

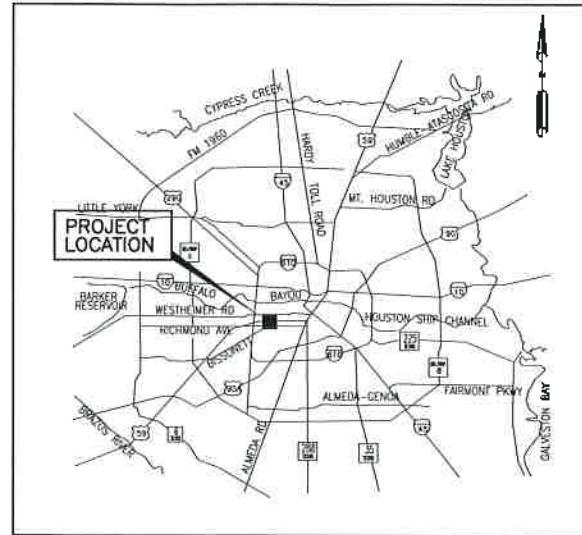
MONTROSE REDEVELOPEMENT AUTHORITY

HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS

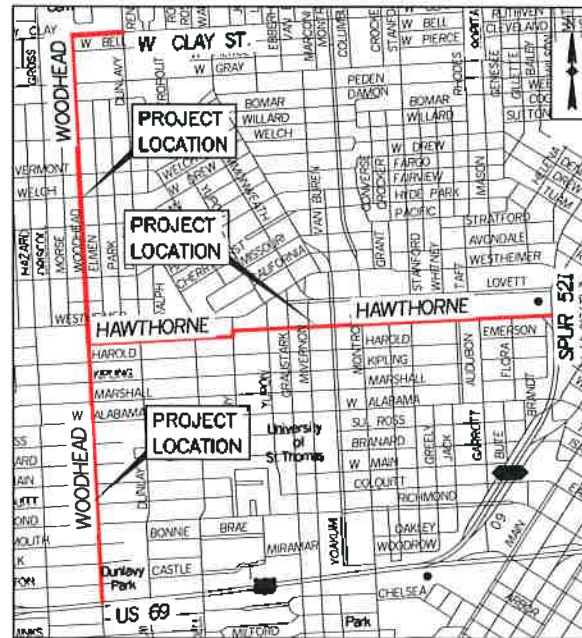
WBS No. N-T27000-0002-7

ON BEHALF OF
TAX INCREMENT REINVESTMENT ZONE NO. 27

FEBRUARY, 2022



LOCATION MAP
N.T.S



VICINITY MAP

KEY MAP No. 492R,492V,492Z,493S,493T
GIMS MAP No. 5356a, 5356b, 5356c

TDLR EABPR TABS2021021625



<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	<p>STATE OF TEXAS KARAM QADDO 125611 PROFESSIONAL ENGINEER <i>Karam Qaddo</i> 02/21/2022</p>
<p>NOTE: CITY SIGNATURE VALID FOR ONE YEAR ONLY, AFTER DATE OF SIGNATURE</p>	
<p>for <i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS</p>	<p><i>2/22/22</i> DATE</p>
<p>SHEET NO 1 OF 247 SHEETS</p>	

72248

Per Tab 1 of HAW.tbl
Plot of D:\iver\pt\TIRZ 27\1090-TO-4-Hawthorne-Woodhead\4-0-Product\on-Work\ng\4-1-CAD\Resource\Plot Files\HAWTHORNE.D1.tofg
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GENERAL CONSTRUCTION NOTES (WITHIN CITY OF HOUSTON ROW)

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
2. 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.
3. 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 CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, AND STREET PAVING" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" REFERENCED ABOVE, AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AT 832-394-9098 OR VIA FAX AT 832-395-4424 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
5. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIME DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
6. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION
7. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
8. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS RECORDING AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE CITY ENGINEER.

STREET AND BRIDGE NOTES (WITHIN CITY OF HOUSTON ROW):

1. HOUSTON PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN IS CONSISTENT WITH THE MINIMUM STANDARDS ESTABLISHED IN THE "INFRASTRUCTURE DESIGN MANUAL" REFERENCED AT: [HTTPS://EDOCS.PUBLICWORKS.HOUSTONTX.GOV/ENGINEERING-AND-CONSTRUCTION/DESIGN-MANUALS.HTML](https://edocs.publicworks.houstontx.gov/engineering-and-construction/design-manuals.html)
2. FILL AREAS ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 6" IN DEPTH AND EACH COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY PRIOR TO INSTALLATION OF WATER LINE AND FILL AREA SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
3. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURBED INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
4. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.
5. EXISTING PAVEMENTS, CURBS, DRIVEWAYS, AND SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARDS, WITH LATEST ADDENDA AND AMENDMENTS THERETO.
6. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
7. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO SATISFACTION OF THE OWNING AUTHORITY.
8. EXPOSED 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT IF NO REINFORCING STEEL EXISTS. USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS 24" LONG 24" C-C DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROC" OR EQUAL.
9. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG AREAS OF EXCAVATION.

10. CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAWS CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED IN CITY OF HOUSTON ORDINANCE #87-1457.

11. WHEEL CHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION.

12. WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE HOUSTON PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS" AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN SHOULD BE CONSISTENT WITH THE MINIMUM STANDARD ESTABLISHED IN THE "DESIGN MANUAL FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORMS DRAINAGE AND STREET PAVING".

13. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES TO EXISTING WATER, WASTEWATER, STORM SEWER AND TRAFFIC SIGNAL CONDUITS, ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE HOUSTON PUBLIC WORKS "STANDARD CONSTRUCTION SPECIFICATIONS" WITH LATEST ADDENDA AND AMENDMENTS THERETO, AT NO COST TO THE CITY OF HOUSTON.

14. PRIOR TO STREET CONSTRUCTION, THE CONTRACTOR SHALL CONTACT HOUSTON PUBLIC WORKS AT (PHONE) 832-394-9578 AND COMPLY WITH ALL REQUIREMENTS FOR THE ISSUANCE OF NECESSARY PERMITS/WORK ORDERS FOR STREET CONSTRUCTION.

15. DOUBLE REFLECTORIZED BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATIONS BY THE PAVING CONTRACTOR. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A BUTTON PLACED ON EACH STREET.

DRAINAGE NOTES (WITHIN CITY OF HOUSTON ROW):

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS II), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 2317-02, 02317-3, 02317-05, 02317-08, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SEIDLOT EASMENT SHALL BE R.C.P (C-76, CLASS III) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-08, AND 02317-07 AS APPLICABLE.
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 CEMENT/C.Y. STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
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).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASS II).
7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
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 18-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES.
9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
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, SEEDDED, AND FERTILIZED.
12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.
13. FEAMA MAP NUMBER AND DATE ARE 48201C0860L EFF 6/18/2007

TRAFFIC NOTES:

CONTRACTOR OR OWNER SHALL SUBMIT TRAFFIC CONTROL PLANS WITH THE MOBILITY PERMIT APPLICATION. THE PLANS SHALL BE DRAWN TO SCALE AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.



THE GENERAL NOTES THAT SHALL BE INCLUDED ON THE TRAFFIC CONTROL PLAN CAN BE FOUND IN CHAPTER 15 (15.12 TRAFFIC CONTROL PLAN) OF THE CITY OF HOUSTON'S (CITY) INFRASTRUCTURE DESIGN MANUAL (IDM). BELOW ARE SEVERAL KEY NOTES FROM THE IDM TO BE AWARE OF:

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. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00PM TO 7:00AM.
3. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF 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 THE BUS STOP.
4. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
5. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM TRANSPORTATION & DRAINAGE OPERATIONS (MOBILITY PERMIT SECTION AT WWW.GMS.HOUSTONTX.GOV) BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN BUSINESS 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.
6. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES
7. 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 DRIVEWAY, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE CITY OF HOUSTON.
8. ADDITIONAL OFF DUTY POLICE OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DIRECTION OF THE CITY EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.

SWPPP CONSTRUCTION NOTES:

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 (SWPPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
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 SWEEPED BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
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.
 - 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
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING

NO.	DATE	REVISION	APP.

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. GADDO 125611 LICENSED PROFESSIONAL ENGINEER 12/23/2021
SURVEYED BY: <i>[Signature]</i>	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
GENERAL CONSTRUCTION NOTES	
SHEET 3 OF 1	
WBS NUMBER: N-127000-002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 3 OF 247	

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Design File Name: P:\TIRZ 27\1090-TO-4-Hawthorne-Woodhead\4-0-Product\on-Work\ng\4-1-CAD\General\003-GENERAL NOTES.dgn



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TRAFFIC SIGNAL GENERAL NOTES

1. ALL EQUIPMENT / MATERIALS AND CONSTRUCTION SHALL MEET OR EXCEED THE REQUIREMENTS CONTAINED IN THE CURRENT CITY OF HOUSTON STANDARD SPECIFICATIONS AND STANDARD DRAWINGS, THE PROJECT SPECIFIC SPECIFICATIONS AND THE PLANS.
2. ALL ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH THE PROVISIONS AND REQUIREMENTS OF THE CITY ELECTRICAL CODE.
3. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. THE CONTRACTOR SHALL ARRANGE THE INSTALLATION OF SIGNALS, POLES AND CONDUIT SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL DIRECTIONS AT ALL TIMES. THE CONTRACTOR SHALL NOT CLOSE MORE THAN ONE LANE OF A ROADWAY AT ONE TIME WITHOUT PRIOR APPROVAL OF THE CITY.
5. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ALL LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS EACH DAY PRIOR TO WORK BEING SUSPENDED FOR THAT DAY.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE TO ARRANGE FOR METER AND ELECTRICAL SERVICE CONNECTION FROM THE POWER COMPANY.
7. ALL PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL MEET ADA REQUIREMENTS. THE SIGNS THAT SHALL BE USED ARE IDENTIFIED IN THE TWUTCO AS R10-3E. CITY OF HOUSTON STANDARDS FOR PEDESTRIAN FACILITIES SHALL BE MET IN ADDITION TO ANY TEXAS ACCESSIBILITY STANDARDS BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR). EXISTING SIGNS AND PUSH BUTTONS WILL BE MAINTAINED UNLESS NOTED BY ENGINEER.
8. NEW PEDESTRIAN PUSH BUTTONS SHALL BE SEPARATED BY A MINIMUM OF 10 FEET. EXCEPTIONS ONLY AS SPECIFIED BY THE ENGINEER WITH AUTHORIZATION FROM THE APPROVED CITY OF HOUSTON REPRESENTATIVE.
9. OVERHEAD STREET NAME SIGNS SHALL BE INSTALLED SUCH THAT THE BOTTOM OF THE SIGN IS NO LESS THAN 17 FEET ABOVE THE ROADWAY PAVEMENT OR NO LESS THAN 16 FEET ABOVE THE FINISHED GRADE BEYOND THE SHOULDER.
10. THE LOCATION OF EACH NEW POLE FOUNDATION, PULL BOX, CONTROLLER CABINET FOUNDATION, UPS CABINET FOUNDATION AND ELECTRIC SERVICE PEDESTAL FOUNDATION SHALL BE MARKED IN THE FIELD AS SHOWN ON THE PLANS. THE EXACT LOCATION SHALL BE APPROVED BY THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE PRIOR TO BEGINNING INSTALLATION OF THE FOUNDATION.
11. NO POLES SHALL BE LOCATED IN WHEELCHAIR RAMPS OR SUCH THAT THEY ARE AN OBSTRUCTION TO PEDESTRIANS OR WHEELCHAIRS.
12. THE TOP OF THE POLE FOUNDATION SHALL BE LEVELLED WITH THE FINISHED GRADE. IF THE SLOPE OR SHOULDER DROPS OFF FROM FINISHED GRADE, THE CONTRACTOR SHALL GRADE AROUND POLE FOUNDATION. THE TOP OF THE FOUNDATION SHALL EXTEND NO MORE THAN 4 INCHES ABOVE SURROUNDING GRADE. GROUTING SHALL BE USED TO FILL ANY GAP BETWEEN THE POLE BASE AND FOUNDATION.
13. POLES SHALL BE LOCATED SUCH THAT ALL PORTIONS OF THE POLES AND ATTACHED EQUIPMENT HAVE CLEARANCES FROM OVERHEAD UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY AND THE NATIONAL ELECTRICAL SAFETY CODE (NEC).
14. ALL UNDERGROUND CONSTRUCTION (CONDUIT, FOUNDATIONS AND PULL BOXES) FOR THE INTERSECTION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF POLES, SIGNALS AND CABINETS. THE CONTRACTOR SHALL NOT PROCEED TO ABOVE GROUND WORK UNTIL THE ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE HAS CONFIRMED THAT THE MATERIALS FOR A COMPLETE INSTALLATION ARE AVAILABLE.
15. UNDERGROUND CONDUIT FOR SIGNAL CABLE SHALL BE EITHER RIGID STEEL, HOT-DIPPED GALVANIZED CONDUIT OR SCHEDULE 80 ELECTRICAL PVC CONDUIT OF THE DIAMETER SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.
16. ALL ABOVE GROUND CONDUIT FOR SIGNAL CABLE AND INTERCONNECT MEDIA SHALL BE HOT DIPPED GALVANIZED STEEL RIGID METAL CONDUIT OF THE DIAMETERS SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.
17. ONLY NEW CONDUIT AND CABLE SHALL BE INSTALLED.
18. CONDUIT INSTALLED UNDER EXISTING PAVED DRIVEWAYS, ROADWAYS OR SIDEWALKS, WHICH ARE NOT SCHEDULED TO BE RECONSTRUCTED AS PART OF THIS PROJECT, SHALL BE INSTALLED BY MEANS OF BORING. THE CONTRACTOR SHALL NOT CUT OPEN ANY STREET OR DRIVEWAY FOR CONDUIT INSTALLATION WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE.
19. CONDUIT NOT PLACED UNDER PAVED DRIVEWAYS, ROADWAY PAVEMENT OR SIDEWALK MAY BE PLACED BY CUTTING A TRENCH, INSTALLING THE CONDUIT AND BACKFILLING. ANY TRENCHING FOR CONDUIT WIDER THAN THREE (3) INCHES SHALL BE RESODDED.
20. PULL BOXES SHALL NOT BE INSTALLED WITHIN CONCRETE CURB ACCESS RAMPS. IN ADDITION, ANY PULL BOXES INSTALLED BEHIND CURBS SHALL BE INSTALLED BETWEEN THE CURB AND THE PROPOSED / FUTURE SIDEWALK OR BEYOND THE PROPOSED / FUTURE SIDEWALK. AN EXCEPTION TO THIS NOTE WOULD BE PULL BOXES INSTALLED IN A MEDIAN. ANY PULL BOXES INSTALLED ALONG AN UNCURBED ROADWAY SHALL BE INSTALLED ADJACENT TO, BUT NOT WITHIN, THE SHOULDER. DRAINAGE AREAS SHOULD BE AVOIDED WHEN PLACING JUNCTION BOXES.
21. A 5/8 IN. X 10 FT. GROUND ROD SHALL BE INSTALLED IN THE NO. 7 PULL BOX LOCATED ON EACH CORNER. TWO GROUND ROD CLAMPS SHALL BE FURNISHED FOR GROUNDING THE GROUND WIRE.
22. ALL CONDUITS SHALL BE CLEANED BY COMPRESSED AIR AND A PROPERLY SIZED CONDUIT PISTON OR MANDREL SHALL BE PULLED THROUGH THE CONDUIT PRIOR TO CABLE INSTALLATION.
23. WHEN PULLING TRAFFIC SIGNAL SYSTEM CABLES THROUGH CONDUIT, THE CABLES SHALL BE LUBRICATED WITH A LUBRICANT NORMALLY USED FOR THIS PURPOSE. ANY ABRASION TO ANY CONDUCTOR INSULATION WHICH OCCURS WHILE PULLING CABLE FOR THE TRAFFIC SIGNAL SYSTEM WILL BE CAUSE FOR THE IMMEDIATE REJECTION OF THE CABLE. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE ENTIRE CABLE RUN AT THEIR EXPENSE.
24. A MINIMUM OF THREE (3) FEET OF EACH WIRE AND CABLE MEASURED FROM THE TOP OF THE PULL BOX SHALL BE LEFT IN EACH PULL BOX AND AT EACH POLE BASE.
25. ALL CABLES SHALL BE STRIPPED, FORMED AND TERMINATED IN A NEAT AND UNIFORM MANNER WHETHER IN THE SIGNAL HEAD OR CONTROLLER CABINET. ALL CABLE SHALL BE BROUGHT INTO THE TERMINAL HOUSING OF SIGNALS AND/OR CONTROLLER CABINETS AND A SUFFICIENT LENGTH OF CABLE SHALL BE LEFT SO THAT ALL TERMINAL CONNECTIONS MAY BE MADE WITHOUT THE NECESSITY OF SPLICING THE CABLE.
26. THE HIGH VOLTAGE CABLES SHOULD BE SEPARATED FROM THE LOW VOLTAGE CABLES AS MUCH AS POSSIBLE.
27. NO LOOP DETECTOR SHALL BE CUT IN A PARALLEL EXPANSION JOINT. LOOPS CUT ACROSS EXPANSION JOINTS SHALL HAVE A SLACK IN THE CABLE FOR EXPANSION.
28. ALL VEHICLE ROADWAY DETECTION LOOP CABLES SHALL BE #14 AWG IMSA 51-5-1985 CABLE. LEAD-IN CABLES SHALL BE #18 AWG IMSA 50-2-1984 CABLE. NO SPLICES SHALL BE ALLOWED IN THE ROADWAY DETECTION LOOP CABLE EXCEPT AT THE PULL BOX ADJACENT TO LOOP. THE DETECTOR LEAD-IN CABLE SHALL NOT BE SPLICED.
29. DETECTION LOOP SAW CUTS SHALL BE FLUSHED WITH WATER UNDER PRESSURE AND THEN DRIED WITH AIR UNDER PRESSURE.
30. THERE SHALL BE NO SPLICING IN CONDUCTORS EXCEPT FOR THE NECESSARY SPLICE BETWEEN ROADWAY LOOP WIRE AND DETECTOR LEAD-IN CABLE IN THE PULL BOX ADJACENT TO THE DETECTOR. THESE SPLICES SHALL BE WATERPROOF AND SHALL BE IN COMPLIANCE WITH THE CITY OF HOUSTON STANDARD DRAWINGS FOR TRAFFIC SIGNAL CONSTRUCTION. THESE SPLICES SHALL BE MADE BY THE CONTRACTOR. DO NOT GROUND THE CABLE SHIELD AT THE PULL BOX.

31. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE LED.
32. THE CONTRACTOR SHALL BAG ALL NEWLY INSTALLED VEHICULAR AND/OR PEDESTRIAN TRAFFIC SIGNAL HEADS WITH BURLAP OR OTHER APPROVED MATERIAL UNTIL THE FINAL INSPECTION AND ACCEPTANCE BY THE CITY TRAFFIC ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE. THE BURLAP OR OTHER APPROVED MATERIAL/DEVICE SHALL COMPLETELY COVER THE TRAFFIC SIGNAL HEAD AND SHALL OBSCURE THE VIEW OF THE TRAFFIC SIGNAL INDICATIONS SO THAT THEY CANNOT BE SEEN UNTIL THE TRAFFIC SIGNAL IS PLACED IN OPERATION. DURING CONSTRUCTION, THE TRAFFIC SIGNAL WILL BE DE-ENERGIZED WHILE NOT IN USE FOR TESTING.
33. THE TRAFFIC SIGNAL OPERATION AT EXISTING SIGNALIZED INTERSECTIONS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
34. ALL STRIPING AND PAVEMENT MARKINGS ARE TO BE DONE UNDER THIS CONTRACT AND SHALL BE IN PLACE PRIOR TO THE ACTIVATION OF THE TRAFFIC SIGNAL. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL STOP LINES PRIOR TO THE INSTALLATION OF LOOP DETECTORS.
35. ALL CROSSWALK MARKINGS SHALL BE 10-FT. WIDE FOLLOWING CITY OF HOUSTON STANDARD DETAILS.
36. ALL CONSTRUCTION SIGNING AND CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
37. THE CONTRACTOR WILL CONTACT CITY OF HOUSTON TRAFFIC SIGNAL MAINTENANCE DEPARTMENT BEFORE INSTALLATION OF NEW EQUIPMENT IN EXISTING SIGNAL CABINETS.

NO.	DATE	REVISION	APP.

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. GAIDOO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
SURVEYED BY: 11/15/2021	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
TRAFFIC SIGNAL GENERAL NOTES	
SHEET 1 OF 1	
WBS NUMBER	For City of Houston Use Only
N-T27000-002-7	72248
AS NOTED	
CITY OF HOUSTON PM	
SHAWN OLSHIN	
SHEET NO. 4 OF 247	

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PRIVATE UTILITY NOTES:

AT&T TEXAS/ SWBT FACILITIES:

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.
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.
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.
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 POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7229@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES:

CAUTION: UNDERGROUND GAS FACILITIES

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
 - WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713-207-5483 OR 713-845-8037 (7:00 AM TO 4:30 PM) 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 713-859-3552 OR 713-207-4200
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES:

1. 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 & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
 - ANY ACTIVITY WHERE PERSONS 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.
2. 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.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

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

METRO

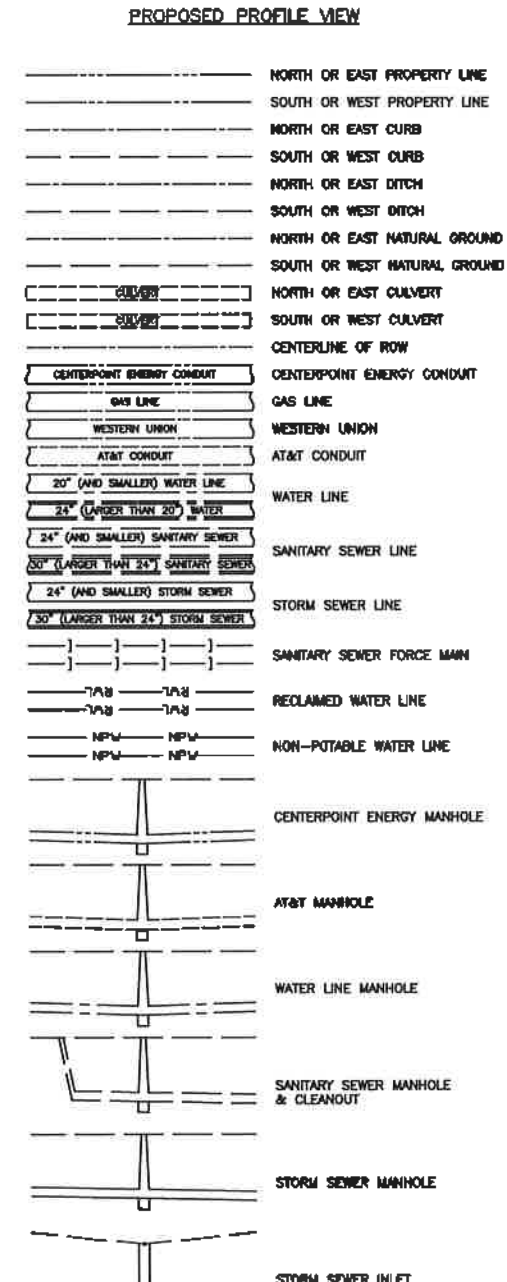
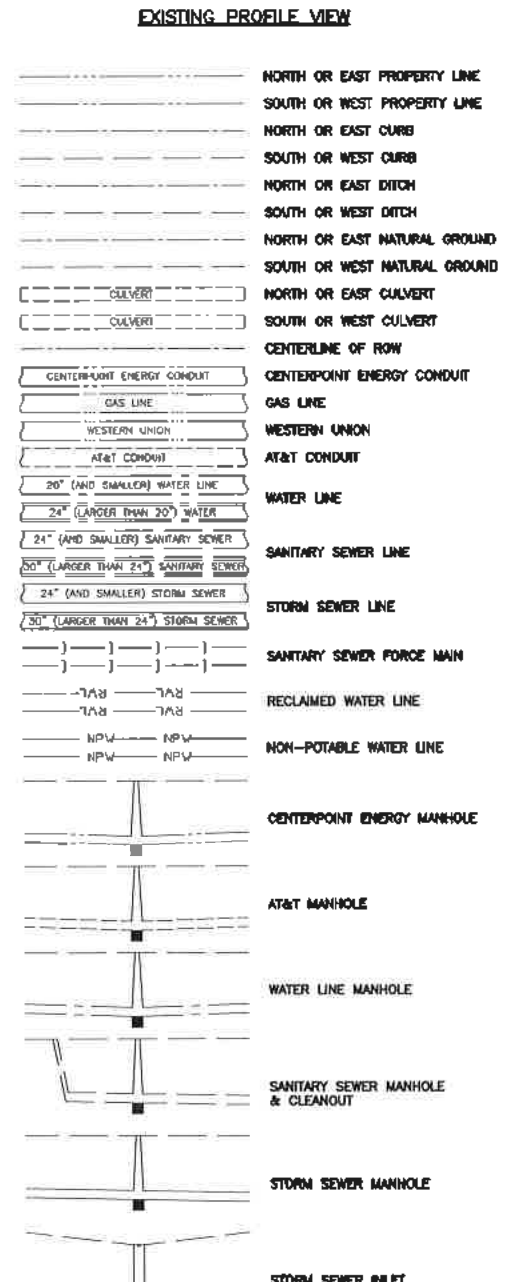
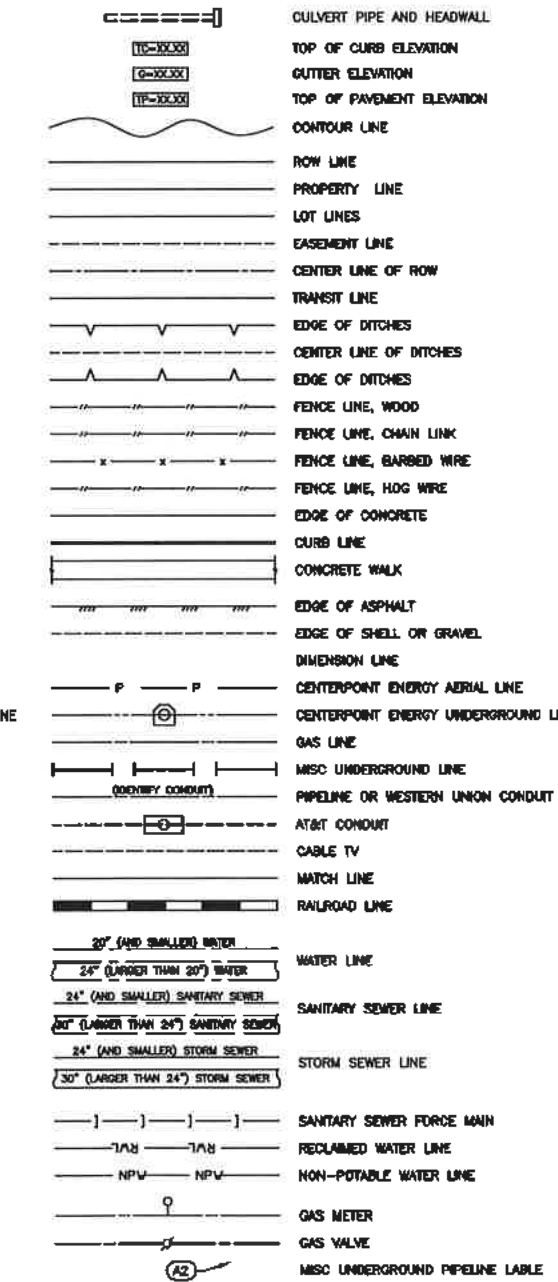
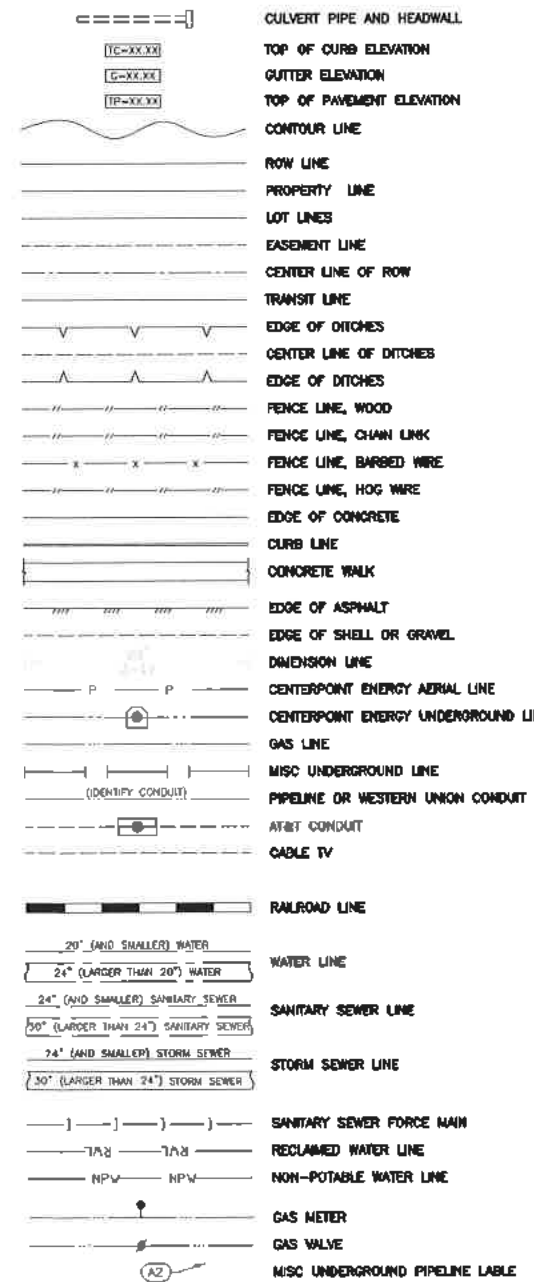
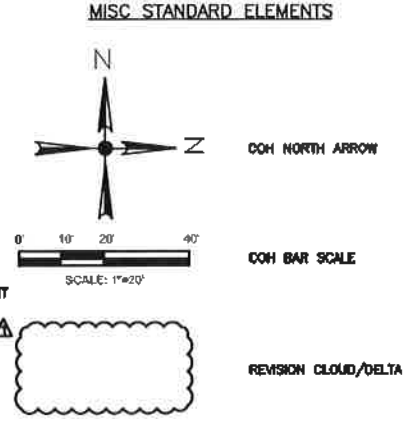
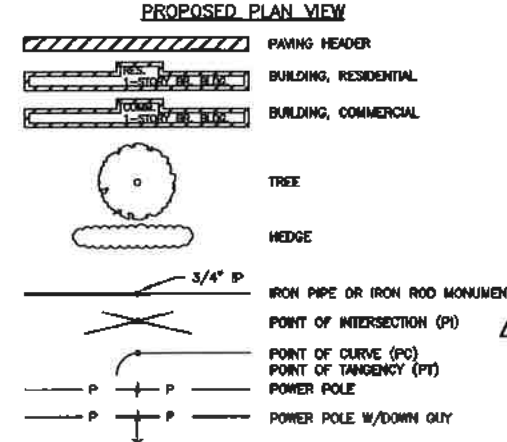
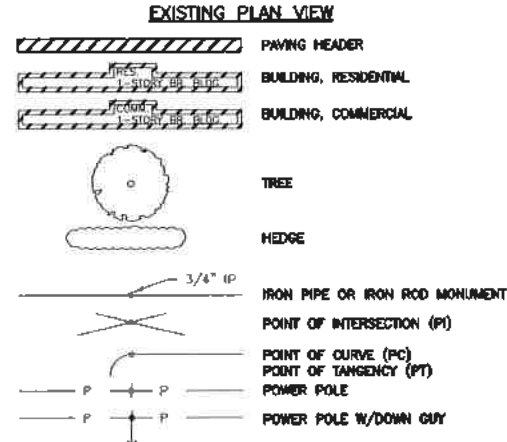
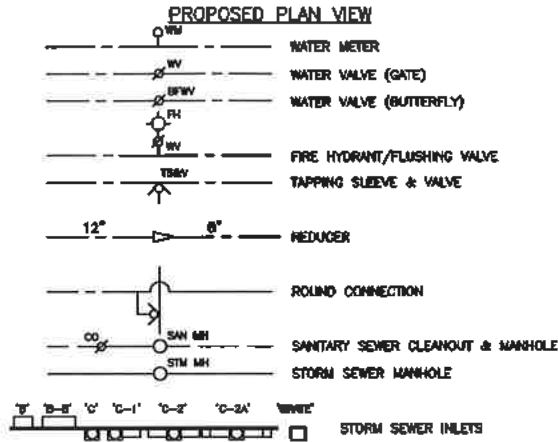
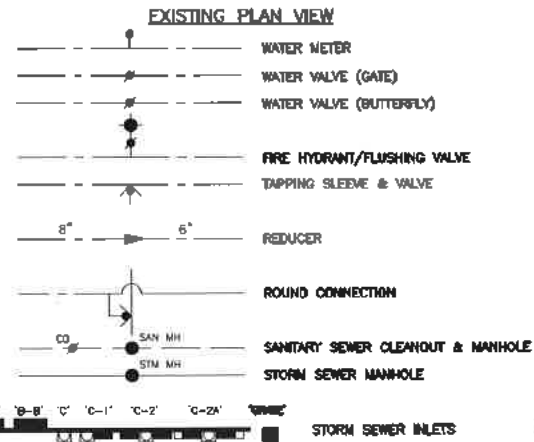
1. THE CONTRACTOR SHALL CONTACT METRO BUS OPERATIONS BY EMAIL 10 BUSINESS DAYS IN ADVANCE OF WORK SCHEDULED THAT WOULD IMPACT A METRO BUS OR RAIL LINE. EMAILS SHALL BE SENT TO ZELMA.RIDLEY@RIDEMETRO.ORG, TANGEE.MOBLEY@RIDEMETRO.ORG AND CARL.TAYLOR@RIDEMETRO.ORG, CARBON COPIED TO COH PROJECT MANAGER, CALL METRO AT (713)635-4000 WITH QUESTIONS.

