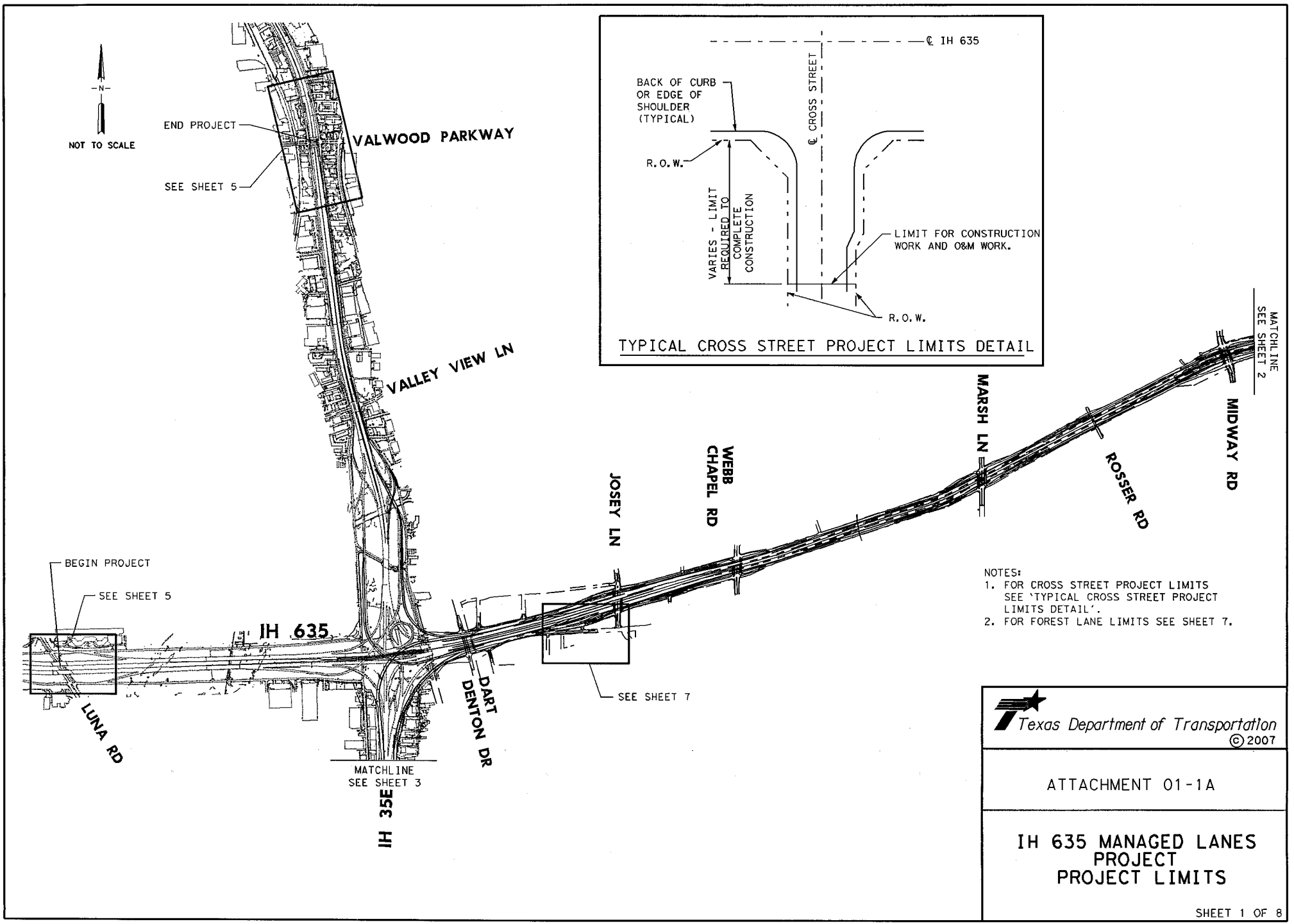
Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 01-1A

Project Limits

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-01A02.dgn - ON=1-31,33-62 PRF=L:\P\4200\ML 01-01A02.hlf - ROT=0.000000 - SCALE=2665.072000 USER=bekele PLOTTED Thu Sep 06 10:03:30 2007



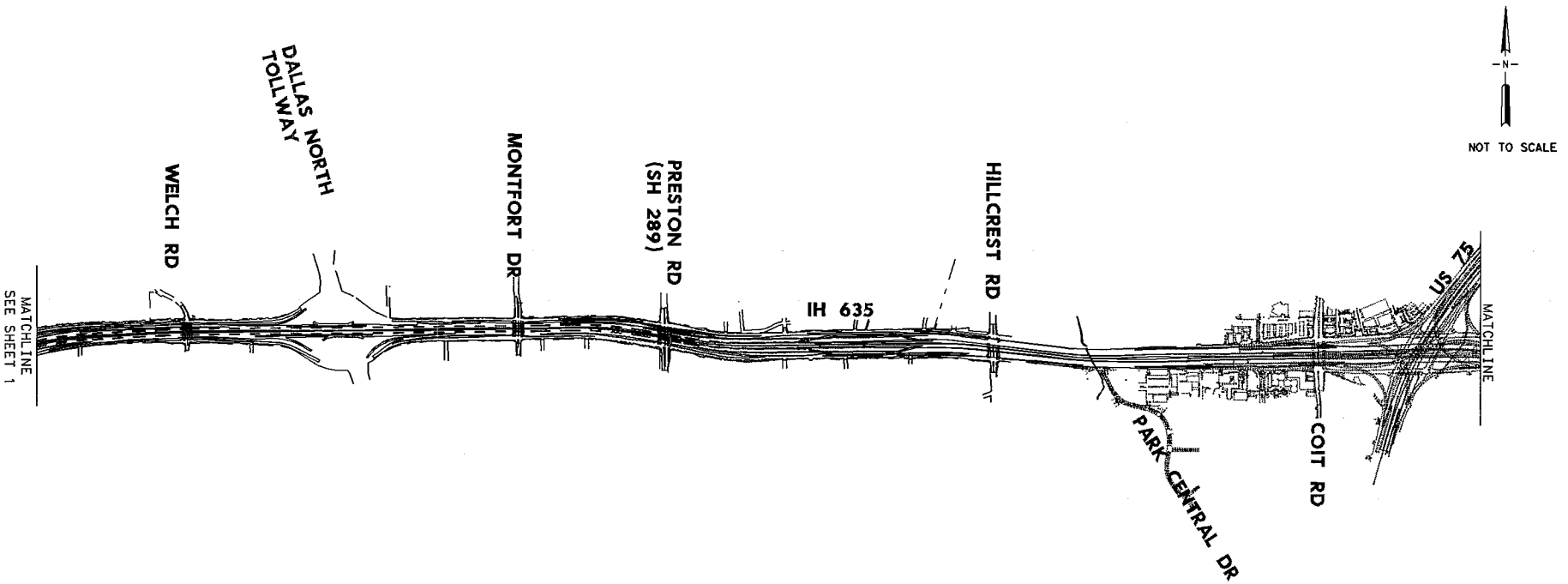
NOTES:
1. FOR CROSS STREET PROJECT LIMITS SEE 'TYPICAL CROSS STREET PROJECT LIMITS DETAIL'.
2. FOR FOREST LANE LIMITS SEE SHEET 7.

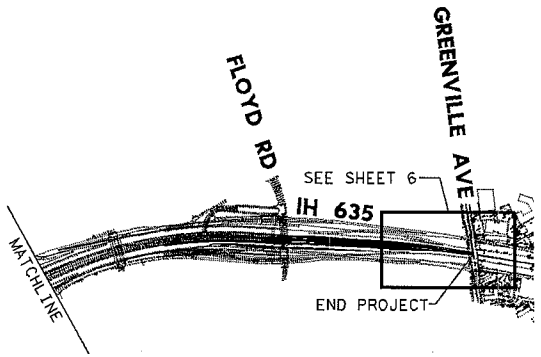
Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT PROJECT LIMITS

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-01A03.dgn - ON=1-60 PRF=L:\P\4200\ML 01-01A03.hlf - ROT=0.000000 - SCALE=2665.148000 USER=bekele PLOTTED Thu Sep 06 10:03:40 2007





NOTE:
FOR CROSS STREET PROJECT LIMITS SEE 'TYPICAL CROSS STREET DETAIL' ON SHEET 1.

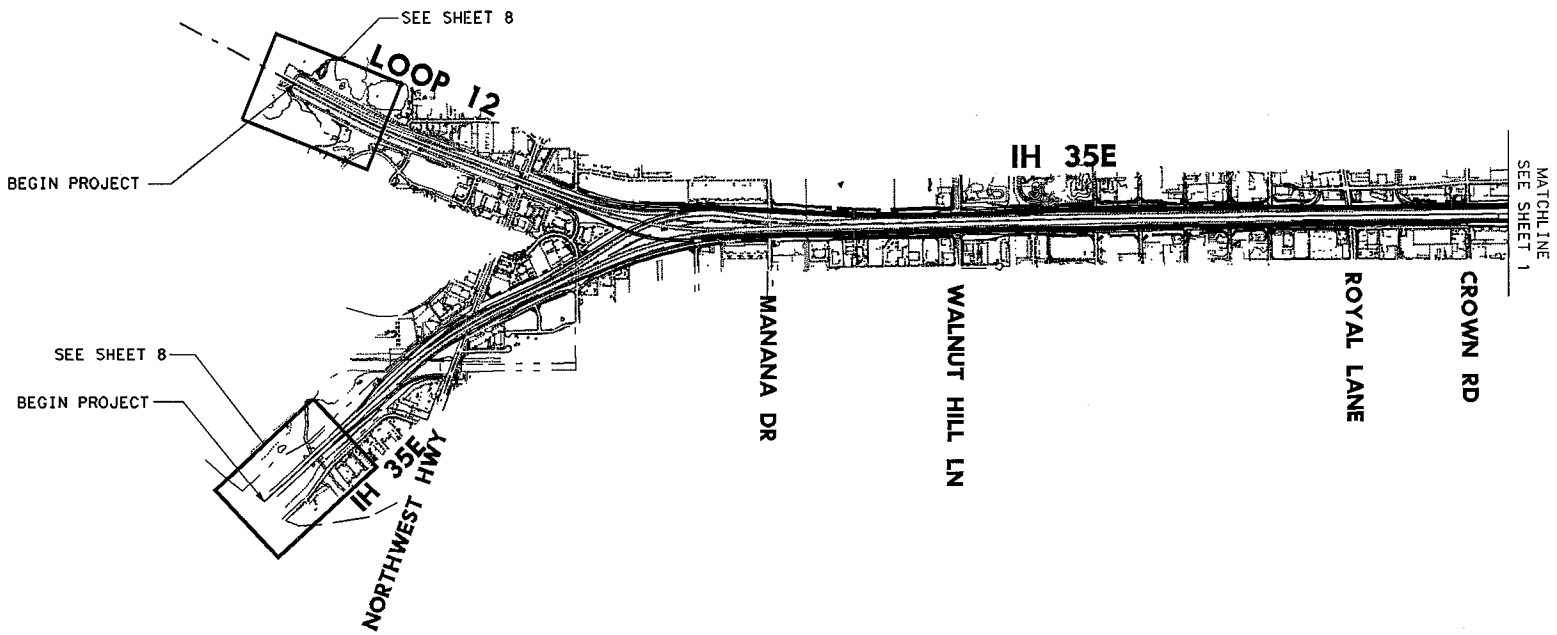
Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT
PROJECT LIMITS

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-01A01.dgn - ON=1-62 PRF=L:\P\4200\ML 01-01A01.hlf - ROT=0.000000 - SCALE=2665.148000 USER=bekele PLOTTED Thu Sep 06 10:03:12 2007

NOT TO SCALE



Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT
PROJECT LIMITS

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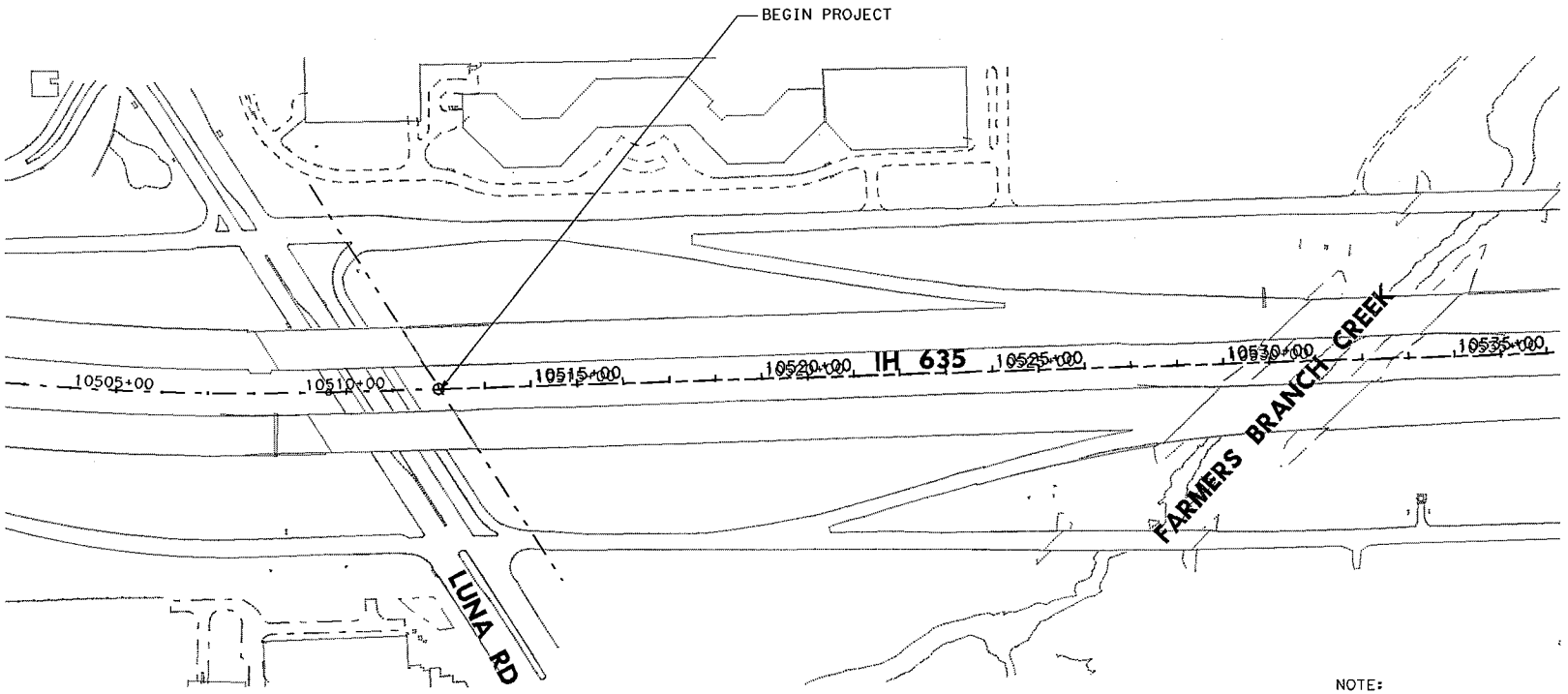


N

NOT TO SCALE

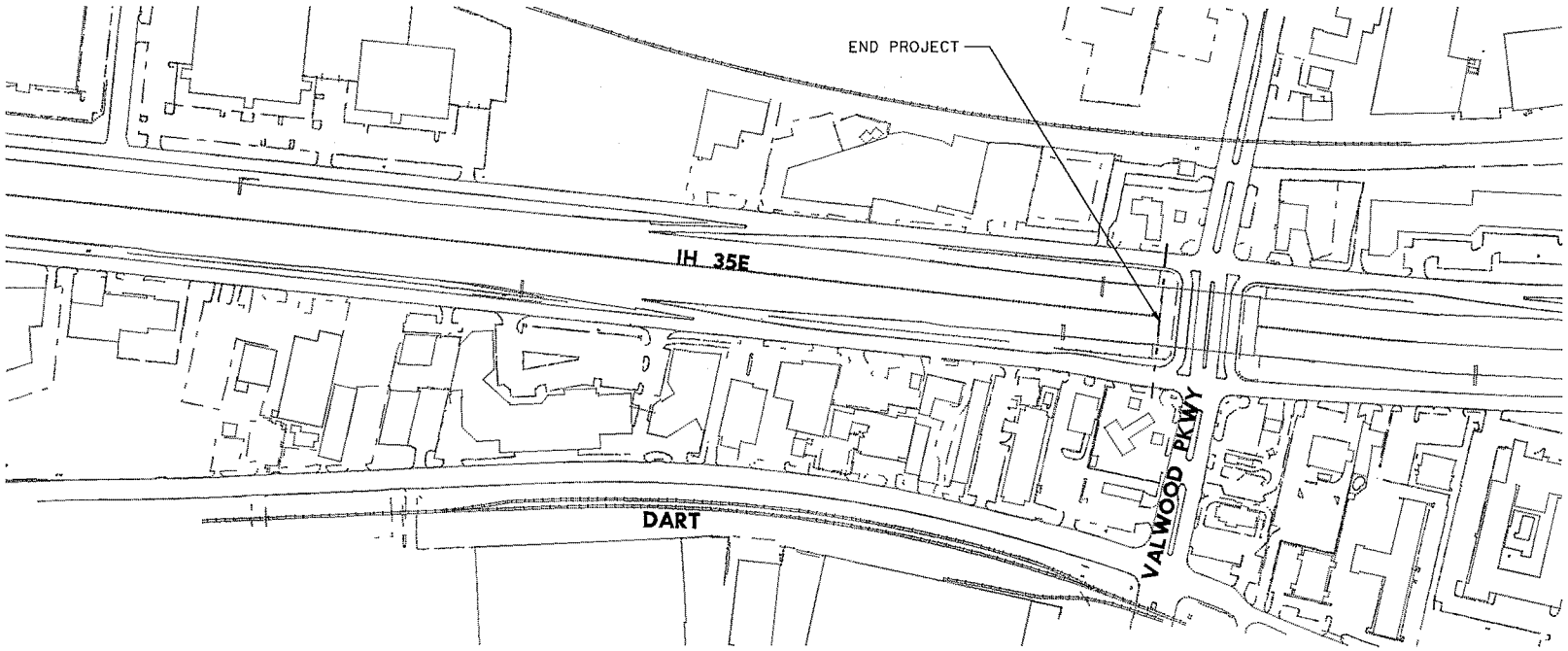
NOTE:
PROJECT BEGINS AT EAST ABUTMENT OF LUNA RD OVERPASS.

Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT PROJECT LIMITS

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-01A08.dgn - ON=1-62 PRF=L:\P\4200\ML 01-01A08.hlf - ROT=0.000000 - SCALE=403.811000 USER=bekele PLOTTED Thu Sep 06 10:04:48 2007



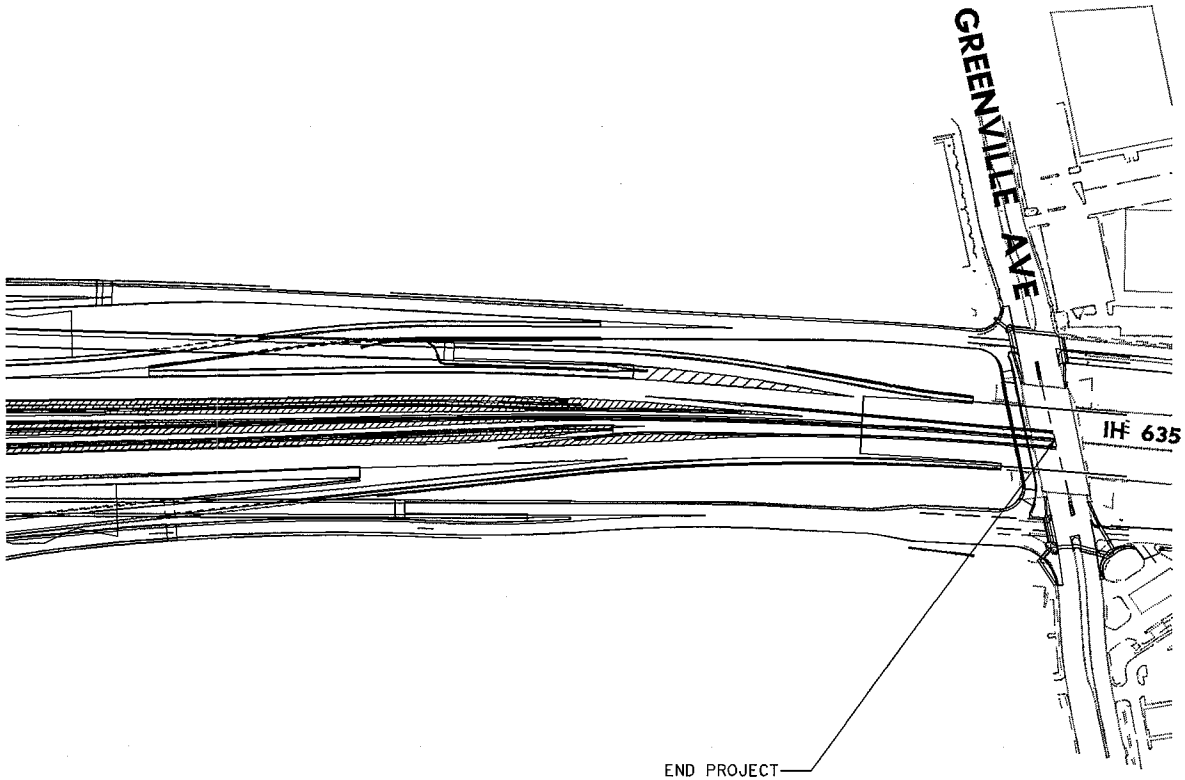
NOTE:
PROJECT ENDS AT SOUTH ABUTMENT OF VALWOOD PARKWAY OVERPASS.

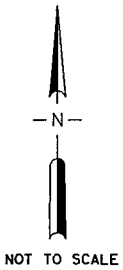
Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT
PROJECT LIMITS

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-01A03b.dgn - ON=1-60 PRF=L:\P\4200\ML 01-01A03b.hlf - ROT=0.000000 - SCALE=401.906000 USER=bekele PLOTTED Thu Sep 06 10:04:07 2007





NOT TO SCALE

Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT PROJECT LIMITS

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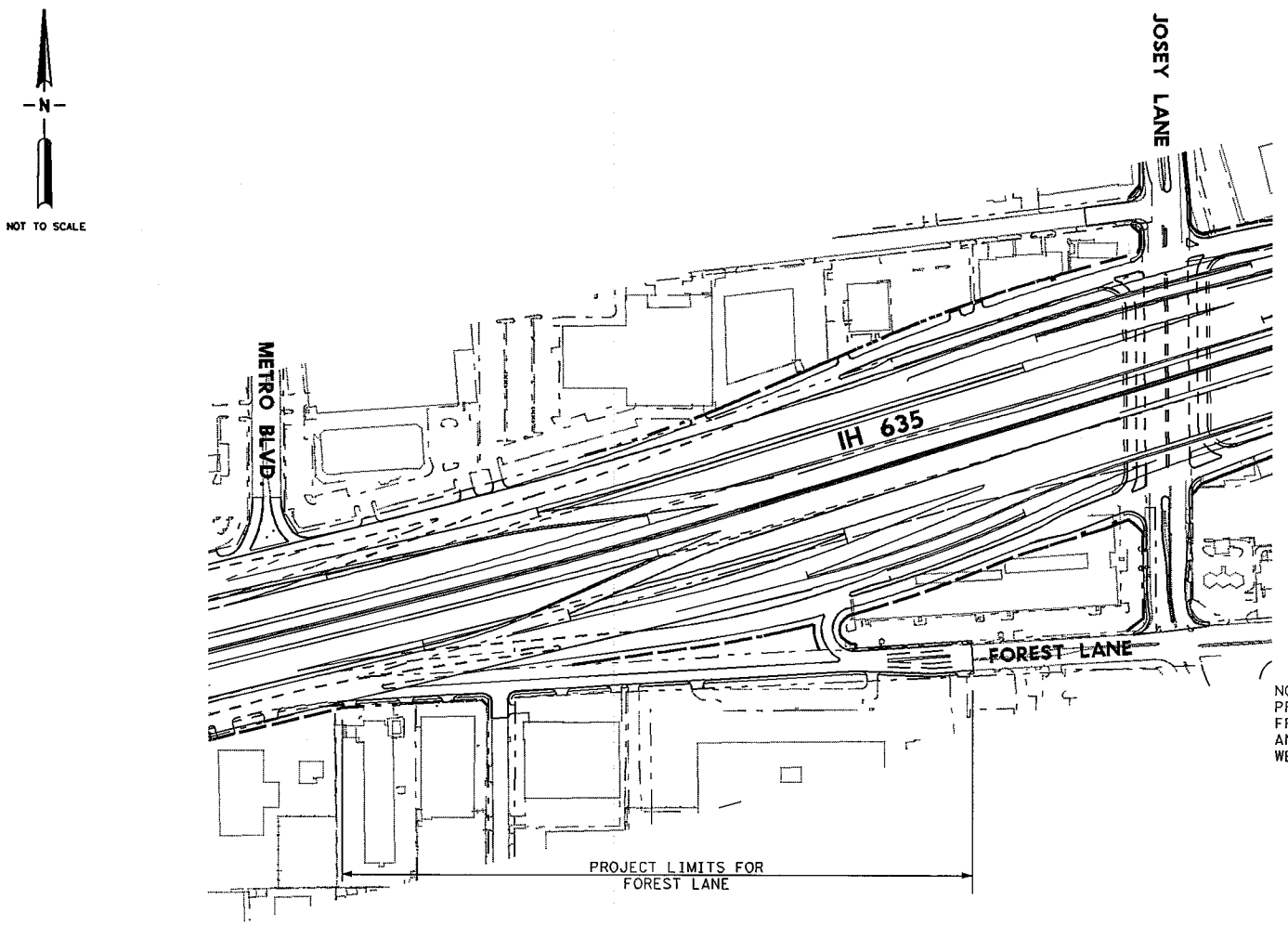
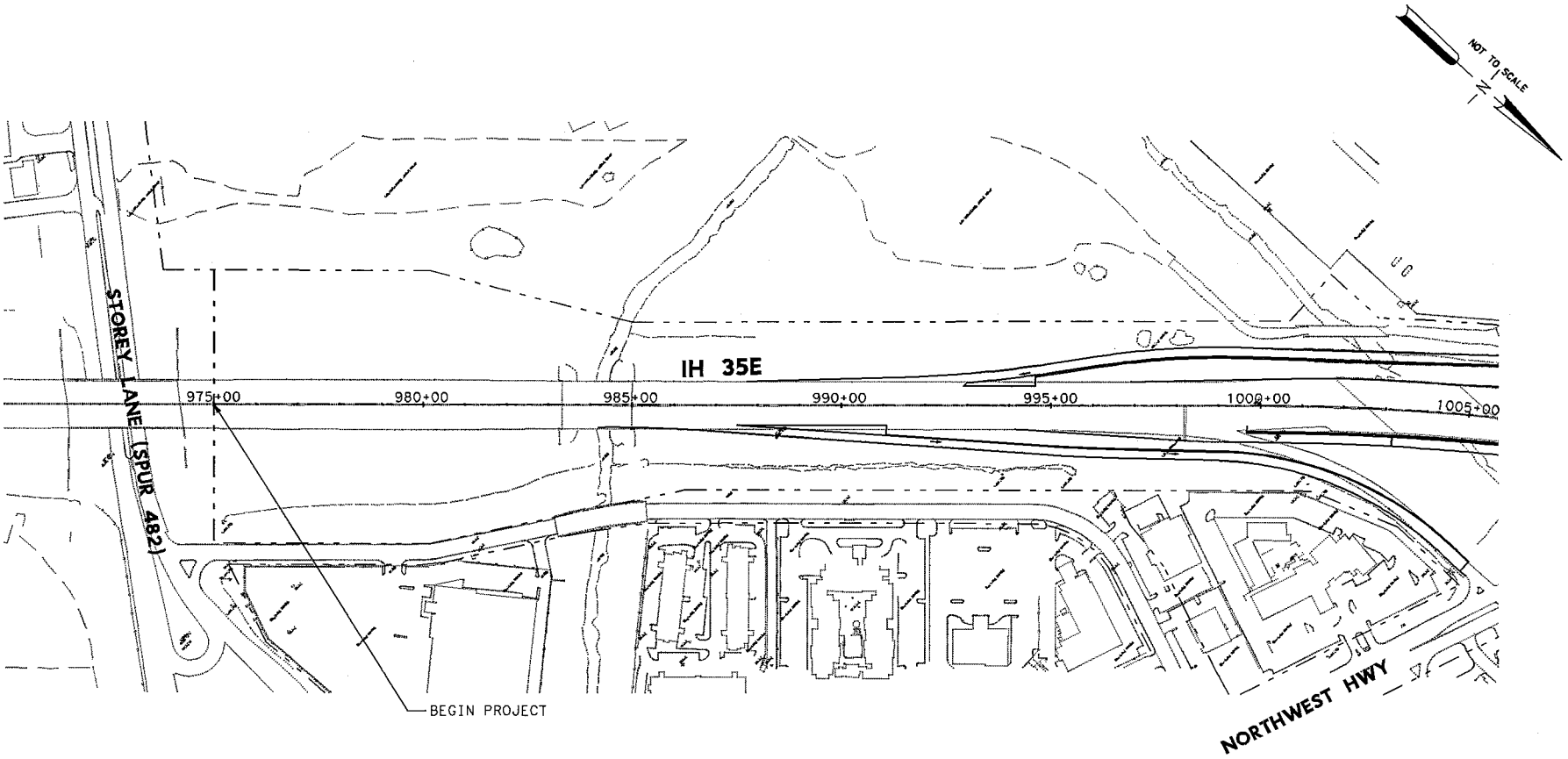


NOTE:
PROJECT LIMITS ALONG FOREST LANE EXTEND FROM THE INTERSECTION OF FOREST LANE AND THE EB FRONTAGE ROAD UPTO 473 FT WEST OF CENTERLINE JOSEY LANE.

Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT
PROJECT LIMITS



NOTE:
PROJECT BEGINS AT THE NORTH ABUTMENT OF THE IH 35E BRIDGES OVER STOREY LANE.

Texas Department of Transportation

ATTACHMENT 01-1A

IH 635 MANAGED LANES PROJECT PROJECTS LIMITS

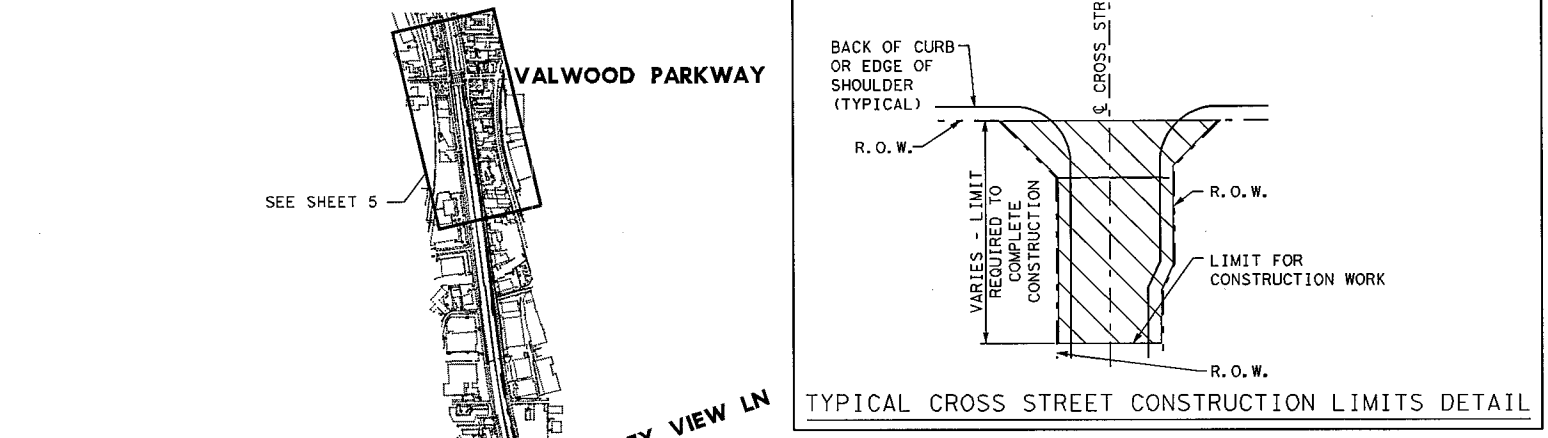
Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 01-2A

Construction Limits

DGN=L:\Job\023260\CADD\Proj Limit\ML 01-03A01.dgn - ON=1-31,33-62 PRF=L:\P\4200\ML 01-03A01.hlf - ROT=0.000000 - SCALE=2665.148000 USER=bekele PLOTTED Mon Dec 10 16:34:27 2007



TYPICAL CROSS STREET CONSTRUCTION LIMITS DETAIL

NOT TO SCALE

VALWOOD PARKWAY

SEE SHEET 5

VALLEY VIEW LN

IH 635

LUNA RD

SEE SHEET 4

MATCHLINE SEE SHEET 3

IH 35E

DART

DENTON DR

JOSEY LN

SEE SHEET 6

MARSH LN

WEBB CHAPEL RD

ROSSER RD

MIDWAY RD

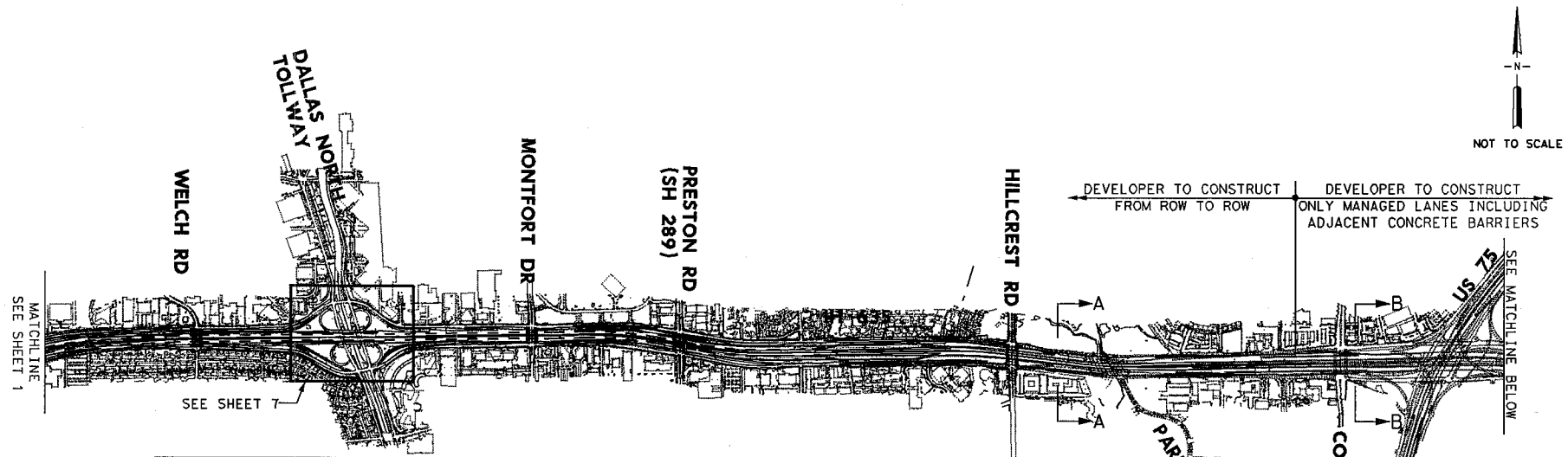
MATCHLINE SEE SHEET 2

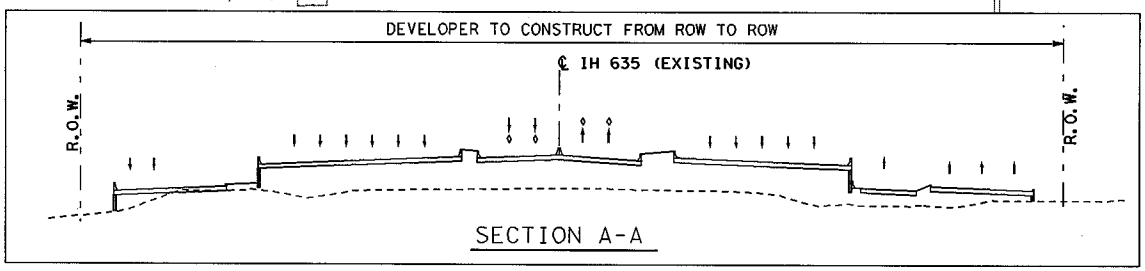
NOTE:
FOR CROSS STREET CONSTRUCTION LIMITS SEE 'TYPICAL CROSS STREET CONSTRUCTION LIMITS DETAIL'.

Texas Department of Transportation

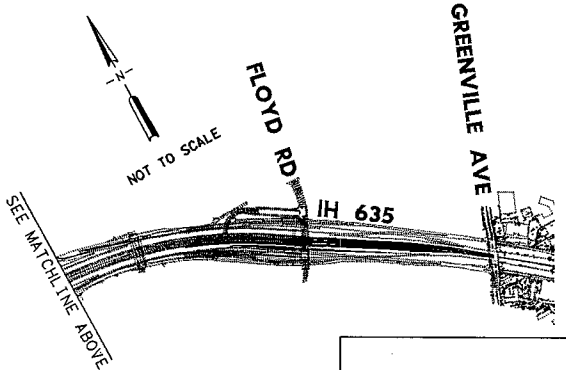
ATTACHMENT 01-2A

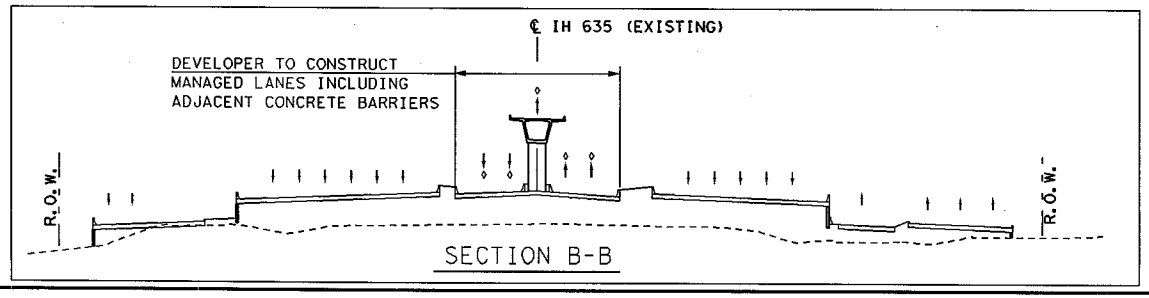
IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS





SECTION A-A





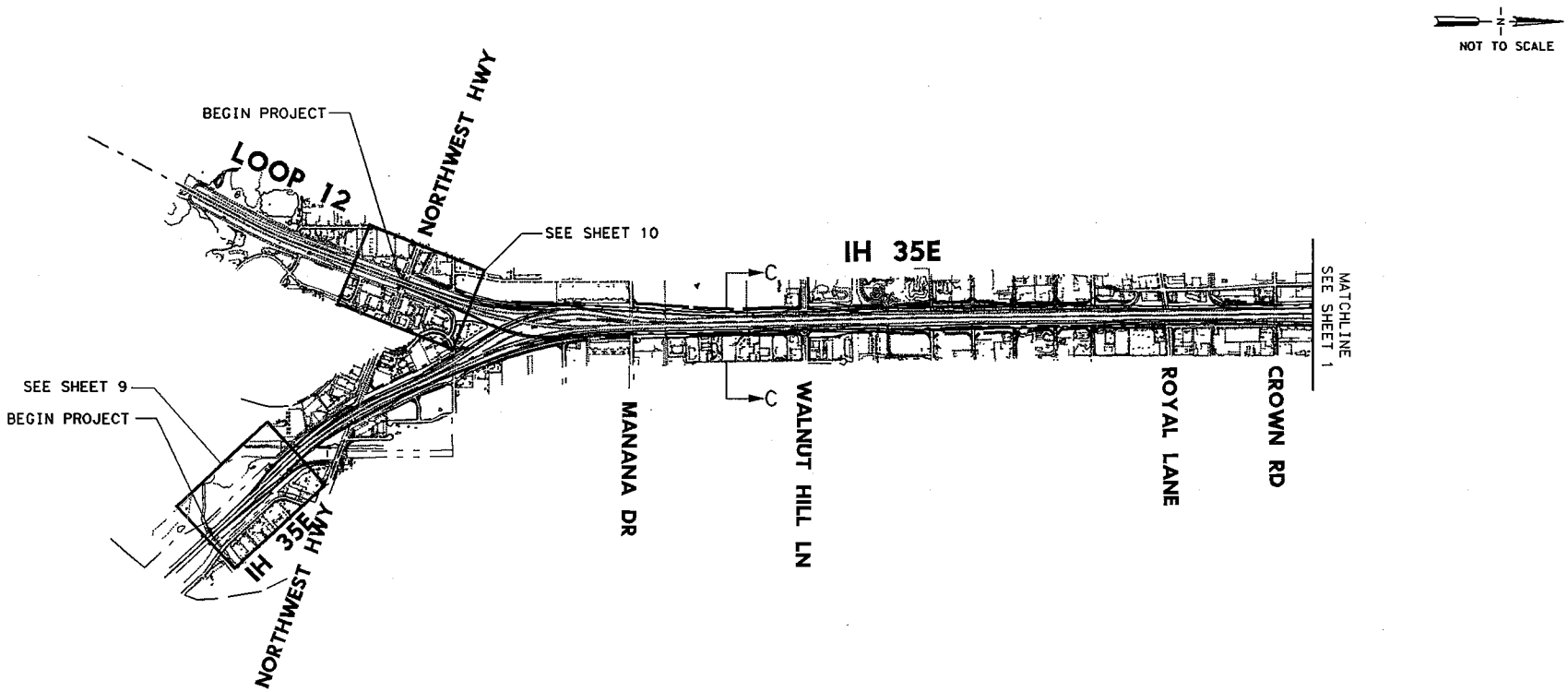
SECTION B-B

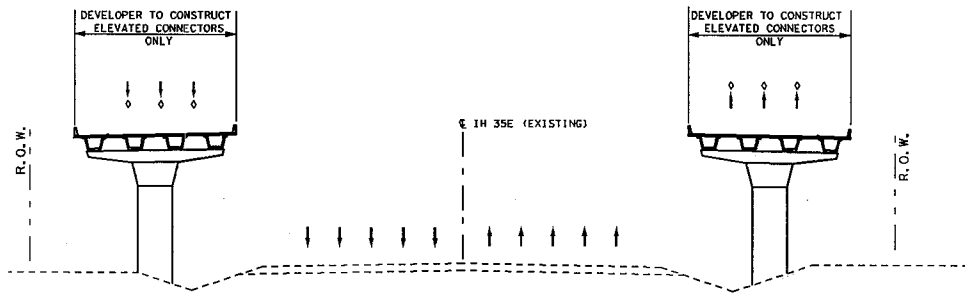
NOTE:
1. SECTIONS A-A AND B-B DEPICT THE LIMITS OF CONSTRUCTION. THE ROADWAY CONFIGURATION IS FOR ILLUSTRATIVE PURPOSES ONLY.
2. FOR CROSS STREET CONSTRUCTION LIMITS, SEE " TYPICAL CROSS STREET CONSTRUCTION LIMITS DETAIL" ON SHEET 1.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS





SECTION C - C

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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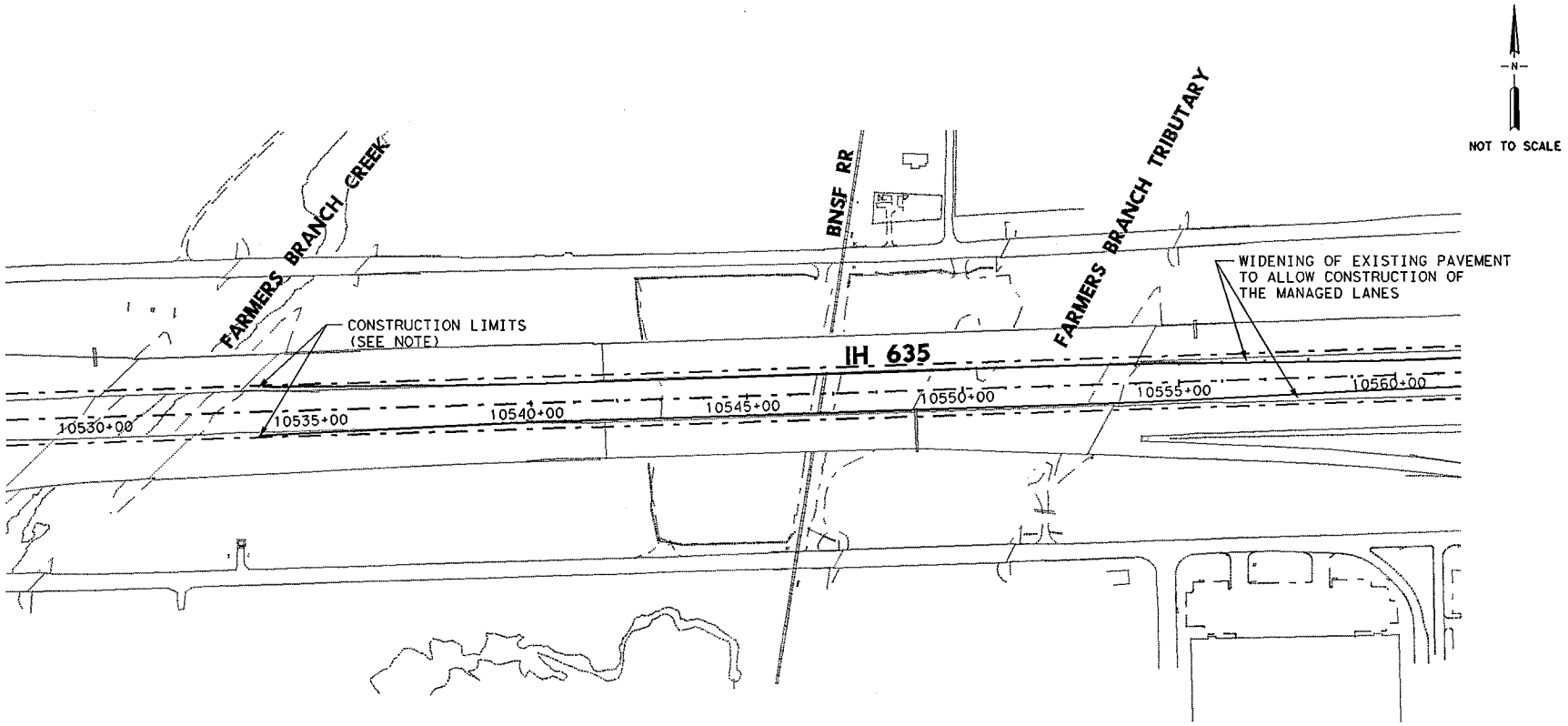


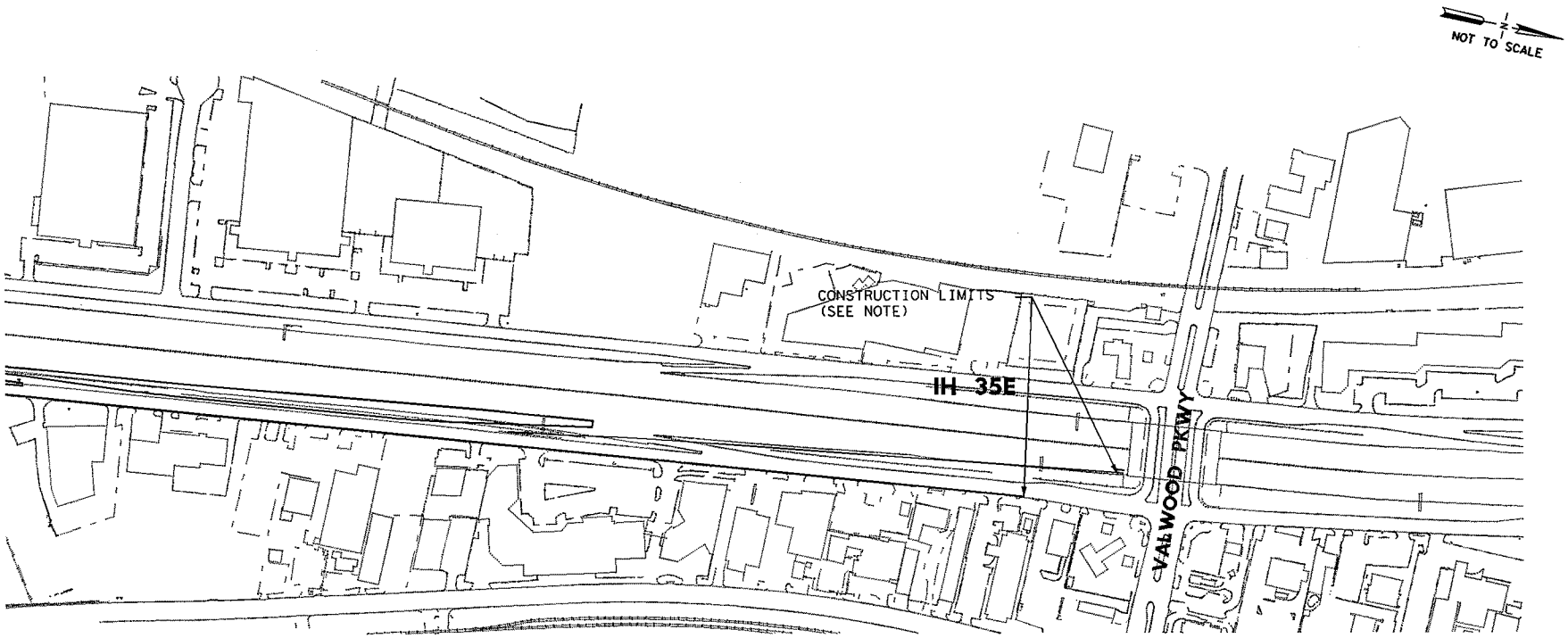
NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

DGN=L:\job\023260\CADD\Proj Limit\ML 01-03A04.dgn - ON=1-62 PRF=L:\P\4200\ML 01-03A04.hlf - ROT=0.000000 - SCALE=403.811000 USER=bekele PLOTTED Mon Dec 10 16:35:23 2007



NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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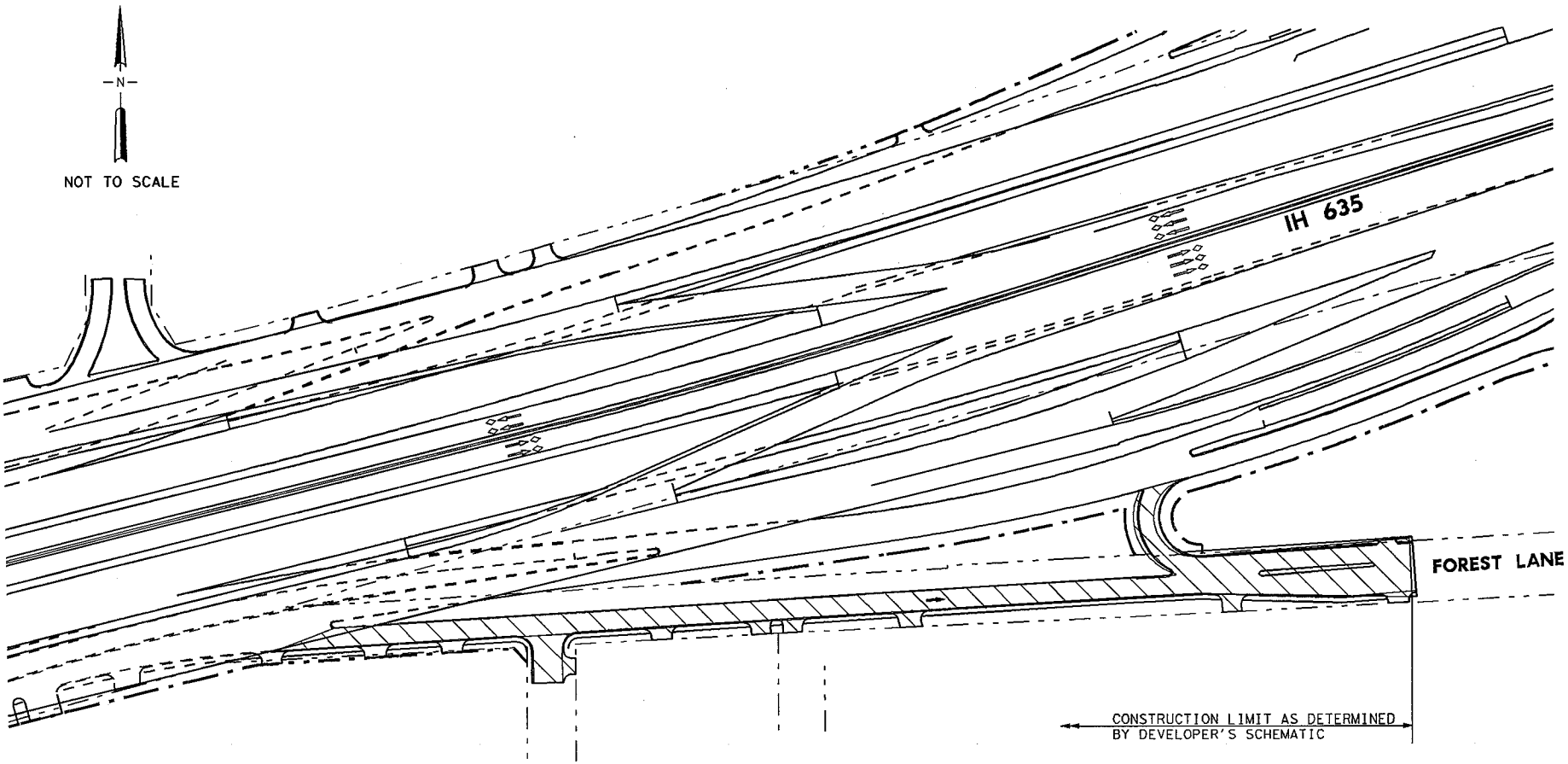

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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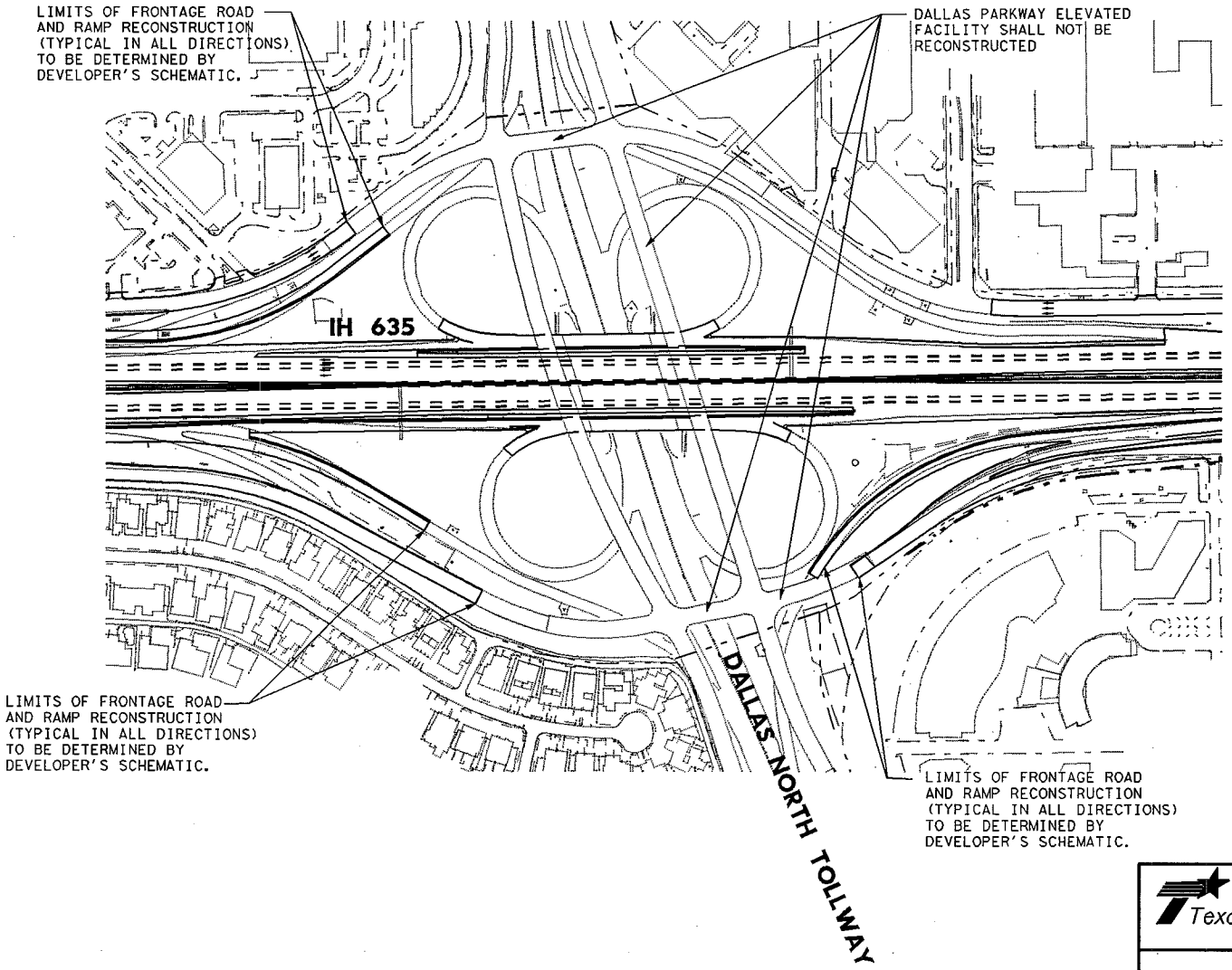

