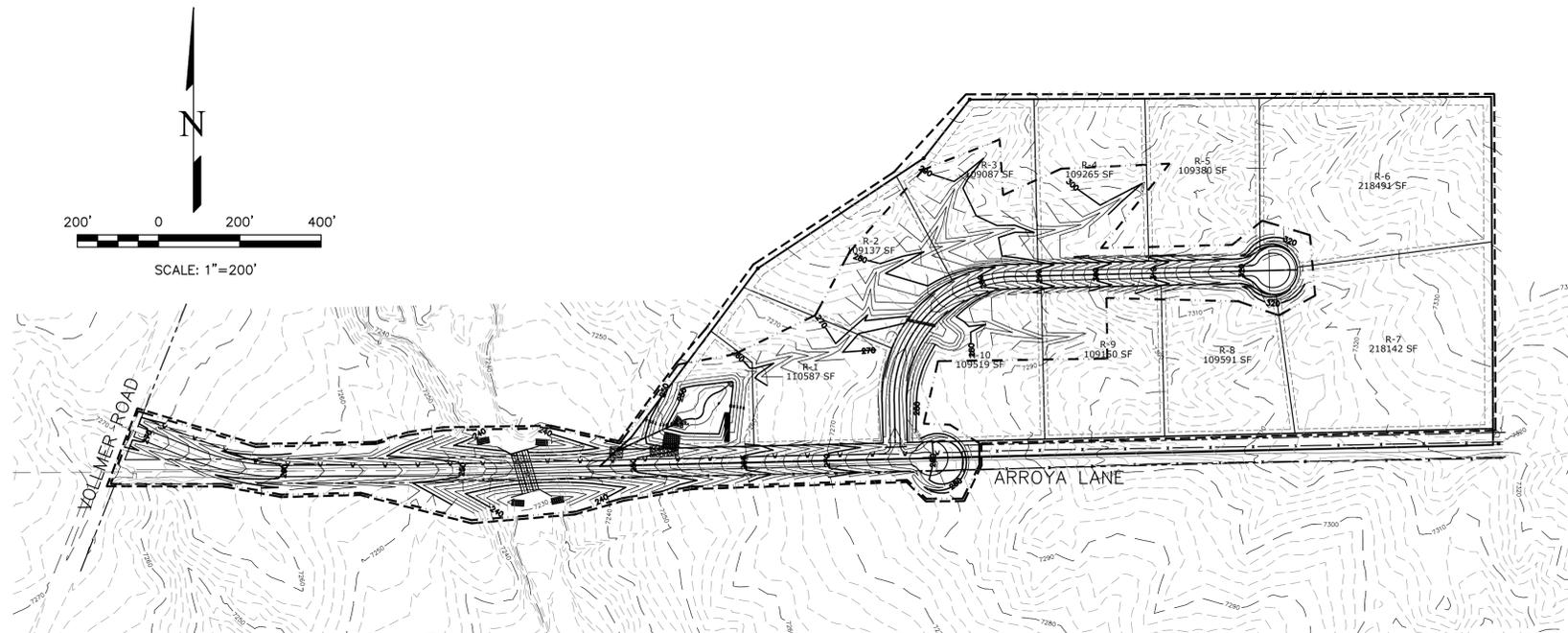


TIMBERRIDGE ESTATES - 9210 ARROYA LANE

EL PASO COUNTY

GRADING & EROSION CONTROL PLAN

AUGUST 2018



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- 10 EROSION CONTROL DETAILS

CONTACT INFORMATION:

OWNER: TIMBERRIDGE ESTATES, LLC
2760 BROGANS BLUFF
COLORADO SPRINGS, COLORADO 80819
(719) 499-6752

CIVIL ENGINEER: TERRA NOVA ENGINEERING, INC.
721 S. 23RD STREET
COLORADO SPRINGS, COLORADO 80904
QUENTIN N. ARMIJO, P.E., (719) 635-6422

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

SOIL TYPES

ONSITE SOILS ARE HYDROLOGIC GROUP "B", KETTLE GRAVELLY LOAMY SAND (40), 3 TO 8 PERCENT SLOPES, KETTLE GRAVELLY LOAMY SAND (41), 8 TO 40 PERCENT SLOPES AND PRING COARSE SANDY LOAM (71)

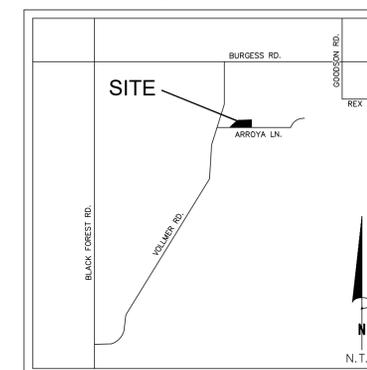
BENCHMARKS

A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER.
ELEV = 7,319.85' (NGVD-1929)

BASIS OF BEARING

THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 12 SOUTH, RANGE 65 WEST AND IS ASSUMED TO BEAR NORTH 0 DEGREES 18 MINUTES 04 SECONDS EAST 2640.26 FEET.

VICINITY MAP



EROSION CONTROL COST OPINION:

1. 2,270 LF-SILT FENCE @ \$4.00/LF	\$	9,080
2. 5,725 LF-SEDIMENT CONTROL LOGS \$4.00/LF	\$	22,900
3. 2 EA-VEHICLE TRACKING CONTROL @ \$1,325/ENTRANCE	\$	2,650
4. 14.2 AC-HYDROSEED @ \$1,000/AC	\$	14,200
5. 5,150 SY-EROSION CONTROL BLANKET @ \$8.00/SY	\$	41,200
6. 1 EA.-CONCRETE WASHOUT @ \$760/EA	\$	760
7. 40% MAINTENANCE AND REPLACEMENT	\$	36,316
TOTAL	\$	127,106

STILL NEED

1. ANY ADDITIONAL EASEMENTS ??? - FOR ROAD REALIGNMENT, ELEC/GAS, ETC.

EL PASO COUNTY APPROVAL

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

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

COUNTY ENGINEER / DIRECTOR _____ DATE _____
CONDITIONS:

ENGINEER'S STATEMENT

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

DUCETT, P.E. #32339
FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.