DETAILS

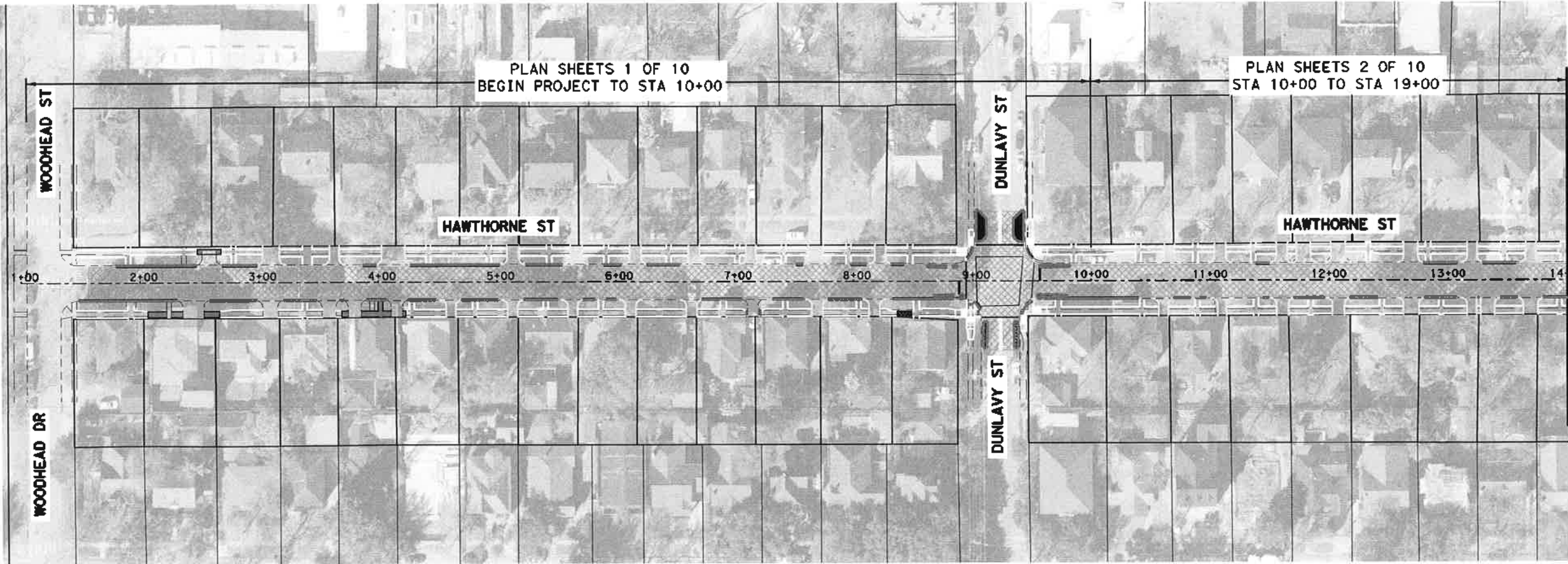
1. CITY OF HOUSTON STANDARD DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATERLINES, STORM DRAINAGE, AND STREET PAVING ARE INCORPORATED IN PLANS BY REFERENCE AS IF COPIED VERBATIM. STANDARD DETAILS ARE AVAILABLE FOR DOWNLOAD AT THE FOLLOWING WEB ADDRESS: <http://edocs.publicworks.houston.tx.gov/engineering-and-construction.html>
2. DETAILS INCLUDED IN PLAN SET SUPERSEDE RELATED COH STANDARD DETAILS.

NO.	DATE	REVISION	APP.

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. GADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
PRIVATE UTILITY NOTES	
SHEET 1 OF 1	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>
AS NOTED	
CITY OF HOUSTON PM SHAIPOOR COLSHAN	
SHEET NO. 5 OF 247	



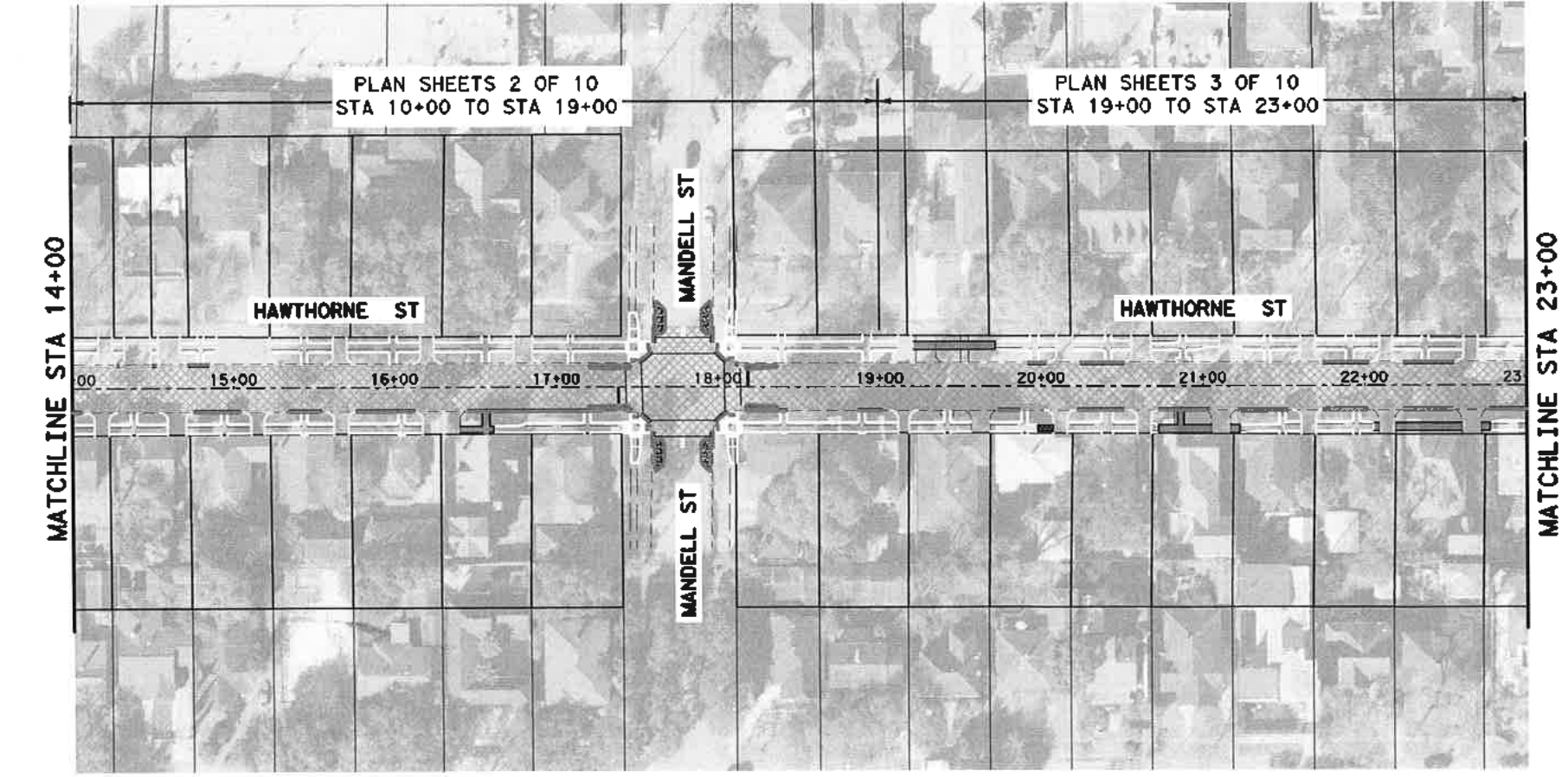
<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	<p>KARIM M. GADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021</p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p>	
<p>SYMBOLS</p>	
<p>WBS NUMBER</p> <p>N-T27000-002-1</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p>72248</p>
<p>AS NOTED</p> <p>CITY OF HOUSTON PM</p> <p>SHAPOOR GOLSMAN</p>	<p>SHEET NO. 6 OF 247</p>



LEGEND

- EXIST CURB
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY

NO.	DATE	REV. STION	APP.

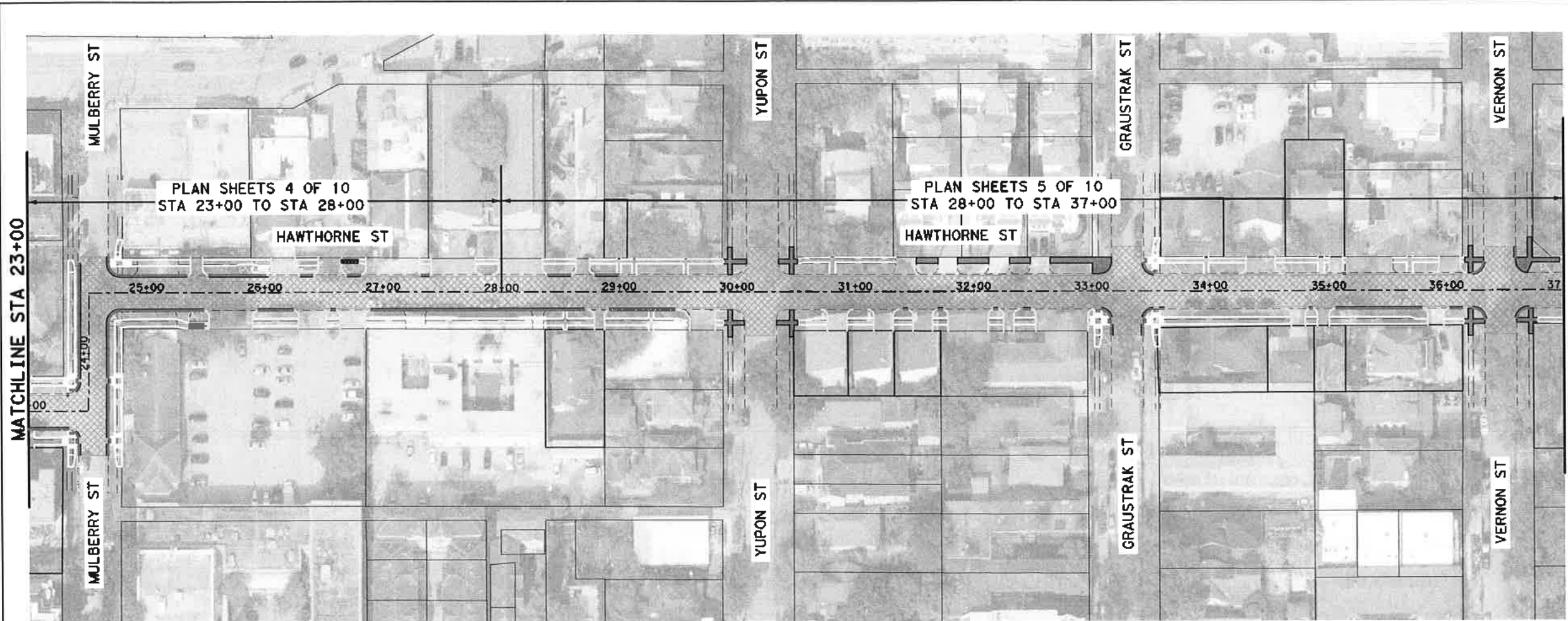


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 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 PROJECT LAYOUT

NBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T2T000-002-7	72248
DRAWING SCALE	CITY OF HOUSTON PM
AS NOTED	SHUPOR OOLSHAN
CITY OF HOUSTON PM	SHEET NO. 7 OF 247

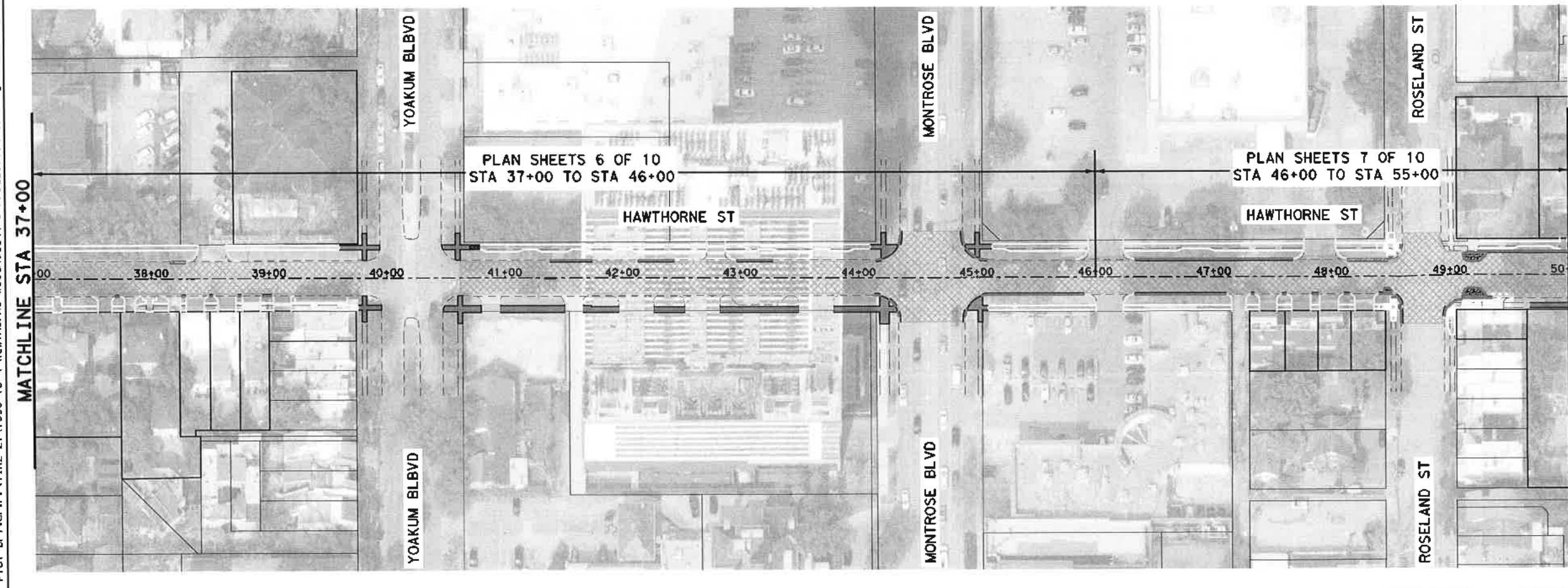


PLAN SHEETS 4 OF 10
 STA 23+00 TO STA 28+00

PLAN SHEETS 5 OF 10
 STA 28+00 TO STA 37+00

LEGEND

- EXIST CURB
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY



PLAN SHEETS 6 OF 10
 STA 37+00 TO STA 46+00

PLAN SHEETS 7 OF 10
 STA 46+00 TO STA 55+00



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 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 PROJECT LAYOUT

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DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	SHAIPOOR GOLSHAN
SHEET NO.	B OF 247

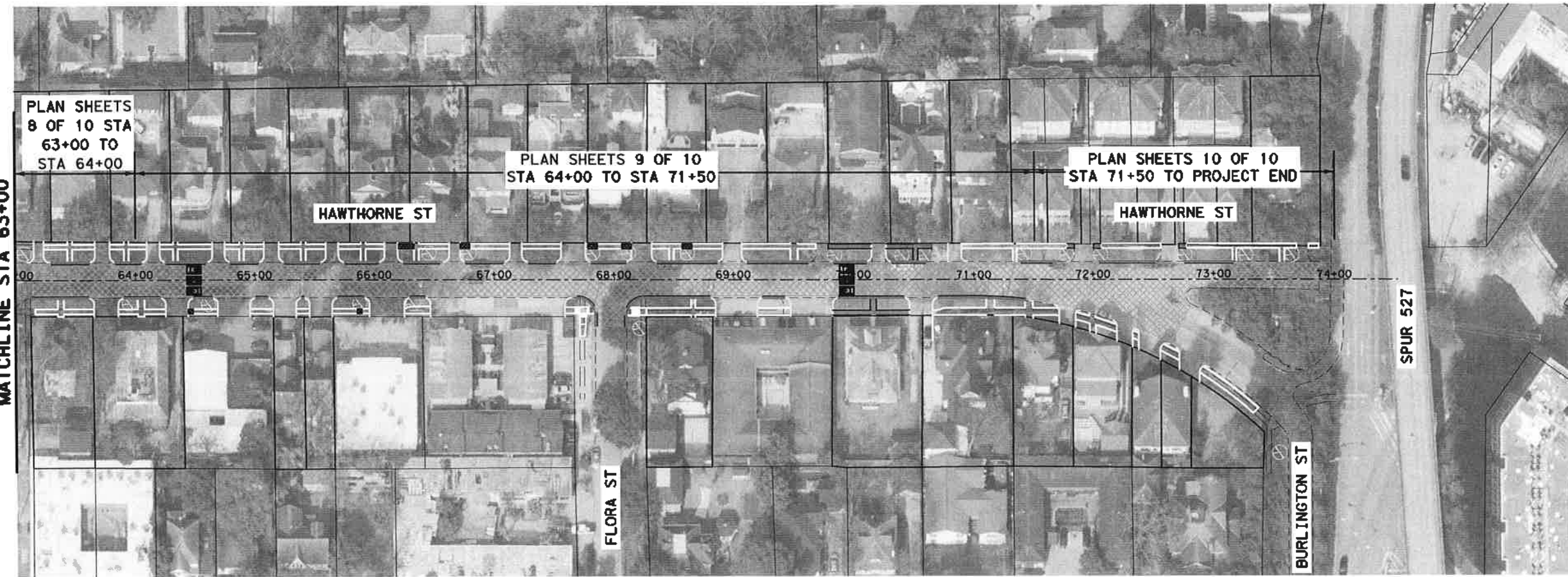
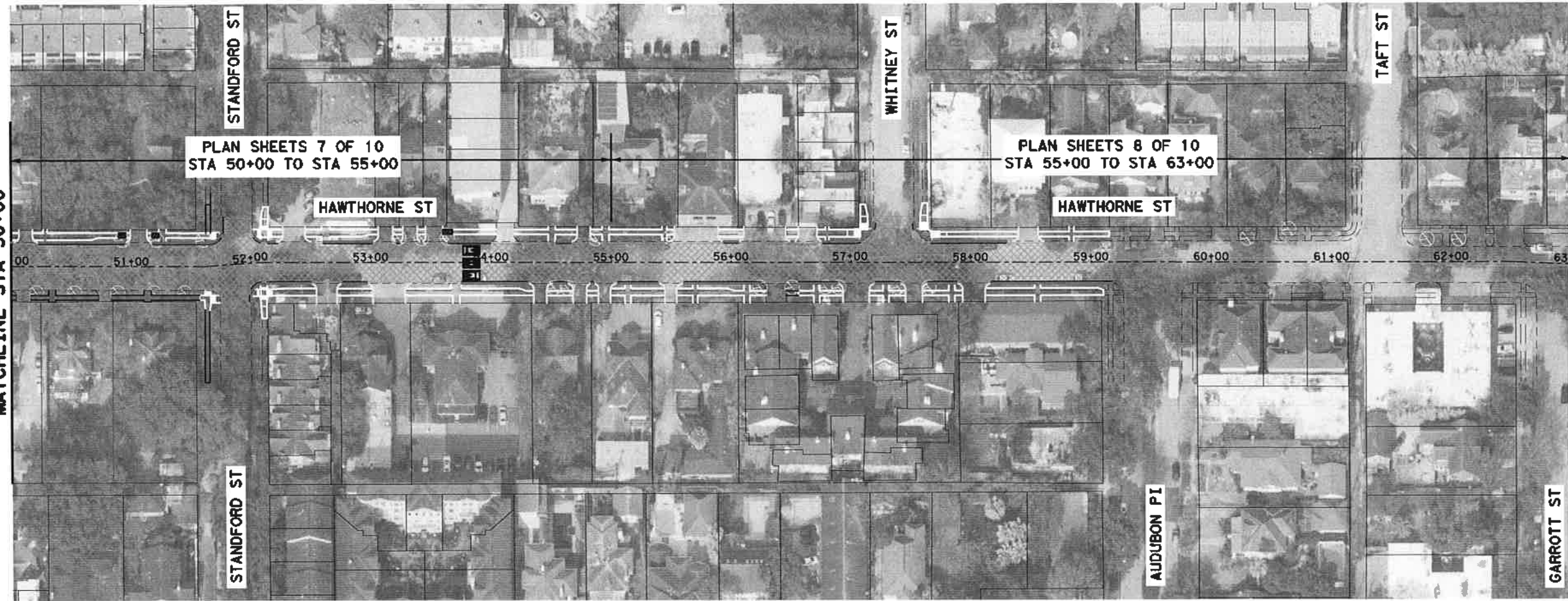
SHEET 2 OF 3
 FOR CITY OF HOUSTON USE ONLY

72248

NO.	DATE	REVISION	APP.

