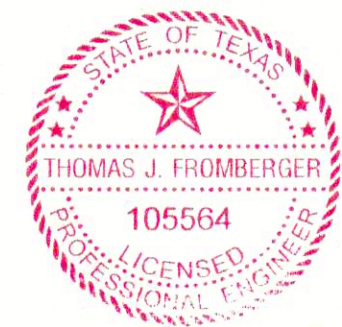


TOM GREEN COUNTY CHRISTOVAL, TEXAS

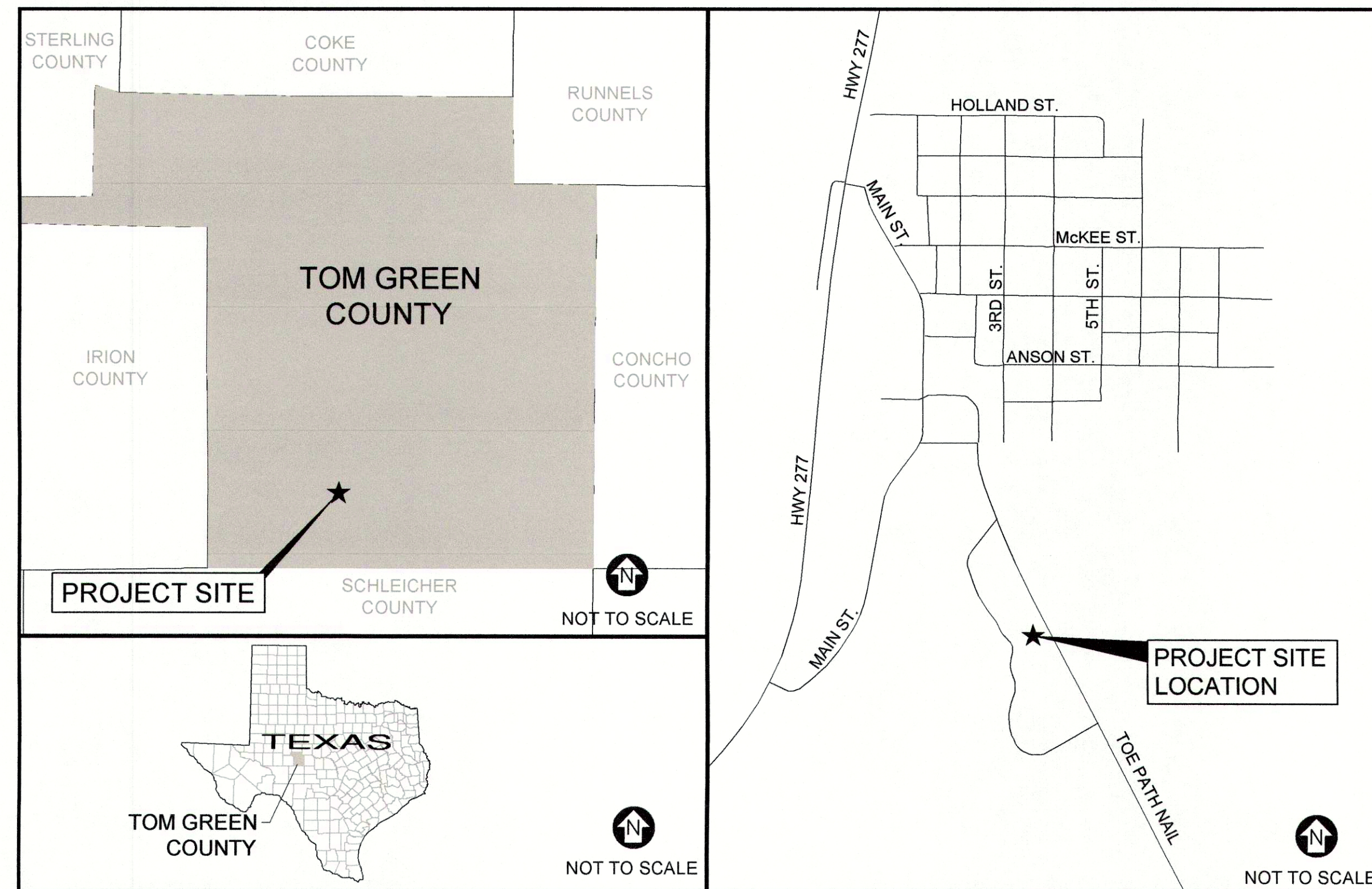
PUGH PARK TRAIL IMPROVEMENTS

AUGUST 2019



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Thomas J. Fromberger
 8/28/19



SITE LOCATION MAP

31° 11' 02.42" N 100° 29' 43.01" W

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GENERAL NOTES:

- 1. ALL IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE MOST RECENT STANDARDS AND SPECIFICATIONS OF THE CITY OF SAN ANGELO.
2. THE CONTRACTOR SHALL PROVIDE SURVEY STAKEOUT FOR THE PROPOSED IMPROVEMENTS.
3. THE CONTRACTOR SHALL PROVIDE PUMPS, WELL POINTS OR OTHER METHODS OF DEWATERING EXCAVATIONS SO FIRM BEDDING AND FOUNDATION CONDITIONS CAN BE MAINTAINED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TESTING SERVICES FOR MATERIALS, BACKFILL COMPACTION, AND DISINFECTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING SHRUBS AND TREES. ANY SHRUBS OR TREES THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR AS NOTED ON PLANS.
6. UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL BEAR THE RESPONSIBILITY OF VERIFYING UTILITY LOCATION AND SIZES. THE CONTRACTOR SHALL CALL TEXAS 811 PRIOR TO COMMENCING WORK TO HAVE UTILITIES STAKED IN THE FIELD.
7. THE CONTRACTOR SHALL PERFORM THE WORK IN SUCH A MANNER THAT THE SAFETY OF THE WORKERS IS REASONABLY ASSURED. THIS SHALL INCLUDE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
8. THE CONTRACTOR SHALL SUPPORT GAS MAINS AND SERVICES EXPOSED BY THEIR EXCAVATION. SUPPORT SYSTEMS SHALL BE AS RECOMMENDED BY THE RESPECTIVE UTILITY OWNERS.
9. THE CONTRACTOR SHALL REQUEST TEMPORARY POLE SUPPORT SERVICES PROVIDED BY THE UTILITY OWNERS AT ANY POLE THAT MAY BE UNDERCUT BY TRENCH OPERATIONS. THE CONTRACTOR SHALL PROVIDE THE UTILITY COMPANY(S) WITH A MINIMUM OF THREE (3) WORKING DAYS NOTICE OF THE NEED FOR POLE SUPPORT.
10. PAVEMENT MARKINGS, TRAFFIC SIGNALS AND/OR SIGNS THAT HAVE BEEN DISTURBED BY THE CONSTRUCTION OPERATIONS SHALL BE RESTORED IN A MANNER CONFORMING TO TXDOT SPECIFICATIONS.
11. EROSION CONTROL MEASURES TO BE ESTABLISHED AND MAINTAINED BY THE CONTRACTOR AT LOCATIONS DETERMINED BY THE OWNER OR ENGINEER.
12. ALL PAVEMENT CUTS SHALL BE MADE BY A PAVEMENT SAW TO NEAREST JOINT. SAW CUTS SHALL BE PERPENDICULAR TO THE LENGTH OF DRIVEWAY. SAW CUTTING SHALL BE REQUIRED PRIOR TO ALL WATER WORK.
13. CONTRACTOR WILL PROTECT AND MAINTAIN AT ALL TIMES DRAINAGE SWALES, PIPES, TILES, ETC., PROTECT AND MAINTAIN AT ALL TIMES ALL SEPTIC SYSTEMS/LEACH FIELDS. ALSO PROTECT AND PRESERVE ALL PROPERTY CORNERS, MONUMENTS, MARKERS, ETC., ANY GUIDE RAILING DAMAGED OR DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED IN KIND.
14. COMPACTED STONE SHALL BE 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE THE MODIFIED PROCTOR TEST (ASTM D1557).
15. CONTRACTOR SHALL COMPLETE FINAL GRADING OR STABILIZATION, TOPSOILING AND SEEDING WITHIN TWO (2) WEEKS OF WATER MAIN INSTALLATION. AT NO TIME SHALL THE INSTALLATION PROCESS BE GREATER THAN 5000' AHEAD OF THE FINAL RESTORATION. ALL DISTURBED AREAS WITHIN THE STATE OR COUNTY ROW SHALL BE TOPSOILED, SEEDED AND MULCHED PRIOR TO CLOSE OF BUSINESS EVERY FRIDAY. IN CASE OF INCLEMENT WEATHER, THE AREA SHALL BE RESTORED BEFORE ANY FURTHER EXCAVATION TAKES PLACE ON THE NEXT BUSINESS DAY.
16. CONTRACTOR SHALL SAFEGUARD AND PRESERVE ALL RIGHT-OF-WAY MONUMENTS AND PROPERTY CORNERS ALONG THE PROJECT ROUTE. ALL PROPERTY CORNERS THAT ARE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION ARE TO BE REPLACED AND CERTIFIED BY A TEXAS LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND ANY EXISTING UTILITIES. COSTS OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTORS ENTIRE EXPENSE.
18. ANY TREE CLEARING SHALL BE CONSIDERED INCIDENTAL TO PROJECT INCLUDE IN CONTRACTOR'S BID PRICE.

EROSION CONTROL NOTES

- 1. ALL SWALES AND SEDIMENTATION TRAPS MUST BE CLEANED AND MAINTAINED AT ALL TIMES BY CONTRACTOR TO ALLOW ADEQUATE DRAINAGE.
2. CONTRACTOR MUST PROTECT AT ALL TIMES ADJACENT PROPERTIES AND ROADWAYS FROM SEDIMENTATION, EROSION, RUNOFF, DEBRIS AND/OR ANY OTHER EFFECTS FROM THE SITE CONSTRUCTION.
3. UPON INSTALLATION OF DRAINAGE CULVERTS CONTRACTOR MUST MAINTAIN AND PERIODICALLY FLUSH THOSE CULVERTS TO ALLOW DRAINAGE FLOWS.
4. CONTRACTOR(S) MUST TAKE ALL PRECAUTIONS AS NECESSARY AND/OR AS ORDERED BY ENGINEER FOR DUST CONTROL AND FLYING DEBRIS PROTECTION. (i.e. WATER, FENCE, MATTING, COVERS, ETC.)
5. DURING CONSTRUCTION, BEFORE SUFFICIENT SEEDING COVER IS ESTABLISHED ON STEEPER SLOPES, CONTRACTOR MAY BE REQUIRED TO PLACE MATTING, BLANKETS, OR OTHER MEASURES TO PROTECT SLOPES AGAINST EROSION AS NECESSARY AND/OR AS ORDERED BY THE ENGINEER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR FULL COMPLIANCE WITH THE LOCAL STORMWATER REQUIREMENTS.
7. ALL EROSION CONTROL MEASURES WITHIN TEXAS HIGHWAY BOUNDARY SHALL CONFORM TO TXDOT STANDARD SPECIFICATION.
8. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY CHECKED, CLEANED AND REPAIRED, PARTICULARLY AFTER STORM EVENTS.
9. SILT FENCE SHALL BE ERRECTED AT THE LIMITS OF ALL DISTURBED AREAS WHERE, IN THE JUDGEMENT OF THE ENGINEER, THERE IS THE POTENTIAL FOR FILTRATION OF STREAMS, STORM SEWERS, WETLANDS OR NEIGHBORING PROPERTIES, REGARDLESS OF WHETHER THE SILT FENCE IS INDICATED ON THE DRAWINGS.

CONSTRUCTION SEQUENCE:

- 1. INSTALL ALL EROSION CONTROL DEVICES AS NECESSARY, PRIOR TO EARTHWORK CONSTRUCTION. BASED ON FIELD PERFORMANCE AND WEATHER CONDITIONS, ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED. DISTURBANCE TO THE SITE TO BE LIMITED.
2. CONTRACTOR SHALL RESTRICT GRADING OPERATIONS TO THE AREAS INDICATED ON THE CONTRACT DRAWINGS, PERFORMING WORK OUTSIDE THE IDENTIFIED LIMITS SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
3. PROTECT EXISTING VEGETATION AND OTHER ENVIRONMENTAL FEATURES TO BE PRESERVED WITH CONSTRUCTION BARRIERS.
4. CONSTRUCTION OF TRAIL & UNDERGROUND UTILITIES MAY BEGIN AT THIS TIME. A MAXIMUM OF 5 ACRES OF DISTURBED SOIL IS PERMITTED AT ANY ONE TIME PRIOR TO STABILIZATION.
5. RESTORE EROSION CONTROL MEASURES AS NEEDED FOLLOWING THE UTILITY INSTALLATION. CONTINUE TO MAINTAIN AND REPAIR TEMPORARY EROSION CONTROL DEVICES THROUGHOUT CONSTRUCTION AS NEEDED.
6. COMPLETE FINAL GRADING OF SITE. AREAS TO REMAIN UNDISTURBED FOR GREATER THAN 14 DAYS WILL BE SEEDED/MULCHED. REAPPLY TOPSOIL, INSTALL PERMANENT SEEDING, FERTILIZER AND MULCH.
7. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR.
8. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL AN APPROVED PERMANENT COVER OF VEGETATION IS ESTABLISHED. REMOVAL OF DEVICES TO BE COORDINATED WITH THE OWNER, LOCAL MUNICIPALITY OR REPRESENTATIVE THEREOF.

WATER NOTES:

- 1. MATERIALS
ALL WATER MAIN MATERIALS SHALL BE ANSI/NSF-61.
POLYVINYL CHLORIDE (PVC) PIPE MUST BE WITH INTEGRAL BELL AND SPIGOT JOINTS; CLASS 200, DR 18; CONFORMING WITH THE LATEST REVISION OF NSI/AWWA C900 (FOR 4"-12" PIPES) OR C905 (FOR LARGER PIPE) STANDARD. INSTALLATION TO INCLUDE TRACER TAPE AS PER MANUFACTURER'S INSTRUCTIONS.
HIGH DENSITY POLYETHYLENE (HDPE) WATER DISTRIBUTION AND SERVICE PIPING DR-17 SHALL CONFORM TO ANSI/AWWA C 901-2005, POLYETHYLENE PRESSURE PIPE AND TUBING SIZES IPS .5" THROUGH 3" AND ANSI/AWWA C 900-2006 POLYTHENE PIPE AND FITTINGS, SIZES DIPS 4" THROUGH 63". NOTE: ALL DIRECTIONALLY DRILLED CROSSING SHALL BE DR-11.
DUCTILE IRON (DI) PIPE CONFORMING TO REQUIREMENTS OF ANSI/AWWA C151/A21.51; PUSH-ON JOINTS IN ACCORDANCE WITH ANSI/AWWA C111/A21.11, CEMENT LINED IN ACCORDANCE WITH ANSI/AWWA C104/A21.4, PRESSURE CLASS 350.
2. DEPTH - WATER PIPING MUST HAVE A MINIMUM OF 2.5 OF COVER FROM FINISHED GRADE IN ALL NON-TRAFFIC AREAS AND UNDER THE LOCAL / CITY ROADS. UNDER ALL COUNTY AND STATE ROADS THE WATER PIPING MUST HAVE A MINIMUM OF 4 FEET OF COVER FROM THE CENTERLINE OF THE ROAD.
3. CROSSINGS - ADEQUATE SEPARATION BETWEEN WATER MAINS AND STORM OR SANITARY SEWERS MUST BE PROVIDED AS REQUIRED BY 30 TAC 230.44(a). MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAINS AND STORM OR SANITARY SEWERS TO BE 9 FEET, MEASURED FROM THE OUTSIDE OF THE PIPES. SEE TCEQ WATER DISTRIBUTION SYSTEM NOTE 13.
4. HYDRANTS - HYDRANT TYPE SHALL BE AS NOTED ON THE PLANS OR AS REQUIRED BY THE APPLICANT. GUARD VALVES SHALL BE USED AND ALL HYDRANT STUBPIPING SHALL BE MECHANICAL JOINT. SHOULD EVIDENCE OF GROUND WATER BE ENCOUNTERED WITHIN SEVEN (7) FEET OF THE FINISHED GRADE, HYDRANT WEEP HOLES (DRAINS) SHALL BE PLUGGED USING MECHANICAL METAL PLUGS. ALL HYDRANTS WITH PLUGGED WEEP HOLES SHALL BE APPROPRIATELY TAGGED.
5. THRUST BLOCKS - ALL TEES, STUBS, BENDS AND OTHER FITTINGS, OR OTHER AREAS AS ORDERED BY ENGINEER, SHALL BE BACKED WITH MINIMUM 3000 PSI CONCRETE THRUST BLOCKS AS INDICATED ON THIS SHEET. MECHANICAL RESTRAINTS MAY BE USED IN LIEU OF THRUST BLOCKS WITH THE APPROVAL OF THE ENGINEER.
6. FLUSHING/PRESSURE AND LEAKAGE TESTING - WATER PIPING SHALL BE FLUSHED AND TESTED IN CONFORMANCE WITH THE LATEST REVISION OF ASTM F 2164.
7. DISINFECTION - THE PROPOSED WORKS MUST FOLLOW ANSI/AWWA C651-LATEST EDITION STANDARD, TABLET METHOD NOT ACCEPTED, FOLLOWING FLUSHING AND TESTING, THE ENGINEER SHALL OVERSEE COLLECTION OF AN APPROPRIATE NUMBER OF BACTERIOLOGICAL SAMPLES FOR TOTAL AND FECAL COLIFORM AND FOR STANDARD BACTERIAL PLATE COUNT AFTER THE FIELD FREE CHLORINE RESIDUAL IS LESS THAN 1.5 PPM AND THE SAMPLING POINTS HAVE BEEN DECONTAMINATED. PRIOR TO SAMPLING, THE ENGINEER SHALL COORDINATE THE APPROPRIATE NUMBER AND LOCATION OF SAMPLES TO BE COLLECTED WITH TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (TCEQ). SEE TCEQ WATER DISTRIBUTION SYSTEM NOTES 17 AND 18.
8. PLACING INTO OPERATION - THE COMPLETED WORKS SHALL NOT BE PLACED INTO SERVICE UNTIL AN APPROVAL OF COMPLETED WORKS FORM IS ISSUED BY TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (TCEQ). PRIOR TO ISSUANCE, A TEXAS LICENSED PROFESSIONAL ENGINEER MUST SUBMIT CERTIFICATION THAT, THEY OR THEIR DESIGNATED REPRESENTATIVE WITNESSED THAT CONSTRUCTION WAS IN CONFORMANCE WITH THE PLANS AS APPROVED, FLUSHING, TESTING, AND DISINFECTION PROCEDURES NOTED HEREIN HAD BEEN PROPERLY PERFORMED; AND, MICROBIOLOGICAL SAMPLE RESULTS FROM THE COMPLETED WORKS WERE ACCEPTABLE. COPIES OF THE OFFICAL LABORATORY RESULTS ARE TO BE INCLUDED WITH THE CERTIFICATION.
9. EROSION - ADEQUATE CONTROL MEASURES SHALL BE EMPLOYED DURING ALL PHASES OF CONSTRUCTION IN ACCORDANCE WITH ALL APPROPRIATE STANDARDS AND REQUIREMENTS. BEST MANAGEMENT PRACTICES ARE TO BE FOLLOWED.
10. FILL AREAS - WHERE PIPING IS TO BE PLACED WITHIN FILL AREAS, THE FILL SHALL BE PLACED AND COMPACTED TO AT LEAST 95% MODIFIED PROCTOR PRIOR TO TRENCH EXCAVATION.
11. SERVICE INTERRUPTION - SHUTDOWN OF EXISTING WATER MAINS SHALL BE IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT. THE WATER DEPARTMENT MUST BE NOTIFIED IN ADVANCE OF ALL PROPOSED SHUTDOWNS IN ACCORDANCE WITH THEIR DIRECTION. WATER MUST BE TURNED BACK ON AS SOON AS POSSIBLE. ALL ENDS OF WATER MAINS MUST BE PROVIDED WITH ADEQUATE PLUG, BLOCK, AND BLOW-OFF AS INDICATED ON THE PLANS, AS PER DETAILS HEREIN.