OWNER'S STATEMENT

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

OWNER NAME: _____ DATE: _____

SIGNED BY: _____

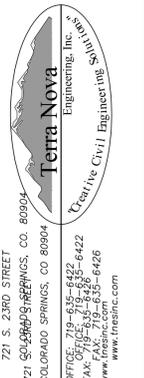
TITLE: _____

ADDRESS: _____

REVISIONS NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE EL PASO COUNTY ENGINEERING DEPARTMENT, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED BY WRITTEN AUTHORIZATION.

PREPARED FOR:
TIMBERRIDGE ESTATES, LLC
ATTN:
2760 BROGANS BLUFF
COLORADO SPRINGS, CO 80919



TIMBERRIDGE ESTATES
9210 ARROYA LANE

GRADING & EROSION CONTROL PLAN
COVER SHEET

DESIGNED BY LD
DRAWN BY DLF
CHECKED BY LD
H-SCALE AS SHOWN
V-SCALE NA
JOB NO. 1733.00
DATE ISSUED 08/13/18
SHEET NO. 1 OF 10

TIMBERRIDGE ESTATES - 9210 ARROYA LANE

EL PASO COUNTY

GRADING & EROSION CONTROL PLAN

AUGUST 2018

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF SITE WATERS, INCLUDING WETLANDS.
2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. 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.
4. 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.
5. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPs SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
6. 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.
7. 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).
8. 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.
9. 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.
10. 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.
11. 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.
12. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.
13. 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. BMPs MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
14. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.
20. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
21. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, 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.
22. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
23. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
24. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
25. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC. AND SHALL BE CONSIDERED A PART OF THESE PLANS.
26. 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
WOOD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

1. 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 & 2 AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. 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).
3. 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:
 - A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2
 - C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 - D. CDOT M & S STANDARDS.
4. 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-FACE WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
5. 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.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. IT IS THE CONTRACTORS 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.
8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
10. 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.
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
12. 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.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PUBLIC WORK DEPARTMENT AND MUTCD CRITERIA.
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PWD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
15. 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.

CONSTRUCTION SCHEDULE

BEGIN GRADING: SUMMER 2018, END GRADING: FALL 2019

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.

UTILITY NOTES

1. UTILITY LINE LOCATIONS AND ELEVATIONS ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED.
2. BURY DEPTH OF THE WATER MAIN ALONG ARROYA LANE TO BE CONFIRMED PRIOR TO STARTING ANY GRADING ABOVE THE WATER MAIN.

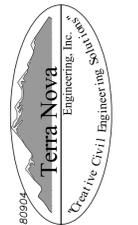
CONSTRUCTION NOTES:

1. ALL WORK SHALL COMPLY WITH THE CODES AND POLICIES FOR EL PASO COUNTY.
2. EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THIS GRADING PLAN WAS OBTAINED FROM AERIAL CONTOURS. THE CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE THE SITE AND BE FAMILIAR WITH THE EXISTING CONDITIONS.
3. 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.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE RE-ESTABLISHMENT OF ALL SURVEY MONUMENTS DISTURBED WITHIN THE PROJECT LIMITS.
5. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.
6. 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.
7. SUBGRADE MATERIALS DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED, DISPOSED OF AND REPLACED WITH APPROVED MATERIALS.
8. FILL SHALL BE PLACED IN 8-INCH MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED PRIOR TO SUCCESSIVE LIFTS.
9. 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:
 - SEDIMENT CONTROL LOGS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - SILT FENCE WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - PERMANENT SEEDING AND MULCHING WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
 - CONCRETE WASH AREAS.
 - VEHICLE TRACKING CONTROL.
 - SOIL STOCKPILING AREA.
 - MATERIALS STAGING AREA.THESE AND ALL EROSION CONTROL BEST MANAGEMENT PRACTICES AS SHOWN IN THE GRADING AND EROSION CONTROL PLANS SHALL BE STRICTLY ADHERED TO.
10. FINISHED CONTOURS/ SPOT ELEVATIONS SHOWN HEREON REPRESENT FINISHED GRADES.