MATCHLINE STA 50+00

MATCHLINE STA 63+00



LEGEND

- EXIST CURB
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY



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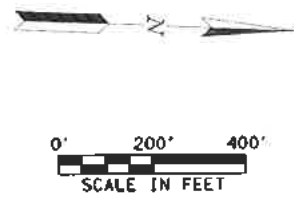
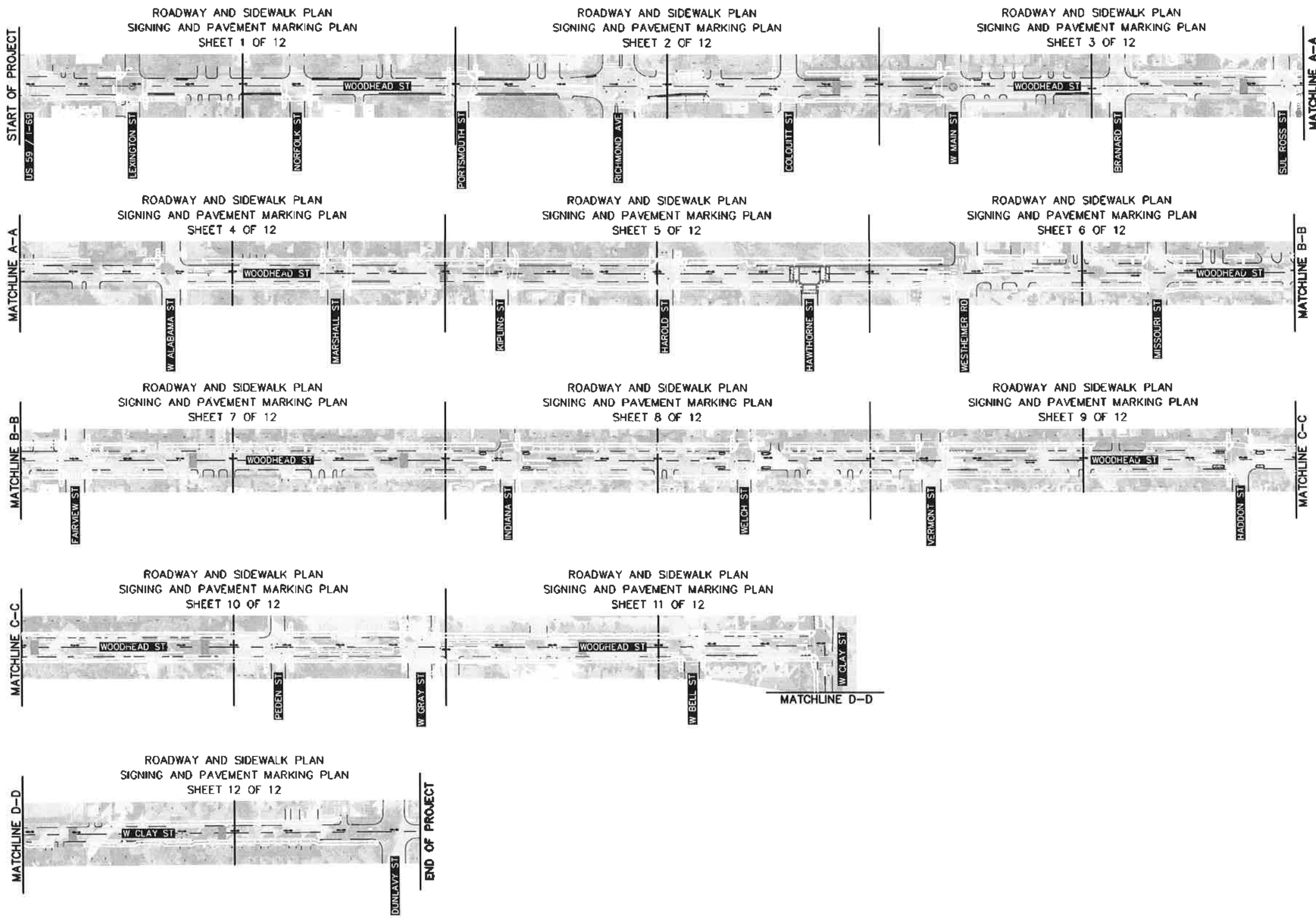
SURVEYED BY:
KARAM M. QADDO
125611
PROFESSIONAL ENGINEER
11/15/2021



CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
HAWTHORNE STREET
PROJECT LAYOUT

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SHEET NO. 9 OF 247	

NO.	DATE	REVISION	APP.



NO.	DATE	REVISION

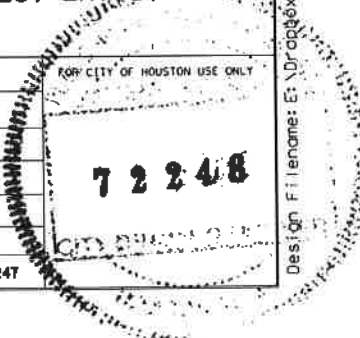
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 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #P-3158

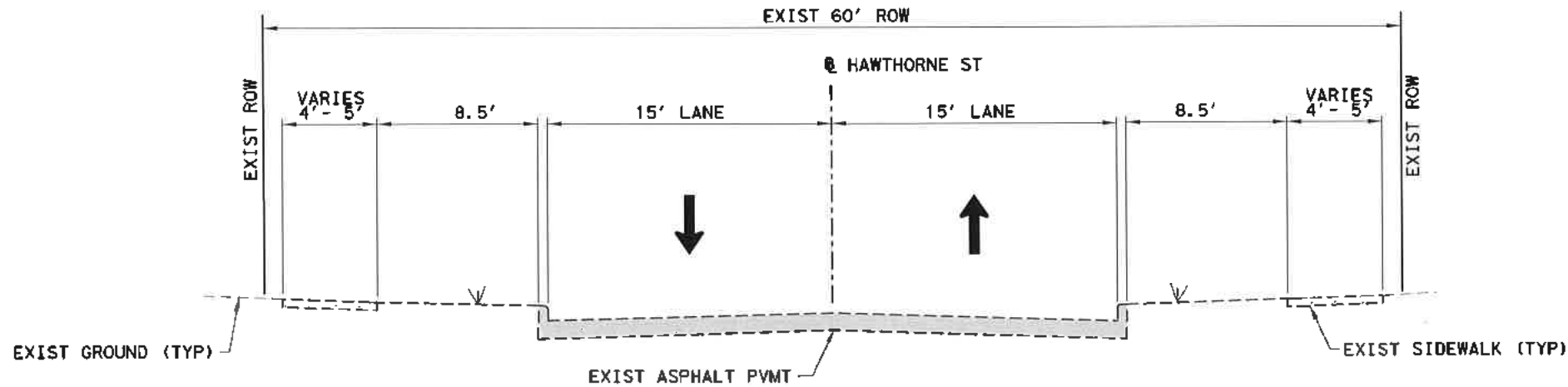
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

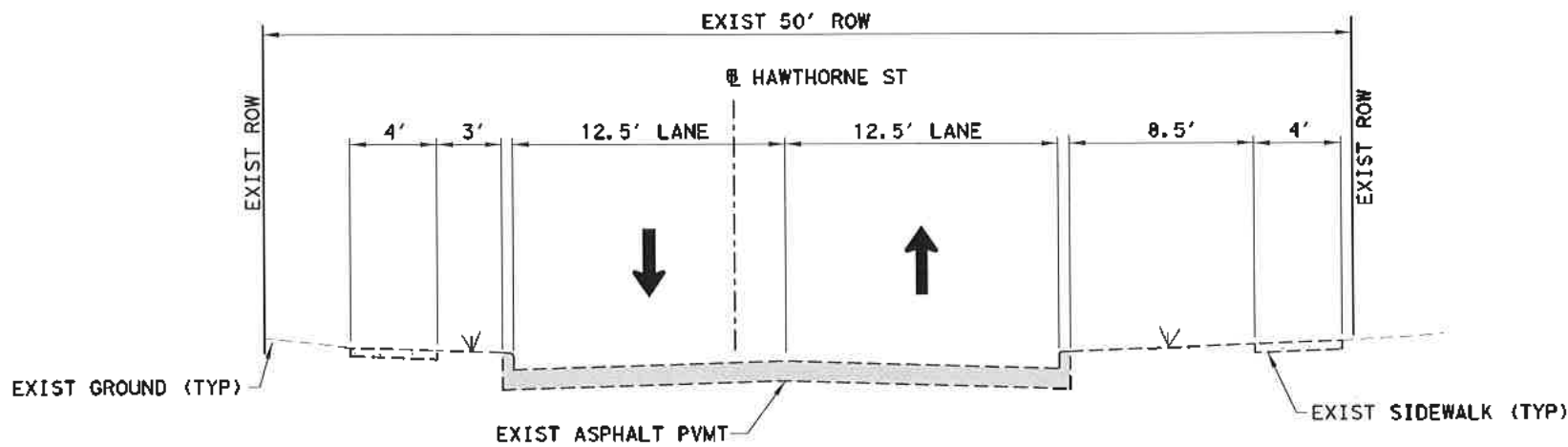
**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 PROJECT LAYOUT**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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HAWTHORNE ST
WOODHEAD ST TO MULBERRY ST
 N.T.S



HAWTHORNE ST
MULBERRY ST
 N.T.S

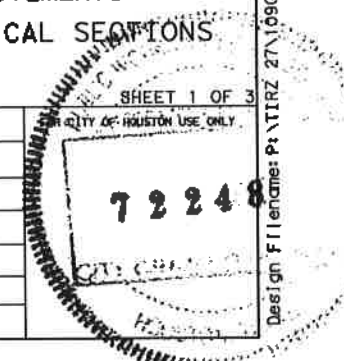
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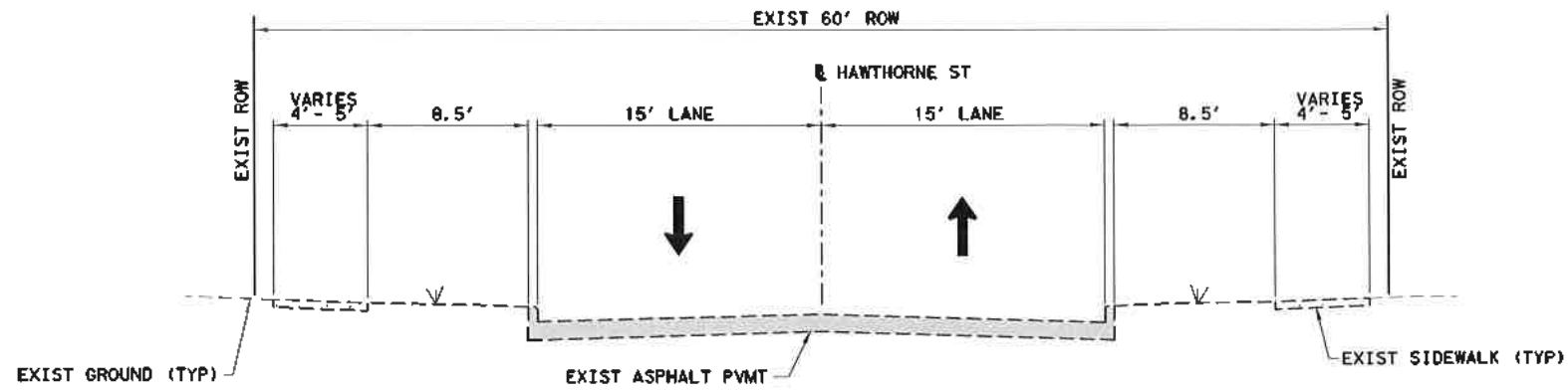
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 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

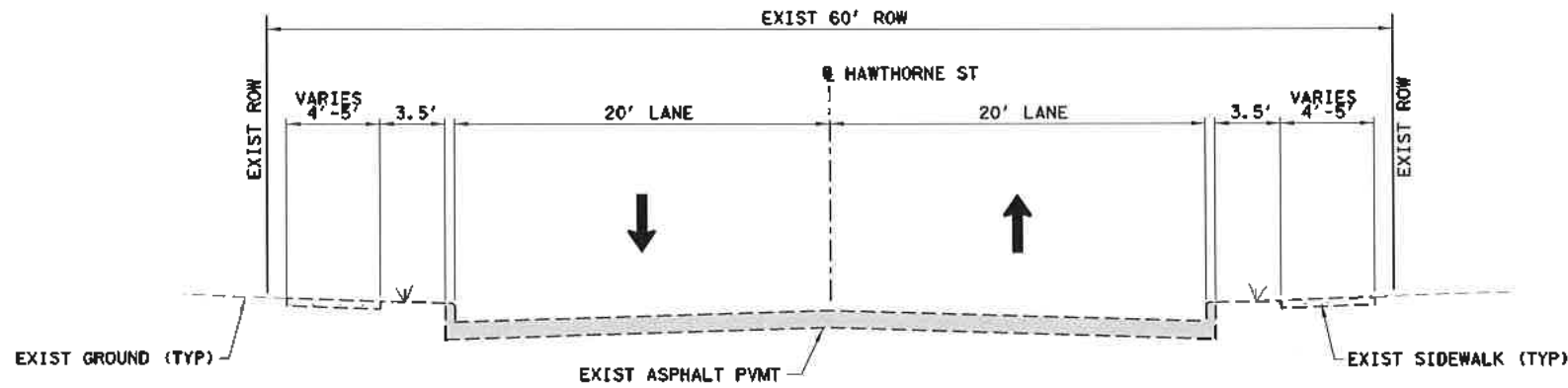
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 EXIST TYPICAL SECTIONS

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DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	SHAPOOR GOLSMAN
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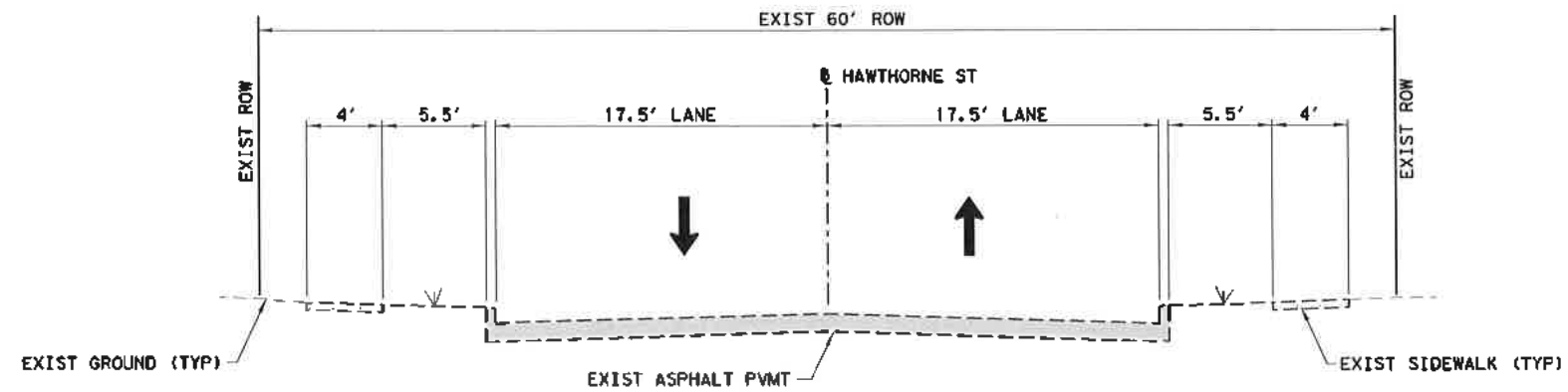




**HAWTHORNE ST
 MULBERRY ST TO ROSELAND ST**
 N.T.S



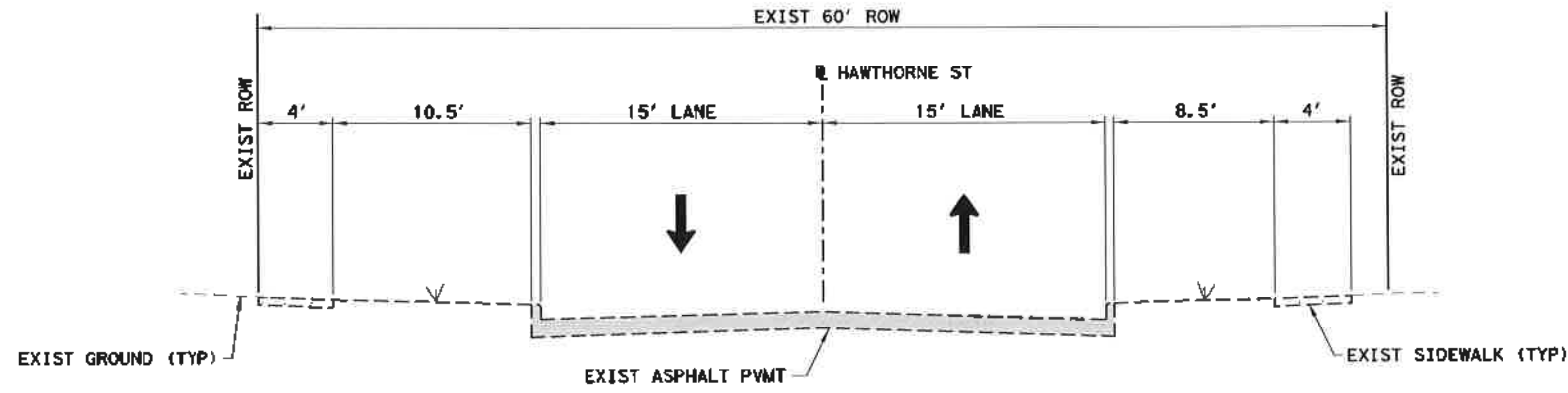
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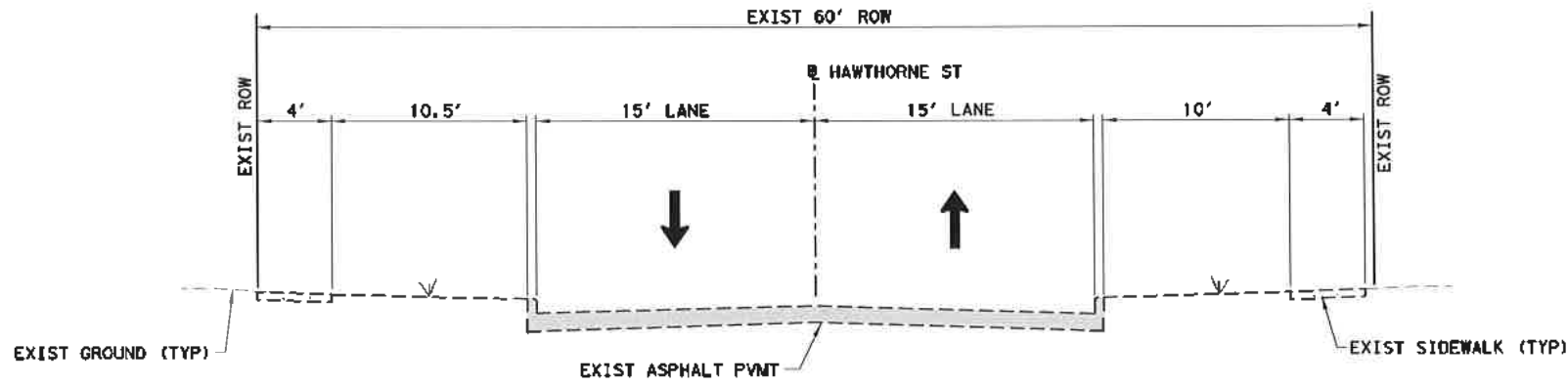
**HAWTHORNE ST
 STANFORD ST TO TAFT ST**
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NO.	DATE	REVISION	APP.

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CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
EXIST TYPICAL SECTIONS	
SHEET 2 OF 3	
NBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	72248
CITY OF HOUSTON PM SHAIPOOR GOLSHAI	DESIGNER: <i>[Signature]</i>
SHEET NO. 12 OF 247	DATE: 11/15/2021



**HAWTHORNE ST
TAFT ST TO FLORA ST**
N.T.S



**HAWTHORNE ST
FLORA ST TO PROJECT END**
N.T.S

NO.	DATE	REVISION	APP.

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Karam M. Gaddo
11/15/2021

STATE OF TEXAS
KARAM M. GADDO
125611
LICENSED PROFESSIONAL ENGINEER

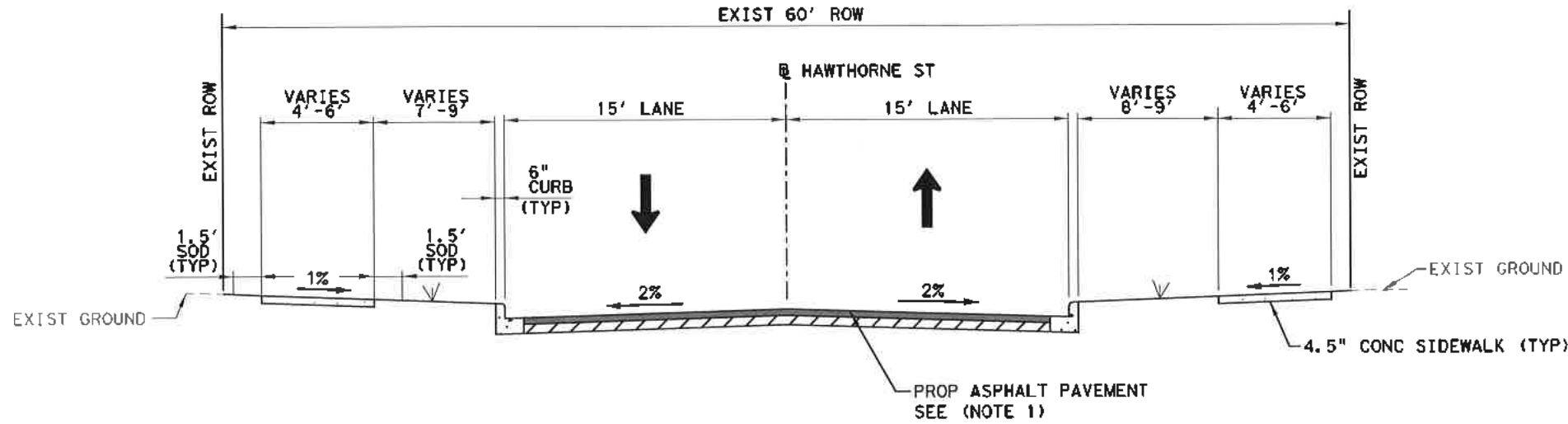
CITY OF HOUSTON
HOUSTON PUBLIC WORKS
**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS**
EXIST TYPICAL SECTIONS

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CITY OF HOUSTON PM	SAMPOOR BOLSHAN
SHEET NO.	13 OF 247

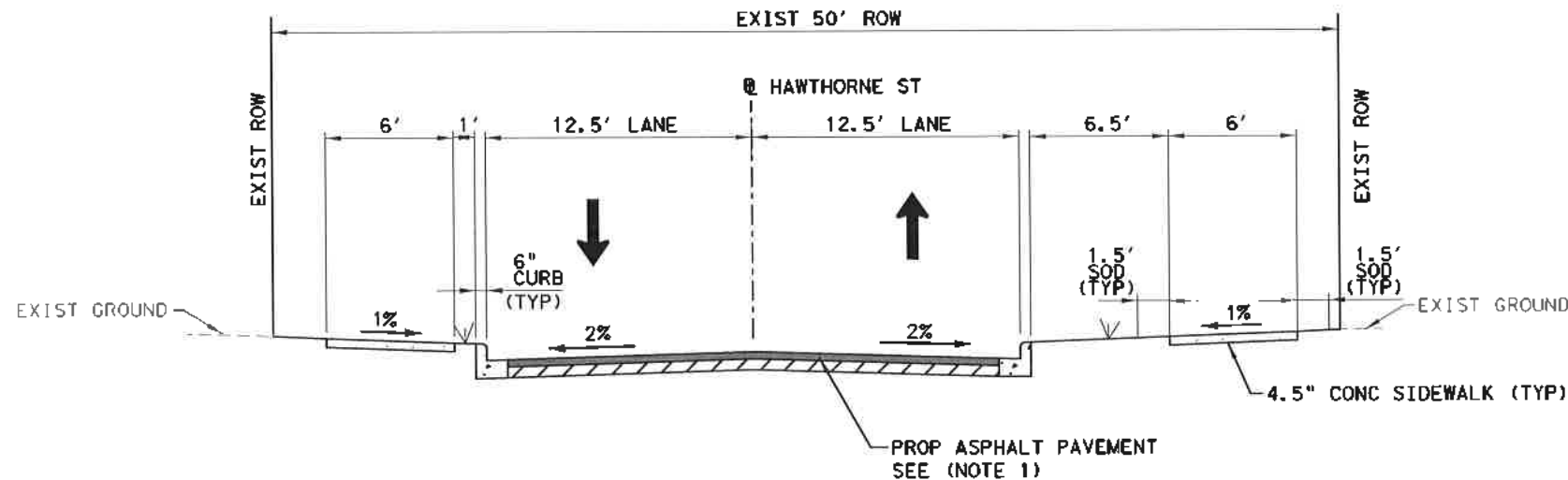
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FOR CITY OF HOUSTON USE ONLY.
72248

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HAWTHORNE ST
WOODHEAD ST TO MULBERRY ST
 N. T. S



HAWTHORNE ST
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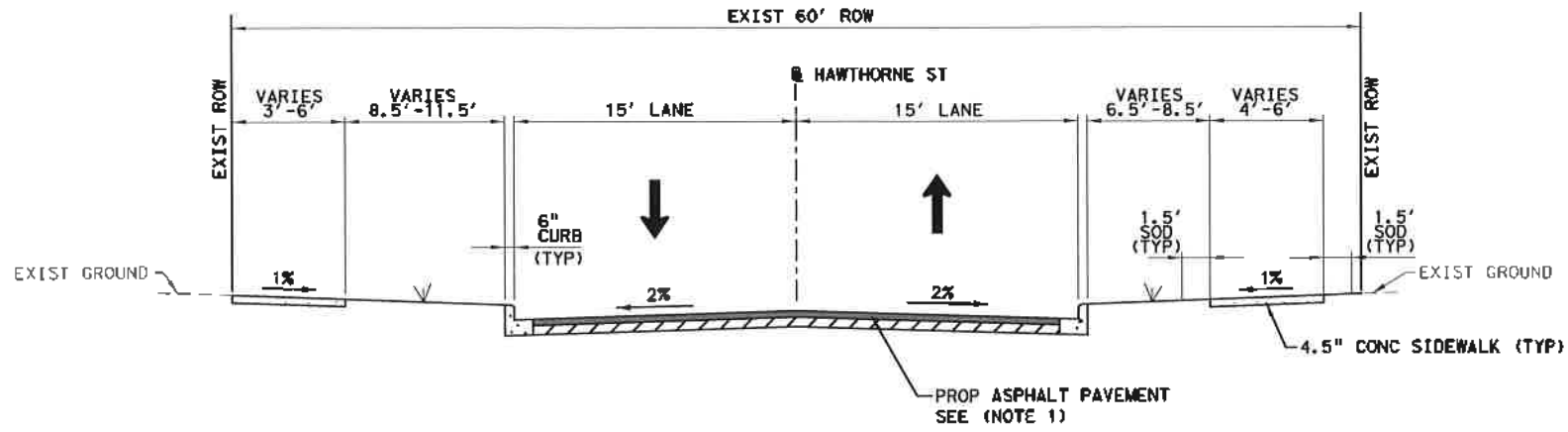
NOTES

1. MILL AND SURFACE 1.5-INCHES OF THE ASPHALT ROADWAY WITHIN PROJECT LIMITS. THE PROPOSED ROADWAY CENTERLINE/GRADE LINE ELEVATION SHALL BE APPROXIMATELY EQUAL TO THE EXISTING PAVEMENT CENTERLINE/GRADE ELEVATION. THE PROPOSED CROSS SLOPE SHALL ALSO MATCH THE EXISTING CROSS SLOPE. WORK IS INCIDENTAL TO MILL AND OVERLAY ITEM. NO SEPARATE PAY

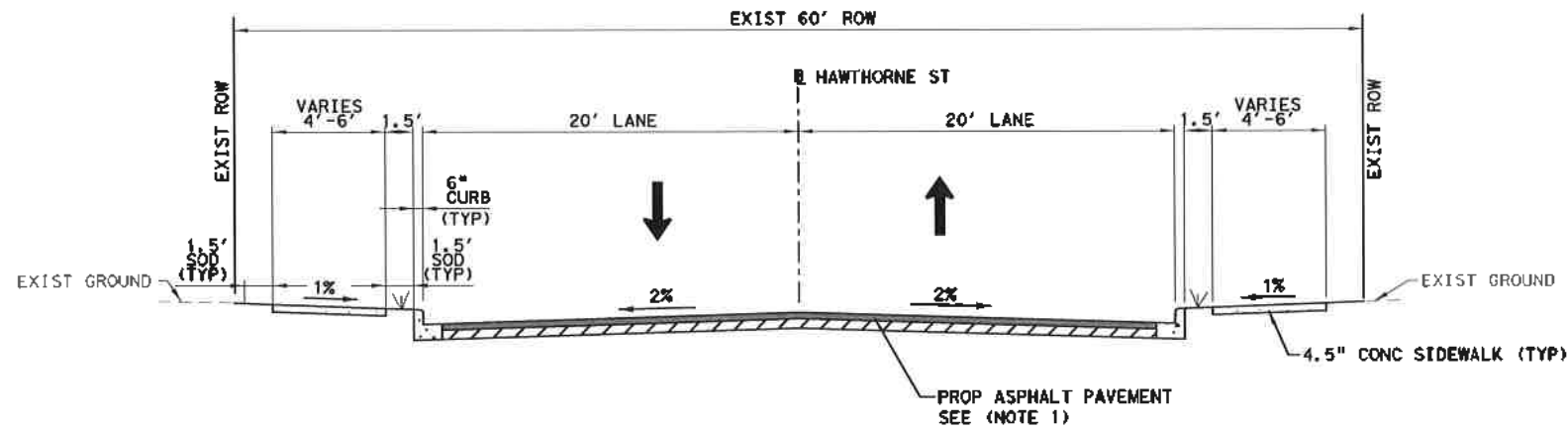
NO.	DATE	REVISION	APP.