TRAFFIC CONTROL NOTES

- 1. ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, WARNING SIGNS, AND FLAGMAN OPERATIONS SHALL BE FURNISHED, PLACED, CONSTRUCTED, EXECUTED, AND MAINTAINED IN THE APPROPRIATE TYPES AND SIZES IN ACCORDANCE WITH THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD), TEXAS DEPARTMENT OF TRANSPORTATION, OR AS DIRECTED BY THE ENGINEER. IF A CONFLICT ARISES, THEN THE TEXAS DEPT. OF TRANSPORTATION MANUAL SHALL CONTROL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.
2. INSTALLATION OF CONSTRUCTION BARRICADING AND SIGNING SHALL BE COORDINATED THROUGH THE ENGINEER.
3. THE USE OF ADVANCE WARNING FLASHING ARROW PANELS IS REQUIRED FOR THE CLOSING OF TRAFFIC LANES EXCEPT WHERE SHOWN OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH ONE STAND-BY UNIT IN GOOD WORKING CONDITION AT THE JOBSITE, READY FOR IMMEDIATE USE.
4. ALL PORTABLE SIGNS REQUIRE THE USE OF SANDBAGS FOR WEIGHTING. THE USE OF SOLID OBJECTS SUCH AS CONCRETE, ROCKS, IRON, ETC., SHALL NOT BE PERMITTED.
5. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ANY TEMPORARY MARKINGS WITHOUT DAMAGING THE PAVEMENT SURFACE. GRINDING WILL NOT BE PERMITTED.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER A MINIMUM OF TWO (2) WORKING DAYS IN ADVANCE OF BLOCKING TRAFFIC LANES AND A MINIMUM OF SIX (6) WORKING DAYS IN ADVANCE OF SCHEDULED DETOURING OF TRAFFIC LANES.
7. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHO'S RIGHT-OF-WAYS ARE AFFECTED BY HIS WORK ZONE TRAFFIC CONTROLS. THE CONTRACTOR SHALL PROVIDE ZONE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY REQUIRE.
8. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE DUST-FREE LANE OF TRAFFIC AT ALL TIMES.
9. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES WHILE CROSSING EXISTING, INTERSECTING ROADWAYS UNLESS OTHERWISE NOTED ON THE PLANS AND APPROVED BY THE ENGINEER.
10. THERE SHALL BE A MINIMUM OF TEN (10) FEET CLEAR WIDTH FOR EACH LANE OF TRAFFIC IN CHANNELIZED AREAS, UNLESS NOTED OTHERWISE.
11. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES AT THE CONTRACTOR. IF ACCESS CAN NOT BE MAINTAINED, AT LEAST 24 HOUR WRITTEN NOTICE WILL BE GIVEN TO AFFECTED PROPERTY OWNERS AND APPROVAL IS REQUIRED FROM THE ENGINEER.
12. AREAS OF TRENCHES THAT WILL BE OPEN TO TRAFFIC AFTER WORKING HOURS SHALL HAVE THE TRENCHES BACKFILLED AND COLD-MIXED OR PLATED AND COLD-MIXED. AREAS OF OPEN TRENCH NOT UNDER TRAFFIC SHALL BE SAFETY FENCED.
13. THE TRAFFIC CONTROLS SHOWN ON THE DETAILS DETAIL SHEETS ARE TYPICAL. ADDITIONAL SIGNING AND/OR BARRICADING, AS WELL AS TEMPORARY MARKINGS AND OBLITERATION/RESTORATION OF EXISTING PAVEMENT MARKINGS, MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS. FIELD ADJUSTMENTS TO TRAFFIC CONTROLS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO TRAFFIC CONTROLS.
14. THE CONTRACTOR SHALL MAKE AN INSPECTION OF ALL TRAFFIC CONTROL DEVICES AT LEAST TWO TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE WORK DAY) INCLUDING NON-WORKING DAYS. THE CONTRACTOR SHALL ENSURE THAT ALL DEVICES ARE IN PROPER WORKING ORDER.
15. NIGHT TIME WORK IS NOT PERMITTED.
16. THE MAXIMUM SPACING BETWEEN CHANNELIZED DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL TO THE SPEED LIMIT IN MILES PER HOUR.
17. SIGN MOUNTING HEIGHTS SHALL BE ONE (1) FOOT MINIMUM ABOVE THE GROUND FOR DAYTIME OPERATIONS AND THREE (3) FEET MINIMUM ABOVE THE GROUND FOR NIGHTTIME OPERATIONS.
18. ALL DETOUR ROUTE SIGNS (M4-9 SERIES) HAVE STREET NAME PLAQUES.
19. ALL PERSONS WORKING WITHIN THE RIGHT-OF-WAY SHALL WEAR AN ORANGE COLORED SAFETY VEST. THE SAFETY VEST SHALL BE REFLECTORIZED WHILE WORKING AT NIGHT.
20. ALL FLAGGERS SHALL WEAR ORANGE COLORED SAFETY VEST AND SHALL HAVE EITHER AN ORANGE FLAG OR A SIGN PADDLE WHILE ON DUTY. FLAGGERS SHALL NOT PERFORM ANY WORK NOT RELATED TO FLAGGING WHILE ON DUTY.
21. FLAGGERS SHALL BE REQUIRED TO USE TWO-WAY RADIOS WHEN OUT OF CLEAR VIEW OF EACH OTHER.
22. CONTRACTOR SHALL NOTIFY PRINCIPALS OF EACH OF THE FOLLOWING ENTITIES OF THE CONSTRUCTION SCHEDULE AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROVIDE PERTINENT INFORMATION ABOUT LANE CLOSURES AND DETOURS AND ANY OTHER CONSTRUCTION RELATED ACTIVITY WHICH MAY INTERFERE WITH NORMAL SERVICES.
A.) FIRE DEPARTMENT
B.) POLICE DEPARTMENT
C.) EMERGENCY MEDICAL SERVICES (EMS)
23. EMERGENCY ACCESS SHALL ONLY BE MADE AVAILABLE DURING THE TIME OF THE EMERGENCY, AT WHICH TIME CONTRACTOR SHALL MAKE AVAILABLE A TEMPORARY LANE FOR EMERGENCY VEHICLES ONLY, EVEN IF THIS REQUIRES BACKFILLING OPEN TRENCHES. DURING THE NIGHT, A SINGLE TRAFFIC LANE SHALL BE MADE AVAILABLE TO HOMEOWNERS INCLUDING DRIVEWAY ACCESS.
24. CONTRACTOR WILL PROVIDE 12' WIDE TRAFFIC LANE EXCEPT DURING CONSTRUCTION HOURS. IF 12' WIDTH IS NOT FEASIBLE, CONTRACTOR TO REQUEST OTHER.
25. FOR PUBLIC SAFETY, CONTRACTOR SHALL PROVIDE BARRIERS TO PROTECT TRENCH FROM PEDESTRIAN AND AUTOMOBILE TRAFFIC.
26. WHERE POSTED SPEED LIMIT IS GREATER THAN OR EQUAL TO 55 MPH, SIGN SPACING SHOULD BE INCREASED TO 1500' ADVANCED WARNING.

Trail Improvements
Pugh Rive Park
Christoval, Tom Green County

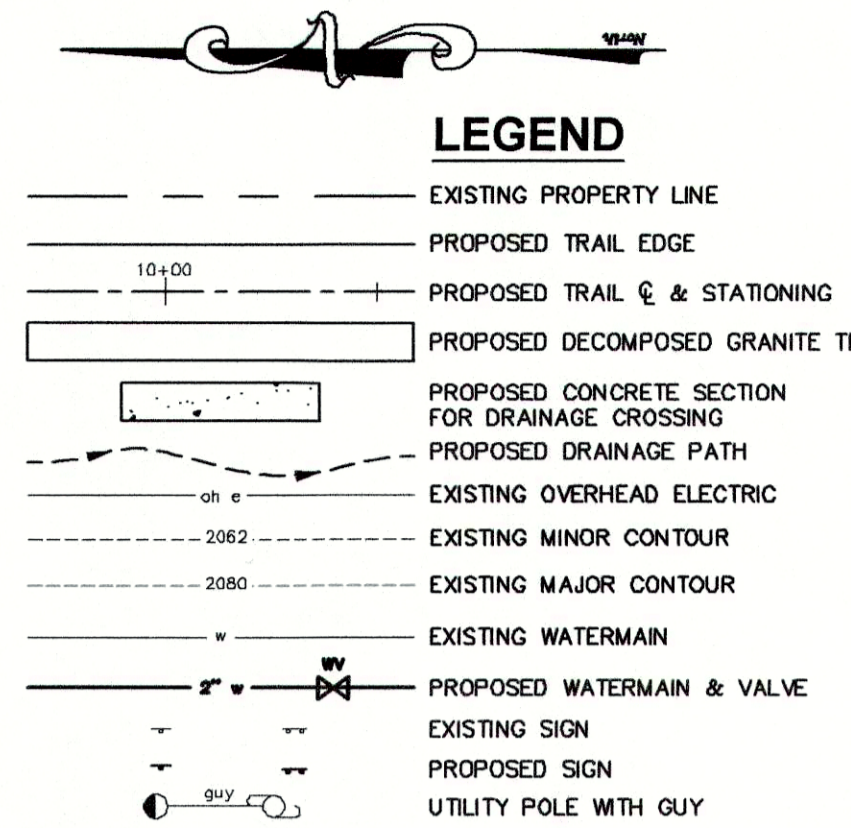
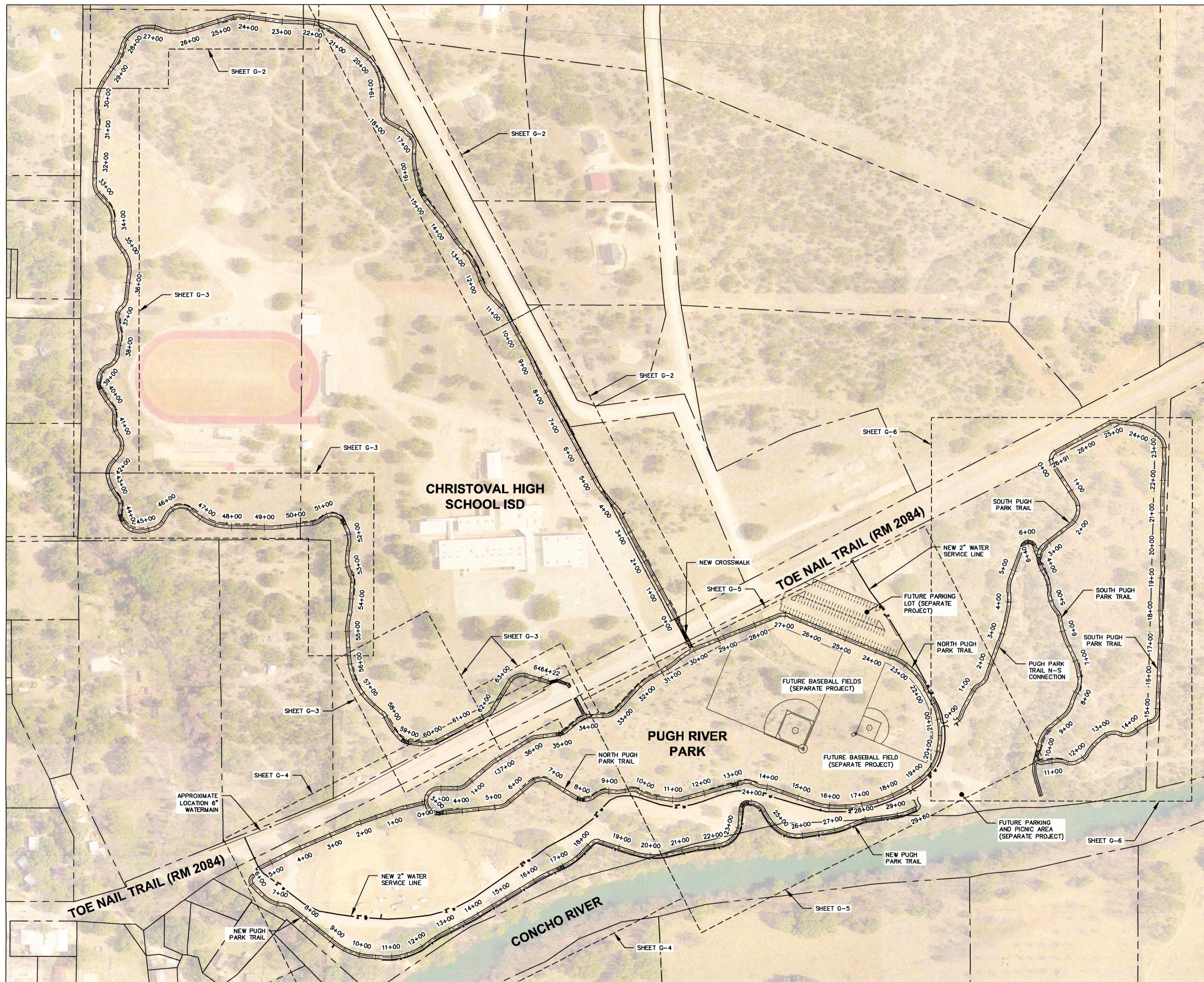
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Drawn By: JPU
Checked By: TUF
Scale: N.T.S.
Date: 8/2019



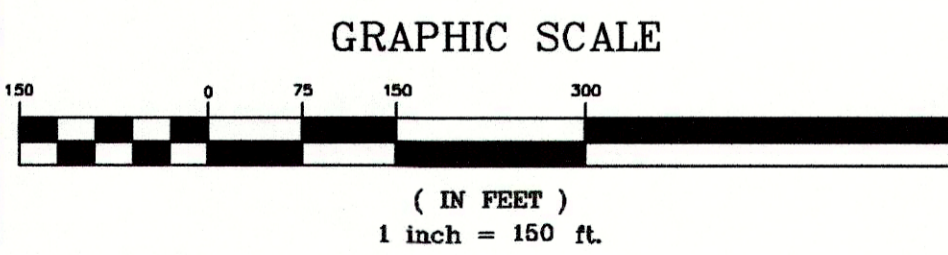
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Project No. 2054.19001

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- TRAIL NOTES:**
- COUNTY STAFF HAS CONDUCTED A FIELD INVESTIGATION AND UTILIZED GPS TECHNOLOGY TO IDENTIFY THE ALIGNMENT OF THE TRAIL.
 - PARCEL INFORMATION SHOWN FROM COUNTY DATA. VERIFY IN FIELD PRIOR TO TRAIL CONSTRUCTION.
 - TRAIL ALIGNMENT, ENVIRONMENTAL FEATURES, AND STORMWATER DRAINAGE CROSSING ARE APPROXIMATELY SHOWN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION. CONTOURS SHOWN ARE FROM COUNTY LIDAR DATA.
 - TRAIL SHALL BE CONSTRUCTED TO MEET ALL REQUIREMENTS OF THE ADA OUTDOOR RECREATION GUIDELINES. MINIMUM AND MAXIMUM RUNNING AND CROSS SLOPES SHALL NOT BE EXCEEDED.
 - ALL EROSION CONTROL AND TREE PROTECTION ELEMENTS SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
 - CONTOURS SHOWN ARE COUNTY LIDAR INFORMATION.
 - PARCEL INFORMATION FROM THE COUNTY. VERIFY PROPERTY LINE PRIOR TO TRAIL INSTALLATION.
- CONSTRUCTION SEQUENCE:**
- INSTALL ALL EROSION CONTROL DEVICES AS NECESSARY, PRIOR TO EARTHWORK CONSTRUCTION. BASED ON FIELD PERFORMANCE AND WEATHER CONDITIONS, ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED. DISTURBANCE TO THE SITE TO BE LIMITED.
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No.	Revisions and Descriptions	By	Date

Project Title: **TRAIL IMPROVEMENTS PUGH RIVER PARK CHRISTOVAL, TOM GREEN COUNTY**

Drawing Title: **OVERALL TRAIL MAP**

Drawn By: JFJ
 Checked By: TJF
 Scale: 1" = 150'
 Date: 8/2019

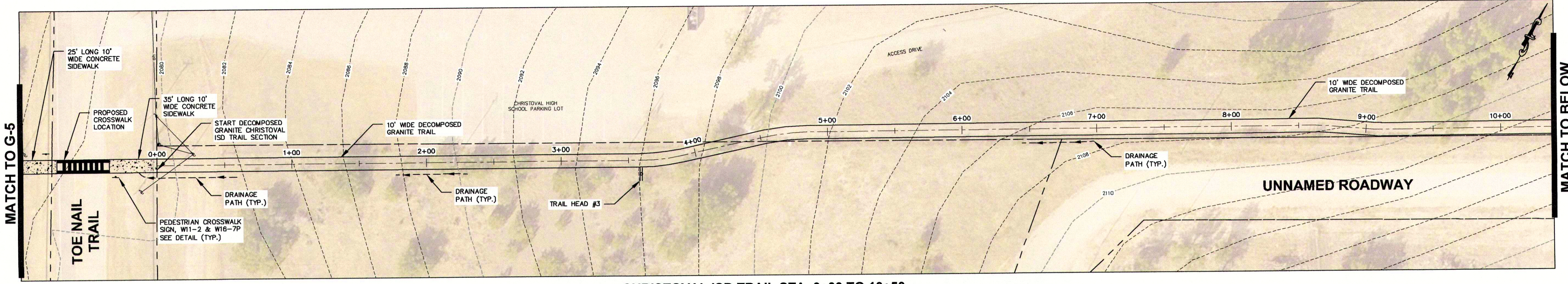


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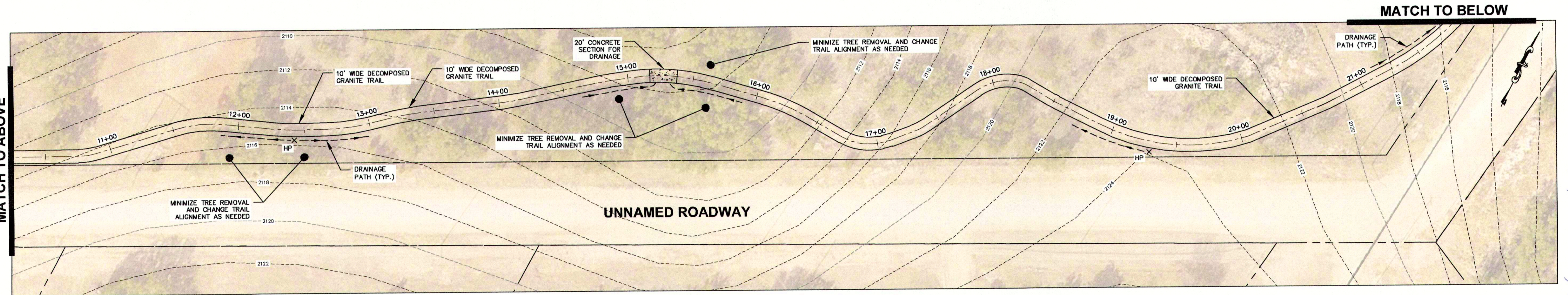
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 Project No. **2054.19001**

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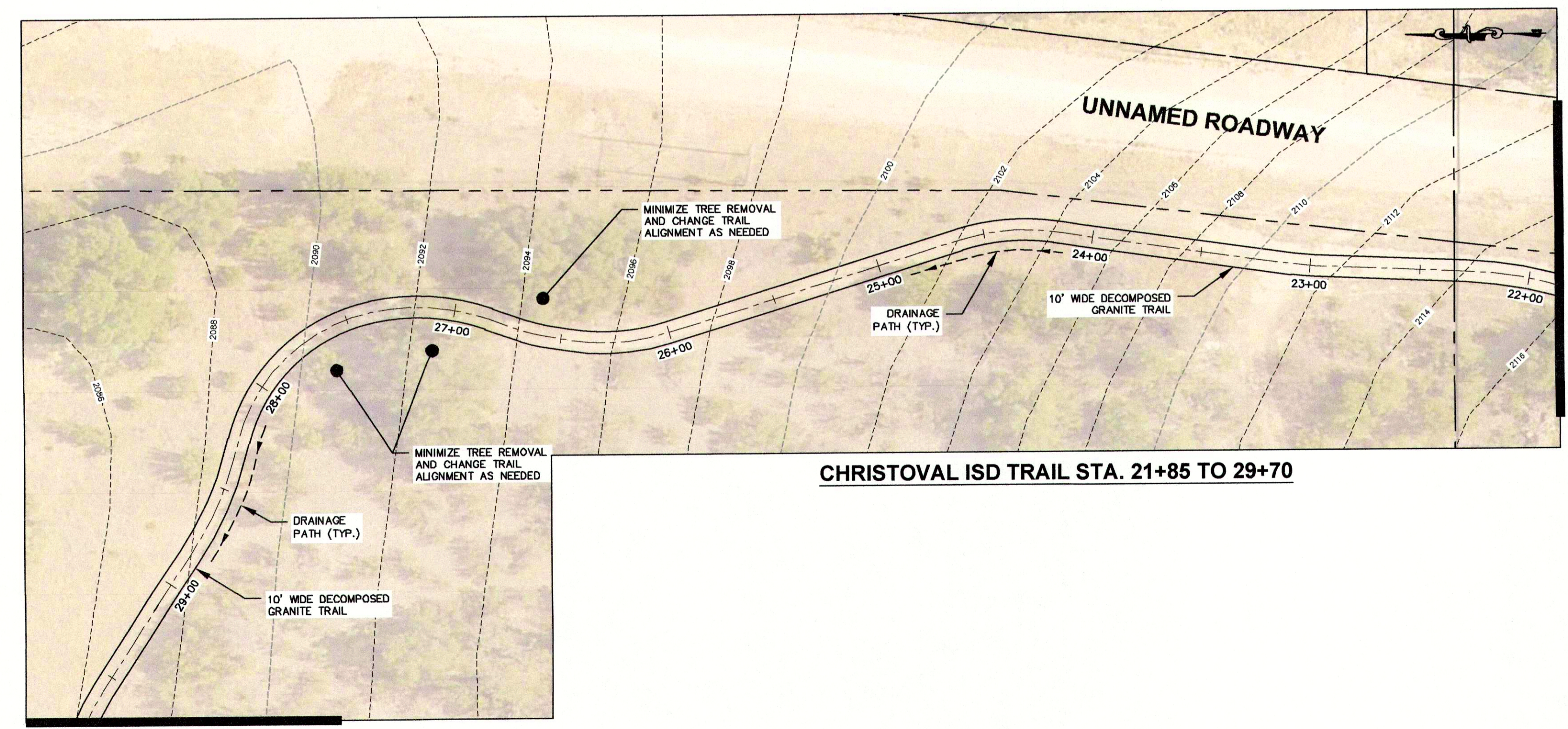
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CHRISTOVAL ISD TRAIL STA. 0+00 TO 10+50



CHRISTOVAL ISD TRAIL STA. 10+50 TO 21+85



CHRISTOVAL ISD TRAIL STA. 21+85 TO 29+70

TRAIL NOTES:

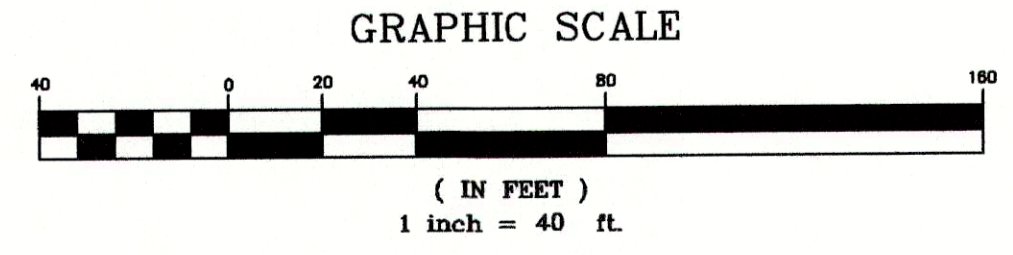
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- ALL EROSION CONTROL AND TREE PROTECTION ELEMENTS SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
- CONTOURS SHOWN ARE COUNTY LIDAR INFORMATION.
- PARCEL INFORMATION FROM THE COUNTY. VERIFY PROPERTY LINE PRIOR TO TRAIL INSTALLATION.

