INTERSECTION CAPACITY IMPROVEMENTS (FY 23)
BID NO. 26-53ITB CIP ST2303

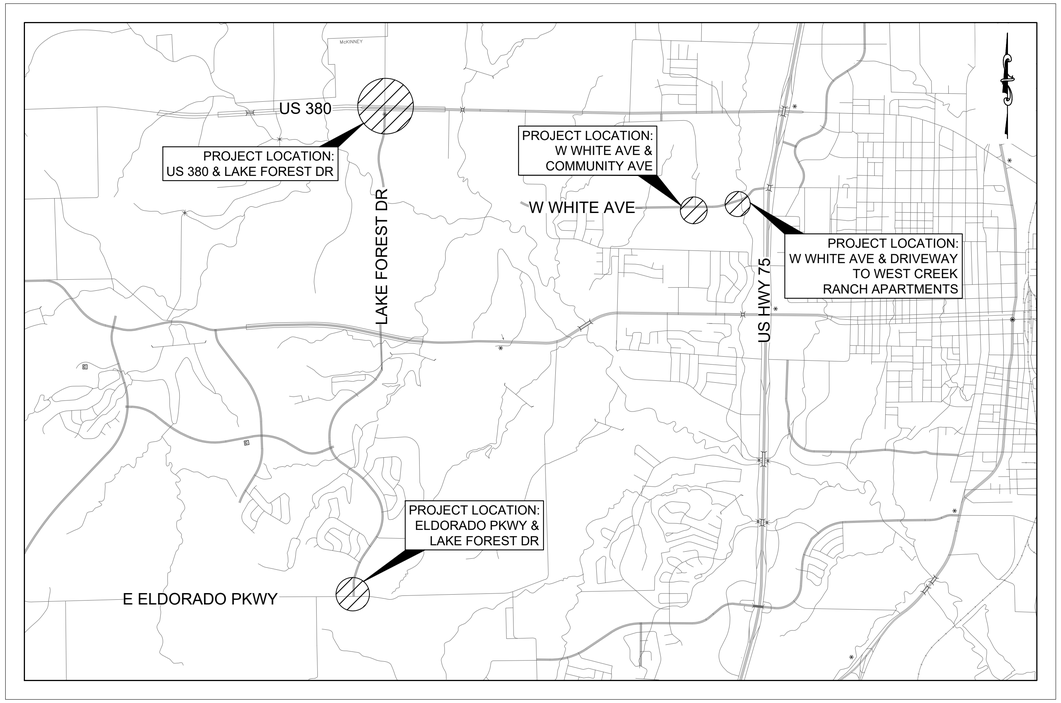
CITY COUNCIL

BILL COX	MAYOR
JUSTIN BELLER	DISTRICT 1
PATRICK CLOUTIER	DISTRICT 2
GERÉ FELTUS	DISTRICT 3, MAYOR PRO TEM
RICK FRANKLIN	DISTRICT 4
ERNEST LYNCH	AT LARGE 1
MICHAEL JONES	AT LARGE 2

STAFF

PAUL GRIMES	CITY MANAGER
GARY GRAHAM, P.E., PTOE	DIRECTOR OF ENGINEERING

* ALL WORK IN THE STATE ROW MUST BE TO TXDOT STANDARDS



VICINITY MAP
NTS

January 5, 2026

CobbFendley
TBPELS Firm Registration No. 274
Land Survey Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

PROJECT NUMBER : 2312-064-01

STATE OF TEXAS
PRIYA Y MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

SUBMITTAL LOG

NO.	DATE	DESCRIPTION
1.	10/07/2024	60% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
2.	08/08/2025	90% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
3.	10/02/2025	100% SUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
4.	12/05/2025	100% RESUBMITTAL (FOR PRELIMINARY REVIEW ONLY)
5.	01/05/2026	ISSUED FOR BIDDING

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ABBREVIATIONS

B	
B-B	BACK TO BACK
BFR	BARRIER FREE RAMP
BLDG	BUILDING
BOC	BACK OF CURB
BOTOC	BY OTHER THAN OPEN CUT
C	
CAB	CABINET
CB	CHORD BEARING
CF	COBB, FENDLEY & ASSOCIATES
℄	CENTERLINE
C.I.C.	CAPPED IRON ROD
C.I.C.F.	CAPPED IRON ROD FOUND
CL	CHORD LENGTH
CO	CLEAN OUT
CONC	CONCRETE
CONN.	CONNECT
CPB	COMMUNICATION PULL BOX
CP	CONTROL POINT
CPED	CABLE PEDESTAL
E	
E	EAST
ECAB	ELECTRIC CABINET
EG	EXISTING GRADE
ELEC	ELECTRIC
ELEV	ELEVATION
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EP	END POINT
EPB	ELECTRIC PULL BOX
ESMT	EASEMENT
EX.	EXISTING
EXIST.	EXISTING
F	
FH	FIRE HYDRANT
F-F	FACE TO FACE
FL	FLOW LINE
FO	FIBER OPTIC
FT	FOOT OR FEET
G	
GTL	GAS TEST LINE
GW	GUY WIRE
I	
IC	IRRIGATION VALVE
L	
L	LENGTH
LF	LINEAR FEET
LP	LIGHT POLE
LT	LEFT
M	
MH	MANHOLE
N	
N	NORTH
NEPI	NO EXTRA PAY ITEM
NW	NORTHWEST
NTS	NOT TO SCALE
O	
OH	OVERHEAD WIRE
P	
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PG	PROPOSED GRADE
PGL	PROFILE GRADE LINE
PP	POWER POLE
PPR	POWER POLE RISER
PROP.	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL
PVMT	PAVEMENT
R	
R	RADIUS
RCB	REINFORCED CONCRETE BOX
R.C..P.	REINFORCED CONCRETE CYLINDER PIPE
RCP	REINFORCED CONCRETE PIPE
RFD	ROCK FILER DAM
R.O.W.	RIGHT OF WAY
RT	RIGHT
S	
S	SOUTH
SAN	SANITARY
SCF	SEDIMENT CONTROL FENCE
SH	SPRINKLER HEAD
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STM	STORM
STMH	STORM MANHOLE
SWLK	SIDEWALK
SWR	SEWER
T	
T	TANGENT
TCP	TRAFFIC CONTROL PLAN
TELE	TELEPHONE
TH	TEST HOLE
THT	THROAT
T.O.P.	TOP OF PIPE
TPED	TELEPHONE PEDESTAL
TYP	TYPICAL
U	
UE	UNDERGROUND ELECTRIC
UNK	UNKNOWN
V	
VLV	VALVE
W	
W	WEST
W/	WITH
WL	WATER LINE
WM	WATER METER
WV	WATER VALVE

LEGEND

BUSH	WATER VALVE - EXIST.
TREE	FIRE HYDRANT
SPRINKLER HEAD	WATER METER
SIGN	IRRIGATION VALVE
POWER POLE	
MONITORING WELL	
MAILBOX	
LIGHT POLE	
FLAG POLE	
ELECTRIC TRANSFORMER	
ELECTRIC MANHOLE	
ELECTRIC VAULT	
GAS TEST STATION	
GAS LINE MARKER	
GAS VALVE	
SANITARY SEWER MANHOLE- EXIST.	
SANITARY SEWER CLEANOUT- EXIST.	
STORM MANHOLE	
TELECOM MANHOLE	
TELECOM PEDESTAL	
TELECOM VAULT	
TELECOM MARKER	
CATV PEDESTAL	

	R.O.W. LINE
	PROPERTY LINE
8" W	EXIST. WATER LINE
8" SS	EXIST. SANITARY SEWER LINE
G	GAS
OH	ELECTRIC - OVERHEAD
E	ELECTRIC - UNDERGROUND
	FENCE - BARBED WIRE
	FENCE - CHAIN LINK
	FENCE - WOOD
CATV	CABLE TV - UNDERGROUND
	STORM SEWER
	PROP. STORM SEWER
T	TELEPHONE - UNDERGROUND
	PROP. TEXTURED CONC.
	PROP. PAVEMENT
	PROP. SIDEWALK PAVEMENT
	PROP. BARRIER FREE RAMP
	PROP. SIDEWALK DETECTABLE SURFACE

STREET LIGHTING NOTES:

1. TYPICAL CONDUIT FOR STREET LIGHTS SHALL BE SCHEDULE 40 PVC OR POLYETHYLENE AND INSTALLED A MINIMUM OF 24-INCHES BELOW GRADE. CONDUIT ON BRIDGE SHALL BE RIGID METAL.
2. REMOVE EXISTING POLE, LUMINARIE, AND CONCRETE FOUNDATION TO 24-INCHES BELOW GRADE. REMOVE CONDUCTORS AND CONDUIT IN CONFLICT WITH PROPOSED CONSTRUCTION (NO SEPARATE PAY ITEM).
3. CONSTRUCT ROADWAY LIGHTING AND ASSOCIATED BRANCH CIRCUITS. COORDINATE NEW POWER SERVICE WITH ONCOR AT THE LOCATIONS SHOWN IN THE PLAN. EXISTING ROADWAY LIGHTING SHALL REMAIN FULLY FUNCTIONAL UNTIL PROPOSED ILLUMINATION CAN BE PLACED IN OPERATION.
4. COMPLY WITH ALL NATIONAL, FEDERAL, STATE, CITY, AND LOCAL CODES WITH AUTHORITIES HAVING JURISDICTION, AND MCKINNEY STANDARDS AND SPECIFICATIONS. SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSES, AND INSPECTIONS AS REQUIRED BY LAW.
5. THE FOLLOWING TXDOT STANDARD SPECIFICATION SECTIONS AND APPLICABLE TXDOT REFERENCE ITEMS SHALL GOVERN CONSTRUCTION OF THE ILLUMINATION SYSTEM:
   - 5.1. ITEM 610: ROADWAY ILLUMINATION ASSEMBLIES
   - 5.2. ITEM 616: PERFORMANCE TESTING OF LIGHTING SYSTEMS
   - 5.3. ITEM 618: CONDUIT
   - 5.4. ITEM 624: GROUND BOXES
6. TXDOT STANDARD PLANS AND DETAILS TO BE USED ARE:
   - 6.1. RID(1)-17 ROADWAY ILLUMINATION DETAILS
   - 6.2. RID(2)-17 ROADWAY ILLUMINATION DETAILS - RDWY ILLUM FOUNDATIONS
   - 6.3. ED(1)-14 ELECTRICAL DETAILS - CONDUITS & NOTES
   - 6.4. ED(2)-14 ELECTRICAL DETAILS - GROUND BOXES
7. FURNISH AND INSTALL ALL LABOR, MATERIAL, EQUIPMENT TOOLS AND SERVICES NECESSARY AND INCIDENTAL TO THE COMPLETE AND FULLY OPERATIONAL ELECTRICAL SYSTEMS DIAGRAMMATICALLY REPRESENTED ON THE PLANS AS DESCRIBED IN THESE SPECIFICATIONS WITH THE PAY ITEMS PROVIDED
8. ALL COSTS FOR LABOR TEMPORARY MATERIALS, EQUIPMENT, AND INCIDENTAL WORK NECESSARY TO MAINTAIN THE EXISTING ROADWAY LIGHTING SYSTEM IN OPERATION ARE SUBSIDIARY TO THE BID ITEMS PROVIDED - NO SEPARATE PAY ITEM. NEW ELECTRICAL SYSTEMS MAY BE USED TO TEMPORARILY POWER EXISTING ROADWAY LIGHTING AS APPROVED BY THE ENGINEER.
9. SUBMIT MANUFACTURER'S PRODUCE DATA ON ALL MATERIAL PROPOSED FOR THE PROJECT. MATERIALS AND PRODUCTS OF MANUFACTURER'S OTHER THAN THOSE SPECIFIED REQUIRE APPROVAL IN WRITING. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR APPROVAL.
10. WHERE BENDS ARE REQUIRED, THEY SHALL BE OF THE LONG RADIUS TYPE.
11. ALL GROUND BOXES SHALL HAVE REINFORCED CONCRETE APRONS AND SHALL BE BEDDED FLUSH WITH THE FINISHED GRADE. THE COVER SHALL BE GALVANIZED STEEL OF THE BOLT-DOWN TYPE AND SHALL BE PERMANENTLY MARKED "CITY OF MCKINNEY - ELECTRIC".
12. A NO. 9 GALVANIZED WIRE SHALL BE PLACED IN ALL EMPTY CONDUIT. THIS WIRE SHALL NOT EXTEND 1 FOOT (MINIMUM) BEYOND THE CONDUIT END WHEN THE CAP IS REMOVED. THE WIRE END SHALL BE COILED AND THEN TAPED TO THE CONDUIT SURFACE AT THE CONDUIT END FOR EASY FUTURE ACCESS. NO SEPARATE ITEM.

ADDITIONAL TRAFFIC CONTROL NOTES:

1. ALL EXISTING TRAFFIC CONTROL DEVICES SHALL REMAIN IN PLACE, OPERATIONAL, AND CLEAR OF ANY VISIBILITY OBSTRUCTIONS AT ALL TIMES THROUGHOUT CONSTRUCTION.
2. CONTRACTOR TO NOTIFY THE CITY OF MCKINNEY SIGNAL SUPERVISOR NO LESS THAN 24 HOURS IN ADVANCE OF ANY LANE CLOSURES OR BARRICADING OF TRAVEL LANES WITHIN 300 FEET OF A SIGNALIZED INTERSECTION. TEMPORARY TRAFFIC CONTROL DEVICES WITHIN VEHICLE DETECTION ZONES SHALL NOT BE INSTALLED OR REMOVED WITHOUT CONSENT FROM THE SIGNAL SUPERVISOR.

ADDITIONAL PAVING NOTES:

1. FLEXIBLE BASE MAY BE USED AS A SUBSTITUTE TO LIME TREATED SUBGRADE WITHIN CITY ROW AT NO ADDITIONAL COST TO THE CITY. IF USED, FLEXIBLE BASE SHALL HAVE A MINIMUM DEPTH OF 8 INCHES AND SHALL EXTEND A MINIMUM OF 1 FOOT BEHIND THE BACK OF CURB. FLEXIBLE BASE SHALL MEET TXDOT SPECIFICATION, ITEM 247, TYPE D, GRADE 1 OR 2 WITH TRIAX 1X 140 GEOGRID (OR APPROVED EQUAL) UNDERNEATH THE FLEXIBLE BASE.
2. THE TEMPERATURE FOR ALL CONCRETE SHALL NOT EXCEED 95 DEGREE FAHRENHEIT. ANY CONCRETE EXCEEDING THIS TEMPERATURE SHALL BE REJECTED.
3. EXPANSION JOINTS SHALL BE PLACED AT A SPACING TO MEET THE EXISTING PAVING JOINTS AND IS CONSIDERED SUBSIDIARY TO THE INSTALLATION OF CONCRETE PAVEMENT. WHERE ADDITIONAL JOINTS ARE NEEDED, THEY SHALL BE PLACED IN ACCORDANCE WITH CITY STANDARD 2050M.
4. BUTT JOINTS WILL BE PLACED IN ACCORDANCE WITH CITY STANDARD 2055M AND IS CONSIDERED SUBSIDIARY TO THE INSTALLATION OF CONCRETE PAVEMENT.
5. UTILITY APPURTENANCES (I.E. WATER VALVES) THAT REQUIRE AN ADJUSTMENT FOR PROPOSED GRADES WILL BE CONSIDERED SUBSIDIARY TO THE INSTALLATION OF CONCRETE PAVEMENT.
6. STAMPED CONCRETE PAVEMENT SHALL BE INTEGRAL SOLOMON COLORS #417 BRICK RED (SRI 40) AND STAMPED WITH THE BASKETWEAVE PATTERN BY INCRETE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

LEGEND, ABBREVIATIONS, & NOTES

McKINNEY TEXAS
Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 02

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640 1_GENL.dwg - Plotted: 1/5/2026

GENERAL ITEMS

1. If any conflict arises between these general notes and any other notes found in the plans, the City of McKinney's General Notes shall take precedence. However, the Director of Engineering has the authority to review and approve legitimate conflicting project specific notes if needed. For CIP Projects, the controlling order of precedence will be as specified in the Contract Documents.
2. All construction, testing, and materials shall be in accordance with the City's current standard details and specifications. Prior to any construction, the Contractor shall be familiar with the Contract Documents and Specifications, the Plans (including all notes), the City of McKinney's Specifications, and any other applicable standards or specifications relevant to the proper completion of the work specified. Failure on the part of the Contractor to be familiar with all Standards and Specifications pertaining to this work shall in no way relieve the Contractor of responsibility for performing the work in accordance with all such applicable Standards and Specifications.
3. Prior to construction, Contractor shall have in their possession all necessary permits, plans, licenses, etc. Contractor shall have at least one set of approved Engineering Plans and Specifications on-site at all times.
4. Owner shall be responsible for obtaining all offsite easements prior to commencement of offsite and relevant on-site construction activities. It shall be the responsibility of the Contractor, prior to the initiation of construction on easements through private property, to inform the property owner of this intent to begin construction. Before beginning construction in areas of public dedication, the Contractor shall inform the agency having jurisdiction in the area forty-eight (48) hours prior to initiation of the work.
5. All work shall conform to the City of McKinney's current version of the Engineering Design Manual, technical specifications, standard details, and approved materials list(s). In the event an item is not covered in the plans or the above referenced documents, the most current North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction shall apply with concurring notification to the Director of Engineering and Engineer of Record. The Director of Engineering shall have the final decision on all construction materials, methods, and procedures.
6. Construction inspection may be performed by representatives of the Owner, Engineer, City, Geotechnical Engineer, and reviewing authorities / agencies. Unrestricted access shall be provided to them at all times. Contractor is responsible for understanding and scheduling required inspections. Testing samples shall be collected and processed by certified technicians.
7. All Contractors must confine their activities to the work area. No encroachments onto developed or undeveloped areas will be allowed. Any damage resulting therefrom shall be Contractor's responsibility to repair or restore. If the Contractor to desires to utilize adjacent lot(s) for any purpose, the Contractor shall provide the City advance written permission from the property owner(s). The project shall not be finalized until the Contractor provides a written letter from the property owner(s) stating that the property owner is satisfied with the said lot(s). All property disturbed by any activities associated with the project shall be returned to pre-project conditions and shall comply with all erosion control requirements.
8. It will be the responsibility of each Contractor to protect all existing public and private utilities throughout the construction of this project. Contractor shall contact the appropriate utility companies to identify utility locations prior to commencement of construction and shall maintain up-to-date utility locates throughout the duration of construction. Contractor shall assume full liability and responsibility to those utility companies for any damages caused by the Contractor to utility facilities. If the Contractor damages any City property (water mains, fire hydrants, structures, etc.), they will be assessed applicable charges. Contractor may be required to expose these facilities at no cost to the City.

Texas 811	811 or 800-344-8377
Atmos Energy (Gas)	866-322-8667
Oncor Electric Delivery	888-313-4747
AT & T	800-288-2020
McKinney Water & Wastewater Dept.	972-547-7360
Spectrum / Charter	214-320-5435
Astound Broadband (formerly Grande Communications)	800-218-5725
CoServ Electric	844-330-0762 OR 940-321-6825
CoServ Gas	844-330-0763
Capco Fiber	512-217-6241
GCEC Overhead Electric	903-482-7181
GCEC Underground Electric	903-482-7141
Grayson Collin Communications (formerly GCEC Telecom)	903-482-7274
City of Irving - David Johnson	469-446-0362

9. Continuous access for mail service and solid waste collection shall be provided during construction.
10. The Contractor shall maintain, and keep in good repair, all the areas covered by the Plans and Specifications during the full duration of the Project.
11. Working Time is defined as the time during the day, except holidays in which the Contractor shall be permitted to work. Unless otherwise approved, normal work hours will be 6:00 a.m. to 9:00 p.m. (7:00 a.m. to 7:00 p.m. within 500 feet of residential areas) Monday through Friday. Contractor will be permitted to work weekend hours between 8:00 a.m. and 5:00 p.m. on Saturdays and between 1 p.m. and 5 p.m. on Sundays provided Contractor supplies written notification to the McKinney Engineering Construction Inspector of Contractor's intent to work and identifies the specific weekend days and hours it plans to work on or before 12:00 noon of the immediately preceding Thursday. The Contractor will not be allowed to work City of McKinney holidays unless an exception is given by the City, and it is the Contractor's responsibility to verify the City's holiday schedule. The consequences of work being performed without the benefit of inspection on Saturdays, Sundays, or holidays may be the removal of all work performed without the appropriate inspection, as determined by the McKinney Engineering Construction Inspector.
12. No material which has been used by the Contractor for any temporary purposes whatsoever is to be incorporated in the permanent work without written consent of the Director of Engineering and the Engineer of Record.
13. Where the words "equivalent", "proper", or "equal to" are used, they shall be understood to mean that the thing referred to shall be proper, the equivalent of, or equal to some other thing, in the opinion or judgment of the Engineer of Record and the City. Where the term "or equal," or "or approved equal" is not used in the specifications, this does not necessarily exclude alternative items, materials, or equipment which may accomplish the intended purpose. Where materials or equipment are specified by a trade or brand name, it is not the intention of the City to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality or performance, and to establish an equal basis for the evaluation of bids. No substitutions will be permitted until the Contractor has received written permission of the Director of Engineering and the Engineer of Record to make a substitution for the material that has been specified.
14. The Contractor shall be responsible for the repair or replacement of any existing items damaged by the Contractor during construction. These may include but are not limited to landscaping, irrigation, mailboxes, fences, driveways, street pavement, sidewalks, hike / bike trails, public utilities, franchise utilities, structures, buildings, etc. Any such existing items which are removed or damaged shall be put back to better or previous condition at no cost to the City.
15. The Contractor shall coordinate construction activities with the City of McKinney Engineering Department and Public Works Department. In the event other contractors are doing work in the same area simultaneously with this project, the Contractor shall coordinate his proposed construction with other contractors. Any work performed within Texas Department of Transportation right-of-way shall comply with applicable TxDOT standards and the Contractor shall be responsible for obtaining the required permits to perform said work. All coordination with TxDOT construction inspectors will be coordinated with the designated City of McKinney Construction Inspector.
16. Contractor shall inform Owner, residences, and/or businesses forty-eight (48) hours prior to any interruption of sewer and/or water service or impacts to existing access. Contractor shall schedule the construction activities to minimize any inconvenience to the residents and businesses. Interruptions to existing services may be required to be performed during off times and shall be coordinated with the affected agencies. Any planned interruptions of sewer and/or water services must have prior written approval of the Director of Engineering.
17. All shop drawings, traffic control plans, working drawings or other documents which require review by the City, shall be submitted by the Contractor sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
18. Establishment of utility services for the use of City potable water for construction purposes is available through the City of McKinney Utility Billing Office located at 210 N. Tennessee St. (972 547-7550). Contractor shall comply with all related City Ordinances and shall pay all fees in a timely manner.
19. All Contractors and subcontractors shall perform all work in a manner consistent with safe work practices, and in accordance with all applicable safety and health rules and regulations.
20. It is the Contractor's responsibility to maintain a neat and accurate record of construction for the Record Drawings that will be submitted to City. Prior to final acceptance, the Contractor's redlines shall be provided to the Engineer of Record for incorporation into the Record Drawings. Record Drawings including redline updates shall be provided to the McKinney Engineering Construction Inspector at least one day prior to the scheduled final walkthrough inspection.

EROSION CONTROL & VEGETATION

1. Within the City of McKinney, all soil disturbing activities require a grading permit. A copy of the appropriate Construction Site Notice (CSN) or Notice of Intent (NOI) shall be provided to the City of McKinney prior to issuance of a grading permit. The site specific Erosion Control Plan (ECP) shall be provided to McKinney's Stormwater Administrator prior to grading.
2. The CSN or NOI shall be posted in a location viewable to the public until construction is complete and Notice of Termination (NOT) submitted. The Storm Water Pollution Prevention Plan (SW3P) shall be readily available for review by Federal, State, or Local officials.
3. No soil disturbing activities will occur prior to the SW3P, ECP, and associated Best Management Practices (BMP) being fully implemented, and then inspected by McKinney's Erosion Control Inspectors.
4. The contractor shall comply with the City of McKinney's Stormwater Ordinance, the current NCTCOG iSWM™ Technical Manual for Construction, the TPDES General Construction Permit TXR150000 and any other State and/or Local regulations.
5. The Contractor shall employ measures as necessary to prevent dirt, mud, and debris from being tracked off site. Any dirt, mud, and debris tracked offsite shall be cleaned up by the Contractor immediately to ensure safe environment within and adjacent to the site.
6. The site shall be reviewed by the Contractor or his representative weekly, and after any major storm. Adjustments/repairs to the erosion control measures will be made as needed. The Contractor shall notify McKinney's Erosion Control Inspectors of adjustments/repairs such that the adjustments/repairs may be inspected and approved by the Erosion Control Inspectors in coordination with the Stormwater Administrator.
7. Unless otherwise approved by the Director of Engineering, perennial vegetation shall be fully established in all disturbed areas (both on-site and off-site) and all temporary erosion and sediment control measures shall be removed (both on-site and off-site) prior to final acceptance and issuance of a Certificate of Occupancy
8. A completed NOT shall be submitted to the State and a copy of this NOT shall be provided to the City of McKinney prior to final acceptance.
9. All excavated earth in excess of that required for backfilling, and all concrete removed, shall be disposed of in a satisfactory manner. The Contractor shall provide documentation to the City in writing of the final destination of this material. This documentation shall be submitted at the time of the SWP3. The documentation shall include permission from the property owner and verification from the floodplain manager in the jurisdiction that the disposal area is outside the FEMA 100-year floodplain.

RETAINING WALLS

1. Retaining walls (including the foundation or footing) shall not be constructed to encroach upon City Right-of-Way, public easements, or public utilities without the consent of the Director of Engineering.
2. Prior to beginning construction of a retaining wall, the Contractor shall coordinate an onsite pre-construction meeting with the wall contractor, wall engineer (if applicable), and the construction inspector. The retaining wall Engineer of Record is responsible to perform and document onsite inspections throughout construction; and to provide the Engineering Department a copy of all documentation confirming construction compliance with all drawings and specifications as required by the Director of Engineering prior to final acceptance of project.

TREE PRESERVATION

1. Prior to construction, the Contractor shall construct and maintain a protective fence at the drip line of all protected existing trees, unless noted otherwise on the construction drawings. Any damage to the existing trees caused by construction shall be replaced to the satisfaction of the Owner and/or the City of McKinney at the Contractor's expense.
2. All protective measures shall be in place prior to commencement of any site or grading work and remain in place until all exterior work has been completed.
3. The City Arborist shall be contacted to approve the placement of the Tree Preservation fencing prior to beginning of site work on property.
4. The following activities shall be prohibited within the limits of the primary root zone: material storage, equipment cleaning/liquid disposal, and construction equipment/vehicular traffic. No signs or wires shall be attached to trees.
5. Unless specifically allowed, no grade changes shall be allowed within the limits of the primary root zone of any protected tree unless the City Arborist approves adequate construction methods.
6. No trimming of trees may occur within the Tree Preservation fencing limits without prior consent of the City Arborist.

PEDESTRIAN ACCESSIBILITY

1. Contractor shall maintain all existing pedestrian routes and access within and adjacent to the site throughout the duration of construction. A temporary pedestrian route shall be provided when any existing sidewalk is closed due to construction activity. Any signage required for the designation of a temporary pedestrian route shall be included on the approved Traffic Control Plan.
2. All newly constructed sidewalks, curb ramps, and crosswalks installed within City of McKinney public right-of-way, easements, or on City property shall be considered a pedestrian access route and shall conform to the most current (Draft or Adopted) Guidelines for Public Right-of-Way created by the United States Access Board (PROWAG).

GENERAL CONSTRUCTION NOTES

JANUARY 2025

SHEET 1 OF 2

CITY OF McKINNEY ENGINEERING DEPARTMENT
401 E. Virginia St. McKINNEY, TX 75069
P (972) 547-7420 F (972) 547-2604

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REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA C. MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

GENERAL NOTES

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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET	03

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_GEN.dwg - Plotted: 1/5/2026

TRAFFIC CONTROL

1. All existing traffic control devices and infrastructure shall remain in place, operational, and unobstructed at all times throughout the duration of construction unless otherwise approved by the Director of Engineering. The Contractor shall be responsible for maintaining all traffic control devices whether or not work is active. Any deficiencies shall be corrected by the Contractor immediately regardless of time of day. The first violation of this provision will result in a verbal warning to the Contractor. Subsequent violations will result in suspension of all work at the job site for a minimum of forty-eight (48) hours.
2. All traffic control devices shall be in accordance with the latest Texas MUTCD and NCHRP 350. Devices must contain either Type III Hi-Intensity sheeting or Type IV reboundable Hi-Intensity sheeting.
3. Construction activities which impact existing traffic and/or access to properties shall not begin until a site-specific traffic control plan is approved by the City of McKinney. Traffic control plans may be required on other roadways as determined by the Director of Engineering or their designee. All traffic control plans must be prepared by an individual certified in their preparation and must be submitted for review a minimum of seven (7) working weekdays prior to the anticipated implementation. Any deviation from an approved Traffic Control Plan must be reviewed by the Director of Engineering or their designee.
4. Lane closures will not be permitted on arterial roadways before 9:00 am or after 4:00 p.m. Violations may result in suspension of all work at the job site for a minimum of forty-eight (48) hours. The Director of Engineering reserves the right to deny, restrict, or revoke permission for closures.
5. Lane closures will not be permitted on streets in the vicinity of private and/or public schools during posted school zone hours. Lane closures in the vicinity of schools without designated school zones shall be coordinated with the school. In general, school zone hours can be found at www.mckinneytexas.org.
6. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, temporary traffic control devices that are no longer appropriate shall be removed, covered or turned away from traffic. The first violation of this provision will result in a verbal warning to the Contractor. Subsequent violations will result in suspension of all work at the job site for a minimum of forty-eight (48) hours.
7. Existing permanent signs removed by the Contractor for construction purposes other than stop, yield, and street name signs shall be returned to the City of McKinney. All stop, yield, and street name signs removed shall be temporarily erected in the appropriate locations and in accordance with the Texas MUTCD until permanent signing can be installed. Any temporary stop or yield sign locations to be left in place overnight requires prior approval from the Director of Engineering.
8. Any permanent signs or existing pavement markings that conflict with the approved traffic control plan shall be covered, obliterated, or removed as directed by the Director of Engineering.
9. Contractor shall notify the City of McKinney Signals Supervisor at (972) 547-7428 and Project Manager at least twenty-four (24) hours in advance of any work to be performed on a roadway or driveway within 500 feet of an existing traffic signal. Temporary traffic control devices within vehicle detection zones shall not be installed or removed without consent from the Signal Supervisor. The first violation of this provision will result in a verbal warning to the Contractor. Subsequent violations will result in suspension of all work at the job site for a minimum of forty-eight (48) hours.
10. Access must be maintained to all drives and side streets or as indicated in the Traffic Control Plan.

WATER

1. Contractor shall submit a Trench Safety Plan to the McKinney Engineering Construction Inspector prior to the Pre-Construction Meeting for review and approval by the City.
2. Prior to water line installation, Contractor shall provide flush and disinfection plan for review and approval by the City of McKinney Engineering Department.
3. Contractor shall not operate existing McKinney water valves. Contractor shall contact the City of McKinney Engineering Construction Inspector for coordination with Public Works.
4. All water services and water meters shall be size on size. No reductions in water meter sizing are allowed for single services.
5. In Residential developments, Bullhead water services (dual meter box with single water service line tap) are required. The water service meter box shall be installed 6-inch behind the back of curb and 1 foot off of the property line.
6. Each individual service location shall be sawcut into the face of the curb with a four (4) inch high "I" painted by the Contractor. If no curb exists, a similar mark shall be placed in the pavement near the edge of the roadway. After cleaning the sawcut via compressed air or brush, apply one coat of APWA Blue paint to mark the sawcut symbol.
7. All water service lines shall be embedded with 6 in. sand below and around the pipe and 1 ft. of sand over the top of the pipe; from the water main to the meter. Water service lines within City roadway right-of-way shall be compacted to a minimum of the 95% Standard Proctor density.
8. Minimum cover shall be 4 feet for 6-inch to 8-inch lines, 5 feet for 12-inch to 16-inch lines, and 6 feet for 20-inch and larger lines. Additional cover may be required in un-paved or un-developed areas.
9. Water mains in the right-of-way near storm inlets shall be constructed with a minimum clearance of 12 inches behind the inlet by pulling the pipe using longitudinal bending in accordance to 75% of the pipe manufacturers' requirements.
10. All City water main lines shall use Type “H” embedment.
11. All blow-off (flush) valves shall be two (2) inch and shall be provided in accordance with City of McKinney standards. All main line stubouts shall have blow-off valves installed.
12. All water line fittings shall be ductile iron. All 6-inch to 12-inch valves shall be AWWA approved resilient wedge gate valves.
13. In addition to thrust blocking, all fittings must be restrained.
14. Install 2 foot by 2 foot by 4-inch thick, concrete pad around all water valves outside of concrete pavement.
15. Valve extensions shall be provided on all valves with operating nuts greater than 5 feet below finished ground or paving grade.
16. All valves shall be marked with a four (4) inch high "V" by sawcut on the curb or pavement The "V" shall point to the location of the valve as follows: If the valve is in the paving, the "V" shall be marked upright; if the valve is outside the paving, the "V" shall be marked upside down. After cleaning the sawcut via compressed air or brush, apply one coat of APWA Blue paint to mark the sawcut symbol.
17. A Blue Stimsonite, Fire-Lite reflector(or approved equal)shall be placed in the center of the street opposite each fire hydrant.
18. No testing (pressure and/or disinfection) is allowed against existing water valves.

WASTEWATER

1. Contractor shall submit a Trench Safety Plan to the McKinney Engineering Construction Inspector prior to the Pre-Construction Meeting for review and approval by the City.
2. After curb and paving has been completed, contractor shall cut a four (4) inch high "II" on the curb indicating the location of the cleanout. After cleaning the sawcut via compressed air or brush, apply one coat of APWA Green paint to mark the sawcut symbol.
3. All sanitary sewer mains shall be tested by pulling a mandrel, air pressure test, and inclination video inspections with TV log report following the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP). Sewer laterals shall be tested by air pressure and inclination video inspected with an inclinometer after all franchise utilities have been installed. The inclination video recordings and the NASSCO PACP certified report shall be provided to the McKinney engineering construction inspector in a DVD format and shall be labeled accordingly for City record.
4. All sanitary sewer manholes within flood plains or flood prone areas require type "S" manhole lids.
5. All manholes shall be vacuum tested where a 10-inch mercury vacuum is developed. The air vacuum shall then be monitored for the test period noted in the NCTCOG specifications. The allowance drop in air vacuum shall be no greater than 1-inch mercury over the test period.
6. The contractor shall install City of McKinney standard wastewater manhole lids.
7. Unless otherwise noted, in open spaces, the top of the sanitary sewer manhole shall be installed 3 inch above the surrounding ground and include manhole mow strip.
8. All City sewer lines and sanitary sewer laterals shall use Type "H" embedment.

STORM SEWER

1. Contractor shall submit a Trench Safety Plan to the McKinney Engineering Construction Inspector prior to the Pre-Construction Meeting for review and approval by the City.
2. Prior to final acceptance, the Contractor shall perform a video inspection of all storm sewers and provide a copy of the inspection to the McKinney Engineering Construction Inspector. All storm sewers shall be cleared of any sediment and debris.
3. Where a storm drain pipe or culvert greater than 48 inches in span crosses over a water/sewer line, a steel encasement pipe shall be used to encase the carrier pipe when there is less than two foot vertical clearance. Where the storm pipe is less than 48 inches in span, or where the storm pipe crosses underneath the water/sewer line, a concrete encasement pipe shall be used. The encasement pipe shall be extended a minimum of 10 feet from the outside edge of a box culvert or the outside diameter edge of the storm drain for future maintenance of the carrier pipe. Minimum steel encasement thickness shall be ½ inch, and minimum concrete encasement thickness shall be 6 inches.
4. Manhole lids on storm sewer inlets and junction boxes shall be centered over the outgoing storm lateral.
5. All bends and wyes for pipes less than 42-inch diameter must be factory manufactured bends and wyes.
6. The contractor shall install City of McKinney standard storm sewer disc markers on all new inlets.
7. The contractor shall install City of McKinney standard storm sewer manhole lids on inlets, manholes, junction boxes, etc.

PAVING

1. All mix designs shall be signed and sealed by a Professional Engineer and submitted to the McKinney Engineering Construction Inspector a minimum of one week before a scheduled pour. Mix designs are subject to approval by the Director of Engineering.
2. The Contractor shall give the McKinney Engineering Construction Inspector a minimum of 24 hour notice of his intention to construct Portland cement concrete pavement, structural concrete, or hot mix asphaltic concrete to assure the adequate quality control of construction materials and workmanship.
3. A mix truck is required to be used on all concrete placement greater than one travel mile to batch plant.
4. Test cylinder: minimum 5 needed for breaks: one at day 7, three at day 28 and 1 hold.
5. No vehicles are permitted on reinforcing steel at any time.
6. All pavement cuts on street and fire lanes requires full panel replacement (no partial replacement) or as required by the Director of Engineering.
7. Restore permanent type pavements, alley pavement, sidewalks, driveways, curbs, gutters, and surface structures removed or disturbed during or as a result of construction operations to a condition which is equal in appearance and quality to the condition that existed before the work began. The surface of all improvements shall match the appearance of the existing surface.
8. The subgrade for street and driveway pavement shall be prepared by excavating and filling the area as required, to bring the grade to the elevations as shown on the Drawings. All areas that are intended to be paved shall be proof rolled once the subgrade has been prepared and compacted. McKinney Engineering Construction Inspector must be present to observe proof rolling.
9. All fill shall be compacted to 95% Standard Proctor Density in a maximum of 6-inch lifts or per the approved Geotechnical Engineers Report.
10. The subgrade shall extend a minimum of 12-inches beyond the back of curb to the minimum depths specified in the McKinney Engineering Design Manual or greater depths as recommended in the site specific geotechnical report. The Contractor shall obtain a site specific lime series and add sufficient lime accordingly to achieve a Plasticity Index not to exceed 12.
11. A subgrade density report must be presented to the City Inspector prior to paving. Densities are only valid for 72 hours. Densities received on a Friday are valid until noon on the following Monday. Densities taken before inclement weather may be required to be retaken at the City Inspectors discretion.
12. All City streets are required to be paved with the use of an approved slip form paving machine with mechanical vibration. Hand pours are only allowed at intersection returns or other non-standard areas as approved by the City Inspector. Hand pours shall be vibrated by an approved hand vibrator.
13. All concrete paving, including sidewalks and hike & bike trails, shall meet the required minimum compressive strength at 28 days: 4000 psi for hand pours and 4,500 psi for machine finished pavement.
14. Expansion joints shall be placed a maximum of 400 feet.
15. All median noses shall be poured monolithically.

TESTING AND QUALITY CONTROL

1. The Owner will employ the services of an engineering testing laboratory to make certain inspections and to sample and test the materials to be used in the Work on all Developer projects. The Owner shall furnish, at his own expense, all necessary specimens for testing of the materials and when requested, shall furnish a complete written statement of the origin, composition, and/or manufacturer of any or all materials that are to be used in the Work. All materials not conforming to the requirements of the Specifications will be rejected. For CIP projects, the City will typically provide the services of the engineering testing lab.
2. During the construction, the engineering testing laboratory will perform services related to checking the quality of the Work being performed by the Contractor to determine if the improvements are being constructed in accordance with the Plans and Specifications. This quality control service does not relieve the Contractor of its responsibility with regard to constructing the work in accordance with the contract.
3. The Contractor must ensure the testing laboratory representative has arrived onsite prior to beginning any Work requiring sampling and testing. The testing laboratory representative shall be equipped with the appropriate testing equipment, properly maintained, and calibrated as verified by the Contractor. In the event the scope and schedule of the work warrants, the laboratory shall provide sufficient additional representatives. The testing laboratory shall issue all reports to the designated distribution list in a timely fashion. All test results that do not comply with project Specifications shall be clearly indicated.

GENERAL CONSTRUCTION NOTES

JANUARY 2025
SHEET 2 OF 2

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PRIYA V. MISTRY
123226
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INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 04

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640I_GENL.dwg - Plotted: 1/5/2026

GENERAL NOTES

1. A City of McKinney Traffic Engineer shall be present when temporary or permanent traffic signals are to be activated. Contact the City of McKinney Transportation Engineering Manager at (972) 547-2634 with at least one week notice of any planned turn-on activities.
2. New signals shall be activated in full color operation with all indications functional. Unless directed by the City, the signal shall be placed in FULL operation between 9:00 A.M. - 12:00 P.M. (noon) on Tuesday, Wednesday or Thursday only.
3. No flash period will be allowed before full operation unless the signal is located in close proximity to a freeway. Contact the City of McKinney Transportation Engineering Manager for approval.
4. All hand hole covers, pole caps, conduit seals and cable identification tags shall be in place prior to signal activation.
5. Contractor shall not enter any City of McKinney traffic signal cabinets or electric service pedestals without the supervision of a City of McKinney traffic signal technician or designee.
6. Contractor shall notify the City of McKinney Signal Supervisor within 1 hour of any damage which has occurred to existing signal, illumination, or City of McKinney communication infrastructure during construction. Contractor will be held responsible for cost of repair to city infrastructure resulting from construction operations.
7. City equipment to be salvaged will be inventoried in the field prior to the beginning of construction by City of McKinney signal staff. Any and all salvage materials to be returned to the city shall be handled in a manner as to minimize loss, damage, and/or breakage. Contractor will be responsible for replacement cost of any materials lost, damaged, or broken at the discretion of the City of McKinney Signal Supervisor.
8. All existing signal hardware shown for removal shall be returned to the City of McKinney traffic control facility located at 1550 S. College Street unless otherwise directed by the City of McKinney Signal Supervisor. Contact the City of McKinney Signal Supervisor with 24 hour notice of intent to deliver salvage materials and/or equipment.
9. A City of McKinney Traffic Engineer shall be present during the layout of pavement markings on approaches to and within signalized intersections. Contractor shall not place any final markings without express approval from the City of McKinney Traffic Engineer.
10. Contractor shall notify the City of McKinney Signal Supervisor prior to beginning work on existing or proposed traffic signals and lighting. Contact the Signal Supervisor at (972) 547-7428 at least twenty-four (24) hours in advance of any work.

SIGNAL HARDWARE

1. Mast arm assemblies shall be galvanized steel finish unless otherwise noted in the plans.
2. All vehicular and pedestrian signal heads shall be black polycarbonate. Signal visors shall be polycarbonate with flatblack powdercoated exterior finish and matte black inside finish. Signal backplates shall be polycarbonate, non-vented, with flat black powdercoated finish.
3. All proposed signal displays shall be LED.
4. All proposed pedestrian displays shall be countdown type.
5. All vehicular signal heads shall be mounted horizontally unless otherwise shown on the plans.
6. Proposed traffic signal cabinet, vehicle detection equipment and associated cable, opticom equipment and associated cable, police enforcement confirmation lights, battery backup units, communication equipment, and monitoring cameras, where applicable, will be provided and installed by the contractor.
7. Contact the Signal Supervisor at (972) 547-7428 with 24 hour notice of intent to pick up materials and/or equipment.
8. Proposed signal phasing and wiring as shown on the plans is subject to change. Contractor shall wire proposed signal as shown in the cabinet drawings provided with the signal cabinet.

ELECTRIC SERVICE

1. Contractor shall coordinate point of electric service and proposed pedestal location with the City of McKinney and the electric provider prior to constructing electric service foundations or placing conduit.
2. Electric service pedestal exterior shall be natural aluminum or stainless steel finish.
3. Contractor shall obtain an electrical permit from the Building Inspections Department and notify the assigned inspector when conduit from the cabinet to service pole is exposed and ready to inspect.
4. Contractor shall notify the City of McKinney Signal Supervisor within 24 hours when a new electrical service pedestal or riser has been installed and green-tagged.

ELECTRIC

1. All signal conductors shall be stranded copper, 14 AWG unless otherwise shown on the plans.
2. Contractor to coordinate with Signal Supervisor for relocation of existing street light.

SIGNAL DETECTION EQUIPMENT

1. Detection equipment locations shown on the plans are diagrammatic and subject to change based on field conditions. A City of McKinney Traffic Engineer or their designee shall be present at all times during installation of detection equipment. Contact the Transportation Engineering Manager at (972) 547-2634 with 1 week notice to schedule installation supervision and system verification.
2. Contractor shall provide qualified manufacturer's technician on-site to program detection equipment and verify system functionality. City staff shall be present during the configuration and programming of detection system.

FOUNDATIONS AND CONCRETE

1. The contractor shall be responsible for verifying all utility location and depths in the field by potholing method prior to drilling foundations. No additional payment will be made for potholing or relocation of any foundation due to utilities.
2. Locations of foundations as shown on the plans are diagrammatic and subject to change based on field conditions. Contractor shall meet the City of McKinney Traffic Engineer in the field to verify final locations prior to drilling and for inspection of reinforcing steel and grounding prior to pouring concrete.
3. Contractor shall notify the City of McKinney Traffic Engineer with 2 business day notice of intent to drill foundations.
4. The contractor shall be responsible for all concrete testing for concrete items. Concrete test reports shall be submitted to the city prior to final acceptance of the project.

SIGNS

1. All proposed signs shall be in strict conformance with the latest edition of the Texas SHSD and Texas MUTCD.
2. Contractor shall submit all sign proofs to the City of McKinney Signs and Markings Supervisor for approval prior to ordering signs. Contact the City of McKinney Signs and Markings Supervisor at (972) 547-7437.

SIGNAL ITEMS TO BE PROVIDED BY CITY FOR FOR INSTALLATION BY CONTRACTOR

1. ATC cabinet *
2. Signal Controller *
3. Signal poles and mast arms
4. Accessible Pedestrian Signal (APS) equipment
5. Detection equipment and cable
6. Opticom equipment and cable
7. Pan-Tilt-Zoom (PTZ) camera
8. PTZ cable
9. Police enforcement confirmation lights
10. All signs & hardware
11. Luminaires
12. Battery Backup Unit (BBU) *
13. Communication equipment *

PROJECT EQUIPMENT AND MATERIALS

1. Contractor shall obtain the list of approved materials and equipment for the traffic signal installation from the City of McKinney to ensure compliance with city's requirements.

*2. Items requiring testing and a burn-in time shall be provided to the city for this purpose. Contact the City of McKinney Signal Supervisor at (972) 547-7428 with 24-hours notice to arrange for drop-off/pickup of equipment.

SIGNAL AND LIGHTING
CONSTRUCTION NOTES
JANUARY 2025
SHEET 1 OF 1

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REVISIONS

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STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
SIGNAL CONSTRUCTION NOTES

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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

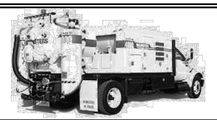
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 05

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mxml\02_PLAN_SHEET\23120640I1_GENL.dwg - Plotted: 1/5/2026

CobbFendley
2801 Network Boulevard
Suite 800
Frisco, TX 75034
(972) 335-3214

Summary of Test Hole Information and Coordinates



Project Name:	ST2303_Inter_Cap	**General Location:**	N Lake Forest Dr & US 380 / N Lake Forest Drive & Eldorado Pkwy	**Field Manager:**	P. Deyo
Client Name:	City of Mckinney			**Technicians:**	LS DG
Client Proj. No.:				**Vacuum Excavation Truck/Trailer:**	228
CobbFendley Proj. No.:	2312-064-01	**City/Town:** Mckinney	**County:** Collin **State:** TX	**Designating Truck:**	202

Test Hole #	Utility Size, O.D. (Inches)	Utility Material (Refer to Legend)	Utility Type (Refer to Legend)	Depth to Top of Utility (Feet)	Cross Sectional View	General Utility Direction	Surface Type and Thickness (Inches) AC - Asphalt Concrete B - Brick PC - Portland Concrete NG - Natural Ground	ID'd By: 1: 5/8"Iron Rod/Cap 2: Nail/Disk 3: 'X'in Conc. 4: PVC Pipe	Date Test Hole Excavated	Utility Observed (Yes or No)	Survey Point #	Northing (Y) (Feet)	Easting (X) (Feet)	Ground Elevation (Z) (Feet)	Top of Utility Elevation (Feet)	Test Hole Notes
01	4.25	PVC	BT	6.94	○○	↔	NG	5/8"IR W/ CAP	09/03/25	YES	19039	7132000.17	2525106.71	601.18	594.24	
02	4.25	PVC	BT	10.22	○	↔	NG	5/8"IR W/ CAP	09/03/25	YES	19034	7131994.95	2525502.67	603.40	593.18	
03	4.25	PVC	FOC	5.11	○○○○	↔	NG	5/8"IR W/ CAP	09/04/25	YES	19025	7131988.46	2525949.28	612.82	607.71	*See notes.
04	8	DI	UNK	5.36	○	↗	NG	5/8"IR W/ CAP	09/05/25	YES	19023	7132006.53	2525742.51	606.03	600.67	
05	4	PVC	FOC	4.70	○○○	↕	NG	5/8"IR W/ CAP	09/05/25	YES	19011	7115811.61	2524295.02	712.64	707.94	
TR01	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19017	7132005.18	2525741.03	605.97	N/A	
TR01-1	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19019	7132006.43	2525742.87	605.99	N/A	
TR01-2	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19015	7132003.96	2525742.94	606.03	N/A	
TR01-3	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19013	7132003.47	2525740.66	606.10	N/A	
TR01-4	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19021	7132006.88	2525740.35	605.95	N/A	
TR02-1	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19007	7115810.51	2524296.57	712.48	N/A	
TR02-2	UNK	UNK	UNK	UNK	UNK	UNK	NG	5/8"IR W/ CAP	09/05/25	NO	19009	7115810.67	2524294.09	712.62	N/A	

Notes: *Found 4 PVC conduits in TH. Possibly telephone and fiber running together in same duct.

Utility Materials:

STL - Steel	**PVC** - Polyvinyl Chloride	**CSC** - Concrete/Steel Cylinder	**RCCP** - Reinf. Conc. Cyl. Pipe
PE - Polyethylene	**DBC** - Direct Buried Cable	**CMP** - Corrugated Metal Pipe	-
AC - Transite	**RCP** - Reinforced Concrete Pipe	**COP** - Copper	-
CI - Cast Iron	**VC** - Vitrified Clay	**CONC** - Concrete Encased	-
DI - Ductile Iron	**FG** - Fiberglass	**I** - Iron Pipe	-

Utility Types:

E - Electric	**BT** - Buried Telephone	**TS** - Traffic Signal
G - Gas	**FOC** - Fiber Optic Cable	**FM** - Force Main
W - Water	**SAN** - Sanitary Sewer	-
PL - Product Line	**STM** - Storm Sewer	-
FL - Fuel Line	**CTV** - Cable Television	-

Prepared By: LZ Date: 09/26/25 Checked by: CE Date: 9/26/2025 Page: 1 of 1

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
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TEST HOLE INFORMATION

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SHEET 06	

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_GENL.dwg - Plotted: 1/5/2026

				W WHITE AVE & DRIVEWAY TO WESTCEEK RANCH APARTMENTS				W WHITE AVE & COMMUNITY AVE						ELDORADO PKWY & LAKE FOREST DR							US 380 & LAKE FOEST DR																							
ITEM NO.	DESCRIPTION	QUANTITY	UNIT	Sh. 10	Sh. 11	Sh. 13	Sh. 14	Sh. 18	Sh. 19	Sh. 22	Sh. 23	Sh. 25	Sh. 28	Sh. 32	Sh. 33	Sh. 35	Sh. 36	Sh 38	Sh. 41	Sh. 47	Sh. 48	Sh. 49	Sh. 50	Sh. 51	Sh. 52	Sh. 53	Sh. 54	Sh. 55	Sh. 56	Sh. 57	Sh. 58	Sh. 59	Sh. 64	Sh. 65	Sh. 66	Sh. 67	Sh. 69	Sh. 79	Sh. 80
	GENERAL																																											
100	Mobilization	4	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
101	General Site Preparation	4	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	Traffic Control	4	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	SWPPP (Including Tree Protection)	4	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	Furnish & Install Project Signs	10	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	Irrigation	4	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	REMOVAL																																											
200	Sawcut, Remove, & Dispose of Existing Concrete Curb & Gutter (All Types)	5725	LF	274	-	-	-	268	-	-	-	-	-	384	-	-	-	-	-	323	1021	2426	1029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
201	Sawcut, Remove, & Dispose of Existing Concrete Pavement, Concrete Median Nose, & Concrete Median (All Depths, All Types)	2756	SY	14	-	-	-	68	-	-	-	-	-	40	-	-	-	-	-	34	439	1604	557	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
202	Sawcut, Remove, & Dispose of Existing Concrete Commercial Driveways (All Depths, All Types)	753	SY	-	-	-	-	216	-	-	-	-	-	-	-	-	-	-	-	-	143	394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
203	Sawcut, Remove, & Dispose of Existing Concrete Sidewalk (All Depths, All Types)	911	SY	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	237	202	302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
204	Remove Existing Pavers (All Depths, All Types)	14	SY	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205	Remove Existing HOA Monument	1	EA	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
206	Remove Existing Concrete Ramps	15	EA	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
207	Remove Existing 8' Recessed Curb Inlet	1	EA	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
208	Remove Existing 10' TxDOT Curb Inlet Top (PCO)	4	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
209	Remove Existing 15' TxDOT Curb Inlet Top (PCO)	5	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
210	Remove Existing 10' TxDOT Curb Inlet Base (PB)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
211	Remove Existing 15' TxDOT Curb Inlet Base (PB)	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
211	Remove Existing 15' TxDOT Curb Inlet Base (PB)	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
212	Remove Existing Junction Box Lid (PSL)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
213	Remove Existing 18" RCP	25	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
214	Remove Existing Storm Manhole Concrete Pad	1	EA	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
215	Remove Trees (>6" to 18")	16	EA	-	-	-	-	2	-	-	-	-	-	11	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
216	Remove Trees (>18" to 30")	4	EA	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
217	Remove Existing Reflective Pavement Marking TY I White 6" Skip	1801	LF	-	-	-	-	-	-	228	-	-	-	-	-	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	903	270	-	-	-	-	-	-	-	-	-	-	-
218	Remove Existing Reflective Pavement Marking TY I White 8" Solid	5533	LF	-	-	-	-	-	-	547	-	-	-	-	-	1596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2585	805	-	-	-	-	-	-	-	-	-	-	-
219	Remove Existing Reflective Pavement Marking TY I White 24" Solid (Stop Bar)	550	LF	-	-	-	-	-	-	124	-	-	-	-	-	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	99	-	-	-	-	-	-	-	-	-	-	-
220	Remove Existing Reflective Pavement Marking TY I White 24" Solid (Cross Walk)	653	LF	-	-	-	-	-	-	239	-	-	-	-	-	414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
221	Remove Existing Reflective Pavement Marking TY I Arrow	16	EA	-	-	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	-	-	-	-	-	-	-	-	-	-	-
222	Remove Existing Reflective Pavement Marking TY I Word	15	EA	-	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	-	-	-	-	-	-	-	-	-	-	-
223	Remove Existing Reflective Pavement Marking TY I Yellow Double 4" Solid	671	LF	-	-	-	-	-	-	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
224	Remove Existing Reflective Pavement Marking TY I Yellow 6" Solid	525	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	-	-	-	-	-	-	-	-	-	-	-
225	Remove Existing Reflective Pavement Marking TY I Yellow 12" Solid	133	LF	-	-	-	-	-	-	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
226	Remove Existing Reflective Pavement Marking TY I White 6" Dot Puppy Tracks	401	EA	-	-	-	-	-	-	-	-	-	-	-	-	246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155	-	-	-	-	-	-	-	-	-	-	-	-
227	Remove Existing Traffic Sign	7	EA	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
228	Remove Reflective Pavement Marking TY II-C-R	106	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	37	-	-	-	-	-	-	-	-	-	-	-
	PAVING																																											
300	Unclassified Street Excavation	3286	CY	-	65	-	-	-	346	-	-	-	-	-	282	-	-	-	-	-	-	-	-	300	300	300	300	300	246	246	300	300	-	-	-	-	-	-	-	-	-	-	-	-
301	Compacted Earth Fill	852	CY	-	17	-	-	-	13	-	-	-	-	-	2	-	-	-	-	-	-	-	-	116	116	116	116	116	4	4	116	116	-	-	-	-	-	-	-	-	-	-	-	-
302	Furnish & Install 8" Flexbase with Geogrid	2041	SY	-	319	-	-	-	534	-	-	-	-	-	468	-	-	-	-	-	-	-	-	-	-	-	-	-	633	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-
303	Furnish & Install 20" Lime Stabilized Subgrade	5867	SY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	979	507	660	1148	218	280	815	1044	-	-	-	-	-	-	-	-	-	-	-	-
304	Furnish & Install Lime	294	TON	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	49	26	33	57	11	14	41	52	-	-	-	-	-	-	-	-	-	-	-	-	-
305	Furnish Ş Install 4" Type B HMAC (PG-64-22)	5867	SY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	979	507	660	1148	218	280	815	1044	-	-	-	-	-	-	-	-	-	-	-	-
306	Furnish & Install 10" CRCP (TXDOT Class P)	3659	SY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	611	419	374	623	174	164	521	720	-	-	-	-	-	-	-	-	-	-	-	-
307	Furnish & Install 8" Reinforced Concrete Pavement	1588	SY	-	244	-	-	-	323	-	-	-	-	-	425	-	-	-	-	-	-	-	-	-	-	-	-	-	528	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
308	Furnish & Install 6" Reinforced Concrete Driveway	560	SY	-	-	-	-	-	176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138	246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
309	Furnish & Install 6" Monolithic Curb & Gutter	1480	LF	-	272	-	-	-	350	-	-	-	-	-	376	-	-	-	-	-	-	-	-	-	-	-	-	-	415	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-
310	Furnish & Install Type II Curb (Mono)	3885	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324	565	285	350	441	84	202	776	858	-	-	-	-	-	-	-	-	-	-	-	-
311	Furnish & Install Monolithic Median Nose - Type A	5	EA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-
312	Furnish & Install Monolithic Median Nose - Type B	3	EA	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
313	Furnish & Install Colored Textured Concrete	95	SY	-	83	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	Furnish & Install Concrete Median	601	SY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	114	-	-	-	-	-	213	235	-	-	-	-	-	-	-	-	-	-	-	-
315	Furnish & Install 6' Mower Ramp	3	EA	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
316	Furnish & Install 4" Reinforced Concrete Sidewalk (Width Varies)	1162	SY	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	273	221	244	100	192	-	-	-	-	-	-	-	-	-	-	-	-	-	-
317	Furnish & Install 5" Reinforced Concrete Trail (Width Varies)	228	SY	-	-	-	-	-	228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
318	Furnish & Install Barrier Free Ramp	21	EA	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	3	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
319	Furnish & Install Solid Sod	2570	SY	-	-	-	99	-	-	-	-	-	239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2127	105	-
320	Furnish and Install Curb Wall	211	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
321	Furnish & Install Landscaping, Including Tree Lighting	1	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
322	Furnish and Install Pedestrian Rail	65	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SIGNING & PAVEMENT MARKINGS																																											
400	Reflective Pavement Marking TY I White 6" Skip	1590	LF	-	A	-	-	-	-	240	-	-	-	-	-	490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	540	320	A	-	-	-	-	-	-	-	-	-	-
401	Reflective Pavement Marking TY I White 6" Dot - Puppy Track	1869	LF	-	B	-	-	-	-	-	-	-	-	-	-	583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1286	-	B	-	-	-	-	-	-	-	-	-	-
402	Reflective Pavement Marking TY I White 6" Solid	3037	LF	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3037	-	C	-	-	-	-	-	-	-	-	-	-
403	Reflective Pavement Marking TY I White 8" Solid	6237	LF	-	D	144	-	-	-	576	-	-	-	-	-	1680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2739	1098	D	-	-	-	-	-	-	-	-	-	-
404	Reflective Pavement Marking TY I White 24" Solid - Stop Bar	641	LF	-	E	-	-	-	-	130	-	-	-	-	-	241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145	125	E	-	-	-	-	-	-	-	-	-	-
405	Reflective Pavement Marking TY I White 24" Solid - Crosswalk	977	LF	-	F	-	-	-	-	124	-	-	-	-	-	422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232	199	F	-	-	-	-	-	-	-	-	-	-
406	Reflective Pavement Marking TY I White Arrow	75	EA	-	G	-	-	-	-	14	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	15	G	-	-	-	-	-	-	-	-	-	-
407	Reflective Pavement Marking TY I White Word	16	EA	-	H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	H	-	-	-	-	-	-	-	-	-	-
408	Reflective Pavement Marking TY I Yellow Double 4" Solid (Detail E)	240	LF	-	I	-	-	-	-	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I	-	-	-	-	-	-	-	-	-
409	Reflective Pavement Marking TY I Yellow 6" Solid	2482	LF	-	J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2482	-	J	-	-	-	-	-	-	-	-	-	-
410	Reflective Pavement Marking TY I Yellow Double 4" Solid (Detail K)	494	LF	-	K	-	-	-	-	494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	-	-	-	-	-	-	-	-	-
411	Reflective Pavement Marking TY I Yellow 12" Solid - Crosshatch	133	LF	-	L	-	-	-	-	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	-
412	Reflective Pavement Marking TY II-C-R	502	EA	-	M	14	-	-	-	65	-	-	-	-	-	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171	128	M	-	-	-	-	-	-	-	-	-	-
413	Reflective Pavement Marking TY II-A-A	37	EA	-	N	-	-	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	-	-	-	-	-	-	-	-	-	-
414	Reflective Pavement Marking Fire Lane Striping	48	LF	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-
415	Furnish & Install Traffic Sign	7	EA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

QUANTITY SUMMARY

McKINNEY TEXAS
Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
7A

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_sd2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640I_GENL.dwg - Plotted: 1/5/2026

				W WHITE AVE & DRIVEWAY TO WESTCEEK RANCH APARTMENTS				W WHITE AVE & COMMUNITY AVE						ELDORADO PKWY & LAKE FOREST DR							US 380 & LAKE FOEST DR																					
ITEM NO.	DESCRIPTION	QUANTITY	UNIT	Sh. 10	Sh. 11	Sh. 13	Sh. 14	Sh. 18	Sh. 19	Sh. 22	Sh. 23	Sh. 25	Sh. 28	Sh. 32	Sh. 33	Sh. 35	Sh. 36	Sh 38	Sh. 41	Sh. 47	Sh. 48	Sh. 49	Sh. 50	Sh. 51	Sh. 52	Sh. 53	Sh. 54	Sh. 55	Sh. 56	Sh. 57	Sh. 58	Sh. 59	Sh. 64	Sh. 65	Sh. 66	Sh. 67	Sh. 69	Sh. 79	Sh. 80
	WATER																																								
500	Relocate Water Meter	4	EA	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DRAINAGE																																								
600	Furnish & Install 8' Recessed Curb Inlet	1	EA	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
601	Furnish & Install 10' TXDOT Curb Inlet Base (PB)	4	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
602	Furnish & Install 15' TXDOT Curb Inlet Base (PB)	4	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
603	Furnish & Install 10' TXDOT Curb Inlet Top (PCO)	4	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
604	Furnish & Install 15' TXDOT Curb Inlet Top (PCO)	5	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-
605	Furnish & Install 10' TXDOT Junction Box Lid (PSL)	3	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
606	Furnish & Install 15' TXDOT Junction Box Lid (PSL)	3	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
607	Furnish & Install 18" Class III RCP	77	LF	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	23	12	-	16	-	8	-	-	-	-	-	-	-	-	-	-	-
608	Furnish & Install 21" Class III RCP	14	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
609	Furnish & Install 24" Class III RCP	10	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TRAFFIC SIGNAL MODIFICATIONS																																								
700	Drill Shaft (Trf Sig Pole) (24 In)	56	LF	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-
701	Drill Shaft (Trf Sig Pole) (30 In)	12	LF	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
702	Drill Shaft (Trf Sig Pole) (48 In)	54	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	-	-	-	-	-
703	Conduit (Pvc) (Sched 40)(2")(Trench)	320	LF	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	315	-	-	-	-
704	Conduit (Pvc) (Sched 40)(3")(Trench)	325	LF	-	-	-	-	-	-	-	-	45	-	-	-	-	-	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-
705	Conduit (Pvc) (Sched 40)(3")(Bore)	1010	LF	-	-	-	-	-	-	-	-	270	-	-	-	-	-	135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	605	-	-	-	-
706	Conduit (Pvc) (Sched 40)(4")(Trench)	5	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
707	Elec Conductor (No.6) Bare	2100	LF	-	-	-	-	-	-	-	-	430	-	-	-	-	-	620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1050	-	-	-	-
708	Elec Conductor (No.6) Insulated	1450	LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	860	-	-	-	-
709	Elec Conductor (No.8) Insulated	2570	LF	-	-	-	-	-	-	-	-	640	-	-	-	-	-	350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1580	-	-	-	-
710	Ground Box Ty D w/ Apron	12	EA	-	-	-	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-
711	Remove Ground Box	12	EA	-	-	-	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-
712	Backplate (12 In)(3 Sec)	8	EA	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
713	Backplate (12 In)(4 Sec)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
714	Backplate (12 In)(5 Sec)	5	EA	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
715	Ped Sig Sec (12")(Led)(Countdown/ 2 Indications)	12	EA	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-
716	Veh Sig Sec (12 In)(Red)	13	EA	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
717	Veh Sig Sec (12 In)(Yellow)	13	EA	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
718	Veh Sig Sec (12 In)(Green)	13	EA	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
719	Veh Sig Sec (12 In)(Red Arrow)	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
720	Veh Sig Sec (12 In)(Yellow Arrow)	6	EA	-	-	-	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
721	Veh Sig Sec (12 In)(Green Arrow)	6	EA	-	-	-	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
722	Traffic Signal Cable (Ty C)(12 Awg)(2 Cndr)	2275	LF	-	-	-	-	-	-	-	-	665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1610	-	-	-	-
723	Traffic Signal Cable (Ty A)(14 Awg)(5 Cndr)	790	LF	-	-	-	-	-	-	-	-	265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	525	-	-	-	-
724	Traffic Signal Cable (Ty A)(14 Awg)(7 Cndr)	945	LF	-	-	-	-	-	-	-	-	215	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	670	-	-	-	-
725	Traffic Signal Cable (Ty A)(14 Awg)(10 Cndr)	2180	LF	-	-	-	-	-	-	-	-	610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1570	-	-	-	-
726	Traffic Signal Cable (Ty A)(14 Awg)(20 Cndr)	1150	LF	-	-	-	-	-	-	-	-	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	790	-	-	-	-
727	Ins Traffic Signal Assembly (S) 1 Arm (32')(Lum)	1	EA	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
728	Ins Traffic Signal Assemble (S) 1 Arm (55')(Lum)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
729	Ins Traffic Signal Assemble (S) 1 Arm (65')(Lum)	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
730	Install Ped Pole Assembly	12	EA	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-
731	Remove Ped Pole Assembly	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
732	Ins Ped Detect (2 In Push Button)	12	EA	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-
733	Pedestrian Sign (R10-3e)	12	EA	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-
734	Vivds Cable (Install)	690	LF	-	-	-	-	-	-	-	-	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	-	-	-	-
735	Vivds Camera (Install)	5	EA	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
736	Opticom Cable (Install)	1180	LF	-	-	-	-	-	-	-	-	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	840	-	-	-	-
737	Opticom Receiver (Install)	5	EA	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
738	Install Aluminum Signs (Ty A)	22	SF	-	-	-	-	-	-	-	-	16	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
739	Relocate Aluminum Signs (Ty A)	11	EA	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-
740	Remove Aluminum Signs (Ty A)	2	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
741	Remove Control Cabinet (Grnd Mnt)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
742	Install Control Cabinet (Grnd Mnt)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
743	Remove Signal Pole Assembly	4	EA	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
744	ITS Pole (40 ft)(Relocate)	1	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
	ILLUMINATION																																								
800	Drill Shaft (Rdwy III Pole) (30 In)	56	VF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	24	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-
801	Relocate Light Pole	7	EA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
QUANTITY SUMMARY

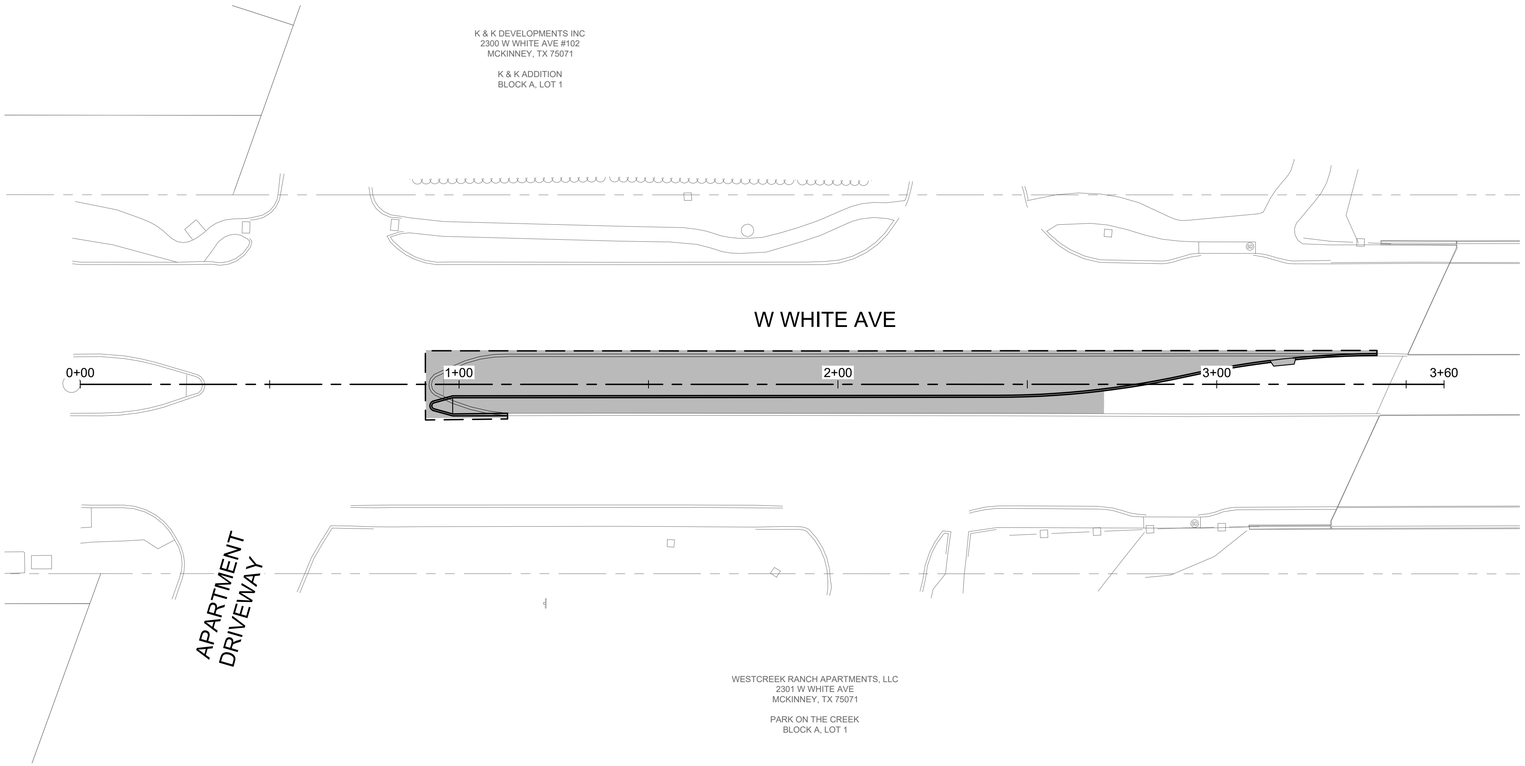
McKINNEY TEXAS
Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
7B

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\231206401_GENL.dwg - Plotted: 1/5/2026





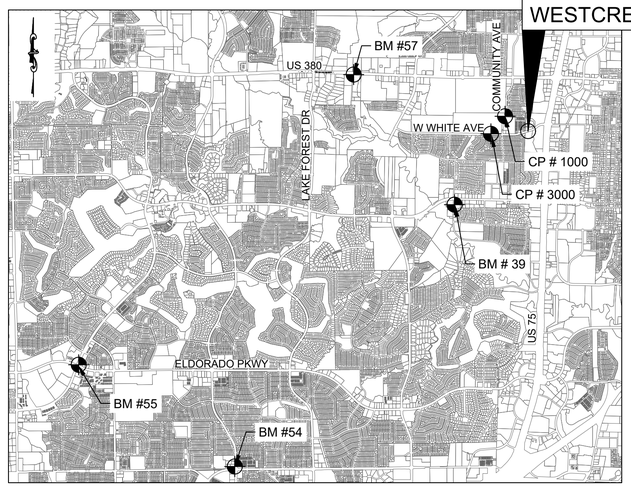
LEGEND

PROP. IMPROVEMENTS

PROJECT CONTROL						
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING	FOUND/SET	DESCRIPTION
39	BM	577.765	7124859.6563	2533262.5685	FOUND	CAP IN CONC CITY OF MCKINNEY
54	BM	733.180	7110698.4348	2521361.2605	FOUND	ALUMINUM DISK CITY OF MCKINNEY
55	BM	747.300	7116207.0698	2512908.2473	FOUND	ALUMINUM DISK CITY OF MCKINNEY
57	BM	606.460	7131924.2600	2527809.9798	FOUND	ALUMINUM DISK CITY OF MCKINNEY
1000	CP	652.262	7129663.3868	2535999.1833	SET	REBAR W/ CAP 5/8 in OC CFA
3000	CP	642.964	7128702.8641	2535234.0575	SET	REBAR W/ CAP 5/8 in OC CFA

ALL DISTANCE AND COORDINATES SHOWN HERON ARE SURFACE VALUES DISPLAYED IN US SURVEY FEET, TEXAS COORDINATE SYSTEM OF 1963, NORTH CENTRAL ZONE, AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT. THESE VALUES MAY BE CONVERTED TO GRID VALUES BY DIVIDING THOSE SURFACE VALUES BY A SURFACE ADJUSTMENT FACTOR OF 1.00152710.

ALIGNMENT TABLE				
LINE	START N/E	BEARING	LENGTH	END N/E
T5	7128792.22/2537071.97	N 72°49'06" E	360.00'	7128898.57/2537415.90



NO.	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
PROJECT LAYOUT & CONTROL

McKINNEY TEXAS
Unique by nature.

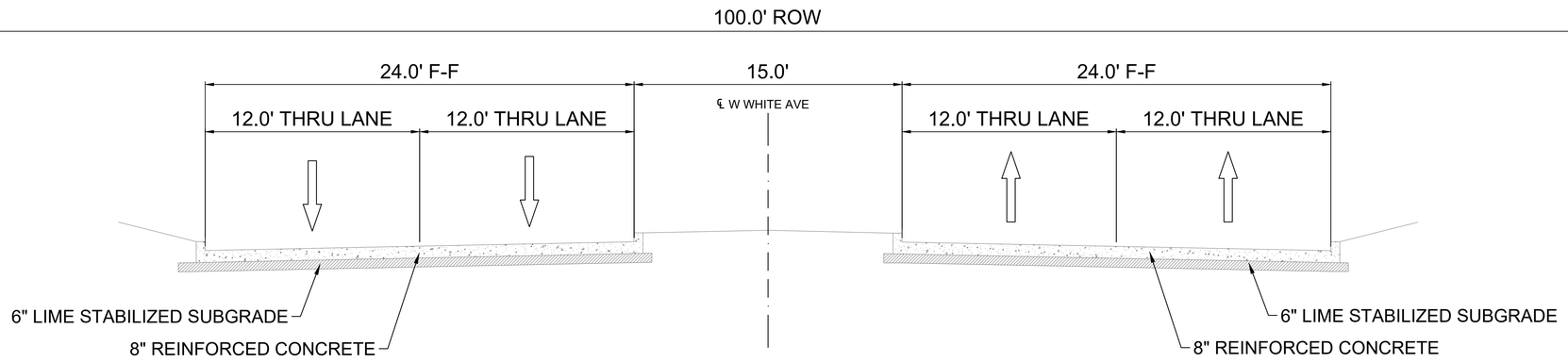
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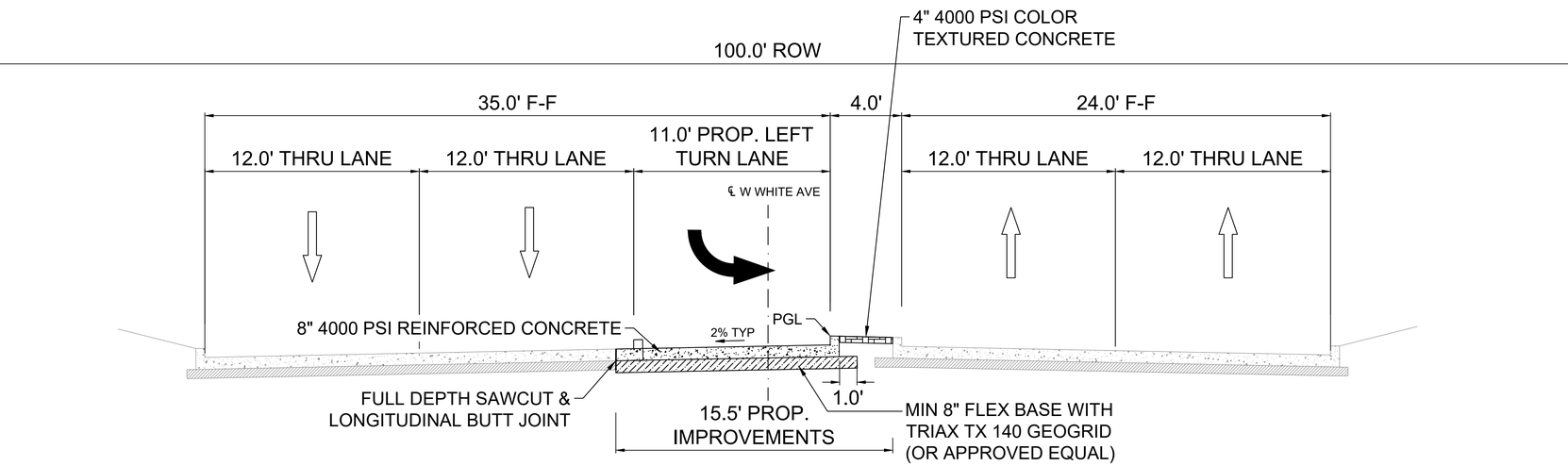
SHEET
08

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\231206401_GENL_PLYT.dwg - Plotted: 1/5/2026

NOTE
EXISTING TYPICAL SECTION BASED ON CITY OF MCKINNEY PROJECT: W WHITE AVENUE EXTENSION WEST - 1990.



WB W WHITE AVE - EXISTING
NTS



WB W WHITE AVE - PROPOSED
LEFT TURN LANE AT WESTCREEK RANCH APARTMENT DRIVEWAY
NTS

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
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01/05/2026

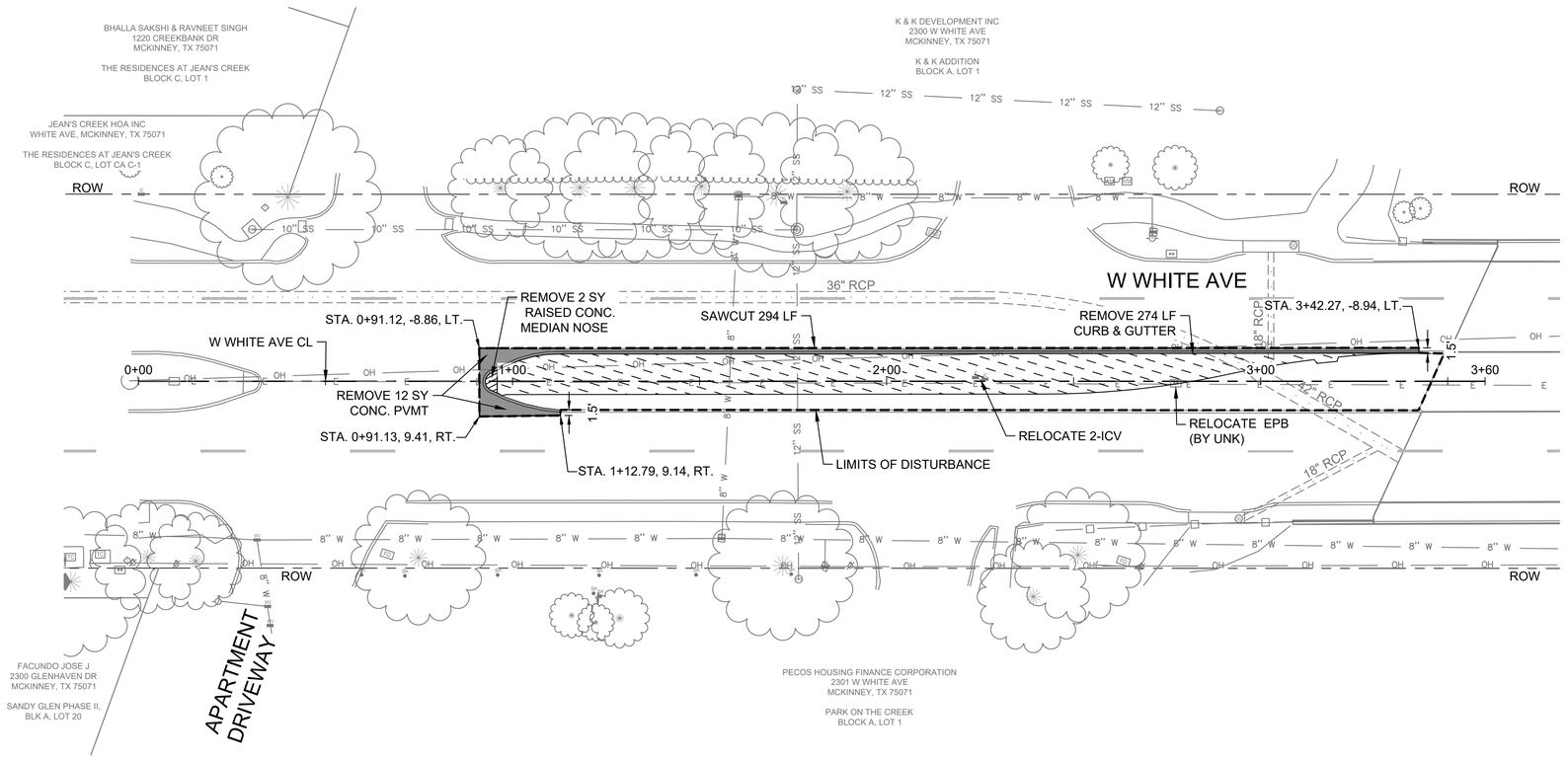
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(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
TYPICAL SECTION

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 09	

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_intsc_cap\400_CAD\412_Mun\02_PLAN_SHEET\231206401_GENL_SECT.dwg - Plotted: 1/5/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20'

LEGEND

- CONC. PVMT REMOVAL
- RAISED CONC. MEDIAN NOSE REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)

NO.	DATE	COMMENT

REVISIONS

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STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
REMOVAL PLAN

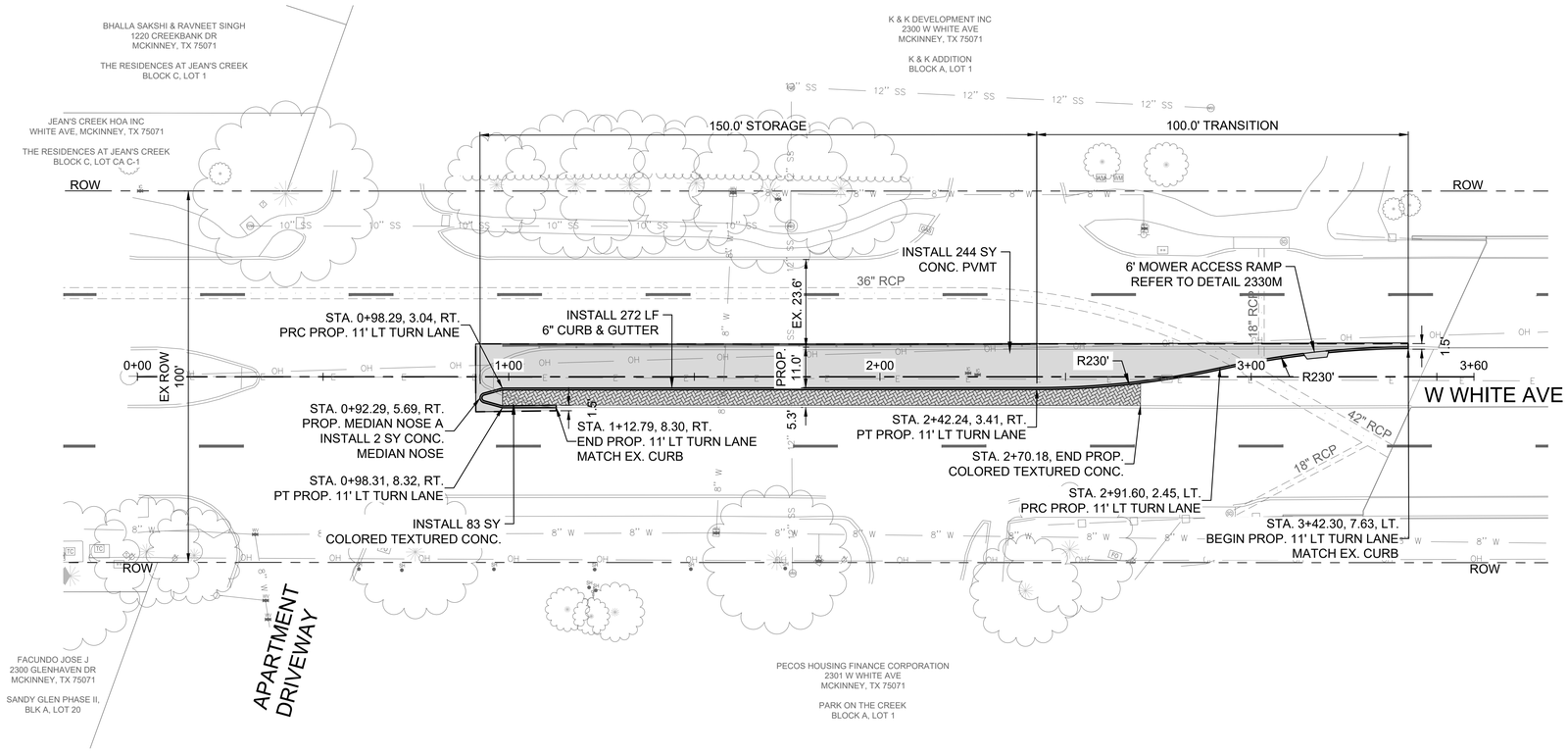
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

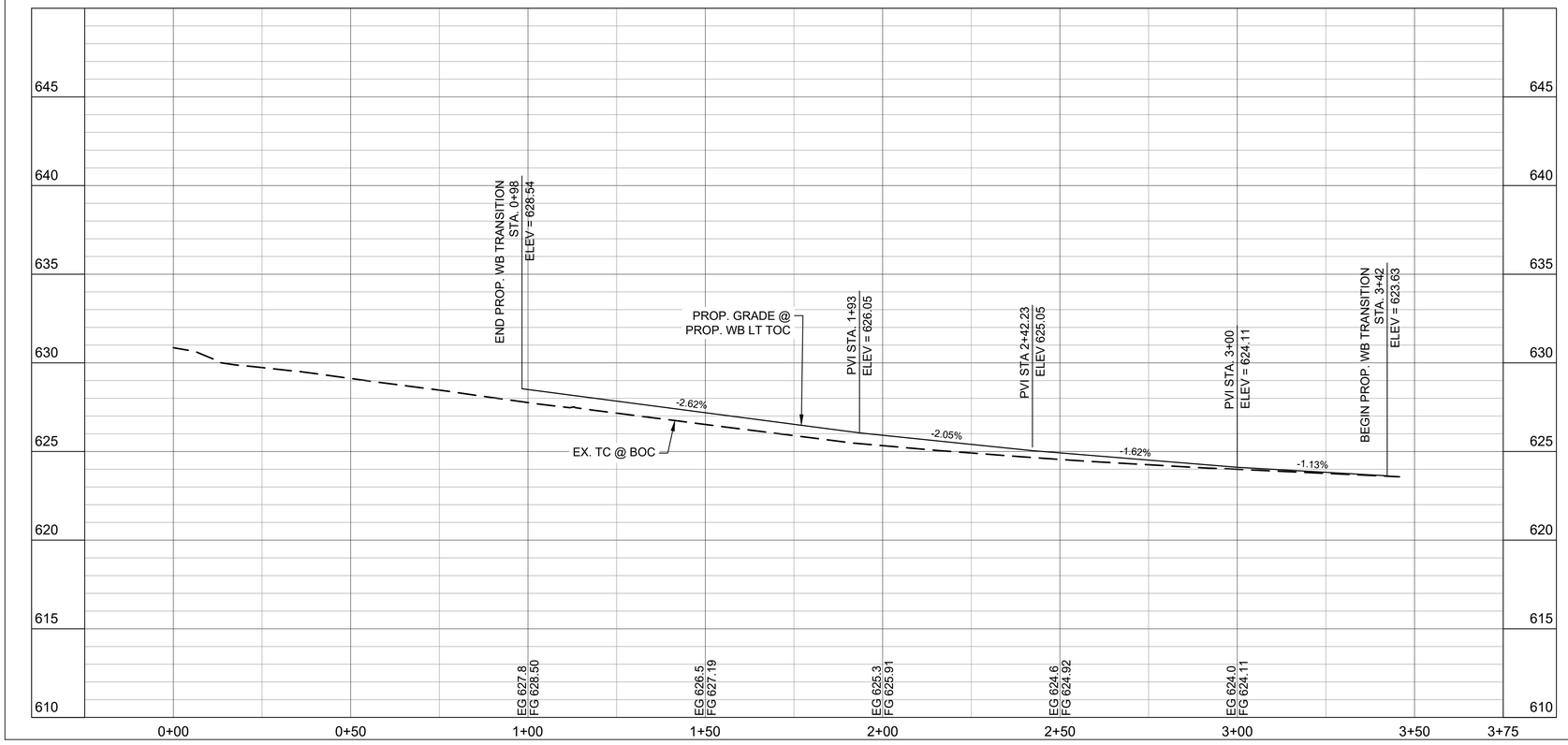
McKINNEY TEXAS Unique by nature.

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 10

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_RMVL.dwg - Plotted: 1/5/2026





!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: H 1" = 20'
V 1" = 4'

LEGEND

PROP. 8" REINF. CONC.

PROP. COLORED TEXTURED CONC. (REFER TO DETAIL 2080M)

NOTES:

1. CONTRACTOR WILL POTHOLE AND FIELD VERIFY EXISTING UTILITIES AT PROPOSED PEDESTRIAN AND SIGNAL POLE LOCATIONS PRIOR TO CONSTRUCTION. REFER TO SIGNAL POLE LAYOUT SHEETS FOR DETAILS ON PROPOSED LOCATIONS (NON-PAY ITEM).
2. CONTRACTOR WILL PROVIDE LONGITUDINAL BUTT JOINTS BETWEEN EXISTING AND PROPOSED CONCRETE PAVEMENT (NON-PAY ITEM).
3. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
4. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.

NO	DATE	COMMENT
		REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
PAVING PLAN & PROFILE

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PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 11

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mxml\02_PLAN_SHEET\23120640 1_RDWY_WHITE&WCREEK.dwg - Plotted: 1/5/2026

2+00

1+50

3+00

1+00

2+50

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

NO.	DATE	COMMENT

REVISIONS

0 10' 20' 40'

SCALE: H 1" = 20'
V 1" = 10'

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO WESTCREEK RANCH APARTMENTS
CROSS SECTIONS

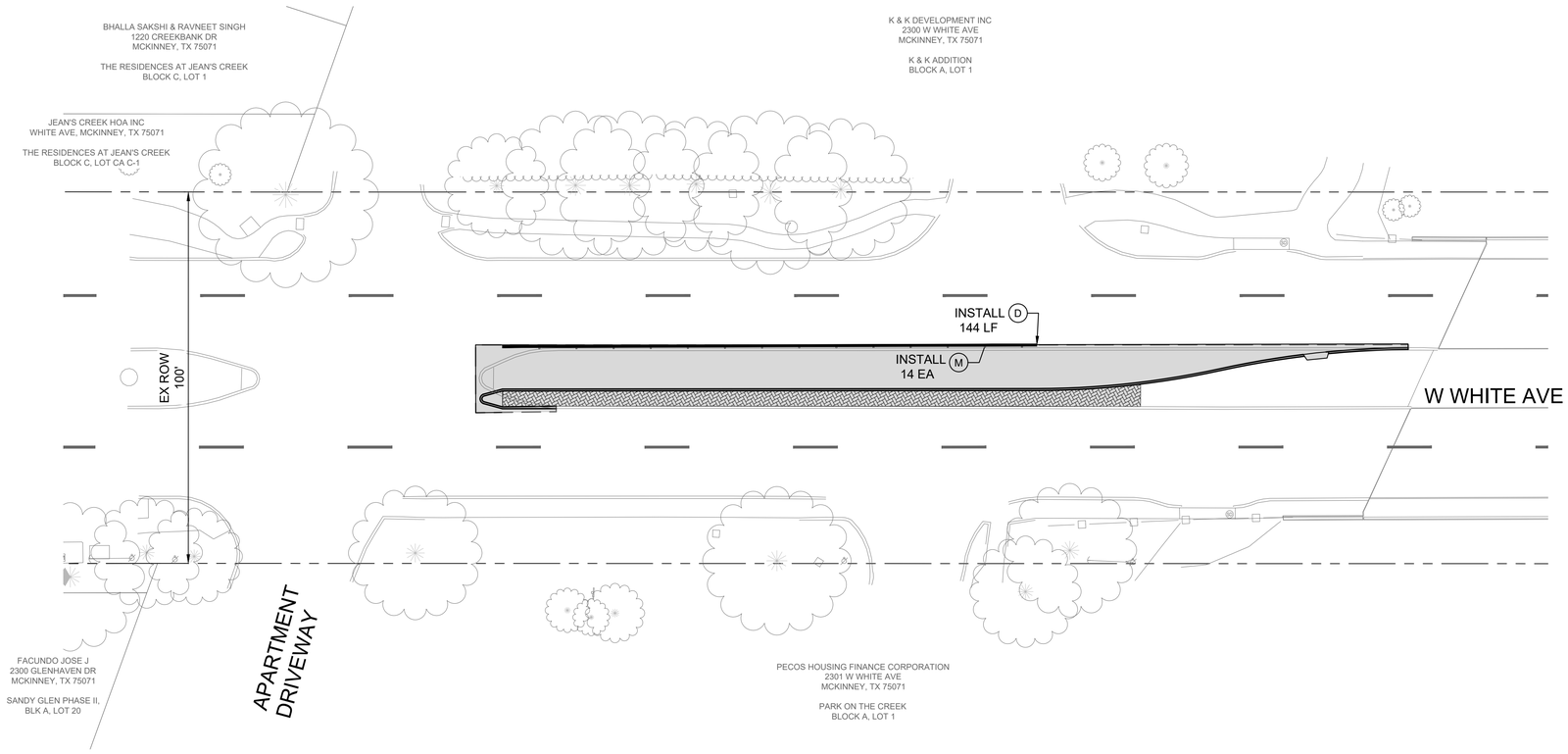
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PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 12

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RDWY_WHITEWCREEK.dwg - Plotted: 1/5/2026



!!! WARNING !!!

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811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20'

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
- (C) REFL PAV MRK TY I (W) (6") (SLD)
- (D) REFL PAV MRK TY I (W) (8") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
- (F) REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
- (G) REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B / DETAIL I)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
SIGNING & PAVEMENT MARKINGS

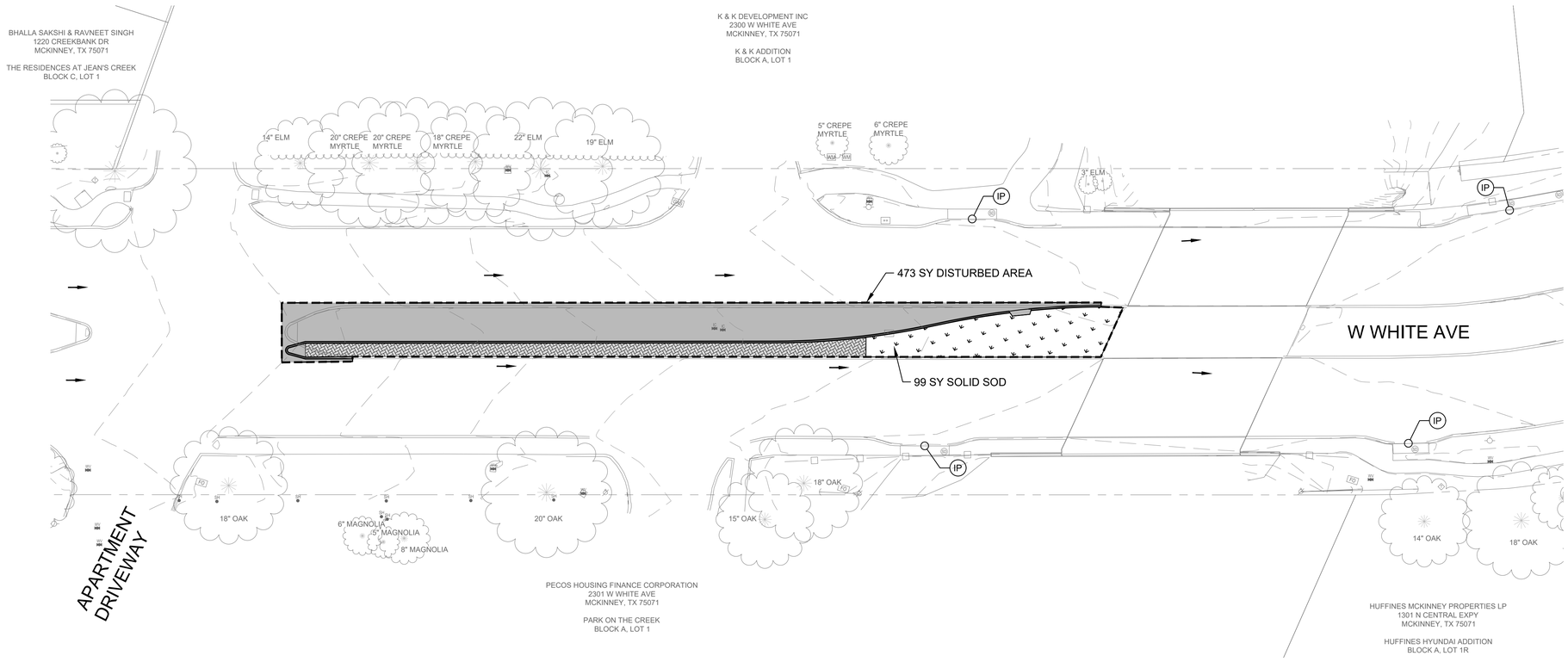
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 13

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_RDWY_WHITE&WCREEK.dwg - Plotted: 1/5/2026



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0 10' 20' 40'

SCALE: 1"= 20'

LEGEND

- FLOW ARROW
- IP — INLET PROTECTION W/ TYPE P-2 FILTER SEE CITY DETAIL 1130M
- SOD
- DISTURBED AREA

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO
WESTCREEK RANCH APARTMENTS
EROSION CONTROL PLAN

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 14

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_EROS.dwg - Plotted: 1/5/2026

LEGEND

PROP. IMPROVEMENTS IN PHASE

VERTICAL PANELS/ BARRELS

TYPE III BARRICADE

DIRECTION OF TRAFFIC FLOW

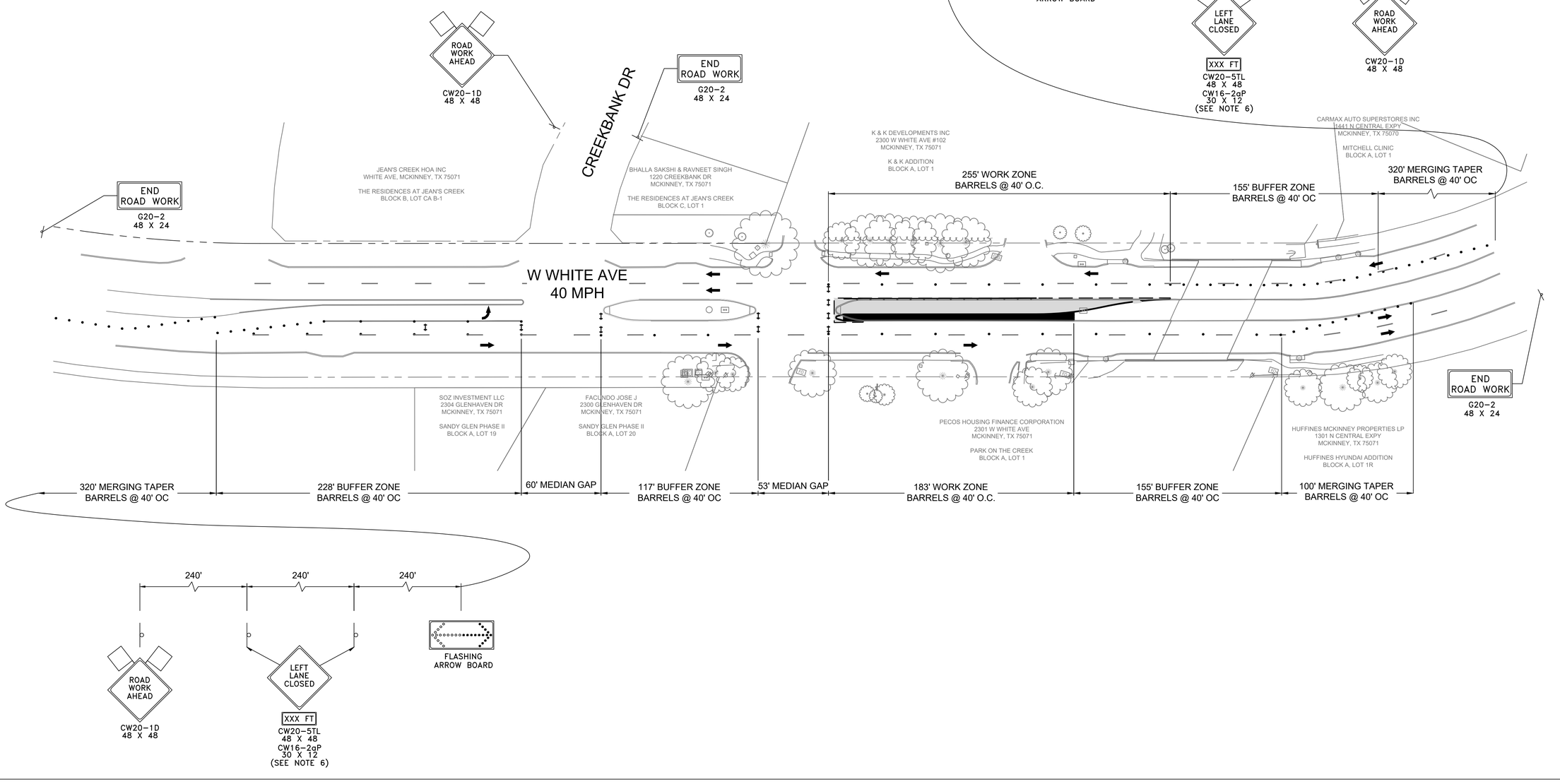
NOTES:

1. REFER TO TXDOT STANDARDS BC-21 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON RADIUS IN CONFORMANCE WITH TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
4. ALL DIMENSIONS AND QUANTITIES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
5. CONTRACTOR WILL PROVIDE SIGNED AND SEALED SITE SPECIFIC TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES IF TRAFFIC CONTROL IS MODIFIED FROM WHAT IS SHOWN ON THE PLANS OR IF ADDITIONAL TRAFFIC CONTROL IS REQUIRED FOR CONSTRUCTION.
6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS
   M-F: 9:00 AM - 4:00 PM

!!! WARNING !!!

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NO.	DATE	COMMENT

REVISIONS

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PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & DRIVEWAY TO WESTCREEK RANCH APARTMENTS
TRAFFIC CONTROL PLAN

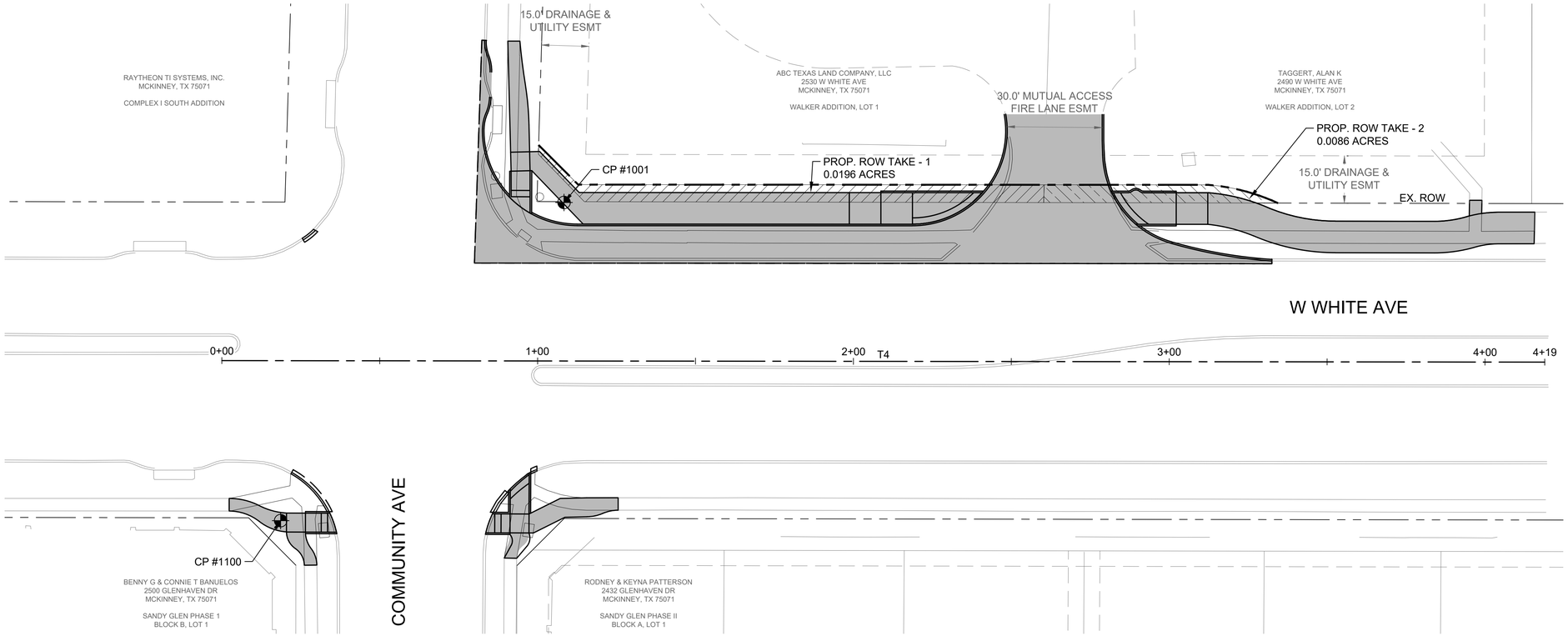
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Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 15

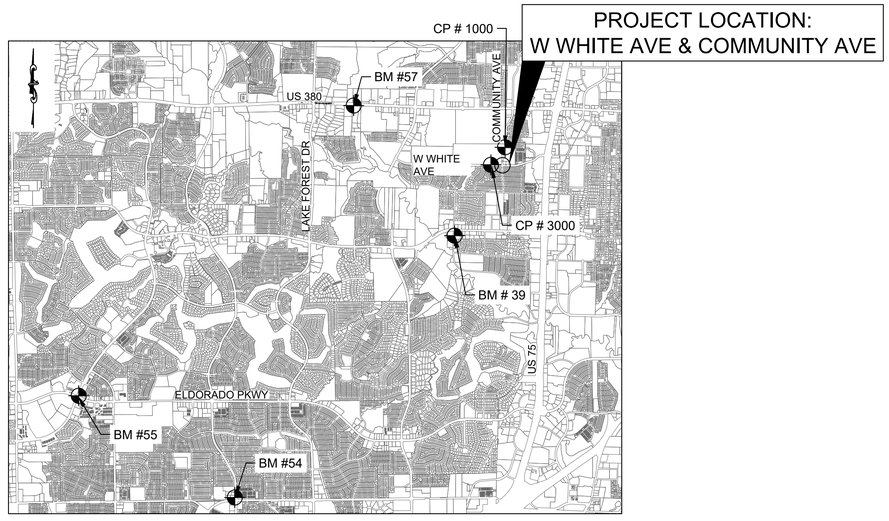
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PROJECT CONTROL						
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING	FOUND/SET	DESCRIPTION
39	BM	577.765	7124859.6563	2533262.5685	FOUND	CAP IN CONC CITY OF MCKINNEY
54	BM	733.180	7110698.4348	2521361.2605	FOUND	ALUMINUM DISK CITY OF MCKINNEY
55	BM	747.300	7116207.0698	2512908.2473	FOUND	ALUMINUM DISK CITY OF MCKINNEY
57	BM	606.460	7131924.2600	2527809.9798	FOUND	ALUMINUM DISK CITY OF MCKINNEY
1000	CP	652.262	7129663.3868	2535999.1833	SET	REBAR W/ CAP 5/8 in OC CFA
1001	CP	639.313	7128703.8183	2535893.6462	SET	REBAR W/ CAP 5/8 in
1100	CP	637.975	7128603.9880	2535802.8914	SET	60D NAIL SET IN GRASS
3000	CP	642.964	7128702.8641	2535234.0575	SET	REBAR W/ CAP 5/8 in OC CFA

ALL DISTANCE AND COORDINATES SHOWN HERON ARE SURFACE VALUES DISPLAYED IN US SURVEY FEET, TEXAS COORDINATE SYSTEM OF 1963, NORTH CENTRAL ZONE, AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT. THESE VALUES MAY BE CONVERTED TO GRID VALUES BY DIVIDING THOSE SURFACE VALUES BY A SURFACE ADJUSTMENT FACTOR OF 1.00152710.

ALIGNMENT TABLE				
LINE	START N/E	BEARING	LENGTH	END N/E
T4	7128654.78/2535784.73	S 89°21'18" E	418.92'	7128650.06/2536203.63



NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
PROJECT LAYOUT & CONTROL

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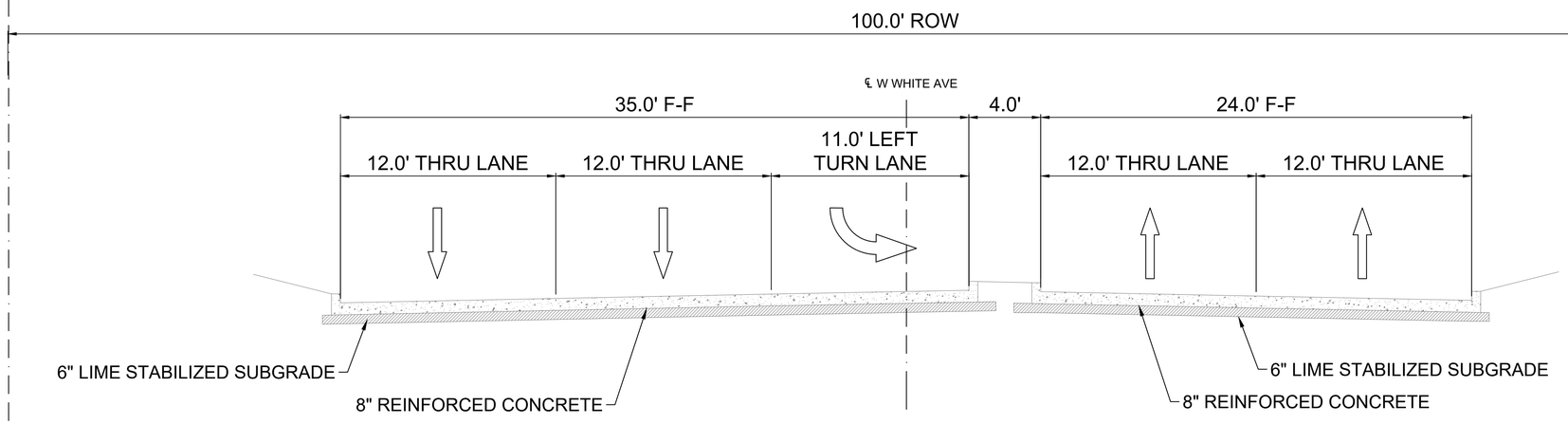
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PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

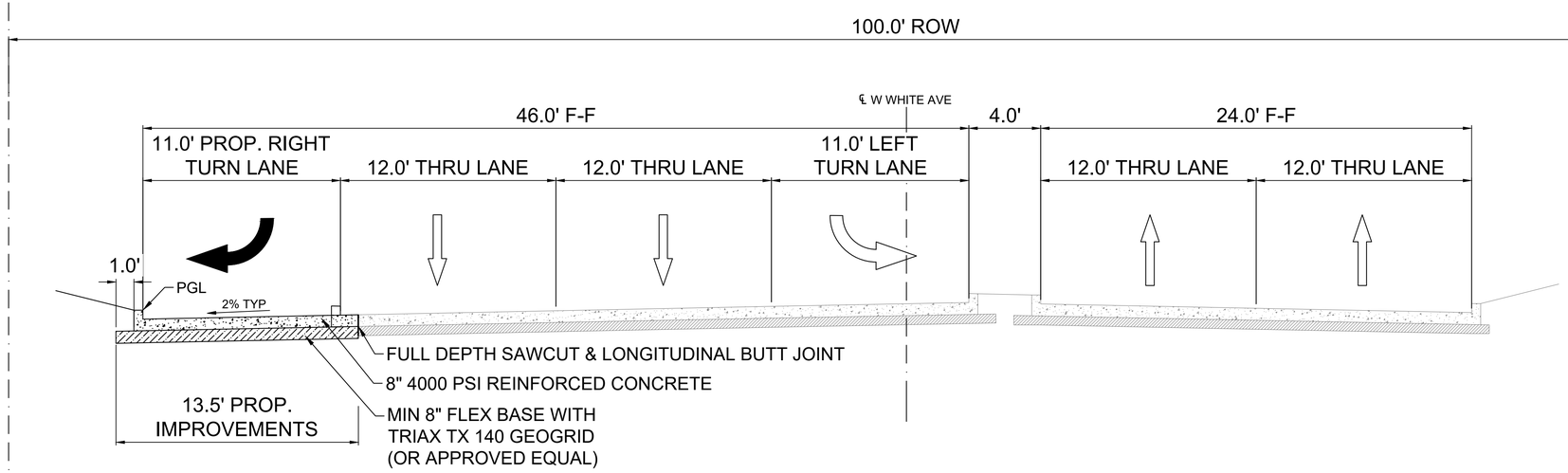
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16

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NOTE
EXISTING TYPICAL SECTION BASED ON CITY OF MCKINNEY PROJECT: W WHITE AVENUE EXTENSION WEST - 1990.



WB W WHITE AVE - EXISTING
NTS



WB W WHITE AVE - PROPOSED
RIGHT TURN LANE AT COMMUNITY AVE
NTS

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
TYPICAL SECTION

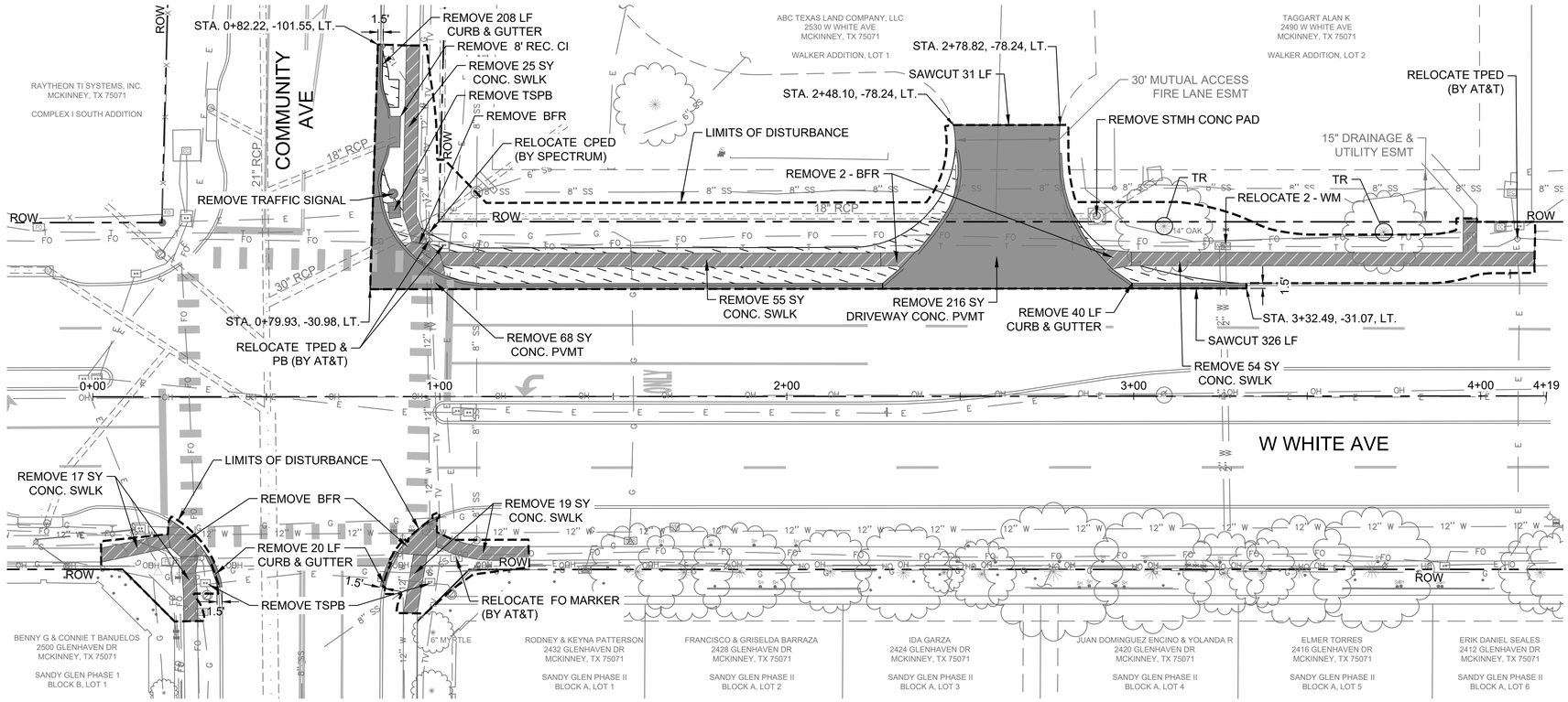
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
17

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0 10' 20' 40'

SCALE: 1"= 20'

LEGEND

- CONC. PVMT REMOVAL
- CONC. SIDEWALK REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA
- TREE REMOVAL (TR)

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. CONTRACTOR SHALL SAWCUT AND LEAVE IN PLACE A 10'X10' CONCRETE WEDGE OR FILL 10'X10' CORNER WITH HOT MIX ASPHALT (HMAC) AT IMPROVEMENTS TO RIGHT TURN LANES. MATERIAL WILL REMAIN IN PLACE TILL TIME TO PREPARE SUBGRADE AND POUR CONCRETE. (NO PAY ITEM)

NO.	DATE	COMMENT

REVISIONS

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STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 W WHITE AVE & COMMUNITY AVE REMOVAL PLAN

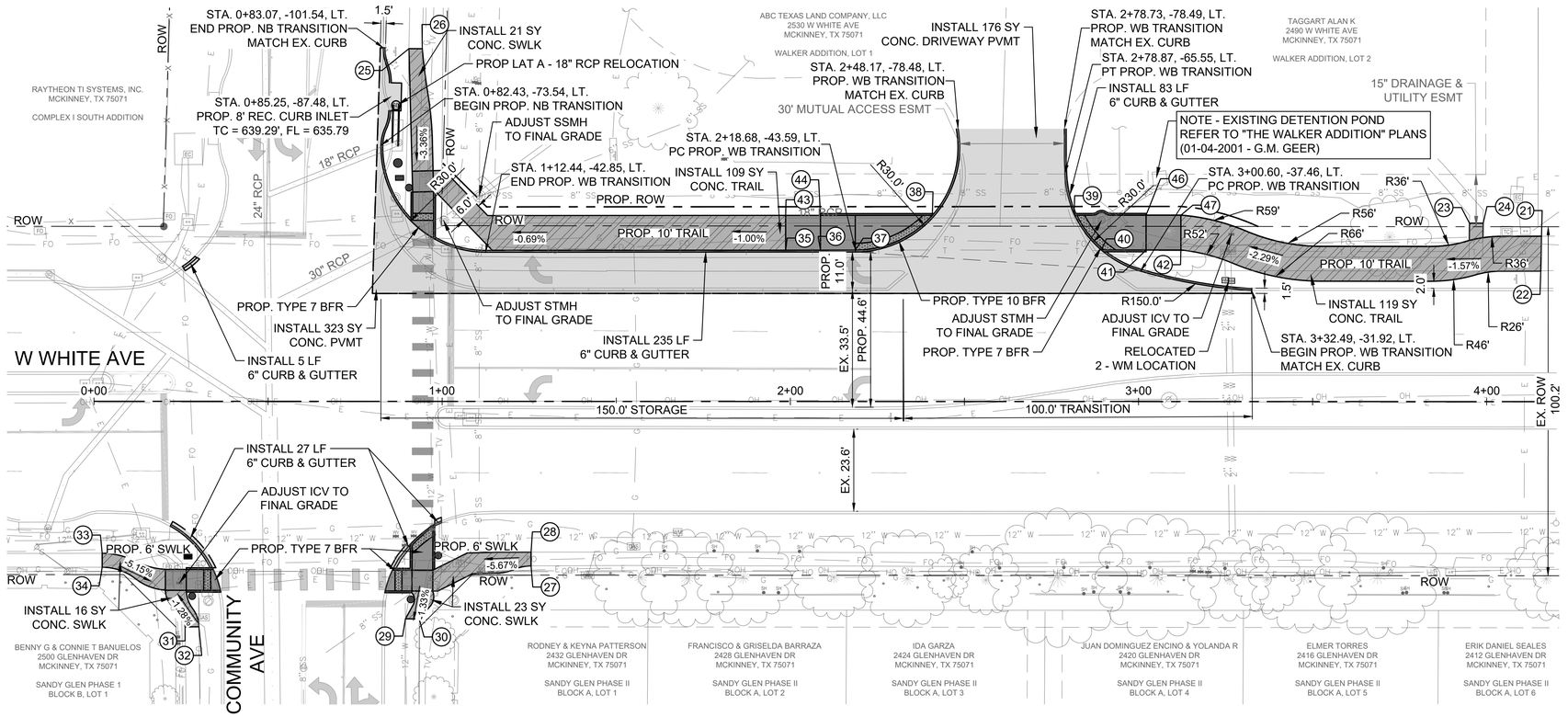
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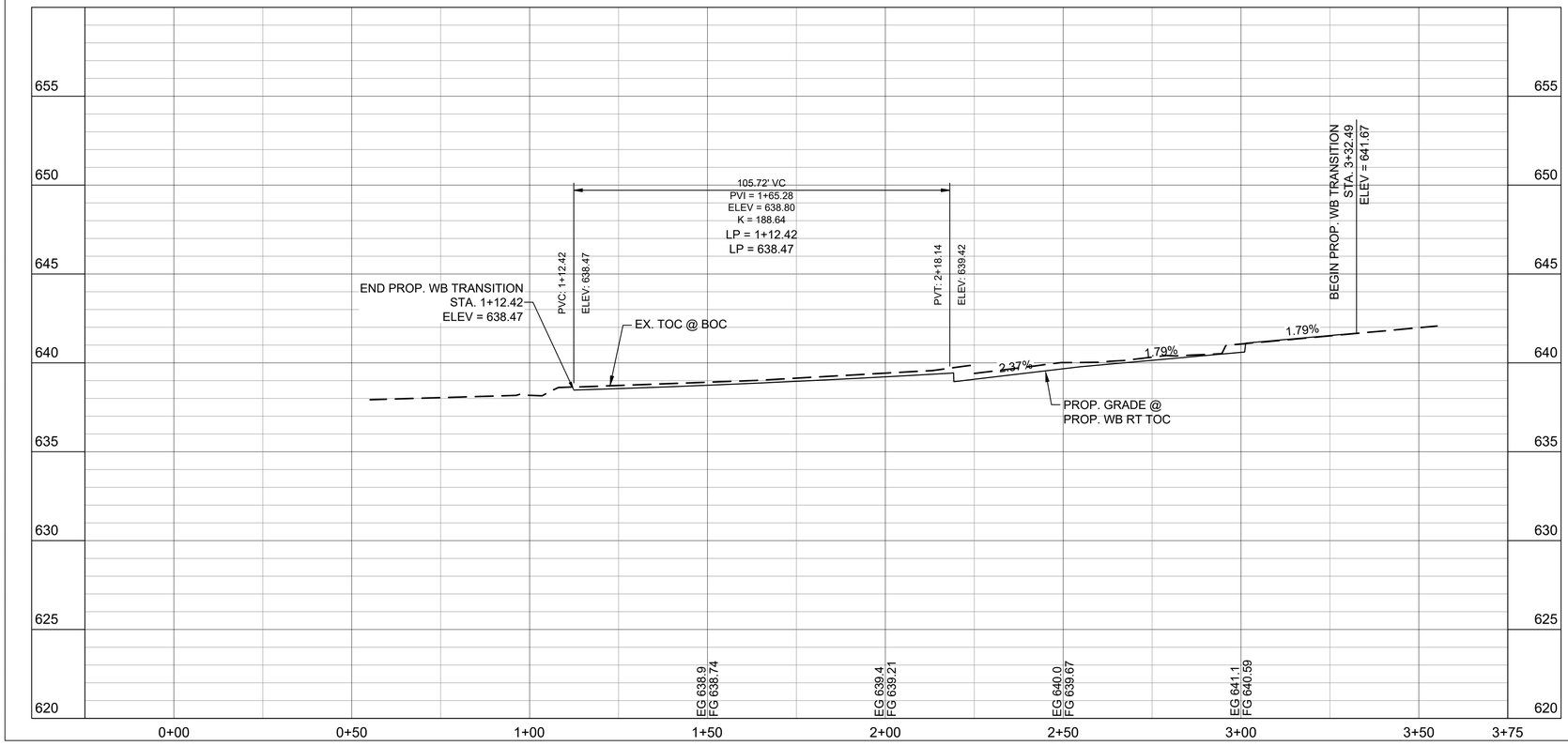
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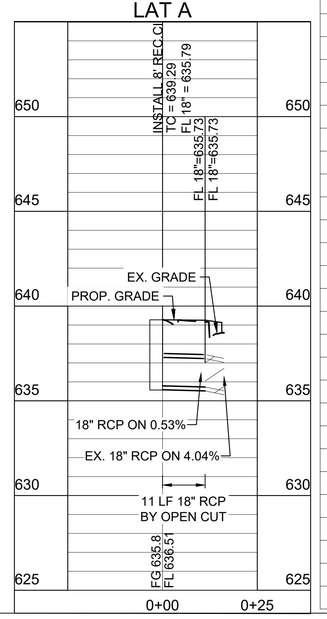
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 18

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RMVL.dwg - Plotted: 1/5/2026







NOTES:

1. CONTRACTOR WILL POTHOLE AND FIELD VERIFY EXISTING UTILITIES AT PROPOSED PEDESTRIAN AND SIGNAL POLE LOCATIONS PRIOR TO CONSTRUCTION. REFER TO SIGN POLE LAYOUT SHEETS FOR DETAILS ON PROPOSED LOCATIONS (NON-PAY ITEM).
2. CONTRACTOR WILL PROVIDE LONGITUDINAL BUTT JOINTS BETWEEN EXISTING AND PROPOSED CONCRETE PAVEMENT (NON-PAY ITEM).
3. CONTRACTOR SHALL FIELD VERIFY LOCATION & FL ELEVATION OF PROPOSED STORM CONNECTION PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION IF FIELD CONDITIONS DIFFER FROM DESIGN.
4. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
5. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.