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	SURVEYED BY:
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS PROPOSED TYPICAL SECTIONS	
SHEET 1 OF 3	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	CITY OF HOUSTON PE SHAMOUR OLSHUN
SHEET NO. 15 OF 24	

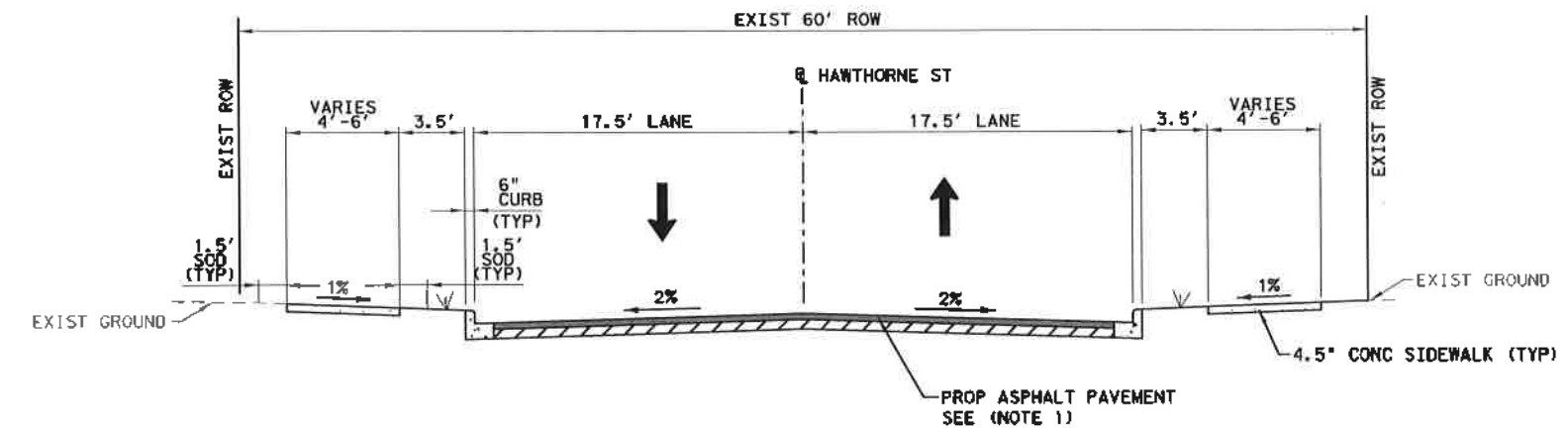
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**HAWTHORNE ST
 MULBERRY ST TO ROSELAND ST**
 N. T. S



**HAWTHORNE ST
 ROSELAND ST TO STANFORD ST**
 N. T. S

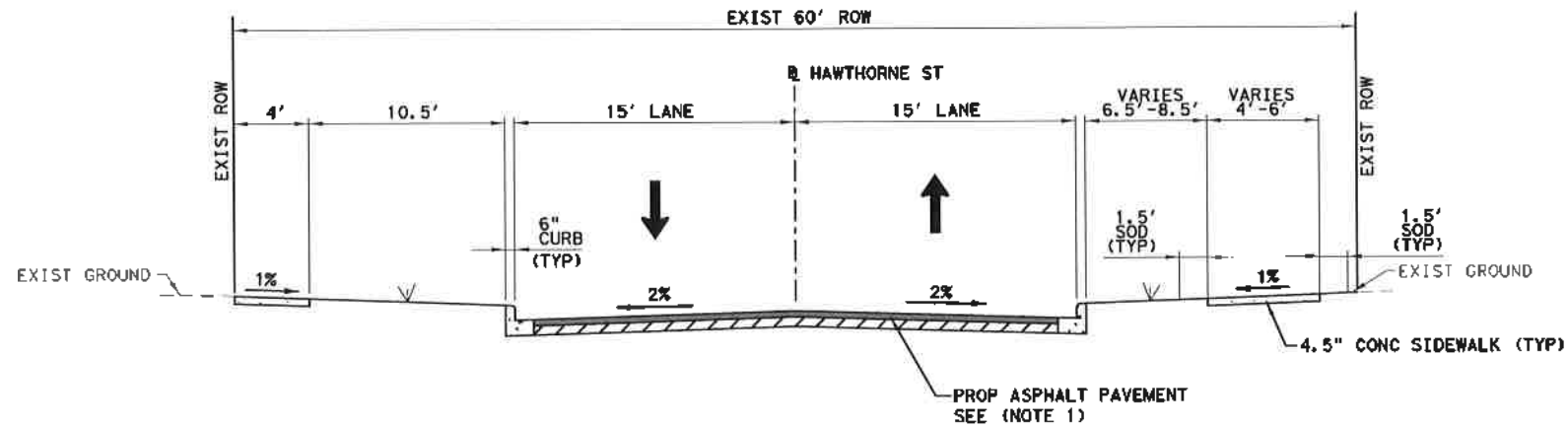


**HAWTHORNE ST
 STANFORD ST TO AUDUBON ST**
 N. T. S

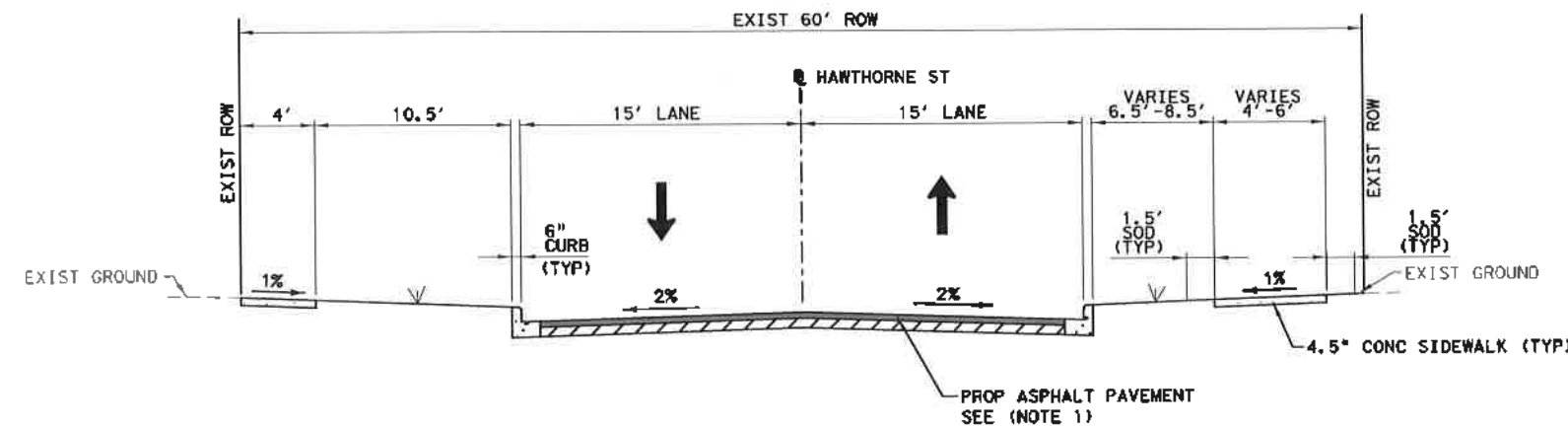
NOTES

1. MILL AND SURFACE 1.5-INCHES OF THE ASPHALT ROADWAY WITHIN PROJECT LIMITS. THE PROPOSED ROADWAY CENTERLINE/GRADE LINE ELEVATION SHALL BE APPROXIMATELY EQUAL TO THE EXISTING PAVEMENT CENTERLINE/GRADE ELEVATION. THE PROPOSED CROSS SLOPE SHALL ALSO MATCH THE EXISTING CROSS SLOPE. WORK IS INCIDENTAL TO MILL AND OVERLAY ITEM. NO SEPARATE PAY

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	
	SURVEYED BY: 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
PROPOSED TYPICAL SECTIONS	
SHEET 2 OF 3	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON PW	
SNAPOOR GOLSHAN	
SHEET NO. 16 OF 247	



**HAWTHORNE ST
GARROTT ST TO FLORA ST**
N. T. S

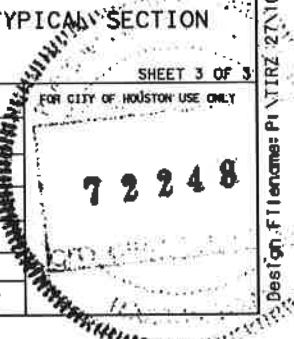


**HAWTHORNE ST
FLORA ST TO PROJECT END**
N. T. S

NOTES

- MILL AND SURFACE 1.5-INCHES OF THE ASPHALT ROADWAY WITHIN PROJECT LIMITS. THE PROPOSED ROADWAY CENTERLINE/GRADE LINE ELEVATION SHALL BE APPROXIMATELY EQUAL TO THE EXISTING PAVEMENT CENTERLINE/GRADE ELEVATION. THE PROPOSED CROSS SLOPE SHALL ALSO MATCH THE EXISTING CROSS SLOPE. WORK IS INCIDENTAL TO MILL AND OVERLAY ITEM. NO SEPARATE PAY

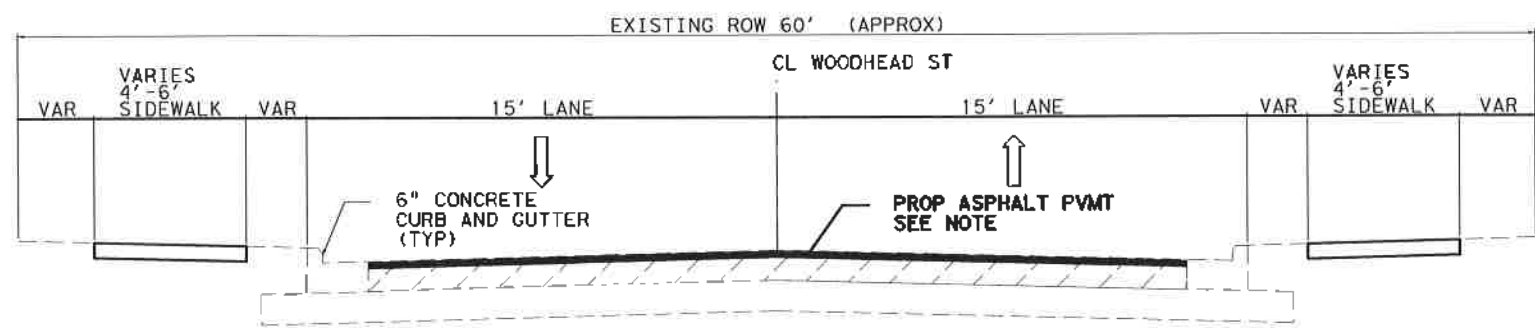
 Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
PROPOSED TYPICAL SECTION	
SHEET 3 OF 3 FOR CITY OF HOUSTON USE ONLY	
WBS NUMBER N-127000-002-7	
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAPOOR GOLSHAN	
SHEET NO. 17 OF 247	



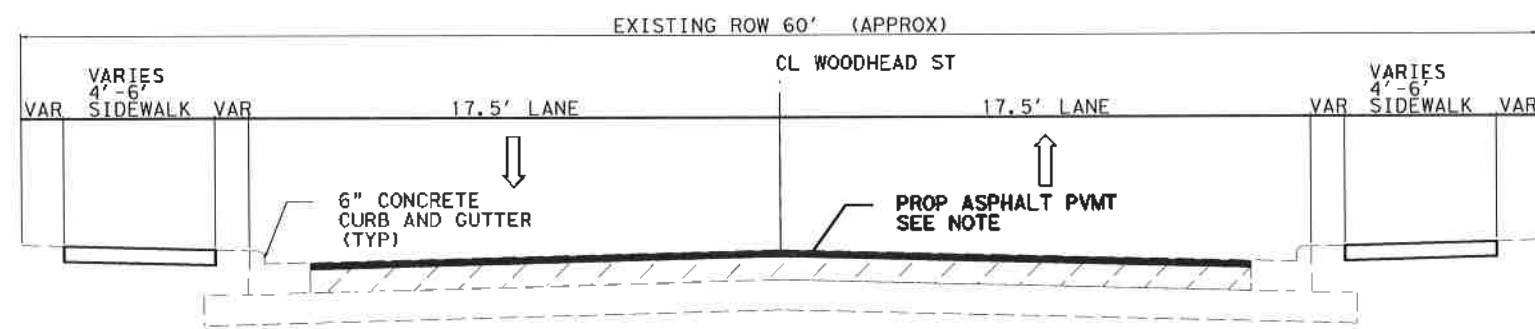
NO.	DATE	REVISION	APP.

Pen Title: HAW. tbi | Plot Dr: iverip; TIRZ 27\1090-TC-4-Hawthorne-Woodhead\4-0-Product\on-Work\ng\4-1-CAD\General\HAWTHORNE ST_PROF TYP_03.dgn

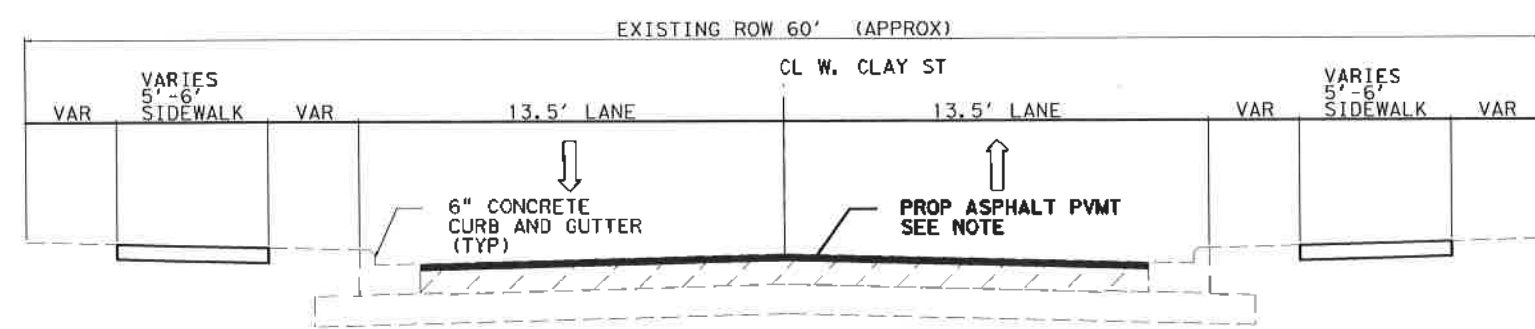
NO.	DATE	REVISION	APP.



WOODHEAD STREET
RICHMOND AVE TO WESTHEIMER RD



WOODHEAD STREET
STA 181+41 TO W. CLAY ST



W. CLAY STREET
WOODHEAD ST TO DUNLAVY

NOTE: MILL AND RESURFACE 1.5-INCHES OF THE ASPHALT ROADWAY WITHIN PROJECT LIMITS. THE PROPOSED ROADWAY CENTERLINE/GRADE LINE ELEVATION SHALL BE APPROXIMATELY EQUAL TO THE EXISTING PAVEMENT CENTERLINE/GRADE LINE ELEVATION. THE PROPOSED CROSS SLOPE SHALL ALSO MATCH THE EXISTING CROSS SLOPE. SOME WORK IS INCIDENTAL TO MILL AND OVERLAY ITEM. NO SEPARATE PAY.

TRAFFIC ENGINEERS, INC. <small>801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</small>	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET PROPOSED TYPICAL SECTIONS	
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 72248
AS NOTED CITY OF HOUSTON PM SHADON BOLSHAN	
SHEET NO. 18 OF 247	

Design File Name: E:\Droptbox\Traffic Engineers\City of Houston\Projects\Woodhead\Design\PlanSet Sheets\Typical Section - Proposed.dgn



LEGEND

	PHASE 2, STEP 1
	PHASE 2, STEP 2
	BARRELS OR DRUMS
	TYPE III BARRICADE W/ ROAD CLOSED SIGN
	PROP DIRECTION OF TRAFFIC
	EXIST DIRECTION OF TRAFFIC

NO.	DATE	REVISION	APP.

TRAFFIC CONTROL NARRATIVE

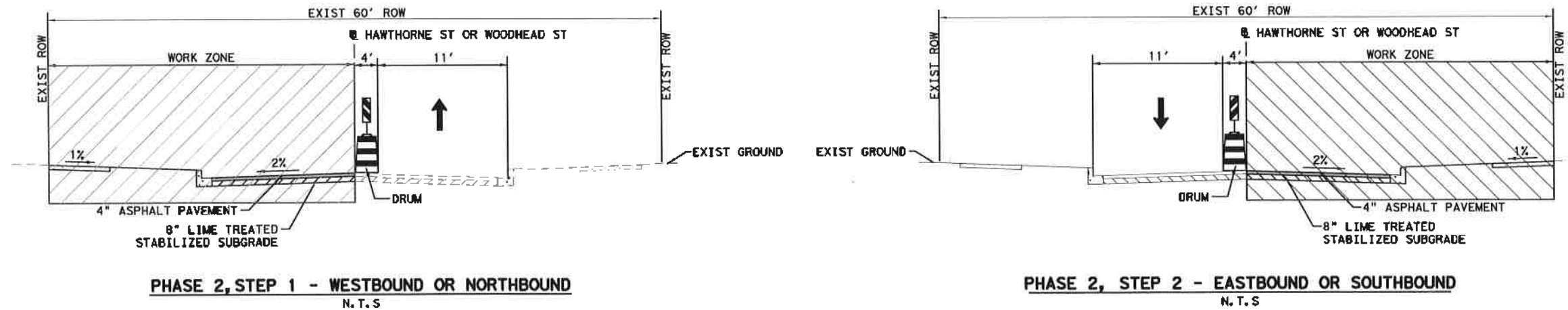
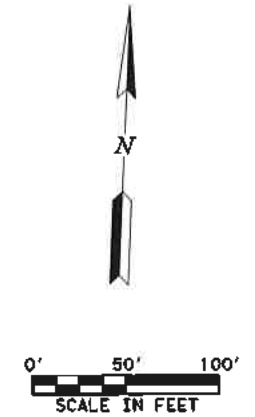
TRAFFIC CONTROL NARRATIVE

- 1- PHASE 1 - SIDEWALK REMOVAL AND CONSTRUCTION
USE TYPICAL SINGLE LANE CLOSURE WITH FLAGGERS FOR SIDEWALK WORKS.
- 2- PHASE 2 - MILL & OVERLAY OPERATION
USE DETOUR FOR MILL AND OVERLAY WORK (SEE TYPICAL DETOUR DETAILS SHEET 18.19)

SEQUENCE OF CONSTRUCTION

- STEP 1: HAWTHORNE STREET
- STEP 2: WOODHEAD STREET FROM US 59 TO WESTHEIMER ROAD
- STEP 3: WOODHEAD FROM W GRAY TO W CLAY
- STEP 4:
-WEST SIDE SIDEWALK OF WOODHEAD FROM WESTHEIMER RD TO W GRAY
-EAST SIDE SIDEWALK OF WOODHEAD FROM WESTHEIMER RD TO W GRAY





WOODHEAD BETWEEN HAROLD AND WESTHEIMER RD SHALL BE DONE DURING SUMMER (JUNE 15TH TO AUGUST 12TH).
COORDINATE WITH LANIER MIDDLE SCHOOL BEFORE STARTING ANY WORK WITHIN THIS SECTION



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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
SEQUENCE OF CONSTRUCTION	
SHEET 1 OF 1	
WBS NUMBER N-T27000-002	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	CITY OF HOUSTON SHARPOO GOLSHAN
SHEET NO. 19 OF 24	12/15/2021



LEGEND

-  PHASE 1
-  PHASE 2
-  BARRELS OR DRUMS
-  TYPE III BARRICADE W/ ROAD CLOSED SIGN

NO.	DATE	REVISION	APP.

- NOTES:**
1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH CM CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
 2. DETOUR TCP IS APPLICABLE TO ALL BLOCKS OF HAWTHORNE AND WOODHEAD STREETS. WORK SHALL BE DONE BLOCK BY BLOCK AS SHOWN IN THE TYPICAL DETOUR LAYOUT

PHASE 2, SEE (NOTE 2) STEP 1 - WB DETOUR

Gauge
 ENGINEERING
 3200 Wilcrest Drive, Suite 220
 Houston, TX 77042
 www.GaugeEngineering.com
 Texas PE Firm Reg. #F-20017



SURVEYED BY: *Karam M. Qaddo*
 12/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS

PHASE 2
 TYPICAL DETOUR LAYOUT

WBS NUMBER	SHEET 1 OF 2
N-T27000-002-7	CITY OF HOUSTON USE ONLY
DRAWING SCALE	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON PM	7 2 2 4 8
SHAPOOR GOLSHAN	
SHEET NO. 120 OF 247	

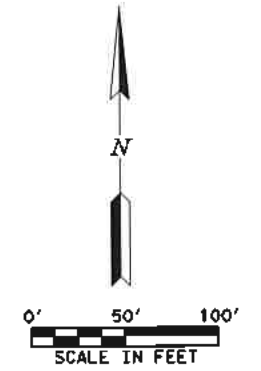


PHASE 2, SEE (NOTE 2) STEP 2 - EB DETOUR

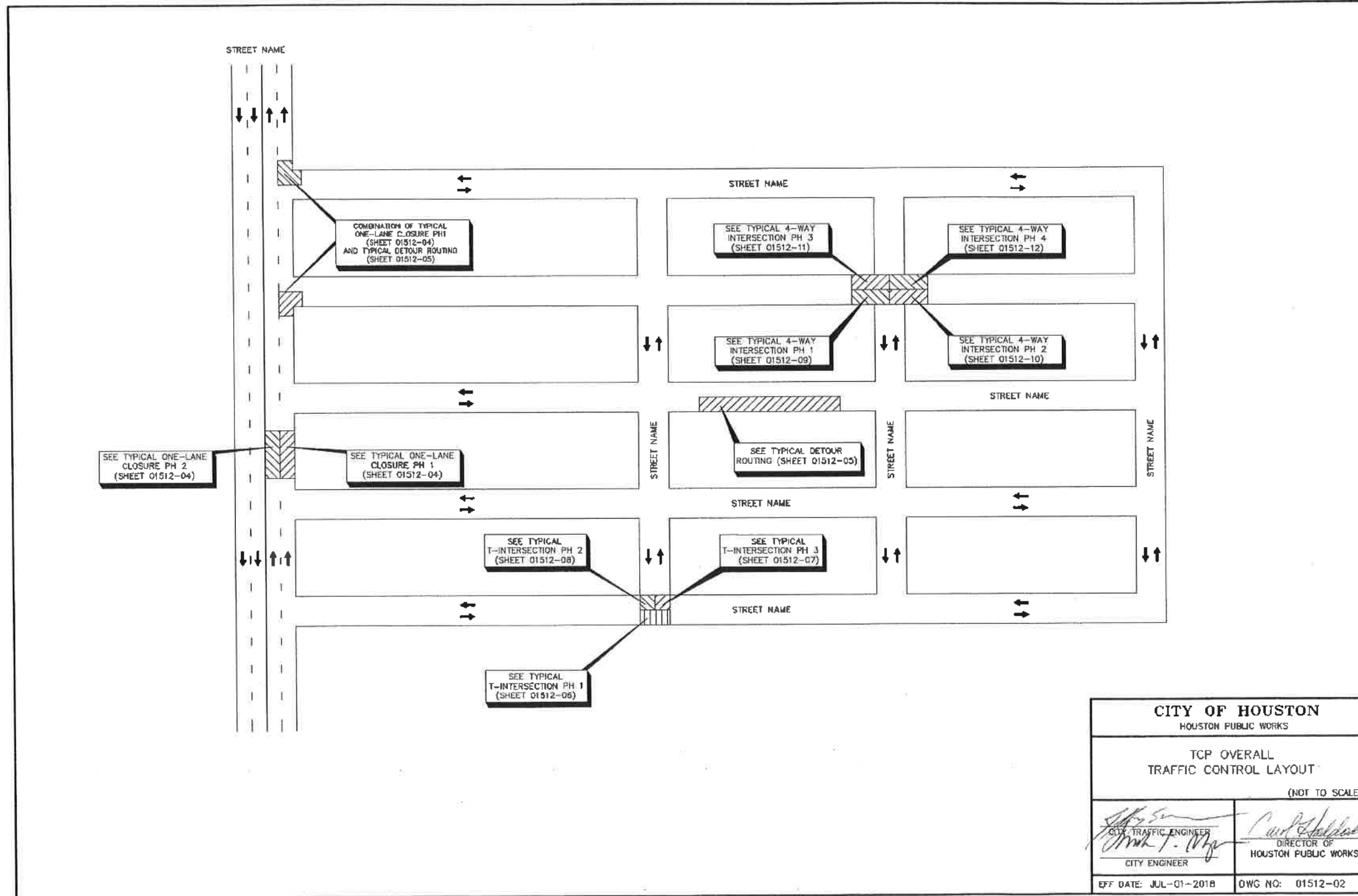
LEGEND

	PHASE 1
	PHASE 2
	BARRELS OR DRUMS
	TYPE III BARRICADE W/ ROAD CLOSED SIGN

- NOTES:**
1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
 2. DETOUR TCP IS APPLICABLE TO ALL BLOCKS OF HAWTHORNE AND WOODHEAD STREETS. WORK SHALL BE DONE BLOCK BY BLOCK AS SHOWN IN THE TYPICAL DETOUR LAYOUT