-N-

NOT TO SCALE

NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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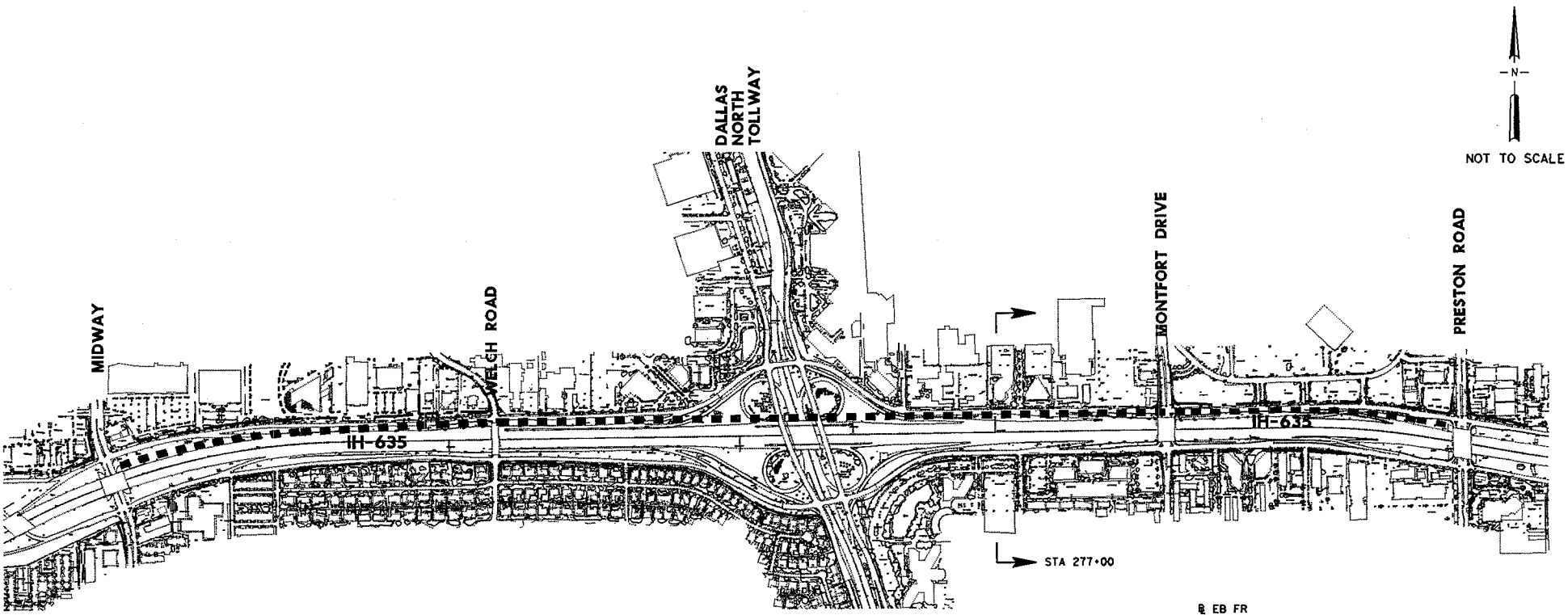

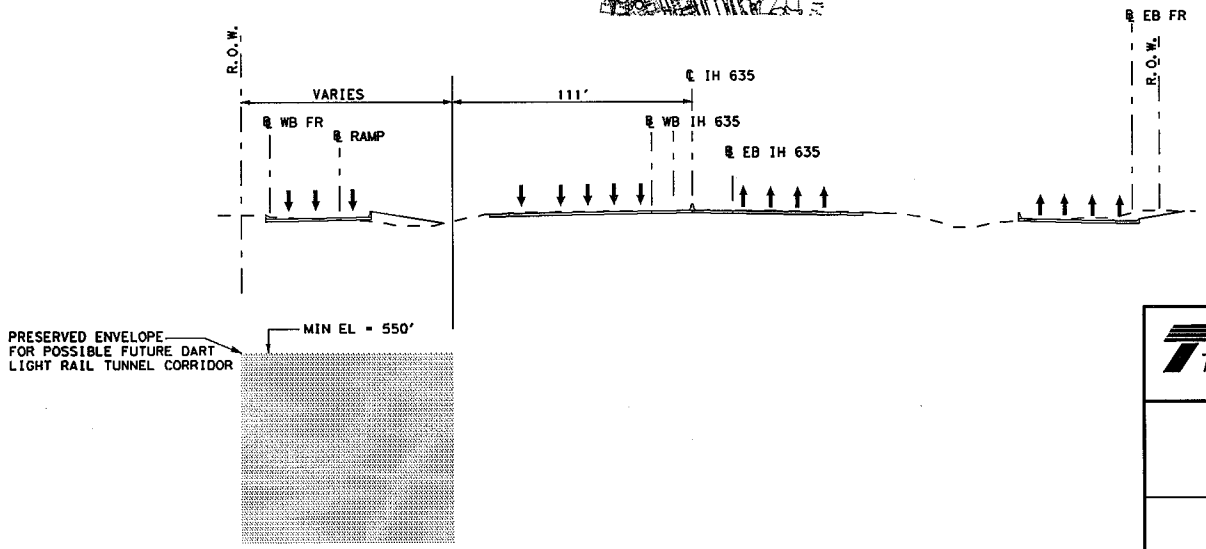

DART TUNNEL ENVELOPE
NOT TO SCALE

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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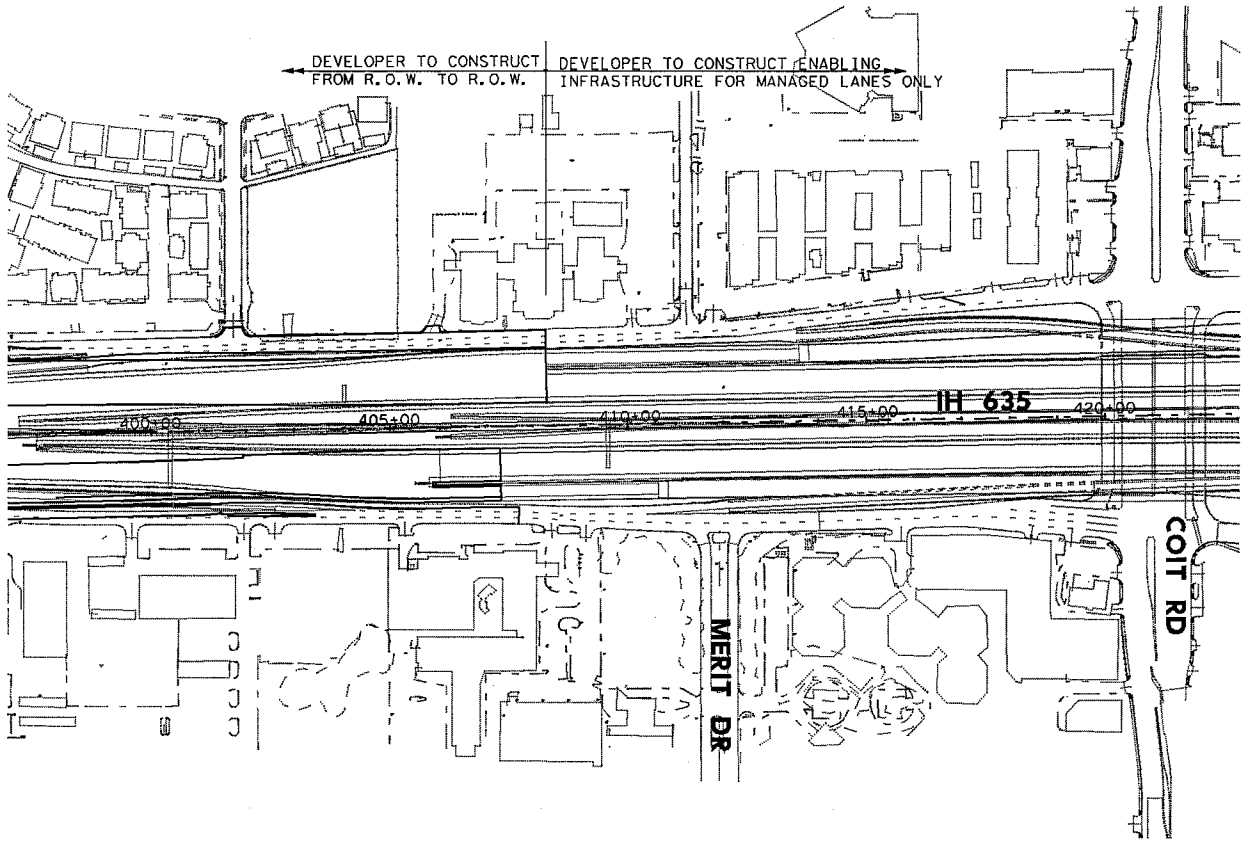


-N-

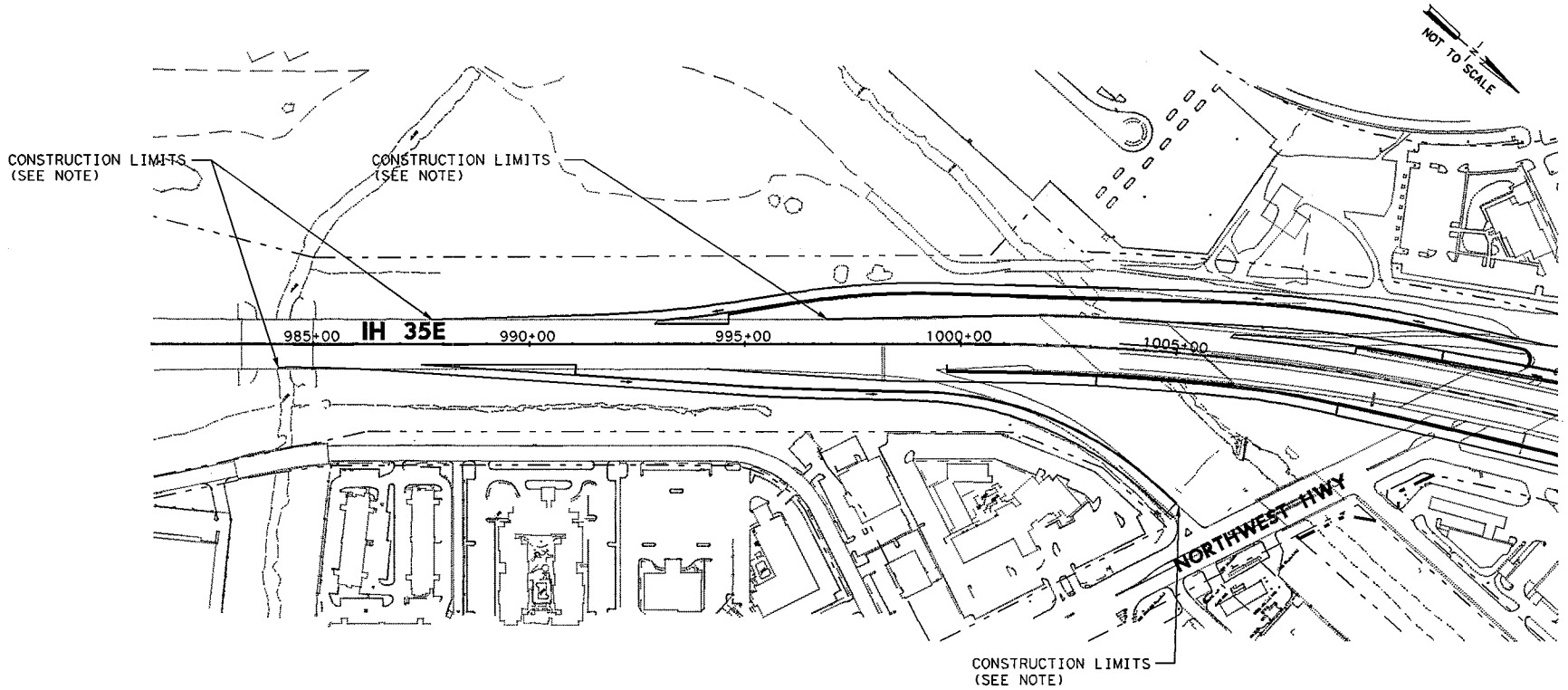
NOT TO SCALE

NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC PLAN OF PROJECTS.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS



NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC PLAN OF PROJECT.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

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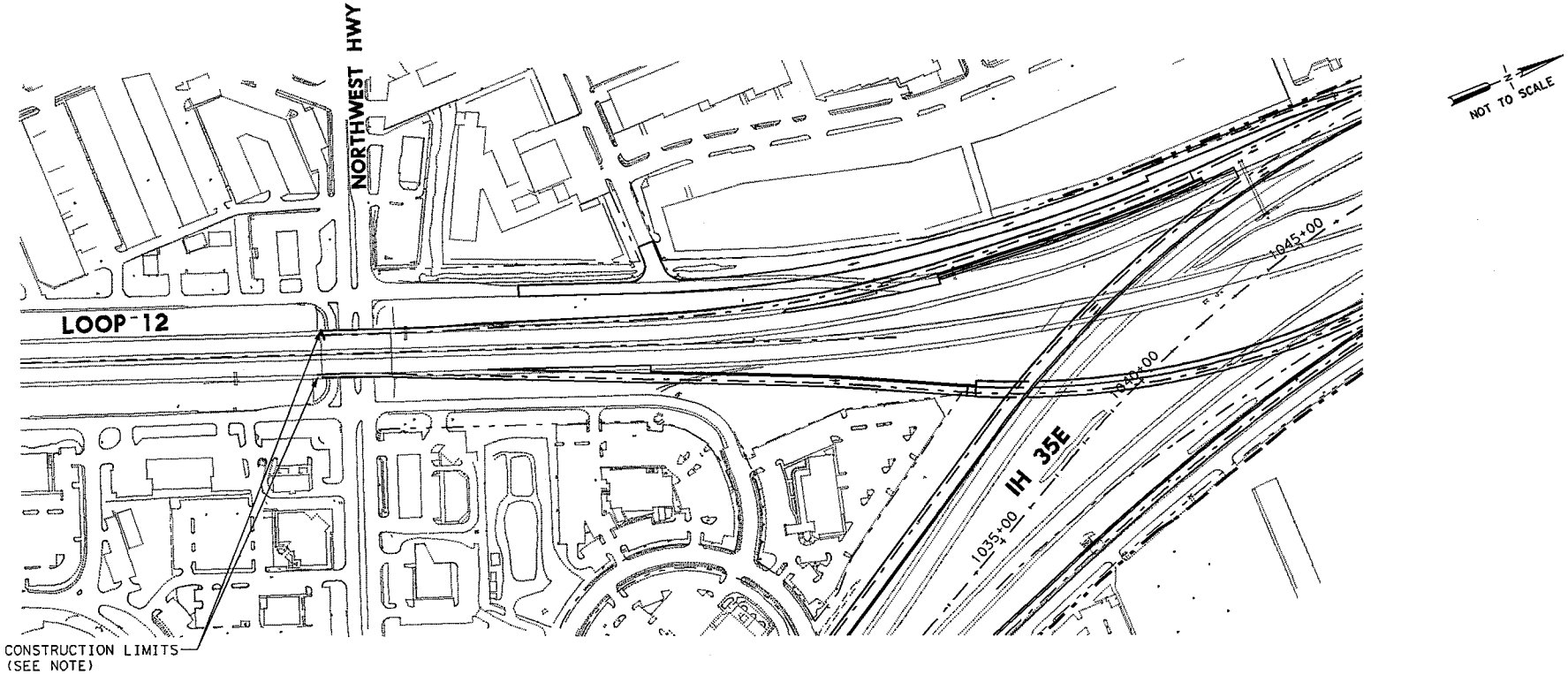


NOTE:
ACTUAL CONSTRUCTION LIMITS TO BE DETERMINED BY THE DEVELOPER'S SCHEMATIC.

Texas Department of Transportation

ATTACHMENT 01-2A

IH 635 MANAGED LANES PROJECT CONSTRUCTION LIMITS

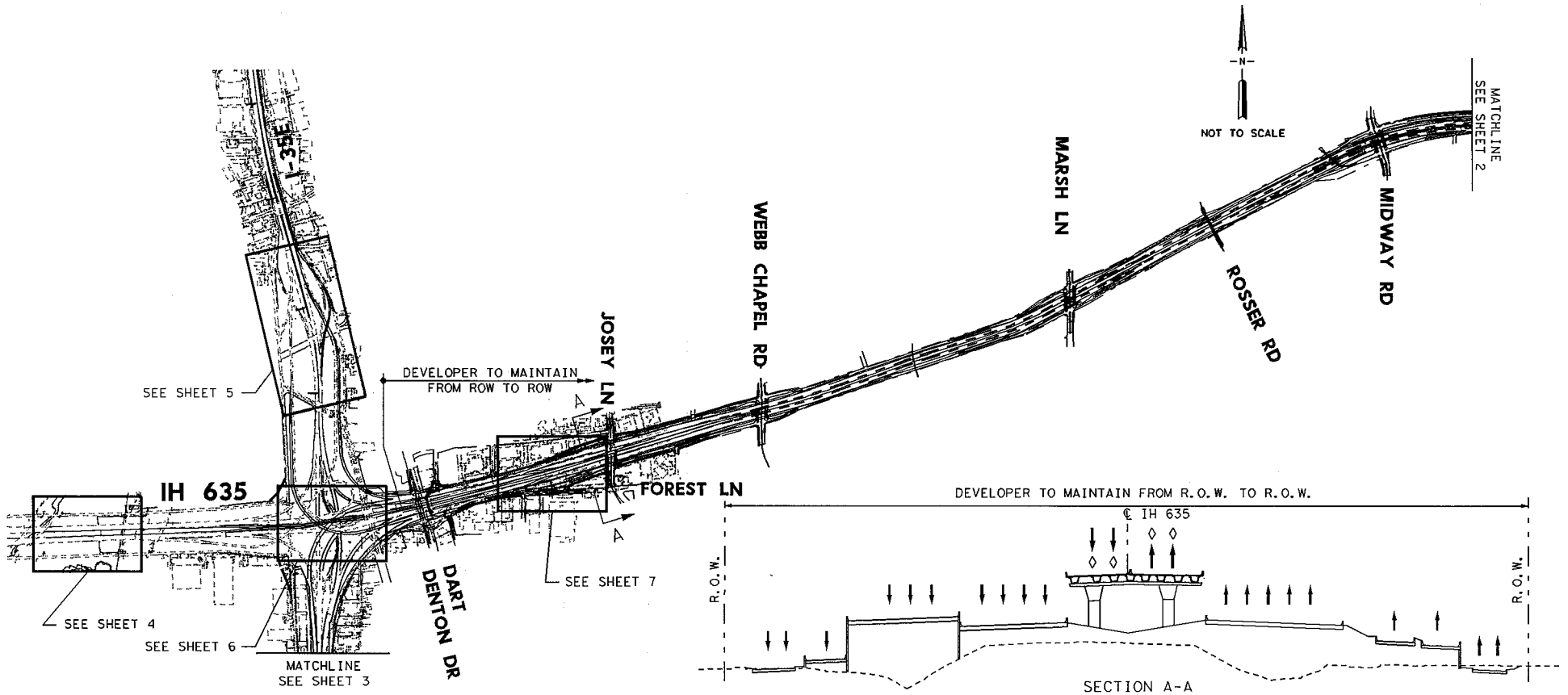
Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

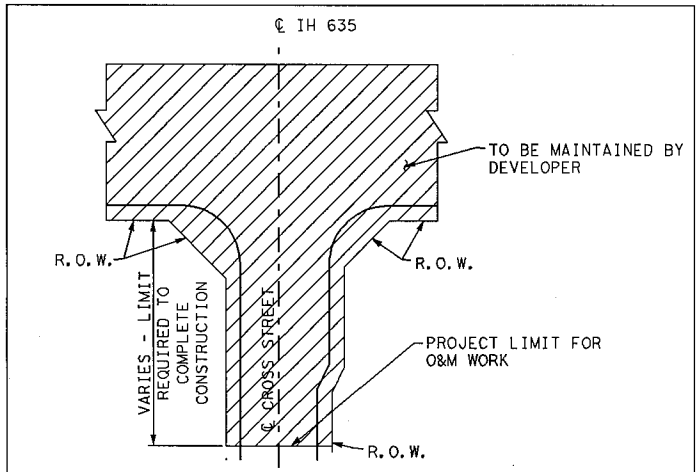
Attachment 01-3A

Operations and Maintenance Work Limits

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-02A01.dgn - ON=1-62 PRF=L:\P\4200\ML 01-02A01.hlf - ROT=0.000000 - SCALE=2665.148000 USER=bekele PLOTTED Wed Sep 05 15:38:20 2007



SECTION A-A
N.T.S



TYPICAL CROSS STREET O&M LIMITS DETAIL
N.T.S

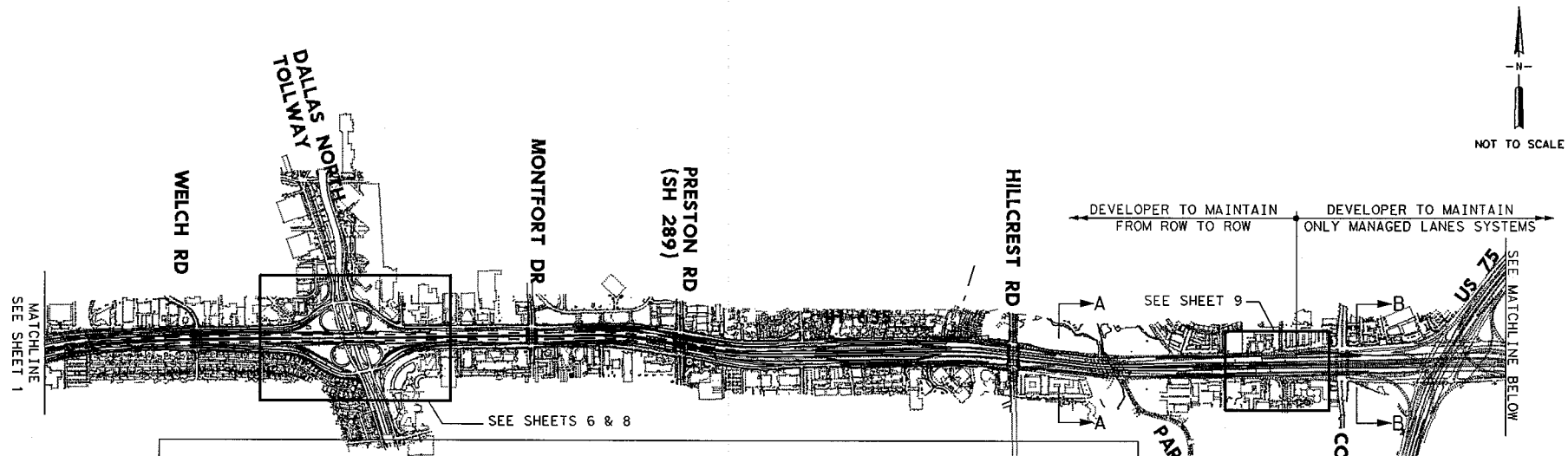
NOTES:
1. SECTION A-A DEPICTS THE LIMITS OF MAINTENANCE. THE ROADWAY CONFIGURATION IS FOR ILLUSTRATIVE PURPOSES ONLY.
2. FOR CROSS STREET O&M LIMITS, SEE 'TYPICAL CROSS STREET O&M LIMITS DETAIL'.

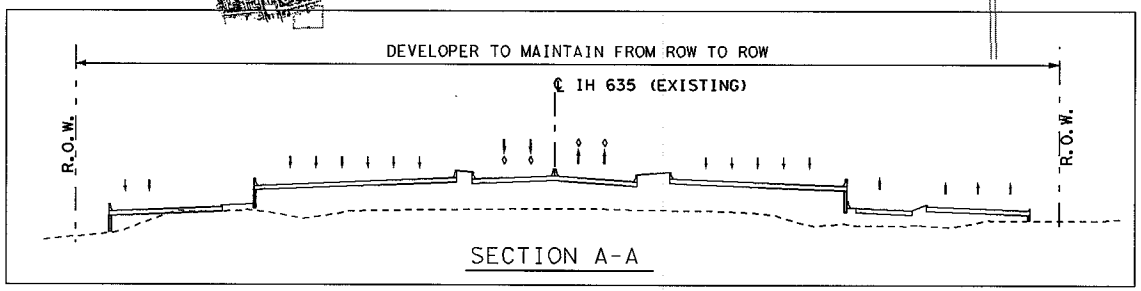
Texas Department of Transportation

ATTACHMENT 01-3A

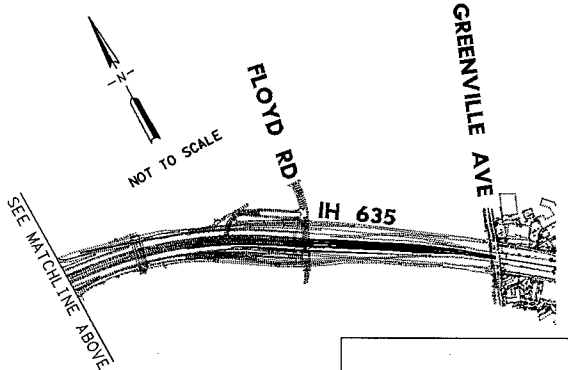
IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

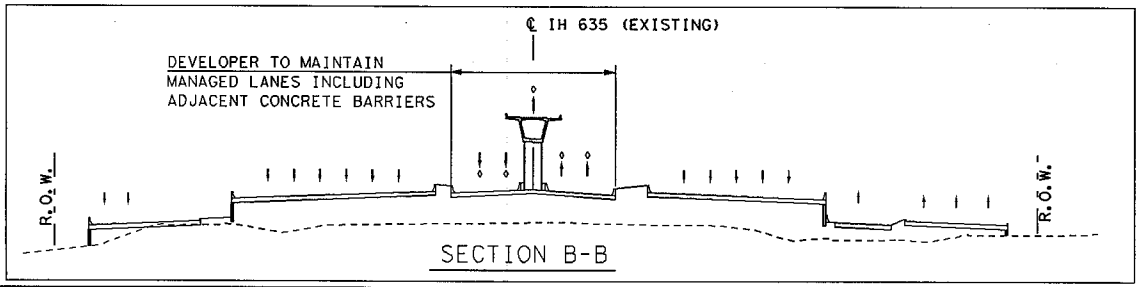
DGN=L:\Job\023260\CADD\Proj Limit\ML 01-02A02.dgn - ON=1-60 PRF=L:\P\4200\ML 01-02A02.hlf - ROT=0.000000 - SCALE=2665.148000 USER=bekele PLOTTED Fri Nov 30 07:58:57 2007





SECTION A-A





SECTION B-B

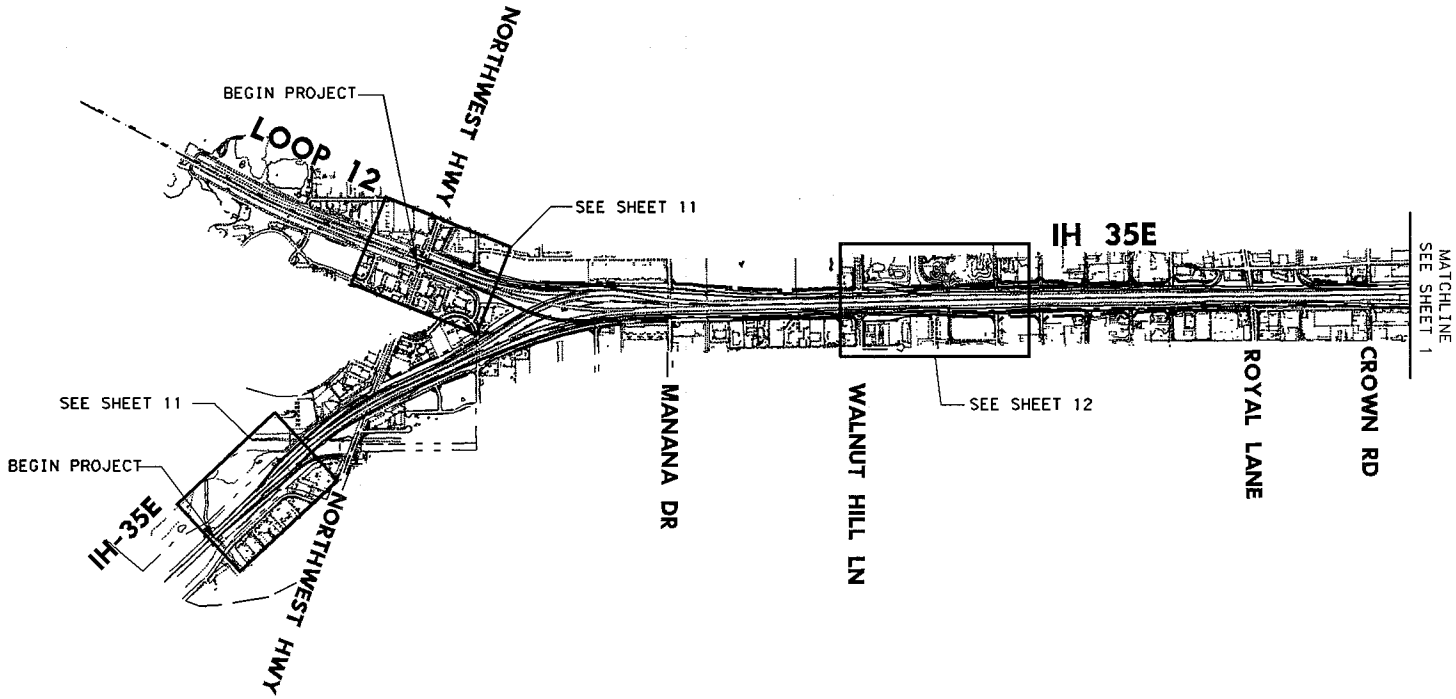
NOTE:
1. SECTIONS A-A AND B-B DEPICT THE LIMITS OF MAINTENANCE. THE ROADWAY CONFIGURATION IS FOR ILLUSTRATIVE PURPOSES ONLY.
2. FOR CROSS STREET MAINTENANCE LIMITS, SEE " TYPICAL CROSS STREET MAINTENANCE LIMITS DETAIL" ON SHEET 1.

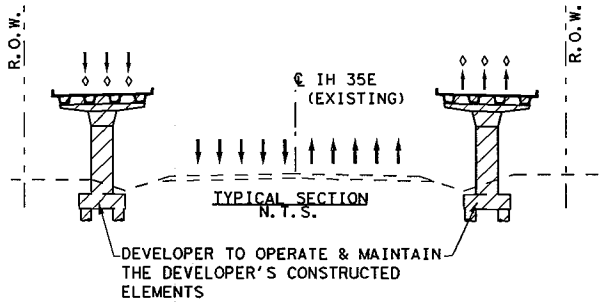
Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

NOT TO SCALE





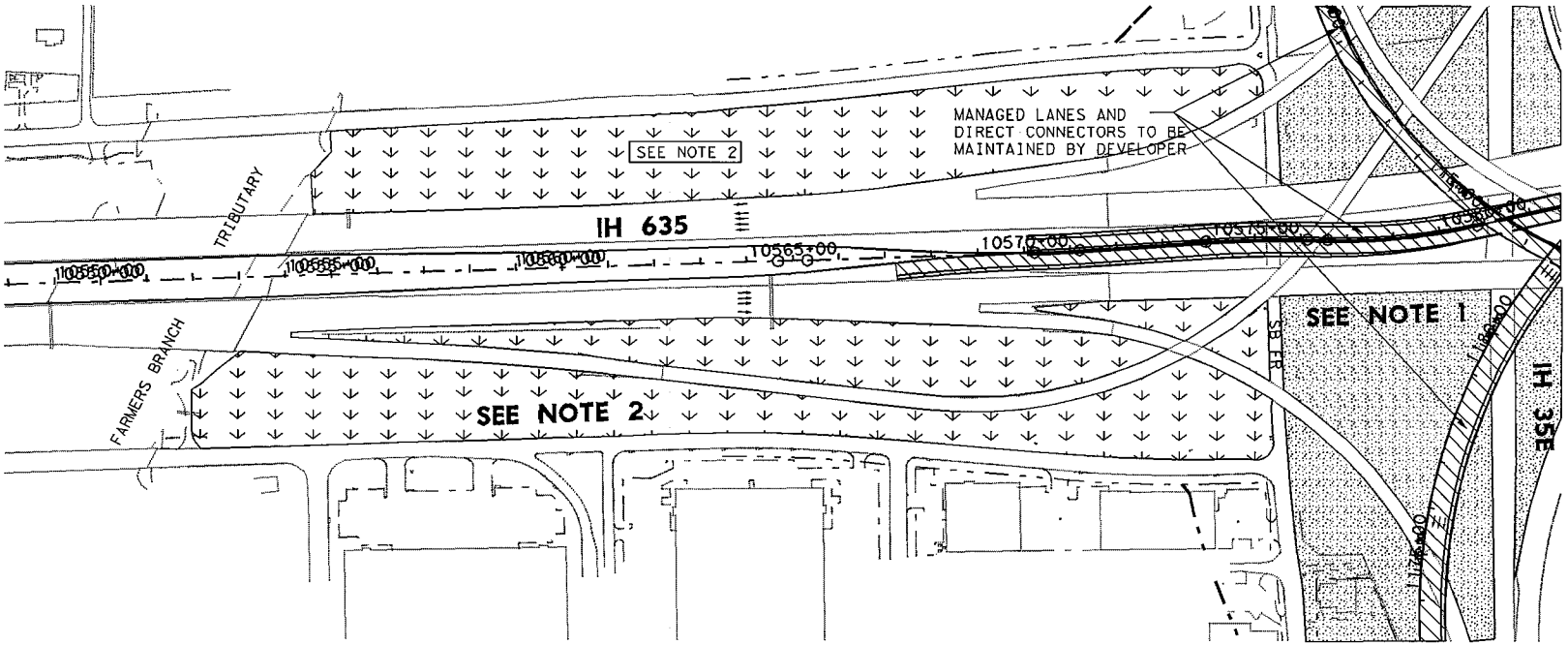
NOTE:
'TYPICAL SECTION' DEPICTS THE LIMITS OF MAINTENANCE. THE ROADWAY CONFIGURATION IS FOR ILLUSTRATIVE PURPOSES ONLY.

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

DGN=I:\Job\023260\CADD\Proj Limit\ML 01-02A03.dgn - ON=1-62 PRF=L:\P\4200\ML 01-02A03.hlf - ROT=0.000000 - SCALE=403.810000 USER=bekele PLOTTED Wed Sep 05 15:38:57 2007



NOTES:

1. DEVELOPER SHALL MAINTAIN ALL WATER QUALITY FEATURES, OPEN CHANNELS AND DRAINAGE STRUCTURES CONSTRUCTED BY THE DEVELOPER WITHIN THE IH 35E/IH 635 INTERCHANGE. (THE AREA BOUNDED BY HARRY HINES BOULEVARD, THE IH 35E SB FRONTAGE ROAD, AND CROWN ROAD).
2. BETWEEN THE IH 35E SB FRONTAGE ROAD AND FARMERS BRANCH TRIBUTARY THE DEVELOPER SHALL MAINTAIN ALL DRAINAGE STRUCTURES CONSTRUCTED BY THE DEVELOPER INCLUDING CULVERTS, PIPES, HEADWALLS, ETC. OPEN CHANNELS SHALL BE MAINTAINED BY TxDOT.
3. REMAINING R.O.W. AND HIGHWAY TO BE OPERATED & MAINTAINED BY OTHERS.

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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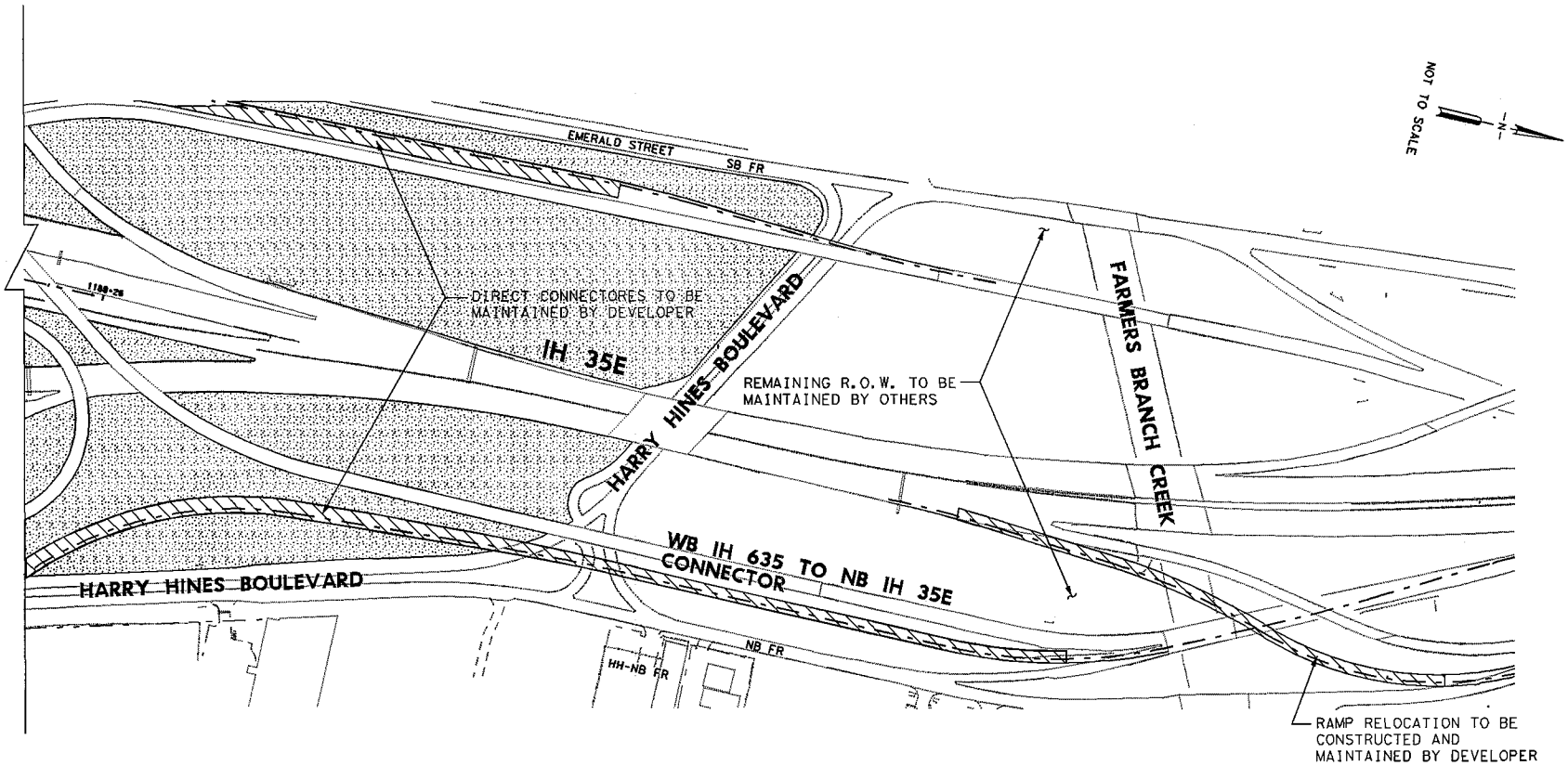

NOTE
DEVELOPER SHALL OPERATE AND MAINTAIN ALL WATER QUALITY FEATURES, OPEN CHANNELS AND DRAINAGE STRUCTURES CONSTRUCTED BY THE DEVELOPER WITHIN THE IH 35E/IH 635 INTERCHANGE (THE AREA BOUNDED BY HARRY HINES BOULEVARD, THE IH 35E SB FRONTAGE ROAD AND CROWN ROAD).

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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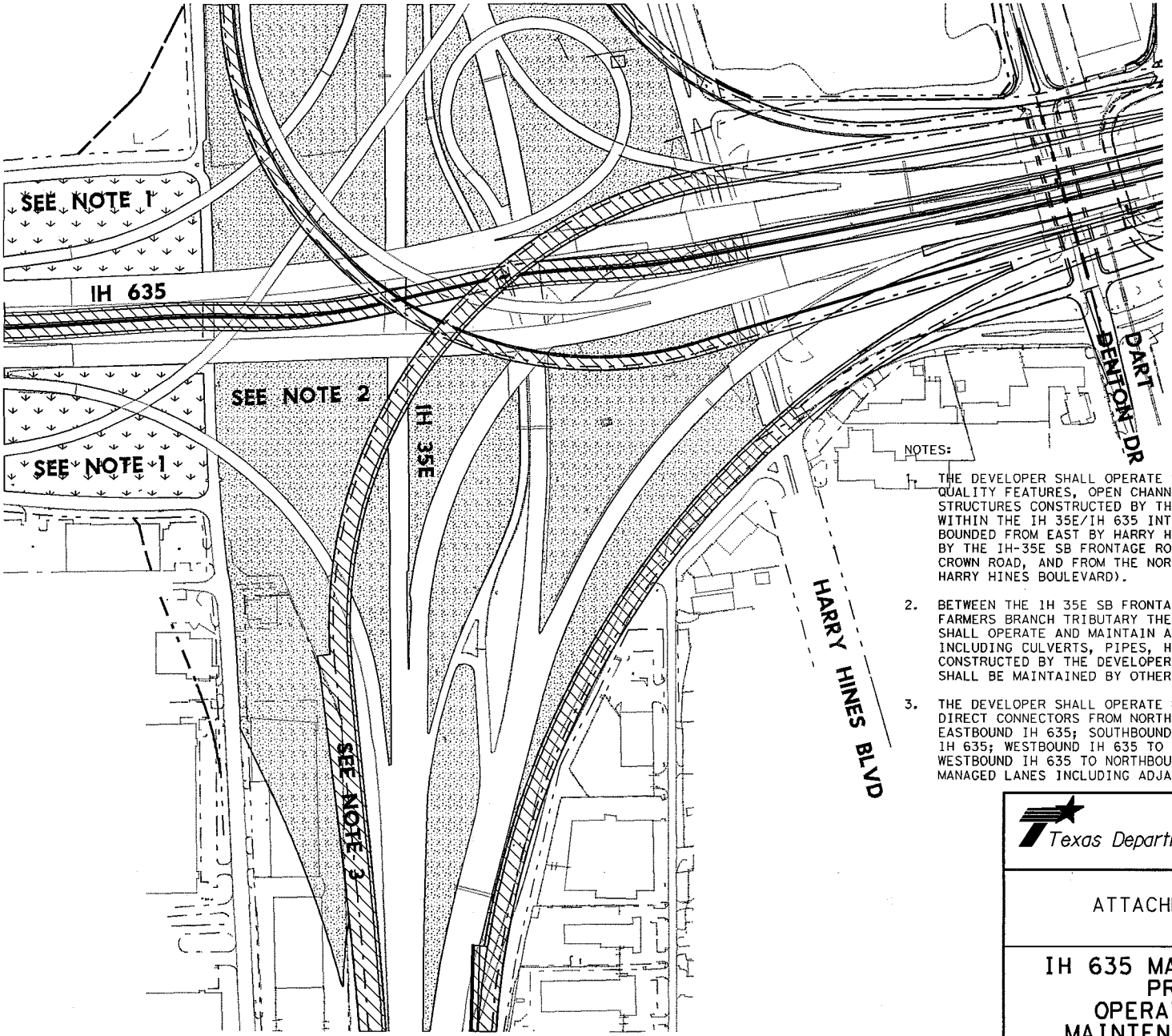

-N-

NOT TO SCALE

NOTES:

1. THE DEVELOPER SHALL OPERATE & MAINTAIN ALL WATER QUALITY FEATURES, OPEN CHANNELS AND DRAINAGE STRUCTURES CONSTRUCTED BY THE DEVELOPER WITHIN THE IH 35E/IH 635 INTERCHANGE (THE AREA BOUNDED FROM EAST BY HARRY HINES BOULEVARD, FROM WEST BY THE IH-35E SB FRONTAGE ROAD, FROM SOUTH BY CROWN ROAD, AND FROM THE NORTH BY HARRY HINES BOULEVARD).

2. BETWEEN THE IH 35E SB FRONTAGE ROAD AND FARMERS BRANCH TRIBUTARY THE DEVELOPER SHALL OPERATE AND MAINTAIN ANY DRAINAGE STRUCTURES INCLUDING CULVERTS, PIPES, HEADWALL, ETC. CONSTRUCTED BY THE DEVELOPER. OPEN CHANNELS SHALL BE MAINTAINED BY OTHERS.

3. THE DEVELOPER SHALL OPERATE & MAINTAIN ELEVATED DIRECT CONNECTORS FROM NORTHBOUND IH 35E TO EASTBOUND IH 635; SOUTHBOUND IH 35E TO EASTBOUND IH 635; WESTBOUND IH 635 TO SOUTHBOUND IH 35E; WESTBOUND IH 635 TO NORTHBOUND IH 35E, AND IH 635 MANAGED LANES INCLUDING ADJACENT CONCRETE BARRIERS.

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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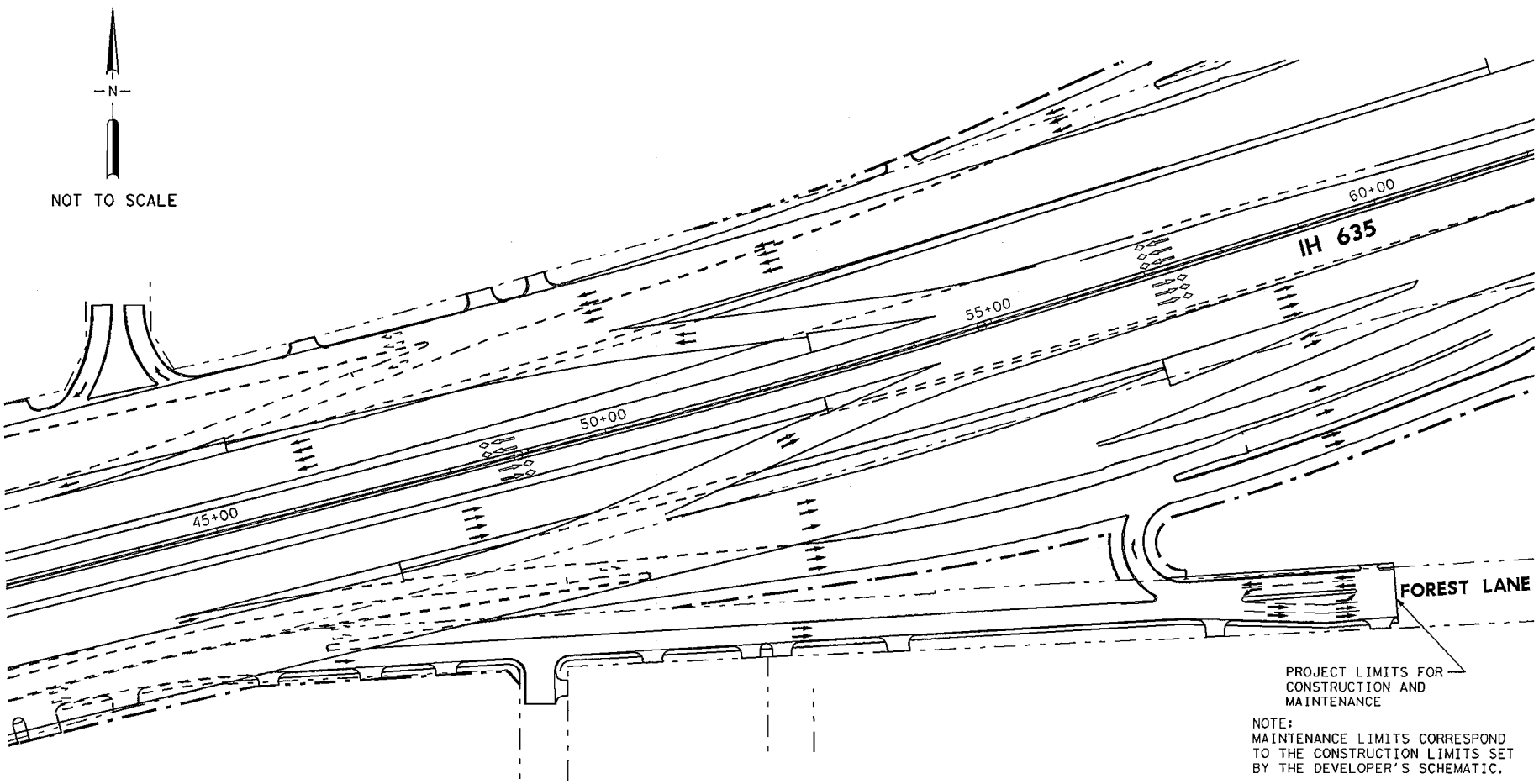

NOTE:
MAINTENANCE LIMITS CORRESPOND TO THE CONSTRUCTION LIMITS SET BY THE DEVELOPER'S SCHEMATIC.

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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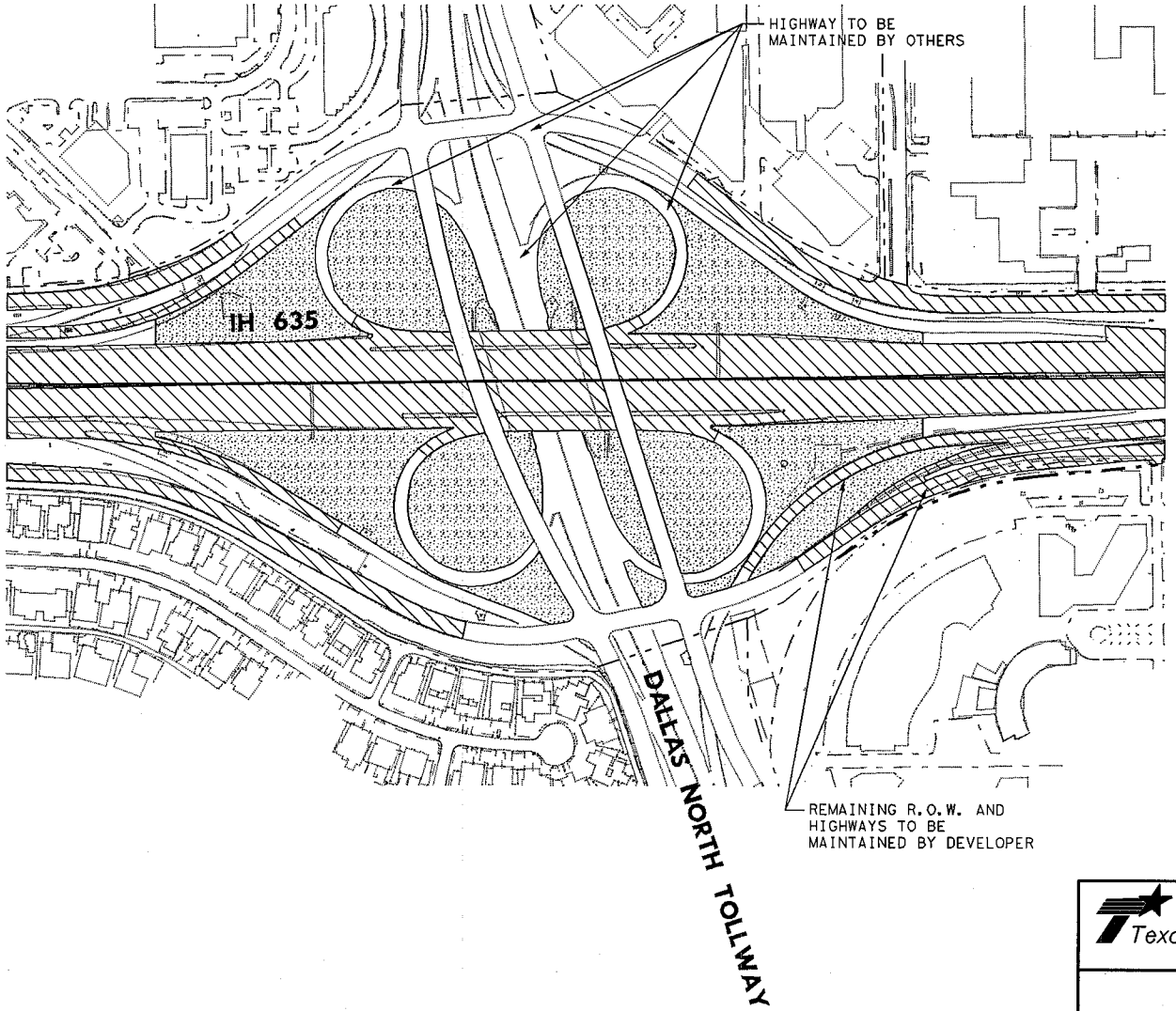

-N-

NOT TO SCALE

NOTES:

1. DEVELOPER IS RESPONSIBLE FOR ALL MAINTENANCE WITHIN THE IH 635 CORRIDOR R.O.W.
2. DEVELOPER SHALL MAINTAIN ALL ROADWAYS AND STRUCTURES WHICH IS CONSTRUCTED BY THE PROJECT, EXCEPT FOR THE DALLAS NORTH TOLLWAY MAINLANES OR PORTIONS OF THE CONNECTING LOOP RAMPS THAT MAY BE RECONSTRUCTED AS PART OF THE PROJECT.

Texas Department of Transportation

ATTACHMENT 01-3A

IH-635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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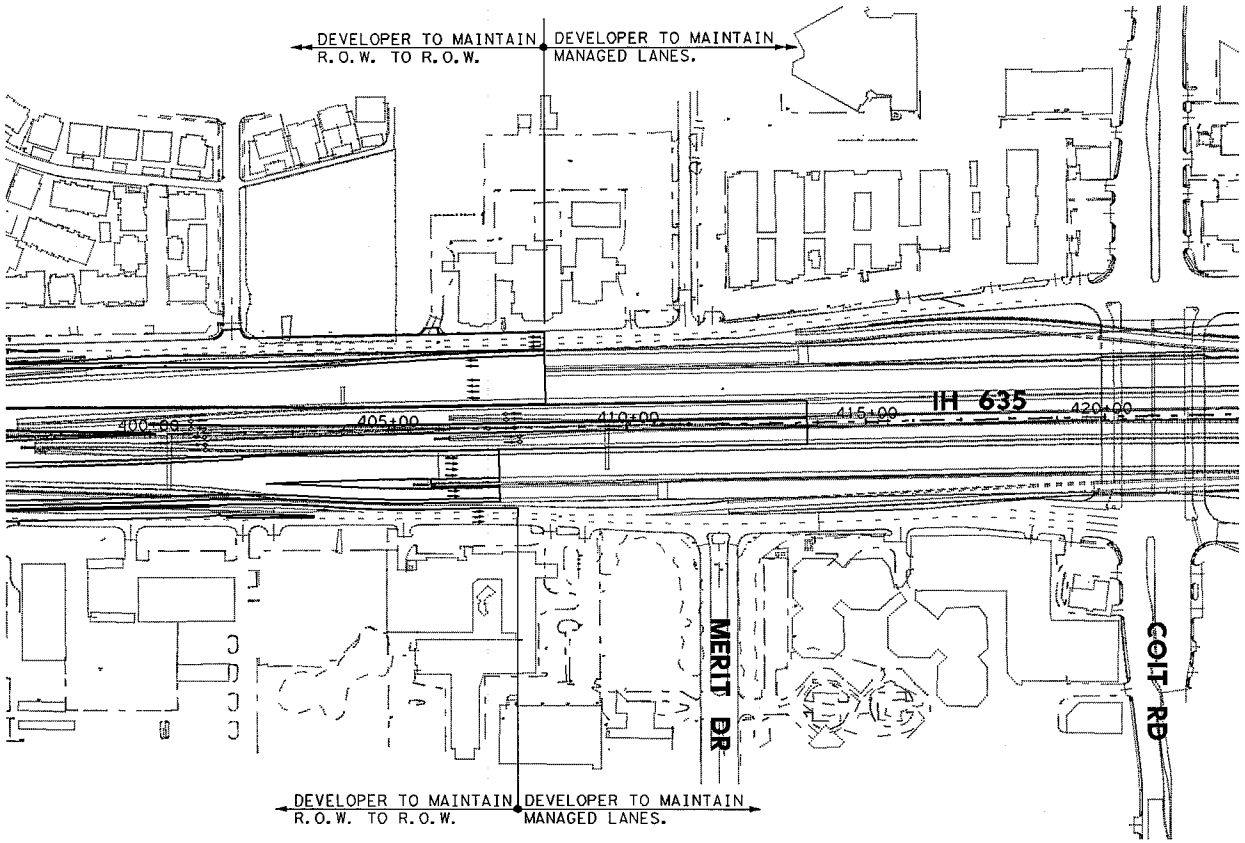


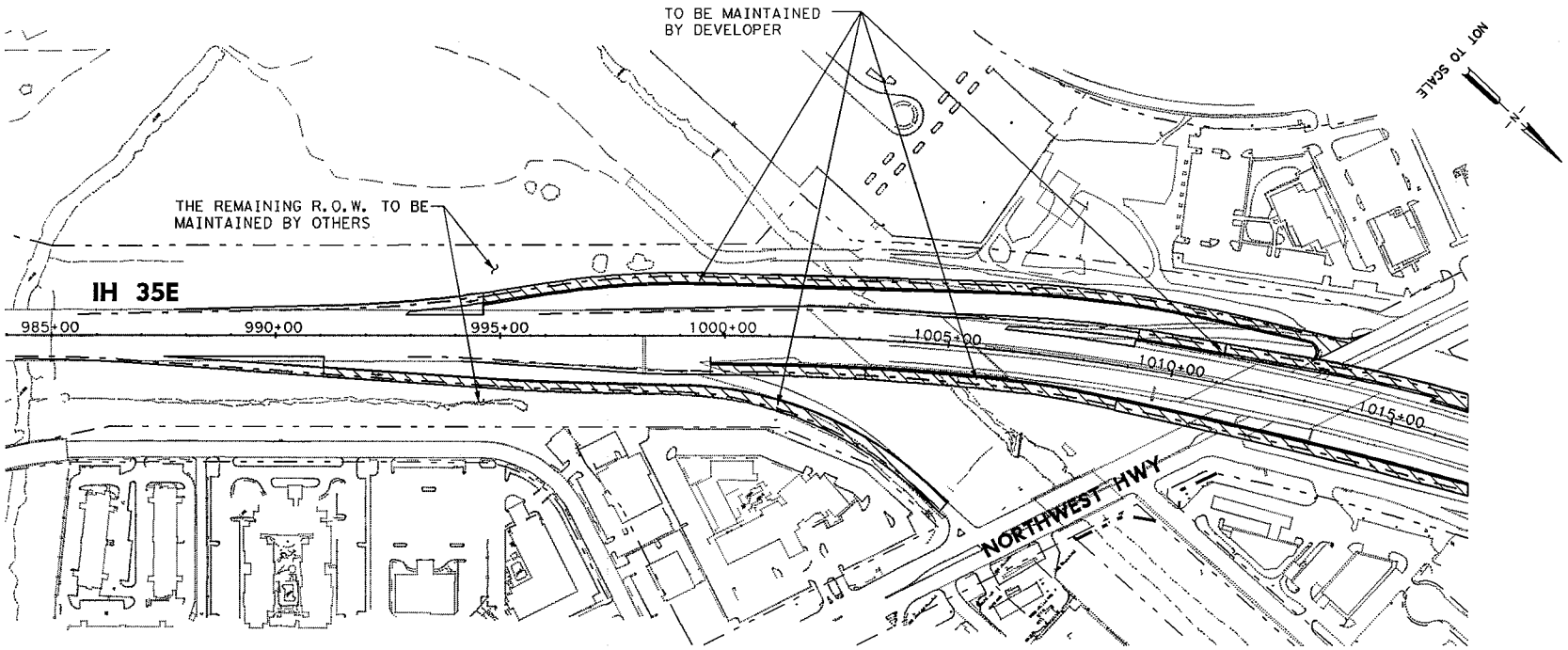
-N-

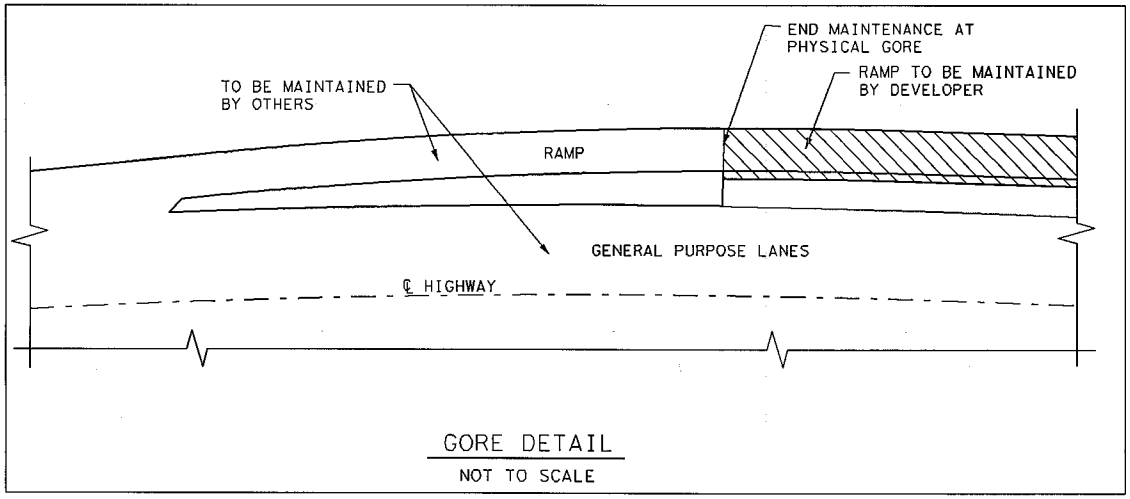
NOT TO SCALE

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS



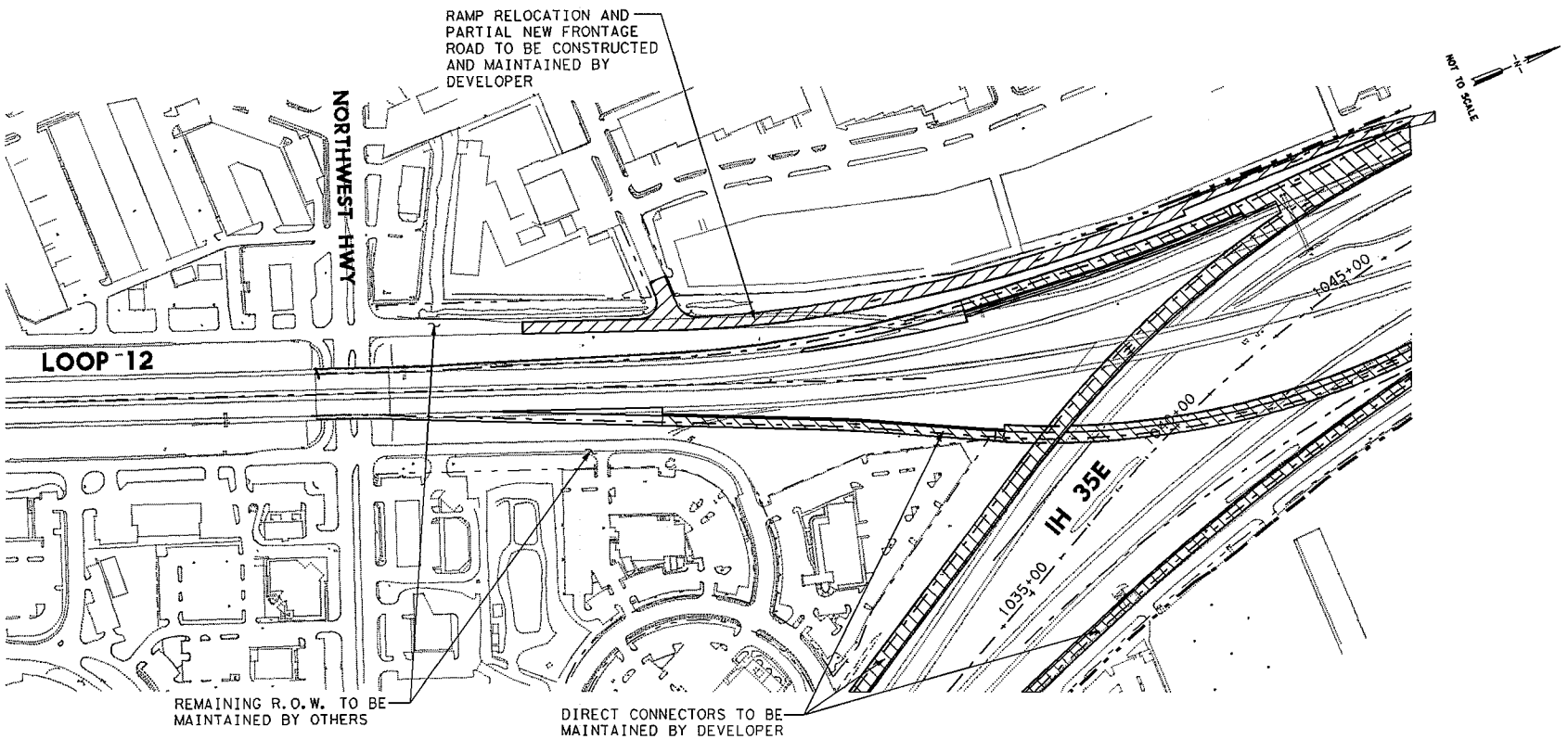


GORE DETAIL
NOT TO SCALE

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS



NOTE:
THE MAINTENANCE LIMIT IS LOCATED AT THE PHYSICAL GORE WITH GENERAL PURPOSE LANES. SEE 'GORE DETAIL'.

Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

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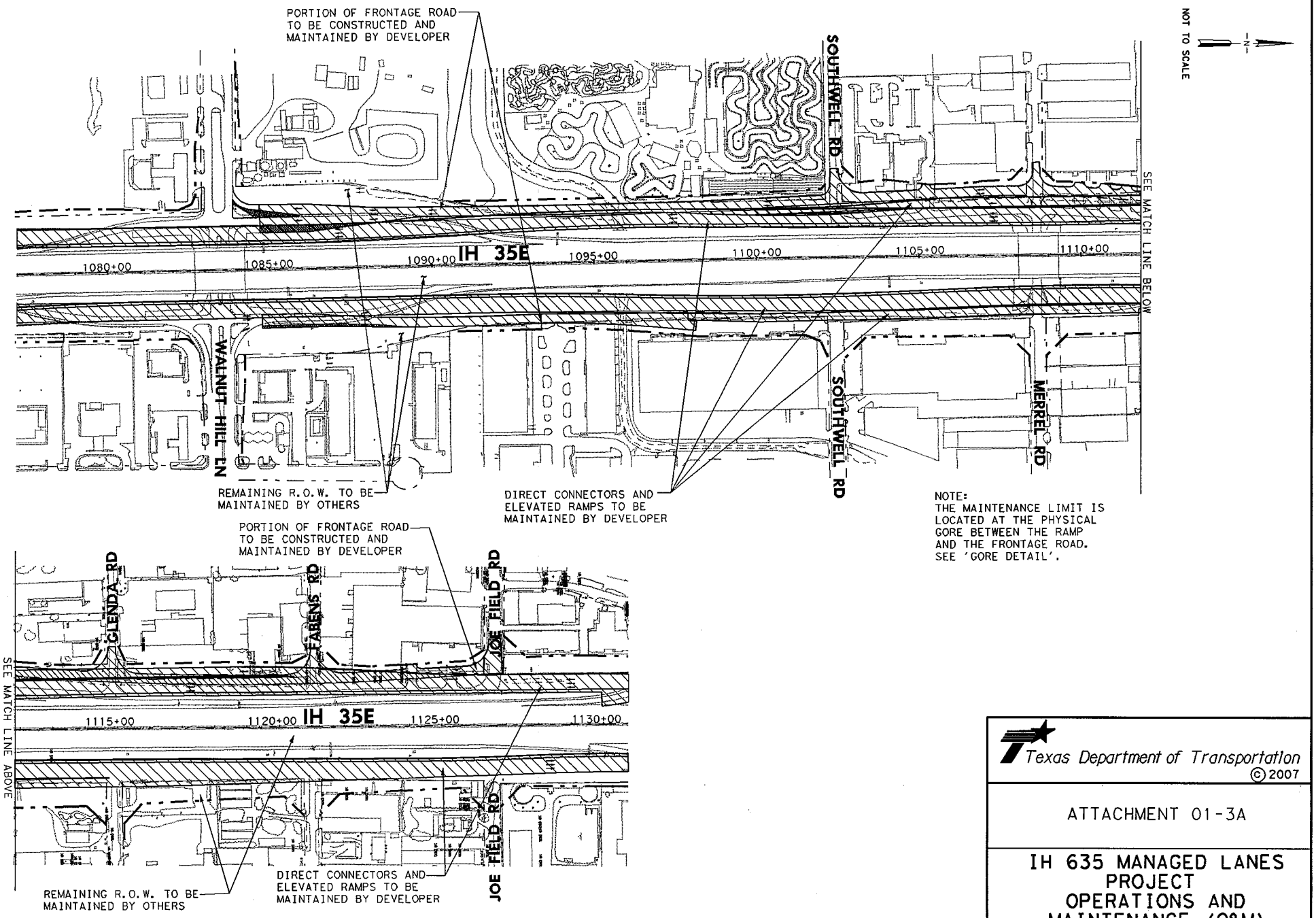


Texas Department of Transportation

ATTACHMENT 01-3A

IH 635 MANAGED LANES PROJECT OPERATIONS AND MAINTENANCE (O&M) WORK LIMITS

Texas Department of Transportation

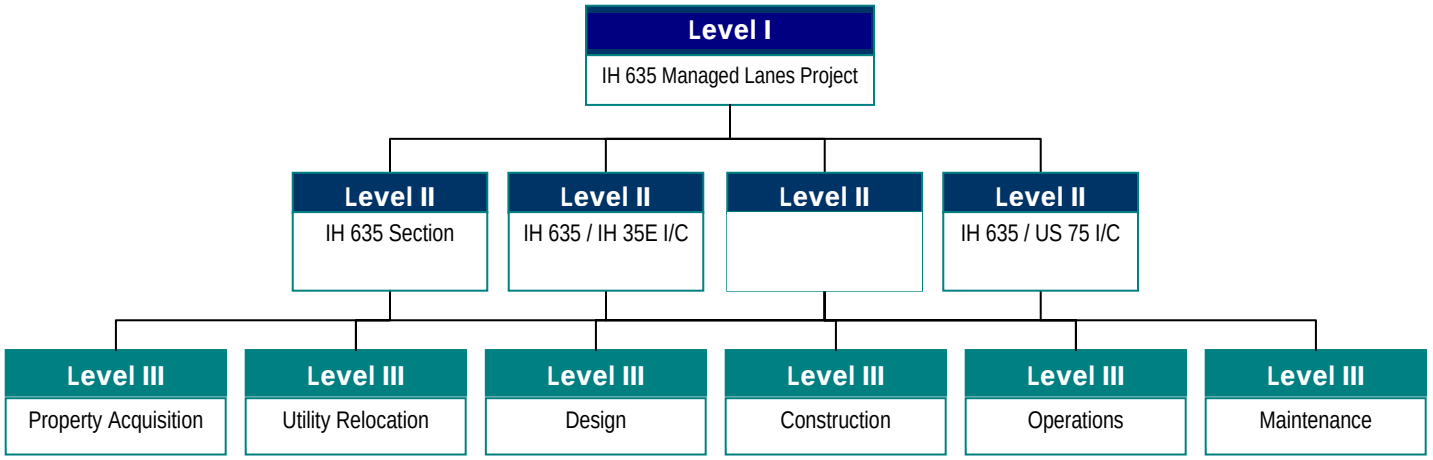
IH 635 Managed Lanes Project
Technical Provisions

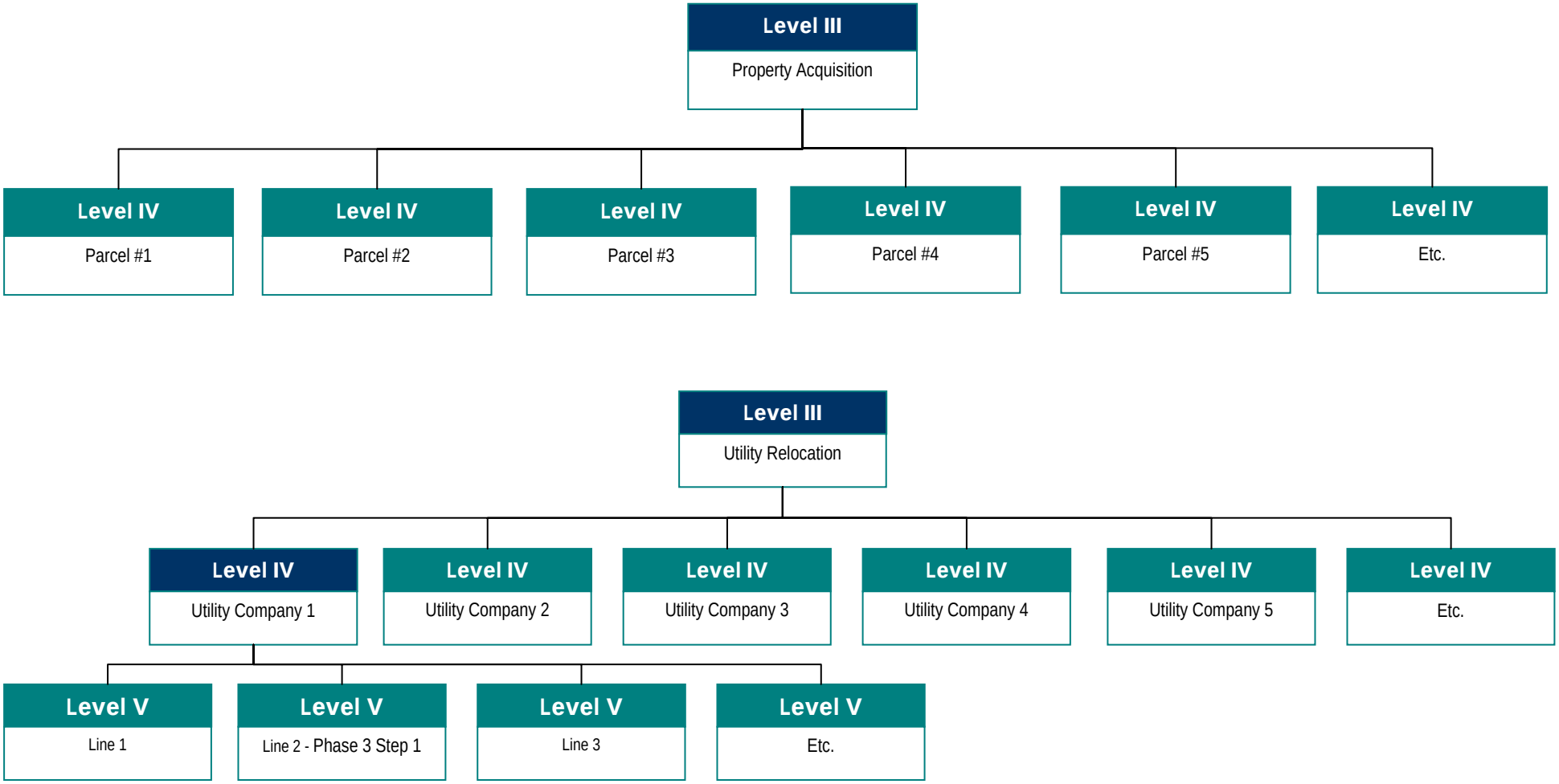
Attachment 02-1A

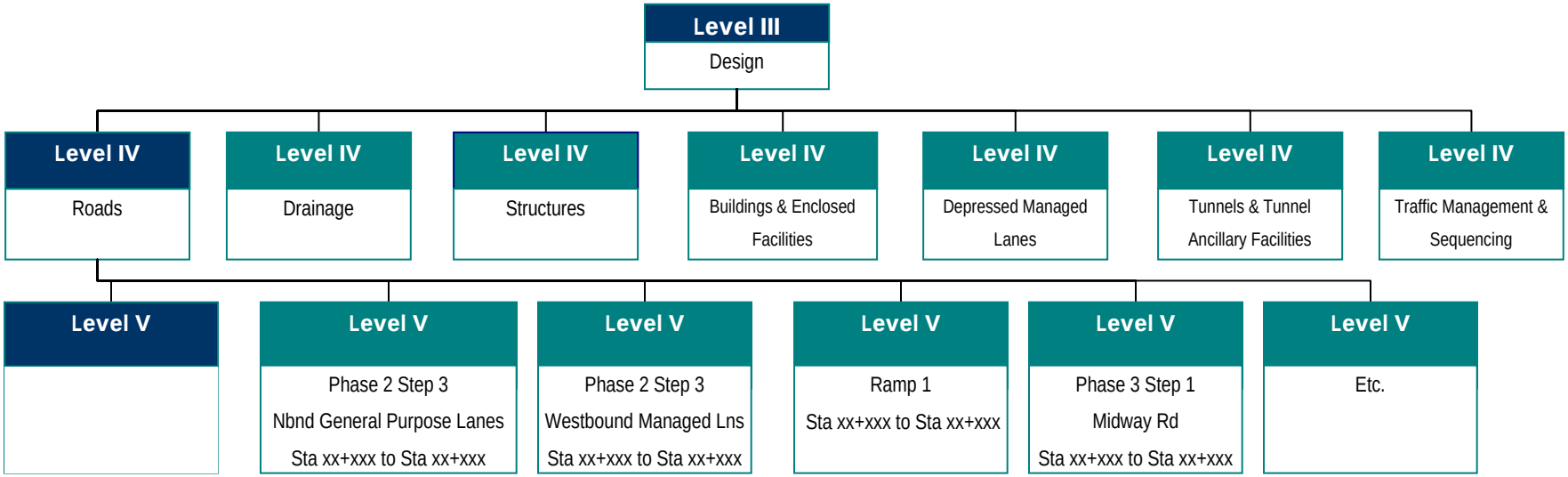
Base Work Breakdown Structure (WBS)

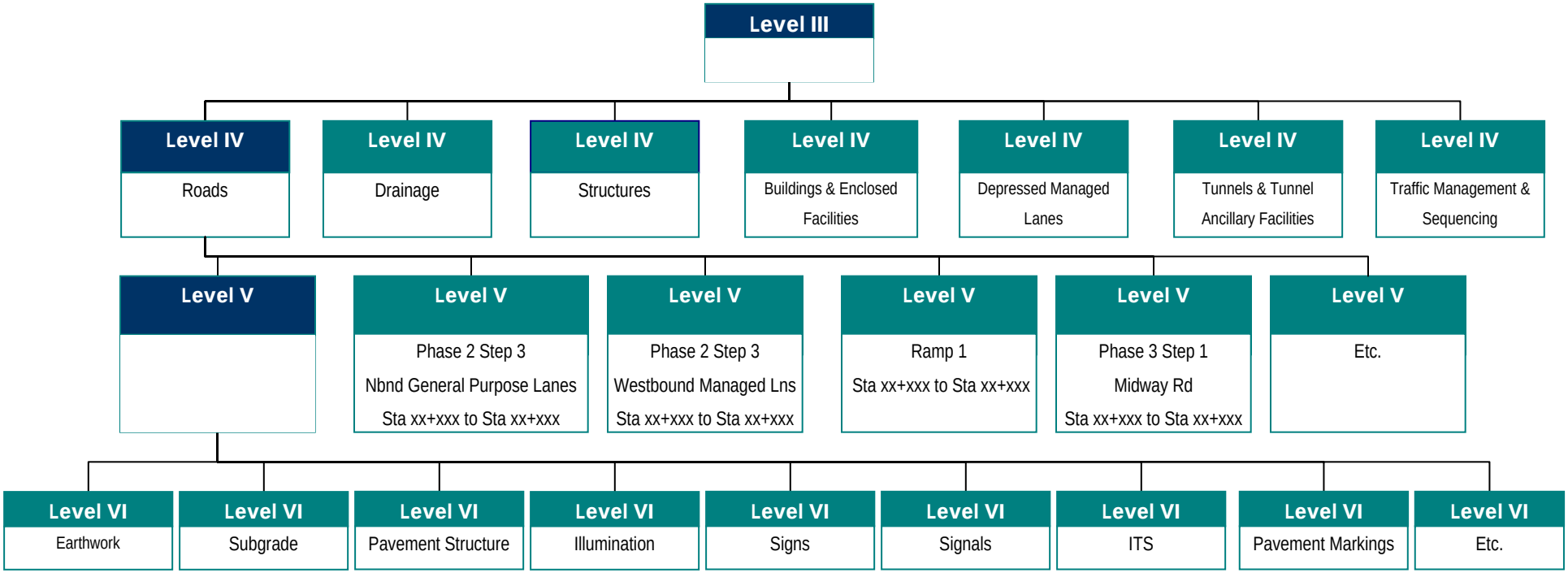
The base Work Breakdown Structure (WBS) provided to the Developer shall be the basis for organizing all Work and shall be used to structure the preliminary Project Baseline Schedule, the Project Baseline Schedule, the Schedule of Values and the Project Pay Request.

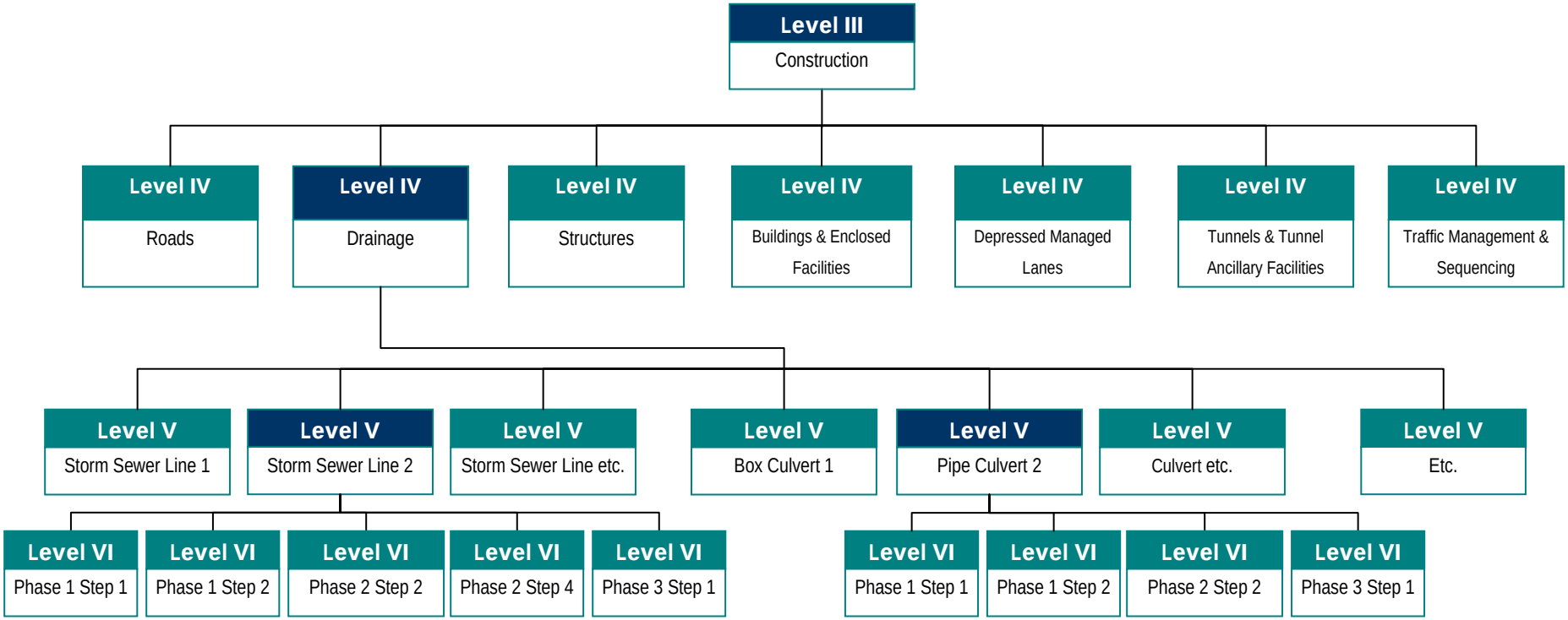
The following base WBS represents Levels I through VI. Levels I though IV shall be as provided in the following base WBS. However, the Developer may revise and / or provide further detail to Levels V and VI to provide a clear understanding of the planned Work.

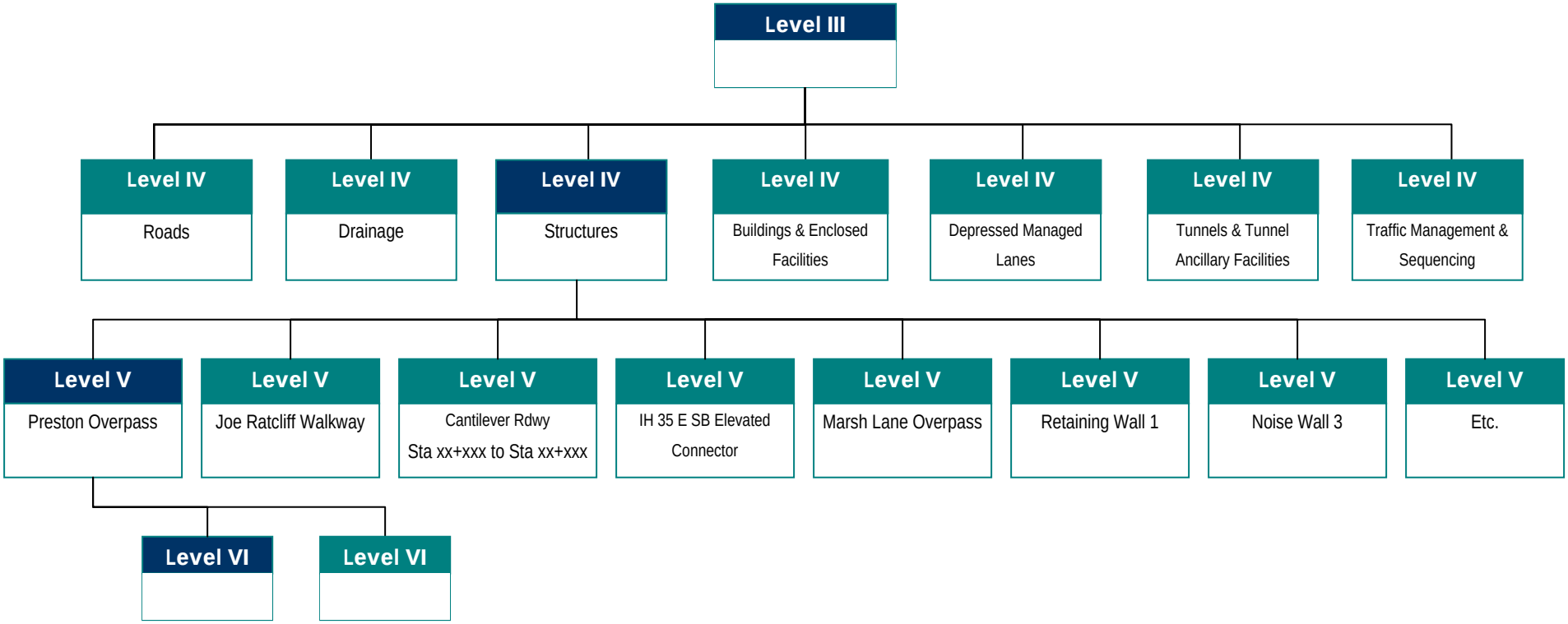

Level I
IH 635 Managed Lanes Project
Level II
IH 635 Section
Level II
IH 635 / IH 35E I/C
Level II
Level II
IH 635 / US 75 I/C
Level III
Property Acquisition
Level III
Utility Relocation
Level III
Design
Level III
Construction
Level III
Operations
Level III
Maintenance

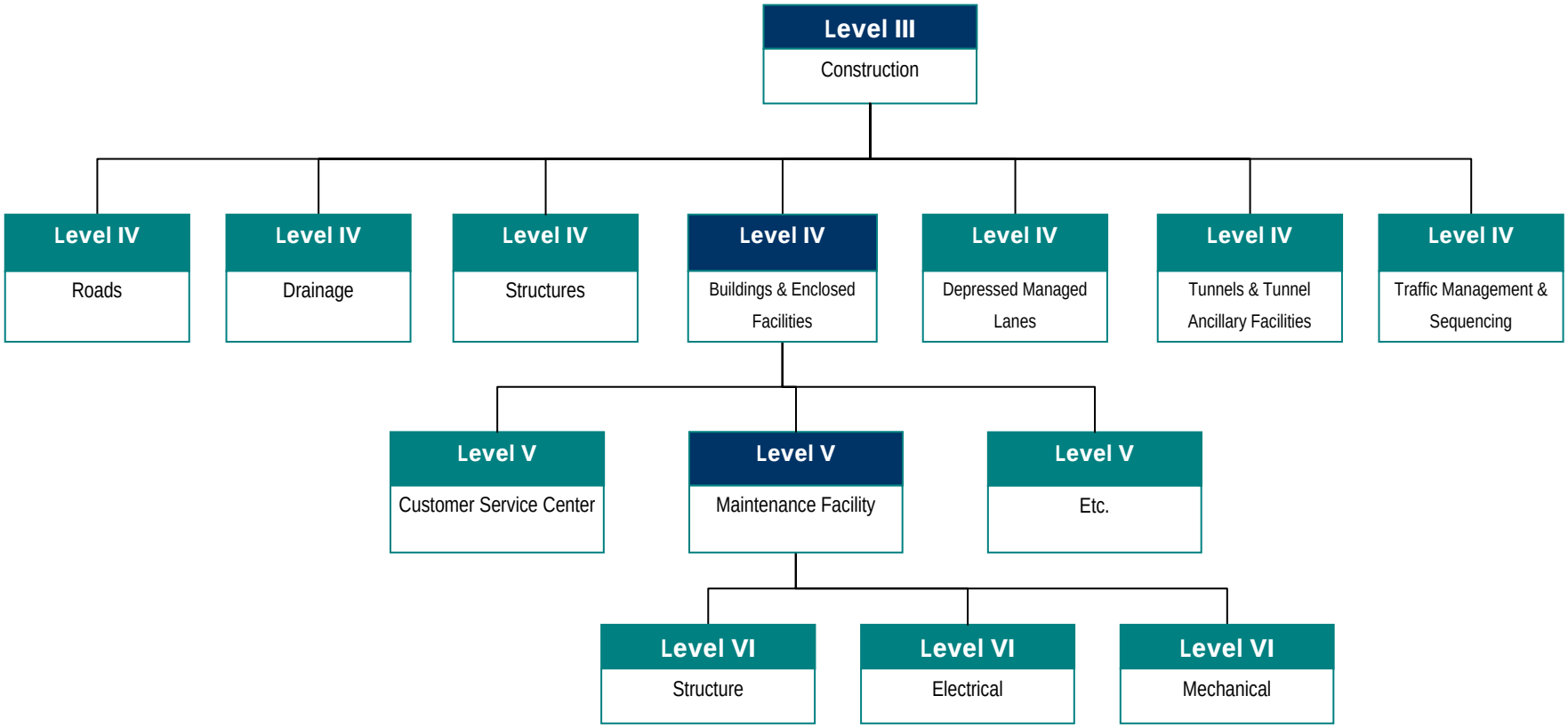

Level III
Property Acquisition
Level IV
Parcel #1
Level IV
Parcel #2
Level IV
Parcel #3
Level IV
Parcel #4
Level IV
Parcel #5
Level IV
Etc.
Level III
Utility Relocation
Level IV
Utility Company 1
Level IV
Utility Company 2
Level IV
Utility Company 3
Level IV
Utility Company 4
Level IV
Utility Company 5
Level IV
Etc.
Level V
Line 1
Level V
Line 2 - Phase 3 Step 1
Level V
Line 3
Level V
Etc.

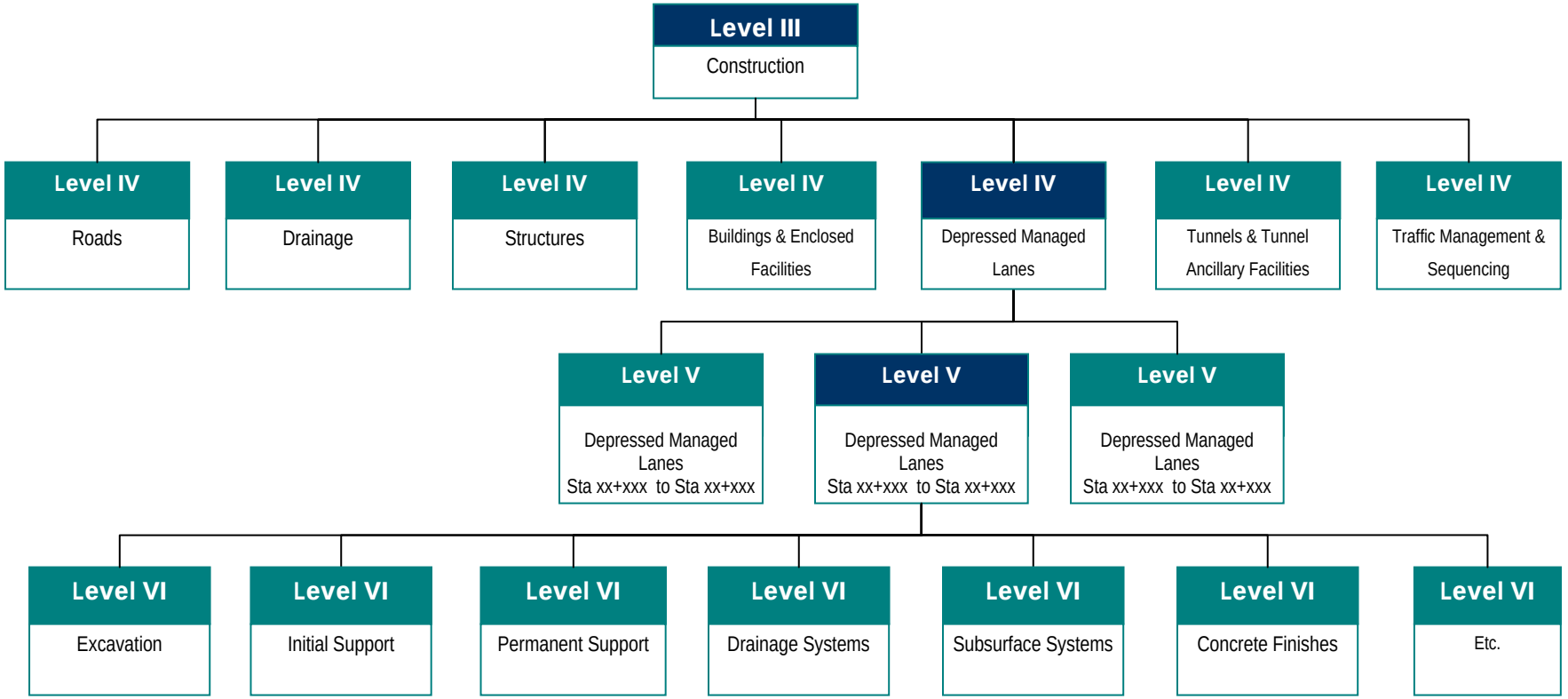

Level III
Design
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Level V
Phase 2 Step 3
Nbnd General Purpose Lanes
Sta xx+xxx to Sta xx+xxx
Level V
Phase 2 Step 3
Westbound Managed Lns
Sta xx+xxx to Sta xx+xxx
Level V
Ramp 1
Sta xx+xxx to Sta xx+xxx
Level V
Phase 3 Step 1
Midway Rd
Sta xx+xxx to Sta xx+xxx
Level V
Etc.

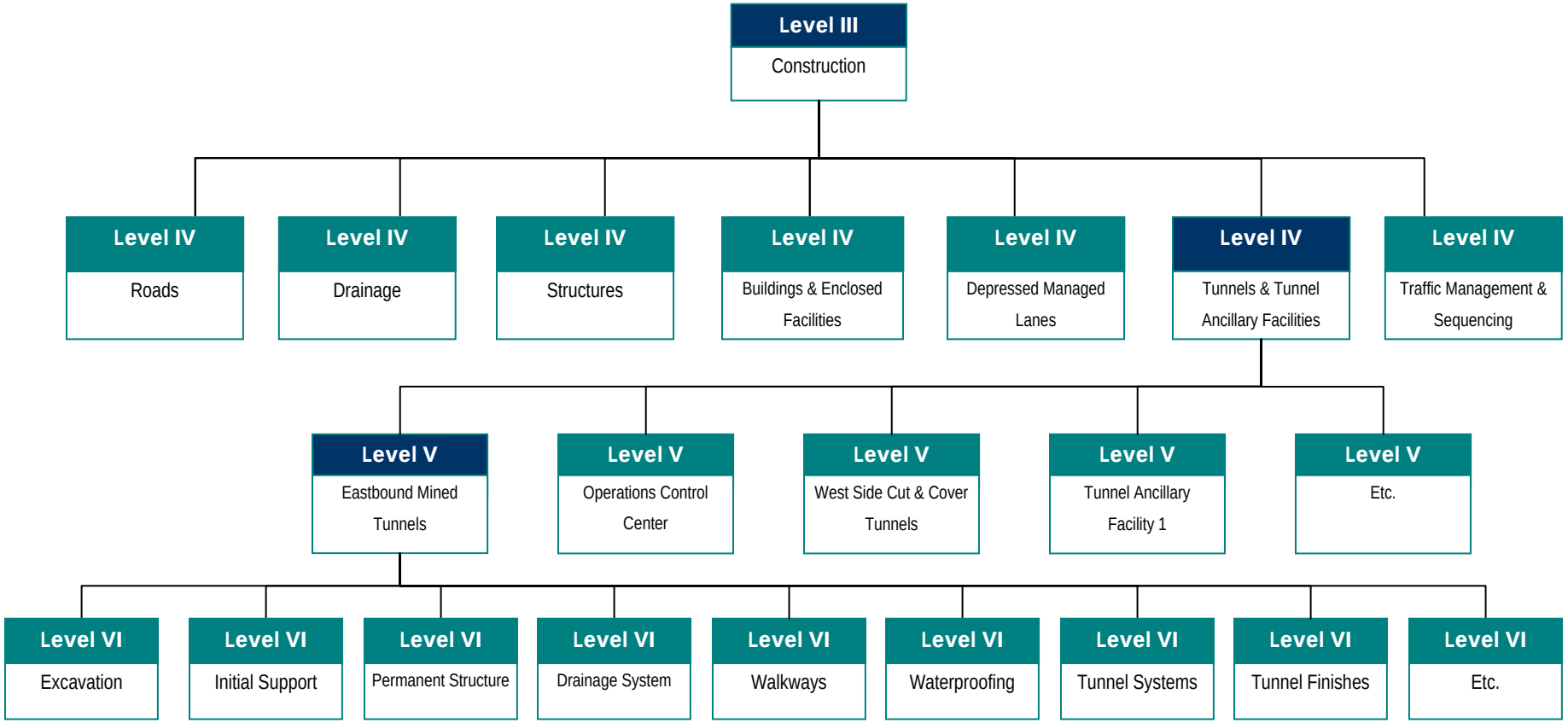

Level III
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Level V
Phase 2 Step 3
Nbnd General Purpose Lanes
Sta xx+xxx to Sta xx+xxx
Level V
Phase 2 Step 3
Westbound Managed Lns
Sta xx+xxx to Sta xx+xxx
Level V
Ramp 1
Sta xx+xxx to Sta xx+xxx
Level V
Phase 3 Step 1
Midway Rd
Sta xx+xxx to Sta xx+xxx
Level V
Etc.
Level VI
Earthwork
Level VI
Subgrade
Level VI
Pavement Structure
Level VI
Illumination
Level VI
Signs
Level VI
Signals
Level VI
ITS
Level VI
Pavement Markings
Level VI
Etc.

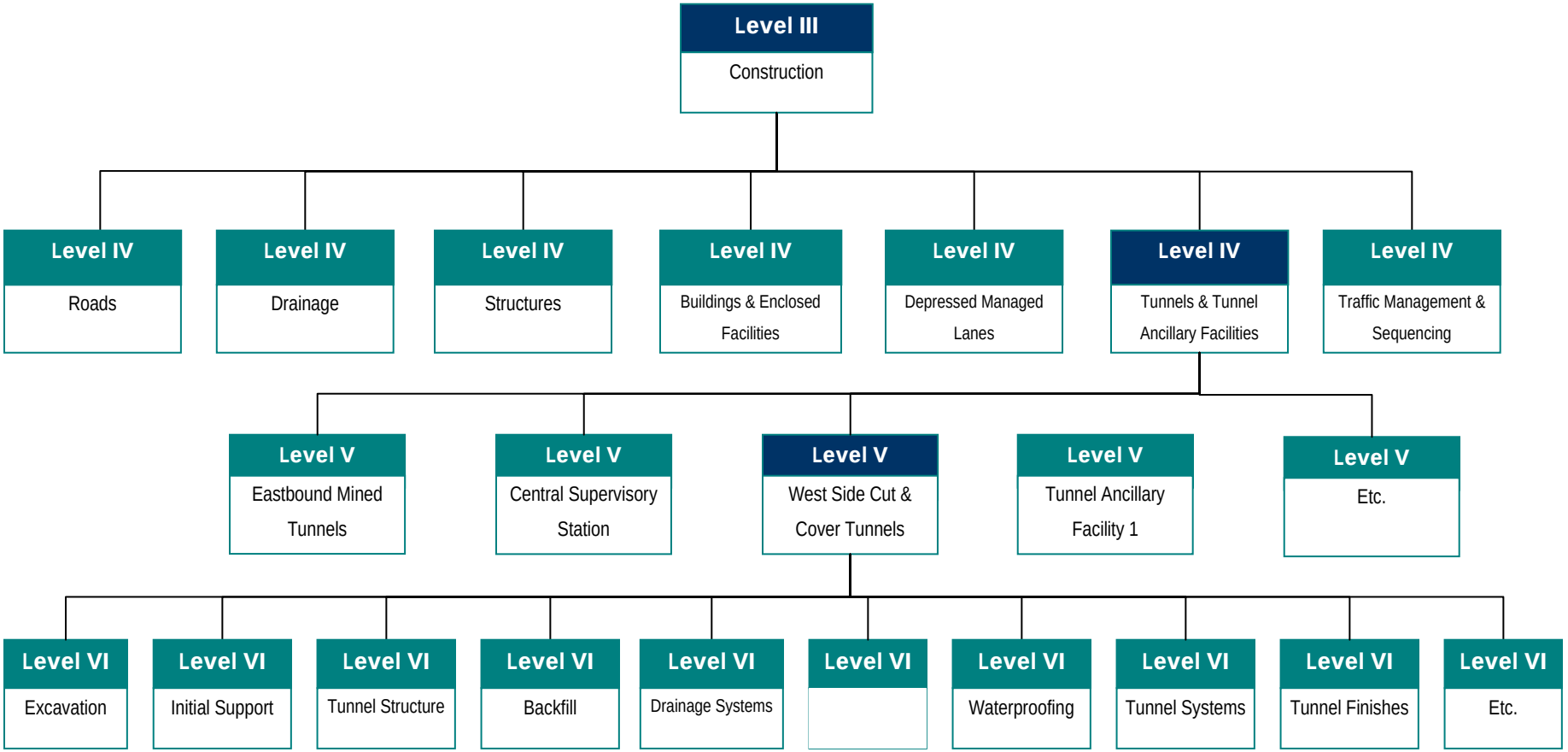

Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Storm Sewer Line 1
Level V
Storm Sewer Line 2
Level V
Storm Sewer Line etc.
Level V
Box Culvert 1
Level V
Pipe Culvert 2
Level V
Culvert etc.
Level V
Etc.
Level VI
Phase 1 Step 1
Level VI
Phase 1 Step 2
Level VI
Phase 2 Step 2
Level VI
Phase 2 Step 4
Level VI
Phase 3 Step 1
Level VI
Phase 1 Step 1
Level VI
Phase 1 Step 2
Level VI
Phase 2 Step 2
Level VI
Phase 3 Step 1

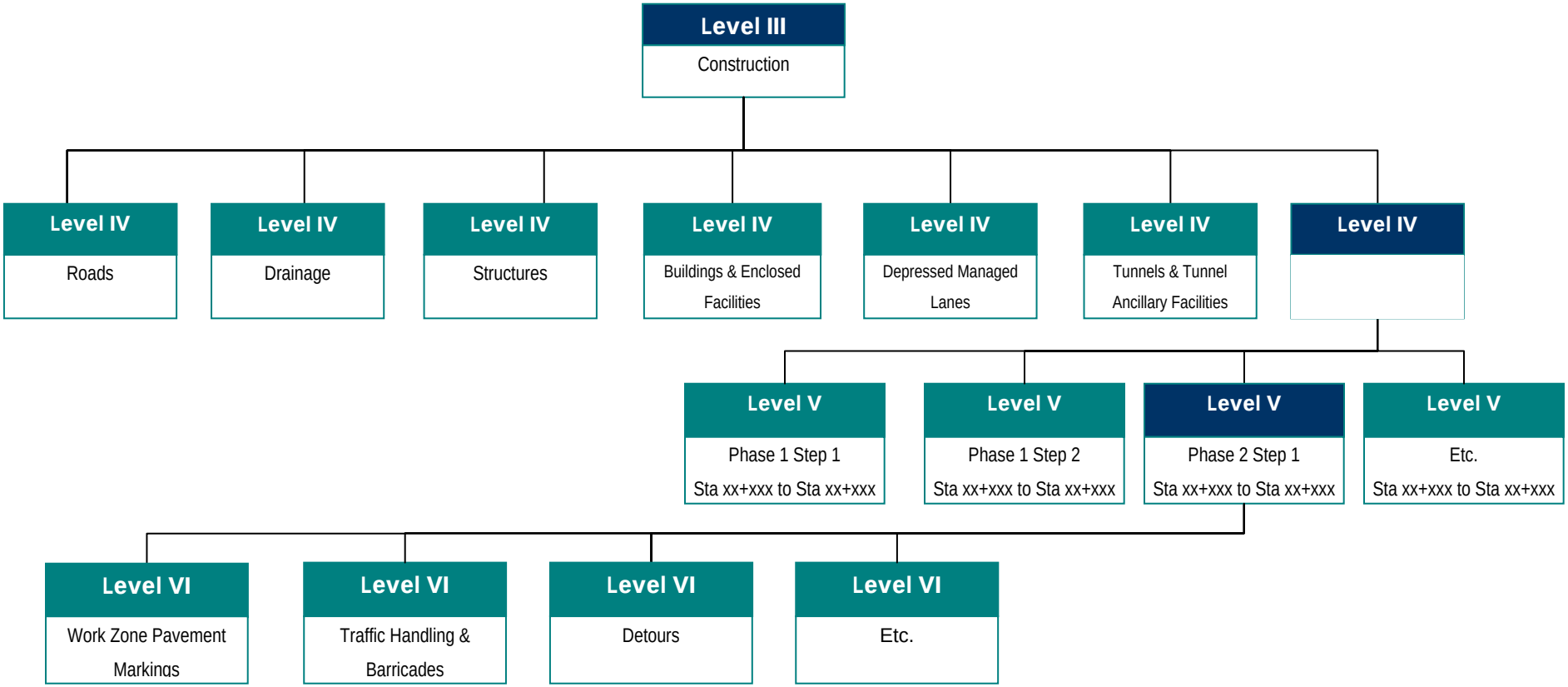

Level III
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Preston Overpass
Level V
Joe Ratcliff Walkway
Level V
Cantilever Rdwy
Sta xx+xxx to Sta xx+xxx
Level V
IH 35 E SB Elevated Connector
Level V
Marsh Lane Overpass
Level V
Retaining Wall 1
Level V
Noise Wall 3
Level V
Etc.
Level VI
Level VI

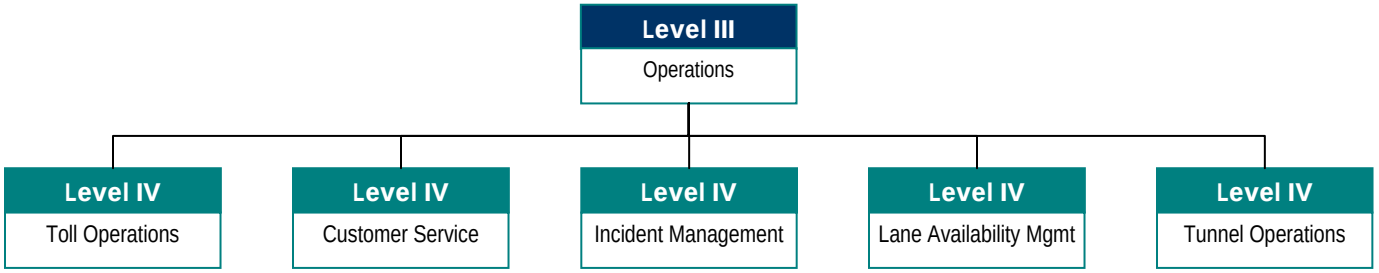

Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Customer Service Center
Level V
Maintenance Facility
Level V
Etc.
Level VI
Structure
Level VI
Electrical
Level VI
Mechanical

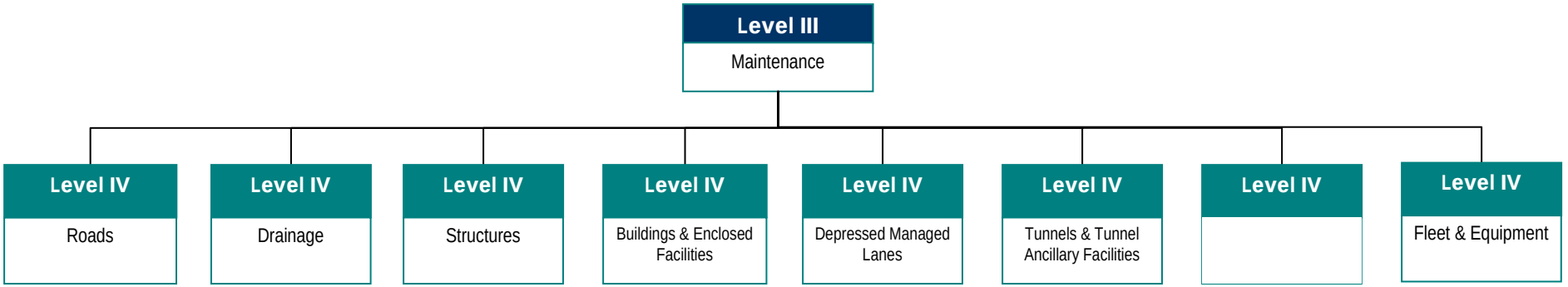

Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Depressed Managed Lanes
Sta xx+xxx to Sta xx+xxx
Level V
Depressed Managed Lanes
Sta xx+xxx to Sta xx+xxx
Level V
Depressed Managed Lanes
Sta xx+xxx to Sta xx+xxx
Level VI
Excavation
Level VI
Initial Support
Level VI
Permanent Support
Level VI
Drainage Systems
Level VI
Subsurface Systems
Level VI
Concrete Finishes
Level VI
Etc.


Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Eastbound Mined Tunnels
Level V
Operations Control Center
Level V
West Side Cut & Cover Tunnels
Level V
Tunnel Ancillary Facility 1
Level V
Etc.
Level VI
Excavation
Level VI
Initial Support
Level VI
Permanent Structure
Level VI
Drainage System
Level VI
Walkways
Level VI
Waterproofing
Level VI
Tunnel Systems
Level VI
Tunnel Finishes
Level VI
Etc.


Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Traffic Management & Sequencing
Level V
Eastbound Mined Tunnels
Level V
Central Supervisory Station
Level V
West Side Cut & Cover Tunnels
Level V
Tunnel Ancillary Facility 1
Level V
Etc.
Level VI
Excavation
Level VI
Initial Support
Level VI
Tunnel Structure
Level VI
Backfill
Level VI
Drainage Systems
Level VI
Level VI
Waterproofing
Level VI
Tunnel Systems
Level VI
Tunnel Finishes
Level VI
Etc.


Level III
Construction
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Level V
Phase 1 Step 1
Sta xx+xxx to Sta xx+xxx
Level V
Phase 1 Step 2
Sta xx+xxx to Sta xx+xxx
Level V
Phase 2 Step 1
Sta xx+xxx to Sta xx+xxx
Level V
Etc.
Sta xx+xxx to Sta xx+xxx
Level VI
Work Zone Pavement Markings
Level VI
Traffic Handling & Barricades
Level VI
Detours
Level VI
Etc.


Level III
Operations
Level IV
Toll Operations
Level IV
Customer Service
Level IV
Incident Management
Level IV
Lane Availability Mgmt
Level IV
Tunnel Operations


Level III
Maintenance
Level IV
Roads
Level IV
Drainage
Level IV
Structures
Level IV
Buildings & Enclosed Facilities
Level IV
Depressed Managed Lanes
Level IV
Tunnels & Tunnel Ancillary Facilities
Level IV
Level IV
Fleet & Equipment

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 02-2A

Schedule of Values Example

A sample presentation of the Schedule of Values is shown below. The Developer's project management, administration, design, contingencies and any allowance for inflation, profit and financing, as well as indirect site costs such as site cleanup and maintenance; temporary roads and access; off site access roads; and security shall be prorated through all activities so that the sum of all the Schedule of Values line items equals the Total Project D-B Costs as shown in Form P. Note: There can be 1 or more Payment Activities for each of the lowest (terminal) WBS elements in the WBS. For example, earthwork (Level VI) could have 1 Payment Activity or multiple Payment Activities that roll up costs to the Level VI element.

Payment Activity ID No.	Activity Description	Quantity / Units	Unit Price - $	Scheduled Value - $
1.1 IH 635 Section (Level II)		LS	x,xxx,xxx.00	x,xxx,xxx.00
1.1.4 Construction (Level III)		LS	x,xxx,xxx.00	x,xxx,xxx.00
1.1.4.1 Roads (Level IV)		LS	x,xxx,xxx.00	x,xxx,xxx.00
1.1.4.1.01 EBFR Sta xx+xxx to Sta xx+xxx (Level V)		LS	x,xxx,xxx.00	x,xxx,xxx.00
1.1.4.1.01.01 Earthwork (Level VI)		LS	x,xxx,xxx.00	x,xxx,xxx.00
AEBFR1245	EBnd Frtg Rd – Sta 1237+00 to Sta 1358+00 – Earthwork	12400 cy	abc / cy	xxx,xxx.00
1.1.4.1.01.02 Subgrade (Level VI)			xxx,xxx.00	xxx,xxx.00
AEBFR1255	EBnd Frtg Rd – Sta 1237+00 to Sta 1358+00 - Subgrade	14500 sy	def / sy	xxx,xxx.00
1.1.4.6 Tunnel Systems (Level IV)		LS	xxx,xxx.00	xxx,xxx.00
1.1.4.6.03 West Side Cut & Cover Tunnels (Level V)		LS	xxx,xxx.00	xxx,xxx.00
1.1.4.6.03.09 Tunnel Finishes (Level VI)		LS	xxx,xxx.00	xxx,xxx.00
AEBML1245	Install Emergency Egress Tunnel Doors	20 ea	abc / ea	xx,xxx.00
AEBML1255	Build-out Emergency Egress Stairwells	20 ea	def / ea	xx,xxx.00
1.2 IH 635 / IH 35E Interchange (Level II)				
1.2.4 Construction (Level III)		LS	xxx,xxx.00	xxx,xxx.00
1.2.4.1 Roads (Level IV)		LS	xxx,xxx.00	xxx,xxx.00
1.2.4.04Ramp 1 (Level V)		LS	xxx,xxx.00	xxx,xxx.00
1.2.4.04.01 Earthwork (Level VI)		LS	xxx,xxx.00	xxx,xxx.00
BEBR11131	DC Ramp 1 – Earthwork	500 cy	abc / cy	xx,xxx.00
1.2.4.04.03	**Pavement Structure**	LS	xxx,xxx.00	xxx,xxx.00
BWBR20131	DC Ramp 2 – Form & Pour 12" CRCP	1000 sy	ghi / sy	xx,xxx.00
TOTAL Project D-B Costs		LS	xxx,xxx,xxx.00	xxx,xxx,xxx.00

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 02-3A

Document Data Properties

Attachment 02-3A – Document Data Properties

Document Class – Identifies the associated business discipline of the document

Business Function – Identifies or associates a specific business function or project subdiscipline to a file or document and is utilized only if additional classification is required within a document class.

Document Type – Identifies the project specific document grouping series for the document.

Document Subtype – Identifies the project specific document second level grouping series for the document.

Document Name – Identifies the project specific document name or title for the document type/subtype.

Document Date – Identifies the date in which a document is complete or a work action is complete.

Received Date - Identifies the date the document is received by the retaining organization.

Document Status - Identifies the 'state' of a file or document representing its document life cycle stage.

Highway Segment – Identifies a Highway and/or Segment identifier to each file or document.

Component - Identifies the corridor Components associated with the document or file.

Document Author - Identifies the sender (FROM) for documents such as correspondence/transmittals.

Addressee - Identifies the recipient (TO) for documents such as correspondence/transmittals.

Transmittal Number - Identifies that a document or file is transmitted to or received – identifies the date and to whom the document is going to or coming from.

Meeting Name - Identifies the name of a meeting.

Meeting Date – Identifies the calendar date of a meeting.

Meeting Location – Identifies the location (generally a City) where a meeting is held.

Comment (Document) – Identifies or further describes something unique about the document or file.

Title – Identifies or further defines the document or file for example subject matter or key topics.

Attachment 02-3A – Document Data Properties

Parcel Owner – Identifies the legal owner of a ROW parcel of land or property that is being pursued for or is procured.

Parcel Number – Identifies the unique identification of a ROW parcel of land or piece of property that is being pursued for or is procured.

WBS Element – Identifies the element of the WBS.