Point Table			
Point #	Northing	Easting	ELEVATION
21	7128697.5833	2536200.9692	643.41
22	7128687.6408	2536200.6570	643.26
23	7128701.5552	2536180.3216	0.00
24	7128701.5078	2536184.2525	0.00
25	7128755.0304	2535876.3095	639.91
26	7128754.9820	2535880.1370	640.09
27	7128606.1371	2535909.7484	638.94
28	7128610.0742	2535909.7826	638.93
29	7128591.3591	2535873.5192	637.16
30	7128591.2361	2535877.4668	637.30
31	7128589.7182	2535810.1822	637.54
32	7128589.7244	2535814.1485	637.47
33	7128611.1091	2535786.6069	638.21
34	7128607.1164	2535786.5626	638.43
35	7128695.9617	2535983.8570	639.27
36	7128695.8574	2535993.8565	639.44
37	7128695.7531	2536003.8560	639.37
38	7128705.5218	2536026.0950	639.87
39	7128705.5975	2536066.7951	640.82
40	7128695.0157	2536074.5457	640.56
41	7128694.8821	2536087.3685	641.03
42	7128694.7779	2536097.3680	641.35
43	7128705.9611	2535983.9613	639.47
44	7128705.8569	2535993.9608	639.64
46	7128704.8819	2536087.4727	641.23
47	7128704.7776	2536097.4722	641.55

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: H 1" = 20'
V 1" = 4'

LEGEND

- PROP. 8" REINF. CONC.
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
PAVING PLAN & PROFILE

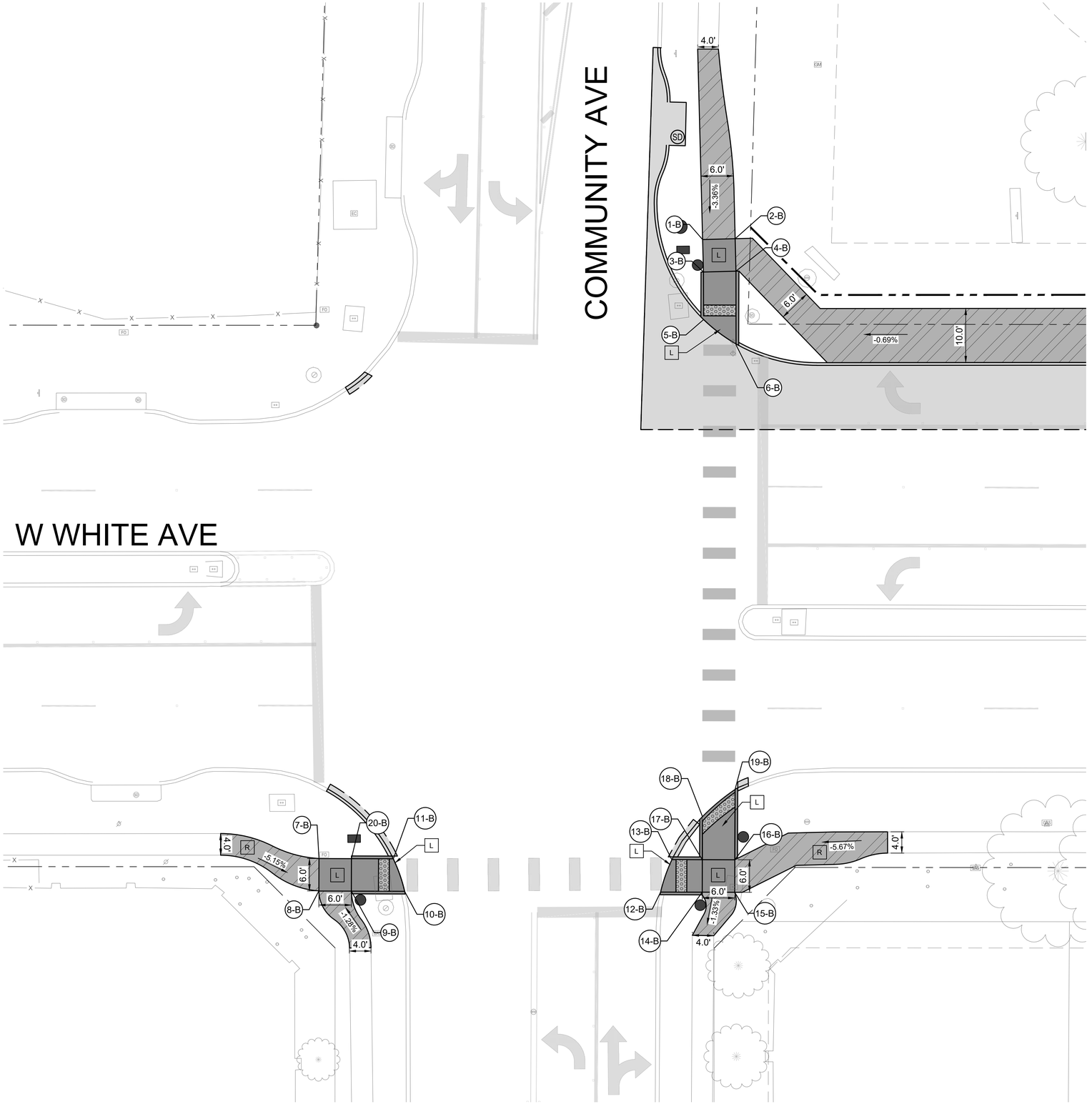
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Land Surveying Firm Registration No. 10046700
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972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 19

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_RDWY_WHITE&COMMUNITY.dwg - Plotted: 1/5/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 5' 10' 20'

SCALE: H 1" = 20'

LEGEND

- PROP. IMPROVEMENTS
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- L — LANDING - 2.0% MAX
- R — RAMP - 8.3% MAX, 5.0% MIN

Point Table			
Point #	Northing	Easting	ELEVATION
1-B	7128719.8328	2535876.8352	638.35
2-B	7128719.9226	2535882.8481	638.23
3-B	7128713.8335	2535876.9248	638.22
4-B	7128713.9231	2535882.9256	638.11
5-B	7128705.0453	2535876.8534	638.05
6-B	7128700.3185	2535882.7876	637.95
7-B	7128606.2954	2535804.7218	637.45
8-B	7128600.3230	2535804.6380	637.55
9-B	7128600.2095	2535810.6370	637.43
10-B	7128600.0714	2535820.4754	637.11
11-B	7128606.0711	2535818.4516	637.18
12-B	7128599.4082	2535867.7440	636.93
13-B	7128605.3791	2535869.8666	637.23
14-B	7128599.3004	2535875.4330	637.27
15-B	7128599.2162	2535881.4324	637.69
16-B	7128605.2226	2535881.5167	637.35
17-B	7128605.2998	2535875.5172	637.18
18-B	7128613.2512	2535875.6287	637.71
19-B	7128618.2028	2535881.6988	638.04
20-B	7128606.1797	2535810.7098	637.32

NOTES:

1. ALL PROPOSED SIDEWALK WILL BE A MINIMUM OF 48" WIDE.
2. SIDEWALK WILL HAVE A CROSS SLOPE NO GREATER THAN 2% TOWARDS THE BACK OF CURB.
3. CURB RAMP LANDINGS WILL BE SLOPED NO GREATER THAN 2% IN EVERY DIRECTION AND NO SMALLER THAN 4'X4'.
4. LENGTH OF RAMP IS NOT TO EXCEED 15 FEET TO ACHIEVE DESIRED ELEVATION CHANGE.
5. ALL NEW SIDEWALKS, CURB RAMPS, AND CROSSWALKS INSTALLED WILL CONFORM TO THE MOST CURRENT ADA/PROWAG GUIDELINES.
6. CURBS WILL TRANSITION FROM 0" HEIGHT CURB AT THE RAMP TO 6" HEIGHT CURB TO MATCH EXISTING PAVEMENT CURB AT ALL RAMP LOCATIONS.
7. QUANTITY OF CURB IN LINEAR FEET (LF) INCLUDES CURB INSTALLED ALONG THE LENGTH OF RAMP AND SIDEWALK. CURB INSTALLED ADJACENT TO ROADWAY PAVEMENT IS CONSIDERED SUBSIDIARY TO THE RAMP (NON-PAY ITEM).
8. PASSING SPACES (5'X5' MIN.) WILL BE PROVIDED FOR NEW SIDEWALK AT A MAXIMUM SPACING OF 200' WHERE CLEAR WIDTH OF SIDEWALK IS LESS THAN 5'.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS — PRIYA MISTRY — 125226 — LICENSED PROFESSIONAL ENGINEER — 01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
PEDESTRIAN RAMP LAYOUT

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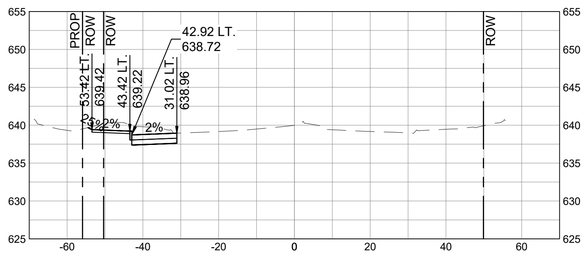
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Land Surveying Firm Registration No. 10046700
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DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

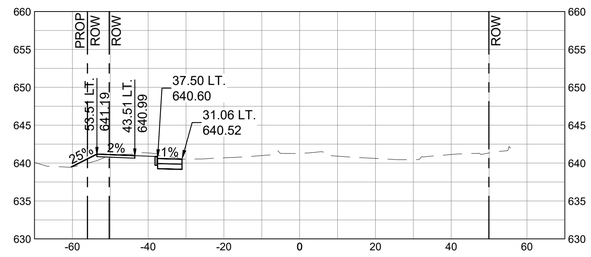
SHEET 20

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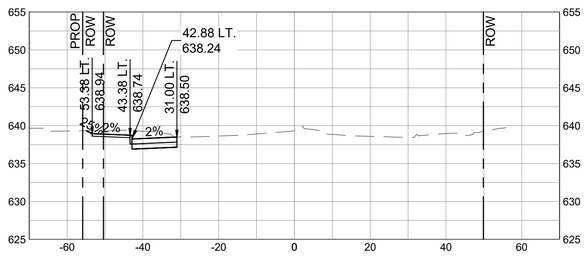
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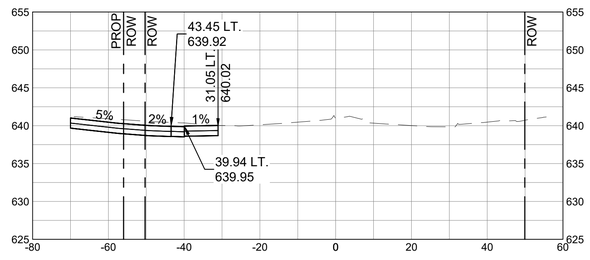
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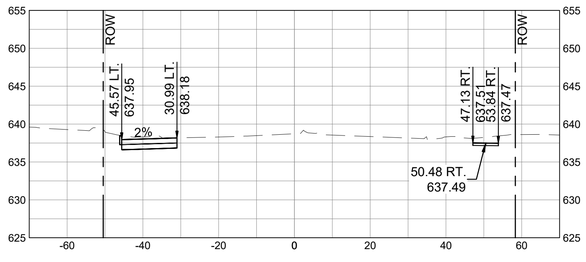
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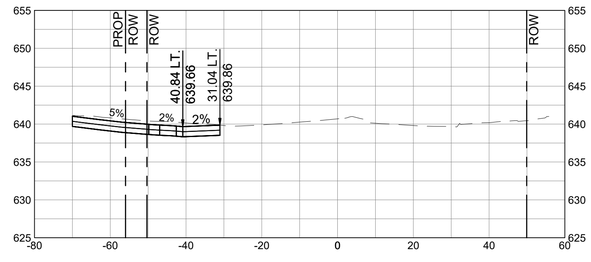
2+63.43



1+00



2+50



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

NO.	DATE	COMMENT

REVISIONS

0 5' 10' 20'

SCALE: H 1" = 20'
V 1" = 10'

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
CROSS SECTIONS

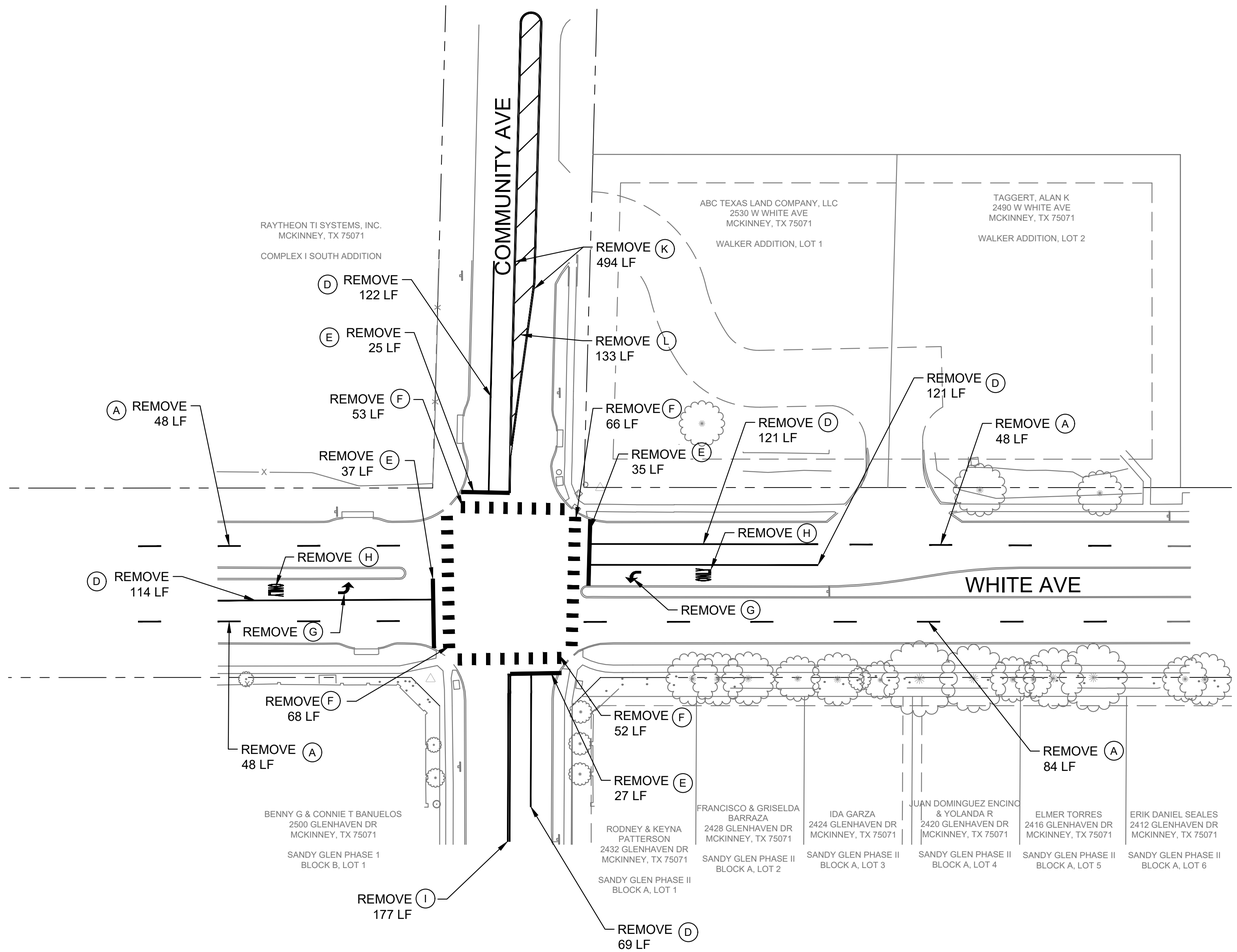
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 21

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_ROWY_WHITE&COMMUNITY.dwg - Plotted: 1/5/2026



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811 Know what's below. Call before you dig.

0 20' 40' 80'

SCALE: 1"= 40'

LEGEND

A	REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
B	REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
C	REFL PAV MRK TY I (W) (6") (SLD)
D	REFL PAV MRK TY I (W) (8") (SLD)
E	REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
F	REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
G	REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
H	REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
I	REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
J	REFL PAV MRK TY I (Y) (6") (SLD)
K	REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
L	REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
M	REFL PAV MRK TY II-C-R (7002M - DETAIL B / DETAIL I)
N	REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAILS FOR ADDITIONAL INFORMATION.

REVISIONS

NO.	DATE	COMMENT

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STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
SIGNING & PAVEMENT MARKINGS REMOVAL

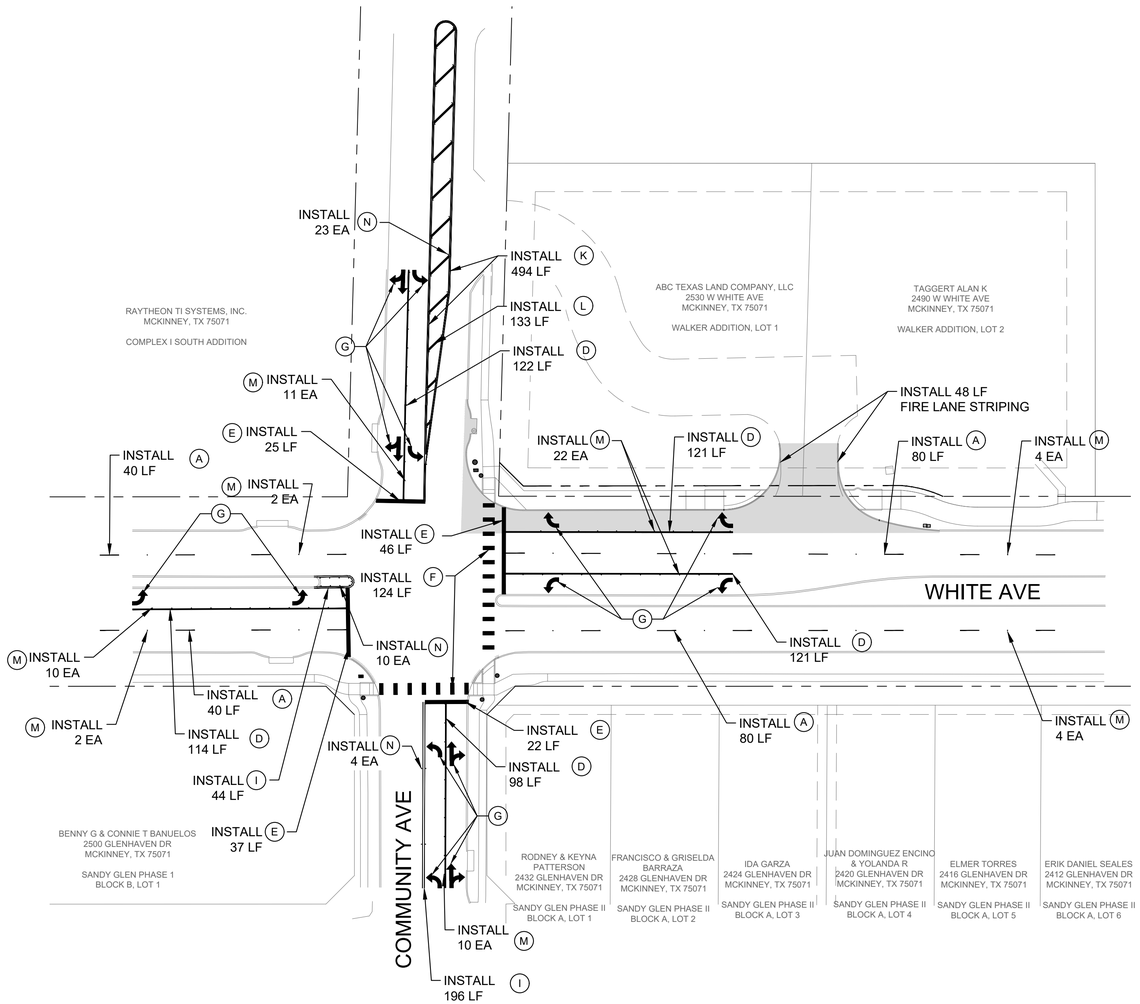
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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 22

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640I1_RMVL_MRKG.dwg - Plotted: 1/5/2026



!!! WARNING !!!

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811 Know what's below. Call before you dig.

0 20' 40' 80'

SCALE: 1"= 40'

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
- (C) REFL PAV MRK TY I (W) (6") (SLD)
- (D) REFL PAV MRK TY I (W) (8") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
- (F) REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
- (G) REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B / DETAIL I)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAIL FOR ADDITIONAL INFORMATION.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
SIGNING & PAVEMENT MARKINGS

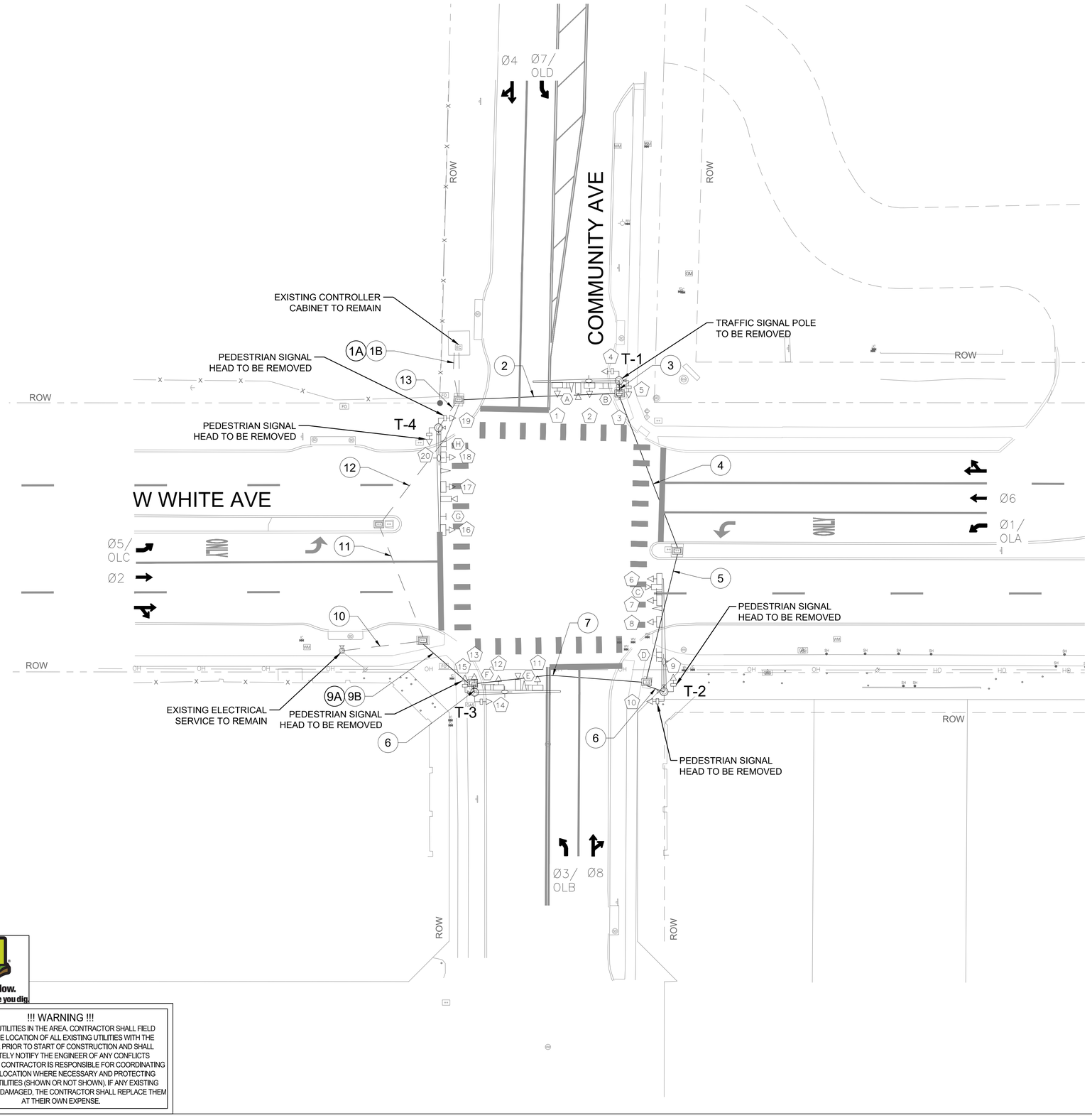
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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
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DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 23

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RDWY_WHITECOMMUNITY.dwg - Plotted: 1/5/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- (14) SIGNAL HEAD INDICATION LABEL
- (B) SIGN INDICATION LABEL
- (8) CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
- EXIST / PROP LED LUMINAIRE FIXTURE
- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
- EXIST / PROP VIVDS CAMERA
- EXIST / PROP OPTICOM DETECTOR
- EXIST / PROP TRAFFIC SIGNAL CABINET
- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 10' 20' 40'
SCALE: H 1" = 20'
V 1" = 5'

Know what's **below.** **Call** before you dig.

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 W WHITE AVE & COMMUNITY AVE TRAFFIC SIGNAL EXISTING LAYOUT

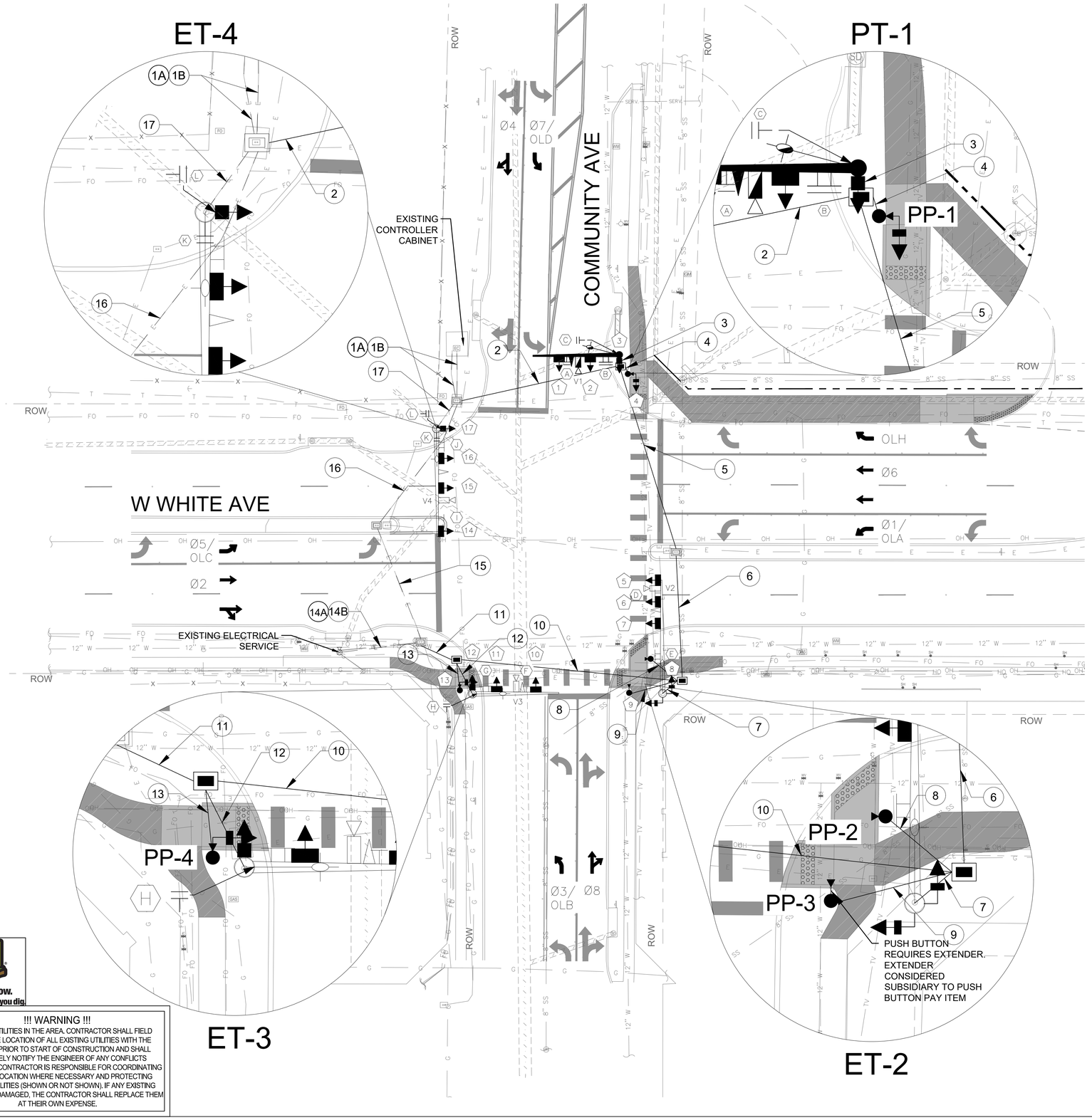
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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 24

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\02-Sheets\Existing\231206401_SIGNAL_WHITE&COMMUNITY.dwg - Plotted: 1/6/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- 14 SIGNAL HEAD INDICATION LABEL
- B SIGN INDICATION LABEL
- 8 CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
- EXIST / PROP LED LUMINAIRE FIXTURE
- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
- EXIST / PROP VIVDS CAMERA
- EXIST / PROP OPTICOM DETECTOR
- EXIST / PROP TRAFFIC SIGNAL CABINET
- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 10' 20' 40'
SCALE: H 1" = 20'
V 1" = 5'

NOTE:
1. PROPOSED LUMINAIRES TO BE INSTALLED PARALLEL TO MAST ARMS.
2. ALL EXISTING SIGNAL HEADS ARE TO BE REPLACED WITH NEW SIGNAL HEADS.

811 Know what's below. Call before you dig.

!!! WARNING !!!
EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
TRAFFIC SIGNAL PROPOSED LAYOUT

McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 25

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\03_Sheets\Proposed\23120641_PROPOSED_WHITE&COMMUNITY.dwg - Plotted: 1/6/2026

TRAFFIC SIGNAL CONDUIT SUMMARY

RUN NO.	CONDUIT SIZE/TYPE (FEET)						ELECTRICAL CONDUCTORS (FEET)				AXIS CAMERA CABLE	OPTICOM CABLE	2 CNDR. CABLE (#12 AWG) (TY C)	SIGNAL CABLES (TY A) (FEET)		LENGTH OF RUN (FEET)
	2" PVC - Trenched	**2" PVC - Bored**	3" PVC - Trenched	**3" PVC - Bored**	4" PVC - Trenched	**4" PVC - Bored**	STATUS	NO. 6XHW POWER CABLE	NO. 8XHW POWER CABLE (ILLUM)	NO. 6 BARE WIRE				10 CNDR. CABLE (#14 AWG)	20 CNDR. CABLE (#14 AWG)	
1A							E	3	4	1	2	2	2	2	2	20
1B							E		4	1	2	2	2	2	2	20
2				60			P		2	1	1	1	1	1	2	60
3			5				P		2	1	1	1			1	5
4	5						P			1			1	1		5
5				70			P			1			2	2		70
6				45			P			1			2	2		45
7			10				P		2	1	1	1			1	10
8							P			1			1	1		15
9							P			1			1	1		20
10				80			P		2	1	1	1			1	80
11			15				P		4	1	2	2	1	1	2	15
12			15				P		2	1	1	1		1	1	15
13							P			1			1			10
14A							E	2		1						45
14B							E	1		1						55
15							E	3	4	1	2	2	1	1	2	55
16							E	3	4	1	2	2	1	1	2	40
17							E		2	1	1	1			1	15
CABLE TOTALS (LF)								490	970	600	485	485	530	535	545	
NEW CABLE TOTALS (LF)	5	0	45	255	0	0		0	440	390	260	260	435	440	320	

NOTES:
THIS CHART DOES NOT REFLECT THE QUANTITIES OF CABLE INSIDE THE POLE.
E = EXISTING, P = PROPOSED

2" TRENCH	5
2" BORE	0
3" TRENCH	45
3" BORE	255
4" TRENCH	0
4" BORE	0

ELECTRICAL SERVICE DATA

I.D.	DESCRIPTION	SERVICE CONDUIT SIZE	SERVICE CONDUCTOR NO/SIZE	SAFETY SWITCH AMPS	MAIN DISCONNECT CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANELBD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT AMPS	KVA LOAD
1	ELEC SERV TY D (120/240) 070 (NS) AL (E) PS (U)	2"	3/#4	N/A	2P/70	30	100	T.S. ILSN/LIGHTING	1P/50 2P/15	<7.1

CABLE TERMINATION CHART - SIGNAL AND PEDESTRIAN POLES

	CONDUCTOR COLOR	CABLE 1	CABLE 2	CABLE 3	CABLE 4	CABLE 5	CABLE 6	CABLE 7	CABLE 8
		20 CNDR	10 CNDR	2 CNDR	20 CNDR	2 CNDR	20 CNDR	2 CNDR	20 CNDR
		FROM CNTRL TO PT-1	FROM CNTRL TO PP-1	FROM CNTRL TO PP-2	FROM CNTRL TO ET-2	FROM CNTRL TO PP-3	FROM CNTRL TO ET-3	FROM CNTRL TO PP-4	FROM CNTRL TO ET-4
1	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 1, 2, 3 Ø8 R	SPARE	SPARE	SH 5, 6, 7 Ø2 R	SPARE	SH 10, 11, 12 Ø4 R	SPARE	SH 14, 15, 16, 17 Ø6 R
4	GREEN	SH 1, 2, 3 Ø8 G	SPARE	SPARE	SH 5, 6, 7 Ø2 G	SPARE	SH 10, 11, 12 Ø4 G	SPARE	SH 14, 15, 16, 17 Ø6 G
5	ORANGE	SH 1, 2, 3 Ø8 Y	SPARE	SPARE	SH 5, 6, 7 Ø2 Y	SPARE	SH 10, 11, 12 Ø4 Y	SPARE	SH 14, 15, 16, 17 Ø6 Y
6	BLUE	SH COM	SPARE	SPARE	SH COM	SPARE	SH COM	SPARE	SH COM
7	WHITE/BLACK	SPARE	Ø8 PED CALL	Ø8 PED CALL	SPARE	Ø2 PED CALL	SPARE	Ø2 PED CALL	SPARE
8	RED/BLACK	SPARE	PB COM	PB COM	SPARE	PB COM	SPARE	PB COM	SPARE
9	GREEN/BLACK	SPARE	SH 4 Ø8 DW	SPARE	SH 8 Ø8 DW	SPARE	SH 13 Ø2 DW	SPARE	SPARE
10	ORANGE/BLACK	SPARE	SH 4 Ø8 W	SPARE	SH 8 Ø8 W	SPARE	SH 13 Ø2 W	SPARE	SPARE
11	BLUE/BLACK	SPARE			SPARE		SPARE		SPARE
12	BLACK/WHITE	SPARE			SH 9 Ø2 DW		SH 13 Ø4 DW		SPARE
13	RED/WHITE	SPARE			SH 9 Ø2 W		SH 13 Ø4 W		SPARE
14	GREEN/WHITE	SH 1 Ø3 YA LT			SH 5 Ø5 YA LT		SH 10 Ø7 YA LT		SH 14 Ø1 YA LT
15	BLUE/WHITE	SH 1 Ø3 GA LT			SH 5 Ø5 GA LT		SH 10 Ø7 GA LT		SH 14 Ø1 GA LT
16	BLACK/RED	Ø8 RED LIGHT CONFIRM			Ø2 RED LIGHT CONFIRM		Ø4 RED LIGHT CONFIRM		Ø6 RED LIGHT CONFIRM
17	WHITE/RED	SH 1 OLB FYA LT			SH 5 OLC FYA LT		SH 10 OLD FYA LT		SH 14 OLA FYA LT
18	ORANGE/RED	SPARE			SPARE		SPARE		SH 17 OLH YA RT
19	BLUE/RED	SPARE			SPARE		SPARE		SH 17 OLH GA RT
20	RED/GREEN	SPARE			SPARE		SPARE		SPARE

R = RED BALL; Y = YELLOW BALL; G = GREEN BALL; RA = RED ARROW; YA = YELLOW ARROW; GA = GREEN ARROW
FYA = FLASHING YELLOW ARROW; RT = RIGHT TURN; LT = LEFT TURN

REVISIONS

NO.	DATE	COMMENT



INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
SIGNAL DESIGN TABLES

McKINNEY TEXAS
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2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
KFR	GK
DATE:	JOB NUMBER:
1/6/2026	2312-064-01

SHEET
26

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SIGNAL HEADS												
SIGNAL HEAD NUMBER	SIGNAL HEAD TYPE	BACKPLATE			12" SIGNAL INDICATION						PED SIG SEC COUNTDOWN LED LAMP	STATUS
					VEH SIGNAL SEC WITH LED LAMP							
		3 SEC	4 SEC	5 SEC	G	GA	Y	YA	R	RA		
		EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
2, 6, 7, 11, 15, 16	H3	6			6		6		6			P
1, 5, 10, 14	H5FYA			4	4	4	4	4	4			P
3, 12	V3	2			2		2		2			P
17	V5RT			1	1	1	1	1	1			P
4, 8, 9, 13	COUNTDOWN										4	P
TOTAL		8	0	5	13	5	13	5	13	0	4	

NOTE 1 - THE CONTRACTOR SHALL NOTIFY THE CITY OF MCKINNEY AT 972.547.7428 AT LEAST 48 HOURS PRIOR TO THE SIGNAL TURN-ON

NOTE 2 - CONTRACTOR SHALL CONTACT THUAN HUYNH WITH THE CITY OF MCKINNEY AT 972.547.2634 FOR SIGNAL PHASING AND TIMING PARAMETERS.

TRAFFIC SIGNAL SIGNS SUMMARY							
			ACTION				LOCATION
ID	TYPE	LEGEND	REMAIN IN PLACE	REMOVE	RELOCATE	FURNISH & INSTALL	
A	R10-12	LEFT TURN YIELD ON GREEN			1		T-1 MAST ARM
B	SN	WHITE AVE			1		T-1 SN ARM
C	R9-3	NO PEDESTRIANS				1	T-1 POLE
D	R10-12	LEFT TURN YIELD ON GREEN	1				T-2 MAST ARM
E	SN	COMMUNITY AVE	1				T-2 SN ARM
F	R10-12	LEFT TURN YIELD ON GREEN	1				T-3 MAST ARM
G	SN	WHITE AVE	1				T-3 SN ARM
H	R9-3	NO PEDESTRIANS				1	T-3 POLE
I	R10-12	LEFT TURN YIELD ON GREEN	1				T-4 MAST ARM
J	SN	COMMUNITY AVE	1				T-4 SN ARM
K	R9-3	NO PEDESTRIANS				1	T-4 POLE
L	R9-3	NO PEDESTRIANS				1	T-4 POLE

SIGNAL HEAD AND POLE PLACEMENT (LF)											
POLE NUMBER	FOUNDATION TYPE	FOUNDATION DEPTH (LF)	A	B	C	D	E	F	G	NO. OF HEADS ON MAST ARM	LUM-A
PT-1	30-A	12	4	11	23	- - -	- - -	32	30	2/1	1
PP-1	24-A	6	PROPOSED PEDESTAL POLE					- - -	10	- - -	- - -
PP-2	24-A	2	PROPOSED PEDESTAL POLE					- - -	10	- - -	- - -
ET-2	EXISTING		24	26	34	42	- - -	42	30	3/1	1
PP-3	24-A	2	PROPOSED PEDESTAL POLE					- - -	10	- - -	- - -
ET-3	EXISTING		4	9	- - -	- - -	- - -	24	30	2/1	1
PP-4	24-A	2	PROPOSED PEDESTAL POLE					- - -	10	- - -	- - -
ET-4	EXISTING		6	11	22	38	- - -	55	30	3/1	1

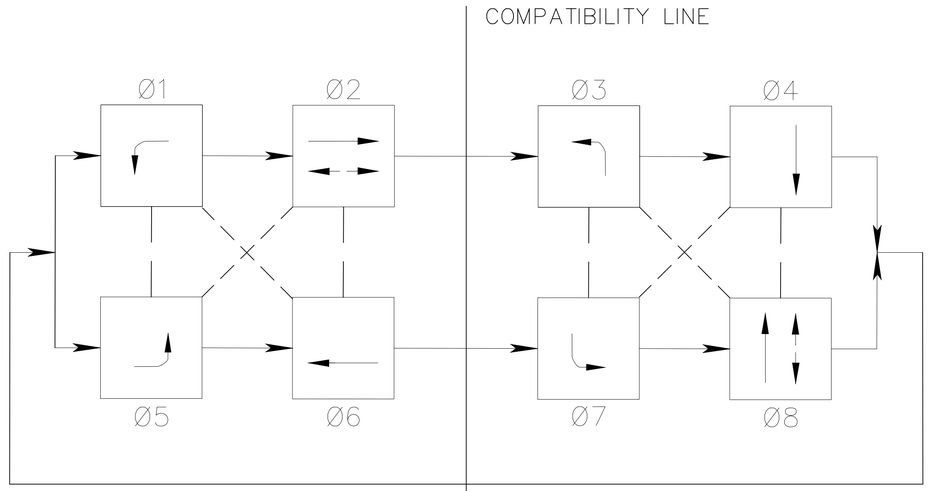
POLE NUMBER	WIRE INSIDE POLE (FEET)				
	2 CNDR CABLE (#12 AWG) (TY C)	5 CNDR CABLE (#14 AWG) (TY A)	7 CNDR CABLE (#14 AWG) (TY A)	OPTICOM	AXIS CAMERA
PT-1	5	40	45	40	35
PP-1	5	10			
PP-2	5				
ET-2		90	60		
PP-3	5				
ET-3		40	40		
PP-4	5				
ET-4		65	70		

QUANTITIES SHOWN ABOVE ARE FOR NEW CABLE ONLY

VEHICLE DETECTION INFORMATION			
VIVIDS DETECTION	STATUS	PHASES	LOCATION
V1	P	Ø3 & Ø8 PRESENCE	T-1 MAST ARM
V2	E	Ø2 & Ø5 PRESENCE	T-2 MAST ARM
V3	E	Ø4 & Ø7 PRESENCE	T-3 MAST ARM
V4	E	Ø1 & Ø6 PRESENCE	T-4 MAST ARM

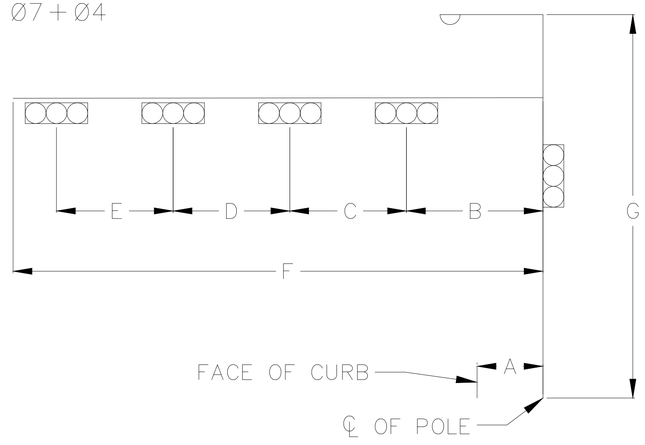
E = EXISTING; P = PROPOSED

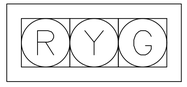
PHASE SEQUENCE



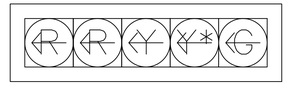
OL A = Ø1 + Ø6
OL B = Ø3 + Ø8
OL C = Ø5 + Ø2
OL D = Ø7 + Ø4

COMPATIBLE PHASES
PEDESTRIAN MOVEMENT

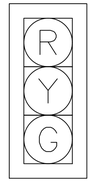




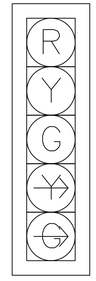
H3



H5FYA



V3



V5RT

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
SIGNAL DESIGN TABLES

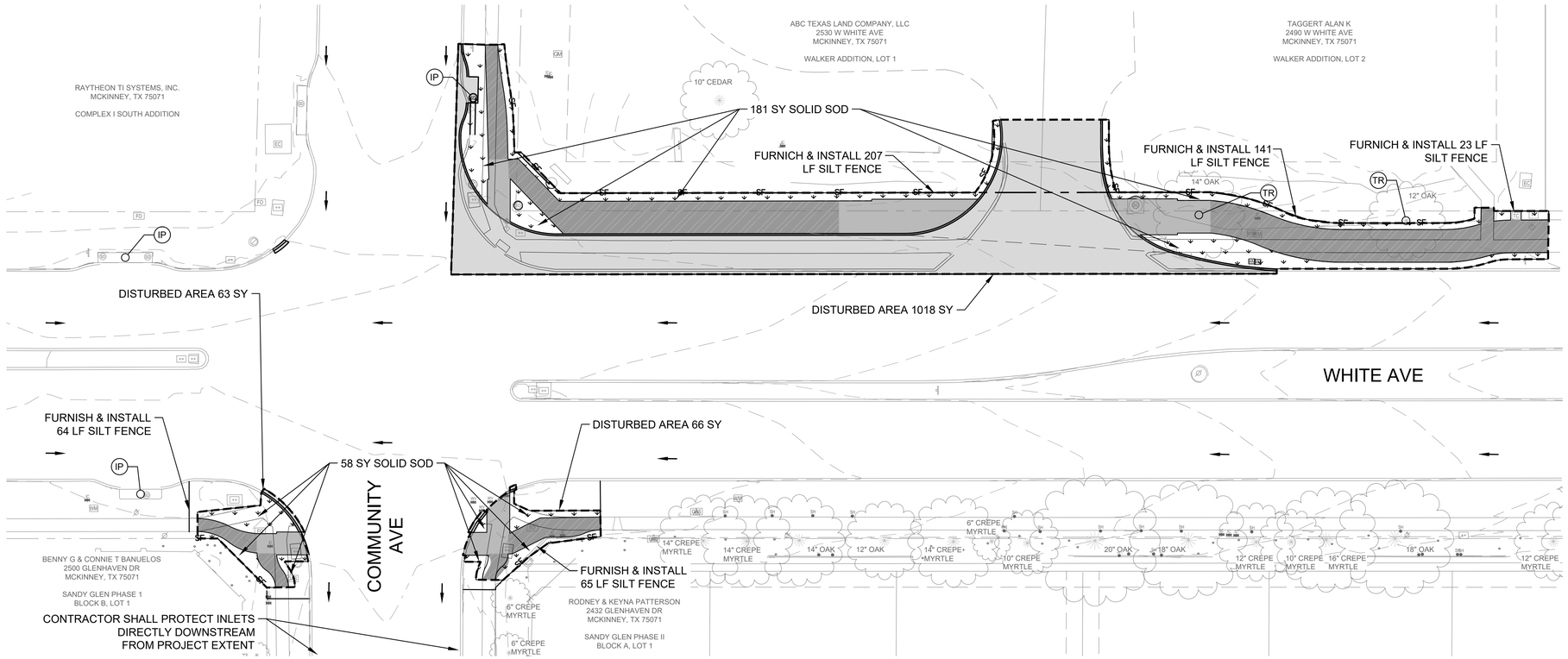
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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
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DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 27

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\02-Sheets\Proposed\23126401_PROPOSED_WHITEECOMMUNITY.dwg - Plotted: 1/6/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20'

LEGEND

- FLOW ARROW
- (IP) INLET PROTECTION W/ TYPE P-2 FILTER SEE CITY DETAIL 1130M
- (TP) TREE PROTECTION
- (TR) TREE REMOVAL
- SF SILT FENCE
- SOD
- DISTURBED AREA

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
W WHITE AVE & COMMUNITY AVE
EROSION CONTROL PLAN

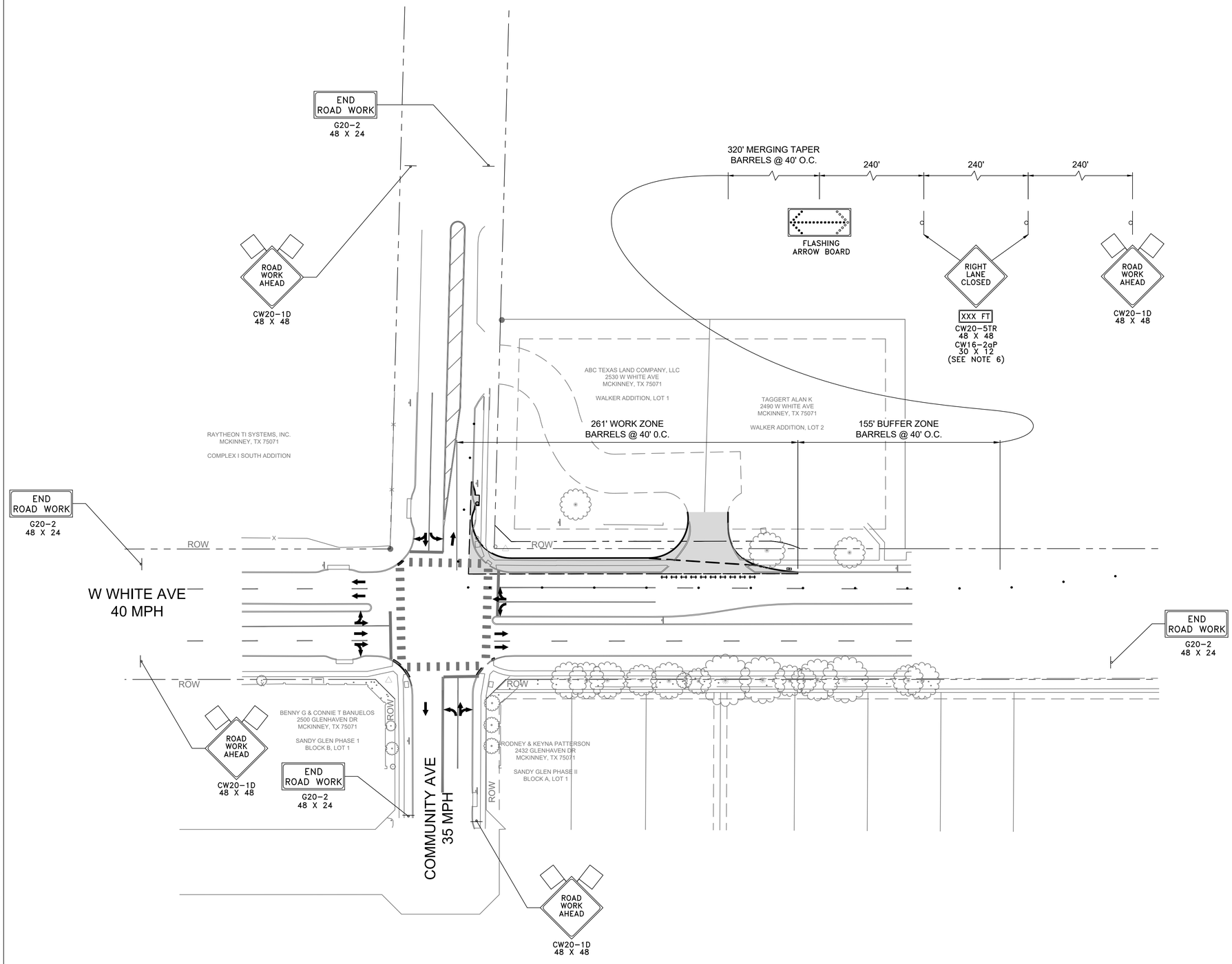
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 28

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640 1_EROS.dwg - Plotted: 1/5/2026



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811 Know what's below. Call before you dig.

0 20' 40' 80'

SCALE: 1"= 40'

LEGEND

- PROP. IMPROVEMENTS IN PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

NOTES:

1. REFER TO TXDOT STANDARDS BC-21 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON RADIUS IN CONFORMANCE WITH TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
4. ALL DIMENSIONS AND QUANTITIES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
5. CONTRACTOR WILL PROVIDE SIGNED AND SEALED SITE SPECIFIC TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES IF TRAFFIC CONTROL IS MODIFIED FROM WHAT IS SHOWN ON THE PLANS OR IF ADDITIONAL TRAFFIC CONTROL IS REQUIRED FOR CONSTRUCTION.
6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS
   M-F: 9:00 AM - 4:00 PM

NO.	DATE	COMMENT

REVISIONS

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STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 W WHITE AVE & COMMUNITY AVE TRAFFIC CONTROL PLAN

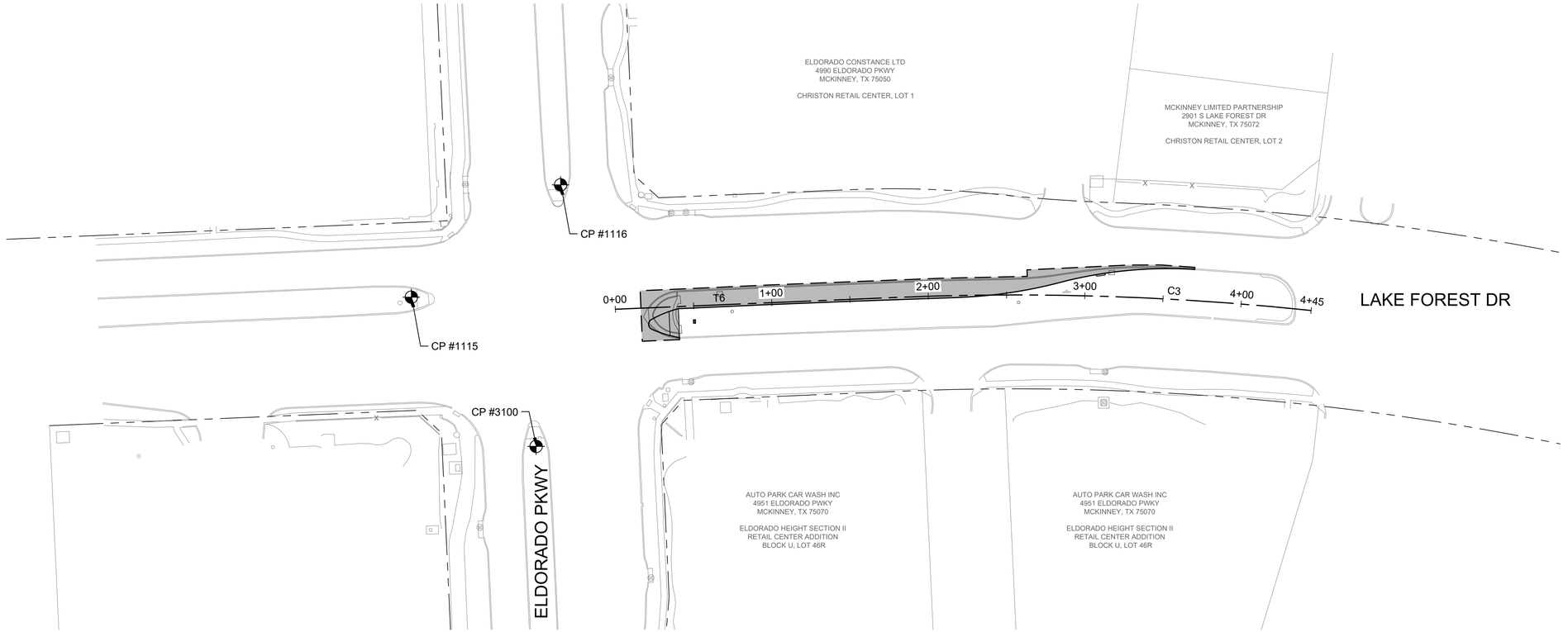
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Frisco, Texas 75034
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PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 29

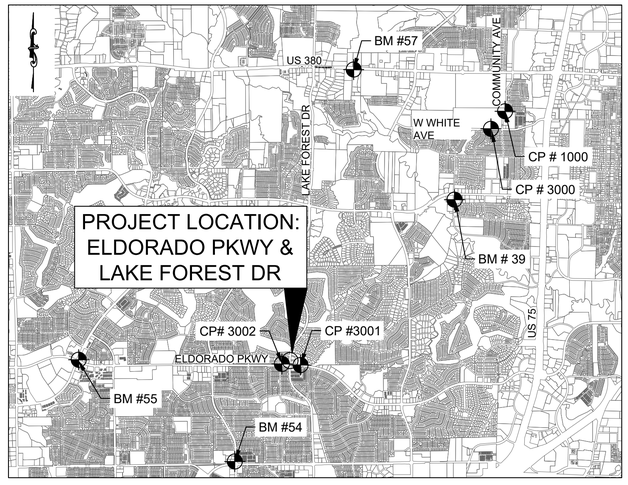
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PROJECT CONTROL						
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING	FOUND/SET	DESCRIPTION
39	BM	577.765	7124859.6563	2533262.5685	FOUND	CAP IN CONC CITY OF MCKINNEY
54	BM	733.180	7110698.4348	2521361.2605	FOUND	ALUMINUM DISK CITY OF MCKINNEY
55	BM	747.300	7116207.0698	2512908.2473	FOUND	ALUMINUM DISK CITY OF MCKINNEY
57	BM	606.460	7131924.2600	2527809.9798	FOUND	ALUMINUM DISK CITY OF MCKINNEY
1000	CP	652.262	7129663.3868	2535999.1833	SET	REBAR W/ CAP 5/8 in OC CFA
1115	CP	712.772	7115810.2676	2524330.8908	SET	60D SET IN GROUND
1116	CP	713.440	7115908.3716	2524262.9974	SET	60D SET IN GROUND
3000	CP	642.964	7128702.8641	2535234.0575	SET	REBAR W/ CAP 5/8 in OC CFA
3001	CP	712.316	7115810.7917	2524919.4306	SET	REBAR W/ CAP 5/8 in OC CFA
3002	CP	719.363	7115943.1569	2523920.1360	SET	REBAR W/ CAP 5/8 in OC CFA
3100	CP	712.098	7115886.0692	2524429.3578	SET	60D NAIL IN EARTH

ALL DISTANCE AND COORDINATES SHOWN HERON ARE SURFACE VALUES DISPLAYED IN US SURVEY FEET, TEXAS COORDINATE SYSTEM OF 1963, NORTH CENTRAL ZONE, AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT. THESE VALUES MAY BE CONVERTED TO GRID VALUES BY DIVIDING THOSE SURFACE VALUES BY A SURFACE ADJUSTMENT FACTOR OF 1.00152710.

ALIGNMENT TABLE				
LINE	START N/E	BEARING	LENGTH	END N/E
C3	7116119.90/2524343.42	N 5°31'10" E	265.18'	7116384.16/2524362.37
T6	7115940.17/2524343.80	N 0°07'20" W	179.73'	7116119.90/2524343.42



NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
PROJECT LAYOUT & CONTROL

McKINNEY TEXAS
Unique by nature.

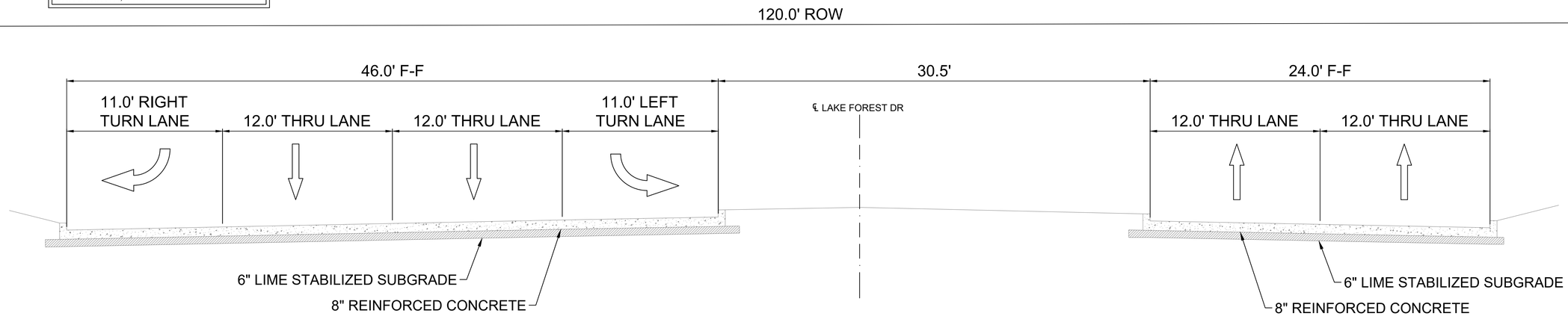
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

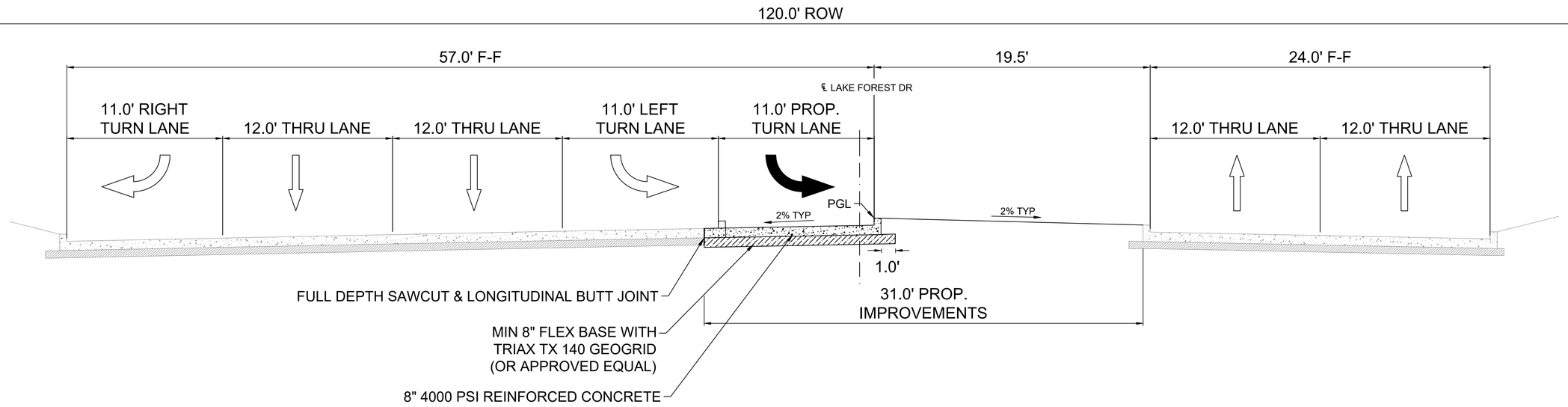
SHEET 30

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\231206401_GENL_PLYT.dwg - Plotted: 1/5/2026

NOTE
EXISTING TYPICAL SECTION BASED ON CITY OF MCKINNEY PROJECT: LAKE FOREST DRIVE NORTH, 1998.



SB LAKE FOREST DR - EXISTING
NTS



SB LAKE FOREST DR - PROPOSED
LEFT TURN LANE AT ELDORADO PKWY
NTS

REVISIONS

NO	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
TYPICAL SECTION

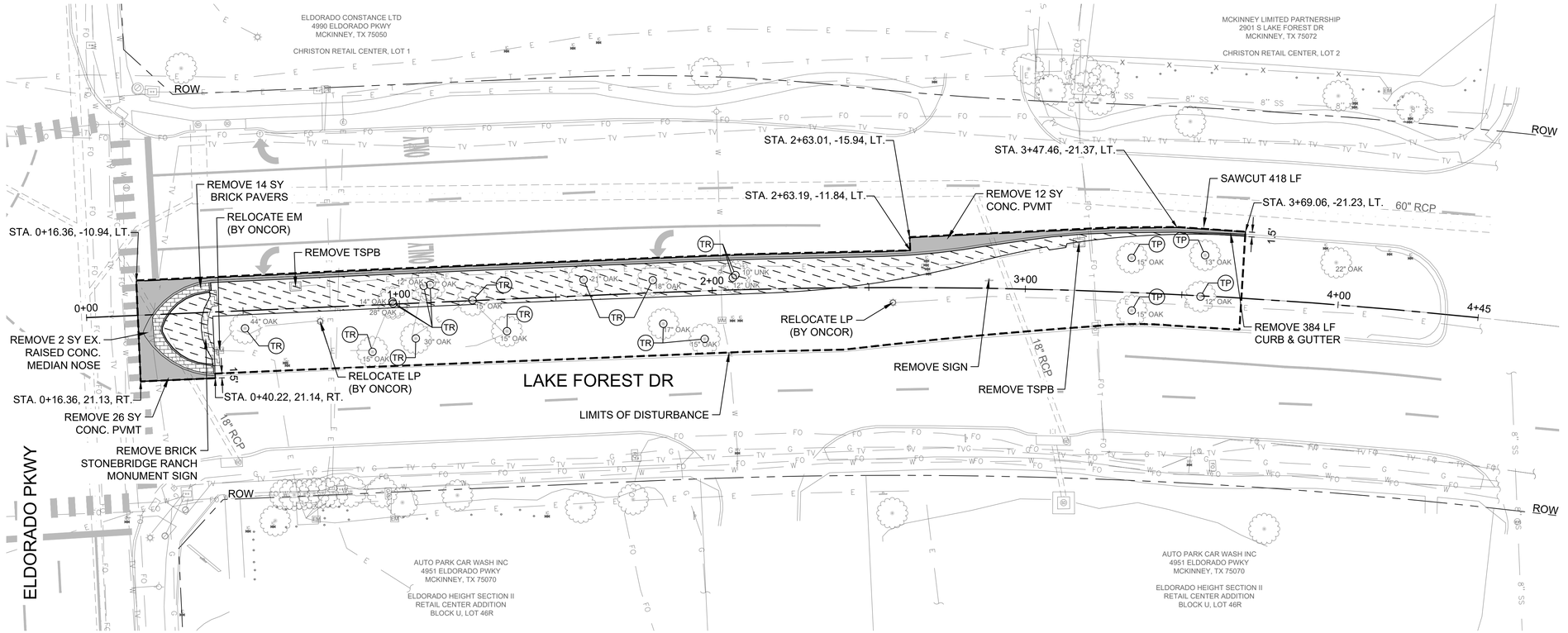
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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET
31

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_GENL_SECT.dwg - Plotted: 1/5/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

SCALE: 1"= 20'

LEGEND

- CONC. PVMT REMOVAL
- BRICK PAVERS REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA
- TREE REMOVAL
- TREE PROTECTION

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. REMOVAL OF EXISTING TREE LIGHTS AND ALL OTHER APPURTENANCES RELATED TO LANDSCAPE LIGHTING WILL BE SUBSIDIARY. (NO PAY ITEM)
3. CONTRACTOR WILL CONTACT AMANDA GRIFFETH OF STONEBRIDGE RANCH COMMUNITY ASSOCIATION AT 972-948-6671 TO COORDINATE REMOVAL OF TREE LIGHTS AND TURNING OFF, CUTTING, AND PLUGGING IRRIGATION.

NO.	COMMENT	DATE

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 ELDORADO PKWY & LAKE FOREST DR REMOVAL PLAN

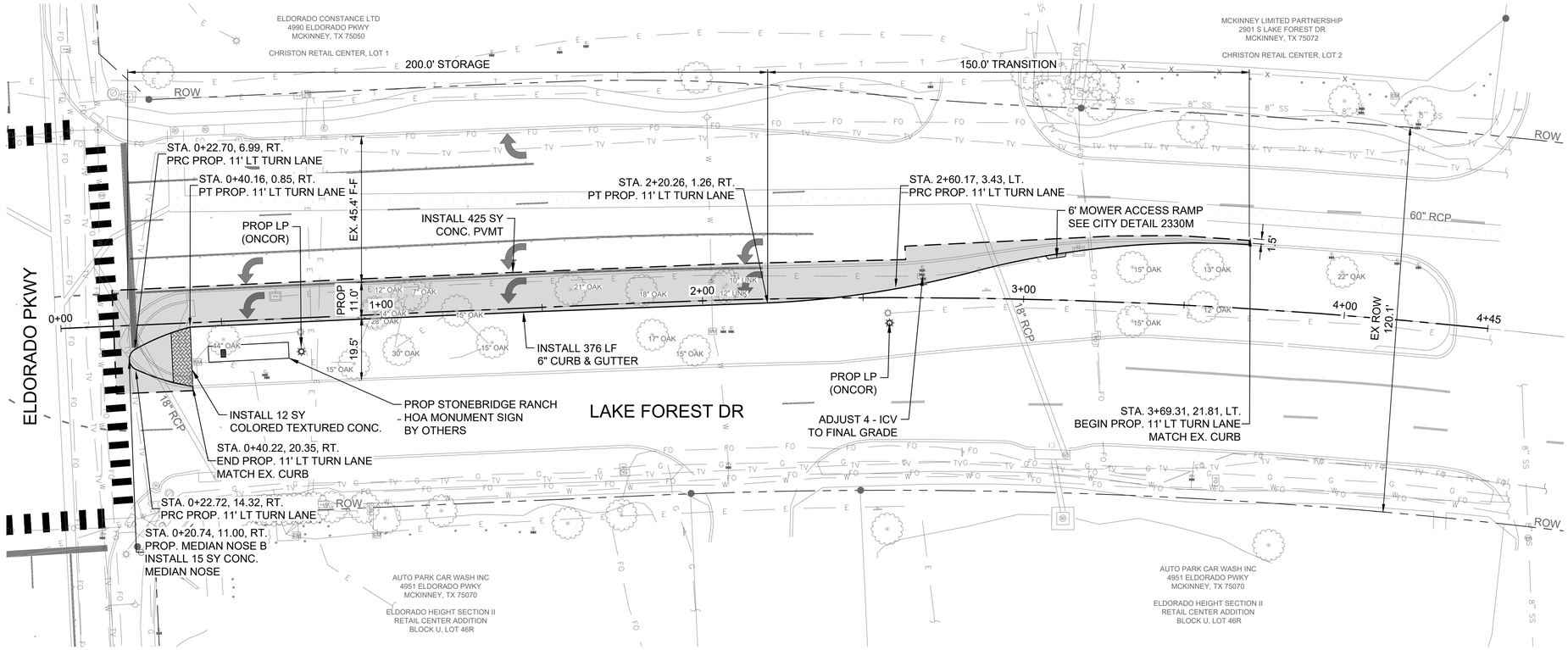
McKINNEY TEXAS Unique by nature.

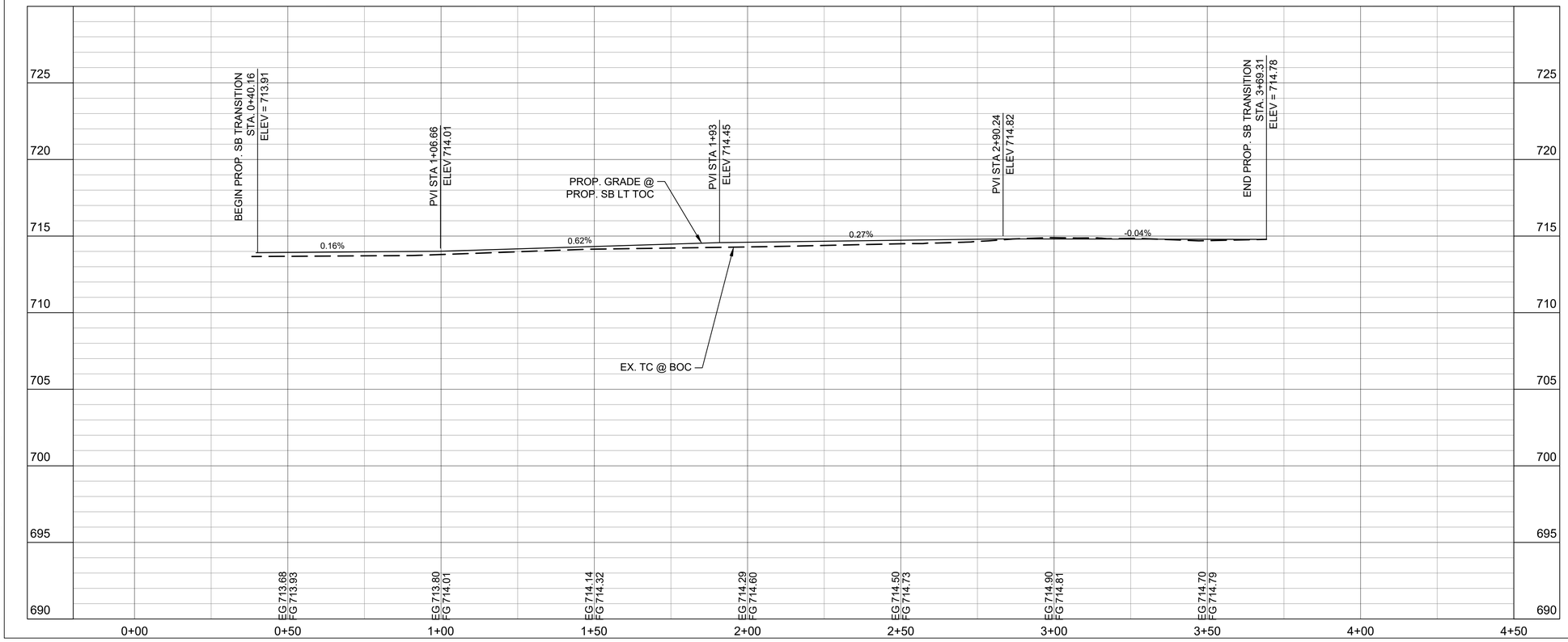
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 32

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_RMVL.dwg - Plotted: 1/5/2026





!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

SCALE: H 1" = 20'
V 1" = 4'

LEGEND

PROP. 8" REINF. CONC.

PROP. COLORED TEXTURED CONC. (REFER TO DETAIL 2080M)

NOTES:

1. CONTRACTOR WILL POTHOLE AND FIELD VERIFY EXISTING UTILITIES AT PROPOSED PEDESTRIAN AND SIGNAL POLE LOCATIONS PRIOR TO CONSTRUCTION. REFER TO SIGN POLE LAYOUT SHEETS FOR DETAILS ON PROPOSED LOCATIONS (NON-PAY ITEM).
2. CONTRACTOR WILL PROVIDE LONGITUDINAL BUTT JOINTS BETWEEN EXISTING AND PROPOSED CONCRETE PAVEMENT (NON-PAY ITEM).
3. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
4. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
PAVING PLAN & PROFILE

McKINNEY TEXAS Unique by nature.

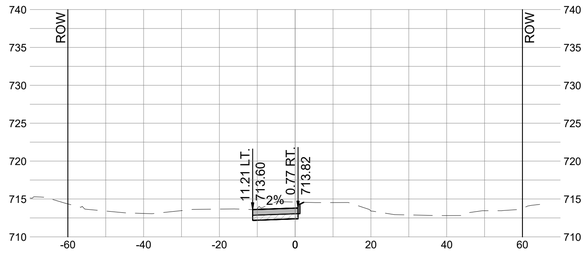
CobbFendley
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

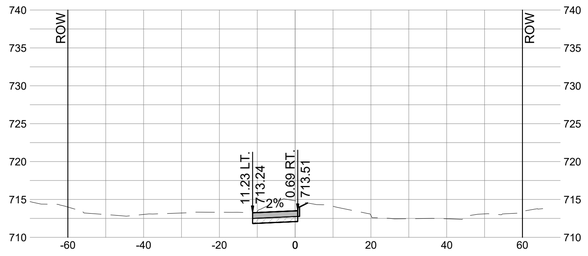
SHEET 33

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\23120640I_RDWY_ELDORADO&LF.dwg - Plotted: 1/5/2026

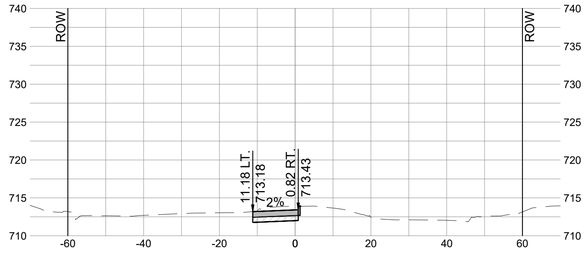
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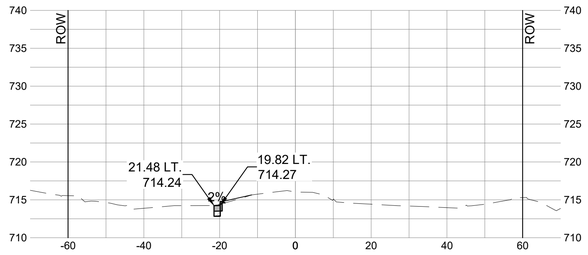
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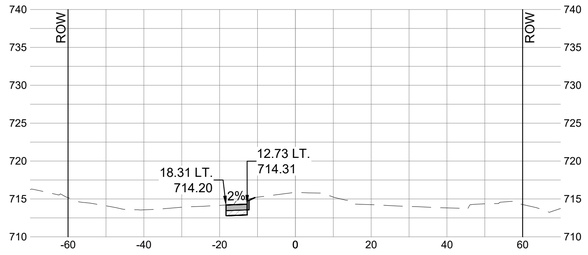
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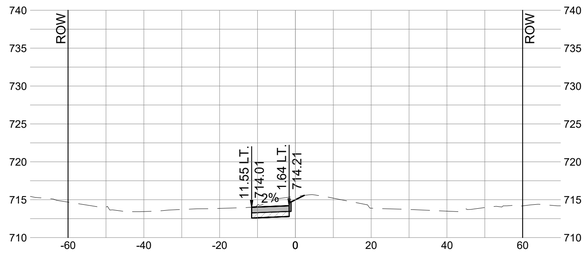
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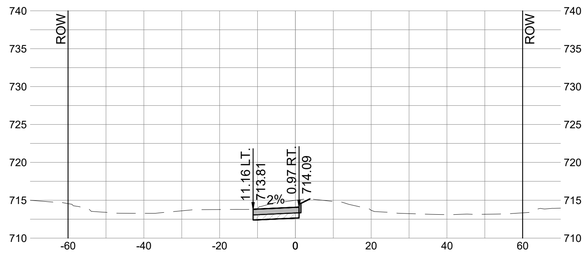
3+00



2+50



2+00



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EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

SCALE: H 1" = 20'
V 1" = 10'

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 ELDORADO PKWY & LAKE FOREST DR CROSS SECTIONS

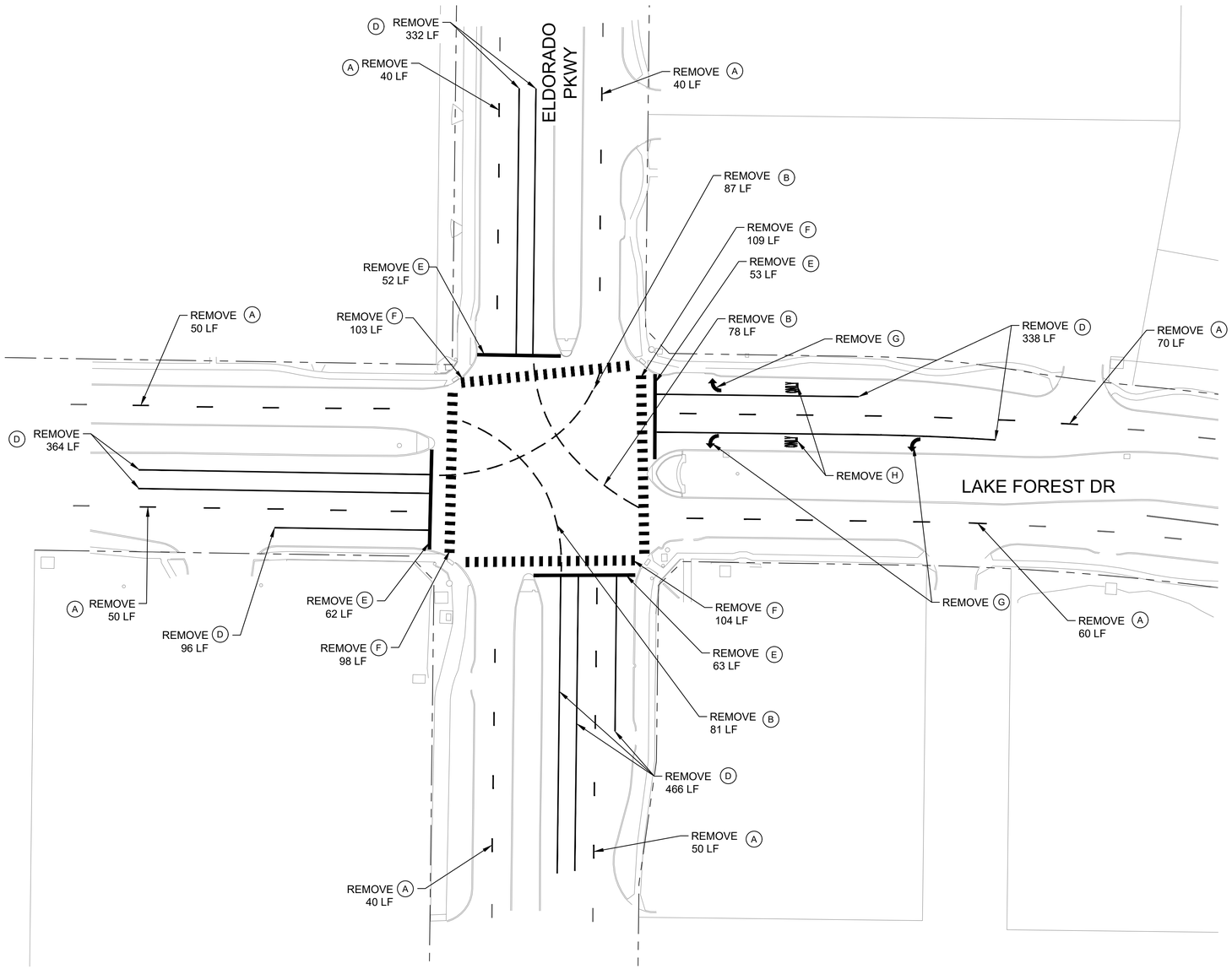
McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 34

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\231206401_RDWY_ELDORADOBLF.dwg - Plotted: 1/5/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 20' 40' 80'

SCALE: 1"= 40'

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
- (C) REFL PAV MRK TY I (W) (6") (SLD)
- (D) REFL PAV MRK TY I (W) (8") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
- (F) REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
- (G) REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B / DETAIL I)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAILS FOR ADDITIONAL INFORMATION.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
SIGNING & PAVEMENT MARKINGS REMOVAL

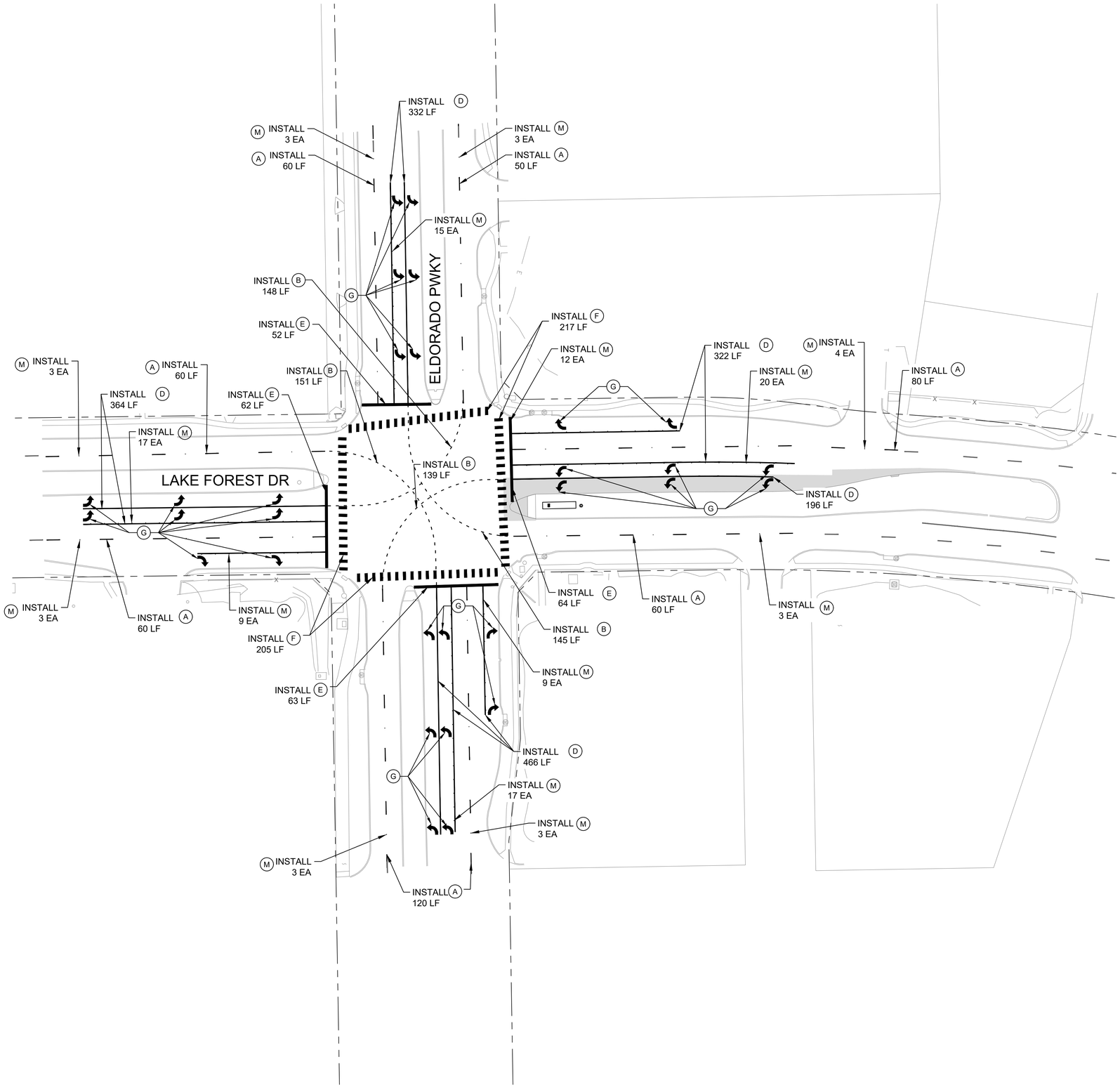
McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 35

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RMVL_MRKG.dwg - Plotted: 1/5/2026



!!! WARNING !!!

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NO	DATE	COMMENT

REVISIONS

0 20' 40' 80'

SCALE: 1"= 40'

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
- (C) REFL PAV MRK TY I (W) (6") (SLD)
- (D) REFL PAV MRK TY I (W) (8") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
- (F) REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
- (G) REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B / DETAIL I)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAIL FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

ELDORADO PKWY & LAKE FOREST DR SIGNING & PAVEMENT MARKINGS

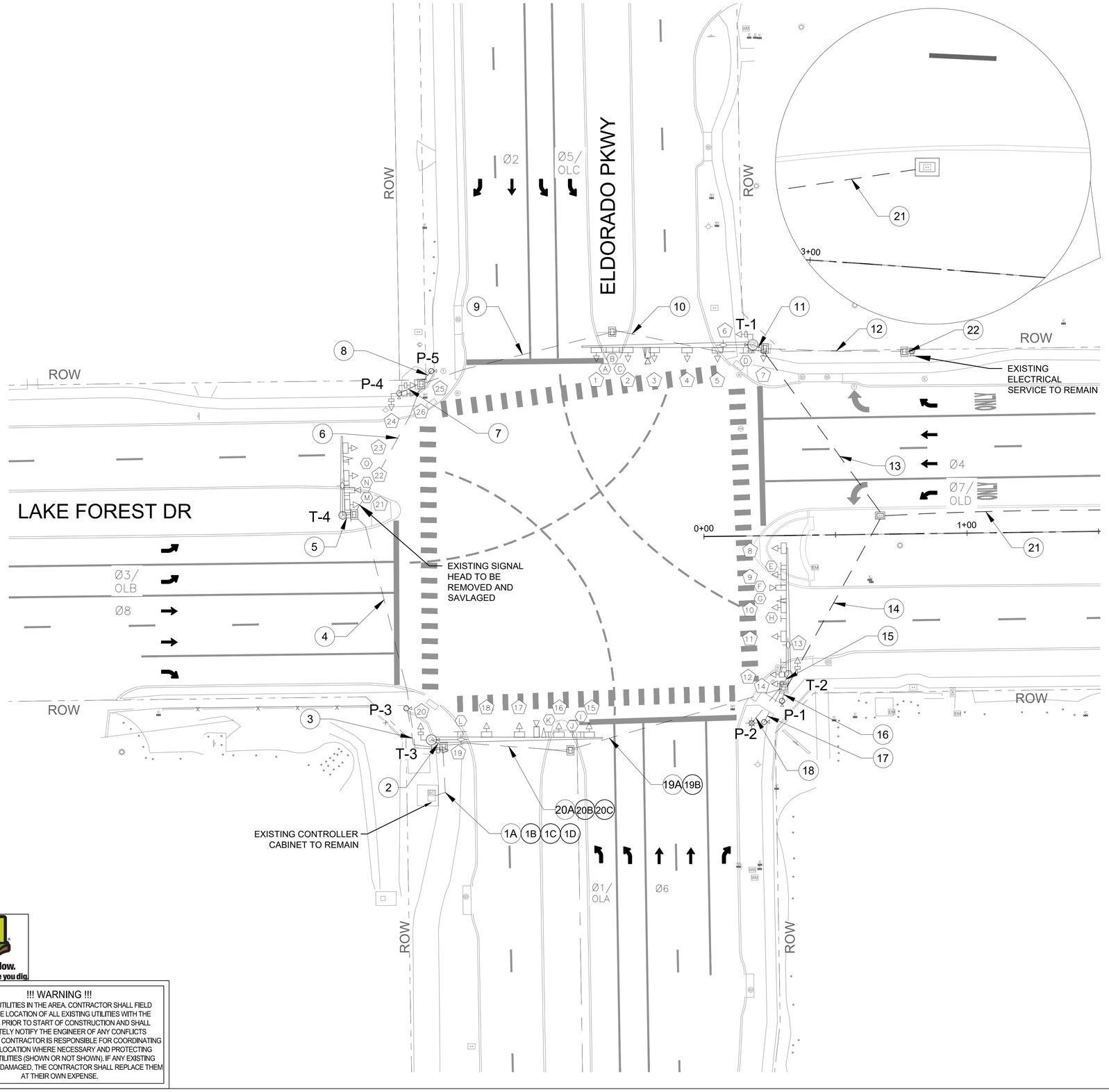
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 36

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640I_RDWY_ELDORADO&LF.dwg - Plotted: 1/5/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- 14 SIGNAL HEAD INDICATION LABEL
- B SIGN INDICATION LABEL
- 8 CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
- EXIST / PROP LED LUMINAIRE FIXTURE
- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
- EXIST / PROP VIVDS CAMERA
- EXIST / PROP OPTICOM DETECTOR
- EXIST / PROP TRAFFIC SIGNAL CABINET
- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 10' 20' 40'
SCALE: H 1" = 20'
V 1" = 5'

Know what's **below.** **Call** before you dig.

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
TRAFFIC SIGNAL EXISTING LAYOUT

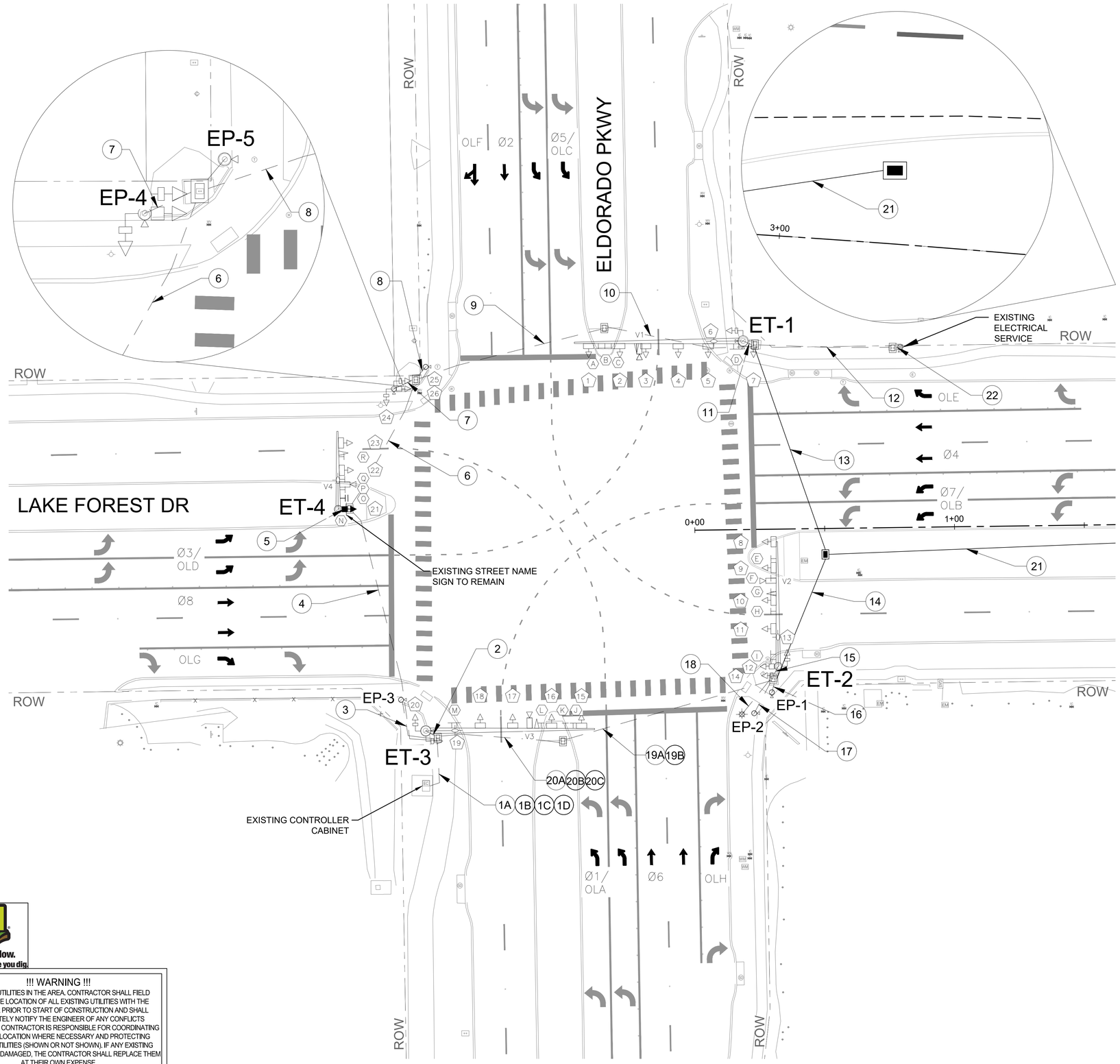
McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 37

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\400_Traffic\02-Sheets\Existing\231206401_SIGNAL_ELDORADO&LF.dwg - Plotted: 1/6/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- (14) SIGNAL HEAD INDICATION LABEL
- (B) SIGN INDICATION LABEL
- (8) CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
- EXIST / PROP LED LUMINAIRE FIXTURE
- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
- EXIST / PROP VIVDS CAMERA
- EXIST / PROP OPTICOM DETECTOR
- EXIST / PROP TRAFFIC SIGNAL CABINET
- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 10' 20' 40'
SCALE: H 1" = 20'
V 1" = 5'

Know what's below. Call before you dig.

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
TRAFFIC SIGNAL PROPOSED LAYOUT

McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 38

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\400_Traffic\02-Sheets\Proposed\23120640I1_PROPOSED_ELDORADOALF.dwg - Plotted: 1/6/2026

TRAFFIC SIGNAL CONDUIT SUMMARY

RUN NO.	CONDUIT SIZE/TYPE (FEET)						ELECTRICAL CONDUCTORS (FEET)				OPTICOM CABLE	AXIS CAMERA CABLE	2 CNDR. CABLE (#12 AWG) (TY C)	SIGNAL CABLES (TY A) (FEET)		LENGTH OF RUN (FEET)
	2" PVC - Trenched	**2" PVC - Bored**	3" PVC - Trenched	**3" PVC - Bored**	4" PVC - Trenched	**4" PVC - Bored**	STATUS	NO. 6XHW POWER CABLE	NO. 8XHW POWER CABLE (ILLUM)	NO. 6 BARE WIRE				10 CNDR. CABLE (#14 AWG)	20 CNDR. CABLE (#14 AWG)	
1A							E		2	1	1	1	2		1	20
1B							E			1						20
1C							E	2		1						20
1D							E			1						20
2							E			1						5
3							E			1						25
4							E			1						70
5							E			1						5
6							E			1						55
7							E			1						10
8							E			1						5
9							E			1						75
10							E			1						60
11							E		2	1	1	1	2		1	5
12							E	4		1						55
13				85			P	4	2	1	1	1	2		1	85
14				50			P	4	2	1	1	1	2		1	50
15							E			1						5
16							E			1			1			5
17							E			1			1			15
18							E	2		1						20
19A							E	2	2	1						85
19B							E			1	1	1	2		1	85
20A							E	2	2	1						50
20B							E			1	1	1	2		1	50
20C							E			1						50
21			270				P			1						270
22							E	4		1						5
CABLE TOTALS (LF)								1130	590	1225	295	295	610	0	295	
NEW CABLE TOTALS (LF)	0	0	270	135	0	0		540	310	555	155	155	310	0	155	

2" TRENCH	0
2" BORE	0
3" TRENCH	270
3" BORE	135
4" TRENCH	0
4" BORE	0

NOTES:
THIS CHART DOES NOT REFLECT THE QUANTITIES OF CABLE INSIDE THE POLE.
E = EXISTING, P = PROPOSED

CABLE TERMINATION CHART - SIGNAL AND PEDESTRIAN POLES

	CONDUCTOR COLOR	CABLE 1	CABLE 2	CABLE 3	CABLE 4	CABLE 5	CABLE 6	CABLE 7	CABLE 8	CABLE 9
		20 CNDR	20 CNDR	2 CNDR	2 CNDR	20 CNDR	20 CNDR	2 CNDR	20 CNDR	2 CNDR
		FROM CNTRL TO ET-1	FROM CNTRL TO ET-2	FROM CNTRL TO EP-1	FROM CNTRL TO EP-2	FROM CNTRL TO ET-3	FROM CNTRL TO ET-4	FROM CNTRL TO EP-3	FROM CNTRL TO EP-4	FROM CNTRL TO EP-5
1	BLACK	SH 1, 2 Ø1 YA LT	SH 8, 9 Ø3 YA LT	SPARE	SPARE	SH 15, 16 Ø5 YA LT	SH 21 Ø7 YA LT	SPARE	SPARE	SPARE
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 3, 4, 5 Ø6 R	SH 10, 11, 12 Ø8 R	SPARE	SPARE	SH 17, 18 Ø2 R	SH 22, 23 Ø4 R	SPARE	SH 26 Ø4 R	SPARE
4	GREEN	SH 3, 4, 5 Ø6 G	SH 10, 11, 12 Ø8 G	SPARE	SPARE	SH 17, 18 Ø2 G	SH 22, 23 Ø4 G	SPARE	SH 26 Ø4 G	SPARE
5	ORANGE	SH 3, 4, 5 Ø6 Y	SH 10, 11, 12 Ø8 Y	SPARE	SPARE	SH 17, 18 Ø2 Y	SH 22, 23 Ø4 Y	SPARE	SH 26 Ø4 Y	SPARE
6	BLUE	SH 1, 2 Ø1 GA LT	SH 8, 9 Ø3 GA LT	SPARE	SPARE	SH 15, 16 Ø5 GA LT	SH 21 Ø7 GA LT	SPARE	SPARE	SPARE
7	WHITE/BLACK	Ø4 PED CALL	SPARE	Ø8 PED CALL	Ø6 PED CALL	Ø8 PED CALL	SPARE	Ø2 PED CALL	Ø2 PED CALL	Ø4 PED CALL
8	RED/BLACK	PB COM	SPARE	PB COM	PB COM	PB COM	SPARE	PB COM	PB COM	PB COM
9	GREEN/BLACK	SH 6 Ø4 DW	SH 13 Ø6 DW	SPARE	SPARE	SH 20 Ø2 DW	SPARE	SPARE	SH 24 Ø2 DW	SPARE
10	ORANGE/BLACK	SH 6 Ø4 W	SH 13 Ø6 W	SPARE	SPARE	SH 20 Ø2 W	SPARE	SPARE	SH 24 Ø2 W	SPARE
11	BLUE/BLACK	Ø6 PED CALL	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
12	BLACK/WHITE	SH 7 Ø6 DW	SH 14 Ø8 DW	SPARE	SPARE	SH 19 Ø8 DW	SPARE	SPARE	SH 25 Ø4 DW	SPARE
13	RED/WHITE	SH 7 Ø6 W	SH 14 Ø8 W	SPARE	SPARE	SH 19 Ø8 W	SPARE	SPARE	SH 25 Ø4 W	SPARE
14	GREEN/WHITE	SH 1, 2 Ø1 RA LT	SH 8, 9 Ø3 RA LT	SPARE	SPARE	SH 15 Ø5 RA LT	SH 21 Ø7 RA LT	SPARE	SPARE	SPARE
15	BLUE/WHITE	SPARE	SH 12 OLE YA RT	SPARE	SPARE	SPARE	SPARE	SPARE	SH 26 OLG GA RT	SPARE
16	BLACK/RED	SPARE	SH 12 OLE GA RT	SPARE	SPARE	SPARE	SPARE	SPARE	SH 26 OLG YA RT	SPARE
17	WHITE/RED	Ø6 RED LIGHT CONFIRM	Ø8 RED LIGHT CONFIRM	SPARE	SPARE	Ø2 RED LIGHT CONFIRM	Ø4 RED LIGHT CONFIRM	SPARE	SPARE	SPARE
18	ORANGE/RED	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
19	BLUE/RED	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
20	RED/GREEN	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE

R = RED BALL; Y = YELLOW BALL; G = GREEN BALL; RA = RED ARROW; YA = YELLOW ARROW; GA = GREEN ARROW
RT = RIGHT TURN; LT = LEFT TURN
FYA = FLASHING YELLOW ARROW

ELECTRICAL SERVICE DATA

I.D.	DESCRIPTION	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTOR NO/SIZE	SAFETY SWITCH AMPS	MAIN DISCONNECT CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANELBD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT AMPS	KVA LOAD
1	ELEC SERV TY D (120/240) 070 (NS) AL (E) PS (U)	1 1/4"	3/#4	N/A	2P/70	30	100	T.S. ILSN/LIGHTING	1P/50 2P/15	<7.1

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
SIGNAL DESIGN TABLES

McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 39

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\02-Sheets\Proposed\23120640I1_PROPOSED_ELDORADOSILF.dwg - Plotted: 1/6/2026

SIGNAL HEADS												
SIGNAL HEAD NUMBER	SIGNAL HEAD TYPE	BACKPLATE			12" SIGNAL INDICATION VEH SIGNAL SEC WITH LED LAMP						PED SIG SEC COUNTDOWN LED LAMP	STATUS
		3 SEC	4 SEC	5 SEC	G	GA	Y	YA	R	RA		
		EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
3, 4, 10, 11, 17, 18, 22, 23	H3	7			7		7		7			E
1, 2, 8, 9, 15, 16	H4PLT		6			6		6		12		E
5	H5RT			1	1	1	1	1	1			E
12, 26	V5RT			2	2	2	2	2	2			E
6, 7, 13, 14, 19, 20, 24, 25	COUNTDOWN										8	E
21	V4PLT		1			1		1		2		P
TOTAL		0	1	0	0	1	0	1	0	2	0	

NOTE 1 - THE CONTRACTOR SHALL NOTIFY THE CITY OF MCKINNEY AT 972.547.7428 AT LEAST 48 HOURS PRIOR TO THE SIGNAL TURN-ON

NOTE 2 - CONTRACTOR SHALL CONTACT THUAN HUYNH WITH THE CITY OF MCKINNEY AT 972.547.2634 FOR SIGNAL PHASING AND TIMING PARAMETERS.

NOTE 3 - SIGNAL HEADS THAT ARE BEING RELOCATED SHALL BE PERMANENTLY REMOUNTED TO THE MAST ARM AND NEW WIRE WILL NEED TO BE INSTALLED INSIDE THE POLE/MAST ARM.

TRAFFIC SIGNAL SIGNS SUMMARY							
ID	TYPE	LEGEND	ACTION				LOCATION
			REMAIN IN PLACE	REMOVE	RELOCATE	INSTALL	
A	R10-5L	LEFT ON GREEN ARROW ONLY	1				ET-1 MAST ARM
B	R3-4	NO U-TURN	1				ET-1 MAST ARM
C	R3-8 LL	LEFT TURN ONLY | LEFT TURN ONLY	1				ET-1 MAST ARM
D	SN	LAKE FOREST DRIVE	1				ET-1 MAST ARM
E	R3-4	NO U-TURN	1				ET-2 MAST ARM
F	R10-5L	LEFT ON GREEN ARROW ONLY	1				ET-2 MAST ARM
G	R3-8 LL	LEFT TURN ONLY | LEFT TURN ONLY	1				ET-2 MAST ARM
H	R5-2	NO TRUCKS, 3 AXLES OR MORE	1				ET-2 MAST ARM
I	SN	ELDARADO PARKWAY	1				ET-2 SN ARM
J	R10-5L	LEFT ON GREEN ARROW ONLY	1				ET-3 MAST ARM
K	R3-4	NO U-TURN	1				ET-3 MAST ARM
L	R3-8 LL	LEFT TURN ONLY | LEFT TURN ONLY	1				ET-3 MAST ARM
M	SN	LAKE FOREST DRIVE	1				ET-3 SN ARM
N	SN	ELDORADO PARKWAY	1				ET-4 SN ARM
O	R3-8 LL	LEFT TURN ONLY | LEFT TURN ONLY				1	ET-4 MAST ARM
P	R10-5L	LEFT ON GREEN ARROW ONLY	1				ET-4 MAST ARM
Q	R3-4	NO U-TURN	1				ET-4 MAST ARM
R	R5-2	NO TRUCKS, 3 AXLES OR MORE	1				ET-4 MAST ARM

SIGNAL HEAD AND POLE PLACEMENT (LF)											
POLE NUMBER	FOUNDATION TYPE	FOUNDATION DEPTH (LF)	A	B	C	D	E	F	G	NO. OF HEADS ON MAST ARM	LUM-A
ET-1	EXISTING		15	14	25	38	48	60	65	5/1	1
EP-1	EXISTING		EXISTING PEDESTAL POLE					- - -	10	- - -	- - -
ET-2	EXISTING		6	15	26	38	48	48	30	4/1	1
EP-2	EXISTING		EXISTING PEDESTAL POLE					- - -	10	- - -	- - -
ET-3	EXISTING		14	21	34	49	60	65	30	4/1	1
EP-3	EXISTING		EXISTING PEDESTAL POLE					- - -	10	- - -	- - -
ET-4	EXISTING		11	4	15	26	- - -	30	30	3/1	1
EP-4	EXISTING		EXISTING PEDESTAL POLE					- - -	10	- - -	- - -
EP-5	EXISTING		EXISTING PEDESTAL POLE					- - -	10	- - -	- - -

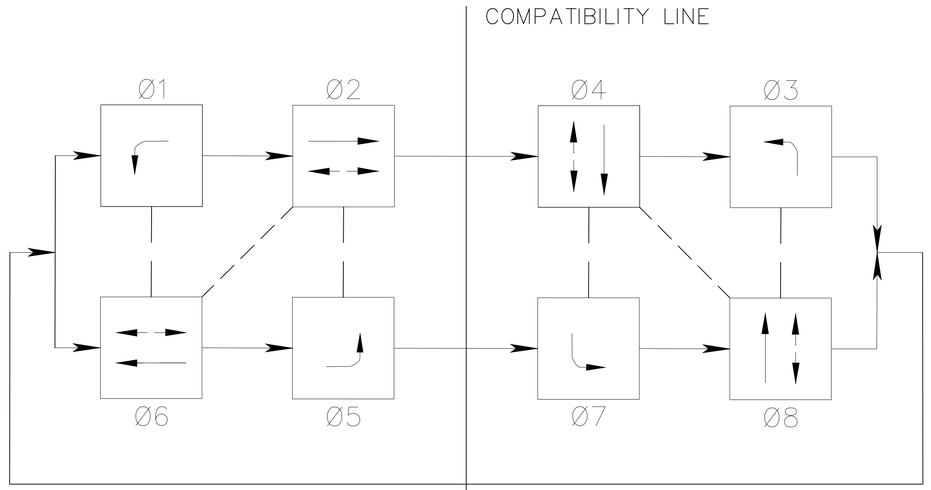
POLE NUMBER	WIRE INSIDE POLE (FEET)				
	2 CNDR CABLE (#12 AWG) (TY C)	5 CNDR CABLE (#14 AWG) (TY A)	7 CNDR CABLE (#14 AWG) (TY A)	OPTICOM	AXIS CAMERA
ET-1					
EP-1					
ET-2					
EP-2					
ET-3					
EP-3					
ET-4			60		
EP-4					
EP-5					

QUANTITIES SHOWN ABOVE ARE FOR NEW CABLE ONLY

VEHICLE DETECTION INFORMATION			
VIVIDS DETECTION	STATUS	PHASES	LOCATION
V1	E	Ø1 & Ø6 PRESENCE	ET-1 MAST ARM
V2	E	Ø3 & Ø8 PRESENCE	ET-2 MAST ARM
V3	E	Ø2 & Ø5 PRESENCE	ET-3 MAST ARM
V4	E	Ø4 & Ø7 PRESENCE	ET-4 MAST ARM

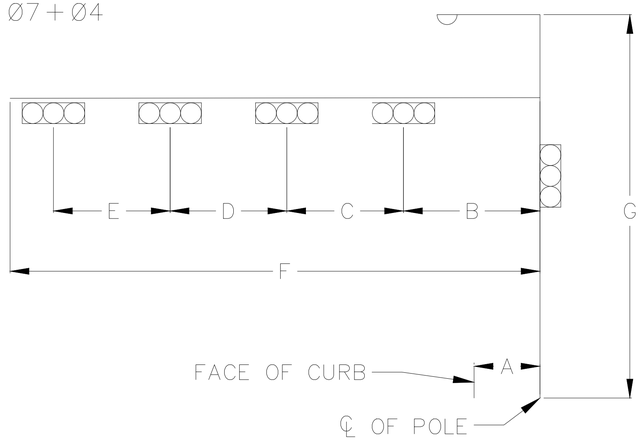
E = EXISTING; P = PROPOSED

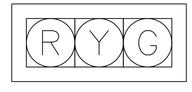
PHASE SEQUENCE



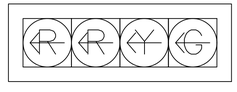
OL A = Ø1 + Ø6
OL B = Ø3 + Ø8
OL C = Ø5 + Ø2
OL D = Ø7 + Ø4

COMPATIBLE PHASES
PEDESTRIAN MOVEMENT

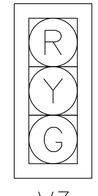




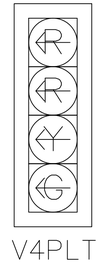
H3



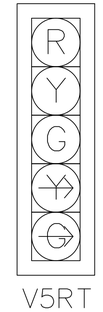
H4PLT



V3



V4PLT



V5RT

NO.	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
SIGNAL DESIGN TABLES

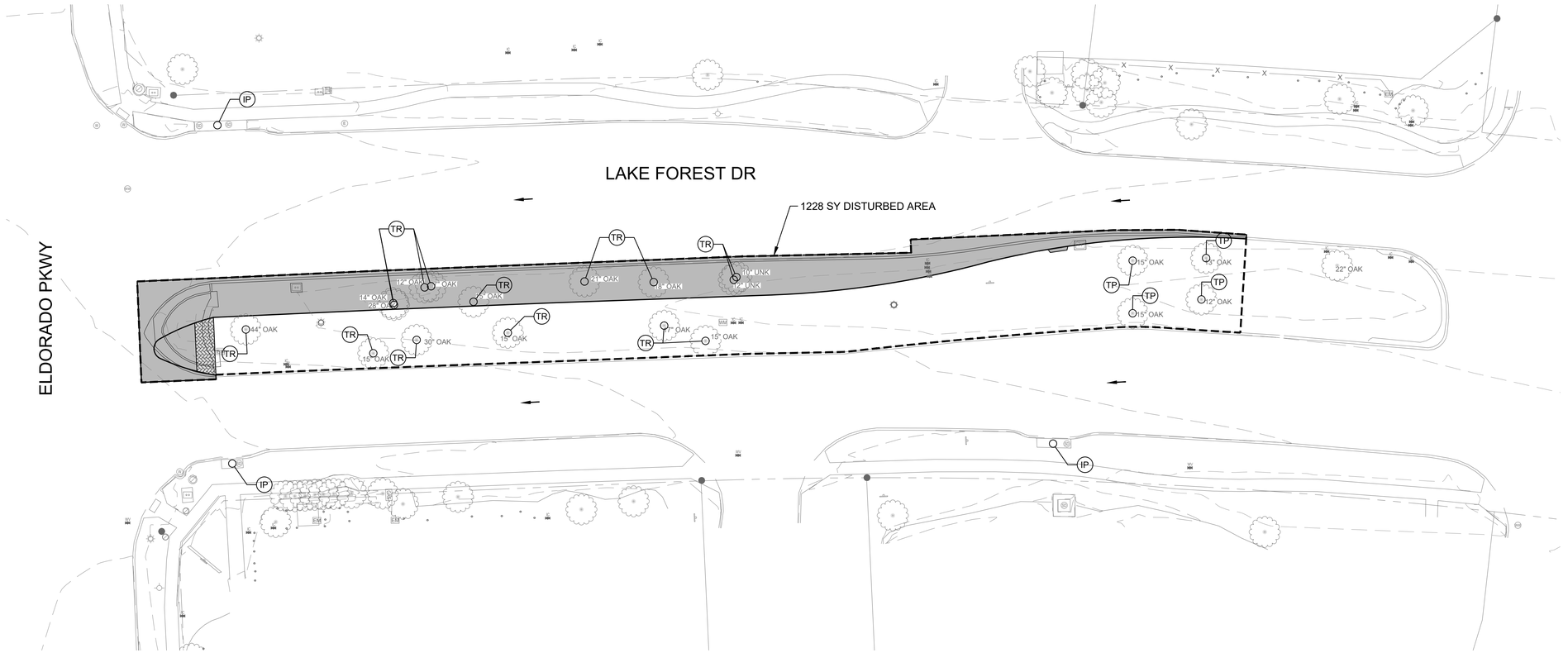
McKINNEY TEXAS
Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 40

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\02-Sheets\Proposed\231206401_PROPOSED_ELDORADOLF.dwg - Plotted: 1/6/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 ELDORADO PKWY & LAKE FOREST DR EROSION CONTROL PLAN

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax.972.335.3202 | www.cobbfendley.com

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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 41

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_EROS.dwg - Plotted: 1/5/2026

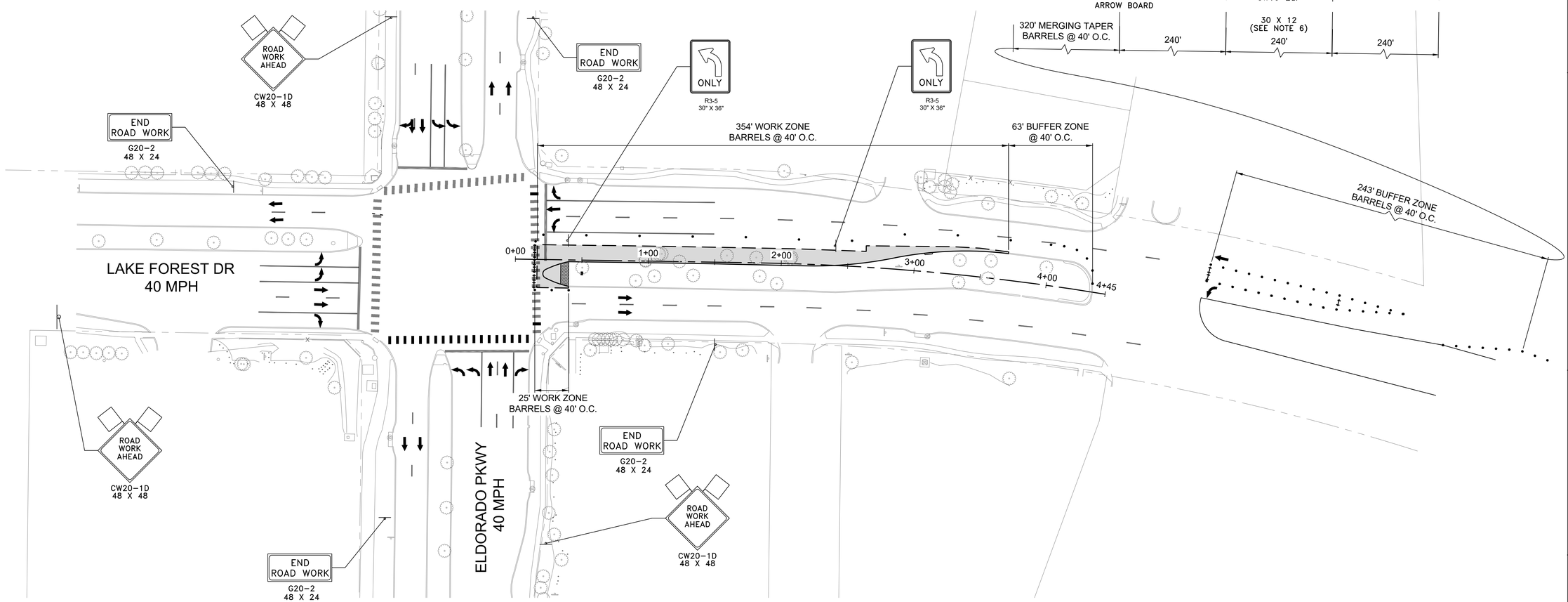
LEGEND

- PROP. IMPROVEMENTS IN PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.



NOTES:

1. REFER TO TXDOT STANDARDS BC-21 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON RADIUS IN CONFORMANCE WITH TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
4. ALL DIMENSIONS AND QUANTITIES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
5. CONTRACTOR WILL PROVIDE SIGNED AND SEALED SITE SPECIFIC TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES IF TRAFFIC CONTROL IS MODIFIED FROM WHAT IS SHOWN ON THE PLANS OR IF ADDITIONAL TRAFFIC CONTROL IS REQUIRED FOR CONSTRUCTION.
6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS
   M-F: 9:00 AM - 4:00 PM

0 20' 40' 80'
SCALE: 1"= 40'

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
ELDORADO PKWY & LAKE FOREST DR
TRAFFIC CONTROL PLAN

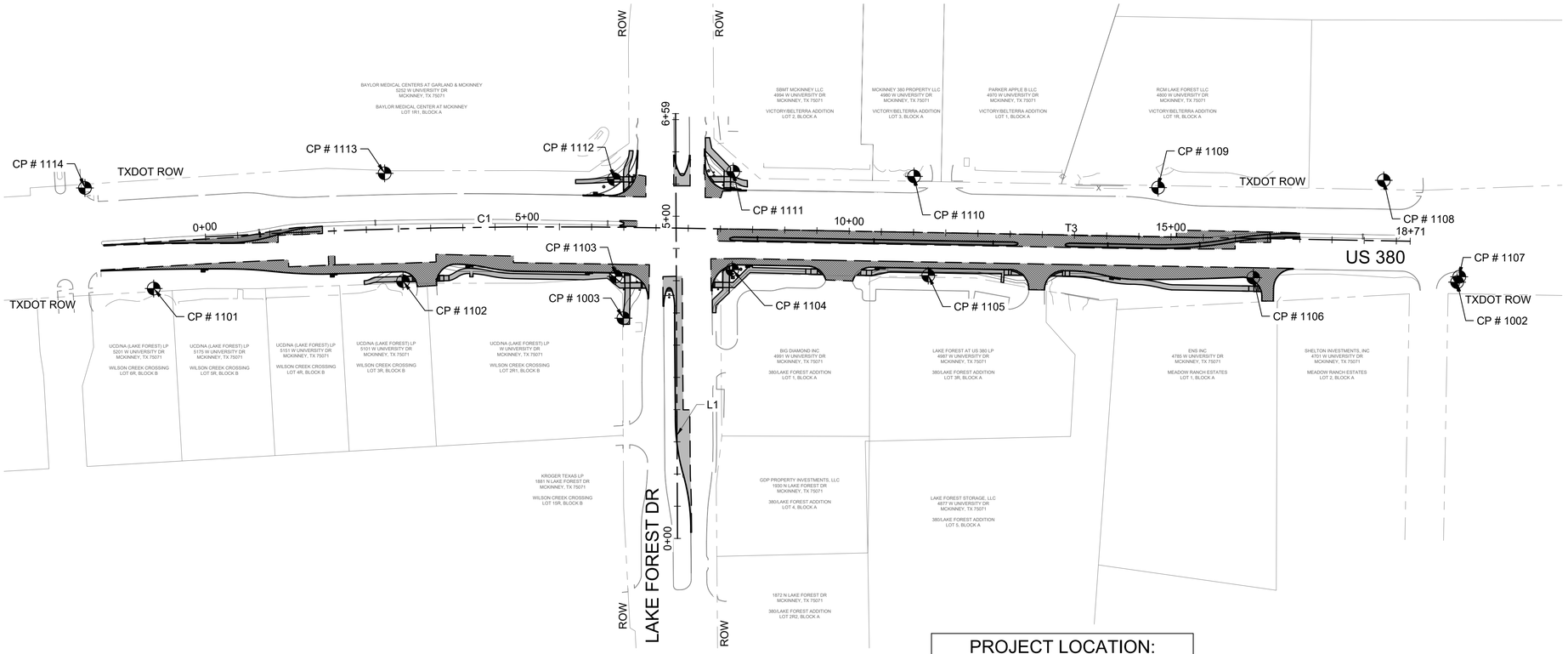
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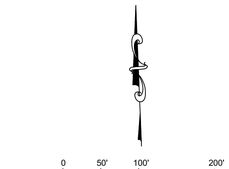
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 42

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640I_TCP.dwg - Plotted: 1/5/2026

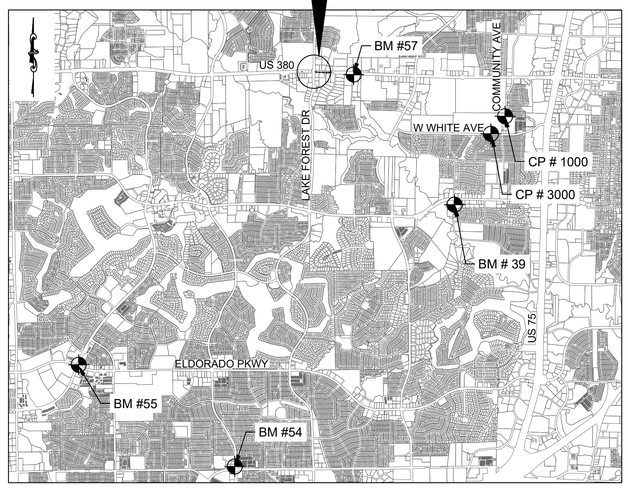




LEGEND

PROP. IMPROVEMENTS

PROJECT LOCATION:
US 380 & LAKE FOREST DR



ALIGNMENT TABLE

LINE	START N/E	BEARING	LENGTH	END N/E
C1	7132066.25/2524910.91	S 89°20'38" E	731.76'	7132063.11/2525642.47
L1	7131581.56/2525632.93	N 1°04'00" E	659.32'	7132240.76/2525645.20
T3	7132063.11/2525642.47	S 87°39'00" E	1139.71'	7132016.37/2526781.22

PROJECT CONTROL

POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING	FOUND/SET	DESCRIPTION
39	BM	577.765	7124859.6563	2533262.5685	FOUND	CAP IN CONC CITY OF MCKINNEY
54	BM	733.180	7110698.4348	2521361.2605	FOUND	ALUMINUM DISK CITY OF MCKINNEY
55	BM	747.300	7116207.0698	2512908.2473	FOUND	ALUMINUM DISK CITY OF MCKINNEY
57	BM	606.460	7131924.2600	2527809.9798	FOUND	ALUMINUM DISK CITY OF MCKINNEY
1000	CP	652.262	7129663.3868	2535999.1833	SET	REBAR W/ CAP 5/8 in OC CFA
1002	CP	626.108	7131951.2021	2526852.5468	SET	60D SET IN GROUND
1003	CP	603.457	7131925.1781	2525556.8119	SET	MAGNAIL 5/8 in MAG SET/W SHINER
1101	CP	599.762	7131988.0507	2524828.5577	SET	60D SET IN GROUND
1102	CP	601.918	7131990.4181	2525215.9619	SET	60D SET IN GROUND
1103	CP	603.794	7131990.3441	2525546.5234	SET	60D SET IN GROUND
1104	CP	605.872	7131996.4310	2525727.6370	SET	60D SET IN GROUND
1105	CP	615.090	7131980.4586	2526031.6674	SET	60D SET IN GROUND
1106	CP	620.494	7131965.3212	2526536.2395	SET	60D SET IN GROUND
1107	CP	626.251	7131959.4554	2526856.1203	SET	60D SET IN GROUND
1108	CP	628.419	7132111.7466	2526742.3069	SET	60D SET IN GROUND
1109	CP	617.489	7132108.5941	2526391.6614	SET	60D SET IN GROUND
1110	CP	613.596	7132134.7501	2526013.1366	SET	60D SET IN GROUND
1111	CP	606.098	7132148.7113	2525732.5408	SET	60D SET IN GROUND
1112	CP	604.095	7132141.2301	2525547.1215	SET	60D SET IN GROUND
1113	CP	607.288	7132158.4657	2525191.2891	SET	60D SET IN GROUND
1114	CP	599.552	7132146.6019	2524725.4410	SET	60D SET IN GROUND
3000	CP	642.964	7128702.8641	2535234.0575	SET	REBAR W/ CAP 5/8 in OC CFA

ALL DISTANCE AND COORDINATES SHOWN HERON ARE SURFACE VALUES DISPLAYED IN US SURVEY FEET, TEXAS COORDINATE SYSTEM OF 1963, NORTH CENTRAL ZONE, AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT. THESE VALUES MAY BE CONVERTED TO GRID VALUES BY DIVIDING THOSE SURFACE VALUES BY A SURFACE ADJUSTMENT FACTOR OF 1.00152710.

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PROJECT LAYOUT & CONTROL

McKINNEY TEXAS Unique by nature.