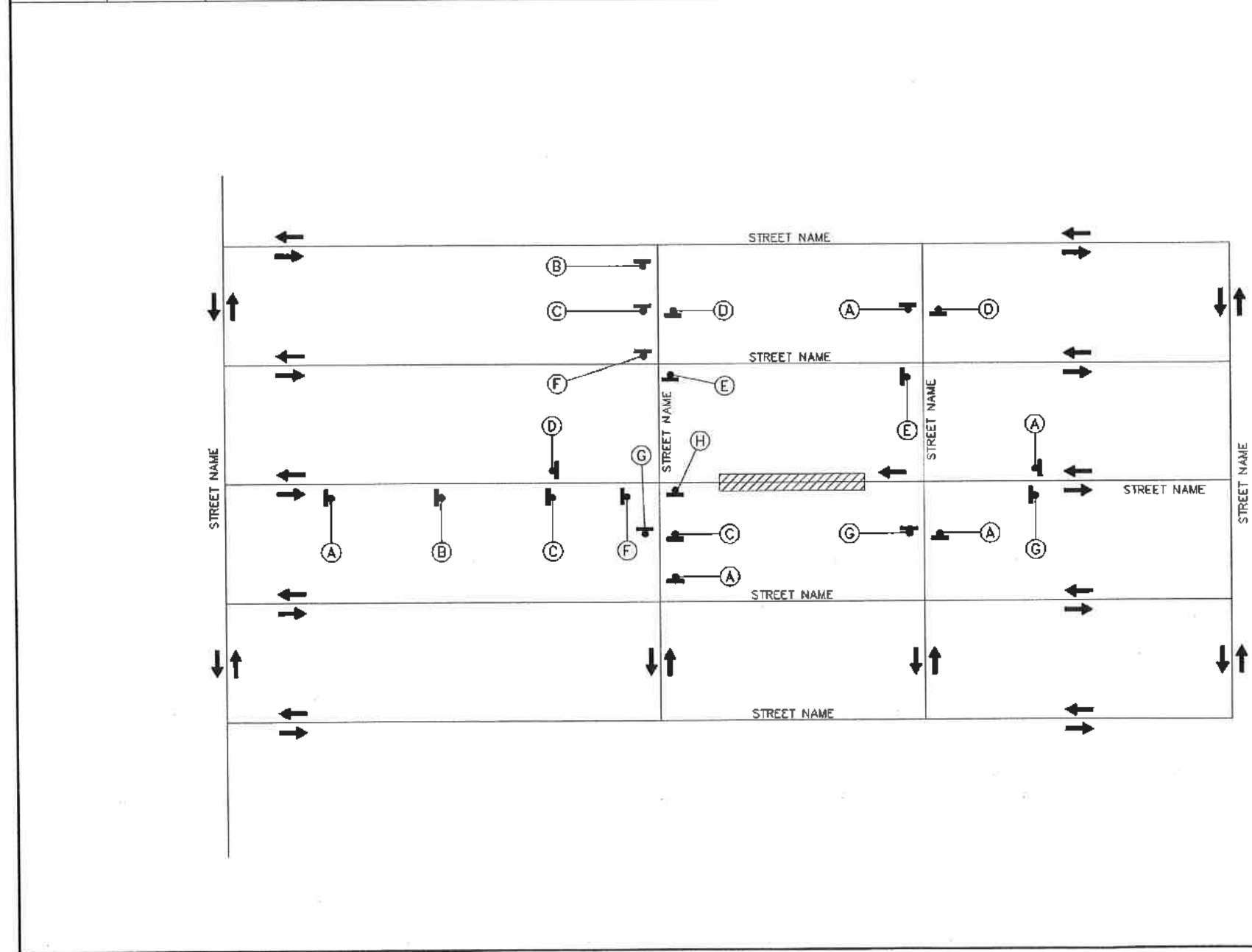
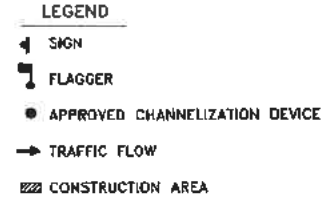
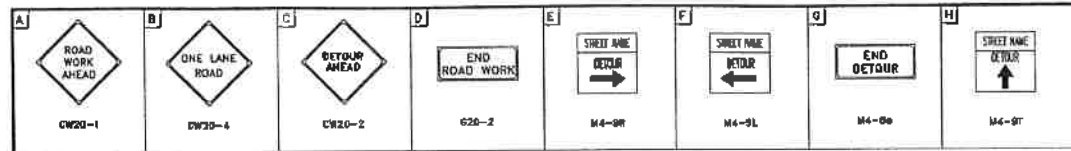
Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
	SURVEYED BY:
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
PHASE 2 TYPICAL DETOUR LAYOUT	
SHEET 2 OF 2	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PW SHUPOOR GOLSHAN	
SHEET NO. 21 OF 247	



CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP OVERALL TRAFFIC CONTROL LAYOUT (NOT TO SCALE)	
<i>[Signature]</i> CITY ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-02

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p> <p>OVERALL TRAFFIC CONTROL LAYOUT</p> <p style="text-align: right;">SHEET 1 OF 1</p>	
<p>WBS NUMBER: N-272000-002-7</p> <p>DRAWING SCALE: AS NOTED</p> <p>CITY OF HOUSTON PH: SHAIPOOR BOLSHAM</p> <p>SHEET NO. 23 OF 247</p>	
<p style="font-size: 2em; font-weight: bold;">72248</p>	

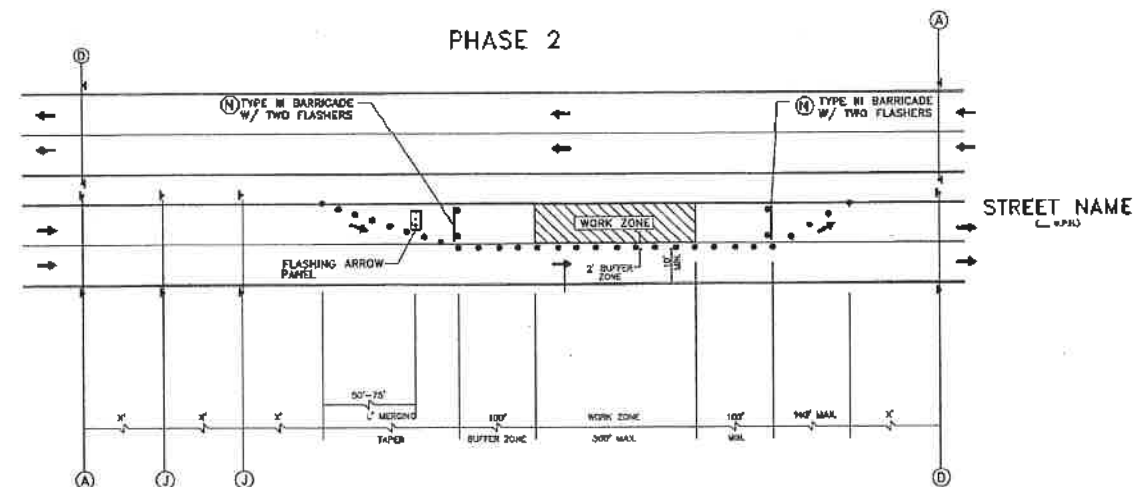
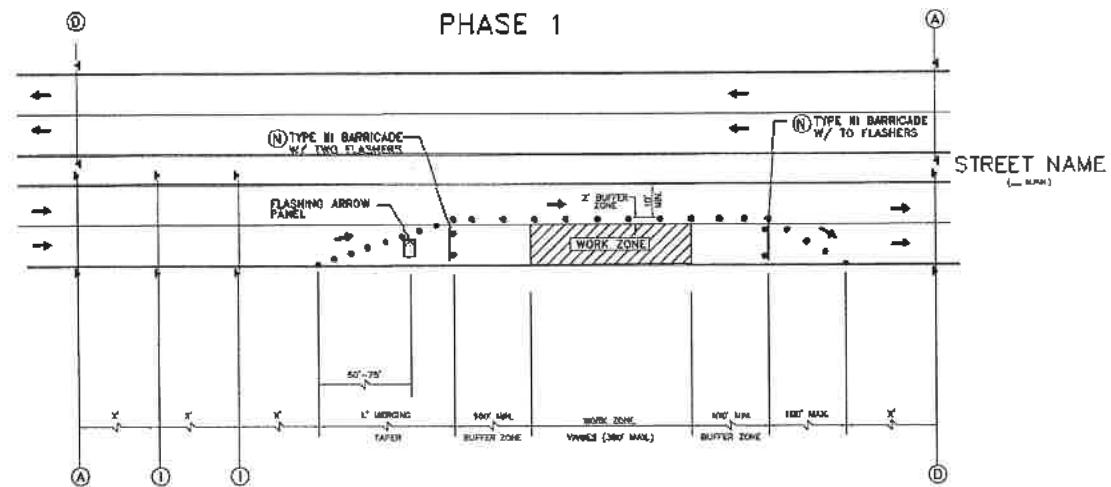
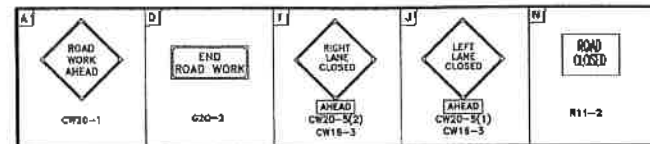
NO.	DATE	REVISION	APP.



CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TRAFFIC CONTROL LAYOUT (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-03

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SURVEYED BY:	
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS TRAFFIC CONTROL LAYOUT SHEET 1 OF 1	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON	
SRAPPOO GOLSHAN	
SHEET NO. 24 OF 24	

NO.	DATE	REVISION	APP.



LEGEND

- ◀ SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- ▨ CONSTRUCTION AREA

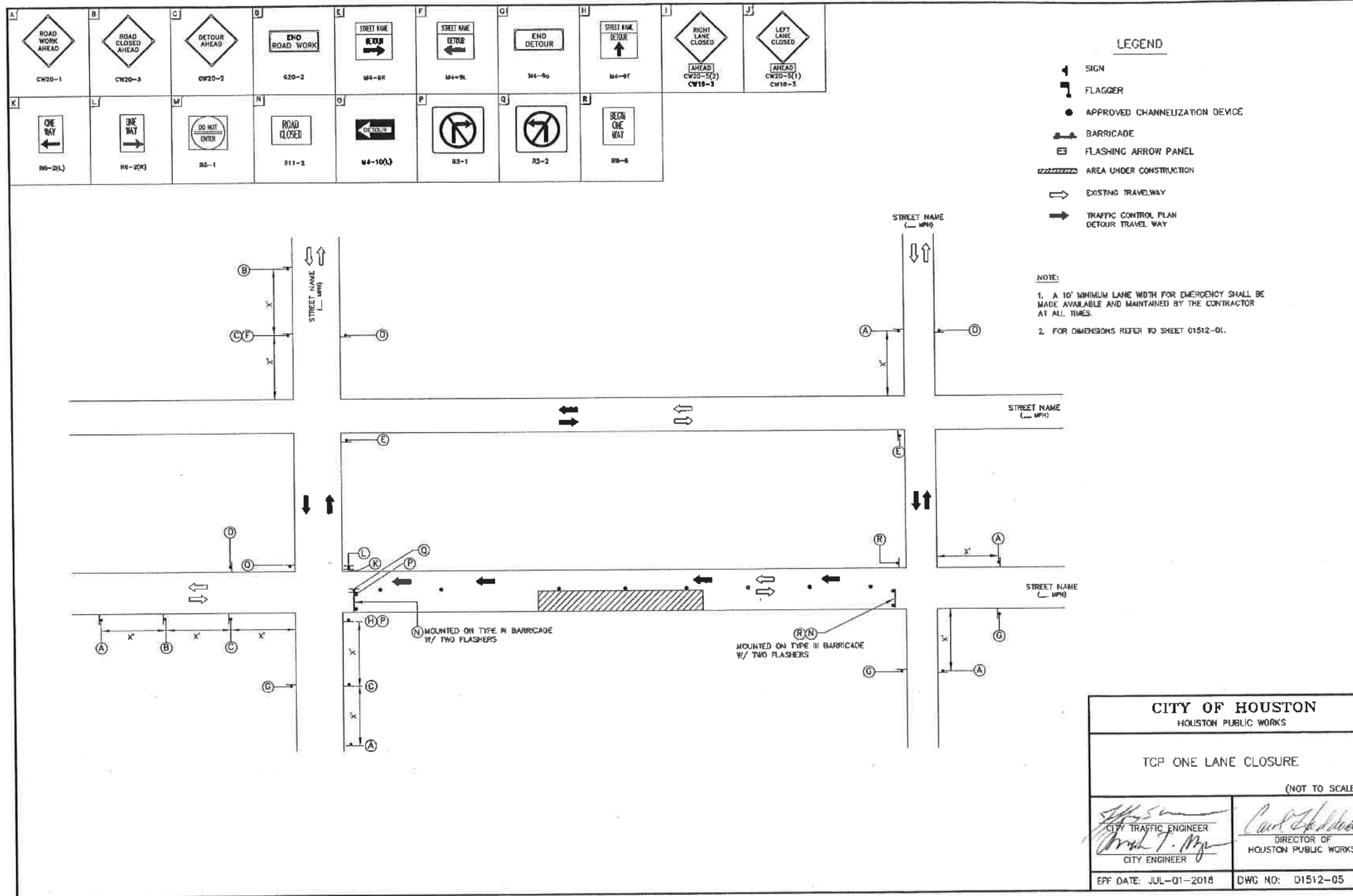
NOTE:

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 01512-01.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP ONE LANE CLOSURE PHASE 1 & 2 (NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER CITY ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF. DATE: JUL-01-2018	DWC NO: 01512-04

Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SURVEYED BY: <i>[Signature]</i> 11/15/2021	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
ONE LANE CLOSURE PHASE 1 & 2	
SHEET 1 OF 1	
WBS NUMBER N-127000-002-1	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	72248
CITY OF HOUSTON PW	
SHAMPOOR GOLSHAN	
SHEET NO. 25 OF 247	







NO.	DATE	REVISION	APP.









CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP ONE LANE CLOSURE (NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER CITY ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EPF DATE: JUL-01-2018	DWG NO: D1512-05

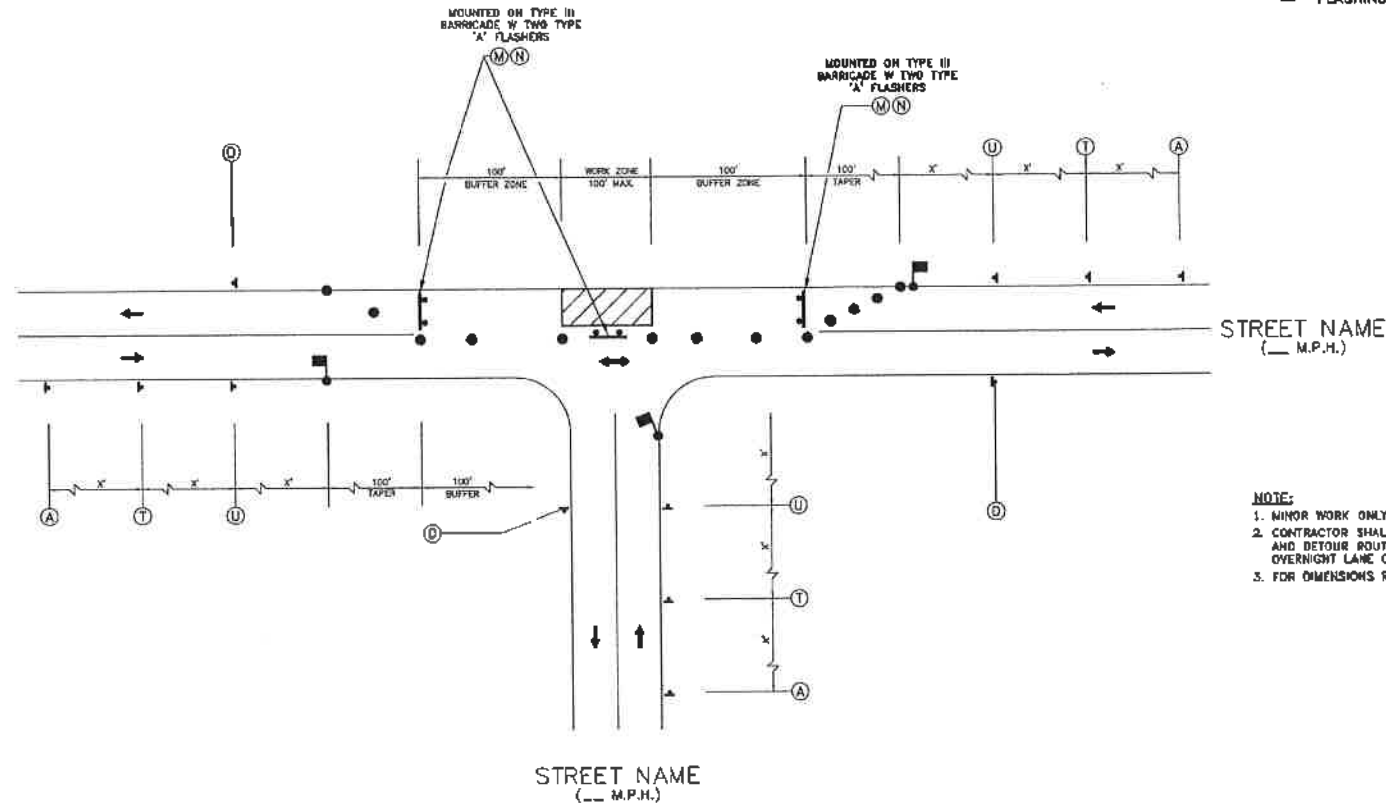
Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
ONE LANE CLOSURE PHASE	
SHEET 1 OF 1	
RBS NUMBER N-T27000-002-	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAIPOOR GOLSMAN	
SHEET NO. 26 OF 247	

NO.	DATE	REVISION	APP.

 CW20-1	 CW20-4	 CW20-7	 G20-2	 R5-1	 R11-2
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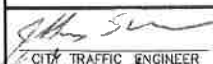
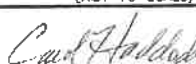
LEGEND



-  SIGN
-  FLAGGER
-  APPROVED CHANNELIZATION DEVICE
-  TRAFFIC FLOW
-  BARRICADE
-  FLASHING ARROW PANEL



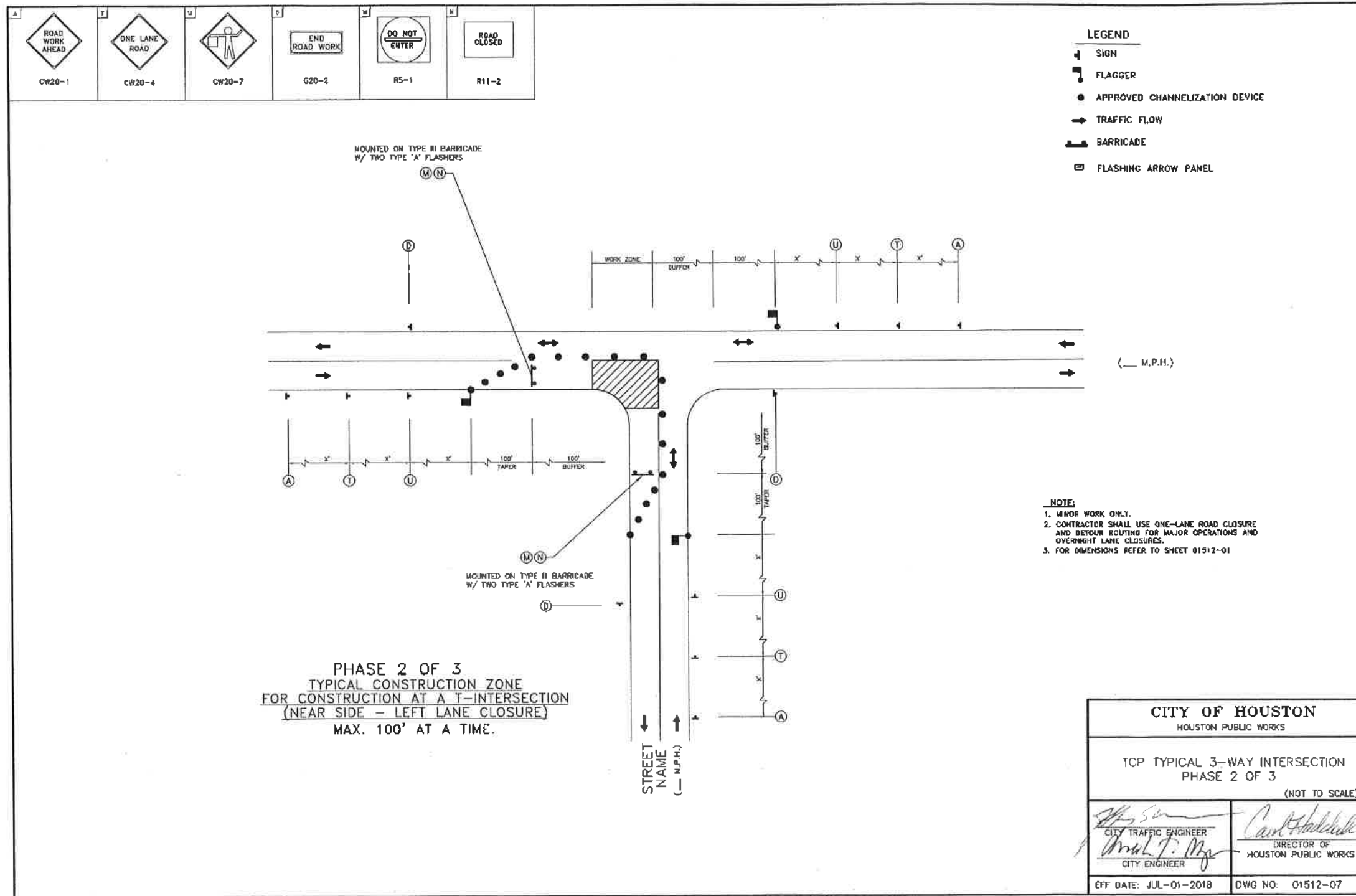
- NOTE:**
- MINOR WORK ONLY.
 - CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
 - FOR DIMENSIONS REFER TO SHEET 01512-01

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

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP TYPICAL 3-WAY INTERSECTION PHASE 1 OF 3 (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-08

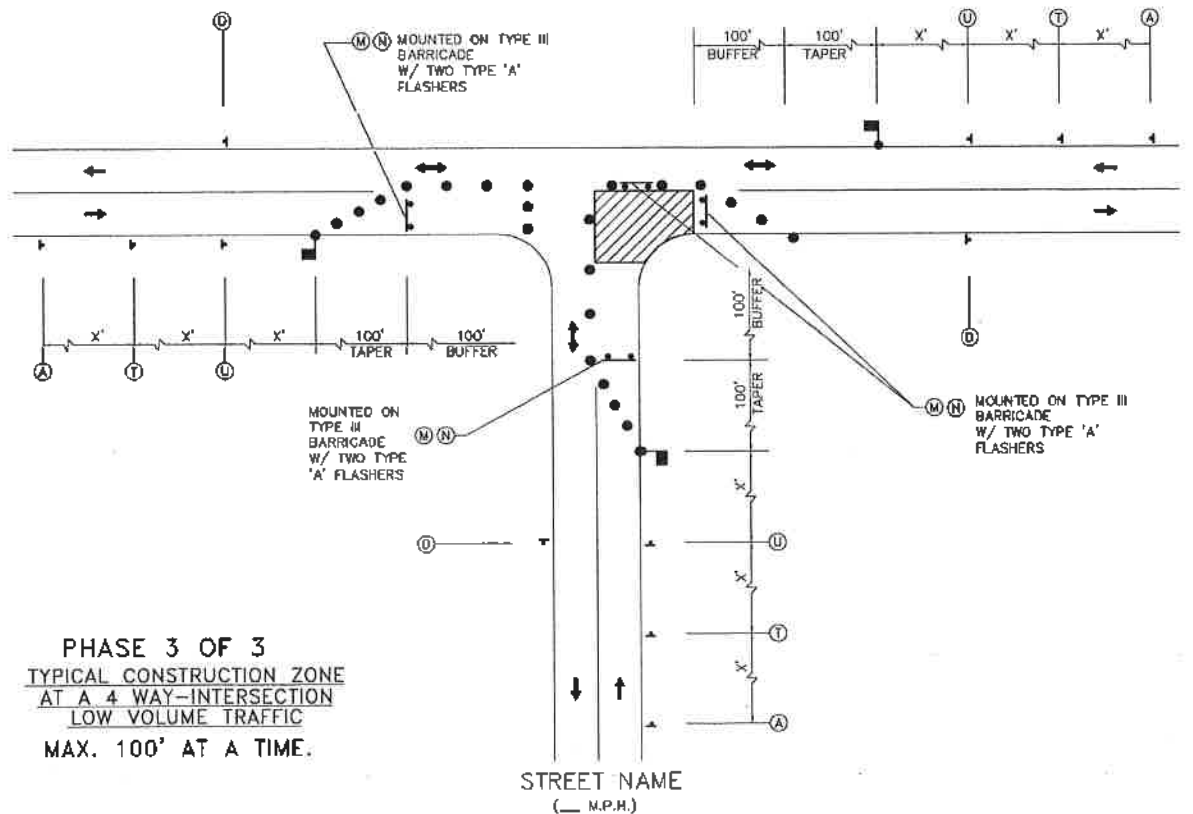
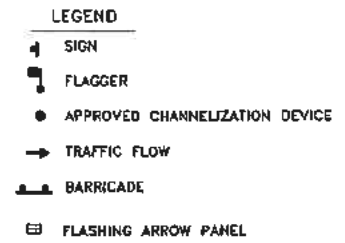
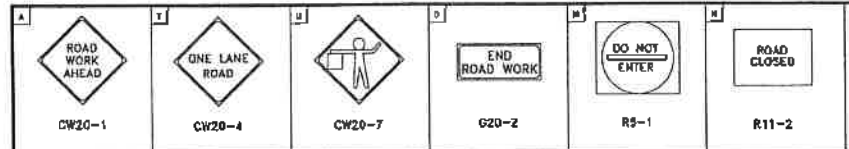
 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
TYPICAL 3-WAY INTERSECTION PHASE 1 OF 3	
SHEET 1 OF 1	
WBS NUMBER N-T2T000-002-7	
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAPOOR GOLSHAN	
SHEET NO. 27 OF 247	

NO.	DATE	REVISION	APP.



Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	STATE OF TEXAS KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
	SURVEYED BY:
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
TYPICAL 3-WAY INTERSECTION PHASE 2 OF 3	
SHEET 1 OF 1	
WBS NUMBER N-T2T000-002-T	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	72248
CITY OF HOUSTON SHAYKH BOLSHAKOV	
SHEET NO. 28 OF 24	

NO.	DATE	REVISION	APP.



