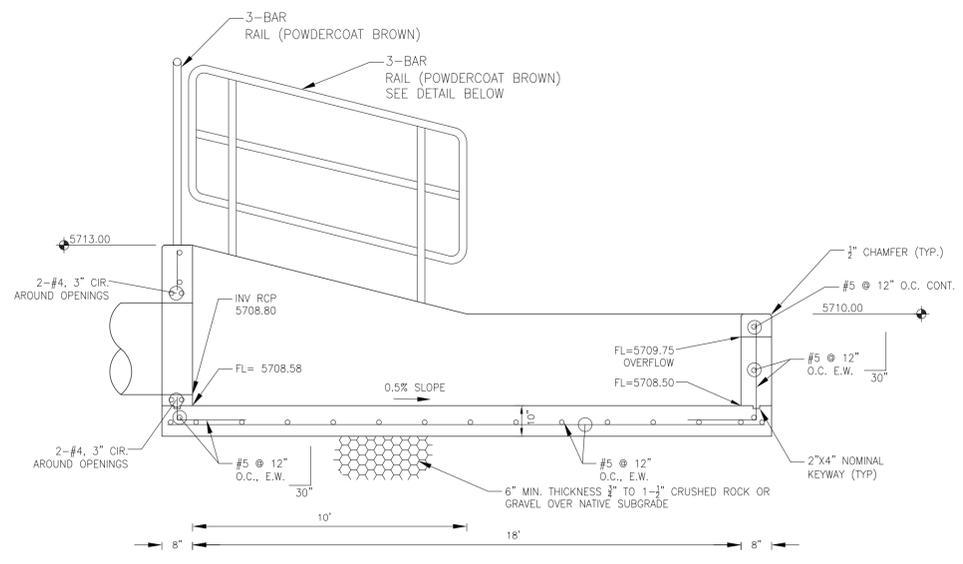
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NO. 1: _____

