1. ALL CONSTRUCTION WITHIN THE STATE RIGHT OF WAY WILL REQUIRE COMPLIANCE TO TxDOT STANDARD SPECIFICATIONS, STANDARD PLANS, TxDOT ON–LINE MANUALS, AND THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. BY SEALING AND SIGNING THESE PERMIT PLANS AS A PROFESSIONAL CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS, I CERTIFY THAT THE PROPOSED DRIVEWAY OR PUBLIC STREET CONNECTION(S) TO THE STATE ROADWAY MEETS OR EXCEEDS THE MINIMUM STOPPING SIGHT DISTANCE REQUIRED FOR A DESIGN SPEED OF 55 M.P.H. FOR STATE HIGHWAY 205, BASED ON THE MOST RECENT ON–LINE TxDOT ROADWAY DESIGN MANUAL REQUIREMENTS.
3. THE POSTED SPEED LIMIT 55 M.P.H. FOR STATE HIGHWAY 205.
4. SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014 AND SPECIFICATIONS ITEMS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT FOR ALL WORK WITHIN THE STATE RIGHT–OF–WAY.
5. TRAFFIC CONTROL MUST BE MAINTAINED THROUGHOUT THE DURATION OF WORK WITHIN TxDOT R.O.W.
6. ALL DISTURBED R.O.W. MUST BE RE–VEGETATED WITH SOD AND MAINTAINED UNTIL VEGETATION IS RE–ESTABLISHED.
7. ALL LANE CLOSURES MUST BE COORDINATED WITH BOTH TXDOT AND MUNICIPALITY INSPECTORS.
8. NO CONSTRUCTION SHALL BE PERMITTED WITHIN TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) RIGHT OF WAY PRIOR TO TxDOT APPROVAL AND ISSUANCE OF PERMIT.

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) AND CITY STANDARDS OF DESIGN AND CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE "AS BUILT" PLANS TO THE ENGINEER SO THAT THE REPRODUCIBLES OF THE ENGINEERING PLANS MAY BE CORRECTED TO REFLECT "AS BUILT" CONDITIONS.
3. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AND MAINTAIN ALL NECESSARY WARNING AND SAFETY DEVICES (FLASHING LIGHTS, BARRICADES, SIGNS, ETC.) TO PROTECT THE PUBLIC SAFETY AND HEALTH UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED BY THE CITY IN COMPLIANCE WITH TX.M.U.T.C.D. LATEST EDITION.
4. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND VERIFY IN THE FIELD ANY UTILITIES THAT MANY CONFLICT WITH HIS CONSTRUCTION. AT LEAST 24 HOURS PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY OF UNDERGROUND UTILITIES, NOTIFY THE APPROPRIATE UTILITY COORDINATOR.
5. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEANOUTS, VALVE BOXES, FIRE HYDRANTS, ETC., MUST BE ADJUSTED TO THE PROPER LINE AND GRADE BY THE CONTRACTOR PRIOR TO AND AFTER THE PLACING OF PERMANENT PAVING.
6. ALL UNDERGROUND UTILITY WORK TO BE COMPLETED PRIOR TO FINAL SUBGRADE PREPARATION AND PLACING OF PAVEMENT.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH ALL HANDICAPPED ACCESSIBILITY REQUIREMENTS, INCLUDING SIGNAGE, TEXTURES, COLORINGS, MARKINGS, AND SLOPES OF ADA ACCESSIBLE ROUTES AND PARKING SPACES
8. CONTRACTOR SHALL NOTIFY ENGINEER IF ANY DISCREPANCIES ARISE.

CONSTRUCTION PLANS FOR CREEKSIDE COMMONS ACCESS DRIVE BLOCK A, LOTS 1-14

PAVING, GRADING, STORM DRAINAGE, AND TRAFFIC SIGNAL IMPROVEMENTS

CITY OF ROCKWALL, TEXAS
AUGUST 2022

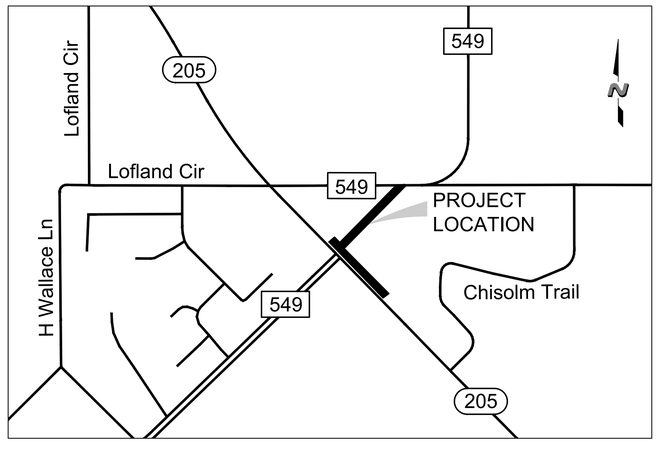
RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED. THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

TBPE FIRM REGISTRATION
#F-8396

STATE OF TEXAS
KEATON L. MAI
125077
LICENSED PROFESSIONAL ENGINEER

11/14/2023



VICINITY MAP
1 IN. = 1,000 FT.
MAPSCO: 46-H

SHEET INDEX

Texas 811
CAUTION NOTICE TO CONTRACTORS
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

OWNER/DEVELOPER
ROCKWALL 205 INVESTORS, LLC
1 CANDLELITE TRAIL
HEATH, TX 75032
PHONE: (469) 446-7734
CONTACT: RUSSELL PHILLIPS
EMAIL: rphil404@aol.com

ENGINEER
THE DIMENSION GROUP
10755 SANDHILL ROAD
DALLAS, TX 75238
PHONE: (214) 343-9400
CONTACT: KEATON L. MAI, PE
EMAIL: kmai@dimensiongroup.com

SURVEYOR
TEXAS HERITAGE SURVEYING, INC.
10610 METRIC DRIVE, SUITE 124
DALLAS, TX 75243
PHONE: (214) 340-9700
CONTACT: DOUG STEWART, RPLS
EMAIL: doug@txheritage.onmicrosoft.com

THE DIMENSION GROUP
ARCHITECTURE • CIVIL ENGINEERING • MEP ENGINEERING
10755 SANDHILL ROAD, DALLAS, TEXAS 75238
TEL: 214-343-9400 www.dimensiongrp.com

GENERAL ITEMS

1. All construction shall conform to the requirements set forth in the City of Rockwall's Engineering Department's "Standards of Design and Construction" and the "Standard Specifications for Public Works Construction" by the North Texas Central Council of Governments, 5th edition amended by the City of Rockwall. The CONTRACTOR shall reference the latest City of Rockwall standard details provided in the Rockwall Engineering Departments "Standards of Design and Construction" manual for details not provided in these plans. The CONTRACTOR shall possess one set of the NCTCOG Standard Specifications and Details and the City of Rockwall's "Standards of Design and Construction" manual on the project site at all times
2. Where any conflicting notes, details or specifications occur in the plans the City of Rockwall General Construction Notes, Standards, Details and Specifications shall govern unless detail or specification is more strict.
3. The City of Rockwall Engineering Departments "Standards of Design and Construction" can be found online at: http://www.rockwall.com/engr.asp
4. All communication between the City and the CONTRACTOR shall be through the Engineering Construction Inspector and City Engineer or designated representative only. It is the responsibility of the CONTRACTOR to contact the appropriate department for inspections that do not fall under this approved engineering plan set.
5. Prior to construction, CONTRACTOR shall have in their possession all necessary permits, plans, licenses, etc.
6. The CONTRACTOR shall have at least one original stamped and signed set of approved engineering plans and specifications on-site and in their possession at all times. A stop work order will be issued if items are not on-site. Copies of the approved plans will not be substituted for the required original "approved plans to be on-site".
7. All material submittals, concrete batch designs and shop drawings required for City review and approval shall be submitted by the CONTRACTOR to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
8. All site dimensions are referenced to the face of curb or edge of pavement unless otherwise noted.
9. The City requires ten (10%) percent-two (2) year maintenance bond for paving, paving improvements, water systems, wastewater systems, storm sewer systems including detention systems, and associated fixtures and structures which are located within the right-of-ways or defined easements. The two (2) year maintenance bond is to state "from date of City acceptance" as the starting time.
10. A review of the site shall be conducted at twenty (20) months into the two (2) year maintenance period. The design engineer or their designated representative and the CONTRACTOR shall be present to walk the site with the City of Rockwall Engineering Inspection personnel.

EROSION CONTROL & VEGETATION

1. The CONTRACTOR or developer shall be responsible, as the entity exercising operational control, for all permitting as required by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). This includes, but is not limited to, preparation of the Storm Water Pollution Prevention Plan (SWPPP), the Construction Site Notice (CSN), the Notice of Intent (NOI), the Notice of Termination (NOT) and any Notice of Change (NOC) and is required to pay all associated fees
2. Erosion control devices as shown on the erosion control plan for the project shall be installed prior to the start of land disturbing activities.
3. All erosion control devices are to be installed in accordance with the approved plans, specifications and Storm Water Pollution Prevention Plan (SWPPP) for the project. Erosion control devices shall be placed and in working order prior to start of construction. Changes are to be reviewed and approved by the design engineer and the City of Rockwall prior to implementation.
4. If the Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) as approved cannot appropriately control erosion and off-site sedimentation from the project, the erosion control plan and/or the SWPPP is required to be revised and any changes reported to the Texas Commission on Environmental Quality (TCEQ), when applicable.
5. All erosion control devices shall be inspected weekly by the CONTRACTOR and after all major rain events, or more frequently as dictated in the project Storm Water Pollution Prevention Plan (SWPPP). CONTRACTOR shall provide copies of inspection's reports to the engineering inspection after each inspection.
6. The CONTRACTOR shall not dispose of waste and any materials into streams, waterways or floodplains. The CONTRACTOR shall secure all excavation at the end of each day and dispose of all excess materials.
7. CONTRACTOR shall take all available precautions to control dust. CONTRACTOR shall control dust by sprinkling water or other means as approved by the City Engineer.
8. CONTRACTOR shall establish grass and maintain the seeded area, including watering, until a "Permanent Stand of Grass" is obtained at which time the project will be accepted by the City. A "Stand of Grass" (not winter rye or weeds) shall consist of 75% to 80% coverage of all disturbed areas and a minimum of one-inch (1") in height as determined by the City. No bare spots will be allowed. Re-seeding will be required in all washed areas and areas that don't grow.
9. All City right-of-ways shall be sodded if disturbed. No artificial grass is allowed in any City right-of-way and/or easements.
10. All adjacent streets/alleys shall be kept clean at all times
11. CONTRACTOR shall keep construction site clean at all times, immediately contain all debris and trash, all debris and trash shall be removed at the end of each work day, and all vegetation on the construction site 10-inches or taller in height must be cut immediately.
12. Suspension of all construction activities for the project will be enforced by the City if any erosion control requirements are not meet. Work may commence after deficiency has been rectified.
13. During construction of the project, all soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The CONTRACTOR is responsible for the temporary protection and permanent stabilization of all soil stockpiles on-site as well as borrow areas and soil intentionally transported from the project site.
14. Where construction vehicles access routes intersect paved or public roads/alleys, construction entrances shall be installed to minimize the transport of sediment by vehicular tracking onto paved surfaces. Where sediment is transferred onto paved or public surfaces, the surface shall be immediately cleaned. Sediment shall be removed from the surface by shoveling or sweeping and transported to a sediment disposal area. Pavement washing shall be allowed only after sediment is removed in this manner.
15. All drainage inlets shall be protected from siltation, ineffective or unmaintained protection devices shall be immediately replaced and the inlet and storm system cleaned. Flushing is not an acceptable method of cleaning.
16. During all dewatering operations, water shall be pumped into an approved filtering device prior to discharge into a receiving outlet.

TRAFFIC CONTROL

1. All new Detouring or Traffic Control Plans are required to be submitted to the City for review and approval a minimum of 21 calendar days prior to planned day of implementation.
2. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety, and the efficiency of road user flow is an integral element of every traffic control zone.
3. All traffic control plans shall be prepared and submitted to the Engineering Department in accordance with the standards identified in Part VI of the most recent edition of the TMUTCD. Lane closures will not occur on roadways without an approval from the Rockwall Engineering Department and an approved traffic control plan. Traffic control plans shall be required on all roadways as determined by the City Engineer or the designated representative.
4. All traffic control plans must be prepared, signed, and sealed by an individual that is licensed as a professional engineer in the State of Texas. All traffic control plans and copies of work zone certification must be submitted for review and approval a minimum of three (3) weeks prior to the anticipated temporary traffic control.
5. The CONTRACTOR executing the traffic control plan shall notify all affected property owners two (2) weeks prior to any the closures in writing and verbally.
6. Any deviation from an approved traffic control plan must be reviewed by the City Engineer or the designated representative. If an approved traffic control plan is not adhered to, the CONTRACTOR will first receive a verbal warning and be required to correct the problem immediately. If the deviation is not corrected, all construction work will be suspended, the lane closure will be removed, and the roadway opened to traffic.
7. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, all temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure.
8. Lane closures on any major or minor arterial will not be permitted between the hours of 6:00 am to 9:00 am and 3:30 pm to 7:00 pm. Where lane closures are needed in a school area, they will not be permitted during peak hours of 7:00 am – 9:00 am and 3:00 pm to 5:00 pm. Closures may be adjusted according to the actual start-finish times of the actual school with approval by the City Engineer. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure of a roadway whether they are working or not.
9. No traffic signs shall be taken down without permission from the City.
10. No street/roadway will be allowed to be fully closed.

UTILITY LINE LOCATES

1. It is the CONTRACTOR's responsibility to notify utility companies to arrange for utility locates at least 48 hours prior to beginning construction. The completeness and accuracy of the utility data shown on the plans is not guaranteed by the design engineer or the City. The CONTRACTOR is responsible for verifying the depth and location of existing underground utilities proper to excavating, trenching, or drilling and shall be required to take any precautionary measures to protect all lines shown and .or any other underground utilities not on record or not shown on the plans.
2. The CONTRACTOR shall be responsible for damages to utilities
3. CONTRACTOR shall adjust all City of Rockwall utilities to the final grades.
4. All utilities shall be placed underground.
5. CONTRACTOR shall be responsible for the protection of all existing main lines and service lines crossed or exposed by construction operations. Where existing mains or service lines are cut, broken or damaged, the CONTRACTOR shall immediately make repairs to or replace the entire service line with same type of original construction or better. The City of Rockwall can and will intervene to restore service if deemed necessary and charge the CONTRACTOR for labor, equipment, material and loss of water if repairs aren't made in a timely manner by the CONTRACTOR.
6. The City of Rockwall (City utilities) is not part of the Dig Tess or Texas one Call – 811 – line locate system. All City of Rockwall utility line locates are to be scheduled with the City of Rockwall Service Center. 972-771-7730. A 48-hour advance notice is required for all non-emergency line locates.
7. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Material used for backfilling trenches shall be properly compacted to 95% standard density in order to minimize erosion, settlement, and promote stabilization that the geotechnical engineer recommends.
   c. Applicable safety regulations shall be complied with.
11. This plan details pipes up to 5 feet from the building. Refer to the building plans for building connections. CONTRACTOR shall supply and install pipe adapters as necessary.
12. All underground lines shall be installed, inspected, and approved prior to backfilling.
13. All concrete encasement shall have a minimum of 28 days compressive strength at 3,000 psi (min. 5.5 sack mix).

WATER LINE NOTES

1. The CONTRACTOR shall maintain existing water service at all times during construction.
2. Proposed water lines shall be AWWA C900-16 PVC Pipe (blue in color) for all sizes, DR 14 (PC 305) for pipeline sizes 12-inch and smaller, and DR 18 (PC 235) for 14-inch and larger water pipelines unless otherwise shown on water plan and profiles sheets. Proposed water lines shall be constructed with minimum cover of 4 feet for 6-inch through 8-inch, 5 feet for 12-inch through 18-inch and 6 feet for 20-inch and larger.
3. Proposed water line embedment shall be NCTCOG Class 'B-3' as amended by the City of Rockwall's engineering standards of design and construction manual.
4. CONTRACTOR shall coordinate the shutting down of all water lines with the City of Rockwall Engineering Inspector and Water Department. The City shall operate all water valves. Allow 5 business days from the date of notice to allow City personnel time to schedule a shut down. Two additional days are required for the CONTRACTOR to notify residents in writing of the shut down after the impacted area has been identified. Water shut downs impacting businesses during their normal operation hours is not allowed. CONTRACTOR is required to coordinate with the Rockwall Fire Department regarding any fire watch requirements as well as any costs incurred when the loss of fire protection to a structure occurs.
5. CONTRACTOR shall furnish and install gaskets on water lines between all dissimilar metals and at valves (both existing and proposed).
6. All fire hydrants and valves removed and salvaged shall be returned to the City of Rockwall Municipal Service Center.
7. Blue EMS pads shall be installed at every change in direction, valve, curb stop and service tap on the proposed water line and every 250'.
8. All water valve hardware and valve extensions, bolts, nuts and washers shall be 316 stainless steel.
9. All fire hydrants bolts, nuts and washers that are buried shall be 316 stainless steel.
10. Abandoned water lines to remain in place shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product. Valves to be abandoned in place shall have any extensions and the valve box removed and shall be capped in concrete.
11. All fire hydrants will have a minimum of 5 feet of clearance around the appurtenance including but not limited to parking spaces and landscaping.
12. All joints are to be megalug joints with thrust blocking.
13. Water and sewer mains shall be kept 10 feet apart (parallel) or when crossing 2 feet vertical clearance.
14. CONTRACTOR shall maintain a minimum of 4 feet of cover on all water lines.
15. All domestic and irrigation services are required to have a testable backflow device with a double check valve installed per the City of Rockwall regulations at the property line and shown on plans.

WASTEWATER LINE NOTES

1. The CONTRACTOR shall maintain existing wastewater service at all times during construction.
2. Wastewater line for 4-inch through 15-inch shall be Green PVC – SDR 35 (ASTM D3034) [less 10 ft cover] and SDR 26 (ASTM D3034) [10 ft or more cover]. For 18-inch and lager wastewater line shall be Green PVC – PS 46 (ASTM F679) [less 10 ft cover] and PS 115 (ASTM F679) [10 ft or more cover]. No services will be allowed on a sanitary sewer line deeper than 10 feet.
3. Proposed wastewater line embedment shall be NCTCOG Class 'H' as amended by the City of Rockwall's public works standard design and construction manual.
4. Green EMS pads shall be installed at every 250', manhole, clean out and service lateral on proposed wastewater lines.
5. CONTRACTOR shall CCTV all existing wastewater lines that are to be abandoned to ensure that all laterals are accounted for and transferred to proposed wastewater lines prior to abandonment.
6. All abandoned wastewater and force main lines shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product.
7. Existing manholes and cleanouts not specifically called to be relocated shall be adjusted to match final grades.
8. All wastewater pipes and public services shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR's expense. A television survey will be performed as part of the final testing in the twentieth (20^{th}) month of the maintenance period.
9. All manholes (public or private) shall be fitted with inflow prevention. The inflow prevention shall conform to the measures called out in standard detail R-5031.
10. All new or existing manholes being modified shall have corrosion protection being Raven Liner 405 epoxy coating, ConShield, or approved equal.. Consheild must have terracotta color dye mixed in the precast and cast-in-place concrete. Where connections to existing manholes are made the CONTRACTOR shall rehab manhole as necessary and install a 125 mil thick coating of Raven Liner 405 or approved equal.
11. All new or existing manholes that are to be placed in pavement shall be fitted with a sealed (gasketed) rim and cover to prevent inflow.
12. If an existing wastewater main or trunk line is called out to be replaced in place a wastewater bypassing pump plan shall be required and submitted to the Engineering Construction Inspector and City Engineer for approval prior to implementation. Bypass pump shall be fitted with an auto dialer and conform to the City's Noise Ordinance. Plan shall be to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
13. CONTRACTOR shall maintain a minimum of 4 feet of cover on all wastewater lines.

GENERAL CONSTRUCTION NOTES
Sheet 1 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087
P (972) 771-7746
F (972) 771-7748

THE DIMENSION GROUP
ARCHITECTURE · CIVIL ENGINEERING · MEP ENGINEERING
TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
LICENSED ENGINEER

11/14/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/14/2023 – 10:25 am
dwg.

CITY OF ROCKWALL GENERAL NOTES

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C0.1

DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

1. All pavements to be removed and replaced shall be saw cut to full depth along neat squared lines shown in the plans.
2. Proposed concrete pavement shall be constructed with longitudinal butt construction joints at all connections to existing concrete pavement.
3. All public concrete pavement to be removed and replaced shall be full panel replacement, 1-inch thicker and on top of 6-inch thick compacted flexbase.
4. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the City of Rockwall. No excess excavation shall be deposited in the City Limits without a permit from the City of Rockwall. If the CONTRACTOR places excess materials in these areas without written permission, the CONTRACTOR will be responsible for all damages resulting from such fill and shall remove the material at their own cost.

PAVING AND GRADING

1. All detention systems are to be installed and verified for design compliance along with the associated storm sewer and outflow structures, prior to the start of any paving operations (including building foundations). Erosion protection shall be placed at the pond outflow structures, silt fence along the perimeter of the pond along with any of the associated erosion BMPs noted on the erosion control plan, and the sides and bottom of the detention system shall have either sod or anchored seeded curlex installed prior to any concrete placement.
2. All paving roadway, driveways, fire lanes, drive-isles, parking, dumpster pads, etc. sections shall have a minimum thickness, strength, reinforcement, joint type, joint spacing and subgrade treatment shall at a minimum conform to the City standards of Design and Construction and table below.

Street/Pavement Type	Minimum Thickness (inches)	Streng th 28-Day (psi)	Minimum Cement (sacks / CY)		Steel Reinforcement	
			Machine placed	Hand Placed	Bar #	Spacing (O.C.E.W.)
Arterial	10”	3,600	6.0	6.5	#4 bars	18”
Collector	8”	3,600	6.0	6.5	#4 bars	18”
Residential	6”	3,600	6.0	6.5	#3 bars	24”
Alley	7”-5”-7”	3,600	6.0	6.5	#3 bars	24”
Fire Lane	6”	3,600	6.0	6.5	#3 bars	24”
Driveways	6”	3,600	6.0	6.5	#3 bars	24”
Barrier Free Ramps	6”	3,600	N/A	6.5	#3 bars	24”
Sidewalks	4”	3,000	N/A	5.5	#3 bars	24”
Parking Lot/Drive Aisles	5”	3,000	5.0	5.5	#3 bars	24”
Dumpster Pads	7”	3,600	6.0	6.5	#3 bars	24”

3. Reinforcing steel shall be tied (100%). Reinforcing steel shall be set on plastic chairs. Bar laps shall be minimum 30 diameters. Sawed transverse dummy joints shall be spaced every 15 feet or 1.25 time longitudinal butt joint spacing whichever is less. Sawing shall occur within 5 to 12 hours after the pour, including sealing. Otherwise, the section shall be removed and longitudinal butt joint constructed.
4. No sand shall be allowed under any paving.
5. All concrete mix design shall be submitted to the City for review and approval prior to placement.
6. Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per C.Y. of concrete. The fly ash replacement shall be 1.25 lbs. per 1.0 lb. cement reduction.
7. All curb and gutter shall be integral (monolithic) with the pavement.
8. All fill shall be compacted by sheep's foot roller to a minimum 95% standard proctor. Maximum loose lift for compaction shall be 8 inches. All lifts shall be tested for density by an independent laboratory. All laboratory compaction reports shall be submitted to the City Engineering Construction Inspector once results are received. All reports will be required prior to final acceptance.
9. All concrete compression tests and soil compaction/density tests are required to be submitted to the City’s Engineering Inspector immediately upon results.
10. All proposed sidewalks shall include barrier free ramps at intersecting streets, alleys, etc. Barrier free ramps (truncated dome plate in Colonial or brick red color) shall meet current City and ADA requirements and be approved by the Texas Department of Licensing and Regulation (TDLR).
11. All public sidewalks shall be doweled into pavement where it abuts curbs and driveways. Expansion joint material shall be used at these locations.
12. All connection of proposed concrete pavement to existing concrete pavement shall include a longitudinal butt joint as the load transfer device. All longitudinal butt joints shall be clean, straight and smooth (not jagged in appearance)
13. Cracks formed in concrete pavement shall be repaired or removed by the CONTRACTOR at the City's discretion. CONTRACTOR shall replace existing concrete curbs, sidewalk, paving, a gutters as indicated on the plans and as necessary to connect to the existing infrastructure, including any damage caused by the CONTRACTOR.
14. All residential lots will require individual grading plans submitted during the building permit process that correspond with the engineered grading and drainage area plans.
15. Approval of this plan is not an authorization to grade adjacent properties when the plans or field conditions warrant off-site grading. Written permission must be obtained and signed from the affected property owner(s) and temporary construction easements may be required. The written permission shall be provided to the City as verification of approval by the adjacent property owner(s). Violation of this requirement will result in suspension of all work at the job site until issue has been rectified.
16. All cut or fill slopes of non-paved areas shall be a maximum of 4:1 and minimum of 1%.
17. CONTRACTOR agrees to repair any damage to property and the public right-of-way in accordance with the City Standards of Design and Construction.
18. CONTRACTOR shall protect all monuments, iron pins/rods, and property corners during construction.
19. CONTRACTOR shall ensure positive drainage so that runoff will drain by gravity flow to new or existing drainage inlets or sheet flow per these approved plans.

DRAINAGE / STORM SEWER NOTES

1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural concrete shall be 4200 psi compressive strength at 28 days minimum 7.0 sack mix, air entrained, unless noted otherwise. Fly ash shall not be allowed in any structural concrete.
3. Proposed storm sewer embedment shall be NCTCOG Class 'B' as amended by the City of Rockwall's Engineering Department Standards of Design and Construction Manual.
4. All public storm pipe shall be a minimum of 18-inch reinforced concrete pipe (RCP), Class III, unless otherwise noted.
5. All storm pipe entering structures shall be grouted to assure connection at the structure is watertight.
6. All storm structures shall have a smooth uniform poured mortar invert from invert in to invert out.
7. All storm sewer manholes in paved areas shall be flush with the paving grade, and shall have traffic bearing ring and covers.
8. All storm sewer pipes and laterals shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR’s expense. A television survey will be performed as part of the final testing in the twentieth (20^{th}) month of the maintenance period.

RETAINING WALLS

1. All retaining walls, regardless of height, will be reviewed and approved by the City Engineering Department
2. All retaining walls (including foundation stem walls), regardless of height, will be constructed of rock/stone/brick or rock/stone/brick faced. No smooth concrete walls are allowed. Wall materials shall be the same for all walls on the project.
3. All portions, including footings, tie-backs, and drainage backfill, of the wall shall be on-site and not encroach into any public easements or right-of-way. The entire wall shall be in one lot and shall not be installed along a lot line.
4. All walls 3 feet and taller will be designed and signed/sealed by a registered professional engineer in the State of Texas. The wall design engineer is required to inspect the wall construction and supply a signed/sealed letter of wall construction compliance to the City of Rockwall along with wall as-builts prior to City Engineering acceptance.
5. No walls are allowed in detention easements. A variance to allow retaining walls in a detention easement will require approval by the Planning and Zoning Commission with appeals being heard by the City Council.

FINAL ACCEPTANCE AND RECORD DRWINGS/AS-BUILTS

1. Final Acceptance shall occur when all the items on the Checklist for Final Acceptance have been completed and signed-off by the City. An example of the checklist for final acceptance has been included in the Appendix of the Standards of Design and Construction. Items on the checklist for final acceptance will vary per project and additional items not shown on the check list may be required.
2. After improvements have been constructed, the developer shall be responsible for providing to the City “As Built” or “Record Drawings”. The Design Engineer shall furnish all digital files of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (.pdf) format with a CD-ROM disk or flash drive. The disk or drive shall include a full set of plans along with any landscaping, wall plans, and details sheets.
3. Submit 1-set of printed drawings of the “Record Drawings” containing copies of all sheets to the Engineering Construction Inspector for the project. The printed sheets will be reviewed by the inspector PRIOR to producing the “Record Drawing” digital files on disk or flash drive. This will allow any revisions to be addressed prior to producing the digital files.
4. Record Drawing Disk drawings shall have the Design Engineers seal, signature and must be stamped and dated as “Record Drawings” or “As Built Drawings” on all sheets.
5. The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineer’s surveyor/surveyors did not verify grades after construction, or that the Record Drawings were based solely on information provided by the construction contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.
6. Example of Acceptable Disclaimer: “To the best of our knowledge ABC Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.”

GENERAL CONSTRUCTION NOTES
Sheet 2 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087

P (972) 771-7746
F (972) 771-7748

THE DIMENSION GROUP
ARCHITECTURE · CIVIL ENGINEERING · MEP ENGINEERING
13755 SANDHILL ROAD, DALLAS, TEXAS 75238
TEL: 214.343.8040 · www.dimensiongroup.com

TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
LICENSED CIVIL ENGINEER

11/14/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/14/2023 – 10:25 am
dwg.

CITY OF ROCKWALL GENERAL NOTES

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C0.2

20230000008813 1/10 PLAT 05/31/2023 03:42:43 PM

FINAL PLAT
CREEKSIDE COMMONS
LOTS 1-13, BLOCK A
34.484 ACRES / 1,502,144.12 SF
13 LOTS
SITUATED WITHIN TRACTS 17-5 & 17-8 OF THE
W. W. FORD SURVEY, ABSTRACT NO. 80
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

PAGE 1 OF 10

CASE # P2022-052
DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 150' / DRAWN: JACOB

SCALE 1"=150'

CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD
C1	81.75'	1155.00'	04°03'19"	S58°43'21"W 81.73'
C2	284.58'	1110.00'	14°41'22"	S53°26'21"W 283.80'
C3	248.45'	970.00'	14°40'31"	N53°27'16"E 247.77'
C4	493.93'	1345.00'	21°02'27"	N50°13'28"E 491.16'

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	75.92'	S 00°19'31" E
L2	27.47'	S 16°51'44" W
L3	40.01'	S 22°54'56" W
L4	57.97'	S 00°40'17" E
L5	29.01'	S 25°31'25" W
L6	10.85'	S 46°58'36" W
L7	67.68'	S 04°39'47" W
L8	80.15'	S 04°05'04" E
L9	20.61'	S 28°59'48" E
L10	49.11'	S 49°25'52" E
L11	25.46'	S 19°56'28" E
L12	31.76'	S 10°02'02" W
L13	32.94'	S 29°56'16" W
L14	152.35'	S 01°52'06" E
L15	210.12'	S 16°29'14" W
L16	158.06'	S 15°07'34" W
L17	194.04'	N 43°53'05" E
L18	194.04'	N 44°16'30" E
L19	194.05'	S 44°07'00" W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L20	6.34'	N 01°00'24" E
L21	117.82'	N 46°00'24" E
L22	293.25'	N 60°44'32" E
L23	25.00'	S 29°15'28" E
L24	185.92'	N 29°14'45" W
L25	177.40'	N 45°52'02" W
L26	117.82'	S 46°00'24" W
L27	13.64'	N 88°17'09" W
L28	99.40'	N 45°52'38" W
L29	19.03'	S 44°09'02" W
L30	121.80'	S 01°07'51" E
L31	269.59'	N 44°08'05" E
L32	269.61'	N 44°01'14" E
L33	269.62'	N 43°59'07" E
L34	269.64'	N 44°08'20" E
L35	114.68'	S 33°19'17" E
L36	25.09'	S 29°29'58" E

LEGEND:

IRF	IRON ROD FOUND
PC "TXDOT"	IRON ROD FOUND WITH PINK CAP STAMPED "TXDOT"
IRS	IRON ROD SET WITH YELLOW CAP STAMPED "TXHS"
<CM>	CONTROLLING MONUMENT
D.R.R.C.T.	DEED RECORDS, ROCKWALL COUNTY, TEXAS
M.R.R.C.T.	MAP RECORDS, ROCKWALL COUNTY, TEXAS
O.P.R.R.C.T.	OFFICIAL PUBLIC RECORDS, ROCKWALL COUNTY, TEXAS
INST. NO.	INSTRUMENT NUMBER
VOL., PG.	VOLUME, PAGE
ESMT.	EASEMENT
FEC	FARMERS ELECTRIC COOPERATIVE
L=	LENGTH

VICINITY MAP (NOT TO SCALE)

SHEET LAYOUT

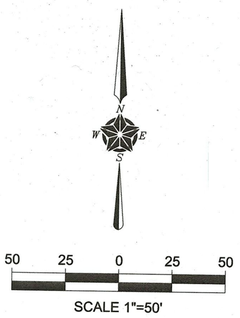
PG2 PG3 PG4
PG5 PG6 PG7
PG8 PG9

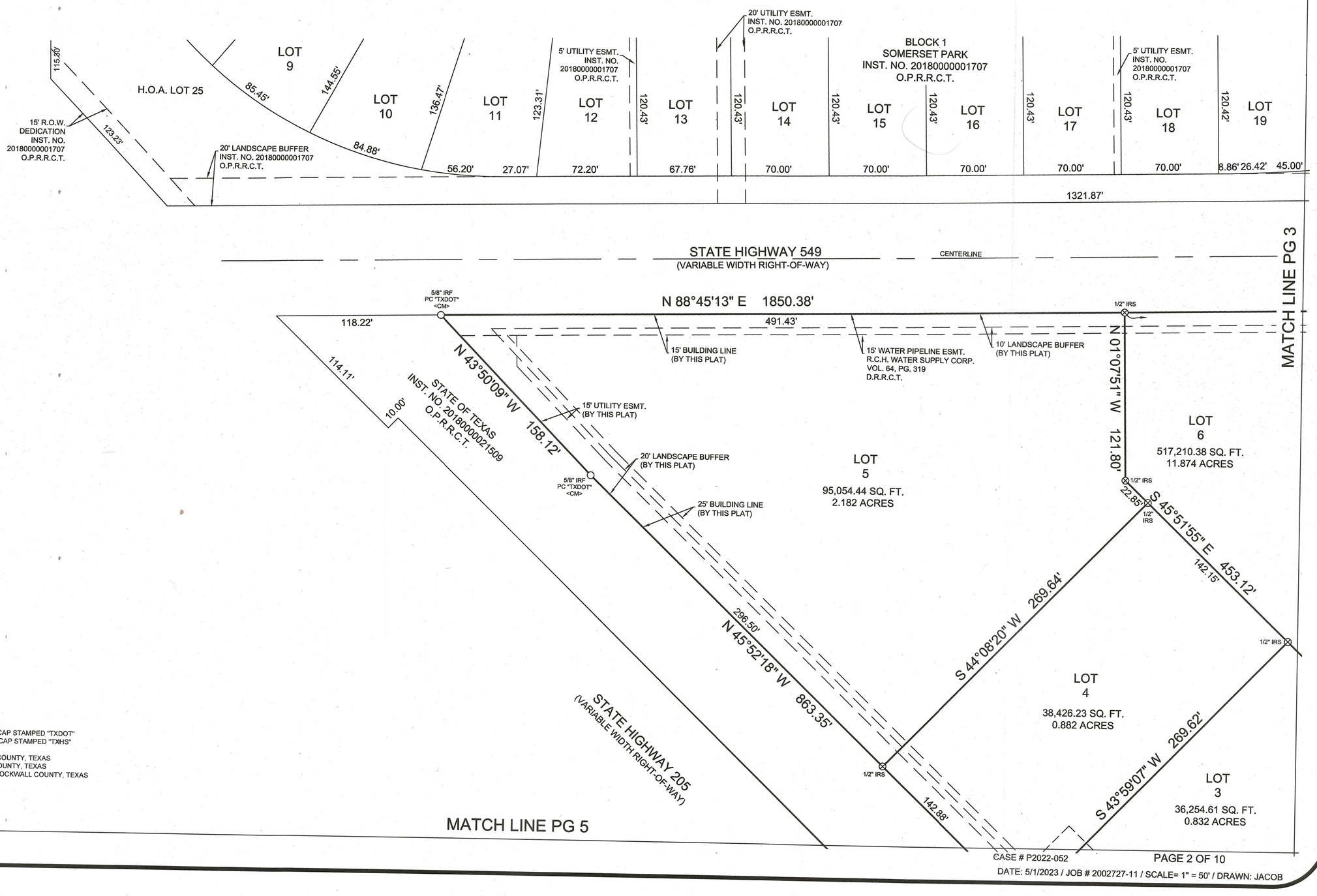
SURVEYOR
TEXAS HERITAGE SURVEYING, LLC
10610 Metric Drive, Suite 124, Dallas, TX 75243
Office 214-340-9700 Fax 214-340-9710
txheritage.com
Firm No. 10169300

OWNER
549 CROSSING, LP
10755 SANDHILL ROAD
DALLAS, TEXAS 75238

OWNER
ROCKWALL 205 INVESTORS, LLC
1 CANDLELITE TRAIL
HEATH, TEXAS 75032

ENGINEER
THE DIMENSION GROUP
10755 SANDILL ROAD
DALLAS, TEXAS 75238
attn: KEATON MAI





LEGEND:

IRF	IRON ROD FOUND
PC "TXDOT"	IRON ROD FOUND WITH PINK CAP STAMPED "TXDOT"
IRS	IRON ROD SET WITH YELLOW CAP STAMPED "TXHS"
<CM>	CONTROLLING MONUMENT
D.R.R.C.T.	DEED RECORDS, ROCKWALL COUNTY, TEXAS
M.R.R.C.T.	MAP RECORDS, ROCKWALL COUNTY, TEXAS
O.P.R.R.C.T.	OFFICIAL PUBLIC RECORDS, ROCKWALL COUNTY, TEXAS
INST. NO.	INSTRUMENT NUMBER
VOL., PG.	VOLUME, PAGE
ESMT.	EASEMENT

50 25 0 25 50

SCALE 1"=50'

BLOCK 1
SOMERSET PARK
INST. NO. 20180000001707
O.P.R.R.C.T.

LOT 20

LOT 21

LOT 21

LOT 24

120.00'

120.00'

87.67'

87.67'

120.00'

83.42'

76.56'

46.19'

115.64'

117.55'

5' UTILITY ESMT.
INST. NO. 20180000001707
O.P.R.R.C.T.

64.87'

20' LANDSCAPE BUFFER
INST. NO. 20180000001707
O.P.R.R.C.T.

H.O.A. LOT 25

28.38'

SYLVANPARK DRIVE
(83' RIGHT-OF-WAY)

SANITARY SEWER ESMT.
INST. NO. 20170000002409
O.P.R.R.C.T.

247.13'

40' BUILDING LINE
INST. NO. 20140000006510
O.P.R.R.C.T.

10' ELECTRIC & TELEPHONE ESMT.
INST. NO. 20140000006510
O.P.R.R.C.T.

LOT 2

15' WATER LINE ESMT.
INST. NO. 20140000006510
O.P.R.R.C.T.

BLOCK A
EDWARDS ACRES SUBDIVISION
INST. NO. 20140000006510
O.P.R.R.C.T.

621.78'

123.28'

558.17'

MATCH LINE PG 2

STATE HIGHWAY 549
(VARIABLE WIDTH RIGHT-OF-WAY)

CENTERLINE

N 88°45'13" E 1850.38'

507.25'

1358.95'

10' LANDSCAPE BUFFER
(BY THIS PLAT)

15' WATER PIPELINE ESMT.
R.C.H. WATER SUPPLY CORP.
VOL. 64, PG. 319
D.R.R.C.T.

15' BUILDING LINE
(BY THIS PLAT)

30.26'

594.40'

SANITARY SEWER ESMT.
INST. NO. 20150000003475
D.R.R.C.T.

L85

BFE = 519

19.911

L82

L81

L42

L80

30' WASTEWATER ESMT.
(BY THIS PLAT)

L41

MATCH LINE PG 4

WILLIAM W. FORD SURVEY,
ABSTRACT NO. 80

SANITARY SEWER ESMT.
INST. NO. 20150000003475
D.R.R.C.T.

DRAINAGE EASEMENT/
EROSION HAZARD
SETBACK LINE
(BY THIS PLAT)

L57

L58

20' WATER ESMT.
(BY THIS PLAT)

L40

L71

UTILITY ESMT.
(BY THIS PLAT)

L83

25' BUILDING
LINE
(BY THIS PLAT)

L91

L39

L79

382.65'

S 60°46'14" W

L56

L70

L38

39.21'

20' LANDSCAPE
BUFFER
(BY THIS PLAT)

L55

L73

42.05'

L90

L54

10.00'

5/8" IRF
PC "TXDOT"
<CM>

S 29°29'58" E

25.09'

L102

5/8" IRF
PC "TXDOT"
<CM>

L126

STATE HIGHWAY 549
(VARIABLE WIDTH RIGHT-OF-WAY)

TRACT ONE
793,730.47 SQ. FT.
18.222 ACRES

CREEKSIDE COMMONS CROSSING, LP
INST. NO. 20220000021201
O.P.R.R.C.T.

LOT
6
517,210.38 SQ. FT.
11.874 ACRES

CREEKSIDE COMMONS
BLOCK A
1,502,144.12 SQ. FT.
34.484 ACRES

S 45°51'55" E 453.12'

134.55'

36,254.61
SQ. FT.
0.832 ACRES

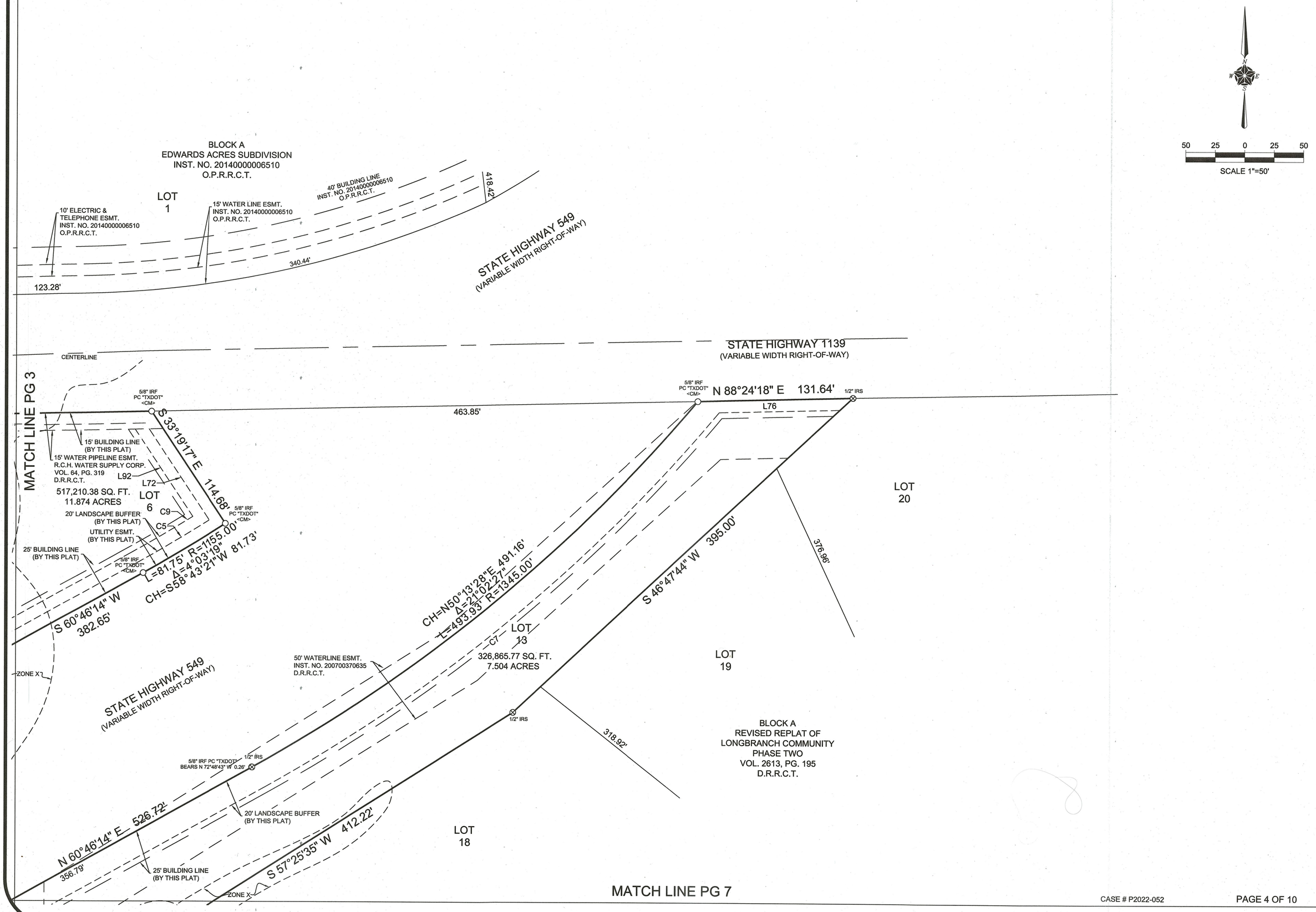
LOT
3

1/2" IRS

LOT
2
41,328.89 SQ. FT.
0.949 ACRES

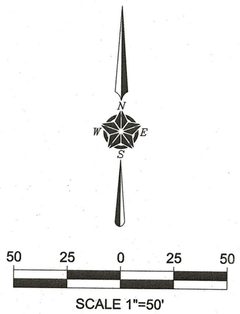
153.57'

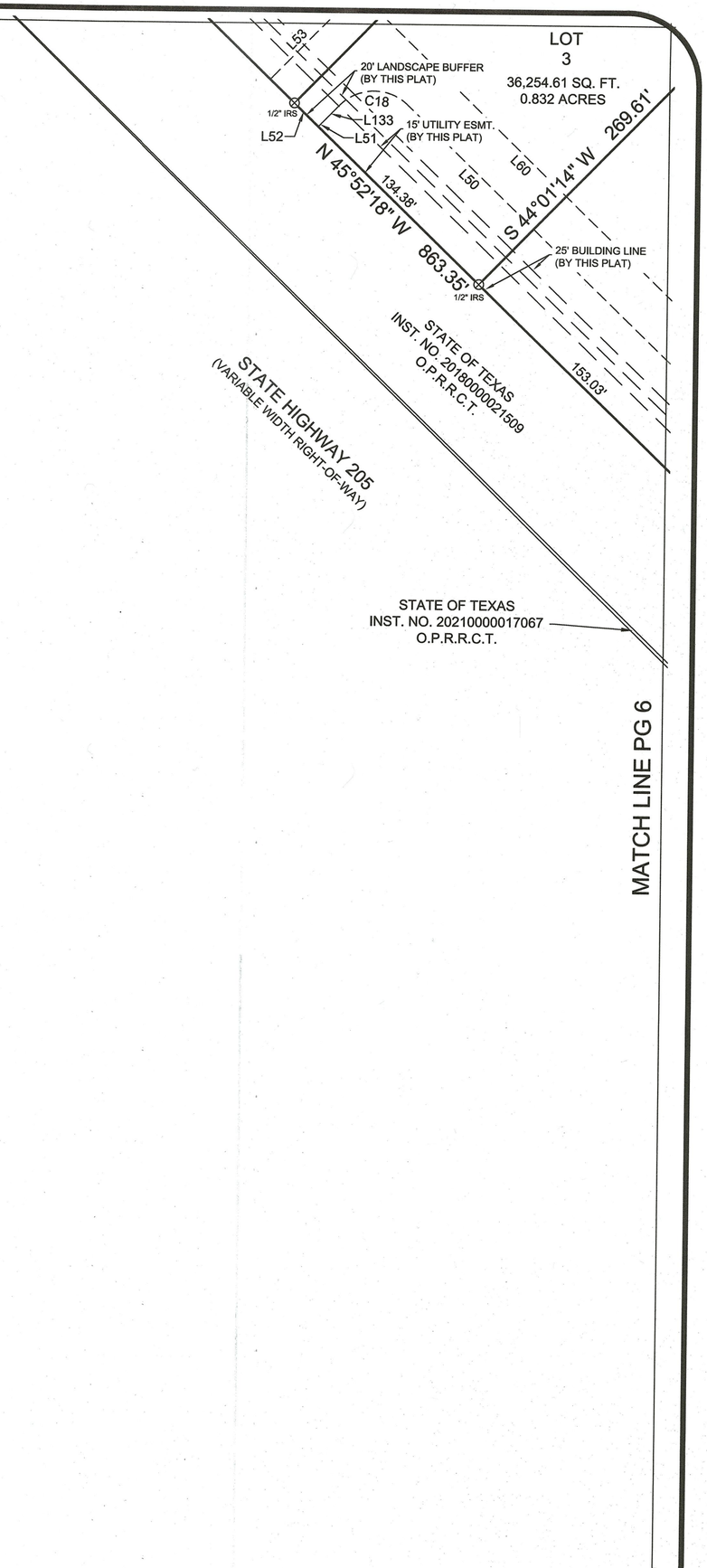
MATCH LINE PG 6



DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB

MATCH LINE PG 2





EASEMENT CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD
C5	71.03'	1133.58'	3°35'25"	N58° 58' 31"E 71.02'
C6	243.28'	935.72'	14°53'48"	N53° 27' 17"E 242.60'
C7	505.55'	1361.76'	21°16'15"	N50° 08' 06"E 502.65'
C8	156.06'	1129.92'	7°54'49"	N56° 49' 37"E 155.94'
C9	60.32'	1123.58'	3°04'33"	N59° 13' 57"E 60.31'
C10	35.08'	25.00'	80°24'27"	S86° 04' 08"E 32.28'
C11	153.50'	1217.83'	7°13'18"	N57° 20' 17"E 153.39'
C12	23.41'	1110.00'	1°12'29"	S60° 10' 48"W 23.41'
C13	48.20'	30.00'	92°03'14"	N75° 56' 55"W 43.18'
C14	88.11'	1187.83'	4°15'00"	S55° 53' 57"W 88.09'
C15	68.78'	49.00'	80°25'32"	S86° 00' 47"E 63.27'
C16	39.27'	25.00'	90°00'00"	S89° 08' 05"W 35.36'
C17	76.97'	49.00'	90°00'04"	S89° 08' 07"W 69.30'
C18	39.27'	25.00'	90°00'08"	S89° 08' 12"W 35.36'
C19	39.27'	25.00'	90°00'07"	N89° 07' 55"E 35.35'
C20	289.70'	1130.00'	14°41'20"	N53° 26' 20"E 288.91'
C21	25.92'	16.50'	90°00'00"	N88° 44' 15"E 23.34'
C22	25.92'	16.50'	90°00'00"	S1° 15' 34"E 23.33'
C23	113.79'	1106.94'	5°53'23"	N48° 57' 05"E 113.74'
C24	35.80'	1106.94'	1°51'11"	S50° 58' 11"W 35.80'

CASE # P2022-052

DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB

MATCH LINE PG 3

MATCH LINE PG 5

MATCH LINE PG 7

MATCH LINE PG 8

LOT 2
41,328.89 SQ. FT.
0.949 ACRES

LOT 1
65,455.92 SQ. FT.
1.503 ACRES

LOT 6
517,210.38 SQ. FT.
11.874 ACRES

LOT 7
60,252.43 SQ. FT.
1.383 ACRES

LOT 8
47,388.29 SQ. FT.
1.088 ACRES

LOT 9
183,328.22 SQ. FT.
4.209 ACRES

LOT 10

LOT 11
24,831.12 SQ. FT.
0.570 ACRES

LOT 12
28,181.92 SQ. FT.
0.647 ACRES

LOT 13
326,865.77 SQ. FT.
7.504 ACRES

TRACT TWO
708,413.65 SQ. FT.
16.263 ACRES

REMAINDER OF
ROCKWALL 205 INVESTORS, LLC
INST. NO. 20160000001487
O.P.R.R.C.T.

549 CROSSING, LP
INST. NO. 20210000028395
O.P.R.R.C.T.

STATE HIGHWAY 549
(VARIABLE WIDTH RIGHT-OF-WAY)

STATE HIGHWAY 205
(VARIABLE WIDTH RIGHT-OF-WAY)

STATE OF TEXAS
INST. NO. 20210000017067
O.P.R.R.C.T.

STATE OF TEXAS
INST. NO. 20180000021509
O.P.R.R.C.T.

DETENTION ESMT. (BY THIS PLAT)
100YR WATER SURFACE ELEVATION= 545.20
24' FIRELANE, ACCESS, & UTILITY ESMT. (BY THIS PLAT)
15' UTILITY ESMT. (BY THIS PLAT)
25' BUILDING LINE (BY THIS PLAT)
20' LANDSCAPE BUFFER (BY THIS PLAT)
VARIABLE WIDTH UTILITY ESMT. (BY THIS PLAT)
FEC UTILITY ESMT. (BY THIS PLAT)
UTILITY ESMT. (BY THIS PLAT)
SANITARY SEWER ESMT. INST. NO. 20150000003475 D.R.R.C.T.
DRAINAGE EASEMENT/ EROSION HAZARD SETBACK LINE (BY THIS PLAT)
ZONE A (SFHA)
ZONE X
BFE = 516

S 44°08'05" W 269.59'
S 45°53'13" E 261.06'
S 60°45'12" W 437.07'
N 60°46'14" E 526.72'
S 29°15'28" E 25.00'
169.93'
S 00°19'31" E 75.92'
S 16°51'44" W 27.47'
S 22°54'56" W 40.01'
S 00°40'17" E 57.97'
S 25°31'25" W 29.01'
S 46°58'36" W 10.85'
S 04°39'47" W 67.68'
S 04°05'04" E 80.15'
S 28°59'48" E 20.61'
S 49°25'52" E 49.11'
S 19°56'28" E 25.46'
S 10°02'02" W 31.76'
S 29°56'16" W 32.94'
S 01°52'06" E 152.35'
S 16°29'14" W 210.12'
L=284.58' R=1110.00' Δ=14°41'22" CH=S53°26'21"W 283.80'
N 60°44'32" E 293.25'
185.77'
107.48'
S 29°14'45" E 185.92'
CH=N53°27'16"E 247.77' Δ=14°40'31" R=970.00' L=248.45' L=176.56' L=170.74'
S 45°52'02" E 177.40'
S 60°45'15" W 232.34'
S 45°52'02" E 542.00'
127.49'
S 44°07'00" W 194.05'
N 45°52'13" W 1230.96'
145.26'
S 44°07'58" W 194.04'
145.21'
N 46°00'24" E 117.82'
N 01°00'24" E 6.34'
S 46°00'24" W 117.82'
S 44°09'02" W 19.03'
N 45°52'38" W 99.40'
N 88°17'09" W 13.64'
136.56'
153.57'
2553.30'
309.61'

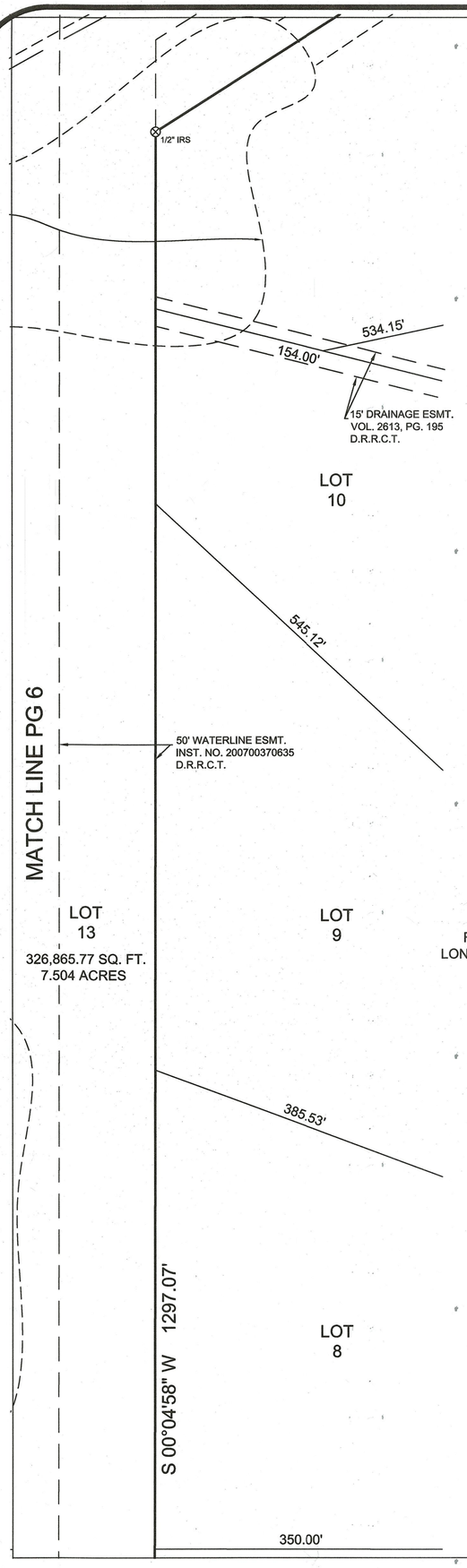
SANITARY SEWER ESMT. INST. NO. 20150000003475 D.R.R.C.T.

