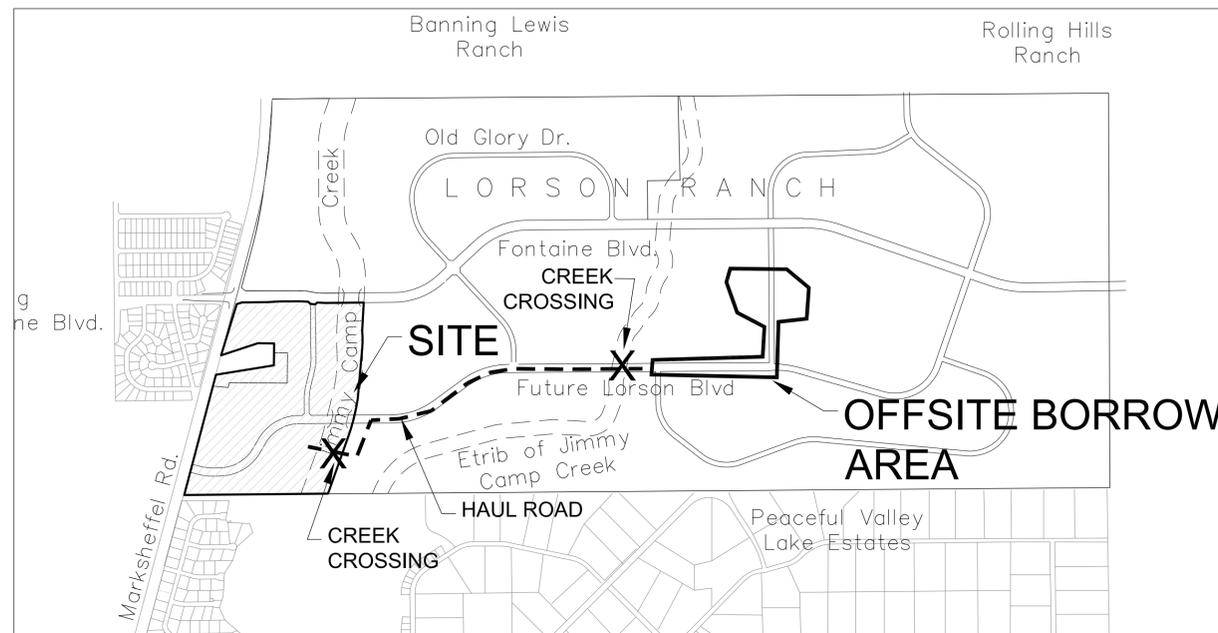


FINAL SITE GRADING CONSTRUCTION PLANS  
FOR  
**CARRIAGE MEADOWS SOUTH at LORSON RANCH**  
FINAL GRADING / EROSION CONTROL PLANS



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



SHEET INDEX	
SHEET NO.	SHEET DESCRIPTION
C0.1	COVER SHEET
C0.2	NOTES (GENERAL, GRADING, EROSION CONTROL)
C0.3	TYPICAL SECTIONS
C4.1 ~ C4.3	GRADING AND EROSION CONTROL, PLAN AND DETAILS
C4.4 ~ C4.8	POND GRADING
C4.9 ~ C4.11	STORM SEWER
C4.12	DETAILS
C4.13-C4.14	OFFSITE BORROW AREA

**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 \_\_\_\_\_  
TITLE MANAGER  
ADDRESS 212 N. WAHSATCH AVE. SUITE 301  
COLORADO SPRINGS, CO 80903

**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.

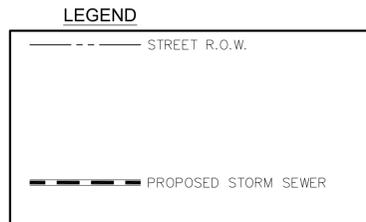
FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES I AND II, AND ENGINEERING CRITERIA MANUAL AS AMENDED. CONSTRUCTION DOCUMENTS WILL BE VALID FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER.

\_\_\_\_\_  
JENNIFER IRVINE, COUNTY ENGINEER/ECM ADMINISTRATOR DATE \_\_\_\_\_  
CONDITIONS:

**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 ON MY PART IN PREPARING THIS PLAN

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



**WATER / SANITARY**  
WIDEFIELD WATER AND SANITATION DISTRICT  
37 WIDEFIELD BLVD.  
SECURITY, CO 80911  
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°15'2" 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.



VICINITY MAP  
NO SCALE

**CORE ENGINEERING GROUP**  
15004 1ST AVENUE S.  
BURNSVILLE, MN 55306  
PH: 719-570-1100  
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  
CONTACT: JEFF MARK

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

**COVER SHEET  
FINAL SITE GRADING  
AND EROSION CONTROL PLANS**

DATE  
**JUNE 20, 2017**  
PROJECT NO.  
**100.030**  
SHEET NUMBER  
**C0.1**  
TOTAL SHEETS: **17**

**SF 17-011**

**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.

**EL PASO COUNTY STANDARD CONSTRUCTION NOTES:**

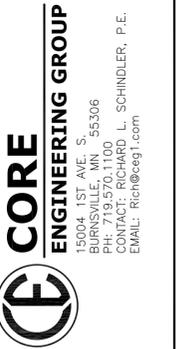
- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION 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.

In general, please change all references to DSD to PCD.

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

- CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PCD AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PCD INSPECTIONS.
- 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. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY DSD INSPECTIONS STAFF.
- SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
- TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
- ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
- ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
- ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.
- ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
- EROSION CONTROL BLANKETING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMP'S MAY BE REQUIRED BY EL PASO COUNTY PCD IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- 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 CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
- INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO ACTUAL CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
WATER QUALITY CONTROL DIVISION  
WQCD - PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT



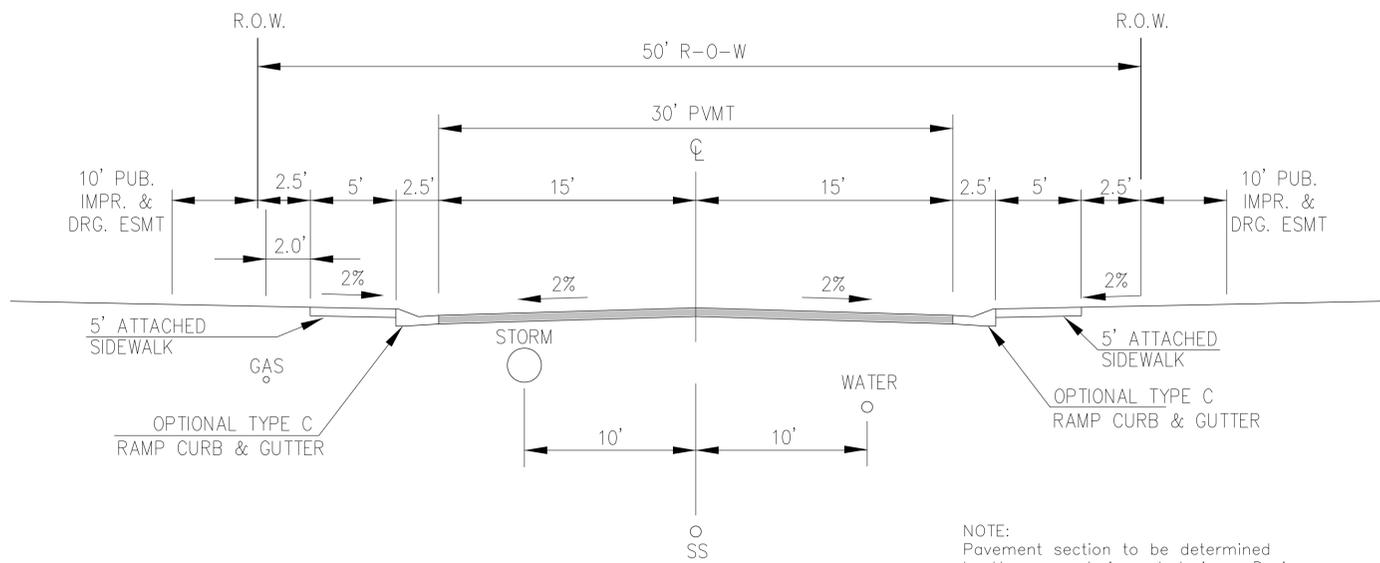
1500 WEST AVE. SUITE 505  
BOURNE, CO 80015  
PH: 719.570.1100  
CONTACT: RICHARD L. SCHINDLER, P.E.  
EMAIL: Rich@cegl.com

DATE: \_\_\_\_\_  
DESCRIPTION: \_\_\_\_\_  
NO: \_\_\_\_\_  
PROJECT: CARRIAGE MEADOWS SOUTH  
FONTAINE BLVD. - CARRIAGE MEADOWS DR  
EL PASO COUNTY, COLORADO  
PREPARED FOR: LORSON, LLC  
212 N. WAHSATCH AVE., SUITE 301  
COLORADO SPRINGS, COLORADO 80903  
(719) 638-3200  
CONTACT: JEFF MARK

DRAWN: RLS  
DESIGNED: RLS  
CHECKED: RLS

**FINAL  
SITE GRADING PLAN  
NOTES**

DATE  
**JUNE 20, 2017**  
PROJECT NO.  
**100.030**  
SHEET NUMBER  
**C0.2**  
TOTAL SHEETS: 17

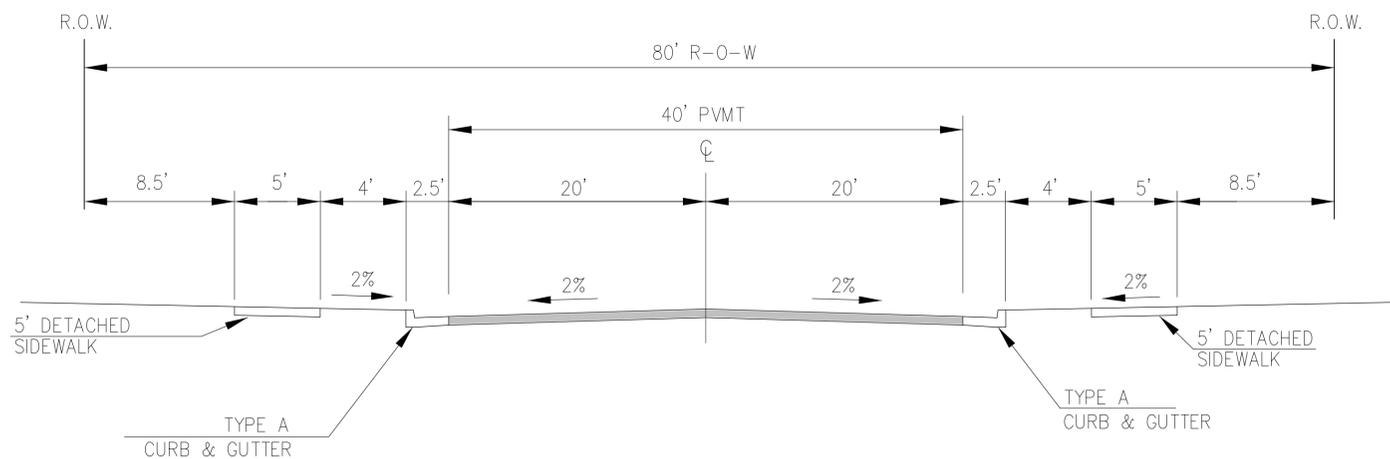


**TYPICAL SECTION 50' R.O.W.  
RESIDENTIAL URBAN LOCAL**

NOT TO SCALE

- WANDO DRIVE
- RUBICON DRIVE
- MANDAN DRIVE
- CLATSOP DRIVE
- GALPIN DRIVE
- SIMCOE DRIVE
- CARRIAGE MEADOWS DRIVE (INTERIM)

