CIVIL CONSTRUCTION PLANS MRG, LP OIL AND GAS CE PAD

A PORTION OF OUTLOT P, MILLENNIUM EAST 10TH SUBDIVISION (REC. #20210017402). BEING A PART OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN CITY OF LOVELAND, COUNTY OF LARIMER, STATE OF COLORADO

TITLE HAS BEEN UPDATED.

NUMBERING HAS

BEEN PROVIDED

Sheet List Table

Sheet Title

COVER SHEET

GENERAL NOTES

GENERAL NOTES

DRILLING PHASE GRADING PLAN

DRILLING PHASE SECTION VIEWS

PRODUCTION PHASE GRADING PLAN

PRODUCTION PHASE SECTION VIEWS

PHASE 1 SEDIMENT AND EROSION CONTROL PLAN

DRILLING PHASE SEDIMENT AND EROSION CONTROL PLAN

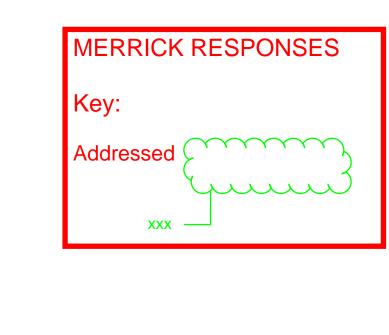
RODUCTION PHASE SEDIMENT AND EROSION CONTROL PLAN

DETAIL SHEET

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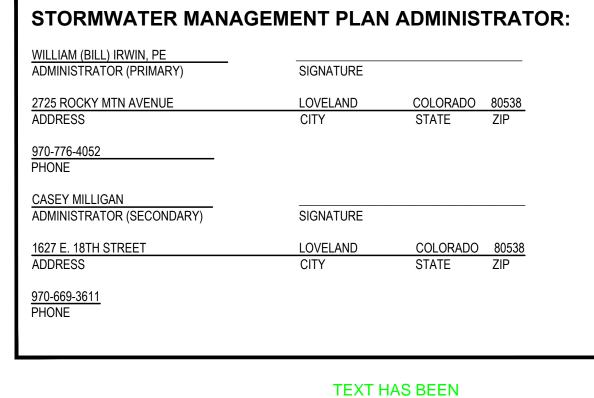


Reviewers Planning Stormwater Fire Traffic Transportation Power General Plat Parks and Rec Building Water/Wastewater

LEGEND

SIGNATURE ADMINISTRATOR (SECONDARY SIGNATURE

CITY OF LOVELAND - IMPROVEMENT CONSTRUCTION PLANS APPROVAL BLOCK LOVELAND FIRE RESCUE AUTHORITY WATER AND POWER DEPARTMENT - WATER/WASTEWATER WATER AND POWER DEPARTMENT - POWER PUBLIC WORKS DEPARTMENT - STORMWATER DIVISION PARKS AND RECREATION DEPARTMENT DEVELOPMENT SERVICES DEPARTMENT - CURRENT PLANNING DIVISION HE CITY OF LOVELAND REVIEW CONSTITUTES COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING STAMPED, SIGNED, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE ENGINEER OF THESE PLANS ARE INTENDED TO BE FOR CITY REVIEW OR PUBLIC AND PRIVATE INFRASTRUCTURE IMPROVEMENTS ASSOCIATED WITH THE DEVELOPMENT PROJECT. CONSTRUCTION OF IMPROVEMENTS CANNOT COMMENCE UNTIL REQUIRED SITE DEVELOPMENT PLANS AND SUBDIVISION PLATS ARE COMPLETE, APPROVED, AND ON FILE WITH THE CITY. HESE PLANS SHALL BE VALID FOR A PERIOD OF THREE YEARS FROM THE DATE OF APPROVAL BY THE TRANSPORTATION DEVELOPMENT DIVISION. IF THE NEXT APPROVAL OR PERMIT REQUIRED TO



provide copy of

SHALL BE DEEMED NULL AND VOID.

LANDSCAPING ADDED TO THE

COMMENCE CONSTRUCTION THAT IS AUTHORIZED BY THE CITY'S APPROVAL OF THESE PLANS HAS NOT

BEEN APPLIED FOR WITHIN THREE YEARS OF THE DATE OF APPROVAL, THE PLANS SHALL EXPIRE AND

PROPOSED WATER LINE **EXISTING WATER LINE** PROPOSED FIRE HYDRANT PROPOSED VALVE EXISTING WATER WELL PROPOSED WATER METER

PROPOSED SANITARY MANHOLE PROPOSED STORM SEWER W/ RIPRAF EXISTING STORM SEWER W/ RIPRAP

PROPOSED SANITARY SEWER

EXISTING WATER METER

PROPOSED TYPE R INLET

— — G — G — EXISTING GAS LINE

PROPOSED DRAINAGE SWALE

EXISTING UNDERGROUND COMMUNICATION LINE

EXISTING UNDERGROUND ELECTRIC LINE — — — EX SS — — EX SS — EXISTING SANITARY SEWER LINE

— FX W — — — FX W — — — EXISTING WATER LINE

LEGAL DESCRIPTION

LEGEND

A PORTION OF OUTLOT P MILLENNIUM EAST 10TH SUBDIVISION BEING A PORTION OF THE NORTHEAST QUARTER AND SOUTHEAST QUARTER OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 68 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF LOVELAND, COUNTY OF LARIMER, STATE OF COLORADO

BEARINGS ARE ASSUMED AND ARE BASED ON THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 11, AS BEARING S89 °10'22"W A DISTANCE OF 2642.94 FEET BETWEEN THE EAST QUARTER CORNER OF SAID SECTION 11 BEING MOMUMENTED BY A FOUND 2" ALUMINUM CAP STAMPED "CITY OF LOVELAND BENCHMARK 95-06" SET IN A HEADWALL

500' N OF HWY 34 INTERSECTION.

REVISION DESCRIPTION

Please include the benchmark elevation and datum used (NVGD29)

ELVATION AND DATUM HAS BEEN

DATE CHNDCHKDAPPR

CENTERRA EAST DEVELOPMENT, LLC CITY OF LOVELAND 2725 ROCKY MOUNTAIN AVE, STE 200 DEVELOPMENT SERVICES DEPARTMENT PUBLIC WORKS DEPARTMENT 444 MOUNTAIN AVENUE 500 EAST THIRD STREET 2525 W. 1st Street LOVELAND, CO 80538 500 EAST THIRD STREET BERTHOUD, CO 80513 (970) 776-4046 LOVELAND, CO 80537 (970) 532-5891 (970) 962-2771 970-962-2531 TROY MCWHINNEY (970) 962-2579 CHRISTINE MYERS SUZETTE SCHAFF, TROY BLISS WATER AND SANITATION FIRE PROTECTION SURVEYOR LAT40, INC. **CIVIL ENGINEER** CITY OF LOVELAND LOVELAND FIRE AND RESCUE MERRICK & COMPANY WATER & POWER DEPARTMENT 410 EAST 5TH STREET 5970 GREENWOOD PLAZA BLVD 6250 W. 10TH STREET, UNIT #2 LOVELAND, CO 80537 200 NORTH WILSON AVENUE GREENWOOD VILLAGE, CO. 80111 GREELEY, CO 80634 LOVELAND, CO 80537 (970) 962-2518 (303) 353-3617 (970) 515-5294 CARIE DANN, DEPUTY FIRE MARSHAL (970) 962-3709 TYLER SCARLETT, P.E. BRIAN ROTTINGHAUS, PLS MELISSA MORIN, P.E.

DIRECTORY

OIL & GAS REGULATORY SPECIALIST **GOETECHNICAL ENGINEER** ARDOR ENVIRONMENTAL 3522 DRAFT HORSE COURT (303) 503-7539 LOVELAND, CO 80538 CONTACT: TRISHA FANNING

LANDSCAPE ARCHITECT

BOLDED NOTE HAS BEEN ADDED.

Please place a bold note in a box on the cover sheet as follows:

PRIOR TO THE ISSUANCE OF A SITE WORK PERMIT OR ANY CONSTRUCTION ACTIVITY WITHIN COUNTY ROAD 3 RIGHT-OF-WAY, A RIGHT-OF-WAY WORK PERMIT AND APPROVED CONSTRUCTION TRAFFIC CONTROL PLAN SHALL BE OBTAINED FROM THE CITY PUBLIC WORKS DEPARTMENT

-

9/1/2022 TVG SWC TS A ISSUED FOR REVIEW

Call before you dig.

OWNER/DEVELOPER

SOILOGIC, INC

(970) 535-6144

CONTACT: DARREL DICARLO, P.E.



VICINITY MAP

MUNICIPALITY

BEEN UPDATED.

STORM DRAINAGE

INFORMATION HAS

BEEN REMOVED.



CORRECTED

numbers beginning

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Sheet Number

C-002

C-100

C-101

C-200

C-300

C-500

C-501

C-502

C-503

MRG, LP OIL AND GAS CE PAD CITY OF LOVELAND, COLORADO CIVIL CONSTRUCTION PLANS **COVER SHEET**

9/1/2022

65120236-10

A. CITY OF LOVELAND GENERAL NOTES

- 1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF PUBLIC IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE LARIMER COUNTY URBAN AREA STREET STANDARDS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE MOST RESTRICTIVE STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE LOCAL
- 2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE ENGINEER SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING, TO HAVE ALL REGISTERED UTILITY LOCATIONS MARKED. OTHER UNREGISTERED UTILITY ENTITIES (I.E. DITCH / IRRIGATION COMPANY) ARE TO BE LOCATED BY CONTACTING THE RESPECTIVE REPRESENTATIVE. UTILITY SERVICE LATERALS ARE ALSO TO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE
- 3. NO WORK MAY COMMENCE WITHIN ANY IMPROVED PUBLIC RIGHT-OF-WAY UNTIL A RIGHT-OF-WAY PERMIT OR DEVELOPMENT CONSTRUCTION PERMIT IS OBTAINED, IF APPLICABLE. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH MUTCD, TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY, (LOCAL ENTITY, COUNTY OR STATE), FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE LOCAL ENTITY ENGINEER AT LEAST 2 WORKING DAYS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS. IF THE LOCAL ENTITY ENGINEER IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE CONTRACTOR MAY COMMENCE WORK IN THE ENGINEER'S ABSENCE. HOWEVER, THE LOCAL ENTITY RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.
- 5. THE ENGINEER WHO HAS PREPARED THESE PLANS, BY EXECUTION AND/OR SEAL HEREOF, DOES HEREBY AFFIRM RESPONSIBILITY TO THE CITY OF LOVELAND, AS BENEFICIARY OF SAID ENGINEER'S WORK, FOR ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS, AND APPROVAL OF THESE PLANS BY THE CITY ENGINEER SHALL NOT RELIEVE THE ENGINEER WHO HAS PREPARED THESE PLANS OF ALL SUCH RESPONSIBILITY. FURTHER, TO THE EXTENT PERMITTED BY LAW, THE ENGINEER HEREBY AGREES TO HOLD HARMLESS AND INDEMNIFY THE CITY, AND ITS OFFICERS AND EMPLOYEES, FROM AND AGAINST ALL LIABILITIES, CLAIMS, AND DEMANDS WHICH MAY ARISE FROM ANY ERRORS AND OMISSIONS CONTAINED IN THESE PLANS.
- 6. ALL UTILITY INSTALLATIONS WITHIN OR ACROSS THE ROADBED OF NEW RESIDENTIAL ROADS MUST BE COMPLETED PRIOR TO THE FINAL STAGES OF ROAD CONSTRUCTION. FOR THE PURPOSES OF THESE STANDARDS, ANY WORK EXCEPT C/G ABOVE THE SUBGRADE IS CONSIDERED FINAL STAGE WORK. ALL SERVICE LINES MUST BE STUBBED TO THE PROPERTY LINES AND MARKED SO AS TO REDUCE THE EXCAVATION NECESSARY FOR BUILDING CONNECTIONS.
- 7. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE LOCAL ENTITY, AND ALL UTILITY COMPANIES INVOLVED, WITH REGARD TO RELOCATIONS, ADJUSTMENTS, EXTENSIONS AND REARRANGEMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, IN ADVANCE, ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES.
- NO WORK MAY COMMENCE WITHIN ANY PUBLIC STORM WATER, SANITARY SEWER OR POTABLE WATER SYSTEM UNTIL THE CONTRACTOR NOTIFIES THE UTILITY PROVIDER. NOTIFICATION SHALL BE A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF ANY WORK. AT THE DISCRETION YEARS, FROM THE DATE, OF ACCEPTANCE. OF THE WATER UTILITY PROVIDER, A PRE-CONSTRUCTION MEETING MAY BE REQUIRED PRIOR TO
- Please provide all 39 LCUASS Appendix E General Notes for Civil Construction plans. For any notes you believe do not apply, please show the THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONS note and mark as N/A. No LCUASS variances are granted for this application. FOR COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR ANY UTILITY CROSSIN
- 10. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE THE APPROXIMATE WHEN SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UNKNOWN UNDERGROUND UTILITIES.
- 11. WHEN APPLICABLE, THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, EACH OF THE FOLLOWING:
- THE NOTICE OF INTENT (NOI) BEST MANAGEMENT PRACTICES (BMP) MAINTENANCE FOLDER
- UP TO DATE STORMWATER MANAGEMENT PLAN (SWMP) THAT ACCURATELY REPRESENTS CURRENT FIELD CONDITIONS ONE (1) SIGNED COPY OF THE APPROVED PLANS
- ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS
- A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
- 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY. REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING.
- 13. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE DESIGNER AND THE LOCAL ENTITY ENGINEER IMMEDIATELY.
- 14. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.
- 15. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH MUTCD, TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY. (LOCAL ENTITY, COUNTY OR STATE), FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
- 16. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS, SHOWN ON THESE DRAWINGS, OR DESIGNATED TO BE PROVIDED, INSTALLED, OR CONSTRUCTED, UNLESS SPECIFICALLY NOTED OTHERWISE.
- 17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NO MUD OR DEBRIS SHALL BE TRACKED ONTO THE EXISTING PUBLIC STREET SYSTEM. MUD AND DEBRIS MUST BE REMOVED BY THE END OF EACH WORKING DAY BY AN APPROPRIATE MECHANICAL METHOD (I.E. MACHINE BROOM SWEEP, LIGHT DUTY FRONT-END LOADER, ETC.) OR AS APPROVED BY THE LOCAL ENTITY STREET

CITY OF LOVELAND GENERAL NOTES (CONTINUED)

- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE LOCAL ENTITY'S INSPECTOR AT ALL TIMES.
- DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE DESIGNER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.
- 20. THE CONTRACTOR SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO PERMIT FOR STORM WATER DISCHARGE. THE STORM WATER MANAGEMENT PLAN, AND THE EROSION CONTROL PLAN
- 21. ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED, AT THE LIMITS OF CONSTRUCTION AND AT AREAS WITH DISTURBED SOIL, ON- OR OFF-SITE, PRIOR TO ANY OTHER GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS IS STABILIZED WITH HARD SURFACE OR LANDSCAPING. TO MITIGATE EROSION, THE CONTRACTOR SHALL USE STANDARD EROSION CONTROL TECHNIQUES DESCRIBED IN THE URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME 3 - BEST MANAGEMENT PRACTICES, AS PUBLISHED BY THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
- 22. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF THE WATER LINES AND DRY UTILITIES.
- 23. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, UNLESS SPECIFICALLY APPROVED BY THE LOCAL ENTITY ENGINEER, AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS, UNLESS THERE IS PRIOR WRITTEN APPROVAL BY THE LOCAL ENTITY.
- 24. THE DESIGNER SHALL PROVIDE ON THE COVER SHEET THE LOCATION OF THE NEAREST SURVEY BENCHMARK FOR THIS PROJECT AS WELL AS THE BASIS OF BEARING. THE BENCHMARK SHALL BE ON THE CURRENT CITY APPROVED DATUM.
- 25. UPON COMPLETION OF CONSTRUCTION, THE SITE SHALL BE CLEANED AND RESTORED TO A CONDITION EQUAL TO, OR BETTER THAN, THAT WHICH EXISTED BEFORE CONSTRUCTION, OR TO THE GRADES AND CONDITION AS REQUIRED BY THESE PLANS.
- 26. EXISTING FENCES, TREES, STREETS, SIDEWALKS, CURBS AND GUTTERS, LANDSCAPING, STRUCTURES. AND IMPROVEMENTS DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED OR RESTORED IN LIKE KIND AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE INDICATED ON THESE PLANS.
- 27. OVERLOT GRADING CONSTRUCTION MUST COMPLY WITH THE STATE OF COLORADO PERMITTING PROCESS FOR "STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY." CONTACT THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT, WATER QUALITY CONTROL DIVISION, PHONE (303) 692-3500.
- 28. A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED IF DEWATERING IS REQUIRED IN ORDER TO INSTALL UTILITIES OR BEFORE WATER IS DISCHARGED INTO A STORM SEWER, CHANNEL, IRRIGATION DITCH OR ANY WATERS OF THE UNITED STATES.
- 29. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING AND VERIFYING ELEVATIONS OF ALL EXISTING SEWER MAINS, WATER MAINS, CURBS, GUTTERS AND OTHER UTILITIES AT THE POINTS OF CONNECTION SHOWN ON THE PLANS, AND AT ANY UTILITY CROSSINGS PRIOR TO INSTALLING ANY OF THE NEW IMPROVEMENTS. IF A CONFLICT EXISTS AND/OR A DESIGN MODIFICATION IS REQUIRED, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVED BY THE LOCAL ENTITY PRIOR TO BEGINNING CONSTRUCTION.
- 30. AFTER ACCEPTANCE BY THE LOCAL ENTITY, PUBLIC IMPROVEMENTS DEPICTED IN THESE PLANS SHALL BE GUARANTEED TO BE FREE FROM MATERIAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF TWO

EMENT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF THREE YEARS PROVAL BY THE LOCAL ENTITY ENGINEER. USE OF THESE PLANS AFTER THE RÉQUIRE A NEW REVIEW AND APPROVAL PROCESS BY THE LOCAL ENTITY PRIOR F ANY WORK SHOWN IN THESE PLANS.

LOCAL ENTITY ENGINEER AND SUBGRADE COMPACTION TESTS ARE TAKEN AND ACCEPTED BY THE LOCAL

- 33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SOILS TESTS WITHIN THE PUBLIC RIGHT-OF-WAY AFTER RIGHT OF WAY GRADING AND ALL UTILITY TRENCH WORK IS COMPLETE. IF THE FINAL SOILS/PAVEMENT DESIGN REPORT DOES NOT CORRESPOND WITH THE RESULTS OF THE ORIGINAL GEOTECHNICAL REPORT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR A RE-DESIGN OF THE SUBJECT PAVEMENT SECTION OR, THE CONTRACTOR MAY USE THE LOCAL ENTITY'S DEFAULT PAVEMENT THICKNESS SECTION(S). REGARDLESS OF THE OPTION USED, ALL FINAL SOILS/PAVEMENT DESIGN REPORTS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER. THE FINAL REPORT SHALL BE SUBMITTED TO THE INSPECTOR A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO PLACEMENT OF BASE AND ASPHALT. PLACEMENT OF BASE AND ASPHALT SHALL NOT OCCUR UNTIL THE ENGINEERING DIVISION APPROVES THE FINAL REPORT.
- 34. ALL ROAD CONSTRUCTION IN AREAS DESIGNATED AS WILD FIRE HAZARD AREAS SHALL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION CRITERIA AS ESTABLISHED IN THE WILD FIRE HAZARD AREA MITIGATION REGULATIONS IN FORCE AT THE TIME OF FINAL PLAT APPROVAL.
- 35. PORTIONS OF LARIMER COUNTY ARE WITHIN OVERLAY DISTRICTS. THE LARIMER COUNTY FLOODPLAIN RESOLUTION SHOULD BE REFERRED TO FOR ADDITIONAL CRITERIA FOR ROADS WITHIN THESE
- 36. STANDARD HANDICAP RAMPS ARE TO BE CONSTRUCTED AT ALL CURB RETURNS AND AT ALL "T"
- 37. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
- 38. APPROVED VARIANCES ARE LISTED AS FOLLOWS: (PLAN SET MUST HAVE A LIST OF ALL APPLICABLE VARIANCES FOR THE PROJECT). IF THIS NOTE APPLIES, THEN THIS SPECIAL NOTE SHALL BE PLACED ON THE COVER SHEET OF THE CIVIL CONSTRUCTION PLANS.

B. CITY OF LOVELAND STANDARD EROSION AND SEDIMENT CONTROL CONSTRUCTION PLAN NOTES:

- 1. THE EROSION CONTROL INSPECTOR MUST BE NOTIFIED AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO ANY CONSTRUCTION ON THIS SITE.
- 2. THERE SHALL BE NO EARTH-DISTURBING ACTIVITY OUTSIDE THE LIMITS DESIGNATED ON THE ACCEPTED
- 3. ALL REQUIRED PERIMETER SILT AND CONSTRUCTION FENCING SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY (STOCKPILING, STRIPPING, GRADING, ETC). ALL OTHER REQUIRED EROSION CONTROL MEASURES SHALL BE INSTALLED AT THE APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE AS INDICATED IN THE APPROVED PROJECT SCHEDULE, CONSTRUCTION PLANS, AND EROSION CONTROL REPORT
- 4. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING ON-SITE EROSION INCLUDING KEEPING THE PROPERTY SUFFICIENTLY WATERED SO AS TO MINIMIZE WIND BLOWN SEDIMENT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL EROSION CONTROL FACILITIES SHOWN HEREIN.
- PRE-DISTURBANCE VEGETATION SHALL BE PROTECTED AND RETAINED WHEREVER POSSIBLE. REMOVAL OR DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO THE AREA(S) REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS, AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
- ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) SHALL BE KEPT IN A ROUGHENED CONDITION BY RIPPING OR DISKING ALONG LAND CONTOURS UNTIL MULCH, VEGETATION, OR OTHER PERMANENT EROSION CONTROL BMPS ARE INSTALLED. NO SOILS IN AREAS OUTSIDE PROJECT STREET RIGHTS-OF-WAY SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS BEFORE REQUIRED TEMPORARY OR PERMANENT EROSION CONTROL (E.G. SEED/MULCH, LANDSCAPING, ETC.) IS INSTALLED, UNLESS OTHERWISE APPROVED BY THE CITY OF LOVELAND.
- 7. IN ORDER TO MINIMIZE EROSION POTENTIAL, ALL TEMPORARY (STRUCTURAL) EROSION CONTROL MEASURES
- (A.) BE INSPECTED AT A MINIMUM OF ONCE EVERY TWO (2) WEEKS AND AFTER EACH SIGNIFICANT STORM EVENT AND REPAIRED OR RECONSTRUCTED AS NECESSARY IN ORDER TO ENSURE THE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
- (B.) REMAIN IN PLACE UNTIL SUCH TIME AS ALL THE SURROUNDING DISTURBED AREAS ARE SUFFICIENTLY STABILIZED AS DETERMINED BY THE EROSION CONTROL INSPECTOR.
- (C.) BE REMOVED AFTER THE SITE HAS BEEN SUFFICIENTLY STABILIZED AS DETERMINED BY THE EROSION CONTROL INSPECTOR.
- 8. WHEN TEMPORARY EROSION CONTROL MEASURES ARE REMOVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN UP AND REMOVAL OF ALL SEDIMENT AND DEBRIS FROM ALL DRAINAGE INFRASTRUCTURE AND OTHER PUBLIC FACILITIES.
- 9. THE CONTRACTOR SHALL IMMEDIATELY CLEAN UP ANY CONSTRUCTION MATERIALS INADVERTENTLY DEPOSITED ON EXISTING STREETS, SIDEWALKS, OR OTHER PUBLIC RIGHTS OF WAY, AND MAKE SURE STREETS AND WALKWAYS ARE CLEANED AT THE END OF EACH WORKING DAY.
- 10. ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, SHALL BE REMOVED AND DISPOSED OF IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY WATERS OF THE UNITED STATES.
- 11. NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY SURFACE ROUGHENING, WATERING, AND PERIMETER SILT FENCING. ANY SOIL STOCKPILE REMAINING AFTER THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED.
- 12. THE STORM WATER VOLUME CAPACITY OF DETENTION PONDS WILL BE RESTORED AND STORM SEWER LINES WILL BE CLEANED UPON COMPLETION OF THE PROJECT AND BEFORE TURNING THE MAINTENANCE OVER TO THE CITY OF LOVELAND OR HOMEOWNERS ASSOCIATION (HOA).
- 13. CITY ORDINANCE AND COLORADO DISCHARGE PERMIT SYSTEM (CDPS) REQUIREMENTS MAKE IT UNLAWFUL TO DISCHARGE OR ALLOW THE DISCHARGE OF ANY POLLUTANT OR CONTAMINATED WATER FROM CONSTRUCTION SITES. POLLUTANTS INCLUDE, BUT ARE NOT LIMITED TO DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, OIL AND GAS PRODUCTS, LITTER, AND SANITARY WASTE. THE CONTRACTOR SHALL AT ALL TIMES TAKE WHATEVER MEASURES ARE NECESSARY TO ASSURE THE PROPER CONTAINMENT AND DISPOSAL OF POLLUTANTS ON THE SITE IN ACCORDANCE WITH ANY AND ALI APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
- 14. A DESIGNATED AREA SHALL BE PROVIDED ON SITE FOR CONCRETE TRUCK CHUTE WASHOUT. THE AREA SHALL BE CONSTRUCTED SO AS TO CONTAIN WASHOUT MATERIAL AND LOCATED AT LEAST FIFTY (50) FEET AWAY FROM ANY WATERWAY DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION ACTIVITIES THE CONCRETE WASHOUT MATERIAL WILL BE REMOVED AND PROPERLY DISPOSED OF PRIOR TO THE AREA
- 15. TO ENSURE THAT SEDIMENT DOES NOT MOVE OFF OF INDIVIDUAL LOTS ONE OR MORE OF THE FOLLOWING SEDIMENT/EROSION CONTROL BMPS SHALL BE INSTALLED AND MAINTAINED UNTIL THE LOTS ARE SUFFICIENTLY STABILIZED, AS DETERMINED BY THE EROSION CONTROL INSPECTOR, (LOVELAND GMA & CITY LIMITS ONLY).
 - (A.) BELOW ALL GUTTER DOWNSPOUTS.
 - (B.) OUT TO DRAINAGE SWALES.
 - (C.) ALONG LOT PERIMETER. (D.) OTHER LOCATIONS, IF NEEDED.
- 16. CONDITIONS IN THE FIELD MAY WARRANT EROSION CONTROL MEASURES IN ADDITION TO WHAT IS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL IMPLEMENT WHATEVER MEASURES ARE DETERMINED NECESSARY, AS DIRECTED BY THE CITY OF LOVELAND.
- 17. A VEHICLE TRACKING CONTROL PAD SHALL BE INSTALLED WHENEVER IT IS NECESSARY FOR CONSTRUCTION EQUIPMENT INCLUDING BUT NOT LIMITED TO PERSONAL VEHICLES EXITING EXISTING ROADWAYS. NO EARTHEN MATERIALS, I.E., STONE, DIRT, ETC., SHALL BE PLACED IN THE CURB & GUTTER OR ROADWAY AS A RAMP TO ACCESS TEMPORARY STOCKPILE(S), STAGING AREA(S), CONSTRUCTION MATERIAL(S), CONCRETE WASHOUT AREA(S) AND/OR BUILDING SITE(S).

Our Standard Erosion & Sediment Control Construction Plan Notes have recently been revised. Please update the Standard Erosion & Sediment Control Construction Plan Notes to the most recent version (May 23, 2022), which can be found on our web site at the following link: www.lovgov.org/services/public-works/stormwater/stormwater-standards.

THE EROSION & SEDIMENT **CONTROL NOTES** HAVE BEEN UPDATED.

9/1/2022 | TVG | SWC | TS | A ISSUED FOR REVIEW DATE CHNDCHKDAPPR REVISION DESCRIPTION

Know what's below. Call before you dig.

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ALL GENERAL

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MRG, LP OIL AND GAS CE PAD CITY OF LOVELAND, COLORADO CIVIL CONSTRUCTION PLANS **GENERAL NOTES**

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GENERAL NOTES

1.THE CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE OWNER AND ENGINEER.

SAFETY

- 2. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY OF HIS OWN PERSONNEL, ALL VISITORS TO THE SITE, AND THE GENERAL PUBLIC. CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ALL APPLICABLE HEALTH AND SAFETY STANDARDS INCLUDING, BUT NOT LIMITED TO, OSHA 29 CFR PARTS 1910 AND 1926 FOR GENERAL CONSTRUCTION.
- 3. UNLESS A SAFE EXCAVATION/TRENCH DEPTH IS SPECIFICALLY IDENTIFIED DURING THE PRECONSTRUCTION SAFETY ASSESSMENT BY QUALIFIED PERSONNEL, WHERE PERSONNEL ENTER EXCAVATIONS 4 FEET OR MORE IN DEPTH, PROTECT THE EXCAVATION WITH A SUPPORT SYSTEM OF SLOPING, SHORING, BRACING OR BY USE OF A TRENCH BOX MEETING OSHA SAFETY STANDARD: INSPECT SHORING AND/OR BRACING SYSTEMS DAILY AND AFTER RAINSTORMS OR OTHER HAZARD-INCREASING OCCURRENCE. ALSO PROVIDE SUCH PROTECTION IN EXCAVATIONS LESS THAN 4 FEET DEEP WHERE HAZARDOUS EARTH MOVEMENT MAY BE EXPECTED.

TOPSOIL, CLEARING AND GRUBBING

- 4. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIAL INCLUDING, BUT NOT LIMITED TO VEGETATION, ROCK, DEBRIS, EXCESS SOILS, DEMOLITION MATERIALS, AND CONSTRUCTION MATERIALS. ACQUISITION OF OFF-SITE DISPOSAL AREA IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE INDICATED BY CLIENT.
- 5. PERFORM ALL CLEARING, GRUBBING AND EARTHWORKS IN CONFORMANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS, INCLUDING REQUIREMENTS FOR HANDLING, REMOVING AND DISPOSING OF CONTAMINATED SOIL, IF APPLICABLE.
- NO VEGETATION OVERHANGING THE CONSTRUCTION AREA, BUT ROOTED OUTSIDE SAID AREA, SHALL BE REMOVED WITHOUT APPROVAL FROM THE CLIENT OR CONSTRUCTION MANAGER.
- 7. SHOULD THE CONTRACTOR DISCOVER THAT THE DEPTH OF TOPSOIL EXCEEDS THE DEPTH INDICATED ON THE PLANS, CONTRACTOR SHALL NOTIFY THE CLIENT AND ENGINEER IN WRITING TO DETERMINE IF ANY REVISIONS TO THE EARTHWORKS QUANTITIES AND DESIGN ARE REQUIRED. UNDER SUCH CIRCUMSTANCES THE CONTRACTOR SHALL NOT PROCEED WITH TOPSOIL REMOVAL UNTIL DIRECTED TO DO SO BY THE CLIENT OR CONSTRUCTION MANAGER.

