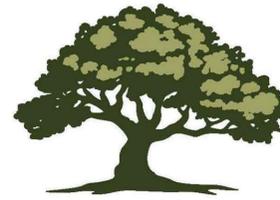


CITY OF SPRING VALLEY VILLAGE

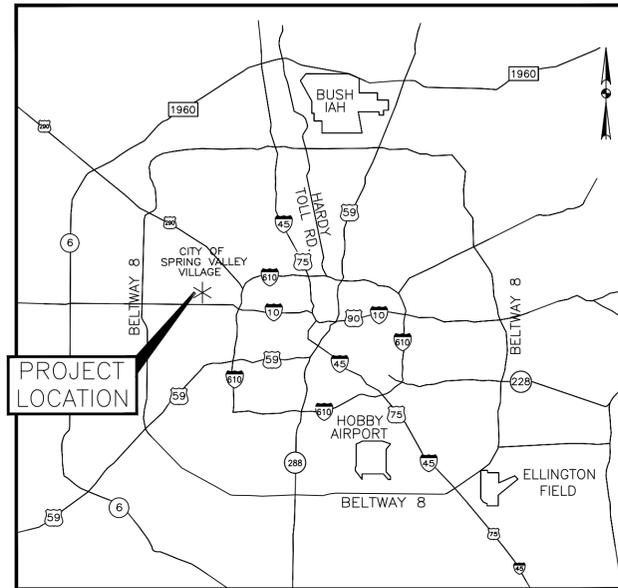
CONSTRUCTION PLANS FOR MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

CITY OF SPRING VALLEY VILLAGE
HARRIS COUNTY, TEXAS
November 2025

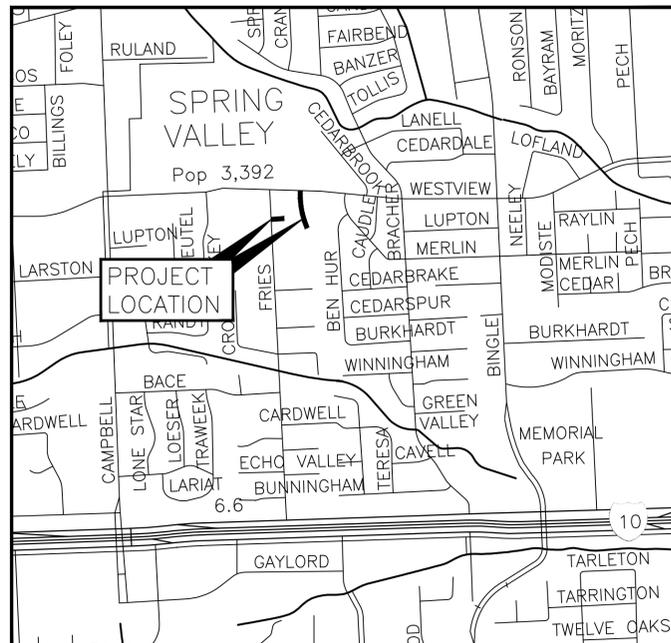


EST. 1955
SPRING VALLEY
VILLAGE

MAYOR - MARCUS VAJDOS
MAYOR PRO TEAM - ALLEN CARPENTER
CITY COUNCIL - STEVE BASS
CITY COUNCIL - JOHN LIENBY
CITY COUNCIL - DAVID DOMINY
CITY COUNCIL - JOY McCORMACK



VICINITY MAP
N.T.S.



LOCATION MAP
KEY MAP #450Z, 490D
N.T.S.

100% SUBMITTAL

CobbFendley
TBPELS Engineering Firm No. 274
Land Surveying Firm No. 10046700
10055 Grogans Mill Road, Suite 350
The Woodlands, Texas 77380
936.224.7114
www.cobbfendley.com

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GENERAL CONSTRUCTION NOTES:

- WARNING: THE CONSTRUCTION AREA CONTAINS ELECTRIC AND COMMUNICATION LINES. CONDUITS MAY CONTAIN HIGH VOLTAGE ELECTRICAL WIRING. SOME ELECTRICAL WIRING MAY BE BURIED BELOW GROUND WITHOUT CONDUITS. THE CONTRACTOR SHALL EXERCISE CAUTION.
- THE DRAWINGS SHOW AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED BY SURVEYS AND FROM CITY AND UTILITY RECORDS REGARDING THE LOCATION AND NATURE OF GAS LINES, STORM DRAINS, WATER LINES, ETC. HOWEVER, THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. THE CONTRACTOR SHALL CONTACT 811 PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION. CONTRACTOR TO NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO CONTINUING CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY THE CITY OF SPRING VALLEY VILLAGE AT (713) 465-8308 A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
- THE BIDDER SHALL VISIT THE SITE OF THE WORK AND EXAMINE LOCAL CONDITIONS TO BE ENCOUNTERED, IMPROVEMENTS TO BE PROTECTED AND CONDUCT OTHER RESEARCH NECESSARY TO ASSURE THAT THEY UNDERSTAND THE PROJECT THOROUGHLY AND ARE FULLY AWARE OF ALL CONDITIONS AND CONSTRAINTS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION.
- EQUIPMENT AND MATERIALS SHALL NOT BE STORED ON PUBLIC RIGHT-OF-WAY DURING THE COURSE OF CONSTRUCTION WITHOUT PRIOR APPROVAL BY AND COORDINATION WITH THE ENGINEER.** ANY MATERIAL AND EQUIPMENT APPROVED BY THE ENGINEER FOR TEMPORARY PLACEMENT ALONG THE PUBLIC RIGHT-OF-WAY OR OUTSIDE THE EASEMENT AREAS SHALL BE ADEQUATELY BARRICADED FOR EACH DIRECTION OF TRAVEL.
- CONTRACTOR TO PROVIDE ACCESS TO RESIDENT DRIVEWAYS THROUGHOUT CONSTRUCTION.
- CONSTRUCTION TO COMMENCE ON ONE SIDE OF THE STREET AND MAINTAIN DIRECTION ON ONE SIDE UNTIL COMPLETE AND RESTORED TO MATCH EXISTING SURFACE CONDITIONS.
- IN THE EVENT OF DAMAGE TO UNDERGROUND FACILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE OR PAY FOR THE NECESSARY REPAIRS TO PLACE THE FACILITIES BACK IN SERVICE AT NO INCREASE IN THE CONTRACT PRICE. ALL SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY OPERATING THE FACILITY.
- EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW CONSTRUCTION FROM JOINT TO JOINT PER SPECIFICATIONS AND DETAILS IN ACCORDANCE WITH CITY OF SPRING VALLEY VILLAGE. AT NO ADDITIONAL COST TO OWNER.
- CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH RESIDENTS WITHIN FORTY-EIGHT (48) HOURS OF ANY DRIVEWAY ACCESS RESTRICTIONS. CONTRACTOR SHALL WORK TO MINIMIZE INCONVENIENCE TO THE RESIDENTS.
- SURFACE RESTORATION AT THE END OF ALL CONSTRUCTION PROJECTS. THE CONTRACTOR SHALL RESTORE EXISTING FACILITIES (I.E. PROPERTY) EQUAL TO OR BETTER THAN EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THE LOADING AND UNLOADING OF ALL PIPE, MANHOLES AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR MATERIALS AND EQUIPMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND EQUIPMENT STORED ON THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES, DURING AND AFTER WORKING HOURS, UNTIL PROJECT COMPLETION
- CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND BRACING AS NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION, AS PER O.S.H.A. REQUIREMENTS.
- ALL FINISHING GRADES SHALL VARY UNIFORMLY BETWEEN FINISHED ELEVATIONS.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH RESIDENTS WHEN INTERRUPTING EXISTING SERVICES.
- CONTRACTOR SHALL PROVIDE PROPERTY OWNERS 2 WEEKS NOTICE PRIOR TO START OF CONSTRUCTION, TO ALLOW PROPERTY OWNERS TIME TO REMOVE PERSONAL PROPERTY WITHIN THE EXISTING R.O.W. LIMITS THAT MAY BE DAMAGED DURING CONSTRUCTION INCLUDING MAILBOXES, LANDSCAPING, HARDSCAPE, IRRIGATION, ETC.
- FOR ANY WATER OR SANITARY LINE REPAIR EMERGENCIES, CONTACT CITY OF SPRING VALLEY VILLAGE AT (713)465-8308.
- THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE PLANS, UNLESS SPECIFICALLY ESTABLISHED IN THE BID PROPOSAL SECTION OF THE CONTRACT DOCUMENTS. INCLUDE COST OF THIS WORK IN THE CONTRACT UNIT PRICE FOR ITEMS OF WHICH THIS WORK IS A COMPONENT OR INCIDENTAL.
- EXISTING UTILITY INFORMATION SHOWN IS NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF HIS CONSTRUCTION. ANY CONFLICT OR DISCREPANCY DISCOVERED MUST IMMEDIATELY BE BROUGHT TO THE ENGINEER'S ATTENTION.
- THE CONTRACTOR ON BEHALF OF THE OWNER, SHALL OBTAIN ALL CONSTRUCTION PERMITS PRIOR TO THE COMMENCEMENT OF WORK.
- THE WORK AREA SHALL BE BARRICADED AND ILLUMINATED DURING DARKNESS AND PERIODS OF INACTIVITY, WHEN IN AN AREA OF DIRECT PUBLIC ACCESS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIAL AND EQUIPMENT IN A SAFE AND WORKMAN LIKE MANNER TO PREVENT INJURIES. DURING AND AFTER WORKING HOURS UNTIL PROJECT COMPLETION. THERE SHALL BE NO PAYMENT MADE TO THE CONTRACTOR FOR STORED MATERIAL.
- SWPPP BEST MANAGEMENT PRACTICES SHALL BE MAINTAINED BY CONTRACTOR THROUGHOUT CONSTRUCTION AS PART OF ORIGINAL UNIT BID PRICE. ALL PIPE AND REINFORCEMENT STEEL SHALL BE KEPT FREE OF DIRT AND OTHER DEBRIS. ANY DAMAGE TO THE COATING OF THE VARIOUS MATERIALS MUST BE REPAIRED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE AND POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES. NATURAL GROUND ADJACENT TO UTILITY TRENCH EXCAVATION TO BE GRUBBED PRIOR TO PLACEMENT OF EXCESS TRENCH MATERIAL. (NO SEPARATE PAY)
- ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING VEGETATION, ROOTS, CONCRETE AND DEBRIS SHALL BE DISPOSED OFFSITE BY THE CONTRACTOR. NO DIRECT PAYMENT WILL BE MADE, BUT SHALL BE CONSIDERED AS INCIDENTAL TO THE VARIOUS BID PROPOSAL ITEMS.
- ALL MANHOLES ARE TO BE CONSTRUCTED TO ALLOW FOR A MINIMUM OF 1 FOOT OF VERTICAL ADJUSTMENT.
- ALL TRENCH EXCAVATION, BEDDING AND BACKFILL SHALL BE IN CONFORMANCE WITH TCEQ AND THE CITY OF SPRING VALLEY VILLAGE STANDARD DETAILS - EXCAVATION AND BACKFILL FOR UTILITIES AND UTILITY BACKFILL SPECS, UNLESS OTHERWISE SHOWN IN PLANS.
- CONTRACTOR SHALL PROTECT ALL TREES ADJACENT TO WORK AREA. NO TREES SHALL BE REMOVED WITHOUT PERMISSION OF OWNER. SEE TREE PROTECTION PLAN FOR DETAILS.
- CONTRACTOR SHALL PROVIDE 6" MINIMUM CLEARANCE AT STORM SEWER, SANITARY SEWER AND WATER LINE CROSSINGS.
- EXCAVATE MUCK, ORGANIC MATERIAL AND UNSUITABLE SOIL PRIOR TO PLACING FILL. PLACE SUITABLE MATERIAL IN 8" MAXIMUM LOOSE LIFT AND COMPACT TO 95% STANDARD PROCTOR DENSITY.
- ALL BACKFILL SHALL BE PLACED 8" LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY AND BE TESTED BY AN APPROVED TESTING LAB.

- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC. DURING CONSTRUCTION BOTH DAY AND NIGHT IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
- CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND PAVEMENT BEFORE CONSTRUCTION. ANY VERIFICATIONS THAT ARE INCONSISTENT WITH THE PLANS NEED TO BE REPORTED TO THE ENGINEER BEFORE CONSTRUCTION BEGINS.
- LAWS TO BE OBSERVED, THE CONTRACTOR SHALL MAKE HIMSELF FAMILIAR WITH AND AT ALL TIME SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS, ORDINANCES, AND REGULATIONS WHICH IN ANY MANNER AFFECT THE CONDUCT OF THE WORK AND SHALL INDEMNIFY AND SAVE HARMLESS THE CITY AND ITS REPRESENTATIVES AGAINST ANY CLAIM ARISING FROM THE VIOLATION OF ANY SUCH LAW, ORDINANCE, OR REGULATIONS, WHETHER BY HIMSELF OR BY HIS EMPLOYEES.
- CONTRACTOR TO TERMINATE AND PLUG SPRINKLER SYSTEMS AT THE ROAD RIGHT-OF-WAY. PROPERTY OWNER RESPONSIBLE TO REPAIR IRRIGATION SYSTEM. CONTRACTOR TO BE PAID PER EACH LOT.
- EXISTING DRIVEWAYS WILL BE REPLACED WITH CONCRETE. CITY TO COORDINATE CUSTOM DRIVEWAYS WITH RESIDENTS PRIOR TO BIDDING. RESIDENTS WITH CUSTOM DRIVEWAYS, AS NOTED ON THE PLANS, ARE RESPONSIBLE FOR REPLACING THEIR DRIVEWAY. RESIDENTS WERE COMPENSATED BY THE CITY PRIOR TO BIDDING.
- GRADING WITHIN 10' OF EXISTING TREES SHALL BE COMPLETED BY HAND EXCAVATION. ALL WORK COMPLETED BY HAND EXCAVATION SHALL BE CONSIDERED INCIDENTAL THROUGHOUT THE LIMITS OF THE PROJECT.
- THE CITY WILL PROVIDE METAL CURB DRAIN OPENINGS FOR THE CONNECTION OF PROPOSED 4-INCH PVC CURB DRAINS. CONTRACTOR TO BE PAID FOR INSTALLATION OF CURB DRAIN PER DRAWING DETAILS.

STORM SEWER CONSTRUCTION NOTES:

- STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF SPRING VALLEY VILLAGE GENERAL DESIGN AND CONSTRUCTION STANDARDS.
- STORM SEWERS SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH CITY OF SPRING VALLEY VILLAGE DETAIL.
- ALL STORM SEWERS CONSTRUCTED IN SIDE LOT EASEMENTS SHALL BE R.C.P. (C-76 CLASS III) UNLESS SPECIFIED OTHERWISE AND SHALL BE BEDDED IN ACCORDANCE WITH THE CITY OF SPRING VALLEY VILLAGE DETAIL.
- ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" THICK BRICK WALLS UNLESS OTHERWISE NOTED.
- ALL STORM SEWER PIPES 18" AND LARGERS TO BE REINFORCED CONCRETE PIPE ASTM C76 CLASS III OR HIGH-PERFORMANCE POLYPROPYLENE INCLUDING INLET LEADS CROSSING UNDER EXISTING OR PROPOSED PAVEMENTS. ALL INLETS LEADS SHALL BE 18" REINFORCED CONCRETE PIPE OR LARGER, ALL STORM SEWER PIPE SHALL BE RUBBER GASKETED.

PAVING AND DRAINAGE NOTES:

- ALL CONCRETE PAVING SHALL BE IN ACCORDANCE WITH SPEC. SECTION 02751.
- ALL CONCRETE TO TEST 3500 P.S.I. AT 28 DAYS.
- ALL REINFORCING STEEL SHALL BE F=60 K.S.I.
- CONTRACTOR SHALL COORDINATE WITH RESIDENTS WITHIN 48 HOURS OF ANY DRIVEWAY ACCESS RESTRICTIONS. CONTRACTOR SHALL WORK TO MINIMIZE INCONVENIENCE TO THE RESIDENTS.

CENTERPOINT ENERGY:

CAUTION: UNDERGROUND GAS FACILITIES

THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713) 945-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
- FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769.

NOTE:

ALL PLANNED OUTAGES REQUIRE 72 HOUR NOTICE TO RESIDENTS AND CITY. NO PLANNED OUTAGES ON ANY FRIDAY OR RIGHT BEFORE A HOLIDAY.

AT&T TEXAS/SWBT FACILITIES:

- THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT BE OCCURRED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
- WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
- THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
- PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 412-3990 OR E-MAIL HIM AT RL7259@ATT.COM IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&T TEXAS/SWBT FACILITIES.

SPRING VALLEY VILLAGE GENERAL NOTES:

WASTEWATER COLLECTION: ALL SEWER COLLECTION ITEMS SHALL BE DESIGNED AND INSTALLED ACCORDING TO ADOPTED PLUMBING CODES AND THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARDS.

MANHOLES: ALL MANHOLES SHALL BE PRECAST CONCRETE UNLESS APPROVED BY A PROFESSIONAL ENGINEER WHO SUBMITS A "CAST IN PLACE" MANHOLE DESIGN FOR REVIEW AND IS APPROVED BY THE CITY. ALL PRECAST MANHOLES SHALL INCORPORATE A "BOOT" TYPE CONNECTOR FOR SEWER DIAMETERS UP TO TWENTY-FOUR INCHES (24"). FOR SEWER DIAMETERS GREATER THAN TWENTY-FOUR INCHES (24"), UTILIZE EITHER THE "BOOT" TYPE CONNECTOR (IF AVAILABLE) OR AN INTEGRAL GASKET. ALL PRECAST MANHOLES SHALL CONFORM TO THE LATEST AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) REQUIREMENTS. MANHOLES SHALL BE COATED WITH CORROSION RESISTANT EPOXY COATING APPROVED BY THE CITY. FOR ALL PUBLIC SEWERS, MANHOLES SHALL BE PLACED AT ALL CHANGES IN ALIGNMENT, CHANGES IN GRADE, JUNCTION POINTS, AND EITHER AT STREET, ALLEY, OR EASEMENT INTERSECTIONS AS THE DESIGN MAY REQUIRE. THE MAX SPACING BETWEEN MANHOLES IS FOUR-HUNDRED FEET (400') UNLESS OTHERWISE APPROVED BY THE CITY. THE MINIMUM MANHOLE DEPTH SHALL BE FOUR FEET (4'). MANHOLES SHALL BE PLACED AT ALL DEAD-END MAINS AND LATERALS UNLESS OTHERWISE APPROVED BY THE CITY. WALL PENETRATION SHALL BE CORED AND SHALL USE THE APPROPRIATE BOOTS AND APPROVED "GROUT" FOR SEALING AS APPROVED BY THE CITY ENGINEER. FOR AN EXISTING MANHOLE THAT IS CORED, THE COATING OF THE MANHOLE WILL NEED TO BE REPAIRED OF LINED.

MANHOLE LIDS: UTILIZE MANHOLE LIDS WITH THE APPROVED CITY OF SPRING VALLEY LOGO ON ALL MANHOLES. DETAIL: WW-8 TO WW-11.

MANHOLE WITHIN THE 100 YEAR FLOODPLAIN: MANHOLES LOCATED WITHIN THE 100 YEAR FLOODPLAIN OR IN AREAS OF HIGH GROUND WATER SHALL BE WATERPROOFED BY WRAPPING THE INDIVIDUAL JOINTS WITH CONWRAP, CONSEAL, OR APPROVED EQUAL. WATERPROOFING MEASURES SHALL APPROVED BY THE CITY OF PRIOR TO BACKFILL. MANHOLES SHOWING SIGNS OF INFILTRATION SHALL BE EXCAVATED AND REPAIRED, TO THE SATISFACTION OF THE CITY, PRIOR TO ACCEPTANCE BY THE CITY. MANHOLES LOCATED WITHIN THE 100 YEAR FLOODPLAIN SHALL BE INSTALLED WITH RIM ELEVATIONS NOT LESS THAN TWO FEET (2') ABOVE THE FLOODPLAIN AT THAT LOCATION. MANHOLES LOCATED WITHIN THE ONE HUNDRED (100) YEAR FLOODPLAIN MAY ALSO REQUIRE A SEALABLE MANHOLE COVER OR AN INFILTRATION CAP (DETAIL WW-5).

STREETS:

RESIDENTIAL STREET WIDTH: ALL RESIDENTIAL STREET SHALL HAVE A WIDTH OF TWENTY-EIGHT (28") FEET MAY OCCUR IN LIMITED SITUATIONS (I.E LARGE TREES IN ROW), AND REQUIRED WRITTEN APPROVAL FROM THE CITY PRIOR TO AN PAVING.

PAVEMENT TYPE: ALL STREETS SHALL BE CONSTRUCTED IN CONCRETE.

STREET CURB TYPE: SIX-INCH (6") MONUMENT CURBS SHALL BE USED ALL COLLECTOR STREETS AND FOUR-INCH (4") ROLLOVER CURBS SHALL BE USED ON ALL LOCAL/RESIDENTIAL STREETS. IN CONJUNCTION WITH THESE STREET CURB TYPES, A GALVANIZED FABRICATED CURB CONNECTION SHALL BE USED IN COMPLIANCE WITH THE CITY'S DRAINAGE CRITERIA MANUAL.

SIDEWALKS: THE CONSTRUCTION OF SIDEWALKS WILL BE LIMITED TO COLLECTOR AND THOROUGH STREETS.

COMPLICATION WITH RIGHT-OF-WAY REGULATIONS: ANY AND ALL WORK PERFORMED WITHIN THE CITY'S RIGHT-OF-WAY, INCLUDING CUTTING OR EXCAVATING ANY PUBLIC STREET, SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CITY HAS ADOPTED RIGHT-OF-WAY REGULATIONS THAT MAY BE FOUND ON THE CITY'S WEBSITE IN THE CODE OF ORDINANCES. THESE REGULATIONS INCLUDE A REQUIREMENT TO OBTAIN A RIGHT-OF-WAY PERMIT FROM THE CITY FOR NON-CITY PROJECTS PRIOR TO PERFORMING ANY WORK WITHIN THE CITY'S RIGHT-OF-WAY. FAILURE TO COMPLY WITH APPLICABLE RIGHT-OF-WAY REGULATIONS WILL RESULT IN ENFORCEMENT ACTION BY THE CITY.

BARRICADES REQUIRED: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE WORK ALONG A STREET TO INSTALL BARRICADES, FLAGS, AND OTHER SAFETY MEASURES NECESSARY DURING THE TIME OF CONSTRUCTION AND UNTIL ALL HAZARDS HAVE BEEN CORRECTED AFTER THE COMPLETION OF THE WORK. WHETHER THE PROJECT IS DESIGNED BY AN ENGINEER OR NOT, A TRAFFIC PLAN MUST BE SUBMITTED TO AND APPROVED BY THE CITY.

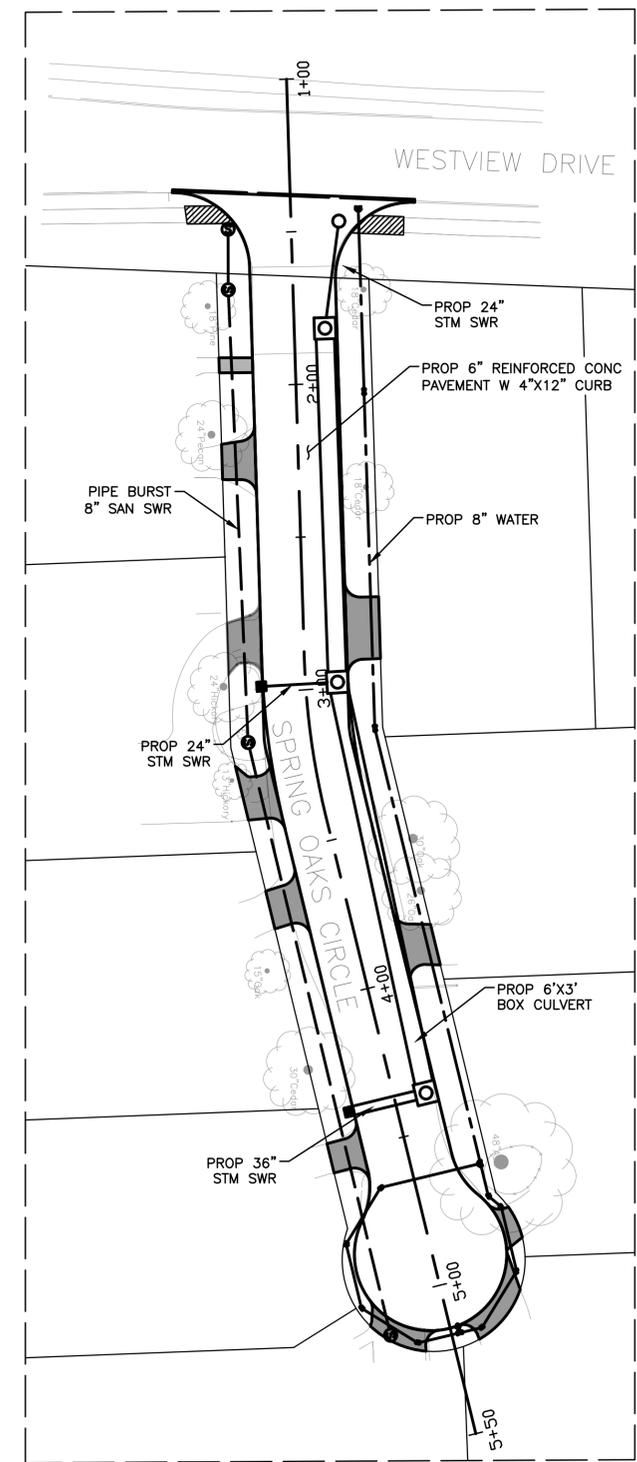
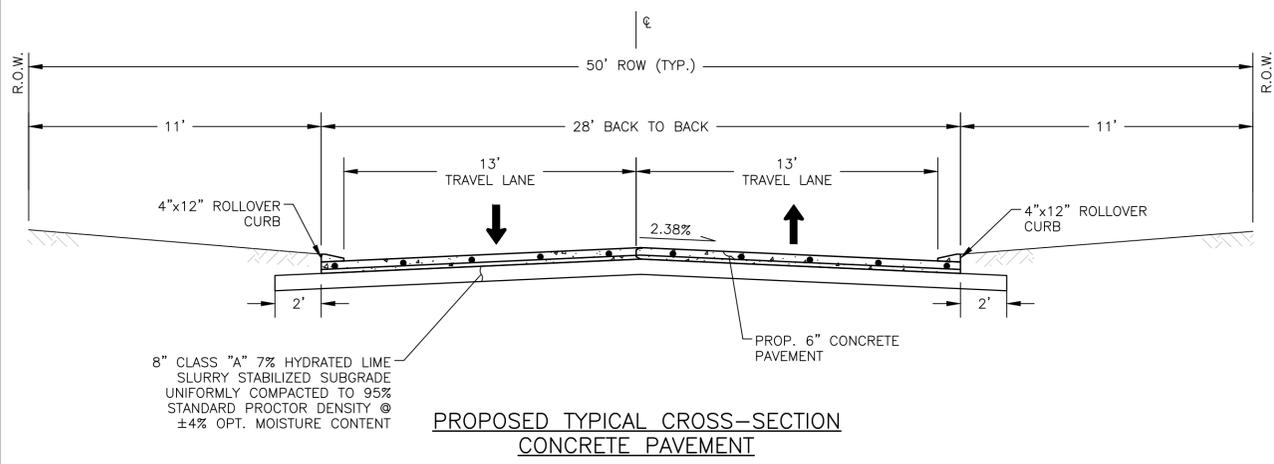
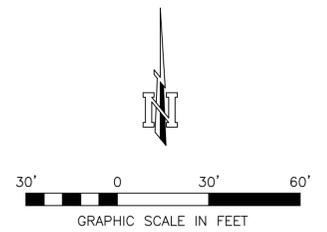
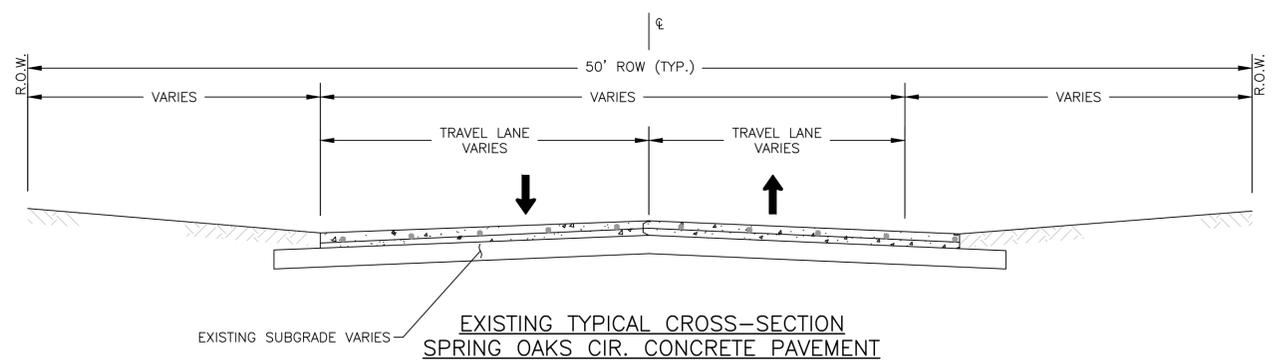
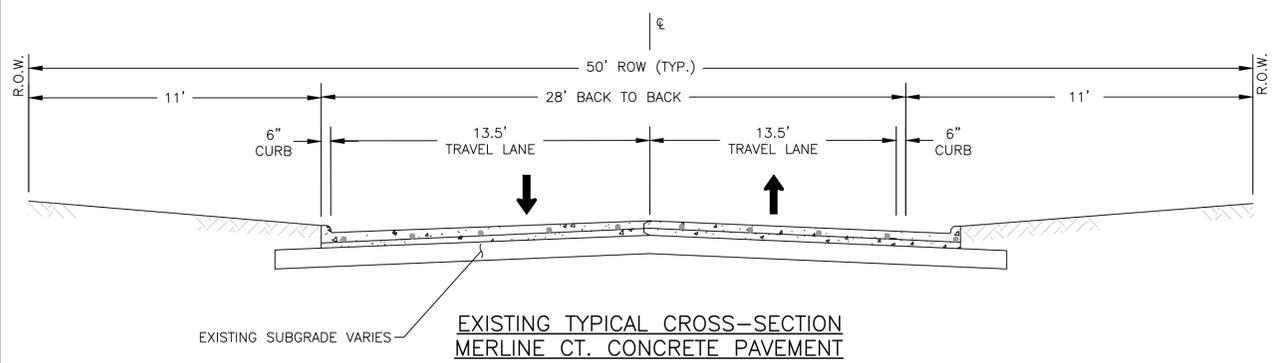
BACKFILLING EXCAVATIONS OUTSIDE THE PAVEMENT: ALL EXCAVATIONS IN THE STREET RIGHT-OF-WAY SHALL BE REPLACED BY TAMPING, BACKFILLING WITH SELECT FILL, SAND, GRAVEL, OR OTHER METHODS APPROVED BY THE CITY ENGINEER OR THE CITY. BACKFILL SHALL BE COMPACTED ACCORDING TO ENGINEERING PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL RESTORE ANY AREAS DAMAGED OR DISTURBED TO ORIGINAL BY BLOCKING SODDING.

CONCRETE PAVEMENT RESTORATION: IF CONCRETE PAVEMENT HAS TO BE RESTORED AND THE WORK CANNOT BE AVOIDED, ALL EXCAVATIONS OR REMOVAL OF ANY CONCRETE PAVEMENT IN THE STREET RIGHT-OF-WAY SHALL BE REPLACED AS FOLLOWS:

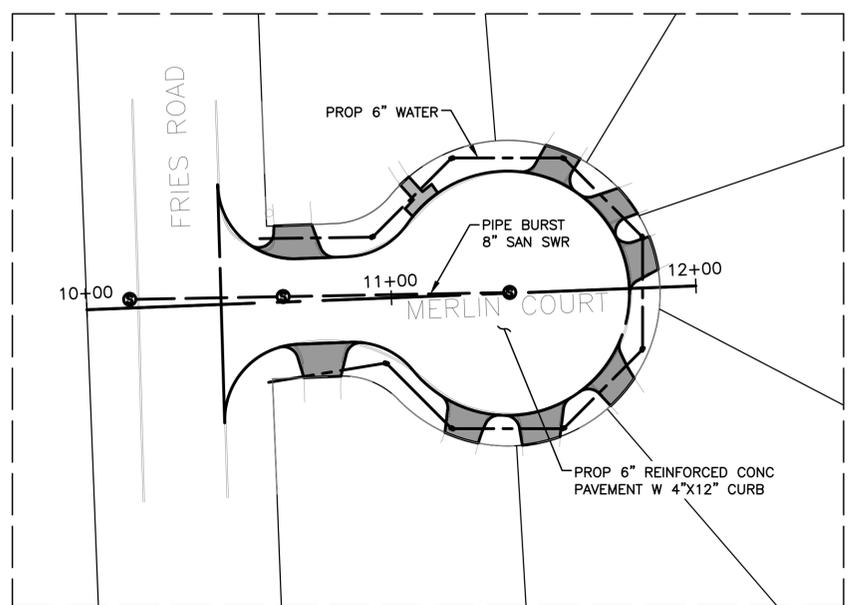
- REPLACE THE ENTIRE STREET OR SIDEWALK PANEL WIDTH, LENGTH, AND DEPTH TO THE NEAREST CONSTRUCTION OR EXPANSION JOINT;
- REPLACE THE CONCRETE PAVEMENT TO EXISTING DEPTH OR ACCORDING TO ENGINEERING SPECIFICATIONS APPROVED BY THE CITY UTILIZING DOWELS AND REBAR SPECIFIED.

NO.	DATE	REVISIONS
		
 <p> TBPELS Engineering Firm No. 274 Land Surveying Firm No. 10046700 10055 Grogans Mill Road, Suite 350 The Woodlands, Texas 77380 936.224.7114 www.cobbfendley.com </p>		
CITY OF SPRING VALLEY VILLAGE		
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION		
GENERAL NOTES		
SUBMITTED: 9/23/2025	DESIGNED BY: JMS	
SCALE: N/A	DRAWN BY: AC / BAK	
DATE: 9/23/2025	SHEET No.: 2 OF 49	
SURVEY BY: CFA	DWG. No:	
F B No.: -		

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- NOTES:**
1. CONTRACTOR TO COORDINATE WITH ADJACENT PROPERTY OWNERS.
 2. INSTALL PROPOSED WATERLINE VIE TRENCHLESS CONSTRUCTION. INSTALL NEW SHORT AND LONG WATERLINE LEADS. REPLACE CONCRETE METER BOXES WITH PLASTIC.
 3. PIPE BURST EXISTING SANITARY SEWER. USE BYPASS PUMPING AS NEEDED FOR CONSTRUCTION. SANITARY SEWER MANHOLES TO BE CIPP LINED. INSTALL NEW SHORT AND LONG SANITARY SEWER LEADS.
 4. REMOVE AND REPLACE SUBGRADE AND ROADWAY. NEW ROADWAY WILL BE LOWER THAN EXISTING ROAD. CONTRACTOR TO HAUL-OFF EXCESS MATERIAL.
 5. SEE TREE PROTECTION PLANS SHEET 48



NO.	DATE	REVISIONS

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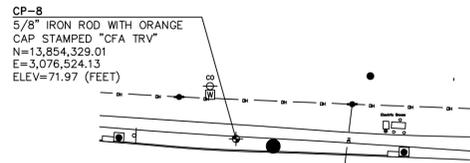
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

OVERALL LAYOUT

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 30'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 3 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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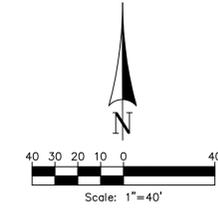
LEGEND

- Grid West
- Electric Pole Box
- Water Meter
- Mailbox
- Secondary Manhole
- Light Standard
- Clean Out
- Sign
- Power Pole
- Storm Manhole
- Fire Hydrant
- Water Valve
- Sprinkler Head
- Flood Lamp
- Water Tank Mark

NOTES:
 1. ALL COORDINATES SHOWN HEREON ARE SURFACE COORDINATES BASED ON THE TEXAS STATE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NAD 83, 2001 ADJUSTMENT. MULTIPLY BY A SCALE FACTOR OF 0.99989543 TO OBTAIN GRID COORDINATES.

BENCHMARK INFORMATION

REFERENCE BENCHMARK
 FLOODPLAIN REFERENCE MARK NUMBER 210255 IS A BRASS DISK STAMPED "210255" LOCATION: FROM THE INTERSECTION OF I-10 AND FRIES ROAD APPROXIMATELY 0.5 MILE TO BRIDGE. MONUMENT IS LOCATED ON THE EAST CONCRETE GUARDRAIL AT MIDSTREAM ELEVATION = 70.83 (FEET) NAVD 1988 (2001 ADJUSTMENT)



SITE CONTROL AND BENCHMARKS

CP-6
 5/8" IRON ROD WITH ORANGE CAP STAMPED "CFA TRV"
 N=13,853,985.01
 E=3,076,123.27
 ELEV=71.87 (FEET)

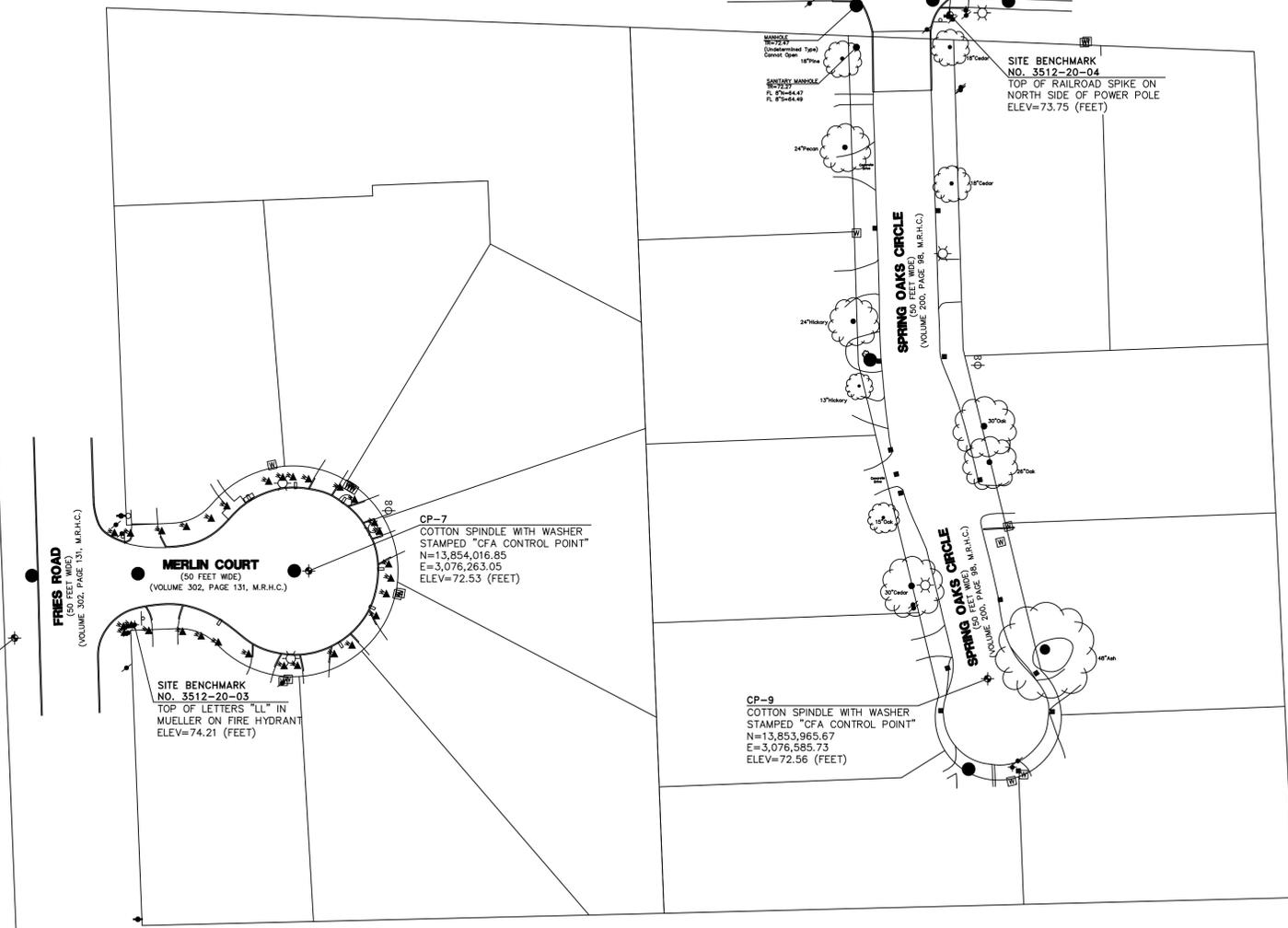
CP-7
 COTTON SPINDLE WITH WASHER STAMPED "CFA CONTROL POINT"
 N=13,854,016.85
 E=3,076,263.05
 ELEV=72.53 (FEET)

CP-8
 5/8" IRON ROD WITH ORANGE CAP STAMPED "CFA TRV"
 N=13,854,329.01
 E=3,076,524.13
 ELEV=71.97 (FEET)

CP-9
 COTTON SPINDLE WITH WASHER STAMPED "CFA CONTROL POINT"
 N=13,853,965.67
 E=3,076,585.73
 ELEV=72.56 (FEET)

SITE BENCHMARK 3512-20-03
 TOP OF LETTERS "LL" IN MUELLER ON FIRE HYDRANT
 ELEV=74.21 (FEET)

SITE BENCHMARK 3512-20-04
 TOP OF RAILROAD SPIKE ON NORTH SIDE OF POWER POLE
 ELEV=73.75 (FEET)



CP-6
 5/8" IRON ROD WITH ORANGE CAP STAMPED "CFA TRV"
 N=13,853,985.01
 E=3,076,123.27
 ELEV=71.87 (FEET)

CP-7
 COTTON SPINDLE WITH WASHER STAMPED "CFA CONTROL POINT"
 N=13,854,016.85
 E=3,076,263.05
 ELEV=72.53 (FEET)

SITE BENCHMARK NO. 3512-20-03
 TOP OF LETTERS "LL" IN MUELLER ON FIRE HYDRANT
 ELEV=74.21 (FEET)

CP-9
 COTTON SPINDLE WITH WASHER STAMPED "CFA CONTROL POINT"
 N=13,853,965.67
 E=3,076,585.73
 ELEV=72.56 (FEET)

SITE BENCHMARK NO. 3512-20-04
 TOP OF RAILROAD SPIKE ON NORTH SIDE OF POWER POLE
 ELEV=73.75 (FEET)

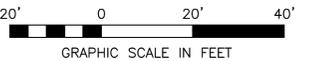


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MERLIN COURT AND
 SPRING OAKS CIRCLE
 HORIZONTAL AND VERTICAL
 CONTROL SHEET
 HARRIS COUNTY, TEXAS



DRAWN BY:	RC	DATE:	9-12-2025	SHEET:	1	OF:	1	REVISED:
DESIGNED BY:	RC	SCALE:	1"=40'	F.B. NO.:	2021			
		CHK'D BY:	RC	PROJECT NO. 2412-064-01-06				



DEMOLITION LEGEND

- PIPE BURST
- PIPE ABANDONMENT
- [Hatched Box] LIMITS OF WALKWAY REMOVAL
- [Dotted Box] LIMITS OF DRIVEWAY REMOVAL
- [Stippled Box] LIMITS OF CONCRETE PAVEMENT REMOVAL
- [Diagonal Lines Box] LIMITS OF CONCRETE SIDEWALK REMOVAL
- [Solid Black Box] LIMITS OF CURB REMOVAL
- [Hexagon with #] DRIVEWAY (SEE SHEET 7 FOR DRIVEWAY SUMMARY TABLE)
- [Square with #] WALKWAY (SEE SHEET 8 FOR WALKWAY SUMMARY TABLE)

NOTES:

1. SEE TREE PROTECTION PLANS SHEET 48.
2. WATER METERS ARE TO REMAIN. CONTRACTOR TO NOTIFY THE CITY IF ANY WATER METERS ARE DAMAGED. REPLACE CONCRETE METER BOXES WITH PLASTIC.
3. PRIVATE IRRIGATIONS SYSTEMS INSTALLED IN THE ROAD RIGHT-OF-WAY WILL BE REMOVED AND CAPPED AT THE ROAD RIGHT-OF-WAY. COST IS INCIDENTAL TO CONSTRUCTION.
4. EXISTING STORM SEWER THAT IS NOT IN CONFLICT WITH THE PROPOSED STORM SEWER MAY BE ABANDONED IN PLACE.
5. PROVIDE TEMPORARY MAILBOXES AS NEEDED
6. REFER TO DRIVEWAY AND WALKWAY SUMMARY TABLES ON SHEET 7 AND 8 FOR EXISTING MATERIAL TO BE REMOVED.
7. CONTRACTOR TO REMOVE LANDSCAPE HARDSCAPE AND STOCKPILE AT ROW.
8. INSPECTOR MAY FIELD ADJUST PAVEMENT REMOVAL TO MATCH EXISTING JOINTS UP TO 4- FEET ON EITHER SIDE OF THE ROW.
9. CONTRACTOR TO REMOVE AND REPLACE STREET SIGNS AS NEEDED FOR CONSTRUCTION.
10. CONTRACTOR TO TAKE CARE TO NOT DAMAGE EXISTING STREET LIGHTS.
11. CONTRACTOR TO TELEWISE EXISTING STORM SEWER AND PROVIDE TO CITY.

