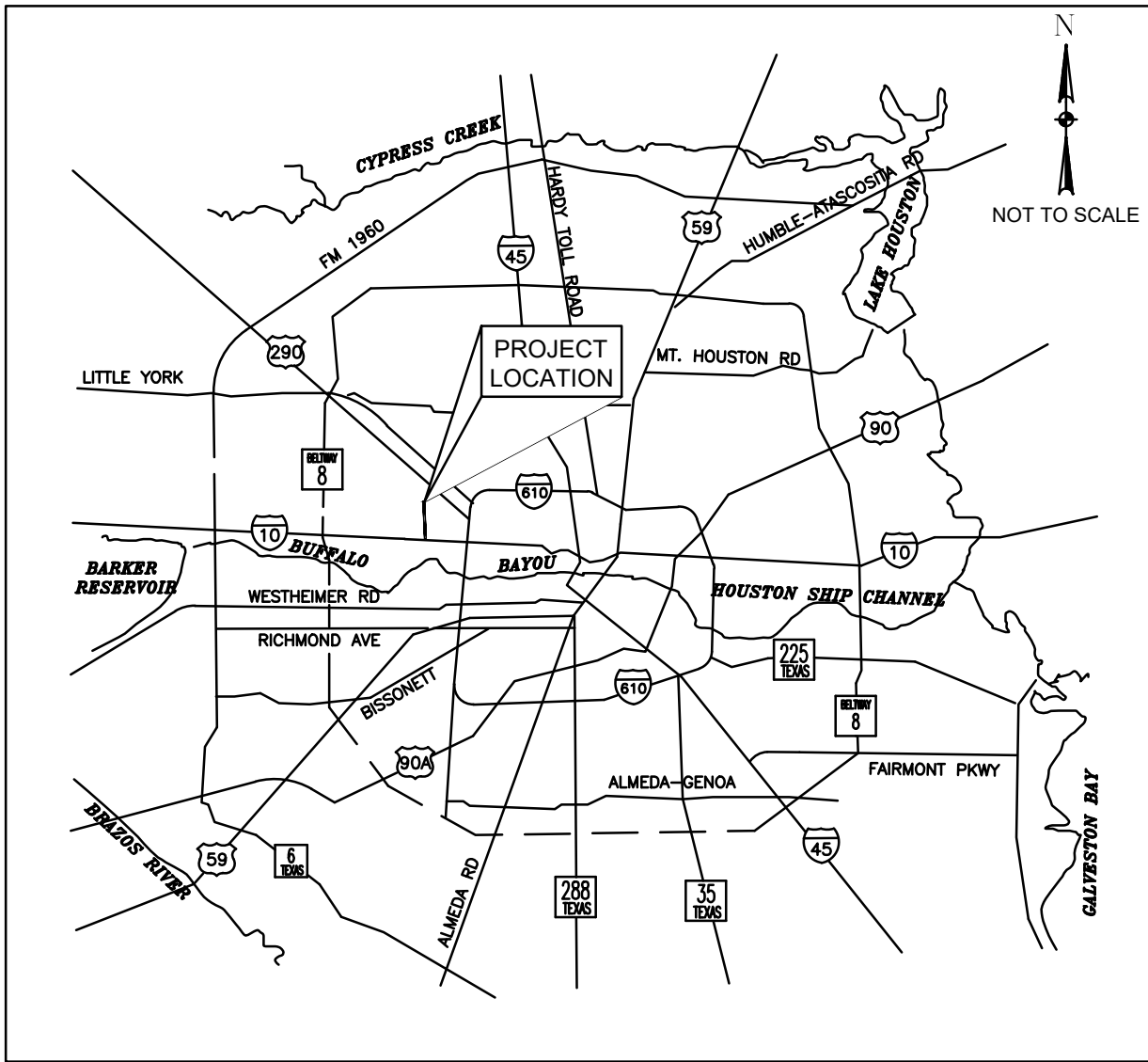


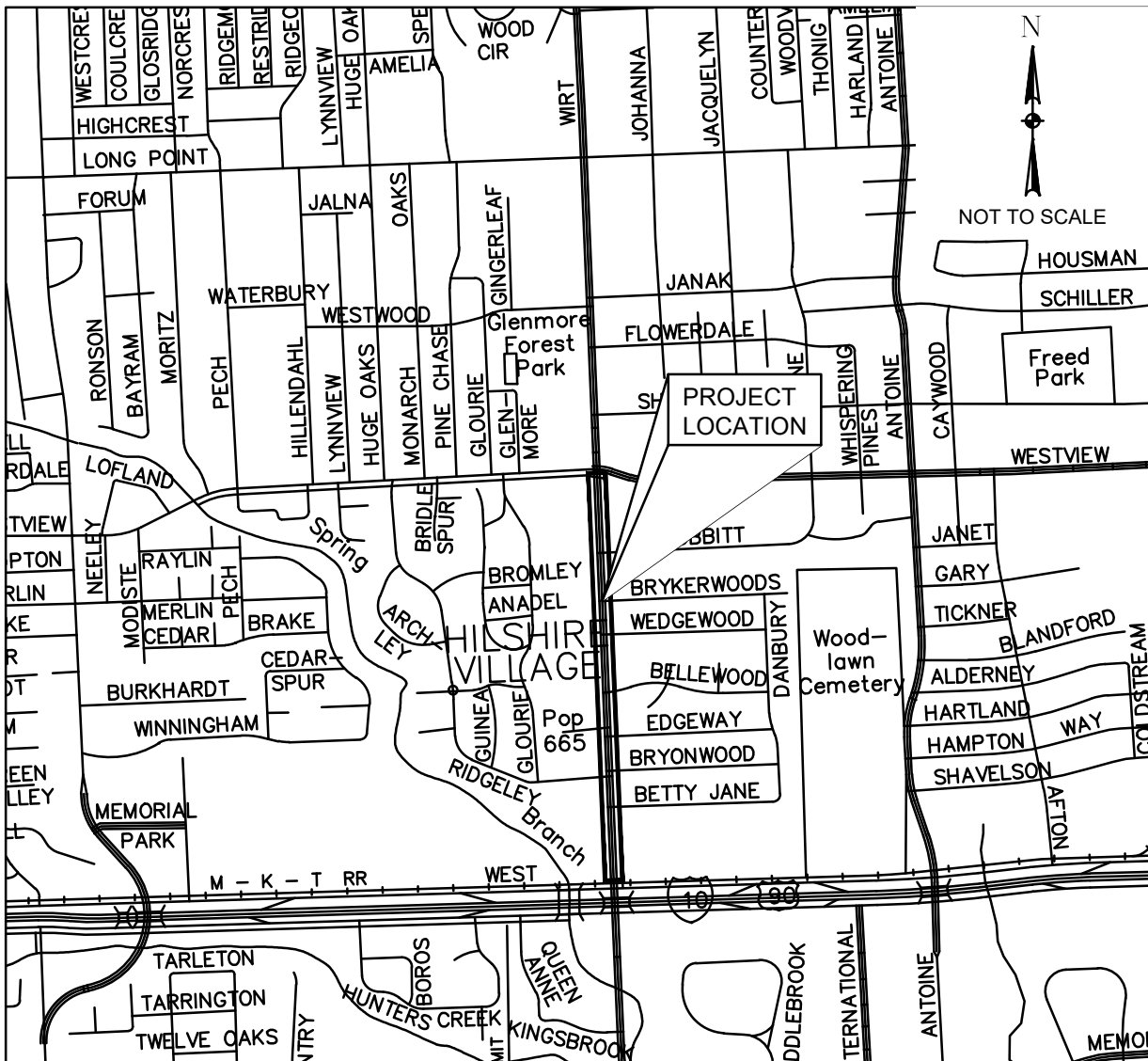
CITY OF HOUSTON
CITY OF HILSHIRE VILLAGE
WIRT RD SAFETY PROJECT
100% SUBMITTAL

SHEET INDEX

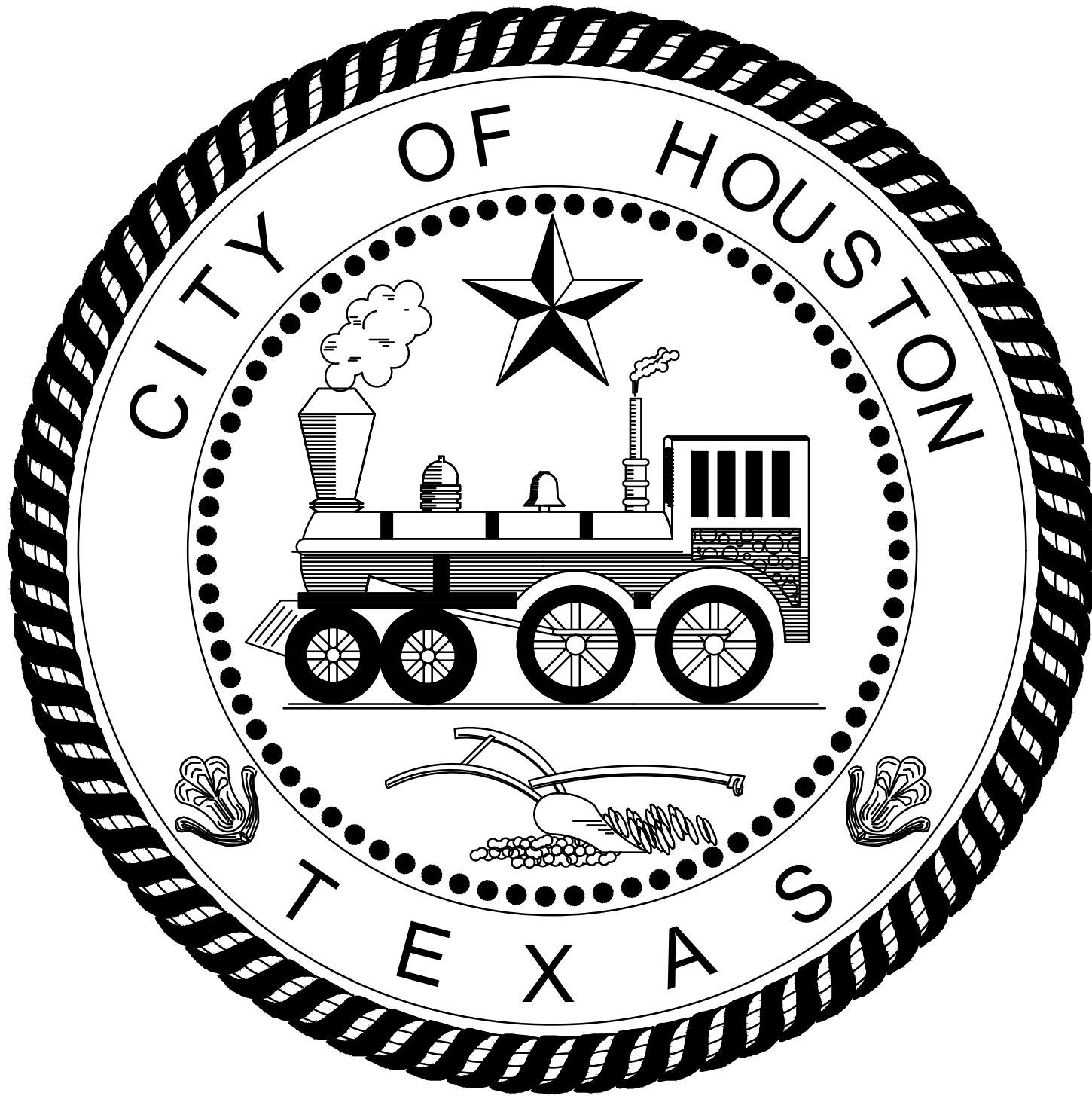
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LOCATION MAP



VICINITY MAP
KEY MAP NO. 451X
FEMA MAP NO. 48201C0665M
DATED 6/9/2014



MAYOR
JOHN WHITMIRE

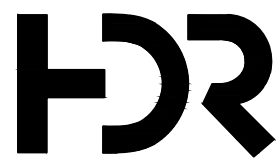
CONTROLLER
CHRIS HOLLINS

DISTRICT
COUNCIL MEMBERS

AMY PECK DISTRICT A	TARSHA JACKSON DISTRICT B	ABBIE KAMIN DISTRICT C	CAROLYN EVANS-SHABAZZ DISTRICT D
FRED FLICKINGER DISTRICT E	TIFFANY D. THOMAS DISTRICT F	MARY NAN HUFFMAN DISTRICT G	MARIO CASTILLO DISTRICT H
JOAQUIN MARTINEZ DISTRICT I	EDWARD POLLARD DISTRICT J	MARTHA CASTEX-TATUM DISTRICT K	

COUNCIL MEMBERS
AT-LARGE

JULIAN RAMIREZ POSITION 1	WILLIE DAVIS POSITION 2
TWILA CARTER POSITION 3	LETITIA PLUMMER POSITION 4
SALLIE ALCORN POSITION 5	



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METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

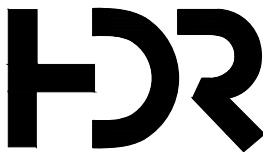
SURVEY


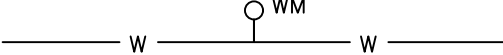

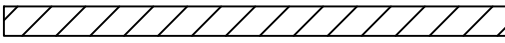
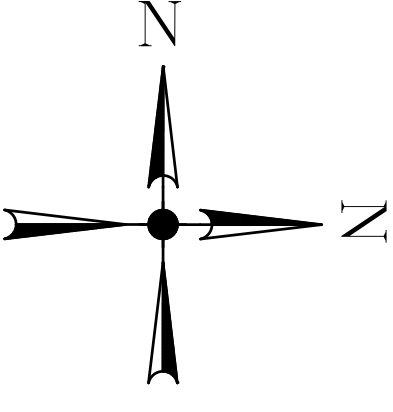

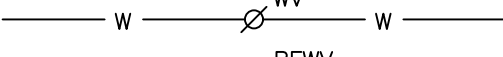

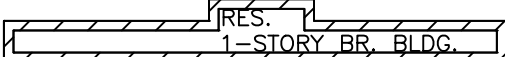

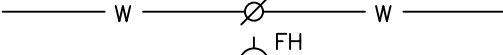


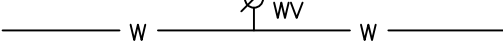
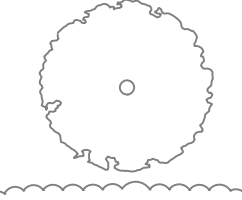
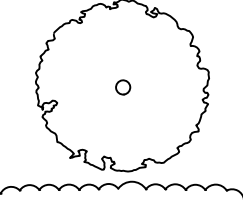
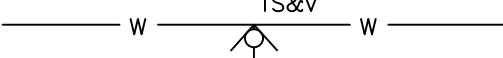







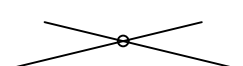




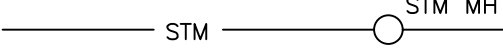

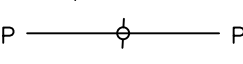
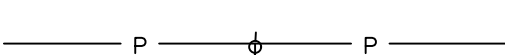

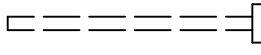





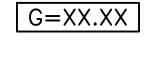
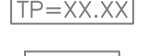
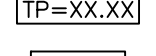
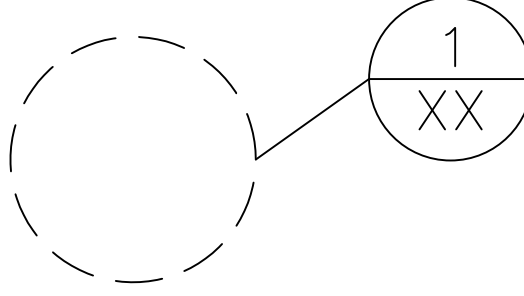




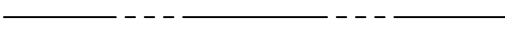



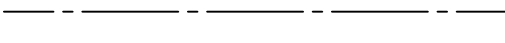
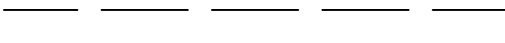


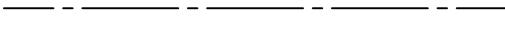
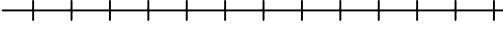









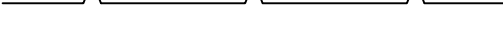
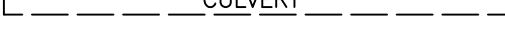

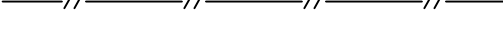













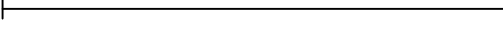



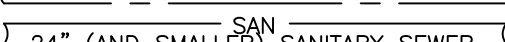
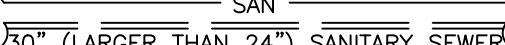

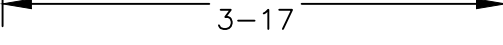







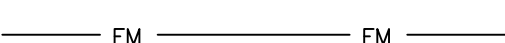







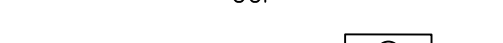
















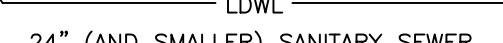




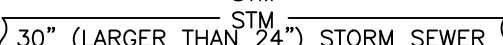
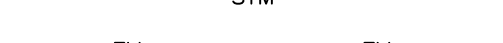









CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

SHEET NO 01 OF 25 SHEETS

FOR CITY OF HOUSTON USE ONLY

					APP.
				REVISION	
			NO.	DATE	
<div><div>CITY OF HOUSTON HOUSTON PUBLIC WORKS GENERAL NOTES- INSIDE CITY LIMITS</div><div>1. Unless otherwise noted and approved on Drawings, construct civil infrastructure in accordance with the effective edition of the Houston Public Works Standard Construction Specifications, Standard Construction Details, and supplements, addenda and amendments thereto. The latest edition of the above publications can be found at: http://www.houstonpermittingcenter.org/office-city-engineer/design-and-construction-standards.</div><div>2. The design must be consistent with the effective edition of Houston Public Works Infrastructure Design Manual and TCEQ (Texas Commission on Environmental Quality) requirements.</div><div>3. Utilities presented on these drawings are shown based on the best available information. Contractor shall verify the exact locations in the field prior to commencing construction. Contractor shall notify Texas One Call at 713-223-4567/811 or 800-344-8377 and Lone Star Notification Center at 800-669-8344 at least 48 hours before proceeding with any excavation. Utilities marked within the public right of way or in easements shall comply with TAC Title 16, Part 1, Chapter 18, Rule §18.6 and the American Public Works Administration (APWA) Uniform Color Code.</div><div>4. Contractor shall be responsible for damages to existing water, wastewater, storm water lines and traffic control devices. Damages shall be repaired in accordance with the effective edition of Houston Public Works, Standard Construction Specifications for Wastewater Collection System, Water Lines, Storm Drainage, Street Paving, and Traffic and Standard Construction Details for Wastewater Collection Systems, Water Lines, Storm Drainage, Street Paving, and Traffic, referenced above and supplements, addenda and amendments thereto, at no additional cost to the City of Houston.</div><div>5. Contractor shall notify the Office of the City Engineer, Houston Public Works @ 832-394-9098 or via fax at 832-395-4424 for inspection at least 48 hours prior to commencing construction.</div><div>6. Adequate drainage shall be maintained at all times during construction and any drainage ditch or structure disturbed during construction shall be restored to existing conditions or better and to the satisfaction of the owning authority.</div><div>7. Contractor shall take necessary precautions to protect root systems of shrubs, plants and trees along the area of excavation.</div><div>8. Contractor shall comply with latest edition of OSHA regulations and the State of Texas laws concerning excavation.</div><div>CITY OF HOUSTON HOUSTON PUBLIC WORKS STORM CONSTRUCTION NOTES</div><div>1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 2317-02, 02317-3, 02317-05, 02317-06, AND 02317-07 (JULY 2019) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.</div><div>2. ALL STORM SEWER CONSTRUCTED IN SIDELOT EASMENT SHALL BE R.C.P (C-76, CLASSIII) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE.</div><div>3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENTIC.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL..</div><div>4. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMACTION TEST (ASTM D-698/AASHTO T99).</div><div>5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.</div><div>6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASSIII).</div><div>7. ALL PRPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.</div><div>8. MINIMUM HORIZONTAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES. MINIMUM VERTICAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 24-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES.</div><div>9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALAVE BOXES TO GRADE.</div><div>10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.</div><div>11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.</div><div>12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.</div></div> <div><div>CITY OF HOUSTON HOUSTON PUBLIC WORKS SWPPP CONSTRUCTION NOTES</div><div>1. Contractor shall implement inlet protection devices and Reinforced Filter Fabric barrier along road and side ditches at locations shown on the typical Storm Water Pollution Prevention (SWPP) plans to keep silt and or excavated materials from entering into the storm water inlets and ditches eventually polluting the receiving storm.</div><div>2. During the excavation phase of the project, Contractor shall schedule the work in short segments so that excavation material can be quickly hauled away from the site and to prevent it from staying uncollected on the existing pavement. Any loose excavated material which falls on pavements or driveways shall be swept back into the excavated area.</div><div>3. Contractor shall clean up the existing street intersections and driveways daily, as necessary, to remove any excess mud, silt or rock tracked form the excavated area.</div><div>4. Contractor shall follow good housekeeping practices during the construction of the project, always cleaning up dirt and loose material as construction progresses.</div><div>5. Contractor to inspect and maintain the areas listed below at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.<ul style="list-style-type: none">• Disturbed areas of the construction site that have not been finally stabilized.• Areas used for storage of materials that are exposed to precipitation.• Structural control measures.• Locations where vehicles enter or exit the site.</div><div>6. Contractor to be responsible to maintain existing ditches and or culverts for unobstructed drainage at all times. Where sodding is disturbed by excavation on backfilling operations, such areas shall be replaced by seeding or sodding. Slopes 4:1 or steeper shall be replaced by block sodding.</div></div> <div><div>AT&T TEXAS/SWBT FACILITIES</div><div><div>1. The locations of AT&T Texas/SWBT facilities are shown in an approximate way only. The contractor shall determine the exact location before commencing work. He agrees to be fully responsible for any and all damages which might be occasioned by this failure to exactly locate and preserve these underground utilities.</div><div>2. The contractor shall call 1-800-344-8377 (TEXAS 811) a minimum of 48 hours prior to construction to have underground lines field located.</div><div>3. When excavating within eighteen inches (18") of the indicated location of AT&T Texas/SWBT facilities, all excavations must be accomplished using non-mechanized excavation procedures. When boring, the contractor shall expose the AT&T Texas/SWBT facilities.</div><div>4. When AT&T Texas/SWBT facilities are exposed, the contractor will provide support to prevent damage to the conduit ducts or cables. When excavating near telephone poles the contractor shall brace the the pole for support.</div><div>5. The presence or absence of AT&T Texas/SWBT underground conduit facilities of buried cable facilities shown on these plans does not mean that there are no direct buried cables or other cables in conduit in the area.</div><div>6. Please contact the AT&T Texas Damage Prevention Manager Kevin Ray Jr. at (713) 614-1983 or e-mail him at kr7896@att.com, if cable locate requests are not completed for our AT&T Texas/SWBT facilities.</div></div></div> <div><div>CENTERPOINT ENERGY GAS FACILITIES</div><div><div>CAUTION: UNDERGROUND GAS FACILITIES</div><div>The Contractor shall contact the Utility Coordinating Committee at 1-800-545-6005 or 811 a minimum of 48 hours prior to construction to have main and service lines field located.</div><div><ul style="list-style-type: none">• When CenterPoint Energy pipe line markings are not visible, call (713) 207-5463 or (713) 945-8037 (7:00 a.m. to 4:30 p.m.) for status of line location request before excavation begins.• When excavating within eighteen inches (18") of the indicated location of CenterPoint Energy Facilities, all excavation must be accomplished using non-mechanized excavation procedures.• When CenterPoint Energy facilities are exposed, sufficient support must be provided to the facilities to prevent excessive stress on the piping.• For emergencies regarding gas lines call (713) 659-2111 or (713) 207-4200.</div><div>The Contractor is fully responsible for any damages caused by his failure to exactly locate and preserve these underground facilities.</div></div></div> <div><div>CENTERPOINT ENERGY ELECTRIC FACILITIES</div><div><div>CAUTION: OVERHEAD ELECTRICAL LINES</div><div>Overhead lines may exist on the property. The location of overhead lines has not been shown on these drawings as the lines are clearly visible, but you should locate them prior to beginning any construction. Texas law, Section 752, Health and Safety Code forbids activities that occur in close proximity to high voltage lines, specifically:<ul style="list-style-type: none">• Any activity where person or things may come within six (6) feet of live overhead high voltage lines; and• Operating a crane, derrick, power shovel, drilling rig, pile driver, hoisting equipment, or similar apparatus within 10 feet of live overhead high voltage lines.</div><div>Parties responsible for the work, including Contractors are legally responsible for the safety of construction workers under this law. This law carries both criminal and civil liability. To arrange for lines to be turned off or removed call CenterPoint Energy at (713) 207-2222.</div><div>ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY</div><div>No approval to use, cross or occupy CenterPoint fee or easement property is given. If you need to use CenterPoint property, please contact our Survey & Right of Way Division at (713) 207-6348 or (713) 207-5769.</div><div>WARNING: UNDERGROUND ELECTRICAL UTILITIES</div><div>The Contractor shall contact the utility coordinating committee at 1-800-545-6005 or 811 a Minimum of 48 hours prior to construction to have main and service lines field located.</div><div><ul style="list-style-type: none">• All information concerning type and location of underground utilities is not guaranteed to be accurate or all inclusive. The contractors are responsible making their own determinations as to type and location of underground utilities as may be necessary to avoid damage thereto. The contractor shall verify location of underground pipelines, conduits, and structures by contacting owners of underground utilities or by excavating in advance of construction.• The contractor is responsible for determining the exact location of all utilities when and where they fall in the path of construction.• The contractor is also responsible for contacting the utility coordinating committee at (713) 223-4567 and Texas one call at 1-800-245-4545, forty-eight (48) hours prior to any construction.• The location of any CenterPoint energy utilities are shown in approximate way only. The contractor shall determine the exact location before commencing work. They agree to be fully responsible for any and all damages which might be occasioned by this failure to exactly locate and preserve these underground utilities.• All proposed facilities shall maintain 12" clear from all existing utilities.</div></div></div> <div><div>NOTICE:</div><div>FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811</div><div>VERIFICATION OF PRIVATE UTILITY LINES</div><div>Date</div><div>CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.</div><div>Signature valid for six months.</div><div>Date</div><div>CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities — not to be used for conflict verification)</div><div>Signature valid for six months.</div><div>Date</div><div>Approved for AT&T underground conduit facilities only. Signature valid for one year.</div><div><div><div><div>4828 LOOP CENTRAL DR #700 Houston, TX 77081 Tel: (713) 622-9264 www.hdrinc.com TEXAS REG. NO.F-754</div></div><div><div>INTERIM REVIEW</div><div>Not intended for construction, bidding or permit purposes.</div><div>Engineer: NGOC KIM LE, P.E.</div><div>P.E. Serial No.: 101192</div><div>Date: DECEMBER 2024</div></div></div></div><div><div>HILSHIRE VILLAGE WIRT RD SAFETY PROJECT</div><div>GENERAL NOTES</div><div>CITY OF HOUSTON HOUSTON PUBLIC WORKS</div><div>DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A</div><div>SHEET NO. 02 OF 25 FOR CITY OF HOUSTON USE ONLY</div></div></div>					