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

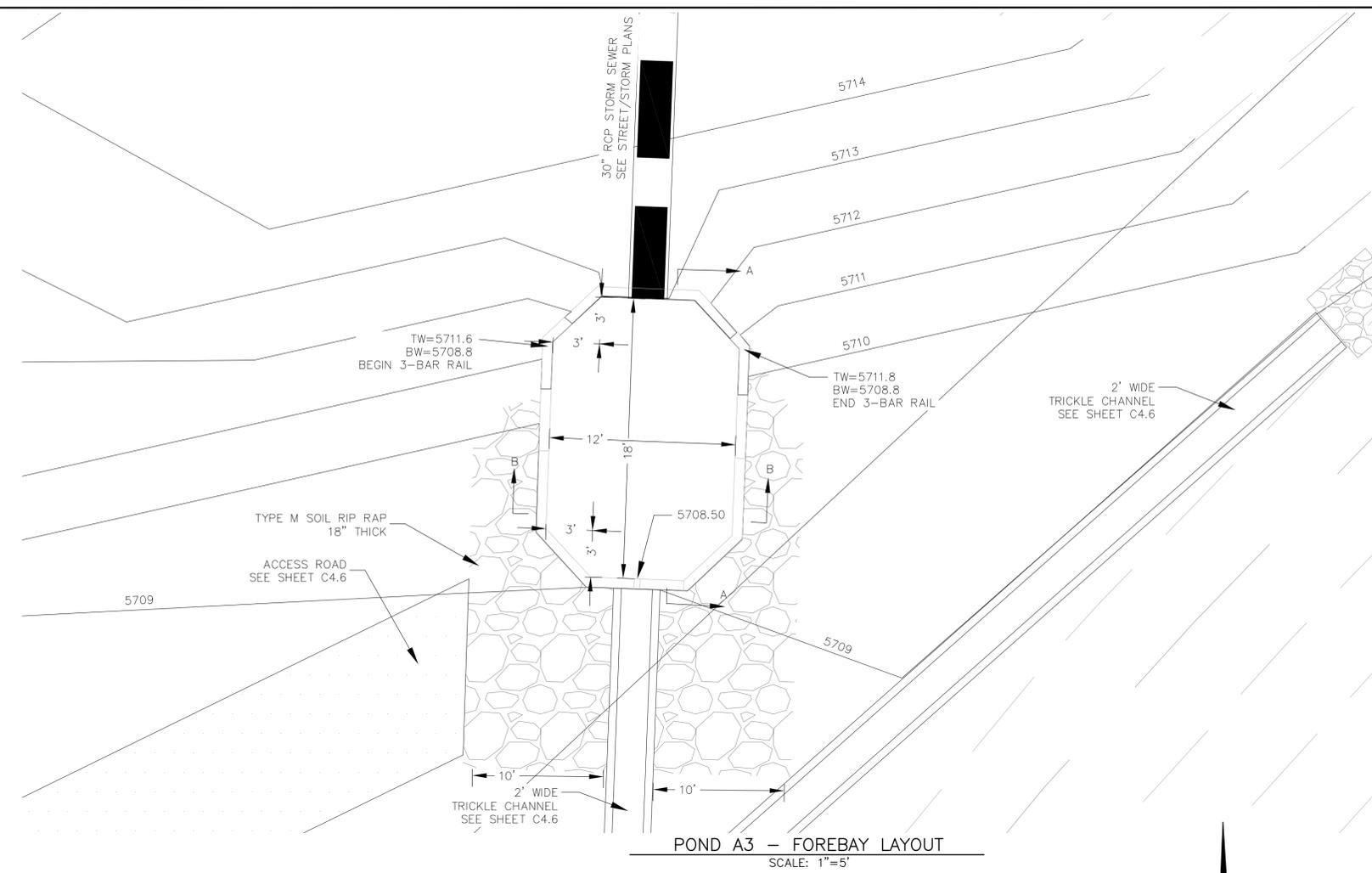
**PONDEROSA AT LORSON RANCH
FILING NO. 3
GRADING AND EROSION CONTROL PLAN**

DATE: SEPT 2, 2020
PROJECT NO. 100.050
SHEET NUMBER **C4.5**
TOTAL SHEETS: 14

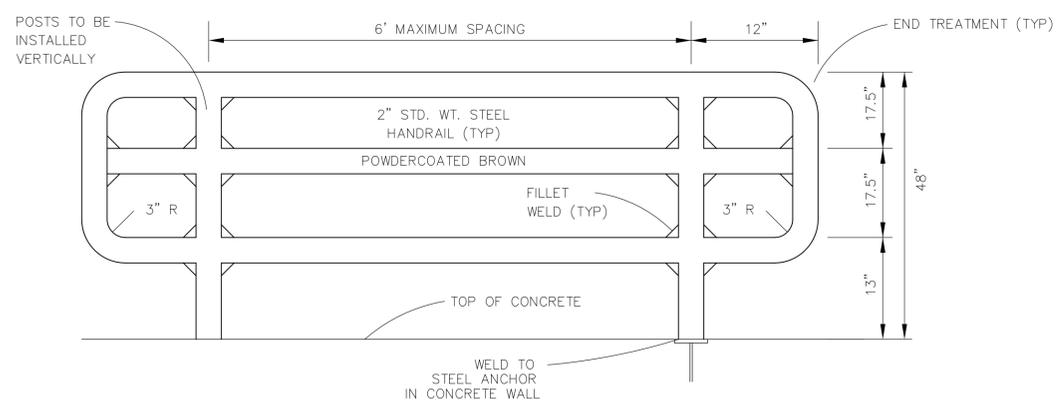
PROFESSIONAL ENGINEER
33997
R.L. Schindler



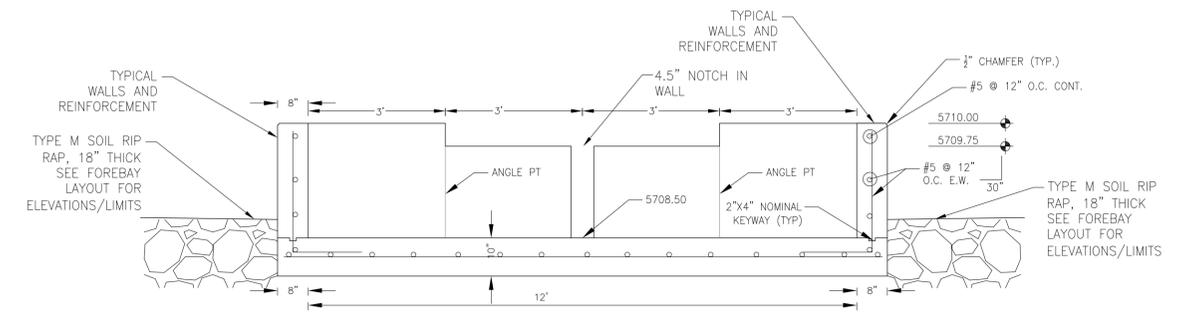
FOREBAY SECTION A-A
NO SCALE



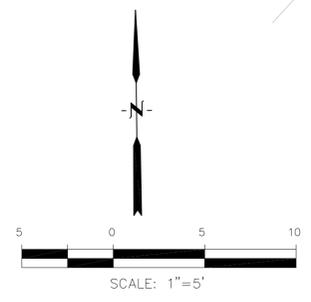
POND A3 - FOREBAY LAYOUT
SCALE: 1"=5'



3-BAR RAIL DETAIL
NO SCALE



FOREBAY SECTION B-B
NO SCALE



NOTE: ALL CONCRETE FOR FOREBAY SHALL BE CDOT TYPE D

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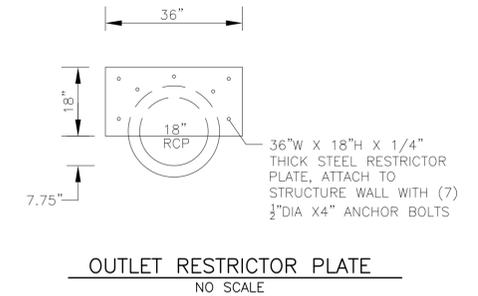
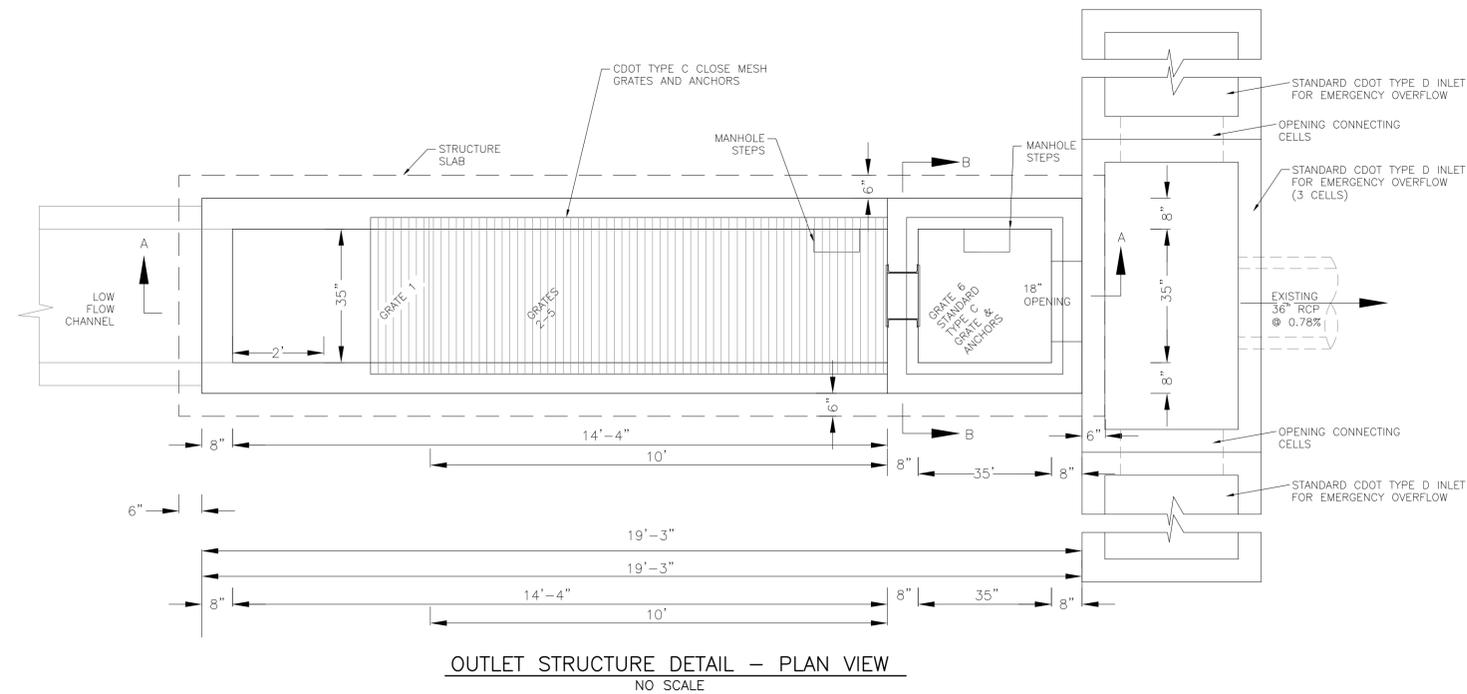
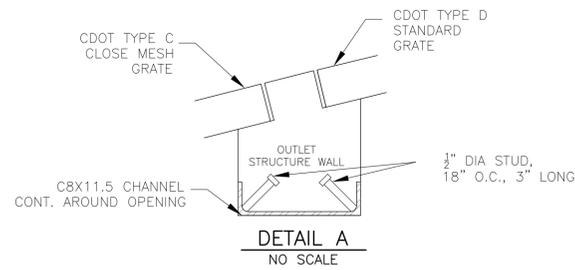
DATE: _____
DESCRIPTION: _____
NO: _____
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