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

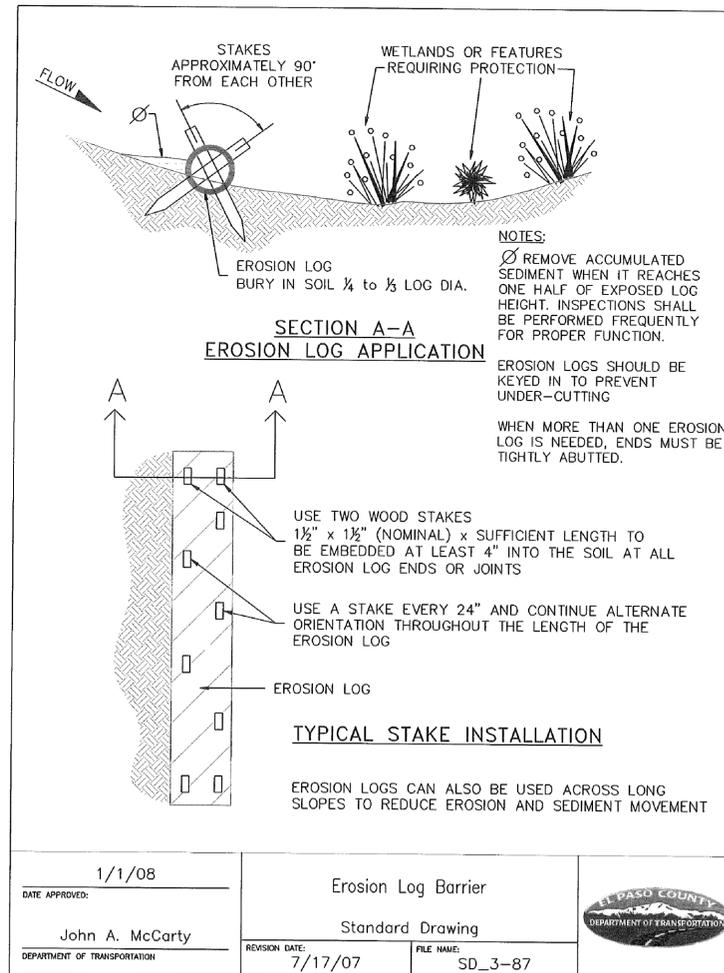


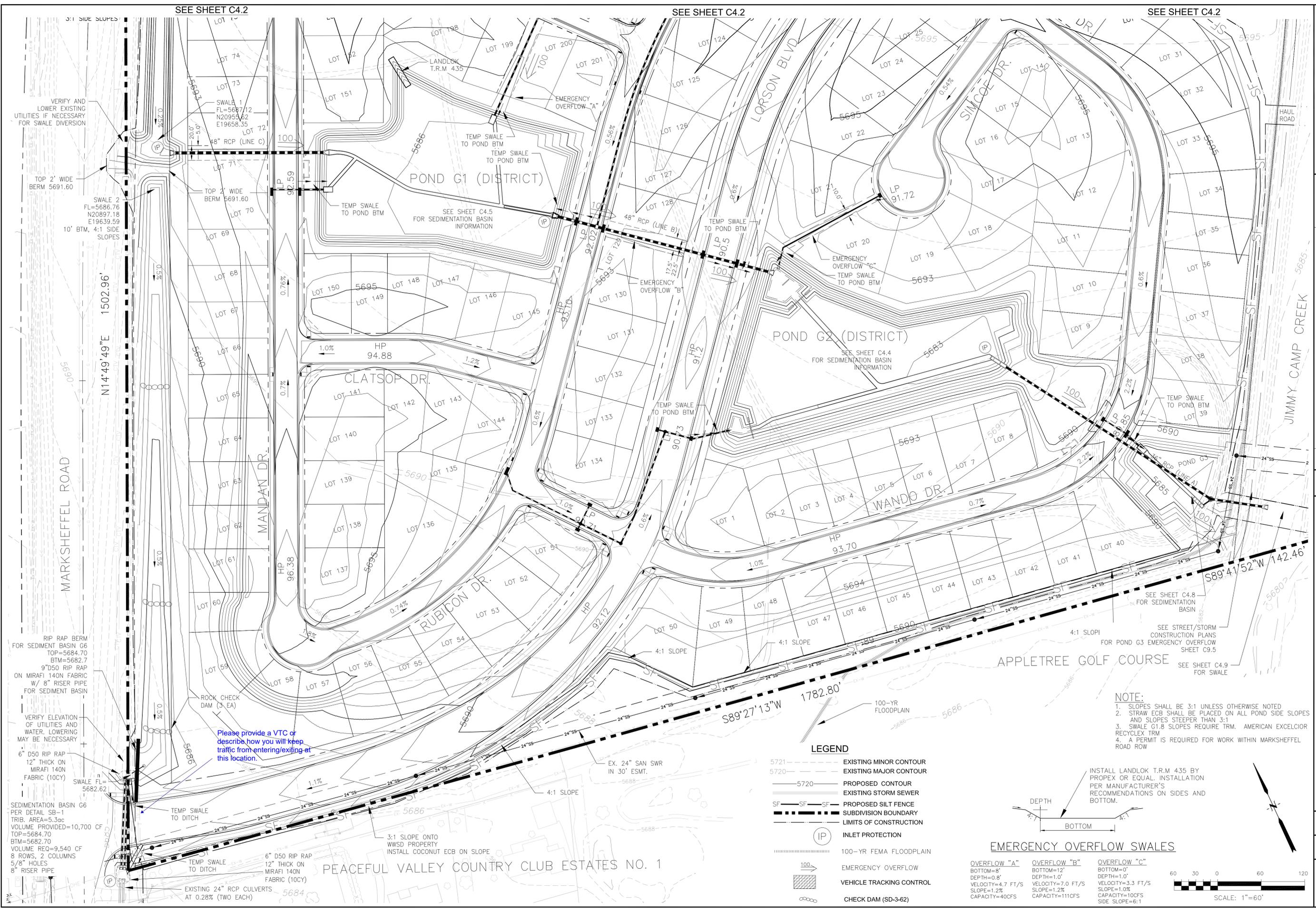
**TYPICAL SECTION 80' R.O.W.  
RESIDENTIAL URBAN COLLECTOR**

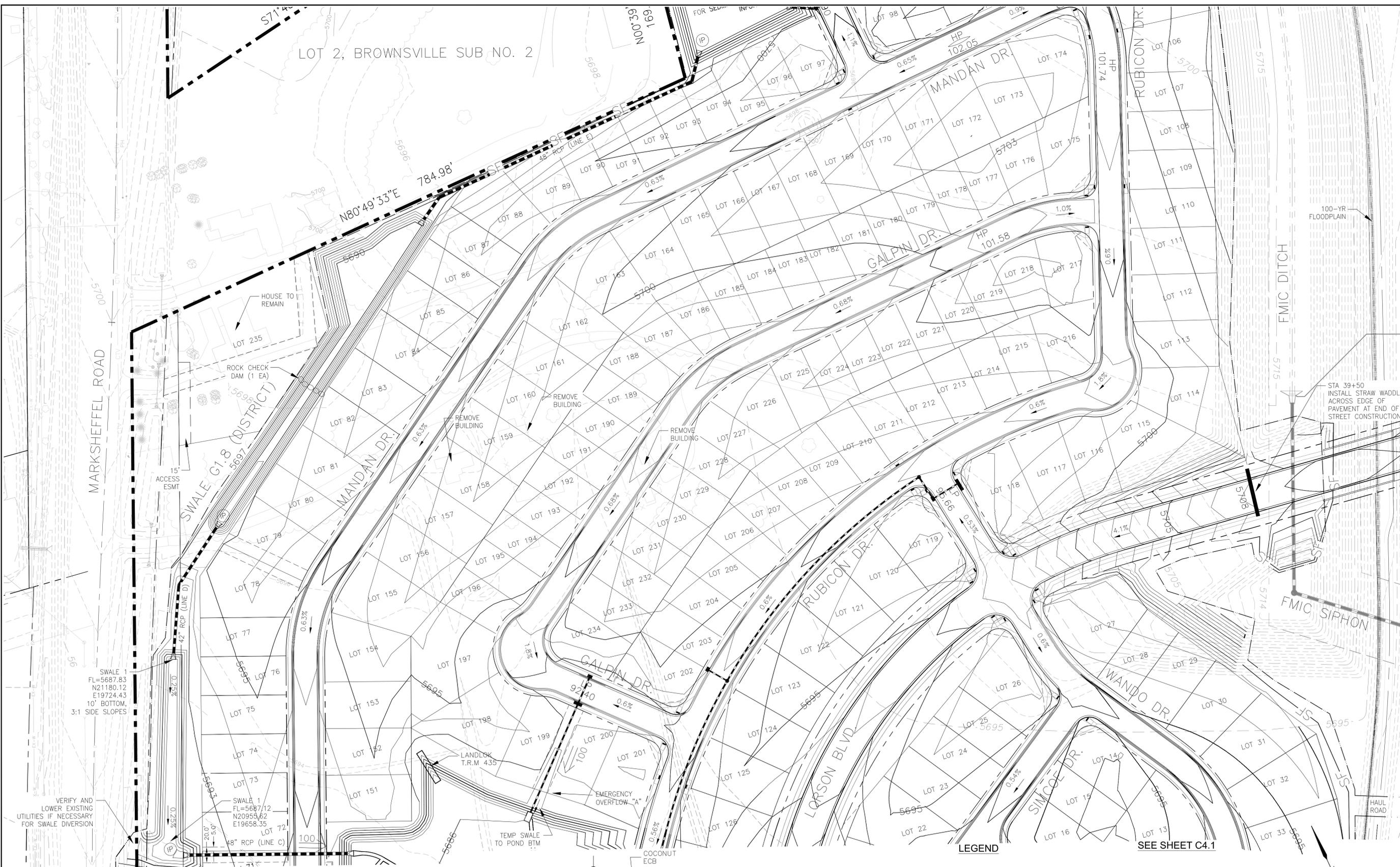
NOT TO SCALE

LORSON BOULEVARD

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

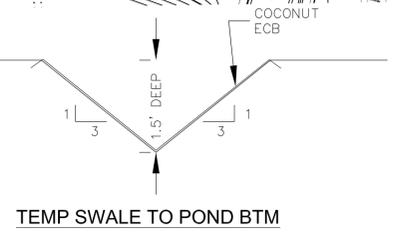




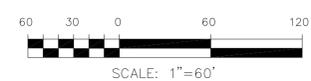


**NOTE:**  
 1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED  
 2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND SLOPES GREATER THAN 3:1  
 3. **POUND** 1.8 SLOPES REQUIRE TRM. AMERICAN EXCELSIOR RECYCLEX TRM  
 4. A PERMIT IS REQUIRED FOR WORK WITHIN MARKSHEFFEL ROAD ROW