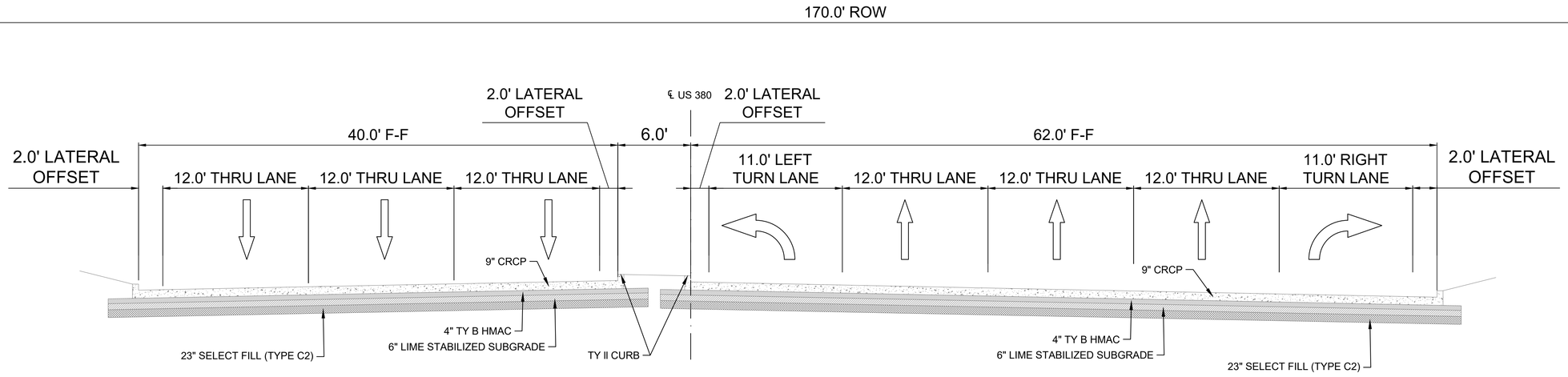
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

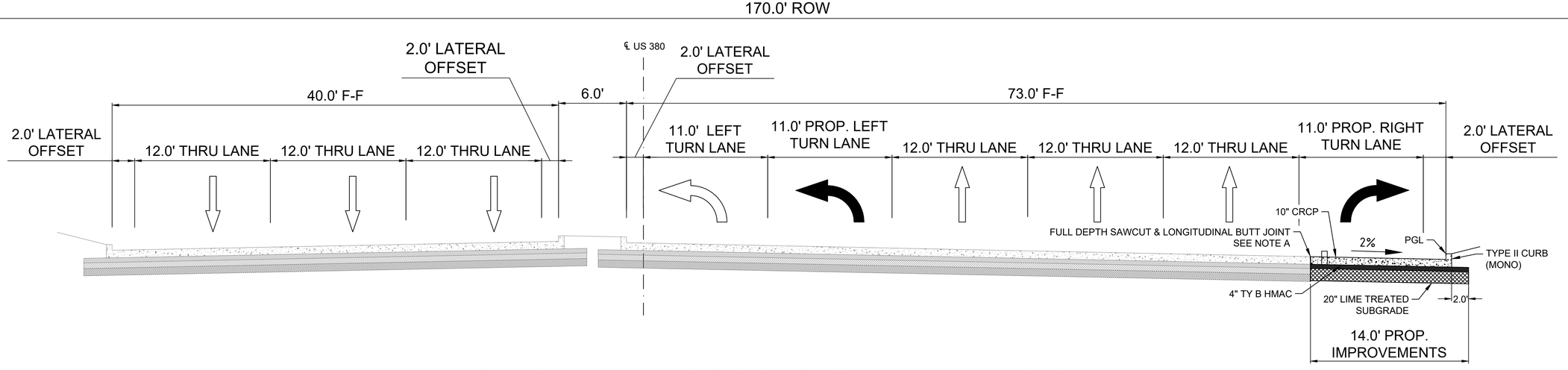
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NOTE
EXISTING TYPICAL SECTION BASED ON TXDOT PROJECT: US 380 FROM WEST OF FM 1461 (LAKE FOREST DR.) TO BOIS D'ARC RD. IN MCKINNEY, 2010. PN: C 135-2-46



EB US 380 - EXISTING
NTS



EB US 380 - PROPOSED (STA. 0+00 TO STA. 7+50)
DUAL LEFT & RIGHT TURN LANES AT LAKE FOREST DRIVE
NTS

NOTE A: DRILL HOLES WITH CORING TYPE BIT. NO IMPACT DRILLS ARE ALLOWED. BLOW HOLES, CLEAN AND COAT WITH APPROVED EPOXY (OR OTHER APPROVED METHOD). INSERT ONE HALF OF THE 36 INCH LONG #3 INCH TIE BARS INTO EXISTING PAVEMENT 36" O.C., 18 INCHES FROM THE ENDS

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TYPICAL SECTION (1 OF 3)

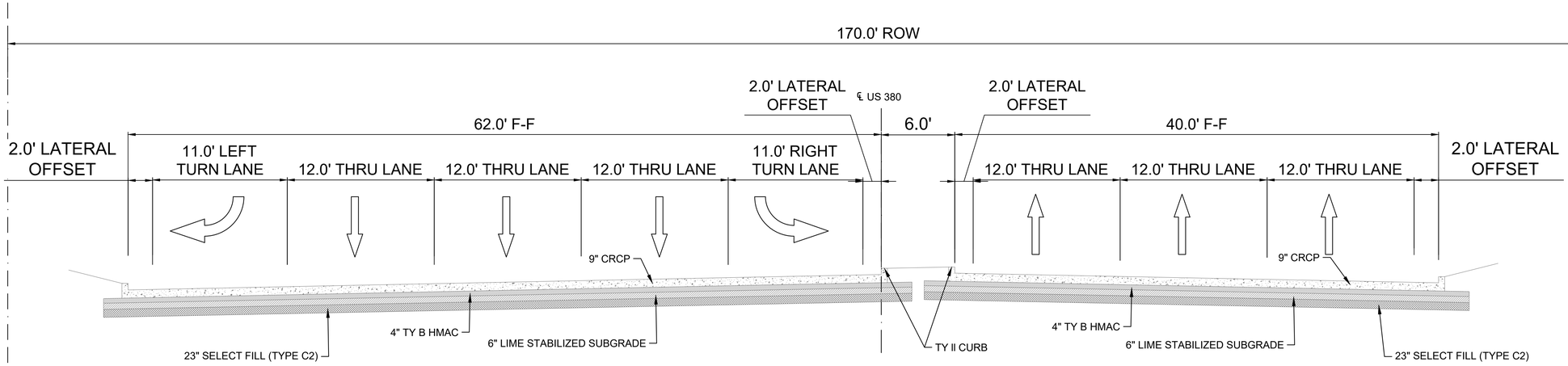
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Unique by nature.

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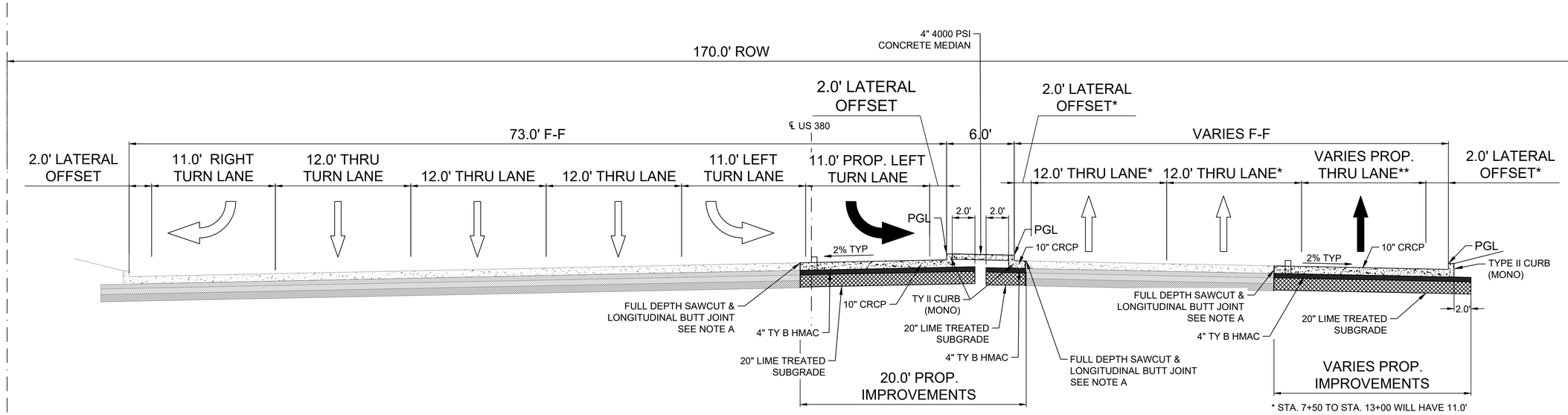
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 44	

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Main\02_PLAN_SHEET\23120640 1_GENL_SECT.dwg - Plotted: 1/6/2026

NOTE
EXISTING TYPICAL SECTION BASED ON TXDOT PROJECT: US 380 FROM WEST OF FM 1461 (LAKE FOREST DR.) TO BOIS D'ARC RD. IN MCKINNEY, 2010. PN: C 135-2-46



WB US 380 - EXISTING
NTS



WB US 380 - PROPOSED (STA. 7+50 TO END)
DUAL LEFT TURN LANES AT LAKE FOREST DRIVE
NTS

* STA. 7+50 TO STA. 13+00 WILL HAVE 11.0' THRU LANES WITH 2.0' LATERAL OFFSETS.

** STA. 13+00 TO END WILL HAVE 11.0' THRU LANES WITH 11.0' RIGHT TURN LANE WITH 2.0' LATERAL OFFSETS.

NOTE A: DRILL HOLES WITH CORING TYPE BIT. NO IMPACT DRILLS ARE ALLOWED. BLOW HOLES, CLEAN AND COAT WITH APPROVED EPOXY (OR OTHER APPROVED METHOD). INSERT ONE HALF OF THE 36 INCH LONG #8 INCH TIE BARS INTO EXISTING PAVEMENT 36" O.C., 18 INCHES FROM THE ENDS

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TYPICAL SECTION (2 OF 3)

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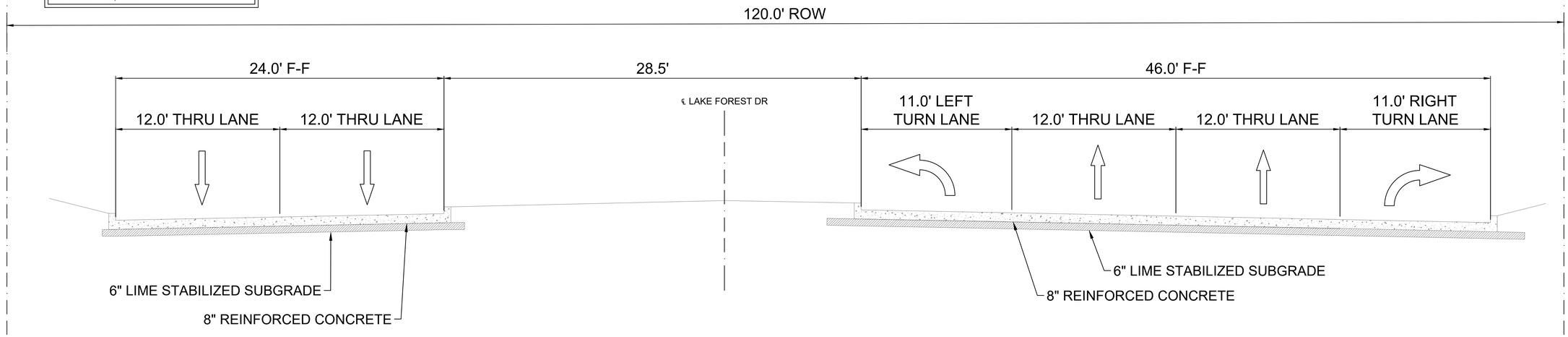
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Frisco, Texas 75034
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DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

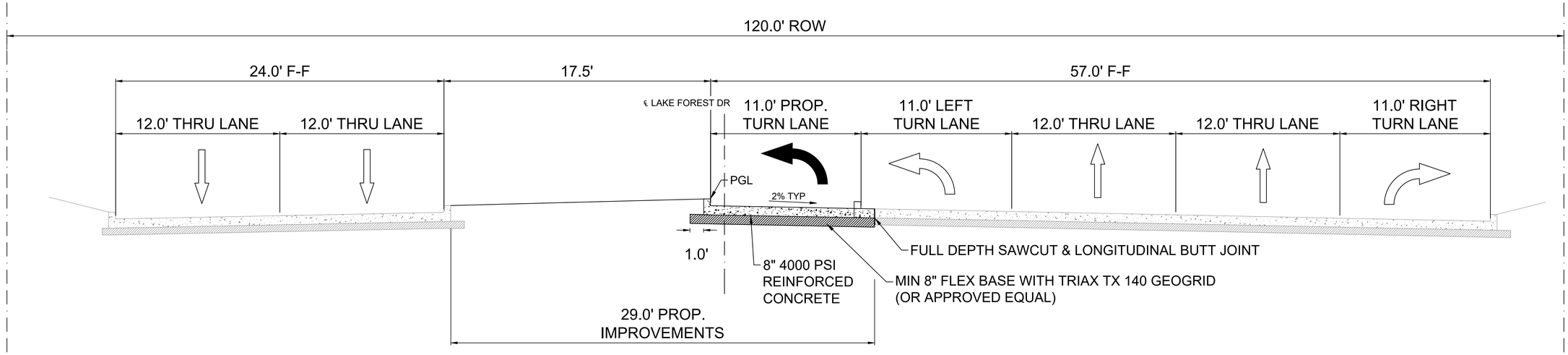
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NOTE
EXISTING TYPICAL SECTION BASED ON CITY OF MCKINNEY PROJECT: LAKE FOREST DRIVE NORTH, 1998.



NB LAKE FOREST DR - EXISTING
NTS



NB LAKE FOREST DR - PROPOSED
LEFT TURN LANE AT US 380
NTS

REVISIONS

NO	DATE	COMMENT

STATE OF TEXAS
PRIYA MISTRY
142526
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TYPICAL SECTION (3 OF 3)

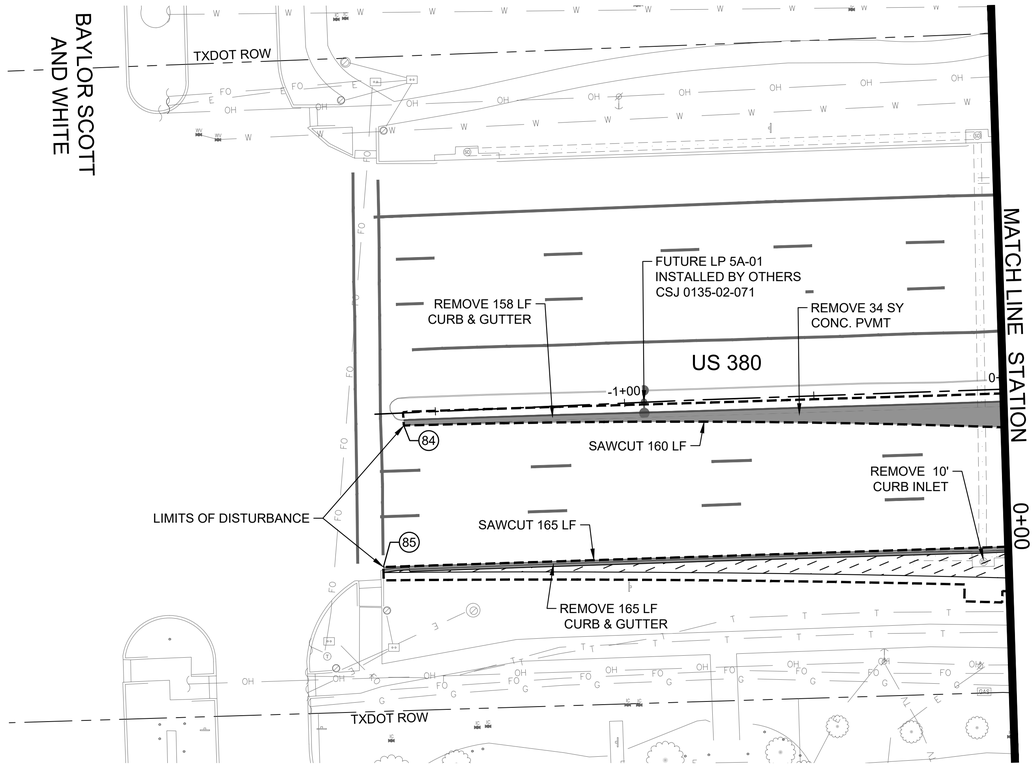
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Frisco, Texas 75034
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PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET
46

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\23120640 1_GENL_SECT.dwg - Plotted: 1/5/2026



Point Table		
Point #	Northing	Easting
84	7132055.9705	2524752.7449
85	7132018.5941	2524747.5100

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20' (22" X 34")
SCALE: 1"= 40' (11"X17")

LEGEND

- CONC. PVMT REMOVAL
- CONC. SIDEWALK REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. CONTRACTOR SHALL SAWCUT AND LEAVE IN PLACE A 10'X10' CONCRETE WEDGE OR FILL 10' X 10' CORNER WITH HOT MIX ASPHALT (HMA) AT IMPROVEMENTS TO RIGHT TURN LANES. MATERIAL WILL REMAIN IN PLACE TILL TIME TO PREP SUBGRADE AND POUR CONCRETE. (NO PAY ITEM).
3. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
REMOVAL PLAN
STA. -1+61 TO STA. 0+00 (EB & WB)

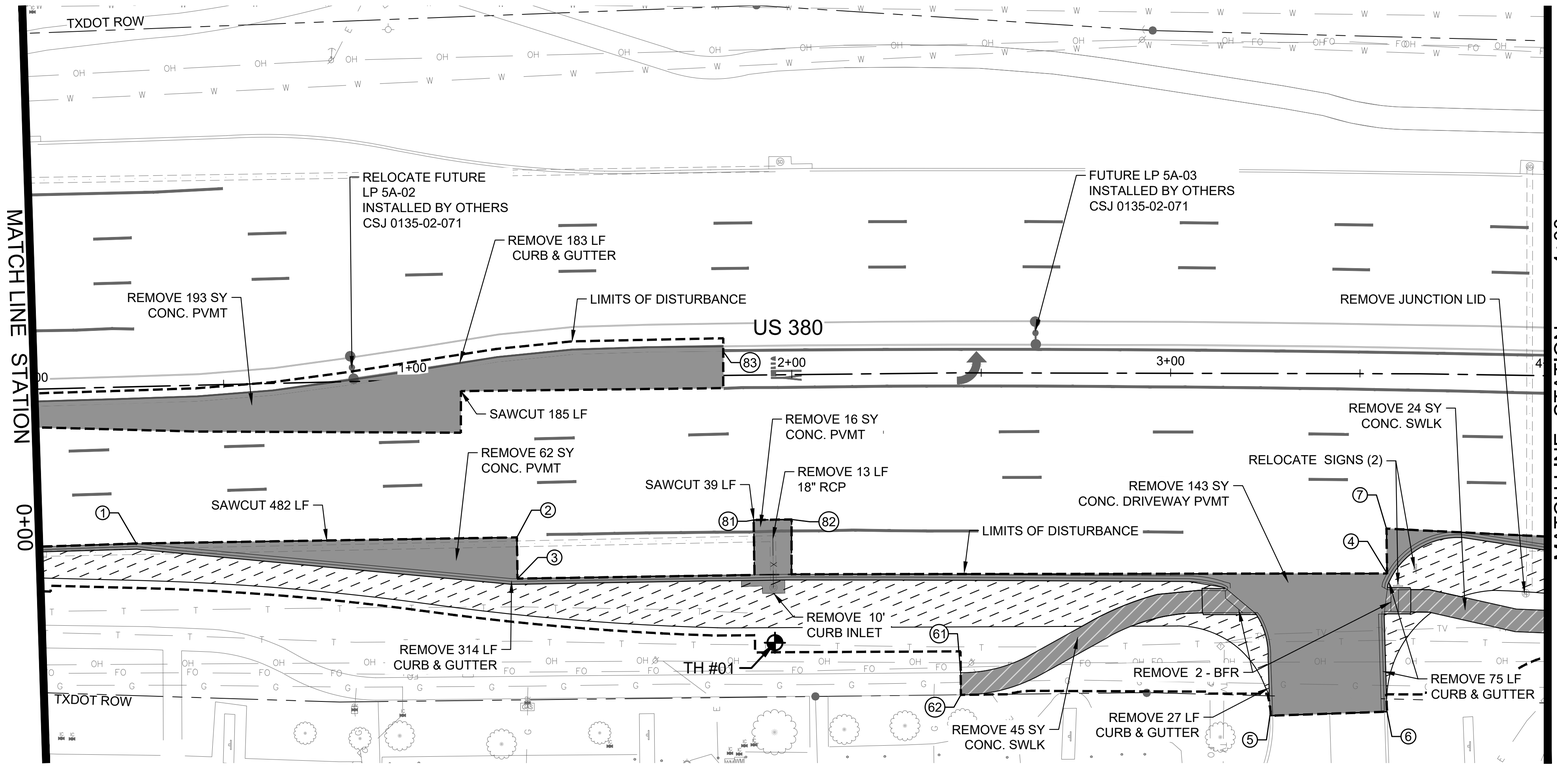
McKINNEY TEXAS Unique by nature.

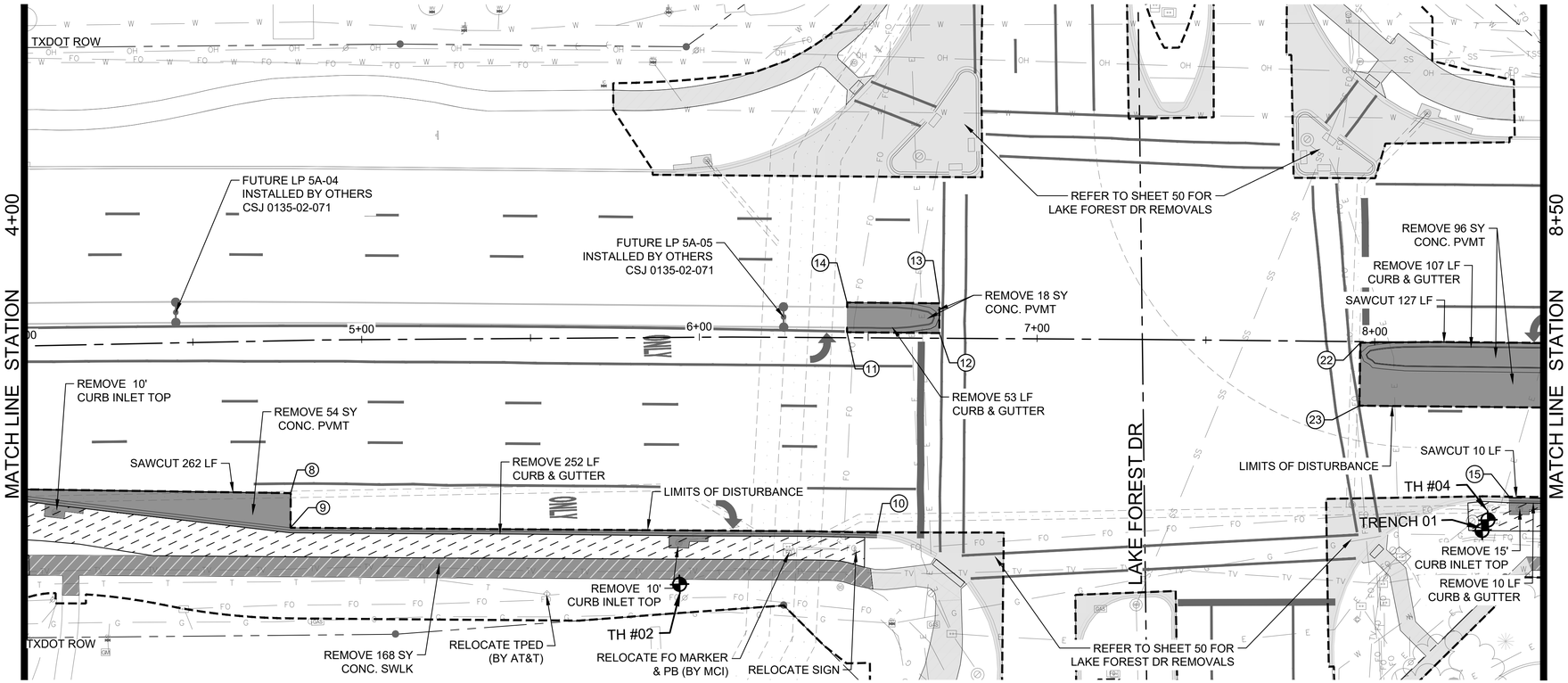
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET
47

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23126401_RMVL.dwg - Plotted: 1/5/2026





Point Table		
Point #	Northing	Easting
1	7132025.6289	2524938.0247
2	7132027.6793	2525038.4638
3	7132016.8081	2525038.6857
4	7132019.1579	2525268.2054
5	7131981.4937	2525237.4502
6	7131982.6704	2525268.3692
7	7132030.9992	2525268.0094
8	7132025.5441	2525388.4173
9	7132015.2936	2525388.0281
10	7132008.7056	2525561.5408
11	7132067.9974	2525554.5443
12	7132066.9044	2525581.8697
13	7132075.7077	2525582.2137
14	7132076.8033	2525554.8254
15	7132013.2254	2525749.0607
22	7132060.1588	2525706.4104
23	7132041.5336	2525705.5406
61	7131992.4875	2525155.7507
62	7131986.6247	2525155.8439
81	7132032.5703	2525100.9552
82	7132032.7264	2525110.9540
83	7132076.9802	2525092.7573

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20' (22" X 34")
SCALE: 1"= 40' (11"X17")

LEGEND

- CONC. PVMT REMOVAL
- CONC. SIDEWALK REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. CONTRACTOR SHALL SAWCUT AND LEAVE IN PLACE A 10'X10' CONCRETE WEDGE OR FILL 10' X 10' CORNER WITH HOT MIX ASPHALT (HMA) AT IMPROVEMENTS TO RIGHT TURN LANES. MATERIAL WILL REMAIN IN PLACE TILL TIME TO PREP SUBGRADE AND POUR CONCRETE. (NO PAY ITEM).
3. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
US 380 & LAKE FOREST DR
REMOVAL PLAN
STA. 0+00 TO STA. 8+50 (EB & WB)

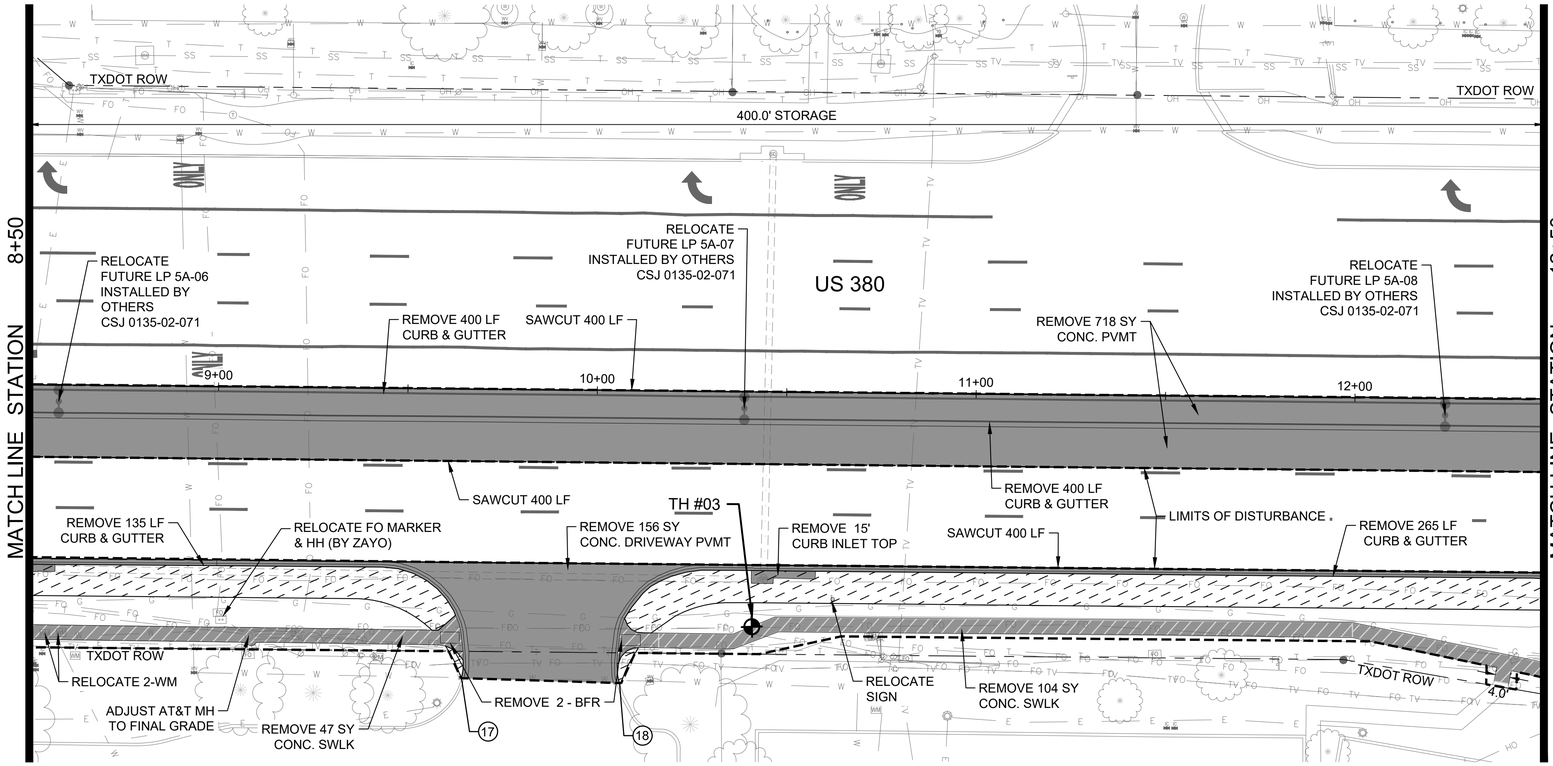
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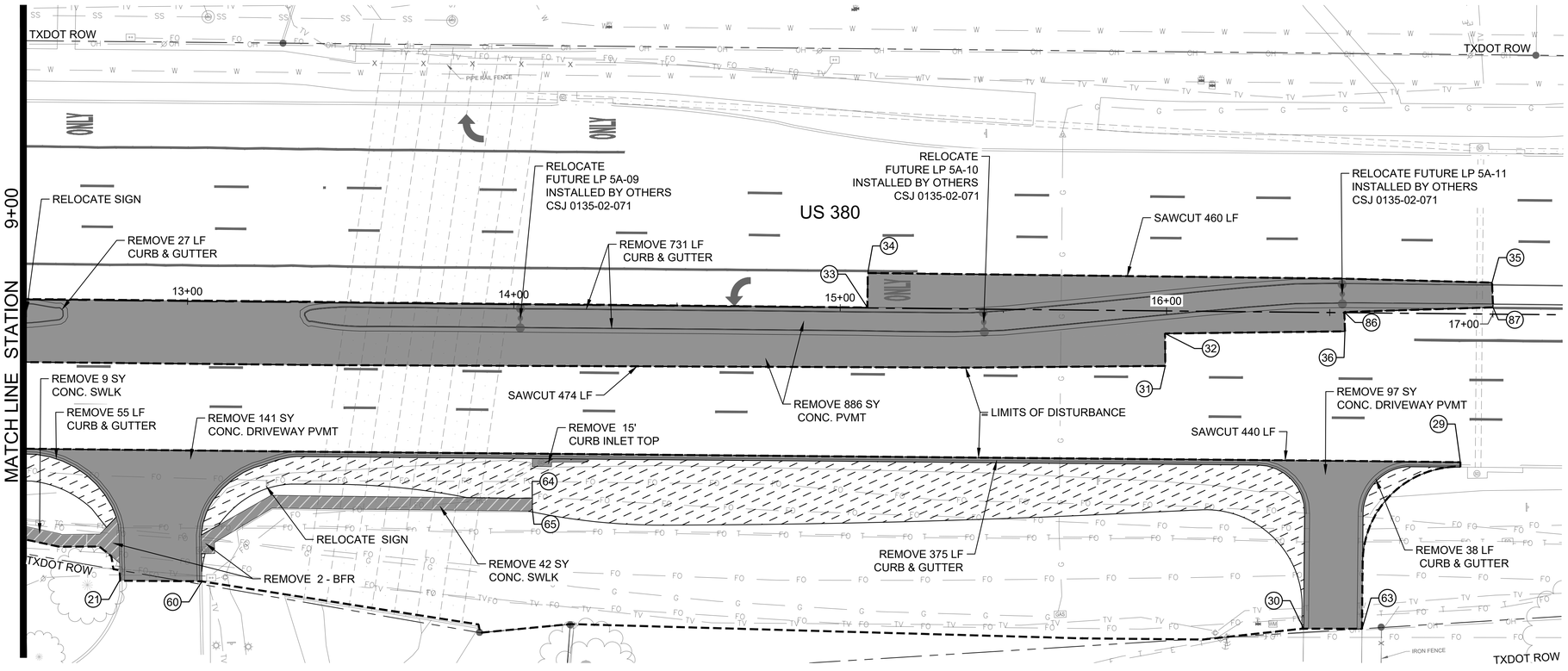
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 48

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mom\02_PLAN_SHEET\23120640 1_RMVL.dwg - Plotted: 1/5/2026





Point Table		
Point #	Northing	Easting
17	7131977.3038	2525872.2646
18	7131974.6859	2525913.9171
21	7131954.9937	2526186.7751
29	7131978.3578	2526598.5042
30	7131928.8651	2526548.9171
31	7132010.6762	2526509.0611
32	7132020.6022	2526509.2864
33	7132031.4143	2526418.3773
34	7132041.9740	2526418.8319
35	7132033.0653	2526609.9145
36	7132019.5478	2526564.4062
63	7131928.1461	2526566.7678
64	7131976.1984	2526313.8993
65	7131972.8925	2526313.8453
86	7132025.4677	2526564.4056
87	7132025.4722	2526609.9788

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

SCALE: 1"= 20' (22" X 34")
SCALE: 1"= 40' (11"X17")

LEGEND

- CONC. PVMT REMOVAL
- CONC. SIDEWALK REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. CONTRACTOR SHALL SAWCUT AND LEAVE IN PLACE A 10'X10' CONCRETE WEDGE OR FILL 10' X 10' CORNER WITH HOT MIX ASPHALT (HMA) AT IMPROVEMENTS TO RIGHT TURN LANES. MATERIAL WILL REMAIN IN PLACE TILL TIME TO PREP SUBGRADE AND POUR CONCRETE. (NO PAY ITEM).
3. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
US 380 & LAKE FOREST DR
REMOVAL PLAN
STA. 8+50 TO END (EB & WB)

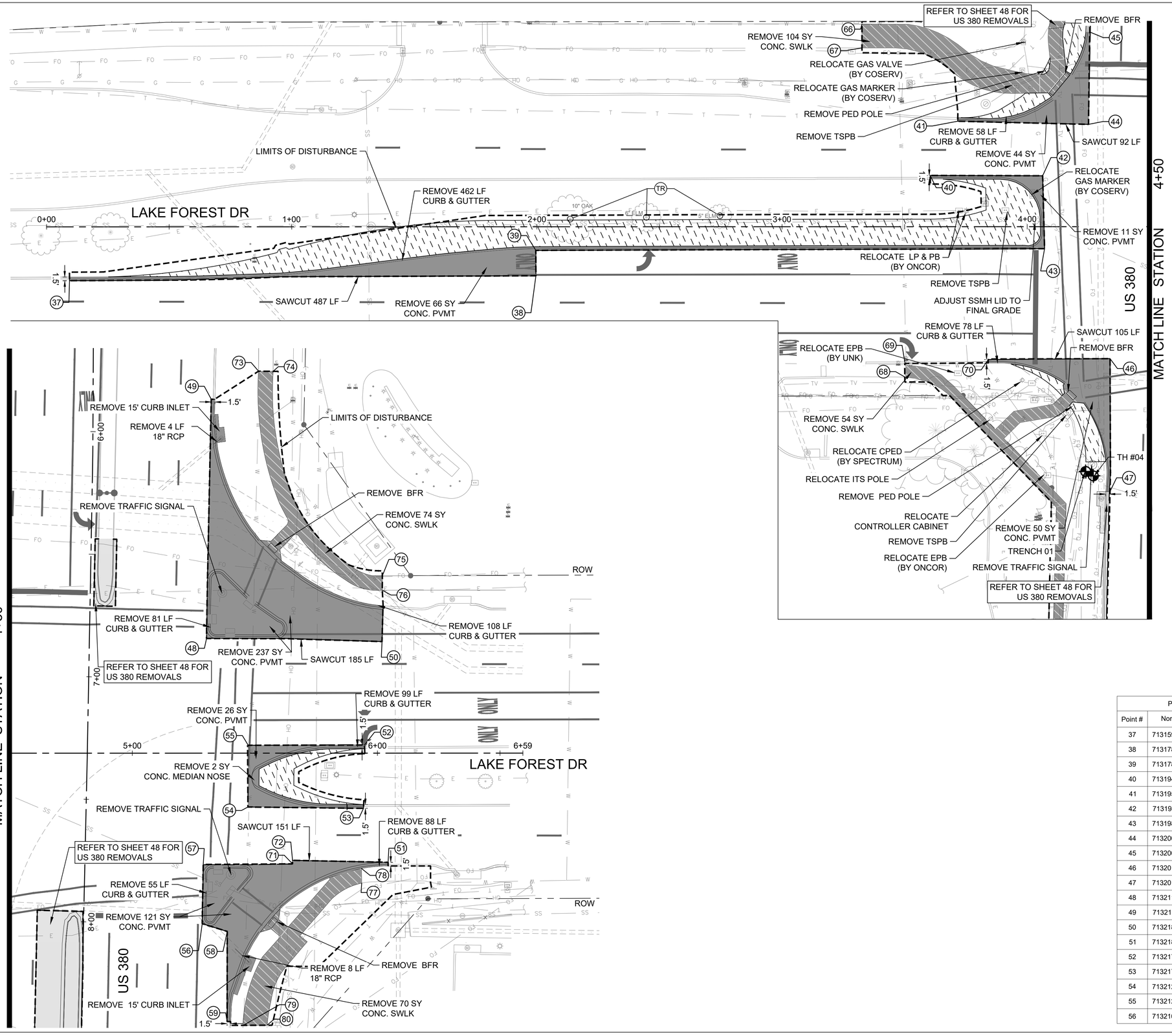
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 49

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\231206401_RMVL.dwg - Plotted: 1/5/2026



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!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

NO	DATE	COMMENT

REVISIONS

0 10' 20' 40'

SCALE: 1"= 20' (22" X 34")
SCALE: 1"= 40' (11"X17")

LEGEND

- CONC. PVMT REMOVAL
- CONC. SIDEWALK REMOVAL
- MEDIAN / PARKWAY REMOVAL
- DISTURBED AREA
- TREE REMOVAL

NOTES:

1. REMOVAL OF EXISTING IRRIGATION MAINS AND ALL OTHER APPURTENANCES RELATED TO IRRIGATION WILL BE SUBSIDIARY. (NO PAY ITEM)
2. CONTRACTOR SHALL SAWCUT AND LEAVE IN PLACE A 10'X10' CONCRETE WEDGE OR FILL 10' X 10' CORNER WITH HOT MIX ASPHALT (HMA) AT IMPROVEMENTS TO RIGHT TURN LANES. MATERIAL WILL REMAIN IN PLACE TILL TIME TO PREP SUBGRADE AND POUR CONCRETE. (NO PAY ITEM).
3. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.

Point Table		
Point #	Northing	Easting
37	7131590.5125	2525655.0556
38	7131780.7569	2525656.6214
39	7131780.9125	2525646.2567
40	7131942.3445	2525618.7314
41	7131953.9752	2525596.8069
42	7131988.1851	2525619.7239
43	7131988.3979	2525649.4476
44	7132007.2793	2525599.1050
45	7132008.7056	2525561.5408
46	7132014.2690	2525694.8094
47	7132013.2270	2525749.0254
48	7132112.6486	2525595.9619
49	7132116.3861	2525498.4912
50	7132184.1787	2525598.6356
51	7132184.9683	2525688.6912
52	7132176.2393	2525640.6929
53	7132175.3368	2525666.5024
54	7132128.2175	2525665.0659
55	7132128.8155	2525639.8981
56	7132108.6884	2525712.3054

Point Table		
Point #	Northing	Easting
57	7132109.5510	2525688.2774
58	7132118.8316	2525715.6596
59	7132118.0862	2525752.3966
66	7131915.6618	2525556.4686
67	7131915.5224	2525566.1693
68	7131930.5714	2525700.7919
69	7131930.7301	2525695.8419
70	7131964.6091	2525694.2502
71	7132146.0018	2525688.6149
72	7132145.9999	2525687.1634
73	7132135.9013	2525487.4133
74	7132141.8332	2525487.6014
75	7132184.8168	2525571.8052
76	7132184.7091	2525577.7075
77	7132174.0280	2525696.9781
78	7132174.0348	2525690.9781
79	7132124.5016	2525754.1651
80	7132134.3944	2525754.1763

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

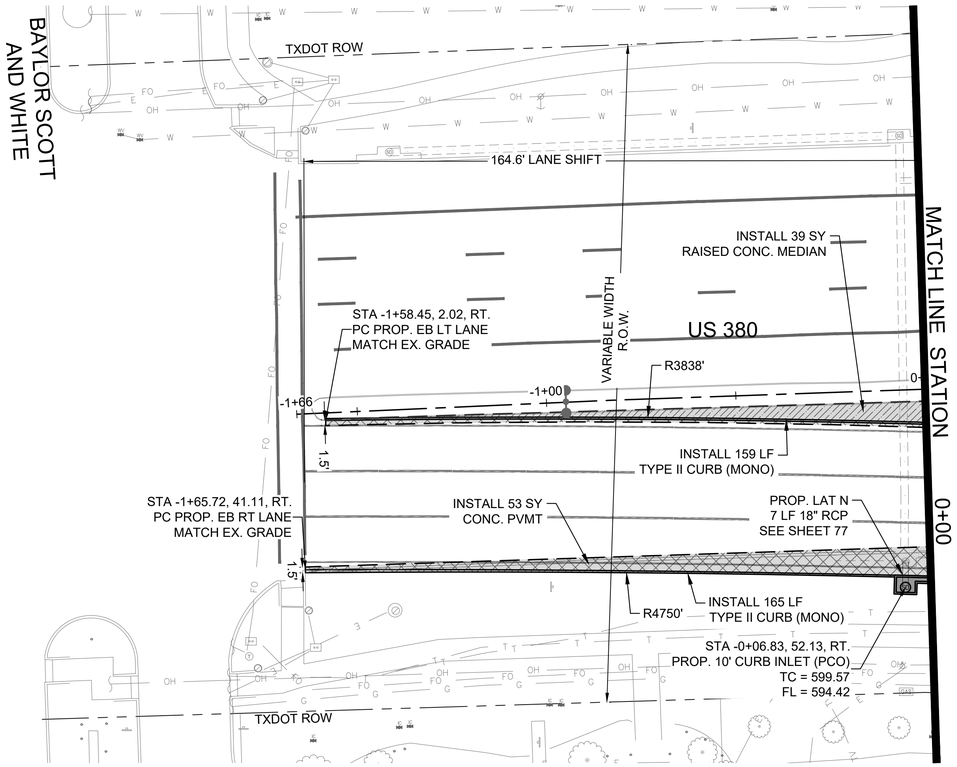
INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR REMOVAL PLAN STA. 0+00 TO END (NB & SB)

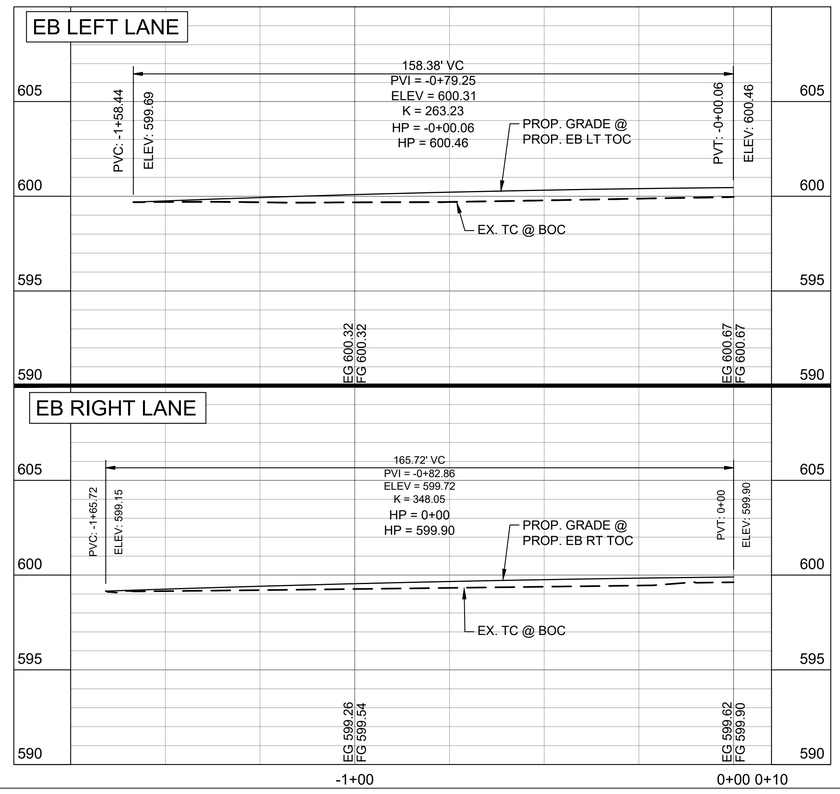
McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 50





!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 10' 20' 40'

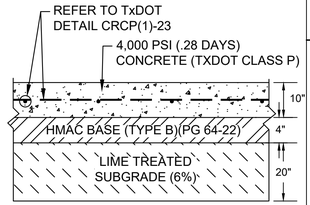
SCALE: H 1" = 40' H 1" = 20'
V 1" = 8' V 1" = 4'
(11"X17") (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

NOTES:

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4. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.
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6. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.



TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR PAVING PLAN & PROFILE STA. -1+66 TO STA. 0+00 (EB)

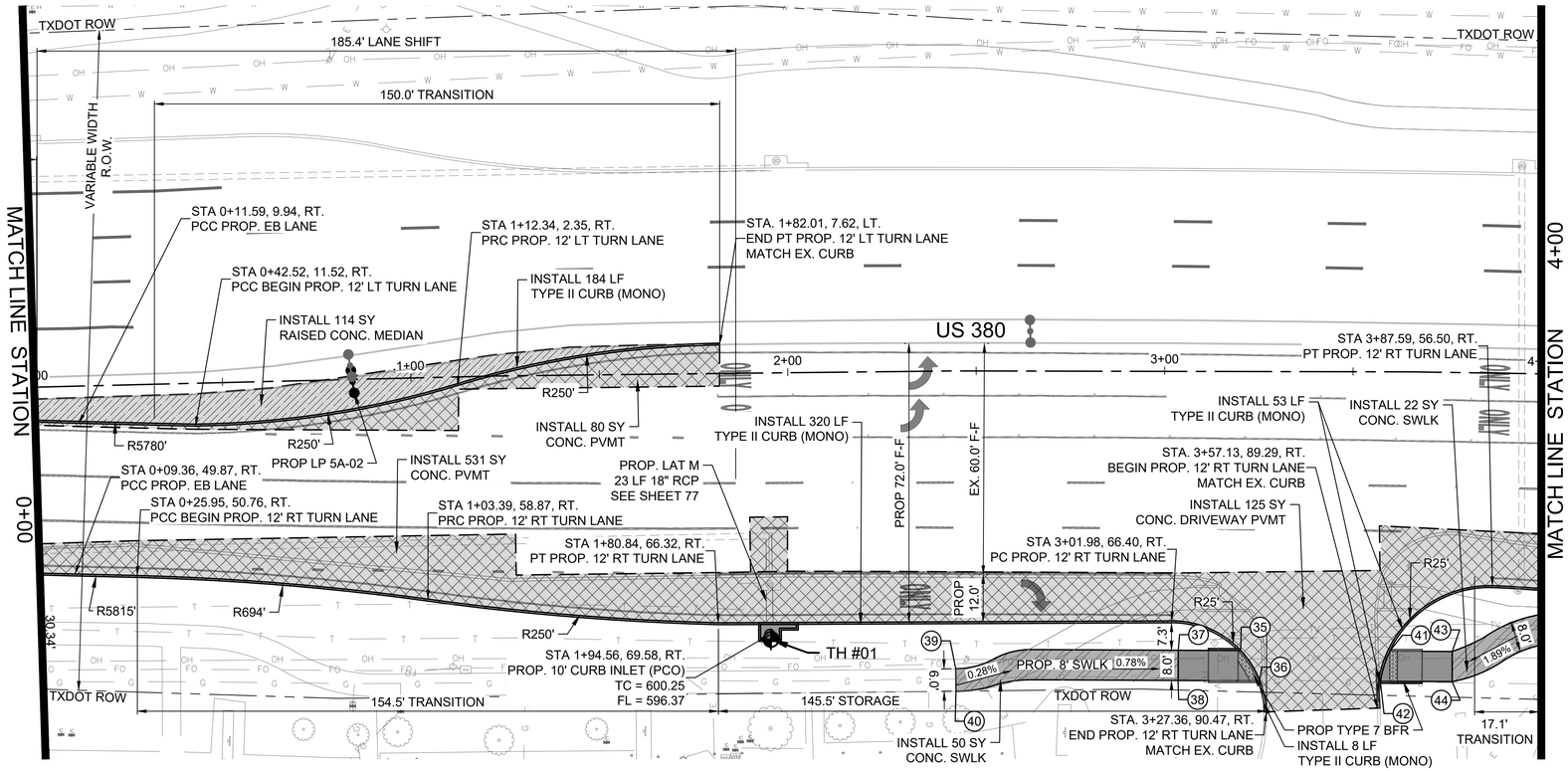
McKINNEY TEXAS Unique by nature.

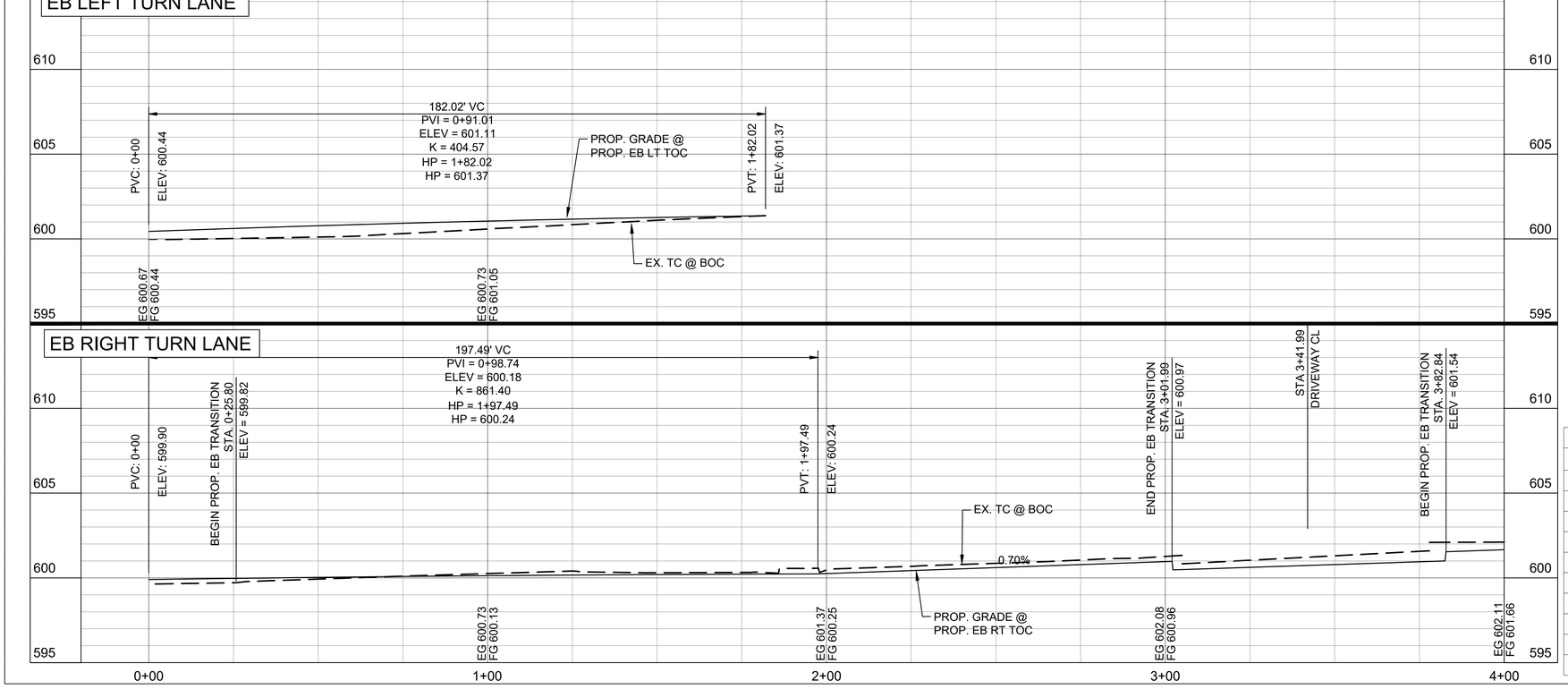
CobbFendley
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2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 51

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mxml\02_PLAN_SHEET\231206401_RDWY_US380ALF.dwg - Plotted: 1/5/2026





!!! WARNING !!!

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0 10' 20' 40'

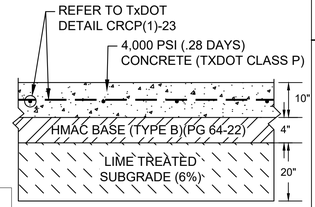
SCALE: H 1" = 40' V 1" = 8' (11"X17") H 1" = 20' V 1" = 4' (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

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5. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
6. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.



TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

Point Table

Point #	Northing	Easting	Elevation
35	7131997.7678	2525231.3301	601.44
36	7131989.7712	2525236.4388	601.64
37	7131997.7568	2525214.7876	601.31
38	7131989.7689	2525214.7496	601.47
39	7131992.6291	2525155.7547	601.72
40	7131986.6510	2525155.8436	601.89
41	7131997.7722	2525270.8739	0.00
42	7131989.7108	2525268.4333	0.00
43	7131997.7624	2525287.4797	0.00
44	7131989.7624	2525287.4797	0.00

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 0+00 TO STA. 4+00 (EB)

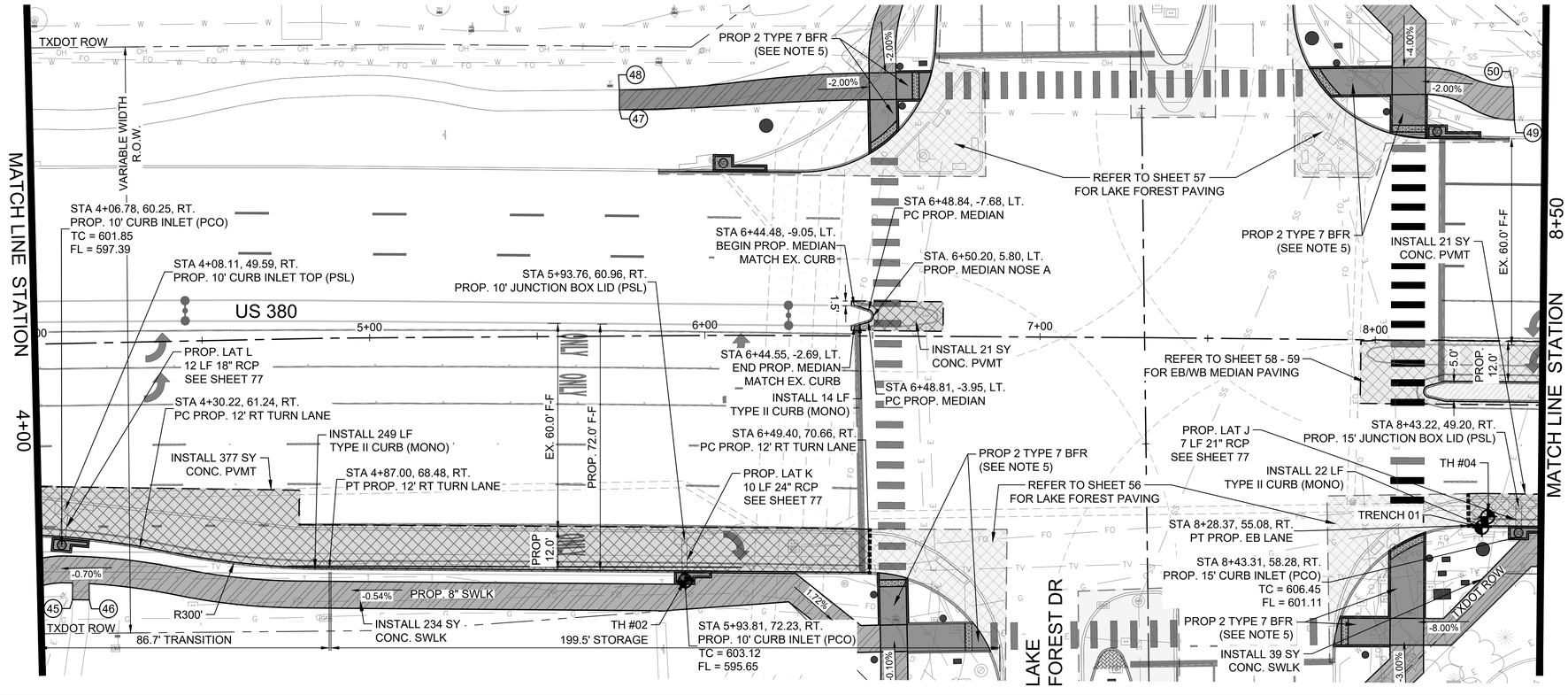
McKINNEY TEXAS Unique by nature.

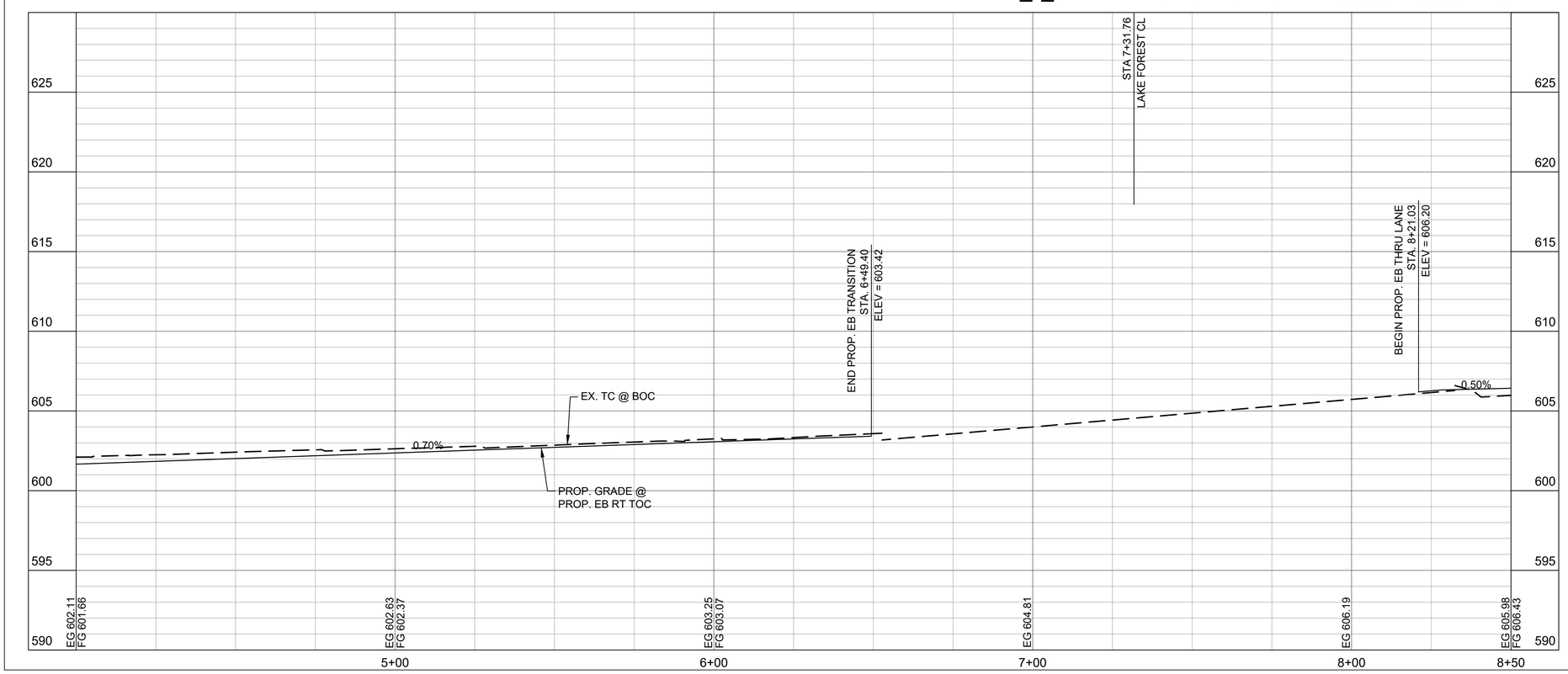
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 52

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Msm\02_PLAN_SHEET\23120640 1_RDWY_US380&LF.dwg - Plotted: 1/5/2026





!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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0 10' 20' 40'

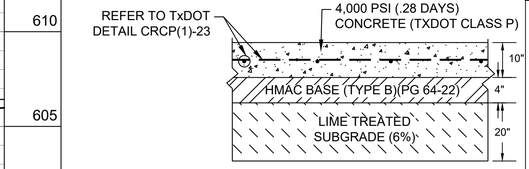
SCALE: H 1" = 40' H 1" = 20'
V 1" = 8' V 1" = 4'
(11"X17") (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

NOTES:

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3. CONTRACTOR SHALL ADJUST EXISTING APPURTENANCES TO FINAL GRADE.
4. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.
5. REFER TO PEDESTRIAN RAMP LAYOUT (SHEET 60) FOR SPOT ELEVATIONS OF PROPOSED RAMPS AT INTERSECTION.
6. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
7. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.



TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

Point Table			
Point #	Northing	Easting	Elevation
45	7131995.0216	2525319.7755	602.76
46	7131994.8191	2525324.7801	602.70
47	7132135.9013	2525487.4133	604.99
48	7132141.8332	2525487.6014	605.07
49	7132124.5016	2525754.1651	606.34
50	7132134.3944	2525754.1763	606.49

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 4+00 TO STA. 8+50 (EB)

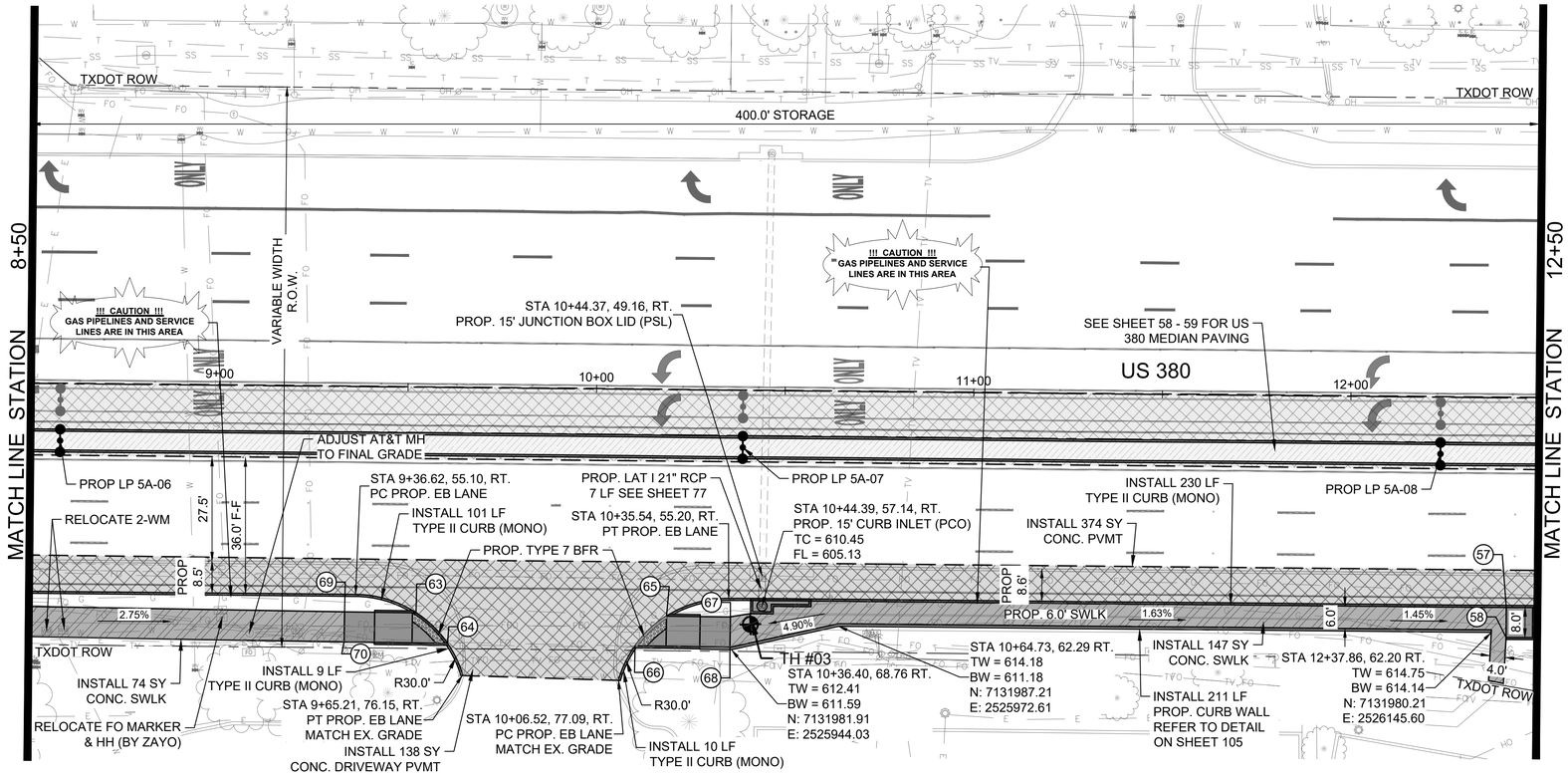
McKINNEY TEXAS Unique by nature.

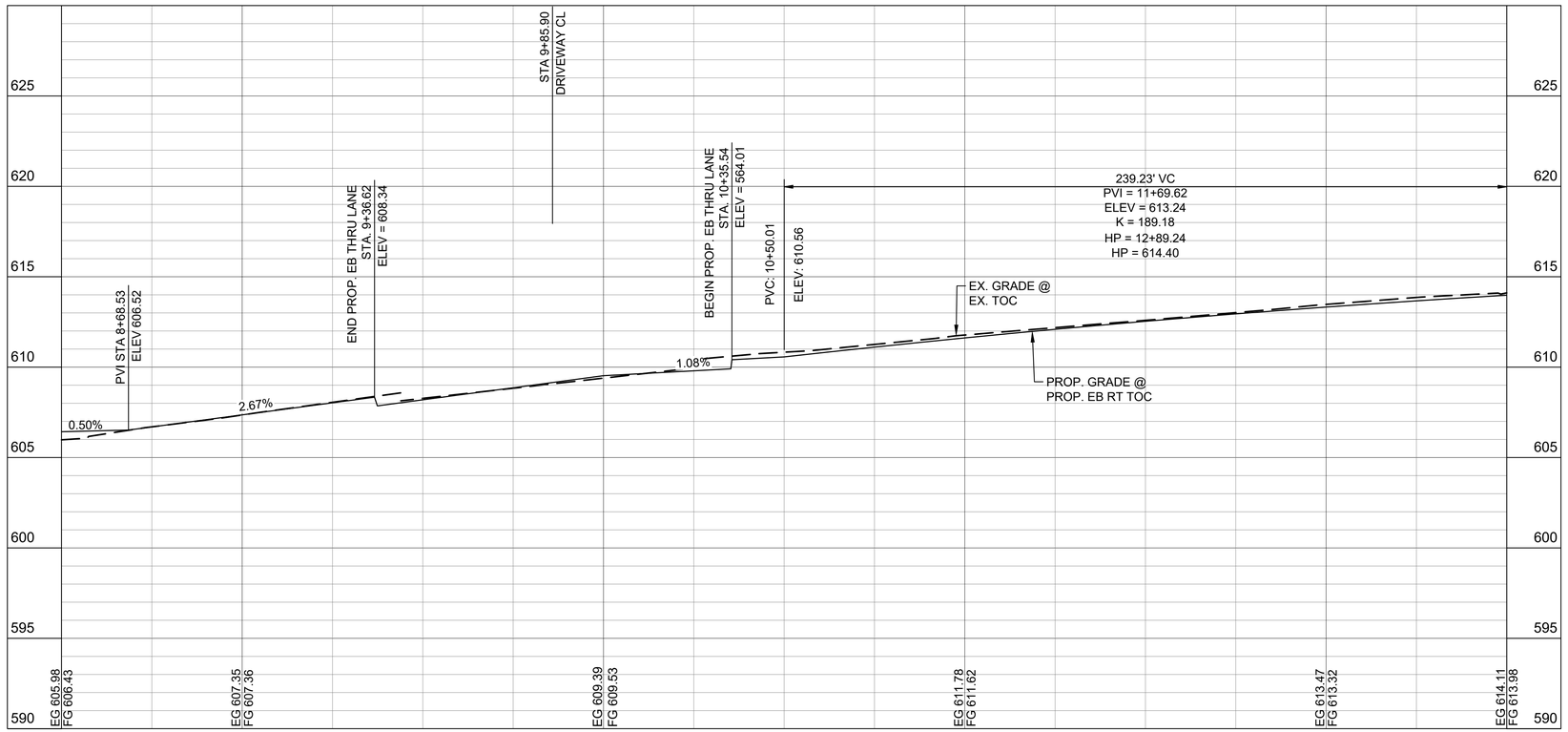
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 53

Dwg Info: f:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RDWY_US380&LF.dwg - Plotted: 1/5/2026





Point Table			
Point #	Northing	Easting	Elevation
57	7131986.7321	2526149.7400	613.92
58	7131978.7374	2526149.4466	614.08
63	7131994.2954	2525860.7666	609.13
64	7131985.8846	2525868.8656	609.36
65	7131991.3442	2525927.1190	610.41
66	7131983.7195	2525918.5419	610.14
67	7131990.6294	2525944.0378	610.47
68	7131982.6009	2525943.6466	610.63
69	7131995.1365	2525841.8273	608.28
70	7131987.1443	2525841.4730	608.44

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0 10' 20' 40'

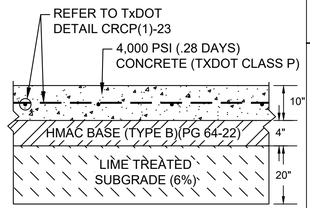
SCALE: H 1" = 40' V 1" = 8' (11"X17") H 1" = 20' V 1" = 4' (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

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TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 8+50 TO STA. 12+50 (EB)

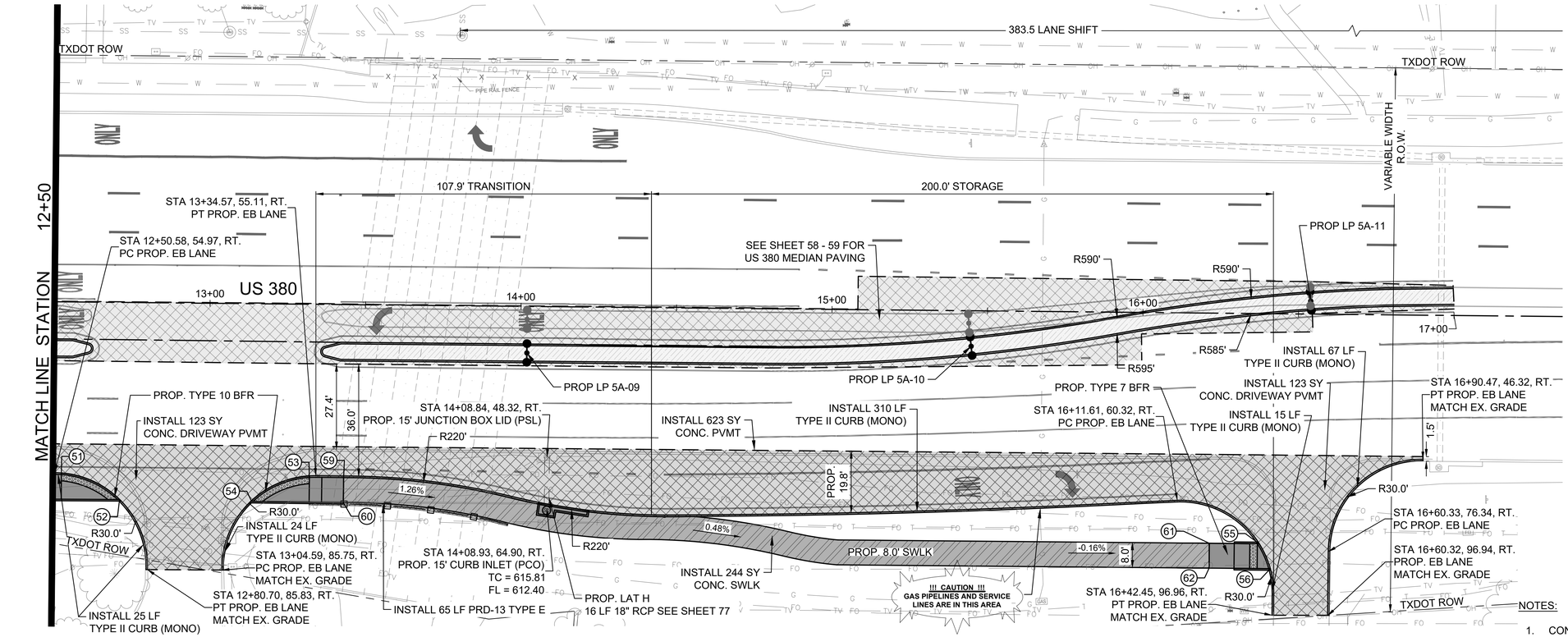
McKINNEY TEXAS Unique by nature.

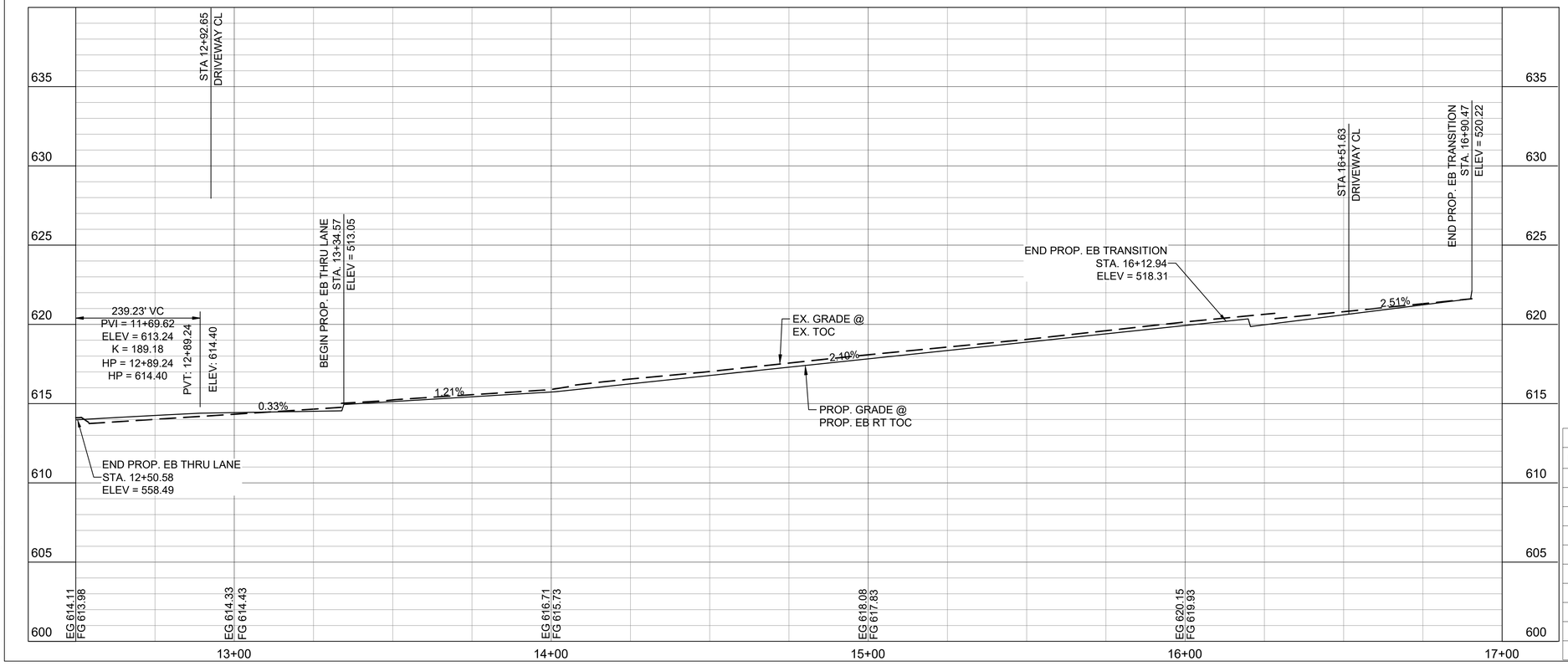
CobbFendley
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 54

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640 1_RDWY_US380ALF.dwg - Plotted: 1/5/2026





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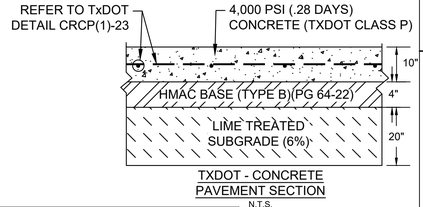
SCALE: H 1" = 40' V 1" = 8' (11"X17") | H 1" = 20' V 1" = 4' (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
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- PROP. DETECTABLE WARNING SURFACE
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TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

Point Table			
Point #	Northing	Easting	Elevation
51	7131986.7519	2526160.7403	613.62
52	7131977.6698	2526179.1735	613.22
53	7131983.3365	2526240.4020	614.75
54	7131975.8090	2526221.5557	613.66
55	7131952.0102	2526545.0129	0.00
56	7131943.8707	2526548.3299	0.00
59	7131982.4638	2526251.4111	615.10
60	7131974.4475	2526251.0644	614.94
61	7131952.6549	2526528.9429	0.00
62	7131944.6594	2526528.6691	0.00

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 12+50 TO END (EB)

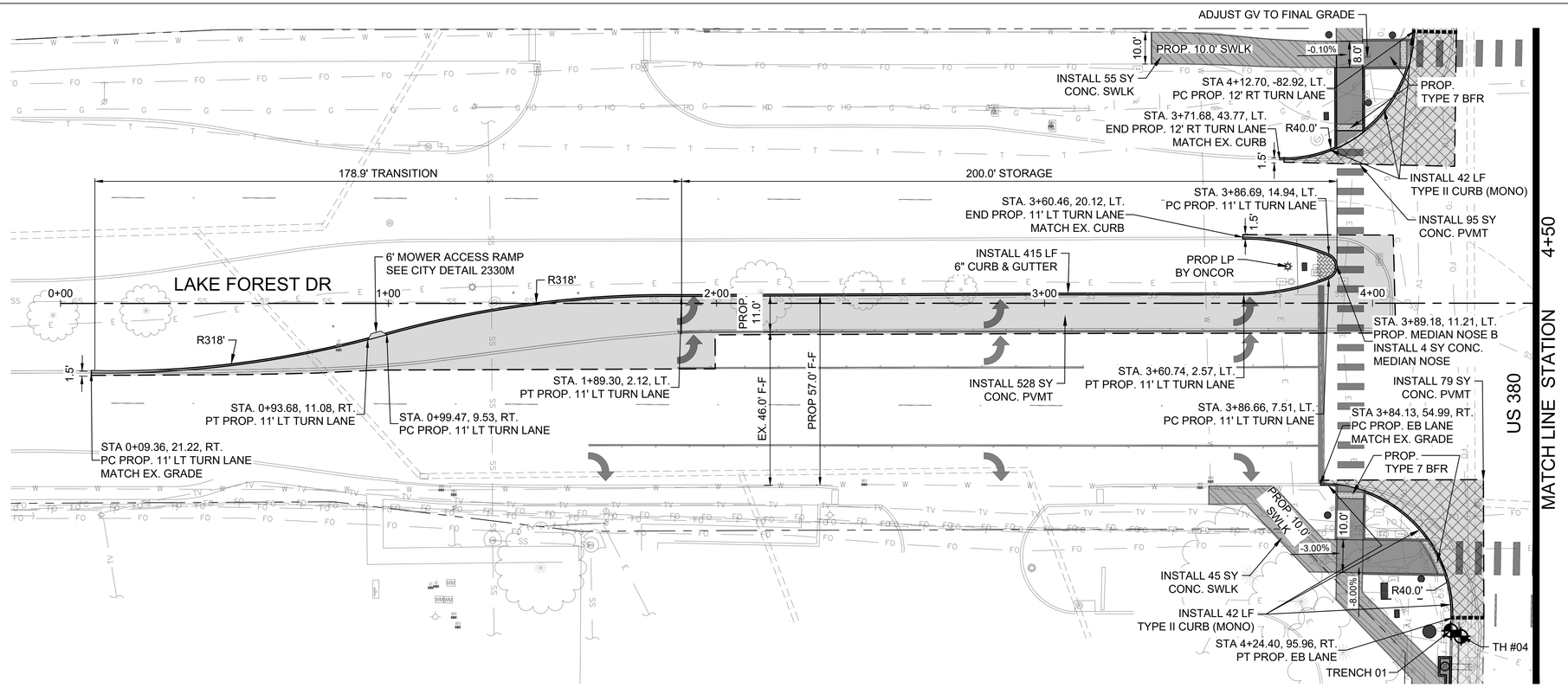
McKINNEY TEXAS Unique by nature.

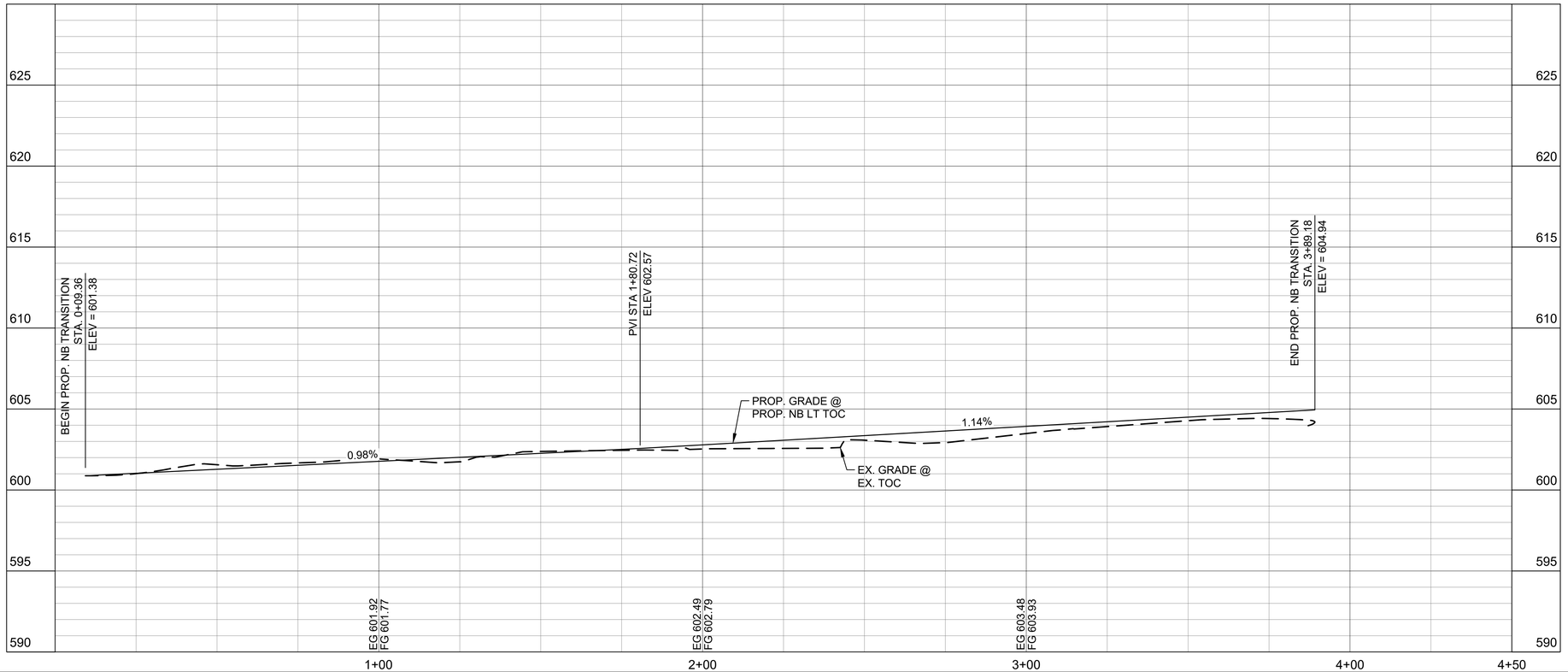
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 55

Dwg Info: f:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RDWY_US380&LF.dwg - Plotted: 1/5/2026





!!! WARNING !!!
EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

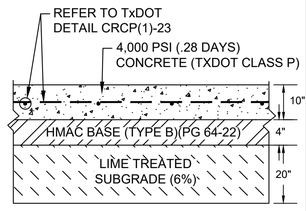
SCALE: H 1" = 40' V 1" = 8' (11"X17") | H 1" = 20' V 1" = 4' (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN
- PROP. TEXTURED CONC.

NOTES:

1. CONTRACTOR WILL POTHOLE AND FIELD VERIFY EXISTING UTILITIES AT PROPOSED PEDESTRIAN AND SIGNAL POLE LOCATIONS PRIOR TO CONSTRUCTION. REFER TO SIGN POLE LAYOUT SHEETS FOR DETAILS ON PROPOSED LOCATIONS (NON-PAY ITEM).
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3. CONTRACTOR SHALL ADJUST EXISTING APPURTENANCES TO FINAL GRADE.
4. EXISTING INLETS TO BE RELOCATED SHALL BE CAPPED AND USED AS A JUNCTION BOX FOR PROPOSED INLET.
5. REFER TO REMOVAL SHEET FOR UTILITY RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.
6. COORDINATE WITH UTILITY OWNERS PRIOR TO RELOCATIONS AND ADJUSTMENTS TO FINAL GRADE.



TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 0+00 TO STA. 4+50 (NB & SB)

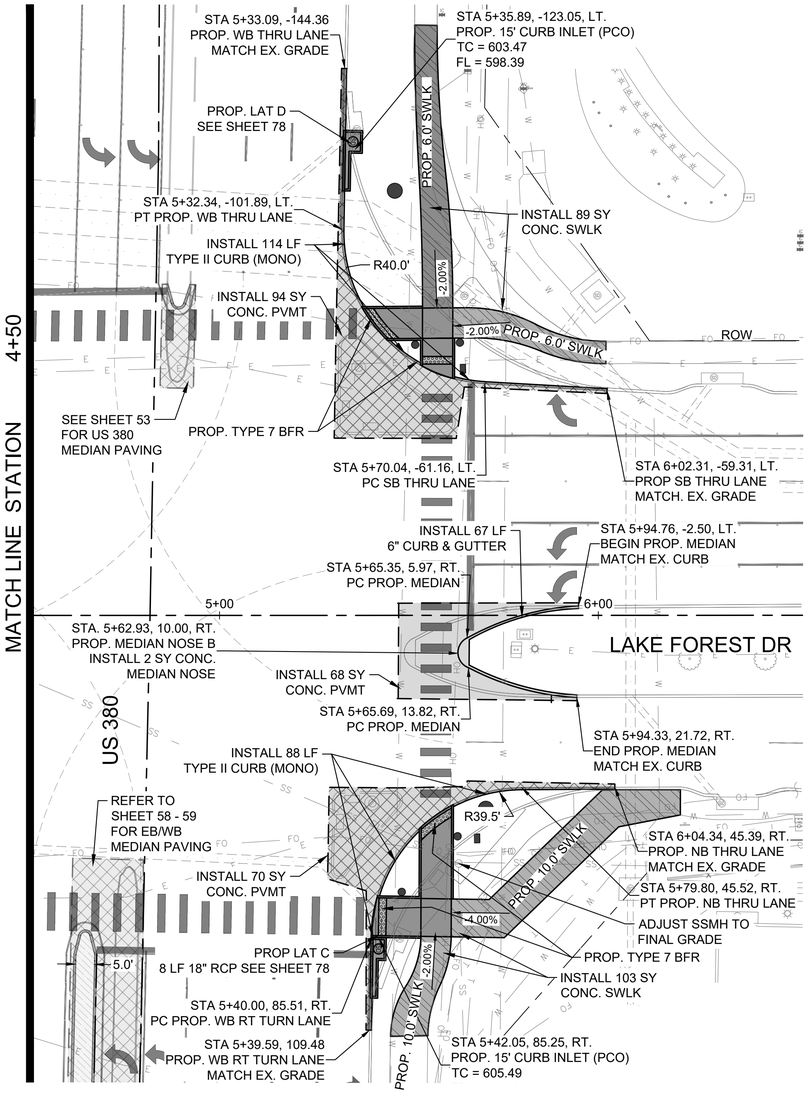
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/8/2026	JOB NUMBER: 2312-064-01

SHEET 56

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mxml\02_PLAN_SHEET\2312064_RDWY_US380&LF.dwg - Plotted: 1/8/2026



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0 10' 20' 40'

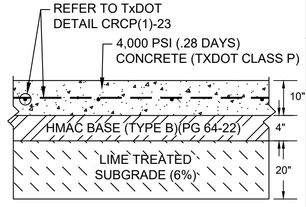
SCALE: H 1" = 40' H 1" = 20'
V 1" = 8' V 1" = 4'
(11"X17") (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

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TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 4+50 TO END
(NB & SB)

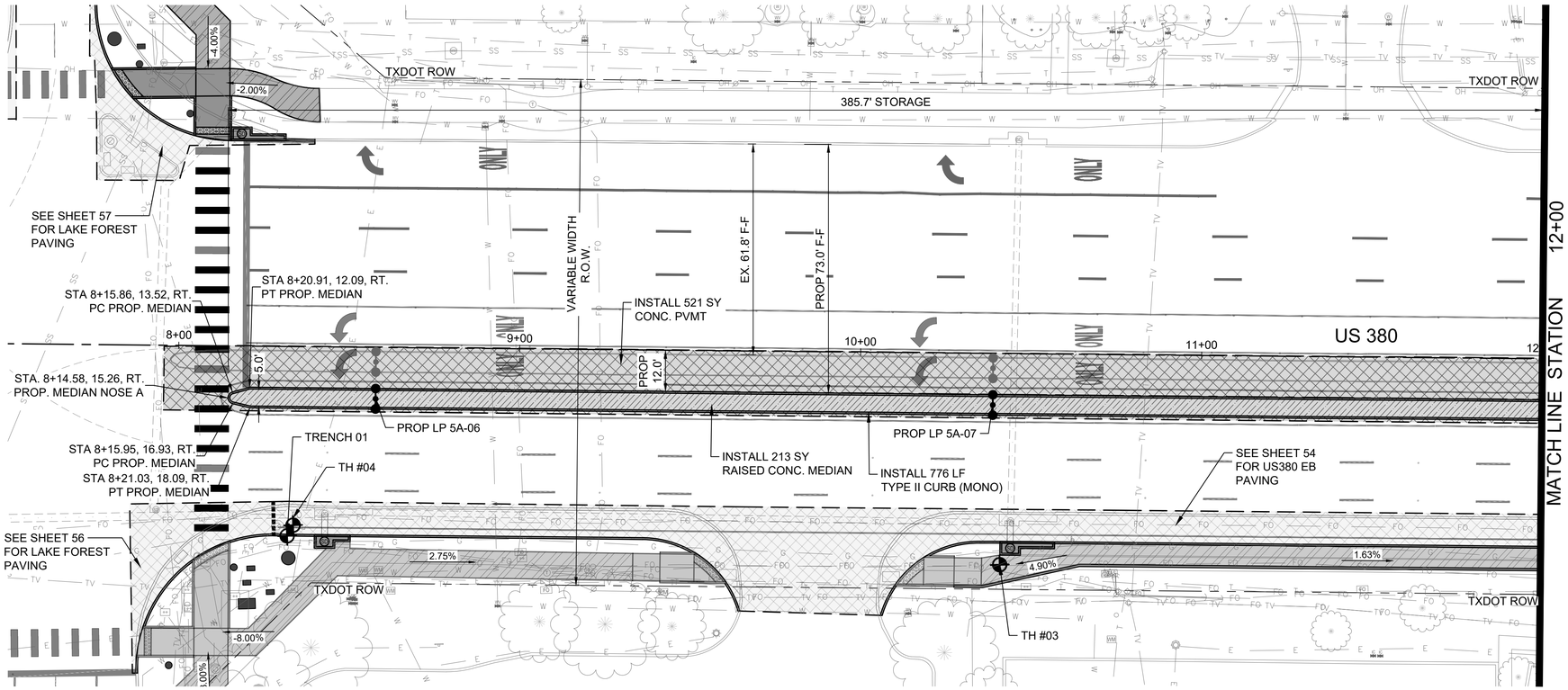
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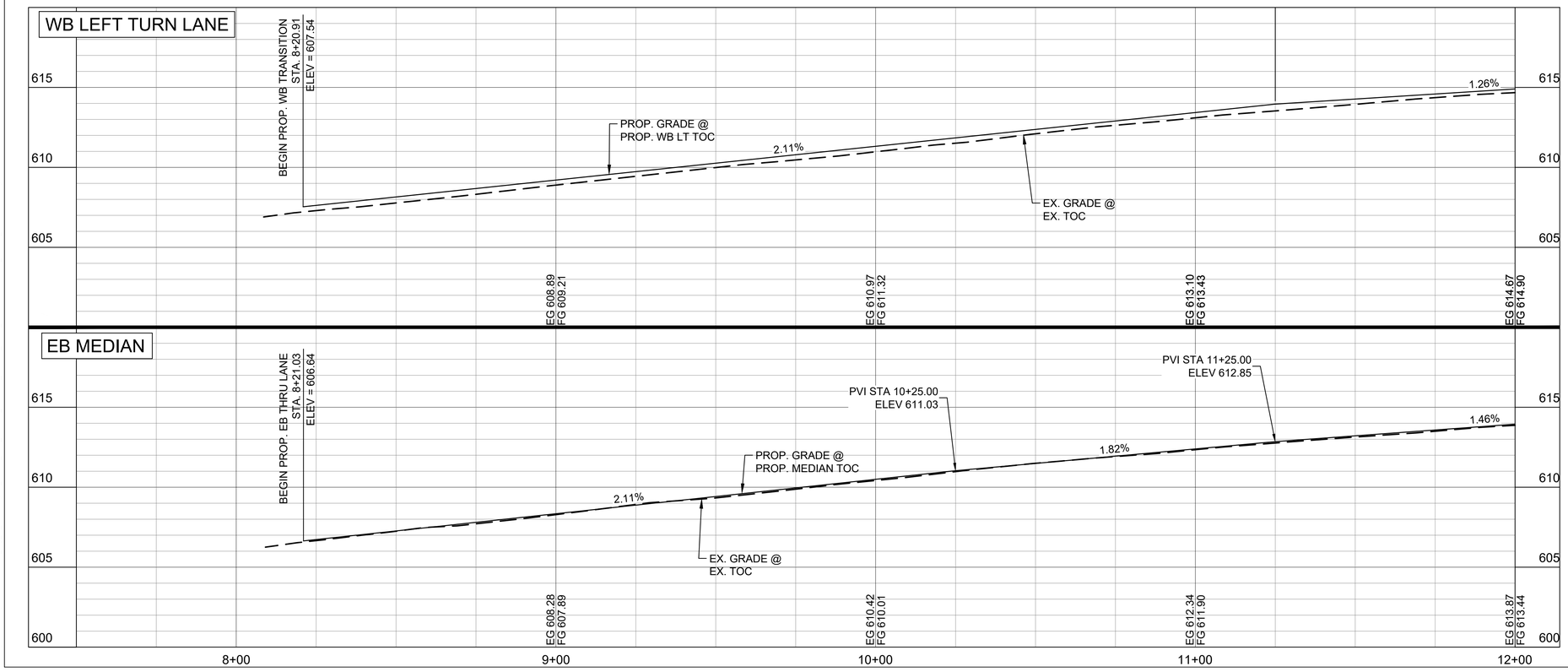
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/6/2026	2312-064-01

SHEET 57

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_RDWY_US380&LF.dwg - Plotted: 1/6/2026





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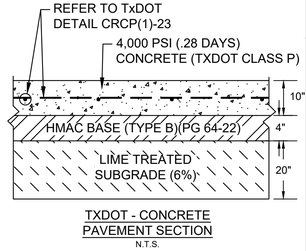
SCALE: H 1" = 40' H 1" = 20'
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(11"X17") (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

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TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 0+00 TO STA. 12+00
WB LEFT TURN LANE & EB MEDIAN

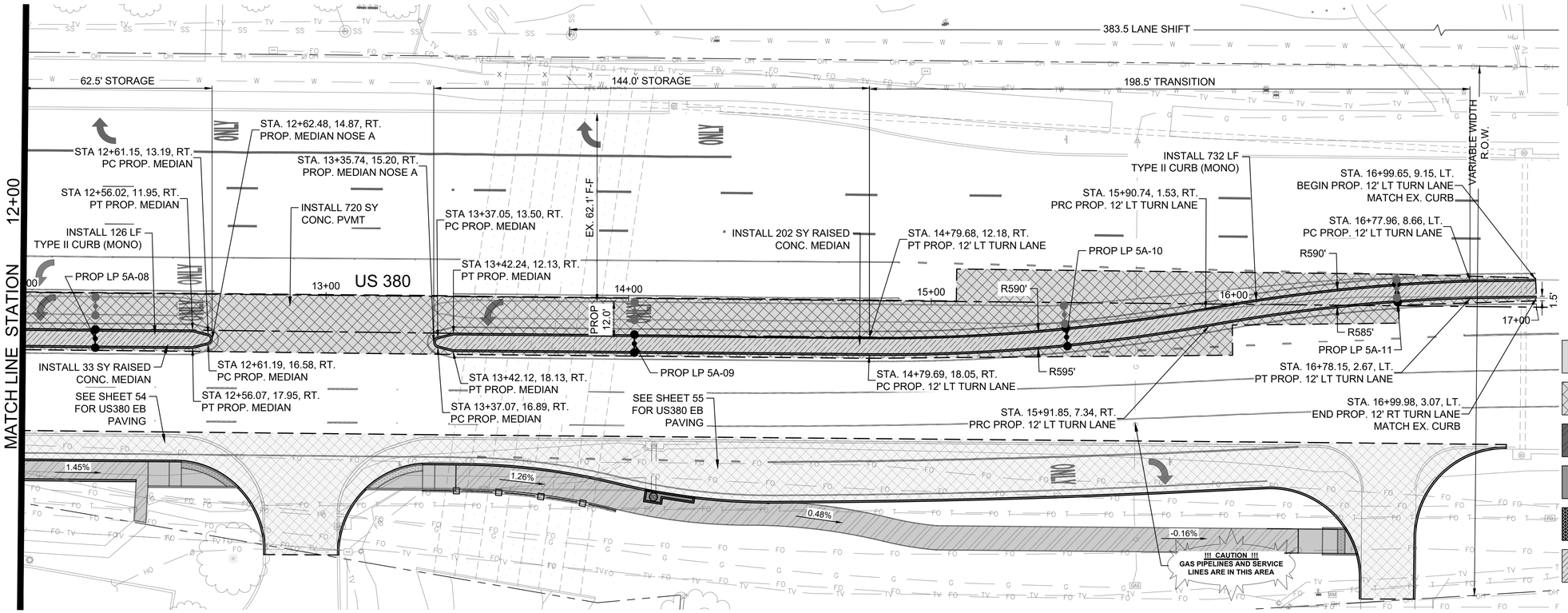
McKINNEY TEXAS Unique by nature.

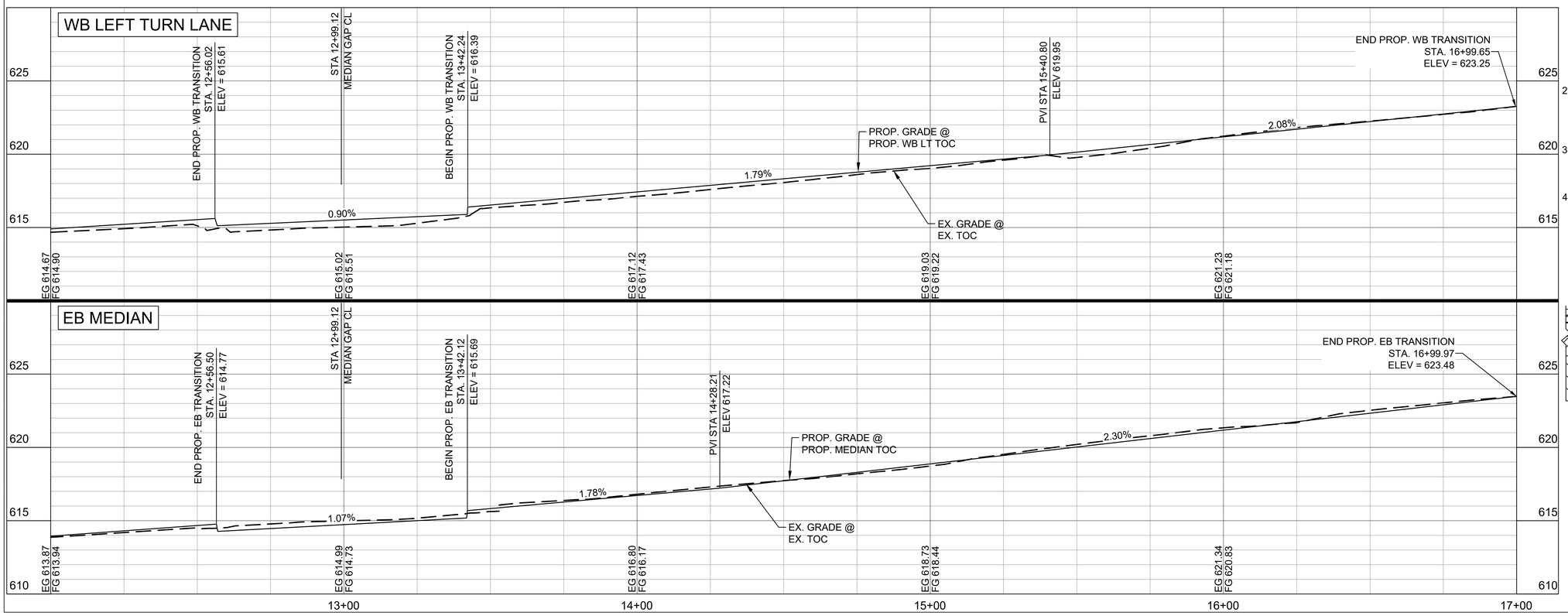
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 58

Dwg Info: f:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RDWY_US380&LF.dwg - Plotted: 1/5/2026





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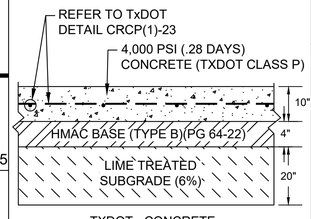
SCALE: H 1" = 40' V 1" = 8' (11"X17") | H 1" = 20' V 1" = 4' (22"X34")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT REFER TO DETAIL ON THIS SHEET
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- PROP. CONC. MEDIAN

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TXDOT - CONCRETE PAVEMENT SECTION
N.T.S.

REVISIONS

NO	DATE	COMMENT

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVING PLAN & PROFILE
STA. 12+00 TO END
WB LEFT TURN LANE & EB MEDIAN

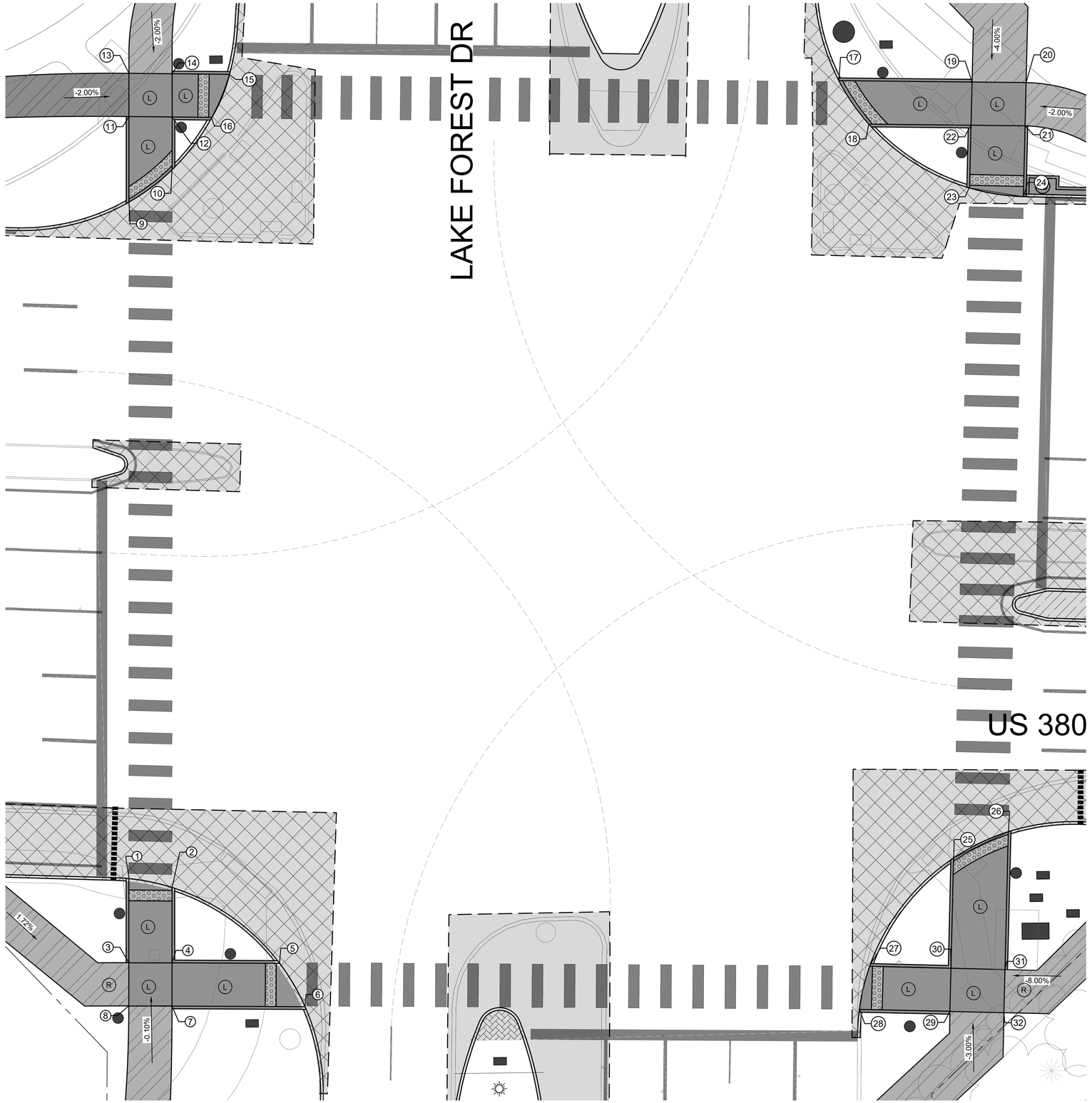
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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 59

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_pt2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_RDWY_US380MLF.dwg - Plotted: 1/5/2026



Point Table			
Point #	Northing	Easting	Elevation
1	7131995.5086	2525560.6093	602.91
2	7131993.7799	2525568.5538	602.88
3	7131979.9591	2525560.3848	603.28
4	7131979.8388	2525568.3805	603.12
5	7131979.5301	2525588.2645	602.79
6	7131971.4631	2525592.9009	602.75
7	7131971.8392	2525568.2909	603.28
8	7131971.9595	2525560.2953	603.44
9	7132120.7399	2525561.9839	603.65
10	7132126.6152	2525569.9889	603.67
11	7132136.5699	2525562.1369	603.84
12	7132136.3996	2525570.1331	603.68
13	7132144.5705	2525562.2296	604.00
14	7132144.3995	2525570.2226	603.84
15	7132144.1295	2525580.7994	603.64
16	7132136.1697	2525577.4239	603.67
17	7132141.7266	2525693.5835	604.57
18	7132133.6576	2525699.0181	604.64
19	7132141.2327	2525718.2173	605.19
20	7132141.0187	2525728.2159	605.39
21	7132133.0229	2525727.9372	605.23
22	7132133.2368	2525717.9386	604.99
23	7132121.6456	2525717.4506	604.80
24	7132119.9100	2525727.4757	605.00
25	7131997.6516	2525713.2177	604.97
26	7132002.4051	2525723.4068	605.37
27	7131977.9328	2525697.5094	604.08
28	7131969.8995	2525695.4727	603.81
29	7131969.2436	2525712.2139	604.55
30	7131977.2384	2525712.5013	604.39
31	7131976.8793	2525722.4948	604.55
32	7131968.9151	2525722.2086	604.13

!!! WARNING !!!

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0 5' 10' 20'

SCALE: 1" = 10' (22"X34")
SCALE: 1" = 20' (11"X17")

LEGEND

- PROP. CITY PAVEMENT
- PROP. TXDOT PAVEMENT
- PROP. SIDEWALK REPLACEMENT
- PROP. BFR
- PROP. DETECTABLE WARNING SURFACE
- (L) LANDING - 2.0% MAX
- (R) RAMP - 8.3% MAX 5.0% MIN

NOTES:

1. ALL PROPOSED SIDEWALK WILL BE A MINIMUM OF 48" WIDE.
2. SIDEWALK WILL HAVE A CROSS SLOPE NO GREATER THAN 2% TOWARDS THE BACK OF CURB.
3. CURB RAMP LANDINGS WILL BE SLOPED NO GREATER THAN 2% IN EVERY DIRECTION AND NO SMALLER THAN 4'X4'.
4. LENGTH OF RAMP IS NOT TO EXCEED 15 FEET TO ACHIEVE DESIRED ELEVATION CHANGE.
5. ALL NEW SIDEWALKS, CURB RAMPS, AND CROSSWALKS INSTALLED WILL CONFORM TO THE MOST CURRENT ADA/PROWAG GUIDELINES.
6. CURBS WILL TRANSITION FROM 0" HEIGHT CURB AT THE RAMP TO 6" HEIGHT CURB TO MATCH EXISTING PAVEMENT CURB AT ALL RAMP LOCATIONS.
7. QUANTITY OF CURB IN LINEAR FEET (LF) INCLUDES CURB INSTALLED ALONG THE LENGTH OF RAMP AND SIDEWALK. CURB INSTALLED ADJACENT TO ROADWAY PAVEMENT IS CONSIDERED SUBSIDIARY TO THE RAMP (NON-PAY ITEM).
8. PASSING SPACES (5'X5') WILL BE PROVIDED FOR NEW SIDEWALK AT A MAXIMUM SPACING OF 200' WHERE CLEAR WIDTH OF SIDEWALK IS LESS THAN 5'.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR PEDESTRIAN RAMP LAYOUT

McKINNEY TEXAS Unique by nature.

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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

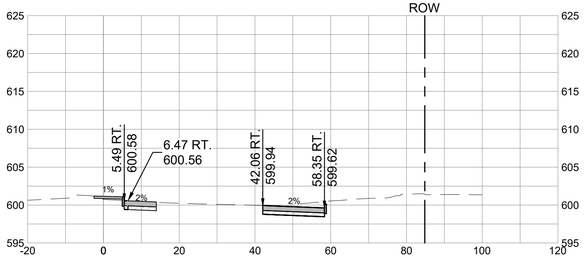
SHEET 60

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_RDWY_US380&LF.dwg - Plotted: 1/5/2026

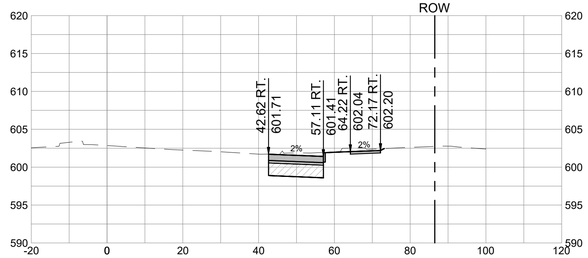
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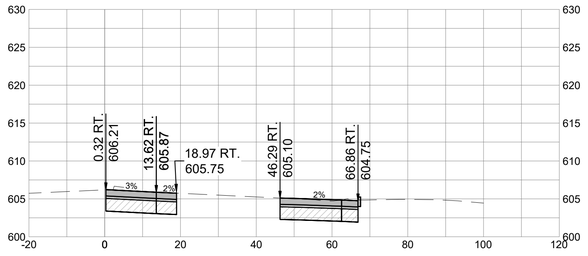
1+00

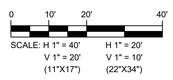


4+00

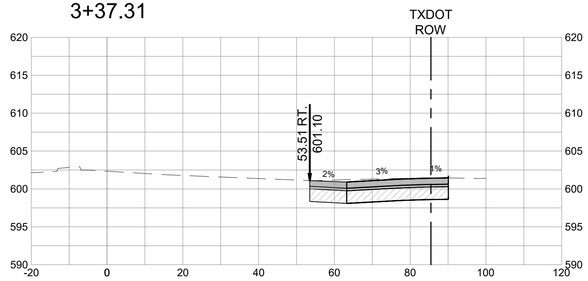


8+00

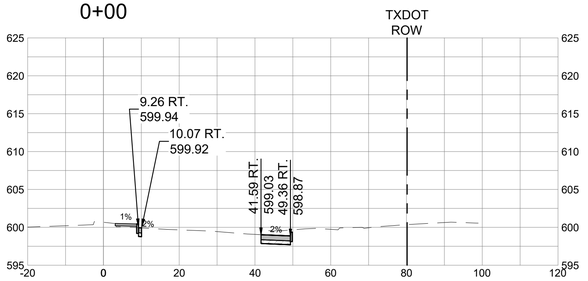




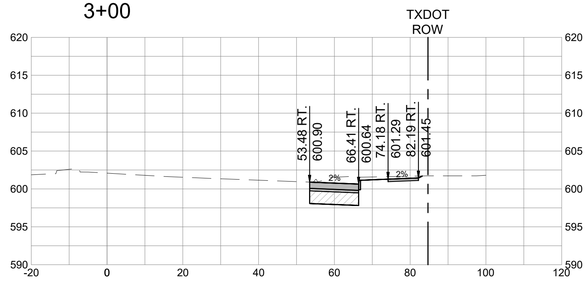
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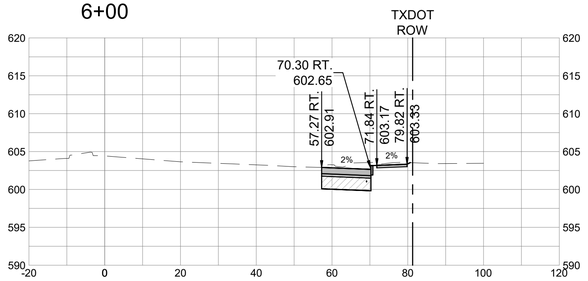
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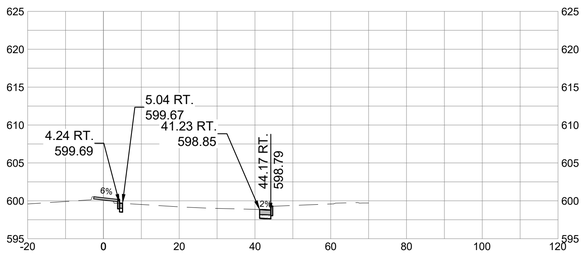
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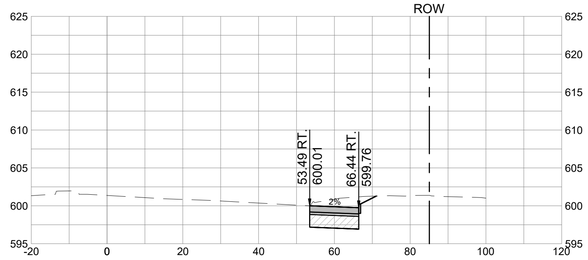
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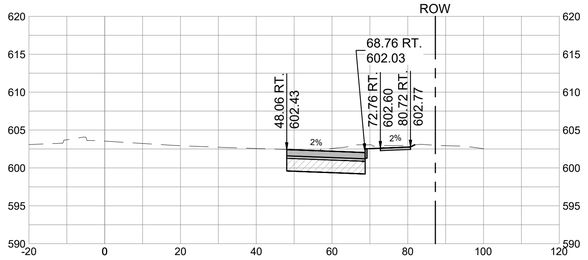
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2+00



5+00



NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA M. MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR CROSS SECTIONS EB & WB

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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 61

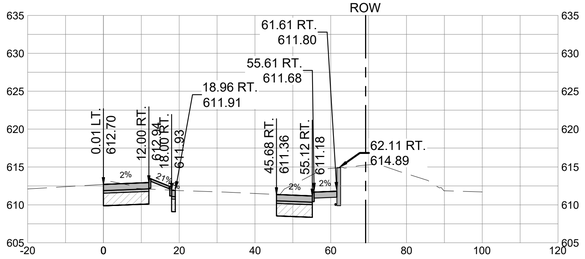
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!!! WARNING !!!

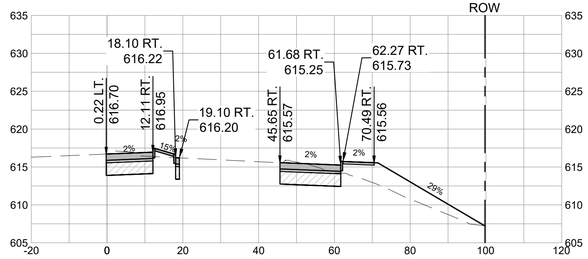
EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

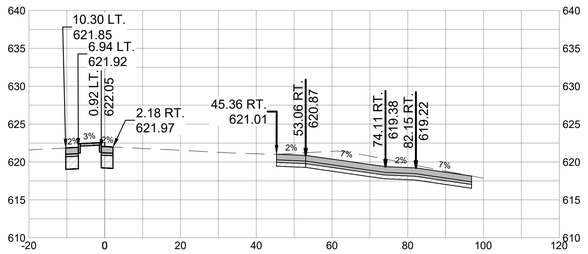
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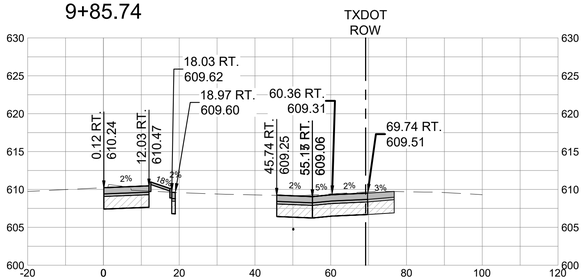


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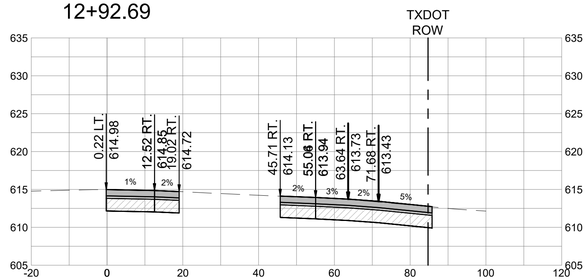


SCALE: H 1" = 40' V 1" = 20' (11"X17")
H 1" = 20' V 1" = 10' (22"X34")

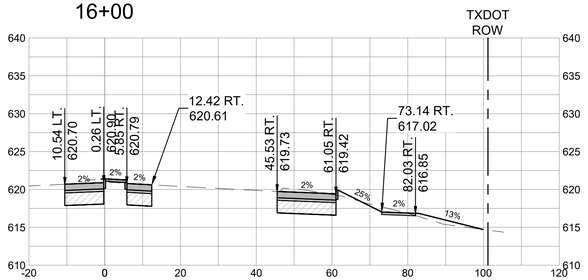
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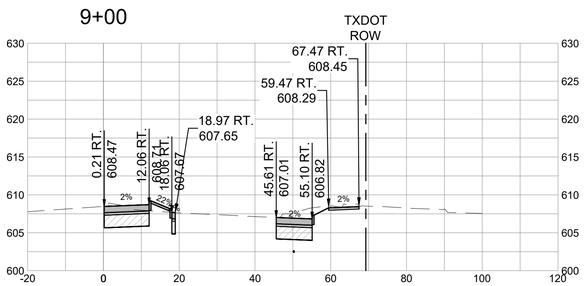
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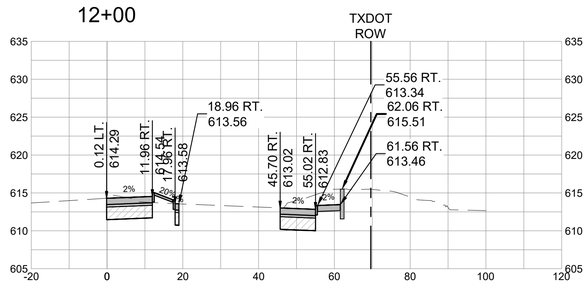
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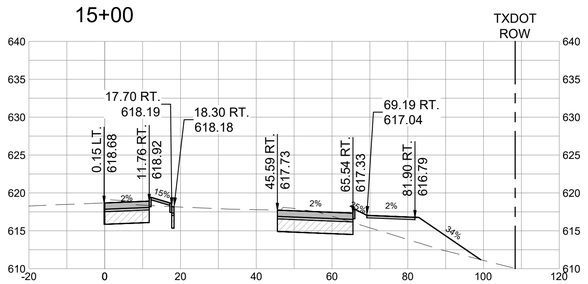
9+00



12+00



15+00



NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
CROSS SECTIONS
EB & WB

McKINNEY TEXAS Unique by nature.

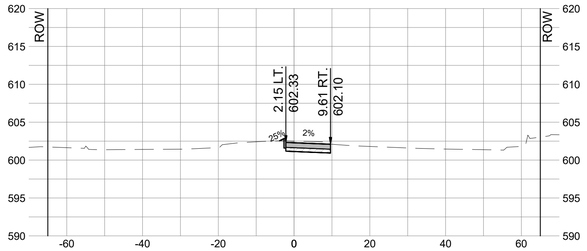
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

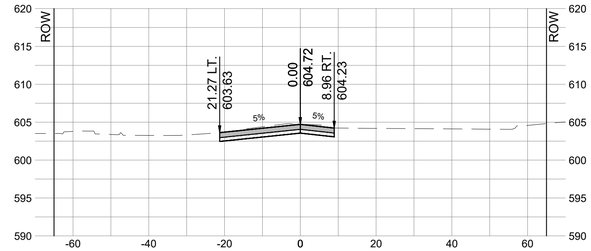
SHEET 62

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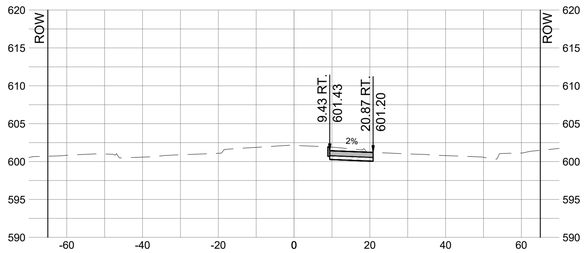
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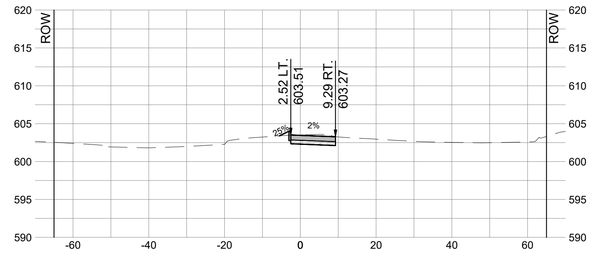
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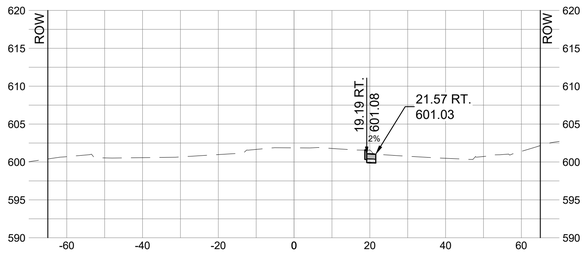
1+00



3+00



0+50



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

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0 10' 20' 40'

SCALE: H 1" = 40' V 1" = 20' (11"X17")
H 1" = 20' V 1" = 10' (22"X34")

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
CROSS SECTIONS
NB & SB

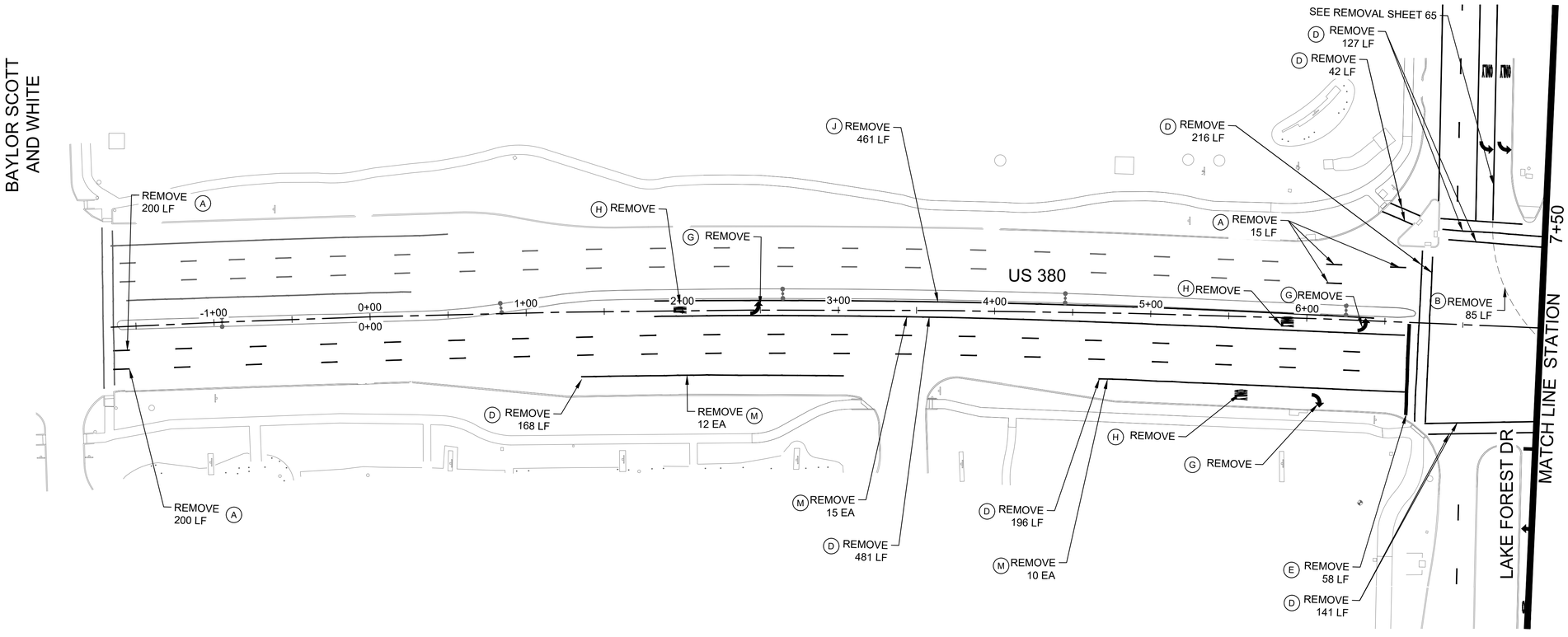
McKINNEY TEXAS
Unique by nature.