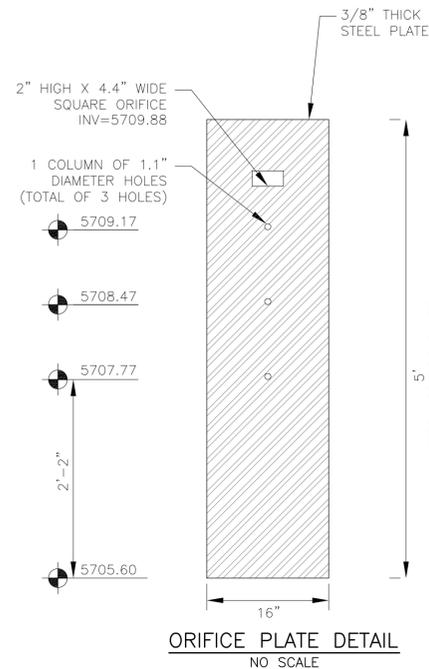
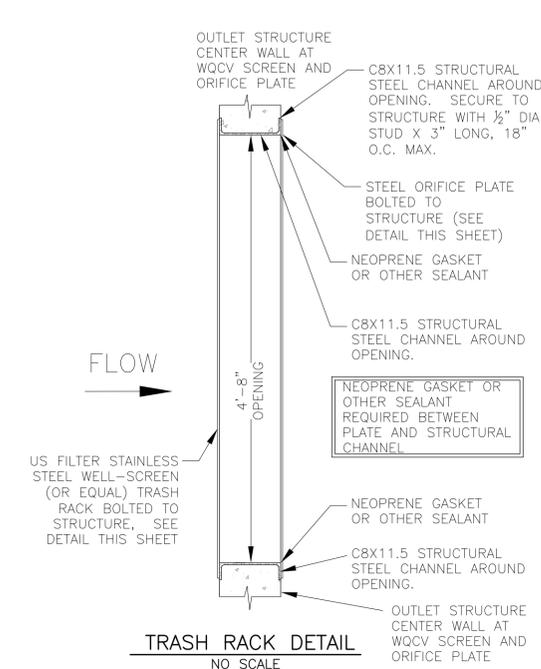
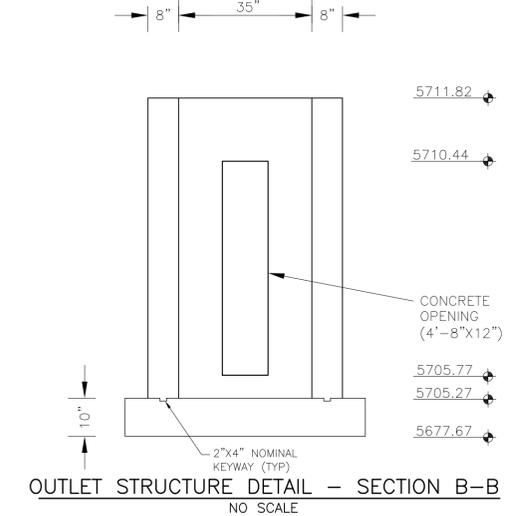
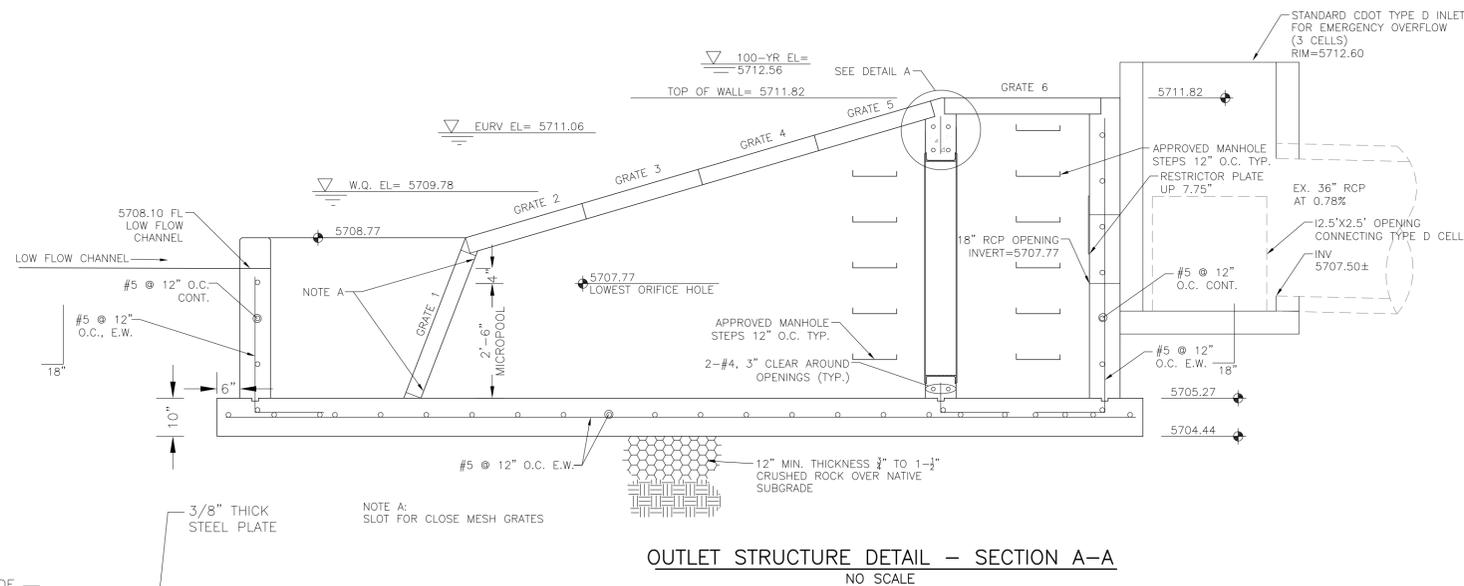
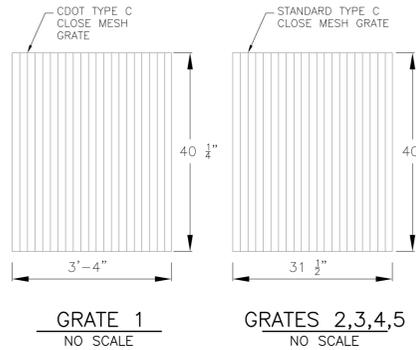
POND A3
FOREBAY DETAILS