REVISIONS	NO.	DESCRIPTION	DATE

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

PREPARED FOR:
TIMBERRIDGE ESTATES, LLC
ATTN:
2760 BROGANS BLUFF
COLORADO SPRINGS, CO 80919



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

TIMBERRIDGE ESTATES
9210 ARROYA LANE
GRADING & EROSION CONTROL PLAN
NOTES SHEET

DESIGNED BY LD
DRAWN BY DLF
CHECKED BY LD
H-SCALE NA
V-SCALE NA
JOB NO. 1733.00
DATE ISSUED 08/13/18
SHEET NO. 2 OF 10

TIMBERRIDGE ESTATES - 9210 ARROYA LANE

EL PASO COUNTY

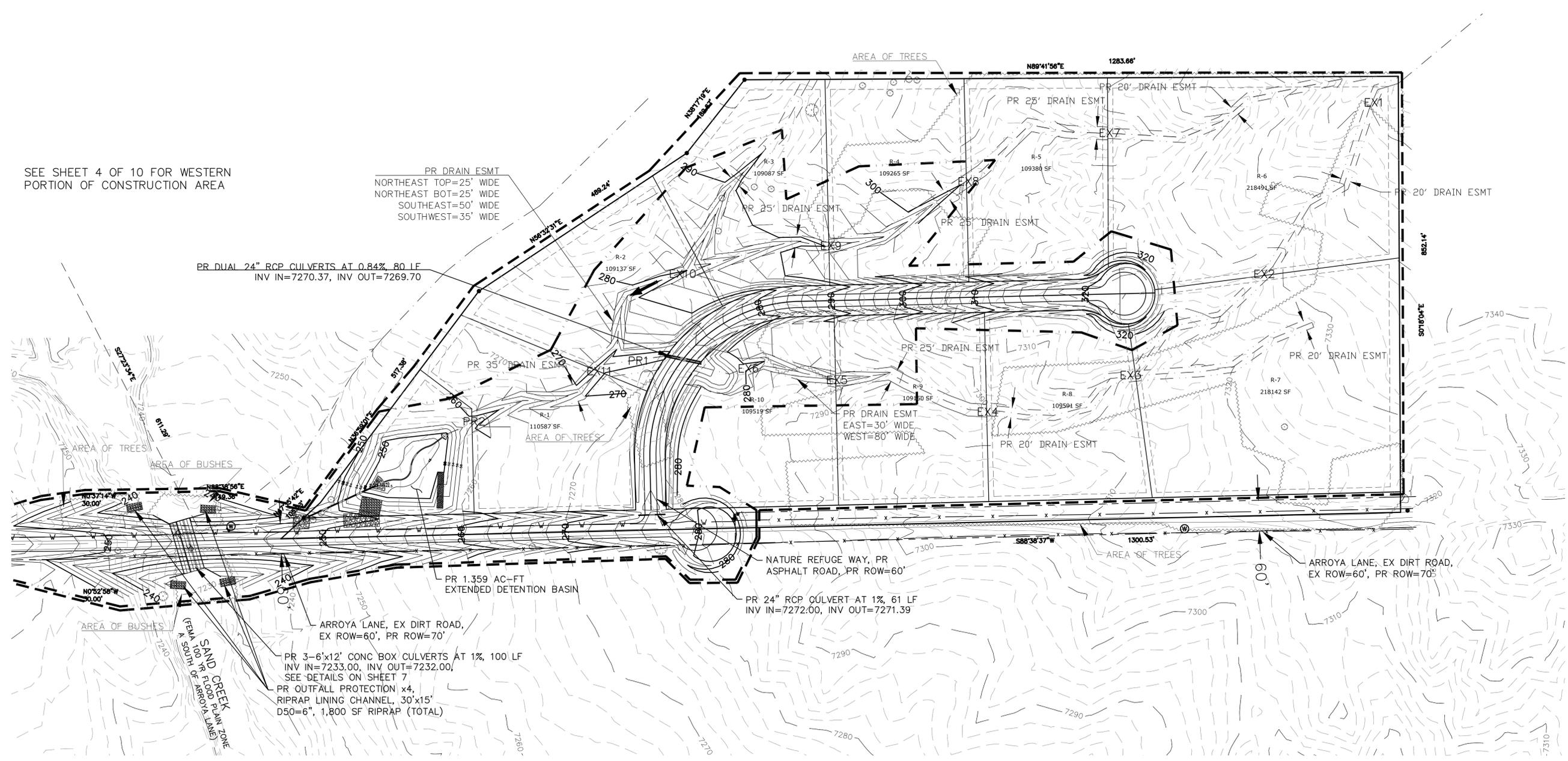
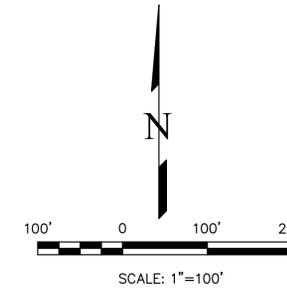
GRADING & EROSION CONTROL PLAN

AUGUST 2018

BENCHMARKS
 A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER.
 ELEV = 7,319.85' (NGVD-1929)

LEGEND

- EXISTING 2' CONTOUR
- - - - - EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- - - - - PROPOSED 10' CONTOUR
- - - - - SURFACE FLOW CHANNEL
- - - - - PROPOSED DRAINAGE EASEMENT
- - - - - EXISTING WATER LINE
- - - - - CONSTRUCTION SITE BOUNDARY
- - - - - AREA OF SOIL DISTURBANCE
- EXISTING TREE
- EX# / PR# OPEN CHANNEL FLOW CALC POINT
- - - - - AREA OF TREES/BRUSH LIMIT



SEE SHEET 4 OF 10 FOR WESTERN PORTION OF CONSTRUCTION AREA

PR DRAIN ESMT
 NORTHEAST TOP=25' WIDE
 NORTHEAST BOT=25' WIDE
 SOUTHEAST=50' WIDE
 SOUTHWEST=35' WIDE

PR DUAL 24" RCP CULVERTS AT 0.84%, 80 LF
 INV IN=7270.37, INV OUT=7269.70

PR 1.359 AC-FT EXTENDED DETENTION BASIN

PR 24" RCP CULVERT AT 1%, 61 LF
 INV IN=7272.00, INV OUT=7271.39

PR 3-6'x12' CONC BOX CULVERTS AT 1%, 100 LF
 INV IN=7233.00, INV OUT=7232.00,
 SEE DETAILS ON SHEET 7
 PR OUTFALL PROTECTION x4,
 RIPRAP LINING CHANNEL, 30'x15'
 D50=6", 1,800 SF RIPRAP (TOTAL)