5/8" IRF PC "TXDOT" <CM>
1/2" IRS
1/2" IRF YELLOW CAP "TXHS"

SCALE 1"=50'

CASE # P2022-052
DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB

MATCH LINE PG 4



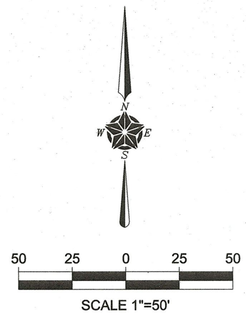
EASEMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L38	58.09'	S7°53'35"W
L39	52.52'	S5°12'37"E
L40	57.86'	S41°00'19"W
L41	50.06'	S14°21'43"W
L42	104.55'	S8°38'06"W
L43	427.07'	N60°45'08"E
L44	182.35'	S45°51'55"E
L45	70.46'	S29°55'18"E
L46	6.59'	S60°50'37"W
L47	9.73'	N29°55'18"W
L48	139.25'	N45°51'55"W
L49	143.09'	S44°08'02"W
L50	208.04'	N45°51'50"W
L51	4.00'	S44°06'49"W
L52	35.00'	N45°53'11"W
L53	64.54'	N44°06'49"E
L54	15.09'	N29°13'46"W
L55	4.21'	N60°46'14"E
L56	74.46'	N10°06'25"E
L57	208.50'	N0°05'08"E

EASEMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L58	151.54'	N0°05'08"E
L59	192.10'	N44°05'45"E
L60	268.07'	S45°52'02"E
L61	17.51'	S45°59'58"W
L62	9.30'	N45°52'38"W
L63	22.87'	N10°59'40"W
L64	60.33'	N44°05'55"E
L65	10.50'	N45°53'11"W
L66	90.21'	N44°07'24"E
L67	35.00'	S45°53'11"E
L68	139.95'	S44°06'49"W
L69	12.97'	S10°59'31"E
L70	59.83'	N10°06'25"E
L71	362.47'	N60°46'14"E
L72	93.20'	N33°19'17"W
L73	25.86'	N60°46'14"E
L74	34.98'	S29°15'28"E
L75	49.99'	N60°46'14"E
L76	102.56'	N88°24'18"E
L77	10.00'	N29°13'33"W

EASEMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L78	107.70'	N 46°00'24" E
L79	211.93'	S10°51'32"W
L80	6.95'	N89°50'07"E
L81	57.32'	N0°03'08"E
L82	19.37'	S1°14'41"E
L83	250.76'	S10°51'32"W
L84	7.65'	N45°52'13"W
L85	216.36'	N88°45'13"E
L86	101.78'	N46°00'24"E
L87	273.27'	N60°44'32"E
L88	24.99'	S29°15'28"E
L89	546.71'	N60°46'14"E
L90	25.09'	N29°13'46"W
L91	402.53'	N60°46'14"E
L92	89.33'	N33°19'17"W
L93	1195.44'	N45°52'13"W
L94	5.74'	N45°52'38"W
L95	10.50'	N45°53'11"W
L96	20.94'	S44°07'47"W
L97	11.21'	S44°06'49"W

EASEMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L98	34.53'	N45°52'02"W
L99	162.36'	N43°47'26"E
L100	15.00'	S46°15'34"E
L101	158.64'	S43°43'24"W
L102	53.86'	S29°22'22"W
L103	52.29'	S13°32'54"W
L104	53.58'	S3°57'56"E
L105	53.41'	S5°53'02"E
L106	51.52'	S7°48'14"W
L107	50.33'	S16°43'19"W
L108	48.99'	S10°05'04"W
L109	49.98'	S16°46'36"W
L110	44.78'	S35°07'49"W
L111	49.90'	S6°11'07"W
L112	52.17'	S16°56'45"E
L113	45.99'	S1°24'22"E
L114	32.33'	S2°47'42"W
L115	48.32'	S39°25'12"E
L116	85.80'	S52°19'37"E
L117	51.84'	S14°13'56"W

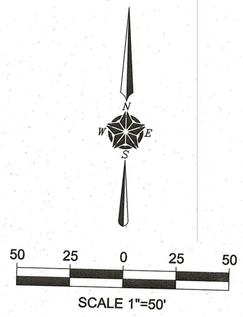
EASEMENT LINE TABLE		
LINE #	LENGTH	DIRECTION
L118	61.86'	S8°26'16"W
L119	63.29'	S50°19'42"W
L120	47.58'	S5°11'50"W
L121	51.87'	S19°51'38"W
L122	47.73'	S11°41'54"W
L123	50.26'	S2°46'22"W
L124	42.15'	S8°20'29"E
L125	50.04'	S10°07'11"E
L126	67.17'	S39°36'35"E
L127	25.11'	N45°53'13"W
L128	59.25'	N45°54'13"W
L129	112.34'	N46°00'24"E
L130	59.56'	N45°53'11"W
L131	10.00'	S44°06'49"W
L132	58.55'	S45°53'11"E
L133	11.54'	S44°08'51"W



MATCH LINE PG 9

CASE # P2022-052

DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB



GENERAL NOTES:

1) It shall be the policy of the City of Rockwall to withhold issuing building permits until all streets, water, sewer and storm drainage systems have been accepted by the City. The approval of a plat by the City does not constitute any representation, assurance or guarantee that any building within such plat shall be approved, authorized or permit therefore issued, nor shall such approval constitute any representation, assurance or guarantee by the City of the adequacy and availability for water for personal use and fire protection within such plat, as required under Ordinance 83-54.

2) Bearings are based upon the Texas State Plane Coordinate System, Texas North Central Zone, (4202) North American Datum of 1983, (2011).

3) The purpose of this plat is to create 13 lots.

4) Benchmarks:

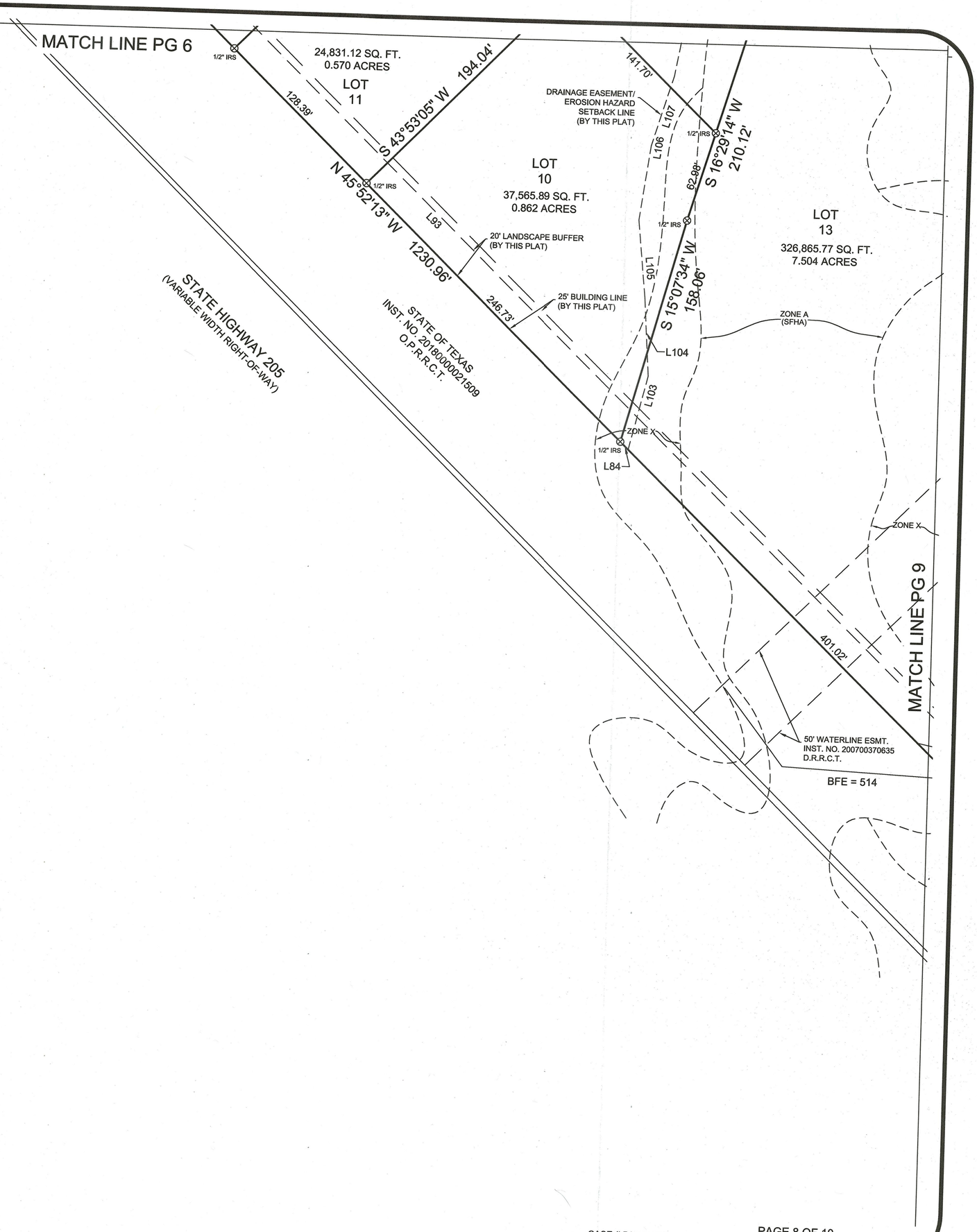
COR-8: Aluminum disk stamped "City of Rockwall Survey Monument" at the northerly intersection of Silver View Lane and Diamond Way Drive ± 1 foot north of curb line in center of curve.
N= 7,018,063.113; E= 2,609533.682; Elevation= 600.48'

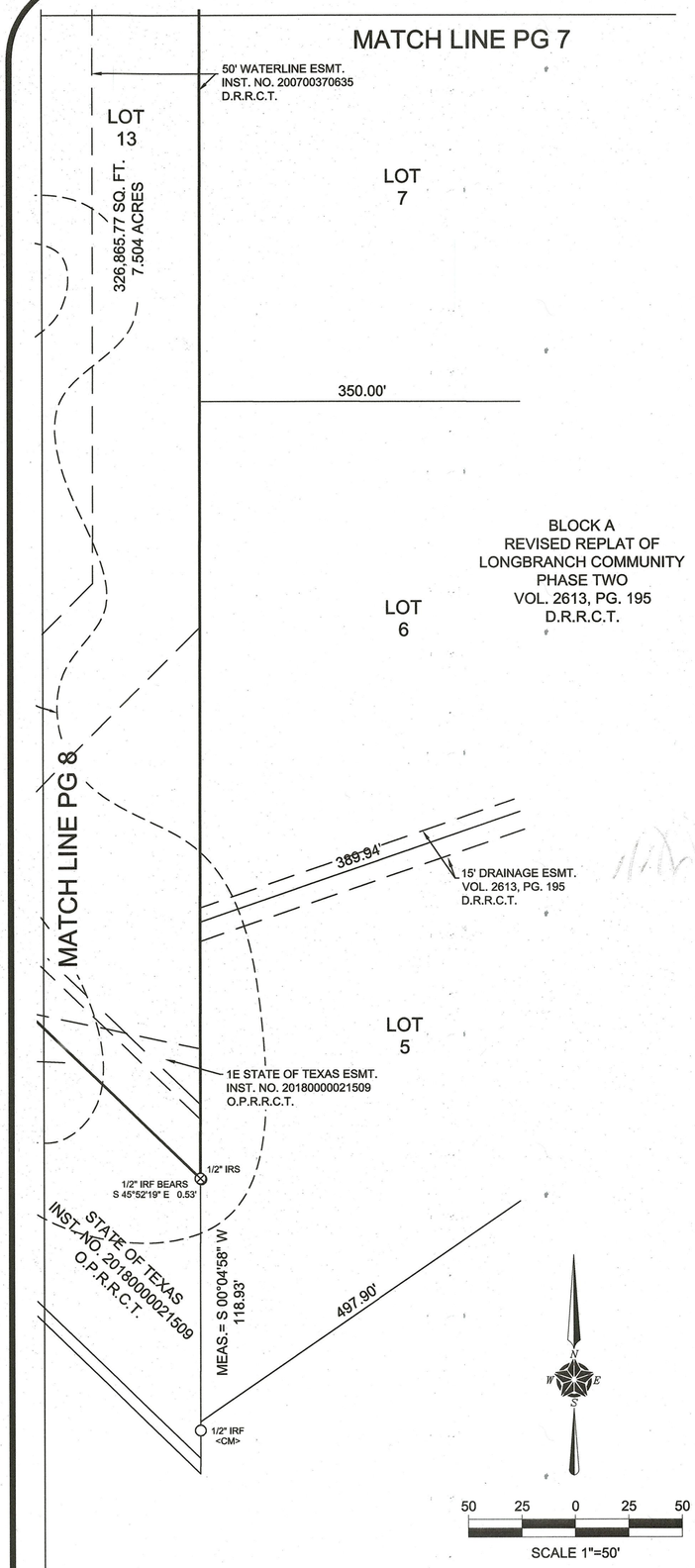
COR-9: Brass disk stamped "City of Rockwall Survey Monument" on the south side of Discovery Boulevard at the southeaster corner of curb inlet ± 180 feet east intersection of Discovery/Corporate.
N= 7,020,550.132; E= 2,607,463.893; Elevation= 595.63'

5) Zoning: Commercial (C) District

6) Property owner shall be responsible for maintenance, repairs, and reconstruction of drainage and detention easements.

7) Base Flood Elevation information per FEMA GIS, FIRM Panel #48397C0045L.





OWNER'S CERTIFICATE:

STATE OF TEXAS
COUNTY OF ROCKWALL

TRACT ONE

WHEREAS, Creekside Commons Crossing, LP and 549 CROSSING, LP are the owners of that tract of land situated in the William W. Ford Survey, Abstract No. 80, City of Rockwall, Rockwall County, Texas, being that same tract of land described in Special Warranty Deed to Creekside Commons Crossing, LP recorded in Instrument Number 20220000021201 of the Official Public Records of Rockwall County, Texas, together with that tract of land described in Special Warranty Deed to 549 CROSSING, LP recorded in Instrument Number 20210000028395 of the Official Public Records of Rockwall County, Texas, and being more particularly described by metes and bounds as follows:

Beginning at a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner, said corner being in the northeast corner of said State of Texas Parcel 1 Part 1 tract, said corner also being in the south right-of-way line of existing State Highway 549 (variable width right-of-way);

Thence North 88 degrees 45 minutes 13 seconds East, along the south right-of-way line of said existing State Highway 549, a distance of 1,850.38 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner, said corner being the northwest corner of said State of Texas Parcel 1 Part 2 tract, said corner also being in a northwest right-of-way line of new State Highway 549 (variable width right-of-way);

Thence, along the northwest line of said State of Texas Parcel 1 Part 2 tract and along the northwest line of said new State Highway 549, the following courses and distances:

Thence South 33 degrees 19 minutes 17 seconds East, a distance of 114.68 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner, said corner being the beginning of a non-tangent curve to the right, having a delta of 04 degrees 03 minutes 19 seconds, a radius of 1,155.00 feet and a chord bearing and distance of South 58 degrees 43 minutes 21 seconds West, 81.73 feet;

Thence, in a southwesterly direction, along said curve to the right, an arc length of 81.75 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 60 degrees 46 minutes 14 seconds West, a distance of 382.65 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 29 degrees 29 minutes 58 seconds East, a distance of 25.09 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 60 degrees 45 minutes 08 seconds West, a distance of 437.07 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner,said corner being the beginning of a non-tangent curve to the left, having a delta of 14 degrees 41 minutes 22 seconds, a radius of 1,110.00 feet and a chord bearing and distance of South 53 degrees 26 minutes 21 seconds West, 283.80 feet;

Thence, in a southwesterly direction, along said curve to the left, an arc length of 284.58 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 46 degrees 00 minutes 24 seconds West, a distance of 117.82 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence North 88 degrees 17 minutes 09 seconds West, a distance of 13.64 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner, said corner being in a northeast line of said State of Texas Parcel 1 Part 1 tract;

Thence North 45 degrees 52 minutes 38 seconds West, along a northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 99.40 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 44 degrees 09 minutes 02 seconds West, along a northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 19.03 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence North 45 degrees 52 minutes 18 seconds West, along a northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 863.35 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence North 45 degrees 50 minutes 09 seconds West, along a northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 158.12 feet back to the POINT OF BEGINNING and containing 793,730.47 square feet or 18.222 acres of land.

TRACT TWO

WHEREAS, Rockwall 205 Investors, LLC is the owner of that tract of land situated in the William W. Ford Survey, Abstract No. 80, Rockwall County, Texas, being that same tract of land described in General Warranty Deed to Rockwall 205 Investors, LLC recorded in Instrument Number 20160000001487 of the Official Public Records of Rockwall County, Texas, less that tract of land described as Parcel 1 Part 1 and Parcel 1 Part 2 in deed to the State of Texas recorded in Instrument Number 20180000021509 of the Official Public Records of Rockwall County, Texas, and the remaining being more particularly described by metes and bounds as follows:

Beginning at a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner, said corner being in the northeast corner of said State of Texas Parcel 1 Part 2 tract, said corner also being in the south right-of-way line of State Highway 1139 (variable width right-of-way);

Thence North 88 degrees 24 minutes 18 seconds East, along the south right-of-way line of State Highway 1139 (variable width right-of-way), a distance of 131.64 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" set for corner, said corner being in the north line of Lot 20, Block A of Revised Replat of Longbranch Community Phase Two, an addition to the City of Rockwall, Rockwall County, Texas according to the plat thereof recorded in Volume 2613, Page 195 of the Deed Records of Rockwall County, Texas;

Thence South 46 degrees 47 minutes 44 seconds West, along the northwest line of Lots 20, 19 and 18, Block A of said Revised Replat of Longbranch Community Phase Two, a distance of 395.00 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" set for corner, said corner being in a northwest line of said Lot 18;

Thence South 57 degrees 25 minutes 35 seconds West, along a northwest line of said Lot 18, a distance of 412.22 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" set for corner, said corner being in the west line of said Lot 18;

Thence South 00 degrees 04 minutes 58 seconds West, along a west line of Lots 18, 10, 9, 8, 7, 6, and 5 of Block A of said Revised Replat of Longbranch Community Phase Two, a distance of 1,297.07 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" set for corner, from which lies a 1/2 inch iron rod found which bears South 45 degrees 52 minutes 19 seconds East, 0.53 feet;

Thence North 45 degrees 52 minutes 13 seconds West, along the northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 1,230.96 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" found for corner;

Thence North 01 degrees 00 minutes 24 seconds East, along a northeast line of said State of Texas Parcel 1 Part 1 tract, a distance of 6.34 feet to a 5/8 inch iron rod found for corner;

Thence, along the southeastern line of said State of Texas Parcel 1 Part 2 tract and along the southeast line of said new State Highway 549, the following courses and distances:

Thence North 46 degrees 00 minutes 24 seconds East, a distance of 117.82 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" found for corner, said corner being the beginning of a non-tangent curve to the right, having a delta of 14 degrees 40 minutes 31 seconds, a radius of 970.00 feet and a chord bearing and distance of North 53 degrees 27 minutes 16 seconds East, 247.77 feet;

Thence, in a northeasterly direction, an arc length of 248.45 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence North 60 degrees 44 minutes 32 seconds East, a distance of 293.25 feet to a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found for corner;

Thence South 29 degrees 15 minutes 28 seconds East, a distance of 25.00 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" found for corner;

Thence North 60 degrees 46 minutes 14 seconds East, a distance of 526.72 feet to a 1/2 inch iron rod with yellow plastic cap stamped "TXHS" set for corner, from which lies a 5/8 inch iron rod with pink plastic cap stamped "TXDOT" found which bears North 72 degrees 48 minutes 43 seconds West, 0.26 feet, said corner being the beginning of a non-tangent curve to the left, having a delta of 21 degrees 02 minutes 27 seconds, a radius of 1,345.00 feet and a chord bearing and distance of North 50 degrees 13 minutes 28 seconds East, 491.16 feet;

Thence, in a northeasterly direction, along the southeast line of said State of Texas Parcel 1 Part 2 tract, along said curve to the left, an arc length of 493.93 feet back to the POINT OF BEGINNING and containing 708,413.65 square feet or 16.263 acres of land.

SURVEYOR
TEXAS HERITAGE SURVEYING, LLC
10610 Metric Drive, Suite 124, Dallas, TX 75243
Office 214-340-9700 Fax 214-340-9710
txheritage.com
Firm No. 10169300

FINAL PLAT
CREEKSIDE COMMONS ADDITION
LOTS 1-13, BLOCK A
34.484 ACRES / 1,502,144.12 SF
13 LOTS
SITUATED WITHIN TRACTS 17-5 & 17-8 OF THE
W. W. FORD SURVEY, ABSTRACT NO. 80
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

CASE # P2022-052

DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB

OWNER'S DEDICATION:

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS
COUNTY OF ROCKWALL

I the undersigned owner of the land shown on this plat, and designated herein as the CREEKSIDE COMMONS subdivision to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. I further certify that all other parties who have a mortgage or lien interest in the CREEKSIDE COMMONS subdivision have been notified and signed this plat. I understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. I also understand the following;

1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.

2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purposes of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.

3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.

4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.

5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.

6. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or

Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.

I further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; I, my successors and assigns hereby waive any claim, damage or cause of action that I may have as a result of the dedication of exactions made herein.

Rockwall 205 Investors, LLC

Justin Webb
Manager

STATE OF TEXAS
COUNTY OF ROCKWALL

BEFORE ME, the undersigned authority, on this day personally appeared Justin Webb, a Texas limited liability company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 11th day of May, 2023.

Kathy Bowen
Notary Signature

KATHY BOWEN
My Notary ID # 10331083
Expires October 23, 2023

549 CROSSING, LP

Jassem Setayesh
President/CEO

STATE OF TEXAS
COUNTY OF DALLAS

BEFORE ME, the undersigned authority, on this day personally appeared Jassem Setayesh, a Texas limited liability company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 11th day of May, 2023.

Kathy Bowen
Notary Signature

KATHY BOWEN
My Notary ID # 10331083
Expires October 23, 2023

Creekside Commons Crossing, LP

Jassem Setayesh
President/CEO

STATE OF TEXAS
COUNTY OF DALLAS

BEFORE ME, the undersigned authority, on this day personally appeared Jassem Setayesh, a Texas limited liability company, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 11th day of May, 2023.

Kathy Bowen
Notary Signature

KATHY BOWEN
My Notary ID # 10331083
Expires October 23, 2023

SURVEYORS CERTIFICATE:

I, Gary E. Johnson, do hereby certify that I prepared this plat from an actual and accurate survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision.

Gary E. Johnson, R.P.L.S. No. 5299

STATE OF TEXAS
GARY E. JOHNSON
5299
PROFESSIONAL LAND SURVEYOR

Approved:

Planning and Zoning Commission, Chairman

5.30.2023
Date

I hereby certify that the above and foregoing plat of an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the 7th day of November, 2023.

The approval shall be invalid unless the approved plat for such addition is recorded in the office of the County Clerk of Rockwall County, Texas, within one hundred eight (180) days from said date of final approval.

WITNESS OUR HANDS, this 25th day of May, 2023.

Mayor, City of Rockwall

CITY OF ROCKWALL TEXAS

Kristy Teague
City Secretary

Amy Williams, P.E.
City Engineer

Filed and Recorded
Official Public Records
Jennifer Fogg, County Clerk
Rockwall County, Texas
05/31/2023 03:42:43 PM
$500.00
20230000008813

COUNTY CLERK ROCKWALL COUNTY, TEXAS

COPY

ENGINEER
THE DIMENSION GROUP
10755 SANDILL ROAD
DALLAS, TEXAS 75238
attn: KEATON MAI

OWNER
549 CROSSING, LP
10755 SANDHILL ROAD
DALLAS, TEXAS 75238

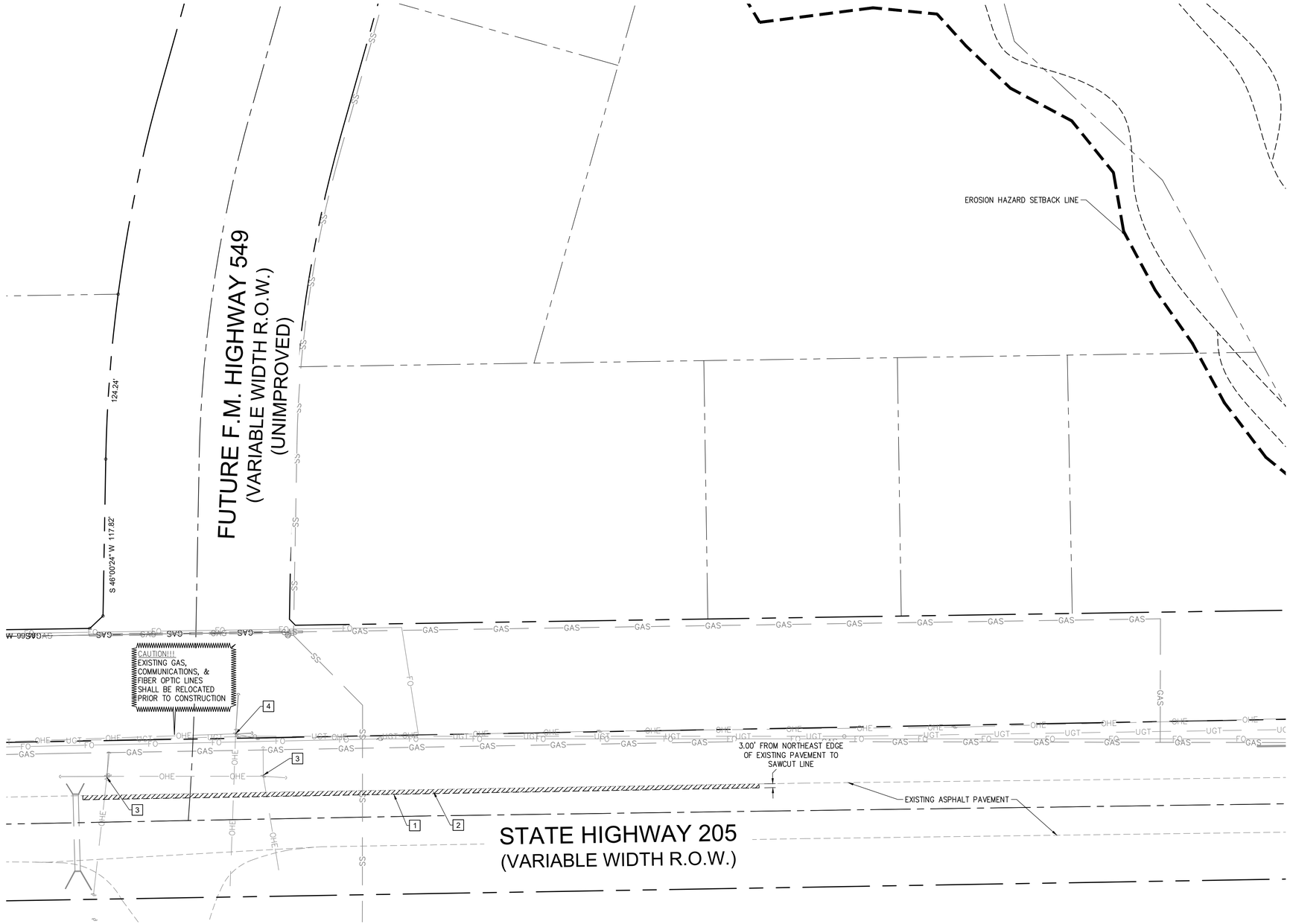
OWNER
ROCKWALL 205 INVESTORS, LLC
1 CANDLELITE TRAIL
HEATH, TEXAS 75032

SURVEYOR
TEXAS HERITAGE SURVEYING, LLC
10610 Metric Drive, Suite 124, Dallas, TX 75243
Office 214-340-9700 Fax 214-340-9710
txheritage.com
Firm No. 10169300

FINAL PLAT
CREEKSIDE COMMONS
LOTS 1-13, BLOCK A
34.484 ACRES / 1,502,144.12 SF
13 LOTS
SITUATED WITHIN TRACTS 17-5 & 17-8 OF THE
W. W. FORD SURVEY, ABSTRACT NO. 80
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

CASE # P2022-052

DATE: 5/1/2023 / JOB # 2002727-11 / SCALE= 1" = 50' / DRAWN: JACOB



GRAPHIC SCALE
40 0 20 40
1 INCH = 40 FEET

LEGEND

EASEMENT
PROPERTY LINE
R.O.W. LINE
UNDERGROUND TELEPHONE — UGT
FIBER OPTIC — FO
OVERHEAD ELECTRIC — OHE
EDGE OF PAVEMENT / PAN
SANITARY MAIN — SS

DEMOLITION KEYNOTES:

1. SAWCUT LINE
2. REMOVE ASPHALT PAVEMENT & FLEX BASE
3. EXISTING TRAFFIC SIGNAL POLES TO BE RELOCATED (REF. TRAFFIC SIGNAL PLANS)
4. EXISTING POWER POLE TO BE RELOCATED

DEMOLITION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL OF ALL MATERIALS.
2. ALL CITY, STATE, AND FEDERAL CODES, LAWS, AND ORDINANCES SHALL BE FOLLOWED.
3. CONTRACTOR IS RESPONSIBLE FOR LOCATING & DISCONNECTING ALL UTILITIES TO THE BUILDING BEFORE START OF DEMOLITION.
4. CONTRACTOR TO GIVE APPROPRIATE NOTICE TO ALL AGENCIES PRIOR TO DEMOLITION.
5. CONTRACTOR TO PROVIDE BARRICADES AND COORDINATE WITH CITY & STATE ON ALL TRAFFIC CONTROL REQUIREMENTS.
6. PROVIDE TREE PROTECTION FOR ALL TREES ON OR JUST OUTSIDE THE PROPERTY LINE.
7. CONTRACTOR TO CONTACT CITY PUBLIC SERVICES & UTILITY COMPANIES IF ANY EXISTING ON-SITE UTILITIES ARE TO BE REMOVED.

CAUTION:

1. PROTECT ALL EXISTING UNDERGROUND & ABOVE GROUND UTILITIES DURING DEMOLITION PROCESS EXCEPT AS IT IS SHOWN TO BE REMOVED BY THIS PLAN.

NOTE:

1. ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY OF ROCKWALL MONUMENTS:

GEODETIC CONTROL MONUMENTS - NORTH AMERICAN DATUM - 1983 (2011) TEXAS NORTH CENTRAL ZONE (4202).

COR-8: ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" AT THE NORTHERLY INTERSECTION OF SILVER VIEW LANE AND DIAMOND WAY DRIVE ±1 FOOT NORTH OF CURB LINE IN CENTER OF CURVE.
N: 7018063.113, E: 2609533.682 ELEVATION: 600.48'

COR-9: BRASS DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON THE SOUTH SIDE OF DISCOVERY BOULEVARD AT THE SOUTHEAST CORNER OF CURB INLET ±180 FOOT EAST INTERSECTION OF DISCOVERY/CORPORATE.
N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

THE DIMENSION GROUP
ARCHITECTURE · CIVIL ENGINEERING · MEP ENGINEERING
13755 SANDHILL ROAD, DALLAS, TEXAS 75238
TEL: 214.343.8040 · www.dimensiondfw.com

TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
LICENSED PROFESSIONAL ENGINEER

11/14/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

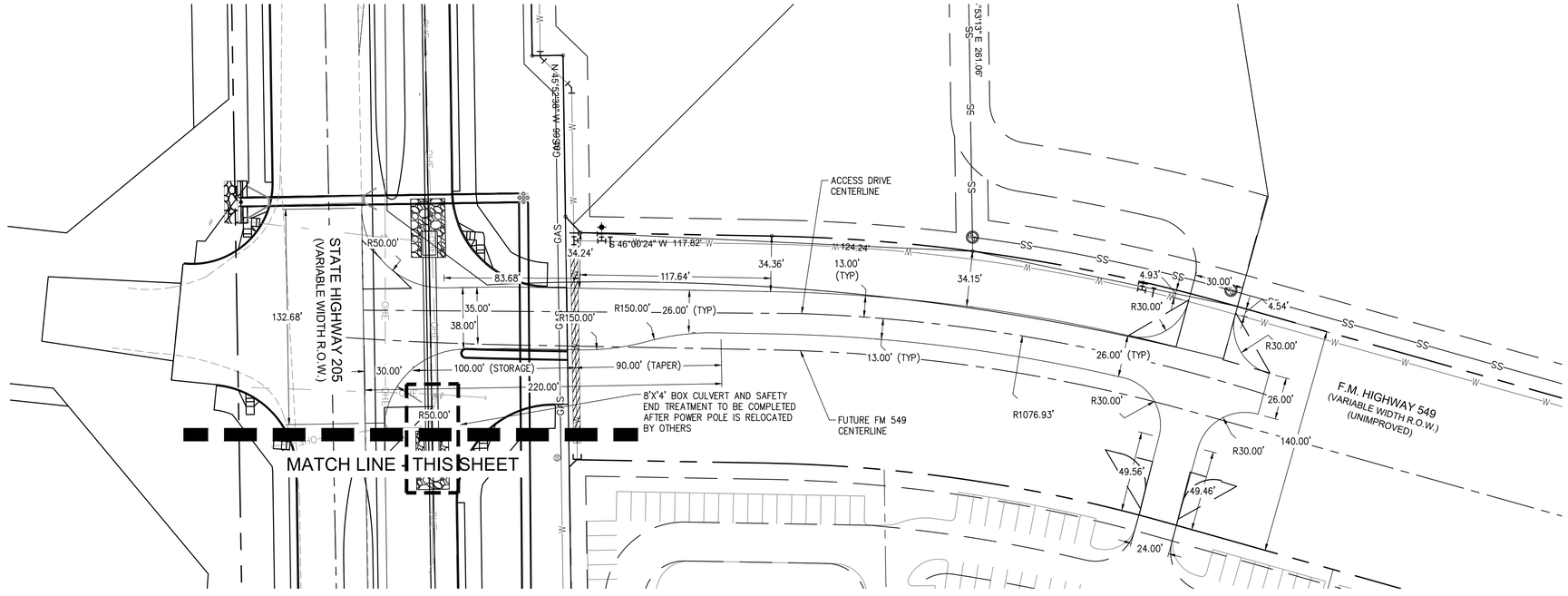
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

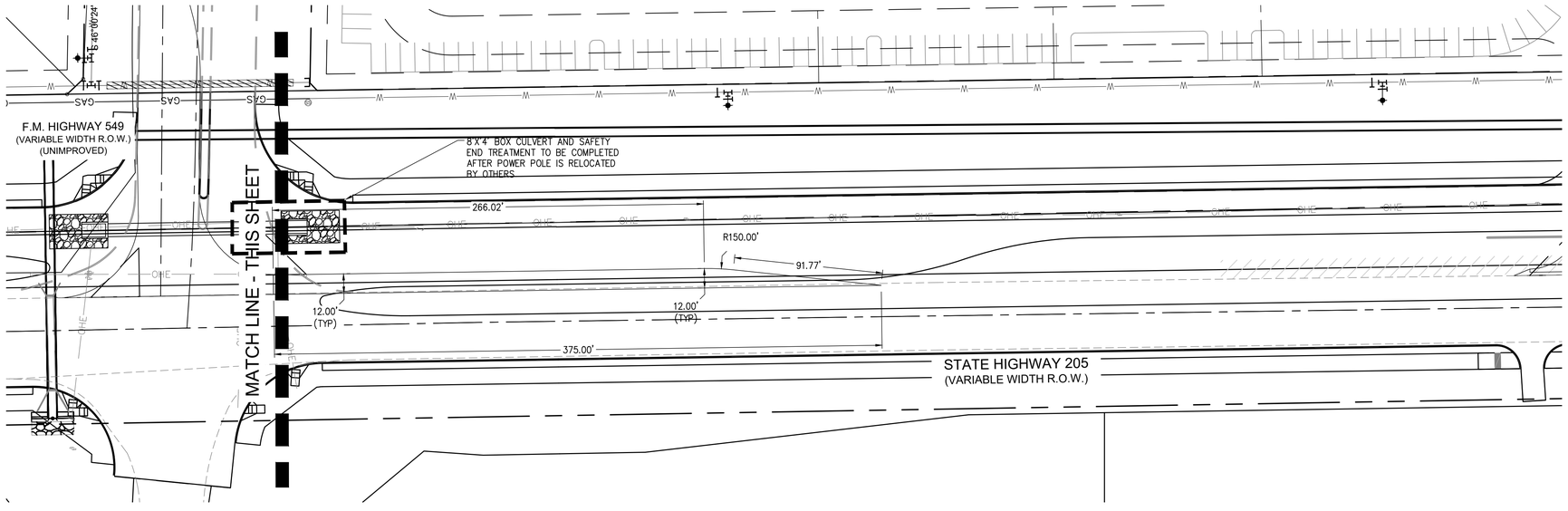
project no. 200-672
date 11/14/2023 - 2:06 pm
dwg

DEMOLITION PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C3.1





GRAPHIC SCALE
40 0 20 40
1 INCH = 40 FEET

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
5461	MINOR CONTOUR	
SS	SANITARY MAIN	SS
(SS)	SANITARY MANHOLE	(SS)

GRAPHIC SCALE
40 0 20 40
1 INCH = 40 FEET

HORIZONTAL CONTROL NOTES:

1. WHERE CONSTRUCTION DETAILS AND SPECIFICATIONS ARE NOT NOTED ON THESE PLANS USE TXDOT & CITY OF ROCKWALL STANDARD DRAWINGS FOR DESIGN AND CONSTRUCTION.
2. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

NOTE:

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CITY OF ROCKWALL MONUMENTS:

GEODETIC CONTROL MONUMENTS - NORTH AMERICAN DATUM - 1983 (2011) TEXAS NORTH CENTRAL ZONE (4202).

COR-8: ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" AT THE NORTHERLY INTERSECTION OF SILVER VIEW LANE AND DIAMOND WAY DRIVE ±1 FOOT NORTH OF CURB LINE IN CENTER OF CURVE.
N: 7018063.113, E: 2609533.682 ELEVATION: 600.48'

COR-9: BRASS DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON THE SOUTH SIDE OF DISCOVERY BOULEVARD AT THE SOUTHEAST CORNER OF CURB INLET ±180 FOOT EAST INTERSECTION OF DISCOVERY/CORPORATE.
N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

CAUTION NOTICE TO CONTRACTORS

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THE DIMENSION GROUP
ARCHITECTURE · CIVIL ENGINEERING · MEP ENGINEERING
10755 SANDHILL ROAD, DALLAS, TEXAS 75238
TEL: 214.343.4640 www.dimensiongroup.com

TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
PROFESSIONAL ENGINEER

11/14/2023

RECORD DRAWING

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

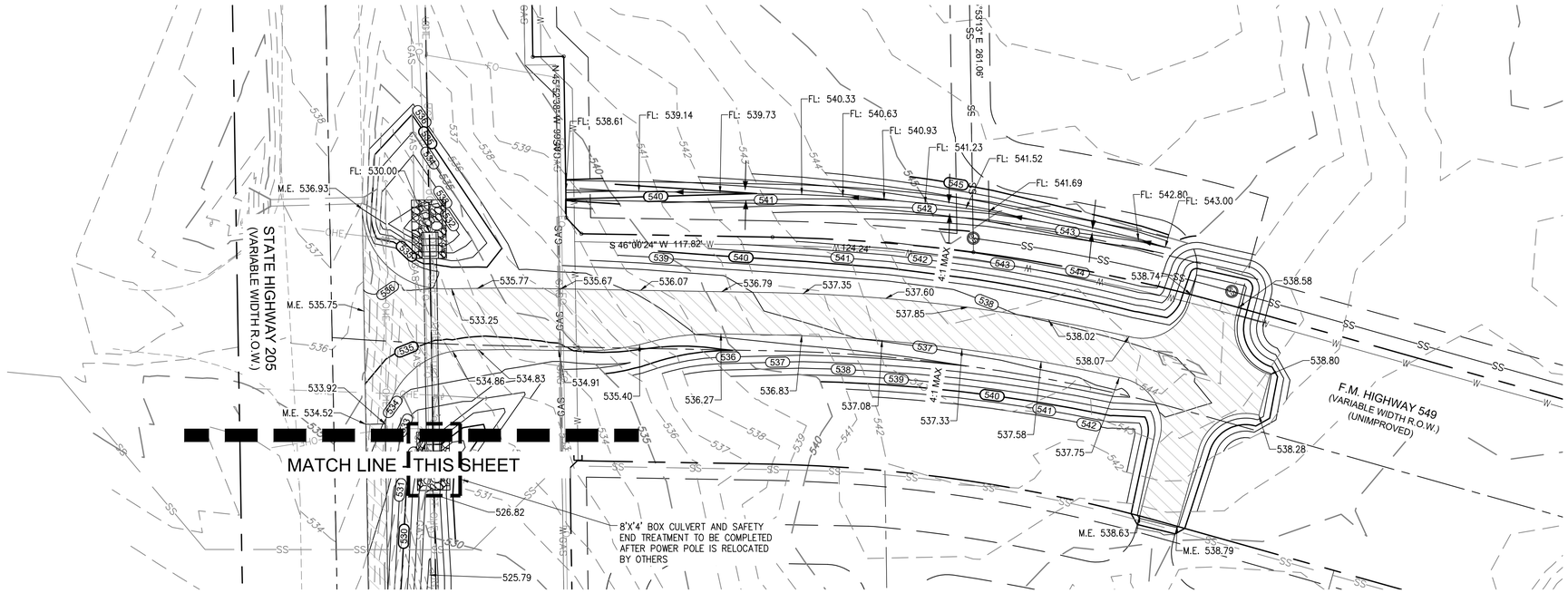
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

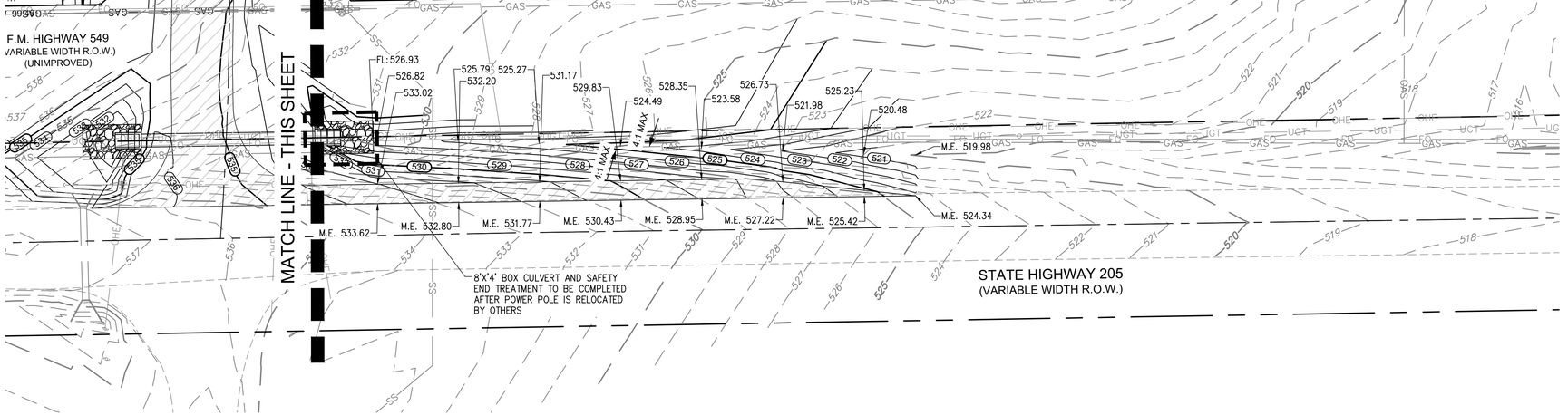
project no. 200-672
date 11/14/2023 – 3:17 pm
dwg

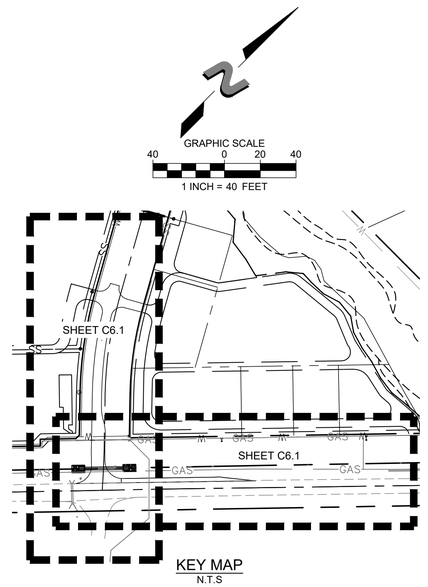
DIMENSION CONTROL PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C4.1







DETAILED GRADING NOTES:

1. THIS SHEET IS FOR DETAILED GRADING REFERENCE ONLY. ALL EROSION AND SEDIMENT CONTROL SHALL BE COMPLETE PER SHEET C10.1.
2. CURB SPOT ELEVATIONS ARE TO FLOWLINE OF CURB UNLESS OTHERWISE NOTED.
3. ALL ELEVATIONS ARE TO FINISHED GRADE OF SURFACE UNLESS OTHERWISE NOTED.
4. CONTRACTOR MUST OBTAIN CONSTRUCTION ACTIVITIES STORMWATER DISCHARGE PERMIT.

GENERAL GRADING NOTES:

1. REFER TO GEO-TECHNICHAL ENGINEERING REPORT FOR SITE WORK. REFERENCE PROJECT NO. G211152 PREPARED BY ALPHA TESTING ON MAY 24, 2021.

2. TRENCH SAFETY: IF ANY TRENCH ON THIS JOB SITE, INCLUDING OPEN EXCAVATIONS WHOSE DIMENSIONS CAUSE THEM TO BE CONSIDERED TRENCHES BY O.S.H.A REGARDLESS OF WHETHER FOR THE INSTALLATION OF UTILITIES, FOUNDATIONS OR ANY OTHER SITE ELEMENT, IS EQUAL TO OR GREATER THAN 5.00' DEPTH, THEN THE CONTRACTOR SHALL NOT PERFORM ANY TRENCHING ON THIS SITE UNTIL HE HAS FIRST OBTAINED DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS CONFORMING TO O.S.H.A. REQUIREMENTS. SUCH PLANS AND SPECIFICATIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER EMPLOYED BY OR CONTRACTED BY THE CONTRACTOR AND SHALL BE CONSIDERED A PART OF THE CONTRACTOR'S MEANS AND METHOD'S OF CONSTRUCTION . IF THIS PROJECT IS OFFERED FOR BID, THE BIDS MUST CONTAIN A SEPARATE UNIT PRICE PAY ITEM FOR TRENCH SAFETY.

3. ALL SURPLUS EXCAVATION AND WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO REMOVE SUCH SURPLUS EXCAVATION AND WASTE MATERIAL FROM THE SITE TO A PUBLIC DUMP SITE APPROVED FOR THE DISPOSAL OF SUCH MATERIALS. IF SURPLUS EXCAVATION IS REMOVED FROM THIS SITE TO ANOTHER PROPERTY, IT SHALL BE PLACED ON SUCH PROPERTY WITH THE WRITTEN CONSENT OF THE OWNER(S) OF SUCH PROPERTY. A COPY OF SUCH WRITTEN CONSENT SHALL BE PROVIDED TO THE OWNER. IF THE CONTRACTOR WISHES TO DISPOSE OF SURPLUS EXCAVATION ON-SITE, IT SHALL BE ONLY WITH THE PRIOR APPROVAL OF THE OWNERS PROJECT REPRESENTATIVE AND CARE SHOULD BE TAKEN TO AVOID BLOCKING NATURAL DRAINAGE AND INCREASING STEEP SLOPES.

4. THE CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN STAKING AND TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO APPLY TO BOTH VERTICAL ELEVATION AND HORIZONTAL ALIGNMENT.

5. ANY EXISTING SITE IMPROVEMENTS OR UTILITIES REMOVED, DAMAGED OR UNDERCUT BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AS APPROVED BY THE OWNER OF SUCH UTILITY. ANY SUCH REPAIR OR REPLACEMENT SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.

6. THE CONTRACTOR SHALL PREPARE ALL LANDSCAPE AREAS INCLUDING STREET RIGHT-OF-WAY AREAS TO AN ACCEPTABLE SUBGRADE CONDITION IN ACCORDANCE WITH THE LANDSCAPE PLANS. IF THE CONTRACTOR IS NOT EMPLOYED TO PROVIDE AND INSTALL LANDSCAPING, THE CONTRACTOR SHALL PREPARE A FINISHED AND COMPACTED SUBGRADE IN THE LANDSCAPING AREAS 4" BELOW NOMINAL FINISH GRADE AS SHOWN ON THE PLANS AND SHALL ADD 2" OF TOPSOIL TO BRING LANDSCAPING SUBGRADE AS PROVIDED TO THE LANDSCAPING CONTRACTOR, TO 2" BELOW NOMINAL FINISH GRADE.

7. THE CONTRACTOR SHALL STOCKPILE AN ADEQUATE QUANTITY OF TOPSOIL, FOR USE BY THE LANDSCAPER TO BRING FINISH GRADE IN THE LANDSCAPED AREAS TO NOMINAL FINISH GRADE AS SHOWN ON THESE PLANS. WHERE SOD IS PLACED, ADJUST GRADES SO THAT TOP OF SOD MATCHES TOP OF CURB AND FLOW LINES OF DRAINAGE SWALES, UNLESS OTHERWISE SPECIFIED ON THESE PLANS.

8. CONTRACTOR SHALL CONFIRM DITCHES NEAR THE AREA OF WORK ARE CLEARED, CLEANED, AND REGRADED (ONLY WITH PERMISSION FROM THE PROPERTY OWNER).

NOTE:

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CITY OF ROCKWALL MONUMENTS:

GEODETIC CONTROL MONUMENTS - NORTH AMERICAN DATUM - 1983 (2011) TEXAS NORTH CENTRAL ZONE (4202).

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N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
5461	MINOR CONTOUR	5461
SS	SANITARY MAIN	SS
(SS)	SANITARY MANHOLE	(SS)

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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
PROFESSIONAL ENGINEER

11/15/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
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ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

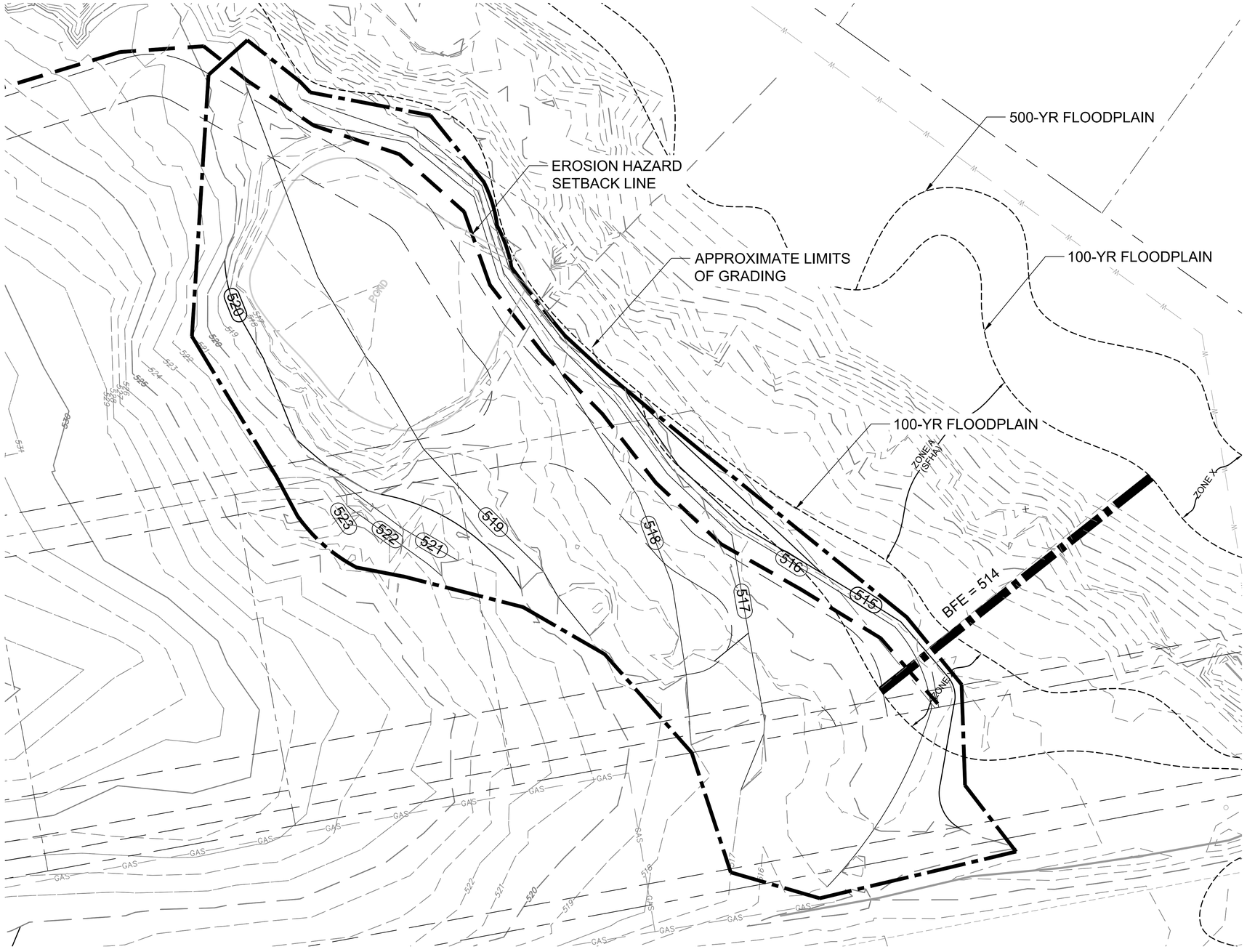
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/15/2023 - 8:50 am
dwg

GRADING PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C6.1



GRAPHIC SCALE
30 0 15 30
1 INCH = 30 FEET

PROPOSED	LEGEND	EXISTING
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
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CITY OF ROCKWALL MONUMENTS:

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OWNER/DEVELOPER
PRUDENT GROUP
10755 SANDHILL ROAD
DALLAS, TX 75238
PHONE: (214) 271-4630
CONTACT: MICHAEL HAMPTON
EMAIL: mhampton@prudentdevelopment.com

ENGINEER
THE DIMENSION GROUP
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DALLAS, TX 75238
PHONE: (214) 343-9400
CONTACT: KEATON L. MAI, PE
EMAIL: kmai@dimensiongroup.com

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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
PROFESSIONAL LICENSED ENGINEER

11/14/2023

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ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

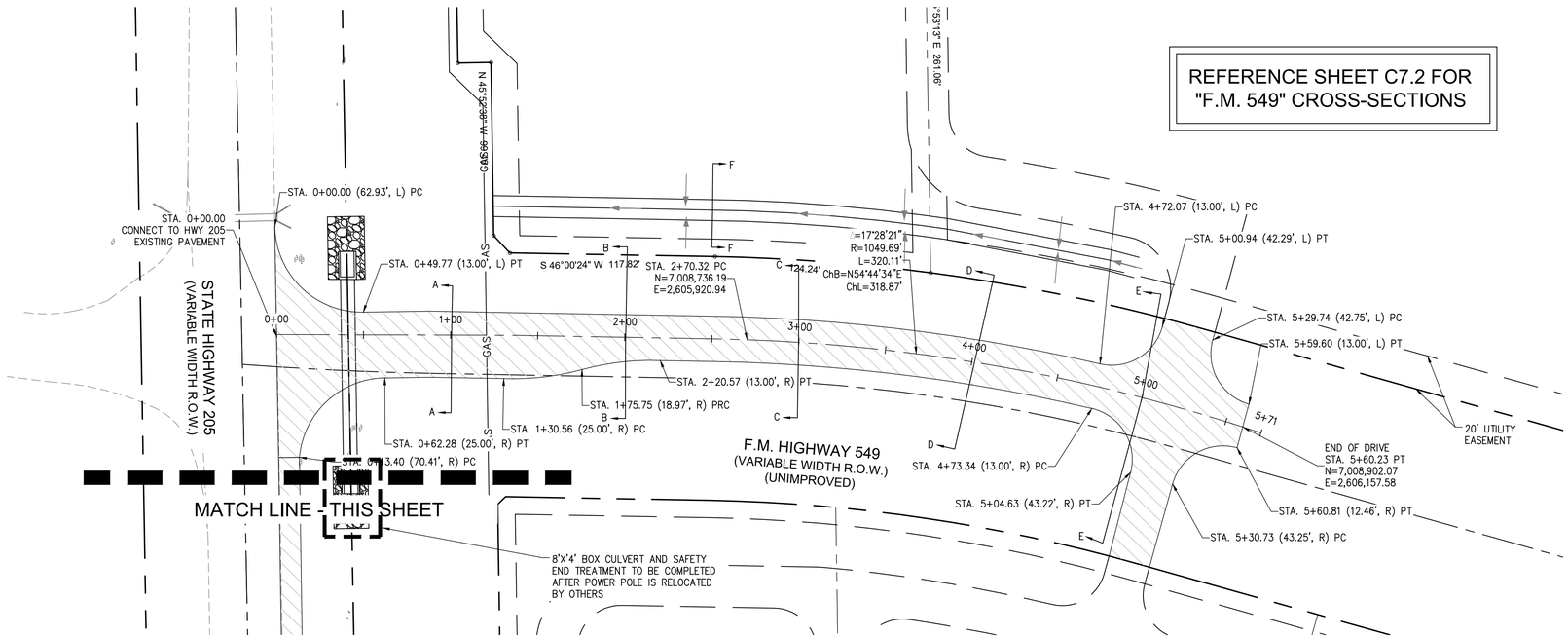
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

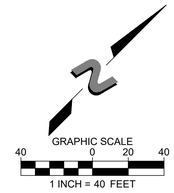
project no. 200-6672
date 11/14/2023 – 11:16 am
dwg

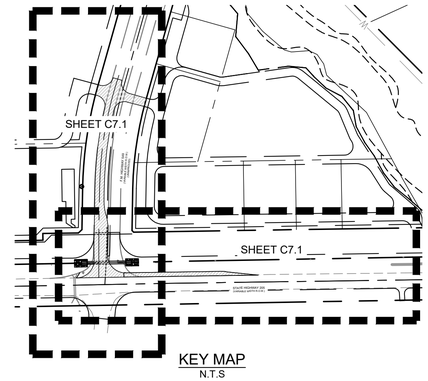
GRADING PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

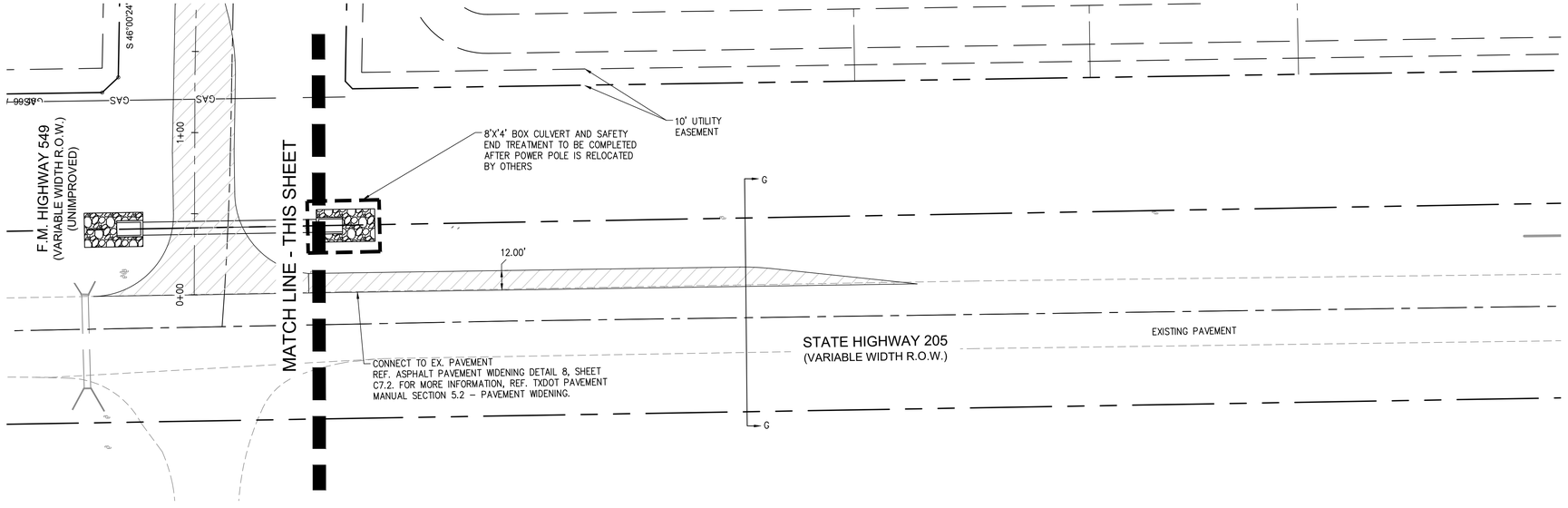
SHEET
C6.2

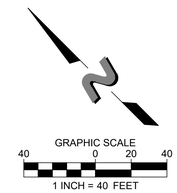






KEY MAP
N.T.S





PAVING NOTES

1. REFER TO GEOTECHNICHAL ENGINEERING REPORT NO. G211152 BY ALPHA TESTING ON MAY 24, 2021 FOR SITE WORK.
2. ALL PAVEMENT SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO AT LEAST 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ATSM D 698) AND WITHIN 0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.
3. ALL ASPHALT PAVEMENT SHALL BE CONSTRUCTED PER TXDOT SPECIFICATION ITEM 340 - HOT MIX ASPHALTIC CONCRETE PAVEMENT.
4. THE CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN STAKING AND TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO APPLY TO BOTH VERTICAL ELEVATION AND HORIZONTAL ALIGNMENT.
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N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

LEGEND

2" HMAC SURFACE COURSE TYPE C OVER 4" HMAC BASE COURSE TYPE B W/ 8" FLEXBASE PER TxDOT.

