AVG LONE TREE

5858 SOUTH YOSEMITE STREET
LONE TREE, CO

ENGINEERING CERTIFICATION NOTE

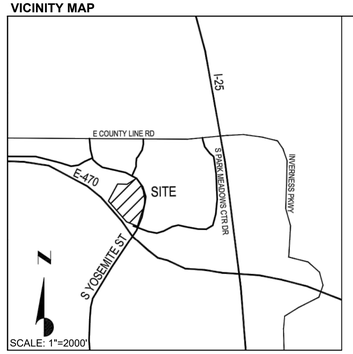
THESE CONSTRUCTION PLANS FOR AVG LONE TREE WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE REQUIREMENTS OF DOUGLAS COUNTY'S ROADWAY DESIGN AND CONSTRUCTION STANDARDS, STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA, AND THE GRADING, EROSION AND SEDIMENT CONTROL MANUAL.

BRUCE QUINTANA-JONES
ASHLEY & VANCE ENGINEERING

LEGEND

SD — SD	STORM DRAINAGE
W — W	WATER SERVICE
G — G	GAS
SS — SS	SANITARY SEWER
E — E	POWER ELECTRICAL
	DITCH / FLOWLINE
	GRADING LIMIT
	GRADE SLOPE
	PROPERTY LINE
	CENTERLINE
	SAWCUT

VICINITY MAP



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SURVEY NOTES

EXISTING TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN HEREON PER SURVEY BY GALLOWAY DATED 10/10/2027

BOUNDARY DATA:

PARCEL A: LOT 1A, BLOCK 2; AND TRACT A, PARKWAY SUBDIVISION FILING NO. 4 - 4TH AMENDMENT, EXCEPT THAT PORTION CONVEYED BY SPECIAL WARRANTY DEED TO THE DEPARTMENT OF TRANSPORTATION, RECORDED MAY 29, 1996 IN BOOK 1344 AT PAGE 1660, AND FURTHER EXCEPTING THAT PORTION SET FORTH UNDER THE RULE AND ORDER OF CONDEMNATION TO THE PARK MEADOWS METROPOLITAN DISTRICT, A QUASI-MUNICIPAL CORPORATION AND POLITICAL SUBDIVISION OF THE STATE OF COLORADO, RECORDED JUNE 14, 2007 AT RECEPTION NO. 2007047663.

BASIS OF BEARINGS:

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE WEST LINE OF LOT 1A, BLOCK 2, PARKWAY SUBDIVISION FILING NO. 3, 3RD AMENDMENT AND IS CONSIDERED TO BEAR N41°32'54"E, MONUMENTED ON THE NORTH BY A NAIL & DISC, "PLS 23899" AND ON THE SOUTH BY A NO. 4 REBAR W/ YELLOW PLASTIC CAP, PLS 23899".

BENCHMARK:

ELEVATIONS (NAVD 88) FOR THE SITE WERE BASED ON THE NATIONAL GEODETIC SURVEY (NGS) MONUMENT 'JOG/ KK1696', WHICH HAS AN ELEVATION OF 5893. TO REACH THE STATION FROM THE JUNCTION OF INTERSTATE HIGHWAY 25 AND STATE HIGHWAY 88 (ARAPAHOE ROAD) GO SOUTH-SOUTHEAST ON INTERSTATE HIGHWAY 25 FOR 2.5 MILES TO COUNTY LINE ROAD EXIT. TAKE EXIT RAMP TO A STOP SIGN, TURN LEFT ON COUNTY LINE ROAD FOR 0.3 MILE TO A FRONTAGE ROAD ON THE RIGHT AND ENTRANCE RAMP FOR NORTHBOUND INTERSTATE HIGHWAY 25. (TO REACH AZIMUTH MARK FROM HERE TURN RIGHT ON FRONTAGE ROAD AND GO WESTERLY AND SOUTH FOR 0.4 MILE TO AZIMUTH MARK ON THE RIGHT). TURN LEFT ONTO ENTRANCE RAMP AND GO NORTHERLY FOR 0.1 MILE TO THE STATION ON THE RIGHT NEXT TO A CHAIN LINK FENCE.

SURVEY MONUMENT PROTECTION:

PROTECT AND PRESERVE, IN PLACE, ALL SURVEY MONUMENTS AND BENCHMARKS. DO NOT DISTURB, MOVE, OR RELOCATE MONUMENTS OR BENCHMARKS WITHOUT THE PRIOR REVIEW AND APPROVAL BY THE AGENCY HAVING JURISDICTION OVER THE MONUMENT OR BENCHMARK. THE CONTRACTOR SHALL CONTRACT WITH A LICENSED SURVEYOR FOR MONUMENTS REQUIRING DISTURBANCE OR REMOVAL, AND THE SURVEYOR SHALL RESET THE MONUMENTS OR PROVIDE PERMANENT WITNESS MONUMENTS AND FILE THE REQUIRED DOCUMENTATION WITH THE AUTHORITY HAVING JURISDICTION, PURSUANT TO ALL APPLICABLE BUSINESS AND PROFESSIONAL CODES.

STANDARD ABBREVIATIONS

(E)	EXISTING	FS	FINISHED SURFACE
(P)	PROPOSED	GB	GRADE BREAK
AC	ASPHALTIC CONCRETE	IE	INVERT ELEVATION
BF	BOTTOM OF FOOTING	INV	INVERT
BS	BOTTOM OF STEP	LA	LANDSCAPE AREA
BLDG	BUILDING	NG	NATURAL GRADE
BCR	BEGIN CURB RETURN	PA	PLANTER AREA
BVC	BEGIN VERTICAL CURVE	PCC	PORTLAND CEMENT CONCRETE
BW	BOTTOM OF WALL	P/L	PROPERTY LINE
CB	CATCH BASIN	POC	POINT OF CONNECTION
C/L	CENTERLINE	PS	PARKING STRIPE
CMU	CONCRETE MASONRY UNIT	PVC	POLYVINYL CHLORIDE
CONC	CONCRETE	RW	RIGHT OF WAY
DW	DRIVEWAY	SD	STORM DRAIN
ECR	END CURB RETURN	SG	SUB-GRADE ELEVATION
EG	EXISTING GRADE	SS	SANITARY SEWER
EP	EDGE OF PAVEMENT	TC	TOP OF CURB, CONCRETE
EVC	END VERTICAL CURVE	TF	TOP OF FOOTING
FFE	FINISHED FLOOR ELEVATION	TG	TOP OF GRATE
FG	FINISHED GRADE	TS	TOP OF STEP
FH	FIRE HYDRANT	TW	TOP OF WALL
FL	FLOW LINE	VC	VERTICAL CURVE

PROJECT INFORMATION

OWNER: AVG PARTNERS
9595 WILSHIRE BLVD., STE 700
BEVERLY HILLS, CO 90212
(310) 273-0864

ARCHITECT: 4 SITE ADVISORS
900 EAST NICHOLS AVENUE, SUIITE 155
CENTENNIAL, CO 80112
720-838-7023

STRUCTURAL: HUDSON STRUCTURAL SOLUTIONS
9000 E NICHOLS AVE., STE 155
CENTENNIAL, CO 80112
(310) 254-6080

PLUMBING: RJA ENGINEERING
3301 LAWRENCE ST., STE 2
DENVER, CO 80205
(720) 598-0774

ELECTRICAL: RJA ENGINEERING
3301 LAWRENCE ST., STE 2
DENVER, CO 80205
(720) 598-0774

SURVEYOR: GALLOWAY
6162 SOUTH WILLOW DRIVE, SUITE 320
GREENWOOD VILLAGE, CO 80111
303-770-8884

GRADING INFORMATION

SITE AREA: 0.82 AC
AREA DISTURBED: 0.86 AC
CUT QUANTITY: 20 CUBIC YARDS
FILL QUANTITY: 2520 CUBIC YARDS
NET QUANTITY: 2500 CUBIC YARDS IMPORT

NOTE: THE ABOVE QUANTITIES ARE FOR PLANNING AND PERMITTING PURPOSES ONLY. SHRINKAGE; CONSOLIDATION AND SUBSIDENCE FACTORS; LOSSES DUE TO CLEARING AND DEMOLITION OPERATIONS; AND TRENCHING FOR UTILITIES AND FOUNDATIONS ARE NOT INCLUDED. ESTIMATED EARTHWORK QUANTITIES ARE BASED ON THE APPROXIMATE DIFFERENCE BETWEEN EXISTING GRADES AND PROPOSED FINISHED GRADES OR PAVEMENT SUBGRADES, AS INDICATED ON THE PLANS, AND SHOULD VARY ACCORDING TO THESE FACTORS AND LOSSES. THE CONTRACTOR SHALL PERFORM AN EARTHWORK ESTIMATE FOR THE PURPOSE OF PREPARING A LUMP SUM BID PRICE FOR EARTHWORK. THE BID PRICE SHALL INCLUDE COSTS FOR ANY NECESSARY IMPORT AND PLACEMENT OF EARTH MATERIALS OR THE EXPORT AND PROPER DISPOSAL OF EXCESS EARTH MATERIALS.

DIG ALERT

DIGALERT
DIAL TOLL FREE **811** OR (1-800-422-4133) AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT

PRIOR TO COMMENCING OF ANY EXCAVATION, DIGGING, POT HOLING, ETC. CALL DIG ALERT FOR ASSIGNMENT OF AN INQUIRY ID NUMBER, BECAUSE NO EARTH WORK SHALL COMMENCE UNLESS THE CONTRACTOR HAS OBTAINED THIS AND EACH UTILITY OR OWNER OF SUBSURFACE FACILITIES HAS LOCATED AND MARKED THEIR SUBSURFACE FACILITIES IN THE AREA OF WORK.

City of Lone Tree

Date

These construction plans have been reviewed by the City of Lone Tree for street and drainage, signage and striping, and grading and erosion control improvements only.

Engineering Division Acceptance Block

ASHLEY & VANCE ENGINEERING

8800 RALSTON ROAD, SUITE 200
ARVADA, CO 80002
303.755.9762

WWW.ASHLEYVANCE.COM

CIVIL • STRUCTURAL

INVESTOR OFFICE
YOSEMITE & C-470 | LONE TREE, CO

ENGINEER OF RECORD:

COLORADO LICENSED
CHRISTOPHER QUINTANA-JONES
53998
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

TITLE SHEET

C-0.1

4/13/2026 1:47:39 PM

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF LONE TREE AND THE CURRENT EDITION OF THE BUILDING CODE.
2. IN THE EVENT OF A CONFLICT BETWEEN ANY REFERENCED STANDARD, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
3. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. BEFORE BEGINNING WORK, CONTRACTOR SHALL CONFIRM WITH AGENCIES HAVING JURISDICTION THAT ALL REQUIRED PERMITS AND LICENSES HAVE BEEN OBTAINED AND ALL REQUIRED NOTICES GIVEN.
5. UNDERGROUND AND OVERHEAD CONSTRUCTION IN ADDITION TO WHAT IS SHOWN ON THESE PLANS MAY BE PART OF THIS PROJECT, INCLUDING ARCHITECTURAL AND LANDSCAPE ARCHITECTURAL IMPROVEMENTS. ADDITIONAL PERMITS MAY BE REQUIRED.
   A. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK AND INTERFACING IMPROVEMENTS WITH WORK BY OTHER CONTRACTORS AT THIS JOB SITE AND WITH IMPROVEMENTS REQUIRED BY PLANS BY OTHERS.
   B. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR BUILDING AND SITE LAYOUT DIMENSIONING.
   C. CONTRACTOR SHALL REFER TO ARCHITECTURAL AND LANDSCAPE ARCHITECTURAL PLANS AND SPECIFICATIONS FOR SITE DEVELOPMENT CONSTRUCTION DETAILS AND DIMENSIONING, INCLUDING THOSE FOR BUILDINGS, PATIOS, WALKWAYS, DRIVEWAYS, WALLS/FENCES, PLUMBING, ELECTRICAL, UTILITIES, LANDSCAPING, AND IRRIGATION.
7. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS, ORDINANCES, REGULATIONS, RULES, AND STANDARDS INCLUDING ALL REQUIREMENTS OF OSHA.
8. ALL UNSUITABLE CONSTRUCTION MATERIALS AND RUBBISH AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE; TRANSPORTED TO A SUITABLE LOCATION, AND DISPOSED OF IN A PROPER AND LEGAL MANNER.
9. ALL WORK INVOLVING EXCAVATION, INCLUDING THAT FOR WATER, SEWER, STORM DRAIN AND UTILITY CONDUITS AND ALL SERVICE CONNECTIONS AND METER BOXES (NOT PERMITTED IN DRIVEWAYS) SHALL BE COMPLETED AND OBSERVED AND APPROVED BY THE AGENCY HAVING JURISDICTION AND THE STRUCTURAL BACKFILL OBSERVED AND TESTED FOR COMPACTION AND APPROVED BY THE GEOTECHNICAL ENGINEER BEFORE AGGREGATE BASE, PAVING AND OTHER PERMANENT SURFACE CONSTRUCTION MAY COMMENCE.
10. BEFORE COMMENCING EXCAVATION, CONTRACTOR SHALL CONTACT PUBLIC WORKS AND UTILITY COMPANIES OR OTHER OWNERS OF SUBSURFACE FACILITIES WITHIN THE WORK SITE AND SHALL VERIFY WHETHER OR NOT A REPRESENTATIVE WILL BE PRESENT BEFORE AND/OR DURING EXCAVATION, AND SHALL DETERMINE SITE SPECIFIC REQUIREMENTS FOR EXCAVATION.
11. CONTRACTOR SHALL NOTIFY PUBLIC WORKS, BUILDING AND SAFETY, UTILITY COMPANIES, GEOTECHNICAL ENGINEER, AND ENGINEER OF RECORD, AT LEAST 48 HOURS BEFORE START OF ANY CONSTRUCTION AND OF THE TIME AND LOCATION OF PRE-CONSTRUCTION CONFERENCE, AND SHALL DETERMINE FROM EACH PARTY THEIR SCOPE OF WORK TO BE OBSERVED AND BY WHOM, AND SCOPE OF TESTING DURING THE COURSE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR OBSERVATION AND TESTING AS STIPULATED PURSUANT TO ABOVE DETERMINATIONS. WORK NOT OBSERVED AND TESTED WILL BE SUBJECT TO REJECTION.
12. CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SUCH SHEETING, SHORING, BRACING, AND/OR OTHER PROTECTION AS IS NECESSARY TO PREVENT FAILURE OF TEMPORARY EXCAVATIONS AND EMBANKMENTS AND TO PREVENT DAMAGE TO EXCAVATIONS, IMPROVEMENTS, TEMPORARY IMPROVEMENTS, AND PARTIALLY COMPLETED PORTIONS OF THE WORK. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SUFFICIENCY OF SUCH SUPPORTS AND/OR OTHER PROTECTION PER ALL REQUIREMENTS OF OSHA.
13. CONTRACTOR SHALL PROMPTLY NOTIFY ENGINEER OF RECORD AND AUTHORITY HAVING JURISDICTION BY TELEPHONE AND IN WRITING UPON DISCOVERY OF, AND BEFORE DISTURBING ANY PHYSICAL CONDITIONS DIFFERING FROM THOSE REPRESENTED BY APPROVED PLANS AND SPECIFICATIONS.
14. CONTRACTOR SHALL MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CHANGES OF CONSTRUCTION FROM THAT SHOWN ON THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING A BASIS FOR CONSTRUCTION OF RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER OF RECORD AND AUTHORITY HAVING JURISDICTION. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL DELIVER THIS RECORD OF ALL CONSTRUCTION CHANGES TO ENGINEER ALONG WITH A LETTER WHICH DECLARES THAT, OTHER THAN THESE NOTED CHANGES, "THE PROJECT WAS CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS."
    WARNING: ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY PREPARER.
15. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONALS HARMLESS FROM ALL LIABILITY AND CLAIMS, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT AND ACCEPTS LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONALS.
16. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL AND SAFETY AND SHALL FURNISH, INSTALL, AND MAINTAIN SUCH FENCING, SIGNS, LIGHTS, TRENCH PLATES, BARRICADES, AND/OR OTHER PROTECTION AS IS NECESSARY FOR SAID CONTROL AND SAFETY.
17. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR PROTECTION OF PUBLIC AND PRIVATE PROPERTY AT OR IN THE VICINITY OF THE JOB SITE AND FURTHER AGREES TO, AT CONTRACTOR'S EXPENSE, REPAIR OR REPLACE TO ORIGINAL CONDITION, ALL EXISTING IMPROVEMENTS WITHIN OR IN THE VICINITY OF THE JOB SITE WHICH ARE NOT DESIGNATED FOR REMOVAL AND WHICH ARE DAMAGED OR REMOVED AS A RESULT OF CONTRACTOR'S OPERATIONS.

GENERAL GRADING NOTES:

1. GRADING SHALL BE IN CONFORMANCE WITH RECOMMENDATIONS MADE BY THE GEOTECHNICAL ENGINEER DURING OBSERVATION AND TESTING OF SITE DEMOLITION, PREPARATION, GRADING, AND DEVELOPMENT WORK. FOR ANY CONFLICT BETWEEN THESE PLANS AND THE RECOMMENDATIONS AND/OR SPECIFICATIONS OF THE GEOTECHNICAL ENGINEER, THE MORE STRINGENT PROVISION SHALL GOVERN.
2. AREAS TO BE GRADED SHALL BE CLEARED OF ALL VEGETATION (EXCEPT TREES INDICATED TO REMAIN), INCLUDING ROOTS AND ROOT STRUCTURES, OTHER ORGANIC MATERIAL, DEBRIS, NON-COMPLYING FILL, AND OTHER MATERIAL UNSUITABLE FOR SUPPORT OF FILL AND/OR PROPOSED IMPROVEMENTS, AS RECOMMENDED BY AND UNDER THE OBSERVATION AND TESTING OF THE GEOTECHNICAL ENGINEER. CALL THE INSPECTOR FOR INITIAL INSPECTION.
3. ALL UNSUITABLE SOIL MATERIALS AND RUBBISH AND DEBRIS RESULTING FROM DEMOLITION AND GRADING OPERATIONS SHALL BE REMOVED FROM THE JOB SITE; TRANSPORTED TO A SUITABLE LOCATION AND DISPOSED OF IN A PROPER AND LEGAL MANNER.
4. AREAS TO RECEIVE FILL MATERIAL AND AREAS TO RECEIVE BUILDINGS, EXTERIOR SLABS, WALKWAYS, WALLS, PAVEMENT AND OTHER STRUCTURAL IMPROVEMENTS SHALL BE PREPARED AS RECOMMENDED BY AND UNDER THE OBSERVATION AND TESTING OF THE GEOTECHNICAL ENGINEER. RECOMMENDATIONS FOR OVER EXCAVATION, ADDITIONAL SCARIFICATION, BACKFILL AND RECOMPACTION ARE CONTAINED IN THE PROJECT GEOTECHNICAL REPORT REFERENCED IN THE GENERAL NOTES ON THESE PLANS.
5. PRIOR TO PLACEMENT OF FILL AND BACKFILL MATERIAL, THE PREPARED AREA SHALL BE INSPECTED AND APPROVED BY THE INSPECTOR. THE GEOTECHNICAL ENGINEER SHALL ALSO OBSERVE THE AREAS TO BE FILLED. ALLOW A MINIMUM 48-HOUR NOTICE. FILL AND BACKFILL PLACED ON THE PREPARED AREA WITHOUT THE REQUIRED OBSERVATION SHALL BE REMOVED.
6. ALL FILL MATERIAL, WHETHER EXCAVATED ON-SITE OR IMPORTED FROM OFF-SITE, SHALL BE TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. IMPORTED FILL MATERIAL SHALL BE EQUAL TO OR BETTER IN QUALITY THAN THE ON-SITE SOILS AND SHALL CONFORM TO THE RECOMMENDATION OF THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL TEST AND APPROVE THE SOIL PROPOSED FOR IMPORT FOR STRUCTURAL FILL PRIOR TO IMPORTATION TO THE SITE. THE LANDSCAPE ARCHITECT AND THE GEOTECHNICAL ENGINEER SHALL TEST AND APPROVE THE SOIL PROPOSED FOR IMPORT FOR LANDSCAPE AREA SURFACE MATERIAL PRIOR TO IMPORTATION TO THE SITE.
7. CONTRACTOR SHALL REFER TO THE FOLLOWING AS APPLICABLE:
   - ARCHITECT'S PLANS FOR ADDITIONAL GRADING REQUIREMENTS IN BUILDING AREAS.
   - LANDSCAPE ARCHITECT'S PLANS FOR TREE PRESERVATION REQUIREMENTS AND FOR SUBGRADE ALLOWANCES IN LANDSCAPE AREAS.
   - PUBLIC IMPROVEMENT PLANS FOR INTERFACING WITH PUBLIC GRADING, PAVING, STORM DRAINAGE AND UTILITY IMPROVEMENTS.
8. WHERE PLANTER AREAS ARE SHOWN ON THE PLANS ADJACENT TO BUILDINGS AND ARE CONTAINED BY WALKS / FLATWORK LESS THAN 8" BELOW BOTTOM OF SILL PLATE OR WHERE ADJACENT FINISH GRADE OUTSIDE A BUILDING IS SHOWN TO BE LESS THAN 8" BELOW BOTTOM OF SILL PLATE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT BUILDING PLANS CALL FOR APPROPRIATE DAMPPROOF OR WATERPROOF CONSTRUCTION AND IS CONSTRUCTED IN ACCORDANCE WITH ALL BUILDING APPLICABLE CODE REQUIREMENTS.
9. PLAN ELEVATIONS SHOWN ON SOIL AND LANDSCAPED AREAS ARE FINISH GRADE (FINISH SURFACE) ELEVATIONS INTENDED TO ESTABLISH SURFACE DRAINAGE CONTROL FOR THESE AREAS. DURING GRADING OPERATIONS, THICKNESSES (SUBGRADE ALLOWANCES) SPECIFIED BY LANDSCAPE ARCHITECT FOR TURF, WOOD CHIPS, MULCH, ETC. SHALL BE SUBTRACTED FROM THESE ELEVATIONS TO ESTABLISH FINISH SUBGRADE.
10. BEFORE PLACEMENT OF AGGREGATE BASE OR SUBBASE MATERIAL IN PAVEMENT AREAS, THE SUBGRADE SOIL SHALL BE REVIEWED AND TESTED BY THE GEOTECHNICAL ENGINEER. DURING PAVING OPERATIONS, STRUCTURAL SECTION COMPACTION SHALL BE OBSERVED AND TESTED BY THE GEOTECHNICAL ENGINEER.
11. QUALITY REVIEW AND REPORTING REQUIREMENTS.
    A. GRADING AND IMPROVEMENTS FOUND NOT IN CONFORMANCE WITH APPROVED PLANS AND DESIGN INTENT SHALL BE CORRECTED BY CONTRACTOR AT CONTRACTOR'S EXPENSE. ADDITIONAL SURVEYING TO CONFIRM ELEVATIONS AFTER CORRECTIVE MEASURES SHALL ALSO BE AT CONTRACTOR'S EXPENSE.

