

Brushy Creek Municipal Utility District

WOODS OF BRUSHY CREEK TRAIL AND DRAINAGE IMPROVEMENTS

50% SUBMITTAL



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APPROVED FOR CONSTRUCTION:

BRUSHY CREEK MUNICIPAL UTILITY DISTRICT

Location Map



SHEET LIST

- 1 COVER SHEET
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- 20-25 DRAINAGE & TRAIL PLAN SHEETS
- 26-29 DRAINAGE DETAIL SHEETS



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TBPE FIRM #F-312
TWO SIERRA WAY, SUITE 105
GEORGETOWN, TEXAS 78626-7574
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NOVEMBER 2014
AVO 30426

GENERAL NOTES:

- All construction shall be in accordance with Williamson County standards, BCMUD standards, State Law & Regulations.
- Any existing utilities, pavement, curbs, sidewalks, structures, trees, etc., not planned for destruction or removal that are damaged or removed shall be repaired or replaced at contractor's expense.
- The Contractor shall verify all depths and locations of existing utilities prior to any construction. Any discrepancies with the construction plans found in the field shall be brought immediately to the attention of the Engineer who shall be responsible for revising the plans as appropriate.
- The Contractor shall give the BCMUD 48 hours notice before beginning each phase of construction
- All areas disturbed or exposed during construction shall be revegetated in accordance with the plans and specifications. Revegetation of all disturbed or exposed areas shall consist of sodding or seeding, at the Contractor's option unless otherwise called out in plans. However, the type of revegetation must equal or exceed the type of vegetation present before construction.
- The Contractor and the Engineer shall keep accurate records of all construction that deviates from the plans. The Engineer shall furnish BCMUD accurate "As-Built" drawings following completion of all construction. These "As-Built" drawings shall meet with the satisfaction of the Engineering and Development Services Department prior to final acceptance.
- The Brushy Creek MUD shall not be petitioned for acceptance until all necessary easement documents have been signed and recorded.
- When construction is being carried out within easements, the Contractor shall confine his work to within the permanent and any temporary easements. Prior to final acceptance, the Contractor shall be responsible for removing all trash and debris within the permanent and temporary easements. Clean-up shall be to the satisfaction of the Engineer.
- Prior to any construction, the Contractor shall apply for and secure all proper permits from the appropriate authorities. Available benchmarks that may be utilized for the construction of this project are described as follows:

SURVEY CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
G100	10150584.59	3113719.07	842.56	SPKS "TP"
1193	10150793.90	3113528.76	841.65	SET NAIL "TP"
1192	10150947.73	3113442.30	843.40	SET NAIL "TP"
1501	10151251.35	3113397.40	843.58	SET NAIL "TP"
1248	10151255.12	3113394.13	843.53	SET NAIL "TP"
1280	10151289.47	3113335.05	860.14	SET NAIL "TP"
1502	10151241.53	3113273.36	860.65	SET NAIL "TP"
1544	10151394.08	3113205.33	855.14	SET NAIL "TP"
1591	10151421.27	3113080.90	861.73	SET NAIL "TP"
1593	10151542.25	3112929.61	863.90	SET NAIL "TP"
G102	10151679.84	3112782.16	874.32	SX "TP"
10345	10151679.84	3112782.16	876.55	SET NAIL "TP"
1752	10151968.60	3112625.91	876.83	SET NAIL "TP"
10344	10151978.01	3112589.66	875.34	SET NAIL "TP"
1751	10152097.20	3112619.49	880.53	SET NAIL "TP"
1742	10152449.76	3113438.88	889.86	SET NAIL "TP"
1743	10152533.66	3112338.05	893.08	SET NAIL "TP"
G101	10152666.79	3112074.04	898.57	SPKS "TP"

NOTE:
SURVEY COORDINATES ARE STATE PLANE, NAD 83 TEXAS COORDINATE SYSTEM CENTRAL ZONE. USE AN ADJUSTMENT FACTOR OF 1.00012 TO CONVERT TO SURFACE COORDINATES.

TRENCH SAFETY NOTES:

- In accordance with the Laws of the State of Texas and the U. S. Occupational Safety and Health Administration regulations, all trenches over 5 feet in depth in either hard and compact or soft and unstable soil shall be sloped, shored, sheeted, braced or otherwise supported. Furthermore, all trenches less than 5 feet in depth shall also be effectively protected when hazardous ground movement may be expected. Trench safety systems to be utilized for this project will be provided by the Contractor.
- In accordance with the U. S. Occupational Safety and Health Administration regulations, when persons are in trenches 4 feet deep or more, adequate means of exit, such as a ladder or steps, must be provided and located so as to require no more than 25 feet of lateral travel.
- If trench safety system details were not provided in the plans because trenches were anticipated to be less than 5 feet in depth and during construction it is found that trenches are in fact 5 feet or more in depth or trenches less than 5 feet in depth are in an area where hazardous ground movement is expected, all construction shall cease, the trenched area shall be barricaded and the Engineer notified immediately. Construction shall not resume until appropriate trench safety system details, as designed by a professional engineer, are retained and copies submitted to the Engineer.

STREET AND DRAINAGE NOTES:

- All testing shall be done by an independent laboratory at the Owner's expense. Any retesting shall be paid for by the Contractor. Testing shall be coordinated with the Inspector and he shall be given a minimum of 24 hours notice prior to any testing.
- Backfill behind the curb shall be compacted to obtain a minimum of 95% maximum density to within 3" of top of curb. Material used shall be primarily granular with no rocks larger than 6" in the greatest dimension. The remaining 3" shall be clean topsoil free from all clods and suitable for sustaining plant life.
- All R.C.P. shall be minimum class III.

TRAFFIC MARKING NOTES:

- Any methods, street markings and signage necessary for warning motorists, warning pedestrians or diverting traffic during construction shall conform to the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest edition.
- All pavement markings, markers, paint, traffic buttons, traffic controls and signs shall be installed in accordance with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges and, the Texas Manual of Uniform Traffic Control Devices for Streets and Highways, latest editions.

EROSION AND SEDIMENTATION CONTROL NOTES:

- Erosion control measures, site work and restoration work shall be in accordance with the details.
- All slopes shall be sodded or seeded with approved grass, grass mixtures or ground cover suitable to the area and season in which they are applied.
- Silt fences, rock berms, sedimentation basins and similarly recognized techniques and materials shall be employed during construction to prevent point source sedimentation loading of downstream facilities. Additional measures may be required if, in the opinion of the Engineer, they are warranted.
- All temporary erosion control measures shall not be removed until final inspection and approval of the project by the Engineer. It shall be the responsibility of the Contractor to maintain all temporary erosion control structures and to remove each structure as approved by the Engineer.
- All mud, dirt, rocks, debris, etc., spilled, tracked or otherwise deposited on existing paved streets, drives and areas used by the public shall be cleaned up immediately.

**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**
BRUSHY CREEK MUD
16318 GREAT OAKS DR.
ROUND ROCK, TX 78681

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Noah S. Staffor 10/7/22 11/14/14
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Project No: AV0 #30426
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 Revisions:

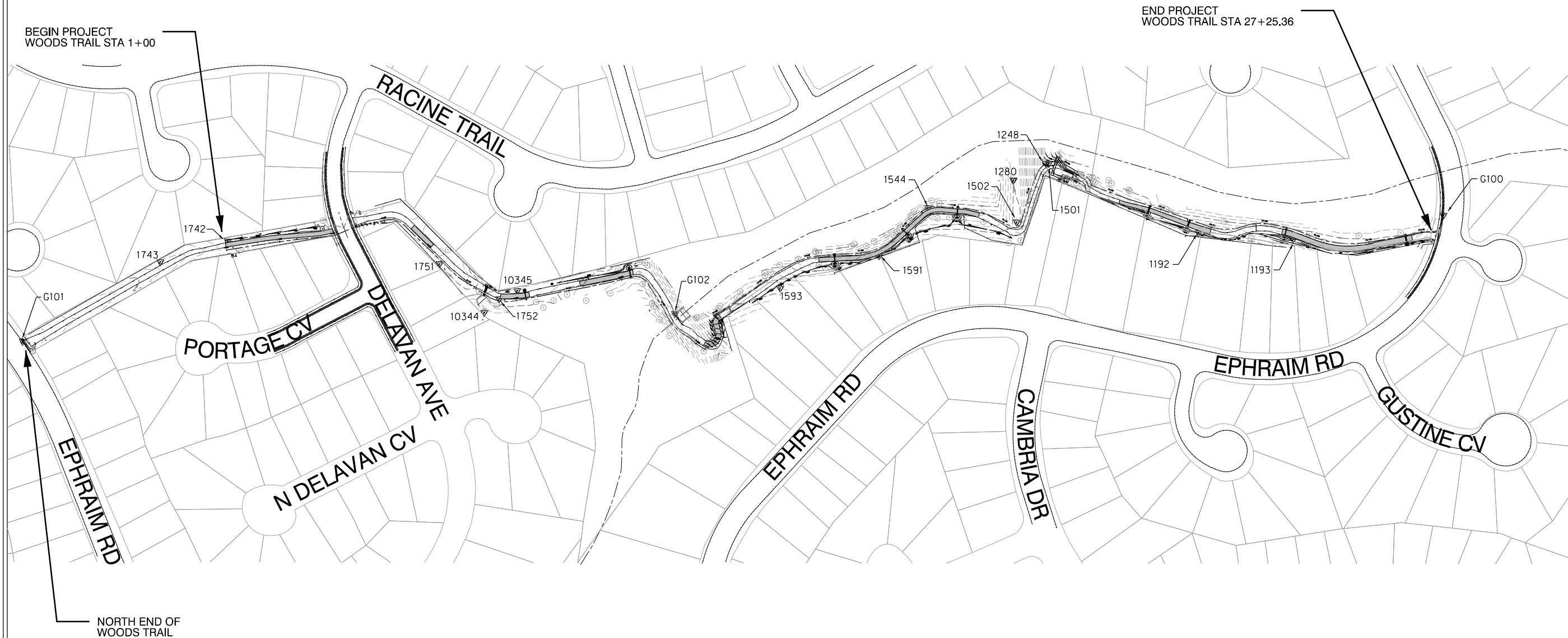
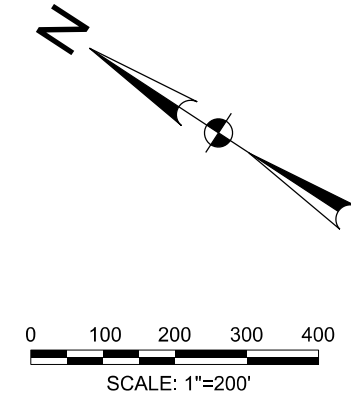
No.	Date	Description

 Drawn by: JH
 Checked by: NS5
 Sheet Title: GENERAL NOTES
 Sheet Number: 2

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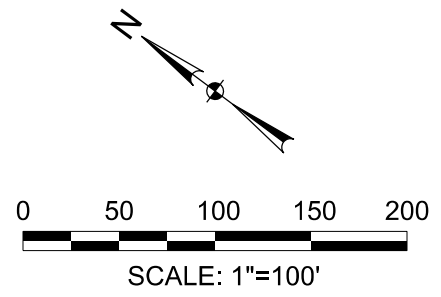
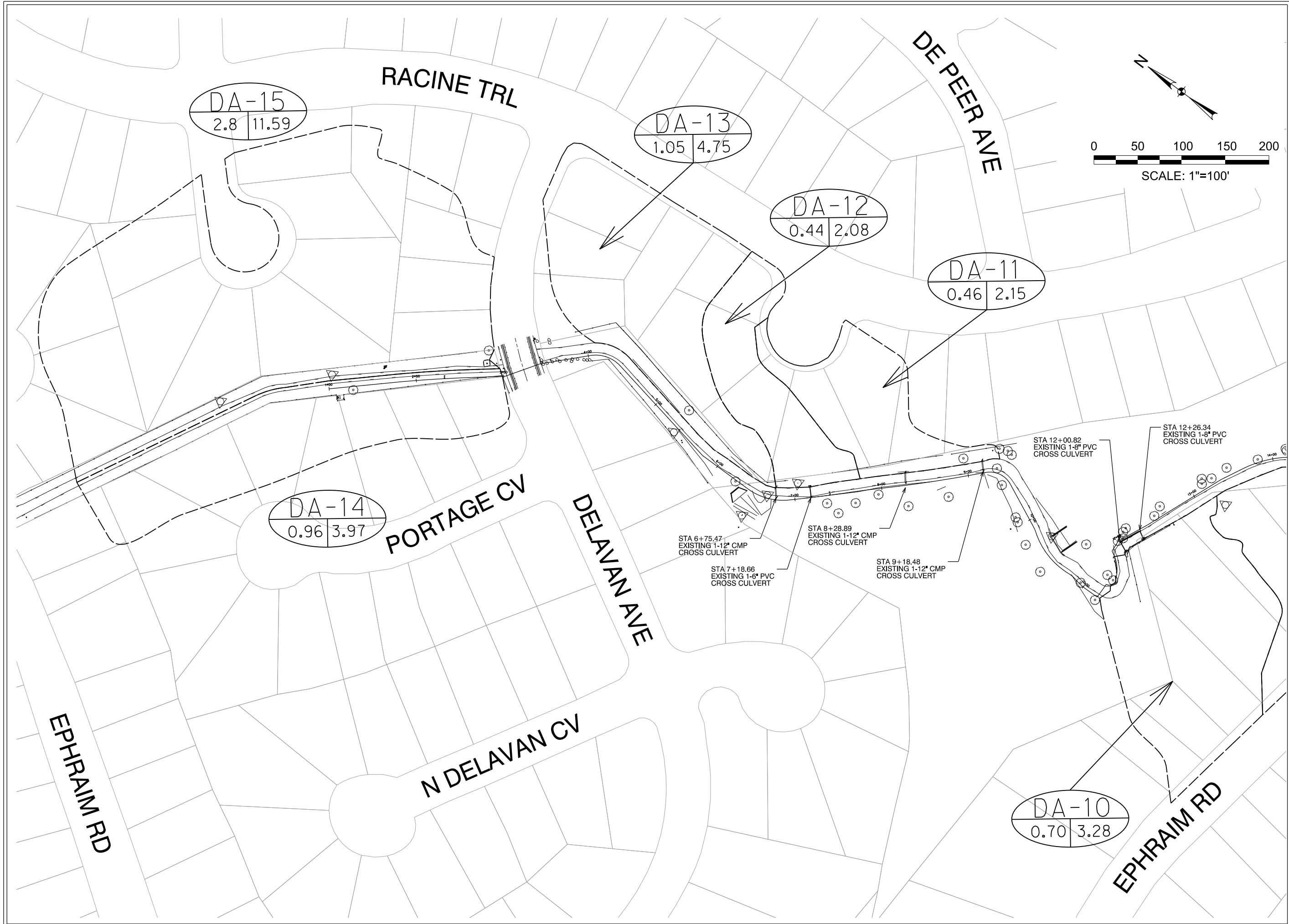
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PROJECT LAYOUT		
Sheet Number		
3		



**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
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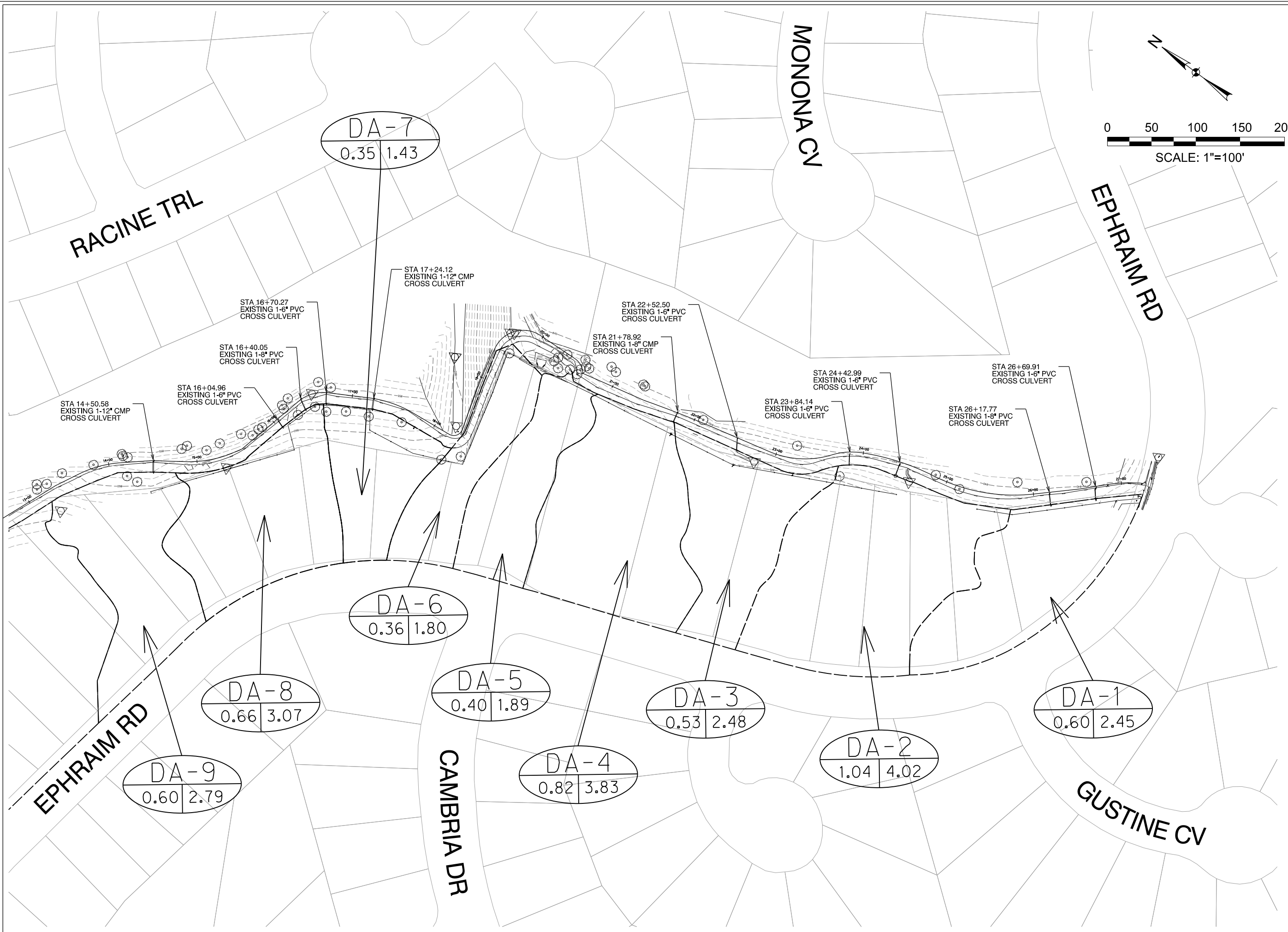
11/19/2014	
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Revisions:

No.	Date	Description

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Checked by: NS5
Sheet Title
DRAINAGE AREA MAP
FROM STA 1+00 TO 14+17

4
Sheet Number



**WOODS OF BRUSHY CREEK
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Sheet Title	
DRAINAGE AREA MAP	
FROM STA 14+17 TO STA 27+25	
5	
Sheet Number	

Woods of Brushy Creek Trail Drainage Improvements Area Hydraulic Calculations

Area #	Area total (ac)	Length (Ft) (Sheet flow)	Slope (Ft/Ft)	Corrected Slope	Tt (Sheet flow) (mins)	Length (Ft) (Shall/Concen)	Slope (Ft/Ft)	Corrected Slope	Tt (Shall/Concen) (mins)	Length (Ft) (Channel)	Slope (Ft/Ft)	Corrected Slope	R (Ft) (Hydrlic)	Velocity V - (Ft/s)	Tt (Channel) (mins)	Tc (Corr)	Intensity i - (in/hr)	C (runoff Coeff)	Q (Drng Area Flow) (acin/hr)	Q (Drng Area Flow) (cfs)	
D1	0.602	100	0.04	0.040	0.12	147.4	0.06	0.061	0.62	78.82	0.02	0.019	0.21	0.48	2.73	3.47	5	10.1	0.4	2.43	2.45
D2	1.035	100	0.04	0.040	0.12	197.77	0.07	0.071	0.77	105.35	0.01	0.009	0.21	0.34	5.17	6.06	6.06	9.62	0.4	3.98	4.02
D3	0.53	100	0.05	0.050	0.11	118.3	0.12	0.118	0.36	40.35	0.06	0.062	0.21	0.87	0.78	1.24	5	10.1	0.46	2.46	2.48
D4	0.817	100	0.04	0.040	0.12	133.95	0.12	0.119	0.40	40.7	0.05	0.049	0.21	0.77	0.88	1.40	5	10.1	0.46	3.80	3.83
D5	0.403	100	0.04	0.040	0.12	150.77	0.11	0.113	0.46	36.66	0.00	0.005	0.21	0.25	2.48	3.06	5	10.1	0.46	1.87	1.89
D6	0.36	100	0.04	0.040	0.12	144.08	0.09	0.090	0.50	34.44	0.15	0.145	0.21	1.33	0.43	1.05	5	10.1	0.49	1.78	1.80
D7	0.352	100	0.06	0.060	0.10	72.02	0.08	0.083	0.26	74.42	0.01	0.007	0.21	0.29	4.34	4.70	5	10.1	0.4	1.42	1.43
D8	0.655	100	0.06	0.060	0.10	44.69	0.09	0.090	0.15	88.17	0.05	0.051	0.21	0.79	1.87	2.12	5	10.1	0.46	3.04	3.07
D9	0.595	100	0.02	0.020	0.16	195.86	0.07	0.071	0.76	56.96	0.04	0.035	0.21	0.65	1.45	2.37	5	10.1	0.46	2.76	2.79
D10	0.7	100	0.03	0.030	0.13	203.66	0.04	0.044	1.00	17.57	0.06	0.057	0.21	0.83	0.35	1.49	5	10.1	0.46	3.25	3.28
D11	0.459	100	0.03	0.030	0.13	146.22	0.04	0.041	0.75	89.04	0.03	0.034	0.21	0.64	2.32	3.20	5	10.1	0.46	2.13	2.15
D12	0.444	100	0.02	0.020	0.16	191.1	0.05	0.047	0.91	19.45	0.03	0.026	0.21	0.56	0.58	1.65	5	10.1	0.46	2.06	2.08
D13	1.05	100	0.015	0.015	0.18	233.87	0.03	0.026	1.51	153.72	0.03	0.033	0.21	0.63	4.08	5.76	5.76	9.75	0.46	4.71	4.75
D14	0.96	100	0.02	0.020	0.16	187.12	0.02	0.021	1.32	218.91	0.03	0.027	0.21	0.58	6.32	7.80	7.80	8.92	0.46	3.94	3.97
D15	2.8	100	0.02	0.020	0.16	235.45	0.02	0.017	1.87	200.29	0.03	0.027	0.21	0.58	5.78	7.80	7.80	8.92	0.46	11.49	11.59

Formulas/ Equations

Time of Concentration	$T_c = T_t(\text{Sheet}) + T_t(\text{Shall Concen}) + T_t(\text{Channel})$		
Sheet Flow	$T_t = 0.007((nL)^{0.8}) / (((P_2)^{0.5})((s)^{0.4}))$	COA Table 2-3: P ₂ =3.44 in	COA Table 2-2: n= 0.15
Shallow/Concen. Flow	$T_t = L / (60(16.1345)(s)^{0.5})$	S ≥ 0.5% (0.005 Ft/Ft)	T _c ≥ 5 mins
Channel Flow	$T_t = \sum(L_i / 60V_i)$	$V = (K_n/n) * (R^{0.667}) * (S^{0.5})$	R= A/P= 0.208 ft K _n = 1.49
Q=CiA	COA Table 2-1: C= flat=0.4 Avg=0.46 Steep=0.49 i= a/(T _c +b)^c (For T _c = 5 mins., COA Table 2-4 25yr. 5 min. value of 10.1 is used, all others use equation. COA Table 2-5 25yr: a= 82.936 b= 10.74 c= 0.7634)		

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6	
Sheet Number	

Culvert Calculator Report
Culvert G: 1-12" CMP

Solve For: Discharge

Culvert Summary, Grades, Hydraulic Profile, Section, Outlet Control Properties, Inlet Control Properties

Culvert Calculator Report
Culvert H: 2-8" PVC

Solve For: Discharge

Culvert Summary, Grades, Hydraulic Profile, Section, Outlet Control Properties, Inlet Control Properties

Culvert Calculator Report
Culvert I: 2-8" PVC

Solve For: Discharge

Culvert Summary, Grades, Hydraulic Profile, Section, Outlet Control Properties, Inlet Control Properties

Culvert Calculator Report
Culvert J: 1-12" CMP

Solve For: Discharge

Culvert Summary, Grades, Hydraulic Profile, Section, Outlet Control Properties, Inlet Control Properties

Culvert Calculator Report
Culvert K: 2-8" PVC

Solve For: Discharge

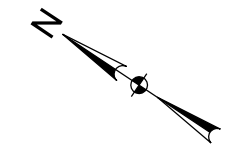
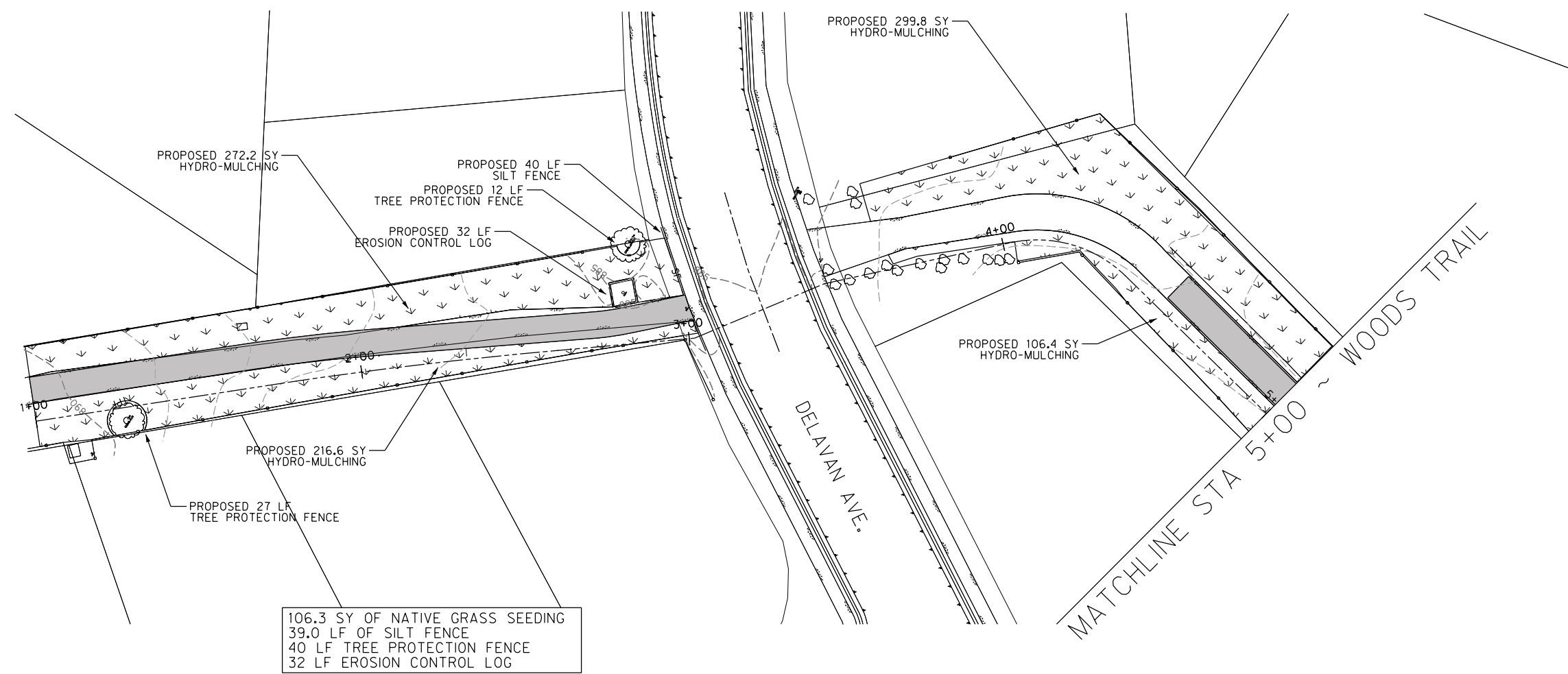
Culvert Summary, Grades, Hydraulic Profile, Section, Outlet Control Properties, Inlet Control Properties

WOODS OF BRUSHY CREEK TRAIL & DRAINAGE IMPROVEMENTS BRUSHY CREEK MUD 16318 GREAT OAKS DR. ROUND ROCK, TX 78681

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HALFF TEXAS REGISTERED ENGINEERING FIRM F-312 TWO SIERRA WAY, SUITE 105 GEORGETOWN, TEXAS 78626-7574

Project No: AV0 #30426, Issues, Revisions, Drawn by: JH, Checked by: NS5, Sheet Title: CALCULATIONS, Sheet Number: 8



0 10 20 30 40
SCALE: 1"=40'

GENERAL NOTES

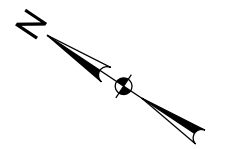
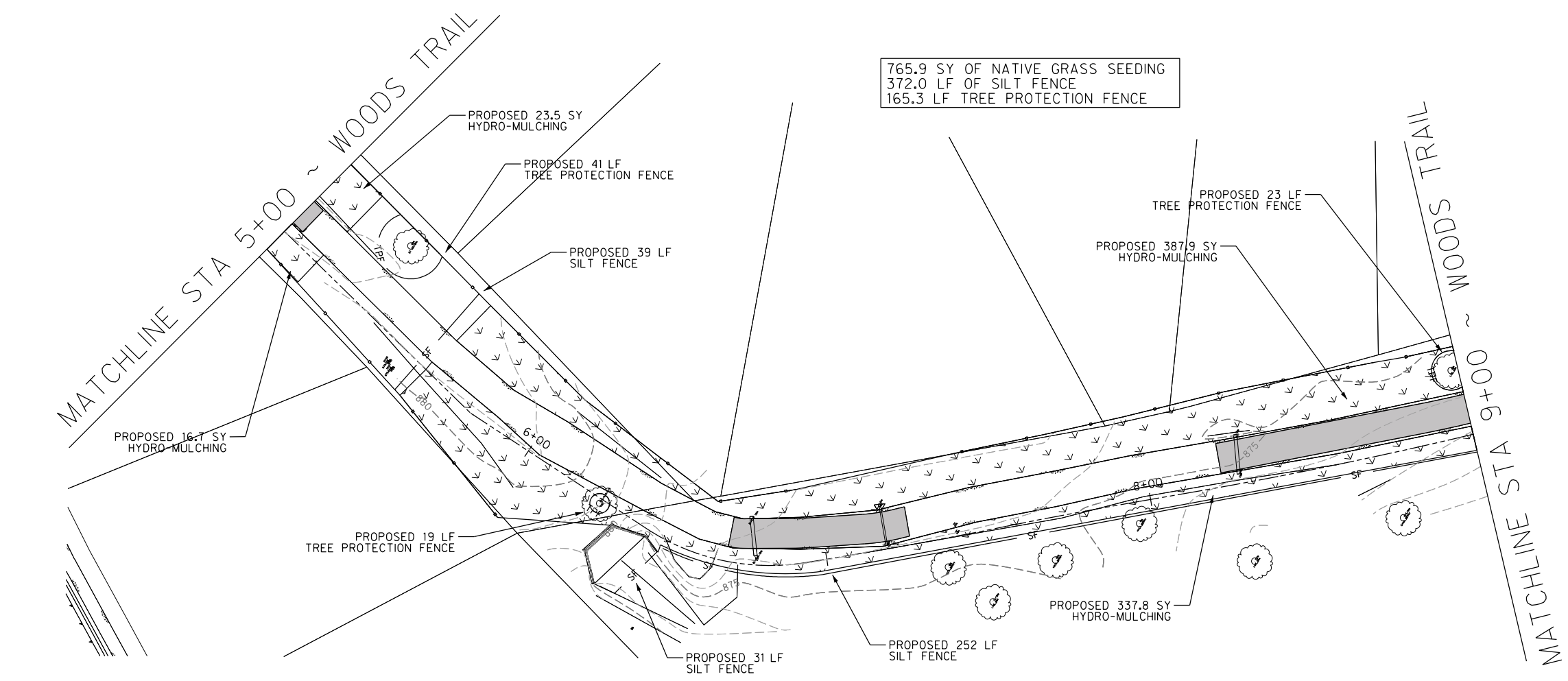
- 1) EROSION CONTROL & TREE PROTECTION MEASURES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE INTENDED TO AIDE THE CONTRACTOR IN PREPARATION OF SWPPP.
- 2) ALL TREES WITHIN THE LIMITS OF CONSTRUCTION TO BE PROTECTED UNLESS OTHERWISE NOTED. ALL TREES WITHIN THE CONSTRUCTION LIMITS NOT SHOWN TO BE EITHER PROTECTED OR REMOVED SHALL BE CONSIDERED TO REMAIN UNLESS IT DIRECTLY CONFLICTS WITH CONSTRUCTION OF THE WATERLINE (REMOVAL FOR CONVENIENCE WILL NOT BE ALLOWED). IF REMOVAL IS REQUIRED, COSTS WILL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
- 3) EROSION/SEDIMENTATION CONTROLS WILL BE IN PLACE PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES.
- 4) CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF R.O.W WITHOUT TEMPORARY CONSTRUCTION EASEMENT.