EXISTING PLAN VIEW	PROPOSED PLAN VIEW	EXISTING PLAN VIEW	PROPOSED PLAN VIEW	MISC. STANDARD ELEMENTS
 WATER METER	 WATER METER	 PAVING HEADER	 PAVING HEADER	 COH NORTH ARROW
 WATER VALVE (GATE)	 WATER VALVE (GATE)	 BUILDING, RESIDENTIAL	 BUILDING, RESIDENTIAL	 COH BAR SCALE
 WATER VALVE (BUTTERFLY)	 WATER VALVE (BUTTERFLY)	 BUILDING, COMMERCIAL	 BUILDING, COMMERCIAL	 REVISION CLOUD/DELTA
 FIRE HYDRANT/FLUSHING VALVE	 FIRE HYDRANT/FLUSHING VALVE	 TREE	 TREE	
 TAPPING SLEEVE & VALVE	 TAPPING SLEEVE & VALVE	 HEDGE	 HEDGE	
 REDUCER	 REDUCER	 IRON PIPE OR IRON ROD MONUMENT	 IRON PIPE OR IRON ROD MONUMENT	
 ROUND CONNECTION	 ROUND CONNECTION	 POINT OF INTERSECTION (PI)	 POINT OF INTERSECTION (PI)	
 SANITARY SEWER CLEANOUT & MANHOLE	 SANITARY SEWER CLEANOUT & MANHOLE	 POINT OF CURVE (PC)	 POINT OF CURVE (PC)	
 STORM SEWER MANHOLE	 STORM SEWER MANHOLE	 POINT OF TANGENCY (PT)	 POINT OF TANGENCY (PT)	
 STORM SEWER INLETS	 STORM SEWER INLETS	 POWER POLE	 POWER POLE	
 CULVERT PIPE AND HEADWALL	 CULVERT PIPE AND HEADWALL	 POWER POLE W/DOWN GUY	 POWER POLE W/DOWN GUY	
 TOP OF CURB ELEVATION	 TOP OF CURB ELEVATION			 VIEW TITLE
 GUTTER ELEVATION	 GUTTER ELEVATION			 SECTION CALLOUT
 TOP OF PAVEMENT ELEVATION	 TOP OF PAVEMENT ELEVATION			 DETAIL CALLOUT
 CONTOUR LINE	 CONTOUR LINE			
 ROW LINE	 ROW LINE	 NORTH OR EAST PROPERTY LINE	 NORTH OR EAST PROPERTY LINE	
 PROPERTY LINE	 PROPERTY LINE	 SOUTH OR WEST PROPERTY LINE	 SOUTH OR WEST PROPERTY LINE	
 LOT LINES	 LOT LINES	 NORTH OR EAST CURB	 NORTH OR EAST CURB	
 EASEMENT LINE	 EASEMENT LINE	 SOUTH OR WEST CURB	 SOUTH OR WEST CURB	
 CENTER LINE OF ROW	 CENTER LINE OF ROW	 NORTH OR EAST DITCH	 NORTH OR EAST DITCH	
 TRANSIT LINE	 TRANSIT LINE	 SOUTH OR WEST DITCH	 SOUTH OR WEST DITCH	
 EDGE OF DITCHES	 EDGE OF DITCHES	 NORTH OR EAST NATURAL GROUND	 NORTH OR EAST NATURAL GROUND	
 CENTER LINE OF DITCHES	 CENTER LINE OF DITCHES	 SOUTH OR WEST NATURAL GROUND	 SOUTH OR WEST NATURAL GROUND	
 EDGE OF DITCHES	 EDGE OF DITCHES	 NORTH OR EAST CULVERT	 NORTH OR EAST CULVERT	
 FENCE LINE, WOOD	 FENCE LINE, WOOD	 SOUTH OR WEST CULVERT	 SOUTH OR WEST CULVERT	
 FENCE LINE, CHAIN LINK	 FENCE LINE, CHAIN LINK	 CENTERLINE OF ROW	 CENTERLINE OF ROW	
 FENCE LINE, BARBED WIRE	 FENCE LINE, BARBED WIRE	 CENTERPOINT ENERGY CONDUIT	 CENTERPOINT ENERGY CONDUIT	
 FENCE LINE, HOG WIRE	 FENCE LINE, HOG WIRE	 GAS LINE	 GAS LINE	
 EDGE OF CONCRETE	 EDGE OF CONCRETE	 WESTERN UNION	 WESTERN UNION	
 CURB LINE	 CURB LINE	 AT&T CONDUIT	 AT&T CONDUIT	
 CONCRETE WALK	 CONCRETE WALK	 WATER LINE	 WATER LINE	
 EDGE OF ASPHALT	 EDGE OF ASPHALT	 SANITARY SEWER LINE	 SANITARY SEWER LINE	
 EDGE OF SHELL OR GRAVEL	 EDGE OF SHELL OR GRAVEL	 STORM SEWER LINE	 STORM SEWER LINE	
 DIMENSION LINE	 DIMENSION LINE	 SANITARY SEWER FORCE MAIN	 SANITARY SEWER FORCE MAIN	
 AERIAL POWER LINE	 AERIAL POWER LINE	 RECLAIMED WATER LINE	 RECLAIMED WATER LINE	
 UNDERGROUND POWER LINE	 UNDERGROUND POWER LINE	 NON-POTABLE WATER LINE	 NON-POTABLE WATER LINE	
 GAS LINE	 GAS LINE	 CENTERPOINT ENERGY MANHOLE	 CENTERPOINT ENERGY MANHOLE	
 UNKNOWN UNDERGROUND LINE	 UNKNOWN UNDERGROUND LINE	 AT&T MANHOLE	 AT&T MANHOLE	
 OIL PIPELINE	 OIL PIPELINE	 WATER LINE MANHOLE	 WATER LINE MANHOLE	
 UNDERGROUND TELCOMM LINE W/VAULT	 UNDERGROUND TELCOMM LINE W/ VAULT	 SANITARY SEWER MANHOLE & CLEANOUT	 SANITARY SEWER MANHOLE & CLEANOUT	
 AERIAL TELCOMM LINE	 AERIAL TELCOMM LINE	 STORM SEWER MANHOLE	 STORM SEWER MANHOLE	
 RAILROAD LINE	 RAILROAD LINE	 STORM SEWER INLET	 STORM SEWER INLET	
 WATER LINE	 WATER LINE			
 SANITARY SEWER LINE	 SANITARY SEWER LINE			
 STORM SEWER LINE	 STORM SEWER LINE			
 SANITARY SEWER FORCE MAIN	 SANITARY SEWER FORCE MAIN			
 RECLAIMED WATER LINE	 RECLAIMED WATER LINE			
 NON-POTABLE WATER LINE	 NON-POTABLE WATER LINE			
 GAS METER	 GAS METER			
 GAS VALVE	 GAS VALVE			
 PROPANE LINE	 PROPANE LINE			
 STEAM LINE	 STEAM LINE			
 MISC UNDERGROUND PIPELINE LABLE	 MISC UNDERGROUND PIPELINE LABLE			
	 MATCH LINE			

ABBREVIATIONS:

&	AND
⊙	AT
AB	ALL BELL
AC	ACRE / ASBESTOS CEMENT
AI/VR	AIR INLET / VACUUM RELIEF
APPROX	APPROXIMATELY
ASPH	ASPHALT
AVE	AVENUE
℄	BASELINE
B/B	BACK TO BACK
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BL	BUILDING LINE
BLDG	BUILDING
BLVD	BOULEVARD
℄	CENTER LINE
C/C	CENTER TO CENTER
COMP	CORRUGATED GALVANIZED METAL PIPE
CMP	CORRUGATED METAL PIPE
CIP	CAST IRON PIPE
CLR	CLEARANCE
CO	CLEAN OUT
COH	CITY OF HOUSTON
CONC	CONCRETE
CONSTR	CONSTRUCTION
CPEE	CENTERPOINT ENERGY ELECTRIC
CPEG	CENTERPOINT ENERGY GAS
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG	DRAWING
DWY	DRIVEWAY
E	EAST
EL	ELEVATION
EP	EDGE OF PAVEMENT
E/R	END OF RADIUS
ESMT	EASEMENT
EXST	EXISTING
FC	FACE OF CURB
F/F	FACE TO FACE
FH	FIRE HYDRANT
℄	FLOW LINE
FM	FORCE MAIN
FT	FEET
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
GV&B	GATE VALVE AND BOX
HCFC	HARRIS COUNTY FLOOD CONTROL DISTRICT
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HP	HIGH PRESSURE
INV EL	INVERT ELEVATION
IP	INTERMEDIATE PRESSURE
IR	IRON ROD

ABBREVIATIONS:

J-BOX	JUNCTION BOX
JT	JOINT
JUNCT	JUNCTION
LF	LINEAR FEET
LN	LANE
LPT	LOW POINT
LT	LEFT
LS	LIFT STATION
MAX	MAXIMUM
METRO	METROPOLITAN TRANSIT AUTHORITY
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
N	NORTH
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NG	NATURAL GROUND
NO	NUMBER
NTS	NOT TO SCALE
OCC	ZERO CURB CUT
OS	OFFSET
OH	OVERHEAD
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PERM	PERMANENT
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PNT	POINT
PPCA	POTENTIALLY PETROLEUM CONTAMINATED AREA
PRC	POINT OF REVERSE
PROP	PROPOSED
PSI	POUND PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE / POINT OF VERTICAL CURVATURE
PVMT	PAVEMENT
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

ABBREVIATIONS:

Ⓡ	RECORD DRAWING
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REINF	REINFORCED
REM	REMOVABLE
RJ	RESTRAINED JOINT
ROW	RIGHT OF WAY
RR	RAILROAD
RRPM	REFLECTIVE REMOVABLE PAVEMENT MARKERS
RT	RIGHT
S	SOUTH
SAN	SANITARY
SCHED	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SSE	SANITARY SEWER EASEMENT
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STM	STORM
SWBT	SOUTHWESTERN BELL TELEPHONE
SWR	SEWER
SY	SQUARE YARD
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TEMP	TEMPORARY
TOB	TOP OF BANK
TOC	TOP OF CURB
TOP	TOP OF PAVEMENT
TOS	TOP OF STACK
TS&V	TAPPING SLEEVE AND VALVE
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TYP	TYPICAL
UE	UTILITY EASEMENT
UGND	UNDERGROUND
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
W/	WITH
WL	WATER LINE
WLE	WATER LINE EASEMENT
WM	WATER METER
WP	WOOD POLE
WSEL	WATER SURFACE ELEVATION
WV	WATER VALVE
WWTP	WASTE WATER TREATMENT PLANT

NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities – not to be used for conflict verification)

Signature valid for six months.

Date

Approved for AT&T underground conduit facilities only.
Signature valid for one year.



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Houston, TX 77081
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www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

ABBREVIATIONS

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

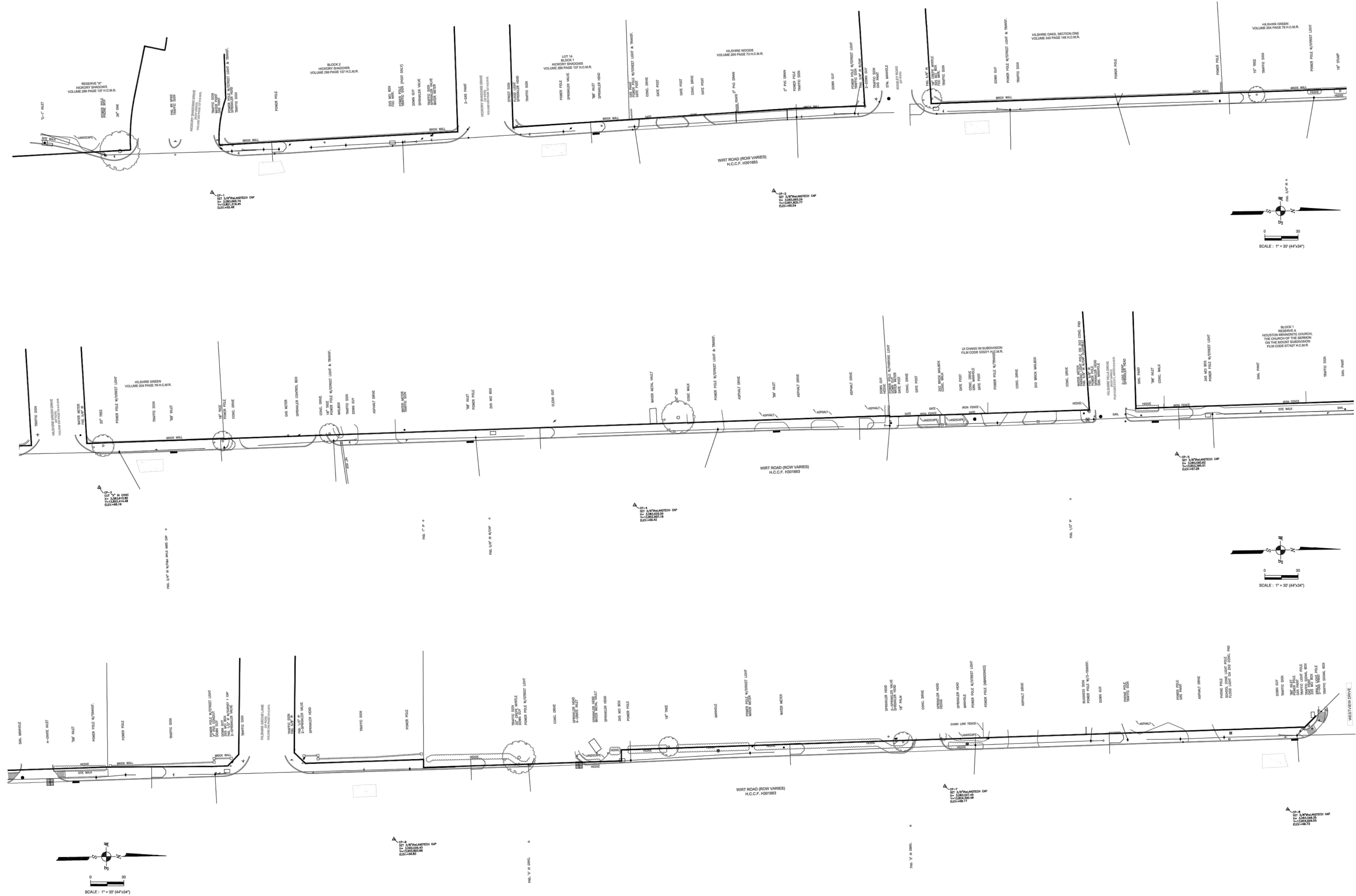
DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 04 OF 25

FOR CITY OF HOUSTON USE ONLY

MM/DD/YY	BRIEF DESCRIPTION	XXX
MM/DD/YY	BRIEF DESCRIPTION	XXX
MM/DD/YY	BRIEF DESCRIPTION	XXX
NO.	DATE	REVISION
		APP.

R:\2025\2320002\CADD\WIRT ROAD TPO.dwg



SURVEY CONTROL SHEET

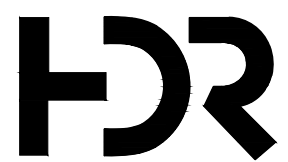
BENCHMARK

CITY OF HOUSTON MONUMENT
5159-0000 BRASS DISK ON
ESR ANKAGE AT THE INTERSECTION
OF WIRT ROAD AND JANAK DRIVE
ELEVATION: 58.00 FT.
NAVD83 (2001 ADJUSTMENT)

LANDTECH

1315 W SAM HOUSTON PARKWAY N, Suite 100,
Houston, Texas 77008
T: 713-861-7068
F: 713-861-4131
TRB/EIS Registration No. 10019100

DATE: 8/8/24
SCALE: AS SHOWN
DRAWING No.: 2320002
JOB No.:
SHEET No.: 1 OF 1



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Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

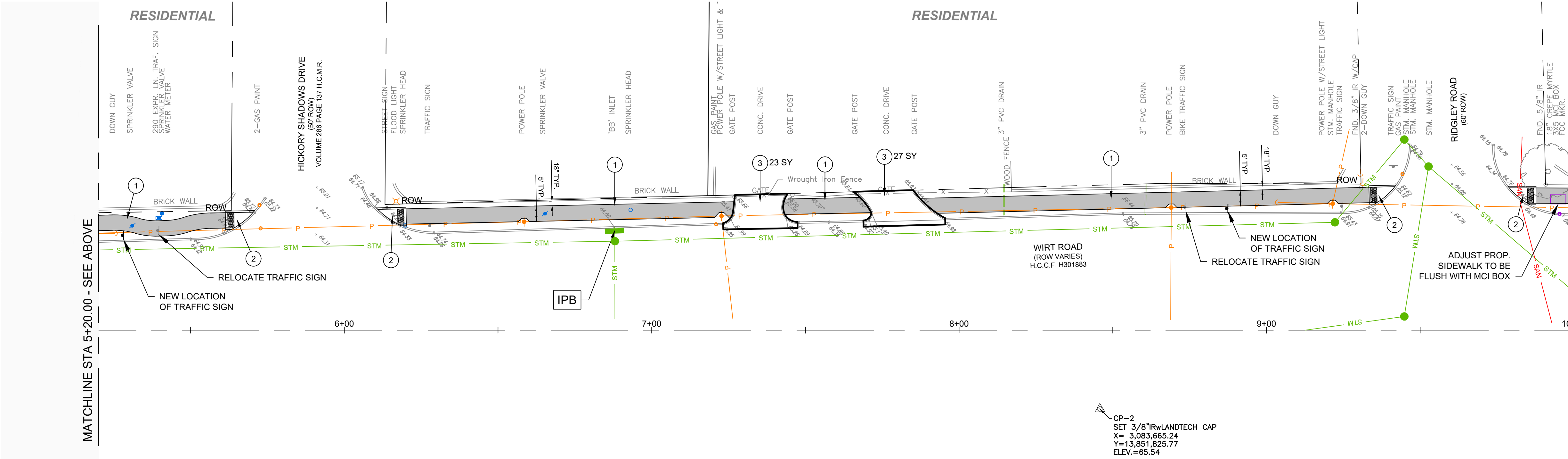
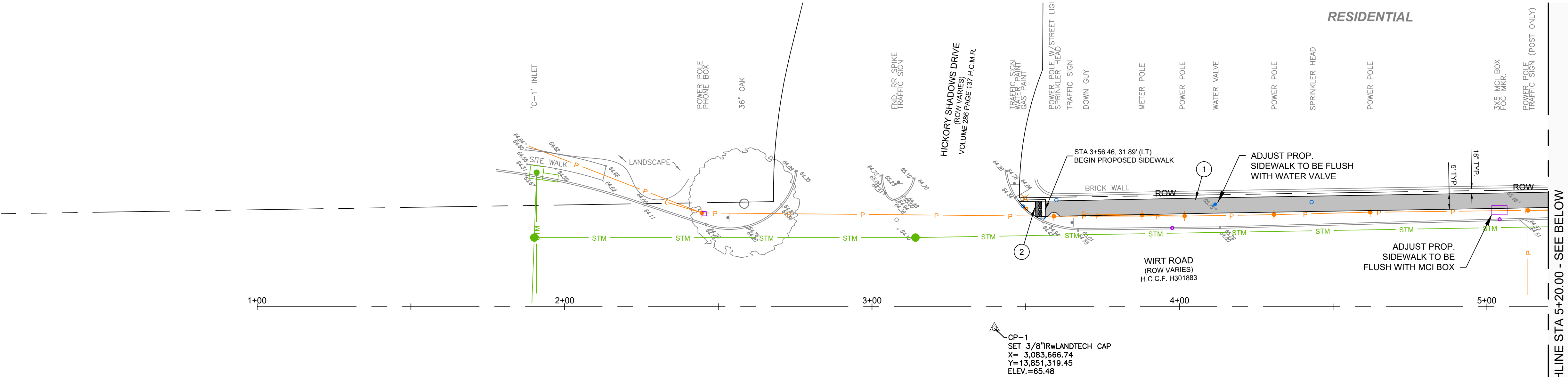
SURVEY CONTROL MAP

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 05 OF 25

FOR CITY OF HOUSTON USE ONLY



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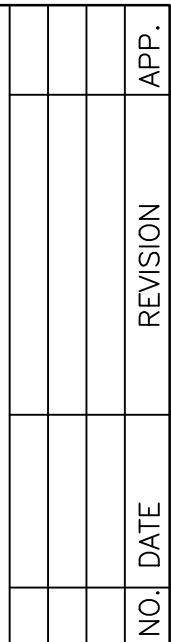
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- 1 PROPOSED CONCRETE SIDEWALK
- 2 PROPOSED ADA RAMP
- 3 REMOVE AND REPLACE CONCRETE DRIVEWAY

NOTES:

1. CONTRACTOR TO TAKE CAUTION TO EXPOSE THE BRICK WALL FOUNDATION WHEN CONSTRUCTING SIDEWALK.
2. THE PROPOSED SIDEWALK TO BE CONSTRUCTED IN SEGMENTS TO AVOID IMPACTING DRIVEWAY ACCESS. CONTRACTOR TO COORDINATE DRIVEWAY ACCESS TO MINIMIZE IMPACTS TO RESIDENTS, SCHOOLS, CHURCHES, AND BUSINESSES.
3. RESIDENTS' SPRINKLER SYSTEMS MAY BE LOCATED WITHIN THE STREET RIGHT-OF-WAY. CONTRACTOR SHALL CUT AND CAP EXISTING SPRINKLER SYSTEMS AT THE RIGHT-OF-WAY LINE PRIOR TO CONSTRUCTION. COST TO CUT AND CAP EXISTING SPRINKLER SYSTEMS IS INCIDENTAL TO THE PROJECT. ANY SPRINKLERS THAT ARE REMOVED ARE TO BE SALVAGED AND RETURNED TO THE PROPERTY OWNER.

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811
AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES
CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR
OBLIGATION TO CALL 811

INTERIM REVIEW

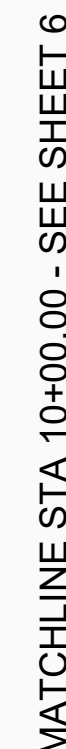
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bidding or permit purposes.

Engineer: NGOC KIM LE, P.E.

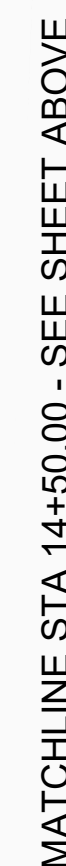
P.E. Serial No.: 101192

Date: DECEMBER 2024

FOR CITY OF HOUSTON USE ONLY

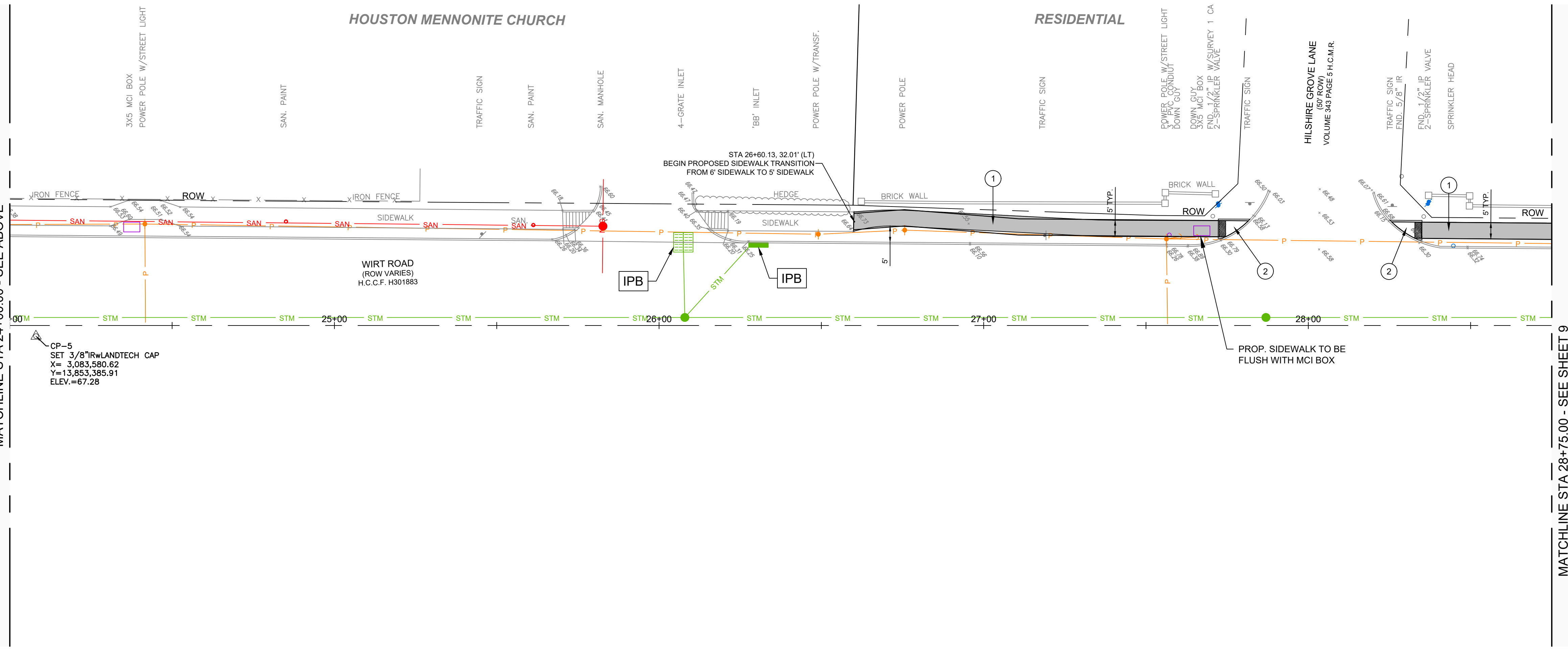
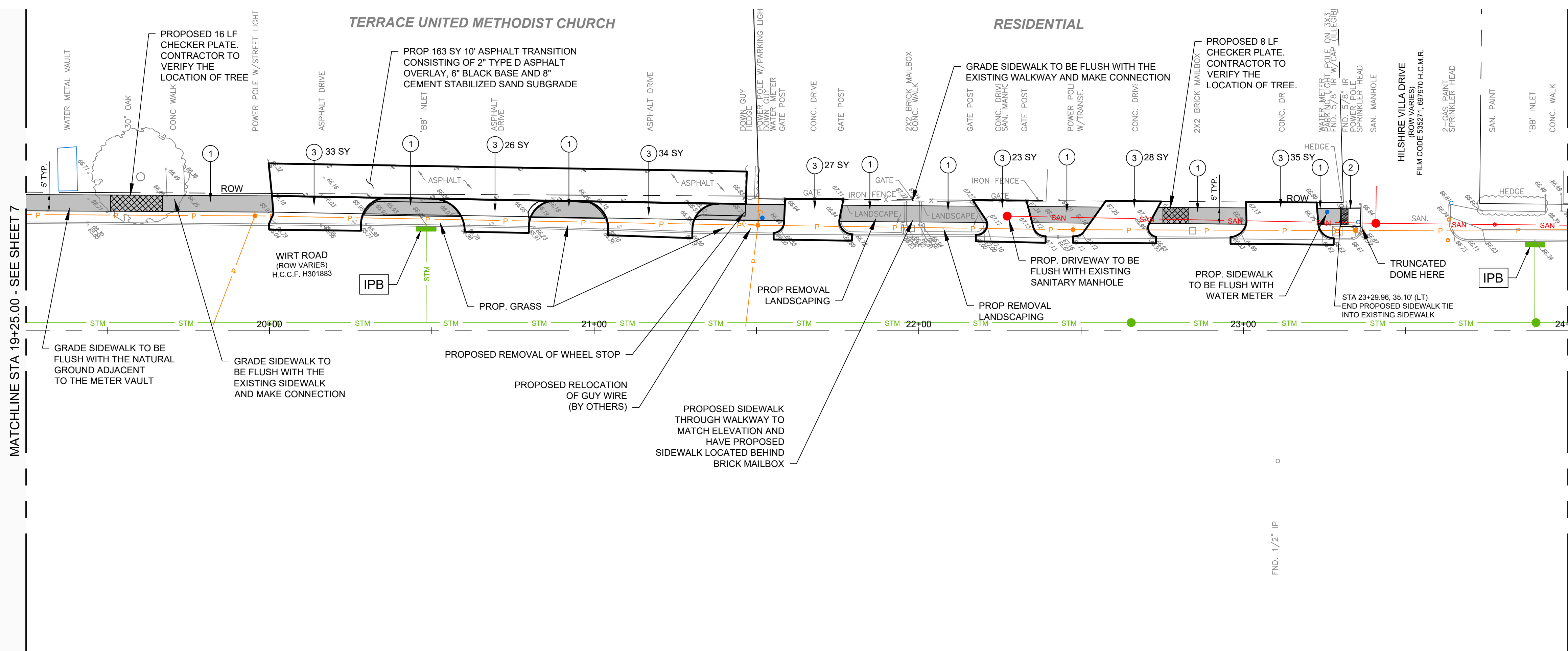


MATCHLINE STA 14+50.00 - SEE BELOW



— — — — —
MATCHLINE STA 19+25.00 - SEE SHEET 8

SET 3/8"IRwLANDTECH CA
X= 3,083,626.5
Y=13,852,897.7
FI FV=66.4



LEGEND:

- 1 PROPOSED CONCRETE SIDEWALK
- 2 PROPOSED ADA RAMP
- 3 REMOVE AND REPLACE CONCRETE DRIVEWAY

IPB INLET PROTECTION BARRIER

X RFB X REINFORCED FILTER FABRIC FENCE

- NOTES:**
- CONTRACTOR TO TAKE CAUTION TO EXPOSE THE BRICK WALL FOUNDATION WHEN CONSTRUCTING SIDEWALK.
 - THE PROPOSED SIDEWALK TO BE CONSTRUCTED IN SEGMENTS TO AVOID IMPACTING DRIVEWAY ACCESS. CONTRACTOR TO COORDINATE DRIVEWAY ACCESS TO MINIMIZE IMPACTS TO RESIDENTS, SCHOOLS, CHURCHES, AND BUSINESSES.
 - RESIDENTS' SPRINKLER SYSTEMS MAY BE LOCATED WITHIN THE STREET RIGHT-OF-WAY. CONTRACTOR SHALL CUT AND CAP EXISTING SPRINKLER SYSTEMS AT THE RIGHT-OF-WAY LINE PRIOR TO CONSTRUCTION. COST TO CUT AND CAP EXISTING SPRINKLER SYSTEMS IS INCIDENTAL TO THE PROJECT. ANY SPRINKLERS THAT ARE REMOVED ARE TO BE SALVAGED AND RETURNED TO THE PROPERTY OWNER.

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date _____

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date _____

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities – not to be used for conflict verification)

Signature valid for six months.

Date _____

Approved for AT&T underground conduit facilities only.
Signature valid for one year.

4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW

Not intended for construction, bidding or permit purposes.

Engineer: NGOC KIM LE, P.E.