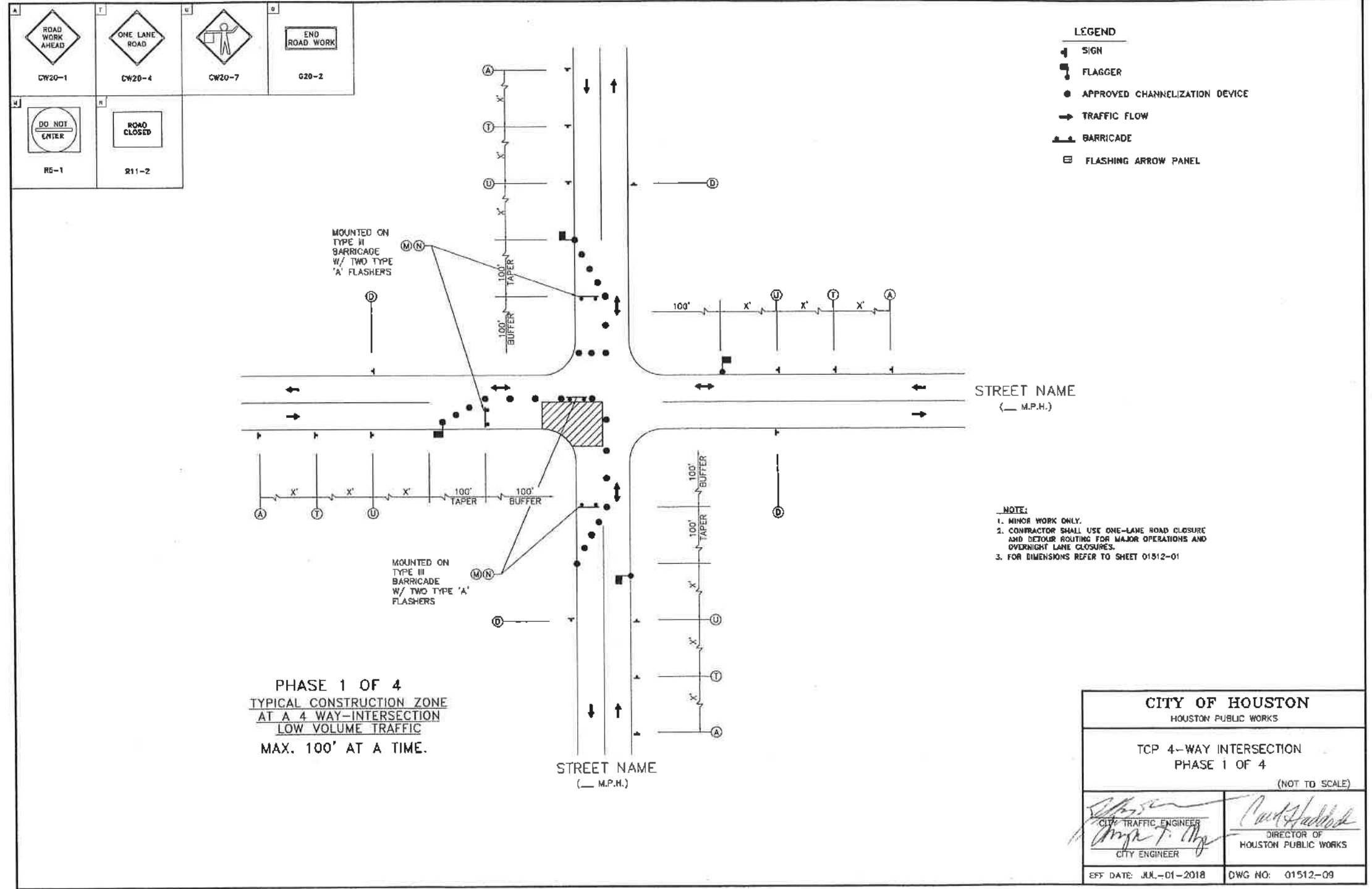
PHASE 3 OF 3
 TYPICAL CONSTRUCTION ZONE
 AT A 4 WAY-INTERSECTION
 LOW VOLUME TRAFFIC
 MAX. 100' AT A TIME.

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

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP TYPICAL 3-WAY INTERSECTION PHASE 3 OF 3 (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-08

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SURVEYED BY:	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
TYPICAL 3-WAY INTERSECTION PHASE 3 OF 3	
SHEET 1 OF 1	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON PM SHAMPOOR DOLSHAN	
SHEET NO. 29 OF 247	

NO.	DATE	REVISION	APP.

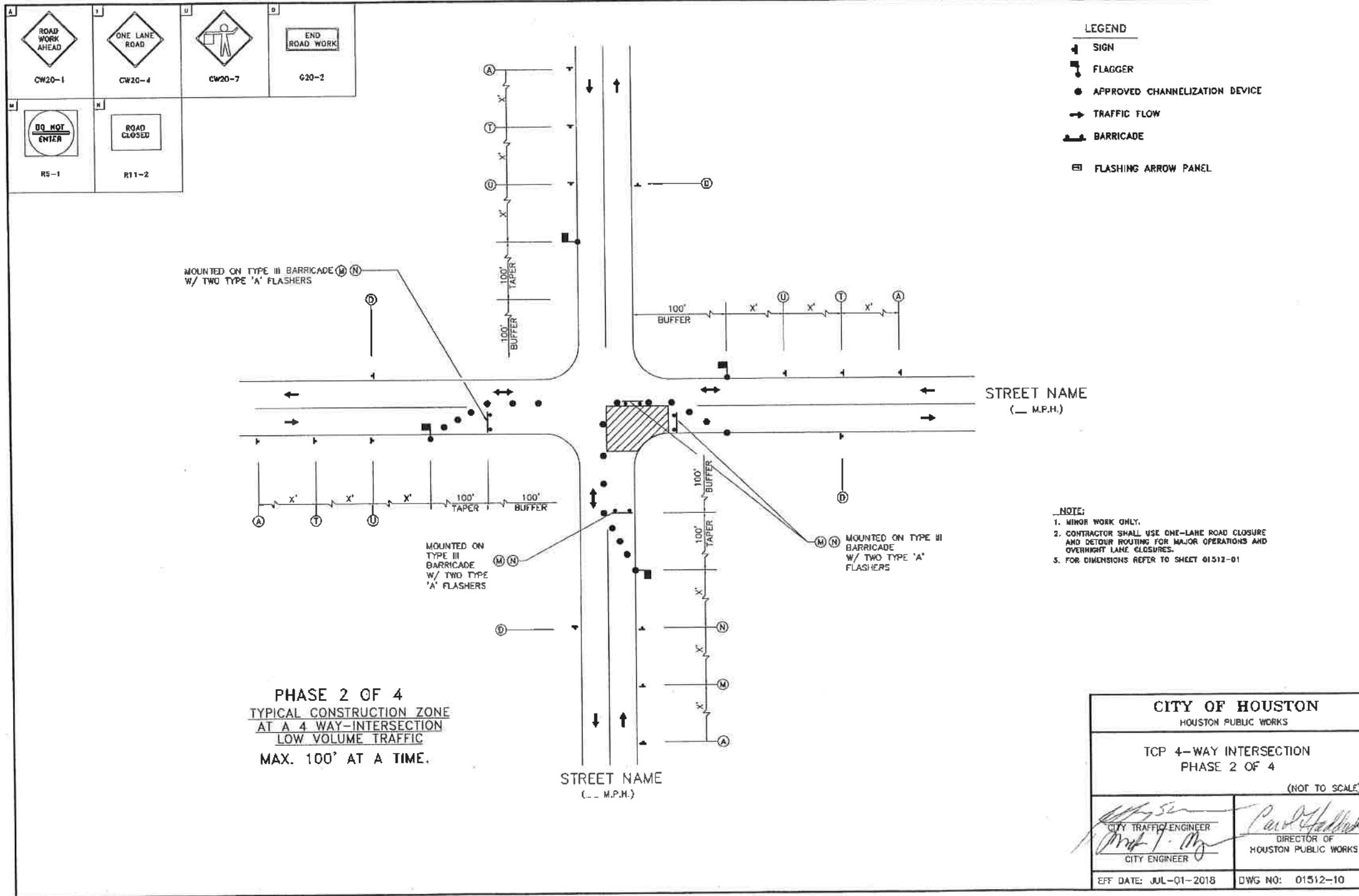


PHASE 1 OF 4
 TYPICAL CONSTRUCTION ZONE
 AT A 4 WAY-INTERSECTION
 LOW VOLUME TRAFFIC
 MAX. 100' AT A TIME.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP 4-WAY INTERSECTION PHASE 1 OF 4 (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-09

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
4-WAY INTERSECTION PHASE 1 OF 4	
SHEET 1 OF 1	
WBS NUMBER:	FOR CITY OF HOUSTON USE ONLY
N-Y2Y000-00-7	
DRAWING SCALE:	
AS NOTED	7 2 2 4 8
CITY OF HOUSTON, TX	
SHIPPOOR COL. SH.	
SHEET NO. 30 OF 37	

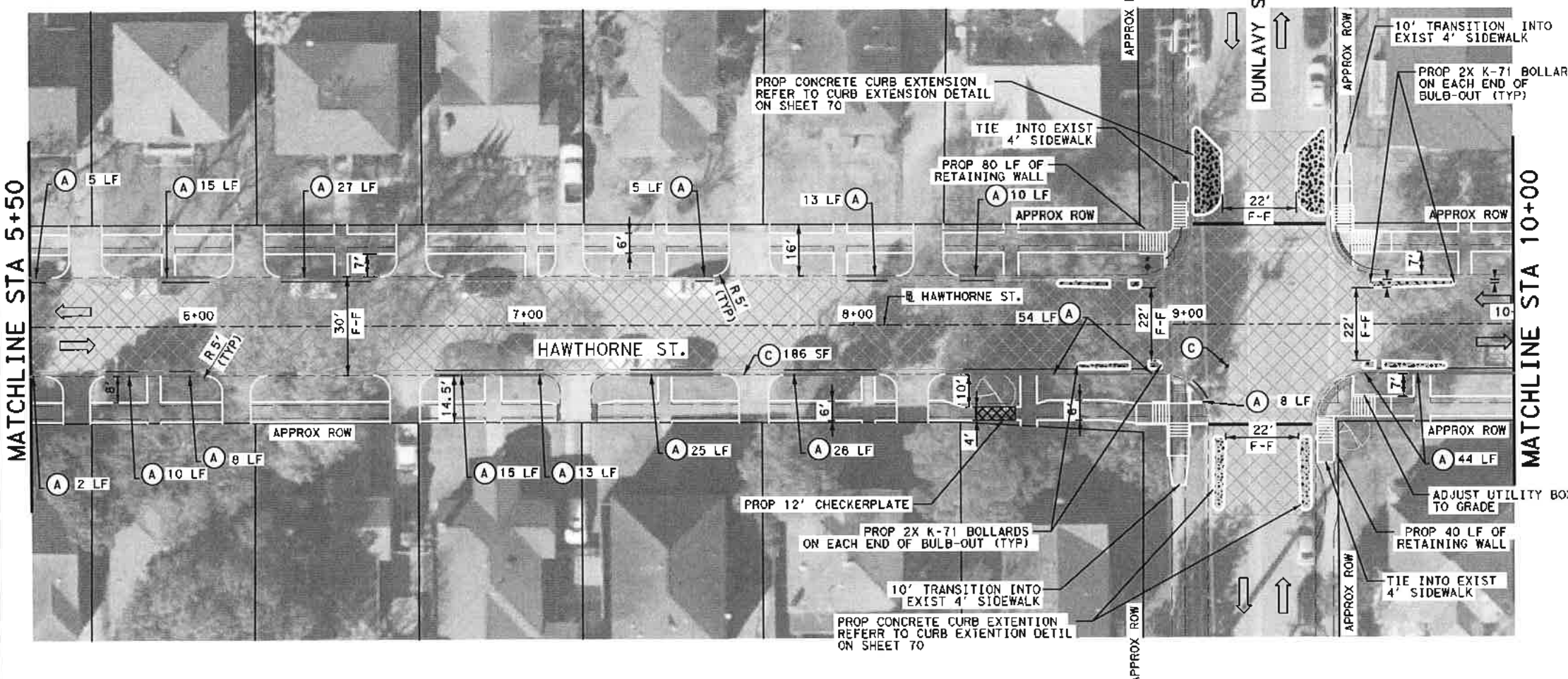
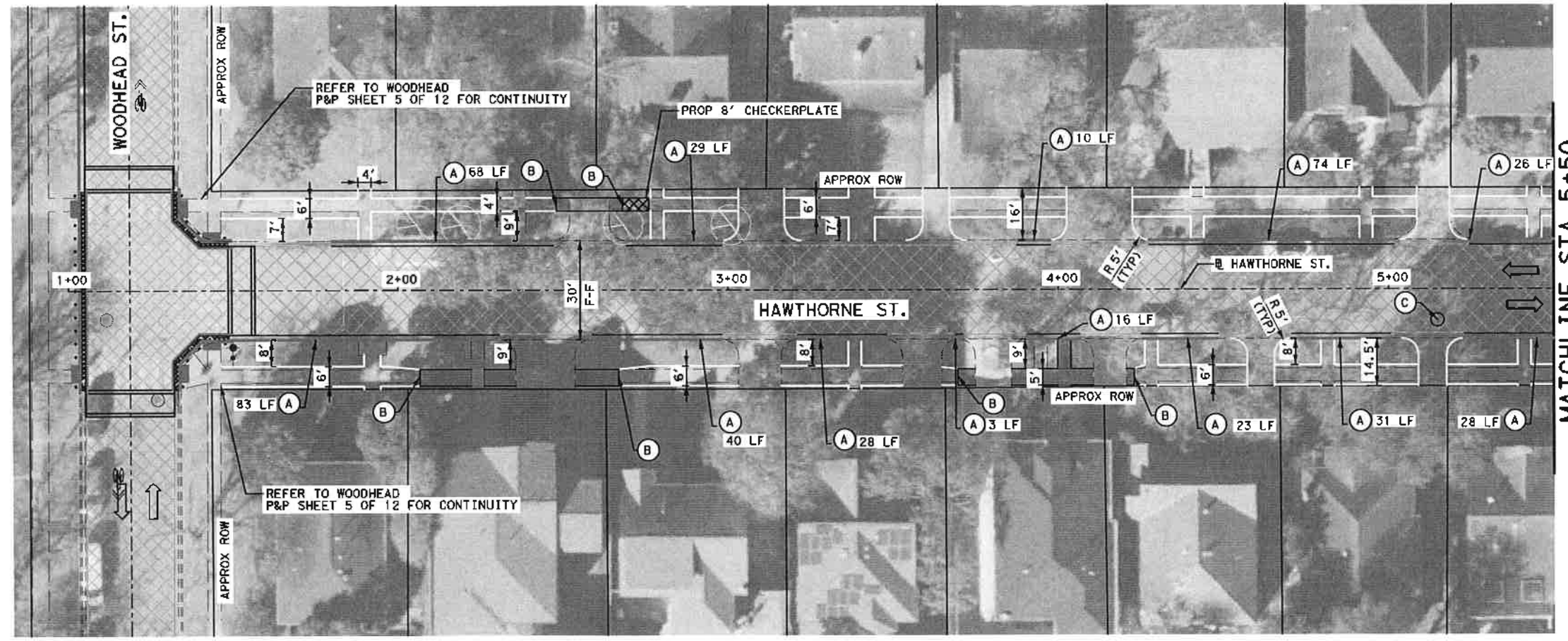
NO.	DATE	REVISION	APP.



NO.	DATE	REVISION	APP.

Product Files: P:\IRZ\27\1090-TO-4-Hawthorne-Woodhead\4-0-Product Ion-Working\4-1-CAD\Tr-off to\STANDARDS\TCP 10 - 1090 -4-WAY INTERSECTION PHASE 2.dgn

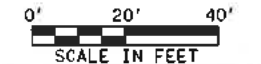
Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TCP 4-WAY INTERSECTION PHASE 2 OF 4 (NOT TO SCALE)	
CITY TRAFFIC ENGINEER CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-10
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS 4-WAY INTERSECTION PHASE 2 OF 4	
SHEET 1 OF 1 FOR CITY OF HOUSTON USE ONLY	
NBS NUMBER N-T27000-002-7	72248
DRAWING SCALE AS NOTED	CITY OF HOUSTON PA SHUPOR COLSMAN
SHEET NO. 31 OF 247	



LEGEND

- EXIST LANE
- - - EXIST CURB
- - - EXIST DRIVEWAY
- - - PROPOSED DRIVEWAY
- - - PROPOSED SIDEWALK
- █ EXIST SIDEWALK TO REMAIN
- ▨ PROP 1.5 INCH ASPHALT MILL AND OVERLAY
- ▩ PROP CONCRETE MEDIAN
- EXIST INLET
- ▭ PROPOSED RAISED MEDIAN
- (A) REMOVE AND REPLACE CURB AND GUTTER
- (B) MATCH EXIST SIDEWALK
- (C) ADJUST TO GRADE

- NOTES**
1. ALL DISTANCES ARE APPROXIMATE.
 2. ALL INTERSECTIONS AND DRIVEWAYS SHALL BE FEATHERED. SEE PROJECT MANUAL FOR MORE DETAILS.
 3. PROPOSED SIDEWALK SHALL MATCH EXISTING SIDEWALK WIDTH, GRADE, CROSS-SLOPE AT CONNECTION POINTS.
 4. ADJUST ALL MANHOLES RIMS/WATER VALVE BOXES TO PROPOSED GRADE ELEVATION.
 5. PROPOSED SIDEWALK SHALL BE CONSTRUCTED FLUSH WITH NATURAL GROUND. SIDEWALKS SHALL BE CONSTRUCTED TO ADA GUIDELINES WITH MAXIMUM CROSS SLOPE OF 2% AND MAXIMUM RUNNING SLOPE OF 5%.
 6. PROVIDE ALL NECESSARY TREE PROTECTION MEASURES TO MAINTAIN EXISTING TREE CONDITION DURING CONSTRUCTION.
 7. REPLACE EXIST LOOP DETECTOR AT SIGNALIZED INTERSECTION ON ALL APPROACHES. REFER TO SIGNAL SHEETS FOR MORE INFORMATION.
 8. RAMP LENGTHS ARE SHOWN GRAPHICALLY IN APPROXIMATE LOCATION. PROPOSED RAMP SHALL BE CONSTRUCTED PER COH STANDARD DETAILS WITH MAXIMUM LONGITUDINAL SLOPE OF 1:15.
 9. CONTRACTOR TO FIELD LAYOUT EDGES OF PROPOSED SIDEWALKS AND CONFIRM LOCATIONS WITH CM OR ENGINEER PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. NOTIFY CM OR ENGINEER OF ANY PLAN DEVIATIONS PRIOR TO FORM WORK. NO SEPARATE PAY.
 10. OVERLAY FINISHED SURFACE SHALL BE CONSTRUCTED FLUSH WITH EXISTING GUTTER. SEE SHEET 79.
 11. CONTRACTOR TO MATCH EXISTING DRIVEWAY WIDTH.



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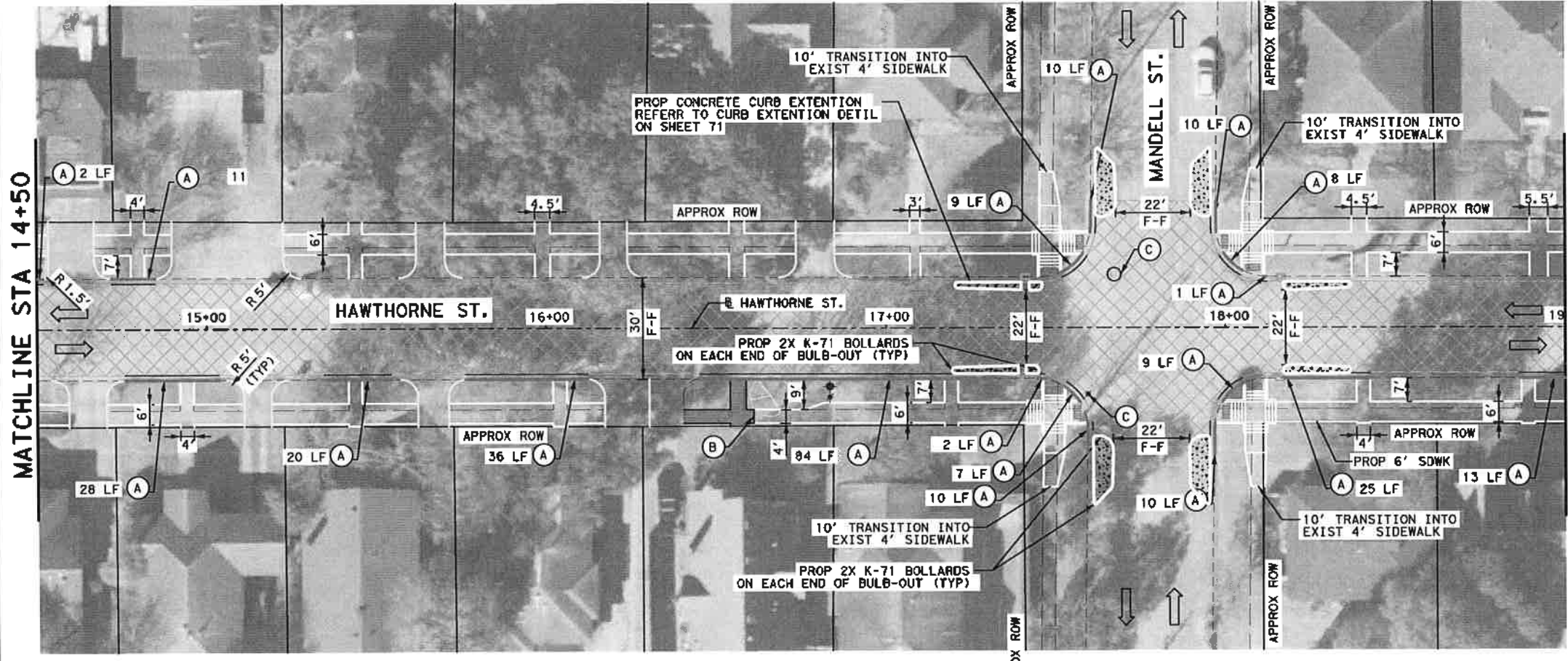
SURVEYED BY:
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER
1/5/2022

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN
BEGIN PROJECT TO STA 10+00
SHEET 1 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002	
DRAWING SCALE	72248
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOOLSHAN	
SHEET NO. 35	OF 247

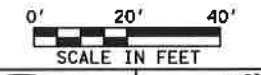
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LEGEND

- EXIST LANE
- EXIST CURB
- EXIST DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY
- PROP CONCRETE MEDIAN
- EXIST INLET
- PROPOSED RAISED MEDIAN
- (A) REMOVE AND REPLACE CURB AND GUTTER
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- (C) ADJUST TO GRADE

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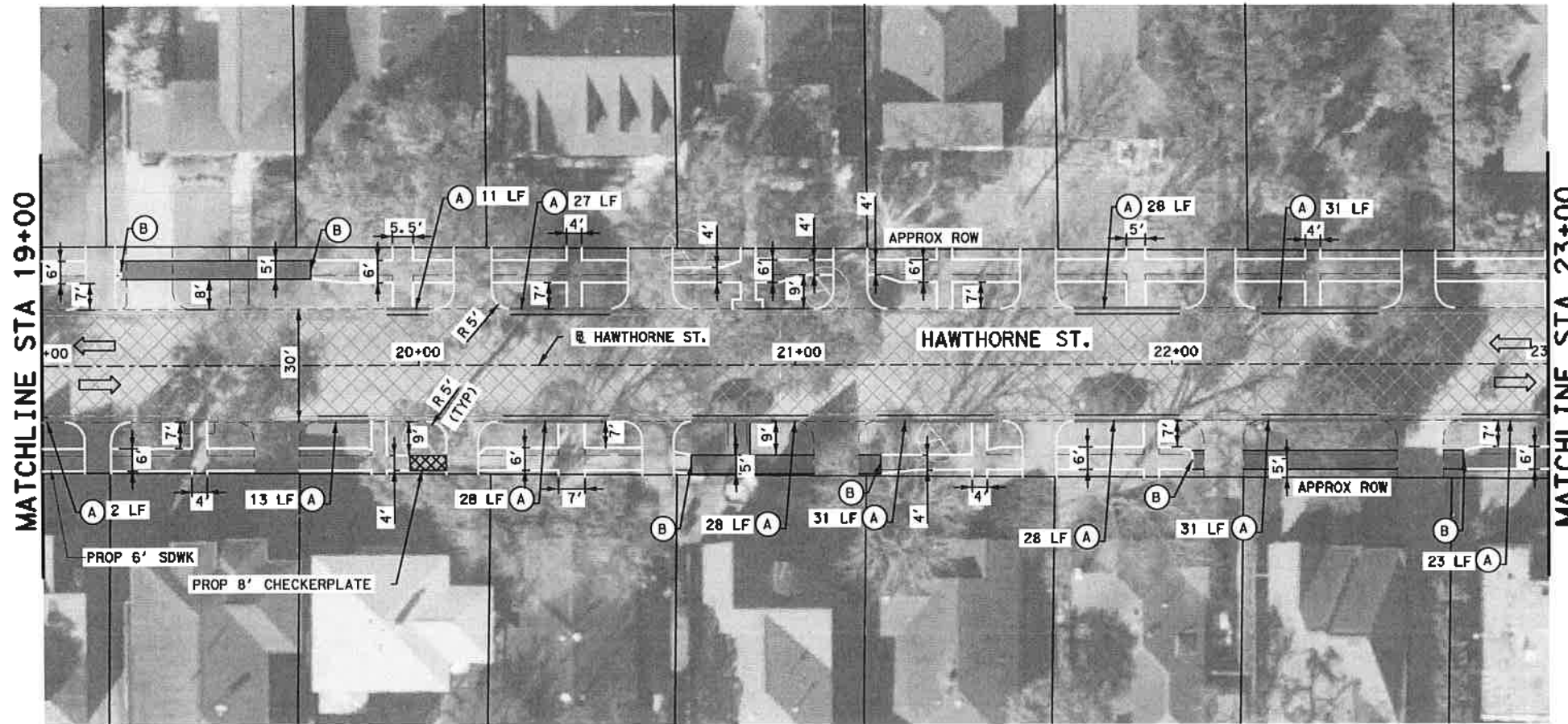
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET ROADWAY
 AND SIDEWALK PLAN**
 STA 10+00 TO STA 19+00
 SHEET 2 OF 10

WBS NUMBER: N-127000-000-7
 DRAWING SCALE: AS NOTED
 CITY OF HOUSTON
 SHARON GOLDSUM
 SHEET NO. 36 OF 241

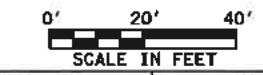
72248



LEGEND

- EXIST LANE
- EXIST CURB
- EXIST DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY
- PROP CONCRETE MEDIAN
- EXIST INLET
- PROPOSED RAISED MEDIAN
- REMOVE AND REPLACE CURB AND GUTTER
- MATCH EXIST SIDEWALK
- ADJUST TO GRADE

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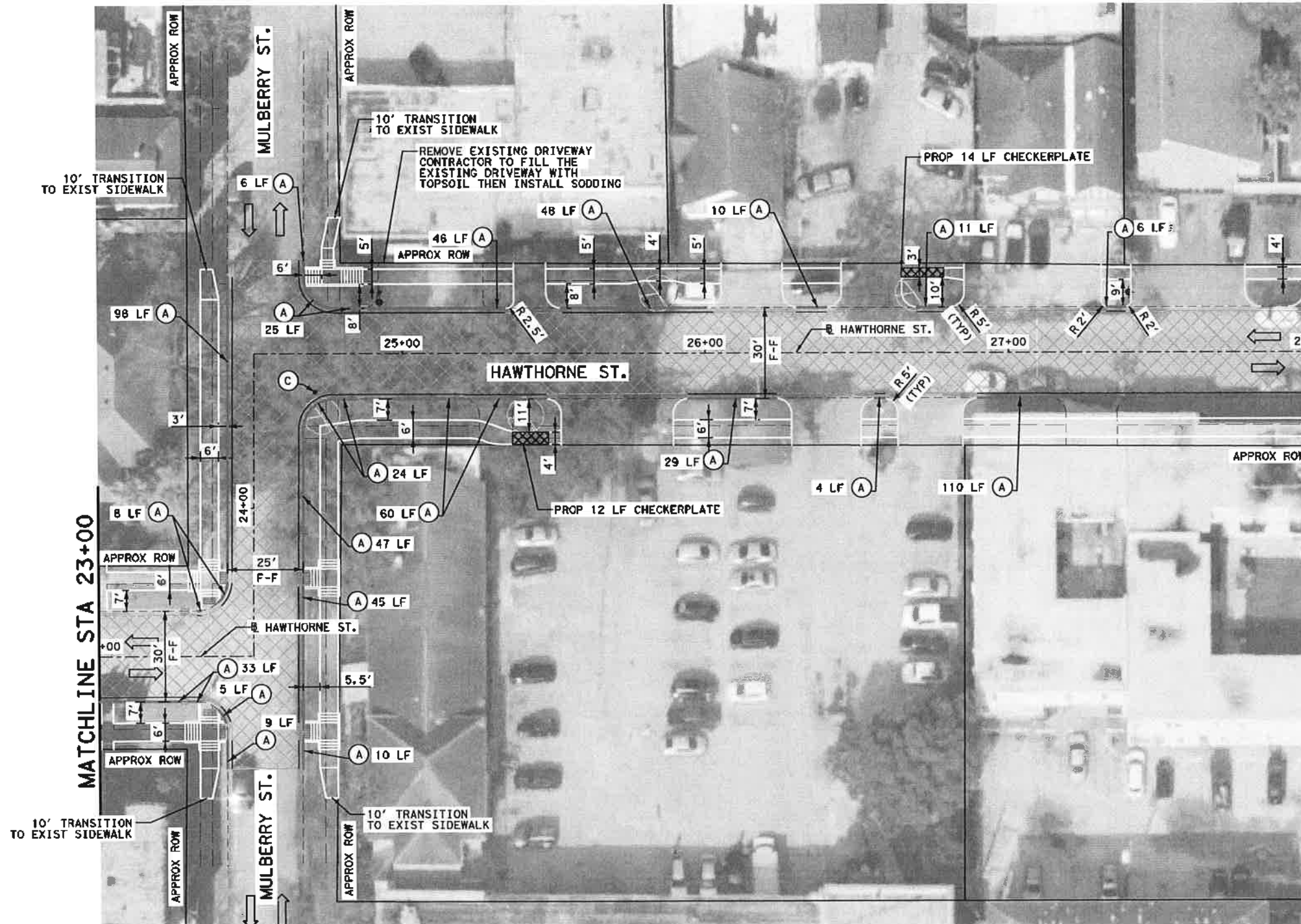
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11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
HAWTHORNE STREET ROADWAY
AND SIDEWALK PLAN**

STA 19+00 TO STA 23+00
SHEET 3 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY.
N-T27000-002	
DRAWING SCALE	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON	
SHAIKH GOLSHAN	
SHEET NO. 37 OF 247	



MATCHLINE STA 28+00

MATCHLINE STA 23+00

LEGEND

- EXIST LANE
- EXIST CURB
- EXIST DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY
- PROP CONCRETE MEDIAN
- EXIST INLET
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- REMOVE AND REPLACE CURB AND GUTTER
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 11. CONTRACTOR TO MATCH EXISTING DRIVEWAY WIDTH.