LEGEND

- TPF — TREE PROTECTION FENCE
- SF — SILT FENCE FOR EROSION CONTROL
- ROCK BERM
- HYDRO-MULCH
- EXISTING TREE
- EXISTING TREE TO BE REMOVED

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0 10 20 30 40
SCALE: 1"=40'

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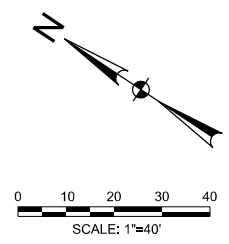
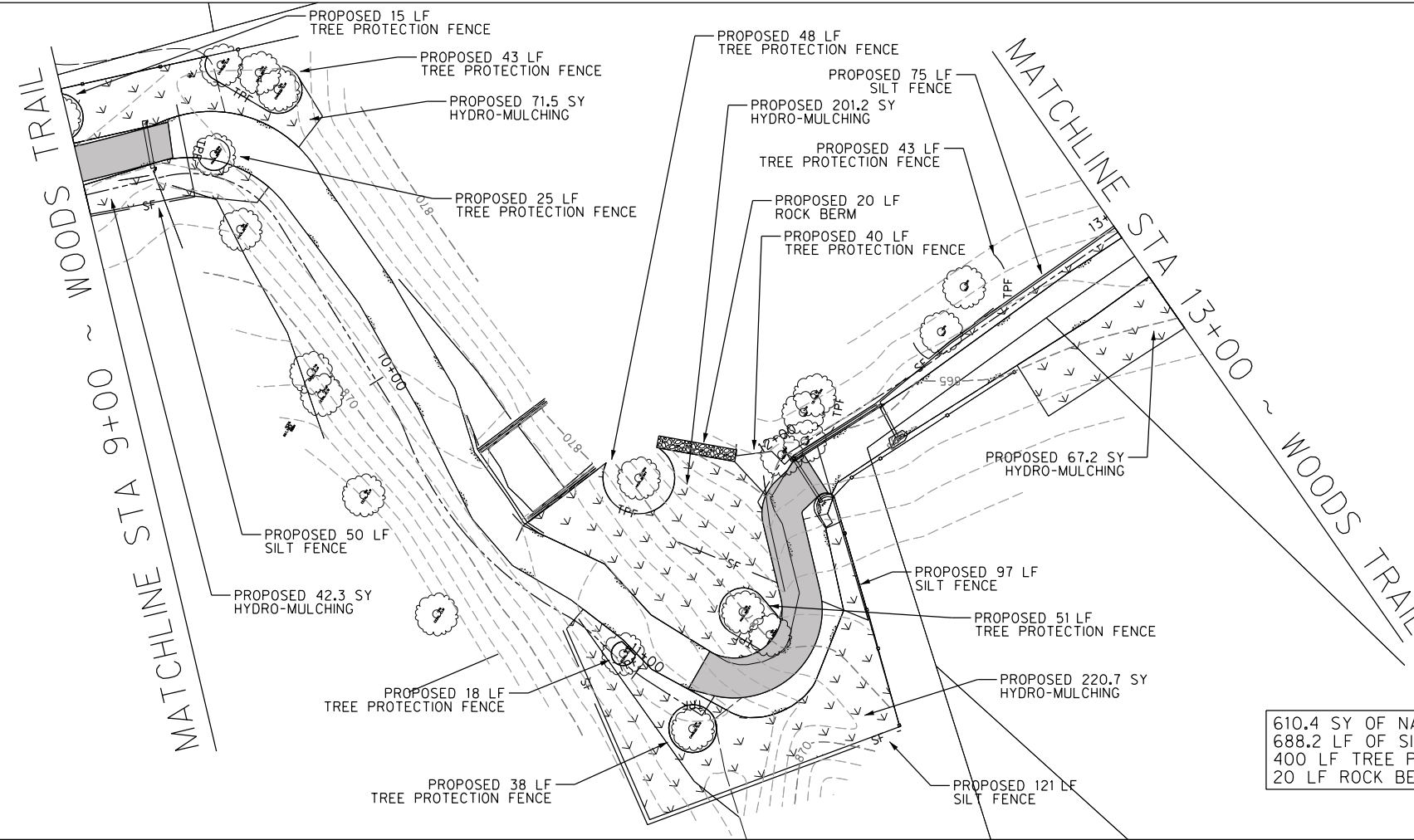
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EROS. CONTROL
 FROM STA 1+00 TO STA 9+00

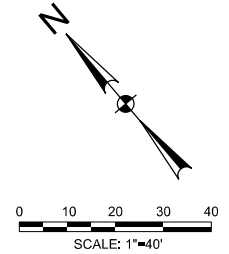
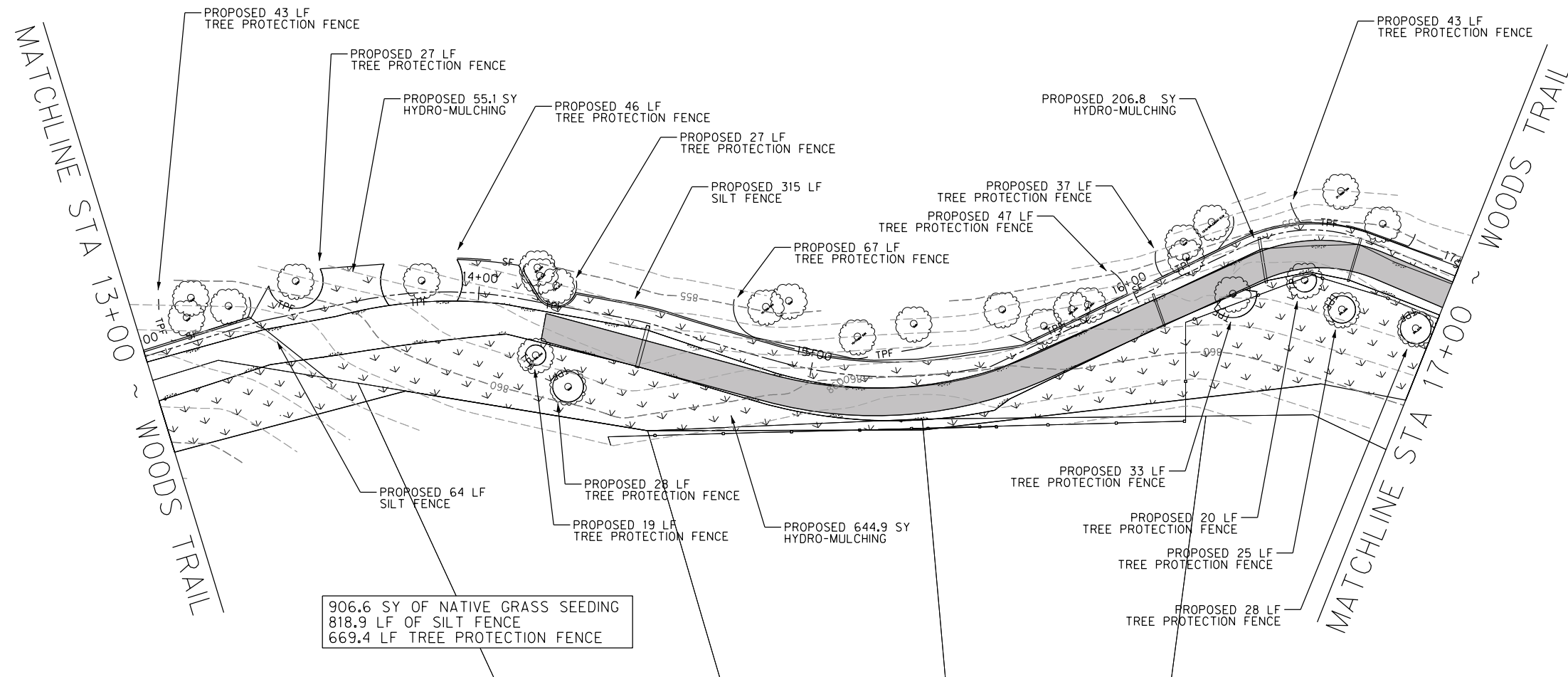


GENERAL NOTES

- 1) EROSION CONTROL & TREE PROTECTION MEASURES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE INTENDED TO AIDE THE CONTRACTOR IN PREPARATION OF SWPPP.
- 2) ALL TREES WITHIN THE LIMITS OF CONSTRUCTION TO BE PROTECTED UNLESS OTHERWISE NOTED. ALL TREES WITHIN THE CONSTRUCTION LIMITS NOT SHOWN TO BE EITHER PROTECTED OR REMOVED SHALL BE CONSIDERED TO REMAIN UNLESS IT DIRECTLY CONFLICTS WITH CONSTRUCTION OF THE WATERLINE (REMOVAL FOR CONVENIENCE WILL NOT BE ALLOWED). IF REMOVAL IS REQUIRED, COSTS WILL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
- 3) EROSION/SEDIMENTATION CONTROLS WILL BE IN PLACE PRIOR TO ANY OTHER CONSTRUCTION ACTIVITIES.
- 4) CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF R.O.W WITHOUT TEMPORARY CONSTRUCTION EASEMENT.

LEGEND

- TPF — TREE PROTECTION FENCE
- SF — SILT FENCE FOR EROSION CONTROL
- [Rock pattern] ROCK BERM
- [Dashed line with arrows] HYDRO-MULCH
- (Tree symbol) EXISTING TREE
- (Tree symbol) EXISTING TREE TO BE REMOVED



**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**
BRUSHY CREEK MUD
16318 GREAT OAKS DR.
ROUND ROCK, TX 78681

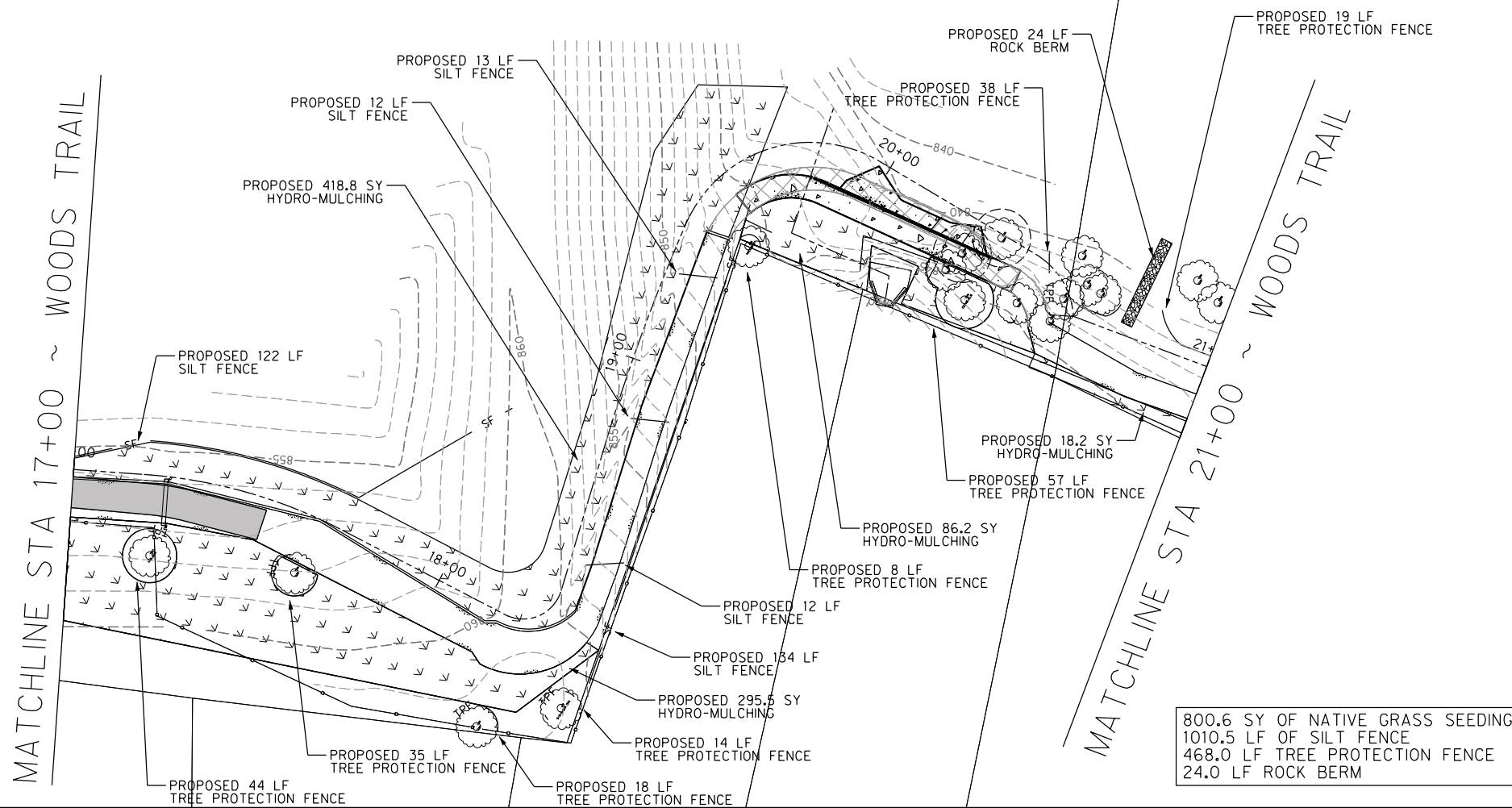
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Project No: AV0 #30426
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 Checked by: NS
 Sheet Title:
EROS. CONTROL
 FROM STA 9+00 TO STA 17+00



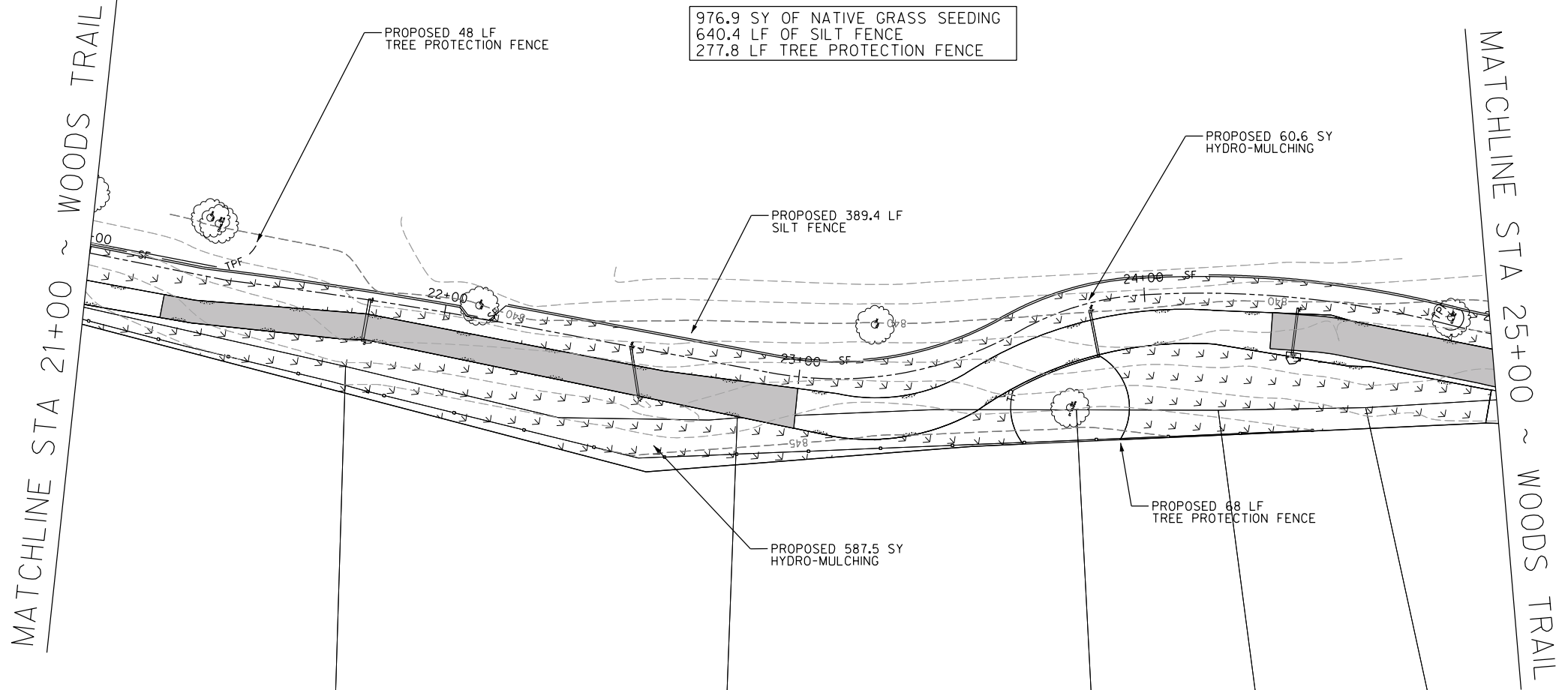
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LEGEND

- TPF — TREE PROTECTION FENCE
- SF — SILT FENCE FOR EROSION CONTROL
- ███ ROCK BERM
- *— HYDRO-MULCH
- EXISTING TREE
- EXISTING TREE TO BE REMOVED

800.6 SY OF NATIVE GRASS SEEDING
 1010.5 LF OF SILT FENCE
 468.0 LF TREE PROTECTION FENCE
 24.0 LF ROCK BERM



976.9 SY OF NATIVE GRASS SEEDING
 640.4 LF OF SILT FENCE
 277.8 LF TREE PROTECTION FENCE

WOODS OF BRUSHY CREEK
 TRAIL & DRAINAGE
 IMPROVEMENTS

BRUSHY CREEK MUD
 16318 GREAT OAKS DR.
 ROUND ROCK, TX 78681

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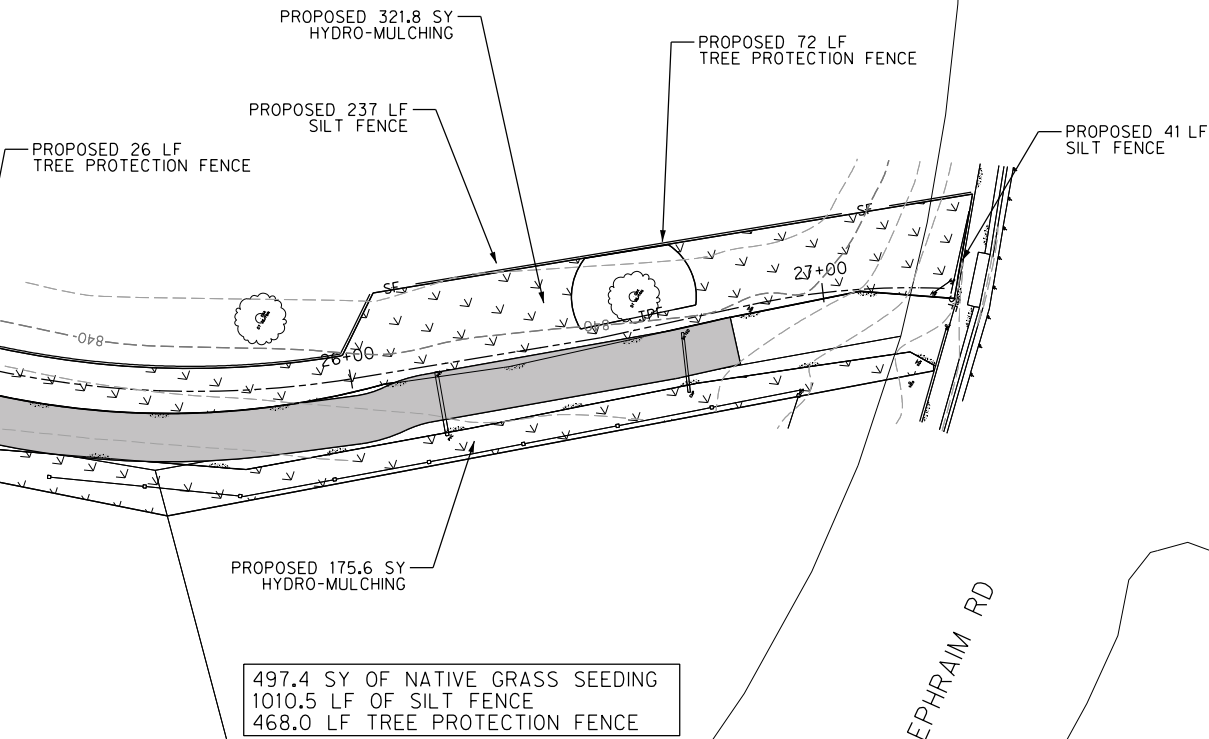
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 Sheet Title
EROS. CONTROL
 FROM STA 17+00 TO STA 25+00