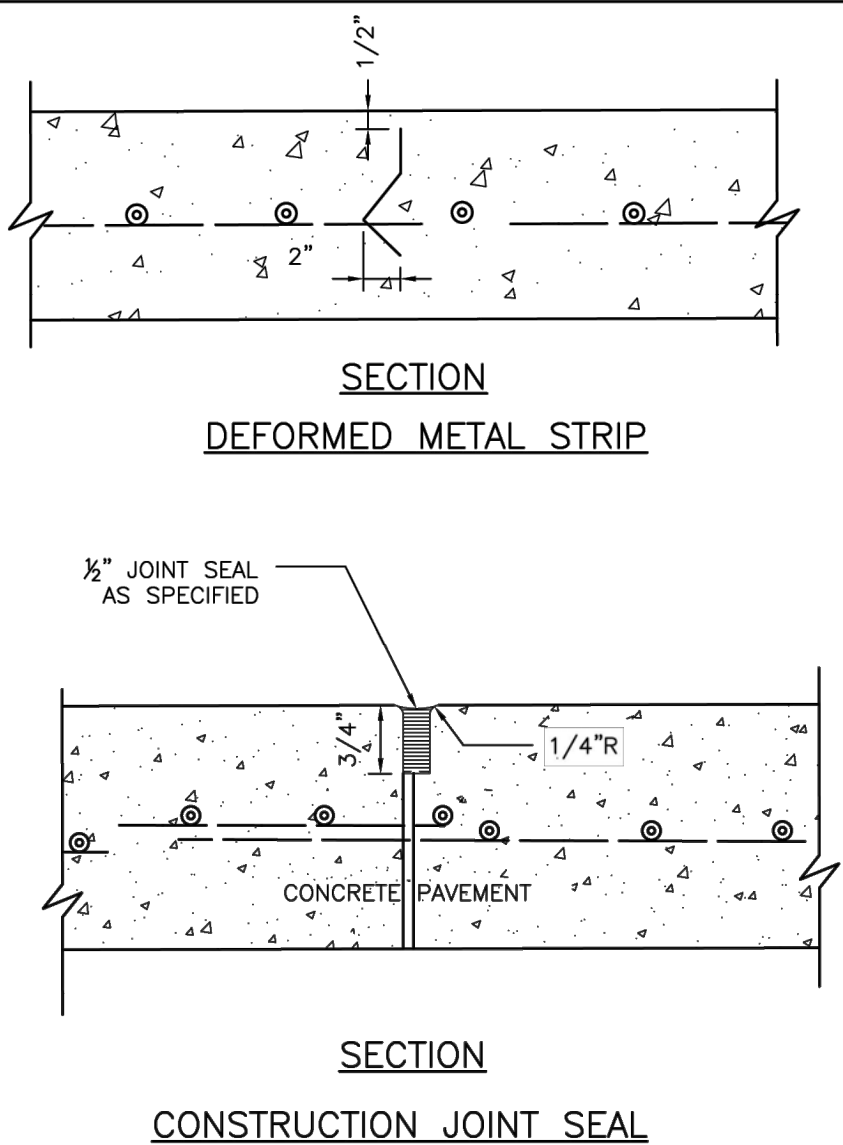
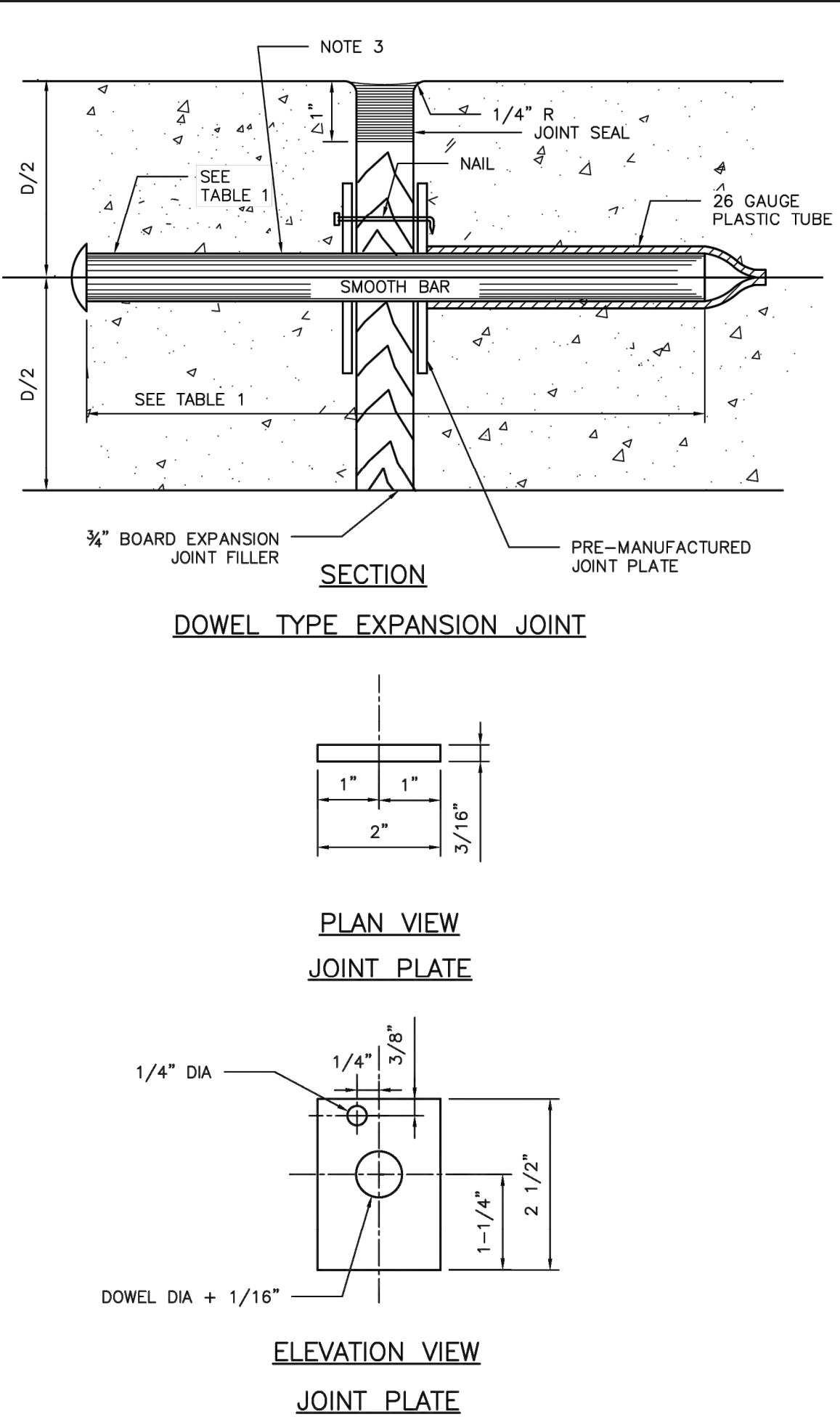
P.E. Serial No.: 101192

Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

PLAN SHEET STA. 19+25 TO STA. 28+75

DISCLAIMER: THIS STANDARD IS COVERED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



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

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

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by:
Sulhad KANUNAR
30178BC041F5476

CITY ENGINEER

DocuSigned by:
KRANG NGUYEN
96A30BF0A7884C7

CITY TRAFFIC ENGINEER

DocuSigned by:
Carl Haddock
A0C318E710463

DIRECTOR OF HPW

EFF DATE: NOV-27-2023 DWG NO: 02752-01

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

NOTES:

- STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
- EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5 FEET.
- CENTER DOWEL HORIZONTALLY ON JOINT.
- CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2 INCH MINIMUM COVER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by:
Sulhad KANUNAR
30178BC041F5476

CITY ENGINEER

DocuSigned by:
KRANG NGUYEN
96A30BF0A7884C7

CITY TRAFFIC ENGINEER

DocuSigned by:
Carl Haddock
A0C318E710463

DIRECTOR OF HPW

EFF DATE: NOV-27-2023 DWG NO: 02752-02

HDR
4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW
Not intended for construction,
bidding or permit purposes.
Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

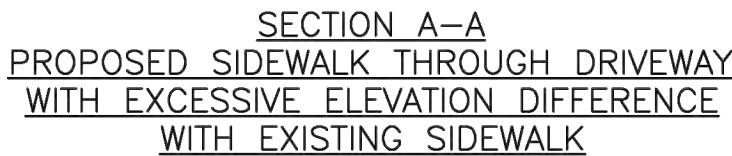
HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(1 OF 7)

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 10 OF 25
FOR CITY OF HOUSTON USE ONLY



REINFORCING STEEL INFORMATION
FOR 4 1/2" THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

DRIVEWAY DESIGN CRITERIA (1)(2)												
TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE-WAY	10	12	4	10	12 ⁽⁵⁾	16 ⁽⁵⁾	4 ⁽⁵⁾	10 ⁽⁵⁾	15	20	10	20
TWO-WAY	10 ⁽³⁾	24 ⁽⁴⁾	4	10	16 ⁽⁶⁾	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEEP PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM DRIVEWAY FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE-WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42-146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40-552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
 - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
 - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
 - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
 - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
 - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
 - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
 - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02752-02 AND SPECIFICATION 02752.
4. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS; IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
7. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
8. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
9. DETECTABLE WARNING SURFACES:
 - 9.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
 - 9.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED; OR
 - 9.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
 - 9.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
 - 9.3. REFER TO STANDARD DETAILS 02775-06 TO 02775-07 FOR DETECTABLE WARNING SURFACE STANDARDS.

EFF DATE: NOV-27-2023	DWG NO: 02754-01B

CITY OF HOUSTON

HOUSTON PUBLIC WORKS STANDARD

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(2 OF 7)

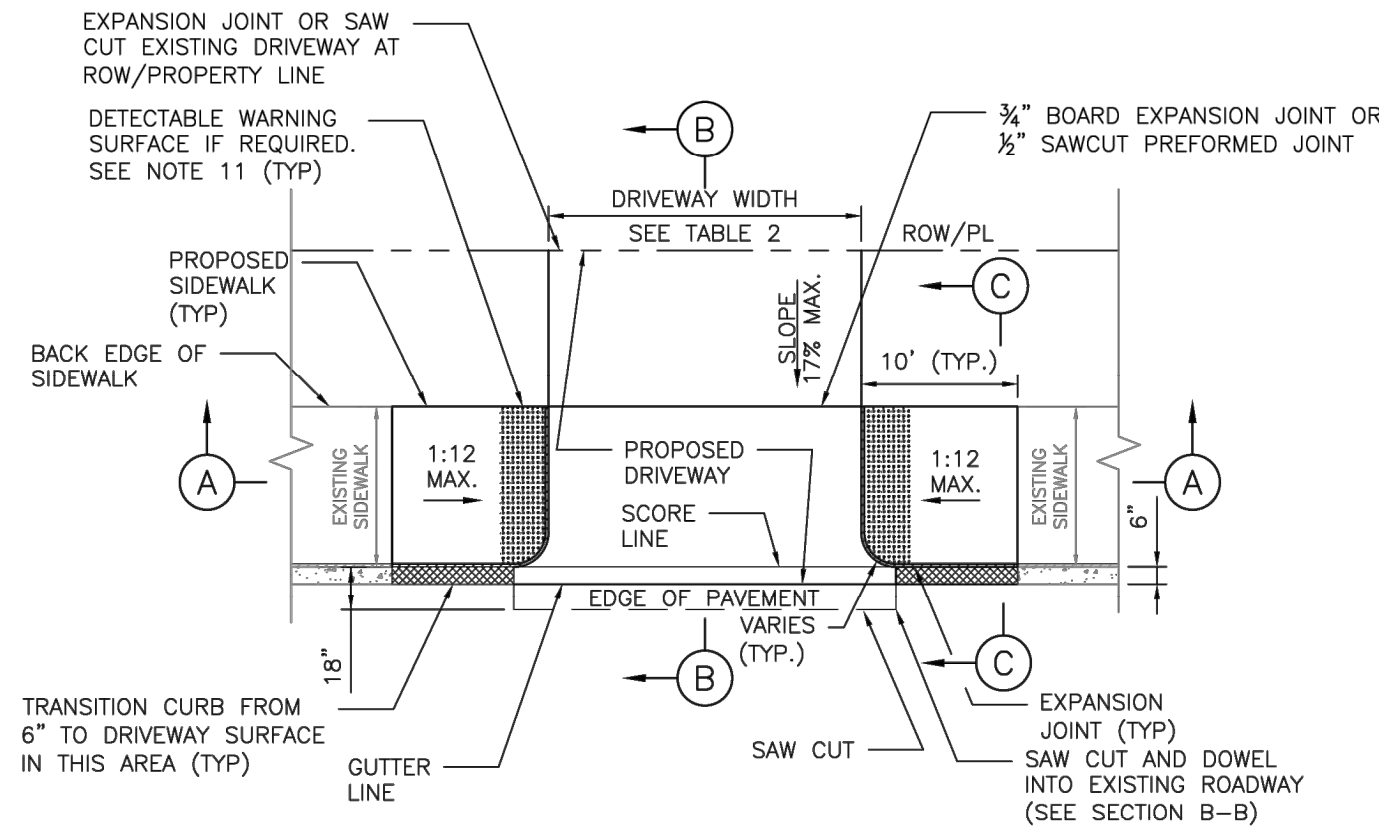
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

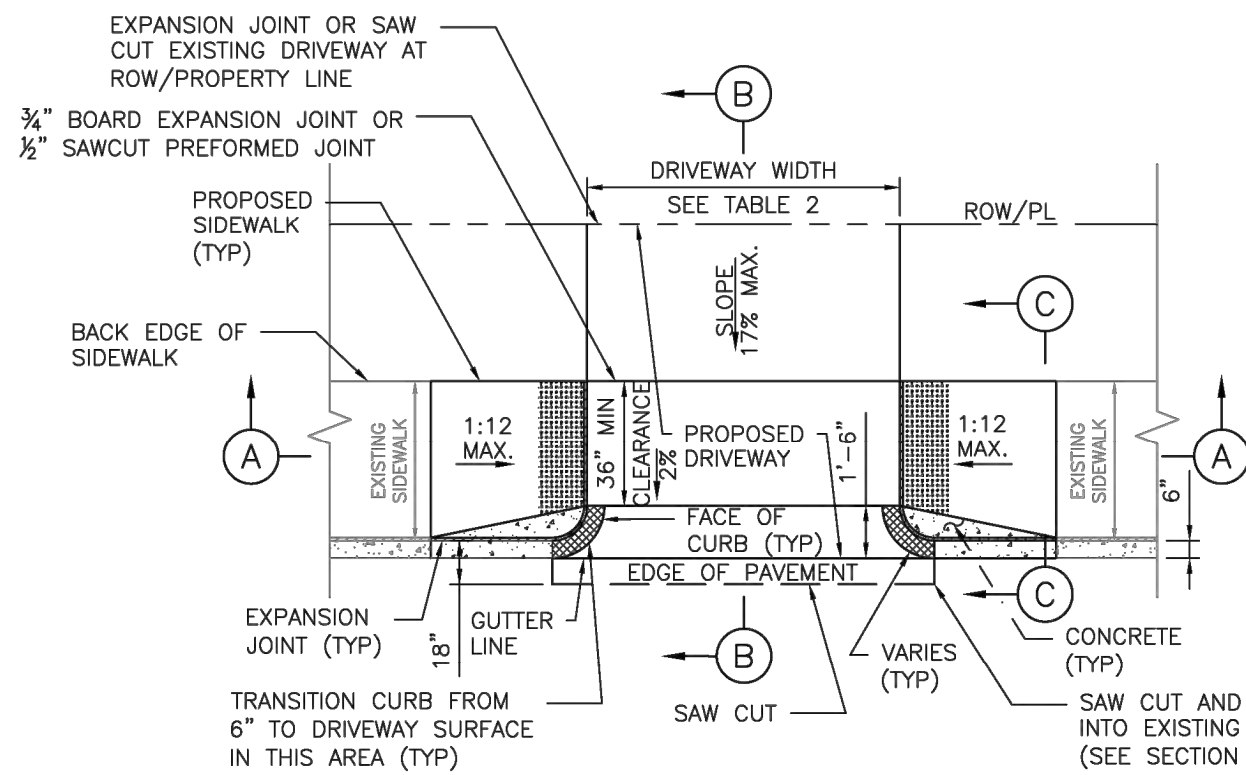
SHEET NO. 11 OF 25

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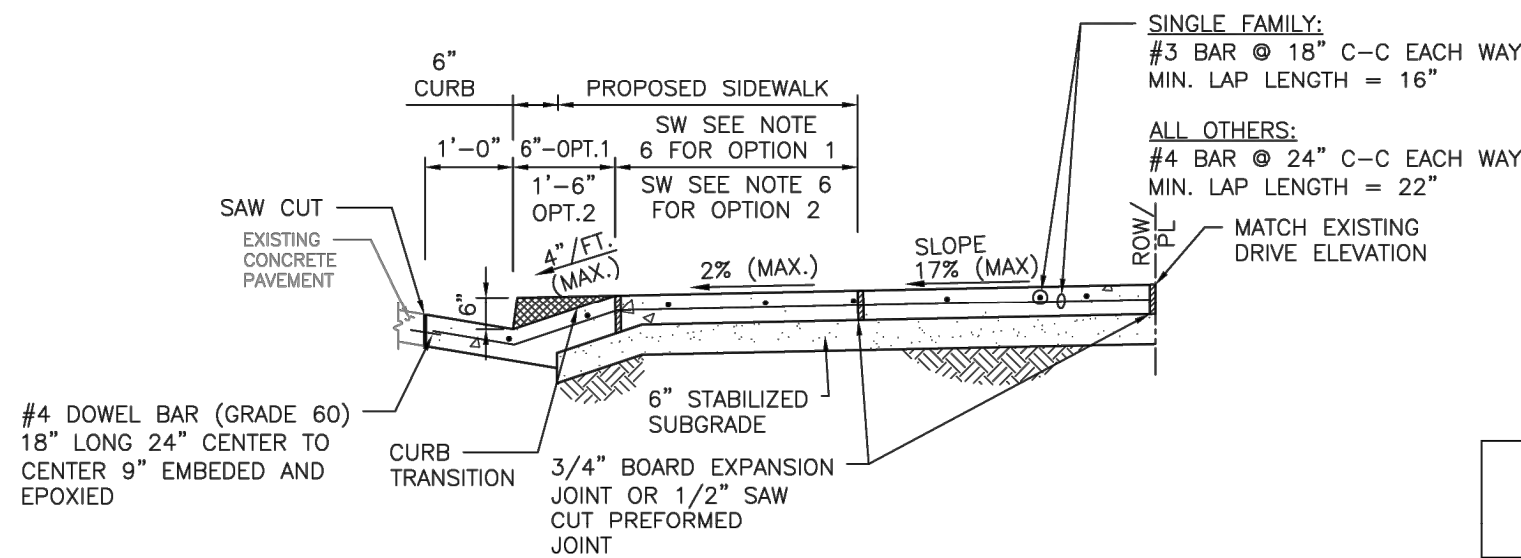
DISCLAIMER: THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



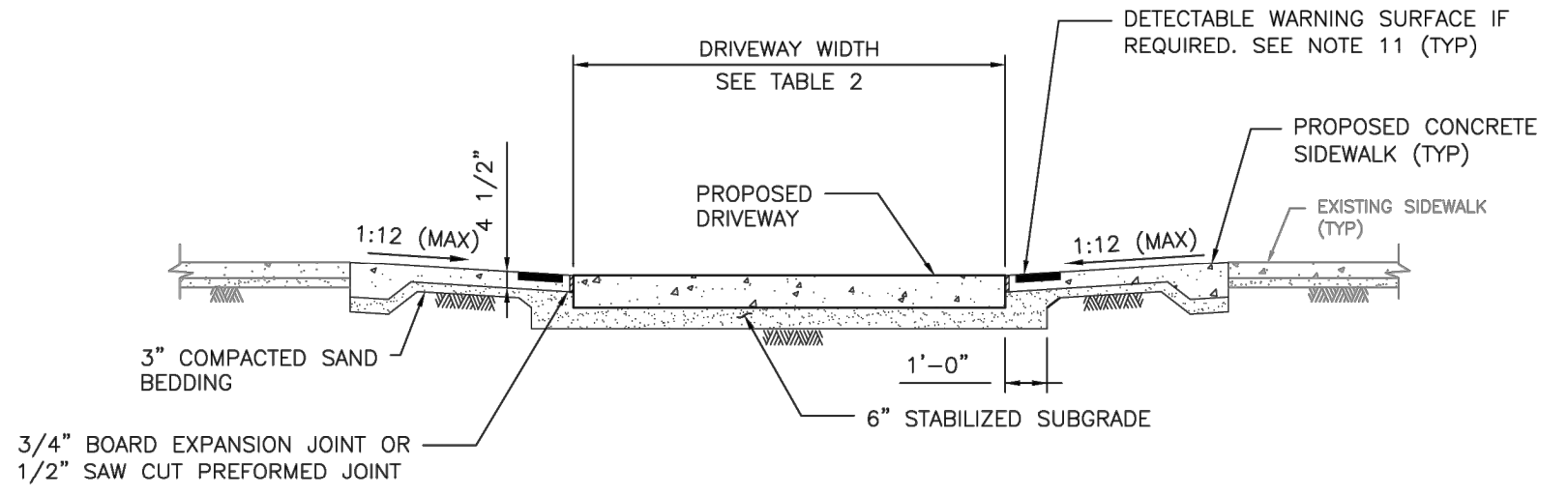
OPTION 1 - CURB LEVEL SIDEWALK
PLAN VIEW - DRIVEWAY WITHOUT CURB AT CURB RETURN



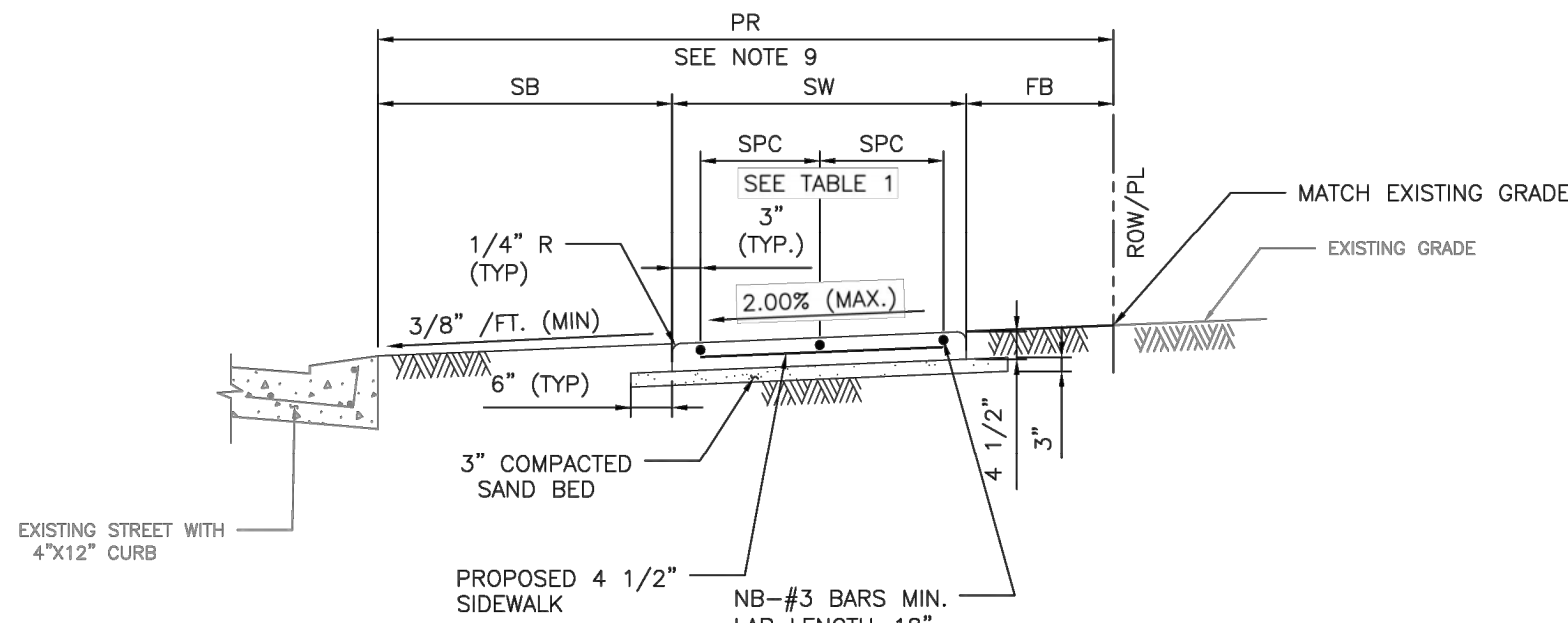
OPTION 2 - CURB LEVEL SIDEWALK
PLAN VIEW - DRIVEWAY WITH CURB AT CURB RETURN



SECTION B-B
TYPICAL DRIVEWAY SECTION THROUGH DRIVEWAY



SECTION A-A
PROPOSED SIDEWALK THROUGH DRIVEWAY



SECTION C-C
TYPICAL SIDEWALK SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 1/2" THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
f'c = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)													
TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)				
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
ONE-WAY	10	12	4	10	12 ⁽³⁾	16 ⁽³⁾	4 ⁽³⁾	10 ⁽³⁾	15	20	10	20	
TWO-WAY	10 ⁽³⁾	24 ⁽⁴⁾	4	10	16 ⁽⁶⁾	24	4	10	24	35	10	20	

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEEP PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE-WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42-146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

- REPAIR, RECONSTRUCTION OR REPLACEMENT OF EXISTING SIDEWALKS:
 - EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
 - THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
 - EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
 - THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
 - 20 FOOT TOTAL LENGTH IS DEFINED AS:
 - UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
 - UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
- PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE DESIGNED ACCORDING TO IDW REQUIREMENTS AND CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
- DRIVEWAY WIDTH VARIES TO MATCH EXISTING DRIVE.
- DRIVEWAY DETAIL TO PROVIDE FOR SIDEWALK TRANSITION FROM EXISTING BACK OF CURB TO PROPOSED DRIVEWAY EDGE.
- DRIVEWAY WITH WIDTH >5' @ 2% CROSS SLOPE QUALIFIES AS PASSING SPACE. (SEE OPTION 1 AND OPTION 2 PLANS)
- ALL RAMP AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
- CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
- REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
- DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
- DETECTABLE WARNING SURFACES:
 - SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
 - SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
 - SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
 - DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
- REFER TO STANDARD DETAILS 02775-06 TO 02775-07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
<i>Sulaim Alkharwar</i> SEF08DC5A1F547B...	<i>KRANG NGUYEN</i> SA020F0CA15BAC2...
CITY ENGINEER	CITY TRAFFIC ENGINEER

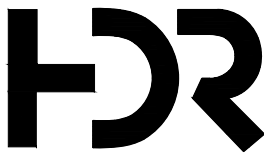
APPROVED BY:
<i>Carl Hallock</i> F09C410B72B5455...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023	DWG NO: 02754-03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH
DRIVEWAY WITH EXCESSIVE
ELEVATION DIFFERENCE

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	



4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW
Not intended for construction,
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Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

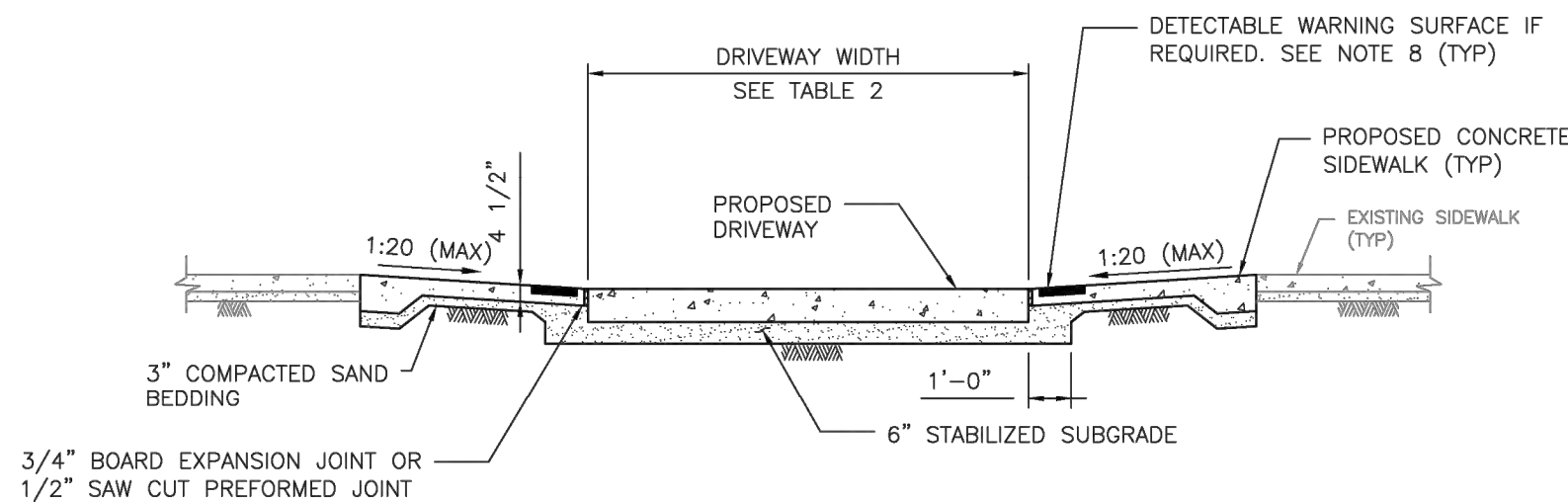
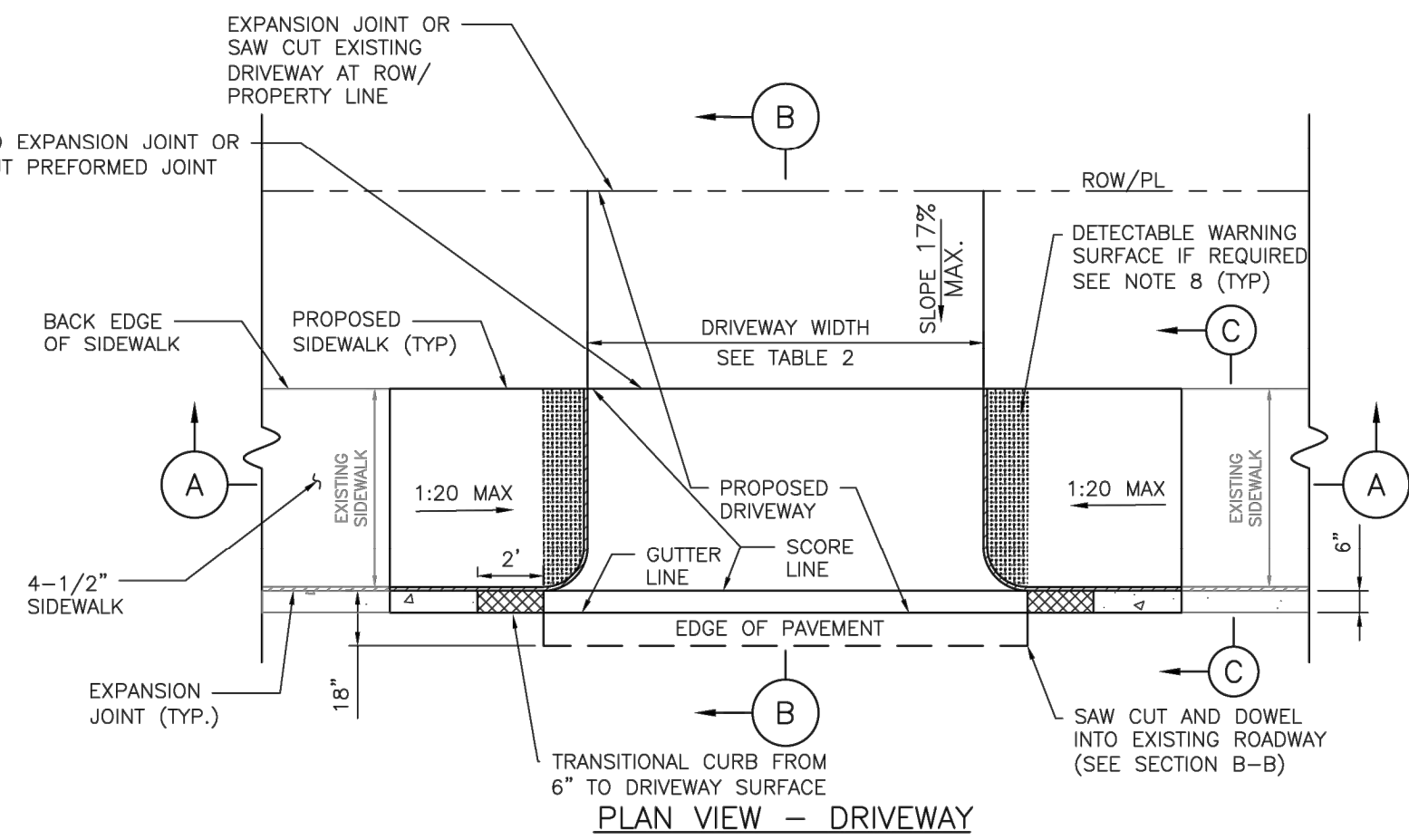
PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(3 OF 7)