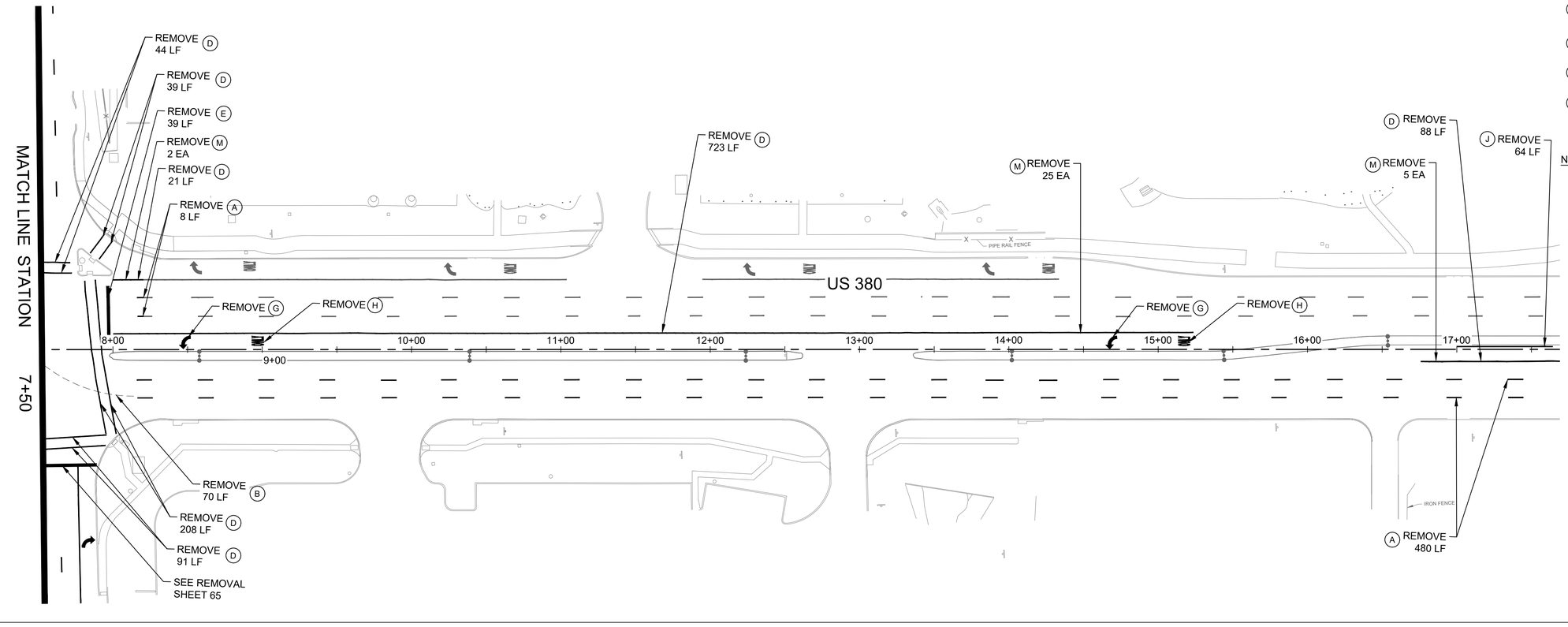
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 63

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mod\02_PLAN_SHEET\231206401_RDWY_US380&LF.dwg - Plotted: 1/5/2026





!!! WARNING !!!

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0 20' 40' 80'

SCALE: 1"= 40' (22" X 34")
SCALE: 1"= 80' (11"X17")

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
- (C) REFL PAV MRK TY I (W) (6") (SLD)
- (D) REFL PAV MRK TY I (W) (8") (SLD)
- (E) REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
- (F) REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
- (G) REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAILS FOR ADDITIONAL INFORMATION.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR REMOVAL - EB & WB

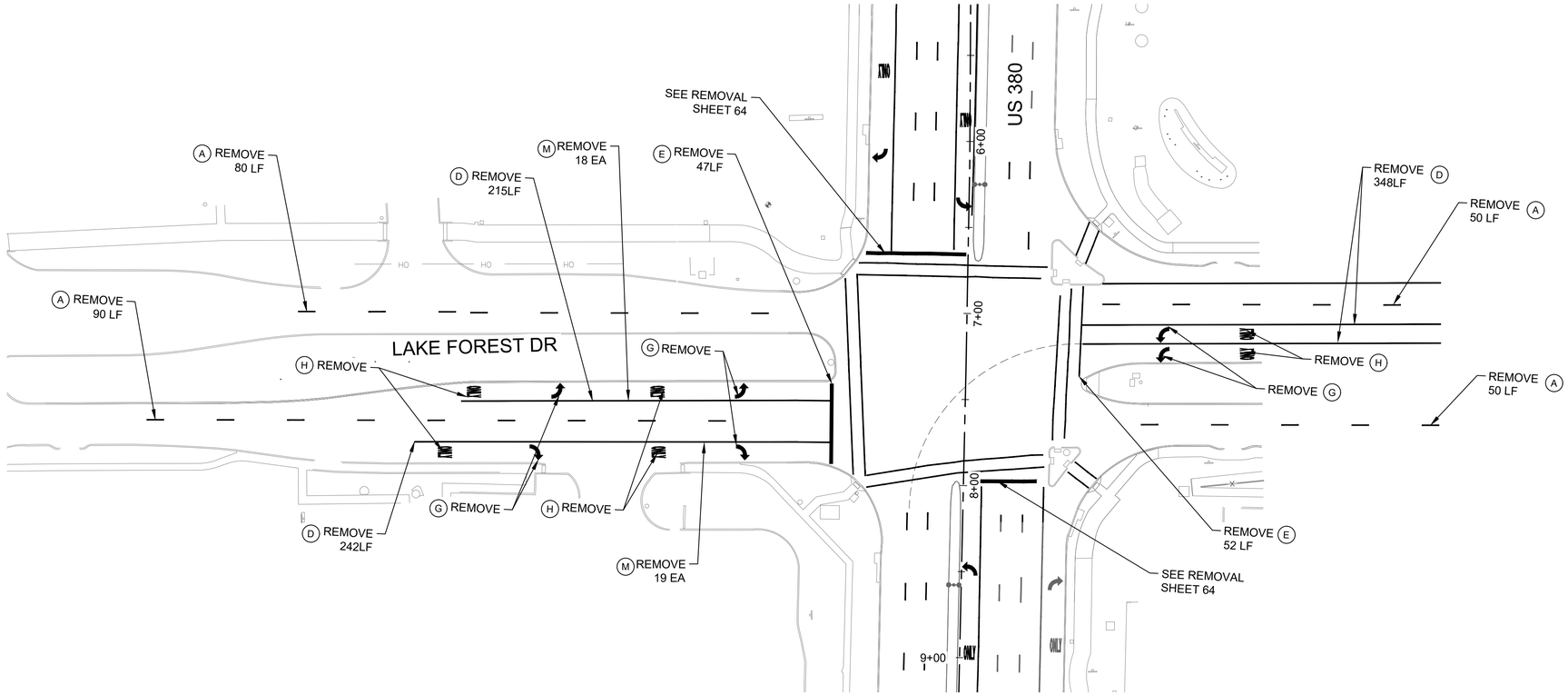
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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 64

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_RMVL_MRKG.dwg - Plotted: 1/5/2026



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SCALE: 1"= 80' (11"X17")

LEGEND

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B	REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
C	REFL PAV MRK TY I (W) (6") (SLD)
D	REFL PAV MRK TY I (W) (8") (SLD)
E	REFL PAV MRK TY I (W) (24") (SLD) - STOP BAR (7002M - DETAIL A)
F	REFL PAV MRK TY I (W) (24") (SLD) - CROSSWALK (7002M - DETAIL A)
G	REFL PAV MRK TY I (W) (ARROW) (7002M - DETAIL F)
H	REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
I	REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
J	REFL PAV MRK TY I (Y) (6") (SLD)
K	REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
L	REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
M	REFL PAV MRK TY II-C-R (7002M - DETAIL B)
N	REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

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NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
REMOVAL - NB & SB

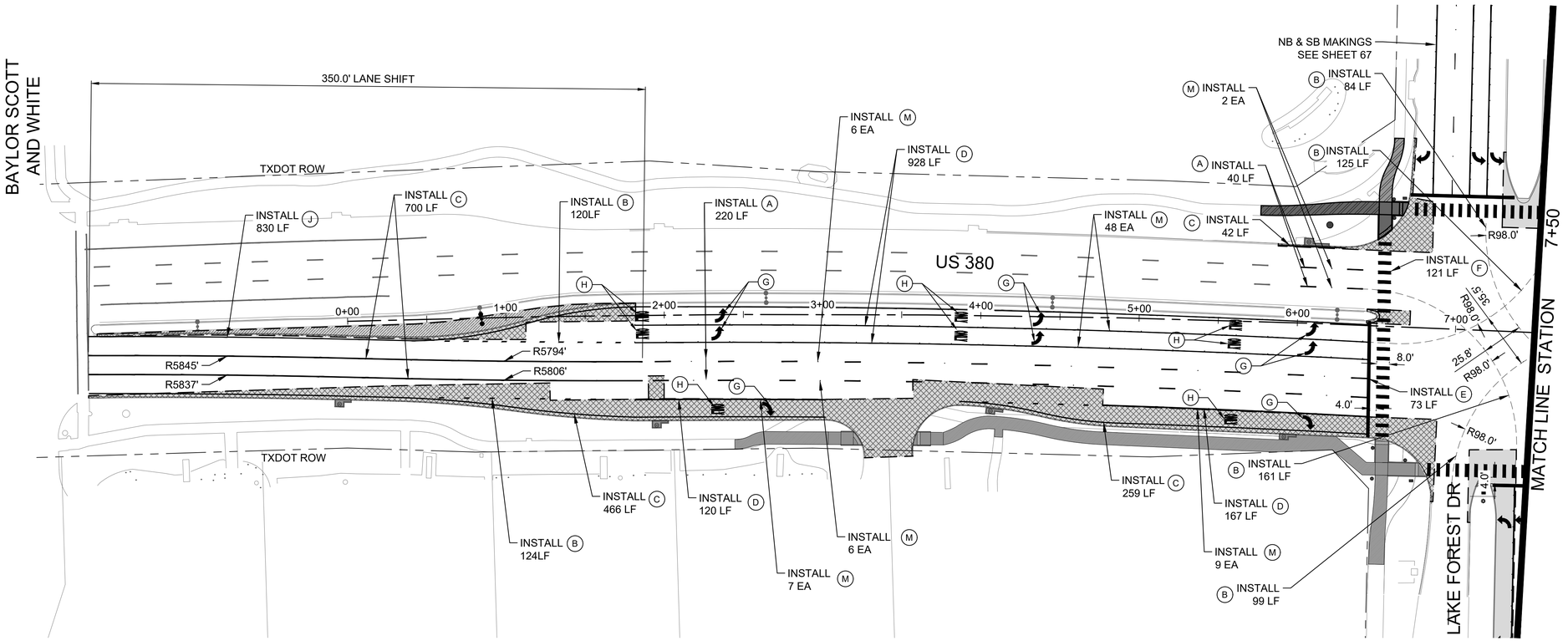
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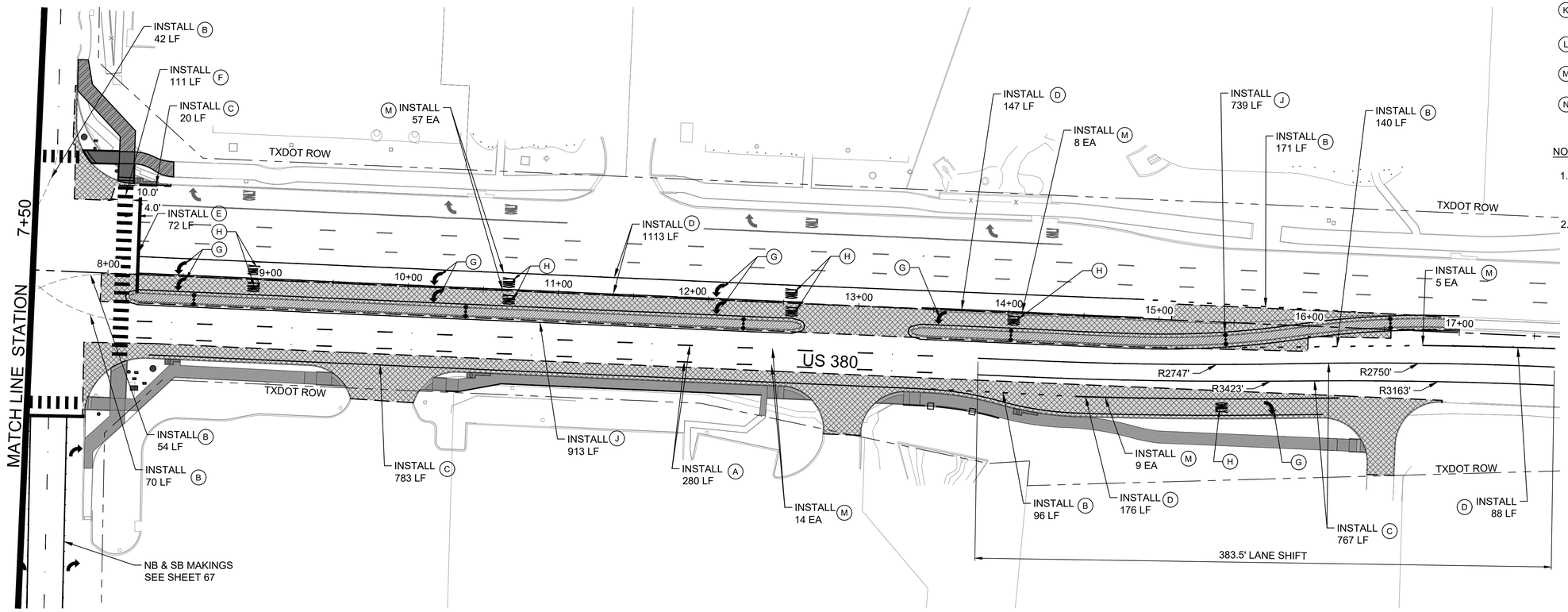
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 65

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_intsc_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640 1_RMVL_MRKG.dwg - Plotted: 1/5/2026





0 20' 40' 80'

SCALE: 1"= 40' (22" X 34")
SCALE: 1"= 80' (11"X17")

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
- (B) REFL PAV MRK TY I (W) (6") (DOT) - PUPPY TRACKS (7002M - DETAIL J)
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- (H) REFL PAV MRK TY I (W) (WORD) (7002M - DETAIL F)
- (I) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL E)
- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

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2. REFER TO CITY STANDARD DETAILS FOR ADDITIONAL INFORMATION.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVEMENT MARKINGS
EB & WB

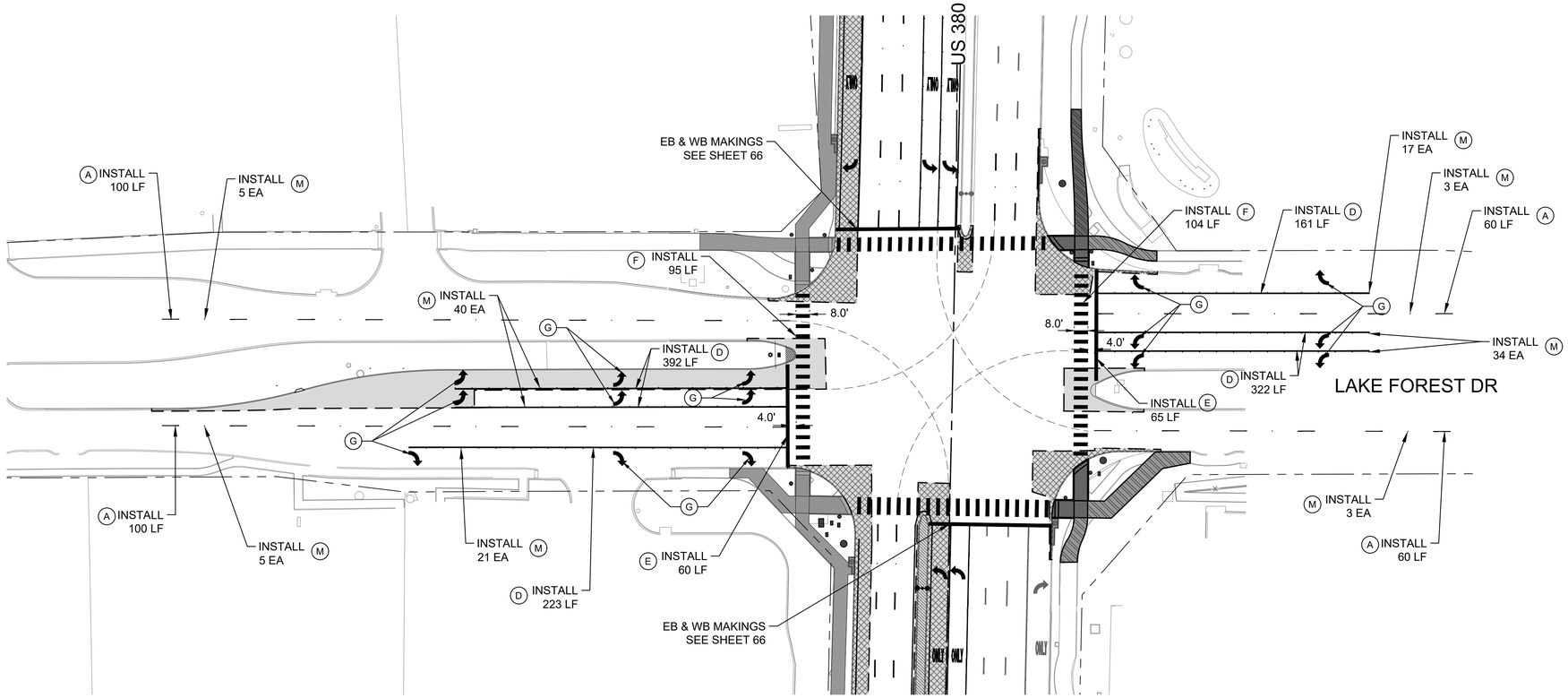
McKINNEY TEXAS Unique by nature.

CobbFendley
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 66

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Horiz\02_PLAN_SHEET\23120640I1_RDWY_MRKG_US380&LF.dwg - Plotted: 1/5/2026



0 20' 40' 80'

SCALE: 1"= 40' (22" X 34")
SCALE: 1"= 80' (11"X17")

LEGEND

- (A) REFL PAV MRK TY I (W) (6") (BRK) - SKIP (7002M - DETAIL D)
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- (J) REFL PAV MRK TY I (Y) (6") (SLD)
- (K) REFL PAV MRK TY I (Y) DOUBLE (4") (SLD) (7002M - DETAIL K)
- (L) REFL PAV MRK TY I (Y) (12") (SLD) - CROSSHATCH (7002M - DETAIL K)
- (M) REFL PAV MRK TY II-C-R (7002M - DETAIL B)
- (N) REFL PAV MRK TY II-A-A (7002M - DETAIL E)

NOTES:

1. ALL MARKINGS, ARROWS, AND WORDS SHALL COMPLY WITH TMUTCD, TXDOT, AND CITY OF MCKINNEY STANDARDS.
2. REFER TO CITY STANDARD DETAILS FOR ADDITIONAL INFORMATION.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PAVEMENT MARKINGS
NB & SB

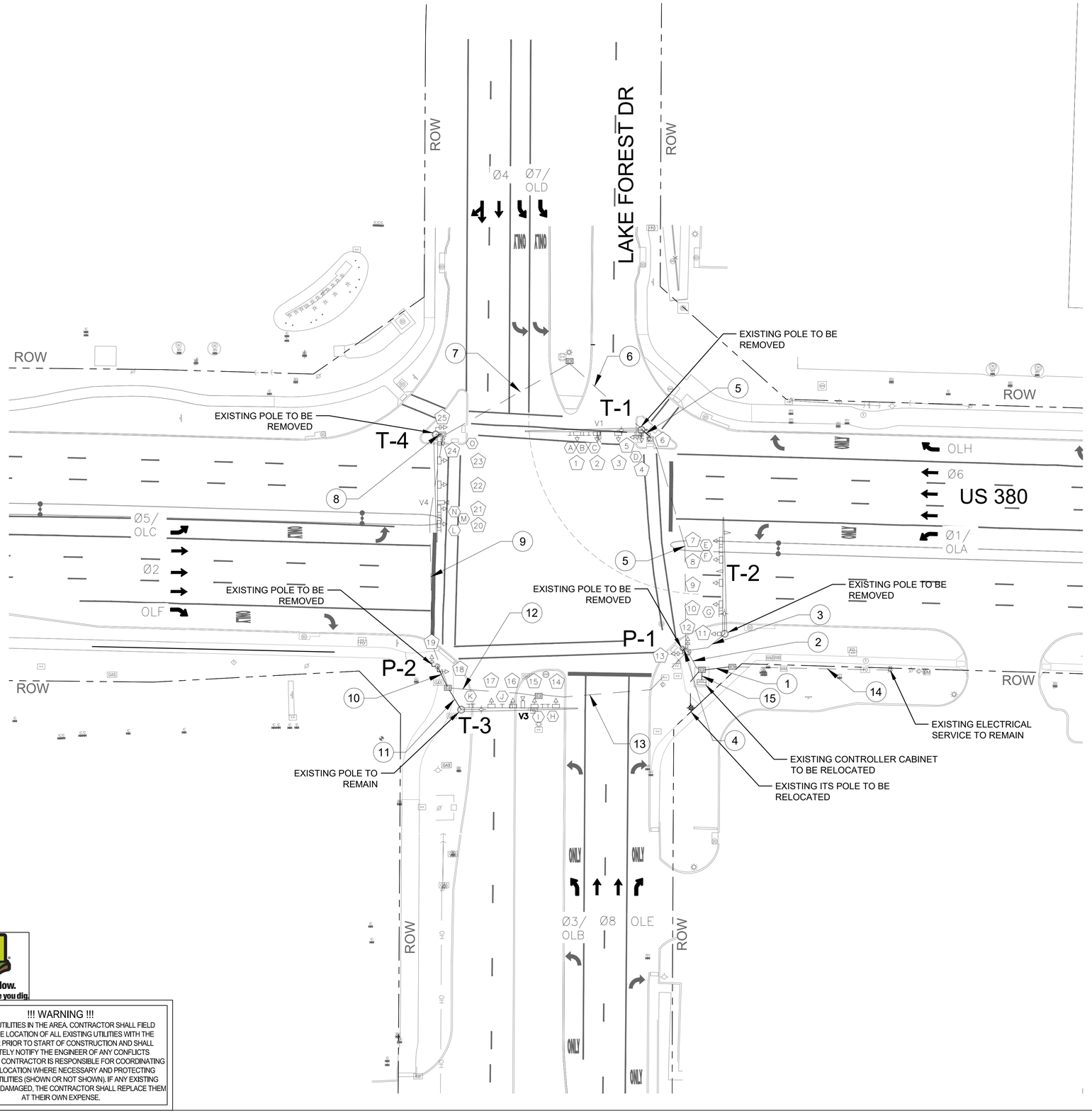
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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
67

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_RDWY_MRKG_US380NLF.dwg - Plotted: 1/5/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- 14 SIGNAL HEAD INDICATION LABEL
- B SIGN INDICATION LABEL
- 8 CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
- EXIST / PROP LED LUMINAIRE FIXTURE
- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
- EXIST / PROP VIVDS CAMERA
- EXIST / PROP OPTICOM DETECTOR
- EXIST / PROP TRAFFIC SIGNAL CABINET
- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 15' 30' 60'
SCALE: 1"= 30' (22" X 34")
SCALE: 1"= 60' (11"X17")

NOTE:
EXISTING CONDUITS RUNNING BETWEEN POLES TO BE REMOVED SHALL BE ABANDONED IN PLACE. PROPOSED CONDUIT LOCATIONS ARE SHOWN ON THE PROPOSED INTERSECTION LAYOUT SHEET.

Know what's below. Call before you dig.

!!! WARNING !!!
EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TRAFFIC SIGNAL EXISTING LAYOUT

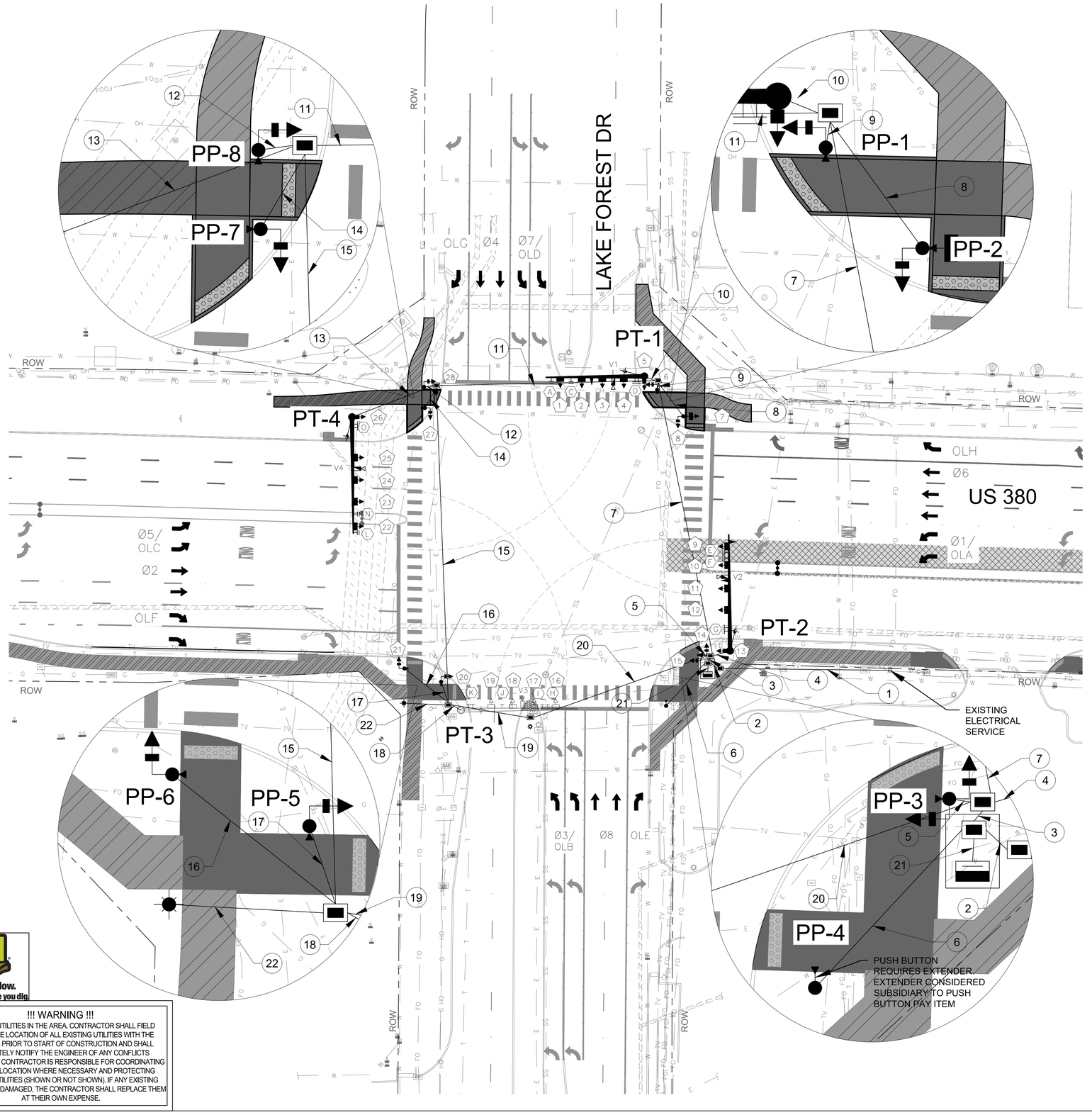
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DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 68

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\03_Sheets\Existing\231206401_SIGNAL_US380&LF.dwg - Plotted: 1/6/2026



LEGEND

- Ø8 PHASE LABEL
- T–1 POLE LABEL
- 14 SIGNAL HEAD INDICATION LABEL
- B SIGN INDICATION LABEL
- 8 CONDUIT LABEL
- TRAFFIC FLOW ARROW
- EXIST / PROP GROUND BOX
- EXIST / PROP CONDUIT
- EXIST / PROP SIGNAL POLE AND MAST ARM
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- EXIST / PROP HORIZONTAL TRAFFIC SIGNAL HEAD
- EXIST / PROP VERTICAL TRAFFIC SIGNAL HEAD
- EXIST / PROP PED SIGNAL HEAD
- EXIST / PROP PED PUSH BUTTON
- EXIST / PROP PED POLE
- EXIST / PROP ITS POLE
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- EXIST / PROP ADVANCE DETECTION
- EXIST / PROP PRESENCE DETECTION
- EXIST / PROP STREET SIGN OVERHEAD
- EXIST / PROP METRO SIGN OVERHEAD
- EXIST ELECTRICAL SERVICE
- EXIST RADIO

0 15' 30' 60'
SCALE: 1"= 30' (22" X 34")
SCALE: 1"= 60' (11"X17")

NOTE:
PROPOSED LUMINAIRES TO BE INSTALLED PARALLEL TO MAST ARMS

811 Know what's below. Call before you dig.

!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR TRAFFIC SIGNAL PROPOSED LAYOUT

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DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 69

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\409_Traffic\02-Sheets\Proposed\231206401_PROPOSED_US380ALF.dwg - Plotted: 1/6/2026

TRAFFIC SIGNAL CONDUIT SUMMARY

RUN NO.	CONDUIT SIZE/TYPE (FEET)						ELECTRICAL CONDUCTORS (FEET)				AXIS CAMERA CABLE	OPTICOM CABLE	2 CNDR. CABLE (#12 AWG) (TY C)	SIGNAL CABLES (TY A) (FEET)		LENGTH OF RUN (FEET)
	2" PVC - Trenched	**2" PVC - Bored**	3" PVC - Trenched	**3" PVC - Bored**	4" PVC - Trenched	**4" PVC - Bored**	STATUS	NO. 6XHW POWER CABLE	NO. 8XHW POWER CABLE (ILLUM)	NO. 6 BARE WIRE				10 CNDR. CABLE (#14 AWG)	20 CNDR. CABLE (#14 AWG)	
1	95						P	4		1						95
2	5						P	4		1						5
3					5		P	2	8	1	1	4	8	8	4	5
4			10				P		2	1		2			1	10
5	5						P			1			1	1		5
6	40						P			1			1	1		40
7				155			P		4	1	1	2	4	4	2	155
8	25						P			1			1	1		25
9	5						P			1			1	1		5
10	10						P		2	1	1	1			1	10
11				120			P		2	1		1	2	2	1	120
12	5						P			1			1	1		5
13	50						P		2	1		1			1	50
14	15						P			1			1	1		15
15				180			P			1						180
16	35						P			1			1	1		35
17	15						P			1			1	1		15
18	10						P		2	1					1	10
19				45			P	2	2	1			2	2	1	45
20				105			P	2	2	1			2	2	1	105
21	5						P	2	8	2	1	4	8	8	4	5
22	25						P	2								25
CABLE TOTALS (LF)								770	1400	945	175	550	1385	1385	700	
NEW CABLE TOTALS (LF)	315	0	10	605	5	0		770	1400	945	175	550	1385	1385	700	

NOTES:
THIS CHART DOES NOT REFLECT THE QUANTITIES OF CABLE INSIDE THE POLE.
E = EXISTING, P = PROPOSED
THIS CHART ONLY INCLUDES QUANTITIES FOR NEW CONDUCTORS AND CONDUIT.

2" TRENCH	315
2" BORE	0
3" TRENCH	10
3" BORE	605
4" TRENCH	5
4" BORE	0

ELECTRICAL SERVICE DATA

I.D.	DESCRIPTION	SERVICE CONDUIT SIZE	SERVICE CONDUCTOR NO/SIZE	SAFETY SWITCH AMPS	MAIN DISCONNECT CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANELBD. / LOADCENTER AMP RATING	CIRCUIT NO.	BRANCH CIRCUIT AMPS	KVA LOAD
1	ELEC SERV TY D (120/240) 070 (NS) AL (E) PS (U)	2"	3/#4	N/A	2P/70	30	100	T.S. ILSN/LIGHTING	1P/50 2P/20	<7.1

CABLE TERMINATION CHART - SIGNAL AND PEDESTRIAN POLES

	CONDUCTOR COLOR	CABLE 1	CABLE 2	CABLE 3	CABLE 4	CABLE 5	CABLE 6	CABLE 7	CABLE 8	CABLE 9	CABLE 10	CABLE 11	CABLE 12
		20 CNDR	10 CNDR	10 CNDR	20 CNDR	10 CNDR	10 CNDR	20 CNDR	10 CNDR	10 CNDR	20 CNDR	10 CNDR	10 CNDR
		FROM CNTRL TO PT-1	FROM CNTRL TO PP-1	FROM CNTRL TO PP-2	FROM CNTRL TO PT-2	FROM CNTRL TO PP-3	FROM CNTRL TO PP-4	FROM CNTRL TO PT-3	FROM CNTRL TO PP-5	FROM CNTRL TO PP-6	FROM CNTRL TO PT-4	FROM CNTRL TO PP-7	FROM CNTRL TO PP-8
1	BLACK	SH 1, 2 Ø3 YA LT	SPARE	SPARE	SH 9, 10 Ø5 YA LT	SPARE	SPARE	SH 16, 17 Ø7 YA LT	SPARE	SPARE	SH 22, 23 Ø1 YA LT	SPARE	SPARE
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 3, 4, 5 Ø8 R	SH 7 Ø8 R	SH 8 Ø8 DW	SH 11, 12, 13 Ø2 R	SPARE	SPARE	SH 18, 19 Ø4 R	SH 20 Ø2 DW	SH 21 Ø4 DW	SH 24, 25, 26 Ø6 R	SH 27 Ø4 DW	SH 28 Ø6 DW
4	GREEN	SH 3, 4, 5 Ø8 G	SH 7 Ø8 G	SH 8 Ø8 W	SH 11, 12, 13 Ø2 G	SPARE	SPARE	SH 18, 19 Ø4 G	SH 20 Ø2 W	SH 21 Ø4 W	SH 24, 25, 26 Ø6 G	SH 27 Ø4 W	SH 28 Ø6 W
5	ORANGE	SH 3, 4, 5 Ø8 Y	SH 7 Ø8 Y	SPARE	SH 11, 12, 13 Ø2 Y	SPARE	SPARE	SH 18, 19 Ø4 Y	SPARE	SPARE	SH 24, 25, 26 Ø6 Y	SPARE	SPARE
6	BLUE	SH 1, 2 Ø3 GA LT	SPARE	SPARE	SH 9, 10 Ø5 GA LT	SPARE	SPARE	SH 16, 17 Ø7 GA LT	SPARE	SPARE	SH 22, 23 Ø1 GA LT	SPARE	SPARE
7	WHITE/BLACK	SPARE	Ø6 PED CALL	Ø8 PED CALL	SPARE	Ø8 PED CALL	Ø2 PED CALL	SPARE	Ø2 PED CALL	Ø4 PED CALL	SPARE	Ø4 PED CALL	Ø6 PED CALL
8	RED/BLACK	SPARE	PB COM	PB COM	SPARE	PB COM	PB COM	SPARE	PB COM	PB COM	SPARE	PB COM	PB COM
9	GREEN/BLACK	SPARE	SH 6 Ø6 DW	SPARE	SH 14 Ø8 DW	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
10	ORANGE/BLACK	SPARE	SH 6 Ø6 W	SPARE	SH 14 Ø8 W	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
11	BLUE/BLACK	SPARE			SPARE			SPARE			SPARE		
12	BLACK/WHITE	SPARE			SH 15 Ø2 DW			SPARE			SPARE		
13	RED/WHITE	SPARE			SH 15 Ø2 W			SPARE			SPARE		
14	GREEN/WHITE	SH 1, 2 Ø3 RA LT			SH 9, 10 Ø5 RA LT			SH 16, 17 Ø7 RA LT			SH 22, 23 Ø1 RA LT		
15	BLUE/WHITE	SH 5 OLE YA RT			SH 13 OLF YA RT			SPARE			SH 26 OLH YA RT		
16	BLACK/RED	SH 5 OLE GA RT			SH 13 OLF GA RT			SPARE			SH 26 OLH GA RT		
17	WHITE/RED	Ø8 RED LIGHT CONFIRM			Ø2 RED LIGHT CONFIRM			Ø4 RED LIGHT CONFIRM			Ø6 RED LIGHT CONFIRM		
18	ORANGE/RED	SPARE			SPARE			SPARE			SPARE		
19	BLUE/RED	SPARE			SPARE			SPARE			SPARE		
20	RED/GREEN	SPARE			SPARE			SPARE			SPARE		

R = RED BALL; Y = YELLOW BALL; G = GREEN BALL; RA = RED ARROW; YA = YELLOW ARROW; GA = GREEN ARROW
RT = RIGHT TURN; LT = LEFT TURN

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
SIGNAL DESIGN TABLES

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Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/6/2026	JOB NUMBER: 2312-064-01

SHEET 70

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SIGNAL HEADS												
SIGNAL HEAD NUMBER	SIGNAL HEAD TYPE	BACKPLATE			12" SIGNAL INDICATION VEH SIGNAL SEC WITH LED LAMP						PED SIG SEC COUNTDOWN LED LAMP	STATUS
		3 SEC	4 SEC	5 SEC	G	GA	Y	YA	R	RA		
		EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	
18, 19	H3	2			2		2		2			E
16, 17	H3PLT	2			2		2		2			E
3, 4, 11, 12, 24, 25	H3	6			6		6		6			P
1, 2, 9,10,22, 23	H4PLT		6			6		6		12		P
7	V3	1			1		1		1			P
5, 13. 26	V5RT			3	3	3	3	3	3			P
6, 8, 14, 15, 20, 21, 27, 28	COUNTDOWN										8	P

TOTAL

TRAFFIC SIGNAL SIGNS SUMMARY						
ID	TYPE	LEGEND	ACTION			LOCATION
			REMAIN IN PLACE	REMOVE	RELOCATE	
A	R3-4	NO U-TURN			1	T-1 MAST ARM
B		LEFT TURN SIGNAL		1		T-1 MAST ARM
C	R3-5L	LEFT TURN ONLY			1	T-1 MAST ARM
D	SN	380 UNIVERSITY DR			1	T-1 SN ARM
E		LEFT TURN SIGNAL			1	T-2 MAST ARM
F	R3-5L	LEFT TURN ONLY			1	T-2 MAST ARM
G	SN	LAKE FOREST DR			1	T-2 SN ARM
H		LEFT TURN SIGNAL	1			T-3 MAST ARM
I	R3-8 LL	LEFT TURN ONLY | LEFT TURN ONLY	1			T-3 MAST ARM
J	R5-2	NO TRUCKS	1			T-3 MAST ARM
K	SN	380 UNIVERSITY DR	1			T-3 SN ARM
L	R3-4	NO U-TURN			1	T-4 MAST ARM
M		LEFT TURN SIGNAL		1		T-4 MAST ARM
N	R3-5L	LEFT TURN ONLY			1	T-4 MAST ARM
O	SN	LAKE FOREST DR			1	T-4 SN ARM

SIGNAL HEAD AND POLE PLACEMENT (LF)											
POLE NUMBER	FOUNDATION TYPE	FOUNDATION DEPTH (LF)	A	B	C	D	E	F	G	NO. OF HEADS ON MAST ARM	LUM-A
PT-1	42-A	18	5	11	23	35	47	55	30	4/1	1
PP-1	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PP-2	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PT-2	42-A	18	7	23	35	48	58	65	30	4/1	1
PP-3	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PT-3	42-A	18	5	17	29	41	53	65	30	4/1	1
PP-4	24-A	2	PROPOSED PEDESTAL POLE					---	10	---	---
PP-5	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PP-6	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PT-4	42-A	18	14	23	35	48	61	65	30	4/1	1
PP-7	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---
PP-8	24-A	6	PROPOSED PEDESTAL POLE					---	10	---	---

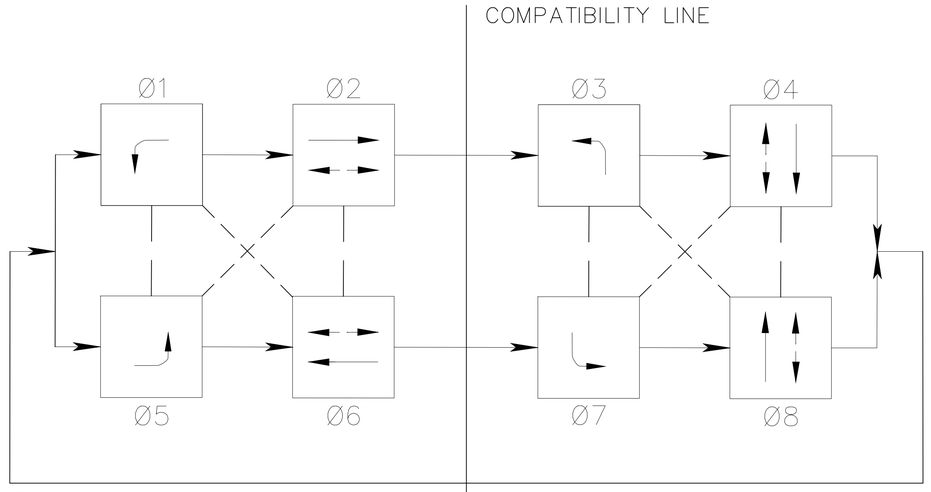
POLE NUMBER	WIRE INSIDE POLE (FEET)				
	2 CNDR CABLE (#12 AWG) (TY C)	5 CNDR CABLE (#14 AWG) (TY A)	7 CNDR CABLE (#14 AWG) (TY A)	OPTICOM	AXIS CAMERA
PT-1		95	145	50	40
PP-1	5	10			
PP-2	5	10			
PT-2		120	185	145	
PP-3	5				
PT-3		130	155		50
PP-4	5				
PP-5		120	185		50
PP-6	5	10			
PT-4	5	10			
PP-7	5	10			
PP-8	5	10			

QUANTITIES SHOWN ABOVE ARE FOR NEW CABLE ONLY

VEHICLE DETECTION INFORMATION			
VIVIDS DETECTION	STATUS	PHASES	LOCATION
V1	P	Ø3 & Ø8 PRESENCE	T-1 MAST ARM
V2	P	Ø2 & Ø5 PRESENCE	T-2 MAST ARM
V3	E	Ø4 & Ø7 PRESENCE	T-3 MAST ARM
V4	P	Ø1 & Ø6 PRESENCE	T-4 MAST ARM

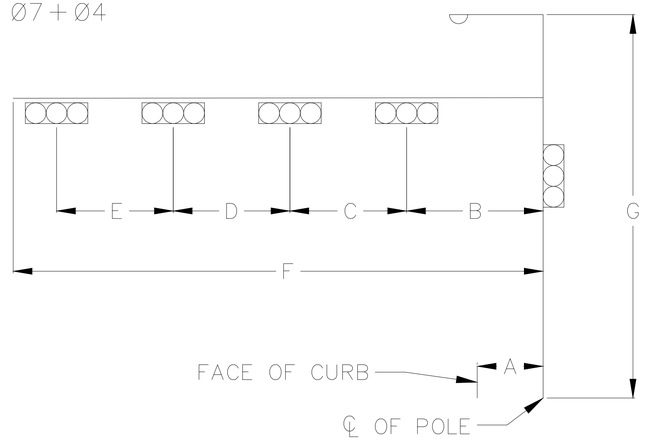
E = EXISTING; P = PROPOSED

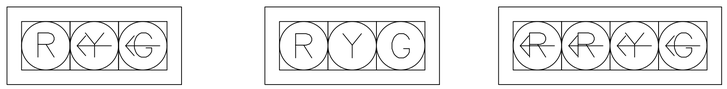
PHASE SEQUENCE



OL A = Ø1 + Ø6
OL B = Ø3 + Ø8
OL C = Ø5 + Ø2
OL D = Ø7 + Ø4

COMPATIBLE PHASES
PEDESTRIAN MOVEMENT

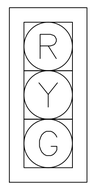




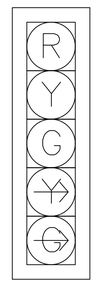
H3PLT

H3

H4PLT



V3



V5RT

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
KARL F. ROTHERMEL
116355
LICENSED
PROFESSIONAL ENGINEER
1/6/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
SIGNAL DESIGN TABLES

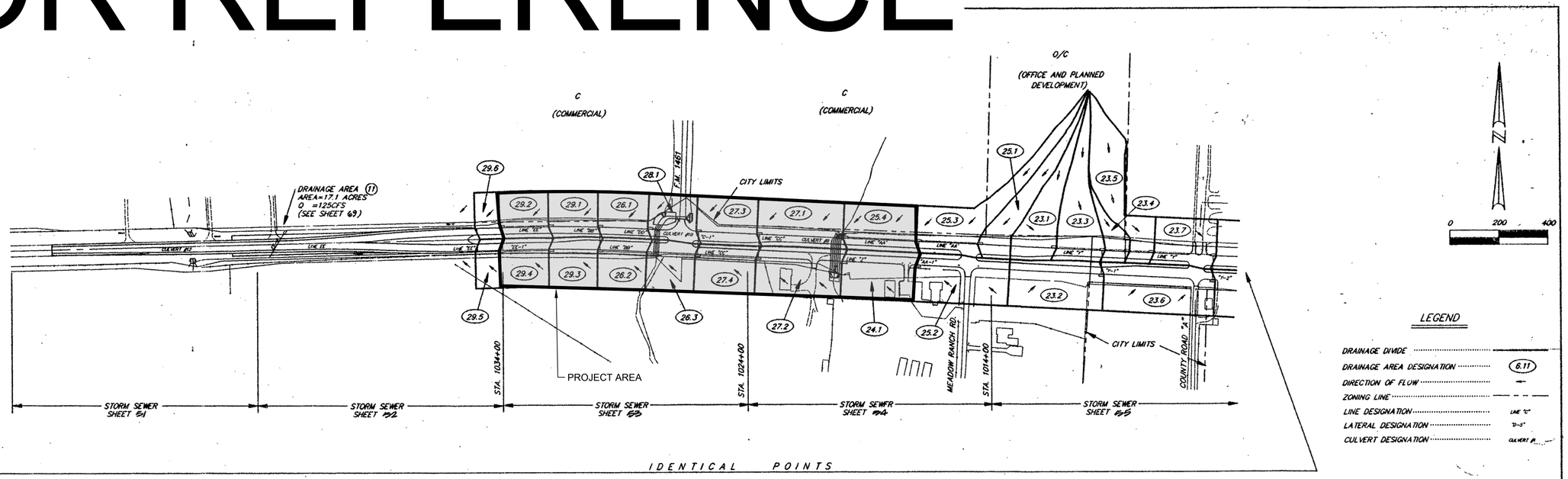
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DESIGN BY: KFR	DRAWN BY: GK
DATE: 1/6/2026	JOB NUMBER: 2312-064-01
SHEET 71	

Dwg Info: F:\Projects\2023\12064_City_of_McKinney\01_ST2303_Inter_Cap\400_CAD\609_Traffic\02-Sheets\Proposed\231206401_PROPOSED_US380&LF-dwg - Plotted: 1/6/2026

FOR REFERENCE



DRAINAGE AREA MAP

SHEET 1 OF 2

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
6	TEXAS	NH 92(86)M	42
STATE DIST. NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	WARNING SHEET NO.
18	COLLIN	1.35 / 02 / 30	380

3/23/92

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
EXISTING DRAINAGE AREA MAP
RECORD DRAWING

McKINNEY TEXAS
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DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 72

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640I_STRM_US380&LF.dwg - Plotted: 1/5/2026

RUNOFF COMPUTATIONS

DRAIN. AREA NO.	AC.	ACRES – DRAINED C=0.95	C=0.86	C=0.70	C=0.60	C=0.50	C=0.40	C=0.30	TOTAL C.A.	TIME OF CONC.	I_5 IN/HR	I_{50} IN/HR	Q_5 cfs	REMARKS
23.5	2.03		0.13	1.90					1.44	10 MIN.	6.78		9.8	
23.6	2.05		0.60	1.45					1.53	10 MIN.	6.78		10.4	
23.7	1.13		0.33	0.80					0.84	10 MIN.	6.78		5.7	
23.8	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
23.9	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
23.10	0.55		0.15	0.40					0.41	10 MIN.	6.78		2.8	
24.1	1.36		0.40	0.96					1.02	10 MIN.	6.78		6.9	
25.1	1.13		0.16	0.97					0.82	10 MIN.	6.78		5.5	
25.2	1.73		0.51	1.22					1.29	10 MIN.	6.78		8.8	
25.3	1.73		0.33	1.40					1.26	10 MIN.	6.78		8.6	
25.4	1.36		0.40	0.96					1.02	10 MIN.	6.78		6.9	
26.1	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
26.2	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
26.3	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
27.1	1.59		0.47	1.12					1.19	10 MIN.	6.78		8.1	
27.2	1.59		0.47	1.12					1.19	10 MIN.	6.78		8.1	
27.3	1.13		0.33	0.80					0.84	10 MIN.	6.78		5.7	
27.4	1.13		0.33	0.80					0.84	10 MIN.	6.78		5.7	
28.1	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
29.1	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
29.2	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
29.3	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
29.4	0.91		0.27	0.64					0.68	10 MIN.	6.78		4.6	
29.5	0.47		0.13	0.34					0.35	10 MIN.	6.78		2.4	
29.6	0.47		0.13	0.34					0.35	10 MIN.	6.78		2.4	

NOTE: $I_5 = b/(tc+d)^e$ FOR COLLIN COUNTY
$I_5 = 6.78$ in/hr
b = 67
d = 8.8
e = 0.781

FOR REFERENCE

RUNOFF COMPUTATIONS

SHEET 2 OF 2

FED. ROAD DIV. NO.		FEDERAL AID PROJECT NO.		SHEET NO.
6	TEXAS	NH 92 (68) M		45
STATE DIST. NO.	COUNTY			
18	COLLIN	139	02	30

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
EXISTING RUNOFF CALCULATIONS
RECORD DRAWING

McKINNEY TEXAS
Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 73

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_STRM_US380&LF.dwg - Plotted: 1/5/2026

INLET COMPUTATIONS

INLET NO.	LOCATION	TYPE	NO. OF GRATES	RUN OFF COMPUTATIONS								INLET DESIGN																REMARKS
				DA NO.	CA	TIME OF CONCENTRATION ACTUAL (MIN)	TIME OF CONCENTRATION DESIGN (MIN)	DESIGN FREQ. (YRS)	INTENSITY (IN/HRS)	Q_A (CFS)	CARRY OVER (CFS)	TOTAL Q_A (CFS)	Z	$Z/_N$	S	Y	PONDED WIDTH Y + Z (FT)	A (IN)	QL (CFS)	$L_A = Q_A/Q_L$ (FT)	L (FT)	$L/_{L_A}$	$A/_Y$	$Q/_{Q_A}$	Q (CFS)	H (GRATE) (FT)	Q_g (GRATE CAP) (CFS)	Q_T (SLOT & GRATE) (CFS)	CARRY OVER (CFS)	
23.2	1009+50 (49.50' LT.)	C.I.		23.2	1.31		10	5	6.78	8.9	–	8.9	48	3200	2.2	0.28	13.43	3	0.43	20.56	15	0.73	0.89	0.83	7.4				1.5	CARRYOVER TO 23.6
23.3	1009+50 (49.50' RT.)	C.I.		23.3	1.28		10	5	6.78	8.7	1.2	9.9	48	3200	2.2	0.29	13.97	3	0.44	22.34	15	0.67	0.86	0.79	7.8				2.1	CARRYOVER TO 23.4
23.4	1008+50 (49.50' RT.)	C.I.		23.4	0.27		10	5	6.78	1.8	2.1	3.9	48	3200	2.8	0.20	9.46	3	0.36	10.84	10	0.92	1.27	0.95	3.7				0.2	CARRYOVER TO 23.5
23.5	1007+50 (49.50' RT.)	C.I.		23.5	1.44		10	5	6.78	9.8	0.2	10.0	48	3200	3.3	0.27	12.98	3	0.43	23.44	15	0.64	0.92	0.76	7.6				2.4	CARRYOVER TO 23.7
23.6	1004+94.50 (49.50' LT.)	C.I.		23.6	1.53		10	5	6.78	10.4	1.5	11.9	48	3200	3.7	0.28	13.58	3	0.44	27.27	15	0.55	0.88	0.68	8.1				3.8	CARRYOVER TO 23.8
23.7	1004+94.50 (49.50' RT.)	C.I.		23.7	0.84		10	5	6.78	5.7	2.4	8.1	48	3200	3.7	0.25	11.78	3	0.40	20.16	15	0.74	1.02	0.83	6.7				1.4	CARRYOVER TO 23.9
23.8	1003+00 (49.50' LT.)	C.I.		23.8	0.68		10	5	6.78	4.6	3.8	8.4	48	3200	1.7	0.29	13.79	3	0.44	19.11	15	0.78	0.87	0.87	7.3				1.1	CARRYOVER TO 21.1
23.9	1003+00 (49.50' RT.)	C.I.		23.9	0.68		10	5	6.78	4.6	1.4	6.0	48	3200	1.7	0.25	12.13	3	0.41	14.55	10	0.69	0.99	0.80	4.8				1.2	CARRYOVER TO 23.10
23.10	1001+75 (49.50' RT.)	C.I.		23.10	0.41		10	5	6.78	2.8	1.2	4.0	48	3200	0.5	0.27	13.15	3	0.43	9.38	10			1.0	4.0				–	
24.1	1020+00 (49.50' LT.)	C.I.		24.1	1.02		10	5	6.78	6.9	1.4	8.3	48	3200	1.7	0.29	13.74	3	0.44	18.95	15	0.79	0.87	0.88	7.3				1.0	CARRYOVER TO 27.2
25.1	1014+50 (49.50' RT.)	C.I.		25.1	0.82		10	5	6.78	5.5	–	5.5	48	3200	0.7	0.29	13.93	3	0.44	12.52	10	0.80	0.86	0.87	4.8				0.7	CARRYOVER TO 25.3
25.2	1017+00 (49.50' LT.)	C.I.		25.2	1.29		10	5	6.78	8.8	–	8.8	48	3200	2.2	0.28	13.35	3	0.43	20.30	15	0.74	0.90	0.84	7.4				1.4	CARRYOVER TO 24.1
25.3	1017+00 (49.50' RT.)	C.I.		25.3	1.26		10	5	6.78	8.6	0.7	9.3	48	3200	2.2	0.28	13.61	3	0.44	21.13	15	0.71	0.88	0.82	7.6				1.7	CARRYOVER TO 25.4
25.4	1020+00 (49.50' RT.)	C.I.		25.4	1.02		10	5	6.78	6.9	1.7	8.6	48	3200	1.7	0.29	13.90	3	0.44	19.42	15	0.77	0.86	0.86	7.4				1.2	CARRYOVER TO 27.1
26.1	1030+00 (49.50' RT.)	C.I.		26.1	0.68		10	5	6.78	4.6	0.4	5.0	48	3200	0.6	0.29	13.80	3	0.44	11.36	10	0.88	0.87	0.94	5.0				0.3	CARRYOVER TO 29.1
26.2	1030+00 (49.50' LT.)	C.I.		26.2	0.68		10	5	6.78	4.6	0.4	5.0	48	3200	0.6	0.29	13.78	3	0.44	11.33	10	0.88	0.87	0.94	4.7				0.3	CARRYOVER TO 29.3
26.3	1028+00 (49.50' LT.)	C.I.		26.3	0.68		10	5	6.78	4.6	0.5	5.1	48	3200	0.6	0.29	13.88	3	0.44	11.50	10	0.87	0.86	0.92	4.7				0.4	CARRYOVER TO 26.2
27.1	1023+50 (49.50' RT.)	C.I.		27.1	1.19		10	5	6.78	8.1	1.2	9.3	48	3200	2.0	0.29	13.85	3	0.44	20.92	15	0.72	0.87	0.83	7.7				1.6	CARRYOVER TO 27.3
27.2	1023+50 (49.50' LT.)	C.I.		27.2	1.19		10	5	6.78	8.1	1.0	9.1	48	3200	2.0	0.29	13.77	3	0.44	20.67	15	0.73	0.87	0.84	7.6				1.5	CARRYOVER TO 27.4
27.3	1026+00 (49.50' RT.)	C.I.		27.3	0.84		10	5	6.78	5.7	1.6	7.3	48	3200	1.6	0.28	13.27	3	0.43	17.09	15	0.88	0.90	0.93	6.8				0.5	CARRYOVER TO 28.1
27.4	1026+00 (49.50' LT.)	C.I.		27.4	0.84		10	5	6.78	5.7	1.5	7.2	48	3200	1.6	0.28	13.21	3	0.43	16.93	15	0.89	0.91	0.93	6.7				0.5	CARRYOVER TO 26.3
28.1	1028+00 (49.50' RT.)	C.I.		28.1	0.68		10	5	6.78	4.6	0.5	5.1	48	3200	0.6	0.29	13.92	3	0.44	11.57	10	0.86	0.86	0.92	4.7				0.4	CARRYOVER TO 26.1
29.1	1032+00 (49.50' RT.)	C.I.		30.1	0.68		10	5	6.78	4.6	0.3	4.9	48	3200	0.6	0.29	13.74	3	0.44	11.26	10	0.89	0.87	0.94	4.6				0.3	CARRYOVER TO 29.2
29.2	1034+00 (49.50' RT.)	C.I.		30.2	0.68		10	5	6.78	4.6	0.3	4.9	48	3200	0.6	0.29	13.71	3	0.44	11.21	10	0.89	0.88	0.94	4.6				0.3	OFFSITE
29.3	1032+00 (49.50' LT.)	C.I.		29.1	0.68		10	5	6.78	4.6	0.3	4.9	48	3200	0.6	0.29	13.73	3	0.44	11.25	10	0.89	0.87	0.94	4.6				0.3	CARRYOVER TO 29.4
29.4	1034+00 (49.50' LT.)	C.I.		29.2	0.68		10	5	6.78	4.6	0.3	4.9	48	3200	0.6	0.29	13.71	3	0.44	11.21	10	0.89	0.88	0.94	4.6				0.3	OFFSITE

FOR REFERENCE

INLET COMPUTATIONS

SHEET 3 OF 3

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.				SHEET NO.
6	TEXAS	NH 92(88)M				50
STATE DIST. NO.	COUNTY		CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
18	COLLIN		135	02	30	380

5/23/92

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS PRIYA MISTRY 123226 LICENSED PROFESSIONAL ENGINEER 01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
EXISTING INLET CALCULATIONS
RECORD DRAWING

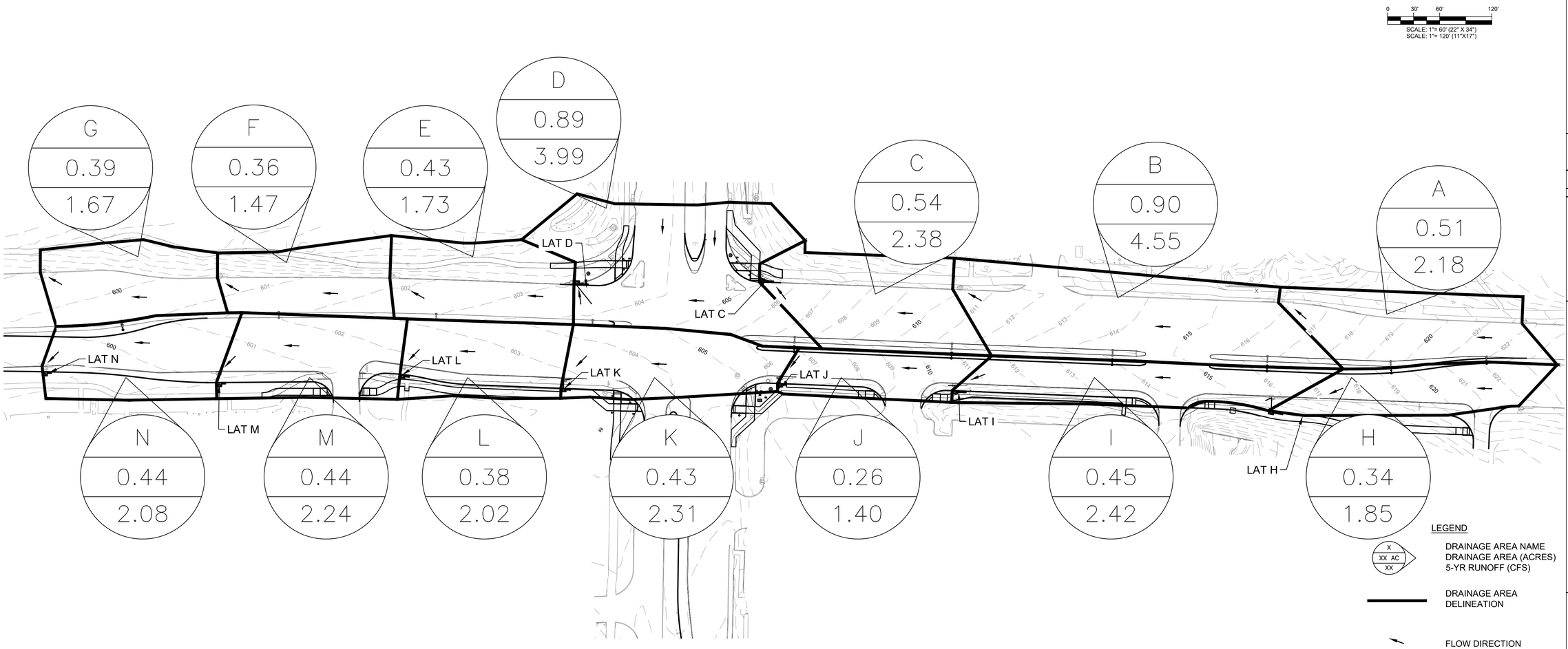
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CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 74

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_sd\303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640 1_STRM_US380&LF.dwg - Plotted: 1/5/2026



Rational Method Runoff Calculation

Drainage Area	5-YEAR DESIGN FLOW BY RATIONAL METHOD							
	Design Storm Frequency (years)	Time of Concentration (minutes)	Intensity " I5 " (in/hr)	Drainage Area " A " (acres)	Runoff Coefficient "C"			Design Flow Q5 = C x I x A
					0.95	0.35	Composite	
1	2	3	4	5			6	7
A	5	10	5.78	0.51	0.33	0.17	0.75	2.18
B	5	10	5.78	0.90	0.79	0.11	0.87	4.55
C	5	10	5.78	0.54	0.37	0.17	0.76	2.38
D	5	10	5.78	0.89	0.63	0.26	0.78	3.99
E	5	10	5.78	0.43	0.25	0.17	0.70	1.73
F	5	10	5.78	0.36	0.21	0.14	0.71	1.47
G	5	10	5.78	0.39	0.25	0.14	0.73	1.67
H	5	10	5.78	0.34	0.34	0.00	0.95	1.85
I	5	10	5.78	0.45	0.43	0.02	0.93	2.42
J	5	10	5.78	0.26	0.25	0.01	0.93	1.40
K	5	10	5.78	0.43	0.42	0.01	0.93	2.31
L	5	10	5.78	0.38	0.36	0.02	0.92	2.02
M	5	10	5.78	0.44	0.39	0.05	0.88	2.24
N	5	10	5.78	0.44	0.35	0.09	0.83	2.08

Rational Method Runoff Calculation

Drainage Area	100-YEAR DESIGN FLOW BY RATIONAL METHOD							
	Design Storm Frequency (years)	Time of Concentration (minutes)	Intensity " I100 " (in/hr)	Drainage Area " A " (acres)	Runoff Coefficient "C"			Design Flow Q100 = C x I x A
					0.950	0.350	Composite	
1	2	3	4	5			6	7
A	100	10	9.53	0.51	0.33	0.17	0.75	3.59
B	100	10	9.53	0.90	0.79	0.11	0.87	7.50
C	100	10	9.53	0.54	0.37	0.17	0.76	3.92
D	100	10	9.53	0.89	0.63	0.26	0.78	6.57
E	100	10	9.53	0.43	0.25	0.17	0.70	2.86
F	100	10	9.53	0.36	0.21	0.14	0.71	2.42
G	100	10	9.53	0.39	0.25	0.14	0.73	2.75
H	100	10	9.53	0.34	0.34	0.00	0.95	3.05
I	100	10	9.53	0.45	0.43	0.02	0.93	3.99
J	100	10	9.53	0.26	0.25	0.01	0.93	2.31
K	100	10	9.53	0.43	0.42	0.01	0.93	3.82
L	100	10	9.53	0.38	0.36	0.02	0.92	3.33
M	100	10	9.53	0.44	0.39	0.05	0.88	3.70
N	100	10	9.53	0.44	0.35	0.09	0.83	3.43

REVISIONS

NO	DATE	COMMENT

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
PROPOSED DRAINAGE AREA MAP

McKINNEY TEXAS
Unique by nature.

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TBPELS Firm Registration No. 274
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2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 75

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Main\02_PLAN_SHEET\231206401_STRM_US380MLF.dwg - Plotted: 1/5/2026

5-Year Inlet Design Calculations

INLET			AREA RUNOFF (Q = CIA)								On Grade Inlet								SELECTED INLET				
No.	Drainage Area	Design Storm Frequency (years)	Time of Conc. (min)	Intensity (in/hr)	Runoff Coeff.	Area (acres)	Q (cfs)	Carryover From Upstream Inlet (cfs)	Total Gutter Flow (cfs)	Gutter Capacity (cfs)	Gutter Cross Slope (ft/ft)	Roadway Cross Slope, Sx (ft/ft)	Depth of Water in Curb & Gutter, y (ft)	Width of Flow in Roadway, T (ft)	Width of Depressed Gutter Section, W (ft)	Roadway Longitudinal Slope, S (ft/ft)	Manning's Roughness Coefficient, n	Inlet Length Required (ft)	Length " L " (feet)	Type	Crown Type	**Carryover to Downstream Inlet (cfs)**	**Remarks**
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	20	23	24
IN-A	A	5	10	5.78	0.75	0.51	2.18	1.70	3.88	3.85	0.188	0.02	0.208	10.40	1.333	0.0210	0.016	14.08	15	On Grade	Straight	0.00	Existing inlet / Not replacing Carryover from US380 DA-25.3
IN-B	B	5	10	5.78	0.87	0.90	4.55	0.00	4.55	4.52	0.188	0.02	0.245	12.24	1.333	0.0121	0.016	13.77	15	On Grade	Straight	0.00	Existing inlet / Not replacing
IN-C	C	5	10	5.78	0.76	0.54	2.38	0.00	2.38	2.36	0.188	0.02	0.165	8.27	1.333	0.0267	0.016	11.18	15	On Grade	Straight	0.00	
IN-D	D	5	10	5.78	0.78	0.89	3.99	0.00	3.99	3.96	0.188	0.02	0.258	12.91	1.333	0.0070	0.016	11.35	10	On Grade	Straight	0.81	Carryover to IN-E
IN-E	E	5	10	5.78	0.70	0.43	1.73	0.81	2.54	2.53	0.188	0.02	0.218	10.91	1.333	0.0070	0.016	8.67	10	On Grade	Straight	0.00	Existing inlet / Not replacing
IN-F	F	5	10	5.78	0.71	0.36	1.47	0.00	1.47	1.46	0.188	0.02	0.178	8.88	1.333	0.0070	0.016	6.28	10	On Grade	Straight	0.00	Existing inlet / Not replacing
IN-G	G	5	10	5.78	0.73	0.39	1.67	0.00	1.67	1.66	0.188	0.02	0.228	11.38	1.333	0.0024	0.016	5.37	15	On Grade	Straight	0.00	Existing inlet / Not replacing
IN-H	H	5	10	5.78	0.95	0.34	1.85	0.00	1.85	1.84	0.188	0.02	0.158	7.89	1.333	0.0210	0.016	9.20	15	On Grade	Straight	0.00	
IN-I	I	5	10	5.78	0.93	0.45	2.42	0.00	2.42	2.40	0.188	0.02	0.193	9.66	1.333	0.0121	0.016	9.47	15	On Grade	Straight	0.00	
IN-J	J	5	10	5.78	0.93	0.26	1.40	0.00	1.40	1.39	0.188	0.02	0.136	6.79	1.333	0.0267	0.016	8.35	15	On Grade	Straight	0.00	
IN-K	K	5	10	5.78	0.93	0.43	2.31	0.00	2.31	2.30	0.188	0.02	0.211	10.53	1.333	0.0070	0.016	8.20	10	On Grade	Straight	0.00	
IN-L	L	5	10	5.78	0.92	0.38	2.02	0.00	2.02	2.01	0.188	0.02	0.200	10.01	1.333	0.0070	0.016	7.57	10	On Grade	Straight	0.00	
IN-M	M	5	10	5.78	0.88	0.44	2.24	0.00	2.24	2.23	0.188	0.02	0.208	10.41	1.333	0.0070	0.016	8.05	10	On Grade	Straight	0.00	
IN-N	N	5	10	5.78	0.83	0.44	2.08	0.00	2.08	2.07	0.188	0.02	0.247	12.37	1.333	0.0024	0.016	6.14	10	On Grade	Straight	0.00	

1 - Design Storm Frequency selected to match original US 380 design.

2 - Rainfall intensities are from NOAA Atlas 14.

3 - Proposed inlet sizes reflect existing inlet sizes.

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
INLET CALCULATIONS

McKINNEY TEXAS
Unique by nature.

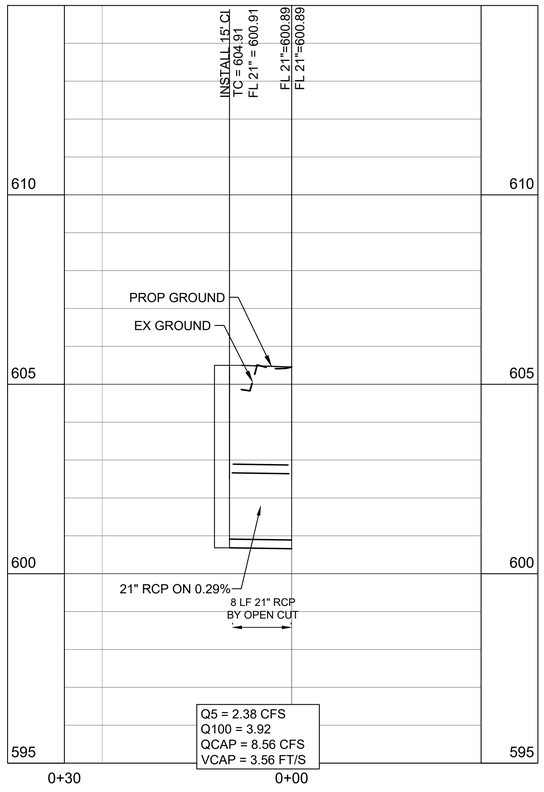
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

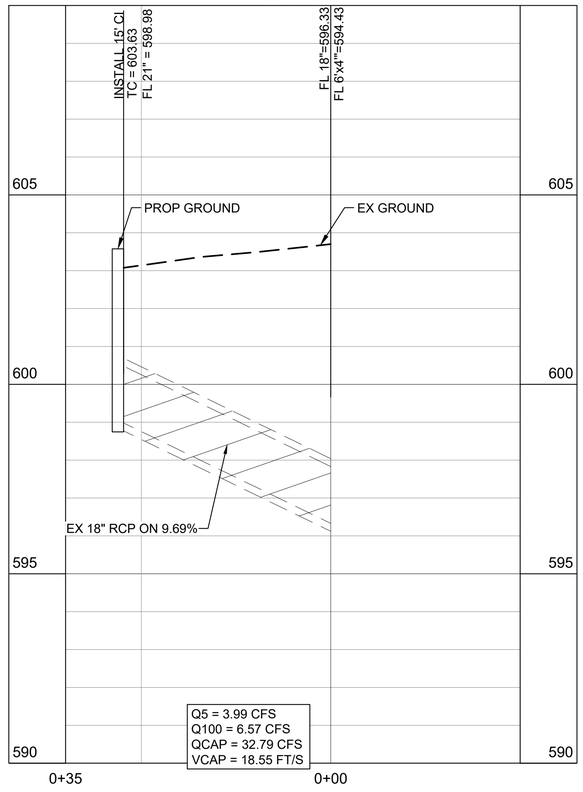
SHEET 76

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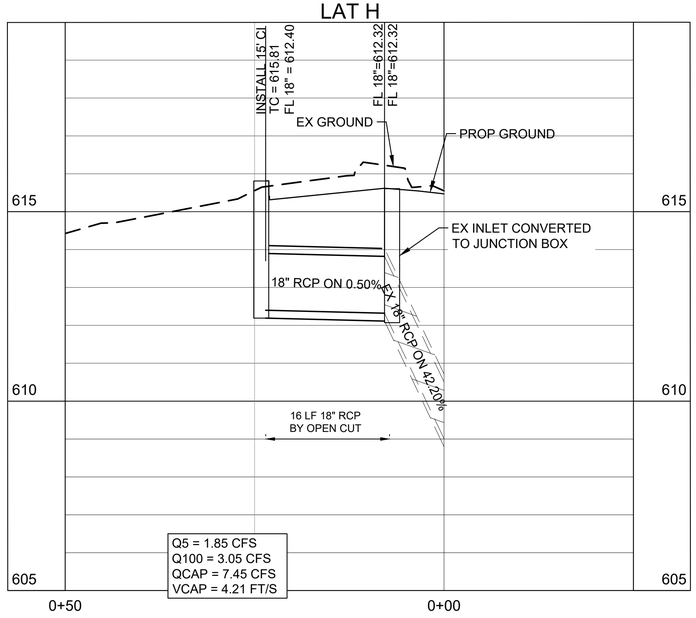
LAT C



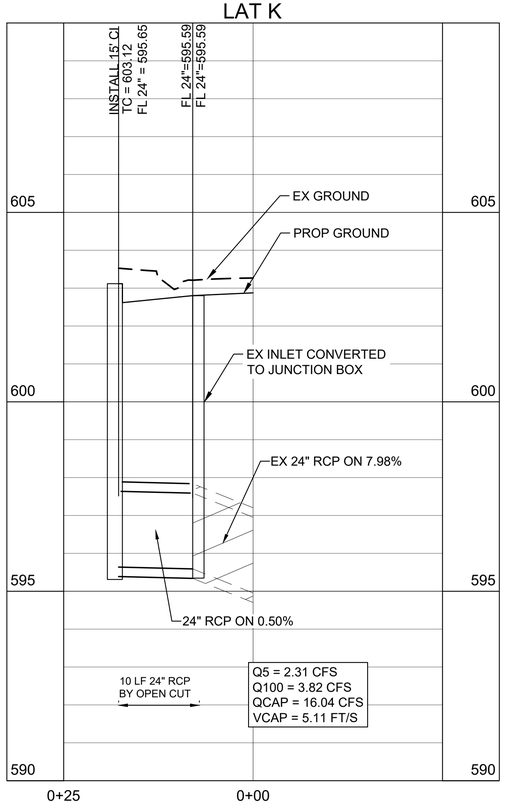
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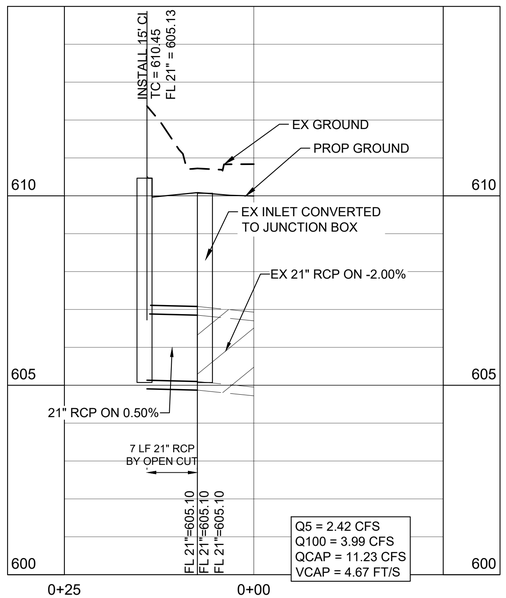
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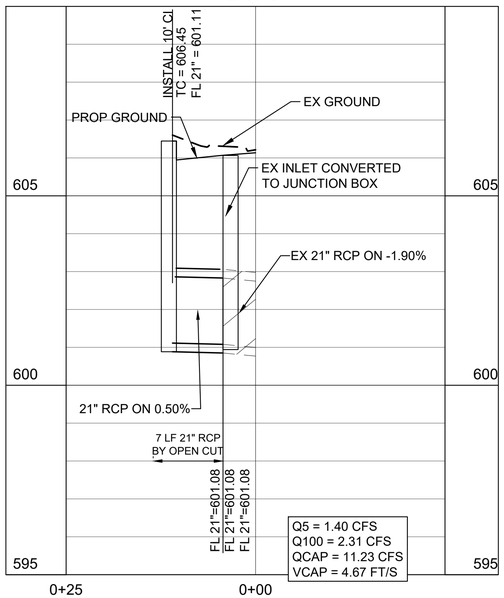
LAT K



LAT I



LAT J



NOTE:
CONTRACTOR SHALL FIELD VERIFY LOCATION & FL ELEVATION OF PROPOSED STORM CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION IF FIELD CONDITIONS DIFFER FROM DESIGN.

SCALE: H 1" = 20' V 1" = 4' (11"X17") | H 1" = 10' V 1" = 2' (22"X34")

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
STORM RELOCATIONS

McKINNEY TEXAS
Unique by nature.

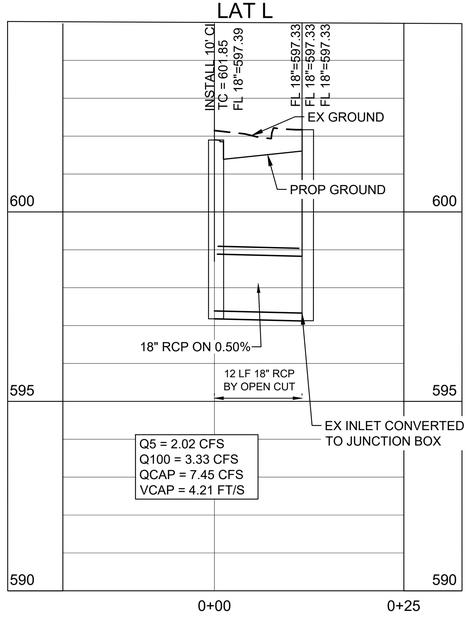
CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

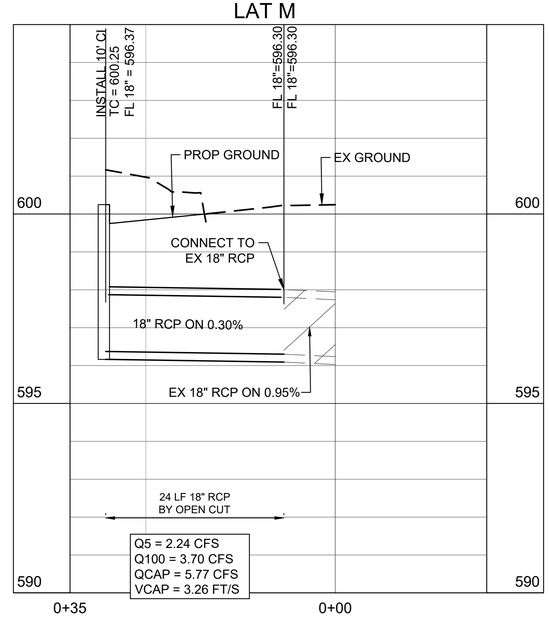
SHEET 77

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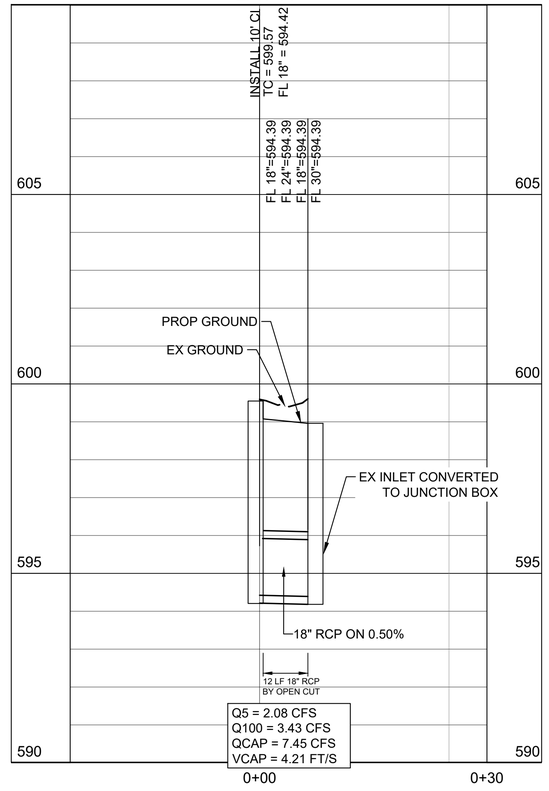
LAT L

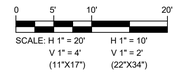


LAT M



LAT N





NOTE:
CONTRACTOR SHALL FIELD VERIFY LOCATION & FL ELEVATION OF PROPOSED STORM CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION IF FIELD CONDITIONS DIFFER FROM DESIGN.

REVISIONS

NO.	DATE	COMMENT



INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR STORM RELOCATIONS

McKINNEY TEXAS
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

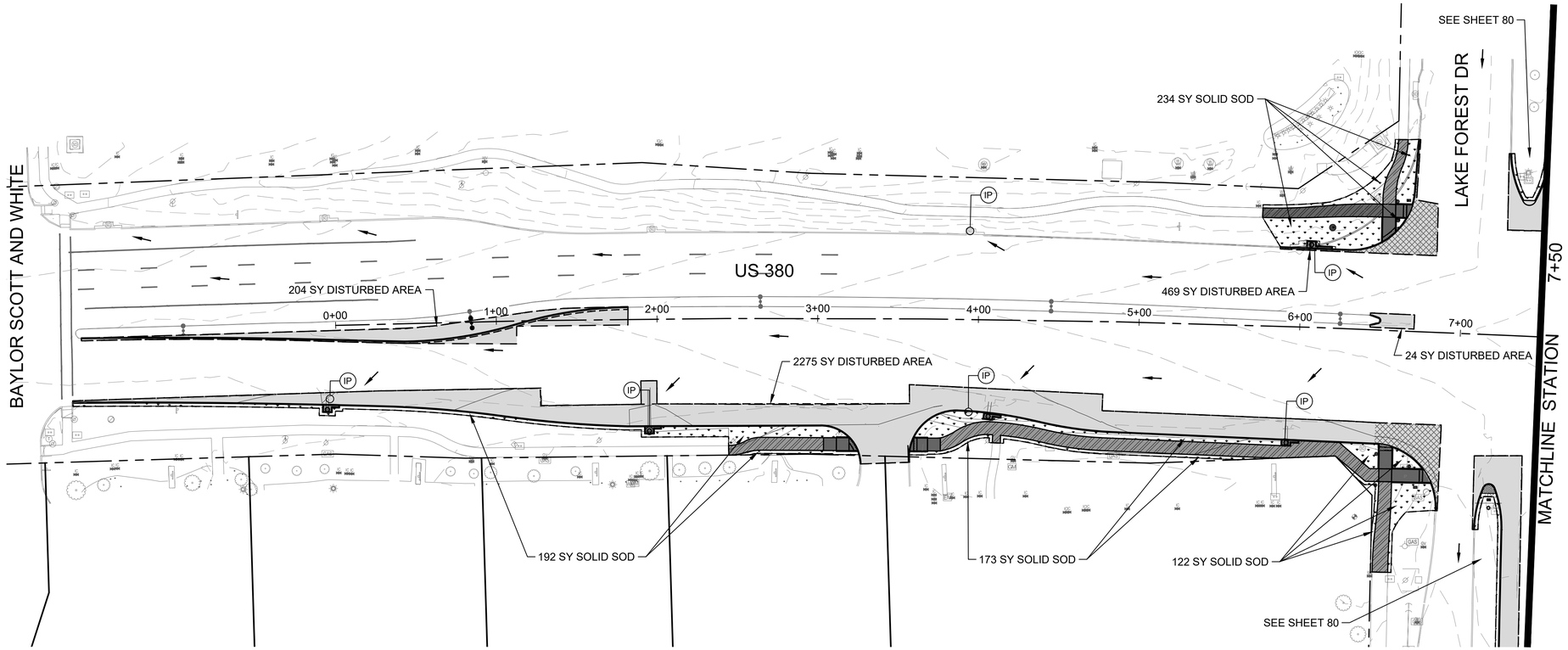
SHEET 78

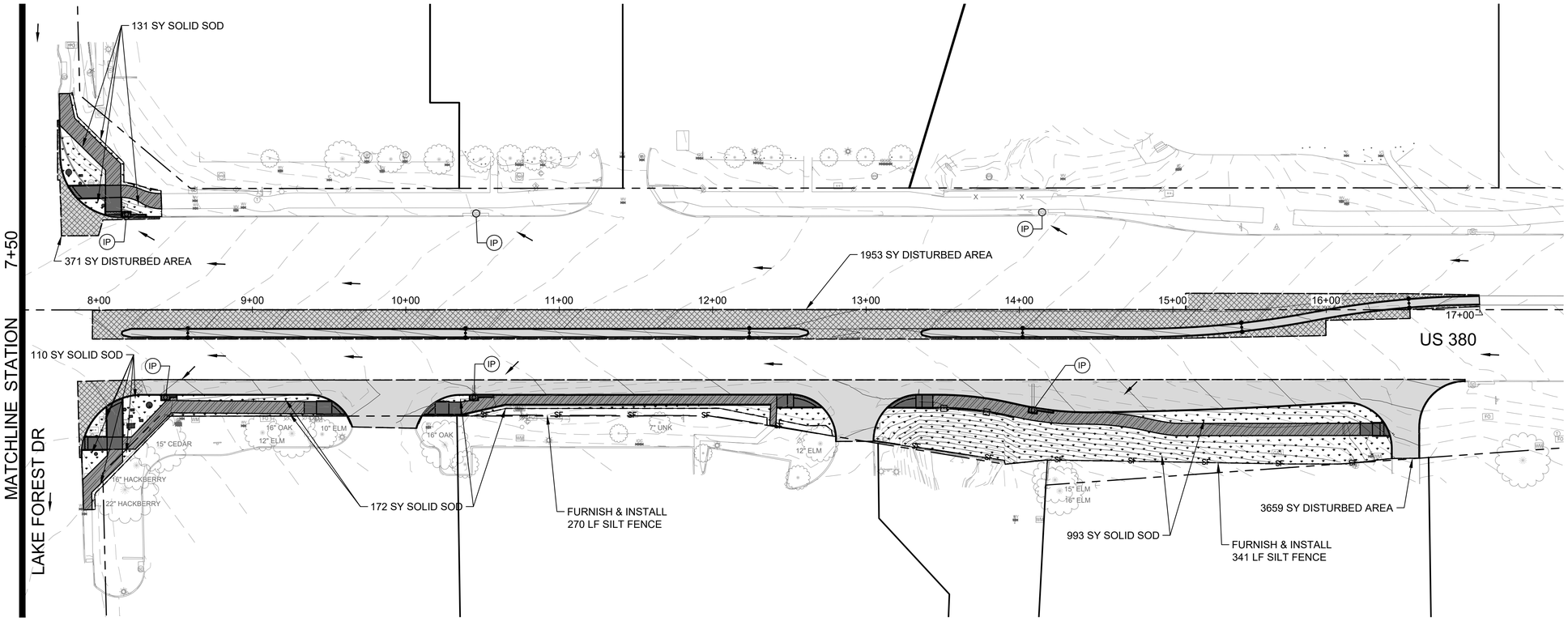
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!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.





0 20' 40' 80'

SCALE: 1"= 40' (22" X 34")
SCALE: 1"= 80' (11"X17")

LEGEND

- FLOW ARROW
- IP — INLET PROTECTION W/ TYPE P-2 FILTER SEE CITY DETAIL 1130M
- SF — SILT FENCE
- SOD
- DISTURBED AREA

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
EROSION CONTROL PLAN
EB & WB

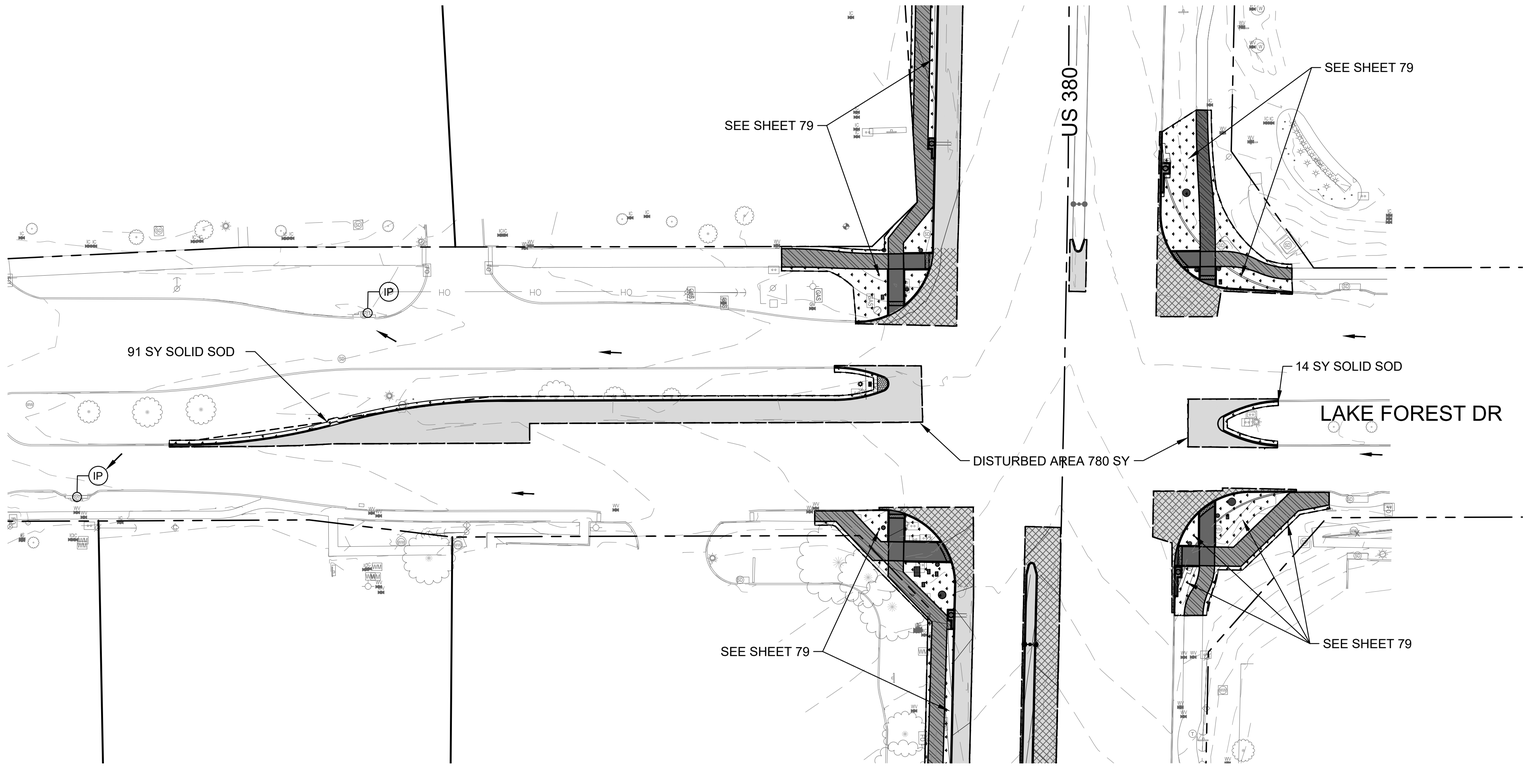
McKINNEY TEXAS
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 79

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\23120640 1_EROS.dwg - Plotted: 1/5/2026



!!! WARNING !!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

811 Know what's below. Call before you dig.

0 20' 40' 80'

SCALE: 1"= 40' (22" X 34")
SCALE: 1"= 80' (11"X17")

LEGEND

- FLOW ARROW
- IP — INLET PROTECTION W/ TYPE P-2 FILTER SEE CITY DETAIL 1130M
- SOD
- DISTURBED AREA

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303 US 380 & LAKE FOREST DR EROSION CONTROL PLAN NB & SB

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 80

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\23120640 1_EROS.dwg - Plotted: 1/5/2026

LEGEND

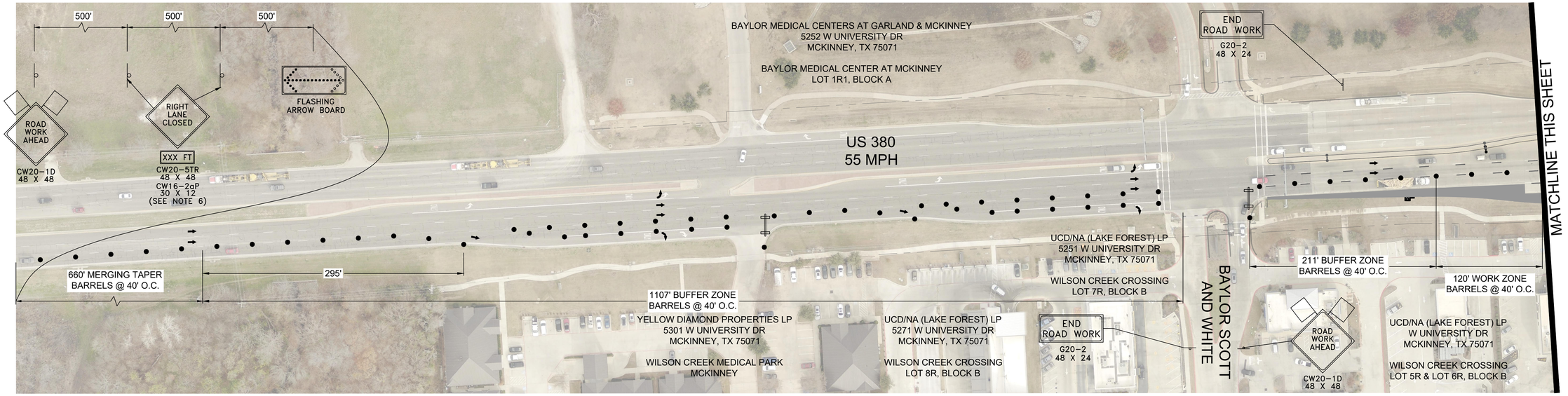
- PROP. IMPROVEMENTS PLACED IN THIS PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

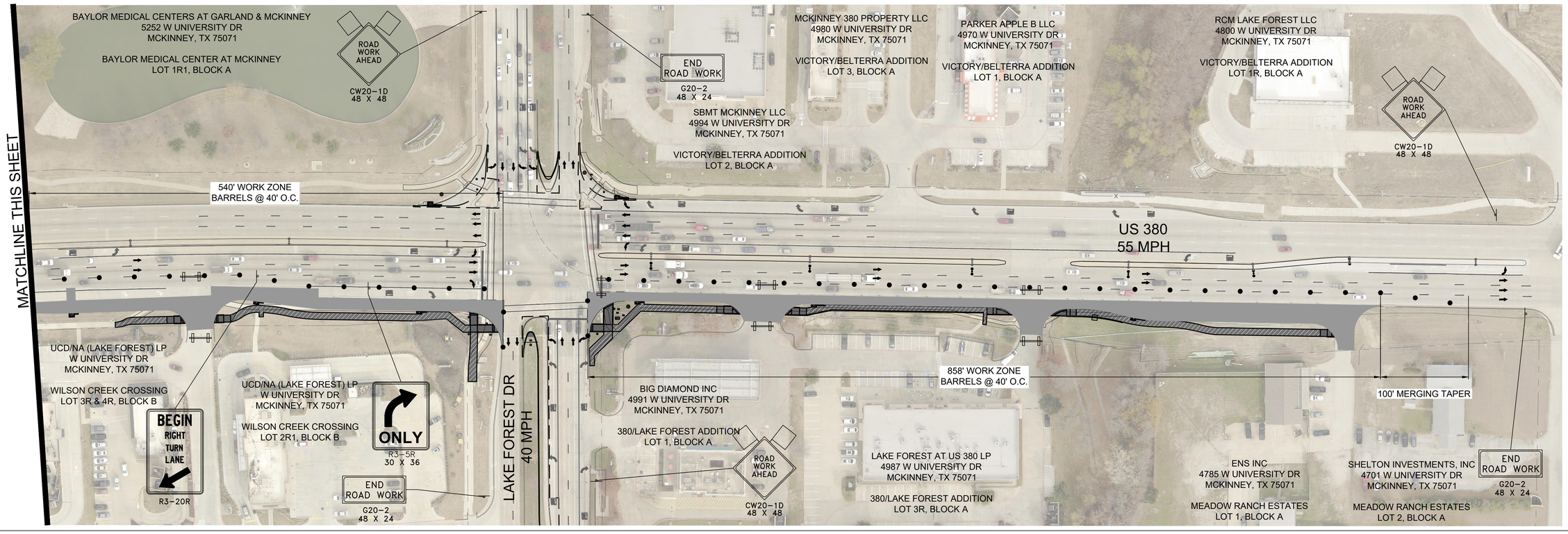
TCP NOTES:

1. REFER TO TXDOT STANDARDS BC(1)-14 TO BC(12)-14 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON A RADIUS IN CONFORMANCE WITH THE TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
4. ALL DIMENSIONS AND QUANTITIES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
5. CONTRACTOR WILL PROVIDE SIGNED AND SEALED SITE SPECIFIC TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW AND ACCEPTANCE PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES IF TRAFFIC CONTROL IS MODIFIED FROM WHAT IS SHOWN ON THE PLANS OR IF ADDITIONAL TRAFFIC CONTROL IS REQUIRED FOR CONSTRUCTION.
6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS:
   M-F: 9:00 AM - 3:30 PM

0 30' 60' 120'

SCALE: 1"= 60' (22" X 34")
SCALE: 1"= 120' (11"X17")





NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TRAFFIC CONTROL PLAN - PHASE 1

McKINNEY TEXAS
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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/5/2026	2312-064-01

SHEET 81

Dwg Info: f:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23120640I_US380&LF_TCP.dwg - Plotted: 1/6/2026

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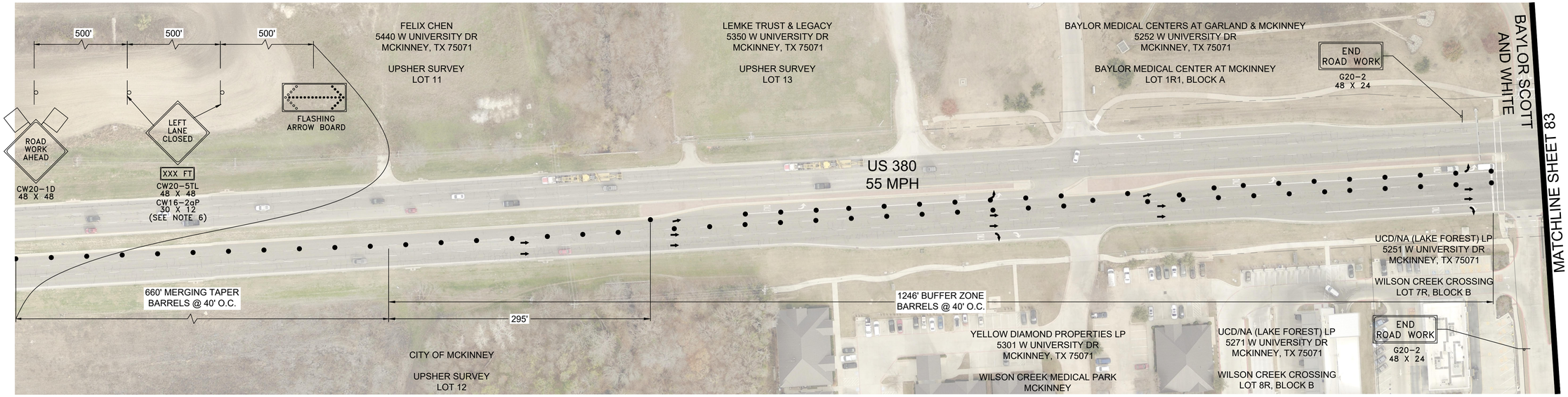
- PROP. IMPROVEMENTS PLACED IN THIS PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

TCP NOTES:

1. REFER TO TXDOT STANDARDS BC(1)-14 TO BC(12)-14 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON A RADIUS IN CONFORMANCE WITH THE TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
4. ALL DIMENSIONS AND QUANTITIES SHOWN ARE FOR INFORMATION PURPOSES ONLY.
5. CONTRACTOR WILL PROVIDE SIGNED AND SEALED SITE SPECIFIC TRAFFIC CONTROL PLANS TO THE CITY FOR REVIEW AND ACCEPTANCE PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES IF TRAFFIC CONTROL IS MODIFIED FROM WHAT IS SHOWN ON THE PLANS OR IF ADDITIONAL TRAFFIC CONTROL IS REQUIRED FOR CONSTRUCTION.
6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS:
   M-F: 9:00 AM - 3:30 PM

0 30' 60' 120'

SCALE: 1"= 60' (22" X 34")
SCALE: 1"= 120' (11"X17")



NO.	DATE	COMMENT
		REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
80 TRAFFIC CONTROL PLAN - PHASE 2

McKINNEY TEXAS
Unique by nature.

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/6/2026	2312-064-01

SHEET
82

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640l_US380&LF_TCP.dwg - Plotted: 1/6/2026

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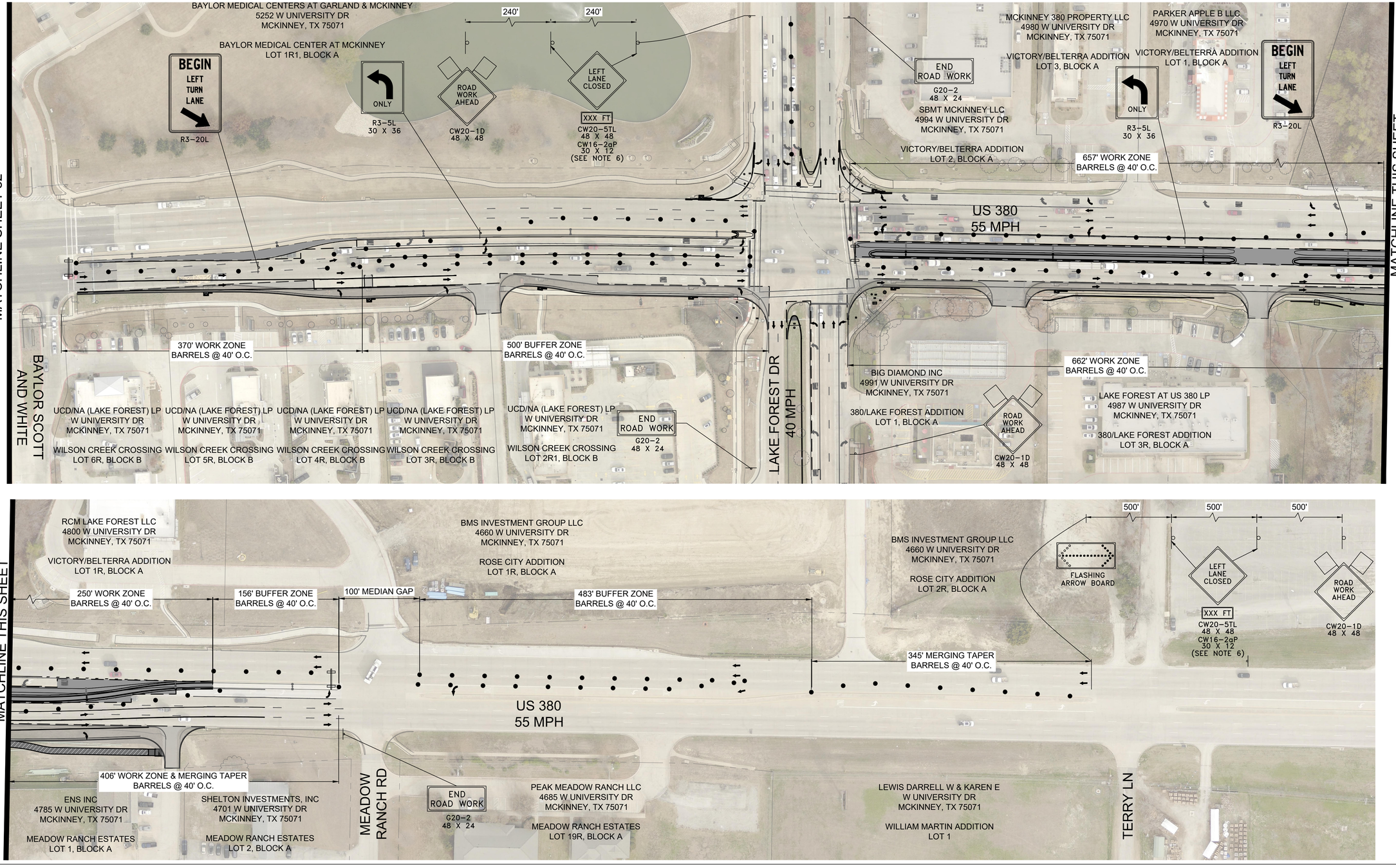
- PROP. IMPROVEMENTS PLACED IN THIS PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

TCP NOTES:

1. REFER TO TXDOT STANDARDS BC(1)-14 TO BC(12)-14 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON A RADIUS IN CONFORMANCE WITH THE TMUTCD.
3. ARROWS SHOWN ARE FOR CONTRACTORS INFORMATION ONLY AND ARE THERE ONLY TO INDICATE WHERE TRAFFIC SHOULD BE DURING EACH PHASE OF CONSTRUCTION.
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6. FOR SHORT TERM APPLICATIONS, WHEN POST MOUNTED SIGNS ARE NOT USED, THE DISTANCE LEGEND MAY BE SHOWN ON THE SIGN FACE RATHER THAN ON A CW16-3aP SUPPLEMENTAL PLAQUE.
7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS:
   M-F: 9:00 AM - 3:30 PM

0 30' 60' 120'

SCALE: 1"= 60' (22" X 34")
SCALE: 1"= 120' (11"X17")



NO.	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TRAFFIC CONTROL PLAN - PHASE 2 (2)

McKINNEY TEXAS
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/6/2026	2312-064-01

SHEET
83

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_US380&LF_TCP.dwg - Plotted: 1/6/2026

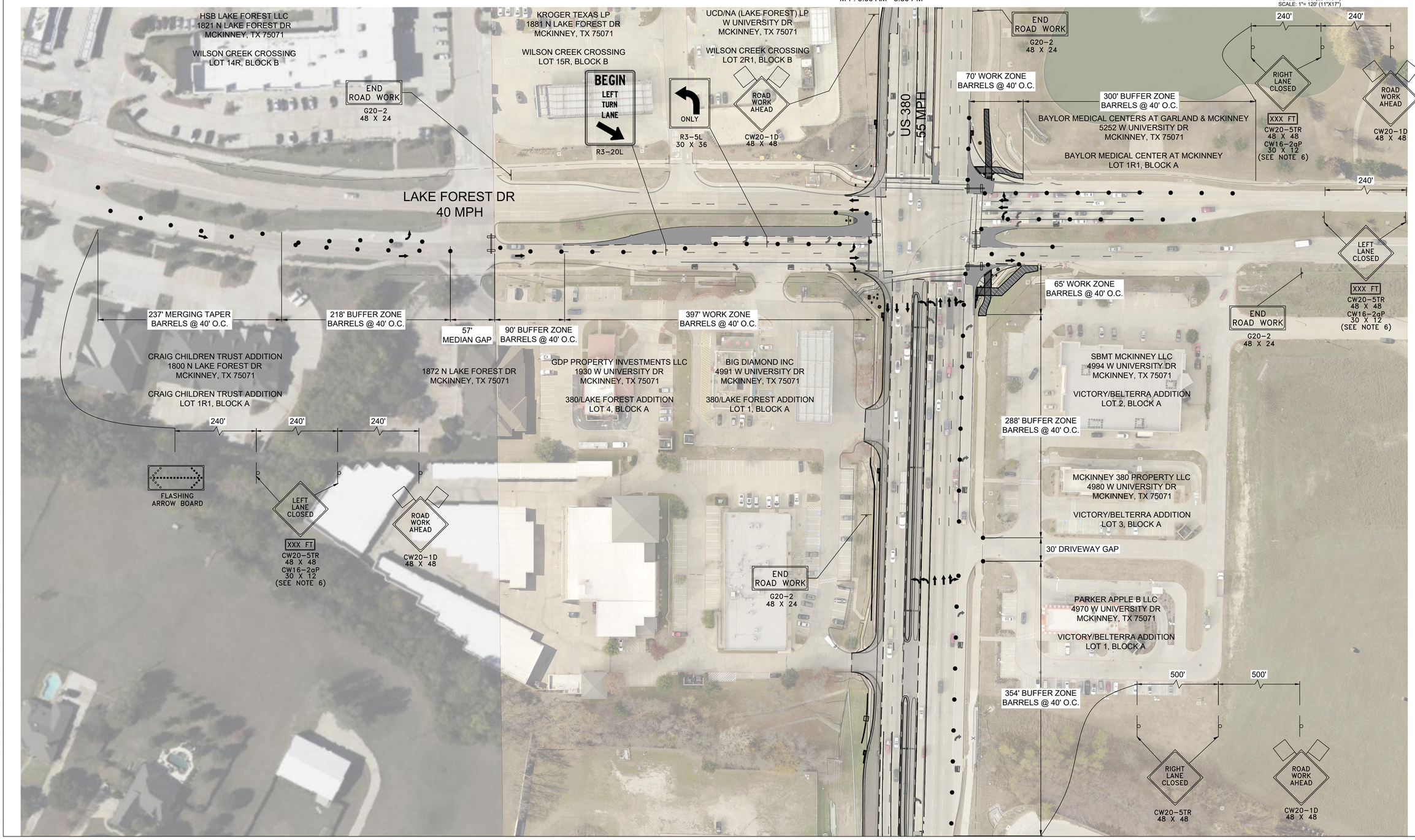
LEGEND

- PROP. IMPROVEMENTS PLACED IN THIS PHASE
- VERTICAL PANELS/ BARRELS
- TYPE III BARRICADE
- DIRECTION OF TRAFFIC FLOW

TCP NOTES:

1. REFER TO TXDOT STANDARDS BC(1)-14 TO BC(12)-14 FOR ADVANCE WARNING SIGNS LAYOUT INFORMATION.
2. BARRELS AND/OR VERTICAL PANELS WILL BE PLACED AT 40' O.C. ON TANGENTS OR 10' O.C. ON A RADIUS IN CONFORMANCE WITH THE TMUTCD.
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7. LANE CLOSURES ALLOWED DURING NON-PEAK TRAFFIC HOURS ONLY.
   NON-PEAK TRAFFIC HOURS:
   M-F: 9:00 AM - 3:30 PM

0 30' 60' 120'
SCALE: 1"= 60' (22" X 34")
SCALE: 1"= 120' (11"X17")



NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
US 380 & LAKE FOREST DR
TRAFFIC CONTROL PLAN - PHASE 3

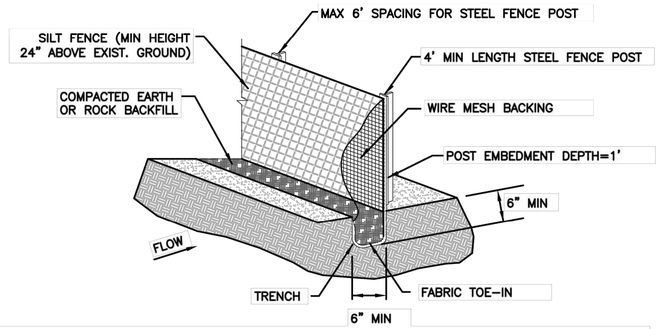
McKINNEY TEXAS
Unique by nature.

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
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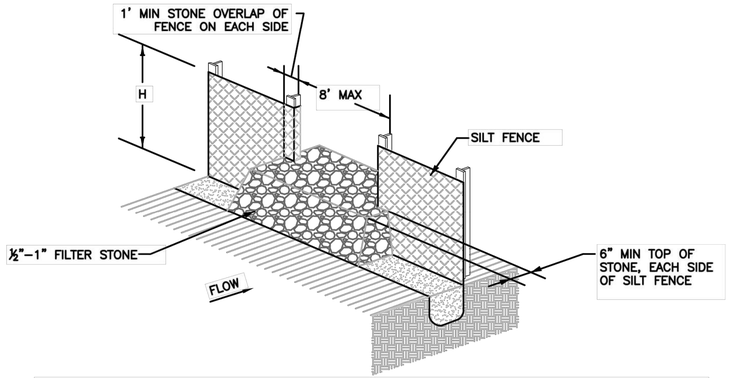
DESIGN BY:	DRAWN BY:
PYM	NLS, AYC
DATE:	JOB NUMBER:
1/6/2026	2312-064-01

SHEET
84

Dwg Info. I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640101_US380&LF_TCP.dwg - Plotted: 1/6/2026



SILT FENCE EXAMPLE
N.T.S.



STONE OVERFLOW STRUCTURE
N.T.S.

NOTES:
1. DESIGN SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE OVERFLOW STRUCTURES SHALL BE INSTALLED. OVERFLOW STRUCTURES ARE REQUIRED AT ALL POINTS AND AT A SPACING OF APPROXIMATELY 300 FT WHERE NO LOW POINT IS APPARENT.
2. DESIGNER SHALL INDICATE ON THE DRAWINGS THE LOCATIONS WHERE SILT FENCE IS TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE A MINIMUM OF 10 FEET.
3. STEEL FENCE POSTS ADJACENT TO ROW AND PEDESTRIAN AREAS SHALL BE CAPPED.

SHEET 1 OF 2

McKINNEY TEXAS Unique by nature.	SILT FENCE	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 1020M

SILT FENCE GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EVERY RAIN EVENT. REPAIR OR REPLACEMENT SHALL BE MADE WITHIN 24 HOURS AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SHEET 2 OF 2

McKINNEY TEXAS Unique by nature.	SILT FENCE NOTES	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 1020M

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

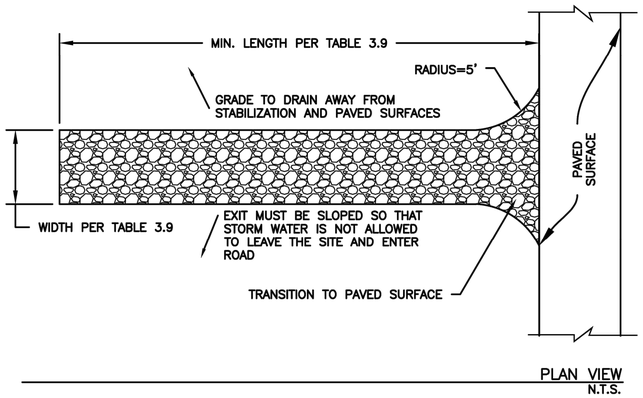
INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

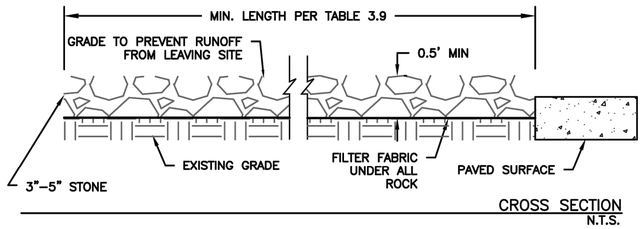
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 85	

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PLAN VIEW
N.T.S.



CROSS SECTION
N.T.S.

NOTES:
INSTALL SILT FENCE, CONSTRUCTION SAFETY FENCING, OR SIMILAR BARRIER ALONG THE CONSTRUCTION ACCESS.

TABLE 3.9 MINIMUM EXIT DIMENSIONS		
DISTURBED AREA	MIN. WIDTH OF EXIT	MIN. LENGTH OF EXIT
<1 ACRE	15 FEET	20 FEET
>1 ACRE BUT <5 ACRES	25 FEET	50 FEET
>5 ACRES	30 FEET	50 FEET

SHEET 1 OF 2

McKINNEY TEXAS Unique by nature.	STABILIZATION CONSTRUCTION ACCESS	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 1020M

STABILIZED CONSTRUCTION EXIT GENERAL NOTES:

1. STONE SHALL BE 3 TO 5 INCH DIAMETER CRUSHED ROCK.
2. IF RECYCLED CONCRETE IS USED, IT SHALL BE CLEAN GRADED CRUSHED CONCRETE FREE OF REINFORCING STEEL AND OTHER OBJECTIONABLE MATERIAL AND HAVE AT MOST 1.5% DELETERIOUS MATERIAL CONFORMING TO TxDOT'S RECYCLED MATERIAL SPECIFICATIONS.
3. THE THICKNESS SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. THE ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
7. THE ACCESS MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

SHEET 2 OF 2

McKINNEY TEXAS Unique by nature.	STABILIZATION CONSTRUCTION ACCESS NOTES	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 1070M

NO.	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

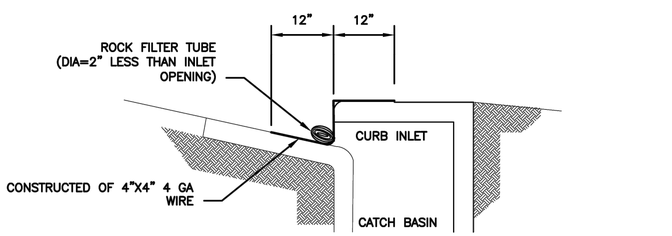
McKINNEY TEXAS Unique by nature.

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TBPELS Firm Registration No. 274
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2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

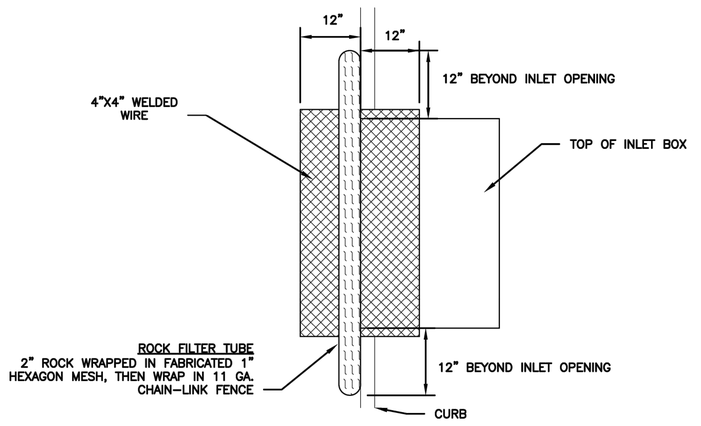
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 86

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ROCK FILTER TUBE CURB INLET PROTECTION CROSS SECTION
N.T.S.



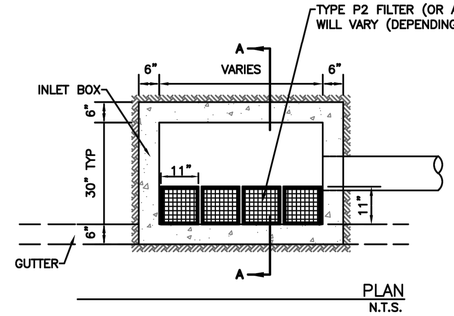
ROCK FILTER TUBE CURB INLET PROTECTION PLAN VEW
N.T.S.

NOTES:

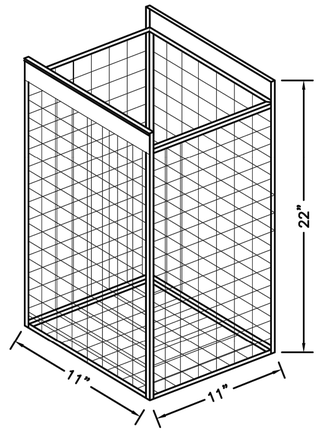
1. THIS CONTROL WILL DECREASE THE CAPACITY OF THE INLET. IT SHALL ONLY BE USED WHEN THE ENGINEER HAS DETERMINED THERE IS ADEQUATE STORAGE OR POSITIVE OVERFLOW. NOT TO BE USED ON ACTIVE PUBLIC ROADWAYS.
2. ALLOWED FOR NON-ACCEPTED ROADWAY.
3. FOR ACTIVE ROADWAY, SEDIMENT FROM ADJACENT STREET SHALL BE RETAINED ON SITE AND TYPE P-2 INLET FILTERS (OR APPROVED EQUAL) SHALL BE USED.
4. OVERLAP ROCK FILTER TUBES A MINIMUM OF 1-FOOT.

SHEET 1 OF 2

McKINNEY TEXAS Unique by nature.	CURB INLET PROTECTION ROCK FILTER TUBE	JANUARY 2025 STANDARD DRAWING NO. 1130M
	CITY OF McKINNEY, TEXAS	

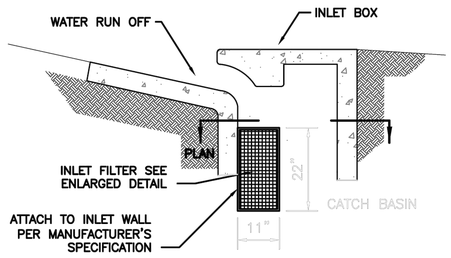


PLAN
N.T.S.



ENLARGED DETAIL
N.T.S.

SPECIFICATION: INSERT CHAMBER
WIDTH 11"
LENGTH 11"
HEIGHT 22"
FILTRATION SURFACE AREA



SECTION A-A
N.T.S.

*P2 INLET FILTERS (OR APPROVED EQUAL) REQUIRED WHEN STREET IS OPEN TO VEHICULAR TRAFFIC.

NOTES:

1. BASKETS SHALL BE LINED WITH FILTER FABRIC AND INSPECTED/CLEANED/MAINTAINED BY CONTRACTOR ON A BI-WEEKLY BASIS AND/OR WITHIN TWO DAYS OF A RAIN EVENT.
2. P2 FILTERS ARE TO BE REMOVED BY CONTRACTOR WITH ALL EROSION CONTROL(BMPs) AT COMPLETION OF PROJECT.

SHEET 2 OF 2

McKINNEY TEXAS Unique by nature.	CURB INLET PROTECTION TYPE P-2 INLET FILTER	JANUARY 2025 STANDARD DRAWING NO. 1130M
	CITY OF McKINNEY, TEXAS	

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

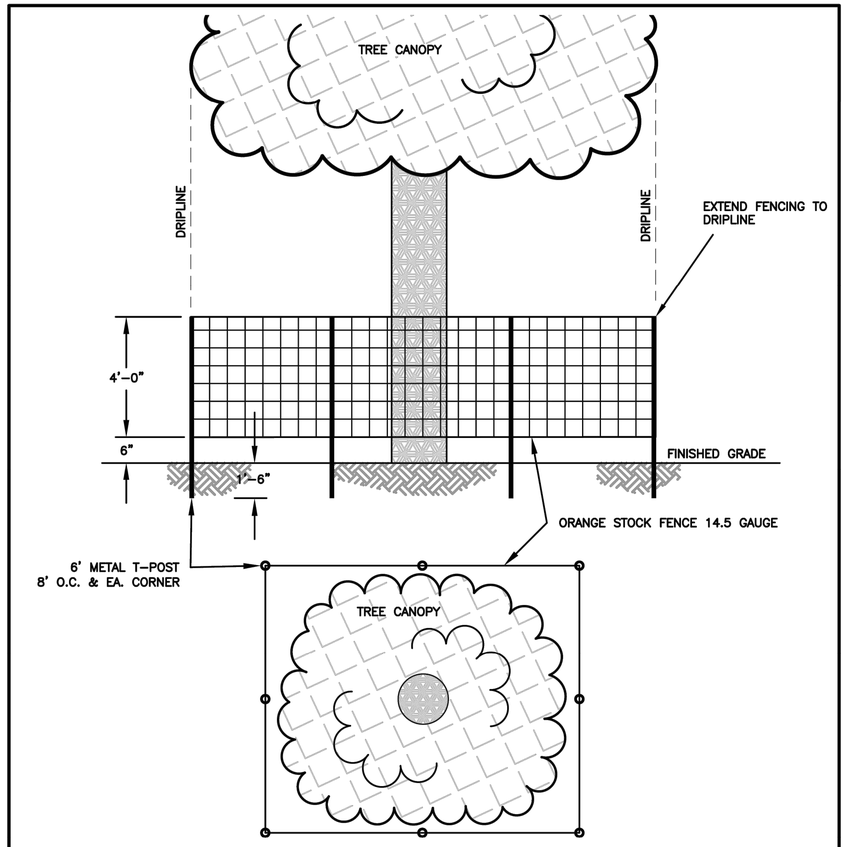
McKINNEY TEXAS Unique by nature.

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
87

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NOTES:

1. FENCE SHALL BE MAINTAINED AND REPAIRED AS REQUIRED DURING ALL PHASES OF CONSTRUCTION.
2. NO CONSTRUCTION TRAFFIC, GRADING, STORAGE, OR WASTE DISPOSAL ALLOWED WITHIN FENCED AREAS AROUND EXISTING TREES.
3. TREE TRUNKS MUST BE CUT AT GROUND LEVEL WHERE REMOVAL OF A TREE MAY DAMAGE ROOT SYSTEMS OF AN ADJACENT TREE.
4. ALL ROOTS TWO INCHES OR LARGER IN CALIPER, WHICH ARE EXPOSED AS A RESULT OF TRENCHING OR OTHER EXCAVATION, SHALL BE CUT OFF SQUARE.

McKINNEY TEXAS Unique by nature.	TREE PRESERVATION & PROTECTION	JANUARY 2025
		STANDARD DRAWING NO. 1180M
	CITY OF McKINNEY, TEXAS	

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
142526
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

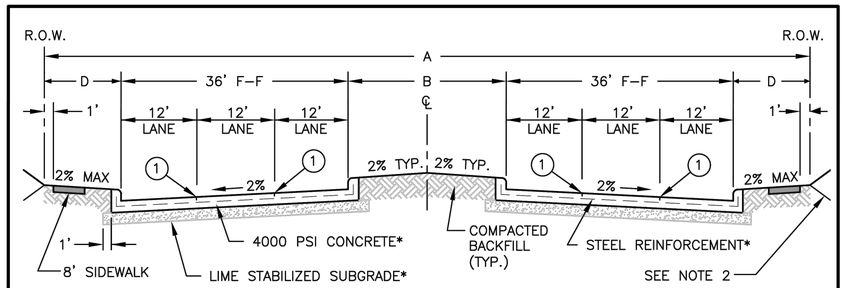
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

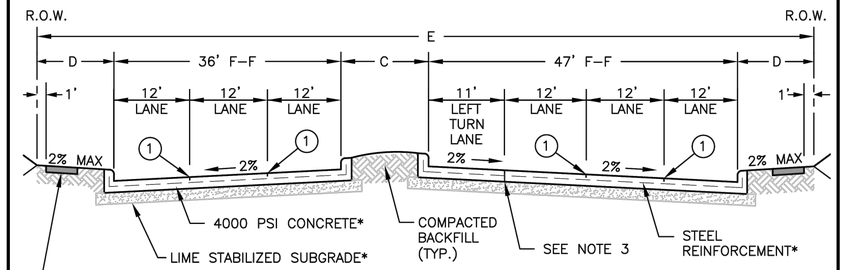
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Land Surveying Firm Registration No. 10046700
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Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 88	

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\23126401_DETL_EROS.dwg - Plotted: 1/5/2026



SIX LANE DIVIDED
STANDARD SECTION (P6D-M6D)
MID-BLOCK
N.T.S.



INTERSECTION
N.T.S.

(1) SAWED LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT

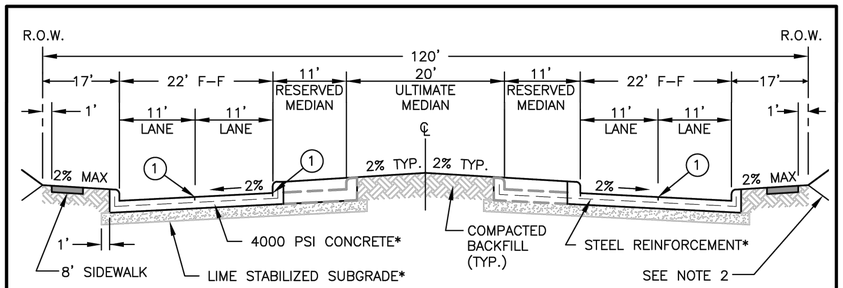
ROAD TYPE	R.O.W. @ MID-BLOCK (A)	MEDIAN WIDTH (B)	MEDIAN WIDTH (C)	PARKWAY WIDTH (D)	R.O.W. @ INTERSECTION (E)
P6D	130'	20'	7'	19'	150'
M6D	124'	20'	8'	16'	145'

NOTES:
1. REINFORCED CURB HEIGHT AND WIDTH SHALL BE 6".
2. SLOPES ADJACENT TO THE R.O.W. SHALL BE NO STEEPER THAN 4:1.
3. KEYWAY JOINT REQ'D FOR NEW ROADWAY CONSTRUCTION, LONGITUDINAL BUTT JOINT REQ'D ON EXISTING SECTION.
4. TOP 4" OF MEDIAN AND PARKWAY BACKFILL SHALL BE TOPSOIL MATERIAL.