MATCHLINE STA 25+00 ~ WOODS TRAIL



GENERAL NOTES

- 1) EROSION CONTROL & TREE PROTECTION MEASURES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE INTENDED TO AIDE THE CONTRACTOR IN PREPARATION OF SWPPP.
- 2) ALL TREES WITHIN THE LIMITS OF CONSTRUCTION TO BE PROTECTED UNLESS OTHERWISE NOTED. ALL TREES WITHIN THE CONSTRUCTION LIMITS NOT SHOWN TO BE EITHER PROTECTED OR REMOVED SHALL BE CONSIDERED TO REMAIN UNLESS IT DIRECTLY CONFLICTS WITH CONSTRUCTION OF THE WATERLINE (REMOVAL FOR CONVENIENCE WILL NOT BE ALLOWED). IF REMOVAL IS REQUIRED, COSTS WILL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
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LEGEND

- TPF — TREE PROTECTION FENCE
- SF — SILT FENCE FOR EROSION CONTROL
- █ ROCK BERM
- ▨ HYDRO-MULCH
- EXISTING TREE
- EXISTING TREE TO BE REMOVED

WOODS OF BRUSHY CREEK TRAIL & DRAINAGE IMPROVEMENTS
 BRUSHY CREEK MUD
 16318 GREAT OAKS DR.
 ROUND ROCK, TX 78681

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Sheet Title

EROS. CONTROL

FROM STA 25+00 TO STA 27+25

Sheet Number **12**

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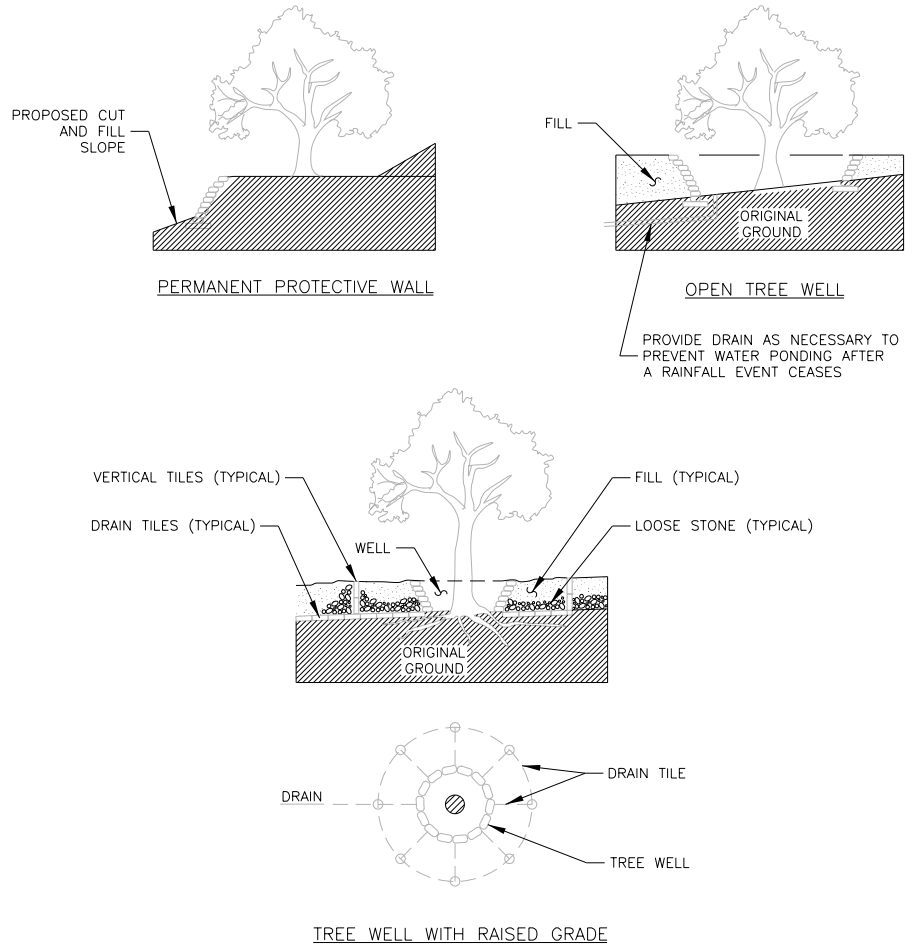
No.	Date	Description

 Drawn by: JH
 Checked by: NS5
**EROS. CONTROL
DETAILS**
 Sheet Number **13**

- ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM HIS ACTIVITIES.
- ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS, SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING. SEE: TREE PROTECTION TREE WELLS (EC-02), TREE PROTECTION TREE LOCATION (EC-03) AND TREE PROTECTION FENCE-CHAIN LINK (EC-04).
- TREE PROTECTION FENCES SHALL BE ERECTED ACCORDING TO CITY STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIGNAGE.
- TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
- EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIPLINES.
- FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES, LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE) OR CRITICAL ROOT ZONE (CRZ), WHICHEVER IS GREATER; AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
 - SOIL COMPACTION IN CRZ AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.
 - CRZ DISTURBANCES DUE TO GRADE CHANGES OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE FORESTRY MANAGER.
 - WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT
 - OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.
- EXCEPTIONS TO INSTALLING TREE FENCES AT THE TREE DRIPLINES OR CRZ, WHICHEVER IS GREATER, MAY BE PERMITTED IN THE FOLLOWING CASES:
 - WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, OR TREE WELL;
 - WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
 - WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN 6 FEET TO THE BUILDING.
 - WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE FORESTRY MANAGER TO DISCUSS ALTERNATIVES.
- WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, THE TRUNK SHALL BE PROTECTED BY STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
- WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES UNDER THE DRIPLINE OR CRZ, WHICHEVER IS GREATER, THOSE AREAS SHOULD BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.
- ALL GRADING WITHIN CRZ AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.
- ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.
- PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINES, A CLEAN CUT SHALL BE MADE WITH A ROCK SAW OR SIMILAR EQUIPMENT, IN A LOCATION AND TO A DEPTH APPROVED BY THE FORESTRY MANAGER, TO MINIMIZE DAMAGE TO REMAINING ROOTS.
- TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CROWNS ARE TO BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.
- WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, A PLASTIC VAPOR BARRIER SHALL BE PLACED BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE CRZ.
- ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
- NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIPLINE OR CRZ OF TREES, WHICHEVER IS GREATER. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.
- PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO CITY STANDARDS AND AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).
- ALL OAK TREE CUTS, INTENTIONAL OR UNINTENTIONAL, SHALL BE SEALED WITH AN APPROVED PRUNING SEALER IMMEDIATELY (WITHIN 10 MINUTES). TREE PAINT MUST BE KEPT ON SITE AT ALL TIMES.
- THE FORESTRY MANAGER HAS THE AUTHORITY TO REQUIRE ADDITIONAL TREE PROTECTION BEFORE OR DURING CONSTRUCTION.
- TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED. REFER TO THE CITY OF ROUND ROCK TREE TECHNICAL MANUAL FOR APPROPRIATE REMOVAL METHODS.
- PRIOR TO CONSTRUCTION, ALL LOWER TREE LIMBS OVER ROADWAYS MUST BE PRUNED TO A HEIGHT OF 14 FEET USING THE TECHNIQUES DESCRIBED IN THE CITY OF ROUND ROCK TREE TECHNICAL MANUAL.
- DEVIATIONS FROM THE ABOVE REQUIREMENTS AND NEGLIGENT DAMAGE TO TREES MAY BE CONSIDERED AS ORDINANCE VIOLATIONS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK TREE PROTECTION NOTES	DRAWING NO: EC-01
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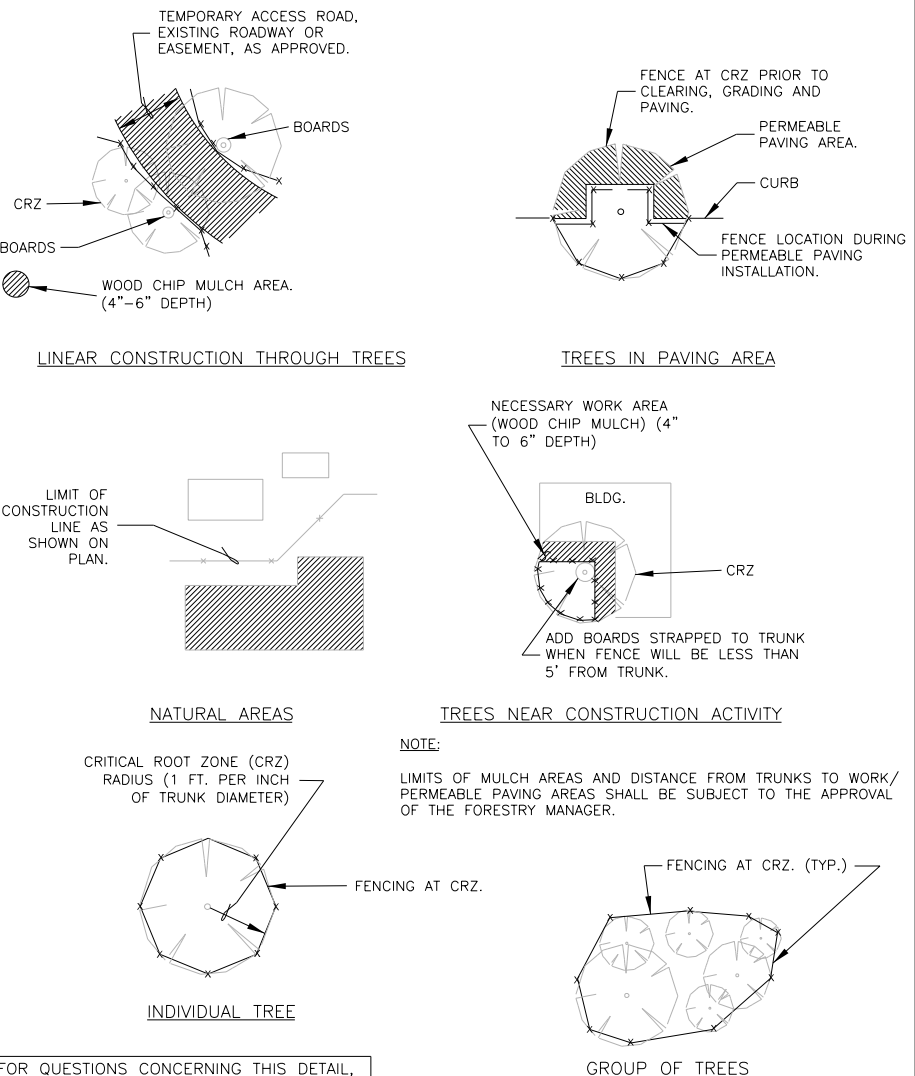


NOTE:

LOCATION, TYPE, DEPTHS AND CONSTRUCTION SPECIFICATIONS OF FILL, DRAINS AND WALLS SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK TREE PROTECTION TREE WELLS	DRAWING NO: EC-02
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NOTE:

LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/ PERMEABLE PAVING AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE FORESTRY MANAGER.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED 03-25-11 DATE THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)	CITY OF ROUND ROCK TREE PROTECTION FENCE LOCATIONS	DRAWING NO: EC-03
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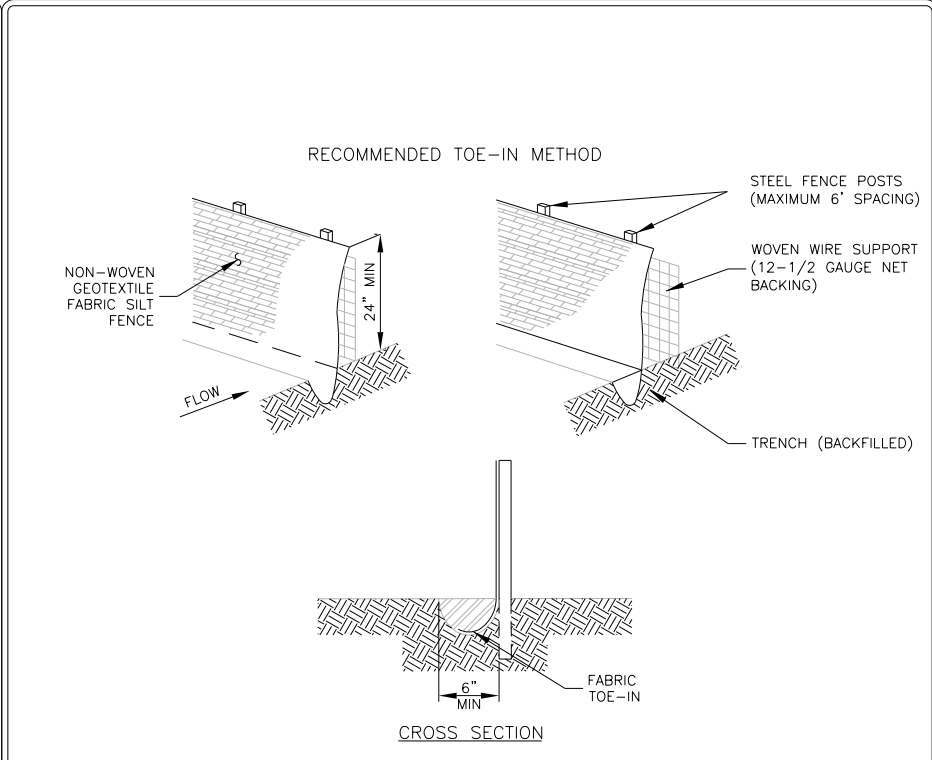
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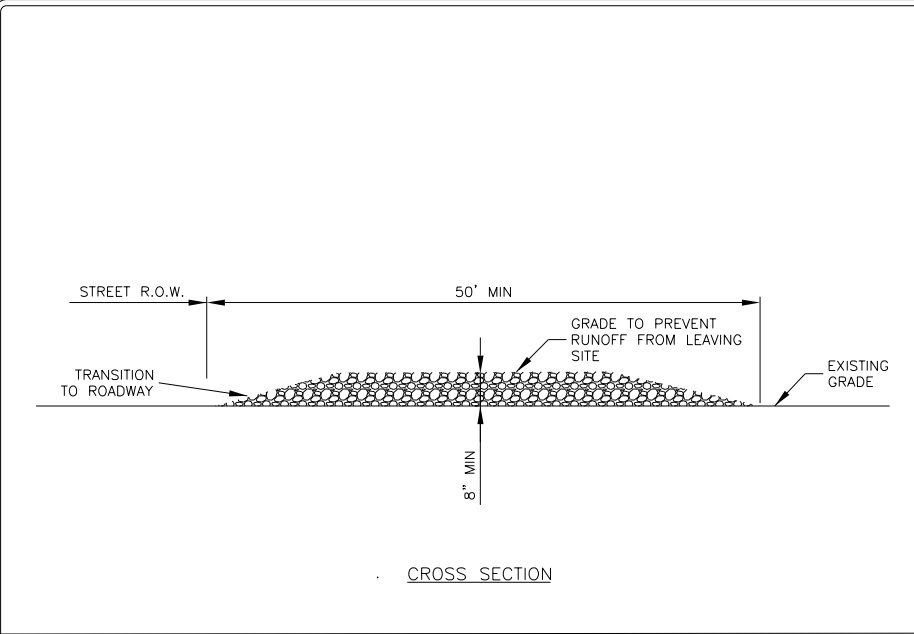
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Sheet Title
**EROS CONTROL
DETAILS**
Sheet Number
14



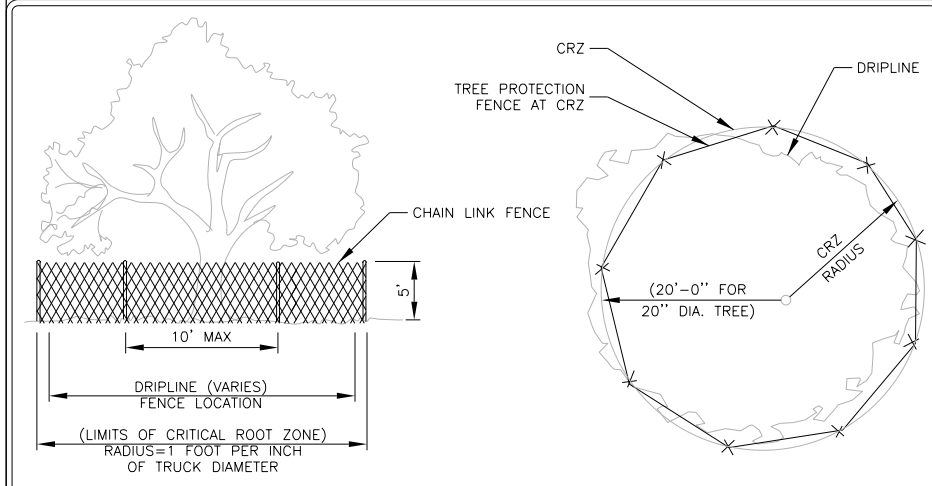
- NOTES:
1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
 2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
 3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
 4. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.
 5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
 6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
 7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.
 8. SILT FENCE SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED	CITY OF ROUND ROCK	DRAWING NO: EC-10
03-25-11 DATE	TREE PROTECTION FENCE CHAIN LINK	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



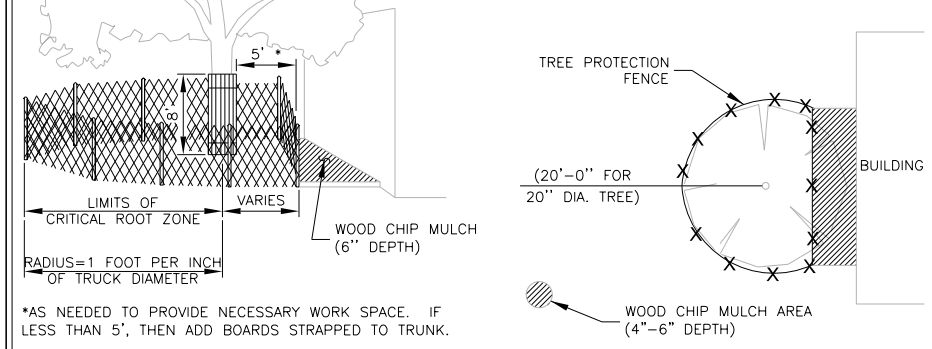
- NOTES:
1. STONE SIZE SHALL BE 3" - 8" OPEN GRADED ROCK.
 2. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
 3. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
 4. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
 5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.
 6. AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED	CITY OF ROUND ROCK	DRAWING NO: EC-09
03-25-11 DATE	STABILIZED CONSTRUCTION ENTRANCE DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



TREE PROTECTION FENCE - CHAIN LINK

NOTE:
LIMITS OF WOOD CHIP MULCH AREA AND DISTANCE FROM TRUNK TO WORK AREA SHALL BE SUBJECT TO THE APPROVAL OF THE FORESTRY MANAGER.