CONSTRUCTION SEQUENCE:

- INSTALL ALL EROSION CONTROL DEVICES AS NECESSARY, PRIOR TO EARTHWORK CONSTRUCTION. BASED ON FIELD PERFORMANCE AND WEATHER CONDITIONS, ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED. DISTURBANCE TO THE SITE TO BE LIMITED.
- CONTRACTOR SHALL RESTRICT GRADING OPERATIONS TO THE AREAS INDICATED ON THE CONTRACT DRAWINGS, PERFORMING WORK OUTSIDE THE IDENTIFIED LIMITS SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
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- ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR.
- EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL AN APPROVED PERMANENT COVER OF VEGETATION IS ESTABLISHED. REMOVAL OF DEVICES TO BE COORDINATED WITH THE OWNER, LOCAL MUNICIPALITY OR REPRESENTATIVE THEREOF.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED TRAIL EDGE
- PROPOSED TRAIL & STATIONING
- PROPOSED DECOMPOSED GRANITE TRAIL
- PROPOSED CONCRETE SECTION FOR DRAINAGE CROSSING
- PROPOSED DRAINAGE PATH
- EXISTING OVERHEAD ELECTRIC
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING WATERMAIN
- PROPOSED WATERMAIN & VALVE
- EXISTING SIGN
- PROPOSED SIGN
- UTILITY POLE WITH GUY



No.	Revisions and Descriptions	By	Date

Project Title:
**TRAIL IMPROVEMENTS
 PUGH RIVE PARK
 CHRISTOVAL, TOM GREEN COUNTY**

Drawing Title:
CHRISTOVAL ISD TRAIL STA 0+00 TO 29+70

Drawn By: JRU
 Checked By: TJF
 Scale: 1" = 40'
 Date: 8/2019

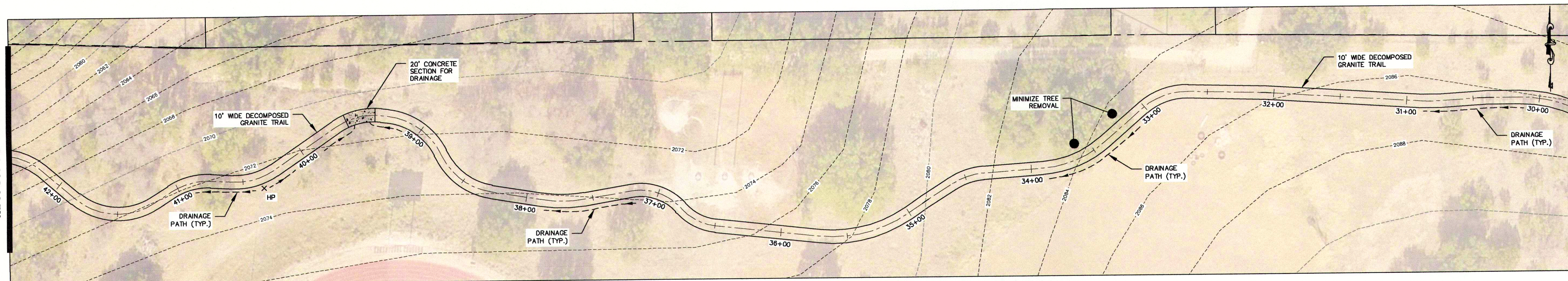


Thomas J. Frazier 8/28/19

MRB group
 Engineering, Architecture, Surveying, P.C.
 8834 N. Capital of Texas Hwy Suite 147, Austin, Texas 78759 512-436-8571
 Corporate Office: The Calver Road Annex, 145 Calver Road, Suite 101, Rockville, New York 14620 360-501-1250
 TBE Form Number: E-0045
 www.mrbgroup.com

Sheet No. **G-2**
4 of **11**
 Project No. **2054.19001**

MATCH TO BELOW



MATCH TO SHEET G-2

CHRISTOVAL ISD TRAIL STA. 29+70 TO 42+40

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED TRAIL EDGE
- 10+00 --- PROPOSED TRAIL C & STATIONING
- PROPOSED DECOMPOSED GRANITE TRAIL
- PROPOSED CONCRETE SECTION FOR DRAINAGE CROSSING
- PROPOSED DRAINAGE PATH
- EXISTING OVERHEAD ELECTRIC
- 2062 --- EXISTING MINOR CONTOUR
- 2080 --- EXISTING MAJOR CONTOUR
- EXISTING WATERMAIN
- 2" W --- PROPOSED WATERMAIN & VALVE
- EXISTING SIGN
- PROPOSED SIGN
- UTILITY POLE WITH GUY

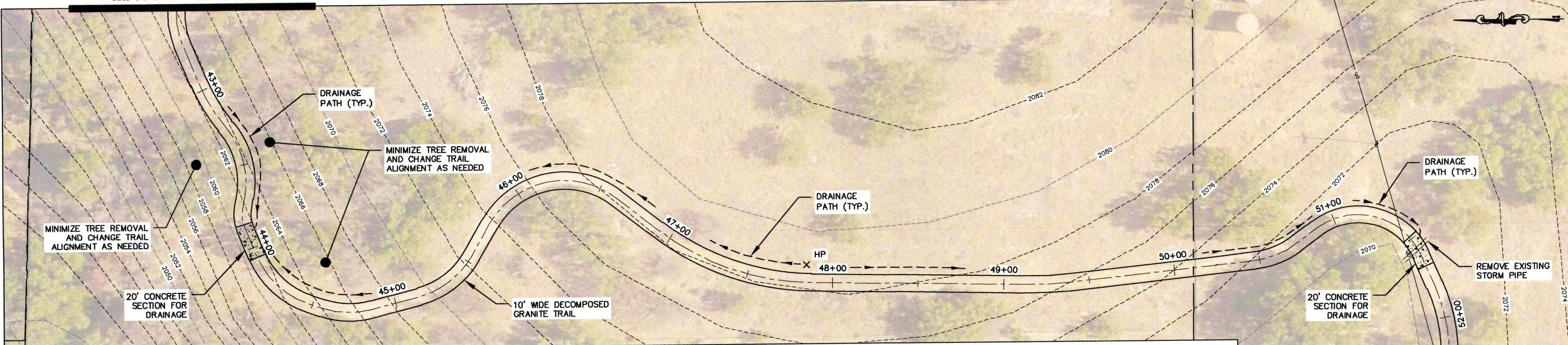
TRAIL NOTES:

1. COUNTY STAFF HAS CONDUCTED A FIELD INVESTIGATION AND UTILIZED GPS TECHNOLOGY TO IDENTIFY THE ALIGNMENT OF THE TRAIL.
2. TRAIL ALIGNMENT, ENVIRONMENTAL FEATURES, AND STORMWATER DRAINAGE CROSSING ARE APPROXIMATELY SHOWN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION.
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5. CONTOURS SHOWN ARE COUNTY LIDAR INFORMATION.
6. PARCEL INFORMATION FROM THE COUNTY. VERIFY PROPERTY LINE PRIOR TO TRAIL INSTALLATION.

CONSTRUCTION SEQUENCE:

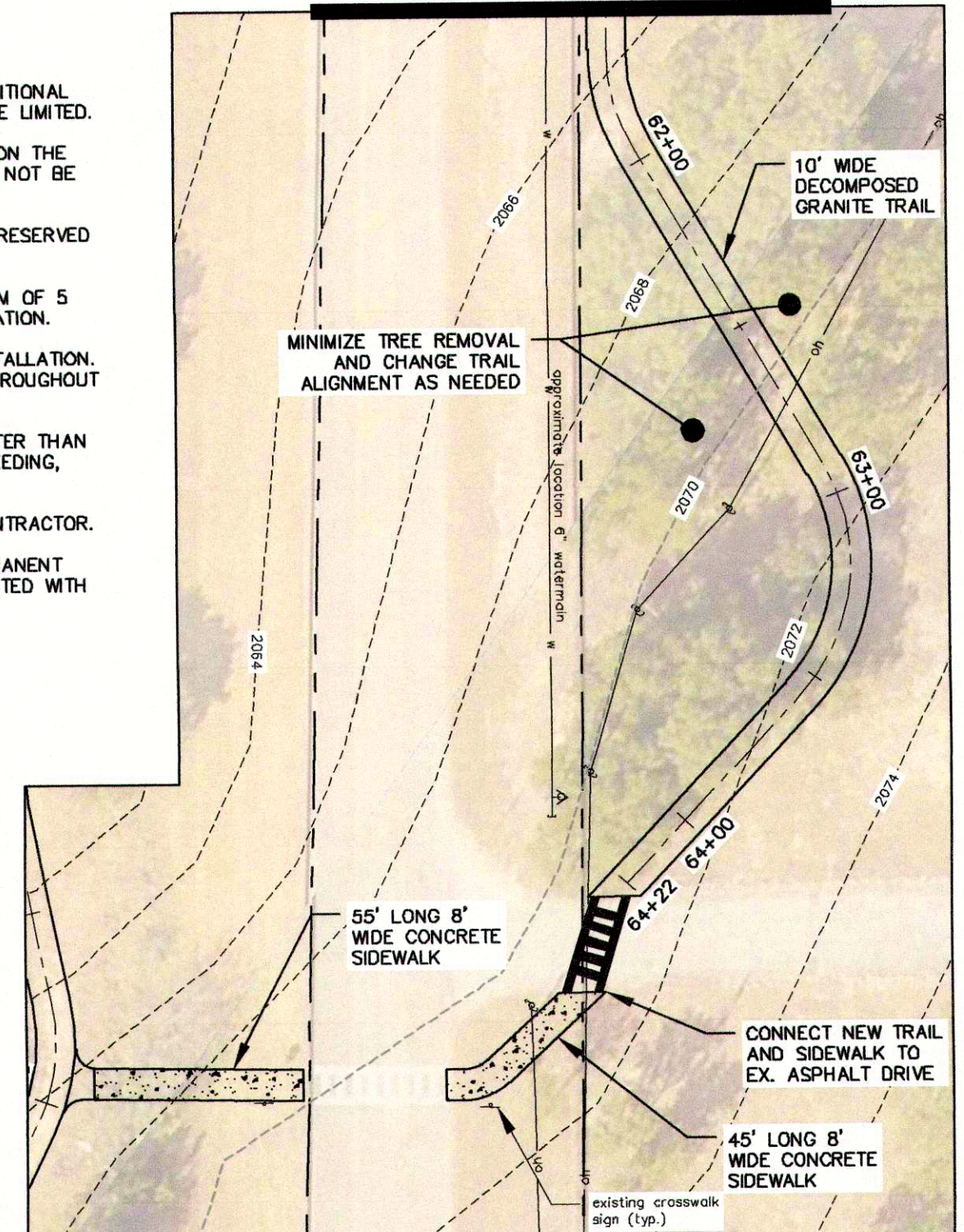
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MATCH TO ABOVE

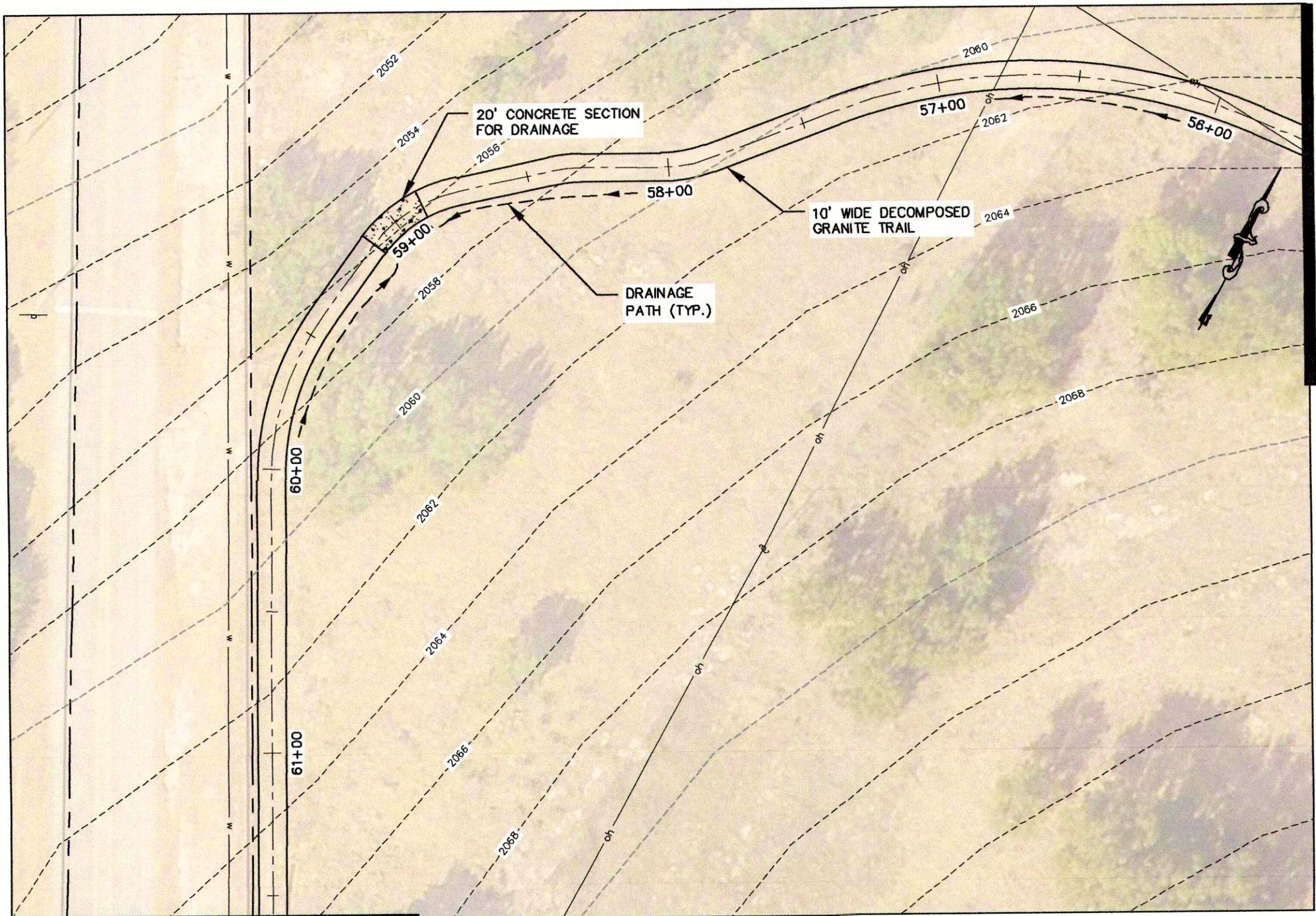


CHRISTOVAL ISD TRAIL STA. 42+40 TO 55+75

MATCH TO RIGHT

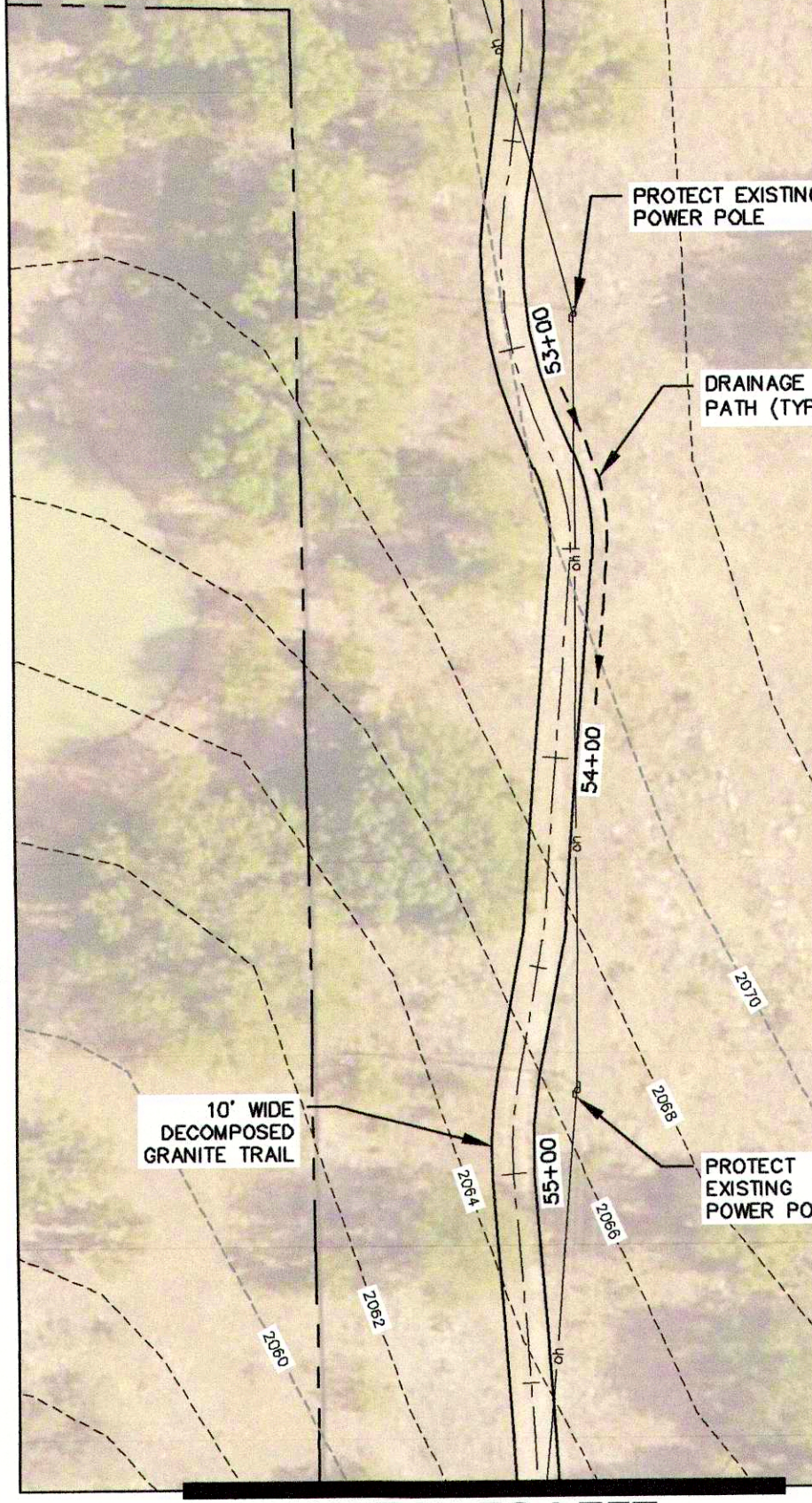


CHRISTOVAL ISD TRAIL STA. 61+60 TO 64+22



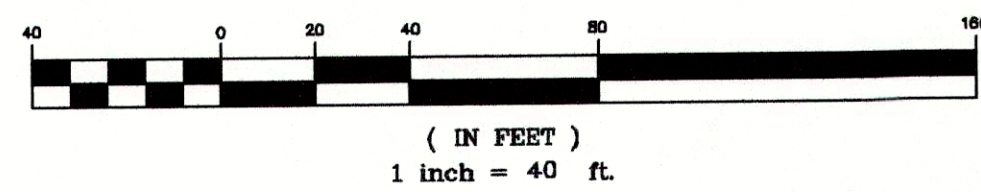
MATCH TO LEFT CHRISTOVAL ISD TRAIL STA. 55+75 TO 61+60