ARROYA LANE, EX DIRT ROAD,
 EX ROW=60', PR ROW=70'

NATURE REFUGE WAY, PR
 ASPHALT ROAD, PR ROW=60'

ARROYA LANE, EX DIRT ROAD,
 EX ROW=60', PR ROW=70'

<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">NO.</th> <th style="width: 85%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DESCRIPTION	DATE				<p>UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE RELEVANT AGENCIES, THE TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND FOR THE MOST PART, BY WRITTEN AUTHORIZATION.</p>
NO.	DESCRIPTION	DATE					
<p>PREPARED FOR: TIMBERRIDGE ESTATES, LLC</p> <p>ATTN: 2760 BROGANS BLUFF COLORADO SPRINGS, CO 80919</p>	<p>721 S. 2900 STREET COLORADO SPRINGS, CO 80904 OFFICE: 719-635-6422 FAX: 719-635-6426 www.tneshinc.com</p>						
<p>TIMBERRIDGE ESTATES 9210 ARROYA LANE</p>	<p>GRADING & EROSION CONTROL PLAN GRADING PLAN - EAST</p>						
<p>DESIGNED BY LD DRAWN BY DLF CHECKED BY LD</p>	<p>H-SCALE 1"=100' V-SCALE NA</p>						
<p>JOB NO. 1733.00 DATE ISSUED 08/13/18 SHEET NO. 3 OF 10</p>							

TIMBERRIDGE ESTATES - 9210 ARROYA LANE

EL PASO COUNTY

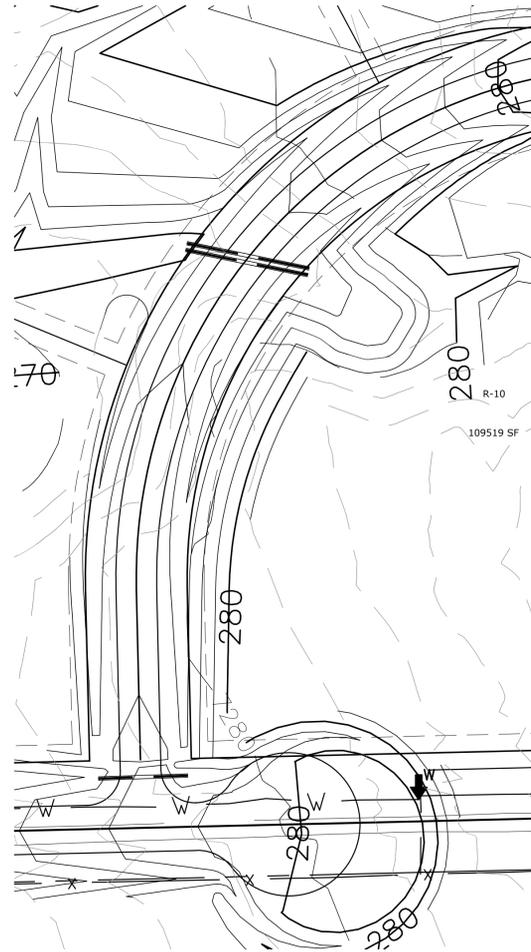
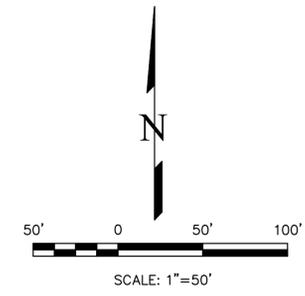
GRADING & EROSION CONTROL PLAN

AUGUST 2018

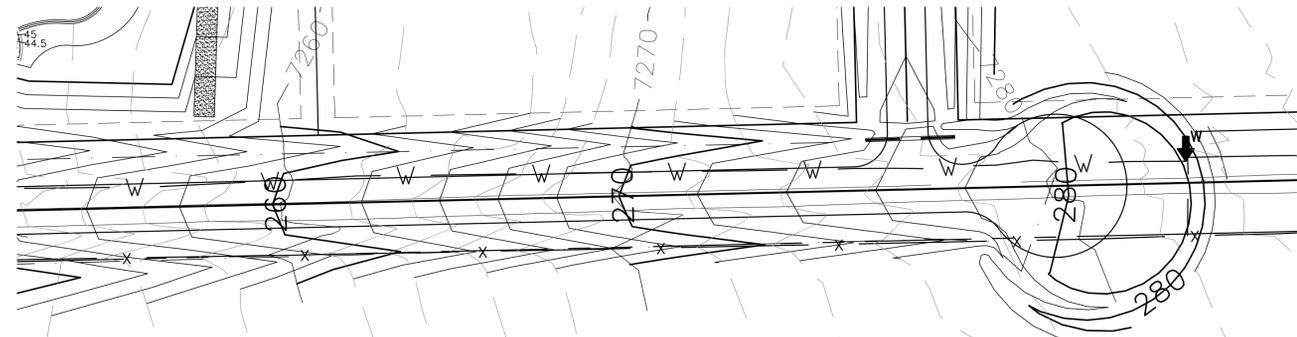
BENCHMARKS
 A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER
 ELEV = 7,319.85' (NGVD-1929)