       REQUIREMENTS FOR VARIOUS SURFACING CONDITIONS ARE AS FOLLOWS:

       - DIRT: NOT LESS THAN 2% (1/4" PER FOOT) SLOPE IN DIRECTION OF SURFACE DRAINAGE AND 0.10 FOOT MAXIMUM DEVIATION FROM DESIGN ELEVATION AT ANY LOCATION
       - A.C. PAVEMENT: NOT LESS THAN 1% (1/8 INCH PER FOOT) SLOPE IN DIRECTION OF SURFACE DRAINAGE AND 0.04 FOOT MAXIMUM DEVIATION FROM DESIGN ELEVATION AT ANY LOCATION
       - CONCRETE: NOT LESS THAN 0.5% (1/16 INCH PER FOOT) SLOPE IN DIRECTION OF SURFACE DRAINAGE AND 0.02 FOOT MAXIMUM DEVIATION FROM DESIGN ELEVATION AT ANY LOCATION UNLESS NOTED OTHERWISE ON PLANS.

DEMOLITION NOTES:

1. THE EXISTENCE AND APPROXIMATE LOCATIONS OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY THE AVAILABLE RECORDS PROVIDED. THE CIVIL ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID LINES, NOR FOR UTILITY OR IRRIGATION LINES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO WORK OR POTHOLE TO DETERMINE THE EXACT LOCATIONS OF ALL LINES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OR PROTECTION OF ALL EXISTING UTILITY LINES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION OF THE SITE AND SHALL REMOVE AND DISPOSE OF ALL STRUCTURES ABOVE AND OR BELOW GROUND UNLESS NOTED OTHERWISE. ANY HAZARDOUS MATERIALS ENCOUNTERED SHALL BE HANDLED AND REMOVED AS REQUIRED BY LOCAL AND/OR STATE LAWS AT NO COST TO THE OWNER.
3. THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID DAMAGE TO EXISTING HARDSCAPE IMPROVEMENTS, UTILITY FACILITIES, AND LANDSCAPING FEATURES THAT ARE NOT AFFECTED BY THESE PLANS.
4. ALL JOIN LINES SHALL BE SAWCUT ON A NEAT, STRAIGHT LINE PARALLEL WITH THE JOIN. THE CUT EDGE SHALL BE PROTECTED FROM CRUSHING, AND ALL BROKEN EDGES SHALL BE RE-CUT PRIOR TO JOINING.
5. ALL EXISTING OBJECTIONABLE MATERIALS THAT CONFLICT WITH PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, BUILDING FOUNDATIONS, UTILITIES, APPURTENANCES, TREES, SIGNS, STRUCTURES, ETC. SHALL BE REMOVED AND DISPOSED BY THE CONTRACTOR AT NO COST TO THE OWNER, UNLESS NOTED OTHERWISE HEREIN, OR AS DIRECTED BY THE CONSTRUCTION MANAGER.
6. THE CONTRACTOR SHALL PROTECT ALL EXISTING STREETS FROM DAMAGES CAUSED BY HIS OPERATIONS. ANY CURBS DAMAGED DURING HIS OPERATIONS SHALL BE SAWCUT AND REPLACED AT NO COST TO THE OWNER. ANY EXISTING PAVING IDENTIFIED AS POTENTIALLY NEEDING TO BE REPLACED SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO THE COMMENCEMENT OF WORK.
7. THE CONTRACTOR SHALL PERFORM AND BE RESPONSIBLE FOR ALL CLEARING AND GRUBBING OPERATIONS AS NECESSARY TO COMPLETE THE WORK, INCLUDING TRANSPORTATION AND DISPOSAL OF ALL REMOVED MATERIALS, AND ALL ASSOCIATED COSTS.

TRENCHING AND BACKFILL NOTES:

1. ALL TRENCHING, BEDDING AND BACKFILL MATERIAL AND CONSTRUCTION, SHALL BE IN ACCORDANCE WITH THESE PLANS INCLUDING THE PIPE TRENCH DETAIL.
2. TRENCH OR STRUCTURE EXCAVATION SUBGRADE SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF BEDDING MATERIAL OR FORMS. WET OR UNSTABLE SOIL ENCOUNTERED IN THE BOTTOM OF THE EXCAVATION AND DEEMED BY THE GEOTECHNICAL ENGINEER TO BE INCAPABLE OF PROPERLY SUPPORTING THE PIPE OR STRUCTURE BEING CONSTRUCTED, SHALL BE REMOVED TO THE DEPTH RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND THE EXCAVATION BACKFILLED TO THE BOTTOM OF THE PIPE OR STRUCTURE GRADE WITH SUITABLE MATERIAL RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
3. WATER ENCOUNTERED IN TRENCH OR STRUCTURE EXCAVATION SHALL BE REMOVED BY THE CONTRACTOR TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER TO PROVIDE DRY CONDITIONS DURING CONSTRUCTION OF PIPE OR STRUCTURE.
4. BEDDING AND BACKFILL MATERIAL AND COMPACTED DENSITY, SHALL BE TESTED FOR COMPLIANCE WITH APPLICABLE REQUIREMENTS BY THE GEOTECHNICAL ENGINEER.
5. BEDDING AND PIPE ZONE BACKFILL MATERIAL, SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DENSITY. TRENCH BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 90% OF MAXIMUM DENSITY. THE UPPER 12" BELOW THE BASE OR SUB-BASE COURSE IN PAVED AND OTHER TRAFFIC AREAS AND BELOW THE CONCRETE OR SAND COURSE IN WALKWAY AREAS SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DENSITY. BACKFILL COMPACTION SHALL BE TESTED FOR COMPLIANCE WITH THESE REQUIREMENTS IN ACCORDANCE WITH ASTM D-1557, LATEST REVISION, AND REPORTED BY THE GEOTECHNICAL ENGINEER.
6. CLASS I OR CLASS II (TRENCH) BACKFILL SHALL NOT BE PLACED UNTIL BEDDING AND INITIAL (PIPE ZONE) BACKFILL HAVE BEEN OBSERVED, TESTED AND APPROVED.
7. COMPACTION BY FLOODING OR JETTING IS NOT PERMITTED.
8. CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT(S), THE PROJECT WORK AREA AND VICINITY, AND SHALL FAMILIARIZE HIMSELF WITH THE WORK AREA CONDITIONS. CONTRACTOR SHALL MAKE HIS OWN DEDUCTIONS AND CONCLUSIONS AS TO HOW EXISTING SURFACE AND SUB-SURFACE CONDITIONS WILL AFFECT OR BE AFFECTED BY HIS CONSTRUCTION OPERATIONS, INCLUDING THE NATURE OF MATERIALS TO BE EXCAVATED. THE DEGREE OF DIFFICULTY ASSOCIATED WITH MAKING AND MAINTAINING THE REQUIRED EXCAVATIONS, AND THE DEGREE OF DIFFICULTY WHICH MAY ARISE FROM SUBSURFACE CONDITIONS INCLUDING GROUNDWATER, AND SHALL ACCEPT FULL RESPONSIBILITY THEREOF.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE INTEGRITY OF EXISTING PAVEMENT ALONG AND BEHIND THE TRENCH SAWCUT LINES DURING CONSTRUCTION. IF THIS PAVEMENT IS BROKEN-OFF OR OTHERWISE DAMAGED BEFORE NEW PAVEMENT IS PLACED, CONTRACTOR SHALL SAWCUT A NEW CONFORM LINE PARALLEL WITH, FULL LENGTH OF, AND SUFFICIENT DISTANCE (1-FOOT MINIMUM) BEHIND ORIGINAL SAWCUT SO AS TO REMOVE DAMAGED PAVEMENT AND / OR IRREGULARITY ALONG THE CONFORM LINE.

STORM DRAIN NOTES:

1. ALL PRIVATE STORM DRAIN MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, INCLUDING THE PIPE TRENCH DETAIL.
2. CONTRACTOR SHALL SCHEDULE STORM DRAIN WORK AHEAD OF OTHER UNDERGROUND CONDUIT CONSTRUCTION.
3. GRAVITY STORM DRAIN WORK SHALL BEGIN AT THE LOWEST POINT OF DISCHARGE AND PROCEED UPSTREAM.
4. POLYVINYL CHLORIDE (PVC) PIPE FOR 4" THROUGH 8" SIZE SHALL COMPLY WITH THE MOST RECENT ISSUE OF ASTM STANDARD D-3034 (SDR 35). PVC PIPE SHALL HAVE AN INTEGRALLY MOLDED BELL OR SOCKET END FOR GASKETED JOINT ASSEMBLY. JOINTS AND GASKETS SHALL COMPLY WITH THE MOST RECENT ISSUE OF ASTM STANDARD D-3212. PVC PIPE INSTALLATION SHALL COMPLY WITH UNI-BELL PLASTIC PIPE ASSOCIATION STANDARD UNI-B-5, LATEST REVISION. PVC PIPE CONNECTIONS TO MANHOLES, CATCH BASINS AND OTHER CONCRETE STRUCTURES SHALL BE CONSTRUCTED WITH WATERSTOP AT MIDPOINT OF STRUCTURE WALL PENETRATION. WATERSTOP SHALL BE PVC CONCRETE MANHOLE ADAPTER (4" THROUGH 8" PIPE) OR LARGE DIAMETER WATERSTOP AS MANUFACTURED BY FERNCO, OR EQUIVALENT APPROVED BY THE ENGINEER.
5. HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS FOR 12" THROUGH 48" SIZE SHALL BE N-12PROLINK WT (WATERTIGHT) SERIES AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. (ADS). UNLESS NOTED OTHERWISE. LATERAL CONNECTIONS TO MAINLINES SHALL BE MADE USING MANUFACTURER'S WATERTIGHT REDUCING FITTINGS. PIPE AND FITTING INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURES. CONNECTIONS TO CONCRETE STRUCTURES SHALL BE CONSTRUCTED WATERTIGHT USING MANUFACTURER'S RECOMMENDED MATERIALS AND METHODS.
6. GRATED CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLAN DETAIL SHOWN HEREON.
7. WITHIN TEN (10) WORKING DAYS OF COMPLETION OF THE STORM DRAIN SYSTEM AND BEFORE CONSTRUCTION OF PAVEMENT, WALKWAYS AND OTHER PERMANENT SURFACE IMPROVEMENTS, CONTRACTOR SHALL ENSURE TOP OF GRATE, COVER, INLET AND OUTLET INVERT ELEVATIONS OF ALL STORM DRAIN STRUCTURES MATCH PLANS AND ARE ACCURATE TO 0.01 FEET.

SEWER NOTES:

1. ALL PUBLIC SEWER MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS AND WITH THE PROJECT SPECIFIC AND STANDARD REQUIREMENTS AND STANDARD DRAWINGS OF THE GOVERNING AGENCY.
2. ALL PRIVATE SEWER MATERIALS AND CONSTRUCTION, INCLUDING BUILDING SEWERS, SHALL COMPLY WITH THE UNIFORM PLUMBING CODE, CURRENT EDITION, AND WITH THE GOVERNING AGENCY CODE.
3. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF CRITERIA FOR SEPARATION OF WATER MAINS AND SANITARY SEWERS.
4. PVC SDR 35 PIPE SHALL CONFORM TO ASTM D 3034 FOR GASKET OR SOLVENT-WELDED PIPE WITH A MINIMUM PIPE STIFFNESS OF 46 TESTED PER ASTM D2412. GASKET JOINTS SHALL CONFORM TO ASTM F 477. SOLVENT-WELD JOINTS SHALL CONFORM TO ASTM D2672.
5. GRAVITY SEWER CONSTRUCTION SHALL BEGIN AT THE LOWEST POINT OF DISCHARGE AND PROCEED UPSTREAM.
6. CONTRACTOR SHALL MAINTAIN RECORDS OF THE EXACT LOCATIONS AND DEPTHS OF ALL SEWER MANHOLES, CLEANOUTS, MAIN STUBS, AND LATERALS FOR THE PURPOSE OF PROVIDING A BASIS FOR CONSTRUCTION-RECORD DRAWINGS. SAID RECORD SHALL BE DELIVERED TO THE DEVELOPER'S ENGINEER PRIOR TO ACCEPTANCE OF THE WORK BY THE GOVERNING AGENCY.
7. ALL SEWER MANHOLE AND CLEAN-OUT RIMS SHALL BE ADJUSTED TO FINISH GRADE IN PAVED AREAS.

WATER NOTES:

1. ALL PUBLIC WATER LINE MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS AND WITH THE PROJECT SPECIFIC AND STANDARD REQUIREMENTS AND STANDARD DRAWINGS OF THE GOVERNING AGENCY.
2. ALL PRIVATE WATER LINE MATERIALS AND CONSTRUCTION, INCLUDING SERVICE LATERALS, SHALL COMPLY WITH THE UNIFORM PLUMBING CODE, CURRENT EDITION, AND WITH THE GOVERNING AGENCY CODE.
3. ALL WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF CRITERIA FOR SEPARATION OF WATER MAINS AND SANITARY SEWERS.
4. PVC SCH 40 PIPE SHALL CONFORM TO ASTM D 1785 FOR GASKET OR SOLVENT-WELD. GASKET JOINTS SHALL CONFORM TO ASTM F 477. SOLVENT-WELD JOINTS SHALL CONFORM TO ASTM D2672.
5. CONTRACTOR SHALL MAINTAIN RECORDS OF THE EXACT LOCATIONS OF ALL WATER VALVES, METERS, MAIN STUBS, AND LATERALS FOR THE PURPOSE OF PROVIDING A BASIS FOR CONSTRUCTION-RECORD DRAWINGS. SAID RECORD SHALL BE DELIVERED TO THE DEVELOPER'S ENGINEER PRIOR TO ACCEPTANCE OF THE WORK BY THE GOVERNING AGENCY.
6. ALL WATER METER BOXES AND VALVE BOX RIMS SHALL BE ADJUSTED TO FINISH GRADE IN PAVED AREAS.
7. PRIOR TO ALLOWING WATER MIXING FROM THE MUNICIPAL SOURCE, NEW AND REPLACED PUBLIC WATER MAINS SHALL BE DISINFECTED TO THE STANDARD PROVIDED IN THE AMERICAN WATER WORKS ASSOCIATION STANDARD C651-14 FOR DISINFECTING WATER MAINS.

ASPHALT PAVEMENT NOTES:

1. UNLESS MODIFIED OR OTHERWISE SPECIFIED BY THE CONSTRUCTION NOTES THAT FOLLOW HEREON INCLUDING THOSE UNDER SEPARATE HEADINGS, PRIVATE ROADWAY MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), CURRENT EDITION PER LOCATION.
2. STANDARD SPECIFICATIONS. NO RECYCLED ASPHALT SHALL BE INCORPORATED INTO THE A.C. MIX.
3. BEFORE PAVING, A PAINT BINDER (TACK COAT) OF ASPHALTIC EMULSION SHALL BE APPLIED TO ALL EXISTING VERTICAL SURFACES AGAINST WHICH PAVING IS TO BE PLACED AND BETWEEN PAVEMENT COURSES CONSTRUCTED MORE THAN 24 HOURS APART.
4. THE COMPOSITION OF ALL CUTBACK AND EMULSIFIED ASPHALT USED IN THE MANUFACTURE, PLACEMENT OR MAINTENANCE OF ASPHALT CONCRETE PAVEMENT SHALL CONFORM WITH THE AIR POLLUTION CONTROL DISTRICT RULE 329. CONTRACTOR SHALL MAINTAIN RECORDS AVAILABLE FOR INSPECTION FOR A PERIOD OF 2 YEARS WHICH DOCUMENT THE TYPES AND AMOUNTS OF ASPHALTS USED.
5. BASE MATERIAL SHALL BE CRUSHED AGGREGATE BASE IN CONFORMANCE WITH 200-2.2 OF THE STANDARD SPECIFICATIONS.
6. THE PRELIMINARY ESTIMATED ASPHALT PAVEMENT STRUCTURAL SECTION IS AS SHOWN ON THE PLAN DETAILS AND CONSTRUCTION NOTES. ACTUAL THICKNESS OF PAVEMENT SURFACING AND BASE COURSES SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AFTER COMPLETION OF ROUGH GRADING BASED ON "R"-VALUE TESTS OF COMPLETED SUBGRADE MATERIAL AND THE TRAFFIC INDEXES (T.I.'S) SHOWN ON THE PLAN DETAILS, SUBJECT TO APPROVAL BY THE ENGINEER. PREPARATION OF AREAS TO RECEIVE PAVEMENT AND APPURTENANT CONCRETE IMPROVEMENTS, INCLUDING REMOVAL AND RECOMPACTION OF EXISTING SOIL AND PLACEMENT OF FILL SOIL, SHALL BE AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. DURING PAVING OPERATIONS, STRUCTURAL SECTION COMPACTION SHALL BE OBSERVED AND TESTED BY THE GEOTECHNICAL ENGINEER.
7. COMPACTION OF FILL, SUBGRADE AND BASE COURSES AS WELL AS ALL TRENCH BEDDING AND BACKFILL SHALL BE OBSERVED AND TESTED FOR COMPLIANCE WITH APPLICABLE REQUIREMENTS BY THE GEOTECHNICAL ENGINEER.
8. ALL EXISTING AND PROPOSED VALVE AND UTILITY BOXES AND MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO FINISH GRADE.
9. AFTER CONSTRUCTION A FLOOD TEST SHALL BE CONDUCTED TO REVIEW SURFACE DRAINAGE, AS FOLLOWS:
   A. WATER SHALL BE SUPPLIED AND DISCHARGED IN SUFFICIENT QUANTITY TO COMPLETELY WET AND COVER ALL PAVEMENT AND CONCRETE GUTTER AREAS; THE OUTLINE LIMITS OF RESIDUAL STANDING/PONDED WATER SHALL THEN BE MARKED
   B. PAVEMENT SHALL BE REMOVED AND REPLACED, AT NO ADDITIONAL COST TO THE OWNER, AS NECESSARY TO PROVIDE POSITIVE SURFACE DRAINAGE AND TO PREVENT PONDING OF WATER ON PAVEMENT SURFACES AND IN GUTTERS
   C. ADDITIONAL FLOOD TESTING SHALL BE CONDUCTED TO CONFIRM SUCCESS OF CORRECTIVE MEASURES.
   D. WHERE SAWCUT LINE IS CONSTRUCTED ALONG CONFORM LINE WITH EXISTING A.C. PAVEMENT, IT IS CONTRACTOR'S RESPONSIBILITY TO PROTECT THE INTEGRITY OF THE PAVEMENT ALONG AND BEHIND THE SAWCUT LINE DURING CONSTRUCTION; IF THIS PAVEMENT IS BROKEN-OFF OR OTHERWISE DAMAGED BEFORE NEW PAVEMENT IS PLACED, CONTRACTOR SHALL SAWCUT A NEW CONFORM LINE PARALLEL WITH, FULL LENGTH OF, AND SUFFICIENT DISTANCE BEHIND ORIGINAL SAWCUT SO AS TO REMOVE DAMAGED PAVEMENT AND/OR IRREGULARITY ALONG THE CONFORM LINE.