MATCH TO RIGHT



MATCH TO LEFT

GRAPHIC SCALE



No.	Revisions and Descriptions	By	Date

Project Title: **TRAIL IMPROVEMENTS PUGH RIVE PARK CHRISTOVAL, TOM GREEN COUNTY**

Drawing Title: **CHRISTOVAL ISD TRAIL STA 29+70 TO 61+30**

Drawn By: **APJ**

Checked By: **TB**

Scale: **1" = 40'**

Date: **8/2019**



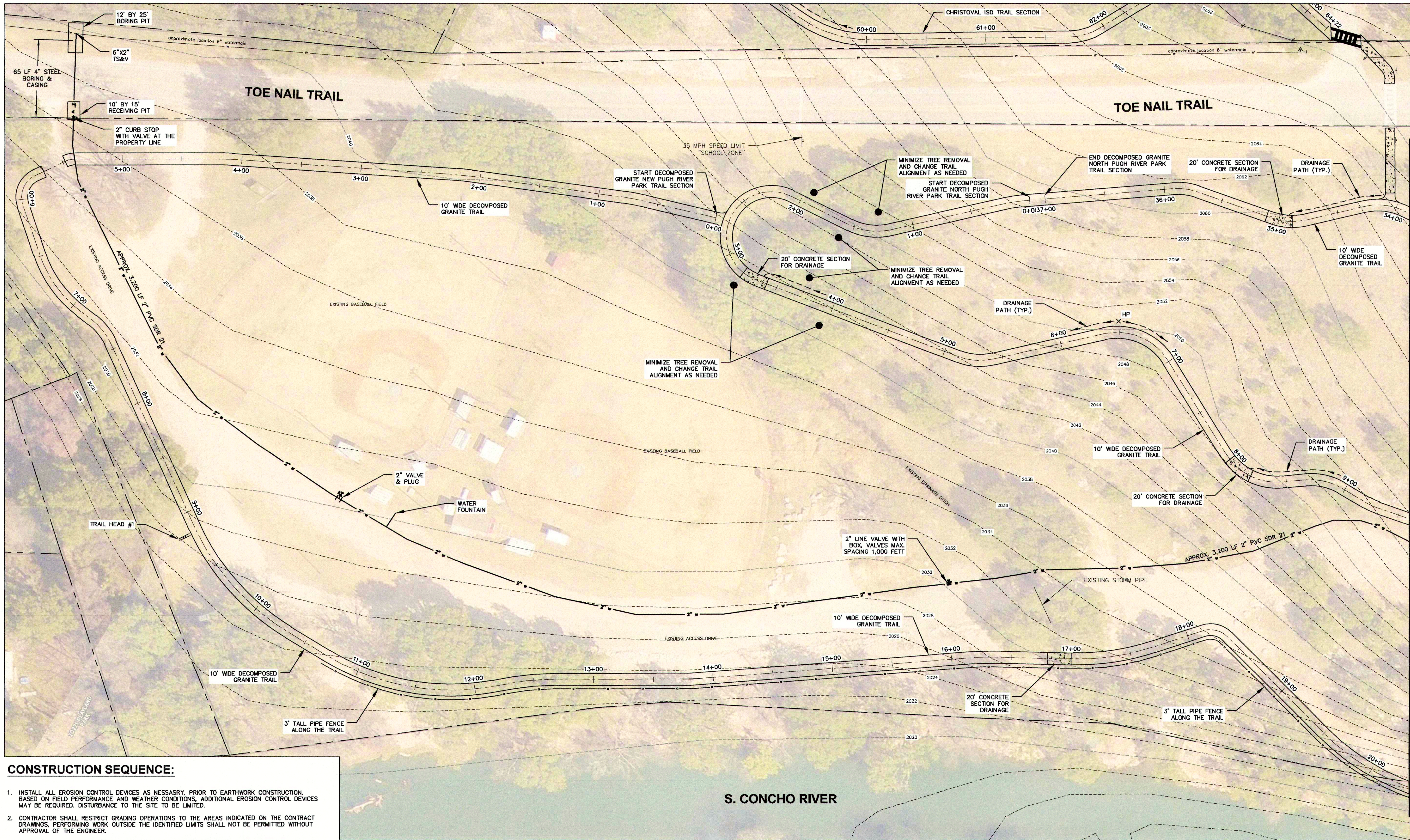
MRB group
 Engineering, Architecture, Surveying, P.C.
 8834 N. Capital of Texas Hwy Suite 147, Austin, Texas 78759 512-436-4871
 Corporate Office: The Calver Road Annex, 145 Calver Road, Suite 160, Rochester, New York 14620 585-381-9250
 TBPE Firm Number: F-10615
 www.mrbgroup.com

Sheet No. **G-3**

5 of **11**

Project No. **2054.19001**

N:\2054.19001\000\dwg\Pugh Park - Trails Base.dwg, 8/28/2019, 4:51:16 PM, jlanulis



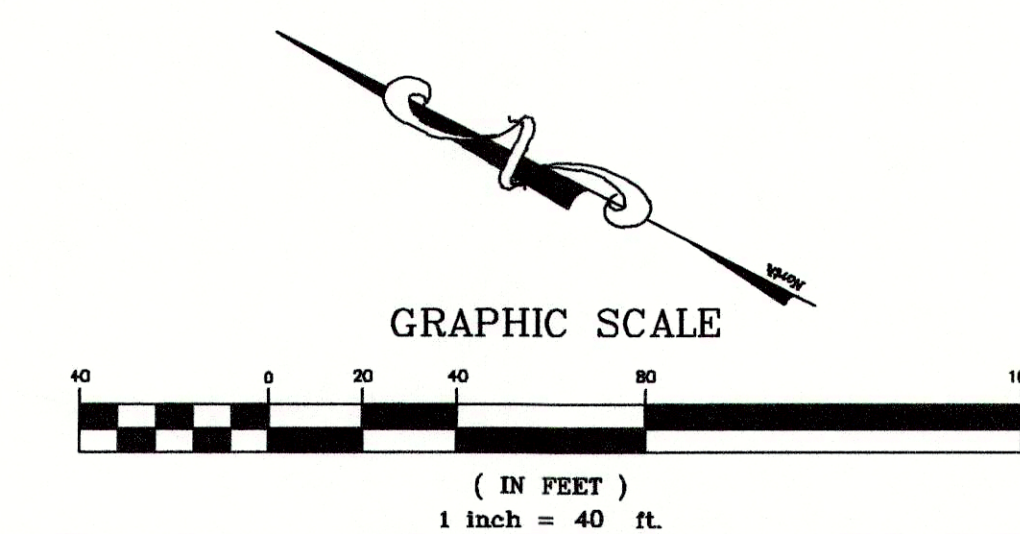
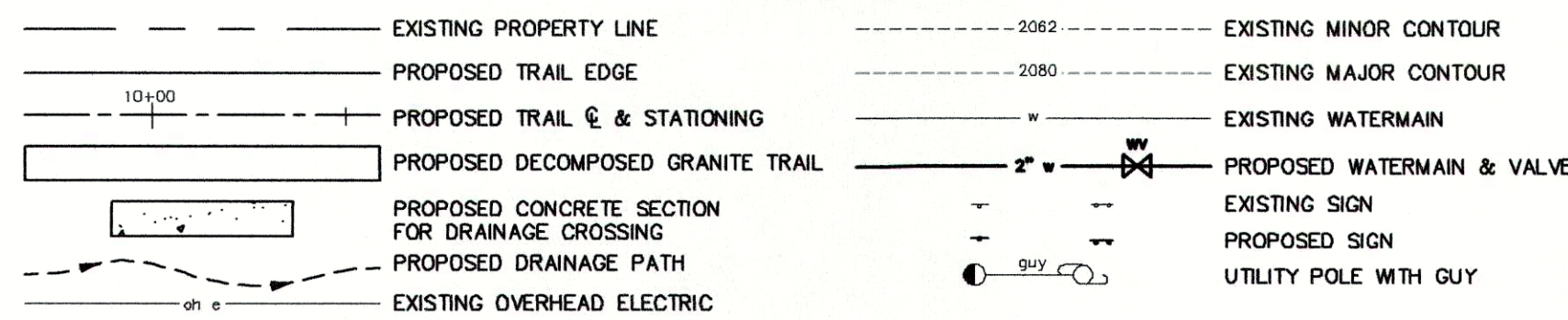
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TRAIL NOTES:

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LEGEND



MATCH TO G-5

MATCH TO G-5

No.	Revisions and Descriptions	By	Date

**TRAIL IMPROVEMENTS
PUGH RIVER PARK
CHRISTOVAL, TOM GREEN COUNTY
PUGH RIVER PARK NORTH TRAIL MAP**

Project Title:
Drawn By: JPJ
Checked By: TB
Scale: 1" = 40'
Date: 8/2019



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Rochester, New York 14620 585-881-9250
TYPE Firm Number: F-10015
www.mrbgroup.com

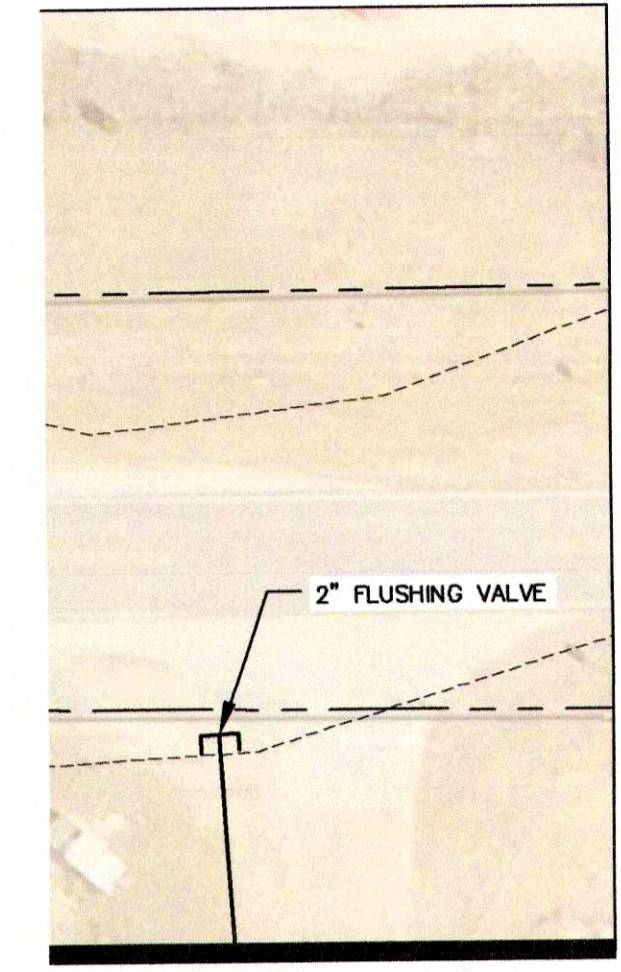
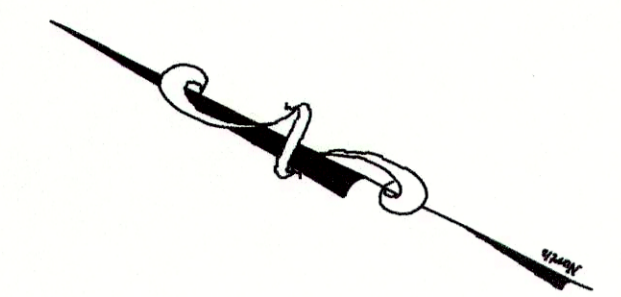
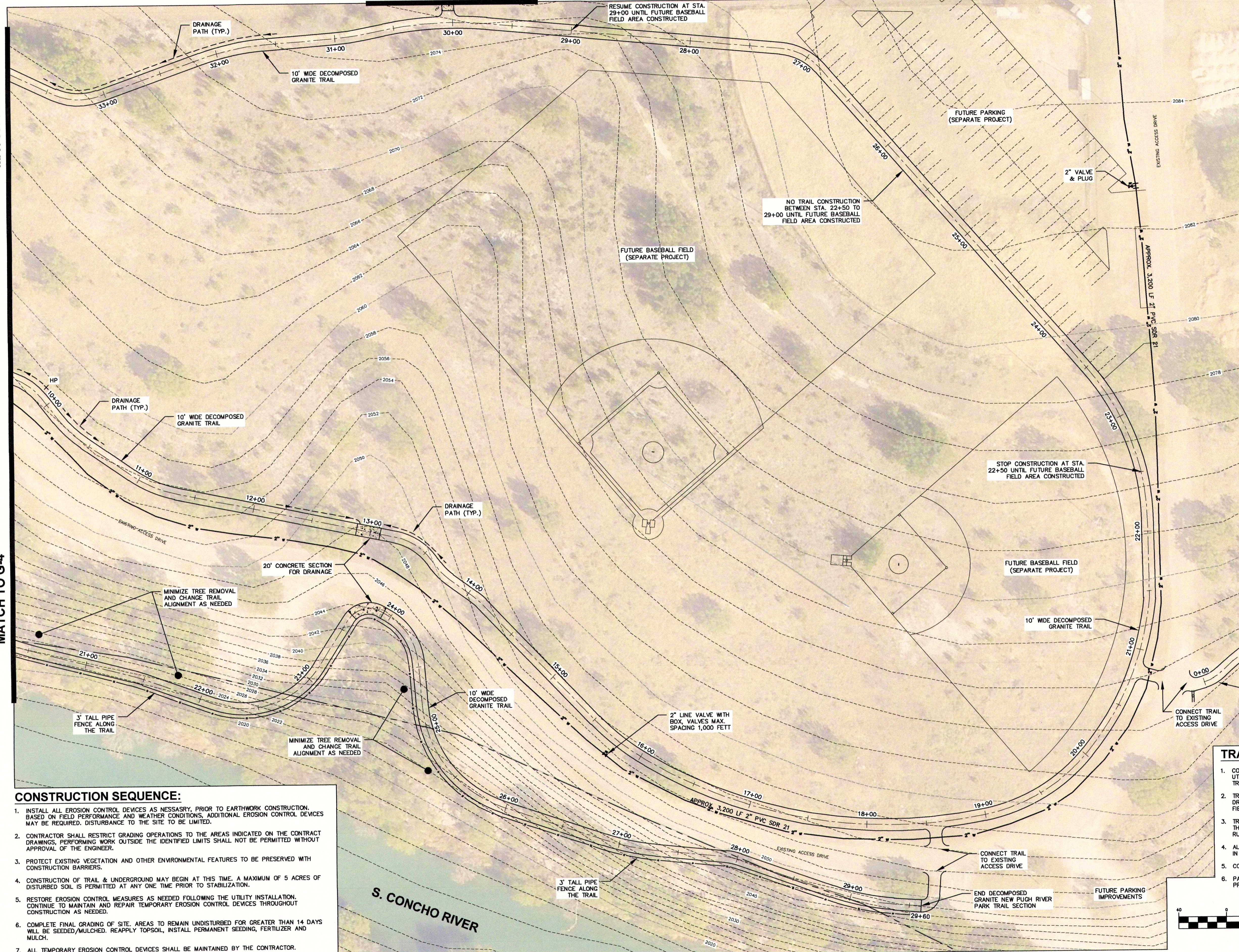
Sheet No. **G-4**
6 of **11**
Project No. **2054.19001**

MATCH TO G-2

MATCH RIGHT

MATCH TO G-4

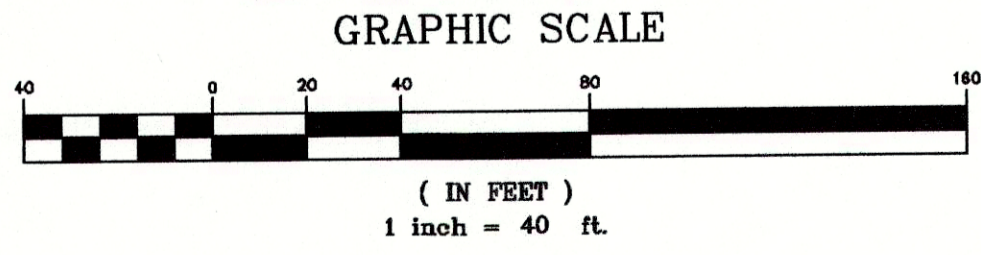
MATCH TO G-4



LEGEND

	EXISTING PROPERTY LINE
	PROPOSED TRAIL EDGE
	PROPOSED TRAIL C & STATIONING
	PROPOSED DECOMPOSED GRANITE TRAIL
	PR. CONCRETE SECTION FOR DRAINAGE CROSSING
	PR. DRAINAGE PATH
	EXL. OVERHEAD ELEC.
	EX. MINOR CONTOUR
	EX. MAJOR CONTOUR
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	PROPOSED SIGN
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- TRAIL NOTES:**
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No.	Revisions and Descriptions	By	Date

Project Title: **TRAIL IMPROVEMENTS PUGH RIVER PARK**
 CHRISTOVAL, TOM GREEN COUNTY
 Drawing Title: **PUGH RIVER PARK MIDDLE TRAIL MAP**

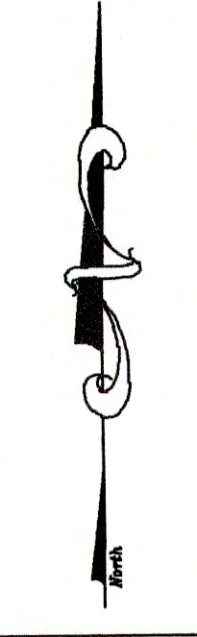
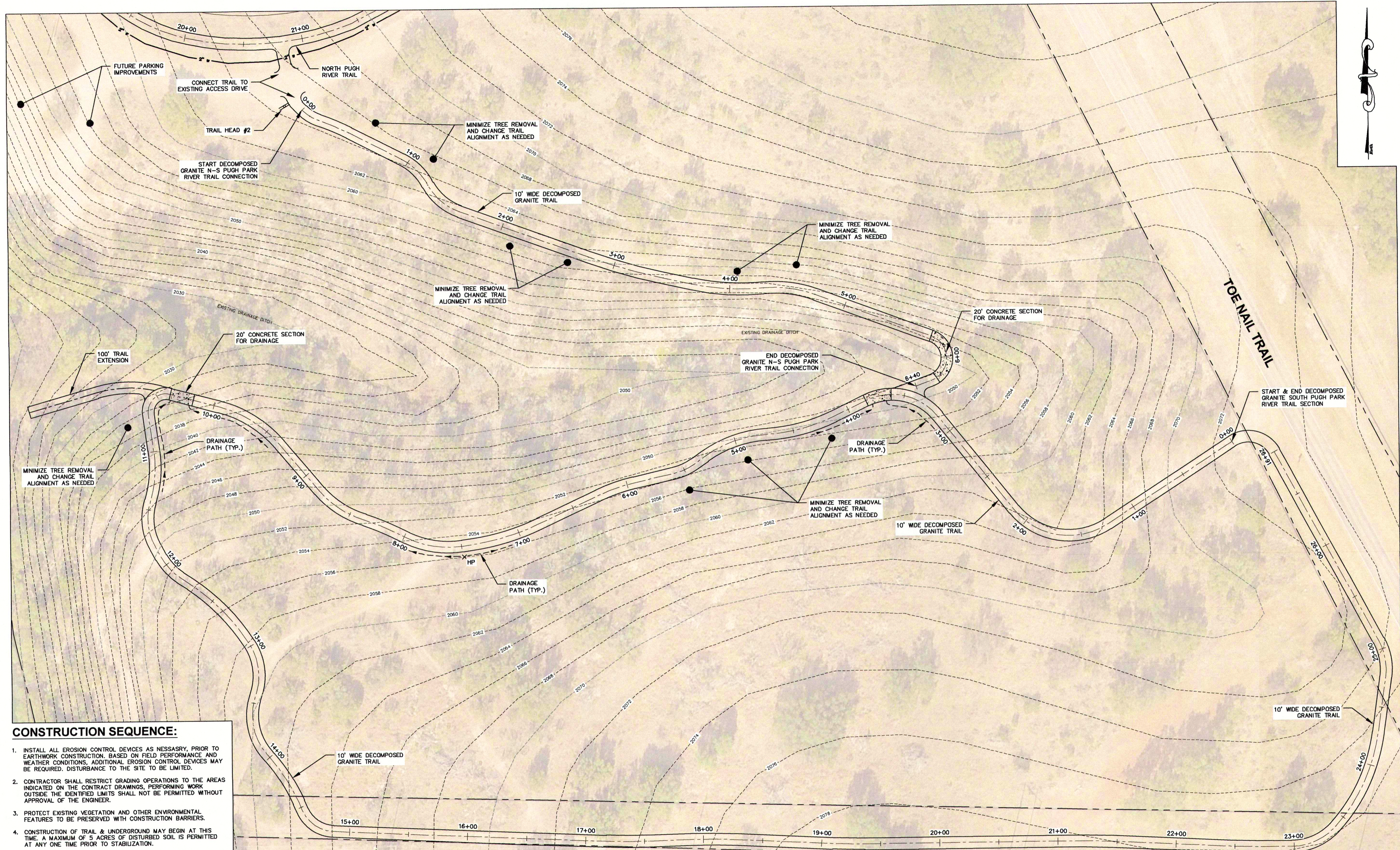
Drawn By: *apj*
 Checked By: *TJF*
 Scale: 1" = 40'
 Date: 8/2019