GRADING AND COMPACTION

- 8. WHERE A GEOTECHNICAL REPORT EXISTS FOR THIS PROJECT, CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND ADHERING TO THE REQUIREMENTS OF THE REPORT. SHOULD A DISCREPANCY BETWEEN THE PROJECT SITE GEOTECHNICAL REPORT AND THESE PLANS EXIST, CONTRACTOR TO INFORM THE ENGINEER IN WRITING BEFORE PROCEEDING WITH EARTHWORKS ACTIVITIES. CONTRACTOR SHALL NOT PROCEED WITH EARTHWORKS ACTIVITIES UNTIL DIRECTED TO DO SO BY THE ENGINEER AND CLIENT.
- 9. ONSITE EXCAVATED MATERIAL STORAGE SHALL BE IN THE LOCATION INDICATED BY THE CLIENT OR AS INDICATED ON THESE PLANS. CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES FOR THE SOIL STOCKPILES AS APPROPRIATE TO COMPLY WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- 10. ANY ROCK UNEARTHED DURING EXCAVATION WITH A LONG AXIS LENGTH THAT EXCEEDS 5 INCHES AND IS NOT REQUIRED FOR SITE DEVELOPMENT, SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS INDICATED OTHERWISE BY THE CLIENT OR ENGINEER.
- 11. CONTRACTOR TO PROVIDE AND VERIFY THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED PRIOR TO INDEPENDENT CONFIRMATION OF COMPACTION BY A QUALIFIED INSPECTOR. OPTIMUM MOISTURE CONTENT AND MAXIMUM COMPACTED DENSITY TO BE INDICATED IN THESE DRAWINGS OR IN THE ASSOCIATED GEOTECHNICAL REPORT. ON SPEC MATERIAL TO BE PLACED AND COMPACTED IN 6-INCH HORIZONTAL LIFTS.
- 12. COMPACTION TO BE VERIFIED BY NUCLEAR METHOD PER ASTM D-6938 OR BY AN EQUIVALENT METHOD APPROVED BY THE ENGINEER.
- 13. COMPACTION TESTING FREQUENCY FOR ROADS AND PARKING AREAS SHALL BE 1 TEST (ASTM D-6938) PER 12 FT. OF WIDTH PER 500 FT. OF

LENGTH, OR FRACTION THEREOF PER 6" LIFT UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.

14. COMPACTION TEST FREQUENCY FOR AREAS UNDER STRUCTURAL FOUNDATIONS SHALL BE 1 TEST (ASTM D-6938) FOR EACH 1,000 FT2/ OR FRACTION THEREOF PER 6" LIFT, UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.

15. COMPACTION TEST FREQUENCY FOR DETENTION OR RETENTION POND FILL EMBANKMENTS OR ANY EMBANKMENT IMPOUNDING WATER SHALL BE A MINIMUM OF 1 TEST (ASTM D-6938) PER 2,500 FT2/ OR FRACTION THEREOF PER 6" LIFT UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.

16. COMPACTION TEST FREQUENCY FOR REMAINING AREAS (NOT INCLUDING STRUCTURAL FOUNDATIONS, ROADS AND DETENTION POND EMBANKMENTS) IN NON-HEAVY LOADING AREAS SHALL BE 1 SPOT CHECKS PER 40,000 FT²/ PER 6" LIFT IN FILL AREAS UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.

17. CONSTRUCTION MANAGER, INSPECTOR AND/OR ENGINEER MAY REQUIRE THAT MORE COMPACTION TESTS ARE NEEDED BASED ON FIELD OBSERVATIONS. THE RECOMMENDED NUMBER OF COMPACTION TESTS INDICATED IN THESE GENERAL NOTES CONSTITUTES THE MINIMUM NUMBER OF TESTS; MORE TESTS MAY BE WARRANTED BASED ON FINDINGS IN THE

18. THE CONTRACTOR SHALL SCARIFY SUBGRADE 6" (MIN.) WITH A MOISTURE CONDITION AND COMPACT TO 95% MAXIMUM ACHIEVABLE DENSITY IN ACCORDANCE WITH ASTM D-698 UNLESS INDICATED OTHERWISE IN THESE

19. HORIZONTAL LIFTS OF NON-GRAVEL MATERIAL TO BE COMPACTED IN 6" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698 UNLESS INDICATED OTHERWISE IN THESE PLANS. HORIZONTAL LIFTS OF GRAVEL MATERIAL TO BE COMPACTED IN 6" (MAX) LIFTS TO 90% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557 UNLESS INDICATED OTHERWISE IN THESE PLANS. SHOULD A DISCREPANCY BETWEEN THE PROJECT SITE GEOTECHNICAL REPORT AND THESE PLANS EXIST, CONTRACTOR TO INFORM THE ENGINEER IN WRITING BEFORE PROCEEDING WITH SOIL LIFT PLACEMENT AND COMPACTION.

20. WHERE SUFFICIENT EXCAVATION MATERIAL IS NOT AVAILABLE FOR FILL AND "BORROW MATERIAL" IS REQUIRED; BORROW MATERIAL SHALL BE OBTAINED FROM SOURCES SHOWN IN THIS DRAWING PACKAGE OR OTHER SOURCES APPROVED BY THE ENGINEER. OVERBURDEN TO BE REMOVED FROM BORROW SITE PRIOR TO OBTAINING BORROW MATERIAL. ENGINEER APPROVED BMP AND EROSION CONTROL MEASURES TO BE PROVIDED BY CONTRACTOR FOR ANY BORROW LOCATIONS.

21. BLASTING IS NOT PERMITTED, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER AND CLIENT.

22. THE CUT AND FILL VOLUMES PROVIDED IN THIS DRAWING PACKAGE ARE LISTED AS BANK (I.E. IN-SITU) VOLUMES UNLESS INDICATED OTHERWISE. UNLESS STATED ELSEWHERE IN THIS DRAWING PACKAGE OR IN THE APPLICABLE GEOTECHNICAL REPORT, CONTRACTOR TO ASSUME A 25% VOLUMETRIC CHANGE OF EXCAVATED SOILS (BULKING/SHRINKAGE FACTOR) FOR THE PURPOSES OF EARTHWORKS TRANSPORT, STORAGE AND STOCKPILING. SOIL MATERIAL PLACED AND COMPACTED PER THE REQUIREMENTS OF THESE PLANS IS ASSUMED TO BE HAVE A 1:1 RATIO FOR EXCAVATED (BANK) TO PLACED EARTHWORKS VOLUMES; ANY OBSERVED VOLUMETRIC CHANGE IN THE SOILS (EXPANSION AND/OR SHRINKAGE) OF THE PLACED AND COMPACTED MATERIALS THAT IS NOT AT A 1:1 RATIO SHALL BE REPORTED TO THE CLIENT AND ENGINEER BY THE CONTRACTOR.

23. ALL STOCKPILES SHOWN IN THESE PLANS ARE ASSUMED TO HAVE 2H:1V SIDE SLOPES. MAXIMUM STOCKPILE HEIGHT IS ASSUMED TO BE 10 FT. CONTRACTOR SHALL NOT CREATE STOCKPILES WITH SIDE SLOPES GREATER THAN 2:1 OR HEIGHTS GREATER THAN 10 FT. WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OR UNLESS INDICATED OTHERWISE IN THESE PLANS. THE STOCKPILE FOOTPRINTS SHOWN IN THESE PLANS ARE ASSUMED TO HAVE AN EXPANSION FACTOR OF 1.25.

24. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES IDENTIFIED SHALL BE BROUGHT TO THE INSPECTOR'S OR CONSTRUCTION MANAGER'S ATTENTION AND RECONCILED WITH THE ENGINEER PRIOR TO CONSTRUCTION.

24. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ALL EXISTING DISTURBED AREAS, FENCES, WALLS, SHEDS OR ANY OTHER STRUCTURES

ACCEPTED BY

CITY ENGINEER (or Desginee)

DAMAGED DURING CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER CONDITION. ANY DAMAGE TO ADJACENT PROPERTY OFF OF THE CLIENT'S PROPERTY SHALL BE REPORTED TO THE CLIENT'S REPRESENTATIVE FOR AUTHORIZATION PRIOR TO SAID REPAIRS.

25. ALL EARTHWORKS SHALL CONFORM TO ELEVATIONS AND GRADES DESIGNATED IN THIS DRAWING PACKAGE. ALLOWABLE TOLERANCES ARE ± 0.10 FEET OF FINISHED FINAL GRADE (FG) FOR ALL EARTHWORKS UNLESS INDICATED OTHERWISE IN THIS DRAWING PACKAGE OR BY THE ENGINEER.

26. CONTRACTOR TO PROVIDE BEST MANAGEMENT PRACTICES (BMP) FOR STORMWATER RUNOFF AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GOVERNMENT REQUIREMENTS. IN PARTICULAR, BMP SHALL CONFORM WITH THE FEDERAL CLEAN WATER ACT'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER REGULATIONS REQUIREMENTS. DO NOT PERFORM ANY GRADING OR GRUBBING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS, OR INTO NATURAL WATERCOURSES.

27. ALL PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO ANY OTHER EARTH DISTURBING ACTIVITY. ALL OTHER STRUCTURAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS SOON AS THE CONSTRUCTION ACTIVITIES, AROUND WHICH THEY ARE BASED. COMMENCE.

28. IMPORTED, ENGINEERED FILL TO MEET ASTM D-1241 SPECIFICATION FOR TYPE I, GRADE B MATERIAL AS FOLLOWS UNLESS INDICATED OTHERWISE IN THIS DRAWING PACKAGE:

- A. 100% SOIL MATERIAL FINER THAN 2-INCH SIEVE.
- B. 75% 95% SOIL MATERIALS FINER THAN 1-INCH SIEVE.
- C. 40% 75% SOIL MATERIALS FINER THAN NO. 3/8 SIEVE.
- D. 30% 60% SOIL MATERIALS FINER THAN NO. 4 SIEVE. E. 20% - 45% SOIL MATERIALS FINER THAN NO. 10 SIEVE.
- F. 15% 30% SOIL MATERIALS FINER THAN NO. 40 SIEVE.
- G. 5% 15% SOIL MATERIALS FINER THAN NO. 200 SIEVE.
- H. MAXIMUM LIQUID LIMIT OF 25.
- I. PLASTICITY INDEX (PI) 6 (MAX).
- J. MAXIMUM EXPANSIVE POTENTIAL 0.5%.

29. CONTRACTOR TO BE ADVISED THAT IN THE EVENT CAD GRADING FILES ARE PROVIDED TO THE CONTRACTOR, OR ANY OTHER PARTY INVOLVED WITH EARTHWORKS ACTIVITIES, THAT THE CAD FILES ARE NOT TYPICALLY PRODUCED TO A LEVEL APPROPRIATE FOR DIRECT USE BY HEAVY EQUIPMENT GPS "AUTO-PILOT" GRADING ACTIVITIES. THE PROVIDE CAD FILES MUST TYPICALLY BE PREPARED AND/OR REVISED BEFORE BEING USED FOR HEAVY EQUIPMENT GPS "AUTO-PILOT" GRADING USE.

FINAL GRADE AND ACCEPTANCE

30. FINAL GRADE TO MAINTAIN POSITIVE (I.E. OFFSITE) DRAINAGE ACROSS THE ENTIRE PROJECT SITE UNLESS SPECIFICALLY INDICATED OTHERWISE IN THIS DRAWING PACKAGE.

31. FINAL SUBGRADE (AS APPLICABLE) TO BE PROOF ROLLED BY A TRUCK WITH A REAR AXLE LOAD OF APPROXIMATE 16,000 LBS./AXLE AND ACCEPTED BY THE INSPECTOR OR CONSTRUCTION MANAGER PRIOR TO FINAL ACCEPTANCE OF SUBGRADE AND PLACEMENT OF GRAVEL TOP LAYER. REMOVE AND REPLACE ANY SOFT MATERIAL WHICH EXHIBITS PERMANENT SUBGRADE DEFORMATION EXCEEDING 0.5".

PROJECT SPECIFIC NOTES

32. PAD TO BE CAPPED WITH CDOT CLASS 6 AGGREGATE BASE COURSE (ABC) UNLESS INDICATED OTHERWISE IN THESE PLANS OR BY THE CLIENT. ABC TO BE COMPACTED IN 4" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698 UNLESS INDICATED OTHERWISE IN THESE PLANS.

33. AS OF THE TIME THIS DRAWING PACKAGE WAS ISSUED, NO INFORMATION REGARDING TANK LOCATION, SIZE, WEIGHT (IF APPLICABLE) WAS NOT AVAILABLE. THE PREFERRED LOCATION(S) FOR TANK PLACEMENT ARE IN AREAS OF CUT. IF ANY LARGE TANKS (E.G. MLTS, MINION TANKS, ETC.) ARE INTENDED TO BE PLACED ON THE PAD IN FILL AREAS, THE TANK(S) MUST BE PLACED A MINIMUM OF 30 LINEAR FEET FROM THE EDGE OF THE PAD. THIS REQUIREMENT IS TO PROVIDE ADEQUATE SPACING TO PROTECT AGAINST

SLOPE INSTABILITY ISSUES AND TO PROVIDE SAFE WORKING CONDITIONS IN ACCORDANCE WITH ENGINEERING BEST PRACTICES. IF THERE ARE ANY QUESTIONS OR CONCERNS REGARDING SAFE PLACEMENT OF LARGE TANK OR TANK LIKE STRUCTURES (I.E. LARGE LOADS) PLEASE CONTACT MERRICK & COMPANY INFRASTRUCTURE DIVISION (DENVER OFFICE) ENGINEERING DEPARTMENT TO OBTAIN GUIDANCE AS TO WHERE THE TANK(S) CAN BE SAFELY LOCATED.

34. HORIZONTAL LIFTS OF FILL SOIL MATERIAL (NON-GRAVELS) DIRECTLY BENEATH AND WITHIN 5.0 FT. OF THE TANK TO BE COMPACTED IN 6" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557; A MINIMUM OF THREE (3) COMPACTION TESTS PER 6" LIFT (COMPACTED THICKNESS) SHALL BE PERFORMED FOR THE FILL AREAS DIRECTLY BENEATH AND WITHIN 5.0 FT. OF THE TANK TO CONFIRM THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.

35. GRADING INSPECTION TO BE PERFORMED BY A QUALIFIED PERSON AT LEAST ONCE EVERY 3 MONTHS OR AFTER A LARGE STORM EVENT. INSPECTOR TO VERIFY THAT SOFT SPOTS, EROSION, UNDERMINING OF THE CDOT CLASS 6 SURFACE COURSE CAP, ETC. DOES NOT OCCUR. ANY DAMAGE TO THE GRADING THAT IS IDENTIFIED WILL NEED TO BE REPAIRED IN A TIMELY FASHION TO PREVENT COMPROMISING THE STRUCTURAL INTEGRITY OF THE GRADING.

Please create a section for CR3 Road Maintenance, dust control and | final grading/paving specifications TBD and provided with the next round | of review or possibly prior to the next submittal if available.

AFTER FURTHER DISCUSSION WITH THE CITY IT WAS DECIDED THAT THESE NOTES DO NOT NECESSARILY NEED TO BE ON THE PLANS AND WILL BE INCLUDED IN THE DEVLEOPMENT AGREEMENT CONDITIONS.