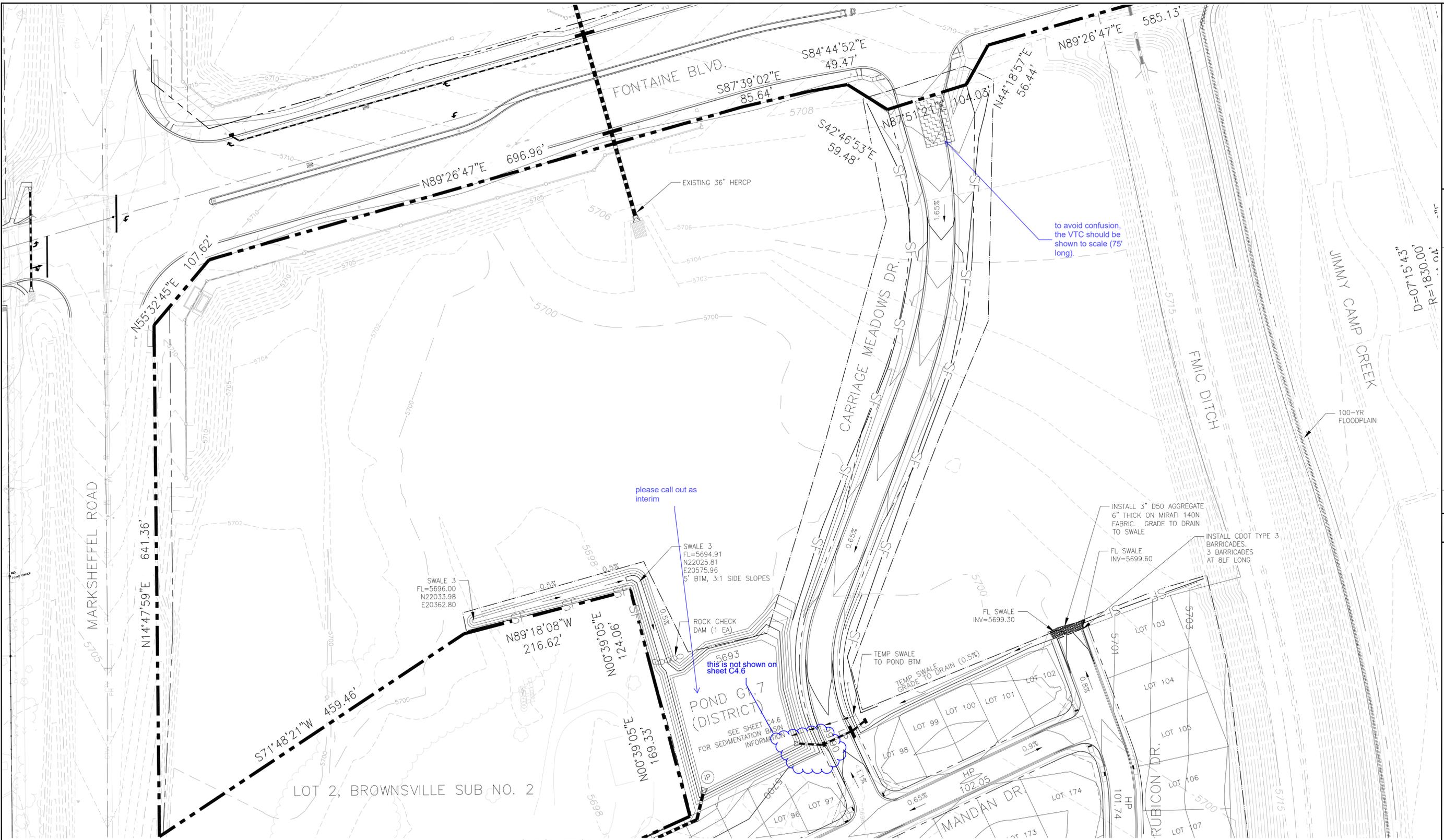
is this intended to be swale G1.8? Please correct each sheet.



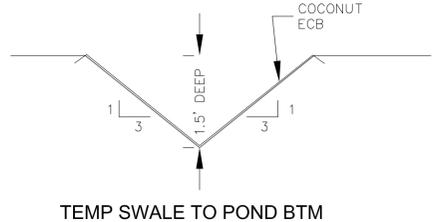
- LEGEND**
- 5721 - - - - - EXISTING MINOR CONTOUR
  - 5720 - - - - - EXISTING MAJOR CONTOUR
  - 5720 ——— PROPOSED CONTOUR
  - SF — SF — SF — EXISTING STORM SEWER
  - SF — SF — SF — PROPOSED SILT FENCE
  - - - - - SUBDIVISION BOUNDARY
  - - - - - LIMITS OF CONSTRUCTION
  - ===== 100-YR FEMA FLOODPLAIN
  - [Hatched Box] VEHICLE TRACKING CONTROL
  - [Circle with X] CHECK DAM (SD-3-62)



**CARRIAGE MEADOWS SOUTH  
 EARLY OVERLOT GRADING AND  
 EROSION CONTROL PLAN**

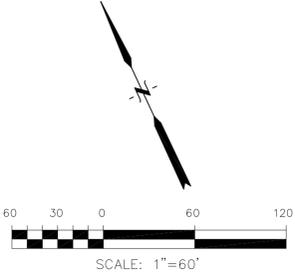


**NOTE:**  
 1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED  
 2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND SLOPES GREATER THAN 3:1  
 3. POND G1,8 SLOPES REQUIRE TRM. AMERICAN EXCELCIOR RECYCLEX TRM  
 4. A PERMIT IS REQUIRED FOR WORK WITHIN MARKSHEFFEL ROAD ROW



**LEGEND**

5721 - - - - -	EXISTING MINOR CONTOUR	-----	100-YR FEMA FLOODPLAIN
5720 - - - - -	EXISTING MAJOR CONTOUR	-----	VEHICLE TRACKING CONTROL
5720 - - - - -	PROPOSED CONTOUR	-----	CHECK DAM (SD-3-82)
SF - SF - SF	EXISTING STORM SEWER	-----	
SF - SF - SF	PROPOSED SILT FENCE	-----	
-----	SUBDIVISION BOUNDARY	-----	
-----	LIMITS OF CONSTRUCTION	-----	



**CORE ENGINEERING GROUP**  
 1500K I-70 AVE. S. 65306  
 PH: 719.570.1100  
 CONTACT: RICHARD L. SCHINDLER, P.E.  
 EMAIL: Rich@ceg1.com

NO.	DESCRIPTION	DATE

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

DRAWN: RLS  
 DESIGNED: RLS  
 CHECKED: RLS

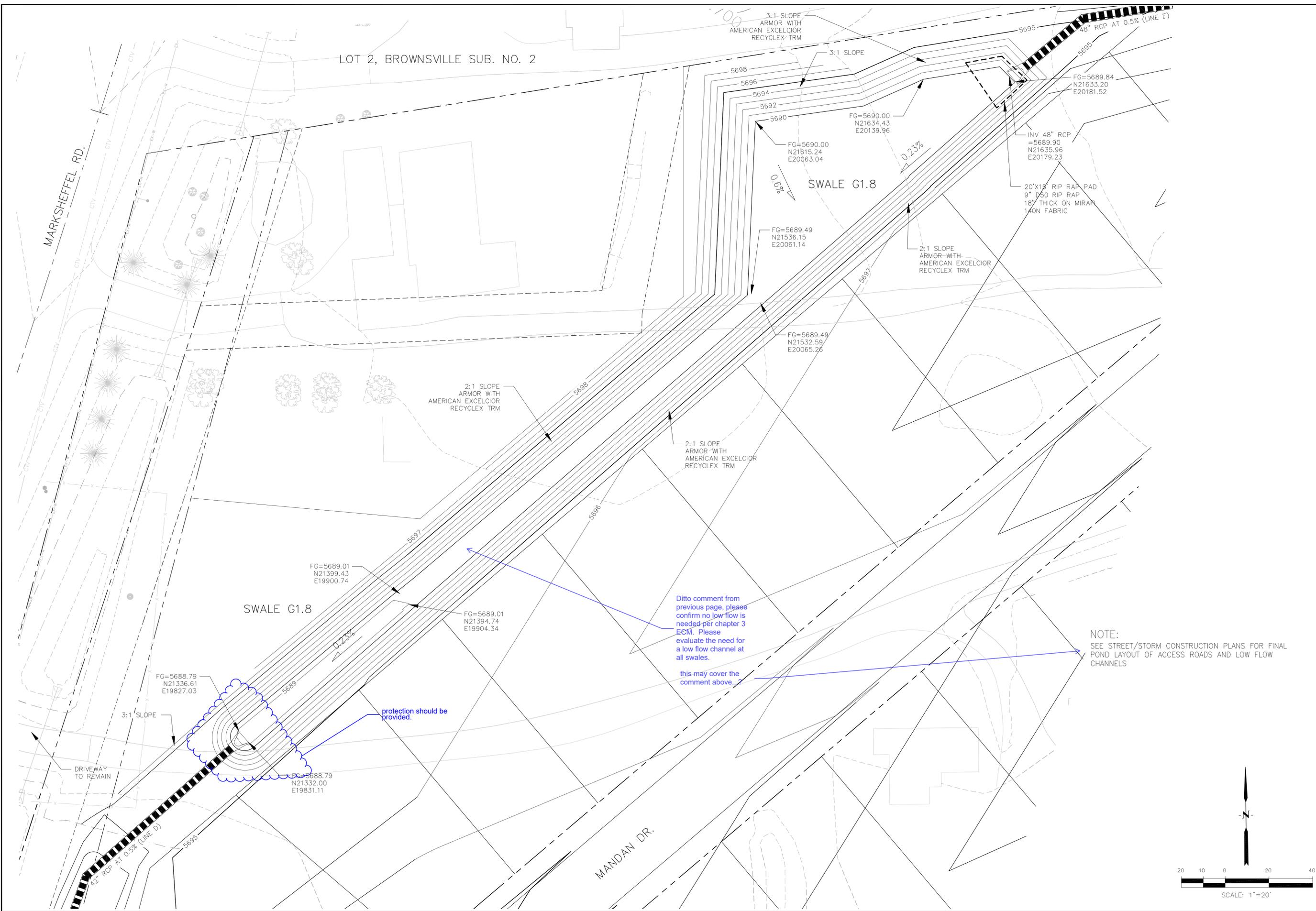
**CARRIAGE MEADOWS SOUTH  
 EARLY OVERLOT GRADING AND  
 EROSION CONTROL PLAN**

DATE	JUNE 20, 2017
PROJECT NO.	100.030
SHEET NUMBER	C4.3
TOTAL SHEETS:	17









LOT 2, BROWNSVILLE SUB. NO. 2

MARKSHEFFEL RD.