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 11/15/2021

STATE OF TEXAS
 KARAM M. QADDOO
 LICENSED PROFESSIONAL ENGINEER
 125611

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN
 STA 23+00 TO STA 28+00
 SHEET 4 OF 10

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 DRAWING SCALE: AS NOTED
 CITY OF HOUSTON PM: SHUPOR GOLSKAN
 SHEET NO. 38 OF 247

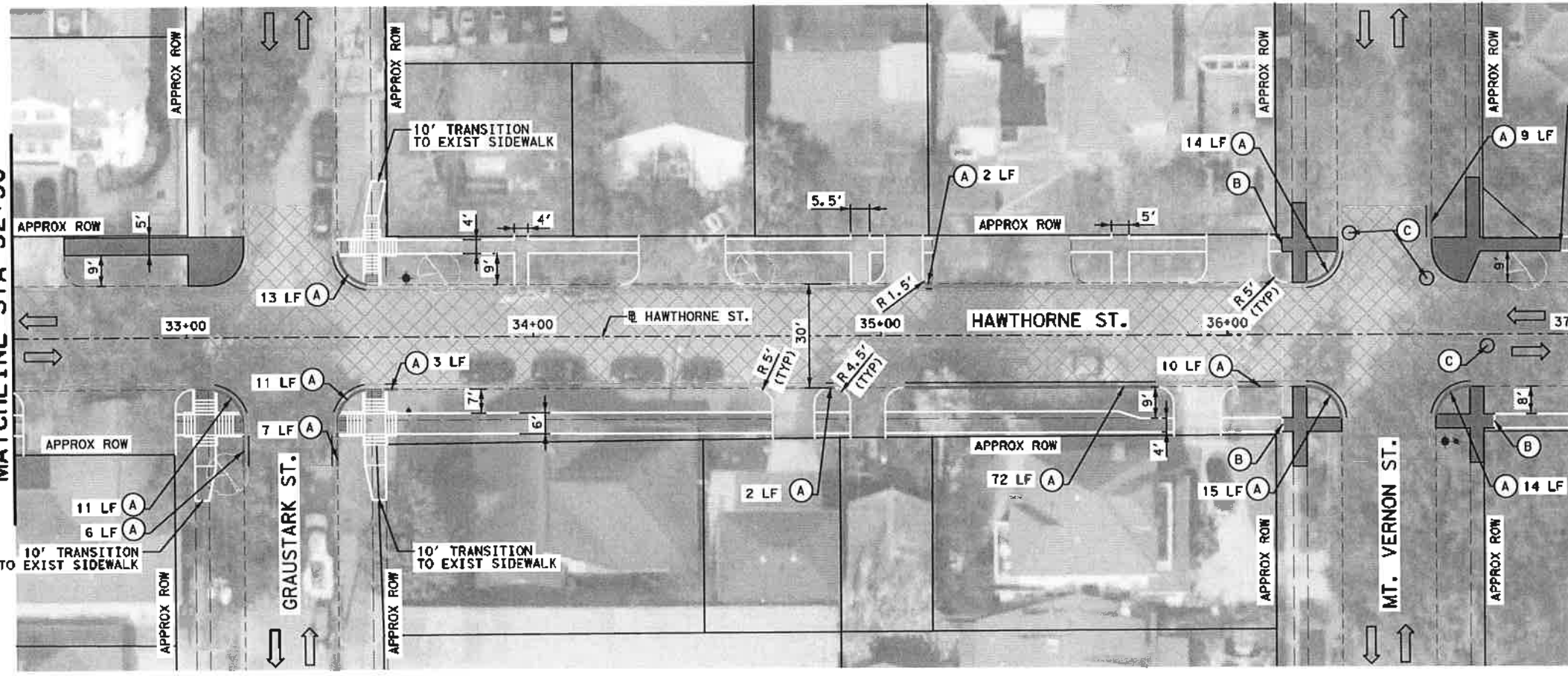
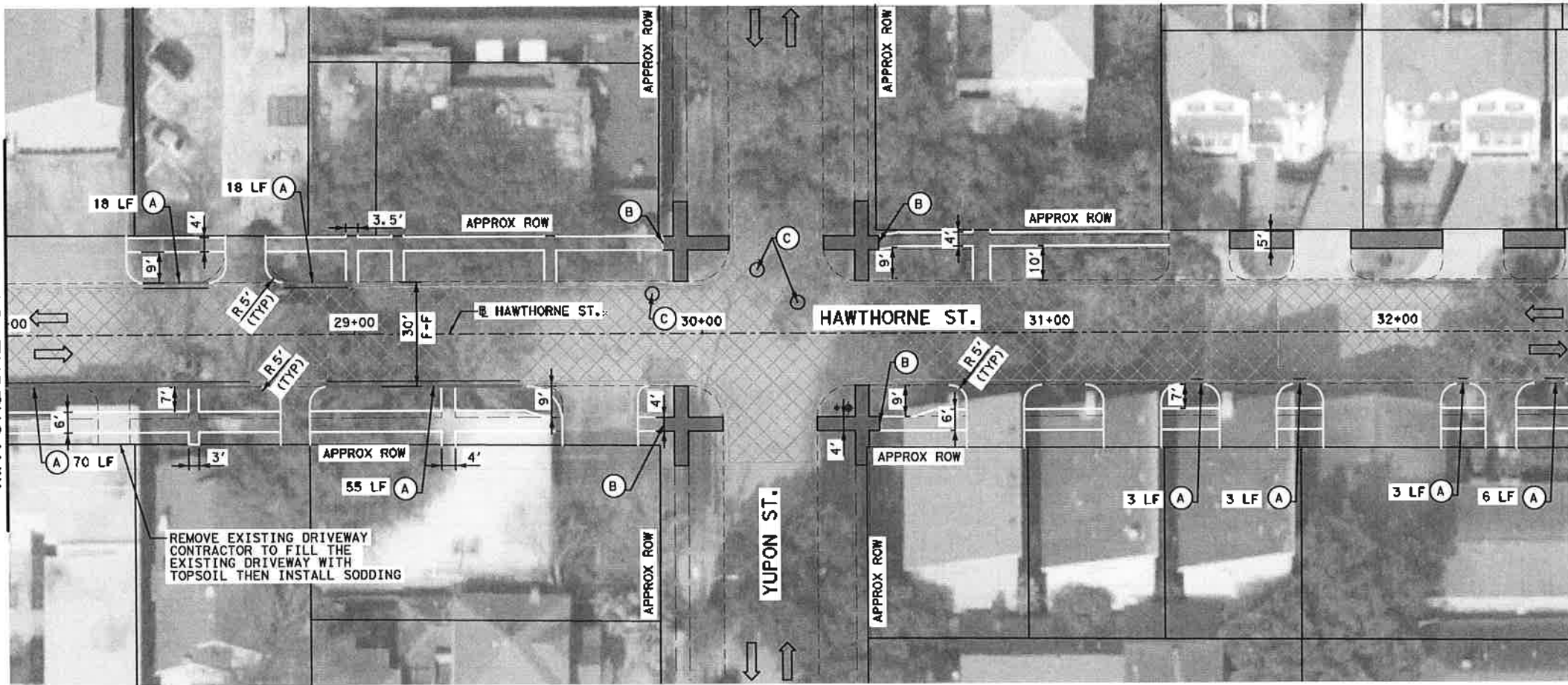
FOR CITY OF HOUSTON USE ONLY
72248

MATCHLINE STA 28+00

MATCHLINE STA 32+50

MATCHLINE STA 32+50

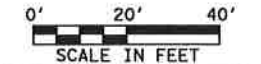
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LEGEND

- EXIST LANE
- - - EXIST CURB
- - - EXIST DRIVEWAY
- - - PROPOSED DRIVEWAY
- - - PROPOSED SIDEWALK
- █ EXIST SIDEWALK TO REMAIN
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STATE OF TEXAS
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER

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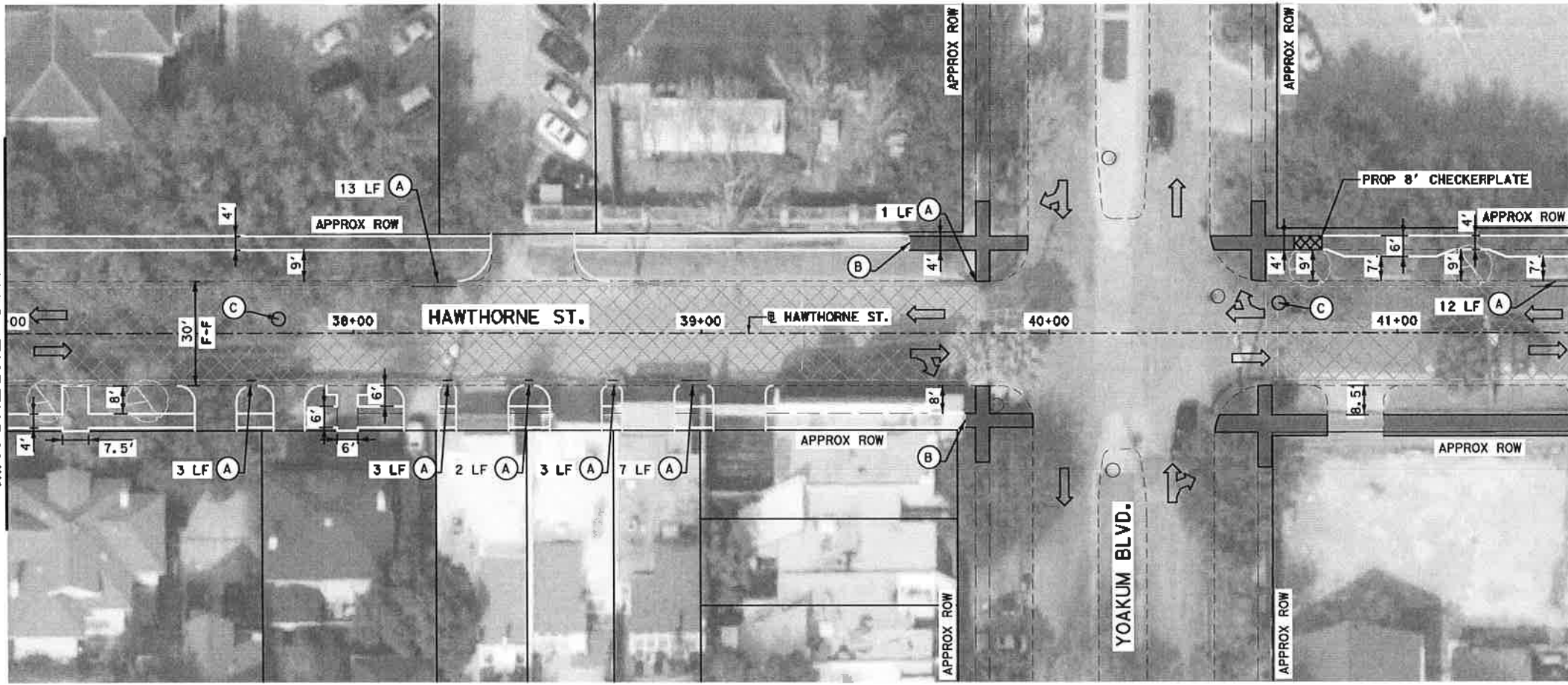
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN
STA 28+00 TO STA 37+00
SHEET 5 OF 10

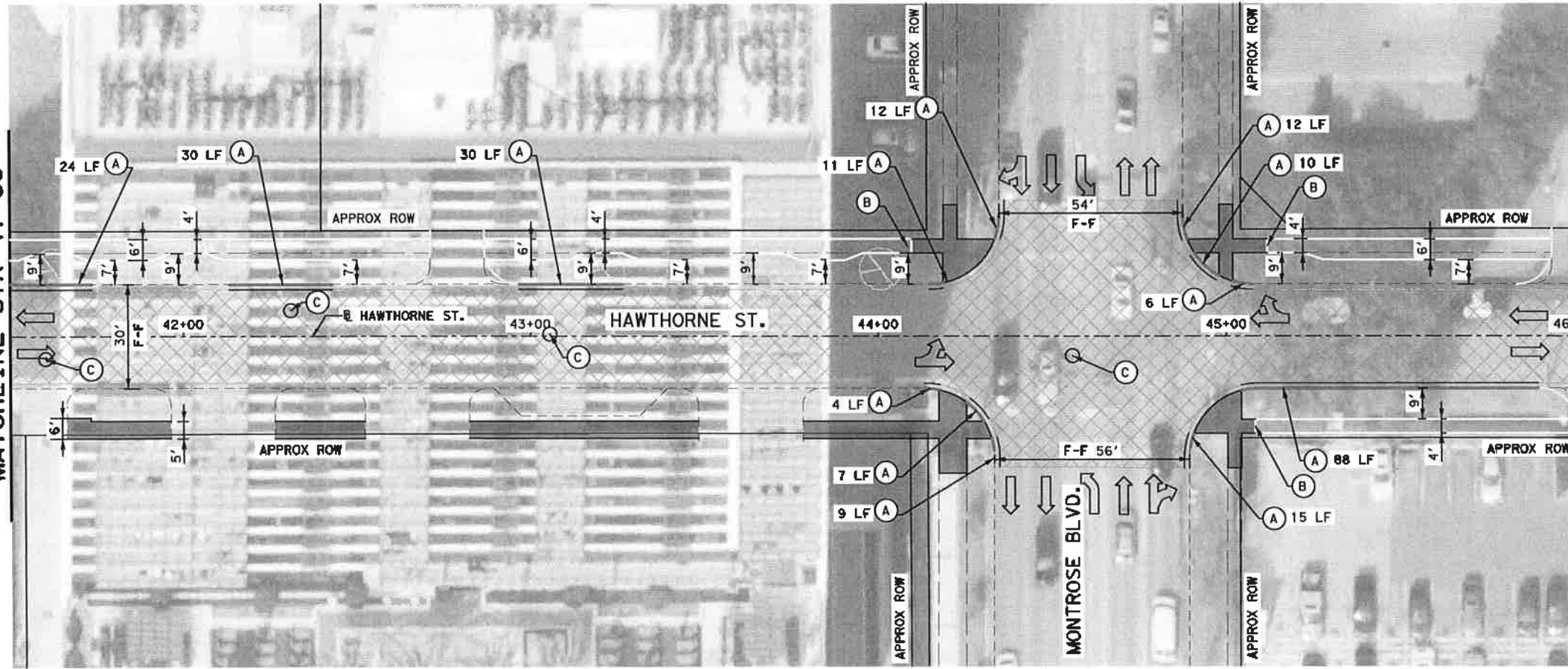
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DRAWING SCALE: AS NOTED
CITY OF HOUSTON, TX
SHEET NO. 39 OF 100

FOR CITY OF HOUSTON USE ONLY
2248

MATCHLINE STA 37+00



MATCHLINE STA 41+50



MATCHLINE STA 41+50

MATCHLINE STA 46+00

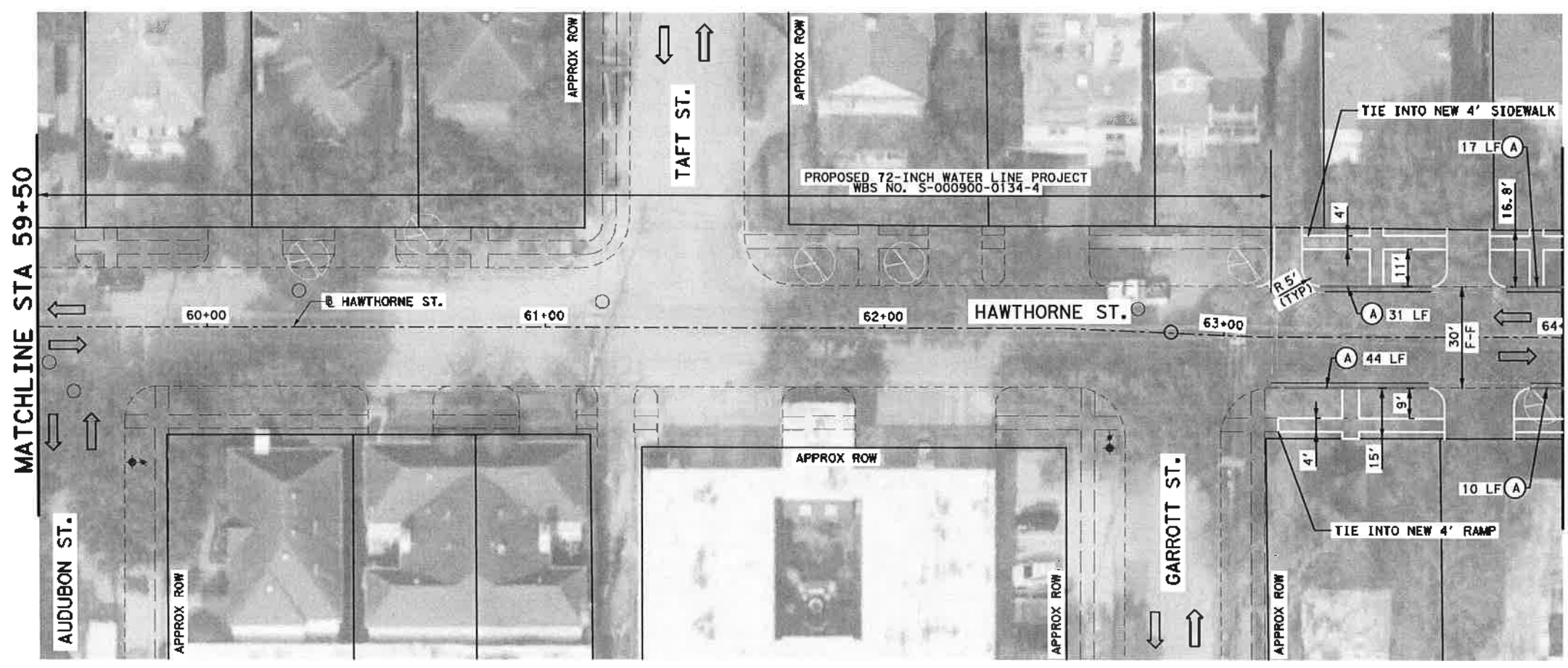
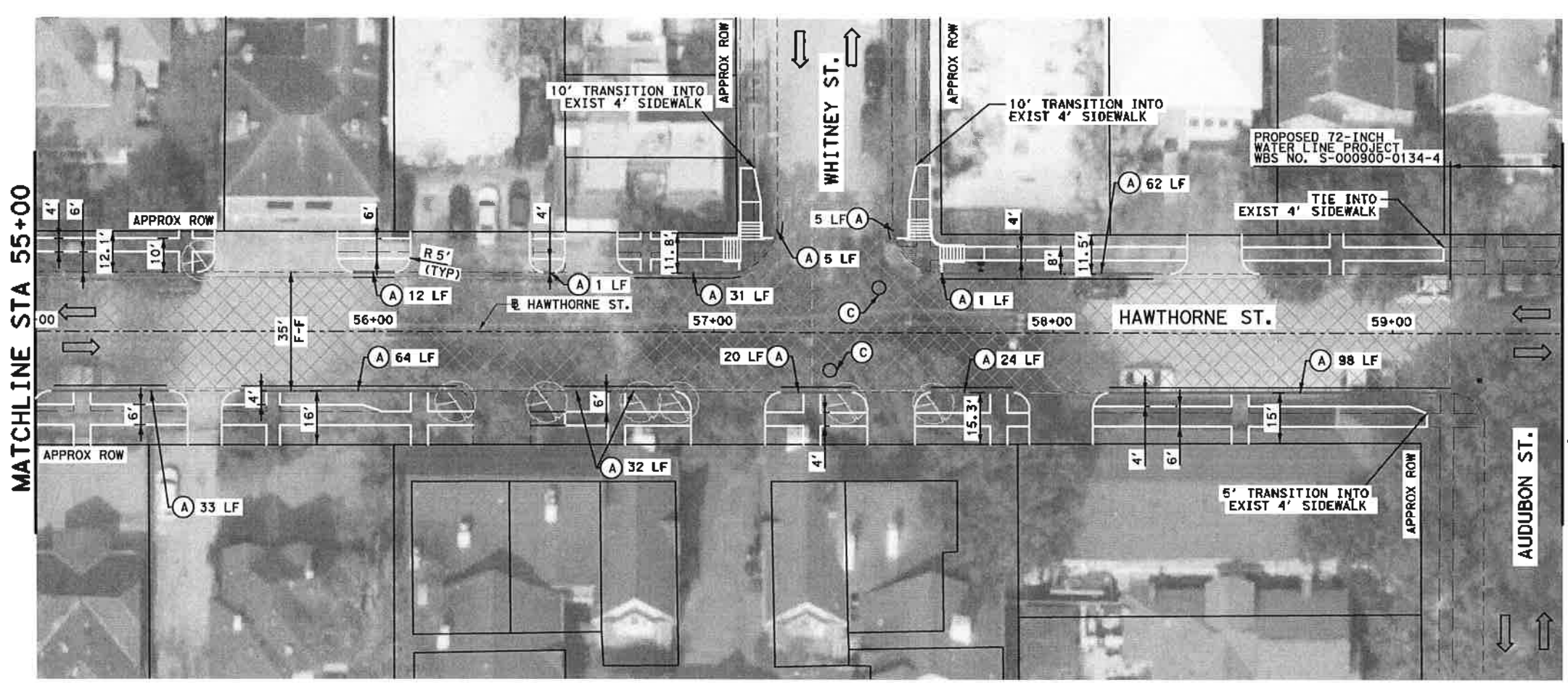
LEGEND

- EXIST LANE
- - - EXIST CURB
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<p>SURVEYED BY:</p>			
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>			
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN STA 37+00 TO STA 46+00 SHEET 6 OF 10</p>			
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY		
N-T27000-002			
DRAWING SCALE	7 2 2 4 8		
AS NOTED			
CITY OF HOUSTON PROJECT NO.			
SUPPOR COLSWN			
SHEET NO. 40 OF 247			