NO.	DATE	REVISIONS



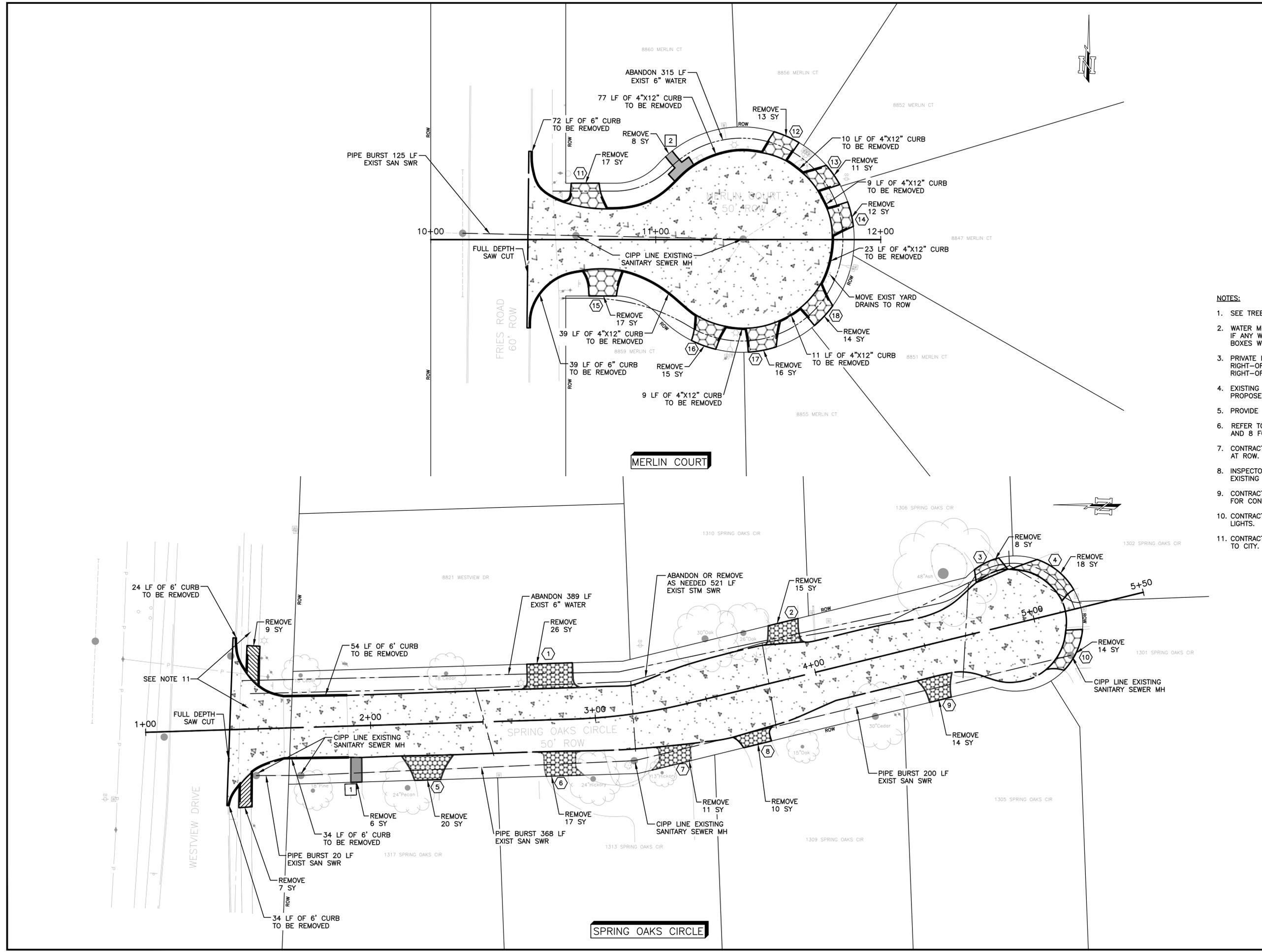
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CITY OF SPRING VALLEY VILLAGE

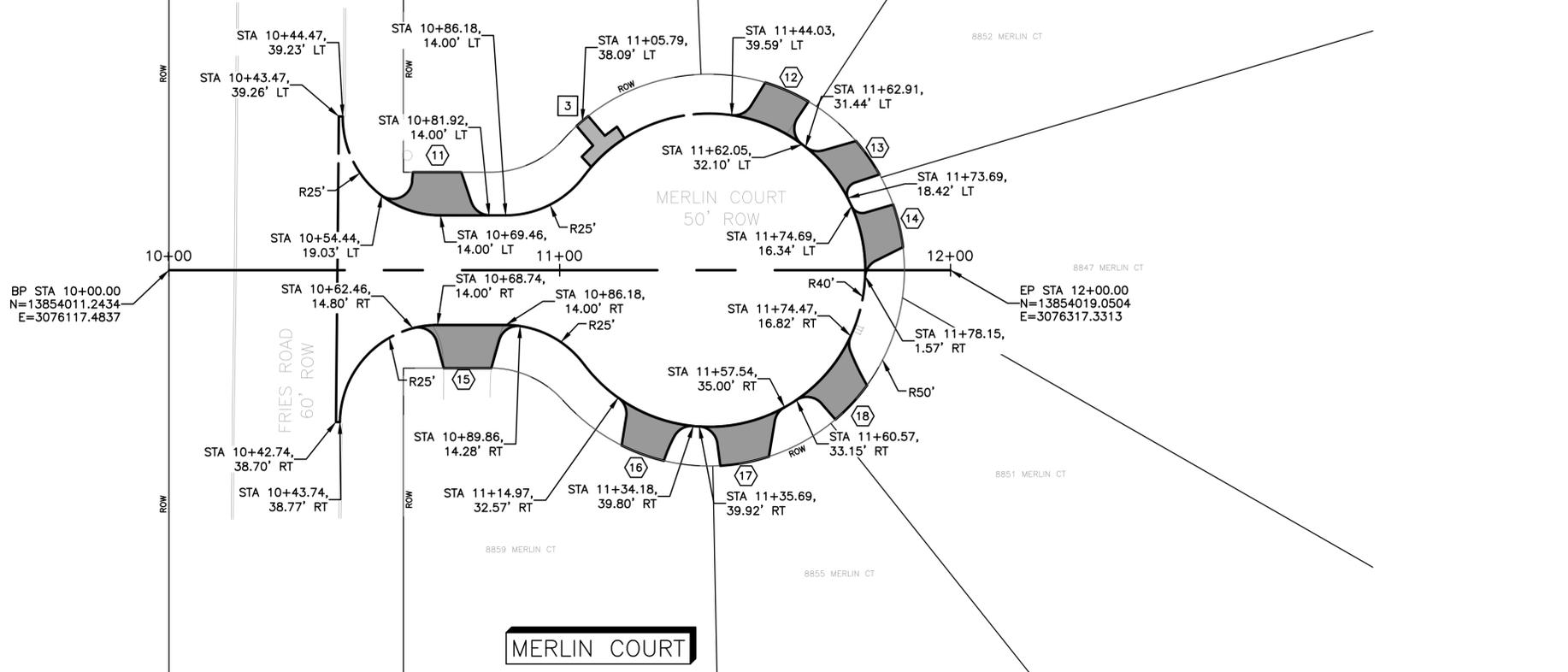
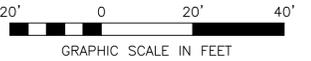
MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

DEMOLITION PLAN

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 20'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 5 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

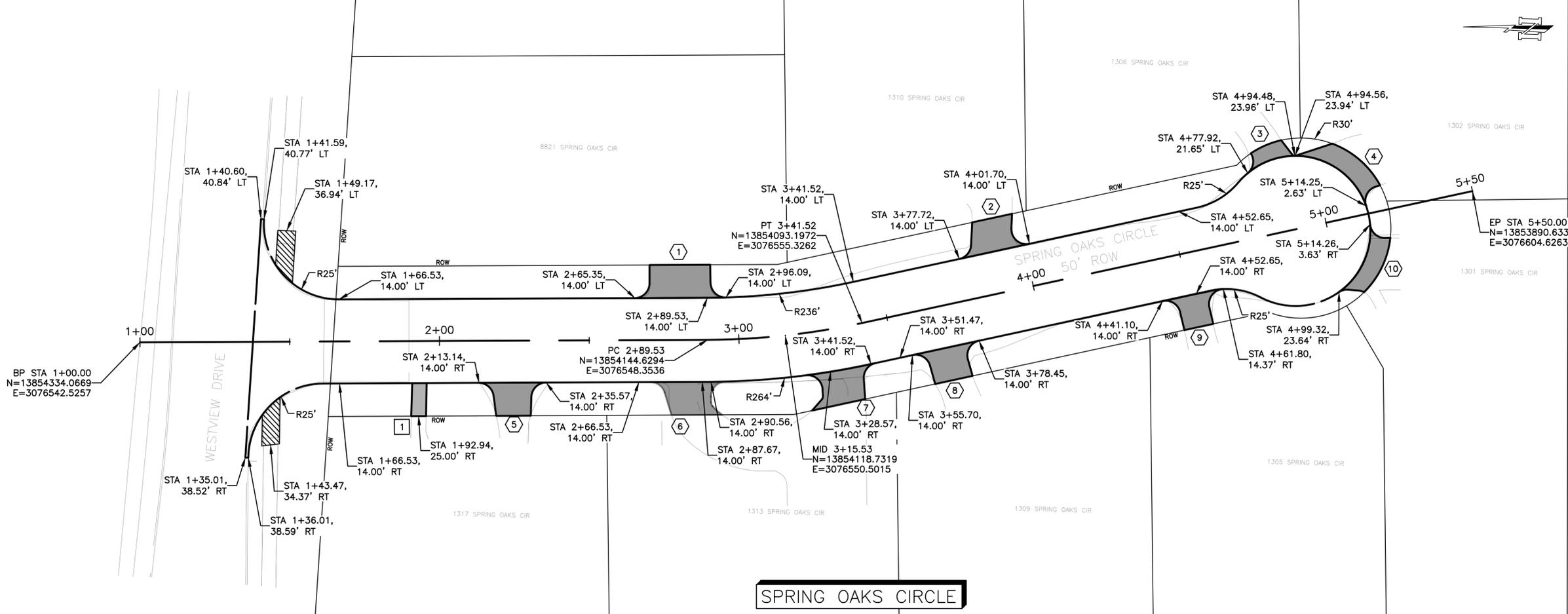


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LEGEND

- PROP DRIVEWAY
- PROP WALKWAY
- PROP SIDEWALK
- DRIVEWAY (SEE SHEET 7 FOR DRIVEWAY SUMMARY TABLE)
- WALKWAY (SEE SHEET 8 FOR DRIVEWAY SUMMARY TABLE)



NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
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 RECONSTRUCTION

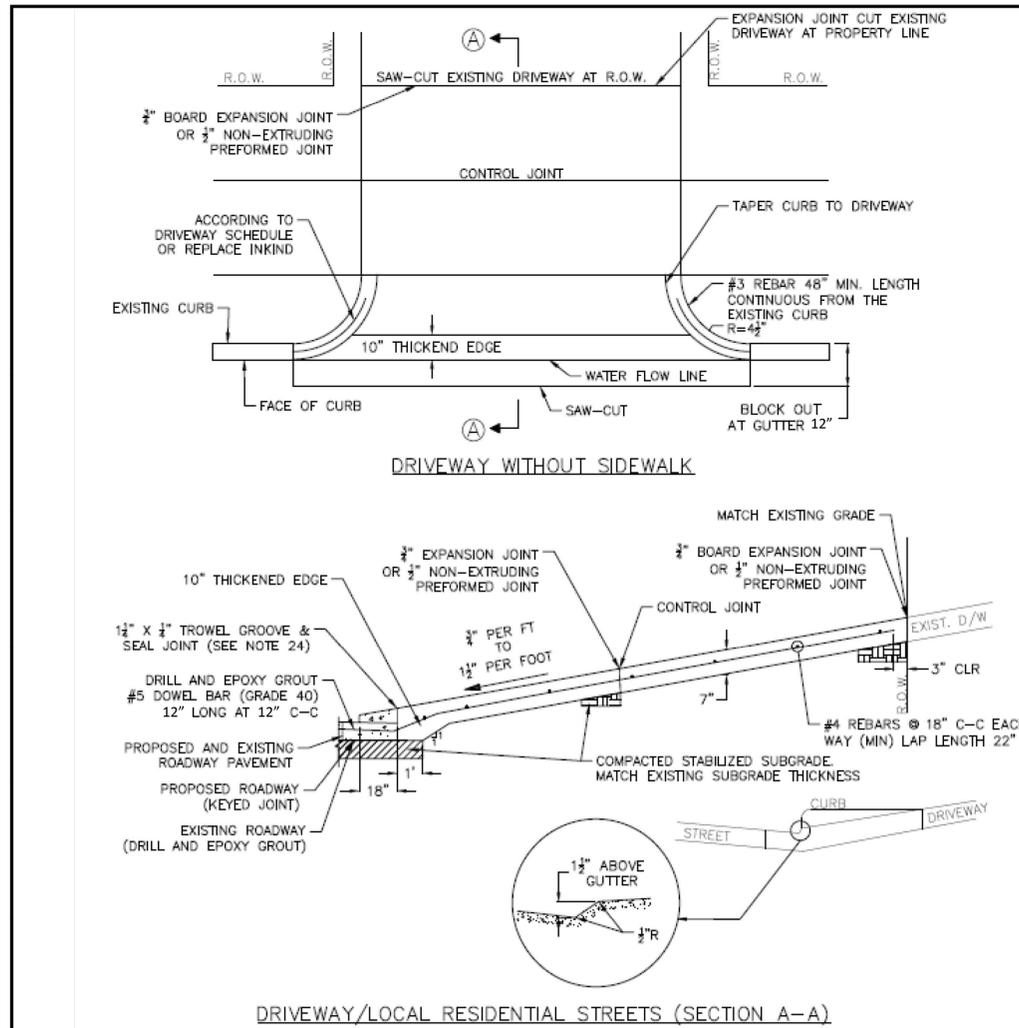
GEOMETRIC LAYOUT

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 20'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 6 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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	DRIVEWAY NO.	CENTER LINE STATION	OFFSET	EXISTING DRIVEWAY MATERIAL	PROPOSED DRIVEWAY	RADIUS (FT)	PROP SY	EXIST GUTTER ELEV (FT)	PROP GUTTER ELEV (FT)	PROP D/W ELEV (FT)	ROW TIE-IN ELEV (FT)	D/W WIDTH (FT)	ROW DEPTH	EXIST D/W DEPTH (FT)	PROP D/W DEPTH (FT)	PROP D/W SLOPE (%)	EXIST D/W SLOPE (%)
SPRING OAKS CIR.	1	2+81.26	LT	CONCRETE	CONCRETE	5'	26	72.52	71.58	71.91	72.91	20.3	11.0	10.6	11.0	10.5%	3.7%
	2	3+90.04	LT	CONCRETE	CONCRETE	5'	19	72.44	71.61	71.94	72.76	13.6	11.0	16.9	11.0	9.5%	1.9%
	3	4+89.09	LT	CONCRETE	CONCRETE	5'L, 1'R	14	72.17	71.62	71.95	72.12	10.9	5.2	19.2	5.2	3.9%	-0.3%
	4	5+07.98	LT	CONCRETE	CONCRETE	0'L, 5'R	24	72.24	71.80	72.13	72.29	19.6	7.1	23.2	10.8	7.8%	0.2%
	5	2+25.26	RT	CONCRETE	CONCRETE	5'	21	72.47	71.68	72.01	72.49	11.0	11.0	20.6	11.0	4.4%	0.1%
	6	2+86.56	RT	CONCRETE	CONCRETE	5'	18	72.47	71.41	71.74	72.54	13.7	11.0	21.0	11.0	7.3%	0.3%
	7	3+32.01	RT	CONCRETE	CONCRETE	5'	18	72.47	71.77	72.10	72.64	16.9	11.0	18.1	11.0	7.7%	0.9%
	8	3+67.70	RT	CONCRETE	CONCRETE	5'	19	72.30	71.89	72.22	72.32	12.8	11.0	19.5	11.0	3.7%	0.1%
	9	4+51.51	RT	CONCRETE	CONCRETE	5'	15	72.37	71.48	72.48	72.48	9.9	11.0	17.6	11.0	7.7%	0.6%
	10	5+09.93	RT	CONCRETE	CONCRETE	5'	22	72.43	71.99	72.32	72.64	18.3	10.0	12.9	10.0	8.0%	1.6%

	DRIVEWAY NO.	CENTER LINE STATION	OFFSET	EXISTING DRIVEWAY MATERIAL	PROPOSED DRIVEWAY	RADIUS (FT)	PROP SY	EXIST GUTTER ELEV (FT)	PROP GUTTER ELEV (FT)	PROP D/W ELEV (FT)	ROW TIE-IN ELEV (FT)	D/W WIDTH (FT)	ROW DEPTH	EXIST D/W DEPTH (FT)	PROP D/W DEPTH (FT)	PROP D/W SLOPE (%)	EXIST D/W SLOPE (%)
MERLIN CT.	11	10+68.93	LT	CONCRETE	CONCRETE	5'	20	71.80	71.48	71.81	72.50	12.4	11.0	18.8	11.0	6.3%	3.7%
	12	11+53.08	LT	CONCRETE	CONCRETE	5'	15	72.25	71.78	72.11	72.58	12.1	10.1	15.4	10.1	4.7%	2.1%
	13	11+69.86	LT	CONCRETE	CONCRETE	LS', R3'	13	72.34	71.92	72.25	72.66	10.5	10.2	15.6	10.2	4.0%	2.1%
	14	11+77.33	LT	CONCRETE	CONCRETE	R3', LS'	15	72.52	72.07	72.40	73.01	11.2	10.0	11.4	10.0	6.1%	4.3%
	15	10+77.46	RT	CONCRETE	CONCRETE	5'	20	71.82	71.54	71.87	72.78	12.2	11.0	18.7	11.0	8.3%	5.1%
	16	11+24.12	RT	CONCRETE	CONCRETE	5'	15	72.20	71.57	71.90	72.93	11.5	10.0	13.8	10.0	10.3%	5.3%
	17	11+47.04	RT	CONCRETE	CONCRETE	5'	17	72.39	71.73	72.06	72.90	12.7	10.1	14.7	10.1	8.3%	3.5%
	18	11+68.88	RT	CONCRETE	CONCRETE	5'	16	72.48	71.92	72.25	73.00	11.9	10.2	16.5	10.2	7.4%	3.2%



NOTES:

1. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED.
2. ALL DISTURBED SUBGRADE MUST BE TREATED TO DEPTH OF STABILIZATION REQUIREMENTS PER GEO REPORT NOTES AND SPECIFICATIONS.
3. SAW CUT OPERATIONS SHALL BEGIN AS SOON AS POSSIBLE AFTER CONCRETE PLACEMENT.
4. SAW CUT EXISTING DRIVES AT R.O.W. UNLESS OTHERWISE INSTRUCTED BY THE CITY ENGINEER OR CITY
5. SEAL ALL SAW CUT CONTROL POINTS WITH SELF-SEALING NON-SAG JOINT SEALANT MATERIAL.
6. METER BOXES OR CLEANOUTS SHALL NOT BE LOCATED WITHIN DRIVEWAYS.
7. REFER TO EXPANSION JOINT DETAIL FOR SPACING.
8. THE SIDEWALK CROSS SLOPE APPLIES TO THE DRIVEWAY INLINE WITH THE SIDEWALK CROSSING THE DRIVE. (ON THOROUGHFARES AND COLLECTORS ONLY).

NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

DRIVEWAY SUMMARY

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE:	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 7 OF 49
SURVEY BY: CFA	DWG. No.:
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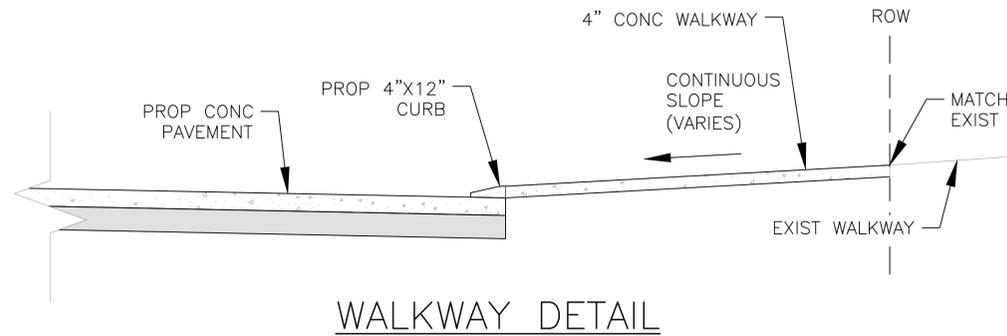


RESIDENTIAL DRIVEWAY WITHOUT SIDEWALK DETAIL

DETAIL ST - 4

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	WALKWAY NO.	STATION	OFFSET	EXIST W/W SLOPE (%)	PROP WALKWAY	EXIST WALKWAY MATERIAL
SPRING OAKS CIR.	1	2+40.29	RT	0.8%	CONCRETE	CONCRETE
MERLIN CT.	2	11+12.07	LT	2.7%	CONCRETE	CONCRETE



NO.	DATE	REVISIONS



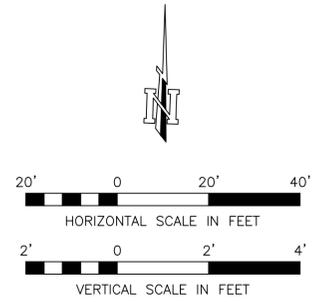
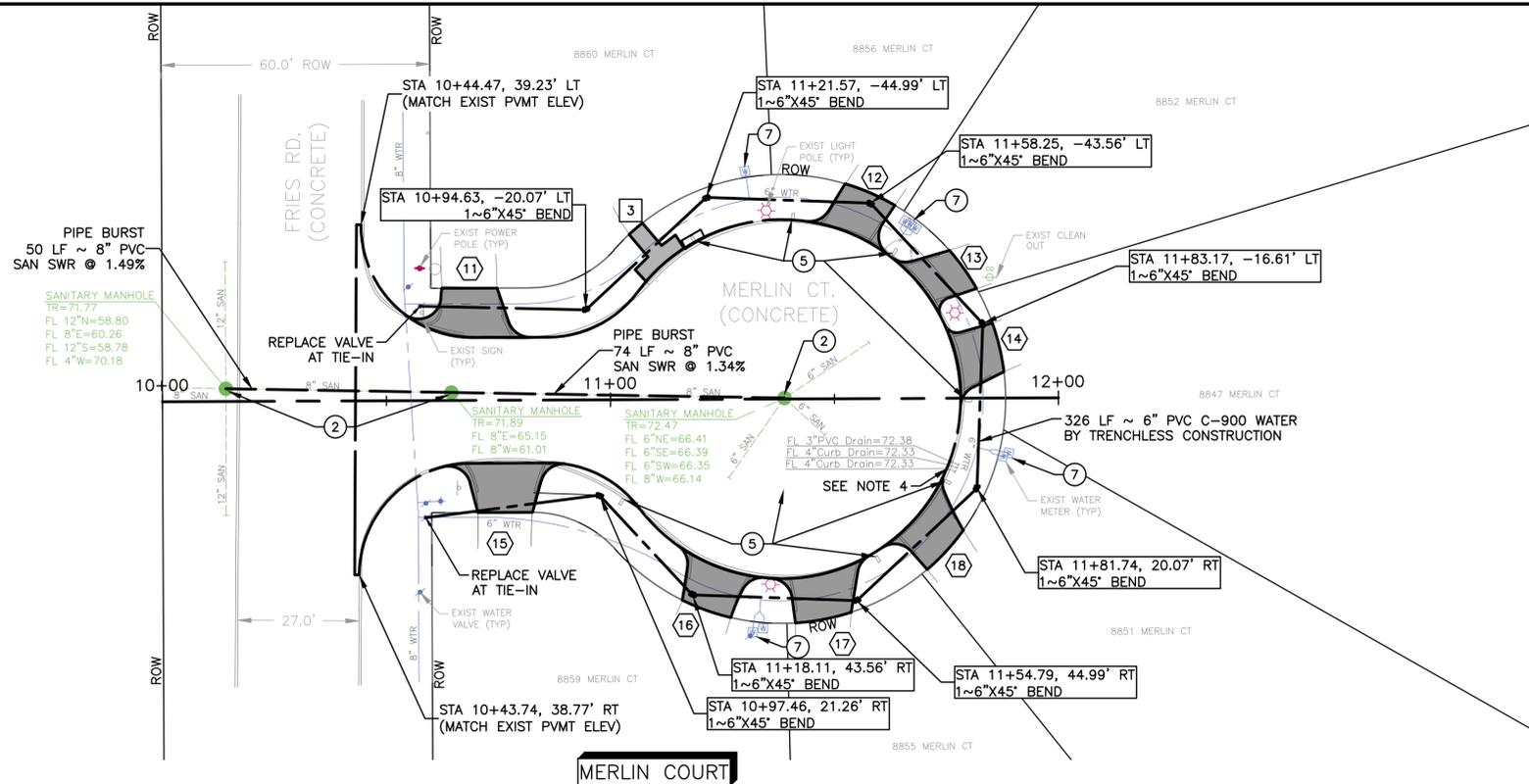
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
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 RECONSTRUCTION

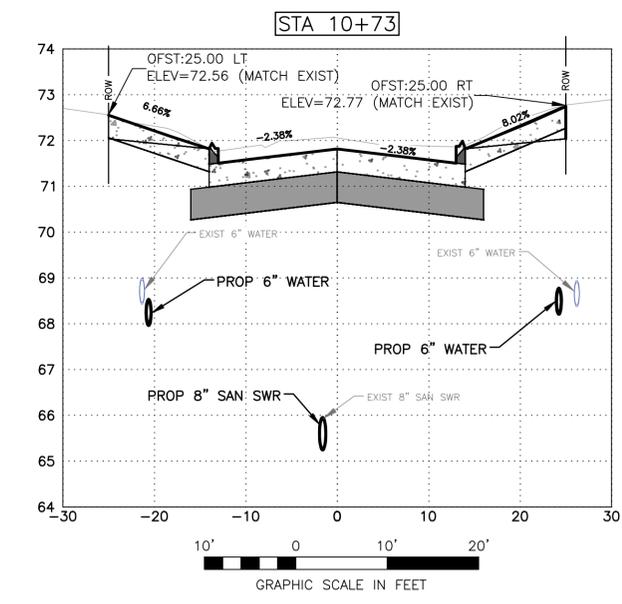
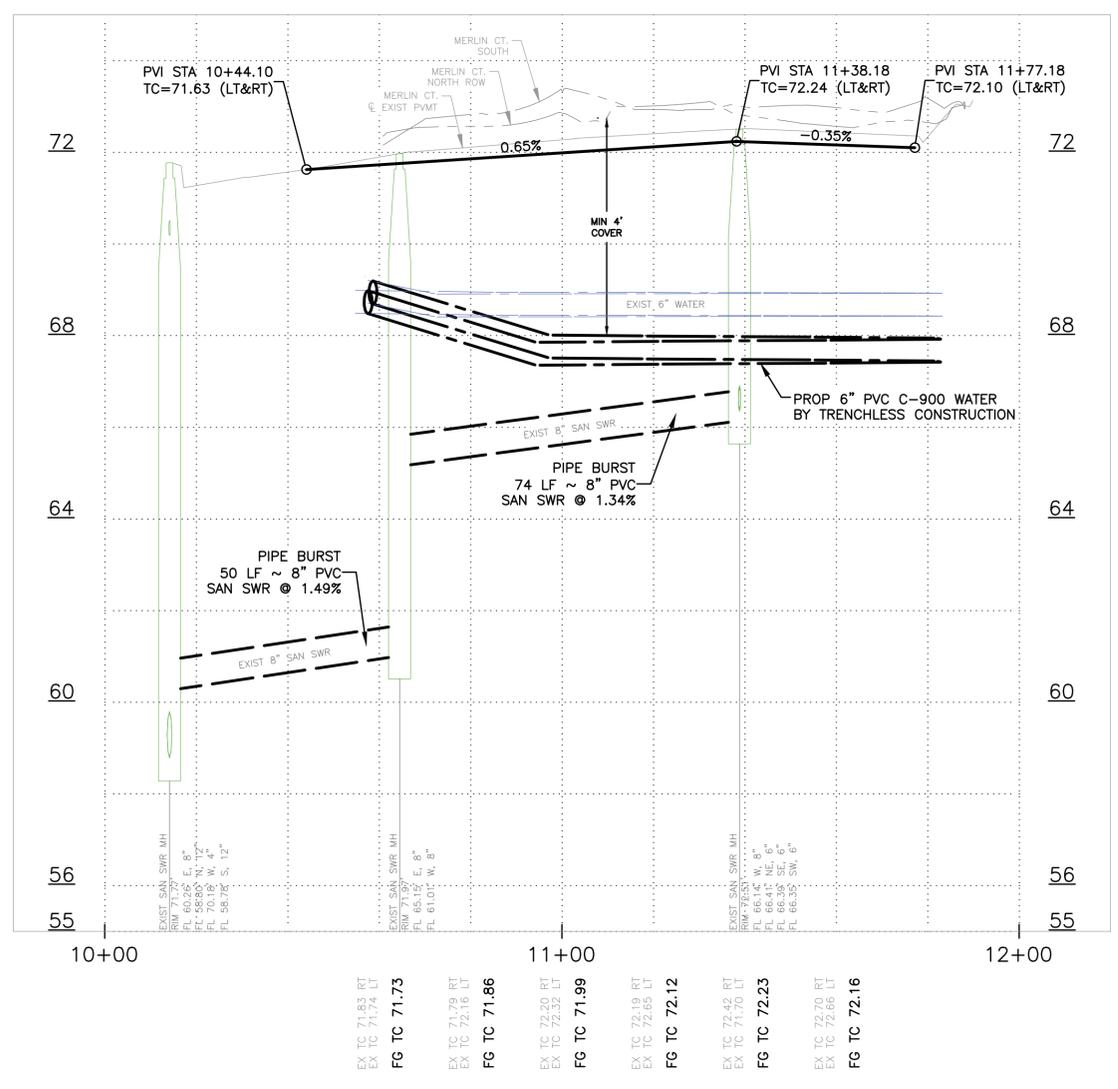
WALKWAY SUMMARY

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE:	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 8 OF 49
SURVEY BY: CFA	DWG. No:
F B No.: -	



- LEGEND**
- PROP DRIVEWAY
 - PROP WALKWAY
 - # DRIVEWAY (SEE SHEET 7 FOR DRIVEWAY SUMMARY TABLE)
 - # WALKWAY (SEE SHEET 8 FOR WALKWAY SUMMARY TABLE)

- NOTES:**
1. PIPE BURST EXISTING SANITARY SEWER WITH SAME SIZE. ITEM INCLUDES CLEANING, TELEVISIONING AND PIPE BURSTING.
 2. CLEAN SANITARY MANHOLE, REMOVE AND CIPP LINE EXISTING MANHOLE, REPLACE MANHOLE CONE. MATCH PROPOSED ROADWAY ELEVATION.
 3. CONTRACTOR TO TIE IN PROPOSED 6" WATERLINE INTO EXISTING 6" WATERLINE.
 4. REMOVE RESIDENTIAL YARD DRAIN TO EXISTING ROW. REPLACE AND INSTALL NEW METAL CURB.
 5. RESIDENT IS RESPONSIBLE FOR MOVING MAILBOX TO ROW AND REINSTALLING AFTER CONSTRUCTION. BID ITEMS INCLUDE TEMPORARY MAILBOX PROVIDED BY CONTRACTOR. EXTRA BID ITEM INCLUDES MOVING MAILBOX TO ROW. NO PAYMENT FOR MOVING MAILBOX TO BACK-OF-CURB.
 6. NO WATERLINE SHUT OFF ON FRIDAYS.
 7. REPLACE WATER LEAD AND METER BOX.



NO.	DATE	REVISIONS

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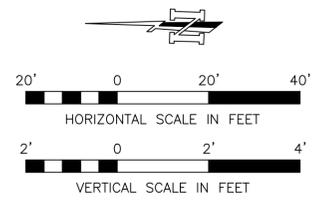
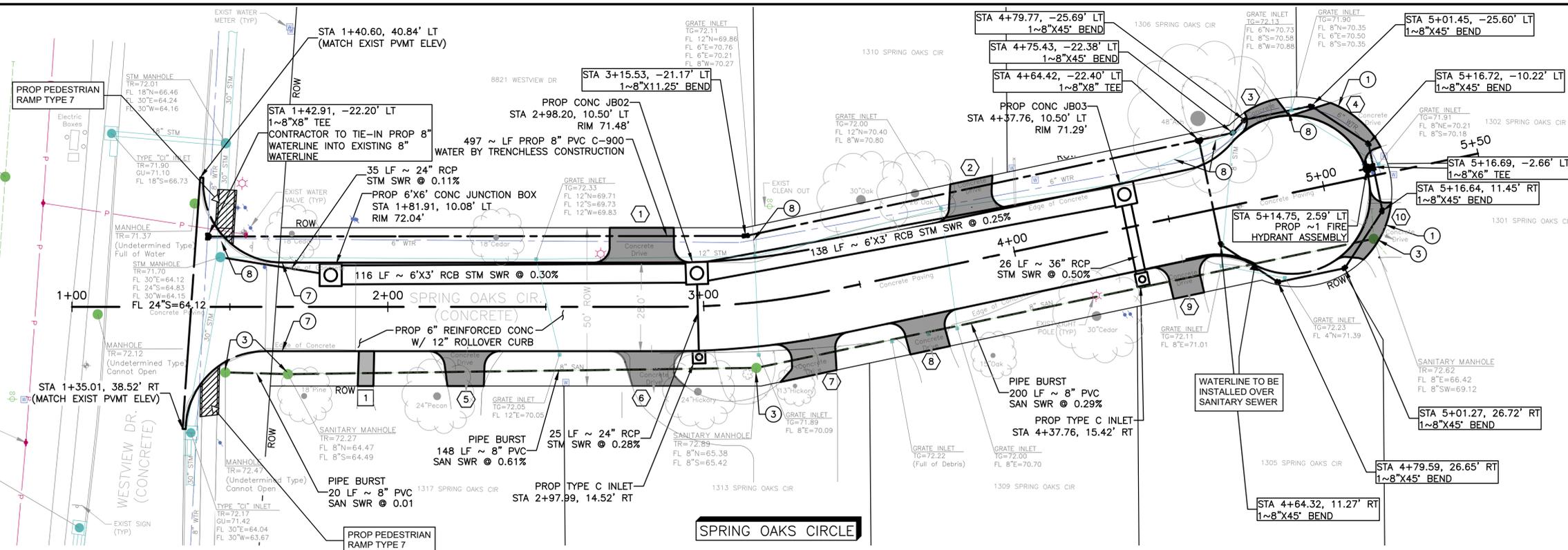
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

MERLIN COURT PLAN AND PROFILE

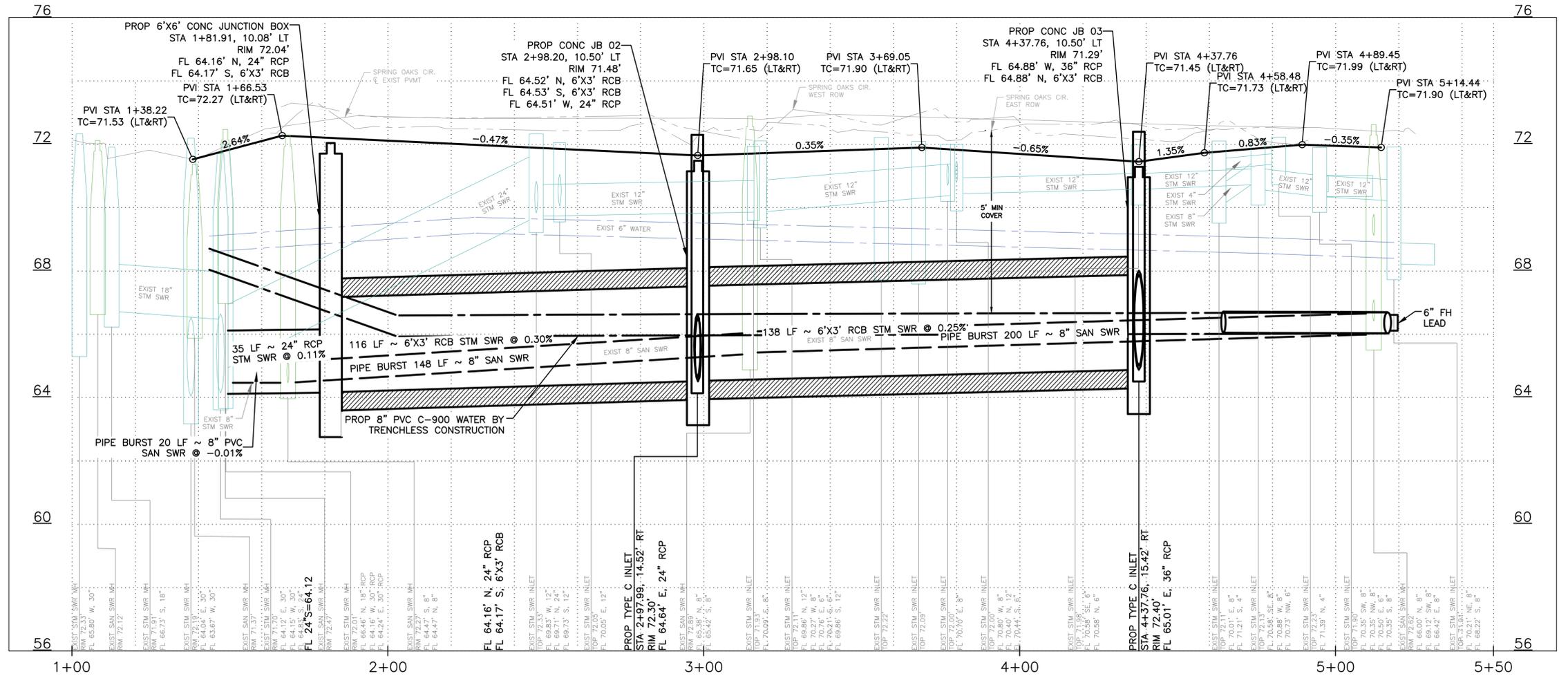
SUBMITTED: 9/24/2025	DESIGNED BY: JMS
SCALE: 1"=20'H, 1"=2'V	DRAWN BY: AC / BAK
DATE: 9/24/2025	SHEET No.: 9 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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- LEGEND**
- PROP DRIVEWAY
 - PROP DRIVEWAY
 - PROP SIDEWALK
 - DRIVEWAY (SEE SHEET 7 FOR DRIVEWAY SUMMARY TABLE)
 - WALKWAY (SEE SHEET 8 FOR DRIVEWAY SUMMARY TABLE)

- NOTES:**
1. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS FOR ROW AND DRIVEWAY TIE IN.
 2. PIPE BURST EXISTING SANITARY SEWER WITH SAME SIZE. ITEM INCLUDES CLEANING, TELEVISIONING AND PIPE BURSTING.
 3. CLEAN SANITARY MANHOLE, REMOVE AND CIPP LINE EXISTING MANHOLE, REPLACE MANHOLE CONE. MATCH PROPOSED ROADWAY ELEVATION.
 4. CONTRACTOR TO TIE IN PROPOSED 8" WATERLINE TO EXISTING 8" WATERLINE.
 5. REMOVE RESIDENTIAL YARD DRAIN TO EXISTING ROW. REPLACE AND INSTALL NEW METAL CURB.
 6. RESIDENT IS RESPONSIBLE FOR MOVING MAILBOX TO ROW AND REINSTALLING AFTER CONSTRUCTION. BID ITEMS INCLUDE TEMPORARY MAILBOX PROVIDED BY CONTRACTOR. EXTRA BID ITEM INCLUDES MOVING MAILBOX TO ROW. NO PAYMENT FOR MOVING MAILBOX TO BACK-OF-CURB.
 7. BEGIN 10-FOOT CURB TRANSITION FROM 6" CURB TO 12" ROLL OVER CURB.
 8. EXISTING STORM SEWER IS SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO FIELD VERIFY EXISTING STORM MAY BE REMOVED OR ABANDONED IN PLACE. CONTRACTOR TO REPLACE PRIVATE DRAIN LINES FROM THE ROW TO CURB. INSTALL NEW METAL CURBS.
 9. CONTRACTOR TO TIE IN PROPOSED 8" WATERLINE INTO EXISTING 8" WATERLINE.



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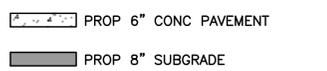
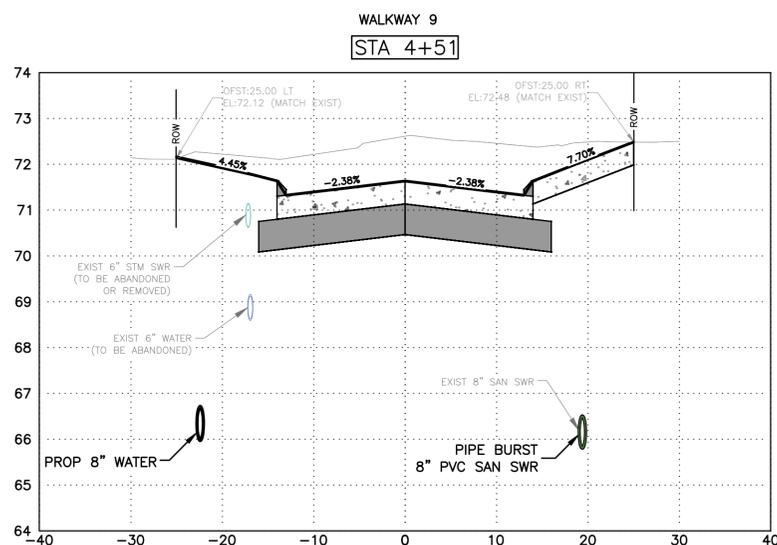
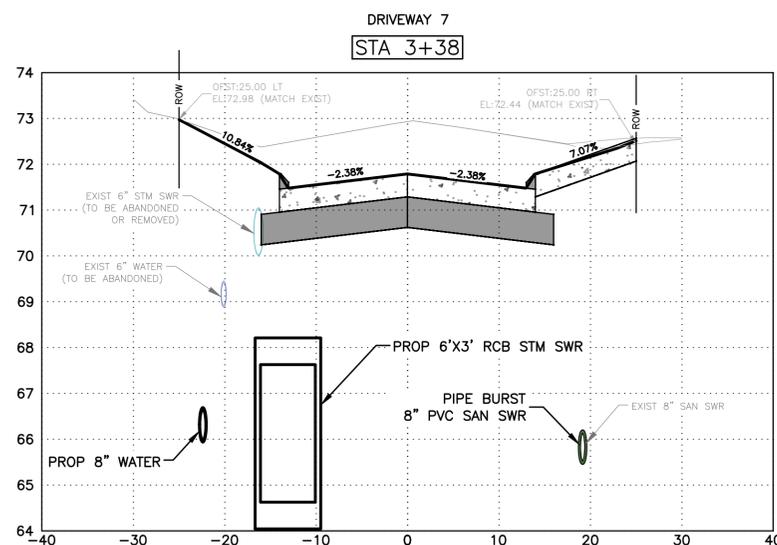
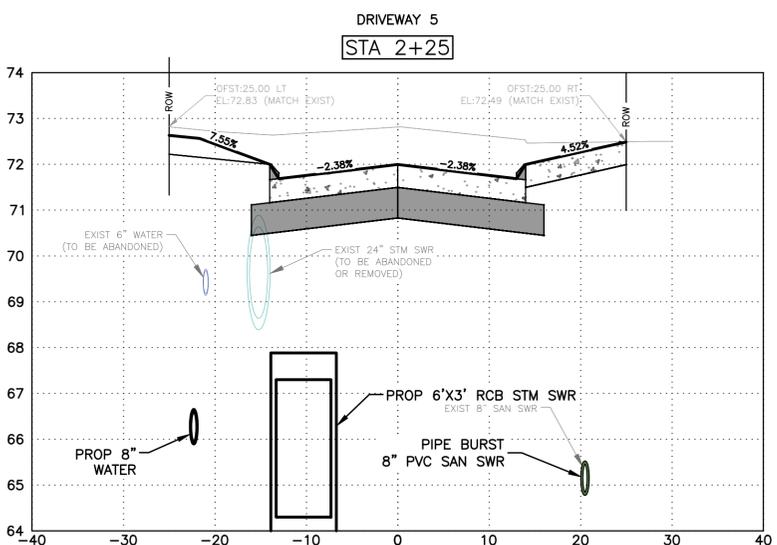
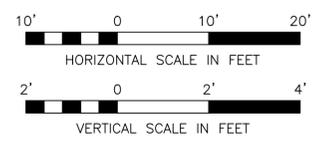
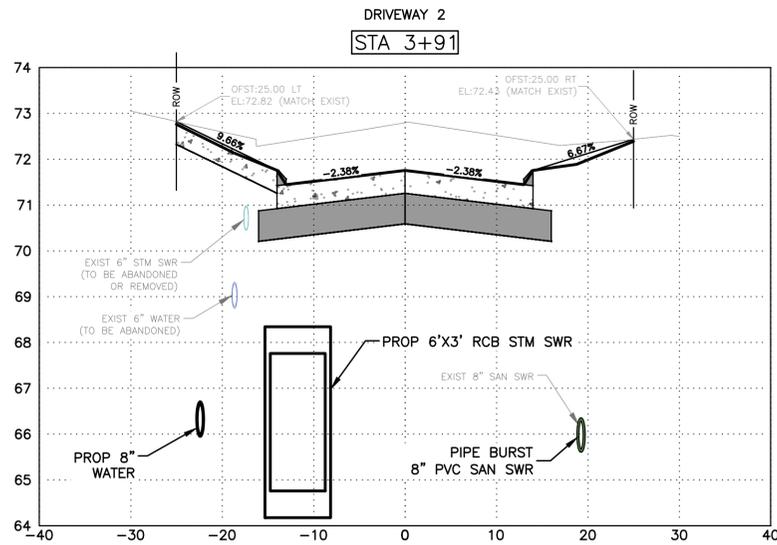
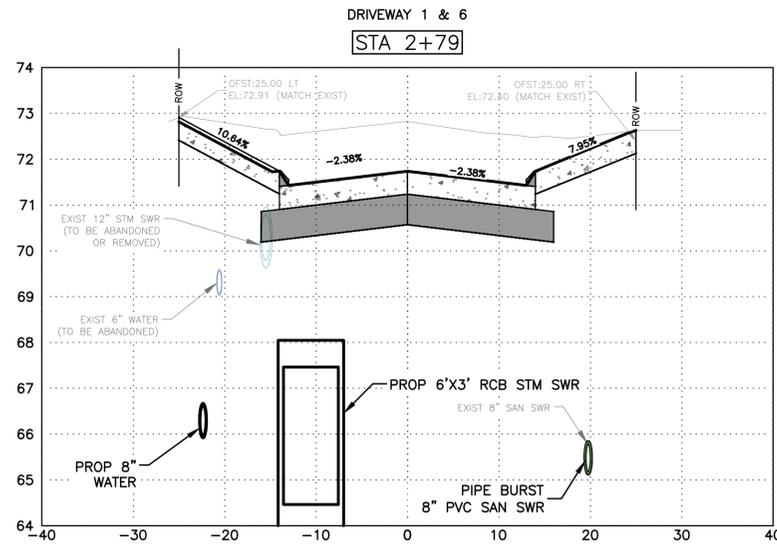
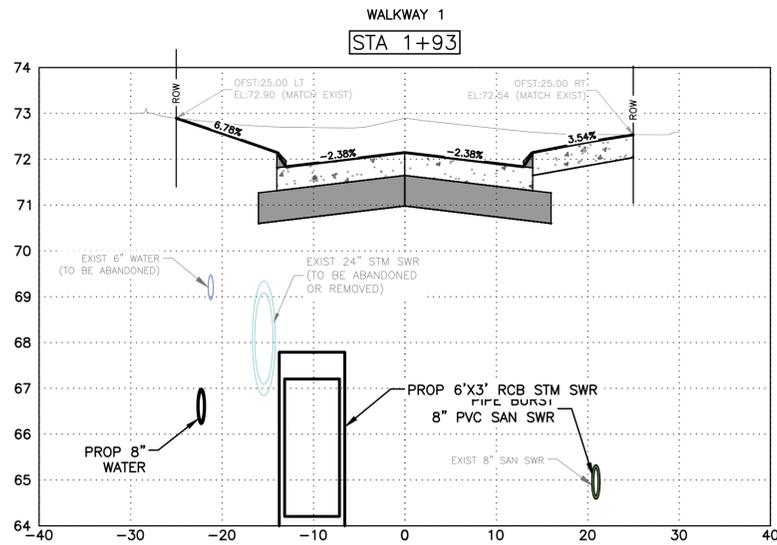
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

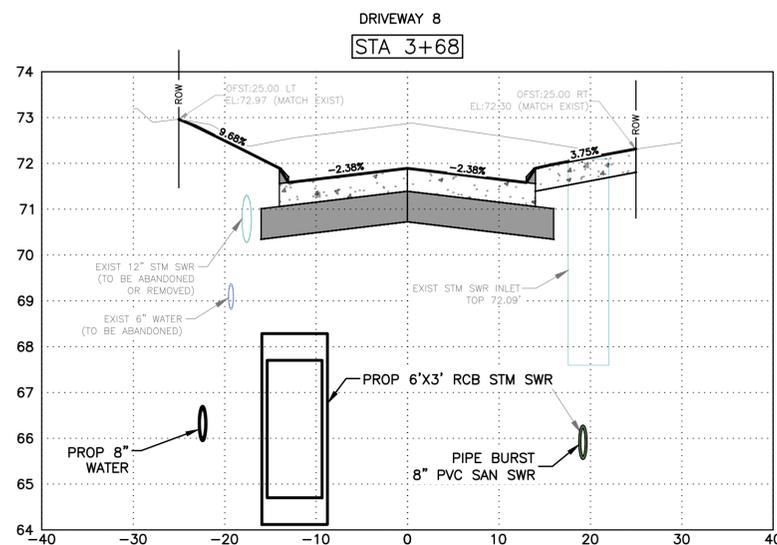
SPRING OAKS CIRCLE
 PLAN AND PROFILE

SUBMITTED: 9/26/2025	DESIGNED BY: JMS
SCALE: 1"=20'H, 1"=2'V	DRAWN BY: AC / BAK
DATE: 9/26/2025	SHEET No.: 10 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.:	

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NO.	DATE	REVISIONS



CobbFendley
 TBPELS Engineering Firm No. 274
 Land Surveying Firm No. 10046700
 10055 Grogans Mill Road, Suite 350
 The Woodlands, Texas 77380
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

SPRING OAKS CIRCLE
 CROSS SECTIONS

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1"=10'H, 1"=2'V	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 11 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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CONSTRUCTION NARRATIVE

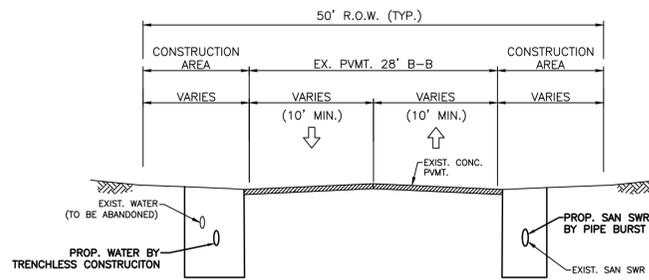
- COORDINATE CONSTRUCTION SCHEDULE AND OPERATIONS WITH THE CITY, FIRE DEPARTMENT, POLICE DEPARTMENT, SPRING BRANCH INDEPENDENT SCHOOL DISTRICT, AND U.S. POSTAL OFFICE.
- ALL PLANNED OUTAGES REQUIRE 72 HOUR NOTICE TO RESIDENTS AND CITY. NO PLANNED OUTAGES ON ANY FRIDAY OR RIGHT BEFORE A HOLIDAY
- ELIMINATE OR COVER ANY EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TEMPORARY SIGNS AND CONSTRUCTION.
- ESTABLISH STORM WATER POLLUTION PREVENTION PLAN FOR EACH PHASE OF CONSTRUCTION.
- INSTALL LOW PROFILE CONCRETE TRAFFIC BARRIERS (LPCB) WITH REFLECTORS IF THE EXCAVATED AREA DROP EXCEEDS 12-INCHES.
- MAINTAIN INTEGRITY OF DRAINAGE DURING ALL PHASES OF CONSTRUCTION.