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 8834 N. Capital of Texas Hwy Suite 147, Austin, Texas 78758 512-436-8571
 Corporate Office: The Calver Road Armory, 145 Calver Road, State 160, Rochester, New York 14620 585-381-9250
 TBE Firm Number: E-18615
 www.mrbgroup.com

Sheet No. **G-5**
 7 of 11
 Project No. **2054.19001**

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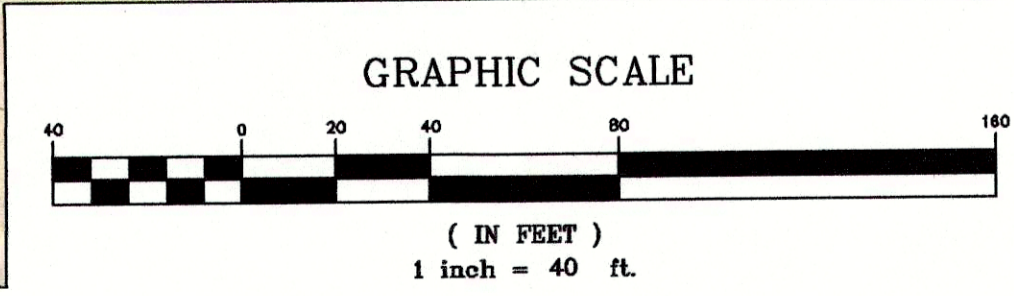


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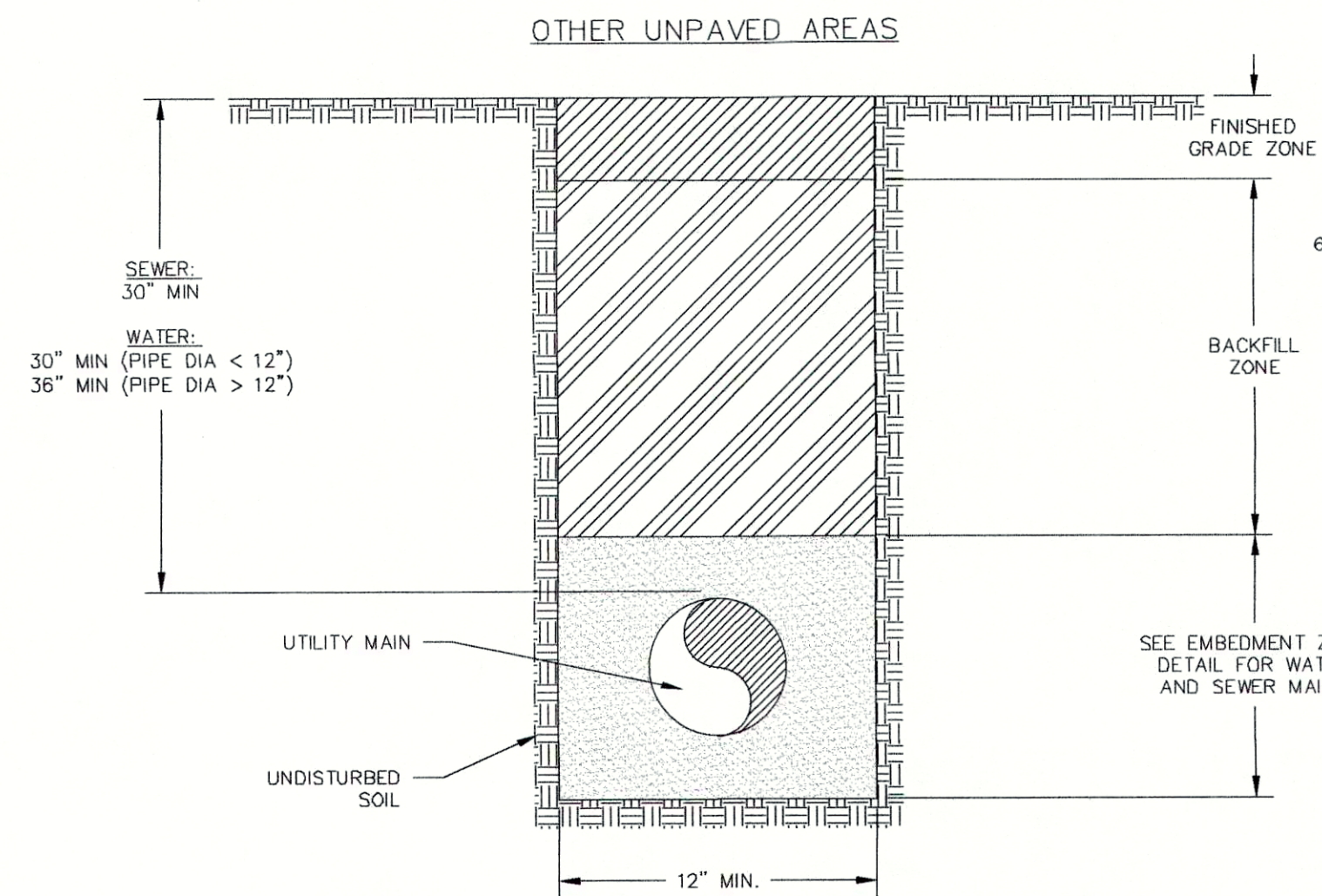
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N:\2054_19001_000\dwg\Pugh Park - Trails Base.dwg, 8/28/2019 4:51:32 PM, jhanulis

<p>TRAIL IMPROVEMENTS PUGH RIVE PARK CHRISTOVAL, TOM GREEN COUNTY PUGH RIVE PARK SOUTH TRAIL MAP</p>									
<p>Project Title: TRAIL IMPROVEMENTS PUGH RIVE PARK</p> <p>Drawn By: JFJ</p> <p>Checked By: TUF</p> <p>Scale: 1" = 40'</p> <p>Date: 8/2019</p>	<p>Revisions and Descriptions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Revisions and Descriptions</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Copyright © 2019 MRB Group All Rights Reserved</p>	No.	Revisions and Descriptions	By	Date				
No.	Revisions and Descriptions	By	Date						
<p>MRB group</p> <p>Engineering, Architecture, Surveying, P.C. 8834 N Capital of Texas Hwy Suite 147, Austin, Texas 78759 512-434-8571 Corporate Office: The Calver Road, Amory, MS 38821 662-585-5815/5250 Rochester, New York 14620 585-5815/5250 www.mrbgroup.com</p>									
<p>Sheet No. G-6</p> <p>8 of 11</p> <p>Project No. 2054.19001</p>									



NOTES:

BACKFILL ZONE:

OPTION #1: WHERE PULVERIZED OR GRANULAR MATERIAL IS AVAILABLE FROM EXCAVATION WHICH IS FREE OF SHARP EDGED STONES OR STONES LARGER THAN 3" IN DIAMETER, CLAY, ORGANIC MATTER, OR OTHER UNSUITABLE SUBSTANCES, HAS PI <=20 AND LL<=40, AND MEETS THE APPROVAL OF THE CITY SUCH MATERIAL MAY BE USED FOR BACKFILL MATERIAL AS INSTRUCTED BY THE OWNER. BACKFILL SHALL BE COMPACTED TO DENSITIES EQUAL TO OR GREATER THAN THAT OF SURROUNDING SOIL.

OPTION #2 FLEXIBLE BASE PER CITY OF SAN ANGELO SPECIFICATIONS COMPACTED IN 6" HORIZONTAL LAYERS TO MINIMUM DENSITY 95% MODIFIED PROCTOR.

FINISHED GRADE ZONE:

BACKFILL SHALL MATCH EXISTING GROUND CONDITIONS (SEE OPTIONS BELOW) OR DIRECTED BY THE OWNER.

OPTION A: UTILIZE BACKFILL ZONE MATERIAL FROM OPTION #1

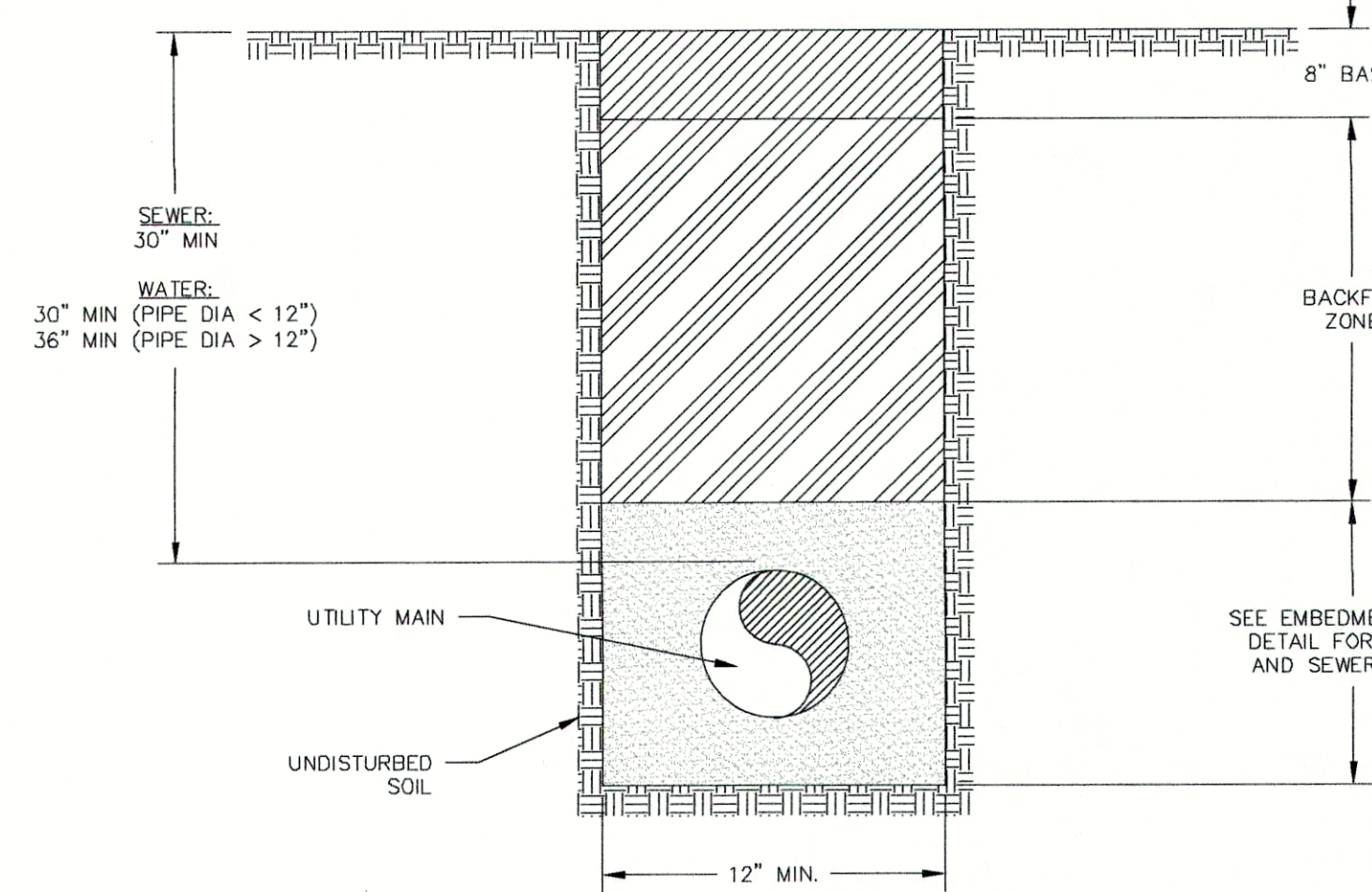
OPTION B: 6" TOP SOIL.

OPTION C: 8" FLEXIBLE BASE.

COVER:

WATER OR SEWER MAINS AND SERVICES WITH LESS THAN 30" OF COVER AT ANY LOCATION SHALL REQUIRE C.O.S.A. APPROVAL PRIOR TO CONSTRUCTION.

UNPAVED STREETS, ALLEYS & DRIVEWAYS



NOTES:

BACKFILL ZONE:

FLEXIBLE BASE PER CITY OF SAN ANGELO SPECIFICATIONS. COMPACTED IN 6" LAYERS. MINIMUM DENSITY 95% MODIFIED PROCTOR.

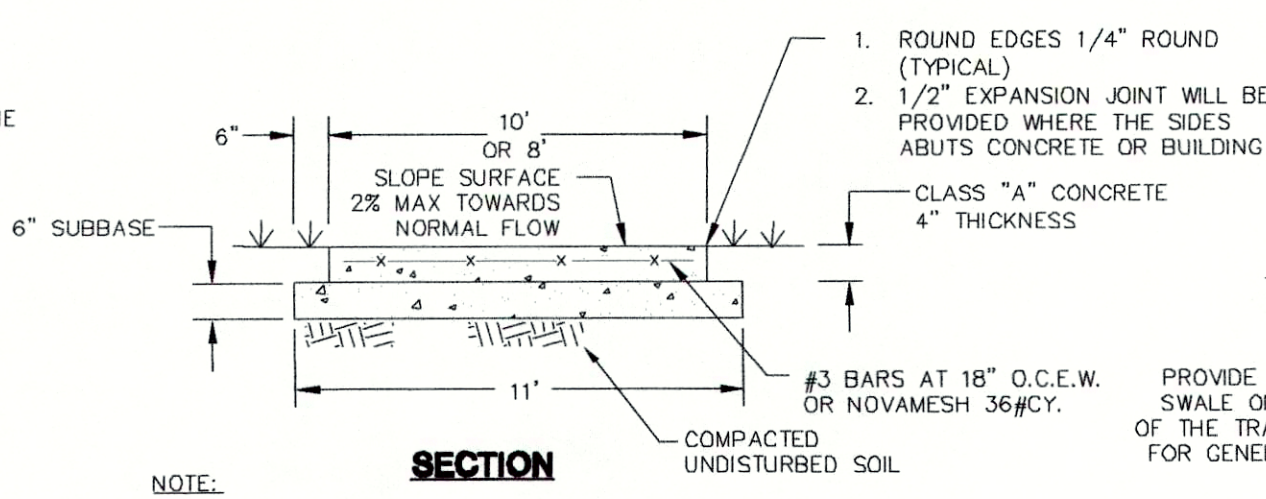
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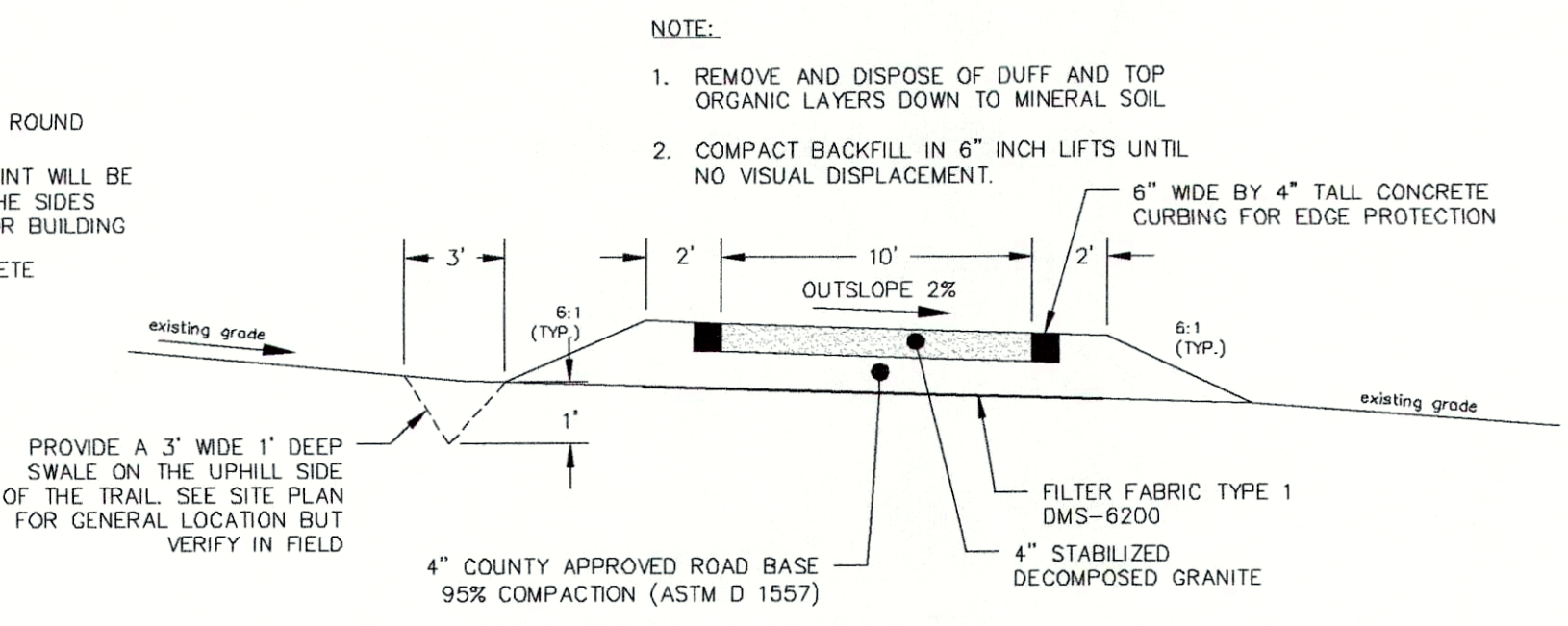
UTILITY TRENCH SECTION
N.T.S.



NOTE:

- GROOVED CONTRACTION JOINTS EVERY 5' AND EXPANSION JOINTS EVERY 40'
- 6" SUBGRADE SHALL BE COMPACTED TO AN EQUIVALENT OF 95% STANDARD PROCTOR DENSITY.
- A ROUGH BROOM FINISH IS PREFERRED.
- LONGITUDINAL SLOPE OF SIDEWALK SHALL NOT EXCEED 5%, AND CROSS SLOPE OF SIDEWALK SHALL NOT EXCEED 2%
- WET SUBGRADE SHALL BE CORRECTED PRIOR TO PLACEMENT OF CONCRETE.
- ALL SIDEWALKS ACROSS DRIVEWAYS SHALL BE 6" REINFORCED CONCRETE.
- IN NARROW RIGHT OF WAY SITUATIONS, THE MINIMUM CLEAR WIDTH OF SIDEWALK SHALL BE 35 INCHES.

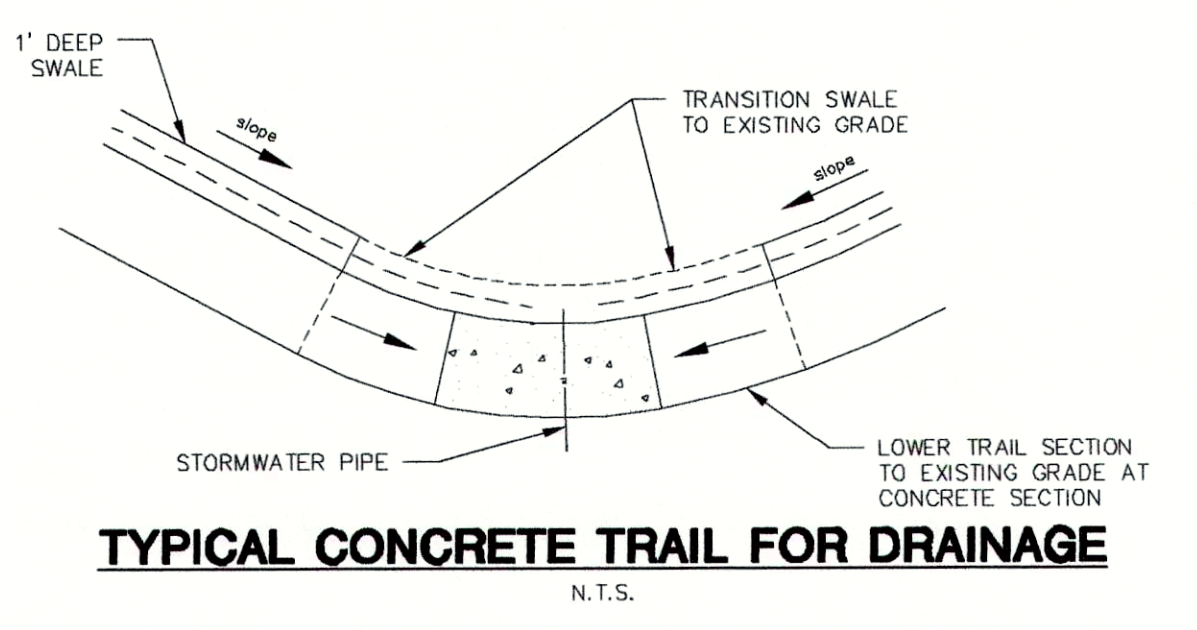
CONCRETE SIDEWALK
N.T.S.