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 05-1A

Agreement for the Installation and Reimbursement for the Operation and Maintenance of Traffic Signals with Municipality

Agreement No. 183XXM5004

STATE OF TEXAS

COUNTY OF TRAVIS

AGREEMENT FOR THE INSTALLATION AND REIMBURSEMENT FOR THE OPERATION AND MAINTENANCE OF TRAFFIC SIGNALS WITHIN A MUNICIPALITY

THIS AGREEMENT is made by and between the State of Texas, acting by and through the Texas Department of Transportation, hereinafter called the "State" and the City of Dallas, Dallas County, Texas, hereinafter called the "City", acting by and through its duly authorized officers as evidenced by Resolution/Ordinance No. 922413, approved on June 24, 1992, and Resolution/Ordinance No. 933743 approved on October 13, 1993, hereinafter acknowledged by reference.

W I T N E S S E T H

WHEREAS, by virtue of a Municipal Maintenance Agreement entered into by the City and the State on the 21st day of February, 1984, the State has been authorized to maintain certain routes within the City; and

WHEREAS, as from time to time the City requests the State to install traffic signals on certain highways within the City, and

WHEREAS, in accordance with Texas Administrative Code: Title 43 Texas Administrative Code Section 25.5, on the 27th day of May, 1987, the State Highway and Public Transportation Commission now the Texas Transportation Commission passed Commission Minute Order No. 85777, authorizing the State to install, operate and maintain traffic signals on: (a) highway routes not designated as full control of access inside the corporate limits of cities, having a population less than 50,000 (latest Federal Census); and (b) highways designated as full control of access in all cities; and

WHEREAS, the City has a population of (over) 50,000 population according to the latest Federal Census; and

WHEREAS, the City requests the State to assume the installation, operation and maintenance responsibilities of the signalized intersections as shown in EXHIBIT 1, attached hereto and made a part of this Agreement; and

WHEREAS, the City agrees to maintain and operate the signalized intersections with the State reimbursing the City for all maintenance and operations costs at a flat rate per location as shown on EXHIBIT 3.

NOW, therefore, in consideration of the premises and of the mutual covenants and agreements of the parties hereto to be by them respectively kept and performed, as hereinafter set forth, it is agreed as follows:

AGREEMENT

Article 1. Contract Period

This agreement becomes effective when fully executed by the City and the State and shall remain in force for a period of one year from the date of final execution by the State and shall be automatically renewed annually for a one year period, unless modified by mutual agreement of both parties, or terminated as hereinafter provided.

Article 2. Construction Responsibilities

A. The State shall prepare or cause to be prepared the plans and specifications, advertise for bids, let the construction contract, or otherwise provide for the construction of new traffic signals and/or reconstruction of existing traffic signals (including, at the State's option, any special auxiliary equipment, interconnect and/or communication material and equipment), and will supervise construction, reconstruction or betterment work as required by said plans and specifications. As a project is developed to construction stage, either as a unit or in increments, the State will submit plans and specifications of the proposed work to the City and will secure the City's consent to construct the traffic signal prior to awarding the contract; said City consent to be signified by the signatures of duly authorized City officers in the spaces provided on the title sheet of plans containing the following notation:

> "Attachment No. _____ to special Agreement for construction, maintenance and operation of traffic signals within municipality, dated _____.

The City-State construction maintenance and operation responsibilities shall be as heretofore agreed to, accepted, and specified in the Agreement to which these plans are made a part."

B. All costs of construction and/or reconstruction of new and existing traffic signals will be borne by the State, and the traffic signal system will remain the property of the State.

Article 3. Maintenance, Operation, and Power Responsibilities

A. The State shall be responsible for all electrical power costs for the operation of the traffic signals covered by this Agreement and shown on EXHIBIT 1. Power costs shall be billed as specified in EXHIBIT 2, "Traffic Signal Maintenance and Operations Provisions," attached hereto and made a part of this Agreement.

B. The City will provide a trained staff to maintain and operate the traffic signals shown on EXHIBIT 1, and the State will reimburse the City at the flat rate shown in EXHIBIT 3 for parts and labor. All repairs shall be prioritized based on public safety and made as soon as possible.

C. The City shall maintain and operate the traffic signals in accordance with the minimum requirements specified in EXHIBIT 2.

D. The City shall maintain at least one log of all emergency calls and all routine maintenance.

E. Routine maintenance shall be performed by the City as specified in EXHIBIT 2.

Article 4. Compensation

A. The maximum amount payable under this agreement is $362,909 per year.

B. Calculations for the above lump sum amount shall be shown in EXHIBIT 3, attached hereto and made a part of this Agreement for maintaining and operating the traffic signal installations covered under this Agreement.

C. The addition or deletion of traffic signals shall be made by supplemental agreement.

Article 5. Payments

A. The State agrees to reimburse the City at the flat rate shown in EXHIBIT 3 for maintenance and operation costs for the traffic signals described in EXHIBIT 1. The City shall submit to the State Form 132, "Billing Statement," or an invoice statement acceptable to the State on a (monthly/quarterly/annual basis). An original Form 132 or acceptable invoice and four copies shall be submitted to the following address:

Texas Department of Transportation
P. O. Box 3067
Dallas, Texas 75221-3067

B. The City shall maintain a system of records necessary to support and establish the eligibility of all claims for payment under the terms of this Agreement. These records may be reviewed at any time to substantiate the payment by the State and/or determine the need for an adjustment in the amount paid by the State.

C. The State shall make payment to the City within 30 days from receipt of the City's request for payment, provided that the request is properly prepared.

D. Knockdowns or damage resulting from accident or act of God and requiring emergency replacement of major equipment shall not be included in the (monthly/quarterly/annual) payments. For eligibility of payment for emergency replacement of major equipment, actual cost shall be submitted the State for review and determination of reimbursement eligibility.

E. Payment of the addition or deletion of a traffic signal installation shall be made by supplemental agreement.

Article 6. Indemnification

The City acknowledges that it is not an agent, servant, or employee of the State and that it is responsible for its own acts and deeds and for those of its agents or employees during the performance of contract work.

Article 7. Termination

A. This agreement may be terminated by one of the following conditions:

(1) By mutual agreement and consent of both parties.

(2) By the State upon (30) days written notice to the City for failure of the City to provide adequate maintenance and operation services for those traffic signal installations which the City has agreed to maintain and operate.

(3) By the State upon sixty (60) days written notice to the City that the State will assume operation and maintenance at the end of the one (1) year period of this contract.

(4) By the City upon one hundred twenty (120) days written notice to the State.

B. In the event this Agreement is terminated by any of the above conditions, the maintenance and operation of the traffic signal systems shall become the responsibility of the State. Any State owned equipment being held by the City shall be promptly returned within 30 calendar days to the State upon termination of this Agreement.

Article 8. Subletting

The City shall not sublet or transfer any portion of the work under this Agreement unless specifically approved in writing by the State. All subcontracts shall include the provisions required in this contract and shall be approved in writing by the State.

Article 9. Amendments

Changes in the character, costs, provisions in the attached exhibits, responsibilities, or obligations authorized herein shall be enacted by written amendment. Any amendment to this agreement must be executed by both parties.

Article 10. Successors and Assigns

The State and the City bind themselves, successors, assigns and legal representatives to the other party to this Agreement and the successors, assigns and legal representatives of such other party to all covenants and provisions provided herein. Furthermore, the City shall not assign, sublet or transfer any interests in this Agreement without the written consent of the State.

Article 11. Legal Construction

In case any one or more of the provisions contained in this Agreement shall for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

Article 12. Prior Agreements Superseded

This Agreement constitutes the sole and only agreement of the parties hereto and supersedes any prior understandings or written or oral agreements between the parties respecting the within subject matter.

Article 13. Gratuities

Texas Transportation Commission policy mandates that employees of the Department shall not accept any benefits, gifts or favors from any person doing business or who reasonably speaking may do business with the State under this contract. The only exceptions allowed are ordinary business lunches and items that have received the advance written approval of the Texas Department of Transportation Executive Director. Any person doing business with or who reasonably speaking do business with the State under this contract may not make any offer of benefits, gifts or favors to Departmental employees, except as mentioned hereabove. Failure on the part of the City to adhere to this policy may result in the termination of this contract.

IN WITNESS WHEREOF, The State and the City have signed duplicate counterparts of the Agreement.

APPROVED AS TO FORM:
SAM LINDSAY
City Attorney

BY _____
Assistant City Attorney

Submitted to City Attorney

CITY OF DALLAS
JAN HART

BY _____
Assistant City Manager

11-24-93
Date

THE STATE OF TEXAS

Executed for the Executive Director and approved for the Texas Transportation Commission under the Authority of Minute Order 100002 and Administrative Circular 26-93, for the purpose and effect of activating and/or carrying out the orders, established policies or work programs by the Texas Transportation Commission.

BY: _____, P.E.
Director, Traffic Operations Division

3/10/94
Date

UNCIL CHAMBER
933743

WHEREAS, the Texas Department of Transportation, operating under Commission Minute Order 70179 dated July 31, 1975, would provide funding for new traffic signal installations and equipment upgrades on designated highway routings in cities over 50,000 population, but not for operation and maintenance expense which had been borne by these cities; and

WHEREAS, this policy was amended in June 1987, to provide for the department to expand the previous policy and by means of agreement between the department and the particular cities with population over 50,000, fund the maintenance and operation of only the signals on the freeway system within those jurisdictions; and

WHEREAS, the CITY is in agreement with this proposed course of action;

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

Section 1: That the City Manager is authorized to amend an agreement with the Texas Department of Transportation, whereby they will reimburse the agreed upon maintenance and operation cost for the number of approved traffic signals on the freeway system within the Dallas city limits.

Section 2. That the City Manager be and is hereby authorized to establish an appropriation of $362,909 in Fund 669, Agency TRN, Org 669B, Object 2820.

Section 3. That the City Controller is hereby authorized to disburse funds from Fund 001, Agency TRN, Org 3652, Object Code 2820 for maintenance of traffic signals on the freeway systems within the City of Dallas in an amount not to exceed $362,909.

Section 4. That the City Controller be and is hereby authorized to deposit all reimbursements from the Texas Department of Transportation in Fund 669, Agency TRN, Org 669B, Revenue Source 6508.

Section 5. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Dallas City Charter, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL

OCT 13 1993

c: Transportation

City Secretary

APPROVED _____ APPROVED _____ APPROVED _____
HEAD OF DEPARTMENT CITY AUDITOR CITY MANAGER

EXHIBIT 1

)C	LENS	MAP	SH	MAKE	TYPE
)CKRELL HILL-IH20	84	62Z	IH 20 @ COCKRELL HILL RD	828A/DIA	NEMA
ıMPTON-IH 20	82	73D	IH 20 @ HAMPTON RD	828A/DIA	NEMA
ıNCASTER-LBJ FWY	0	75D	IH 20 @ LANCASTER RD	828A/DIA	NEMA
I20-POLK	88	74F	IH 20 @ POLK ST	NT848DIA	NEMA
I20-WHEATLAND	64	73D	IH 20 @ WHEATLAND RD	NT848DIA	NEMA
ENTRAL EXY-R L T	50	45R	IH 30 @ CENTRAL EXPY	SP40	PRETIM
)LPHIN-RLT	78	47E	IH 30 @ DOLPHIN RD	828A/DIA	NEMA
ERGUSON-RLT EBSR	21	47G	IH 30 @ FERGUSON EB	2M115	
ERGUSON-RLT WBSR	21	47G	IH 30 @ FERGUSON WB	2M115	
IM MILLER-RLT	76	48E	IH 30 @ JIM MILLER RD	DM800/Z80	NEMA
I30-WESTMORELAND	64	43T	IH 30 @ WESTMORELAND RD	828A/DIA	NEMA
ıDIZ(GRIFFIN)-RLT	37	45U	IH 30 EB OFF RAMP @ CADIZ	SP40	PRETIM
ıDIZ-LAMAR(RLT)	49	45Q	IH 30 EB OFF RAMP @ LAMAR	SP 40	
RIFFIN EAST-ST PAUL	37	45Q	IH 30 EB ON RAMP @ ST PAUL	SP 40	
SH LN(Carroll)-RLT EBSR	34	46K	IH 30 EBSR @ CARROLL AVE	NT124F	PRETIM
ıST GRAND-RLT EBSR	43	46H	IH 30 EBSR @ EAST GRAND	NT124F	PRETIM
RVAY(Griffin)-RLT EB	34	45Q	IH 30 EBSR @ ERVAY ST	SP40	PRETIM
ıRWOOD-RLT NBSR	41	45R	IH 30 EBSR @ HARWOOD ST	SP40	PRETIM
SH LN(Peak)-RLT EBSR	15	46K	IH 30 EBSR @ PEAK ST	NT124F	PRETIM
RIFFIN WEST-ST PAUL	37	45Q	IH 30 WB OFF RAMP @ ST PAUL		
ıRROLL(Terry)-RLT	33	46K	IH 30 WBSR @ CARROLL ST	NT124F	PRETIM
ıST GRAND-RLT WBSR	43	46H	IH 30 WBSR @ EAST GRAND	NT124F	PRETIM
RVAY(Griffin)-RLT WB	30	45Q	IH 30 WBSR @ ERVAY ST	SP40	PRETIM
ıNTON(Griffin)-RLT	37	45T	IH 30 WBSR @ GRIFFIN ST	SP40	PRETIM
ıRWOOD-RLT SBSR	36	45R	IH 30 WBSR @ HARWOOD ST	SP40	PRETIM
ıNTON(Lamar)-RLT	30	45T	IH 30 WBSR @ LAMAR ST	SP40	PRETIM
EAK(Terry)-RLT	15	46K	IH 30 WBSR @ PEAK ST	NT124F	PRETIM
H30-SYLVAN	38	44T	IH 30 WBSR @ SYLVAN RD	EMC4000	NEMA
RYAN-CENTRAL EBSR	35	45L	IH 345 EBSR @ BRYAN ST		
ıMP WISDOM-R L T	64	64V	IH 35E @ CAMP WISDOM	828A/DIA	NEMA
ONTINENTAL-STEMMONS	84	45J	IH 35E @ CONTINENTAL	828DIA	
IGHTH-RLT	60	55A	IH 35E @ EIGHTH	SP 40	
MPIRE CENTRAL-STEMMONS FWY	38	33P	IH 35E @ EMPIRE CENTRAL	SNG2000	ACT
WING-RLT	21	55E	IH 35E @ EWING ST SBSR	NT124F	PRETIM
NWOOD-STEMMONS FWY	90	34W	IH 35E @ INWOOD RD	828A/DIA	NEMA
ıRKET CNTR BLVD-STEMMONS FWY	90	44C	IH 35E @ MARKET CENTER BLVD	828A/DIA	NEMA
OCKINGBIRD-STEMMONS FWY	82	33U	IH 35E @ MOCKINGBIRD LN	828A/DIA	NEMA
OTOR-STEMMONS FWY	84	34X	IH 35E @ MOTOR ST	NT848DIA	NEMA
ıK LAWN-STEMMONS FWY	76	44D	IH 35E @ OAK LAWN AVE	828A/DIA	NEMA
EGAL ROW-STEMMONS FWY	38	33K	IH 35E @ REGAL ROW	KMC8000	NEMA
MERALD(Royal)-STEMMONS FWY	41	22H	IH 35E @ ROYAL LN	828A/DIA	NEMA
TEMMONS FWY-WALNUT HILL	76	22R	IH 35E @ WALNUT HILL LN	828A/DIA	NEMA
TEMMONS FWY-WYCLIFF	41	44C	IH 35E @ WYCLIFF AVE	NT848DIA	NEMA
IEST-RLT EBSR	29	54Y	IH 35E EBSR @ KIEST BLVD	NT124	
ıRRY HINES-RACEWAY	24	33F	IH 35E EXIT RAMP @ HINES	828A	
ORTHWEST-STEMMONS NBOFF RMP	18	22Z	IH 35E NB OFF RAMP @ LOOP 12	MULT820	NEMA
EDBETTER-RLT NBSR	22	64M	IH 35E NBSR @ LEDBETTER	NT12F	PRETIM
ORTHWEST-STEMMONS FWY NBSR	17	22Z	IH 35E NBSR @ LOOP 12	MULT820	NEMA
ıRSALIS-RLT NBSR	34	55E	IH 35E NBSR @ MARSALIS AVE	NT124F	PRETIM
EUNION-STEMMONS FWY	36	45N	IH 35E NBSR @ REUNION	SP40	PRETIM
ADIZ-INDUSTRIAL	44	45T	IH 35E OFF RAMP @ SH 342		
NDUSTRIAL-RLT	23	45T	IH 35E RAMP @ SH 342	2M8(D)	NEMA
LLINOIS-RLT	77	54U	IH 35E RAMPS @ ILLINOIS AVE	SP40	PRETIM
ORTHWEST-STEMMONS SBSR	17	22Z	IH 35E SB ON RAMP @ LOOP 12	MULT820	NEMA
RLT-YARMOUTH(Zang)	36	54M	IH 35E SB RAMP @ ZANG	NT124F	PRETIM
OMMONWEALTH-STEMMONS	15	33Z	IH 35E SBSR @ COMMONWEALTH	2M115	ACT
EDBETTER-RLT SBSR	22	64M	IH 35E SBSR @ LEDBETTER	NT12F	PRETIM
ıRSALIS-RLT SBSR	36	55E	IH 35E SBSR @ MARSALIS AVE	NT124F	PRETIM
BECKLEY-TWELFTH	40	54H	IH 35E SBSR @ TWELFTH	NT124	

EXHIBIT 1

C	LENS	MAP	SH	MAKE	TYPE
EST-RLT WBSR	29	54Y	IH 35E WBSR @ KIEST BLVD		
NTRAL EXY-ROSS NBSR	38	45G	IH 345 NBSR @ ROSS AVE	SP40	PRETIM
NTRAL EXY-LIVE OAK	46	47L	IH 345 SB OFF RAMP @ LIVE OAK	SP40	PRETIM
NTRAL EXY-ROSS SBSR	38	45G	IH 345 SBSR @ ROSS AVE	SP40	PRETIM
YAN-CENTRAL WBSR	35	45L	IH 345 WBSR @ BRYAN ST	SP40	PRETIM
LIUS SCHEPPS FWY-LAMAR	56	56B	IH 45 @ LAMAR	DM800/Z80	NEMA
LIUS SCHEPPS	70	46W	IH 45 @ PENNSYLVANIA	DM800/Z80	NEMA
Y-PENNSYLVANIA					
RAMS-LBJ FWY	76	17W	IH 635 @ ABRAMS	828A/DIA	NEMA
IT-LBJ FWY	76	16T	IH 635 @ COIT RD	828A/DIA	NEMA
WOOD-LBJ FWY	72	14R	IH 635 @ DNP/INWOOD	NT-848	NEMA
REST LN-LBJ FWY	76	17X	IH 635 @ FOREST LN	828A/DIA	NEMA
EENVILLE-LBJ FWY	48	16Z	IH 635 @ GREENVILLE AVE	828A/DIA	NEMA
LLCREST-LBJ FWY	52	15V	IH 635 @ HILLCREST LN	828A/DIA	NEMA
SEY-LBJ FWY	76	13V	IH 635 @ JOSEY LN	828A/DIA	NEMA
J FWY-MIDWAY RD	77	14T	IH 635 @ MIDWAY RD	828A/DIA	NEMA
J FWY-MONTFORT	82	15N	IH 635 @ MONTFORT RD	828A/DIA	NEMA
URCH(Plano Rd)-LBJ FWY	85	IH63	IH 635 @ PLANO RD	828A/DIA	NEMA
J FWY-PRESTON RD	75	15T	IH 635 @ SH 289	828A/DIA	NEMA
J FWY-SKILLMAN	50	27G	IH 635 @ SKILLMAN ST	828A/DIA	NEMA
J FWY-TI EAST BRIDGE	27	16U	IH 635 @ TI EAST BRIDGE	MULT820	NEMA
J FWY-TI WEST BRIDGE	66	16U	IH 635 @ TI WEST BRIDGE	828A/DIA	NEMA
J FWY-WEBB CHAPEL	44	13X	IH 635 @ WEBB CHAPEL	828A/DIA	ACT
J FWY-WELCH	82	14Q	IH 635 @ WELCH	828A/DIA	NEMA
AHEIM-FOREST LN	43	22D	IH 635 EB RAMP @ FOREST LN	MULT820	NEMA
OYD RD-LBJ EBSR	27	16V	IH 635 EBSR @ FLOYD RD	KMT8800C	NEMA
NTON-FOREST LN	86	22D	IH 635 EBSR @ FOREST LN		
RRY HINES- LBJ	26	22D	IH 635 EBSR @ HARRY HINES BLVD	MULT820	NEMA
NTON-LBJ WBSR	44	22D	IH 635 WBSR @ DENTON RD	MULT820	NEMA
NES-LBJ WBSR	26	22D	IH 635 WBSR @ HINES	820	
J-NOEL	0	15N	IH 635 WBSR @ NOEL ST		ACT
FFERSON-WALTON WALKER	64	52F	LOOP 12 @ JEFFERSON BLVD	828A/DIA	NEMA
VIS-WALTON WALKER	58	52A	LOOP 12 @ SH 180	828A/DIA	NEMA
NGLETON-WALTON WALKER	82	42P	LOOP 12 @ SINGLETON BLVD	828A/DIA	NEMA
RTHWEST-WALTON WALKER	76	22Y	LOOP 12 @ SPUR 348	828A/DIA	NEMA
F HAWN-ELAM	0	58T	US 175 @ ELAM RD	NAZTEC	ACT
F HAWN FWY-JIM MILLER	0	58N	US 175 @ JIM MILLER	NAZTEC	ACT
RPENTER FWY-MOCKINGBIRD LN	74	33U	SH 183 @ MOCKINGBIRD LN	828A/DIA	NEMA
RPENTER FWY-REGAL ROW	38	33N	SH 183 @ REGAL ROW	828A/DIA	NEMA
NDUSTRIAL-WOODALL RODERS	74	45J	SPUR 366 @ INDUSTRIAL BLVD	2M8(D)	NEMA
OUTH-WOODALL RODGERS	0	45G	SPUR 366 @ ROUTH		
KARD-WOODALL RODGERS SR	33	45K	SPUR 366 EBSR @ AKARD	SP40	PRETIM
IELD-WOODALL RODGERS SR	34	45K	SPUR 366 EBSR @ FIELD ST	SP40	PRETIM
RWOOD-WOODALL RODGERS SR	30	45K	SPUR 366 EBSR @ HARWOOD ST	SP40	PRETIM
LIVE-WOODALL RODGERS SR	30	45K	SPUR 366 EBSR @ OLIVE ST	SP40	PRETIM
EARL ST-WOODALL RODGERS SR	41	45F	SPUR 366 EBSR @ PEARL ST	SP40	PRETIM
T PAUL-WOODALL RODGERS SR	29	45K	SPUR 366 EBSR @ ST PAUL ST	SP40	PRETIM
KARD-WOODALL RODGERS NR	36	45K	SPUR 366 WBSR @ AKARD	SP40	PRETIM
IELD-WOODALL RODGERS NR	34	45K	SPUR 366 WBSR @ FIELD ST	SP40	PRETIM
RWOOD-WOODALL RODGERS NR	30	45K	SPUR 366 WBSR @ HARWOOD ST	SP40	PRETIM
LIVE-WOODALL RODGERS NR	30	45K	SPUR 366 WBSR @ OLIVE ST	SP40	PRETIM
EARL ST-WOODALL RODGERS NR	40	45F	SPUR 366 WBSR @ PEARL ST	SP40	PRETIM
T PAUL-WOODALL RODGERS NR	26	45K	SPUR 366 WBSR @ ST PAUL	SP40	PRETIM
UCKNER-C F HAWN	0	58U	US 175 @ BUCKNER BLVD	SC170	
ENTRAL EXY-HATCHER	79	56C	US 175 @ HATCHER	2M8R15	NEMA
ENTRAL EXY-M L KING	70	46W	US 175 @ M L KING	828A/DIA	NEMA
F HAWN FWY-ST AUGUSTINE	64	69B	US 175 @ ST AUGUSTINE RD	828A/DIA	NEMA
AMP WISDOM-M D LOVE	76	63U	US 67 @ CAMP WISDOM RD	828A/DIA	NEMA
AMPTON-M D LOVE	84	63R	US 67 @ HAMPTON RD	828A/DIA	NEMA

EXHIBIT 1

)C	LENS	MAP	SH	MAKE	TYPE
EDBETTER-M D LOVE	44	64E	US 67 @ LEDBETTER RD	828A/DIA	NEMA
D LOVE-POLK	76	64B	US 67 @ POLK ST		
D LOVE-REDBIRD	76	63R	US 67 @ REDBIRD		
D LOVE-WHEATLAND	90	73A	US 67 @ WHEATLAND RD		
IEST-M D LOVE NBSR	38	54Y	US 67 NBSR @ KIEST RD	SP40	PRETIM
IEST-M D LOVE SBSR	38	54Y	US 67 SBSR @ KIEST RD	SP40	PRETIM
ENTRAL EXY-FITZHUGH	68	35V	US 75 @ FITZHUGH AVE	VT4000	PRETIM
ENTRAL EXY-FOREST LN	70	16X	US 75 @ FOREST LN	828A/DIA	NEMA
ENTRAL EXY-HASKELL	71	35Y	US 75 @ HASKELL AVE4	VT4000	PRETIM
ENTRAL EXY-HENDERSON(Knox)	68	35V	US 75 @ HENDERSON/KNOX	VT4000	PRETIM
ENTRAL EXY-LEMMON	48	45C	US 75 @ LEMMON AVE	SNG2000	ACT
ENTRAL EXY-LOVERS LN	69	36B	US 75 @ LOVERS LN	VT4000	PRETIM
ENTRAL EXY-MEADOW	82	26K	US 75 @ MEADOW RD	NT-848DIA	NEMA
ENTRAL EXY-MIDPARK	82	16M	US 75 @ MIDPARK	828A/DIA	NEMA
ENTRAL EXY-MOCKINGBIRD	69	36J	US 75 @ MOCKINGBIRD LN	VT4000	PRETIM
ENTRAL EXY-MONTICELLO	68	35R	US 75 @ MONTICELLO AVE	VT4000	PRETIM
ENTRAL EXY-McCOMMAS	59	35R	US 75 @ McCOMMAS BLVD	VT4000	PRETIM
ENTRAL EXY-PARK LN	68	26T	US 75 @ PARK LN	828A/DIA	NEMA
ENTRAL-ROYAL	58	26F	US 75 @ ROYAL LN	828DIA	
ENTRAL EXY-SOUTHWESTERN	50	36B	US 75 @ SOUTHWESTERN BLVD	VT4000	PRETIM
ENTRAL EXY-UNIVERSITY	50	36E	US 75 @ UNIVERSITY BLVD	VT4000	PRETIM
ENTRAL EXY-WALNUT HILL	77	26P	US 75 @ WALNUT HILL LN	828A/DIA	NEMA
ENTRAL EXY-YALE	50	36E	US 75 @ YALE BLVD	VT4000	PRETIM
ENTRAL EXY-HALL NBSR	31	45C	US 75 NBSR @ HALL ST	NT124F	PRETIM
ENTRAL EXY-HALL SBSR	31	45C	US 75 SBSR @ HALL ST	NT124F	PRETIM
	7018				

TRAFFIC SIGNAL MAINTENANCE AND OPERATION PROVISIONS

The maintaining and operating agency agrees to:

1. Inspect the highway traffic signal system a minimum of once every four weeks and replace burned out lamps or damaged sockets as may be required. The reflector and lens should be cleaned each time a lamp is replaced. All replacement lamps shall equal the wattage and type of the existing lamp.

2. Keep signal posts, controller pedestals, and foundations in alignment.

3. Keep signal posts and controller pedestals tight on foundation.

4. Keep signal heads aligned and controller cabinets tight on their pedestals and properly adjusted.

5. Check the controllers, conflict monitors, loop amplifiers, relays, and detectors a minimum of once every three months to ascertain that they are functioning properly and make all necessary repairs and replacements.

6. Keep interior of controller cabinets in a neat and clean condition at all times.

7. Clean reflectors, lenses, and lamps a minimum of once every twelve months.

8. Repaint all highway traffic signal components exposed to weather with a non-lead based paint a minimum of once every two years. Plastic signal heads and galvanized and aluminum components are excluded.

9. Group relamp highway traffic signal heads at the expiration of the average rated lamp life.

10. Repair or replace any and all equipment that malfunctions or is damaged.

11. Provide alternate traffic control during a period of failure or when the controller must be repaired. This may be accomplished through installation of a spare controller, placing the intersection on flash, manually operating the controller, or manually directing traffic through the use of proper authorities. In addition, barricades and warning signs shall be provided in accordance with he requirements of the latest edition of the Texas Manual on Uniform Traffic Control Devices.

12. Provide maintenance personnel trained in the maintenance of traffic signal equipment who will be available to respond to emergency calls from authorized parties 24 hours a day, including Saturdays, Sundays and holidays.

13. Provide the State and local law enforcement agencies the location and respective names and telephone numbers of individuals responsible for emergency maintenance.

14. Document routine observations during the year by trained City personnel of traffic signal operation at each traffic signal during various times of the day to assure fair distribution of time for all traffic movements (phases) during varying traffic conditions.

15. Check cabinet filter a minimum of once every six months and clean if necessary. Cabinet filter shall be replaced every two years.

16. Traffic accidents, inclement weather, special events, and maintenance and construction activities are a few of the causes of nonrecurrent congestion. Nonrecurrent congestion often changes the normal traffic demand patterns. Effective and efficient movement of traffic throughout the transportation network during periods of nonrecurrent congestion must be considered in the design and operation of all traffic management systems, including traffic signal systems.

17. Document all checks and corrective actions.

Power costs shall be included in the calculations shown in EXHIBIT 3.

EXHIBIT 3

CITY OF DALLAS

Traffic signals on State Highways with one controller per intersection shall be reimbursed at $2,619.00 per unmetered intersection and $1,121 per metered intersection per year to be billed quarterly.

Calculations for Unmetered Intersections:

Maintenance	$ 647.00
Operations/Engineering	$ 395.00
Routine Repairs	$ 79.00
Electricity	$1,498.00
	$2,619.00

Calculations for Metered Intersections:

Maintenance	$ 647.00
Operations/Engineering	$ 395.00
Routine Repairs	$ 79.00
Electricity	$ 0.00
	$1,121.00

Total cost w/elect (136 intersections)	$356,184.00
Total cost w/o elect (6 intersections)	$ 6,725.00
Contract cost	$362,909.00

STATE OF TEXAS

Agreement No. 183XXM5004

COUNTY OF TRAVIS

SUPPLEMENTAL AGREEMENT NO. 01
TO
AGREEMENT FOR THE INSTALLATION AND REIMBURSEMENT FOR THE OPERATION AND MAINTENANCE OF TRAFFIC SIGNALS WITHIN A MUNICIPALITY

WHEREAS, on the 10th day of March, 1994, an Agreement for the Installation and Reimbursement for the Operation and Maintenance of Traffic Signals Within a Municipality was entered into by and between the Texas Department of Transportation, hereinafter called the "State", and the City of Dallas, hereinafter called the "City", and subsequently identified the agreement as Contract No. 183XXM5004, and

WHEREAS, the parties to this agreement have mutually determined that it is necessary to amend the original agreement due to the following reasons:

1) Change in electricity rates,
2) Change in number of intersections,
3) Change in number of metered/unmetered intersections

NOW, THEREFORE, Contract No. 183XXM5004 is amended as follows:

EXHIBIT 1
EXHIBIT 1 is amended to add/delete the traffic signal installation at the intersections of:

Central/Pennsylvania - Add
East Grand/RLT - Combined into one intersection
Carroll/Terry/RLT - Combined into one intersection
Peak/Terry/RLT - Combined into one intersection
I45/Simpson Stuart - Add
Winslow/RLT - Add

A copy of the revised EXHIBIT 1 is attached hereto and made a part of this agreement.

EXHIBIT 3

1. The rate of reimbursement for metered Diamond Interchange Signals with one controller shall be increased from $1,121.00 per intersection per year to $1,130.00 per intersection per year.

Calculations for Metered Intersections:

Maintenance	$ 656.00
Operations/Engineering	$ 395.00
Routine Repairs	$ 79.00
Electricity	$ 0.00
	$1,130.00

2. The rate of reimbursement for unmetered Diamond Interchange Signals with one controller shall be increased from $2,619.00 per intersection per year to $2,766.00 per intersection per year.

Calculations for Unmetered Intersections:

Maintenance	$ 656.00
Operations/Engineering	$ 395.00
Routine Repairs	$ 79.00
Electricity	$1,636.00
	$2,766.00

ARTICLE 4. COMPENSATION

The maximum amount payable under this agreement is increased from $362,909 per year to $379,038 per year in accordance with the above changes. Calculations for the increase to the maximum amount payable are as follows:

Electricity Old Rate Unmetered Intersection:	$1,498.00
Electricity New Rate Unmetered Intersection:	$1,636.00
Number of Unmetered Intersections Old Contract:	136
Number of Unmetered Intersections New Contract:	133
Number of Metered Intersections Old Contract:	6
Number of Metered Intersections New Contract:	9
Total cost w/electricity (133 intersections)	$367,878.00
Total cost w/o electricity (9 intersections)	$ 10,170.00
Contract Cost	$378,048.00

AMOUNT OF THIS SUPPLEMENTAL AGREEMENT	$ 15.139.00
ORIGINAL MAXIMUM AMOUNT PAYABLE PER YEAR	$362,909.00
TOTAL PREVIOUS SUPPLEMENTAL AGREEMENTS	$ -0-
REVISED MAXIMUM AMOUNT PAYABLE PER YEAR	$378,048.00

ARTICLE 5. PAYMENT

The amount of this supplemental agreement shown above shall be a prorated amount for the costs for the type of installation calculated on EXHIBIT 3 of this supplemental agreement, and locations of the traffic signals described in EXHIBIT 1 of this supplemental agreement, and any increases or decreases caused by any subsequent supplemental agreements. The ~~(monthly/~~quarterly/~~annual)~~ payment shall be adjusted accordingly.

All other terms or conditions are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the State and the City have signed duplicate counterparts of the Agreement.

CITY OF DALLAS
JOHN L. WARE
City Manager

BY _____
Assistant City Manager

APPROVED AS TO FORM:
SAM A. LINDSAY
Commission.

BY _____
Assistant City Attorney

Submitted to City Attorney

_____
Date

THE STATE OF TEXAS

Executed for the Executive Director and approved for the Texas Transportation Commission under the authority of Minute Order 100002 and Administrative Circular 26-93, for the purpose and effect of activating and/or carrying out the orders, established policies or work programs by the Texas Transportation

APPROVED

_____

ACTING Director, Traffic Operations Division

12/8/95
Date

EXHIBIT 1

PAGE:1 LOCATION		LENS	MAP	SH	TYPE		HIGHWAY
COCKRELL HILL-IH20		84	62Z	IH 20 @ COCKRELL HILL RD	828A/DIA	NEMA	IH 20
HAMPTON-IH 20		82	73D	IH 20 @ HAMPTON RD	828A/DIA	NEMA	IH 20
LANCASTER-LBJ FWY		0	75D	IH 20 @ LANCASTER RD	828A/DIA	NEMA	IH 20
IH20-POLK		88	74F	IH 20 @ POLK ST	NT848DIA	NEMA	IH 20
IH20-WHEATLAND		64	73D	IH 20 @ WHEATLAND RD	NT848DIA	NEMA	IH 20
CARROLL(Terry)-RLT	*	33	46K	IH 30 @ CARROLL ST	170	ACT	IH 30
CENTRAL EXY-R L T		50	45R	IH 30 @ CENTRAL EXPY	170	PRETIM	IH 30
DOLPHIN-RLT		78	47E	IH 30 @ DOLPHIN RD	828A/DIA	NEMA	IH 30
EAST GRAND-RLT	*	43	46H	IH 30 @ EAST GRAND	170	ACT	IH 30
FERGUSON-RLT EBSR		21	47G	IH 30 @ FERGUSON EB	2M115	ACT	IH 30
FERGUSON-RLT WBSR		21	47G	IH 30 @ FERGUSON WB	2M115	ACT	IH 30
JIM MILLER-RLT		76	48E	IH 30 @ JIM MILLER RD	DM800/Z80	NEMA	IH 30
PEAK(Terry)-RLT	*	15	46K	IH 30 @ PEAK ST	170	ACT	IH 30
IH30-WESTMORELAND		64	43T	IH 30 @ WESTMORELAND RD	828A/DIA	NEMA	IH 30
CADIZ(GRIFFIN)-RLT		37	45U	IH 30 EB OFF RAMP @ CADIZ	170	PRETIM	IH 30
CADIZ-LAMAR(RLT)		49	45Q	IH 30 EB OFF RAMP @ LAMAR	170	PRETIM	IH 30
GRIFFIN EAST-ST PAUL		37	45Q	IH 30 EB ON RAMP @ ST PAUL	170	PRETIM	IH 30
ERVAY(Griffin)-RLT EB		34	45Q	IH 30 EBSR @ ERVAY ST	170	PRETIM	IH 30
HARWOOD-RLT NBSR		41	45R	IH 30 EBSR @ HARWOOD ST	170	PRETIM	IH 30
GRIFFIN WEST-ST PAUL		37	45Q	IH 30 WB OFF RAMP @ ST PAUL	170	PRETIM	IH 30
ERVAY(Griffin)-RLT WB		30	45Q	IH 30 WBSR @ ERVAY ST	170	PRETIM	IH 30
CANTON(Griffin)-RLT		37	45T	IH 30 WBSR @ GRIFFIN ST	170	PRETIM	IH 30
HARWOOD-RLT SBSR		36	45R	IH 30 WBSR @ HARWOOD ST	170	PRETIM	IH 30
CANTON(Lamar)-RLT		30	45T	IH 30 WBSR @ LAMAR ST	170	PRETIM	IH 30
IH30-SYLVAN		38	44T	IH 30 WBSR @ SYLVAN RD	170	NEMA	IH 30
BRYAN-CENTRAL EBSR		35	45L	IH 345 EBSR @ BRYAN ST	170	PRETIM	IH 345
CENTRAL EXY-ROSS NBSR		38	45G	IH 345 NBSR @ ROSS AVE	SP40	PRETIM	IH 45
CENTRAL EXY-LIVE OAK		46	47L	IH 345 SB OFF RAMP @ LIVE OAK	SP40	PRETIM	IH 45
CENTRAL EXY-ROSS SBSR		38	45G	IH 345 SBSR @ ROSS AVE	SP40	PRETIM	IH 45
BRYAN-CENTRAL WBSR		35	45L	IH 345 WBSR @ BRYAN ST	170	PRETIM	IH 45
CAMP WISDOM-R L T		64	64V	IH 35E @ CAMP WISDOM	828A/DIA	NEMA	IH 35E
CONTINENTAL-STEMMONS		84	45J	IH 35E @ CONTINENTAL	828DIA	ACT	IH 35E
EIGHTH-RLT		60	55A	IH 35E @ EIGHTH	170	PRETIM	IH 35E
EMPIRE CENTRAL-STEMMONS FWY		38	33P	IH 35E @ EMPIRE CENTRAL	SNG2000	ACT	IH 35E
EWING-RLT		21	55E	IH 35E @ EWING ST SBSR	NT124F	PRETIM	IH 35E
INWOOD-STEMMONS FWY		90	34W	IH 35E @ INWOOD RD	828A/DIA	NEMA	IH 35E
MARKET CNTR BLVD-STEMMONS FWY		90	44C	IH 35E @ MARKET CENTER BLVD	828A/DIA	NEMA	IH 35E
MOCKINGBIRD-STEMMONS FWY		82	33U	IH 35E @ MOCKINGBIRD LN	828A/DIA	NEMA	IH 35E
MOTOR-STEMMONS FWY		84	34X	IH 35E @ MOTOR ST	NT848DIA	NEMA	IH 35E
OAK LAWN-STEMMONS FWY		76	44D	IH 35E @ OAK LAWN AVE	828A/DIA	NEMA	IH 35E
REGAL ROW-STEMMONS FWY		38	33K	IH 35E @ REGAL ROW	KMC8000	NEMA	IH 35E
EMERALD(Royal)-STEMMONS FWY		41	22H	IH 35E @ ROYAL LN	828A/DIA	NEMA	IH 35E
STEMMONS FWY-WALNUT HILL		76	22R	IH 35E @ WALNUT HILL LN	828A/DIA	NEMA	IH 35E
STEMMONS FWY-WYCLIFF		41	44C	IH 35E @ WYCLIFF AVE	NT848DIA	NEMA	IH 35E
KIEST-RLT EBSR		29	54Y	IH 35E EBSR @ KIEST BLVD	NT124	PRETIM	IH 35E
HARRY HINES-RACEWAY		24	33F	IH 35E EXIT RAMP @ HINES	828A	ACT	IH 35E
NORTHWEST-STEMMONS NBOFF RMP		18	22Z	IH 35E NB OFF RAMP @ LOOP 12	MULT820	NEMA	IH 35E
LEDBETTER-RLT NBSR		22	64M	IH 35E NBSR @ LEDBETTER	NT12F	PRETIM	IH 35E
NORTHWEST-STEMMONS FWY NBSR		17	22Z	IH 35E NBSR @ LOOP 12	MULT820	NEMA	IH 35E
MARSALIS-RLT NBSR		34	55E	IH 35E NBSR @ MARSALIS AVE	NT124F	PRETIM	IH 35E

EXHIBIT 1

PAGE:2

LOCATION	LENS	MAP	SH	TYPE	HIGHWAY	
REUNION-STEMMONS FWY	36	45N	IH 35E NBSR @ REUNION	SP40	PRETIM	IH 35E
CADIZ-INDUSTRIAL	44	45T	IH 35E OFF RAMP @ SH 342	2M8(D)	ACT	IH 35E
INDUSTRIAL-RLT	23	45T	IH 35E RAMP @ SH 342	2M8(D)	NEMA	IH 35E
ILLINOIS-RLT	77	54U	IH 35E RAMPS @ ILLINOIS AVE	SP40	PRETIM	IH 35E
NORTHWEST-STEMMONS SBSR	17	22Z	IH 35E SB ON RAMP @ LOOP 12	MULT820	NEMA	IH 35E
RLT-YARMOUTH(Zang)	36	54M	IH 35E SB RAMP @ ZANG	NT124F	PRETIM	IH 35E
COMMONWEALTH-STEMMONS	15	33Z	IH 35E SBSR @ COMMONWEALTH	2M115	ACT	IH 35E
LEDBETTER-RLT SBSR	22	64M	IH 35E SBSR @ LEDBETTER	NT12F	PRETIM	IH 35E
MARSALIS-RLT SBSR	36	55E	IH 35E SBSR @ MARSALIS AVE	NT124F	PRETIM	IH 35E
BECKLEY-TWELFTH	40	54H	IH 35E SBSR @ TWELFTH	NT124	PRETIM	IH 35E
KIEST-RLT WBSR	29	54Y	IH 35E WBSR @ KIEST BLVD	124	PRETIM	IH 35E
JULIUS SCHEPPS FWY-LAMAR	56	56B	IH 45 @ LAMAR	DM800/Z80	NEMA	IH 45
JULIUS SCHEPPS FWY-PENNSYLVANIA	70	46W	IH 45 @ PENNSYLVANIA	DM800/Z80	NEMA	IH 45
IH 45-SIMPSON STUART	0	66M	IH 45 @ SIMPSON STUART	170	ACT	IH 45
ABRAMS-LBJ FWY	76	17W	IH 635 @ ABRAMS	828A/DIA	NEMA	IH 635
COIT-LBJ FWY	76	16T	IH 635 @ COIT RD	828A/DIA	NEMA	IH 635
INWOOD-LBJ FWY	72	14R	IH 635 @ DNP/INWOOD	NT-848	NEMA	IH 635
FOREST LN-LBJ FWY	76	17X	IH 635 @ FOREST LN	828A/DIA	NEMA	IH 635
GREENVILLE-LBJ FWY	48	16Z	IH 635 @ GREENVILLE AVE	828A/DIA	NEMA	IH 635
HILLCREST-LBJ FWY	52	15V	IH 635 @ HILLCREST LN	828A/DIA	NEMA	IH 635
JOSEY-LBJ FWY	76	13V	IH 635 @ JOSEY LN	828A/DIA	NEMA	IH 635
LBJ FWY-MIDWAY RD	77	14T	IH 635 @ MIDWAY RD	828A/DIA	NEMA	IH 635
LBJ FWY-MONTFORT	82	15N	IH 635 @ MONTFORT RD	828A/DIA	NEMA	IH 635
CHURCH(Plano Rd)-LBJ FWY	85	IH63	IH 635 @ PLANO RD	828A/DIA	NEMA	IH 635
LBJ FWY-PRESTON RD	75	15T	IH 635 @ SH 289	828A/DIA	NEMA	IH 635
LBJ FWY-SKILLMAN	50	27G	IH 635 @ SKILLMAN ST	828A/DIA	NEMA	IH 635
LBJ FWY-TI EAST BRIDGE	27	16U	IH 635 @ TI EAST BRIDGE	MULT820	NEMA	IH 635
LBJ FWY-TI WEST BRIDGE	66	16U	IH 635 @ TI WEST BRIDGE	828A/DIA	NEMA	IH 635
LBJ FWY-WEBB CHAPEL	44	13X	IH 635 @ WEBB CHAPEL	828A/DIA	ACT	IH 635
LBJ FWY-WELCH	82	14Q	IH 635 @ WELCH	828A/DIA	NEMA	IH 635
ANAHEIM-FOREST LN	43	22D	IH 635 EB RAMP @ FOREST LN	MULT820	NEMA	IH 635
FLOYD RD-LBJ EBSR	27	16V	IH 635 EBSR @ FLOYD RD	EMT8800C	NEMA	IH 635
DENTON-FOREST LN	86	22D	IH 635 EBSR @ FOREST LN	MULT820	ACT	IH 635
HARRY HINES- LBJ	26	22D	IH 635 EBSR @ HARRY HINES BLVD	MULT820	NEMA	IH 635
DENTON-LBJ WBSR	44	22D	IH 635 WBSR @ DENTON RD	MULT820	NEMA	IH 635
HINES-LBJ WBSR	26	22D	IH 635 WBSR @ HINES	820	ACT	IH 635
LBJ-NOEL	0	15N	IH 635 WBSR @ NOEL ST	EMC4000	ACT	IH 635
RLT-WINSLOW	0	46H	IH30 @ WINSLOW	170	ACT	IH30
JEFFERSON-WALTON WALKER	64	52F	LOOP 12 @ JEFFERSON BLVD	828A/DIA	NEMA	LOOP 12
DAVIS-WALTON WALKER	58	52A	LOOP 12 @ SH 180	828A/DIA	NEMA	LOOP 12
SINGLETON-WALTON WALKER	82	42P	LOOP 12 @ SINGLETON BLVD	828A/DIA	NEMA	LOOP 12
NORTHWEST-WALTON WALKER	76	22Y	LOOP 12 @ SPUR 348	828A/DIA	NEMA	LOOP 12
CARPENTER FWY-MOCKINGBIRD LN	74	33U	SH 183 @ MOCKINGBIRD LN	828A/DIA	NEMA	SH 183
CARPENTER FWY-REGAL ROW	38	33N	SH 183 @ REGAL ROW	828A/DIA	NEMA	SH 183
INDUSTRIAL-WOODALL RODERS	74	45J	SPUR 366 @ INDUSTRIAL BLVD	2M8(D)	NEMA	SPUR 342
ROUTH-WOODALL RODGERS	0	45G	SPUR 366 @ ROUTH	170	ACT	SPUR 366
AKARD-WOODALL RODGERS SR	33	45K	SPUR 366 EBSR @ AKARD	SP40	PRETIM	SPUR 366
FIELD-WOODALL RODGERS SR	34	45K	SPUR 366 EBSR @ FIELD ST	SP40	PRETIM	SPUR 366
HARWOOD-WOODALL RODGERS SR	30	45K	SPUR 366 EBSR @ HARWOOD ST	SP40	PRETIM	SPUR 366
OLIVE-WOODALL RODGERS SR	30	45K	SPUR 366 EBSR @ OLIVE ST	SP40	PRETIM	SPUR 366

EXHIBIT 1

PAGE:3

LOCATION	LENS	MAP	SH	TYPE	HIGHWAY	
PEARL ST-WOODALL RODGERS SR	41	45F	SPUR 366 EBSR @ PEARL ST	SP40	PRETIM	SPUR 366
ST PAUL-WOODALL RODGERS SR	29	45K	SPUR 366 EBSR @ ST PAUL ST	SP40	PRETIM	SPUR 366
AKARD-WOODALL RODGERS NR	36	45K	SPUR 366 WBSR @ AKARD	SP40	PRETIM	SPUR 366
FIELD-WOODALL RODGERS NR	34	45K	SPUR 366 WBSR @ FIELD ST	SP40	PRETIM	SPUR 366
HARWOOD-WOODALL RODGERS NR	30	45K	SPUR 366 WBSR @ HARWOOD ST	SP40	PRETIM	SPUR 366
OLIVE-WOODALL RODGERS NR	30	45K	SPUR 366 WBSR @ OLIVE ST	SP40	PRETIM	SPUR 366
PEARL ST-WOODALL RODGERS NR	40	45F	SPUR 366 WBSR @ PEARL ST	SP40	PRETIM	SPUR 366
ST PAUL-WOODALL RODGERS NR	26	45K	SPUR 366 WBSR @ ST PAUL	SP40	PRETIM	SPUR 366
BUCKNER-C F HAWN	0	58U	US 175 @ BUCKNER BLVD	SC170	ACT	US 175
CF HAWN-ELAM	0	58T	US 175 @ ELAM RD	NAZTEC	ACT	SH 175
CENTRAL EXY-HATCHER	79	56C	US 175 @ HATCHER	2M8R15	NEMA	US 175
CF HAWN FWY-JIM MILLER	0	58N	US 175 @ JIM MILLER	NAZTEC	ACT	SH 175
CENTRAL EXY-M L KING	70	46W	US 175 @ M L KING	828A/DIA	NEMA	US 175
CENTRAL-PENNSYLVANIA	0	46W	US 175 @ PENNSYLVANIA	170	ACT	US 175
C F HAWN FWY-ST AUGUSTINE	64	69B	US 175 @ ST AUGUSTINE RD	828A/DIA	NEMA	US 175
CAMP WISDOM-M D LOVE	76	63U	US 67 @ CAMP WISDOM RD	828A/DIA	NEMA	US 67
HAMPTON-M D LOVE	84	63R	US 67 @ HAMPTON RD	828A/DIA	NEMA	US 67
LEDBETTER-M D LOVE	44	64E	US 67 @ LEDBETTER RD	828A/DIA	NEMA	US 67
M D LOVE-POLK	76	64B	US 67 @ POLK ST	828A/DIA	ACT	US 67
M D LOVE-REDBIRD	76	63R	US 67 @ REDBIRD	NAZTEC	ACT	US 67
M D LOVE-WHEATLAND	90	73A	US 67 @ WHEATLAND RD	828A/DIA	ACT	US 67
KIEST-M D LOVE NBSR	38	54Y	US 67 NBSR @ KIEST RD	SP40	PRETIM	US 67
KIEST-M D LOVE SBSR	38	54Y	US 67 SBSR @ KIEST RD	SP40	PRETIM	US 67
CENTRAL EXY-FITZHUGH	68	35V	US 75 @ FITZHUGH AVE ✓	VT4000	PRETIM	US 75
CENTRAL EXY-FOREST LN	70	16X	US 75 @ FOREST LN	828A/DIA	NEMA	US 75
CENTRAL EXY-HASKELL	71	35Y	US 75 @ HASKELL AVE4 ✓	VT4000	PRETIM	US 75
CENTRAL EXY-HENDERSON(Knox)	68	35V	US 75 @ HENDERSON/KNOX	VT4000	PRETIM	US 75
CENTRAL EXY-LEMMON	48	45C	US 75 @ LEMMON AVE ✓	SNG2000	ACT	US 75
CENTRAL EXY-LOVERS LN	69	36B	US 75 @ LOVERS LN	VT4000	PRETIM	US 75
CENTRAL EXY-MEADOW	82	26K	US 75 @ MEADOW RD	NT-848DIA	NEMA	US 75
CENTRAL EXY-MIDPARK	82	16M	US 75 @ MIDPARK	828A/DIA	NEMA	US 75
CENTRAL EXY-MOCKINGBIRD	69	36J	US 75 @ MOCKINGBIRD LN	VT4000	PRETIM	US 75
CENTRAL EXY-MONTICELLO	68	35R	US 75 @ MONTICELLO AVE	VT4000	PRETIM	US 75
CENTRAL EXY-McCOMMAS	59	35R	US 75 @ McCOMMAS BLVD	VT4000	PRETIM	US 75
CENTRAL EXY-PARK LN	68	26T	US 75 @ PARK LN ✓	828A/DIA	NEMA	US 75
CENTRAL-ROYAL	58	26F	US 75 @ ROYAL LN	828DIA	ACT	US 75
CENTRAL EXY-SOUTHWESTERN	50	36B	US 75 @ SOUTHWESTERN BLVD	VT4000	PRETIM	US 75
CENTRAL EXY-UNIVERSITY	50	36E	US 75 @ UNIVERSITY BLVD	VT4000	PRETIM	US 75
CENTRAL EXY-WALNUT HILL	77	26P	US 75 @ WALNUT HILL LN	828A/DIA	NEMA	US 75
CENTRAL EXY-YALE	50	36E	US 75 @ YALE BLVD	VT4000	PRETIM	US 75
CENTRAL EXY-HALL NBSR	31	45C	US 75 NBSR @ HALL ST	NT124F	PRETIM	US 75
CENTRAL EXY-HALL SBSR	31	45C	US 75 SBSR @ HALL ST	NT124F	PRETIM	US 75

LENS COUNT OF INTERSECTIONS NOT METERED 6926

ASTERISK DENOTES CHANGES

LENS COUNT OF 0 INDICATES METERED INTERSECTIONS

COUNCIL CHAMBER

January 25, 1995 950335

WHEREAS, the Texas Department of Transportation, operating under Commission Minute Order 70179 dated July 31, 1975, would provide funding for new traffic signal installations and equipment upgrades on designated highway routings in cities over 50,000 population, but not for operation and maintenance expense which had been borne by these cities; and,

WHEREAS, this policy was amended in June 1987, to provide for the department to expand the previous policy and by means of agreement between the department and the particular cities with population over 50,000, fund the maintenance and operation of only the signals on the freeway system within those jurisdictions; and,

WHEREAS, the City of Dallas is in agreement with this proposed course of action;

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

Section 1. That the City Manager is authorized to amend an agreement with the Texas Department of Transportation, whereby they will reimburse the agreed upon maintenance and operation cost for the number of approved traffic signals on the freeway system within the Dallas city limits.

Section 2. That the City Manager is hereby authorized to establish an appropriation of $379,038.00 in Fund 669, Agency PBW, Org. 6690, Object 4820.

Section 3. That the City Controller is hereby authorized to disburse funds from Fund 001, Agency PBW, Org 3053, Object Code 2820 for maintenance of traffic signals on the freeway systems within the City of Dallas in an amount not to exceed $379,038.

Section 4. That the City Controller is hereby authorized to deposit all reimbursements from the Texas Department of Transportation in Fund 669, Agency PBW, Org. 6690, Revenue Source 6508.

Section 5. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Dallas City Charter, and it is accordingly so resolved.

APPROVED BY
CITY COUNCIL
JAN 25 1995

Distribution: Public Works & Transportation, Kathy McGuire
320 E. Jefferson, Rm. 102
Public Works & Transportation, Hazel Baker
LIBN, City Hall
City Attorney
City Controller
Budget & Management Services

APPROVED Sam F. Wilson FOR HEAD OF DEPARTMENT

APPROVED DIRECTOR OF FINANCE

APPROVED City Secretary
CITY MANAGER

SUP-000SSA

S N 753-036-006

CITY OF DALLAS

ADMINISTRATIVE ACTION

(See Administrative Directive 4-5)

4590 CD

ADMINISTRATIVE ACTION NUMBER
953125

EFFECTIVE DATE
JUL 11 1995

CLASSIFICATION AND INSTRUCTIONS

1. Check the appropriate box, complete and submit this form for the approval of:
- ☐ a. Low bid, budgeted construction, service or repair contracts of at least $10,000 but not more than $50,000.
- ☐ b. Professional/Personal service contracts of $10,000 or less.
- ☐ c. Other budgeted contracts for lawful City purposes less than $10,000.
- ☐ d. Additive and deductive change orders of $15,000 or less to competitively bid contracts.
- ☒ e. Amendments to non-bid contracts of $10,000 or less, or any decrease, subject to City Code Sec. 2-37.1.1

2. Attach all supporting documents including bid information as required.
3. See Administrative Directive 4-5, Sections 6 through 10 for additional guidelines and routing.
4. Any Administrative Actions to this vendor for this commodity in the last 12 months? YES ☐ NO ☒
(If YES, attach explanation.)

SUBJECT: Supplemental Agreement No. 01 For Operation & Maintenance of Traffic Signal

TO: BUDGET AND MANAGMENT SERVICES DATE

FROM: Public Works & Transportation 7-6-95

ACTION REQUESTED

Amend Council Resolution 95-0335. Change Contract amount from $379,038 to $378,048.

BACKGROUND

The Texas Department of Transportation (TxDOT) deleted two intersections from this agreement that were covered under a separate agreement. This decreased contract by $990.00.

FUNDING

FUND	AGY.	ORG.	ACTV.	OBJ.	JOB	ENCUMBRANCE NUMBER	VENDOR NUMBER	AMOUNT
669	PBW	6690		4820			020318	(990.00)

PROJECT NO. COMMODITY CODE: FINANCING: Texas Department of Transportatio

M/WBE INFORMATION

Please check appropriate boxes GFE by OMBO Init. N/A Date

☐ African-American ☐ Hispanic

☐ Caucasian: Female ☐ Male ☐

☐ Other Minority (Asian-Pacific, Asian-American, Native American)

M/WBE Certification Number _____

CHANGE ORDER DATA

Change Order Number _____ Original CR/AA Number 95-0335

Original CR/AA Amount $379,038

Original CR/AA Date 1-25-95

Amount of Previous Change Orders -0-

Change amount Including this Order 990.00

Total Change Order Percentage .003

COORDINATION

BUDGET & MGMT SRVCS	CITY CONTROLLER
REVIEWED BY	REVIEWED BY
DATE 8/22/95	DATE

APPROVAL

Approved as being in accordance with the Budget and Chapter 2 of the Dallas City Code.