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
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SS	SANITARY MAIN	SS
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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
PROFESSIONAL ENGINEER
11/14/2023

RECORD DRAWING
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ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

#	REVISION DESCRIPTION	DATE
1	RECORD DRAWINGS	11/14/23

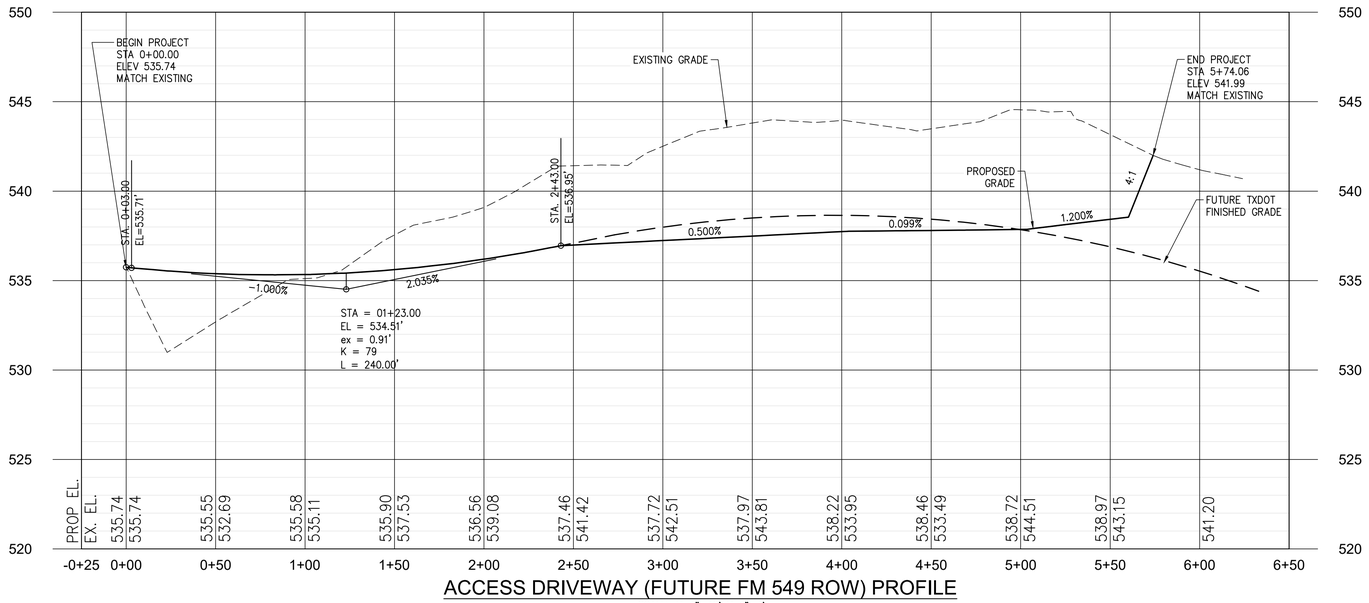
project no. 200-672
date 11/14/2023 – 4:03 pm
dwg

PAVING PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

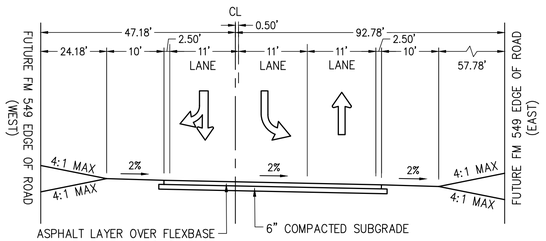
SHEET
C7.1

Drawing name: L:\PRUDENT DEVELOPMENT\2020\200-672 & 200-673 – TBD – Rockwall, TX (205 & 549)\02 Civil\C3D\Sheet\Record Drawings\Paving\CAD\C7.1-PAVING PLAN.dwg Nov 14, 2023 – 4:03pm



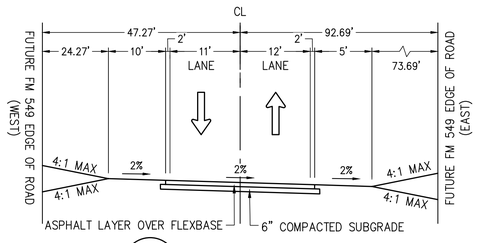
ACCESS DRIVEWAY (FUTURE FM 549 ROW) PROFILE

SCALE: H-1"=40' V-1"=4'



1 C7.2 CROSS SECTION A

N.T.S.



2 C7.2 CROSS SECTION B

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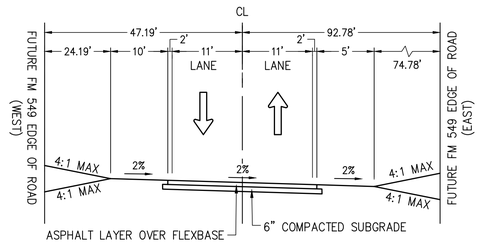
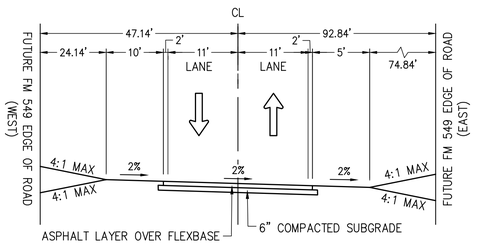


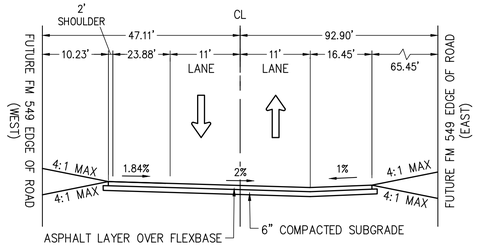
3 C7.2 CROSS SECTION C

N.T.S.



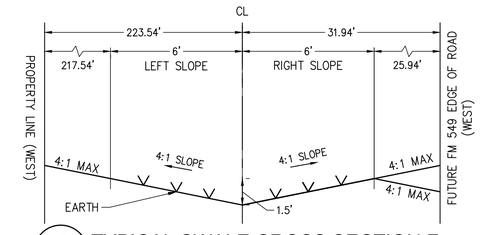
4 C7.2 CROSS SECTION D

N.T.S.



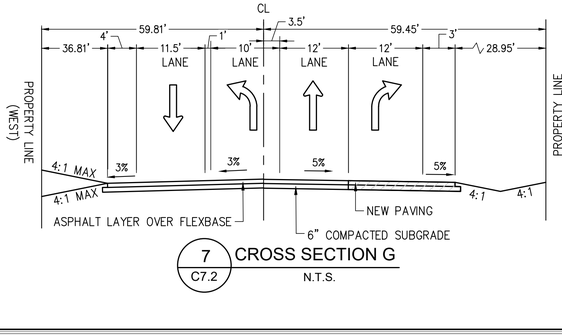
5 C7.2 CROSS SECTION E

N.T.S.



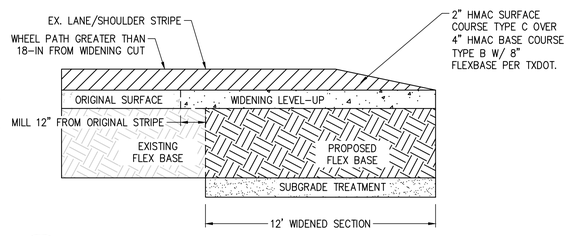
6 C7.2 TYPICAL SWALE CROSS SECTION F

N.T.S.



7 C7.2 CROSS SECTION G

N.T.S.



8 C7.2 HIGHWAY 205 ASPHALT PAVEMENT WIDENING DETAIL

N.T.S.

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LEGEND

2" HMAC SURFACE COURSE TYPE C OVER 4" HMAC BASE COURSE TYPE B W/ 8" FLEXBASE PER TxDOT.

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
5461	MINOR CONTOUR	5461
SS	SANITARY MAIN	SS
(SS)	SANITARY MANHOLE	(SS)

PAVING NOTES

1. REFER TO GEOTECHNICHAL ENGINEERING REPORT NO. G211152 BY ALPHA TESTING ON MAY 24, 2021 FOR SITE WORK.
2. ALL PAVEMENT SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO AT LEAST 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ATSM D 698) AND WITHIN 0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.
3. ALL ASPHALT PAVEMENT SHALL BE CONSTRUCTED PER TXDOT SPECIFICATION ITEM 340 - HOT MIX ASPHALTIC CONCRETE PAVEMENT.
4. THE CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN STAKING AND TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO APPLY TO BOTH VERTICAL ELEVATION AND HORIZONTAL ALIGNMENT.
5. ANY EXISTING SITE IMPROVEMENTS OR UTILITIES REMOVED, DAMAGED OR UNDERCUT BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AS APPROVED BY THE OWNER OF SUCH UTILITY. ANY SUCH REPAIR OR REPLACEMENT SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.

NOTE:

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CITY OF ROCKWALL MONUMENTS:

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COR-8: ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" AT THE NORTHERLY INTERSECTION OF SILVER VIEW LANE AND DIAMOND WAY DRIVE ±1 FOOT NORTH OF CURB LINE IN CENTER OF CURVE.
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COR-9: BRASS DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON THE SOUTH SIDE OF DISCOVERY BOULEVARD AT THE SOUTHEAST CORNER OF CURB INLET ±180 FOOT EAST INTERSECTION OF DISCOVERY/CORPORATE.
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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
REGISTERED LICENSED PROFESSIONAL ENGINEER

11/14/2023

RECORD DRAWING
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ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

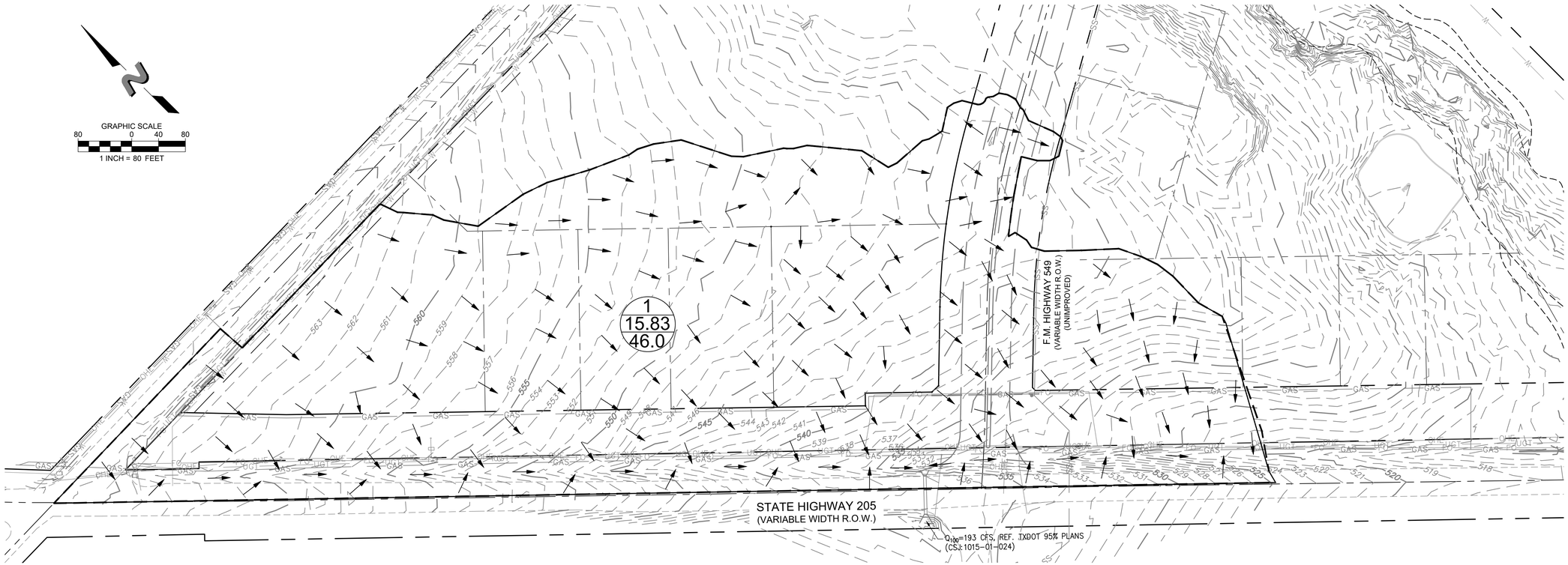
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/14/2023 - 3:49 pm
dwg

PAVING PROFILE AND SECTIONS

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C7.2



EXISTING DRAINAGE AREAS						
DA	AREA	C	Tc	I100	Q100	COMMENTS
NAME	(acres)		(min)	(in/hr)	(cfs)	
1	15.83	0.35	20.0	8.3	46.0	Overland flow towards SH 205 ditch
Total	15.83				46.0	

DRAINAGE LEGEND

A — AREA NO.
0.00 — ACREAGE
0.0 — Q_{100}
DRAINAGE DIVIDE
FLOW DIRECTION
467 — EXISTING CONTOURS

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
LICENSED PROFESSIONAL ENGINEER

11/14/2023

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project no. 200-672
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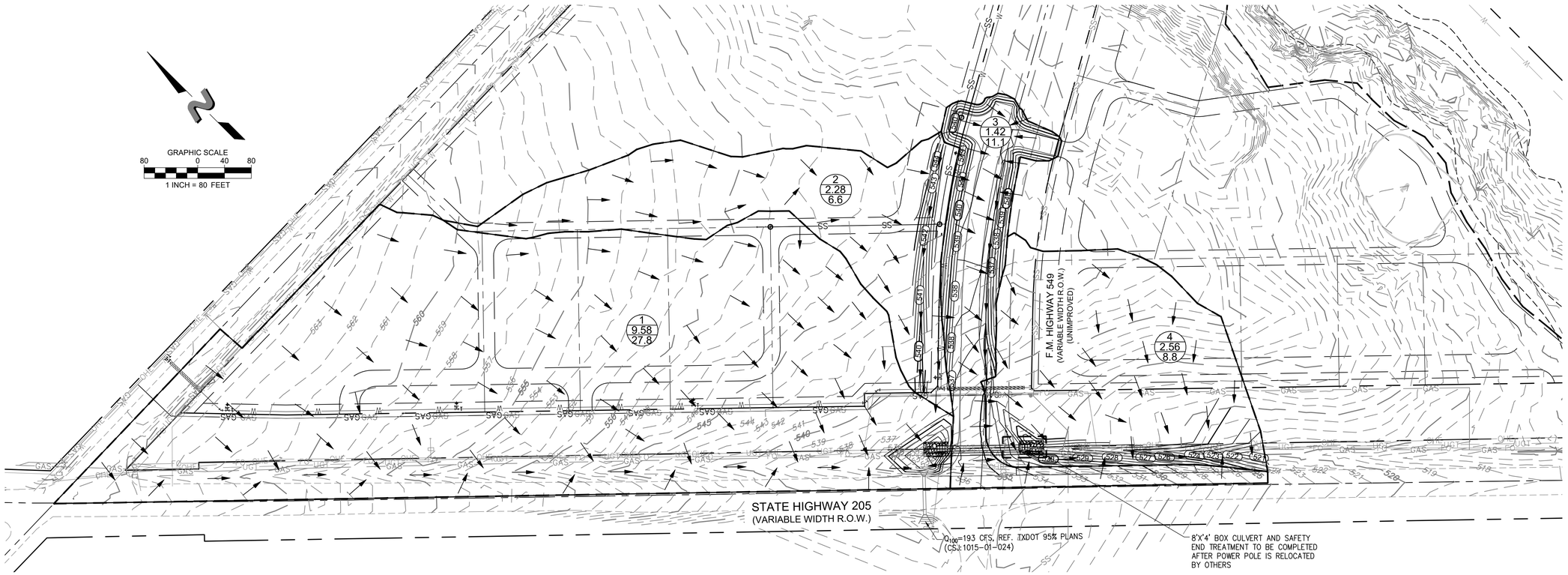
dwg.

EXISTING DRAINAGE AREA MAP

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C9.1



PROPOSED DRAINAGE AREAS						
DA	AREA	C	Tc	I100	Q100	COMMENTS
NAME	(acres)		(min)	(in/hr)	(cfs)	
1	9.58	0.35	20.0	8.3	27.8	Overland flow towards culvert at the intersection of SH 205 and Future 549
2	2.28	0.35	20.0	8.3	6.6	Overland flow towards proposed drainage swale within DA2, swale drains into D1
3	1.42	0.80	10.0	9.8	11.1	Overland flow to ditch on north side of SH 205
4	2.56	0.35	10.0	9.8	8.8	Overland flow to ditch on north side of SH 205
Total	15.84				54.4	

DRAINAGE LEGEND

- A / 0.00 / 0.0 — AREA NO. / ACREAGE / Q_{100}
- DRAINAGE DIVIDE
- FLOW DIRECTION
- 467 — EXISTING CONTOURS

PROPOSED	LEGEND	EXISTING
	EASEMENT	
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
5461	MINOR CONTOUR	5461
SS	SANITARY MAIN	SS
(SS)	SANITARY MANHOLE	(SS)

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project no. 200-672
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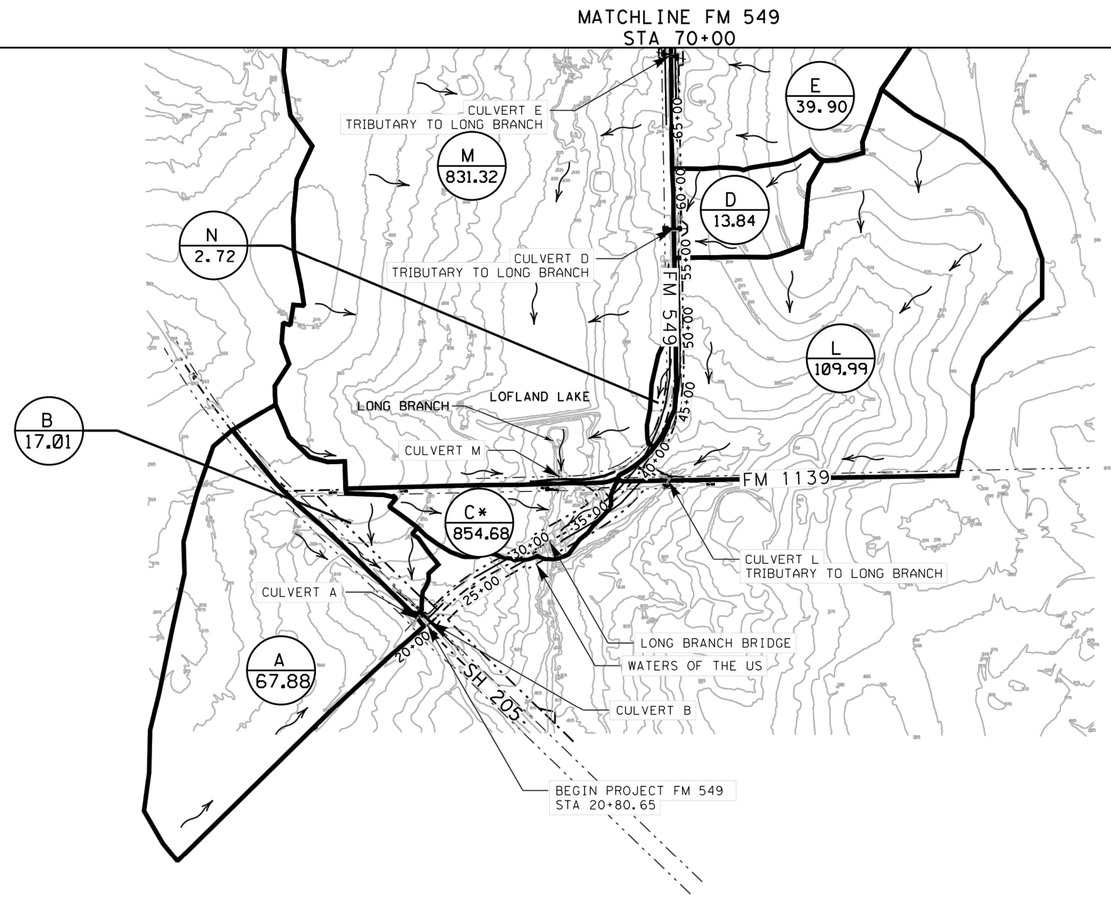
dwg

PROPOSED DRAINAGE AREA MAP

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C9.2



LEGEND

XX — AREA NAME
XXX — AREA IN ACRES

DRAINAGE AREA
FLOW DIRECTION
R.O.W.
DRAINAGE EASEMENT

NOTES:

1. REFER TO CROSS DRAINAGE HYDROLOGIC DATA FOR FLOW CALCULATIONS.
2. FOR INTERNAL DRAINAGE AREAS SEE STORM DRAIN DRAINAGE AREA MAPS.
3. TERRAIN DATA OBTAINED FROM SURVEY AND NTCOG 2015 LIDAR DATA.
4. CITY OF ROCKWALL CONTOURS USED TO DETERMINE DRAINAGE AREA LIMITS FOR LOCATIONS OUTSIDE OF SURVEY DATA.
5. RUNOFF COMPUTATIONS PERFORMED WITH A COMBINATION OF HEC-HMS AND THE RATIONAL METHOD.
6. ARC-GIS WAS USED TO CALCULATE THE WEIGHTED CURVE NUMBER AND THE TIME OF CONCENTRATION LONGEST FLOW PATH
7. THE RAINFALL DEPTHS IN INCHES FOR 15-MIN, 1-HR, 2-HR, 3-HR, 6-HR, 12-HR, AND 24-HR WERE DOWNLOADED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC (NOAA'S) NATIONAL WEATHER SERVICE HYDROMETEOROLOGICAL DESIGN STUDIES CENTER PRECIPITATION FREQUENCY DATA SERVER (PFDS) NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES FOR TEXAS.
8. STORMS WERE MODELED USING A FREQUENCY STORM DISTRIBUTION UP TO A 24-HOUR DURATION
9. RUNOFF VOLUME WAS CALCULATED USING THE NRCS CURVE NUMBER LOSS MODEL WITHOUT CLIMATIC ADJUSTMENT.
10. TIME OF CONCENTRATION WAS COMPUTED USING THE NRCS METHOD. LAG TIME - 0.6*TC.

N.T.S.

0 500 1000
SCALE: 1"=1000'

DATE	BY	REV	REVISION

PRELIMINARY DESIGN
95% SUBMITTAL

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

RESPONSIBLE ENGINEER:
ELIAS D. POTTS, PE
TBPE NO. 130930
9/24/2021

K·FRIESE + ASSOCIATES
PUBLIC PROJECT ENGINEERING
1120 S. Capital of Texas Highway
CityView 2, Suite 100
Austin, Texas 78746
P 512.338.1704 F 512.338.1784
TBPE Firm Number 6535
www.kfriese.com

Texas Department of Transportation

FM 549

OFFSITE DRAINAGE AREA MAP

SCALE: 1"=1000' SHEET 2 OF 2

FED RD DIV NO	FEDERAL AID PROJECT NO.		HIGHWAY
6	SEE TITLE SHEET		FM 549
STATE	DISTRICT	COUNTY	SHEET NO
TEXAS	DAL	ROCKWALL	255
CONTROL	SECTION	JOB	
1015	01	024	

*AREAS K, J, H, G, F, E, D AND M ARE INCLUDED IN THE TOTAL AREA OF BASIN C

FOR REFERENCE ONLY

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TXDOT DRAINAGE AREA MAP

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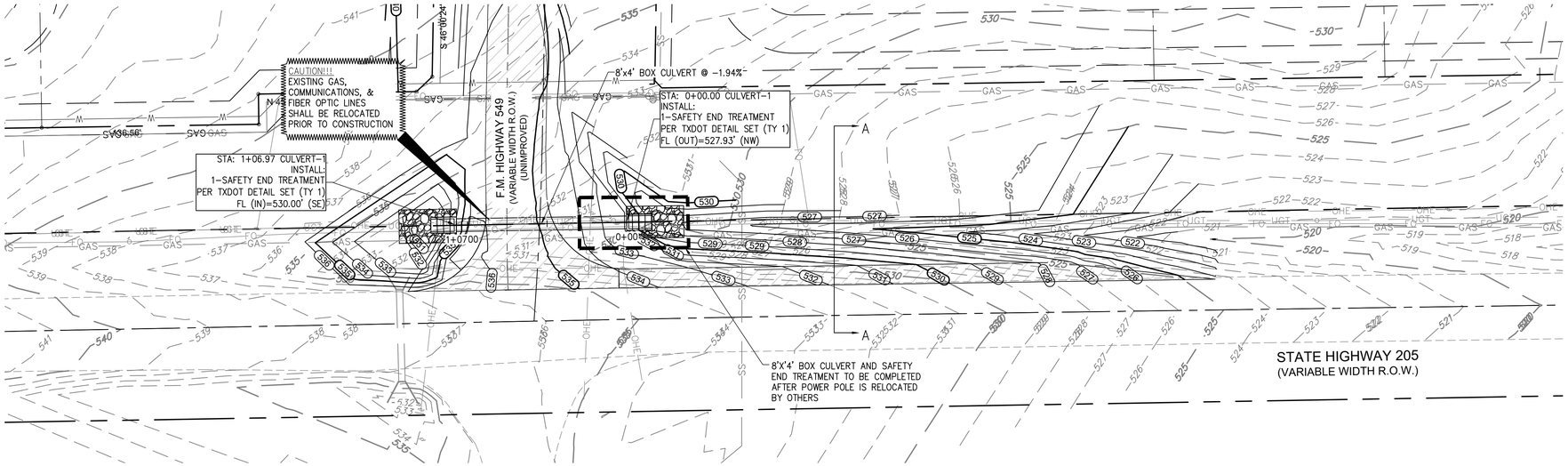
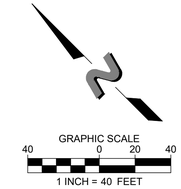
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C9.3





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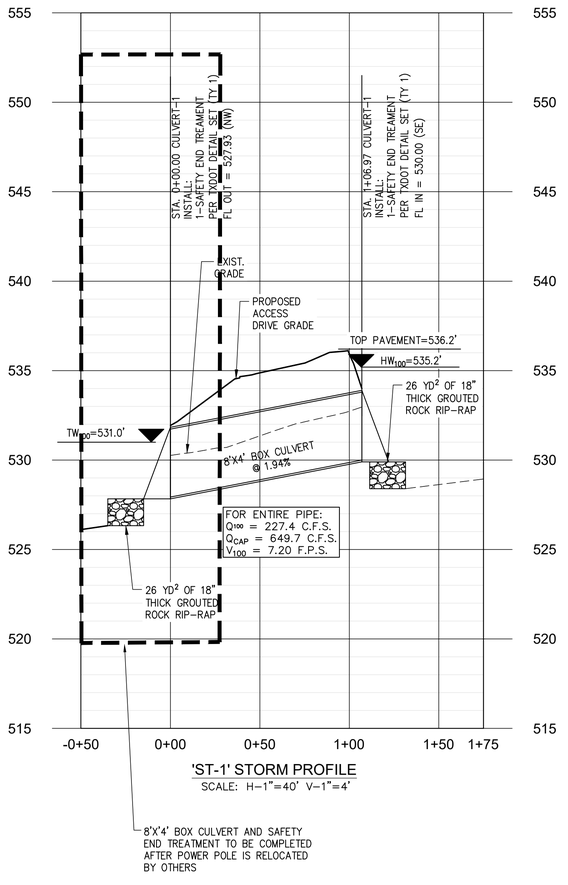
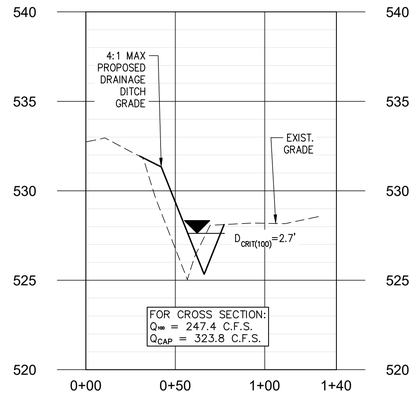


'ST-1' STORM PROFILE
SCALE: H-1"=40' V-1"=4'



DOWNSTREAM DRAINAGE DITCH
CROSS SECTION A-A
SCALE: H-1"=40' V-1"=4'

CULVERT DESIGN CALCULATIONS

CULVERT LOCATION:	SH 205 & FM 549		
LENGTH, L	190.73		
TOTAL DISCHARGE, Q	227.4	DESIGN STORM FREQ.	
ROUGHNESS COEFF., n	0.013	MAX. VEL.	8 F.P.S.
TAILWATER	3.1	D.S. CHANNEL WIDTH	8 F.T.
ENTRANCE DESCRIPTION	0° wingwall flare angle, type 3A		

RDWY. ELEV.	536.20	U.S. CULV. F.L.	530.00
U.S. CULV. F.L.	530.00	D.S. CULV. F.L.	527.93
DIFFERENCE	6.20	DIFFERENCE	2.07
REQ'D FREEBOARD	1 F.T.	CULV. SLOPE, So=	DIFF. FT / LENGTH FT
ALLOW. HEADWATER	5.20 F.T.	S_o=	0.0189

STORM DRAIN NOTES:

1. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR HIS MEANS AND METHODS OF CONSTRUCTION, JOB SITE CONDITIONS AND JOB SITE SAFETY, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS. THE CONTRACTOR SHALL SAVE, PROTECT, INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, THE ARCHITECT AND THE ENGINEER FROM ANY CLAIM OF LIABILITY, REAL OR ALLEGED, ARISING OUT OF THE PERFORMANCE OF ANY WORK ON THIS PROJECT. THE CONTRACTOR SHALL NAME THE OWNER, THE ARCHITECT AND THE ENGINEER AS "ADDITIONAL INSURED" ON HIS INSURANCE POLICIES.
2. EXISTING ABOVE GROUND UTILITIES HAVE BEEN SHOWN BASED ON INFORMATION SHOWN ON A SURVEY OF THE PROPERTY BY OTHERS. UNDERGROUND UTILITIES ARE SHOWN BASED ON RECORD DATA AND MAY NOT BE COMPLETE OR EXACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS AND DEPTHS OF ALL ABOVE GROUND AND UNDERGROUND UTILITIES AND ESTABLISHING THEIR EXACT LOCATION AND DEPTH PRIOR TO SETTING ANY FINISH GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING ABOVE GROUND OR UNDERGROUND UTILITIES, INCLUDING THOSE NOT SHOWN ON THE PLANS. THE CONTRACTOR IS ADVISED TO CONTACT THE CITY AND ALL FRANCHISE UTILITY COMPANIES, EASEMENT HOLDERS, ETC. AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION IN THE VICINITY OF ANY UNDERGROUND UTILITY.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF ROCKWALL STANDARDS, SPECIFICATIONS AND DETAILS FOR STORM SEWER CONSTRUCTION.
4. THE CONTRACTOR SHALL COMPLY WITH ALL BUILDING CODES AND REGULATIONS, FEDERAL STATE, COUNTY AND CITY SAFETY CODES AND INSPECTION REQUIREMENTS.
5. TRENCH SAFETY: IF ANY TRENCH ON THIS JOB SITE, INCLUDING OPEN EXCAVATIONS WHOSE DIMENSIONS CAUSE THEM TO BE CONSIDERED TRENCHES BY OSHA, REGARDLESS OF WHETHER FOR THE INSTALLATION OF UTILITIES, FOUNDATIONS OR ANY OTHER SITE ELEMENT, IS EQUAL TO OR GREATER THAN 5.00' DEPTH, THEN THE CONTRACTOR SHALL NOT PERFORM ANY TRENCHING ON THIS SITE UNTIL HE HAS FIRST OBTAINED DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS CONFORMING TO OSHA REQUIREMENTS. SUCH PLANS AND SPECIFICATIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER EMPLOYED BY OR CONTRACTED BY THE CONTRACTOR AND SHALL BE CONSIDERED A PART OF THE CONTRACTOR'S MEANS AND METHOD'S OF CONSTRUCTION. IF THIS PROJECT IS OFFERED FOR BID, THE BIDS MUST CONTAIN A SEPARATE UNIT PRICE PAY ITEM FOR TRENCH SAFETY.
6. WHERE CONSTRUCTION DETAILS AND SPECIFICATIONS ARE NOT NOTED ON THESE PLANS USE TXDOT AND CITY OF ROCKWALL STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION.

TRIAL CULVERT										HEADWATER CALCULATIONS																		The Greater Controlling Head Water (Inlet or Outlet) (feet)	SELECTED CONDUIT SIZE
		DEPTH RANGE D.R.			POSSIBLE CULVERT SIZES					INLET CONTROL (See Figure 25&26)						OUTLET CONTROL (See Figure 27, 28, 29, & 30)													
																	Case III HW = H + TW - L x So (feet)				Case IV HW = H + ho - L x So (feet)							
Trial Area of Opening T=Ac=Q/Vmax (sq. ft.)	Channel Width "W" (feet)	T*Ac / W (feet)	AHW (feet)	Try Depth "D" (feet)	No. Openings	Width of Box "B" (feet)	Box Depth or Pipe Dia. "D" (feet)	Total Culvert Area "Ac" (sq. ft.)	"Q" Each Opening (c.f.s.)	Entrance Type	Case No.	Q / B (c.f.s.)	HW / D (figure 25&26)	HW	Entrance Coeff. Ke	"H" (feet) (figure 27&28)	"TW" (feet)	L x So (feet)	HW (feet)	"H" (feet) (figure 27&28)	dc (feet) (figure 29&30)	dc+D / 2 (feet)	TW (feet)	ho (feet)	L x So (feet)	"HW" (feet)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
28.80	8.00	3.60	5.20	4.00	1.00	8.00	4.00	32.00	227.40	3A	II	28.43	1.30	5.20	0.70	1.70	3.10	2.02	2.78	1.70	3.00	3.50	3.10	3.50	2.02	3.18	5.20	4'x8'

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

THE DIMENSION GROUP
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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
LICENSED PROFESSIONAL ENGINEER

11/14/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

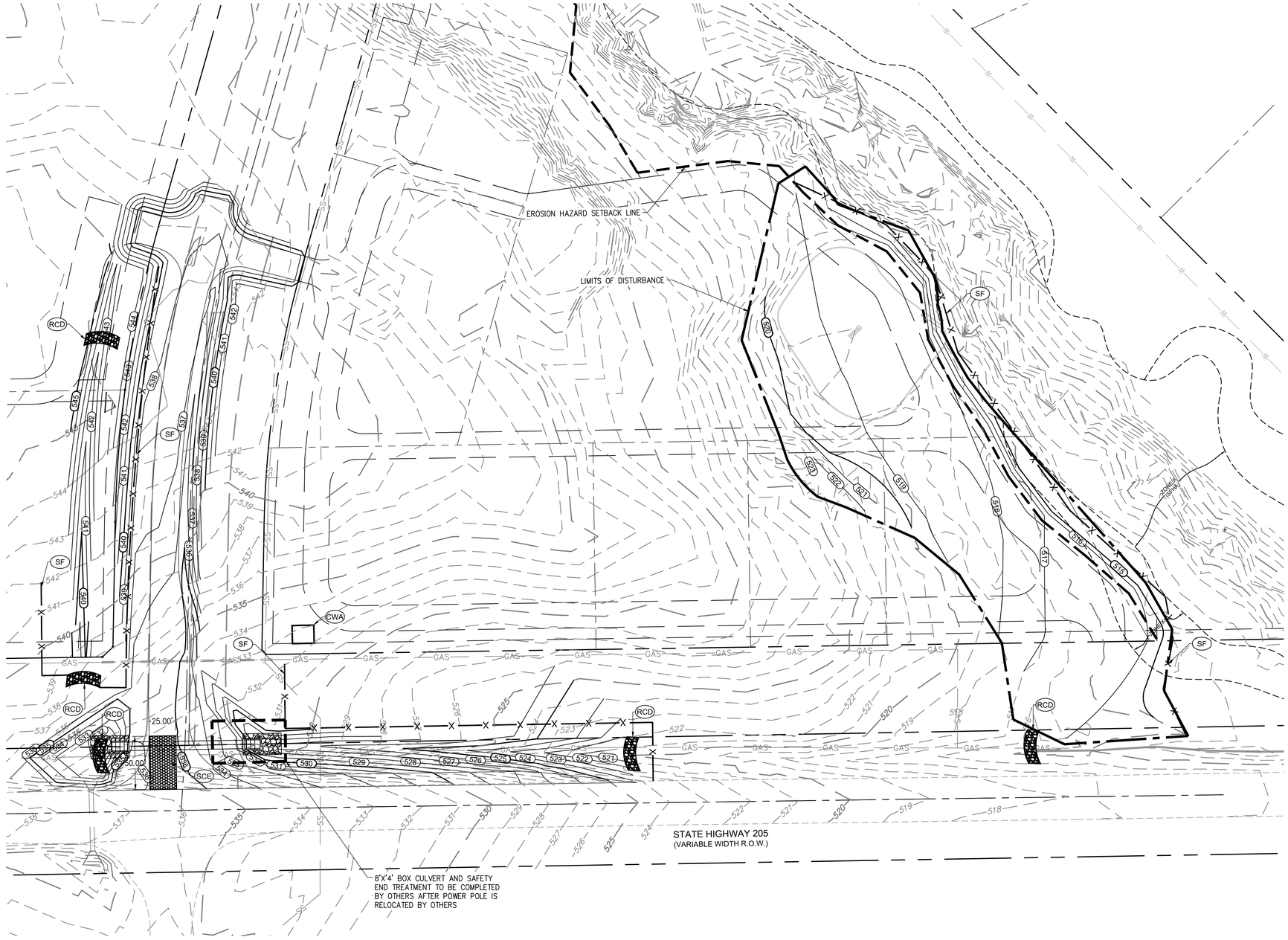
#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/14/2023 - 4:01 pm
dwg

STORM PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C9.4



TOTAL DISTURBED AREA = 184,632.0 SQ. FT. (4.24 AC.)

GRAPHIC SCALE
50 0 25 50
1 INCH = 50 FEET

EROSION CONTROL KEYNOTES:

- (CWA) CONCRETE WASHOUT AREA
- (RDC) ROCK DAM CHECK
- (SF) SILT FENCE
- (SCE) STABILIZED CONSTRUCTION AREA

PROPOSED	LEGEND	EXISTING
	PROPERTY LINE	
	R.O.W. LINE	
UGT	UNDERGROUND TELEPHONE	UGT
FO	FIBER OPTIC	FO
OHE	OVERHEAD ELECTRIC	OHE
	EDGE OF PAVEMENT / PAN	
5460	MAJOR CONTOUR	5460
5461	MINOR CONTOUR	5461
SS	SANITARY MAIN	SS
(SS)	SANITARY MANHOLE	(SS)

SEDIMENT AND EROSION CONTROL NOTES:

1. SEE GENERAL NOTES ON SHEET C10.2
2. ALL EROSION AND SEDIMENT CONTROL PRACTICES AND OTHER PROTECTIVE MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. REGULAR INSPECTION AND MAINTENANCE OF BMPs SHOULD BE LOGGED AND REMEDIAL ACTION TAKEN AS SOON AS PRACTICAL.
3. PERIMETER EROSION CONTROL BMPs ARE TO REMAIN IN PLACE UNTIL PERMANENT GROUND COVERAGE IS ACHIEVED.
4. ALL DISTURBED AREAS NOT TO BE LANDSCAPED ARE TO BE SEEDED AND MULCHED WITHIN 14 DAYS OF FINAL GRADING. SURFACE IS TO BE AMENDED WITH TOPSOIL AND SEEDED WITH LOCAL DRYLAND GRASS SEED MIX.
5. CONTRACTOR IS RESPONSIBLE TO OBTAINING A TXDOT & ROCKWALL STORMWATER CONSTRUCTION PERMIT.

SITE PREPARATION / INITIAL CBMPs

1. INSTALL ALL PERIMETER CBMPs PRIOR TO BEGINNING SITE GRADING.
2. INSTALL ALL SILT FENCE IMMEDIATELY BEHIND BACK OF CURB, SIDEWALK, AND/OR ROADWAY. IF A GAP OF EXPOSED SOIL EXISTS, A STRIP OF EROSION CONTROL BLANKETING MAY BE NECESSARY.
3. INSTALL PTP, SSA, VTC IMMEDIATELY UPON ESTABLISHMENT OF NEAR GRADE CONDITIONS IN THOSE AREAS.
4. CONTACT PUBLIC WORKS TO SCHEDULE A PRE-CONSTRUCTION INSPECTION.
5. MAINTAIN EXISTING SEDIMENTATION BASIN AS LONG AS POSSIBLE DURING OVERLOT GRADING AND BUILDING CONSTRUCTION.

UTILITY / INFRASTRUCTURE / BUILDING CONSTRUCTION INTERIM CBMPs

1. MAINTAIN / REPAIR / REPLACE ALL CBMPs INSTALLED DURING INITIAL PHASE.
2. INSTALL INLET PROTECTION FOR NEW ON-SITE INLETS.
3. CONDUCT INSPECTIONS OF ALL CBMPs EVERY 14 DAYS AND AFTER ALL PRECIPITATION EVENTS.
   LOG INSPECTIONS ON LOG SHEET.
4. WALK PERIMETER OF SITE TO ENSURE NO SEDIMENT IS BYPASSING CBMPs.
5. INSPECT DISCHARGE POINTS.
6. MAINTAIN EXISTING SEDIMENTATION BASIN AS LONG AS POSSIBLE DURING OVERLOT GRADING AND BUILDING CONSTRUCTION.

PERMANENT SITE STABILIZATION / LANDSCAPING FINAL CBMPs

1. MAINTAIN / REPAIR / REPLACE ALL EROSION AND SEDIMENT CONTROL CBMPs INSTALLED DURING INITIAL AND INTERIM PHASES.
2. CONDUCT FINAL INSPECTION OF ALL PERIMETER BMPs. LOG INSPECTIONS ON LOG SHEET.
3. ENSURE ALL DISTURBED AREAS NOT LANDSCAPED ARE SEEDED AND PROPERLY MULCHED AND SECURELY CRIMPED.
4. INSTALL EROSION CONTROL BLANKET ON ALL SLOPE GREATER THE 4:1.
5. CONTACT PUBLIC WORKS TO SCHEDULE A FINAL INSPECTION.
6. LANDSCAPE SHOWN ONLY FOR INFORMATIONAL PURPOSES.

NOTE:

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY OF ROCKWALL MONUMENTS:

GEODETIC CONTROL MONUMENTS - NORTH AMERICAN DATUM - 1983 (2011) TEXAS NORTH CENTRAL ZONE (4202).

COR-8: ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" AT THE NORTHERLY INTERSECTION OF SILVER VIEW LANE AND DIAMOND WAY DRIVE ±1 FOOT NORTH OF CURB LINE IN CENTER OF CURVE.
N: 7018063.113, E: 2609533.682 ELEVATION: 600.48'

COR-9: BRASS DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON THE SOUTH SIDE OF DISCOVERY BOULEVARD AT THE SOUTHEAST CORNER OF CURB INLET ±180 FOOT EAST INTERSECTION OF DISCOVERY/CORPORATE.
N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

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TBPE FIRM REGISTRATION #F-8396

STATE OF TEXAS
KEATON L. MAI
125077
LICENSED
PROFESSIONAL ENGINEER

11/20/2023

RECORD DRAWING

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 20, 2023

#	DATE	REVISION DESCRIPTION
1	11/20/23	RECORD DRAWINGS

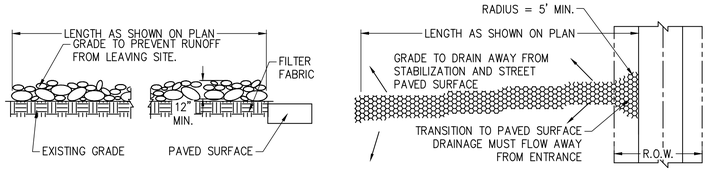
project no. 200-672
date 11/20/2023 – 1:33 pm
dwg

EROSION CONTROL PLAN

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C10.1

[24x36TBs – Offsite-RD.dwg] [V-BASE.dwg] [C-BASE-OFFSITE.dwg] [C6.1-GRADING PLAN.dwg]
Drawing name: L:\PRUDENT DEVELOPMENT\2020\200-672 & 200-673 – TBD – Rockwall, TX (205 & 549)\02 Civil\C3D\Sheet\CD – Offsite\C10.1-EROSION CONTROL PLAN – PAVING.dwg Nov 20, 2023 – 1:33pm



PROFILE VIEW
N.T.S.

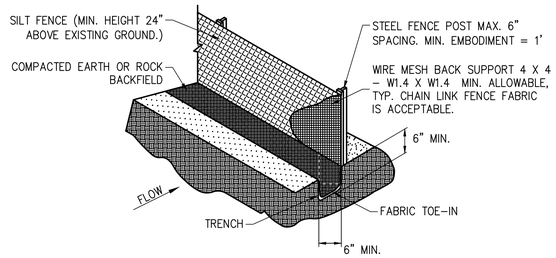
PLAN VIEW
N.T.S.

STABILIZED CONSTRUCTION ENTRANCE

GENERAL NOTES

1. STONE SHALL BE 4 TO 6 INCH DIAMETER CRUSHED ROCK.
2. LENGTH SHALL BE SHOWN ON PLANS, WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM LENGTH OF 50 FEET.
3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS ON INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED. REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING SEDIMENT ON TO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

1 / C10.2 TYPICAL CONSTRUCTION ENTRANCE DETAILS
N.T.S.

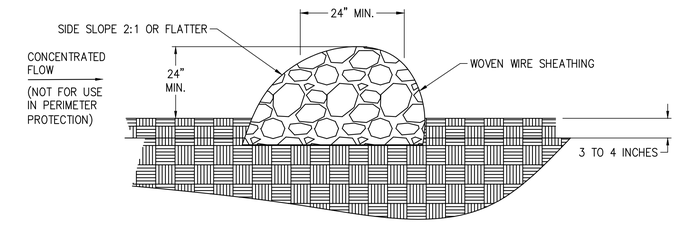


SILT FENCE - ISOMETRIC PLAN VIEW
N.T.S.

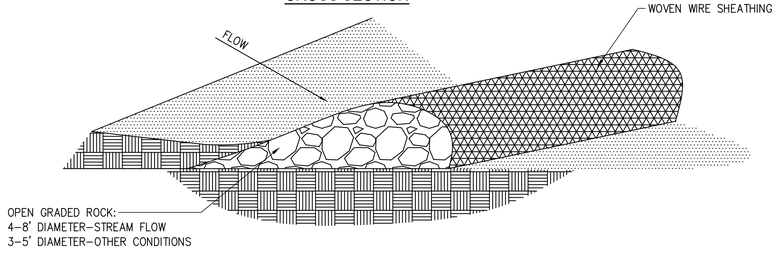
GENERAL NOTES

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 ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLIDE 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 ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING 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 BACKFIELD 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. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE WEEKLY AND AFTER EACH RAINFALL. 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 HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

2 / C10.2 TYPICAL SILT FENCE DETAIL
N.T.S.



CROSS SECTION



ISOMETRIC VIEW

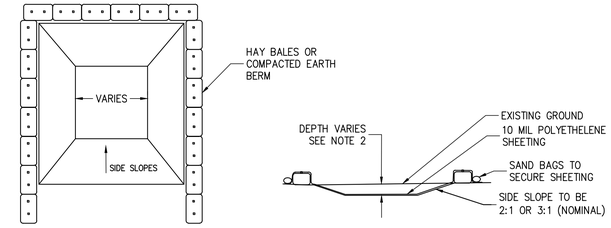
ROCK CHECK DAM GENERAL NOTES

1. WOVEN WIRE SHEATHING SHALL HAVE MAXIMUM OPENING OF ONE (1) INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE SECURED WITH SHOAT RINGS.
2. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION PROPERLY.
3. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT. WHICHEVER IS LESS. THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
4. WHEN THE SITE IS COMPLETELY STABILIZED. THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

3 / C10.2 ROCK CHECK DAM
N.T.S.

EROSION GENERAL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER FOR TXDOT & ROCKWALL.
3. IF THE EROSION CONTROL PLANS AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
4. IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. OFF-SITE BORROW AND SPOIL AREAS ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH MONTGOMERY COUNTY EROSION CONTROL REQUIREMENTS. THESE AREAS SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.
5. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND AFTER ALL MAJOR RAIN EVENTS.
6. ALL NON-IMPERVIOUS AREAS AFTER CONSTRUCTION SHALL BE COVERED WITH SOD OR LANDSCAPED IN ACCORDANCE WITH THE LANDSCAPE DRAWINGS. ALL OTHER REMAINING AREAS SHALL BE HYDRO-MULCHED OR COVERED WITH CURLEX BLANKET (WHERE SHOWN) AND MAINTAINED UNTIL ESTABLISHED.
7. TEMPORARY STONE STABILIZED CONSTRUCTION ENTRANCE SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS: 25' WIDE X 50' LONG X 6" DEEP. (3"-5" COURSE AGGREGATE). PLACE FILTER FABRIC UNDER STONE PER N.C.T.C.O.G. ITEM 2.23.3.
8. THE STABILIZED CONSTRUCTION ENTRANCE IS TO BE USED AS A VEHICLE WASH DOWN AREA FOR DEBRIS AND SOIL REMOVAL PRIOR TO EXITING THE SITE. THIS STABLIZED ENTRANCE SHALL BE TOP DRESSED WITH ADDITIONAL STONE AS NECESSARY. LOCATION OF STABLIZED ENTRANCE MAY BE MODIFIED IF APPROVED BY MONTGOMERY COUNTY AND THE DESIGN ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE, AS THE ENTITY EXERCISING OPERATIONAL CONTROL, FOR ALL PERMITTING AS REQUIRED BY THE EPA/TCEQ. THIS INCLUDES, BUT IS NOT LIMITED TO, PREPARATION OF N.O.I. AND NOT AND PAYMENT OF ALL ASSOCIATED FEES.
10. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO INSURE THAT THE DEVICES ARE FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH DOWN OPERATION HALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST LOWING THROUGH ANOTHER BMP TO CONTROL OFF SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTAL OF N.O.I., N.O.T. & ANY ADDITIONAL INFORMATION REQUIRED BY THE E.P.A.. CONTRACTOR SHALL COMPLY WITH ALL E.P.A. STORM WATER POLLUTION PREVENTION REQUIREMENTS.
12. EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF THE CONTRACTOR. THE CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.
13. ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.



4 / C10.2 CONCRETE WASHOUT AREA DETAIL
N.T.S.

CONCRETE WASHOUT AREA NOTES

1. CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. THE CONCRETE WASHOUT AREA SHALL BE ENTIRELY SELF-CONTAINED.
2. THE CONTRACTOR SHALL SUBMIT THE DESIGN, LOCATION AND SIZING OF THE CONCRETE WASHOUT AREA(S) WITH THE PROJECT'S EROSION AND SEDIMENTATION CONTROL PLAN AND SHALL BE APPROVED BY THE ENGINEER.

   LOCATION: WASHOUT AREA(S) ARE TO BE LOCATED AT LEAST 50 FEET FROM ANY STREAM, WETLAND, STORM DRAINS, OR OTHER SENSITIVE RESOURCE. THE FLOOD CONTINGENCY PLAN MUST ADDRESS THE CONCRETE WASHOUT IF THE WASHOUT IS TO BE LOCATED WITHIN THE FLOODPLAIN.

   SIZE: THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING, BUT NOT LIMITED TO, OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.
3. SURFACE DISCHARGE IS UNACCEPTABLE. THEREFORE, HAY BALES OR OTHER CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHOULD BE USED AROUND THE PERIMETER OF THE CONCRETE WASHOUT AREA FOR CONTAINMENT.
4. SIGNS SHOULD BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE AREA(S) AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS. WASHOUT AREA(S) SHOULD BE FLAGGED WITH SAFETY FENCING OR OTHER APPROVED METHOD.
5. WASHOUT AREA(S) ARE TO BE INSPECTED AT LEAST ONCE A WEEK FOR STRUCTURAL INTEGRITY, ADEQUATE HOLDING CAPACITY AND CHECKED FOR LEAKS, TEARS, OR OVERFLOWS. (AS REQUIRED BY THE CONSTRUCTION SITE ENVIRONMENTAL INSPECTION REPORT) WASHOUT AREA(S) SHOULD BE CHECKED AFTER HEAVY RAINS.
6. HARDENED CONCRETE WASTE SHOULD BE REMOVED AND DISPOSED OF WHEN THE WASTE HAS ACCUMULATED TO HALF OF THE CONCRETE WASHOUT'S TO HALF OF THE CONCRETE WASHOUT'S HEIGHT. THE WASTE CAN BE STORED AT AN UPLAND LOCATION, AS APPROVED BY THE ENGINEER. ALL CONCRETE WASTE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL APPLICABLE LAWS, REGULATIONS, AND GUIDELINES.
7. PAYMENT FOR THIS ITEM IS TO BE INCLUDED UNDER THE GENERAL COST OF THE WORK FOR THE PROJECT, INCLUDING SITE RESTORATION.

CITY OF ROCKWALL MONUMENTS:

GEODETIC CONTROL MONUMENTS - NORTH AMERICAN DATUM - 1983 (2011) TEXAS NORTH CENTRAL ZONE (4202).

COR-8: ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" AT THE NORTHERLY INTERSECTION OF SILVER VIEW LANE AND DIAMOND WAY DRIVE ±1 FOOT NORTH OF CURB LINE IN CENTER OF CURVE.
N: 7018063.113, E: 2609533.682 ELEVATION: 600.48'

COR-9: BRASS DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON THE SOUTH SIDE OF DISCOVERY BOULEVARD AT THE SOUTHEAST CORNER OF CURB INLET ±180 FOOT EAST INTERSECTION OF DISCOVERY/CORPORATE.
N: 7020550.132, E: 2607463.893 ELEVATION: 595.63'

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

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TBPE FIRM REGISTRATION #F–8396

STATE OF TEXAS
KEATON L. MAI
1 2 5 0 7 7
LICENSED
PROFESSIONAL ENGINEER

11/14/2023

RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND INFORMATION PROVIDED BY THE CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED.
THE ORIGINAL SEALED CONSTRUCTIONS PLANS ARE ON FILE AT THE CITY OF FRISCO.

ENGINEER OF RECORD:
KEATON L. MAI, P.E.
THE DIMENSION GROUP, INC. TBPE FIRM F-8396
DATE: November 14, 2023

#	DATE	REVISION DESCRIPTION
1	11/14/23	RECORD DRAWINGS

project no. 200-672
date 11/14/2023 – 11:23 am
dwg.

EROSION CONTROL DETAILS

CREEKSIDE COMMONS UTILITY EXTENSIONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C10.2

GENERAL NOTES:

1. ALL WORK DETAILED ON THESE PLANS SHALL BE GOVERNED BY TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) SPECIFICATIONS. THE SPECIFICATIONS ARE DEFINED BY PUBLICATION: "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES" (DATED NOV 1, 2014), THE ATTACHED STANDARD DETAIL SHEETS, AND THE ATTACHED SPECIAL SPECIFICATIONS.
2. THE QUANTITY SUMMARY (SHEET TF.02) REFERENCES EACH WORK ITEM TO THE TXDOT SPECIFICATION MANUAL DESCRIBED ABOVE. THE FIRST OUR NUMBERS REFERENCE THE TXDOT SPECIFICATION ITEM NUMBER AND THE SECOND FOUR NUMBERS THE BID ITEM CODE.
3. THE INFORMATION SHOWN ON PLAN DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE AT THE TIME OF CONSTRUCTION. PRIOR TO DIGGING , BORING OR DRILLING, THE CONTRACTOR SHALL LOCATE UNDERGROUND UTILITIES AND IF NECESSARY DIG TEST DITCHES OR POTHOLES TO AVOID DAMAGES.
4. CONTRACTOR SHALL NOTIFY THE TXDOT BY PHONE AND EMAIL AT LEAST TWO WEEKS PRIOR TO THE BEGINNING OF WORK ON THE PROJECT.

   - TXDOT CONTACT NAME:
   - TXDOT CONTACT NUMBER:
   - TXDOT CONTACT EMAIL:

5. CONTRACTOR SHALL CONTACT TXDOT AT LEAST 48 HOURS IN ADVANCE TO INSPECT AND APPROVE PROPOSED LOCATIONS FOR DIGGING, BORING, DRILLING OR POURING CONCRETE. PROPOSED LOCATIONS SHALL BE CLEARLY MARKED BY THE CONTRACTOR IN ADVANCE.
6. A REPRESENTATIVE FROM TXDOT SHALL BE PRESENT WHEN THE TRAFFIC SIGNAL MODIFICATIONS ARE ACTIVATED. CONTRACTOR SHALL NOTIFY TXDOT 48 HOURS IN ADVANCE TO SCHEDULE AN ACTIVATION TIME.
7. THE LOCATION OF POLES, CONDUITS, SIGNAL HEADS, SIGNS, AND CAMERAS MAY REQUIRE ADJUSTMENT TO ACCOMMODATE FIELD CONDITIONS. ANY ADJUSTMENTS PROPOSED BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER IN ADVANCE.
8. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ALL TRAFFIC CONTROL PLANS SHALL CONFORM TO THE LATEST EDITION OF THE "TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". CONTRACTOR SHALL CONTACT TXDOT AND/OR THE CITY OF ROCKWALL TO SUBMIT PLANS AND OBTAIN STREET CLOSURE PERMITS. CONTRACTOR SHALL NOTIFY ALL EMERGENCY UNITS AND SCHOOL DISTRICTS (OPERATING WITHIN A MILE OF THE PROJECT) OF THE PROPOSED WORK AND LANE CLOSURES.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH TCEQ'S TPDES PROGRAM FOR CONTROL OF SILT AND EROSION. IF NECESSARY, SEDIMENT CONTROL DEVICES SHALL BE INSTALLED NEAR DRILLING AND EXCAVATION AREAS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH DESIGN OR REPLACEMENT (TO CURRENT STANDARDS) OF CITY/TXDOT INFRASTRUCTURE DUE TO DAMAGES CAUSED BY THE CONTRACTOR DURING CONSTRUCTION OF THE PROJECT.

BARRICADES, CONES AND SIGNAGE

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, CONES AND SIGNS REQUIRED TO OPERATE LANE CLOSURES DEFINED IN THE TRAFFIC CONTROL PLAN. WORK ZONE REQUIREMENTS ARE DEFINED IN ITEM 502 AND ATTACHED STANDARD DETAIL SHEETS.