DECOMPOSED GRANITE COMPACTION NOTES:

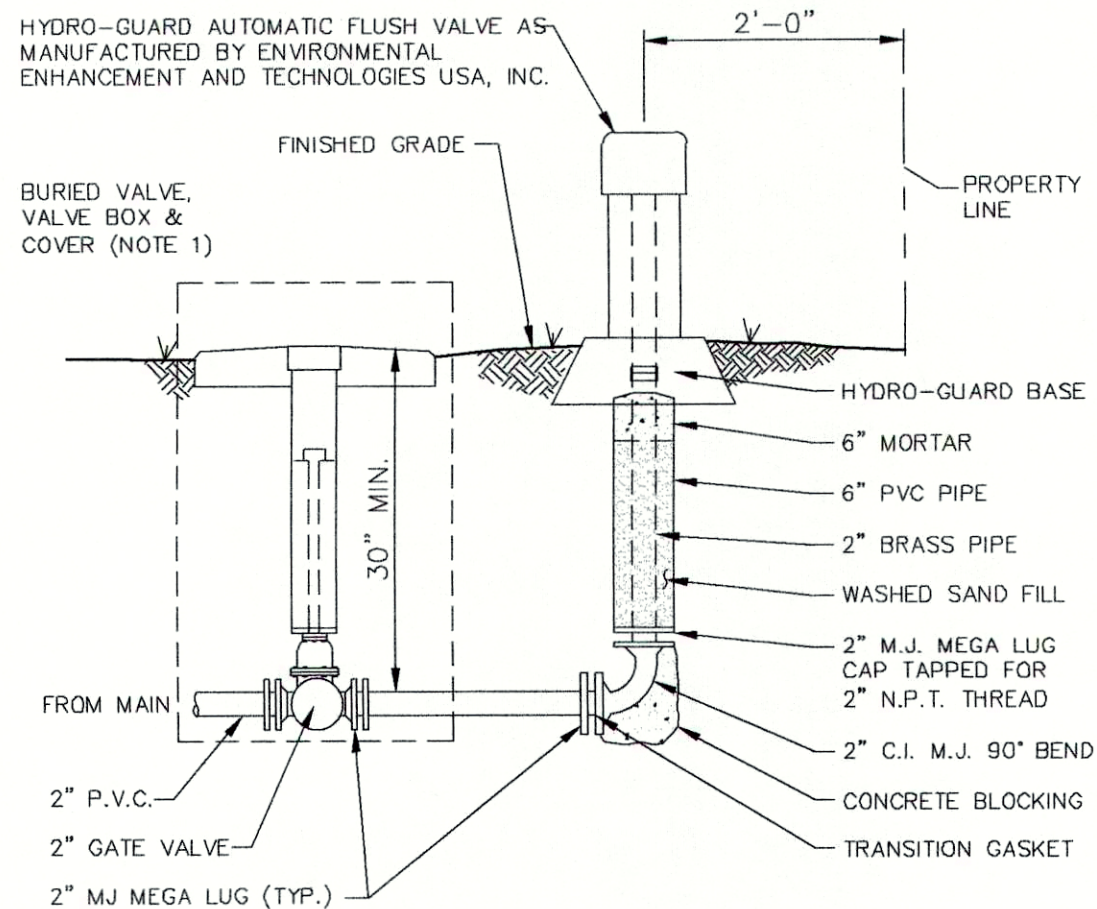
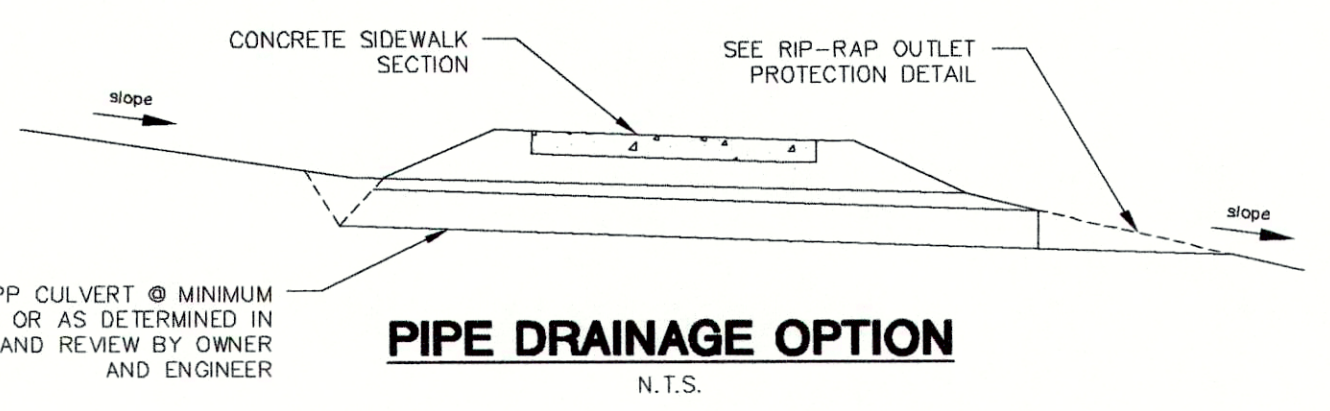
- COMPACT STABILIZED AGGREGATE TO 85% RELATIVE COMPACTION BY EQUIPMENT SUCH AS: A 2 TO 5 TON DOUBLE DRUM ROLLER MAKING 3 TO 4 PASSES. DO NOT BEGIN COMPACTION FOR 6 HOURS AFTER PLACEMENT AND UP TO 72 HOURS. DO NOT USE VIBRATORY PLATE COMPACTOR OF VIBRATION FEATURE ON ROLLER, AS VIBRATION SEPARATES LARGE AGGREGATE PARTICLES. IF PUMPING OR PANCAKING OF SURFACE OCCURS, SURFACE IS STILL TOO WET TO ROLL.
- LIGHTLY SPRAY SURFACE AREA FOLLOWING COMPACTION. DO NOT DISTURB AGGREGATE SURFACE WITH SPRAY ACTION.

DECOMPOSED GRANITE TRAIL
N.T.S.



NOTE:

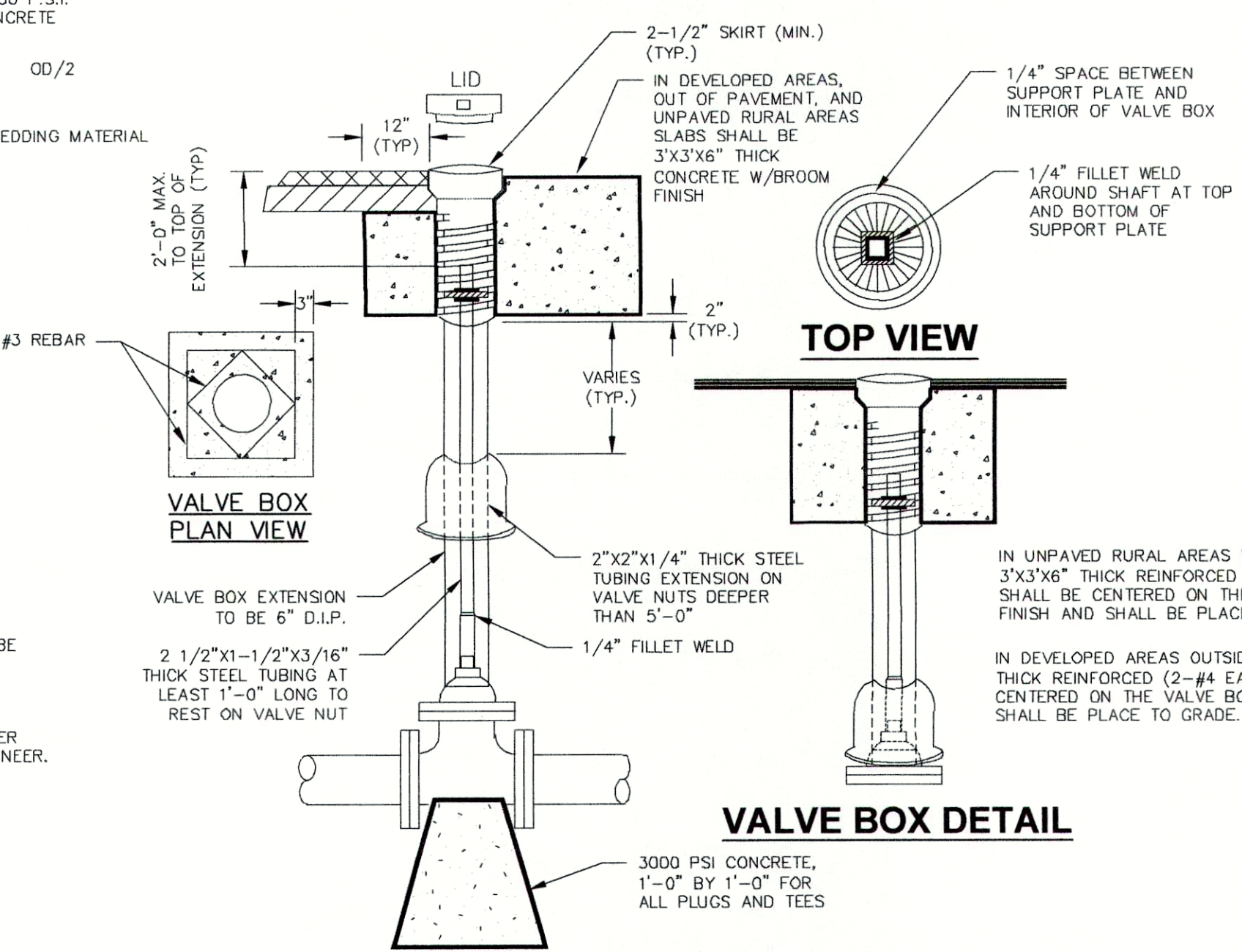
- IF GRADE ALLOW, A 10" SICPP CULVERT CAN BE USED IN LIEU OF THE CONCRETE SECTION OPTION.
- USE GRAVEL SECTION FOR PIPE EMBEDMENT



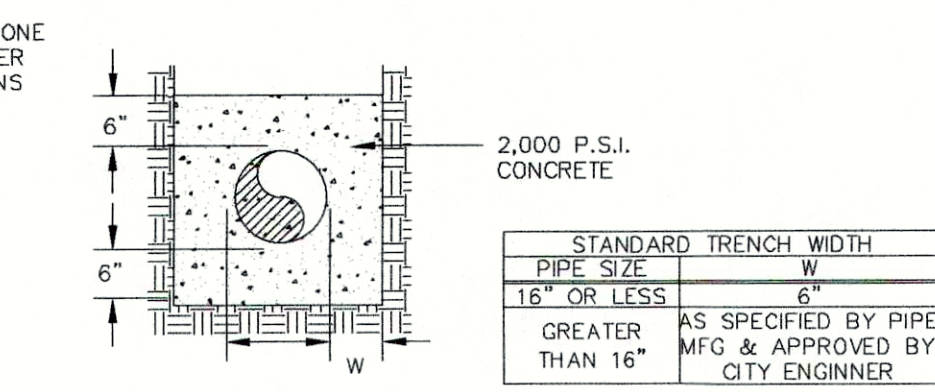
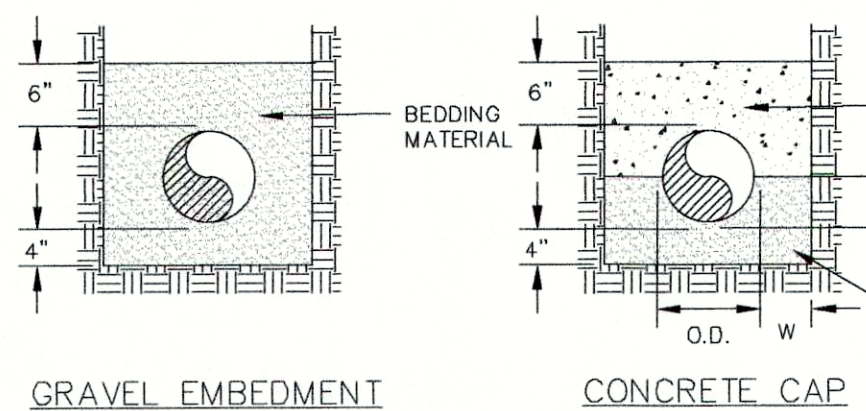
NOTE:

- CONTRACTOR SHALL REFER TO BURIED VALVE, VALVE BOX AND COVER DETAIL FOR ADDITIONAL REQUIREMENTS.

FLUSHING VALVE CONNECTION
N.T.S.



VALVE BOX EXTENSION DETAIL



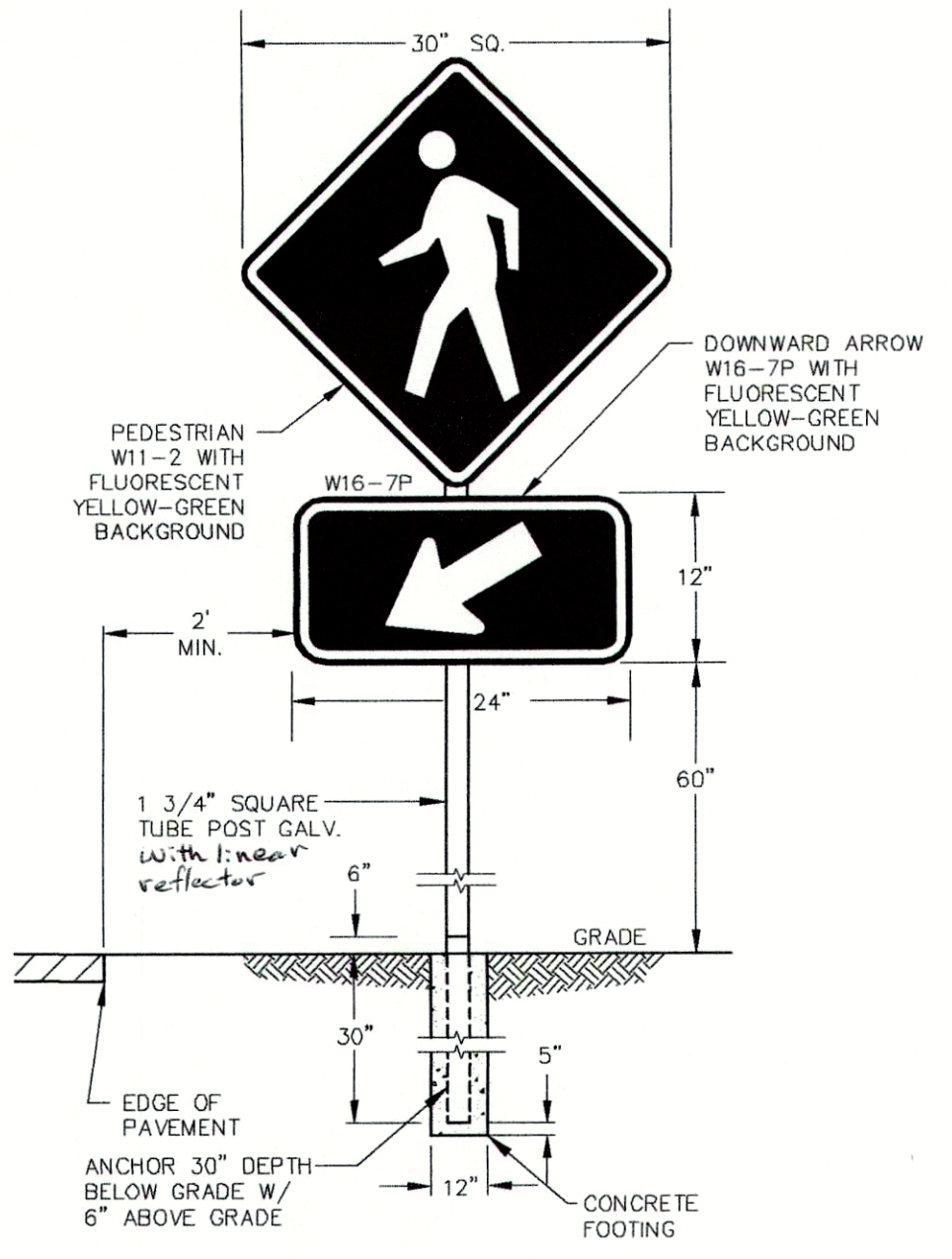
NOTES:

BEDDING MATERIAL FOR THE INSTALLATION OF WATER AND SEWER MAINS SHALL BE CRUSHED STONE OR PEA GRAVEL THAT WILL REMAIN FIRM AND NOT PERMIT DISPLACEMENT OF THE PIPE EITHER DURING PIPE LAYING OR BACKFILLING OR FOLLOWING THE COMPLETION OF CONSTRUCTION.

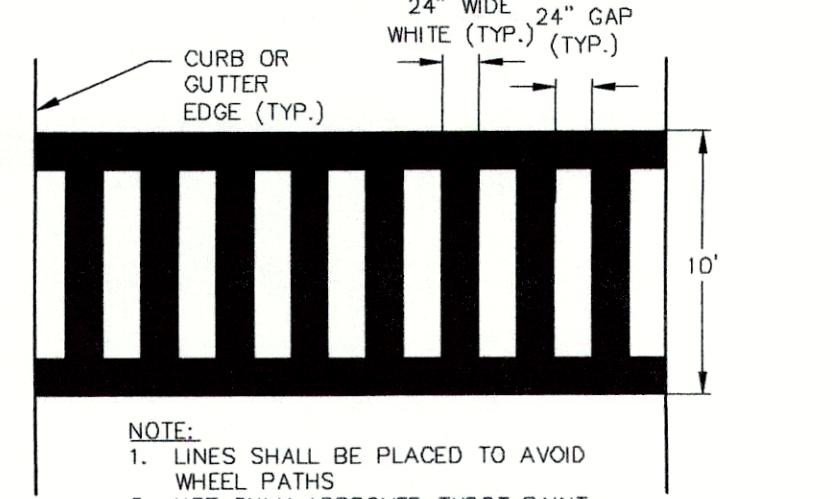
BEDDING MATERIAL SHALL BE FROM AN APPROVED BEDDING MATERIAL SOURCE PER THE LIST OF APPROVED BEDDING SUPPLIERS OR BE APPROVED BY THE CITY ENGINEER.

TRENCH SPOILS ARE NOT ACCEPTABLE FOR "EMBEDMENT ZONE MATERIAL"

PIPE EMBEDMENT ZONE
N.T.S.



PEDESTRIAN CROSSING SIGN
N.T.S.



CONTINENTAL CROSSWALK DETAIL
N.T.S.