BY DEPARTMENT DIRECTOR DATE

BY ASSISTANT CITY MANAGER DATE 9/11/95

Approved as to form BY CITY ATTORNEY DATE

WHITE-City Secretary GREEN-City Controller CANARY-Budget & Mgmt Svcs PINK-Initiating Department GOLDENROD-Office of Minority Business Opportunity

PUR-01756 REV 09/94
S/N 2761-04-150

WHEREAS, the Texas Department of Transportation, operating under Commission Minute Order 70179 dated July 31, 1975, would provide funding for new traffic signal installations and equipment upgrades on designated highway routings in cities over 50,000 population, but not for operation and maintenance expense which had been borne by these cities; and,

WHEREAS, this policy was amended in June 1987, to provide for the department to expand the previous policy and by means of agreement between the department and the particular cities with population over 50,000, fund the maintenance and operation of only the signals on the freeway system within those jurisdictions; and,

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Section 5. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Dallas City Charter, and it is accordingly so resolved.

APPROVED BY CITY COUNCIL
JAN 25 1995

Distribution: Public Works & Transportation, Kathy McGuire
320 E. Jefferson, Rm. 102
Public Works & Transportation, Hazel Baker
L1BN, City Hall
City Attorney
City Controller
Budget & Management Services

APPROVED Sam T. Wilson FOR HEAD OF DEPARTMENT
APPROVED DIRECTOR OF FINANCE
APPROVED City Secretary CITY MANAGER

S:N 753-036-006

SUP-00055A

Contract No. 183XXM5004

SUPPLEMENTAL AGREEMENT NO. 02
TO
AGREEMENT FOR THE INSTALLATION AND REIMBURSEMENT FOR THE OPERATION AND MAINTENANCE OF TRAFFIC SIGNALS WITHIN A MUNICIPALITY

WHEREAS, on the 10th day of March, 1994, an Agreement for the installation and Reimbursement of the Operation and Maintenance of Traffic Signals within a Municipality was entered into by and between the Texas Department of Transportation, hereinafter call the "State," and the City of Dallas, hereinafter called the "City," and subsequently identified the agreement as contract No. 183XXM5004; and,

WHEREAS, Supplemental Agreement # 1 was executed on the 8th day of December, 1995; and,

WHEREAS, the parties to this agreement have mutually determined that it is necessary to amend the original agreement due to the following reason/reasons:

- Change in locations on EXHIBIT 1
- Revised EXHIBIT 3
- Electrical bills for metered intersections shall be paid directly by TxDOT

NOW, THEREFORE, Contract No. 183XXM5004 is amended as follows:

EXHIBIT 1

EXHIBIT 1 is amended to add/delete the traffic signal(s) installation(s) at the intersection(s) of:

Central/Northwest Hwy - Add (metered)
Keeneland/Walton Walker - Add (metered)
Laureland/RLT - Add (metered)
Ann Arbor/RLT - Add (metered)
Coit/190 - Add (metered)
Midway/190 - Add (metered)
Frankford/190 - Add (metered)
Rosemead/190 - Add (metered)
Marsh/190 - Add (metered)
Beltline/CF Hawn - Add (metered)
Bonnieview/IH 20 - Add (metered)
Caruth Haven/Central - Add (metered)
IH 30/Munger - Add (metered)

EXHIBIT 1 (continued)

IH 635 E&W/Central - Add (metered)
Kiest/Walton Walker - Add (unmetered)
Duncanville/Loop 12 - Add (unmetered)
Marsalis/RLT - Combined into one intersection (metered)
Kiest/M D Love - Combined into one intersection (metered)
Central /Hall - Combined into one intersection (metered)
Hampton/IH 20 - Changed from unmetered to metered intersection
Ewing/RLT - Changed from unmetered to metered intersection
Beckley/Twelfth - Changed from unmetered to metered intersection
Abrams/LBJ - Changed from unmetered to metered intersection
Greenville/LBJ - Changed from unmetered to metered intersection
Ledbetter/M D Love - Changed from unmetered to metered intersection
Central/University - Changed from unmetered to metered intersection
Mockingbird/SH 183 - Changed from unmetered to metered intersection

A copy of the revised EXHIBIT 1 is attached hereto and made a part of this agreement.

EXHIBIT 2

A copy of the revised EXHIBIT 2 is attached hereto and made a part of this agreement.

EXHIBIT 3

1. The rate of reimbursement for metered Diamond Interchange Signals with one controller shall be increased/decreased from $ 1,130.00 per intersection per year to $ 1,714.00 per intersection per year.

   Calculations for metered Intersections:

Maintenance	$ 1,147.00
Operations/Engineering	$ 479.00
Routine Repairs	$ 89.00
Electricity	$ 0.00
	$ 1,714.00

2. The rate of reimbursement for unmetered Diamond Interchange Signals with one controller shall be increased/decreased from $ 2,766.00 per intersection per year to $ 3,922.00 per intersection per year.

   Calculations for Unmetered Intersections:

Maintenance	$ 1,147.00
Operations/Engineering	$ 479.00
Routine Repairs	$ 89.00
Electricity	$ 2,208.00
	$ 3,922.00

Article 4. Compensation

The maximum amount payable under this agreement is increased/decreased from $378,048.00 per year to 515,900.00 per year in accordance with the above changes. Calculations for the increase/decrease to the maximum amount payable are as follows:

Electricity Old rate Unmetered Intersection:	$ 1,636.00
Electricity New Rate Unmetered Intersection:	$ 2,208.00
Number of Unmetered Intersection Old Agreement:	133
Number of Unmetered Intersections New Agreement:	111
Number of Metered Intersections Old Agreement:	9
Number of Metered Intersections New Agreement:	47
Total cost w/electricity (111 unmetered Intersections)	$ 435,342.00
Total cost w/o electricity (48 metered Intersections)	$ 80,558.00
Revised New Contract Cost	$ 515,900.00
AMOUNT OF THIS SUPPLEMENTAL AGREEMENT	$ 137,852.00
ORIGINAL MAXIMUM AMOUNT PAYABLE PER YEAR	$ 362,909.00
TOTAL PREVIOUS SUPPLEMENTAL AGREEMENTS	$ 15,139.00
REVISED MAXIMUM AMOUNT PAYABLE PER YEAR	$ 515,900.00

ARTICLE 5. Payment

The amount of this supplemental agreement shown above shall be a prorated amount based on the cost for the type of installation calculated on EXHIBIT 3 of the original agreement and any increases or decreases caused by any subsequent agreements. The (monthly/quarterly/annual) payment shall be adjusted accordingly.

All other terms or conditions are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the State and the City have signed duplicate counterparts of the agreement.

THE CITY OF DALLAS

APPROVED AS TO FORM:
Madeleine Johnson
City Attorney

By: _____
Assistant City Attorney
Submitted to City Attorney

CITY OF DALLAS
Teodoro J. Benavides
City Manager

By: _____
Assistant City Manager

Date: 11/21/02

THE STATE OF TEXAS

Executed for the Executive Director and approved for the Texas Transportation Commission for the purpose and effect of activating and/or carrying out the orders, established policies or work programs heretofore approved and authorized by the Texas Transportation Commission.

By: _____
Jay R. Nelson, P.E.
Dallas District Engineer

Date: 12/18/02

1. Unmetered signalized intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	LEN	ST_RD	CHECK_DATE
COCKRELL HILL	IH 20	IH 20 @ COCKRELL HILL	IH 20	62Z	NO	84	YES	02-Oct-99
HAMPTON	IH 20	IH 20 @ HAMPTON	IH 20	66Z	NO	76	YES	06-Oct-99
LANCASTER	L B J FRWY	IH 20 @ LANCASTER	IH 20	75D	NO	82	YES	29-Dec-99
IH 20	POLK ST	IH 20 @ POLK	IH 20	74F	NO	88	YES	06-Oct-99
IH 20	WHEATLAND RD	IH 20 @ WHEATLAND	IH 20	75E	NO	64	YES	29-Dec-99
CADIZ	GRIFFIN	IH 30 EB OFF RMP @ CADIZ	IH 30	45U	NO	37	YES	20-Oct-99
CADIZ	LAMAR	IH 30 EB OFF RMP @ LAMAR	IH 30	45T	NO	46	YES	02-Nov-99
GRIFFIN E	ST PAUL	IH 30 EB ON RMP @ ST PAUL	IH 30	45Q	NO	30	YES	20-Oct-99
FERGUSON	R L THORNTON EBSR	IH 30 EB @ FERGUSON	IH 35	47G	NO	21	YES	27-Oct-99
ERVAY	GRIFFIN E	IH 30 EBSR @ ERVAY	IH 30	45Q	NO	34	YES	20-Oct-99
HARWOOD	R L THORNTON EBSR	IH 30 EBSR @ HARWOOD	IH 35E	45R	NO	36	YES	28-Oct-99
GRIFFIN W	ST PAUL	IH 30 WB ON RMP @ ST PAUL	IH 30	45Q	NO	30	YES	20-Oct-99
FERGUSON	R L THORNTON WBSR	IH 30 WB @ FERGUSON	IH 35	47G	NO	21	YES	27-Oct-99
ERVAY	GRIFFIN W	IH 30 WBSR @ ERVAY	IH 30	45Q	NO	40	YES	20-Oct-99
CANTON	GRIFFIN	IH 30 WBSR @ GRIFFIN	IH 30	45T	NO	37	YES	20-Oct-99
HARWOOD	R L THORNTON WBSR	IH 30 WBSR @ HARWOOD	IH 35	45R	NO	39	YES	28-Oct-99
CANTON	LAMAR	IH 30 WBSR @ LAMAR	IH 30	45T	NO	32	YES	02-Nov-99
IH 30	SYLVAN	IH 30 WBSR @ SYLVAN	IH 30	44T	NO	38	YES	26-Oct-99
CARROLL	R L THORNTON	IH 30 @ CARROLL	IH 30	46K	NO	63	YES	10-Nov-99
CENTRAL	R L THORNTON	IH 30 @ CENTRAL	IH 30	45R	NO	50	YES	02-Nov-99
DOLPHIN	R L THORNTON	IH 30 @ DOLPHIN	IH 30	47E	NO	72	YES	01-Mar-2000
EAST GRAND	R L THORNTON	IH 30 @ EAST GRAND	IH 30	46H	NO	58	YES	01-Mar-2000
JIM MILLER	R L THORNTON	IH 30 @ JIM MILLER	IH 30	48E	NO	66	YES	01-Mar-2000
PEAK	R L THORNTON	IH 30 @ PEAK	IH 30	46K	NO	54	YES	03-Mar-2000
IH 30	WESTMORELAND	IH 30 @ WESTMORELAND	IH 30	43T	NO	65	YES	20-Jan-2000
BRYAN	CENTRAL NBSR	IH 345 NBSR @ BRYAN	US 75	45L	NO	47	YES	02-Nov-99
CENTRAL	ROSS NBSR	IH 345 NBSR @ ROSS	US 75	45G	NO	41	YES	02-Nov-99
CENTRAL	LIVE OAK	IH 345 SB OFF RMP @ LIVE OAK	IH 345	45L	NO	46	YES	20-Oct-99
BRYAN	CENTRAL SBSR	IH 345 SBSR @ BRYAN	US 75	45L	NO	35	YES	02-Nov-99
CENTRAL	ROSS SBSR	IH 345 SBSR @ ROSS	US 75	45G	NO	33	YES	02-Nov-99

1. Unmetered signalized intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	LEN	ST_RD	CHECK_DATE
KIEST	R L THORNTON	IH 35E EBSR @ KIEST	IH 35E	54Y	NO	58	YES	02-Nov-99
HARRY HINES	RACEWAY	IH 35E EXIT RMP @ HARRY HINES	IH 35E	33F	NO	24	YES	02-Nov-99
LEDBETTER	R L THORNTON NBSR	IH 35E NBSR @ LEDBETTER	IH 35E	64M	NO	24	YES	19-Nov-99
NORTHWEST HWY	STEMMONS FWY NBSR	IH 35E NBSR @ LOOP 12	IH 35E	22Z	NO	17	YES	24-Feb-2000
REUNION	STEMMONS FWY	IH 35E NBSR @ REUNION	IH 35E	45N	NO	33	YES	03-Nov-99
CADIZ	INDUSTRIAL	IH 35E OB RMP @ SH 342	IH 35E	45T	NO	38	YES	01-Mar-2000
INDUSTRIAL	R L THORNTON	IH 35E RAMP @ SH 342	IH 35E	45T	NO	33	YES	01-Mar-2000
R L THORNTON	YARMOUTH(Zang)	IH 35E SB RMP @ ZANG	IH 35E	54M	NO	36	YES	28-Dec-99
COMMONWEALTH	STEMMONS FWY	IH 35E SBSR @ COMMONWEALTH	IH 35E	33Z	NO	41	YES	23-Feb-2000
LEDBETTER	R L THORNTON SBSR	IH 35E SBSR @ LEDBETTER	IH 35E	64M	NO	19	YES	19-Nov-99
NORTHWEST HWY	STEMMONS FWY SBSR	IH 35E SBSR @ LOOP 12	IH 35E	22Z	NO	17	YES	24-Feb-2000
CAMP WISDOM	R L THORNTON	IH 35E @ CAMP WISDOM	IH 35E	64V	NO	64	YES	24-Nov-99
CONTINENTAL	STEMMONS FWY	IH 35E @ CONTINENTAL	IH 35E	45J	NO	62	YES	23-Feb-2000
EIGHTH	R L THORNTON	IH 35E @ EIGHTH	IH 35E	55A	NO	62	YES	11-Jan-2000
EMPIRE CENTRAL	STEMMONS FWY	IH 35E @ EMPIRE CENTRAL	IH 35E	33P	NO	38	YES	01-Mar-2000
ILLINOIS	R L THORNTON	IH 35E @ ILLINOIS	IH 35E	54U	NO	87	YES	29-Oct-99
MARKET CNTR BLVD	STEMMONS FWY	IH 35E @ MARKET CENTER	IH 35E	44C	NO	96	YES	22-Feb-2000
MOCKINGBIRD	STEMMONS FWY	IH 35E @ MOCKINGBIRD	IH 35E	33U	NO	52	YES	23-Feb-2000
MOTOR	STEMMONS FWY	IH 35E @ MOTOR	IH 35E	34X	NO	77	YES	23-Feb-2000
NORTHWEST HWY	STEMMONS FWY NBOFRMP	IH 35E @ NB OF RMP @ LOOP 12	IH 35E	22Z	NO	18	YES	24-Feb-2000
OAK LAWN	STEMMONS FWY	IH 35E @ OAK LAWN	IH 35E	44D	NO	74	YES	23-Feb-2000
REGAL ROW	STEMMONS FWY	IH 35E @ REGAL ROW	IH 35E	33K	NO	41	YES	01-Mar-2000
EMERALD	ROYAL	IH 35E @ ROYAL	IH 35E	22H	NO	111	YES	01-Mar-2000
STEMMONS FWY	WALNUT HILL	IH 35E @ WALNUT HILL	IH 35E	22R	NO	122	YES	01-Mar-2000
STEMMONS FWY	WYCLIFF	IH 35E @ WYCLIFF	IH 35E	44C	NO	91	YES	23-Feb-2000
JULIUS SCHEPPS	LAMAR	IH 45 @ LAMAR	IH 45	56B	NO	52	YES	12-Nov-99
JULIUS SCHEPPS	PENNSYLVANIA	IH 45 @ PENNSYLVANIA	IH 45	46W	NO	36	YES	12-Nov-99
ANAHEIM	FOREST LN	IH 635 EB RAMP @ FOREST	IH 635	22D	NO	39	YES	27-Oct-99
DENTON	FOREST	IH 635 EBSR @ FOREST LN	IH 635	22D	NO	46	YES	
GREENVILLE	LBJ FWY	IH 635 @ GREENVILLE	IH 635	16Z	NO	49	YES	09-Nov-99

1. Unmetered signalized intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	LEN	ST_RD	CHECK DATE
LBJ FRWY	T I BLVD	IH 635 EBSR @ T I BLVD	IH 635	16V	NO	24	YES	29-Feb-2000
DENTON	L B J FRWY	IH 635 WBSR @ DENTON	IH 635	22D	NO	38	YES	27-Oct-99
HARRY HINES	LBJ FWY WBSR	IH 635 WBSR @ HARRY HINES(Forest Ln)	IH 635	22D	NO	26	YES	28-Dec-99
COIT	LBJ	IH 635 @ COIT RD	IH 635	16T	NO	70	YES	06-Nov-99
INWOOD	LBJ FWY	IH 635 @ DNP / INWOOD	IH 635	14R	NO	72	YES	29-Feb-2000
FOREST LN	LBJ FRWY	IH 635 @ FOREST LN	IH 635	17X	NO	44	YES	27-Dec-99
HILLCREST	L B J FRWY	IH 635 @ HILLCREST	IH 635	15V	NO	88	YES	29-Feb-2000
JOSEY	L B J FWY	IH 635 @ JOSEY	IH 635	13V	NO	127	YES	01-Mar-2000
LBJ FRWY	MIDWAY	IH 635 @ MIDWAY	IH 635	14T	NO	90	YES	03-Mar-2000
LBJ FRWY	MONTFORT	IH 635 @ MONTFORT	IH 635	15N	NO	82	YES	29-Feb-2000
CHURCH	LBJ FWY	IH 635 @ PLANO	IH 635	28J	NO	86	YES	25-Feb-2000
LBJ FRWY	PRESTON	IH 635 @ SH 289	IH 635	15T	NO	86	YES	29-Feb-2000
LBJ FRWY	SKILLMAN	IH 635 @ SKILLMAN	IH 635	27G	NO	49	YES	09-Nov-99
LBJ FRWY	TI BRIDGE EAST	IH 635 @ T I EAST BRIDGE	IH 635	16U	NO	66	YES	29-Feb-2000
LBJ FRWY	TI BRIDGE WEST	IH 635 @ T I WEST BRIDGE	IH 635	16U	NO	24	YES	29-Feb-2000
LBJ FRWY	WEBB CHAPEL	IH 635 @ WEBB CHAPEL	IH 635	13X	NO	70	YES	07-Oct-99
LBJ FRWY	WELCH	IH 635 @ WELCH	IH 635	14Q	NO	78	YES	06-Oct-99
INWOOD	STEMMONS FWY	IN 35E @ INWOOD	IH 35E	34W	NO	78	YES	18-Feb-2000
DUNCANVILLE	WALTON WALKER	LOOP 12 @ DUNCANVILLE	LOOP 12	52Y	NO	76	YES	11-Jan-2000
HARRY HINES	NORTHWEST	LOOP 12 @ HARRY HINES	LOOP 12	23X	NO	39	YES	17-Nov-99
JEFFERSON	WALTON WALKER	LOOP 12 @ JEFFERSON	LOOP 12	52F	NO	58	YES	03-Nov-99
KIEST	WALTON WALKER	LOOP 12 @ KIEST	LOOP 12	52Y	NO	35	YES	04-Nov-99
DAVIS	WALTON WALKER	LOOP 12 @ SH 180	LOOP 12	52A	NO	76	YES	11-Jan-2000
SINGLETON	WALTON WALKER	LOOP 12 @ SINGLETON	LOOP 12	42P	NO	82	YES	01-Mar-2000
NORTHWEST HWY	WALTON WALKER	LOOP 12 @ SPUR 348	LOOP 12	22Y	NO	73	YES	24-Feb-2000
CARPENTER FWY	REGAL ROW	SH 183 @ REGAL ROW	SH 183	33N	NO	90	YES	24-Nov-99
AKARD	WOODALL RODGERS WB	SPUR 366 EB @ AKARD	SPUR 366	45K	NO	35	YES	08-Feb-2000

60
27
87

1. Unmetered signalized intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	LEN	ST_RD	CHECK_DATE
HARWOOD	WOODALL RODGERS EBSR	SPUR 366 EBSR @ HARWOOD	SPUR 366	45K	NO	30	YES	08-Nov-99
OLIVE	WOODALL RODGERS EBSR	SPUR 366 EBSR @ OLIVE	SPUR 366	45K	NO	30	YES	08-Nov-99
PEARL ST	WOODALL RODGERS EBSR	SPUR 366 EBSR @ PEARL	SPUR 366	45F	NO	41	YES	08-Nov-99
ST PAUL	WOODALL RODGERS EBSR	SPUR 366 EBSR @ ST PAUL	SPUR 366	45K	NO	34	YES	08-Nov-99
ST PAUL	WOODALL RODGERS EBSR	SPUR 366 EBSR @ ST PAUL	SPUR 366	45K	NO	34	YES	08-Nov-99
AKARD	WOODALL RODGERS EB	SPUR 366 WB @ AKARD	SPUR 366	45K	NO	35	YES	08-Nov-99
HARWOOD	WOODALL RODGERS WBSR	SPUR 366 WBSR @ HARWOOD	SPUR 366	45K	NO	30	YES	08-Nov-99
OLIVE	WOODALL RODGERS WBSR	SPUR 366 WBSR @ OLIVE	SPUR 366	45K	NO	30	YES	08-Nov-99
PEARL ST	WOODALL RODGERS WBSR	SPUR 366 WBSR @ PEARL	SPUR 366	45F	NO	41	YES	08-Nov-99
ST PAUL	WOODALL RODGERS WBSR	SPUR 366 WBSR @ ST PAUL	SPUR 366	45K	NO	24	YES	08-Nov-99
FIELD	WOODALL RODGERS	SPUR 366 @ FIELD	SPUR 366	45K	NO	97	YES	28-Oct-99
INDUSTRIAL	WOODALL RODERS	SPUR 366 @ INDUSTRIAL	SPUR 366	45J	NO	69	YES	01-Mar-2000
ROUTH	WOODALL RODGERS	SPUR 366 @ ROUTH	SPUR 366	45G	NO	76	YES	08-Nov-99
HATCHER	S M WRIGHT	US 175 @ HATCHER	US 175	56C	NO	74	YES	08-Oct-99
MARTIN LUTHER KING	S M WRIGHT	US 175 @ MARTIN LUTHER KING	US 175	46W	NO	49	YES	12-Nov-99
C F HAWN	ST AUGUSTINE	US 175 @ ST AUGUSTINE	US 175	69B	NO	55	YES	01-Mar-2000
CAMP WISDOM	MARVIN D LOVE	US 67 @ CAMP WISDOM	US 67	63U	NO	69	YES	27-Dec-99
MARVIN D LOVE	POLK	US 67 @ POLK	US 67	64B	NO	71	YES	27-Dec-99
MARVIN D LOVE	REDBIRD	US 67 @ REDBIRD	US 67	63R	NO	58	YES	28-Dec-99
MARVIN D LOVE	WHEATLAND	US 67 @ WHEATLAND	US 67	73A	NO	86	YES	01-Mar-2000
CENTRAL	FOREST LN	US 75 @ FOREST LN	US 75	16X	NO	119	YES	04-Feb-2000
CENTRAL	MEADOW	US 75 @ MEADOW	US 75	26K	NO	106	YES	29-Feb-2000
CENTRAL	MIDPARK	US 75 @ MIDPARK	US 75	16M	NO	82	YES	29-Feb-2000
CENTRAL	ROYAL	US 75 @ ROYAL	US 75	26F	NO	114	YES	29-Feb-2000

TOTAL UNMETERED INTERSECTIONS 111

EXHIBIT 1

2. Metered intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	METER #	ENS	ST_RD	CHECK_DATE
BONNIE VIEW	IH 20	IH 20 @ BONNIE VIEW	IH 20	66Z	YES	26 850091	96	YES	01-Oct-99
COCKRELL HILL	IH 30	IH 30 @ COCKRELL HILL	IH 30	42V	YES	11 634 509	100	YES	27-Mar-2001
IH 30	MUNGER	IH 30 @ MUNGER	IH 30	46G	YES	67 065 742	88	YES	01-Mar-2000
IH 30	WINSLOW	IH 30 @ WINSLOW	IH 30	46H	YES	71 338 547	60	YES	01-Mar-2000
BECKLEY	TWELFTH	IH 35E SBSR @ TWELFTH	IH 35E	54H	YES	69 980 769	51	YES	27-Oct-99
ANN ARBOR	R L THORNTON	IH 35E @ ANN ARBOR	IH 35E	64H	YES	26 297 848	82	YES	02-Oct-99
EWING	R L THORNTON	IH 35E @ EWING	IH 35E	55E	YES	29 547 756	70	YES	22-Feb-2000
LAURELAND	R L THORNTON	IH 35E @ LAURELAND	IH 35E	64R	YES	31 086 243	80	YES	19-Nov-99
MARSALIS	R L THORNTON	IH 35E @ MARSALIS	IH 35E	55E	YES	26 437 904	64	YES	29-Dec-99
IH 45	SIMPSON STUART	IH 45 @ SIMPSON STUART	IH 45	66M	YES	29 842 215	94	YES	01-Mar-2000
LBJ FRWY	NOEL	IH 635 WBSR @ NOEL	IH 635	15R	YES	29 576 667	25	YES	29-Feb-2000
ABRAMS	LBJ FWY	IH 635 @ ABRAMS	IH 635	17W	YES	26 335 089	76	YES	03-Feb-2000
LBJ FRWY	ROYAL LN (Miller Rd)	IH 635 @ ROYAL LN	US 75						
LBJ FRWY	CENTRAL EXP	IH 635 @ US 75 (EB/WB)	IH 635						
KEENELAND	WALTON WALKER	LOOP 12 @ KEENELAND	LOOP 12	52J	YES	29 547 642	74	YES	11-Jan-2000
CARPENTER FWY	MOCKINGBIRD	SH 183 @ MOCKINGBIRD	SH 183	33U	YES	029 925 718	86	YES	24-Nov-99
COIT	SH 190	SH 190 @ COIT RD	SH 190	06F	YES	67 183 056	102	YES	
FRANKFORD	SH 190	SH 190 @ FRANKFORD	SH 190	03H	YES			YES	
MARSH	SH 190	SH 190 @ MARSH	SH 190	03D	YES			YES	
MIDWAY RD	SH 190	SH 190 @ MIDWAY	SH 190	655W	YES	84 042 785	38	YES	13-Jan-2000
ROSEMEADE	SH 190	SH 190 @ ROSEMEADE	SH 190	655W	YES			YES	
BELT LINE	C F HAWN	US 175 @ BELT LINE	US 175	69AR	YES	29 580 291	82	YES	01-Mar-2000
BUCKNER	C F HAWN	US 175 @ BUCKNER	US 175	58U	YES	82 875 185	86	YES	03-Oct-99
C F HAWN	ELAM	US 175 @ ELAM	US 175	58T	YES	62 925 862	79	YES	01-Mar-2000
C F HAWN	JIM MILLER	US 175 @ JIM MILLER	US 175	58N	YES	39 822 976	94	YES	03-Nov-99
PENNSYLVANIA	S M WRIGHT	US 175 @ PENNSYLVANIA	US 175	46W	YES	00 247 70RB	68	YES	12-Nov-99

EXHIBIT 1

2. Metered intersections on State Highways located with the City of Dallas

STREETA	STREETB	ST_LOC	HWY	MAP	METER?	METER #	LENS	ST_RD	CHECK_DATE
KIEST	MARVIN D LOVE	US 67 @ KIEST	US 67	54Y	YES	96 038 367	38	YES	02-Nov-99
LEDBETTER	MARVIN D LOVE	US 67 @ LEDBETTER	US 67	64E	YES	55 70C3 2G19	58	YES	06-Oct-99
CARUTH HAVEN	CENTRAL	US 75 @ CARUTH HAVEN	US 175	26W	YES	90 459 964	103	YES	01-Sep-2000
CENTRAL	CHURCHILL WAY	US 75 @ CHURCHILL WAY	US 75						
CENTRAL	FITZHUGH	US 75 @ FITZHUGH	US 75	35V	YES	56 610 478	69	YES	01-Feb-2000
CENTRAL	HALL	US 75 @ HALL	US 75	45C	YES	02 159 717	100	YES	02-May-2002
CENTRAL	HASKELL	US 75 @ HASKELL	US 75	35Y	YES	97 812 147	108	YES	01-Feb-2000
CENTRAL	HENDERSON/KNOX	US 75 @ HENDERSON	US 75	35V	YES	84 394 582	110	YES	01-Feb-2000
CENTRAL	LBJ FRWY	US 75 @ IH 635 (NB/SB)	IH 635						
CENTRAL	LEMMON	US 75 @ LEMMON	US 75	45C	YES	96 819 065	113	YES	10-Feb-2000
CENTRAL	LOVERS	US 75 @ LOVERS	US 75	36B	YES	68 661 506	102	YES	10-Feb-2000
CENTRAL	McCOMMAS	US 75 @ McCOMMAS	US 75	35R	YES	53 884 943	94	YES	10-Feb-2000
CENTRAL	MOCKINGBIRD	US 75 @ MOCKINGBIRD	US 75	36J	YES	39 016 772	110	YES	29-Feb-2000
CENTRAL	MONTICELLO	US 75 @ MONTICELLO	US 75	35R	YES	39 175 698	100	YES	29-Feb-2000
CENTRAL	NORTHPARK CTR	US 75 @ NORTHPARK BLVD	US 75	26S	YES	94 217 290	103	YES	01-Sep-2000
CENTRAL	NORTHWEST	US 75 @ NORTHWEST	US 75	26W	YES	94 217 290	100	YES	11-Nov-99
CENTRAL	PARK LN	US 75 @ PARK LN	US 75	26T	YES	95 002 575	108	YES	29-Feb-2000
CENTRAL	SOUTHWESTERN	US 75 @ SOUTHWESTERN	US 75	36B	YES	02 290 581	106	YES	29-Feb-2000
CENTRAL	UNIVERSITY	US 75 @ UNIVERSITY	US 75	36E	YES	01 968 927	101	YES	29-Feb-2000
CENTRAL	WALNUT HILL	US 75 @ WALNUT HILL	US 75	29P	YES	02 262 299	136	YES	29-Feb-2000
CENTRAL	YALE	US 75 @ YALE	US 75	36E	YES	56 121 344	94	YES	29-Feb-2000

TOTAL METERED INTERSECTIONS: **47**

EXHIBIT 2

TRAFFIC SIGNAL MAINTENANCE AND OPERATION PROVISIONS

The maintaining and operating city agrees to:

1. Unless specifically noted elsewhere in this agreement, the signal timing and operational phasing shall be the responsibility of the city.

2. Inspect the highway traffic signal system a minimum of once every 12 months and replace burned out lamps or damaged sockets as may be required. Police, citizen or other reports of burned out lamps or other damage, which could jeopardize safety, shall be repaired or replaced as soon as possible after the report, depending on the nature of the report. Otherwise, appropriate steps shall be taken to protect the public. The reflector and lens should be cleaned each time a lamp is replaced. All replacement lamps shall equal the wattage and type of the existing lamp.

3. Keep signal poles, controller pedestals, and foundations in alignment.

4. Keep signal poles and controller cabinets tight on their foundation(s) or pedestal(s).

5. Keep traffic and pedestrian signal heads aligned and properly adjusted. Repair back plates where needed.

6. Check the controllers, conflict monitors, detector units, relays, pedestrian push buttons and detectors, minimum of once every 12 months to ascertain that they are functioning properly and make all necessary repairs and replacements.

7. Keep interior of controller cabinets in a neat and clean condition at all times.

8. Clean reflectors, lenses, and lamps a minimum of once every twelve months.

9. Repaint all corrosive susceptible highway traffic signal components exposed to weather with a non-lead based paint as needed in order to maintain a well kept appearance in the opinion of the Texas Department of Transportation's representative. Plastic signal heads and galvanized and aluminum components are excluded.

10. Group relamp incandescent lamps of all highway traffic signal heads at the expiration of the average rated lamp life or replace the lamps on a burn out basis.

11. Repair or replace any and all equipment that malfunctions or is damaged.

12. Provide alternate traffic control during a period of failure or when the controller must be repaired. This may be accomplished through installation of a spare controller, placing the intersection on flash, manually operating the controller, or manually directing traffic through the use of proper authorities. In addition, barricades and warning signs shall be provided in accordance with the requirements of the latest edition of the Texas Manual on Uniform Traffic Control Devices.

13. Provide maintenance personnel trained in the maintenance of traffic signal equipment who will be available to respond to emergency calls from authorized parties 24 hours a day, including Saturdays, Sundays, and Holidays.

14. Provide the State and local law enforcement agencies the location and respective names and telephone numbers of individuals responsible for emergency maintenance.

15. Document routine observations during the year by a trained City personnel of the traffic operation at each traffic signal during various times of the day to assure fair distribution of time for all traffic movements (phases) during varying traffic conditions.

16. Check cabinet filter a minimum of once every six months and clean if necessary. Cabinet filter shall be replaced every two years.

17. Document all checks and corrective actions in a separate log book for each intersection.

18. In metropolitan cities where Intelligent Transportation Systems and/or incident management systems are being implemented the signal timing will be the responsibility of the city in cooperation with the Texas Department of Transportation.

    Traffic accidents, inclement weather, special events, maintenance and construction activities are a few of the causes of nonrecurrent congestion. Nonrecurrent congestion often changes the normal traffic demand patterns. Effective and efficient movement of traffic through the transportation network during periods of nonrecurrent congestion must be considered in the design and operation of all traffic management systems, including traffic signal systems. Priority should be given to freeway or expressway frontage roads when nonrecurrent congestion occurs on freeway or expressway main lanes.

19. Power cost shall be billed directly to the State.

COUNCIL CHAMBER

022931

October 9, 2002

WHEREAS, the Texas Department of Transportation, operating under Commission Minute Order 70179 dated July 31, 1975, would provide funding for new traffic signal installations and equipment upgrades on designated highway routings in cities over 50,000 population, but not for operation and maintenance expense which has been borne by these cities; and,

WHEREAS, this policy was amended in June 1987, to provide for the department to expand the previous policy and by means of agreement between the department and the particular cities which population over 50,000, fund the maintenance and operation of only the signals on the freeway system within those jurisdictions; and,

WHEREAS, the City of Dallas is in agreement with this proposed course of action.

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

Section 1. That the City Manager is hereby authorized to amend the Interlocal Agreement with the Texas Department of Transportation, whereby they will reimburse the agreed upon maintenance and operation cost for the number of approved traffic signals on the freeway system within the Dallas city limits.

Section 2. That the City Manager is hereby authorized to increase the appropriations in Fund 0669, Agency PBW, Org. 6690, Obj. 4820, not to exceed the amount of $515,900.

Section 3. That the City Controller is hereby authorized to disburse funds in accordance with the terms and conditions of the agreement from Fund 0001, Agency PBW, Org. 3053, Obj. 2820 for maintenance of traffic signals on the freeway system within the City of Dallas, in an amount not to exceed $515,900.

Section 4. That the City Controller is hereby authorized to deposit all reimbursements from the Texas Department of Transportation in Fund 0669, Agency PBW, Org. 6690, Revenue Source 6508.

Section 5. That the City Controller is hereby authorized to reimburse Fund 0001, Agency PBW, Org. 3053, Obj. 5331, in an amount not to exceed $515,900, from Fund 0669, Agency PBW, Org. 6690, Obj. 4820.

APPROVED _____ HEAD OF DEPARTMENT

APPROVED _____ CITY CONTROLLER

APPROVED _____ CITY MANAGER

COUNCIL CHAMBER

022931

October 9, 2002

Section 6. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.

Distribution: Public Works and Transportation, Sandra Williams, OCMC, Room 101
Public Works and Transportation, Hazel Baker, City Hall, Room L1BN
City Attorney
Office of Financial Services, Regina H. Givens, 4BN
Office of Financial Services

APPROVED BY
CITY COUNCIL

OCT - 9 2002

City Secretary

APPROVED _____ APPROVED _____ APPROVED _____
HEAD OF DEPARTMENT CITY CONTROLLER CITY MANAGER

Contract No. 182XXM5015

AGREEMENT FOR THE INSTALLATION AND REIMBURSEMENT FOR THE OPERATION AND MAINTENANCE OF TRAFFIC SIGNALS WITHIN A MUNICIPALITY

STATE OF TEXAS §

COUNTY OF TRAVIS §

This AGREEMENT made by and through the State of Texas acting by and through the Texas Department of Transportation, hereinafter called the "State" and the City of FARMERS BRANCH, hereinafter called the "City," acting by and through its duly authorized officers, as evidenced by Resolution/Ordinance No. 92-042, executed on March 9, 1992, hereinafter acknowledged by reference.

W I T N E S S E T H

WHEREAS, by virtue of a Municipal Maintenance Agreement entered into by the City and the State on the 17TH day of JULY, 1978, the State has been authorized to maintain certain highway routes within the City; and

WHEREAS, from time to time the City requests the State to install traffic signals on certain highways within the City; and

WHEREAS, in accordance with Texas Administrative Code: Title 43 Texas Administrative Code Section 25.5, on the 27th day of May, 1987, the State Highway and Public Transportation Commission now the Texas Transportation Commission passed Commission Minute Order No. 85777, authorizing the State to install, operate and maintain traffic signals on: (a) highway routes not designated as full control of access inside the corporate limits of cities, having a population less than 50,000

(latest Federal Census); and (b) highways designated as full control of access in all cities; and

WHEREAS, the City has a population of ~~(over~~/less) than 50,000 population according to the latest Federal Census; and

WHEREAS, the City requests the State to assume the installation, operation and maintenance responsibilities of the signalized intersections as shown in EXHIBIT 1, attached hereto and made a part of this Agreement; and

WHEREAS, the City agrees to maintain and operate the signalized intersections with the State reimbursing the City for all maintenance and operations costs at a flat rate per location as shown on EXHIBIT 3.

NOW, therefore, in consideration of the premises and of the mutual covenants and agreements of the parties hereto to be by them respectively kept and performed, as hereinafter set forth, it is agreed as follows:

A G R E E M E N T

Article 1. Contract Period

This Agreement becomes effective when fully executed by the City and the State and shall remain in force for a period of one year from the date of final execution by the State and shall be automatically renewed annually for a one year period, unless modified by mutual agreement of both parties, or terminated as hereinafter provided.

Article 2. Construction Responsibilities

A. The State shall prepare or cause to be prepared the plans and specifications, advertise for bids, let the construction contract, or otherwise provide for the construction of new traffic signals and/or reconstruction of existing traffic signals (including, at the State's

option, any special auxiliary equipment, interconnect and/or communication material and equipment), and will supervise construction, reconstruction or betterment work as required by said plans and specifications. As a project is developed to construction stage, either as a unit or in increments, the State will submit plans and specifications of the proposed work to the City and will secure the City's consent to construct the traffic signal prior to awarding the contract; said City consent to be signified by the signatures of duly authorized City officers in the spaces provided on the title sheet of plans containing the following notation:

"Attachment No. _____ to special Agreement for construction, maintenance and operation of traffic signals within municipality, dated July 17, 1978 ."

The City-State construction, maintenance and operation responsibilities shall be as heretofore agreed to, accepted, and specified in the Agreement to which these plans are made a part."

B. All costs of construction and/or reconstruction of new and existing traffic signals will be borne by the State, and the traffic signal system will remain the property of the State.

Article 3. Maintenance, Operation, and Power Responsibilities

A. The State shall be responsible for all electrical power costs for the operation of the traffic signals covered by this Agreement and shown on EXHIBIT 1. Power costs shall be billed as specified in EXHIBIT 2, "Traffic Signal Maintenance and Operations Provisions," attached hereto and made a part of this Agreement.

B. The City will provide a trained staff to maintain and operate the traffic signals shown on EXHIBIT 1, and the State will reimburse the

City at the flat rate shown in EXHIBIT 3 for parts and labor. All repairs shall be prioritized based on public safety and made as soon as possible.

C. The City shall maintain and operate the traffic signals in accordance with the minimum requirements specified in EXHIBIT 2.

D. The City shall maintain at least one log of all emergency calls and all routine maintenance.

E. Routine maintenance will be performed by the city as specified in EXHIBIT 2.

Article 4. Compensation

A. The maximum amount payable under this Agreement is $7,824.00 per year.

B. Calculations for the above lump sum amount shall be shown in EXHIBIT 3, attached hereto and made a part of this Agreement for maintaining and operating the traffic signal installations covered under this Agreement.

C. The addition or deletion of traffic signals shall be made by supplemental agreement.

Article 5. Payment

A. The State agrees to reimburse the City at the flat rate shown in EXHIBIT 3 for maintenance and operation costs for the traffic signals described in EXHIBIT 1. The City shall submit to the State Form 132, "Billing Statement," or an invoice statement acceptable to the State on a (~~monthly~~/quarterly/~~annual basis~~). An original Form 132 or acceptable invoice and four copies shall be submitted to the following address:

TEXAS DEPARTMENT OF TRANSPORTATION
P.O. BOX 3067
DALLAS, TEXAS 75221-3067

B. The City shall maintain a system of records necessary to support and establish the eligibility of all claims for payment under the terms of this Agreement. These records may be reviewed at any time to substantiate the payment by the State and/or determine the need for an adjustment in the amount paid by the State.

C. The State shall make payment to the City within 30 days from receipt of the City's request for payment, provided that the request is properly prepared.

D. Knockdowns or damage resulting from accident or act of God and requiring emergency replacement of major equipment shall not be included in the (~~monthly~~/ quarterly/~~annual~~) payments. For eligibility of payment for emergency replacement of major equipment, actual cost shall be submitted to the State for review and determination of reimbursement eligibility.

E. Payment for the addition or deletion of a traffic signal installation shall be made by supplemental agreement.

Article 6. Indemnification

To the extent permitted by law, the City shall indemnify and save harmless the State, its agents or employees, from all suits, actions or claims and from all liability and damages for any and all injuries or damages sustained by any person or property in consequence of any neglect in the performance, or failure of performance by the City, its agents, officers and employees, under this Agreement.

Article 7. Termination

A. This Agreement may be terminated by any of the following conditions:

(1) By mutual agreement and consent of both parties.

(2) By the State upon thirty (30) days written notice to the City for failure of the City to provide adequate maintenance and operation services for those traffic signal installations which the City has agreed to maintain and operate.

(3) By the State upon sixty (60) days written notice to the City that the State will assume operation and maintenance at the end of the one (1) year period of this contract.

(4) By the City upon one hundred twenty (120) days written notice to the State.

B. In the event this Agreement is terminated by any of the above conditions, the maintenance and operation of the traffic signal systems shall become the responsibility of the State. Any State owned equipment being held by the City shall be promptly returned within 30 calendar days to the State upon termination of this Agreement.

Article 8. Subletting

The City shall not sublet or transfer any portion of the work under this Agreement unless specifically approved in writing by the State. All subcontracts shall include the provisions required in this contract and shall be approved in writing by the State.

Article 9. Amendments

Changes in the character, costs, provisions in the attached exhibits, responsibilities or obligations authorized herein shall be enacted by written amendment. Any amendment to this Agreement must be executed by both parties.

Article 10. Successors and Assigns

The State and the City bind themselves, successors, assigns and legal representatives to the other party to this Agreement and the successors,

assigns and legal representatives of such other party to all covenants and provisions provided herein. Furthermore, the City shall not assign, sublet or transfer any interests in this Agreement without the written consent of the State.

Article 11. Legal Construction

In case any one or more of the provisions contained in this Agreement shall for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

Article 12. Prior Agreements Superseded

This Agreement constitutes the sole and only agreement of the parties hereto and supersedes any prior understandings or written or oral agreements between the parties respecting the within subject matter.

Article 13. Gratuities

Texas Transportation Commission policy mandates that employees of the Department shall not accept any benefits, gifts or favors from any person doing business or who reasonably speaking may do business with the State under this contract. The only exceptions allowed are ordinary business lunches and items that have received the advanced written approval of the Texas Department of Transportation Executive Director. Any person doing business with or who reasonably speaking do business with the State under this contract may not make any offer of benefits, gifts or favors to Departmental employees, except as mentioned hereabove. Failure on the part of the City to adhere to this policy may result in the termination of this contract.

IN WITNESS WHEREOF, the parties have executed duplicate counterparts to effectuate this Agreement.

The City of: FARMERS BRANCH

By: _____
(Name)

City Manager
(Title)

3-27-92
(Date)

ATTEST:

_____
City Secretary

THE STATE OF TEXAS

Certified as being executed for the purpose and affect of activating and/or carrying out the orders, established policies, or work programs heretofore approved and authorized by the Texas Transportation Commission under the authority of Minute Order 100002.

By: _____
Traffic Operations Engineer

Date: 6-1-92

EXHIBIT 1

Signalized intersections on State Highways located within the City of FARMERS BRANCH.

Location	Type of Signal
1. IH635 @ MARSH LANE	DIAMOND WITH ONE CONTROLLER
2. IH635 @ LUNA ROAD	DIAMOND WITH ONE CONTROLLER
3. IH35E @ VALWOOD PKWY	DIAMOND WITH ONE CONTROLLER
4. IH35E @ VALLEY VIEW LANE	DIAMOND WITH ONE CONTROLLER

EXHIBIT 2

TRAFFIC SIGNAL MAINTENANCE AND OPERATION PROVISIONS

CITY OF FARMERS BRANCH, TEXAS

The maintaining and operating agency agrees to:

1. Perform a semi-annual check of the controllers, conflict monitors, loop amplifiers, relays, and detectors to ascertain that they are functioning properly and make all necessary repairs and replacements.

2. On an annual basis, relamp all signal heads and clean all reflectors and lenses.

3. Ensure that all highway traffic signal components, other than plastic signal heads or galvanized and aluminum components are repainted with a non-lead base paint, a minimum of every four years.

4. Perform an annual preventative maintenance check that includes, but is not limited to:

   A) alignment of signal posts, controller pedestals, and foundations
   B) tension of signal posts, and controller pedestals on their foundations
   C) alignment and tension of signal heads
   D) vacuuming and cleaning of controller cabinets
   E) cleaning or replacing cabinet air filter as required
   F) pullbox inspection
   G) insect control
   H) electrical measurements pertinent to total current drain from electrical service, and current drain of field wiring conductors
   I) visual inspection of electrical service point, and controller cabinet wiring
   J) test of all controller cabinet switches on police and maintenance panels
   K) loop detector operating frequency test

5. Semi-annually, perform routine observations of traffic signal operation during various times of the day to assure fair distribution of time for all traffic movements (phases) during varying traffic conditions.

6. Repair or replace any and all equipment that malfunctions or is damaged.

7. Provide alternate traffic control during a period of failure or when the controller must be repaired. This may be accomplished through installation of a spare controller, placing the intersection on flash, manually operating the controller, manually directing traffic through the use of proper authorities, or placing emergency stop signs. In addition, barricades and warning signs shall be provided in accordance with the requirements of the latest edition of the Texas Manual on Uniform Traffic Control Devices.

8. Employ maintenance personnel trained in the maintenance of traffic signal equipment who will be available to respond to emergency calls from authorized parties 24 hours a day, including Saturdays, Sundays, and holidays.

9. Provide the proper State and local law enforcement authorities with a procedure for communicating emergency calls to the "On Call" traffic signal technician during other than normal work hours. In addition, the names, work locations, and telephone numbers of individuals responsible for emergency maintenance will be provided.

10. Document all checks and corrective actions.

Power costs shall be billed directly to the State.

A:TRAFSIG.O&M

EXHIBIT 3

City of FARMERS BRANCH

Actuated Signals at conventional intersections and at Tee intersections shall be reimbursed at N.A. per intersection per year.

Calculations:

Fixed Time Signals shall be reimbursed at N.A. per intersection per year.

Calculations:

Diamond Interchange Signals with one controller shall be reimbursed at $1,956.00 per intersection per year.to be billed quarterly.

Calculations:

SEMI-ANNUAL INSPECTIONS	= $ 198.00
RELAMPING	= $ 386.00
ANNUAL PREVENTATIVE MAINTENANCE	= $ 207.00
OBSERVATION AND DOCUMENTATION	= $ 108.00
EMERGENCY MAINTENANCE CALLS	= $ 1,057.00
TOTAL	= $ 1,956.00

Diamond Interchange Signals with two or more controllers shall be reimbursed at N.A. per intersection per year.

Calculations:

Sign Mounted Flashers shall be reimbursed at N.A. per unit per year.

Calculations:

Overhead Flashing Beacons shall be reimbursed at N.A. per intersection per year.

Calculations:

CITY OF FARMERS BRANCH

COUNTY OF DALLAS

STATE OF TEXAS

I, Ruth Ann Parish, City Secretary for the City of Farmers Branch, Texas, certify that the attached Resolution No. 92-042, Dated March 9, 1992, is a true and correct copy of the resolution passed by the City Council of the City of Farmers Branch, Texas, and that the original of said resolution is now a filed paper in the office and constitutes part of the records thereof.

Signed this the 26th day of March, 1992.

Ruth Ann Parish
City Secretary
City of Farmers Branch, Texas

FARMERS BRANCH

RESOLUTION NO. 92-042

RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE A SIGNAL REIMBURSEMENT AGREEMENT WITH THE TEXAS DEPARTMENT OF TRANSPORTATION.

WHEREAS, the Texas Department of Transportation has proposed an agreement which provides for State reimbursement to the City of Farmers Branch for the cost of maintaining traffic signals on state highways; and,

WHEREAS, the City of Farmers Branch maintains the traffic signals at IH635 and Marsh Lane, IH635 and Luna Road, IH35E and Valley View Lane, and IH35E and Valwood Parkway; and,

WHEREAS, the agreement will provide reimbursement to the City of $7,824.00 for one year.

NOW THEREFORE BE IT RESOLVED, by the City of Farmers Branch, Texas that:

SECTION 1. The City Manager is hereby authorized to execute on behalf of the City the proposed Signal Reimbursement Agreement with the Texas Department of Transportation.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF FARMERS BRANCH, TEXAS, this the 9th day of March, 1992.

ATTEST:

Ruth Ann Parish, City Secretary

David Blair, Mayor

APPROVED AS TO FORM:

City Attorney

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 05-2A

To Be Provided at a Later Date

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 05-3A

Municipal Maintenance Agreement

Form 1038
(Revised 2/77)

MUNICIPAL MAINTENANCE AGREEMENT

STATE OF TEXAS X

COUNTY OF TRAVIS X

THIS AGREEMENT made this 14th day of December, 19 83, by and between the State of Texas, hereinafter referred to as the "State", party of the first part, and the City of Dallas, Dallas County, Texas (population 904,078, 19 80, Federal Census) acting by and through its duly authorized officers, hereinafter called the "City", party of the second part.

W I T N E S S E T H

WHEREAS, the City has requested the State to assist in the maintenance of State Highway routes within such city; and

WHEREAS, the Engineer-Director, acting for and in behalf of the State Highway and Public Transportation Commission, has made it known to the City that the State will assist the City in the maintenance, control, supervision, and regulation of State Highway routes within such city, conditioned that the City will enter into agreements with the State for the purpose of determining the responsibilities of the parties thereto:

A G R E E M E N T

NOW, THEREFORE, in consideration of the premises and of the mutual convenants and agreements of the parties hereto to be by them respectively kept and performed, it is agreed as follows:

Coverage

1. This agreement is intended to cover and provide for State participation in the maintenance of the following classification of State Highway routes within the City:

1. A. Non-Controlled Access routes or portions thereof which are described and/or graphically shown as "State Maintained" routes in Exhibit "A", which is attached hereto and made a part hereof.

   B. All State Highway routes or portions thereof which have been designated by the State Highway and Public Transportation Commission as Controlled Access Highways and which are described and/or graphically shown in Exhibit "B", which is attached hereto and made a part hereof.

2. The City shall retain full responsibility for the maintenance of those State Highway routes and portions thereof which are listed and/or graphically shown in Exhibit "A" and Exhibit "B" as "City Maintained" routes, except that the State is hereby authorized by the City to erect and maintain normal route markers and directional and destination signs thereon for direction of highway traffic.

3. In the event that the present system of State Highway routes within the City is changed by cancellation, modified routing, new routes, or change in the City's corporate limits, the State shall terminate maintenance and this agreement shall become null and void on that portion of the routes which are no longer routes of a State Highway; and the full effect and all conditions of this agreement shall apply to the changed routes or new routes of the State Highways within the City and shall be classified as "State Maintained" under paragraph 1 above, unless the execution of a new agreement on the changed portion of the routes is requested by either the City of the State.

GENERAL CONDITIONS

1. The City hereby agrees and does hereby authorize the State to maintain the State Highway routes covered by this agreement in the manner set out herein.

2. This agreement shall supplement any special agreements between the State and the City for the maintenance and/or construction of the highways covered herein and this agreement shall supersede any existing Municipal Maintenance Agreements.

3. Traffic regulations including speed limits, will be established and fixed by agreement with the State after traffic and engineering surveys have been conducted.

4. It is mutually agreed that, subject to approval by the State, any street lighting system may be installed by the City provided the City shall pay all cost of installation, maintenance and operation except in those installations specifically covered by separate agreements between the City and State.

5. It is understood and agreed that this agreement is for the purpose of defining the authority and responsibility of both parties for maintenance of highway routes through the City and shall in no way be considered to cover any present or past obligation either real or anticipated concerning such State Highway routes through the City.

6. The City shall prohibit the movement of loads over State maintained streets which exceed the legal limits for either weight, length, height or width, as prescribed by State law for public highways outside corporate limits of cities, except those having proper permits from the State for such movements. The City shall also, by ordinance and enforcement, prescribe and enforce lower weight limits when mutually agreed by the City and the State that such restrictions are needed to avoid damage to the street and/or for traffic safety.

7. The City shall prevent future encroachments within the right of way of the highway routes and assist in removal of any present encroachments when requested by the State except where specifically authorized by separate agreement; and prohibit the planting of trees or shrubbery or the creation or construction of any other obstruction within the right of way without prior agreement with the State.

8. The City agrees that traffic control devices, such as signs, traffic signals and pavement markings, in respect to type of device, points of installation, and necessity will be fixed by agreement with the State after traffic and engineering surveys have been made. The City agrees that it will not install or maintain or permit the installation or maintenance of any type of traffic control device which will affect or influence the utility of the State Highway routes without having obtained in writing the prior approval of the State. Traffic control devices installed prior to the date of this agreement are hereby made subject to the terms of this agreement and the City agrees to the removal of such devices which affect or influence the utility of the State Highway routes unless their continued use is approved in writing by the State. It is understood that future traffic control devices installed as a joint project by the City and State will be the subject of a separate agreement outlining the responsibilities for installation and maintenance.

9. The City agrees to assure the grantee's conformance, for proper construction and maintenance of access driveway facilities, in accordance with "Regulations for Access Driveways to State Highways" adopted by the State Department of Highways and Public Transportation or in accordance with other standards and specifications for the design, construction and maintenance details subject to approval by the State Department of Highways and Public Transportation.

10. It is understood that the use of unused right of way and areas beneath structures will be as determined by a separate agreement.

11. On those State Highway routes and portions thereof which are listed and/or graphically shown on Exhibit "A" and Exhibit "B" as "City Maintained" routes, the City agrees to perform biennial inspections of all bridges and bridge classified culverts not later than July 1 of each even numbered year, and to provide inspection and inventory data to the State; all in accordance with National Bridge Inspection Standards.

NON-CONTROLLED ACCESS HIGHWAYS

State's Responsibilities

1. Maintain the pavement, base and its support and maintain the shoulders on those sections where there is no curb and gutter.

2. Install and maintain normal highway markings necessary for directing highway traffic in a safe and efficient manner, which shall include normal route markers, directional and destination signs, city limit signs, school safety devices including school crosswalks (in cities under 15,000 population only), center line, lane line and no-passing barrier line stripes, and such other pavement markings considered necessary for direction of traffic, except pedestrian crosswalks. Any other traffic striping desired by the City may be placed and maintained by the City subject to the approval of the State.

3. Assist the City in sweeping and otherwise cleaning the pavement, in mowing and cleaning of litter; and in maintenance of roadway ditches, on those sections of State Highway routes where and to the extent that such duties are delineated on Exhibit "A".

4. Assist in snow and ice control as availability of labor and equipment will allow.

City's Responsibilities

1. Prohibit angle parking, except upon written approval by the State after traffic and engineering surveys have been conducted to determine that the roadway is of sufficient width to permit angle parking without interfering with the free movement of traffic.

2. Install and maintain all parking restriction signs, school safety devices including school crosswalks (in cities over 15,000 population only), pedestrian crosswalks, parking stripes and special guide signs when agreed to by the State. Signing and marking of

intersecting city streets to State Highway routes will be the full responsibility of the City.

3. Require installations, repairs, removals or adjustments of publicly or privately owned utilities or services to be performed in accordance with State Department of Highways and Public Transportation specifications and subject to approval of the State.

4. Retain all functions and responsibilities for maintenance, control, supervision, and regulation which are not specifically described as the responsibility of the State. The assistance by the State in maintenance of roadway ditches does not relieve the City of its responsibility for drainage of the highway facility within its corporate limits except where participation by the State other than above is specifically covered in a separate agreement between the City and the State.

CONTROLLED ACCESS HIGHWAYS

The following specific conditions and responsibilities shall be applicable to controlled access highways in addition to the "General Conditions" contained herein above. Routes of controlled access highways or portions thereof covered by this section are those listed and/or graphically shown in Exhibit "B".

State's Duties

1. Maintain the traveled surface of the through lanes, ramps and frontage roads and those things beneath such traveled surface necessary for the proper support of same under vehicular loads encountered.

2. Mow and clean up litter within the outermost curbs of the frontage roads or the entire right of way width where no frontage roads exist, and assist in performing these operations between the right of way line and the outermost curb or crown line of the frontage roads in undeveloped areas.

3. Sweep and otherwise clean the through lanes, ramps, separation structures or roadways, and frontage roads.

4. Remove snow and control ice on the through lanes and ramps and assist in these operations as the availability of equipment and labor will allow on the frontage roads and separation structures or roadways.

5. Erect and maintain all normal markings and signs necessary for the proper use of the facility and direction of traffic thereon.

6. Maintain all drainage facilities within the limits of the right of way.

City's Duties

1. Restrict parking on frontage roads to parallel parking on one side only and prohibit all parking on main lanes and ramps and at such other places where such restriction is necessary for satisfactory operation of traffic, by passing and enforcing ordinances and taking other appropriate action in addition to full compliance with current laws on parking.

2. When considered necessary and desirable by both the City and the State, the City shall pass and enforce an ordinance providing for one-way traffic on the frontage roads except as may be otherwise agreed to by separate agreements with the State.

3. Secure or cause to be secured the approval of the State before any utility installation, repair, removal or adjustment is undertaken, crossing over or under the highway facility or entering the right of way. In the event of an emergency, it being evident that immediate action is necessary for protection of the public and to minimize property damage and loss of investment, the City, without the necessity of approval by the State, may at its own responsibility and risk make necessary emergency utility repairs, notifying the State of this action as soon as practicable.

4. Pass necessary ordinances and retain its responsibility for enforcing the control of access to the Freeway facility.

Termination

1. It is understood and agreed between the parties hereto that all obligation of the State created herein to maintain the State Highway routes covered by this agreement shall terminate if and when they are no longer routes of State Highways; and further, that should either party fail to properly fulfill its obligations as herein outlined, the other party may terminate this agreement upon thirty days written notice.

Said State assumption of maintenance shall be effective the date of execution of this agreement by the State Department of Highways and Public Transportation.