MATERIALS AND TESTING

1. ALL EQUIPMENT FURNISHED BY THE CONTRACTOR MUST BE INSPECTED AND APPROVED PRIOR TO INSTALLATION. CONTRACTOR SHALL SUBMIT AN EQUIPMENT LIST (IN SPREADSHEET FORMAT) WITH SERIAL NUMBERS, WARRANTY INFORMATION AND MANUFACTURE DATES. MANUFACTURE DATES MUST BE NO MORE THAN 1 YR PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONCRETE MIX DESIGNS TO THE CITY PRIOR TO THE START OF ANY CONCRETE WORK. CONTRACTOR WILL BE RESPONSIBLE FOR CONCRETE TESTING. CONCRETE TEST REPORTS SHALL BE SUBMITTED TO TXDOT PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. PAYMENT FOR CONCRETE TESTING IS SUBSIDIARY TO CONCRETE WORK ITEMS.

COORDINATION WITH ELECTRIC COMPANY

1. CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC COMPANY PRIOR TO BEGINNING ERECTION OF ANY POLES, LUMINAIRES AND/OR STRUCTURES NEAR OVERHEAD ELECTRIC LINES.

CONDUITS AND WIRE

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE MOST CURRENT NATIONAL ELECTRIC CODE, TXDOT SPECIFICATION ITEMS 618, 620, 625, 684, AND ATTACHED STANDARD DETAIL SHEETS.

SIGNAL HEADS

1. SIGNAL HEADS AND BACK PLATES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH TXDOT SPECIFICATION ITEM 682 AND ATTACHED DETAIL SHEET TS-BP-20.
2. ALL NEW SIGNAL HEADS SHALL BE COVERED WITH BURLAP AND TURNED DOWN UNTIL PLACED INTO OPERATION.

CAMERAS FOR VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS)

1. CONTRACTOR SHALL CONTACT TXDOT TO DETERMINE THE BRAND/MODEL OF THE CURRENT VIVDS IN OPERATION AND PROPOSE SAME OR COMPATIBLE BRAND/MODELS.

SPAN WIRE INSTALLATIONS

1. THE CONTRACTOR SHALL REMOVE, INSTALL AND RELOCATE TIMBER POLES, SPAN WIRES AND SIGNAL HEADS IN ACCORDANCE WITH ITEMS 627 (TIMBER POLES), 625 (STEEL CABLE), 680 (HIGHWAY TRAFFIC SIGNALS). SEE ATTACHED STANDARD SHEETS FOR DETAILS ON THE CONSTRUCTION OF SPAN WIRE MOUNTED TRAFFIC SIGNALS.

LUMINAIRES

1. LUMINAIRES SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ITEM 610 AND ATTACHED STANDARD DETAIL SHEET LUM-A-12.
2. NEW LUMINAIRES SHALL BE FURNISHED WITH AN 8' LUMINAIRE MAST ARM, LED 250W-EQ LUMINAIRE AND A PHOTO CELL.

SIGNS

1. ALL SIGNS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ITEMS 636, 643, 644 AND ATTACHED STANDARD DETAIL SHEETS.
2. OVERHEAD STREET NAME SIGNS AND SHALL BE GREEN WITH WHITE BORDERS. ALL NUMBERS AND LETTERS SHALL USE "CLEARVIEW HIGHWAY 5" FONT AND FOLLOW TXDOT GUIDELINES FOR OVERHEAD STREET SIGNS.
3. PRIOR TO FABRICATION OF CUSTOM SIGNS, THE CONTRACTOR SHALL SUBMIT A DESIGN DRAWING OF THE PROPOSED SIGN LAYOUT DEPICTING SIGN COLORS, FONTS AND DIMENSIONS FOR APPROVAL.

MARKINGS

1. ALL PAVEMENT MARKINGS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH ITEMS 666, 672, 677 AND 678 AND THE ATTACHED STANDARD DETAIL SHEETS.
2. TXDOT STAFF MUST BE PRESENT TO APPROVE PAVEMENT MARKING LAYOUTS PRIOR TO THE APPLICATION OF ANY MARKINGS. AT LEAST 48 HOURS PRIOR TO MOBILIZATION, THE CONTRACTOR SHALL CONTACT THE PAVEMENT MARKINGS SUPERVISOR TO SCHEDULE FIELD REVIEW AND APPROVAL OF THE PROPOSED LAYOUT.
3. THE PROPOSED PAVEMENT MARKINGS WILL SHIFT LANE LINES AND REQUIRE EXISTING RUMBLE STRIPS TO BE FILLED. CONTRACTOR SHALL FILL THE ASPHALT RUMBLE STRIPS IN ACCORDANCE WITH SPECIAL SPECIFICATION SS5092 (ATTACHED).

ITEM 680 - INSTALLATION OF HIGHWAY TRAFFIC SIGNALS

1. THE FOLLOWING ITEMS SHALL BE SUBSIDARY TO PAYMENT FOR ITEM 680:
   a. FURNISHING AND INSTALLING ALUMINUM SIGNS.
   b. SIGN DESIGN DRAWINGS AND FABRICATION OF CUSTOM SIGNS.
   c. RELOCATION OF SIGNAL EQUIPMENT TO THE NEW TP3 TIMBER POLE AND SPANS.
   d. ADJUSTING THE POSITION OF SIGNAL HEADS AND SIGNS TO ALIGN WITH THE PROPOSED PAVEMENT MARKINGS.

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02-09-2022

DRAFT
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designed by
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date
dwg.

GENERAL NOTES

CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TF.01

SUMMARY OF ESTIMATED QUANTITIES

BID ITEM	DESCRIPTION	UNIT	QTY
04166001	DRILL SHAFT (18 IN)	LF	6
05026001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	1
06186068	CONDT (RM) (1 1/2")	LF	10
06206008	ELEC CONDR (NO.8) INSULATED	LF	1130
06206009	ELEC CONDR (NO.6) BARE	LF	0
06206010	ELEC CONDR (NO.6) INSULATED	LF	0
06256001	ZINC-COAT STL WIRE STRAND (1/4")	LF	370
06256003	ZINC-COAT STL WIRE STRAND (3/8")	LF	1415
06276003	TIMBER POLE (CL 2) 50 FT	EA	1
06366001 (1)	ALUMINUM SIGNS (TY A)	SF	114
06446001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	4
06446068	RELOCATE SM RD SN SUP&AM TY 10BWG	EA	2
(1)	IN SM RD SN ON BARRICADE	EA	2
(1)	IN SM RD SN ON SPAN WIRE	EA	8
(1)	RELOCATE SM RD SN ON SPAN WIRE	EA	2
06666036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	1075
06666048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	121
06666054	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	7
06666057	REFL PAV MRK TY I(W)(DBL ARROW)(100MIL)	EA	4
06666078	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	5
06666182	REFL PAV MRK TY II (W) 24" (SLD)	LF	121
0666-6224	PAVEMENT SEALER 4"	LF	4697
0666-6226	PAVEMENT SEALER 8"	LF	1075
0666-6230	PAVEMENT SEALER 24"	LF	121
0666-6231	PAVEMENT SEALER (ARROW)	EA	7
0666-6232	PAVEMENT SEALER (WORD)	EA	5
0666-6234	PAVEMENT SEALER (DBL ARROW)	EA	4
06666303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	2123
06666314	RE PM W/RET REQ TY I (Y)4"(SLD)(090MIL)	LF	2574
0672-6009	REFL PAV MRKR TY II-A-A	EA	123
0672-6010	REFL PAV MRKR TY II-C-R	EA	59
06776001	ELIM EXT PAV MRK & MRKS (4")	LF	2300
06776003	ELIM EXT PAV MRK & MRKS (8")	LF	495
06776007	ELIM EXT PAV MRK & MRKS (24")	LF	44
06776008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	3
06776012	ELIM EXT PAV MRK & MRKS (WORD)	EA	2
06786001	PAV SURF PREP FOR MRK (4")	LF	4697
06786004	PAV SURF PREP FOR MRK (8")	LF	1075
06786008	PAV SURF PREP FOR MRK (24")	LF	121
06786009	PAV SURF PREP FOR MRK (ARROW)	EA	7
06786010	PAV SURF PREP FOR MRK (DBL ARROW)	EA	4
06786016	PAV SURF PREP FOR MRK (WORD)	EA	5
06806002	INSTALL HWY TRF SIG (ISOLATED)	EA	1
(1)	RELOCATE EXISTING SIGNAL HEAD	EA	4
06826001	VEH SIG SEC (12")LED(GRN)	EA	2
06826002	VEH SIG SEC (12")LED(GRN ARW)	EA	4
06826003	VEH SIG SEC (12")LED(YEL)	EA	2
06826004	VEH SIG SEC (12")LED(YEL ARW)	EA	8
06826005	VEH SIG SEC (12")LED(RED)	EA	2
06826006	VEH SIG SEC (12")LED(RED ARW)	EA	8
06826054	BACKPLATE W/REF BRDR(3 SEC)(VENT)ALUM	EA	2
06826056	BACKPLATE W/REF BRDR(5 SEC)(VENT)ALUM	EA	4
06846031	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF	571
06846033	TRF SIG CBL (TY A)(14 AWG)(7 CONDR)	LF	559
06906021	REMOVAL OF TIMBER POLES	EA	1
06906016	REMOVAL OF SPAN CABLE ASSM	LF	235
06906081	INSTL DOWN GUY AND ANCHOR W/GUARD	EA	2
63066014	VIVDS CAM ASSY (RELOCATE)	EA	2
06906137	VIVDS CABLE (INSTALL)	LF	536
06906138	VIVDS CAMERA (INSTALL)	EA	1
(1)	RELOCATE LUMINAIRE MAST ARM	EA	1
06906069	INSTALL OF 8' LUMINAIRE MAST ARM	EA	1
60006130	INSTALL LUMINAIRE 250 W EQ (LED)	EA	1
50626001	PATCHING MILLED CONCRETE RUMBLE STRIPS	LF	235

NOTE: (1) PAYMENT SHALL BE SUBSIDIARY TO ITEM 680 - INSTALL HIGHWAY TRFFIC SIGNAL.

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02-09-2022

DRAFT
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drawn by
designed by
approved by

project no. 200-672
date
dwg.

QUANTITY SUMMARY

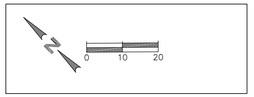
CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

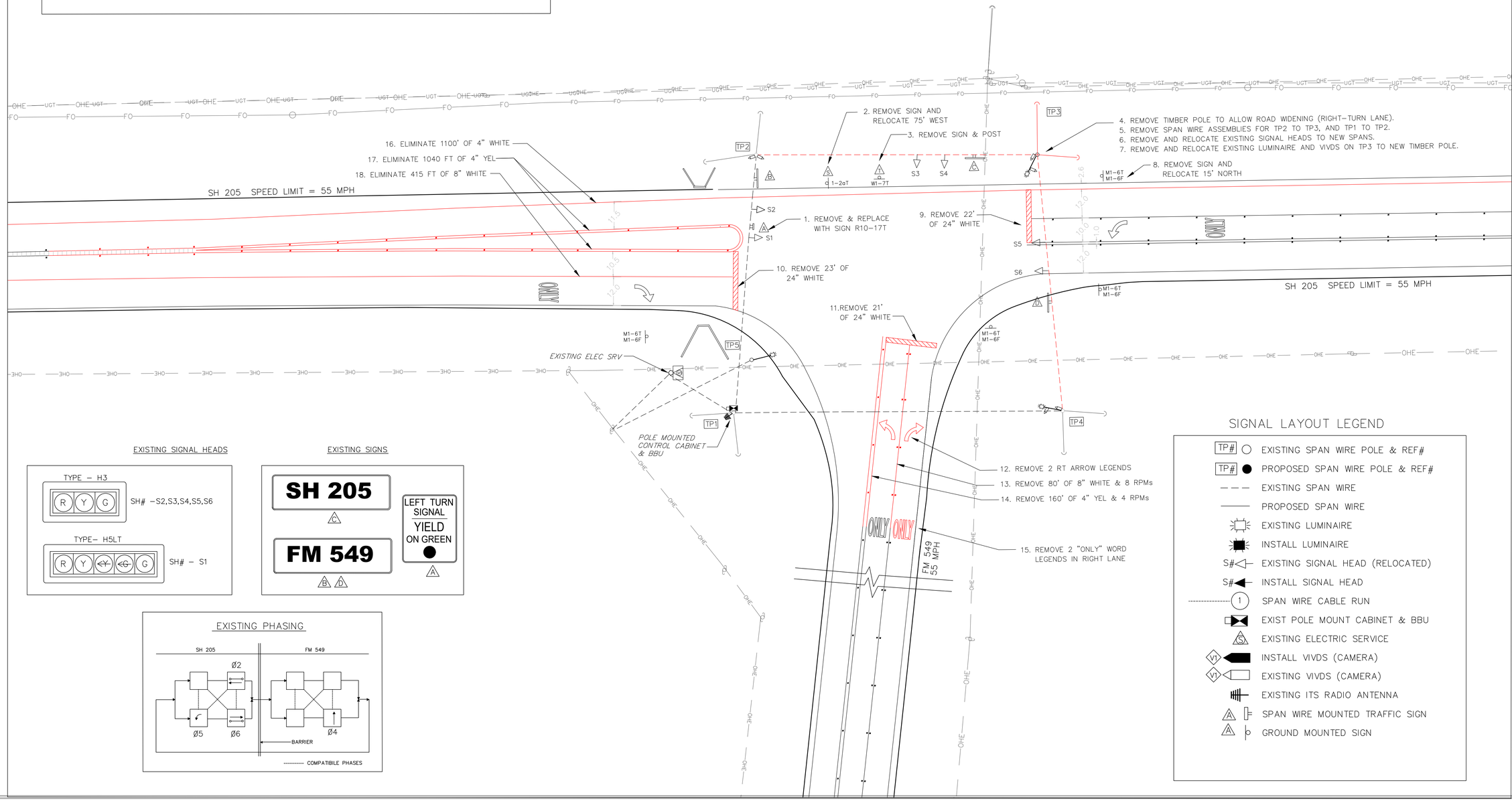
SHEET
TF.02

NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS IS NOT GUARANTEED TO BE ACCURATE AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL REQUEST LINE LOCATES AND DETERMINE THE CURRENT LOCATION OF UNDERGROUND UTILITIES PRIOR TO ANY DEMOLITION OR DRILLING.
2. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED TO TXDOT PRIOR TO BEGINNING WORK ON THE PROJECT.
3. A SUMMARY OF PAVEMENT MARKING REMOVALS IS SHOWN ON SHEET TF.08.
4. ALL SALAVAGED MATERIALS SHALL BE RETURNED TO THE TXDOT SIGNAL SHOP.

ORIGINALLY PLOTTED TO 1"=20'





EXISTING SIGNAL HEADS

EXISTING SIGNS

EXISTING PHASING

SIGNAL LAYOUT LEGEND

- TP# ○ EXISTING SPAN WIRE POLE & REF#
- TP# ● PROPOSED SPAN WIRE POLE & REF#
- EXISTING SPAN WIRE
- PROPOSED SPAN WIRE
- EXISTING LUMINAIRE
- INSTALL LUMINAIRE
- S# EXISTING SIGNAL HEAD (RELOCATED)
- S# INSTALL SIGNAL HEAD
- 1 SPAN WIRE CABLE RUN
- EXIST POLE MOUNT CABINET & BBU
- A EXISTING ELECTRIC SERVICE
- V1 INSTALL VIVDS (CAMERA)
- V1 EXISTING VIVDS (CAMERA)
- EXISTING ITS RADIO ANTENNA
- A SPAN WIRE MOUNTED TRAFFIC SIGN
- A GROUND MOUNTED SIGN

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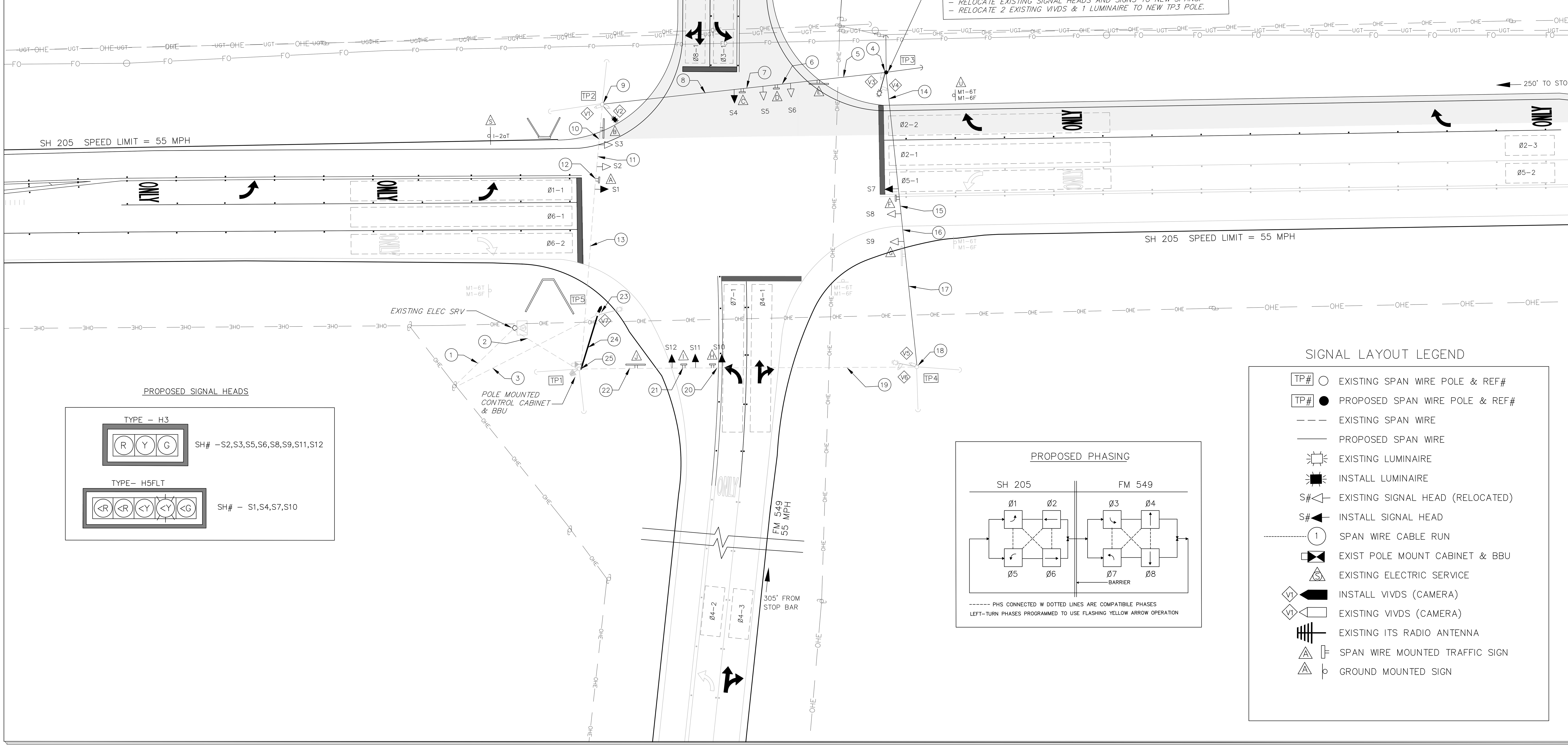
EXISTING CONDITIONS AND REMOVALS

CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TF.03

NOTES:

1. SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION (NOVEMBER 1, 2014), ATTACHED STANDARD DETAIL SHEETS, AND SPECIFICATION ITEMS LISTED HEREIN, SHALL GOVERN ALL WORK ON THIS PROJECT.
2. THE LOCATIONS OF UNDERGROUND UTILITIES AND CONDUITS SHOWN ON THE PLANS ARE NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES TO AVOID DAMAGES.
3. REFER TO THE ATTACHED DALLAS DISTRICT STANDARD DETAIL SHEETS FOR INSTALLATION OF TIMBER POLES AND SPAN WIRE MOUNTED TRAFFIC SIGNALS.
4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONDUIT, WEATHER HEADS AND MOUNTING HARDWARE FOR INSTALLATION AND/OR RELOCATION OF VIVDS AND LUMINAIRES.
5. ALL SIGNAL HEAD BACKPLATES SHALL BE PROVIDED WITH REFLECTIVE BORDERS PER TXDOT STANDARD TS-BP-20.
6. CONTRACTOR SHALL PROVIDE ADDITIONAL CABLE COILED ON SPAN TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS.
7. THE LOCATION OF POLES, SIGNAL HEADS, SIGNS AND VIVDS, MAY REQUIRE ADJUSTMENT BY THE ENGINEER TO ACCOMMODATE FIELD CONDITIONS.
8. REUSE ALL EXISTING STREET NAME SIGNS, VIVDS AND LUMINAIRES.
9. ALL SALVAGED EQUIPMENT SHALL BE RETURNED TO THE TXDOT SIGNAL SHOP.



PROPOSED SIGNAGE

RELOCATE EXISTING		FURNISH & INSTALL	
E	FM 549	A,C,F&H	LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-17T)
G	SH 205	D,I,K&L	ONLY (lane use)
S	Rockwall CITY LIMIT	M&N	ROAD ENDS 500 FT
U	SOUTH / NORTH FARM ROAD XXXX	O&P	ROAD ENDS 250 FT
		B	FM 549 STREET ENDS
		J	SH 205
		Q&R	(object marker)

SEE SHEETS TF.08 AND TF.09 FOR FULL LAYOUT OF SIGNS AND MARKINGS.

ORIGINALLY PLOTTED TO 1"=20'

0 10 20

PROPOSED SIGNAL HEADS

TYPE – H3: R Y G — SH# –S2,S3,S5,S6,S8,S9,S11,S12

TYPE– H5FLT: <R <R <Y <Y <G — SH# – S1,S4,S7,S10

PROPOSED PHASING

SH 205		FM 549	
Ø1	Ø2	Ø3	Ø4
Ø5	Ø6	Ø7	Ø8

BARRIER

------ PHS CONNECTED W DOTTED LINES ARE COMPATIBILE PHASES
LEFT-TURN PHASES PROGRAMMED TO USE FLASHING YELLOW ARROW OPERATION

SIGNAL LAYOUT LEGEND

- TP# ○ EXISTING SPAN WIRE POLE & REF#
- TP# ● PROPOSED SPAN WIRE POLE & REF#
- EXISTING SPAN WIRE
- PROPOSED SPAN WIRE
- EXISTING LUMINAIRE
- INSTALL LUMINAIRE
- S# EXISTING SIGNAL HEAD (RELOCATED)
- S# INSTALL SIGNAL HEAD
- (1) SPAN WIRE CABLE RUN
- EXIST POLE MOUNT CABINET & BBU
- EXISTING ELECTRIC SERVICE
- V1 INSTALL VIVDS (CAMERA)
- V1 EXISTING VIVDS (CAMERA)
- EXISTING ITS RADIO ANTENNA
- SPAN WIRE MOUNTED TRAFFIC SIGN
- GROUND MOUNTED SIGN

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PROPOSED SIGNAL LAYOUT

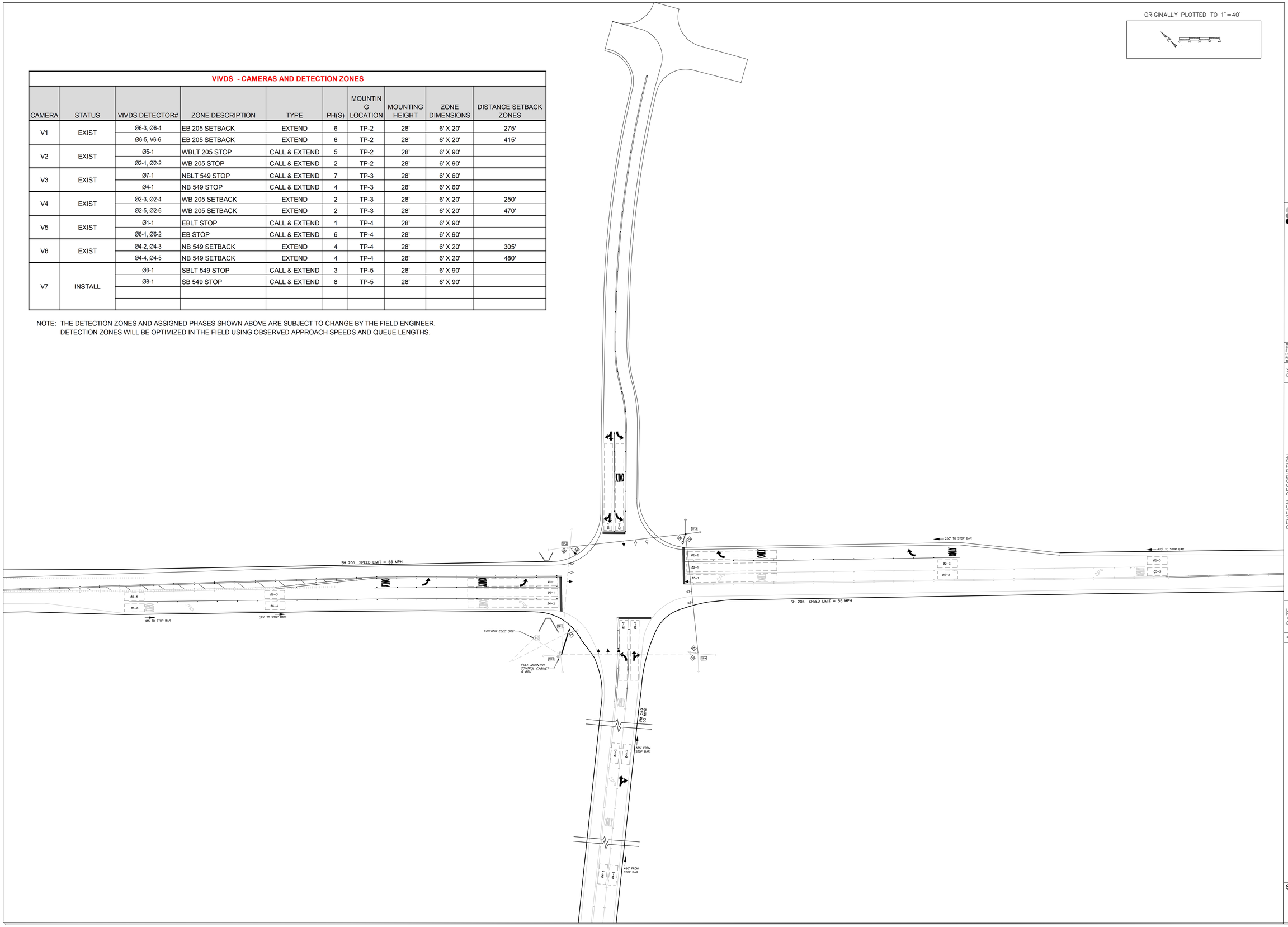
CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET TF.04

VIVDS - CAMERAS AND DETECTION ZONES

CAMERA	STATUS	VIVDS DETECTOR#	ZONE DESCRIPTION	TYPE	PH(S)	MOUNTING LOCATION	MOUNTING HEIGHT	ZONE DIMENSIONS	DISTANCE SETBACK ZONES
V1	EXIST	Ø6-3, Ø6-4	EB 205 SETBACK	EXTEND	6	TP-2	28'	6' X 20'	275'
		Ø6-5, V6-6	EB 205 SETBACK	EXTEND	6	TP-2	28'	6' X 20'	415'
V2	EXIST	Ø5-1	WBLT 205 STOP	CALL & EXTEND	5	TP-2	28'	6' X 90'	
		Ø2-1, Ø2-2	WB 205 STOP	CALL & EXTEND	2	TP-2	28'	6' X 90'	
V3	EXIST	Ø7-1	NBLT 549 STOP	CALL & EXTEND	7	TP-3	28'	6' X 60'	
		Ø4-1	NB 549 STOP	CALL & EXTEND	4	TP-3	28'	6' X 60'	
V4	EXIST	Ø2-3, Ø2-4	WB 205 SETBACK	EXTEND	2	TP-3	28'	6' X 20'	250'
		Ø2-5, Ø2-6	WB 205 SETBACK	EXTEND	2	TP-3	28'	6' X 20'	470'
V5	EXIST	Ø1-1	EBLT STOP	CALL & EXTEND	1	TP-4	28'	6' X 90'	
		Ø6-1, Ø6-2	EB STOP	CALL & EXTEND	6	TP-4	28'	6' X 90'	
V6	EXIST	Ø4-2, Ø4-3	NB 549 SETBACK	EXTEND	4	TP-4	28'	6' X 20'	305'
		Ø4-4, Ø4-5	NB 549 SETBACK	EXTEND	4	TP-4	28'	6' X 20'	480'
V7	INSTALL	Ø3-1	SBLT 549 STOP	CALL & EXTEND	3	TP-5	28'	6' X 90'	
		Ø8-1	SB 549 STOP	CALL & EXTEND	8	TP-5	28'	6' X 90'	

NOTE: THE DETECTION ZONES AND ASSIGNED PHASES SHOWN ABOVE ARE SUBJECT TO CHANGE BY THE FIELD ENGINEER. DETECTION ZONES WILL BE OPTIMIZED IN THE FIELD USING OBSERVED APPROACH SPEEDS AND QUEUE LENGTHS.



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TBPE FIRM REGISTRATION #F-8396

LAMBETH ENGINEERING

STATE OF TEXAS
ELIZABETH A. RAMIREZ
66120
LICENSED PROFESSIONAL ENGINEER
02-09-2022

DRAFT

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#	DATE	REVISION DESCRIPTION	BY
			LAMBETH
			LAMBETH

drawn by
designed by
approved by

project no. 200-672
date
dwg.

VIVDS DETECTION LAYOUT

CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TF.05

CONDUIT AND CABLE CHART

RUN NUMBER	LENGTH OF RUN (FT)	CONDUIT ITEM 618: 5" RIGID METAL RISER	CONDUIT ITEM 618: 2" PVC	CONDUIT ITEM 618: 1-1/2 RM TOP OF POLE	CONDUIT ITEM 618: 1-1/2 RM TOP OF POLE	ELECTRICAL CONDUCTORS ITEM 620: NO. 6 - POWER XHHW WIR E	ELECTRICAL CONDUCTORS ITEM 620: NO. 6 BARE WIRE	ELECTRICAL CONDUCTORS ITEM 620: NO. 8 - LUMINAIRE XHHW WIR E	ELECTRICAL CONDUCTORS ITEM 620: NO. 8 - LUMINAIRE XHHW WIR E	SIGNAL CABLES ITEM 684: 5 CNDR - NO. 14 AWG	SIGNAL CABLES ITEM 684: 7 CNDR - NO. 14 AWG	SIGNAL CABLES ITEM 6306: VIVDS CABLE	SIGNAL CABLES ITEM 6306: VIVDS CABLE	SIGNAL CABLES ITEM 6062: ITS RADIO CABLE	LENGTH OF RUN (FT)
STATUS >		EXIST	EXIST	EXIST	INSTALL	EXIST	EXIST	EXIST	INSTALL	INSTALL	INSTALL	INSTALL	EXIST	EXIST	
1	33							2	0						33
2	40		1			3	1		2						40
3	62							2	0						62
4	5			1					2			2			5
5	38								2			2			38
6	12								2	1		2			12
7	12								2	1		2			12
8	53								2	1	1	2			53
9	5				1				2			2	2		5
10	16								4	1	1	2	2		16
11	9								4	1	1	2	2		9
12	9								4	2	1	2	2		9
13	73								4	2	2	2	2		73
14	47														47
15	10										1				10
16	11									1	1				11
17	51									1	1				51
18	5			1					2				2		5
19	78								2	1	1		2		78
20	11								2	1	2		2		11
21	10								2	2	2		2		10
22	37								2	2	2		2		37
23	5				1							1			5
24	22											1			22
25	15	1							6	4	4	3	4	1	15
	TOTAL	15	40	10	10	120	40	190	1130	571	559	536	566	25	669

NOTE: SPAN LENGTHS SHOWN IN THE TABLE ABOVE DO NOT INCLUDE THE REQUIRED WIRE COILS AT EACH TRAFFIC SIGNAL HEAD.
PAYMENT FOR COILED SLACK WIRE IS SUBSIDIARY TO PERTINENT ITEMS.

SIGNAL HEAD AND POLE CHART

	TP-1			TP-2			TP-3			TP-4			TP-5		
TIMBER POLE STATUS	EXISTING TP			EXISTING TP			1			EXISTING TP			EXISTING TP		
LUMINAIRES W 8'ARM	0			1			1 *			1 EXISTING			1 EXISTING		
VIVDS	0			2 EXISTING			2 *			2 EXISTING			1		
SPAN	TP1 TO TP2			TP2 TO TP3			TP3 TO TP4			TP4 TO TP1			TP4 TO TP5		
SPAN LENGTH	105'			115'			120			140			25'		
SIGNAL HEAD TYPE	H5FLT	H3	H3	H5FLT	H3	H3	H5FLT	H3	H3	H5FLT	H3	H3			
SIGNAL FACE NO.	1	2**	3**	4	5**	6**	7	8**	9**	10	11	12			
LED INDICATIONS	< R	R	R	< R	R	R	< R	R	R	< R	R	R			
	< R	Y	Y	< R	Y	Y	< R	Y	Y	< R	Y	Y			
	< Y	G	G	< Y	G	G	< Y	G	G	< Y	G	G			
	< Y			< Y			< Y			< Y					
	< G			< G			< G								
PED UNITS	NONE			NONE			NONE			NONE			NONE		

NOTES:
"TP" = TIMBER POLE
* RELOCATE FROM EXISTING POLE TO NEW POLE
** USE EXISTING SIGNAL HEAD.

STEEL CABLE SUMMARY

SPAN	TP1 - TP2				TP2 - TP3				TP3 - TP4				TP4 - TP1				TP4 - TP5	
STEEL CABLE SIZE	SPAN	H5FLT	H3	H3	H5FLT	H5FLT	H3	H3	SPAN	H5FLT	H3	H3	SPAN	H5FLT	H3	H3	SPAN	TOTAL
3/8"	EXIST	EXIST	EXIST	EXIST	115	120	120	120	120	125	125	125	EXIST	140	140	140	25	1415
1/4"	EXIST	EXIST	EXIST	EXIST	115	0	0	0	120	0	0	0	135	0	0	0	0	370

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LAMBETH ENGINEERING TEXAS REGISTERED ENGINEERING FIRM F-19508
STATE OF TEXAS ELIZABETH A. RAMIREZ 66120 LICENSED PROFESSIONAL ENGINEER
02-09-2022
DRAFT
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#	DATE	REVISION DESCRIPTION	BY

drawn by
designed by
approved by
project no. 200-672
date
dwg.

CONDUIT, CABLE AND POLE SUMMARY
CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TF.06

CABLE TERMINATION CHART

CNDR NO.	CONDUCTOR COLOR	7 CONDR FROM S1 TO CONTR CAB	5 CONDR FROM S2 TO CONTR CAB	5 CONDR FROM S2 TO S3	7 CONDR FROM S 4 TO CONTR CAB	5 CONDR FROM S5 TO CONTR CAB	5 CONDR FROM S5 TO S6	7 CONDR FROM S7 TO CONTR CAB	5 CONDR FROM S8 TO S9	5 CONDR FROM S9 TO CONTR CAB	7 CONDR FROM S10 TO CONTR CAB	5 CONDR FROM S11 TO S12	5 CONDR FROM S12 TO CONTR CAB
1	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
2	WHITE	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON	SH COMMON
3	RED	Ø5 < R	PH 2 R	Ø 2 R	Ø7 < R	Ø4 R	Ø 4 R	Ø1 < R	Ø6 R	Ø6 R	Ø3 < R	Ø8 R	Ø8 R
4	GREEN	Ø5 < G	PH 2 G	Ø 2 G	Ø7 < G	Ø4 G	Ø 4 G	Ø1 < G	Ø6 G	Ø6 G	Ø3 < G	Ø8 G	Ø8 G
5	ORANGE	Ø5 < Y	PH 2 Y	Ø2 Y	Ø7 < Y	Ø4 Y	Ø 4 Y	Ø1 < Y	Ø6 Y	Ø6 Y	Ø3 < Y	Ø8 Y	Ø8 Y
6	BLUE	OL < F Y (WBLT)			OL < F Y (NBLT)			OL < F Y (EBLT)			OL < F Y (SBLT)		
7	WHITE/BLACK	SPARE			SPARE			SPARE			SPARE		

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02-09-2022

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project no. 200-672
date
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WIRE TERMINATIONS

CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

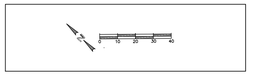
SHEET
TF.07

SIGN SUMMARY

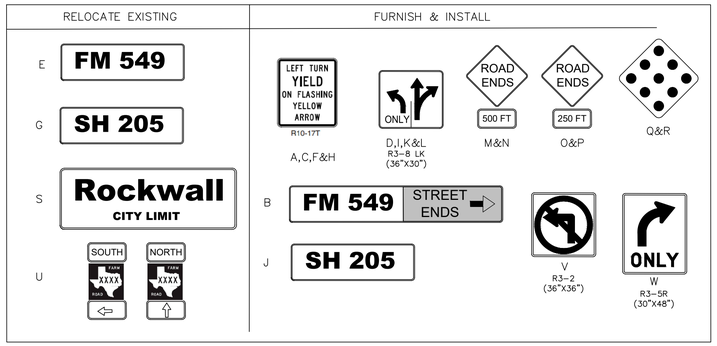
NO.	STATUS	TYPE	DESCRIPTION	SIZE	SF	LOCATION
A	REMOVE	R10-12	LT YEILD ON GRN BALL	30" x 30"	N/A	EXISTING SPAN WIRE
	INSTALL	R10-17T	LT YEILD ON FL YEL ARROW	36" X 42"	10.5	MOUNT ON SPAN WIRE
B	REMOVE	CUSTOM STREET NAME	FM 549	60" X 18"	N/A	EXISTING SPAN WIRE
	INSTALL	CUSTOM STREET NAME	FM 549 / STREET ENDS	96" X 18"	12	MOUNT ON SPAN WIRE
C	INSTALL	R10-17T	LT YEILD ON FL YEL ARROW	36" X 42"	10.5	MOUNT ON SPAN WIRE
D	INSTALL	R3-8 LK	LEFT ONLY | THRU+RT	36" x 30"	7.5	MOUNT ON SPAN WIRE
E	RELOCATE	STREET NAME	SH 205	60" X 18"	N/A	RELOCATE TO NEW SPAN TP2 TO TP3B
F	INSTALL	R10-17T	LT YEILD ON FL YEL ARROW	36" X 42"	10.5	MOUNT ON SPAN WIRE
G	RELOCATE	STREET NAME	FM 549	60" X 18"	N/A	RELOCATE TO NEW SPAN TP3B-TP4
H	INSTALL	R10-17T	LT YEILD ON FL YEL ARROW	36" X 42"	10.5	MOUNT ON SPAN WIRE
I	INSTALL	R3-8 LK	LEFT ONLY | THRU+RT	36" x 30"	7.5	MOUNT ON SPAN WIRE
J	INSTALL	CUSTOM STREET NAME	SH 205	60" X 18"	7.5	MOUNT ON SPAN WIRE
K	INSTALL	R3-8 LK	LEFT ONLY | THRU+RT	36" x 30"	7.5	NB FM 549 - 370' FROM STOP BAR
L	INSTALL	R3-8 LK	LEFT ONLY | THRU+RT	36" x 30"	7.5	SB FM 549 ACCESS RD - 150' FROM STOP BAR
M	INSTALL	W14-1T	ROAD ENDS	30" x 30"	6.25	ON ACCESS RD - 500' S OF FM549 ROAD END
N	INSTALL	W16-2aP	DISTANCE PLAQUE -500'	24" x 12"	2	ON ACCESS RD - 500' S OF FM549 ROAD END
O	INSTALL	W14-1T	ROAD ENDS	30" x 30"	6.25	ON ACCESS RD - 250' S OF FM549 ROAD END
P	INSTALL	W16-2aP	DISTANCE PLAQUE -250'	24" x 12"	2	ON ACCESS RD - 250' S OF FM549 ROAD END
Q	INSTALL	OM4-2	END OF ROAD	36" X 36"	9	ATTACH TO BARRICADE AT FM549 ROAD END
R	INSTALL	OM4-2	END OF ROAD	36" X 36"	9	ATTACH TO BARRICADE AT FM549 ROAD END
S	RELOCATE	I-2aT	CITY LIMIT	48" X 24"	0	GRD MOUNT 75' W OF EXISTING LOCATION
T	REMOVE	W1-7	END OF ROAD - DBL ARROW	48" X 24"	0	GRD MOUNT - N SIDE OF T- INTERSECTION
U	RELOCATE	M1-6T & M1-6F	FM549 ROUTE SIGNS	MISC	0	GRD MOUNT ON NE CORNER - 15' N OF EXIST LOC
V	INSTALL	R3-2	NO RIGHT-TURN SYMBOL	36" X 36"	9	GRD MOUNT AT SITE DRIVEWAY EXIT TO SH205
W	INSTALL	R3-5R	RIGHT ONLY	30" X 48"	10	GRD MOUNT ON SH 205 - 530' FROM STOP BAR
				TOTAL	94	

NOTE: THE SIZES OF THE CUSTOM STREET NAME SIGNS SHOWN ABOVE ARE ESTIMATED. SIGN SIZE WILL BE DETERMINED BY THE FONT AND LETTER HEIGHT.

ORIGINALLY PLOTTED TO 1"=40'



PROPOSED SIGNAGE



NOTE: SEE SHEET TF.03 "EXISTING CONDITIONS & REMOVALS" FOR LOCATIONS OF PAVEMENT MARKING REMOVALS.

PAVEMENT MARKING SUMMARY

DESCRIPTION	REMOVALS						INSTALLATIONS									
	4"	8"	24"	ARW LEGEND	WORD LEGEND	RPM	4" W	4" Y	6" Y	8" W	24" W	ARW LEGEND	DBL ARW LEGEND	WORD LEGEND	4" RPM TY II (A-A)	4" RPM TY I- C
EDGELINE REMOVAL - N SIDE SH 205	1220															
EDGELINE N SIDE SH 205 + W SIDE FM 549 ACCESS RD							1280									
EDGELINE N SIDE SH 205 + E SIDE FM 549 ACCESS RD							966									
WB RIGHT TURN LANE (W OF FM 549)										300		2		2		15
7-11 DRIVEWAY TO SH 205 & PORK CHOP ISLAND							35	140	271	35					33	20
SB APPROACH								922		100	22	2	2	1	48	6
WB APPROACH			22							275	34	2		2		14
NB APPROACH	160	80	21	3	2	12		170		85	33	1	2		5	8
EB APPROACH	1040	415	23			14		1479		615	32	2		2	70	32
	2420	495	66	3	2	26	2281	2711	271	1410	121	9	4	7	156	95

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STATE OF TEXAS · ELIZABETH A. RAMIREZ · 66120 · LICENSED PROFESSIONAL ENGINEER · 08-02-2023 · DRAFT

#	DATE	REVISION DESCRIPTION	BY
1	08/02/2023	SH 205 – FM 549 TRAFFIC SIGNAL PLAN Submitted	LAMBETH
2	08/02/2023	8:43 am	LAMBETH

project no. 200-672
date 8/02/2023
dwg SH 205 – FM 549 TRAFFIC SIGNAL PLAN Submitted 08-02-2023.dwg
drawn by
designed by
checked by

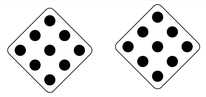
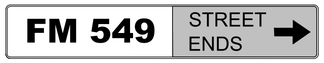
PAVEMENT MARKING AND SIGNING

CREEKSIDE COMMONS ACCESS DRIVE
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TF.08

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE (FRP = Fiberglass, TWT = Thin-Wall, 10BWG = 10 BWG, S80 = Sch 80)	POSTS (1 or 2)	ANCHOR TYPE (UA=Universal Conc, UB=Universal Bolt, SA=Slipbase-Conc, SB=Slipbase-Bolt, WS=Wedge Steel, WP=Wedge Plastic)	MOUNTING DESIGNATION: PREFABRICATED (P = "Plain", T = "T", U = "U")	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext, BM = Extruded Wind Beam, WC = 1.12 #/ft Wing Channel, EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE
TS.06	A,C,F,H	R10-17T		30" X 30"			N/A	N/A	N/A	N/A	SPAN WIRE MOUNTED	TY N TY S
TS.06	D,I	R3-8 L/TH+RT		30" X 30"			N/A	N/A	N/A	N/A	SPAN WIRE MOUNTED	
	K,L	R3-8 L/TH+RT		30" X 30"			10BWG	2	SA	P	N/A	
TS.06	M&N	W14-1T		30" X 30"			10BWG	1	SA	P	N/A	
		W16-2aP		24" X 12"								
TS.06	O&P	W14-1T		30" X 30"			10BWG	1	SA	P	N/A	
		W16-2aP		24" X 12"								
TS.06	Q	OM4-2		36" X 36"			N/A	N/A	N/A	N/A	ATTACH TO BARRICADE	
	R	OM4-2		36" X 36"			N/A	N/A	N/A	N/A	ATTACH TO BARRICADE	
TS.06	B	SN CUSTOM		TBD" X 18"			N/A	N/A	N/A		SPAN WIRE MOUNTED	
TS.06	J	SN CUSTOM		60" X 18"			N/A	N/A	N/A		SPAN WIRE MOUNTED	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

DATE:
FILE:

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Elizabeth A Ramirez
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TBPE FIRM REGISTRATION #F-8396

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS					
4-16		DIST	COUNTY		SHEET NO.
8-16					TF.08

EXISTING TREE LEGEND

- FEATURE TREE
- PRIMARY PROTECTED TREE - UNKNOWN CONDITION
- PRIMARY PROTECTED TREE - HEALTHY CONDITION
- PRIMARY PROTECTED TREE - DECLINING CONDITION
- SECONDARY PROTECTED TREE
- NON-PROTECED TREE
- IN UTILITY EASEMENT

SEE SHEETS TS-4 - TS-6 FOR TREE SURVEY TABLES

TREE PRESERVATION CALCULATIONS

PRIMARY PROTECTED TREES	929"
4" THROUGH 25" DBH. REPLACEMENT SHALL BE ON A 1:1 INCH BASIS	
TREES IN GOOD HEALTH (2)	26"
TREES IN DECLINE (99)	903"
SECONDARY PROTECTED TREES	2,594"
HACKBERRY & CEDAR TREES 11" THROUGH 25" DBH REPLACEMENT SHALL BE 0.5:1 INCH BASIS ALL IN DECLINE	
FEATURED TREES	26"
ALL TREES GREATER THAN 25" DBH. REPLACEMENT SHALL BE ON A 2:1 BASIS. (1) TREE IN DECLINE	
NON-PROTECTED TREES	6,617"
NO MITIGATION REQUIRED FOR ANY TREE LESS THAN 4" DBH, OR LESS THAN 11" DBH FOR HACKBERRY & CEDAR. NO MITIGATION SHALL BE REQ. FOR BOIS D'ARC, WILLOW, COTTONWOOD, LOCUST, & CHINABERRY	
TREES IN R.O.W. OR EASEMENTS	69"
TOTAL SITE CALIPER INCHES OF TREES	10,235"
CALIPER INCHES IN DECLINE	3,592"
CALIPER INCHES FOR PRESERVATION OR MITIGATION (2) CEDAR ELM	26"

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

MATCH LINE - SEE SHEET TS-3

MATCH LINE - SEE SHEET TS-2

Scale 1" = 40'

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REGISTERED LANDSCAPE ARCHITECT
TRACY R BRANHAM
3423
STATE OF TEXAS

07/21/2021

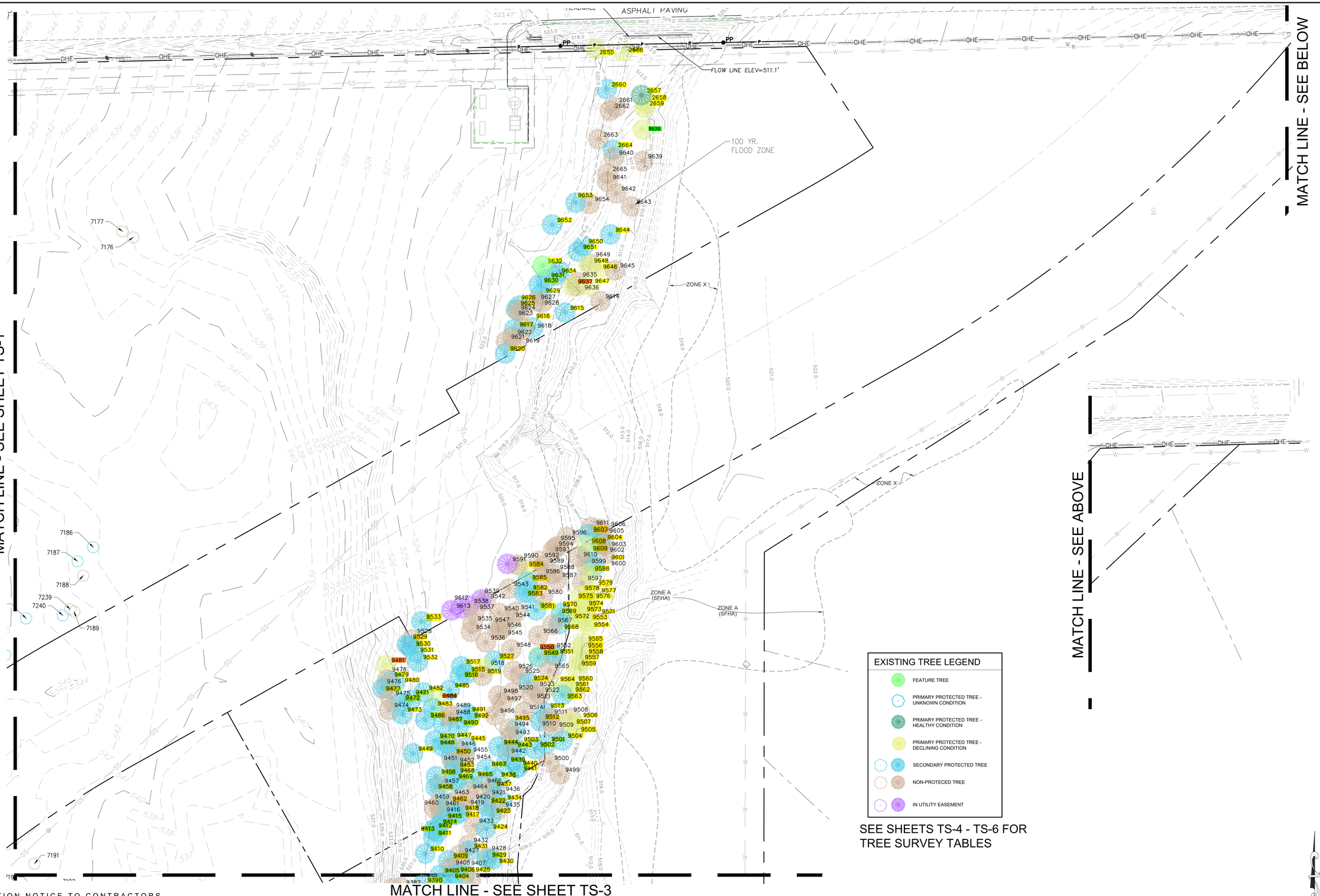
#	DATE	REVISION DESCRIPTION

project no. 200-672
date 7/22/2021 – 4:36 pm
dwg. Creekside Commons Tree Survey.dwg
drawn by
designed by
approved by

TREE SURVEY PLAN

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-1



SEE SHEETS TS-4 - TS-6 FOR TREE SURVEY TABLES

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

Scale 1" = 40'

THE DIMENSION GROUP
ARCHITECTURE · CIVIL ENGINEERING · MEP ENGINEERING
5600 S. QUEBEC STREET, SUITE 325C, GREENWOOD VILLAGE, COLORADO 80111
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EVERGREEN DESIGN GROUP
(800) 680-6630
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Addison, TX 75001
www.EvergreenDesignGroup.com

REGISTERED LANDSCAPE ARCHITECT
NANCY R. BRANDON
3423
STATE OF TEXAS
07/21/2021

#	DATE	REVISION DESCRIPTION	BY

drawn by
designed by
approved by

project no. 200-672
date 7/22/2021 - 4:37 pm
dwg Creekside Commons Tree Survey.dwg

TREE SURVEY PLAN

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-2

MATCH LINE - SEE SHEET TS-1

MATCH LINE - SEE SHEET TS-2

MATCH LINE - SEE THIS SHEET

MATCH LINE - SEE THIS SHEET

100 YR. FLOOD ZONE

100 YR. FLOOD ZONE

ZONE X

ZONE A

POND

HWY 205
ASPHALT PAVING

FIBER OPTIC MARKER

CONCRETE FLUME

CONCRETE HEADWALL
FLOW LINE ELEV=504.4'

TBM #2
"X" SET
515.53'

PP

OHE

EXISTING TREE LEGEND

- FEATURE TREE
- PRIMARY PROTECTED TREE - UNKNOWN CONDITION
- PRIMARY PROTECTED TREE - HEALTHY CONDITION
- PRIMARY PROTECTED TREE - DECLINING CONDITION
- SECONDARY PROTECTED TREE
- NON-PROTECED TREE
- IN R.O.W. OR UTILITY EASEMENT

SEE SHEETS TS-4 - TS-6 FOR TREE SURVEY TABLES

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

Scale 1" = 40'

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5600 S. QUEBEC STREET, SUITE 235C, GREENWOOD VILLAGE, COLORADO 80111
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EVERGREEN DESIGN GROUP
(303) 680-6630
15455 Dallas Parkway, Suite 600
Addison, TX 75001
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NANCY R. BRANNON
REGISTERED LANDSCAPE ARCHITECT
3423
STATE OF TEXAS

07/21/2021

#	DATE	REVISION DESCRIPTION	BY

project no. 200-672
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dwg Creekside Commons Tree Survey.dwg

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TREE SURVEY PLAN

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-3

TREE INVENTORY

TAG	SPECIES	DBH	CONDITION	COMMENT
548	CEDAR	6.00		
549	CEDAR	6.00		
550	MESQUITE	6.00		
551	CEDAR	8.00		
552	CEDAR	8.00		
553	CEDAR	6.00		
554	CEDAR	6.00		
555	CEDAR	8.00		
556	CEDAR	8.00		
557	CEDAR	6.00		
558	CEDAR	6.00		
559	CEDAR	6.00		
560	CEDAR	6.00		
561	CEDAR	8.00		
562	CEDAR	6.00		
563	CEDAR	6.00		
564	CEDAR	6.00		
565	CEDAR	6.00		
566	CEDAR	8.00		
567	CEDAR	8.00		
568	CEDAR	6.00		
569	CEDAR	8.00		
570	CEDAR	6.00		
571	CEDAR	6.00		
572	CEDAR	6.00		
573	CEDAR	6.00		
574	CEDAR	6.00		
575	CEDAR	6.00		
576	CEDAR	6.00		
577	CEDAR	6.00		
578	CEDAR	6.00		
579	CEDAR	8.00		
580	CEDAR	6.00		
581	CEDAR	6.00		
582	CEDAR	6.00		
583	CEDAR	6.00		
584	CEDAR	6.00		
585	CEDAR	8.00		
586	CEDAR	8.00		
587	CEDAR	8.00		
588	CEDAR	8.00		
589	CEDAR	8.00		
590	CEDAR	10.00		
591	CEDAR	6.00		
592	CEDAR	8.00		
593	BOIS D'ARC	6.00		
594	BOIS D'ARC	6.00		
595	BOIS D'ARC	6.00		
596	CEDAR	10.00		
597	CEDAR	10.00		
598	CEDAR	6.00		
599	CEDAR	8.00		
600	CEDAR	8.00		
601	CEDAR	NA		
602	CEDAR	NA		
603	CEDAR	6.00		
604	CEDAR	6.00		
605	CEDAR	6.00		
606	CEDAR	8.00		
607	CEDAR	8.00		
608	CEDAR	8.00		
609	CEDAR	10.00		
610	CEDAR	8.00		
611	CEDAR	8.00		
612	CEDAR	6.00		
613	CEDAR	8.00		
614	CEDAR	8.00		
615	CEDAR	10.00		
616	CEDAR	8.00		
617	CEDAR	10.00		
618	CEDAR	10.00		
619	CEDAR	6.00		
620	CEDAR	6.00		

IN	SPECIES	DBH	CONDITION	COMMENT
621	CEDAR	8.00		
622	CEDAR	10.00		
623	CEDAR	10.00		
624	CEDAR	8.00		
625	CEDAR	8.00		
626	CEDAR	8.00		
627	CEDAR	6.00		
628	CEDAR	6.00		
629	CEDAR	8.00		
630	CEDAR	8.00		
631	CEDAR	12.00		
632	CEDAR	8.00		
633	CEDAR	6.00		
634	CEDAR	10.00		
635	CEDAR	12.00		
636	CEDAR	8.00		
637	CEDAR	6.00		
638	CEDAR	10.00		
639	CEDAR	6.00		
640	CEDAR	6.00		
641	CEDAR	6.00		
642	CEDAR	8.00		
643	CEDAR	8.00		
644	CEDAR	8.00		
645	CEDAR	10.00		
646	CEDAR	6.00		
647	CEDAR	6.00		
648	CEDAR	10.00		
649	BOIS D'ARC	6.00		
650	BOIS D'ARC	6.00		
651	BOIS D'ARC	6.00		
652	BOIS D'ARC	6.00		
653	BOIS D'ARC	6.00		
654	BOIS D'ARC	6.00		
655	BOIS D'ARC	6.00		
656	BOIS D'ARC	6.00		
657	CEDAR	10.00		
658	CEDAR	10.00		
659	CEDAR	8.00		
660	CEDAR	8.00		
661	CEDAR	8.00		
662	BOIS D'ARC	8.00		
663	BOIS D'ARC	6.00		
664	BOIS D'ARC	6.00		
665	CEDAR	8.00		
666	CEDAR	6.00		
667	CEDAR	6.00		
668	CEDAR	6.00		
669	CEDAR	8.00		
670	CEDAR	8.00		
671	CEDAR	6.00		
672	CEDAR	8.00		
673	CEDAR	10.00		
674	BOIS D'ARC	6.00		
675	BOIS D'ARC	6.00		
676	BOIS D'ARC	6.00		
677	CEDAR	8.00		
678	CEDAR	8.00		
683	CEDAR	8.00		
684	CEDAR	8.00		
685	CEDAR	8.00		
686	BOIS D'ARC	8.00		
687	BOIS D'ARC	6.00		
688	CEDAR	10.00		
689	BOIS D'ARC	8.00		
690	CEDAR	8.00		
692	CEDAR	6.00		
693	CEDAR	6.00		
694	CEDAR	8.00		
695	CEDAR	8.00		
696	CEDAR	8.00		
697	CEDAR	10.00		
698	CEDAR	8.00		
699	CEDAR	10.00		
700	CEDAR	8.00		
701	CEDAR	6.00		