DATE: SEPT 2, 2020
PROJECT NO: 100.050
SHEET NUMBER: **C4.7**
TOTAL SHEETS: 14



NOTE:
AFTER CONCRETE STRUCTURE HAS BEEN POURED
ALL GRATE DIMENSIONS SHALL BE FIELD VERIFIED
PRIOR TO GRATE CONSTRUCTION

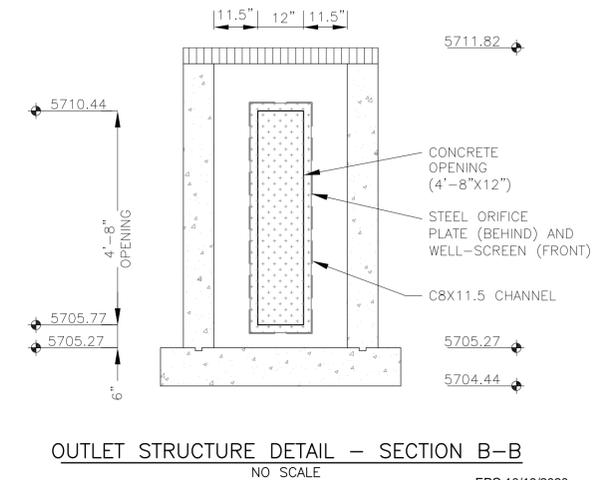


OUTLET STRUCTURE, FOREBAY, AND DRAIN CHANNEL NOTES:

- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
 - GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPLICE LENGTH FOR REINFORCING BARS. ALL REINFORCING STEEL SHALL HAVE A TWO-INCH MINIMUM CLEARANCE FROM EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
- | BAR SIZE | #4 | #5 | #6 |
|--------------------|-------|-------|-------|
| MIN. SPLICE LENGTH | 1'-3" | 1'-7" | 2'-0" |
- CONCRETE FOR THE OUTLET STRUCTURE AND FOREBAY SHALL BE CDOT CLASS D CONCRETE.
 - CONCRETE FOR DRAIN CHANNELS SHALL BE CDOT CLASS B CONCRETE.
 - EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK, SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE AND THE JOINT SHALL BE SEALED, REFER TO DETAILS.
 - ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/8" CHAMFER UNLESS OTHERWISE NOTED.
 - SUBGRADE TO BE 12" THICK CLEAN FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM M698 UNDER STRUCTURE.
 - REFER TO POND DETAILS FOR PRESEDIMENTATION/FOREBAY DESIGN.
 - ENGINEER SHALL BE NOTIFIED PRIOR TO BEGINNING CONSTRUCTION OF OUTLET STRUCTURE TO SCHEDULE OBSERVATION VISITS FOR STRUCTURES.

WQCV WELL-SCREEN NOTES:

- Well-Screen shall be stainless steel and attached by stainless steel bolts along edge of the mounting frame.
- WQCV Well Screen
 - Type of Screen: Stainless steel #93 Vee Wire (Johnson Vee Wire (tm) Stainless Steel Screen or equivalent with 60% open area)
 - Screen slot opening dimension: 0.139" (Screen #93 Vee Wire Slot Opening)
 - Type and Size of Support Rod: 1E 0.074"x0.50"
 - Spacing of Support Rod (O.C.): 1.0 Inch
 - Total Screen Thickness: 0.655"
 - Carbon Steel Holding Frame Type: 3/4" x 1.0" angle