IN WITNESS WHEREOF, the parties have hereunto affixed their signatures, the City of Dallas on the 14th day of December, 19 83, and the State Department of Highways and Public Transportation on the 31st day of FEBRUARY, 1984.

ATTEST:

/s/ BARRY J. DAVIS
for City Secretary

CITY OF DALLAS

/s/ BY RICHARD O. KNIGHT
ASSISTANT City Mgr.
Mayor
(Title of Signing Official)

APPROVAL RECOMMENDED:

/s/ Robert L. Yielding
District Engineer, District 18

/s/ EDUARDO A. DAVIS
Engineer of Maintenance

STATE OF TEXAS

Certified as being executed for the purpose and effect of activating and/or carrying out the orders, established policies, or work programs heretofore approved and authorized by the State Department of Highways and Public Transportation.

/s/ BY HENRY A. THOMASON
Chief Engineer of Maintenance Operations

Note: To be executed in triplicate and supported by Municipal Maintenance Ordinance and Certificate of City Secretary.

CITY OF DALLAS
CONTROLLED ACCESS HIGHWAYS
STATE MAINTAINED

S.H. 183:
94-3 (.980 Mi) — From the West City Limits (Trinity River) to the Junction of IH 35E

I.H. 30:
1068-4 (6.793 Mi)*
9-11 (8.730 Mi)
15.523
*Spur 274 (Frontage Rds & Ramps from W. of Sylvan to Beckley belong to IH 30-See M.O. 60371 - 2-16-68

From the West City Limits to the intersection of IH 35E, over IH 35E Highway Route for a short distance, to the East City Limits

I.H. 35E:
442-2 (10.018 Mi)
196-3 (12.911 Mi)
22.929

From South City Limits to North City Limits

I.H. 635:
2374-7 (.133 Mi)
2374-1 (14.682 Mi)
2374-2 (0)
14.815

From West City Limits to Dallas-Garland City Limits near Jupiter Rd.

I.H. 20:
2374-3 (7.872 Mi)
2374-4 (7.166 Mi)
15.038

From IH 35E to Duncanville East City Limits

From Duncanville West City Limits to Dallas-Grand Prairie City Limits

Loop 12:
581-2 (3.346 Mi) — From Illinois Ave. to Dallas North City Limits near West Fork of Trinity River

Loop 12:
581-2 (2.115 Mi)
5.461

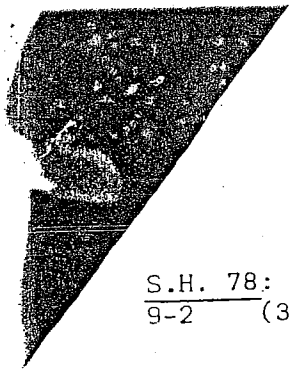
From Elm Fork Trinity River to intersection of IH 35E

Spur 408:
3000-1 (4.270 Mi) — From Junction of IH 20 to Junction Loop 12

STATE MOWING STOPS HERE

CITY OF DALLAS
CONTROLLED ACCESS HIGHWAYS
STATE MAINTAINED

U.S. 175:	From U.S. 75 southeast to Balch Springs West City Limits
197-2 (7.678 Mi)	
197-2 (2.708 Mi)	From Balch Springs East City Limits to Dallas-Seagoville City Limits
10.386	
U.S. 75:	From Live Oak Street to North City Limits at Floyd Rd.
47-7 (11.159 Mi)	
U.S. 75:	From Grand Ave. to River Oaks St.
92-1 (2.745 Mi)	
92-2 (2.744 Mi)	
5.489	
I.H. 345:	From near Louise Street to Ross Avenue
92-14 (1.399 Mi)	
U.S. 67:	From South of Duncanville-Wheatland Rd. to Junction of IH 35E
261-3 (5.355 Mi)	
I.H. 45:	From South City Limits to Junction IH 345
92-14 (8.727 Mi)	
Spur 366:	From IH 35E to U.S. 75
196-7 (1.522 Mi)	



CITY OF DALLAS
NON CONTROLLED ACCESS HIGHWAYS
STATE MAINTAINED

S.H. 78:
9-2 (3.409 Mi)

From North City Limits (near IH 635) over Garland Rd. to intersection of Loop 12 (Buckner Blvd.) (Base, surface, and bridge classification structures only).

S.H. 78:
9-2 (1.569 Mi)
(See 9-2-23 & 24 Sheet 6)

From intersection of Gaston Avenue over E. Grand Avenue to intersection of Winslow Avenue (E. line of Beacon Street) (Southbound Traffic-Northbound Traffic routes through Tenison Park.) (Base, surface and bridge classification structures only.) Includes a short section of frontage roads which were originally old E. Grand and City Streets.

Spur 244:
353-5 (2.914 Mi)

From the Junction of Loop 12 near the North end of White Rock Lake to the Junction of S.H. 78. (Base, surface, and bridge classification structures only).

S.H. 289:
91-6 (5.917 Mi)
Under constr. now

From the Collin-Dallas County Line to Elderwood St. (Base, surface, and bridge classification structures only).

U.S. 75:
92-2 (2.583 Mi)

From River Oaks to Southeast City Limits. (Base, surface, assist in mowing, cleaning litter, and in maintenance of roadway ditches).

S.H. 342:
48-1 (3.249 Mi)

From Loop 12 over Lancaster Road to South City Limits (Base, surface, and bridge classification structures only).

Spur 303:
2208-2 (2.877 Mi)

From Florina Drive to Loop 12. (Base, surface, and bridge classification structures only).

F.M. 1382:
1047-3 (3.976 Mi)

From Grand Prairie-Dallas City Limits North of Fish Creek to Cedar Hill City Limits, which includes only those sections of F.M. 1382 within the City Limits. (Base, surface, assist in mowing, cleaning litter, and in maintenance of roadway ditches).

Spur 482:
94-3 (2.211 Mi)
See Loop 12 & Spur 354 Plans 353-5-52

From Dallas City Limits (Elm Fork of Trinity River) to Loop 354.(Base surface, and bridge classification structures only).

CITY OF DALLAS
NON CONTROLLED ACCESS HIGHWAYS
STATE MAINTAINED

F.M. 3193: 2586-2 (.753 Mi)	From Dallas-Collin County Line to North City Limits (Dallas-Plano City Limits). (Base, surface, assist in mowing, clean-litter, and in maintenance of roadway ditches).
Spur 348: 353-4 (1.898 Mi)	From Northwest City Limits (Elm Fork Trinity River) to Junctic Loop 12. (Base, surface, and bridge classification structures only).
S.H. 356: 92-7 (2.568 Mi)	From West City Limits (Elm Fork Trinity River) along Irving Blvd. and Commonwealth Drive to Junction IH 35E. (Base, surface, and bridge classification structures only.)
S.H. 352: 197-1 (1.440 Mi) 430-1 (6.403 Mi)	From Ash Lane along Third Street to intersection of Second Avenue, and from Second Avenue along Scyene Road to East City Limits (Base, surface, and bridge classification structures only).
U.S. 80: 8-8 (.297 Mi) (8-8-41)	From Dallas-Grand Prairie City Limits over W. Davis to a point E. of Merrifield Road. (Base, surface, assist in mowing, cleaning litter, and in maintenance of roadway ditches).
(.824 Mi) (8-8-42)	From a point E. of Merrifield Road to a point E. of Dwight Avenue. (Base, surface, and bridge classification structures only)
(.273 Mi) (8-8-42)	From a point E. of Dwight Avenue to Chalk Hill Road. (Base surface, assist in mowing, cleaning litter, and in maintenance of roadway ditches).
(.248 Mi) (8-8-42)	From Chalk Hill Road to end of curb and gutter section. (Base, surface, and bridge classification structures only)
(.816 Mi) (8-8-42)	From end of curb & gutter section to 1,065.5' W. of Gilpin Street. (Base, surface, assist in mowing, cleaning litter, and in maintenance of roadway ditches).
2.458 Mi	
Loop 12: 353-4 (.559 Mi) 353-5 (5.464 Mi)	From Spur 348 to S.H. 289 (Preston Road). (Base, surface, and bridge classification structures only) NOTE: See attached sketch of Loop 12 & Spur 354 interchange for State and City responsibilities.
(6.931 Mi) 353-5 (25.819 Mi) 581-1 (6.403 Mi) 581-2	From Airline Road, East, South, West, and North to Illinois Avenue. (Base, surface & bridge classification structures only).
45.176 Mi	

CITY OF DALLAS
NON CONTROLLED ACCESS HIGHWAYS
CITY MAINTAINED

S.H. 78:
9-2 (2.111 Mi) — From Loop 12 (Buckner Blvd.) over Garland Road to intersection of Gaston Avenue.

9-2 (.068 Mi)
95-1 (.119 Mi)
2.298 Mi — From intersection of Winslow Avenue (E. Line of Beacon St.) over E. Grand Avenue to Junction of N. Frontage Road of IH 30

U.S. 75:
47-7 (.376 Mi)
92-1 (1.355 Mi)
1.731 Mi — From Live Oak Street to Grand Avenue

S.H. 289:
91-6 (2.383 Mi) — From Elderwood Street to Loop 12
(From North City Limits of University Park, 20' S. of Loop 12, to South City Limits of University Park (South Line of St. Andrews Drive) is totally maintained by the City of University Park - see letter in Agreement File dated 2-16-71.) 4.846 Mi.

91-7 (3.798 Mi) — From South City Limits of Highland Park (South of Wycliff Avenue) ~~over~~ Preston Road, Oak Lawn Avenue, Maple Avenue, and Cedar Spring Road to the intersection of Wichita Street and Harry Hines (Loop 354)

(.175 Mi) — From Junction of Cedar Springs Road and Wichita Street South over Wichita Street to the Junction with Harry Hines Blvd. (Southbound Traffic)

(.140 Mi)
7.058 Mi — From Junction of Cedar Springs Road & Harry Hines Blvd. North over Cedar Springs Road to the Junction with McKinnon Street (Northboun Traffic)

S.H. 342:
48-1 (7.255 Mi) — From Junction of Loop 260 (Commerce Street) near Triple Underpass over Industrial Blvd., Corinth St., and Lancaster Rd. to Loop 12

Loop 260 (U.S. 80 Bus Rte)
12-1 (4.635 Mi)
12-2 (.149 Mi)
4.784 Mi — From Junction of U.S. 80 over Fort Worth Avenue and W. Commerce Street to Houston Street.

U.S. 80:
8-8 (2.086 Mi)
9-1 (1.411 Mi)
9-20 (.933 Mi)
4.430 Mi — From 1,086.5' West of Centerline of Gilpin Street over Davis Street and Eighth Street to intersection of IH 35E

CITY OF DALLAS
NON CONTROLLED ACCESS HIGHWAYS
CITY MAINTAINED

Loop 354:
196-6 (10.636 Mi)
91-7 (.803 Mi)
9-1 (2.366 Mi)
442-1 (2.712 Mi)
16.517 Mi

From North City Limits over Harry Hines Blvd., Cedar Springs Road, Field Street, McKinney Avenue., Lamar Street, Houston Street and Zang Blvd., to Junction IH 35E at Saner (Southbound Traffic)

From Junction IH 35E at Saner over Zang Blvd., Jefferson Street Viaduct, Market Street, Commerce, Lamar, McKinney Avenue, Field Street, Cedar Springs, McKinnon and Harry Hines Blvd. to North City Limit. (Northdound Traffic)

NOTE: See attached sketch of Loop 12 & Spur 354 interchange for State and City Responsibilities

S.H. 352:
197-1 (0.464 Mi)

*From Junction U.S. 67 & U.S. 80 Business Route at Commerce Street and Second Avenue, over Second Avenue to Ash Lane (Southbound Traffic); *From Junction U.S. 67 & U.S. 80 Business Route at Commerce Street and First Street over First Street to Ash Lane (Northbound Traffic)

*Denotes one way traffic.

U.S. 80 & U.S. 67:
Business Route
95-1 (3.660 Mi)

From Houston Street over Commerce Street to Second Avenue, Right on Second Avenue to Canton Street, *Left on Canton Street to Exposition Street*, Right on Exposition Street to Parry Street, *Left on Parry Street to Haskell Street*, Right on Haskell Street to East Grand Avenue, *Left on East Grand Avenue to IH 30 South Frontage Road*. (Eastbound Traffic)

*From IH 30 South Frontage Road over East Grand Avenue to Stonewall Right on Stonewall to Parry Street, *Left on Parry to Commerce Street*, Right on Commerce Street to Exposition Street over Exposition Street to Elm Street to Houston Street. (Westbound Traffic)

*Denotes two way traffic.

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 05-4A

To Be Provided at a Later Date

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 07-1A

ROW Parcels

Parcel #	Owner
	CSJ 0196 03 231 From Spur 482 (Story Lane) to IH-635
3AC	EPT Downreit II, Inc.
4AC	Rosebriar Stemmons 3 LP
5AC	Rosebriar Stemmons LP
6	City of Dallas
7	JWV Associates LTD
8	PHCG Investments
9	Viacom Outdoor Inc
10	VCV LLC ATTN: Gene Chupik
11	VCV LLC ATTN: Gene Chupik
13	Sammons Realty Crop.
14	Shadows Corporation
15	Eastgroup Texas Partners Ltd
16	PACCAR Leasing Corporation
17	East Group Properties Lp
18	Weingarten Realty
19	Lit Industrial Texas Limited Partners
20	Summit Electric Supply Co
21	International Boating Center of Dallas, Ltd. Attention: Mr. Casey Freeman
22	Three Stemmons Land Ltd
23	Two Stemmons Land Ltd PS
24	Sarkis J. Kechejian Trust
25	KP Million
26	COMPOSIT BUILDING, INC., A TEXAS CORPORATION
27	Dutt Hospitality, LLC Attention: Mr. Hemant Patel
28	ACFI Traildust LLC
29	Clay E. Cooley
30	Million dollar Saloon Inc
31	Western Properties Three LLC
32	ACFI OSF LLC ACFI Trail Dust LLC
33	Van Four Ltd
34	Walnut Hill I35 Ent. LLC
35	Wallcon Equities 2 Ltd
36	Paul D. Lewis No. 5 Ltd PS
37	Mohammed Sadiq
39	Texas Utilities Electric Company
40	Texas Utilities Electric Company
41	Stemmons Park Ltd c/o Dentt Properties (Rick Dentt)
42 PT 1	First Industrial LP
43	East Group Properties LP

Parcel #	Owner
	CSJ 0196 03 231 From Spur 482 (Story Lane) to IH-635
44	Quoin
45	F & F Stasuma PS
46	Doris S. James
47	Regal Plastics Supply Co.
48	Heste Trust
49	College Park Joint Venture
50	Dennis Jenkins
51	Larry Williams
52	National Advertising Company
53	Doris S. James
54	J. M. Lamb ENT. INC.
55	Paul & Cheryl Heatherington
56	Heste Trust
57	One Fabens Inc.
58	Khaled Chami, Trustee
59	Nasser Investments Inc.
60	Khaled B. Chami
61	11327 Reeder Road Inc
62	11327 Reeder Road Inc
63	John D. Karotkin
64	Larry Craig Clutter/ Robert Eric Cooper
65	Donna C. McDonald
66	Ellen Gimbel et al
67	Makhani Brothers Investments, Inc. Attention: William Roth
68	Chun Investments, LLC Attention: Dr. Richard B.D. Chun
69	Statewide Stations Inc.
70	Exhaust System Spec.
71	Franchise Realty Interstate Corporation
72	K-Cho Investment Inc.
73AC	Fredrick W Bowman
74AC	CDT Properties Inc
75	US Central Plaza Investment LP
76	Texas Utilities Electric Company
78	T J Marshal LTD
79	Levering Enterprise LP
80	Walnut Hill I35 Ent. LLC
81	Jerry Spencer LP

Parcel #	Owner
	CSJ 2374 01 052 Luna to Webb Chapel Valwood to Royal (IH 635/35) Interchange
2AC	TRANSCONTINENTAL REALTY INVESTORS INC.
3AC	PRINCIPAL LIFE INSURANCE COMPANY
5AC	AMERICAN REALTY TRUST INC
6	AMERICAN REALTY TRUST INC
7AC	PROLOGIS TRUST
8	SECURITY CAPITAL INDUSTRIAL TRUST
9	MULTI-PLATE CIRCUITS INC
10	PROLOGIS TRUST
11	MOON VENTURES LTD
12	MOON ACQUISITIONS LTD
13	BALDWIN-HARRIS COMPANY
14 PT1	2610 FOREST LANE LIMITED PARTNERSHIP
15	M6 REMAINDER II LLC
16AC	YPI MERIDIAN PARTNERS LP
17	PAUL YOUNG ASSOCIATES II LP
18	M-SIX VI BUSINESS TRUST
19	THE ARMY AND AIR FORCE EXCHANGE
20	JOHN ROBERT VRIESENGA
21	VIRGINIA WHITE BOWIE
22	DGSE CORPORATION
23	STONE-LEWIS PROPERTIES
24	PWB INTERESTS LTD
25	ML & NB RAY PARTNERS LTD
26	Pit Pros #1 Inc.
27	MBC PARTNERSHIP
28	ANDRE AND SUSAN MONGEON
29	CSFB 1998-PI 2915 LBJ FREEWAY LIMITED PARTNERSHIP
30	JOSEY VILLAGE LTD
31	C P PLAZA LP
32	ONE GRAYSTONE CENTRE LP
33	ARI-TRIWEST PLAZA
34	CINEMARK PARTNER II LTD
35	MOTIVA ENTERPRISES LLC
36	EMKAT LTD
38	BCK PROPERTIES JOINT VENTURE
39	G H JANGDA
40	11590 EMERALD STREET ASSOCIATES
41	B J LANCASTER
42	R A WISK
43	TXU ELECTRIC DELIVERY COMPANY
44	CLINTON L WATSON
45	TXU ELECTRIC DELIVERY COMPANY
47AC	THE CITY OF FARMERS BRANCH TEXAS
48	MRP/VV, LP

Parcel #	Owner
	CSJ 2374 01 052 Luna to Webb Chapel Valwood to Royal (IH 635/35) Interchange
49	AGF VALLEY VIEW LTD
50	ROY LEE AND RUBY MARCOM
51	TAHHAN VALLEY INVESTMENTS LLC
52	RAY HALLFORD
53C	THE CITY OF FARMERS BRANCH, TEXAS

Parcel #	Owner
	CSJ 2374 01 152 Webb Chapel to DNT
1	S & S Grand, Inc
2	Metrocrest Hospital Authority
3	Global Webb LP
4	Millennium state Bank of Texas
5	Alejo E. Sigala and Maria Solis
6	Gloria Silguero
7AC	Taco Bell of America, Inc.
8	Wendy's International Inc.
8AC	Wendy's International, Inc.
9	CNLRS BEP LP
10	State Street Bank & Trust Co. of Connecticut
11	Prescott Interest Midway Plaza, LTD
12	Farmers Branch/ Midway Partners
13	D & H Freed Real Estate, LTD
14	Dallas Texas Union, LTD
15	Consolidated Freed Properties LTD
16	Recreation Equipment, Inc.
17	Robert & Helen Larner Community Property Revocable Trust
18	Elbert Winn
19	RM Partnership I, LTD
20	W.O. Bankston Nissan, Inc.
21	Katherine Ann Smith
22	Duetsche Bank National Trust Company
23	Gailya J. Johnson
24	W.O. Bankston Paint and Body, Inc.

Parcel #	Owner
	CSJ 2374 01 150 DNT to Hillcrest Rd.
1	Teachers Insurance and annuity

Parcel #	Owner
	CSJ 2374 01 150 DNT to Hillcrest Rd.
2 AC	TR LBJ Campus Partners LP
3 AC	DBSI Republic LLC
4	MEDHI Bolour Trustee ET AL
5	Hollywood Plaza Associates LLC ET AL
6	Montfort Corner LP
7	McDonalds Corporation
8	Triangle Square, LTD.
9	Primary Properties Corporation
10	Preston National Bank
11	Merit 99 Office Portfolio, LP
12	Macerich Valley View, LTD
13	CNL Retirement CRSI Valley View Dallas
14	Betty Everett Family LP
15	Sears Roebuck and Company
16	M L Hart, TR.
17	Dallas Purling 635, LTD.
18	Preston Valley (North) JV
19	HPD North Dallas, LTD.
20	Motiva Enterpriser, LLC.
21	V V S Properties, LTD.
22	Tetco Store LP
23	North Dallas Bank & Trust
24	Carol McCutchin Properties, LTD.
25	Carol McCutchin Properties, LTD.
26	Tuesday Morning, Inc.
27	Dallas/Ft.Worth Financial Corp.
28	Transwestern Concourse Office Park, LP
29	Conni Shults & I.V. Johnson
30	Anna M. Curry
31	Kah Holdings
32	Michael M & Jeanan Griffin
33	King of Glory Lutheran Church
34	CAAWA Investments Properties LLC
35	David Albert & John M. Davies
36	Micheal abtahi
37	Knoche LP
38	Robert A. & Mirna Weathers Lynch
39	BAAR, Inc
40	LBJ / Hillcrest Oaks. LP
41	US State Street Bank and Trust Company
42	John D. Vezina
43	Brinker Int'l Payroll Corp.
44	Sunrise Hillcrest Senior Living LLC
45	David Albert and Ginette M Albert

Parcel #	Owner
	CSJ 2374 01 148 Hillcrest Rd. to Merit Dr.
1	12380 Hillcrest Road Investors LP
2	Muscovy Limited Partnership
3	Watermark Community Church
4	DA Residential Two LP
5	Westdale LJ Partners LTD
6	Houston RE Income Properties XVIII LTD
7	PCRI Property LP
8	Park Central Joint Venture

Parcel #	Owner
	CSJ 2374 01 142 IH 635 at Webb Chapel Rd.
1	Motiva Enterprises
2	Exxon Mobil Foundation
3	Metrocrest Hospital Authority

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

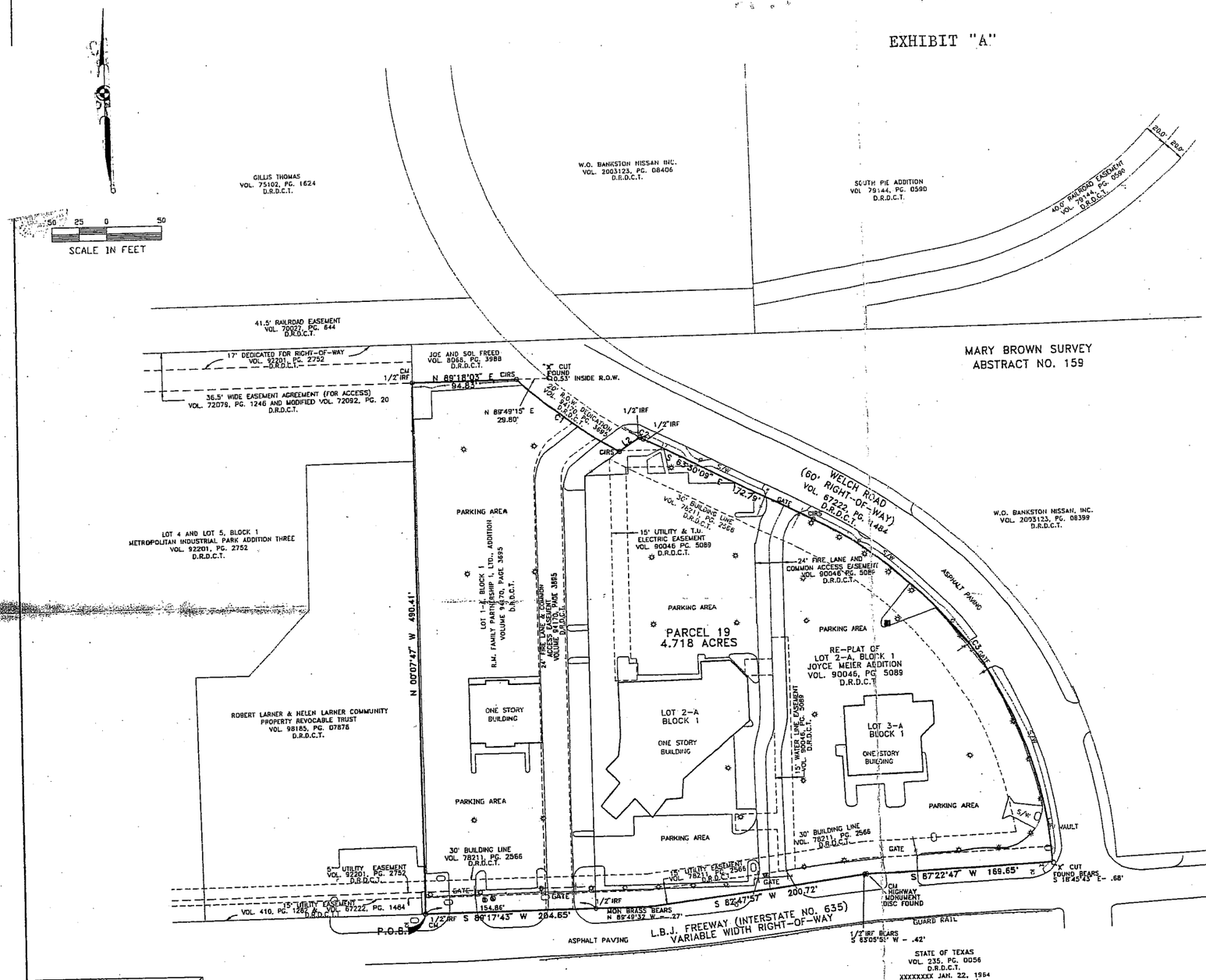
Attachment 07-2A

Property Descriptions and Locations


©NCTCOG
Mcewen
Lyndon B Johnson
635
635
Lyndon B Johnson
Welch
Thunder
http://www.dfwmaps.com
0
194.9ft

Parcel 19 / 2374-01-152
9118-01-038

EXHIBIT "A"



CURVE	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	ARC LENGTH
C1	433.07'	15°19'00"	S 53°50'52" E	115.43'	115.77'
C2	413.07'	00°30'27"	S 63°14'55" E	3.66'	3.66'
C3	378.76'	60°54'56"	S 33°02'41" E	383.99'	402.69'

LINE	BEARING	DISTANCE
L2	N 56°32'48" E	22.82'

LEGEND		
	CM	CONTROL MONUMENT
	IRF	IRON ROD FOUND
	CIRS	5/8" IRON ROD WITH YELLOW PLASTIC CAP STAMPED CARTER BURGESS SET
	PP	POWER POLE
	CO	CLEAN OUT
	WM	WATER METER
	SIGN	SIGN
	MW	MONITOR WELL
	SS MH	SAN SEWER MANHOLE
	EV	ELECTRIC VAULT
	TV	TELEPHONE VAULT

NOTES:

1. ALL CORNERS ARE MONUMENTED WITH A 5/8" IRON ROD CAPPED "CARTER BURGESS", UNLESS OTHERWISE NOTED.
2. THE SUBJECT PROPERTY FALLS WITHIN ZONE "X", DETERMINED TO BE OUTSIDE OF THE 500-YEAR FLOODPLAIN. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP, COMMUNITY MAP NUMBER 48113C0190 J, DATED AUGUST 23, 2001.
3. BASIS OF BEARING IS REFERENCED TO THE TEXAS COORDINATE SYSTEM, NAD 83, NORTH CENTRAL ZONE, BASED ON THE TEXAS DEPARTMENT OF TRANSPORTATION GEODETIC

PARCEL 19
PROPERTY DESCRIPTION

BEING A 4.718 ACRE TRACT OF LAND SITUATED IN THE MARY BROWN SURVEY, ABSTRACT NO. 159, DALLAS COUNTY, TEXAS, AND BEING ALL OF LOT 1-A, BLOCK 1 OF THE R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AS RECORDED IN VOLUME 94170, PAGE 3695, DEED RECORDS DALLAS COUNTY, TEXAS (D.R.D.C.T.) AND ALL OF A RE-PLAT OF LOT 2-A, BLOCK 1 OF THE JOYCE MEIER ADDITION AS RECORDED IN VOLUME 90046, PAGE 5089, D.R.D.C.T. BASIS OF BEARING IS REFERENCED TO THE TEXAS COORDINATE SYSTEM, NAD 83, NORTH CENTRAL ZONE, BASED ON THE TEXAS DEPARTMENT OF TRANSPORTATION GEODETIC MONUMENTS. SAID 4.718 ACRE TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD FOUND FOR THE SOUTHWEST CORNER OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON SOUTHEAST CORNER OF A TRACT OF LAND DESCRIBED IN DEED TO ROBERT LARNER & HELEN LARNER, COMMUNITY PROPERTY REVOCABLE TRUST, RECORDED IN VOLUME 98185, PAGE 7878, D.R.D.C.T., SAID POINT ALSO BEING IN THE NORTH RIGHT-OF-WAY (R.O.W.) LINE OF L.B.J. FREEWAY (INTERSTATE NO. 635 A VARIABLE WIDTH R.O.W.);

THENCE, N 00°07'47" W, ALONG THE WEST LINE OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON EAST LINE OF SAID LARNER COMMUNITY TRACT, A DISTANCE OF 490.41 FEET TO A 1/2" IRON ROD FOUND FOR THE NORTHWEST CORNER OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON SOUTHWEST CORNER OF A TRACT OF LAND DESCRIBED IN DEED TO JOE AND SOL FREED, RECORDED IN VOLUME 88068, PAGE 3988, D.R.D.C.T.;

**THENCE, N 89°18'03" E, ALONG THE NORTH LINE OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON SOUTH LINE OF SAID FREED TRACT, A DISTANCE OF 94.83 FEET TO A 5/8" IRON ROD WITH YELLOW PLASTIC CAP STAMPED "CARTER BURGESS SET IN THE SOUTHWESTERLY LINE OF A 20 FOOT R.O.W. DEDICATION, SAID POINT BEING N 89°49'15" E, A DISTANCE OF 29.80 FEET FROM AN "X" CUT FOUND IN THE SOUTHWESTERLY R.O.W. LINE OF WELCH ROAD (A 60 FOOT R.O.W.);

**THENCE ALONG THE SOUTHWESTERLY LINE OF SAID 20 FOOT R.O.W. DEDICATION ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 433.07 FEET, A DELTA ANGLE OF 15°19'00", A CHORD BEARING OF S 53°50'52" E, AND A CHORD LENGTH OF 115.43 FEET, AND AN ARC LENGTH OF 115.77 FEET TO A 5/8" IRON ROD WITH YELLOW PLASTIC CAP STAMPED "CARTER BURGESS SET IN THE EAST LINE OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON WEST LINE OF SAID JOYCE MEIER ADDITION;

THENCE, N 56°32'48" E, ALONG SAID COMMON LINE A DISTANCE OF 22.82 FEET TO A 1/2" IRON ROD FOUND FOR THE NORTHEAST CORNER OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE COMMON NORTHWEST CORNER OF SAID JOYCE MEIER ADDITION, SAID POINT ALSO BEING IN THE SOUTHWESTERLY R.O.W. LINE OF SAID WELCH ROAD;

THENCE ALONG THE NORTH LINE OF SAID JOYCE MEIER ADDITION AND THE COMMON SOUTHWESTERLY R.O.W. LINE OF SAID WELCH ROAD THE FOLLOWING THREE (3) CALLS:

ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 413.07 FEET, A DELTA ANGLE OF 0°30'27", A CHORD BEARING OF S 63°14'55" E, AND A CHORD LENGTH OF 3.66 FEET, AND AN ARC LENGTH OF 3.66 FEET TO A 1/2" IRON ROD FOUND FOR CORNER;

**S 63°30'09" E, A DISTANCE OF 172.79 FEET TO A 5/8" IRON ROD WITH YELLOW PLASTIC CAP STAMPED "CARTER BURGESS" SET FOR CORNER;

ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 378.76 FEET, A DELTA ANGLE OF 60°54'56", A CHORD BEARING OF S 33°02'41" E, AND A CHORD LENGTH OF 383.99 FEET, AND AN ARC LENGTH OF 402.69 FEET, TO A POINT FOR THE SOUTHEAST CORNER OF SAID JOYCE MEIER ADDITION SAID POINT ALSO BEING THE INTERSECTION OF THE WEST R.O.W. LINE OF SAID WELCH ROAD AND THE NORTH R.O.W. LINE OF SAID L.B.J. FREEWAY, FROM WHICH A "X" CUT FOUND BEARS S 18°45'43" E, A DISTANCE OF 0.68 FEET;

THENCE ALONG THE SOUTH LINE OF SAID JOYCE MEIER ADDITION, THE COMMON SOUTH LINE OF SAID R.M. FAMILY PARTNERSHIP I, LTD., ADDITION AND THE NORTH R.O.W. LINE OF L.B.J. FREEWAY THE FOLLOWING THREE (3) CALLS:

S 87°22'47" W, A DISTANCE OF 169.65 FEET TO A ALUMINUM HIGHWAY MONUMENT DISC FOUND FOR CORNER FROM WHICH A 1/2" IRON ROD FOUND BEARS S 83°05'56" W, A DISTANCE OF 0.42 FEET;

S 82°47'57" W, A DISTANCE OF 200.72 FEET TO A POINT FOR CORNER FROM WHICH A BRASS HIGHWAY MONUMENT DISC FOUND BEARS N 89°49'32" W, A DISTANCE OF 0.27 FEET;

S 89°17'43" W, A DISTANCE OF 204.65 FEET TO THE POINT OF BEGINNING, AND CONTAINING 4.718 ACRES OF LAND, MORE OR LESS.

**THE MONUMENT DESCRIBED AND SET IN THIS CALL, IF DESTROYED DURING CONSTRUCTION, MAY BE REPLACED WITH A TxDOT TYPE II RIGHT-OF-WAY MARKER UPON THE COMPLETION OF THE HIGHWAY CONSTRUCTION PROJECT UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL LAND SURVEYOR, EITHER EMPLOYED OR RETAINED BY TxDOT.

SURVEYORS CERTIFICATE

I, WILLIAM C. BODEN, REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE MAP SHOWN HEREON ACCURATELY REPRESENTS THE DESCRIBED PROPERTY AS DETERMINED BY A SURVEY, MADE ON THE GROUND UNDER MY DIRECTION AND SUPERVISION AND 5/8" IRON RODS CAPPED "CARTER & BURGESS" HAVE BEEN SET AT ALL BOUNDARY CORNERS, UNLESS OTHERWISE NOTED. THE MONUMENTS OR MARKS SET, OR FOUND, ARE SUFFICIENT TO ENABLE RETRACEMENT.

WILLIAM C. BODEN
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 1932

NOVEMBER 18, 2003
DATED

STATE OF TEXAS REGISTERED WILLIAM C. BODEN 1932 PROFESSIONAL LAND SURVEYOR

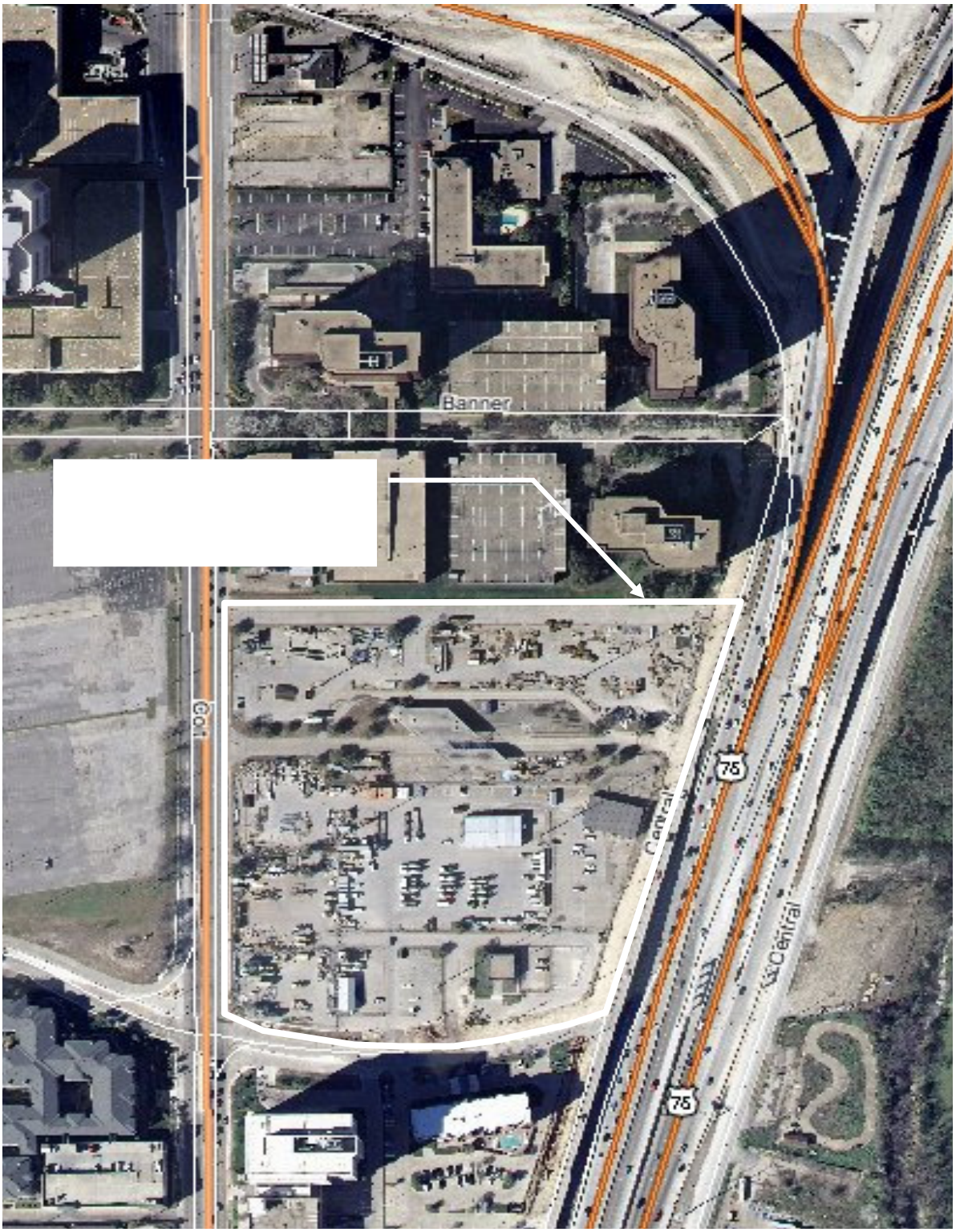
-- NOTICE --

REVISIONS			
DATE			
021807/01	J.FLORES	B.BODEN	10/02/03
PROJECT NO.	DRAWN BY	APPROVED BY	DATE

BOUNDARY SURVEY
4.718 ACRES
OUT OF THE
MARY BROWN SURVEY, ABSTRACT NO. 159
IN THE CITY OF FARMERS BRANCH, DALLAS COUNTY, TEXAS

Carter::Burgess
CARTER & BURGESS, INC.
7950 ELMBROOK DRIVE, SUITE 250
DALLAS, TX 75247-4961
(214) 638-0145

FILE: 01-664


Banner
Col
Canal
75
75
KY Central

State Department of Highways
and Public Transportation
Form D-15-11 (Whole Taking)
Page 1 of 4
Rev. 7-75

DEED RECORD

9018-9-18
Parcel 1

DEED
CONTROLLED ACCESS HIGHWAY FACILITY

8852 0 2 9.00 DEED 03/05/79

THE STATE OF TEXAS §
§
COUNTY OF DALLAS §

WHEREAS, the State Highway and Public Transportation Commission has been authorized under House Bill 179, Acts of the 55th Legislature, Regular Session, 1957 (Article 6674w-1, et seq., Vernon's Annotated Civil Statutes of Texas) to purchase land and such other property rights deemed necessary for the purposes of facilitating the construction, maintenance and operation of Controlled Access Highways; and,

WHEREAS, the purchase of the hereinafter described premises has been deemed necessary by the State Highway and Public Transportation Commission for the purposes of facilitating the construction, maintenance and operation of a Controlled Access Highway facility;

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, WDS, Inc., a Delaware Corporation, acting by and through its duly authorized officer,

of the County of Oklahoma, Oklahoma ~~Texas~~, State of Grantors, whether one or more, for and in consideration of the sum of Two Million, Five Hundred Thousand and no/100---------- ($2,500,000.00) Dollars to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have this day Sold, and by these presents do Grant, Bargain, Sell and Convey unto the State of Texas, all that certain tract or parcel of land lying and being situated in the County of Dallas, State of Texas, more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, and in the M. J. Sanchez Survey, Abstract No. 1272, Dallas County, Texas.

BEING 485,296 square feet (11.141 acres) tract of land, more or less, and being all of the said tract of land which was conveyed to Texas Auto Warehousers, Inc., a Delaware corporation, by deed dated March 3, 1954 recorded in Volume 4187, Page 614, Deed Records of Dallas County, Texas and further conveyed by Agreement of Merger to Auto Warehousers, Inc., dated April 19, 1963 recorded in Volume 881, Page 0316, Deed Records in Dallas County, Texas, said 485,296 square feet tract of land being more particularly described as follows;

Returned W.T.

79041 2130

BEGINNING at the southeast corner of said 485,296 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears South 16°21'26" West a distance of 317.78 feet from the northeast corner of Arno Goetz tract acquired by deed dated May 28, 1975 recorded in Volume 75107, Page 2648, Deed Records of said county;

(1) THENCE South 81°37'47" West for a distance of 642.99 feet for a corner;

(2) THENCE North 0°20'56" East for a distance 956.47 feet for a corner;

(3) THENCE South 89°18'13" East for a distance of 490.00 feet for a corner;

(4) THENCE South 0°23'36" West for a distance of 675.13 feet for a corner;

(5) THENCE North 81°14'02" East for a distance of 210.20 feet to a point in the existing West right of way line of U. S. 75;

(6) THENCE South 16°21'26" West along the said existing right of way line a distance of 222.84 feet to the place of beginning.

SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

NONE

Grantors covenant and agree to remove the above described improvements from said land by xxxxx, xx, 19 xx, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

Grantors reserve all of the oil, gas and sulphur in and under the land herein conveyed but waive all rights of ingress and egress to the surface thereof for the purpose of exploring, developing, mining or drilling for same; however, nothing in this reservation shall affect the title and rights of the State to take and use all other minerals and materials thereon, therein and thereunder.

TO HAVE AND TO HOLD the above described premises herein conveyed together with all and singular the rights and appurtenances thereto in anywise belonging, unto the State of Texas and its assigns forever; and Grantors do hereby bind ourselves, our heirs, executors, administrators, successors and assigns, to Warrant and Forever Defend all and singular the said premises herein conveyed unto the State of Texas and its assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

IN WITNESS WHEREOF, this instrument is executed on this the 20th day of February, 19 79.

ATTEST: J. Tom Ramsey
Assistant Secretary

HDS, Inc.
By: Roy E. Townsdin
Roy E. Townsdin, President

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS }
County of ..... }

Before me, ..., a notary public in and for said County and State, on this day personally appeared ....., known to me (or proved to me on the oath of ....., a credible witness) to be the person ..... whose name ..... subscribed to the foregoing instrument and acknowledged to me that ....he ... executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the ..... day of ..... 19 ....

Notary Public in and for ..... County, Texas.

70041 2122

State Department of Highways
and Public Transportation
Form D-15-11 (Whole Taking)
Page 1 of 4
Rev. 7-75

DEED RECORD

Parcel 2
9018-9-18

DEED
CONTROLLED ACCESS HIGHWAY FACILITY

A

9.00 DEED
6797 0 2 06/06/79

THE STATE OF TEXAS §
§
COUNTY OF DALLAS §

WHEREAS, the State Highway and Public Transportation Commission has been authorized under House Bill 179, Acts of the 55th Legislature, Regular Session, 1957 (Article 6674w-1, et seq., Vernon's Annotated Civil Statutes of Texas) to purchase land and such other property rights deemed necessary for the purposes of facilitating the construction, maintenance and operation of Controlled Access Highways; and,

WHEREAS, the purchase of the hereinafter described premises has been deemed necessary by the State Highway and Public Transportation Commission for the purposes of facilitating the construction, maintenance and operation of a Controlled Access Highway facility;

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, ARNO GOETZ, not joined by my wife as this property represents no part of my business or residential homestead,

of the County of Dallas, State of Texas, hereinafter referred to as Grantors, whether one or more, for and in consideration of the sum of Three Hundred Seventy Thousand and no/100---------- ($370,000.00) Dollars to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have this day Sold, and by these presents do Grant, Bargain, Sell and Convey unto the State of Texas, all that certain tract or parcel of land lying and being situated in the County of Dallas, State of Texas, more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, Dallas County, Texas.

BEING 26,144 square feet (0.600 acre) tract of land, more or less, and being all of the said tract of land which was conveyed to Arno Goetz by deed dated May 28, 1975, recorded in Volume 75107, Page 2648, Deed Records of Dallas County, Texas, said 26,144 square feet tract of land being more particularly described as follows:

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BEGINNING at the southeast corner of said 26,144 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears North 16°21'26" East a distance of 222.84 feet from the southeast corner of 3.101 acre tract which was conveyed to Texas Auto Warehousers, Inc., by Deed recorded in Volume 4187, Page 614, Deed Records of said county;

(1) THENCE South 81°14'02" West for a distance of 210.20 feet for a corner;

(2) THENCE North 0°23'36" East for a distance of 146.47 feet for a corner;

(3) THENCE South 84°17'28" East for a distance of 234.64 feet to a point in the existing West right of way line of U. S. 75;

(4) THENCE South 16°21'26" West along the said existing right of way line a distance of 94.94 feet to the place of beginning.

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SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

NONE

Grantors covenant and agree to remove the above described improvements from said land by xxxxx xx, 19 xx, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

Grantors reserve all of the oil, gas and sulphur in and under the land herein conveyed but waive all rights of ingress and egress to the surface thereof for the purpose of exploring, developing, mining or drilling for same; however, nothing in this reservation shall affect the title and rights of the State to take and use all other minerals and materials thereon, therein and thereunder.

TO HAVE AND TO HOLD the above described premises herein conveyed together with all and singular the rights and appurtenances thereto in anywise belonging, unto the State of Texas and its assigns forever; and Grantors do hereby bind ourselves, our heirs, executors, administrators, successors and assigns, to Warrant and Forever Defend all and singular the said premises herein conveyed unto the State of Texas and its assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

IN WITNESS WHEREOF, this instrument is executed on this the 16th day of May, 19 79.

Arno Goetz

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS
County of DALLAS

Before me, the undersigned authority, a notary public in and for said County and State, on this day personally appeared Arno Goetz, known to me (~~or proved to me on the oath of~~ ~~a credible witness~~) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 16th day of May 19 79

Notary Public in and for Dallas County, Texas.

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Resolution of Directors

to

Terminate Lease, Adjust
Rent and Pay Rent/Damages

WHEREAS, the State of Texas through the State Department of Highways and Public Transportation determined it is in the best interest of the public to acquire subject property located at 12505 North Central Expressway, more specifically described by attached Exhibit A; and

WHEREAS, the State of Texas public use will require existing structures be demolished and removed from the property described by Exhibit A; and

WHEREAS, the above actions required Warrex Computer Corporation to move from the property and the State is proceeding to acquire fee title interest thereto;

THEREFORE, Be It Resolved, That Warrex Computer Corporation terminate its lease of subject property, adjust the rental and other payments may be due fee owner; and, that JAMES H SMITH President of Warrex Computer Corporation be authorized to negotiate these issues and make payments to the fee owner in terms and amounts which, in his opinion, are in the best interest of Warrex Computer Corporation.

This is to certify that the Board of Directors of Warrex Computer Corporation met in a properly called session on Jan 11 79 and, after, required formality, unanimously approved the Resolution set forth above as an act of the corporation.

Certified this 30th day of May, 1979.

James H Smith
President

attest: [signature]
Secretary

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RETURN TO:

John G. Keller, Dist. Engr.
State Department of Highways and Public Transportation
P. O. Box 3067
Dallas, Texas 75221

STATE OF TEXAS COUNTY OF
I hereby certify that this instrument was filed on the date and time stamped hereon by me and was duly recorded in the volume and page of the named records of Dallas County, Texas as stamped hereon by me.

JUN 6 1979

L.E. Murdock
COUNTY CLERK, Dallas County, Texas

VOL PAGE
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'79 JUN 5 PM 2:48

COUNTY CLERK
DALLAS COUNTY

L.E. Murdock
Deputy

STW GF 202654 Rec W/D $11.00

State Department of Highways
and Public Transportation
Form D-15-11 (Whole Taking)
Page 1 of 4
Rev. 7-75

DEED RECORD

DEED
CONTROLLED ACCESS HIGHWAY FACILITY

I 635-6(191)454
9018-9-18
Parcel 3

THE STATE OF TEXAS §
§
COUNTY OF DALLAS §

3976 11.00 DEED
04/04/80

WHEREAS, the State Highway and Public Transportation Commission has been authorized under House Bill 179, Acts of the 55th Legislature, Regular Session, 1957 (Article 6674w-1, et seq., Vernon's Annotated Civil Statutes of Texas) to purchase land and such other property rights deemed necessary for the purposes of facilitating the construction, maintenance and operation of Controlled Access Highways; and,

WHEREAS, the purchase of the hereinafter described premises has been deemed necessary by the State Highway and Public Transportation Commission for the purposes of facilitating the construction, maintenance and operation of a Controlled Access Highway facility;

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, DALLAS CERAMIC COMPANY, a Texas Corporation,

of the County of Dallas, State of Texas, hereinafter referred to as Grantors, whether one or more, for and in consideration of the sum of Five Hundred Five Thousand and no/100---------- ($505,000.00) Dollars to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have this day Sold, and by these presents do Grant, Bargain, Sell and Convey unto the State of Texas, all that certain tract or parcel of land lying and being situated in the County of Dallas, State of Texas, more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, Dallas County, Texas.

BEING 34,434 square feet (0.791 acre) tract of land, more or less, and being all of the said tract of land which was conveyed to Dallas Ceramic Company, a Texas corporation, by deed dated January 20, 1959, recorded in Volume 5040, Page 269, Deed Records of Dallas County, Texas, said 34,434 square feet tract of land being more particularly described by metes and bounds as follows:

80068 2104

Recorded
6-80

BEGINNING at the southeast corner of said 34,434 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears North 16° 21' 26" East a distance of 317.78 feet from the southeast corner of 3.101 acre tract which was conveyed to Texas Auto Warehousers Inc., by Deed recorded in Volume 4187, Page 614, Deed Records of said county;

(1) THENCE North 84° 17' 28" West for a distance of 234.64 feet for a corner;

(2) THENCE North 0° 23' 36" East for a distance of 124.64 feet for a corner;

(3) THENCE South 89° 10' 03" East for a distance of 274.91 feet to a point in the existing West right of way line of U. S. 75;

(4) THENCE South 16° 21' 26" West along the said existing right of way line a distance of 150.06 feet to the place of beginning.

80068 2105

SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

None

Grantors covenant and agree to remove the above described improvements from said land by xxxxx xxx xxx, 19 xx, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

Grantors reserve all of the oil, gas and sulphur in and under the land herein conveyed but waive all rights of ingress and egress to the surface thereof for the purpose of exploring, developing, mining or drilling for same; however, nothing in this reservation shall affect the title and rights of the State to take and use all other minerals and materials thereon, therein and thereunder.

TO HAVE AND TO HOLD the above described premises herein conveyed together with all and singular the rights and appurtenances thereto in anywise belonging, unto the State of Texas and its assigns forever; and Grantors do hereby bind ourselves, our heirs, executors, administrators, successors and assigns, to Warrant and Forever Defend all and singular the said premises herein conveyed unto the State of Texas and its assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

IN WITNESS WHEREOF, this instrument is executed on this the 26th day of February, 19 80.

ATTEST:

DALLAS CERAMIC COMPANY

By: Charles C. Nies
Charles C. Nies
Vice President-Finance

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS }
County of ..... }

Before me, ..., a notary public in and for said County and State, on this day personally appeared .....

....., known to me (or proved to me on the oath of ....., a credible witness) to be the person ..... whose name ..... subscribed to the foregoing instrument and acknowledged to me that ....he.... executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 26 day of February 19 80

.....
Notary Public in and for Dallas County, Texas.

VOL

80068 2106

STW GF 202655 Rec W/D .$7.00

State Department of Highways
and Public Transportation
Form D-15-11 (Whole Taking)
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Rev. 7-75

9018-9-18
Parcel 4

DEED
CONTROLLED ACCESS HIGHWAY FACILITY

A

7201 0 2 10/11/79 7.00 DEED

THE STATE OF TEXAS X
X
COUNTY OF DALLAS X

WHEREAS, the State Highway and Public Transportation Commission has been authorized under House Bill 179, Acts of the 55th Legislature, Regular Session, 1957 (Article 6674w-1, et seq., Vernon's Annotated Civil Statutes of Texas) to purchase land and such other property rights deemed necessary for the purposes of facilitating the construction, maintenance and operation of Controlled Access Highways; and,

WHEREAS, the purchase of the hereinafter described premises has been deemed necessary by the State Highway and Public Transportation Commission for the purposes of facilitating the construction, maintenance and operation of a Controlled Access Highway facility;

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, JOSE MILMO, not joined by my wife as this property constitutes no part of my business or residential homestead

City of Monterrey, State of Nuevo Leon, Republic of Mexico, hereinafter referred to as Grantors, whether one or more, for and in consideration of the sum of Seven Hundred Thousand and no/100---------- ($ 700,000.00) Dollars to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have this day Sold, and by these presents do Grant, Bargain, Sell and Convey unto the State of Texas, all that certain tract or parcel of land lying and being situated in the County of Dallas, State of Texas, more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, Dallas County, Texas.

BEING 134,543 square feet (3.089 acres) tract of land, more or less, and being all of the said tract of land which was conveyed to Jose Milmo by deed dated September 3, 1973 recorded in Volume 73218, Page 1115, Deed Records of Dallas County, Texas, said 134,543 square feet tract of land being more particularly described as follows:

VOL. PAGE

79199 0154

Reviewed
by 9-7-79

BEGINNING at the southeast corner of said 134,543 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears North 16° 21' 26" East a distance of 467.84 feet from the southeast corner of 3.101 acres tract which was conveyed to Texas Auto Warehousers, Inc., by deed recorded in Volume 4187, Page 614, Deed Records of said county;

(1) THENCE North 89° 10' 03" West for a distance of 274.91 feet for a corner;

(2) THENCE North 0° 23' 36" East for a distance of 404.02 feet for a corner;

(3) THENCE South 89° 18' 13" East for a distance of 390.49 feet to a point in the existing West right of way line of U. S. 75;

(4) THENCE South 16° 21' 26" West along the said existing right of way line a distance of 420.27 feet to the place of beginning.

SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

NONE

Grantors covenant and agree to remove the above described improvements from said land by xxxxx xx, 19 xx, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

Grantors reserve all of the oil, gas and sulphur in and under the land herein conveyed but waive all rights of ingress and egress to the surface thereof for the purpose of exploring, developing, mining or drilling for same; however, nothing in this reservation shall affect the title and rights of the State to take and use all other minerals and materials thereon, therein and thereunder.

TO HAVE AND TO HOLD the above described premises herein conveyed together with all and singular the rights and appurtenances thereto in anywise belonging, unto the State of Texas and its assigns forever; and Grantors do hereby bind ourselves, our heirs, executors, administrators, successors and assigns, to Warrant and Forever Defend all and singular the said premises herein conveyed unto the State of Texas and its assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof.

IN WITNESS WHEREOF, this instrument is executed on this the 3 day of August, 1979.

X José Milmo
Jose Milmo

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS
County of Dallas

Before me, the undersigned authority, a notary public in and for said County and State, on this day personally appeared Jose Milmo, known to me (~~or proved to me on the oath of~~, ~~or credible witness~~) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 3rd day of August 1979.

Francine K. Culbertson
Notary Public in and for Dallas County, Texas.

79199 0156

STW GF 202655 Rec QCD $9.00

State Department of Highways
and Public Transportation
Form D-15-30
Page 1 of 4
Rev. 7-75

DEED RECORD

Parcel 4
9018-9-18

QUITCLAIM

STATE OF TEXAS

COUNTY OF DALLAS

7199 0 2 10/11/79 9.00 DEED

KNOW ALL MEN BY THESE PRESENTS:

That DALLAS CERAMIC COMPANY

of the County of Dallas, State of Texas, hereinafter referred to as Grantors, whether one or more, for and in consideration of the sum of Nine Hundred Thirty and No/100---------- ($ 930.00) Dollars, and other good and valuable consideration to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, the receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have quitclaimed, and do by these presents Bargain, Sell, Release and forever Quitclaim unto the State of Texas all of Grantors' right, title, interest, claim and demand in and to that certain tract or parcel of land, situated in the County of Dallas, State of Texas, and being more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, Dallas County, Texas.

BEING 134,543 square feet (3.089 acres) tract of land, more or less, and being all of the said tract of land which was conveyed to Jose Milmo by deed dated September 3, 1973 recorded in Volume 73218, Page 1115, Deed Records of Dallas County, Texas, said 134,543 square feet tract of land being more particularly described as follows:

Reviewed
WT 9-7-79

VOL PAGE

79199 0144

BEGINNING at the southeast corner of said 134,543 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears North 16° 21' 26" East a distance of 467.84 feet from the southeast corner of 3.101 acres tract which was conveyed to Texas Auto Warehousers, Inc., by deed recorded in Volume 4187, Page 614, Deed Records of said county;

(1) THENCE North 89° 10' 03" West for a distance of 274.91 feet for a corner;

(2) THENCE North 0° 23' 36" East for a distance of 404.02 feet for a corner;

(3) THENCE South 89° 18' 13" East for a distance of 390.49 feet to a point in the existing West right of way line of U. S. 75;

(4) THENCE South 16° 21' 26" West along the said existing right of way line a distance of 420.27 feet to the place of beginning.

SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

A. Advertising Sign

Grantors covenant and agree to remove the above described improvements from said land by October 1, 1979, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

VOL. PAGE

79199 0145

TO HAVE AND TO HOLD for said purposes together with all and singular the rights, privileges, and appurtenances thereto in any manner belonging unto the said State of Texas forever.

IN WITNESS WHEREOF, this instrument is executed on this the 3 day of August, 1979.

DALLAS CERAMIC COMPANY

ATTEST By: Charles C. Tise

Secretary Treasurer

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS }
County of Dallas }

Before me, Francine P. Culbreath, a notary public in and for said County and State, on this day personally appeared Charles C. Tise, known to me (or proved to me on the oath of ....., a credible witness) to be the person whose name subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 3rd day of August 1979

Francine P. Culbreath

Notary Public in and for Dallas County, Texas.