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

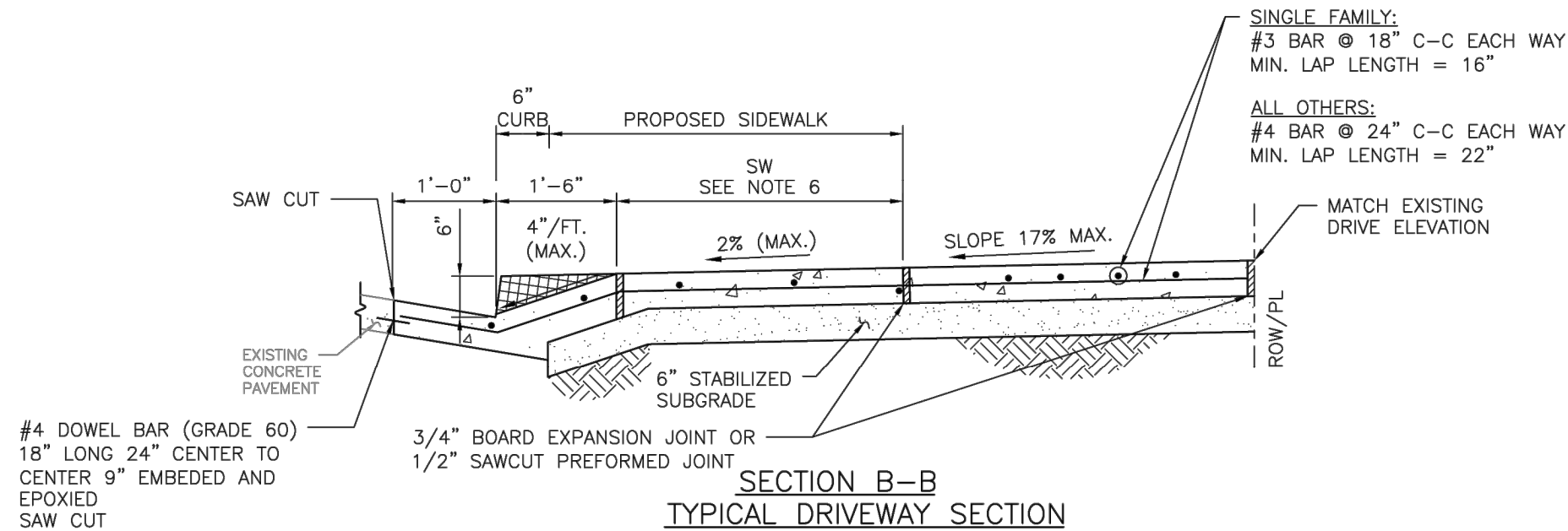
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SHEET NO. 12 OF 25

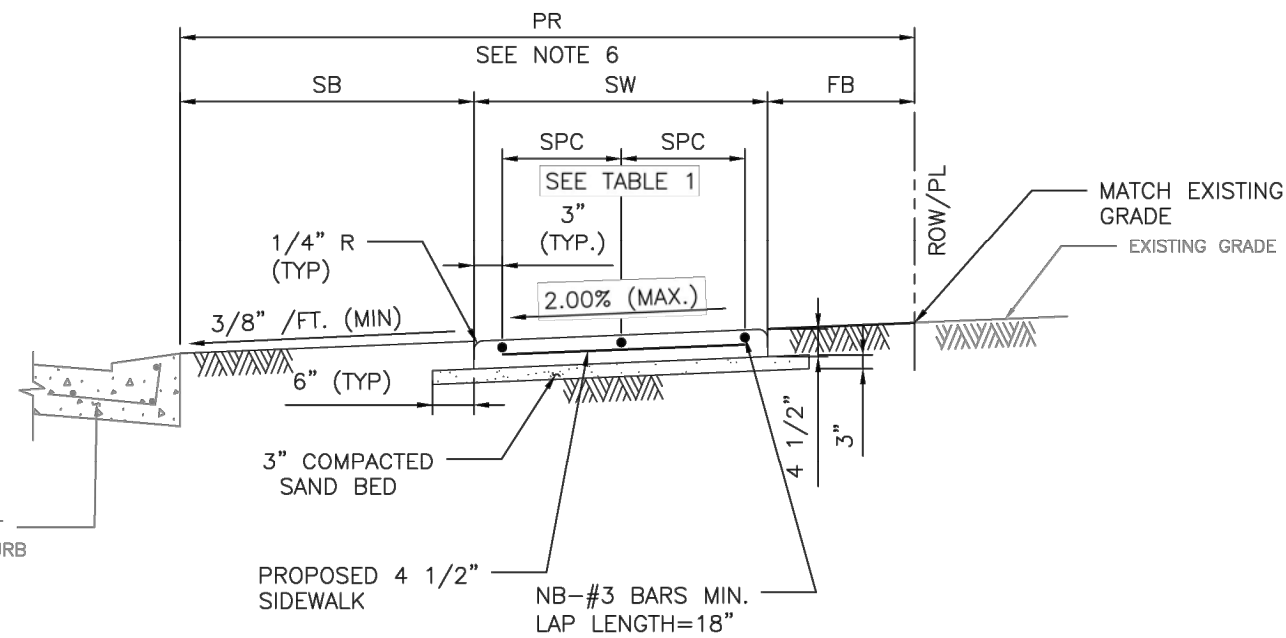
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SECTION A-A
PROPOSED SIDEWALK THROUGH DRIVEWAY



SECTION B-B
TYPICAL DRIVEWAY SECTION



SECTION C-C
TYPICAL SIDEWALK SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 1/2" THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA 1(2)(2)												
TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE-WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO-WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEEP PATH ANALYSIS.
 (2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
 (3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
 (4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
 (5) ONLY MURFS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE-WAY DRIVEWAYS.
 (6) REFER TO CHAPTER 42, SECTION 42-146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

- REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40-552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
 - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
 - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
 - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
 - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
 - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
 - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
 - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE DESIGNED ACCORDING TO IDM REQUIREMENTS AND CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:20 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
6. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
7. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)

8. DETECTABLE WARNING SURFACES:

- 8.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED.
- 8.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
- 8.3. REFER TO STANDARD DETAILS 02775-06 TO 02775-07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
Designated by: <i>Suhail Banwar</i> 9E7B00C541F5478...	Designated by: <i>RAJESH MEHTA</i> 6D425E7DA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:

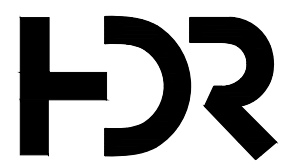
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A93CA10617293463

DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02754-04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH
DRIVEWAY WITH MINIMAL
ELEVATION DIFFERENCE

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	



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Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW

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bidding or permit purposes.

Engineer: NGOC KIM LE, P.E.

P.E. Serial No.: 101192

Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(4 OF 7)

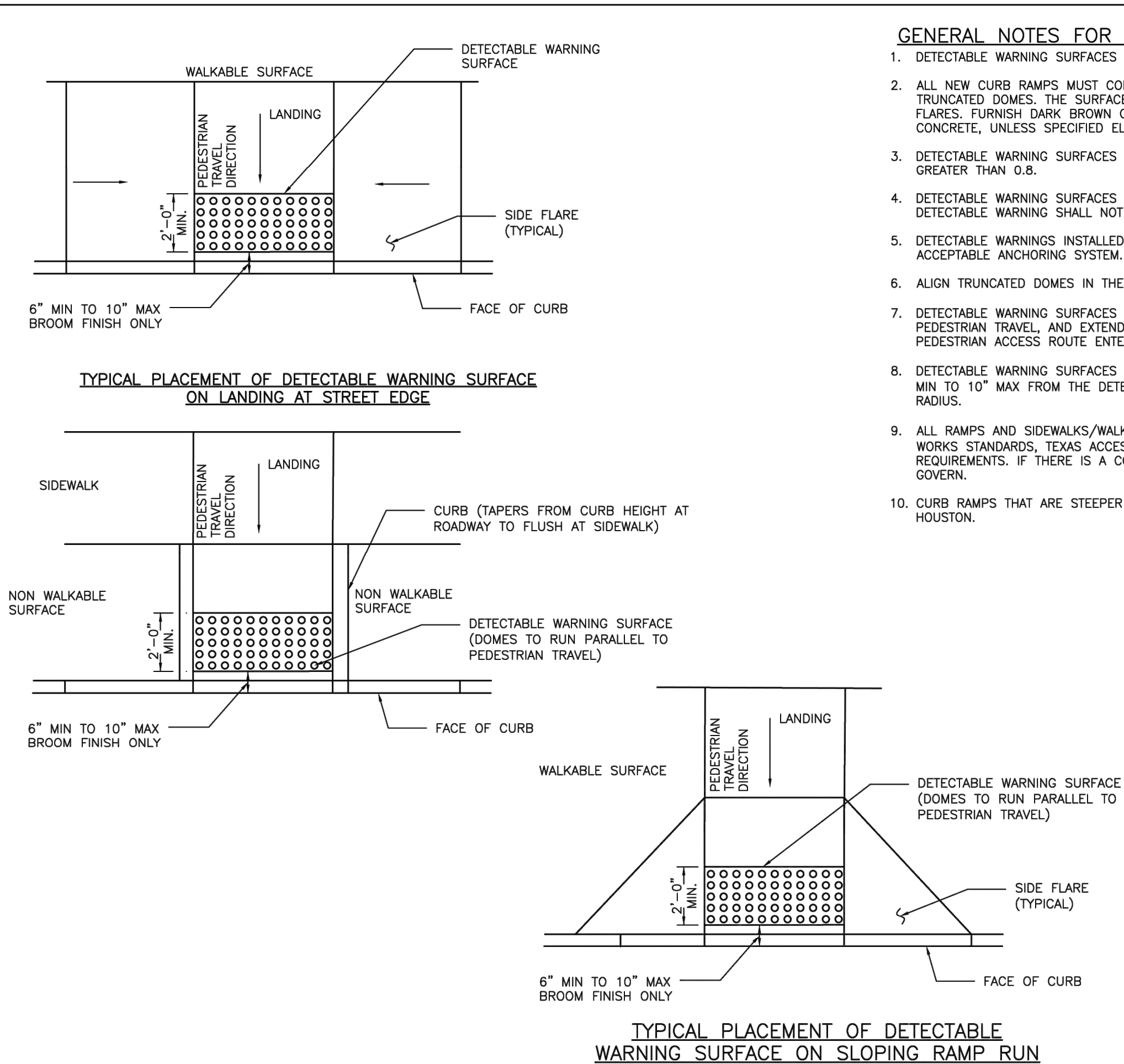
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 13 OF 25

FOR CITY OF HOUSTON USE ONLY

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- GENERAL NOTES FOR DETECTABLE WARNINGS:**
1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
 2. ALL NEW CURB RAMP MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
 3. DETECTABLE WARNING SURFACES MUST MAINTAIN A SLIP RESISTANCE WITH FA-VALUE OF EQUAL TO OR GREATER THAN 0.8.
 4. DETECTABLE WARNING SURFACES MUST MAINTAIN A WATER ABSORPTION RATE OF LESS THAN 1%, DETECTABLE WARNING SHALL NOT ALLOW WATER TO ACCUMULATE.
 5. DETECTABLE WARNINGS INSTALLED INTO FRESH CONCRETE SHALL BE WITHOUT VOIDS AND UTILIZING AN ACCEPTABLE ANCHORING SYSTEM.
 6. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
 7. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
 8. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
 9. ALL RAMP AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
 10. CURB RAMP THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING CURB RAMP DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

Desigined by: <i>Sulad Kaniwar</i> CITY ENGINEER	Desigined by: <i>Carl Hubbard</i> DIRECTOR OF HPW
Desigined by: <i>BRING NGUYEN</i> CITY TRAFFIC ENGINEER	

EFF DATE: NOV-27-2023 DWG NO: 02775-06

- NOTES:**
1. 6X6 - W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
 2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON STANDARD DETAILS 02754-01A, 02754-01B, 02754-03, AND 02754-04.
 3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
 4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.
 5. ALL RAMP AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
 6. CURB RAMP THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
 7. REFER TO CONTRACT DRAWINGS FOR SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

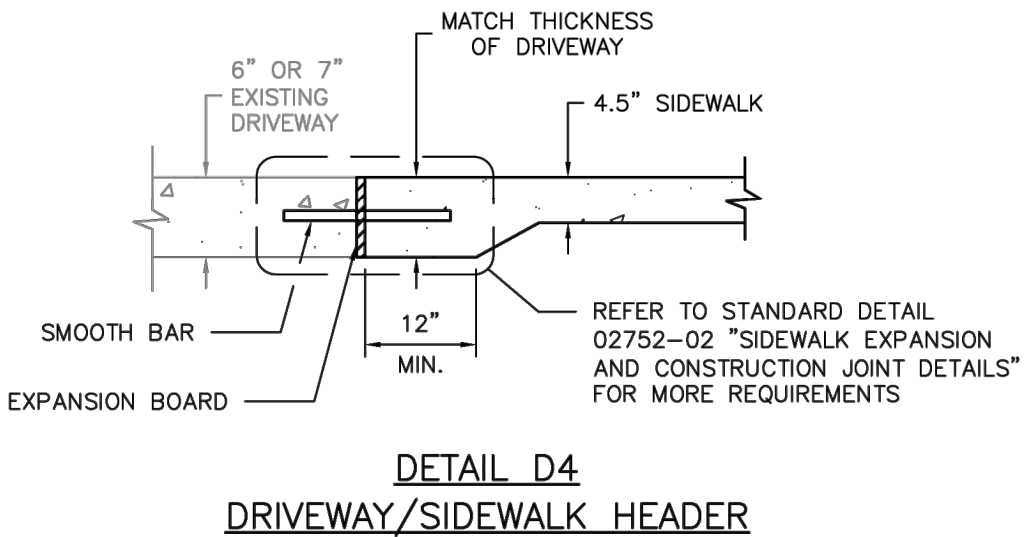
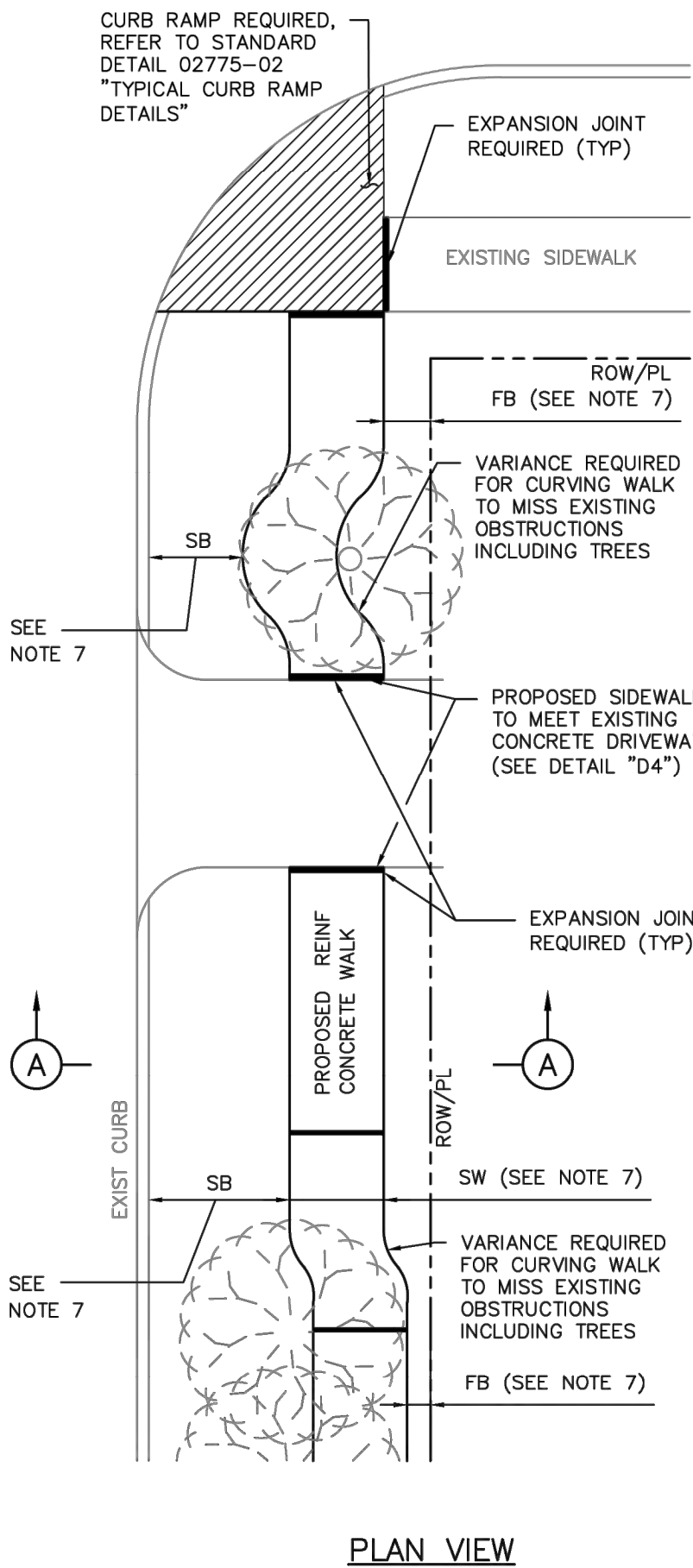
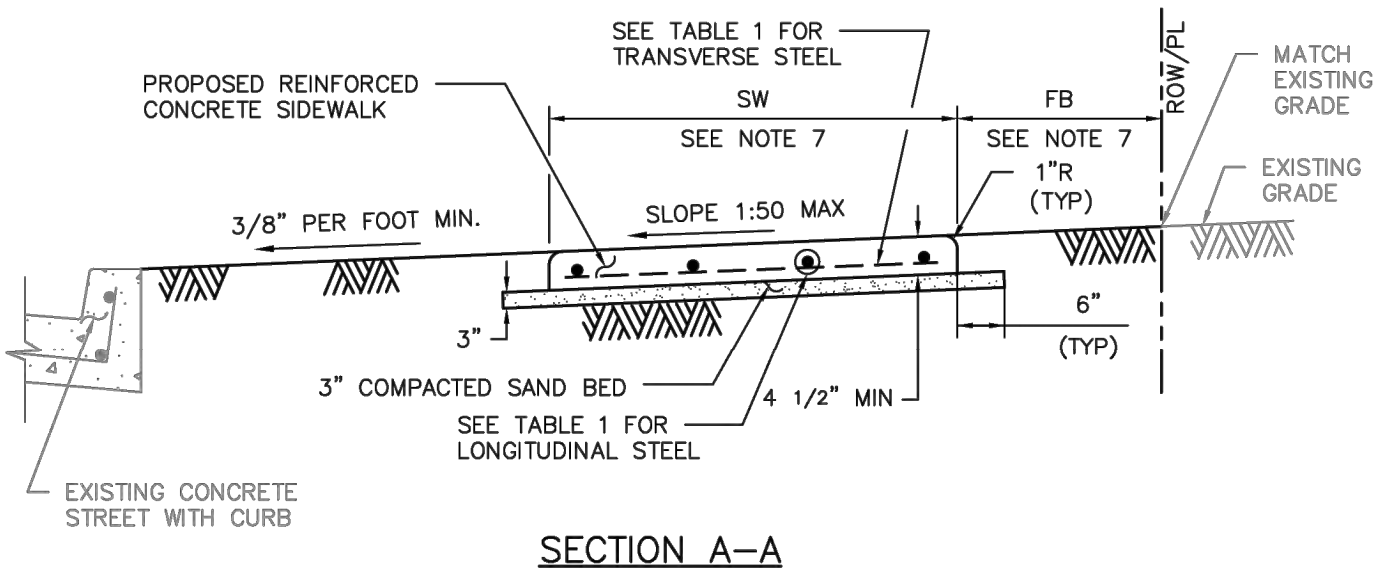


TABLE 1

REINFORCING STEEL INFORMATION FOR 4 1/2" THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		NO. OF BARS	SPACING (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48



CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL SIDEWALK LAYOUT AND DETAILS FOR STREETS WITH CURBS
(SCALE: NOT TO SCALE)

APPROVED BY:

Desigined by: <i>Sulad Kaniwar</i> CITY ENGINEER	Desigined by: <i>Carl Hubbard</i> DIRECTOR OF HPW
Desigined by: <i>BRING NGUYEN</i> CITY TRAFFIC ENGINEER	

EFF DATE: NOV-27-2023 DWG NO: 02775-01

HR

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Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

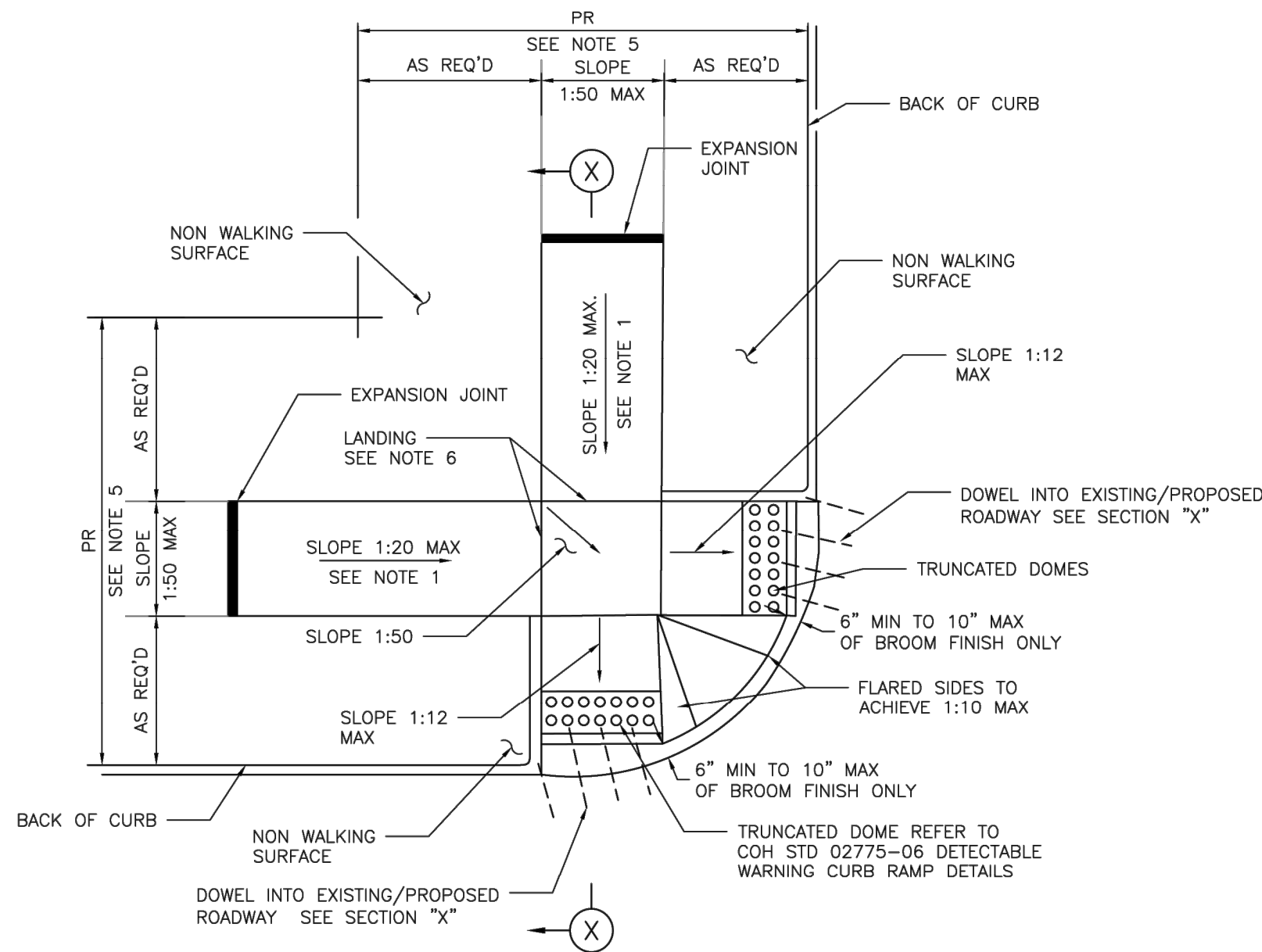
PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(5 OF 7)

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

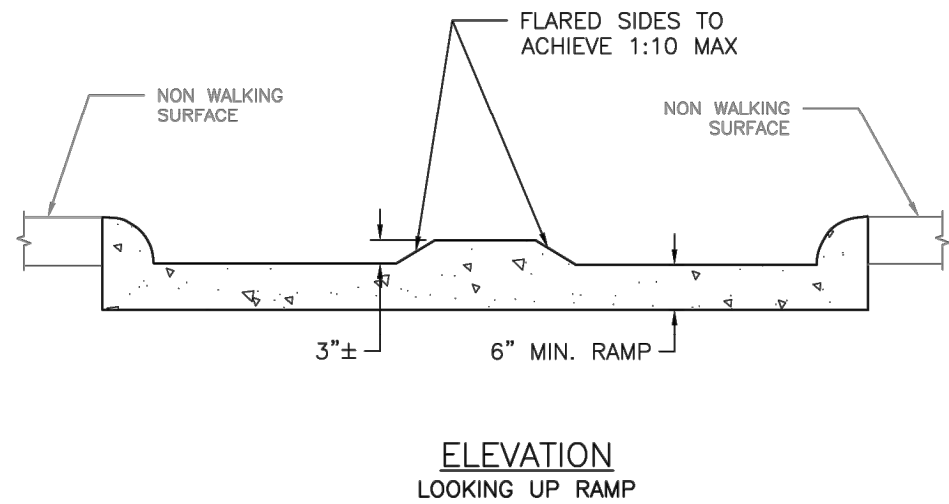
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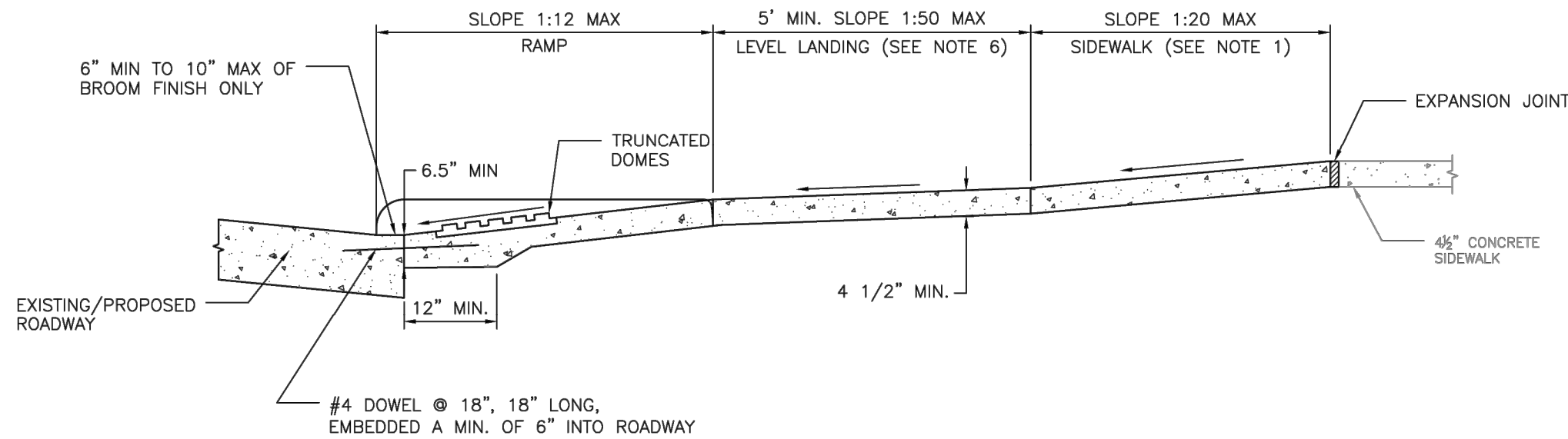
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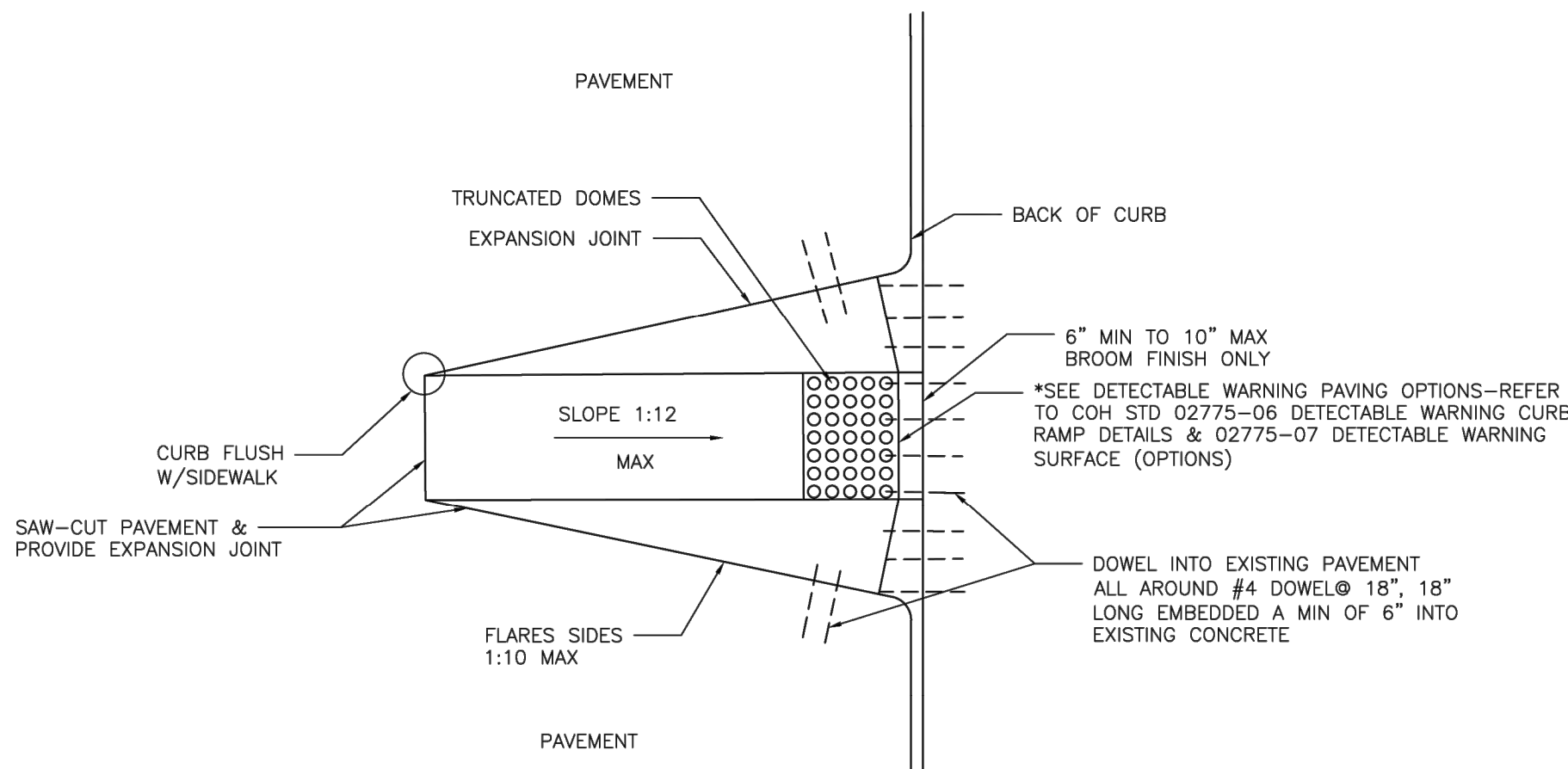
STREETS WITH NON- WALKING SURFACE BEHIND CURB
SEE NOTE-7



ELEVATION
LOOKING UP RAMP



SECTION X-X

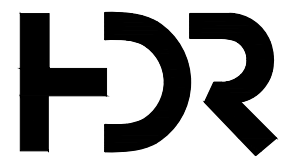


CURB RAMP CONSTRUCTION FOR EXISTING PAVEMENT

NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. BROOM FINISH IS MEASURED FROM FACE OF CURB.
3. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
4. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
5. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR) WIDTH.
6. MINIMUM 5'x5' LANDING PAD ACCORDING TO ADA REQUIREMENTS. WHEN THE APPROACHING SIDEWALK IS WIDER THAN 5', THE LANDING PAD AND RAMP WIDTH MUST MATCH THE SIDEWALK WIDTH.
7. FOR STREETS WITH WALKABLE SURFACES IMMEDIATELY BEHIND THE CURB A FLARE IS REQUIRED ON BOTH SIDES OF THE RAMP.