PHASE 1: WATER AND SANITARY SEWER

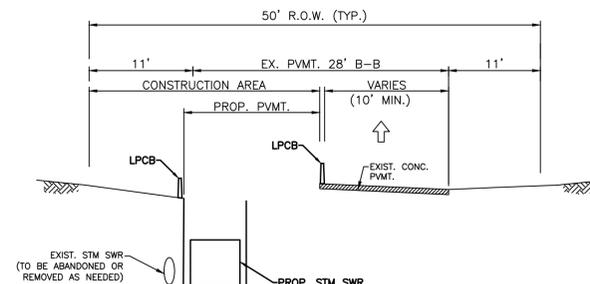
- INSTALL PROPOSED WATER MAIN BY TRENCHLESS CONSTRUCTION
- PIPE BURST PROPOSED SANITARY SEWER MAIN

PHASE 2-5: STORM SEWER AND PAVING

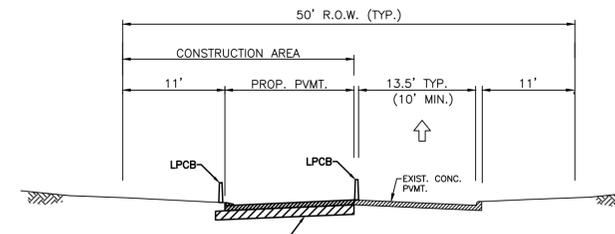
- PLACE ADVANCE WARNING SIGNS AND BARRICADES. SEE TRAFFIC CONTROL PLAN SHEET 40 FOR TYPICAL ONE LANE CLOSURE DETAIL.
- COORDINATE TRAFFIC CONTROL CHANGES/MODIFICATIONS WITH RESIDENTS AND CITY.
- COORDINATE DRIVEWAY NOTIFICATIONS WITH RESIDENTS AND CITY.
- SEE TYPICAL SECTIONS 2 - 6 ON THIS SHEET AND PROVIDE TEMPORARY PAVEMENT, AS NEEDED, TO MAINTAIN 11' TYP. (10' MIN.) LANES.
- REMOVE PAVEMENT ON HALF OF THE STREET, OPEN CUT AND INSTALL THE DRAINAGE SYSTEM, INCLUDING BACKFILL, BEGINNING WITH THE MAIN TRUNK LINE CONNECTION.
- CONSTRUCT NEW PAVEMENT ON HALF OF THE STREET.
- ADJUST ADVANCE WARNING SIGNS AND BARRICADES. ON THE OTHER HALF OF THE STREET, REMOVE EXISTING PAVEMENT AND CONSTRUCT NEW PAVEMENT.
- REMOVE ADVANCE WARNING SIGNS AND BARRICADES.



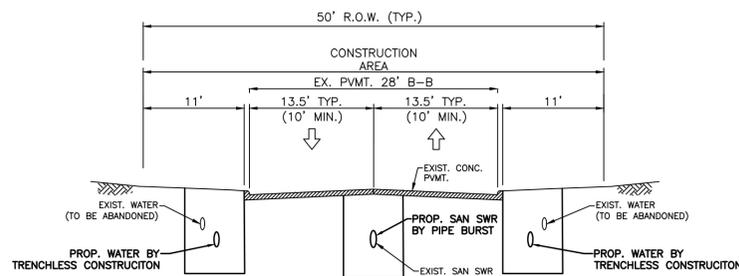
TYPICAL SECTION 1
WATER AND SANITARY - SPRING OAKS CIRCLE



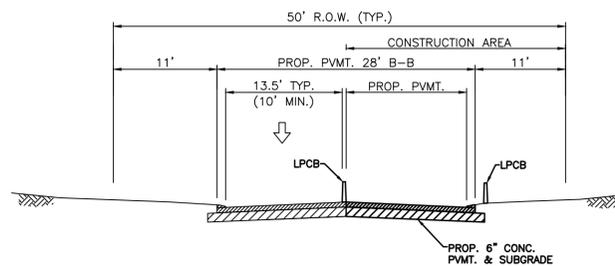
TYPICAL SECTION 3
PAVING AND STORM SEWER CONSTRUCTION - SPRING OAKS CIRCLE EAST



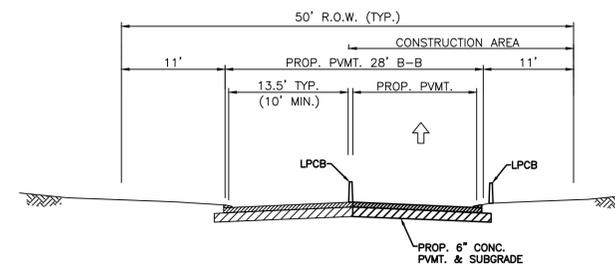
TYPICAL SECTION 5
PAVING CONSTRUCTION - MERLIN COURT NORTH



TYPICAL SECTION 2
WATER AND SANITARY - MERLIN COURT



TYPICAL SECTION 4
PAVING CONSTRUCTION - SPRING OAKS CIRCLE WEST



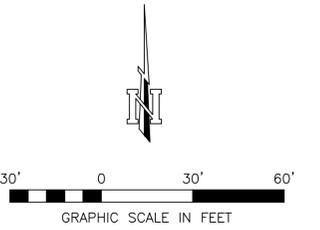
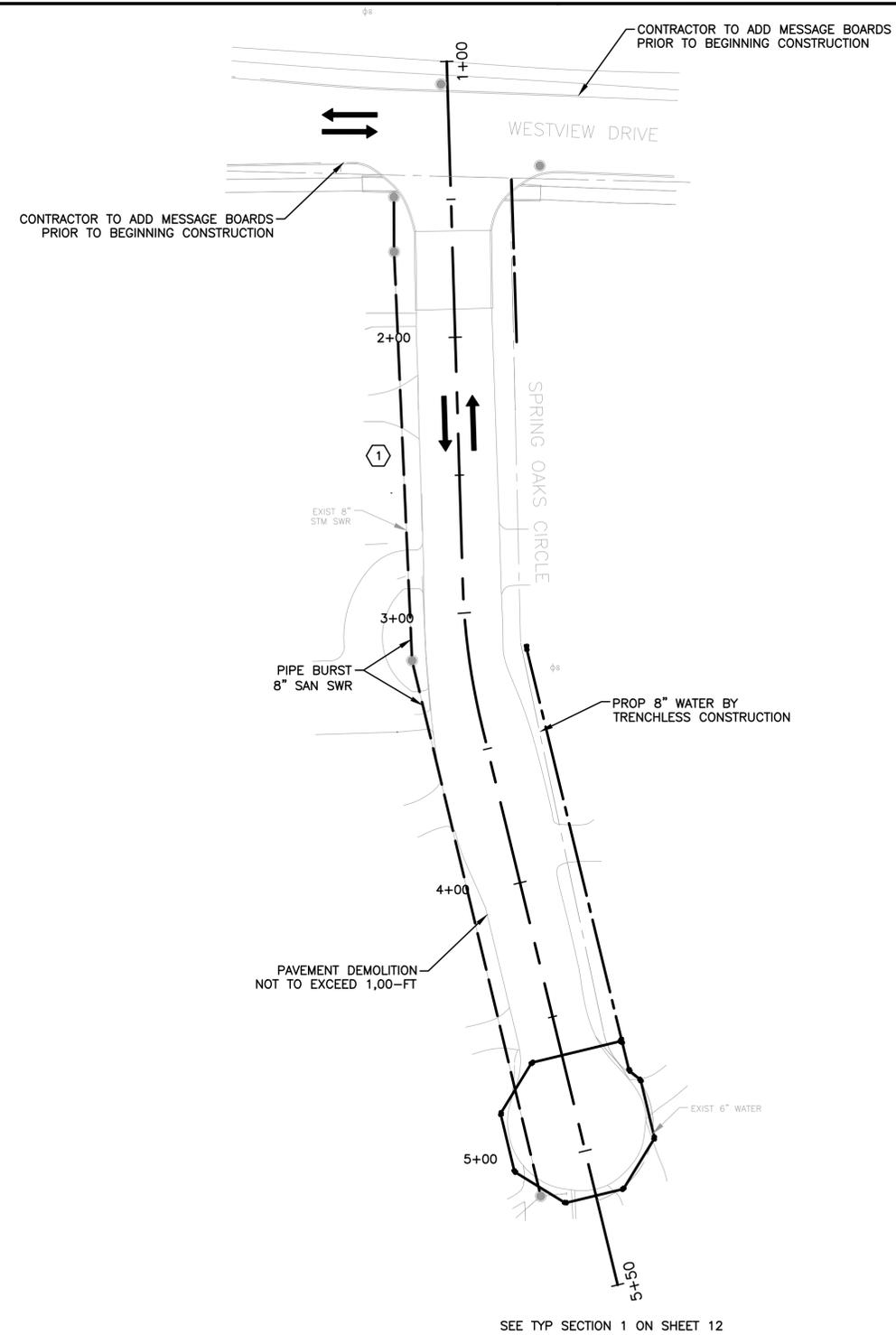
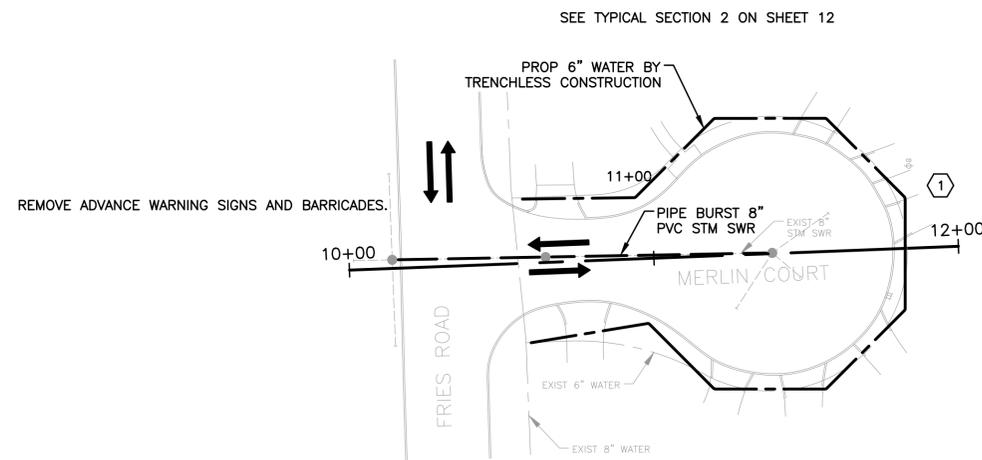
TYPICAL SECTION 6
PAVING CONSTRUCTION - MERLIN COURT SOUTH

NO.	DATE	REVISIONS
		
 <p style="font-size: small; margin: 0;"> TBPELS Engineering Firm No. 274 Land Surveying Firm No. 10046700 10055 Grogans Mill Road, Suite 350 The Woodlands, Texas 77380 936.224.7114 www.cobbfendley.com </p>		
CITY OF SPRING VALLEY VILLAGE		
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION		
CONSTRUCTION NARRATIVE AND TYPICAL SECTIONS		
SUBMITTED: 9/23/2025	DESIGNED BY: JMS	
SCALE:	DRAWN BY: AC / BAK	
DATE: 9/23/2025	SHEET No.: 12 OF 49	
SURVEY BY: CFA	DWG. No.:	
F B No.: -		

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PHASE 1 WATER & SANITARY SEWER	PHASE 2 EAST SPRING OAKS CIRCLE	PHASE 3 WEST SPRING OAKS CIRCLE
	PHASE 4 NORTH MERLIN COURT	PHASE 5 SOUTH MERLIN COURT

SHEET 13



SECTION CODE DESCRIPTION:

	= TRAFFIC FLOW DIRECTION
	= PHASE NUMBER
	= SUB-PHASE A
	= SUB-PHASE B

- NOTE:**
- CLEAN SANITARY MANHOLE, REMOVE AND CIPP LINE EXISTING MANHOLE, REPLACE MANHOLE CONE. MATCH PROPOSED ROADWAY ELEVATION.

PHASE 1: MERLIN AND SPRING OAKS CIR. STORM AND PAVING
 A TWO-PHASED CONSTRUCTION APPROACH IS TYPICALLY RECOMMENDED FOR EACH STREET. IN PHASE A, CONSTRUCT HALF OF THE STREET WITH ONE-WAY TRAFFIC ON THE OTHER SIDE OF THE STREET. IN PHASE B, CONSTRUCT THE REMAINING HALF OF THE STREET AND MAINTAIN TRAFFIC ON THE NEWLY CONSTRUCTED SIDE OF THE STREET.

- PLACE ADVANCE WARNING SIGNS AND BARRICADES. REFER TO SHEET 40 FOR TRAFFIC CONTROL PLAN AND DETOUR DETAILS.
- CONTRACTOR TO PROVIDE DOOR HANGERS PRIOR TO BEGINNING CONSTRUCTION
- SEE TYPICAL SECTION 1 ON SHEET 12 AND PROVIDE TEMPORARY PAVEMENT AS NEEDED TO MAINTAIN MINIMUM LANE WIDTH (10').
- CONTRACTOR TO FIELD VERIFY EXISTING FLs AT CONNECTION TO EXIST STORM SEWER AND CONTRACTOR TO FIELD VERIFY PIPELINE AND EXISTING PRIVATE UTILITY CROSSING ELEVATIONS AND CLEARANCES PRIOR TO CONSTRUCTION OF THE STORM SEWER. NOTIFY ENGINEER OF ANY CONFLICTS IDENTIFIED IN THE FIELD.
- REFER TO SUBPHASE FOR PAVEMENT SEQUENCING. EACH SUBPHASE WILL HAVE AN INDEPENDENT TRAFFIC CONTROL SETUP. ADJUST THE TRAFFIC CONTROL SIGNAGE AS CONSTRUCTION PROGRESSES. CONTRACTOR MAY WORK ON MULTIPLE SUBPHASES CONCURRENTLY PROVIDED THAT ONE-WAY TRAFFIC FLOW IS MAINTAINED.
- CONTRACTOR TO INSTALL SUBGRADE BEFORE CONCRETE PAVEMENT.
- CONSTRUCT NEW PAVEMENT ON HALF OF THE STREET.
- ADJUST ADVANCE WARNING SIGNS AND BARRICADES. REMOVE EXISTING PAVEMENT AND CONSTRUCT NEW PAVEMENT ON THE OTHER HALF OF THE STREET.
- MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.
- REMOVE ADVANCE WARNING SIGNS AND BARRICADES.

NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

PROJECT SEQUENCING
 (1 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 30'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 13 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

PHASE 1
WATER &
SANITARY SEWER

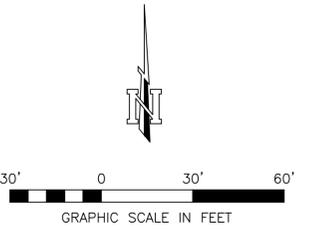
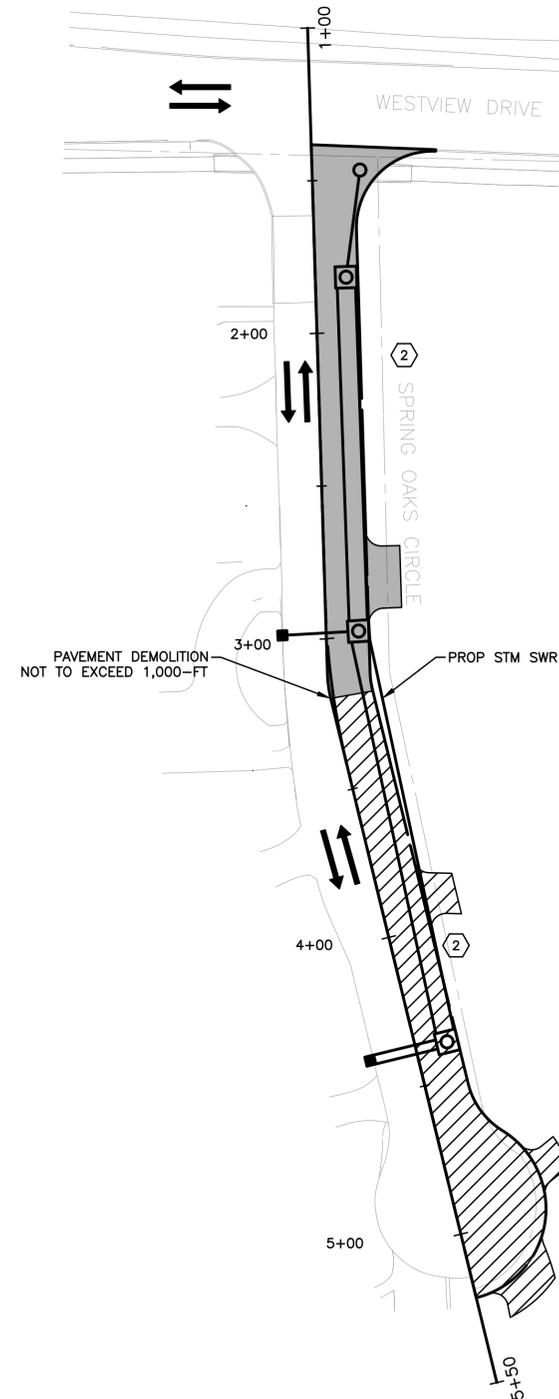
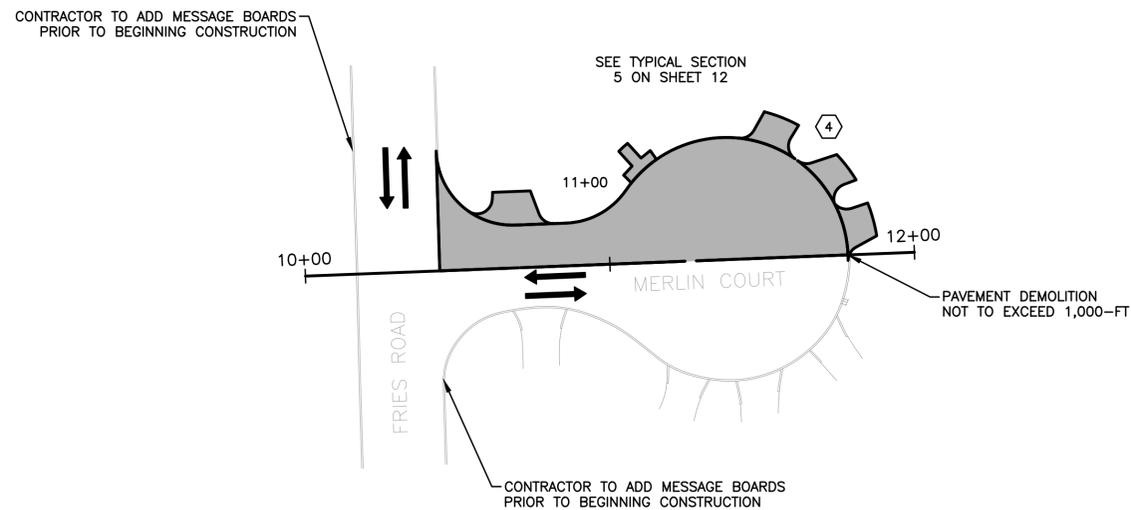
PHASE 2
EAST SPRING
OAKS CIRCLE

PHASE 3
WEST SPRING
OAKS CIRCLE

PHASE 4
NORTH
MERLIN COURT

PHASE 5
SOUTH
MERLIN COURT

SHEET 14



SECTION CODE DESCRIPTION:
 = TRAFFIC FLOW DIRECTION
 = PHASE NUMBER
 = SUB-PHASE A
 = SUB-PHASE B

PHASE 2 & 4: MERLIN AND SPRING OAKS CIR. STORM AND PAVING
 A TWO-PHASED CONSTRUCTION APPROACH IS TYPICALLY RECOMMENDED FOR EACH STREET. IN PHASE A, CONSTRUCT HALF OF THE STREET WITH ONE-WAY TRAFFIC ON THE OTHER SIDE OF THE STREET. IN PHASE B, CONSTRUCT THE REMAINING HALF OF THE STREET AND MAINTAIN TRAFFIC ON THE NEWLY CONSTRUCTED SIDE OF THE STREET.

- PLACE ADVANCE WARNING SIGNS AND BARRICADES. REFER TO SHEET 40 FOR TRAFFIC CONTROL PLAN AND DETOUR DETAILS.
- CONTRACTOR TO PROVIDE DOOR HANGERS PRIOR TO BEGINNING CONSTRUCTION.
- SEE TYPICAL SECTIONS 2 - 6 ON SHEET 12 AND PROVIDE TEMPORARY PAVEMENT AS NEEDED TO MAINTAIN MINIMUM LANE WIDTH.
- CONTRACTOR TO FIELD VERIFY EXISTING FLs AT CONNECTION TO EXIST STORM SEWER AND CONTRACTOR TO FIELD VERIFY PIPELINE AND EXISTING PRIVATE UTILITY CROSSING ELEVATIONS AND CLEARANCES PRIOR TO CONSTRUCTION OF THE STORM SEWER. NOTIFY ENGINEER OF ANY CONFLICTS IDENTIFIED IN THE FIELD.
- REFER TO SUBPHASE FOR PAVEMENT SEQUENCING. EACH SUBPHASE WILL HAVE AN INDEPENDENT TRAFFIC CONTROL SETUP. ADJUST THE TRAFFIC CONTROL SIGNAGE AS CONSTRUCTION PROGRESSES. CONTRACTOR MAY WORK ON MULTIPLE SUBPHASES CONCURRENTLY PROVIDED THAT ONE-WAY TRAFFIC FLOW IS MAINTAINED.
- CONTRACTOR TO INSTALL SUBGRADE BEFORE CONCRETE PAVEMENT.
- CONSTRUCT NEW PAVEMENT ON HALF OF THE STREET.
- ADJUST ADVANCE WARNING SIGNS AND BARRICADES. REMOVE EXISTING PAVEMENT AND CONSTRUCT NEW PAVEMENT ON THE OTHER HALF OF THE STREET.
- MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.
- REMOVE ADVANCE WARNING SIGNS AND BARRICADES.

NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

PROJECT SEQUENCING
 (2 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 30'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 14 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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PHASE 1
WATER &
SANITARY SEWER

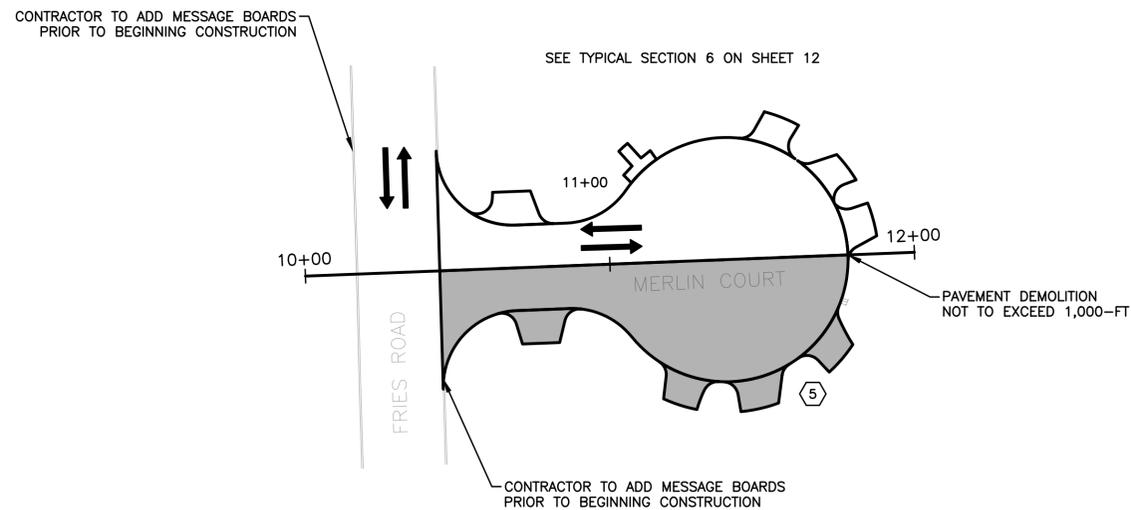
PHASE 2
EAST SPRING
OAKS CIRCLE

PHASE 3
WEST SPRING
OAKS CIRCLE

PHASE 4
NORTH
MERLIN COURT

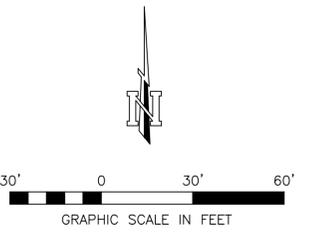
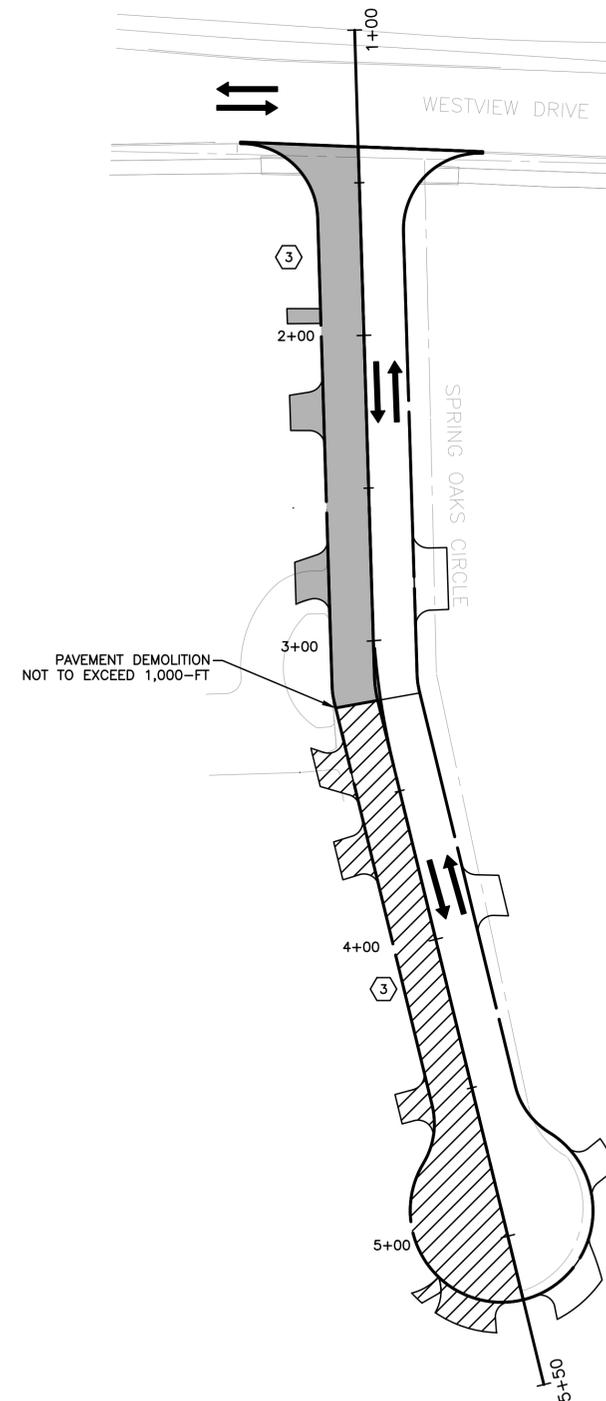
PHASE 5
SOUTH
MERLIN COURT

SHEET 15



PHASE 3 & 5: MERLIN AND SPRING OAKS CIR. STORM AND PAVING
A TWO-PHASED CONSTRUCTION APPROACH IS TYPICALLY RECOMMENDED FOR EACH STREET. IN PHASE A, CONSTRUCT HALF OF THE STREET WITH ONE-WAY TRAFFIC ON THE OTHER SIDE OF THE STREET. IN PHASE B, CONSTRUCT THE REMAINING HALF OF THE STREET AND MAINTAIN TRAFFIC ON THE NEWLY CONSTRUCTED SIDE OF THE STREET.

- PLACE ADVANCE WARNING SIGNS AND BARRICADES. REFER TO SHEET 40 FOR TRAFFIC CONTROL PLAN AND DETOUR DETAILS.
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- SEE TYPICAL SECTIONS 2 - 6 ON SHEET 12 AND PROVIDE TEMPORARY PAVEMENT AS NEEDED TO MAINTAIN MINIMUM LANE WIDTH.
- CONTRACTOR TO FIELD VERIFY EXISTING FLs AT CONNECTION TO EXIST STORM SEWER AND CONTRACTOR TO FIELD VERIFY PIPELINE AND EXISTING PRIVATE UTILITY CROSSING ELEVATIONS AND CLEARANCES PRIOR TO CONSTRUCTION OF THE STORM SEWER. NOTIFY ENGINEER OF ANY CONFLICTS IDENTIFIED IN THE FIELD.
- REFER TO SUBPHASE FOR PAVEMENT SEQUENCING. EACH SUBPHASE WILL HAVE AN INDEPENDENT TRAFFIC CONTROL SETUP. ADJUST THE TRAFFIC CONTROL SIGNAGE AS CONSTRUCTION PROGRESSES. CONTRACTOR MAY WORK ON MULTIPLE SUBPHASES CONCURRENTLY PROVIDED THAT ONE-WAY TRAFFIC FLOW IS MAINTAINED.
- CONTRACTOR TO INSTALL SUBGRADE BEFORE CONCRETE PAVEMENT.
- CONSTRUCT NEW PAVEMENT ON HALF OF THE STREET.
- ADJUST ADVANCE WARNING SIGNS AND BARRICADES. REMOVE EXISTING PAVEMENT AND CONSTRUCT NEW PAVEMENT ON THE OTHER HALF OF THE STREET.
- MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.
- REMOVE ADVANCE WARNING SIGNS AND BARRICADES.



SECTION CODE DESCRIPTION:

← → = TRAFFIC FLOW DIRECTION

= PHASE NUMBER

▒ = SUB-PHASE A

▨ = SUB-PHASE B

NO.	DATE	REVISIONS



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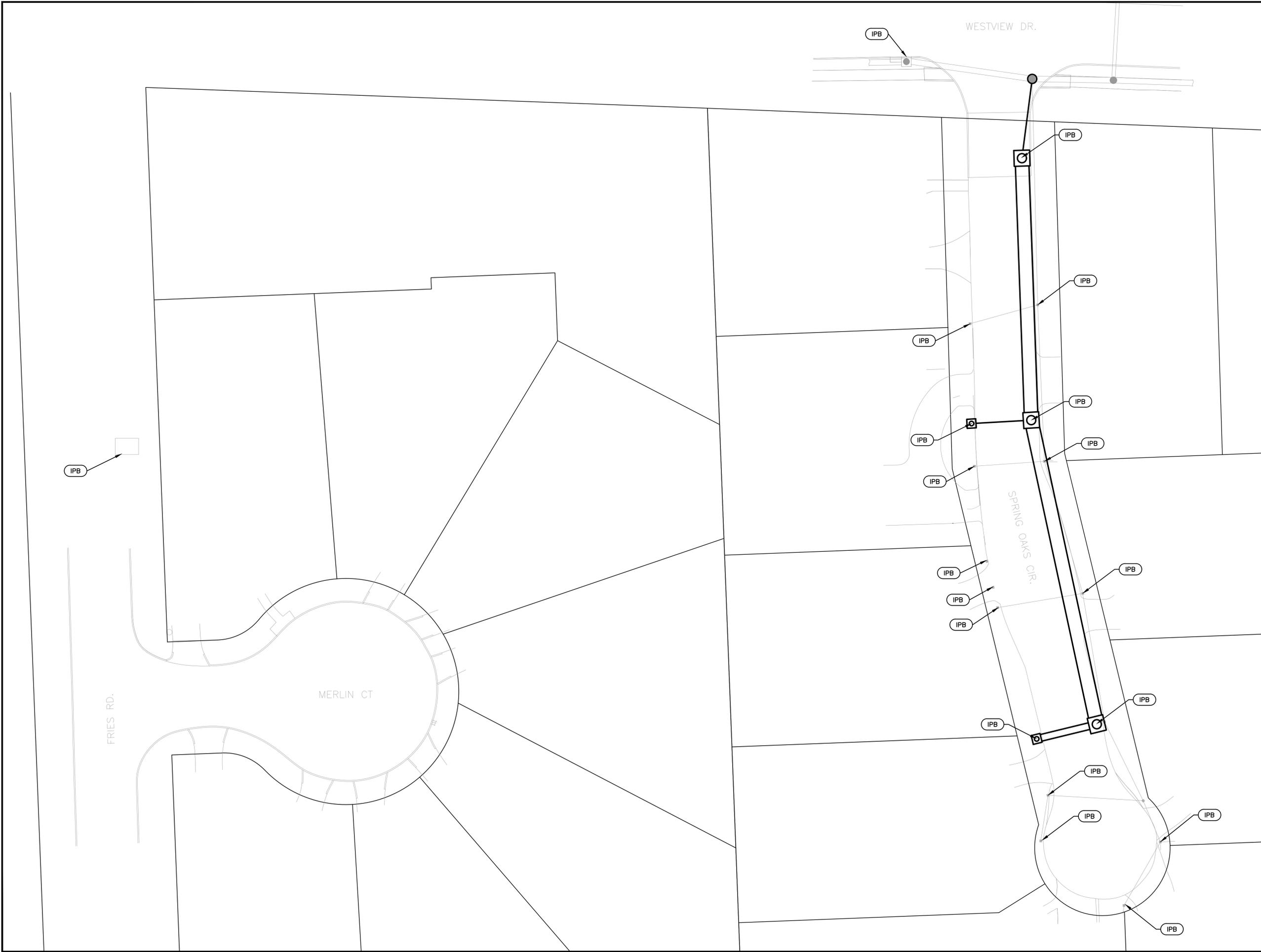
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

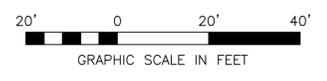
PROJECT SEQUENCING
(3 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: 1" = 30'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 15 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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WESTVIEW DR.



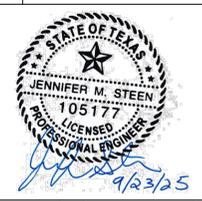
LEGEND

 INLET PROTECTION BARRIER

NOTES:

1. CONTRACTOR TO SOD ALL DISTURBED AREAS BETWEEN BACK OF CURB AND ROW WITH ST AUGUSTINE SOD.
2. SEE DETAIL SHEET 17 FOR INLET PROTECTION BARRIER.
3. DOWNSTREAM INLETS TO HAVE PROTECTION.

NO.	DATE	REVISIONS



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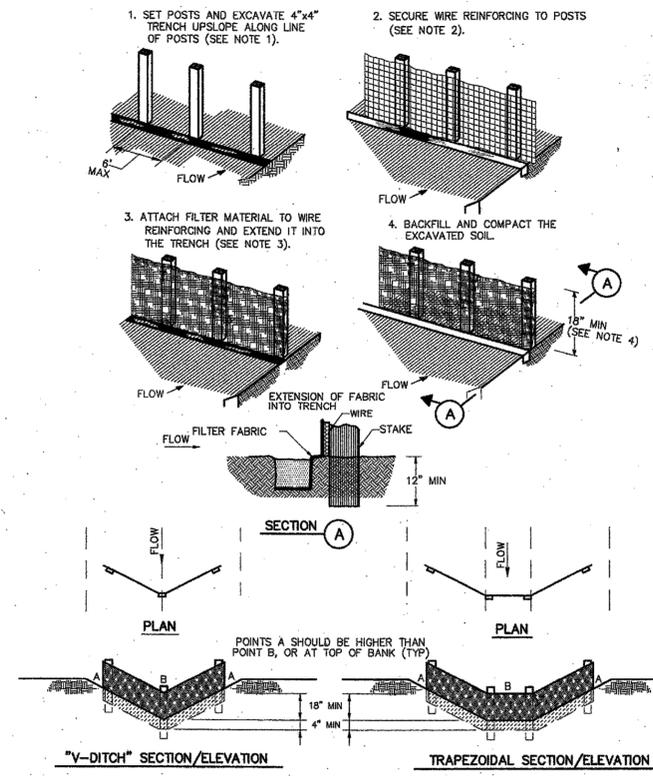
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

STORM WATER POLLUTION &
 PREVENTION PLANS

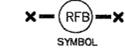
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SCALE: 1" = 20'	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 16 OF 49
SURVEY BY: CFA	DWG. No:
F B No.: -	

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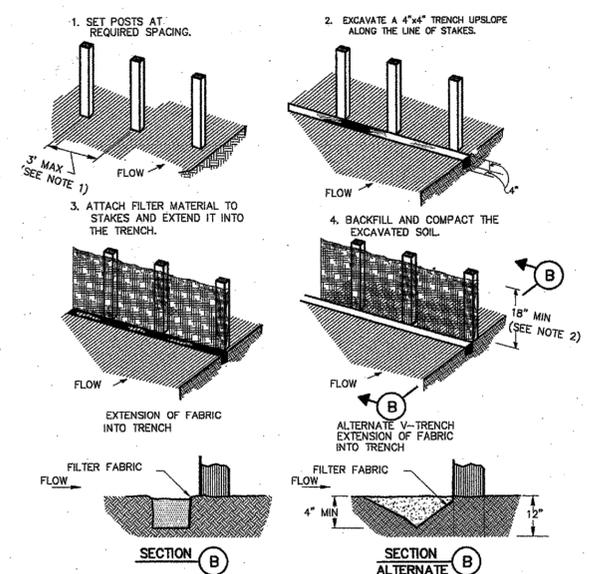


CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.



REINFORCED FILTER FABRIC BARRIER



CONSTRUCTION NOTES:

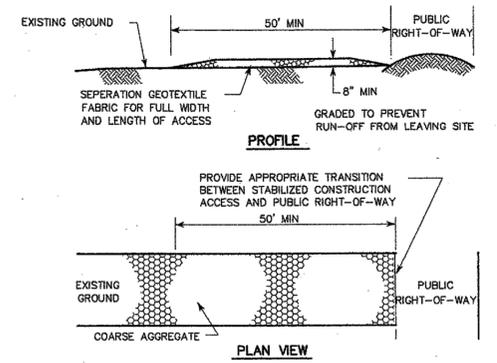
1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

INLET PROTECTION BARRIER

HAY BALE INLET PROTECTION BARRIER

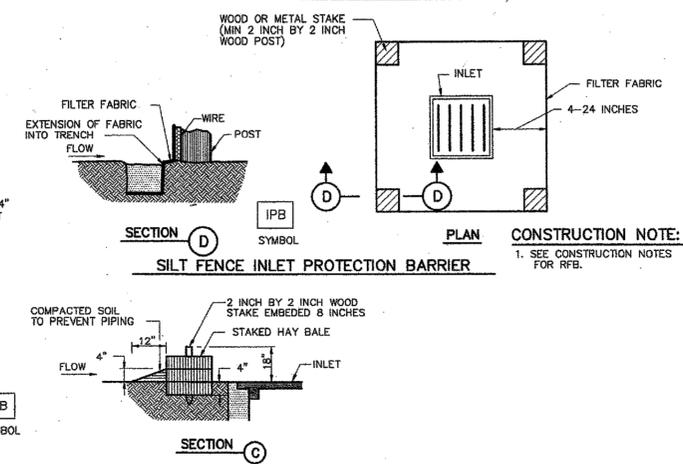


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



STABILIZED CONSTRUCTION ACCESS

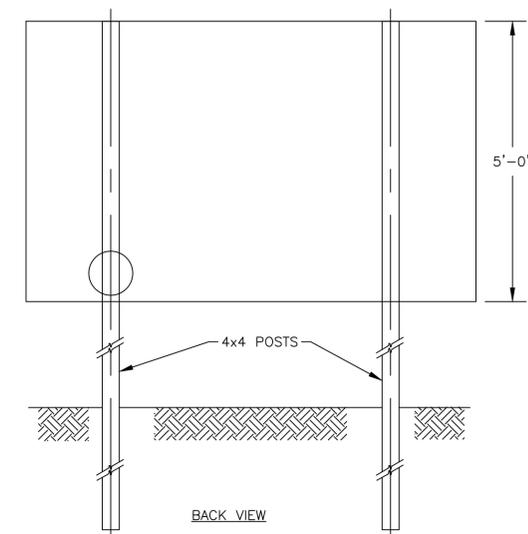
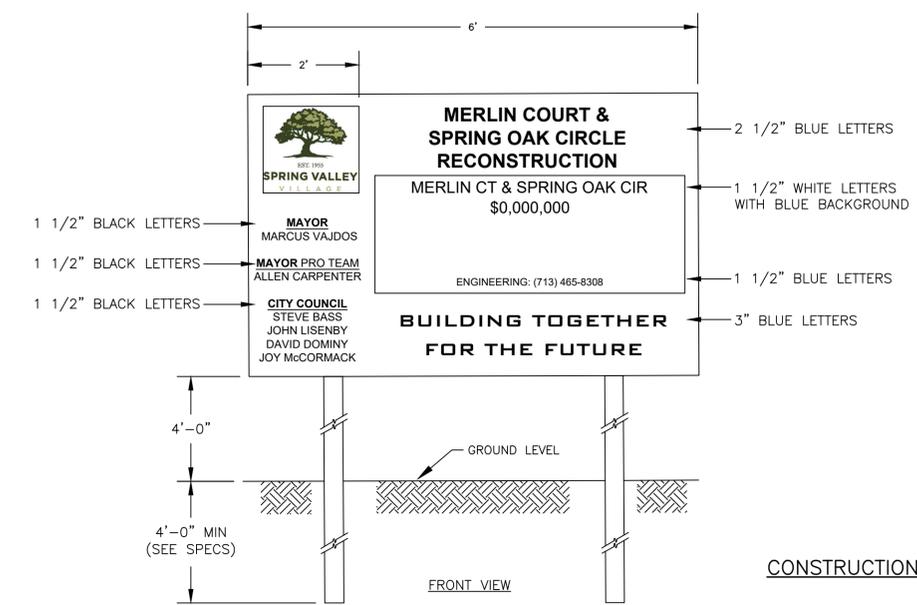


INLET PROTECTION BARRIER

SILT FENCE INLET PROTECTION BARRIER

HAY BALE INLET PROTECTION BARRIER

STORM WATER POLLUTION PREVENTION PLAN DETAILS



CONSTRUCTION SIGN

NO.	DATE	REVISIONS



CobbFendley
 TBPELS Engineering Firm No. 274
 Land Surveying Firm No. 10046700
 10055 Grogans Mill Road, Suite 350
 The Woodlands, Texas 77380
 936.224.7114
 www.cobbfendley.com

CITY OF SPRING VALLEY VILLAGE

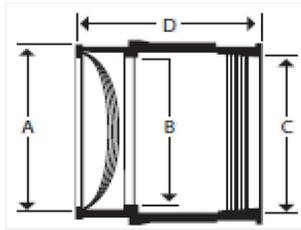
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

SWPPP AND CONSTRUCTION DETAILS

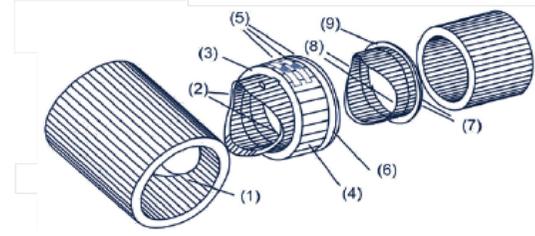
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 17 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

D:\PROJECTS\2024\12064_CITY_OF_SPRING_VALLEY_VILLAGE\01_MERLIN_COURT_&_SPRING_OAK_CIRCLE_RECON\400_CAD\412_MUNI\SHEETS\2412-064-01-06_DET_GENERAL.DWG

Connection of sewer service lines to existing clay City sewer mains shall use fittings specifically manufactured for the pipe materials of clay. The lateral connection shall be strapless and accommodate for ground movement with heavy duty stainless steel shear bands to prevent off set joints. The lateral connection fitting must provide a "positive stop" located inside the fitting that prohibits protrusion of the lateral pipe into the main line pipe. The fitting must provide a smooth transition all the way through to the main line pipe manufactured from synthetic rubber. The fitting will ensure a positive, water-tight and rot-free seal. The hole for the sewer service must be cored and not chipped. The fitting must meet or exceed ASTM 923, ASTM 425, ASTM 1173.