STANDARD CONCRETE NOTES:

- A CONCRETE PERMIT IS REQUIRED FOR ALL NEW UTILITY SERVICE AND IRRIGATION LINES CROSSING UNDER THE PUBLIC CURB. GUTTER AND SIDEWALK UNLESS INSTALLATION IS MADE BY A MECHANICAL BORE. DIGGING OR TUNNELING UNDER THE CONCRETE IS
- 2. CONCRETE AND ASPHALT PAVEMENTS SHALL BE SAW CUT TO FULL DEPTH AT THE NEAREST JOINT OR AS MARKED BY THE ENGINEER AND ALONG THE JOINT BETWEEN CONCRETE AND ASPHALT PAVEMENTS SHALL BE SAW CUT FOR THE FULL DEPTH OF THE CONCRETE. ALL ADVANCE SAWING SHALL BE PERFORMED WITH A WET SAW. ALL WATER AND CONCRETE DUST RESIDUE SHALL BE CLEANED FROM SITE AT THE TIME OF SAWING. ASPHALT SHALL BE SAWCUT A MINIMUM OF NINE (9) INCHES AND A MAXIMUM OF TWELVE (12) INCHES AWAY FROM THE LIP AND THE ASPHALT REMOVED. AFTER CONCRETE HAS BEEN PLACED, CURED AND FORMS REMOVED, THE AREA SHALL BE THOROUGHLY CLEANED AND COMPACTED AND PATCHED WITH ASPHALT.
- ALL SUBGRADE UPON WHICH CONCRETE IS TO BE PLACED SHALL BE THOROUGHLY COMPACTED AND MOISTENED. THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE VARIOUS UNITS REQUIRING TAMPING BY THE ENGINEER ON CITY PROJECTS. CONCRETE SHALL BE PLACED ONLY WHEN THE SUBGRADE IS MOIST AND NOT WHEN IT IS TOO WET OR DRY OR UNSTABLE. JUMPING-JACK AND PLATE TAMPERS MUST BE ON SITE AT ALL TIMES DURING SUB GRADE PREPARATIONS.
- METAL OR WOODEN FORMS MAY BE USED. THEY SHALL BE FREE FROM WARP, OF SUFFICIENT STRENGTH TO RESIST SPRINGING OUT OF SHAPE. FORMS SHALL BE CLEANED OF ALL MORTAR AND DIRT AND OILED BEFORE THEY ARE USED. THEY SHALL BE SET TO THE ESTABLISHED LINE AND GRADE, BEING WELL STAKED, BRACED, OR OTHERWISE HELD IN PLACE. FORMS SHALL REMAIN IN PLACE AT LEAST TWELVE (12) HOURS AFTER CONCRETE HAS BEEN PLACED AGAINST THEM OR FOR A LONGER PERIOD IF SO DIRECTED BY THE ENGINEER. MAXIMUM DEVIATION OF THE TOP SURFACE SHALL NOT EXCEED ONE-EIGHTH (1/8) INCH IN TEN (10) FEET OR THE INSIDE FACE NOT MORE THAN ONE-QUARTER (1/4) INCH IN TEN (10) FEET. THE METHOD OF CONNECTIONS BETWEEN SECTIONS SHALL BE SUCH THAT THE JOINT THUS FORMED IS TIGHT AND FREE FROM MOVEMENT IN ANY DIRECTION. APPROVED FLEXIBLE FORMS SHALL BE USED FOR CONSTRUCTION WHERE THE RADIUS IS ONE HUNDRED FIFTY (150) FEET OR LESS.
- 5. AFTER THE INSPECTOR HAS APPROVED THE FORMS AND SUBGRADE. THEN CONCRETE SHALL BE DEPOSITED ON THE SUBGRADE TO THE REQUIRED DEPTH AND WIDTH IN SUCCESSIVE BATCHES AND IN A CONTINUOUS OPERATION. THE CONCRETE SHALL BE PLACED AS UNIFORMLY AS POSSIBLE TO MINIMIZE THE AMOUNT OF SPREADING NECESSARY. WHILE BEING PLACED, THE CONCRETE SHALL BE SPADED AND/OR VIBRATED WITH SUITABLE TOOLS TO PREVENT THE FORMATION OF VOIDS OR HONEYCOMB.WIRE FABRIC SHALL BE PLACED AT A POINT THREE (3) INCHES BELOW THE SURFACE OF A CROSS PAN AND SQUARED-OUT RETURN. THE FABRIC SHALL BE FULLY SUPPORTED ON PRECAST MORTAR BLOCKS PRIOR TO PLACING THE CONCRETE.
- 6. ALL SIDEWALKS, CURB, GUTTERS AND DRIVEWAYS SHALL HAVE THE NAME OF THE CONTRACTOR AND THE YEAR OF CONSTRUCTION IMPRESSED THEREIN, USING BLOCK LETTERS ONE (1) INCH HIGH AND THREE-EIGHTH (3/8) INCH DEEP. ONE IMPRESSION SHALL BE MADE IN EACH DRIVEWAY. IMPRESSIONS SHALL BE MADE IN SIDEWALKS, CURBS, GUTTERS AT EACH END OF THE CONSTRUCTION, OR AT ONE HUNDRED (100) FOOT INTERVALS AND AT EACH EXTENSION TO CURBING.
- ANY ADJUSTMENT TO UTILITY COVERS, STOP BOXES, METER PITS, MANHOLE LIDS, SPLICE BOXES, VALVE BOXES ETC WILL BE COMPLETED BY THE CONTRACTOR. ANY STOP BOXES BROKEN OR UNABLE TO BE ADJUSTED WILL BE IDENTIFIED FOR REPLACEMENT BY THE ENGINEER AT TIME OF INSPECTION AND WILL BE MEASURED AND PAID FOR IN ACCORDANCE WITH SECTION 3.2.1 OF THESE STANDARD SPECIFICATIONS.
- 8. CONCRETE SHALL BE CDOT CLASS B (4,500 PSI) FROM A CDOT PRE-APPROVED SUPPLIER OR CONTRACTOR SHALL SUBMIT A MIX DESIGN TO THE CITY OF ENGLEWOOD FOR APPROVAL PRIOR TO CONSTRUCTION.
- 9. CONCRETE SHALL BE CURED BY PROTECTING IT AGAINST MOISTURE LOSS, RAPID TEMPERATURE CHANGE, RAIN, FLOWING WATER AND MECHANICAL INJURY FOR A PERIOD OF NOT LESS THAN FIVE (5) DAYS AFTER PLACEMENT.
- 9.a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FROM THE ELEMENTS AND TRAFFIC, AND IF NEGLECTED THE ENGINEER SHALL DIRECT THAT THE NECESSARY PROTECTIVE MEASURES BE TAKEN AT THE EXPENSE OF THE CONTRACTOR, AND NO FURTHER POURING WILL BE PERMITTED.
- 9.b. MOIST CURING. MOIST CURING SHALL BE ACCOMPLISHED AFTER INITIAL SET BY COVERING WITH WET BURLAP, COTTON MATS, OR OTHER APPROVED FABRIC USED SINGLY OR IN COMBINATION. CURING MATS SHALL BE KEPT CONTINUOUSLY WET AND IN INTIMATE CONTACT WITH THE CONCRETE FOR THE DURATION OF THE MOIST CURE.
- 9.c. WATERPROOF PAPER AND POLYETHYLENE SHEETS. THE SURFACE OF THE CONCRETE SHALL BE THOROUGHLY MOISTENED WITH A FINE SPRAY OF WATER AND THEN COVERED AFTER INITIAL SET WITH THE WATERPROOF PAPER OR SHEETING. PAPER OR SHEETING SHALL COVER THE ENTIRE WIDTH AND EDGES SHALL BE LAPPED AT LEAST TWELVE (12) INCHES TO INSURE COMPLETE COVERAGE. PAPER OR SHEETING SHALL BE ADEQUATELY WEIGHTED TO PREVENT DISPLACEMENT OR BILLOWING DUE TO WIND. ("SHEET MATERIALS FOR CURING CONCRETE", A.A.S.H.T.O. DESIGNATION: M 171-70.)
- LIQUID MEMBRANE CURING COMPOUND. ONLY WHITE PIGMENTED MEMBRANE CURING COMPOUND SHALL BE USED (PROTEX PROMULSION 50AW OR EQUIVALENT) AND SHALL BE APPLIED IMMEDIATELY AFTER THE WATER SHEEN HAS LEFT THE FINISHED CONCRETE. THE COMPOUND SHALL BE APPLIED AT A RATE OF ONE GALLON PER 200 SQUARE FEET. CLEAR CURING COMPOUND SHALL BE USED FOR ANY COLORED CONCRETE PLACED.
- 10. EXCEPT BY SPECIFIC WRITTEN AUTHORIZATION, CONCRETING SHALL CEASE WHEN AMBIENT AIR TEMPERATURE IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT FALLS BELOW 40 DEGREES FAHRENHEIT. IT SHALL NOT BE RESUMED UNTIL THE AMBIENT AIR TEMPERATURE IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT IS 35 DEGREES FAHRENHEIT AND RISING. CONCRETE SHALL NOT BE PLACE ON FROZEN GROUND. WHEN CONCRETE IS PERMITTED DURING COLD WEATHER, THE TEMPERATURE OF THE MIX SHALL BE NOT LESS THAN 50 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT AT THE TIME OF PLACING. AGGREGATES OR WATER OR BOTH MAY BE HEATED, BUT SHALL NOT BE HEATED TO A TEMPERATURE GREATER THAN 150 DEGREES FAHRENHEIT. BEFORE CONCRETING IS STARTED, REMOVE ICE, SNOW AND FROST. WHEN CONCRETE IS BEING PLACED IN COLD WEATHER AND TEMPERATURE MAY BE EXPECTED TO DROP BELOW 35 DEGREES FAHRENHEIT, A SUPPLY OF STRAW, INSULATED CURING BLANKETS, OR OTHER SUITABLE MATERIAL SHALL BE PROVIDED ALONG THE LINE OF WORK. AT ANY TIME WHEN THE AIR TEMPERATURE MAY BE EXPECTED TO REACH THE FREEZING POINT DURING THE DAY OR NIGHT, THE MATERIALS SO PROVIDED SHALL BE SPREAD OVER THE CONCRETE TO A SUFFICIENT DEPTH TO PREVENT FREEZING OF THE CONCRETE. CONCRETE SHALL BE PROTECTED FROM FREEZING TEMPERATURES FOR A MINIMUM OF THREE (3) DAYS FROM THE TIME OF PLACEMENT. MAINTAIN CONCRETE SURFACE TEMPERATURES FOR THE PERIOD IN ACCORDANCE WITH COLUMN 2 OF ACI 306, TABLE 3.2.1. CONCRETE INJURED BY FROST ACTION SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXCEPT BY WRITTEN AUTHORIZATION, CONCRETE PLACING SHALL CEASE IF THE TEMPERATURE OF THE PLASTIC CONCRETE CANNOT BE MAINTAINED AT 90 DEGREES OR LOWER. TO FACILITATE THE PLACEMENT OF CONCRETE IN HOT WEATHER, THE AGGREGATES OR WATER OR BOTH MAY BE COOLED.
- 11. CONCRETE SHALL NOT BE OPENED TO TRAFFIC FOR A PERIOD OF AT LEAST THREE (3) DAYS AFTER THE LAST CONCRETE HAS BEEN PLACED OR UNTIL TEST RESULTS SHOW THAT CONCRETE HAS OBTAINED AT LEAST 3,000 PSI STRENGTH OR FOR A LONGER PERIOD OF TIME IF THE ENGINEER CONSIDERS IT NECESSARY. IF IT IS DESIRED TO OPEN NEWLY PLACED CONCRETE TO TRAFFIC EARLIER THAN THREE (3) DAYS, CONTRACTOR MAY ELECT TO PLACE AN ACCELERATED CURING MIX, AT NO ADDITIONAL COST TO THE CITY, AND OPEN THE AREA TO TRAFFIC ONCE STRENGTH HAS REACHED AT LEAST 3,000 PSI. CONTRACTOR MUST DEMONSTRATE THAT THE IN-PLACE CONCRETE HAS ACHIEVED A COMPRESSIVE STRENGTH ACCEPTABLE TO THE ENGINEER. IT SHALL BE THE OBLIGATION OF THE CONTRACTOR TO MAINTAIN SUITABLE BARRICADES WHILE CONCRETE CURES.
- 12. AT THE END OF EACH WORKDAY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK EACH CONCRETE LOCATION AND INSURE PROPER BARRICADING IS IN PLACE. BARRICADING SHALL BE IN CONFORMANCE WITH THE MUTCD FOR THE PROTECTION OF A WORK AREA. BARRICADES SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS ATTAINED THE NECESSARY STRENGTH. ALL BARRICADES AND TRAFFIC CONTROL DEVICES MUST HAVE WORKING LIGHTS WHEN IN SERVICE.
- 13. UNLESS OTHERWISE STATED IN THESE PLANS, STEEL REINFORCEMENT BARS SHALL BE NEW, DEFORMED BILLET STEEL, MEETING ASTM A 615; GRADE 60. TIE WIRE: ANNEALED STEEL, FED. SPEC. QQ W 461, 16 GAUGE MINIMUM.
- 14. BAR SUPPORTS: THE CONCRETE BLOCK SUPPORTS AT THE BASE OF THE WALL AND FOR THE SLAB-ON-GRADE SHALL BE SPECIALLY FABRICATED FOR THIS PROJECT, EITHER BY THE CONTRACTOR OR BY A SPECIALTY SUPPLIER ACCEPTABLE TO THE ENGINEER. THEY SHALL BE 4-INCHES SQUARE AND 2-3/8 INCHES THICK AND SHALL BE MADE OF SIMILAR CONCRETE AS SPECIFIED FOR THE STRUCTURE, ADJUSTED FOR ELIMINATION OF THE COURSE AGGREGATE