APPROVED BY: DocuSigned by: <i>Sulail Kanwar</i> 160755502411915416	APPROVED BY: DocuSigned by: <i>KRANG NGUYEN</i> 160755502411915416
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: <i>Carl Hallock</i> 160755502411915416	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02775-02
CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
TYPICAL CURB RAMP DETAILS	
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DRAWING SCALE	
NOT TO SCALE	



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INTERIM REVIEW
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Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

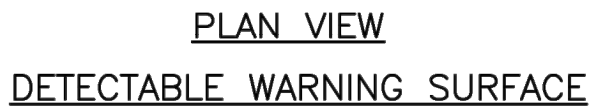
HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(6 OF 7)

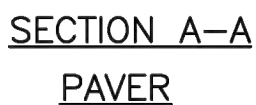
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 15 OF 25
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DETECTABLE WARNING PAVER



NOTES:

GENERAL NOTES

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PAVERS

1. FURNISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
2. LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING POWER UNITS USING A POWER SAW.

POLYMER CONCRETE

1. DETECTABLE WARNING TILES SHALL BE MADE OF POLYMER CONCRETE MATERIALS.
2. DETECTABLE WARNING TILES SHALL BE INSTALLED INTO FRESH CONCRETE (CAST-IN-PLACE) UTILIZING AN ANCHORING SYSTEM.
3. DETECTABLE WARNING TILES SHALL BE OF TERRACOTTA (BRICK-RED) COLOR AND COLORED THROUGHOUT TO GUARANTEE THE ADA REQUIRED COLOR CONTRAST.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING:
 - A. ASTM-BASED "STANDARDS" FOR CONCRETE MATERIALS.
 - B. COMPRESSION STRENGTH > 12,500 PSI PER ASTM C 39-04
 - C. WATER ABSORPTION < 0.25% PER ASTM C 97-09

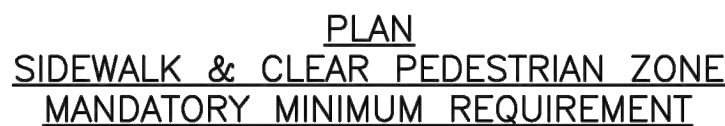
PADS

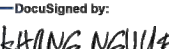

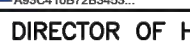
1. FURNISH REQUIREMENTS OF ADAAG (MARCH 2003).
2. OTHER MATERIALS MAY BE USED IF APPROVED BY THE CITY ENGINEER

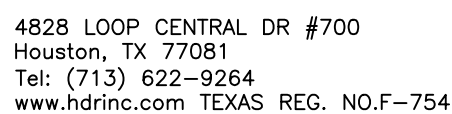
<h1 style="text-align: center;">CITY OF HOUSTON</h1> <p style="text-align: center;">HOUSTON PUBLIC WORKS STANDARD</p>	
<h2>DETECTABLE WARNING SURFACE (OPTIONS)</h2> <p>(SCALE: NOT TO SCALE)</p>	
<h3>APPROVED BY:</h3>	
<p>Designed by:</p> <p><i>Suhail kumar</i></p> <p>08789004105478</p> <p>CITY ENGINEER</p> <p>Drawn by:</p> <p><i>Leandro Nunez</i></p> <p>08400004000000</p> <p>CITY TRAFFIC ENGINEER</p>	<p>Designed by:</p> <p><i>Carl Hubbard</i></p> <p>08000000000000</p> <p>DIRECTOR OF HPW</p>
<p>EFF DATE: NOV-27-2023</p> <p>DWG NO: 02775-07</p>	

NOTES

1. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), AND SIDEWALK (SW) WIDTHS.
2. THE MINIMUM UNOBSTRUCTED VERTICAL CLEARANCE OF A SIDEWALK IS EIGHT (8) FEET AS MEASURED VERTICALLY FROM THE SURFACE OF THE SIDEWALK. FOR VERTICAL CLEARANCE TO IMPROVEMENTS CONSTRUCTED OVER A SIDEWALK WITHIN THE PEDESTRIAN REALM, REFER TO THE CONTRACT DRAWINGS.
3. FOR PEDESTRIAN REALM DESIGN BACKGROUND, REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES, ARTICLE IV – ENHANCED PEDESTRIAN REALM STANDARDS AND THE USERS' GUIDE FOR WALKABLE PLACES AND TRANSIT-ORIENTED DEVELOPMENT.
4. FOR ADDITIONAL PLANNING REQUIREMENTS, REFER TO CHAPTER 33 OF THE CODE OF ORDINANCES, SECTION 129 – GENERAL PLANNING STANDARDS.



<h1 style="text-align: center;">CITY OF HOUSTON</h1> <p style="text-align: center;">HOUSTON PUBLIC WORKS STANDARD</p>	
<h2>SIDEWALK AND CLEAR ZONE TRANSIT CORRIDOR STREET</h2> <p>(SCALE: NOT TO SCALE)</p>	
APPROVED BY:	
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Digitally signed by:  =D8FBD0641F5478= </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> CITY ENGINEER Digitally signed by:  =A6A2E9B8...= </div> <div style="border: 1px solid black; padding: 5px;"> LERAE NUYPFFEN CITY TRAFFIC ENGINEER </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Digitally signed by:  =...= </div> <div style="border: 1px solid black; padding: 5px;"> DIRECTOR OF HPW </div>
<div style="display: flex; justify-content: space-between;"> EFF DATE: NOV-27-2023 DWG NO: 02775-08 </div>	



INTERIM REVIEW

Not intended for construction,
bidding or permit purposes.

Engineer: NGOC KIM LE, P.E.

P.E. Serial No.: 101192

Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

PAVING, DRIVEWAY AND
SIDEWALK STANDARD DETAILS
(7 OF 7)

CITY OF HOUSTON

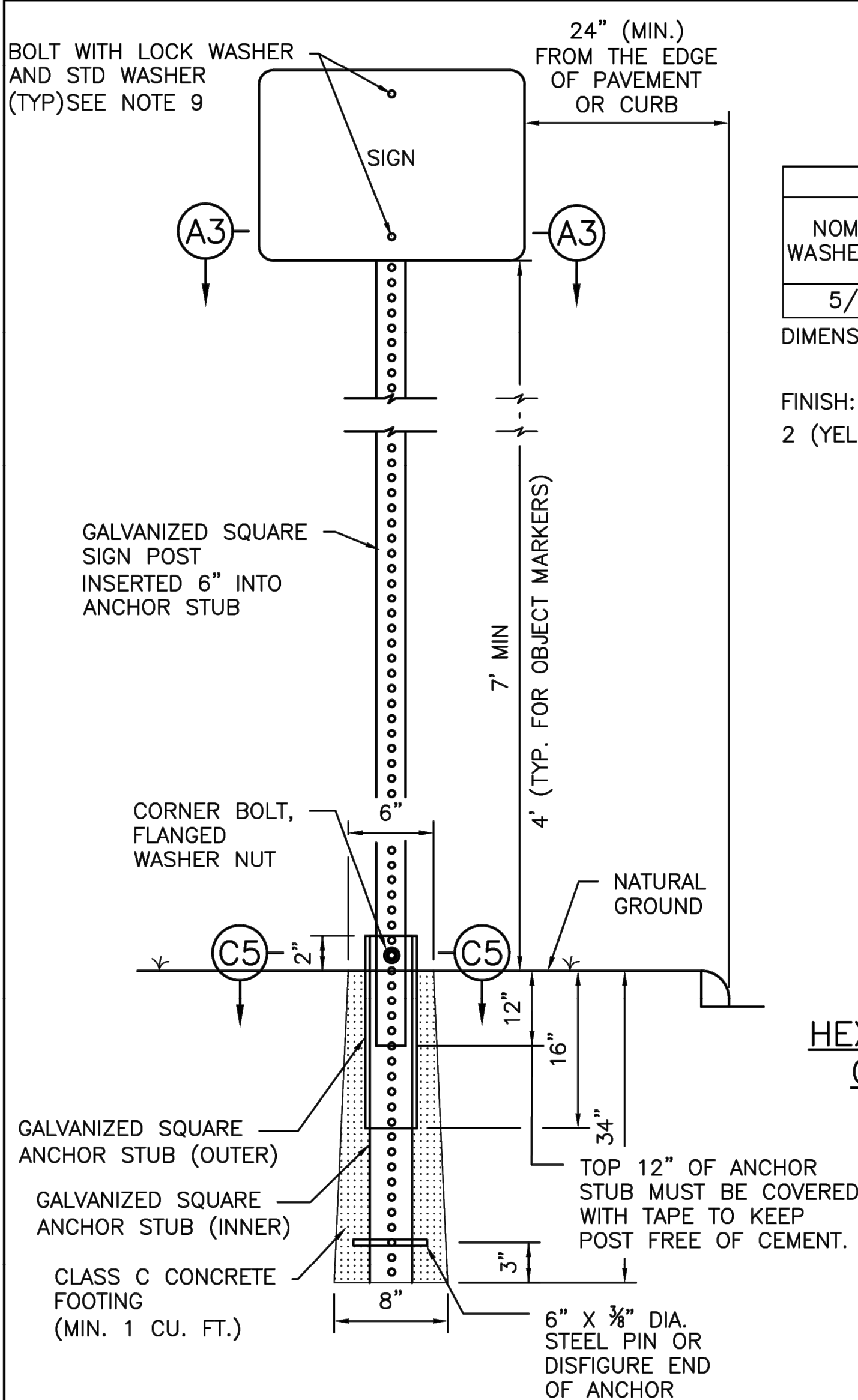
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 16 OF 25

FOR CITY OF HOUSTON USE ONLY

DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



ELEVATION
TYPICAL GROUND SIGN INSTALLATION
PERFORATED SQUARE METAL TUBING

TABLE A	
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4"x1-3/4" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PREFORATED) (INNER)	2"x2"x36" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (OUTER)	2 1/4" x 2 1/4" x 18" (14 GAUGE)

NOMINAL WASHER SIZE	A INSIDE DIAMETER		B OUTSIDE DIAMETER	T MEAN SECTION (THICKNESS)	W SECTION WIDTH
	MAX	MIN	MAX		
5/16"	0.332"	0.314"	0.583"	0.078"	0.125"

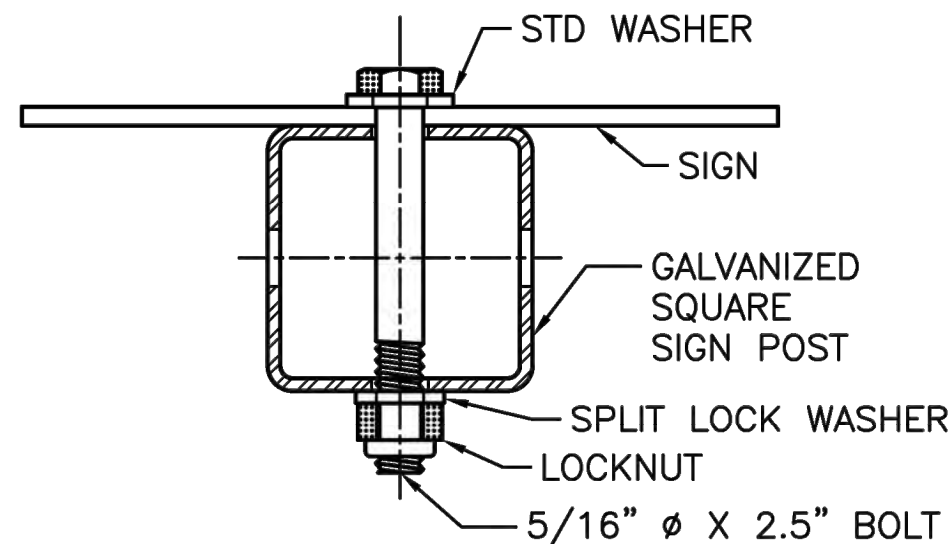
DIMENSIONS: ASME B18.21.1
MATERIAL: ALLOY STEEL PER ASME B18.21.1
FINISH: MECHANICAL ZINC PER ASTM B695, CLASS 5, TYPE 2 (YELLOW)

5/16" SPLIT LOCK WASHER,
HIGH ALLOY MECHANICAL
DEPOSITED YELLOW SINK

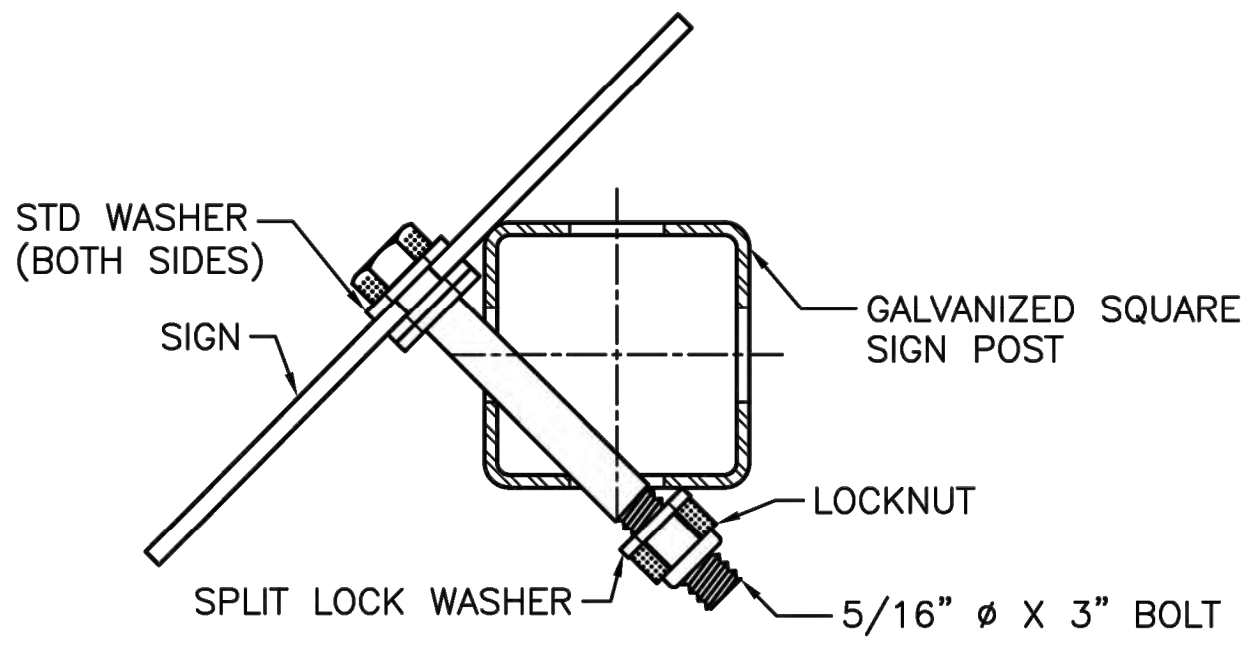
SIZE	C THICKNESS		A WIDTH ACROSS FLATS		D HEX HEIGHT
	MAX	MIN	MAX	MIN	MIN
0.313"	0.359"	0.329"	0.502"	0.489"	0.250"

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

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



STANDARD ORIENTATION

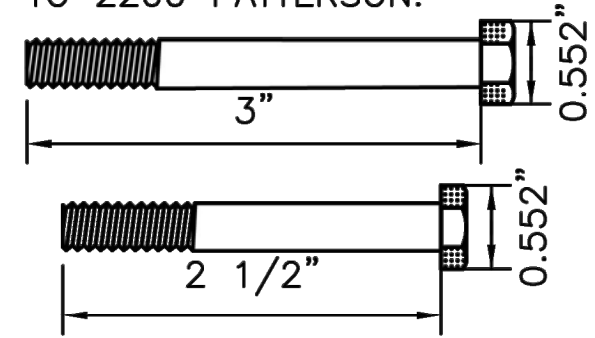


NON-STANDARD ORIENTATION

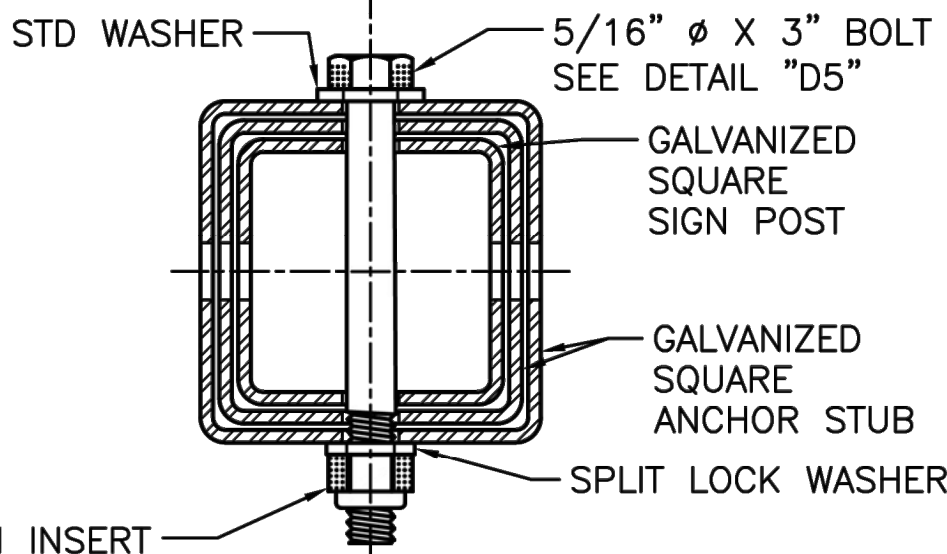
SECTION A3: SIGN CONNECTION DETAILS

NOTES:

- THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITE ARE THE PROPERTY OF THE CITY OF HOUSTON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO THE TRAFFIC OPERATIONS CENTER (2200 PATTERSON). THE GENERAL TRAFFIC SUPERINTENDENT (832-395-6771) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.
- AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION OF HOUSTON PUBLIC WORKS (832-395-6771) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER ONLY CITY SIGNS AND POSTS IDENTIFIED BY TRAFFIC OPERATIONS DIVISION TO 2200 PATTERSON.
- PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.
- ALL GROUND MOUNTED STOP SIGNS, WARNING SIGNS, AND OTHER REGULATORY SIGNS SHALL USE AT A MINIMUM HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING.
- ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.
- ALL OTHER SIGNS SHALL USE SUPER ENGINEER GRADE SHEETING.
- ALL BLANKS TO BE INSTALLED SHALL BE ALUMINUM ALLOY 6061-T-6 OR 5052-H38 IN ACCORDANCE WITH ASTM B209.
- ALL HOLES SHALL BE 3/8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES. WHERE NON-STANDARD ORIENTATION OF SIGN IS USED, ENLARGE HOLE IN SIGN POST AT SIGN CONNECTION NOT GREATER THAN 11/16" IN DIAMETER.
- BOLT SIZE REQUIREMENTS FOR SIGN CONNECTION:
 - STANDARD ORIENTATION = 5/16" DIA X 2 1/2" BOLT
 - NON STANDARD ORIENTATION = 5/16" DIA X 3" BOLT
- SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL ON SHEET 01554-06.
- ALL SIGN BLANKS ARE TO BE ETCHED, DEGREASED, AND HAVE A COATING MEETING THE REQUIREMENTS OF ASTM B449, CLASS 2, OR ASTM B921, CLASS 2. PRIOR TO APPLICATION OF LEGENDS.
- ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND STANDARD HIGHWAY SIGNS LATEST EDITION.



SECTION D5
BOLTS



SECTION C5
CORNER BOLT

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

GENERAL NOTES AND
GROUND MOUNTING SIGN

(SCALE: NOT TO SCALE)

APPROVED BY:

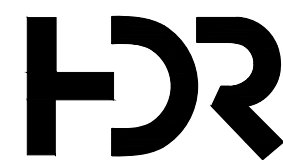
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Sulail Kanwar
9EF8BDC841F5478
CITY ENGINEER
DocuSigned by:
KHANG NGUYEN
95A29EFDAT5B4CD...

CITY TRAFFIC ENGINEER

DocuSigned by:
Carol Hallock
A93C410B72B3453
DIRECTOR OF HPW

EFF DATE: NOV-27-2023

DWG NO: 01554-01



4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

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Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

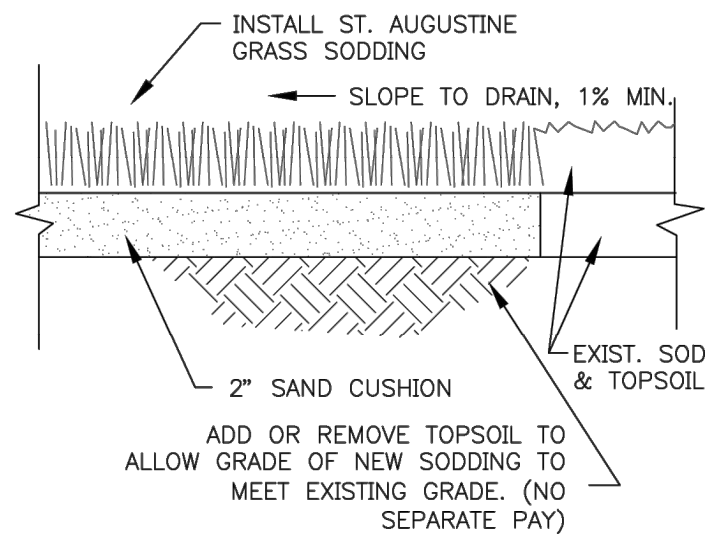
HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

SIGN STANDARD DETAILS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

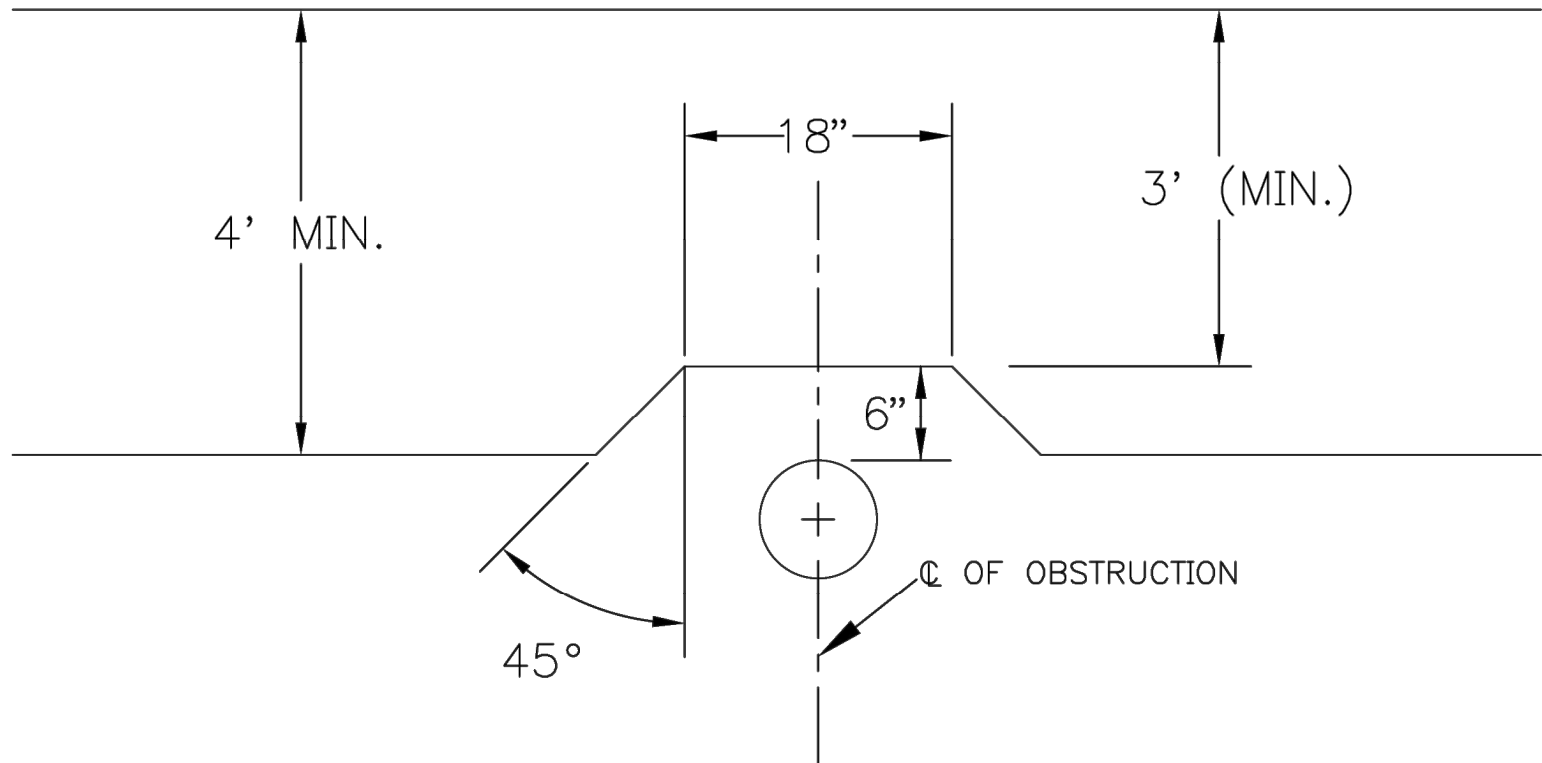
SHEET NO. 17 OF 25
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- NOTES:
1. SODDING SHALL BE ON AREAS DISTURBED BY CONSTRUCTION.
 2. SODDING LIMITS AT DITCHES SHALL BE THOSE AREAS DISTURBED BY THE GRADING PROCESS.
 3. CONTRACTOR TO REPAIR SODDING IN THE AREAS DAMAGED BY CONSTRUCTION AND SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT COST.
 4. IN THE EVENT EXISTING LANDSCAPING OTHER THAN GRASS IS WITHIN THESE AREAS, THE CONTRACTOR SHALL REBUILD OR REINSTALL THE LANDSCAPING OF THE AREA AFTER CONSTRUCTION IN AN EQUAL OR BETTER CONDITION.