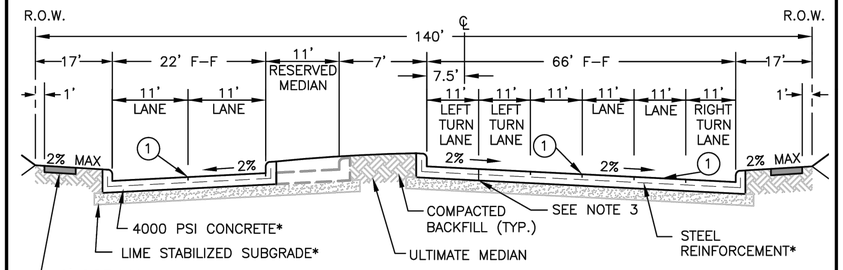
* A GEOTECHNICAL EVALUATION AND DESIGN SHALL BE CONDUCTED TO DETERMINE AN ADEQUATE PAVEMENT SECTION BASED ON A MINIMUM 30 YEAR DESIGN LIFE FOR ALL PAVING PROJECTS. (REFER TO ENGINEERING DESIGN MANUAL) THE MINIMUM ALLOWABLE PAVEMENT DESIGN SHALL BE NO LESS THAN 9"-4000 PSI CONCRETE WITH #4 BARS AT 18" CENTERS ON A 8" LIME STABILIZED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE PLASTICITY INDEX SHALL NOT EXCEED 12.

REFERENCE ENGINEERING DESIGN MANUAL FOR INTERSECTION LAYOUT INFORMATION

McKINNEY TEXAS Unique by nature.	P6D-M6D 6 LANE DIVIDED THOROUGHFARE CITY OF McKINNEY, TEXAS	JANUARY 2025 STANDARD DRAWING NO. 2010M



FOUR LANE DIVIDED
STANDARD SECTION (G4D)
MID-BLOCK
N.T.S.



INTERSECTION
N.T.S.

(1) SAWED LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT

NOTES:
1. REINFORCED CURB HEIGHT AND WIDTH SHALL BE 6".
2. SLOPES ADJACENT TO THE R.O.W. SHALL BE NO STEEPER THAN 4:1.
3. KEYWAY JOINT REQ'D FOR NEW ROADWAY CONSTRUCTION, LONGITUDINAL BUTT JOINT REQ'D ON EXISTING SECTION.
4. TOP 4" OF MEDIAN AND PARKWAY BACKFILL SHALL BE TOPSOIL MATERIAL.
5. RESERVED MEDIAN TO ACCOMMODATE FUTURE LANE AND SHALL REMAIN CLEAR OF LANDSCAPING OR MEDIAN INFRASTRUCTURE.

* A GEOTECHNICAL EVALUATION AND DESIGN SHALL BE CONDUCTED TO DETERMINE AN ADEQUATE PAVEMENT SECTION BASED ON A MINIMUM 30 YEAR DESIGN LIFE FOR ALL PAVING PROJECTS. (REFER TO ENGINEERING DESIGN MANUAL) THE MINIMUM ALLOWABLE PAVEMENT DESIGN SHALL BE NO LESS THAN 9"-4000 PSI CONCRETE WITH #4 BARS AT 18" CENTERS ON A 8" LIME STABILIZED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE PLASTICITY INDEX SHALL NOT EXCEED 12.

REFERENCE ENGINEERING DESIGN MANUAL
FOR INTERSECTION LAYOUT INFORMATION

McKINNEY TEXAS Unique by nature.	G4D 4 LANE DIVIDED THOROUGHFARE CITY OF McKINNEY, TEXAS	JANUARY 2025 STANDARD DRAWING NO. 2020M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125276
LICENSED PROFESSIONAL ENGINEER
01/05/2026

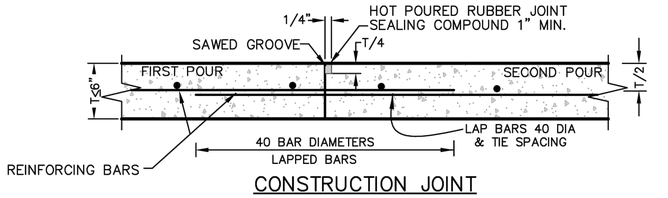
INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

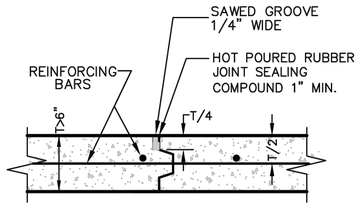
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Frisco, Texas 75034
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 89	

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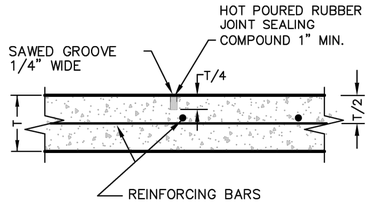


CONSTRUCTION JOINT



KEYWAY JOINT

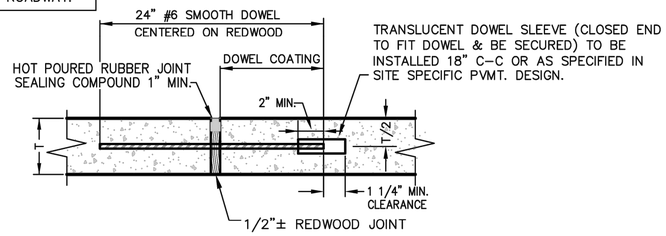
FOR PAVEMENT THICKNESS
GREATER THAN OR EQUAL TO 6"



SAWED CONTRACTION JOINT

NOTE: SAWED JOINTS SHALL BE EVERY 15' FOR ALL THICKNESS OF CONCRETE AND SHALL BE CONSTRUCTED WITHIN THE FIRST 12 HOURS OF CONCRETE PLACEMENT.

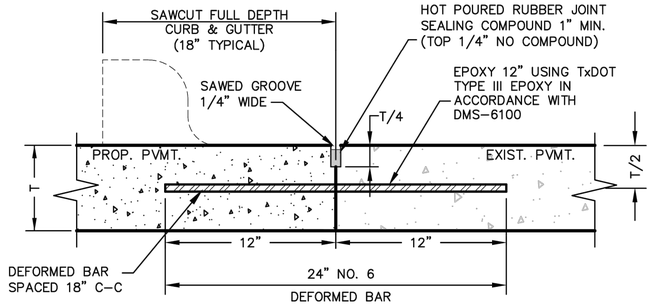
NOTE: STEEL REINFORCEMENT SHALL BE AS SPECIFIED IN THE SITE SPECIFIC PAVEMENT DESIGN FOR THE GIVEN ROADWAY.



NOTES:
1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
2. SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16" GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
3. EXPANSION JOINTS TO BE CONSTRUCTED A MAXIMUM OF 400' APART ON STRAIGHT PAVING, AS WELL AS INTERSECTION P.C.'S & P.T.'S UNLESS OTHERWISE SPECIFIED.
4. REBAR BASKET FOR EXPANSION JOINTS IS REQUIRED.

EXPANSION JOINT

McKINNEY TEXAS Unique by nature.	JOINTS	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2050M



LONGITUDINAL BUTT JOINT

NOTES:
1. DEFORMED BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF MECHANICAL RIG. ALL DRILLED DEFORMED BARS SHALL BE EPOXIED.
2. HAND DRILLING IS NOT ACCEPTABLE, PUSHING DEFORMED BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.
3. REINFORCING SHALL BE AS SPECIFIED IN THE SITE SPECIFIC PAVEMENT/GEOTECHNICAL DESIGN.

McKINNEY TEXAS Unique by nature.	LONGITUDINAL BUTT JOINT	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2055M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

STANDARD DETAILS

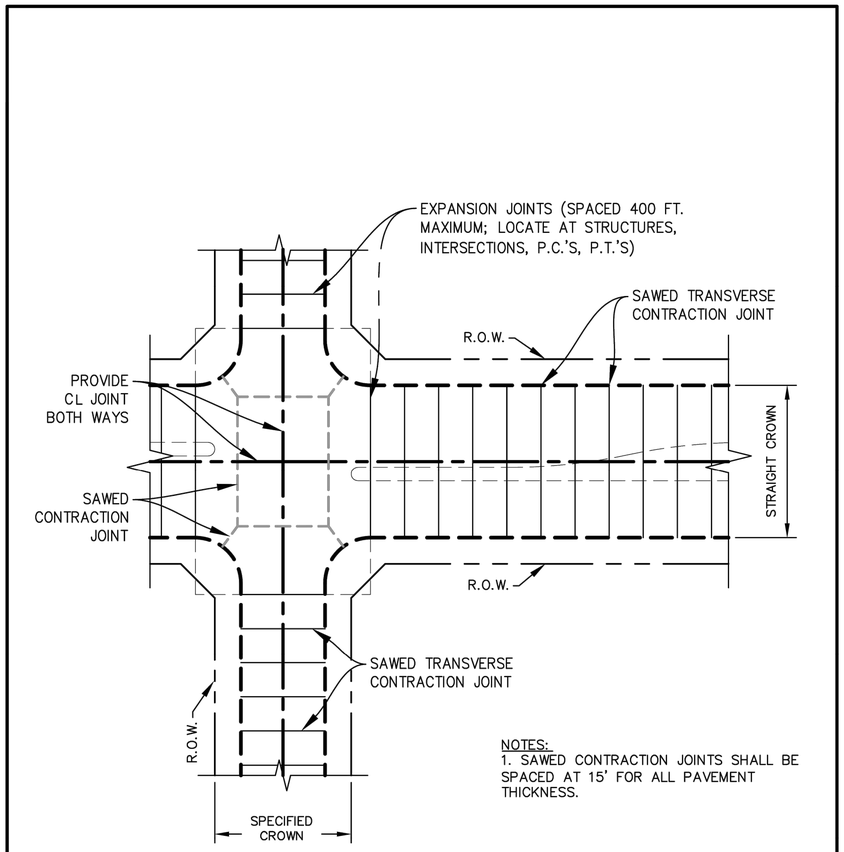
McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 90

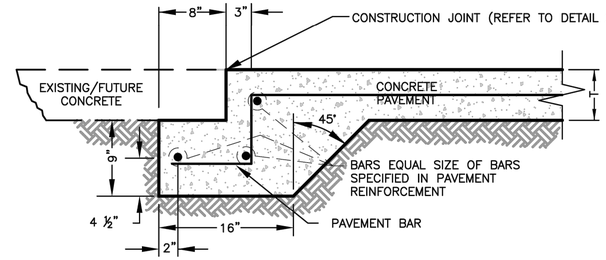
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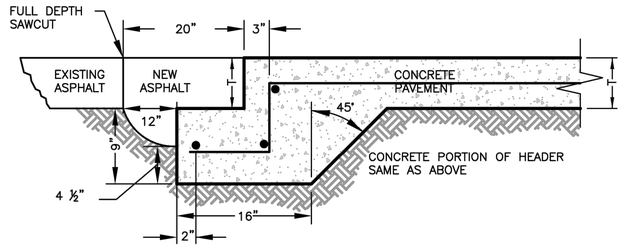
NOTES:
1. SAWED CONTRACTION JOINTS SHALL BE SPACED AT 15' FOR ALL PAVEMENT THICKNESS.

SPACING DIAGRAM FOR TRANSVERSE JOINTS

McKINNEY TEXAS Unique by nature.	TRANSVERSE JOINT SPACING	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2060M



STREET HEADER AT EXISTING AND FUTURE CONCRETE PAVEMENT



STREET HEADER AT ASPHALT PAVEMENT

NOTES:
1. PAVEMENT BARS TO BE BENT DOWN INTO HEADER.
2. HEADER AND PAVEMENT TO BE MONOLITHIC.
3. NEW ASPHALT SHALL MATCH PROPOSED PAVEMENT THICKNESS WITH TOP 2" TYPE D AND THE REMAINING ASPHALT SHALL BE TYPE B PER TXDOT SPECIFICATIONS.

McKINNEY TEXAS Unique by nature.	STREET HEADERS	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2070M

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

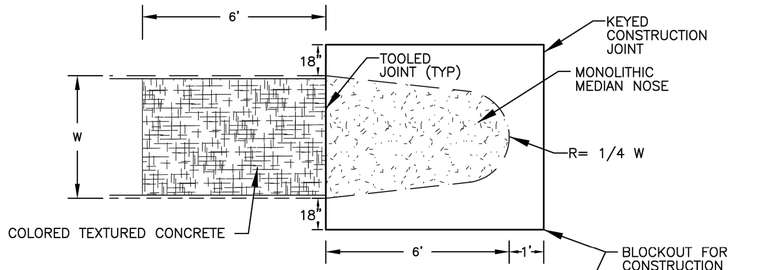
INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

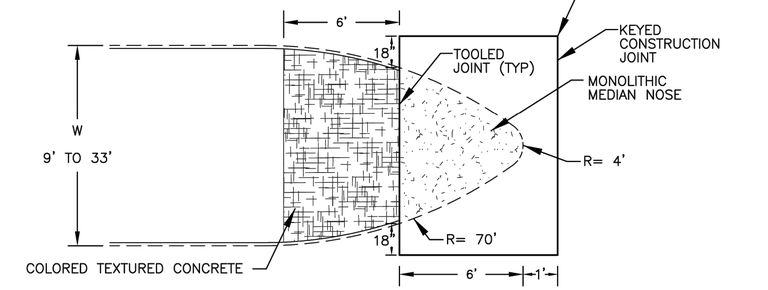
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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 91	

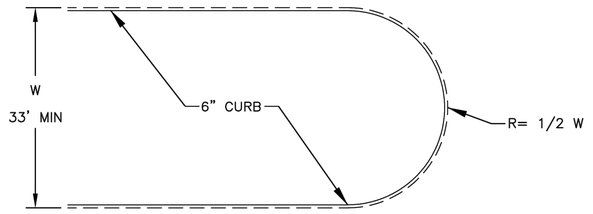
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MEDIAN NOSE TYPE "A"
FOR W LESS THAN 9'



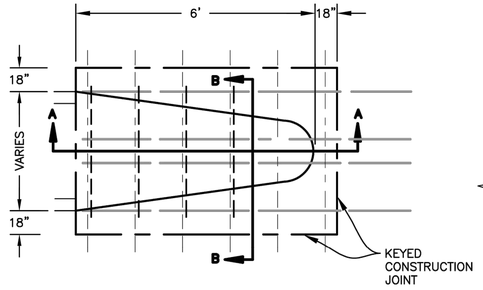
MEDIAN NOSE TYPE "B"
FOR W GREATER THAN 9' AND LESS THAN 33'



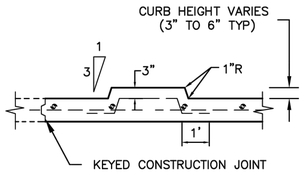
MEDIAN NOSE TYPE "C"
FOR W GREATER THAN OR EQUAL TO 33'

SHEET 1 OF 2

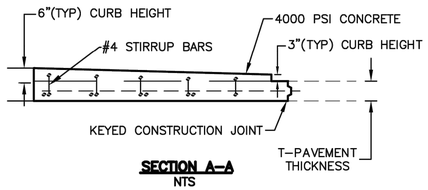
McKINNEY TEXAS Unique by nature.	MEDIAN NOSE DETAIL	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2080M



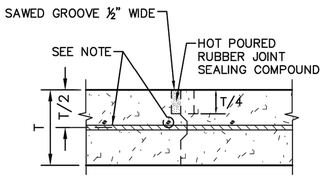
MONOLITHIC MEDIAN NOSE DETAIL
NTS



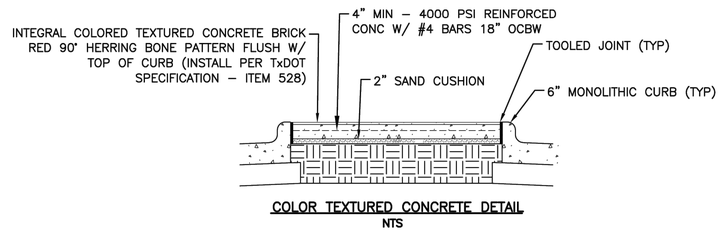
SECTION B–B
NTS



SECTION A–A
NTS



KEYED CONSTRUCTION JOINT
NTS



COLOR TEXTURED CONCRETE DETAIL
NTS

NOTES:

1. REINFORCEMENT BARS SHALL MATCH THOSE IN PAVEMENT.
2. FULL HEIGHT CURB REQUIRED FOR MEDIANS LESS THAN 6' WIDE.
3. COLORED TEXTURED CONCRETE TO BE PROVIDED IN ALL LOCATIONS WHERE MEDIAN WIDTH LESS THAN 6' WIDE.

SHEET 2 OF 2

McKINNEY TEXAS Unique by nature.	MEDIAN NOSE DETAIL	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2080M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

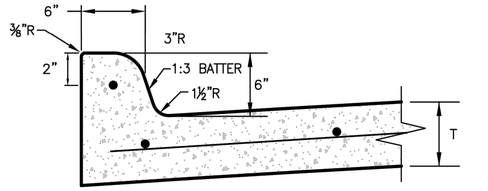
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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

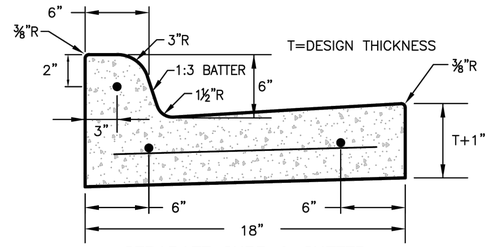
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 92

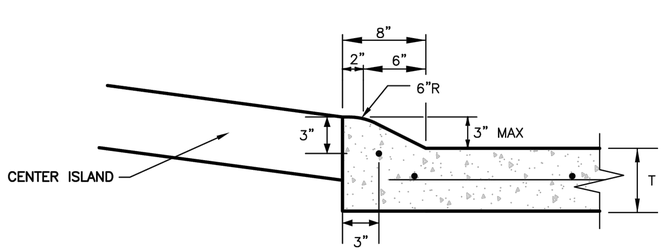
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INTEGRAL CURB & GUTTER



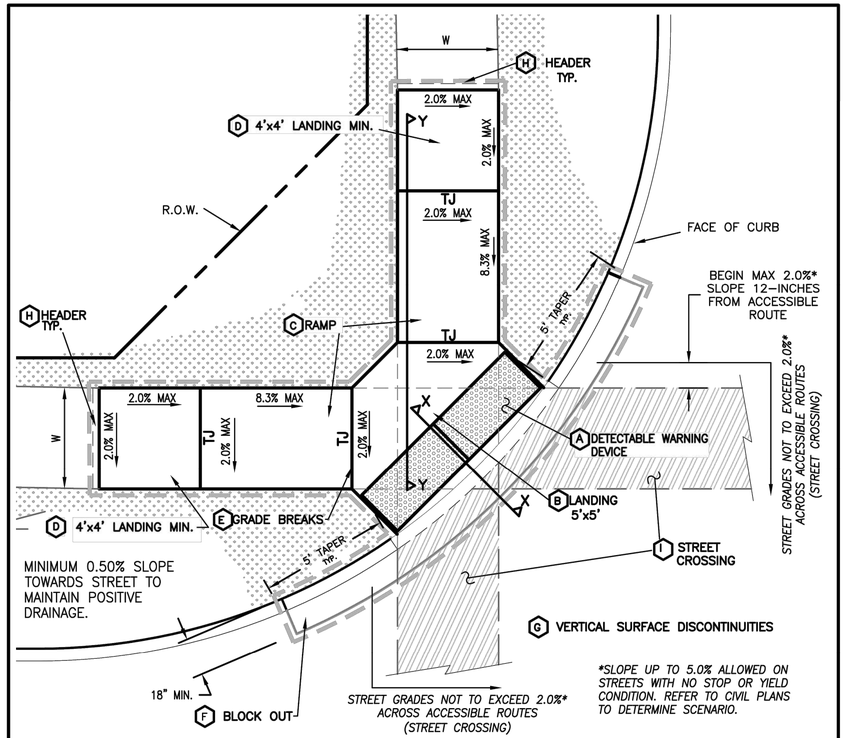
SEPARATE CURB & GUTTER



MOUNTABLE CURB DETAIL

NOTES:
1. INTEGRAL CURB AND GUTTER SHALL BE USED ON ALL NEW STREETS.
2. FOR INTEGRAL CURB AND GUTTER, REINFORCEMENT SHALL MATCH STREET PAVING REINFORCING. FOR SEPARATE CURB AND GUTTER, #4 BARS SHALL BE USED.
3. ALL CURBS SHALL BE CONSTRUCTED OF 4000 PSI PORTLAND CEMENT CONCRETE UNLESS OTHERWISE SPECIFIED.
4. GRADE SHALL BE MEASURED AT BACK OF CURB.
5. NO VERTICAL DOWELED CURBS SHALL BE ALLOWED.
6. #4 REBAR SHALL BE USED.
7. IF SEPARATE CURB & GUTTER IS ADJACENT TO EXISTING CONCRETE PAVEMENT, LONGITUDINAL BUTT JOINT MUST BE INSTALLED.

McKINNEY TEXAS Unique by nature.	CONCRETE CURB & GUTTER	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2120M



THIS DETAIL AND ACCOMPANYING NOTES ARE A REPRESENTATION OF THE INFORMATION FROM PROWAG AND ARE INTENDED TO PROVIDE GUIDANCE FOR THE DESIGN AND CONSTRUCTION OF SIDEWALK RAMPS IN McKINNEY. IT IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL AND THE CONTRACTOR TO ENSURE ALL RAMPS CONSTRUCTED MEET THE REQUIREMENTS OF PROWAG.

TJ – TOOLED JOINT (SEE 2170M FOR MORE DETAILS)
– – – – REQUIRED LIMITS OF CONSTRUCTION WITH STREET INSTALLATION
PROWAG = PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES
W – FOR SIDEWALK WIDTH SEE DETAIL 2170M

NOTES: ALL NEWLY CONSTRUCTED SIDEWALKS, CURB RAMPS AND CROSSWALKS INSTALLED WITHIN CITY OF McKINNEY PUBLIC RIGHTS-OF-WAY SHALL BE CONSIDERED A PEDESTRIAN ACCESS ROUTE AND SHALL CONFORM TO THE MOST CURRENT GUIDELINES FOR PUBLIC RIGHTS-OF-WAY CREATED BY THE UNITED STATES ACCESS BOARD.

1. SEE DETAIL 2125M (SHEET 2 OF 4) FOR RAMP FEATURE DESCRIPTIONS
2. SEE DETAIL 2125M (SHEET 3 OF 4) FOR SECTIONS X-X AND Y-Y
3. SEE DETAIL 2125M (SHEET 4 OF 4) FOR ADDITIONAL NOTES
4. REFER TO TxDOT STANDARD DETAIL (PED-18, TYPE 7) FOR DIRECTIONAL RAMPS.

SHEET 1 OF 4

McKINNEY TEXAS Unique by nature.	CURB RAMP	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2125M

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 93

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_DETL_RDWY.dwg - Plotted: 1/5/2026

A. DETECTABLE WARNING DEVICES (DWD) SHALL BE PRE–MANUFACTURED CAST–IN–PLACE PLATES FROM THE CITY OF MCKINNEY APPROVED VENDOR LIST INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS, AND SHALL MEET ALL ADA REQUIREMENTS. NO BRICK PAVERS ALLOWED. COLOR TO BE BRICK RED OR SIMILAR. DWD SHALL BE 24 INCHES IN LENGTH FOR THE FULL WIDTH OF THE STREET CONNECTION STARTING AT THE BACK OF CURB.

B. ALSO KNOWN AS "CLEAR SPACE" PER ADA PROWAG, THE CITY REQUIRES A MINIMUM LANDING SPACE OF 5–FOOT BY 5–FOOT AT THE BOTTOM OF EVERY RAMP. THIS LANDING SPACE SHALL HAVE A CROSS SLOPE IN BOTH DIRECTIONS THAT DOES NOT EXCEED 2.0%. AND SHALL BE WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.

C. THE RAMP COMPONENT OF THE DIRECTIONAL CURB RAMP SHALL HAVE A CONTINUOUS LONGITUDINAL SLOPE MORE THAN 5% AND LESS THAN 8.3%. THE RAMP SHALL ALSO HAVE A CROSS SLOPE OF NO MORE THAN 2.0%. LENGTH OF RAMP CAN VARY, BUT SHALL NOT EXCEED 15 FEET TO ACHIEVE DESIRED ELEVATION CHANGE.

D. ALSO KNOWN AS "TURNING SPACE" PER ADA PROWAG, A MINIMUM LANDING SPACE OF 4–FOOT BY 4–FOOT SHALL BE AT THE TOP OF EVERY RAMP. WHERE THE TURNING SPACE IS CONSTRAINED AT THE BACK–OF–SIDEWALK, THE TURNING SPACE SHALL BE 4–FOOT BY 5–FOOT MINIMUM.THIS LANDING (TURNING) SPACE SHALL HAVE A CROSS SLOPE IN BOTH DIRECTIONS THAT DOES NOT EXCEED 2.0%. LANDING MUST MATCH WIDTH OF SIDEWALK AND LENGTH SHALL BE THE SAME DISTANCE ("SQUARED" LANDING).

E. ALL CURB RAMPS SHALL HAVE GRADE BREAKS AT THE TOP AND BOTTOM THAT ARE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. WHERE THE ENDS OF THE BOTTOM GRADE BREAK ARE LESS THAN OR EQUAL TO 5 FEET, THE DWD SHALL BE PLACED WITHIN THE RAMP AT THE BOTTOM GRADE BREAK. WHERE EITHER END OF THE BOTTOM GRADE BREAK IS GREATER THAN 5 FEET, THE DWD SHALL BE PLACED BEHIND THE BACK OF THE CURB.

F. PAVING CONTRACTOR SHALL LEAVE BLOCK OUT WITH A KEYWAY JOINT INSTALLED, MINIMUM OF 18 INCHES MEASURED FROM BACK OF CURB. BLOCK OUT SHALL BE POURED MONOLITHICALLY WITH CURB RAMP. CONCRETE SHALL TIE TO STREET PAVING WITH A KEYWAY JOINT PER CITY DETAIL 2050M. NO CURB SHALL BE CONSTRUCTED WHERE A DWD IS PROVIDED. THE CURB ON EITHER SIDE SHALL HAVE A TYPICAL 5 FOOT TAPER TO TRANSITION FROM THE STANDARD 6–INCH CURB HEIGHT TO BE FLUSH WITH RAMP.

G. ALL WORK ASSOCIATED WITH ACCESSIBLE ROUTES SHALL BE INSTALLED FLUSH WITH ALL FEATURES TO MINIMIZE VERTICAL SURFACE DISCONTINUITIES. EACH SEGMENT ALONG ACCESSIBLE ROUTE SHALL BE FLUSH WITH NO MORE (ZERO TOLERANCE) THAN A 1/4–INCH GRADE SEPARATION (ELEVATION DIFFERENCE), OR 1/2–INCH GRADE SEPARATION IF BEVELED (BEVEL SLOPE SHALL NOT BE STEEPER THAN 50%).

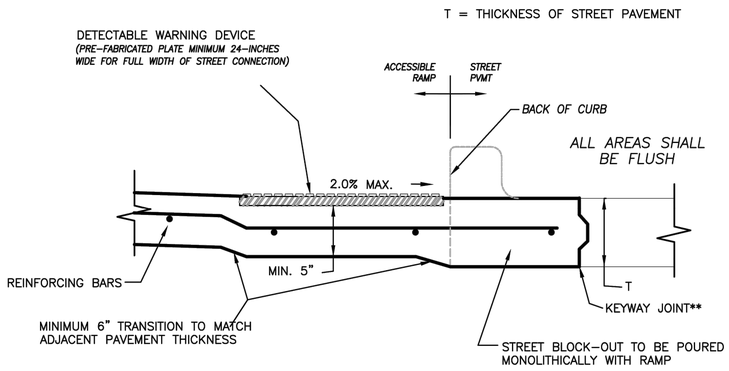
H. A SIDEWALK HEADER SHALL BE CONSTRUCTED AT ENDS OF ALL WORK PERFORMED.

I. STREET CROSSINGS SHALL ADHERE TO SAME GUIDELINES AS OTHER ACCESSIBLE ROUTES WITHIN PUBLIC RIGHT–OF–WAY, AND SHALL BE FOR THE FULL WIDTH OF THE IN–LINE ACCESSIBLE ROUTE. CROSS SLOPE SHALL NOT EXCEED 2%*. NEW STREET CONSTRUCTION SHALL INCORPORATE ALL ADA DESIGN REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL AND CONTRACTOR TO ENSURE ALL STREET CROSSINGS MEET THE REQUIREMENTS OF PROWAG. STREET ALTERATIONS ON EXISTING STREETS TO BRING TO COMPLIANCE SHALL BE AT THE CITY ENGINEER'S DISCRETION.

J. ALL CURBS CONSTRUCTED AS PART OF AN ADA RAMP SHALL MATCH CITY CURB STANDARDS.

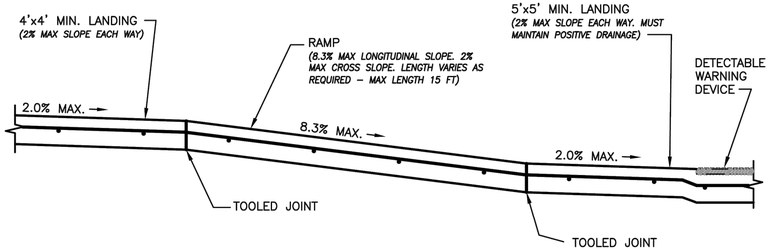
* SEE PROWAG SPECIAL DESIGN CONSIDERATIONS WHEN STREET CROSSING HAS NO STOP OR YIELD CONDITION.

McKINNEY TEXAS Unique by nature.	CURB RAMP	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2125M



SECTION X–X
N.T.S.

**KEYWAY JOINT FOR NEW CONSTRUCTION. STREET CONNECTION SHALL BE LONGITUDINAL BUTT JOINT FOR CONNECTIONS TO EXISTING ROADWAYS.



SECTION Y–Y
N.T.S.

NOTE: ALL SIDEWALK CURB RAMPS WILL BE 4000 PSI CONCRETE.

McKINNEY TEXAS Unique by nature.	CURB RAMP	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2125M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

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Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 94

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640I_DETL_RDWY.dwg - Plotted: 1/6/2026

PEDESTRIAN ACCESSIBILITY (WITHIN PUBLIC R.O.W.)

ALL NEWLY CONSTRUCTED SIDEWALKS, CURB RAMPS AND CROSSWALKS INSTALLED WITHIN CITY OF MCKINNEY PUBLIC RIGHTS-OF-WAY SHALL BE CONSIDERED A PEDESTRIAN ACCESS ROUTE AND SHALL CONFORM TO THE MOST CURRENT GUIDELINES FOR PUBLIC RIGHTS-OF-WAY CREATED BY THE UNITED STATES ACCESS BOARD.

CURB RAMPS

1. ALL SLOPES SHOWN ARE MAXIMUM ALLOWABLE, LESSER SLOPES THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. LANDINGS SHALL HAVE A MAXIMUM 2% SLOPE IN THE TRANSVERSE AND LONGITUDINAL DIRECTIONS..
3. CLEAR SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 5'X 5' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%.
5. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE MOST CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS), 16 TAC 68.102, 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, AND 2011 PROPOSED ACCESSIBLE GUIDELINES FOR PEDESTRIAN FACILITIES IN PUBIC RIGHT-OF-WAY (PROWAG).
6. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS AND ACCESSIBLE ROUTES SHALL ALIGN WITH THEORETICAL CROSSWALKS UNLESS OTHERWISE DIRECTED.
7. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS.
8. PROVIDE A FLUSH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
9. ACCESSIBLE ROUTES ARE CONSIDERED "RAMPS" WHEN LONGITUDINAL SLOPES ARE BETWEEN 5% AND 8.3% (MAXIMUM ALLOWABLE). SIDEWALKS UNDER 5% LONGITUDINAL SLOPE ARE DEEMED ACCESSIBLE ROUTES AND MUST FOLLOW ALL APPLICABLE GUIDELINES.

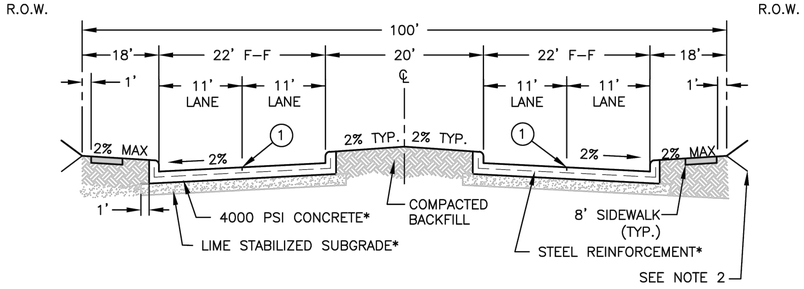
DETECTABLE WARNING DEVICE

10. CURB RAMPS OR LANDINGS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TAS. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES. FURNISH AND INSTALL AN APPROVED CAST-IN-PLACE DARK RED DETECTABLE WARNING SURFACE MATERIAL ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
11. DETECTABLE WARNING MATERIALS MUST MEET CITY OF MCKINNEY MATERIAL SPECIFICATION (REFER TO TXDOT APPROVED VENDOR LIST) AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
12. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
13. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
14. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. WHEN PLACED ON THE RAMP, ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. WHERE DETECTABLE WARNING SURFACES ARE PROVIDED ON A SURFACE WITH A SLOPE THAT IS LESS THAN 5 PERCENT, DOME ORIENTATION IS LESS CRITICAL. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.

SIDEWALKS

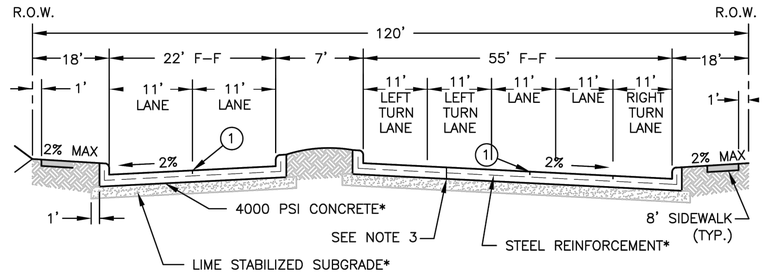
15. PROVIDE CLEAR GROUND SPACE AT OPERABLE PARTS, INCLUDING PEDESTRIAN PUSH BUTTONS. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE REACH RANGES SPECIFIED IN TAS 308.
16. PLACE TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SO AS NOT TO OBSTRUCT THE PEDESTRIAN ACCESS ROUTE OR CLEAR GROUND SPACE.
17. STREET GRADES AND CROSS SLOPES SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
18. CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED (1/2 INCH WITH BEVEL).
19. WHERE A 4' SIDEWALK IS PROVIDED, A 5'X 5' PASSING AREAS ARE REQUIRED AT INTERVALS NOT TO EXCEED 200'.
20. THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS WITHIN THE PUBLIC RIGHT OF WAY MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY. WHERE A CONTINUOUS GRADE GREATER THAN 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS. IF PROVIDED, HANDRAILS SHALL COMPLY WITH TAS 505.
21. HANDRAIL EXTENSIONS SHALL NOT PROTRUDE INTO THE USABLE LANDING AREA OR INTO INTERSECTING PEDESTRIAN ROUTES.

McKINNEY TEXAS Unique by nature.	CURB RAMP	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2125M



STANDARD SECTION (M4D)

MID-BLOCK
N.T.S.



INTERSECTION

N.T.S.

(1) SAWED LONGITUDINAL CONTRACTION JOINT OR CONSTRUCTION JOINT

NOTES:
1. REINFORCED CURB HEIGHT AND WIDTH SHALL BE 6".
2. SLOPES ADJACENT TO THE R.O.W. SHALL BE NO STEEPER THAN 4:1.
3. KEYWAY JOINT REQ'D FOR NEW ROADWAY CONSTRUCTION, LONGITUDINAL BUTT JOINT REQ'D ON EXISTING SECTION.
4. TOP 4" OF MEDIAN AND PARKWAY BACKFILL SHALL BE TOPSOIL MATERIAL.
5. RESERVED MEDIAN TO ACCOMMODATE FUTURE LANE AND SHALL REMAIN CLEAR OF LANDSCAPING OR MEDIAN INFRASTRUCTURE.

* A GEOTECHNICAL EVALUATION AND DESIGN SHALL BE CONDUCTED TO DETERMINE AN ADEQUATE PAVEMENT SECTION BASED ON A MINIMUM 30 YEAR DESIGN LIFE FOR ALL PAVING PROJECTS. (REFER TO ENGINEERING DESIGN MANUAL) THE MINIMUM ALLOWABLE PAVEMENT DESIGN SHALL BE NO LESS THAN 8"-4000 PSI CONCRETE WITH #4 BARS AT 18" CENTERS ON A 8" LIME STABILIZED SUBGRADE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE PLASTICITY INDEX SHALL NOT EXCEED 12.

REFERENCE ENGINEERING DESIGN MANUAL FOR INTERSECTION LAYOUT INFORMATION

McKINNEY TEXAS Unique by nature.	M4D 4 LANE DIVIDED THOROUGHFARE	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2025M

NO	DATE	COMMENT
REVISIONS		

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

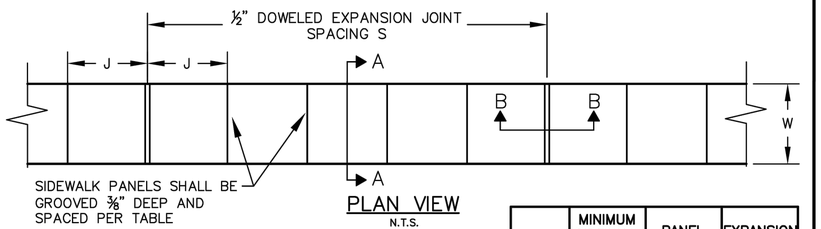
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 95

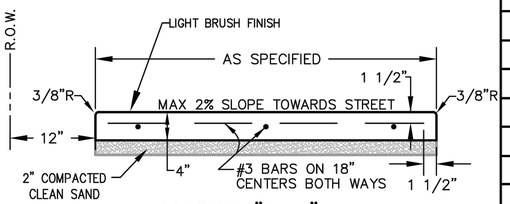
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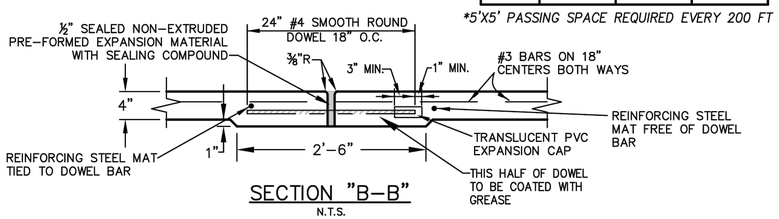
PLAN VIEW
N.T.S.

ROAD TYPE	MINIMUM SIDEWALK WIDTH (W)	PANEL SPACING (J)	EXPANSION JOINT (S)
P6D	8'	8'	32'
G6D	8'	8'	32'
G4D	8'	8'	32'
M6D	8'	8'	32'
M4D	8'	8'	32'
M4U	8'	8'	32'
M3U	6'	6'	24'
C2U	5'/6'	5'/6'	25'/24'
R2U*	5'	5'	25'

*5'X5' PASSING SPACE REQUIRED EVERY 200 FT



SECTION "A–A"
N.T.S.

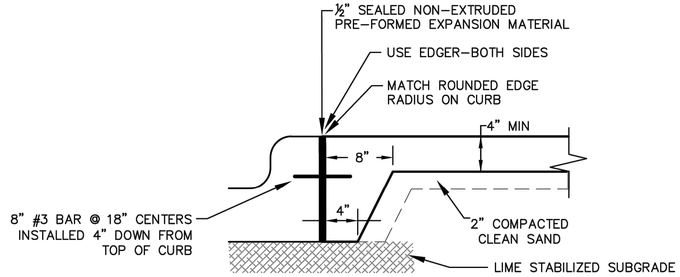


SECTION "B–B"
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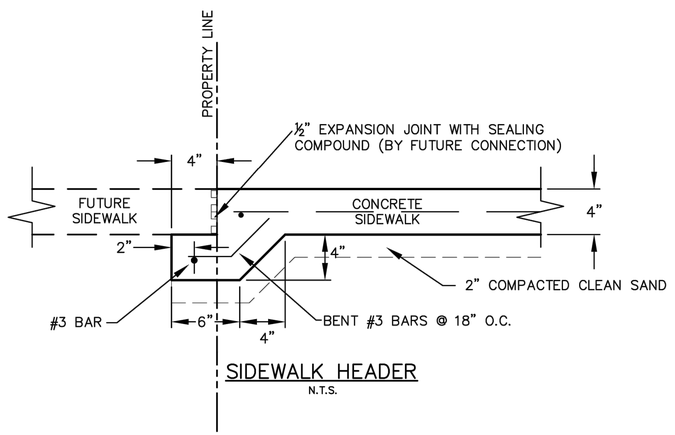
NOTES:
1. CROSS SLOPE OF SIDEWALK SHALL BE NO GREATER THAN 2%
2. SIDEWALK CONCRETE WITHIN CITY R.O.W. SHALL BE MINIMUM 4,000 PSI CONCRETE.
3. ALL SIDEWALKS SHALL MAINTAIN POSITIVE DRAINAGE.
4. PAVED SIDEWALKS SHALL BE PROVIDED ALONG BOTH SIDES OF ALL THOROUGHFARES AND COLLECTORS, AND ALONG ALL RESIDENTIAL OR LOCAL STREETS WHICH ARE LOCATED IMMEDIATELY ADJACENT TO A SCHOOL SITE AND FOR A DISTANCE OF ONE BLOCK ALONG SUCH STREETS LEADING DIRECTLY TO A SCHOOL SITE.
5. MINIMUM WIDTH OF 6' IF SIDEWALK ADJACENT TO CURB.
6. STEEL WIRE MESH IS NOT ACCEPTABLE.
7. NO BELOW GRADE STAKES IN EXPANSION JOINTS.
8. ALL REINFORCING STEEL SHALL BE SUPPORTED BY AN APPROVED DEVICE.

SHEET 1 OF 3

McKINNEY TEXAS Unique by nature.	REINFORCED CONCRETE SIDEWALKS JOINTS AND SPACING	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2170M



JOINT LUG DETAIL FOR MEDIAN PAVEMENT
LEAD WALK CONNECTIONS OR SIDEWALK ADJACENT TO CURB
N.T.S.



SIDEWALK HEADER
N.T.S.

SHEET 2 OF 3

McKINNEY TEXAS Unique by nature.	REINFORCED CONCRETE SIDEWALKS JOINT LUG AND HEADER	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2170M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

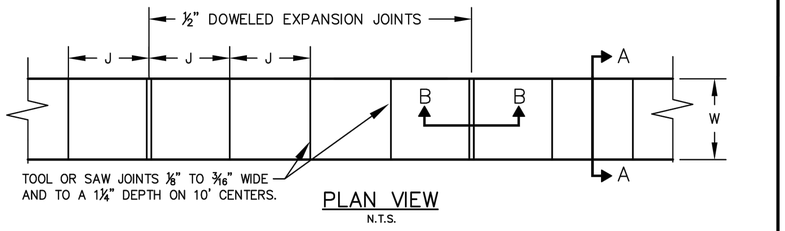
INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

STANDARD DETAILS

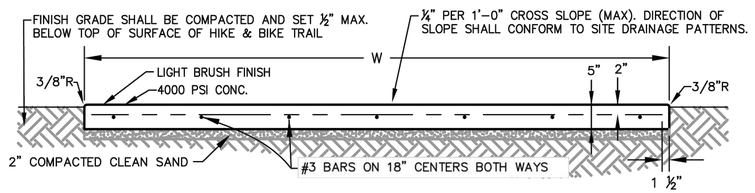
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 96	

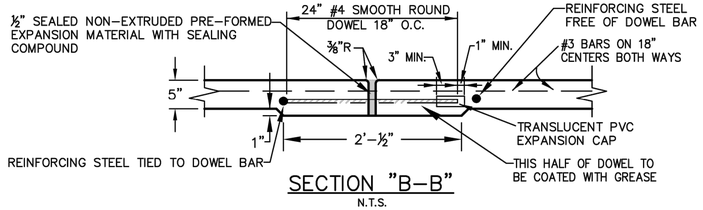
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PLAN VIEW
N.T.S.



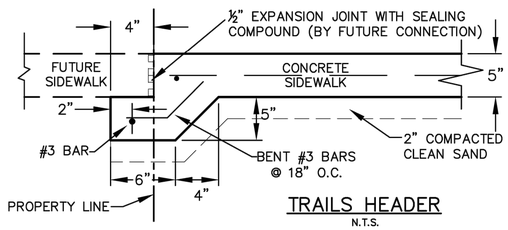
SECTION "A–A"
N.T.S.



SECTION "B–B"
N.T.S.

TRAIL WIDTH (W)	EXPANSION JOINT SPACING (S)	PANEL SPACING (J)
10'	40'	10'
12'	36'	12'

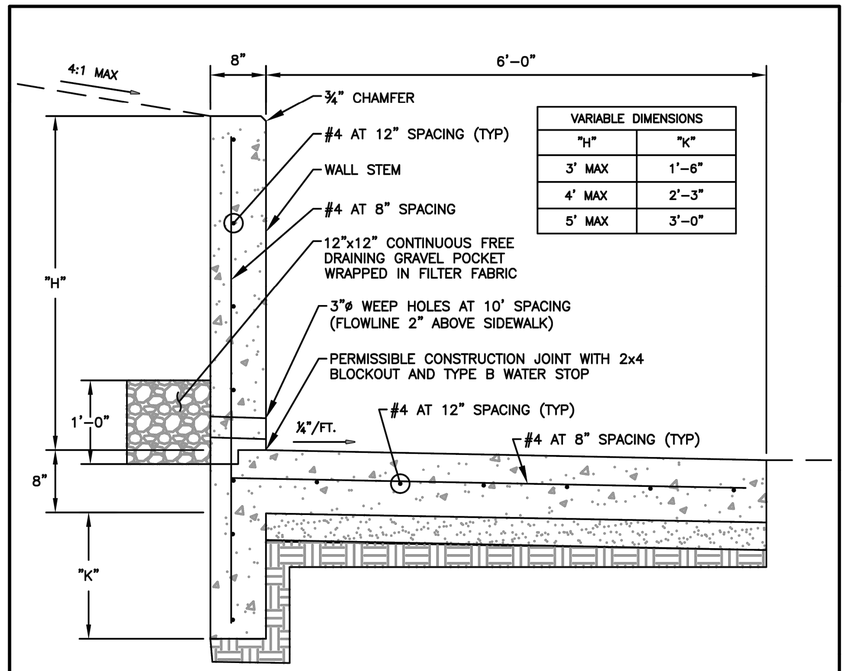
W–SPECIFIED IN PLANS



TRAILS HEADER
N.T.S.

SHEET 3 OF 3

McKINNEY TEXAS Unique by nature.	REINFORCED CONCRETE SIDEWALKS HIKE & BIKE TRAIL	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2170M



VARIABLE DIMENSIONS	
"H"	"K"
3' MAX	1'–6"
4' MAX	2'–3"
5' MAX	3'–0"

RETAINING WALL WITH INTEGRAL 6' SIDEWALK

NOTES:
1. FOR USE OF THIS STANDARD DETAIL, THE FOLLOWING GEOTECHNICAL SITE CONDITIONS MUST BE MET:
   –MINIMUM ALLOWABLE BEARING PRESSURE: 1,500 PSF
   –MINIMUM COEFFICIENT OF FRICTION: 0.3
   –MAXIMUM ACTIVE PRESSURE COEFFICIENT (Ka): 0.65
2. ALL MATERIALS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
4. ALL REINFORCING STEEL SHALL BE GRADE 60.
5. ALL CLEAR COVER SHALL BE 2" WHERE FORMED AND 3" WHERE CAST AGAINST EARTH.
6. IF ANY SURCHARGE LOAD IS ANTICIPATED WITHIN A HORIZONTAL DISTANCE OF HALF THE WALL HEIGHT FROM THE BACK OF WALL, AN ENGINEERING DESIGN IS REQUIRED, SEALED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS. THIS INCLUDES DEAD LOAD SURCHARGES AND LIVE LOAD SURCHARGES SUCH AS TRAFFIC LOADS.
7. JOINT LOCATIONS SHALL MATCH ON SIDEWALK AND WALL. JOINT SPACING SHALL BE EVERY 30 FEET FOR CONTROL JOINTS AND EVERY 90 FEET FOR EXPANSION JOINTS. TYPE B WATERSTOP SHALL BE APPLIED ON THE FILL SIDE OF ALL EXPANSION AND CONSTRUCTION JOINTS.
8. FOR WALL HEIGHTS LESS THAN 2'–0", STRUCTURAL DESIGN IS NOT REQUIRED (SEE McKINNEY ENGINEERING DESIGN MANUAL).

McKINNEY TEXAS Unique by nature.	REINFORCED CONCRETE RETAINING WALL WITH 6' SIDEWALK	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2180M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

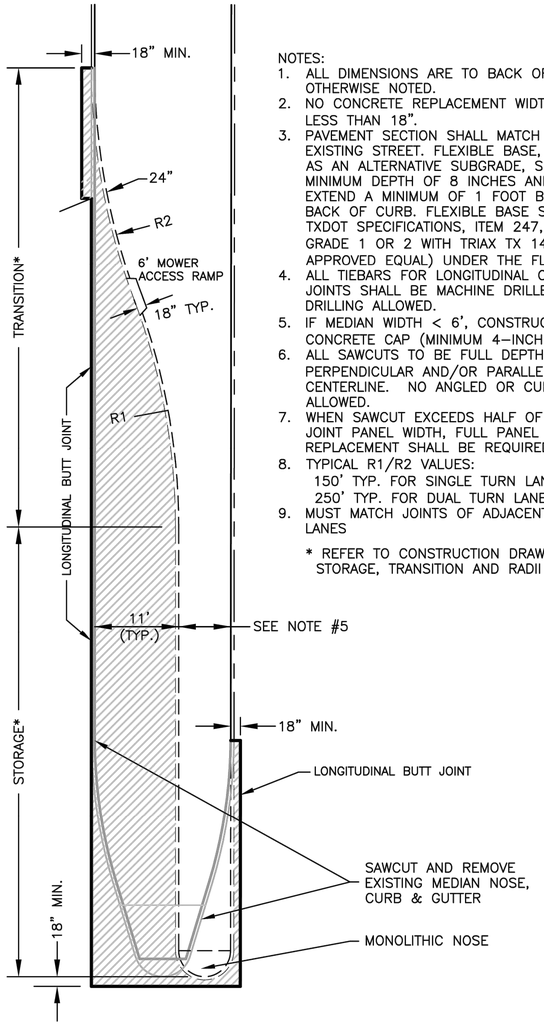
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 97

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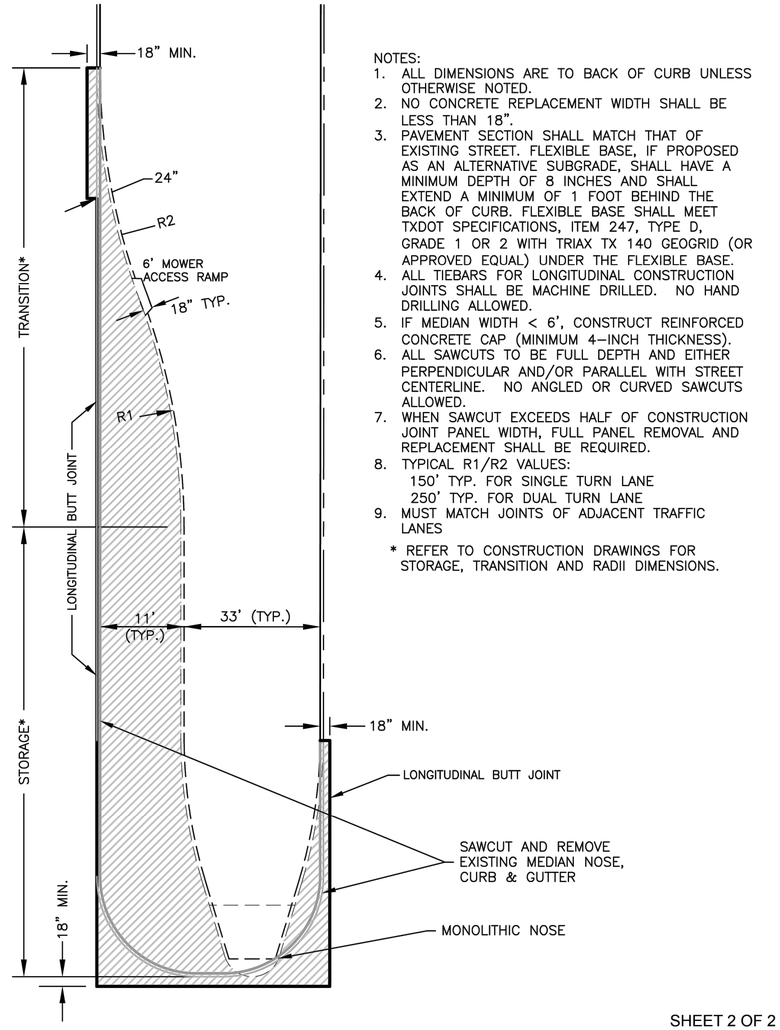


NOTES:
1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. NO CONCRETE REPLACEMENT WIDTH SHALL BE LESS THAN 18".
3. PAVEMENT SECTION SHALL MATCH THAT OF EXISTING STREET. FLEXIBLE BASE, IF PROPOSED AS AN ALTERNATIVE SUBGRADE, SHALL HAVE A MINIMUM DEPTH OF 8 INCHES AND SHALL EXTEND A MINIMUM OF 1 FOOT BEHIND THE BACK OF CURB. FLEXIBLE BASE SHALL MEET TXDOT SPECIFICATIONS, ITEM 247, TYPE D, GRADE 1 OR 2 WITH TRIAX TX 140 GEOGRID (OR APPROVED EQUAL) UNDER THE FLEXIBLE BASE.
4. ALL TIEBARS FOR LONGITUDINAL CONSTRUCTION JOINTS SHALL BE MACHINE DRILLED. NO HAND DRILLING ALLOWED.
5. IF MEDIAN WIDTH < 6', CONSTRUCT REINFORCED CONCRETE CAP (MINIMUM 4–INCH THICKNESS).
6. ALL SAWCUTS TO BE FULL DEPTH AND EITHER PERPENDICULAR AND/OR PARALLEL WITH STREET CENTERLINE. NO ANGLED OR CURVED SAWCUTS ALLOWED.
7. WHEN SAWCUT EXCEEDS HALF OF CONSTRUCTION JOINT PANEL WIDTH, FULL PANEL REMOVAL AND REPLACEMENT SHALL BE REQUIRED.
8. TYPICAL R1/R2 VALUES:
   150' TYP. FOR SINGLE TURN LANE
   250' TYP. FOR DUAL TURN LANE
9. MUST MATCH JOINTS OF ADJACENT TRAFFIC LANES

* REFER TO CONSTRUCTION DRAWINGS FOR STORAGE, TRANSITION AND RADII DIMENSIONS.

SHEET 1 OF 2

McKINNEY TEXAS Unique by nature.	LEFT TURN LANE CONCRETE REMOVAL & REPLACEMENT	JANUARY 2025 STANDARD DRAWING NO.
	CITY OF McKINNEY, TEXAS	2330M



NOTES:
1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. NO CONCRETE REPLACEMENT WIDTH SHALL BE LESS THAN 18".
3. PAVEMENT SECTION SHALL MATCH THAT OF EXISTING STREET. FLEXIBLE BASE, IF PROPOSED AS AN ALTERNATIVE SUBGRADE, SHALL HAVE A MINIMUM DEPTH OF 8 INCHES AND SHALL EXTEND A MINIMUM OF 1 FOOT BEHIND THE BACK OF CURB. FLEXIBLE BASE SHALL MEET TXDOT SPECIFICATIONS, ITEM 247, TYPE D, GRADE 1 OR 2 WITH TRIAX TX 140 GEOGRID (OR APPROVED EQUAL) UNDER THE FLEXIBLE BASE.
4. ALL TIEBARS FOR LONGITUDINAL CONSTRUCTION JOINTS SHALL BE MACHINE DRILLED. NO HAND DRILLING ALLOWED.
5. IF MEDIAN WIDTH < 6', CONSTRUCT REINFORCED CONCRETE CAP (MINIMUM 4–INCH THICKNESS).
6. ALL SAWCUTS TO BE FULL DEPTH AND EITHER PERPENDICULAR AND/OR PARALLEL WITH STREET CENTERLINE. NO ANGLED OR CURVED SAWCUTS ALLOWED.
7. WHEN SAWCUT EXCEEDS HALF OF CONSTRUCTION JOINT PANEL WIDTH, FULL PANEL REMOVAL AND REPLACEMENT SHALL BE REQUIRED.
8. TYPICAL R1/R2 VALUES:
   150' TYP. FOR SINGLE TURN LANE
   250' TYP. FOR DUAL TURN LANE
9. MUST MATCH JOINTS OF ADJACENT TRAFFIC LANES

* REFER TO CONSTRUCTION DRAWINGS FOR STORAGE, TRANSITION AND RADII DIMENSIONS.

SHEET 2 OF 2

McKINNEY TEXAS Unique by nature.	LEFT TURN LANE CONCRETE REMOVAL & REPLACEMENT	JANUARY 2025 STANDARD DRAWING NO.
	CITY OF McKINNEY, TEXAS	2330M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
123226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23)
CIP ST2303

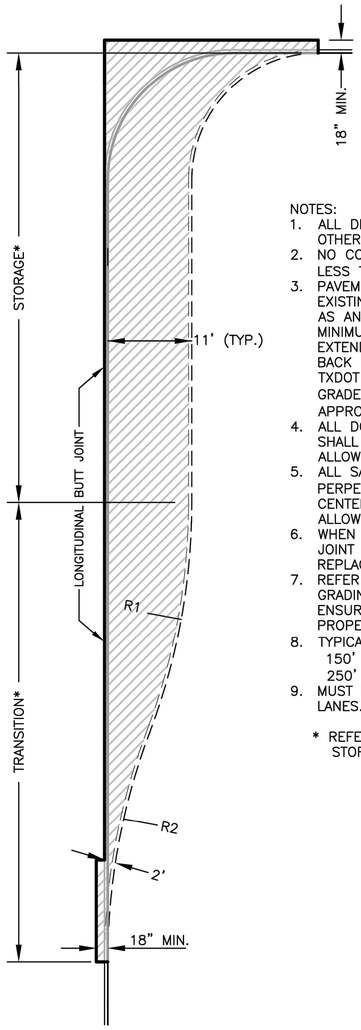
STANDARD DETAILS

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 98	

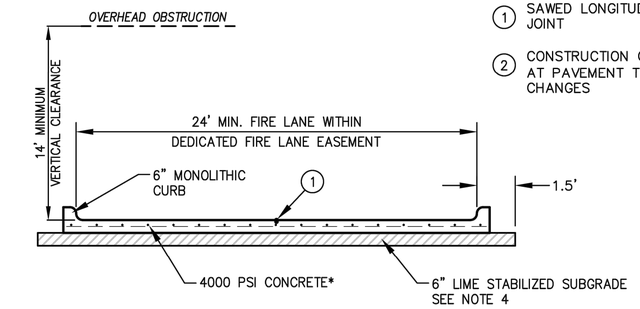
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NOTES:
1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. NO CONCRETE REPLACEMENT WIDTH SHALL BE LESS THAN 18".
3. PAVEMENT SECTION SHALL MATCH THAT OF EXISTING STREET. FLEXIBLE BASE, IF PROPOSED AS AN ALTERNATIVE SUBGRADE, SHALL HAVE A MINIMUM DEPTH OF 8 INCHES AND SHALL EXTEND A MINIMUM OF 1 FOOT BEHIND THE BACK OF CURB. FLEXIBLE BASE SHALL MEET TXDOT SPECIFICATIONS, ITEM 247, TYPE D, GRADE 1 OR 2 WITH TRIAX TX 140 GEOGRID (OR APPROVED EQUAL) UNDER THE FLEXIBLE BASE.
4. ALL DOWELS FOR LONGITUDINAL BUTT JOINTS SHALL BE MACHINE DRILLED. NO HAND DRILLING ALLOWED.
5. ALL SAWCUTS TO BE FULL DEPTH AND EITHER PERPENDICULAR AND/OR PARALLEL WITH STREET CENTERLINE. NO ANGLED OR CURVED SAWCUTS ALLOWED.
6. WHEN SAWCUT EXCEEDS HALF OF CONSTRUCTION JOINT PANEL WIDTH, FULL PANEL REMOVAL AND REPLACEMENT SHALL BE REQUIRED.
7. REFER TO CONSTRUCTION DRAWINGS FOR GRADING OF TURN LANE. CONTRACTOR TO ENSURE ALL AREAS OF TURN LANE DRAIN PROPERLY WITH NO PONDING OF WATER.
8. TYPICAL R1/R2 VALUES:
   150' TYP. FOR SINGLE TURN LANE
   250' TYP. FOR DUAL TURN LANE
9. MUST MATCH JOINTS OF ADJACENT TRAFFIC LANES.

* REFER TO CONSTRUCTION DRAWINGS FOR STORAGE, TRANSITION AND RADII DIMENSIONS.

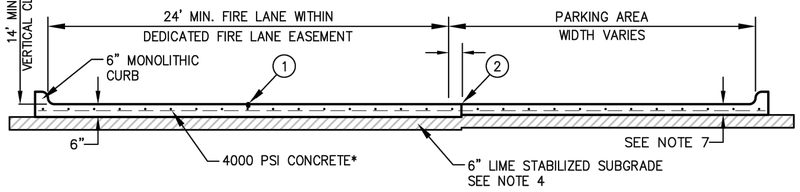
McKINNEY TEXAS Unique by nature.	RIGHT TURN LANE CONCRETE REMOVAL & REPLACEMENT	JANUARY 2025 STANDARD DRAWING NO. 2340M
	CITY OF McKINNEY, TEXAS	



1. SAWED LONGITUDINAL CONTRACTION JOINT
2. CONSTRUCTION OR KEYWAY JOINT AT PAVEMENT THICKNESS/STRENGTH CHANGES

FIRE LANE SECTION
(LOCATED OUTSIDE OF PARKING AREA)

* THICKNESS AND REINFORCING TO BE SPECIFIED BY DESIGN ENGINEER AND BASED ON GEOTECHNICAL EVAULATION. MIN. ALLOWABLE SECTION SHALL BE 6" THICK, #4 BARS AT 18" C.E.W. ON 6" LIME STABILIZED SUBGRADE. SEE NOTE 4



FIRE LANE SECTION WITH ADJACENT PARKING AREA

NOTES:
1. MINIMUM UNOBSTRUCTED FIRE LANE WIDTH SHALL BE NOT LESS THAN 24 FEET.
2. MINIMUM UNOBSTRUCTED VERTICAL CLEARANCE SHALL BE NOT LESS THAN 14 FEET.
3. FIRE LANE PAVEMENT SHALL BE CONSTRUCTED TO MEET CITY OF McKINNEY STANDARDS.
4. SUBGRADE SHALL BE LIME STABILIZED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY. PLASTICITY INDEX SHALL NOT EXCEED 12. AS AN ALTERNATIVE TO LIME STABILIZATION, CONCRETE THICKNESS MAY BE INCREASED BY 1" WITH A MINIMUM OF 6" CRUSH STONE BASE COURSE PER TXDOT ITEM 247 AND GEOTECHNICAL RECOMMENDATION.
5. MINIMUM SLOPE IN ALL DIRECTIONS SHALL NOT BE LESS THAN 0.5%. MAXIMUM CROSS SLOPE SHALL NOT EXCEED 5%. MAXIMUM LONGITUDINAL SLOPE SHALL NOT EXCEED 6%.
6. ASPHALT FIRE LANES SHALL NOT BE USED UNLESS APPROVED BY THE DIRECTOR OF ENGINEERING. IF APPROVED, MIN. DESIGN SHALL BE 2" TYPE D HMAC SURFACE COURSE OVER 6" ASPHALT STABILIZED BASE COURSE PER TXDOT ITEM 292. SUBGRADE REQUIREMENTS REMAIN PER NOTE 4.
7. PRIVATE PARKING THICKNESS SHALL BE AS SPECIFIED IN THE PLANS BY THE DESIGN ENGINEER.

McKINNEY TEXAS Unique by nature.	FIRE LANE PAVEMENT	JANUARY 2025 STANDARD DRAWING NO. 2510M
	CITY OF McKINNEY, TEXAS	

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 99

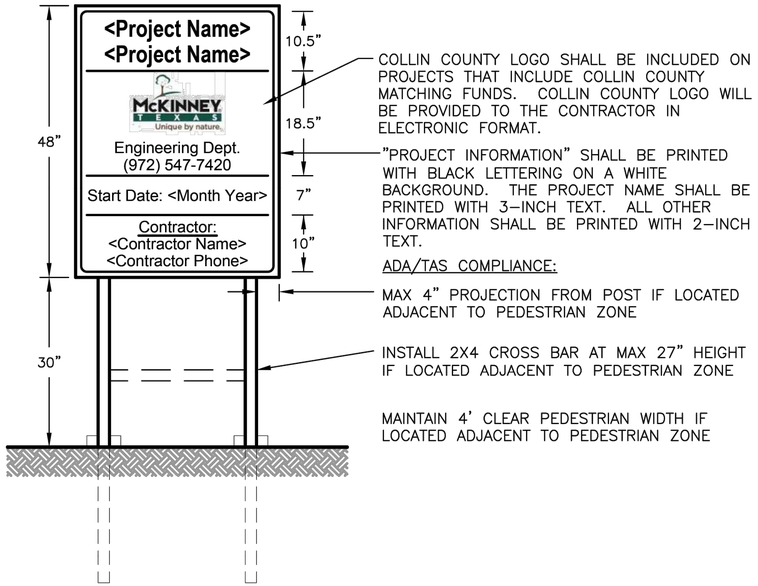
Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mon\02_PLAN_SHEET\23120640 1_DETL_RDWY_STRM.dwg - Plotted: 1/5/2026

CONCRETE PAVING REQUIREMENTS

1. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO CITY FOR APPROVAL ONE WEEK PRIOR TO PLACING CONCRETE. CONCRETE MIX DESIGN MUST BE SEALED BY A LICENSED ENGINEER WITH AN ORIGINAL SIGNATURE AND DATE. MIN. COMPRESSIVE STRENGTH IS 4000*PSI AT 28 DAYS (*4500 PSI FOR HAND POURS). FLY ASH REPLACEMENT IS 20% MAX BY UNIT WEIGHT. MULTIPLE DESIGNS REQUIRED FOR MACHINE POURS, HAND POURS AND STRUCTURAL POURS. TEMPERATURES OF ALL CONCRETE SHALL NOT EXCEED 95 DEGREES F. ALL CONCRETE EXCEEDING THIS WILL BE REJECTED FROM THE PROJECT COMPLETELY.

2. SUBGRADE:
   OPTION 1: LIME STABILIZATION
   OPTION 2 WITH PRIOR APPROVAL OF THE ENGINEERING DEPARTMENT: FIRE LANES SHALL BE 6 INCHES THICK, BUT MAY INCREASE BY ONE (1) INCH AND A MINIMUM OF 6 INCHES FLEXIBLE BASE COURSE IN LIEU OF TREATING THE SUBGRADE WITH LIME OR CEMENT PER GEOTECHNICAL RECOMMENDATION.
3. FORMING OF PAVEMENT:
   SLIP FORM – REQUIRED
   HAND POUR – AT INTERSECTIONS AND OTHER MISC. AREAS
4. DENSITY REPORT PRIOR TO PAVING RECEIVED. DENSITIES ARE ONLY GOOD FOR 72 HOURS. DENSITIES RECEIVED ON A FRIDAY ARE ONLY GOOD UP UNTIL NOON ON THE FOLLOWING MONDAY. DENSITIES TAKEN BEFORE INCLEMENT WEATHER MAY BE REQUIRED TO BE RETAKEN AT THE INSPECTOR'S DISCRETION.
5. ALL DRIVE APPROACHES, SIDEWALKS WITHIN CITY RIGHT-OF-WAY, AND BARRIER FREE RAMPS MUST BE BUILT TO CITY OF MCKINNEY AND ADA/TAS STANDARDS.
6. MANHOLES FRAME AND COVERS SHALL BE RAISED TO GRADE PRIOR TO PLACEMENT OF CONCRETE.
7. ALL VALVES SHALL BE OPERABLE BEFORE SUBGRADE PREPARATION AND PAVING OPERATION BEGIN.
8. REBAR:
   a) SHALL BE A MIN. OF #4 REBAR, PLACE 18 INCHES OCEW, WITH
   b) MINIMUM COVER IS 2 INCHES, AND THE MAXIMUM LATERAL COVER IS 3 INCHES,
   c) SHALL BE TIED AT EACH JOINT, WITH CHAIRS PLACED AT EVERY OTHER JOINT, EACH BAR, EACH DIRECTION.
   d) MUST BE FREE OF ANY RUST OR DEBRIS PRIOR TO PLACEMENT OF CONCRETE.
   e) NO VEHICLES ON REBAR (E.G. TAILGATING).
10. WOOD STAKES – NO WOOD STAKES INSIDE OF FORMS
11. EXPANSION JOINTS :
   a) EXPANSION DOWELS BARS SHALL BE SMOOTH, LEVEL, AND PERPENDICULAR TO THE JOINT, ADEQUATELY SUPPORTED TO RETAIN PROPER ALIGNMENT; AND WITH ONE SIDE GREASED AND THE END PROTECTED WITH A PROPERLY LOCATED EXPANSION CAP.
   b) REDWOOD JOINTS MUST BE FULL DEPTH OF THE SLAB, RESTING ON GRADE.
12. EXPANSION JOINTS FOLLOW THE STREET STANDARDS SUCH AS EVERY 400 FEET, PC AND PT.

McKINNEY TEXAS Unique by nature.	CONCRETE PAVING REQUIREMENTS GENERAL NOTES	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 2515M



PROJECT INFORMATION SIGN DETAIL

NOT TO SCALE

NOTES:
1. CONTRACTOR SHALL PROVIDE CITY PROJECT MANAGER A PROOF FOR REVIEW PRIOR TO FABRICATION OF THE SIGN.
2. McKINNEY LOGO WILL BE PROVIDED TO THE CONTRACTOR IN ELECTRONIC FORMAT, UPON REQUEST. CONTRACTOR SHALL MAINTAIN THE ASPECT RATIO OF THE LOGO USING A 12" HEIGHT. CUSTOM COLORS ARE AS FOLLOWS:
   GREEN: PMS 330; RGB 15, 59, 52; CMYK 93, 40, 64, 35.
   BROWN: PMS 448; RGB 58, 48, 13; CMYK 55, 40, 93, 50.
3. PROJECT INFORMATION SIGNS SHALL BE ERECTED IN ACCORDANCE WITH THE TXDOT BC (BARRICADE & CONSTRUCTION) STANDARD SHEETS, EXCEPT AS NOTED HEREIN.
4. REMOVE SIGNS AT END OF PROJECT.

McKINNEY TEXAS Unique by nature.	CAPITAL IMPROVEMENTS PROGRAM PROJECT INFORMATION SIGN	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 7001M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

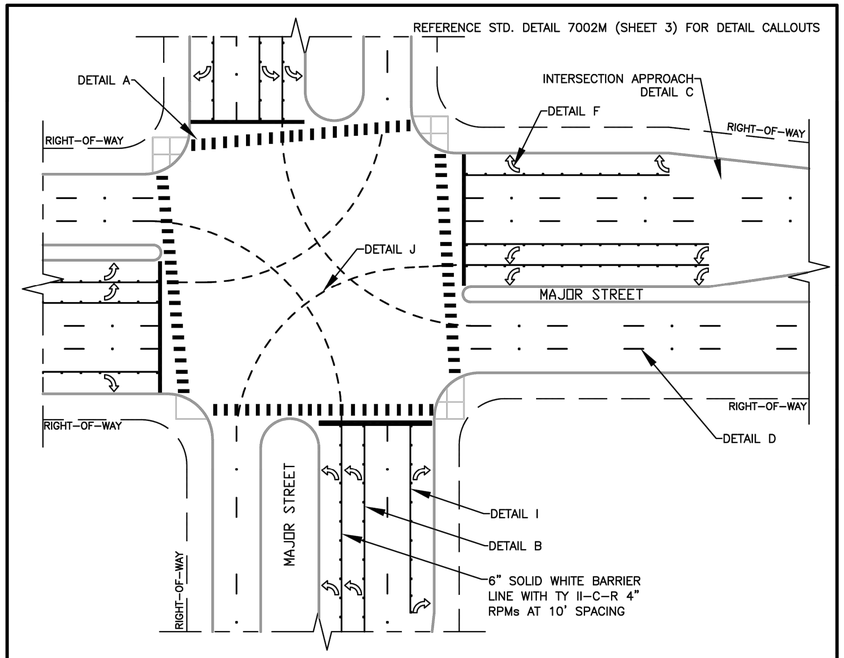
STANDARD DETAILS

McKINNEY TEXAS Unique by nature.

CobbFendley
TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 100	

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23120640 1_DETL_RDWY_STRM.dwg - Plotted: 1/5/2026

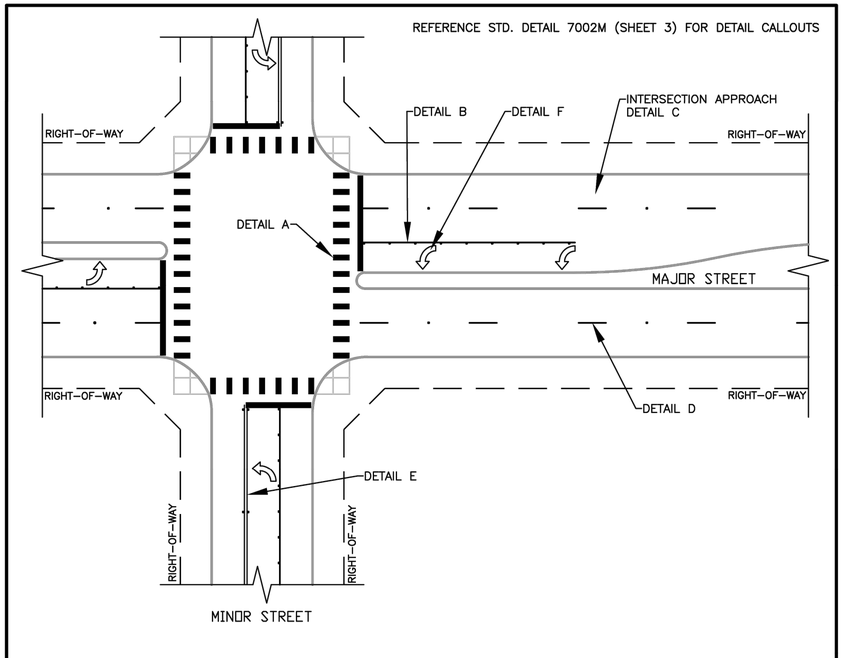


NOTES:

1. ALL NEW STRIPING SHALL BE CITY APPROVED THERMOPLASTIC (TYPE I, DMS–8220) OR 98:2 MMA AS SHOWN IN THE PLANS UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
2. STOP BARS SHALL BE 24" WIDE AND EXTEND FROM 12" FROM NEAREST FACE OF CURB OR EDGE OF PAVEMENT ACROSS ALL APPROACH LANES.
3. INSTALL ALL PAVEMENT MARKINGS ACCORDING TO TxDOT STANDARD SPECIFICATION ITEMS 666, 668, 672, 677 AND 678.
4. DIMENSIONS OF SYMBOLS ARE TYPICAL. DIMENSIONS MAY BE MODIFIED IF SHOWN ON PLANS.
5. FOR ITEMS NOT SHOWN ON THESE SHEETS REFER TO TxDOT STANDARD SHEETS PM(1)–22, PM(2)–22 AND PM(3)–22 (OR LATEST TxDOT REVISION).
6. REMOVE EXISTING STRIPING PRIOR TO INSTALLATION OF NEW STRIPING. REMOVE EXISTING RAISED PAVEMENT MARKINGS (RPMs) THAT ARE IN CONFLICT WITH NEW STRIPING PLANS.
7. THESE DETAILS ARE FOR DESCRIPTION ONLY; NOT ALL INTERSECTIONS WILL HAVE ALL FEATURES.
8. USE TYPE II–C–R RPMs ALONG LEFT AND RIGHT TURN BAY STRIPES IN AREAS WITH DIVIDED HIGHWAYS OR RAISED MEDIANS. USE TYPE II–A–A WITH UNDIVIDED HIGHWAYS, FLUSH MEDIANS, AND TWO–WAY LEFT TURN LANES.

SHEET 1 OF 6

McKINNEY TEXAS Unique by nature.	MAJOR-MAJOR INTERSECTION PAVEMENT MARKINGS	JANUARY 2025 STANDARD DRAWING NO.
	CITY OF McKINNEY, TEXAS	7002M



NOTES:

1. ALL NEW STRIPING SHALL BE CITY APPROVED THERMOPLASTIC (TYPE I, DMS–8220) OR 98:2 MMA AS SHOWN IN THE PLANS UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
2. STOP BARS SHALL BE 24" WIDE AND EXTEND FROM 12" FROM NEAREST FACE OF CURB OR EDGE OF PAVEMENT ACROSS ALL APPROACH LANES.
3. INSTALL ALL PAVEMENT MARKINGS ACCORDING TO TxDOT STANDARD SPECIFICATION ITEMS 666, 668, 672, 677 AND 678.
4. DIMENSIONS OF SYMBOLS ARE TYPICAL. DIMENSIONS MAY BE MODIFIED IF SHOWN ON PLANS.
5. FOR ITEMS NOT SHOWN ON THESE SHEETS REFER TO TxDOT STANDARD SHEETS PM(1)–22, PM(2)–22 AND PM(3)–22 (OR LATEST TxDOT REVISION).
6. REMOVE EXISTING STRIPING PRIOR TO INSTALLATION OF NEW STRIPING. REMOVE EXISTING RAISED PAVEMENT MARKINGS (RPMs) THAT ARE IN CONFLICT WITH NEW STRIPING PLANS.
7. THESE DETAILS ARE FOR DESCRIPTION ONLY; NOT ALL INTERSECTIONS WILL HAVE ALL FEATURES.
8. USE TYPE II–C–R RPMs ALONG LEFT AND RIGHT TURN BAY STRIPES IN AREAS WITH DIVIDED HIGHWAYS OR RAISED MEDIANS. USE TYPE II–A–A WITH UNDIVIDED HIGHWAYS, FLUSH MEDIANS, AND TWO–WAY LEFT TURN LANES.

SHEET 2 OF 6

McKINNEY TEXAS Unique by nature.	MAJOR-MINOR INTERSECTION PAVEMENT MARKINGS	JANUARY 2025 STANDARD DRAWING NO.
	CITY OF McKINNEY, TEXAS	7002M

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

STANDARD DETAILS

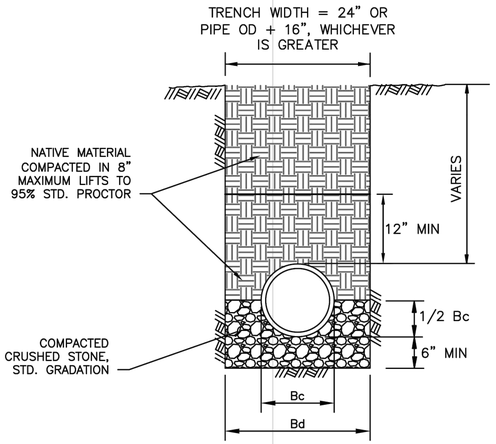
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
101

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mun\02_PLAN_SHEET\23126401_DETL_ROWY_STRM.dwg - Plotted: 1/5/2026



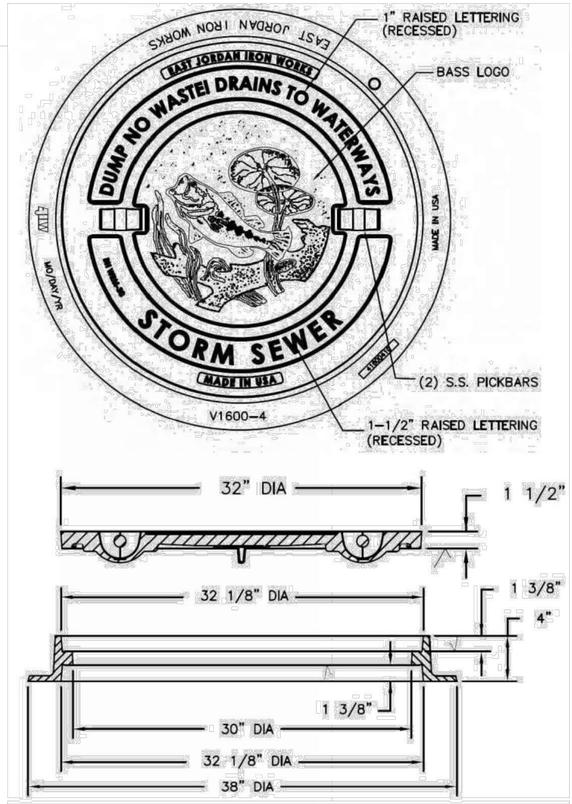
CLASS "B"

N.T.S.

NOTES:

1. Bc=OUTSIDE DIAMETER OF PIPE
2. Bd= TRENCH WIDTH
3. IN-PLACE DENSITY/MOISTURE CONTENT SHALL BE TESTED AND VERIFIED AS SPECIFIED BY THE CITY, OR AT AN AVERAGE FREQUENCY OF ONCE PER 300 LINEAR FEET PER ONE FOOT OF DEPTH.

McKINNEY TEXAS Unique by nature.	CLASS "B" EMBEDMENT STORM SEWER PIPE	JANUARY 2025 STANDARD DRAWING NO. 3020M
	CITY OF McKINNEY, TEXAS	



PRODUCT NUMBERS
BASS & HAYS VRM-30 BASS Storm Sewer
EAST JORDAN IRON WORKS 00147987A01

H-20 TRAFFIC RATED WHEN RING IS PROPERLY INSTALLED IN REINFORCED CONCRETE.

√ DESIGNATES MACHINED SURFACE.

COATING: UNDIPPED

DESCRIPTION
30" REVERSIBLE CAST IRON MANHOLE
RING AND COVER "BASS STORM SEWER"
ASTM A48 GRAY IRON CL35B

RING WEIGHT: 154 LBS.
COVER WEIGHT: 237 LBS.
SET WEIGHT: 391 LBS.

McKINNEY TEXAS Unique by nature.	STORMWATER MANHOLE LID	JANUARY 2025 STANDARD DRAWING NO. 6010M
	CITY OF McKINNEY, TEXAS	

NO	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

STANDARD DETAILS

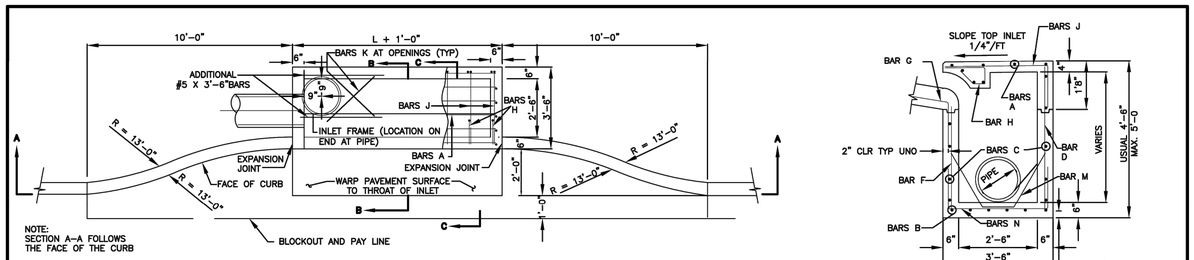
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET
102

Dwg Info: I:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Muni\02_PLAN_SHEET\231206401_DETL_ROWY_STRM.dwg - Plotted: 1/5/2026

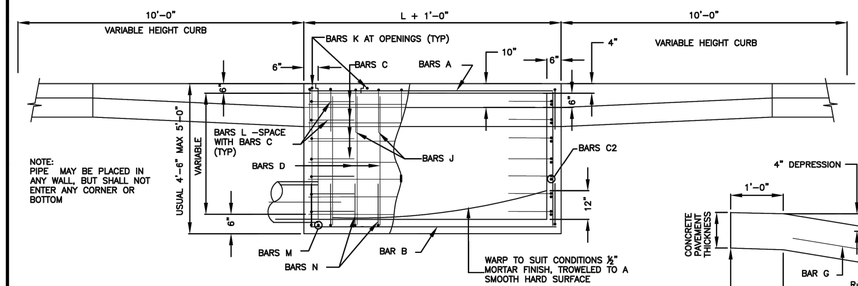


5, 8 AND 10 FOOT RECESSED INLETS – PLAN VIEW

N.T.S.

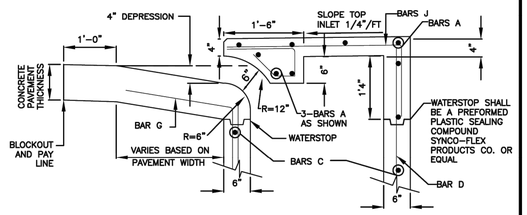
SECTION B–B –5, 8 AND 10 FOOT INLETS

N.T.S.



SECTION A–A – 5, 8 AND 10 FOOT RECESSED INLETS

N.T.S.



SECTION C–C –5, 8 AND 10 FOOT INLETS

N.T.S.

SHEET 1 OF 4

McKINNEY TEXAS Unique by nature.	5', 8', 10' SINGLE CURB INLETS	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 6030M

STANDARD DRAWING NO. 6030M

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303
STANDARD DETAILS

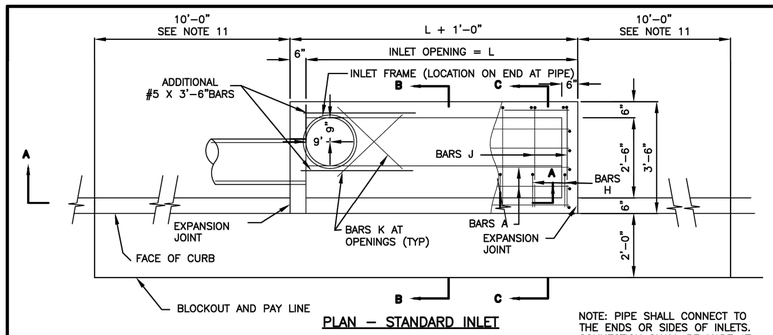
McKINNEY TEXAS Unique by nature.

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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 103

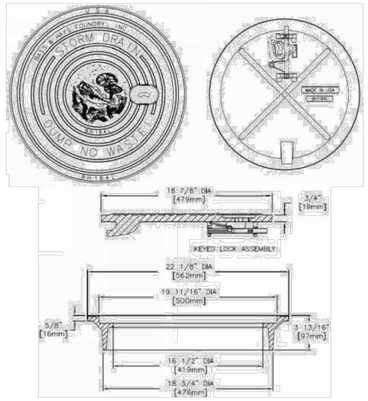
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PLAN – STANDARD INLET

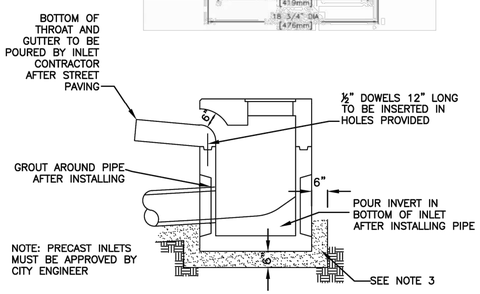
N.T.S.

NOTE: PIPE SHALL CONNECT TO THE ENDS OR SIDES OF INLETS. CONNECTION SHALL BE MADE AT CORNER OR BOTTOM.



NOTES:

1. THROAT OPENING SHALL BE 6 INCHES.
2. PRECAST INLETS MUST BE APPROVED BY ENGINEER.
3. THE FLOOR OF THE EXCAVATION MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.
4. A MINIMUM OF 6 INCHES OF 1" DIAMETER (MAXIMUM ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR IN LIEU OF THIS, AT LEAST 6 INCHES OF 2–SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED–SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.
5. AFTER CASTING HAS BEEN INSTALLED ON THE PROPER BEDDING, THE BACKFILL MATERIAL, WHICH IS FREE FLOWING AND CLEAR OF ROCKS, IN EXCESS OF 4" DIAMETER AND OTHER LUMPS WHICH WOULD PROHIBITED PROPER COMPACTION, SHALL BE COMMENCED IN LIFTS OF NO MORE THAN 18". THE MATERIAL USED FOR BACKFILL SHOULD BE OF TYPE A SUITABLE TO OBTAIN THE DENSITY REQUIREMENTS FOR THE SPECIFIC JOB.
6. CONCRETE TO BE 4000 PSI.
7. LOCKING DEVICE IS REQUIRED ON ALL STORM SEWER LIDS.
8. "NO DUMPING" WARNING PLAQUE TO BE INSTALLED ON ALL STANDARD AND RECESSED INLETS.
9. DESIGN SHOWN FOR INLETS UP TO 5'–0" IN DEPTH. SPECIAL DESIGN WILL BE REQUIRED FOR INLETS GREATER THAN 5'–0" IN DEPTH.
10. AT LEAST ONE ACCESS RING AND COVER SHALL BE PLACED OVER OUTFALL PIPE.
11. IF INLET IN SAG, BLOCKOUT SHALL EXTEND 10' EITHER SIDE OF INLET. IF NOT IN SAG, THEN BLOCKOUT SHALL EXTEND 10' UPSTREAM AND 5' DOWNSTREAM OF INLET.



INSTALLATION DRAWING FOR PRECAST
5 AND 10 FOOT CURB INLETS

N.T.S.

SHEET 3 OF 4

STANDARD DRAWING NO. 6030M	CURB INLET DETAILS & NOTES	JANUARY 2025
McKINNEY TEXAS Unique by nature.	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 6030M

REVISIONS

NO.	DATE	COMMENT

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

STANDARD DETAILS

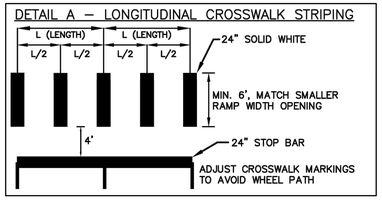
McKINNEY TEXAS Unique by nature.

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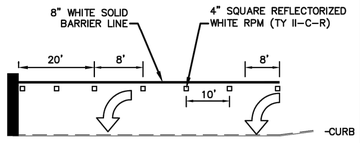
DESIGN BY: PYM	DRAWN BY: NLS, AYC
DATE: 1/5/2026	JOB NUMBER: 2312-064-01
SHEET 104	

Dwg Info: f:\Projects\2023\12064_city_of_mckinney\01_st2303_inter_cap\400_CAD\412_Mum\02_PLAN_SHEET\23120640 1_DETL_RDWY_STRM.dwg - Plotted: 1/5/2026

DETAIL A – LONGITUDINAL CROSSWALK STRIPING



DETAIL B – LEFT TURN BAY



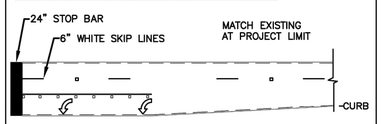
LEFT TURN ARROWS SHALL BE PLACED AT 20' FROM THE STOP BAR AND AT THE END OF THE LEFT TURN LANE.

IF THE LEFT TURN LANE IS OVER 150' IN LENGTH PLACE ONE ARROW MARKING IN THE MIDDLE BETWEEN THE OTHER TWO ARROWS.

BEGIN 8" STRIPE WHERE TURN BAY REACHES FULL WIDTH.

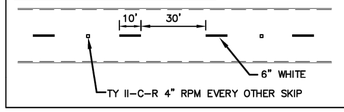
STOP BAR AND ARROWS SHALL NOT BE INSTALLED FOR RESIDENTIAL OR MINOR DEVELOPMENT INTERSECTIONS UNLESS SPECIFIED.

DETAIL C – INTERSECTION APPROACH

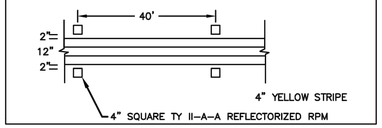


NOTE: 6" WHITE SKIP LINE INSTALLED TO STOP BAR

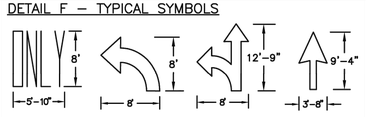
DETAIL D – 6" WHITE SKIPS



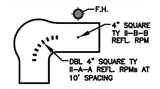
DETAIL E – 4" DOUBLE YELLOW STRIPES



DETAIL F – TYPICAL SYMBOLS



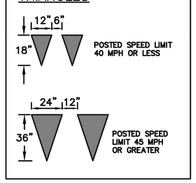
DETAIL G – RAISED PAVEMENT MARKERS



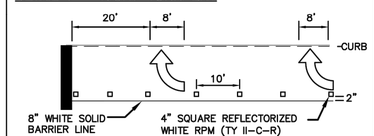
BLUE RPMs SHALL BE PERPENDICULAR TO FIRE HYDRANT LOCATIONS. INSTALL ALONG NEAREST LANE LINE. FOR UNMARKED ROADS, INSTALL AT CENTER OF ROAD.

AMBER RPMs SHALL BE INSTALLED IN ALL RESIDENTIAL NEIGHBORHOODS AT ELBOW INTERSECTIONS.

DETAIL H – YIELD TRIANGLES



DETAIL I – RIGHT TURN BAY



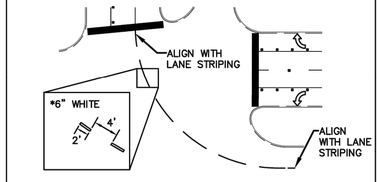
RIGHT TURN ARROWS SHALL BE PLACED AT 20' FROM THE STOP BAR AND AT THE END OF THE RIGHT TURN LANE.

IF THE RIGHT TURN LANE IS OVER 150' IN LENGTH PLACE ONE ARROW MARKING IN THE MIDDLE BETWEEN THE OTHER TWO ARROWS.

BEGIN 8" STRIPE WHERE TURN BAY REACHES FULL WIDTH.

STOP BAR AND ARROWS SHALL NOT BE INSTALLED FOR RESIDENTIAL OR MINOR DEVELOPMENT INTERSECTIONS UNLESS SPECIFIED.

DETAIL J – LEFT TURN GUIDE LINES



PROVIDE DETAILED LAYOUT ON PLAN SHEET.

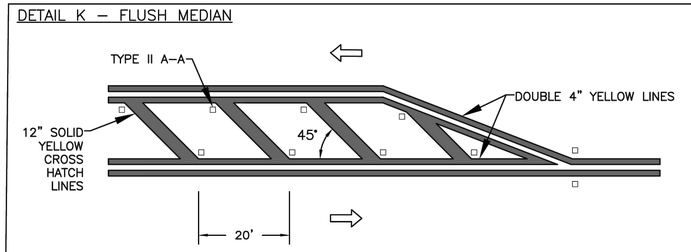
NOTE IF CONCURRING LEFTS OCCUR.

*MATCH PAVEMENT MARKING WIDTH WITH APPROACH PAVEMENT MARKING WIDTH.

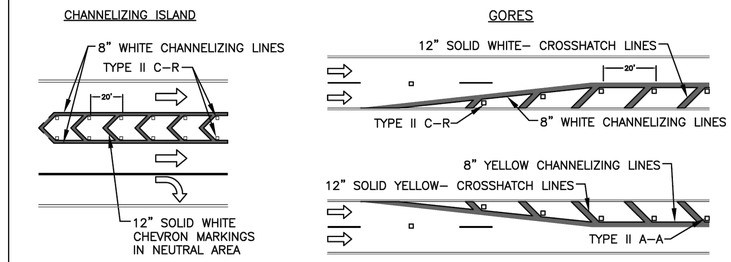
SHEET 3 OF 6

McKINNEY TEXAS Unique by nature.	PAVEMENT MARKING DETAILS	JANUARY 2025
	CITY OF McKINNEY, TEXAS	STANDARD DRAWING NO. 7002M

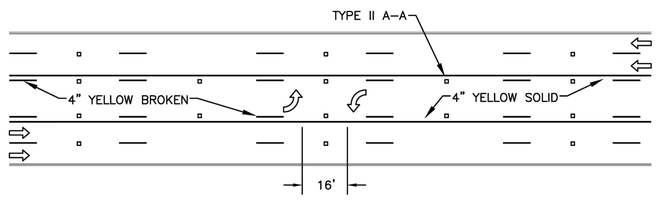
DETAIL K – FLUSH MEDIAN



DETAIL L – CHANNELIZING ISLANDS AND GORES



DETAIL M – TWO WAY LEFT TURN LANE



SHEET 4 OF 6

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REVISIONS		

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

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TBPELS Firm Registration No. 274
Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
972.335.3214 | fax 972.335.3202 | www.cobbfendley.com

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 105

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REINFORCING STEEL SCHEDULE

	INLET OPENING "L"	BAR	BAR SIZE	BAR* LENGTH	BAR SPACING	INLET OPENING "L"	BAR	BAR SIZE	BAR* LENGTH	BAR SPACING	INLET OPENING "L"	BAR	BAR SIZE	BAR* LENGTH	BAR SPACING
DOUBLE INLETS	6'-0"	A	#4	13'-4"	8" O.C. MAX	7'-6"	A	#4	16'-4"	8" O.C. MAX	10'-0"	A	#4	21'-4"	8" O.C. MAX
		B	#4	13'-4"	8" O.C. MAX		B	#4	16'-4"	8" O.C. MAX		B	#4	21'-4"	8" O.C. MAX
		C	#4	13'-4"	8" O.C. MAX		C	#4	16'-4"	8" O.C. MAX		C	#4	21'-4"	8" O.C. MAX
		C2	#4	3'-2"	8" O.C. MAX		C2	#4	3'-2"	8" O.C. MAX		C2	#4	3'-2"	8" O.C. MAX
		D	#5	4'-6"	12" O.C. MAX		D	#5	4'-6"	12" O.C. MAX		D	#5	4'-6"	12" O.C. MAX
		F	#5	3'-3"	12" O.C. MAX		F	#5	3'-3"	12" O.C. MAX		F	#5	3'-3"	12" O.C. MAX
		G	#4	3'-6"	12" O.C. MAX		G	#4	3'-6"	12" O.C. MAX		G	#4	3'-6"	12" O.C. MAX
		H	#4	2'-6"	12" O.C. MAX		H	#4	2'-6"	12" O.C. MAX		H	#4	2'-6"	12" O.C. MAX
		I	#4	2'-0"	8" O.C. MAX		I	#4	2'-0"	8" O.C. MAX		I	#4	2'-0"	8" O.C. MAX
		J	#5	4'-8"	12" O.C. MAX		J	#5	4'-8"	12" O.C. MAX		J	#5	4'-8"	12" O.C. MAX
		K**	#4	3'-0"			K**	#4	3'-0"			K**	#4	3'-0"	
		L	#5	3'-0"	8" O.C. MAX		L	#4	3'-0"	8" O.C. MAX		L	#4	3'-0"	8" O.C. MAX
		M**	#4	4'-0"			M**	#4	4'-0"			M**	#4	4'-0"	
		N	#5	6'-2"	8" O.C. MAX		N	#5	6'-2"	8" O.C. MAX		N	#5	6'-2"	8" O.C. MAX
		U	#4	3'-4"	8" O.C. MAX		U	#4	3'-4"	8" O.C. MAX		U	#4	3'-4"	8" O.C. MAX
SINGLE INLETS	5'-0"	A	#4	5'-0"	8" O.C. MAX	8'-0"	A	#4	7'-0"	8" O.C. MAX	10'-0"	A	#4	9'-0"	8" O.C. MAX
		B	#4	5'-0"	8" O.C. MAX		B	#4	7'-0"	8" O.C. MAX		B	#4	9'-0"	8" O.C. MAX
		C	#4	5'-0"	8" O.C. MAX		C	#4	7'-0"	8" O.C. MAX		C	#4	9'-0"	8" O.C. MAX
		C2	#4	3'-2"	8" O.C. MAX		C2	#4	3'-2"	8" O.C. MAX		C2	#4	3'-2"	8" O.C. MAX
		D	#5	4'-6"	12" O.C. MAX		D	#5	4'-6"	12" O.C. MAX		D	#5	4'-6"	12" O.C. MAX
		F	#5	3'-3"	12" O.C. MAX		F	#5	3'-3"	12" O.C. MAX		F	#5	3'-3"	12" O.C. MAX
		G	#4	3'-6"	12" O.C. MAX		G	#4	3'-6"	12" O.C. MAX		G	#4	3'-6"	12" O.C. MAX
		H	#4	2'-6"	12" O.C. MAX		H	#4	2'-6"	12" O.C. MAX		H	#4	2'-6"	12" O.C. MAX
		J	#5	4'-8"	12" O.C. MAX		J	#5	4'-8"	12" O.C. MAX		J	#5	4'-8"	12" O.C. MAX
		K**	#4	3'-0"			K**	#4	3'-0"			K**	#4	3'-0"	
		L	#4	3'-0"	8" O.C. MAX		L	#4	3'-0"	8" O.C. MAX		L	#4	3'-0"	8" O.C. MAX
		M**	#4	4'-0"			M**	#4	4'-0"			M**	#4	4'-0"	
		N	#5	6'-2"	8" O.C. MAX		N	#5	6'-2"	8" O.C. MAX		N	#5	6'-2"	8" O.C. MAX

* BAR LENGTHS SHOWN ARE FOR MAX HEIGHT INLETS. VALUES SHALL BE ADJUSTED FOR USUAL HEIGHT INLETS

** DIMENSIONS SHOWN FOR TOP SLAB OPENINGS AS SHOWN IN THE DETAILS. ADDITIONAL BARS SHALL BE PROVIDED AT ALL PIPE OPENINGS AS SHOWN IN THE DETAILS, NUMBER AND DIMENSIONS TO BE MODIFIED AS NEEDED.

STANDARD DRAWING NO. 6030M

SHEET 4 OF 4

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CURB INLET DETAILS & NOTES

CITY OF McKINNEY, TEXAS

JANUARY 2025

STANDARD DRAWING NO. 6030M

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS (FY 23) CIP ST2303

STANDARD DETAILS

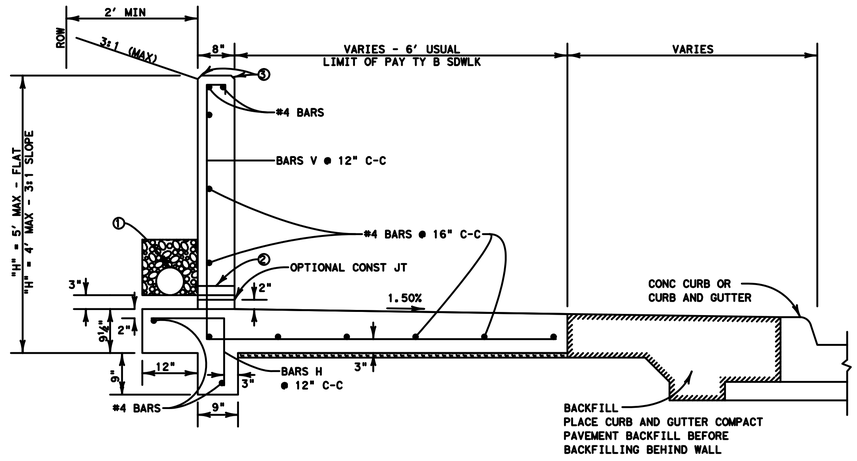
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Land Surveying Firm Registration No. 10046700
2801 Network Boulevard, Suite 800
Frisco, Texas 75034
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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 106

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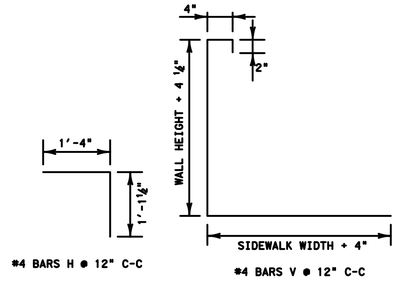


TYPE B SIDEWALK-REMOTE FROM CURB

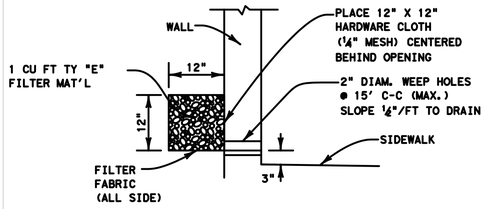
① INSTALL 6" PIPE UNDERDRAIN (TY. 5, 6, 7, OR 8) ENTIRE LENGTH OF WALL. USE TY. "E" FILTER MATERIAL. SLOPE TO DRAIN AND CONNECT TO STORM DRAIN.

② IF, IN THE OPINION OF THE ENGINEER, USE OF UNDERDRAIN IS IMPRACTICAL, INSTALL WEEP HOLES AS SHOWN.

③ ¾" CHAMFER



REINFORCING STEEL DETAILS



WEEP HOLE DETAIL

GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS "C".
2. ALL REINFORCING STEEL SHALL BE GRADE 60, # 4 BARS UNLESS OTHERWISE INDICATED.
3. SEE PLAN SHEETS FOR LOCATIONS OF SIDEWALKS AND RETAINING WALLS.
4. LONGITUDINAL SLOPE OF SIDEWALKS SHALL NOT EXCEED 5% EXCEPT IN CASES WHERE THE ADJACENT ROADWAY SLOPE EXCEEDS 5%. IF ROADWAY SLOPE EXCEEDS 5%, LONGITUDINAL SLOPE OF SIDEWALK MAY MATCH THAT OF ROADWAY.
5. IF SIDEWALK WIDTH IS LESS THAN 5', PROVIDE 5' X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200' SPACING.
6. RETAINING WALL WILL BE SUBSIDIARY TO THE ITEM, "CONC SIDEWALKS (SPECIAL) (TYPE A)" OR "CONC SIDEWALKS (SPECIAL)(TYPE B)", WITH LIMITS OF PAY AS SHOWN.
7. SURFACE TREATMENT OF RETAINING WALL FACE DETAILED ELSEWHERE IN THE PLANS.

NO.	DATE	COMMENT

REVISIONS

STATE OF TEXAS
PRIYA Y. MISTRY
125226
LICENSED
PROFESSIONAL ENGINEER
01/05/2026

INTERSECTION CAPACITY IMPROVEMENTS
(FY 23) CIP ST2303

MISC DETAILS

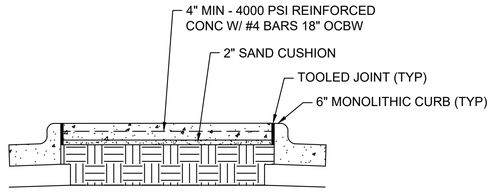
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SHEET
107

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CONCRETE MEDIAN DETAIL
NTS

NOTES:

1. REINFORCEMENT BARS SHALL MATCH THOSE IN PAVEMENT.
2. FULL HEIGHT CURB REQUIRED FOR MEDIANS LESS THAN 6' WIDE.

⊕ DO NOT PAVE AREA BETWEEN SIDEWALK AND DRIVEWAY CURB. SEED, SOD, OR LANDSCAPE AS DIRECTED.

↓ - SEEDING OR OTHER SURFACE NOT SUITABLE AS PEDESTRIAN WALKWAY.

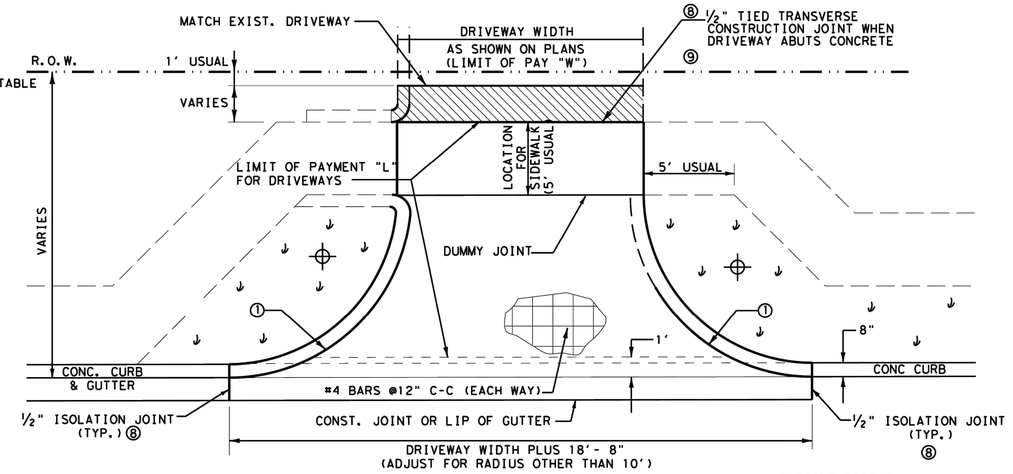
PAY AREA FOR DRIVEWAY SHALL BE THE PRODUCT OF "L" x "W"

S.Y. NON-PAY CONCRETE IN DRIVEWAY RADIUS	
2-90° RADII (FT)	NON-PAY CONC. (S.Y.)
5	0.42
10	3.04
15	10.73
20	15.36
25	29.81
30	37.19

① RADII AS SHOWN ON PLANS

SEE ROADWAY DESIGN MANUAL, APPENDIX C FOR RECOMMENDED RADII.

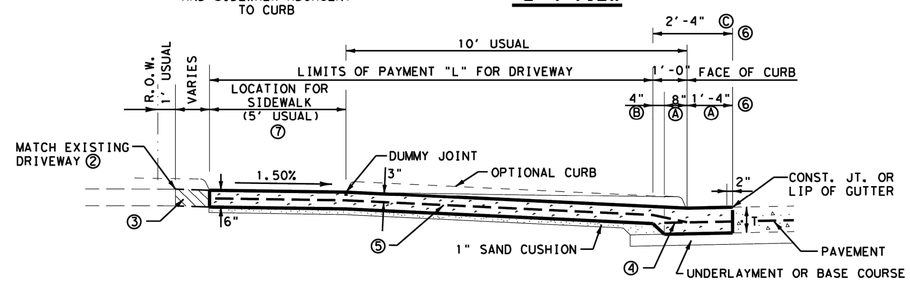
② FULL DEPTH SAW CUT IF CONCRETE



SHOWING OPTIONAL CURB AND SIDEWALK ADJACENT TO CURB

SHOWING SIDEWALK REMOTE FROM CURB

PLAN VIEW



SECTION VIEW

CONCRETE COMMERCIAL DRIVEWAY

③ REPLACE EXISTING DRIVEWAY WITH EQUAL OR BETTER MATERIAL:

IF CONCRETE, PAY FOR AS CONCRETE DRIVEWAY.

IF HOT MIX OR OTHER MATERIAL, PAY FOR IN ACCORDANCE WITH APPROPRIATE BID ITEMS.

④ WHERE DRIVEWAY IS ADJACENT TO CONCRETE PAVEMENT, 36" - #4 TIE BAR, 12" EMBEDMENT INTO PAVEMENT (CAST-IN-PLACE OR DRILLED AND GROUTED). SPACING TO MATCH TRANSVERSE STEEL IN CONCRETE PAVEMENT.

MULTIPLE-PIECE TIE BARS OR 24" EXTENSION OF TRANSVERSE PAVING STEEL MAY BE USED IN LIEU OF TIE BARS.

LONGITUDINAL STEEL IN GUTTER PORTION TO MATCH CONCRETE PAVEMENT OR CONCRETE CURB AND GUTTER DETAILS.

⑤ #4 BARS @ 12" C-C EACH WAY (EXTEND TO FACE OF CURB) BEND AS REQ'D TO TIE TO PAVING STEEL OR TIE BARS.

⑥ IF ADJACENT TO CONCRETE PAVEMENT:
Ⓐ PAID FOR AS CONCRETE PAVEMENT,
Ⓑ PAID FOR AS CONCRETE CURB.

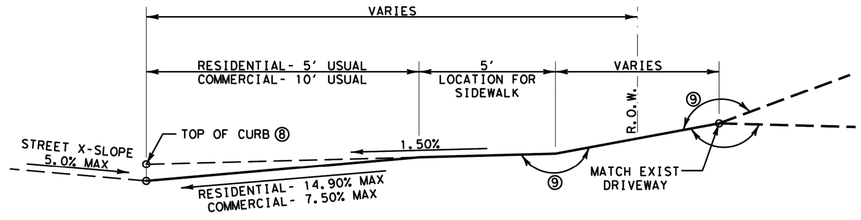
IF ADJACENT TO HOT MIX OR FLEXIBLE PAVEMENT:
Ⓒ PAID FOR AS CONCRETE CURB AND GUTTER.

T = THICKNESS OF CONCRETE PAVEMENT OR CONCRETE CURB AND GUTTER

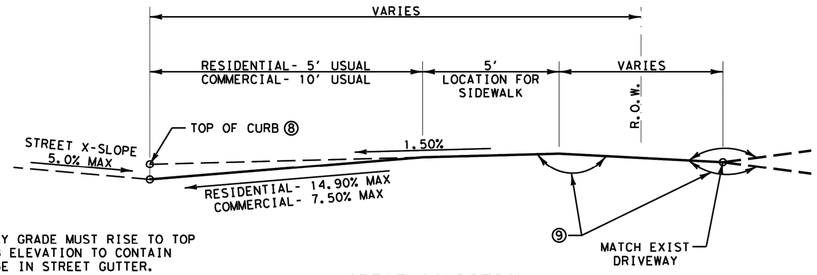
⑦ LOCATION FOR SIDEWALK TO BE PROVIDED ON ALL DRIVEWAYS
FOR SIDEWALK DETAILS, SEE STANDARD CSWD(FTW)

⑧ SEE STANDARD JS (FTW) FOR JOINT DETAILS.

⑨ IF, IN THE OPINION OF THE ENGINEER, ADJACENT CONCRETE IS NOT SOUND, 1/2" ISOLATION JOINT MAY BE USED IN LIEU OF TIED JOINT.



SAG CONDITION



CREST CONDITION

⑧ DRIVEWAY GRADE MUST RISE TO TOP OF CURB ELEVATION TO CONTAIN DRAINAGE IN STREET GUTTER.

⑨ 8% MAX CHANGE IN GRADE (VERTICAL CURVE REQ'D IF 4% OR GREATER).