CONCRETE PAVEMENT AND APPURTENANT CONCRETE NOTES:

1. UNLESS MODIFIED OR OTHERWISE SPECIFIED BY THE CONSTRUCTION NOTES THAT FOLLOW HEREON INCLUDING THOSE UNDER SEPARATE HEADINGS, PRIVATE ROADWAY MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), CURRENT EDITION PER LOCATION.
2. COMPACTION OF FILL, SUBGRADE AND BASE COURSES AS WELL AS ALL TRENCH BEDDING AND BACKFILL SHALL BE OBSERVED AND TESTED FOR COMPLIANCE WITH APPLICABLE REQUIREMENTS BY THE GEOTECHNICAL ENGINEER.
3. CONCRETE FOR DRIVEWAYS, DRAINAGE STRUCTURES, AND PAVEMENT SHALL BE CLASS 560-C



SITE DEMOLITION NOTES:

1. SAWCUT ASPHALT DRIVEWAY
2. REMOVE ASPHALT DRIVEWAY
3. REMOVE CONCRETE CURB AND GUTTER
4. REMOVE STORM DRAIN CATCH BASIN
5. REMOVE STORM DRAIN
6. REMOVE STREET LIGHT

LEGEND:

- SD — STORM DRAINAGE
- W — WATER SERVICE
- G — GAS
- SS — SANITARY SEWER
- E — POWER ELECTRICAL
- PROPERTY LINE

HORIZONTAL SCALE: 1" = 20'

20 0 20 40

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ENGINEER OF RECORD:

COLORADO LICENSED
BRIAN R. JOHNSON
53998
PROFESSIONAL ENGINEER

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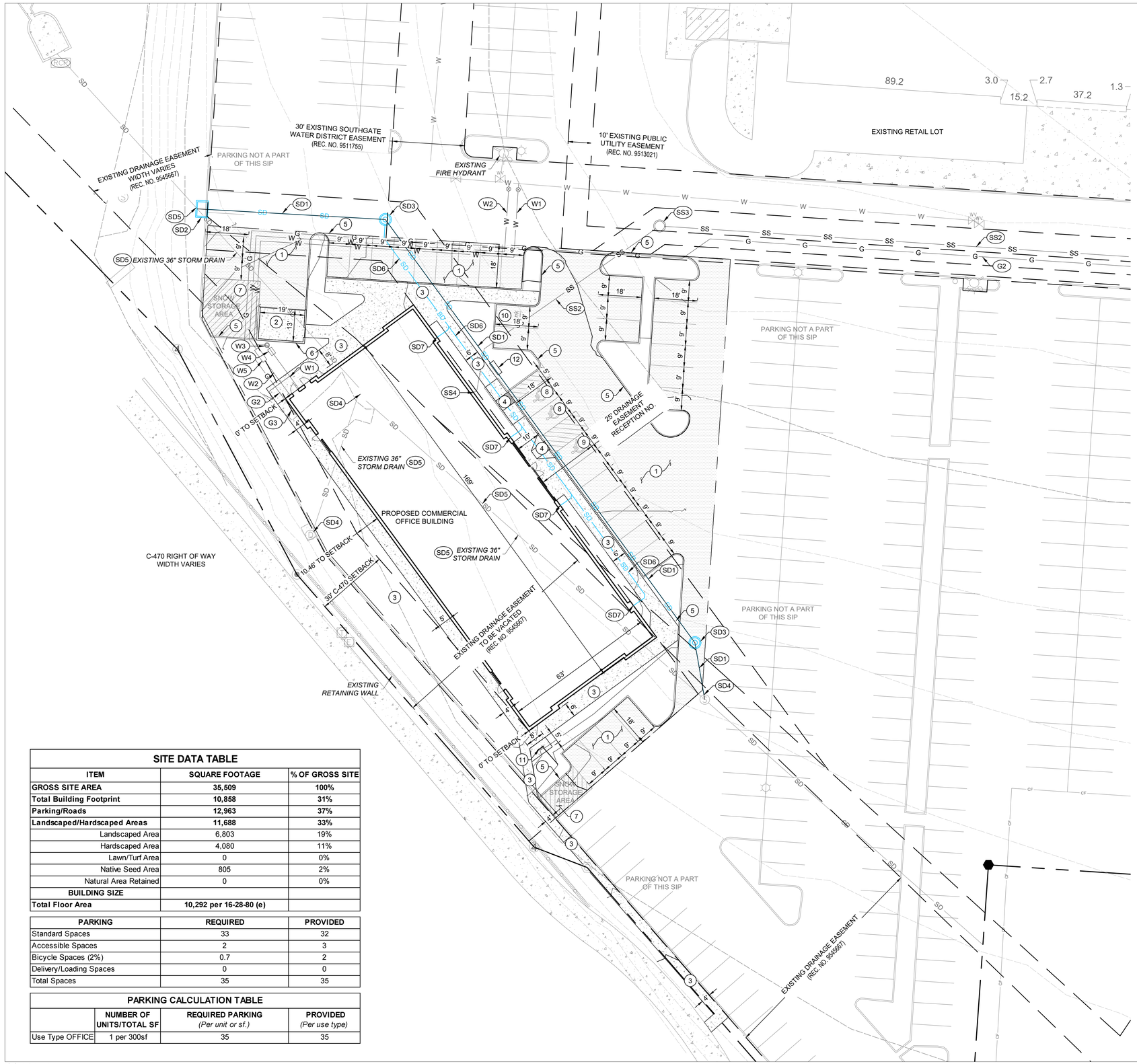
ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
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DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

DEMOLITION PLAN

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SITE CONSTRUCTION NOTES:

1. CONSTRUCT ASPHALT DRIVEWAY SECTION
2. CONSTRUCT CONCRETE DRIVEWAY SECTION
3. CONSTRUCT CONCRETE WALKWAY SECTION
4. CONSTRUCT CONCRETE CURB RAMP
5. CONSTRUCT 6-INCH CONCRETE CURB
6. CONSTRUCT CMU TRASH ENCLOSURE WALL
7. INSTALL SIGNAGE AND STRIPING FOR NO PARKING
8. INSTALL SIGNAGE AND STRIPING FOR ACCESSIBLE PARKING SPACE
9. INSTALL SIGNAGE AND STRIPING FOR VAN ACCESSIBLE PARKING SPACE
10. INSTALL SIGNAGE AND STRIPING FOR LINK ON DEMAND PARKING SPACE
11. INSTALL BICYCLE PARKING RACK
12. INSTALL 6' BENCH

STORM DRAIN CONSTRUCTION NOTES:

- SD1 INSTALL 36-INCH RCP STORM DRAIN LINE PER DOUGLAS COUNTY SP.46A
- SD2 INSTALL STORM DRAIN CATCH BASIN PER DOUGLAS COUNTY SP.34A
- SD3 INSTALL STORM DRAIN MANHOLE PER DOUGLAS COUNTY SP.44A
- SD4 INSTALL CONNECTION TO UPSTREAM MANHOLE
- SD5 INSTALL CONNECTION TO DOWNSTREAM STORM DRAIN
- SD6 INSTALL 8-INCH SDR35 PVC STORM DRAIN LINE
- SD7 INSTALL 6-INCH CONNECTION TO BUILDING DOWNSPOUT

SANITARY SEWER CONSTRUCTION NOTES:

- SS1 INSTALL CONNECTION TO EXISTING SANITARY SEWER MANHOLE
- SS2 INSTALL 6-INCH SDR35 PVC SANITARY SEWER LATERAL
- SS3 INSTALL 48-INCH CONCRETE SANITARY SEWER MANHOLE
- SS4 INSTALL 6-INCH SDR35 PVC SEWER CLEANOUT

WATER CONSTRUCTION NOTES:

- W1 INSTALL 1 1/2-INCH TYPE K COPPER WATER LATERAL SERVICE
- W2 INSTALL 6-INCH C900 PVC WATER LATERAL SERVICE
- W3 INSTALL 1 1/2-INCH SUBMETER AND CORPORATION STOP IN CONCRETE VALVE BOX
- W4 INSTALL 1 1/2-INCH REDUCED PRESSURE BACKFLOW PREVENTER
- W5 INSTALL 6-INCH DOUBLE CHECK DETECTOR ASSEMBLY

GAS CONSTRUCTION NOTES:

- G1 INSTALL 1 1/2-INCH GAS LATERAL CONNECTION TO EXISTING GAS MAIN
- G2 INSTALL 1 1/2-INCH GAS SERVICE
- G3 INSTALL 1 1/2-INCH GAS METER

LEGEND:

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- W — WATER SERVICE
- G — GAS
- SS — SANITARY SEWER
- E — POWER ELECTRICAL
- PROPERTY LINE
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT

N

HORIZONTAL SCALE: 1" = 20'

20 0 20 40

SITE DATA TABLE

ITEM	SQUARE FOOTAGE	% OF GROSS SITE
GROSS SITE AREA	**35,509**	**100%**
Total Building Footprint	**10,858**	**31%**
Parking/Roads	**12,963**	**37%**
Landscaped/Hardscaped Areas	**11,688**	**33%**
Landscaped Area	6,803	19%
Hardscaped Area	4,080	11%
Lawn/Turf Area	0	0%
Native Seed Area	805	2%
Natural Area Retained	0	0%
BUILDING SIZE		
Total Floor Area	**10,292 per 16-28-80 (e)**	

PARKING	REQUIRED	PROVIDED
Standard Spaces	33	32
Accessible Spaces	2	3
Bicycle Spaces (2%)	0.7	2
Delivery/Loading Spaces	0	0
Total Spaces	35	35

PARKING CALCULATION TABLE

	NUMBER OF UNITS/TOTAL SF	REQUIRED PARKING *(Per unit or sf.)*	PROVIDED *(Per use type)*
Use Type OFFICE	1 per 300sf	35	35

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ENGINEER OF RECORD:

COLORADO LICENSED PER 53990 PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

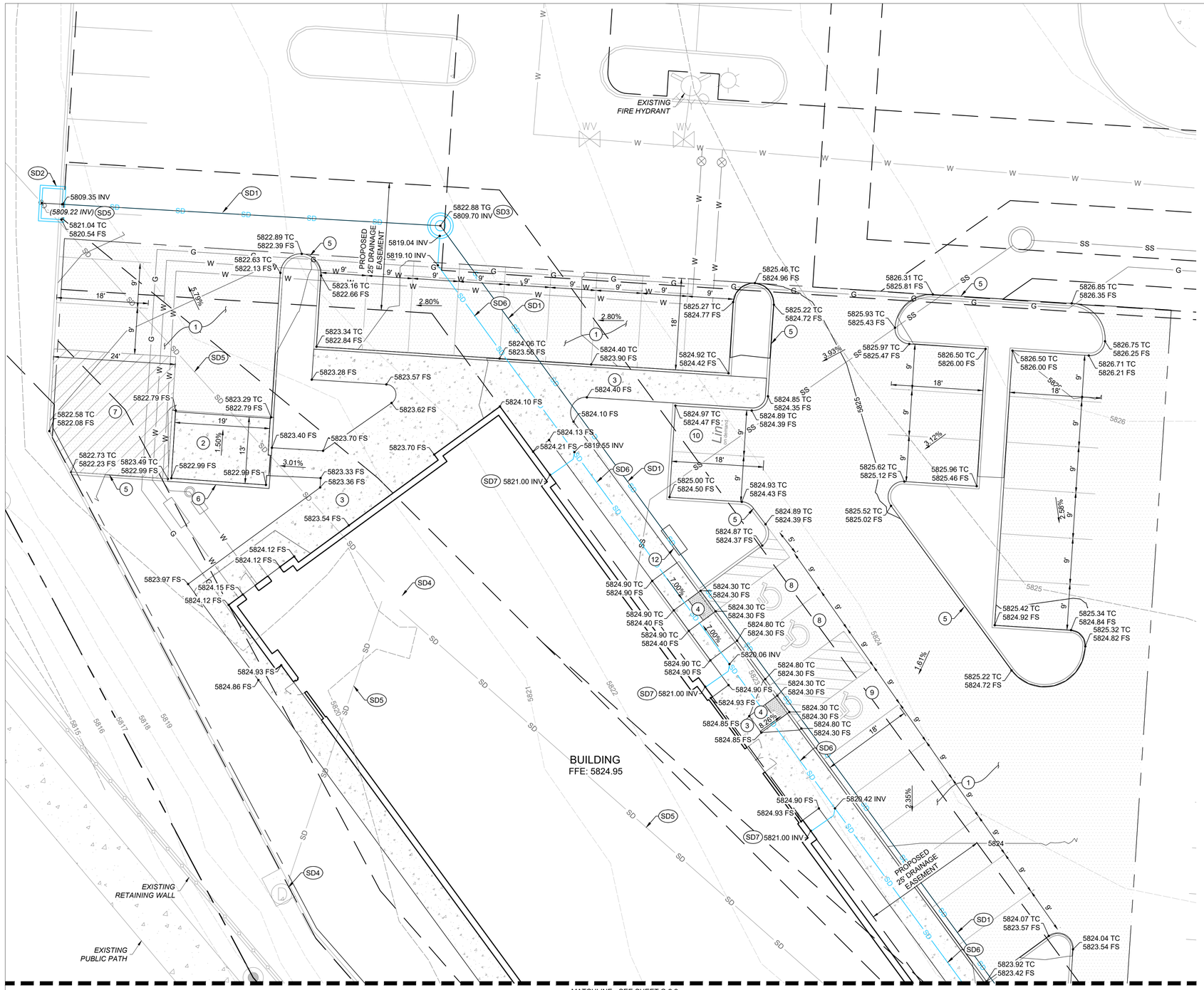
ISSUE	DATE	DESCRIPTION

JOB NUMBER:	251567
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DRAWN BY:	BRJ
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SHEET TITLE:	

SITE PLAN

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GENERAL NOTES:

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SITE CONSTRUCTION NOTES:

1. CONSTRUCT ASPHALT DRIVEWAY SECTION
2. CONSTRUCT CONCRETE DRIVEWAY SECTION
3. CONSTRUCT CONCRETE WALKWAY SECTION
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STORM DRAIN CONSTRUCTION NOTES:

SD1. INSTALL 36-INCH RCP STORM DRAIN LINE PER DOUGLAS COUNTY SP.46
SD2. INSTALL STORM DRAIN CATCH BASIN PER DOUGLAS COUNTY SP.34
SD3. INSTALL STORM DRAIN MANHOLE PER DOUGLAS COUNTY SP.43
SD4. INSTALL CONNECTION TO UPSTREAM MANHOLE
SD5. INSTALL CONNECTION TO DOWNSTREAM STORM DRAIN
SD6. INSTALL 6-INCH SDR35 PVC STORM DRAIN LINE
SD7. INSTALL 6-INCH CONNECTION TO BUILDING DOWNSPOUT

LEGEND:

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HORIZONTAL SCALE: 1" = 10'

10 0 10 20

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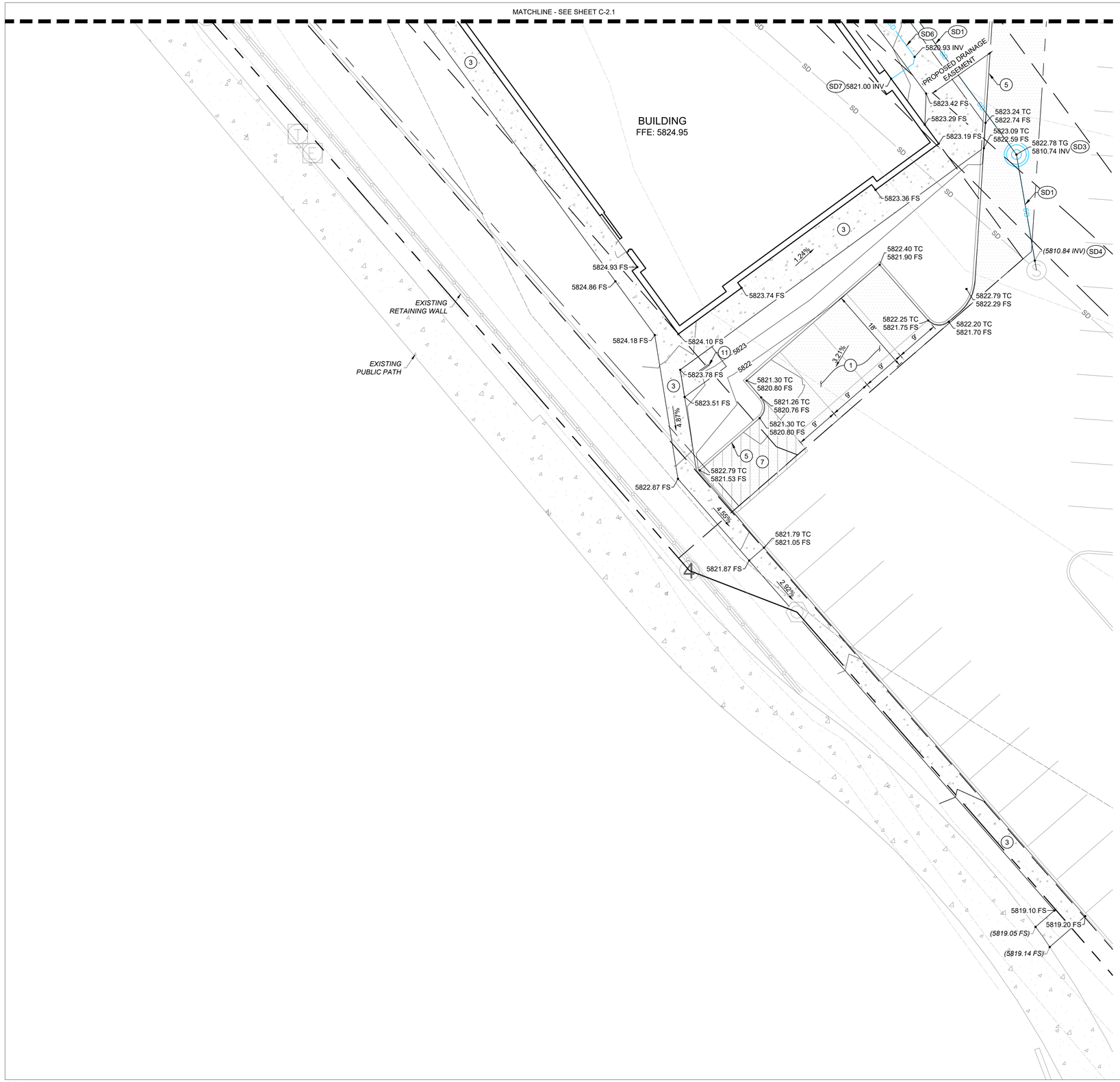
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GRADING AND DRAINAGE PLAN

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HORIZONTAL SCALE: 1" = 10'

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BRIAN RUSTAD JACOBS
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PROFESSIONAL ENGINEER

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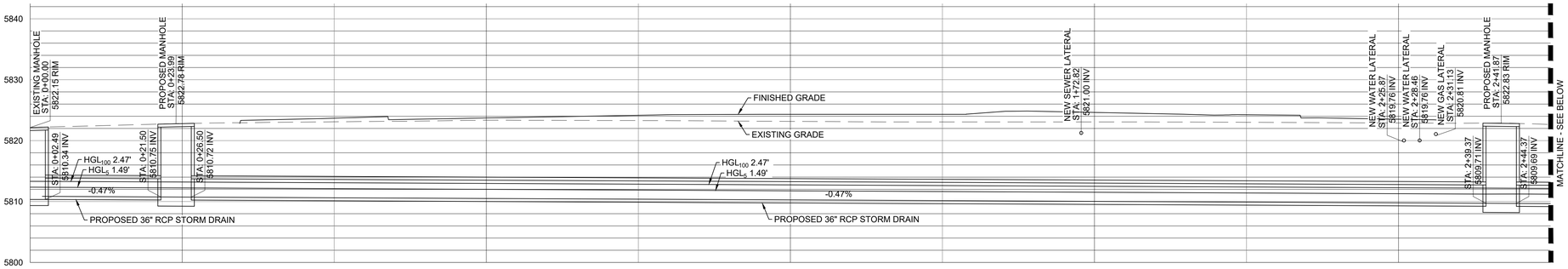
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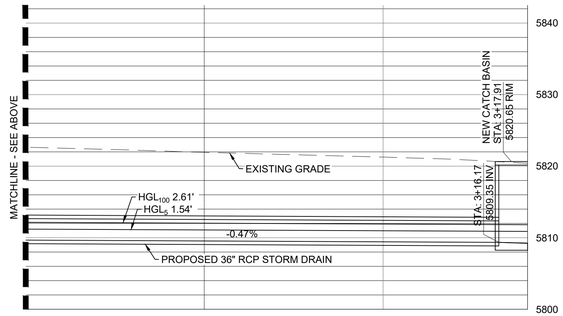
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PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

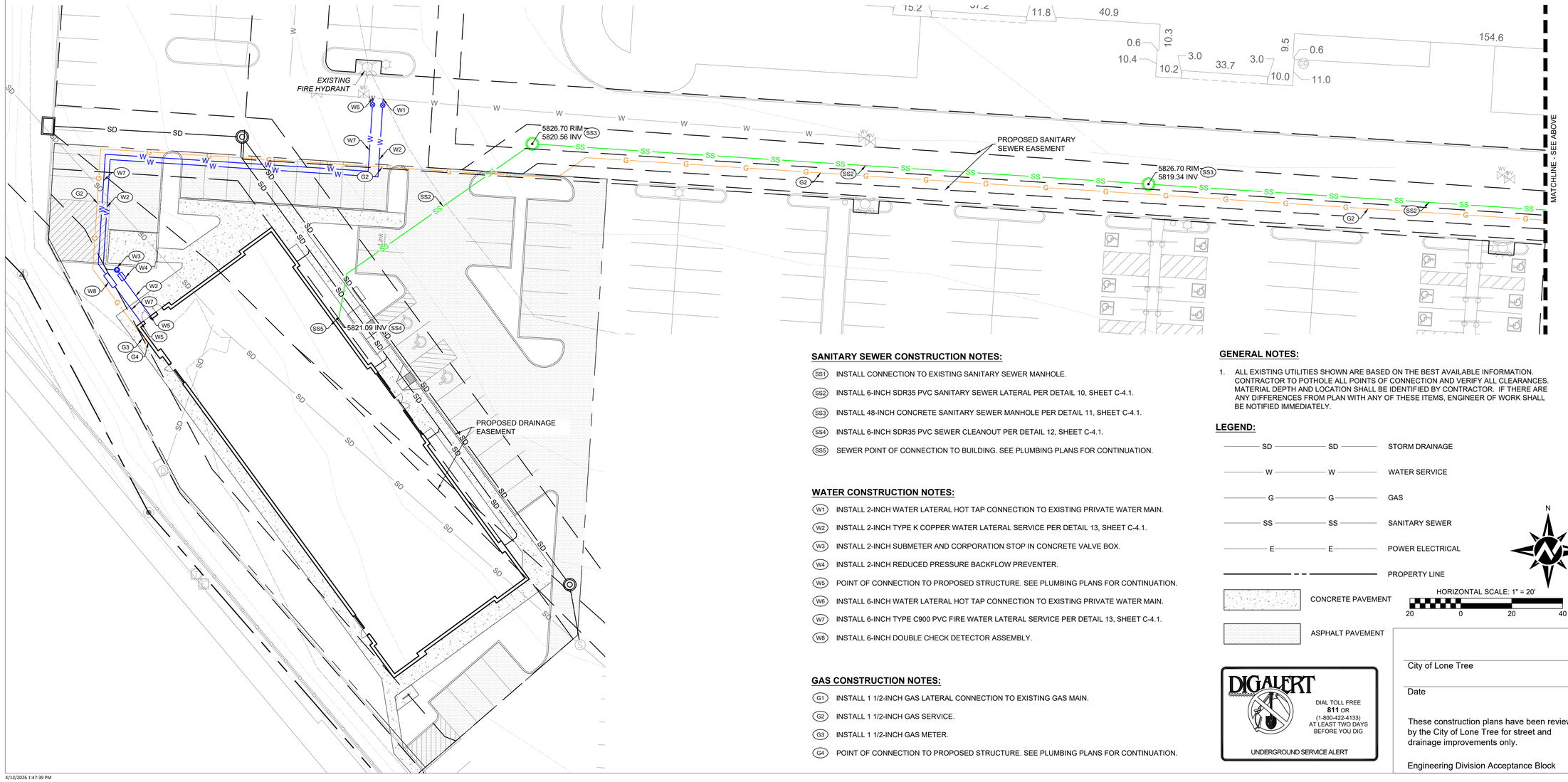
ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

STORM DRAIN PROFILE AND DETAILS

C-2.3

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SANITARY SEWER CONSTRUCTION NOTES:

(SS1) INSTALL CONNECTION TO EXISTING SANITARY SEWER MANHOLE.