TREE PROTECTION FENCE (MODIFIED) - CHAIN LINK

*AS NEEDED TO PROVIDE NECESSARY WORK SPACE. IF LESS THAN 5', THEN ADD BOARDS STRAPPED TO TRUNK.

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03-25-11 DATE	TREE PROTECTION FENCE CHAIN LINK	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		

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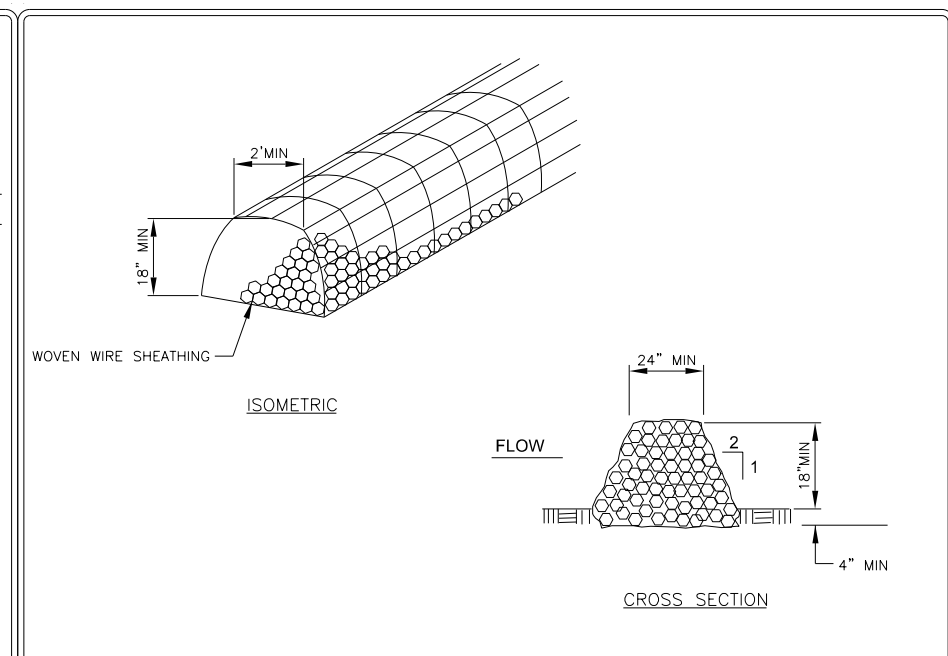
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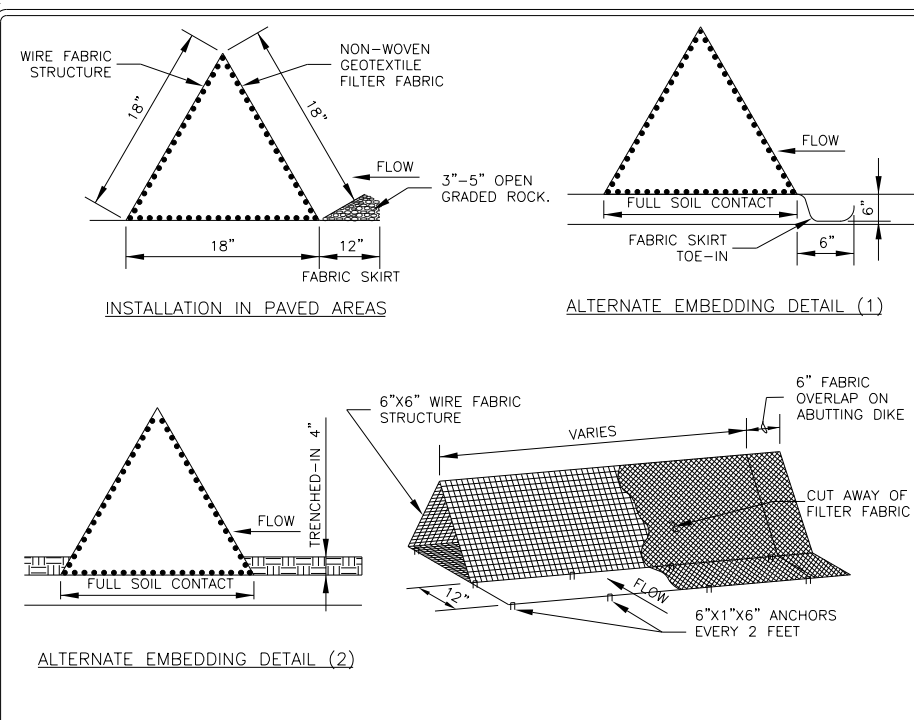
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DETAILS**

Sheet Number
15



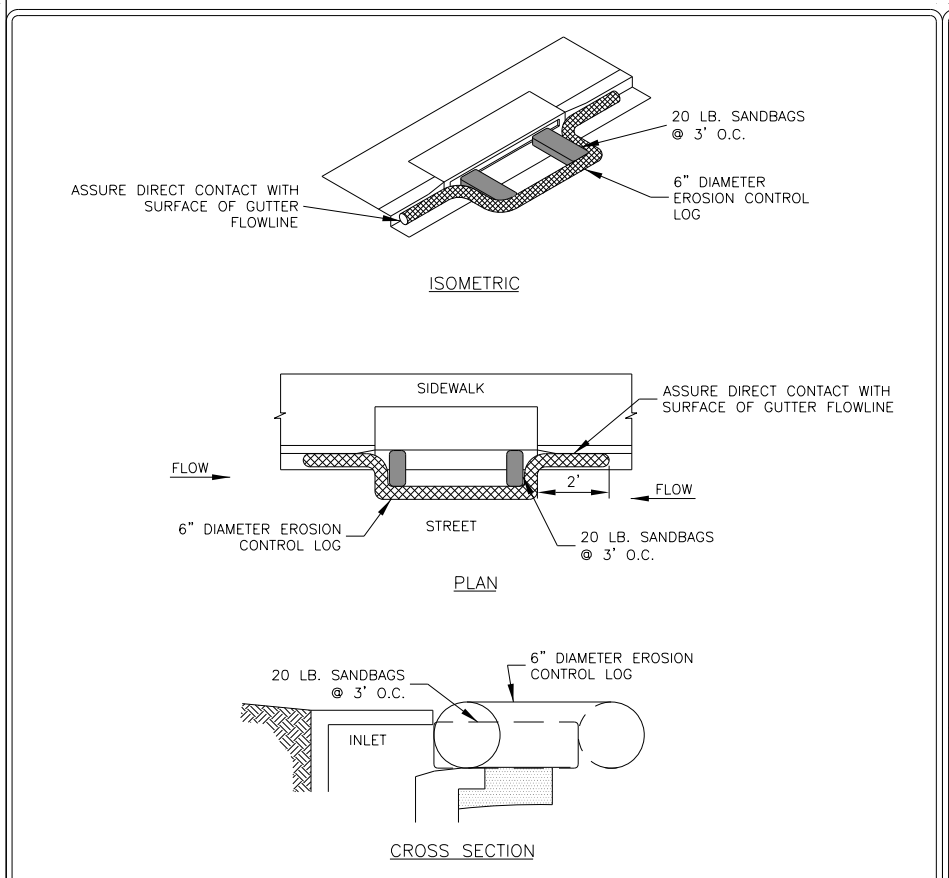
- NOTES:**
- USE ONLY OPEN GRADED ROCK (3 to 5") DIAMETER FOR ALL CONDITIONS.
 - THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
 - THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/ OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
 - IF SEDIMENT REACHES A DEPTH OF 6", THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
 - WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



- NOTES:**
- DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING.
 - FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE UPSTREAM FACE FABRIC.
 - DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE WITH WIRE STAPLES AT 2' INTERVALS ON BOTH EDGES AND SKIRT OR WITH 3/8" DIAMETER REBAR WITH TEE ENDS.
 - FILTER MATERIAL SHALL BE LAPPED OVER ENDS 6" TO COVER DIKE-TO-DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
 - INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS REQUIRED.
 - ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 4" AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
 - AFTER THE DEVELOPMENT SITE IS COMPLETELY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN NOTE #6 ABOVE.

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- NOTES:**
- EROSION CONTROL LOG CONTAINMENT MESH SHALL BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE; AND FILL MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL EXCLUDING STRAW AND HAY.
 - DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
 - CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM WATER BEGINS TO OVERTOP THE CURB.
 - INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

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11/19/2014

Revisions:

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Sheet Title

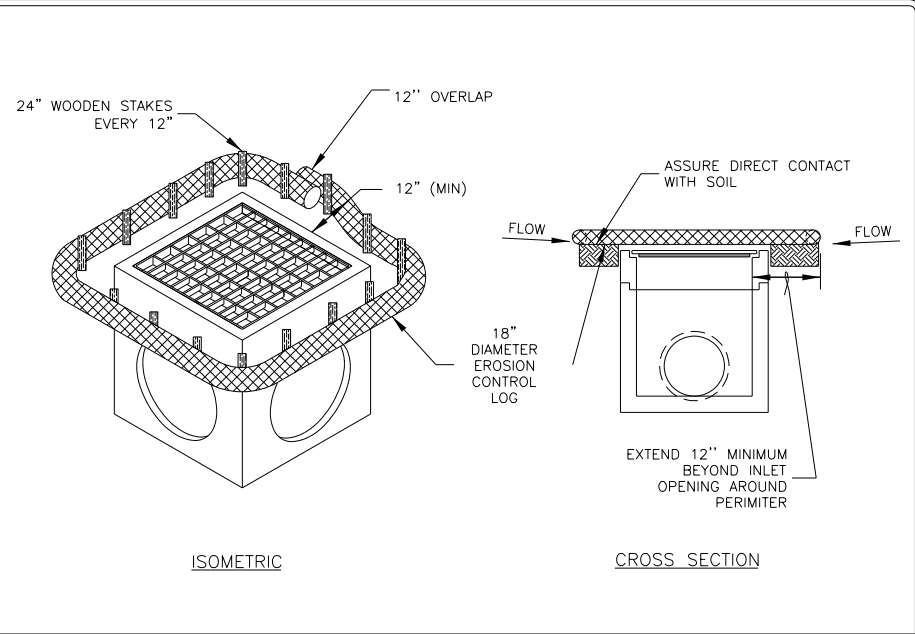
EROS. CONTROL

DETAILS

Sheet Number

16

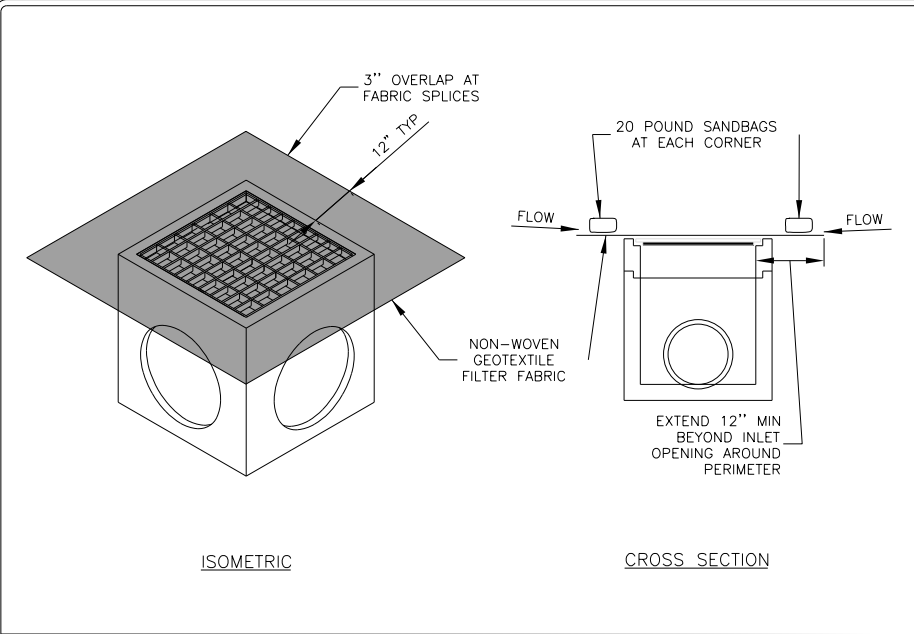
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NOTES:

1. EROSION CONTROL LOG CONTAINMENT MESH SHALL BE 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE; AND FILL MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL EXCLUDING STRAW AND HAY.
2. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 6".
3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

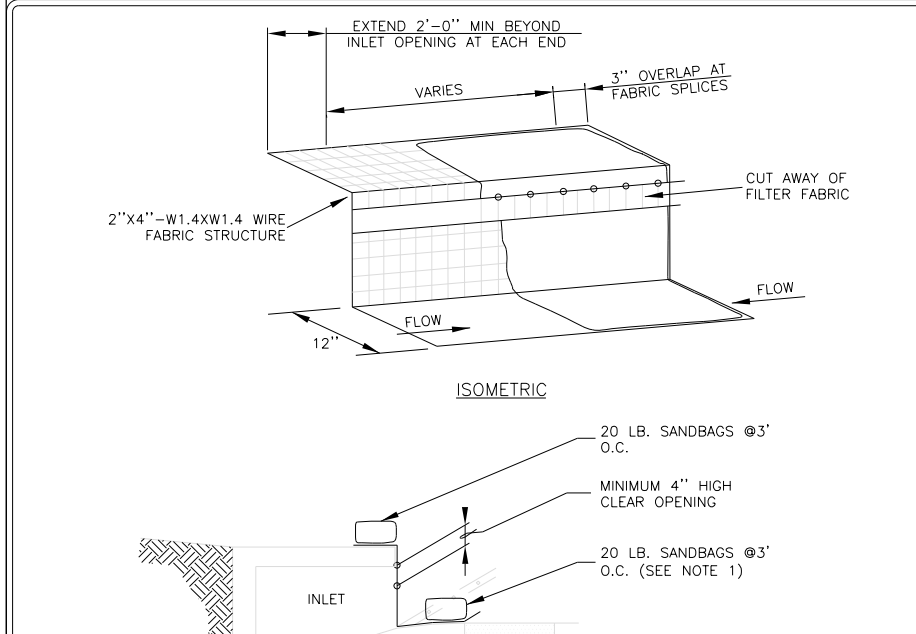
RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED	CITY OF ROUND ROCK	DRAWING NO: EC-16
DATE: 03-25-11	AREA INLET PROTECTION WITH EROSION CONTROL LOG DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED	CITY OF ROUND ROCK	DRAWING NO: EC-15
DATE: 03-25-11	AREA INLET PROTECTION DETAIL	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)		



NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3' O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

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DATE: 03-25-11	CURB INLET PROTECTION DETAIL	
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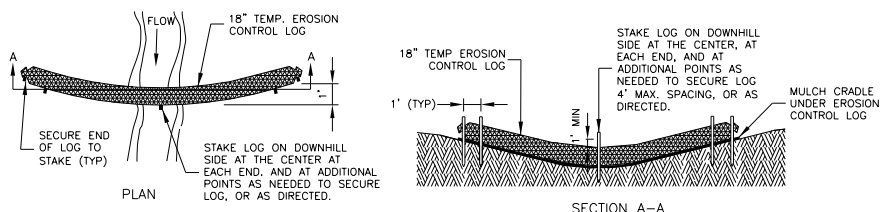
**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**
BRUSHY CREEK MUD
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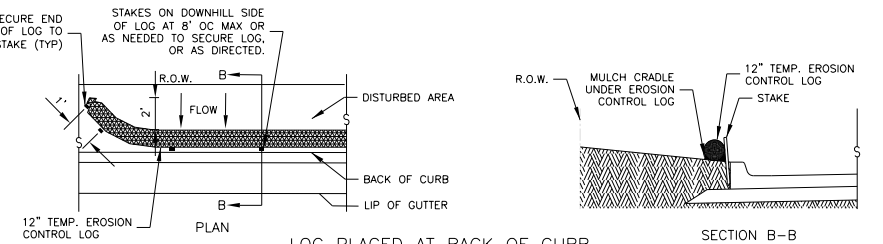
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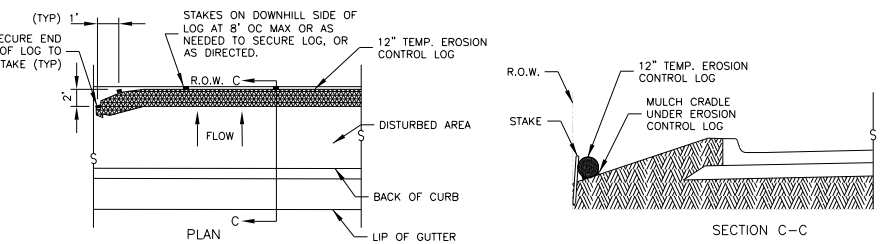
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No.	Date	Description
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Checked by: NS5		
Sheet Title		
EROS. CONTROL		
DETAILS		
17		
Sheet Number		



EROSION CONTROL LOG CHECK DAM

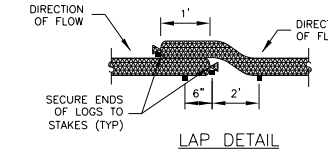


LOG PLACED AT BACK OF CURB



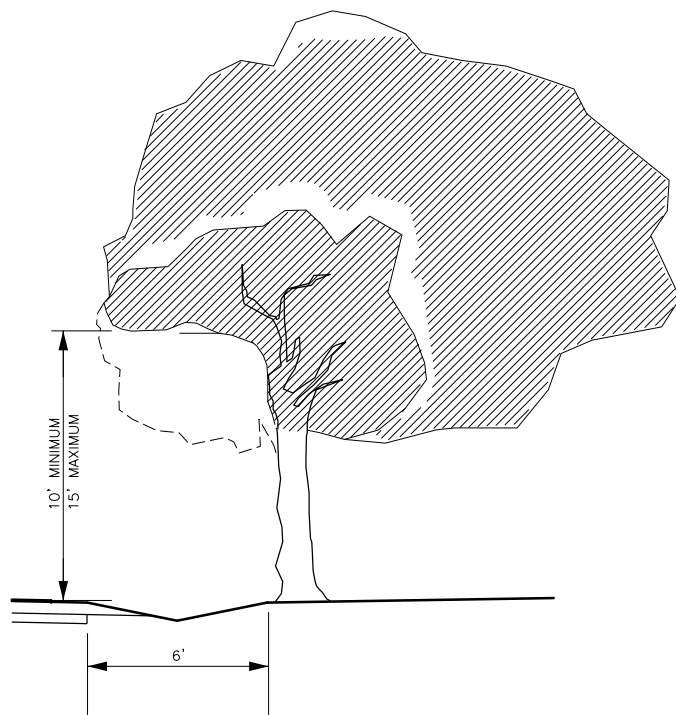
LOG PLACED AT EDGE OF RIGHT-OF-WAY

- NOTES:
- DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 6".
 - CONTRACTOR SHALL MONITOR THE PERFORMANCE OF LOGS DURING RAINFALL EVENT FOR PROPER PERFORMANCE.
 - LOGS SHALL CONSIST OF 100% BIODEGRADABLE, PHOTODEGRADABLE OR RECYCLABLE CONTAINMENT MESH STUFFED WITH FILTER MATERIAL.
 - STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION. FILTER MATERIAL SHALL CONSIST OF MULCH, ASPEN EXCELSIOR WOOD FIBERS, CHIPPED SITE VEGETATION, COCONUT FIBERS, 100% RECYCLABLE FIBERS, OR ANY OTHER ACCEPTABLE MATERIAL, EXCLUDING STRAW AND HAY.
 - STAKES SHALL BE 2" X 2" WOOD, 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED.