ALLOWABLE DRIVEWAY GRADES

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DATE: 1/5/2026	JOB NUMBER: 2312-064-01

SHEET 108

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

10. 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.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

SHEET 1 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

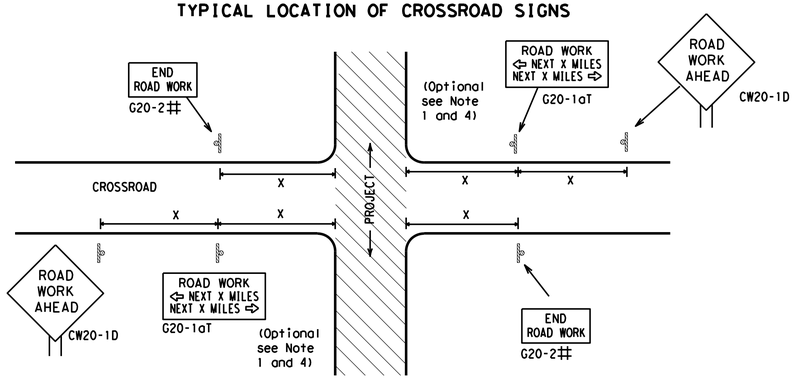
BC(1)-21

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REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	DIST	COUNTY		SHEET NO. 109

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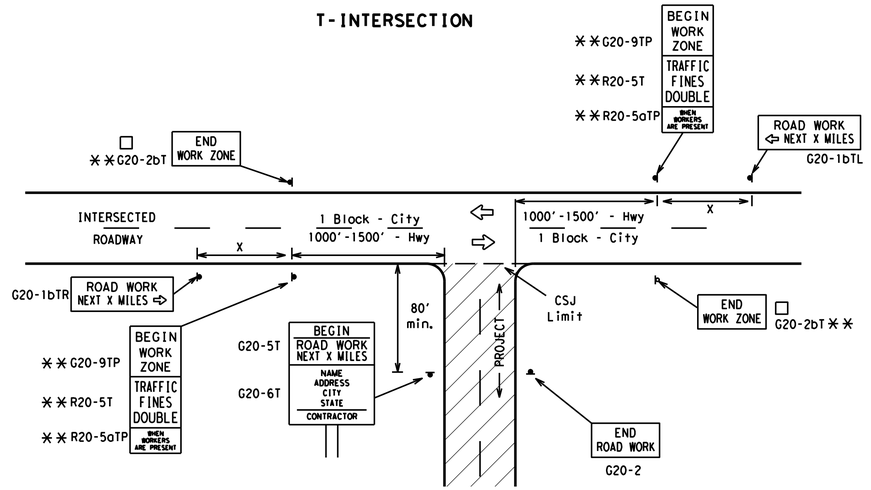
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

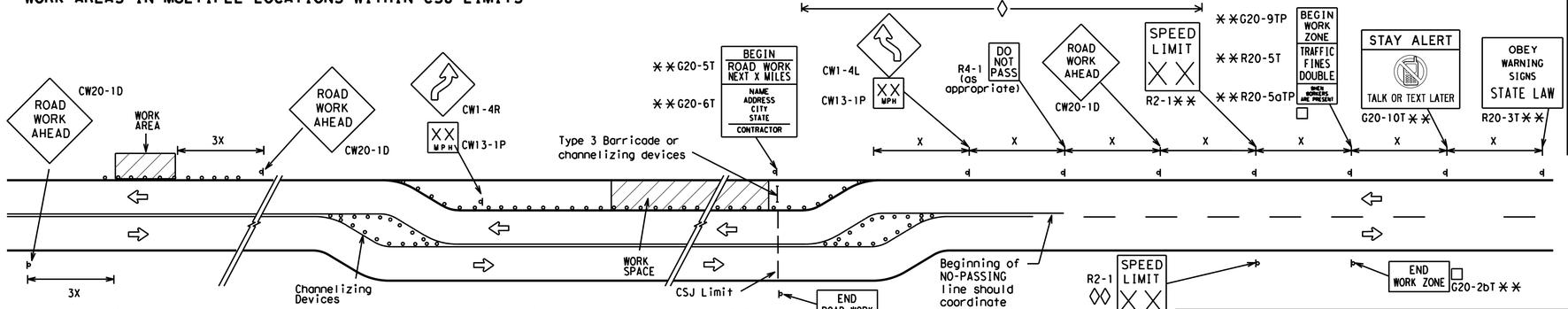
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

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

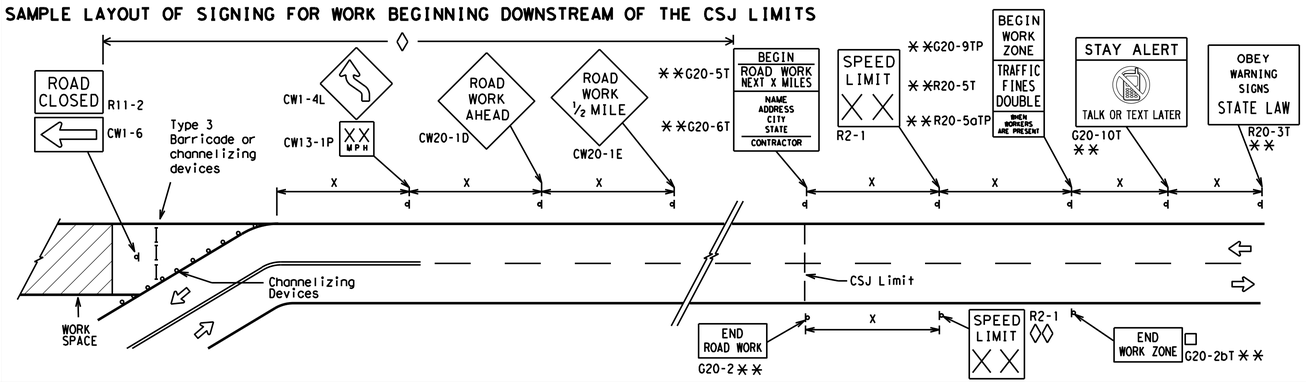
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

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



NOTES

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

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

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

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

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

LEGEND

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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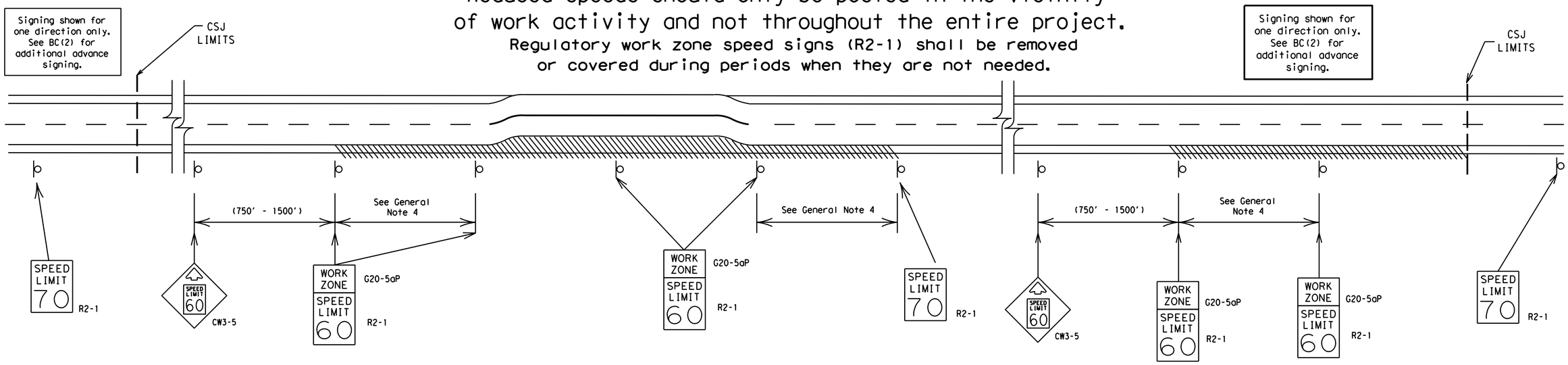
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TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

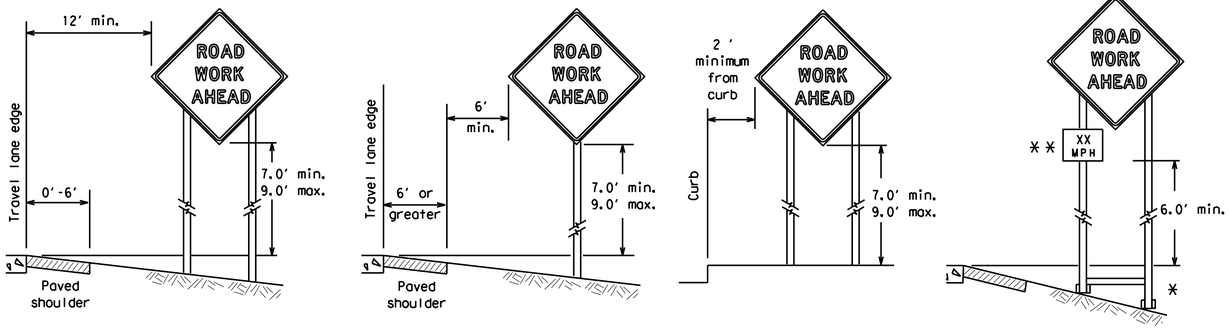
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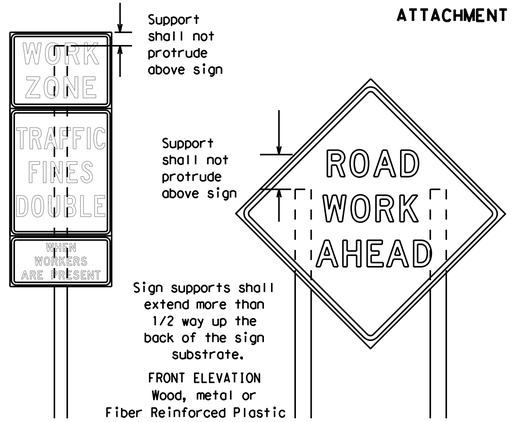
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

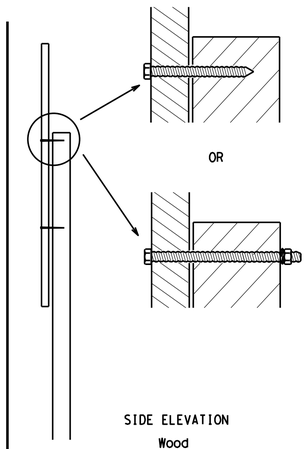


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

* * 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





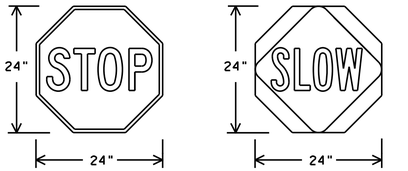
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, 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.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC 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.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

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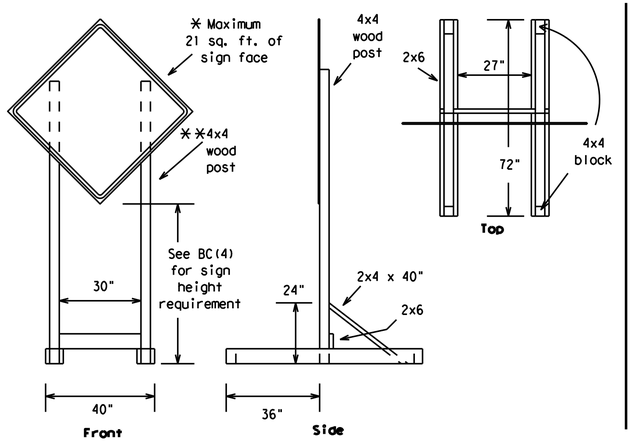
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

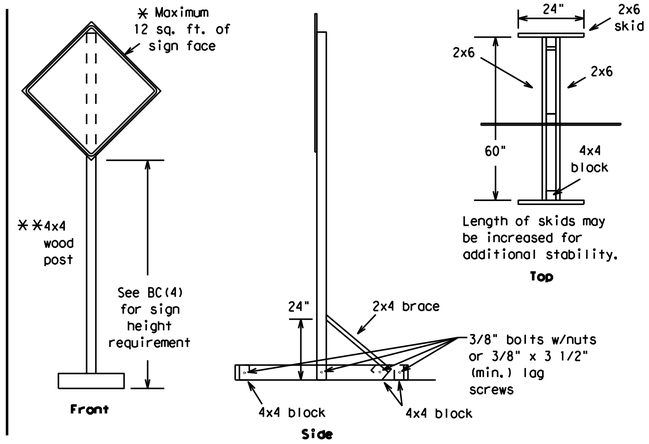
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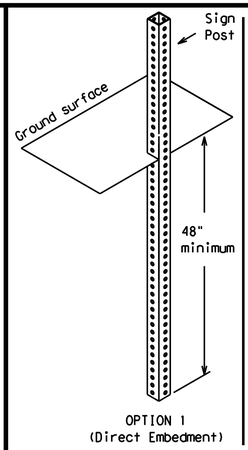
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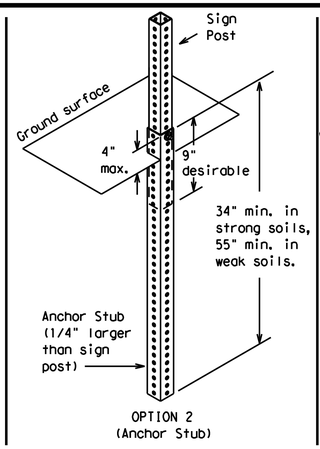


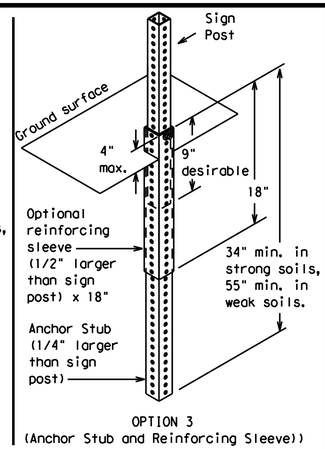


SKID MOUNTED WOOD SIGN SUPPORTS

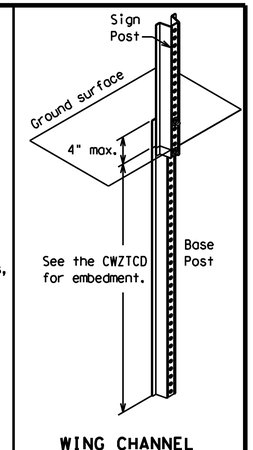
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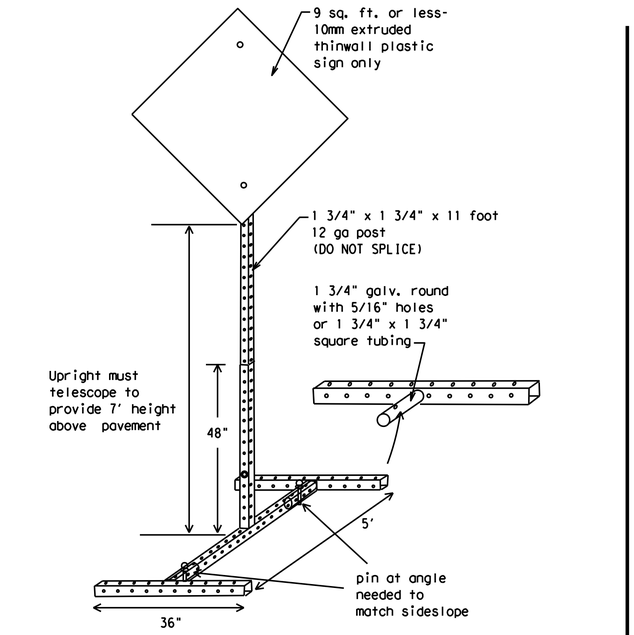
PERFORATED SQUARE METAL TUBING

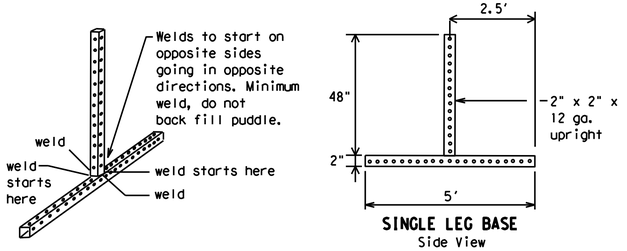


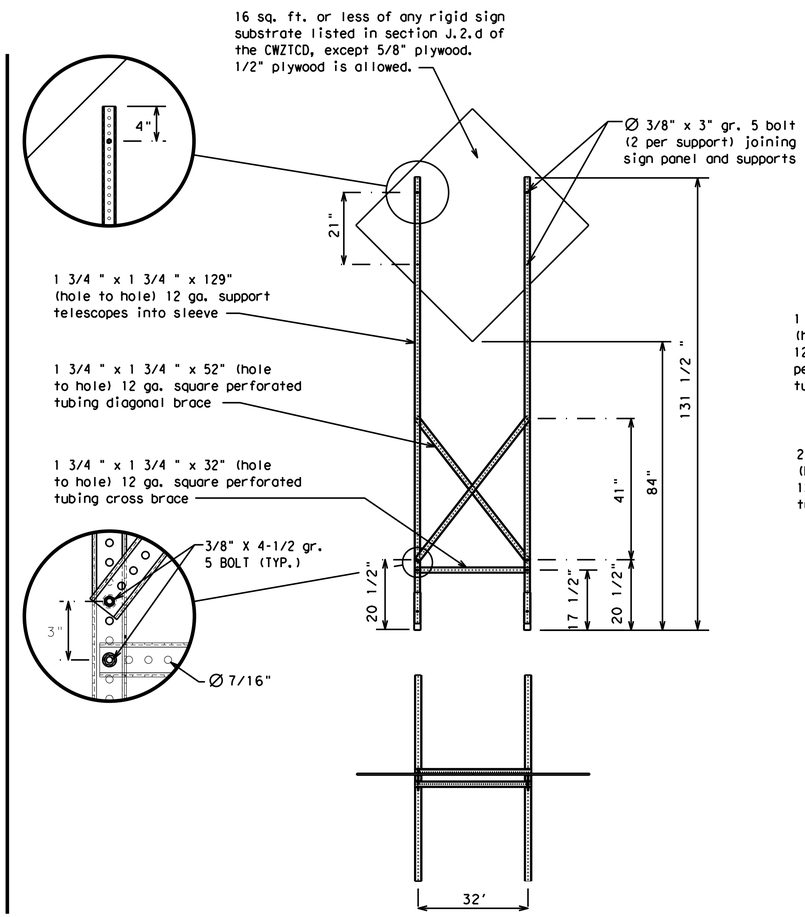
WING CHANNEL
Lap-splice/base bolted anchor

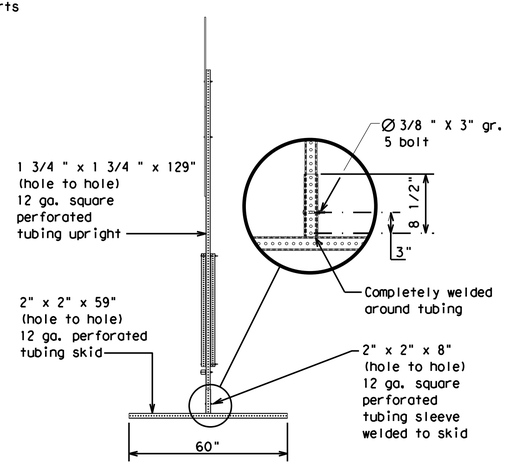
GROUND MOUNTED SIGN SUPPORTS

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









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 CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

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

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

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

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

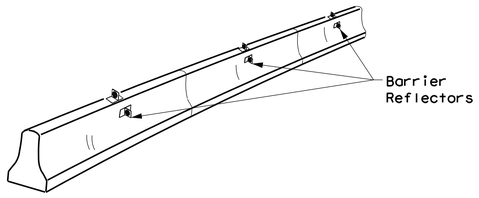
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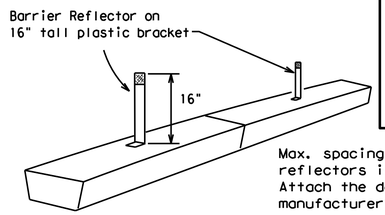
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1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)

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

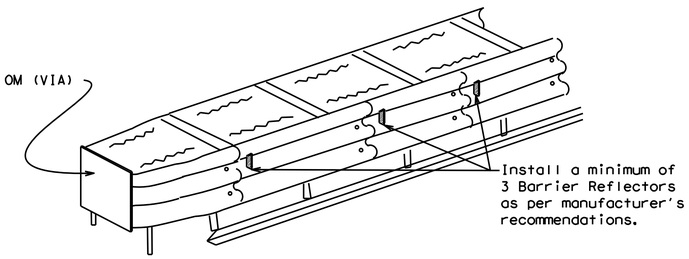


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

LOW PROFILE CONCRETE BARRIER (LPCB)

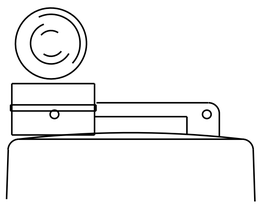


DELINEATION OF END TREATMENTS

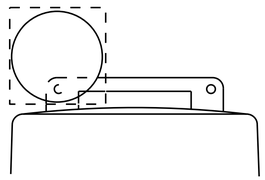
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

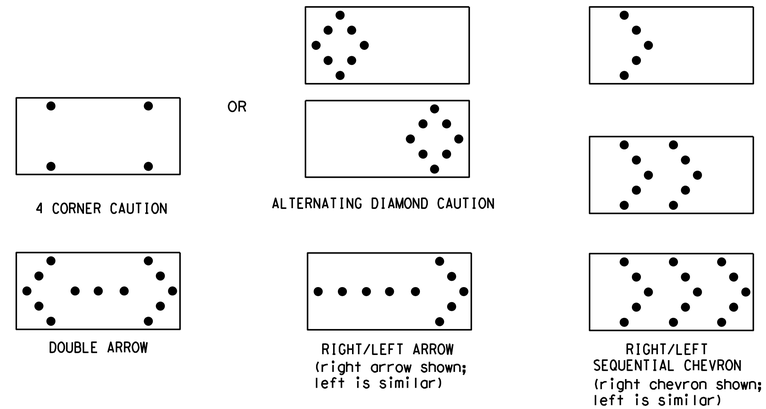
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

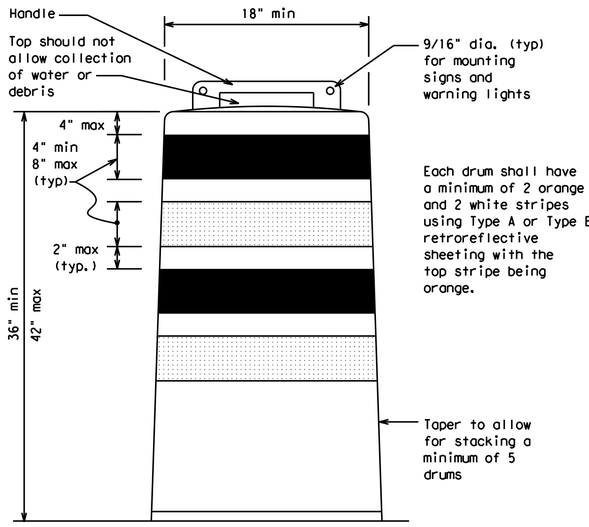
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

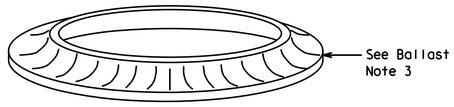
RETROREFLECTIVE SHEETING

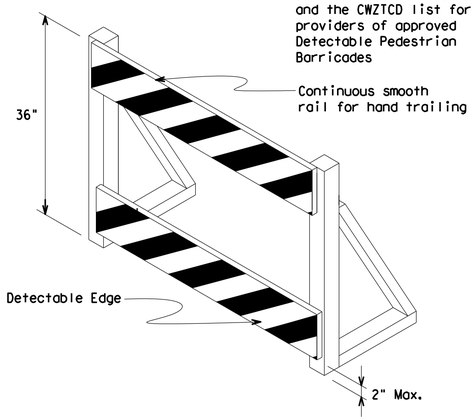
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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



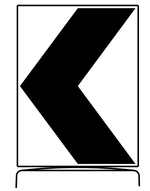




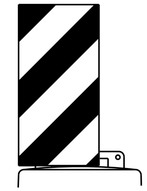
This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. 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.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades 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 D70a, Keep Right R4 series or other signs as approved by Engineer



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

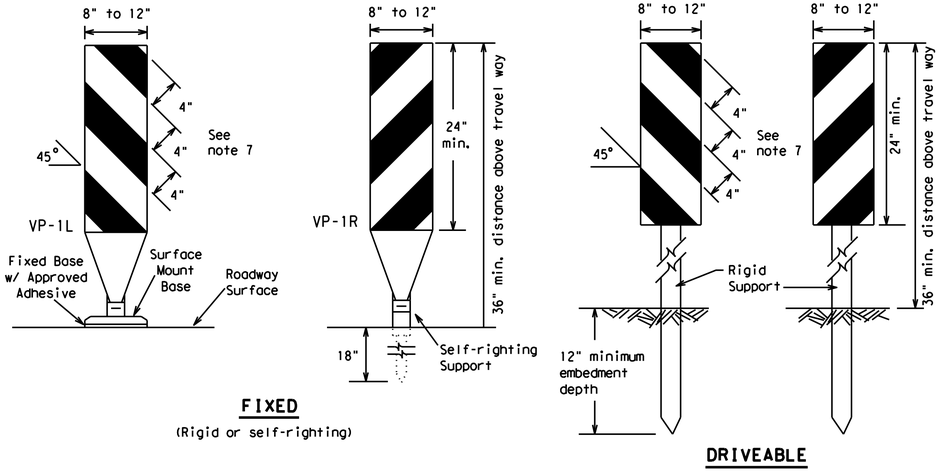
BC(8)-21

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7-13				

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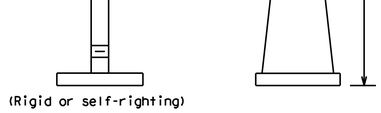
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DATE:
FILE:



FIXED
(Rigid or self-righting)

DRIVEABLE

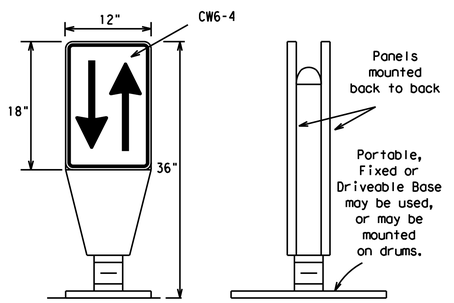


(Rigid or self-righting)

PORTABLE

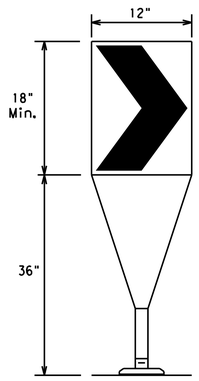
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



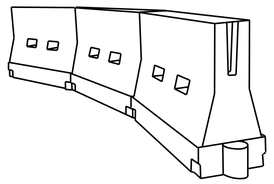
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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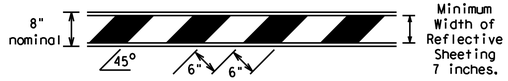
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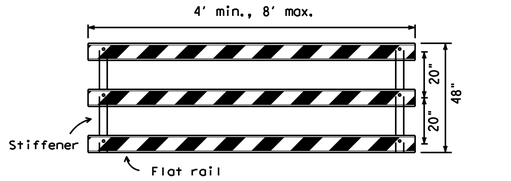
TYPE 3 BARRICADES

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.



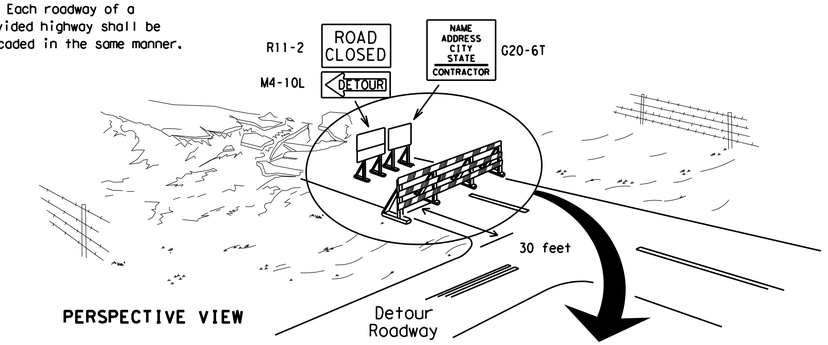
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

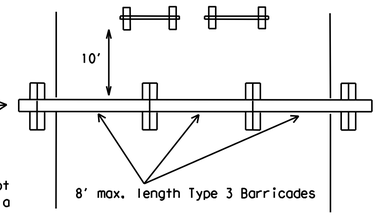
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

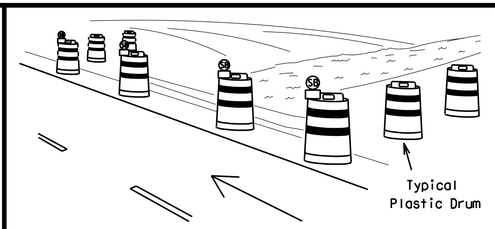
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

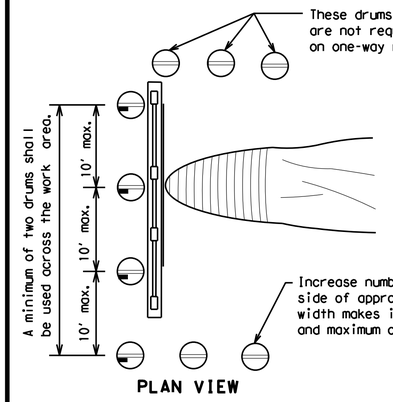
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

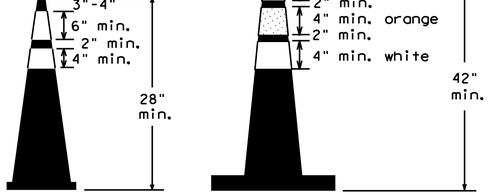
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



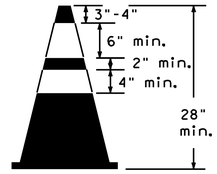
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

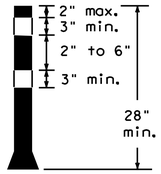
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

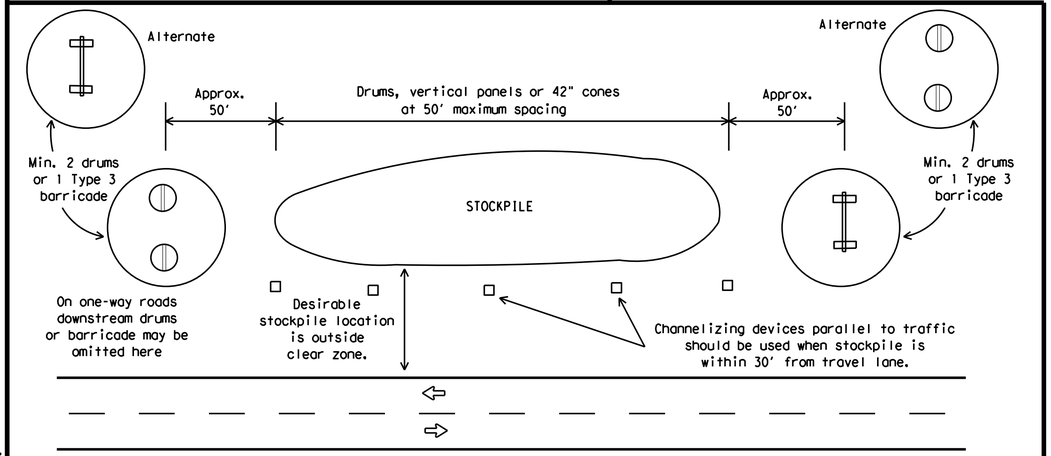


Tubular Marker

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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO. 118

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

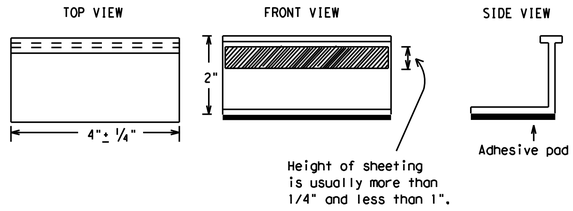
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	DIST	COUNTY		SHEET NO. 119

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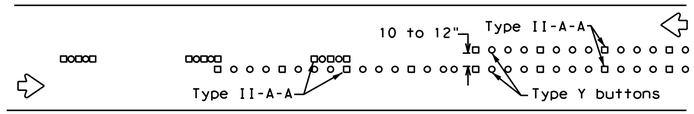
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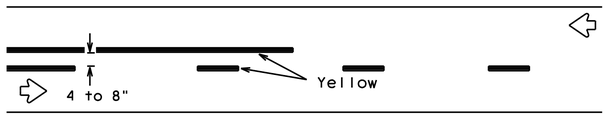
PAVEMENT MARKING PATTERNS



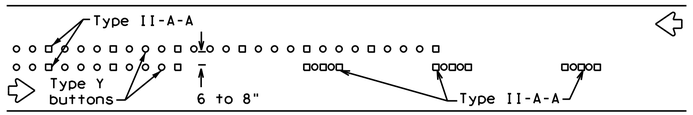
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



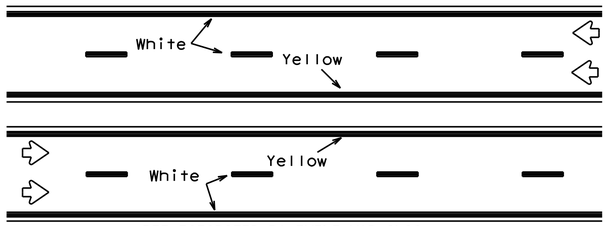
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



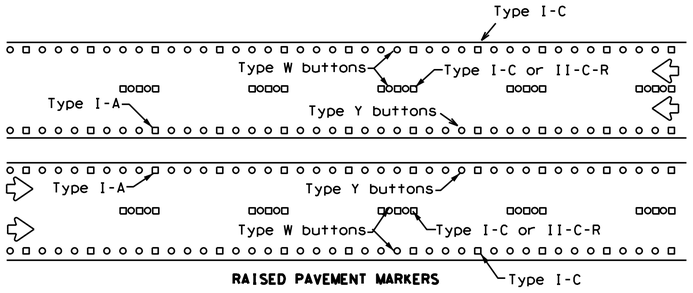
RAISED PAVEMENT MARKERS - PATTERN B

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

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



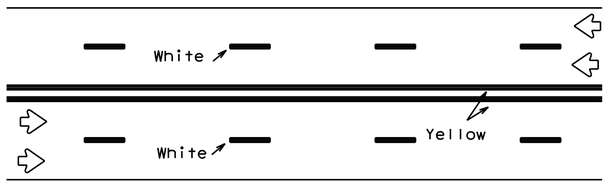
REFLECTORIZED PAVEMENT MARKINGS



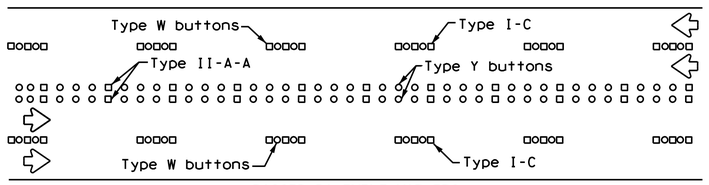
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



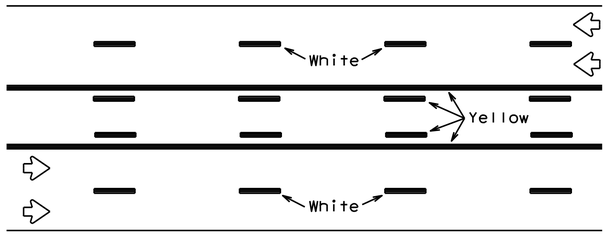
REFLECTORIZED PAVEMENT MARKINGS



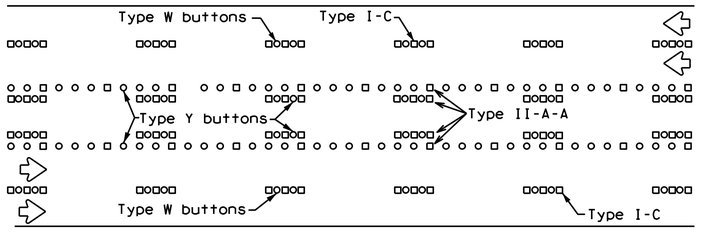
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

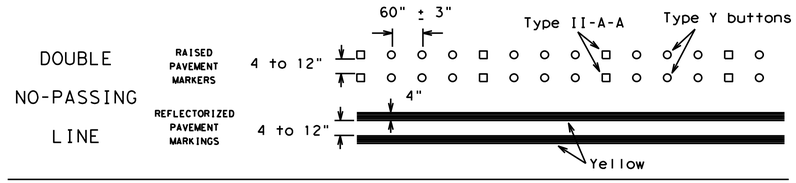
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

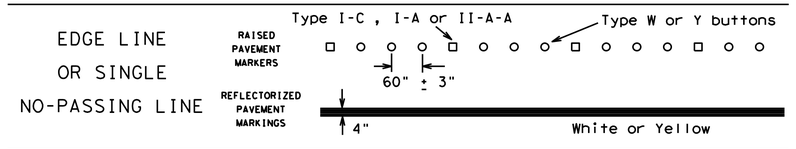
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

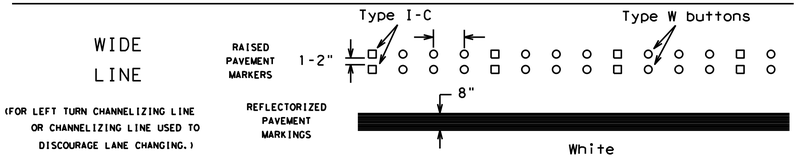


EDGE LINE OR SINGLE NO-PASSING LINE



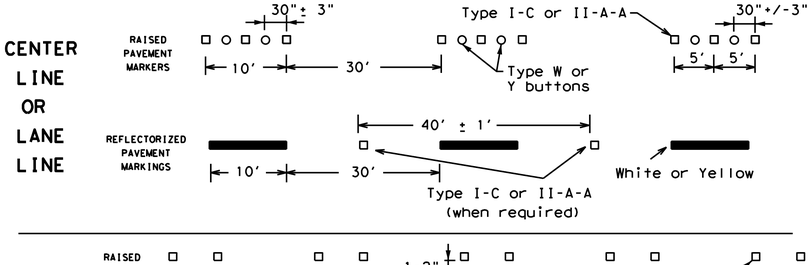
WIDE LINE

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

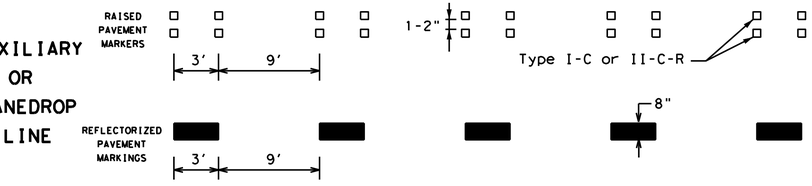


BROKEN LINES

CENTER LINE OR LANE LINE

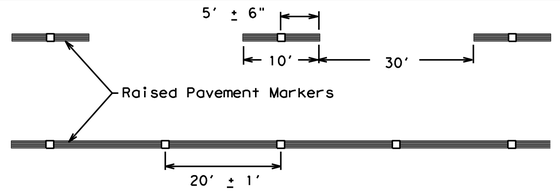


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

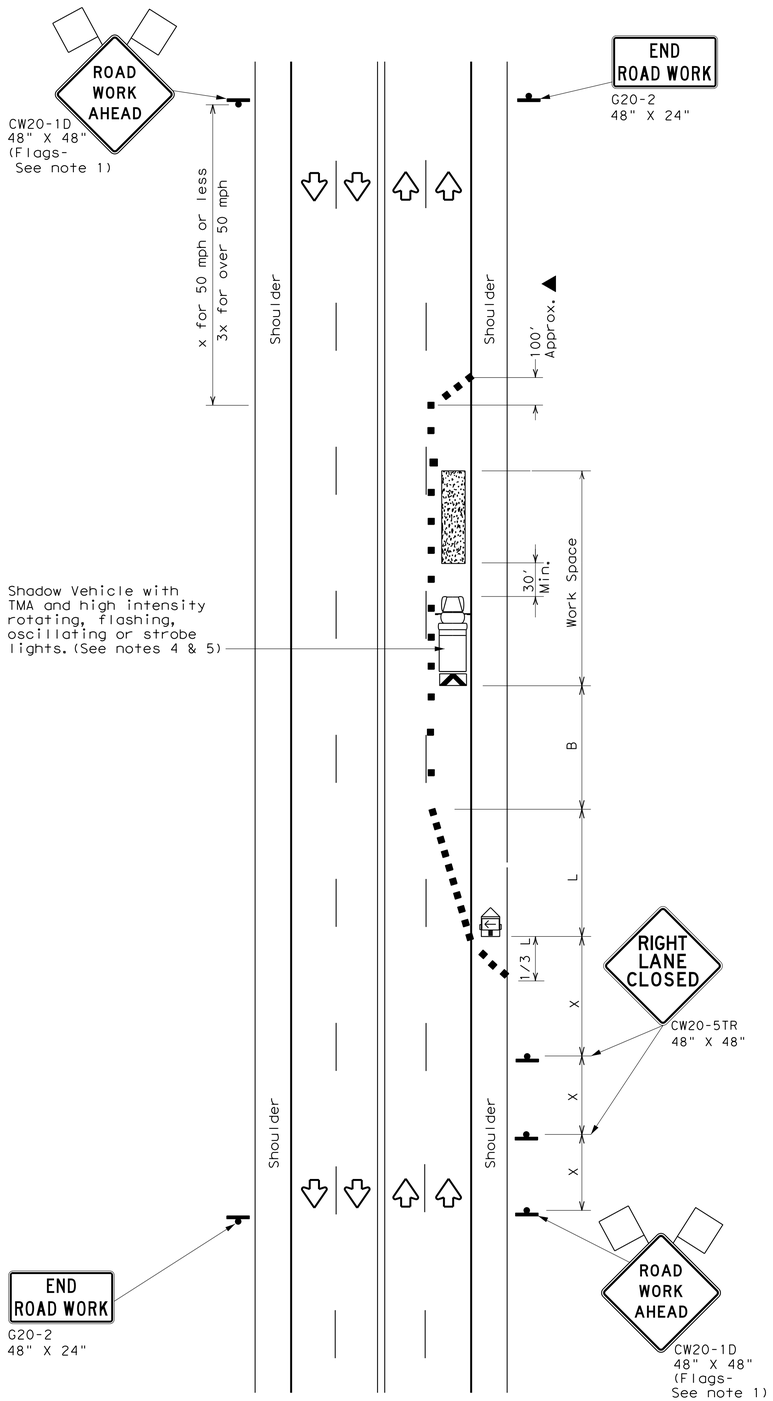
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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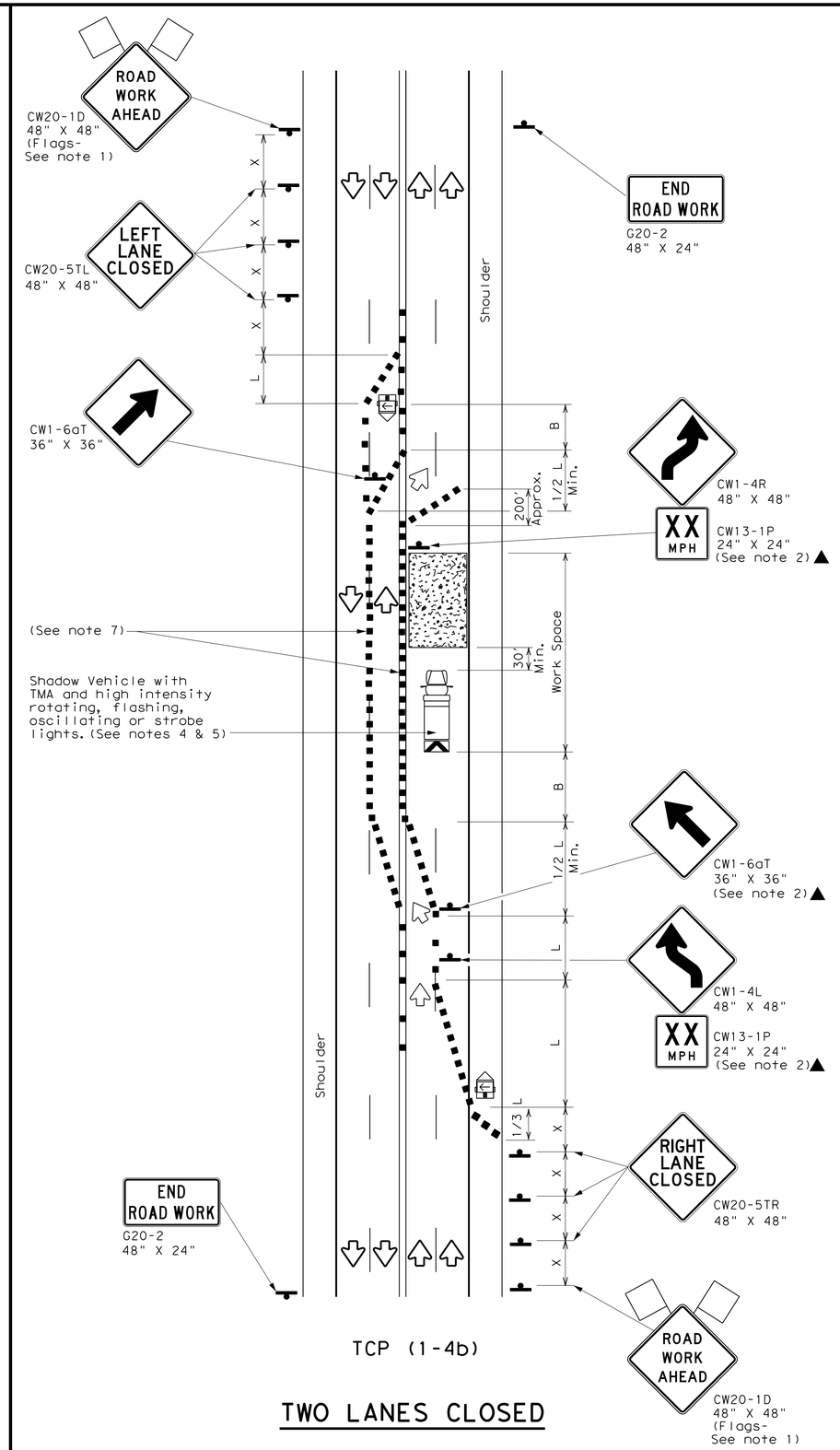
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TCP (1-4a)

ONE LANE CLOSED



TCP (1-4b)

TWO LANES CLOSED

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. 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.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20′ or 15′ if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Texas Department of Transportation

Traffic Operations Division Standard

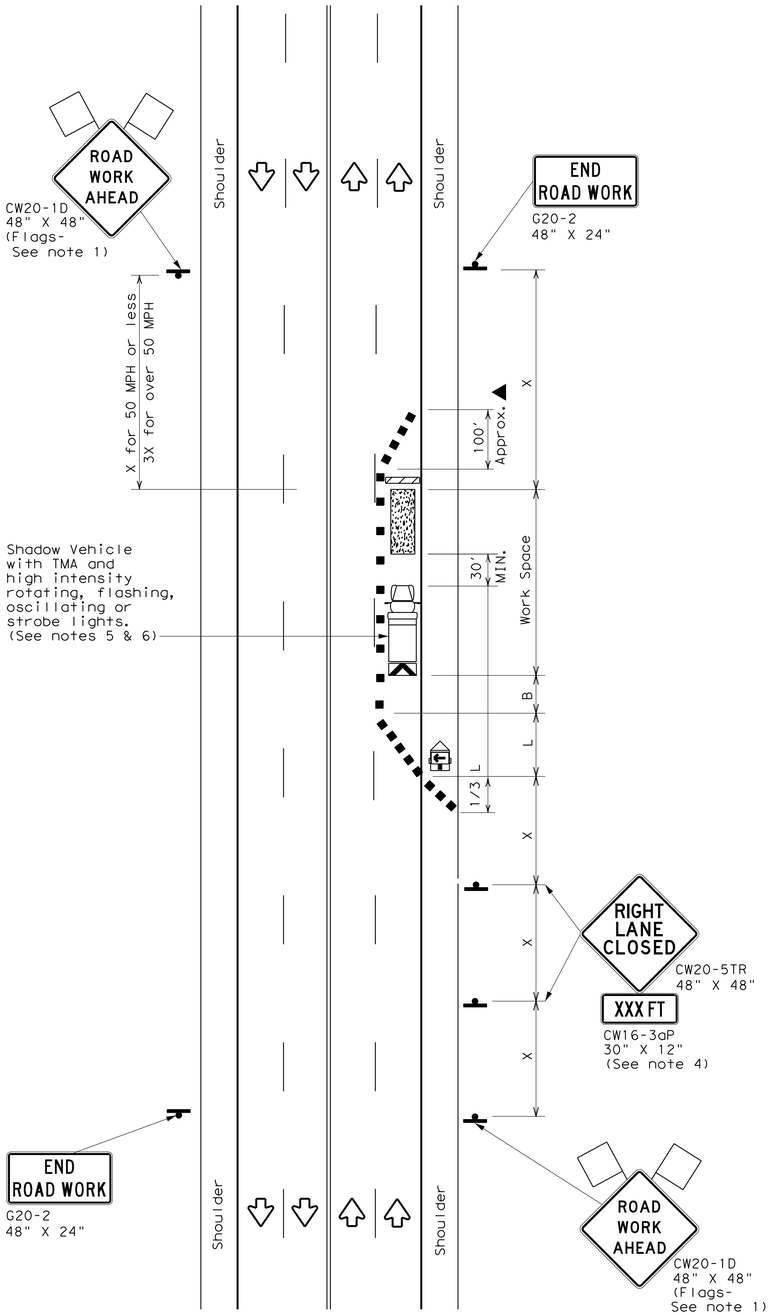
TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(1-4)-18

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REVISIONS				
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8-95 2-12				121
1-97 2-18				

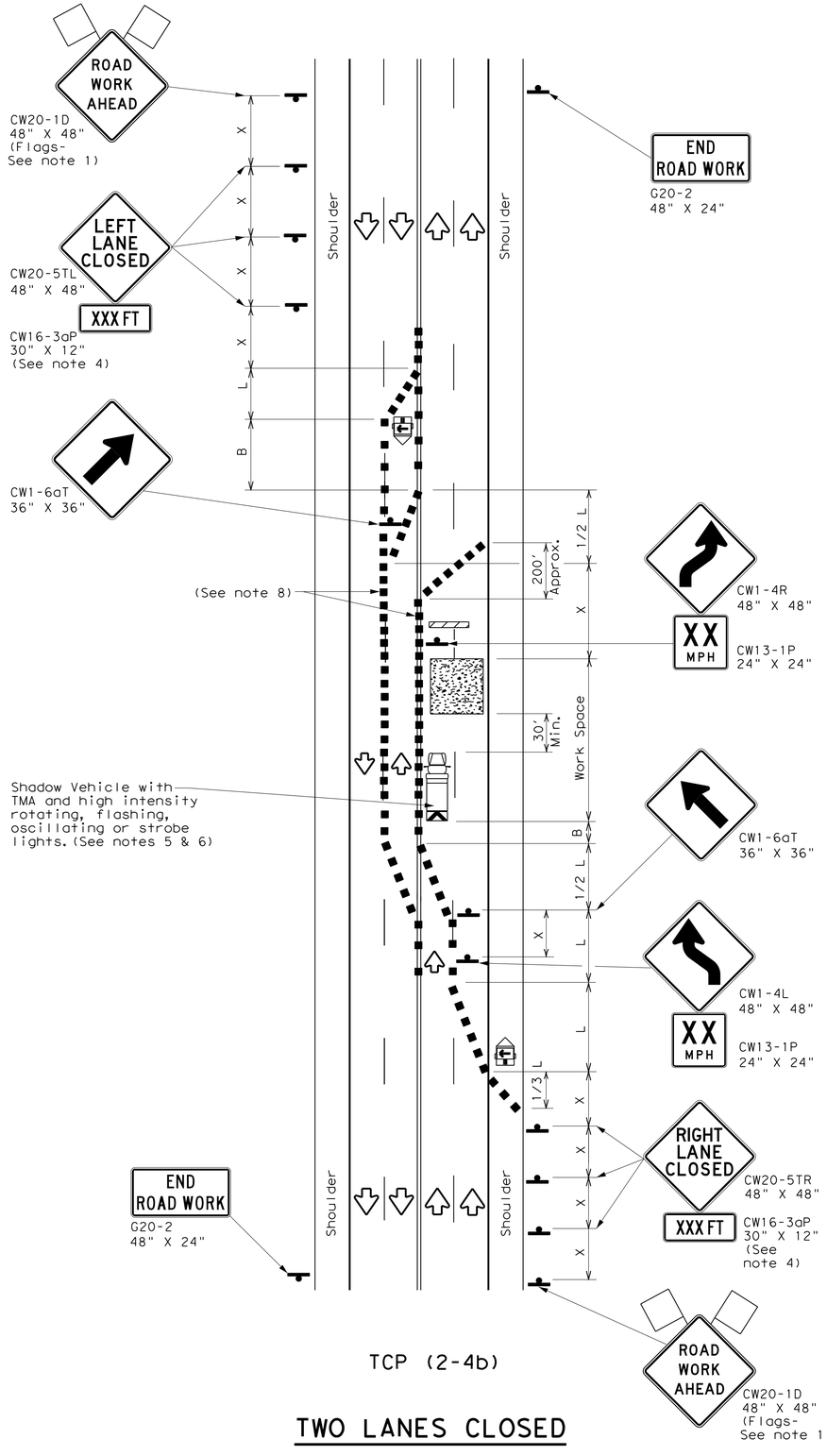
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TCP (2-4a)

ONE LANE CLOSED



TCP (2-4b)

TWO LANES CLOSED

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10′ Offset	11′ Offset	12′ Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150′	165′	180′	30′	60′	120′	90′
35		205′	225′	245′	35′	70′	160′	120′
40		265′	295′	320′	40′	80′	240′	155′
45	L=WS	450′	495′	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55		550′	605′	660′	55′	110′	500′	295′
60		600′	660′	720′	60′	120′	600′	350′
65		650′	715′	780′	65′	130′	700′	410′
70		700′	770′	840′	70′	140′	800′	475′
75		750′	825′	900′	75′	150′	900′	540′

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
5. 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.
6. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED"signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20′ or 15′ if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

Texas Department of Transportation

Traffic Operations Division Standard

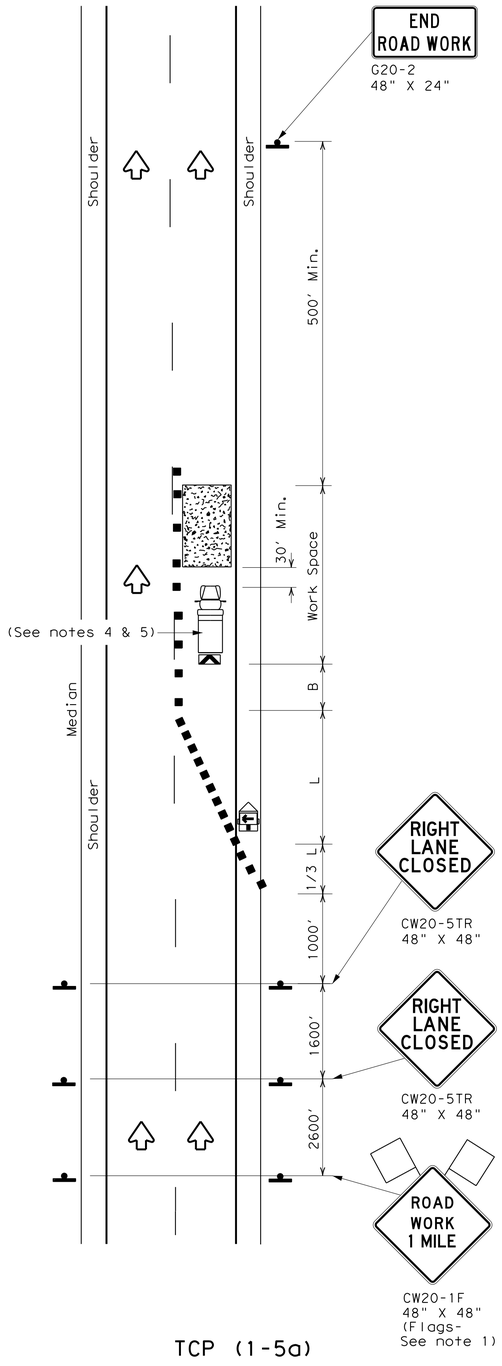
TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(2-4)-18

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REVISIONS 8-95 3-03 / 1-97 2-12 / 4-98 2-18	DIST	COUNTY		SHEET NO. 122

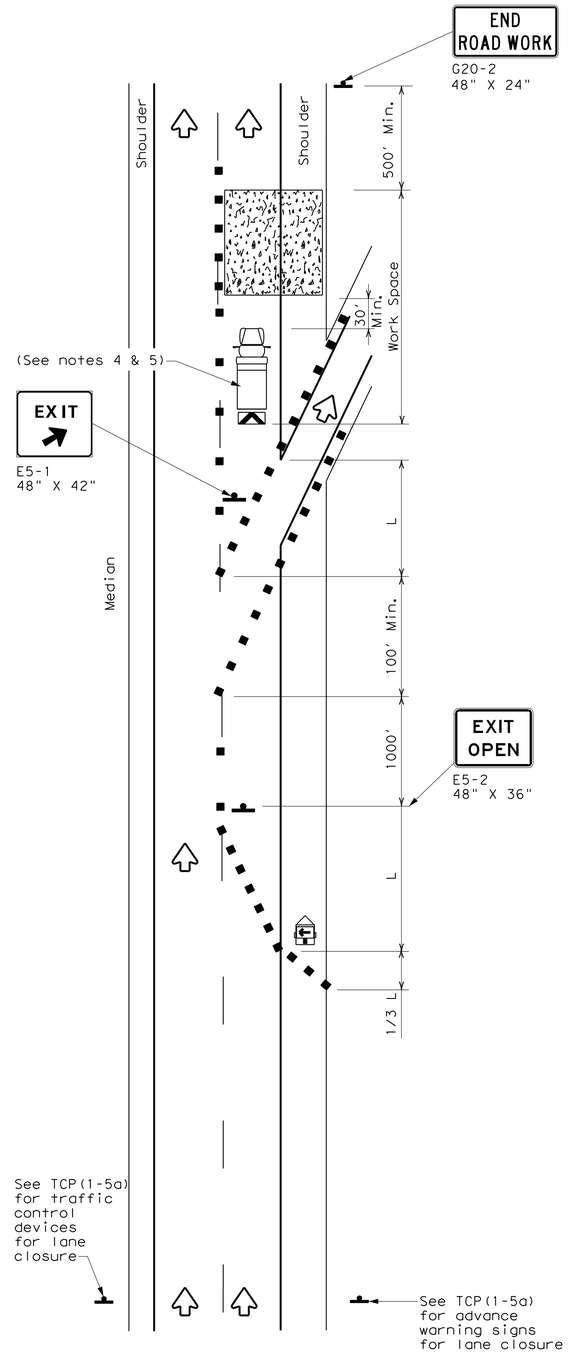
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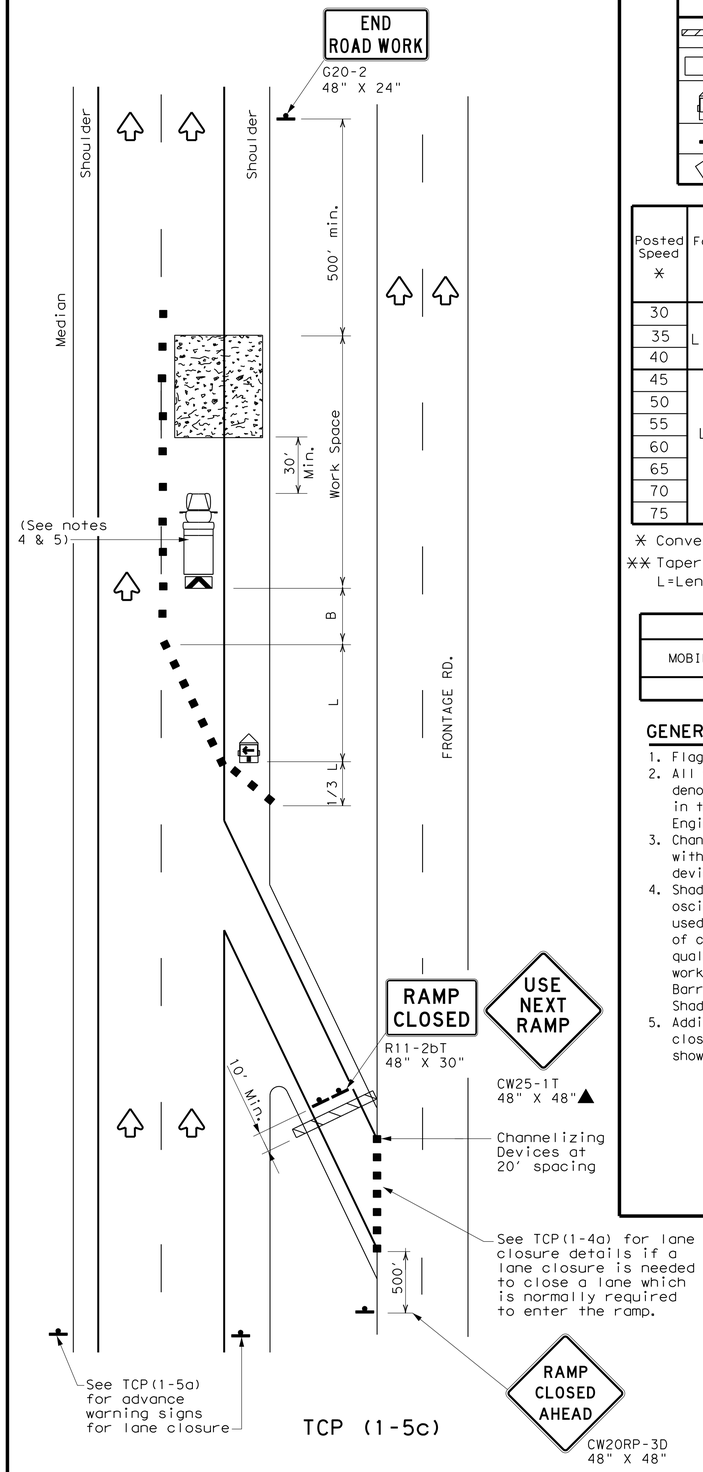
TCP (1-5a)

ONE LANE CLOSURE



TCP (1-5b)

LANE CLOSURE NEAR EXIT RAMPS



TCP (1-5c)

LANE CLOSURE NEAR ENTRANCE RAMPS

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

Posted Speed ✳	Formula	Minimum Desirable Taper Lengths ✳✳ 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

✳ Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. 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.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. 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.
5. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

Texas Department of Transportation

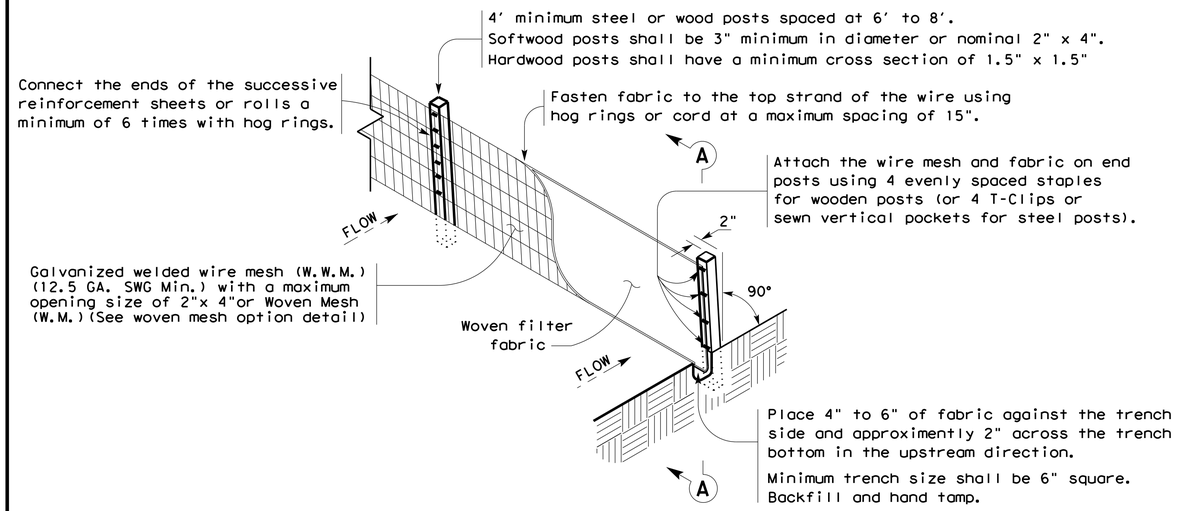
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES FOR DIVIDED HIGHWAYS

TCP(1-5)-18

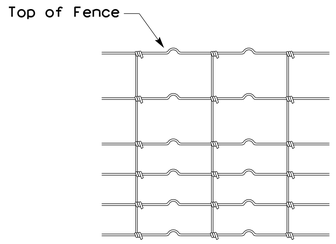
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©TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-18				
	DIST	COUNTY		SHEET NO.
				123

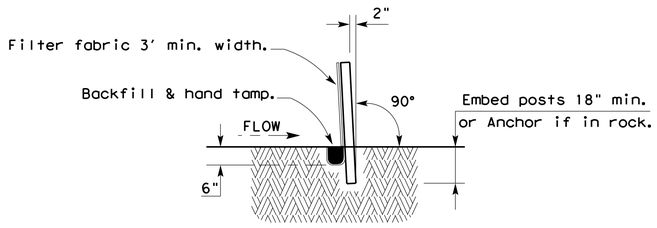
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TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

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

SEDIMENT CONTROL FENCE USAGE GUIDELINES

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

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

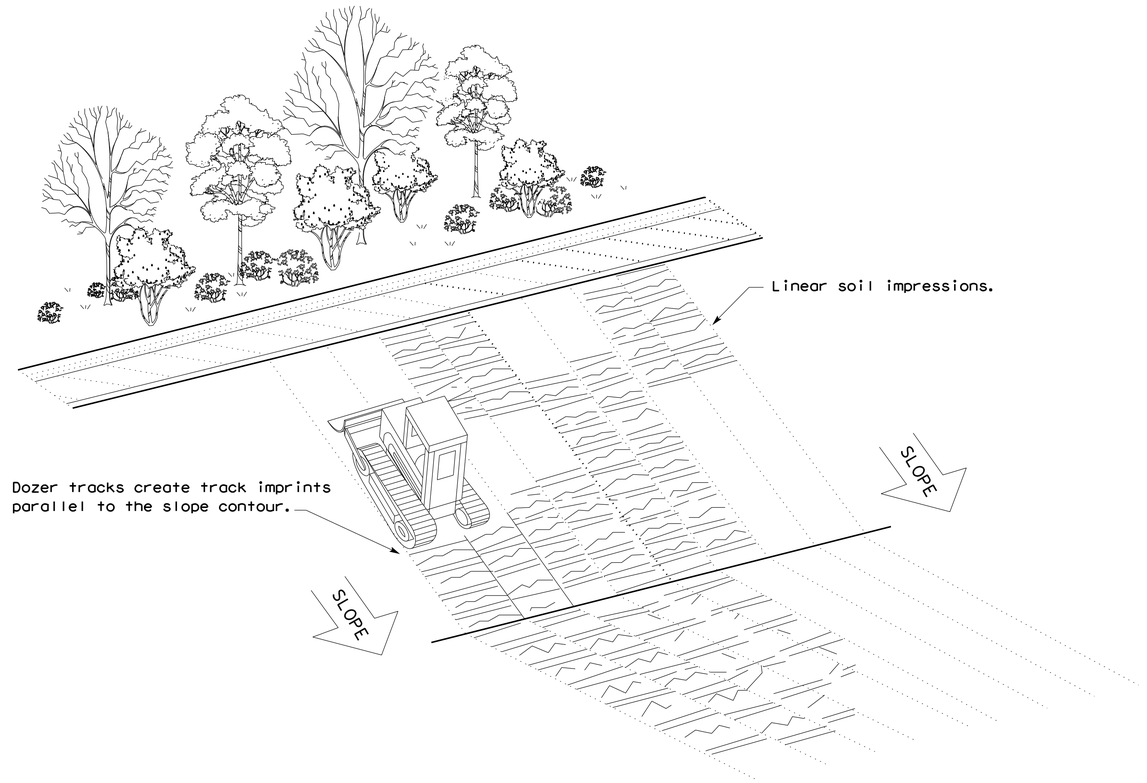
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

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



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

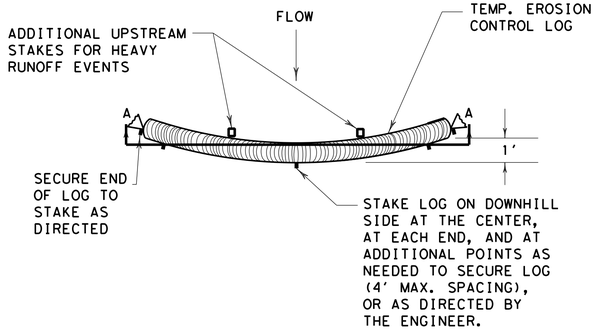
EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				124

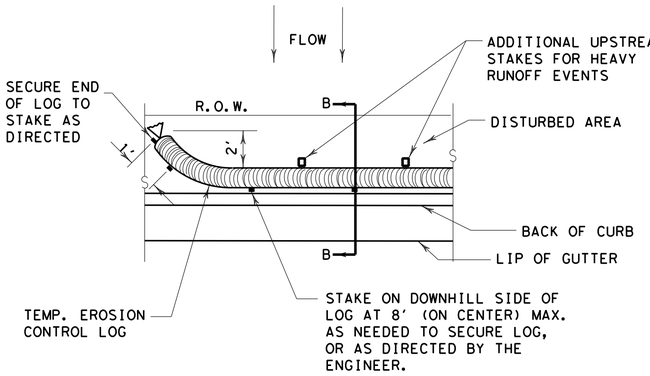
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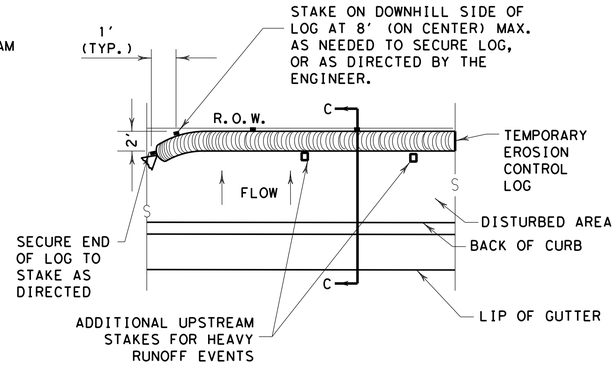
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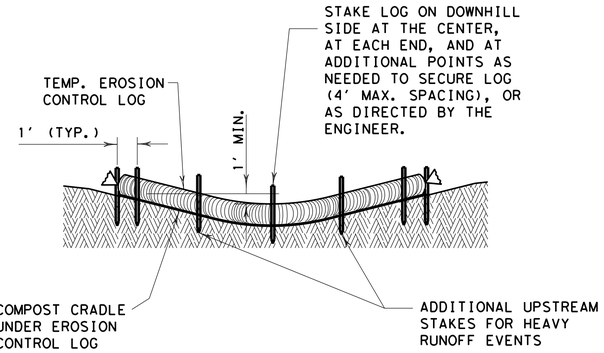
PLAN VIEW



PLAN VIEW



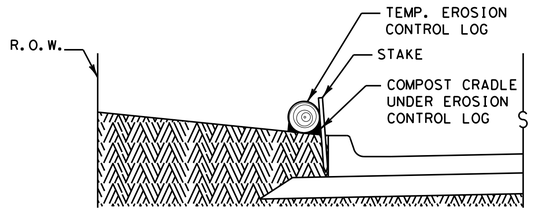
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

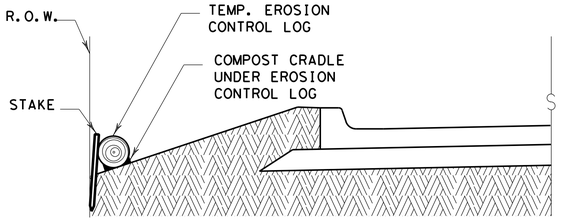
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

CL-BOC



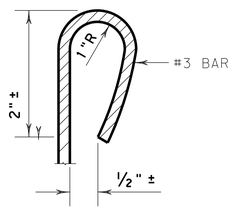
SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW

LEGEND

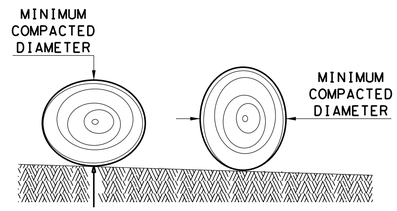
- CL-D — EROSION CONTROL LOG DAM
- CL-BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW — EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI — EROSION CONTROL LOG AT DROP INLET
- CL-CI — EROSION CONTROL LOG AT CURB INLET
- CL-GI — EROSION CONTROL LOG AT CURB & GRATE INLET



REBAR STAKE DETAIL

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

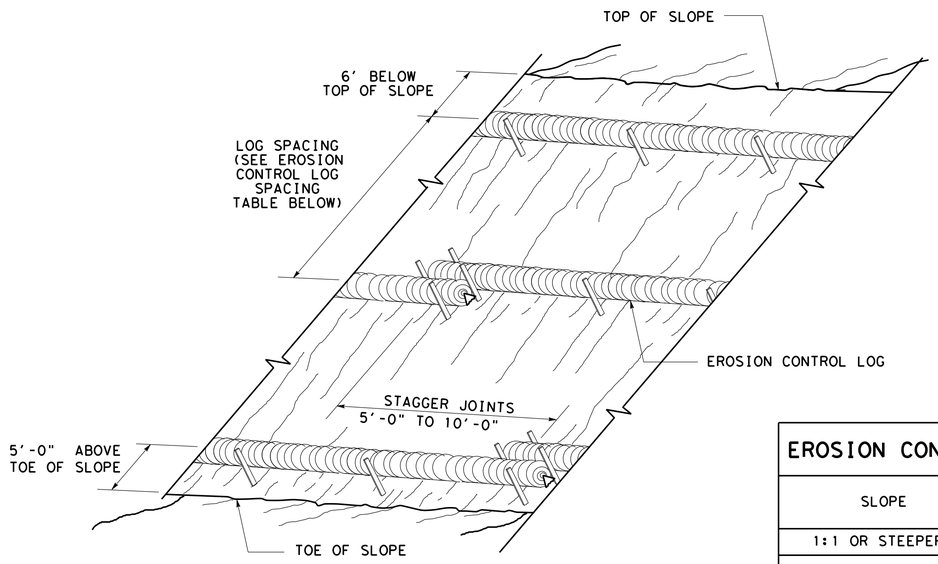
EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT		CK: LS
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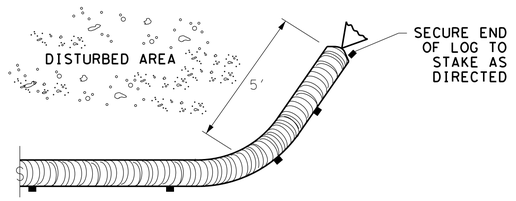
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EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

CL-SST

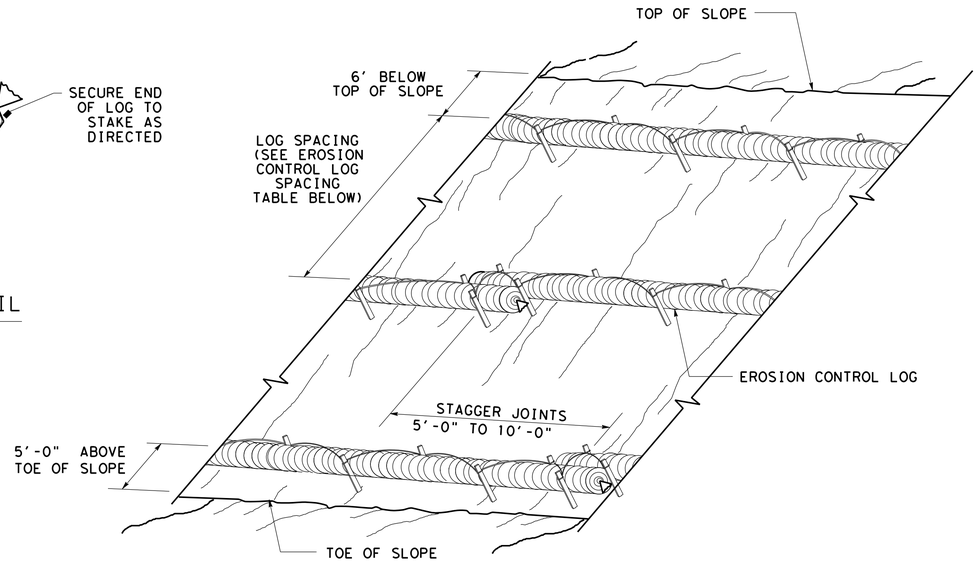


END SECTION RAP DETAIL

EROSION CONTROL LOG SPACING TABLE

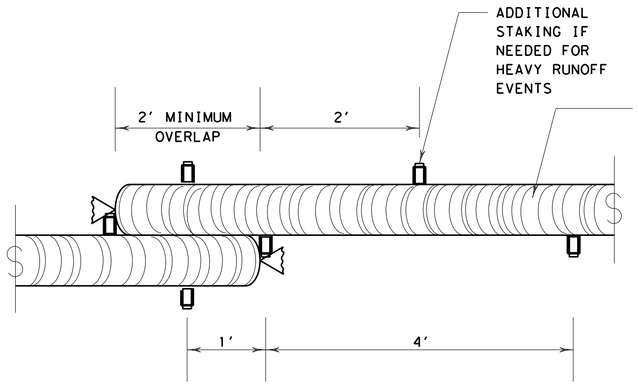
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

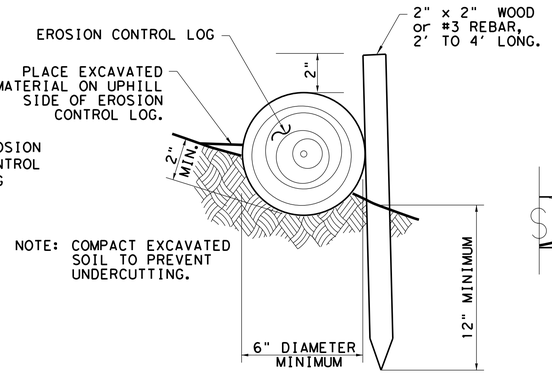
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL



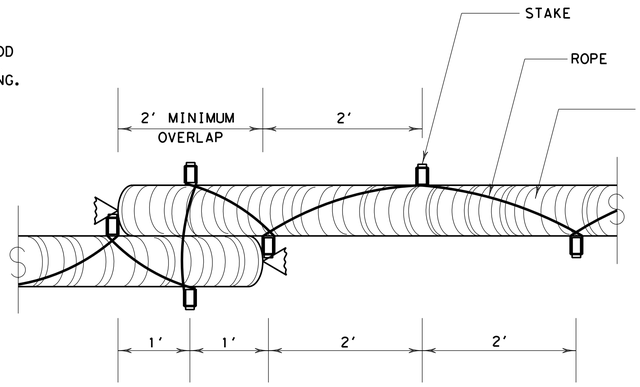


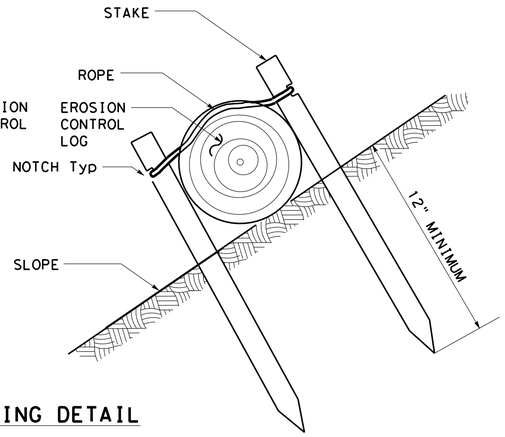
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

TRENCH DEPTH TABLE

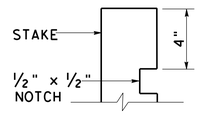
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

Texas Department of Transportation

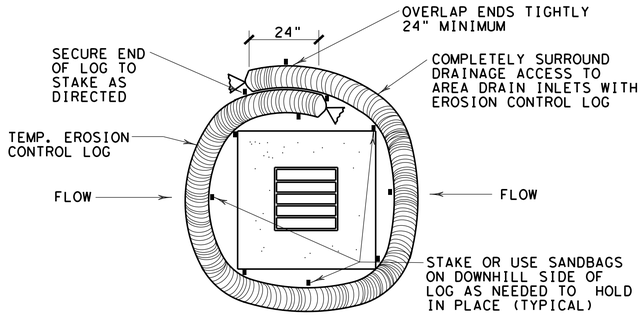
Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
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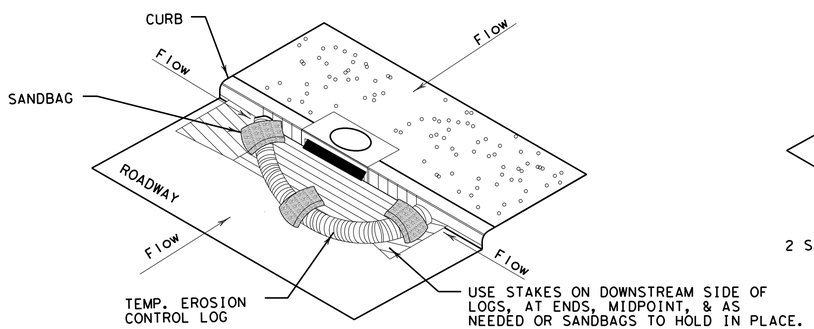
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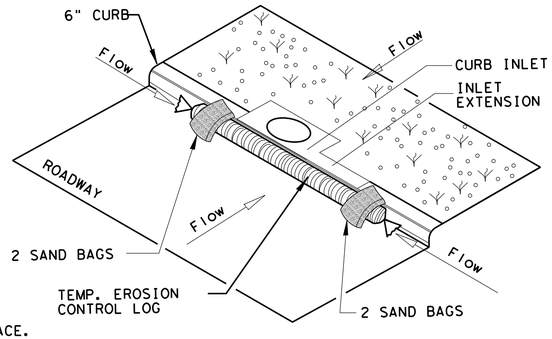
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

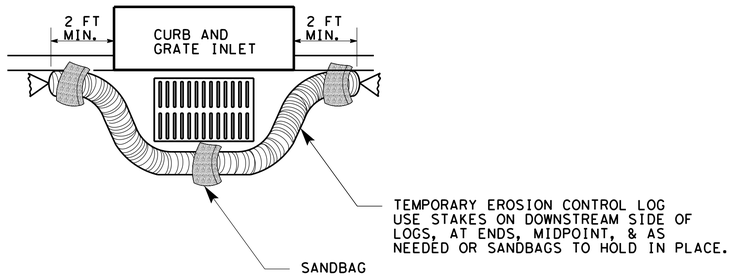
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.

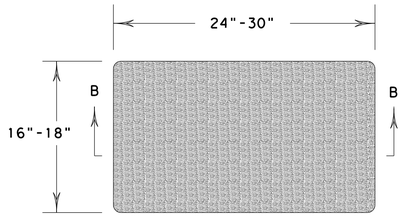


EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS	
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REVISIONS					
	DIST	COUNTY		SHEET NO.	
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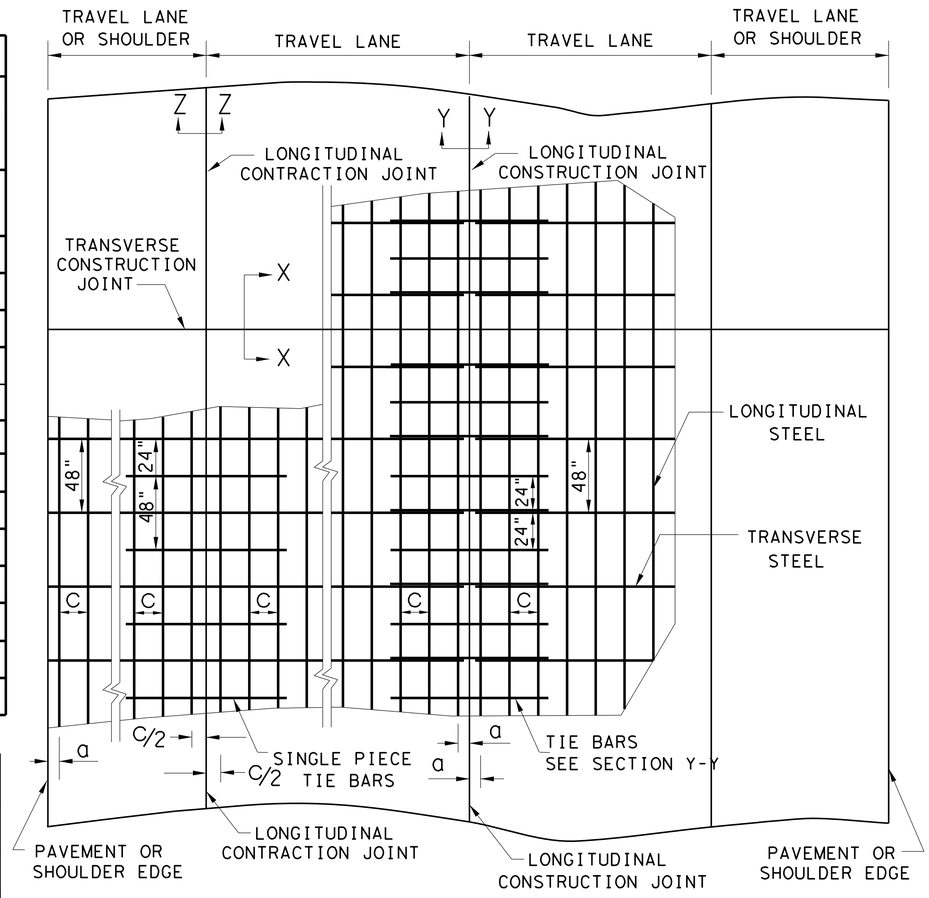
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TABLE NO. 1 LONGITUDINAL STEEL				
SLAB THICKNESS AND BAR SIZE		LONGITUDINAL STEEL BARS	FIRST SPACING AT EDGE OR JOINT	LONG. STEEL VERTICAL POSITION FROM BOTTOM OF PAVEMENT
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING a (IN.)	T1 (IN.)
7.0	#5	6.5	3 TO 4	3.5
7.5	#5	6.0	3 TO 4	3.75
8.0	#6	9.0	3 TO 4	4.0
8.5	#6	8.5	3 TO 4	4.25
9.0	#6	8.0	3 TO 4	4.5
9.5	#6	7.5	3 TO 4	4.75
10.0	#6	7.0	3 TO 4	5.0
10.5	#6	6.75	3 TO 4	5.5
11.0	#6	6.5	3 TO 4	6.0
11.5	#6	6.25	3 TO 4	6.5
12.0	#6	6.0	3 TO 4	7.0
12.5	#6	5.75	3 TO 4	7.5
13.0	#6	5.5	3 TO 4	8.0

TABLE NO. 2 TRANSVERSE STEEL AND TIE BARS						
SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONSTRUCTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5*	48	#5*	48	#5*	24
8.0 - 13.0	#5*	48	#6	48	#6	24

*CONTRACTOR MAY USE #6 REINFORCING STEEL INSTEAD OF #5 REINFORCING STEEL OR COMBINATION OF EACH SIZE

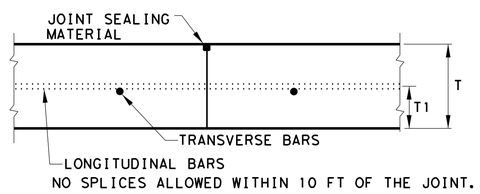


TYPICAL PAVEMENT LAYOUT

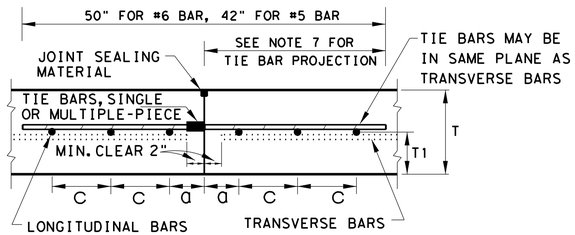
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

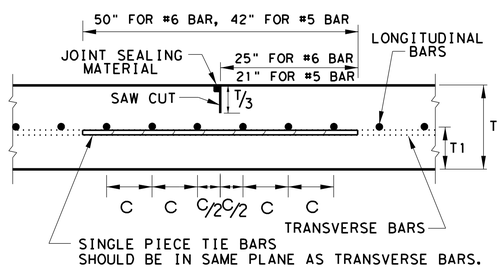
1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. FOR PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT, ADDITIONAL DETAIL MAY BE SHOWN ELSEWHERE IN THE PLANS.
2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (CoTE) OF NOT MORE THAN 5.5 X 10^{-6} IN/IN/ °F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1.
5. ADJUST REINFORCING STEEL VERTICALLY USING SHIMS OR OTHER METHODS, AS APPROVED, TO MEET VERTICAL TOLERANCES PRIOR TO CONCRETE PLACEMENT.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE MINIMUM PROJECTION OF TIE BARS INTO THE ADJACENT PLACEMENT IS 22.5 IN. for #6 BARS AND 18.5 IN. FOR #5 BARS.
8. SEE STANDARD SHEET "CONCRETE CURB AND CURB AND GUTTER," FOR DETAILS WHEN TYING CONCRETE CURB OR CURB GUTTER AT A LONGITUDINAL JOINT.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
12. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM OF 25-IN.



TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z

SHEET 1 OF 2

Texas Department of Transportation

Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

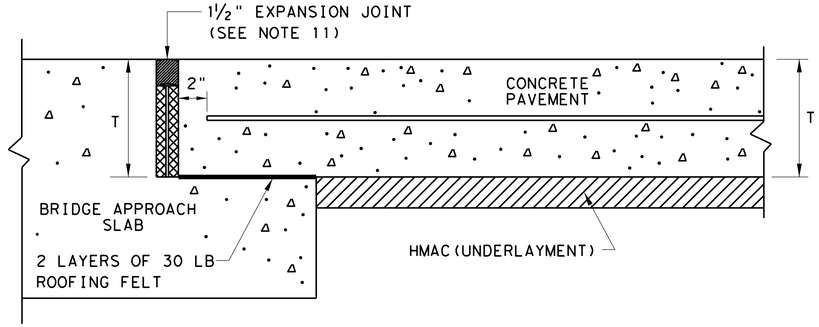
ONE LAYER STEEL BAR PLACEMENT T - 7 to 13 INCHES

CRCP(1)-24

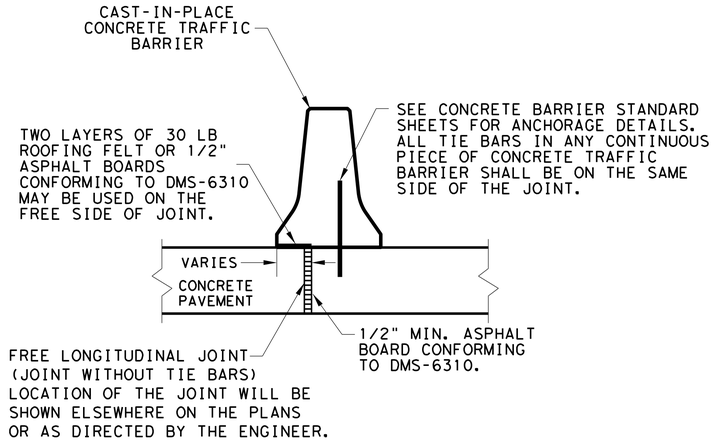
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©TxDOT: Sept 2024 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.
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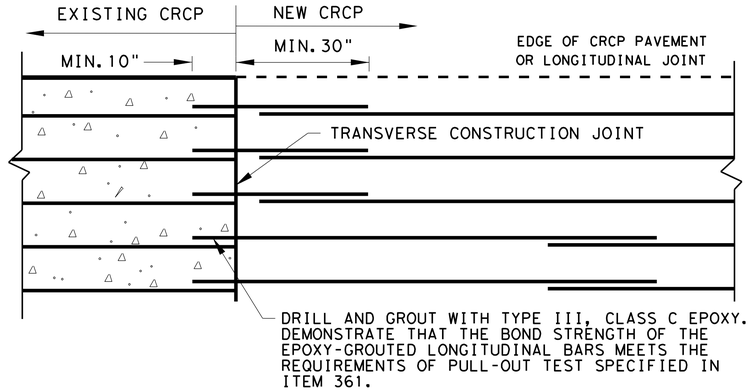
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TRANSVERSE EXPANSION JOINT DETAIL
AT BRIDGE APPROACH



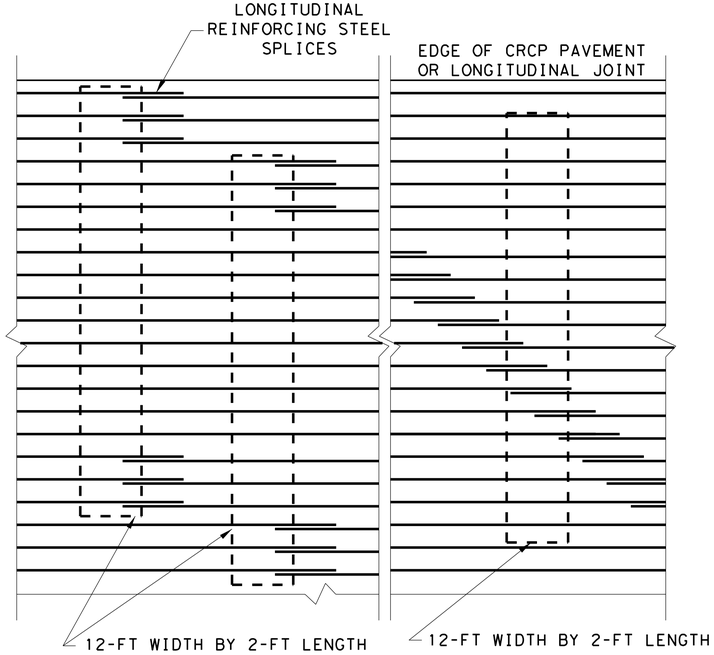
CENTERLINE FREE LONGITUDINAL JOINT DETAIL



OPTION A: DRILL AND EPOXY
PLAN VIEW (NOT TO SCALE)

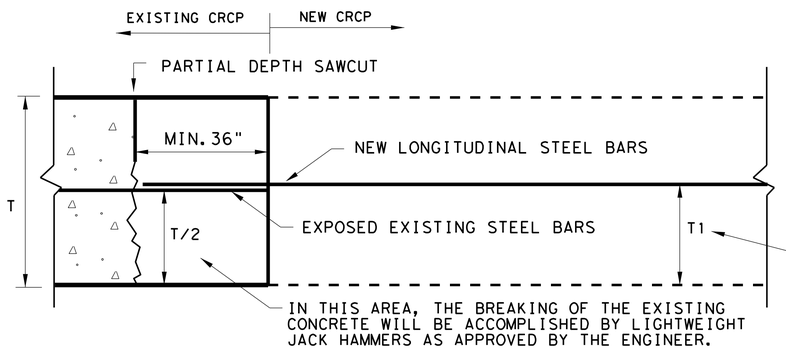
1. BEFORE CONCRETE PLACEMENT, PERFORM PULL-OUT TESTS ON EPOXY-GROUTED TIE BARS IN ACCORDANCE WITH ITEM 360.
2. SPACE TIE BARS AT 24" SPACING. USE #6 TIE BARS FOR 8" AND THICKER PAVEMENTS, USE #5 TIE BARS FOR LESS THAN 8" THICK PAVEMENTS.

LONGITUDINAL WIDENING JOINT DETAIL



STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

EXAMPLES OF LAP CONFIGURATION
PLAN VIEW (NOT TO SCALE)



OPTION B: BREAKBACK AND LAP

TRANSVERSE TIE JOINT DETAIL
NEW CRCP TO EXISTING CRCP

SHEET 2 OF 2

Texas Department of Transportation | Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

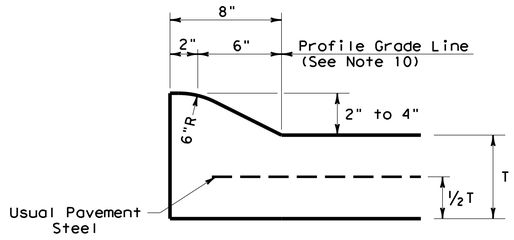
ONE LAYER STEEL BAR PLACEMENT
T - 7 to 13 INCHES

CRCP(1)-24

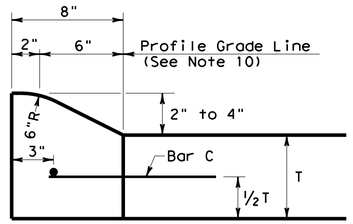
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© TxDOT: Sept 2024	CONT	SECT	JOB	HIGHWAY	
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	DIST	COUNTY		SHEET NO.	
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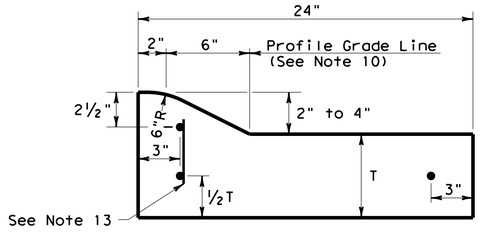
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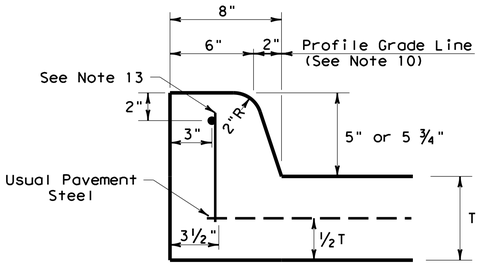
TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



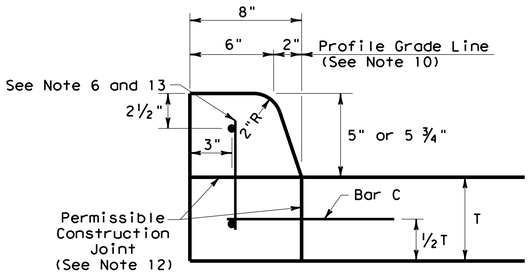
TYPE I CURB
2" - 4" HEIGHT



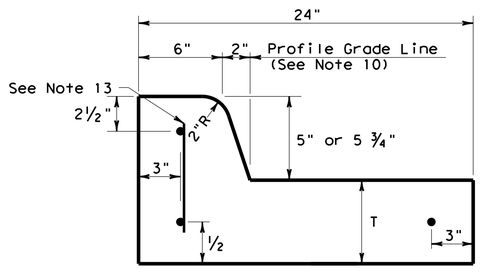
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



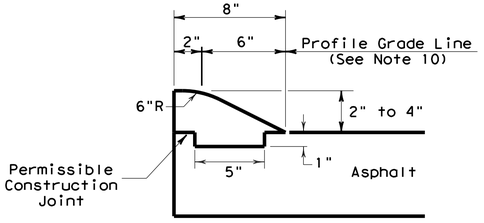
TYPE II CURB (MONOLITHIC)
5" - 5 ¾" HEIGHT



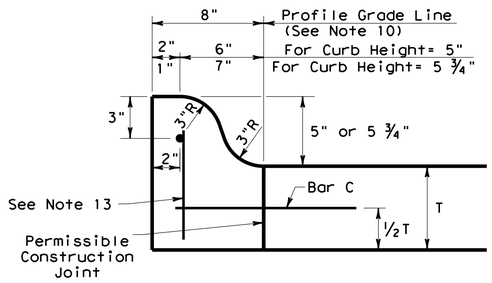
TYPE II CURB
5" - 5 ¾" HEIGHT



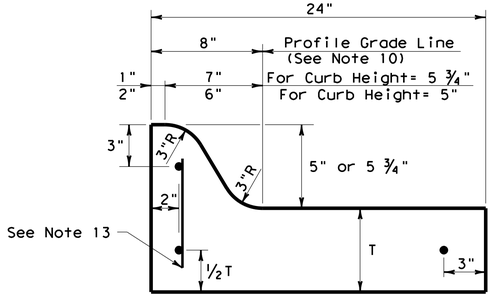
TYPE II CURB AND GUTTER
5" - 5 ¾" HEIGHT



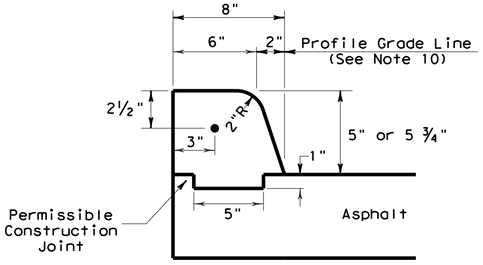
TYPE III CURB (KEYED)
2" - 4" HEIGHT



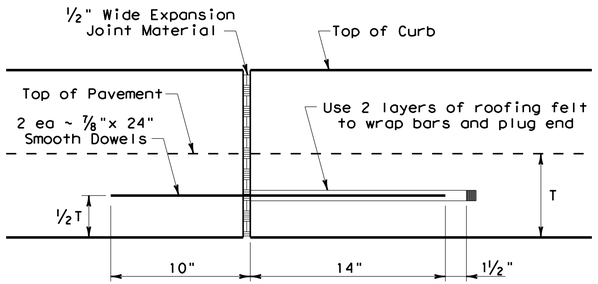
TYPE IIa CURB
5" - 5 ¾" HEIGHT



TYPE IIa CURB AND GUTTER
5" - 5 ¾" HEIGHT

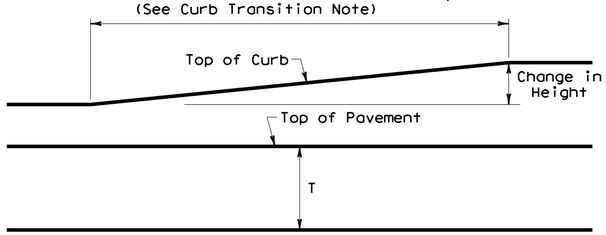


TYPE IV CURB (KEYED)
5" - 5 ¾" HEIGHT



EXPANSION JOINT DETAIL

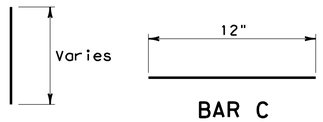
CURB TRANSITION NOTE:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.



CURB TRANSITION
Note: To be paid for as Highest Curb

GENERAL NOTES

1. All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
2. Concrete shall be Class A.
3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
4. Round exposed sharp edges with a rounding tool, to a minimum radius of ¼ inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
7. Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
9. Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
10. Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
11. One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
12. When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
13. Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.



BAR B

BAR C

Texas Department of Transportation

Design Division Standard

CONCRETE CURB AND CURB AND GUTTER

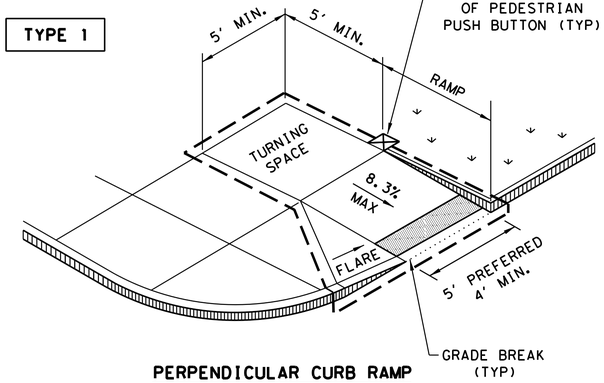
CCCG-22

FILE: cccg21.dgn	DN: TXDOT	CK: AN	DW: CS	CK: KM
© TxDOT: JUNE 2022	CONT	SECT	JOB	HIGHWAY
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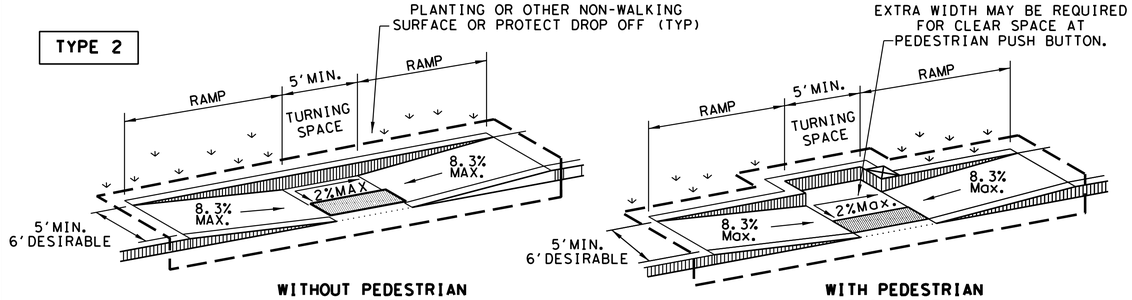
DATE:
FILE:

TYPE 1



PERPENDICULAR CURB RAMP

TYPE 2

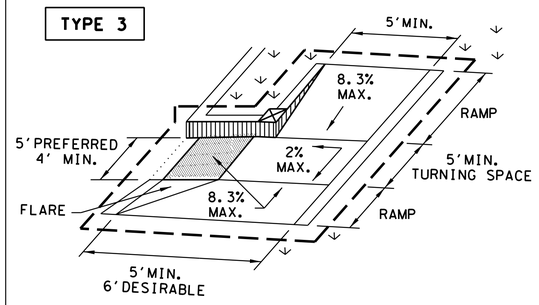


WITHOUT PEDESTRIAN PUSH BUTTON

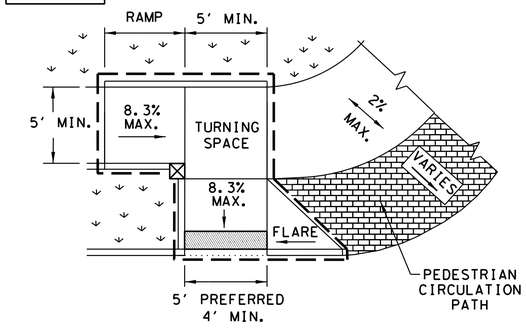
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

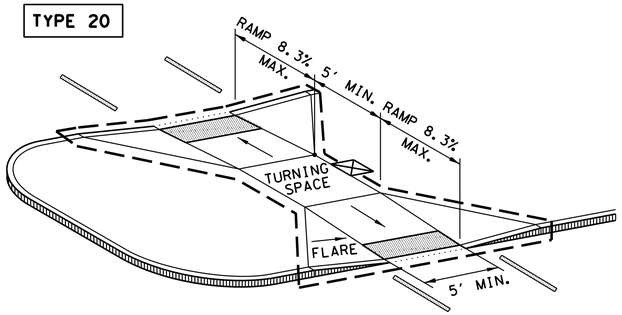


TYPE 6



COMBINATION CURB RAMPS

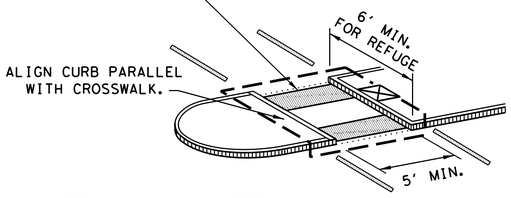
TYPE 20



CURB RAMPS AT MEDIAN ISLANDS

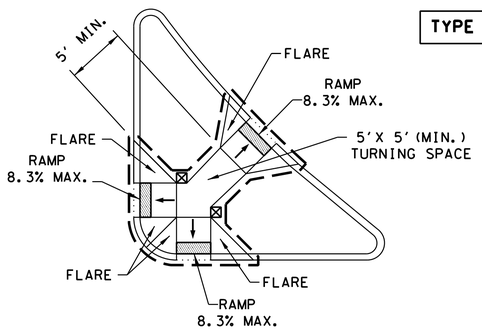
TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.



NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

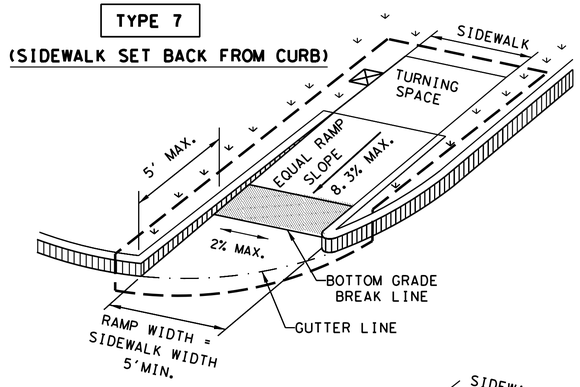
TYPE 22



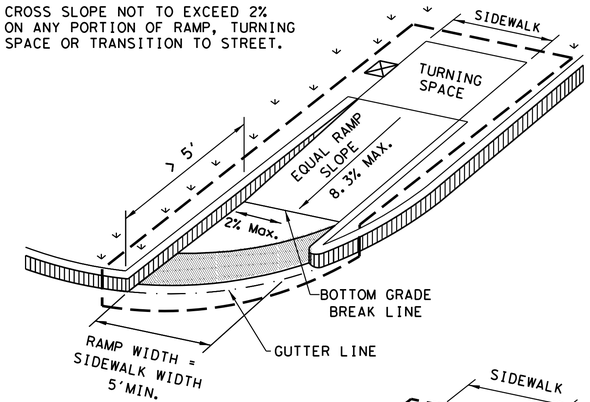
COMBINATION ISLAND RAMPS

TYPE 7

(SIDEWALK SET BACK FROM CURB)

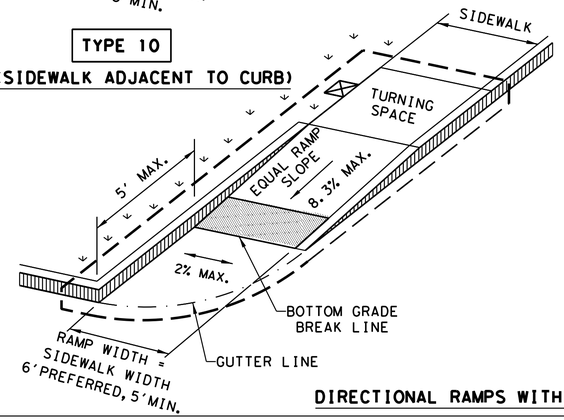


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.

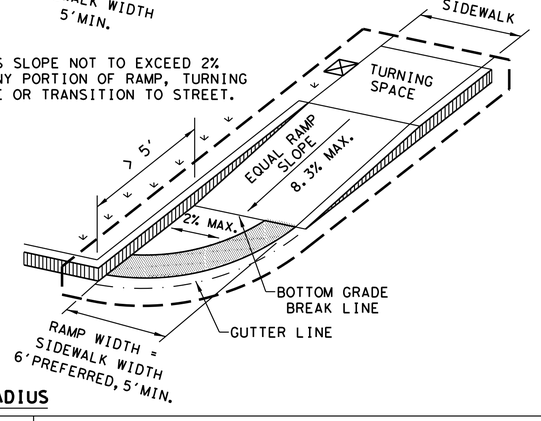


TYPE 10

(SIDEWALK ADJACENT TO CURB)

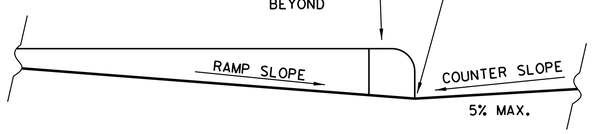


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



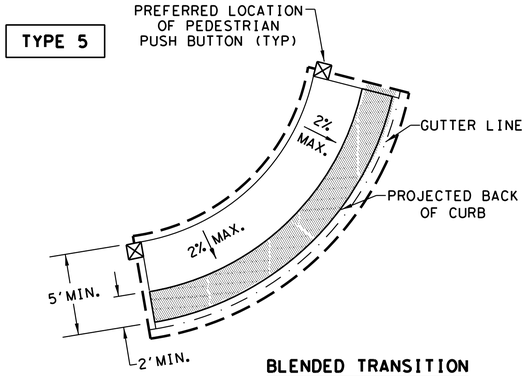
DIRECTIONAL RAMPS WITHIN RADIUS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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REVISIONS				
REVISED 08, 2005	DIST	COUNTY		SHEET NO.
REVISED 06, 2012				
REVISED 01, 2018				131

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicalble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

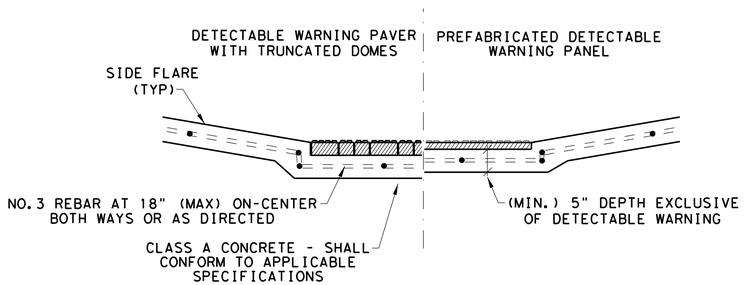
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

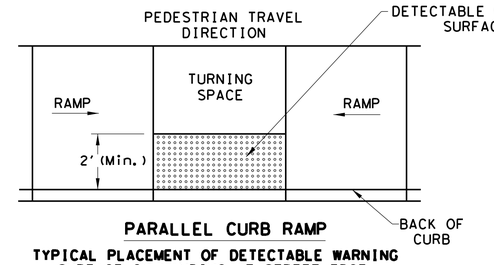
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

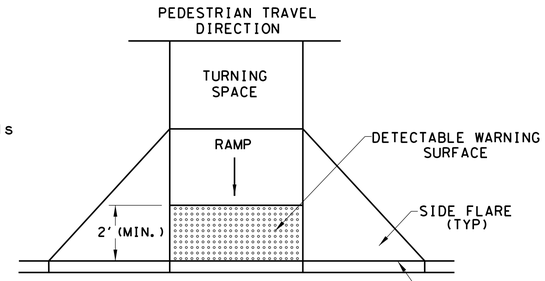


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

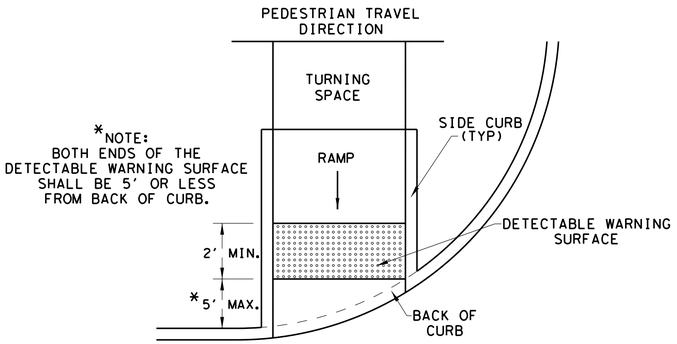
DETECTABLE WARNING SURFACE DETAILS



PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

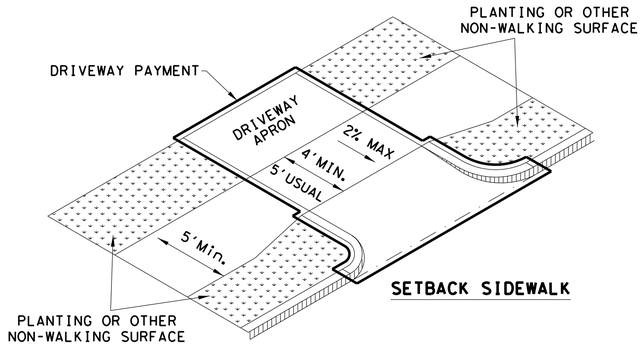
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.
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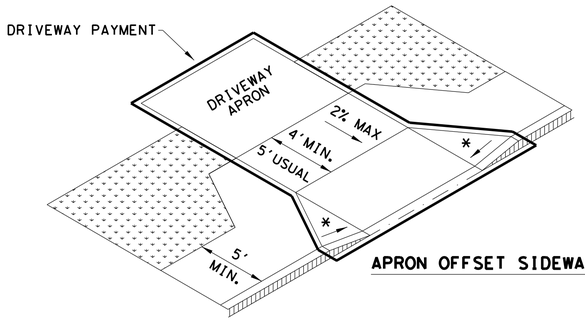
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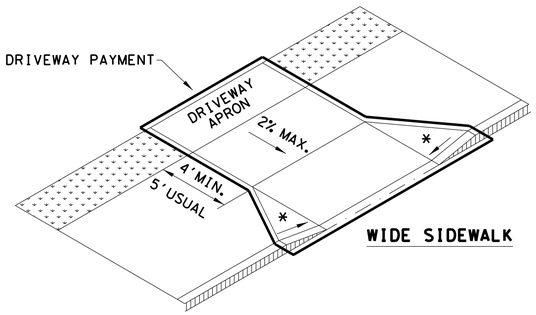
SIDEWALK TREATMENT AT DRIVEWAYS



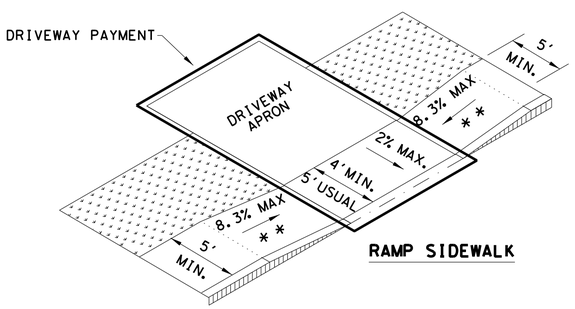
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

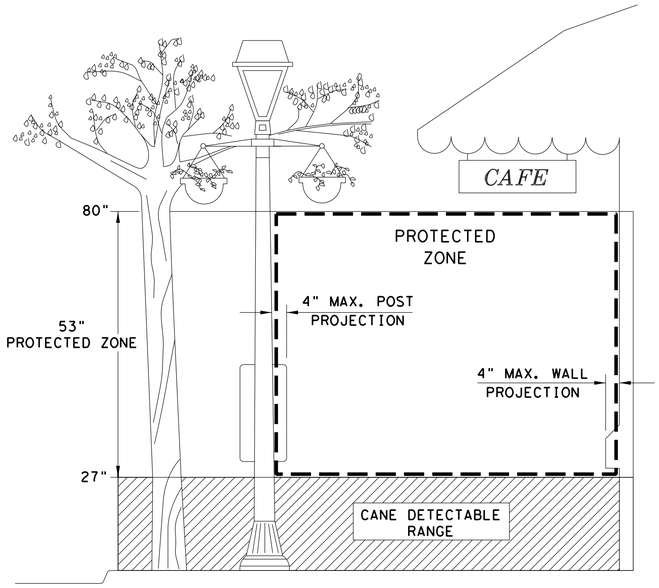


RAMP SIDEWALK

NOTES:

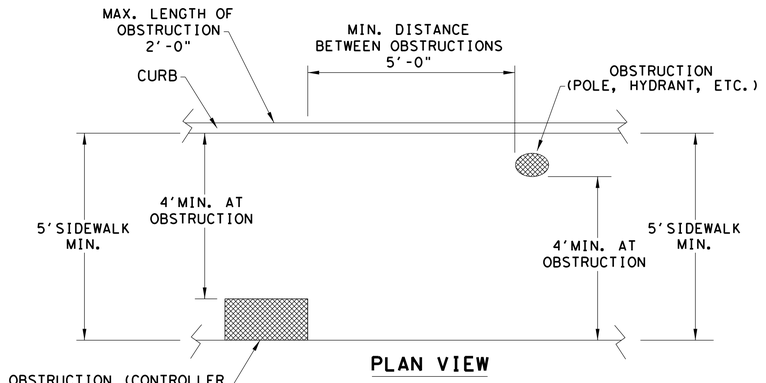
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



PROTECTED ZONE

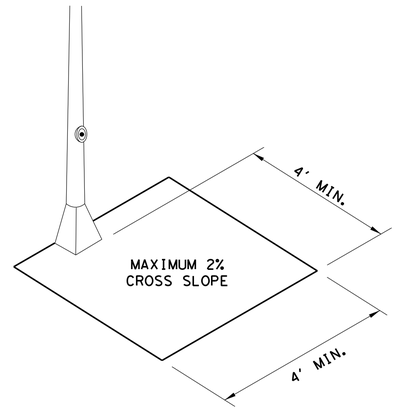
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



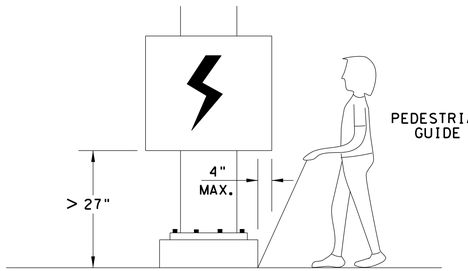
PLAN VIEW

PLACEMENT OF STREET FIXTURES

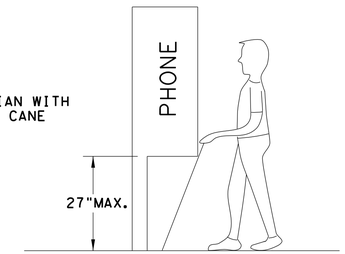
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.



PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

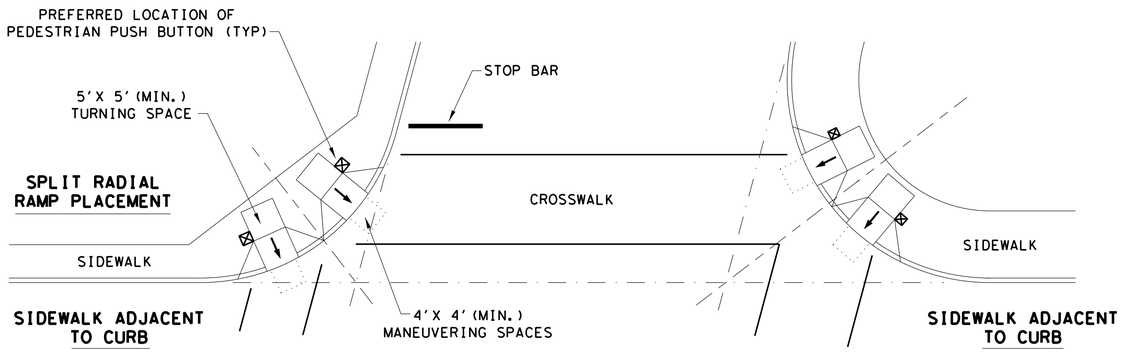
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REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.
				133

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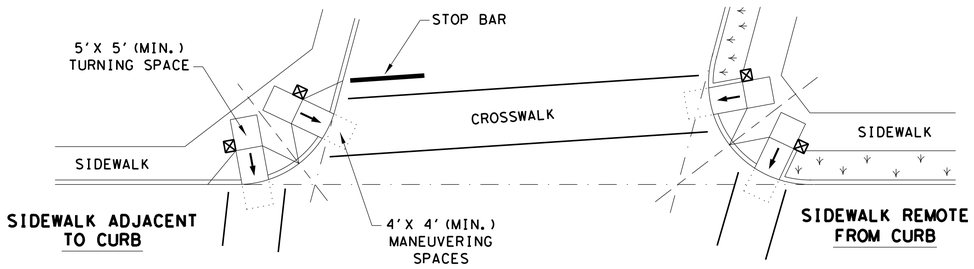
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FILE:

TYPICAL CROSSING LAYOUTS

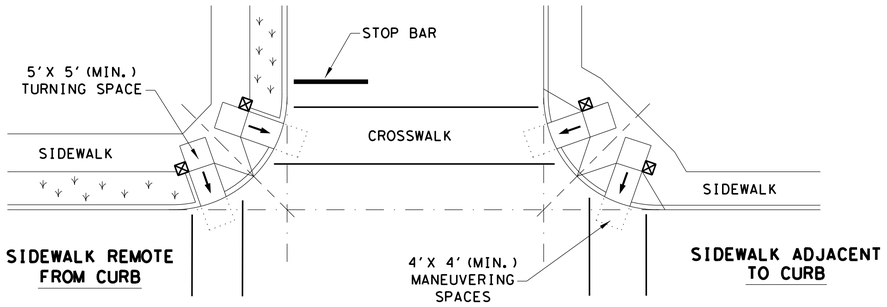
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



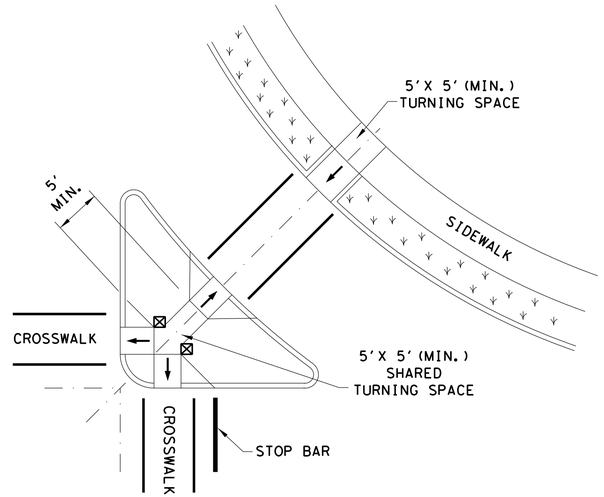
SKEWED INTERSECTION WITH "LARGE" RADIUS



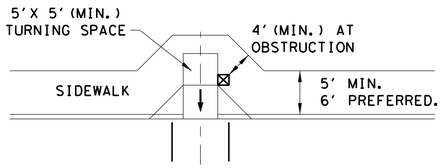
SKEWED INTERSECTION WITH "SMALL" RADIUS



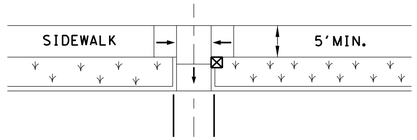
NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



SIDEWALK ADJACENT TO CURB



SIDEWALK REMOTE FROM CURB

MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ⊠

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

Texas Department of Transportation

Design Division Standard

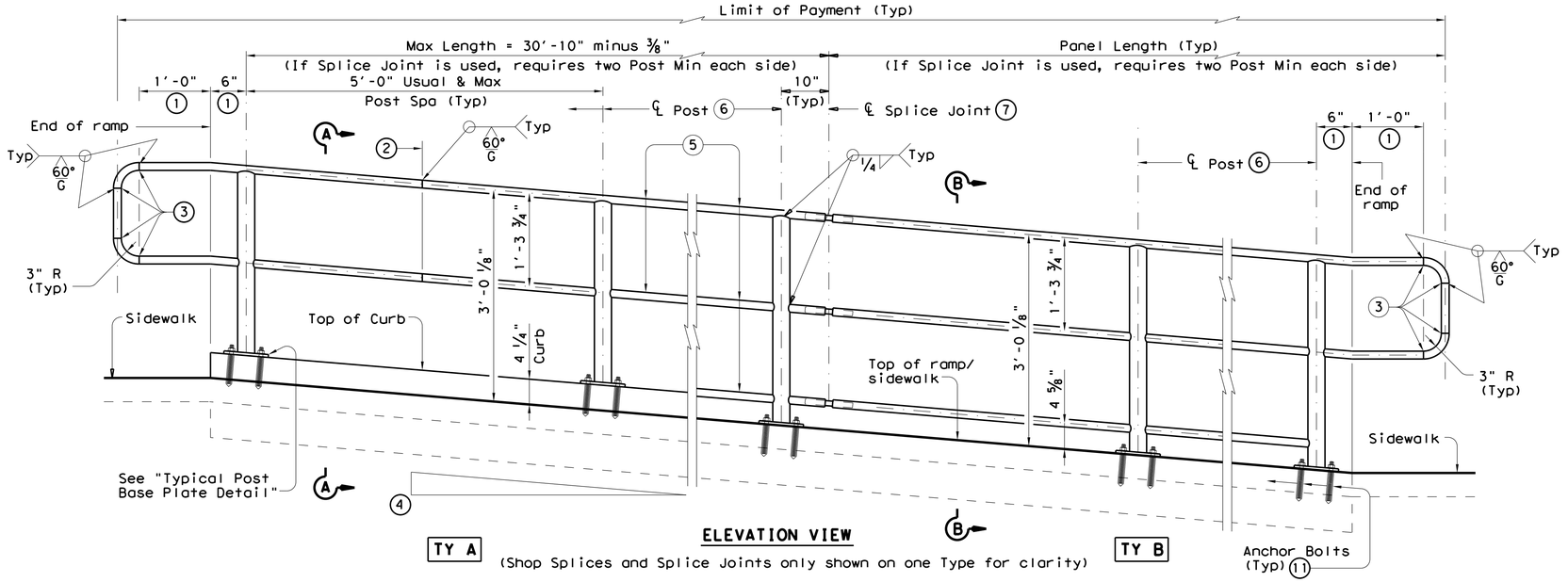
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
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REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.
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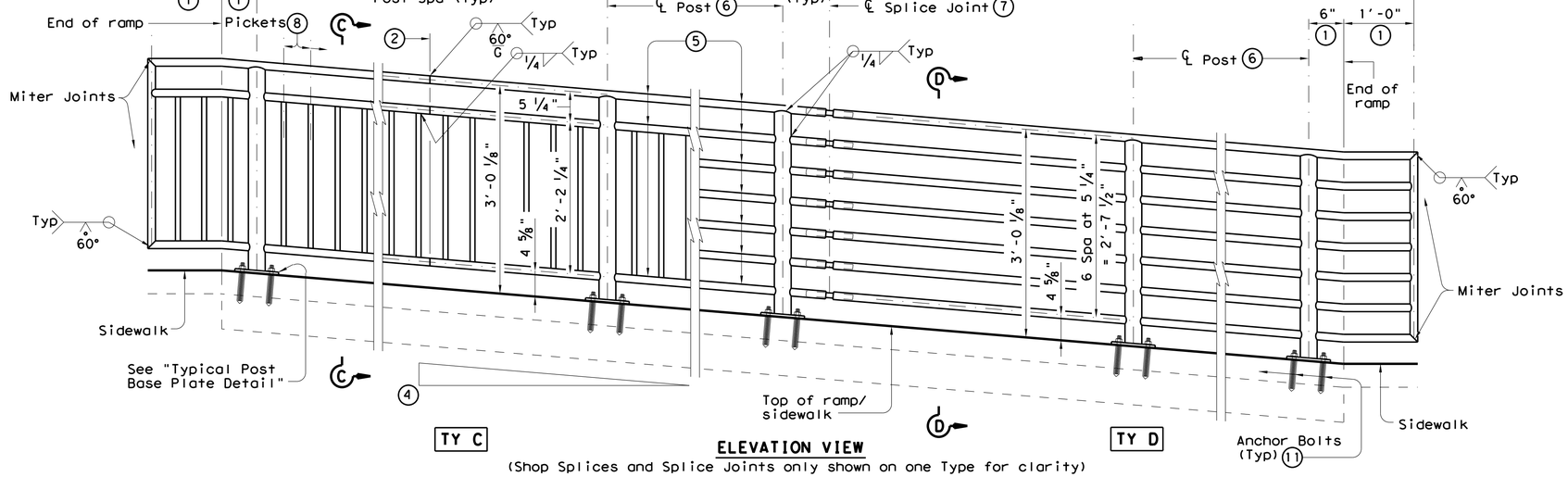
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ELEVATION VIEW

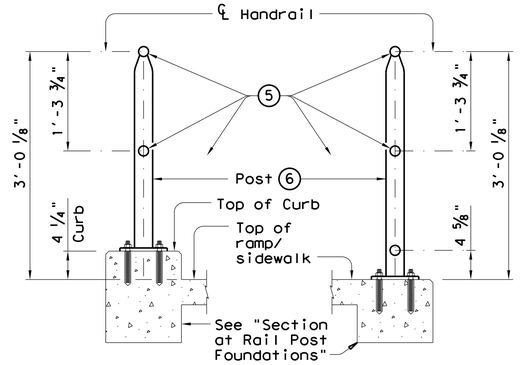
(Shop Splices and Splice Joints only shown on one Type for clarity)



ELEVATION VIEW

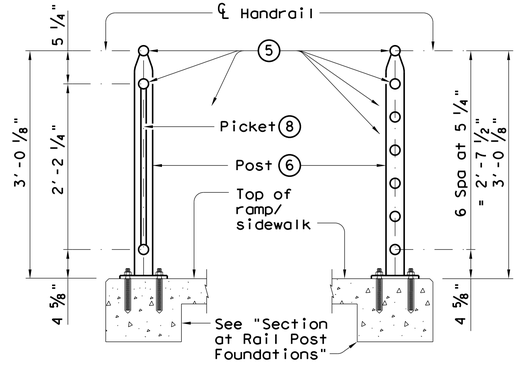
(Shop Splices and Splice Joints only shown on one Type for clarity)

RECOMMENDED USAGE ⑨⑩	
Dropoff Height/ Condition	Recommended Rail Options
< 30" dropoff	TY A, TY B, TY C, or TY D
≥ 30" dropoff, or along Bike Path	TY E or TY F



SECTION A-A
(Showing Handrail **TY A**)

SECTION B-B
(Showing Handrail **TY B**)



SECTION C-C
(Showing Handrail **TY C**)

SECTION D-D
(Showing Handrail **TY D**)

1. Parallel to ground.
2. One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
3. Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
4. See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
5. 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.
6. 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
7. See "Handrail Fabrication Details" for Splice Joints.
8. ℄ ⅝" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.
9. When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.
10. Not to be used on bridges.
11. See "General Notes" for anchor bolt information.

SHEET 1 OF 3

Texas Department of Transportation

Design Division Standard

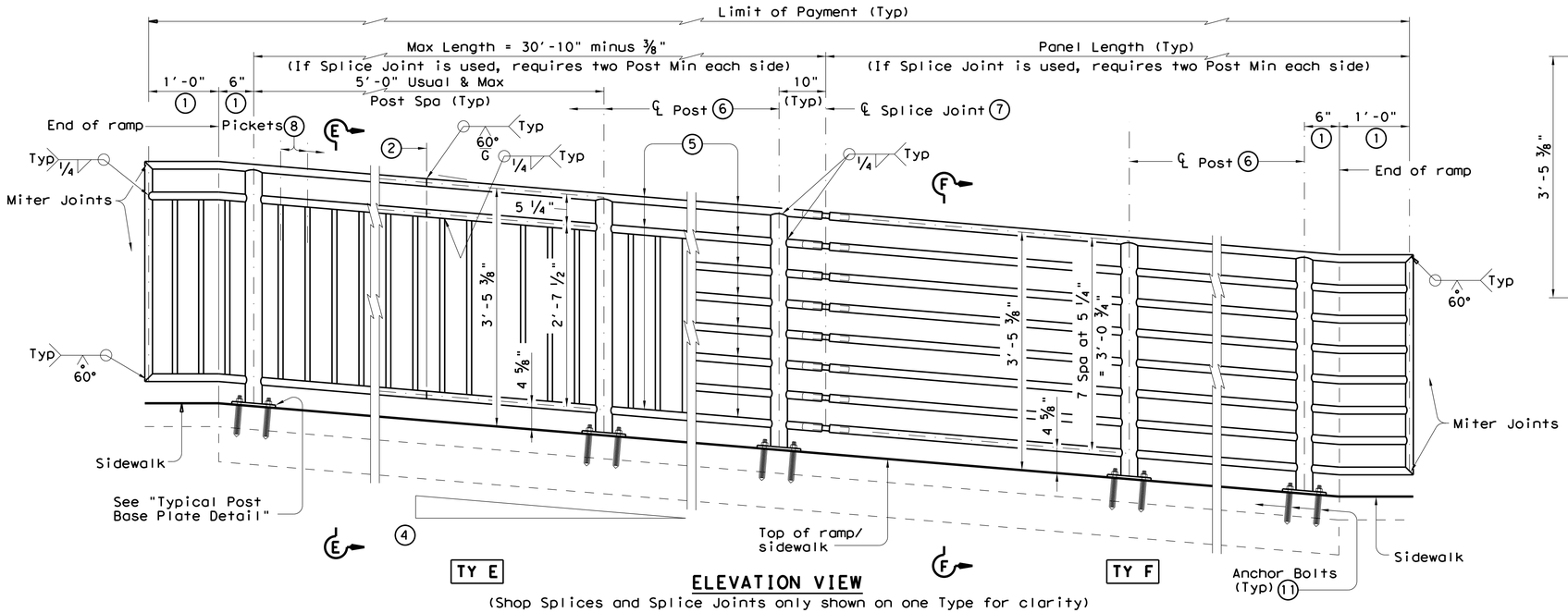
PEDESTRIAN HANDRAIL DETAILS

PRD-13

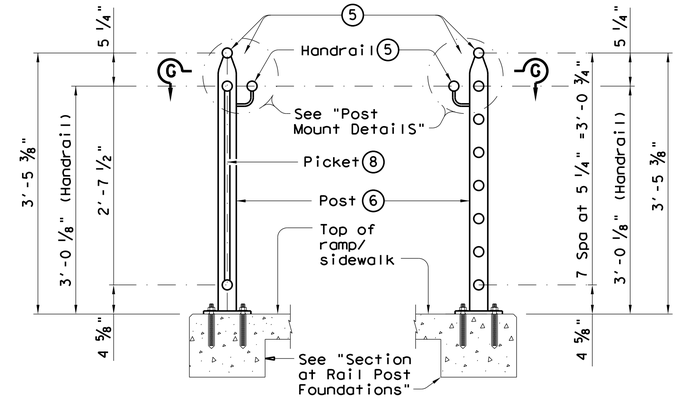
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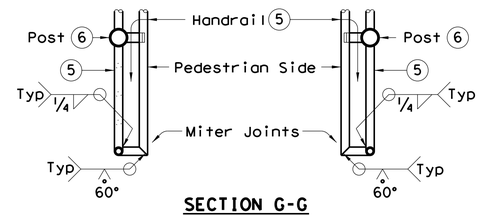


ELEVATION VIEW
(Shop Splices and Splice Joints only shown on one Type for clarity)

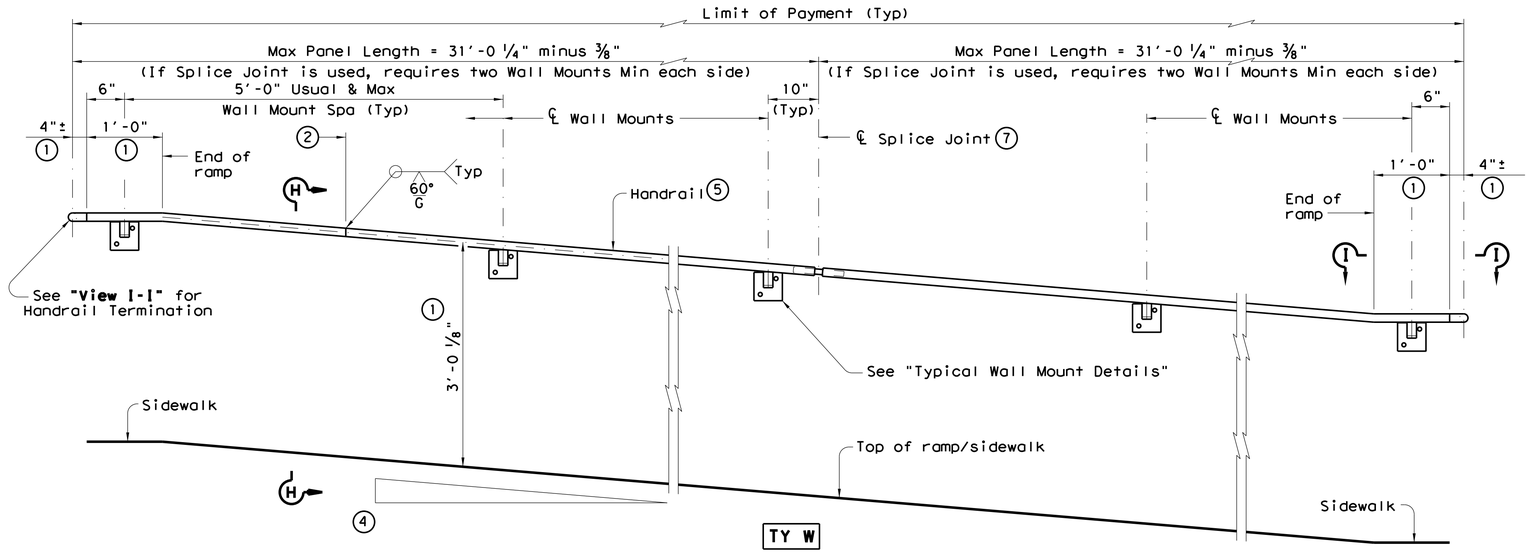


SECTION E-E
(Showing Handrail **TY E**)

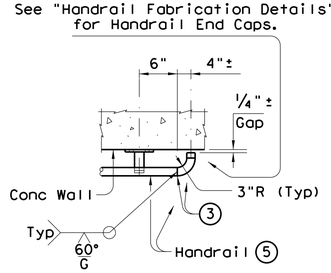
SECTION F-F
(Showing Handrail **TY F**)



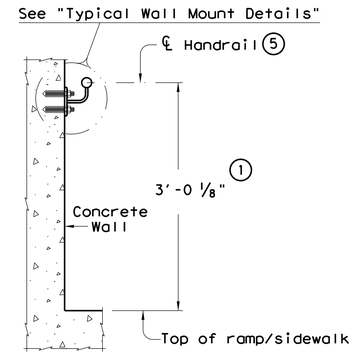
SECTION G-G
(Showing Handrail Termination)



ELEVATION VIEW



VIEW I-I
(Showing Handrail Termination)



SECTION H-H
(Showing Handrail **TY W**)

1. Parallel to ground.
2. One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
3. Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
4. See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
5. 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.
6. 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
7. See "Handrail Fabrication Details" for Splice Joints.
8. ℄ ⅝" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.
11. See "General Notes" for anchor bolt information.