(SS2) INSTALL 6-INCH SDR35 PVC SANITARY SEWER LATERAL PER DETAIL 10, SHEET C-4.1.

(SS3) INSTALL 48-INCH CONCRETE SANITARY SEWER MANHOLE PER DETAIL 11, SHEET C-4.1.

(SS4) INSTALL 6-INCH SDR35 PVC SEWER CLEANOUT PER DETAIL 12, SHEET C-4.1.

(SS5) SEWER POINT OF CONNECTION TO BUILDING. SEE PLUMBING PLANS FOR CONTINUATION.

WATER CONSTRUCTION NOTES:

(W1) INSTALL 2-INCH WATER LATERAL HOT TAP CONNECTION TO EXISTING PRIVATE WATER MAIN.

(W2) INSTALL 2-INCH TYPE K COPPER WATER LATERAL SERVICE PER DETAIL 13, SHEET C-4.1.

(W3) INSTALL 2-INCH SUBMETER AND CORPORATION STOP IN CONCRETE VALVE BOX.

(W4) INSTALL 2-INCH REDUCED PRESSURE BACKFLOW PREVENTER.

(W5) POINT OF CONNECTION TO PROPOSED STRUCTURE. SEE PLUMBING PLANS FOR CONTINUATION.

(W6) INSTALL 6-INCH WATER LATERAL HOT TAP CONNECTION TO EXISTING PRIVATE WATER MAIN.

(W7) INSTALL 6-INCH TYPE C900 PVC FIRE WATER LATERAL SERVICE PER DETAIL 13, SHEET C-4.1.

(W8) INSTALL 6-INCH DOUBLE CHECK DETECTOR ASSEMBLY.

GAS CONSTRUCTION NOTES:

(G1) INSTALL 1 1/2-INCH GAS LATERAL CONNECTION TO EXISTING GAS MAIN.

(G2) INSTALL 1 1/2-INCH GAS SERVICE.

(G3) INSTALL 1 1/2-INCH GAS METER.

(G4) POINT OF CONNECTION TO PROPOSED STRUCTURE. SEE PLUMBING PLANS FOR CONTINUATION.

GENERAL NOTES:

1. ALL EXISTING UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR TO POTHOLE ALL POINTS OF CONNECTION AND VERIFY ALL CLEARANCES. MATERIAL DEPTH AND LOCATION SHALL BE IDENTIFIED BY CONTRACTOR. IF THERE ARE ANY DIFFERENCES FROM PLAN WITH ANY OF THESE ITEMS, ENGINEER OF WORK SHALL BE NOTIFIED IMMEDIATELY.

LEGEND:

SD — SD — STORM DRAINAGE

W — W — WATER SERVICE

G — G — GAS

SS — SS — SANITARY SEWER

E — E — POWER ELECTRICAL

PROPERTY LINE

CONCRETE PAVEMENT

ASPHALT PAVEMENT

N

HORIZONTAL SCALE: 1" = 20'

20 0 20 40

DIG ALERT

DIAL TOLL FREE **811** OR (1-800-422-4133) AT LEAST TWO DAYS BEFORE YOU DIG

UNDERGROUND SERVICE ALERT

City of Lone Tree

Date

These construction plans have been reviewed by the City of Lone Tree for street and drainage improvements only.

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ENGINEER OF RECORD:

COLORADO LICENSED
BRIAN JOSEPH TANNER
53998
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

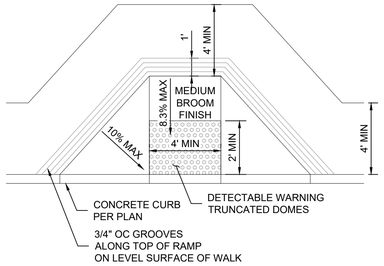
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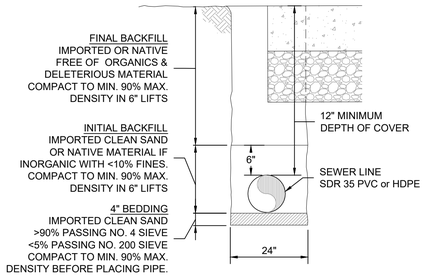
UTILITY PLAN

C-3.1

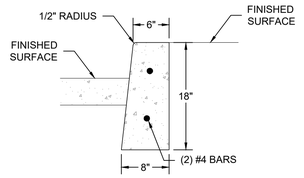
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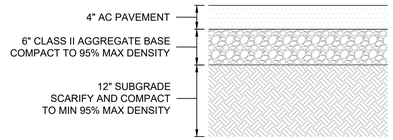
11 CURB RAMP DETAIL
NTS



8 SEWER LATERAL TRENCH SECTION
NTS

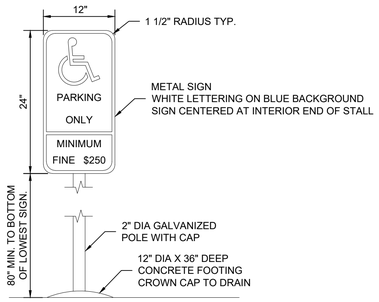


4 CONCRETE CURB DETAIL
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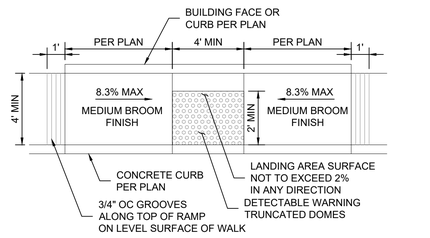


ACTUAL THICKNESS OF A.C. PAVEMENT AND AGGREGATE BASE SHALL BE DETERMINED DURING CONSTRUCTION BY THE GEOTECHNICAL ENGINEER PURSUANT TO R-VALUE TESTING.

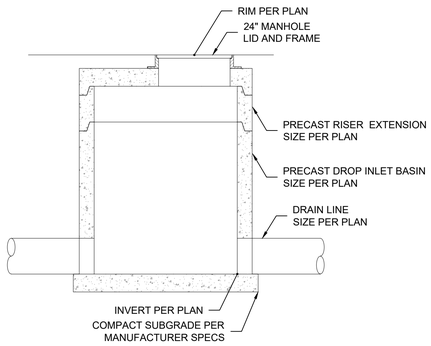
1 TYPICAL ASPHALT DRIVEWAY SECTION
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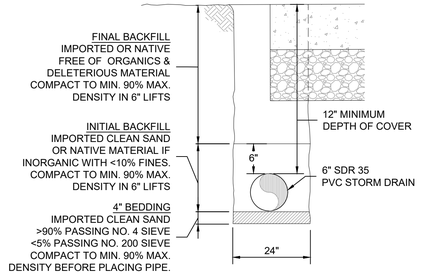
15 ACCESSIBLE PARKING STALL SIGN DETAIL
NTS



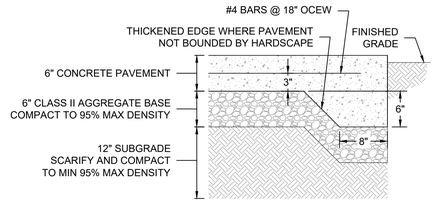
12 CURB RAMP DETAIL
NTS



9 SEWER MANHOLE DETAIL
NTS

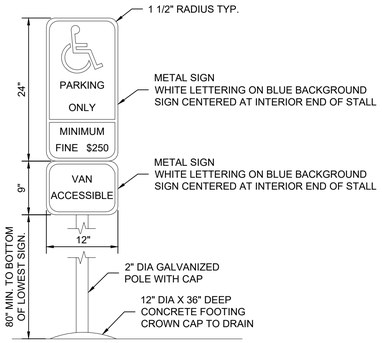


5 PVC STORM DRAIN TRENCH DETAIL
NTS

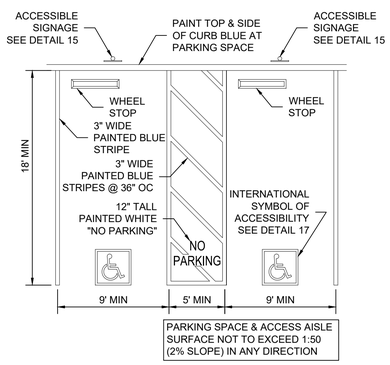


ACTUAL THICKNESS OF CONCRETE AND AGGREGATE BASE SHALL BE DETERMINED DURING CONSTRUCTION BY THE GEOTECHNICAL ENGINEER.

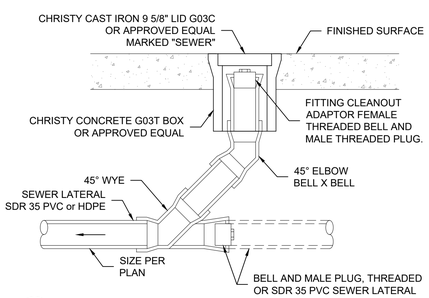
2 TYPICAL CONCRETE DRIVEWAY SECTION
NTS



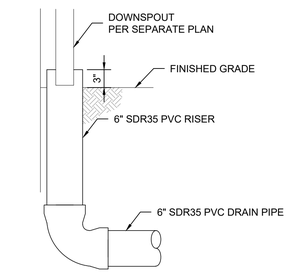
16 VAN ACCESSIBLE PARKING STALL SIGN DETAIL
NTS



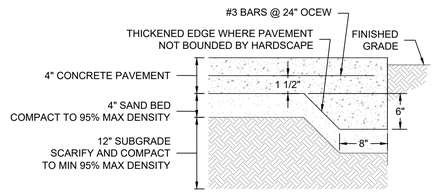
13 ACCESSIBLE PARKING STALL DETAIL
NTS



10 SEWER CLEANOUT DETAIL
NTS

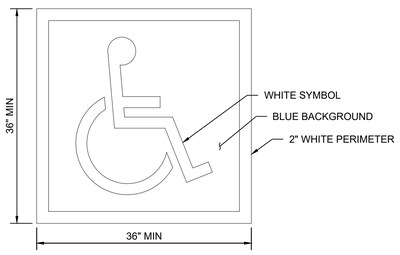


6 DOWNSPOUT CONNECTION DETAIL
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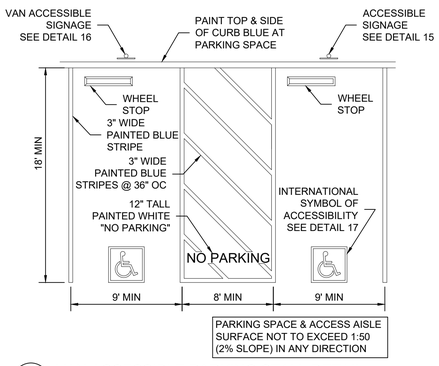


ACTUAL THICKNESS OF CONCRETE AND AGGREGATE BASE SHALL BE DETERMINED DURING CONSTRUCTION BY THE GEOTECHNICAL ENGINEER.

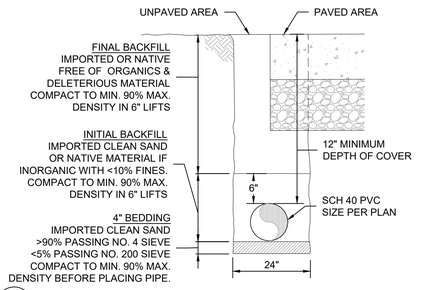
3 TYPICAL CONCRETE WALKWAY SECTION
NTS



17 INTERNATIONAL SYMBOL OF ACCESSIBILITY
NTS



14 VAN ACCESSIBLE PARKING STALL DETAIL
NTS



7 WATER LATERAL TRENCH SECTION
NTS

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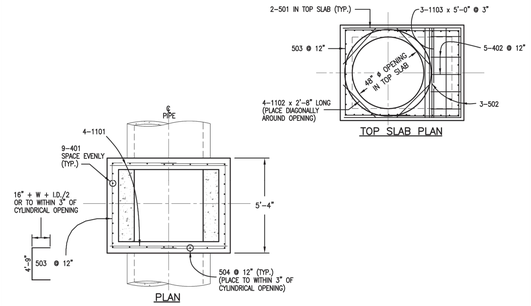
These construction plans have been reviewed by the City of Lone Tree for street and drainage, and signage and striping, improvements only.

Engineering Division Acceptance Block

DETAIL SHEET

C-4.1

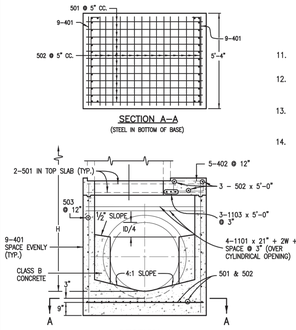
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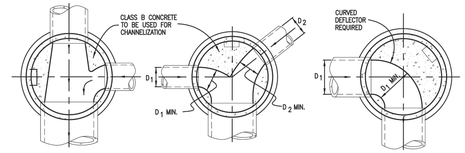
REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43a

GENERAL NOTES

1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8'.
3. THE MH RING (FRAME) SHALL BE SET ON CONCRETE GRADE RINGS. THE FRAME SHALL BE SURROUNDED WITH A CONCRETE COLLAR IN UNPAVED AREA AND CONCRETE PAVEMENT, OR FULL DEPTH ASPHALT IN ASPHALT PAVEMENT. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF CONDUIT OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
6. CAST-IN-PLACE MANHOLES SHALL BE CLASS D CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
8. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT L OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
9. IF ANY REBAR HAS TO BE CUT ON THE JOB SITE, THE EXPOSED BARE STEEL SHALL BE IMMEDIATELY COVERED WITH A MANUFACTURE APPROVED EPOXY PAINT PRIOR TO POUR.
10. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONNECTED BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
11. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE.
12. STUB-OUTS SHALL EXTEND A MINIMUM OF 1 PIPE SECTION BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
13. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL SANITARY SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
14. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.



REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43b



TYPICAL CHANNELIZATION DETAILS

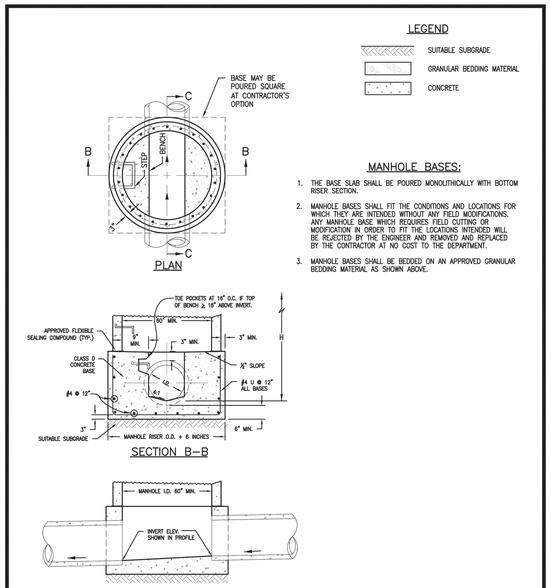
QUANTITIES FOR CONCRETE MANHOLE BOX BASE

MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 60"	I.D. 66"	I.D. 72"	I.D. 84"	I.D. 96"	FORMULAS
401	4	I	0.668	NO. REQ'D.	18	18	18	18	18	401
				LENGTH	8'-3"	9'-3"	9'-10"	11'-0"	12'-2"	BAR LENGTH = 32"+2W+I.D.
				WEIGHT #	104.2	111.2	118.2	132.3	146.3	
402	4	III	0.668	NO. REQ'D.	5	5	5	5	5	402
				LENGTH	6'-0"	6'-7"	7'-2"	8'-4"	9'-6"	BAR LENGTH = I.D. + 2W
				WEIGHT #	20.0	22.0	23.9	27.8	31.7	
501	5	I	1.043	NO. REQ'D.	17	17	17	17	17	501
				LENGTH	8'-0"	8'-7"	9'-2"	10'-4"	11'-6"	BAR LENGTH = 24" + I.D. + 2W
				WEIGHT #	141.8	152.2	162.5	183.2	203.9	
502	5	I	1.043	NO. REQ'D.	23	25	26	29	32	502
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	NUMBER BARS REQ'D. = $3+\left(\frac{24+I.D.+2W}{@\ 5"}+1\right)$
				WEIGHT #	119.9	130.4	135.6	151.2	166.9	
503	5	II	1.043	NO. REQ'D.	16	18	18	20	24	503
				LENGTH	13'-5"	14'-0"	14'-7"	15'-9"	16'-11"	NUMBER BARS REQ'D. = $2\left(\frac{13+I.D.+2W}{@\ 12"}+1\right)$
				WEIGHT #	223.9	262.8	273.8	328.5	423.5	BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	NO. REQ'D.	14	14	16	18	20	504
				LENGTH	8'-8"	9'-3"	9'-10"	11'-0"	12'-2"	NUMBER BARS REQ'D. = $2\left(\frac{2W+I.D.-4}{@\ 12"}+1\right)$
				WEIGHT #	126.6	135.1	164.1	206.5	253.8	BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	NO. REQ'D.	4	4	4	4	4	1101
				LENGTH	7'-9"	8'-4"	8'-11"	10'-1"	11'-3"	BAR LENGTH = 21" + I.D. + 2W
				WEIGHT #	164.7	177.1	189.5	214.3	239.1	
1102	11	I	5.313	NO. REQ'D.	4	4	4	4	4	56.7
				LENGTH	2'-8"	2'-8"	2'-8"	2'-8"	2'-8"	
				WEIGHT #	56.7	56.7	56.7	56.7	56.7	
1103	11	I	5.313	NO. REQ'D.	3	3	3	3	3	
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	
				WEIGHT #	79.7	79.7	79.7	79.7	79.7	
REINFORCING STEEL TOTAL #					1,037.5	1,127.2	1,204.0	1,380.2	1,601.6	
CONCRETE – CUBIC YARDS – TOTAL					6.6	7.3	8.0	9.5	11.1	

NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.

BENDING
TYPE I — STRAIGHT
TYPE II — 4'-9" — 16"+W+I.D./2
TYPE III — 12" — 12" — 7" — I.D.+2W-38"

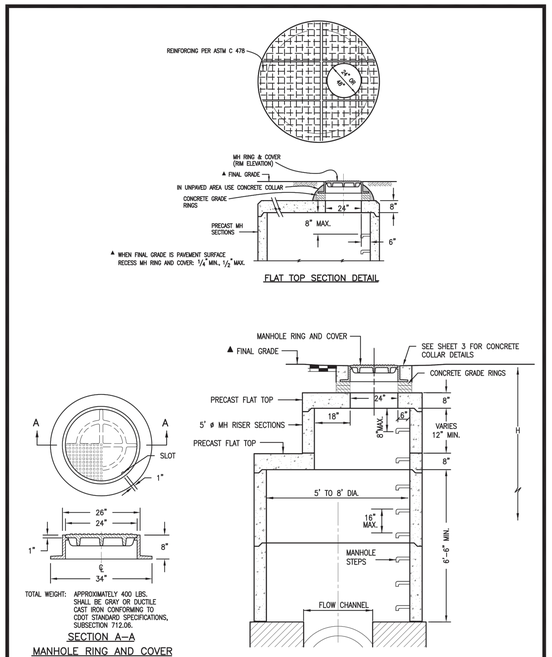
REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43c



MANHOLE BASES:

1. THE BASE SLAB SHALL BE POURED MONOLITHICALLY WITH BOTTOM RISER SECTION.
2. MANHOLE BASES SHALL FIT THE CONDITIONS AND LOCATIONS FOR WHICH THEY ARE INTENDED WITHOUT ANY FIELD MODIFICATIONS. ANY MANHOLE BASE WHICH REQUIRES FIELD CUTTING OR MODIFICATION IN ORDER TO FIT THE LOCATIONS INTENDED WILL BE REJECTED BY THE ENGINEER AND REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE DEPARTMENT.
3. MANHOLE BASES SHALL BE BEDDED ON AN APPROVED GRANULAR BEDDING MATERIAL AS SHOWN ABOVE.