MANDAN DR.

SWALE G1.8

SWALE G1.8

3:1 SLOPE

3:1 SLOPE  
ARMOR WITH  
AMERICAN EXCELCIOR  
RECYCLEX TRM

3:1 SLOPE

2:1 SLOPE  
ARMOR WITH  
AMERICAN EXCELCIOR  
RECYCLEX TRM

2:1 SLOPE  
ARMOR WITH  
AMERICAN EXCELCIOR  
RECYCLEX TRM

2:1 SLOPE  
ARMOR WITH  
AMERICAN EXCELCIOR  
RECYCLEX TRM

FG=5688.79  
N21336.61  
E19827.03

FG=5689.01  
N21399.43  
E19900.74

FG=5689.01  
N21394.74  
E19904.34

FG=5688.79  
N21332.00  
E19831.11

FG=5689.49  
N21536.15  
E20061.14

FG=5689.49  
N21532.59  
E20065.26

FG=5690.00  
N21634.43  
E20139.96

FG=5690.00  
N21615.24  
E20063.04

FG=5689.84  
N21633.20  
E20181.52

INV 48" RCP  
=5689.90  
N21635.96  
E20179.23

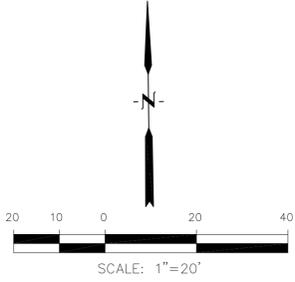
20'X18' RIP RAP PAD  
9" D50 RIP RAP  
18" THICK ON MIRAF  
140N FABRIC

Ditto comment from  
previous page, please  
confirm no low flow is  
needed per chapter 3  
ECM. Please  
evaluate the need for  
a low flow channel at  
all swales.

this may cover the  
comment above.

protection should be  
provided.

NOTE:  
SEE STREET/STORM CONSTRUCTION PLANS FOR FINAL  
POND LAYOUT OF ACCESS ROADS AND LOW FLOW  
CHANNELS



**CORE**  
ENGINEERING GROUP

15004 1ST AVE. S.  
SUITE 1100  
DENVER, CO 80202  
PHONE: 719.570.1100  
CONTACT: RICHARD L. SCHINDLER, P.E.  
EMAIL: Rich@ceg1.com

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

DESCRIPTION: \_\_\_\_\_

NO. \_\_\_\_\_

PROJECT: CARRIAGE MEADOWS SOUTH  
FONTAINE BLVD. - CARRIAGE MEADOWS DR  
EL PASO COUNTY, COLORADO

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

DRAWN: RLS  
DESIGNED: RLS  
CHECKED: RLS

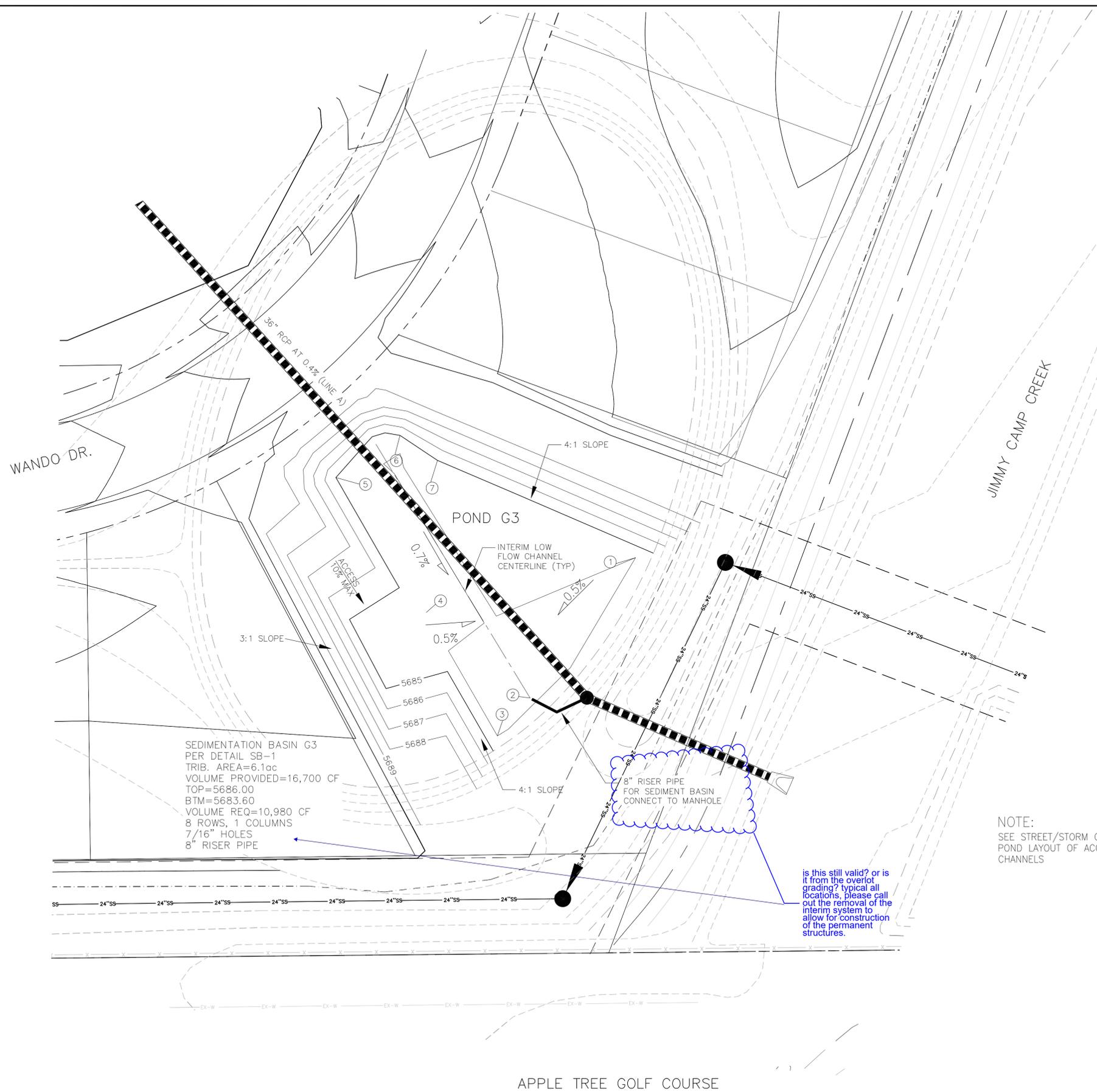
SWALE G1.8 (DISTRICT)  
CARRIAGE MEADOWS SOUTH

DATE: JUNE 20, 2017

PROJECT NO. 100.030

SHEET NUMBER C4.7

TOTAL SHEETS: 17

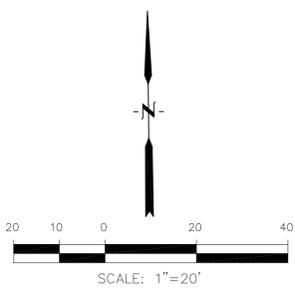


SEDIMENTATION BASIN G3  
 PER DETAIL SB-1  
 TRIB. AREA=6.1ac  
 VOLUME PROVIDED=16,700 CF  
 TOP=5686.00  
 BTM=5683.60  
 VOLUME REQ=10,980 CF  
 8 ROWS, 1 COLUMNS  
 7/16" HOLES  
 8" RISER PIPE