LEGEND

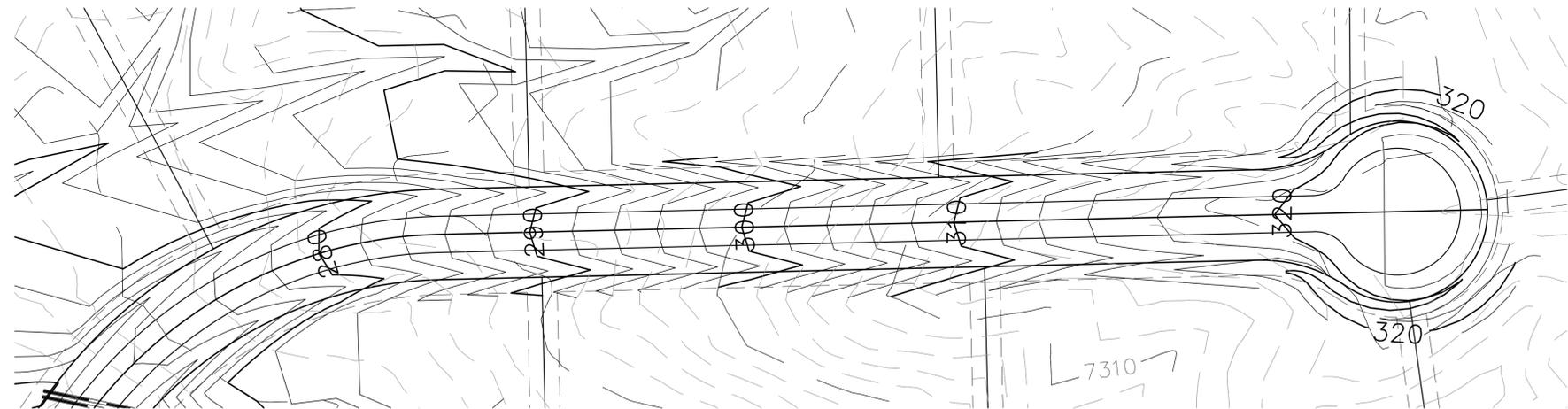
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	EXISTING 10' CONTOUR
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	PROPOSED 10' CONTOUR
	SURFACE FLOW CHANNEL
	PROPOSED DRAINAGE EASEMENT
	EXISTING WATER LINE
	CONSTRUCTION SITE BOUNDARY
	AREA OF SOIL DISTURBANCE
	EXISTING TREE



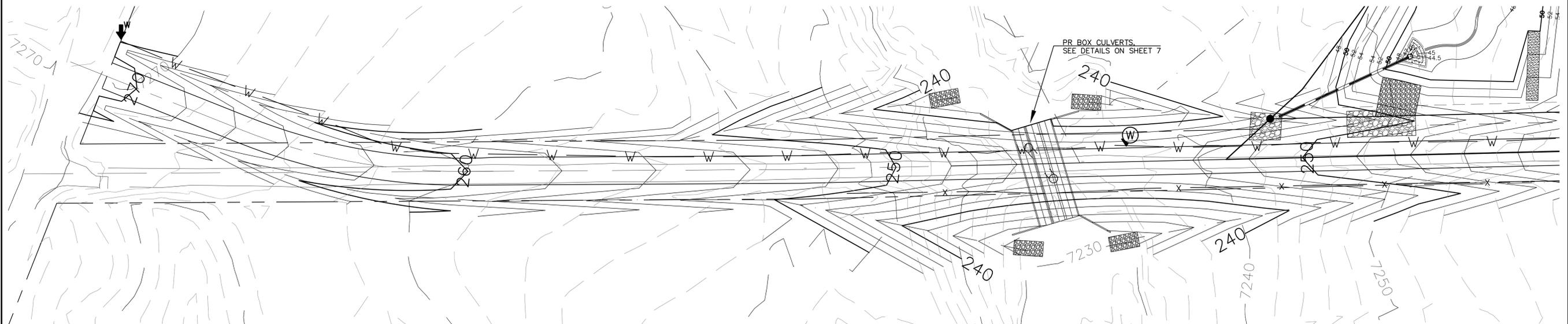
SOUTH PORTION NATURE REFUGE WAY DETAIL



EAST PORTION ARROYA LANE DETAIL



NORTH PORTION NATURE REFUGE WAY DETAIL



WEST PORTION ARROYA LANE DETAIL

REVISIONS	NO.	DESCRIPTION	DATE

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PREPARED FOR:
TIMBERRIDGE ESTATES, LLC
 ATTN:
 2760 BROGANS BLUFF
 COLORADO SPRINGS, CO 80919



721 S. 2800 STREET
 COLORADO SPRINGS, CO 80904
 OFFICE: 719-635-6422
 FAX: 719-635-6426
 www.tneshinc.com

TIMBERRIDGE ESTATES
 9210 ARROYA LANE
 GRADING & EROSION CONTROL PLAN
 GRADING PLAN - DETAILS

DESIGNED BY LD
 DRAWN BY DLF
 CHECKED BY LD
 H-SCALE 1"=50'
 V-SCALE NA
 JOB NO. 1733.00
 DATE ISSUED 08/13/18
 SHEET NO. 5 OF 10

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TIMBERRIDGE ESTATES - 9210 ARROYA LANE