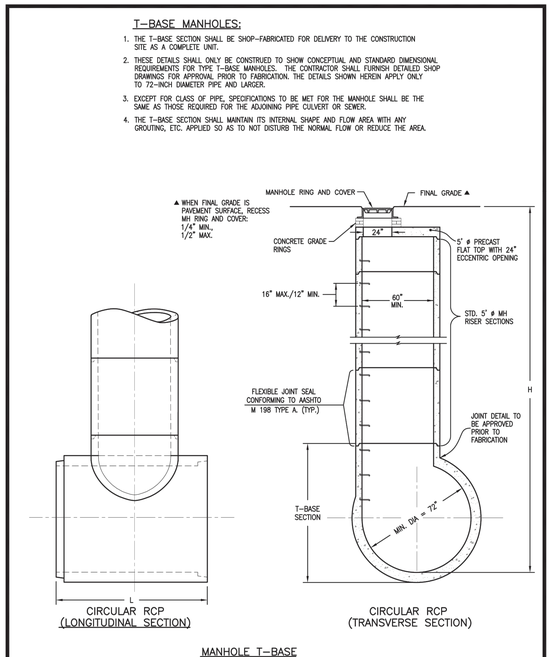
REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43d



REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43e

T–BASE MANHOLES:

1. THE T–BASE SECTION SHALL BE SHOP–FABRICATED FOR DELIVERY TO THE CONSTRUCTION SITE AS A COMPLETE UNIT.
2. THESE DETAILS SHALL ONLY BE CONSTRUED TO SHOW CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR TYPE T–BASE MANHOLES. THE CONTRACTOR SHALL FURNISH DETAILED SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. THE DETAILS SHOWN HEREIN APPLY ONLY TO 72–INCH DIAMETER PIPE AND LARGER.
3. EXCEPT FOR CLASS OF PIPE, SPECIFICATIONS TO BE MET FOR THE MANHOLE SHALL BE THE SAME AS THOSE REQUIRED FOR THE ADJOINING PIPE CULVERT OR SEWER.
4. THE T–BASE SECTION SHALL MAINTAIN ITS INTERNAL SHAPE AND FLOW AREA WITH ANY GROUTING, ETC. APPLIED SO AS TO NOT DISTURB THE NORMAL FLOW OR REDUCE THE AREA.



MANHOLE T–BASE

REFERENCE:	MANHOLES	Issued: 05/2013
CDOT M & S STANDARDS M-604-20	DOUGLAS COUNTY COLORADO	Revised:
		Drawing No. SP.43f

ASHLEY &VANCE ENGINEERING

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YOSEMITE & C-470 | LONE TREE, CO

ENGINEER OF RECORD:

COLORADO LICENSED 53998 PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION

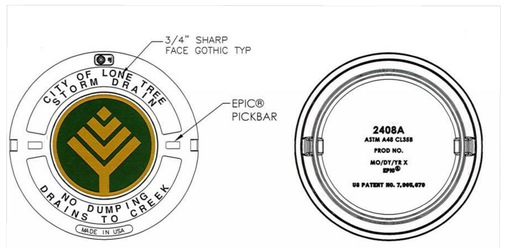
ISSUE	DATE	DESCRIPTION
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PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
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SHEET TITLE:	

DETAIL SHEET

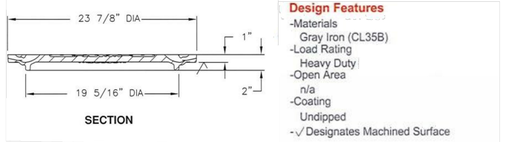
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COVER FACE

COVER BOTTOM

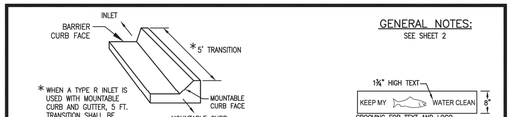


SECTION

Design Features

-Materials
Gray Iron (CL35B)
-Load Rating
Heavy Duty
-Open Area
n/a
-Coating
Undipped
-√ Designates Machined Surface

CITY OF LONE TREE PUBLIC WORKS	**MANHOLE LID COVER**		DETAIL NUMBER **MH-1**
DATE: 06/05/2020	BY: J. KRELL	DRAWING NO.:	

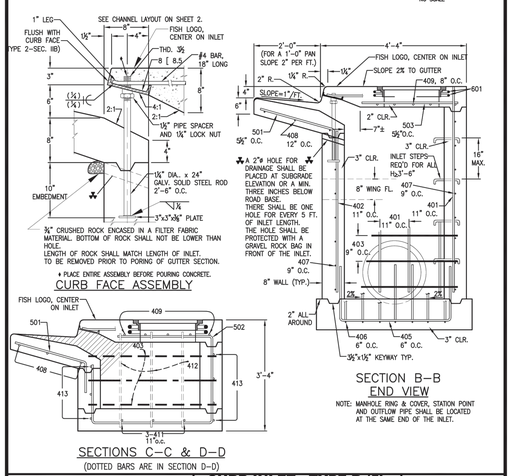


TRANSITION CURB

GENERAL NOTES:
SEE SHEET 2

GROOVING FOR TEXT AND LOGO SHALL BE ⅜" DEPTH AND ⅜" WIDTH

DETAIL FISH LOGO
NO SCALE



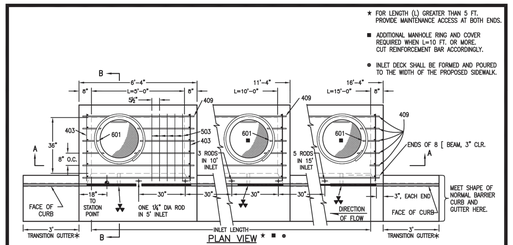
CURB FACE ASSEMBLY

SECTIONS C-C & D-D
(DOTTED BARS ARE IN SECTION D-D)

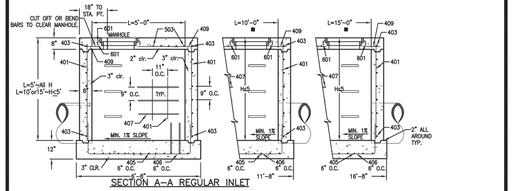
SECTION B-B
END VIEW

NOTE: MANHOLE RING & COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.

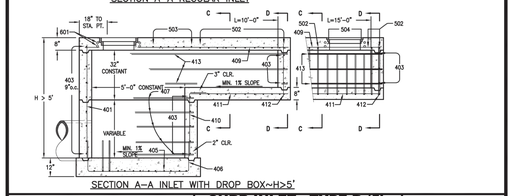
REFERENCE: CDOT M & S STANDARDS M-604-12	**CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)**	Issued: 05/2013 Revised:	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.34a**	



PLAN VIEW



SECTION A-A REGULAR INLET



SECTION A-A INLET WITH DROP BOX-H>5'

REFERENCE: CDOT M & S STANDARDS M-604-12	**CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)**	Issued: 05/2013 Revised:	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.34b**	

MARK	BAR # OR SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT. NO. REQ'D.	ALL INLETS L = 5 FT. LENGTH	INLETS: H ≤ 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 10 FT. LENGTH	INLETS: H ≤ 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 15 FT. LENGTH	INLETS: H > 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 10 FT. LENGTH	INLETS: H > 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 15 FT. LENGTH
401	4	11"	II	15	"	21	"	26	"	11	"	11	"
402	4	11"	II	7	"	13	"	18	"	7	"	7	"
403	4	9"	II	"	4'-0"	"	4'-0"	"	4'-0"	"	4'-0"	"	4'-0"
405	4	6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	4	6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	4	9"	II	"	5'-10"	"	10'-10"	"	15'-10"	"	5'-10"	"	5'-10"
408	4	12"	II	3	6'-10"	3	11'-10"	3	16'-0"	3	11'-10"	3	16'-0"
409	4	8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	4	11"	VII							3	"	3	"
411	4	11"	II							3	5'-2"	3	10'-2"
412	4	11"	II							3	2'-9"	3	2'-9"
413	4	9"	II							7	10'-10"	7	15'-10"
501	5	5½"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5	5½"	III							11	11'-5"	17	11'-5"
503	5	5½"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504	5	5½"	IX									5	8"-4"
601	6	2½"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
■ E6.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2 BARS, 1 ROD	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——

* VARIABLE, REFER TO TABLE TWO.
■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

REGULAR INLETS DROP BOX INLETS

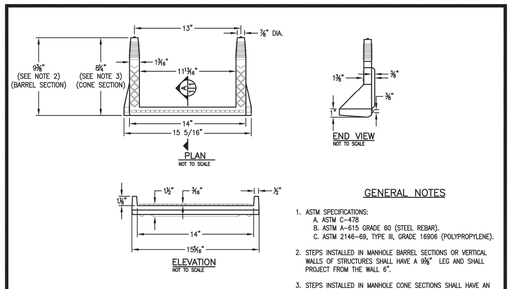
TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"

"H"	LENGTH 401	402	410	NO. REQ'D. REGULAR 403	407	NO. REQ'D. DROP BOX 403	407	L=5' CONC. CU. YDS.	L=5' STEEL LBS.	L=10' CONC. CU. YDS.	L=10' STEEL LBS.	L=15' CONC. CU. YDS.	L=15' STEEL LBS.
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.6	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L=5 FT., L=10 FT., AND L=15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

REFERENCE: CDOT M & S STANDARDS M-604-12	**CURB INLET - TYPE R (5', 10' OR 15' IN LENGTH)**	Issued: 05/2013 Revised:	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.34c**	

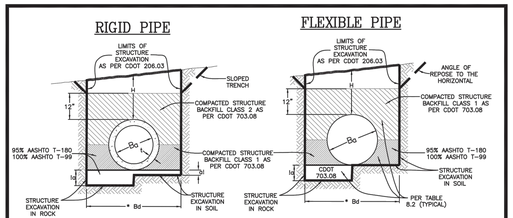


GENERAL NOTES

1. ASTM SPECIFICATIONS:
   A. ASTM C-478
   B. ASTM A-615 GRADE 60 (STEEL REBAR).
   C. ASTM 2146-69, TYPE III, GRADE 16906 (POLYPROPYLENE).
2. STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURES SHALL HAVE A 9⅝" LEG AND SHALL PROJECT FROM THE WALL 6".
3. STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 9⅝" LEG AND SHALL PROJECT FROM THE WALL 4⅝".
4. ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3⅜".
5. STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD UTILIZING A SPECIALLY TAPERED PIN TO FORM THE INSERT HOLE AS SHOWN, FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROUTED IN PLACE.
6. INSTALLED STEPS SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 2500 LB. PER LEG FOR A MINIMUM PERIOD OF TWO MINUTES.
7. PINS MUST BE SMOOTH AND CONTINUOUSLY TAPERED. DIMENSIONS OF THE PIN AND THE INSERTED PORTION OF THE MANHOLE STEP ARE TYPICAL ONLY. DOUGLAS COUNTY INSTALLATIONS REQUIRE A MATCHED COMBINATION OF A TAPERED INSERT PIN AND MANHOLE STEP, AS RECOMMENDED OR REQUIRED BY SPECIFIC MANUFACTURER OF THE STEP TO BE USED.
8. THIS STEP CAN ALSO BE USED IN TOE POCKET INSTALLATIONS PROVIDED 5" TOE CLEARANCE IS ALLOWED.

POLYPROPYLENE REINFORCED PLASTIC STEP

REFERENCE: CITY AND COUNTY OF DENVER DRAWING NUMBER S-750	**MANHOLE AND INLET STEPS**	Issued: 05/2013 Revised:	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.45**	



MAXIMUM HEIGHT OF FILL OVER TOP OF PIPE IN FEET

REINFORCED CONCRETE

Ba in.	Bd ft. **	Min. Wall B	Min. Wall I	Min. Wall V
18	20	19	28	43
24	42	18	28	42
30	50	18	28	42
36	59	18	27	41
42	66	18	27	41
48	78	18	27	41
54	89	17	26	40
60	98	17	26	40
66	108	17	26	40
72	117	17	26	40
78	125	17	26	40
84	135	17	26	40
90	154	17	26	40
96	163	17	26	40
108	173	17	26	40
120	191	17	26	40
132	208	17	26	40
144	224	17	26	40

** Based on Bd=1.33(Bo+2t). Wall thickness can vary between manufacturers.

STEEL – 2 2/3" x 1/2" CORRUGATIONS

Ba in.	Bd ft.	H ABOVE TOP OF PIPE IN FEET 1-15	16-20	21-25	26-30	31-35	36-40
		THICKNESS IN INCHES					
18-48	4-7	.064	.064	.064	.064	.064	.064
54	7.50	.079	.079	.079	.079	.079	.079
60	8.00	.079	.079	.079	.079	.109	.109
66	8.50	.079	.079	.109	.109	.138	.138
72	9.00	.079	.109	.109	.138	.168	.168
78	9.50	.109	.138	.138	.168		
84	10.00	.109	.138	.168			

LEGEND
H = Height of fill over top of pipe
Ba = Inside diameter (I.D.) of pipe
* Bd = Trench Width
t = Wall thickness of pipe
CLSM = Controlled Low Strength Material
a = Loose granular bedding, as follows:
a=6" for Flexible Culverts in Soil.
a=12" for RCP Culvert in Soil.
a=3" for Culvert in Rock.
* TRENCH WIDTH:
RCP: Bd = Min. of 1.33(Bo+2t), or (Bo+2t)+12" (Per AASHTO Section 17)
CSP: Bd = Min. of Bo+4' (Per AASHTO Section 12)
I Bedding material for SOIL shall be Structural Backfill Class 1 or 2.
I Bedding material for ROCK shall be Structural Backfill Class 1.

GENERAL NOTES
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.
2. ALL TRENCH INSTALLATIONS SHALL BE IN ACCORDANCE WITH OSHA AND COLORADO DEPARTMENT OF TRANSPORTATION REGULATIONS.
3. THE USE OF NON-REINFORCED CONCRETE PIPE WILL NOT BE ALLOWED IN DOUGLAS COUNTY.

RCP DESIGN CRITERIA

Safety Factor = Per ASTM C76
Soil Weight = 120 lb. per cu. ft.
Bedding = Type 2

ALL UTILITY REPAIRS MUST BE BACKFILLED WITH CLSM. SEE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS MANUAL FOR SPECIFIC DETAILS.

CSP DESIGN CRITERIA

3"x1" CORRUGATIONS: 60 TO 84 Pipe shall be .064" thick (16 gauge) to H=40 ft.

Soil Weight = 120 lb. per cu. ft.
Safety Factor for Seam Strength = 2.00
Buckling Stress Level = 1/2 Yield Strength
Load Factor (Backfill) = 95% Standard Density, AASHTO-T 99 (K=0.86)

NOTE: All trenching shall comply with all State, Federal and O.S.H.A. safety requirements. It will be the responsibility of the Contractor to meet all safety requirements.

TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY *Janet Herman* JANET HERMAN, P.E. DIRECTOR OF PUBLIC WORKS ENGINEERING DATE 06/18/2021	**PIPE INSTALLATION IN TRENCH**	Issued: 05/2013 Revised: 05/2021	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.46a**	

NOTES:

1. This trench backfill detail specifies requirements in addition to those specified in the latest edition of the Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction.
2. A construction traffic control plan shall be submitted to and approved by Douglas County prior to issuance of construction permits in the County right-of-way.
3. Trench shall be braced or shored as necessary for the safety of the workers and protection of other utilities or structures in accordance with applicable local, state and federal safety regulations.
4. The trench width shall be confined to those minimum dimensions, which will permit proper installation and acceptable pipe loading, as established by current local, state and federal Safety regulations.
5. Backfill compaction requirements: Minimum density will be determined in accordance with AASHTO T 99 or T 180 as defined by CDOT Standard Specifications Section 203.07 and CDOT 703.03. Except for CLSM.
6. Pavement edges shall be saw-cut. Edges shall be tack coated prior to patching.
7. All storm sewers shall be constructed so that a minimum cover is maintained to withstand AASHTO HS-20 loading on the pipe. The minimum cover to withstand live loading depends upon the pipe size, type and class, and soil bedding condition, but shall be not less than 1-foot at any point along the pipe. Other factors that affect the depth of the pipe are hydraulic grade line elevations, inlet depths, adjacent utilities or utility crossings, including water and sewer services lines along residential streets, and connections to existing storm sewer systems. The roadway subgrade, which supports the pavement section is typically plowed to a certain depth, moisture treated and compacted prior to the placement of the sub-base, base course, and surfacing. There are also instances where the subgrade material must be excavated and replaced or treated to a certain depth to mitigate swelling soils. These efforts can impact the storm sewer system if it has not been designed with adequate depth. The design engineer shall use the best information available, including pavement design or soils reports (if available) to ensure that storm sewer pipes have adequate depth.
8. Changes in design criteria will require compensating change in pipe design.
9. When pipe sewer is to be extended or replaced with pipe of different material, the connections shall conform to the detail shown on plans or be approved through Douglas County Engineering.
10. When two or more conduits are laid side-by-side, they shall be placed so that they are ½ outside diameter, or ½ outside span, or 3' apart, whichever is less. However, if end sections are used, the minimum spacing shall be 1' between the outside edge of end sections.
11. TRENCH INSTALLATION (per OSHA Standards):
    a. Trenches over 5 feet in depth shall be either shored or the trench walls shall be sloped no steeper than 3:1 to the angle of repose. If sloped, the bottom of the slope shall be a minimum of 1 foot above the top of the pipe.
    b. Shoring will be required when the bottom of the slope is more than 3 feet above the bottom of the trench.
    c. All sheeting or shoring to be removed.
12. CLSM may be used in place of Structural Backfill.
13. CLSM shall not exceed a strength over 100 p.s.i.

REFERENCE: Douglas County Drainage Manual and Colorado Department of Transportation "M" Standards.

TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY *Janet Herman* JANET HERMAN, P.E. DIRECTOR OF PUBLIC WORKS ENGINEERING DATE 06/18/2021	**PIPE INSTALLATION IN TRENCH NOTES**	Issued: 05/2013 Revised: 05/2021	
	DOUGLAS COUNTY COLORADO	Drawing No. **SP.46b**	

ASHLEY & VANCE ENGINEERING
8800 RALSTON ROAD, SUITE 200
ARVADA, CO 80002
303.755.9762
WWW.ASHLEYVANCE.COM
CIVIL • STRUCTURAL

INVESTOR OFFICE
YOSEMITE & C-470 | LONE TREE, CO

ENGINEER OF RECORD:



ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

DETAIL SHEET

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STANDARD EROSION AND SEDIMENT CONTROL NOTES:

1. ALL GRADING, EROSION. AND SEDIMENT CONTROL MUST CONFORM TO APPROVED PLANS. REVISIONS TO LAND DISTURBANCE AREAS, SLOPES, AND/OR EROSION AND SEDIMENT CONTROL MEASURES ARE NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY OF LONE TREE. FIELD MODIFICATIONS TO AN EQUIVALENT BMP THAT DOES NOT AFFECT THE SITE HYDROLOGY MAY BE APPROVED BY CITY OF LONE TREE ENGINEERING STAFF.
2. THE APPROVED PLANS ARE VALID FOR TWO (2) YEARS FROM THE DATE OF APPROVAL FROM THE CITY OF LONE TREE.
3. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING A PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, AT LEAST 10 DAYS PRIOR THE START OF CONSTRUCTION ACTIVITIES FOR LAND DISTURBANCE AREAS OF ONE ACRE OR GREATER. THE PERMIT MUST BE KEPT CURRENT THROUGHOUT T H E CONSTRUCTION PROCESS.
4. EROSION CONTROL BMPS MUST BE INSTALLED PRIOR TO GRADING ACTIVITIES.
5. APPROVED EROSION AND SEDIMENT CONTROL BMPS SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THE PROJECT. AT A MINIMUM, THE PROPERTY OWNER OR CONTRACTOR SHALL INSPECT ALL BMPS IN ACCORDANCE WITH THE APPROVED PLANS. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED IMMEDIATELY. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
6. ALL TOPSOIL MUST BE SALVAGED, SEGREGATED, AND STOCKPILED SEPARATELY FROM THE OVERBURDEN. TOPSOIL AND OVERBURDEN MUST BE REDISTRIBUTED WITHIN THE GRADED AREA AFTER ROUGH GRADING T O PROVIDE A SUITABLE BASE FOR AREAS THAT MUST BE SEEDED AND PLANTED. RUNOFF FROM THE STOCKPILED AREA MUST BE CONTROLLED TO PREVENT EROSION AND SEDIMENTATION O F RECEIVING WATERS.
7. SOILS THAT ARE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL B E SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION.
8. THE LANDOWNER AND/OR CONTRACTOR MUST IMMEDIATELY TAKE ALL NECESSARY STEPS TO CONTROL SEDIMENT DISCHARGE.
9. SOIL STABILIZATION MEASURES SHALL B E APPLIED WITHIN 30 DAYS TO DISTURBED AREAS, WHICH MAY NOT B E AT FINAL GRADE, BUT WILL BE LEFT DORMANT FOR LONGER THAN 60 DAYS.
10. ALL DISTURBED SLOPES (UNLESS IN A COMPETENT ROCK CUT) GREATER THAN OR EQUAL TO 3:1 (H2V), FLOW LINES OF SWALES, GUTTER DOWNSPOUTS, OR ADDITIONAL AREAS AT THE DISCRETION OF COUNTY STAFF, SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET OR EQUIVALENT BMP.
11. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR CLEAN UP AND REMOVAL OF ALL SEDIMENT AND DEBRIS FROM ALL DRAINAGE INFRASTRUCTURE AND PUBLIC FACILITIES DURING THE ENTIRE CONSTRUCTION PROCESS.
12. THE LANDOWNER AND/OR CONTRACTOR MUST TAKE REASONABLE PRECAUTIONS T O ENSURE THAT VEHICLES DO NOT TRACK OR SPILL EARTH MATERIALS ON TO STREETS/ROADS AND MUST IMMEDIATELY REMOVE SUCH MATERIALS IF THIS OCCURS.
13. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR CONTROLLING LITTER SUCH AS DISCARDED BUILDING MATERIALS. CONCRETE TRUCK WASHOUT, CHEMICALS, AND SANITARY WASTE, AS APPLICABLE. IN ADDITION, SPILL PREVENTION AND CONTAINMENT BMPS FOR CONSTRUCTION MATERIALS, WASTE, AND FUEL MUST BE PROVIDED, AS APPLICABLE. LOCATIONS OF STOCKPILES, CONCRETE WASHOUT AREAS, AND TRASH RECEPTACLES MUST BE CLEARLY SHOWN ON THE PLANS. LITTERING IS DEFINED AND ENFORCED B Y CRS 18-4-511.
14. FUGITIVE DUST EMISSIONS RESULTING FROM GRADING ACTIVITIES AND/OR WIND SHALL BE CONTROLLED USING THE BEST AVAILABLE CONTROL TECHNOLOGY, AS DEFINED BY THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, AT THE TIME OF GRADING.
15. EARTH MATERIALS AND CONSTRUCTION SUPPLIES ARE TO BE STORED ON A CONSTRUCTION SITE STAGING AREA, AND ARE NOT TO BE STORED ON THE STREET OR SIDEWALK. LOCATIONS OF STOCKPILES, CONCRETE WASHOUT AREAS AND TRASH RECEPTACLES ARE CLEARLY LOCATED ON THE PLANS.
16. CITY OF LONE TREE AUTHORIZED REPRESENTATIVES, MAY MODIFY THE EROSION AND SEDIMENT CONTROL PLAN AS FIELD CONDITIONS WARRANT.
17. ALL PORTABLE TOILETS SHALL BE PLACED ON A PERVIOUS SURFACE AND STAKED DOWN ON ALL FOUR SIDES
18. ALL ADJACENT AREAS SHALL BE CLEANED OF DIRT AND DEBRIS IMMEDIATELY USING DRY METHODS ONLY.
19. GESC PERMIT CLOSEOUT WILL NOT OCCUR UNTIL ALL DISTURBED AREAS ACHIEVE 70% STABILIZATION BASED ON PRE-DEVELOPMENT CONDITIONS. WEED MITIGATION MAY BE REQUIRED PRIOR TO GESC CLOSEOUT.
20. FOD MATS (OR EQUIVALENT ALTERNATIVE) IS AN ACCEPTABLE FORM OF ACCESS VEHICLE TRACKING CONTROL (VTC). ALL MATS SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND STAKED AT ALL FOUR CORNERS TO PREVENT MOVEMENT.