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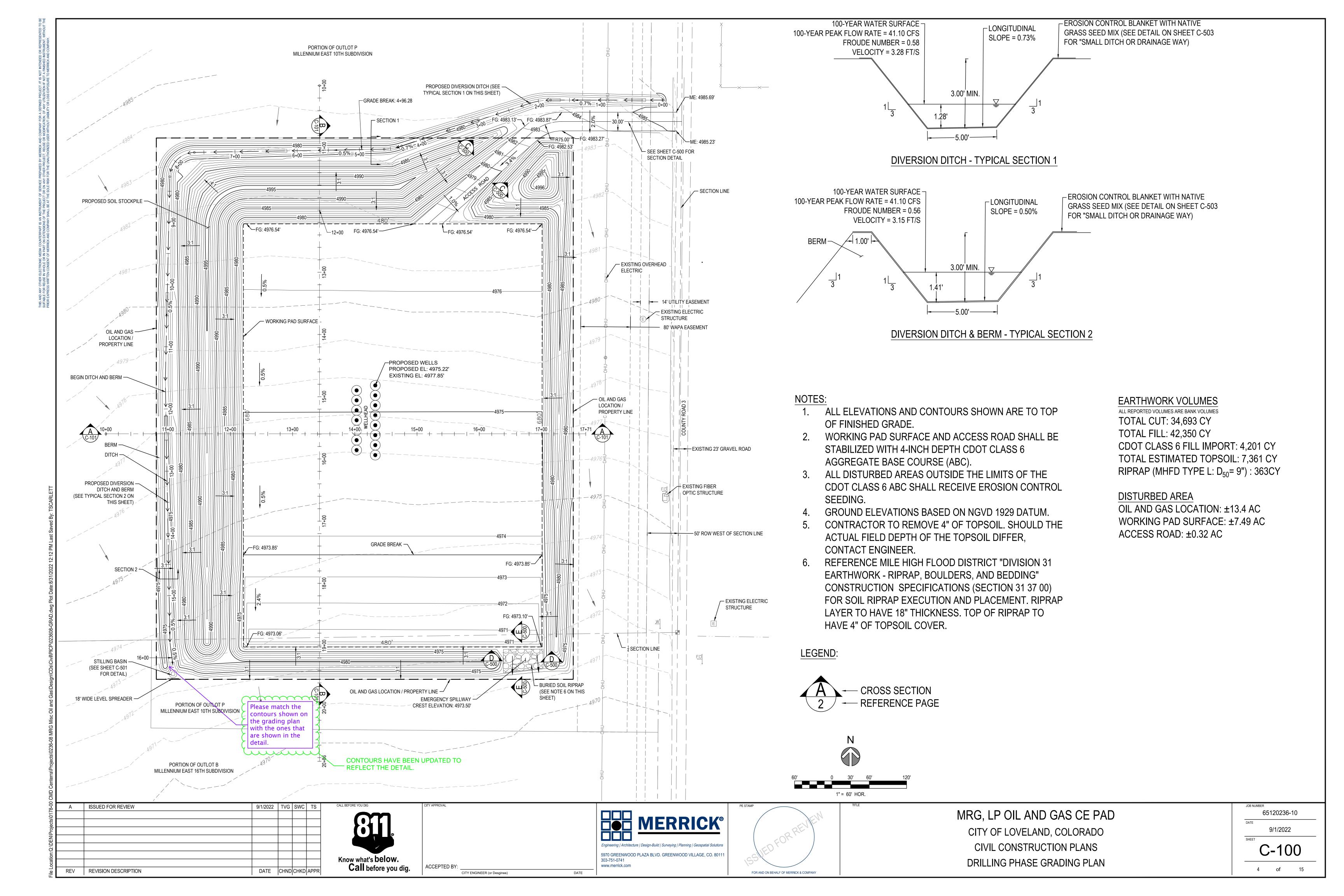
Engineering | Architecture | Design-Build | Surveying | Planning | Geospatial Solutions 5970 GREENWOOD PLAZA BLVD. GREENWOOD VILLAGE, CO. 8011 303-751-0741 www.merrick.com



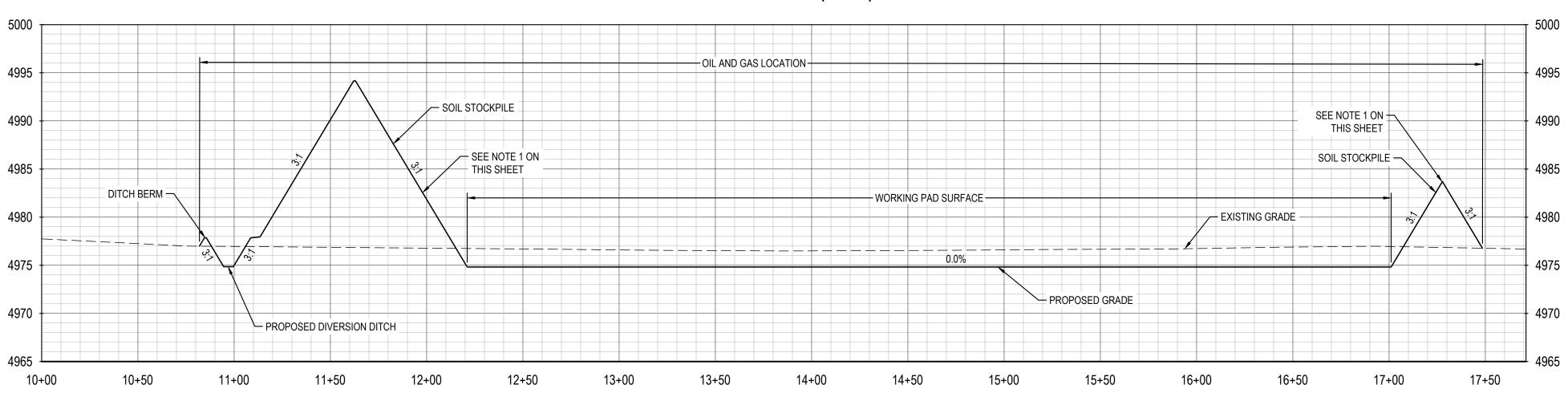
MRG, LP OIL AND GAS CE PAD CITY OF LOVELAND, COLORADO CIVIL CONSTRUCTION PLANS **GENERAL NOTES**

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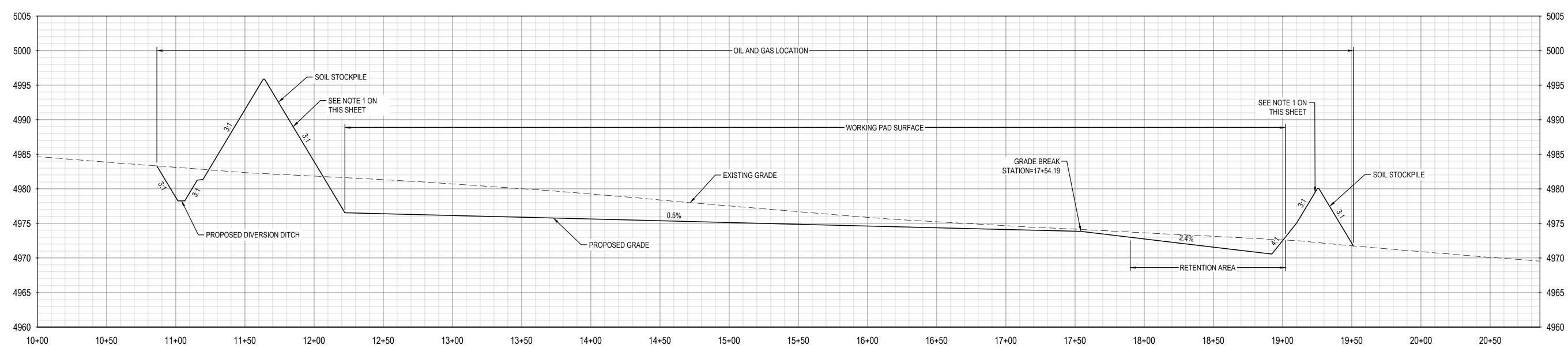
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SECTION A (W-E)



SECTION B (N-S)

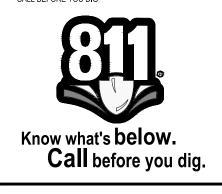


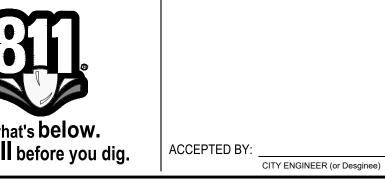
NOTES:

1. UPON COMPLETION OF THE STOCKPILES, THE STOCKPILE SURFACE IS TO BE COATED WITH A BIODEGRADABLE, SOIL TACKIFIER SUITABLE FOR USE IN ENVIRONMENTS WITH AVERAGE HUMIDITY LEVELS IN THE 40%-50% RANGE TO RESIST WIND EROSION.



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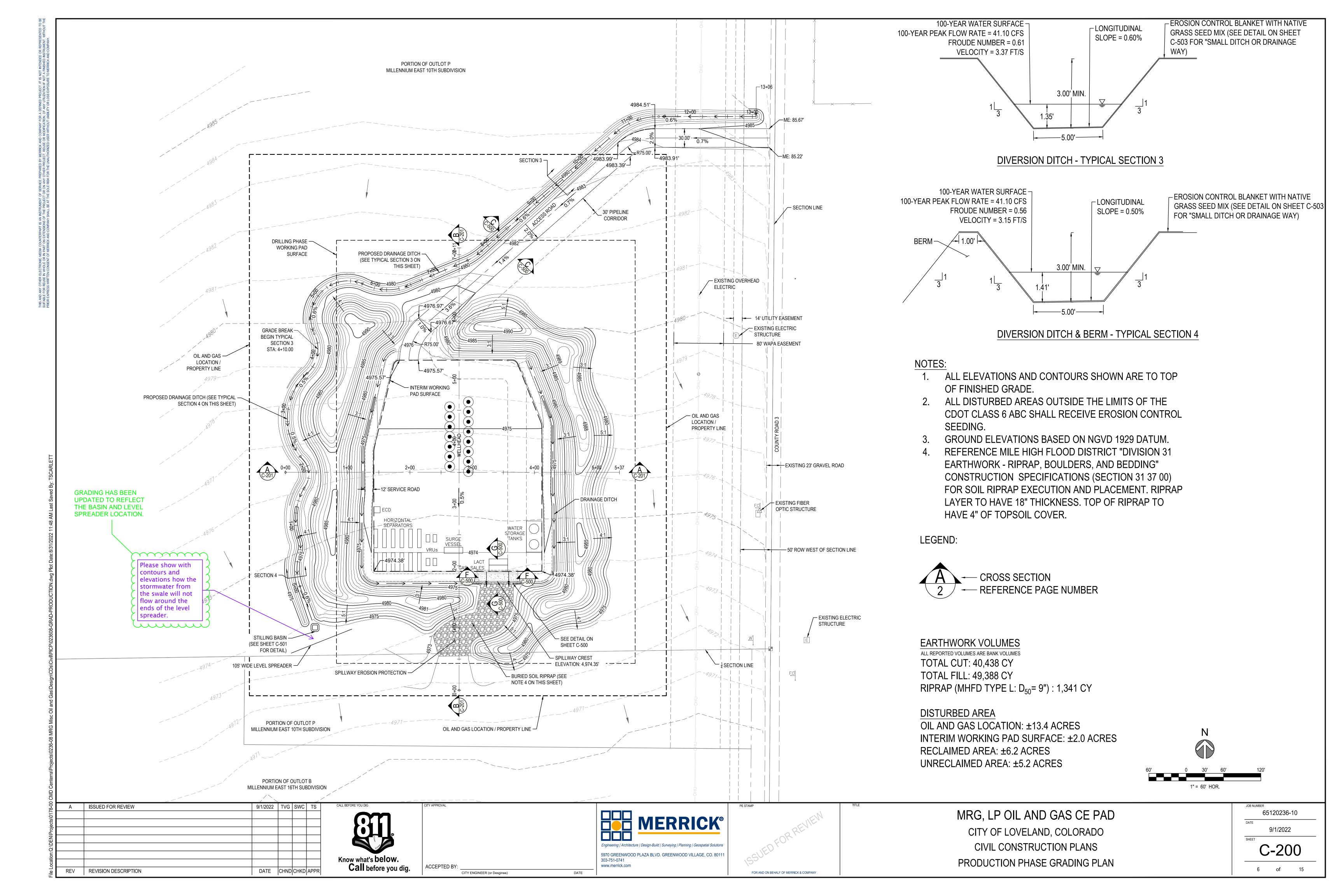




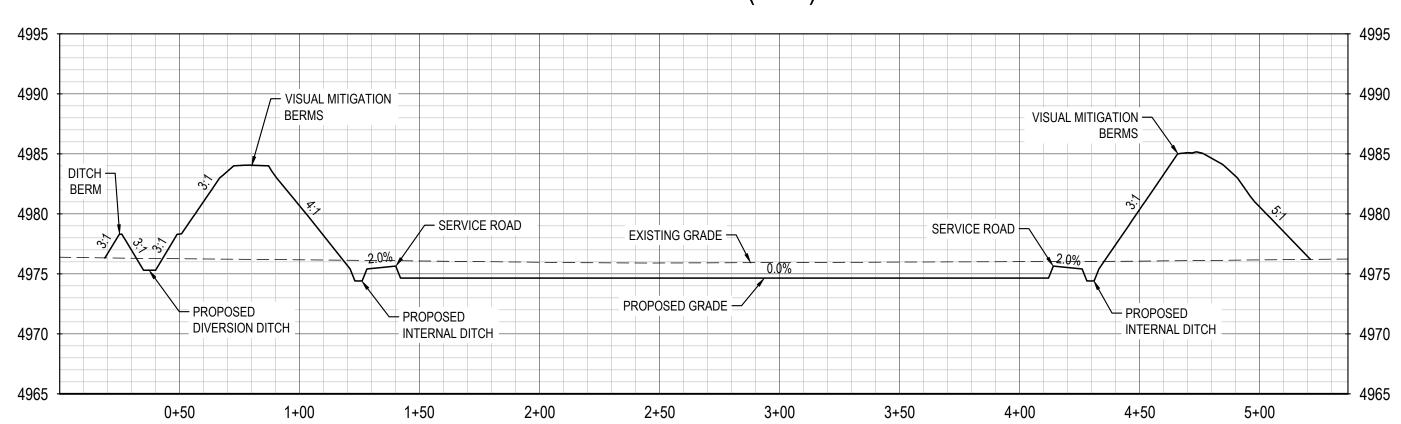


MRG, LP OIL AND GAS CE PAD CITY OF LOVELAND, COLORADO CIVIL CONSTRUCTION PLANS DRILLING PHASE SECTION VIEWS

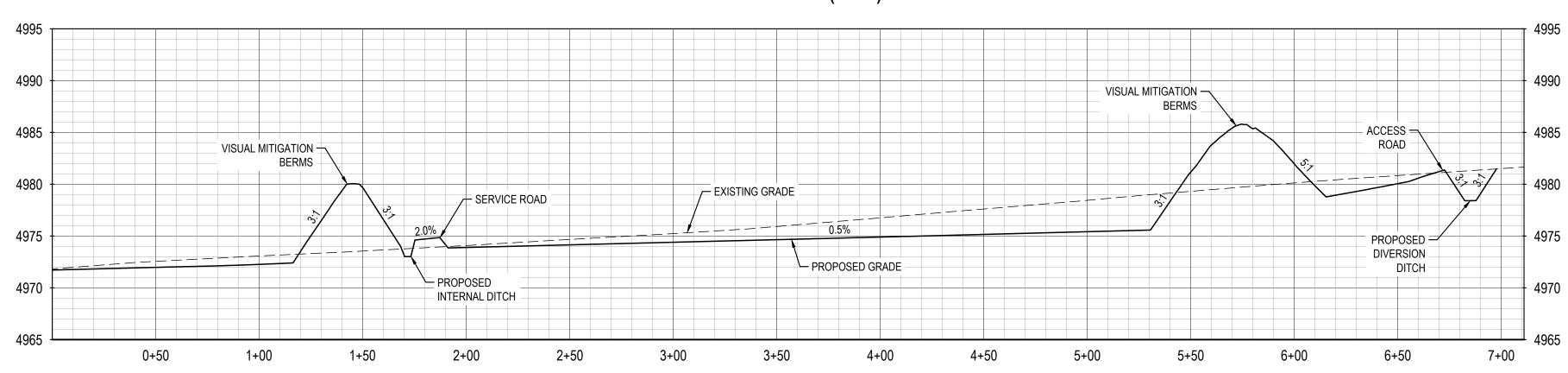
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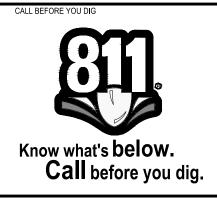
SECTION B (S-N)



40' 0 20' 40' 1" = 40' HOR. 1" = 8 VERT.