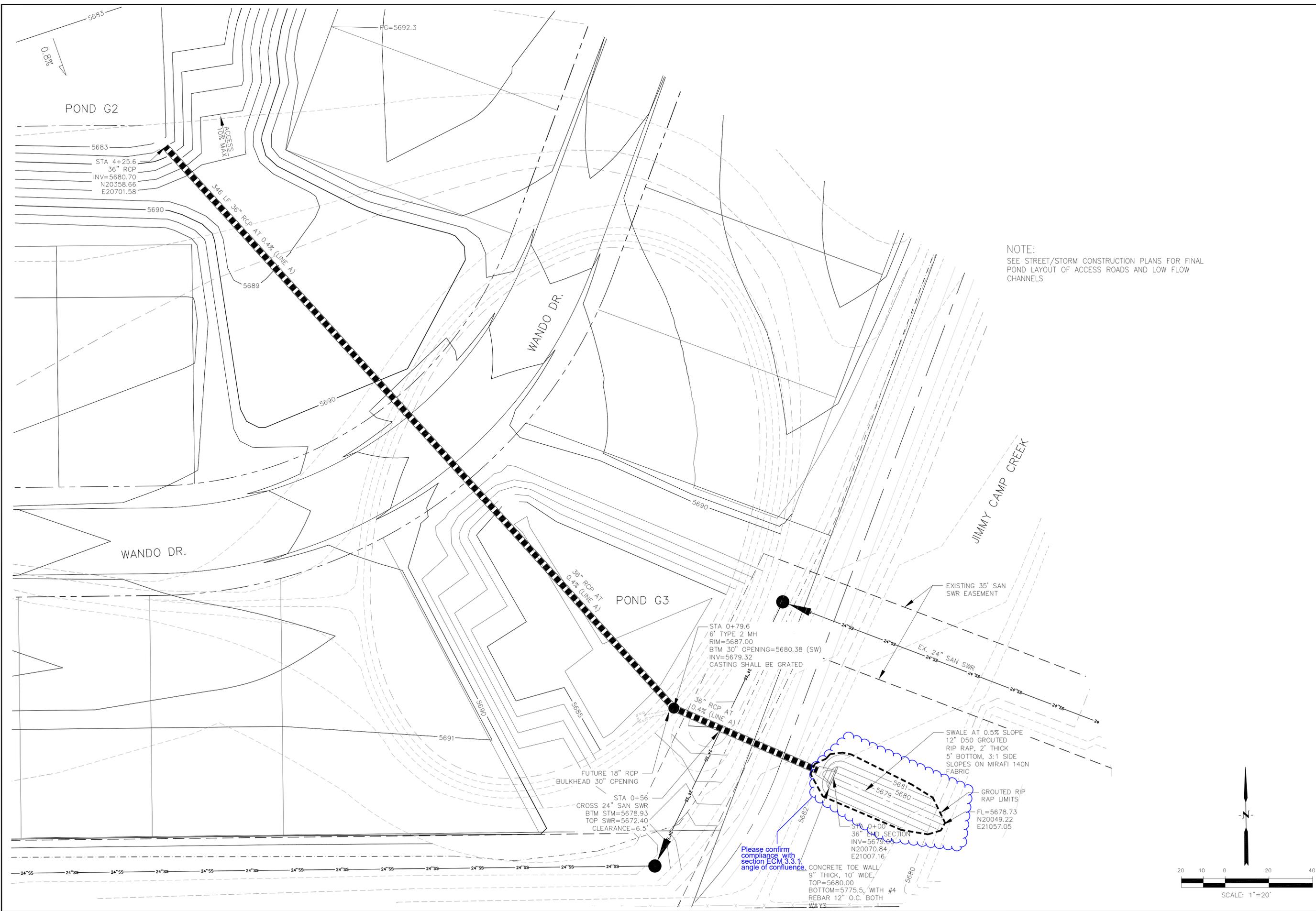
POINT TABLE				
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	20152.70	20951.65	5684	POND BOTTOM
2	20102.39	20913.69	5683.33	POND BOTTOM
3	20088.79	20901.93	5684	POND BOTTOM
4	20133.08	20876.39	5684.20	POND BOTTOM
5	20181.43	20843.88	5685	POND BOTTOM
6	20196.53	20866.94	5685	POND BOTTOM
7	20187.57	20880.42	5685	POND BOTTOM

NOTE:  
 SEE STREET/STORM CONSTRUCTION PLANS FOR FINAL  
 POND LAYOUT OF ACCESS ROADS AND LOW FLOW  
 CHANNELS

is this still valid? or is  
 it from the overlot  
 grading? typical all  
 locations, please call  
 out the removal of the  
 interim system to  
 allow for construction  
 of the permanent  
 structures.



**DETENTION POND G3 (DISTRICT)**  
**CARRIAGE MEADOWS SOUTH**



NOTE:  
SEE STREET/STORM CONSTRUCTION PLANS FOR FINAL  
POND LAYOUT OF ACCESS ROADS AND LOW FLOW  
CHANNELS

NO.	DESCRIPTION	DATE

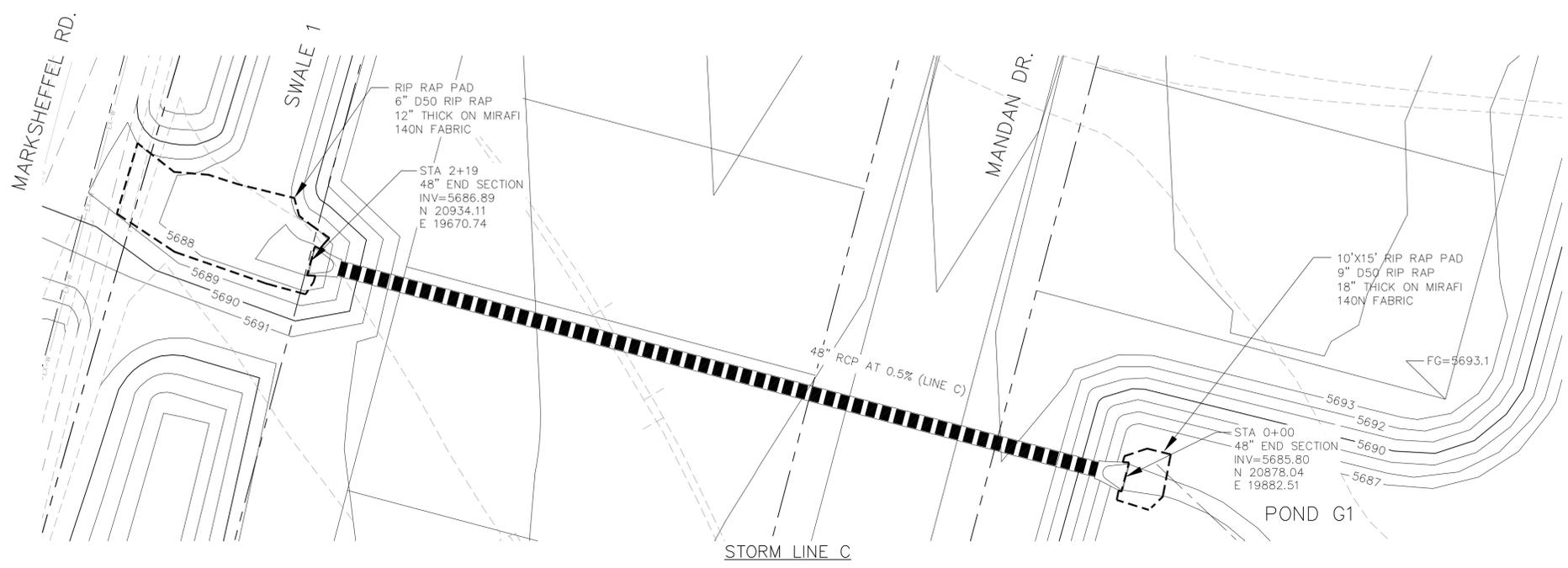
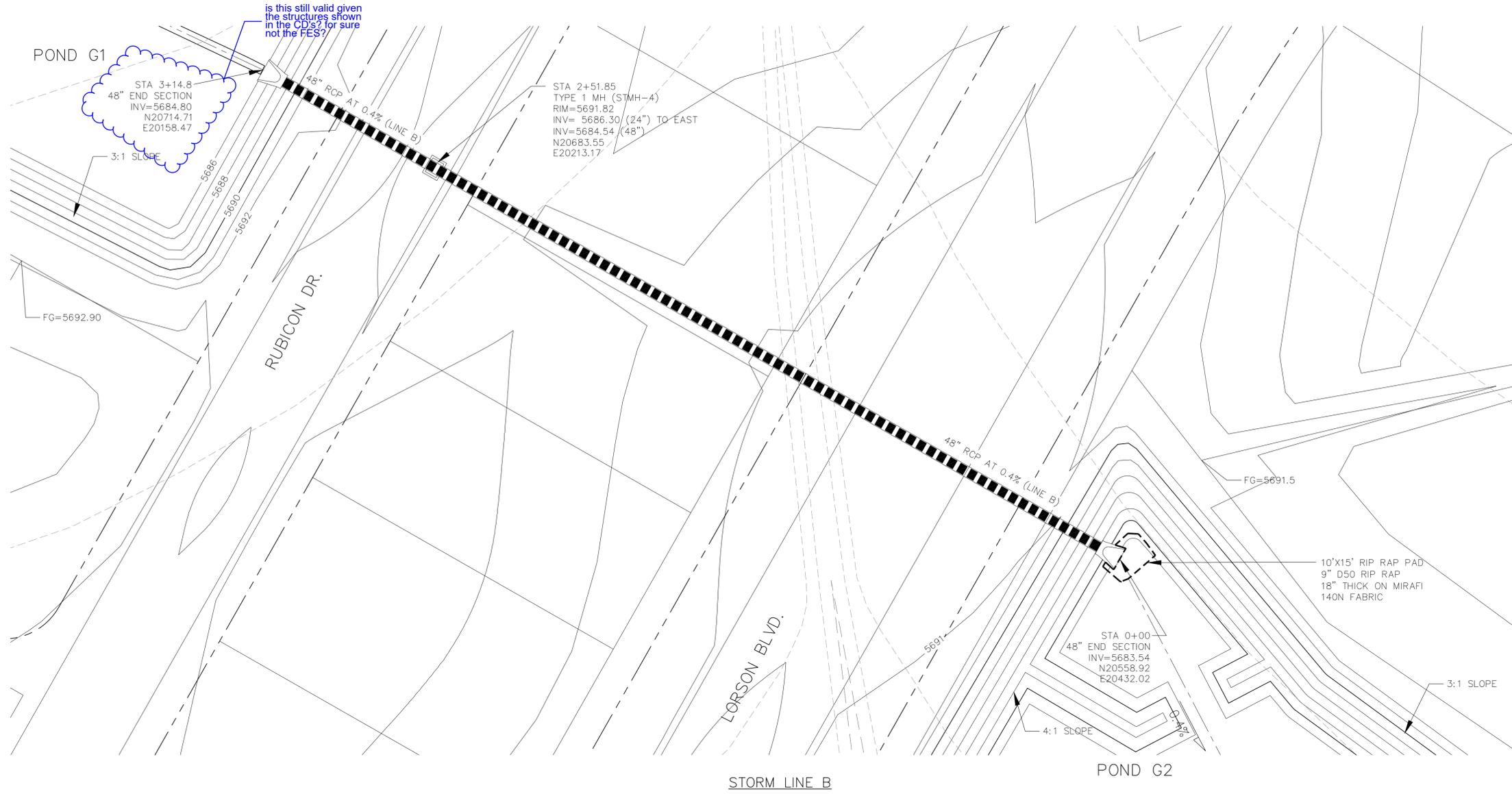
PREPARED FOR: **LORSON, LLC**  
 212 N. WAHSATCH AVE., SUITE 301  
 COLORADO SPRINGS, COLORADO 80903  
 CONTACT: JEFF MARK

PROJECT: **CARRIAGE MEADOWS SOUTH**  
 FONTAINE BLVD. - CARRIAGE MEADOWS DR  
 EL PASO COUNTY, COLORADO

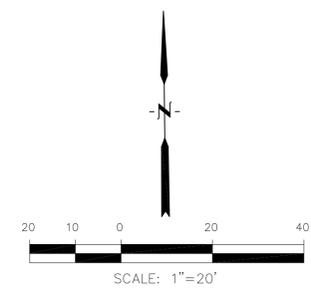
DRAWN: RLS  
 DESIGNED: RLS  
 CHECKED: RLS

**STORM SEWER LINE A (DISTRICT)  
 CARRIAGE MEADOWS SOUTH  
 FINAL GRADING PLAN**

Please confirm compliance with section ECM 3.3.1, angle of confluence.