Project Title: **TRAIL IMPROVEMENTS PUGH RIVE PARK CHRISTOVALL, TOM GREEN COUNTY**

Drawing Title: **SITE & UTILITY DETAILS**

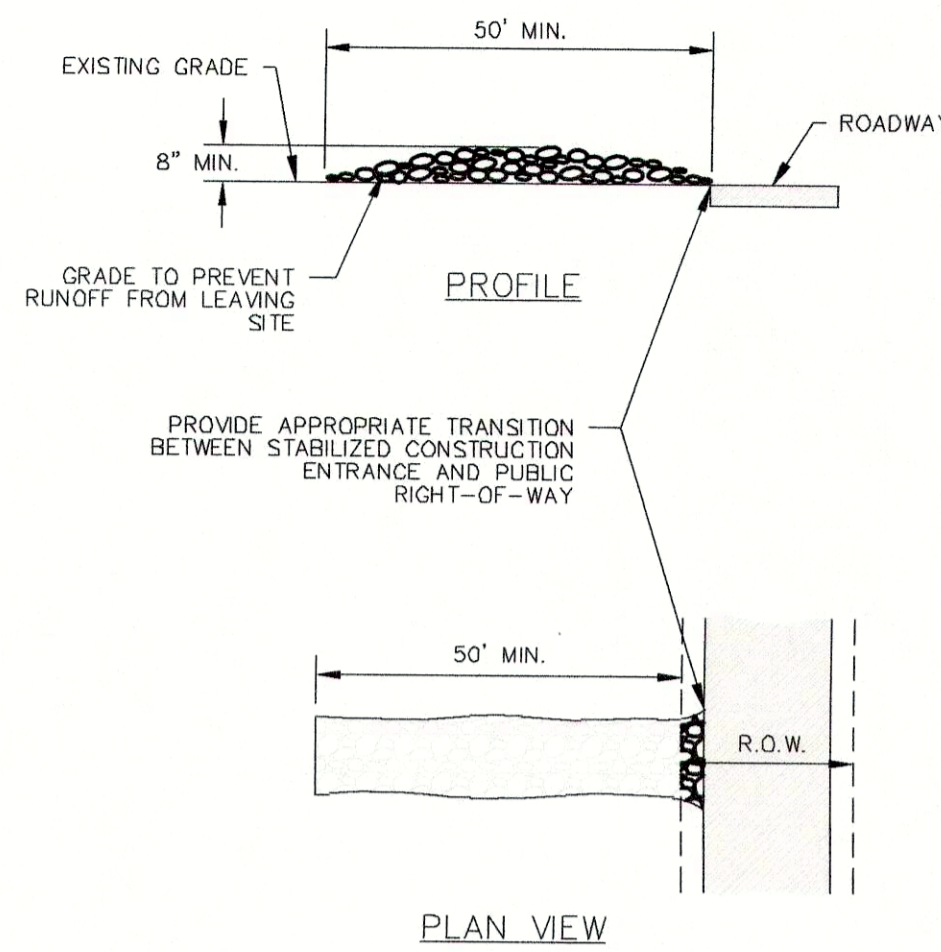
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Checked By: TUF
Scale: AS SHOWN
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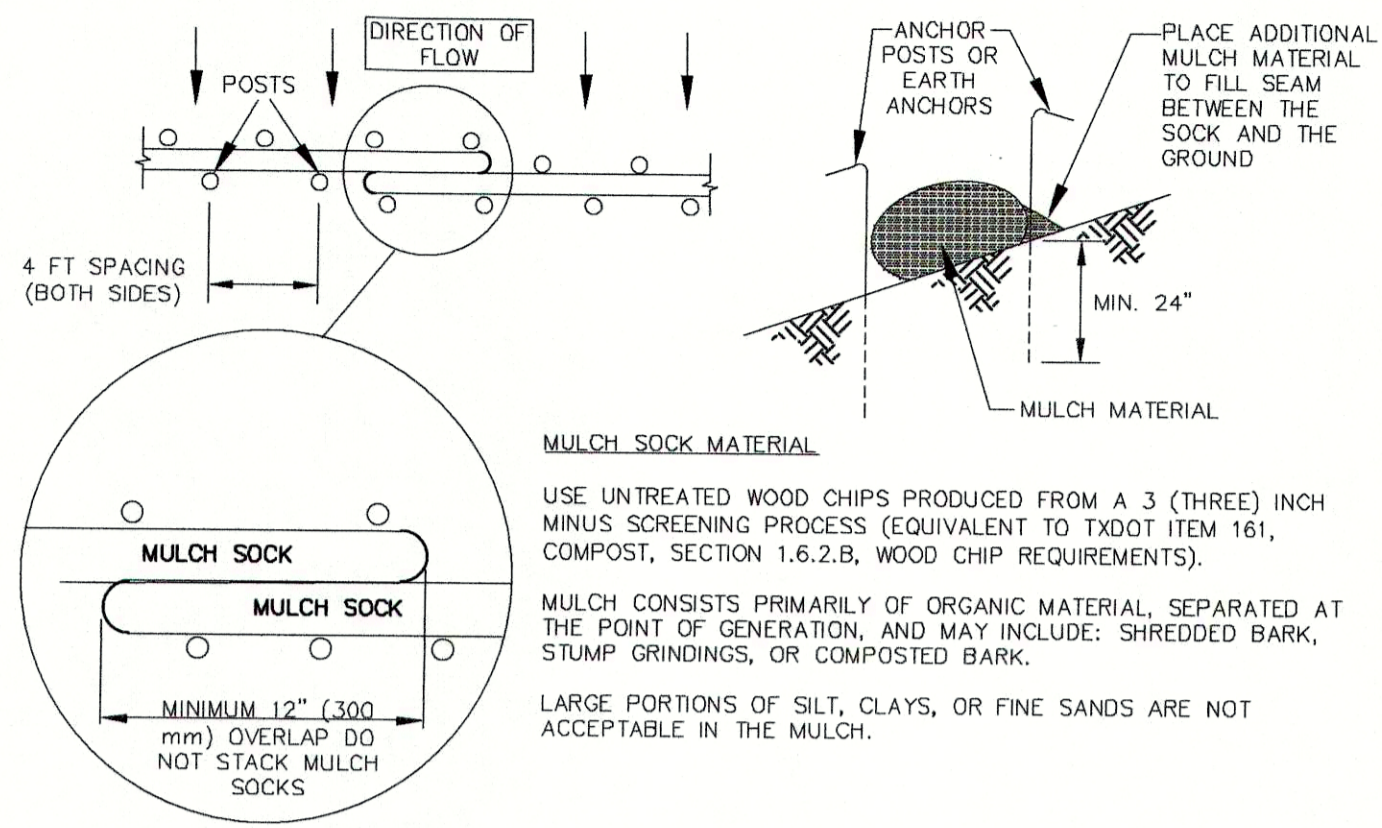


STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

NOTES:

1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

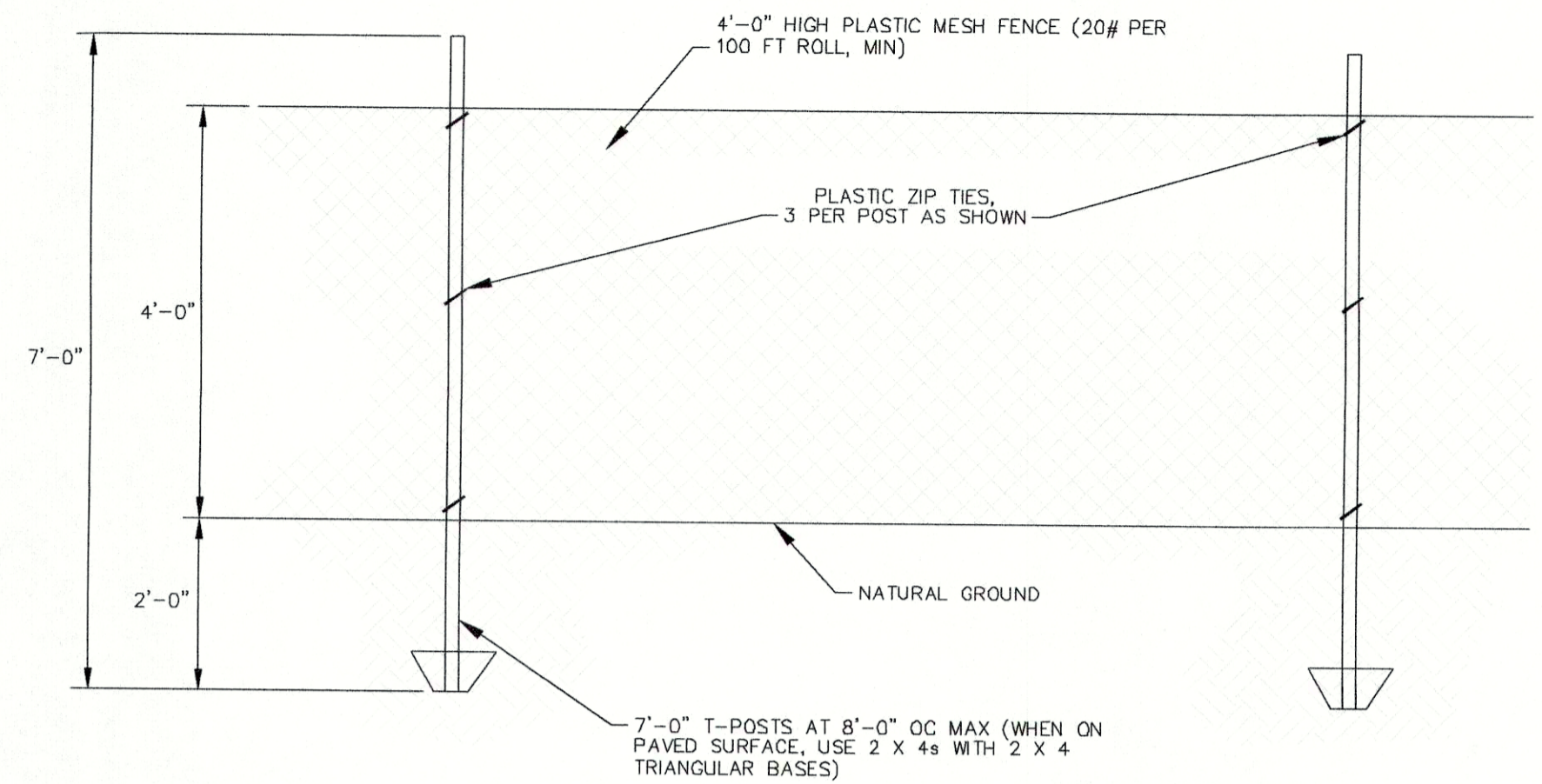


MULCH SOCK

N.T.S.

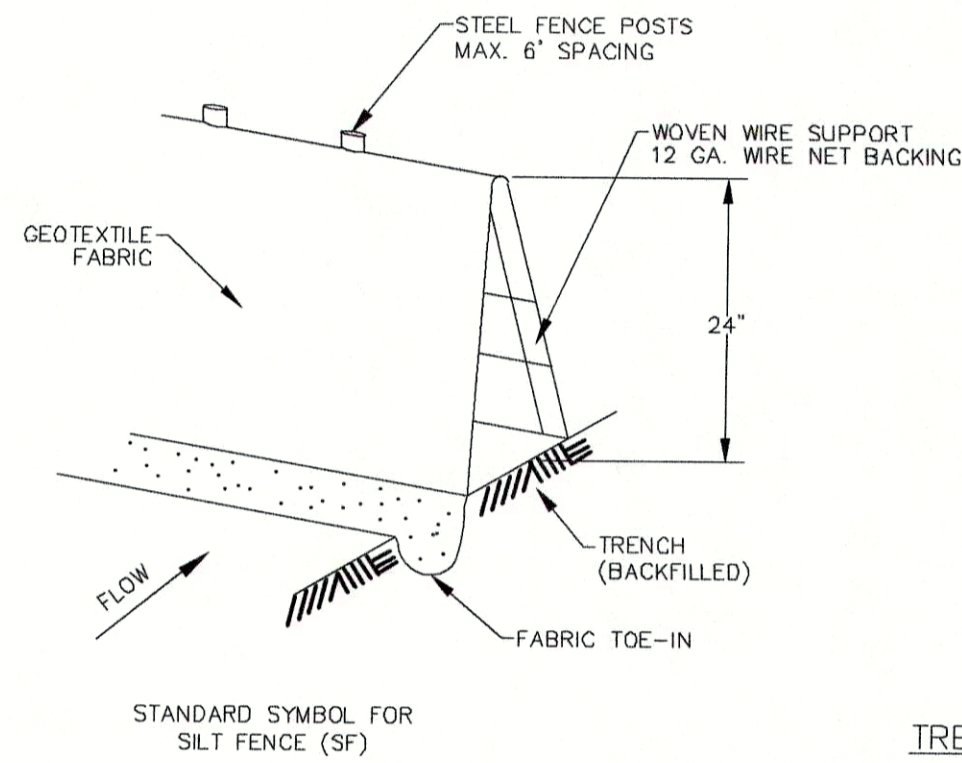
NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.
2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OF MULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).
3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.
4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.1 FOR A GIVEN SLOPE CATEGORY.
6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.



SAFETY FENCE DETAIL

N.T.S.



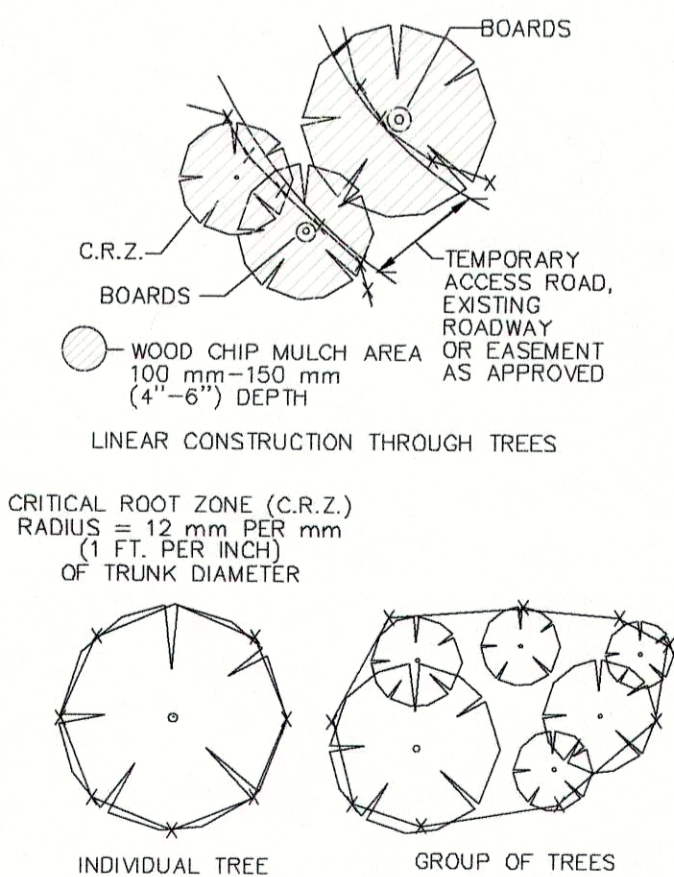
TRENCH CROSS SECTION

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 MINIMUM OF 18".
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 CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
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". THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. ALL EROSION CONTROL MEASURES MUST CONFORM TO TCEQ REQUIREMENTS FOR NON-POINT SOURCE POLLUTION.

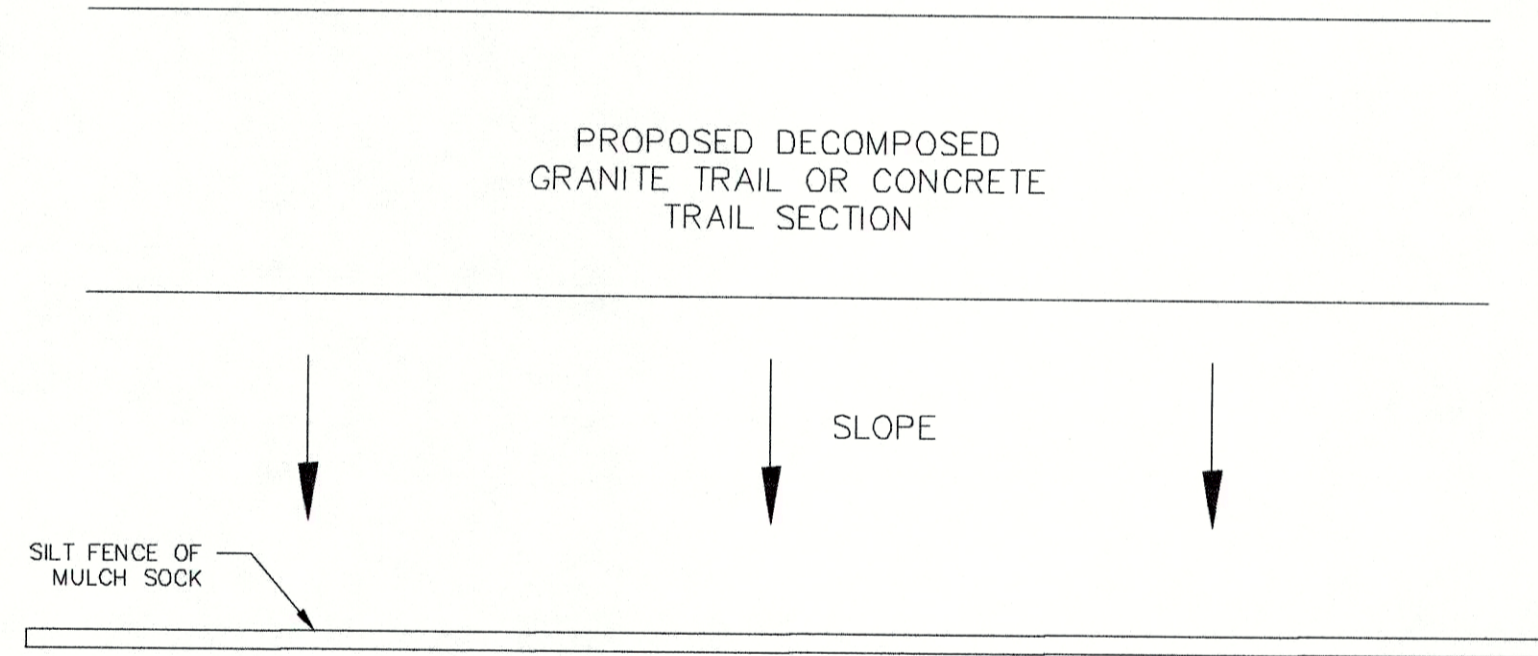
SILT FENCE

N.T.S.