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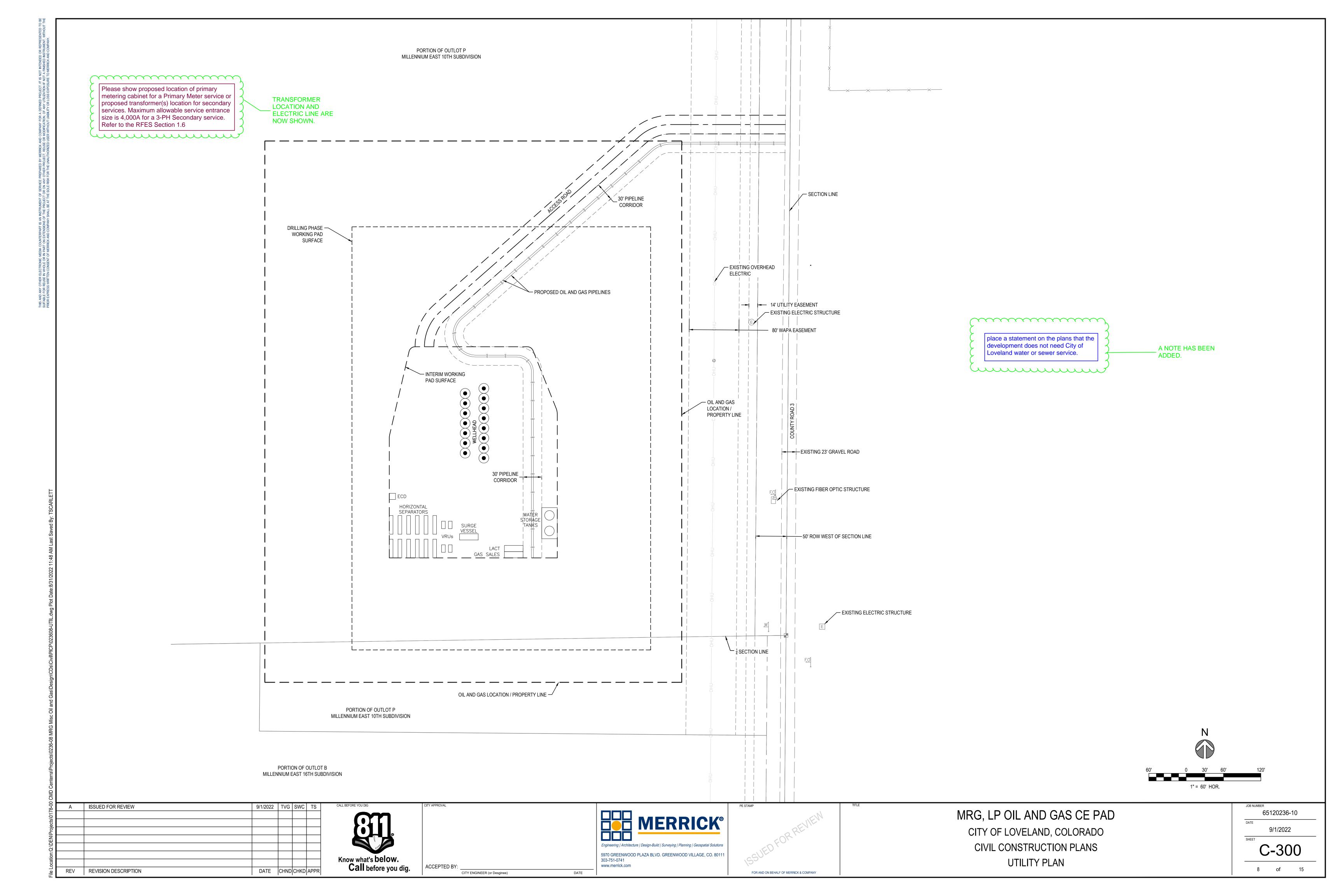
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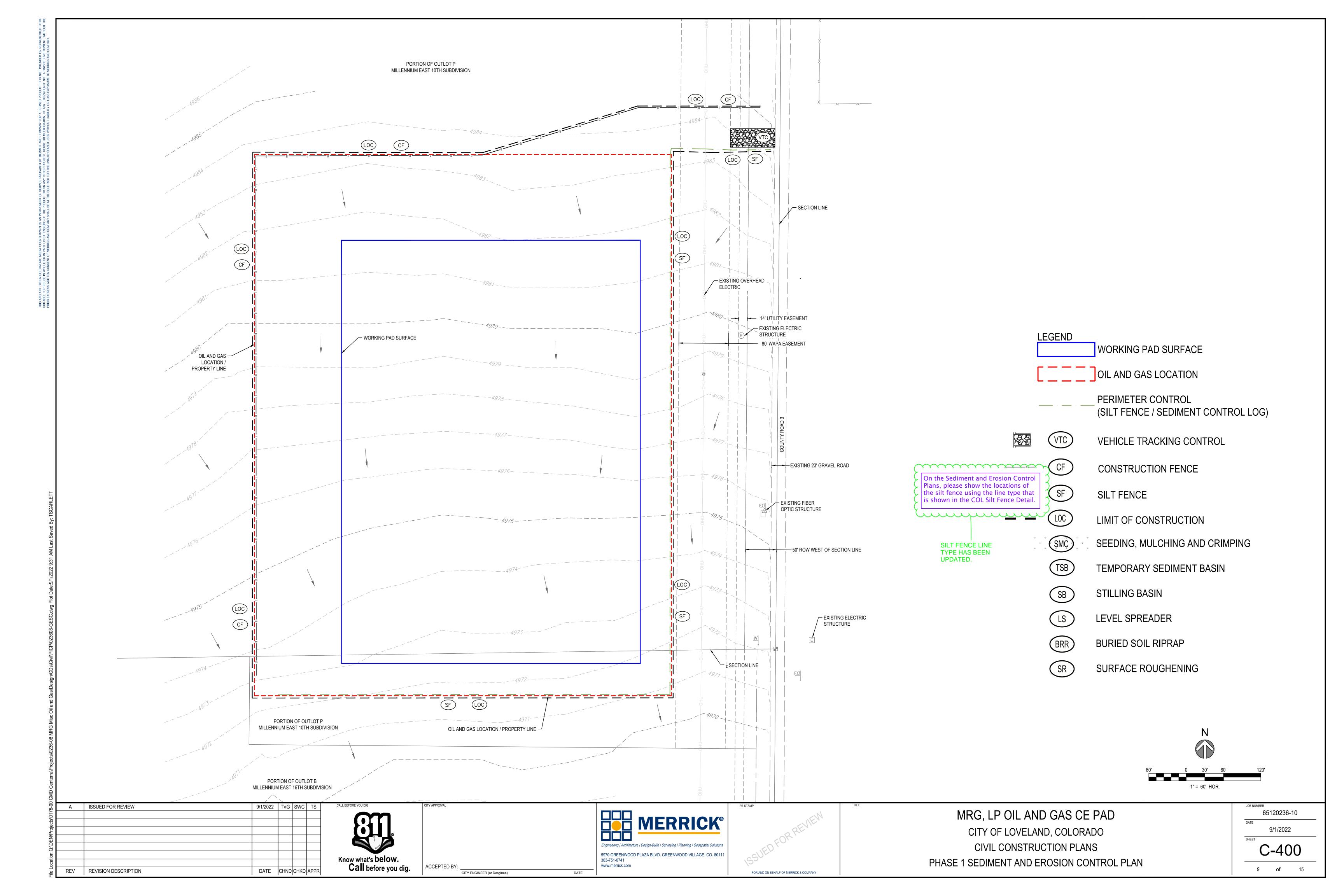
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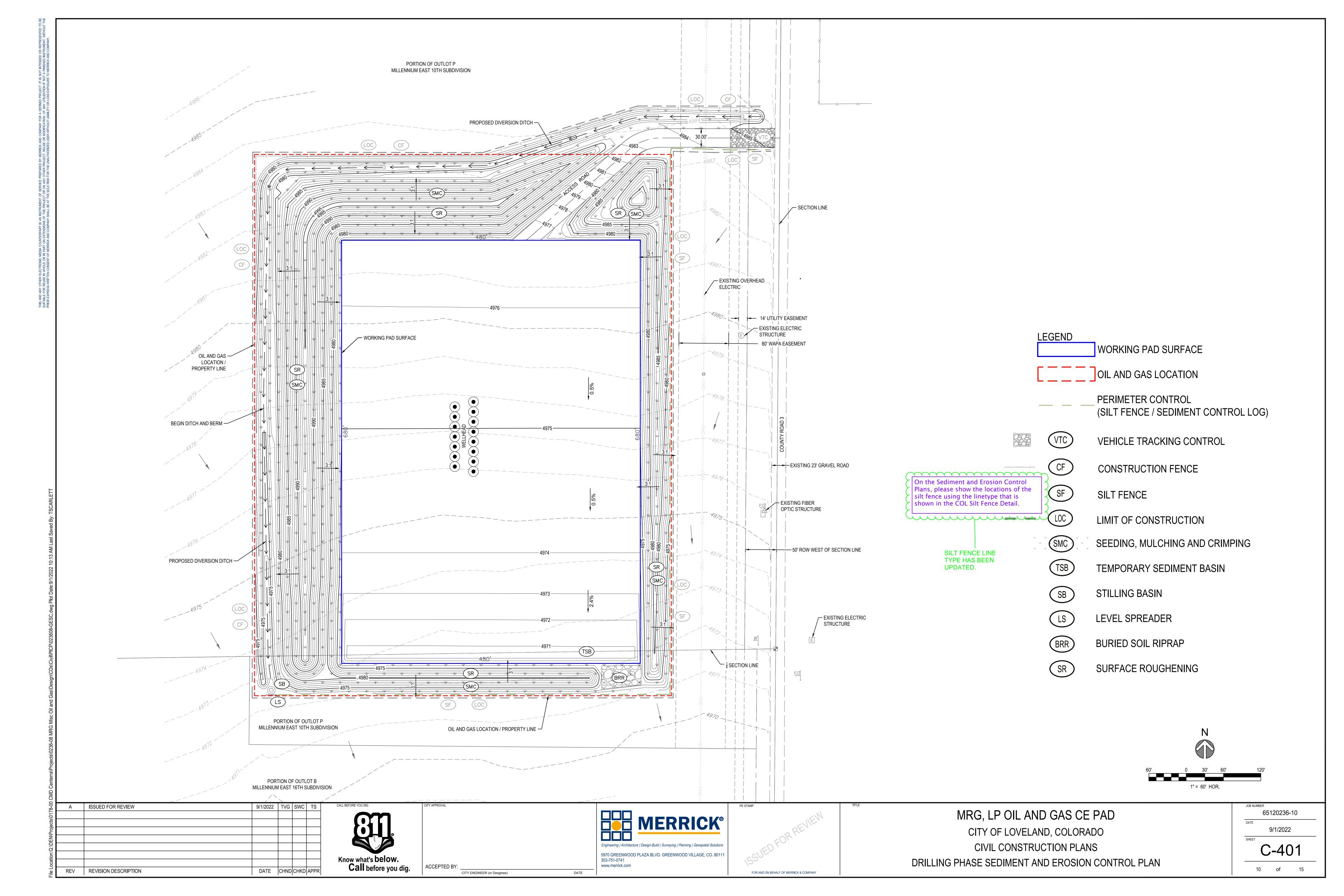


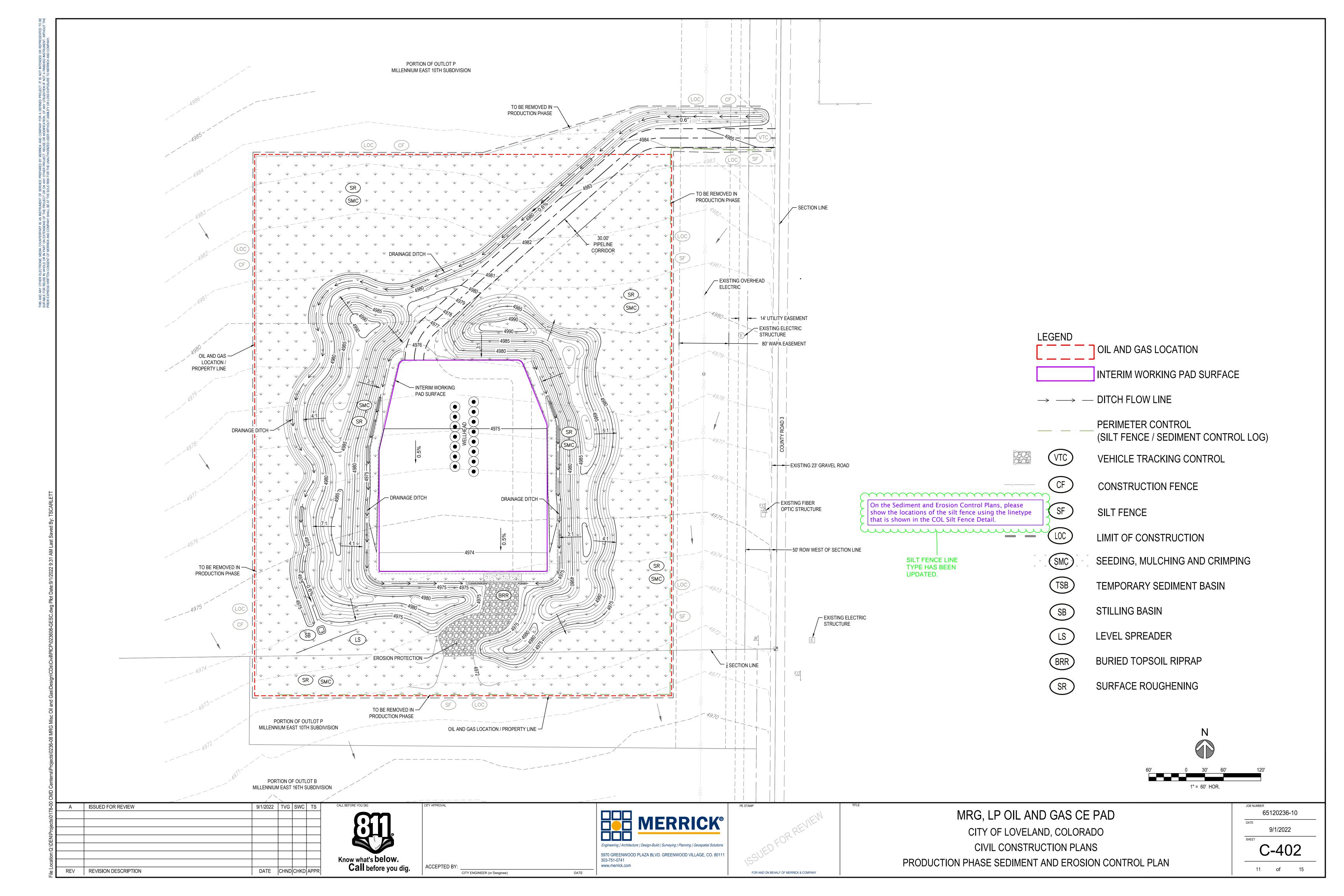
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CITY OF LOVELAND, COLORADO
CIVIL CONSTRUCTION PLANS
PRODUCTION PHASE SECTION VIEWS