GESC NOTES:

- SEE COVER SHEET OF LONE TREE STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
- SHADED BMPS INSTALLED IN THE INITIAL STAGE SHALL BE LEFT IN PLACE IN THE INTERIM STAGE. ALL INTERIM BMPS, INCLUDING SEEDING AND MULCHING OF DISTURBED AREAS, MUST BE COMPLETED PRIOR TO ISSUANCE OF ANY CURB AND GUTTER PERMITS.
- SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT DRAINAGE FACILITIES SUCH AS DETENTION FACILITIES, CULVERTS, STORM DRAINS, AND INLET AND OUTLET PROTECTION.

BMP SELECTION & LEGEND:

THE FOLLOWING BMPS SHALL BE USED IN THE CONTRACTOR STAGING AREA:

- (CWA) CONCRETE WASHOUT AREA (INITIAL)
- (SP) STOCKPILE MANAGEMENT (INITIAL)
- (SSA) STABILIZED STAGING AREA (INITIAL)

THE FOLLOWING BMPS ARE SPECIFIED ON THIS PLAN AND ARE TO BE INSTALLED OR CONSTRUCTED PER GESC STANDARD PLANS AND DETAILS:

- (TOP) TEMPORARY OUTLET PROTECTION (INITIAL)
- (SF) SILT FENCE (INITIAL)
- (IP) INLET PROTECTION (INTERIM)
- (CF) CONSTRUCTION FENCE (INITIAL)
- (VTC) VEHICLE TRACKING CONTROL (INITIAL)
- SEEDING AREA (FINAL)

GRADING INFORMATION:

AREA DISTURBED:	0.86 AC
CUT QUANTITY:	20 CUBIC YARDS
FILL QUANTITY:	2520 CUBIC YARDS
NET QUANTITY:	2500 CUBIC YARDS IMPORT

N

HORIZONTAL SCALE: 1" = 20'

20 0 20 40

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ENGINEER OF RECORD:

COLORADO LICENSED
BRIAN RUSTAD JONES
53998
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

EROSION CONTROL PLAN

C-5.1

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STANDARD EROSION AND SEDIMENT CONTROL NOTES:

1. ALL GRADING, EROSION. AND SEDIMENT CONTROL MUST CONFORM TO APPROVED PLANS. REVISIONS TO LAND DISTURBANCE AREAS, SLOPES, AND/OR EROSION AND SEDIMENT CONTROL MEASURES ARE NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY OF LONE TREE. FIELD MODIFICATIONS TO AN EQUIVALENT BMP THAT DOES NOT AFFECT THE SITE HYDROLOGY MAY BE APPROVED BY CITY OF LONE TREE ENGINEERING STAFF.
2. THE APPROVED PLANS ARE VALID FOR TWO (2) YEARS FROM THE DATE OF APPROVAL FROM THE CITY OF LONE TREE.
3. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING A PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, AT LEAST 10 DAYS PRIOR THE START OF CONSTRUCTION ACTIVITIES FOR LAND DISTURBANCE AREAS OF ONE ACRE OR GREATER. THE PERMIT MUST BE KEPT CURRENT THROUGHOUT T H E CONSTRUCTION PROCESS.
4. EROSION CONTROL BMPS MUST BE INSTALLED PRIOR TO GRADING ACTIVITIES.
5. APPROVED EROSION AND SEDIMENT CONTROL BMPS SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THE PROJECT. AT A MINIMUM, THE PROPERTY OWNER OR CONTRACTOR SHALL INSPECT ALL BMPS IN ACCORDANCE WITH THE APPROVED PLANS. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED IMMEDIATELY. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
6. ALL TOPSOIL MUST BE SALVAGED, SEGREGATED, AND STOCKPILED SEPARATELY FROM THE OVERBURDEN. TOPSOIL AND OVERBURDEN MUST BE REDISTRIBUTED WITHIN THE GRADED AREA AFTER ROUGH GRADING T O PROVIDE A SUITABLE BASE FOR AREAS THAT MUST BE SEEDED AND PLANTED. RUNOFF FROM THE STOCKPILED AREA MUST BE CONTROLLED TO PREVENT EROSION AND SEDIMENTATION O F RECEIVING WATERS.
7. SOILS THAT ARE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL B E SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION.
8. THE LANDOWNER AND/OR CONTRACTOR MUST IMMEDIATELY TAKE ALL NECESSARY STEPS TO CONTROL SEDIMENT DISCHARGE.
9. SOIL STABILIZATION MEASURES SHALL B E APPLIED WITHIN 30 DAYS TO DISTURBED AREAS, WHICH MAY NOT B E AT FINAL GRADE, BUT WILL BE LEFT DORMANT FOR LONGER THAN 60 DAYS.
10. ALL DISTURBED SLOPES (UNLESS IN A COMPETENT ROCK CUT) GREATER THAN OR EQUAL TO 3:1 (H2V), FLOW LINES OF SWALES, GUTTER DOWNSPOUTS, OR ADDITIONAL AREAS AT THE DISCRETION OF COUNTY STAFF, SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET OR EQUIVALENT BMP.
11. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR CLEAN UP AND REMOVAL OF ALL SEDIMENT AND DEBRIS FROM ALL DRAINAGE INFRASTRUCTURE AND PUBLIC FACILITIES DURING THE ENTIRE CONSTRUCTION PROCESS.
12. THE LANDOWNER AND/OR CONTRACTOR MUST TAKE REASONABLE PRECAUTIONS T O ENSURE THAT VEHICLES DO NOT TRACK OR SPILL EARTH MATERIALS ON TO STREETS/ROADS AND MUST IMMEDIATELY REMOVE SUCH MATERIALS IF THIS OCCURS.
13. THE LANDOWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR CONTROLLING LITTER SUCH AS DISCARDED BUILDING MATERIALS. CONCRETE TRUCK WASHOUT, CHEMICALS, AND SANITARY WASTE, AS APPLICABLE. IN ADDITION, SPILL PREVENTION AND CONTAINMENT BMPS FOR CONSTRUCTION MATERIALS, WASTE, AND FUEL MUST BE PROVIDED, AS APPLICABLE. LOCATIONS OF STOCKPILES, CONCRETE WASHOUT AREAS, AND TRASH RECEPTACLES MUST BE CLEARLY SHOWN ON THE PLANS. LITTERING IS DEFINED AND ENFORCED B Y CRS 18-4-511.
14. FUGITIVE DUST EMISSIONS RESULTING FROM GRADING ACTIVITIES AND/OR WIND SHALL BE CONTROLLED USING THE BEST AVAILABLE CONTROL TECHNOLOGY, AS DEFINED BY THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, AT THE TIME OF GRADING.
15. EARTH MATERIALS AND CONSTRUCTION SUPPLIES ARE TO BE STORED ON A CONSTRUCTION SITE STAGING AREA, AND ARE NOT TO BE STORED ON THE STREET OR SIDEWALK. LOCATIONS OF STOCKPILES, CONCRETE WASHOUT AREAS AND TRASH RECEPTACLES ARE CLEARLY LOCATED ON THE PLANS.
16. CITY OF LONE TREE AUTHORIZED REPRESENTATIVES, MAY MODIFY THE EROSION AND SEDIMENT CONTROL PLAN AS FIELD CONDITIONS WARRANT.
17. ALL PORTABLE TOILETS SHALL BE PLACED ON A PERVIOUS SURFACE AND STAKED DOWN ON ALL FOUR SIDES
18. ALL ADJACENT AREAS SHALL BE CLEANED OF DIRT AND DEBRIS IMMEDIATELY USING DRY METHODS ONLY.
19. GESC PERMIT CLOSEOUT WILL NOT OCCUR UNTIL ALL DISTURBED AREAS ACHIEVE 70% STABILIZATION BASED ON PRE-DEVELOPMENT CONDITIONS. WEED MITIGATION MAY BE REQUIRED PRIOR TO GESC CLOSEOUT.
20. FOD MATS (OR EQUIVALENT ALTERNATIVE) IS AN ACCEPTABLE FORM OF ACCESS VEHICLE TRACKING CONTROL (VTC). ALL MATS SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND STAKED AT ALL FOUR CORNERS TO PREVENT MOVEMENT.

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EROSION CONTROL PLAN

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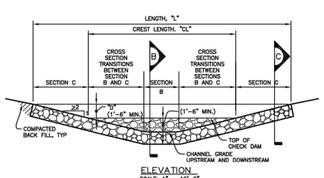
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GRADING, EROSION, AND SEDIMENT CONTROL (GESC) GENERAL NOTES ⚠

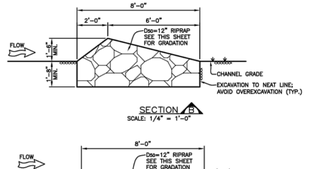
1. THE CITY OF LONE TREE ENGINEER'S SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE CITY OF LONE TREE PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH THE CITY OF LONE TREE SUBDIVISION REGULATIONS AND/OR THE GRADING, EROSION AND SEDIMENT CONTROL (GESC) CRITERIA MANUAL. THE CITY OF LONE TREE ENGINEER, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.
2. THE ADEQUACY OF THIS GESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER.
3. THE GESC PLAN SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY THE CITY OF LONE TREE, AFTER WHICH TIME THE PLAN SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY THE CITY OF LONE TREE.
4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF LONE TREE ENGINEERING DIVISION. THE CITY OF LONE TREE RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE GESC MANUAL, GESC PLAN OR GESC PERMIT.
5. THE PLACEMENT OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN ACCORDANCE WITH THE CITY OF LONE TREE – ACCEPTED GESC PLAN AND THE CITY OF LONE TREE GESC MANUAL.
6. ANY VARIATION IN MATERIAL, TYPE OR LOCATION OF EROSION AND SEDIMENT CONTROL BMPs FROM THE CITY OF LONE TREE – ACCEPTED GESC PLAN WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF THE CITY OF LONE TREE ENGINEERING DIVISION.
7. AFTER THE GESC PLAN HAS BEEN ACCEPTED, THE GESC PERMIT APPLIED FOR, FEES AND FISCAL SECURITY SUBMITTED TO THE CITY, AND THE GESC FIELD MANUAL OBTAINED AND REVIEWED, THE CONTRACTOR MAY INSTALL THE INITIAL–STAGE EROSION AND SEDIMENT CONTROL BMPs INDICATED ON THE ACCEPTED GESC PLAN.
8. THE FIRST BMP TO BE INSTALLED ON THE SITE SHALL BE CONSTRUCTION FENCE, MARKERS, OR OTHER APPROVED MEANS OF DEFINING THE LIMITS OF CONSTRUCTION, INCLUDING CONSTRUCTION LIMITS ADJACENT TO STREAM CORRIDORS AND OTHER AREAS TO BE PRESERVED.
9. AFTER INSTALLATION OF THE INITIAL–STAGE EROSION AND SEDIMENT CONTROL BMPs, THE PERMITTEE SHALL CALL THE CITY OF LONE TREE CONSTRUCTION INSPECTOR AT (303) 662–8112 TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE A MINIMUM OF THREE BUSINESS DAYS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.
10. THE OWNER OR OWNER'S REPRESENTATIVE, THE GESC MANAGER, THE GENERAL CONTRACTOR, AND THE GRADING SUBCONTRACTOR, IF DIFFERENT FROM THE GENERAL CONTRACTOR, MUST ATTEND THE PRECONSTRUCTION MEETING. IF ANY OF THE REQUIRED PARTIES FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE GESC FIELD MANUAL IS NOT ON SITE, OR IF THE INSTALLATION OF THE INITIAL BMPs ARE NOT APPROVED BY THE CITY OF LONE TREE GESC INSPECTION, THE APPLICANT WILL HAVE TO PAY A REINSPECTION FEE, ADDRESS ANY PROBLEMS WITH BMP INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION. THE CITY OF LONE TREE STRONGLY ENCOURAGES THE APPLICANT TO HAVE THE ENGINEER OF RECORD AT THE PRECONSTRUCTION MEETING. FAILURE OF THE ENGINEER OF RECORD TO ATTEND MAY RESULT IN A DELAY OF THE START OF CONSTRUCTION.
11. CONSTRUCTION SHALL NOT BEGIN UNTIL THE CITY OF LONE TREE GESC INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL BMPs AND THE APPROVED GESC PERMIT IS PICKED UP FROM THE CITY AND IS IN–HAND ON THE SITE. THE COMPLETED PERMIT WILL BE AVAILABLE WITHIN 24–HOURS AFTER THE INSTALLATION OF THE INITIAL BMPs ARE APPROVED.
12. THE GESC MANAGER SHALL STRICTLY ADHERE TO THE CITY OF LONE TREE–APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE CITY OF LONE TREE ENGINEERING DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE ENGINEERING DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED IN ANY ADDITIONAL AREAS OF CONSTRUCTION.
13. THE MAXIMUM AREA OF CONSTRUCTION SHALL BE LIMITED TO 40 ACRES (70 ACRES IF APPROVED FOR SOIL MITIGATION OPERATIONS) TO REDUCE THE AMOUNT OF LAND DISTURBED AT ANY ONE TIME. LARGER SITES SHALL BE DIVIDED INTO PHASES THAT ARE EACH 40 (OR 70) ACRES OR LESS IN SIZE. THESE PROJECTS SHALL CONDUCT GRADING ACTIVITIES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN. BMP INSTALLATION AND APPROVAL BY THE CITY OF LONE TREE AT THE START AND COMPLETION OF EACH PHASE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE GESC MANUAL AND/OR GESC FIELD MANUAL.
14. PRIOR TO ACTUAL CONSTRUCTION, THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES. FOR INFORMATION, CONTACT THE DENVER INTER–UTILITY GROUP AT 1–800–922–1987 OR FAX AT (303) 534–6700.
15. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.
16. THE GESC PERMIT SHALL BE VALID FOR A PERIOD OF ONE (1) YEAR, UNLESS EXTENDED.
17. A COPY OF THE GESC PERMIT, ACCEPTED GESC PLANS AND THE GESC FIELD MANUAL SHALL BE ON SITE AT ALL TIMES.
18. THE GESC MANAGER SHALL BE RESPONSIBLE FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE GESC PERMIT AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH THE CITY FOR ALL MATTERS PERTAINING TO THE GESC PERMIT. THE GESC MANAGER SHALL BE PRESENT AT THE SITE THE MAJORITY OF THE TIME AND SHALL BE AVAILABLE THROUGH A 24–HOUR CONTACT NUMBER. IN THE EVENT THAT THE CONTRACTOR'S GESC MANAGER IS NOT ON SITE AND CANNOT BE REACHED DURING A VIOLATION, THE ALTERNATE GESC MANAGER SHALL BE CONTACTED. IF NEITHER THE GESC MANAGER NOR ALTERNATE GESC MANAGER CAN BE CONTACTED DURING ANY VIOLATION, A STOP WORK ORDER SHALL BE ISSUED.
19. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE THROUGH THE CITY OF LONE TREE–APPROVED ACCESS POINT. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL ACCESS POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE CITY OF LONE TREE ENGINEERING DIVISION.
20. THE GESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED ONTO ADJACENT PAVED AREAS. PAVED AREAS INCLUDING STREETS ARE TO BE KEPT CLEAN THROUGHOUT BUILD–OUT AND SHALL BE CLEANED, WITH A STREET SWEEPER OR SIMILAR DEVICE, AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE CITY OF LONE TREE GESC INSPECTOR. STREET WASHING IS NOT ALLOWED. THE CITY OF LONE TREE RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
21. APPROVED EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT, AT A MINIMUM, THE GESC MANAGER SHALL INSPECT ALL BMPS IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND GESC MANUAL. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN 48 HOURS FOR LEVEL III VIOLATIONS, AND IMMEDIATELY FOR LEVEL II VIOLATIONS, OR AS DIRECTED BY A CITY OF LONE TREE GESC INSPECTOR. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
22. STRAW BALES ARE NOT A GESC–ACCEPTED SEDIMENT CONTROL BMP.
23. TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN THE LOCATION SHOWN ON THE ACCEPTED GESC PLAN. THE GESC MANAGER SHALL SCHEDULE AN INSPECTION WITH THE CITY OF LONE TREE GESC INSPECTOR AS SOON AS TOPSOIL STRIPPING IS COMPLETED. FAILURE TO SCHEDULE SUCH INSPECTION OR FAILURE TO STOCKPILE TOPSOIL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER. THE STOP WORK ORDER SHALL REMAIN IN PLACE UNTIL TOPSOIL IS STOCKPILED ON SITE OR APPROPRIATE SOIL AMENDMENTS ARE STOCKPILED ON SITE.
24. THE ACCEPTED GESC PLAN MAY REQUIRE CHANGES OR ALTERATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. THE GESC MANAGER SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER AND THE CITY OF LONE TREE ENGINEERING FOR ANY PROPOSED CHANGES.
25. LINING OF TEMPORARY SWALES AND DITCHES SHALL BE IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.
26. NO PERMANENT EARTH SLOPES GREATER THAN 3:1 SHALL BE ALLOWED.
27. ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE GESC MANAGER. THE GESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
28. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
29. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY THE CITY OF LONE TREE ENGINEERING DIVISION.
30. ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDE BUT ARE NOT LIMITED TO, SURFACE WATER, GROUND WATER AND STORM SEWER LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE COPHE PER CRS 25–8–601, AND THE CITY OF LONE TREE. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE COPHE. THE APPLICABLE CONTACT INFORMATION (SEE APPENDIX A, DOUGLAS COUNTY GESC MANUAL — SUBJECT TO CHANGE) IS: COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT TOLL–FREE 24–HOUR ENVIRONMENTAL EMERGENCY SPILL REPORTING LINE 1–877–518–5608; NATIONAL RESPONSE CENTER (24–HOUR NATIONAL SPILL RESPONSE) 1–800–424–8802; CITY OF LONE TREE PUBLIC WORKS (303) 662–8112. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER.
31. ALL WORK ON SITE SHALL STAY A MINIMUM OF ONE HUNDRED (100) FEET AWAY FROM ANY DRAINAGE WAY, WETLAND, ETC. UNLESS OTHERWISE NOTED ON AN ACCEPTED CITY OF LONE TREE GESC PLAN.
32. ALL PROJECTS SHALL BALANCE EARTHWORK QUANTITIES ON SITE. IN THE EVENT A VARIANCE IS GRANTED BY THE CITY ENGINEER TO ALLOW IMPORT OR EXPORT OF MATERIAL, THE PERMITTEE SHALL HAVE A GESC PERMIT IN HAND FOR THE IMPORT OR EXPORT SITE PRIOR TO ANY TRANSPORTING OF EARTHEN MATERIAL. THE GESC MANAGER SHALL NOTIFY THE CITY OF LONE TREE GESC INSPECTOR OF THE LOCATION AND GESC PERMIT NUMBERS OF BOTH THE EXPORTING AND IMPORTING SITES PRIOR TO ANY IMPORT/EXPORT OPERATIONS.
33. THE USE OF REBAR, STEEL STAKES OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF ANY EROSION OR SEDIMENT CONTROL BMP IS PROHIBITED (EXCEPT STEEL TEE–POSTS FOR USE IN SUPPORTING CONSTRUCTION FENCE).
34. THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.
35. ALL DEWATERING ON SITE SHALL BE COORDINATED WITH A CITY OF LONE TREE GESC INSPECTOR AND BE FREE OF SEDIMENT IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.
36. ALL PERMANENT INSTALLATIONS OF PIPES FOR STORM SEWERS, SLOPE DRAINS, AND CULVERTS, TOGETHER WITH RIPRAP APRONS OR OTHER INLET AND OUTLET PROTECTION, REQUIRE INSPECTION BY THE CITY OF LONE TREE ENGINEERING (SEPARATE FROM GESC INSPECTIONS).
37. ALL DISTURBED AREAS SHALL BE DRILL SEEDED AND CRIMP MULCHED IN ACCORDANCE WITH THE DOUGLAS COUNTY GESC MANUAL CRITERIA AND THE CITY OF LONE TREE SEEDING AND MULCHING DETAIL (#17) INCLUDED HEREIN WITHIN THIRTY DAYS OF INITIAL EXPOSURE OR WITHIN SEVEN DAYS OF SUBSTANTIAL COMPLETION (AS DEFINED BY THE CITY OF LONE TREE) OF AN AREA, WHICHEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
38. HYDRAULIC SEEDING AND HYDRAULIC MULCHING ARE NOT AN ACCEPTABLE METHOD OF SEEDING OR MULCHING IN THE CITY OF LONE TREE.
39. NO CURB AND GUTTER PERMITS SHALL BE ISSUED UNTIL ALL DISTURBED AREAS ARE DRILL SEEDED AND CRIMP MULCHED.
40. NO PAVING PERMITS SHALL BE ISSUED UNTIL ALL INTERIM INLET PROTECTION IS INSTALLED AND APPROVED BY THE GESC INSPECTOR.
41. A FINAL GESC INSPECTION SHALL BE CONDUCTED A MINIMUM OF TWO WEEKS PRIOR TO THE ANTICIPATED REQUEST FOR CERTIFICATE OR TEMPORARY CERTIFICATE OF OCCUPANCY OR INITIAL ACCEPTANCE.