Connector Size	Connector P/N	Suggested Lateral Pipe O.D. Range	Hole/Connector Dimensions				Pipe Clamp P/N	Minimum Pipe I.D.	Minimum Wall Thickness
			A	B	C	D			
4"	4" TAP-N-TEE	5.38"	5.0625"	4.25"	5.38"	6.00"	#90	8"	.50"
6"	6" TAP-N-TEE	8.00"	7.125"	6.38"	8.00"	8.75"	#136	8"	.50"
8"	8" TAP-N-TEE	10.05"	9.125"	8.25"	10.00"	8.00"	#168	10"	.50"



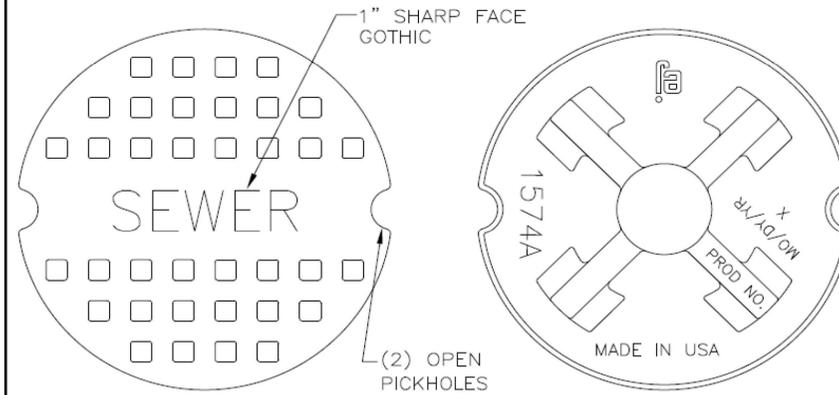
EXAMPLE OF SEWER SADDLE USED FOR CLAY PIPE

Connection of service lines to existing City PVC or Cast Iron sewer mains shall use fittings specifically manufactured for the pipe materials. The lateral connection shall be a sewer saddle with an adjustable 3 1/2 inch stainless steel strap per ASTM A 240, type 304. Bolts shall be 1/2 inch UNC rolled thread, lubricant coated, stainless steel per ASTM A 193, type 304. The nuts shall be stainless steel per ASTM A 194, type 304. Washers shall be stainless steel per ASTM A 240, type 304 and plastic lubricating washers. The gasket shall be SBR per ASTM D 2000 MBA 710, compounded for water and sewer service. The lateral connection fitting must provide a "positive stop" located inside the fitting that prohibits protrusion of the lateral pipe into the main line pipe. The fitting must ensure a positive, water-tight and rot-free seal.

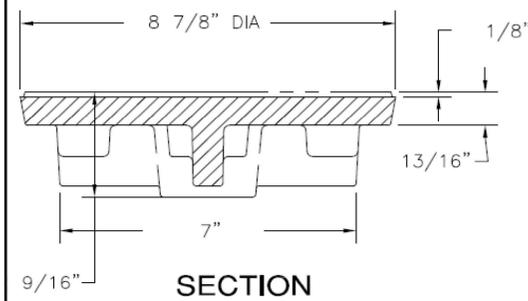


EXAMPLE OF SEWER SADDLE USED FOR PVC AND CAST PIPE

Cleanout/Monument Box Cover

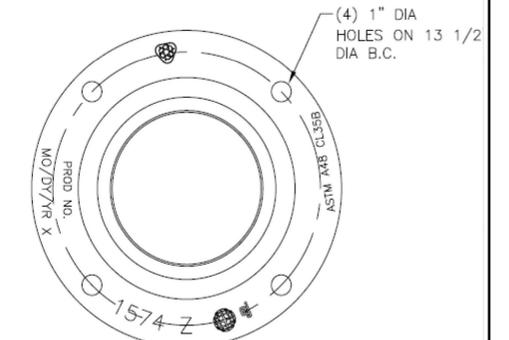


BOTTOM VIEW

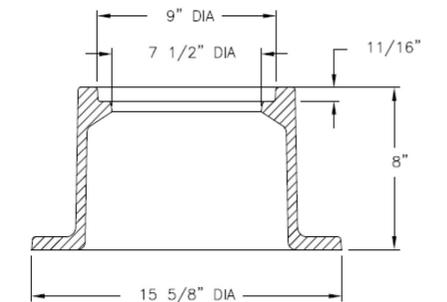


SECTION

Cleanout/Monument Box Frame



PLAN VIEW



FRAME SECTION



SEWER SERVICE TAP CONNECTION FITTINGS

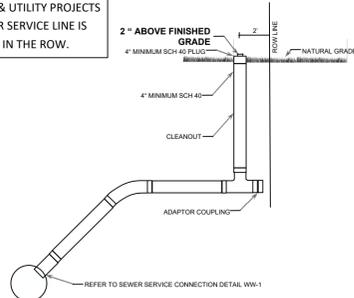
DETAIL: WW-1



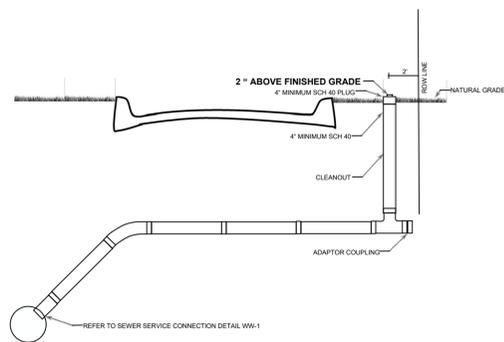
CLEAN OUT FRAME/MONUMENT BOX FRAME/COVER FOR CONCRETE

DETAIL: WW-2

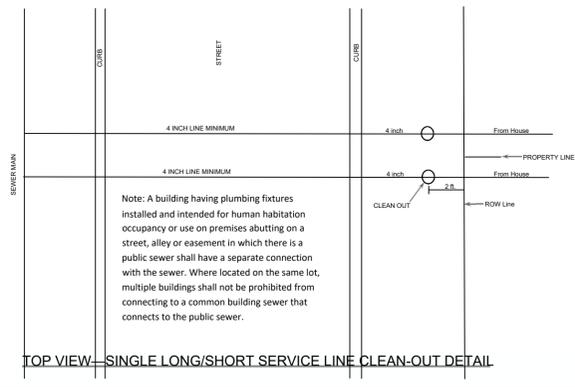
NOTE: DETAIL FOR CITY PAVEMENT & UTILITY PROJECTS WHERE THE SEWER MAIN OR SEWER SERVICE LINE IS REPLACED AS PART OF THE PROJECT IN THE ROW.



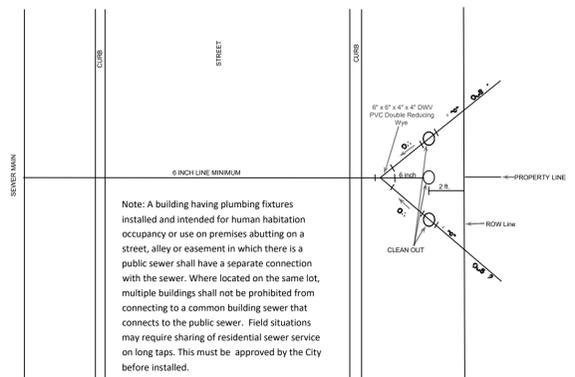
SHORT SERVICE LINE CLEAN-OUT DETAIL



LONG SERVICE LINE CLEAN-OUT DETAIL



TOP VIEW—SINGLE LONG/SHORT SERVICE LINE CLEAN-OUT DETAIL



TOP VIEW—DOUBLE LONG/SHORT SERVICE LINE CLEAN-OUT DETAIL



CLEAN OUT AND SERVICE LINE LOCATION DETAIL

DETAIL: WW-3

NO.	DATE	REVISIONS



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 Land Surveying Firm No. 10046700
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 936.224.7114
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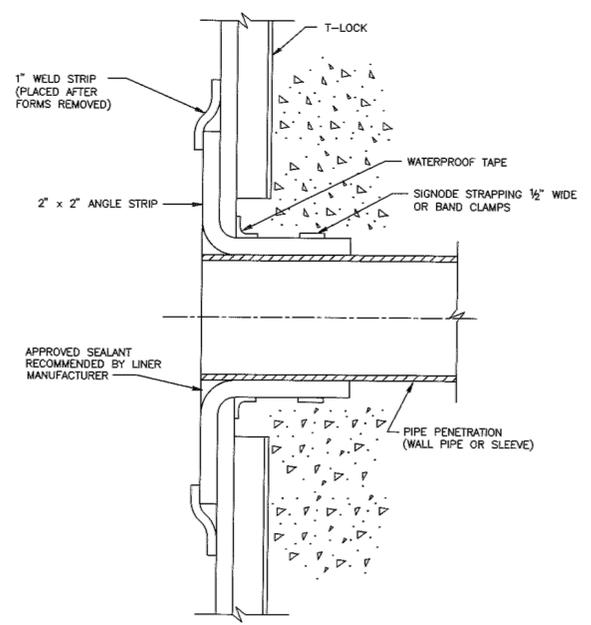
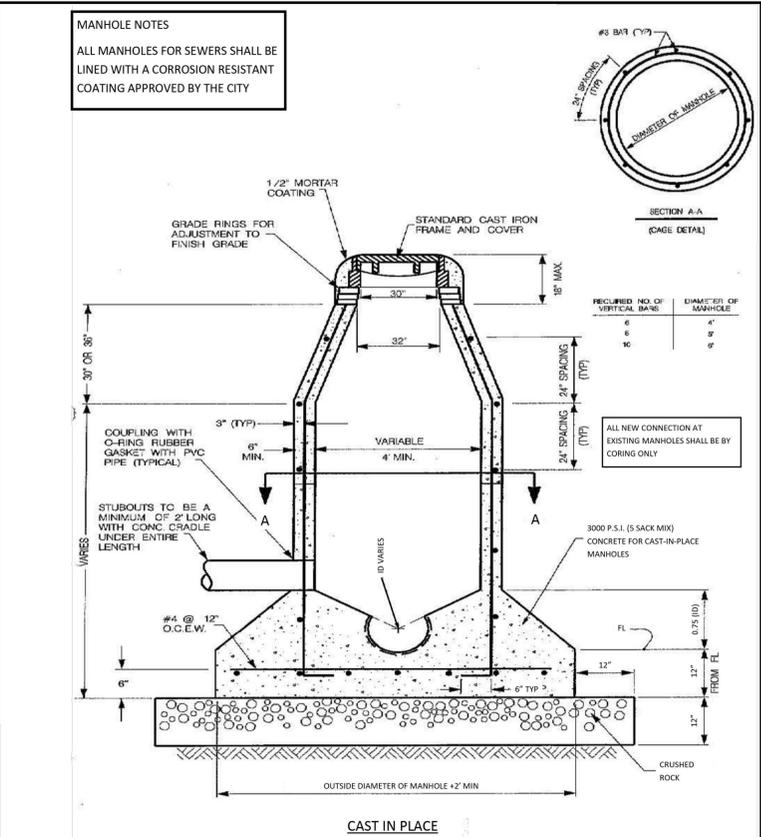
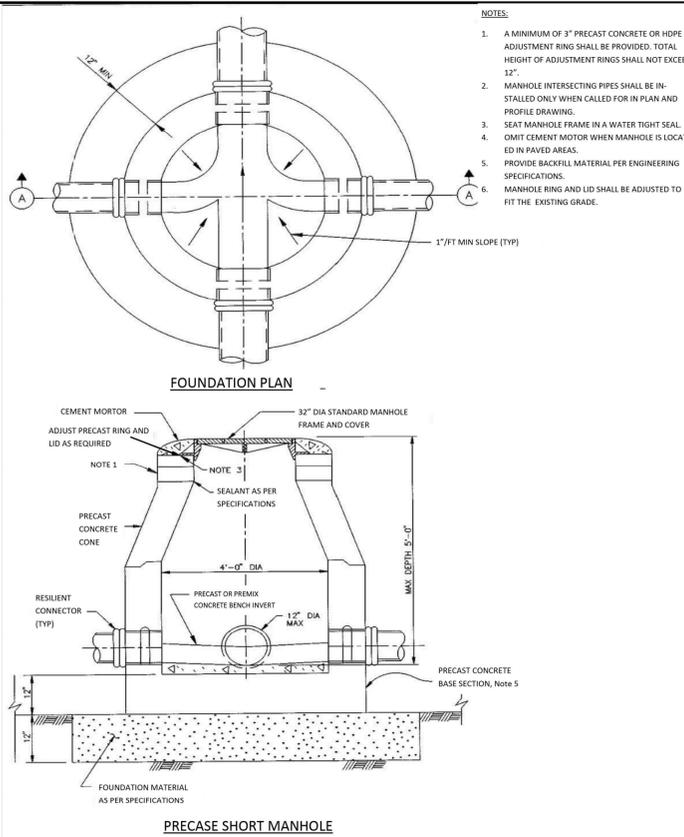
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

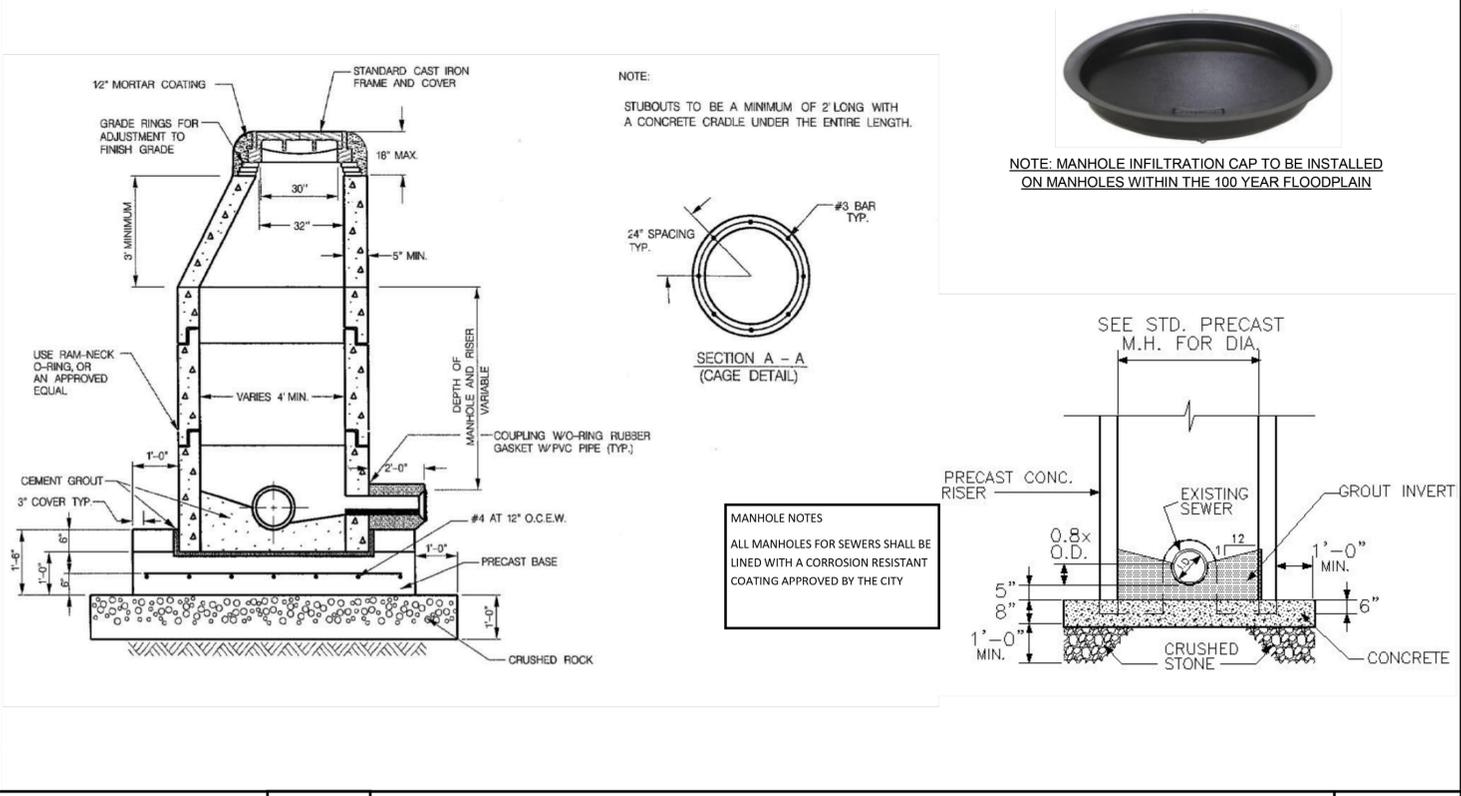
SANITARY SEWER DETAILS
 (1 OF 4)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 18 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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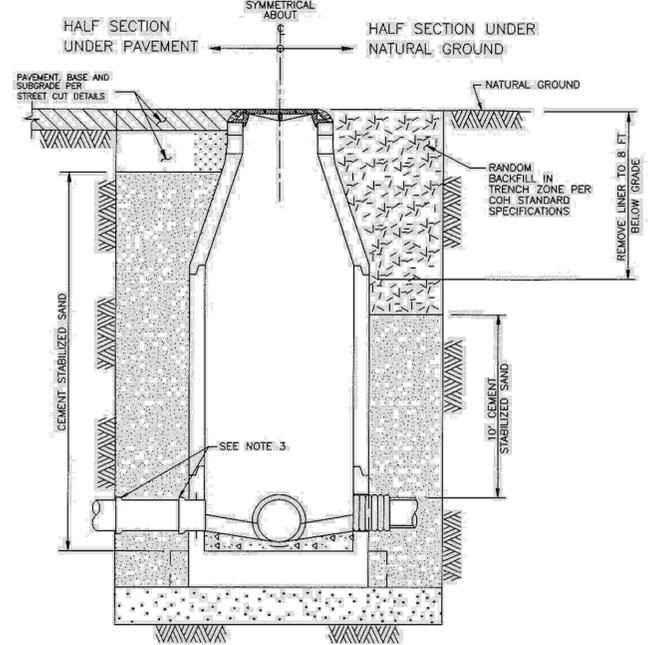
EST. 1935. **SPRING VALLEY VILLAGE** **PRECAST & CAST IN PLACE CONCRETE MANHOLES NO OUTSIDE DROP MANHOLES** DETAIL: WW-4



EST. 1935. **SPRING VALLEY VILLAGE** **PRECAST CONCENTRIC & BASE MANHOLE** DETAIL: WW-5

NOTES:

- GROUTING OF MANHOLE STRUCTURE ANNULAR SPACE WILL BE PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACEMENT AND COMPACTION OF CEMENT STABILIZED SAND, PER COM STANDARD SPECIFICATION FOR TUNNEL GROUT.
- THIS DETAIL ALSO APPLIES TO BACKFILL OF SHAFTS WITHOUT STRUCTURES.
- ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.



NO.	DATE	REVISIONS

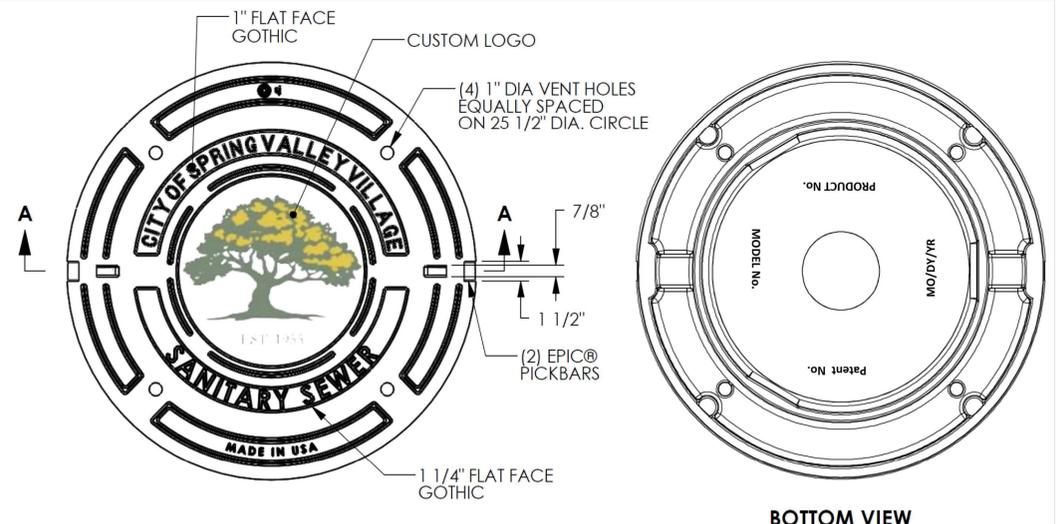
CobbFendley
 TBPELS Engineering Firm No. 274
 Land Surveying Firm No. 10046700
 10055 Grogans Mill Road, Suite 350
 The Woodlands, Texas 77380
 936.224.7114
 www.cobbfendley.com

CITY OF SPRING VALLEY VILLAGE

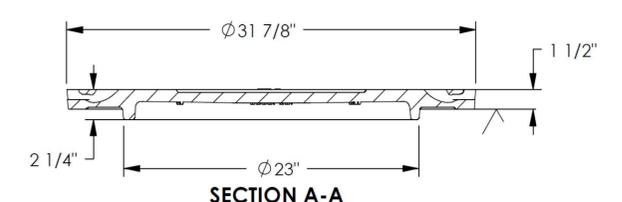
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

SANITARY SEWER DETAILS (2 OF 4)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 19 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

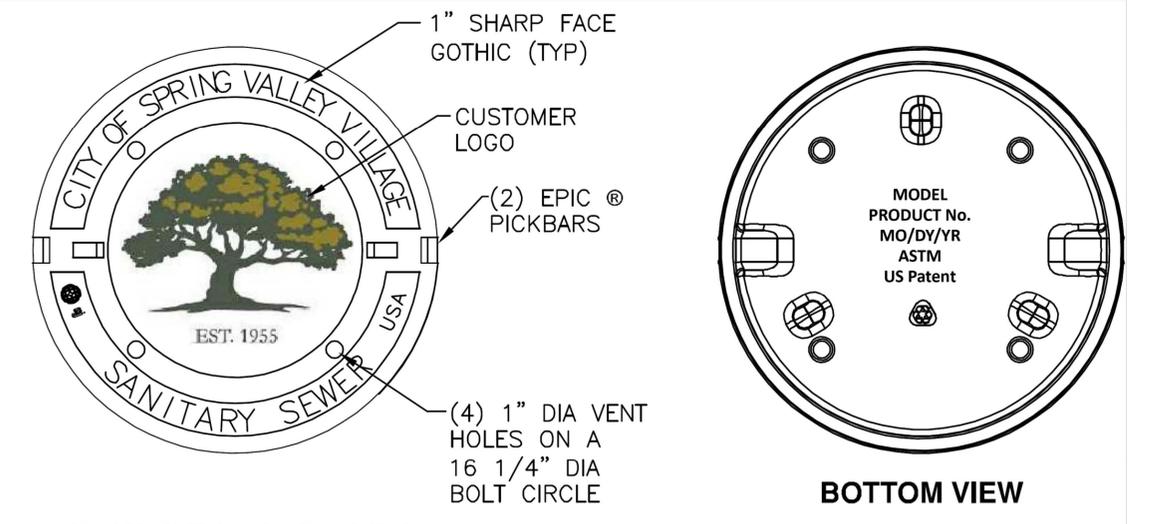


NOTE: LOGO NOT COLORED ON ACTUAL CASTING

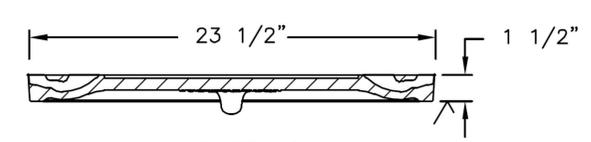


SECTION A-A

PERMISSION GRANTED TO THE CITY OF SPRING VALLEY VILLAGE BY EAST JORDAN IRON WORKS TO USE THIS DESIGN.



NOTE: LOGO NOT COLORED ON ACTUAL CASTING



SECTION

PERMISSION GRANTED TO THE CITY OF SPRING VALLEY VILLAGE BY EAST JORDAN IRON WORKS TO USE THIS DESIGN.



31 7/8" SEWER MANHOLE LID WITH LOGO

DETAIL: WW-8



23 1/2" SEWER MANHOLE LID WITH LOGO (ONLY FOR EXISTING MANHOLES)

DETAIL: WW-9

NO.	DATE	REVISIONS

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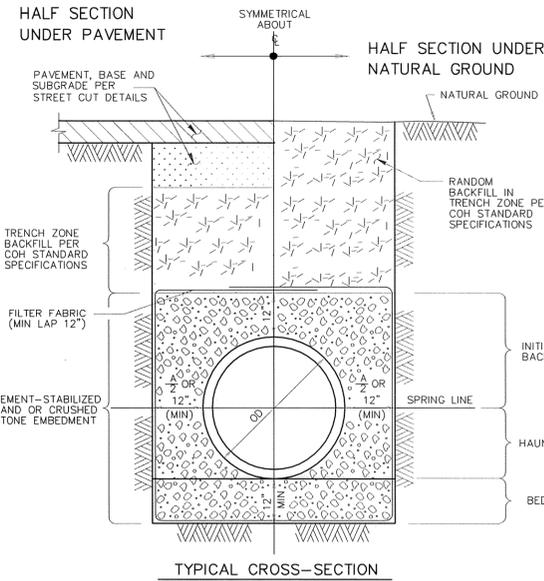
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

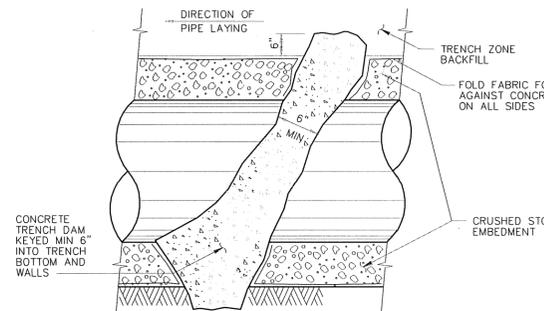
SANITARY SEWER DETAILS
 (3 OF 4)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 20 OF 49
SURVEY BY: CFA	DWG. No:
F B No.: -	

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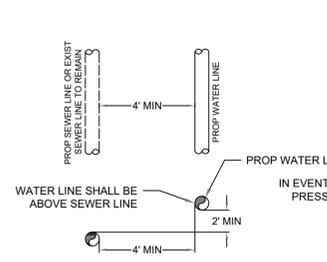


TYPICAL CROSS-SECTION

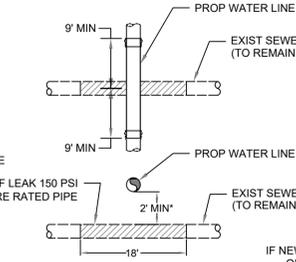


LONGITUDINAL SECTION ALONG PIPE CENTERLINE AT EMBEDMENT TRENCH DAM

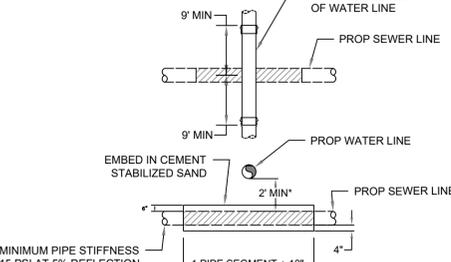
SANITARY SEWER EMBEDMENT AND TRENCH ZONE BACKFILL FOR DRY OR WET STABLE TRENCH



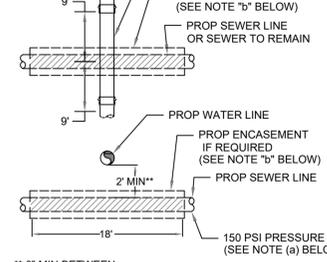
1. TCEQ CH. 290.44 (e)(4)(A) PUBLIC WATER PARALLELS PUBLIC SEWER LINE



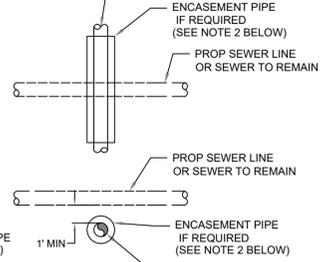
2. TCEQ CH. 290.44 (e)(4)(B)(i-ii) NEW PUBLIC WATER CROSSES EXISTING PUBLIC SEWER LINE (SEE NOTES 1-3 BELOW)



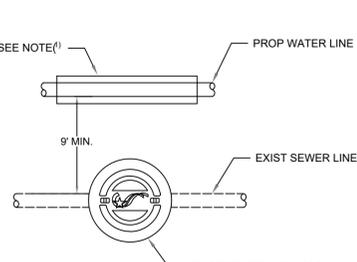
3. TCEQ CH. 290.44 (e)(4)(B)(iii,v,vi) NEW PUBLIC WATER CROSSES NEW PUBLIC SEWER LINE (SEE NOTES 1,3-6 BELOW)



4A. TCEQ CH. 290.44 (e)(4)(B)(iv)(I-II) NEW PUBLIC WATER LINE CROSSES NEW PUBLIC SEWER LINE (SEE NOTE 1 BELOW)



4B. TCEQ CH. 290.44 (e)(4)(B)(iv)(III) NEW PUBLIC WATER CROSSES UNDER EXISTING PUBLIC SEWER LINE (SEE NOTE 2 BELOW)



5. TCEQ CH. 290.44 (e)(5) PUBLIC WATER LINE WITHIN 9 FT OF PUBLIC SEWER MANHOLE

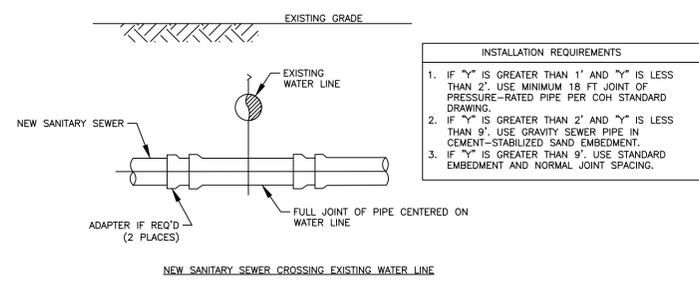
- When new potable water lines are installed they shall be no closer than 9 feet in any direction to an existing wastewater collection facility. If 9 feet cannot be observed then the following criteria shall apply.
 - When the lines are running parallel to one another the horizontal distance between wastewater main and waterline shall be at least 4 feet and the vertical distance shall be at least 2 feet. The engineer must first determine that the existing wastewater main or lateral is not leaking. A wastewater collection system pipe must be below a public water supply pipe.
 - If the engineer cannot determine if the existing wastewater line is leaking it shall be replaced with 150 psi pressure rated pipe.
 - Where a new potable water line parallels a new wastewater main, the wastewater line shall be constructed of 150 psi pressure rated pipe. The waterline shall be located a minimum of 2 feet vertically and 4 feet horizontally from the wastewater main.

- Where new potable waterline crosses an existing or new wastewater main or lateral, one segment of the waterline pipe shall be centered over the waste water line such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater line. Whenever possible, the crossing shall be centered between the joints of the wastewater line. If the new wastewater pipe has a standard segment length of less than 18 feet, the requirement for scenario 4 shall apply.
- If the existing wastewater main or lateral is disturbed or shows signs of leaking, it shall be replaced for at least nine feet in both directions (18 feet total) centered at the new water line with at least 150 psi pressure rated pipe.
- If the waterline crosses non-pressure rated wastewater main or lateral the potable waterline pipe shall be no less than 2 feet above the wastewater line. If the waterline crosses a pressure rated wastewater line it shall be at least 6 inches above the wastewater main or lateral.
- Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral, the wastewater pipe shall have a minimum pipe stiffness of 115 psi at 5% deflection. Where a new potable waterline crosses a new, pressure rated wastewater main or lateral, the wastewater pipe shall have a minimum pressure rating of 150 psi. The wastewater main or lateral shall be embedded in cement stabilized sand for the total length of one pipe segment plus 12 inches beyond the joint on each end.
- Where a new potable waterline crosses a new wastewater main or lateral, (pressure rated or non-pressure rated), the wastewater main or lateral shall be embedded in cement stabilized sand for the total length of one pipe segment plus 12 inches beyond the joint on each end.
- Where cement stabilized sand bedding is required, the cement stabilized sand shall have a minimum of 10% cement per cubic yard of cement stabilized sand mixture, based on loose dry weight volume (at least 2.5 bags of cement per cubic yard of mixture). The cement stabilized sand bedding shall be a minimum of 6 inches above and 4 inches below the wastewater main or lateral. The use of brown coloring in cement stabilized sand for wastewater main or lateral bedding is recommended for the identification of pressure rated wastewater mains during future construction.

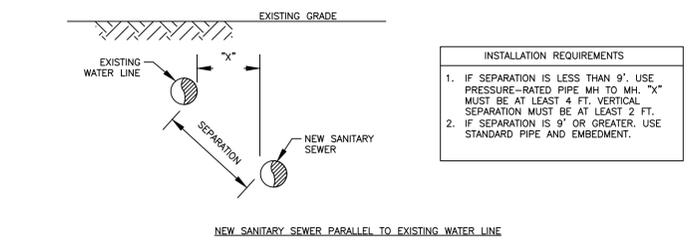
TCEQ WATER/WASTE WATER CROSSING DETAILS
NOT TO SCALE BASED ON CH. 290.44(e)

NOTES:

- MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:
NOMINAL PIPE SIZE "A"
18" TO 30" 24"
OVER 30" 36"
- MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
- TRENCH DAM MAY BE FORMED OR UNFORMED ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
- TRENCH DAM SHALL BE PLACED AT LEAST 5 FT AWAY FROM ANY PIPELINE STRUCTURE. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
- PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
- CEMENT-STABILIZED SAND IS PREFERRED FOR EMBEDMENT, BUT CRUSHED STONE MAY BE USED ONLY WHEN SPECIFIED ON THE PLANS.



- INSTALLATION REQUIREMENTS**
- IF "Y" IS GREATER THAN 1' AND "Y" IS LESS THAN 2', USE MINIMUM 18 FT JOINT OF PRESSURE-RATED PIPE PER COH STANDARD DRAWING.
 - IF "Y" IS GREATER THAN 2' AND "Y" IS LESS THAN 9', USE GRAVITY SEWER PIPE IN CEMENT-STABILIZED SAND EMBEDMENT.
 - IF "Y" IS GREATER THAN 9', USE STANDARD EMBEDMENT AND NORMAL JOINT SPACING.



- INSTALLATION REQUIREMENTS**
- IF SEPARATION IS LESS THAN 9', USE PRESSURE-RATED PIPE MH TO MH. "X" MUST BE AT LEAST 4 FT. VERTICAL SEPARATION MUST BE AT LEAST 2 FT.
 - IF SEPARATION IS 9' OR GREATER, USE STANDARD PIPE AND EMBEDMENT.

SANITARY SEWER INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES

NOTES:

- SANITARY SEWER MUST BE BELOW WATER LINE WHEREVER POSSIBLE. WHEN WATERLINE IS BELOW THE SANITARY SEWER PROVIDE MINIMUM 2 FT SEPARATION AND INSTALL PIPE IN ACCORDANCE TO CHAPTER 7 TABLE 7.3 OF COH DESIGN MANUAL.
- WHEN PRESSURE-RATED PIPE IS REQUIRED, PROVIDE PIPE WITH MINIMUM 150 PSI PRESSURE RATING.
- ADAPTERS MUST BE FACTORY MOLDED OR FABRICATED, WITH RING STIFFNESS AT LEAST EQUAL TO THE ADJOINING SANITARY SEWER PIPE, AND USING RESILIENT GASKET OR SEAL MATERIAL. FLEXIBLE RUBBER "BOOT" TYPE ADAPTERS WILL NOT BE ACCEPTED.
- INSTALL FORCE MANS SAME AS FOR GRAVITY SEWER, USING SPECIFIED PRESSURE PIPE.
- "Y" MUST ALWAYS BE GREATER THAN OR EQUAL TO 1 FT FOR PRESSURE RATED SS AND 2 FT FOR NON-PRESSURE RATED SS.
- "X" MUST BE GREATER THAN OR EQUAL TO 4 FT.
- ALTERNATIVES MAY BE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
- SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS - REFER TO PLUMBING CODE FOR APPLICABLE REQUIREMENTS.

NO.	DATE	REVISIONS



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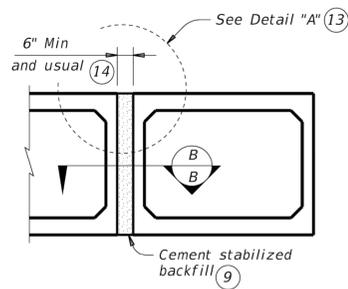
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

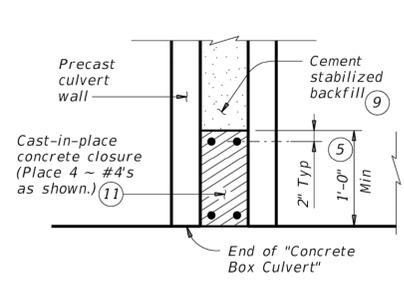
SANITARY SEWER DETAILS (4 OF 4)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 21 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

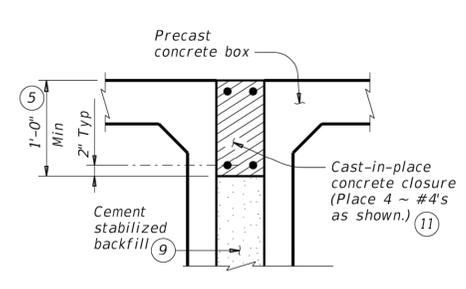
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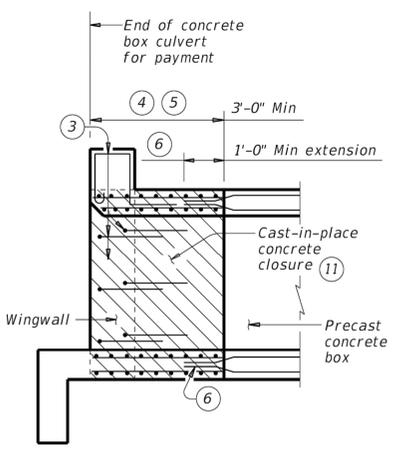
MULTIPLE UNIT PLACEMENT



SECTION B-B

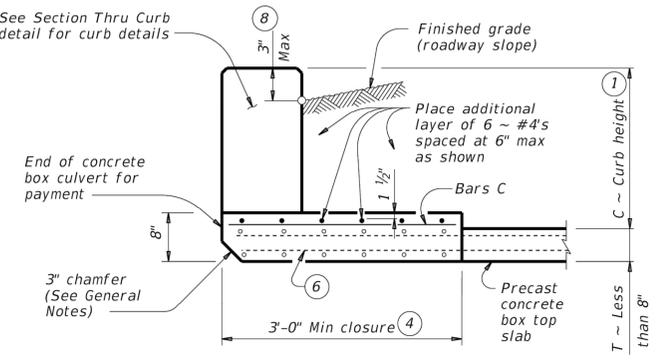


DETAIL "A"

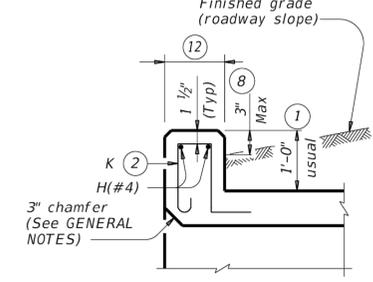


WINGWALL CONNECTION

(Also applies to safety end treatment.)

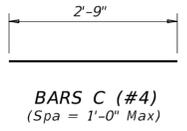


SECTION THRU TOP SLABS LESS THAN 8"

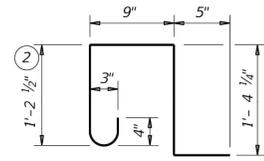


SECTION THRU CURB

QUANTITIES PER FOOT OF CURB (10)	
Reinforcing Steel	4.12 Lb
Concrete	0.037 CY



BARS C (#4)
(Spa = 1'-0" Max)



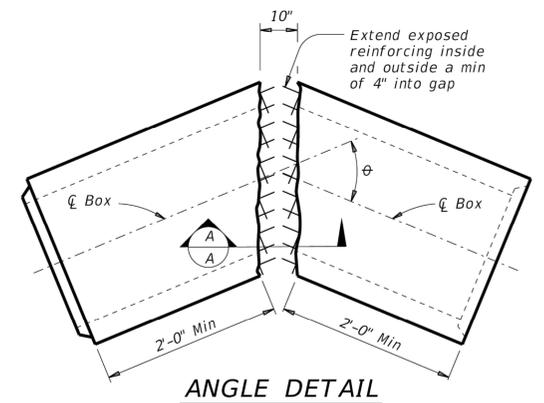
BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

- 1 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail, or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- 2 For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- 3 Extend curb, wingwall, or safety end treatment reinforcing into concrete closure. Bend or trim, as necessary, any reinforcing that does not fit into closure area.
- 4 Provide a 3'-0" Min cast-in-place concrete closure. Break back boxes in the field or cast boxes short. Provide bands of reinforcing in the closure that are the same size and spacing as in the precast box section. Provide #4 longitudinal reinforcement spaced at 12 inches Max within the closure. Except where shown otherwise, construct the cast-in-place closure flush with the inside and outside faces of the precast box section.
- 5 For multiple unit placements, adjust the length of the closure for the interior walls as necessary. Provide a 3'-0" Min cast-in-place closure in the top slab, bottom slab, and exterior wall. See Section B-B detail when interior walls are cast full length.
- 6 Extend precast box reinforcing a minimum of 1'-0" into concrete closure (Typ).
- 7 Place bands of reinforcing matching the inside and outside face reinforcing in the gaps of the top and bottom slabs. Place a band matching the outside face reinforcing of the wall in the gaps of the walls (placed in the outside face only). Tack weld the bands to the exposed reinforcing at each point of contact.
- 8 For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs no more than 3" above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 9 Cement stabilized backfill between boxes is considered part of the box culvert for payment.
- 10 All curb concrete and reinforcing is considered part of the box culvert for payment.
- 11 Any additional concrete and reinforcing required for the closures will be considered subsidiary to the box culvert for payment.
- 12 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
- 13 For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in Detail "A".
- 14 This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box." No payment will be made for any additional material in the gap between adjacent boxes.

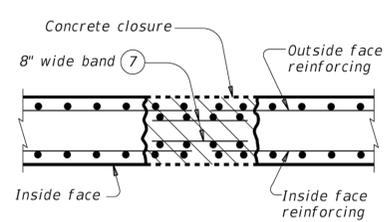
MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide ASTM A1064 welded wire reinforcement.
 Provide Class C concrete (f'c = 3,600 psi) for the closures.
 Provide cement stabilized backfill meeting the requirements of Item 400, "Excavation and Backfill for Structures."
 Any additional concrete required for the closures will be considered subsidiary to the box culvert.

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications.
 Refer to the Single Box Culverts Precast (SCP) standard sheets for details and notes not shown.
 Chamfer the bottom edge of the top slab closure 3 inches at culvert closure ends.

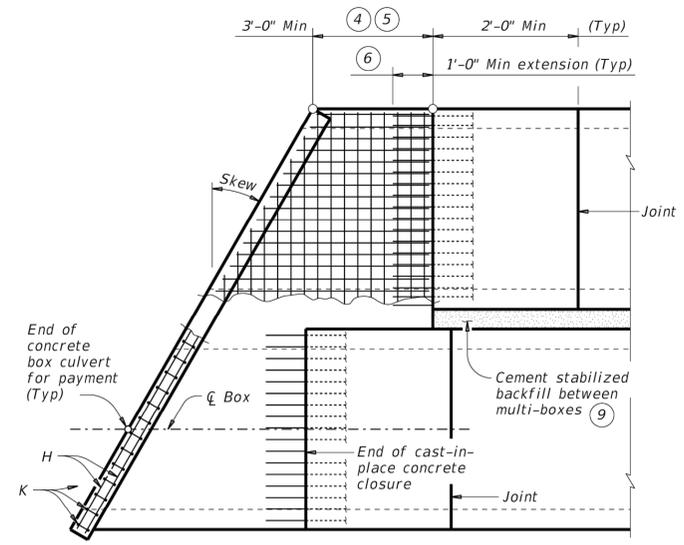
Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bars dimensions are out-to-out of bars.



ANGLE DETAIL



SECTION A-A



PLAN OF SKEWED ENDS

(Showing multi-box placement.)