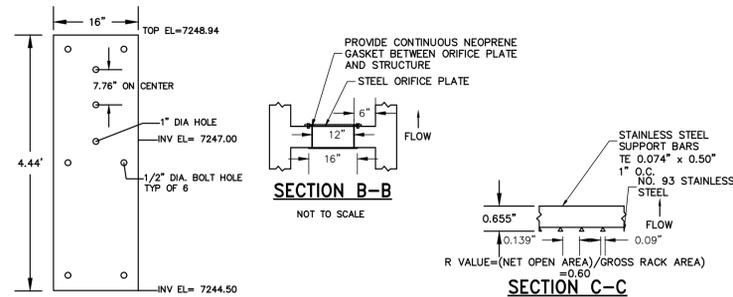
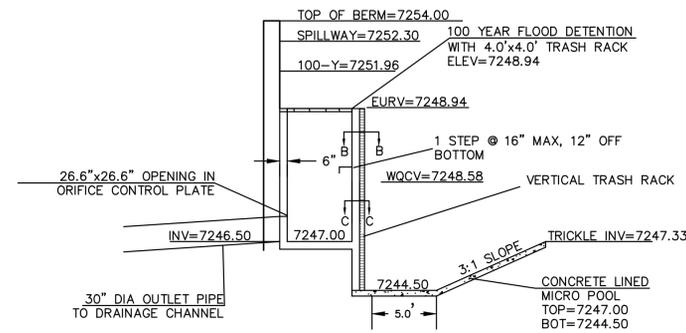
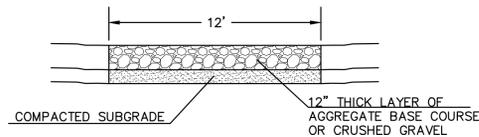
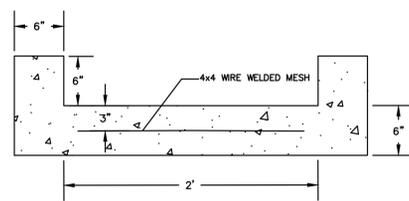
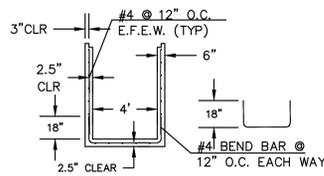
EL PASO COUNTY

GRADING & EROSION CONTROL PLAN

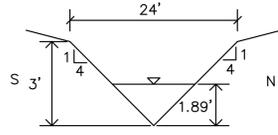
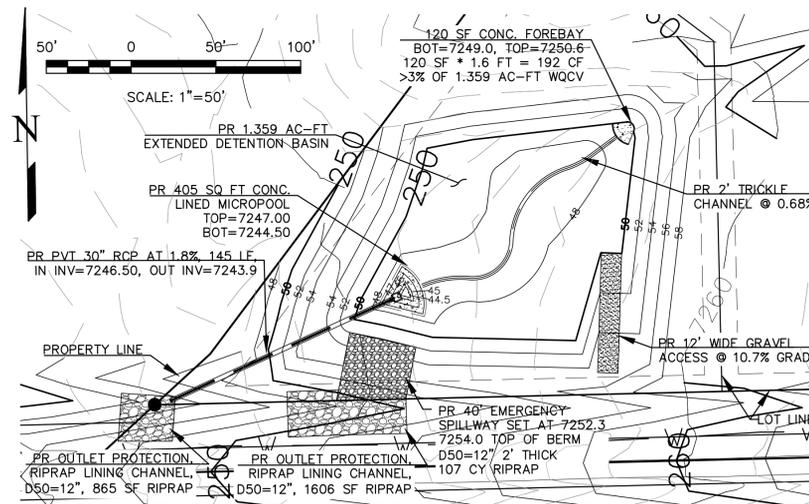
AUGUST 2018

BENCHMARKS
 A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER.
 ELEV = 7,319.85' (NGVD-1929)

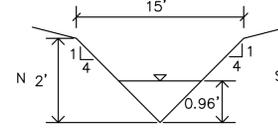
- LEGEND**
- EXISTING 2' CONTOUR
 - 7260 EXISTING 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - 260 PROPOSED 10' CONTOUR
 - SURFACE FLOW CHANNEL
 - PROPOSED DRAINAGE EASEMENT
 - W --- EXISTING WATER LINE
 - CONSTRUCTION SITE BOUNDARY
 - AREA OF SOIL DISTURBANCE
 - EXISTING TREE



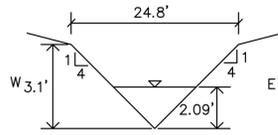
POND OUTLET OVERALL DETAIL



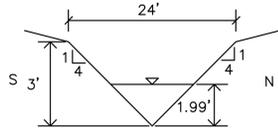
Q = 26.4 CFS
 SLOPE = 3.9%
 n VALUE = 0.15
 DEPTH = 1.89'
 VELOCITY = 1.85 FT/S



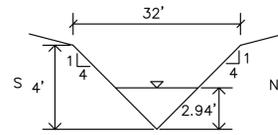
Q = 5.6 CFS
 SLOPE = 7.8%
 n VALUE = 0.15
 DEPTH = 0.96'
 VELOCITY = 1.66 FT/S



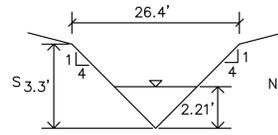
Q = 32.2 CFS
 SLOPE = 3.4%
 n VALUE = 0.15
 DEPTH = 2.09'
 VELOCITY = 1.84 FT/S



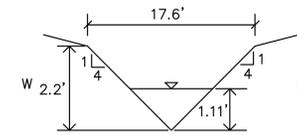
Q = 26.3 CFS
 SLOPE = 3.0%
 n VALUE = 0.15
 DEPTH = 1.99'
 VELOCITY = 1.68 FT/S



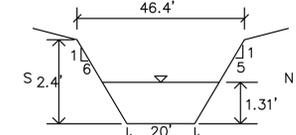
Q = 76.4 CFS
 SLOPE = 3.1%
 n VALUE = 0.15
 DEPTH = 2.94'
 VELOCITY = 2.21 FT/S



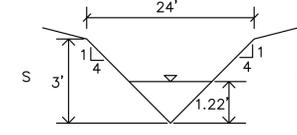
Q = 35.7 CFS
 SLOPE = 3.1%
 n VALUE = 0.15
 DEPTH = 2.21'
 VELOCITY = 1.83 FT/S