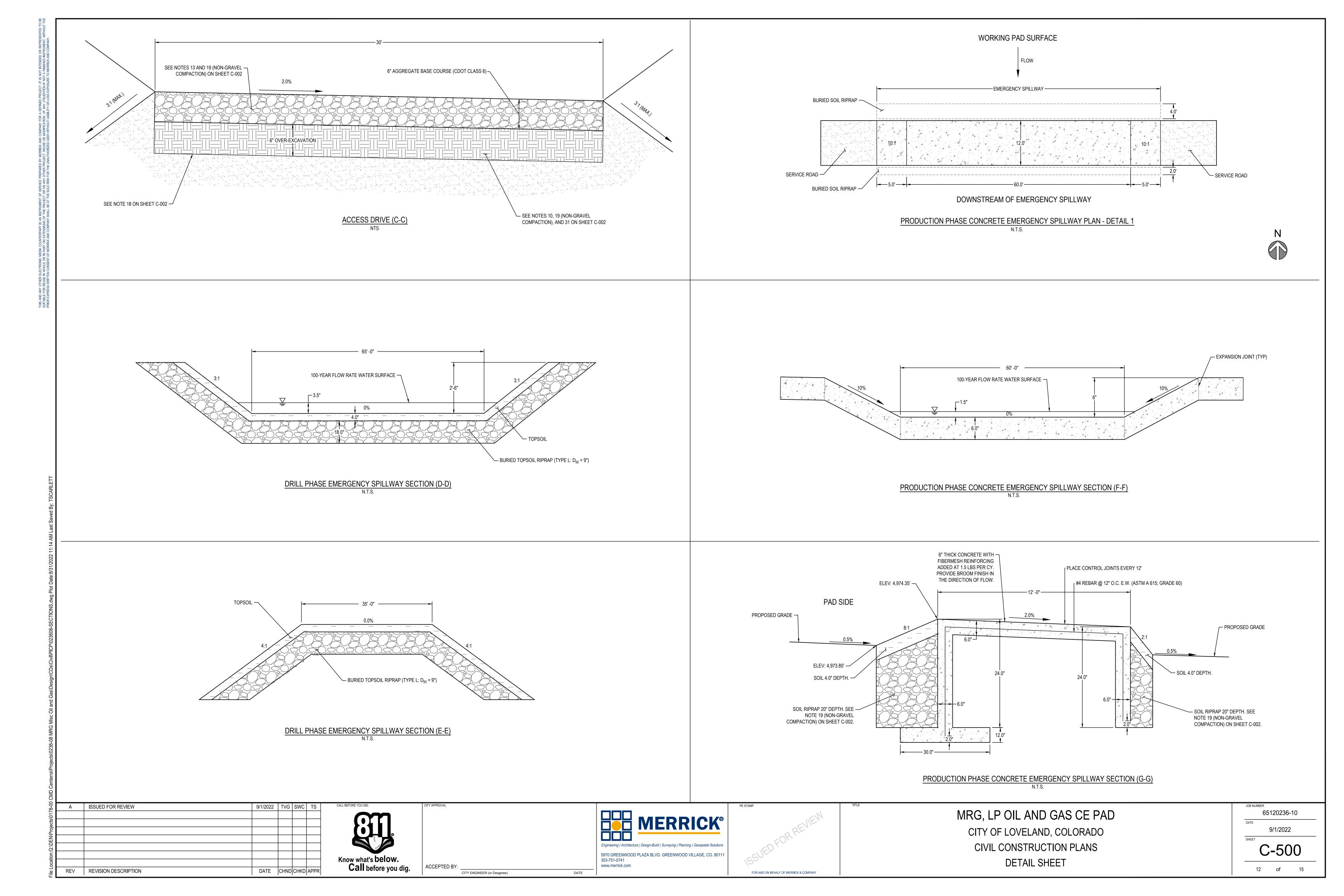
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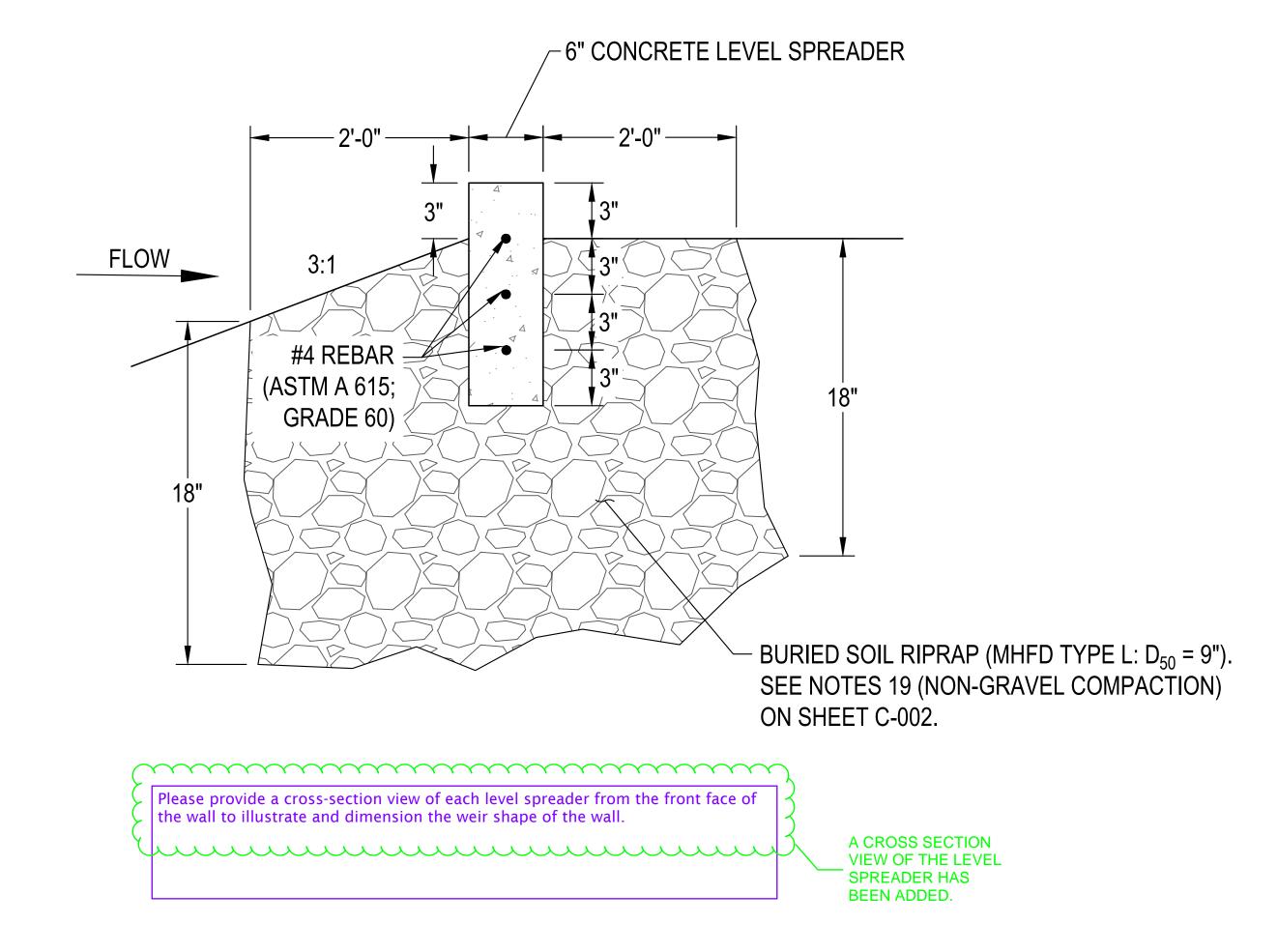




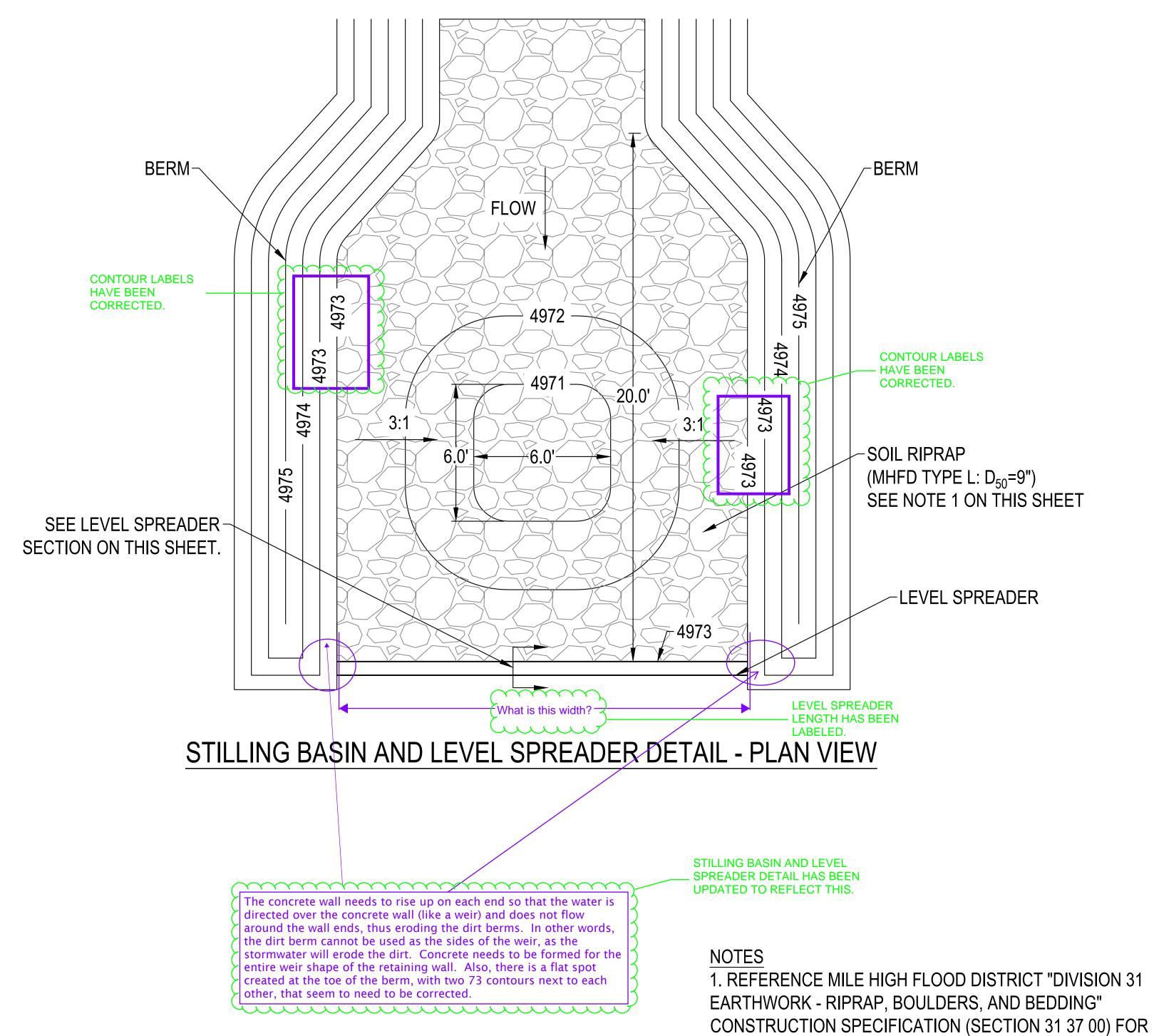








CONCRETE LEVEL SPREADER SECTION



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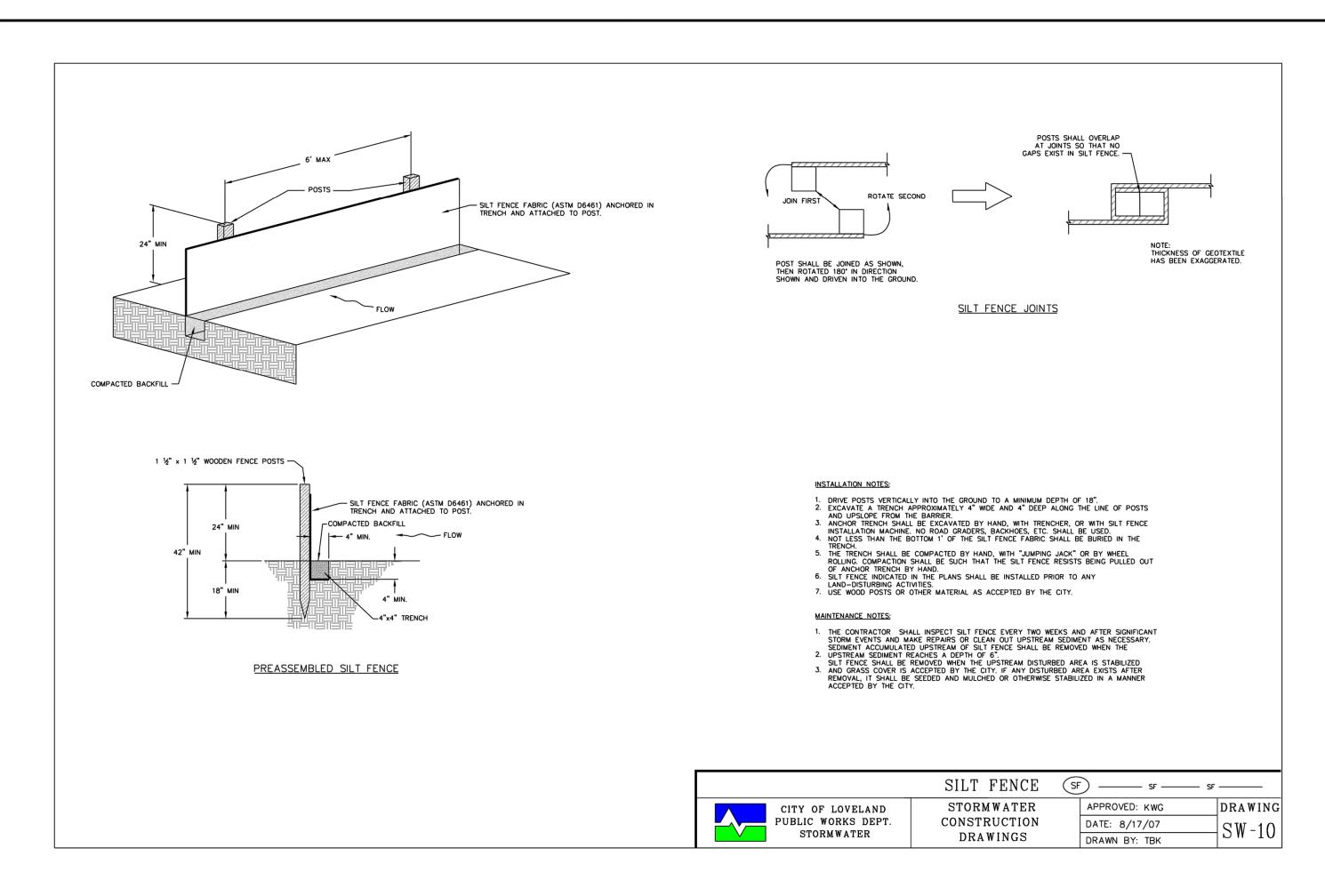
TOPSOIL COVER.