IN	SPECIES	DBH	CONDITION	COMMENT
702	CEDAR	6.00		
703	CEDAR	6.00		
704	CEDAR	6.00		
705	CEDAR	6.00		
706	CEDAR	6.00		
707	CEDAR	10.00		
708	CEDAR	10.00		
709	CEDAR	8.00		
710	CEDAR	8.00		
711	CEDAR	8.00		
712	CEDAR	8.00		
713	CEDAR	8.00		
714	BOIS D'ARC	6.00		
715	CEDAR	6.00		
716	CEDAR	6.00		
717	CEDAR	6.00		
718	BOIS D'ARC	8.00		
719	BOIS D'ARC	6.00		
720	BOIS D'ARC	6.00		
721	BOIS D'ARC	6.00		
2655	CEDAR ELM ULMUS CRASSIFOLIA	10.00	POOR	DECLINE
2656	CEDAR ELM ULMUS CRASSIFOLIA	13.00	POOR	DECLINE
2657	CEDAR ELM ULMUS CRASSIFOLIA	12.00	GOOD	
2658	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2659	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2660	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2661	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2662	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2663	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2664	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
2665	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2666	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2667	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2668	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2669	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2670	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2671	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2672	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2673	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2674	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2675	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2676	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2677	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2678	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2679	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2680	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2681	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2682	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2683	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2684	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2685	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2686	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2687	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2688	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2689	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2690	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
2691	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2692	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2693	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2694	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
2695	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2696	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2697	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2698	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2699	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2700	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2701	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2702	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2703	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2704	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2705	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2706	BOIS D ARC MACLURA POMIFERA	7.00	FAIR	CROWDED, DECLINE
2707	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2708	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2709	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2710	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2711	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2712	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2713	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2714	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2715	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2716	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2717	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2718	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2719	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2720	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2721	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2722	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
2723	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2724	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2725	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2726	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2727	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2728	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2729	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2730	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
2731	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2732	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2733	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2734	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE

IN	SPECIES	DBH	CONDITION	COMMENT
2735	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
2736	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2737	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2738	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2739	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2740	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2741	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2742	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2743	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2744	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2745	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2746	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2747	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2748	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
2749	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	11.00	FAIR	CROWDED, DECLINE
2750	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2751	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2752	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2753	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2754	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2755	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2756	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2757	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2758	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2759	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2760	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2761	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	4.00	FAIR	CROWDED, DECLINE
2762	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2763	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2764	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2765	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2766	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2767	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2768	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2769	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2770	BOIS D ARC MACLURA POMIFERA	9.00	FAIR	CROWDED, DECLINE
2771	CEDAR ELM ULMUS CRASSIFOLIA	7.00	FAIR	CROWDED, DECLINE
2772	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2773	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2774	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
2775	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE
2776	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2777	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2778	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2779	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
2780	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
2781	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
2782	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2783	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
2784	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2785	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2786	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2787	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2788	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2789	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2790	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2791	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2792	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2793	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2794	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2795	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	15.00	FAIR	CROWDED, DECLINE
2796	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2797	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2798	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2799	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
2800	BOIS D ARC MACLURA POMIFERA	18.00	FAIR	CROWDED, DECLINE
2801	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
2802	BOIS D ARC MACLURA POMIFERA	12.00	POOR	DECLINE
2803	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2804	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2805	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2806	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2807	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2808	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2809	BOIS D ARC MACLURA POMIFERA	12.00	POOR	DECLINE
2810	BOIS D ARC MACLURA POMIFERA	12.00	POOR	DECLINE
2811	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2812	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2813	BOIS D ARC MACLURA POMIFERA	16.00	FAIR	CROWDED, DECLINE
2814	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2815	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2816	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2817	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2818	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2819	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2820	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2821	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2822	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
2823	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2824	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2825	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2826	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2827	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2828	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2829	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2830	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2831	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2832	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2833	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE
2834	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

THE DIMENSION GROUP
ARCHITECTURE • CIVIL ENGINEERING • MEP ENGINEERING
5600 S. QUEBEC STREET, SUITE 325C, GREENWOOD VILLAGE, COLORADO 80111
TEL: 775.355.9188 www.dimensiongroup.com

EVERGREEN DESIGN GROUP
(800) 680-6420
15455 Dallas Pkwy, Ste 600
Addison, TX 75001
www.EvergreenDesignGroup.com

REGISTERED LANDSCAPE ARCHITECT
NANCY R. BRANNEN
3423
STATE OF TEXAS

07/21/2021

#	DATE	REVISION DESCRIPTION	BY

drawn by
designed by
approved by

project no. 200-672
date 7/22/2021 – 5:23 pm
dwg. Creekside Commons Tree Survey.dwg

TREE INVENTORY TABLES

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-4

[CAD 2002727-2.dwg] [CAD 2002727-2-OUT-05-12-21.dwg] [24x36TBs-OUT-05-05-21.dwg] [D56921 – Topographic Tree Data.dwg] [EDG TB std 24x36 2018-08-09 MASTER.dwg]
Jul 22, 2021 – 5:23pm
Drawing name: C:\Users\Nancy\Documents\DBLA\PROJECTS\2021\EDG\Creekside Commons Tree Survey – Rockwall, TX\Creekside Commons Tree Survey.dwg

TREE INVENTORY

IN	SPECIES	DBH	CONDITION	COMMENT
2835	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2836	BOIS D ARC MACLURA POMIFERA	16.00	FAIR	CROWDED, DECLINE
2837	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2838	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2839	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE
2840	BOIS D ARC MACLURA POMIFERA	22.00	FAIR	CROWDED, DECLINE
2841	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2842	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2843	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2844	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2845	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2846	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2847	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
2848	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2849	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2850	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
2851	BOIS D ARC MACLURA POMIFERA	5.00	FAIR	CROWDED, DECLINE
2852	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2853	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2854	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2855	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
2856	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2857	CEDAR ELM ULMUS CRASSIFOLIA	15.00	FAIR	CROWDED, DECLINE
2858	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2859	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2860	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2861	CEDAR ELM ULMUS CRASSIFOLIA	11.00	FAIR	CROWDED, DECLINE
2862	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
2863	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
2864	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
2865	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
2866	CEDAR ELM ULMUS CRASSIFOLIA	11.00	FAIR	CROWDED, DECLINE
2867	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
2868	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2869	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2870	BOIS D ARC MACLURA POMIFERA	12.00	POOR	DECLINE
2871	BOIS D ARC MACLURA POMIFERA	9.00	FAIR	CROWDED, DECLINE
2872	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2873	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2874	BOIS D ARC MACLURA POMIFERA	16.00	FAIR	CROWDED, DECLINE
2875	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2876	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2877	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2878	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2879	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2880	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2881	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2882	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2883	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2884	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2885	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2886	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2887	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2888	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2889	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2890	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2891	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2892	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2893	BOIS D ARC MACLURA POMIFERA	7.00	FAIR	CROWDED, DECLINE
2894	BOIS D ARC MACLURA POMIFERA	7.00	FAIR	CROWDED, DECLINE
2895	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2896	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
2897	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2898	CEDAR ELM ULMUS CRASSIFOLIA	7.00	FAIR	CROWDED, DECLINE
2899	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2900	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2901	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2902	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2903	BOIS D ARC MACLURA POMIFERA	18.00	FAIR	CROWDED, DECLINE
2904	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2905	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2906	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2907	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2908	BOIS D ARC MACLURA POMIFERA	11.00	FAIR	CROWDED, DECLINE
2909	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2910	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2911	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2912	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2913	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2914	BOIS D ARC MACLURA POMIFERA	11.00	FAIR	CROWDED, DECLINE
2915	HACKBERRY CELTIS LAEVEGATA	12.00	FAIR	CROWDED, DECLINE
2916	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2917	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2918	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2919	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2920	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2921	HACKBERRY CELTIS LAEVEGATA	5.00	FAIR	CROWDED, DECLINE
2922	HACKBERRY CELTIS LAEVEGATA	12.00	FAIR	CROWDED, DECLINE
2923	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2924	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2925	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE

IN	SPECIES	DBH	CONDITION	COMMENT
2926	BOIS D ARC MACLURA POMIFERA	17.00	FAIR	CROWDED, DECLINE
2927	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2928	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2929	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2930	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2931	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2932	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2933	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2934	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2935	BOIS D ARC MACLURA POMIFERA	15.00	FAIR	CROWDED, DECLINE
2936	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2937	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2938	HACKBERRY CELTIS LAEVEGATA	14.00	FAIR	CROWDED, DECLINE
2939	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2940	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2941	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2942	HONEY LOCUST GLEDITSIA TRIOCANTHA	6.00	FAIR	CROWDED, DECLINE
2943	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2944	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
2945	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2946	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE
2947	BOIS D ARC MACLURA POMIFERA	7.00	FAIR	CROWDED, DECLINE
2948	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2949	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2950	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2951	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2952	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2953	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
2954	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
2955	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
2956	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
2957	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2958	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2959	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
2960	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2961	CEDAR ELM ULMUS CRASSIFOLIA	17.00	FAIR	CROWDED, DECLINE
2962	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2963	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2964	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
2965	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2966	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2967	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
2968	BOIS D ARC MACLURA POMIFERA	14.00	POOR	DECLINE
2969	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2970	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2971	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2972	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2973	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2974	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2975	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2976	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2977	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2978	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2979	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2980	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2981	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
2982	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2983	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
2984	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
2985	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2986	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
2987	HONEY LOCUST GLEDITSIA TRIOCANTHA	8.00	FAIR	CROWDED, DECLINE
2988	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
2989	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2990	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
2991	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
2992	CEDAR ELM ULMUS CRASSIFOLIA	7.00	FAIR	CROWDED, DECLINE
2993	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2994	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
2995	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2996	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2997	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
2998	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
2999	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
3000	BOIS D ARC MACLURA POMIFERA	11.00	FAIR	CROWDED, DECLINE
7153	CEDAR	10.00		
7154	CEDAR	9.00		
7155	CEDAR	9.00		
7156	CEDAR	10.00		
7157	CEDAR	8.00		
7158	CEDAR	10.00		
7159	CEDAR	10.00		
7161	CEDAR	8.00		
7162	CEDAR	10.00		
7163	CEDAR	10.00		
7164	CEDAR	8.00		
7165	CEDAR	8.00		
7166	CEDAR	8.00		
7167	CEDAR	10.00		
7168	CEDAR	12.00		
7169	CEDAR	9.00		
7170	CEDAR	10.00		
7171	CEDAR	10.00		
7172	CEDAR	9.00		
7173	CEDAR	11.00		
7174	CEDAR	14.00		
7176	CEDAR	9.00		
7177	CEDAR	8.00		
7178	CEDAR	10.00		
7179	CEDAR	14.00		

IN	SPECIES	DBH	CONDITION	COMMENT
7180	CEDAR	8.00		
7181	CEDAR	9.00		
7182	CEDAR	12.00		
7183	CEDAR	12.00		
7185	CEDAR	8.00		
7186	CEDAR	12.00		
7187	CEDAR	12.00		
7188	CEDAR	10.00		
7189	CEDAR	10.00		
7191	CEDAR	9.00		
7192	CEDAR	8.00		
7193	CEDAR	10.00		
7194	CEDAR	15.00		
7195	CEDAR	12.00		
7196	CEDAR	14.00		
7197	CEDAR	8.00		
7198	CEDAR	10.00		
7199	CEDAR	11.00		
7200	CEDAR	11.00		
7203	CEDAR	12.00		
7204	CEDAR	11.00		
7205	CEDAR	13.00		
7206	CEDAR	12.00		
7207	CEDAR	11.00		
7208	CEDAR	8.00		
7209	CEDAR	12.00		
7211	CEDAR	8.00		
7212	CEDAR	8.00		
7213	CEDAR	8.00		
7214	CEDAR	8.00		
7216	CEDAR	12.00		
7217	CEDAR	9.00		
7218	CEDAR	8.00		
7219	CEDAR	15.00		
7220	CEDAR	10.00		
7221	CEDAR	9.00		
7222	CEDAR	11.00		
7223	CEDAR	13.00		
7224	CEDAR	8.00		
7225	CEDAR	14.00		
7228	CEDAR	9.00		
7229	CEDAR	14.00		
7230	CEDAR	16.00		
7231	CEDAR	9.00		
7232	CEDAR	9.00		
7233	NA - IN ROW	12.00		
7234	NA - IN ROW	14.00		
7235	NA - IN ROW	15.00		
7236	NA - IN ROW	15.00		
7237	NA - IN ROW	13.00		
7239	CEDAR	10.00		
7240	CEDAR	13.00		
7241	CEDAR	15.00		
7242	CEDAR	13.00		
7245	CEDAR	10.00		
7246	CEDAR	10.00		
7247	CEDAR	15.00		
7248	CEDAR	15.00		
7249	CEDAR	14.00		
7252	CEDAR	8.00		
7253	CEDAR	8.00		
7254	CEDAR	8.00		
7255	CEDAR	8.00		
7256	CEDAR	8.00		
7257	CEDAR	8.00		
7258	CEDAR	8.00		
7259	CEDAR	8.00		
7260	CEDAR	9.00		
7263	CEDAR	10.00		
7264	CEDAR	13.00		
7265	CEDAR	14.00		
7266	CEDAR	12.00		
7267	CEDAR	12.00		
7268	CEDAR	8.00		
7269	CEDAR	10.00		
7270	CEDAR	10.00		
7273	CEDAR	9.00		
7274	CEDAR	9.00		
7275	CEDAR	9.00		
7276	CEDAR	10.00		
7277	CEDAR	9.00		
7278	CEDAR	9.00		
7279	CEDAR	9.00		
7280	CEDAR	9.00		
7283	CEDAR	10.00		
7284	CEDAR	10.00		
7285	CEDAR	10.00		
7286	CEDAR	9.00		
7287	CEDAR	10.00		
7288	CEDAR	10.00		
7289	CEDAR	11.00		
7290	CEDAR	15.00		
7293	CEDAR	8.00		
7294	CEDAR	8.00		
7295	CEDAR	10.00		
7296	CEDAR	10.00		
7297	CEDAR	10.00		
7298	CEDAR	11.00		
7299	CEDAR	11.00		
7300	CEDAR	11.00		

IN	SPECIES	DBH	CONDITION	COMMENT
7303	CEDAR	10.00		
7304	CEDAR	8.00		
7305	CEDAR	8.00		
7306	CEDAR	9.00		
7307	CEDAR	9.00		
7308	CEDAR	10.00		
7309	CEDAR	8.00		
7310	CEDAR	8.00		
9201	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	13.00	FAIR	CROWDED, DECLINE
9202	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9203	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9204	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9205	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	13.00	FAIR	CROWDED, DECLINE
9206	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9207	BOIS D ARC MACLURA POMIFERA	9.00	FAIR	CROWDED, DECLINE
9208	BOIS D ARC MACLURA POMIFERA	9.00	FAIR	CROWDED, DECLINE
9209	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9210	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9211	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9212	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9213	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9214	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9215	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9216	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	4.00	FAIR	CROWDED, DECLINE
9217	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9218	TEXAS PERSIMMON DIOSPYROS TEXANA	9.00	FAIR	CROWDED, DECLINE
9219	BLACK WILLOW SALIX NIGRA	10.00	FAIR	CROWDED, DECLINE
9220	TEXAS PERSIMMON DIOSPYROS TEXANA	6.00	FAIR	CROWDED, DECLINE
9221	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9222	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9223	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9224	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9225	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9226	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
9227	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9228	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9229	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	POOR	DECLINE
9231	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
9232	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9233	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9234	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9235	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9236	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
9237	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9238	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9239	BOIS D ARC MACLURA POMIFERA	16.00	FAIR	CROWDED, DECLINE
9240	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9241	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
9242	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
9243	HONEY LOCUST GLEDITSIA TRIOCANTHA	9.00	FAIR	CROWDED, DECLINE
9244	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9245	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9246	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9247	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9248	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9249	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9250	HONEY LOCUST GLEDITSIA TRIOCANTHA	8.00	FAIR	CROWDED, DECLINE
9251	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9252	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9253	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9254	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9255	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9256	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9257	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9258	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9259	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9260	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9261	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9262	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9263	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9264	BOIS D ARC MACLURA POMIFERA	10.00	POOR	DECLINE
9265	BOIS D ARC MACLURA POMIFERA	17.00	FAIR	CROWDED, DECLINE
9266	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9267	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9268	HERCULES CLUB ZANTHOXYLUM CLAVA-HERCULIS	7.00	FAIR	CROWDED, DECLINE
9269	HERCULES CLUB ZANTHOXYLUM CLAVA-HERCULIS	8.00	FAIR	CROWDED, DECLINE
9270	AMERICAN ELM ULMUS AMERICANA	7.00	FAIR	CROWDED, DECLINE
9271	HACKBERRY CELTIS LAEVEGATA	4.00	FAIR	CROWDED, DECLINE
9272	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
9273	CEDAR ELM ULMUS CRASSIFOLIA	9.00	FAIR	CROWDED, DECLINE
9274	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9275	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9276	HONEY LOCUST GLEDITSIA TRIOCANTHA	6.00	FAIR	CROWDED, DECLINE
9277	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9278	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9279	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9280	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9281	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
9282	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
9283	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9284	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9285	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9286	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
9287	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9288	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9289	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9290	HACKBERRY CELTIS LAEVEGATA	9.00	FAIR	CROWDED, DECLINE
9291	HACKBERRY CELTIS LAEVEGATA	13.00	FAIR	CROWDED, DECLINE
9292	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9293	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

[CAD 2002727-2.dwg] [CAD 2002727-2-OUT-05-12-21.dwg] [24x36TBs-OUT-05-05-21.dwg] [D56921 - Topographic Tree Data.dwg] [EDG TB std 24x36 2018-08-09 MASTER.dwg]
Drawing name: C:\Users\darcy\Documents\DBLA_PROJECTS\2021\EDG\Creekside Commons Tree Survey - Rockwall, TX\Creekside Commons Tree Survey.dwg Jul 22, 2021 - 5:23pm

THE DIMENSION GROUP
ARCHITECTURE • CIVIL ENGINEERING • MEP ENGINEERING
5600 S. QUEBEC STREET, SUITE 325C, GREENWOOD VILLAGE, COLORADO 80111
TEL: 719.536.3180 www.DimensionGroup.com

EVERGREEN DESIGN GROUP
(800) 680-6630
15455 Dallas Pkwy., Ste 600
Addison, TX 75001
www.EvergreenDesignGroup.com

REGISTERED LANDSCAPE ARCHITECT
DARCY R BRANDON
3423
STATE OF TEXAS
07/21/2021

#	DATE	REVISION DESCRIPTION	BY
△			
△			
△			
△			

project no. 200-672
date 7/22/2021 - 5:23 pm
dwg. Creekside Commons Tree Survey.dwg
drawn by
designed by
approved by

TREE INVENTORY TABLES

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-5

TREE INVENTORY

IN	SPECIES	DBH	CONDITION	COMMENT
9294	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9295	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
9296	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	9.00	FAIR	CROWDED, DECLINE
9297	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9298	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9299	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9300	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9301	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9302	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9303	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9304	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9305	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9306	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9307	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9308	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9309	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9310	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9311	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9312	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9313	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
9314	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9315	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9316	BOIS D ARC MACLURA POMIFERA	10.00	POOR	MULTITRUNK
9317	BOIS D ARC MACLURA POMIFERA	11.00	POOR	DECLINE
9318	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9319	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9320	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9321	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
9322	BOIS D ARC MACLURA POMIFERA	18.00	FAIR	CROWDED, DECLINE
9323	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9324	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9325	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9326	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9327	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9328	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9329	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9330	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9331	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9332	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
9333	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9334	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9335	CHITTAMWOOD BUMELIA LANUNGOSA	9.00	FAIR	CROWDED, DECLINE
9336	AMERICAN ELM ULMUS AMERICANA	6.00	FAIR	CROWDED, DECLINE
9337	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9338	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9339	HONEY LOCUST GLEDITSIA TRIOCANTHA	8.00	FAIR	CROWDED, DECLINE
9340	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9341	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9342	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9343	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	LEAN, CROWDED, DECLINE
9344	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9345	CEDAR ELM ULMUS CRASSIFOLIA	14.00	GOOD	
9346	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9347	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9348	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9349	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9350	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9351	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9352	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9353	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9354	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	7.00	FAIR	CROWDED, DECLINE
9355	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9356	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9357	HACKBERRY CELTIS LAEVEGATA	7.00	FAIR	CROWDED, DECLINE
9358	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9359	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9360	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9361	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9362	BOIS D ARC MACLURA POMIFERA	8.00	POOR	FALLEN
9363	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9364	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9365	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9366	AMERICAN ELM ULMUS AMERICANA	7.00	FAIR	CROWDED, DECLINE
9367	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9368	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9369	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9370	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9371	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9372	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9373	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9374	BOIS D ARC MACLURA POMIFERA	16.00	FAIR	CROWDED, DECLINE
9375	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9376	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9377	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9378	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9379	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9380	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9381	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9382	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE

IN	SPECIES	DBH	CONDITION	COMMENT
9383	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9384	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9385	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9386	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9387	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9388	HACKBERRY CELTIS LAEVEGATA	10.00	POOR	POISONOUS VINES
9389	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9390	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9391	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9392	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9393	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9394	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9395	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9396	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9397	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9398	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9399	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9400	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9401	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9402	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9403	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9404	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9405	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9406	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9407	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9408	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9409	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9410	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	18.00	FAIR	CROWDED, DECLINE
9411	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9412	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9413	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9414	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9415	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9416	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9417	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	18.00	FAIR	CROWDED, DECLINE
9418	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9419	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9420	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9421	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9422	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9423	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9424	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9425	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9426	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9427	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9428	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
9429	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9430	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9431	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9432	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9433	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9434	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9435	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9436	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9437	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9438	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9439	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9440	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9441	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9442	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9443	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9444	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9445	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9446	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9447	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9448	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9449	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9450	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9451	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9452	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9453	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9454	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9455	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9456	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9457	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9458	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9459	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9460	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9461	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9462	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9463	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9464	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9465	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9466	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9467	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9468	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9469	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9470	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9471	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9472	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9473	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9474	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9475	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9476	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9477	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9478	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9479	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9480	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9481	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9482	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE

IN	SPECIES	DBH	CONDITION	COMMENT
9483	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9484	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9485	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9486	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9487	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9488	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9489	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9490	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9491	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9492	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9493	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9494	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9495	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	18.00	FAIR	CROWDED, DECLINE
9496	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9497	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9498	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9499	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9500	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9501	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9502	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9503	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9504	HACKBERRY CELTIS LAEVEGATA	14.00	FAIR	CROWDED, DECLINE
9505	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9506	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9507	CEDAR ELM ULMUS CRASSIFOLIA	4.00	FAIR	CROWDED, DECLINE
9508	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9509	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9510	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9511	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9512	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9513	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9514	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9515	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	20.00	FAIR	CROWDED, DECLINE
9516	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9517	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9518	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9519	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9520	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9521	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9522	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9523	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9524	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	22.00	FAIR	CROWDED, DECLINE
9525	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9526	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9527	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9528	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9529	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9530	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9531	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9532	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	22.00	FAIR	CROWDED, DECLINE
9533	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9534	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9535	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9536	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9537	BOIS D ARC MACLURA POMIFERA	8.00	FAIR	CROWDED, DECLINE
9538	REMOVED FOR UTILITY EASMENT			
9539	REMOVED FOR UTILITY EASMENT			
9540	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9541	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9542	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9543	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	CROWDED, DECLINE
9544	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9545	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9546	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9547	HACKBERRY CELTIS LAEVEGATA	10.00	POOR	DECAY
9548	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9549	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9550	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9551	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9552	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9553	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9554	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9555	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9556	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9557	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9558	CEDAR ELM ULMUS CRASSIFOLIA	9.00	POOR	LEAN, CROWDED, DECLINE
9559	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9560	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
9561	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9562	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9563	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9564	CEDAR ELM ULMUS CRASSIFOLIA	14.00	POOR	DECLINE
9565	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9566	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9567	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9568	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9569	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9570	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9571	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9572	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
9573	CEDAR ELM ULMUS CRASSIFOLIA	7.00	FAIR	CROWDED, DECLINE
9574	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9575	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
9576	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
9577	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
9578	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
9579	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
9580	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9581	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9582	HACKBERRY CELTIS LAEVEGATA	12.00	FAIR	CROWDED, DECLINE

IN	SPECIES	DBH	CONDITION	COMMENT
9583	HACKBERRY CELTIS LAEVEGATA	12.00	FAIR	CROWDED, DECLINE
9584	CEDAR ELM ULMUS CRASSIFOLIA	10.00	FAIR	CROWDED, DECLINE
9585	HACKBERRY CELTIS LAEVEGATA	12.00	FAIR	CROWDED, DECLINE
9586	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9587	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9588	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9589	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9590	BOIS D ARC MACLURA POMIFERA	12.00	POOR	LEAN
9591	REMOVED FOR UTILITY EASMENT			
9592	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9593	BOIS D ARC MACLURA POMIFERA	6.00	FAIR	CROWDED, DECLINE
9594	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9595	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9596	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9597	HACKBERRY CELTIS LAEVEGATA	8.00	FAIR	CROWDED, DECLINE
9598	CEDAR ELM ULMUS CRASSIFOLIA	14.00	FAIR	CROWDED, DECLINE
9599	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9600	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9601	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9602	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9603	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9604	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9605	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9606	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9607	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9608	CEDAR ELM ULMUS CRASSIFOLIA	6.00	FAIR	CROWDED, DECLINE
9609	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9610	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9611	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9612	REMOVED FOR UTILITY EASMENT			
9613	REMOVED FOR UTILITY EASMENT			
9614	BOIS D ARC MACLURA POMIFERA	12.00	POOR	MOSTLY DEAD
9615	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9616	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	18.00	FAIR	CROWDED, DECLINE
9617	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9618	BOIS D ARC MACLURA POMIFERA	14.00	FAIR	CROWDED, DECLINE
9619	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9620	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	16.00	FAIR	CROWDED, DECLINE
9621	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9622	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9623	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9624	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9625	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9626	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9627	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9628	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9629	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9630	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9631	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9632	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	26.00	FAIR	CROWDED, DECLINE
9633	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9634	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9635	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9636	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	6.00	FAIR	CROWDED, DECLINE
9637	BOIS D ARC MACLURA POMIFERA	12.00	FAIR	LEAN, CROWDED, DECLINE
9638	CEDAR ELM ULMUS CRASSIFOLIA	14.00	POOR	DRAINAGE AREA
9639	BOIS D ARC MACLURA POMIFERA	10.00	FAIR	CROWDED, DECLINE
9640	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9641	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	10.00	FAIR	CROWDED, DECLINE
9642	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9643	HACKBERRY CELTIS LAEVEGATA	10.00	FAIR	CROWDED, DECLINE
9644	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9645	HACKBERRY CELTIS LAEVEGATA	6.00	FAIR	CROWDED, DECLINE
9646	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
9647	CEDAR ELM ULMUS CRASSIFOLIA	12.00	FAIR	CROWDED, DECLINE
9648	CEDAR ELM ULMUS CRASSIFOLIA	8.00	FAIR	CROWDED, DECLINE
9649	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
9650	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9651	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9652	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	12.00	FAIR	CROWDED, DECLINE
9653	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	14.00	FAIR	CROWDED, DECLINE
9654	EASTERN RED CEDAR JUNIPERUS VIRGINIANA	8.00	FAIR	CROWDED, DECLINE
NA1	CEDAR	8.00		
NA2	CEDAR	8.00		
	TOTAL	**10,195.00**		

CAUTION NOTICE TO CONTRACTORS

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUCH CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATED ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

THE DIMENSION GROUP
ARCHITECTURE • CIVIL ENGINEERING • MEP ENGINEERING
5600 S. QUEBEC STREET, SUITE 325C, GREENWOOD VILLAGE, COLORADO 80111
TEL: 719.536.3180 www.DimensionGroup.com

EVERGREEN DESIGN GROUP
(800) 680-6630
15455 Dallas Pkwy., Ste 600
Addison, TX 75001
www.EvergreenDesignGroup.com

REGISTERED LANDSCAPE ARCHITECT DARCY R BRANDON 3423 STATE OF TEXAS
07/21/2021

#	DATE	REVISION DESCRIPTION	BY

drawn by
designed by
approved by
project no. 200–672
date 7/22/2021 – 5:24 pm
dwg. Creekside Commons Tree Survey.dwg

TREE INVENTORY TABLES

CREEKSIDE COMMONS
NWC STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
TS-6

[CAD 2002727-2.dwg] [CAD 2002727-2-OUT-05-12-21.dwg] [24x36TBs-OUT-05-05-21.dwg] [D56921 – Topographic Tree Data.dwg] [EDG TB std 24x36 2018-08-09 MASTER.dwg]
Drawing name: C:\Users\darcy\Documents\DBLA_PROJECTS\2021\EDG\Creekside Commons Tree Survey – Rockwall, TX\Creekside Commons Tree Survey.dwg Jul 22, 2021 – 5:24pm

DATE:
FILE:

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

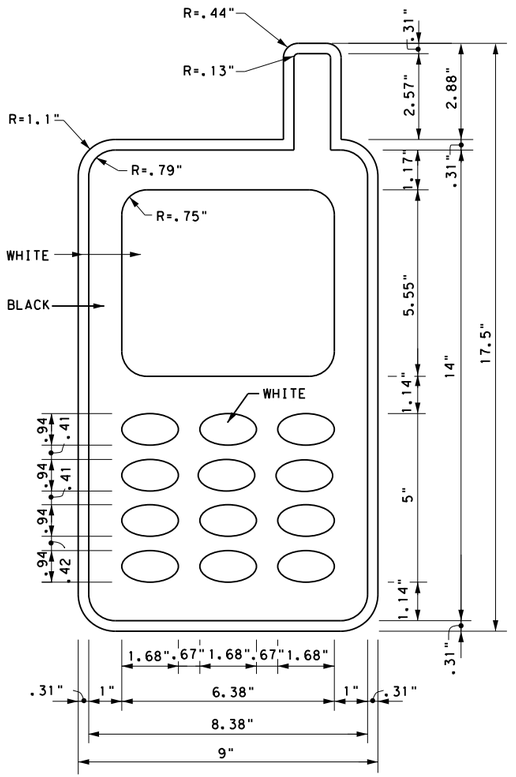
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

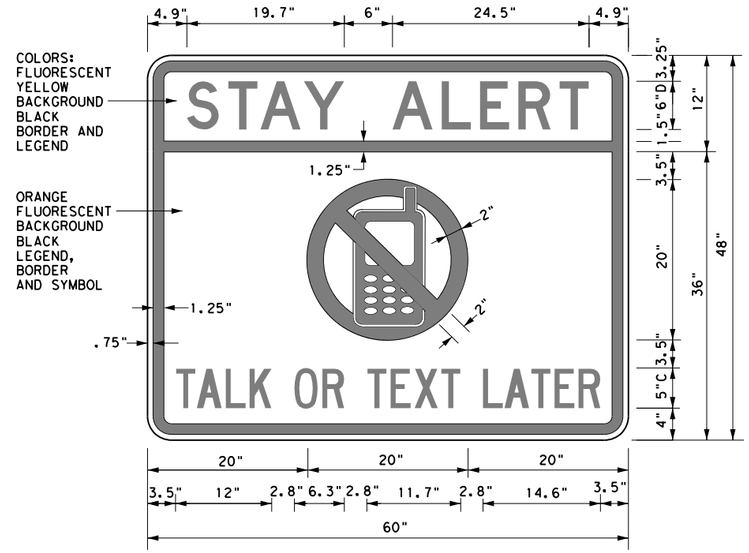
12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.





3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation | Traffic Operations Division Standard

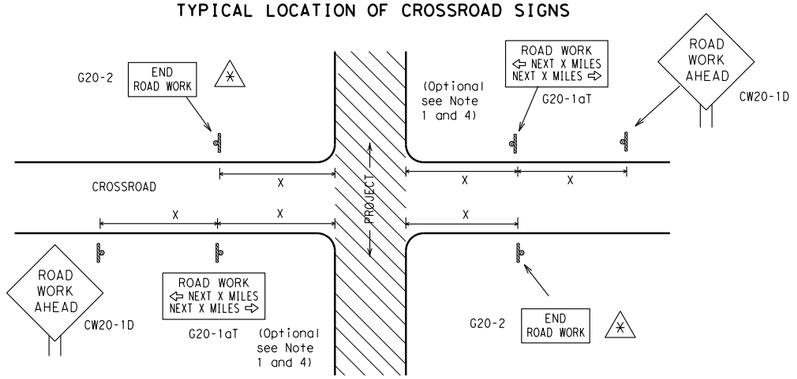
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 5-10 8-14 9-07 7-13	DIST	COUNTY		SHEET NO.

DATE:
FILE:

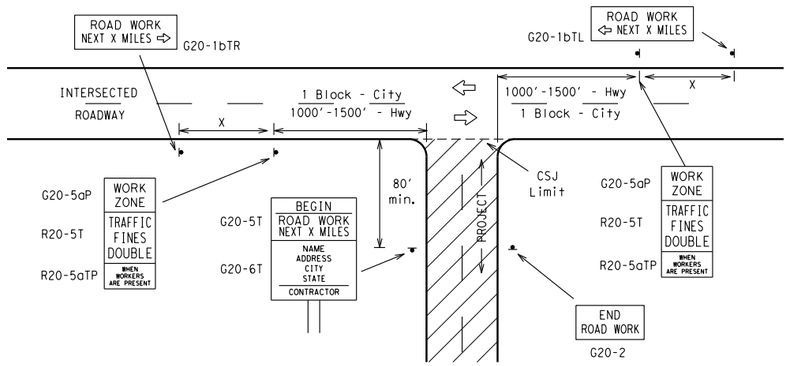
TYPICAL LOCATION OF CROSSROAD SIGNS



✳ May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign Spacing "X" △
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
✳	✳[3]

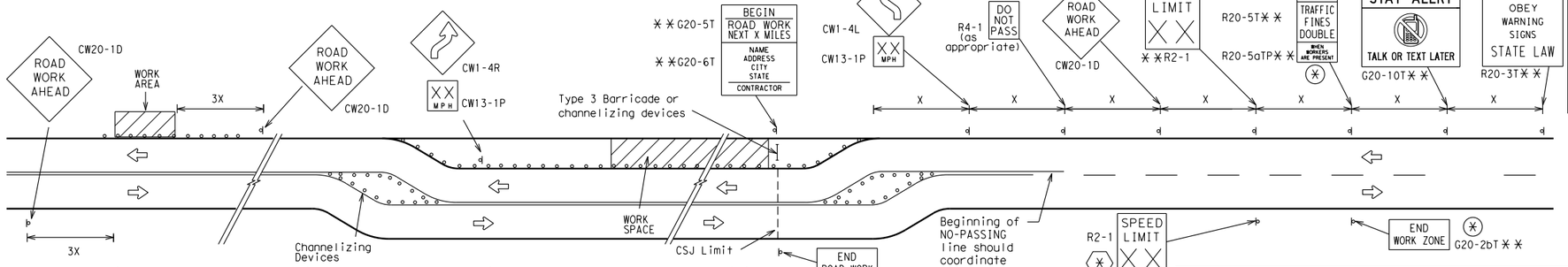
✳ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

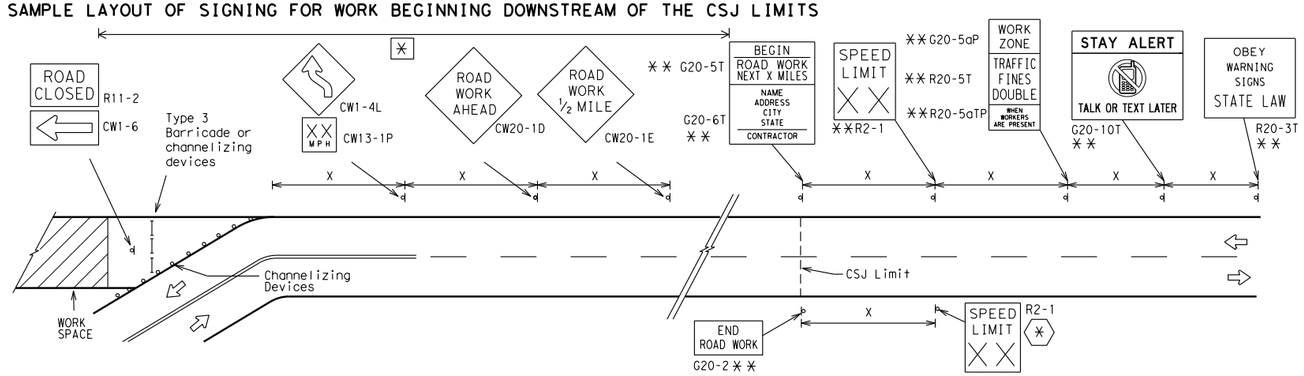
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

✳ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

✳✳ Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

✳ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

✳ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⊢⊣	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13				

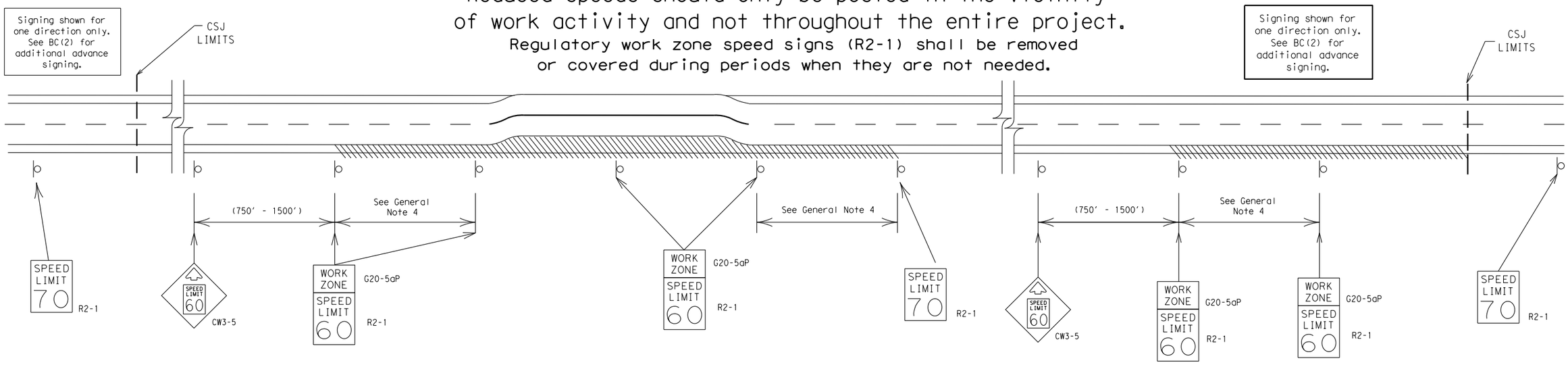
DATE:
FILE:

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

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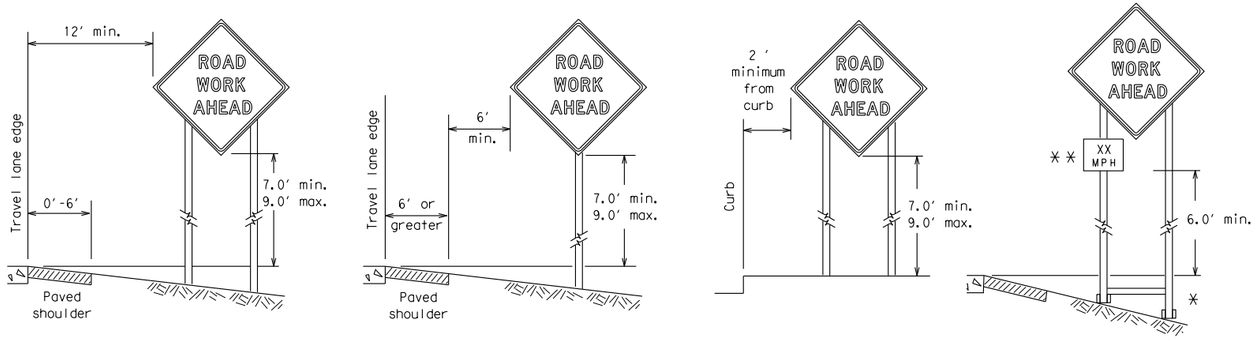
REVISIONS 9-07 8-14 7-13	DIST	COUNTY		SHEET NO.

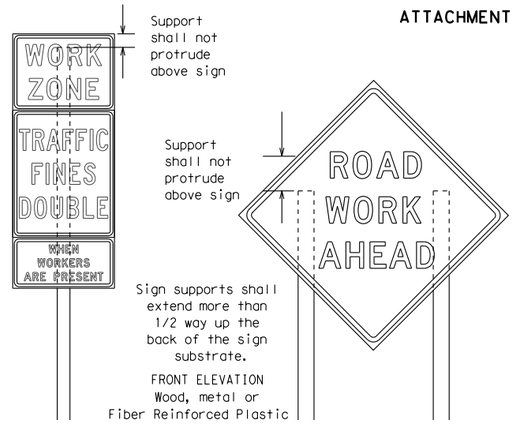
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

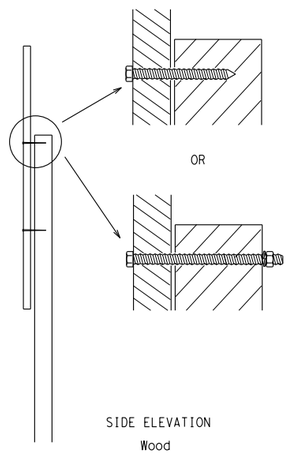


⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

⁎⁎ When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS





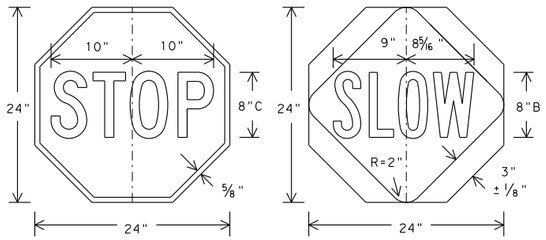
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6′ to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-14

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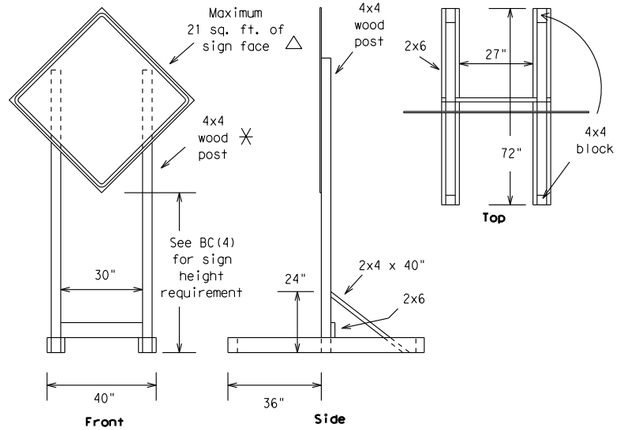
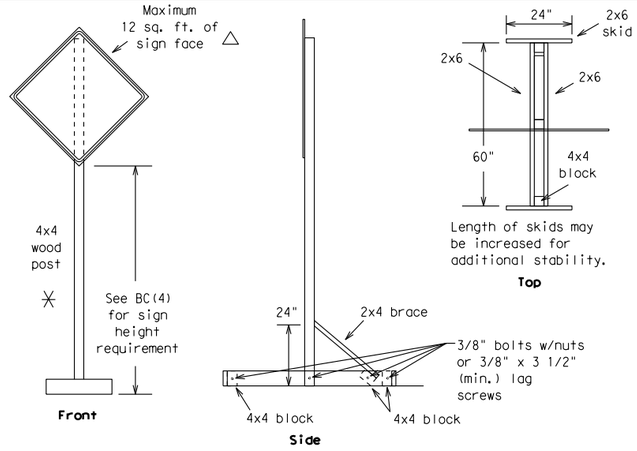
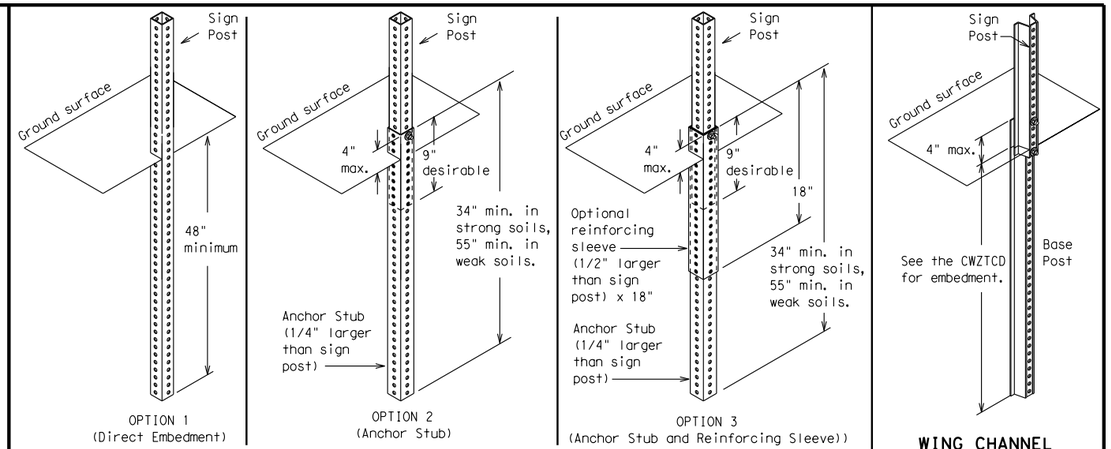




SKID MOUNTED WOOD SIGN SUPPORTS

LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

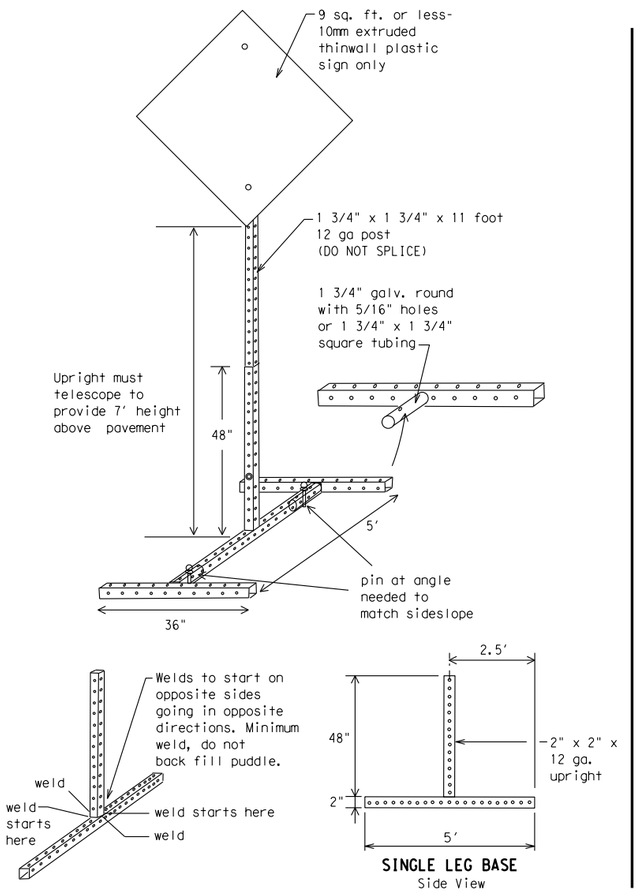


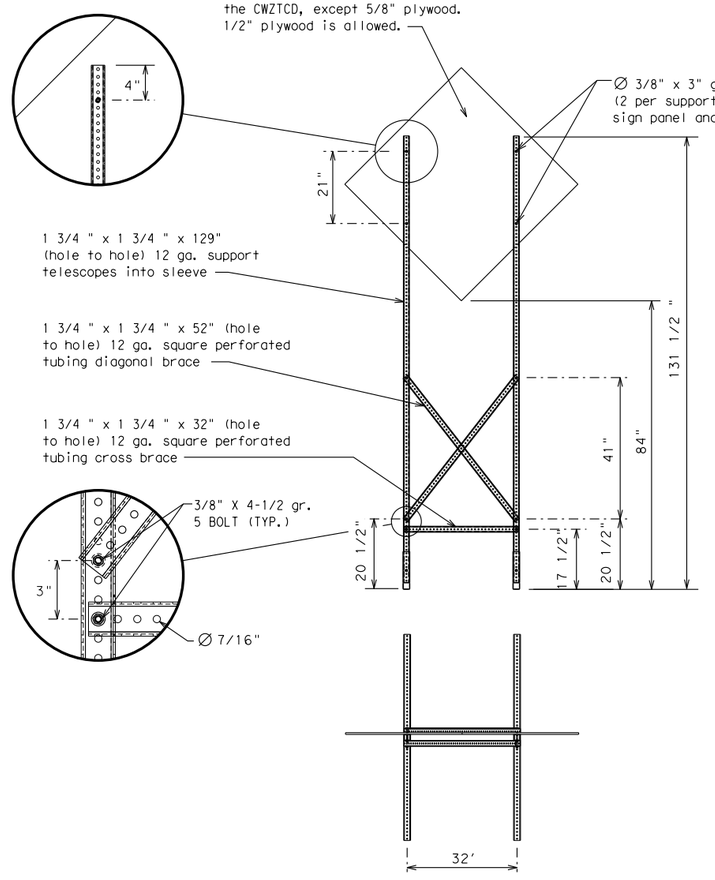
PERFORATED SQUARE METAL TUBING

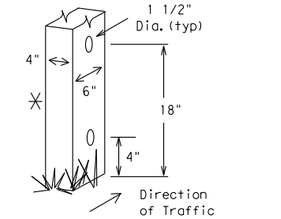
WING CHANNEL
Lap-splice/base bolted anchor

GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.

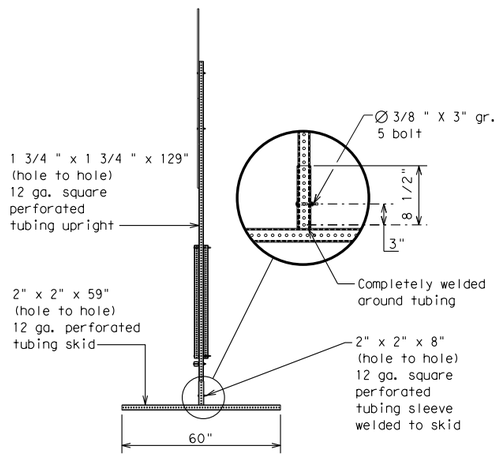






Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS



WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

✳ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

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DATE:
FILE:

SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

DATE:
FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT
RIGHT X LANES CLOSED	RIGHT X LANES OPEN
CENTER LANE CLOSED	DAYTIME LANE CLOSURES
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE
EXIT CLOSED	RIGHT LN TO BE CLOSED
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI
XXXXXXXX BLVD CLOSED	

Other Condition List

ROADWORK XXX FT	ROAD REPAIRS XXXX FT
FLAGGER XXXX FT	LANE NARROWS XXXX FT
RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
DETOUR X MILE	ROUGH ROAD XXXX FT
ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
BUMP XXXX FT	US XXX EXIT X MILES
TRAFFIC SIGNAL XXXX FT	LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORM X LINES RIGHT
DETOUR NEXT X EXITS	USE XXXXX RD EXIT
USE EXIT XXX	USE EXIT I-XX NORTH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N
TRUCKS USE US XXX N	WATCH FOR TRUCKS
WATCH FOR TRUCKS	EXPECT DELAYS
EXPECT DELAYS	PREPARE TO STOP
REDUCE SPEED XXX FT	END SHOULDER USE
USE OTHER ROUTES	WATCH FOR WORKERS
STAY IN LANE *	

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXX TO XXXXXXX
US XXX TO FM XXXX

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM- X PM
APR XX-XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM- XX AM

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-14

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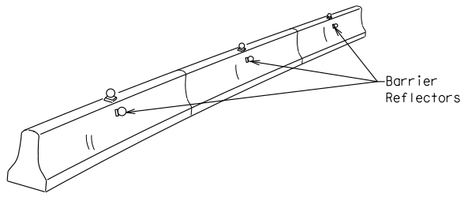
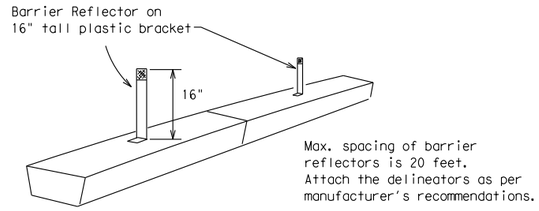
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

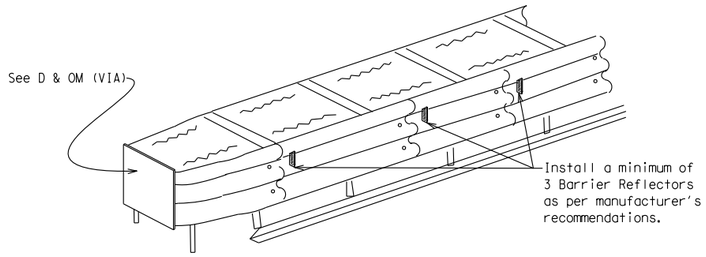


CONCRETE TRAFFIC BARRIER (CTB)

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)

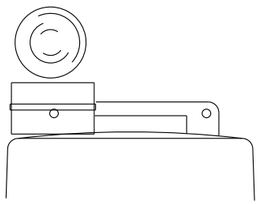


DELINEATION OF END TREATMENTS

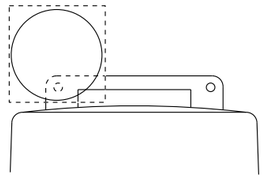
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square.Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

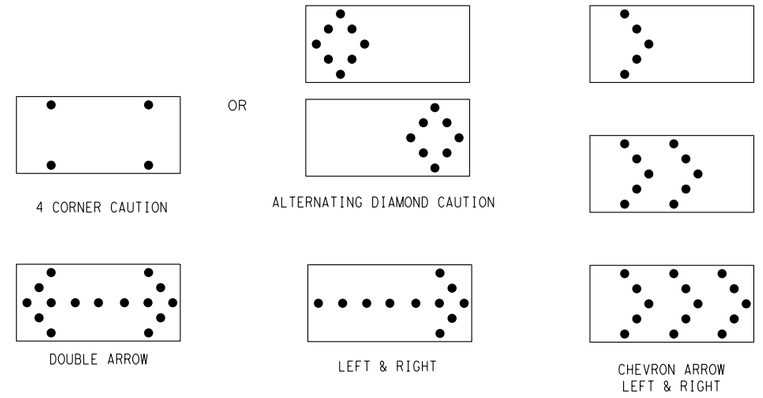
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-14

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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

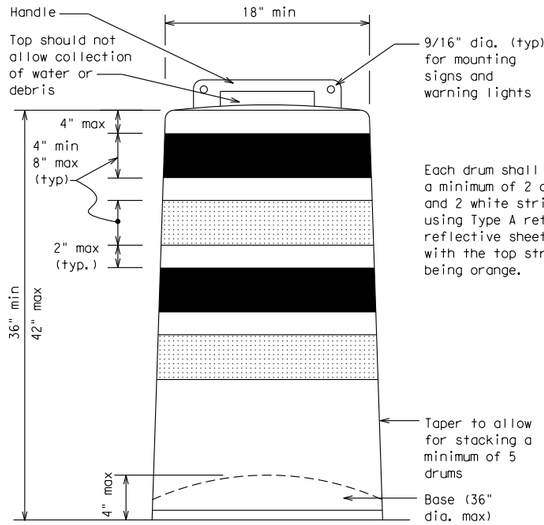
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

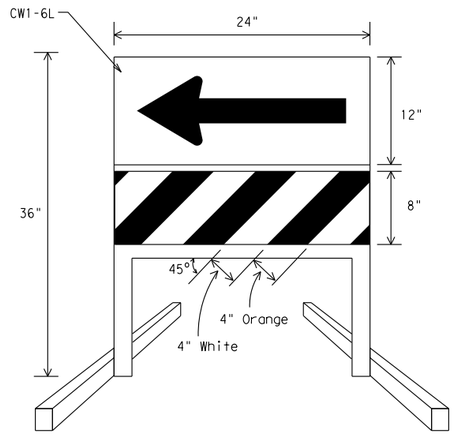
RETROREFLECTIVE SHEETING

1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

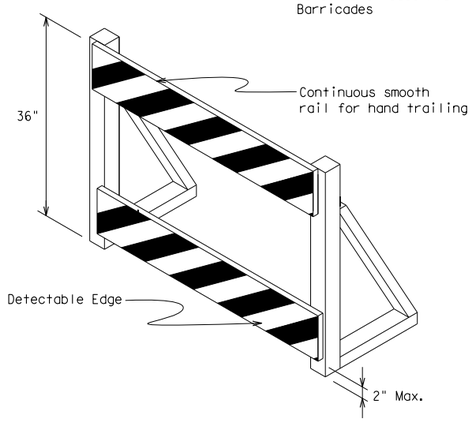




DIRECTION INDICATOR BARRICADE

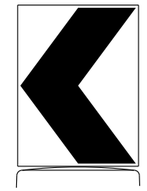
1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B_{FL} or Type C_{FL} Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.