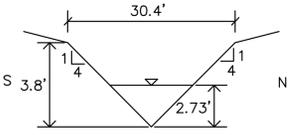
Q = 3.6 CFS
 SLOPE = 1.3%
 n VALUE = 0.15
 DEPTH = 1.11'
 VELOCITY = 0.75 FT/S



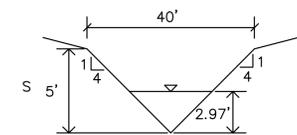
Q = 41.0 CFS
 SLOPE = 1.3%
 n VALUE = 0.15
 DEPTH = 1.31'
 VELOCITY = 1.15 FT/S



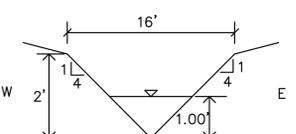
Q = 8.2 CFS
 SLOPE = 5.2%
 n VALUE = 0.15
 DEPTH = 1.16'
 VELOCITY = 1.54 FT/S
 *EXPANDED TO ALLOW FOR POSSIBLE FUTURE FLOW INCREASES



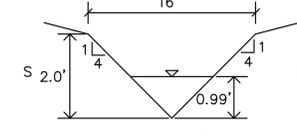
Q = 80.4 CFS
 SLOPE = 5.1%
 n VALUE = 0.15
 DEPTH = 2.73'
 VELOCITY = 2.70 FT/S



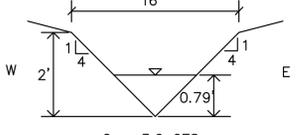
Q = 99.7 CFS
 SLOPE = 5.0%
 n VALUE = 0.15
 DEPTH = 2.97'
 VELOCITY = 2.83 FT/S
 *EXPANDED TO ALLOW FOR POSSIBLE FUTURE FLOW INCREASES



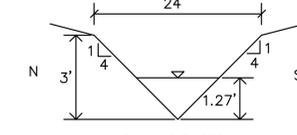
Q = 4.7 CFS
 SLOPE = 3.7%
 n VALUE = 0.15
 DEPTH = 1.00'
 VELOCITY = 1.18 FT/S



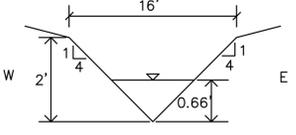
Q = 5.8 CFS
 SLOPE = 6.0%
 n VALUE = 0.15
 DEPTH = 0.99'
 VELOCITY = 1.49 FT/S



Q = 3.2 CFS
 SLOPE = 6.3%
 n VALUE = 0.15
 DEPTH = 0.79'
 VELOCITY = 1.31 FT/S



Q = 10.5 CFS
 SLOPE = 5.9%
 n VALUE = 0.15
 DEPTH = 1.27'
 VELOCITY = 1.74 FT/S
 *EXPANDED TO ALLOW FOR POSSIBLE FUTURE FLOW INCREASES



Q = 0.9 CFS
 SLOPE = 1.3%
 n VALUE = 0.15
 DEPTH = 0.66'
 VELOCITY = 0.53 FT/S

REVISIONS	NO.	DESCRIPTION	DATE

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PREPARED FOR:
TIMBERRIDGE ESTATES, LLC
 ATTN:
 2760 BROGANS BLUFF
 COLORADO SPRINGS, CO 80919

Terra Nova Engineering, Inc.
 A Terra Nova Group Company
 721 S. 2900 STREET
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 OFFICE: 719-635-6422
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 www.tneshinc.com

TIMBERRIDGE ESTATES
 9210 ARROYA LANE
 GRADING & EROSION CONTROL PLAN
 GRADING PLAN - DETAILS

DESIGNED BY LD
DRAWN BY DLF
CHECKED BY LD
H-SCALE 1"=200'
V-SCALE NA
JOB NO. 1733.00
DATE ISSUED 08/13/18
SHEET NO. 6 OF 10

N:\jobs\1733.00\Drawings\CD\173300 GEC.dwg, GRAD DETAILS #2, 8/13/2018 8:37:45 AM

TIMBERRIDGE ESTATES - 9210 ARROYA LANE

EL PASO COUNTY

GRADING & EROSION CONTROL PLAN

AUGUST 2018

BENCHMARKS

A #4 REBAR 28.3 FEET SOUTH AND 77.2 FEET WEST OF THE SOUTHEAST PROPERTY CORNER.
ELEV = 7,319.85' (NGVD-1929)

EROSION CONTROL NOTES

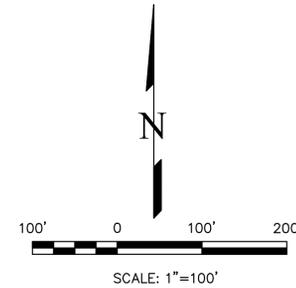
1. PERMANENT SEEDING AND MULCH IS TO BE APPLIED TO ALL DISTURBED AREAS OTHER THAN ROADWAYS. EROSION CONTROL BLANKETS MUST BE USED ALONG FLOW LINE PROPOSED DRAINAGE CHANNELS (3 FEET WIDE) AND ON DETENTION BASIN SIDES.