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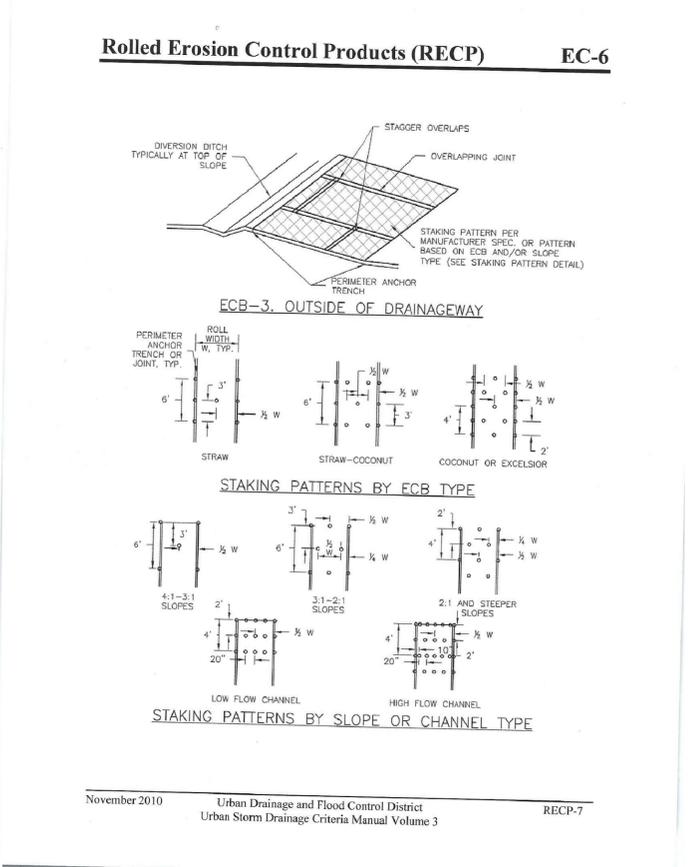
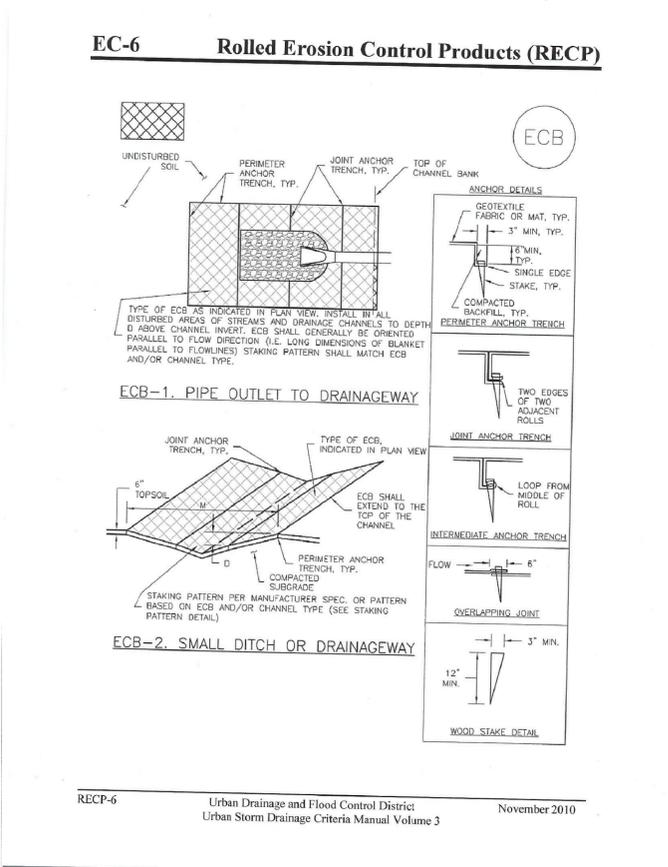
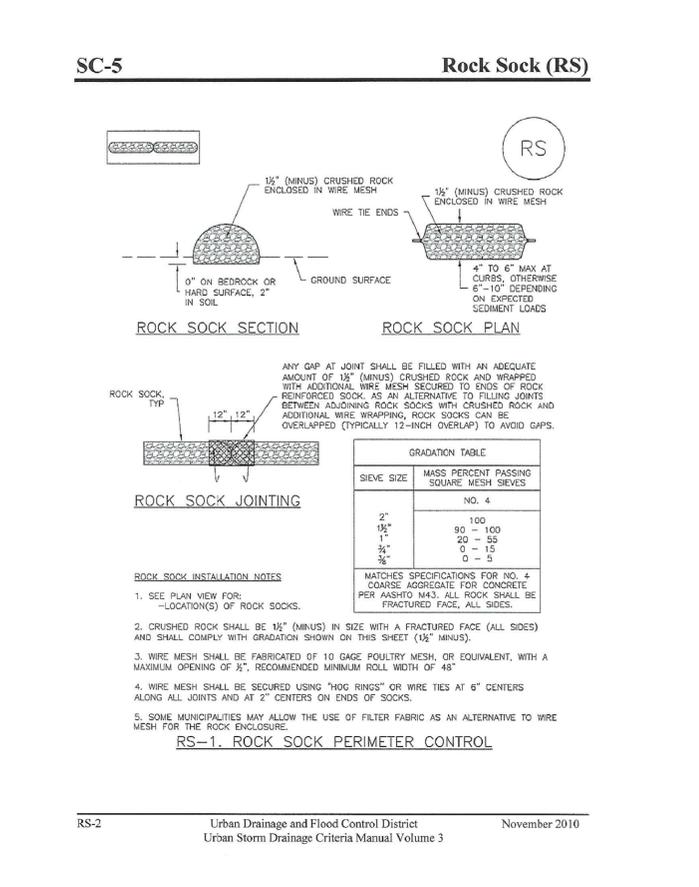
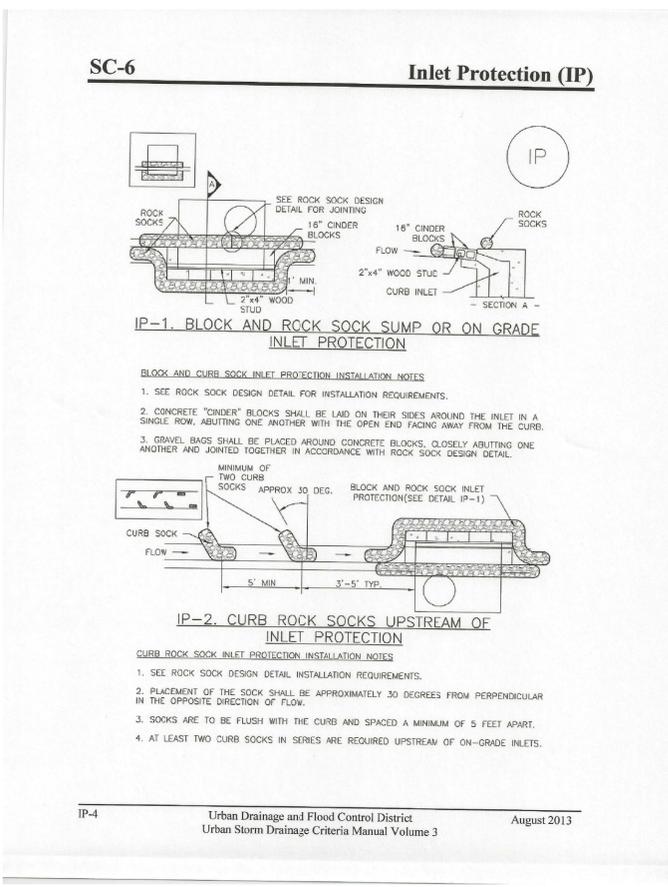
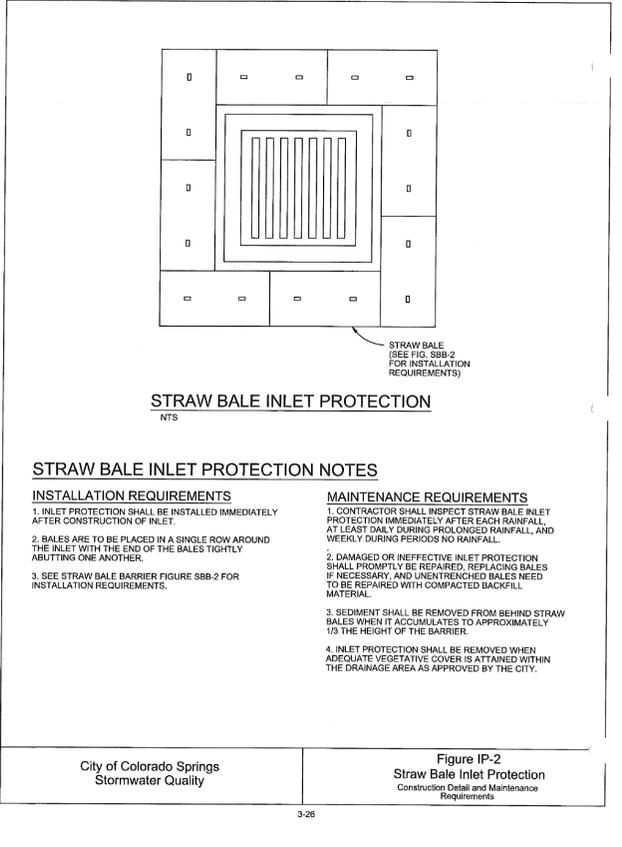
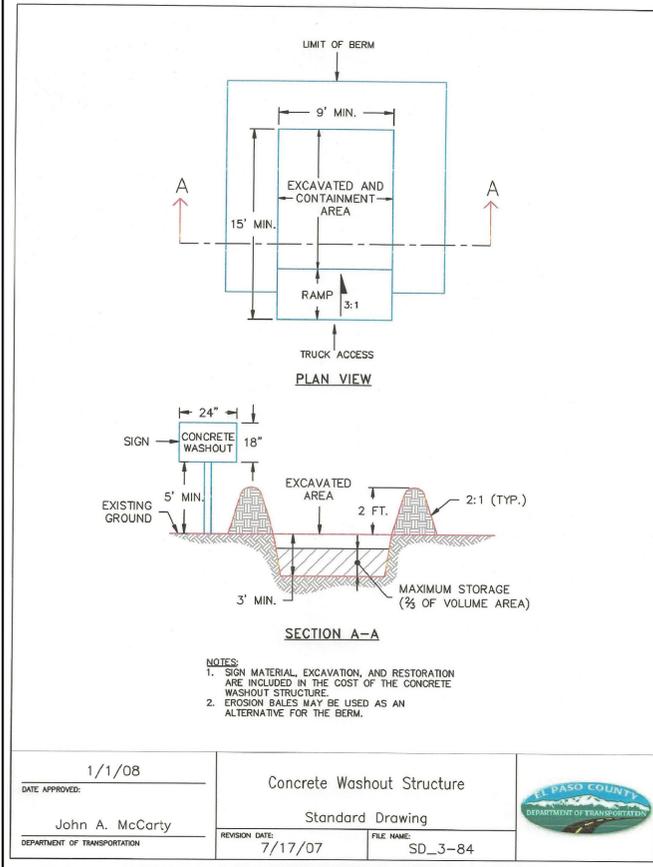
DATE: _____
DESCRIPTION: _____
NO: _____
PREPARED FOR: **LORSON, LLC**
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
PROJECT: **PONDEROSA AT LORSON RANCH FILING NO. 3**
LITTLE DOGIE DR - OLD GLORY DR
COLORADO SPRINGS, COLORADO
CONTACT: JEFF MARK