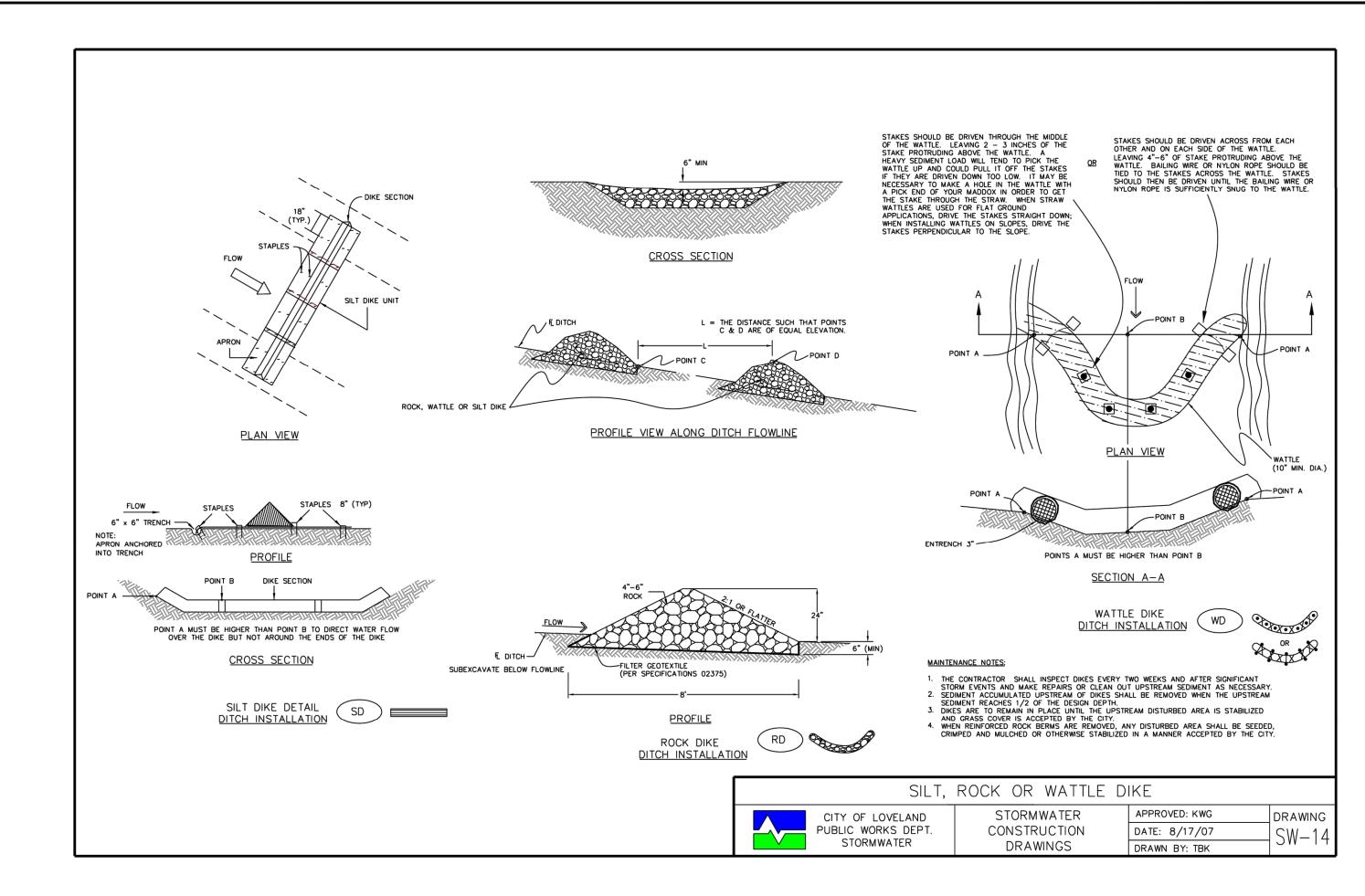
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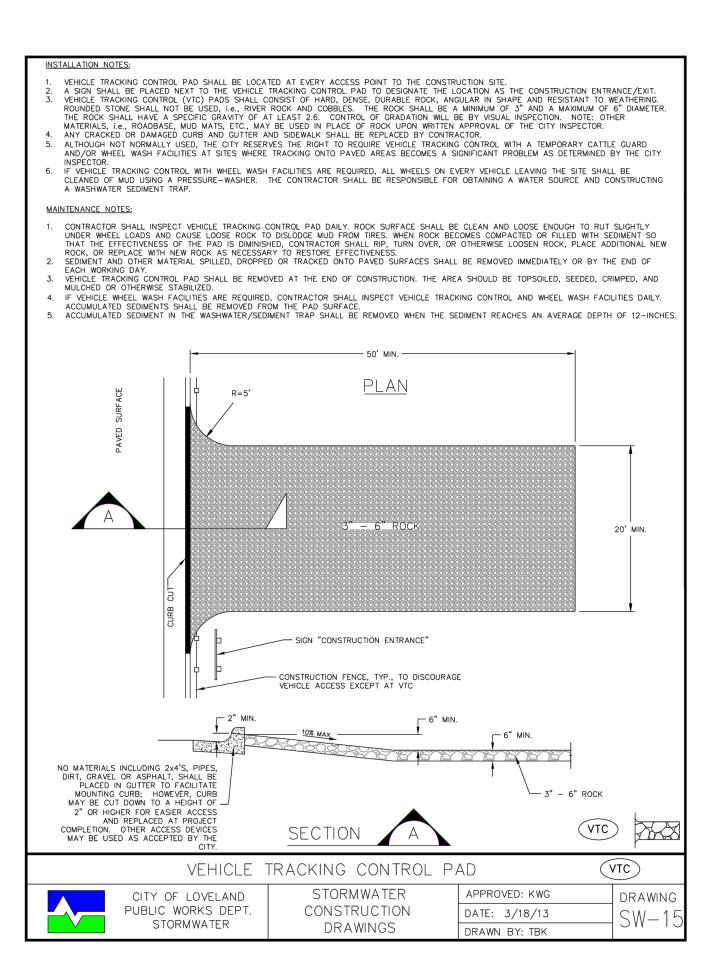
SOIL RIPRAP EXECUTION AND PLACEMENT. RIPRAP LAYER

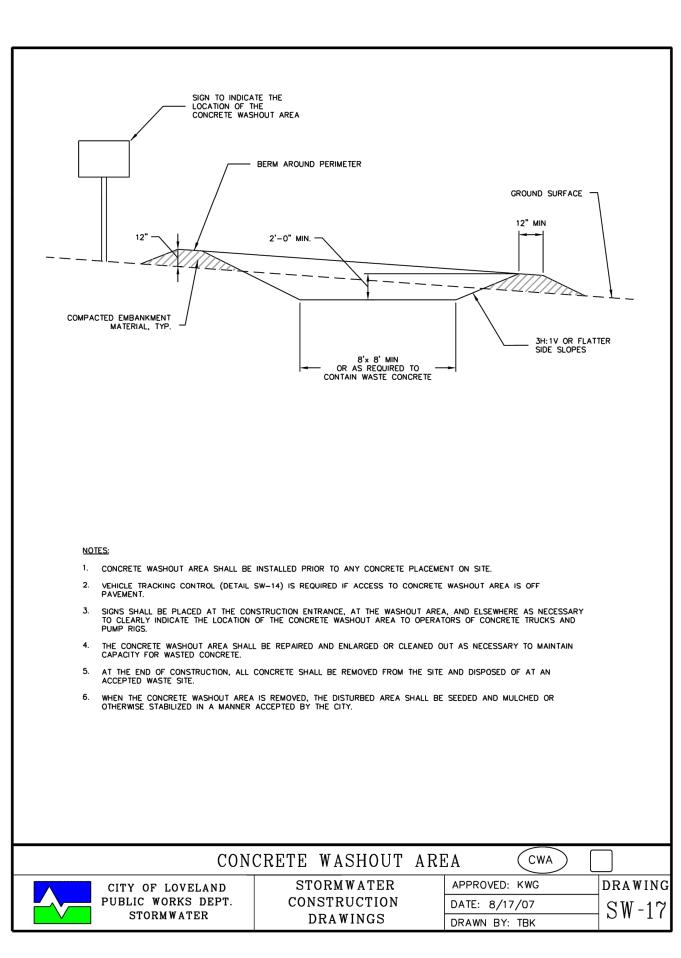
TO HAVE 18" THICKNESS. TOP OF RIPRAP TO HAVE 4" OF

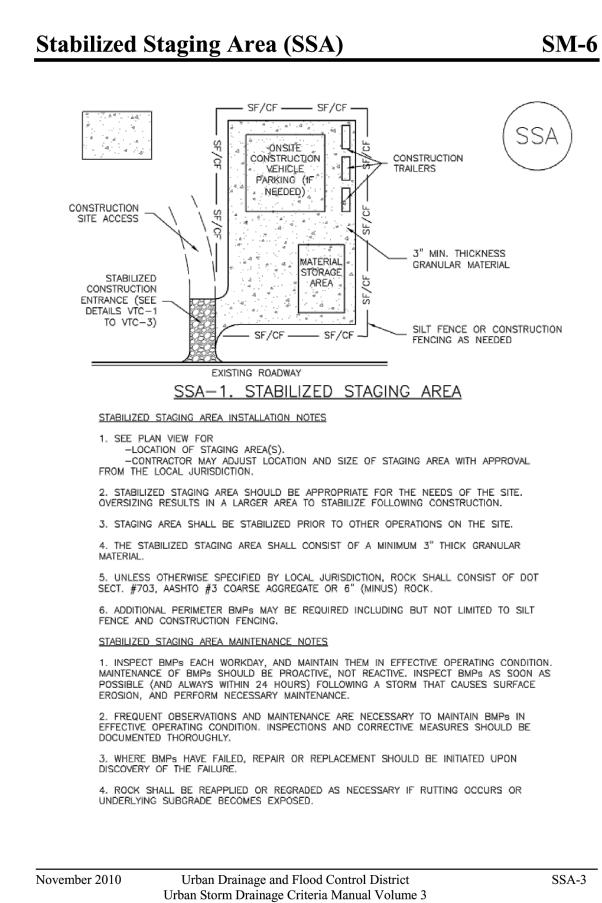
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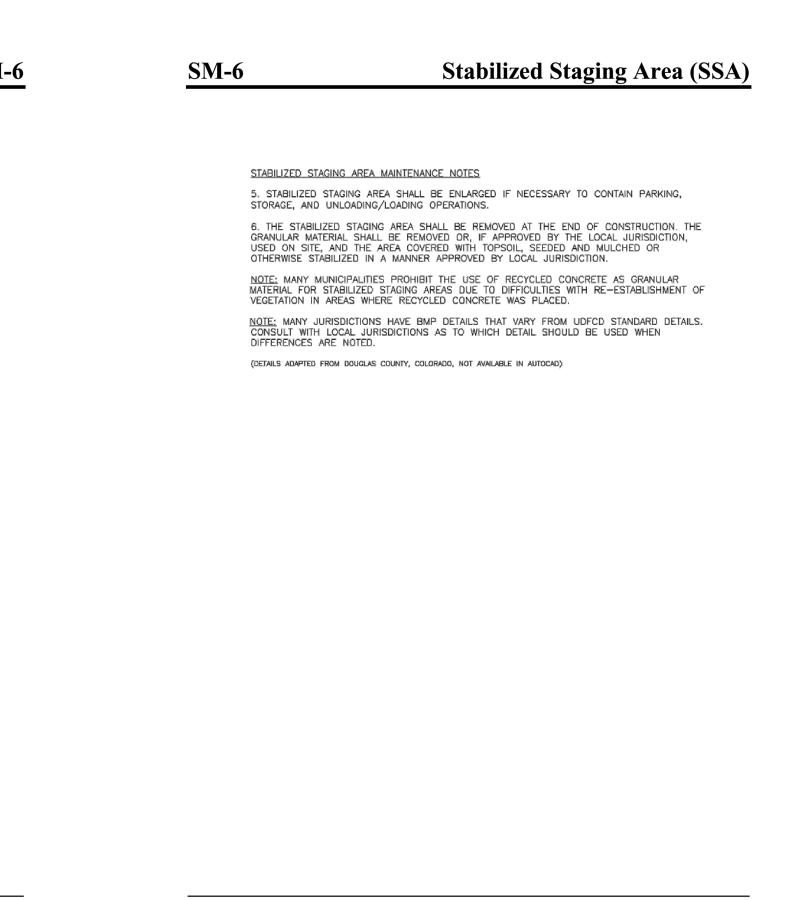


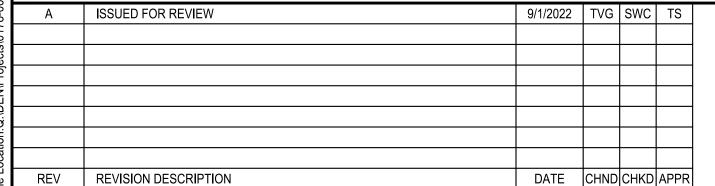




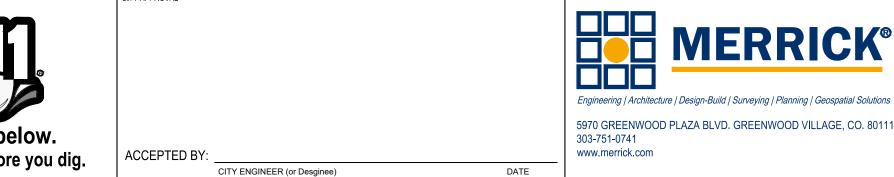


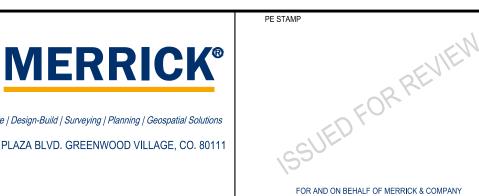












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Urban Storm Drainage Criteria Manual Volume 3

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JOINT ANCHOR TOP OF

TYPE OF ECB, INDICATED IN PLAN VIEW

PERIMETER ANCHOR

TRENCH, TYP.

FABRIC OR MAT, TYP.

6°MIN,

PERIMETER ANCHOR TRENCH

JOINT ANCHOR TRENCH

INTERMEDIATE ANCHOR TRENCH

OVERLAPPING JOINT

WOOD STAKE DETAIL

12" — MIN. —

SINGLE EDGE STAKE, TYP.

OF TWO ADJACENT ROLLS

LOOP FROM

PERIMETER

ANCHOR TRENCH, TYP

TYPE OF ECB AS INDICATED IN PLAN VIEW. INSTALL IN ALL DISTURBED AREAS OF STREAMS AND DRAINAGE CHANNELS TO DEPTH

PARALLEL TO FLOW DIRECTION (I.E. LONG DIMENSIONS OF BLANKET PARALLEL TO FLOWLINES) STAKING PATTERN SHALL MATCH ECB

ECB-1. PIPE OUTLET TO DRAINAGEWAY

STAKING PATTERN PER MANUFACTURER SPEC. OR PATTERN

∠ BASED ON ECB AND/OR CHANNEL TYPE (SEE STAKING

ECB-2. SMALL DITCH OR DRAINAGEWAY

AND/OR CHANNEL TYPE.

JOINT ANCHOR

TRENCH, TYP

CONSTRUCTION FENCE INSTALLATION NOTES SEE PLAN VIEW FOR:
 -LOCATION OF CONSTRUCTION FENCE. 2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES. 3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR—GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'. 5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

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TRACKING OR IMPRINTING FURROWS 2" TO 4" DEEP - WITH 6" MAXIMUM SPACING PARALLEL TO CONTOURS . SURFACE ROUGHENING FOR STEEP SLOPES (3:1 OR STEEPER) SCARIFYING OR TILLING ROUGHENED ROWS SHALL BE 4" TO 6" - DEEP WITH 6" MAXIMUM SPACING PARALLEL TO CONTOURS SR-2. SURFACE ROUGHENING FOR LOW SLOPES (LESS THAN 3:1)

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

EC-1 Surface Roughening (SR)

Construction Fence (CF)

DOCUMENTED THOROUGHLY.

CONSTRUCTION FENCE MAINTENANCE NOTES 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS
POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL

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

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

SURFACE ROUGHENING INSTALLATION NOTES

1. SEE PLAN VIEW FOR: -LOCATION(S) OF SURFACE ROUGHENING.

2. SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY

3. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.

4. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

5. A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACE UPON DISCOVERY OF THE FAILURE.

4. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE 5. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.

6. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER RILL

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD) ${
m \underline{NOTE}}$: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED. RECP-6

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

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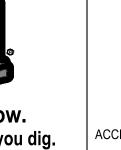
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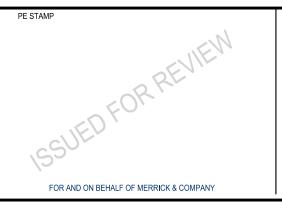
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