HL93 LOADING

Texas Department of Transportation **Bridge Division Standard**

BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

SCP-MD

FILE: CD-SCP-MD-20.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	

NO.	DATE	REVISIONS

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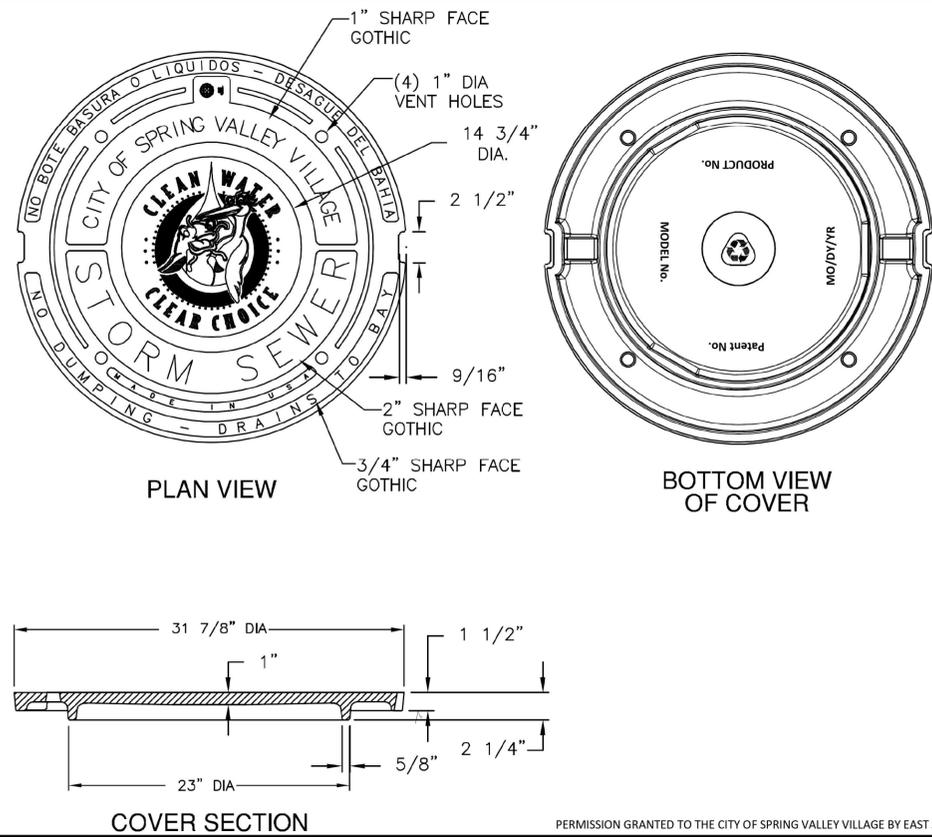
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

BOX CULVERTS PRECAST MISCELLANEOUS DETAILS

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 22 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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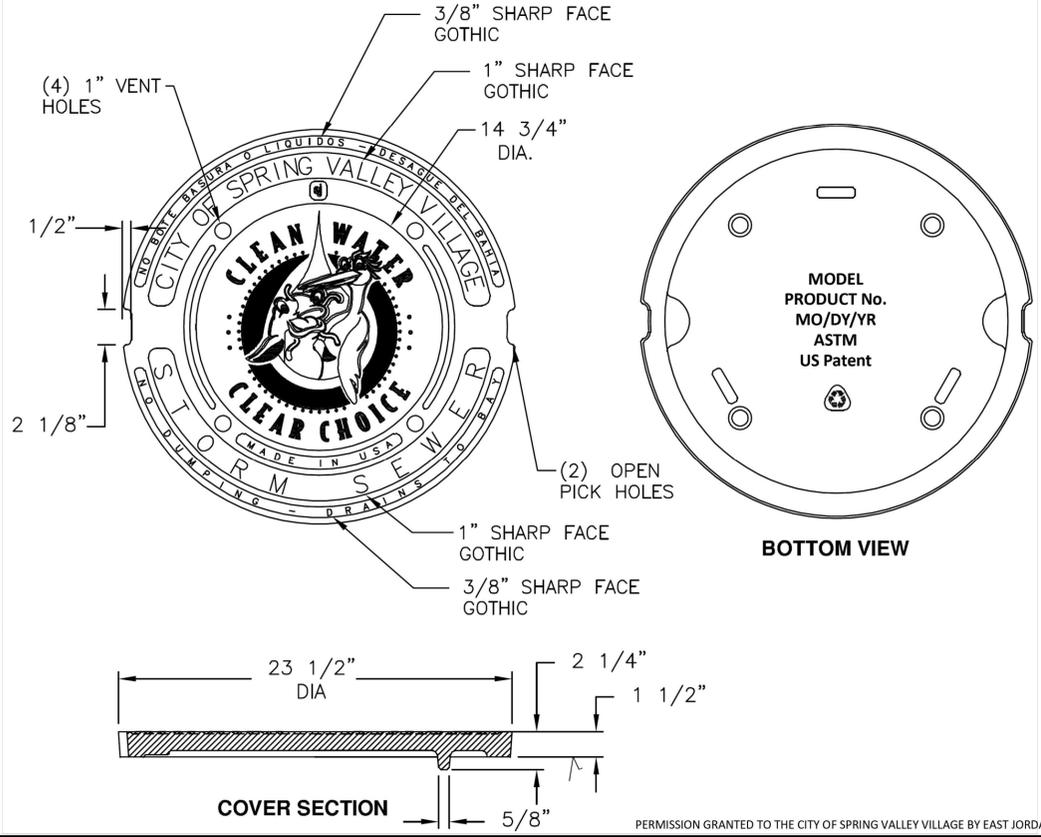


PLAN VIEW

BOTTOM VIEW OF COVER

COVER SECTION

PERMISSION GRANTED TO THE CITY OF SPRING VALLEY VILLAGE BY EAST JORDAN IRON WORKS TO USE THIS DESIGN.



BOTTOM VIEW

COVER SECTION

PERMISSION GRANTED TO THE CITY OF SPRING VALLEY VILLAGE BY EAST JORDAN IRON WORKS TO USE THIS DESIGN.



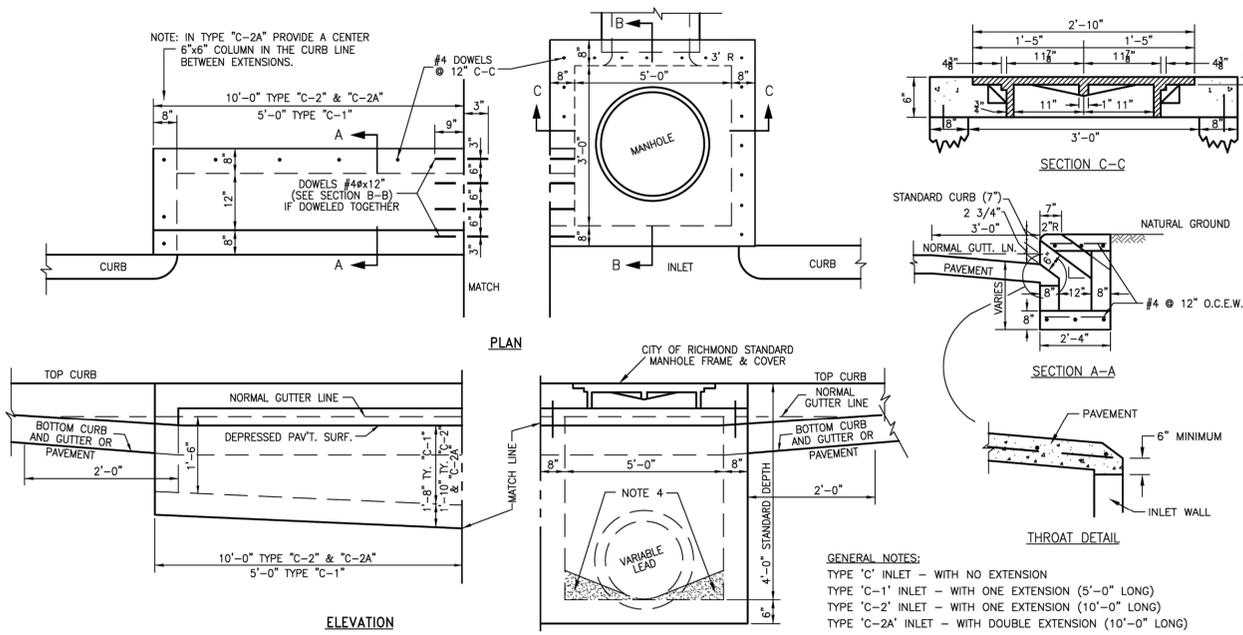
31 7/8" STORMSEWER MANHOLE LID WITH LOGO

DETAIL: WW-10



23 1/2" STORMSEWER MANHOLE LID WITH LOGO (ONLY FOR EXISTING MANHOLES)

DETAIL: WW-11



PLAN

ELEVATION

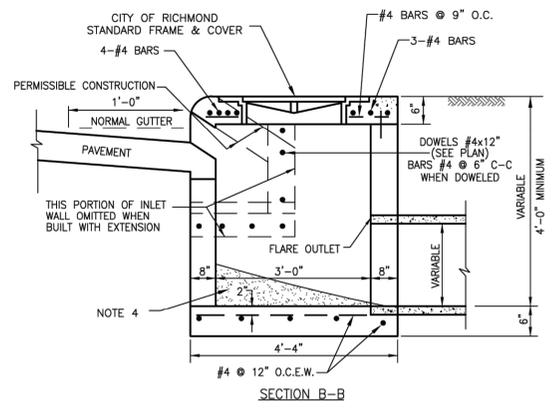
SECTION C-C

SECTION A-A

THROAT DETAIL

GENERAL NOTES:
 TYPE 'C' INLET - WITH NO EXTENSION
 TYPE 'C-1' INLET - WITH ONE EXTENSION (5'-0" LONG)
 TYPE 'C-2' INLET - WITH ONE EXTENSION (10'-0" LONG)
 TYPE 'C-2A' INLET - WITH DOUBLE EXTENSION (10'-0" LONG)

STORM SEWER TYPE 'C' INLET



CITY OF RICHMOND STANDARD FRAME & COVER

PERMISSIBLE CONSTRUCTION

SECTION B-B

- NOTES:
- FOR TYPE 'C-2A' INLETS PROVIDE A CENTER 6"x6" COLUMN IN THE CURB LINE BETWEEN ALL EXTENSIONS.
 - CEMENT STABILIZED SAND BACKFILL SHALL BE PLACED A MINIMUM OF 6 INCHES BELOW INLET AND A MINIMUM OF 12 INCHES AROUND INLET TO THE TOP OF STAGE 1 STRUCTURE.
 - ALTERNATIVE REINFORCED CONCRETE WALLS SHALL BE A MINIMUM OF 6" THICK WITH #4 @ 9" O.C.
 - CONCRETE PLACED AND SHAPED TO DRAIN.
 - PRECAST OR CAST IN PLACE ONLY.

NO.	DATE	REVISIONS



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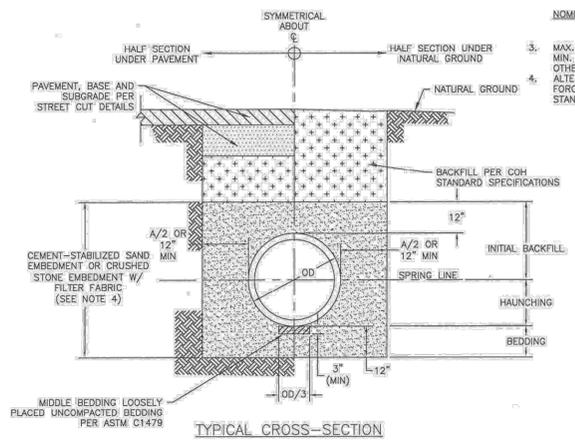
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
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 RECONSTRUCTION

STORM SEWER DETAILS
 (1 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 23 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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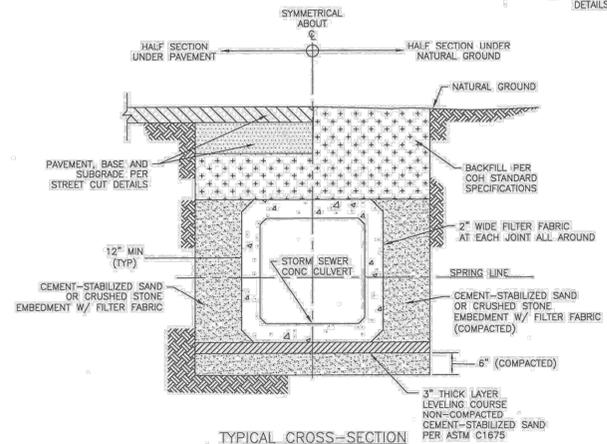
SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

NOTES:

- THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
- MIN. TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

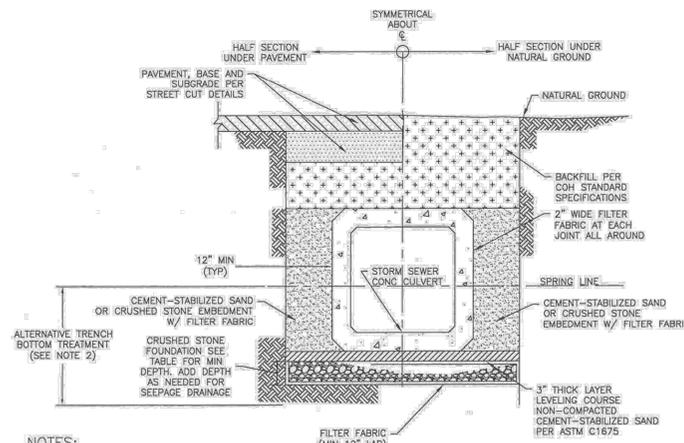
- MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
- ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.



PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

NOTES:

- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
- SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS - 02951.



PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB
NTS

NOTES:

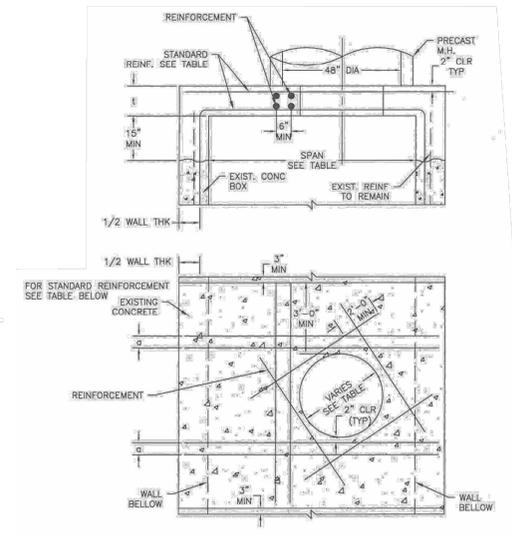
- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
- ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

CULVERT SIZE (FT)	FOUNDATION DEPTH(INCHES)
3' x 2' TO 6' x 6'	12
6' x 6' AND LARGER	18

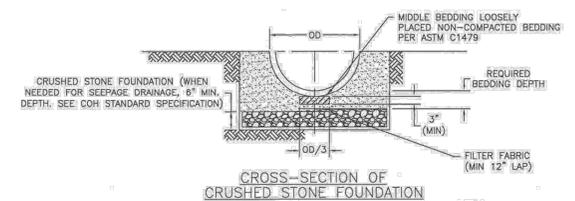
NOTES:

- WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
- REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
- CONCRETE IN SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
- PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB
NTS



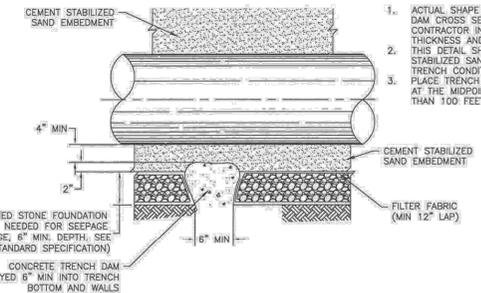
PROPOSED MANHOLE ON EXISTING BOX STORM SEWER
NTS



CROSS-SECTION OF CRUSHED STONE FOUNDATION

NOTES:

- ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
- PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.



LONGITUDINAL SECTION ALONG PIPE @ AT FOUNDATION TRENCH DAM

SANITARY OR STORM SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH
NTS

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CITY OF SPRING VALLEY VILLAGE

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RECONSTRUCTION

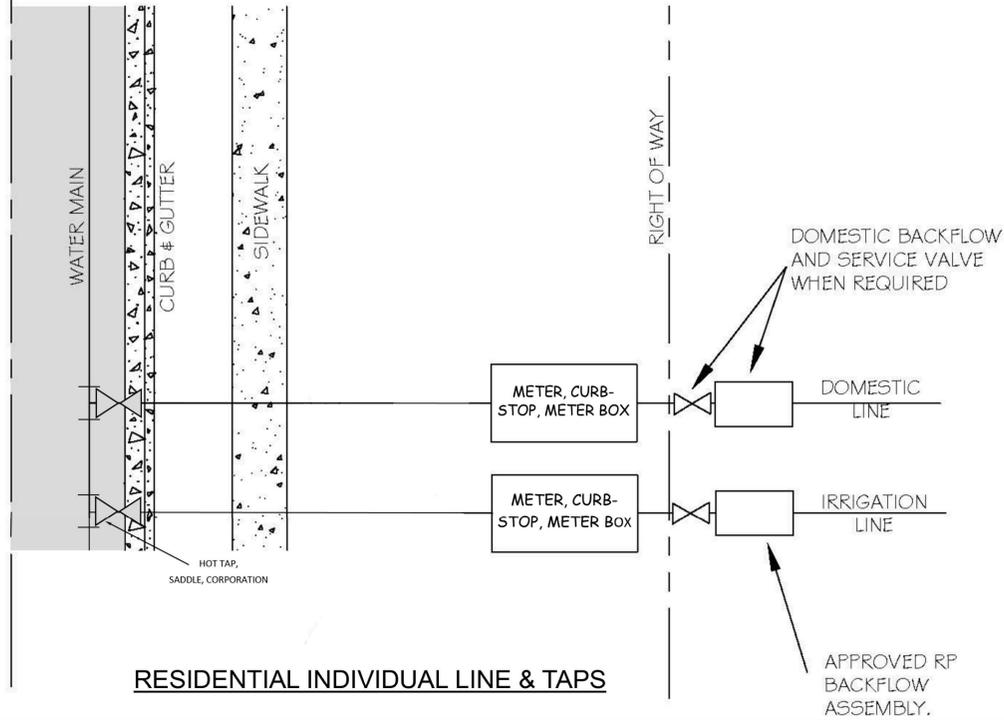
STORM SEWER DETAILS
(3 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 24 OF 49
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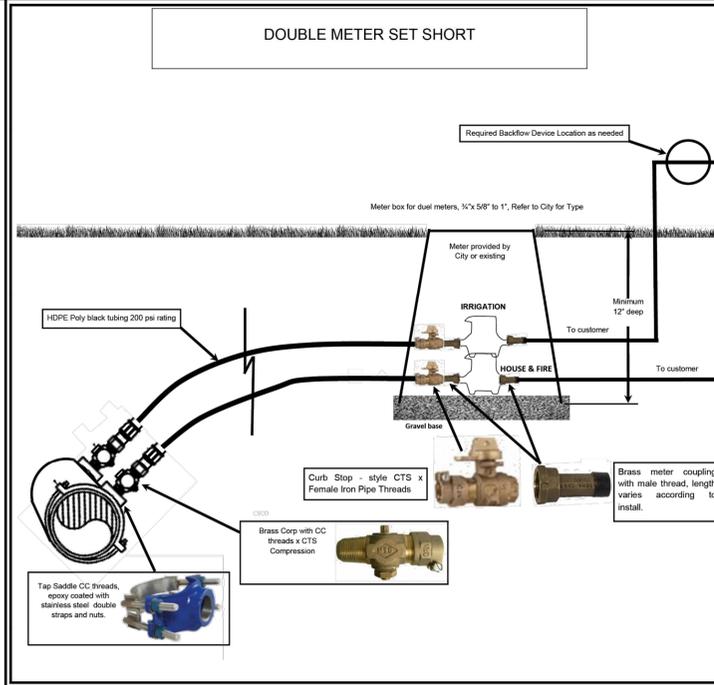
NOTE: DETAIL FOR CITY PAVEMENT & UTILITY PROJECTS WHERE THE WATER MAIN OR CUSTOMER WATER SERVICE LINE IS REPLACED AS PART OF THE PROJECT IN THE ROW.

NOTES:

1. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
2. THE BACKFLOW SHALL BE INSTALLED BETWEEN THE METER AND THE HOUSE AND BEFORE ANY CONNECTIONS ON THE LINE ACCORDING TO TCEQ AND CITY ADOPTED PLUMBING CODE STANDARDS.
3. THE BACKFLOW HAS TO BE TESTED WHEN INSTALLED AND TESTED PERIODICALLY ACCORDING TO TCEQ AND CITY REQUIREMENTS.
4. THE BACKFLOW WILL NEED TO BE INSTALLED AT AN ACCESSIBLE LOCATION.
5. DEVICES MUST BE INSTALLED ACCORDING TO TCEQ AND CITY ADOPTED PLUMBING CODE REQUIREMENTS.



RESIDENTIAL INDIVIDUAL LINE & TAPS



NOTE:

1. DETAIL FOR CITY PAVEMENT & UTILITY PROJECTS WHERE THE WATER MAIN OR CUSTOMER SERVICE LINE IS REPLACED AS PART OF THE PROJECT IN THE ROW.
2. FOR NEW TAPS ON AN EXISTING WATER LINES NOT PART OF A CITY PROJECT, CITY WILL INSTALL THE WATER TAP. TAP FEES WILL APPLY ACCORDING TO THE CURRENT PROVISIONS OF ARTICLE 6.000 - UTILITY SERVICE CHARGES ORDINANCE.
3. FOR A CITY PROJECT REQUIRING A NEW METER, THE METER SHALL BE PURCHASED OR SUPPLIED THROUGH THE CITY TO INSURE COMPATIBILITY WITH THE CURRENT METER READING SYSTEM.
4. IF THE METER IS NOT INSTALLED IMMEDIATELY AND IF A METER IS NEEDED, THE LINE OR CURB WILL BE CAPPED TO PREVENT ANY CONTAMINANTS FROM ENTERING THE CITY SYSTEM.

NOTE:

ALL APPURTENANCES TO BE INSTALLED INSIDE THE METER BOX. NODES TO BE INSTALLED BY CONTRACTOR



METER SETS

DETAIL: W-1



DOUBLE WATER TAP & METER SET FOR EACH LOT

DETAIL: W-2

NO.	DATE	REVISIONS



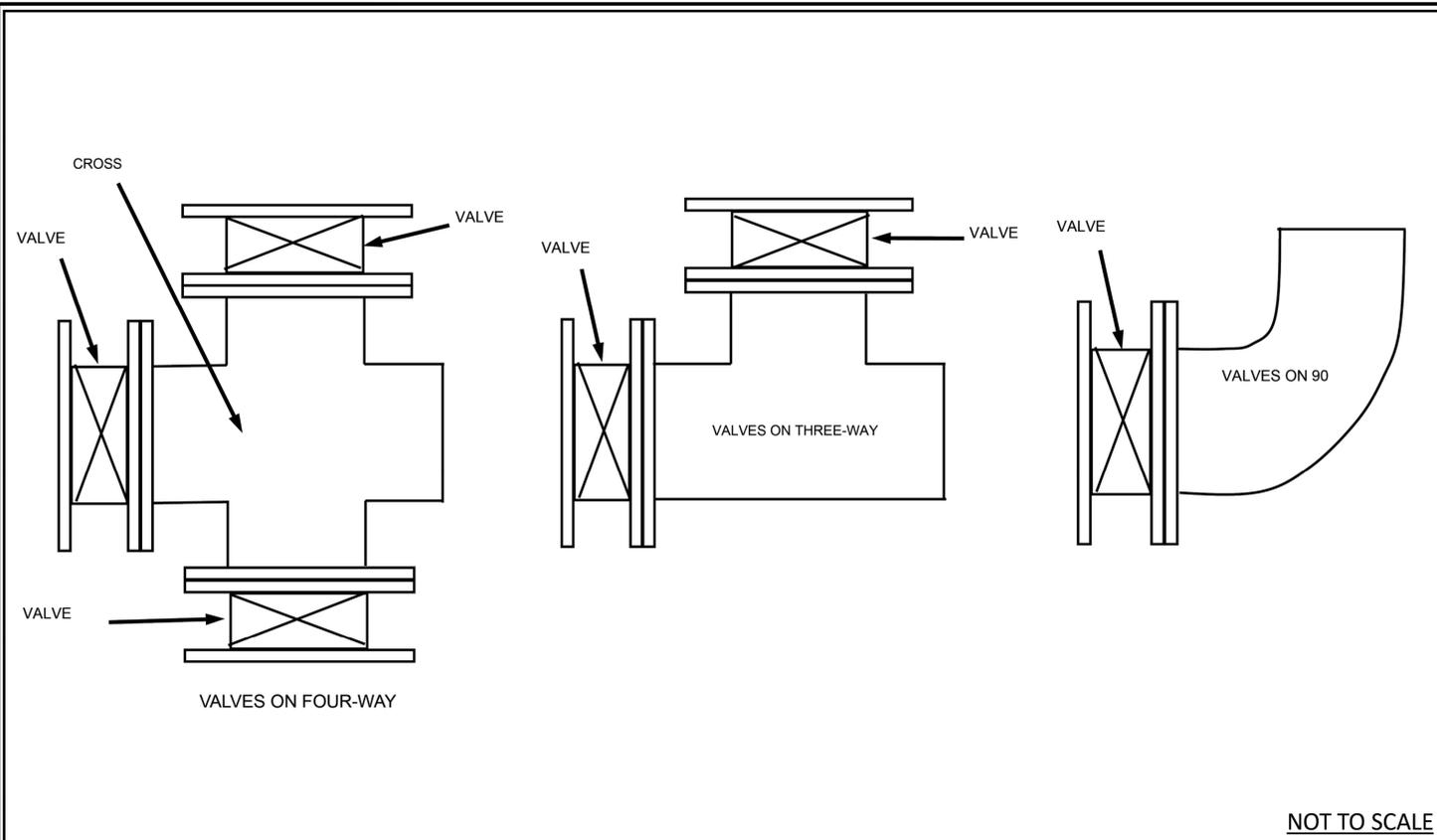
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CITY OF SPRING VALLEY VILLAGE

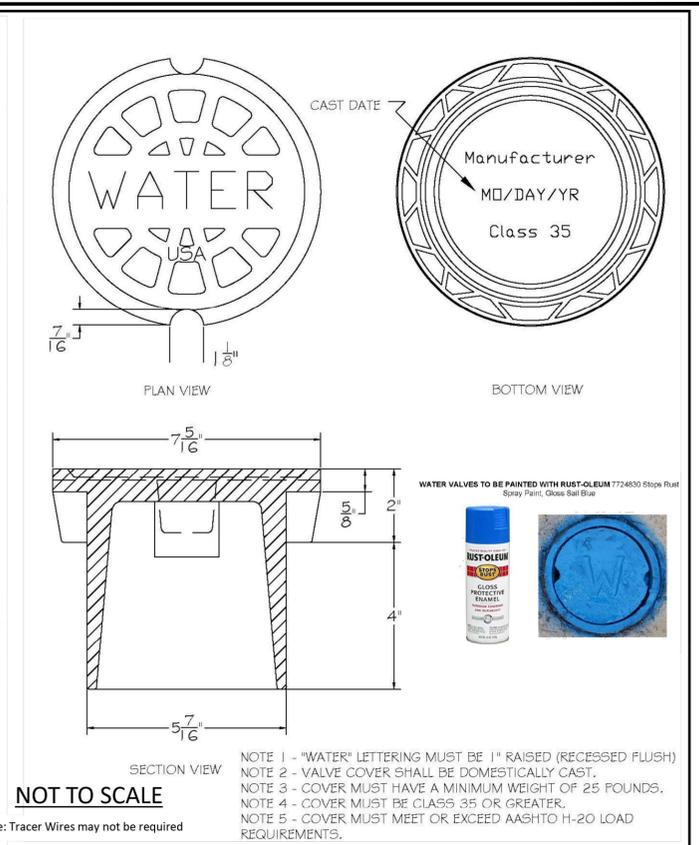
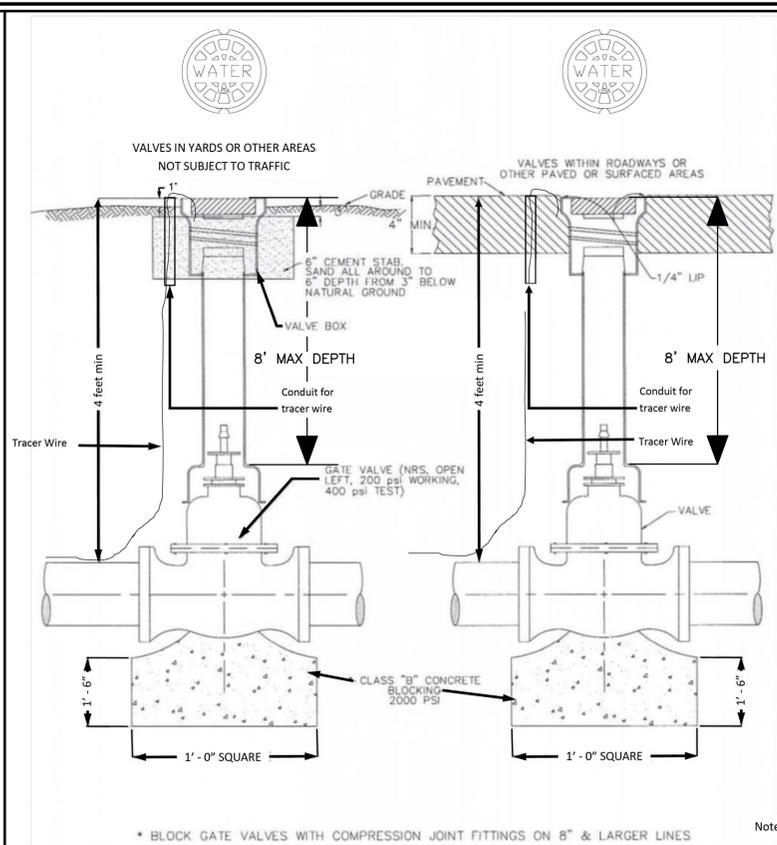
MERLIN COURT &
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WATER LINE DETAILS
 (1 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
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NOT TO SCALE

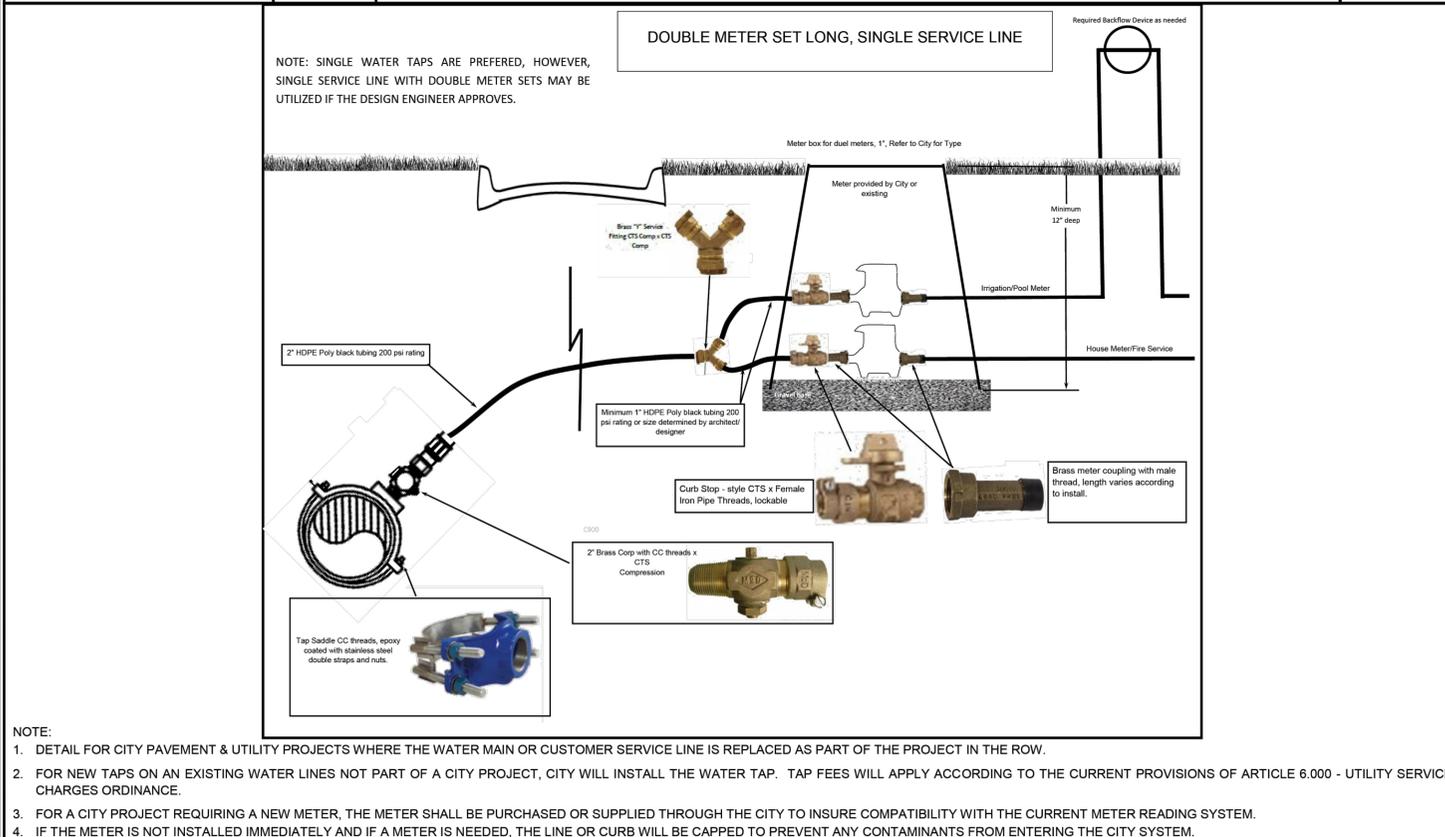


NOT TO SCALE

NOTE 1 - "WATER" LETTERING MUST BE 1" RAISED (RECESSED FLUSH)
 NOTE 2 - VALVE COVER SHALL BE DOMESTICALLY CAST.
 NOTE 3 - COVER MUST HAVE A MINIMUM WEIGHT OF 25 POUNDS.
 NOTE 4 - COVER MUST BE CLASS 35 OR GREATER.
 NOTE 5 - COVER MUST MEET OR EXCEED AASHTO H-20 LOAD REQUIREMENTS.

EST. 1955. SPRING VALLEY VILLAGE. **VALVE PLACEMENT ON CITY MAINS**. DETAIL: W-5

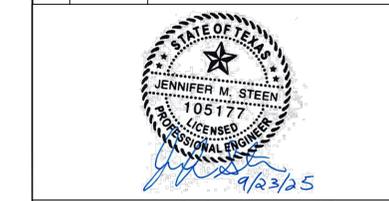
EST. 1955. SPRING VALLEY VILLAGE. **VALVE BOX DETAIL WITH TRACER WIRE (IF APPLICABLE)**. DETAIL: W-6



NOTE:
 1. DETAIL FOR CITY PAVEMENT & UTILITY PROJECTS WHERE THE WATER MAIN OR CUSTOMER SERVICE LINE IS REPLACED AS PART OF THE PROJECT IN THE ROW.
 2. FOR NEW TAPS ON AN EXISTING WATER LINES NOT PART OF A CITY PROJECT, CITY WILL INSTALL THE WATER TAP. TAP FEES WILL APPLY ACCORDING TO THE CURRENT PROVISIONS OF ARTICLE 6.000 - UTILITY SERVICE CHARGES ORDINANCE.
 3. FOR A CITY PROJECT REQUIRING A NEW METER, THE METER SHALL BE PURCHASED OR SUPPLIED THROUGH THE CITY TO INSURE COMPATIBILITY WITH THE CURRENT METER READING SYSTEM.
 4. IF THE METER IS NOT INSTALLED IMMEDIATELY AND IF A METER IS NEEDED, THE LINE OR CURB WILL BE CAPPED TO PREVENT ANY CONTAMINANTS FROM ENTERING THE CITY SYSTEM.

EST. 1955. SPRING VALLEY VILLAGE. **LONG TAP SINGLE SERVICE LINE DOUBLE METER SET**. DETAIL: W-4

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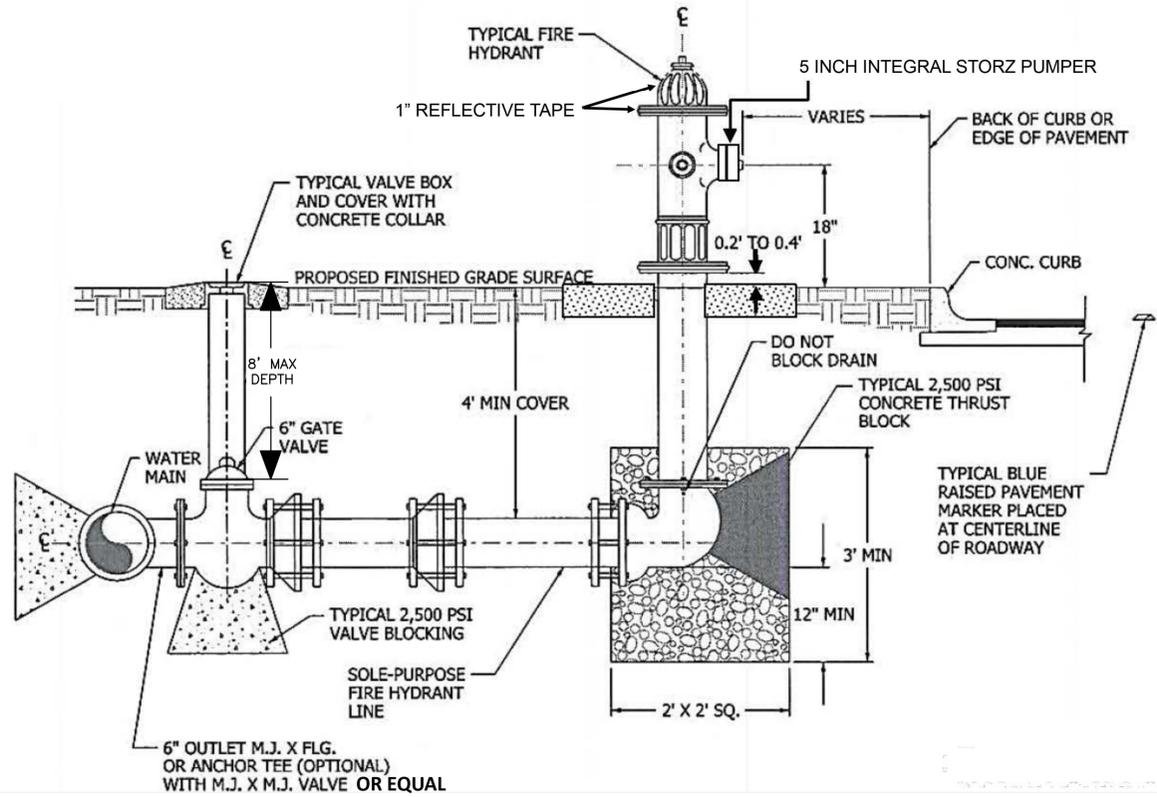
CITY OF SPRING VALLEY VILLAGE

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 RECONSTRUCTION

WATER LINE DETAILS
 (2 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 26 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.:	-

NOT TO SCALE



TYPICAL FIRE HYDRANT INSTALL

DETAIL: FH-1

1. Fire hydrants shall meet or exceed all applicable requirements of the latest revisions of ANSI/AWWA Standard C502. Fire hydrants shall be UL 246 Listed, FM 1510 Approved and certified to ANSI/NSF 61 & 372.
2. Fire hydrants shall have a UL – FM – AWWA Water Working Pressure (WWP) rating of 350 psig (24 barg). Fire hydrants shall be production pressure tested in the fully closed and fully open positions to 700 psig (48 barg). Fire hydrants shall be UL and FM proof-of-design tested at 1400 psig (96 barg).
3. Fire hydrants shall be of the compression type, opening against the pressure and closing with the pressure.
4. Fire hydrants shall have a minimum 5-1/4" main valve opening and a nominal inside lower/upper barrel diameter (I.D.) of 6.9" to assure maximum flow performance. Pressure loss at 1,000 GPM shall not exceed the following values:
 - 4" Pumper Nozzle: 2.70 psi
 - 4.5" Pumper Nozzle: 2.50 psi
5. Fire hydrants shall be three-way in design, having one 5" integral STORZ pumper nozzle with latching cap and two 2-1/2" NTS threaded hose nozzles. Nozzles shall thread counterclockwise into hydrant barrel utilizing O-ring seals. A suitable nozzle lock shall be in place to prevent inadvertent nozzle removal. Nozzle caps shall be secured to the hydrant by a galvanized chain that meets ASTM A-467-64 Class MT.
6. The bonnet assembly shall provide an oil reservoir and lubrication system that automatically circulates lubricant to all stem threads and bearing surfaces each time the hydrant is operated. The bonnet shall have a service plug to facilitate oil replacement when the hydrant is serviced. This lubrication system shall be sealed from the waterway and any external contaminants by use of O-ring seals. An anti-friction washer shall be in place above the thrust collar to further minimize operating torque. The oil reservoir shall be factory filled with a low viscosity, non-toxic, NSF H1 Approved Hydrant Lubricant which will remain fluid through a temperature range of -40° F. to +150° F.
7. The operating nut shall be a one-piece design, manufactured of ASTM B62 or B584 bronze. Operating nut shape and dimensions shall be as specified by the end user. The operating nut shall be affixed to the bonnet by means of an ASTM B62 or B584 bronze hold down nut. The hold down nut shall be threaded into the bonnet in such a manner as to prevent accidental disengagement during the opening cycle of the hydrant. The use of set screws as a means of retention is unacceptable. A resilient weather seal shall be incorporated into the hold down nut, for the purpose of protecting the operating mechanism from the elements.
8. The direction of the opening shall be left to open. An arrow and the letter L shall be cast on the bonnet flange to indicate the specified opening direction.
9. A stainless steel tag shall be attached to the upper barrel of the hydrant that indicates the hydrant bury depth. The tag shall be designed so that it is still readable after multiple hydrant paintings.
10. The hydrant bonnet shall be attached to the upper barrel by not less than eight bolts and nuts and sealed by an O-ring.
11. Hydrants shall be a "traffic-model" having upper and lower barrels joined at the ground line by a separate and breakable "swivel" (traffic) flange providing 360° rotation of upper barrel for proper nozzle facing. Traffic flange shall employ not less than eight bolts. Traffic flange segments shall be located under the upper barrel flange to prevent the segments from falling into the lower barrel when the hydrant is struck. Traffic flange shall be tested by an independent certified testing agency to assure proper function under low speed impact.
12. The upper and lower barrels shall have an O-ring pressure seal between the barrels. The proper ground line shall be cast clearly on the lower barrel and shall provide not less than 18" of clearance from the centerline of the lowest nozzle to the ground.

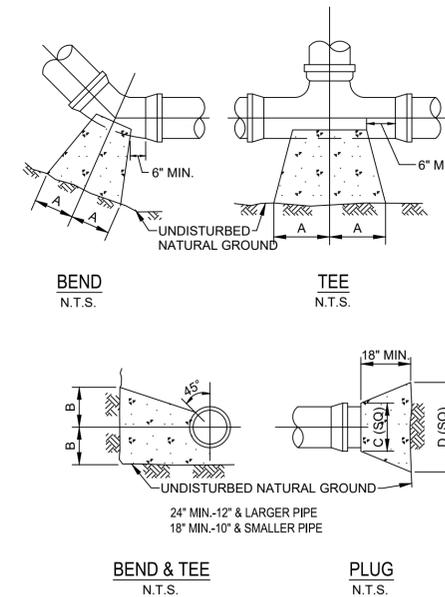
FIRE HYDRANT SPECIFICATIONS

DETAIL: FH-2

13. The operating stem shall consist of two pieces, not less than 1-1/4" diameter (excluding threaded or machined areas) and shall be connected by a stainless steel safety coupling.
14. Operating stems shall be protected from corrosion by electrophoretic coating (e-coat) or FBE (powder coat).
15. The stem coupling shall have an integral internal stop to prevent the coupling from sliding down into the lower barrel when the hydrant is struck. The stem coupling shall be designed to break on traffic impact and so that impacted pieces shall not fall into the hydrant main valve. Proof of design impact testing to be performed at a certified independent test facility.
16. The lower barrel shall be an integrally cast unit composed of ASTM A126 Class B grey iron or ASTM A536 ductile iron. The use of threaded flanges or flanges mechanically attached to barrels or pipe is deemed unacceptable. The hydrant bury depth shall be clearly marked on the hydrant lower barrel.
17. Main Valve shall be constructed of an iron core encapsulated in molded rubber having a Shore A Durometer hardness of 95 +/- 5 and shall be reversible in design to provide a spare in place, it also shall be rated for 350PSI on either side of the main valve. Plastic (polyurethane) main valves are unacceptable. The main valve shall have a cross section not less than 1".
18. Hydrants shall be equipped with (2) two drain valves which drain the barrel when the hydrant is closed and seal per AWWA C502 requirements when the hydrant is opened. These drain valves shall be an integral part of the one-piece bronze upper valve plate. They shall operate without the use of springs, toggles, tubes, levers or other intricate synchronizing mechanisms.
19. The upper valve plate, seat ring and drain ring (shoe bushing) must be ASTM B62 or B584 lead free bronze alloys and work in conjunction to form an all bronze drain way. A minimum of two (2) internal and two (2) external drain openings are required. Drains ported through an iron shoe are not permitted.
20. The bronze seat ring shall thread into a bronze drain ring (or shoe bushing) providing a bronze to bronze threaded connection. Seat rings shall be O-ring pressure sealed.
21. The hydrant shoe shall be ASTM A536 ductile iron; inlet size and connection type shall be as specified (Flanged, MJ, etc.), having ample blocking pads for sturdy setting and the MJ connection must have two strapping lugs to secure the hydrant to piping. A minimum of six bolts and nuts is required to fasten the shoe to the lower barrel.
22. The interior of the shoe including the lower valve plate and stem cap nut shall have a protective coating that meets the requirements of AWWA C-550. If a stem cap nut is utilized, it must be locked in place by a stainless steel lock washer or similar non-corrosive device that will prevent the cap nut from backing-off during normal use.
23. Hydrants shall be warranted by the manufacturer against defects in materials or workmanship for a period of ten years (10) from the date of manufacture. The manufacturing facility for the hydrant must have current ISO certification.
24. Exposed portions of the hydrant including the exterior of the bonnet, upper barrel and hose caps, shall be factory coated with a polyurethane enamel paint. (Safety Red). Do not paint the STORZ connection.

FIRE HYDRANT SPECIFICATIONS

DETAIL: FH-3



SIZE	90° BEND		45° BEND		1/2" BEND		TEES		PLUGS	
	A	B	A	B	A	B	A	B	A	B
2 1/2"	12"	7"	6"	7"	6"	6"	7"	8"	8"	14"
6"	16"	10"	9"	10"	6"	12"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

NOTE: THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 1.0 SQ. FOOT AND THE LEAST DIMENSION SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER, BUT NOT LESS THAN 1.0 FT.

THRUST BLOCK DETAIL
N.T.S.