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

POND A3
FULL SPECTRUM
OUTLET STRUCTURE DETAILS



DATE: SEPT 2, 2020
PROJECT NO: 100.050
SHEET NUMBER: **C4.8**
TOTAL SHEETS: 14
EPC 10/18/2020



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GRADING AND EROSION CONTROL DETAILS

DATE: SEPT 2, 2020

PROJECT NO. 100.050

SHEET NUMBER C12.1

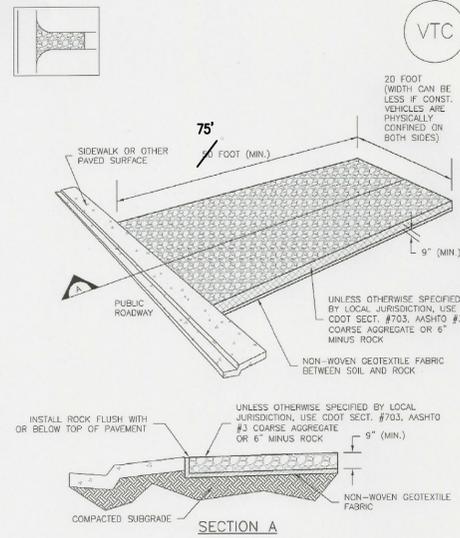
TOTAL SHEETS: 14

PROFESSIONAL ENGINEER
 RICHARD L. SCHINDLER
 33997
 9-2-2020

DATE: 10/18/2020

Vehicle Tracking Control (VTC)

SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

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

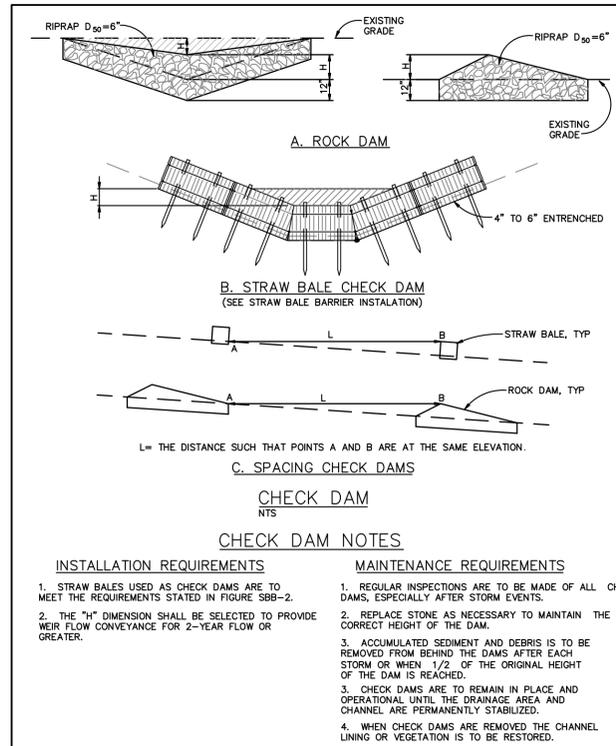


Figure CD-1 Check Dam Construction Detail and Maintenance Requirements

City of Colorado Springs Stormwater Quality

SC-8 Sediment Trap (ST)

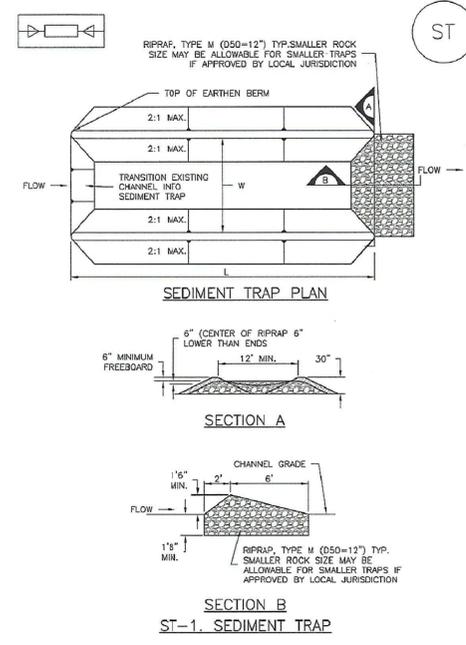


Figure ST-1. SEDIMENT TRAP

ST-2 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

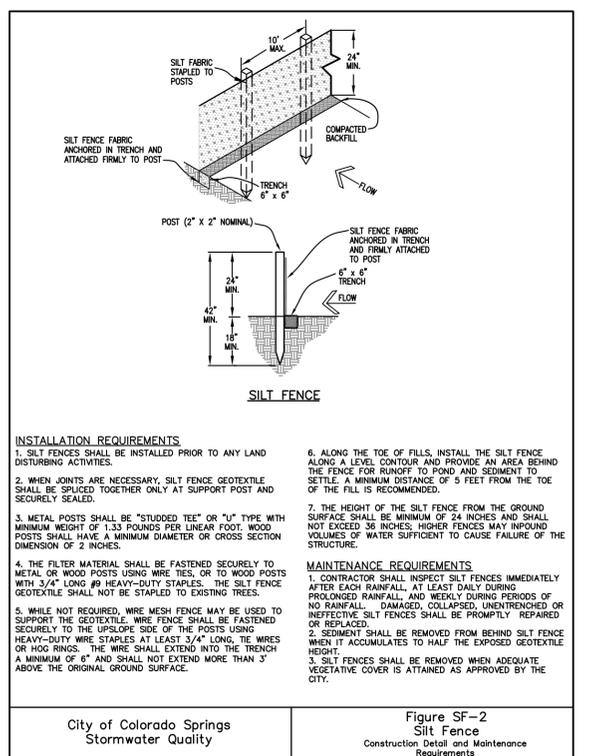


Figure SF-2 Silt Fence Joint Tying

City of Colorado Springs Stormwater Quality

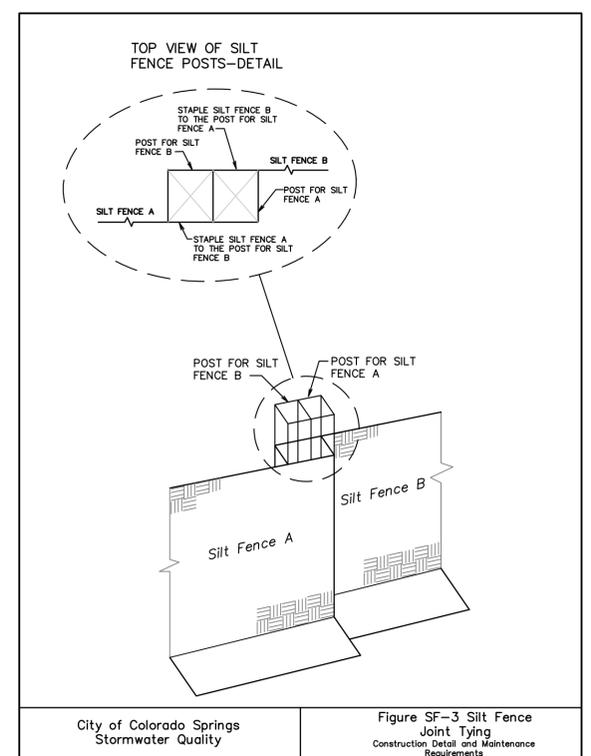
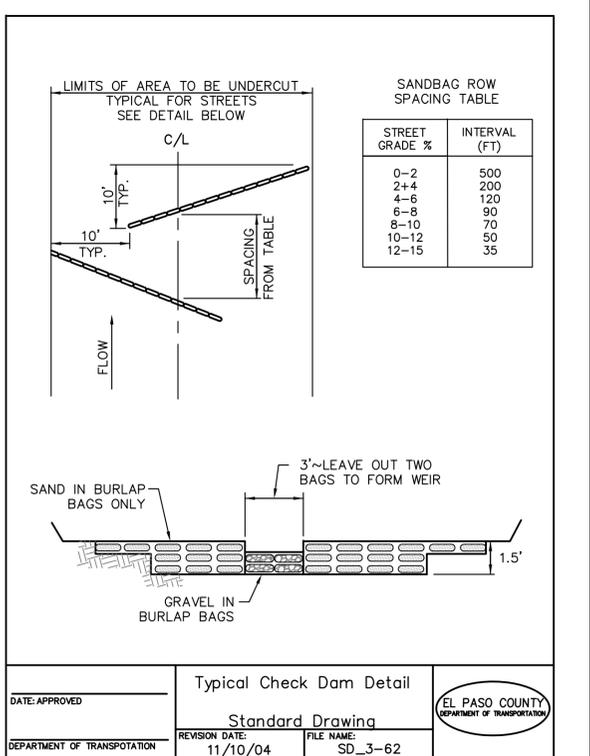