LAP DETAIL

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APPROVED	EROSION CONTROL LOG DETAIL	
03-25-11 DATE		
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TREES OR TREES WITH LIMBS TO REMAIN WITHIN CLEAR ZONE WILL BE PRUNED BY A PROFESSIONAL ARBORIST.

LIMBS WILL BE PRUNED TO A MAX HEIGHT OF 15' TO CLEAR CONSTRUCTION ACTIVITIES AND AS REQUIRED TO CLEAR DRIVING SURFACE BY HEIGHT OF 15'.

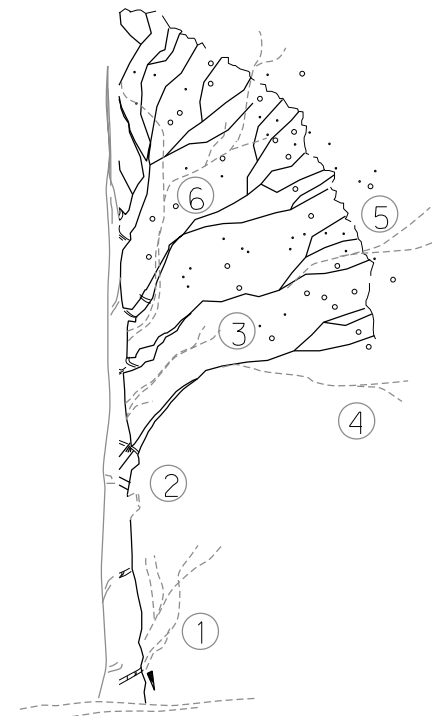
CARE SHOULD BE TAKEN NOT TO REMOVE LOW HANGING BRANCHES ONLY COINCIDENTAL.

***NOTE:**

NOT A SEPARATE PAY ITEM.
SUBSIDIARY TO TxDOT ITEM 100,
PREPARATION OF ROW.

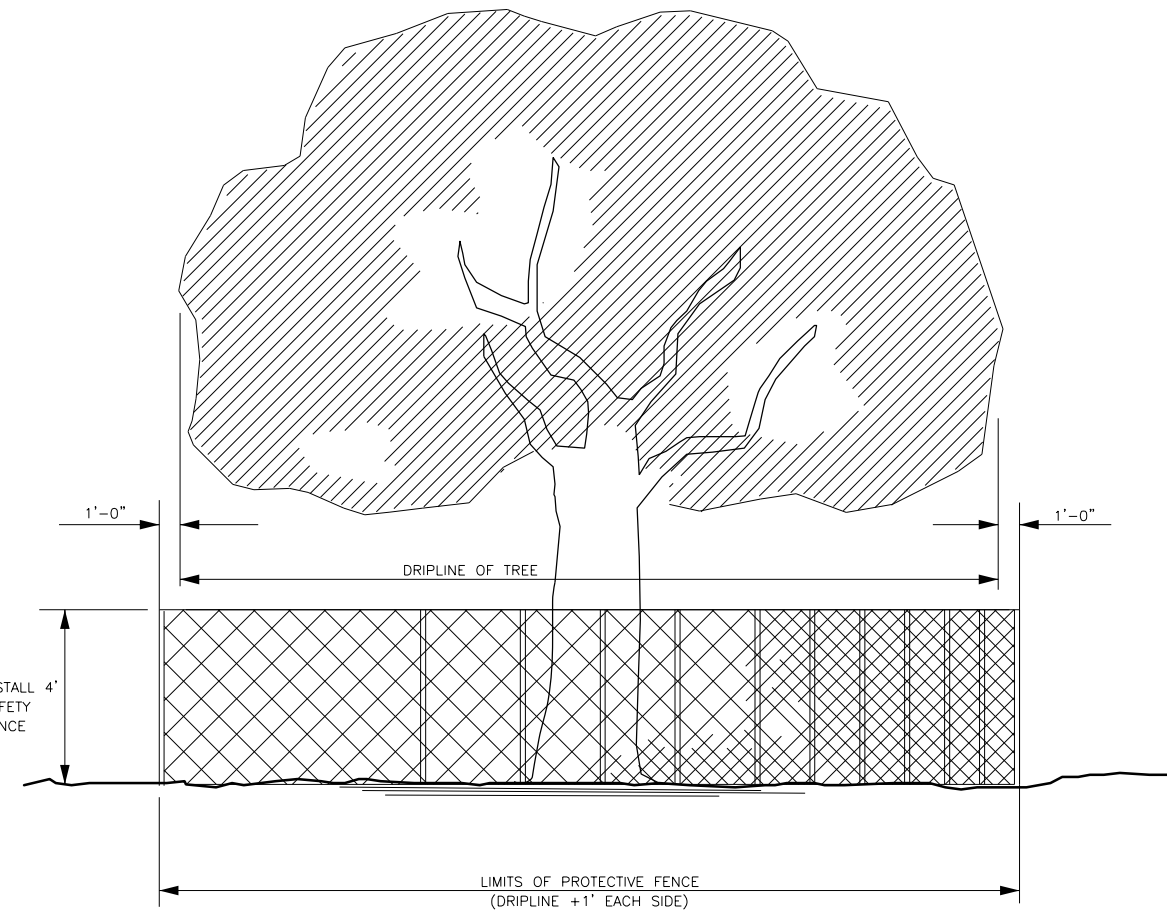
TYPICAL TREE PRUNING DETAIL

N.T.S.



- 1) REMOVE SUCKER SHOOTS AT BASE OF TREE
- 2) MAKE CLEAN CUTS ON OLD STUBS IF PRESENT
- 3) REMOVE ENTIRE SUPPLY OF TWIGS AND BUDS ON TRUNK
- 4) REMOVE LOWER BRANCH WHERE AN OVERLYING BRANCH OCCUPIES APPROX. SAME AREA
- 5) SHAPE TREE BY REMOVING INJURED AND MISSHAPENED BRANCHES
- 6) REMOVE CROSS BRANCHES AND THOSE DEVELOPING INTO SECONDARY LEADERS
- 7) DO NOT REMOVE LEADER

NOTE: DASHED LINES INDICATE BRANCHES TO BE REMOVED. BALD CYPRESS - NO MORE THAN 20 PERCENT OF LIMBS, FOLIAGE, ETC., TO BE REMOVED.



TEMPORARY SAFETY FENCE FOR TREE PROTECTION

N.T.S.

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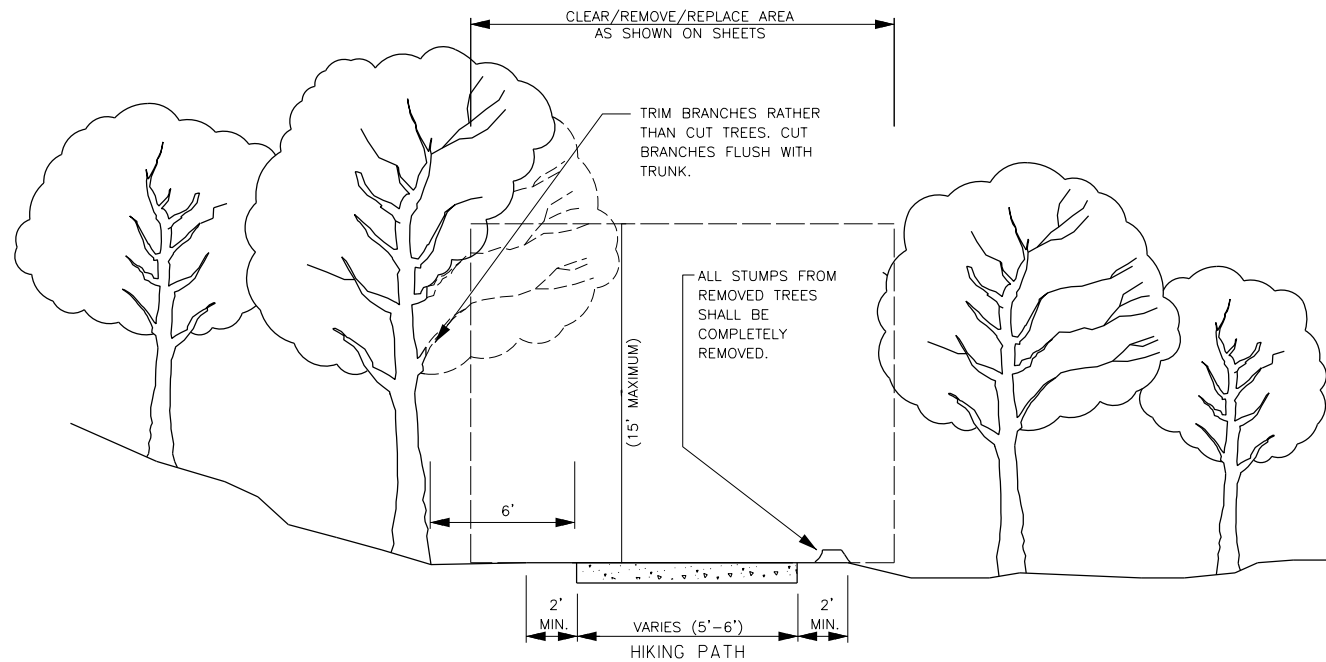
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Checked by: NS5
Sheet Title:

EROS CONTROL
DETAILS

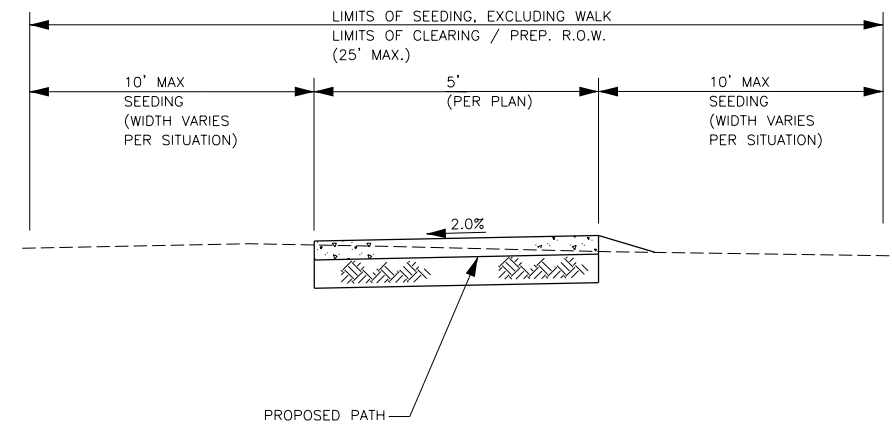


NOTES:

1. IT IS THE INTENT OF THE CITY OF JOHNSON CITY TO MINIMIZE TREE LOSS AS A RESULT OF HIKING TRAIL CONSTRUCTION. ALL VEGETATION WITHIN LIMITED CLEARING AREA FOR TRAIL WILL NOT BE REMOVED OR DAMAGED UNLESS TREE TRIMMING OR GRADING IS REQUIRED. ONLY TREES DIRECTLY CONFLICTING W/CONSTRUCTION WILL BE REMOVED, AND ONLY AT THE DIRECTION OF THE CONSTRUCTION ENGINEER.
2. CONTRACTOR WILL ENTER WOODED CONSTRUCTION AREA FROM DESIGNATED ACCESS POINTS AS APPROVED BY THE CONSTRUCTION ENGINEER.
3. CONTRACTOR SHOULD LIMIT CONSTRUCTION EQUIPMENT TO WORKING/CLEARING AREA ONLY TO PREVENT DAMAGE TO REMAINING TREES.
4. THE CONTRACTOR WILL CONSTRUCT TEMPORARY BARRICADES ALONG WORKING AREA TO PROTECT EXISTING VEGETATION, AS REQUIRED BY THE CONSTRUCTION ENGINEER.

HIKING PATH TYPICAL CONSTRUCTION LIMITS

N.T.S.



NOTE: CONTRACTOR TO SEED EACH SIDE AS SHOWN EXCEPT WHEN IMPROVEMENTS ARE ON BACK OF CURB OR UP AGAINST AN ADJACENT PROPERTY OWNER.

LIMITS OF SEEDING

N.T.S.

**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**
BRUSHY CREEK MUD
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ROUND ROCK, TX 78681

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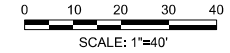
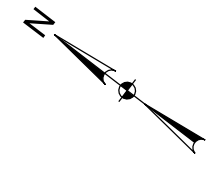
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**EROS CONTROL
DETAILS**

Sheet Number

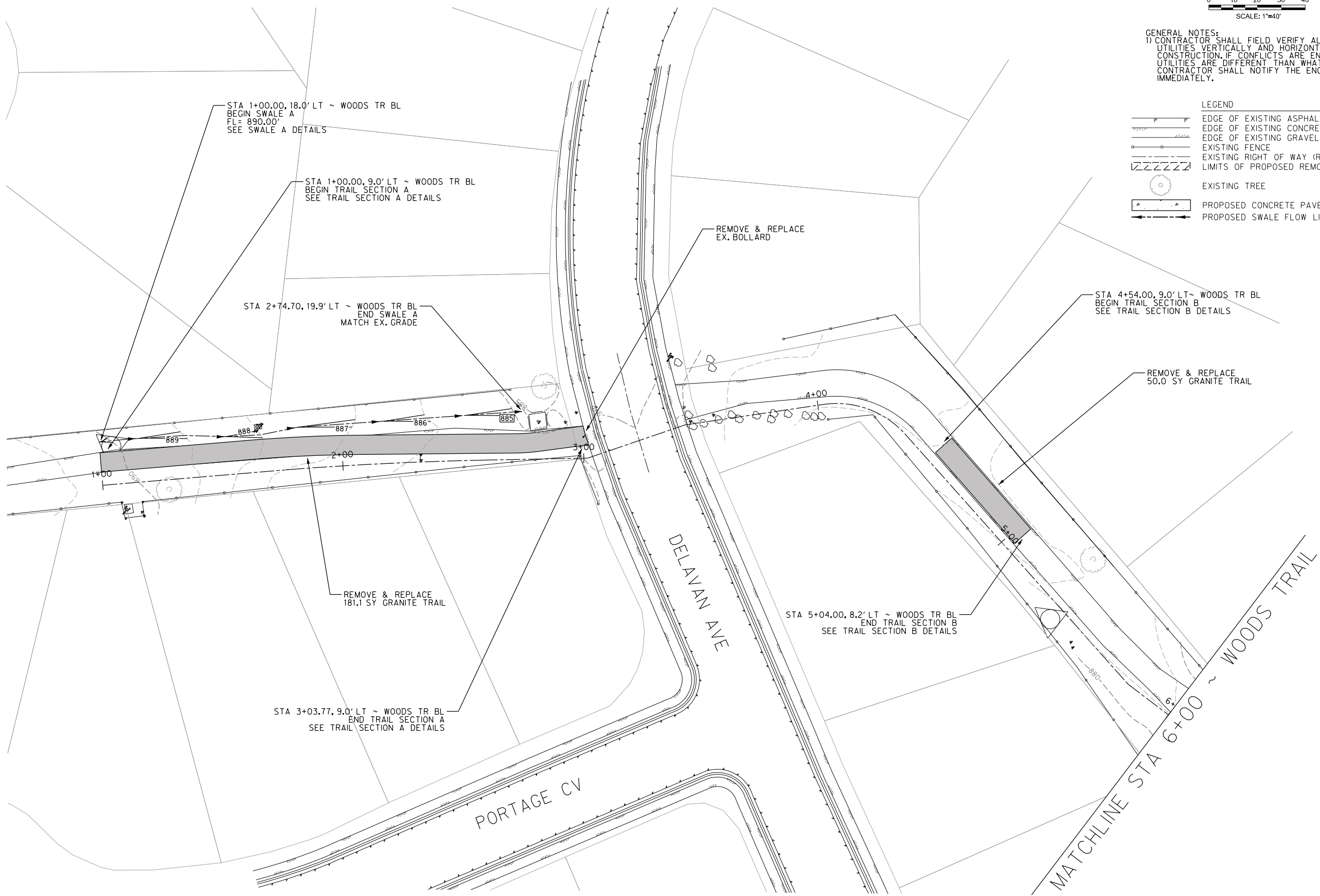
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GENERAL NOTES:
 1) CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. IF CONFLICTS ARE ENCOUNTERED OR UTILITIES ARE DIFFERENT THAN WHAT IS SHOWN, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