NO.	DATE	REVISIONS



CobbFendley
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 Land Surveying Firm No. 10046700
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

WATER LINE DETAILS
 (3 OF 3)

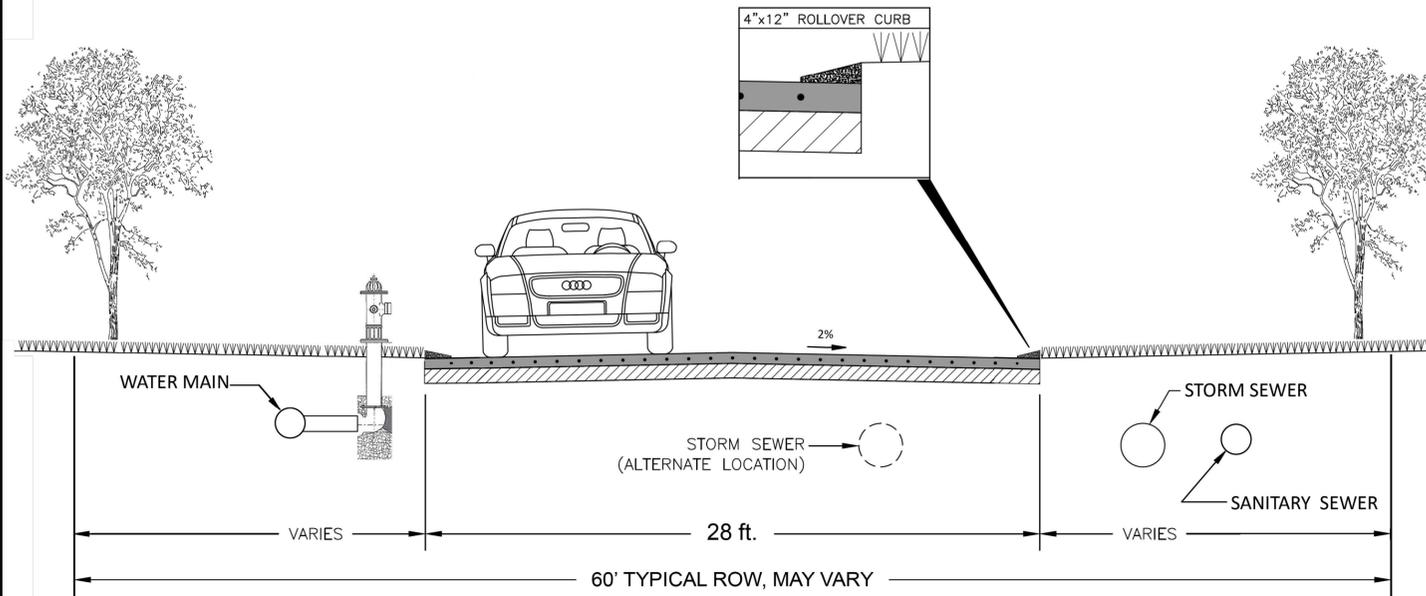
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 27 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	



FIRE HYDRANT SPECIFICATIONS

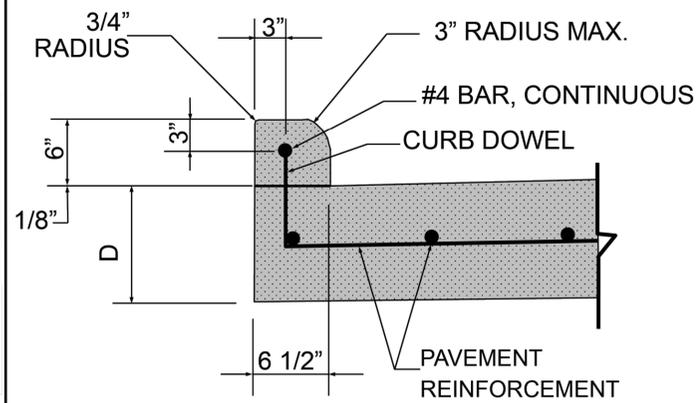
DETAIL: FH-3

NOT TO SCALE

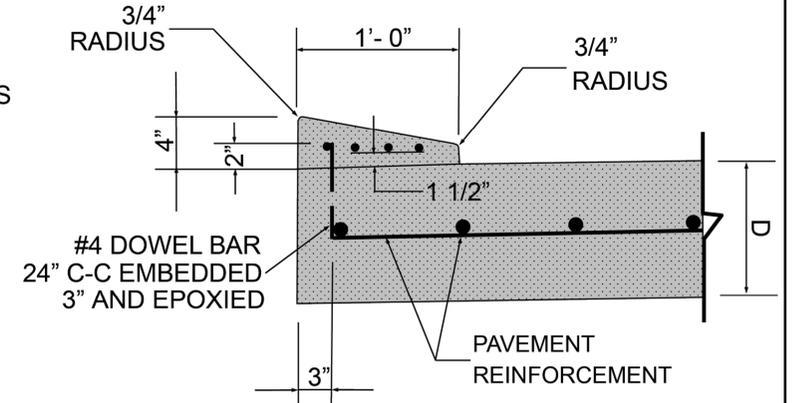


TYPICAL RESIDENTIAL/LOCAL STREET SECTION

DETAIL ST-1



TYPICAL CONCRETE CURB REINFORCING DETAILS



4' X 12' TRANSITION CURB (ROLL OVER)

NOTE: D = DESIGNED PAVEMENT DEPTH

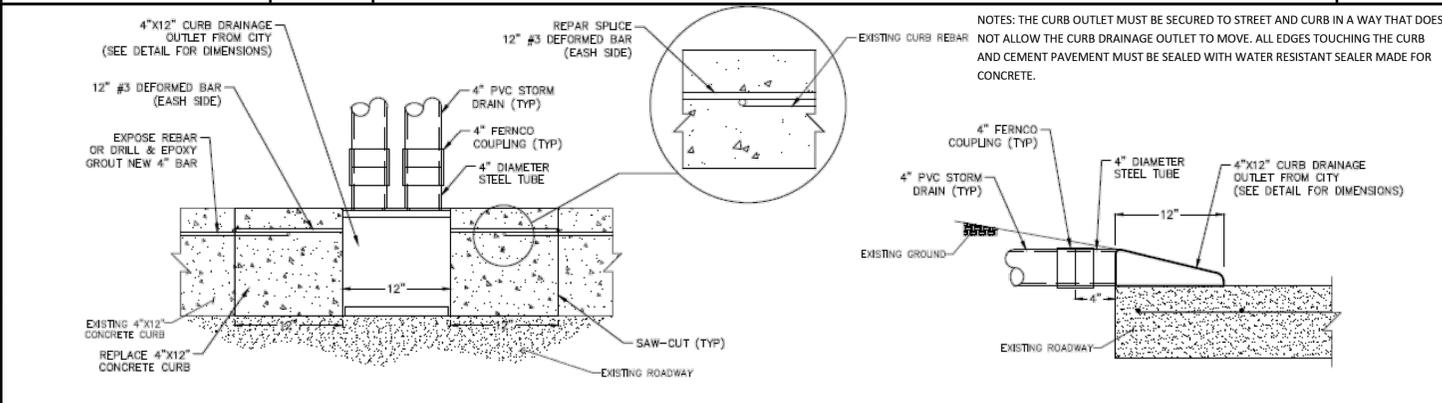
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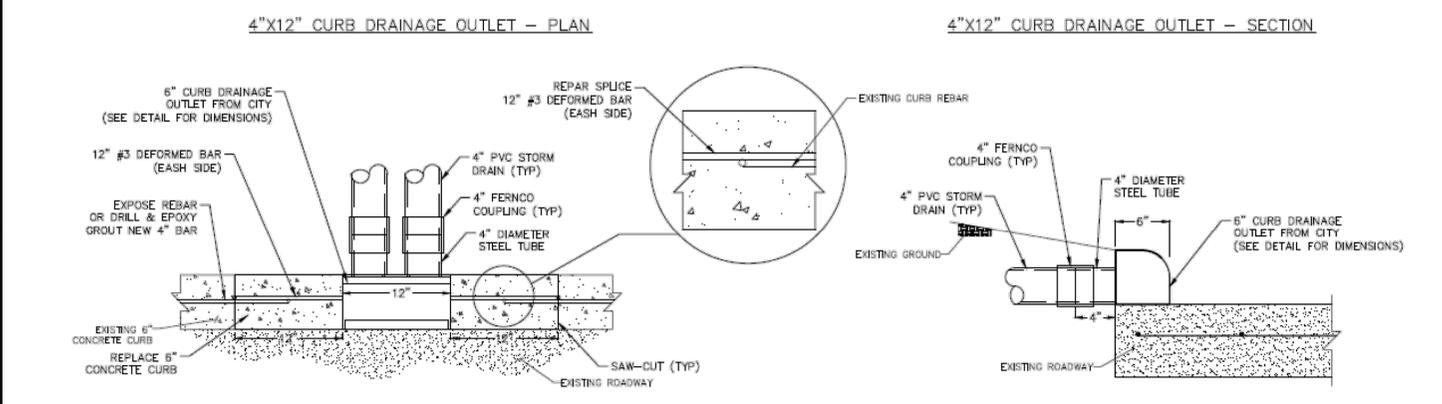
EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE



EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE



NOTES: THE CURB OUTLET MUST BE SECURED TO STREET AND CURB IN A WAY THAT DOES NOT ALLOW THE CURB DRAINAGE OUTLET TO MOVE. ALL EDGES TOUCHING THE CURB AND CEMENT PAVEMENT MUST BE SEALED WITH WATER RESISTANT SEALER MADE FOR CONCRETE.



6\"/>



EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE

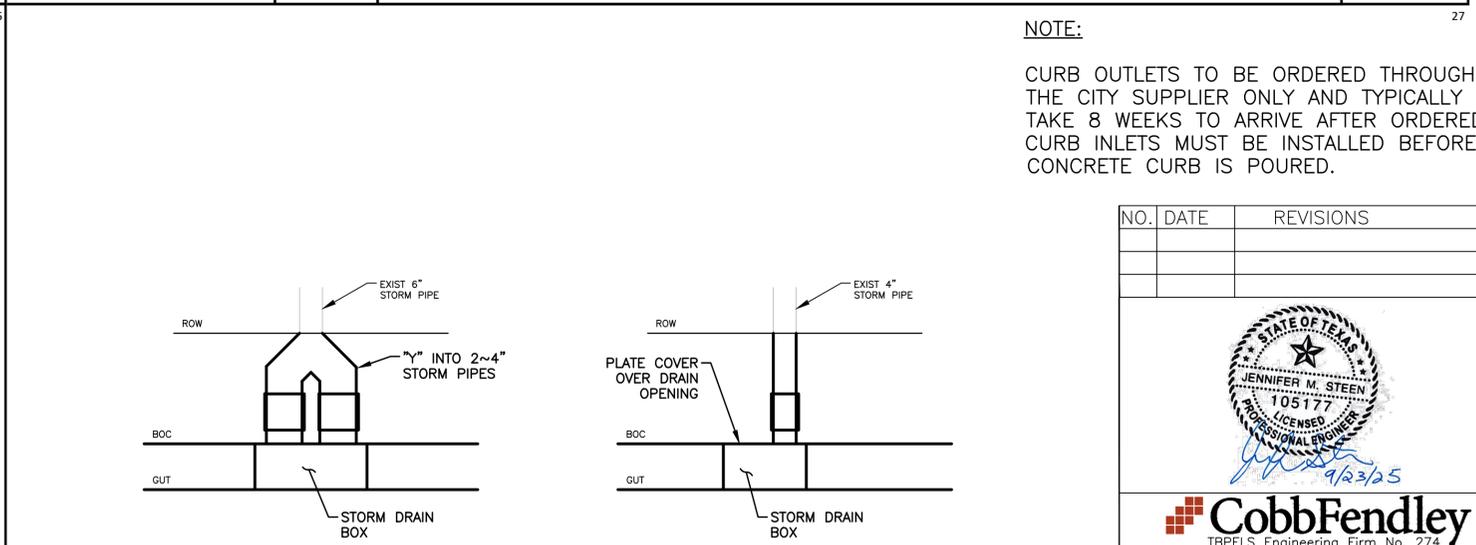
DETAIL: DRAINAGE-1



EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE
 EST. 1955
SPRING VALLEY VILLAGE

MONOLITHIC CURB DETAILS

DETAIL ST-2



CURB DRAIN DETAIL

NOTE:
 CURB OUTLETS TO BE ORDERED THROUGH THE CITY SUPPLIER ONLY AND TYPICALLY TAKE 8 WEEKS TO ARRIVE AFTER ORDERED. CURB INLETS MUST BE INSTALLED BEFORE CONCRETE CURB IS POURED.

NO.	DATE	REVISIONS



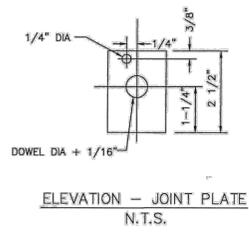
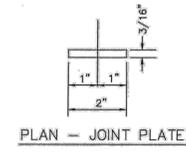
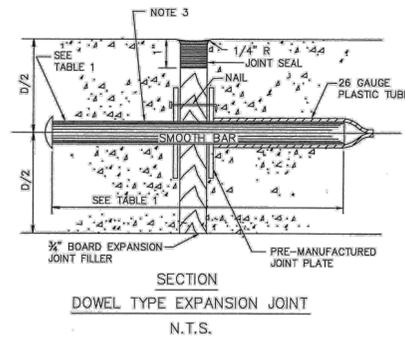
CobbFendley
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 www.cobbfendley.com

CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

PAVEMENT DETAILS
 (1 OF 2)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 28 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

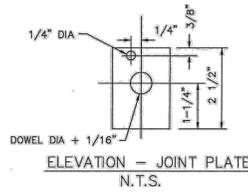
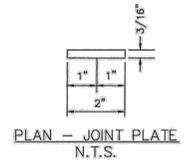
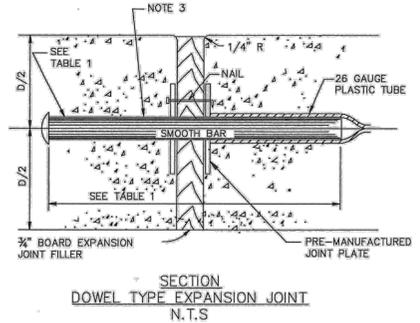
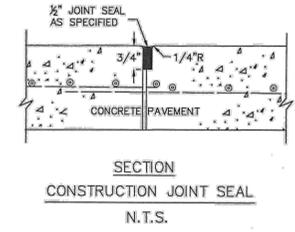
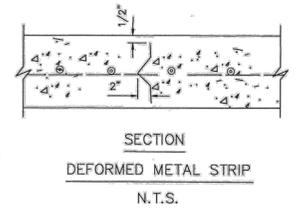


- NOTES:
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED ON 12" CENTRES.
 2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
 3. CENTER DOWEL HORIZONTALLY ON JOINT.
 4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
 5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS
NTS



- NOTES:
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
 2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 3 FEET.
 3. CENTER DOWEL HORIZONTALLY ON JOINT.
 4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2 INCH MINIMUM COVER.

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS
NTS

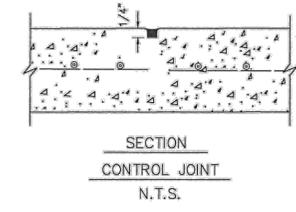
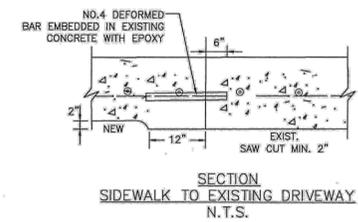
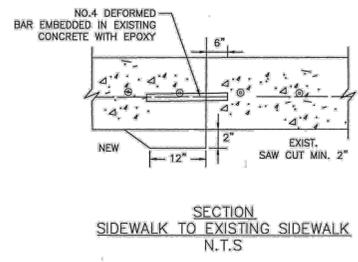
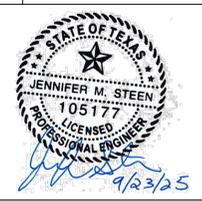


TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12

NO.	DATE	REVISIONS



CobbFendley
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

PAVEMENT DETAILS
 (2 OF 2)

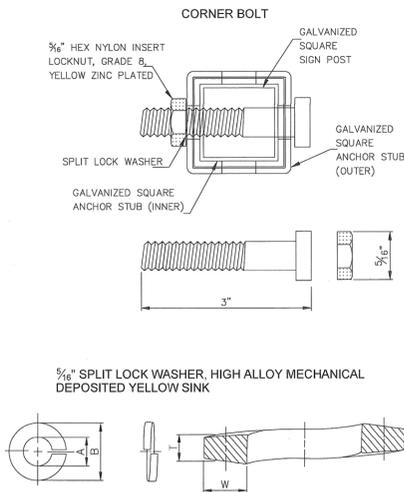
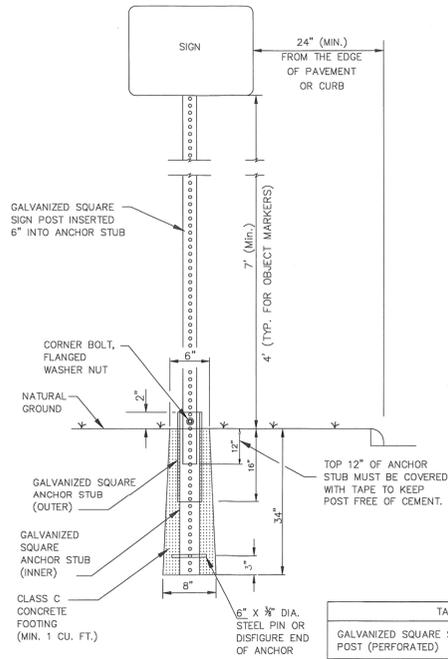
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 29 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

D:\PROJECTS\2024\12064_CITY_OF_SPRING_VALLEY_VILLAGE\01_MERLIN_COURT_&_SPRING_OAKS_CIRCLE_RECON\400_CAD\412_MUNI\SHEETS\2412-064-01-06_DET_PAVEMENT.DWG

GENERAL NOTES

1. THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITE ARE THE PROPERTY OF THE CITY OF HOUSTON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO THE TRAFFIC OPERATIONS CENTER (2200 PATTERSON). THE GENERAL TRAFFIC SUPERINTENDENT (832-395-6728/6756) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.
2. AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION OF THE PUBLIC WORKS AND ENGINEERING DEPARTMENT (832-395-6728/6756) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER ONLY CITY SIGNS AND POSTS IDENTIFIED BY TRAFFIC OPERATIONS DIVISION TO 2200 PATTERSON.
3. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.
4. ALL GROUND MOUNTED STOP SIGNS, WARNING SIGNS, AND OTHER REGULATORY SIGNS SHALL USE AT A MINIMUM HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING.
5. ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.
6. ALL OTHER SIGNS SHALL USE SUPER ENGINEER GRADE SHEETING.
7. ALL BLANKS TO BE INSTALLED SHALL BE OF THE 3000, 5000 OR 6000 SERIES ALUMINUM WITH A YIELD STRENGTH OF 3003-H14 ALLOY.
8. "T" DENOTES THICKNESS OF SIGN BLANKS.
9. ALL HOLES SHALL BE 3/8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES.
10. SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL ON SHEET 01509-03.
11. ALL SIGN BLANK ARE TO BE ETCHED, DEGREASED, AND HAVE AN ALDINE FINISH PRIOR TO APPLICATION OF LEGENDS.
12. ALL DETAILS ARE NOT TO SCALE.
13. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND STANDARD HIGHWAY SIGNS LATEST EDITION.
14. REINSTALLATION OF PREVIOUSLY EXISTING SIGNS, WHERE REQUIRED PER PLANS, SHALL BE AT THE CONTRACTOR'S EXPENSE.

TYPICAL GROUND SIGN INSTALLATION PERFORATED SQUARE METAL TUBING

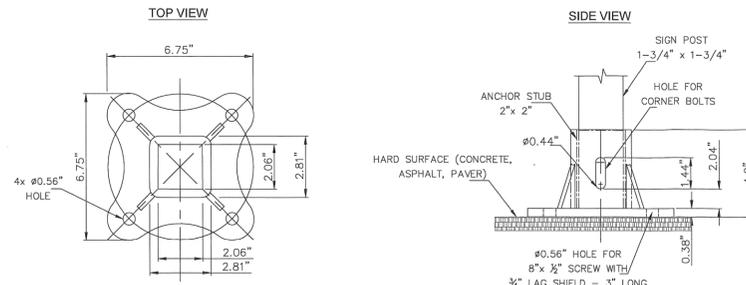


NOMINAL WASHER SIZE	A	B	T	W
3/8"	0.322	0.314	0.503	0.078
	0.314	0.306	0.495	0.125

DIMENSIONS: ASME B18.21.1
MATERIAL: ALLOY STEEL PER ASME B18.211
FINISH: MECHANICAL ZINC PER ASME B695, CLASS 5, TYPE 2 (YELLOW)

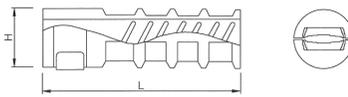
TABLE A	
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4" x 1-3/4" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (INNER)	2" x 2" x 36" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (OUTER)	2 1/4" x 2 1/4" x 18" (14 GAUGE)

TYPICAL HARD SURFACE INSTALLATION GALVANIZED SIGN BASE



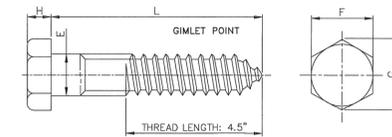
- NOTES:**
1. MATERIAL: ASTM A-536 GRADE 65-45-12 DUCTILE IRON
 2. HOT DIP GALVANIZE PER ASTM A-153
 3. ALL DIMENSIONS ARE IN INCHES

ANCHOR LAG SHIELD - ZINC ALLOY



TH	L	H
LAG THREAD SIZE	LENGTH NOMINAL	DRILLED HOLE SIZE
1/2"	2"	3"
		3/4"

8" HEX LAG SCREWS, HOT DIPPED GALVANIZED



DIAMETER	E		F		G		H		L
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
1/2"	0.515	0.482	0.750	0.725	0.866	0.826	0.564	0.302	8"

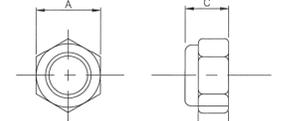
MATERIAL: PER A307 GRADE A
COATING: HOT DIP ZINC PER ASTM F2329 OR IN ACCORDANCE WITH CLASS C OF ASTM A153 AND CLASS D FOR 3/8" DIAMETER AND LESS

1/2" FLAT WASHERS, LOW CARBON, SAE, ZINC PLATED

SIZE	TOLERANCE			OD			THICKNESS-TH		
	BASIC PLUS	MINUS		BASIC PLUS	MINUS		BASIC PLUS	MINUS	
1/2"	0.515	0.015	0.005	1.062	0.030	0.007	0.095	0.121	0.074

DIMENSIONS: ASME B18.21.1, TYPE A PLAIN WASHERS
MATERIAL: CARBON STEEL
FINISH: Fe/Zn 3AT PER ASTM F1941

HEX NYLON INSERT LOCKNUTS (NE), GRADE 8, YELLOW ZINC PLATED



SIZE	C		A		D
	THICKNESS	WIDTH ACROSS FLATS	WIDTH ACROSS CORNERS	HEX HEIGHT	HEX DIAMETER
1/2"	0.359	0.329	0.502	0.489	0.250

DIMENSIONS: ASME B18.16.6
MATERIAL: CARBON STEEL, GRADE 8 PER ASME B18.16.6, NYLON 66
THREAD REQUIREMENTS: ASME B1.1 UNC & UNF CLASS 2B

GENERAL NOTES AND GROUND MOUNTING SIGN

POST MOUNTED STREET NAME SIGN W/ NO OUTLET SIGN



D3 - POST MOUNTED STREET NAME SIGN

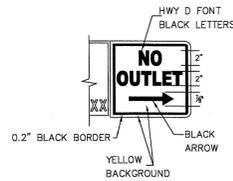


OVERHEAD STREET NAME SIGN DETAIL

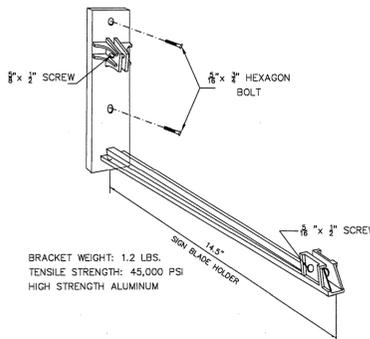


D3 - STREET NAME SIGN

	POST-MOUNTED SIGN	OVERHEAD SIGN
HEIGHT	9"	24"
LENGTH	30" MIN. 48" MAX. 6" INCREMENTS OF LENGTH	10" MAX. 2" INCREMENT OF LENGTH
THICKNESS	0.125"	0.080"
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209)	
SIGN FACE MATERIALS	GREEN FILM OVER DIAMOND GRADE VIP SHEETING	
LEGENDS AND SYMBOLS	HIGHWAY GOTHIC SERIES D (USUAL) HIGHWAY GOTHIC SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK	
COLOR	LETTERS-BLACK REFLECTIVE BORDER-BLACK REFLECTIVE BACKGROUND-WHITE REFLECTIVE	

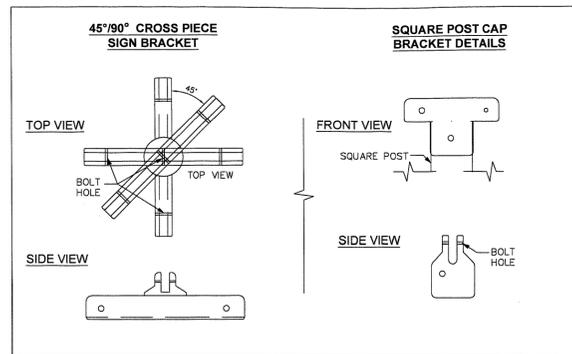


SIGNAL POLE MOUNTING DETAIL

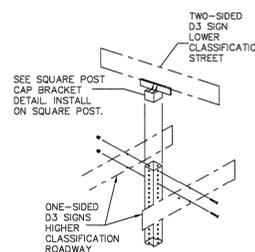


NOTES:

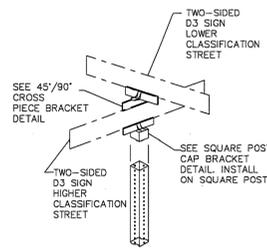
- TYPICAL SIGN PLATE SHOULD BE 30" MAX.
- LONGER SIGN PLATE MUST BE APPROVED BY THE CITY TRAFFIC ENGINEER.



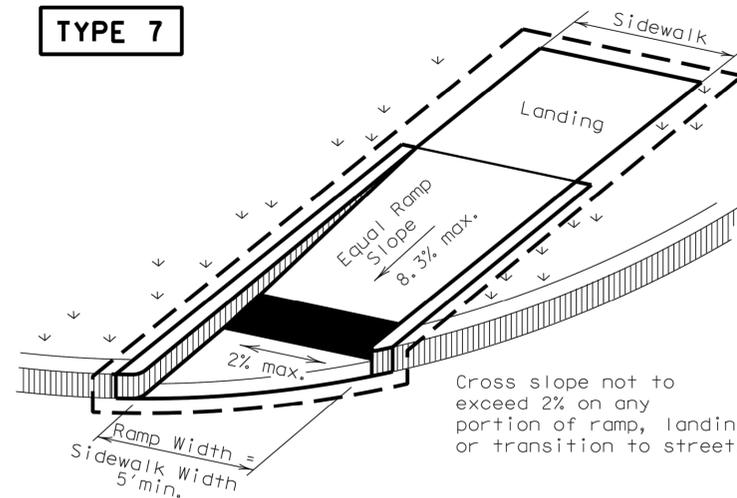
D3 SIGNS GREATER THAN 42" PLATES IN LENGTH



D3 SIGNS LESS THAN OR EQUAL TO 42" PLATES IN LENGTH



TYPE 7



(Sidewalk set back from curb)

DIRECTIONAL RAMPS WITHIN RADIUS

Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.

NO.	DATE	REVISIONS



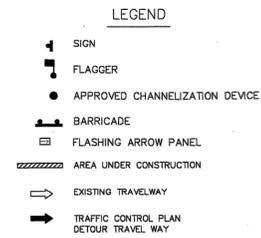
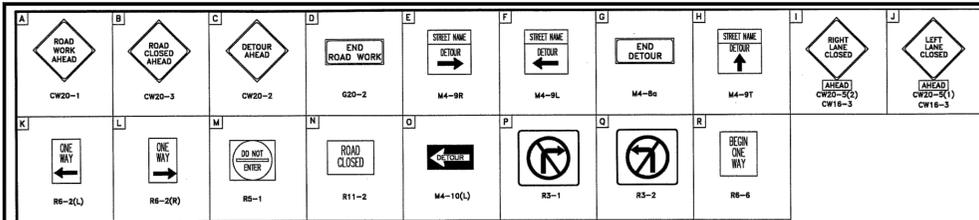
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The Woodlands, Texas 77380
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CITY OF SPRING VALLEY VILLAGE

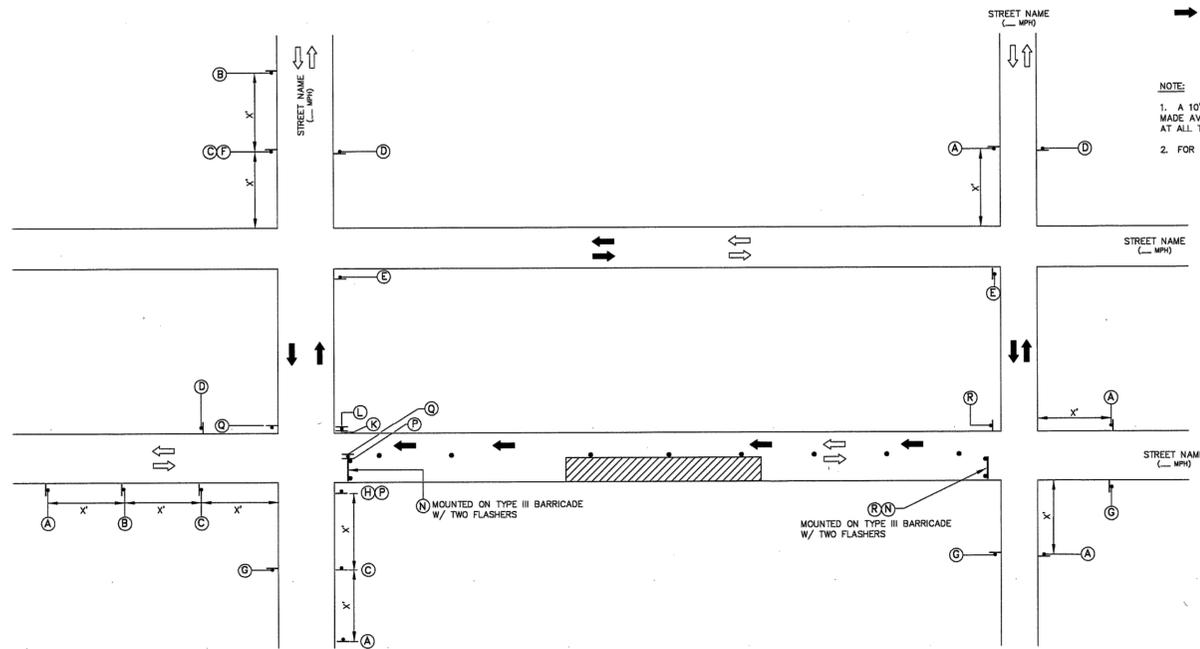
MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

TRAFFIC DETAILS
(1 OF 3)

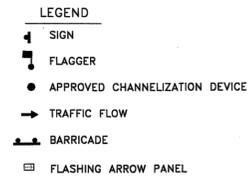
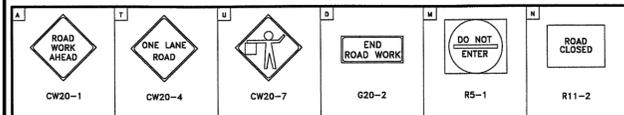
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 30 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	



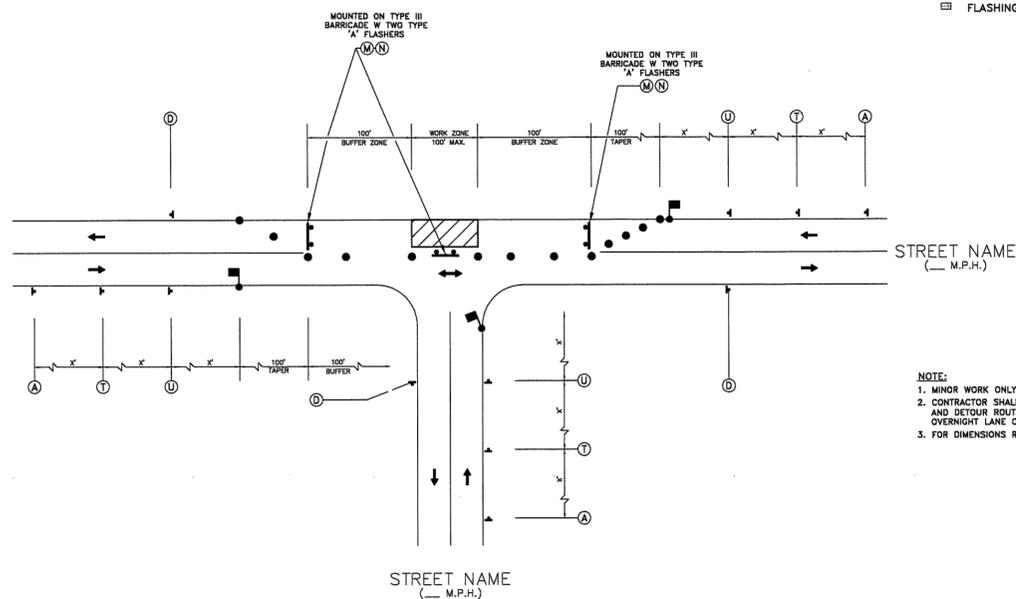
NOTE:
 1. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
 2. FOR DIMENSIONS REFER TO SHEET 01512-01.



TCP ONE LANE CLOSURE



NOTE:
 1. MINOR WORK ONLY.
 2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
 3. FOR DIMENSIONS REFER TO SHEET 01512-01



PHASE 1 OF 3
 TYPICAL CONSTRUCTION ZONE
 AT A T-INTERSECTION

NO.	DATE	REVISIONS



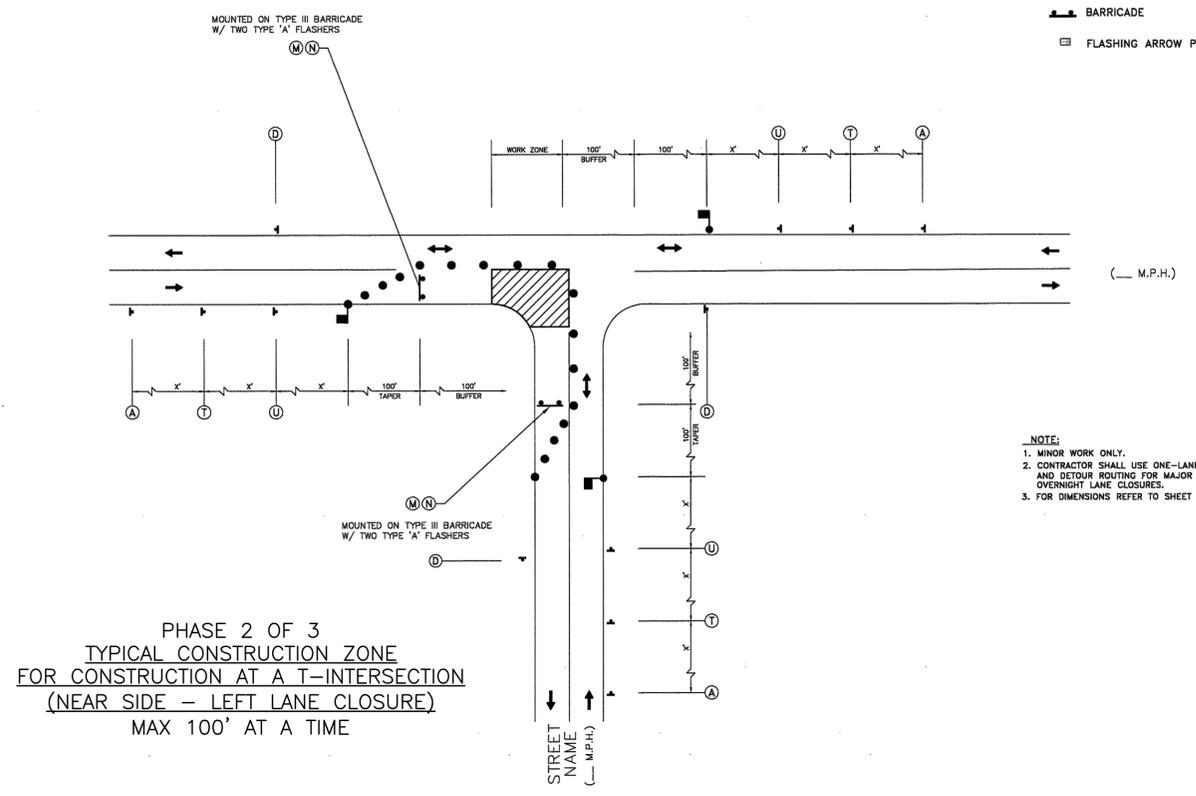
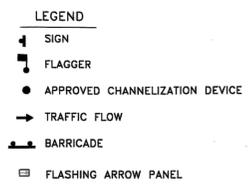
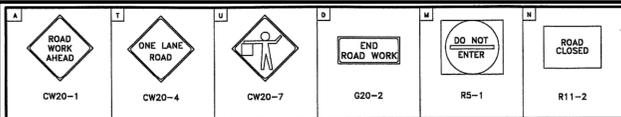
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MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

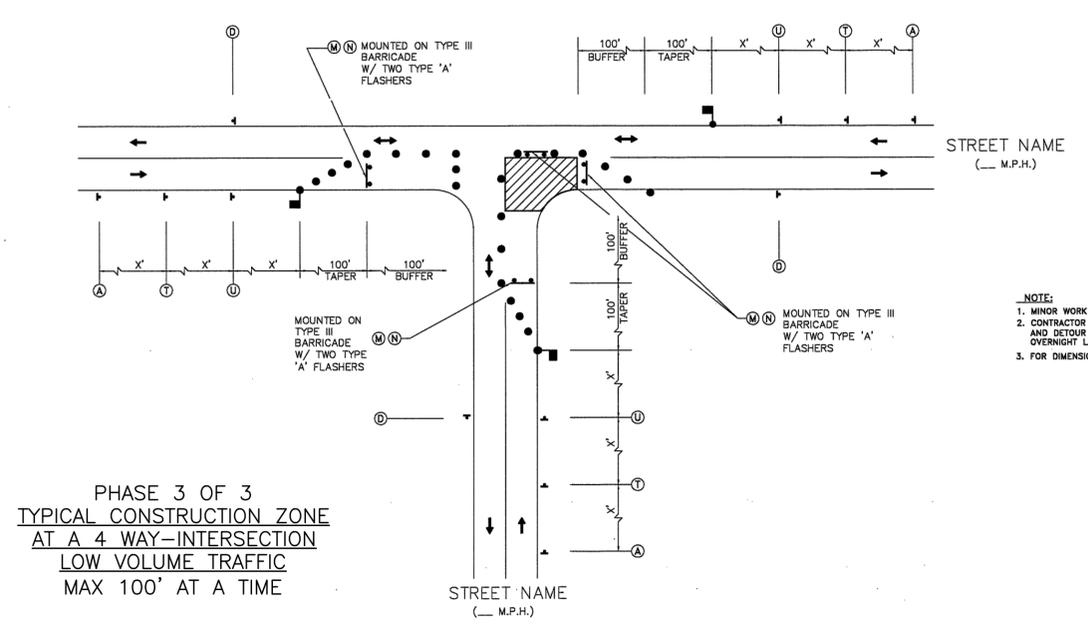
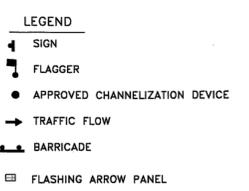
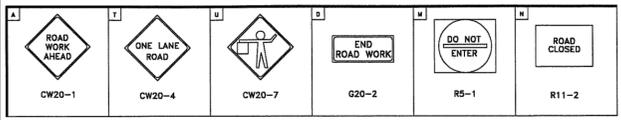
TRAFFIC DETAILS
 (2 OF 3)

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SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 31 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	



NOTE:
 1. MINOR WORK ONLY.
 2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
 3. FOR DIMENSIONS REFER TO SHEET 01512-01

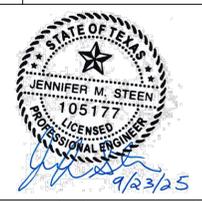
PHASE 2 OF 3
 TYPICAL CONSTRUCTION ZONE
 FOR CONSTRUCTION AT A T-INTERSECTION
 (NEAR SIDE - LEFT LANE CLOSURE)
 MAX 100' AT A TIME



NOTE:
 1. MINOR WORK ONLY.
 2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
 3. FOR DIMENSIONS REFER TO SHEET 01512-01

PHASE 3 OF 3
 TYPICAL CONSTRUCTION ZONE
 AT A 4 WAY-INTERSECTION
 LOW VOLUME TRAFFIC
 MAX 100' AT A TIME

NO.	DATE	REVISIONS



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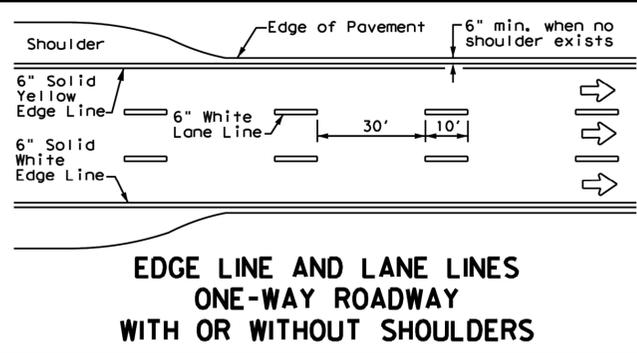
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

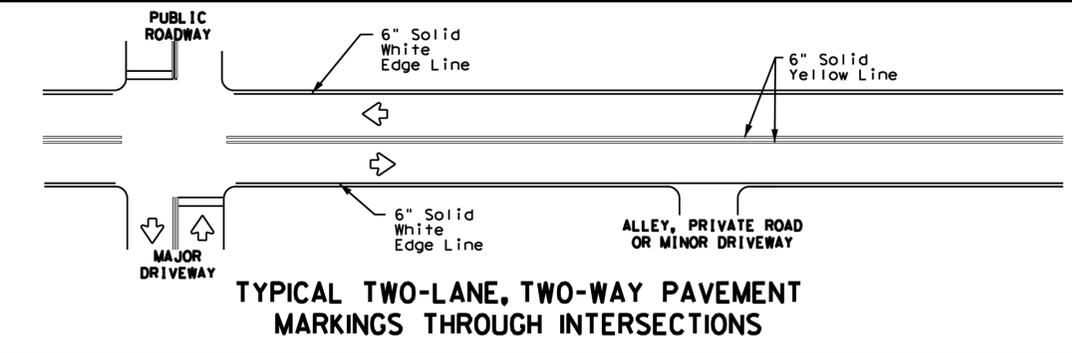
TRAFFIC DETAILS
 (3 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 32 OF 49
SURVEY BY: CFA	DWG. No:
F B No.: -	

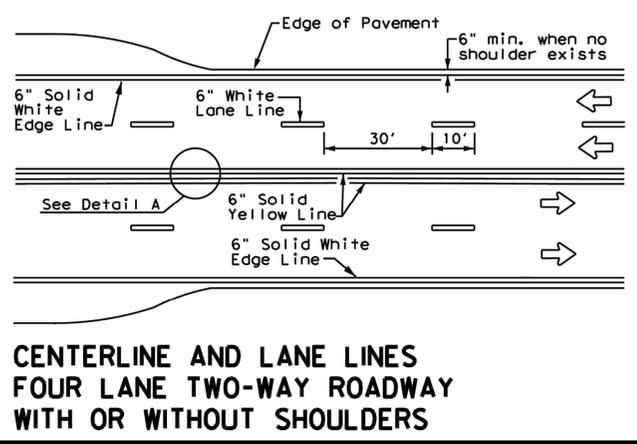
1. THIS STANDARD IS TO BE USED IN CONJUNCTION WITH THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY CONSTRUCTION, LATEST EDITION.



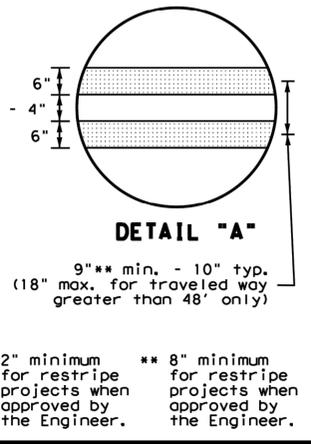
**EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



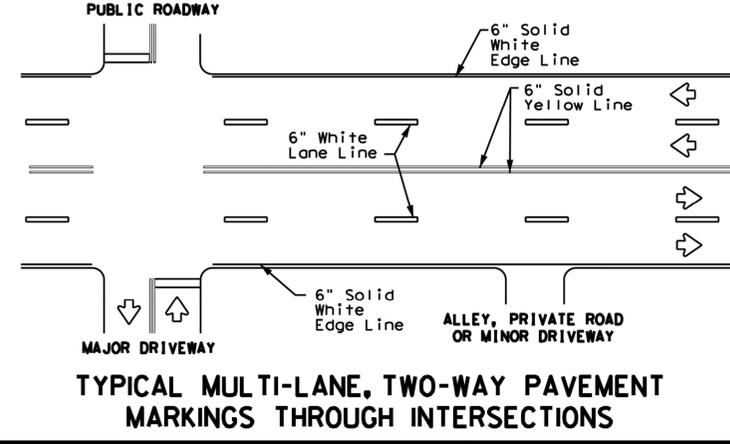
**TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**



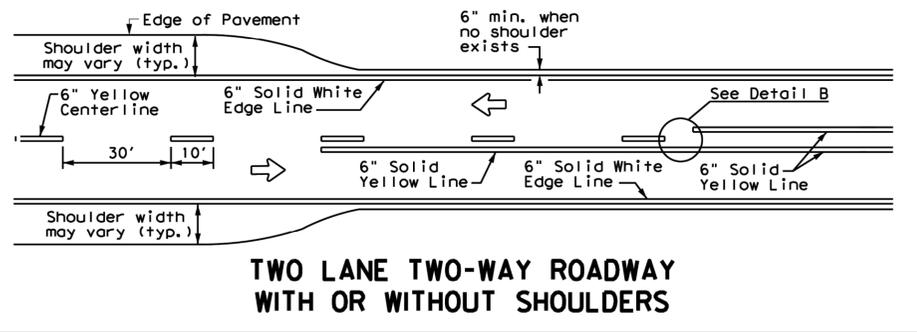
**CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



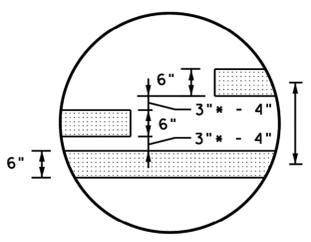
* 2" minimum for restripe projects when approved by the Engineer.
** 8" minimum for restripe projects when approved by the Engineer.



**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS**

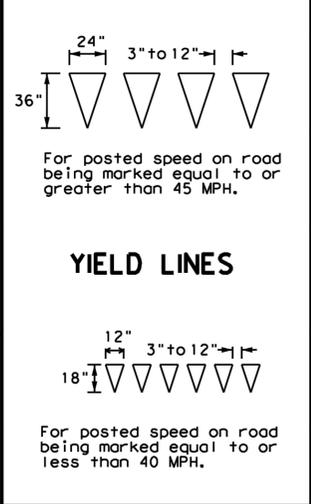


**TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS**



18" min. - 20" max. (16" minimum for restripe projects when approved by the Engineer.)

* 2" minimum for restripe projects when approved by the Engineer.



YIELD LINES

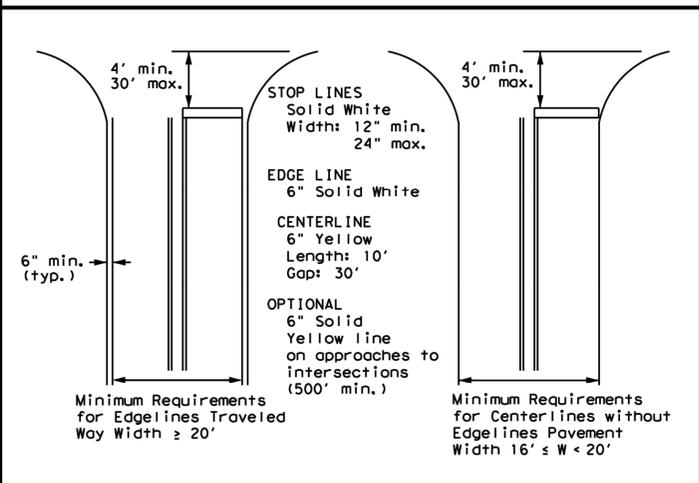
For posted speed on road being marked equal to or less than 40 MPH.

GENERAL NOTES

- Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
- 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 center of edge line to the center of edge line 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.