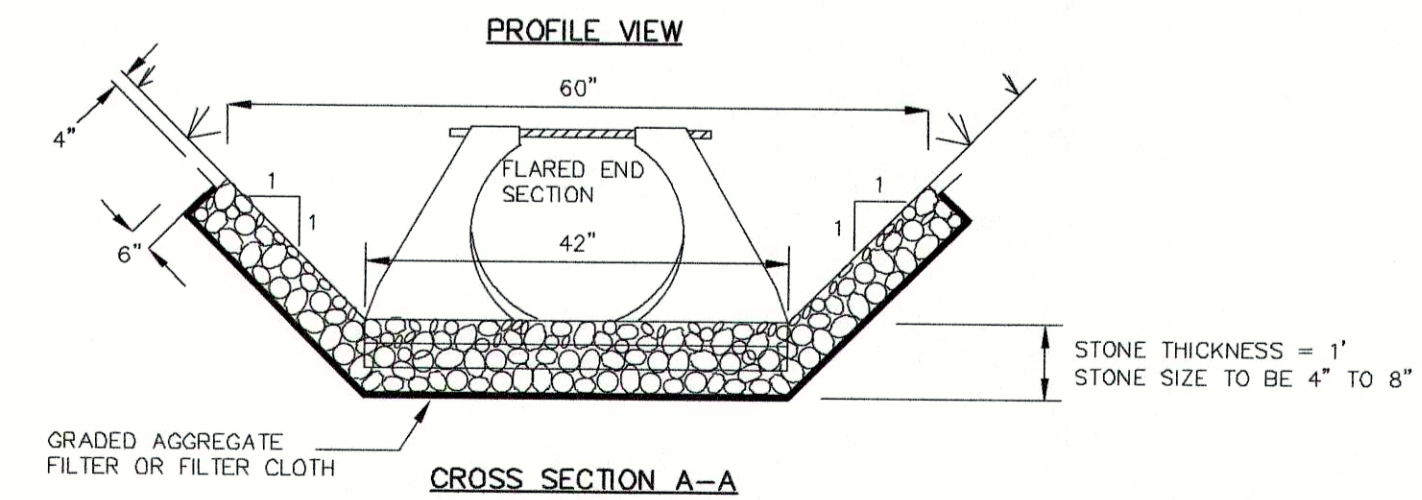
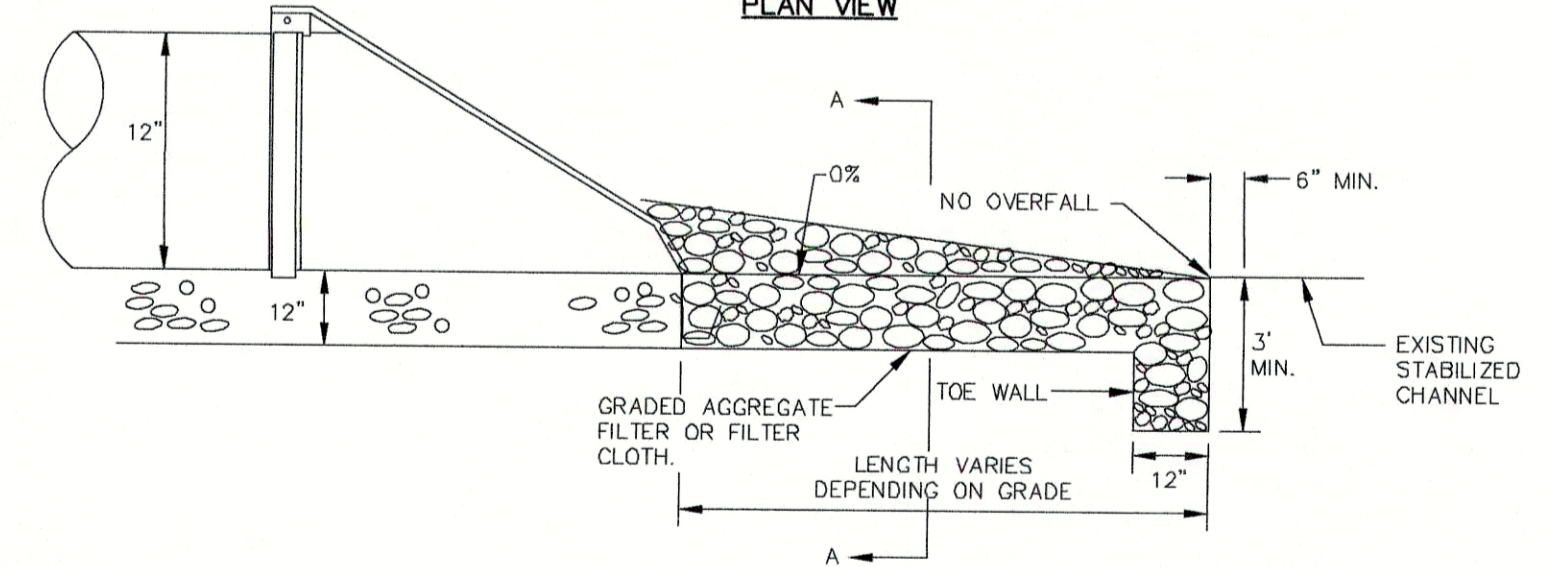
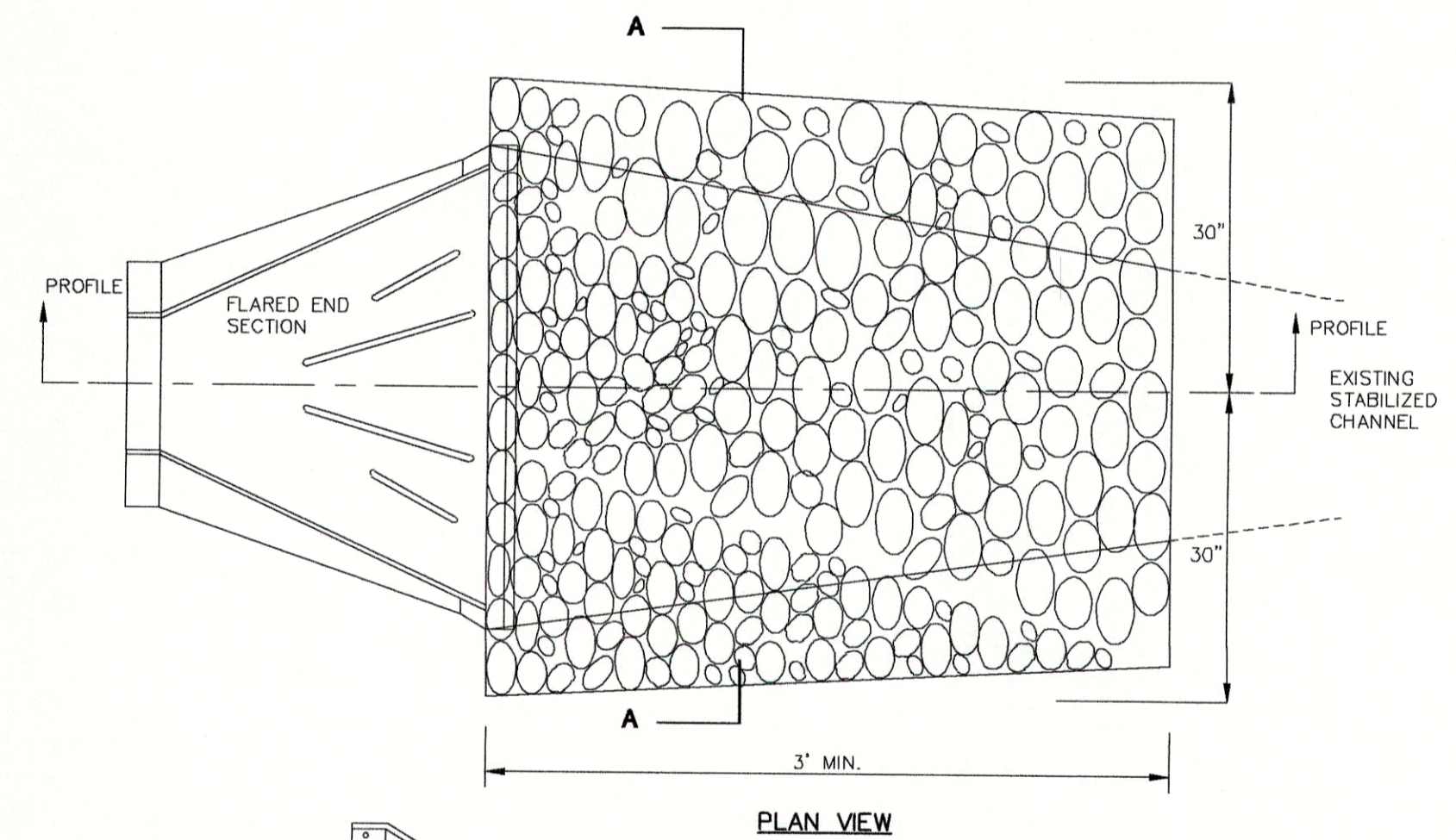
TYPICAL EROSION CONTROL TRAIL CONSTRUCTION

N.T.S.



TREE PROTECTION DETAIL

N.T.S.



RIP-RAP OUTLET PROTECTION DETAIL

N.T.S.

Project Title:
**TRAIL IMPROVEMENTS
PUGH RIVE PARK
CHRISTOVAL, TOM GREEN COUNTY**

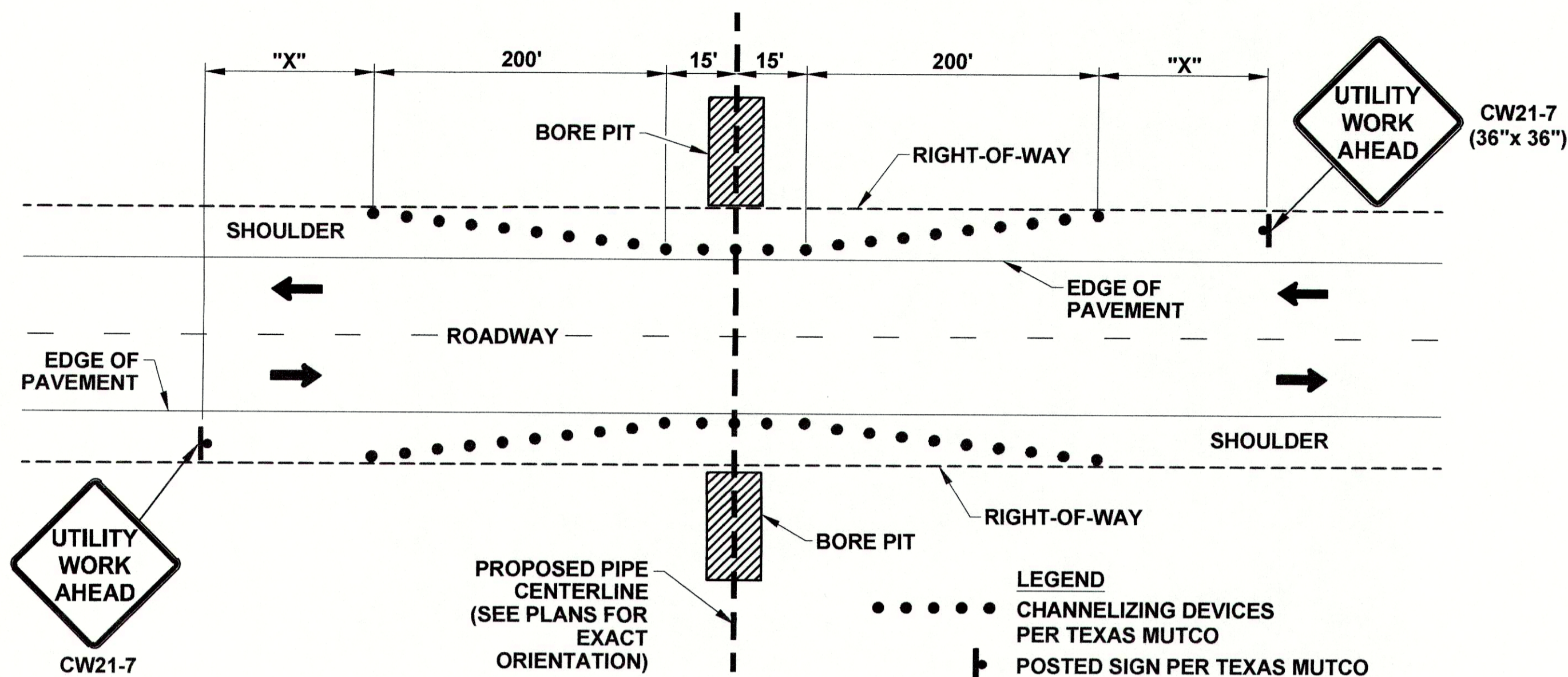
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EROSION CONTROL DETAILS

Drawn By: JPU
Checked By: TUF
Scale: AS SHOWN
Date: 8/2019

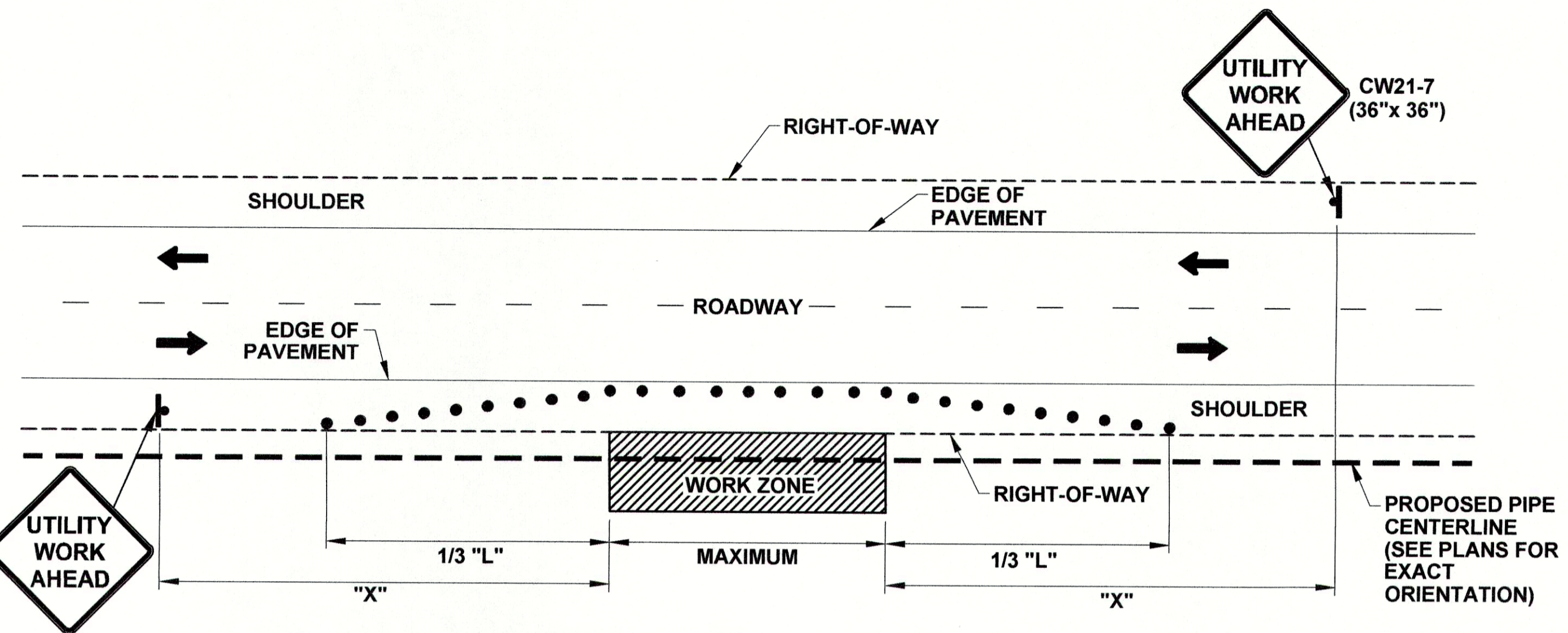


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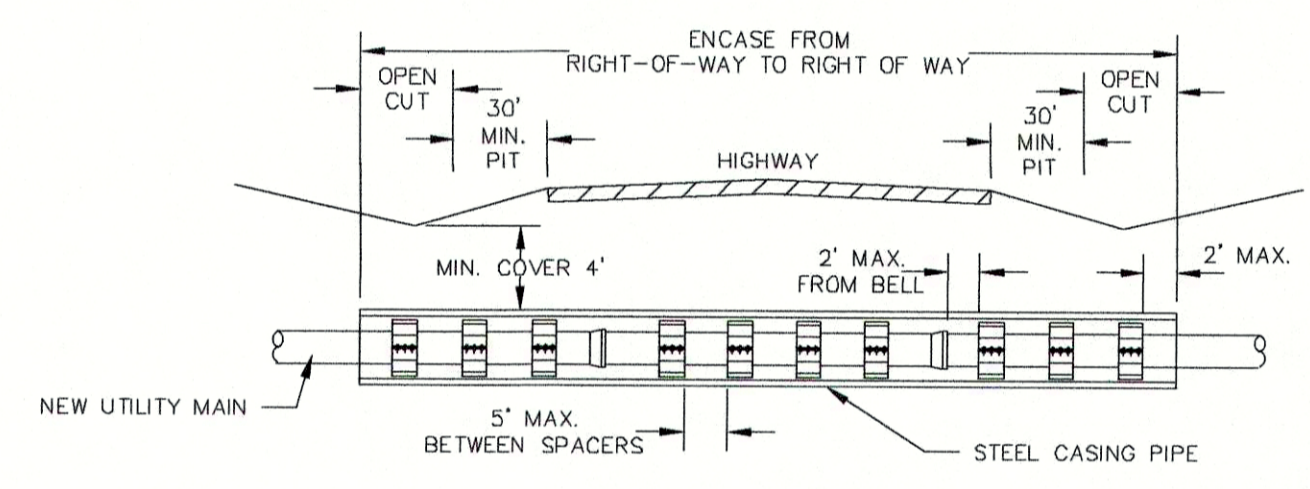
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BORE AT ROADWAY
N.T.S.

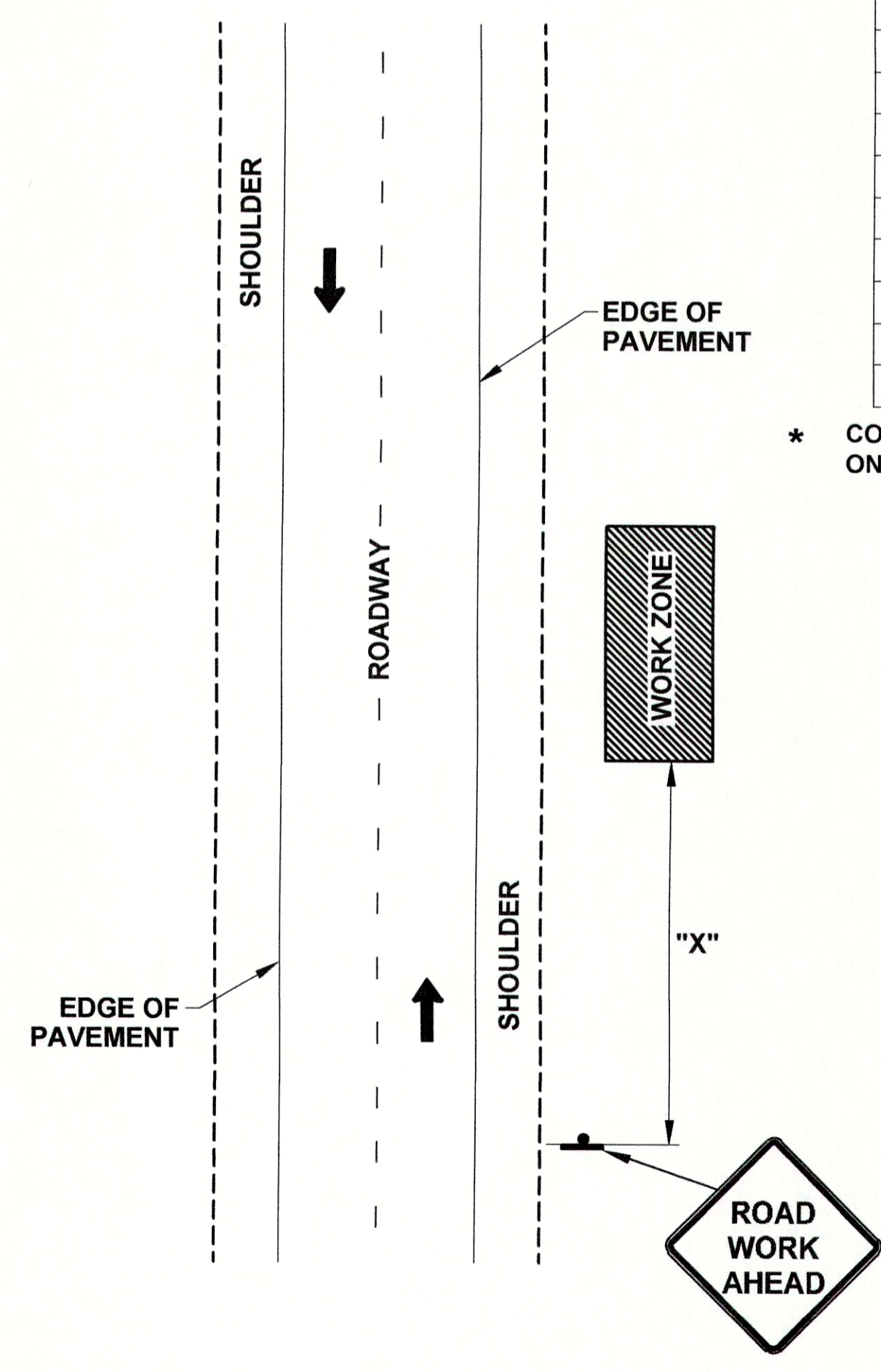


WORK ZONE ADJACENT ROADWAY
N.T.S.



HIGHWAY CROSSING
N.T.S.

- NOTES:
1. ALL HIGHWAY CROSSING AND STREET CROSSING WHERE REQUIRED SHALL BE MADE BY BORING OR TUNNELING.
 2. CASING PIPE SHALL BE MINIMUM 3/8" STEEL PIPE WITH WELDED JOINTS AND BE TWO NOMINAL PIPE SIZES LARGER THAN THE CARRIER PIPE.
 3. CASING SHALL EXTENDED FROM EDGE OF RIGHT-OF-WAY TO EDGE OF RIGHT-OF-WAY OR AS SPECIFIED IN THE PLANS.
 4. EACH END OF CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK GROUT OR A MANUFACTURED WATERTIGHT SEAL.
 5. ALL OVER CUTTING EX CESS OF 1" AROUND CASING PIPE SHALL BE PRESSURE GROUTED.
 6. GROUT SHALL HAVE A MINIMUM STRENGTH OF 1,800 P.S.I. IN 28 DAYS WITH A SLUMP OF 10" OR GREATER.
 7. HDPE CASING SPACERS SHALL BE PLACED AT A MAXIMUM 5' INTERVALS AND 2' FROM EACH BELL AND END OF CASING.
 8. BORE PITS SHALL BE LOCATED AND CONFINED TO THE WORK EASEMENT AND SHALL BE CONSTRUCTED IN SUCH A MANNER AS TO NOT INTERFERE WITH HIGHWAY STRUCTURAL INTEGRITY OR SAFE TRAFFIC OPERATIONS. IF NECESSARY, SHORING SHALL BE USED.



WORK BEYOND THE SHOULDER
N.T.S.

POSTED SPEED *	FORMULA	MINIMUM DESIRABLE TAPER LENGTHS **			SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES		MINIMUM SIGN SPACING "X" DISTANCE	SUGGESTED LONGITUDINAL BUFFER SPACE "B"
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* CONVENTIONAL ROADS ONLY ** TAPER LENGTHS HAVE BEEN ROUNDED OFF. L=LENGTH OF TAPER(FT) W=WIDTH OF OFFSET(FT) S=POSTED SPEED(MPH)

MERGING TAPER LENGTHS AND SPACING OF CHANNELIZING DEVICE
N.T.S.

ROAD CLASSIFICATION	POSTED SPEED (MPH)	SIGN SPACING "X" (FEET)
CONVENTIONAL HIGHWAY	25	100
	30	120
	35	160
	40	240
	45	320
	50	400
	55 *	500
	60 *	600
	65 *	700
70 *	800	
75 *	900	
80 *	1000	
EXPRESSWAY OR FREEWAY	ALL SPEEDS	SEE TYPICAL APPLICATIONS**

- * DISTANCE BETWEEN SIGNS SHOULD BE INCREASED TO HAVE 1500 FEET ADVANCE WARNING.
- ** DISTANCE BETWEEN SIGNS SHOULD BE INCREASED TO HAVE 1/2 MILE OR MORE ADVANCE WARNING.

SUGGESTED ADVANCE WARNING SIGN SPACING
N.T.S.

Project Title: **TRAIL IMPROVEMENTS PUGH RIVE PARK CHRISTOVAL, TOM GREEN COUNTY**

Project No. _____

Drawn By: JPU

Checked By: TUF

Scale: N.T.S.

Date: 8/2019

Revisions and Descriptions

No.	Revisions and Descriptions	By	Date

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