Texas Department of Transportation
Design Division Standard

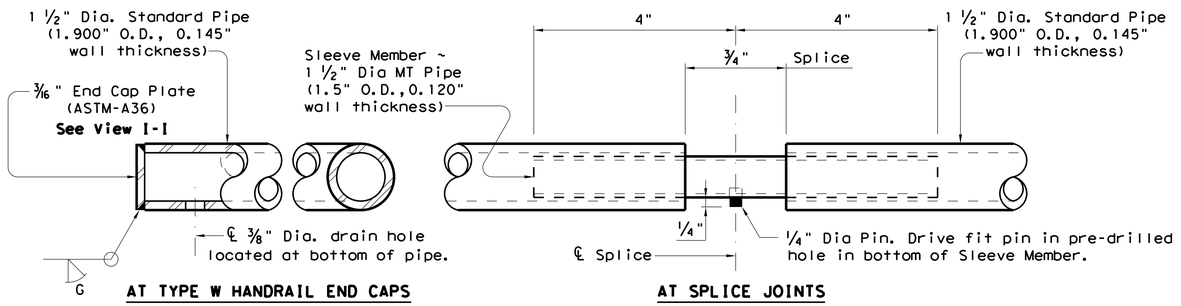
PEDESTRIAN HANDRAIL DETAILS

PRD-13

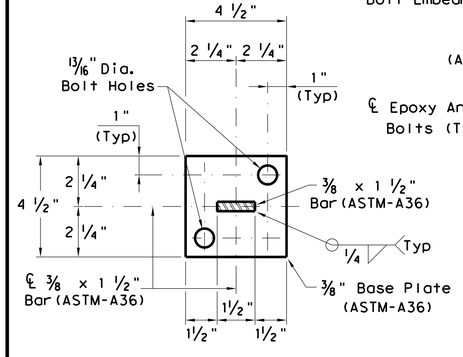
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©TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED MAY, 2013 (VP)	DIST	COUNTY		SHEET NO.
				136

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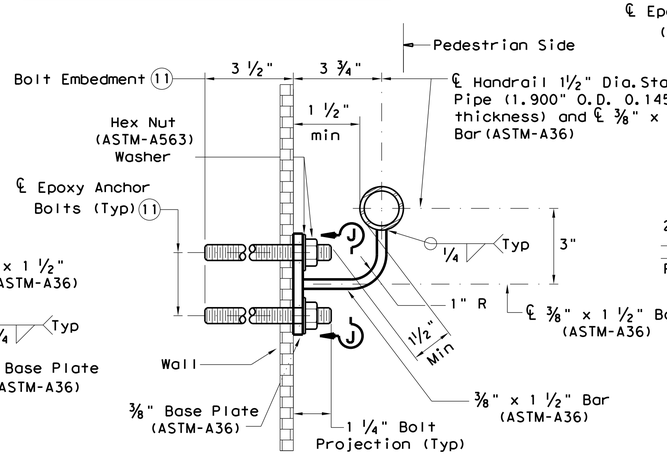
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HANDRAIL FABRICATION DETAILS

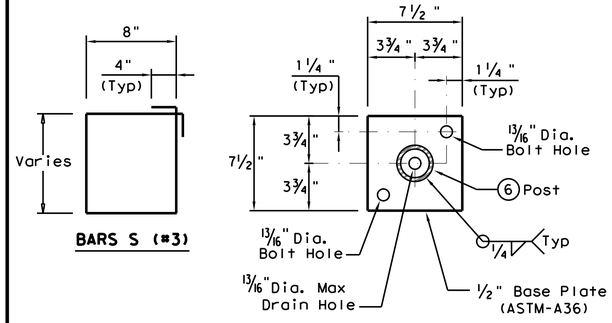


SECTION J-J
(Anchor Bolts not shown for clarity)

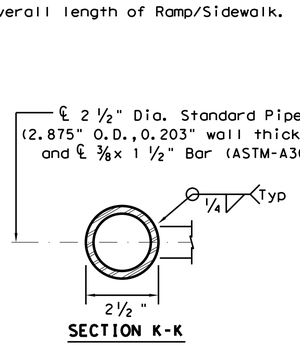


SECTION AT WALL MOUNT

TYPICAL WALL MOUNT DETAILS

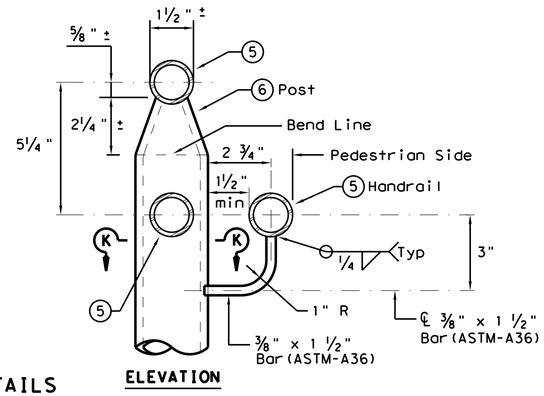


TYPICAL POST BASE PLATE DETAIL

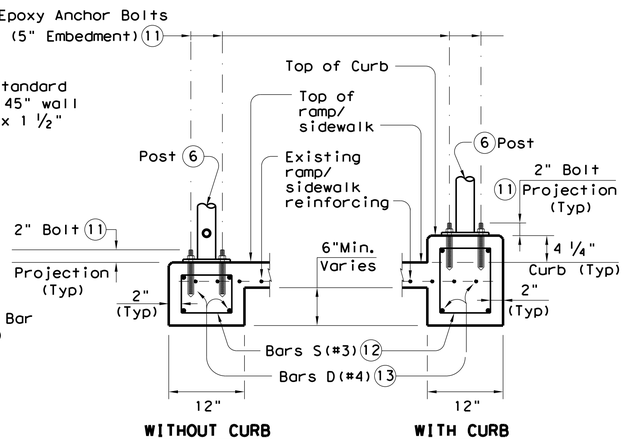


SECTION K-K

POST MOUNT DETAILS

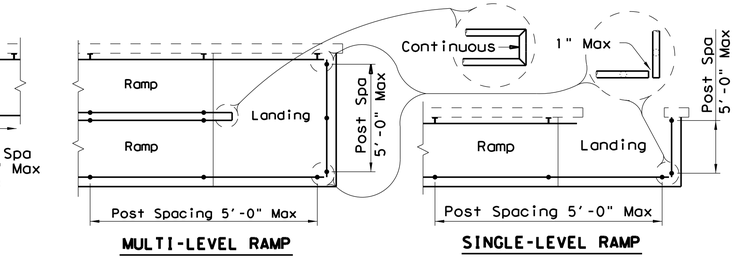


ELEVATION



WITHOUT CURB WITH CURB

SECTION AT RAIL POST FOUNDATIONS



PLAN SHOWING RAIL AT RAMP CONDITIONS

GENERAL NOTES

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.

Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36. Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated ~ #4 = 1'-5" Epoxy coated ~ #4 = 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be ⅝" Dia. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. ⅝" Dia. threaded rod embedment depth for wall mounts is 3 ½" and embedment depth for post base plate is 5".

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxies and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be ⅝" Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8" for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 ft. Shop drawings are required when rail is fabricated to the curve.

For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

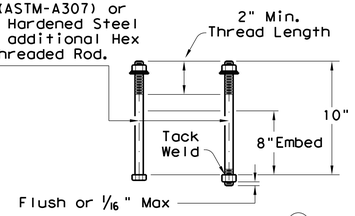
Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

All exposed edges will be rounded or chamfered to approximately ⅛" by grinding.

℄ ⅝" Dia. Hex Head Anchor Bolt (ASTM-A307) or Threaded Rod (ASTM-A36) with one Hardened Steel Washer placed under Hex Nut. One additional Hex Nut will be furnished for each Threaded Rod.



CAST-IN-PLACE ANCHOR BOLT OPTIONS
(Used for Post Base Plate only)

(5) 1 ½" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp/sidewalk. Provide holes as needed in 1 ½" Dia. pipe for galvanizing drainage and venting.

(6) 2 ½" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). Plumb all posts. See "Post Mount Detail" for crimping and trimming post to fit the diamenter of top rail. Provide holes as needed in post for galvanizing drainage and venting.

(11) See "General Notes" for anchor bolt information.

(12) Bars S(#3) spaced at 12" Max (Spaced 3" from outside edge of overall length of Ramp/Sidewalk).

(13) Provide 1 ½" end cover to Bars D(#4) from outside edge of overall length of Ramp/Sidewalk.

SHEET 3 OF 3

Texas Department of Transportation

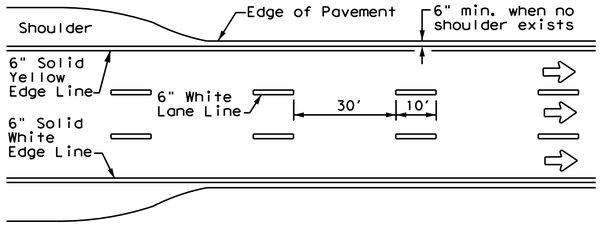
Design Division Standard

PEDESTRIAN HANDRAIL DETAILS

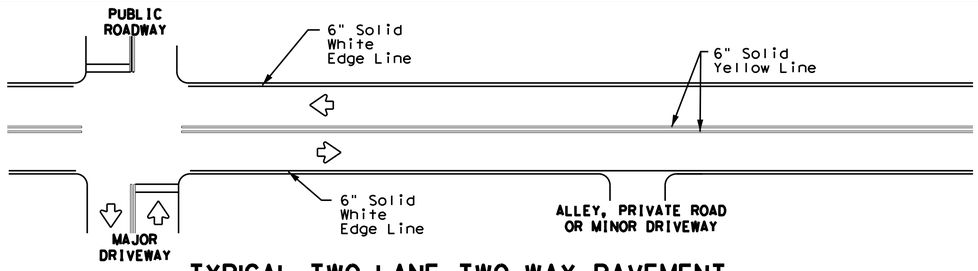
PRD-13

FILE: prd13.dgn	DN: TxDOT	CK: AM	DW: JTR	CK: CGL
©TxDOT December 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED MAY, 2013 (VP)	DIST	COUNTY		SHEET NO.
				137

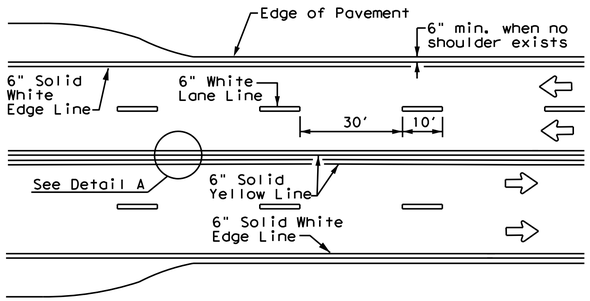
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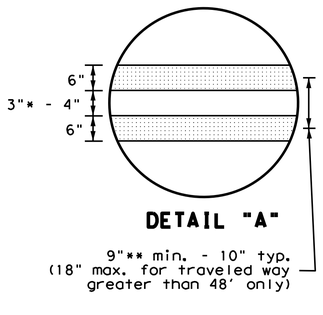


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

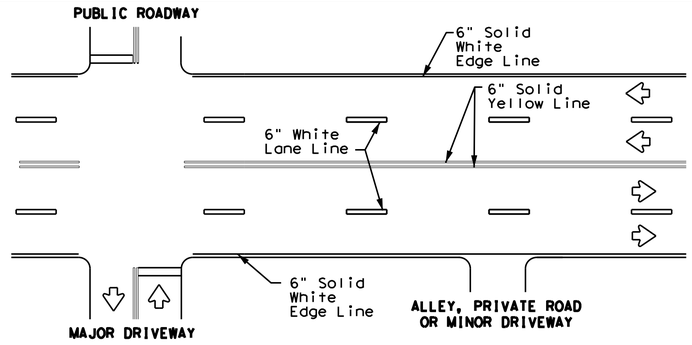




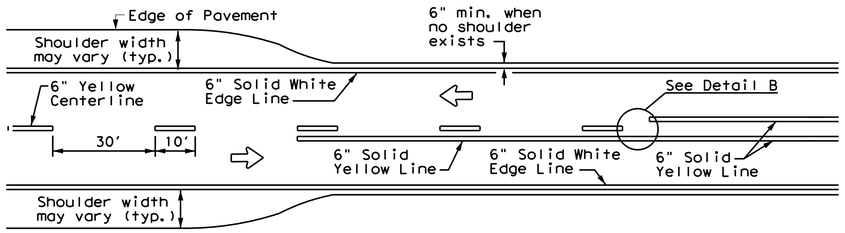
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

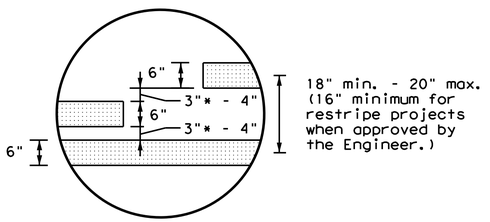
** 8" minimum for restripe projects when approved by the Engineer.



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

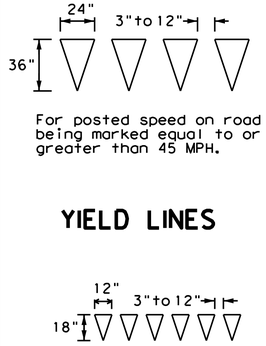


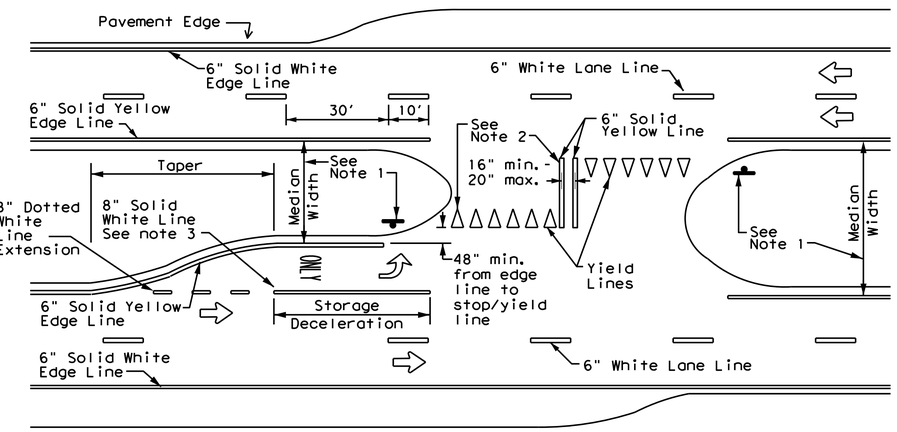
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



DETAIL "B"

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





FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

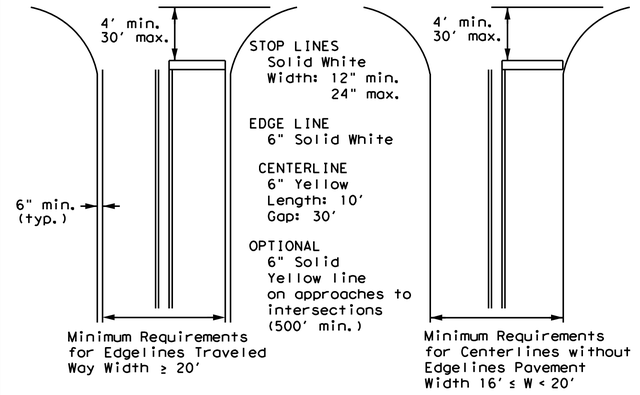
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. 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.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. 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.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the 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

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

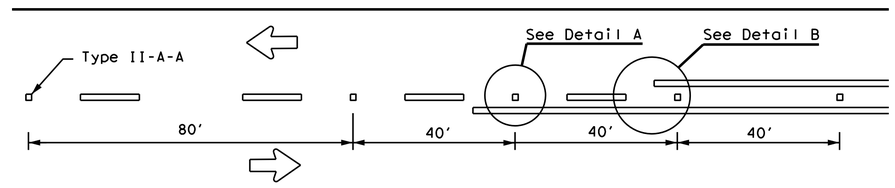
PM(1)-22

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REVISIONS 11-78 8-00 6-20 / 8-95 3-03 12-22 / 5-00 2-12	DIST	COUNTY		SHEET NO. 138

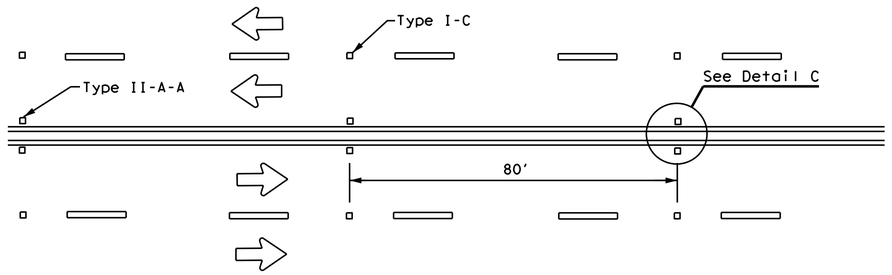
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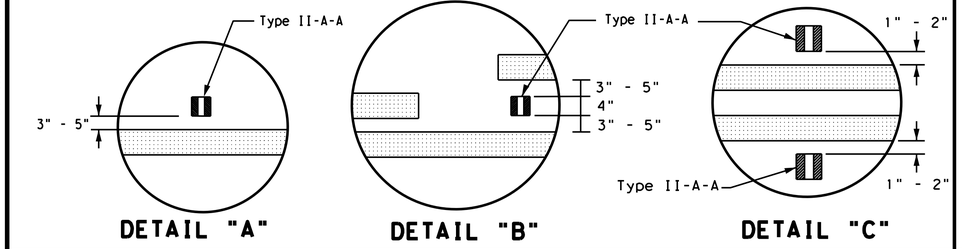
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

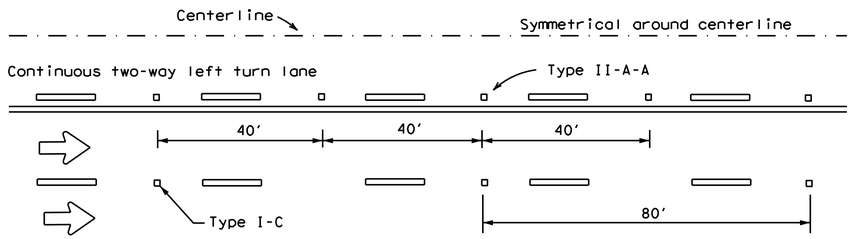


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

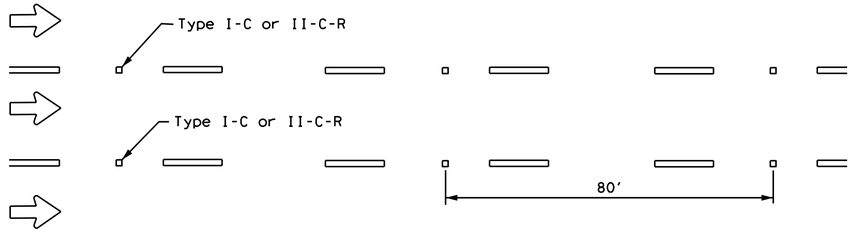


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



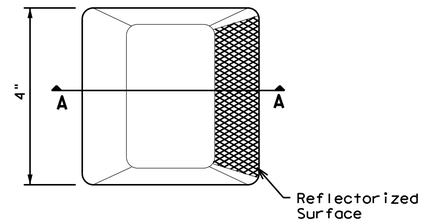
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

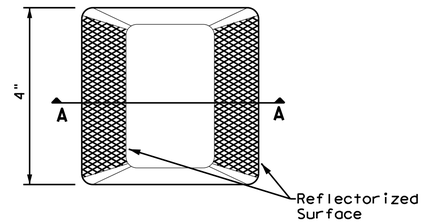
See Note 3.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

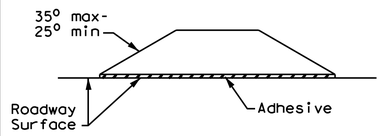
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)

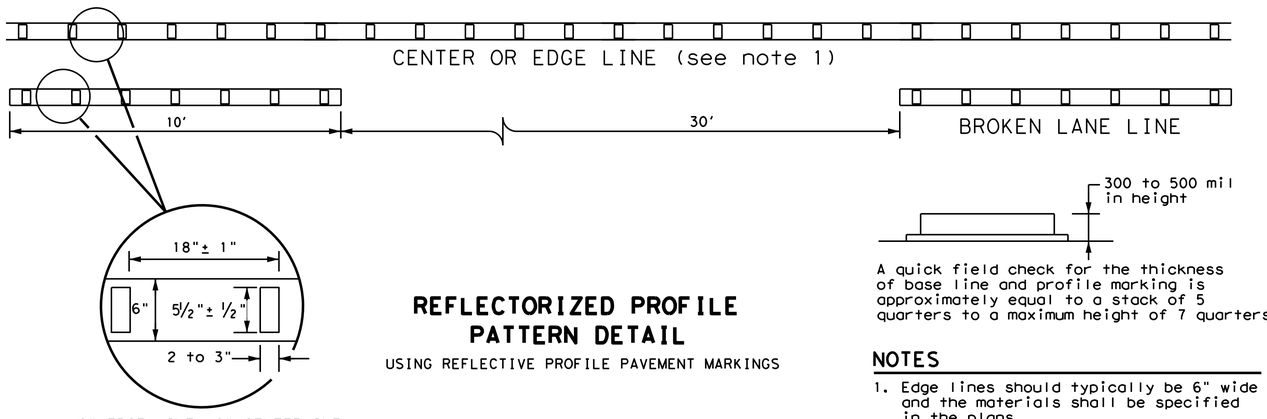


Type II (Top View)



SECTION A

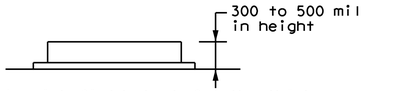
RAISED PAVEMENT MARKERS



6" EDGE LINE, 6" CENTERLINE OR 6" LANE LINE

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTES

1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements, the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians, and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2)-22

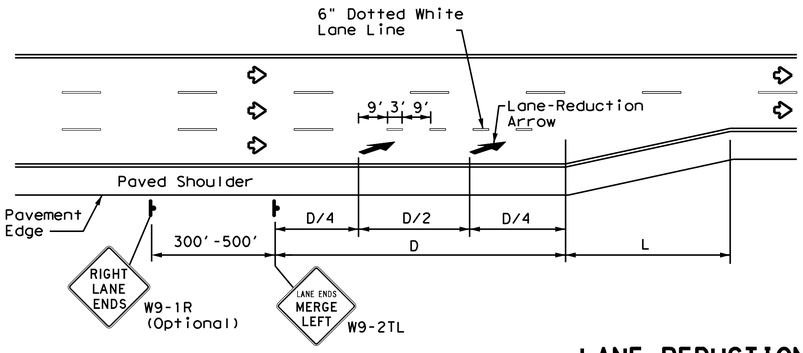
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REVISIONS 4-77 8-00 6-20 4-92 2-10 12-22 5-00 2-12	DIST	COUNTY		SHEET NO. 139

22B

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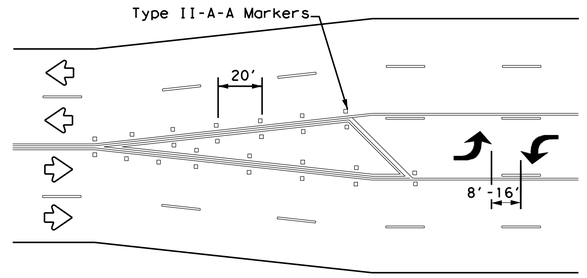


LANE REDUCTION

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

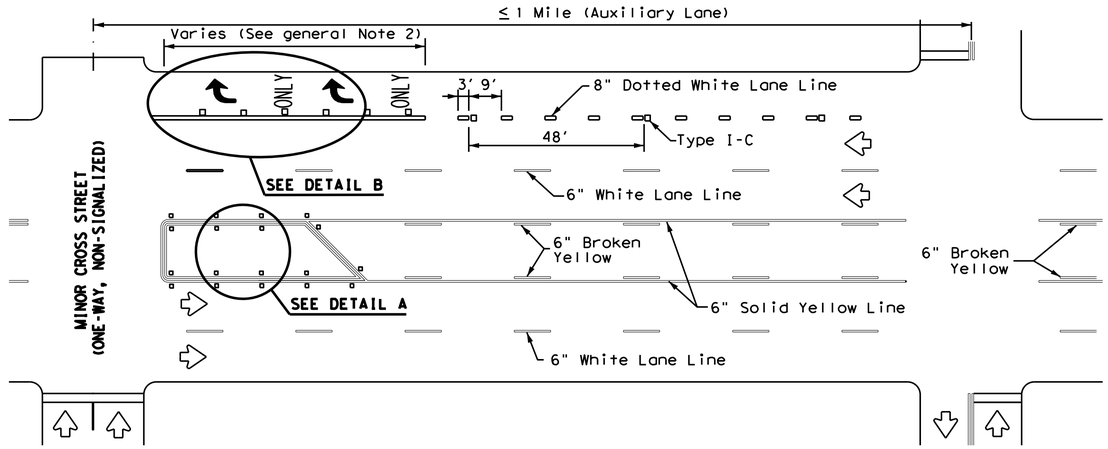
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

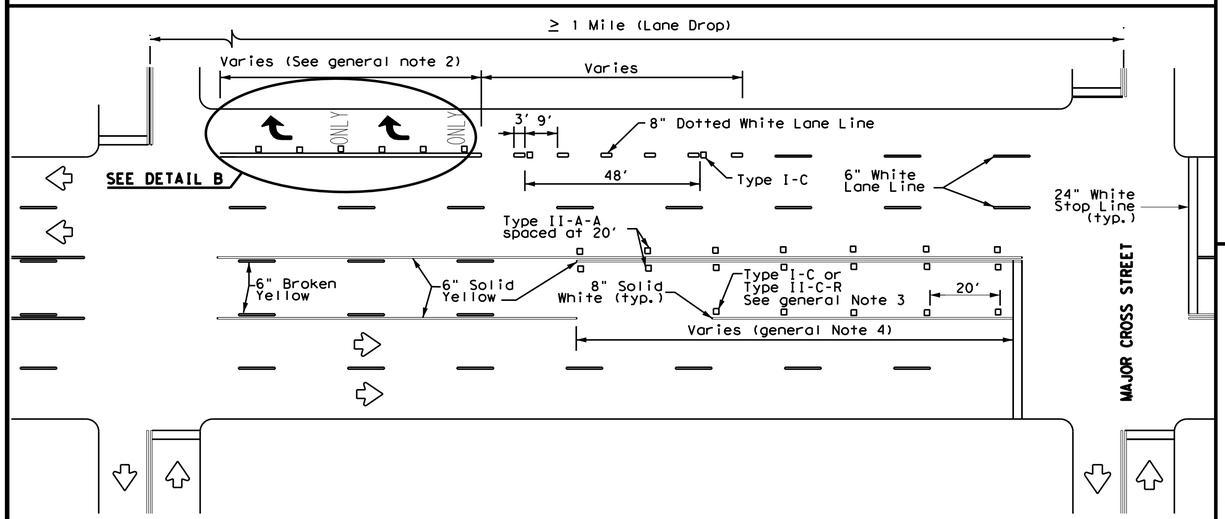
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

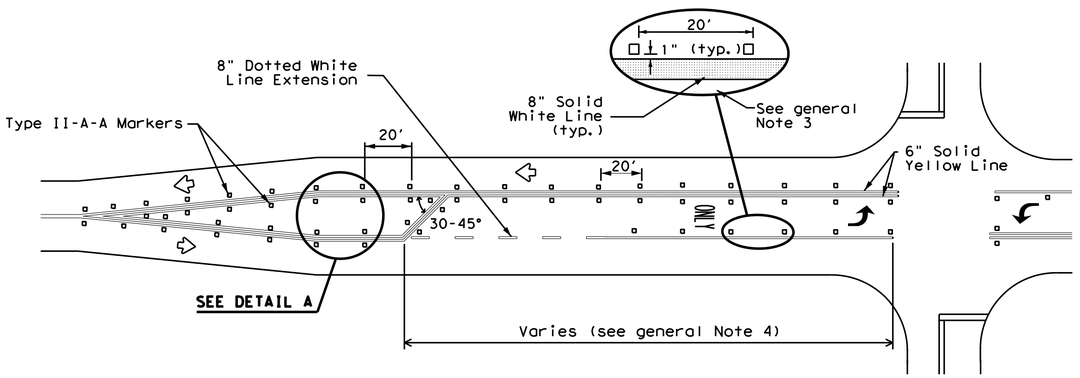
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



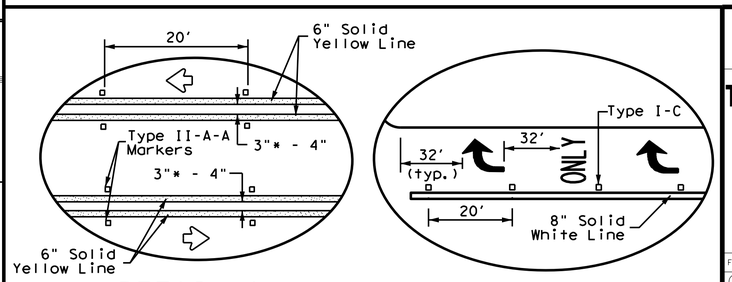
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



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

Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-22

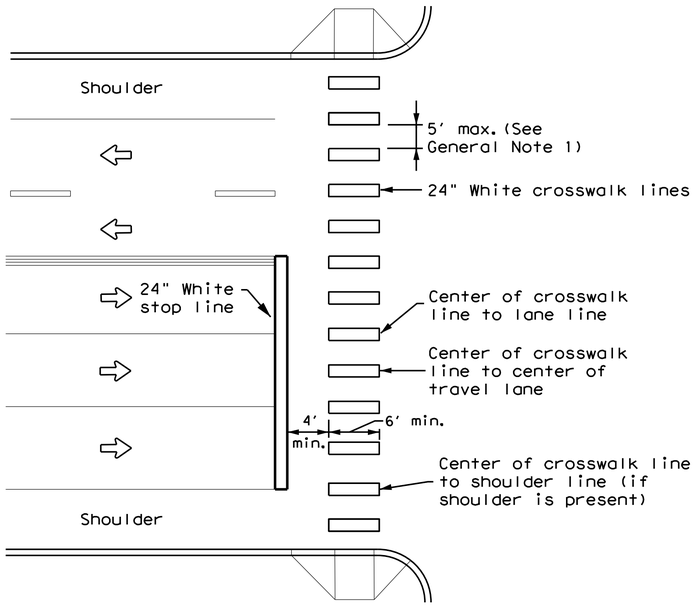
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©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20 5-00 2-10 12-22 8-00 2-12	DIST	COUNTY		SHEET NO. 140

22C

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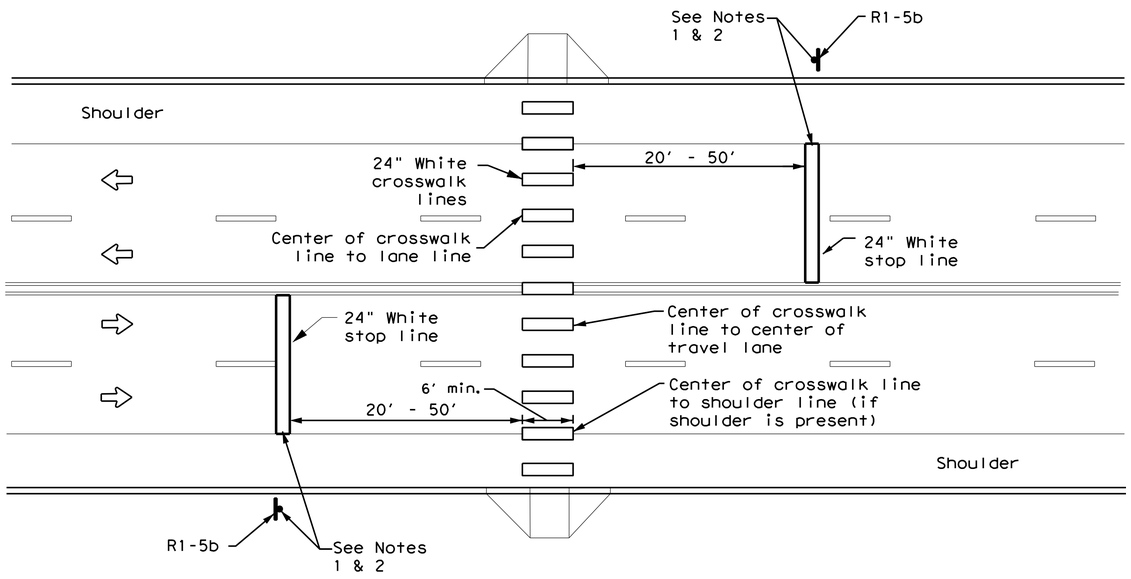
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

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.



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

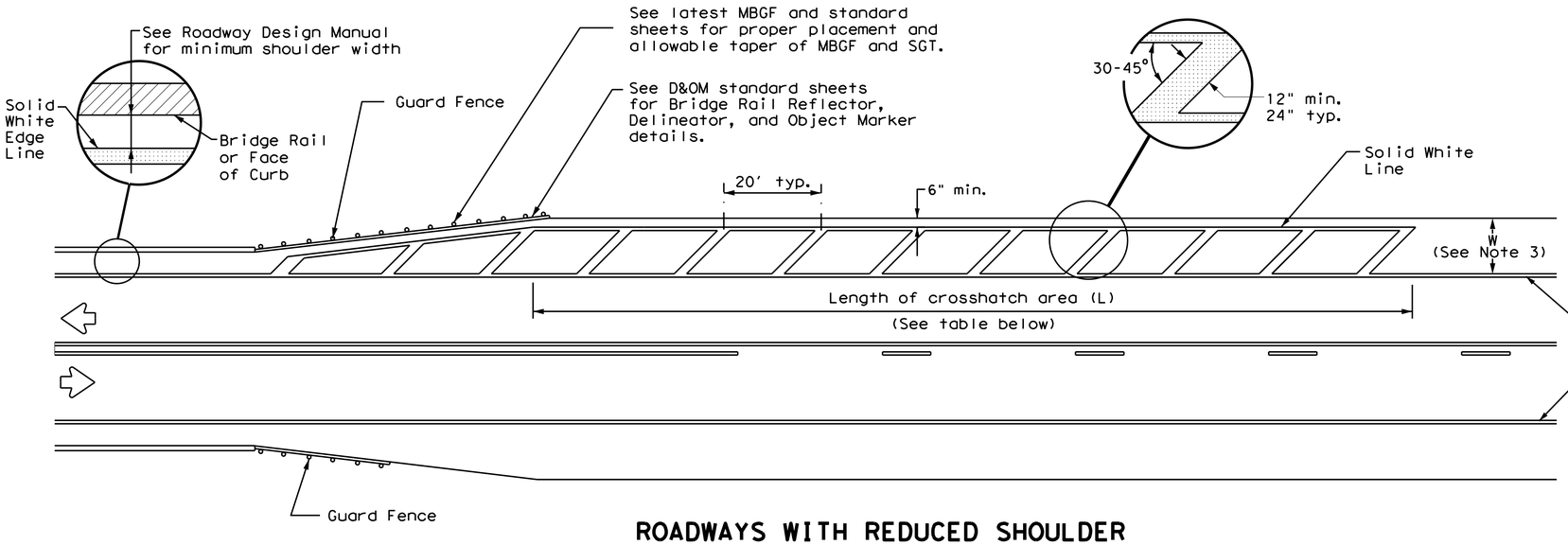
Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

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ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT

CROSSHATCH LENGTH (L)	
Posted Speed (MPH)	L (ft)
30	300 ft
35	
40	
45	
50	500 ft
55	
60	
65	
70	
75	

NOTES

1. 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 4 inches from the bridge rail or face of curb or 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions.
2. No-passing zone on bridge approach is optional. If used, the no-passing zone shall be a minimum 500 feet long from the beginning of the bridge.
3. The crosshatching should be required if the shoulder width in advance of the bridge is 4 feet or wider and a reduction of at least 3 feet in shoulder width across the bridge occurs.
4. On divided highways, review both the right and left shoulder widths for the need for narrow bridge pavement markings.

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.

Texas Department of Transportation

Traffic Safety Division Standard

PAVEMENT MARKINGS FOR ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT

PM(5)-22

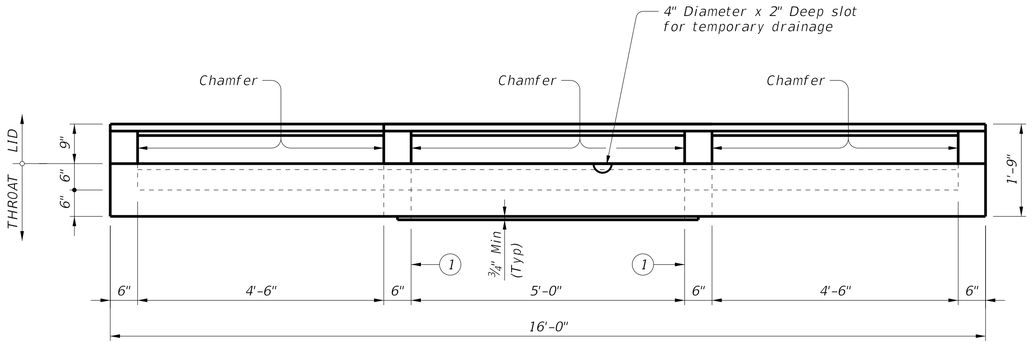
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©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.
				142

DATE:
FILE:

22E

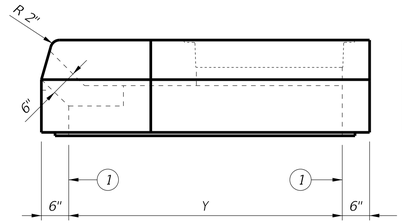
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FRONT VIEW

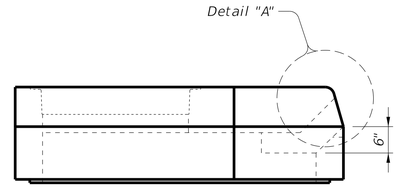
(Showning left and right extensions)



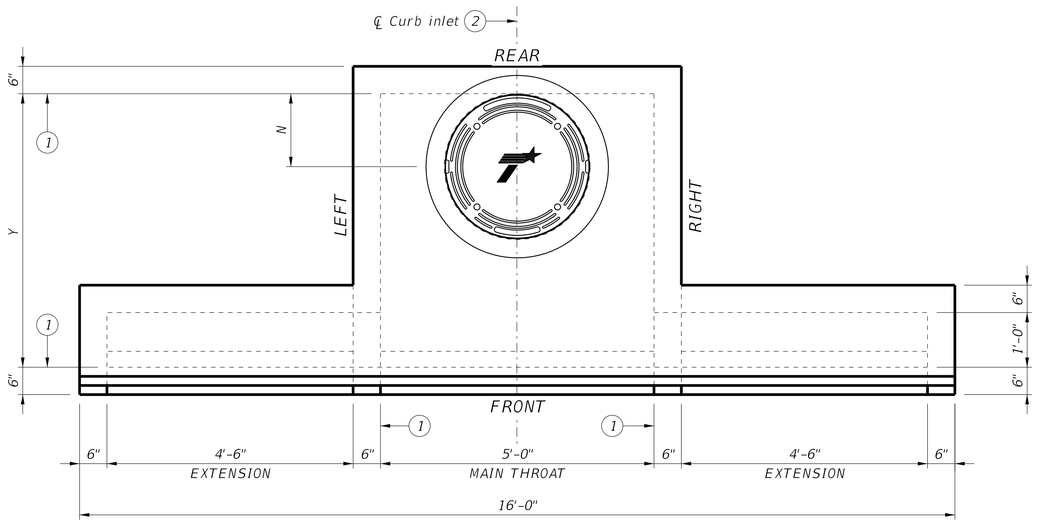
RIGHT VIEW

REAR VIEW

(Extensions not shown)



LEFT VIEW

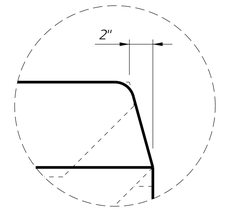


PLAN VIEW

(Showning left and right extensions)

(1) Matches inside face of wall of precast base or riser below inlet.

(2) Reference point is located where the ℄ of the main throat intersects the normal gutter line. See Curb and Gutter Transition Details for PCO Inlet (CGT-PCO) standard for more information.



DETAIL "A"

HS20 LOADING

Texas Department of Transportation

Bridge Division Standard

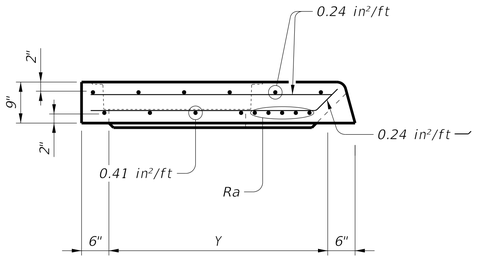
PRECAST CURB INLET OUTSIDE ROADWAY

PCO

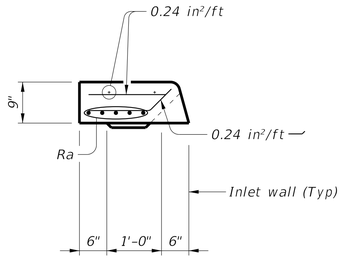
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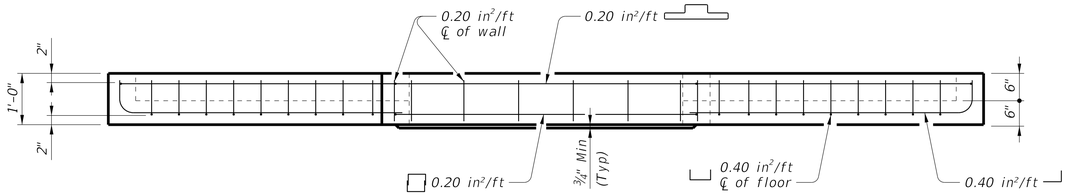
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LID SECTION A-A

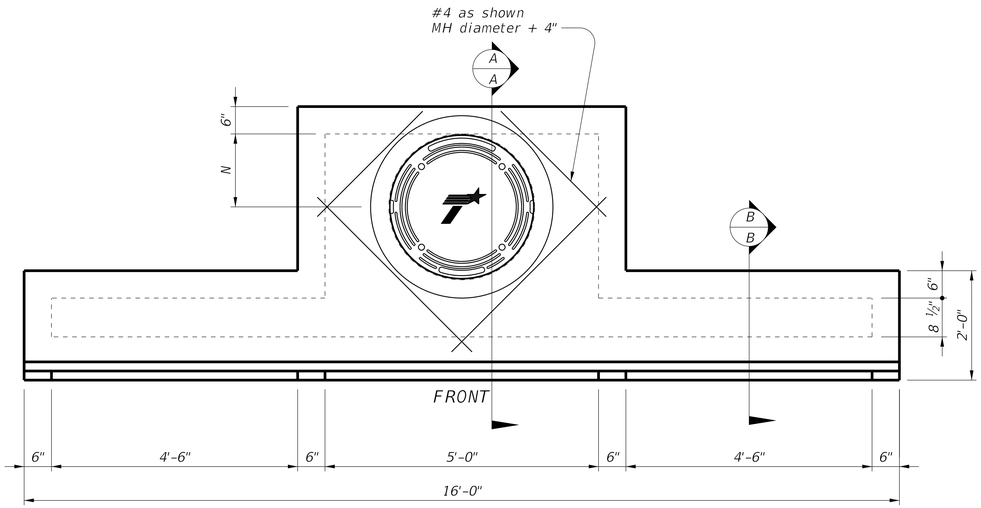


LID SECTION B-B



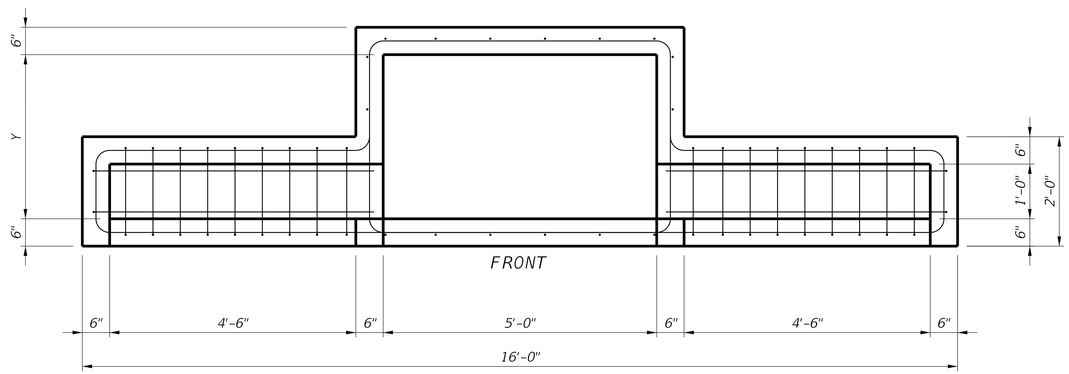
THROAT ELEVATION VIEW

(Showning left and right extensions)



LID PLAN VIEW

(Showning left and right extensions)



THROAT PLAN VIEW

(Showning left and right extensions)

Size (Y)	N	MH Dia*	Ra
3'	9"	18"	(4) #5 Additional
4'	16"	32"	(4) #5 Additional
5'	16"	32"	(4) #5 Additional
6'	16"	32"	(4) #5 Additional

*Nominal ring and cover size.

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Extensions may be right, left, both or none. Provide extensions as specified elsewhere in the plans.
4. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾". Lid may employ a butt joint with dowels at the Contractor's option.
5. Provide lifting devices in conformance with Manufacturer's recommendations.
6. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.
7. Chamfer vertical edges of inlet lid ¾" as shown in Front View, sheet 1.

INSTALLATION NOTES:

1. Inlet throat and lid are not intended for direct traffic. Do not place in roadway.
2. Seal tongue and groove joints and butt joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.

GENERAL NOTES:

1. Designed according to ASTM C913.
2. Open area of main throat = 360 sq in. Open area of one extension throat = 324 sq in.
3. Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, size, and extension placement. Extensions are subsidiary to inlet.

Cover dimensions are clear dimensions, unless noted otherwise.

HS20 LOADING

Texas Department of Transportation

Bridge Division Standard

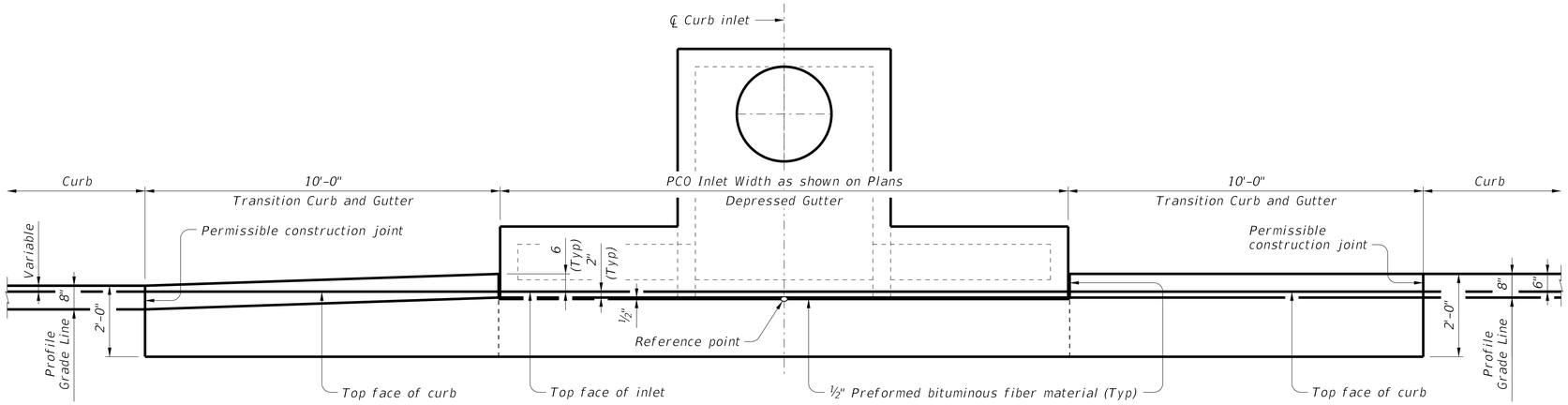
PRECAST CURB INLET OUTSIDE ROADWAY

PCO

FILE: CD-PCO-23.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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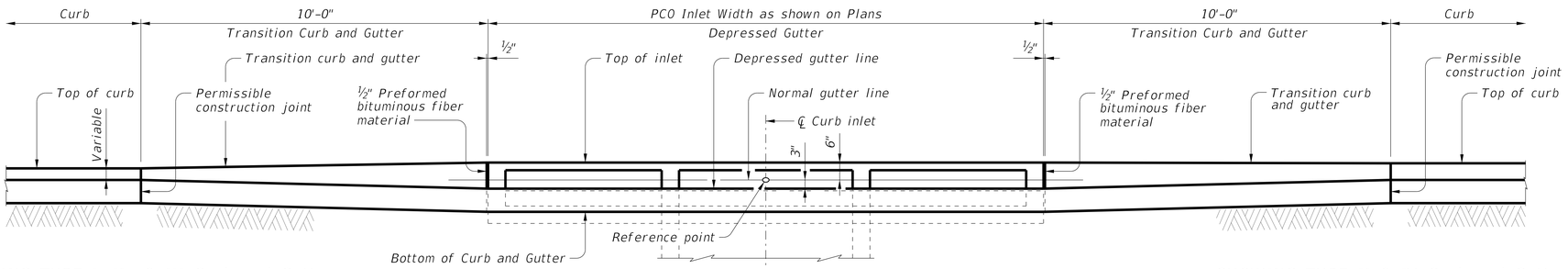
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SHOWING TYPE I, IIa & III Curb and Gutter

SHOWING TYPE II & IV Curb and Gutter

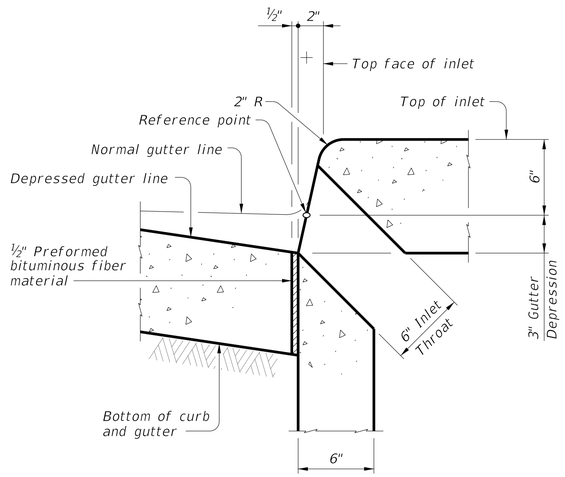
PLAN



SHOWING TYPE I, IIa & III Curb and Gutter

SHOWING TYPE II & IV Curb and Gutter

ELEVATION



SECTION AT GUTTER AND INLET

(Reinforcing steel not shown for clarity.)

CONSTRUCTION NOTES:
Align top face of curb with PCO Inlet as shown.

MATERIAL NOTES:
Provide ½" preformed bituminous fiber material.

GENERAL NOTES:
Reference point is located where the ℄ of the main throat intersects the normal gutter line.
See Precast Curb Inlet Outside Roadway (PCO) standard for details and notes not shown.
See Concrete Curb and Curb and Gutter (CCCG-22) standard for details and notes not shown.
Curb and Gutter Transitions is paid for and in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
Preformed bituminous fiber material is subsidiary to PCO Inlet.

Texas Department of Transportation

Bridge Division Standard

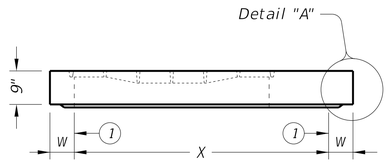
CURB AND GUTTER TRANSITION DETAILS FOR PCO INLET

CGT-PCO

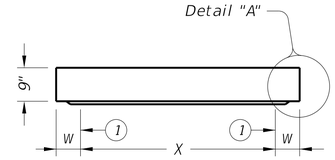
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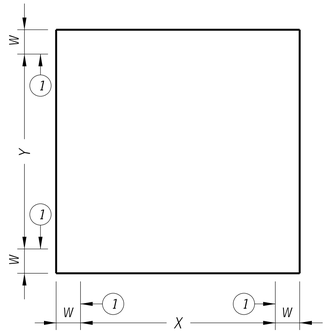
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STYLE 'FG'



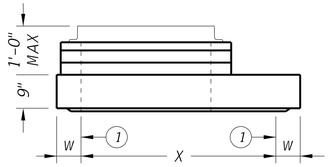
ELEVATION VIEW



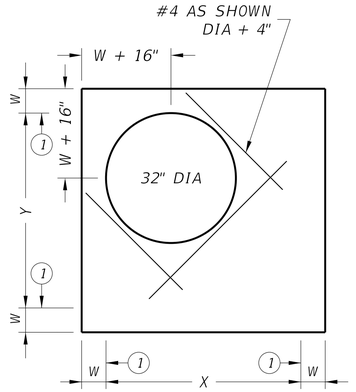
PLAN VIEW

NO OPENINGS

STYLE 'SL'



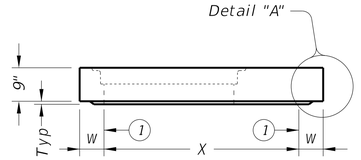
ELEVATION VIEW



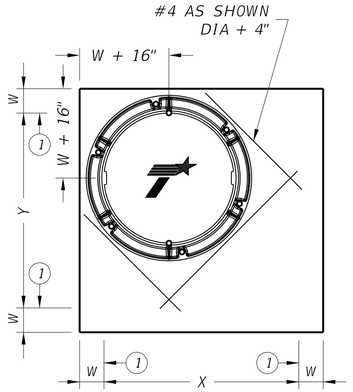
PLAN VIEW

SHIP LOOSE RING & COVER

STYLE 'RH'



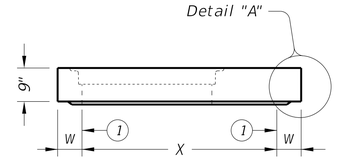
ELEVATION VIEW



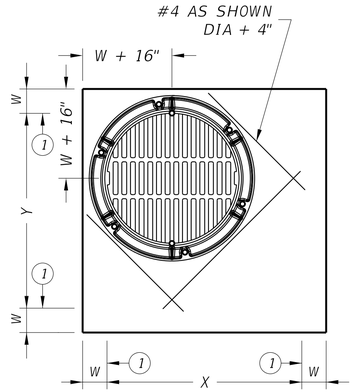
PLAN VIEW

32" DIA CAST-IN RING & COVER

STYLE 'RC'



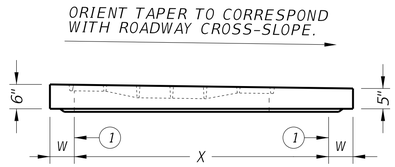
ELEVATION VIEW



PLAN VIEW

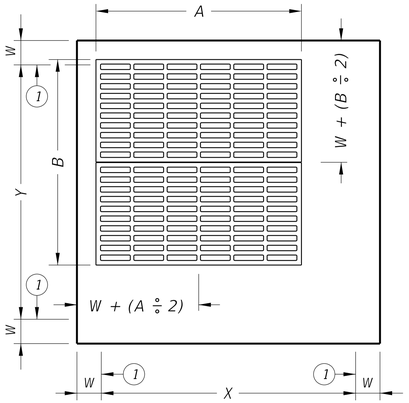
32" DIA CAST-IN RING & GRATE

STYLE 'RG'



STYLE 'SFG'

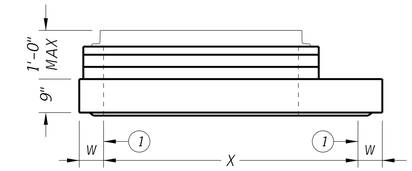
ELEVATION VIEW



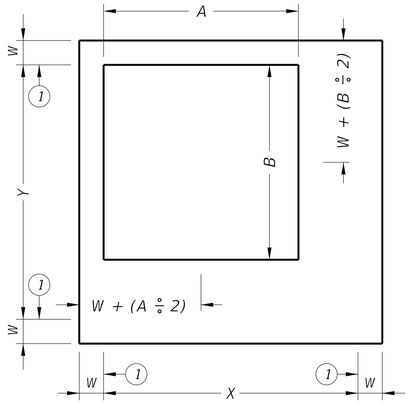
PLAN VIEW

CAST-IN FRAME & GRATE

STYLES 'FG' & 'SFG'



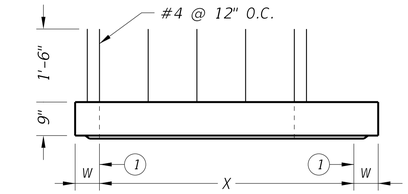
ELEVATION VIEW



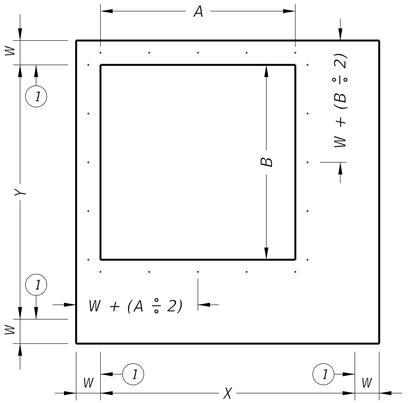
PLAN VIEW

SHIP LOOSE FRAME & GRATE

STYLE 'SH'



ELEVATION VIEW



PLAN VIEW

EXPOSED REBAR

STYLE 'S1'

(1) Matches inside face of wall of precast base or riser below inlet.

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Bridge Division Standard

PRECAST SLAB LID

PSL

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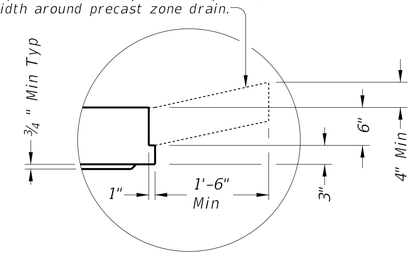
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Style	Size (X x Y)	W (2)	A x B (nominal)	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	6"	n/a	0.37 in²/ft	0.37 in²/ft
RH,RC,RG,SH,S1,FG	3'x3'	6"	3'x3' or 32" Dia	0.37 in²/ft	0.37 in²/ft
SFG	3'x3'	6"	3'x3'	0.32 in²/ft	0.32 in²/ft
SL	4'x4'	6"	n/a	0.34 in²/ft	0.34 in²/ft
RH,RC,RG,SH,S1,FG	4'x4'	6"	3'x3' or 32" Dia	0.41 in²/ft	0.41 in²/ft
SH,S1,FG	4'x4'	6"	4'x4'	0.41 in²/ft	0.41 in²/ft
SFG	4'x4'	6"	4'x4'	0.32 in²/ft	0.32 in²/ft
SL	3'x5'	6"	n/a	0.39 in²/ft	0.39 in²/ft
RH,RC,RG,SH,S1,FG	3'x5'	6"	3'x3' or 32" Dia	0.48 in²/ft	0.48 in²/ft
SH,S1,FG	3'x5'	6"	3'x5'	0.48 in²/ft	0.48 in²/ft
SFG	3'x5'	6"	3'x5'	0.32 in²/ft	0.32 in²/ft
SL	4'x5'	6"	n/a	0.42 in²/ft	0.42 in²/ft
RH,RC,RG,SH,S1,FG	4'x5'	6"	3'x3' or 32" Dia	0.42 in²/ft	0.42 in²/ft
SH,S1,FG	4'x5'	6"	4'x4'	0.63 in²/ft	0.63 in²/ft
SH,S1,FG	4'x5'	6"	3'x5'	0.66 in²/ft	0.66 in²/ft
SL	5'x5'	6"	n/a	0.36 in²/ft	0.36 in²/ft
RH,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.43 in²/ft	0.43 in²/ft
SH,S1,FG	5'x5'	6"	4'x4'	0.63 in²/ft	0.63 in²/ft
SH,S1,FG	5'x5'	6"	3'x5'	0.63 in²/ft	0.63 in²/ft
SL	5'x6'	6"/8"	n/a	0.48 in²/ft	0.48 in²/ft
RH,RC,RG,SH,S1,FG	5'x6'	6"/8"	3'x3' or 32" Dia	0.48 in²/ft	0.48 in²/ft
SH,S1,FG	5'x6'	6"/8"	4'x4'	0.60 in²/ft	0.60 in²/ft
SH,S1,FG	5'x6'	6"/8"	3'x5'	0.60 in²/ft	0.60 in²/ft
SL	6'x6'	6"/8"	n/a	0.43 in²/ft	0.43 in²/ft
RH,RC,RG,SH,S1,FG	6'x6'	6"/8"	3'x3' or 32" Dia	0.56 in²/ft	0.56 in²/ft
SH,S1,FG	6'x6'	6"/8"	4'x4'	0.56 in²/ft	0.56 in²/ft
SH,S1,FG	6'x6'	6"/8"	3'x5'	0.59 in²/ft	0.59 in²/ft
SL	8'x8'	8"/10"	n/a	0.45 in²/ft	0.45 in²/ft
RH,RC,RG,SH,S1,FG	8'x8'	8"/10"	3'x3' or 32" Dia	0.45 in²/ft	0.45 in²/ft
SH,S1,FG	8'x8'	8"/10"	4'x4'	0.45 in²/ft	0.45 in²/ft
SH,S1,FG	8'x8'	8"/10"	3'x5'	0.45 in²/ft	0.45 in²/ft

(2) See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.



DETAIL "A"

(Reinforcing not shown for clarity)

When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

FABRICATION NOTES:

1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of ¾" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in²/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

INSTALLATION NOTES:

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans

GENERAL NOTES:

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

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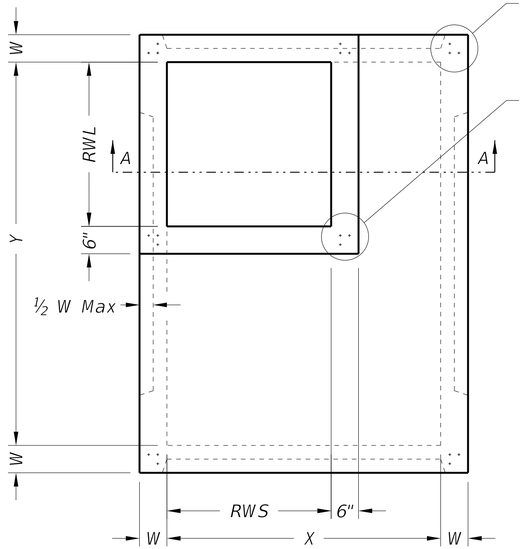
Bridge Division Standard

PRECAST SLAB LID

PSL

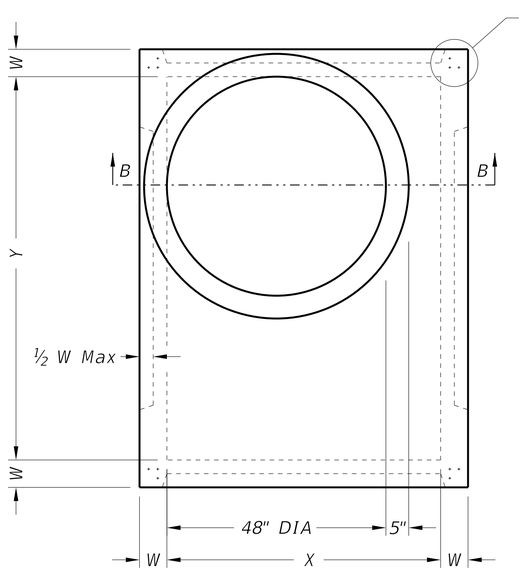
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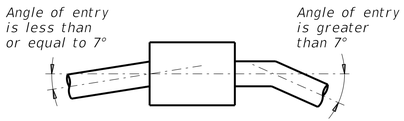
PLAN VIEW "A"

SQUARE REDUCED RISER OPTION



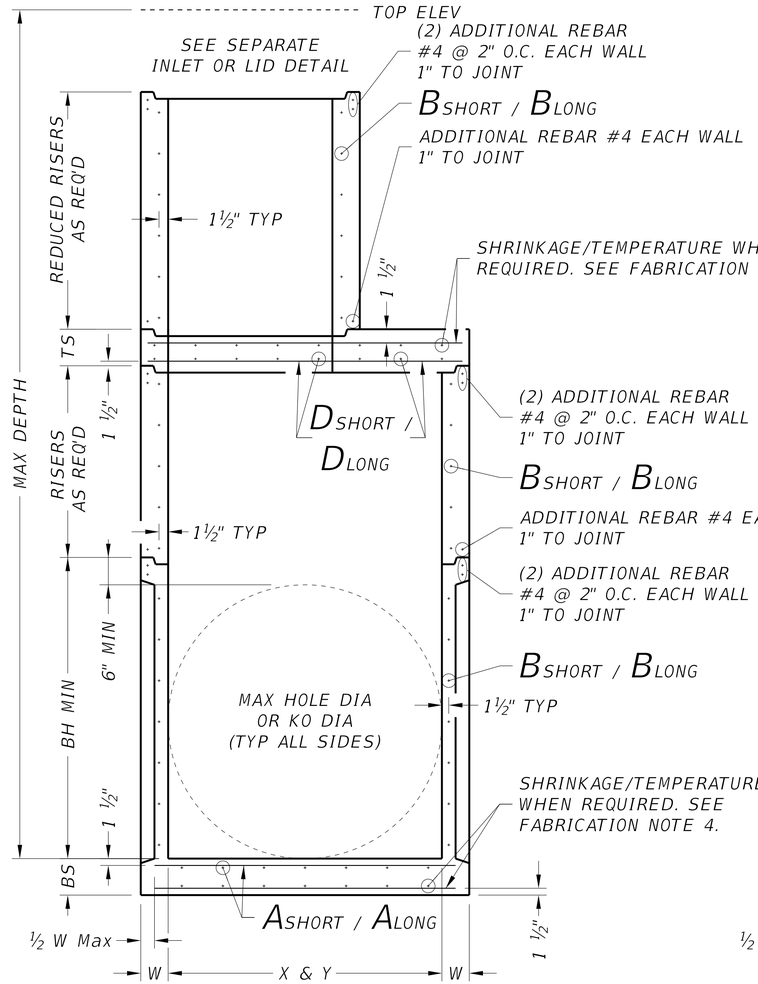
PLAN VIEW "B"

ROUND REDUCED RISER OPTION



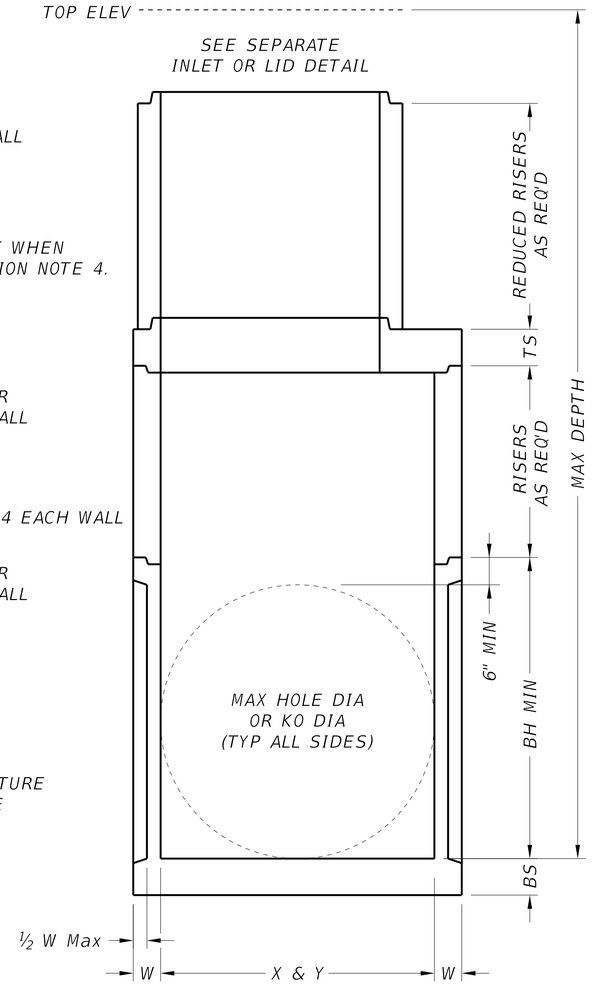
PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PB wall.
If necessary, use pipe elbow or curved
approach alignment to stay within this limit.



SECTION A-A

SQUARE REDUCED RISER OPTION



SECTION B-B

ROUND REDUCED RISER OPTION

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

Cover dimensions are clear dimensions, unless noted otherwise.

INSTALLATION NOTES:

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

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PRECAST BASE

PB

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		MAX DEPTH = 15 ft. to top of BASE SLAB										MAX DEPTH = 25 ft. to top of BASE SLAB											
		Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)				Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)				Min Height (See Gen Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fab Note 2)
	Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness			
	X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	BH MIN	HOLE DIA	KO DIA
	ft.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	ft.	in.	in.
Precast Junction Box (PJB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9	0.29	0.29	6	0.24	0.24	6	N/A	0.37	0.37	9	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9	0.47	0.47	6	0.38	0.38	6	N/A	0.41	0.41	9	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9	0.39	0.18	6	0.23	0.59	6	N/A	0.48	0.48	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9	0.53	0.26	6	0.39	0.59	6	N/A	0.42	0.42	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9	0.62	0.62	6	0.59	0.59	6	N/A	0.43	0.43	9	5.5	60	60
	5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9	0.47	0.45	9	0.38	0.54	8	N/A	0.48	0.48	9	5.5	60/72	60/72
	6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9	0.52	0.52	9	0.54	0.54	8	N/A	0.56	0.56	9	6.5	72	72
	8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12	0.87	0.87	9	0.59	0.59	10	N/A	0.45	0.45	12	8.5	96	72
Precast Base (PB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	0.47	0.47	6	0.38	0.38	6	N/A	N/A	N/A	N/A	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	3x3	0.30	0.34	9	0.39	0.18	6	0.23	0.59	6	3x3	0.40	0.40	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x3	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	3x3	0.46	0.37	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	4x4	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	4x4	0.39	0.39	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9	0.53	0.26	6	0.39	0.59	6	48"	0.47	0.47	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9	0.53	0.26	6	0.39	0.59	6	3x5	0.48	0.48	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9	0.62	0.62	6	0.59	0.59	6	3x3	0.53	0.53	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	4x4	0.64	0.64	9	5.5	60	60
	5x5	0.38	0.38	6	0.34	0.34	6	48"	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	48"	0.64	0.64	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9	0.62	0.62	6	0.59	0.59	6	3x5	0.53	0.53	9	5.5	60	60
	5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9	0.47	0.45	9	0.38	0.54	8	3x3	0.61	0.50	9	5.5	60/72	60/72
	5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	4x4	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	48"	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9	0.47	0.45	9	0.38	0.54	8	3x5	0.61	0.61	9	5.5	60/72	60/72
	6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9	0.52	0.52	9	0.54	0.54	8	3x3	0.74	0.74	9	6.5	72	72
	6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	4x4	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	48"	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	3x5	0.87	0.87	9	6.5	72	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12	0.91	0.91	9	0.70	0.70	10	3x3	0.85	0.85	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	4x4	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	48"	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12	0.87	0.87	9	0.70	0.70	10	3x5	1.01	1.01	12	8.5	96	72

** Unless otherwise indicated.

FABRICATION NOTES:
1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

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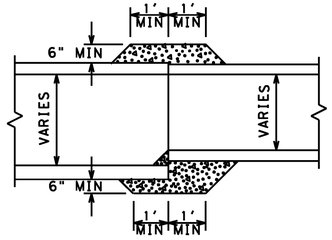
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DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

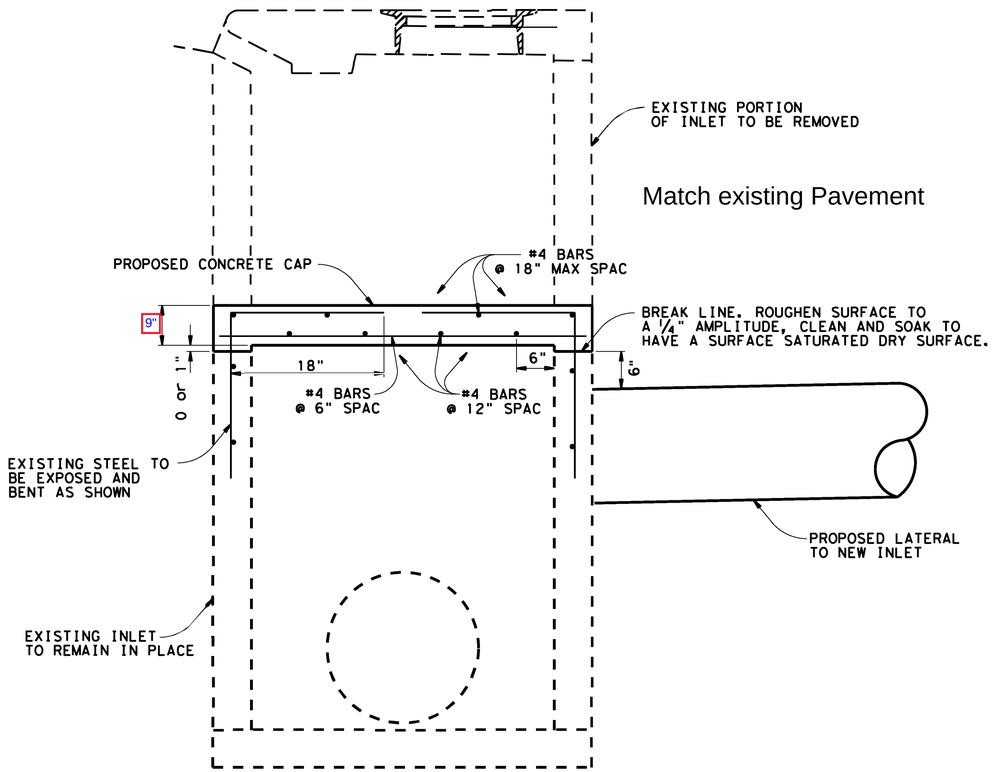
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CONCRETE COLLAR FOR PIPE CONNECTION DETAIL

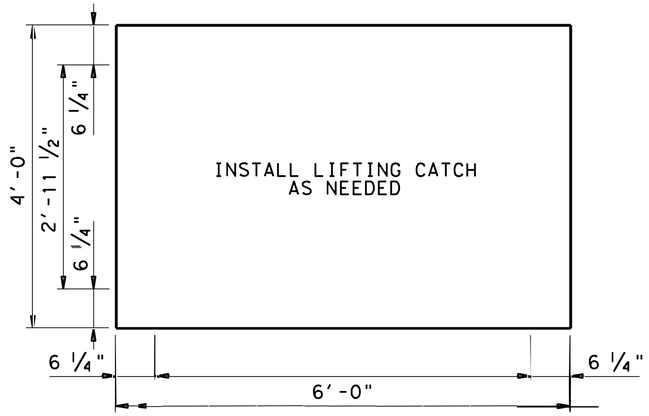
THIS DETAIL IS TO ALSO BE USED ON ALL CONNECTIONS BETWEEN NEW AND EXISTING PIPES.



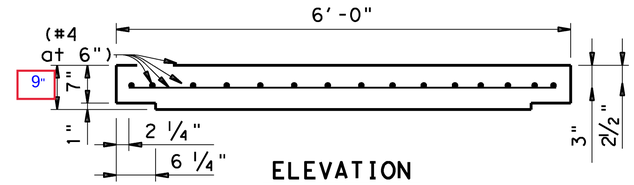
NOTES:
1. REINFORCING BARS TO BE ADJUSTED TO HAVE A MINIMUM OF 1¼ INCHES CLEAR COVER.
2. INLET CAP MUST BE BELOW PAVEMENT SUBGRADE.
3. ALL CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 3600 PSI.
4. ALL REINFORCING STEEL SHALL BE GRADE 60.

PCU or CCO

PCU or CCO

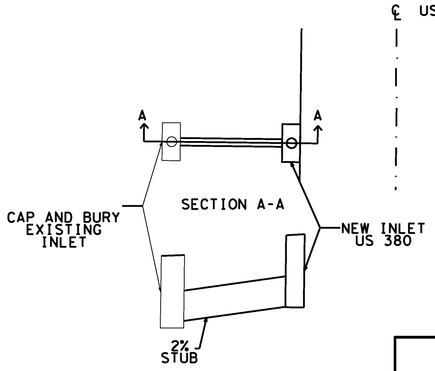


PLAN



ELEVATION

INLET RELOCATION



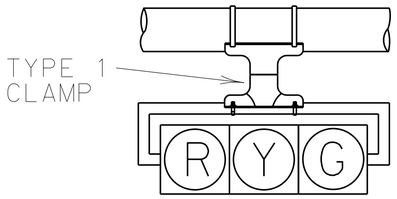
SHEET 1 OF 1

Texas Department of Transportation
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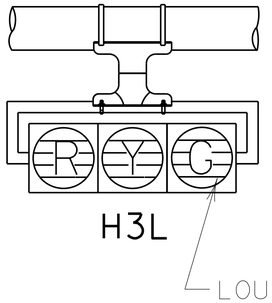
DRAINAGE MISC. DETAILS

DESIGN	FED.RD. DIV.NO.			HIGHWAY NO.
GRAPHICS	6			
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	COLLIN	
CHECK	CONTROL	SECTION	JOB	
				150

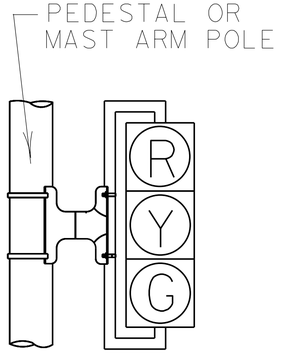
DATE: $DATE$ FILE NAME: $FILE$



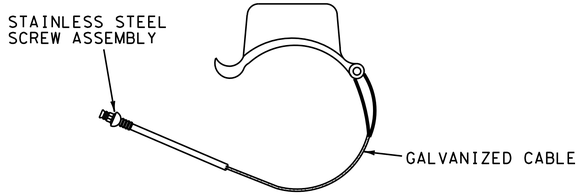
H3



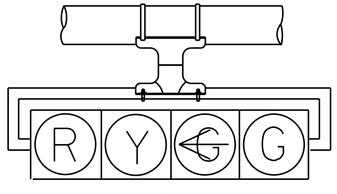
H3L



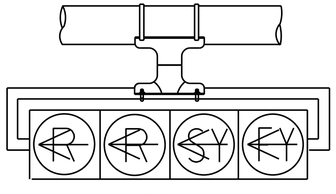
V3



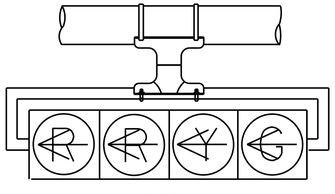
TYPE 1 AND 2 CLAMPS



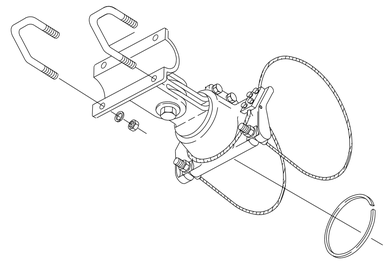
H4LT



H4FLT

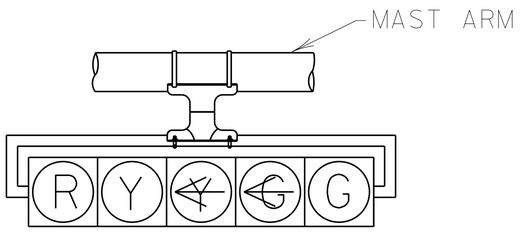


H4PLT

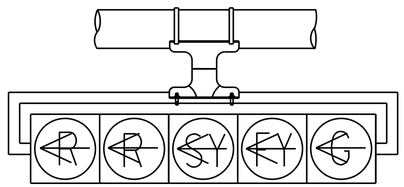


TYPE 2 CLAMP KIT

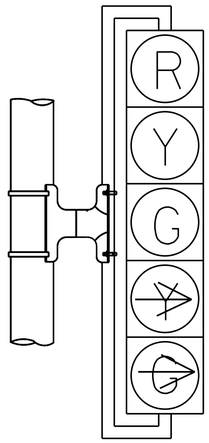
SHALL BE INSTALLED WHEN ROTATION ABOUT
THE HORIZONTAL AND VERTICAL AXES ARE NEEDED.



H5LT



H5FLT



V5RT

NOTES:

1. VEHICLE SIGNAL HEADS SHALL BE MOUNTED WITH TYPE 1 CLAMP AND APPROPRIATE TUBING.
2. ALL POLE MOUNTED VEHICLE HEADS SHALL BE INSTALLED ON THE AWAY-FROM-TRAFFIC SIDE OF THE PEDESTAL OR MAST ARM POLE.
3. THE SIGNAL HEADS SHOWN ARE NOT MEANT TO REFLECT ALL POSSIBLE SIGNAL HEADS, BUT ARE REPRESENTATIVE OF SIGNAL HEADS COMMONLY IN USE. SEE THE TRAFFIC SIGNAL LAYOUT FOR REQUIRED SIGNAL HEADS, AND THE NUMBER AND ORIENTATION OF LOUVERS.

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DALLAS DISTRICT STANDARD

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	(SEE TITLE SHEET)		151
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	DENTON, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0081	03	081	US 377 ETC.

TRAFFIC SIGNAL HEAD DETAILS (DAL)

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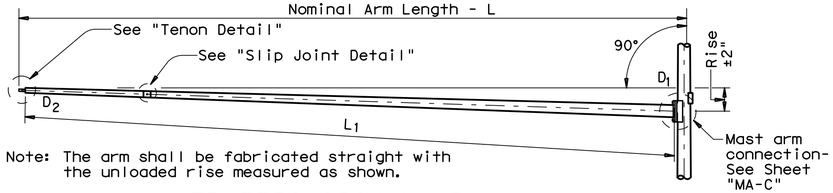
Arm Length	ROUND POLES					POLYGONAL POLES					Foundation Type
	D_B	D_{19}	D_{24}	D_{30}	① thk	D_B	D_{19}	D_{24}	D_{30}	① thk	
ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
20	10.5	7.8	7.1	6.3	.179	11.5	8.5	7.7	6.8	.179	30-A
24	11.0	8.3	7.6	6.8	.179	12.0	9.0	8.2	7.3	.179	30-A
28	11.5	8.8	8.1	7.3	.179	12.5	9.5	8.7	7.8	.179	30-A
32	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
36	12.0	9.3	8.6	7.8	.239	12.5	9.5	8.7	7.8	.239	36-A
40	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
44	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
48	13.0	10.3	9.6	8.8	.239	15.0	12.0	11.2	10.3	.239	36-A

Arm Length	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	① thk	Rise	L_1	D_1	② D_2	① thk	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"
48	47.0	10.5	4.1	.239	3'-4"	47.0	11.0	3.5	.239	2'-9"

D_B = Pole Base O.D.
D_{19} = Pole Top O.D. with no Luminaire and no ILSN
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L = Nominal Arm Length

① Thickness shown are minimums, thicker materials may be used.

② D_2 may be increased by up to 1" for polygonal arms.



Note: The arm shall be fabricated straight with the unloaded rise measured as shown.

TRAFFIC SIGNAL ARM

(Fixed Mount)

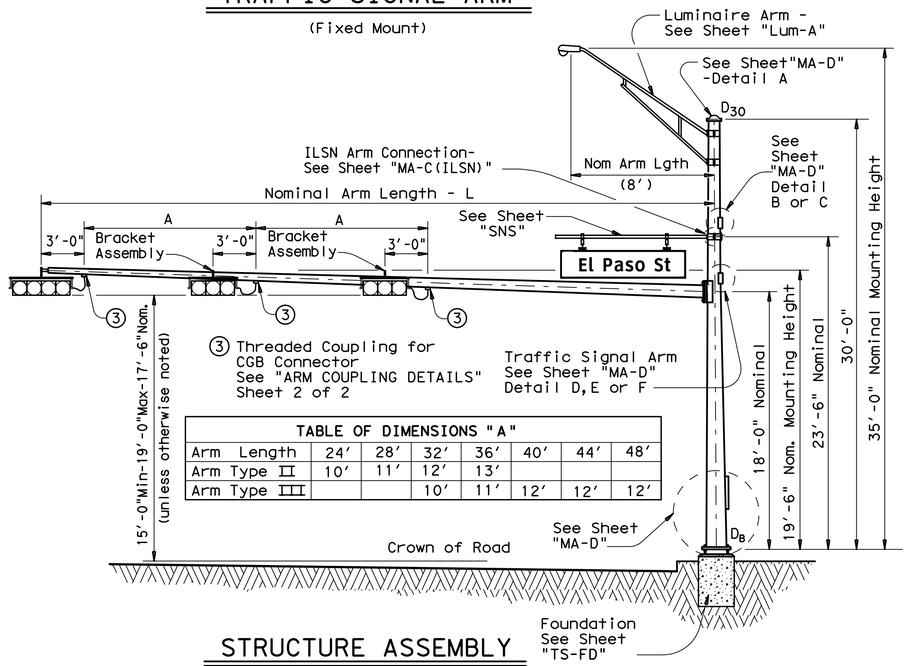


TABLE OF DIMENSIONS "A"

Arm Length	24'	28'	32'	36'	40'	44'	48'
Arm Type II	10'	11'	12'	13'			
Arm Type III			10'	11'	12'	12'	12'

STRUCTURE ASSEMBLY

SHIPPING PARTS LIST

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed-arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length	30' Poles With Luminaire		24' Poles With ILSN		19' Poles With No Luminaire and No ILSN	
	Above hardware plus: One (or two if ILSN attached) small hand hole, clamp-on simplex		Above hardware plus one small hand hole		See note above	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20L-80		20S-80		20-80	
24	24L-80		24S-80		24-80	
28	28L-80		28S-80		28-80	
32	32L-80		32S-80		32-80	
36	36L-80		36S-80		36-80	
40	40L-80		40S-80		40-80	
44	44L-80		44S-80		44-80	
48	48L-80		48S-80		48-80	

Traffic Signal Arms (1 per Pole) Ship each arm with the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	1 CGB connector		1 Bracket Assembly and 2 CGB Connectors		2 Bracket Assemblies and 3 CGB Connectors	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	
48					48III-80	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 ½"	3'-4"	
1 ¾"	3'-10"	

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Templates may be removed for shipment.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(1)-12

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DN: MS	CK: JSY	DW: MWF	CK: JSY

REVISIONS
5-96
11-99
1-12

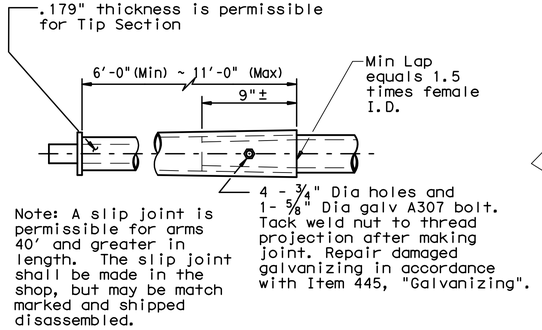
CONT	SECT	JOB	HIGHWAY

DIST	COUNTY	SHEET NO.
		152

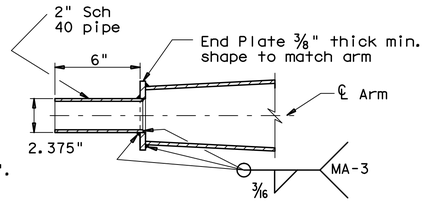
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DATE:
FILE:

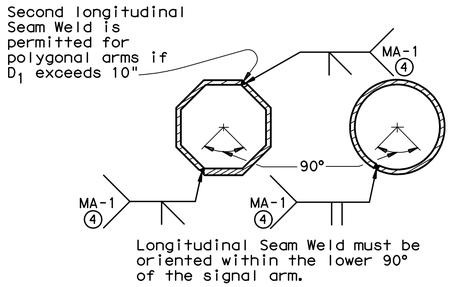


SLIP JOINT DETAIL



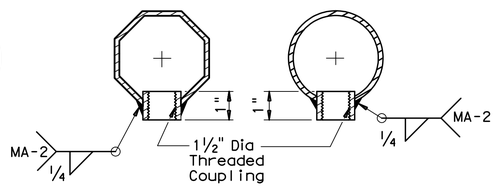
TENON DETAIL

BRACKET ASSEMBLY



ARM WELD DETAIL

④ 60% Min. penetration 100% pemetration within 6" of circumferential base welds.



ARM COUPLING DETAILS

VIBRATION WARNING

Mast Arms of SMA and DMA structures and clamp-on Arms of LMA structures of approximately 40 ft or longer are subject to harmonic vertical vibrations in light wind conditions due to the aeroelastic characteristics of a few of the myriads of possible combinations of the following: signal numbers, weights and positions; existence/solidity of backplates; presence of additional attachments to the arm, such as signs and cameras; arm-wind orientation; and arm-pole stiffness.

Such vibrations may cause fatigue damage to the structure and may lead to galloping in moderate wind conditions which may further damage the structure and alarm the public. Tests have indicated that when wind is blowing toward the back side of signal heads having un-vented backplates attached the probability of unacceptable harmonic vibration and/or galloping is rather high.

If backplates are not required for improved visibility they should not be applied to the signal heads or, if they must be applied, they should be vented as a first and inexpensive measure to mitigate vibrations.

The traffic signal mast arms shall be visually inspected in 5 to 20 mph wind conditions after installation of signal heads and any attachments, including any required backpates. If vertical movements with a total excursion (maximum upward excursion to maximum downward excursion) of more than approximately 8" are observed at the arm tip, a damping plate shall be fitted to the arm. See "Damping Plate Mounting Details" on standard sheet, MA-DPD-10.

This visual inspection shall be repeated after each modification of the structure that could affect its aeroelastic response. Excessive vibrations shall not be allowed to continue for more than two days.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor.

Poles are designed to support one 8'-0" luminaire arm, one 9'-0" internally lighted street name sign and one traffic signal arm with a length as tabulated. The specified luminaire load applied at the end of the luminaire arm equals 60 lbs vertical dead load plus the horizontal wind load on an effective projected area of 1.6 sq ft. The specified internally lighted street name sign load applied 4.5 ft from the centerline of the pole equals 85 lbs vertical dead load plus horizontal wind load on an effective projected area of 11.5 sq ft. The specified signal load applied at the end of the traffic signal arm equals 180 lbs vertical dead load plus the horizontal wind load on an effective projected area of 32.4 sq ft (actual area times drag coefficient).

See Standard Sheet "MA-D" for pole details, "MA-C" for traffic signal arm connection details, "MA-C (ILSN)" for internally lighted street name sign arm connection details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details. See "MA-C" for material specifications.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

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

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

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(2)-12

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DN: MS	CK: JSY	DW: MMF	CK: JSY

REVISIONS
5-96
1-12

CONT	SECT	JOB	HIGHWAY

DIST	COUNTY	SHEET NO.
		153

122B

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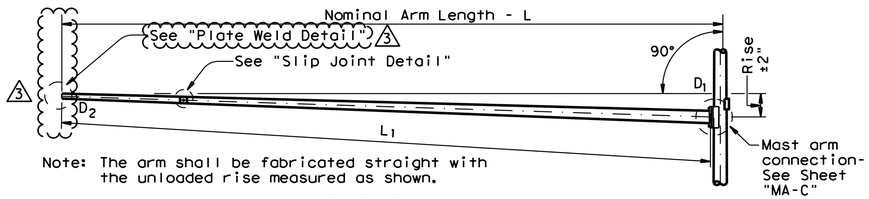
Arm Length	ROUND POLES					POLYGONAL POLES					Foundation Type
	D_B	D_{19}	D_{24}	D_{30}	① thk	D_B	D_{19}	D_{24}	D_{30}	① thk	
ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
20	10.5	7.8	7.1	6.3	.179	11.5	8.5	7.7	6.8	.179	30-A
24	11.0	8.3	7.6	6.8	.179	12.0	9.0	8.2	7.3	.179	30-A
28	11.5	8.8	8.1	7.3	.179	12.5	9.5	8.7	7.8	.179	30-A
32	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
36	12.0	9.3	8.6	7.8	.239	12.5	9.5	8.7	7.8	.239	36-A
40	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
44	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
48	13.0	10.3	9.6	8.8	.239	15.0	12.0	11.2	10.3	.239	36-A

Arm Length	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	① thk	Rise	L_1	D_1	② D_2	① thk	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"
48	47.0	10.5	4.1	.239	3'-4"	47.0	11.0	3.5	.239	2'-9"

D_B = Pole Base O.D.
D_{19} = Pole Top O.D. with no Luminaire and no ILSN
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L = Nominal Arm Length

① Thickness shown are minimums, thicker materials may be used.

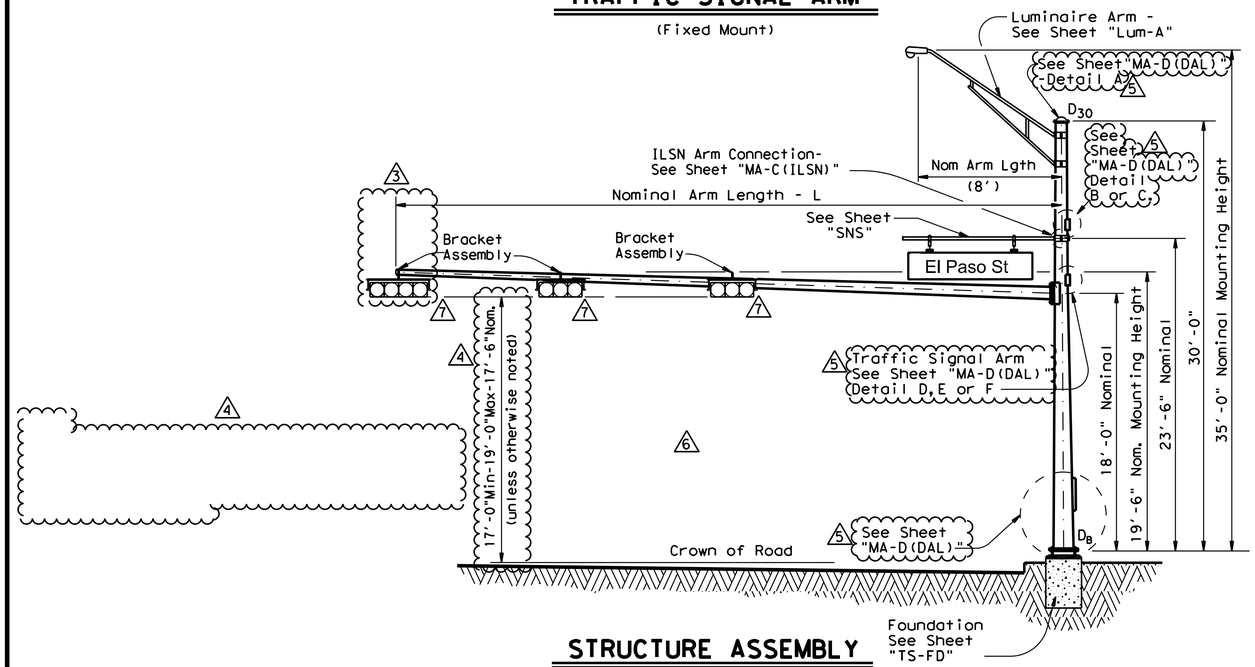
② D_2 may be increased by up to 1" for polygonal arms.



Note: The arm shall be fabricated straight with the unloaded rise measured as shown.

TRAFFIC SIGNAL ARM

(Fixed Mount)



STRUCTURE ASSEMBLY

SHIPPING PARTS LIST

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed-arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length	30' Poles With Luminaire		24' Poles With ILSN		19' Poles With No Luminaire and No ILSN	
	Above hardware plus: One (or two if ILSN attached) small hand hole, clamp-on simplex		Above hardware plus one small hand hole		See note above	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20L-80		20S-80		20-80	
24	24L-80		24S-80		24-80	
28	28L-80		28S-80		28-80	
32	32L-80		32S-80		32-80	
36	36L-80		36S-80		36-80	
40	40L-80		40S-80		40-80	
44	44L-80		44S-80		44-80	
48	48L-80		48S-80		48-80	

Traffic Signal Arms (1 per Pole) Ship each arm with the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	1 1 Bracket Assembly		2 Bracket Assemblies		3 Bracket Assemblies	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40			2 40II-80		40III-80	
44			44II-80		44III-80	
48					48III-80	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 ½"	3'-4"	
1 ¾"	3'-10"	

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Templates may be removed for shipment.

MODIFICATIONS:

1 REPLACED CGB CONNECTOR WITH BRACKET ASSEMBLY. (2/12)

2 ADDITIONAL OPTION. (3/12)

3 REPLACED TENON DETAIL WITH PLATE WELD DETAIL. (2/12)

4 REVISED MINIMUM SIGNAL HEIGHT. (3/12)

5 REPLACED "MA-D" WITH "MA-D(DAL)". (2/12)

6 REMOVED TABLE OF DIMENSIONS "A". (2/12)

7 REMOVED CGB CONNECTORS. (2/12)

Texas Department of Transportation
DALLAS DISTRICT STANDARD

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(1)-12(DAL)

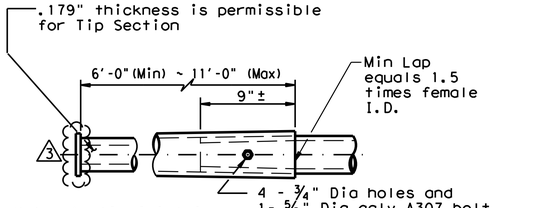
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DN: MS	CK: JSY	DW: MWF	CK: JSY
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
DAL			154

REVISIONS
5-96
11-99
1-12

122A

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Note: A slip joint is permissible for arms 40' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL

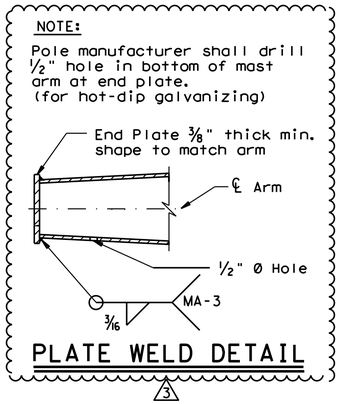


PLATE WELD DETAIL

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 ½" Dia Threaded Coupling.

BRACKET ASSEMBLY

VIBRATION WARNING

Mast Arms of SMA and DMA structures and clamp-on Arms of LMA structures of approximately 40 ft or longer are subject to harmonic vertical vibrations in light wind conditions due to the aeroelastic characteristics of a few of the myriads of possible combinations of the following: signal numbers, weights and positions; existence/solidity of backplates; presence of additional attachments to the arm, such as signs and cameras; arm-wind orientation; and arm-pole stiffness.

Such vibrations may cause fatigue damage to the structure and may lead to galloping in moderate wind conditions which may further damage the structure and alarm the public. Tests have indicated that when wind is blowing toward the back side of signal heads having un-vented backplates attached the probability of unacceptable harmonic vibration and/or galloping is rather high.

If backplates are not required for improved visibility they should not be applied to the signal heads or, if they must be applied, they should be vented as a first and inexpensive measure to mitigate vibrations.

The traffic signal mast arms shall be visually inspected in 5 to 20 mph wind conditions after installation of signal heads and any attachments, including any required backpates. If vertical movements with a total excursion (maximum upward excursion to maximum downward excursion) of more than approximately 8" are observed at the arm tip, a damping plate shall be fitted to the arm. See "Damping Plate Mounting Details" on standard sheet, MA-DPD-10.

This visual inspection shall be repeated after each modification of the structure that could affect its aeroelastic response. Excessive vibrations shall not be allowed to continue for more than two days.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor.

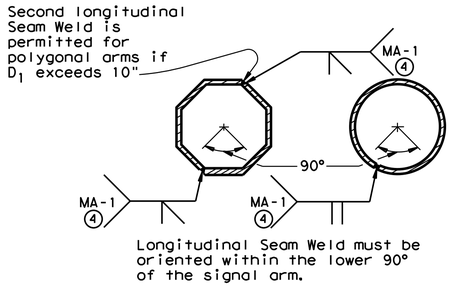
Poles are designed to support one 8'-0" luminaire arm, one 9'-0" internally lighted street name sign and one traffic signal arm with a length as tabulated. The specified luminaire load applied at the end of the luminaire arm equals 60 lbs vertical dead load plus the horizontal wind load on an effective projected area of 1.6 sq ft. The specified internally lighted street name sign load applied 4.5 ft from the centerline of the pole equals 85 lbs vertical dead load plus horizontal wind load on an effective projected area of 11.5 sq ft. The specified signal load applied at the end of the traffic signal arm equals 180 lbs vertical dead load plus the horizontal wind load on an effective projected area of 32.4 sq ft (actual area times drag coefficient).

5 See Standard Sheet "MA-D(DAL)" for pole details, "MA-C" for traffic signal arm connection details, "MA-C (ILSN)" for internally lighted street name sign arm connection details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details. See "MA-C" for material specifications.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

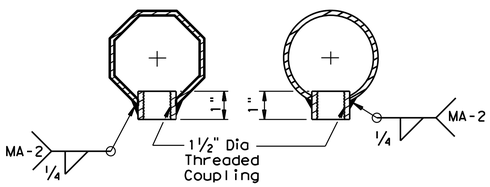
Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing", after fabrication.

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



ARM WELD DETAIL

4 60% Min. penetration 100% pemetration within 6" of circumferential base welds.



ARM COUPLING DETAILS

3 REPLACED TENON DETAIL WITH PLATE WELD DETAIL(2/12).

5 REPLACED "MA-D" WITH "MA-D(DAL)"(2/12).

Texas Department of Transportation
DALLAS DISTRICT STANDARD

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(2)-12(DAL)

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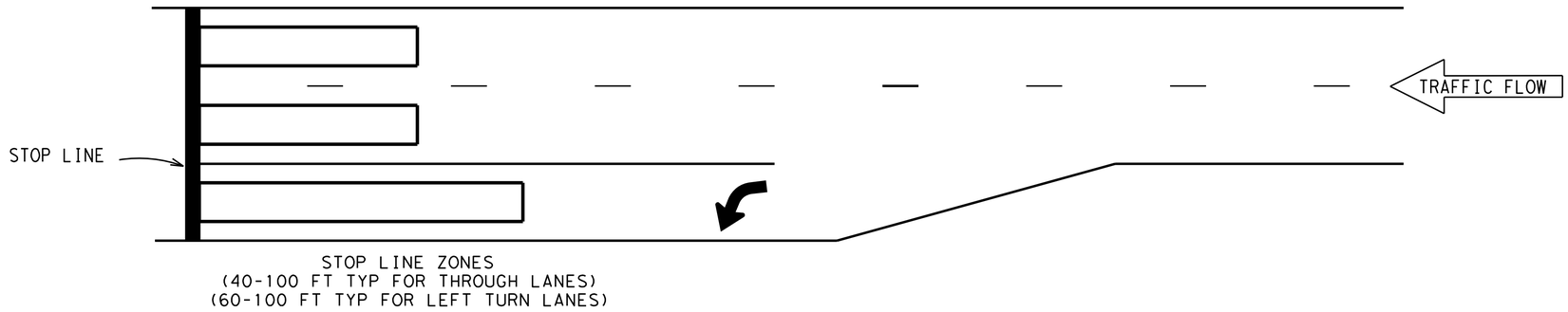
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REVISIONS
5-96
1-12

CONT	SECT	JOB	HIGHWAY

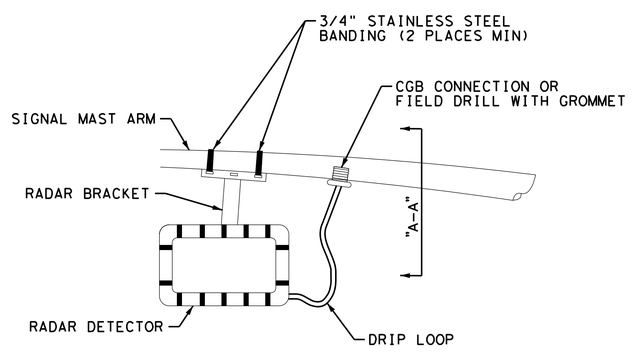
DIST	COUNTY	SHEET NO.
DAL		155

RADAR DETECTION ZONE LOCATIONS

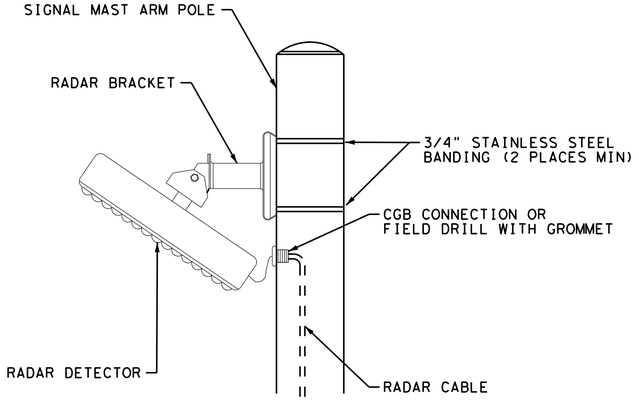


APPROACH SPEED LIMIT (MPH)	MINIMUM RANGE OF ADVANCE DETECTION (LF)
40	355
45	400
50	440
55	490
60	530
65	575
70	620

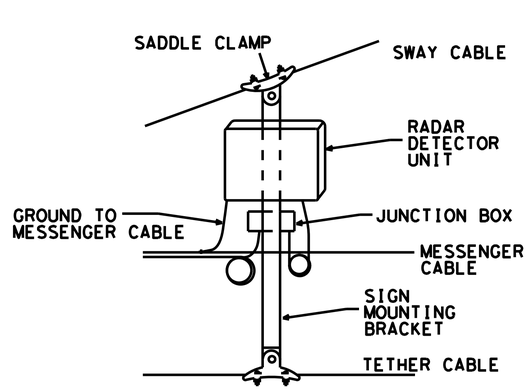
RADAR DETECTION INSTALLATION DETAILS



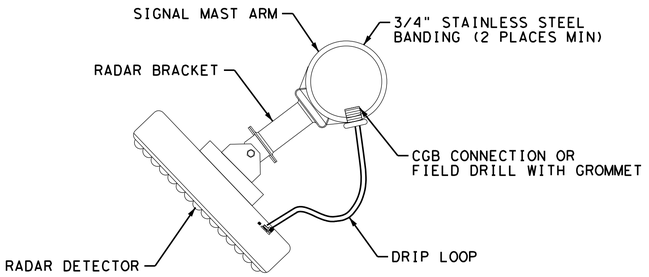
MAST ARM MOUNT



POLE MOUNT



SPAN WIRE MOUNT FOR ADVANCE RADAR



SECTION "A-A"

NOTES:

1. THE RADAR SENSOR MOUNTING BRACKET MUST BE ADJUSTABLE TO TILT UP, DOWN, LEFT, RIGHT, AND TO ROTATE.

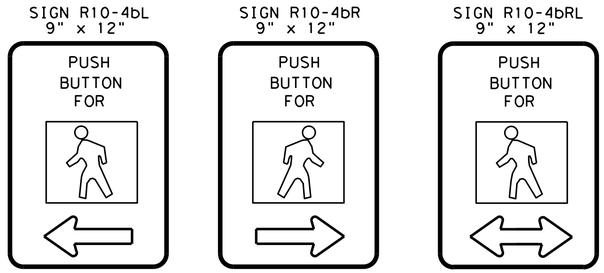
2. THE RADAR DETECTOR UNITS SHOWN ARE NOT INTENDED TO REPRESENT ANY SPECIFIC BRAND OR PRODUCT, AND ALTERNATE MOUNTING METHODS MAY BE SUBMITTED FOR APPROVAL.

DALLAS DISTRICT STANDARD

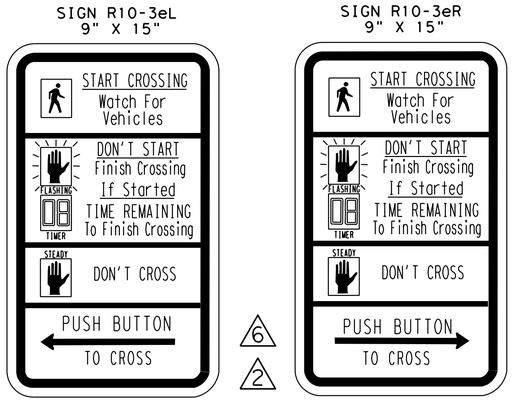
Texas Department of Transportation
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Dallas District

RADAR VEHICLE DETECTION SYSTEM
RVDS-23 (DAL)

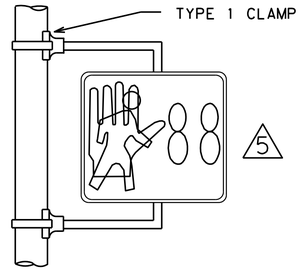
©TxDOT May 2018	DN: EF	CK: ---	DW: EF	CK: TRF-Aus.
REVISIONS	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
	6	(SEE TITLE SHEET)		
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	TEXAS	18	DALLAS	
	CONTROL	SECTION	JOB	- - -
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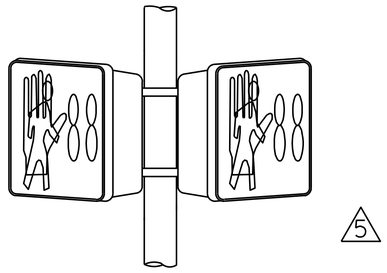
PEDESTRIAN PUSHBUTTON
SIGN DETAILS



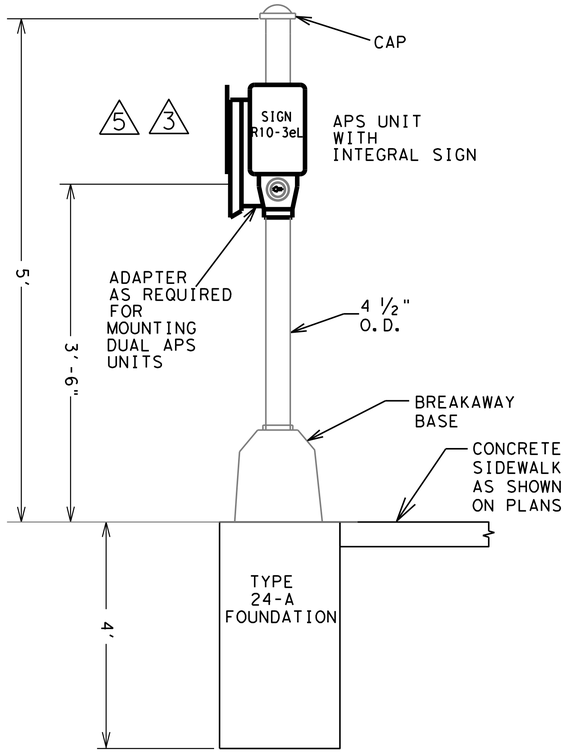
COUNTDOWN PEDESTRIAN PUSHBUTTON
SIGN DETAILS



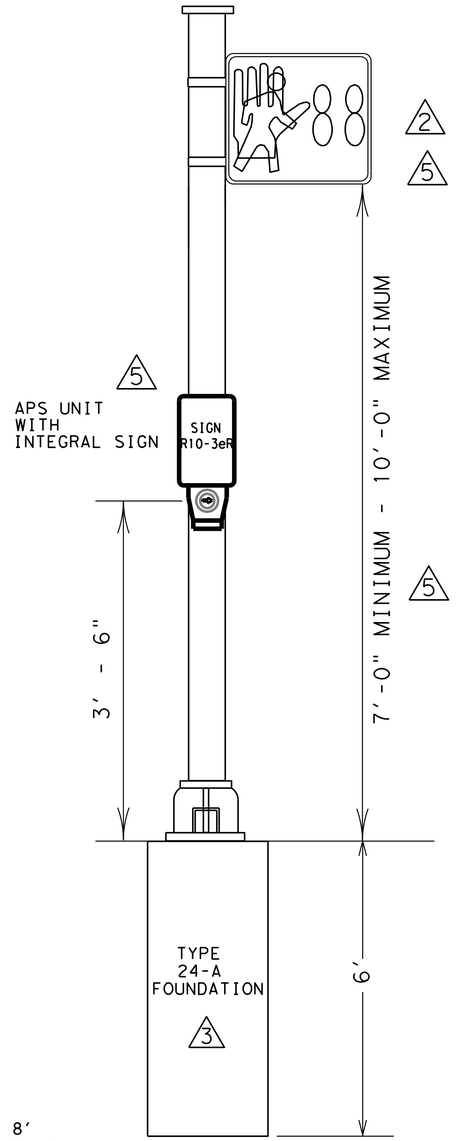
PEDESTRIAN SIGNAL HEAD MOUNTING
FOR ONE PEDESTRIAN SIGNAL HEAD
152A



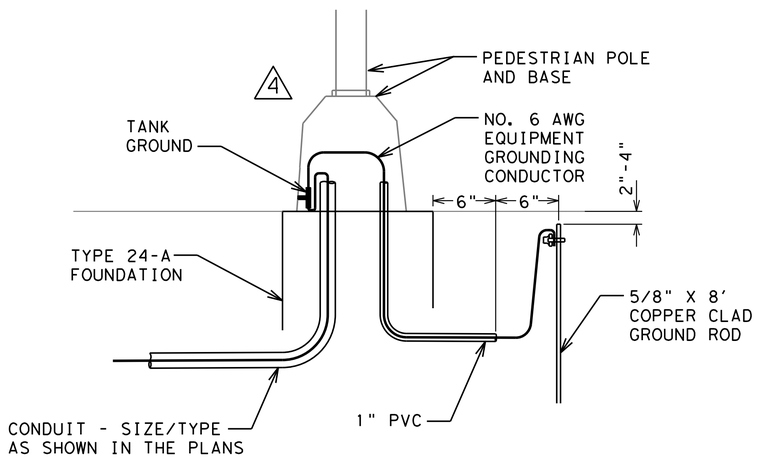
PEDESTRIAN SIGNAL HEAD MOUNTING
FOR TWO PEDESTRIAN SIGNAL HEADS
143C



PEDESTRIAN PUSH BUTTON POLE



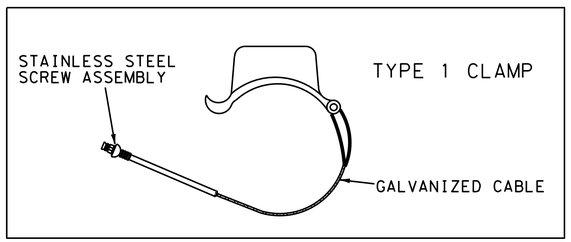
PEDESTAL POLE



PEDESTRIAN PUSH BUTTON POLE
GROUNDING DETAILS

NOTE:
THE POLES ON THIS DRAWING ARE SHOWN AS AN EXAMPLE ONLY. POLES OF SIMILAR DESIGN FOR ANY CROSS SECTION WHICH MEET THE SPECIFICATIONS AND REQUIREMENTS SHOWN ON THESE DRAWINGS AND ARE APPROVED BY THE ENGINEER WILL BE DEEMED ACCEPTABLE.

1 5 NOTE: EITHER TYPE 1 CLAMPS OR CLAM SHELL MOUNTING HARDWARE MAY BE USED AS APPROVED BY THE ENGINEER. FOR CLAM SHELLS, USE ICC P/N 4805 OR McCAIN QUICKMOUNT OR APPROVED EQUAL.



1 ALTERNATIVE MOUNTING METHOD
revised 12-92

2 ALTERNATIVE PEDESTRIAN SIGNAL HEAD AND SIGNING
revised 10-08

3 PEDESTRIAN PUSH BUTTON POLE
revised 01-11

4 PEDESTRIAN PUSH BUTTON POLE GROUNDING DETAILS
revised 09-15

5 APS UNIT ADDED
"SYMBOLS ONLY" PEDESTRIAN SIGNAL HEAD REMOVED
MOUNTING HARDWARE NOTES REVISED
MOUNTING HEIGHT REVISED
revised 06-17

6 APS SIGN REVISED
revised 11-20

NOTES:

5
1. ALL PEDESTRIAN SIGNAL HEADS SHALL BE INSTALLED ON THE AWAY-FROM-TRAFFIC SIDE OF THE PEDESTAL OR MAST ARM POLE.
2. ALL WIRING FOR PEDESTRIAN SIGNALS SHALL BE TOTALLY ENCLOSED WITHIN THE SIGNAL MOUNTING HARDWARE.
3. ALL PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON SIGNS SHALL DISPLAY THE SYMBOLIZED MESSAGES SHOWN ABOVE.

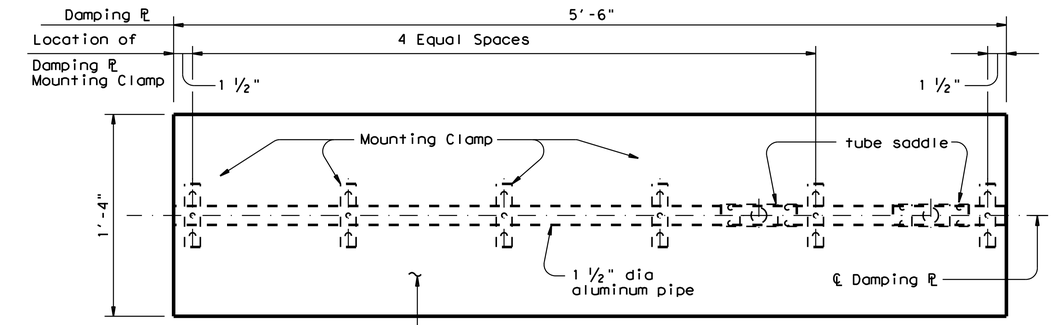
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DALLAS DISTRICT STANDARD

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6	(SEE TITLE SHEET)		157
STATE	STATE DIST.	COUNTY	
TEXAS	18	DENTON	
CONT.	SECT.	JOB	HIGHWAY NO.
1567	01	037	FM5720

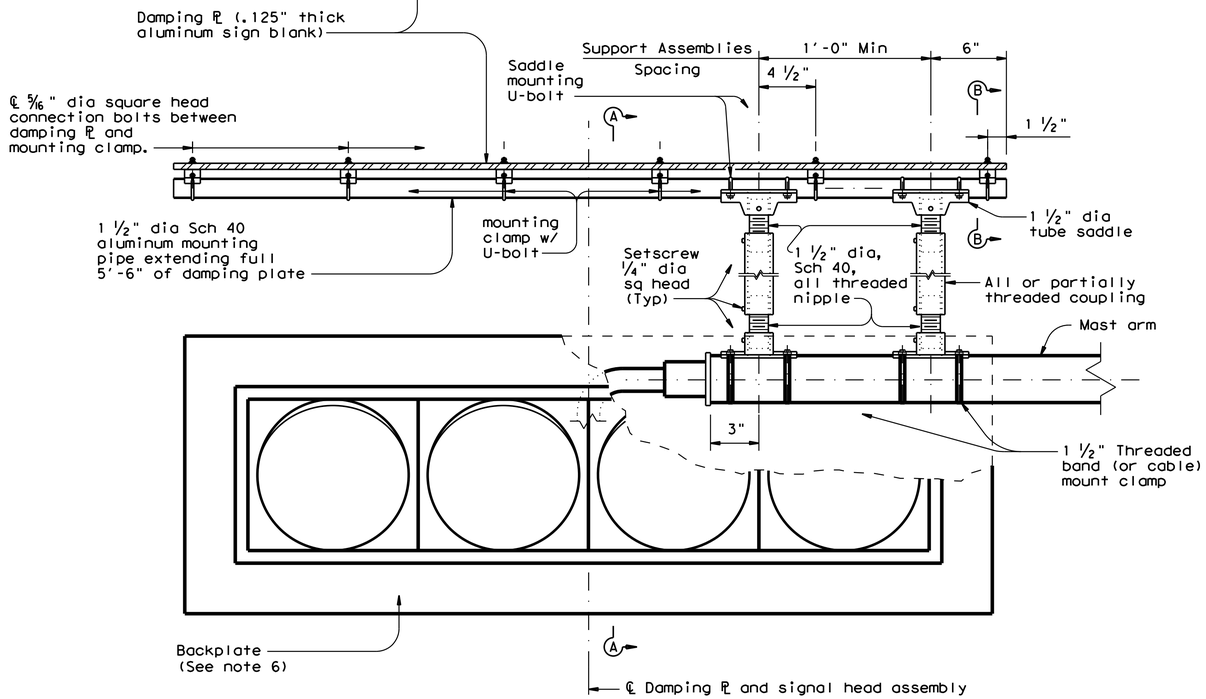
PEDESTRIAN SIGNAL HEAD DETAILS (DAL)

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DATE:
FILE:



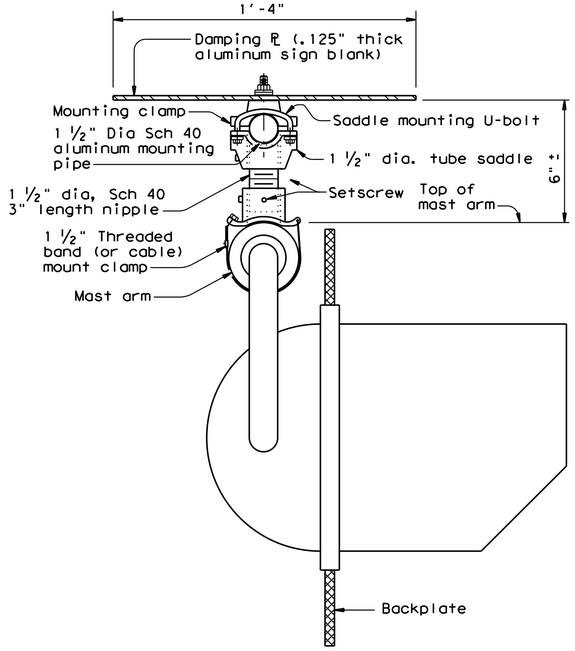
PLAN



ELEVATION

DAMPING PLATE MOUNTING DETAILS

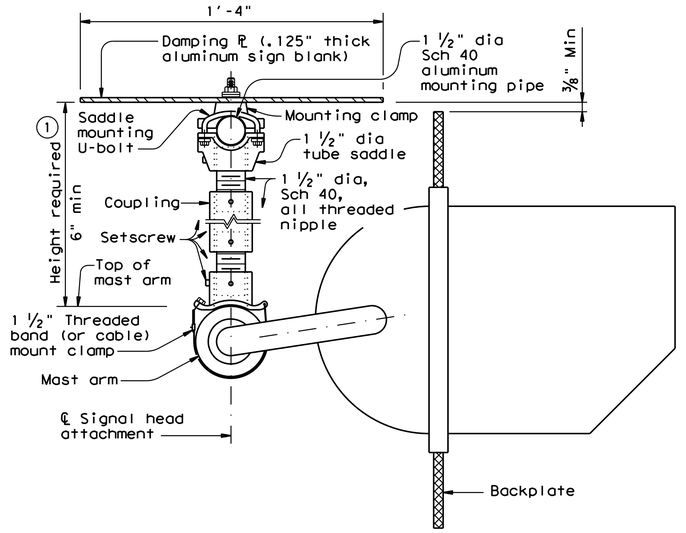
(Showing alternate placement of signal head)



SECTION A-A

(Showing standard placement of signal head)

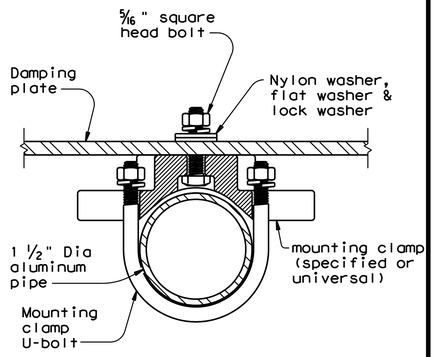
(Mounting clamp U-bolt is not shown for clarity)



SECTION A-A

(Showing alternate placement of signal head)

(Mounting clamp U-bolt is not shown for clarity)



SECTION B-B

(Showing damping plate attachment)

① Recommended supporting assemblies to achieve required height for horizontal section heads			
Height required	One nipple each length	Two nipples each length plus	One coupling each length
6"-6 ¾"	3"	-	-
7"-8 ½"	4"	-	-
9"-10 ½"	6"	-	-
11"-15 ½"	-	4"	5"
16"-24"	-	6"	10"

GENERAL NOTES:

1. In accordance with the findings of TxDOT sponsored research, the installation of a damping plate in accordance with the details shown here at the end of signal mast arms of SMA and DMA standard structures reduces excessive harmonic vertical vibration, and thus fatigue damage. Any deviation from these details may reduce the effectiveness of this damping device.

2. Aluminum sign blank for damping plate will conform to Departmental Material Specifications DMS-7110. Materials for mast arm mounting clamp and tube saddle will be aluminum castings or aluminum alloys as in accordance with manufacturers' stipulations. Mounting pipe, pipe nipple and coupling will be aluminum alloy 6061-T6 or 6063-T6. Damping plate mounting clamp and u-bolt assemblies will conform to Standard sheet SMD(GEN). U-bolts for saddle mounting will have a minimum yield strength of 36 ksi.

3. Damping plate will be mounted horizontally. Position centerline of damping plate to align with centerline of mast arm or horizontal signal head assembly. Vertical clearance between signal head (with or without backing plate) and bottom of damping plate will be maintained as shown. The attachments shown here are examples only, other supporting details which meet both alignment and vertical clearance requirements are also acceptable.

4. Unless stipulated by the manufacturers, all steel parts will be galvanized finish in accordance with Standard Specification Item 445, "Galvanizing".

5. Contractor will verify applicable field dimensions before the installation.

6. Backplates are optional for traffic signals. When backplates are used, Backplates will have a 2-inch fluorescent yellow AASHTO Type B_{FL} or C_{FL} retroreflective border conforming to TxDOT DMS-8300 "Sign Face Materials." See Sheet TS-BP-20 for backplate details.