NOTE:  
SEE STREET/STORM CONSTRUCTION PLANS FOR FINAL  
POND LAYOUT OF ACCESS ROADS AND LOW FLOW  
CHANNELS



NO.	DESCRIPTION	DATE

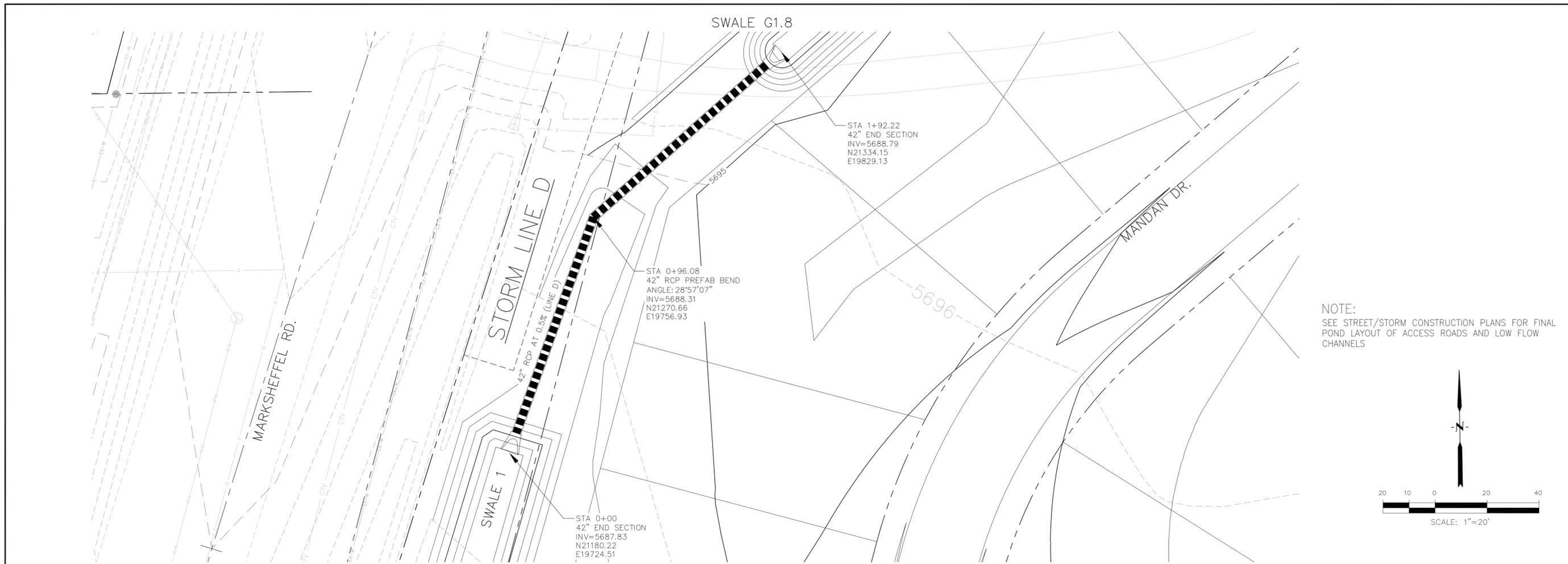
PREPARED FOR:  
**LORSON, LLC**  
212 N. WAHSATCH AVE., SUITE 301  
COLORADO SPRINGS, COLORADO 80903  
CONTACT: JEFF MARK

PROJECT:  
**CARRIAGE MEADOWS SOUTH**  
FONTAINE BLVD. - CARRIAGE MEADOWS DR  
EL PASO COUNTY, COLORADO

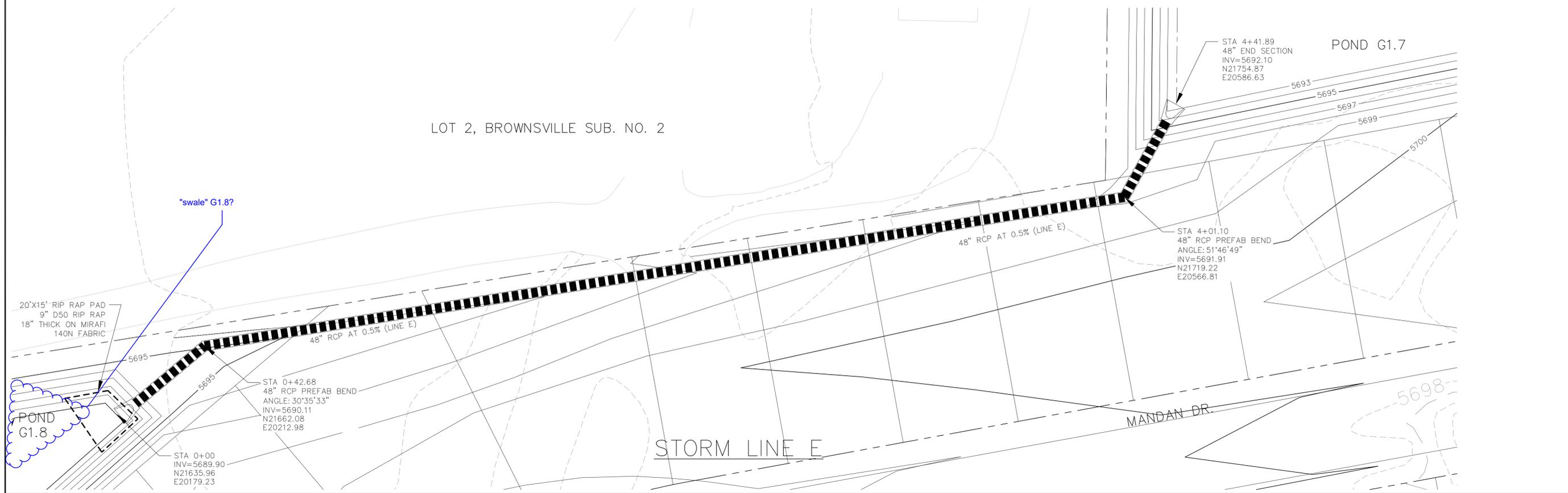
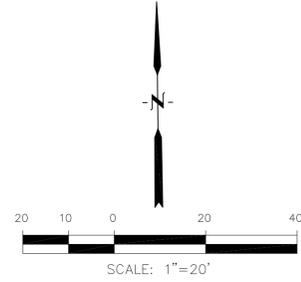
DRAWN:	RLS
DESIGNED:	RLS
CHECKED:	RLS

**STORM SEWER LINE B & C (DISTRICT)**  
**CARRIAGE MEADOWS SOUTH**  
**FINAL GRADING PLAN**

DATE	JUNE 20, 2017
PROJECT NO.	100.030
SHEET NUMBER	C4.10
TOTAL SHEETS:	17



NOTE:  
SEE STREET/STORM CONSTRUCTION PLANS FOR FINAL  
POND LAYOUT OF ACCESS ROADS AND LOW FLOW  
CHANNELS



NO.	DESCRIPTION	DATE

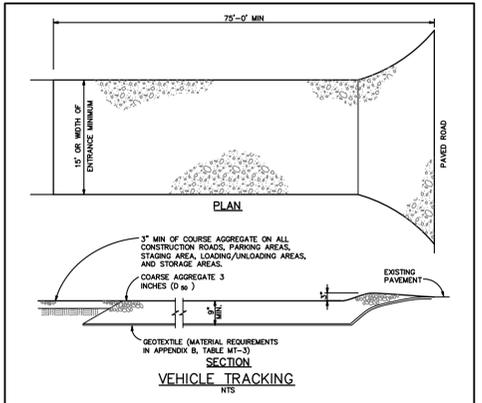
PREPARED FOR: **LORSON, LLC**  
 212 N. WAHSATCH AVE., SUITE 301  
 COLORADO SPRINGS, COLORADO 80903  
 CONTACT: JEFF MARK

PROJECT: **CARRIAGE MEADOWS SOUTH**  
 FONTAINE BLVD. - CARRIAGE MEADOWS DR  
 EL PASO COUNTY, COLORADO

DRAWN: RLS  
 DESIGNED: RLS  
 CHECKED: RLS

**STORM SEWER LINE D & E (DISTRICT)  
 CARRIAGE MEADOWS SOUTH  
 FINAL GRADING PLAN**

DATE	JUNE 20, 2017
PROJECT NO.	100.030
SHEET NUMBER	C4.11
TOTAL SHEETS:	17



**INSTALLATION REQUIREMENTS**

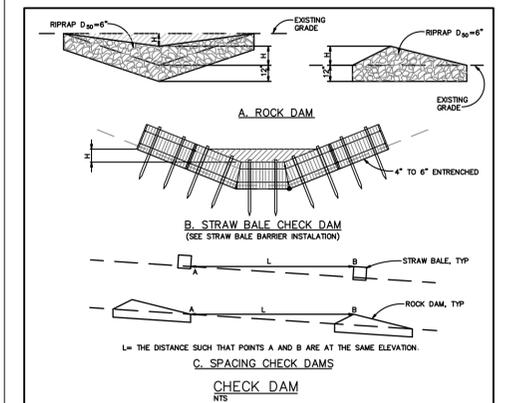
1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS AND STAGING AREAS ARE TO BE STABILIZED.
5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADSES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

**MAINTENANCE REQUIREMENTS**

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

City of Colorado Springs  
Stormwater Quality

Figure VI-2  
Vehicle Tracking  
Application Examples



**INSTALLATION REQUIREMENTS**

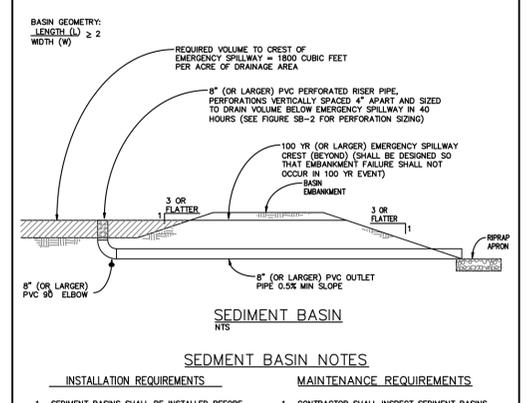
1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SB-2.
2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

**MAINTENANCE REQUIREMENTS**

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
4. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
5. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs  
Stormwater Quality