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS }
County of ..... }

Before me, ..., a notary public in and for said County and State, on this day personally appeared .....

....., known to me (or proved to me on the oath of ....., a credible witness) to be the person whose name subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the ..... day of ..... 19 .....

.....

Notary Public in and for ..... County, Texas.

79199 0146

STW GF 202655 Rec QCD $7.00

State Department of Highways
and Public Transportation
Form D-15-30
Page 1 of 4
Rev. 7-75

DEED RECORD

Parcel 4
9018-9-18

QUITCLAIM

STATE OF TEXAS

COUNTY OF DALLAS

A

7200 0 7.00 DEED 2 10/11/79

KNOW ALL MEN BY THESE PRESENTS:

That NATIONAL ADVERTISING COMPANY

of the County of Dallas, State of Texas, hereinafter referred to as Grantors, whether one or more, for and in consideration of the sum of Eighteen Thousand, Six Hundred Ninety-Five and no/100---------- ($ 18,695.00) Dollars, and other good and valuable consideration to Grantors in hand paid by the State of Texas, acting by and through the State Highway and Public Transportation Commission, the receipt of which is hereby acknowledged, and for which no lien is retained, either expressed or implied, have quitclaimed, and do by these presents Bargain, Sell, Release and forever Quitclaim unto the State of Texas all of Grantors' right, title, interest, claim and demand in and to that certain tract or parcel of land, situated in the County of Dallas, State of Texas, and being more particularly described as follows, to wit:

Situated in Dallas City Block No. 7754, Dallas County, Texas.

BEING 134,543 square feet (3.089 acres) tract of Land, more or less, and being all of the said tract of land which was conveyed to Jose Milmo by deed dated September 3, 1973 recorded in Volume 73218, Page 1115, Deed Records of Dallas County, Texas, said 134,543 square feet tract of land being more particularly described as follows:

Reviewed
WOT 9-7-79

VOL. PAGE

79199 0150

BEGINNING at the southeast corner of said 134,543 square feet tract of land, said point being in the existing West right of way line of U. S. 75 and bears North 16° 21' 26" East a distance of 467.84 feet from the southeast corner of 3.101 acres tract which was conveyed to Texas Auto Warehousers, Inc., by deed recorded in Volume 4187, Page 614, Deed Records of said county;

(1) THENCE North 89° 10' 03" West for a distance of 274.91 feet for a corner;

(2) THENCE North 0° 23' 36" East for a distance of 404.02 feet for a corner;

(3) THENCE South 89° 18' 13" East for a distance of 390.49 feet to a point in the existing West right of way line of U. S. 75;

(4) THENCE South 16° 21' 26" West along the said existing right of way line a distance of 420.27 feet to the place of beginning.

SAVE and EXCEPT, HOWEVER, it is expressly understood and agreed that Grantors are retaining title to the following improvements located on the above described property, to wit:

B. Advertising Sign

Grantors covenant and agree to remove the above described improvements from said land by October 1, 19 79, subject, however, to such extensions of time as may be granted by the State in writing; and if, for any reason, Grantors fail or refuse to remove same within said period of time prescribed, then, without any further consideration, the title to all or any part of such improvements not so removed shall pass to and vest in the State of Texas forever.

VOL PAGE

79199 0151

TO HAVE AND TO HOLD for said purposes together with all and singular the rights, privileges, and appurtenances thereto in any manner belonging unto the said State of Texas forever.

IN WITNESS WHEREOF, this instrument is executed on this the 27th day of August, 1979.

NATIONAL ADVERTISING COMPANY

By: David Harris

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS
County of Dallas

Before me, the undersigned authority, a notary public in and for said County and State, on this day personally appeared DAVID HARRIS, known to me (or proved to me on the oath of ~~the witness~~, a ~~credible witness~~) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 27th day of August 1979

Notary Public in and for Dallas County, Texas.

SINGLE ACKNOWLEDGMENT

THE STATE OF TEXAS
County of

Before me, _____, a notary public in and for said County and State, on this day personally appeared _____, known to me (or proved to me on the oath of _____, a credible witness) to be the person whose name subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the _____ day of _____ 19____

Notary Public in and for _____ County, Texas.

79199 0152

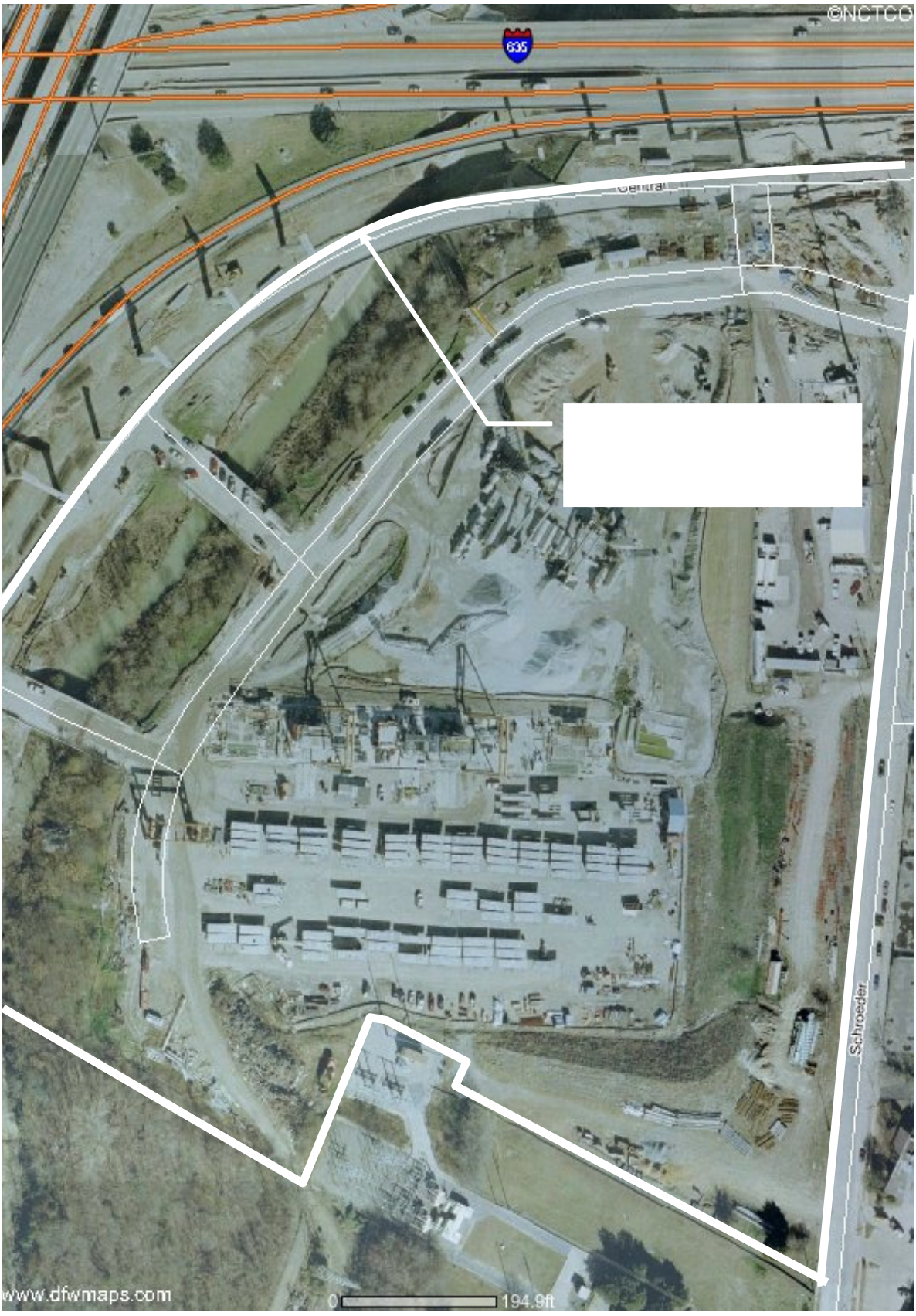

©NCTCOG
635
Schroeder
www.dfwmaps.com
0
194.9ft

EXHIBIT "A"

D-15-11
November 20, 2000

County Dallas
Parcel 33
Highway I.H. 635
PROJECT Limits: From: Crim Drive
To: Pinyon Tree Road

CSJ: 2374-01-103
Acct: 9118-21-07

Legal Land Description for Parcel 33

BEING a 21.210 acre parcel of land situated in the ALEXANDER A. THOMAS SURVEY, Abstract No. 1486, in the City of Dallas, Texas, Block Numbers 7621 and 7624, being all of a called 21.2028 acre tract of land deeded to CLBJ, INC., asrecorded in Volume 93012, Page 1460 of the Deed Records of Dallas County, Texas (DRDCT), and being all of Central 635 Addition, an Addition to the City of Dallas as Recorded inVolume 85008, Page 251, DRDCT. Said 21.210 acre parcel being moreparticularly described by metes and bounds as follows:

BEGINNING at a point, being the intersection of the west right-of-wayline of Schroeder Road (64.00 foot right-of-way at this point), and the south right-of-way line of Interstate 635 (variable width right-of-way), from said point a 5/8" iron rod with an aluminum cap stamped "Texas Department of Transportation" (TXDOT) bears N 86°01' 56" E,a distance of 2.52 feet;

THENCE along the west right-of-way line of said Schroeder Road (64.00foot right-of-way) the following two (2) courses and distances:

1.) S 04°47' 01" W, a distance of 210.42 feet to a 5/8" iron rod with yellow plastic cap stamped "CARTER BURGESS" set, and

2.) S 05°57' 08" W, a distance of 229.17 feet to a 5/8" iron rod with yellow plastic cap stamped "CARTER BURGESS" set, said point being the end of the 64.00 feet right-of way width, and the beginning of variable width right-of-way for said Schroeder Road;

THENCE continuing along the west line of Said Schroeder Road (variable width right-of-way) the following three (3) courses and distances:

3.) S 08°09' 23" W, a distance of 548.46 feet to a point, from saidpoint a 1/2" iron rod found bears N 14°51' 32" W, a distance of 2.47 feet, and

4.) S 65°35' 35" E, a distance of 28.60 feet to a 5/8" iron rod found, and

5.) S 06°00' 58" W, a distance of 297.45 feet to a point, said point being the southeast corner of said 21.2028 acre tract and said Central 635 Addition, same being the northeast corner of Wanda Taylor Addition, an addition to the City of Dallas as recorded in Volume 88071, Page4040, DRDCT, from said point a 5/8" iron rod found bears S 65°32' 39" E, a distance of 1.42 feet;

THENCE leaving said right-of-way line along the south line of said 21.2028 acre tract and

County Dallas
Parcel 33
Highway I.H. 635
PROJECT Limits: From: Crim Drive
To: Pinyon Tree Road

CSJ: 2374-01-103
Acct: 9118-21-07

Legal Land Description for Parcel 33

said Central 635 Addition, being the northline of said Wanda Taylor Addition the following two (2) courses and distances:

6.) N 62°21' 17" W, a distance of 482.80 feet to metal fence corner post found, and

7.) S 06°14 '36" W, a distance of 90.41 feet to an x-cut found in concrete, said point being a southeast corner of said 21.2028 acretract and said Central 635 Addition, being the southwest corner of said Wanda Taylor Addition, and being in the north line ofa called 1.49 acre tract of land deeded to Dallas Power and Light (DP&L), as recorded in Volume 70161, Page 1122, DRDCT;

THENCE continuing along the south line of said 21.2028 acre tract and said Central 635 Addition, being the north line of said DP&L tract the following two (2) courses and distances:

8.) N 62°25 04 " W, a distance of 180.80 feet to a metal fence corner post found, and

9.) S 21°58' 54" W, a distance of 69.43feet to an x-cut in concrete found, said point beirg a southwest corner of said 21.2028 acre tract and said Central 635 Addition, same being the northeast corner of a called 0.35 acre tract of land deeded to DP&L, as recorded in Volume 70161, Page 1118, DRDCT;

10.) THENCE N 61°26' 23" W, along the south line of said 21.2028 acre tract and said Central 635 Addition, being the north line of said DP&L0.35 acre tract a distance of 508.56 feet to a 5/8" iron rod with yellow plastic cap stamped "CARTER BURGESS" set;

11.) THENCE N 6°38' 01" E, along the west line of said 21.2028 acre tract and said Centra 635 Addition, being the east line of said DP&L 0.35 acre tract, passing a northwest corner of said DP&L 0.35 acre tract, same being the southeast corner of a called 005 acre tract of land deeded to Restland Memorial Parkof Dallas, as recorded in Volume 4026, Page 608, DRDCT, continuing along said west line, being the east line of said Restland Memorial tract a total distance of 40.13 feet to a 5/8" iron rod with an aluminum cap stamped "TXDOT" found, said point being a southwest corner of said 21.2028 acre tract and said Central 635 Addition, being the northeast corner of said Restland Memorial tract, and being the southeast corner of a called 0.1913 acre tract of land deeded to TXDOT, as recorded in Volume 99219, Page 949, DRDCT;

EXHIBIT "A"

D-15-11
November 20, 2000

County Dallas
Parcel 33
Highway I.H. 635
PROJECT Limits: From: Crim Drive
To: Pinyon Tree Road

CSJ: 2374-01-103
Acct: 9118-21-07

Legal Land Description for Parcel 33

THENCE along the west and north lines of said 21.2028 acre tract and said Central 635 Addition, being the east and south right-of-way lines for Us Highway 75 (Central Expressway variable width right-of-way) and said Interstate 635 the following seven (7) courses and distances:

12.) S 64°10' 23" E, a distance of 111.27 feet to a 1/2" iron rod found,

13.) N 11°57' 38" E, a distance of 133.29 feet to a brass highway monument found in concrete,

14.) N 24°14' 31" E, a distance of 224.90 feet to a brass highway monument found in concrete,

15.) N 40°15' 41" E, a distance of 450.27 feet to a brass highway monument found in concrete,

16.) N 46°20' 53" E, a distance of 260.02 feet to a brass highway monument found in concrete,

17.) N 82°16' 43" E, a distance of 139.82 feet to a brass highway monument found in concrete,

18.) N 86°17' 33" E, a distance of 352.98 feet to the point of beginning and containing 21.210 acres of land, more of less. Basis of bearing for this description is the Texas Department of Transportation Coordinate System, for US Highway 75, as expanded by Halff Associates, Based on Halff Associates Monuments 402, 403, 404, 405, and 420.

A SURVEY PLAT OF EVEN SURVEY DATE IS ATTACHED TO THIS METES AND BOUNDS DESCRIPTION.

11/21/00
DATE

GORDON K. PERRY
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 5185

STATE OF TEXAS
REGISTERED
GORDON K. PERRY
5185
PROFESSIONAL
LAND SURVEYOR

I:\SUR\02044601\0008\US75-C~1\SDATA\PAR-33.FNS

Exhibit "C"

County: Dallas
Highway: Interstate Highway No. 635
Project Limits From: Crim Drive
To: Pinyon Tree Road
CSJ: 2374-21-103
ACC: 9118-21-07

D-15-13
December 24, 1996

ACCESS CLAUSE FOR PARCEL 33

(To be inserted under last paragraph on page 1 of 3 on D-15-13)

the beginning of the fifteenth call and a point North 86 degrees 17 minutes 41 seconds East a distance of 32.136 meters [105.43 feet] from the beginning of the eighteenth call of the foregoing property description.

CITH OF DALLAS BLOCK 7749

CITY OF DALLAS BLOCK A/7749

CITY OF DALLAS BLOCK 7749

CITY OF DALLAS BLOCK 7325

U.S. 75

HWY MON

CIRS

½ IRF

CUT PART

HAMILTON PARK

M. J. SANCHES SURVEY
ABST. NO. 1272

N45° 09' 37"W
114.090m
(374.31')

N47° 17' 19"W
7.897m
(25.91')

N73° 39' 21"W
49.512m
(162.44')

N20° 32' 17"E
22.165m
(72.72')

N17° 40' 47"E
69.357m
(227.55')

DETAIL B

DETAIL A

N24° 14' 31"E
68.550m
(224.90')

N11° 57' 38"E
40.627m(133.29')

N40° 15' 41"E
137.243m(450.27')

N07° 59' 23"E
40.999m
(134.51')

CITY OF DALLAS BLOCK 7621

N61° 26' 23"W
115.009m (377.36')

S61° 20' 14"E 365.374m (1198.73')

"X" CUT FND

S21° 58' 54"W
21.162m(69.43')

N62° 25' 04"W
55.108m(180.80')

S06° 14' 36"W
27.557m(90.41')

X" CUR FND

FND METAL FEN COR

25D
CLBJ. INC.
DEED
VOL. PG.
20.269 AC.
NO REMAINDER

A. A. THOMAS SURVEY
ABST. NO. 1486

CITY OF DALLAS BLOCK A/7624

CENTRAL 635 ADDITION
LOT 1
BLOCK A/7624

N82° 16' 43"E
42.617m (139.82')

N87° 17' 33"E
107.589m (352.98')

HWY MON BEARS
N85° 44 53"E
2 52'

S05° 57' 08"W
69.851m (229.17')

S04° 47' 01"W
64.136m (210.42')

S06° 01' 06"W
33.653m
(110.41')

DALLAS POWER & LIGHT CO.

WANDA TAYLOR ADDITION
LOT 1, BLOCK A/7621

N62° 21' 17"W 147.158m(482.80')

33
CLBJ. INC.
DEED
VOL. PG.
21.210 AC.
NO REMAINDER

ALEXANDER A. THOMAS SURVEY
ABST. NO. 1486

S65° 35' 35"E
8.717m(28.60')

S06° 00' 58"W
90.663m
(297.45')

S08° 09' 23"W 167.171m (548.46')

⅝" IRF BEARS
S66° 05' 19"E
1.42'

½ IRF BEARS
S03° 20 31 E
2 48

½ IRF BEARS
N15° 24 11 W
2 47'

⅝" IRF

½ IRF BEARS
S27° 33 51 W
2 04'

½ IRF BEARS
N25° 13 31'E
2 77

S21° 12' 43"W
127.416m
(418.03')

N45° 44' 17"W 255.575m (838.50')

FIELDS ESTATES ADDITION

WILLOWDELL DR.

TOWNS

HERCULES DR.

CAMPANELLA DR.

SCHROEDER RD.

BUNCHE DR.

R= 427.550m
(1402.72')
Δ= 15° 11' 37"
L= 113.377m
(371.97')
CH=113.044m
(370.88')
CH-B= S13° 36' 54"W

GRAPHIC SCALE
0' 50' 100 200'

DETAIL A
N. T. S.

N06° 38' 01"E
12.232m(40.13')

S64° 10' 23"E
33.915m
(111.27')

US 75
EXISTING RIGHT
OF WAY

DETAIL B
N. T. S.

N18° 22' 35"E
23.006m(75.48')

PART 1

PART 2

S73° 18' 06"E
33.467m(109.80')

30.693m
(100.70')
N73° 16' 23"W

26.484m
(86.89')
S73° 30' 23"E

N08° 37' 43"E
17.243m(56.57')

N19° 46' 10"E
1.320m(4.33')

F.W. DUNAWAY SURVEY
ABST. NO. 403

I.H. 635

W. CARUTAL SURVEY
ABST. NO. 365

FED. AID PROJ. NO.	STATE	FEDERAL AID PROJECT NO	HIGHWAY NO.
6	TEXAS		IH 635
STATE DISTRICT NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	SHEET NO.
18	DALLAS	2374 / 01 / 103	7A

0118-21-07

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 11-1A

Interstate Access Justification Report

INTERSTATE HIGHWAY (I) 635

FROM: LUNA ROAD
TO: PARK CENTRAL BLVD
DALLAS COUNTY

CSJ: 2374-07-046 & 2374-01-068

ACCESS JUSTIFICATION
I 635 CORRIDOR WEST SECTION UPDATE

March 6, 2007

When FHWA approval is obtained, the final Interstate Access Justification report will be provided.

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 12-1A

Drainage Criteria Manual

Drainage Criteria Manual
for the
Proposed IH 635 (LBJ Freeway) Improvements

Prepared for:

Texas Department of Transportation
Dallas District Office
4777 East Highway 80
Mesquite, Texas 75150

Prepared by:

Carter Burgess

October 2006

Table of Contents

List of Tables

List of Figures

CHAPTER 1 - INTRODUCTION

1.1 PURPOSE

The purpose of this drainage manual is to establish design procedures necessary for the control of storm water runoff for the IH 635 Freeway improvements from Luna Road to US 80 (referred to in this manual as IH 635 corridor). Also included is IH 35E from Royal Lane to Valwood Parkway. The design factors, formulas, graphs, and procedures are intended for use as engineering guides in the solution of drainage problems involving determination of the quantity, rate of flow and conveyance of storm water. The procedures defined herein should be applied by experienced professional drainage Engineers who are ultimately responsible for the design of drainage systems within the IH 635 corridor.

1.2 SCOPE

This manual presents various applications of accepted principles of surface drainage engineering and is a working supplement to the information obtained from standard drainage handbooks and other publications on drainage.

The design criteria presented herein for the IH 635 corridor drainage systems are primarily based on the Texas Department of Transportation's (TxDOT) Hydraulic Design Manual, March 2004. However, additional drainage design guidelines from the cities of Dallas, Farmer's Branch, Garland, and Mesquite were referenced during the development of this manual.

The intent of this manual is to provide clear, concise and uniform principles, guidelines and criteria for use by drainage Engineers designing the storm drainage systems along the IH 635 corridor from Luna Road to US 80. The information provided in this manual has been adjusted to reflect the conditions that generally exist along the Project corridor and is meant to clarify and supplement the TxDOT Hydraulic Design Manual.

Methods of design other than indicated herein may be considered in special cases where experience clearly indicates they are preferable. However, there should be no extensive variations from the practices established herein without express approval from TxDOT.

1.3 DESIGN CRITERIA SUMMARY

A brief summary of the drainage design criteria is provided in Table 1.3.1. For detailed discussions and additional criteria refer to the following chapters.

Table 1.3.1 Design Criteria

Description	General Purpose Lanes	Managed Lanes	Direct Connectors
Method for Determining Peak Runoff			
Less than 200 acres	Rational Method	Rational Method	Rational Method
Greater than 200 acres	Natural Resources Conservation Service Runoff Curve Number Method	Natural Resources Conservation Service Runoff Curve Number Method	Natural Resources Conservation Service Runoff Curve Number Method
Culvert Crossings			
Design Storm	Minor: 50-year	Minor: 50-year	Minor: 50-year
	Major: 100-year	Major: 100-year	Major: 100-year
Check Storm	100-year	100-year	100-year
Headwater Control[1]	< Or = Existing Headwater Elevation	< Or = Existing Headwater Elevation	< Or = Existing Headwater Elevation
Maximum Outlet Velocity	Lined:12 fps	Lined - 12 fps	Lined - 12 fps
	Vegetated clay: 8 fps	Vegetated clay: 8 fps	Vegetated clay: 8 fps
	Vegetated sand: 6 fps	Vegetated sand: 6 fps	Vegetated sand: 6 fps
Minimum Outlet Velocity	Lined: 2.5 fps	Lined: 2.5 fps	Lined: 2.5 fps
	Vegetated: 2 fps	Vegetated: 2 fps	Vegetated: 2 fps
Storm Sewers and Inlets			
Design Storm	50-year	50-year	50-year
Check Storm	100-year	100-year	100-year
Design Storm Allowable Ponding Width	No encroachment into the travel lanes	2 feet of encroachment into the travel lanes	2 feet of encroachment into the travel lanes
Check Storm Allowable Ponding Width	One lane free of encroachment	One lane free of encroachment	One lane free of encroachment
Pipe Material	Concrete	Concrete	Concrete
Minimum Pipe Size	Laterals: 18 inch	Laterals: 18 inch	Laterals: 18 inch
	Trunklines: 24 inch	Trunklines: 24 inch	Trunklines: 24 inch
Minimum Pipe Velocity	3 fps	3 fps	3 fps
Maximum Pipe Velocity	12 fps	12 fps	12 fps

Table 1.3.1 Cont.

Description	Ramps	By-Passes	Elevated Collectors
Method for Determining Peak Runoff			
Less than 200 acres	Rational Method	Rational Method	Rational Method
Greater than 200 acres	Natural Resources Conservation Service Runoff Curve Number Method	Natural Resources Conservation Service Runoff Curve Number Method	Natural Resources Conservation Service Runoff Curve Number Method
Culvert Crossings			
Design Storm	Minor: 50-year	Minor: 50-year	Minor: 50-year
	Major: 100-year	Major: 100-year	Major: 100-year
Check Storm	100-year	100-year	100-year
Headwater Control[1]	< Or = Existing Headwater Elevation	< Or = Existing Headwater Elevation	< Or = Existing Headwater Elevation
Maximum Outlet Velocity	Lined:12 fps	Lined - 12 fps	Lined - 12 fps
	Vegetated clay: 8 fps	Vegetated clay: 8 fps	Vegetated clay: 8 fps
	Vegetated sand: 6 fps	Vegetated sand: 6 fps	Vegetated sand: 6 fps
Minimum Outlet Velocity	Lined: 2.5 fps	Lined: 2.5 fps	Lined: 2.5 fps
	Vegetated: 2 fps	Vegetated: 2 fps	Vegetated: 2 fps
Storm Sewers and Inlets			
Design Storm	50-year	50-year	50-year
Check Storm	100-year	100-year	100-year
Design Storm Allowable Ponding Width	2 feet of encroachment into the travel lanes	2 feet of encroachment into the travel lanes	2 feet of encroachment into the travel lanes
Check Storm Allowable Ponding Width	One lane free of encroachment	One lane free of encroachment	One lane free of encroachment
Pipe Material	Concrete	Concrete	Concrete
Minimum Pipe Size	Laterals: 18 inch	Laterals: 18 inch	Laterals: 18 inch
	Trunklines: 24 inch	Trunklines: 24 inch	Trunklines: 24 inch
Minimum Pipe Velocity	3 fps	3 fps	3 fps
Maximum Pipe Velocity	12 fps	12 fps	12 fps

Table 1.3.1 Cont.

Description	Frontage Roads	Cross Streets
Method for Determining Peak Runoff		
Less than 200 ac	Rational Method	Rational Method
Greater than 200 ac	Natural Resources Conservation Service Runoff Curve Number Method	Natural Resources Conservation Service Runoff Curve Number Method
Culvert Crossings		
Design Storm	Minor: 50-year	Minor: 50-year
	Major: 100-year	Major: 100-year
Check Storm	100-year	100-year
Headwater Control[1]	< Or = Existing Headwater Elevation	< Or = Existing Headwater Elevation
Maximum Outlet Velocity	Lined - 12 fps	Lined - 12 fps
	Vegetated clay: 8 fps	Vegetated clay: 8 fps
	Vegetated sandy: 6 fps	Vegetated sandy: 6 fps
Minimum Outlet Velocity	Lined: 2.5 fps	Lined: 2.5 fps
	Vegetated: 2 fps	Vegetated: 2 fps
Storm Sewers and Inlets		
Design Storm,[2]	25-year	25-year
	Depressed: 50-year	Depressed: 50-year
Check Storm,	50-year	50-year
	Depressed: 100-ear	Depressed: 100-year
Design Storm Allowable Ponding Width	One-lane for a 2-lane frontage road One-and-a-half lanes for a 3-lane frontage road	One lane open to traffic in each direction
Check Storm Allowable Ponding Width	50-year – no overtopping of curb	50-year – no overtopping of curb
Pipe Material	Concrete	Concrete
Minimum Pipe Size	Laterals: 18 inch	Laterals: 18 inch
	Trunklines: 24 inch	Trunklines: 24 inch
Minimum Pipe Velocity	3 fps	3 fps
Maximum Pipe Velocity	12 fps	12 fps

Notes:
1. This applies to cross structures. Refer to Chapter 7. The same headwater controls that apply to storm sewer apply to internal culverts. For internal drainage hydraulic grade line requirements, refer to Chapter 6.
2. For frontage roads and side streets along IH-35E south of Royal Lane, the 10-year design frequency applies. In all cases for depressed sections, design will be for the 50-year event. For further discussion, refer to Chapter 6.2.

CHAPTER 2 - POLICY AND GUIDELINES

An objective of TxDOT is to construct and maintain facilities that minimize the potential for flooding impacts to the surrounding area. The TxDOT Drainage Policy as stated in Chapter 2 of the TxDOT Hydraulic Design Manual shall govern the design of drainage facilities within the IH 635 corridor. All criteria in this manual have been developed to support this policy. Variances from any of the criteria or policy in this manual must receive prior approval from TxDOT.

TxDOT and the design Engineer shall work together in the preparation of the construction plans for projects within the IH 635 corridor. Throughout the preparation process TxDOT shall review the progress of the design in pre-determined intervals as defined in this manual. Submittals shall be made to TxDOT in the form of half-size sets of construction plans that are eleven inches tall by seventeen inches wide. For all but the final submittal, the construction plans shall have the preliminary seal of the project Engineer that is licensed in the state of Texas. An Engineer licensed in the state of Texas shall seal the final set of construction plans and any bound reports.

The review process is subdivided into four distinct steps, representing levels of completeness. They are: 35 percent complete, 65 percent complete, 95 percent complete, and 100 percent complete. A description of major drainage-related elements required at each step is explained in Chapter 3, Section 4. Refer to TxDOT's PS&E Preparation Manual for additional information.

For improvements at crossings that affect Federal Emergency Management Agency (FEMA) flood hazard areas, the guidelines explained in Chapter 2 of TxDOT's Hydraulic Design Manual should be followed. No rise in water surface for the 100-year storm will be permitted; therefore, Conditional Letters of Map Revision (CLOMR's) will not be necessary. It will be left up to the local community to submit to the FEMA a Letter of Map Revision (LOMR) request. TxDOT will provide the cities with the certified as-built plans for the proposed Project.

Improvements along the IH 635 corridor may impact jurisdictional waters of the United States. The agency responsible for regulating such impacts is the U.S. Army Corps of Engineers (USACE). Applications shall be submitted to the USACE detailing impacts to the waters of the United States and adjacent wetlands, according to the guidelines prescribed by the USACE.

The Engineer shall prepare exhibits that clearly demonstrate proposed work in waters of the U.S. and adjacent wetlands. Any measures to mitigate the impacts to the waters of the United States shall be reviewed and approved by TxDOT. The design Engineer shall prepare other permits or applications that may apply along the IH 635 corridor.

CHAPTER 3 - DATA COLLECTION, EVALUATION, AND DOCUMENTATION

3.1 GENERAL

The purpose of this chapter is to clarify documentation and data collection procedures for the IH 635 corridor. Because drainage improvements along the IH 635 corridor may be designed by several Engineers, it is imperative that a clear procedure for documentation is followed. This will ensure that information is adequately relayed and a uniform design within the corridor is achieved. Chapters 3 and 4 of TxDOT's Hydraulic Design Manual discuss the standard documentation and data collection procedures. The following chapter clarifies specific aspects of those procedures as they apply to the IH 635 corridor for the following design elements:

1. Hydraulic reports
2. Drainage plans preparation
3. Submittals

3.2 HYDRAULIC REPORTS

All data gathered and used in analysis and design should be included in hydraulic reports. For each major hydraulic crossing as defined in Table 4.2.1 the following information shall be included when available:

1. Stream/Structure location
2. Site description
3. Maps
    a. Local zoning maps
    b. Flood insurance studies
    c. USGS quadrangle maps
    d. Aerial photos
    e. Soil maps
4. Field survey information
    a. Existing hydraulic facilities
    b. Existing controls
    c. Profiles of existing roadway
5. Ground level photographs
6. Flood history
7. Flood insurance studies (FIS by FEMA)

8. Geotechnical information
    a. Soil properties
    b. Stream stability
    c. Existing erosion/scour problems
    d. Historic scour data from bridge inspection records for existing bridges and other crossings on the same and nearby streams.
    e. Boring logs where available
9. Drainage area maps
    a. Scale
    b. North arrow
    c. Delineated areas and size
    d. Runoff coefficients/Runoff Curve Numbers (RCN)
    e. Slopes
    f. Contours
10. Hydrologic methods and programs
11. Hydrologic calculations
12. Flood frequency analysis
    a. Peak discharges for design and check events
    b. Runoff hydrographs for design and check events
13. Hydraulic method or program used
14. Channel data
    a. Cross sections
        i. Location
        ii. Subdivisions and “n” values
    b. Thalweg profiles
    c. Flow controls
    d. Design criteria and assumptions
15. Structure data
    a. Size and configuration
    b. Abutment protection for bridges
    c. Stream bank stabilization
    d. Allowable headwater and outlet velocities for design and check events
    e. Magnitude and frequency of overtopping event

f. Scour calculations and estimated scour envelope for bridges

16. Hydraulic computations including stage-discharge data
17. Water surface elevations for the design and check events including headwater elevations at structures
18. Average velocities for design and check events
19. Analysis of existing conditions for comparison
    a. Velocities through existing structures
    b. Water surface elevations
    c. Erosion and sedimentation problems
20. Channel improvements/easements
21. Outlet protection/control

3.3 DRAINAGE PLANS PREPARATION

The drainage construction plans for the IH 635 corridor shall include the following sheets and information:

1. Drainage Area Maps
    a. Overall/Offsite drainage area maps
        i. Scale
        ii. North arrow
        iii. Centerline of IH 635
        iv. Cross structure drainage designation and size
        v. Drainage boundary for major divides
        vi. Contours with elevation label at a readable increment (when available)
        vii. Runoff direction arrows
        viii. Drainage area sizes
        ix. Design flows
    b. Roadway/Onsite drainage area maps
        i. Scale
        ii. North arrow
        iii. Centerline of IH 635
        iv. Existing topography
        v. Inlets and cross structures visible

vi. Runoff direction arrows
vii. Drainage area label/identification

2. Major culvert hydraulic computation sheets
    a. Culvert size and length
    b. Method of hydraulic analysis
    c. Design and check storm flow
    d. Design and check storm headwater and tailwater elevations
    e. Design and check storm velocities
        i. Through proposed structure
        ii. Through existing structure
    f. Culvert flowlines upstream and downstream
    g. Allowable and existing headwater elevations
3. Storm sewer hydraulic calculation sheets (refer to Tables 6.10.1 through 6.10.5) for required information
    a. Runoff computations
    b. Inlet configuration
    c. Inlet computations
    d. Storm sewer configuration
    e. Storm sewer computations
4. Culvert layout sheets
    a. North arrow
    b. Vertical and horizontal scales
    c. Plan view
        i. Proposed contours and grading
        ii. Existing contours, grading, or features to match at R.O.W.
        iii. Proposed roadway linework
        iv. Roadway centerline/baseline callouts and stationing
        v. Right-of-way and drainage easement linework and callouts
        vi. Culvert size and length (normal length and skew length, if applicable)
        vii. Culvert, headwall, inlet, storm sewer linework
        viii. Culvert stationing
        ix. Callouts for headwalls and junctions on culvert
    d. Profile view

i. Culvert profile facing the direction of increasing roadway stationing
ii. Culvert stationing
iii. Culvert elevation callouts at grade breaks and junctions
iv. Linework and callouts for pipes/culverts tying to cross structure
v. Centerline slopes upstream and downstream of structure
vi. Proposed flows for the design and check events
vii. Proposed headwater and tailwater elevations for the design and check events
viii. Proposed velocities for the design and check events
ix. Proposed and existing ground along the centerline of the culvert
x. Applicable culvert and end treatment/headwall standard details reference

5. Storm sewer plan and profile sheets
    a. Plan view
        i. Scale
        ii. North arrow
        iii. Topography
        iv. Proposed roadway linework
        v. Callouts for the reference roadway centerlines/baselines
        vi. Culvert, storm sewer trunk line and lateral, inlet, and ditch centerline linework
        vii. Node identification - headwall, inlet, bend, and junction designations
        viii. Pipe/link designations, pay lengths, and diameter/size
        ix. Utilities in critical locations
    b. Profile view
        i. Scale
        ii. Link profile linework
        iii. Callouts for headwalls, inlets, junctions, bends, and grade breaks
            1. Flowline elevations
            2. Type of node
            3. Reference roadway station/offset
            4. Top of pavement/grade or lip of gutter where applicable
            5. Depth of inlet/manhole
        iv. Callouts for pipe/link pay length, diameter/size, and slope

v. Trench excavation protection limits and length
vi. Hydraulic grade line for design event
vii. Existing ground and proposed (finished) grade along centerline of link

6. Special ditch grading
    a. Ditch designation – shown on storm sewer plan view
    b. Table summarizing ditch design – on separate special ditch grading summary sheet
        i. Reference roadway station, offset and elevation for beginning, end, grade breaks, and shape changes
        ii. Ditch flowline elevations
        iii. Ditch bottom width
    c. Ditch typical sections shown on roadway typical sections or on special ditch grading summary sheets
7. Drainage details and standard details

3.4 SUBMITTALS

Documentation review stages shall be as follows:

1. 35 Percent Submittal – Preliminary Design
    a. 11” x 17” half-size bond with preliminary seal
    b. Preliminary hydraulic report for effective review
    c. Overall drainage area maps essentially complete for final review
    d. Major creek crossings
        i. Final hydrologic and hydraulic calculations
        ii. Water surface elevations
        iii. Bridge layouts essentially complete for final review
        iv. Culvert plan and profile sheets with final layouts and sizes
        v. Utility locations in critical locations
    e. Minor culvert crossings – design substantially complete for effective review
        i. Final hydrologic calculations
        ii. Preliminary hydraulic calculations
        iii. Culvert layout
        iv. Preliminary size and profile

v. Preliminary water surface elevations

f. Preliminary box culvert supplement sheet if applicable

2. 65 Percent Submittal – Plans Adequate
   a. 11” x 17” half-size bond with preliminary seal
   b. Incorporated TxDOT comments from 35% submittal
   c. Preliminary storm sewer design
      i. Trunk line layout and preliminary size
      ii. Preliminary trunk line profile
      iii. Known inlet locations
      iv. Sample inlet drainage area map
      v. Outfall location, description, and tailwater information
      vi. Utility locations in critical locations
   d. Minor culvert design complete
      i. Final hydraulic calculations
      ii. Final culvert plan and profile sheets
   e. Provide plans and reports for review by adjacent cities
   f. Provide plans adequate for utility adjustments
3. 95 Percent Submittal – District Review
   a. 11” x 17” half-size bond with preliminary seal
   b. Incorporated TxDOT comments from 65% submittal
   c. Final storm sewer design
      i. Final inlet locations and inlet drainage area maps
      ii. Final hydrologic and hydraulic calculations
      iii. Final storm sewer plan and profiles sheets – trunk lines and laterals
   d. Final bridge design and construction plans
4. 100 Percent Submittal – Final Mylars
   a. 11” x 17 “ half-size sealed mylar
   b. Incorporated TxDOT comments from 95% submittal
   c. Final drainage construction plans and detail sheets
   d. TxDOT standard details
5. As-Built Plans
   a. 11” x 17” half-size sealed mylar
   b. Incorporated TxDOT approved field changes of 100% submittal

CHAPTER 4 - HYDROLOGY

4.1 GENERAL

The requirements regarding the computations of runoff from the watersheds located along the IH 635 corridor are based primarily on the TxDOT's Hydraulic Design Manual, Chapter 5. The information contained herein offers clarification to that manual and specifies some site-specific requirements related to the IH 635 corridor.

For the purposes of the IH 635 corridor, all computed existing and design discharges will be based on the assumption that the offsite contributing watershed is completely developed. In other words, only fully-urbanized discharges will be used to size proposed improvements. Sufficient documentation such as zoning maps, as-builts, site plans, etc., must be provided to support the computation of both the existing and fully-developed runoff discharges.

4.2 DESIGN FREQUENCY

The frequency of a storm refers to the probability that, in any given year, a certain magnitude of rainfall event will occur or be exceeded. Table 4.2.1 summarizes the frequencies that are to be used for the various drainage structures within the IH 635 corridor. Table 4.2.1 also specifies the criteria that are to be used for both design storms and check storms. The design and check storm conditions as they relate to the roadway facilities are given in Chapter 6, 7 and 8.

Table 4.2.1 Design Frequencies

Hydraulic Crossings	Design Storm	Check Storm
Major Bridge Crossings		
- Farmers Branch	100-year	
- Farmers Branch Tributary	100-year	
Major Culvert Crossings		
- Cooks Branch	100-year	
- Long Branch	100-year	
- Audelia	100-year	
- Jackson	100-year	
- Dixon	100-year	
Other major culverts (DA > 200 ac)	100-year	
Minor culvert crossings (DA < 200 ac)	50-year	100-year
Storm Drainage		
Frontage road and cross streets	25- and 50*-Year	50- and 100-Year
Mainlanes/General Purpose, ramps, collector/distributor and Managed HOV	50-Year	100-Year

*Depressed Section

4.3 FREQUENCIES OF COINCIDENTAL OCCURRENCES

Coincidental Occurrence was applied in the hydrologic design for the IH 635 corridor. Coincidental Occurrences refer to the varying amount of time it takes for different size drainage basins to reach peak flow. A smaller basin with a relatively quick time of concentration is going to achieve its peak discharge before a larger basin with a longer time of concentration. Therefore, when the smaller basin's peak flow is achieved the larger basin has only reached a fraction of its peak flow. The percent of the larger basin's peak flow that is reached depends on the ratio of drainage areas for the two basins. Table 4.3.1 lists the possible frequency combinations in the IH 635 corridor. Refer to Section 6.2 for further guidance involving coincidental occurrences.

Table 4.3.1 Frequency Combinations

Area Ratio	Storm Drain Frequency		
Receiving Stream Area to Storm Drain Area	25-Year	50-Year	100-Year
1,000:1	5	5	10
100:1	10	10	25
10:1	10	25	50
1:1	25	50	100

4.4 TIME OF CONCENTRATION

The computation of the time of concentration will be based on TxDOT's Hydraulic Design Manual for urbanized areas which subdivides the flow path into three categories: overland flow (sheet flow), shallow concentrated flow (gutter flow), and conduit and/or open channel flow. Typically, the overland or sheet flow consists of water flow over plane surfaces before it collects as shallow concentrated flow. Because only fully urbanized conditions will be considered for the IH 635 corridor, the shallow concentrated flow is most often carried through the gutter to an inlet and then into a storm sewer pipe or to a discharge point at a creek or channel. The runoff continues in the pipe and/or creek until it reaches IH 635 corridor or the design point.

The overland flow and shallow concentrated flow can be computed by using Figure 5-4 of the TxDOT Hydraulic Design Manual. The overland flow length shall not be greater than 200 feet for urban watersheds and 400 feet for all other watersheds.

Conduit flow and open channel flow can be computed from basic hydraulic principles. The velocity for open channels shall be computed using full bank flow conditions (channel full with no flow in the overbanks) for a typical stream cross-section. If no detailed information or as-built plans are available, the United States Geographical Maps (USGS) may be used. Conduit flow velocity shall be computed at uniform depth based on the computed discharge.

Actual time of concentration shall be computed, input into storm drain analysis, and accumulated along system, even if less than 10 minutes. Actual time is not used until accumulated total exceeds 10 minutes.

If the computed discharge is unknown, the velocity shall be computed using the full capacity of the pipe. The minimum time of concentration shall be 10 minutes.

4.5 RATIONAL METHOD

The Rational Method shall be used for drainage areas that are less than 200 acres. The TxDOT Hydraulic Design Manual provides a specific description of the theory and assumptions for the Rational Method. Table 4.5.1 summarizes various runoff coefficients that are to be used for the IH 635 corridor.

Table 4.5.1 Runoff Coefficients (C) for Urban Watersheds for 2-year, 5-year, and 10-year Frequencies

Type of Drainage Area	Runoff Coefficients (C)
Business	
• Downtown areas	0.90
• Neighborhood areas	0.80
Residential	
• Single-family development	0.60
• Multi-family development	0.85
Industrial	0.90
Parks, cemeteries, open grass areas	0.35
Yards	0.40
Streets	
• Asphalt	0.95
• Concrete	0.95

The runoff coefficients listed in Table 4.5.1 apply to storm events of 2, 5, and 10-year frequencies. Higher frequency storms require modifying the runoff coefficient because infiltration and other abstractions have a proportionally smaller effect on runoff. In order to

adjust the runoff coefficients in Table 4.5.1 to represent higher frequency events, multiply them by the factor C_f as indicated in Table 4.5.2. In no cases should the product of C and C_f exceed 1.00.

Table 4.5.2 Runoff Coefficient Adjustment Factors for Rational Method

Recurrence Intervals (years)	C_f
25	1.10
50	1.20
100	1.25

The Rational formula then becomes:

$$Q = CC_f IA$$

Where,

Q = Design frequency discharge (cfs)
C = Runoff coefficient from Table 4.5.1
C_f = Correction factor for 25, 50, and 100-year frequencies from Table 4.5.2
I = Design Storm Rainfall Intensity (in/hr)
A = Drainage Area (acres)

Each city within the IH 635 corridor has determined the rainfall intensity for various storm events. The values determined by the Cities are published in their respective drainage manuals. A comparison made between the intensities published in these manuals and those computed using TxDOT's criteria revealed that the Cities' 100-year intensities were generally lower than the 25-year intensities computed by TxDOT's criteria for times of concentration less than 20 minutes. Therefore, the rainfall intensity to be used for the IH 635 corridor is based on the following equation from the TxDOT manual:

$$I = \frac{b}{(t_c + d)^e}$$

Where,

I = Rainfall intensity (in/hr)
t_c = Time of concentration (min)
e, b, d = coefficients for specific frequencies that are based on rainfall frequency-duration data contained in the National Weather Service Technical Paper 40 (TP 40) for each county in Texas. See Table 4.5.3.

Table 4.5.3 Intensity Coefficients for Dallas County

Design Storm	Coefficients		
	e	b	d
2-Year	0.791	54	8.3
5-Year	0.782	68	8.7
10-Year	0.777	78	8.7
25-Year	0.774	90	8.7
50-Year	0.771	101	8.7
100-Year	0.762	106	8.3

4.6 NRCS RUNOFF CURVE NUMBER METHOD

The Natual Resources Conservation Services Runoff Curve Number Method (NRCS RCN Method) with a TY II 15-minute rainfall distribution shall be used to compute runoff for drainage areas greater than 200 acres. A detailed discussion of the NRCS RCN methodology can be found in Chapter 5, Section 7 of the TxDOT Hydraulic Design Manual. Within the IH 635 corridor, HEC-1, HEC-HMS, or other TxDOT approved software may be used to compute the runoff and a dimensionless unit hydrograph. With any modeling software, the computational interval shall not exceed one-third of the shortest lag time of any basin in the model. Refer to Chapter 5, Section 8 of the TxDOT Hydraulic Design Manual for a detailed discussion of the NRCS Type II unit hydrograph.

Table 4.6.1 summarizes the curve numbers that are to be used for the IH 635 corridor. This table is based on values from the TxDOT Hydraulic Design Manual, and includes only those categories that represent development within the IH 635 corridor.

Table 4.6.1 Runoff Curve Numbers for Urban Areas

Cover Type and Hydrologic Condition	Average Percent Impervious Area	A	B	C	D
Open space (lawns, parks, golf courses, cemeteries, etc.)		68	79	86	89
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
• Paved; curbs and storm drains (excluding right-of-way)		98	98	98	98
• Paved; open ditches (including right-of-way)		83	89	92	93
• Gravel (including right-of-way)		76	85	89	91
• Dirt (including right-of-way)		72	82	87	89
Urban districts:					
• Commercial and business	85	89	92	94	95
• Industrial	72	81	88	91	93
Residential districts:					
• Town houses and apartments	65	77	85	90	92
• Residential lots	38	61	75	83	87

Notes: Values are for average runoff condition, and $I_a = 0.2S$. The average percent impervious area shown was used to develop the composite RCNs. Other assumptions are: impervious areas are directly connected to the drainage system, impervious areas have a RCN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition.

4.7 FLOOD HYDROGRAPH ROUTING METHODS

A detailed description of Flood Hydrograph Routing techniques can be found in Chapter 5, Section 9 of the TxDOT Hydraulic Design Manual. Along streams that have detailed studies, the routing techniques should not be modified. However, for watersheds that have no existing study, HEC-1, HEC-HMS, or other TxDOT approved software may be used for flood hydrograph routing computation. The Modified Puls Method is to be used for channel routing. This will require development of a storage-discharge relationship from the hydraulic model (HEC-2 or HEC-RAS). Where there are detention ponds, a storage-elevation-discharge relationship is to be determined.

CHAPTER 5 - HYDRAULIC CROSSINGS

5.1 GENERAL

A detailed discussion of hydraulic principles and theory can be found in Chapter 6 of the TxDOT Hydraulic Design Manual. The following guidelines apply to open channels, including creeks, ditches, and channels along the IH 635 corridor. The analysis for these open channels within the IH 635 corridor shall be performed using HEC-RAS. See Section 6.8 for additional Roadside Ditch Criteria.

5.2 SURVEY

Cross-section information used in the hydraulic modeling of open channels shall be based on surveyed information. The cross sections shall be spaced no greater than 500 feet apart, and shall provide enough detail to sufficiently define the channel geometry as illustrated by Figure 5.2.1.

Existing bridges and culverts shall be modeled using the field survey information. The upstream and downstream limits of the hydraulic model for a culvert or bridge crossing shall extend 1,000-feet or to the nearest hydraulic control point which may include structure crossings or any point in the channel that controls the water surface elevation.

5.3 ROUGHNESS COEFFICIENTS

The roughness coefficients used for the hydraulic models shall be defined so that they vary horizontally along the cross section depending on the type of land cover. Table 5.3.1 lists typical values of roughness coefficients. Cross-sections should be subdivided to have a minimum 3 subsections, left overbank, channel, and right overbank. Typically, these 3 subsections will be adequate to define the section.

Figure 5.2.1 Typical Surveyed Cross Section with Five Points in the Channel

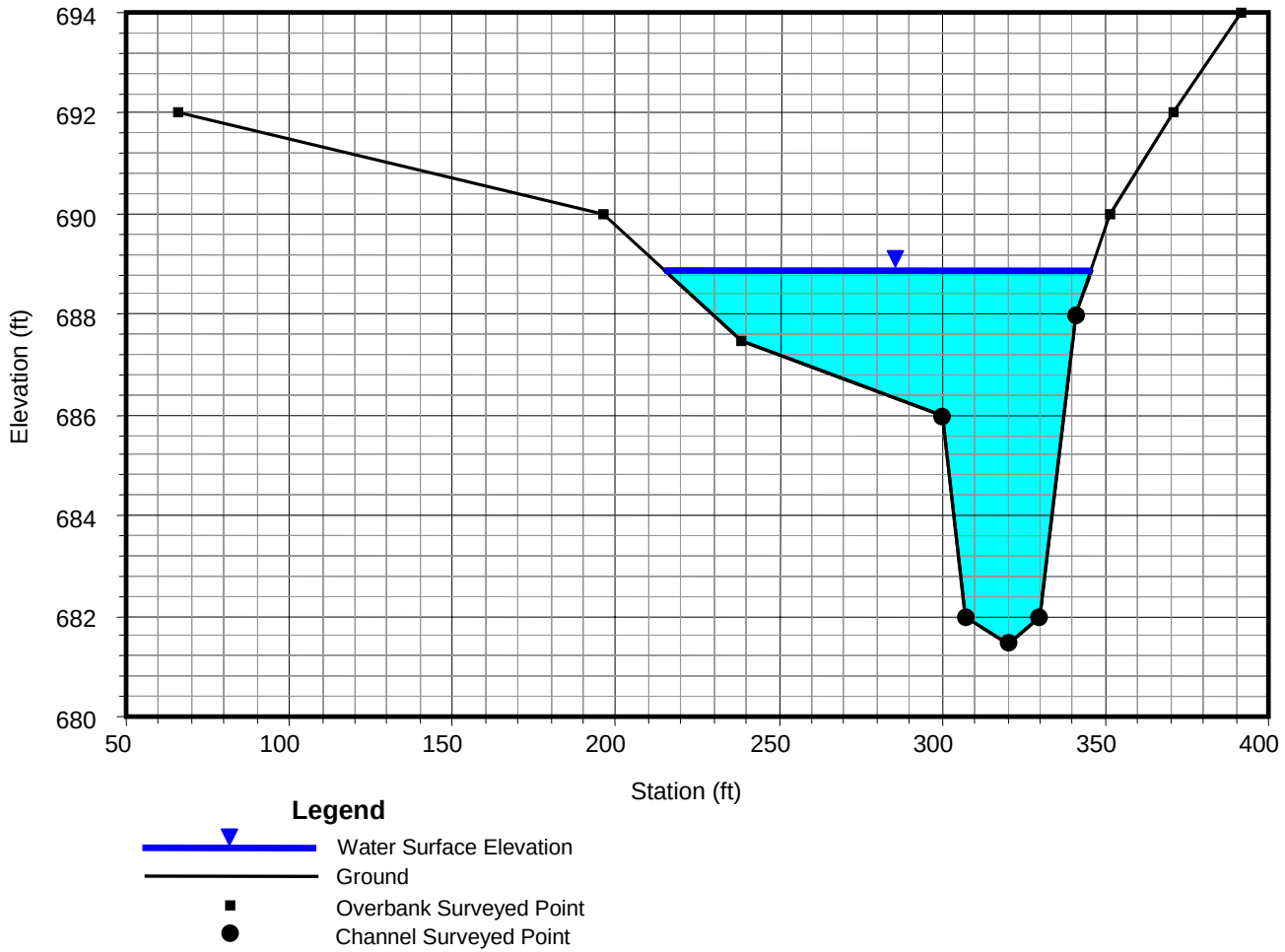


Table 5.3.1 Manning's "n" Values

Channel Description	"n" value
Channel Roughness Coefficients:	
Well Defined Natural Channel	
Rock bottom	0.035
Dirt lined with light vegetation	0.040
Moderate vegetation on banks	0.060
Heavy vegetation on banks	0.070

Channel Description	"n" value
Irregular Channel with Meanders and Pools	
Rock bottom	0.047
Dirt lined with light vegetation	0.052
Moderate vegetation on banks	0.072
Heavy vegetation on banks	0.080
Lined Channel	
Concrete-lined channel	0.020
Grouted riprap	0.035
Ungrouted riprap	0.040
Gabion mattress	0.033
Geotextile fabric with established vegetation	0.043
Maintained grass-lined channel	0.035
Non-maintained grass-lined channel	0.060
Overbank Roughness Coefficients:	
Undeveloped Overbank	
Short grass, no brush	0.050
Tall grass, no brush	0.060
Grass with moderate tree cover	0.080
Grass with heavy tree cover	0.120
Developed Overbanks	
Residential	0.150
Developed commercial or industrial	0.100
Parks, manicured open space	0.035

5.4 REQUIREMENTS

The study of existing open channels within the IH 635 corridor involves the study of both existing and proposed improvements using fully-developed conditions. In addition to complying with the USACE's requirements and TxDOT's requirements, the following guidelines must be met:

- There shall be no rise in water surface elevation between the existing conditions and the proposed conditions for the design storm. Existing conditions are defined as fully-developed offsite design flows and existing onsite (within existing right-of-way) through the existing structure and over the road, if applicable. Proposed conditions are based on fully-developed design flows through the proposed structure.
- The proposed conditions shall not increase the design storm channel velocity above the amount specified in Table 5.5.1.
- The study limits for major crossings shall extend either 1,000 feet upstream and downstream or to the next control structure, whichever is closer.

Valley storage shall be considered on those streams that are part of the Certificate Development Corridor (CDC) program.

5.5 CHANNELS

Chapter 7 of the TxDOT Hydraulic Design Manual discusses in detail the analysis and design of proposed channel improvements. In addition to the guidelines listed here, other requirements that involve state and federal agencies must be met for permits as they apply to any proposed improvements. This includes, but is not limited to, the following:

- Federal Emergency Management Agency National Flood Insurance Program (FEMA NFIP)
- U.S. Corps of Engineers (USACE) Section 404 permit
- Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System permit requirements
- TPDES permit for industrial activity (construction)
- EPA Endangered Species Act provisions
- Texas Commission of Environmental Quality (TCEQ) 401 Permit

Table 5.5.1 Types of Channel Lining

Type of Channel Lining	Maximum Velocity	Minimum Side Slopes (Hor.: Vert.)	Desired Shape	Minimum Velocity
Grouted riprap	12 feet/sec	3:1	Trapezoidal	2.5 feet/sec
Rock riprap	12 feet/sec	3:1	Trapezoidal	2.5 feet/sec
Gabion	12 feet/sec	N/A	N/A	2.5 feet/sec
Vegetated clay channels	8 feet/sec	3:1	Trapezoidal	2 feet/sec *
Vegetated sandy channels	6 feet/sec	3:1	Trapezoidal	2 feet/sec *****

* The minimum velocities apply to proposed channels. Any modifications to existing channels shall match the existing channel as close as possible.

Proposed channel improvements shall be lined with native material such as grasses, crushed rock, and earth where possible. In such a case, the side slopes shall be no steeper than 3 to 1. Other lining material may be necessary to accommodate hydraulic, aesthetic, economics, safety, and environment. Table 5.5.1 summarizes the requirements for various types of channel lining that are to be used in the IH 635 corridor.

5.6 STREAM ANALYSIS

For a detailed discussion of stream morphology and channel analysis refer to Chapter 7 of the TxDOT Hydraulic Design Manual. This manual also discusses environmental mitigation alternatives and stream stabilization measures that should be reviewed during the design of any channel improvements in the IH 635 corridor.

CHAPTER 6 - STORM DRAINAGE SYSTEMS

6.1 GENERAL

The drainage systems shall include all drainage and erosion control appurtenances such as:

- curb inlets
- grate inlets
- manholes
- junction boxes
- headwalls
- ditches
- underdrains
- safety end treatments
- storm sewer pipes
- box or pipe culverts
- lined channels

Drainage shall be designed to:

- Ensure the proper collection and disposal of storm runoff disrupted or generated by the Project and its associated construction.
- Ensure the continuing service of all drainage systems during Project construction.
- Provide protection from erosion of all slopes and ditches in the IH 635 corridor and on adjacent property.
- Maintain clear roadways for the design storm.
- Provide subgrade drainage, where required.

6.2 DESIGN FREQUENCIES

All inlet and storm drain design and check frequencies are listed in Table 4.2.1.

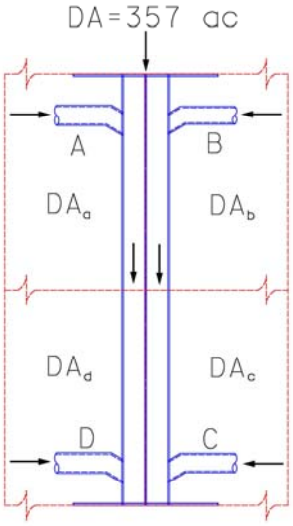
Depressed and at-grade mainlane/general purpose lane, ramp, and Managed HOV lane storm inlets and conduit shall be designed as given here and Table 4.2.1. These criteria with the ponding and the Hydraulic Grade Line (HGL) requirements given in Sections 6.4 through 6.7 meet the Federal Highway Administration (FHWA) and TxDOT's criteria for depressed sections.