- LEGEND**
- EDGE OF EXISTING ASPHALT
 - EDGE OF EXISTING CONCRETE
 - EDGE OF EXISTING GRAVEL
 - EXISTING FENCE
 - EXISTING RIGHT OF WAY (ROW)
 - LIMITS OF PROPOSED REMOVAL
 - EXISTING TREE
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED SWALE FLOW LINE



STA 1+00.00, 18.0' LT ~ WOODS TR BL
 BEGIN SWALE A
 FL= 890.00'
 SEE SWALE A DETAILS

STA 1+00.00, 9.0' LT ~ WOODS TR BL
 BEGIN TRAIL SECTION A
 SEE TRAIL SECTION A DETAILS

STA 2+74.70, 19.9' LT ~ WOODS TR BL
 END SWALE A
 MATCH EX. GRADE

REMOVE & REPLACE
 EX. BOLLARD

STA 4+54.00, 9.0' LT ~ WOODS TR BL
 BEGIN TRAIL SECTION B
 SEE TRAIL SECTION B DETAILS

REMOVE & REPLACE
 50.0 SY GRANITE TRAIL

REMOVE & REPLACE
 181.1 SY GRANITE TRAIL

STA 3+03.77, 9.0' LT ~ WOODS TR BL
 END TRAIL SECTION A
 SEE TRAIL SECTION A DETAILS

STA 5+04.00, 8.2' LT ~ WOODS TR BL
 END TRAIL SECTION B
 SEE TRAIL SECTION B DETAILS

**WOODS OF BRUSHY CREEK
 TRAIL & DRAINAGE
 IMPROVEMENTS**
 BRUSHY CREEK MUD
 16318 GREAT OAKS DR.
 ROUND ROCK, TX 78681

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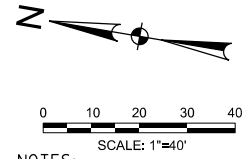
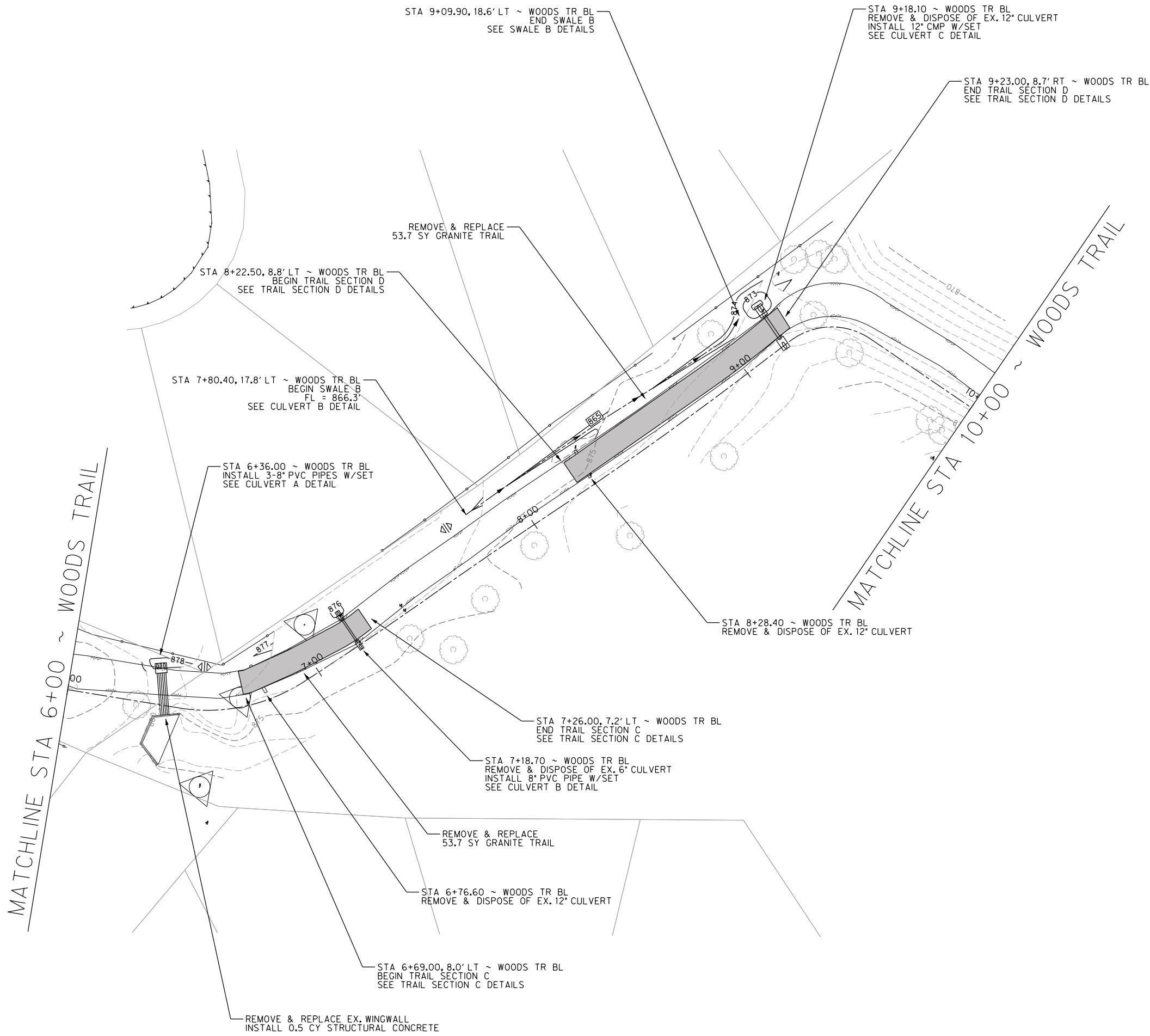
Project No: AV0 #30426

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 Sheet Title: **DRAINAGE & TRAIL**
 FROM STA 1+00 TO STA 6+00

20
 Sheet Number



GENERAL NOTES:
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LEGEND

	EDGE OF EXISTING ASPHALT
	EDGE OF EXISTING CONCRETE
	EDGE OF EXISTING GRAVEL
	EXISTING FENCE
	EXISTING RIGHT OF WAY (ROW)
	LIMITS OF PROPOSED REMOVAL
	EXISTING TREE
	PROPOSED CONCRETE PAVEMENT
	PROPOSED SWALE FLOW LINE

WOODS OF BRUSHY CREEK TRAIL & DRAINAGE IMPROVEMENTS
 BRUSHY CREEK MUD
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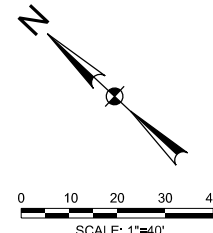


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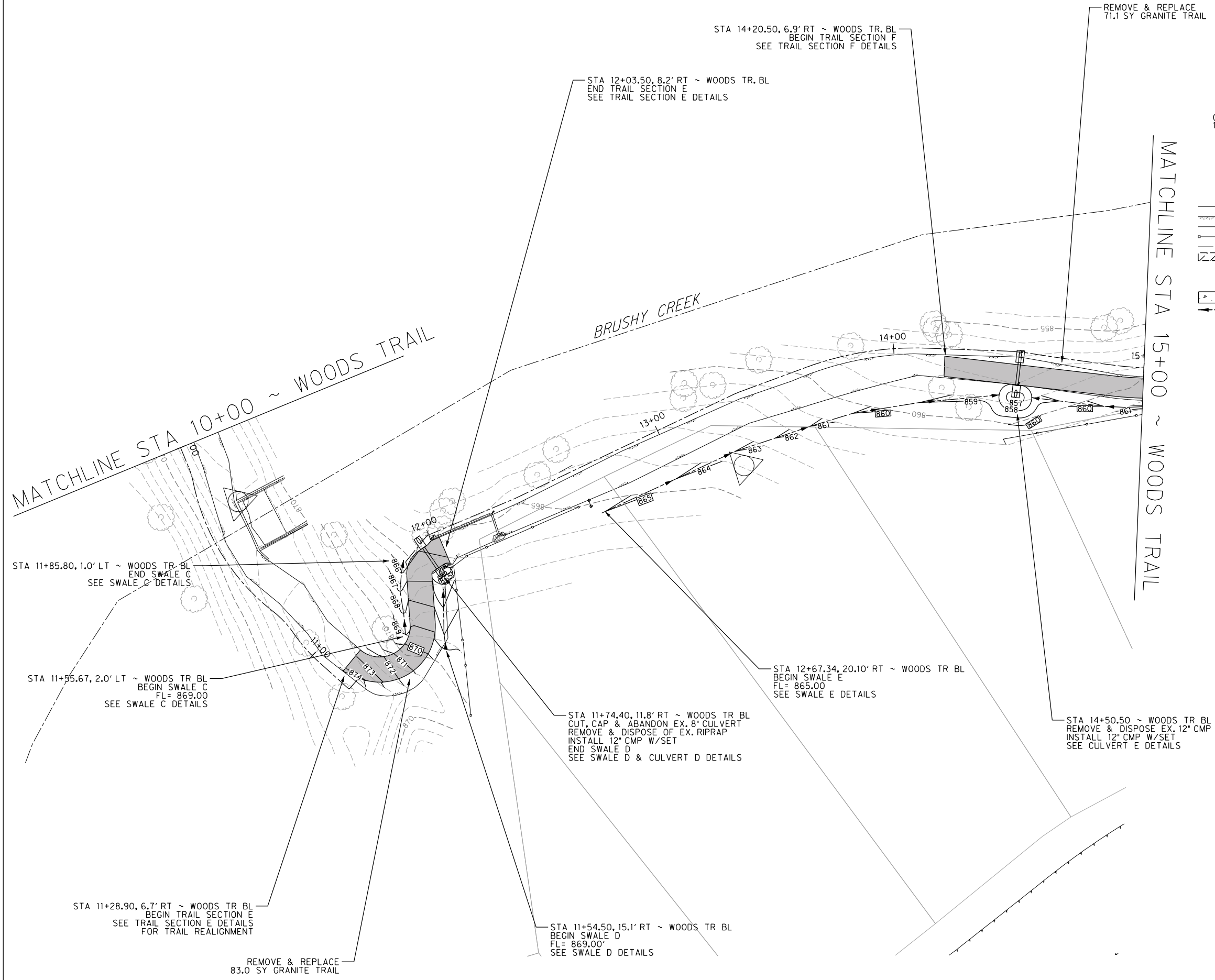
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 Sheet Title: **DRAINAGE & TRAIL**
 FROM STA 6+00 TO 10+00
 Sheet Number: 21

**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**
BRUSHY CREEK MUD
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ROUND ROCK, TX 78681



GENERAL NOTES:
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- LEGEND**
- EDGE OF EXISTING ASPHALT
 - EDGE OF EXISTING CONCRETE
 - EDGE OF EXISTING GRAVEL
 - EXISTING FENCE
 - EXISTING RIGHT OF WAY (ROW)
 - LIMITS OF PROPOSED REMOVAL
 - EXISTING TREE
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED SWALE FLOW LINE



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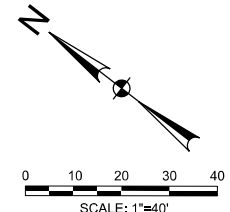
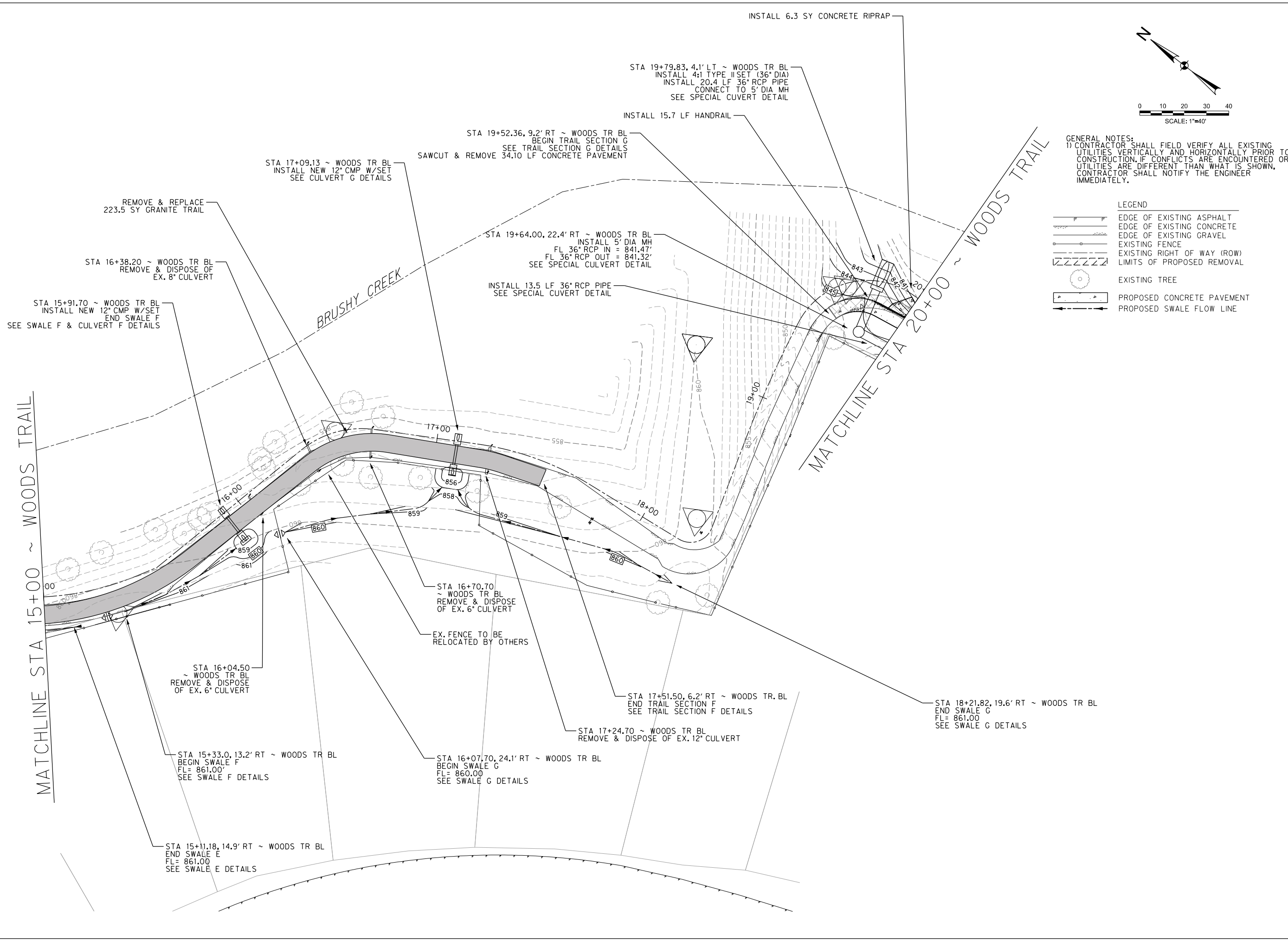
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DRAINAGE & TRAIL
FROM STA 10+00 TO STA 15+00
22
Sheet Number



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WOODS OF BRUSHY CREEK TRAIL & DRAINAGE IMPROVEMENTS
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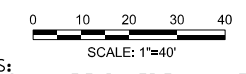
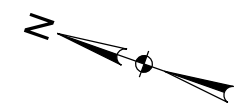
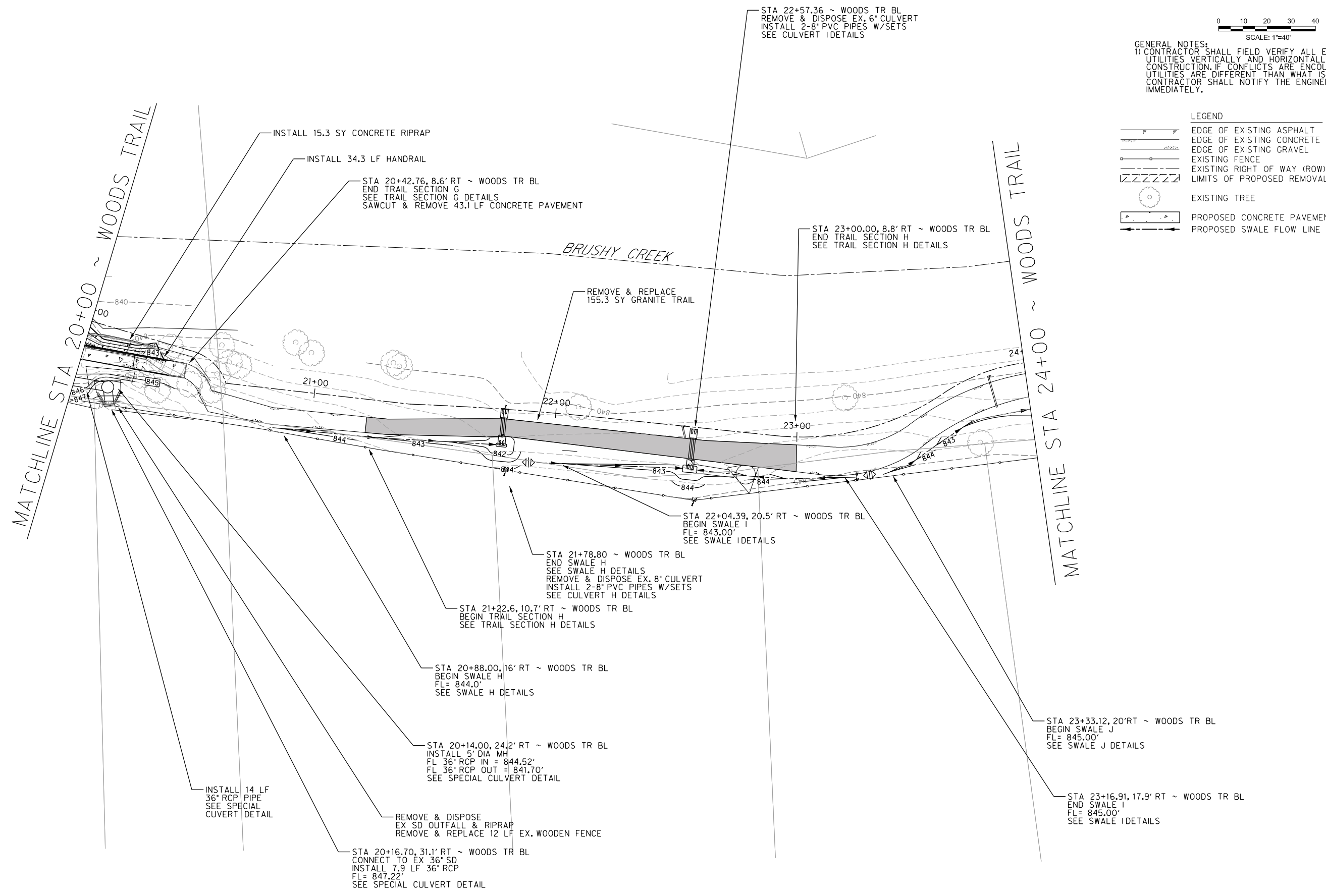
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 Sheet Title: **DRAINAGE & TRAIL**
 FROM STA 15+00 TO 20+00