Texas Department of Transportation

Traffic Safety Division Standard

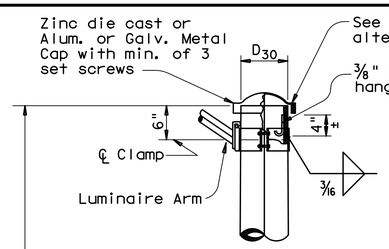
MAST ARM DAMPING PLATE DETAILS

MA-DPD-20

FILE: ma-dpd-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
6-20	DIST	COUNTY		SHEET NO.
				158

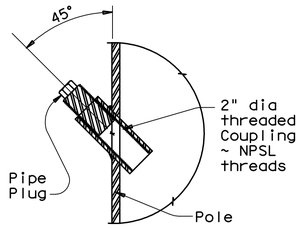
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DATE:
FILE:

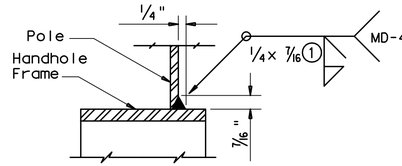


DETAIL A

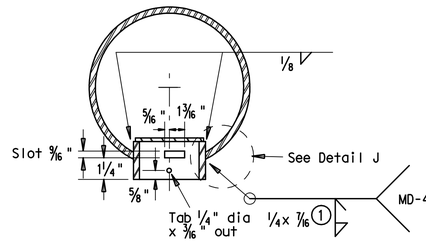
(for pole with luminaire)



POLE COUPLING DETAIL

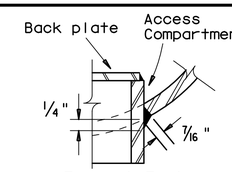


DETAIL G

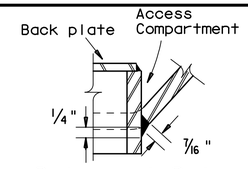


SECTION X-X

Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.

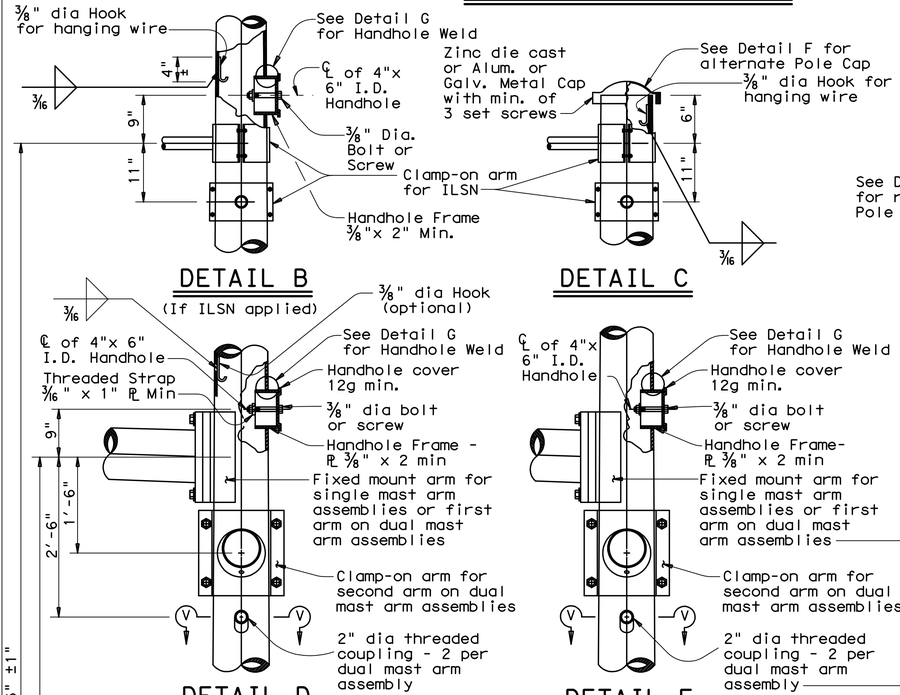


Round Pole



Polygonal Pole

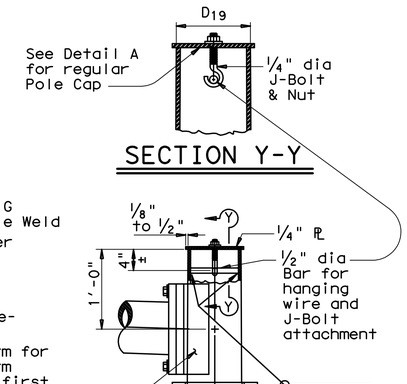
DETAIL J



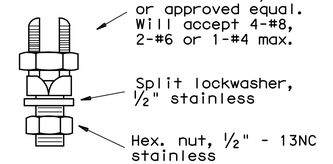
DETAIL B

(If ILSN applied)

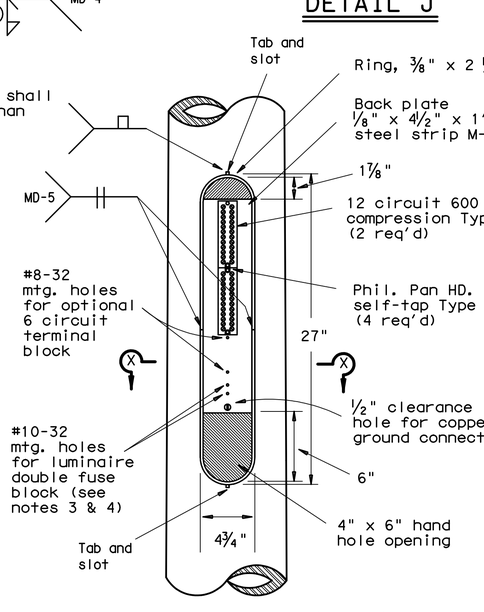
DETAIL C



SECTION Y-Y



COPPER GROUND CONNECTOR



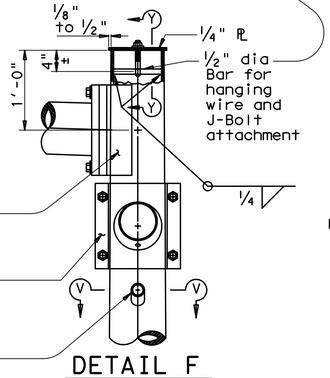
ACCESS COMPARTMENT

DETAIL D

(for 30' pole with luminaire and ILSN sign)

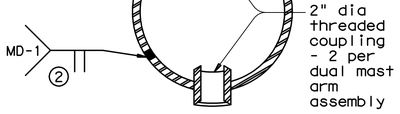
DETAIL E

(for 24' pole with ILSN sign and no luminaire)

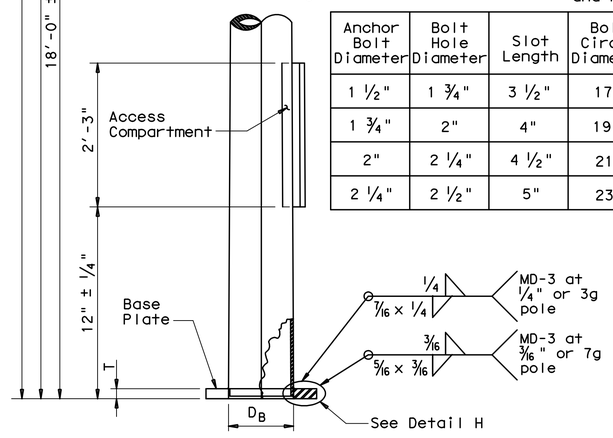


DETAIL F

(for 19' pole with no ILSN sign and no luminaire)

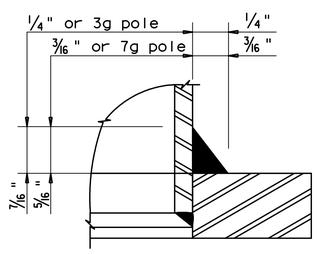


SECTION V-V

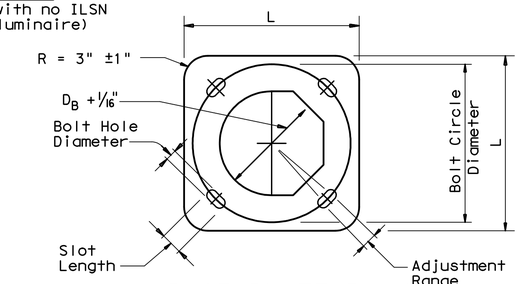


POLE ELEVATION

Anchor Bolt Diameter	Bolt Hole Diameter	Slot Length	Bolt Circle Diameter	Base ℞ Dim. L x T	Adjust. Range
1 1/2"	1 3/4"	3 1/2"	17"	18" x 1 1/2"	13.4°
1 3/4"	2"	4"	19"	20" x 1 3/4"	13.5°
2"	2 1/4"	4 1/2"	21"	22" x 2"	13.6°
2 1/4"	2 1/2"	5"	23"	24" x 2 1/4"	13.7°



DETAIL H



BASE PLATE PLAN

(1) 85% Min. penetration

(2) 60% Min. penetration 100% pemetration within 6" of circumferential base welds.

NOTES:

1. The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
2. The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilsco SSS-5). The traffic signal contractor shall install the kit items in the field.
3. The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
4. Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES MAST ARM POLE DETAILS

MA-D-12

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DN: MS	CK: JSY	DW: FDN	CK: CAL

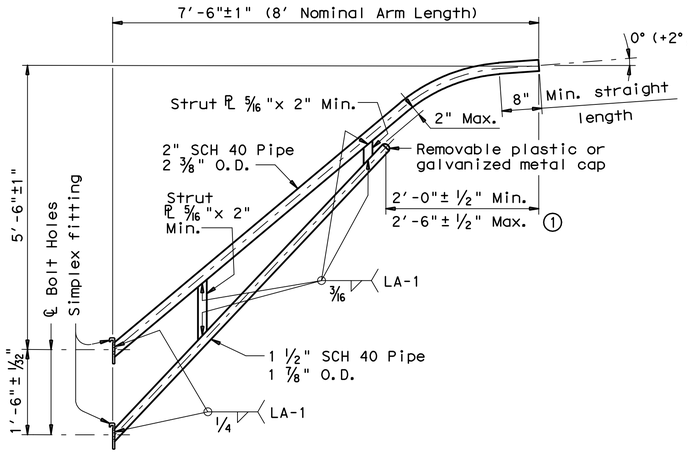
REVISIONS
8-99
1-12

CONT	SECT	JOB	HIGHWAY

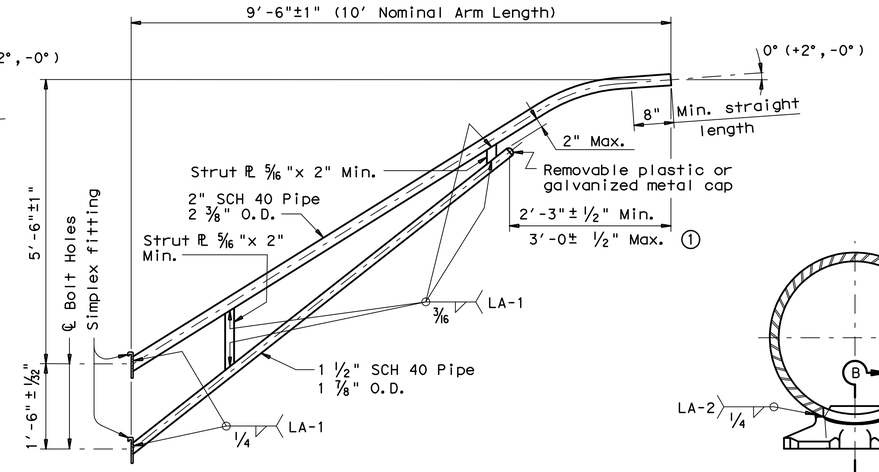
DIST	COUNTY	SHEET NO.
		159

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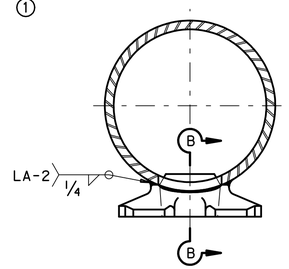
DATE:
FILE:



8-FOOT LUMINAIRE ARM



10-FOOT LUMINAIRE ARM



DIRECT ATTACHMENT DETAIL

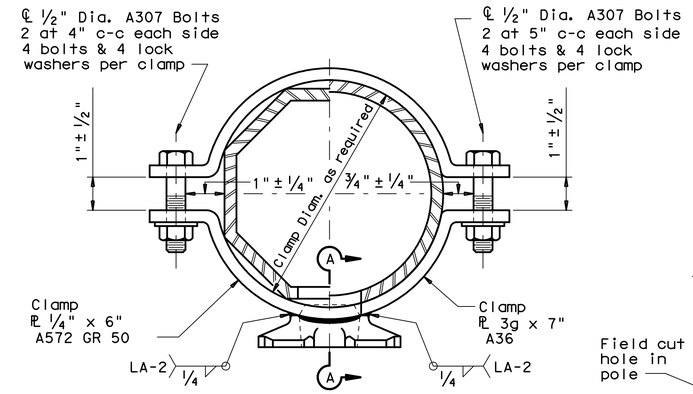
MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr.65-35 or A148 Gr.80-50, A576 Gr.1021 ③, or A36 (Arm only)
Arm Pipes	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50 ④, or A1011 HSLAS-F Gr.50 ④
Arm Strut Plates ②	ASTM A36, A572 Gr.50 ④, or A588
Misc.	ASTM designations as noted

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

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

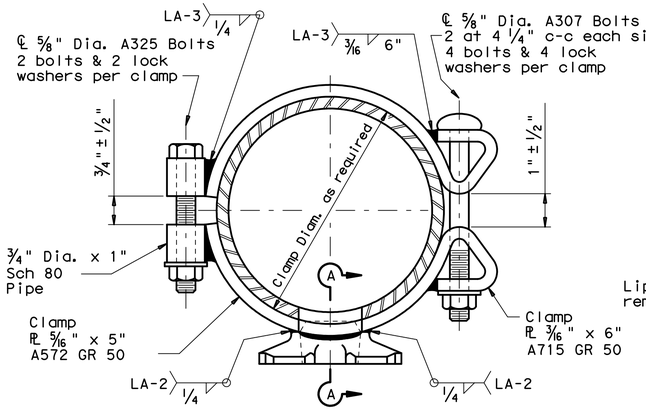
③ A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.

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



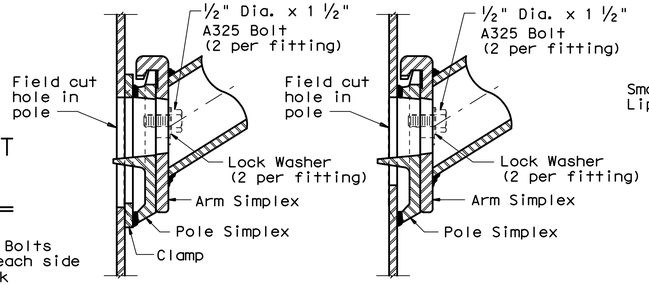
CLAMP ATTACHMENT DETAIL NO.1 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO.2 (HALF SECTION)



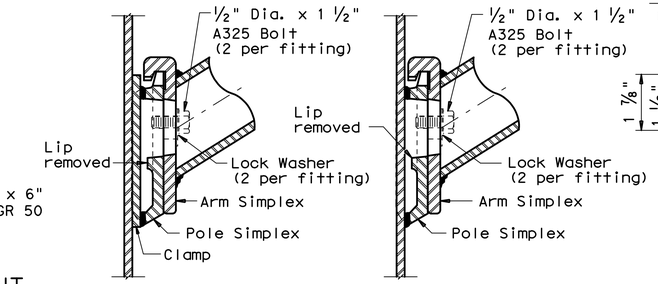
CLAMP ATTACHMENT DETAIL NO.3 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO.4 (HALF SECTION)



UPPER SIMPLEX FITTING

UPPER SIMPLEX FITTING

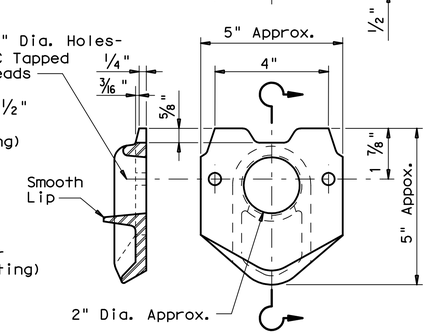


LOWER SIMPLEX FITTING

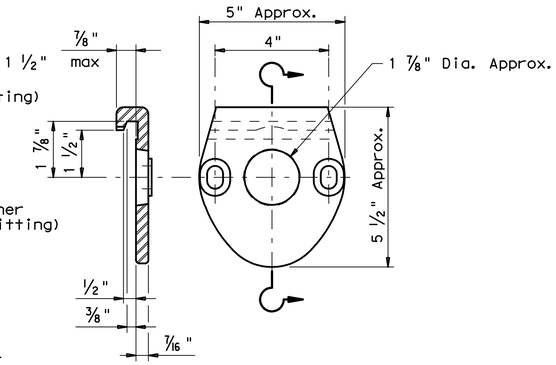
SECTON A-A

LOWER SIMPLEX FITTING

SECTON B-B



POLE SIMPLEX DETAIL



ARM SIMPLEX DETAIL

GENERAL NOTES:

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

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

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

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

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

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

Texas Department of Transportation
Traffic Operations Division

STANDARD ASSEMBLY DRAWINGS FOR LUMINAIRE SUPPORT STRUCTURES

ARM DETAILS

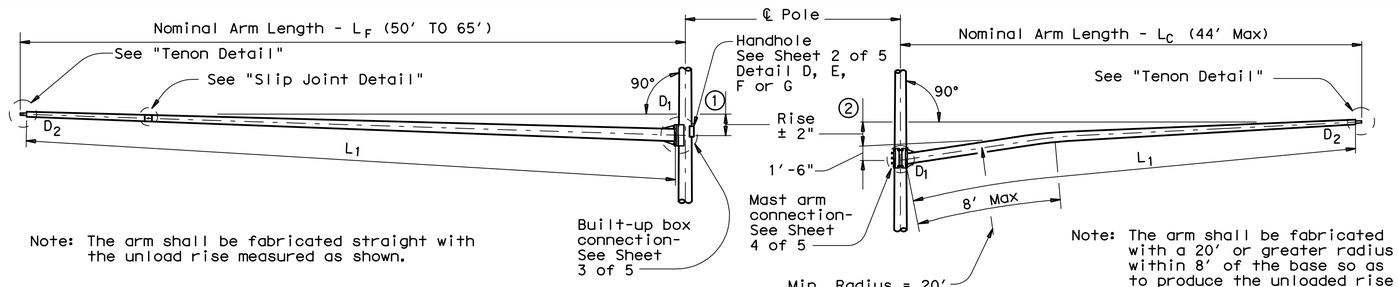
LUM-A-12

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5-96	CONT	SECT	JOB	HIGHWAY
1-99				
1-12	DIST	COUNTY		SHEET NO.
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Note: The arm shall be fabricated straight with the unload rise measured as shown.

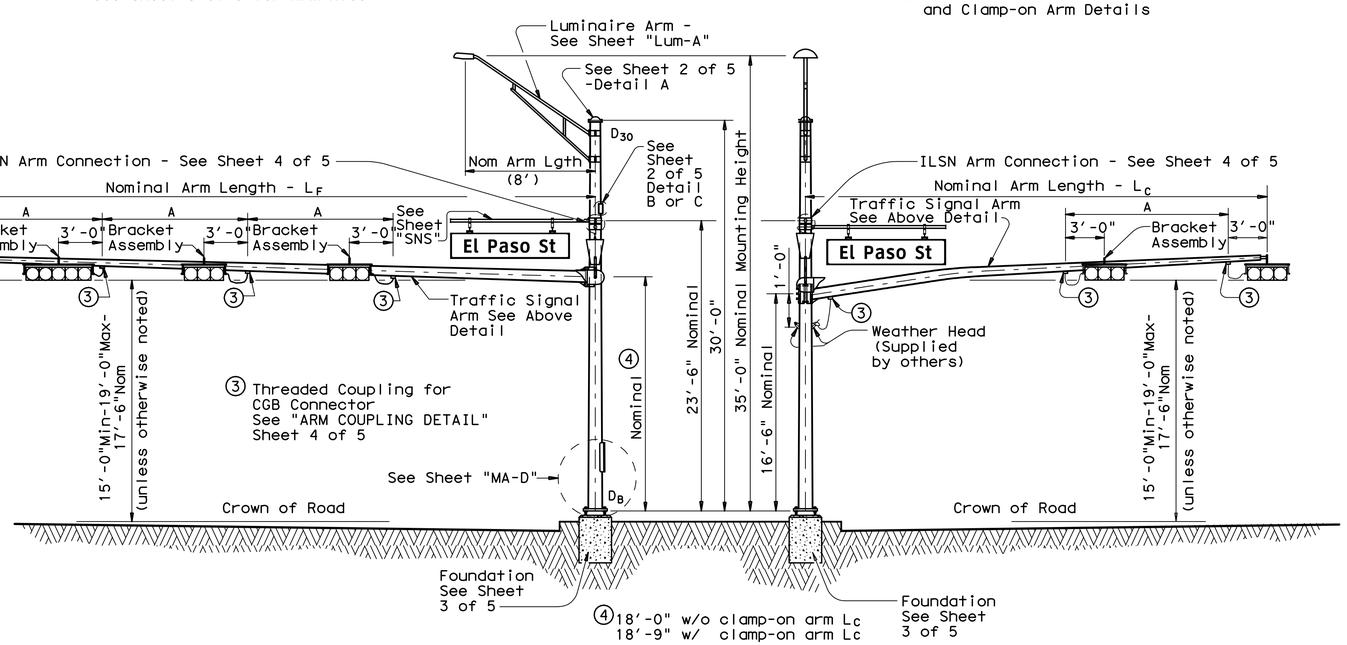
Note: The arm shall be fabricated with a 20' or greater radius within 8' of the base so as to produce the unloaded rise measured as shown.

FIXED MOUNT TRAFFIC SIGNAL ARM

① See Sheet 3 of 5 for Arm Rise

CLAMP-ON TRAFFIC SIGNAL ARM (IF REQUIRED)

② See Sheet 4 of 5 for Arm Rise and Clamp-on Arm Details



ELEVATION

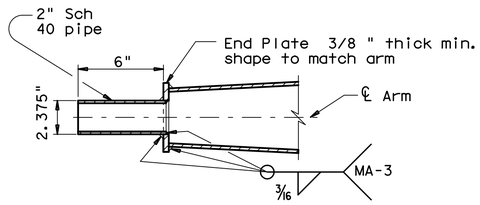
(Showing fixed mount arm)

STRUCTURE ASSEMBLY

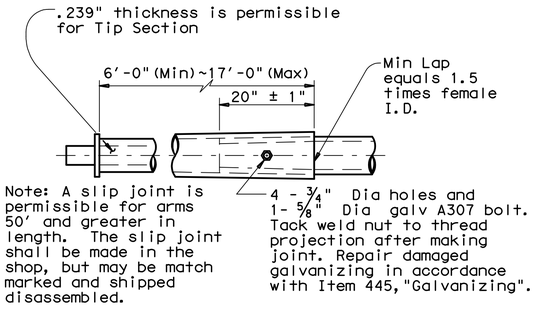
ELEVATION

(Showing clamp-on arm)

TABLE OF DIMENSIONS "A"										
Arm Length	24'	28'	32'	36'	40'	44'	50'	55'	60'	65'
Arm Type II	10'	11'	12'	13'						
Arm Type III			10'	11'	12'	12'				
Arm Type IV							12'	12'	12'	12'



TENON DETAIL



Note: A slip joint is permissible for arms 50' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL(FIXED MOUNT ARM)

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed can be either 100 mph or 80 mph plus a 1.3 gust factor. If clamp-on traffic signal is required, designs are based on an arm included angle of 90 degrees or more. Angles of less than approximately 75 degrees will require a special design.

Poles are designed to support one 8'-0" luminaire arm, two 9'-0" internally lighted street name (ILSN) signs and two traffic signal arms with limited length combinations.

Each arm with its related attachment is shown below

Arm	Equivalent DL ⑤	WL EPA ⑤⑥
8' Luminaire Arm	Luminaire 60 lbs	1.6 sq ft
9' ILSN Arm	Sign 85 lbs	11.5 sq ft
50' to 65' Fixed Mount Arm	Signal Loads 310 lbs	52 sq ft
Up to 44' Clamp-on Arm	Signal Loads 180 lbs	32.4 sq ft

⑤ Equivalent dead load plus horizontal wind load applied at the end of arm except ILSN arm, which applied 4.5' from the centerline of the pole.

⑥ Effective projected area (actual area times drag coefficient) for the application of horizontal wind load.

Except as noted in Sheet 1 thru 5 of 5, other details not covered shall refer to Standard Sheet "MA-D" for pole details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Material, fabrication tolerances, and shipping practices shall also meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

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

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

Installation of damping plate for the long mast arm is not recommended.

Provision of the bracket assembly used to support the traffic signal heads shall be under the direction of the Engineer for approval.

Design also conforms to NCHRP Report 412 for fatigue resistance except that there are no stiffeners at the base plate. TxDOT is conducting tests to determine if stiffeners at the base plate will or will not result in optimal performance; depending upon the results of the tests, poles may need a retrofit to ensure optimal fatigue performance.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

LMA(1)-12

Sheet 1 of 5

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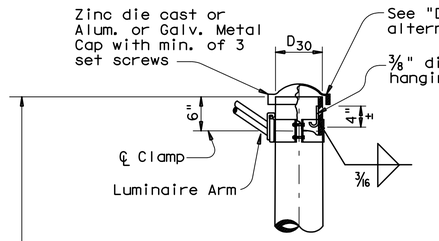
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REVISIONS	CONT	SECT	JOB	HIGHWAY
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1-12	DIST	COUNTY		SHEET NO.
				161

131A

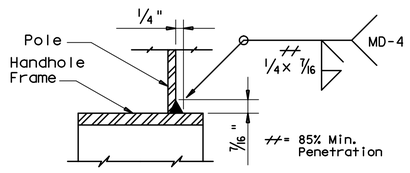
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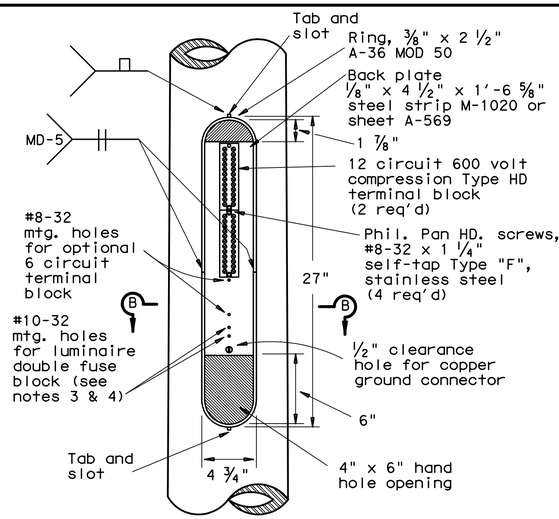


DETAIL A

(for pole with luminaire)



DETAIL H

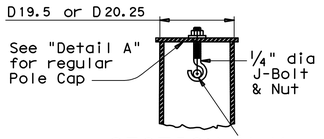


ACCESS COMPARTMENT

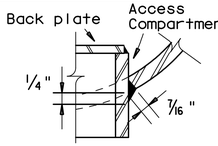
MATERIALS	
Round Shafts or Polygonal Shafts (7)	ASTM A595 Gr.A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 (8)
Plates (7)	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325, or A449 except where noted
Pin Bolts	ASTM A325
Pipe (7)	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Misc. Hardware	Galvanized steel or stainless steel or as noted

(7) ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.

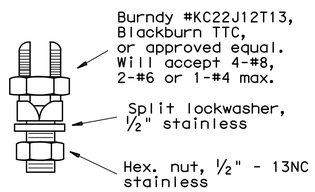
(8) ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.



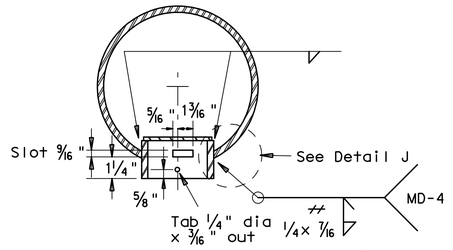
SECTION Y-Y



DETAIL J

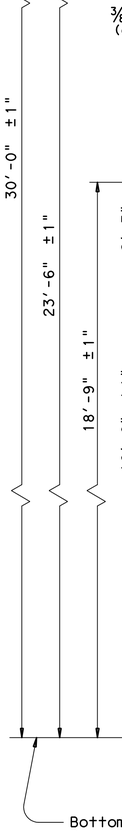


COPPER GROUND CONNECTOR

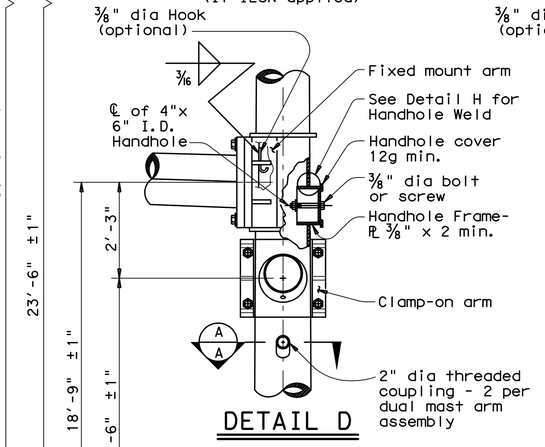


SECTION B-B

Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.

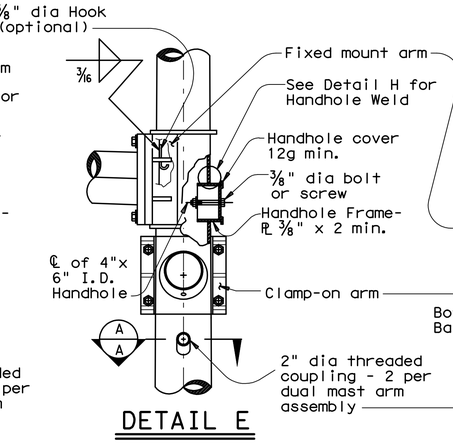


POLE ELEVATION



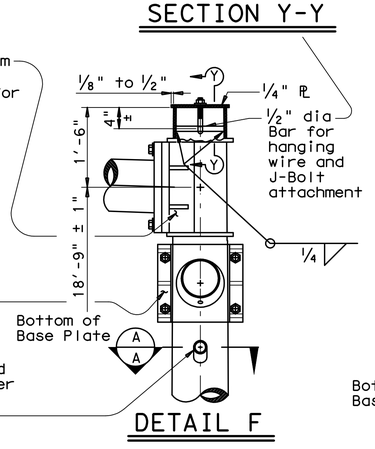
DETAIL D

(for 30' pole with luminaire and ILSN sign)



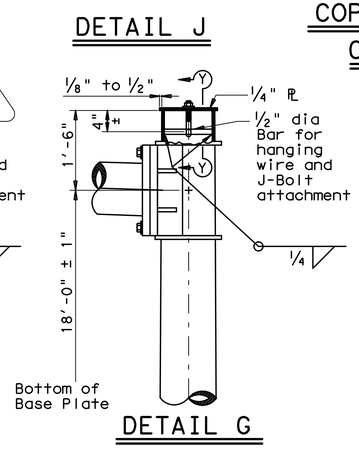
DETAIL E

(for 24' pole with ILSN sign and no luminaire, single or dual mast arm)



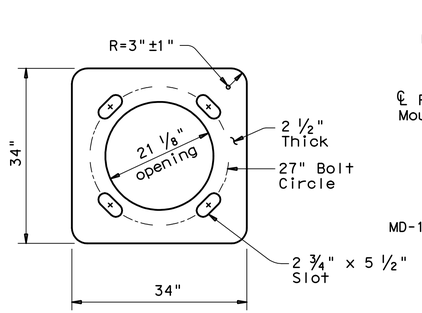
DETAIL F

(for 20.25' pole with no ILSN sign and no luminaire, dual mast arm)

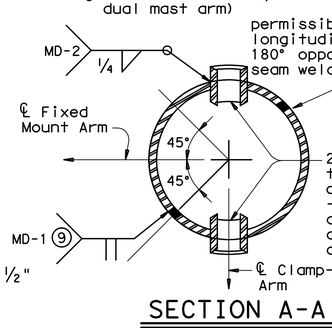


DETAIL G

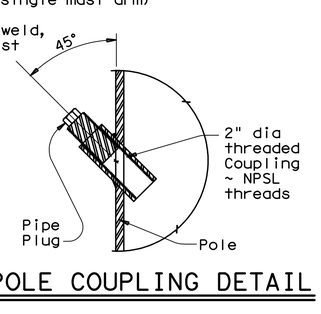
(for 19.5' pole with no ILSN sign and no luminaire, single mast arm)



BASE PLATE



SECTION A-A



POLE COUPLING DETAIL

(9) Longitudinal seam weld must be oriented within 90° (45° rotation each side) along the fixed mount arm. 60% min penetration required, 100% penetration within 6" of circumferential base weld.

ACCESS COMPARTMENT NOTES:

1. The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
2. The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilsco SSS-5). The traffic signal contractor shall install the kit items in the field.
3. The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
4. Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 2 of 5

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DN: JSY	CK: ARC	DW: TGG	CK: JSY

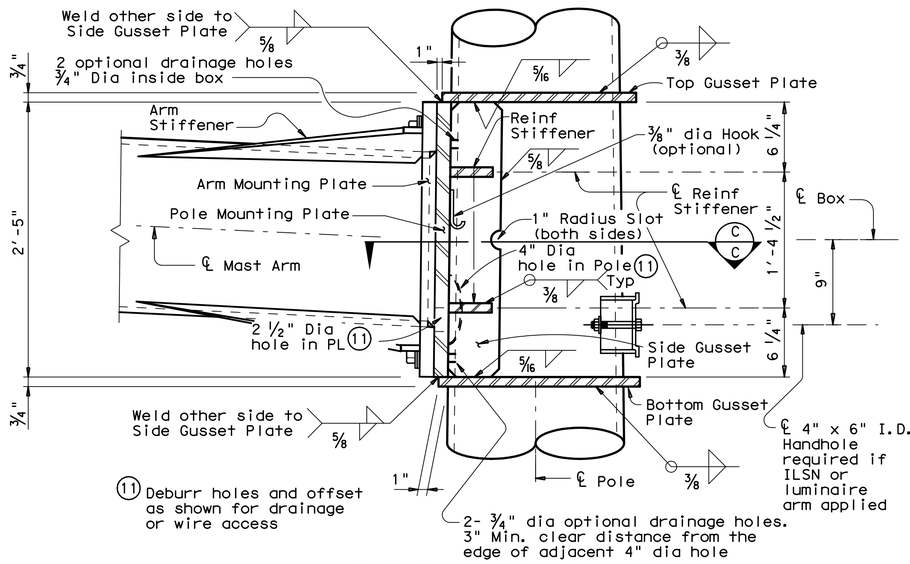
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CONT	SECT	JOB	HIGHWAY

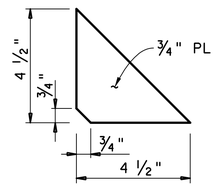
DIST	COUNTY	SHEET NO.
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131B

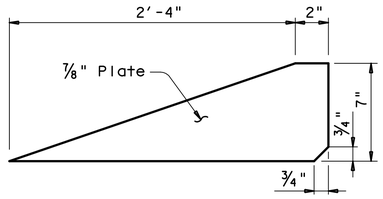
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BUILT-UP BOX CONNECTION

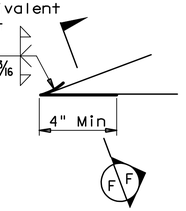


REINFORCING STIFFENER



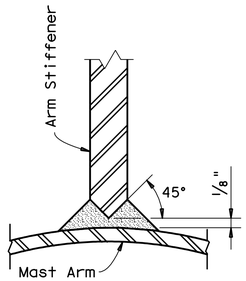
ARM STIFFENER
(Cut to match arm inclination and taper)

Provide Detail shown in SECTION F-F or equivalent 100% complete joint penetration weld from both sides.



Only 4" length at tip of Arm Stiffener requires a complete joint penetration weld. Smooth weld radius to connect Stiffener. Only a fillet weld is required for the remaining weld length.

DETAIL "K"



SECTION F-F

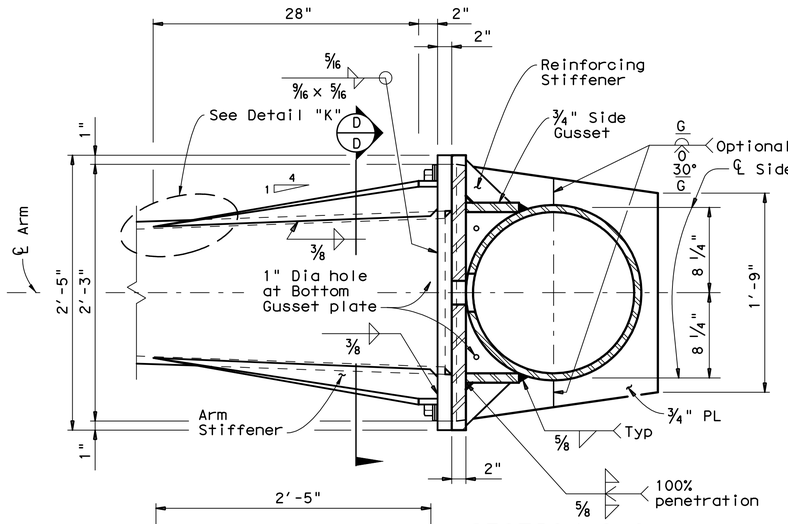
Fixed Mount Arm L_F	ROUND POLES (13)					Foundation Type
	D_B	$D_{19.5}$ or $D_{20.25}$	D_{24}	D_{30}	(12) thk	
ft.	in.	in.	in.	in.	in.	
50', 55' 60', 65'	21.0	18.2	17.6	16.8	.3125	48-A

Fixed Mount Arm L_F	ROUND ARMS (13)				
	L_1	D_1	D_2	(12) thk	Rise
ft.	ft.	in.	in.	in.	
50	49	18.5	11.7	.3125	3'- 3"
55	54	18.5	11.0	.3125	3'- 7"
60	59	18.5	10.3	.3125	3'-11"
65	64	18.5	9.6	.3125	4'- 4"

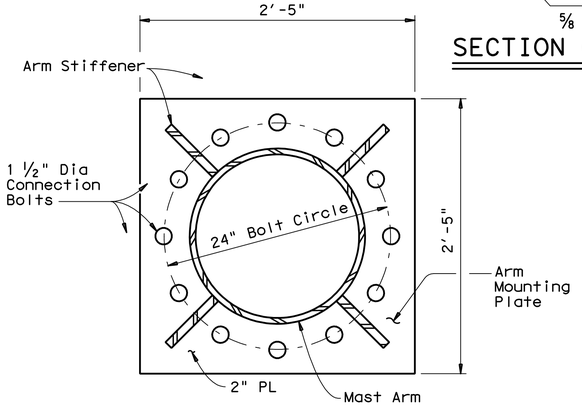
D_B = Pole Base O.D.
$D_{19.5}$ = Pole Top O.D. with no Luminaire and no ILSN (single mast arm)
$D_{20.25}$ = Pole Top O.D. with no Luminaire and no ILSN (dual mast arm)
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L_F = Fixed Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

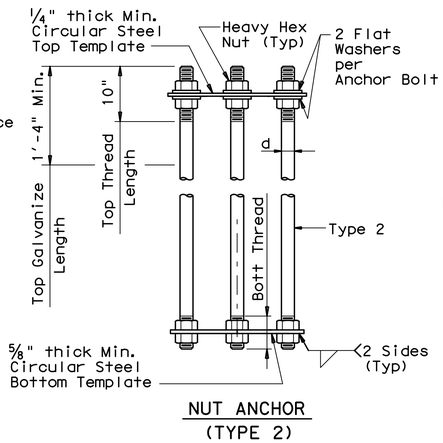
(13) Shaft profile 16-sided or 18-sided is considered to be equivalent to round section.



SECTION C-C

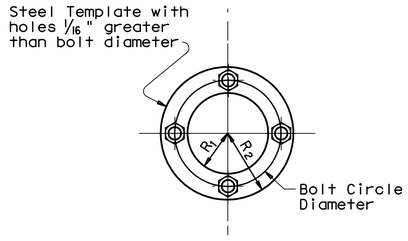


SECTION D-D



NUT ANCHOR
(TYPE 2)

ANCHOR BOLT ASSEMBLY



TEMPLATE DETAIL

ANCHOR BOLT & TEMPLATE SIZE						
Bolt Dia in.	Length ‡	Top Thread	Bottom Thread	Bolt Circle	R_2	R_1
2 1/2"	5'-2"	10"	6 1/2"	27"	16"	11"

‡ Min dimension given, longer bolts are acceptable.

FOUNDATION DESIGN TABLE													
FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (16), (17), (18)			ANCHOR BOLT DESIGN (14)				FOUNDATION DESIGN LOAD (15)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
48-A	48"	20 #9	#4 at 6"	21.9	19.5	14.7	2 1/2"	55	27"	2	490	10	50' to 65' Mast arm assembly.

SEE SHEET "TS-FD" FOR ADDITIONAL DETAILS.

(14) Anchor bolt design develops the foundation capacity given under Foundation Design Laods.

(15) Foundation Design Loads are the allowable moments and shears at the base of the structure.

(16) Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

(17) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

(18) Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

GENERAL NOTES:

Built-up Box Connection: For the welded arm-to-pole connection as a build-up box configuration illustrated here is an example only, fabricators are required to submit a shop drawing of box connection for approval. The drawing shall specify the details of each box element, welds of arm-to-pole connection, arm-to-plate socket connection, and arm rise creation. Specify the proper location of drain holes along the pole. 2 1/2" dia hole in the pole mounting plate and 4" dia hole in the pole need to be aligned for wiring access or drainage. Arm stiffeners cut to match arm inclination and taper shall also be included.

The deviation from flat for either arm or pole mounting plate shall not exceed 1/32 in., which is measured along the center of mounting plate to a radial distance of 13.5 in. The deformed-from-flat connection between arm and pole mounting plates shall not be allowed if the center of both mounting plates cannot contact directly.

Fixed mount details are used for single mast arm assemblies and for the first arm on dual mast arm assemblies.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 3 of 5 LMA(3)-12

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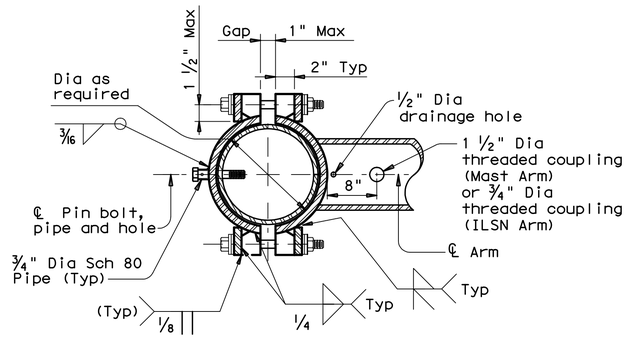
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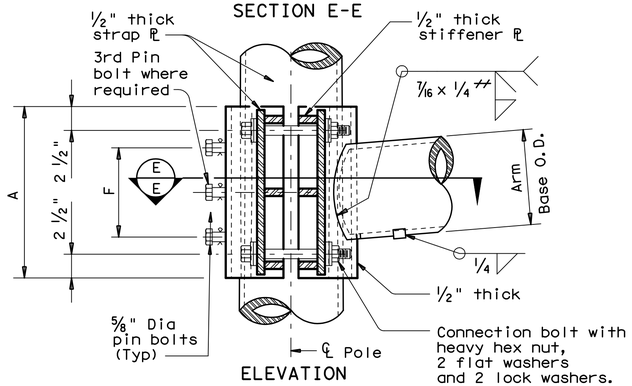
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SECTION E-E



ELEVATION
(Mast Arm or ILSN Arm to pole)

= 85% Min. Penetration

CLAMP-ON CONNECTION

80 MPH WIND

Clamp-on Arm Lc	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"

100 MPH WIND

Clamp-on Arm Lc	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	8.0	5.3	.179	1'-8"	19.1	8.0	3.5	.179	1'-7"
24	23.1	9.0	5.8	.179	1'-9"	23.1	9.0	3.5	.179	1'-8"
28	27.1	9.5	5.7	.179	1'-10"	27.1	10.0	3.5	.179	1'-9"
32	31.0	9.5	5.2	.239	1'-11"	31.0	9.5	3.5	.239	1'-10"
36	35.0	10.0	5.1	.239	2'-0"	35.0	10.0	3.5	.239	1'-11"
40	39.0	10.5	5.1	.239	2'-3"	39.0	11.0	3.5	.239	2'-1"
44	43.0	11.0	5.1	.239	2'-8"	43.0	11.5	4.0	.239	2'-3"

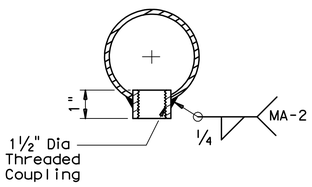
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
Lc = Clamp-on Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

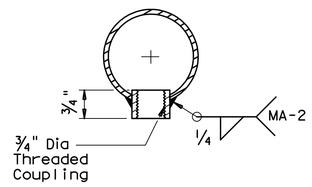
CLAMP-ON ARM CONNECTION

ILSN Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Sch 40 pipe Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
3	.216	10	4	¾	2

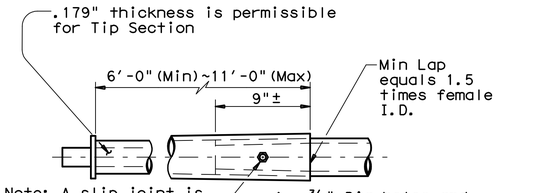
Mast Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Base Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
6.5	.179	12	6	1	2
7.5	.179	14	8	1	2
8.0	.179	14	8	1	2
9.0	.179	16	10	1	2
9.5	.179	18	12	1 ¼	3
9.5	.239	18	12	1 ¼	3
10.0	.239	18	12	1 ¼	3
10.5	.239	18	12	1 ¼	3
11.0	.239	18	12	1 ¼	3
11.5	.239	18	12	1 ¼	3



ARM COUPLING DETAIL



ILSN ARM COUPLING DETAIL

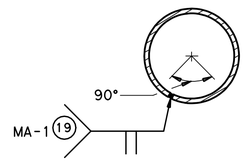


Note: A slip joint is permissible for arms 40' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL (CLAMP-ON ARM)

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 ½" Dia Threaded Coupling.

BRACKET ASSEMBLY



ARM WELD DETAIL

(19) Longitudinal Seam Weld must be oriented within the lower 90° of the signal arm.
60% Min penetration
100% penetration within 6" of circumferential base welds.

GENERAL NOTES:

Clamp-on details are used for the second arm on dual mast arm assemblies or ILSN arm support. For a clamp-on mast arm, a maximum 1 ½" wide vertical slotted hole may be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1". For an ILSN arm, a 1 ½" diameter hole shall be cut in the front clamp plate for wire access. A matched hole shall be field drilled through the pole to provide wire access after arm is oriented. Deburr both holes.

Where duplicate parts occur on a detail, welds shown for part shall apply to all similar parts on the detail.

Pin bolts are required to prevent rotation of clamp-on arms under design wind forces. Pin bolts shall be ASTM A325 with threads excluded from the shear plane. Pin bolt and ¾" diameter pipe shall have 3/16" diameter holes for a 1/8" diameter galvanized cotter pin. Back clamp plate shall be furnished with a ¾" diameter hole for each pin bolt. An 11/16" diameter hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 4 of 5 LMA(4)-12

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Shipping Parts List

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed arm connection bolts and washers, and any additional hardware listed in the table.

Nominal Arm Length	30′ Poles with Luminaire See note above plus: one (or two if ILSN attached) small hand hole, clamp-on simplex		24′ Poles with ILSN See note above plus one small hand hole		19.50′ (Single Mast Arm) 20.25′ (Dual Mast Arm) Poles with no Luminaire and no ILSN See note above	
Single Mast Arm						
Lf ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	50L		50S		50	
55	55L		55S		55	
60	60L		60S		60	
65	65L		65S		65	
Dual Mast Arm						
Lf ft. / Lc ft.						
50 / 20	5020L		5020S		5020	
24	5024L		5024S		5024	
28	5028L		5028S		5028	
32	5032L		5032S		5032	
36	5036L		5036S		5036	
40	5040L		5040S		5040	
44	5044L		5044S		5044	
55 / 20	5520L		5520S		5520	
24	5524L		5524S		5524	
28	5528L		5528S		5528	
32	5532L		5532S		5532	
36	5536L		5536S		5536	
40	5540L		5540S		5540	
44	5544L		5544S		5544	
60 / 20	6020L		6020S		6020	
24	6024L		6024S		6024	
28	6028L		6028S		6028	
32	6032L		6032S		6032	
36	6036L		6036S		6036	
40	6040L		6040S		6040	
44	6044L		6044S		6044	
65 / 20	6520L		6520S		6520	
24	6524L		6524S		6524	
28	6528L		6528S		6528	
32	6532L		6532S		6532	
36	6536L		6536S		6536	
40	6540L		6540S		6540	
44	6544L		6544S		6544	

Foundation Summary Table **

Location Ident.	Avg. N Blow/ft.	No. Each	Drill Shaft *** Length (feet)
			48-A
Total Drill Shaft Length			

Notes

** Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

*** Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Shipping Parts List

Traffic Signal Arms (Fixed Mount) (1 per pole)
Ship each arm with listed equipment attached

Nominal Arm Length	Type IV Arm (4 Signals) 3 Bracket Assembly and 4 CGB Connectors	
ft.	Designation	Quantity
50	50IV	
55	55IV	
60	60IV	
65	65IV	

Luminaire Arms (1 per 30′ pole)

Nominal Arm Length	Quantity
8′ Arm	

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7′ Arm	
9′ Arm	

Traffic Signal Arms (80 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp w/bolts and washers		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp w/bolts and washers	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	

Traffic Signal Arms (100 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-100					
24	24I-100		24II-100			
28	28I-100		28II-100			
32			32II-100		32III-100	
36			36II-100		36III-100	
40					40III-100	
44					44III-100	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
2 1/2 "	5′ - 3"	

Each anchor bolt assembly consists of the following: Top and bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers and 4 nut anchor devices (type 2) per Standard Drawing "TS-FD". Templates may be removed for shipment.

Abbreviations
Lf= Fixed Arm Length
Lc= Clamp-on Arm Length (44′ Max.)

Texas Department of Transportation
Traffic Operations Division

LONG MAST ARM ASSEMBLY PARTS LIST

LMA(5)-12

Sheet 5 of 5

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1-12

CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
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131E

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GENERAL NOTES FOR ALL ELECTRICAL WORK

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

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

3. Miscellaneous nuts, bolts, and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.

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

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

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

CONDUIT

A. MATERIALS

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

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

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

JUNCTION BOX SIZES

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

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

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

6. Do not use Intermediate Metal Conduit (IMC) or Electrical Metallic Tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes sized as directed above, listed and approved for outdoor use, unless otherwise noted on the plans. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

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

8. Provide PVC elbows, unless otherwise shown in the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system.

A. MATERIALS (CONTINUED)

9. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in. below grade or bottom of the ground box, ground the RMC elbow with a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. Elbows are subsidiary to various bid items.

10. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to DMS-11060, "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors according to DMS-11030 for PVC conduit bid under Item 618. Provide conduit of the size and schedule as shown on the plans. Do not extend HDPE conduit into ground boxes or foundations. Provide PVC elbows at all ground boxes and foundations.

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

B. CONSTRUCTION METHODS

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

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

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

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

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

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

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

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

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

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

11. After completion of conductor installation, immediately seal ends of all conduits emerging from ground with duct seal, expandable foam, or other methods approved by the Engineer. Do not use silicone caulking. Do not use duct tape as a permanent seal.

12. File smooth the cut ends of all mounting strut and conduit. To avoid overspray, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% min. zinc content as specified on DMS-8103 and listed on the MPL for Galvanizing Repair Paints) before installing. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with zinc rich paint as an alternative for materials required to be galvanized.

13. For all conduits, ensure the burial depth is 18" min. For conduits placed under a roadway, ensure the burial depth is 24" min.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUITS & NOTES

ED(1)-25

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71A

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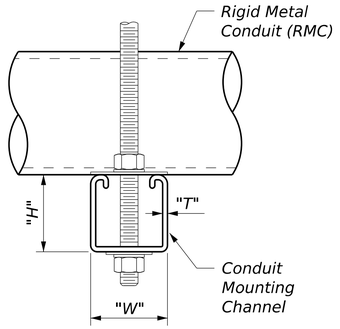
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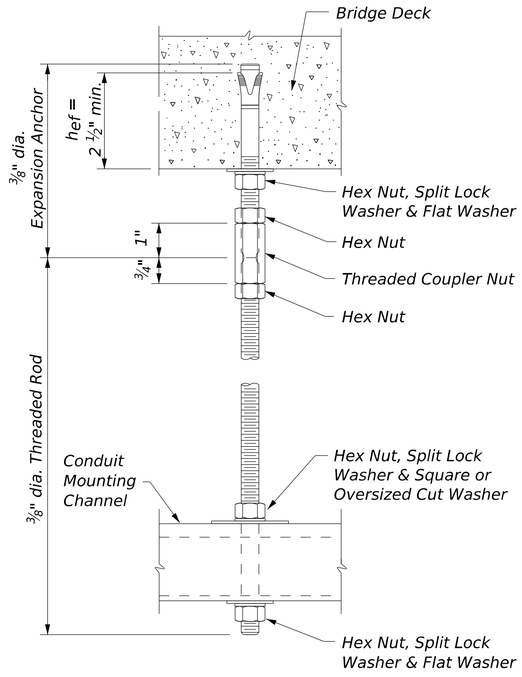
ELECTRIC CONDUIT TO BRIDGE DECK ATTACHMENT

HANGER ASSEMBLY DETAIL

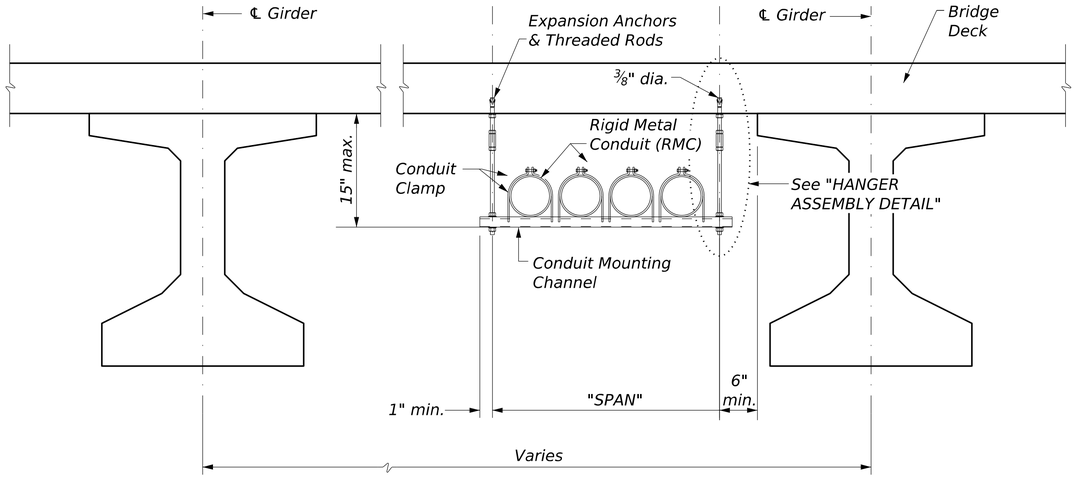
CONDUIT MOUNTING CHANNEL		
"SPAN"	"W" x "H"	"T"
less than 2'	1 5/8" x 1 3/8"	12 ga.
2'-0" to 2'-6"	1 5/8" x 1 5/8"	12 ga.
>2'-6" to 3'-0"	1 5/8" x 2 7/16"	12 ga.

NOTE: Channels with round or short slotted hole patterns are allowed, provided the load carrying capacity is not reduced by more than 15%.



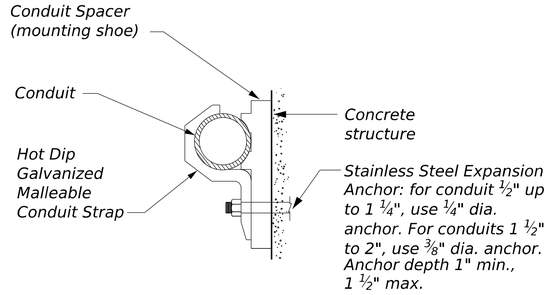


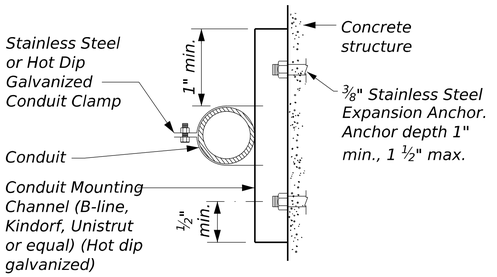
CONDUIT HANGING DETAIL



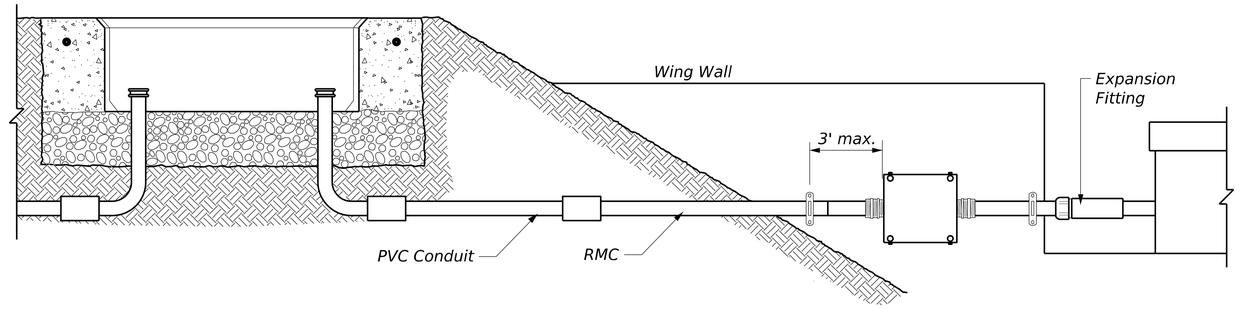
CONDUIT MOUNTING OPTIONS

ATTACHMENT TO CONCRETE SURFACES -
SEE ED(1), CONDUIT, NOTE B.2





TYPICAL CONDUIT ENTRY TO BRIDGE STRUCTURE DETAIL



EXPANSION ANCHOR NOTES FOR BRIDGE DECK ATTACHMENT:

1. Use torque controlled mechanical expansion anchors that are approved for use in cracked concrete by the International Code Council, Evaluation Service (ICC-ES). The chosen anchor product shall have a designated ICC-ES Evaluation Report number, and its approval status shall be maintained on the ICC-ES website under Division 031600 for Concrete Anchors.

2. Unless otherwise approved by the Engineer: do not use adhesive anchors; do not use expansion anchors that are not included in the ICC-ES approval list; and do not use expansion anchors that are only approved for use in uncracked concrete.

3. Use anchors manufactured with stainless steel expansion wedges. Anchors manufactured with carbon steel expansion wedges are not allowed. Anchor bodies can be either zinc-plated carbon steel or stainless steel. Provide only stainless steel anchor bodies and expansion wedges for applications in marine environments.

4. Install anchors as shown on the plans and in accordance with the anchor manufacturer's published installation instructions. Arrange a field demonstration test to evaluate the procedures and tools. The test shall be witnessed and approved by the Engineer prior to furnishing anchors on the structure.

5. Prior to hole drilling, use rebar locator to ensure clearing of existing deck strands or reinforcement. Install anchors to ensure a minimum effective embedment depth, (h_{ef}), as shown. Increase (h_{ef}) as needed to ensure sufficient thread length for proper torquing and tightening of anchors.

6. Use anchors of at least 1600 lbs. tensile capacity (minimum of steel, concrete breakout, and concrete pullout strengths as determined by ACI 318 Appendix D) at the required minimum embedment depth (h_{ef}). No lateral loads shall be introduced after conduit installation.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUIT SUPPORTS

ED(2)-25

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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated copper conductors in accordance with Departmental Material Specification DMS-11040, "Conductors" and Item 620, "Electrical Conductors." Provide conductors as listed on the Material Producer List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620.

2. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape at each accessible location.

3. Insulated grounding conductors may be substituted for bare conductors, unless otherwise shown in the plans. Insulated grounding conductors must be color coded green in accordance with Note 2.

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

5. Where two or more circuits are present in one conduit or enclosure, permanently label the conductors of each branch circuit by attaching a non-metallic, weather resistant tag around both circuit conductors at each accessible location. Provide one-piece tags with two $\frac{3}{16}$" straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.

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

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system.

2. Leave 2 ft. to 3 ft. of length for each conductor up to the splice in ground boxes. Leave 3 ft. to 4 ft. of length for each conductor in ground boxes when pulled through with no splice. Leave 1 ft. to 1.5 ft. of length for each conductor at enclosures and pole bases. Leave 1.5 ft. to 3 ft. of length as required by electric utility for conductors exiting weatherheads.

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

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

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

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

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

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

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

B. CONSTRUCTION METHODS (CONTINUED)

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

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

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor in the conduit. Bond all EGCs together at every accessible location. For ITS installations, bond and ground metal ground box covers and other metal equipment as shown on ITS standards.

C. TEMPORARY WIRING

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

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

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

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

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

GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

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

B. CONSTRUCTION METHODS

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

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

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

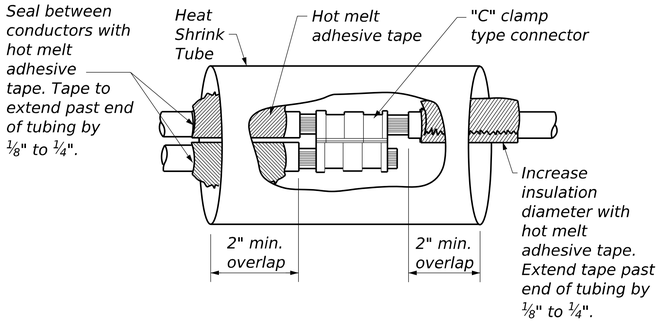
4. Remove all non-conductive material such as concrete splatter from the rod at the clamp location.

5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of 4 in.

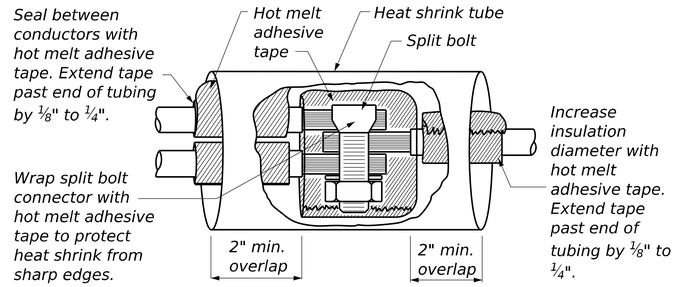
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding bushing and properly sized bonding jumper on each end of the metal conduit.

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

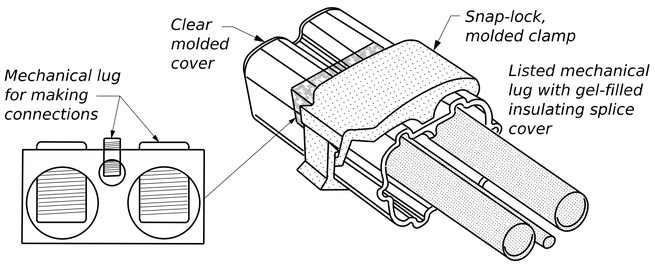
COMPRESSION SPLICE
OPTION 1



SPLIT BOLT SPLICE
OPTION 2



GEL-FILLED INSULATED SPLICE
OPTION 3



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Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUCTORS

ED(3)-25

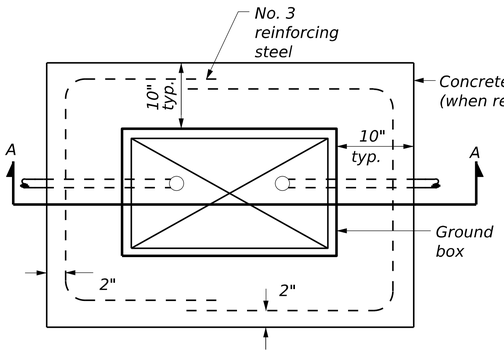
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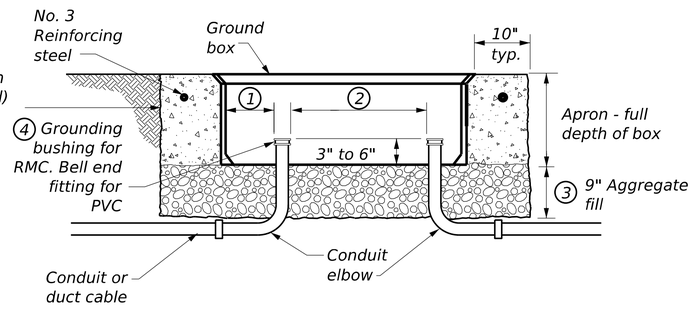
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APRON FOR GROUND BOX

PLAN VIEW



SECTION A - A



SECTION A - A NOTES:

1. Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.
2. Maintain sufficient space between conduits to allow for proper installation of bushing.
3. Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.
4. Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOXES	
TYPE	OUTSIDE DIMENSIONS (Width x Length X Depth)
A	12" X 23" X 11"
B	12" X 23" X 22"
C	16" X 29" X 11"
D	16" X 29" X 22"
E	12" X 23" X 17"

NOTES:

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16 in. x 30 in. x 24 in. (W x L x D) or smaller in accordance with Departmental Material Specification DMS-11070, "Ground Boxes" and Item 624, "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.
3. Ensure ground box cover is correctly labeled in accordance with DMS-11070.
4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

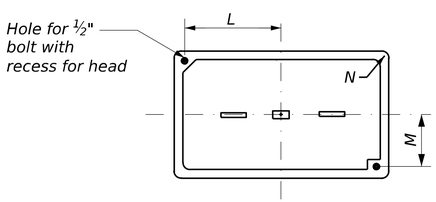
B. CONSTRUCTION METHODS

1. Before setting ground box and after placing and capping conduits, lay an aggregate bed a minimum of 9 in. deep that extends 10 in. beyond the sides of the ground box. Provide coarse aggregate sized 3/4 in. to 2 in., with no more than 20% material passing through a no. 8 sieve, and as defined by the current ASTM C33/33M standard. Clean aggregate and dirt from conduits according to Item 618.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and elbows in a professional and skillful manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit seal. Do not use silicone caulk as a sealant.
7. Bond all equipment grounding conductors in a ground box together with listed connectors.
8. When a Type B or D ground box is stacked to meet volume requirements, an appropriately sized hole may be cut for conduit entry in the side wall at least 18 in. below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper that is the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

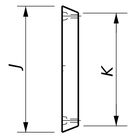
GROUND BOX COVERS								
TYPE	DIMENSIONS							
	H	I	J	K	L	M	N	P
A, B & E	23 ¼"	23"	13 ¾"	13 ½"	9 ⅞"	5 ⅛"	1 ⅜"	2"
C & D	30 ½"	30 ¼"	17 ½"	17 ¼"	13 ¼"	6 ¾"	1 ⅜"	2"

GROUND BOX COVER

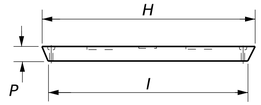
PLAN VIEW



END



SIDE



Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS GROUND BOXES

ED(4)-25

FILE: ed4-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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71D

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ELECTRICAL SERVICES NOTES

1. Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS)-11080, "Electrical Services" and Item 628, "Electrical Services." Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.

2. Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.

3. Provide a Master Lock, Model No. 2, M1, or 6121, keyed to code 2195. Master Lock 2195 keys and locks become property of the Department. Unless otherwise approved, do not energize electrical service equipment until locks are installed.

4. Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.

5. When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.

6. Provide wiring and electrical components rated for 75°C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify conductors per ED(3). Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 1.5 ft. to 3 ft. as required by electric utility.

7. Provide rigid metal conduit (RMC) for all conduits on service, except for the ½ in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 in. underground and then couple to the type and schedule of the conduit shown on the plans. Install a grounding bushing on the RMC where it terminates in the service enclosure.

8. Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees from each other. Size this LFMC the same size as the service entrance conduit. LFMC must not exceed 3 ft. in length. Strap LFMC within 1 ft. of each end. Terminate each end of the LFMC with a grounding bushing or fitting. The LFMC must contain a grounded (neutral) conductor. Ensure bends in LFMC do not exceed 180 degrees. A pull test is required on all installed conductors, with at least 6 in. of free conductor movement demonstrated to the satisfaction of the Engineer.

9. Ensure all mounting hardware and installation details of services conform to utility company specifications.

10. Provide the following documents in the electrical service document pocket: schematic drawing unique to the service from the UL 508 shop; plan sheet showing Electrical Service Data Chart for the service; plan sheets for the circuits powered by the service; and red lined plan sheets if installation differs from the original design. Reduce larger sheets to 8 ½ in. x 11 in. and laminate all documents.

11. When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 ½ in. x 11 in. before laminating. When the enclosure has no door pocket, deliver these drawings to the Engineer before completion of the work.

12. Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a watertight conduit hub or meter hub.

MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS

1. Field drill flange-mounted remote operator handle, if needed, to ensure handle is lockable in both the "On" and "Off" positions.

2. When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

PHOTOELECTRIC CONTROL

1. Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

ELECTRICAL SERVICE DATA (EXAMPLE)∗

ELEC. SERVICE ID	PLAN SHEET NUMBER	ELECTRICAL SERVICE DESCRIPTION	SERVICE CONDUIT SIZE ∗∗	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BKR. POLE/AMPS	LIGHTING CONTACTOR AMPS	PANELBOARD/ LOADCENTER AMP RATING	BRANCH CIRCUIT ID	BRANCH CKT. BKR. POLE/AMPS	BRANCH CIRCUIT AMPS	KVA LOAD
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/#2	100	2P/100	2P/100	N/A	Lighting NB	2P/40	26	28.1
									Lighting SB	2P/40	25	
									Underpass	1P/20	15	
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 ¼"	3/#6	N/A	2P/60	2P/30	100	Sig. Controller	1P/30	23	5.3
									Luminaires	2P/20	9	
									CCTV	1P/20	3	
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 ¼"	3/#6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0
									Flashing Beacon 2	1P/20	4	

∗ Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.

∗∗ Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

ELECTRICAL SERVICE BID ITEM DESCRIPTIONS

ELEC SERV TY X XXX/XXX XXX(XX)XX(X)XX(X)

SCHEMATIC TYPE

SERVICE VOLTAGE

DISCONNECT AMP RATING
NOTE: 000 indicates main lug only, typically Type T

SAFETY SWITCH
(SS) = Safety Switch Ahead of Meter - Check with Utility
(NS) = No Safety Switch Ahead of Meter - Check with Utility

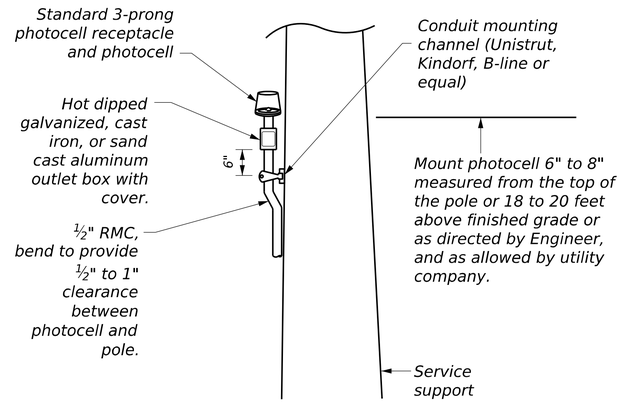
ENCLOSURE TYPE
GS = Galvanized steel ("off the shelf")
SS = Stainless steel (Custom Enclosure) - See MPL
AL = Aluminum (Custom Enclosure) - See MPL

PHOTOCELL MOUNTING LOCATION
(E) = Inside Service/Enclosure Mounted
(T) = Top of pole
(L) = Luminaire mounted
(N) = None - No Photocell or Lighting Contactor Required

SERVICE SUPPORT TYPE
GC = Granite concrete
OC = Other concrete
TP = Timber pole
SP = Steel pole
SF = Steel frame
OT = Pole by others or paid for separately
EX = Existing pole
TS = Service on traffic signal pole
PS = Pedestal Service

SERIVCE FEED
O = Overhead Service Feed from Utility
U = Underground Service Feed from Utility

TOP MOUNTED PHOTOCELL



Install conduit strap maximum 3 ft. from box. Spacing between straps supporting conduit is 5 ft. maximum.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS SERVICE NOTES & DATA

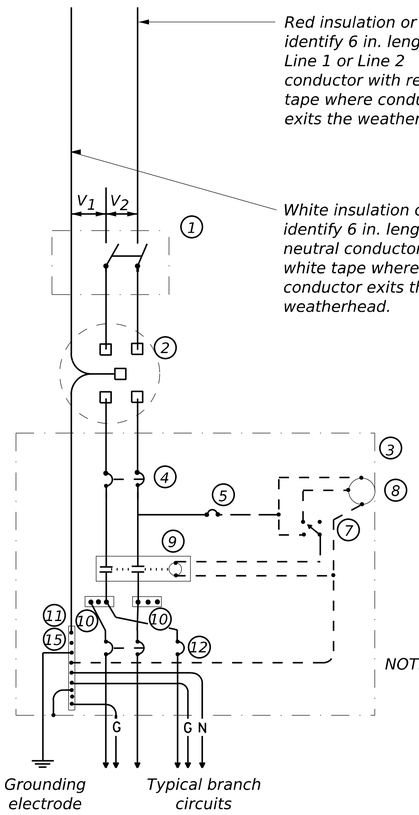
ED(5)-25

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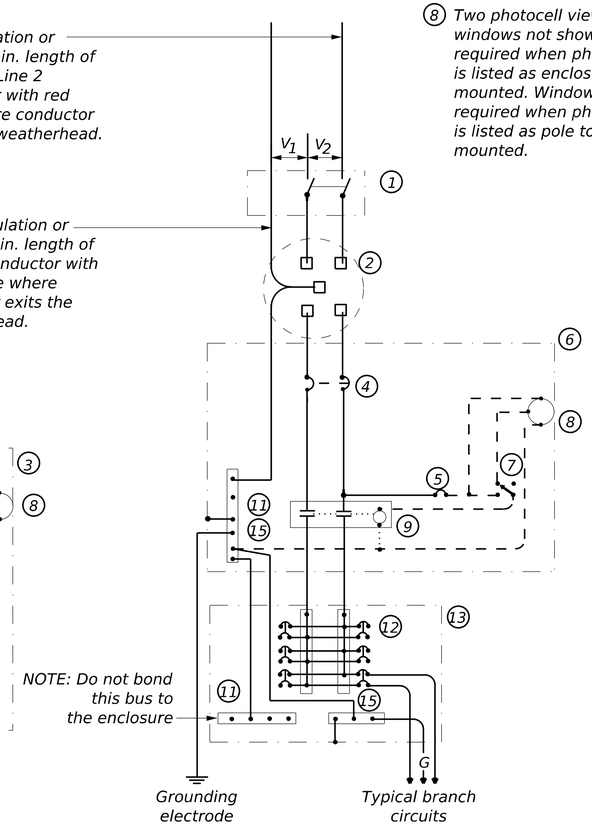
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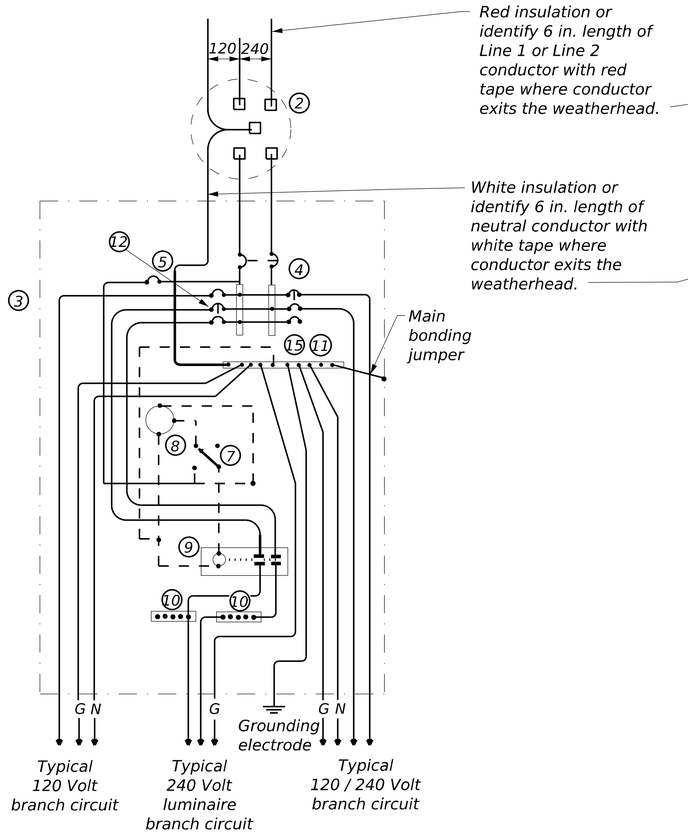
TYPE A
THREE WIRE



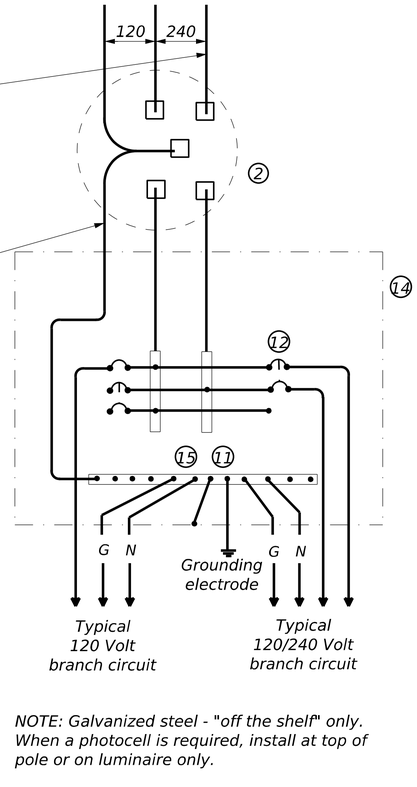
TYPE C
THREE WIRE



TYPE D - CUSTOM
120/240 VOLTS - THREE WIRE



TYPE T
120/240 VOLTS - THREE WIRE



NOTE: Galvanized steel - "off the shelf" only. When a photocell is required, install at top of pole or on luminaire only.

WIRING LEGEND	
———	Power Wiring
– – – –	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor (always required)

SCHEMATIC NOTES:

1. Safety Switch (when required)
2. Meter (when required - verify with electric utility provider)
3. Service Assembly Enclosure
4. Main Disconnect Breaker (See Electrical Service Data)
5. Circuit Breaker, 15 Amp (Control Circuit)
6. Auxiliary Enclosure
7. Control Station ("H-O-A" Switch)
8. Photo Electric Control (enclosure-mounted shown)
9. Lighting Contactor
10. Power Distribution Terminal Blocks
11. Neutral Bus
12. Branch Circuit Breaker (See Electrical Service Data)
13. Separate Circuit Breaker Panelboard
14. Load Center
15. Ground Bus

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS SERVICE SCHEMATICS AND NOTES

ED(6)-25

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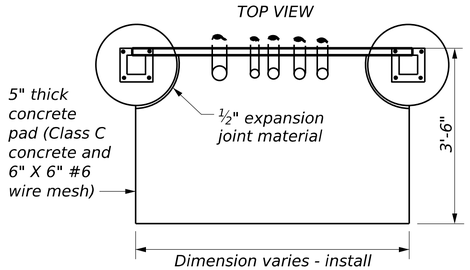
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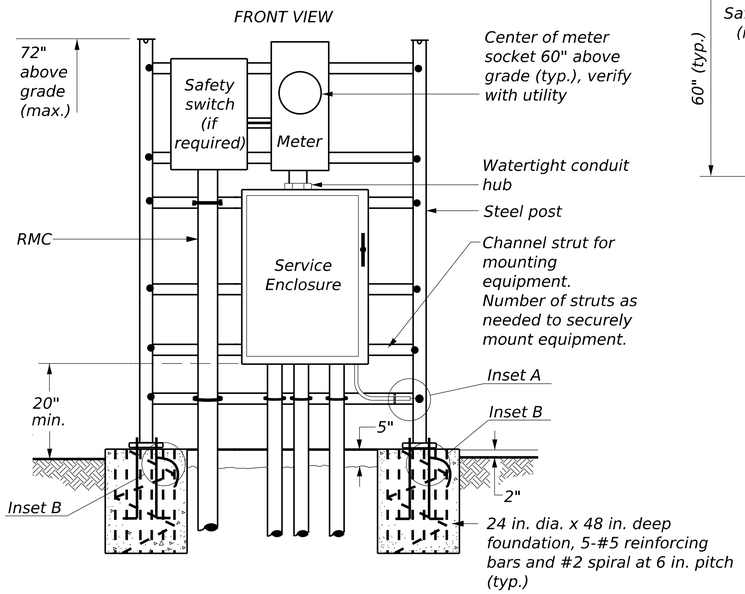
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SUPPORT TYPE STEEL POLE (SP) AND STEEL FRAME (SF) NOTES:

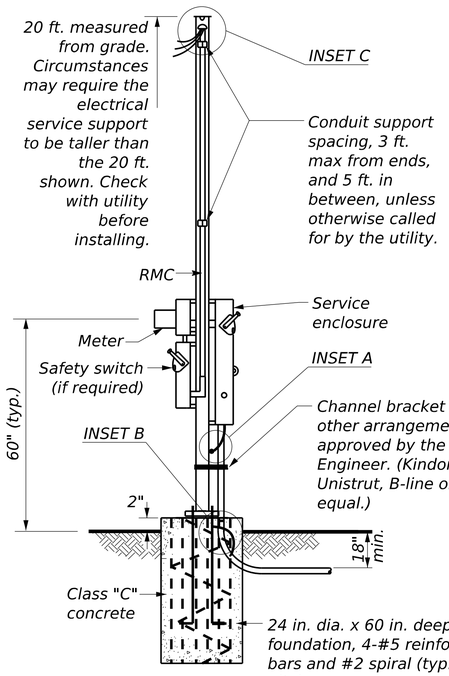
1. Provide steel pole and steel frame supports as per TxDOT Departmental Material Specification DMS-11080, "Electrical Services." Mount all equipment and conduit on 12 gauge galvanized steel or stainless steel channel strut, 1 ½ in. or 1 ⅝ in. wide by 1 in. to 3 ¾ in. deep Unistrut, Kindorf, B-line or equal. Drill, tap, and bolt or weld all channel and hardware to vertical members as approved. Do not stack channel. File smooth and paint field-cut ends of all channel with zinc-rich paint before installing.
2. Install a one point rack or eye bolt bracket 6 in. to 12 in. below the weatherhead as an overhead service drop anchoring point for the electric utility. Attaching bolt must pass through the pole and use a nut, washer, and locking washer on the other size. Self-tapping screws or lag bolts are not allowed.
3. Provide and install galvanized ¾ in. x 18 in. x 4 in. (dia. x length x hook length) anchor bolts for underground service supports. Provide and install galvanized ¾ in. x 56 in. x 4 in. anchor bolts for overhead service supports. Ensure anchor bolts have 3 in. of thread, with 3 ¼ in. to 3 ½ in. of the exposed anchor bolt projecting above finished foundation. Provide and install leveling nuts for all anchor bolts.
4. Use Class C concrete for foundations. Ensure reinforcing steel is Grade 60 with 3 in. of unobstructed concrete cover.
5. Shop drawings are not required for service support structure unless specifically stated elsewhere or directed by the Engineer.
6. Avoid contact of the service drop and service entrance conductors with the metal pole to prevent abrasion of the insulated conductors.
7. Placement of the meter and service enclosure may vary based on the installation of a safety switch.
8. Drill and tap steel poles and frames for ½ in. x 13 UNC tank ground fitting. For steel pole service supports, provide and install tank ground fitting 4 in. to 6 in. directly below the electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting.
9. For steel frame service supports, provide and install tank ground fitting on steel frame post. Install service grounding electrode conductor in a non-metallic conduit or tubing from the enclosure to the steel frame post. Connect electrical service grounding electrode conductor to the tank ground fitting. See SF, SP details and Inset A for more information.
10. Provide and install grounding bushings where RMC terminates in the enclosure. Grounding bushings are not required when RMC is fitted into a watertight conduit hub or meter hub.
11. If steel pole or frame is painted, bond each separate painted piece with a bonding jumper and lugs screwed into tapped holes.
12. Provide ¼ in. x 20 UNC machine screws for bonding. Do not use sheet metal screws. Remove all non-conductive material at contact points. Terminate bonding jumpers with listed devices. Install 6 AWG or larger stranded copper bonding jumpers. Make up all threaded bonding connections wrench-tight.
13. Bond one of the anchor bolts to the rebar cage with 6 AWG bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. See Inset B.

TYPE SF(U)
UNDERGROUND SERVICE

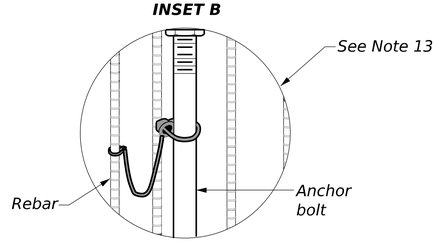




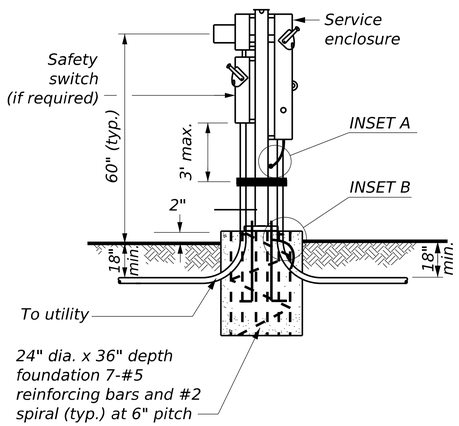
TYPE SP(O)
OVERHEAD SERVICE



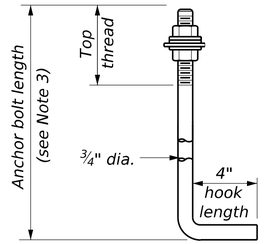
INSET B



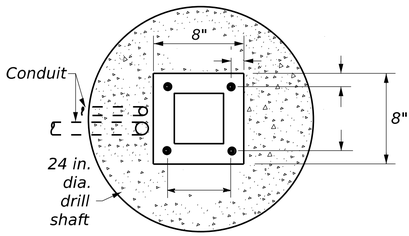
TYPE SP(U)



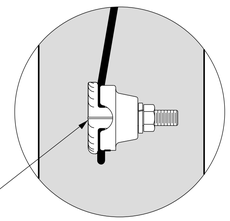
HOOKED ANCHOR DETAIL



BASE PLATE DETAIL

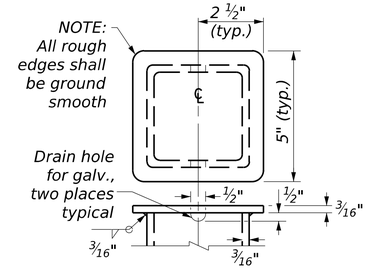


INSET A
FRONT VIEW

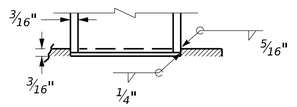


Drill, tap, and thread ½" x 13 UNC. Install tank ground fitting, connect electrical service grounding electrode conductor. See Note 8.

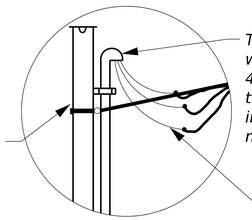
POLE TOP PLATE DETAIL



BOTTOM OF POLE DETAIL
TYPES SF & SP



INSET C
SIDE VIEW



Identify conductors red, black, and white as specified in ED(3), Electrical Conductors, Note A.2. Provide 1.5 ft. to 3 ft. of conductor length as required by electric utility.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS SERVICE SUPPORT TYPES SF & SP

ED(7)-25

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71G

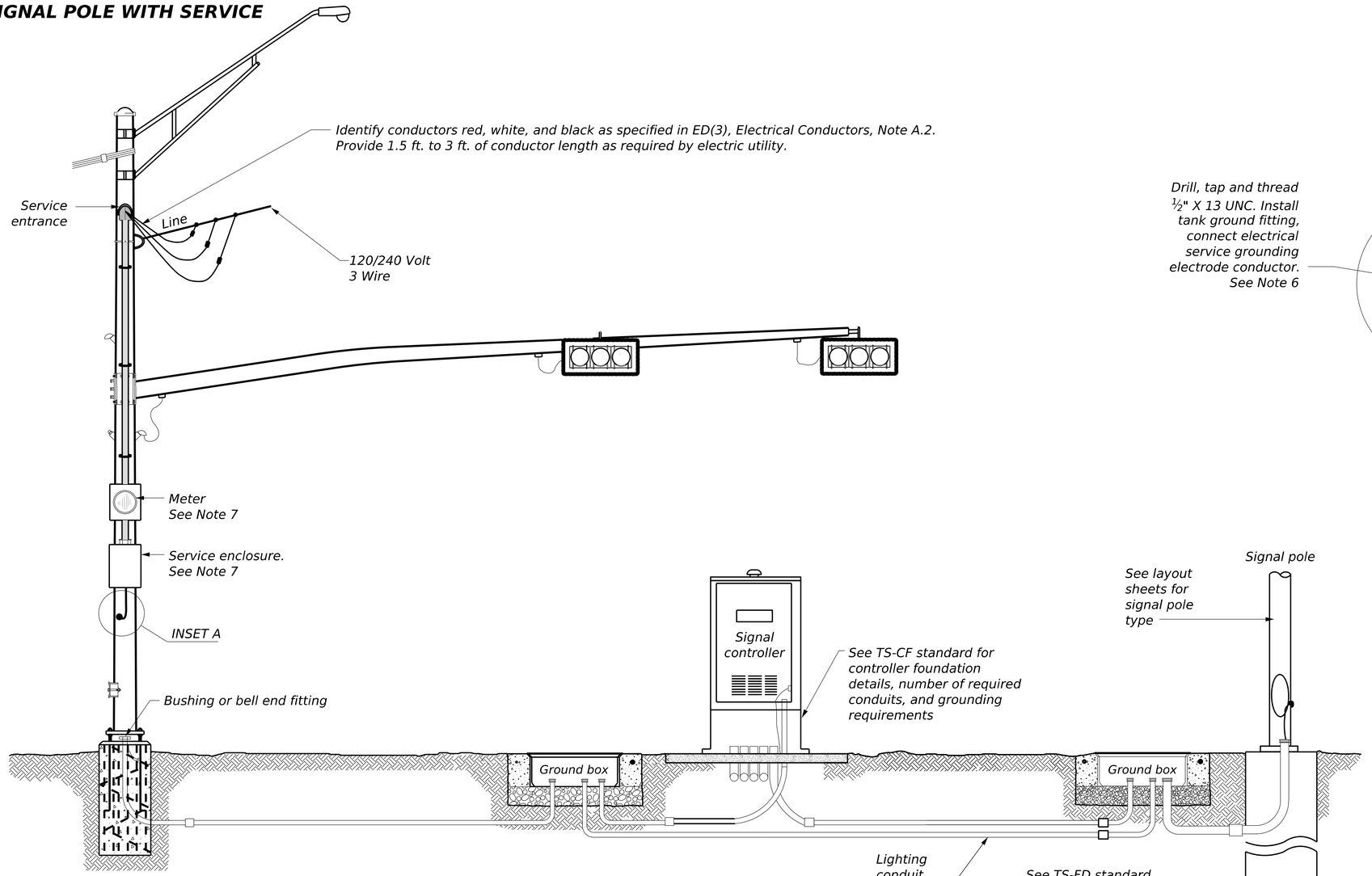
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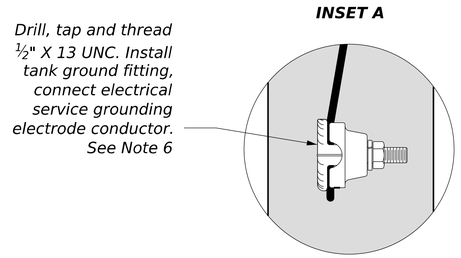
1. *Do not pass luminaire conductors through the signal controller cabinet.*
2. *Include an equipment grounding conductor in all conduits throughout the electrical system. Bond all exposed metal parts to the grounding conductor.*
3. *Provide roadway luminaires, when required, in accordance with Item 610, "Roadway Illumination Assemblies," except for performance testing of luminaires. Test installed roadway luminaires for proper operation as a part of the associated traffic signal system test.*
4. *Ground internally lighted street name (ILSN) signs to the pole with a 12 AWG green XHHW conductor.*
5. *Bond anchor bolts to rebar cage in two locations using #3 bars or 6 AWG stranded copper conductors. Use listed mechanical connectors rated for embedment in concrete. See TXDOT standard TS-FD for further details.*
6. *Drill and tap signal poles for ½ in. x 13 UNC tank ground fitting. Provide and install tank ground fitting 4 in. to 6 in. directly below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Connect the electrical service grounding electrode conductor to the tank ground fitting. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. See Inset A detail for further information. Size service entrance conduit and branch circuit conduit as shown in the plans.*
7. *Mount electrical service enclosure and meter to signal pole with stainless steel bands. Ensure bands are at least ¾ in. wide. Secure enclosures to bands using two-bolt brackets. Install brackets near top and bottom of each enclosure. Install properly sized stainless steel washers on each bolt in the enclosure. Band or drill and tap properly sized stand-off straps to signal pole for attaching conduit.*
8. *Lock all enclosures and bolt down all ground box covers before applying power to the signal installation.*
9. *Terminate conduits entering the top of enclosures with a watertight conduit hub or meter hub. Install a grounding bushing on all metal conduits not connected to conduit-sealing hub or threaded boss. Bond the grounding bushing to the ground bus with a bonding jumper. Seal all conduits entering enclosures with duct seal or expanding foam. Do not use silicone to seal conduit ends.*

SIGNAL POLE WITH SERVICE



FRONT VIEW

INSET A



Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS TYPICAL TRAFFIC SIGNAL SYSTEM DETAILS

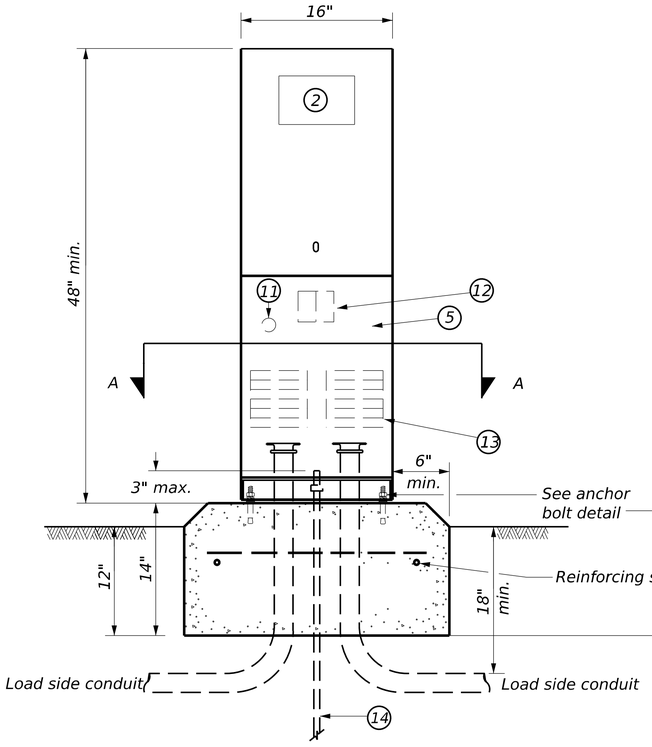
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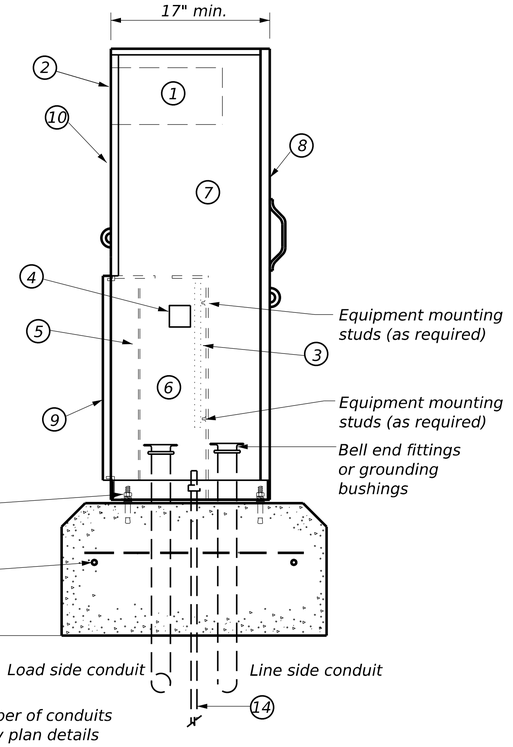
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FRONT VIEW

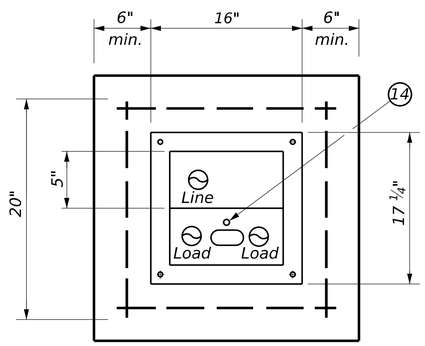


SIDE VIEW

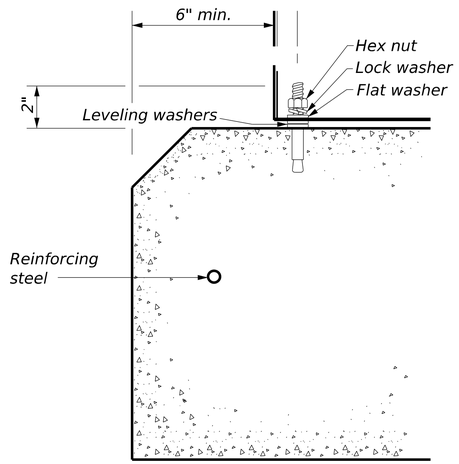


NOTE: Type D shown, Type A similar except that Type A shall have circuit breakers (CB) mounted on an equipment mounting panel. CB handles shall protrude through hinged deadfront trim.

SECTION A-A



ANCHOR BOLT DETAIL



DETAIL CALLOUTS:

1. Meter socket (when required)
2. Meter socket window (when required)
3. Equipment mounting panel
4. Photoelectric control window (when required)
5. Hinged deadfront trim
6. Load side conduit area
7. Line side conduit area
8. Utility access door, with handle
9. Pedestal door
10. Hinged meter access
11. Control station (H-O-A switch)
12. Main disconnect
13. Branch circuit breakers
14. Copper clad ground rod (in load side of cabinet) - 5/8" x 10'

NOTES:

1. Manufacture pedestal electrical services in accordance with Departmental Material Specifications DMS-11080, "Electrical Services," DMS-11085, "Electrical Services-Pedestal (PS)" and Item 628, "Electrical Services." Provide pedestal electrical services listed on the Material Producer list (MPL) under "Roadway Illumination and Electrical Supplies," Item 628. Ensure all mounting hardware and installation details of services meet utility company specifications. Contact the local utility company for approval of pedestal details prior to installing the electrical pedestal service. Submit any changes required by the utility company prior to manufacturing the pedestal enclosure.
2. When a meter socket is required, provide a socket with a 100 amp (minimum) rating that complies with local utility requirements.
3. Provide concrete for pedestal service foundations in accordance with Item 656, "Foundations for Traffic Control Devices" except that concrete will not be paid for directly but is considered subsidiary to Item 628.
4. Provide #4 reinforcing steel for foundations in accordance with Item 440, "Reinforcement for Concrete."
5. Install ½ in. X 2 1/16 in. minimum length concrete single expansion type anchors for mounting pedestal enclosure to foundation. Match anchor location to mounting holes in each corner of enclosure. Secure each of the four corners of the pedestal enclosure to the anchors in the foundation with a ½ in. galvanized or stainless steel machine thread bolt, a properly sized locknut and a flat washer.
6. Finish top of concrete foundation in a professional and skillful manner. If leveling washers are used, ensure no more than ⅛ in. of gap exists at any corner. Do not exceed a maximum dip or rise in the foundation of ⅛ in. per foot. Ensure the top of the service enclosure is level front to back and side to side within ¼ in. Repair rocking or movement of the service enclosure at no additional cost to the Department.
7. Do not use liquidtight flexible metal conduit (LFMC) on pedestal services.
8. Ensure all elbows in the foundation are sized to meet utility provider's conduit requirements for underground conduit and feeders. PVC conduit extensions may be installed provided the ends of the rigid metal conduits are more than 2 in. below the top of the concrete foundation. Where extension conduits are metal, grounding bushings must be installed with a properly terminated bonding jumper.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS PEDESTAL SERVICE TYPE PS

ED(9)-25

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GENERAL NOTES:

1. For overhead services, install a one point rack or eye bolt bracket 6 in. to 12 in. below the weatherhead as a service drop anchoring point for the electric utility. Attaching bolt must pass through the pole and use a nut, washer, and locking washer on the other side. Self-tapping screws or lag bolts are not permitted.
2. Identify service entrance conductors red, white, and black as specified in ED(3), Electrical Conductors, Note A.2. Provide 1.5 ft. to 3 ft. of conductor length as required by electric utility.
3. Install Type A and Type C services so that the center of the grip of the service's external disconnect handle in the on position is no more than 6 ft. 7 in. above grade.

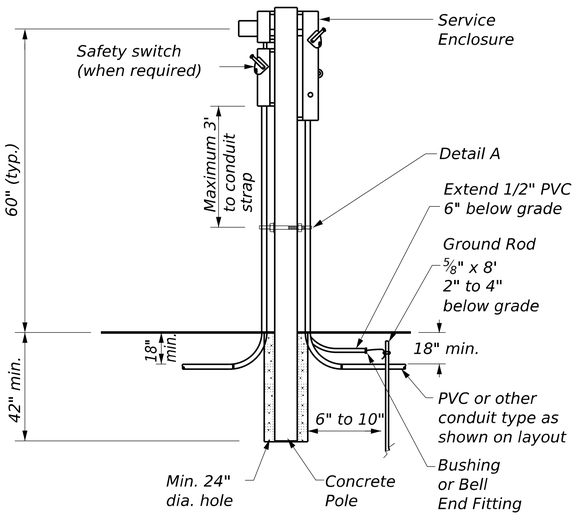
GRANITE CONCRETE (GC) & OTHER CONCRETE (OC) SERVICE NOTES

1. Ensure electrical service support structures bid as type Granite Concrete (GC) or Other Concrete (OC) meet the requirements of DMS-11080, "Electrical Services."
2. Provide prestressed concrete poles suitable for direct embedment into the ground without special foundations.
3. Verify poles are marked as required on DMS-11080. Location of marking should be approximately 4 ft. above final grade. Use the two-point pickup locations when handling pole in horizontal position, and one-point pickup location for use in raising the pole to a vertical position. These marks are small but conspicuous.
4. Embed poles 42 in. or 10% of the length plus 2 ft., whichever is greater.
5. Furnish and install galvanized or stainless steel channel strut 1 ½ in. or 1 ⅝ in. wide by 1 in. up to 3 ¾ in. deep (Unistrut, Kindorf, B-line or equal). Attach channel strut with stainless steel concrete anchors (max. 1 in. depth), square U-bolts or back to back channel strut with long bolts, or other secure mounting as approved by the Engineer. Ensure bolts are galvanized in accordance with ASTM A153. Do not stack channel struts.

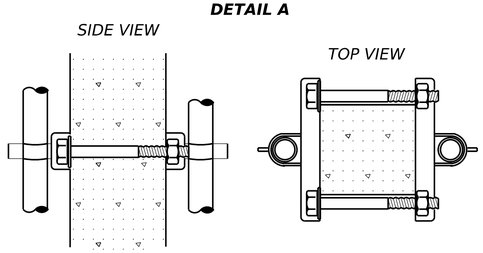
TIMBER POLE (TP) SERVICE NOTES

1. Ensure electrical service support is a class 5 treated timber pole as per Item 627, "Treated Timber Poles." Embed timber pole to depth required in Item 627.
2. Gain pole as required to provide flat surface for each channel. Gain timber pole to ⅝ in. max. depth and 1 ⅞ in. max. height. Gain pole in a professional and skillful manner.
3. Mount meter and service equipment on stainless steel or galvanized channel (Unistrut, Kindorf, or equal). Provide channel sized 1 in. to 3 ¾ in. maximum depth, and 1 ½ in. to 1 ⅝ in. maximum width. File smooth the cut ends of galvanized channel and paint with zinc rich paint before installing on pole. Secure each channel section to timber pole with two galvanized or stainless steel lag bolts, ¼ in. minimum diameter by 1 ½ in. minimum length. Use a galvanized or stainless steel flat washer on each lag bolt. Do not stack channel.
4. When excess length must be trimmed from poles, trim from the top end only.
5. Install point of attachment below weatherhead.

TYPES GC(U) & OC(U)
UNDERGROUND SERVICE

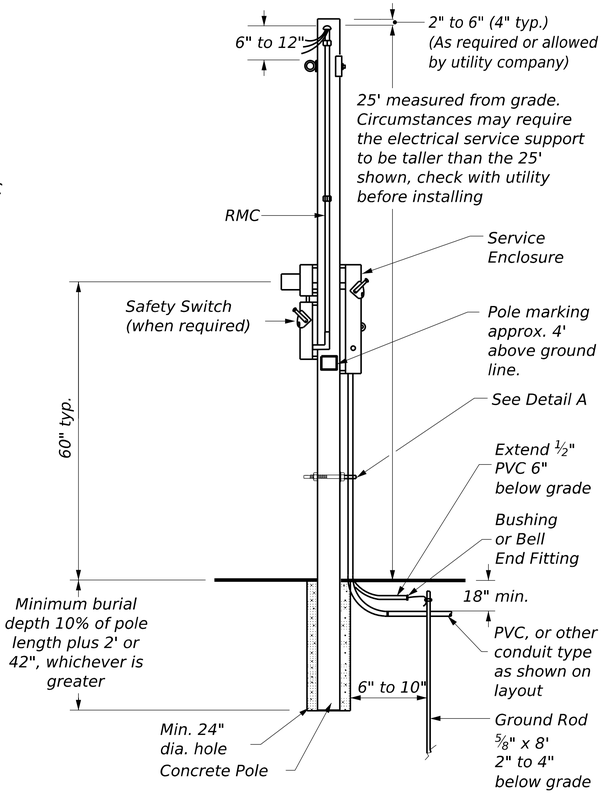


DETAIL A

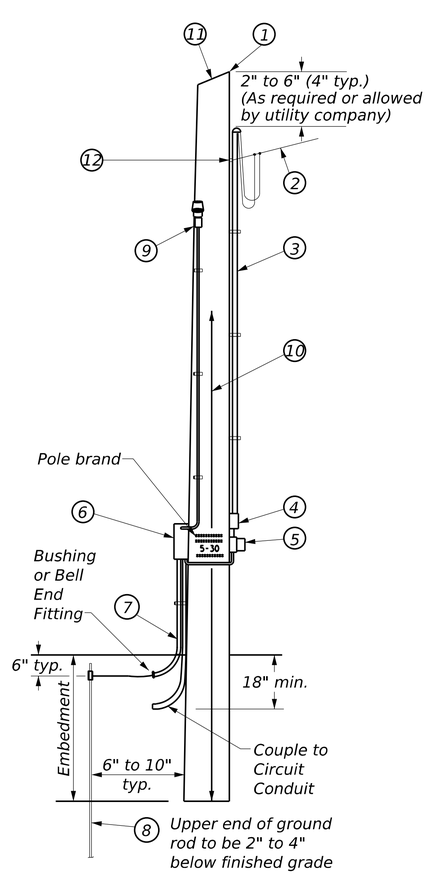


See GC & OC Note 5. Before installing channel that has been cut, file sharp edges and paint with zinc-rich paint. Ensure there is no paint splatter on the pole.

TYPES GC(O) & OC(O)
OVERHEAD SERVICE



TYPE TP(O)
OVERHEAD SERVICE



DETAIL CALLOUTS:

1. Class 5 pole, height as required
2. Service drop from utility company (attached below weatherhead)
3. Service conduit (RMC) and service entrance conductors - one red, one black, one white (see Electrical Service Data)
4. Safety switch (when required)
5. Meter (when required)
6. Service enclosure
7. 6 AWG solid bare copper grounding electrode conductor in ½ in. PVC to ground rod - extend conduit 6 in. underground.
8. ⅝ in. x 8 ft. copper clad ground rod - drive ground rod to a depth of 2 in. to 4 in. below grade.
9. See pole-top mounted photocell detail on ED(5).
10. When required by the serving utility provide bare 6 AWG copper conductor. Run wire from pole top to butt wrap or copper butt plate. Protect conductor with non-conductive material to a height of 8 ft. above finished grade.
11. When required by utility, cut top of pole at an angle to enhance rain run off.
12. Point of attachment (typ.)

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS SERVICE SUPPORT TYPES GC, OC, & TP

ED(10)-25

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NOTES:

1. Provide duct cable in accordance with Departmental Material Specification DMS-11060, "Duct Cable" and Special Specification 6000, "Duct Cable." Provide duct cable as listed on the Material Producer List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Special Specification 6000 - Duct Cable. Provide and install duct cable according to NEC Article 354, Nonmetallic Underground Conduit with Conductors (NUCC).

2. Provide High-Density Polyethylene (HDPE) conduit in accordance with DMS-11030 and Item 618, "Conduit." Provide HDPE as listed on the MPL on the Department web site under "Roadway Illumination and Electrical Supplies," Item 618.

3. Supply duct cable with a minimum 2 in. diameter, unless otherwise shown in the plans. Provide duct cable and HDPE conduit as shown by descriptive code or on the plans. Bend duct cable and HDPE conduit as recommended by the manufacturer, with a minimum bending radius of 26 in. for 2 in. duct. Follow manufacturers' recommendations when handling duct cable and HDPE conduit reels and during installation of duct cable and HDPE conduit.

4. Do not splice conductors within duct cable or HDPE conduit. Couple duct cable and HDPE entering a ground box or foundation to a PVC elbow. When galvanized steel rigid metal conduit (RMC) elbows are called for in the plans and any portion of the RMC elbow is buried less than 18 in. from possible contact, ground the RMC elbow.

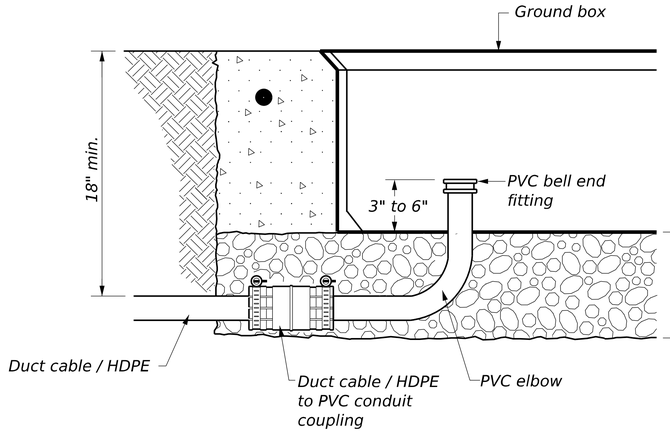
5. When conduit casing is called for in the plans, extend duct cable or HDPE conduit through the conduit casing in one continuous length without connection to the casing.

6. Seal the ends of duct cable or HDPE conduit with duct seal, expandable foam, or other approved method after installation.

7. Provide minimum cover of 24 in. under roadways, 18 in. in other locations, or as shown on the plans.

8. Furnish and install listed fittings to couple duct cable or HDPE conduit to other types of conduit. Duct cable and HDPE conduit may be field-threaded and spliced with PVC or RMC threaded couplings; connected with listed tie-wrap fittings; connected using listed couplings made of HDPE with stainless steel external banding clamps and locking rings; connected with approved electrofusion conduit couplings; or connected using an approved chemical fusion method using an epoxy or adhesive specifically designed for HDPE couplings and connectors. Install connectors in accordance with manufacturer's instructions. Do not use PVC glue on HDPE. Do not use water pipe fittings, or connect conduit with heat shrink tubing.

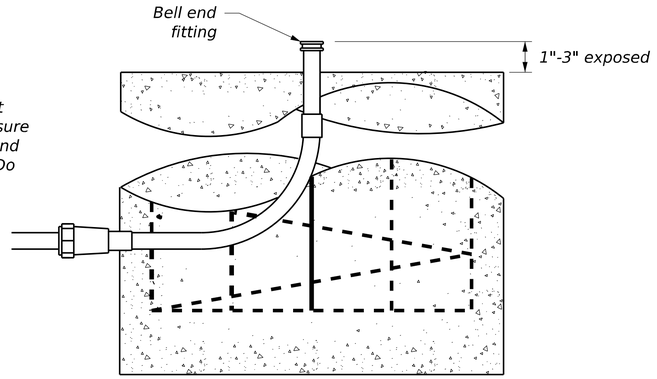
DUCT CABLE / HDPE AT GROUND BOX



When the upper end of an RMC elbow does not enter the ground box,it may be extended with a SCH-40 PVC conduit nipple and bell end, provided there is a minimum of 18 in. of cover over all parts of the elbow. If not, a rigid extension and ground bushing is required.

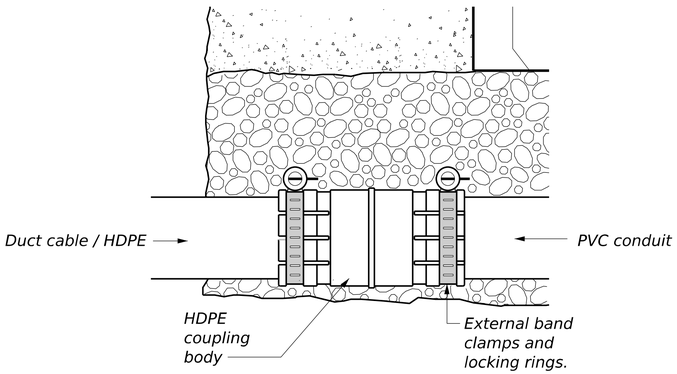
Bed of aggregate is to be a minimum of 9 in. deep, placed under and not in the ground box. Ensure the aggregate does not encroach into the interior of the box.

DUCT CABLE / HDPE AT FOUNDATION

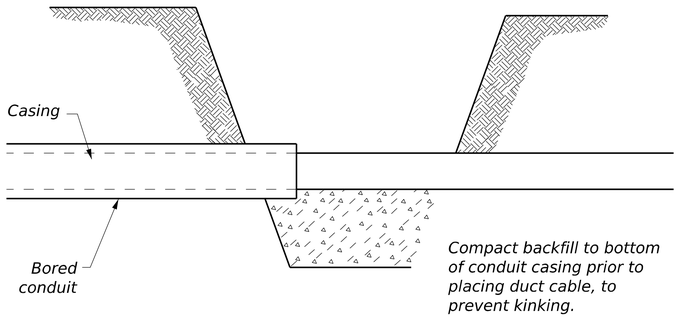


Couple duct to conduit elbow at foundations. Ensure conductors extend into pole base. Do not splice conductors in conduit.

DUCT CABLE / HDPE TO PVC



BORE PIT DETAIL



Compact backfill to bottom of conduit casing prior to placing duct cable, to prevent kinking.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS DUCT CABLE/ HDPE CONDUIT

ED(11)-25

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NOTES:

A. MATERIALS

1. Provide polymer concrete or fiberglass reinforced plastic (FRP) battery box and cover in accordance with Departmental Material Specification DMS-11071, "Battery Box Ground Boxes." Battery box will accommodate up to 4 batteries, each measuring 8 in. x 13.5 in. x 10 in. (W x L x D). Label battery box cover in accordance with DMS-11071.

2. Supply marine grade batteries with covers. Secure the batteries to the stainless steel rack in the bottom of the ground box with tie down straps.

B. CONSTRUCTION METHODS

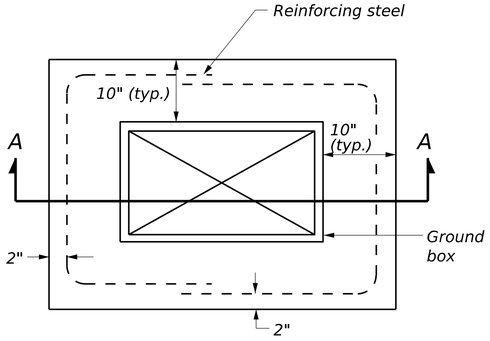
1. Ensure conduit entry will not interfere with placement of the batteries in the battery box.

2. Before setting battery box and after placing and capping conduits, lay an aggregate bed a minimum of 9 in. deep that extends 10 in. beyond the sides of the box. Provide coarse aggregate size 3/4 in. to 2 in., with no more than 20% material passing through a no. 8 sieve, and as defined by the current ASTM C33/33M standard. Clean aggregate and dirt from conduits according to Item 618.

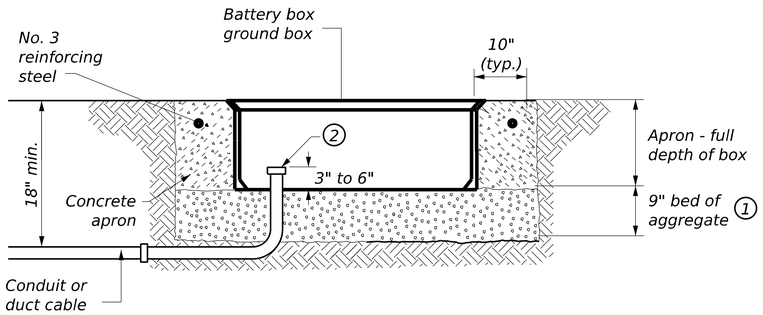
3. Cast battery box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Battery box ground box aprons, including concrete and reinforcing steel, are subsidiary to battery box ground boxes when called for by descriptive code.

4. Bolt covers down when not working in battery box ground boxes. Keep bolt holes in the box clear of dirt.

APRON FOR BATTERY BOX GROUND BOXES



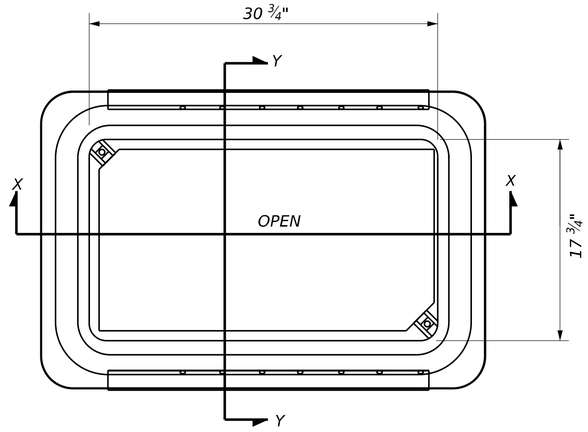
PLAN VIEW



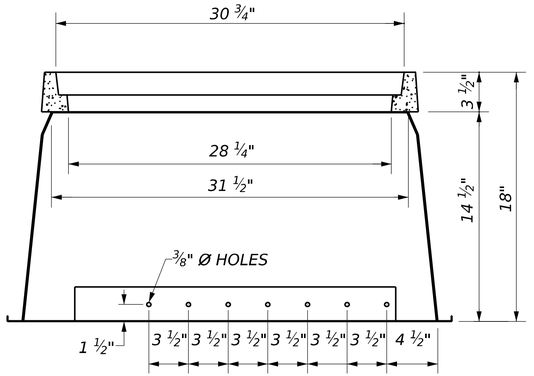
SECTION A - A

1. Place aggregate under the box and not in the box. Aggregate should not encroach on the interior volume of the box.
2. Install bushing or bell end fitting on ends of all conduit entering the box.

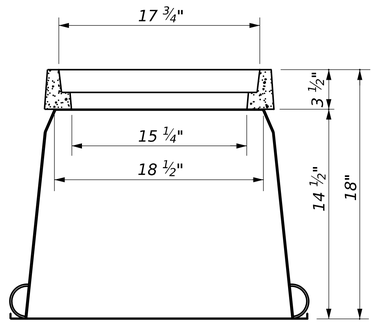
BATTERY BOX TOP VIEW

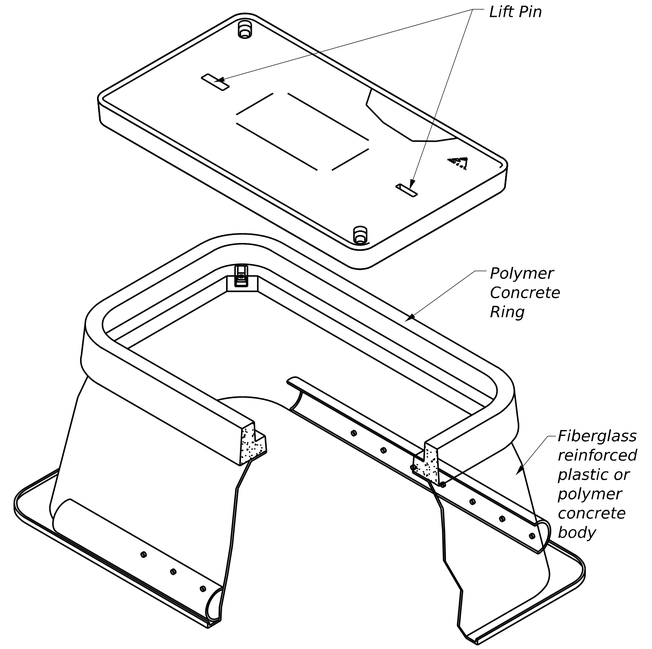


SECTION X-X



SECTION Y-Y





Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS BATTERY BOX GROUND BOXES

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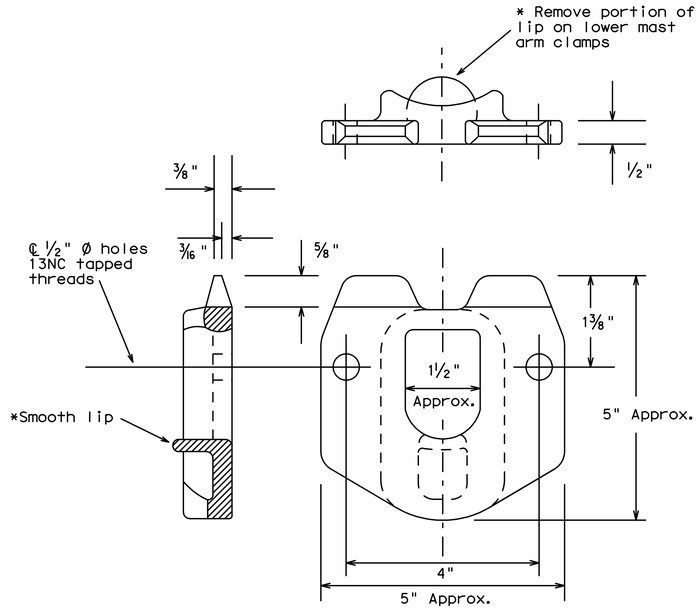
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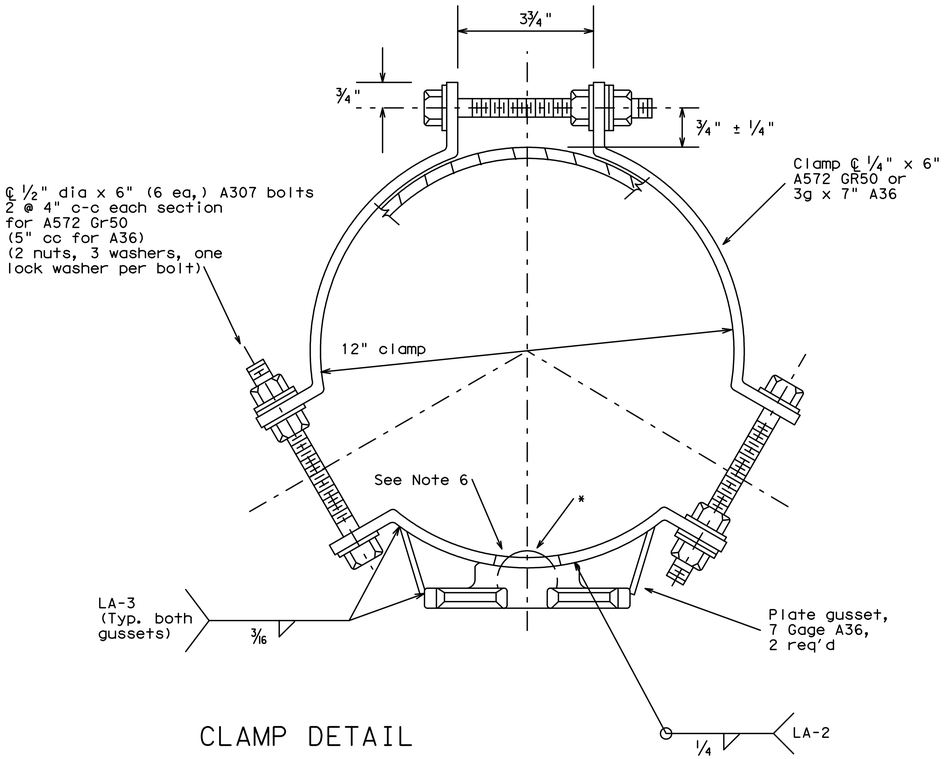
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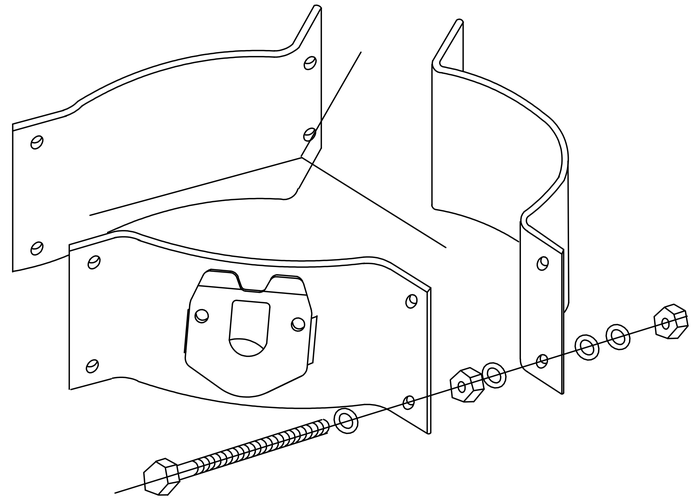
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POLE SIMPLEX DETAILS



CLAMP DETAIL



PROJECTION

OTHER MATERIALS:

1. Pole simplex shall be ASTM A27 GR65-35 or A148 GR80-50 or A576 GR1021. ASTM A576 must be suitable for forging and also meet minimum tensile of 65ksi, minimum yield of 35ksi, and a minimum elongation of 22 percent in 2 inches.
2. Welded tabs and backplates shall be ASTM A-36 steel or better.
3. Nylon insert locknuts shall conform to ASTM A563.

GENERAL NOTES:

1. Materials and fabrication shall be in accordance with Standard Sheet "MA-C" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
2. All parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing". The throat of the Simplex shall be made free of all rough or sharp edges resulting from the galvanizing process.
3. Each simplex fitting shall be supplied with 2 ASTM A325 bolts, 1/2in. X 1 1/2in. and 2 lock washers. The bolts and lock washers shall be secured to the clamp with the other hardware items. The Fabricator shall ship clamp assembly together in a single package, including all bolts, nuts, and washers required for the clamp and simplex fitting.
4. Design conforms to 1994 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" and interim revisions thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor. Clamps are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq.ft.,12 ft. maximum arm length.
5. Each assembly shall consist of one upper piece simplex fitting having a smooth lip and one lower piece simplex fitting with the lip removed.
6. Approximately 2 in. diameter hole in upper mast arm clamp.

For 8.9 - 12 inch diameter Signal Poles
(Two req'd for each mast arm)

Texas Department of Transportation
Traffic Operations Division

CLAMP ON FITTING ASSEMBLY FOR LUMINAIRE MAST ARM

CFA-12

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