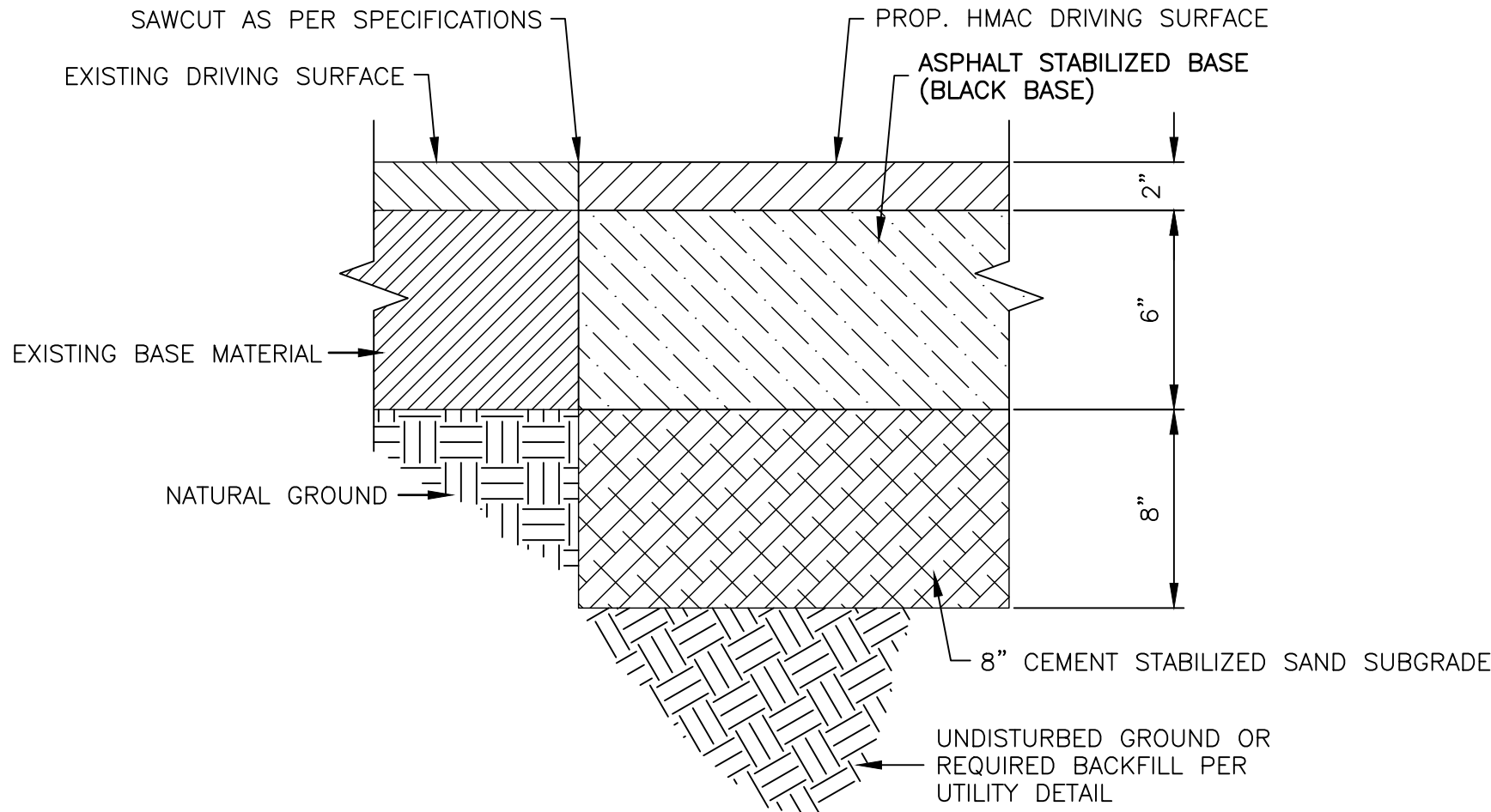
TYPICAL GRASS SODDING DETAILS

NTS



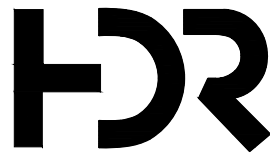
SIDEWALK AROUND OBSTRUCTION

SCALE: NTS



FULL DEPTH ASPHALT TRANSITION DETAIL

NOT TO SCALE

 4828 LOOP CENTRAL DR #700 Houston, TX 77081 Tel: (713) 622-9264 www.hdrinc.com TEXAS REG. NO.F-754	INTERIM REVIEW Not intended for construction, bidding or permit purposes.
	Engineer: NGOC KIM LE, P.E.
	P.E. Serial No.: 101192
	Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

NON STANDARD
DETAILS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 19 OF 25

FOR CITY OF HOUSTON USE ONLY

GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM THE LATEST VERSION OF THE TMUTCD.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY WITHOUT APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00 PM TO 7:00 AM.
5. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF THROUGH LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE-WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO ALL THE BUS STOPS.
6. CONTRACTOR SHALL MAINTAIN TRAFFIC LANES AND DETOURS ACCORDING TO TRAFFIC CONTROL PLANS DURING WORKING HOURS.
7. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
8. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS TO THE CITY OF HOUSTON PROJECT MANAGER FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION. THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SHALL BE SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. OFFICE OF CITY ENGINEER, MOBILITY PERMITS SECTION REPRESENTATIVE APPROVAL IS REQUIRED TO ACCEPT THE PROPOSED CHANGES.
9. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM OFFICE OF CITY ENGINEER (MOBILITY PERMIT SECTION AT hib@houstonpublicworks.org) BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.
10. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.
11. DURING PAVEMENT SURFACE RESTORATION PROJECTS; THE CONTRACTOR SHALL NOT OPEN CLOSED LANES UNTIL THE PAVEMENT SURFACE HAS CURED ENOUGH TO ALLOW VEHICULAR TRAFFIC ACCORDING TO CITY OF HOUSTON STANDARD SPECIFICATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL CONSTRUCTION ACTIVITIES WITH STAKE HOLDERS IN THE VICINITY INCLUDING EMERGENCY RESPONSE AGENCIES SUCH AS HOUSTON POLICE DEPARTMENT, HOUSTON FIRE DEPARTMENT, AND METROPOLITAN TRANSIT AUTHORITY.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ISSUING ALL WORK DIRECTIVES TO ALL SUB-CONTRACTORS, UTILITY COMPANIES, AND ALL OTHER ENTITIES PERFORMING CONSTRUCTION WORK ASSOCIATED WITH THE PROJECT.
14. NOTHING IN THESE NOTES OR PLANS SHALL RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT; INCLUDING SAFETY OF ALL MODES OF TRANSPORTATION, PERSONS, AND PROPERTY, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS.
15. THE OFFICE OF CITY ENGINEER (MOBILITY PERMITS GROUP) PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER HAVE THE RIGHT TO DEMAND THE INSTALLATION OF ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS OF THESE PLANS AND NOTES, AS DEEMED NECESSARY TO PROMOTE THE SAFE AND ORDERLY FLOW OF TRAFFIC, INCLUDING PEDESTRIANS AND BICYCLES, THROUGH THE CONSTRUCTION WORK ZONE. THE CONTRACTOR SHALL COMPLY WITH THESE ADDITIONAL REQUESTS OR MODIFICATIONS WITH DUE DILIGENCE.
16. ALL EXISTING TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED IN VISIBLE LOCATIONS DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER. THE CONTRACTOR SHALL RESTORE OR REPLACE (AT THE DISCRETION OF THE CITY TRAFFIC ENGINEER) ANY PAVEMENT MARKING OR SIGNING DAMAGE DURING CONSTRUCTION OPERATIONS, INCLUDING RAISED PAVEMENT MARKERS (RPMs).
17. WHEN ENTERING OR LEAVING ROADWAYS CARRYING PUBLIC TRAFFIC, THE CONTRACTOR'S EQUIPMENT, WHETHER EMPTY OR LOADED SHALL IN ALL CASES YIELD TO PUBLIC TRAFFIC WITH THE ASSISTANCE OF CONTRACTOR PROVIDED CERTIFIED FLAGGER/PEACE OFFICER.
18. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION WORK ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS MAY BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS ROUTE THROUGH THE CONSTRUCTION WORK ZONE. A MINIMUM OF ONE TRAVEL LANE SHALL BE MAINTAINED ACROSS THE DRIVEWAYS, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER.
19. SPILLAGE RESULTING FROM HAULING OPERATIONS ALONG OR ACROSS ANY PUBLIC TRAVELED WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL SUBMIT AN APPLICATION FOR TEMPORARY PARKING RESTRICTIONS IF THERE ARE PARKING METERS LOCATED AT THE PROPOSED LANE CLOSURES FROM PARKING MANAGEMENT DIVISION (832-393-8690) AT LEAST TEN BUSINESS DAYS BEFORE IMPLEMENTATION OF LANE CLOSURES. IN ADDITION, TEMPORARY NO PARKING SIGNS SHALL BE POSTED 24 HOURS PRIOR TO COMMENCEMENT OF WORK.
21. ADDITIONAL OFF DUTY OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DISCRETION OF THE CITY PROJECT MANAGER EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.
22. THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING CONSTRUCTION.
23. IN GENERAL, A SOLAR POWERED FLASHING ARROW BOARD SHALL BE REQUIRED ON ALL MAJOR THOROUGHFARE LANES CLOSURES. EXCEPTIONS TO FLASHING ARROW BOARDS AND/OR IMPLEMENTATION ON RESIDENTIAL LANE CLOSURES SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.
24. APPROVED TRAFFIC CONTROL PLAN SHALL BE IN PLACE BEFORE STARTING ANY EXCAVATION.
25. WATER FILLED BARRIERS CAN BE USED AS INSTRUCTED BY THE ENGINEER AND APPROVED BY THE CITY FOR PROJECTS WHERE SPACE IS LIMITED AND HEAVY EQUIPMENT TO PLACE CONCRETE BARRIERS IS NOT FEASIBLE. WATER FILLED BARRIERS SHALL NOT BE USED ON ROADWAYS WITH A POSTED SPEED LIMIT MORE THAN 45 MPH.
26. WATER FILLED BARRIERS MUST BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S REQUIREMENTS AND ROUTINELY INSPECTED FOR DEFECTS.
27. IF WATER FILLED BARRIER IS PROVIDED, USE ENVIRONMENTALLY SAFE ANTI-FREEZING AGENT IN THE WATER WHEN IT IS APPLICABLE PER MANUFACTURER SPECIFICATIONS AND RECOVER AGENT WHEN THE BARRIER IS DRAINED.

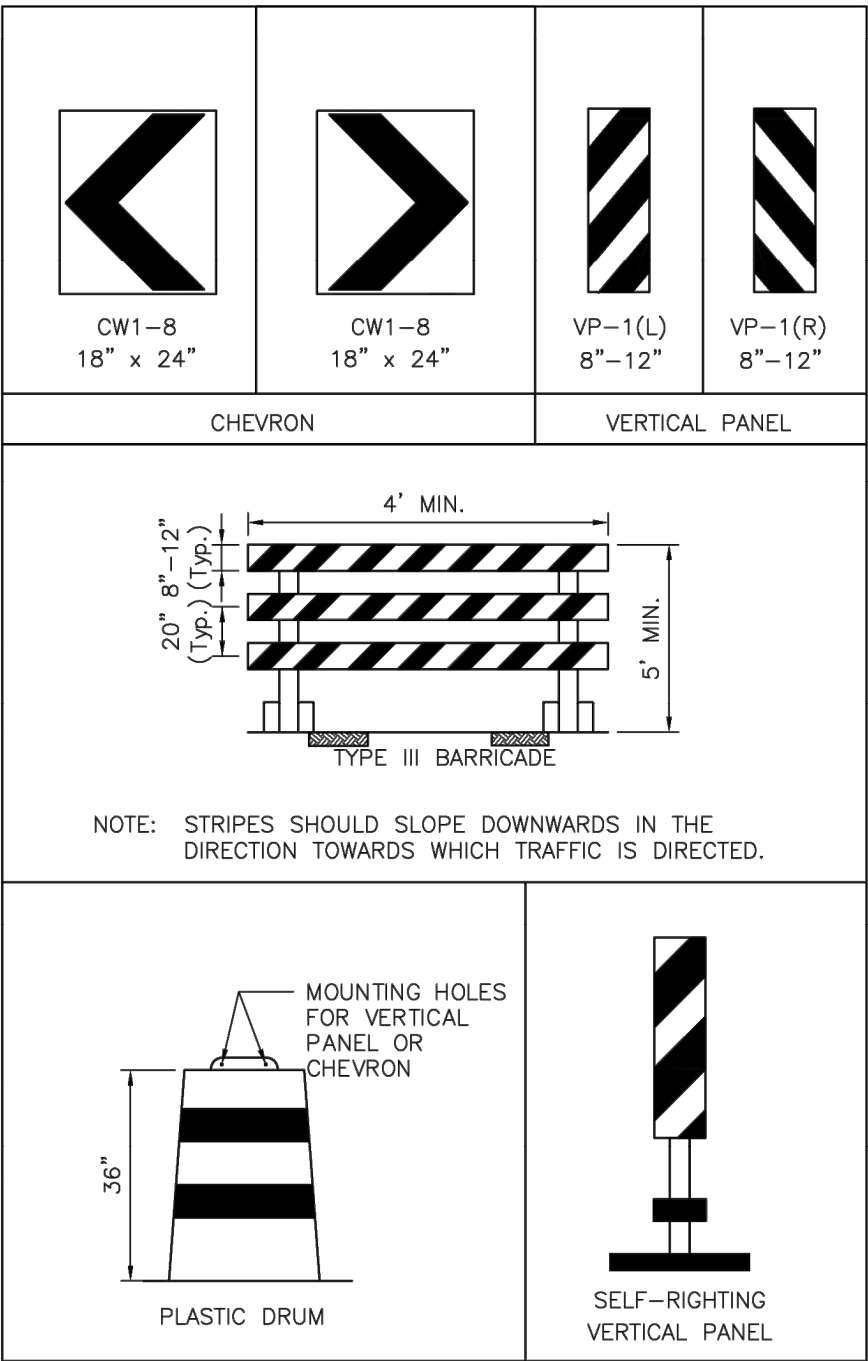
28. DISPOSE OF WATER AND AGENT PROPERLY. DO NOT DRAIN WATER FILLED BARRIER INTO OR ACROSS AN EXISTING TRAVEL LANE.
29. PROVIDE BARRIER UNITS THAT ARE CAPABLE OF BEING LIFTED AND MOVED WHEN FILLED IF DRAINING IS NOT POSSIBLE.
30. PROVIDE WATER FILLED BARRIER THAT ACTS AS ITS OWN FREE STANDING, NON-REDIRECTIVE END TREATMENT.
31. WHEN WATER FILLED BARRIERS ARE USED TO CHANNELIZE PEDESTRIANS, THEY MUST HAVE A CONTINUOUS DETECTABLE BOTTOM FOR USERS OF LONG CANES AND THE TOP OF THE UNIT SHALL NOT BE LESS THAN 32 INCHES IN HEIGHT.
32. ANY CLOSURE OF A PEDESTRIAN OR BICYCLE FACILITY SHALL REQUIRE THE SHORTEST DETOUR THAT MAINTAINS THE SAFETY OF PEDESTRIAN AND/OR BICYCLISTS.

SPACING FOR CHANNELIZING DEVICES

- A. PLASTIC DRUMS ON MERGING TAPER @ 30' C - C WITH CHEVRON SIGN @ 60' C - C AND WARNING LIGHTS FOR OVERNIGHT CLOSURE.
- B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C - C (RETURN TAPER AND BARRICADE ARE OPTIONAL AND DIVIDED ROADWAY SECTION)
- C. PLASTIC DRUMS ON RADII @ 35' C - C.
- D. PLASTIC DRUMS ON TANGENT @ 35' C - C WITH VERTICAL PANEL AT 70' C - C AND APPROVED WARNING LIGHT @ 70' C - C (FOR OVERNIGHT CLOSURE).
- E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C - C WITH VERTICAL PANEL AT 40' C - C AND APPROVED WARNING LIGHT @ 40' C - C (FOR OVERNIGHT CLOSURE).
- F. CONCRETE TRAFFIC BARRIER (CTB) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) WITH APPROVED REFLECTORS @ 10' C - C IF PAVEMENT DROP IS GREATER THAN 1 FOOT.
- G. PLASTIC DRUMS W/GUARD RAIL MOUNTED.
- H. SELF- RIGHTING VERTICAL PANEL SPACING.
 - 4 LANES TO 2 LANES UNDIVIDED ROADWAY SECTION @ 20' C - C.
 - 4 LANES DIVIDED ROADWAY TO ONE SIDE TWO WAY ROADWAY @ 20' C - C.
 - LEFT LANE AND RIGHT LANE STORAGE BAYS @ 15' C - C.
- I. SPACING SHOWN ON TRAFFIC CONTROL SHALL SUPERSEDE THE ABOVE SPACING.
- J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.

TABLE C3 - TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES						
POSTED SPEED (MPH)	SIGN SPACING "X" (FEET)	MIN. DESIRABLE TAPER LENGTH "L"			SUGGESTED MAXIMUM SPACING OF DEVICE	
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT
30	120'	150'	165'	180'	30'	60'-75'
35	160'	205'	225'	245'	35'	70'-90'
40	240'	265'	295'	320'	40'	80'-100'
45	320'	450'	495'	540'	45'	90'-110'
50	400'	500'	550'	600'	50'	100'-125'
55	500'	550'	605'	660'	55'	110'-140'

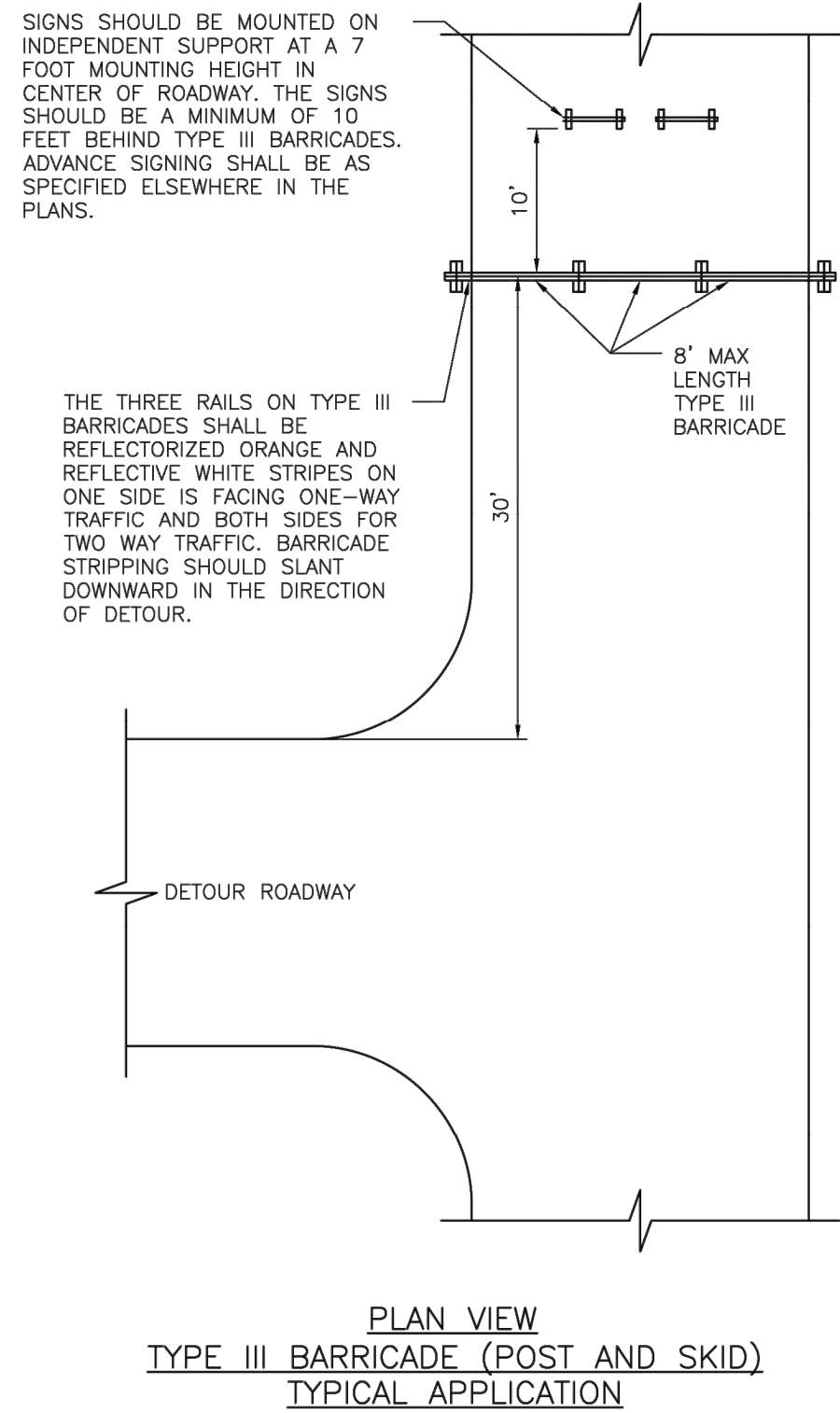
TABLE C4 - STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED	
POSTED SPEED (MPH)	DISTANCE "D" (FEET)
30	200
35	250
40	305
45	360
50	425
55	495



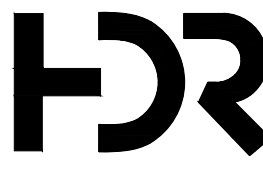
LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

CHANNELIZATION AND BARRICADES



APPROVED BY: <small>Designed by:</small> <i>Sulad Sarwar</i> <small>REGISTERED PROFESSIONAL ENGINEER</small>	APPROVED BY: <small>Designed by:</small> <i>BRAD NATHAN</i> <small>REGISTERED PROFESSIONAL ENGINEER</small>
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: <small>Designed by:</small> <i>Carl Hubbard</i> <small>REGISTERED PROFESSIONAL ENGINEER</small>	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-01
CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
TCP NOTES CHANNELIZING DEVICES AND BARRICADES	
	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	



4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
www.hdrinc.com TEXAS REG. NO.F-754

INTERIM REVIEW
Not intended for construction, bidding or permit purposes.
Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

TCP DETAILS (1 OF 2)

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

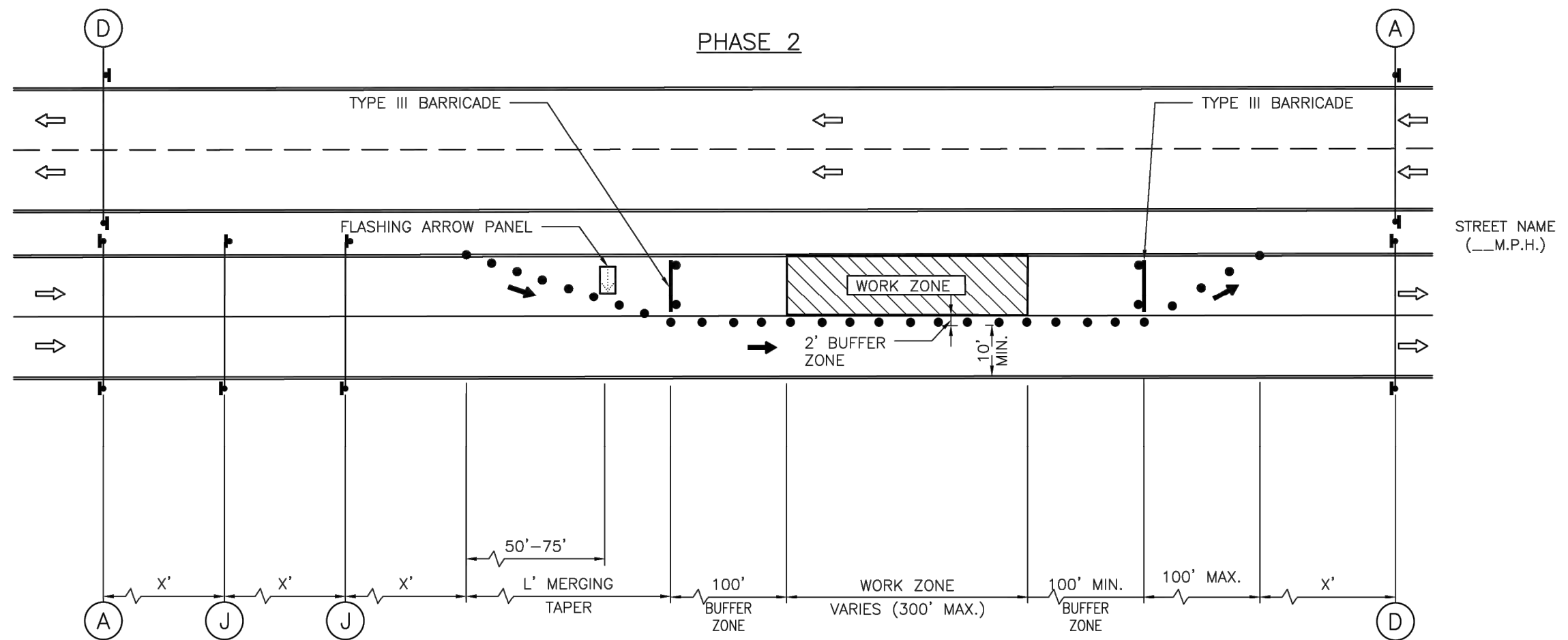
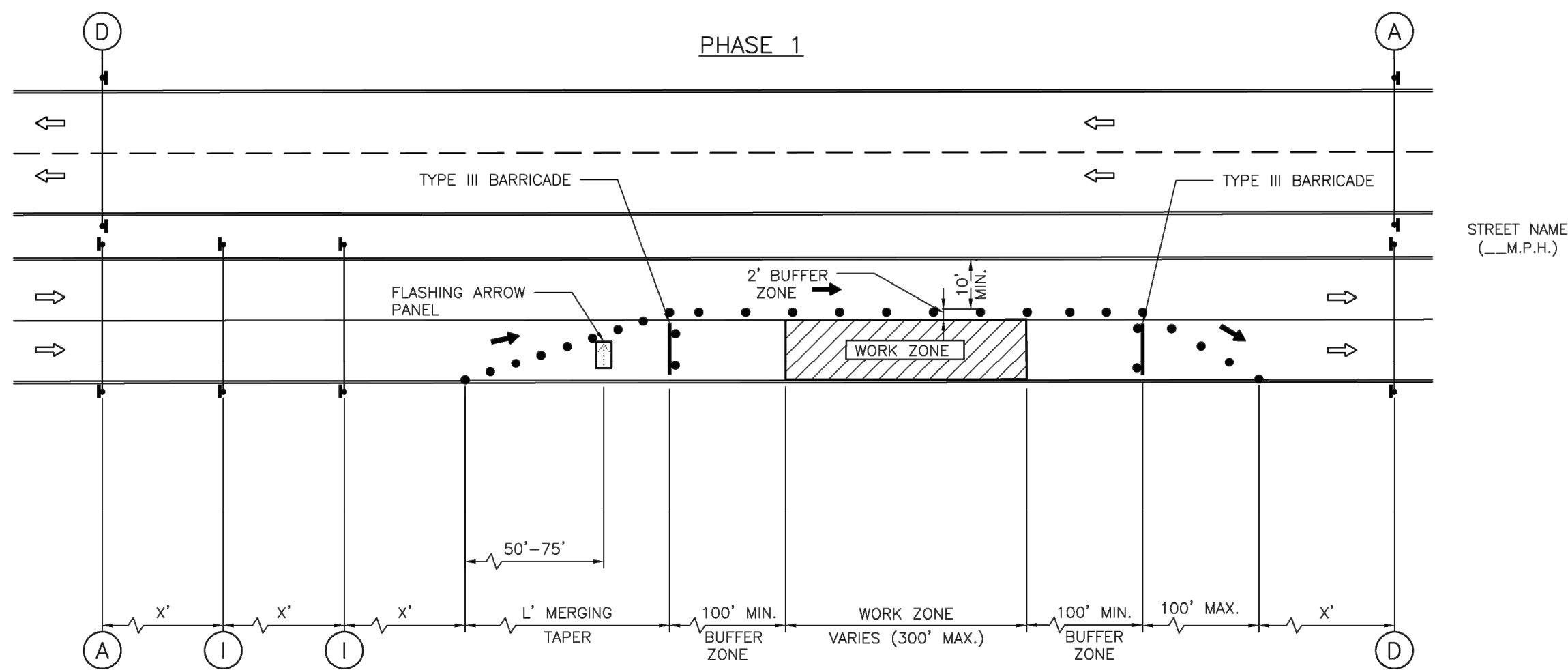
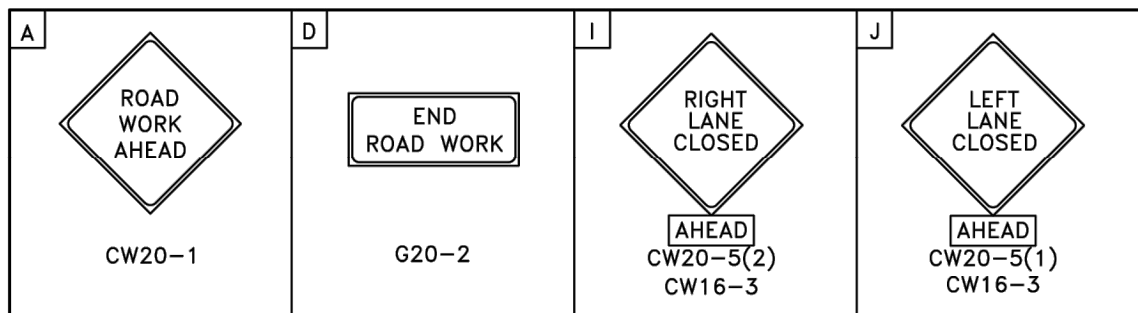
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SHEET NO. 20 OF 25









FOR CITY OF HOUSTON USE ONLY

DISCLAIMER: THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THE USE OF THESE DEVICES. THE USER OF THIS STANDARD ASSUMES ALL RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.