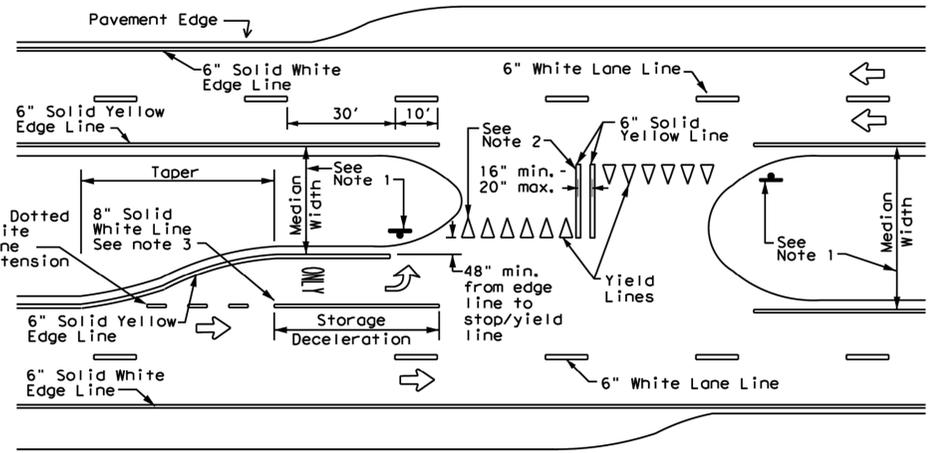


NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

**GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE**
Based on Traveled Way and Pavement Widths for Undivided Roadways

NOTES

- 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 and stop bars are optional as determined by the Engineer.
- Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.



FOUR LANE DIVIDED ROADWAY CROSSOVERS

Texas Department of Transportation
Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

FILE: pml-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-78 8-00 6-20				
8-95 3-03 12-22				
5-00 2-12				
22A				

NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

TYPICAL STANDARD
PAVEMENT MARKINGS

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 33 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

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DATE: FILE: THIS IS MADE BY TxDOT OR ANY OTHER SOURCE. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF TxDOT. TxDOT ASSUMES NO RESPONSIBILITY FOR THE CONSEQUENCES OF ANY DAMAGE RESULTING FROM ITS USE.

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- 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).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- 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 NOTES:

- 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.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

<p>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov</p>
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

SHEET 1 OF 12



**BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS**

BC (1) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-03	7-13			
9-07	8-14			
5-10	5-21			
	DIST	COUNTY	SHEET NO.	

NO.	DATE	REVISIONS



9/23/25



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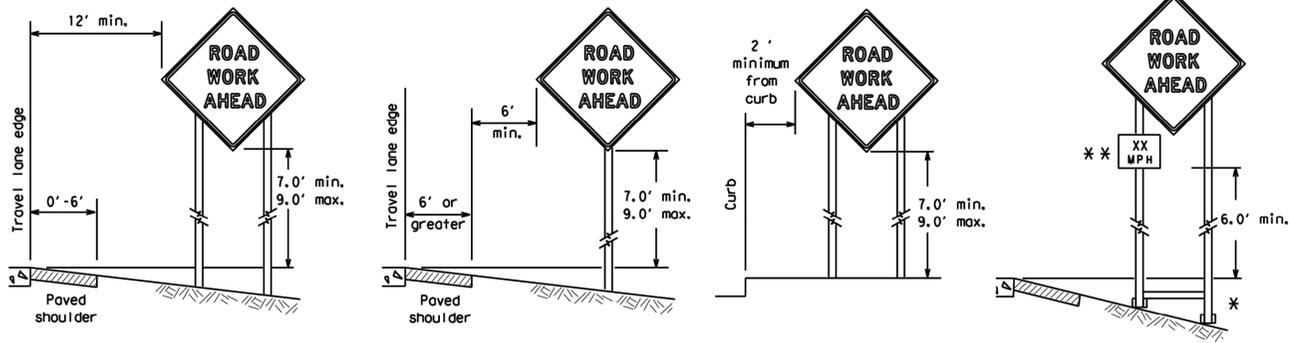
MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
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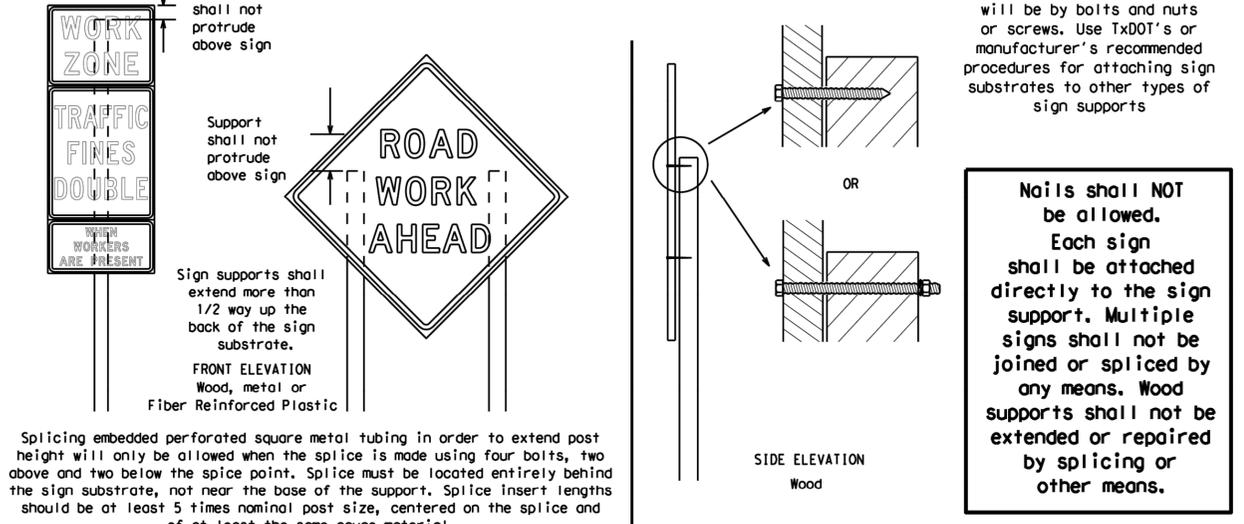
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* 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



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 splice 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.

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- 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.
- 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.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. 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.
- 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.
- 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.
- 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)

- 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.
 - Long-term stationary - work that occupies a location more than 3 days.
 - 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.
 - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - Short, duration - work that occupies a location up to 1 hour.
 - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- 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.
- 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.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- 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.
- 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

- 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

- 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.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- 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

- 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).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- 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

- 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

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- 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.
- 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.
- 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 shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

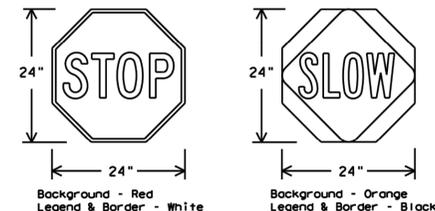
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- 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.
- 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.
- 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.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- 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.

STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
- STOP/SLOW paddles shall be retroreflectORIZED when used at night.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- 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.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- 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, specific service (LOGO), 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.
- 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. For details for covering large guide signs see the TS-CD standard.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- 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.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- 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.

SHEET 4 OF 12

Texas Department of Transportation
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DR: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14				
7-13 5-21	DIST	COUNTY		SHEET NO.

NO.	DATE	REVISIONS

STATE OF TEXAS
JENNIFER M. STEEN
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CITY OF SPRING VALLEY VILLAGE

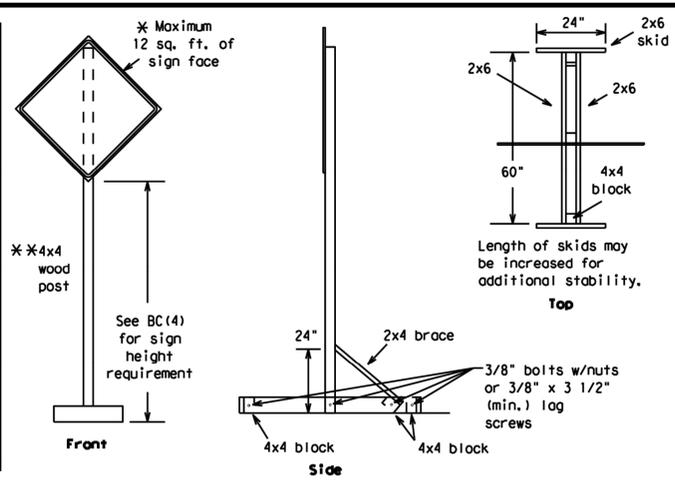
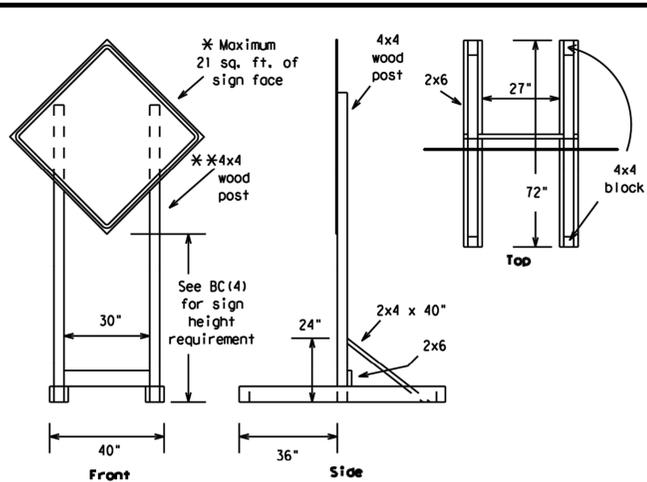
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 35 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

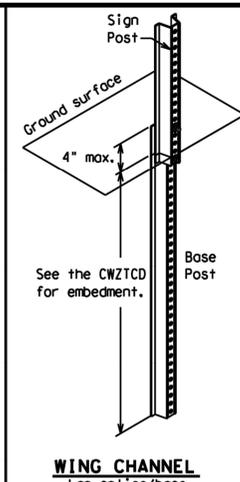
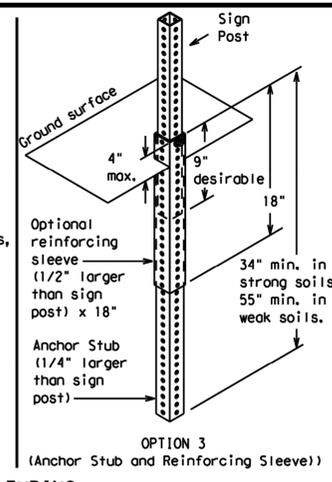
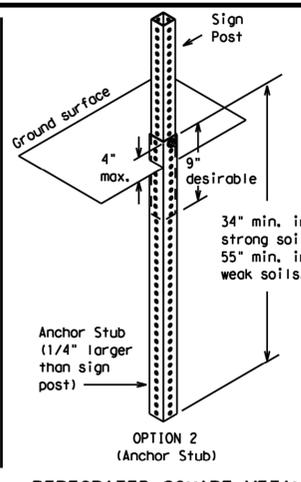
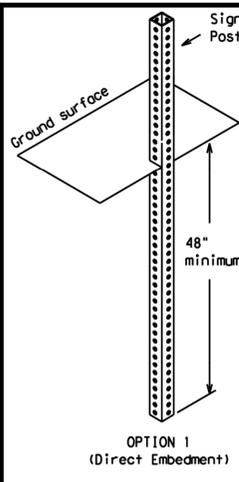
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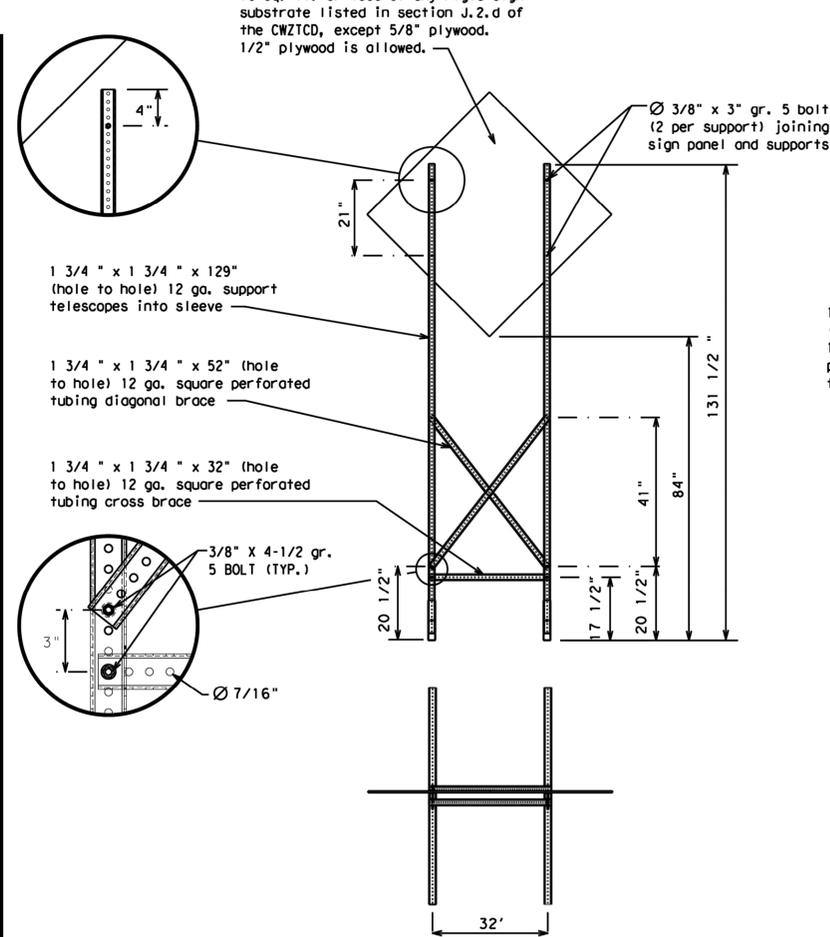
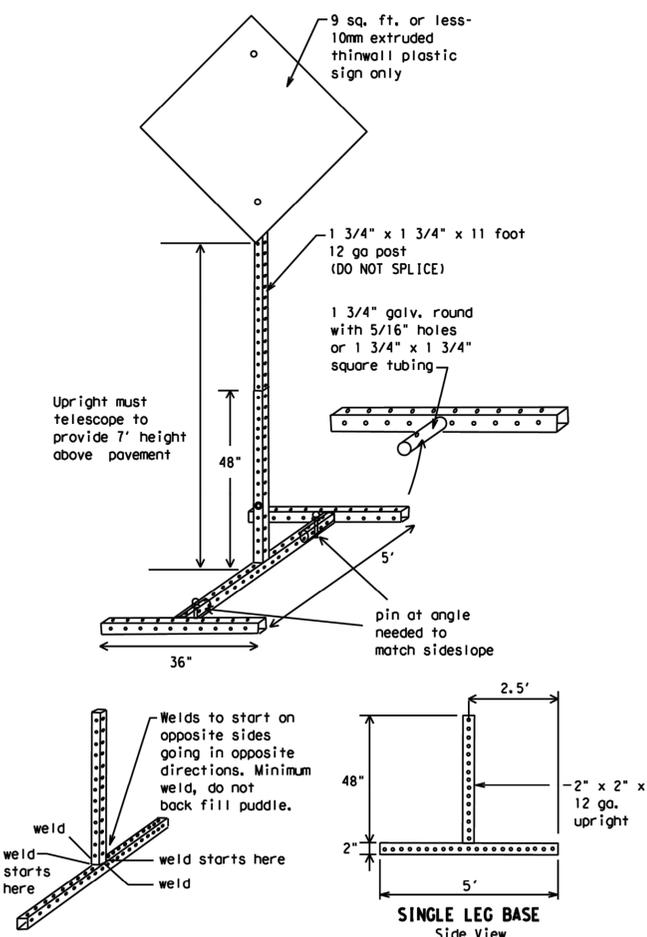
SKID MOUNTED WOOD SIGN SUPPORTS

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



GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTC 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.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID 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 CWZTC 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 CWZTC 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 CWZTC for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE:	bc-21.dgn	DW:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS									
9-07	8-14								
7-13	5-21								
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

BARRICADE AND CONSTRUCTION
 TYPICAL SIGN SUPPORT

SUBMITTED:	9/23/2025	DESIGNED BY:	JMS
SCALE:	N/A	DRAWN BY:	AC / BAK
DATE:	9/23/2025	SHEET No.:	36 OF 49
SURVEY BY:	CFA	DWG. No.:	
F B No.:	-		

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GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- 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.
- 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.
- 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).
- 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.
- 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:

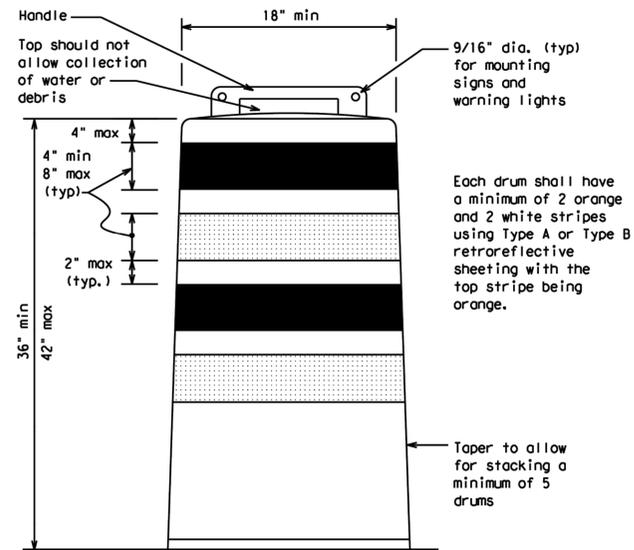
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- 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.
- 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.
- 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.
- 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.
- 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.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

- 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 or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- 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.

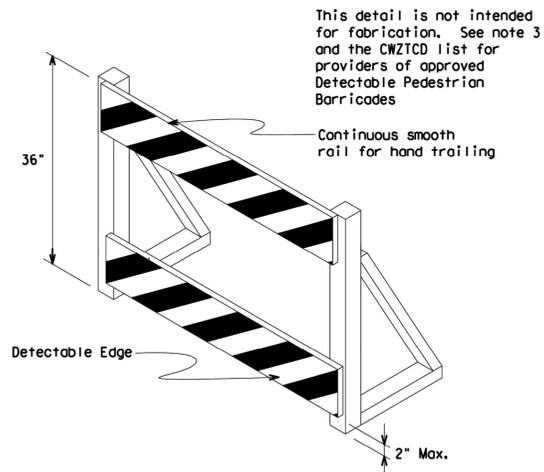
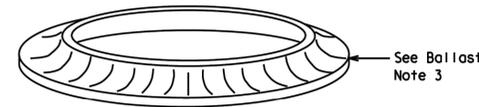
BALLAST

- 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.
- 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.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- 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.
- 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.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



Each drum shall have a minimum of 2 orange and 2 white stripes using Type A or Type B retroreflective sheeting with the top stripe being orange.

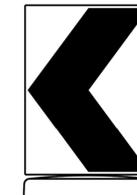
Taper to allow for stacking a minimum of 5 drums



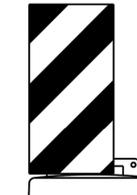
This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

DETECTABLE PEDESTRIAN BARRICADES

- 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. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- 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.
- 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 (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should 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 D700, 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

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B₁ or Type C₁ Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- 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.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- 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 an every third drum. A minimum of three (3) should be used at each location called for in the plans.
- 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.

SHEET 8 OF 12

Texas Department of Transportation Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (8) - 21

FILE: bc-21.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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4-03 8-14	REVISIONS			
9-07 5-21	DIST	COUNTY	SHEET NO.	
7-13	102			

NO.	DATE	REVISIONS



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CITY OF SPRING VALLEY VILLAGE

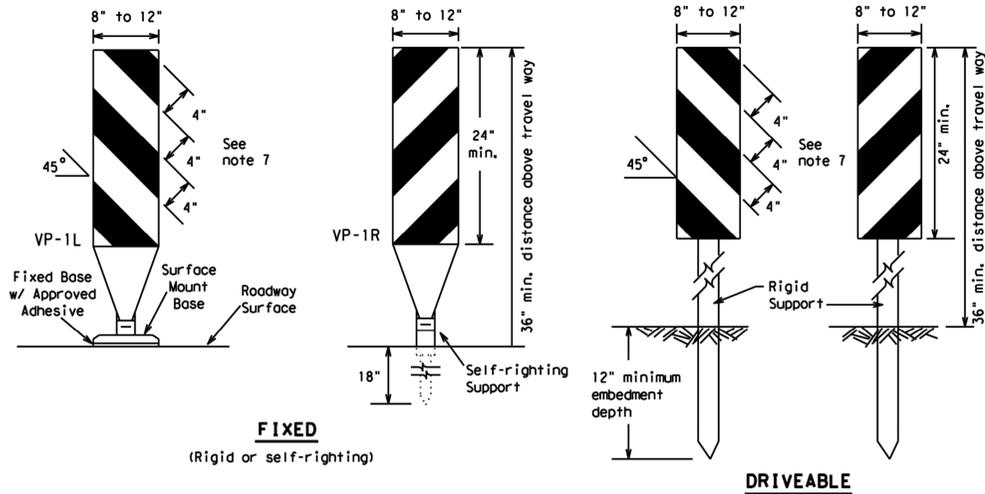
MERLIN COURT &
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 RECONSTRUCTION

BARRICADE AND CONSTRUCTION
 CHANNELIZING DEVICES
 (1 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 37 OF 49
SURVEY BY: CFA	DWG. No:
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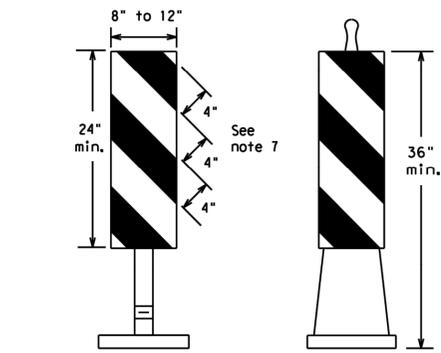
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FIXED
(Rigid or self-righting)

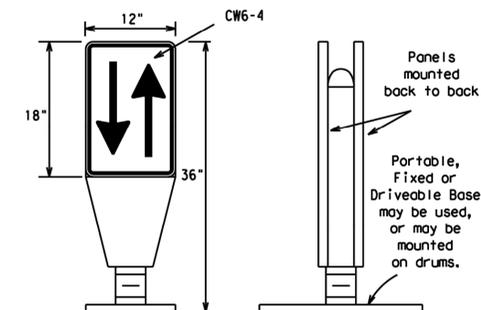
DRIVEABLE



PORTABLE

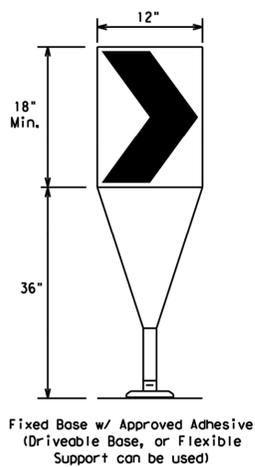
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- 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 for additional requirements on the use VP's for drop-offs.
- 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.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

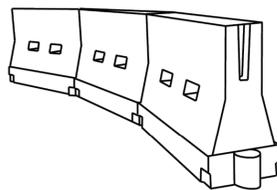
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- 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.



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

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- 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.
- 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.
- To be effective, the chevron should be visible for at least 500 feet.
- 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.
- 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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- 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.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- 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). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- 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 Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- 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.
- 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.
- 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.
- 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 cones 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

GENERAL NOTES

- 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).
- 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.
- 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).
- 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.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- 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.
- 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.

Posted Speed	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40	L = WS	265'	295'	320'	40'	80'
45		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

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

BARRICADE AND CONSTRUCTION
CHANNELIZING DEVICES
(2 OF 3)

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 38 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

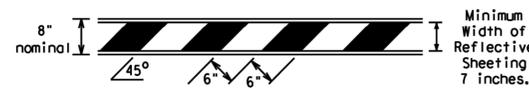
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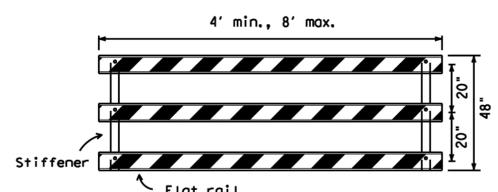
TYPE 3 BARRICADES

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 or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



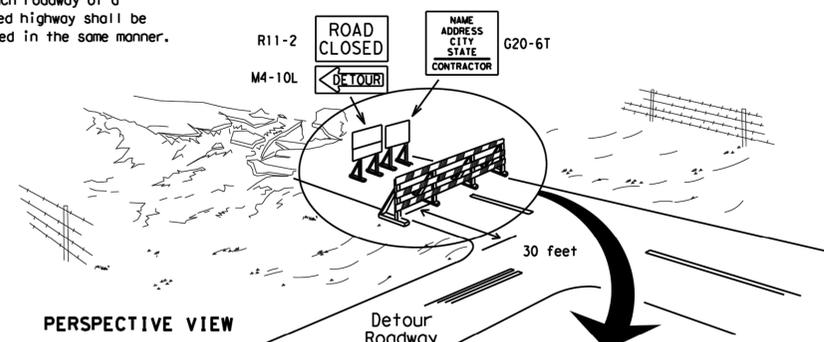
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

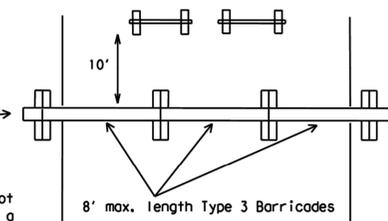
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

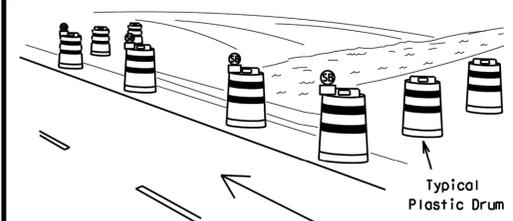
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



PLAN VIEW

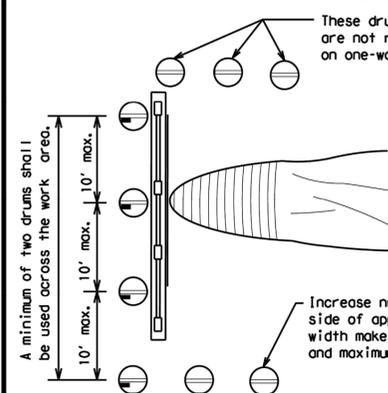
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

1. Where positive redirection 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.



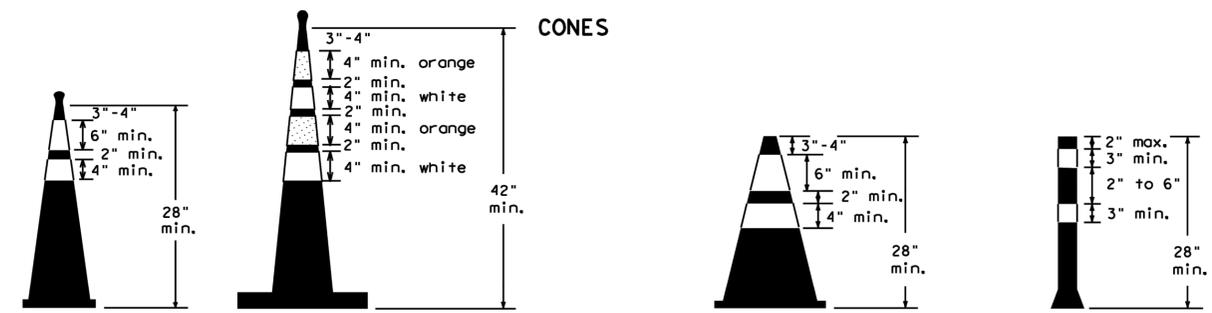
PLAN VIEW

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

Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums)

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

CONES



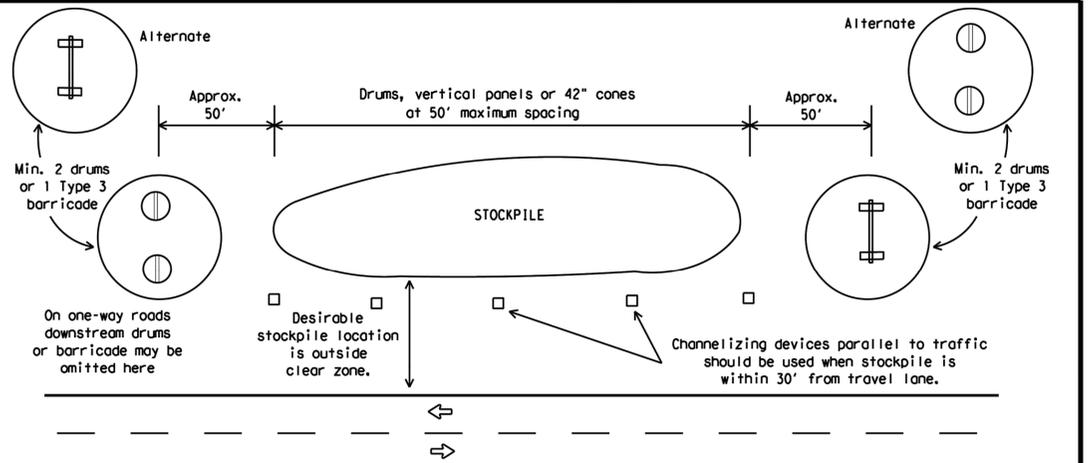
Two-Piece cones

One-Piece cones

Tubular Marker

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 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 or Type B.
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

SHEET 10 OF 12

Texas Department of Transportation
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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STATE OF TEXAS
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105177
LICENSED PROFESSIONAL ENGINEER

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CITY OF SPRING VALLEY VILLAGE

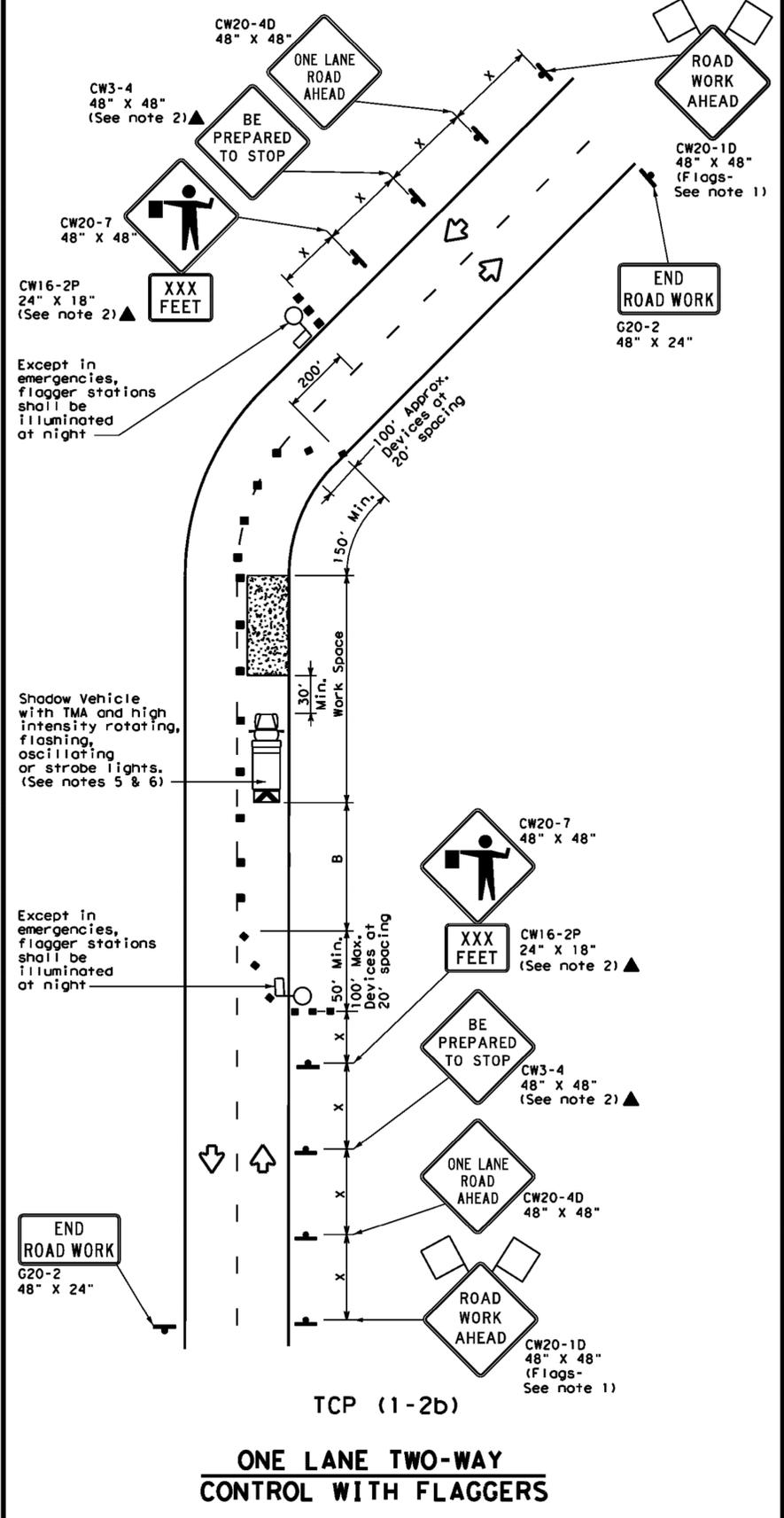
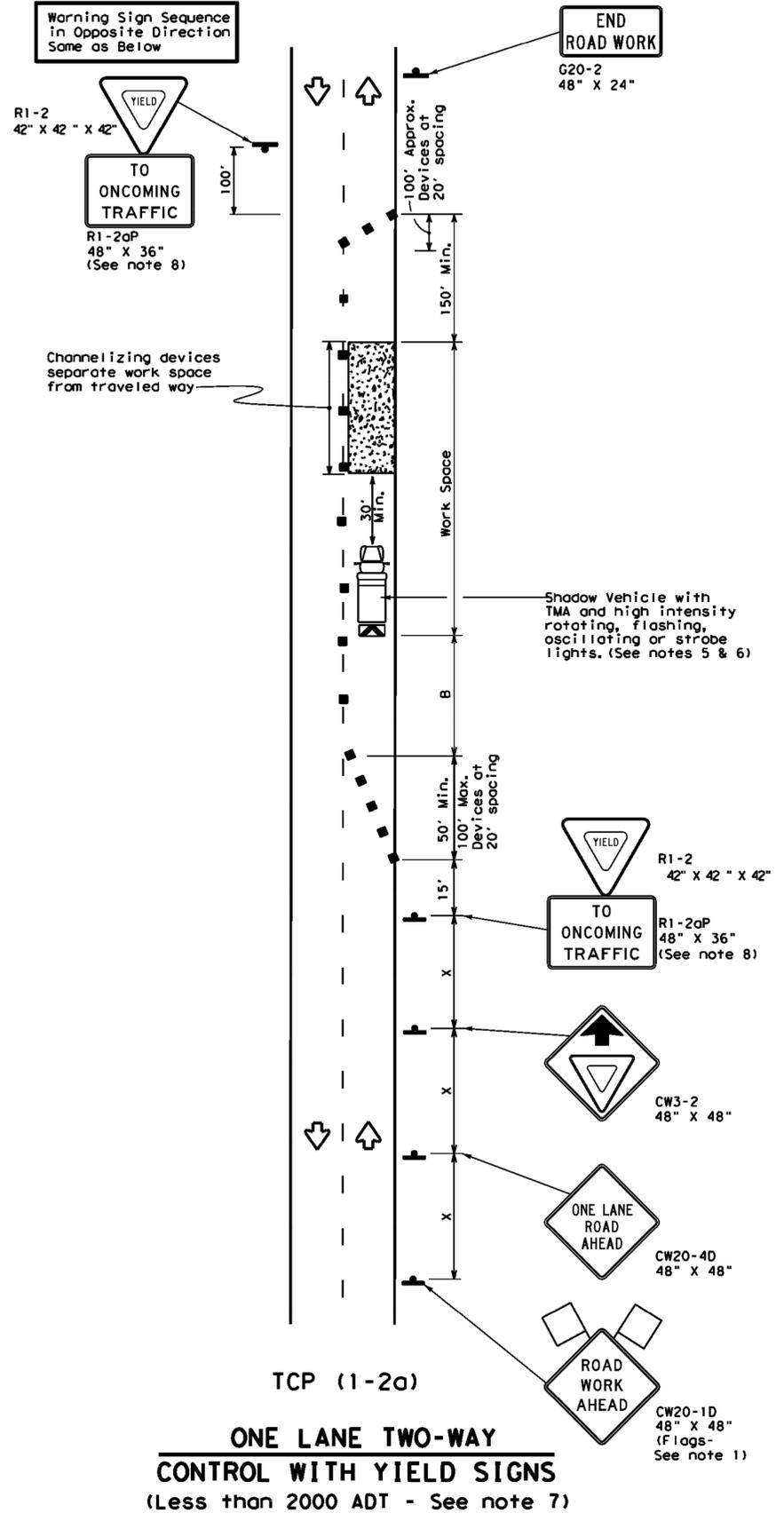
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES (3 OF 3)

SUBMITTED: 9/23/2025 DESIGNED BY: JMS
SCALE: N/A DRAWN BY: AC / BAK
DATE: 9/23/2025 SHEET No.: 39 OF 49
SURVEY BY: CFA DWG. No.:
F B No.: -

FILE:

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LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40	L = WS	265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50	L = WS	500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60	L = WS	600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70	L = WS	700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

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

TYPICAL USAGE

	MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓	✓		

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
 - Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-2a)**
- R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
 - R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.
- TCP (1-2b)**
- Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
 - Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

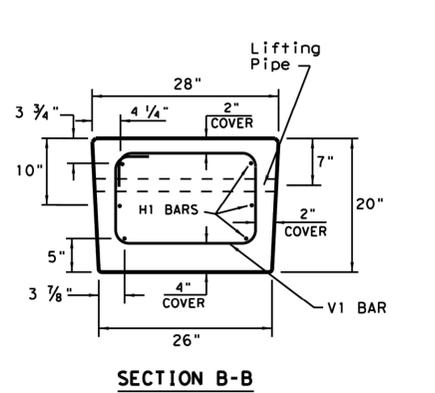
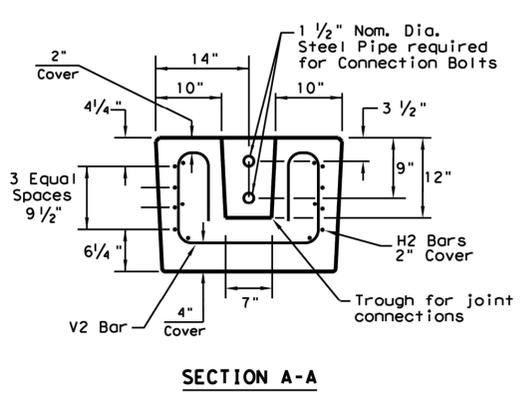
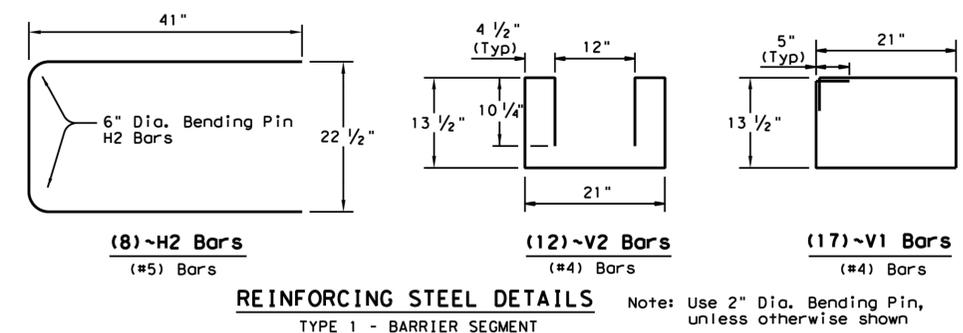
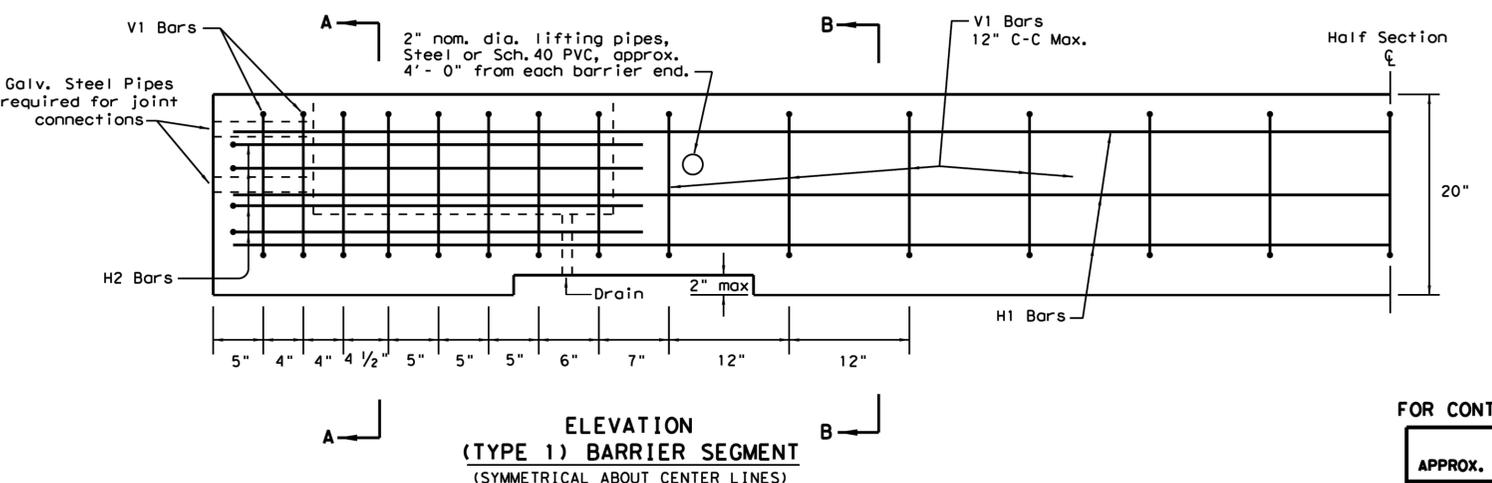
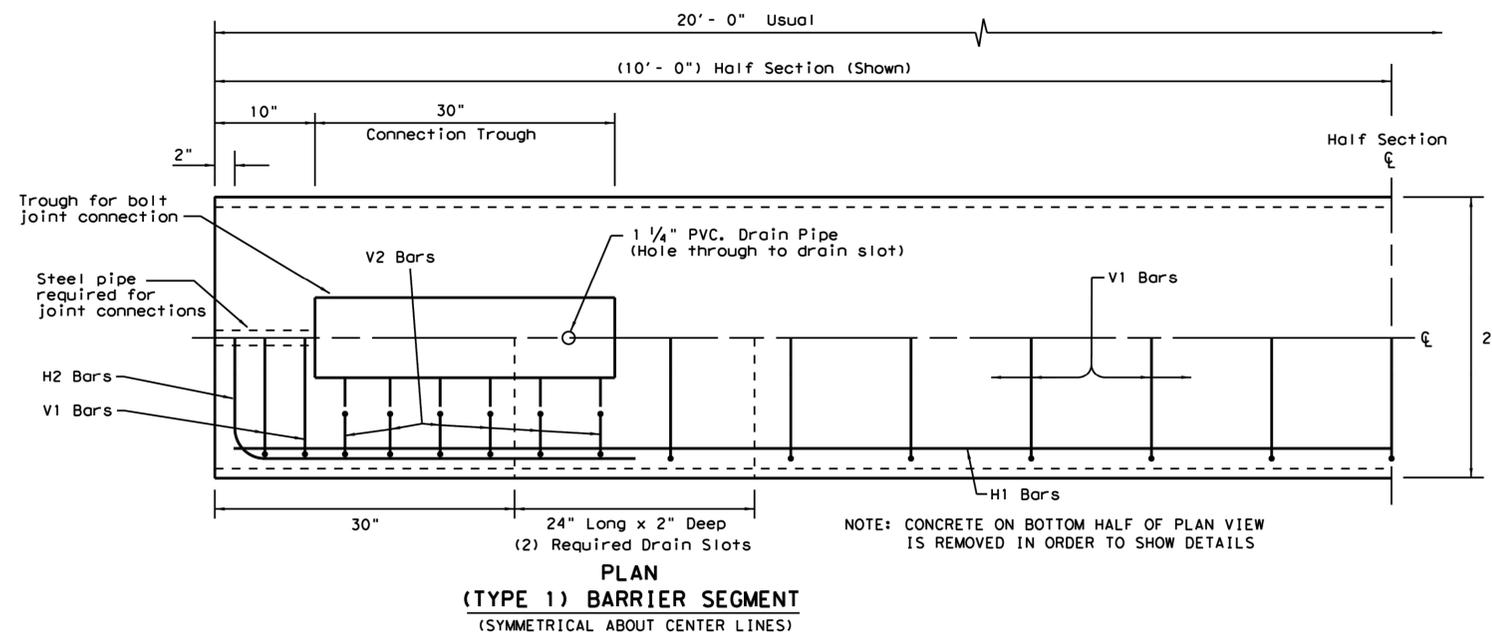
TRAFFIC CONTROL PLAN
 ONE-LANE TWO-WAY
 TRAFFIC CONTROL

SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 40 OF 49
SURVEY BY: CFA	DWG. No.:
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Texas Department of Transportation
 Traffic Operations Division Standard

**TRAFFIC CONTROL PLAN
 ONE-LANE TWO-WAY
 TRAFFIC CONTROL
 TCP (1-2)-18**

FILE: tcp1-2-18.dgn	DN:	CK1:	DW:	CK1:
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2-94 2-12				
1-97 2-18	DIST	COUNTY	SHEET NO.	