The FHWA defines depressed sections as pavement areas on interstate highways where ponded water can only be removed through the storm conduit. The TxDOT Dallas district's policy adds mainlanes/general purpose lanes, direct connectors, ramps, Managed HOV lanes and frontage roads bounded by barrier or retaining wall to the "depressed" category. Because the majority of the IH 635 corridor falls within these two descriptions, all mainlane/general purpose lane, direct connector, ramp, and Managed HOV lane storm drain will be designed at the same frequency.

When a depressed frontage road section ties to a non-depressed frontage road section trunk line, the trunk line downstream of the junction shall be designed to maintain the 50-year HGL at critical elevations. All laterals that tie to this trunk line will be designed for full flow at the 25-year storm event. Figures 6.2.1 and 6.2.2 show examples of the proper design event for various locations. Critical elevations are given in Sections 6.5 and 6.7.

When a storm drain system ties to a cross structure of a larger drainage basin, coincidental occurrence may be applied to determine the storm drain's beginning HGL. The following example references the Table 4.3.1 in Chapter 4, Section 3.

Trunk line design for the 25-year event tying to a cross culvert.



Cross Structure Drainage A = 357 acres

Total Storm Drain Area = (DA_a+DA_b+DA_c+DA_d) = 18.7 acres

Ratio 357/18.7 = 19.1

Go to Table 4.3.1

Ratio 10:1 (round to the nearest ratio in table)

25-year design

Main stream = 10 year

Use the cross structure's 10-year water surface elevation as the starting tailwater elevation for each trunk line.

An acceptable alternative to the above method would be to evaluate the flood hydrograph in the outfall channel and base the tailwater elevation on the water level in the outfall at the time of the peak discharge from the trunk line.

Figure 6.2.1 Depressed and Non-Depressed Frequencies

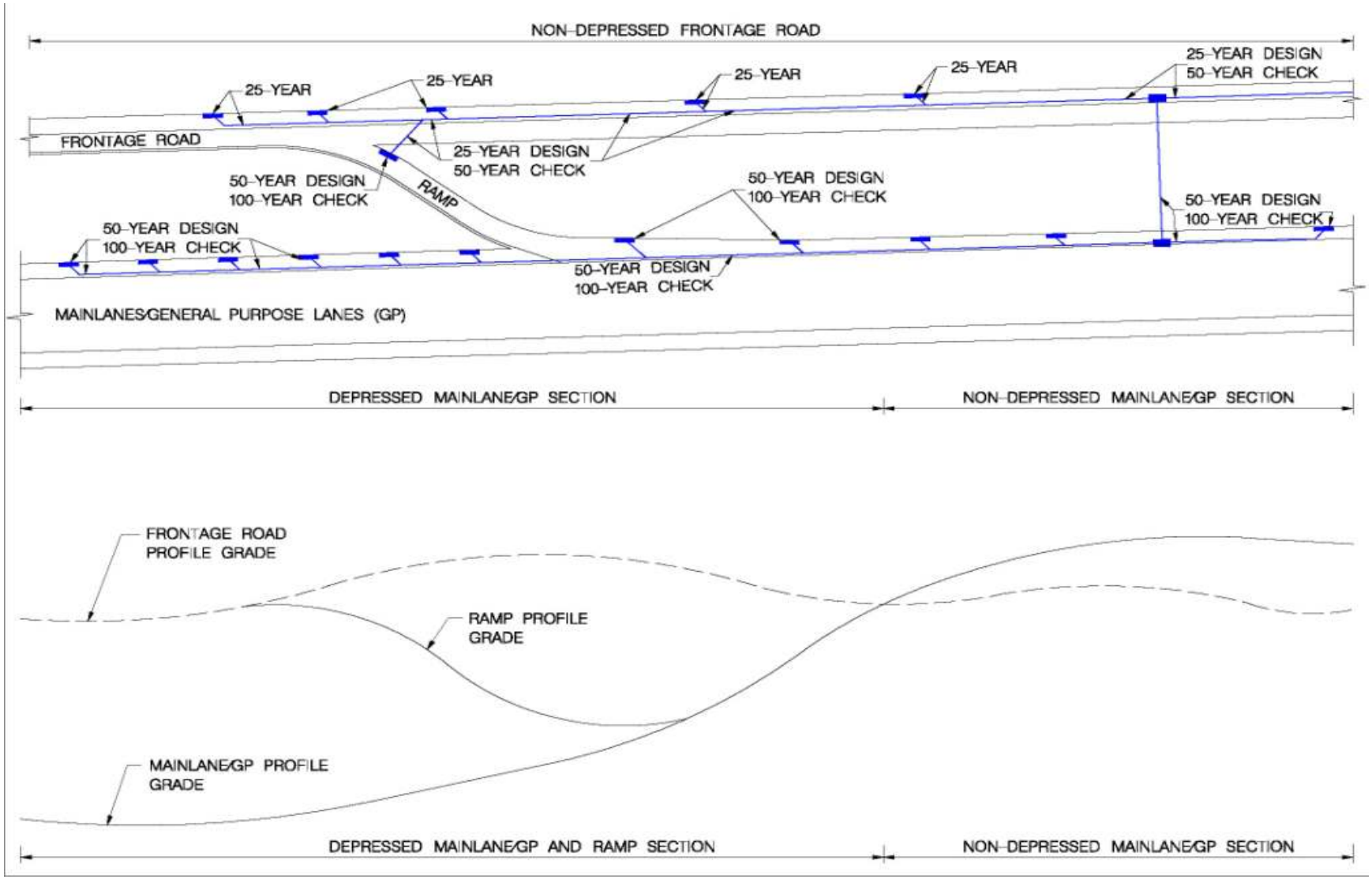
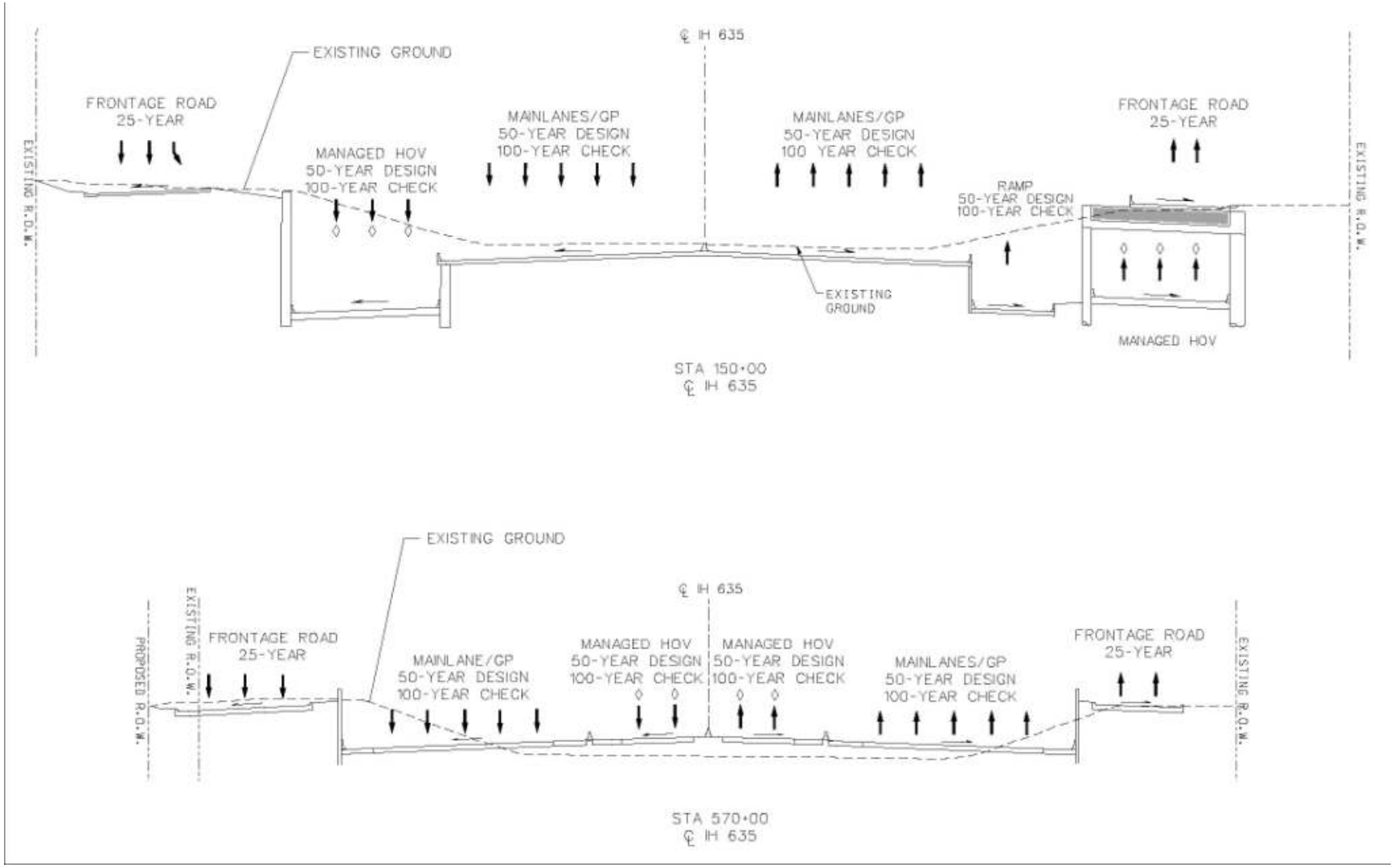


Figure 6.2.2 Depressed Sections



6.3 RUNOFF CALCULATIONS

Storm drain design should maintain the pre-project drainage boundaries when possible to avoid diverting runoff flows from one major watershed to another.

The time of concentration in storm drainage design consists of the time required for water to flow from the most distant point of the drainage area to the inlet and the travel time of the flow within the storm drain pipe. For the IH 635 corridor, the minimum time of concentration shall be 10-minutes. (Refer to Chapter 4, Section 5 for additional information.)

Refer to Chapter 4, Sections 5 and 6 for appropriate runoff calculation methods.

6.4 PAVEMENT DRAINAGE

Table 6.4.1 summarizes the allowable ponding widths.

Table 6.4.1 Allowable Ponding Widths

Location	Design Events	Check Event
Mainlanes/General Purpose Lanes	No encroachment into the travel lanes.	One lane free of encroachment
Managed HOV lanes, ramps, direct connectors and collector distributors	2-feet encroachment into the travel lanes.	One lane free of encroachment
Frontage roads	One-lane for a 2-lane frontage road. One-and-a-half lanes for a 3-lane frontage road.	50-year – no overtopping of curb 50-year – no overtopping of curb
Cross streets	One lane open to traffic in each direction.	50-year – no overtopping of curb
Note: Isolated instances of ponding width greater than those shown in the table may be allowed based on the Engineer's judgment and approval of TxDOT.		

For the design frequency, the allowable ponding width shall not be exceeded, nor shall the depth of flow exceed the curb height on curbed roadways. During the 100-year flood event, one-lane should be free of encroachment on the mainlanes/general purpose lanes, direct connectors and ramps to allow for emergency vehicle access.

Gutter flow and ponding spread should be calculated using the methods given in Chapter 10 Section 4 of the TxDOT Hydraulic Design Manual. Appropriate Manning's "n" values are 0.015 for concrete gutter with asphalt pavement and 0.016 for concrete pavement. For ponding at

approaches to sag locations, the longitudinal slopes used to evaluate ponding widths should be one-half of the tangent grades.

6.5 STORM DRAIN INLETS

Inlet types to be used in the IH 635 corridor are listed in Table 6.5.1. These refer to TxDOT Dallas District Standard Details.

Inlet runoff interception calculations should be based on equations and methods listed in Chapter 10, Section 5 of the TxDOT Hydraulic Design Manual.

Inlet input information for inlet capacity calculations are listed in Table 6.5.2 and Table 6.5.3.

Table 6.5.1 Inlet Types

Inlet Type	Standard Detail Sheet Name	General Location
Curb inlet	Curb Inlet TY I	Frontage roads, cross streets
Grate inlet	Drop Inlet TY C, Drop Inlet TY C & G	Gore areas, separation ditches, swales behind retaining walls
	Drop Inlet TY E & F	Mainlanes/General Purpose lanes, gore areas
Combination inlet	Curb and Grate Inlet TY II	Frontage roads, cross streets (where needed)[a]
Barrier inlet	Curb & Grate Inlet TY III Curb & Grate Inlet TY V	Mainlanes/General Purpose Lanes, Managed HOV lanes, ramps
Slotted drain[b]	Roadway Drain Details[c] (Slotted Drain) SD	Mainlanes/General Purpose Lanes against median barrier (where needed)[d], at entrances to tunnel sections

[a] If a Curb Inlet TY I is not sufficient to meet ponding and interception requirements
[b] Statewide Standard
[c] If other inlet types are not sufficient to meet ponding and interception requirements
[d] Not to be used at sag points and at locations where there are flexible joints in the roadway structure

Table 6.5.2 Curb Inlet Input

Dallas District Standard Detail Sheet Name	Curb Length	Gutter Depression	Depression Width	Inlet Opening Height	Critical Elevation	Maximum Ponded Depth
Curb Inlet TY I[a]	5', 10', 15'	3"	2'	4"	1.0' below gutter depression	Satisfies ponding requirements & < curb height
Curb & Grate Inlet TY II[a]	5', 10', 15'[b]	3"	3'	4"	1.0' below gutter depression	Satisfies ponding requirements & < curb height
Curb & Grate Inlet TY III	5'[b]	3"	3'	4"	1.0' below gutter depression	Satisfies ponding requirements
Curb & Grate Inlet TY V[a]	5', 10', 15'[b]	3"	3'	3"	1.0' below gutter depression	Satisfies ponding requirements

[a] Starting Curb length is 5' and larger lengths increase in 5' increments.
[b] Where the grate and curb opening overlap, the capacity of the greater of the two will be used.

Grate inlets should be aligned so that grate bars are parallel to the gutter flow except on side streets where bicycle safety is concerned and as stated above. Figure 6.5.1 shows typical grate inlet orientation.

All on-grade inlets, slotted drains excluded, shall be designed to intercept a minimum of 65% of the approaching flow of the design event, but inlets shall be designed to be cost effective. Carryover shall be limited upstream of intersections, driveways, superelevation transitions, bridges, and downstream of exit and entrance ramps so that no more than 0.10 cfs shall be allowed to concentrate and flow across travel lanes. If this is not possible, the potential for hydroplaning shall be checked based on guidelines listed in Chapter 10, Section 4 of the TxDOT Hydraulic Design Manual. At Dallas Area Rapid Transit (DART) light rail crossings, inlets shall be coordinated with the street profile so that no runoff enters the trackway.

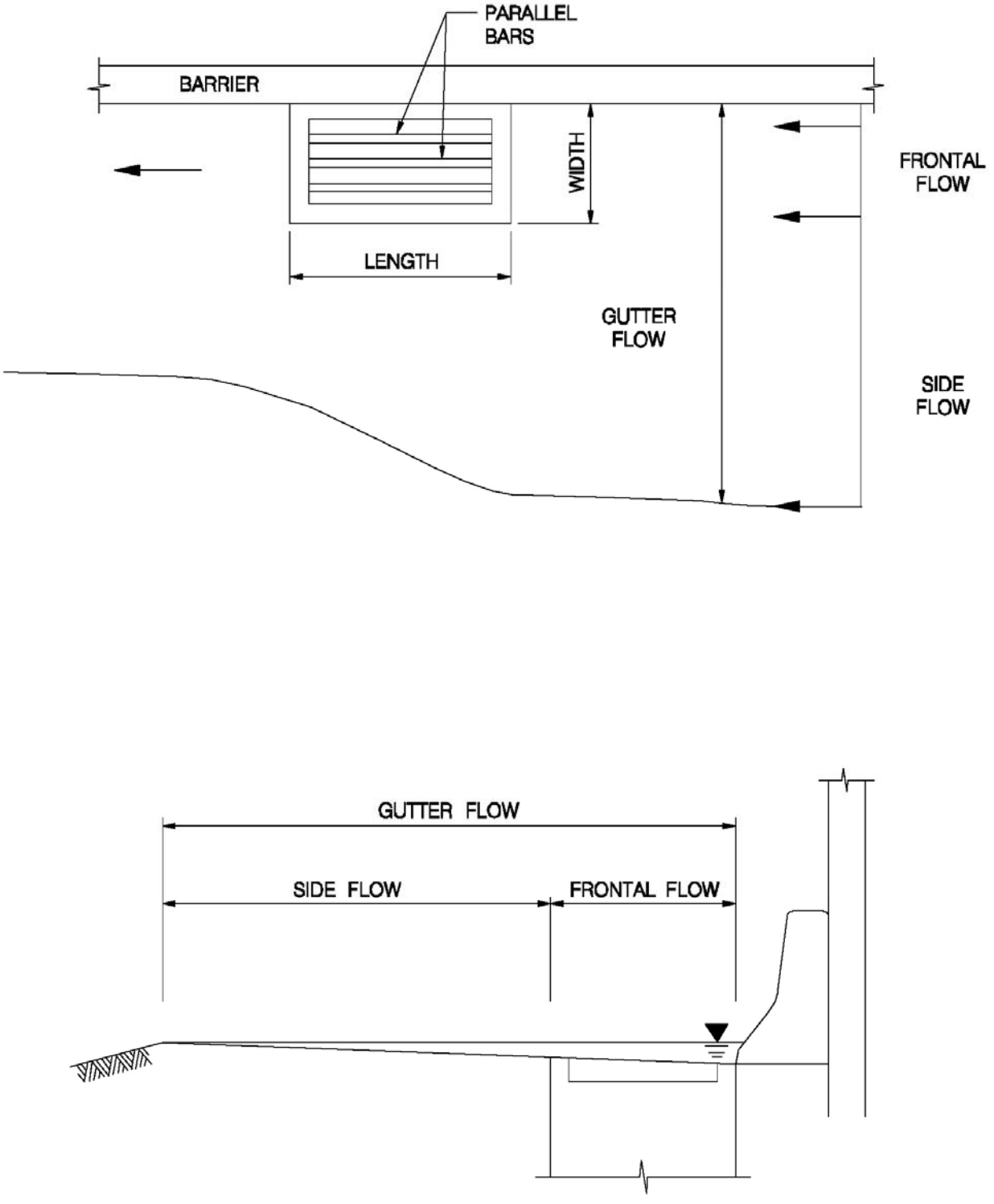
Table 6.5.3 Grate Inlet Input

Dallas District Standard Detail Sheet Name	Critical Elevation	Grate Type	Maximum Ponded Depth	Number of Grates	Grate Width	Grate Length	Effective Grate Area In Sag	Effective Grate Perimeter in Sag - 3-sided	Effective Grate Perimeter in Sag - 4-sided	Safety Reduction Factor in Sag
Drop Inlet TY C	1.0' below top of grate	Parallel	1' of freeboard[a]	1	2'	2.38'	3.14 ft^2	3.14'	8.25'	50%
				2	2'	4.73'	6.38 ft^2	6.38'	13.04'	50%
				3	2'	7.08'	9.59 ft^2	9.59'	17.75'	50%
Drop Inlet TY C & G*	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
Drop Inlet TY E & F	1.0' below top of grate	Parallel	1' of freeboard[a]	1	2.5'	1.22'	3.36 ft^2		7.54'	50%
				2	5.43'	1.22'	6.72 ft^2		11.54'	50%
				3	8.35'	1.22'	10.07 ft^2		15.54'	50%
Curb & Grate Inlet TY II	1.0' below gutter depression	Transverse	Satisfies ponding requirements & < curb height	1	1.52'	2.49'	3.09 ft^2	4.97'	NA	NA
Curb & Grate Inlet TY III	1.0' below gutter depression	Transverse	Satisfies ponding requirements	1	1.52'	2.49'	3.09 ft^2	4.97'	NA	NA
Curb & Grate Inlet TY V	1.0' below gutter depression	Transverse	Satisfies ponding requirements	1	1.52'	2.49'	3.09 ft^2	4.97'	NA	NA
Roadway Drain Details (Slotted Drain) SD	1.0' below drain guide opening	NA	NA	NA	NA	20'	NA	NA	NA	NA

[a] Refer to Figure 6.8.1

[b] Grate used in this detail is the same as the on used in the Drop Inlet TY C standard detail sheet so input is the same.

Figure 6.5.1 Parallel Grate Inlet



6.6 LOCATION OF STORM DRAIN APPURTENANCES / CONDUIT RUNS

Storm conduit and inlets shall be designed so that conflicts with major utilities are avoided.

Geometric controls may determine inlet location in addition to the ponding requirements given in Section 6.4. Examples of such locations are as follows:

- Low points in the gutter grade.
- Immediately upstream of entrance/exit ramp gores, cross walks and street intersection.
- Immediately upgrade of bridges (to prevent pavement runoff from flowing onto bridge decks).
- Immediately downstream of bridges (to intercept bridge deck drainage).
- Immediately upgrade of cross slope reversals.

6.7 CONDUIT SYSTEMS

Table 6.7.1 lists all storm drainage conduit criteria.

Table 6.7.1 Conduit System Design Criteria

Component	Design Criteria
Pipe class	Class III or greater, D-loads calculated according to Chapter 14 in the TxDOT Hydraulic Design Manual
Diameters	Laterals - minimum of 18" reinforced concrete pipe (RCP) Trunk lines - minimum of 24" RCP Standard sizes - 18", 24", 36", etc. in 6" increments Maximum pipe size - 60" then use reinforced concrete box Minimum box culvert height - 3'
Cover	Pavement - top of pipe clears pavement base structure Non-Pavement - a minimum of 1-ft from top of pipe to finished grade
Roughness coefficient "n"	Concrete pipe - 0.013 Concrete box - 0.012
Manhole spacing	24" - 300' 36" - 375' 42"-54" - 450' 60" - 900'
Bends	15, 30, 45, and 60 degree angles 90 degree angle if unavoidable
Lateral tie-ins	One lateral junction - 45 and 60 degree wyes Two or more lateral junction - A manhole or junction box unless the trunkline is more than twice the diameter of the largest ajoining lateral
Velocities	Minimum - 2 fps Maximum - 12 fps
Conduit flow	Design event - non-pressure flow Check event - see Hydraulic Grade Line
Hydraulic grade line	Design: Inlets - meet critical elevation requirements listed in Tables 6.5.2 and 6.5.3 Mahholes - a minimum of 1.0' below the top of the manhole cover Check: Frontage road and side streets - 50-year HGL below top of curb. Mainlanes, ramps, HOV, collector/distributor, depressed frontage roads - 100-year HGL allows for one travel lane to be free of encroachment

6.8 ROADSIDE CHANNELS

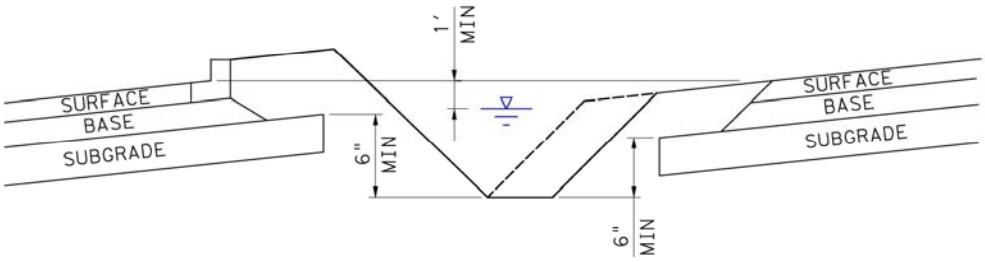
For the IH 635 corridor, roadside channels are those open channels, which convey runoff within the proposed right-of-way. Design shall meet criteria given in Section 5.5 and in Chapter 7, Section 3 of the TxDOT Hydraulic Design Manual. A summary of additional design requirements is listed in Table 6.8.1. Where possible, ditches parallel to DART light rail shall meet DART drainage design criteria.

Table 6.8.1 Roadway Channel Design Criteria

Component	Design Criteria
Minimum longitudinal slope	0.50%
Maximum side slope	Within clear zone[a] Mainlanes/General Purpose and Ramps – 6:1 Frontage Roads – 4:1 Outside of clear zone Mainlanes/General Purpose and Ramps – 4:1 Frontage Roads – 3:1 Backslope Trapezoidal bottom – 4:1 V-shaped bottom – 3:1
Water surface elevation	Design event – 1-foot below pavement surface[b]
Depth	Minimum of 6 inches below subgrade crown[b]

[a] Maximum side slopes without positive protection.
[b] Refer to Figure 6.8.1 for further explanation.

Figure 6.8.1 Roadside Channels



6.9 HEAD LOSSES

Hydraulic grade line losses associated with junctions, manholes, wyes, bends and pipe size changes will be calculated as shown in Table 6.9.1.

Table 6.9.1 Headloss Coefficients

Inlet on mainline		0.50	$(V_2^2/2g) – (K*V_1^2/2g)$
Inlet on mainline with branch lateral		0.25	$(V_2^2/2g) – (K*V_1^2/2g)$
Manhole on mainline with:	90° 60° 45° 30° 15°	0.25 0.35 0.50 0.60 0.90	$(V_2^2/2g) – (K*V_1^2/2g)$
Wye connection or cut in:	60° 45°	0.60 0.75	$(V_2^2/2g) – (K*V_1^2/2g)$
Inlet or manhole at beginning of line		1.25	$K*V_2^2/2g$
Bends:	90° 60° 45° 30° 15°	0.70 0.56 0.47 0.35 0.19	$K*V_2^2/2g$
Conduit connection to cross culvert		N/A	Headloss negligible

V_1 is upstream velocity and V_2 is downstream velocity.

6.10 OUTPUT

Drainage design calculations may be done with Winstorm, Geopak Drainage or other TxDOT approved methods. Required output is shown in Tables 6.9.1 through 6.9.5.

Table 6.10.1 Example Drainage Area Output

DRAINAGE AREA	PAVEMENT C = 0.95 (AC)	COMMERCIAL		INDUSTRIAL C = 0.85 (AC)	RESIDENTIAL		OPEN AREA		TOTAL AREA (AC)	COMPOSITE C VALUE	Tc ACTUAL (MIN)	Tc USED (MIN)	INTENSITY 25 yr (IN/HR)	DISCHARGE 25 yr (CFS)	INTENSITY 50 yr (IN/HR)	DISCHARGE 50 yr (CFS)	INTENSITY 100 yr (IN/HR)	DISCHARGE 100 yr (CFS)
		DOWNTOWN C = 0.90 (AC)	NEIGHBRHD. C = 0.70 (AC)		MULTI C = 0.75 (AC)	SINGLE C = 0.50 (AC)	GRASS C = 0.40 (AC)	PARKS C = 0.30 (AC)										
1-A1	0.24	0.12	0.00	0.62	0.00	0.00	0.05	0.00	1.03	0.86	7.15	10.00	9.33	9.09	10.56	11.22	11.57	12.81
1-A3	0.16	0.45	0.00	0.00	0.00	0.00	0.08	0.00	0.69	0.85	5.27	10.00	9.33	6.02	10.56	7.43	11.57	8.48
2-A1	0.06	0.00	0.23	0.00	0.45	0.70	0.04	0.10	1.58	0.60	9.62	10.00	9.33	9.73	10.56	12.01	11.57	13.71
2-B1	1.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.95	7.06	10.00	9.33	13.55	10.56	16.73	11.57	19.10

Table 6.10.2 Example Inlet Configuration Output

Inlet ID	Inlet Description	Inlet Station	Inlet Offset (ft)	Inlet Ref Chain	Inlet Elev (ft)	Inlet Type	Profile Type	Spread X-sect Slope 1 (%)	Spread X-sect Width 1 (ft)	Curb Length (ft)	Curb Depression (ft)	Curb Height (ft)	Curb Depression Width (%)	Grate Type	Grate Length (ft)	Grate Width (ft)	Grate Area (sf)	Grate Perimeter (sf)	Grate Area Reduction	Grate Perimeter Reduction	Remarks
1-A1	Curb Inlet Ty C w/ 1 ext (10')	910+00	0.00	EBFR	658.54	Curb	On Grade	3.06	38.00	10	0.33	0.50	2.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	CURB INLET
1-A3	Curb Inlet Ty C w/ 1 ext (10')	912+00	0.00	EBFR	653.51	Curb	On Grade	2.77	40.00	10	0.33	0.50	2.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a	CURB INLET
2-A1	Inlet Ty C-1	913+15	5' RT	EBFR	642.21	Grate	Sag	16.61	6.00	n/a	n/a	n/a	n/a	Parallel 1 1/8	2.48	4.96	4.87	9.44	0.5	0.5	DITCH GRATE INLET
2-B1	Inlet Ty C-1	915+00	69.17 LT	CL-IH635	635.54	Grate	On Grade	2.54	52.00	n/a	n/a	n/a	n/a	Parallel 1 1/8	2.48	4.96	4.87	6.95	n/a	n/a	GRATE INLET

Table 6.10.3 Example Inlet Hydraulics Output

1-A1	Curb	On Grade	910+00	EBFR	9.09	2.33	0.00		0.00	10.00	9.60	6.51	0.17	3.45	6.51	0.06	0.015	
1-A3	Curb	On Grade	912+00	EBFR	6.02	3.20	0.00	1-A1	0.00	10.00	9.95	8.26	0.22	1.83	8.26	0.10	0.015	
2-A1	Grate	Sag	913+15	EBFR	9.73	23.01	0.00		0.00	n/a	n/a	0.00	0.01	n/a	0.00	0.00	0.016	
2-B1	Grate	On Grade	915+00	CL-IH635	13.55	9.45	0.00		0.00	n/a	n/a	0.77	0.18	n/a	0.77	0.00	0.016	

Table 6.10.4 Example Link Configuration Output
Hydraulic Data: Proposed Storm Sewer (50-Year Frequency)

Link/Run No.	From Node	To Node	Drainage Area No.	Total DA	Weighted C-Value	Cumulative Tc (min)	Intensity (in/hr)	Design Q (cfs)	Conduit Size	Number of Barrels	Flowline U.S. (ft)	Flowline D.S. (ft)	Hydraulic Length (ft)	Slope (%)	Manning's n-value
IH 635 Eastbound Frontage Road Trunk Line (West of DNT)															
1	DP1	DP2	EF DP 1	2.45	0.915	10.00	10.56	23.72	30" RCP	1	626.35	623.02	664.73	0.50	0.013
2	DP2	DP3	EF DP 1-2	5.76	0.842	10.00	10.56	51.20	36" RCP	1	622.52	615.33	1037.64	0.69	0.013
3	DP3	DP4	EF DP 1-3	6.92	0.868	10.00	10.56	63.46	36" RCP	1	615.33	606.42	810.48	1.10	0.013
4	DP4	DP5	EF DP 1-4	17.88	0.845	10.00	10.56	159.62	4'X4' BC	1	605.42	600.56	441.36	1.10	0.012
5	DP5	DP6	EF DP 1-5	45.41	0.939	12.88	9.46	403.29	6'X6' BC	1	598.56	593.11	1010.63	0.54	0.012
6	DP6	DP6A	EF DP 1-6	60.85	0.951	14.22	9.03	522.27	6'X6' BC	1	593.11	589.75	589.63	0.57	0.012

Table 6.10.5. Example Link Hydraulics Output

Hydraulic Data: Proposed Storm Sewer (50-Year Frequency)

Link/Run No.	From Node	To Node	Critical Elevation (ft)	HGL U.S. (ft)	HGL D.S. (ft)	Friction Slope (%)	Depth Uniform (ft)	Depth Actual (ft/s)	Velocity Uniform (ft)	Velocity Actual (ft/s)	Q (cfs)	Capacity (cfs)	Junction Loss (ft)	Remarks
1	DP1	DP2	631.40	629.22	627.00	0.334	1.72	2.50	6.59	4.83	23.72	29.01	0.000	
2	DP2	DP3	629.80	627.00	620.48	0.589	2.27	3.00	8.91	7.24	51.19	55.52	0.408	
3	DP3	DP4	627.10	620.48	612.52	0.905	2.24	3.00	11.22	8.98	63.46	69.96	0.626	
4	DP4	DP5	616.60	612.52	608.88	0.649	2.78	4.00	14.35	9.98	159.61	207.81	0.773	
5	DP5	DP6	611.70	608.88	603.09	0.477	4.88	6.00	13.79	11.20	403.29	429.26	0.975	
6	DP6	DP6A	619.60	603.09	596.74	0.799	5.91	6.00	14.74	14.51	522.27	441.04	1.635	

CHAPTER 7 - CULVERTS

7.1 GENERAL

Culvert design shall be based on procedures outlined in Chapter 8 of TxDOT's Hydraulic Design Manual. The guidelines included here are intended to supplement that manual. Downstream tailwater shall be calculated as stated in Chapter 7 of TxDOT's Hydraulic Design Manual. Refer to Table 5.3.1 for Channel roughness coefficients to be used in IH 635 corridor.

Chapter 8, Section 2 of the TxDOT Hydraulic Manual discusses design considerations for culverts and Chapter 8, Section 3 discusses design procedure. The following discussion clarifies these sections as they relate specifically to the IH 635 corridor.

7.2 RUNOFF CALCULATIONS

Refer to Chapter 6 for appropriate runoff calculation methodology.

Major crossings or crossings with an upstream drainage area greater than 200 acres shall be designed based on the 100-year storm frequency. Minor crossings with upstream contributing drainage areas less than 200 acres shall be designed based on the 50-year storm frequency. For minor culvert crossings, the 100-year storm frequency shall be used as a check of the performance of the culvert. See section 7.5 for check criteria.

7.3 TAILWATER DETERMINATION

The tailwater refers to the water surface elevation downstream of the culvert crossing. The tailwater is used as starting conditions for the computation of the hydraulic grade line through the culvert. Within the IH 635 corridor there are two types of tailwater conditions and they include culverts that tie into a downstream channel and culverts that tie into a closed storm drain system.

7.3.1 Culverts That Tie Into a Downstream Channel

The tailwater for instances where the culvert discharges into a channel shall be computed based on standard backwater procedures as prescribed in Chapter 7 of the TxDOT Hydraulic Design Manual. Cross sections shall be obtained downstream to the first downstream control point or 1000-feet whichever is shorter. The procedure for obtaining

cross sections and creating hydraulic models is discussed in Chapter 5. Where the culvert is located along a major creek crossing, HEC-RAS or HEC-2 hydraulic models shall be used to determine the tailwater and to design the culvert. When two culverts along the same channel are separated by 1,000-foot or less, the downstream culvert must be included in the backwater computations.

7.3.2 Culverts That Tie Into a Closed System

The hydraulic grade line of the appropriate design frequency for the downstream drainage system shall be used as a tailwater for the proposed culvert. The frequency for the hydraulic grade line shall be the same frequency that is being used to size the culvert.

7.4 HYDRAULIC COEFFICIENTS

The Manning's roughness coefficient that is to be used for concrete boxes is 0.012. For concrete pipe the roughness coefficient is 0.013. Metal or plastic culverts shall not be used for culvert crossings within the IH 635 corridor.

The entrance loss coefficient is based on the culvert entrance geometry. Table 7.4.1 defines the entrance loss coefficients to be used for the various entrance types allowed within the IH 635 corridor. The exit loss coefficient shall be 1.0.

Table 7.4.1 Entrance Loss Coefficients

Type of Structure/Design of Entrance	Coefficient C_e
Pipe, Concrete	
Headwall or headwall and wingwalls	0.5
Straight wingwalls or pipe cut (mitered) to match embankment side slope	0.7
Box, Reinforced Concrete	
Beveled edges on three sides	0.20
45° flared wingwalls	0.40
180° parallel wingalls	0.50
Straight wingwalls (extension of sides)	0.70

7.5 HEADWATER

The headwater is the depth of the upstream water surface measured from the invert at the culvert entrance. Refer to Chapter 8 of TxDOT's Hydraulic Design Manual for headwater computation procedure. The design of the culvert shall begin by establishing the headwater resulting from the existing culvert passing the fully-urbanized discharges as defined in

Sections 4.1 and 5.4. The flow used for culvert design shall include the runoff from all drainage areas contributing flow to the culvert. For culverts within the IH 635 corridor, the total flow will be assumed to enter the upstream culvert entrance.

Once the existing headwater is set, the proposed culvert must be designed so that the design storm's headwater is no greater than the existing headwater. The check storm shall be used to ensure the headwater does not encroach onto the IH 635 mainlanes/general purpose lanes. In addition, the headwater elevation for the check storm must not be greater than the elevation of the culverts drainage divides.

The hydraulic grade line for the culverts will be a straight line interpolation between the proposed headwater and tailwater unless a hydraulic jump or hydraulic drop occurs inside the box.

7.6 CULVERT SECTIONS

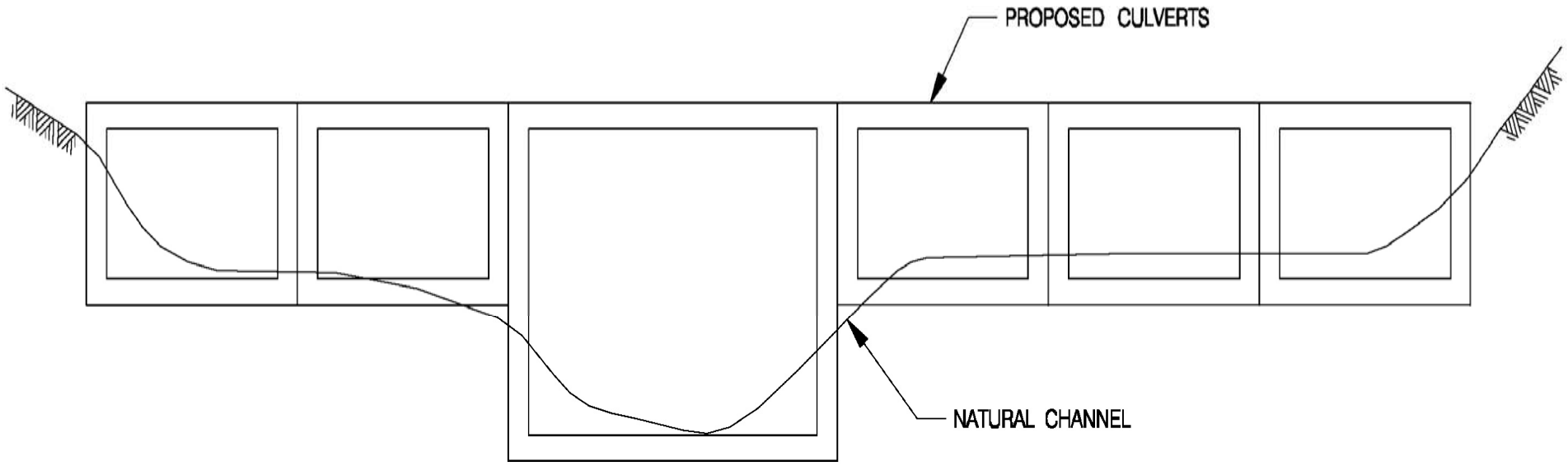
For the IH 635 corridor only concrete box culverts or concrete pipe culverts will be allowed for cross drainage. The smallest pipe diameter allowed is 24-inches. The shortest concrete box culvert height that is allowed is three-feet. The culverts span to height ratio must be no less than 1:1/2 as site conditions allow. When multiple box culverts are necessary they may be placed at various elevations to best match the natural or pipe channel section as shown in Figure 7.6.1.

For the IH 635 corridor, all culverts not tying to closed systems must have headwalls. Wingwalls shall project from the headwall at angles allowed by TxDOT standard details for headwalls and wingwalls. The edges of the culvert entrance shall be beveled as shown in TxDOT standard details for box culverts.

7.7 CULVERT VELOCITY

Modifications to the existing culvert shall not raise the velocities greater than the erosive limits for either the design storm or the check storm. The erosive limits are specified in Table 5.5.1 of this manual. If the proposed design causes a rise in the channel velocity greater than erosive limits, the proposed design must be modified to lower the velocity or the channel must be armored.

Figure 7.6.1 Multiple Box Culvert Placement



Armoring the channel experiencing high velocities may consist of materials shown in Table 5.5.1 such as gabions or rock rip-rap. The armoring shall be extended downstream or upstream to a point where the channel velocities are not erosive. Methods of reducing the proposed velocities are discussed in Chapter 8, Section 5 of TxDOT's Hydraulic Design Manual.

7.8 OUTPUT

There are a number of different tools to analyze culvert systems including: HEC-RAS, HY8, Culvert Master, etc. For the IH 635 corridor, regardless of the analytical tool used to design the culvert, the following data must be provided:

- Number and size of culvert structure
- Lowest top of curb above the culvert
- Upstream and downstream flowline (for each barrel, if necessary)
- Tailwater used for the design and check storm
- Headwater calculated for the design and check storms
- Length of box
- Slope of box
- Discharge for the design storm and check storm

CHAPTER 8 - BRIDGES

8.1 GENERAL

There are four hydraulically designed bridges in the IH 635 corridor. They are the crossings over Farmer's Branch Creek, its tributary, Cooks Branch, and the Lower Long Branch Creek of Duck Creek. These bridge crossings shall be designed based on methods provided in Chapter 9 of TxDOT's Hydraulic Design Manual. Chapter 9, Section 3 covers design considerations and Sections 4 through 6 cover design procedures. The information provided here supplements these sections as they apply to the IH 635 corridor.

8.2 RUNOFF CALCULATIONS

Refer to Chapter 4 for the appropriate runoff calculation methods. All bridge crossings are considered major creek crossings and shall be designed for the ultimate 100-year storm frequency as described in Section 5.4.

8.3 BRIDGE SECTIONS

Bridges shall span the creek so that no bents are located within the main channel when possible. Bents and headers shall be oriented so that they are parallel to the stream lines at the 100-year flow with standard skew angles to the floodplain such as 15°, 30°, 45°, etc. where possible. For skewed stream crossings where the skew angle is greater than 20°, the effective area of opening shall be reduced. Documentation shall be provided in the hydraulic report in the event that bridge or culvert skew is considered.

8.4 HYDRAULIC OPERATION

Because all hydraulically designed bridges are located at major creek crossings, HEC-2 or HEC-RAS hydraulic models shall be used to design the openings and determine tailwater and headwater. Farmer's Branch Creek and its tributary are in HEC-RAS, while Cooks Branch and Upper Long Branch will remain in HEC-2. The limits of analysis and cross section update requirements are given in Section 5.2. Manning's "n" values are given in Table 5.3.1.

Headwater shall be determined with methods listed in Chapter 9 Section 4 of TxDOT's Hydraulic Design Manual. The design storm headwater elevation must not be greater than the bridge's drainage divide elevation. Bridge low chord elevations shall be designed for a minimum of 2-feet above the 50-year water surface elevation and a desirable freeboard of 1-foot above the 100-year water surface elevation. The 100-year headwater shall not encroach onto

the IH 635 mainlanes/general purpose lanes. Bridges shall be designed to maintain their integrity during a 500-year event.

Maximum velocities for various types of channel lining are given in Section 5.5 in Table 5.5.1. Where velocities greater than these exist, the channel shall be protected.

8.5 BRIDGE SCOUR

Refer to "Evaluating Scour at Bridges" (HEC 18, 2001) for detailed scour discussion and analysis procedures.

Refer to FHWA IH-97-030, "Bridge Scour and Stream Instability Countermeasures" (HEC-23) for discussion on selection of scour protection measures.

To prevent scour from impacting the stability of the proposed bridges in non-lined channels, the following two methods shall be used to protect the columns and foundations:

- Design the bridge columns and foundations to withstand the maximum total potential scour for the structure. This includes the assumption that all of the material down to the maximum potential scour limit has been removed when determining the point of rigidity. It is also advisable in areas where a layer of highly erosion resistant bedrock, such as shale or limestone, is relatively shallow, to design these foundations as if the soil above the bedrock is removed completely by the scour process.
- Provide scour protection at the base of columns by installing an apron of rock riprap. Rock riprap is preferred over the use of gabions for scour protection. Riprap protection must be combined with a regular maintenance program to repair any scour that does occur at the base of the columns and regular inspection program of columns subject to scour, especially after major flood events. Guidelines based on HEC-23 for use of rock riprap are as follows:

    - The individual rocks should be sized to withstand the expected velocities.
    - The top of the apron should be at the streambed elevation.
    - The thickness of the apron should be a minimum of 3 times the D_{50}, and no shallower than the D_{100}.
    - The maximum size rock should be no greater than 2 times the D_{50}.

- The extent of the riprap apron around the column should be at least 2 times the column dimension measured perpendicular to the flow, measured from the column face. However, the extent of the apron downstream of the column should be no less than 10 feet.

8.6 OUTPUT

In the IH 635 corridor, HEC-RAS will be used for hydraulic modeling, except where an existing HEC-2 hydraulic model is available. With either software, the design models will be provided in the hydraulic report, and a summary of that documentation shall be incorporated into the construction plans as given in Chapter 3.

Scour calculations shall be performed in accordance with HEC-18. The required scour analysis output is shown in Table 8.6.1. An example of the required scour analysis results is shown in Table 8.6.2.

Table 8.6.1 Sample Scour Calculations

IH 635 LBJ FREEWAY
HYDRAULIC ANALYSIS

SCOUR ANALYSIS

NOTES AND SOURCES OF DATA:

MAXIMUM ALLOWABLE SCOUR:

Original Embedment (ft):	-
Existing Scour (ft):	-
Diameter / Section (inches):	-
Total column length (ft):	-
Column length above bracing (ft):	-
Based on bearing stability = 0.5 * Embedment (ft) - Exist. Scour:	-
Based on allowable unsupported length (ft):	-
Column/Drill Shaft = 1.5 x diameter (inches) - Exposed length:	-
Trestle Pile = 2.0 x diameter (inches) - Exposed length:	-
H or Square Pile = 2.0 x section depth (inches) - Exposed length:	-
Timber Pile = 1.0 x diameter (inches) - Exposed length:	-

PIER SCOUR: $Y_s = 2*Y_1*K_1*K_2*K_3*K_4*(a/Y_1)^{0.65}*Fr^{0.43}$

where:

	angle of attack:	-
L = pier length	L (ft):	-
a = pier width	a (ft):	-
K_1 = pier shape correction (chp 4, table 2 in HEC -18)	K1:	-
K_2 = correction for angle of attack (chp 4, table 3 in HEC-18)	K2:	-
K_3 = correction for bed condtion (chapter 4, table 4 in HEC-18)		
K_4 = correction for armoring by bed material size (chp 4, eqn 24 and table 5 in HEC-18)		
Y_1 = depth of flow directly upstream of the pier	Y1 (ft):	-
V_1 = velocity upstream of pier	V1 (fps):	-
$Fr = V_1/(gy)^{0.5}$	Fr:	-
Y_s = pier scour depth	Ys (ft):	-

CHECK FOR LIVE BED SCOUR: $V > V_{cr}$?, $V_{cr} = 11.52\ Y^{1/6}d_{50}^{1/3}$

where:

V = avg. through bridge velocity for subarea	V (fps):	-
Y = avg. flow depth in subarea	Y (ft):	-
d_{50} = median particle size diameter	d50 (ft):	-
V_{cr} = critical velocity for incipient motion	Vcr (ft):	-

LIVE BED CONTRACTION SCOUR: $Y_2/Y_1 = (Q_t/Q_c)^{0.857}(W_1/W_2)^{.069}$

where:

Y_1 = avg. depth of flow in upstream channel	Y_1 (ft):	-
W_1 = bottom width of the upstream main channel	W_1 (ft):	-
W_2 = bottom width of contracted channel	W_2 (ft):	-
Q_c = main channel flow upstream of contraction	Q_c (cfs):	-
Q_t = main channel flow in contracted section	Q_t (cfs):	-
Y_2 = avg. flow depth in contracted section	Y_2 (ft):	-
Y_s = contraction scour = $Y_2 - Y_1$	Y_s (ft):	-

CLEAR WATER CONTRACTION SCOUR: $Y_2 = (Q^2 / 120\ d_{50}^{2/3} W^2)^{3/7}$

where:

Q = flow in the clear water section	Q (cfs):	-
W = width in clear water section less pier widths	W (ft):	-
Y_2 = avg. flow depth in section + c/w scour	Y_2 (ft):	-
Y_s = contraction scour = $Y_2 - Y$	Y_s (ft):	-

SUMMARY OF SCOUR DEPTHS:

Pier scour (ft):	-
Contraction scour (ft):	-
Total (pier + contraction) scour (ft):	-
Maximum allowable scour depth (ft):	-

Table 8.6.2 Scour Results

Contraction Scour Variables and Depths							
Proposed Structure	Y_1 U/S Depth of Flow (ft)	W_1 Bottom Width of Main Channel (ft)	W_2 Bottom Width of Contracted Channel (ft)	Q_C Main Channel Flow U/S of Contraction (cfs)	Q_t Main Channel Flow Contracted Section (cfs)	Y_2 Avg. Flow Depth Contracted Section (ft)	Maximum Computed Potential Contraction Scour (ft)

Pier Scour Variables and Depths									
Proposed Structure	a Pier Width (ft)	K_1 Pier Shape Factor	K_2 Attack Angle Factor	K_3 Bed Condition Factor	K_4 Amoring Factor	Y_1 Hydraulic Depth (ft)	V_1 Velocity (fps)	Fr Froude Number	Maximum Computed Potential Pier Scour (ft)

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IH 635 Managed Lanes Project
Technical Provisions

Attachment 12-2A

Amendment For The
IH-635 Drainage Criteria Manual, October 2006

Chapter 1 – Introduction

Section	Subheading	Modification
1.1	Purpose	Retain
1.2	Scope	Delete
1.3	Design Criteria Summary	Retain

Chapter 2 – Policy and Guidelines

Delete all text except: "No rise in water surface of the 100-year storm will be permitted, therefore Conditional Letters of Map Revision (CLOMR's) will not be necessary."

Chapter 3 – Data Collection, Evaluation, and Documentation

Section	Subheading	Modification
3.1	General	Delete
3.2	Hydraulic Reports	Retain
3.3	Drainage Plans Preparation	Delete
3.4	Submittals	Delete

Chapter 4 – Hydrology

Section	Subheading	Modification
4.1	General	Delete text in first paragraph. Retain text in second paragraph.
4.2	Design Frequency	Retain
4.3	Frequencies of Coincidental Occurrences	Retain
4.4	Time of Concentration	Replace first sentence in first paragraph with: "The computation of the time of concentration will be based on subdividing the flow path into three categories: overland flow (sheet flow), shallow concentrated flow (gutter flow), and conduit and/or open channel flow. Delete the first sentence in the second paragraph.
4.5	Rational Method	Retain Table 4.5.1, Table 4.5.2, Table 4.5.3 and all text except: "The TxDOT Hydraulic Design Manual provides a specific description of the theory and assumptions for the Rational Method." Replace " Each city within the IH 635 corridor has determined the rainfall intensity for various storm events. The values determined by the Cities are published in their respective drainage manuals. A comparison made between the intensities published in these manuals and those computed using TxDOT's criteria revealed that the Cities' 100-year intensities were generally lower than the 25-year intensities computed by TxDOT's criteria for times of concentration less than 20 minutes. Therefore, the rainfall intensity to be used for the IH 635 corridor is based on the following equation from the TxDOT manual:" with "The rainfall intensity to be used for the IH 635 corridor is based on the following equation:"
4.6	NRCS Runoff Curve Number Method	Retain Table 4.6.1 and replace text with the following: "The Natural Resources Conservation Services Runoff Curve Number Method (NRCS RCN Method) with a TY II 15-minute rainfall distribution shall be used to compute runoff for drainage areas greater than 200 acres. With any modeling software, the computational interval shall not exceed one-third of the shortest lag time of any basin in the model. Table 4.6.1 summarizes the curve numbers that are to be used for the IH 635 corridor."

Section	Subheading	Modification
4.7	Flood Hydrograph Routing Methods	Retain all text except: "A detailed description of Flood Hydrograph Routing techniques can be found in Chapter 5, Section 9 of the TxDOT Hydraulic Design Manual and "TxDOT approved."

Chapter 5 – Hydraulic Crossing

Section	Subheading	Modification
5.1	General	Retain all text except: "A detailed discussion of hydraulic principles and theory can be found in Chapter 6 of the TxDOT Hydraulic Design Manual."
5.2	Survey	Retain
5.3	Roughness Coefficients	Retain
5.4	Requirements	Retain all text except: "In addition to complying with the USACE's requirements and TxDOT's requirements".
5.5	Channels	Delete all except Table 5.5.1.
5.6	Stream Analysis	Delete

Chapter 6 – Storm Drainage Systems

Section	Subheading	Modification
6.1	General	Delete
6.2	Design Frequencies	Retain all text except: "Critical elevations are given in Sections 6.5 and 6.7."
6.3	Runoff Calculations	Delete all text except: "Storm drain design should maintain the pre-project drainage boundaries when possible to avoid diverting runoff flows from one major watershed to another."
6.4	Pavement Drainage	Retain Table 6.4.1 and all text except: "Gutter flow and ponding spread should be calculated using the method's given in Chapter 10 Section 4 of the TxDOT Hydraulic Design Manual."
6.5	Storm Drain Inlets	Delete all text except: "Dallas Area Rapid Transit (DART) light rail crossings, inlets shall be coordinated with the street profile so that no runoff enters the trackway."
6.6	Location of Storm Drain Appurtenances / Conduit Runs	Delete
6.7	Conduit Systems	Retain all except delete the text in Table 6.7.1: "D-loads calculated according to Chapter 14 in the TxDOT Hydraulic Design Manual" and replace the text in Table 6.7.1: "Inlets – meet critical elevation requirements listed in Table 6.5.2 and 6.5.3" with the text: "Curb inlets and combination curb & grate inlets – a minimum of 1.0' below gutter depression. Grate inlets – a minimum of 1.0' below top of grate. Slotted drain – a minimum of 1.0' below guide opening."
6.8	Roadside Channels	Retain Table 6.8.1, Figure 6.8.1, and all text except: "and in Chapter 7, Section 3 of the TxDOT Hydraulic Design Manual."
6.9	Head Losses	Retain
6.10	Output	Delete

Chapter 7 – Culverts

Section	Subheading	Modification
7.1	General	Delete all text except: "Refer to Table 5.3.1 for Channel roughness coefficients to be used in IH 635 corridor." And "The following discussion clarifies these sections as they relate

Section	Subheading	Modification
		specifically to the IH 635 corridor."
7.2	Runoff Calculations	Retain
7.3	Tailwater Determination	Retain
7.3.1	Culverts That Tie Into a Downstream Channel	Retain all text except first sentence.
7.3.2	Culverts That Tie Into a Closed System	Retain
7.4	Hydraulic Coefficients	Retain
7.5	Headwater	Retain all text except: "Refer to Chapter 8 of TxDOT's Hydraulic Design Manual for headwater computation procedure."
7.6	Culvert Sections	Retain all text except the last 2 sentences in the second paragraph.
7.7	Culvert Velocity	Retain all text except: "Methods of reducing the proposed velocities are discussed in Chapter 8, Section 5 of TxDOT's Hydraulic Design Manual."
7.8	Output	Delete

Chapter 8 – Bridges

Section	Subheading	Modification
8.1	General	Delete all text except the first and second sentence.
8.2	Runoff Calculations	Retain
8.3	Bridge Sections	Retain
8.4	Hydraulic Operation	Retain all text except: "Headwater shall be determined with methods listed in Chapter 9 Section 4 of TxDOT's Hydraulic Design Manual."
8.5	Bridge Scour	Delete
8.6	Output	Replace all text with the following: "In the IH 635 corridor, HEC-RAS will be used for hydraulic modeling, except where an existing HEC-2 hydraulic model is available."

Texas Department of Transportation

IH 635 Managed Lanes Project
Technical Provisions

Attachment 14-1A

Amendment for the TxDOT Traffic Operations Manual, Railroad Operations Volume

AMENDMENTS FOR THE:
TxDOT Traffic Operations Manual – Railroad Operations Volume, February 2000

Manual Notices
Delete

Chapter 1 – Introduction

Section	Subheading	Modification
3	Operations Involving Railroads	Replace text with "The Developer and TxDOT will jointly enter into agreements with railroad companies. The Developer shall be responsible for all costs related to force account work for construction or maintenance requirements during the term of project. Where the Manual refers to actions the state normally takes, Developer shall perform those actions."

Chapter 2 – Railroad Agreements – General

Section	Subheading	Modification
1	Overview	Replace text with "Developer shall be responsible for all costs normally assigned to TxDOT."
2	Railroad Force Account Work	Replace text with "Developer and TxDOT will jointly enter into agreements with railroad companies. The Developer shall be responsible for all costs related to force account work for construction or maintenance requirements during the term of project. Where the Manual refers to actions the state normally takes, Developer shall perform those actions."
3	District Responsibilities	For reference only
3	District Responsibilities	In all subsequent subheadings, where the text includes work to be performed by the District or TRF, Developer shall perform.
4	TRF Responsibilities	Replace all text with the following: "The Developer shall provide all documents, estimates, and other information required by the TxDOT Traffic Operations Division (TRF) to prepare railroad agreements for the project."

Chapter 3 – Highway-Rail Grade Crossing Surfaces (Construction and Reconstruction)

Section	Subheading	Modification
1	Overview	Delete
2	Plan Layout	Replace "District" and "TxDOT" with "Developer". Under **Instruction**, delete "to be performed by TxDOT, TxDOT's contractor".
3	Agreement and Negotiating	Replace references to "Traffic Operations Division", "TRF", and "TxDOT" with the word "Developer". Delete **Construction and Maintenance** except for the 1st sentence. Under **Insurance Claims** delete all except the 1st sentence. Replace the word "contractor with the word "Developer". Delete "Payment Clause", "Solicitations of Bids" clause and "Conditions". Delete "Negotiating" and "After Execution".
4	Project Execution	Replace the words "District", "TxDOT's Contractor" and "TxDOT" with the word "Developer". Delete the section **Completion Letter**.

Chapter 4 – Grade Crossing Replanking Program
Delete

Chapter 5 – Spur Tracks
Delete

Chapter 6 – Warning Signals and Devices
Delete

Chapter 7 – Traffic Signal Preemption
Delete

Chapter 8 – Grade Separation
Delete

Chapter 9 – Drainage Structures and Common Ditches
Delete this Chapter, except for Page 9-2; Overview Policy and Practice.

Chapter 10 – Other Railroad Agreements
Delete this Chapter except for Page 10-2, Letter Agreements, Policy and Practices.

Chapter 11 – Crossing Closure, Relocation, and Consolidation
Delete

Appendix A – Forms
Delete