23

Sheet Number



GENERAL NOTES:
 1) CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES VERTICALLY AND HORIZONTALLY PRIOR TO CONSTRUCTION. IF CONFLICTS ARE ENCOUNTERED OR UTILITIES ARE DIFFERENT THAN WHAT IS SHOWN, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

- LEGEND
- EDGE OF EXISTING ASPHALT
 - EDGE OF EXISTING CONCRETE
 - EDGE OF EXISTING GRAVEL
 - EXISTING FENCE
 - EXISTING RIGHT OF WAY (ROW)
 - LIMITS OF PROPOSED REMOVAL
 - EXISTING TREE
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED SWALE FLOW LINE

**WOODS OF BRUSHY CREEK
 TRAIL & DRAINAGE
 IMPROVEMENTS**
 BRUSHY CREEK MUD
 16318 GREAT OAKS DR.
 ROUND ROCK, TX 78681

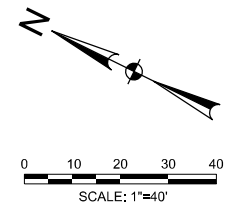
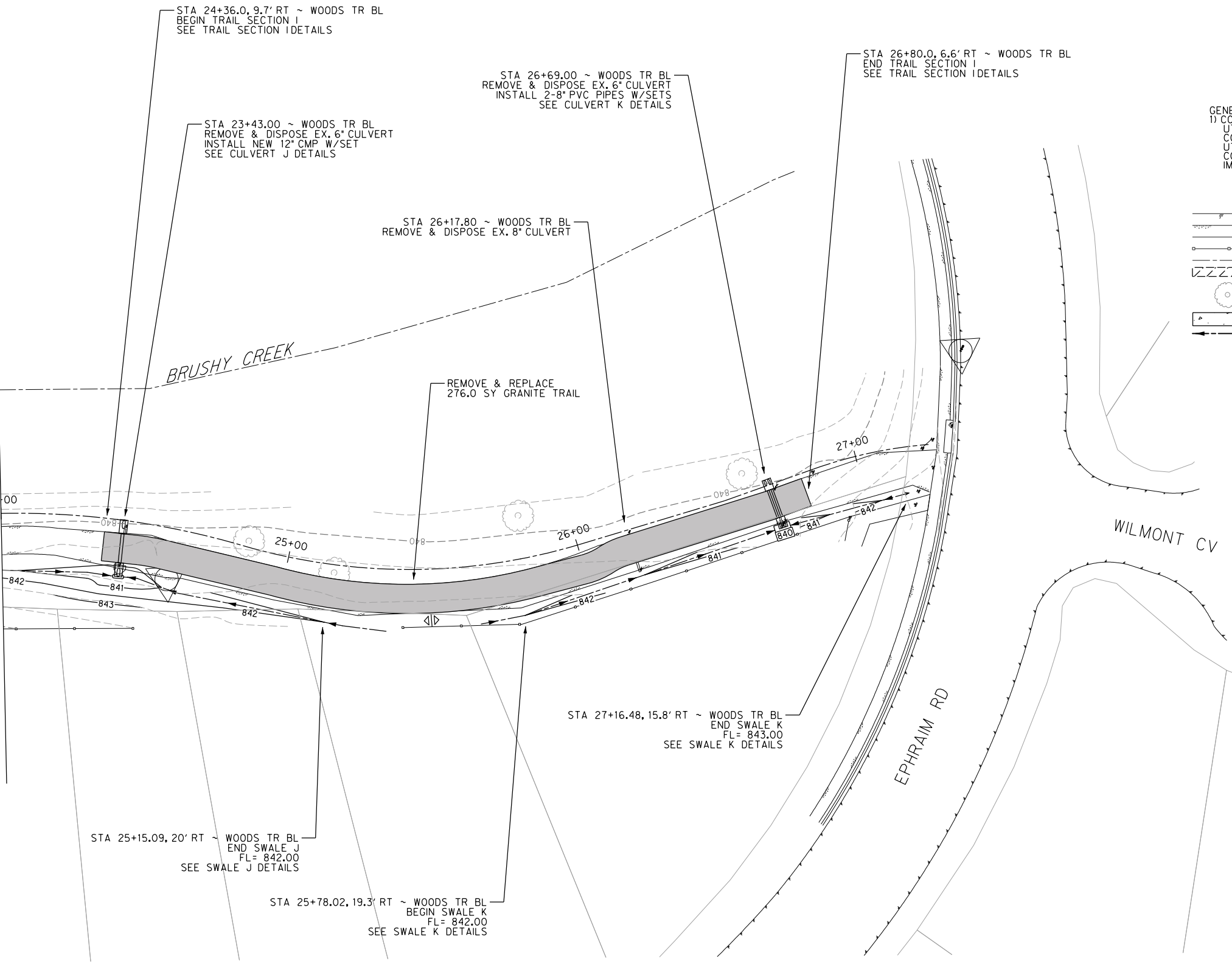
HALFF ASSOCIATES, INC.
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 Noah S. Staffor 107722 11/14/14
 Type or Print Name PE Date

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 GEORGETOWN, TEXAS 78626-7574
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Project No: AV0 30426		
Issues:		
11/19/2014		
Revisions:		
No.	Date	Description
Drawn by: JH		
Checked by: NS5		
Sheet Title		
DRAINAGE & TRAIL		
FROM STA 20+00 TO STA 24+00		
24		
Sheet Number		

MATCHLINE STA 24+00 ~ WOODS TRAIL



GENERAL NOTES:
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**WOODS OF BRUSHY CREEK
TRAIL & DRAINAGE
IMPROVEMENTS**

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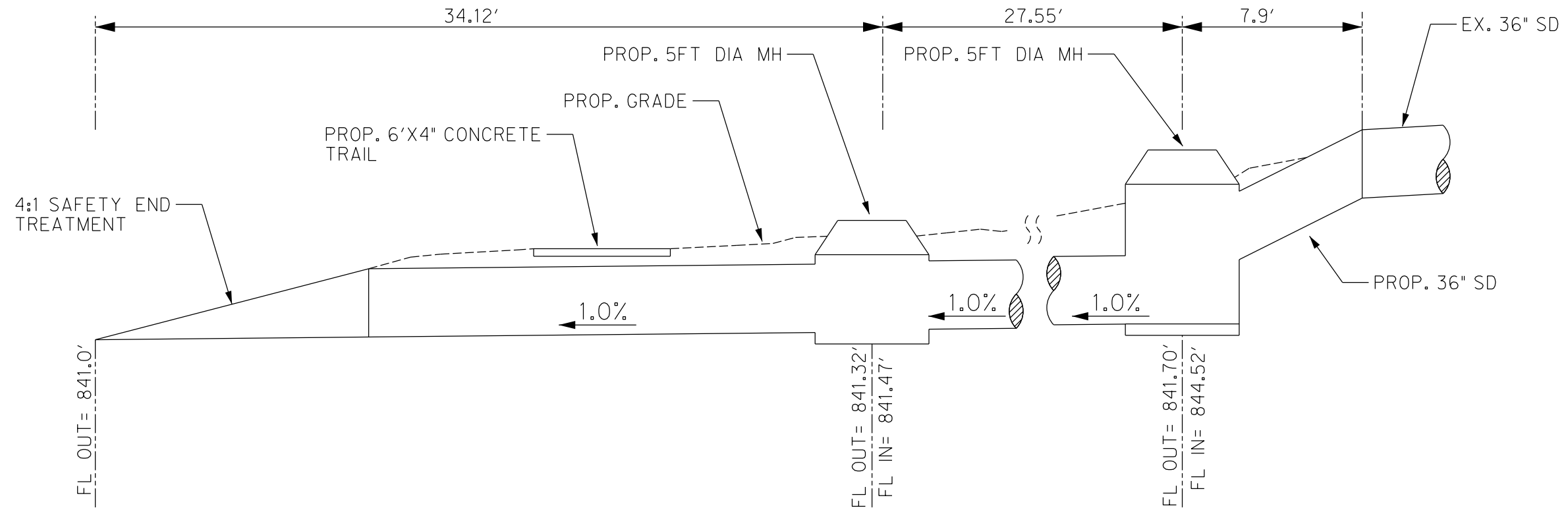
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Drawn by: JH
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Sheet Title: **DRAINAGE & TRAIL**
FROM STA 24+00 TO STA 27+25

25
Sheet Number



SPECIAL CULVERT DETAIL
 BL STA 19+64.00 TO STA 20+16.62 N.T.S.

**WOODS OF BRUSHY CREEK
 TRAIL & DRAINAGE
 IMPROVEMENTS**
 BRUSHY CREEK MUD
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**DRAINAGE
 DETAILS**
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26

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DRAINAGE		
DETAILS		
27		
Sheet Number		

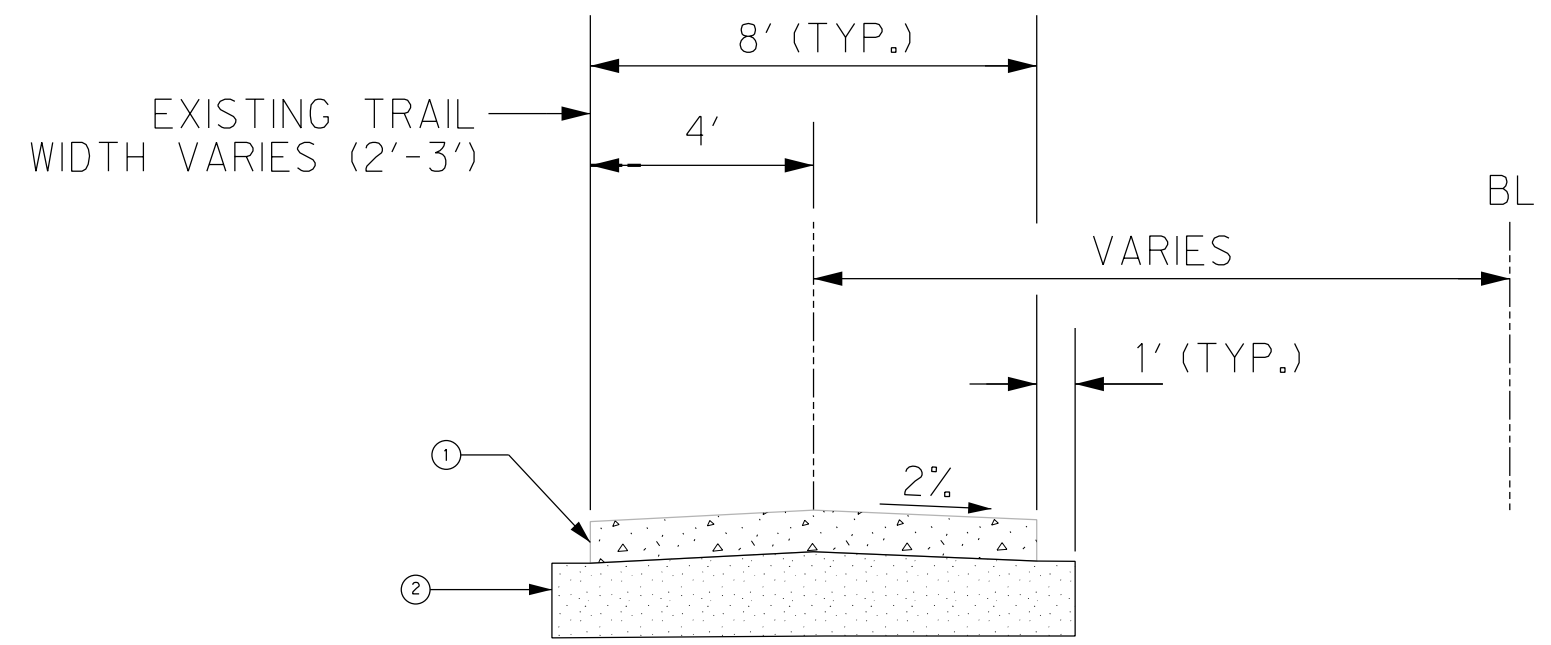
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LEGEND

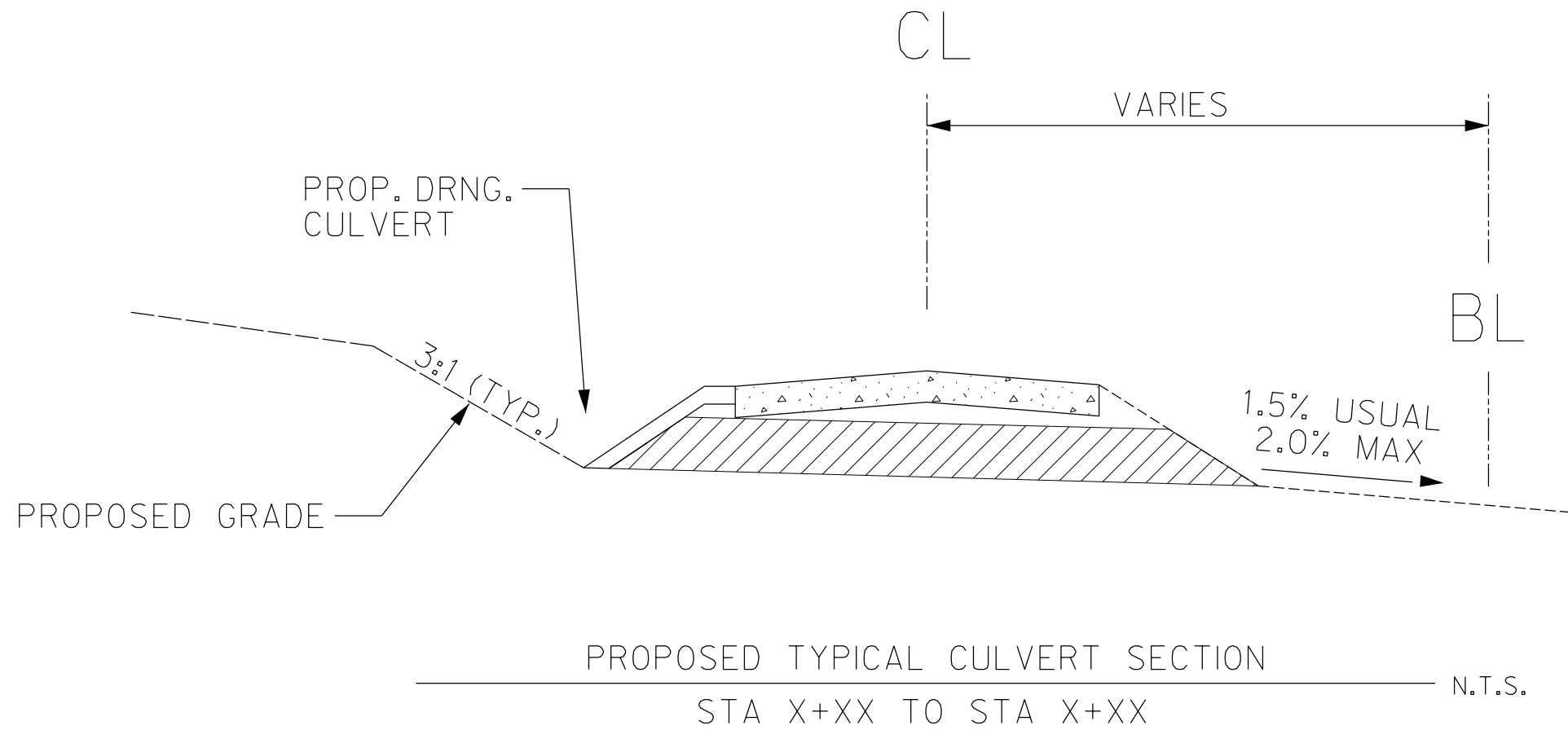
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- PAVEMENT SECTION**
- ① 5" COMPACTED CRUSHED GRANITE
 - ② 8" PROOF ROLLED AND COMPACTED SUBGRADE

- NOTES:**
1. THE TRAIL SECTION REFERENCES THE CITY OF AUSTIN (COA) STANDARD SPECIFICATION NO. 1301S.
 2. CONTRACTOR SHALL ENSURE NO PONDING OCCURS ON THE PATH.
 3. ALL SUBGRADE SHALL BE EXCAVATED AND SHAPED IN CONFORMITY WITH THE TYPICAL SECTIONS SHOWN ON THE DRAWINGS.
 4. THE SUBGRADE SHALL BE TESTED BY "PROOF ROLLING" AND SHALL CONFORM COA STANDARD SPECIFICATION ITEM NO. 236S.
 5. FIELD DENSITY DETERMINATIONS SHALL BE MADE IN ACCORDANCE WITH TXDOT TEST METHOD TEX-115-E.
 6. THE SURFACE LAYER SHALL BE SPRINKLED AS REQUIRED TO BRING THE MATERIAL TO OPTIMUM MOISTURE CONTENT, THEN COMPACTED IN ACCORDANCE WITH COA STANDARD SPECIFICATION ITEM NO. 210S, "FLEXIBLE BASE" TO THE EXTENT NECESSARY TO PROVIDE NOT LESS THAN 92% OF THE OPTIMUM DENSITY. IN NO CASE SHALL THE MATERIAL BE WORKED AT MORE THAN 2% ABOVE OR BELOW OPTIMUM MOISTURE.



PROPOSED TYPICAL TRAILWAY CROSS SECTION
STA X+XX TO STA X+XX N.T.S.



WOODS OF BRUSHY CREEK
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DRAINAGE
DETAILS

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Sheet Number