Figure SF-3 Silt Fence Joint Tying

City of Colorado Springs Stormwater Quality



Typical Check Dam Detail

EL PASO COUNTY DEPARTMENT OF TRANSPORTATION
Standard Drawing
REVISION DATE: 11/10/04 FILE NAME: SD_3-62

Sediment Control Log (SCL) SC-2

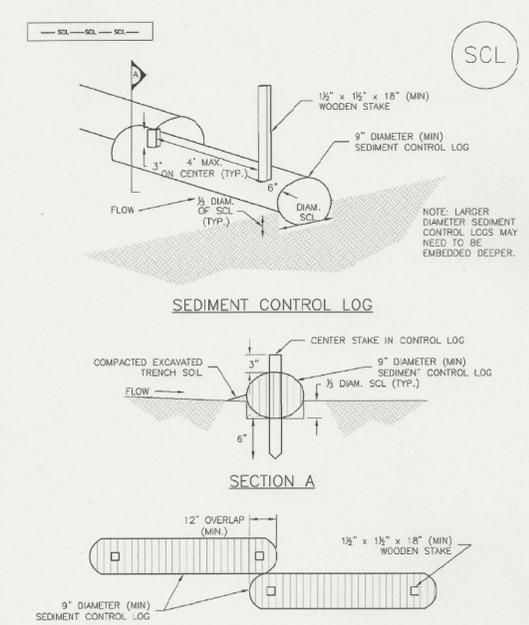


Figure SCL-1. SEDIMENT CONTROL LOG

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

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COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

GRADING AND EROSION CONTROL DETAILS



DATE: SEPT 2, 2020
PROJECT NO. 100.050
SHEET NUMBER C12.2
TOTAL SHEETS: 14

EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

Common Name	Botanical Name	Growth Season ¹	Growth Form	Seeds/Pound	Pounds of PLS/acre
Alkali Soil Seed Mix					
Alkali sacaton	<i>Sporobolus airoides</i>	Cool	Bunch	1,750,000	0.25
Basin wildrye	<i>Elymus cinereus</i>	Cool	Bunch	165,000	2.5
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Jose tall wheatgrass	<i>Agropyron elongatum 'Jose'</i>	Cool	Bunch	79,000	7.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.75
Fertile Loamy Soil Seed Mix					
Ephraim crested wheatgrass	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	2.0
Dural hard fescue	<i>Festuca ovina 'durissima'</i>	Cool	Bunch	565,000	1.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	7.0
Total					15.5
High Water Table Soil Seed Mix					
Meadow foxtail	<i>Alopecurus pratensis</i>	Cool	Sod	900,000	0.5
Redtop	<i>Agrostis alba</i>	Warm	Open sod	5,000,000	0.25
Reed canarygrass	<i>Phalaris arundinacea</i>	Cool	Sod	68,000	0.5
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Pathfinder switchgrass	<i>Panicum virgatum 'Pathfinder'</i>	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	<i>Agropyron elongatum 'Alkar'</i>	Cool	Bunch	79,000	5.5
Total					10.75
Transition Turf Seed Mix⁴					
Ruebens Canadian bluegrass	<i>Poa compressa 'Ruebens'</i>	Cool	Sod	2,500,000	0.5
Dural hard fescue	<i>Festuca ovina 'durissima'</i>	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	<i>Lolium perenne 'Citation'</i>	Cool	Sod	247,000	3.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Total					7.5

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Temporary and Permanent Seeding (TS/PS) EC-2

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.)

Common Name	Botanical Name	Growth Season ¹	Growth Form	Seeds/Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod-forming bunchgrass	825,000	0.5
Camper little bluestem	<i>Schizachyrium scoparium 'Camper'</i>	Warm	Bunch	240,000	1.0
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm	Open sod	274,000	1.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	Cool	Bunch	5,298,000	0.25
Vaughn sidecoats grama	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					10.25
Heavy Clay, Rocky Foothill Seed Mix					
Ephraim crested wheatgrass ⁴	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	1.5
Oahu Intermediate wheatgrass	<i>Agropyron intermedium 'Oahu'</i>	Cool	Sod	115,000	5.5
Vaughn sidecoats grama ⁴	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.5

¹ All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.
² See Table TS/PS-3 for seeding dates.
³ If site is to be irrigated, the transition turf seed rates should be doubled.
⁴ Crested wheatgrass should not be used on slopes steeper than 6H to 1V.
⁵ Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sidecoats grama.

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Temporary and Permanent Seeding (TS/PS) EC-2

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species ¹ (Common name)	Growth Season ²	Pounds of Pure Live Seed (PLS)/acre ³	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5 - 10	½ - ¾
7. Sorghum	Warm	5 - 10	½ - ¾
8. Winter wheat	Cool	20 - 35	1 - 2
9. Winter barley	Cool	20 - 35	1 - 2
10. Winter rye	Cool	20 - 35	1 - 2
11. Triticale	Cool	25 - 40	1 - 2

¹ Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.
 Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.
² See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.
³ Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

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EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

Seeding Dates	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
	Warm	Cool	Warm	Cool
January 1-March 15			✓	✓
March 16-April 30	4	1,2,3	✓	✓
May 1-May 15	4		✓	
May 16-June 30	4,5,6,7			
July 1-July 15	5,6,7			
July 16-August 31				
September 1-September 30		8,9,10,11		
October 1-December 31			✓	✓

Mulch
 Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

Maintenance and Removal
 Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.
 An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.
 Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.
 Protect seeded areas from construction equipment and vehicle access.

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 COLORADO SPRINGS, COLORADO

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

GRADING AND EROSION CONTROL DETAILS



DATE:
SEPT 2, 2020
 PROJECT NO.
100.050
 SHEET NUMBER
C12.3
 TOTAL SHEETS: 14