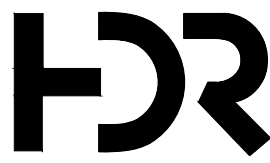
LEGEND:

-  SIGN
-  FLAGGER
-  APPROVED CHANNELIZATION DEVICE
-  BARRICADE
-  FLASHING ARROW PANEL
-  AREA UNDER CONSTRUCTION
-  EXISTING TRAVEL WAY
-  TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTES:

1. RETURN TAPERS AND DOWNSTREAM BARRICADES ARE OPTIONAL ON A DIVIDED ROADWAY SECTION.
2. DOUBLE SIGNS SHALL BE USED ONLY ON ROADWAYS WITH MEDIANS.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

APPROVED BY:	APPROVED BY:
 Subal Kumar REF:0803041154378	 Karim Nalluri REF:0803041154378
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
 Chris Hall REF:0803041154378	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-04
CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
TCP ONE LANE CLOSURE PHASE 1 & 2	
FOR CITY OF HOUSTON USE ONLY	
DRAWING SCALE	
NOT TO SCALE	



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INTERIM REVIEW
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Engineer: NGOC KIM LE, P.E.
P.E. Serial No.: 101192
Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

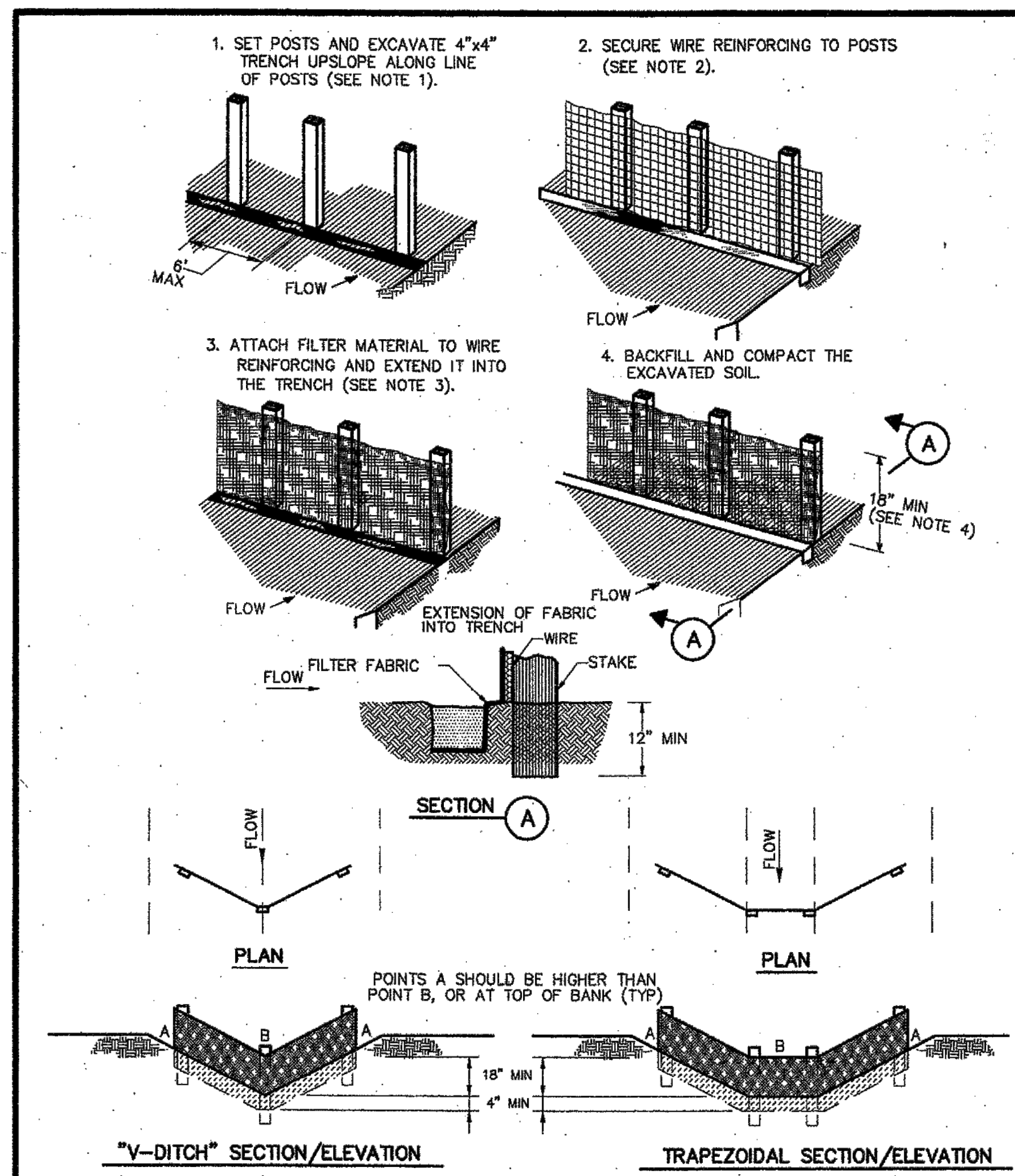
TCP DETAILS (2 OF 2)

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 21 OF 25

FOR CITY OF HOUSTON USE ONLY

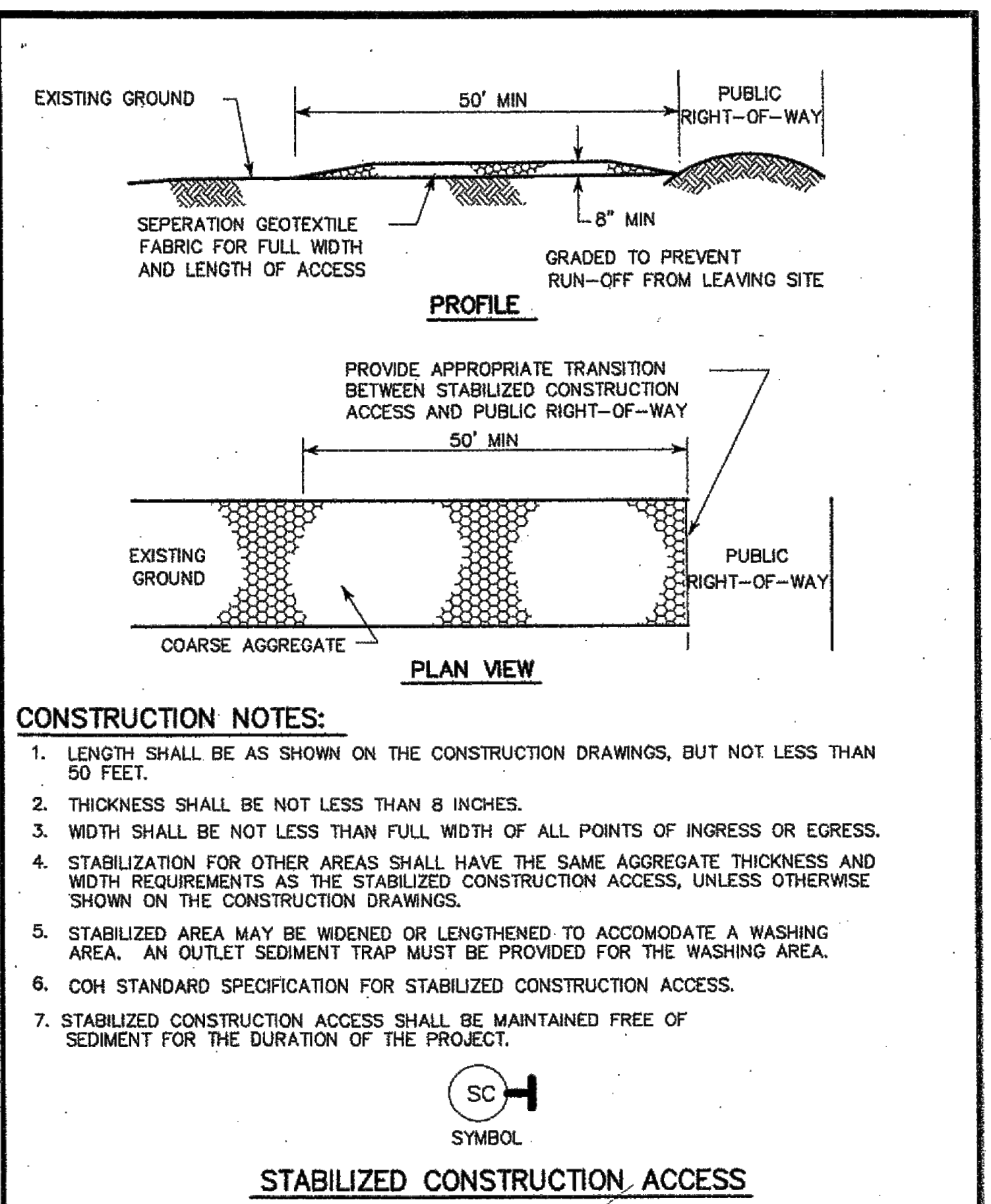
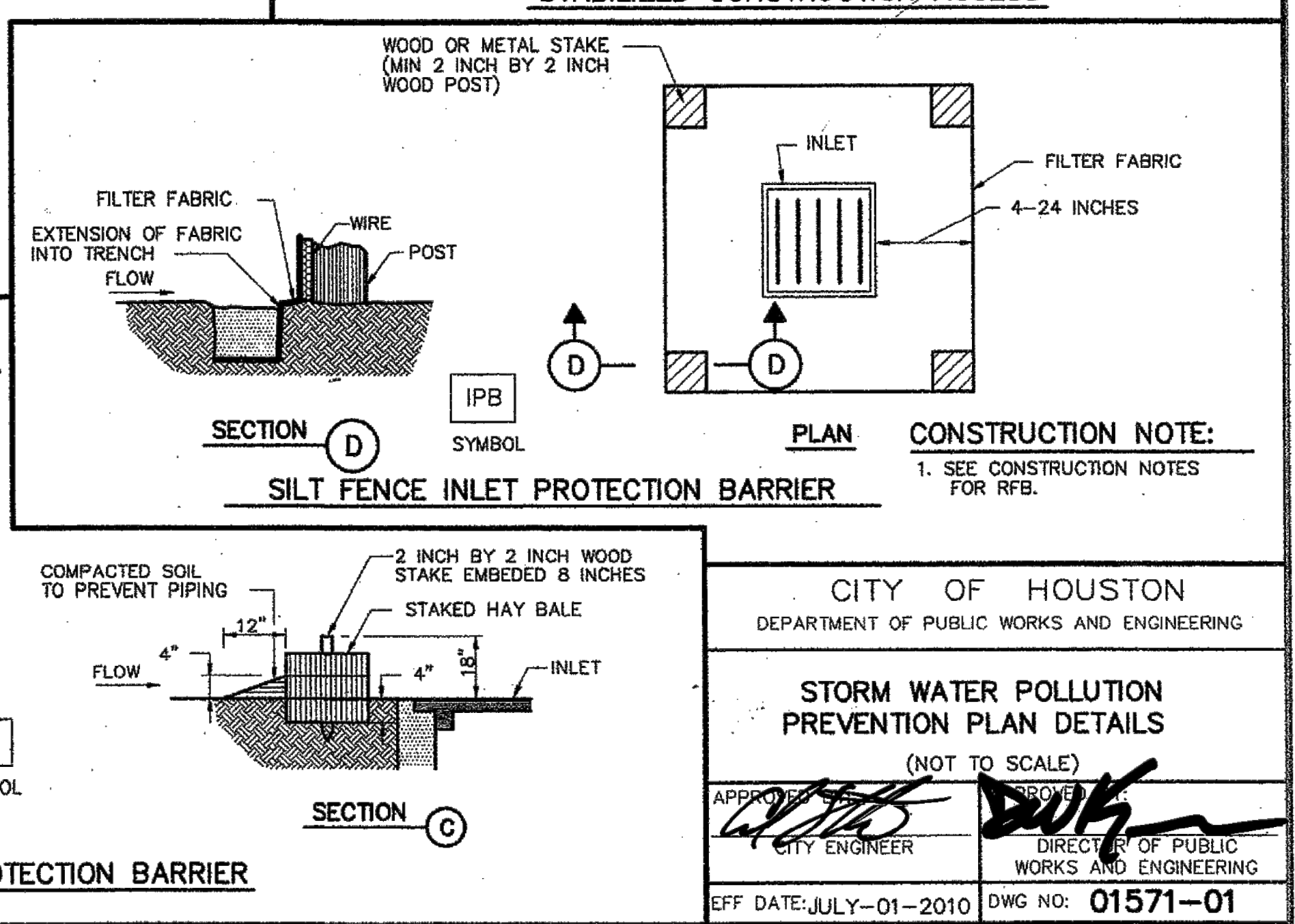
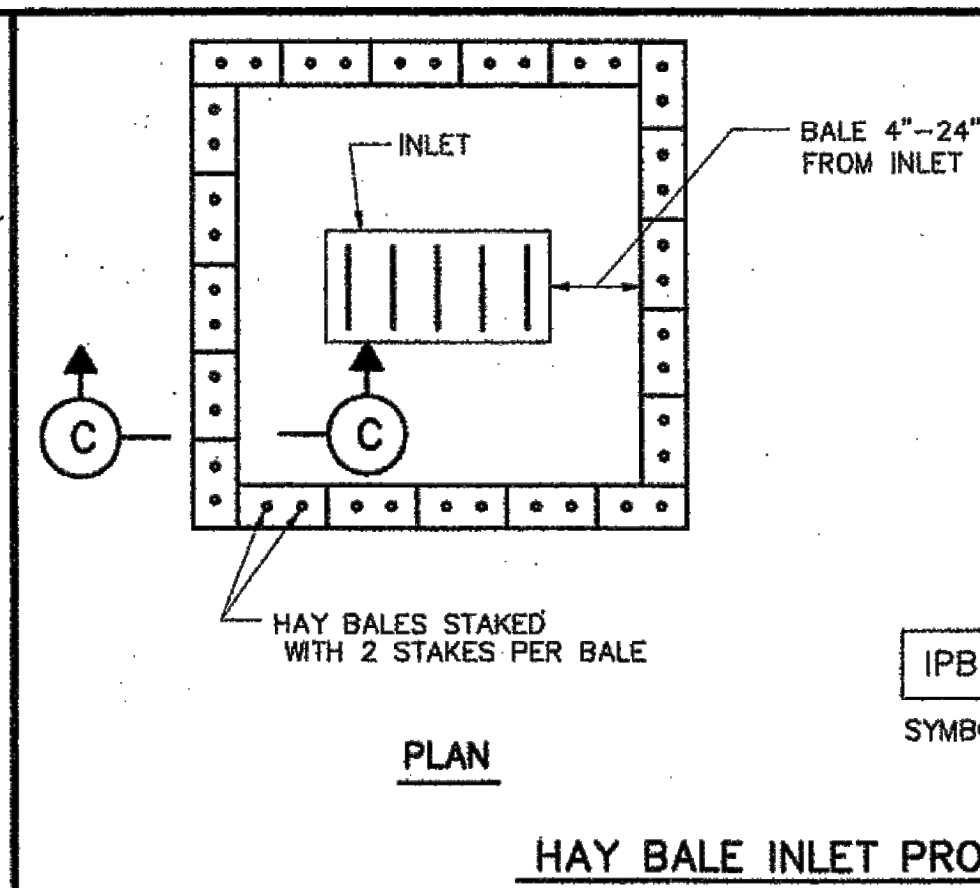
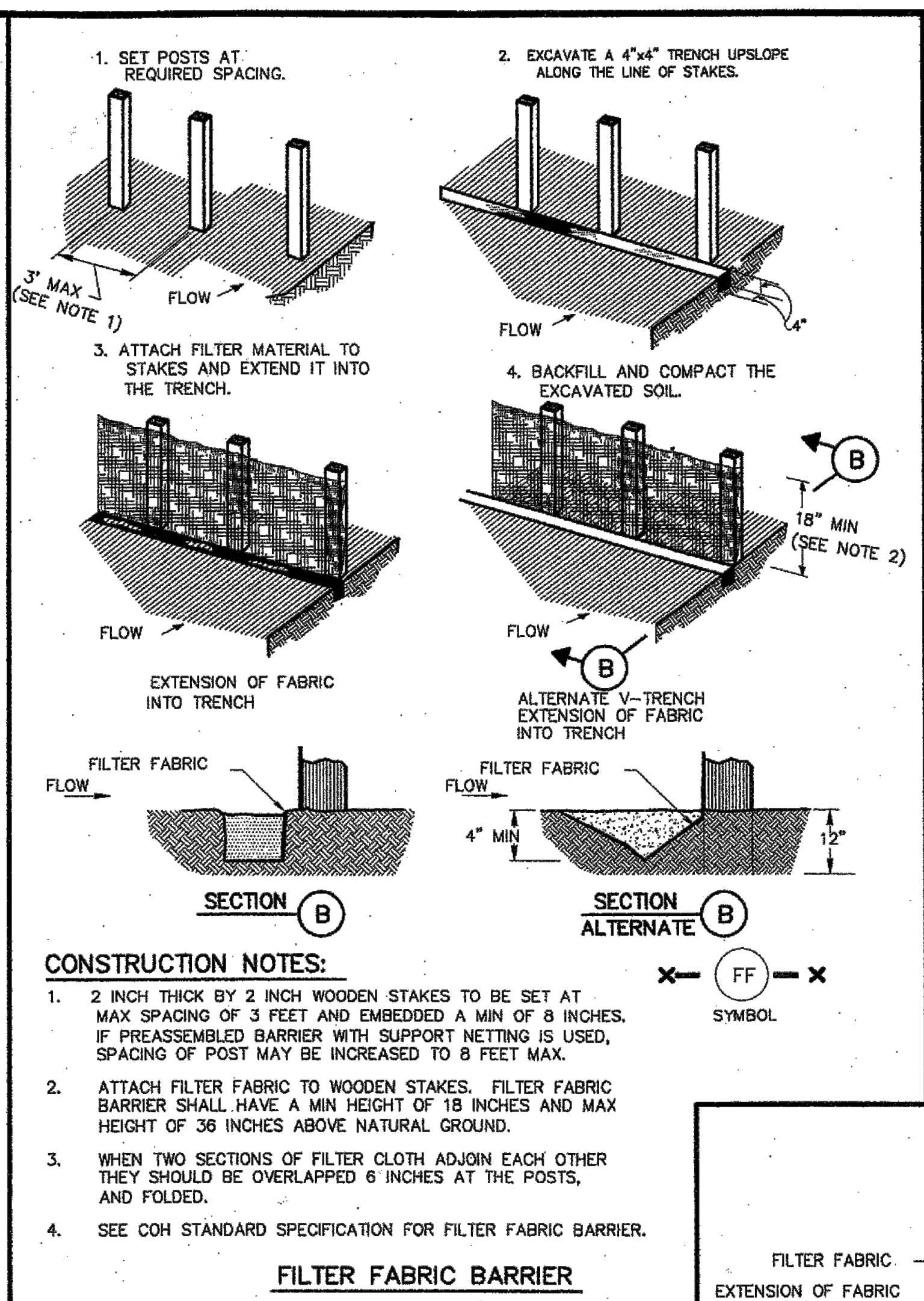
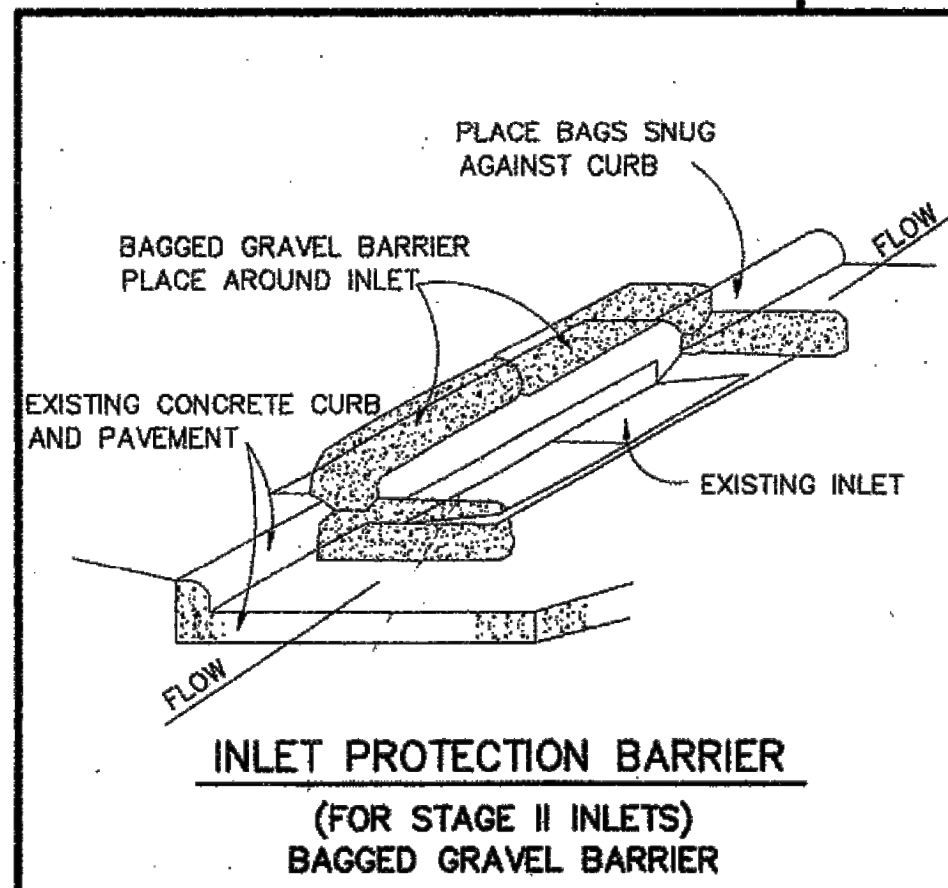


CONSTRUCTION NOTES:

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

REINFORCED FILTER FABRIC BARRIER

SYMBOL: X—(RFB)—X



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Engineer: NGOC KIM LE, P.E.

P.E. Serial No.: 101192

Date: DECEMBER 2024

HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

SWPPP DETAILS

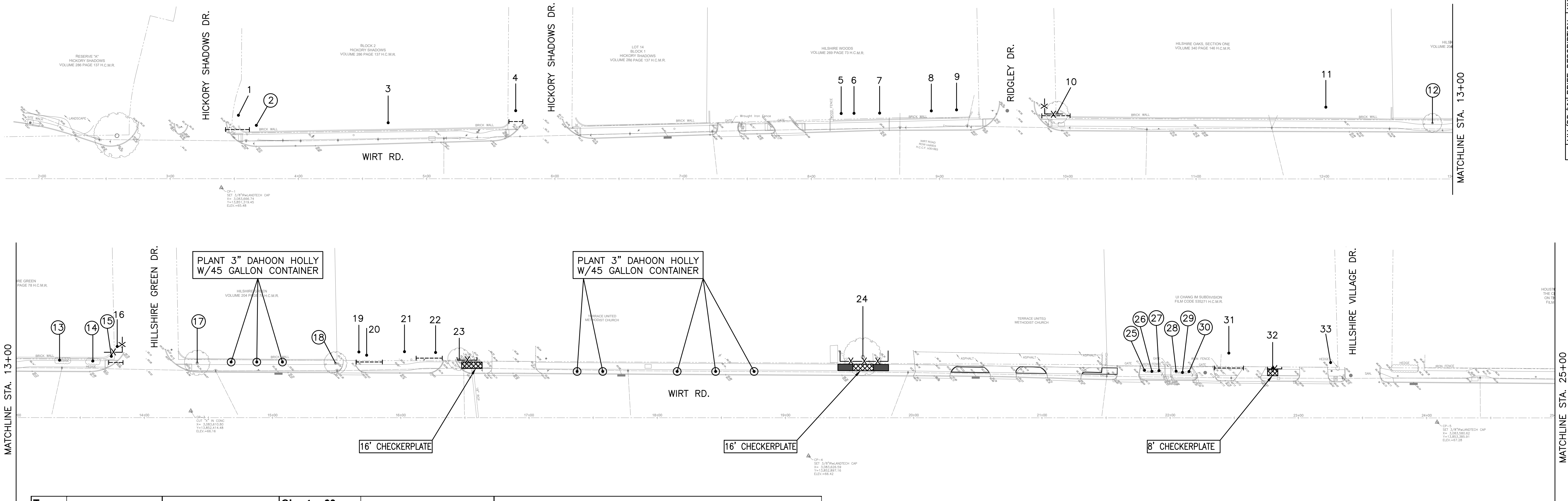
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

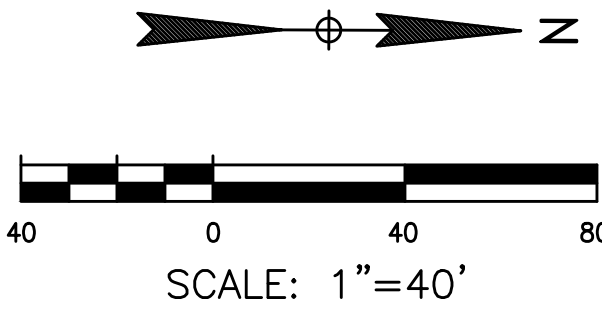
DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 22 OF 25

FOR CITY OF HOUSTON USE ONLY



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
1	18 Hickory Shadows	15" Live Oak	Not protected	Hilshire Village City Tree	Root prune for sidewalk
2	18 Hickory Shadows	26" Live Oak	Not protected	Hilshire Village City Tree	Remove for ADA compliant sloped sidewalk and root loss, No replacement required
3	18 Hickory Shadows	8" Crepe Myrtle	Private	Dead, Not impacted	
4	1 Hickory Shadows	19" Crepe Myrtle	Not protected	Hilshire Village City Tree	Root prune for sidewalk
5	1007 Ridgley	12" Camphor	Private	Hilshire Village City Tree	Clearance prune
6	1007 Ridgley	6" Ligustrum	Private	Hilshire Village City Tree	Clearance prune
7	1007 Ridgley	6" Ligustrum	Private	Hilshire Village City Tree	Clearance prune
8	1007 Ridgley	8" Xylosma	Private	Hilshire Village City Tree	Clearance prune
9	1007 Ridgley	17" Crepe Myrtle	Private	Hilshire Village City Tree	Clearance prune
10	2 Hilshire Oaks Ct	14" Crepe Myrtle	Private	Hilshire Village City Tree	Fence, Root prune for sidewalk, Clearance prune
11	6 Hilshire Oaks Ct	10" Ligustrum	Private	Hilshire Village City Tree	Clearance prune
12	7903 Hilshire Green	11" Redbud	Protected	Dead, Remove for walk	Remove tree, No replacement required
13	7903 Hilshire Green	5" Burford Holly (stump)	Not protected	Remove for walk	Remove tree, No replacement required
14	7903 Hilshire Green	16" Bradford Pear (stump)	Not protected	Remove for walk	Remove tree, No replacement required
15	7903 Hilshire Green	2" Crepe Myrtle	Not protected	Remove for walk	Remove tree, No replacement required
16	7903 Hilshire Green	6" Crepe Myrtle	Not protected	Hilshire Village City Tree	Fence, Root prune for sidewalk, Clearance prune
17	7902 Hilshire Green	21" Bradford Pear	Protected	Remove for ADA slopes	Remove tree, Provide 21" in replacement to comply with COH Chapter 33
18	7902 Hilshire Green	15" American Elm	Protected	Remove for ADA slopes	Remove tree, Provide 15" in replacement to comply with COH Chapter 33
19	Not Available	14" Water Oak	Private	Hilshire Village City Tree	Root prune for sidewalk
20	Not Available	15" Live Oak	Private	Hilshire Village City Tree	Root prune for sidewalk
21	Not Available	7" Vitex	Private	Hilshire Village City Tree	Clearance prune
22	Not Available	15" Magnolia	Private	Hilshire Village City Tree	Root prune for sidewalk, Clearance prune
23	Not Available	16" Water Oak	Private	Hilshire Village City Tree	16' checkerplate, Fence, Demo-form-pour walk without cutting or otherwise damaging tree roots 1" diameter or larger
24	1203 Wirt	25" Live Oak	Private	Hilshire Village City Tree	16' checkerplate, Fence, Demo-form-pour walk without cutting or otherwise damaging tree roots 1" diameter or larger
25	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
26	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
27	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
28	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
29	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
30	1211 Wirt	1" Burford Holly	Not protected	Remove for walk	Remove tree, No replacement required
31	1215 Wirt	16" Live Oak	Private	Hilshire Village City Tree	Root prune for sidewalk, Clearance prune
32	1215 Wirt	10" Live Oak	Protected		8' checkerplate, Fence, Demo-form-pour walk without cutting or otherwise damaging tree roots 1" diameter or larger, Clearance prune
33	1215 Wirt	11" Crepe Myrtle	Private	Hilshire Village City Tree	



- NOTE:**
- THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED SEPTEMBER 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
 - IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP. ACCURACY OF REPRESENTED LOCATION CANT, AND IS NOT GUARANTEED BY DESIGNER.
 - THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF THE NEW TREES AND OBTAIN APPROVAL BY THE CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING AND PLANTING TREES.

TREE PRESERVATION PLAN LEGEND

1

①

—X—X—

⊙

←OCC→

TREE NUMBER/LOCATION

TREE TO BE REMOVED

TREE PROTECTION FENCE

ROOT PRUNING TRENCH

REPLACEMENT PLANTING SPECIES AND SIZE/TYPE

ZERO CURB CUTBACK

CHECKER PLATE

SIDEWALK ON GRADE

C.N. Koehl

Urban Forestry, Inc.

210 Stone Bush Ct. • Katy, Texas 77493

281-391-0022 ckoehl@koehllurbanforestry.com

APPROVED:

4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
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HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

TREE PROTECTION PLAN

SHEET 1 OF 3

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

SHEET NO. 23 OF 25

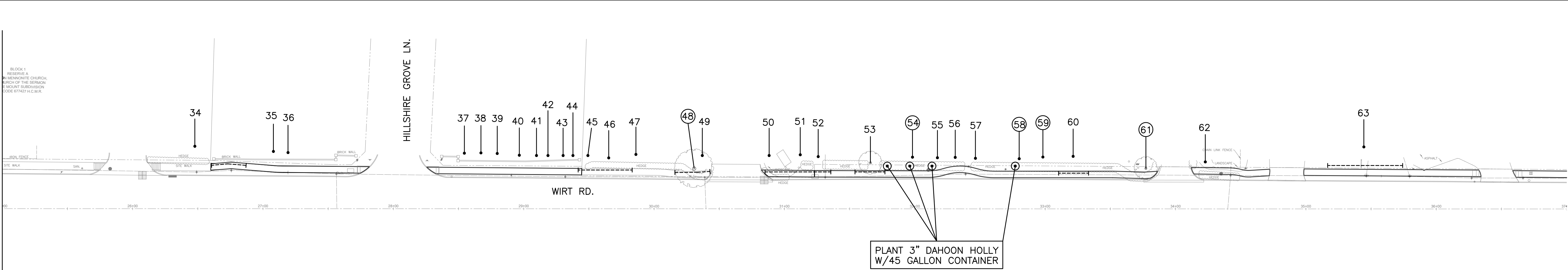
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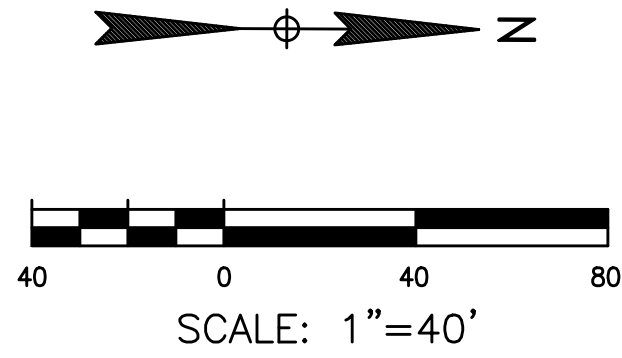
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MATCHLINE STA. 25+00



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
34	1231 Wirt	30" Pine	Private	Hilshire Village City Tree	Root prune for sidewalk
35	1 Hilshire Grove Ln	7" Ligustrum	Private	Hilshire Village City Tree	Clearance prune
36	1 Hilshire Grove Ln	8" Crepe Myrtle	Private	Hilshire Village City Tree	Clearance prune
37	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
38	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
39	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
40	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
41	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
42	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
43	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
44	16 Hilshire Grove Ln	6" Sweet Viburnum	Private	Hilshire Village City Tree	Clearance prune
45	1321 Wirt	15" Sugarberry	Private	Hilshire Village City Tree	Root prune for sidewalk
46	1321 Wirt	15" Green Ash	Private	Hilshire Village City Tree	Root prune for sidewalk
47	1321 Wirt	11" Pecan	Private	Hilshire Village City Tree	
48	1321 Wirt	23" Crepe Myrtle	Private	Hilshire Village City Tree	Remove for ADA compliant sloped sidewalk and root loss, No replacement required
49	1321 Wirt	16" Crepe Myrtle	Private	Hilshire Village City Tree	Root prune for sidewalk
50	1321 Wirt	25" American Elm	Private	Hilshire Village City Tree	Root prune for sidewalk
51	1321 Wirt	23" American Elm	Private	75% dead, Should be removed by property owner, over parking lot, Hilshire Village City Tree	Root prune for sidewalk
52	1321 Wirt	11" Bradford Pear	Private	Hilshire Village City Tree	Root prune for sidewalk, Clearance prune
53	1321 Wirt	14" Bradford Pear	Private	Hilshire Village City Tree	Root prune for sidewalk, Clearance prune
54	1321 Wirt	19" Pine	Private	Hilshire Village City Tree	Remove for ADA compliant sloped sidewalk and root loss, No replacement required
55	1321 Wirt	8" Crepe Myrtle	Private	Hilshire Village City Tree	
56	1321 Wirt	8" Crepe Myrtle	Private	Hilshire Village City Tree	
57	1321 Wirt	8" Crepe Myrtle	Private	Hilshire Village City Tree	
58	1321 Wirt	23" American Elm	Private	Hilshire Village City Tree	Remove for ADA compliant sloped sidewalk and root loss, No replacement required
59	1321 Wirt	16" Pine	Private	Hilshire Village City Tree	Remove for ADA compliant sloped sidewalk and root loss, No replacement required
60	1321 Wirt	11" Bradford Pear	Private	Hilshire Village City Tree	Root prune for sidewalk, Clearance prune
61	1321 Wirt	3' Palm	Not protected	Dead, Remove for walk	Remove tree, No replacement required
62	7901 Westview	3" Arizona Ash	Private	Hilshire Village City Tree	Clearance prune
63	7901 Westview	27" Willow Oak	Private	Hilshire Village City Tree	Root prune for sidewalk



- NOTE:**
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 - THE CONTRACTOR'S ARBORTIST WILL MARK LOCATIONS OF THE NEW TREES AND OBTAIN APPROVAL BY THE CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING AND PLANTING TREES.