Figure CD-1  
Check Dam  
Construction Detail and Maintenance Requirements



**INSTALLATION REQUIREMENTS**

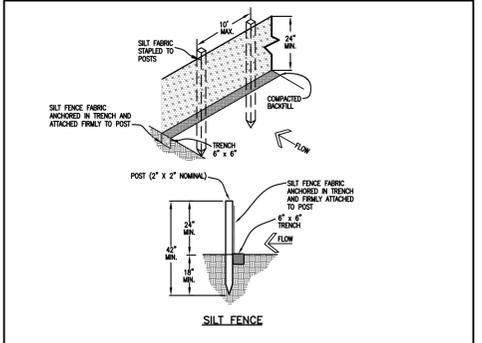
1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
4. THE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

**MAINTENANCE REQUIREMENTS**

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

City of Colorado Springs  
Stormwater Quality

Figure SB-1 Sediment Basin  
Construction Detail and Maintenance Requirements



**INSTALLATION REQUIREMENTS**

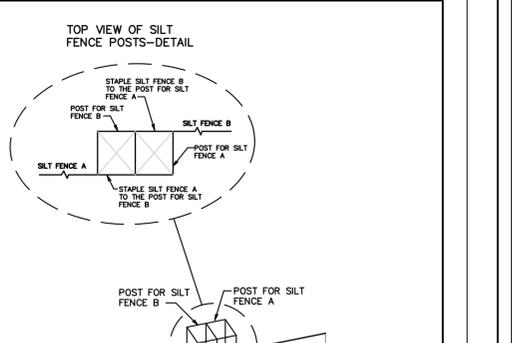
1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WIDTH OF 1.33 INCHES PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #8 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, THE WIRE OR HOOD RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES. HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUPPORTED TO CAUSE FAILURE OF THE STRUCTURE.

**MAINTENANCE REQUIREMENTS**

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

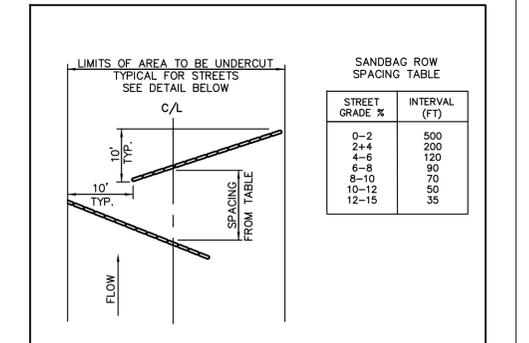
City of Colorado Springs  
Stormwater Quality

Figure SF-2  
Silt Fence  
Construction Detail and Maintenance Requirements



City of Colorado Springs  
Stormwater Quality

Figure SF-3 Silt Fence  
Joint Tying  
Construction Detail and Maintenance Requirements



**LIMITS OF AREA TO BE UNDERCUT**  
TYPICAL FOR STREETS  
SEE DETAIL BELOW

**SANDBAG ROW SPACING TABLE**

STREET GRADE %	INTERVAL (FT)
0-2	500
2-4	200
4-6	120
6-8	90
8-10	70
10-12	50
12-15	35

City of Colorado Springs  
Stormwater Quality

Figure CD-2  
Typical Check Dam Detail  
Standard Drawing  
EL PASO COUNTY  
City of Colorado Springs

**SEED MIX TABLE**

**GRASS MIX FOR QUICK REVEGETATION ALL SITES:**

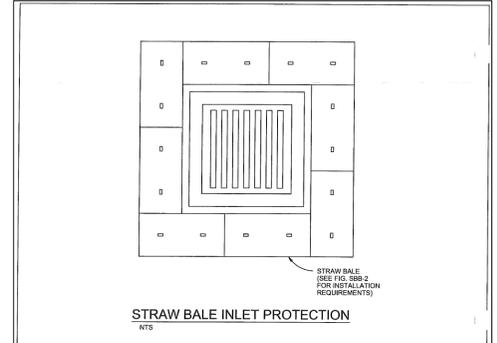
GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
CRESTED WHEAT GRASS	EPHRAIM OR HYCREST	4.0
PERENNIAL RYE	LINN	2.0
WESTERN WHEAT GRASS	BARTON	3.0
SMOOTH BROME GRASS	LINCOLN OR MANCHAR	5.0
SIDEOTS GRAMA	EL RENO	2.5
TOTAL		16.5 LBS

**GRASS MIX FOR SANDY SOILS:**

GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
SIDEOTS GRAMA	EL RENO	3.0
WESTERN WHEAT GRASS	BARTON	2.5
SLENDER WHEAT GRASS	NATIVE	2.0
LITTLE BLUESTEM	PASTURA	2.0
SAND DROPSEED	NATIVE	0.5
SWITCH GRASS	NEBRASKA 28	3.0
WEEPING LOVE GRASS	MORPHA	1.0
TOTAL		14.0 LBS

**GRASS MIX FOR HEAVIER SOIL AREAS:**

GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
WESTERN WHEAT GRASS	BARTON	5.0
SIDEOTS GRAMA	EL RENO	2.5
SLENDER WHEAT GRASS	SODAR	3.0
SMOOTH BROME	LINCOLN OR MANCHAR	4.0
CRESTEDWHEAT GRASS	EPHRAIM	3.0
TOTAL		17.5 LBS



**INSTALLATION REQUIREMENTS**

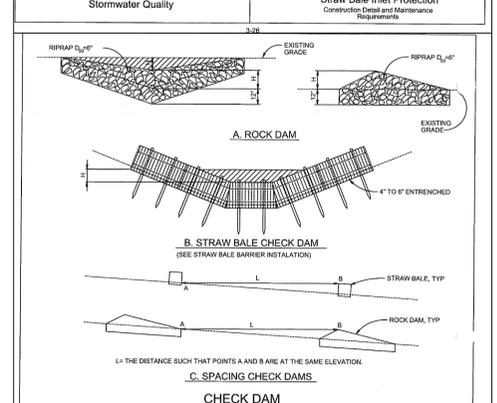
1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
2. BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
3. SEE STRAW BALE BARRIER FIGURE SB-2 FOR INSTALLATION REQUIREMENTS.

**MAINTENANCE REQUIREMENTS**

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

City of Colorado Springs  
Stormwater Quality

Figure IP-2  
Straw Bale Inlet Protection  
Construction Detail and Maintenance Requirements



**INSTALLATION REQUIREMENTS**

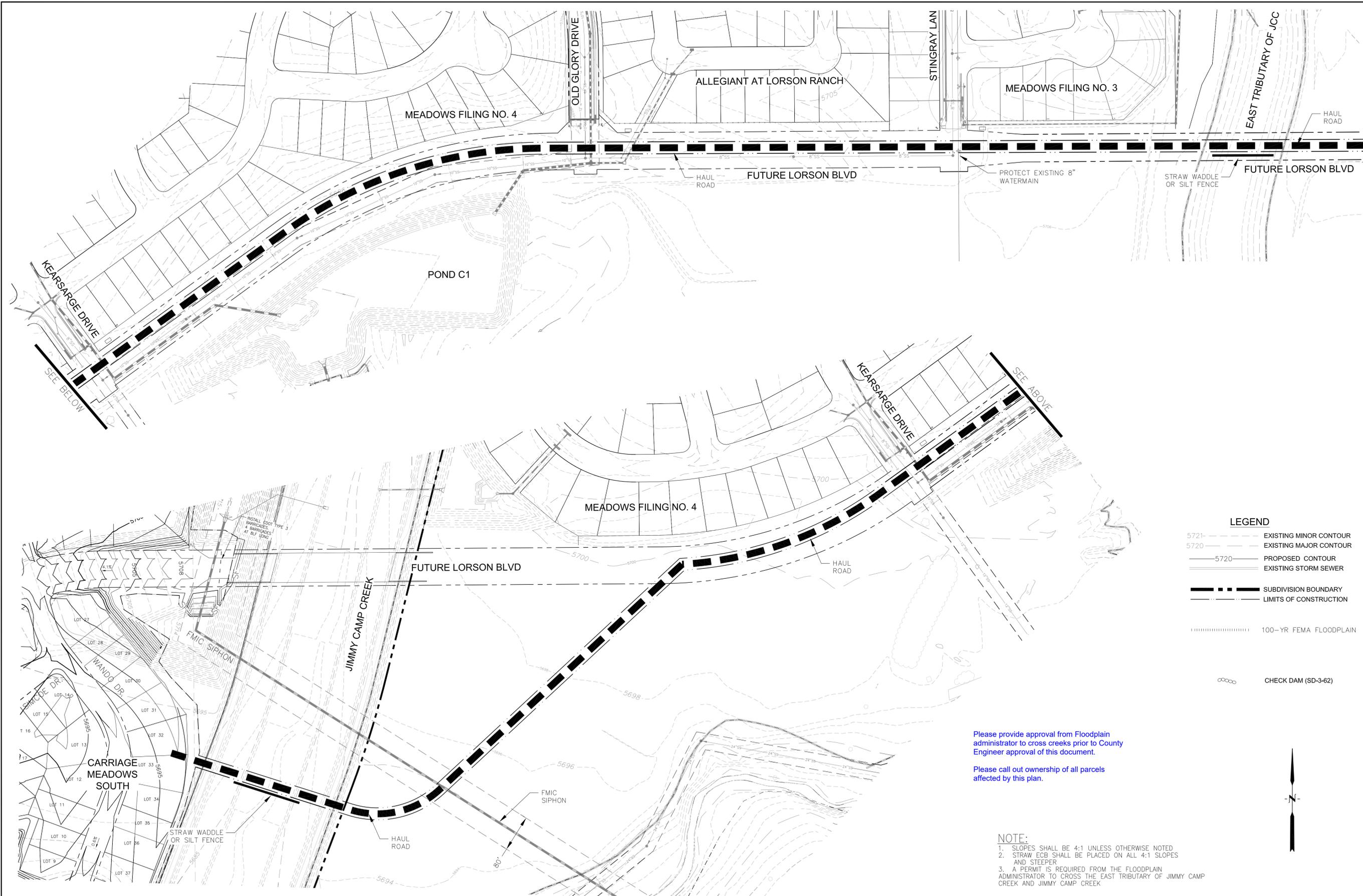
1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SB-2.
2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

**MAINTENANCE REQUIREMENTS**

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
4. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNELS ARE PERMANENTLY STABILIZED.
5. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs  
Stormwater Quality

Figure CD-1  
Check Dam  
Construction Detail and Maintenance Requirements



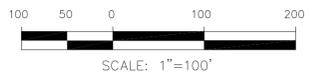
**LEGEND**

5721- - - - -	EXISTING MINOR CONTOUR
5720- - - - -	EXISTING MAJOR CONTOUR
5720- - - - -	PROPOSED CONTOUR
— — — — —	EXISTING STORM SEWER
— — — — —	SUBDIVISION BOUNDARY
— — — — —	LIMITS OF CONSTRUCTION
.....	100-YR FEMA FLOODPLAIN
o o o o	CHECK DAM (SD-3-62)

Please provide approval from Floodplain administrator to cross creeks prior to County Engineer approval of this document.