This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

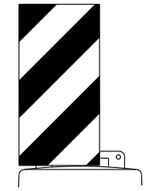


DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-14

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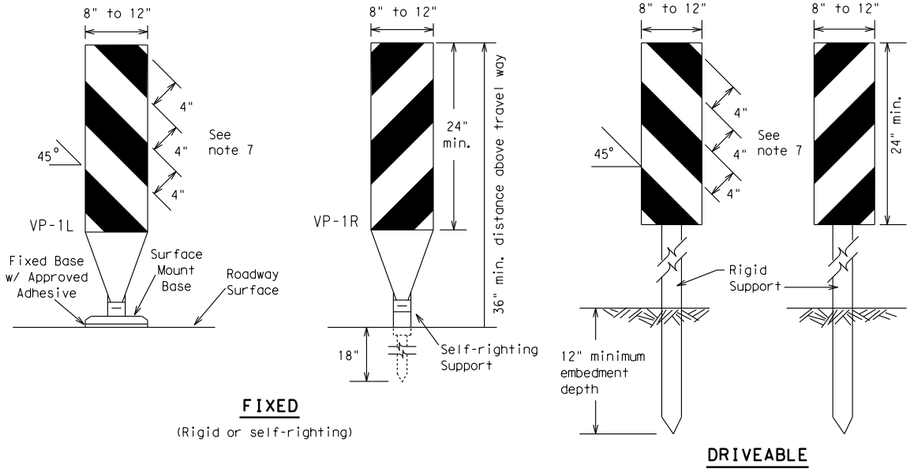
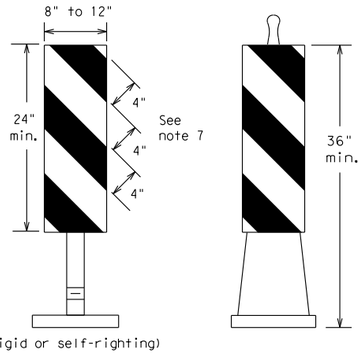


FIXED
(Rigid or self-righting)

DRIVEABLE

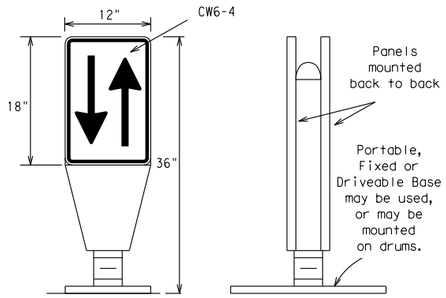


(Rigid or self-righting)

PORTABLE

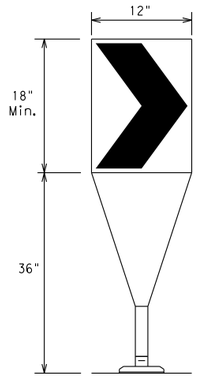
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



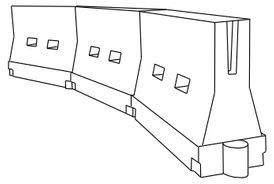
Fixed Base w/ Approved Adhesive
(Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

Posted Speed *	Formula	Minimum Desirable Taper Lengths * * 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

* * Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-14

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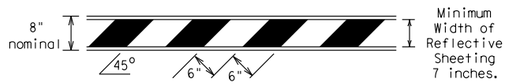
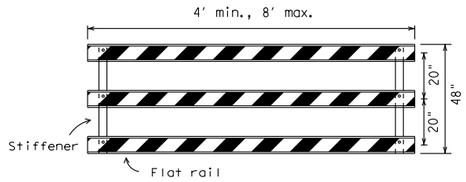
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



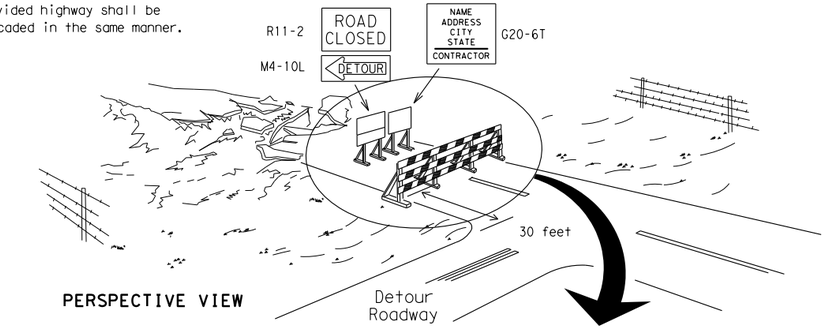
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

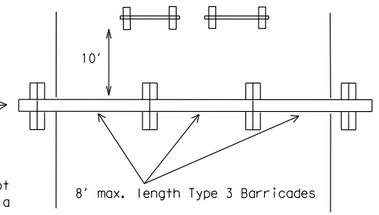
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

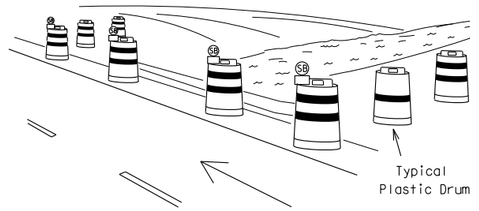
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

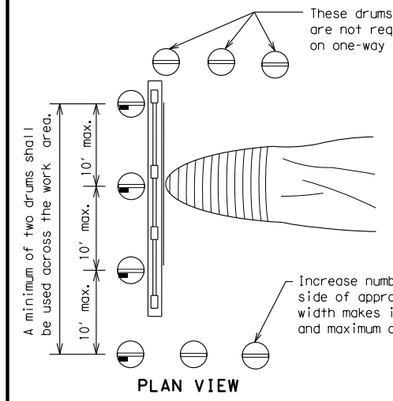
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

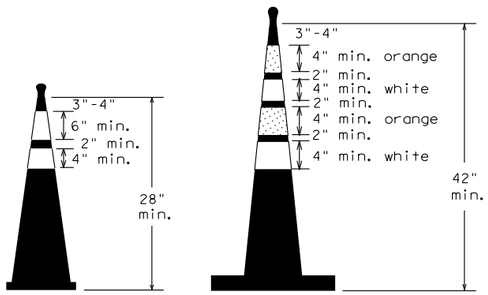
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



PLAN VIEW

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

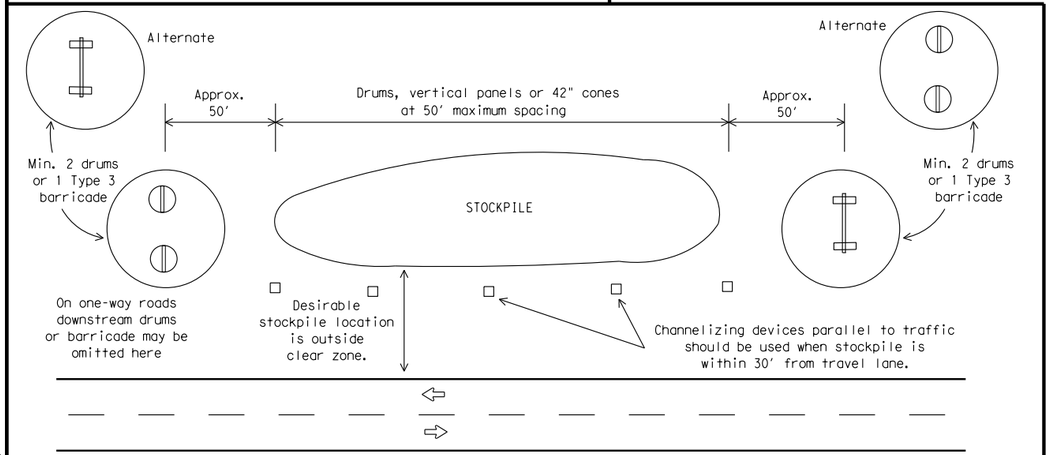
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



28" Cones shall have a minimum weight of 9 1/2 lbs.

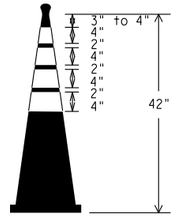
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

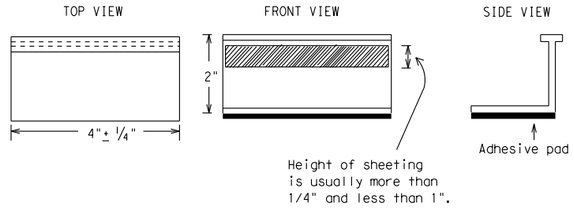
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-14

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11-02 8-14				

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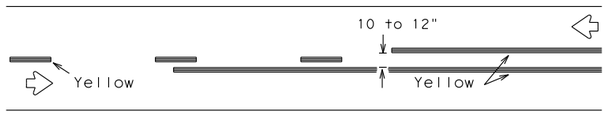
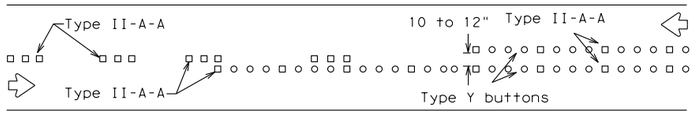
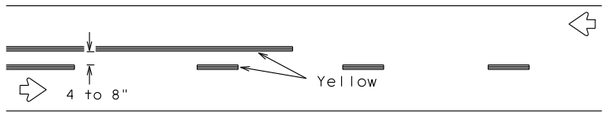
PAVEMENT MARKING PATTERNS



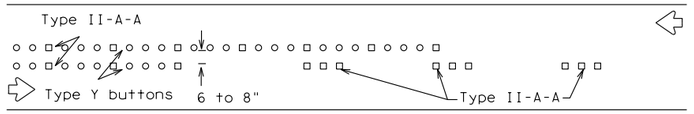
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



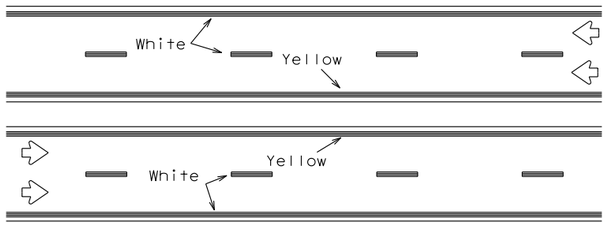
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



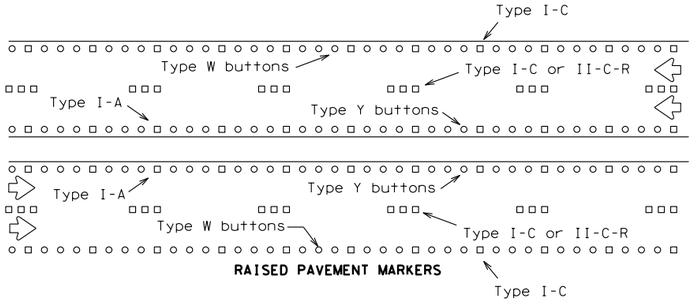
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



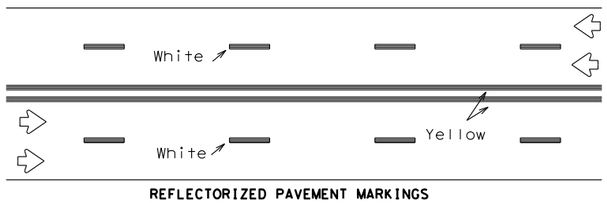
REFLECTORIZED PAVEMENT MARKINGS



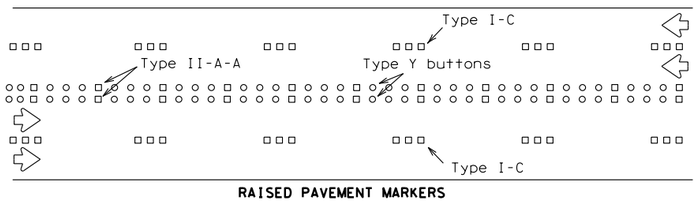
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



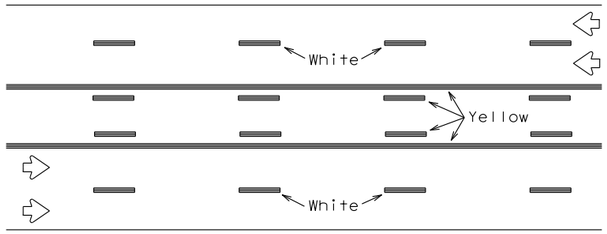
REFLECTORIZED PAVEMENT MARKINGS



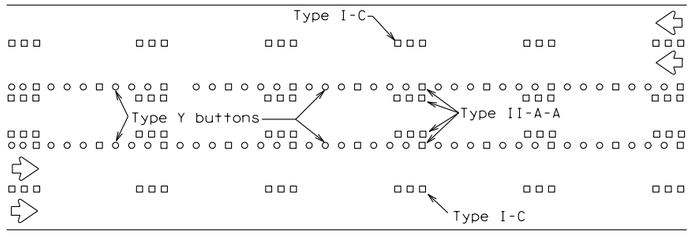
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

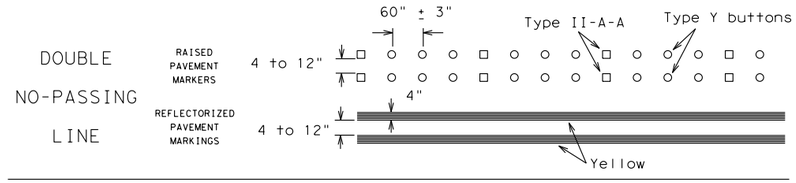
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

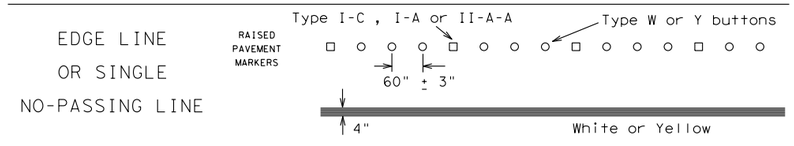
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

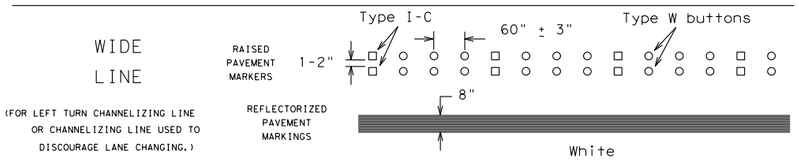


EDGE LINE OR SINGLE NO-PASSING LINE



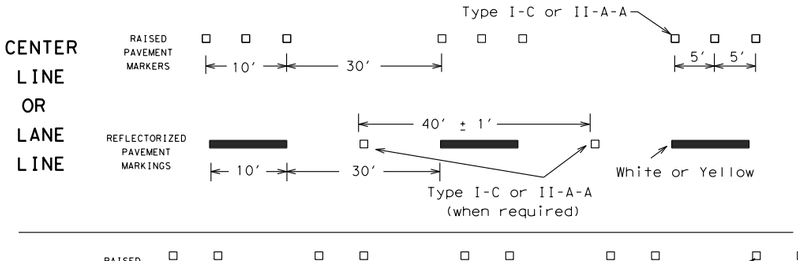
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

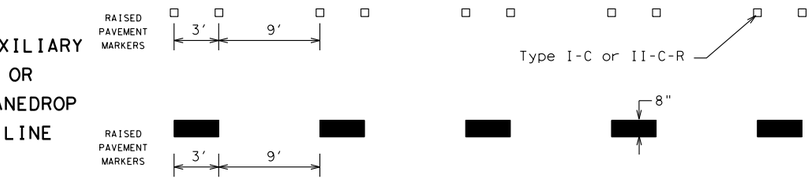


BROKEN LINES

CENTER LINE OR LANE LINE

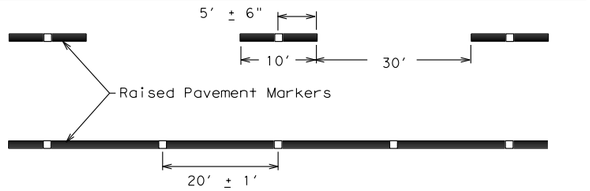


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				
1-97 9-07	DIST	COUNTY		SHEET NO.
2-98 7-13				
11-02 8-14				

DATE:
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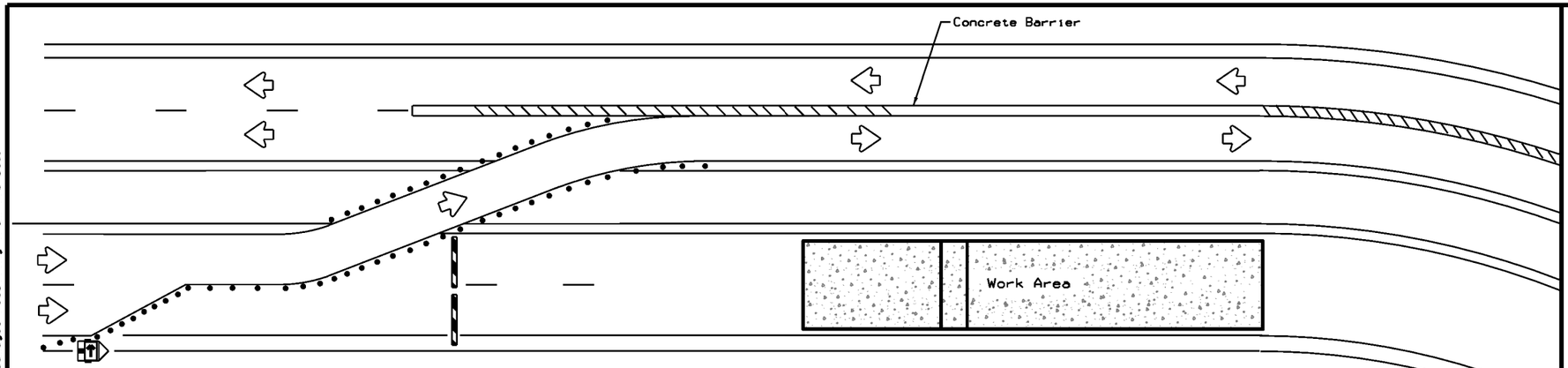


NOTES:

1. Length of Safety Glare screen will be specified elsewhere in the plans.
2. The cumulative nominal length of the modular safety glare screen units shall equal the length of the individual sections of temporary concrete traffic barrier on which they are installed so the joint between barrier sections will not be spanned by any one safety glare screen unit.
3. Screen Panel/blades will be designed such that reflective sheeting conforming with Departmental Material Specification DMS-8300, Sign Face Materials, Type B or C Yellow, minimum size of 2 inches by 12 inches can be attached to the edge of the panel/blade. The sheeting shall be attached to one glare screen panel/blade per section of concrete barrier not to exceed a spacing of 30 feet. Barrier reflectors are not necessary when panel/blades are installed with reflective sheeting as described.
4. Payment for these devices will be under statewide Special Specification "Modular Glare Screens for Headlight Barrier."
5. This detail is only intended to show types of locations where Glare Screens would be appropriate. Required signing and other devices shall be as shown elsewhere in the plans.

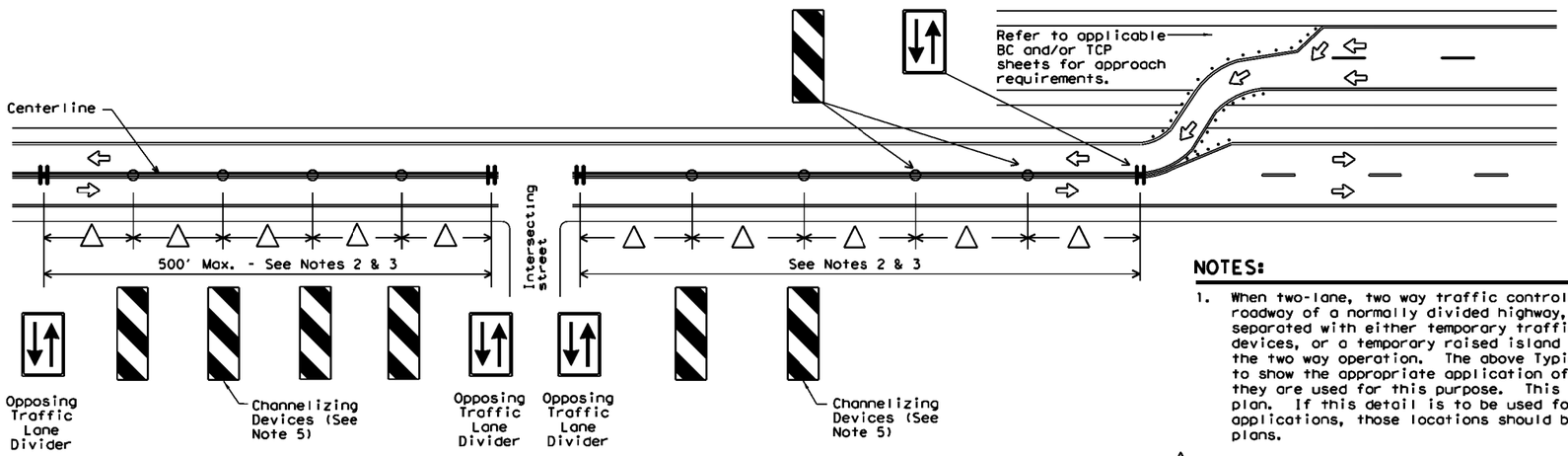
BARRIER DELINEATION WITH MODULAR GLARE SCREENS

LEGEND	
	Type 3 Barricade
• • •	Channelizing Devices
	Trailer Mounted Flashing Arrow Board
	Sign
\\\\	Safety glare screen

DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER	DMS-8610

Only pre-qualified products shall be used. A copy of the Compliant Work Zone Traffic Control Devices List" CWZTCD)describes pre-qualified products and their sources and may be found at the following web address:

http://www.txdot.gov/business/resources/producer-list.html



VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS (OTLD) SEPARATING TWO-WAY TRAFFIC ON NORMALLY DIVIDED HIGHWAYS

NOTES:

1. When two-lane, two way traffic control must be maintained on one roadway of a normally divided highway, opposing traffic shall be separated with either temporary traffic barriers, channelizing devices, or a temporary raised island throughout the length of the two way operation. The above Typical Application is intended to show the appropriate application of channelizing devices when they are used for this purpose. This is not a traffic control plan. If this detail is to be used for other types of roads or applications, those locations should be stated elsewhere in the plans.

△2. Space devices according to the Tangent Spacing shown on the Device Spacing table on BC(9) but not exceeding 100'.

3. Every fifth device should be an OTLD except when spaced closer to accommodate an intersection. An OTLD should be the first device on each side of intersecting streets or roads.
4. Locations where surface mount bases with adhesives or self-righting devices will be required in order to maintain them in their proper position should be noted elsewhere in the plans.
5. Channelizing devices are to be vertical panels, 42" cones or tubular markers that are at least 36" tall. Tubular markers used to separate traffic should have a rubber base weighing at least 30 pounds. Tubular markers that are 42" tall or more shall have four bands of reflective material as detailed for 42" cones on BC(10). Tubular markers less than 42" but at least 36" tall shall have three bands of 3" wide white reflective material spaced 2" apart. Reflective material shall meet DMS-8300, Type A.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN TYPICAL DETAILS

WZ(TD)-17

FILE: wztd-17.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 4-98 2-17 3-03 7-13	DIST	COUNTY		SHEET NO.

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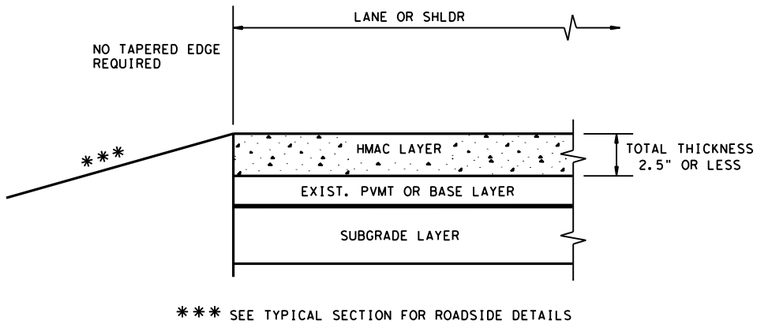
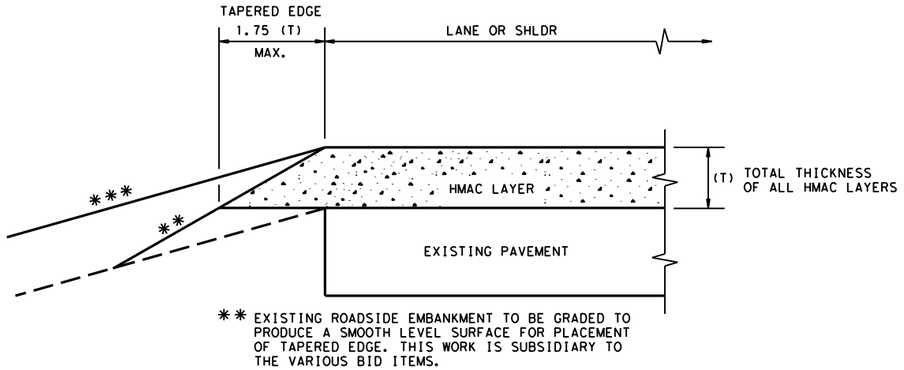


*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

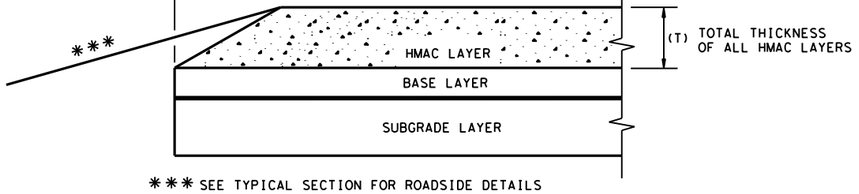
CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY
WITH THICKNESS OF 2.5" OR LESS



** EXISTING ROADSIDE EMBANKMENT TO BE GRADED TO PRODUCE A SMOOTH LEVEL SURFACE FOR PLACEMENT OF TAPERED EDGE. THIS WORK IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

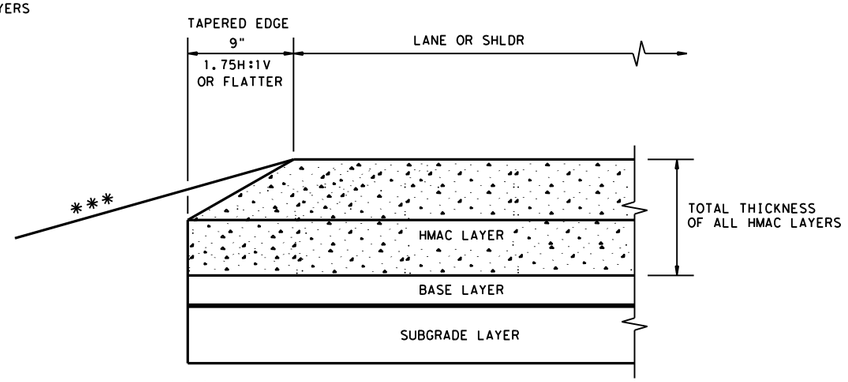
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 2
OVERLAY OF EXISTING PAVEMENT
HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 3
NEW OR RECONSTRUCTED PAVEMENT
HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 4
NEW OR RECONSTRUCTED PAVEMENT
HMAC THICKNESS 5" OR GREATER

(NOT TO SCALE)

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, A VERTICAL EDGE IS PERMISSIBLE FOR HMAC PLACED GREATER THAN 5" BELOW THE EDGE OF PAVEMENT AND FOR THICKNESS OF HMAC LESS THAN 2.5".
2. FOR FURTHER INFORMATION REGARDING THE ROADSIDE AND PAVEMENT DETAILS, SEE TYPICAL SECTIONS.
3. PAYMENT FOR TAPERED EDGE WILL BE IN ACCORDANCE WITH APPLICABLE ITEMS IN THE CONTRACT.
4. THE SLOPE OF THE TAPERED EDGE SHALL BE 1.75H:1V OR FLATTER.
5. THE TAPERED EDGE SHALL BE PRODUCED BY USE OF A SCREED ATTACHMENT CAPABLE OF PRODUCING A SMOOTH COMPACTED SURFACE. ADDITIONAL COMPACTING EFFORT BEHIND THE SCREED IS NOT REQUIRED.

Texas Department of Transportation

Design Division Standard

TAPERED EDGE DETAILS
HMAC PAVEMENT

TE(HMAC)-11

FILE: tehmac11.dgn	DN: TxDOT	CK: RL	DW: KB	CK:
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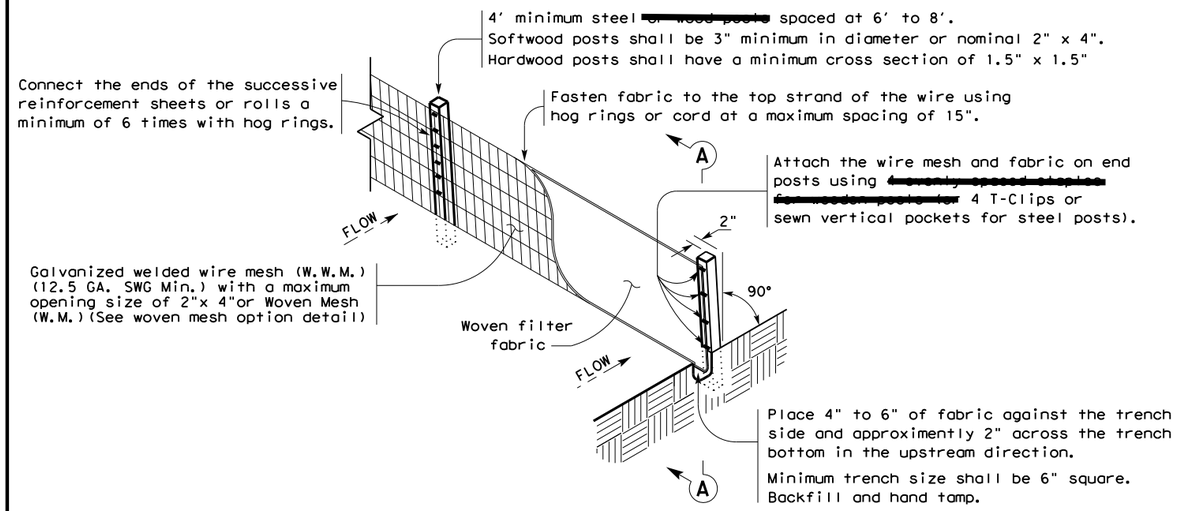
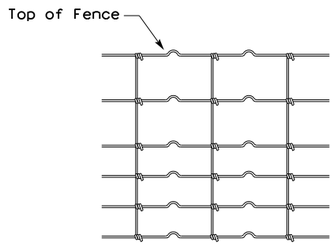
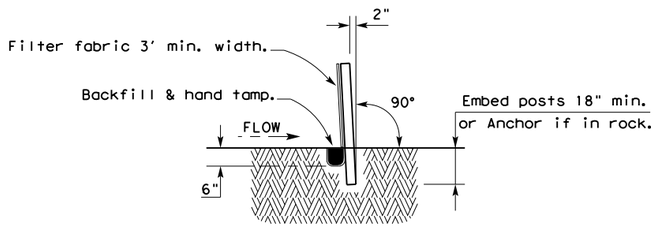
REVISIONS				
	DIST	COUNTY		SHEET NO.



TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

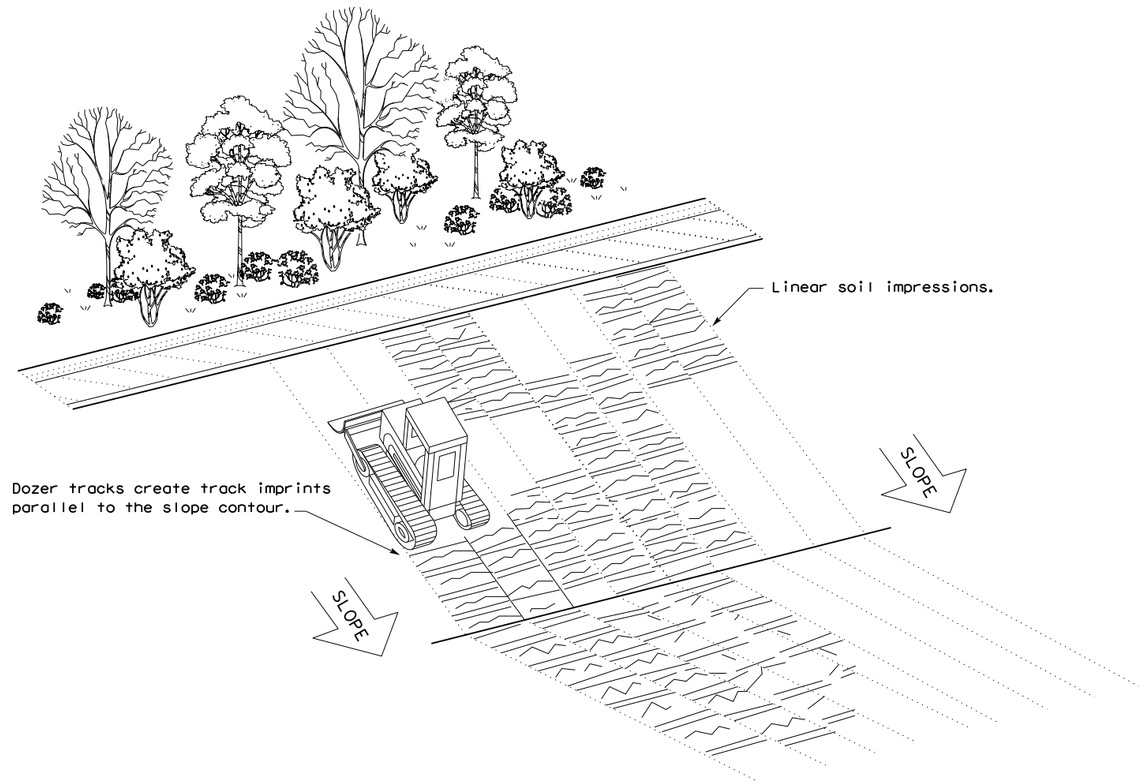
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
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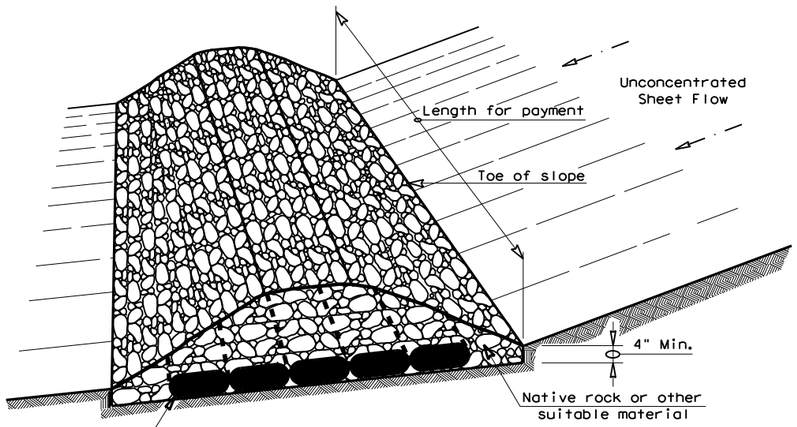
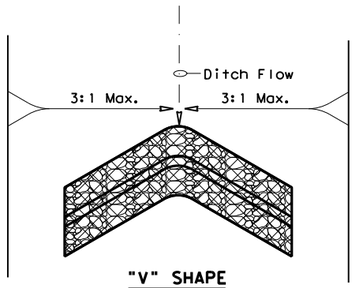
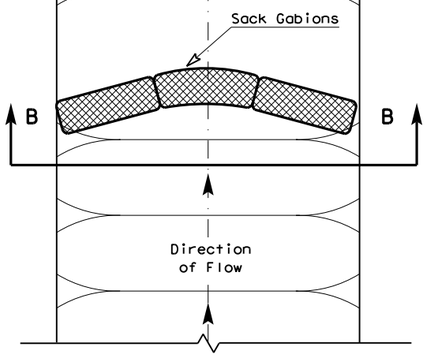


FILTER DAM AT TOE OF SLOPE

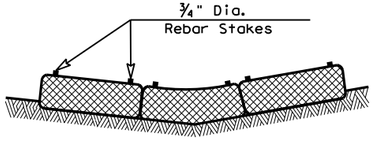
RFD1



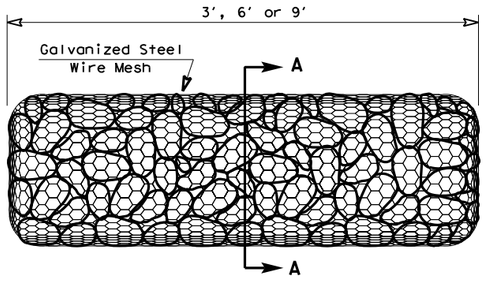
"V" SHAPE PLAN VIEW



PLAN VIEW

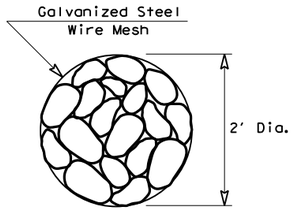


SECTION B-B

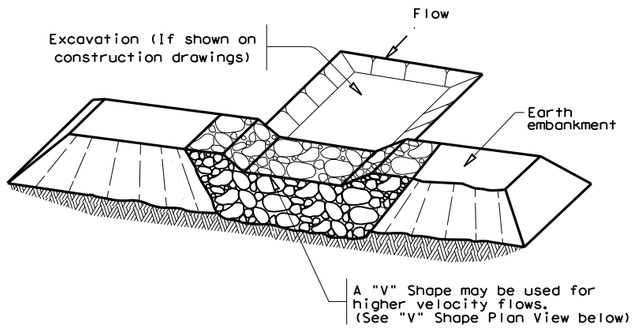


TYPE 4 (SACK GABIONS)

RFD4

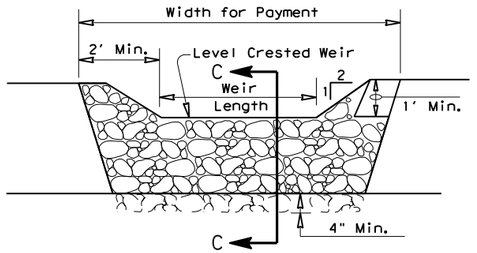


SECTION A-A



FILTER DAM AT SEDIMENT TRAP

RFD1 — OR — RFD2



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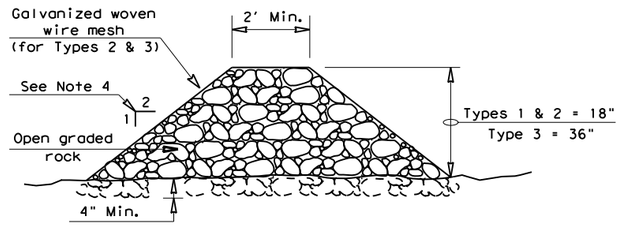
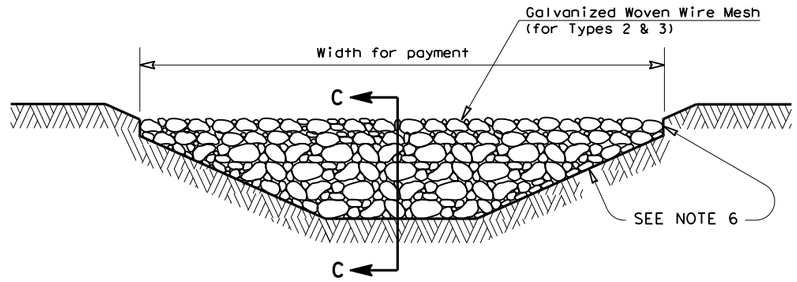


SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 — OR — RFD2 — OR — RFD3

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

EC(2)-16

FILE: ec216	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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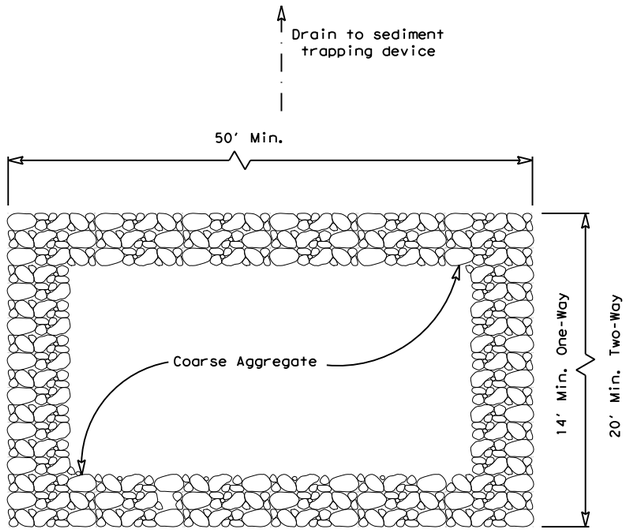
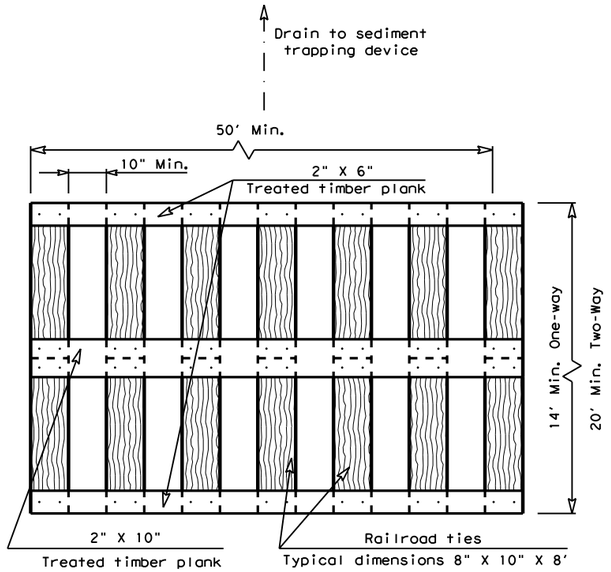


PLAN VIEW



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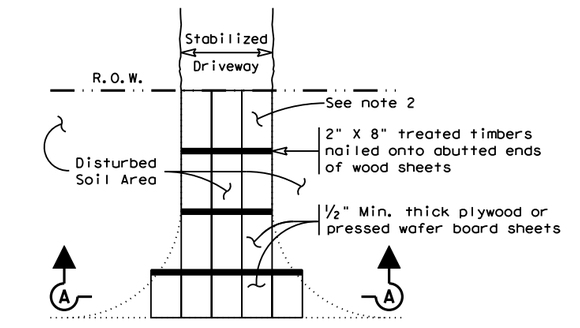

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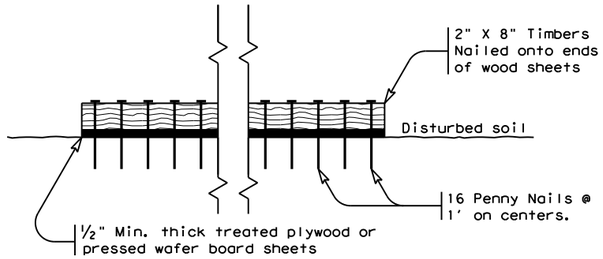
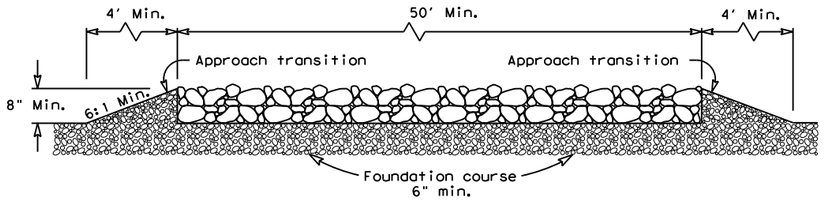


SECTION A-A

CONSTRUCTION EXIT (TYPE 3)

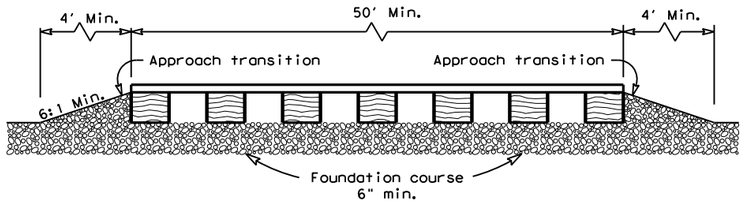
SHORT TERM



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

ROCK CONSTRUCTION (LONG TERM)



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materialas approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

CONSTRUCTION EXITS

EC(3)-16

FILE: ec316	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
©TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
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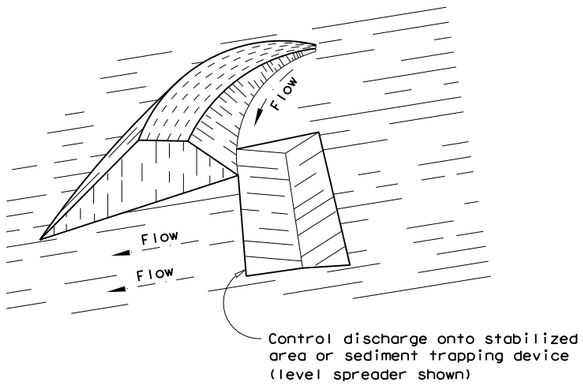
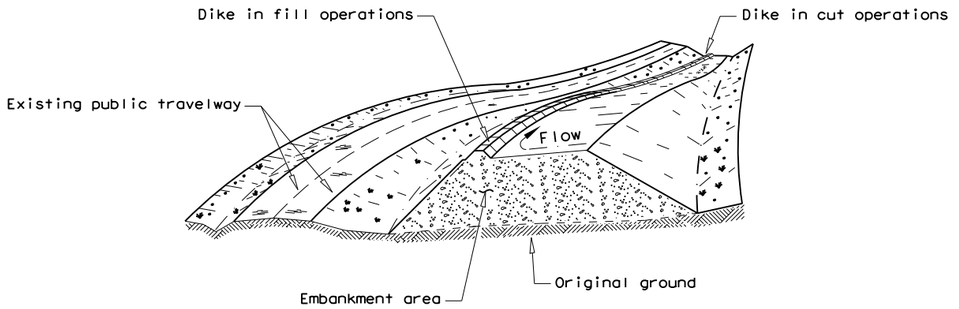


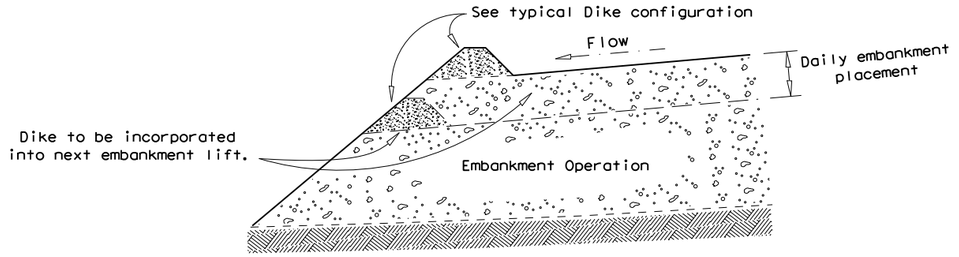
PERIMETER DIKE

→(D)→



DIVERSION DIKE

→(D)→



EMBANKMENT SECTION - DIVERSION DIKE

→(D)→

GENERAL NOTE

1. Soil used in dike construction shall be machine compacted.
2. Top width and height of dike may be modified with prior approval of the Engineer.
3. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
4. Grading shall be shown elsewhere in the plans or as directed by the Engineer.
5. The Engineer reserves the right to modify the dimensions shown for the dike dependent on runoff volume characteristics.
6. Dikes that are in place for more than 14 calendar days should be stabilized to prevent sediment runoff.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Remove sediment and debris when accumulation affects the performance of the devices, after a rain and when directed by the engineer.

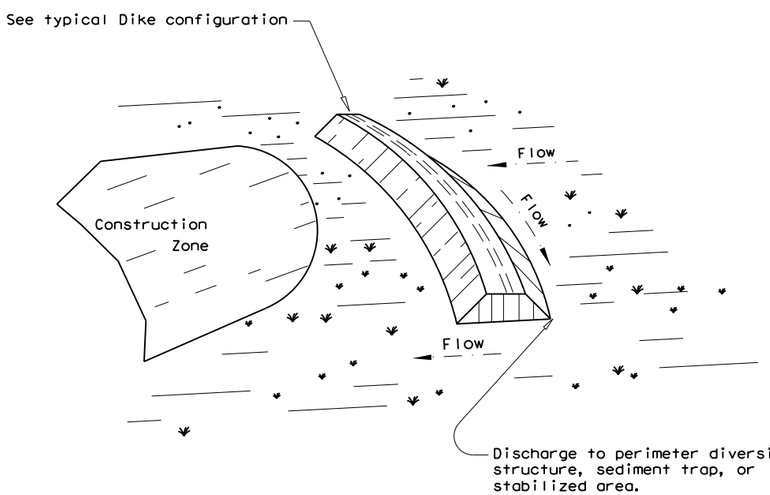
DIKE USAGE GUIDELINES

A Dike may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

The drainage area contributing runoff to a dike should not exceed 5 acres. The spacing of dikes should be as follows:

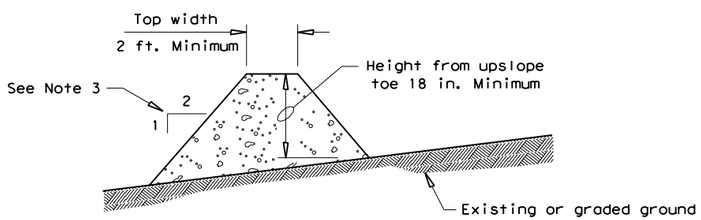
Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100′	200′	300′

Intercepted runoff flowing along a dike should outlet to a stabilized area (vegetation, rock, etc.).



INTERCEPTOR DIKE

→(D)→



TYPICAL DIKE CONFIGURATION

→(D)→

PLANS SHEET LEGEND

DIKE →(D)→

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES DIKES (EARTHWORK FOR EROSION CONTROL)

EC(4)-16

FILE: ec416	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

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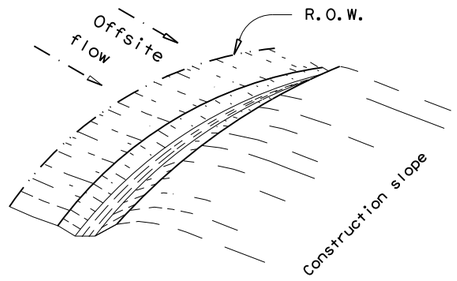
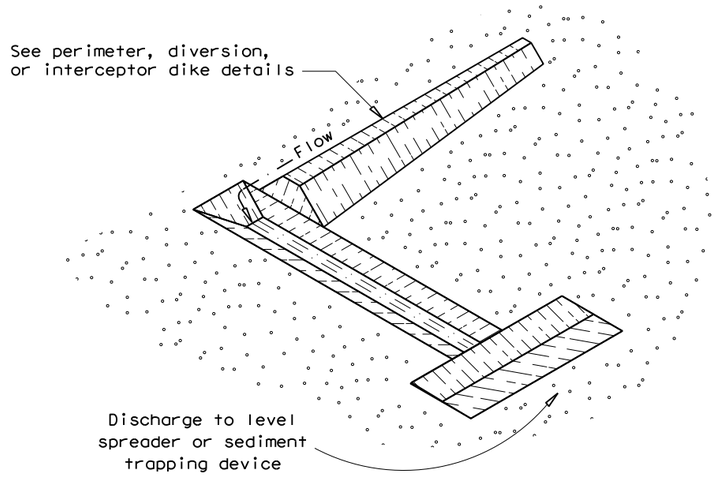


PERIMETER SWALE



DIVERSION SWALE

GENERAL NOTE

1. Dimensions of swale may be modified with prior approval of the Engineer.
2. Side slopes within the safety clear zone of a roadway shall be 6:1 or flatter.
3. Grading shall be shown elsewhere on the plans or as directed by the Engineer.
4. The Engineer reserves the right to modify the dimensions shown for the swale dependent on runoff volume characteristics.
5. Swales that are in place for more than 14 calender days should be stabilized through seeding or other measures to control sediment runoff.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Remove sediment and debris when accumulation affects the performance of the devices, after a rain and when directed by the Engineer.

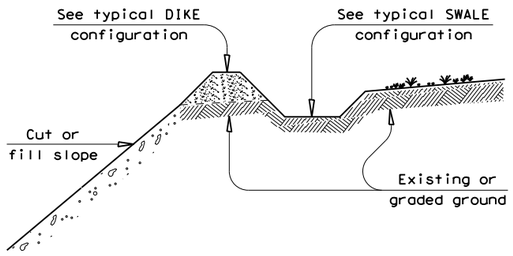
SWALE AND DIKE/SWALE USAGE GUIDELINES

A swale or dike/swale may be used to intercept runoff and divert it around unstabilized areas or to divert sediment laden runoff to an erosion control device (sediment basin or trap, rock filter dam, etc.).

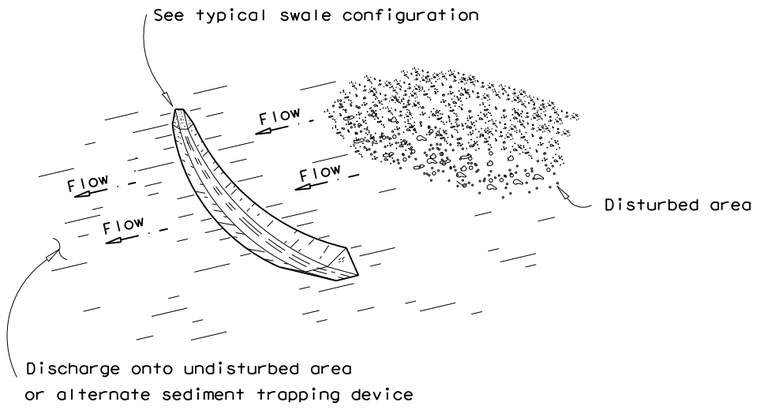
The drainage area contributing runoff to a swale or dike/swale should not exceed 5 acres. The spacing of swales and dike/swales should be as follows:

Slope of disturbed areas above dike	greater than 10%	5 - 10%	less than 5%
Maximum distance between dikes	100′	200′	300′

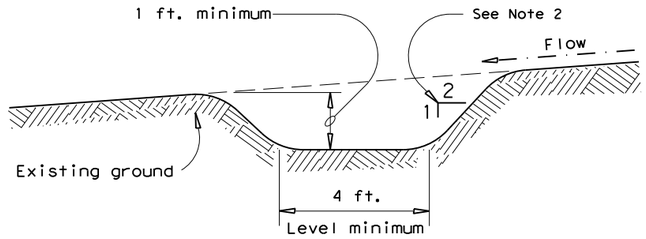
Intercepted runoff flowing in a swale or dike/swale should outlet to a stabilized area (vegetation, rock, etc.).



DIVERSION DIKE WITH SWALE



INTERCEPTOR SWALE



TYPICAL SWALE CONFIGURATION

PLAN SHEET LEGEND

SWALE (S)

DIKE (D)

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
SWALES
(EARTHWORK FOR EROSION CONTROL)

EC(5)-16

FILE: ec516	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
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REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE:
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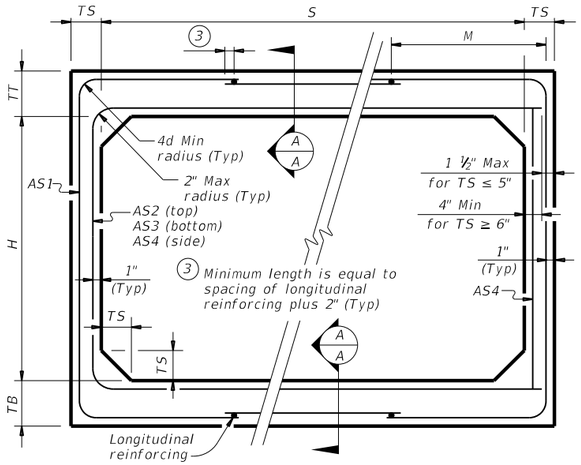
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
8	3	8	8	8	< 2	–	0.31	0.35	0.25	0.19	0.19	0.19	0.19	10.4
8	3	8	8	8	2 < 3	55	0.35	0.29	0.28	0.19	–	–	–	10.4
8	3	8	8	8	3 – 5	50	0.28	0.23	0.24	0.19	–	–	–	10.4
8	3	8	8	8	10	45	0.29	0.25	0.26	0.19	–	–	–	10.4
8	3	8	8	8	15	45	0.39	0.33	0.34	0.19	–	–	–	10.4
8	3	8	8	8	20	45	0.51	0.43	0.44	0.19	–	–	–	10.4
8	3	8	8	8	25	45	0.63	0.53	0.54	0.19	–	–	–	10.4
8	4	8	8	8	< 2	–	0.27	0.38	0.29	0.19	0.19	0.19	0.19	11.2
8	4	8	8	8	2 < 3	50	0.31	0.34	0.32	0.19	–	–	–	11.2
8	4	8	8	8	3 – 5	50	0.25	0.27	0.27	0.19	–	–	–	11.2
8	4	8	8	8	10	45	0.26	0.28	0.29	0.19	–	–	–	11.2
8	4	8	8	8	15	41	0.34	0.37	0.38	0.19	–	–	–	11.2
8	4	8	8	8	20	41	0.44	0.48	0.49	0.19	–	–	–	11.2
8	5	8	8	8	< 2	–	0.24	0.40	0.32	0.19	0.19	0.19	0.19	12.0
8	5	8	8	8	2 < 3	50	0.28	0.37	0.35	0.19	–	–	–	12.0
8	5	8	8	8	3 – 5	45	0.23	0.29	0.30	0.19	–	–	–	12.0
8	5	8	8	8	10	45	0.23	0.31	0.32	0.19	–	–	–	12.0
8	5	8	8	8	15	41	0.30	0.41	0.42	0.19	–	–	–	12.0
8	5	8	8	8	20	41	0.39	0.52	0.54	0.19	–	–	–	12.0
8	6	8	8	8	< 2	–	0.22	0.42	0.35	0.19	0.19	0.19	0.19	12.8
8	6	8	8	8	2 < 3	50	0.25	0.40	0.38	0.19	–	–	–	12.8
8	6	8	8	8	3 – 5	50	0.21	0.32	0.33	0.19	–	–	–	12.8
8	6	8	8	8	10	45	0.22	0.33	0.34	0.19	–	–	–	12.8
8	6	8	8	8	15	41	0.28	0.43	0.45	0.19	–	–	–	12.8
8	6	8	8	8	20	41	0.36	0.55	0.57	0.19	–	–	–	12.8
8	7	8	8	8	< 2	–	0.20	0.44	0.37	0.19	0.19	0.19	0.19	13.6
8	7	8	8	8	2 < 3	55	0.23	0.43	0.41	0.19	–	–	–	13.6
8	7	8	8	8	3 – 5	55	0.19	0.34	0.35	0.19	–	–	–	13.6
8	7	8	8	8	10	50	0.20	0.34	0.36	0.19	–	–	–	13.6
8	7	8	8	8	15	41	0.26	0.45	0.47	0.19	–	–	–	13.6
8	7	8	8	8	20	41	0.33	0.57	0.60	0.19	–	–	–	13.6
8	8	8	8	8	< 2	–	0.20	0.45	0.40	0.19	0.19	0.19	0.19	14.4
8	8	8	8	8	2 < 3	65	0.21	0.45	0.44	0.19	–	–	–	14.4
8	8	8	8	8	3 – 5	65	0.19	0.36	0.38	0.19	–	–	–	14.4
8	8	8	8	8	10	55	0.19	0.35	0.38	0.19	–	–	–	14.4
8	8	8	8	8	15	45	0.24	0.46	0.49	0.19	–	–	–	14.4
8	8	8	8	8	20	45	0.31	0.59	0.62	0.19	–	–	–	14.4

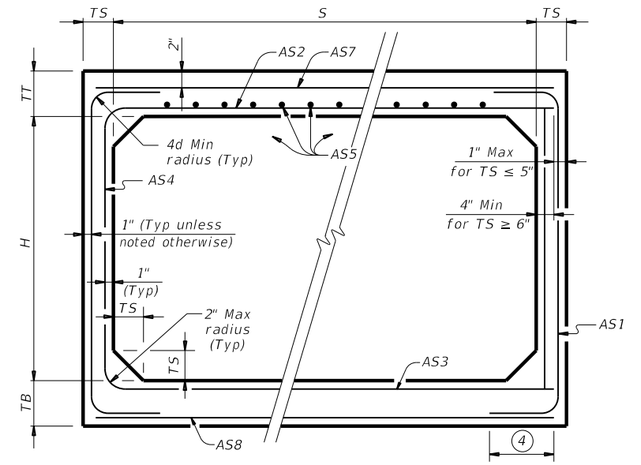
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

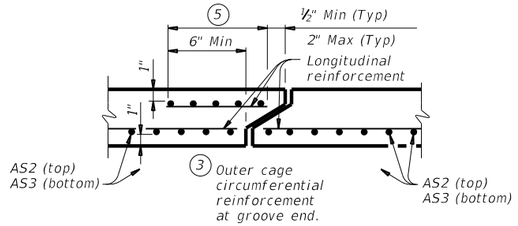
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

8'-0" SPAN

SCP-8

FILE: scp08sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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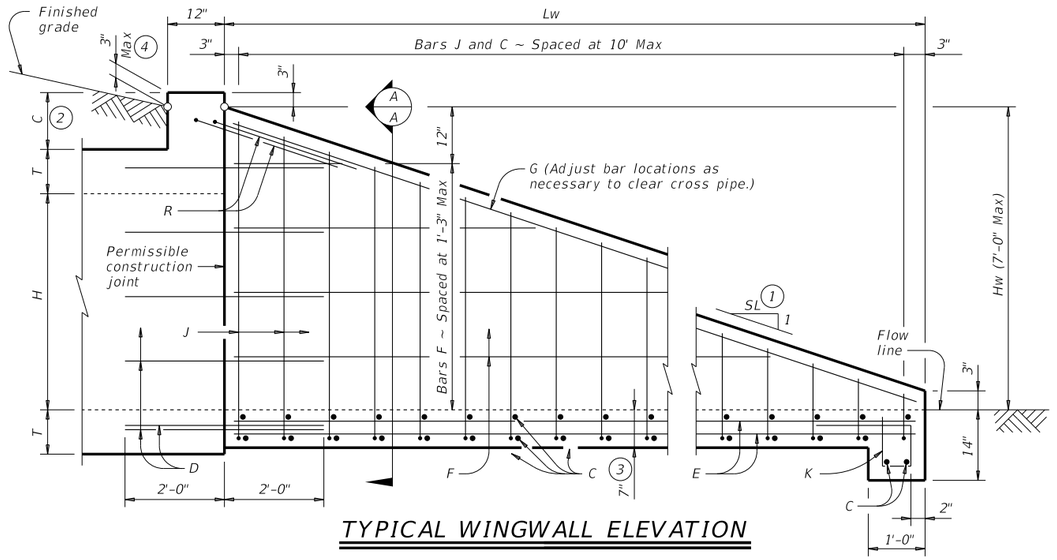
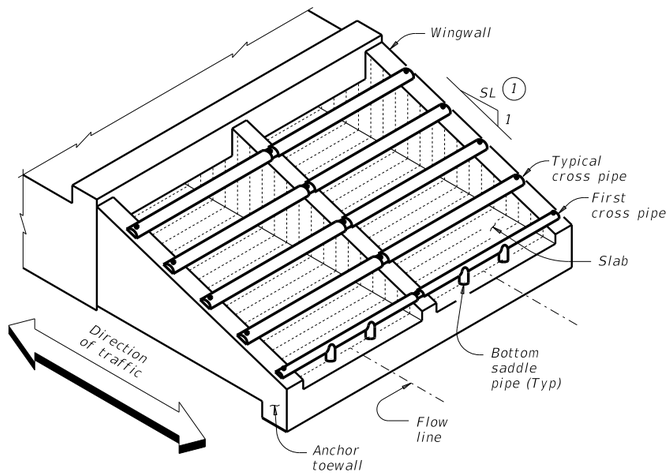


TYPICAL WINGWALL ELEVATION

(Cross pipes not shown for clarity.)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing bolted anchor option.)