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- ZERO CURB CUTBACK
- CHECKER PLATE
- SIDEWALK ON GRADE

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

APPROVED:

HR

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HILSHIRE VILLAGE WIRT RD
SAFETY PROJECT

TREE PROTECTION PLAN

SHEET 2 OF 3

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

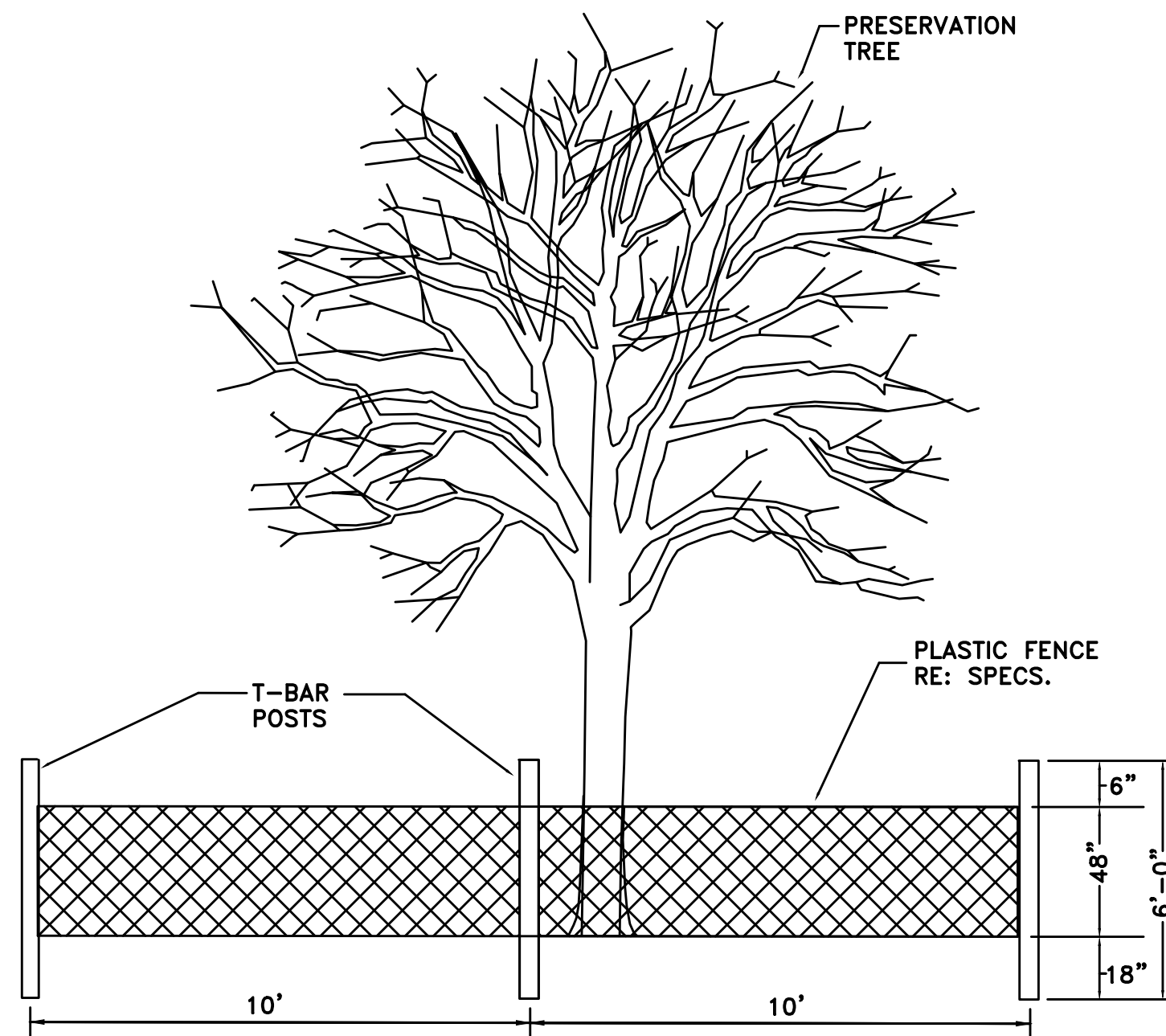
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SHEET NO. 24 OF 25

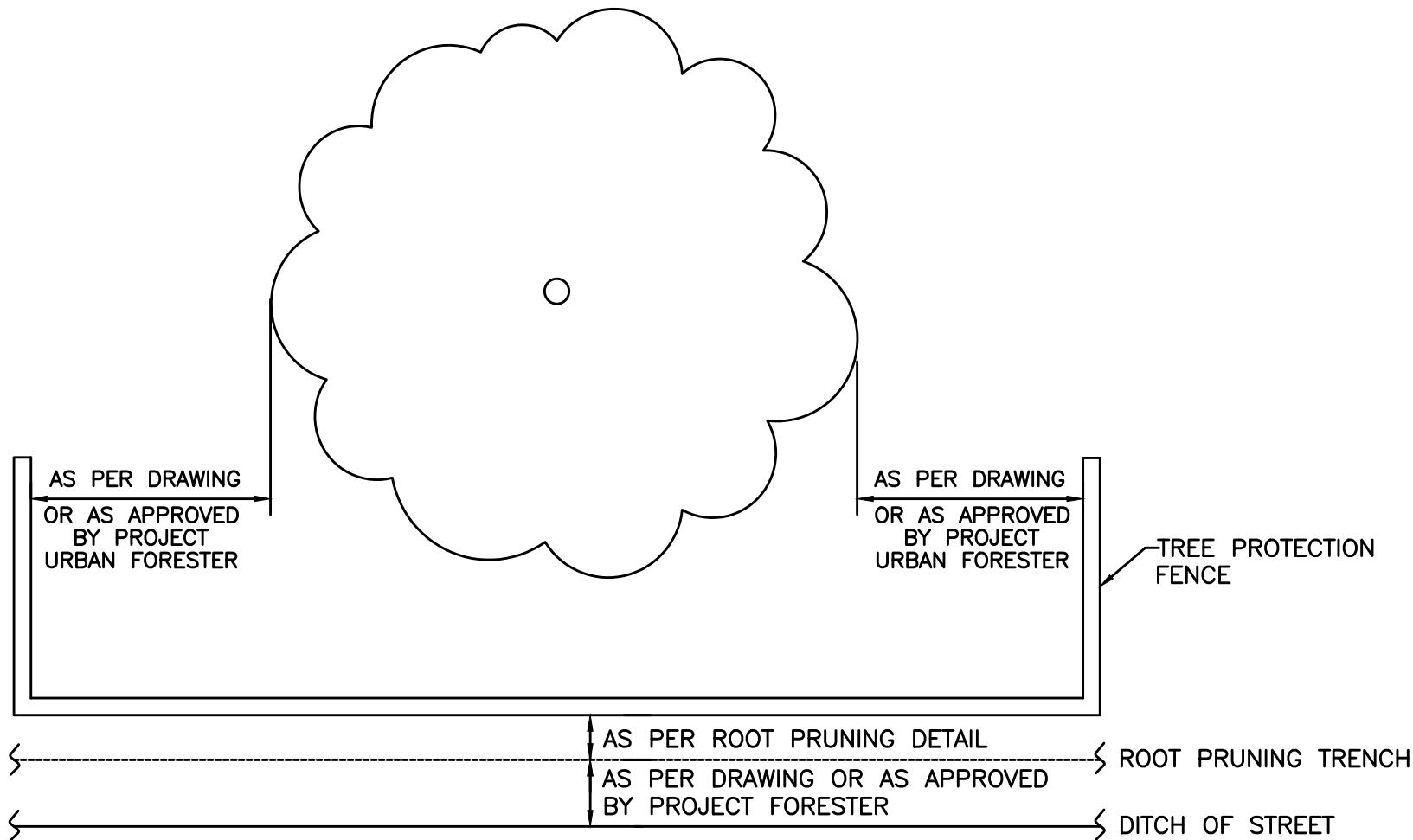
FOR CITY OF HOUSTON USE ONLY

MM/DD/YY	BRIEF DESCRIPTION	XXX
MM/DD/YY	BRIEF DESCRIPTION	XXX
MM/DD/YY	BRIEF DESCRIPTION	XXX
NO.	DATE	REVISION
APP.		

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

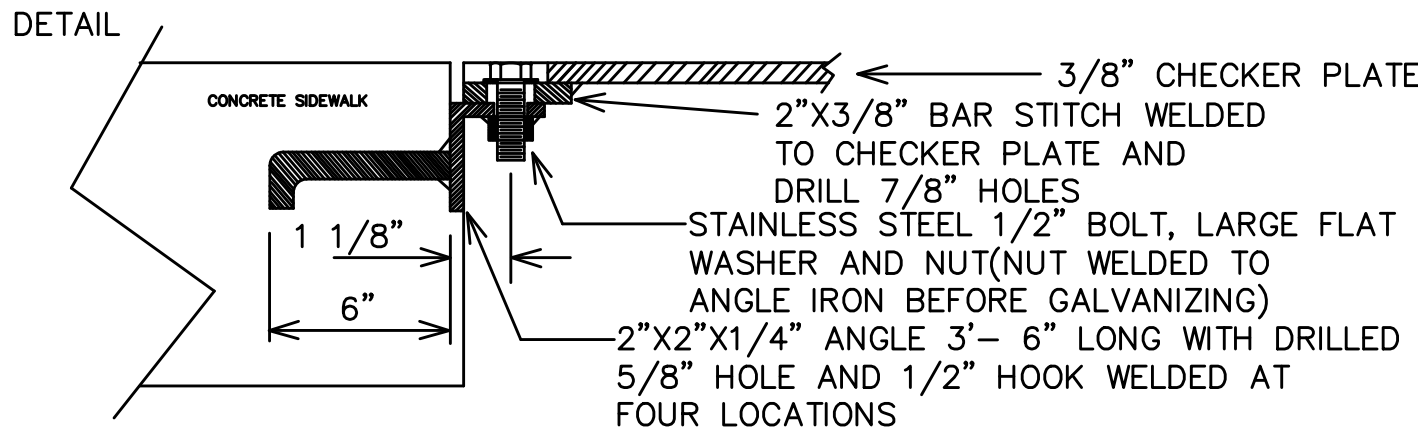
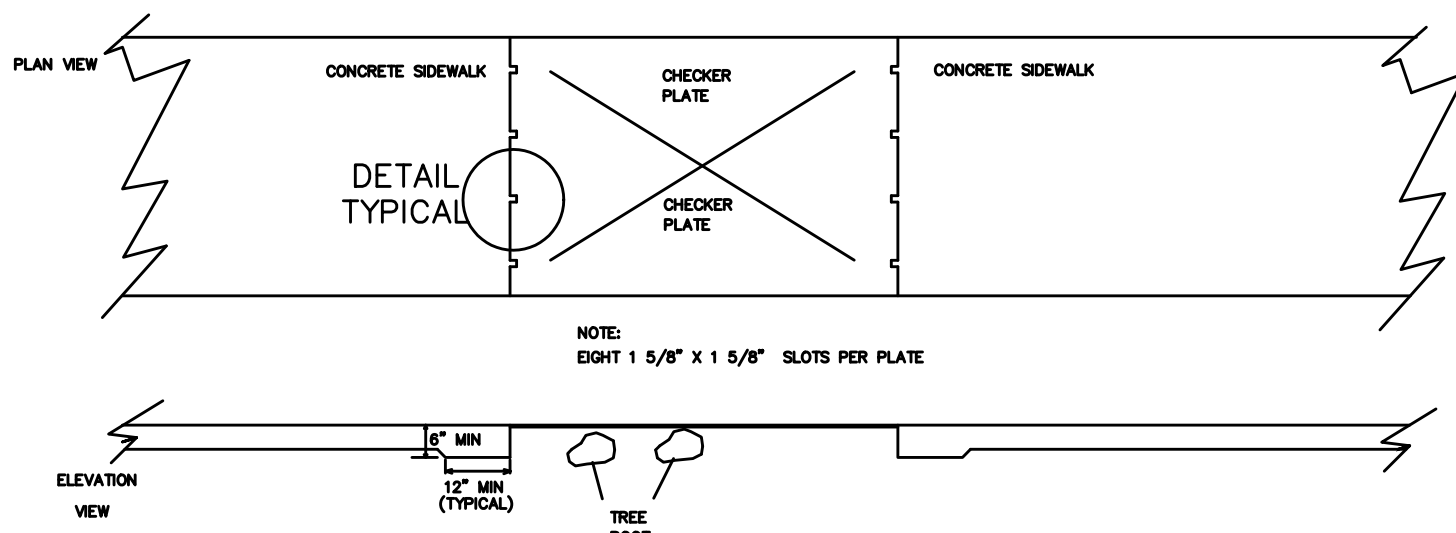


TREE PROTECTION FENCING DETAIL A



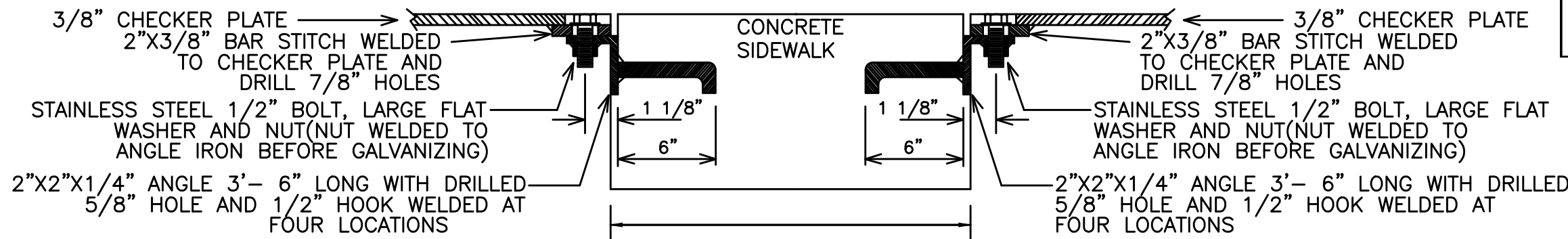
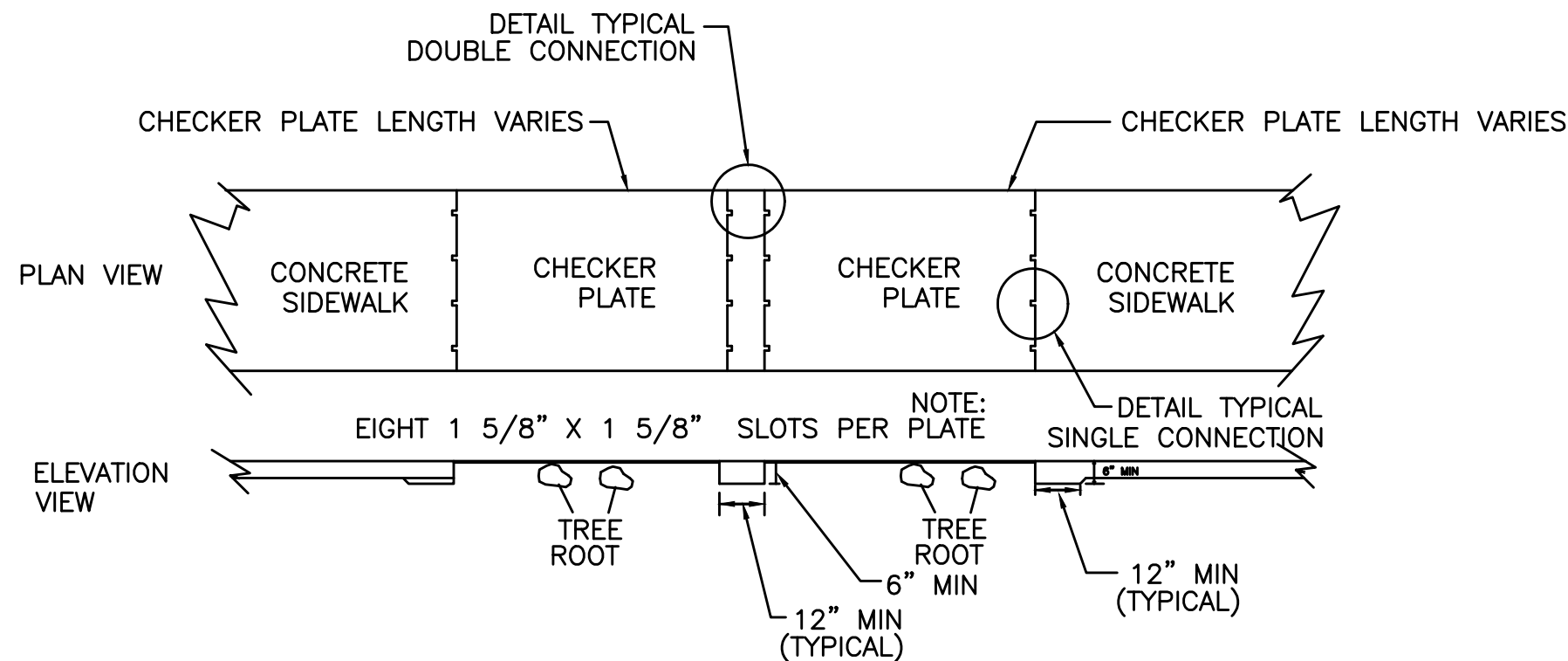
TREE PROTECTION FENCING DETAIL B
NOT TO SCALE

Tree Removal List			
Tree No.	Location	Description	Replacement requirement
2	18 Hickory Shadows	26" Live Oak	0
12	7903 Hilshire Green	11" Redbud	0
13	7903 Hilshire Green	5" Burford Holly (stump)	0
14	7903 Hilshire Green	16" Bradford Pear (stump)	0
15	7903 Hilshire Green	2" Crepe Myrtle	0
17	7902 Hilshire Green	21" Bradford Pear	21
18	7902 Hilshire Green	15" American Elm	15
25	1211 Wirt	1" Burford Holly	0
26	1211 Wirt	1" Burford Holly	0
27	1211 Wirt	1" Burford Holly	0
28	1211 Wirt	1" Burford Holly	0
29	1211 Wirt	1" Burford Holly	0
30	1211 Wirt	1" Burford Holly	0
48	1321 Wirt	23" Crepe Myrtle	0
54	1321 Wirt	19" Pine	0
58	1321 Wirt	23" American Elm	0
59	1321 Wirt	16" Pine	0
61	1321 Wirt	3' Palm	0
TOTAL REPLACEMENT INCHES REQUIRED			36



CHECKERPLATE DETAIL-SINGLE CONNECTION

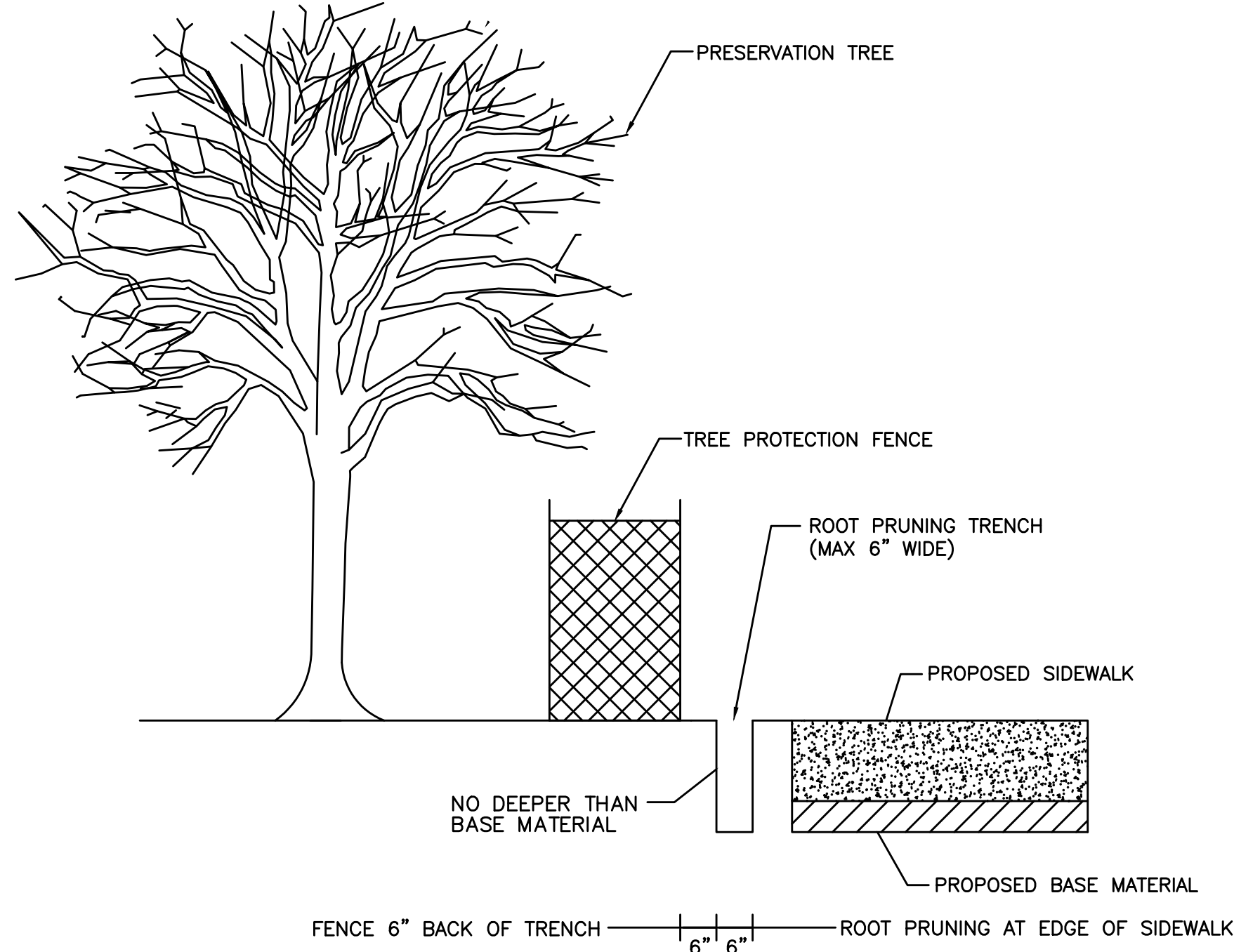
NOTE:
ALL IRONWORK TO BE HOT DIPPED GALVINIZED EXCEPT AS NOTED.



CHECKERPLATE DETAIL-DOUBLE CONNECTION

NOTE:
ALL IRONWORK TO BE HOT DIPPED GALVINIZED EXCEPT AS NOTED.

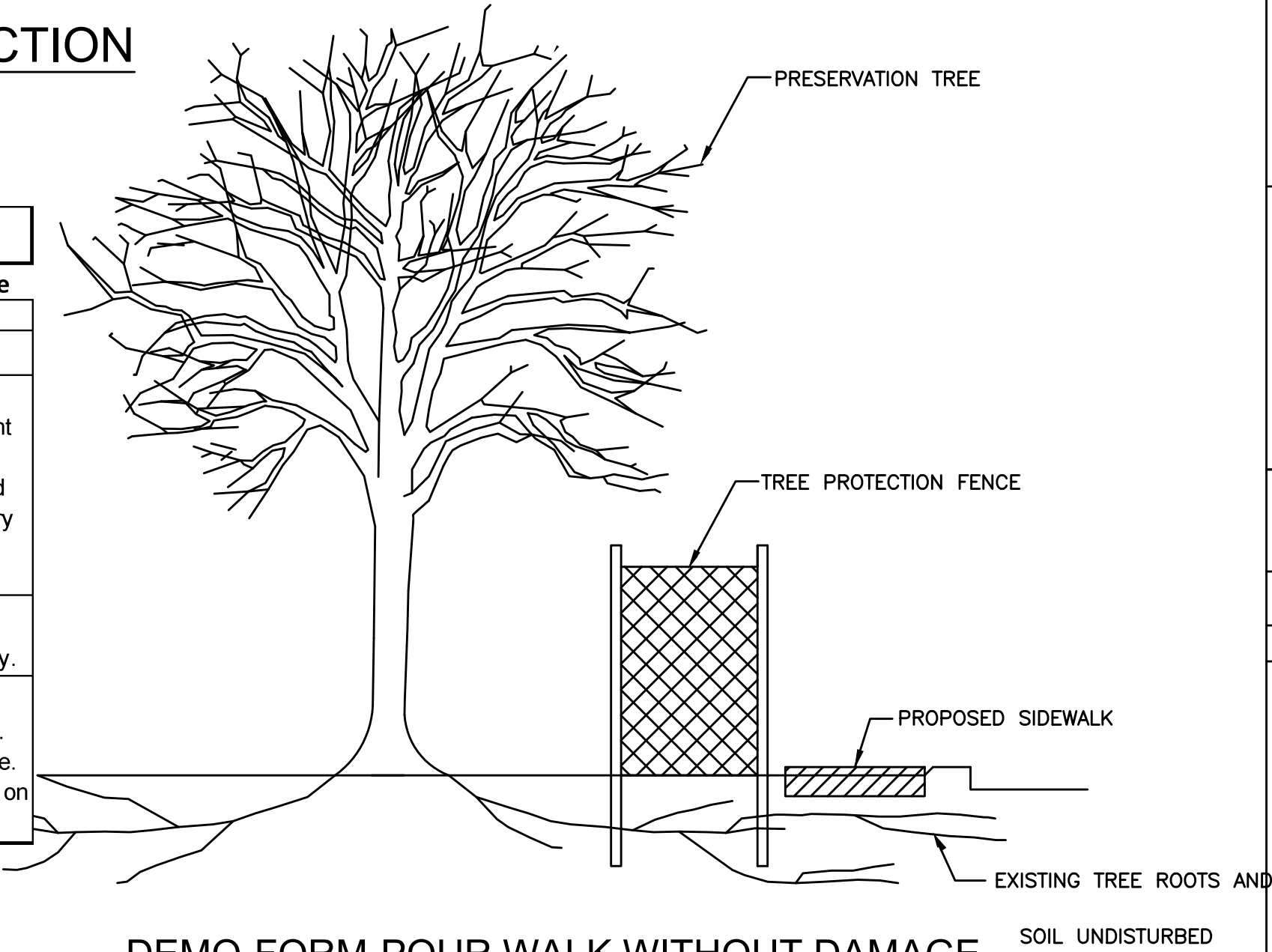
Tree Replacement List			
Quantity	Caliper Size	Species	Container/Tree Spade size
12	3	Dahoon Holly (Ilex cassine)	45 gallon container
TOTAL REPLACEMENT INCHES INCLUDED IN PLAN			36
<p>NOTE: Tree replacement locations are not shown on plans. Contractor must coordinate with City of Houston Urban Forestry and Houston Public Works prior to PURCHASING trees. This project may not have adequate room for all required replacement trees without creating regulatory sign or traffic/pedestrian visibility issues. Number of trees and planting locations will be determined by City of Houston Urban Forestry in construction phase. Trees that are planted are to be maintained and watered for 2 years following planting per standard spec 02915. Timing of planting may be delayed in periods of drought with mandatory water restrictions in place-timing to be coordinated with City of Houston Urban Forestry. Trees in esplanade groupings to be planted in common bed with 4" of hardwood mulch between trees.</p> <p>Trees are to be maintained and watered for 2 years following planting per standard spec 02915. Timing of planting may be delayed in periods of drought with mandatory water restrictions in place-timing to be coordinated with City of Houston Urban Forestry.</p> <p>Tree replacement locations shall comply with Houston Public Works spec sections 02811, 02911, 02912, 02915, 02921 & 02922. In general trees along sides of street right of ways shall be no closer than 3' to back of curb or 20' from another tree. Trees in medians shall be no closer than 6' back of curb, 75' from an intersection, 50' to a median cut, or 20' from another tree. Contractor to coordinate locations with City Forestry and HPW prior to PURCHASING trees. All replacement trees called out on plans may not be planted on project relative to coordination with listed parties.</p>			



ROOT PRUNE FOR SIDEWALK
NOT TO SCALE

Arboriculturally Significant Tree List		
Tree No.	Location	Description
2	18 Hickory Shadows	26" Live Oak
24	1203 Wirt	25" Live Oak
34	1231 Wirt	30" Pine
50	1321 Wirt	25" American Elm
63	7901 Westview	27" Willow Oak

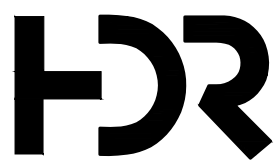
Trees Identified by City of Houston Forestry/Parks & Recreation Department as Arboriculturally Significant are identified here and/or in treatment schedule included on TPP sheets. Arboriculturally Significant trees are to be pruned under direct supervision of City of Houston Forestry. Minimal pruning will be allowed for construction equipment access, and in some cases no pruning will be allowed. Contractor must review conditions around and/or under the canopy of Arboriculturally Significant trees and consider restrictions when preparing cost estimate and planning construction equipment that will be necessary to accomplish design installation with minimal to no tree pruning.



DEMO-FORM-POUR WALK WITHOUT DAMAGE
TO TREE ROOTS 1" DIAMETER OR LARGER

NOT TO SCALE

APPROVED:



4828 LOOP CENTRAL DR #700
Houston, TX 77081
Tel: (713) 622-9264
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SAFETY PROJECT

TREE PROTECTION PLAN

SHEET 3 OF 3

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

DRAWING SCALE: HORIZONTAL: N/A VERTICAL: N/A

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