Please call out ownership of all parcels affected by this plan.

- NOTE:**
- SLOPES SHALL BE 4:1 UNLESS OTHERWISE NOTED
  - STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES AND STEEPER
  - A PERMIT IS REQUIRED FROM THE FLOODPLAIN ADMINISTRATOR TO CROSS THE EAST TRIBUTARY OF JIMMY CAMP CREEK AND JIMMY CAMP CREEK



**CORE ENGINEERING GROUP**

1500K 151<sup>ST</sup> AVE. S. 56306  
 PH: 719.570.1100  
 CONTACT: RICHARD L. SCHINDLER, P.E.  
 EMAIL: Rich@ceg1.com

NO.	DESCRIPTION	DATE

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

PROJECT:  
**CARRIAGE MEADOWS SOUTH**  
 FONTAINE BLVD. - CARRIAGE MEADOWS DR  
 EL PASO COUNTY, COLORADO

DRAWN: RLS  
 DESIGNED: RLS  
 CHECKED: RLS

**CARRIAGE MEADOWS SOUTH  
 FINAL GRADING AND  
 EROSION CONTROL PLAN**

DATE	JUNE 20, 2017
PROJECT NO.	100.030
SHEET NUMBER	C4.13
TOTAL SHEETS:	17

SEE SHEET C4.14

SEE BELOW

SEE ABOVE



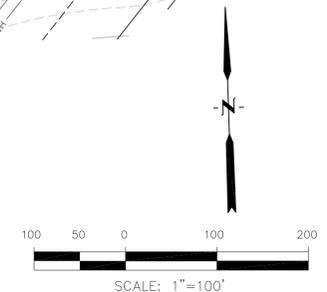
SEE SHEET C4.13

please call out ownership of the parcel containing the borrow area and the haul road.

**NOTE:**  
 1. SLOPES SHALL BE 4:1 UNLESS OTHERWISE NOTED  
 2. STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES AND STEEPER  
 3. A PERMIT IS REQUIRED FROM THE FLOODPLAIN ADMINISTRATOR TO CROSS THE EAST TRIBUTARY OF JIMMY CAMP CREEK AND JIMMY CAMP CREEK

**LEGEND**

5721- - - - -	EXISTING MINOR CONTOUR	.....	100-YR FEMA FLOODPLAIN
5720- - - - -	EXISTING MAJOR CONTOUR		
5720- - - - -	PROPOSED CONTOUR		
--- --- ---	EXISTING STORM SEWER		
SF - SF - SF	PROPOSED SILT FENCE, STRAW WATTLE OR EARTH BERM		
-----	LIMITS OF CONSTRUCTION		
o o o o	CHECK DAM (SD-3-82)		



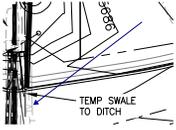
**CARRIAGE MEADOWS SOUTH  
 FINAL GRADING AND E.C. PLAN  
 OFFSITE BORROW AREA**

# Markup Summary

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8/2/2017 1:01:34 PM (1)

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**Subject:** Arrow  
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**Status:**  
**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 1:01:34 PM  
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8/2/2017 1:01:48 PM (1)

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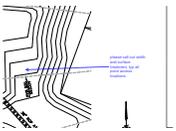
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**Author:** dsdnijkamp  
**Date:** 8/2/2017 1:01:48 PM  
**Color:** ■

Please provide a VTC or describe how you will keep traffic from entering/exiting at this location.

---

8/2/2017 1:04:53 PM (1)

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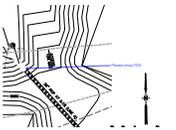
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please call out width and surface treatment, typ all pond access locations.

---

8/2/2017 1:07:08 PM (1)

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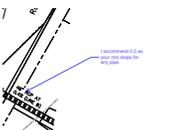
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Please show FES

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8/2/2017 1:07:52 PM (1)

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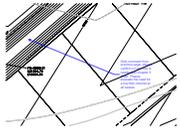
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I recommend 0.5 as your min slope for any pipe.

---

8/2/2017 1:12:06 PM (1)

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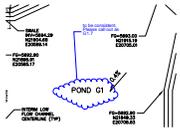
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Ditto comment from previous page, please confirm no low flow is needed per chapter 3 ECM. Please evaluate the need for a low flow channel at all swales.

---

8/2/2017 1:22:12 PM (1)

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**Subject:** Cloud+  
**Page Label:** 9  
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**Status:**  
**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 1:22:12 PM  
**Color:** ■

to be consistent, Please call out as G1.7

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8/2/2017 1:24:02 PM (1)

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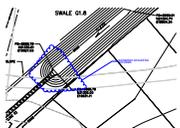


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8/2/2017 1:25:22 PM (1)

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protection should be provided.

---

8/2/2017 1:27:12 PM (1)

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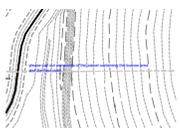
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this may cover the comment above...?

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8/2/2017 1:35:31 PM (1)

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**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 1:35:31 PM  
**Color:** ■

please call out ownership of the parcel containing the borrow area and the haul road.

---

8/2/2017 12:03:59 PM (1)

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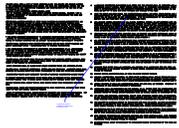
1. RECORDS  
Y CONSTRU  
VTY DSD INS

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**Date:** 8/2/2017 12:03:59 PM  
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8/2/2017 12:04:31 PM (1)

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**Subject:** Callout  
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**Date:** 8/2/2017 12:04:31 PM  
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In general, please change all references to DSD to PCD.

---

8/2/2017 12:06:56 PM (1)

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OT DEVIATE FR  
AND DSD. CC  
RORS OR INCC

**Subject:** Highlight  
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8/2/2017 12:07:55 PM (1)

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8/2/2017 12:10:44 PM (1)

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**Subject:** Cloud+  
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**Author:** dsdnijkamp  
**Date:** 8/2/2017 12:10:44 PM  
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this is not shown on sheet C4.6

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8/2/2017 12:31:48 PM (1)

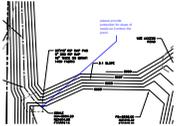
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**Date:** 8/2/2017 12:31:48 PM  
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please call out as interim

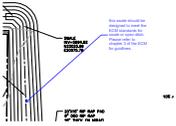
8/2/2017 12:33:06 PM (1)



**Subject:** Callout  
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**Date:** 8/2/2017 12:33:06 PM  
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please provide protection for slope of swale as it enters the pond.

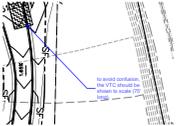
8/2/2017 12:51:14 PM (1)



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**Date:** 8/2/2017 12:51:14 PM  
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this swale should be designed to meet the ECM standards for swale or open ditch. Please refer to chapter 3 of the ECM for guidelines.

8/2/2017 12:54:40 PM (1)



**Subject:** Callout  
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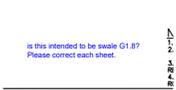
to avoid confusion, the VTC should be shown to scale (75' long).

8/2/2017 12:56:47 PM (1)

- 2. STRAW ECE
- AND SLOP
- 3. POND G1.8
- RECYCLEX TRM
- 4. A PERMIT

**Subject:** Highlight  
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**Color:** ■

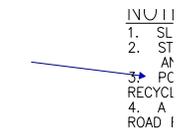
8/2/2017 12:57:52 PM (1)



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**Author:** dsdnijkamp  
**Date:** 8/2/2017 12:57:52 PM  
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is this intended to be swale G1.8? Please correct each sheet.

8/2/2017 2:28:13 PM (1)



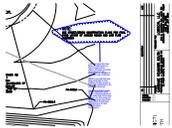
- NOTI
- 1. SL
- 2. ST
- 3. PC
- 4. A
- ROAD I

**Subject:** Arrow  
**Page Label:** 5  
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8/2/2017 2:34:35 PM (1)

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**Subject:** Cloud+  
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**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:34:35 PM  
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I did not see the low flow of channels on the construction plans. Please provide a low flow in all channels or swales if needed (per criteria).

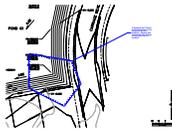
What you call the low flow channel in the bottom of the pond is typically referred to as a trickle channel.

You have storm lines called 'laterals' and 'lines' Please clarify in this note that lines are shown on the over lot grading plan (by XXX, approved XXX) and laterals are on the construction document.

---

8/2/2017 2:37:12 PM (1)

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**Subject:** Cloud+  
**Page Label:** 9  
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**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:37:12 PM  
**Color:** ■

it appears as if there is no reference to the structure at this location. Please call out where the design of this structure is located

---

8/2/2017 2:38:04 PM (1)

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**Subject:** Text Box  
**Page Label:** 16  
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**Status:**  
**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:38:04 PM  
**Color:** ■

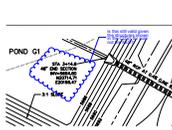
Please provide approval from Floodplain administrator to cross creeks prior to County Engineer approval of this document.

Please call out ownership of all parcels affected by this plan.

---

8/2/2017 2:40:32 PM (1)

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**Subject:** Cloud+  
**Page Label:** 13  
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**Status:**  
**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:40:32 PM  
**Color:** ■

is this still valid given the structures shown in the CD's? for sure not the FES?

---

8/2/2017 2:41:29 PM (1)

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**Subject:** Cloud+  
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**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:41:29 PM  
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"swale" G1.8?

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8/2/2017 2:44:20 PM (1)

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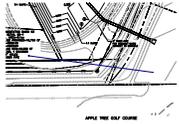
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**Author:** dsdnijkamp  
**Date:** 8/2/2017 2:44:20 PM  
**Color:** ■

is this still valid? or is it from the overlot grading?  
typical all locations, please call out the removal of  
the interim system to allow for construction of the  
permanent structures.

---

8/2/2017 2:44:42 PM (1)

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**Subject:** Arrow  
**Page Label:** 11  
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8/2/2017 3:23:19 PM (1)

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**Subject:** Cloud+  
**Page Label:** 12  
**Lock:** Unlocked  
**Status:**  
**Checkmark:** Unchecked  
**Author:** dsdnijkamp  
**Date:** 8/2/2017 3:23:19 PM  
**Color:** ■

Please confirm compliance with section ECM  
3.3.1, angle of confluence.