WING DIMENSION CALCULATIONS:

$Hw = H + T + C - 0.250'$

$Lw = (Hw - 0.333')\ (SL)$

For cast-in-place culverts:

$Atw = (N)\ (S) + (N + 1)\ (U)$

For precast culverts:

$Atw = (N)\ (2U + S) + (N - 1)\ (0.500')$

Total Wingwall Area (SF)
$= (0.5)\ (Hw + 0.333')\ (Lw)\ (N - 1)$

Total Concrete Volume (CY)
$= [(\text{Wingwall Area})\ (0.583') +$
$(Lw)\ (Atw)\ (0.583') +$
$(Atw)\ (1.167')\ (1.167' - 0.583')] \div (27)$

PIPE RUNNER DIMENSION CALCULATIONS:

Pipe Runner Length (feet)
$= (Lw)\ (K1) = (1.917')$

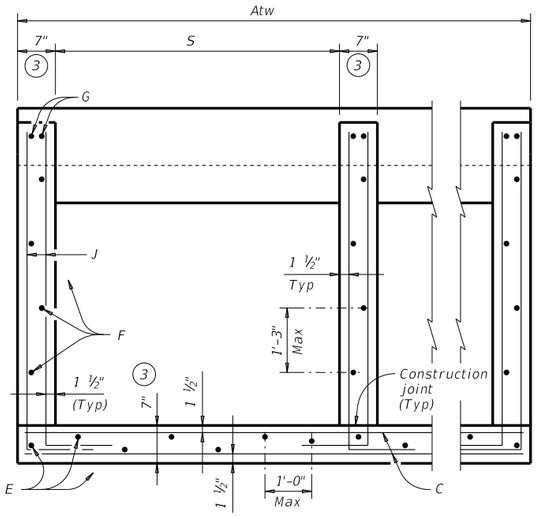
Total Reinforcing (Lb)
$= (1.55)\ (Lw)\ (Atw) +$
$(4.43)\ (Atw) +$
$(K2)\ (Hw)\ (N + 1)\ (\sqrt{Lw})$

C = Height of curb above top of top slab (feet)
Hw = Height of wingwall (feet)
K = Constant value for use in formulas

Slope SL:1	K1	K2
3:1	~	1.054 ~ 7.45
4:1	~	1.031 ~ 8.49
6:1	~	1.014 ~ 10.30

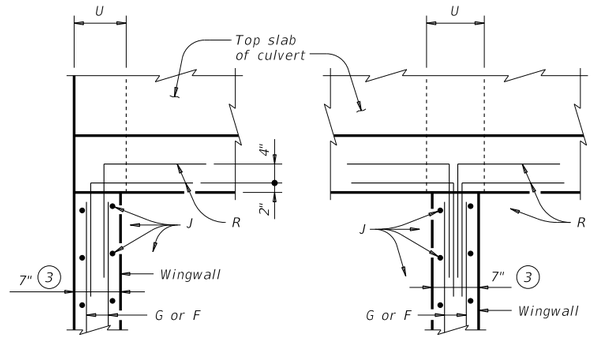
Atw = Anchor toewall length (feet)
Lw = Length of wingwall (feet)
N = Number of culvert barrels
SL:1 = Side slope ratio (horizontal : 1 vertical)

See applicable box culvert standard for H, S, T, and U values.



SECTION A-A

(Showing typical wingwall and wing slab reinforcing. Pipe runners not shown for clarity.)

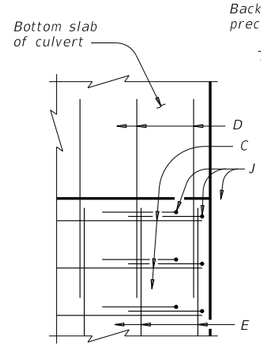


AT TOP OF EXTERIOR WINGWALL

(Cast-in-place culvert)

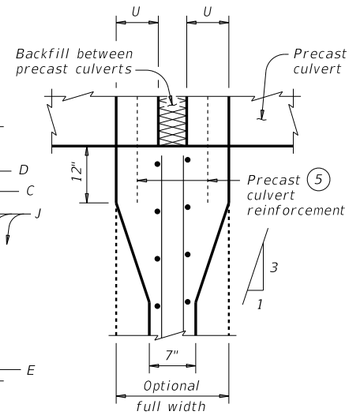
AT TOP OF INTERIOR WINGWALL

(Cast-in-place culvert)



AT OUTSIDE OF BOTTOM SLAB

(Cast-in-place culvert)



AT INTERIOR WINGWALL

(Precast culvert)

PLAN VIEWS OF CORNER DETAILS

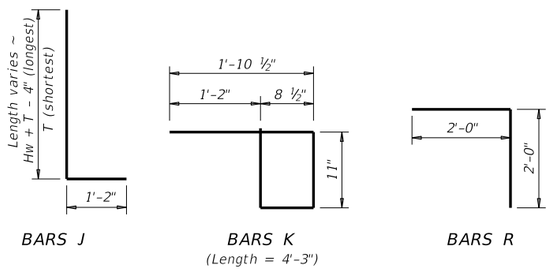


TABLE OF REINFORCING BAR SIZES AND SPACING		
Bar	Size	Spacing
C	#4	10" Max
D	#4	Match F and E
E	#4	1'- 0" Max
F	#4	1'- 3" Max
G	#6	As shown
J	#4	10" Max
K	#4	1'- 0" Max
R	#4	As shown

(1) Provide 6:1 or flatter slope.

(2) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to Extended Curb Details the Extended Curb Details (ECD) standard sheet.

(3) Wingwall and slab thicknesses may be the same as the adjacent culvert wall and slab thicknesses (7" Minimum). If thicknesses greater than the minimum (7") are used, no changes will be made in quantities and no additional compensation will be allowed.

(4) For vehicle safety, reduce height, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

(5) For culverts with C = 0", the precast culvert reinforcing may extend 1'-0" minimum into wingwall. Wingwall bars D and R may be omitted. Otherwise, refer to the Wingwall Connection detail on the Box Culvert Precast Miscellaneous Details (SCP-MD) standard sheet.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Adjust reinforcing as necessary to provide a minimum clear cover of 1½".
Provide Class "C" concrete (f`c = 3,600 psi).
Provide pipe runners, cross pipes, and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.
Provide ASTM A307 bolts.
Galvanize all steel components, except the concrete reinforcing, unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with Item 445, "Galvanizing."

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
The quantities for concrete, reinforcing steel, and cross pipes resulting from the formulas given herein are for Contractor's information only.
See the Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the safety end treatments.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ PARALLEL DRAINAGE

SETB-PD

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	DIST	COUNTY		SHEET NO.

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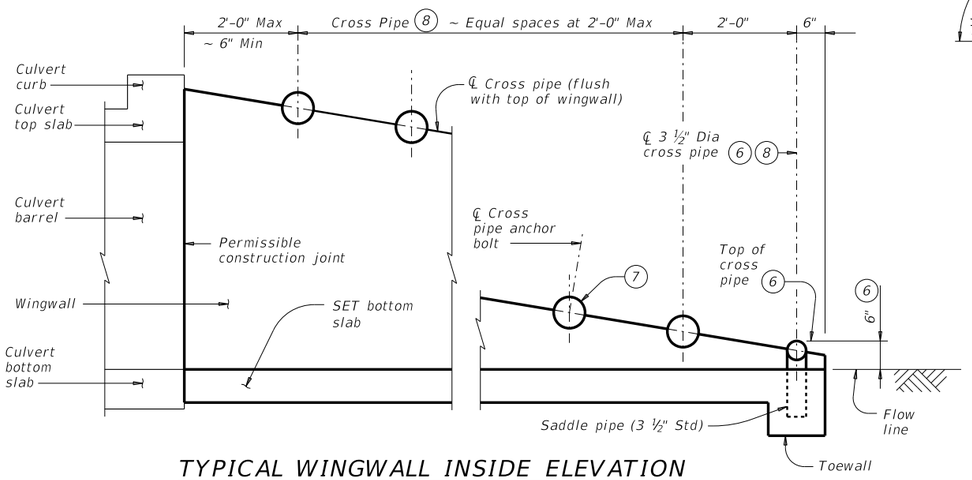
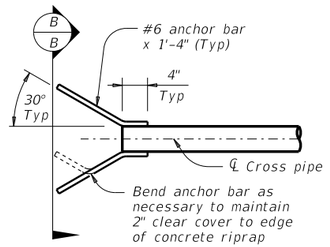
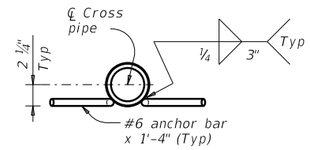


TYPICAL WINGWALL INSIDE ELEVATION

(Showing installation of cross pipes.)



PART PLAN



SECTION B-B

OPTIONAL ANCHOR BAR DETAILS

REQUIRED PIPE SIZES (8)		
Culvert Span Sizes	Cross Pipe Size	Sleeve Pipe Size (9)
First Pipe	3 ½" STD	2 ½" STD
30" to 42"	4" STD	3" STD
48" to 72"	5" STD	4" STD
78" to 120"	6" STD	5" STD

STANDARD PIPE SIZES		
Pipe Size	Pipe O.D.	Pipe I.D.
2 ½" STD	2.875"	2.469"
3" STD	3.500"	3.068"
3 ½" STD	4.000"	3.548"
4" STD	4.500"	4.026"
5" STD	5.563"	5.047"
6" STD	6.625"	6.065"

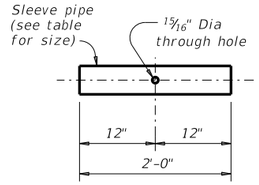
(6) The proper installation of the first cross pipe is critical for vechicle saftey. Place the top of the first cross pipe at no more than 6" above the flow line.

(7) Always install the third cross pipe from the bottom of the culvert using a bolted connection. Take care to ensure that concrete does not flow into this cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

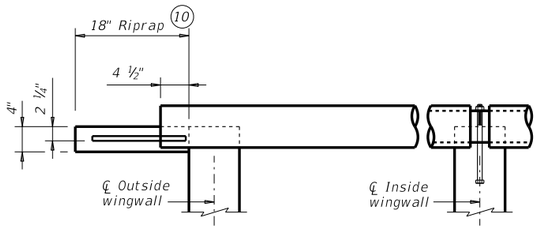
(8) Provide cross pipes and sleeve pipes (if required) as shown in the Required Pipe Sizes table. Provide 3 1#2" saddle pipes for the 3 1#2" first cross pipe.

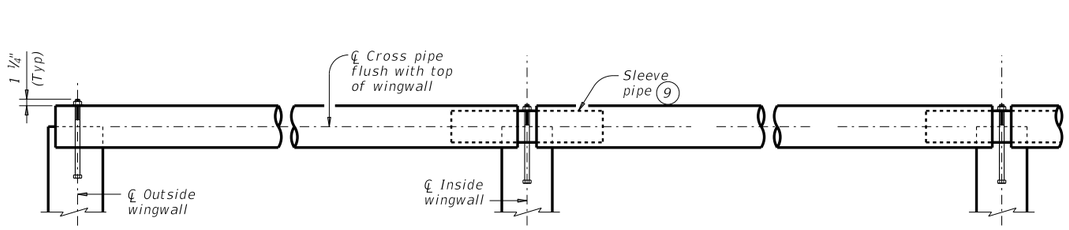
(9) At Contractor's option, make the cross pipe continuous across the inside wingwalls. If this option is selected, omit the sleeve pipe and make a 15#16" diameter throughhole in the cross pipe to accept the anchor bolt at the centerline of each interior wingwall.

(10) Provide riprap when using the Optional Anchor Bar details. Riprap is included in the bid price for Safety End Treatment. Provide riprap in accordance with Item 432, "Riprap".



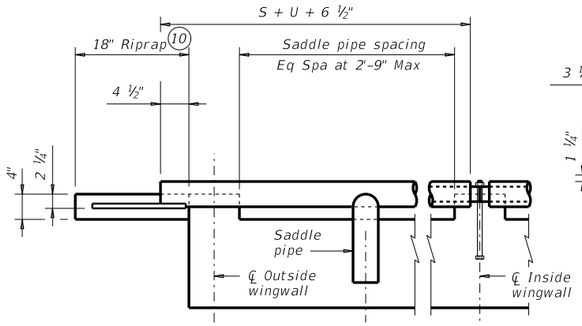
SLEEVE PIPE DETAILS (9)

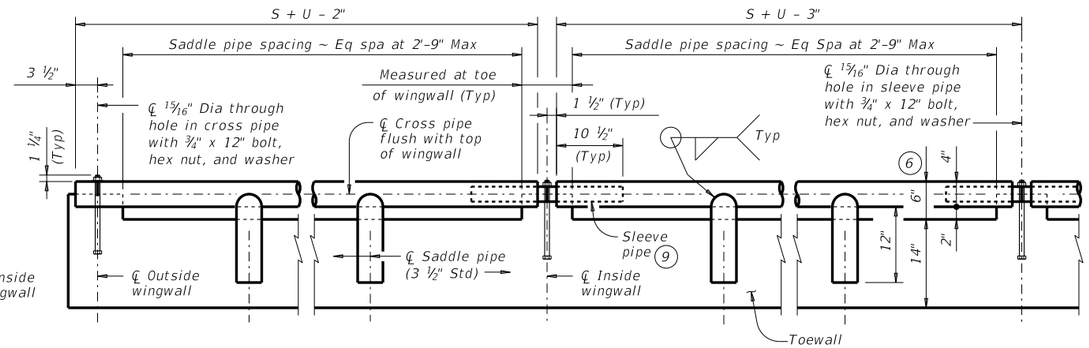




SECTION THROUGH INSTALLATION OF TYPICAL FULL CROSS PIPE

(Anchor details and dimensions are similar to those shown below in Section Through Installation of 3 ½" First Cross Pipe detail.)





OUTSIDE CULVERT BARREL WITH OPTIONAL ANCHOR BARS & RIPRAP

OUTSIDE CULVERT BARREL WITH BOLTED ANCHOR

INSIDE CULVERT BARREL

SECTION THROUGH INSTALLATION OF 3 ½" FIRST CROSS PIPE

CROSS PIPE INSTALLATION DETAILS

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR BOX CULVERTS
(MAXIMUM Hw = 7'-0")
TYPE I ~ PARALLEL DRAINAGE

SETB-PD

FILE: setbpdse-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
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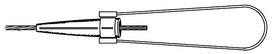
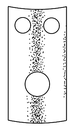


COMPRESSION FITTING

SOURCES:
RELIABLE ELECTRIC NO.5264
FARGO NO. OR EQUAL

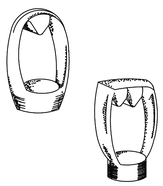
THIMBLEYE BOLT (Angle Type)

SOURCES:
HUBBELL POWER SYS. NO. 5016
MCLEAN POWER SYS. NO. J8154
OR EQUAL



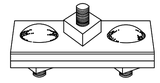
LIFT PLATE

SOURCES:
HUBBELL POWER SYS. NO. 7898
MCLEAN POWER SYS. NO. J7890
OR EQUAL



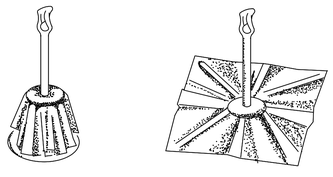
EYE NUTS (Twineye & tripleye)

SOURCES:
HUBBELL POWER SYS. NO. 6560 (TWIN), 6510 (SINGLE)
MCLEAN POWER SYS. NO. J6515 (TWIN), J6510 (SINGLE)
OR EQUAL



GUY CLAMP (3-Bolt)

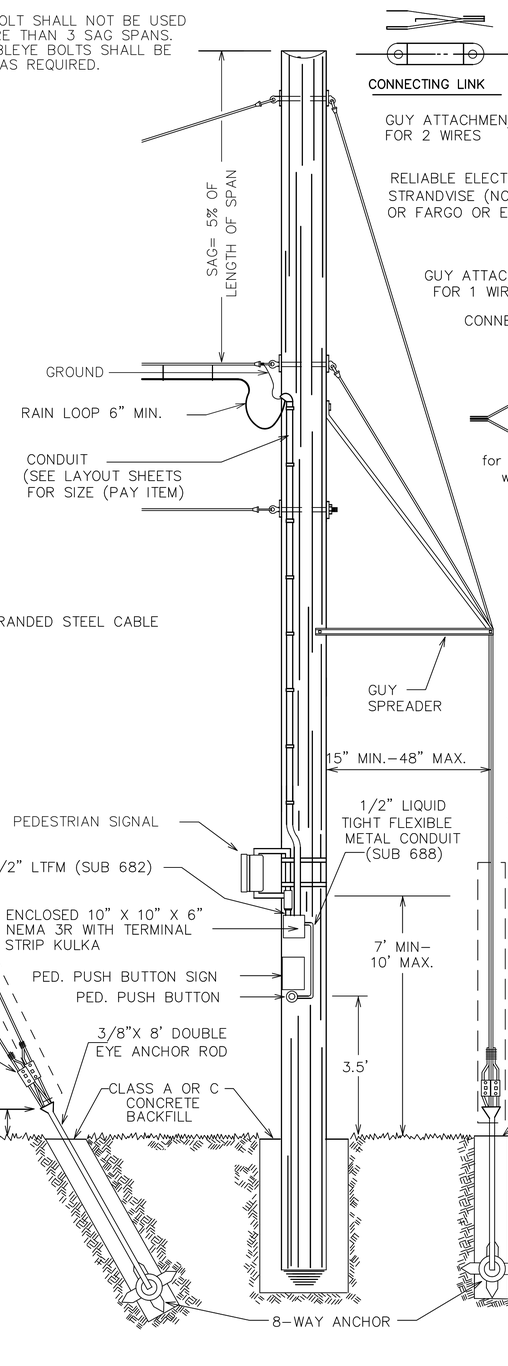
6" HEAVY GUY CLAMP WITH 3-5/8" BOLTS OR RELIABLE ELECTRIC STRANDVISE WITH FLEXIBLE BAIL (NO. 5264), FARGO STRANDVISE, HUBBELL POWER SYS. NO. 6460, OR EQUAL

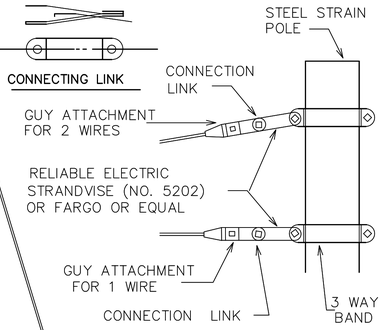


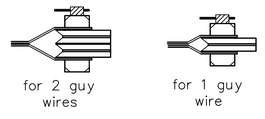
8-WAY ANCHOR

SOURCES:
HUBBELL POWER SYS. NO. 1283
MCLEAN POWER SYS. NO. J0283
OR EQUAL

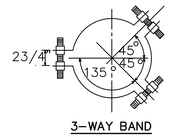
EACH THIMBLEYE BOLT SHALL NOT BE USED TO SUPPORT MORE THAN 3 SAG SPANS. ADDITIONAL THIMBLEYE BOLTS SHALL BE ADDED AS REQUIRED.







GUY ATTACHMENT



3-WAY BAND

SPAN CABLE ATTACHMENT DETAILS FOR STEEL STRAIN POLES

* ANCHORS SHOULD BE LOCATED SO THAT THE DISTANCE BETWEEN THE ANCHOR AND THE POLE BUTT IS EQUAL TO THE DISTANCE FROM THE GROUND TO THE POINT OF GUY ATTACHMENT. IN NO CASE SHOULD THE DISTANCE FROM THE ANCHOR TO THE POLE BUTT BE LESS THAN 1/3 OF THE DISTANCE FROM THE GROUND TO THE POINT OF GUY ATTACHMENT.

SHEET 1 OF 3

Texas Department of Transportation

CONSTRUCTION DETAILS FOR SPAN WIRE MOUNTED TRAFFIC SIGNALS

DALLAS DISTRICT STANDARD

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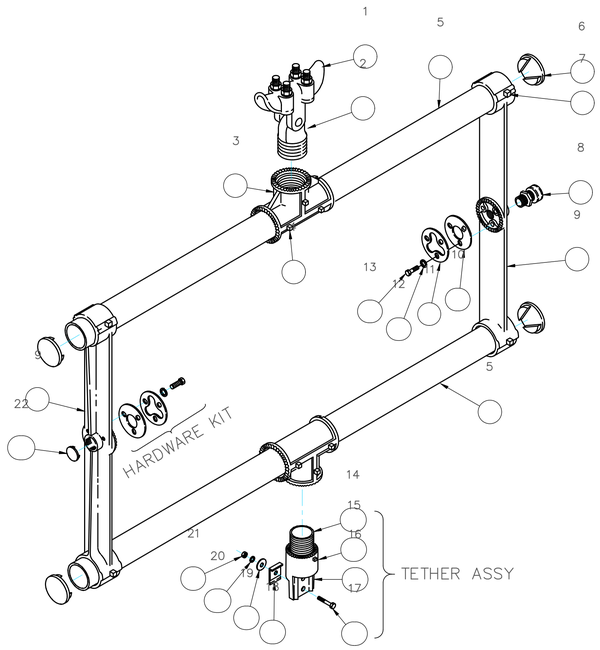
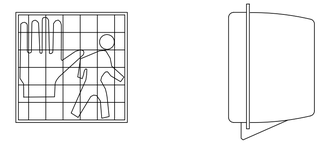
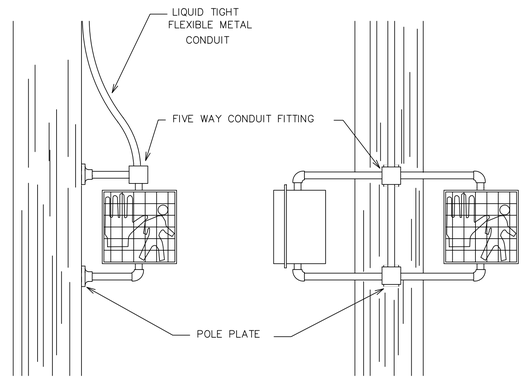


BOTTOM TETHERED,SPAN WIRE SIGNAL HEAD HARDWARE ASSEMBLY (BACKPLATE NOT SHOWN)

ITEM	DESCRIPTION	QTY
1	SPAN WIRE CLAMP, IRON, W/ U-BOLTS	1
2	SPAN WIRE ADAPTER, ALUM W/ STAINLESS BUSHING	1
3	TEE HORIZONTAL SLIP, DIE CAST ALUM	2
4	SCREW, SET SQ HD, 1/4"-20 X 1/2", STAINLESS	6
5	TUBE, 11/2" X LENGTH, ALUM	2
6	TUBE CAP, 11/2", PLASTIC	4
7	SCREW, SET SQ HD, 5/16"-18 X 5/8", STAINLESS	8
8	CGB,3/4" .55-.65, ZINC 1	1
9	CAST ARM, FOR HORIZONTAL MOUNTED SIGNAL, ALUM	2
10	GASKET, TRI-BOLT, 1/16" X 70 DURO NEOPRENE	2
11	WASHER, SLOTTED, ZINC 2	2
12	WASHER, LOCK SPLIT, 1/4", STAINLESS	6
13	BOLT, HEX HD,1/4"-20 X 11/2", GRADE 5, STAINLESS	6
14	NIPPLE, ALLTHREAD, 11/2" NPS X 2.13", ALUM	1
15	SCREW, SET SQ HD, 1/4"-20 X 5/8", STAINLESS	1
16	BODY, 11/2", HANGER, ALUM	1
17	BOLT, HEX HD,5/16"-18 X 11/2", STAINLESS	1
18	PLATE, TETHER, 1-HOLE, ALUM	1
19	WASHER, FENDER, 5/16", STAINLESS	1
20	WASHER, SPLIT LOCK, 5/16", STAINLESS	1
21	NUT, HEX HD, 5/16"-18, STAINLESS	1
22	CAP, EN-3/4, BLUE (FOR CGB)	1

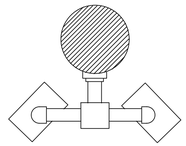


"EGGCRATE" VISOR PEDESTRIAN SIGNAL
WITH ONE-PIECE REFLECTOR



152A
ONE-WAY
ADJUSTABLE FACE SIGNAL FOR
WOOD POLE MOUNTING

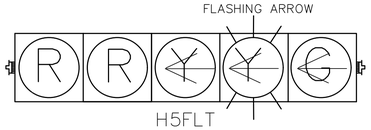
143C
TWO-WAY
ADJUSTABLE FACE SIGNAL FOR
WOOD POLE MOUNTING



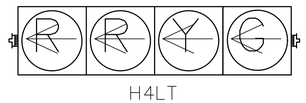
143C
PLAN VIEW

SIGN R10-3e
(LEFT OR RIGHT ARROW)

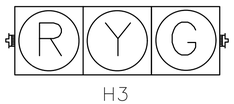
PEDESTRIAN PUSHBUTTON
SIGN DETAILS



H5FLT
TYPICAL SPAN WIRE
HORIZONTAL MOUNT
INSTALLATION



H4LT
TYPICAL SPAN WIRE
HORIZONTAL MOUNT
INSTALLATION

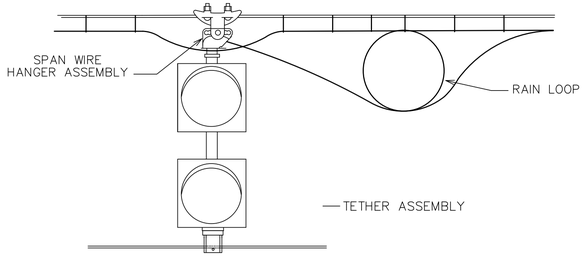


H3
TYPICAL SPAN WIRE
HORIZONTAL MOUNT
INSTALLATION

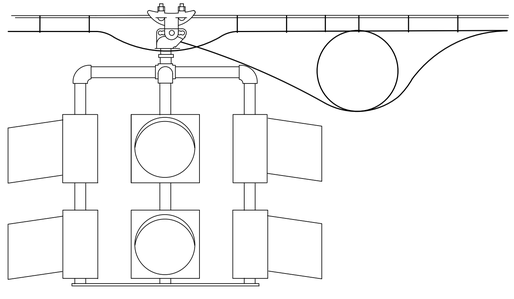
SPAN WIRE FLASHING BEACON SIGNAL HEAD HANGER ASSEMBLY

ITEM	DESCRIPTION	QTY
1	SPAN WIRE CLAMP, IRON, W/ U-BOLTS	1
2	WIRE OUTLET BODY, 3/4", ALUM	1
3	SET SCREW, SQUARE HD, CUP POINT, 1/4"-20X5/8", TYPE 304 STAINLESS	1
4	LOCKRING, SERRATED, 380 DIE CAST ALUM	1
5	GASKET, 70 DURO NEOPRENE	1
6	NIPPLE, HEX, 1-1/2" NPS, ALUM	1
7	KIT, SIGNAL CLOSURE	1
8	GROMMET, 1-1/2", W/ DIAPHRAGM	1

MINIMUM 1" SEPARATION FROM
SIGNAL HEAD MOUNTING BRACKET

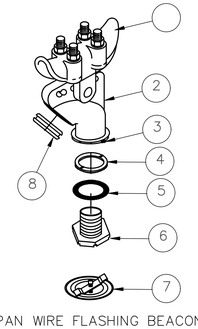


TYPICAL
ONE-WAY FLASHING BEACON
INSTALLATION



TYPICAL
FOUR-WAY FLASHING BEACON
INSTALLATION

1



SPAN WIRE FLASHING BEACON
SIGNAL HEAD HANGER ASSEMBLY

SHEET 2 OF 3

Texas Department of Transportation | *Traffic Safety Division Standard*

CONSTRUCTION DETAILS FOR SPAN WIRE MOUNTED TRAFFIC SIGNALS

DALLAS DISTRICT STANDARD

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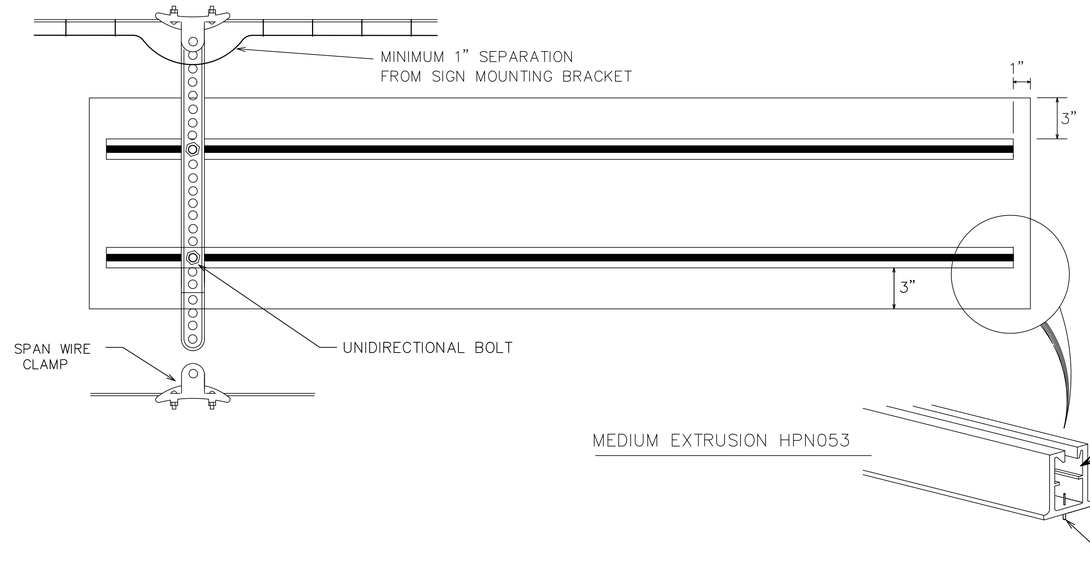
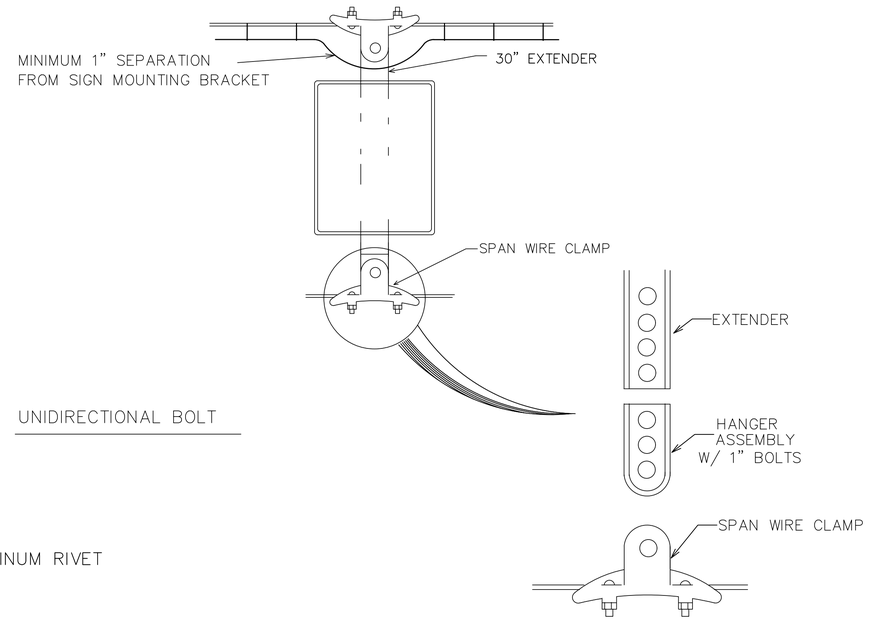
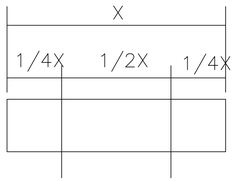
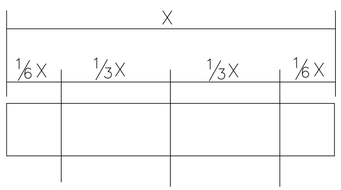




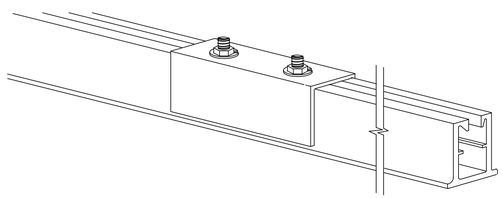




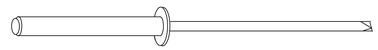
HANGER ASSEMBLY DETAILS

NOTES: 1. BASED ON SIGN WIDTH, THE NUMBER OF VERTICAL SUPPORTS REQUIRED ARE AS FOLLOWS:
3'–0" OR LESS – 1 SUPPORT REQUIRED
>3'–0" UP TO 8'–0" – 2 SUPPORTS REQUIRED
>8'–0" – 3 SUPPORTS REQUIRED
SEE DIAGRAMS FOR SIGN SUPPORT SPACING

2. FOR STREET NAME SIGNS, EXTRUDED ALUMINUM SHALL BE MOUNTED FOR HORIZONTAL SUPPORT AS SHOWN.



5" ALUMINUM COUPLING
6061–T6



ALUMINUM RIVET

NOTE: ALUMINUM RIVETS SHALL BE USED TO ATTACH THE SIGN TO THE EXTRUDED ALUMINUM. SPACINGS OF RIVETS SHALL BE 6" O.C.

SHEET 3 OF 3

Texas Department of Transportation

Traffic Safety Division Standard

CONSTRUCTION DETAILS FOR SPAN WIRE MOUNTED TRAFFIC SIGNALS

DALLAS DISTRICT STANDARD

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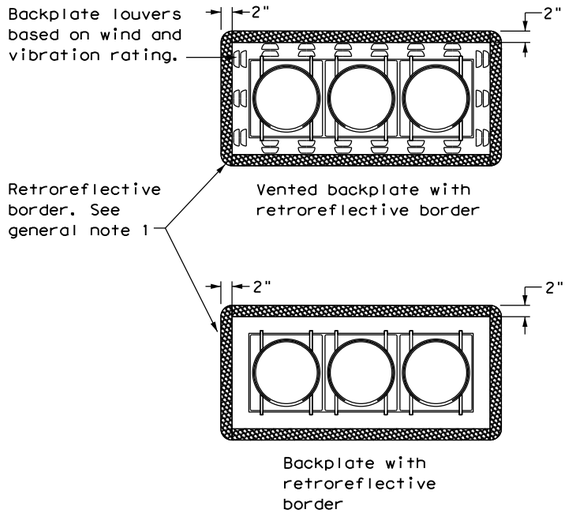
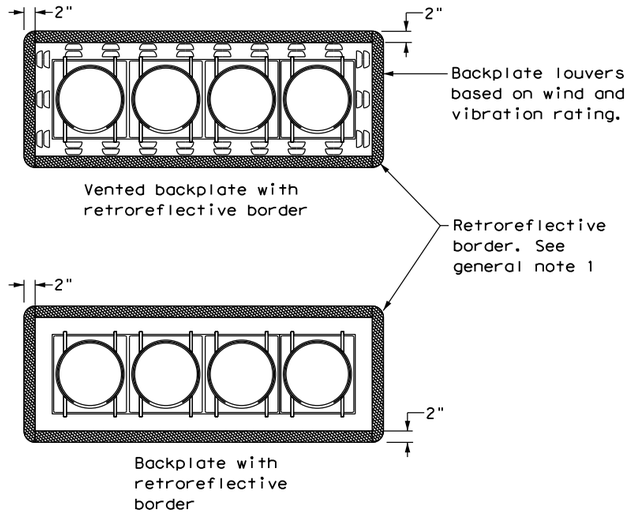
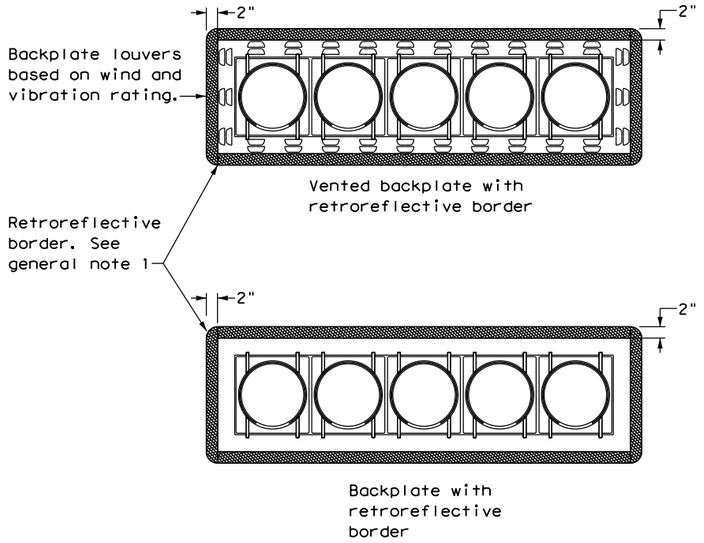


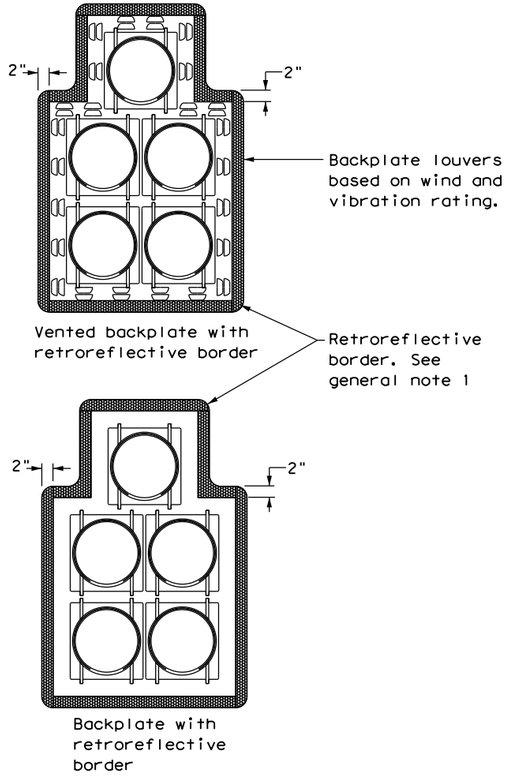
THREE-SECTION HEAD
HORIZONTAL OR VERTICAL



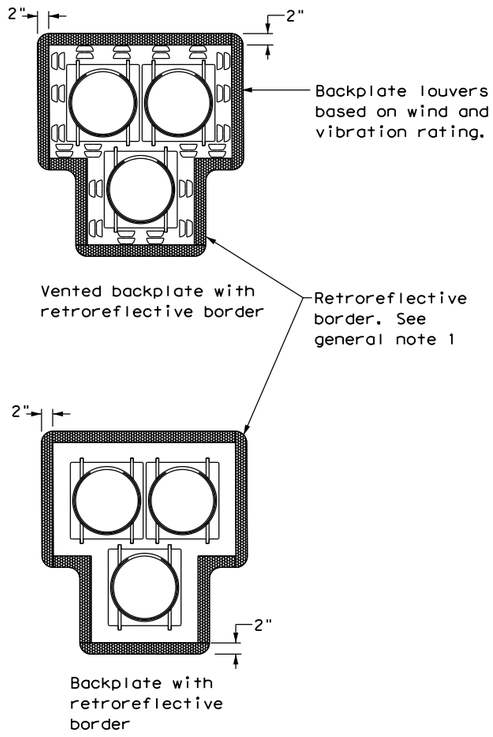
FOUR-SECTION HEAD
HORIZONTAL OR VERTICAL



FIVE-SECTION HEAD
HORIZONTAL OR VERTICAL



FIVE-SECTION HEAD
CLUSTER



PEDESTRIAN HYBRID
BEACON

GENERAL NOTES:

1. Backplates are optional for traffic signals and pedestrian hybrid beacons. When backplates are used, a 2-inch wide fluorescent yellow AASHTO Type B_{FL} or C_{FL} retroreflective border conforming to TxDOT DMS-8300 is required. Place on all approaches when used.
2. Signal head and backplate compatability must be verified by the contractor prior to installation.
3. When using backplates on signal heads, venting is preferred to reduce cyclic vibration stress.
4. When a vented backplate is used, the retroreflective border must not be placed over the louvers.
5. This standard sheet applies to all signal heads with backplates, including but not limited to:
   - Pole mounted
   - Overhead mounted
   - Span wire mounted
   - Mast arm mounted
   - Vertical signal heads
   - Horizontal signal heads
   - Clustered signal heads
   - Pedestrian hybrid beacons

Texas Department of Transportation

Traffic Safety Division Standard

TRAFFIC SIGNAL HEAD WITH BACKPLATE

TS-BP-20

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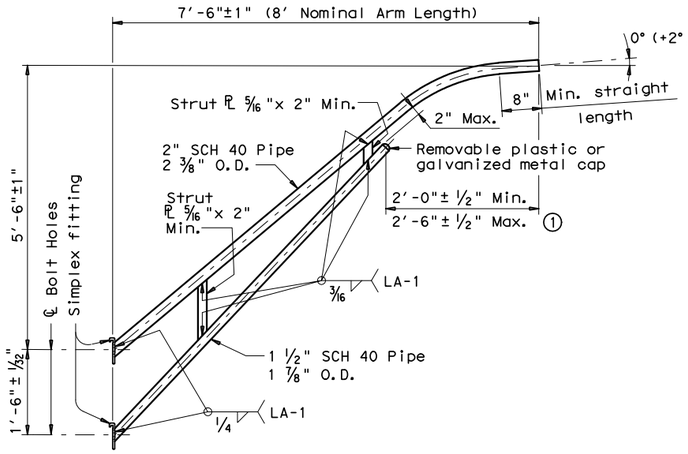
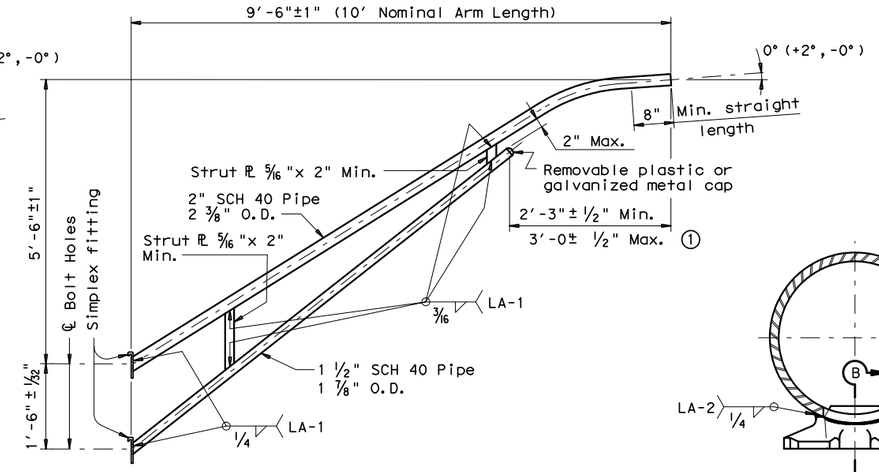
FILE:

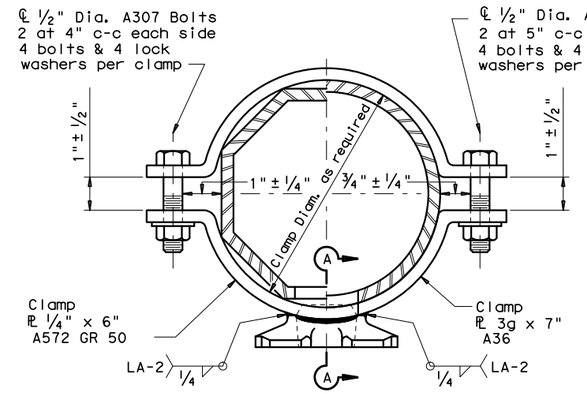


8-FOOT LUMINAIRE ARM



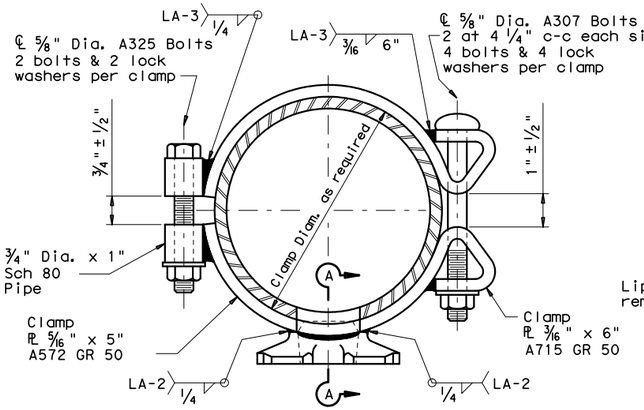
10-FOOT LUMINAIRE ARM

DIRECT ATTACHMENT DETAIL



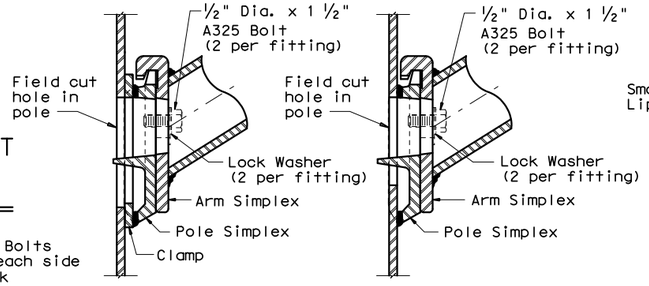
CLAMP ATTACHMENT DETAIL NO. 1 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 2 (HALF SECTION)



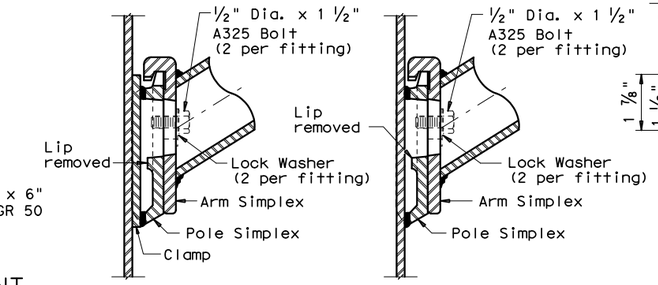
CLAMP ATTACHMENT DETAIL NO. 3 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO. 4 (HALF SECTION)



UPPER SIMPLEX FITTING

UPPER SIMPLEX FITTING

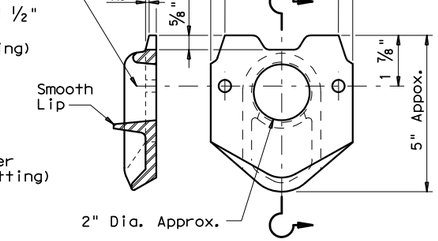


LOWER SIMPLEX FITTING

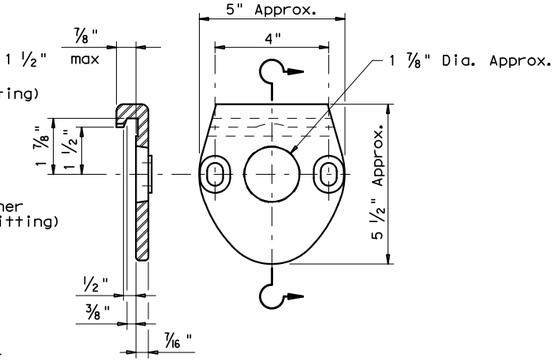
SECTON A-A

LOWER SIMPLEX FITTING

SECTON B-B



POLE SIMPLEX DETAIL



ARM SIMPLEX DETAIL

MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr.65-35 or A148 Gr.80-50, A576 Gr.1021 ③, or A36 (Arm only)
Arm Pipes	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50 ④, or A1011 HSLAS-F Gr.50 ④
Arm Strut Plates ②	ASTM A36, A572 Gr.50 ④, or A588
Misc.	ASTM designations as noted

① Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.

② Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.

③ A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.

④ ASTM A572, A1008 HSLAS-F, and A1011 HSLAS-F may have higher yield strengths but shall not have less elongation than the grade indicated.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Revisions thereto. Design Wind Speed equals 90 mph plus a 1.3 gust factor. Arms are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq. ft.

Materials and fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absense of specified Fabricaton tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.

Unless otherwise noted, all parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing".

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

Each pole simplex fitting shall be supplied with 2 ASTM A325 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans. When clamp attachment is specified, the Fabricator shall ship the clamp assembly securely attached to the pole at the location shown on the plans.

If clamp assemblies are ordered without poles, the Fabricator shall ship one upper and one lower clamp assembly together in a single package, including all nuts and washers required for the clamps and simplex fittings.

Texas Department of Transportation
Traffic Operations Division

STANDARD ASSEMBLY DRAWINGS FOR LUMINAIRE SUPPORT STRUCTURES

ARM DETAILS

LUM-A-12

DN: LEH	CK: JSY	DW: LTT	CK: TEB

REVISIONS
5-96
1-99
1-12

CONT	SECT	JOB	HIGHWAY

DIST	COUNTY	SHEET NO.
		C14.55

DATE:
FILE:

GENERAL NOTES FOR ALL ELECTRICAL WORK

1. The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.

2. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.

3. Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is ½ in. or less in diameter.

4. Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.

5. Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.

6. When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

1. Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.

2. Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.

3. Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

4. Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.

5. Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.

6. Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

7. Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

8. Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.

9. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.

10. Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

1. Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.

2. Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.

3. Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.

4. Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.

5. When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."

6. Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.

7. During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.

8. Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.

9. Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.

10. Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.

11. At all electrical services, install a 6 AWG solid copper grounding electrode conductor.

12. Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).

13. Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.

14. File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUITS & NOTES

ED(1)-14

FILE:	ed1-14.dgn	DN:	CK:	DW:	CK:
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS					
		DIST	COUNTY		SHEET NO.

DATE:
FILE:

ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS)11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.

2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.

3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.

4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.

2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.

3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.

4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.

5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.

6. Support conductors in illumination poles with a J-hook at the top of the pole.

7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.

8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.

9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.

10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.

11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.

2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.

3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.

4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.

5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.

2. Do not place ground rods in the same drilled hole as a timber pole.

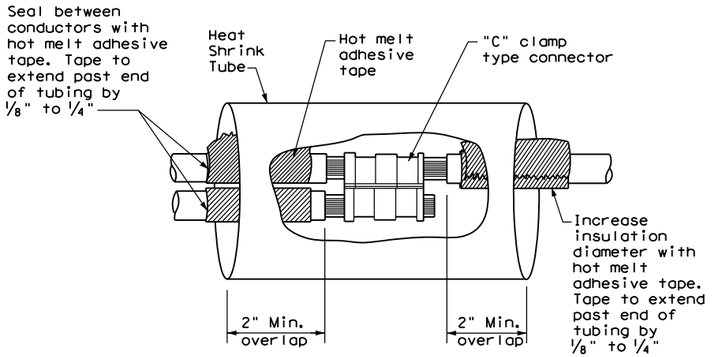
3. Install ground rods so the imprinted part number is at the upper end of the rod.

4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.

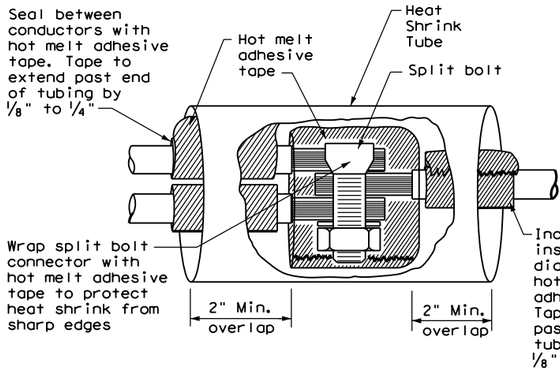
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.

6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.

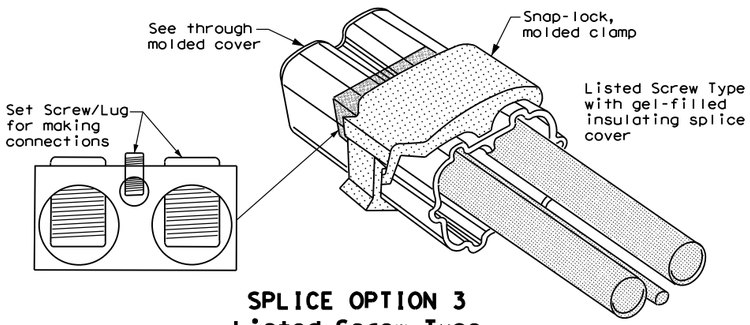
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



SPLICE OPTION 1
Compression Type



SPLICE OPTION 2
Split Bolt Type



SPLICE OPTION 3
Listed Screw Type

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUCTORS

ED(3)-14

FILE: ed3-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

71C

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

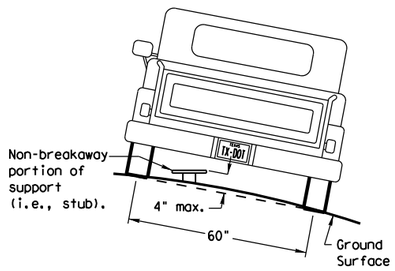
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

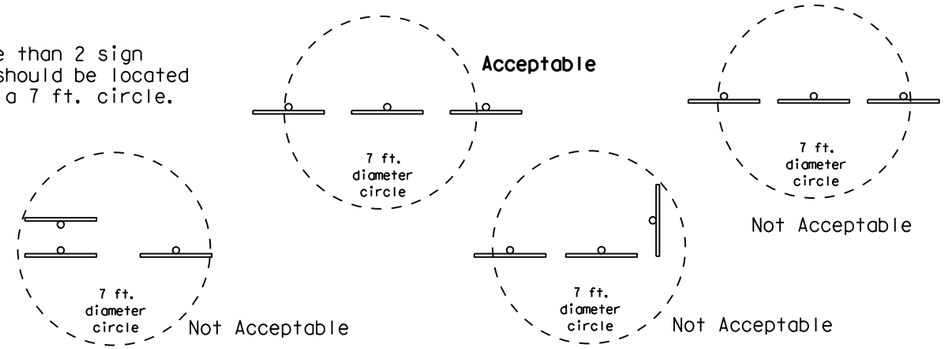
P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



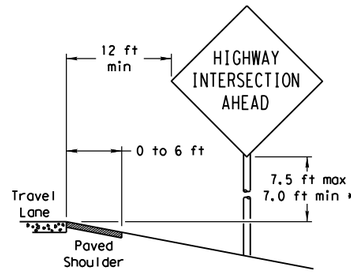
To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

No more than 2 sign posts should be located within a 7 ft. circle.