DETAIL SHEET NO. | NO. | BMP LEGEND

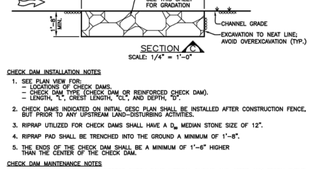
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2	1		CB	COMPOST BLANKET
3	1		CFB	COMPOST FILTER BERM
4	1		CWA	CONCRETE WASHOUT AREA
5	1		CF	CONSTRUCTION FENCE
6	1		CM	CONSTRUCTION MARKERS
7	1		DW	DEWATERING
8	1		DD	DIVERSION DITCH
9	2		ECB	EROSION CONTROL BLANKET
10	2		IP	INLET PROTECTION
11	2		RCD	REINFORCED CHECK DAM
12	2		RRB	REINFORCED ROCK BERM
13	2		RRC	RRB FOR CULVERT PROTECTION
14	2		SB	SEDIMENT BASIN
15	3		SCL	SEDIMENT CONTROL LOG
16	3		ST	SEDIMENT TRAP
17	3		SM	SEEDING AND MULCHING
18	3		SF	SILT FENCE
19	3		SSA	STABILIZED STAGING AREA
20	3		SR	SURFACE ROUGHENING
21	3		TSD	TEMPORARY SLOPE DRAIN
22	3		TSC	TEMPORARY STREAM CROSSING
23	3		TER	TERRACING
24	3		VTC	VEHICLE TRACKING CONTROL
25	3		WW	VTC WITH WHEEL WASH
⚠ 26	3		CS	CURB SOCK
	1			ROCK AND RIPRAP GRADATIONS
			LOC	LIMITS OF CONSTRUCTION



ELEVATION
SCALE: 1" = 10'–0"



SECTION B
SCALE: 1/4" = 1'–0"



SECTION A
SCALE: 1/4" = 1'–0"

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   – LOCATIONS OF CHECK DAMS.
   – CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   – LENGTH, "L", CREST LENGTH, "CL", AND DEPTH.
2. CHECK DAM CONSTRUCTION, INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND–DISTURBING ACTIVITIES.
3. RIPRAP USED IN CHECK DAMS SHALL HAVE A D_{50} MEDIAN STONE SIZE OF 12".
4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'–8".
5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1'–6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT CHECK DAMS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN ½ OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY.
4. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

CD CHECK DAM 1 ⚠

COMPOST FILTER BERM DETAIL

COMPOST BLANKET AND COMPOST FILTER BERM
SCALE: 1" = 10'–0"

COMPOST BLANKET NOTES:

1. SEE PLAN VIEW FOR AREA OF COMPOST BLANKET.
2. MAY BE USED IN PLACE OF STRAW MULCH OR EROSION CONTROL BLANKET IN AREAS WHERE ACCESS IS DIFFICULT DUE TO LANDSCAPING OR OTHER OBJECTS OR IN AREAS WHERE A SMOOTH TURF GRASS FINISH IS DESIRED.
3. SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL; SHALL BE PROHIBITED IN AREAS OF POSSIBLE CONCENTRATED FLOW.
4. SOIL PREPARATION SHALL BE COMPLETE PER THE SPECIFICATIONS OUTLINED IN THESE CRITERIA PRIOR TO APPLICATION.
5. WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES SHALL TAKE PLACE PRIOR TO APPLICATION.
6. SHALL BE EVENLY APPLIED AT A DEPTH OF 2" INCH.
7. MAYBE APPLIED UTILIZING PNEUMATIC BLOWER, OR BY HAND.
8. SEEDING SHALL BE DRILLED PRIOR TO THE APPLICATION OF COMPOST OR SEED MAY BE COMBINED AND BLOWN WITH THE PNEUMATIC BLOWER.
9. COMPOST FILTER BERM SHALL BE UTILIZED ON SLOPES WITH A MAXIMUM SPACING OF 15 FEET PER THE REQUIREMENTS FOUND IN THE COMPOST FILTER BERM SECTION.
10. THE GESC MANAGER SHALL INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
11. COMPOST USED IN THE APPLICATION OF THE COMPOST BLANKET SHALL BE A CLASS I COMPOST AS DEFINED BY THE FOLLOWING PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS:

PARAMETERS	CLASS I COMPOST FOR COMPOST BLANKET
MINIMUM STABILITY INDICATOR	STABLE TO VERY STABLE
SOLUBLE SALTS	MAXIMUM 5mmhos/cm
PH	6.0 — 8.0
AD INDEX	> 10
MATURITY INDICATOR EXPRESSED AS PERCENTAGE OF GERMINATION	80+/80+
MATURITY INDICATOR EXPRESSED AS AMMONIA N/ NITRATE N RATIO	< 4
MATURITY INDICATOR EXPRESSED AS CARBON TO NITROGEN RATIO	20:1
TESTED FOR CLOPYRALID	YES/NEGATIVE RESULT
MOISTURE CONTENT	30–60 %
ORGANIC MATTER CONTENT	25–45 % OF DRY WEIGHT
PARTICLE SIZE DISTRIBUTION	3" (75mm) 100% PASSING 1" (25mm) 95% TO 100% PASSING ¼" (10mm) 80% TO 90% PASSING ⅜" (9.5mm) 50% TO 60% PASSING #4 20 TO 35% PASSING
PRIMARY, SECONDARY NUTRIENTS; TRACE ELEMENT	MUST BE REPORTED
TESTING AND TEST REPORT SUBMITTAL REQUIREMENTS	STA + CLOPYRALID
ORGANIC MATTER PER CUBIC YARD	MUST REPORT
MOISTURE CONTENT	MUST BE EXCEED US EPA CLASS A STANDARD, 40 CFR 503.13 TABLES 1 & 3 LEVELS
MINIMUM MANUFACTURING/PRODUCTION REQUIREMENT	FULLY PERMITTED UNDER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
RISK FACTOR RELATING TO PLANT GERMINATION AND HEALTH	LOW

NOTE: CLOPYRALID IS THE COMMON NAME OF A HERBICIDE THAT KILLS BROAD–LEAVED WEEDS SUCH AS DANDELIONS, CLOVER AND THISTLE.

CB COMPOST BLANKET 2 ⚠

COMPOST FILTER BERM NOTES:

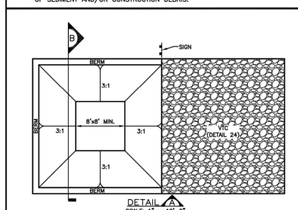
1. SEE PLAN VIEW FOR LENGTH OF COMPOST FILTER BERM.
2. SHALL BE APPLIED TO ALL SLOPES RECEIVING A COMPOST BLANKET AT 15' INCREMENTS.
3. FILTER BERMS SHALL RUN PARALLEL TO THE CONTOUR.
4. FILTER BERMS SHALL BE A MINIMUM OF 1' H x 2' W.
5. FILTER BERMS SHALL BE APPLIED UTILIZING PNEUMATIC BLOWER, OR BY HAND.
6. SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL; SHALL BE PROHIBITED IN AREAS OF POSSIBLE CONCENTRATED FLOW.
7. SOIL PREPARATION SHALL BE COMPLETE PER THE SPECIFICATIONS OUTLINED IN THESE CRITERIA PRIOR TO APPLICATION.
8. WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES SHALL TAKE PLACE PRIOR TO APPLICATION.
9. SEEDING SHALL BE DRILLED BEFORE THE APPLICATION OF COMPOST OR SEED MAY BE COMBINED AND BLOWN WITH THE PNEUMATIC BLOWER.
10. THE GESC MANAGER SHALL INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.
11. COMPOST USED IN THE APPLICATION OF THE COMPOST FILTER BERM SHALL BE A CLASS I COMPOST AS DEFINED BY THE FOLLOWING PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS:

PARAMETERS	CLASS I COMPOST FOR COMPOST FILTER BERM
MINIMUM STABILITY INDICATOR	STABLE TO VERY STABLE
SOLUBLE SALTS	MAXIMUM 5mmhos/cm
PH	6.0 — 8.0
AD INDEX	> 10
MATURITY INDICATOR EXPRESSED AS PERCENTAGE OF GERMINATION/VIGOR	80+/80+
MATURITY INDICATOR EXPRESSED AS AMMONIA N/ NITRATE N RATIO	< 4
MATURITY INDICATOR EXPRESSED AS CARBON TO NITROGEN RATIO	20:1
TESTED FOR CLOPYRALID	YES/NEGATIVE RESULT
MOISTURE CONTENT	30–60 %
ORGANIC MATTER CONTENT	25–45 % OF DRY WEIGHT
PARTICLE SIZE DISTRIBUTION	3" (75mm) 100% PASSING 1" (25mm) 95% TO 100% PASSING ¼" (10mm) 80% TO 90% PASSING ⅜" (9.5mm) 50% TO 60% PASSING #4 20 TO 35% PASSING
PRIMARY, SECONDARY NUTRIENTS; TRACE ELEMENT	MUST BE REPORTED
TESTING AND TEST REPORT SUBMITTAL REQUIREMENTS	STA + CLOPYRALID
ORGANIC MATTER PER CUBIC YARD	MUST REPORT
CHEMICAL CONTAMINANTS	MEET OR EXCEED US EPA CLASS A STANDARD, 40 CFR 503.13 TABLES 1 & 3 LEVELS
MINIMUM MANUFACTURING/PRODUCTION REQUIREMENT	FULLY PERMITTED UNDER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
RISK FACTOR RELATING TO PLANT GERMINATION AND HEALTH	LOW

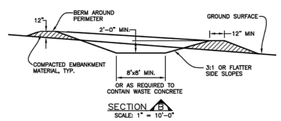
NOTE: IF A BIOSOLID COMPOST IS TO BE UTILIZED IT SHALL BE PRODUCED BY A FACILITY IN POSSESSION OF A VALID NOTICE OF AUTHORIZATION (NOA) FOR THE UNRESTRICTED USE AND DISTRIBUTION BY THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT. THE NOA SHALL BE PROVIDED UPON REQUEST TO CITY OF LONE TREE.

NOTE: A LAB TEST DETAILING THE CHEMICAL, PHYSICAL, AND BIOLOGICAL PARAMETERS SHALL BE PROVIDED UPON REQUEST BY CITY OF LONE TREE.

CFB COMPOST FILTER BERM 3 ⚠



DETAIL A
SCALE: 1" = 10'–0"



SECTION B
SCALE: 1" = 10'–0"

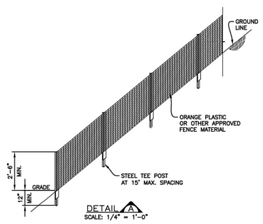
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   – LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL (DETAIL 24) IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

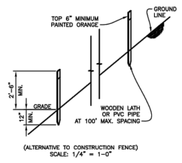
CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

CWA CONCRETE WASHOUT AREA 4



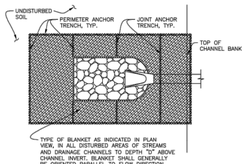
DETAIL B
SCALE: 1/4" = 1'–0"



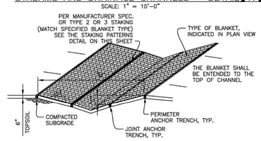
(ALTERNATIVE TO CONSTRUCTION FENCE)
SCALE: 1/4" = 1'–0"

CONSTRUCTION FENCE INSTALLATION NOTES

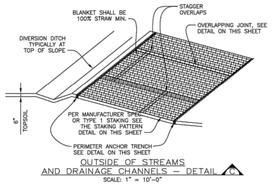
1. SEE PLAN VIEW FOR:
   – TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS).
   – LOCATION AND LENGTH OF FENCE OR LINE OF MARKERS.
2. CONSTRUCTION FENCE OR MARKERS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED P



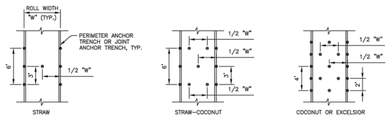
IN DISTURBED AREAS OF STREAMS AND DRAINAGE CHANNELS — DETAIL A
SCALE: 1" = 10'-0"



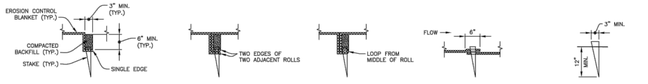
IN DIVERSION DITCH OR SMALL DITCH DRAINAGEWAY — DETAIL B
SCALE: 1" = 10'-0"



OUTSIDE OF STREAMS AND DRAINAGE CHANNELS — DETAIL C
SCALE: 1" = 10'-0"



STAKING PATTERNS
SCALE: 1" = 10'-0"
SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION. IF NO MANUFACTURER'S SPECIFICATION IS AVAILABLE USE THE ACCEPTABLE STAKING PATTERN (AS SHOWN ABOVE).



PERIMETER ANCHOR TRENCH — JOINT ANCHOR TRENCH — INTERMEDIATE ANCHOR TRENCH — OVERLAPPING JOINT — WOOD STAKE DETAIL
SCALE: 1/2" = 1'-0"

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF PERIMETER OF EROSION CONTROL BLANKET.
   - TYPE OF BLANKET (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   - AREA "A" IN SQUARE YARDS OF EACH TYPE OF BLANKET.
2. ALL EROSION CONTROL BLANKETS AND NETTING SHALL BE MADE OF 100% NATURAL AND BIODEGRADABLE MATERIAL; NO PLASTIC OR OTHER SYNTHETIC MATERIAL, EVEN IF PHOTO DEGRADABLE, SHALL BE ALLOWED.
3. IN AREAS WHERE EROSION CONTROL BLANKET IS SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING BELOW THE BLANKET IN ACCORDANCE WITH THE REQUIREMENTS OF DETAIL T-7, SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO BLANKET INSTALLATION AND THE BLANKET SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. PERIMETER ANCHOR TRENCH SHALL BE USED AT OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL BLANKETS EXCEPT STRAW, WHICH MAY USE AN OVERLAPPING JOINT.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF THE ROLL LENGTH FOR COCONUT AND EXCELSIOR BLANKETS.
7. THE OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER FOR BLANKETS ON SLOPES.
8. MATERIAL SPECIFICATIONS OF EROSION CONTROL BLANKET SHALL CONFORM TO TABLE 7.1.

EROSION CONTROL BLANKET INSTALLATION NOTES — CONTINUED

9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING EROSION CONTROL BLANKET SHALL BE RESEEDED AND MULCHED IN ACCORDANCE WITH DETAIL 17.
10. SEE DRAINAGE DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION MEASURES THAT MAY EXCEED THE DESIGN CONDITIONS ASSOCIATED WITH THE DETAILS ABOVE.

TABLE 7.1 – EROSION CONTROL BLANKET TYPE

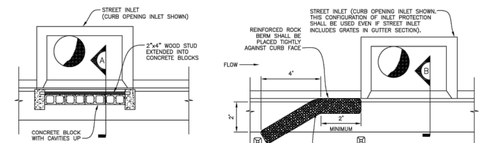
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	NETTING MIN.
STRAW*	–	100%	–	DOUBLE/NATURAL
STRAW–COCONUT	30% MIN.	70% MAX.	–	DOUBLE/NATURAL
COCONUT	100%	–	–	DOUBLE/NATURAL
EXCELSIOR	–	–	100%	DOUBLE/NATURAL

* FOR OUTSIDE OF STREAMS AND DRAINAGE CHANNELS

EROSION CONTROL BLANKET MAINTENANCE NOTES

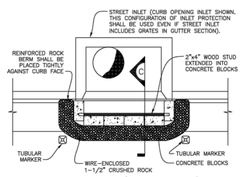
1. THE GESC MANAGER SHALL INSPECT EROSION CONTROL BLANKETS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS AS NECESSARY.
2. EROSION CONTROL BLANKET IS TO BE LEFT IN PLACE UNLESS REQUESTED TO BE REMOVED BY THE CITY.
3. ANY EROSION CONTROL BLANKET PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE RE–INSTALLED. ANY SUBGRADE AREAS BELOW THE BLANKET THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE EROSION CONTROL BLANKET REINSTALLED.

ECB EROSION CONTROL BLANKET 9

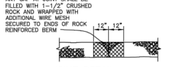


INTERIM CONFIGURATION (BEFORE PAVING) STREET INLET — PLAN
SCALE: 1/4" = 1'-0"

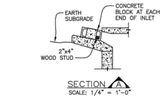
STREET INLET ON CONTINUOUS GRADE (AFTER PAVING) — PLAN
SCALE: 1/4" = 1'-0"



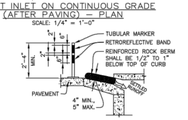
STREET INLET IN SUMP (AFTER PAVING) — PLAN
SCALE: 1/4" = 1'-0"



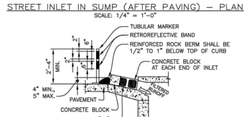
JOINT DETAIL
SCALE: 1/4" = 1'-0"



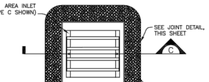
SECTION A
SCALE: 1/4" = 1'-0"



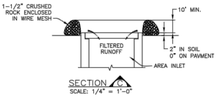
SECTION A
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"



AREA INLET — PLAN
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"

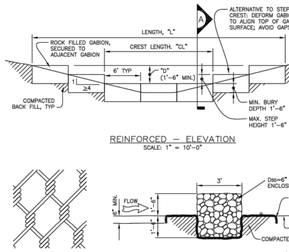
INLET PROTECTION INSTALLATION NOTES

1. INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED WITHIN 48–HOURS OF POURING INLET. INLET PROTECTION (AFTER PAVEMENT) SHALL BE INSTALLED WITHIN 48 HOURS AFTER PAVING IS PLACED.
2. INLET PROTECTION AT AREA INLETS SHALL BE INSTALLED WITHIN 48–HOURS OF POURING INLET.
3. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
4. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48–INCHES.
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
6. REINFORCED ROCK BERM SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING JOINT DETAIL.
7. TUBULAR MARKERS SHALL MEET REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
8. THE TOP OF REINFORCED ROCK BERM SHALL BE 1/2"–1" BELOW TOP OF CURB.