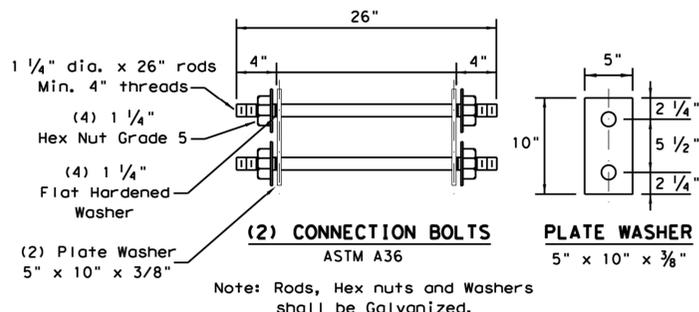
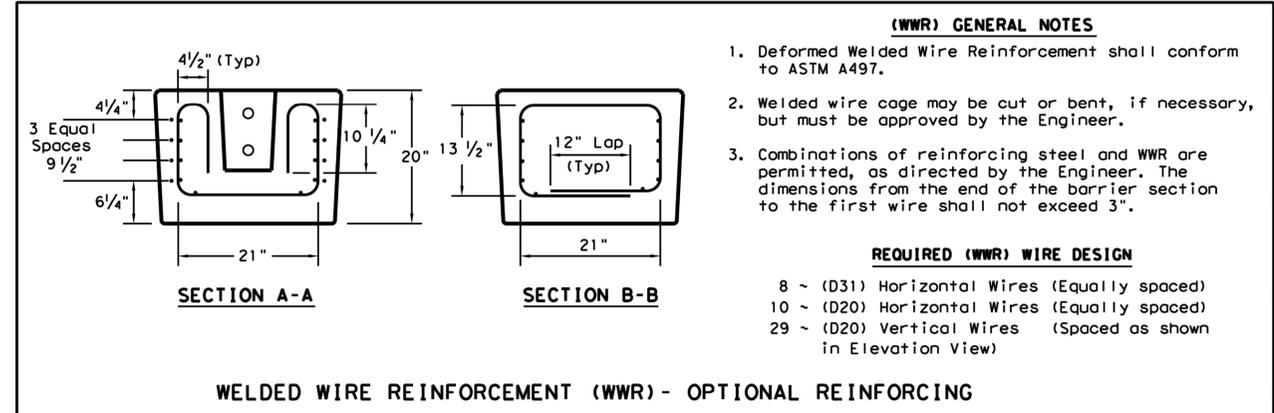


- GENERAL NOTES**
- Low Profile Concrete Barrier (LPCB), is approved for use in temporary work zone locations, where the posted speed is 45 mph, or less.
 - Concrete shall be Class H for precast barrier with a minimum compressive strength of 3,600 psi.
 - Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
 - Precast LPCB barrier length shall be 20 ft.
 - All barrier edges shall have 3/4" chamfer or a tooled radius.
 - Joint connection hardware shall be in accordance with Item 449, "Anchor Bolts," and is considered subsidiary.
 - Steel pipe required for joint connection bolts shall be galvanized in accordance with Item 445, "Galvanizing."
 - Welded wire reinforcement (WWR) may be used in lieu of conventional reinforcement for Type 1 barrier, and shall meet the requirements shown.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 1)
APPROX. QUANTITIES 20 FT. SECTION

CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000



SHEET 1 OF 2

LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 1) LPCB-13

FILES: lpcb13.dgn
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9/23/25

CITY OF SPRING VALLEY VILLAGE

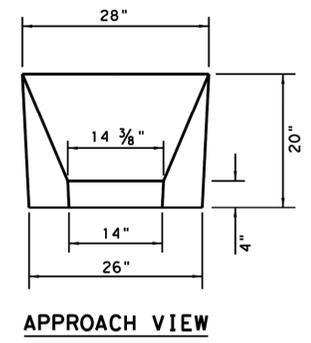
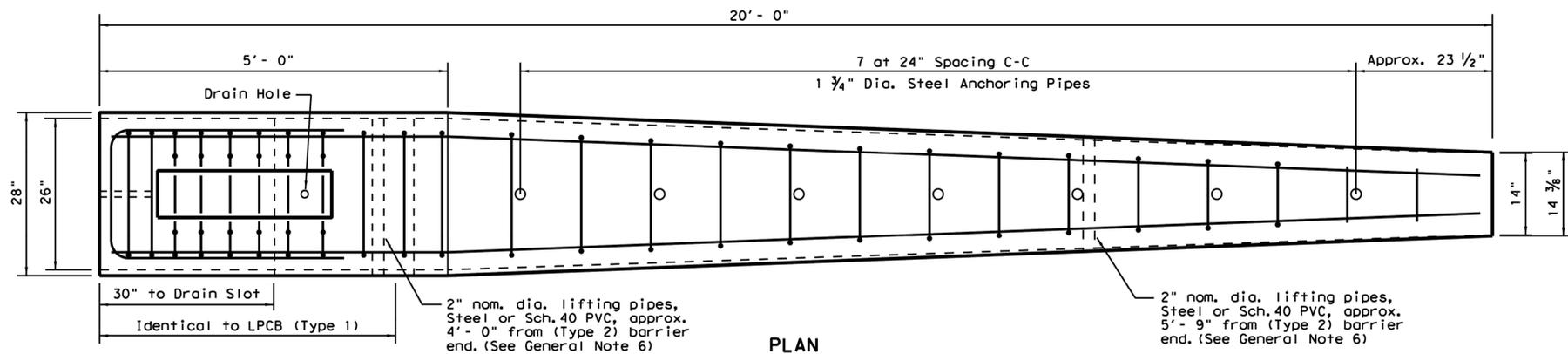
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 1)

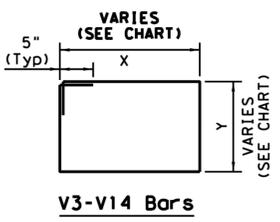
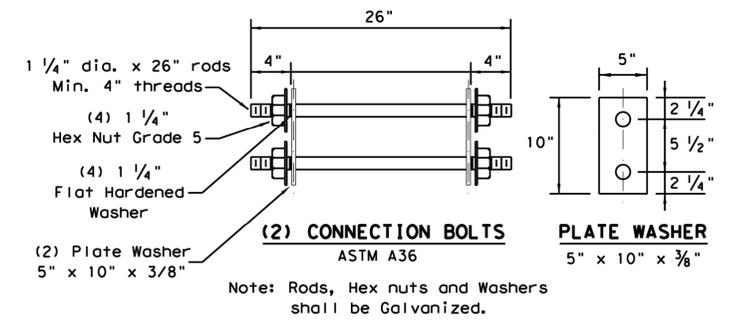
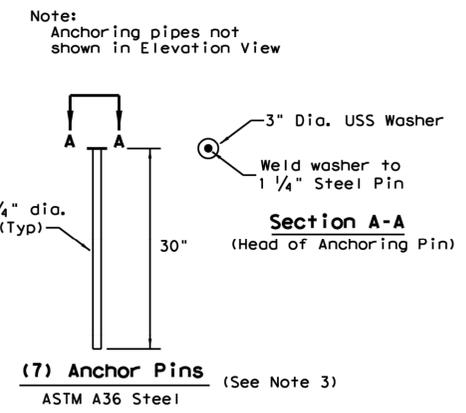
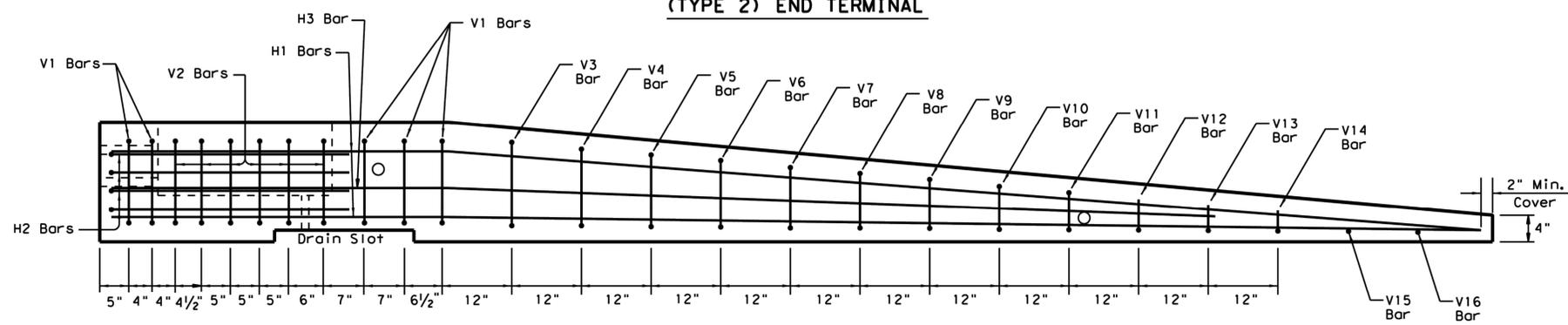
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 41 OF 49
SURVEY BY: CFA	DWG. No.:
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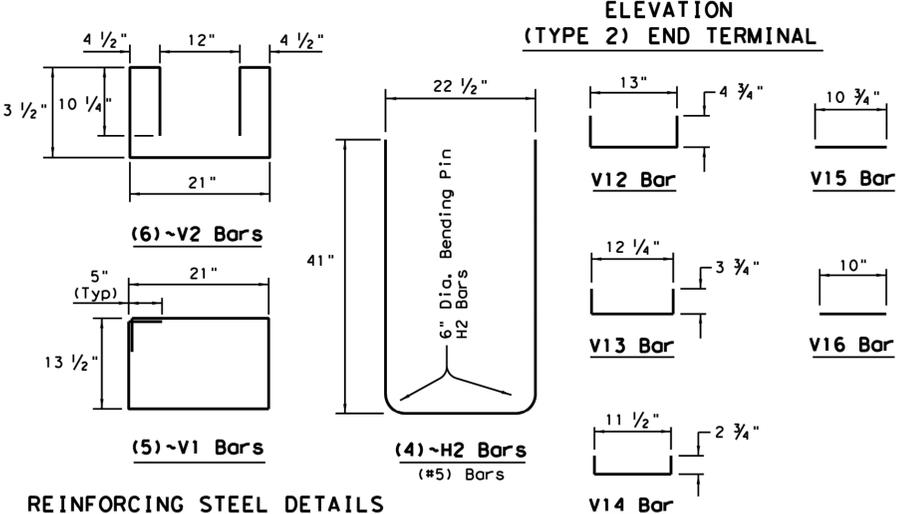
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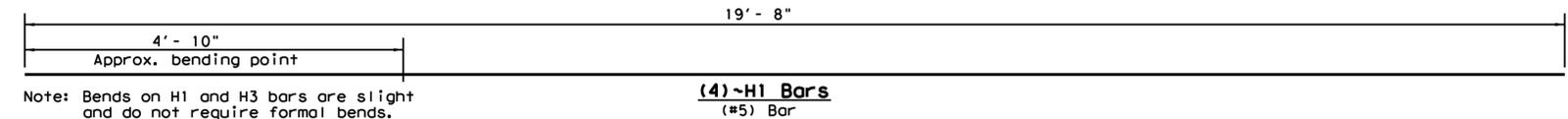
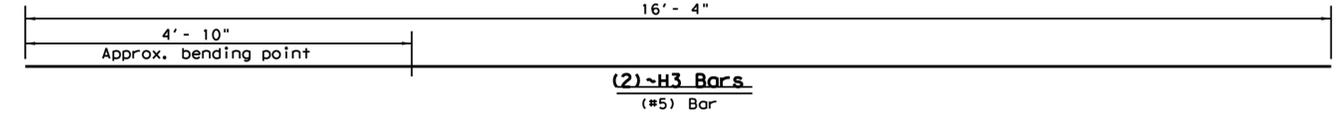
- TYPE 2 - NOTES**
1. Welded wire reinforcement (WWR) is "not" an option for Type 2 Barrier.
 2. Type 2 Barrier shall be used as an end treatment for the Type 1 barrier segments, when applicable.
 3. The end treatment can be used without the anchor pins in locations that can accommodate approximately 4 ft. of lateral displacement of the end treatment. The use of non-pinned end treatment does not affect the performance or the deflection of the Low-Profile barrier system.
 4. The anchor pins are all the same length and are to be driven flush with the top of the (Type 2) barrier surface.
 5. The bends in the H3 and H1 bars are slight, no formal bend is necessary.
 6. The Type 2 barrier segment must be lifted from the rear first, to prevent cracking of sloped section.
 7. See LPCB sheet 1 for additional information.



BAR (#4)	X (IN.)	Y (IN.)
V3 BAR	20 1/4	14 1/2
V4 BAR	19 1/2	13 1/2
V5 BAR	18 1/2	12 1/4
V6 BAR	17 1/2	11 1/4
V7 BAR	17	10 1/4
V8 BAR	16 1/4	9
V9 BAR	15 1/2	8
V10 BAR	14 1/2	7
V11 BAR	13 3/4	6



Note: Use 2" Dia. Bending Pin, unless otherwise shown



Note: Bends on H1 and H3 bars are slight and do not require formal bends.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 2)		
APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	1.65
REINFORCING STEEL	LBS	240
TOTAL BARRIER WT.	LBS	7000

SHEET 2 OF 2

Texas Department of Transportation
Design Division Standard

LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 2) LPCB-13

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NO.	DATE	REVISIONS



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TBPELS Engineering Firm No. 274
Land Surveying Firm No. 10046700
10055 Grogans Mill Road, Suite 350
The Woodlands, Texas 77380
936.224.7114
www.cobbfendley.com

CITY OF SPRING VALLEY VILLAGE

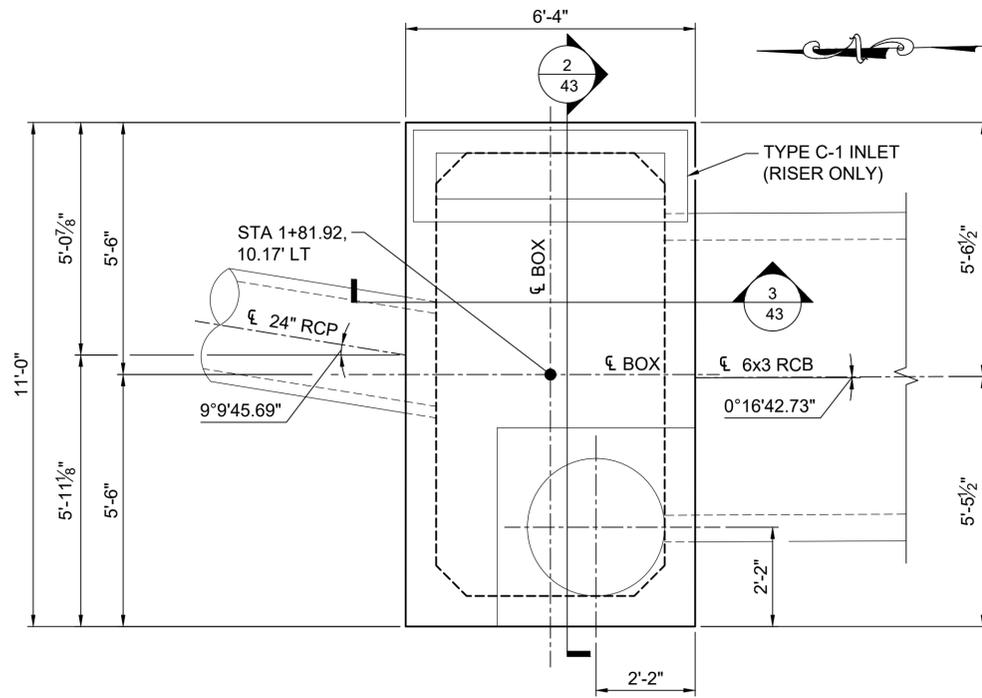
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION

LOW PROFILE CONCRETE BARRIER PRECAST BARRIER (TYPE 2)

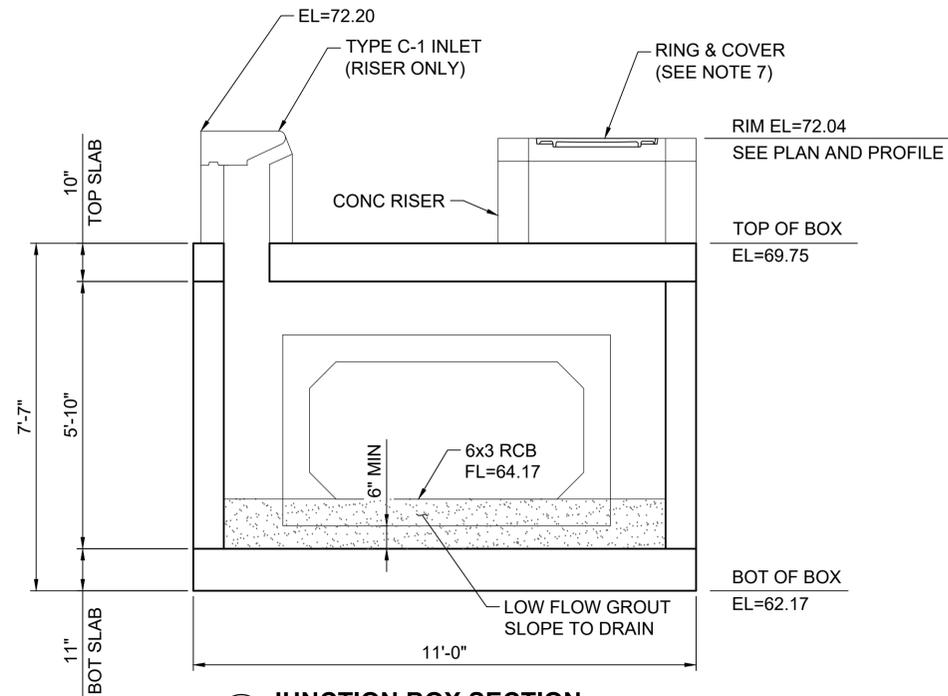
SUBMITTED: 9/23/2025	DESIGNED BY: JMS
SCALE: N/A	DRAWN BY: AC / BAK
DATE: 9/23/2025	SHEET No.: 42 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	

DATE: FILE:

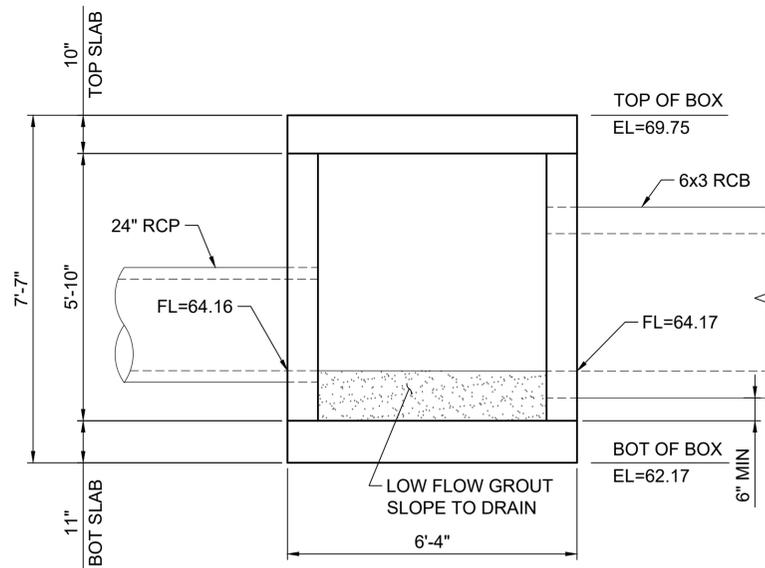
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1 JUNCTION BOX LAYOUT
SCALE: 1/2" = 1'-0"



2 JUNCTION BOX SECTION
SCALE: 1/2" = 1'-0"



3 JUNCTION BOX SECTION
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,600 PSI.
2. FOR REINFORCING REQUIREMENTS, SEE SHEET 46 & 47.
3. AS APPROVED BY THE ENGINEER ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER MAY BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF THE JUNCTION BOX AND/OR RISER.
4. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPE, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
5. LOW FLOW GROUT SHALL BE PLACED TO MINIMIZE THE ACCUMULATION OF SILT AND DEBRIS.
6. THE RISER SHALL BE CONSTRUCTED OF REINFORCED CONCRETE AS SHOWN ON SHEET 47. USE OF REINFORCED CONCRETE PIPE IS NOT PERMITTED.
7. RING AND COVER SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.

NO.	DATE	REVISIONS

Darrell L. Kaderka



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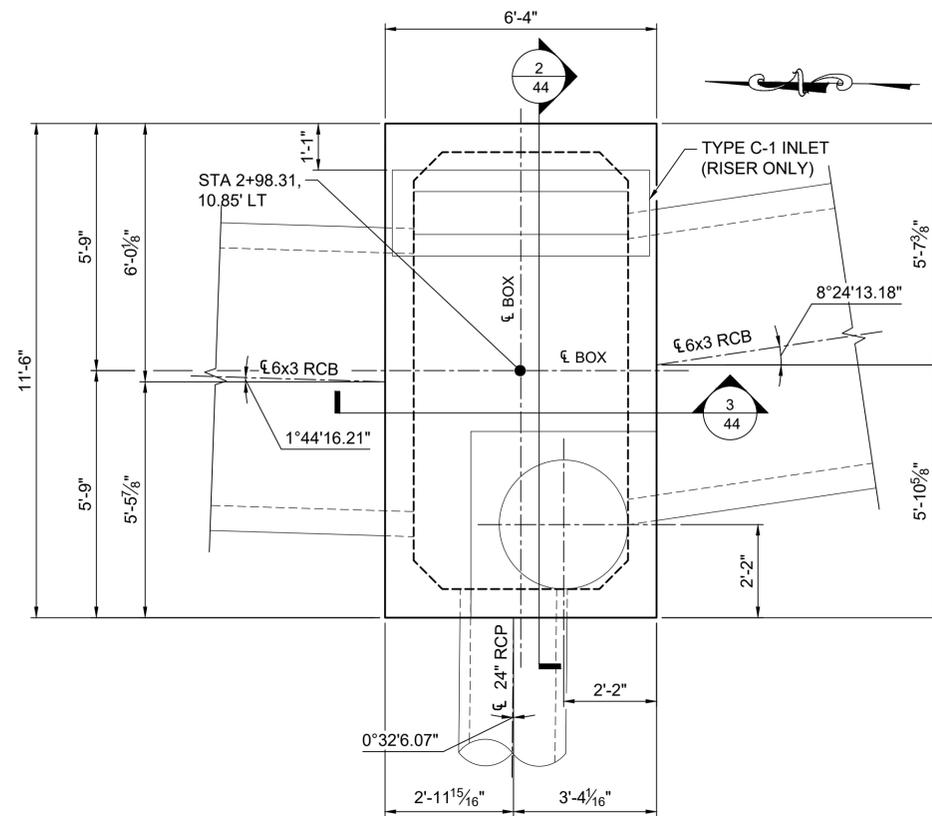
CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

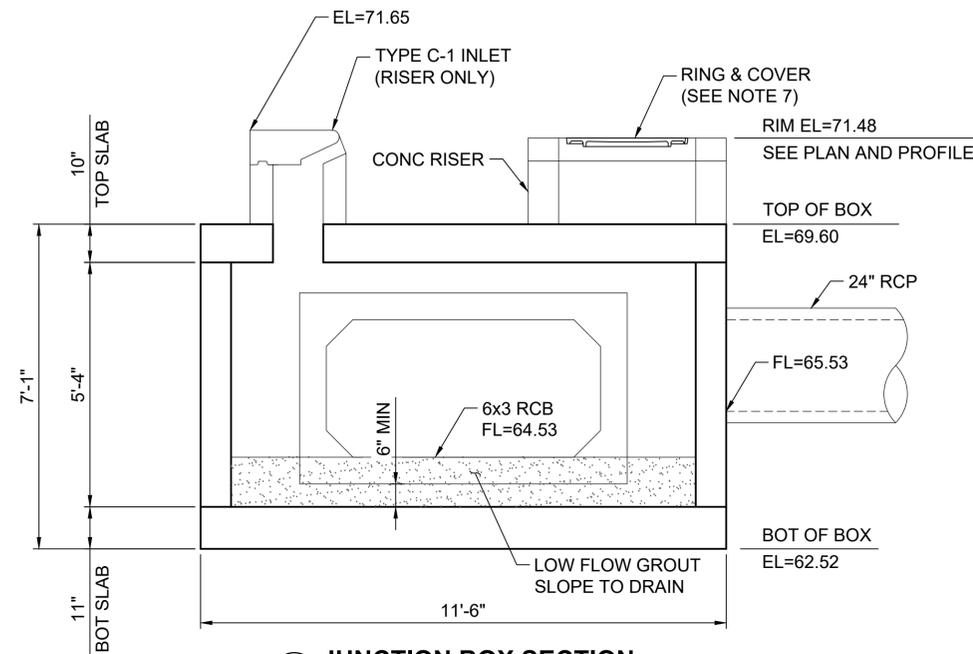
JUNCTION BOX JB01

SUBMITTED: 9/26/2025	DESIGNED BY: DK
SCALE: AS SHOWN	DRAWN BY: CR
DATE: 9/26/2025	SHEET No.: 43 OF 49
SURVEY BY: CFA	DWG. No:
F B No.: -	

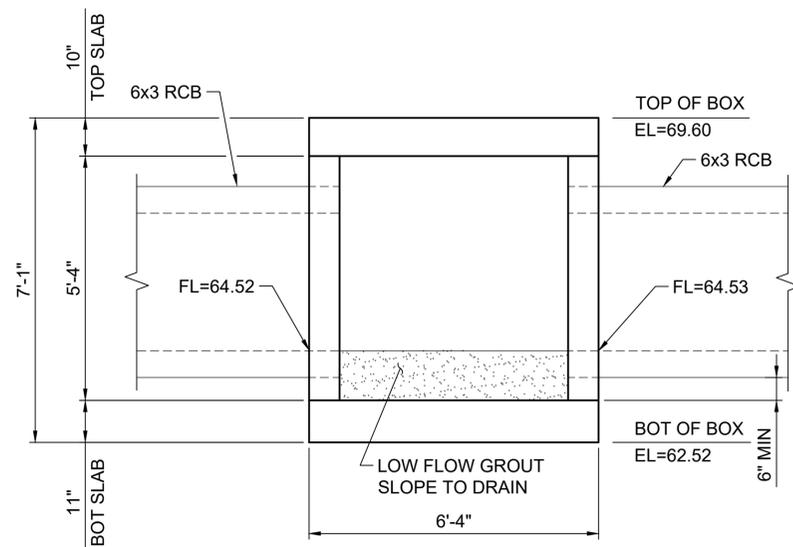
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1 JUNCTION BOX LAYOUT
SCALE: 1/2" = 1'-0"



2 JUNCTION BOX SECTION
SCALE: 1/2" = 1'-0"



3 JUNCTION BOX SECTION
SCALE: 1/2" = 1'-0"

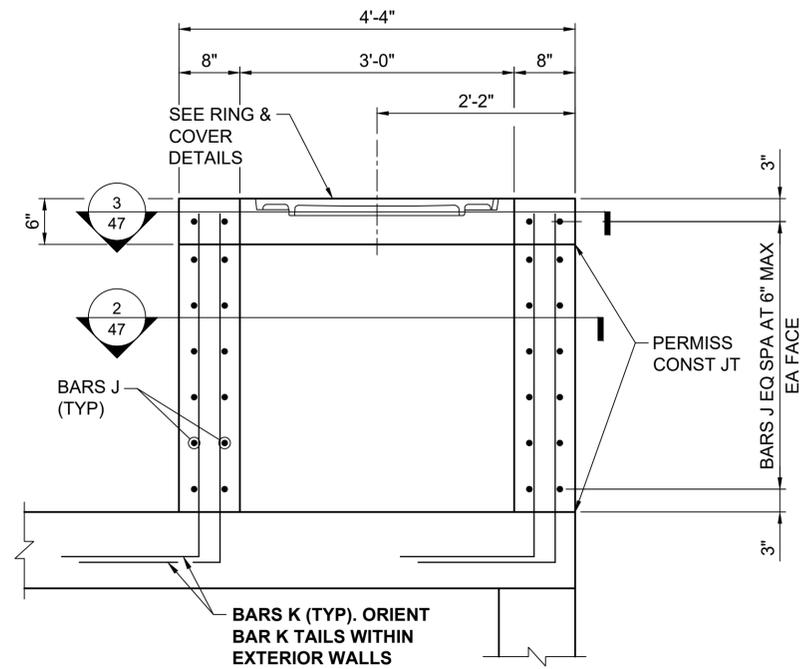
GENERAL NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,600 PSI.
2. FOR REINFORCING REQUIREMENTS, SEE SHEET 46 & 47.
3. AS APPROVED BY THE ENGINEER ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER MAY BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF THE JUNCTION BOX AND/OR RISER.
4. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPE, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
5. LOW FLOW GROUT SHALL BE PLACED TO MINIMIZE THE ACCUMULATION OF SILT AND DEBRIS.
6. THE RISER SHALL BE CONSTRUCTED OF REINFORCED CONCRETE AS SHOWN ON SHEET 47. USE OF REINFORCED CONCRETE PIPE IS NOT PERMITTED.
7. RING AND COVER SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.

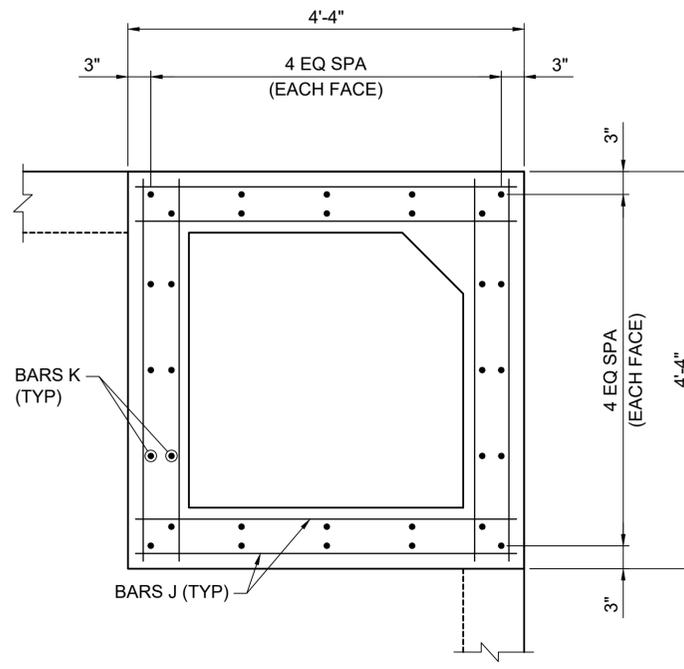
NO.	DATE	REVISIONS
<p>TBPELS Engineering Firm No. 274 Land Surveying Firm No. 10046700 10055 Grogans Mill Road, Suite 350 The Woodlands, Texas 77380 936.224.7114 www.cobbfendley.com</p>		
CITY OF SPRING VALLEY VILLAGE		
MERLIN COURT & SPRING OAKS CIRCLE RECONSTRUCTION		
JUNCTION BOX JB02		
SUBMITTED: 9/26/2025	DESIGNED BY: DK	
SCALE: AS SHOWN	DRAWN BY: CR	
DATE: 9/26/2025	SHEET No.: 44	OF 49
SURVEY BY: CFA	DWG. No:	
F B No.: -		

NOTE:

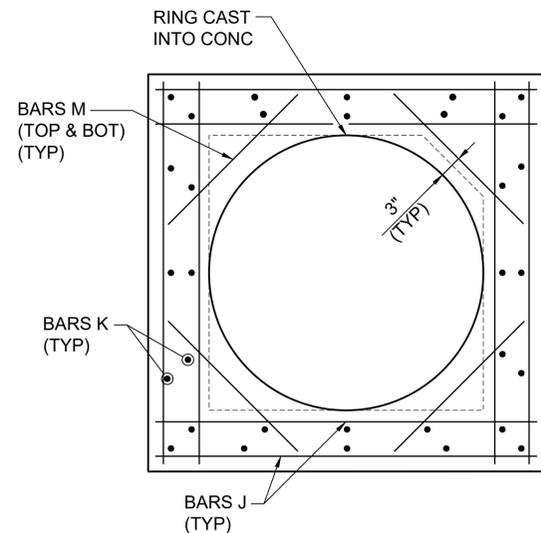
1. FOR GENERAL NOTES SEE SHEET 46.



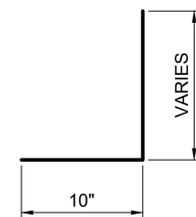
1 CONCRETE RISER ELEVATION
SCALE: 1" = 1'-0"



2 CONCRETE RISER SECTION
SCALE: 1" = 1'-0"

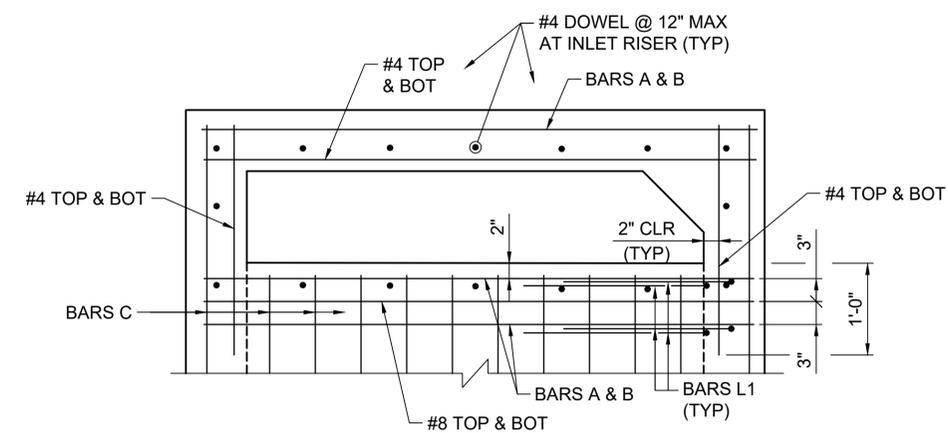


3 CONCRETE RISER TOP PLAN
SCALE: 1" = 1'-0"



4 BARS K
SCALE: N.T.S.

BAR TABLE	
BARS	SIZE
J	#5
K	#5
M	#5



5 PLAN: SLAB OPENING AT INLET
SCALE: 1" = 1'-0"

NO.	DATE	REVISIONS

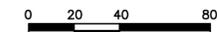
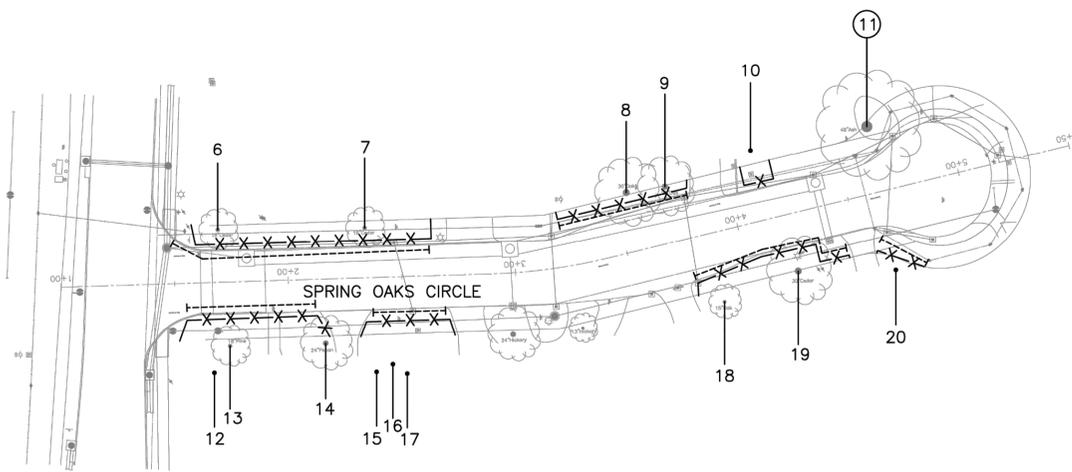
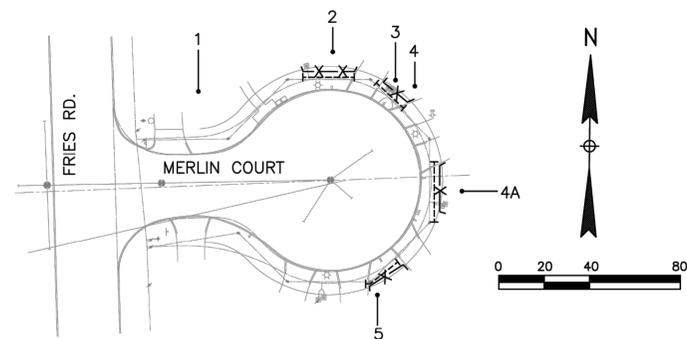
CobbFendley
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 Land Surveying Firm No. 10046700
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

JUNCTION BOX DETAILS
 (2 OF 2)

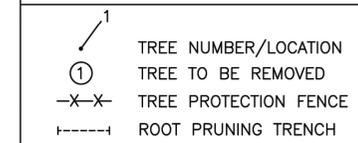
SUBMITTED: 9/26/2025	DESIGNED BY: DK
SCALE: AS SHOWN	DRAWN BY: CR
DATE: 9/26/2025	SHEET No.: 47 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	



NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED JULY 2025. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT—THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREE LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY, APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

TREE PRESERVATION PLAN LEGEND



Tree No.	Location	Description	Comments	Treatment
Trees on Merlin Court				
1	8860 Merlin Court	11" Little Gem Magnolia	Private tree, not impacted	
2	8856 Merlin Court	39" Live Oak	Thin canopy, Private tree	Root prune for waterline, Fence, Clearance prune
3	8852 Merlin Court	14" Crepe Myrtle	40% dieback, Private tree	Root prune for waterline, Fence, Clearance prune
4	8852 Merlin Court	18" Crepe Myrtle	Private tree	Root prune for waterline, Fence
4A	8847 Merlin Court	28" Live Oak	Large trunk scars, Private tree	Root prune for waterline, Fence, Clearance prune
5	8855 Merlin Court	23" Tallow	30% dieback, Private tree	Root prune for waterline, Fence, Clearance prune
Trees on Spring Oaks Circle				
6	8821 Westview	18" Red Cedar		Bore waterline, Root prune for storm, Fence, Clearance prune
7	8821 Westview	22" Red Cedar		Bore waterline, Root prune for storm, Fence, Clearance prune
8	1310 Spring Oaks Cir	35" Shumard Oak	New home construction impacts-tree declining up to 50% as result of impacts, Poor condition	Bore waterline, Root prune for storm, Fence, Clearance prune
9	1310 Spring Oaks Cir	31" Live Oak	New home construction impacts-tree declining up to 50% as result of impacts, Poor condition	Bore waterline, Root prune for storm, Fence, Clearance prune
10	1306 Spring Oaks Cir	5" Fig	Private tree	Bore waterline, Fence
11	1306 Spring Oaks Cir	56" Green Ash	Trunk decay, Structurally compromised, Poor condition, Remove for street widening	Remove tree
12	1317 Spring Oaks Cir	23" Pine	Private tree	Trenchless sanitary, Root prune for street, Fence
13	1317 Spring Oaks Cir	18" Pine	30% dieback, Private tree	Trenchless sanitary, Root prune for street, Fence
14	1317 Spring Oaks Cir	26" Pine	40% dieback, Private tree	Trenchless sanitary, Root prune for street, Fence
15	1317 Spring Oaks Cir	28" Live Oak	New drive construction impacts-tree declining up to 30% as a result of impacts	Trenchless sanitary, Root prune for street, Fence
16	1317 Spring Oaks Cir	17" Red Cedar	New drive construction impacts-tree declining up to 30% as a result of impacts	Trenchless sanitary, Root prune for street, Fence
17	1317 Spring Oaks Cir	24" Red Cedar	New drive construction impacts-tree declining up to 30% as a result of impacts	Trenchless sanitary, Root prune for street, Fence
18	1309 Spring Oaks	17" Shumard Oak	Private tree	Trenchless sanitary, Root prune for street, Fence, Clearance prune
19	1309 Spring Oaks	22" Arborvitae	40% dieback	Trenchless sanitary, Root prune for street, Fence, Clearance prune
20	1305 Spring Oaks	14" D. Yaupon	Private tree	Root prune for waterline, Fence, Clearance prune

NO.	DATE	REVISIONS

C.N. Koehl
 Urban Forestry, Inc.
 210 Stone Bush Ct. • Katy, Texas 77493
 281-391-0022 ckoehl@koehlorbfor.com

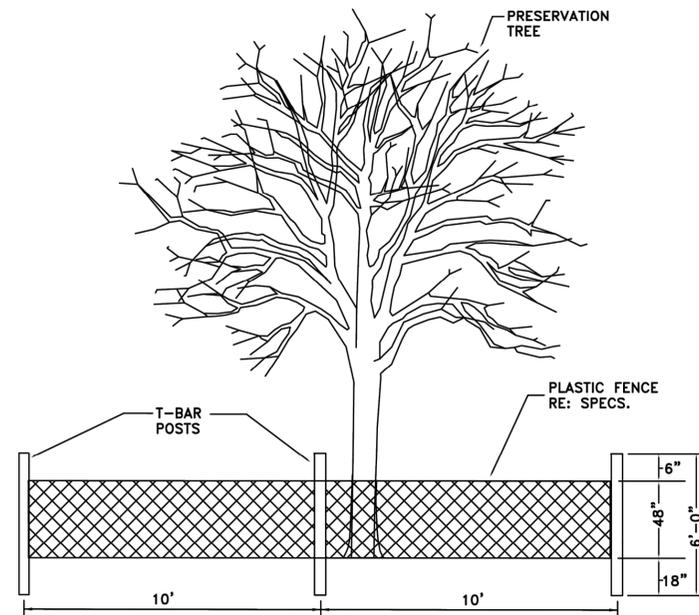
CobbFendley
 TBPELS Engineering Firm No. 274
 Land Surveying Firm No. 10046700
 16610 IH 45, Suite 250
 Conroe, Texas 77384
 936.224.7114 | fax 713.462.3262
 www.cobbfendley.com

CITY OF SPRING VALLEY VILLAGE

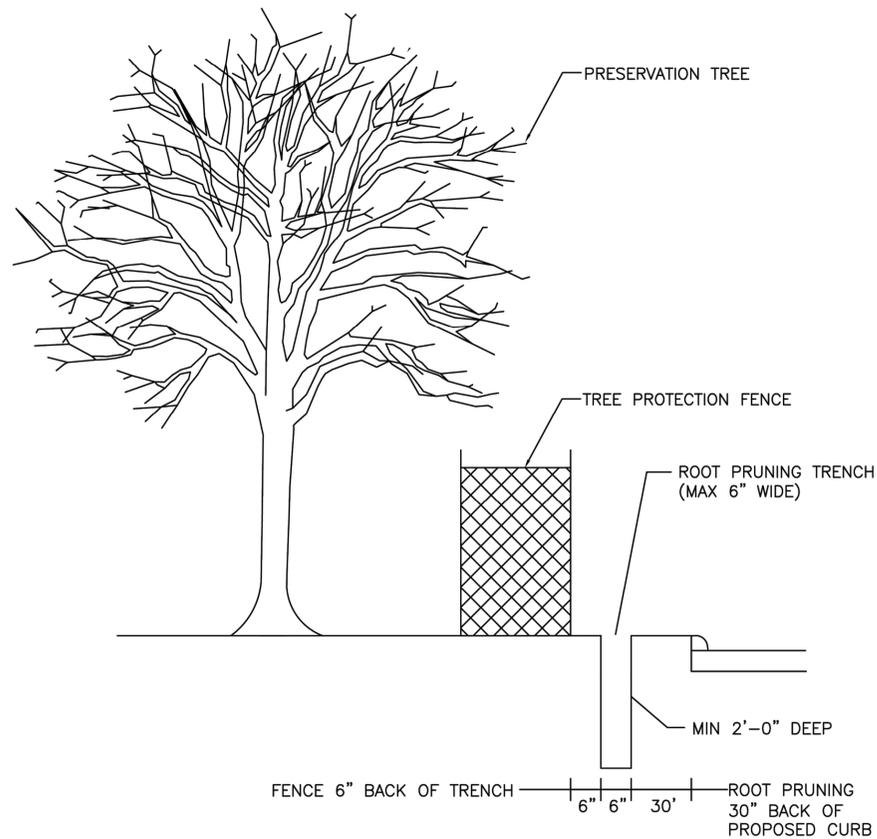
MERLIN COURT &
 SPRING OAKS CIRCLE
 RECONSTRUCTION

TREE PROTECTION PLAN
 SHEET 1 OF 2

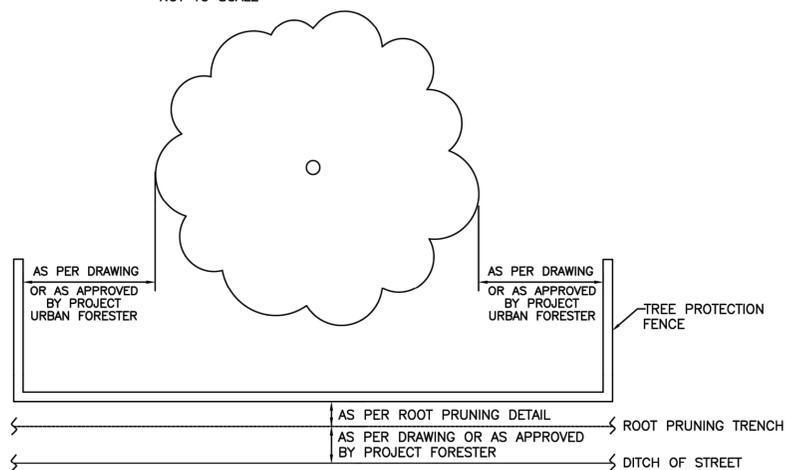
SUBMITTED: 7/10/2025	DESIGNED BY: JMS
SCALE:	DRAWN BY: AC / BAK
DATE: 7/10/2025	SHEET No.: 48 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	



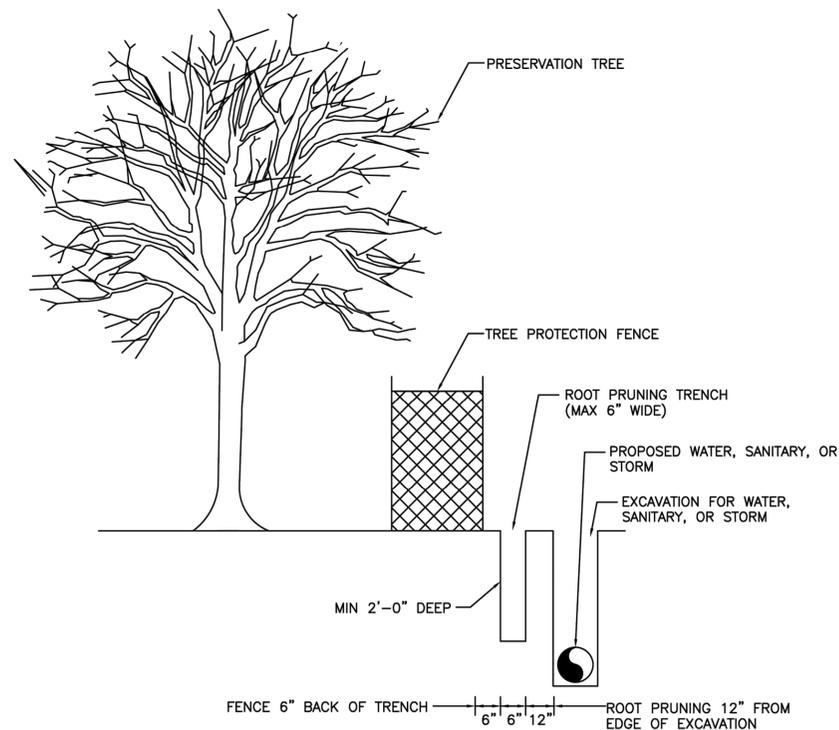
TREE PROTECTION FENCING DETAIL A
NOT TO SCALE



ROOT PRUNE FOR STREET-CURB & GUTTER - NO OCC
NOT TO SCALE



TREE PROTECTION FENCING DETAIL B
NOT TO SCALE



ROOT PRUNE FOR WATER, SANITARY, OR STORM LINE
NOT TO SCALE

NO.	DATE	REVISIONS

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: **CobbFendley**
TBPELS Engineering Firm No. 274
Land Surveying Firm No. 10046700
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CITY OF SPRING VALLEY VILLAGE

MERLIN COURT &
SPRING OAKS CIRCLE
RECONSTRUCTION

TREE PROTECTION PLAN
SHEET 2 OF 2

SUBMITTED: 7/10/2025	DESIGNED BY: JMS
SCALE:	DRAWN BY: AC / BAK
DATE: 7/10/2025	SHEET No.: 49 OF 49
SURVEY BY: CFA	DWG. No.:
F B No.: -	