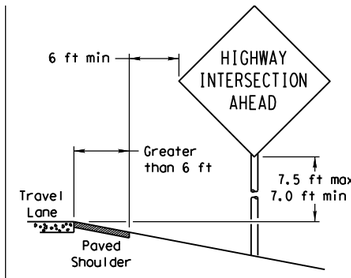
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

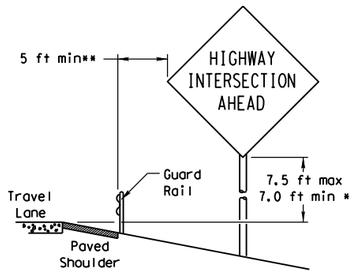
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



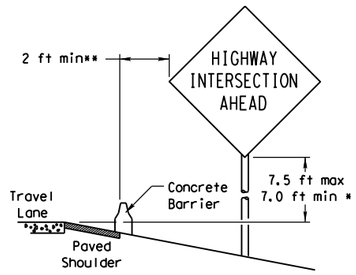
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER



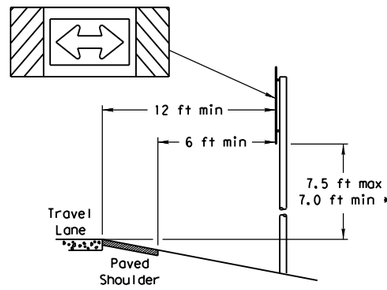
BEHIND GUARDRAIL



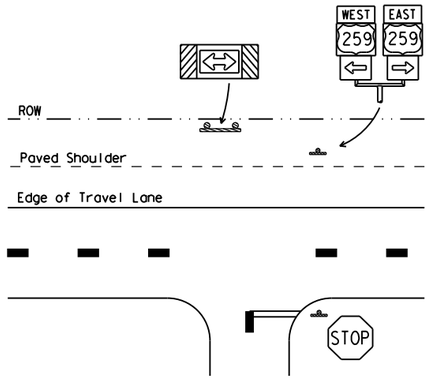
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

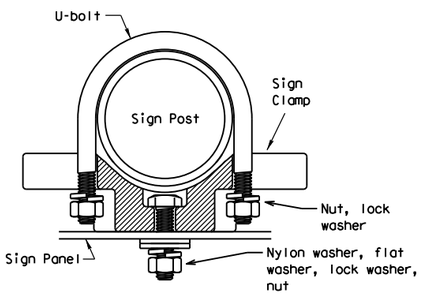
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

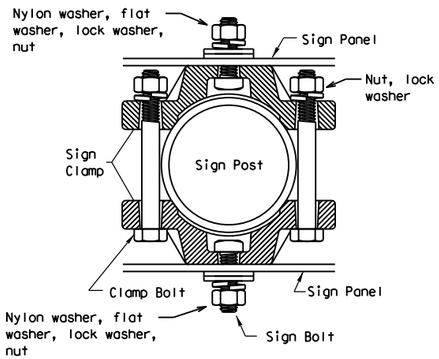
The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs



Back-to-Back Signs



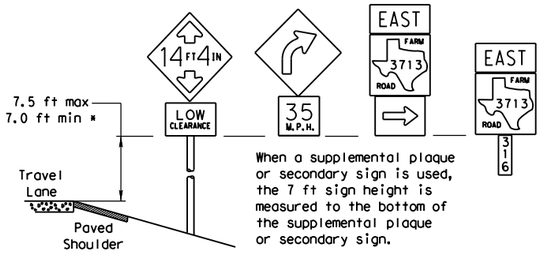
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

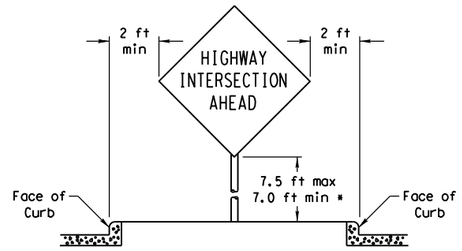
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



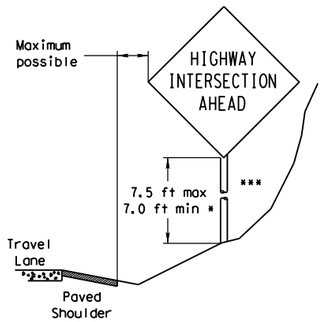
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

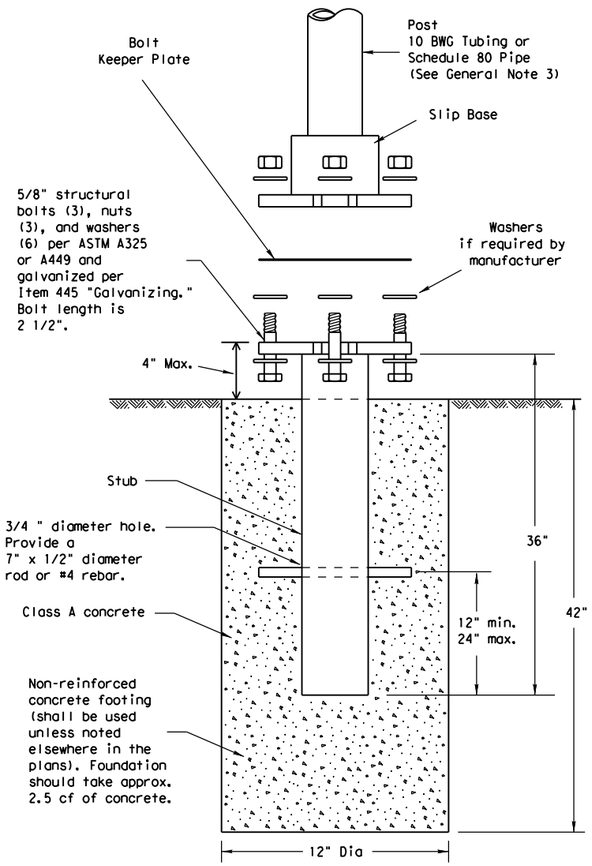
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

©TxDOT July 2002	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

DATE:
FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

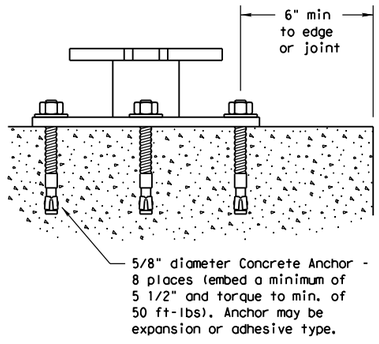
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

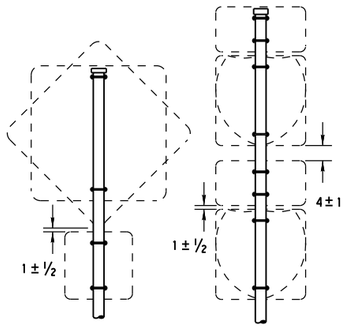
DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY

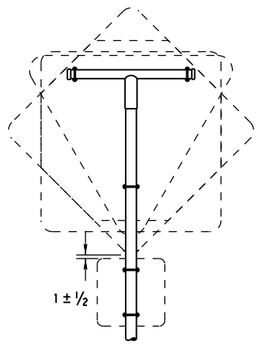
DIST	COUNTY	SHEET NO.

9-08 REVISIONS

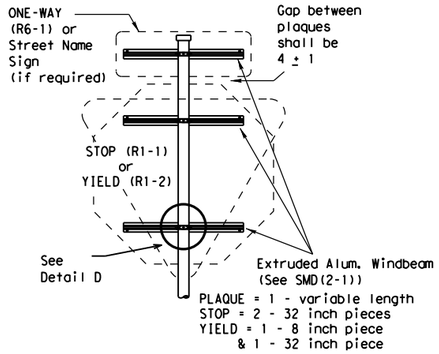
DATE:
FILE:



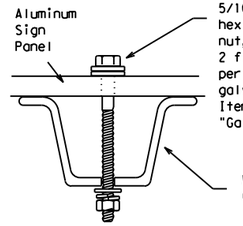
SM RD SGN ASSM TY XXXXX(1)XX(P)



SM RD SGN ASSM TY XXXXX(1)XX(T)

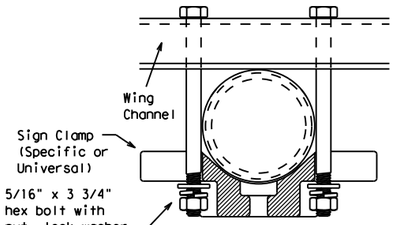


SM RD SGN ASSM TY XXXXX(1)XX(P-BM)



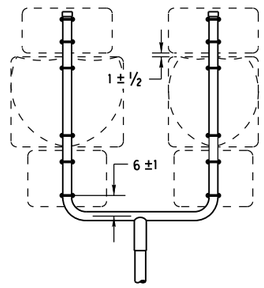
Top View

Detail A



Top View

Detail B



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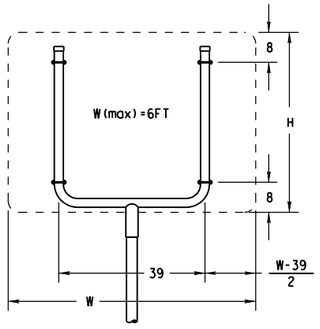

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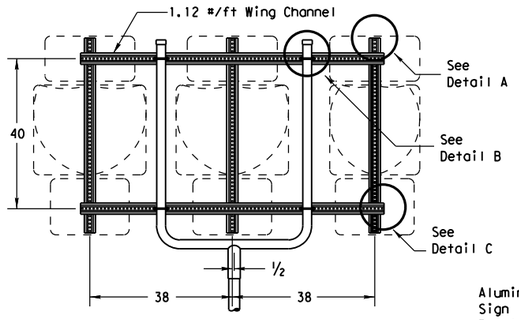
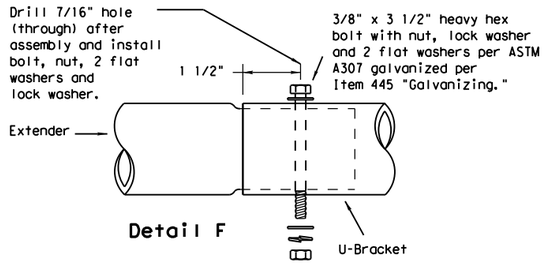
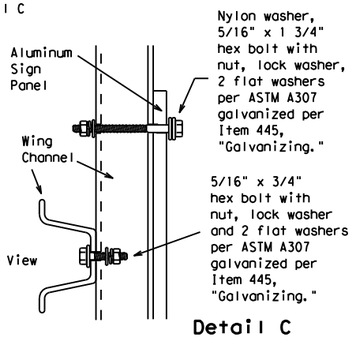


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

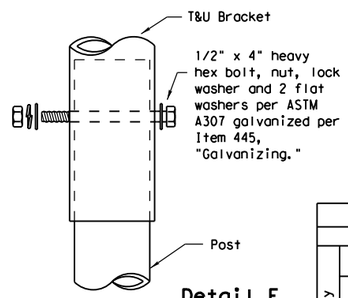


Detail F

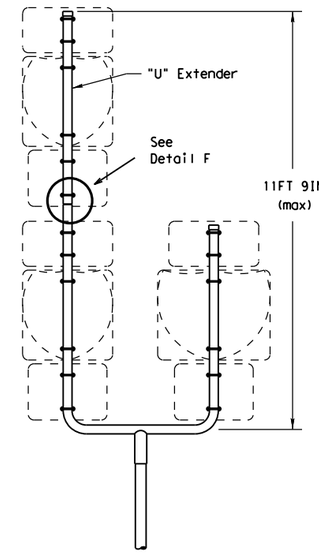
Splices shall only be allowed behind the sign substrate.



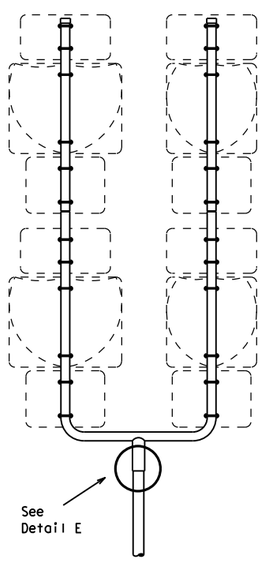
Detail C



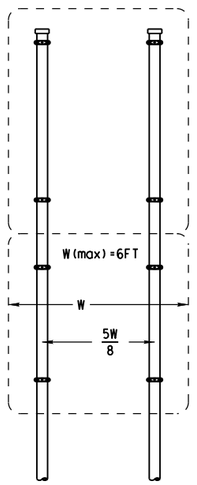
Detail E



SM RD SGN ASSM TY S80(1)XX(U-1EXT)

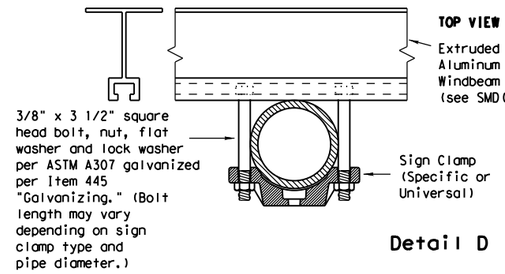


SM RD SGN ASSM TY S80(1)XX(U-2EXT)

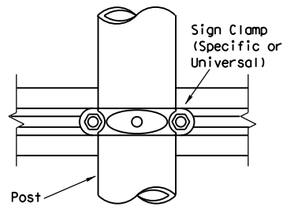


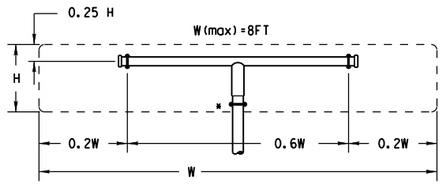
SM RD SGN ASSYM TY XXXXX(2)XX(P)

SIDE VIEW



Detail D

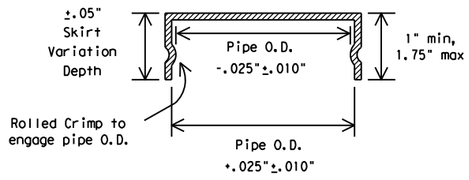




All dimensions are in english unless detailed otherwise.

SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

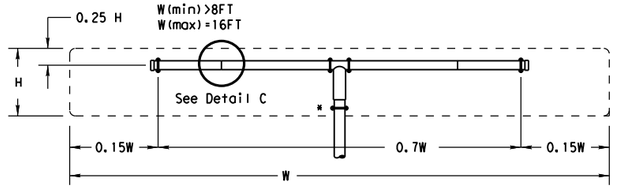
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

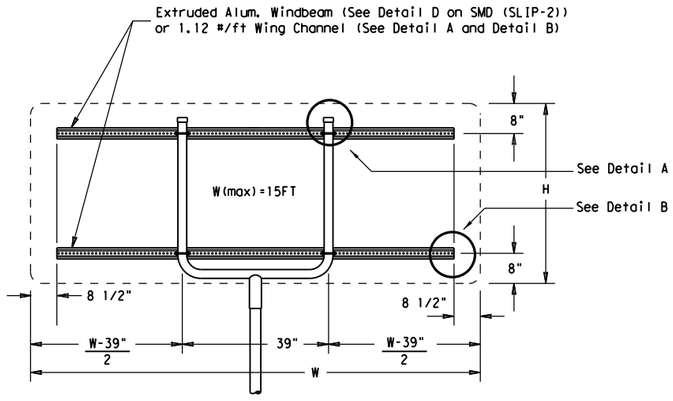
9-08 REVISIONS

DATE:
FILE:

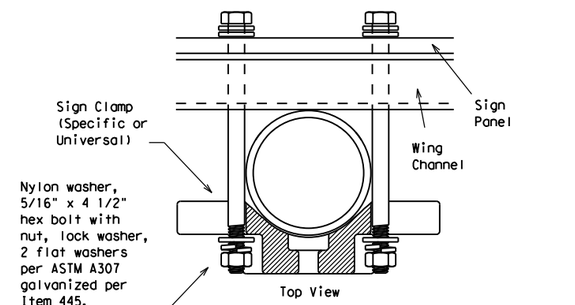


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)

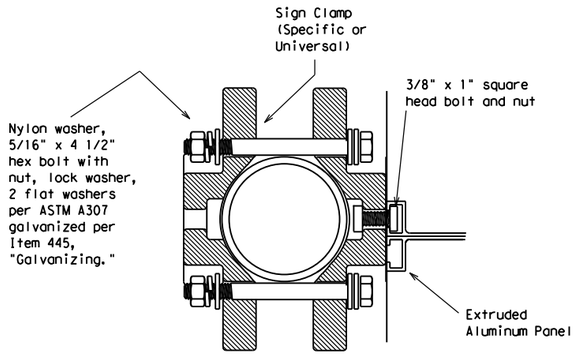
(* - See Note 12)



SM RD SGN ASSM TY XXXXX(1)XX(U-XX)

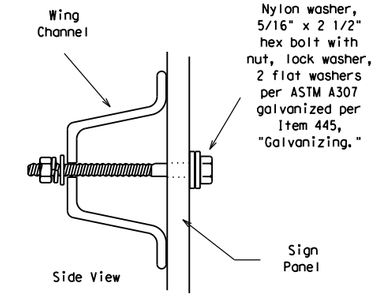


Detail A

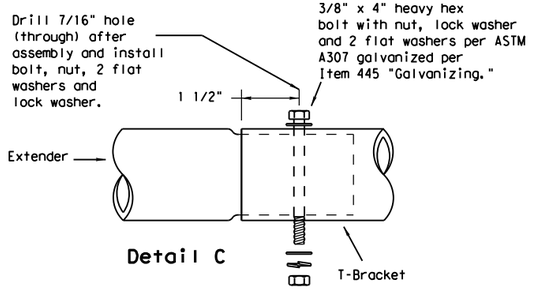


Detail D

EXTRUDED ALUMINUM SIGN WITH T BRACKET

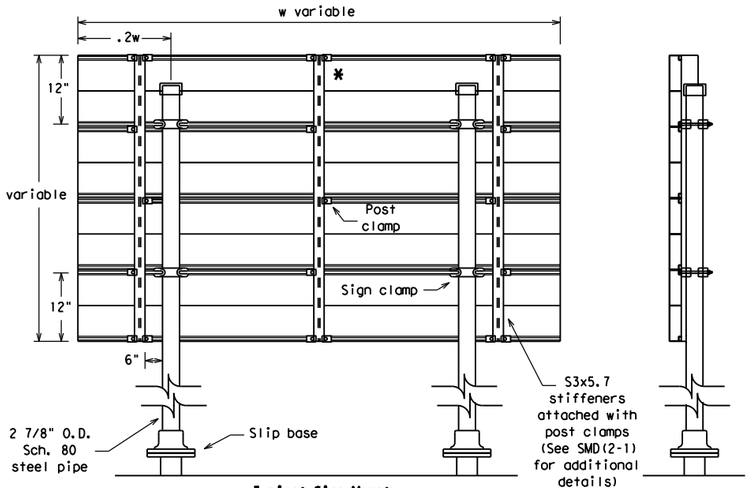


Detail B



Detail C

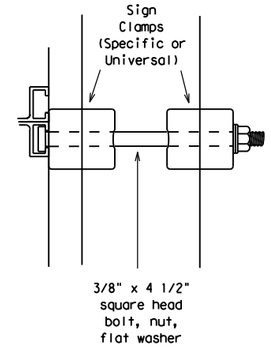
Splices shall only be allowed behind the sign substrate.



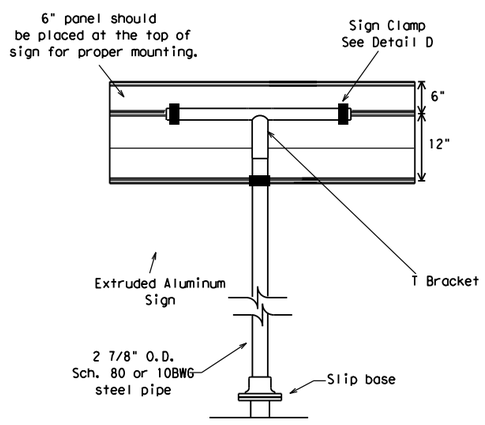
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

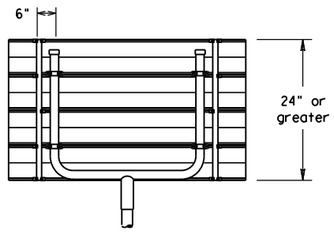
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Detail E



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

1. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
6. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
11. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

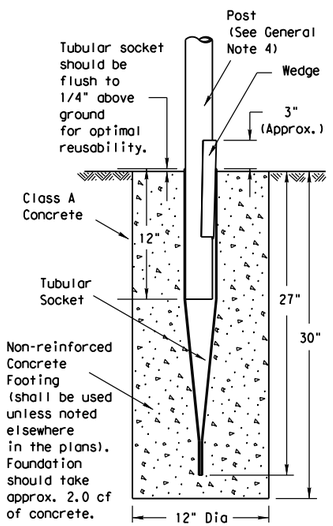
SMD(SLIP-3)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

9-08 REVISIONS

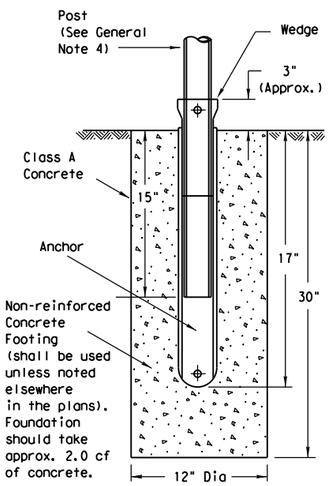
DATE:
FILE:

Wedge Anchor Steel System



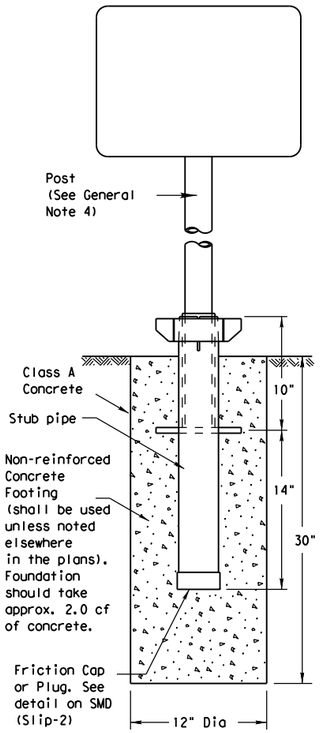
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

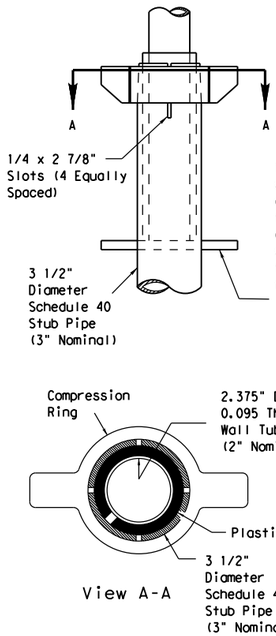


SMD RD SGN ASSM TY TWT(X)WP(X)

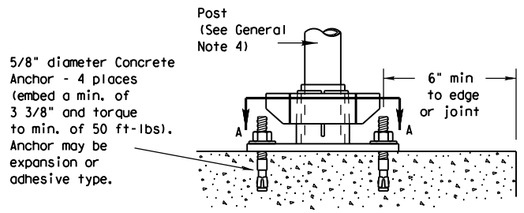
Universal Anchor System with Thin-Walled Tubing Post



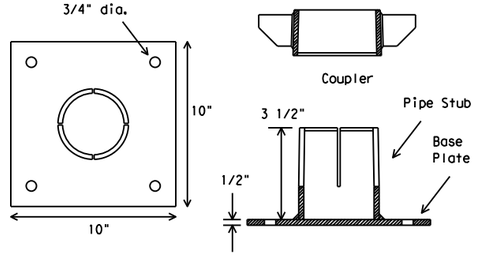
SM RD SGN ASSM TY TWT(X)UA(P)



Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.

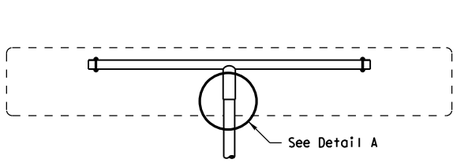


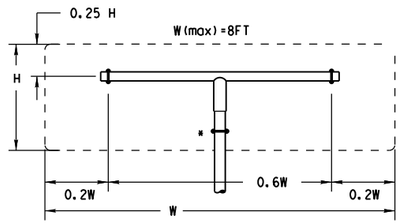
Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.



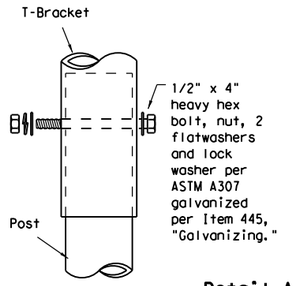
SM RD SGN ASSM TY TWT(X)UB(P)

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post





SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)



Detail A

9/16" hole may need to be drilled through post to accommodate bolt.

NOTE

The devices shall be installed per manufacturer's recommendations.
Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximaely 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

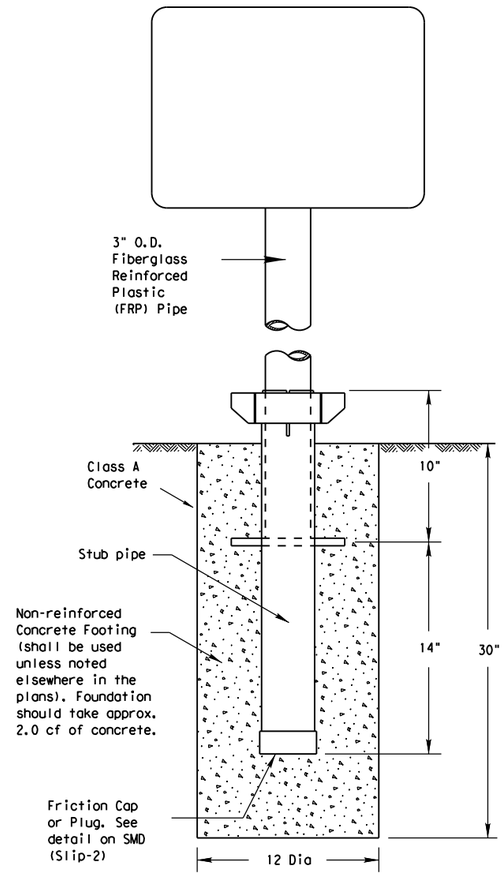
CONT	SECT	JOB	HIGHWAY

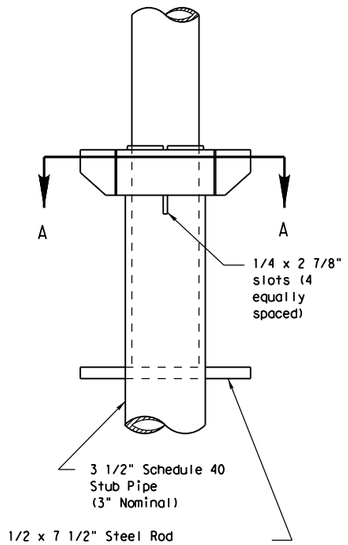
DIST	COUNTY	SHEET NO.

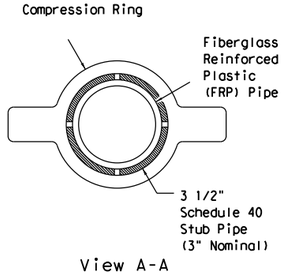
9-08 REVISIONS

DATE:
FILE:

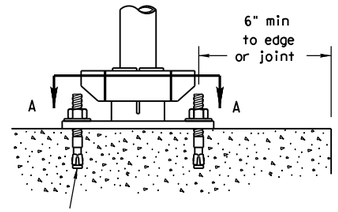
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post







SM RD SGN ASSM TY FRP(X)UA(P)



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

BOLT-DOWN DETAILS

SM RD SGN ASSM TY FRP(X)UB(P)

GENERAL NOTES:

1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is:
   http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

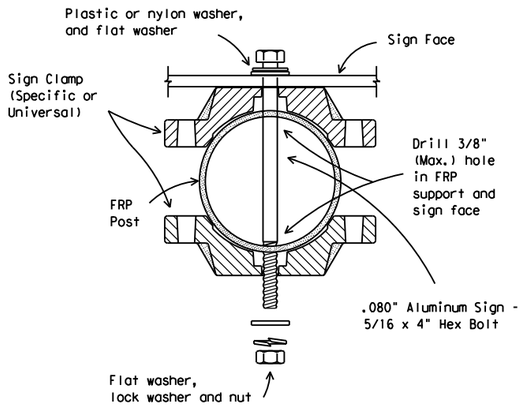
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

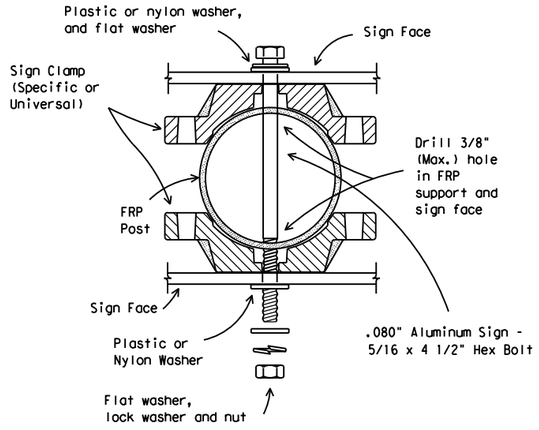
BOLT DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



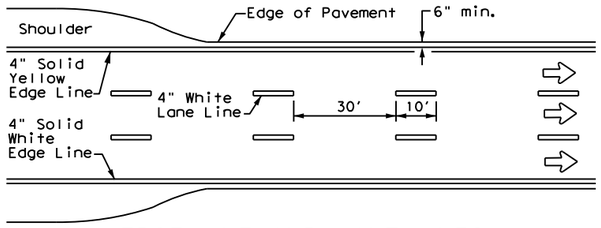
Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

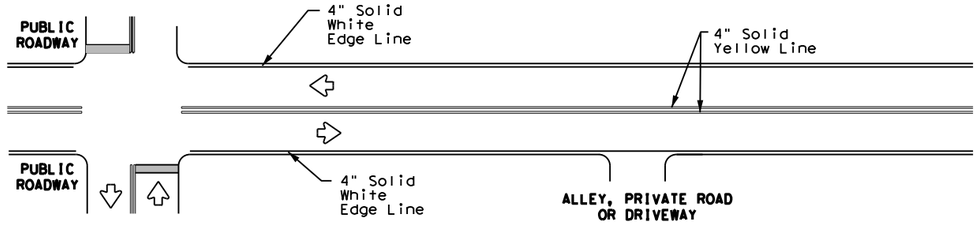
SMD(FRP)-08

©TxDOT July 2002	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

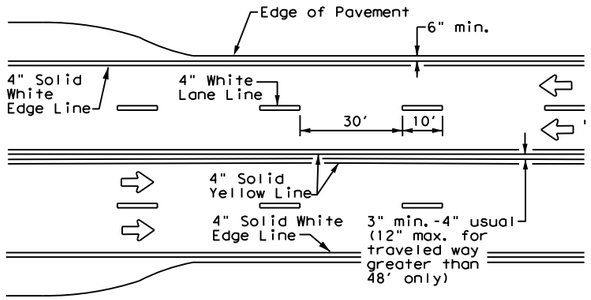
DATE:
FILE:



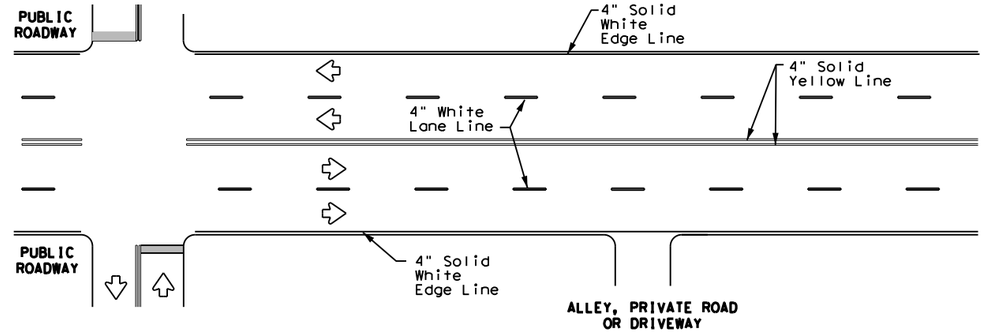
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



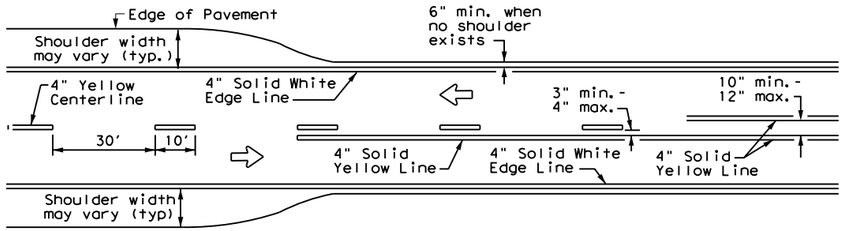
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



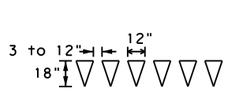
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



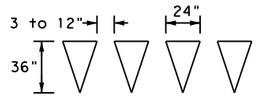
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

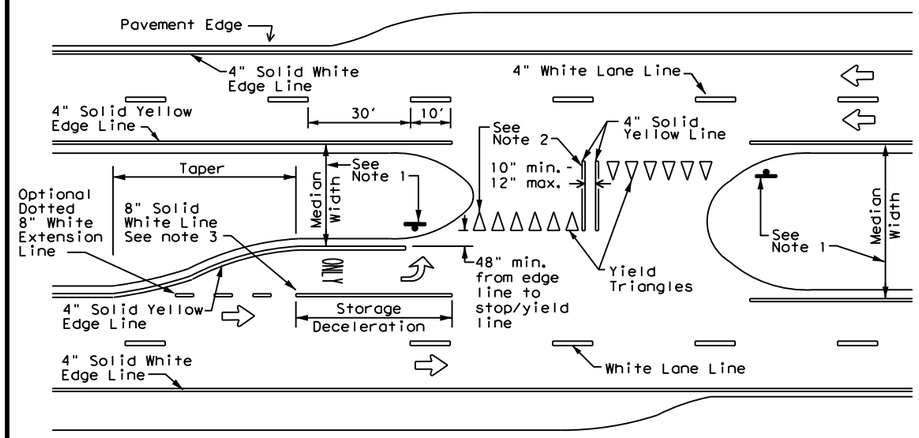


For posted speed on road being marked equal to or less than 40 MPH.



For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.

2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles shall only be used with yield signs.

3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

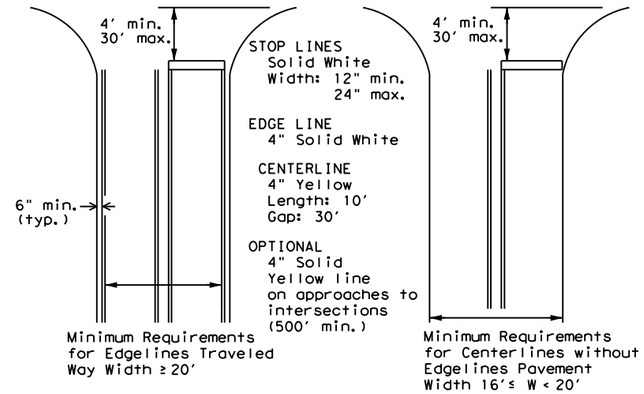
GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

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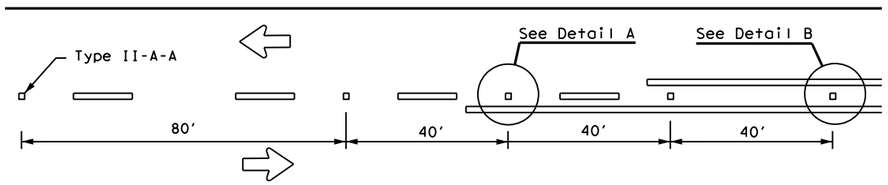
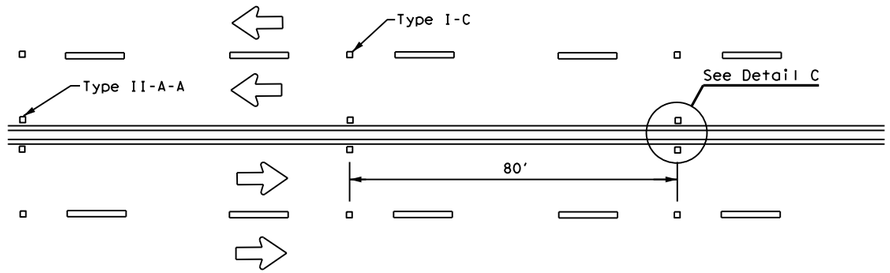
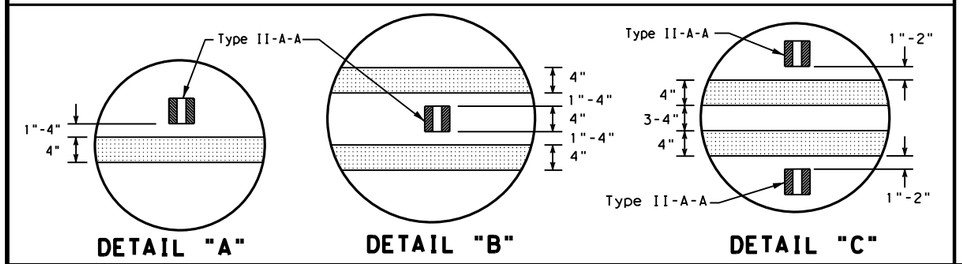
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



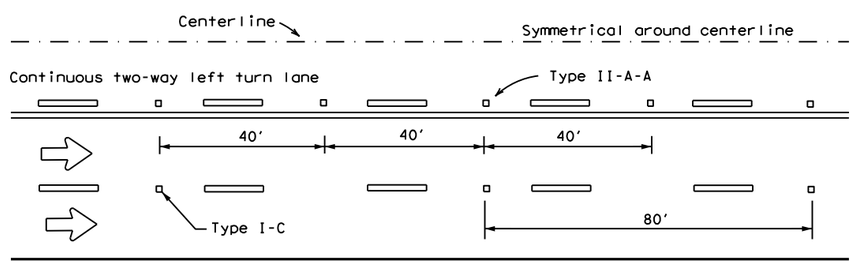
CENTERLINE FOR ALL TWO LANE ROADWAYS



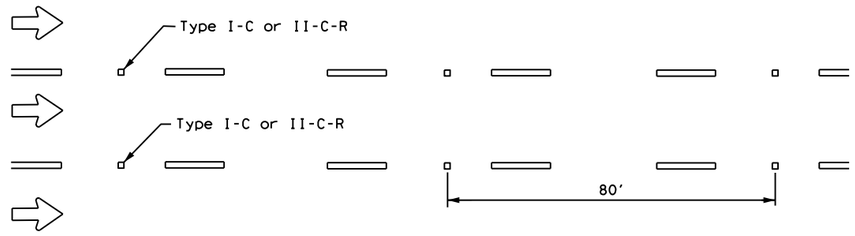
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" **DETAIL "B"** **DETAIL "C"**

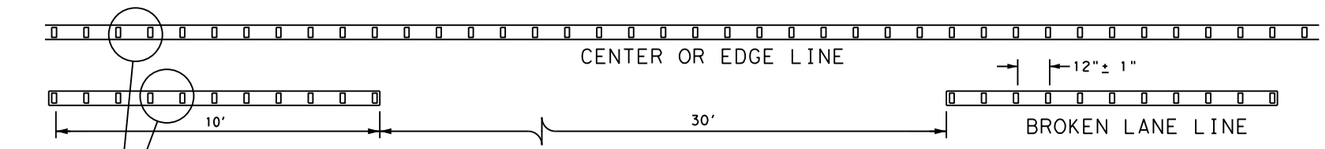


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



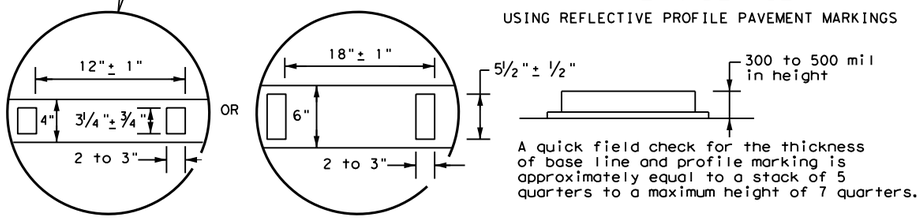
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



4" EDGE LINE, CENTER LINE OR LANE LINE

OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTE

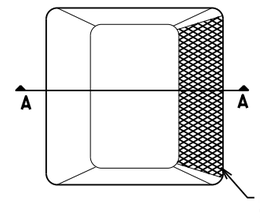
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

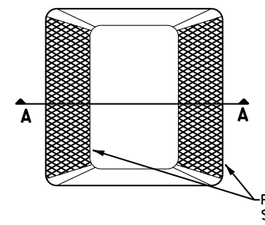
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

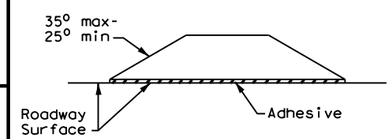
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-20

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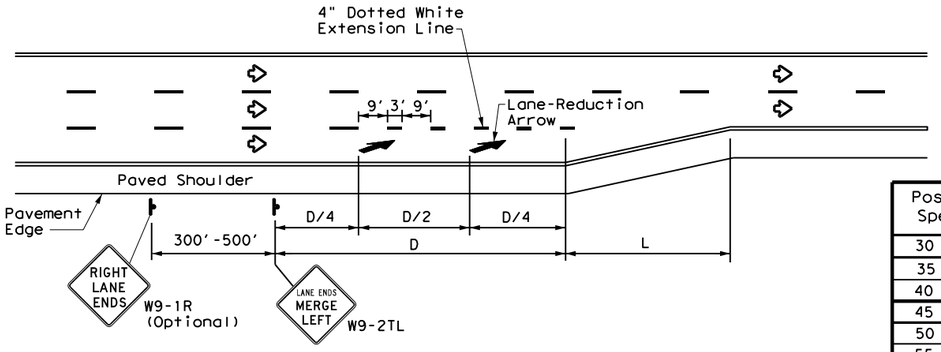
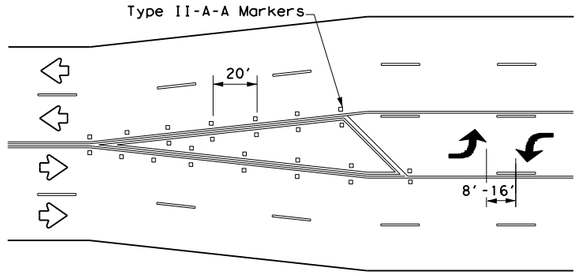


LANE REDUCTION

Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional W9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

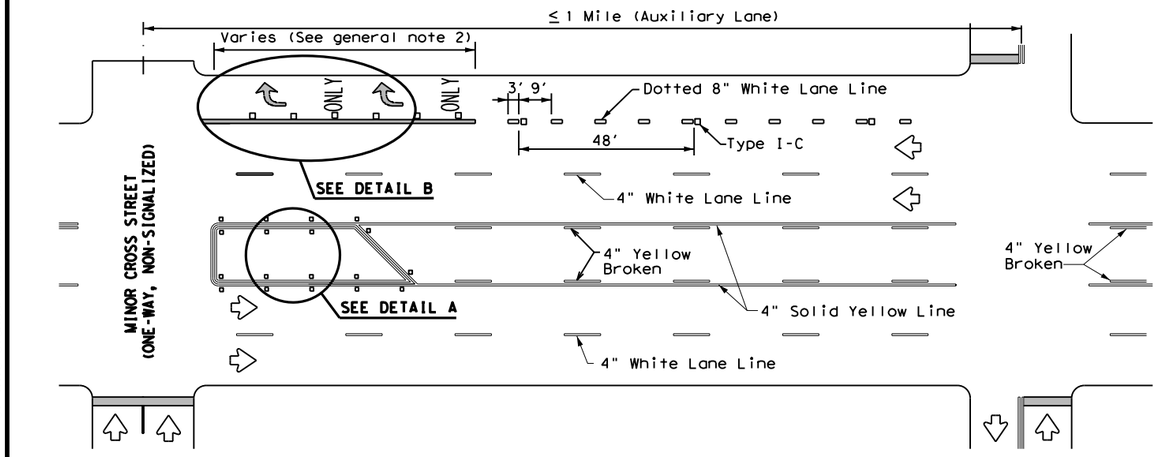
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

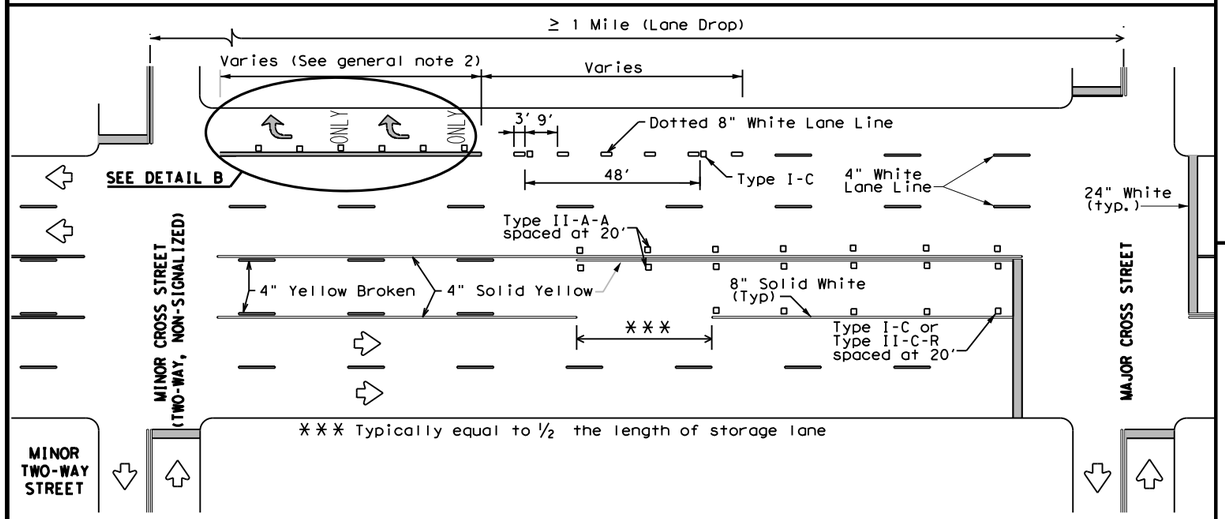
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

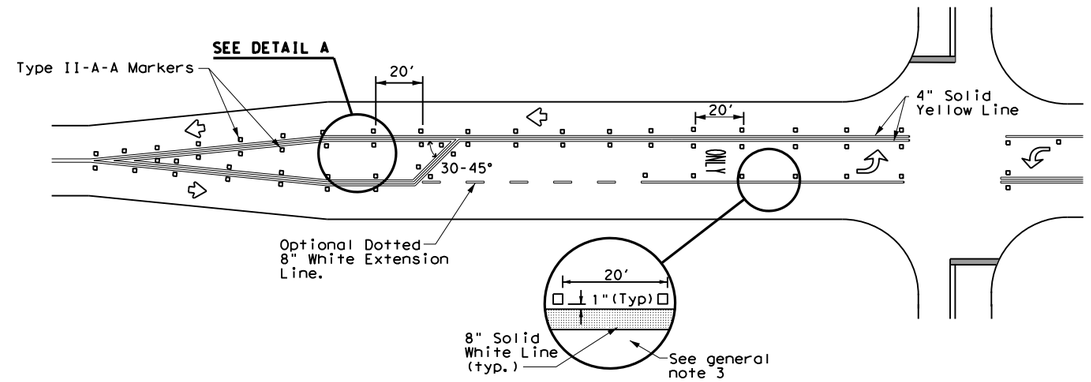
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



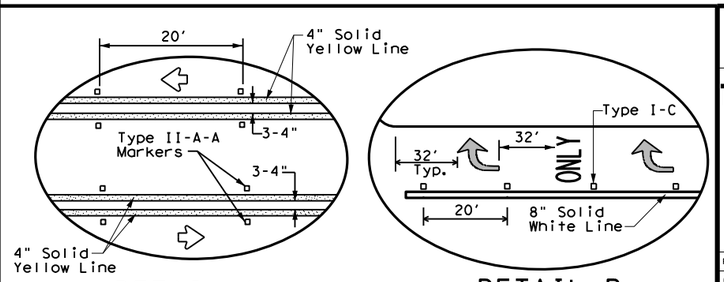
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-20

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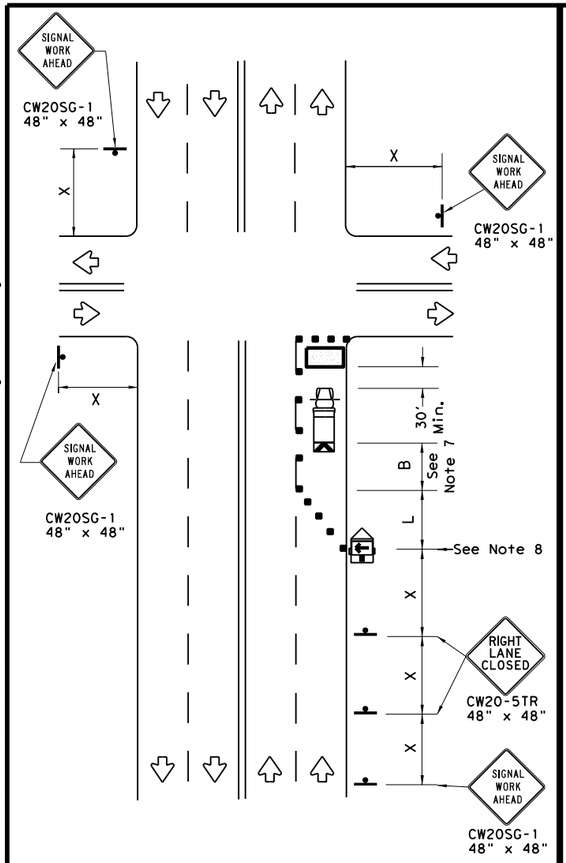
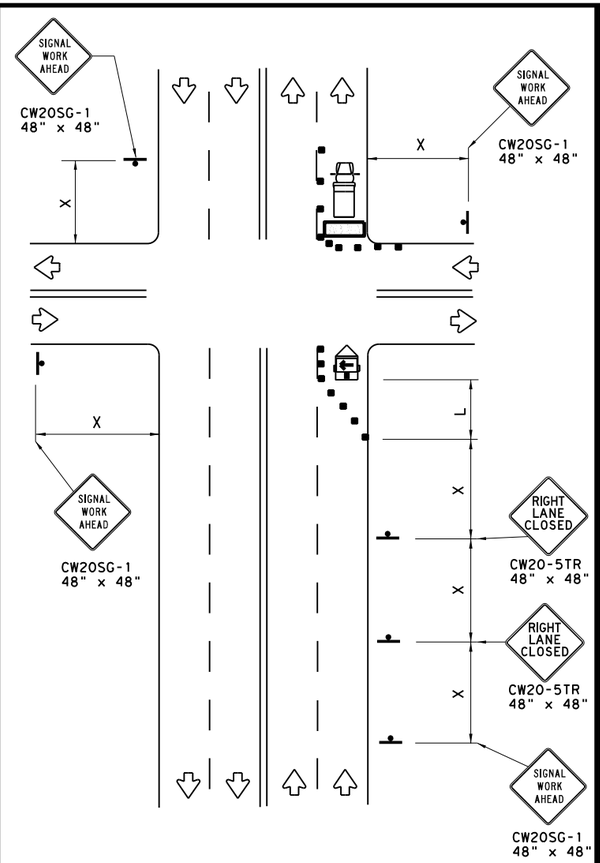


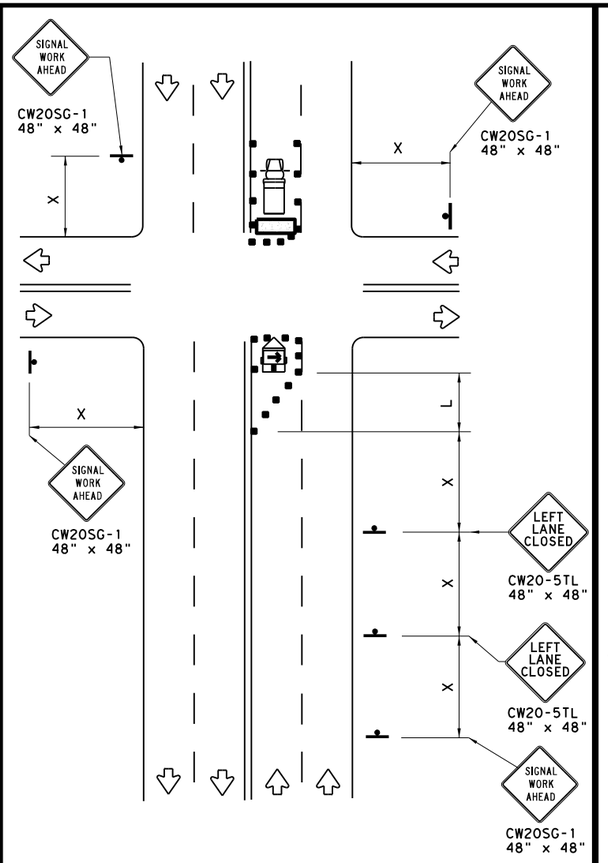
NEAR SIDE LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY



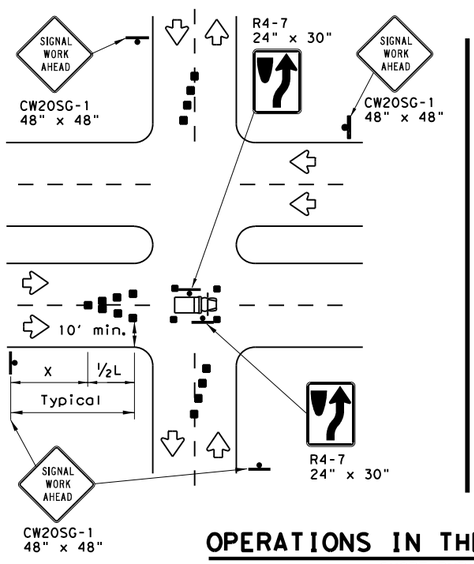
FAR SIDE RIGHT LANE CLOSURE

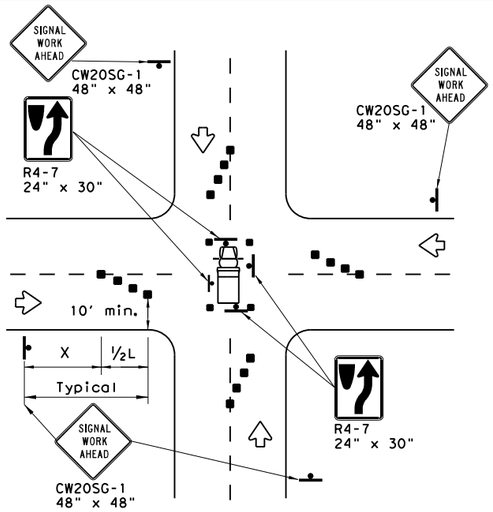
SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE LEFT LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY





OPERATIONS IN THE INTERSECTION

SHORT DURATION

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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)

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.

GENERAL NOTES

1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
5. High level warning devices (flag trees) may be used at corners of the vehicle.
6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
9. Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

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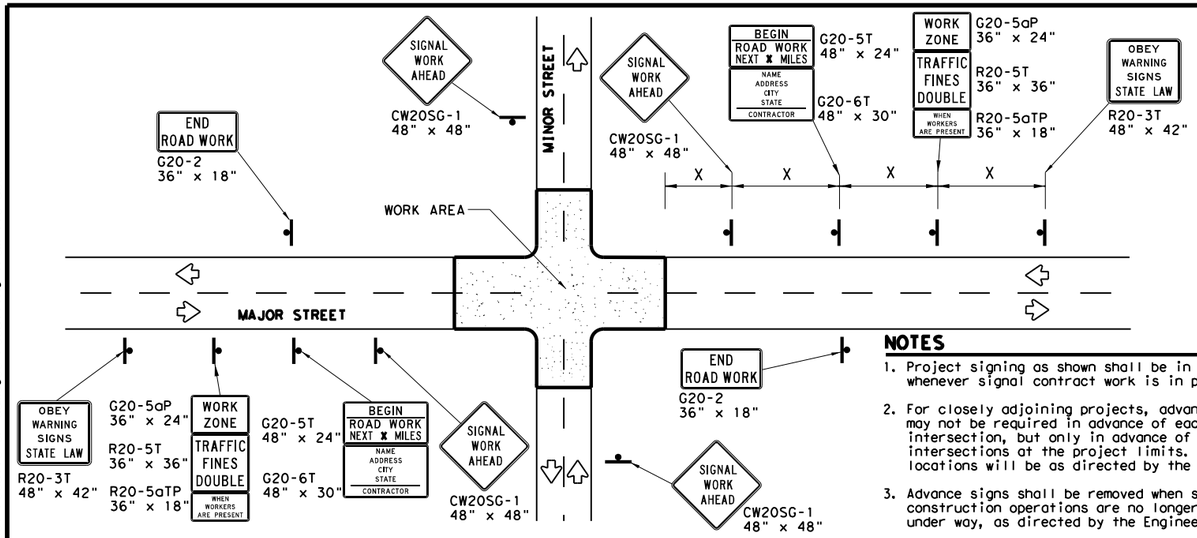


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

NOTES

1. Project signing as shown shall be in place whenever signal contract work is in progress.
2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
4. Warning sign spacing shown is typical for both directions.
5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

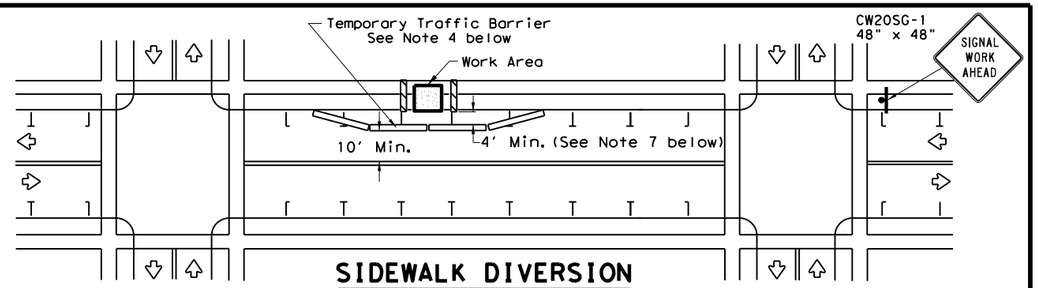
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fastners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

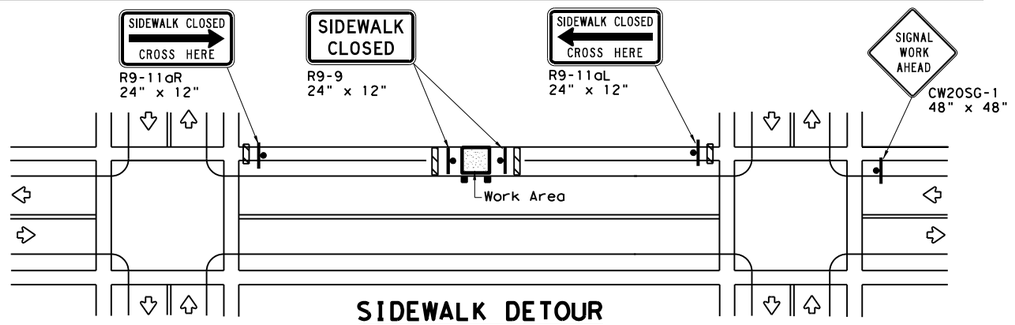
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

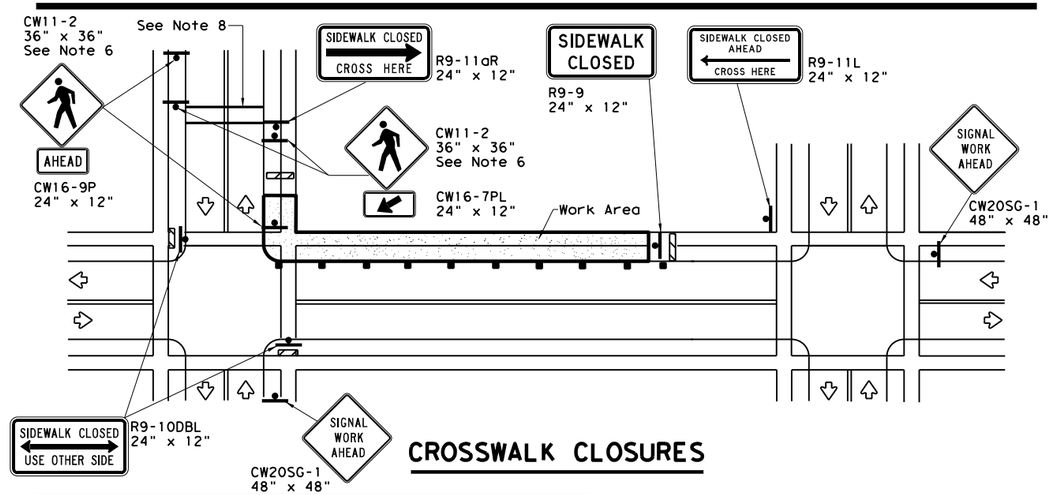
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ(BTS-2)-13

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