INLET PROTECTION MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT INLET PROTECTION WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY. MORE FREQUENT INSPECTIONS AND REPAIRS SHALL BE REQUIRED DURING WINTER CONDITIONS DUE TO FREEZE/THAW PROBLEMS.
2. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK BERM IS WITHIN 2–1/2 INCHES OF THE CREST.
3. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED, UNLESS THE CITY APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
4. WHEN INLET PROTECTION AT AREA INLETS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

IP INLET PROTECTION 10



REINFORCED — ELEVATION
SCALE: 1" = 10'-0"

BLOW UP OF TWISTED WIRE GABION
SCALE: NTS

REINFORCED — SECTION A
SCALE: 1/4" = 1'-0"

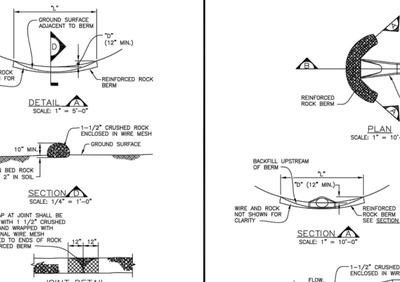
REINFORCED CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CHECK DAMS.
   - CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   - LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
2. CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND–DISTURBING ACTIVITIES.
3. REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4–1/2". USE A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL SEAMS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT GABION.
4. RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D_{50} MEDIAN STONE SIZE OF 6".
5. THE CHECK DAM SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'–6".
6. EROSION BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1'–6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

REINFORCED CHECK DAM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT CHECK DAMS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN ½ OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY.
4. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

RCD REINFORCED CHECK DAM 11



REINFORCED ROCK BERM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF REINFORCED ROCK BERMS.
   - LENGTH, "L", AND DEPTH, "D" DIMENSIONS.
2. REINFORCED ROCK BERM SECTION APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
3. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
4. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48–INCHES.
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
6. FOR CONCENTRATED FLOW AREAS THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

REINFORCED ROCK BERM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT REINFORCED ROCK BERM WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF REINFORCED ROCK BERM SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS WITHIN 5 INCHES OF THE CREST.
3. REINFORCED ROCK BERMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.
4. WHEN REINFORCED ROCK BERMS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

RRB REINFORCED ROCK BERM 12

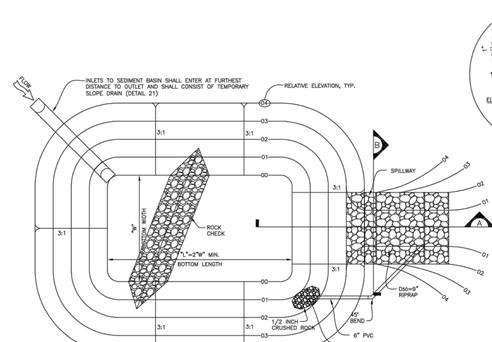
INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CULVERT INLET FILTERS.
   - LENGTH, "L", AND DEPTH, "D".
2. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
3. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
5. THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

MAINTENANCE NOTES

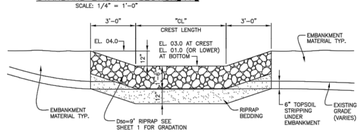
1. THE GESC MANAGER SHALL INSPECT CULVERT INLET FILTER WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF CULVERT INLET FILTER SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS 5 THE HEIGHT OF THE REINFORCED ROCK BERM.
3. RRB FOR CULVERT PROTECTION ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY.
4. WHEN CULVERT INLET FILTERS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

RRC RRB FOR CULVERT PROTECTION 13



STANDARD BASIN — PLAN
SCALE: 1" = 10'-0"

STANDARD BASIN — SECTION A
SCALE: 1/4" = 1'-0"



STANDARD BASIN — SECTION B
SCALE: 1/4" = 1'-0"

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF SEDIMENT BASIN.
   - TYPE OF BASIN (STANDARD BASIN OR NON–STANDARD BASIN).
   - FOR STANDARD BASIN, CREST LENGTH, "CL", BOTTOM WIDTH, "W", AND HOLE DIAMETER, "HD".
   - FOR NON–STANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT, "H", NUMBER OF COLUMNS, "N", HOLE DIAMETER, "HD", AND PIPE DIAMETER "D".
2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
3. SEDIMENT BASINS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY OTHER LAND–DISTURBING ACTIVITY.
4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY WITHIN 2 PERCENTAGE POINTS OF OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
6. PIPE SCH 40 OR GREATER SHALL BE USED.
7. THE DETAILS SHOWN ON THIS SHEET PERTAIN TO STANDARD SEDIMENT BASIN(S) IDENTIFIED ON THE GESC PLAN VIEW DRAWINGS. USED FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SEDIMENT BASIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT BASIN WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED IN SEDIMENT BASIN SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN 2.0 FEET OF THE CREST OF THE SPILLWAY.
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY.
4. IF SEDIMENT BASINS ARE REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

SB SEDIMENT BASIN 14

Sheet Revisions		
6/30/05	ADOPTED FROM DOUGLAS COUNTY GESC PLANS	MLP
5/ /08	EDIT UPDATES A	GAW
11/ /08	ADD CURB SOCK DETAIL A (REF UDFCD, V3 FIGURE C5–23), MISC. NOTE EDITS	GAW

NOTE: SCALES SHOWN ARE FOR 24"x36" SHEETS; ADJUST ACCORDINGLY FOR 11"x17" SHEETS.

CITY OF LONE TREE
DEPARTMENT OF PUBLIC WORKS
Engineering Division

GESC GRADING, EROSION, AND SEDIMENT CONTROL

GESC PLAN STANDARD NOTES AND DETAILS

SHEET 2 OF 3

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CIVIL • STRUCTURAL

INVESTOR OFFICE
YOSEMITE & C-470 | LONE TREE, CO

ENGINEER OF RECORD:



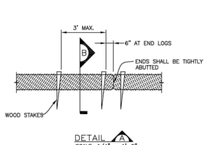
ISSUE	DATE	DESCRIPTION
	26.08.04	SIP SUBMITTAL #3

JOB NUMBER:	251567
PHASE:	PERMIT CHECK SET
DATE:	2026.09.03
DRAWN BY:	BRJ
CHECKED BY:	BRJ
SHEET TITLE:	

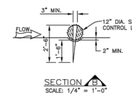
EROSION CONTROL DETAILS

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DETAIL A
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"

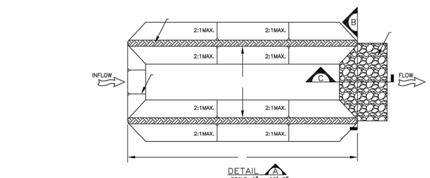
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

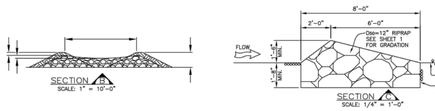
SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

SCL SEDIMENT CONTROL LOG 15



DETAIL B
SCALE: 1" = 10'-0"



SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
2. SEDIMENT TRAPS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
4. RIPRAP OUTLET SHALL BE CONSTRUCTED WITH D =12" RIPRAP WITH A MINIMUM OVERFLOW OF 6".
5. THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.
6. THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL BE MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.

SEDIMENT TRAP MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT TRAPS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF RIPRAP SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE RIPRAP OUTLET STRUCTURE.
3. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVERAGE IS APPROVED BY THE CITY.
4. WHEN SEDIMENT TRAPS ARE REMOVED THE DISTURBED AREA SHALL BE DRILLED SEEDED AND CRIMP MULCHED OR STABILIZED IN A MANNER APPROVED BY THE CITY.

ST SEDIMENT TRAP 16

SEEDING AND MULCHING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - AREA OF SEEDING AND MULCHING.
   - TYPE OF SEED MIX (PERMANENT, TEMPORARY, OR LOW-GROWTH).
2. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAP WEED AND LEAFY SPURGE.
3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY, SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO CITY OF LONE TREE UPON REQUEST.
4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT:
5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO CONTRACTOR AND FORWARDED TO THE CITY OF LONE TREE GESC INSPECTOR.
6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).
7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY THE CITY.
8. ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). HAUL ROADS AND OTHER COMPACTED AREAS SHALL BE LOOSENED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.
9. SOIL IS TO BE THOROUGHLY LOOSENED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE FREE OF ROCKS GREATER THAN 4 INCHES AND SOIL CLODS GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENED SHALL BE REJECTED.
10. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH. ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW. AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. OF STRAW PER ACRE.
11. IF THE PERMITTEE DEMONSTRATES TO THE CITY THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.
12. SEEDING AND MULCHING SHALL BE COMPLETED WITHIN 30 DAYS OF INITIAL EXPOSURE OR 7 DAYS AFTER GRADING IS SUBSTANTIALLY COMPLETE IN A GIVEN AREA (AS DEFINED BY THE CITY). THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
13. MULCH SHALL BE APPLIED WITHIN 24-HOURS OF SEEDING.
14. TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

SEEDING AND MULCHING MAINTENANCE NOTES

1. SEEDED AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE AS FOLLOWS:
   1. THREE (3) PLANTS PER SQUARE FOOT WITH A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE CITY OF LONE TREE-APPROVED MIX.
   2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
   3. FREE OF ERODED AREAS.
   4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.
3. REQUIRED COVERAGE FOR TURF GRASS AREAS SHALL BE DEFINED AS FOLLOWS:
   1. AT LEAST 80% VEGETATIVE COVER OF GRASS SPECIES PLANTED.
   2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
   3. FREE OF ERODED AREAS.
   4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH SECTION 6.4 OF THE GESC CRITERIA MANUAL.
4. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE CITY.

CITY OF LONE TREE PERMANENT DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
BIG BLUESTEM	KAW	PNWS	10	1.1
YELLOW INDIANGRASS	CHEYENNE	PNWS	10	1
SWITCHGRASS	BLACKWELL	PNWS	10	0.4
SIDEOATS GRAMA	VAUGHN	PNWB	10	0.9
WESTERN WHEATGRASS	ARRIBA	PNCS	10	1.6
BLUE GRAMA	HACHITA	PNWB	10	0.3
THICKSPIKE WHEATGRASS	CRITANA	PNCS	10	1
PRAIRIE SANDREED	GOSHEN	PNWS	10	0.7
GREEN NEEDLEGRASS	LODORM	PNCB	10	1
SLENDER WHEATGRASS	PRYOR	PNCB	5	0.6
STREAMBANK WHEATGRASS	SODAR	PNCS	5	0.6
		TOTAL		9.2

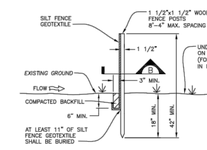
CITY OF LONE TREE TEMPORARY DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
SMOOTH BROMEGRASS	LINCOLN	PICS	30	3.9
INTERMEDIATE WHEATGRASS	OAHE	PICS	30	4.5
PUBESCENT WHEATGRASS	LUNA	PICS	30	4.2
ANNUAL RYEGRASS	N/A	AICB	10	0.8
		TOTAL		13.4

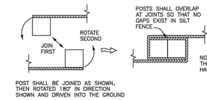
CITY OF LONE TREE LOW-GROWTH DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
BUFFALOGRASS	TEXOKA	PNWS	20	3.2
BLUE GRAMA	HACHITA	PNWB	20	0.6
WESTERN WHEATGRASS	ARRIBA	PNCS	20	3.2
SIDEOATS GRAMA	VAUGHN	PNWB	20	1.8
THICKSPIKE WHEATGRASS	CRITANA	PNCS	10	1
STREAMBANK WHEATGRASS	SODAR	PNCS	10	1.2
		TOTAL		11.0

SM SEEDING AND MULCHING 17



DETAIL A
SCALE: 1/2" = 1'-0"



JOINTS — SECTION A
SCALE: N.T.S.

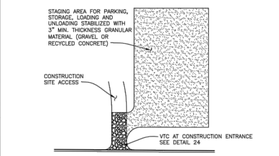
SILT FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF FENCE.
2. ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND, WITH "JUMPING JACK", OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
3. SILT FENCE GEOTEXTILE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - 6-TO 12-GALLONS PER MINUTE PER SQUARE FOOT FLOW CAPACITY.
   - 90 LB. TENSILE STRENGTH PER ASTM D4632.
   - UV DESIGN AT 500 HRS MIN. 70% STRENGTH RETAINED PER ASTM D 4355.
4. SILT FENCE INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SILT FENCE DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.
3. SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE CITY. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

SF SILT FENCE 18



PLAN
SCALE: N.T.S.

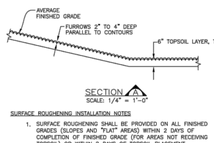
STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR GENERAL LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH CITY APPROVAL.
2. STABILIZED STAGING AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
3. IF REQUIRED BY THE CITY, SITE ACCESS ROADS SHALL BE STABILIZED IN THE SAME MANNER AS THE STAGING AREA.
4. STAGING AREA SHALL BE STABILIZED PRIOR TO ANY OTHER OPERATIONS ON THE SITE.
5. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM OF 3" OF GRANULAR MATERIAL (GRAVEL OR RECYCLED CONCRETE).

STABILIZED STAGING AREA MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT THE STABILIZED STAGING AREA WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. GESC MANAGER SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
3. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
4. ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
5. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE CITY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

SSA STABILIZED STAGING AREA 19



SECTION A
SCALE: 1/4" = 1'-0"

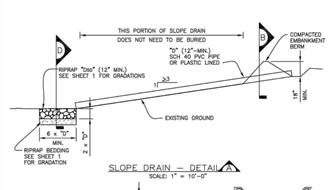
SURFACE ROUGHENING INSTALLATION NOTES

1. SURFACE ROUGHENING SHALL BE PROVIDED ON ALL FINISHED GRADES (SLOPES AND "FLAT" AREAS) WITHIN 2 DAYS OF COMPLETION OF FINISHED GRADE (FOR AREAS NOT RECEIVING TOPSOIL) OR WITHIN 2 DAYS OF TOPSOIL PLACEMENT.
2. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD IS TO BE PLACED WITHIN 7-DAYS OF FINISHED GRADING DO NOT NEED TO BE SURFACE ROUGHENED.
3. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING OF EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

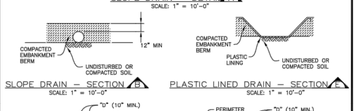
SURFACE ROUGHENING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT THE SURFACE ROUGHENING WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. VEHICLES AND EQUIPMENT SHALL GENERALLY BE CONFINED TO ACCESS DRIVES AND SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
3. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
4. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER ANY RILL EROSION.

SR SURFACE ROUGHENING 20

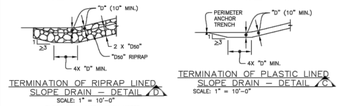


SLOPE DRAIN — DETAIL A
SCALE: 1" = 10'-0"



SLOPE DRAIN — SECTION B
SCALE: 1" = 10'-0"

PLASTIC LINED DRAIN — SECTION C
SCALE: 1" = 10'-0"



TERMINATION OF RIPRAP LINED SLOPE DRAIN — DETAIL D
SCALE: 1" = 10'-0"

TERMINATION OF PLASTIC LINED SLOPE DRAIN — DETAIL C
SCALE: 1" = 10'-0"

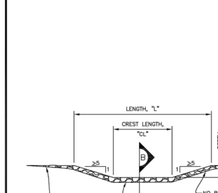
SLOPE DRAIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SLOPE DRAIN.
   - PIPE DIAMETER, "D", AND RIPRAP SIZE, "Dso".
2. SLOPE DRAIN DIMENSIONS SHALL BE CONSIDERED MINIMUM DIMENSIONS; CONTRACTOR MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO SLOPE OR SLOPE DRAIN DURING RUNOFF EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SLOPE DRAINS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
4. FOR TEMPORARY SLOPE DRAINS, PIPE MAY BE INSTALLED ON TOP OF SLOPE, HOWEVER, 12" MIN. COVER AT TOP OF SLOPE SHALL BE PROVIDED.
5. A RIPRAP PAD SHALL BE PLACED AT THE OUTFALL OF THE SLOPE DRAIN.

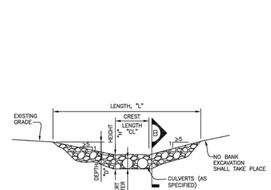
SLOPE DRAIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SLOPE DRAINS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS AS NECESSARY.
2. TEMPORARY SLOPE DRAINS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION. WHEN SLOPE DRAINS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

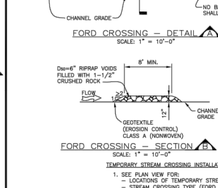
TSD TEMPORARY SLOPE DRAIN 21



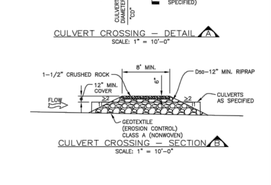
FORD CROSSING — DETAIL A
SCALE: 1" = 10'-0"



CULVERT CROSSING — DETAIL A
SCALE: 1" = 10'-0"



FORD CROSSING — SECTION B
SCALE: 1" = 10'-0"



CULVERT CROSSING — SECTION B
SCALE: 1" = 10'-0"

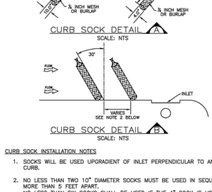
TEMPORARY STREAM CROSSING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF TEMPORARY STREAM CROSSING.
   - STREAM CROSSING TYPE (FORD OR CULVERT).
   - FOR FORD CROSSING: LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
   - FOR CULVERT CROSSING: LENGTH, "L", CREST LENGTH, "CL", CROSSING HEIGHT, "H", DEPTH, "D", CULVERT DIAMETER, "CD", AND NUMBER, TYPE AND CLASS OF CAUSE OF CULVERTS.
2. TEMPORARY STREAM CROSSING DIMENSIONS, DSO, AND NUMBER OF CULVERTS INDICATED (FOR CULVERT CROSSING) SHALL BE CONSIDERED MINIMUM DIMENSIONS; ENGINEER MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO STREAM CROSSING OR EXISTING STREAM CHANNEL DURING BASEFLOW OR FLOOD EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SEE SHEET 1 FOR RIPRAP AND 1-1/2" CRUSHED ROCK GRADATIONS.
4. FOR A TEMPORARY STREAM CROSSING THAT WILL CARRY LOADS, THE TEMPORARY STREAM CROSSING MUST BE DESIGNED BY THE DESIGN ENGINEER.

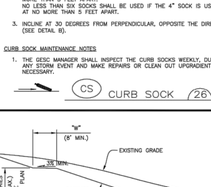
TEMPORARY STREAM CROSSING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT STREAM CROSSINGS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF STREAM CROSSINGS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CROSSING IS WITHIN 6-INCHES OF THE CREST (FORD CROSSING) OR GREATER THAN AN AVERAGE DEPTH OF 12-INCHES (CULVERT CROSSING).
3. STREAM CROSSINGS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION.
4. WHEN STREAM CROSSINGS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY.

TSC TEMPORARY STREAM CROSSING 22



CURB SOCK DETAIL A
SCALE: NTS



CURB SOCK DETAIL B
SCALE: NTS

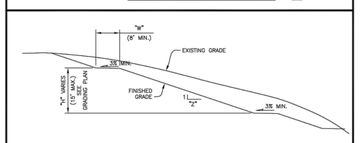
CURB SOCK INSTALLATION NOTES

1. SOCKS WILL BE USED UPGRADIENT OF INLET PERPENDICULAR TO AND FLUSH WITH CURB.
2. NO LESS THAN TWO 10" DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN 5 FEET APART.
   NO LESS THAN SIX SOCKS SHALL BE USED IF THE 4" SOCK IS USED, ALSO SPACED AT NO MORE THAN 5 FEET APART.
3. INCLINE AT 30 DEGREES FROM PERPENDICULAR, OPPOSITE THE DIRECTION OF FLOW (SEE DETAIL B).

CURB SOCK MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT THE CURB SOCKS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPGRADIENT SEDIMENT AS NECESSARY.

CS CURB SOCK 26



SECTION A
SCALE: 1/4" = 1'-0"

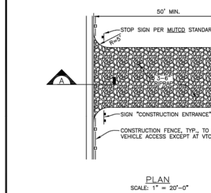
TERRACING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - "WIDTH, "W", AND SLOPE, "Z".
2. TERRACING IS NOT REQUIRED FOR SLOPES OF 4 TO 1 OR FLATTER.
3. EARTH (VEGETATED) SLOPES STEEPER THAN 3 TO 1 ARE NOT ALLOWED ON THE SITE.

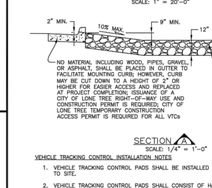
TERRACING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT THE SURFACE ROUGHENING WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. ANY RILL EROSION OCCURRING ON SLOPES SHALL BE REPAIRED AND RESEEDED AND MULCHED IN ACCORDANCE WITH DETAIL 17.

TER TERRACING 23



PLAN
SCALE: 1" = 20'-0"



SECTION A
SCALE: 1" = 1'-0"

VEHICLE TRACKING CONTROL INSTALLATION NOTES

1. VEHICLE TRACKING CONTROL PADS SHALL BE INSTALLED AT EVERY ACCESS POINT TO SITE.
2. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING. ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 3" WITH A MAXIMUM SIZE OF 6". THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF GRADATION WILL BE BY VISUAL INSPECTIONS.
3. WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE VTC STONE TO HELP MINIMIZE MIGRATION OF THE STONE INTO THE UNDERLYING MATERIAL.
4. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY PERMITTEE.
5. A CITY OF LONE TREE TEMPORARY CONSTRUCTION ACCESS PERMIT IS REQUIRED FOR EACH ACCESS/EXIT POINT FROM THE SITE.
6. A 10% MAXIMUM SLOPE IS ESTABLISHED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED, SHALL BE INSTALLED FOR EXITING TRAFFIC AT THE VTC.

VEHICLE TRACKING CONTROL MAINTENANCE NOTES

1. GESC MANAGER SHALL INSPECT VEHICLE TRACKING CONTROL PADS DAILY. ACCUMULATED SEDIMENTS SHALL BE REMOVED FROM PAD SURFACE. STONE SURFACE SHALL BE CLEAN AND LOOSE ENOUGH TO RUT SLIGHTLY UNDER WHEEL LOADS SUFFICIENTLY TO CAUSE LOOSE GRAVEL TO DISLODGE AND REMOVE/DISMOUNT FROM VEHICLE TIRES. WHEN STONE BECOMES COMPACTED AND/OR FILLED WITH SEDIMENT SO THAT THE EFFECTIVENESS OF THE PAD IS DIMINISHED, CONTRACTOR SHALL RIP, TURN OVER, OR OTHERWISE LOOSEN THE STONE, PLACE ADDITIONAL NEW STONE, OR REPLACE STONE AS NECESSARY TO RESTORE EFFECTIVENESS.
2. VEHICLE TRACKING CONTROL SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE STONE AND GEOTEXTILE REMOVED O