EROSION CONTROL QUANTITIES

SILT FENCE: 2,270 LF
SEDIMENT CONTROL LOG: 5,725 LF
SEED & MULCH: 14.2 AC
EROSION CONTROL BLANKET: 5,150 SY

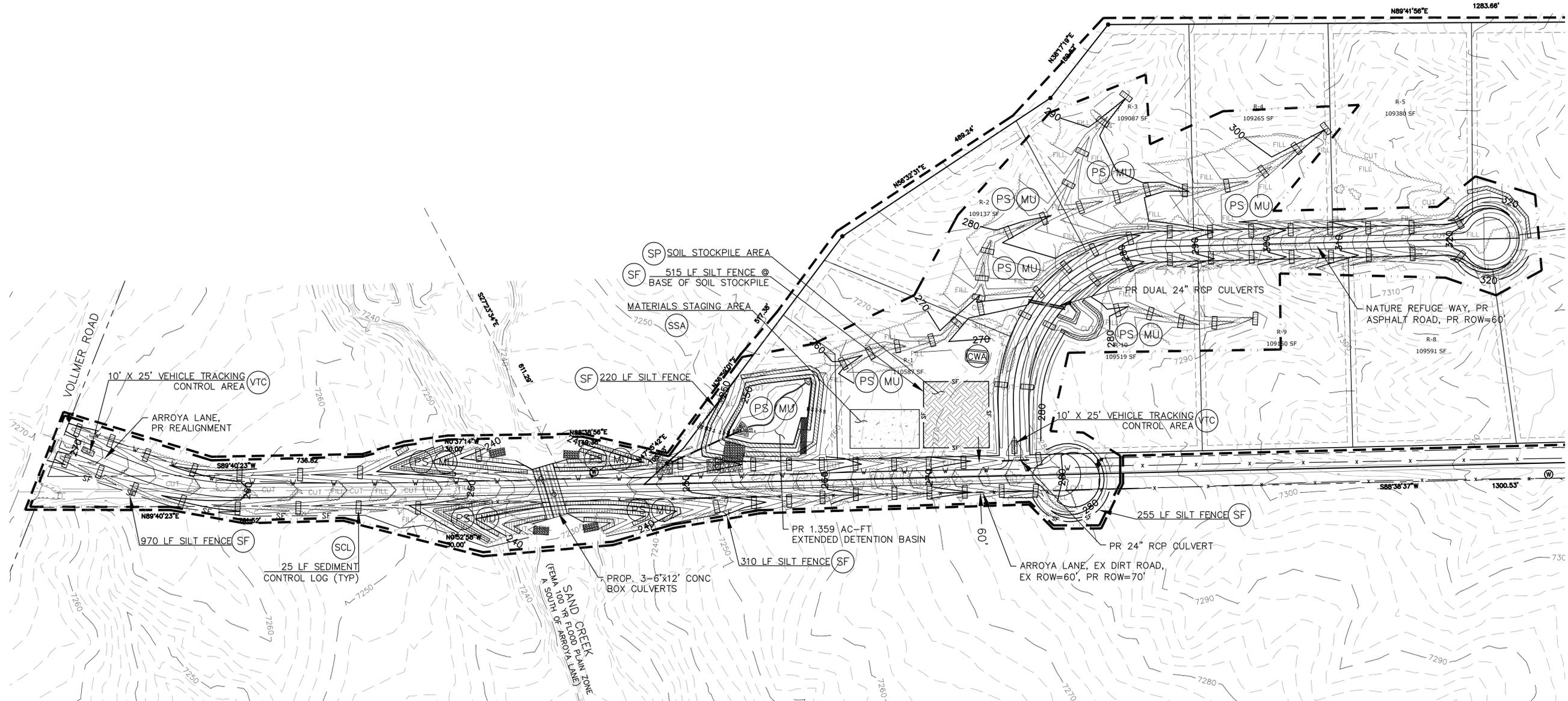
LEGEND

- EXISTING 2' CONTOUR
- - - 7260 EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- - - 260 PROPOSED 10' CONTOUR
- SURFACE FLOW CHANNEL
- PROPOSED DRAINAGE EASEMENT
- W --- EXISTING WATER LINE
- CONSTRUCTION SITE BOUNDARY
- AREA OF SOIL DISTURBANCE
- EXISTING TREE
- CUT FILL AREA BOUNDARY



EROSION CONTROL LEGEND

KEY	TITLE	SYMBOL
○ SF	SILT FENCE	—SF—
○ SSA	STABILIZED STAGING AREA	[Pattern]
○ VTC	VEHICLE TRACKING CONTROL	[Pattern]
○ SP	STOCKPILE MANAGEMENT WITH PROTECTION	[Pattern]
○ CWA	CONCRETE WASHOUT AREA	[Pattern]
○ SCL	SEDIMENT CONTROL LOG	[Pattern]
○ MU	MULCHING - HYDROSEED OR EROSION CONTROL BLANKET, ECB MUST BE USED WITHIN DRAINAGE CHANNELS & ON POND SIDES	○ MU
○ PS	PERMANENT SEEDING - HYDROSEED, SEED MIX PER COLORADO SPIRINGS DRAINAGE CRITERIA MANUAL (MAY 2014) VOL 1, TABLE 14-12	○ PS



REVISIONS NO. _____ DESCRIPTION _____ DATE _____	<p>UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE FOLLOWING AGENCIES: THE TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND MOST DESIGNED BY WRITTEN AUTHORIZATION.</p> <p>PREPARED FOR: TIMBERRIDGE ESTATES, LLC ATTN: 2760 BROGANS BLUFF COLORADO SPRINGS, CO 80919</p> <p style="text-align: center;">  Terra Nova Engineering, Inc. Creative Civil Engineer Inc. </p> <p>721 S. 2980 STREET COLORADO SPRINGS, CO 80904 OFFICE: 719-635-6422 FAX: 719-635-6426 www.tneshinc.com</p>
TIMBERRIDGE ESTATES 9210 ARROYA LANE GRADING & EROSION CONTROL PLAN EROSION CONTROL PLAN	DESIGNED BY LD DRAWN BY DLF CHECKED BY LD H-SCALE 1"=100' V-SCALE NA JOB NO. 1733.00 DATE ISSUED 08/13/18 SHEET NO. 8 OF 10

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