LEGEND

- EXIST LANE
- EXIST CURB
- EXIST DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
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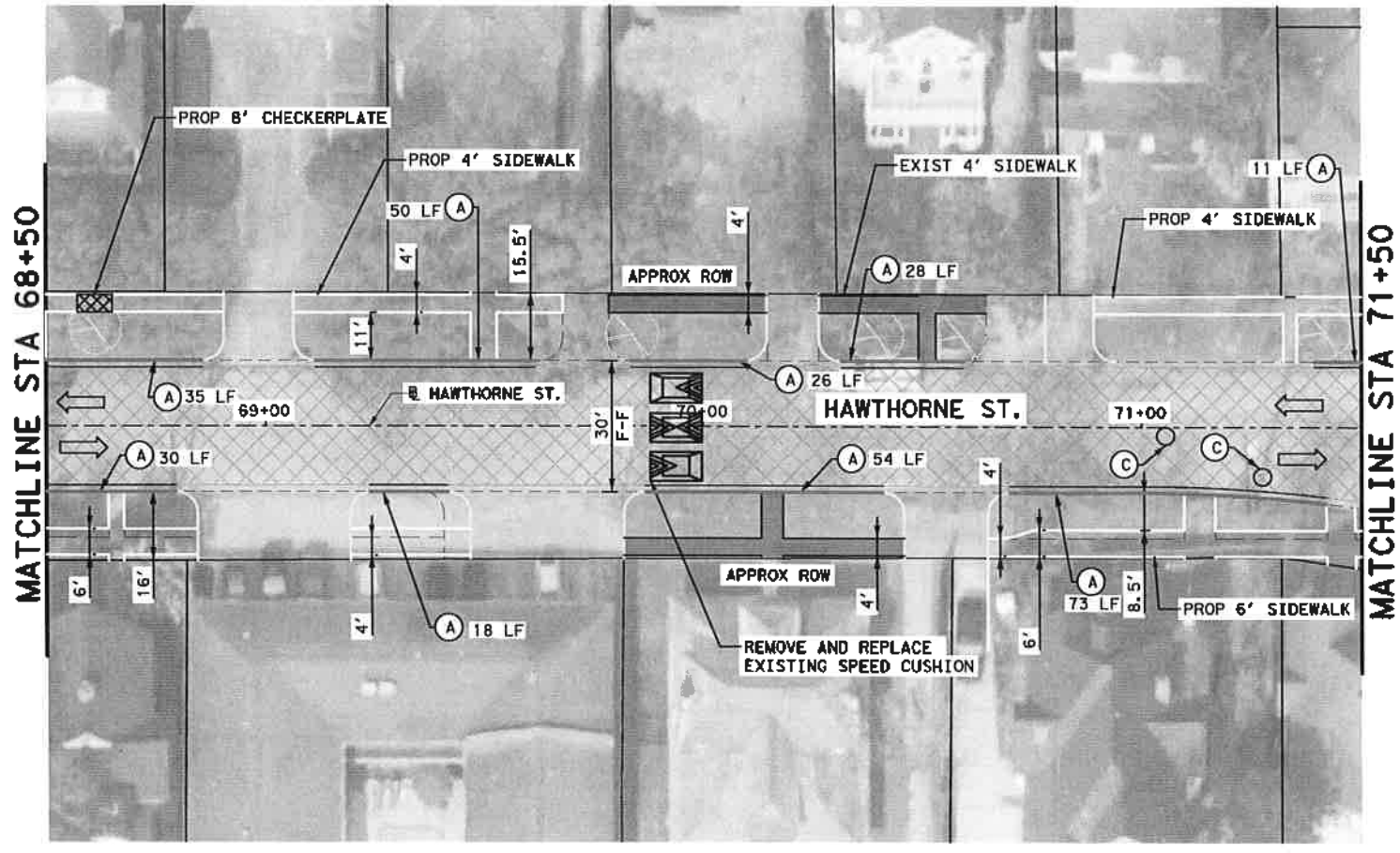
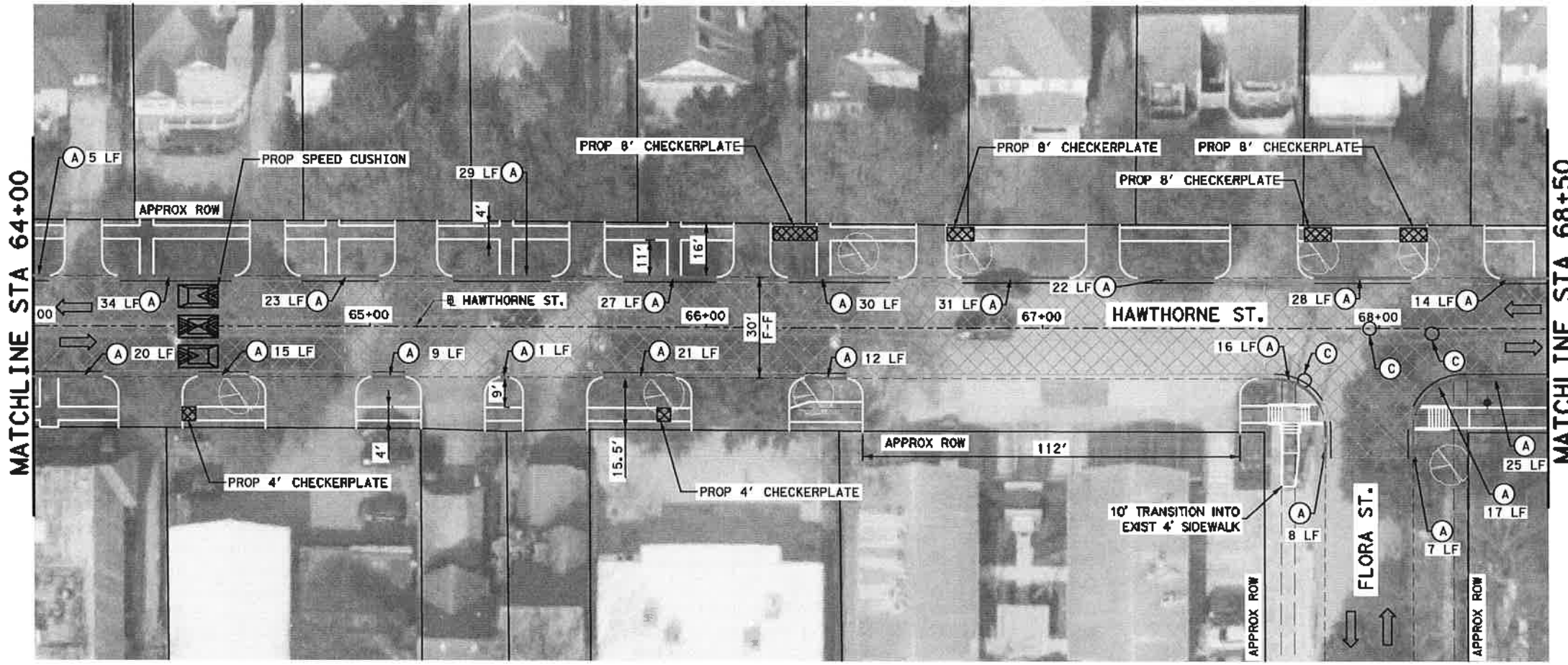
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET ROADWAY
 AND SIDEWALK PLAN
 STA 55+00 TO STA 64+00.**

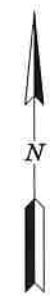
SHEET 8 OF 10

WBS NUMBER N-T27000-002	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON	
SUPPOR BOLSHAM	
SHEET NO. 42 OF 24	

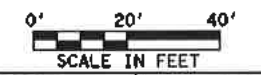


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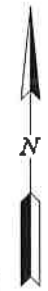
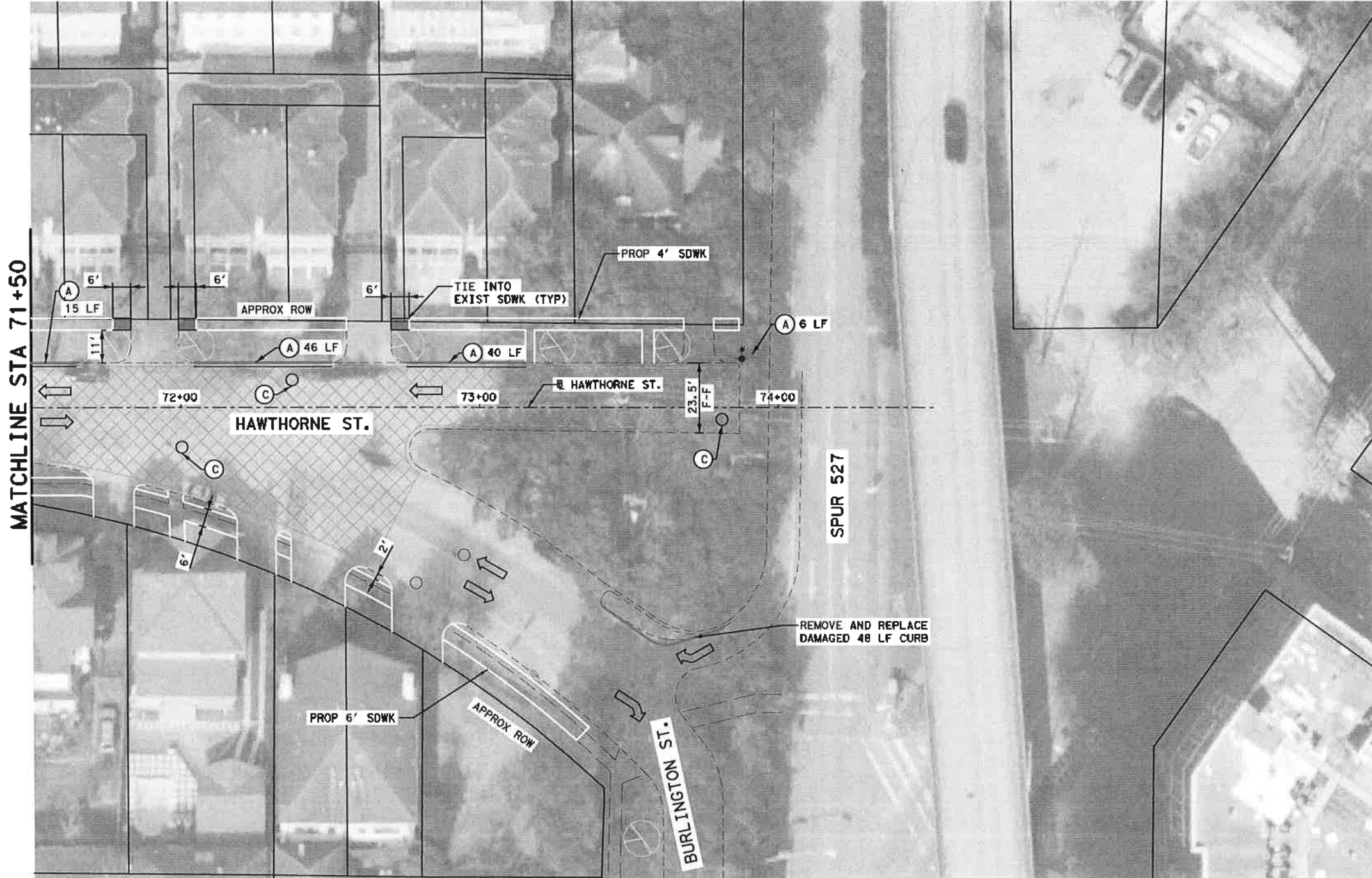
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- (B) MATCH EXIST SIDEWALK
- (C) ADJUST TO GRADE



- NOTES**
1. ALL DISTANCES ARE APPROXIMATE.
 2. ALL INTERSECTIONS AND DRIVEWAYS SHALL BE FEATHERED. SEE PROJECT MANUAL FOR MORE DETAILS.
 3. PROPOSED SIDEWALK SHALL MATCH EXISTING SIDEWALK WIDTH, GRADE, CROSS-SLOPE AT CONNECTION POINTS.
 4. ADJUST ALL MANHOLES RIMS/WATER VALVE BOXES TO PROPOSED GRADE ELEVATION.
 5. PROPOSED SIDEWALK SHALL BE CONSTRUCTED FLUSH WITH NATURAL GROUND. SIDEWALKS SHALL BE CONSTRUCTED TO ADA GUIDELINES WITH MAXIMUM CROSS SLOPE OF 2% AND MAXIMUM RUNNING SLOPE OF 5%.
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 10. OVERLAY FINISHED SURFACE SHALL BE CONSTRUCTED FLUSH WITH EXISTING GUTTER. SEE SHEET 79.
 11. CONTRACTOR TO MATCH EXISTING DRIVEWAY WIDTH.



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SURVEYED BY: <i>[Signature]</i>			
CITY OF HOUSTON			
HOUSTON PUBLIC WORKS			
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS			
HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN			
STA 64+00 TO STA 71+50			
SHEET 9 OF 10			
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY		
N-T27000-002			
DRAWING SCALE	72248		
AS NOTED			
CITY OF HOUSTON			
SHUPOR GOLSHAN			
SHEET NO. 43 OF 247			



LEGEND

- EXIST LANE
- EXIST CURB
- EXIST DRIVEWAY
- PROPOSED DRIVEWAY
- PROPOSED SIDEWALK
- EXIST SIDEWALK TO REMAIN
- PROP 1.5 INCH ASPHALT MILL AND OVERLAY
- PROP CONCRETE MEDIAN
- EXIST INLET
- PROPOSED RAISED MEDIAN
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Gauge
 ENGINEERING
 3200 Wilcrest Drive, Suite 220
 Houston, TX 77042
 www.GaugeEngineering.com
 Texas PE Firm Reg. #F-20017

SURVEYED BY:

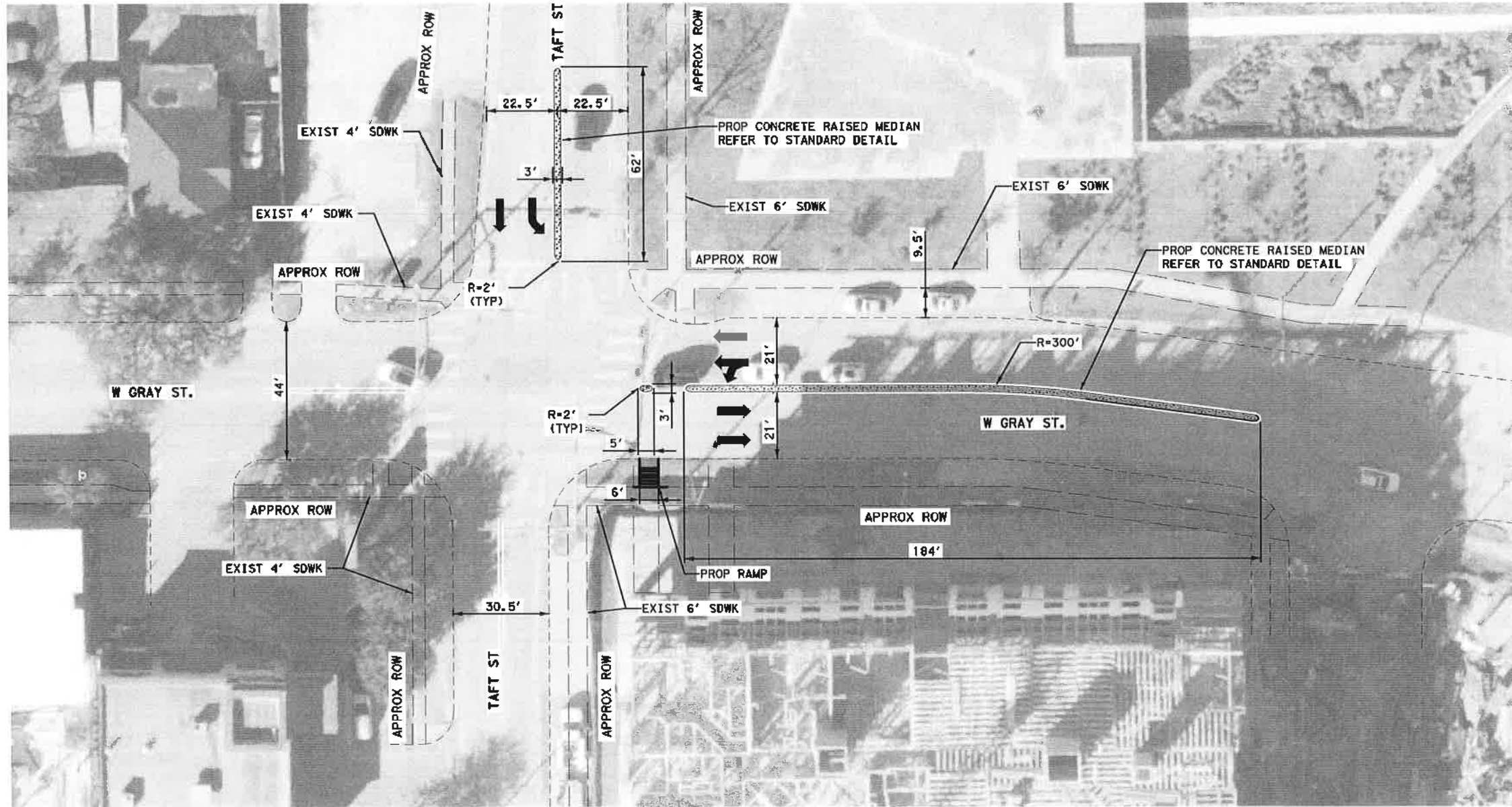
 12/23/2021

STATE OF TEXAS
 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
 HAWTHORNE STREET ROADWAY AND SIDEWALK PLAN
 STA 71+50 TO END PROJECT
 SHEET 10 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	72248
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 44 OF 247	



LEGEND

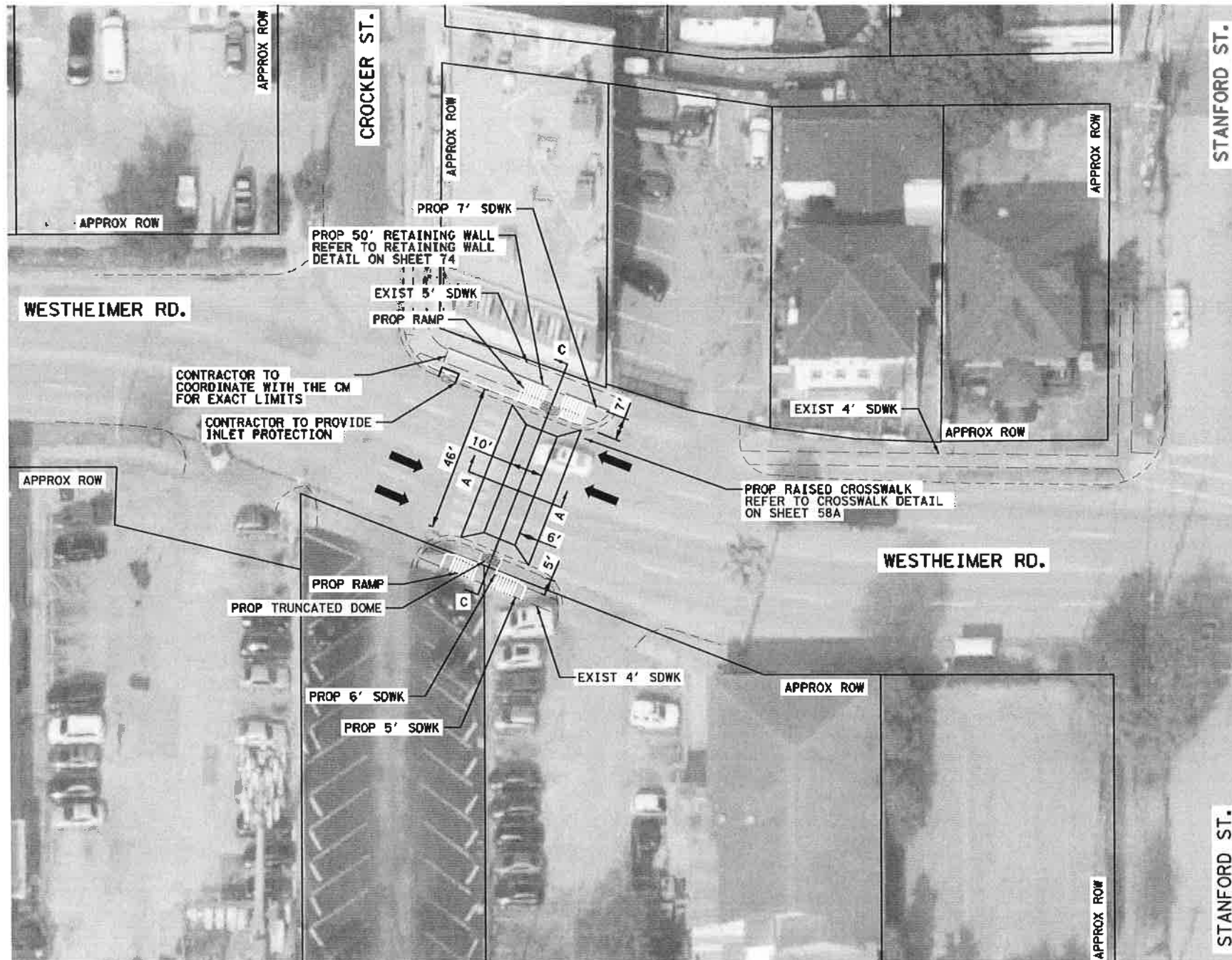
- EXIST LANE
- - - EXIST CURB
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- - - PROPOSED DRIVEWAY
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<p>SURVEYED BY: [Signature]</p>		
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>		
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p>		
<p>TAFT ST AND WEST GRAY ST RAISED MEDIAN</p>		
<p>SHEET 1 OF 1</p>		
<p>WBS NUMBER: N-T27000-0007</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>	
<p>DRAWING SCALE: AS NOTED</p>	<p>7 2 2 4 8</p>	
<p>CITY OF HOUSTON SHAMPOOR GOLSHAN</p>		
<p>SHEET NO. 45 OF</p>		

Design: E | enames | P | V | I | R | Z | 27\1090-TD-4-Hawthorne-Woodhead\4-0-Product\on-Working\4-1-CAD\Roadway\HAWTHORNE-12-TAFT&GRAY.dgn

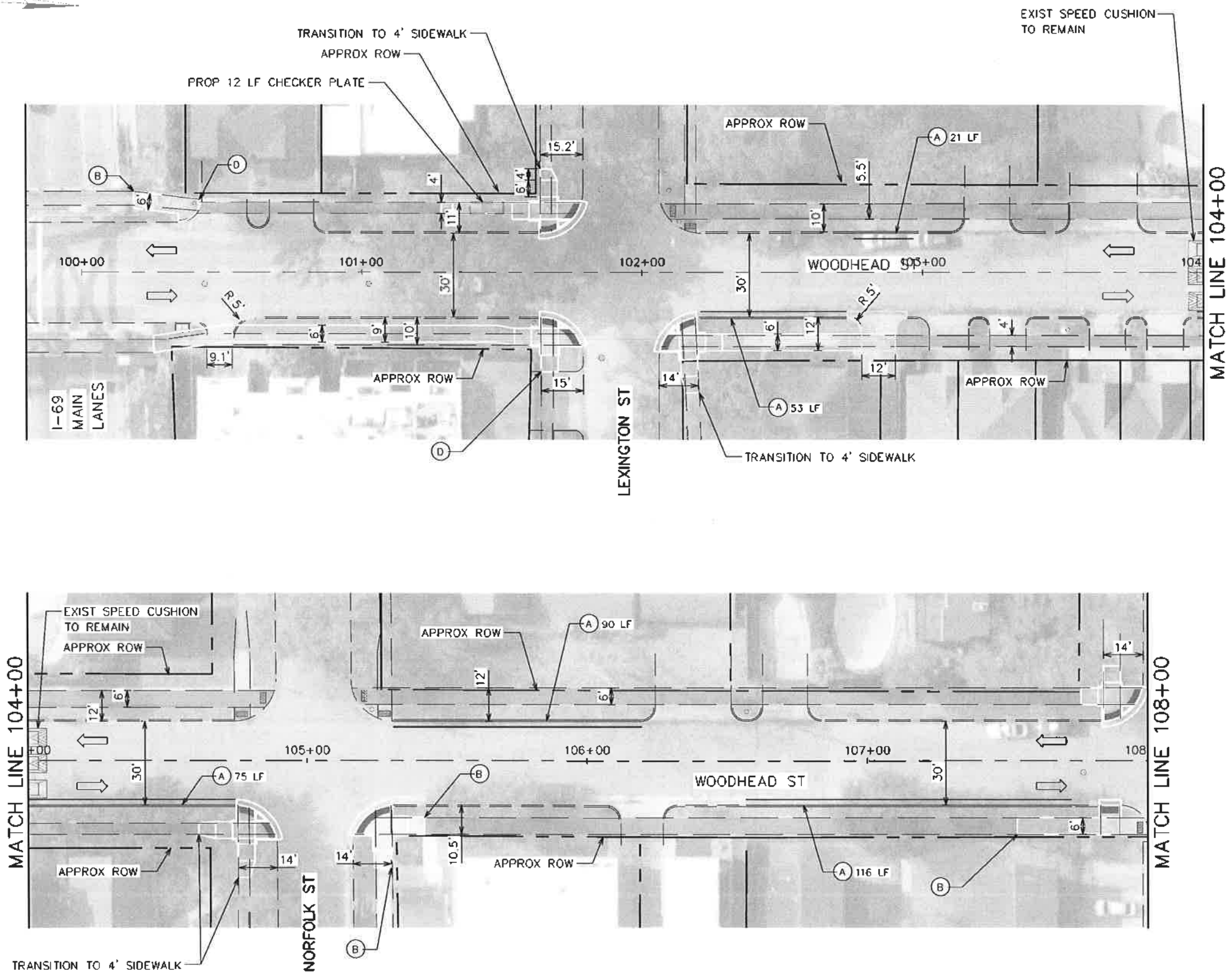


LEGEND

- EXIST LANE
- EXIST CURB
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- EXIST SIDEWALK TO REMAIN
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- SCALE IN FEET

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p> <p>SURVEYED BY: <i>Karam M. Qaddo</i> 12/23/2021</p>	
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p> <p>WESTHEIMER & CROCKER ST RAISED CROSSWALK</p> <p style="text-align: right;">SHEET 1 OF 1</p>	
<p>WBS NUMBER M-127000-002-7</p> <p>DRAWING SCALE AS SHOWN</p> <p>CITY OF HOUSTON, TX SHP00R 600</p> <p>SHEET NO. 46 OF 247</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p style="font-size: 2em; font-weight: bold;">72248</p>



LEGEND

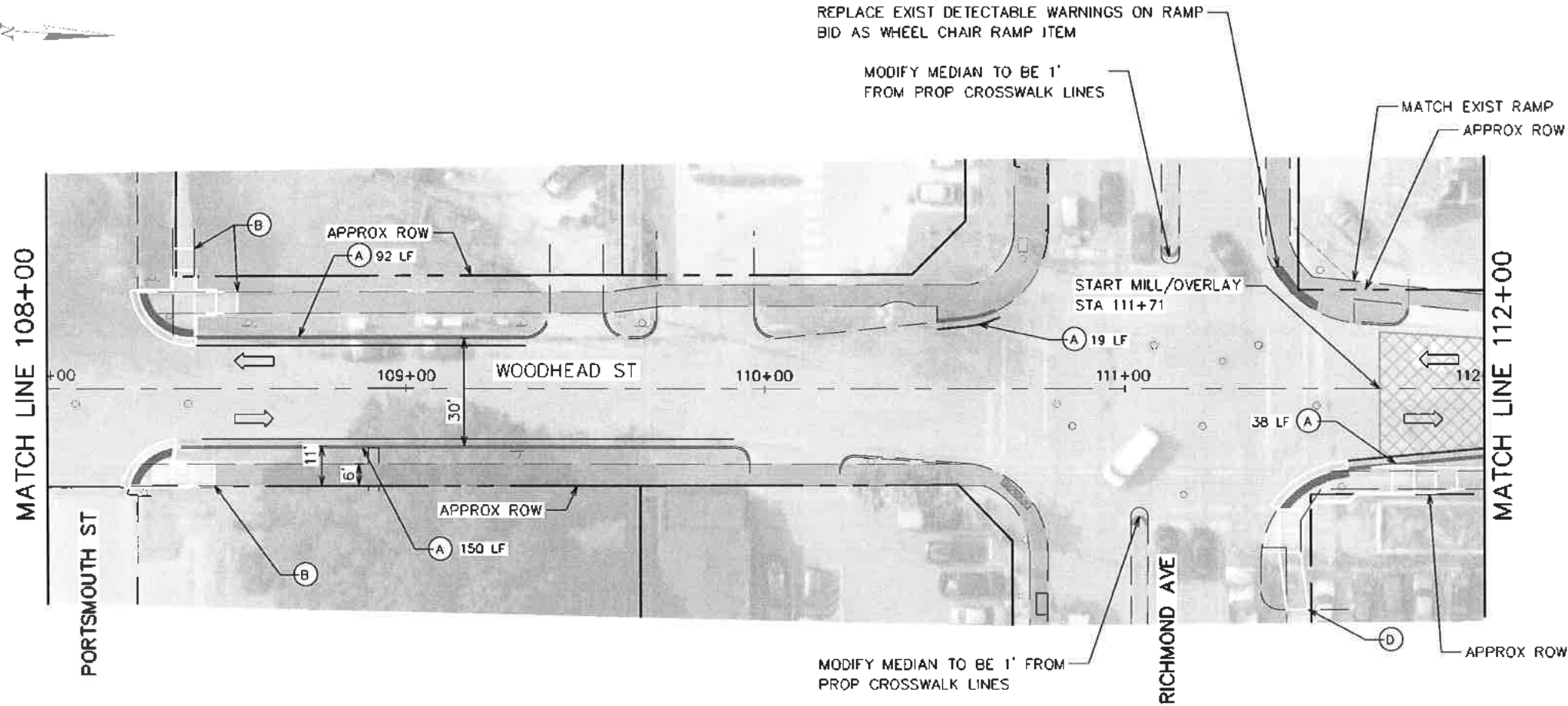
- RIGHT-OF-WAY
- ⇨ EXISTING LANE
- - - EXISTING CURB
- ▬ EXISTING SIDEWALK/DRIVEWAY
- ▬ EXISTING SIDEWALK TO REMAIN
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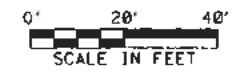
TRAFFIC ENGINEERS, INC. <small>PROFESSIONAL ENGINEERS & SURVEYORS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET ROADWAY AND SIDEWALK PLAN SHEET 1 OF 12		
WBS NUMBER H-127000-00-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON SHAIPOOR GOLSHAN	SHEET NO. 47 OF 247	

Design File Name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\T102 27 Montrose\Design Projects\Woodhead\Design\PlanSet Sheets\Roadway and Sidewalk Plan - Sheet 1.dgn
 INC. DATE: PE:15-04
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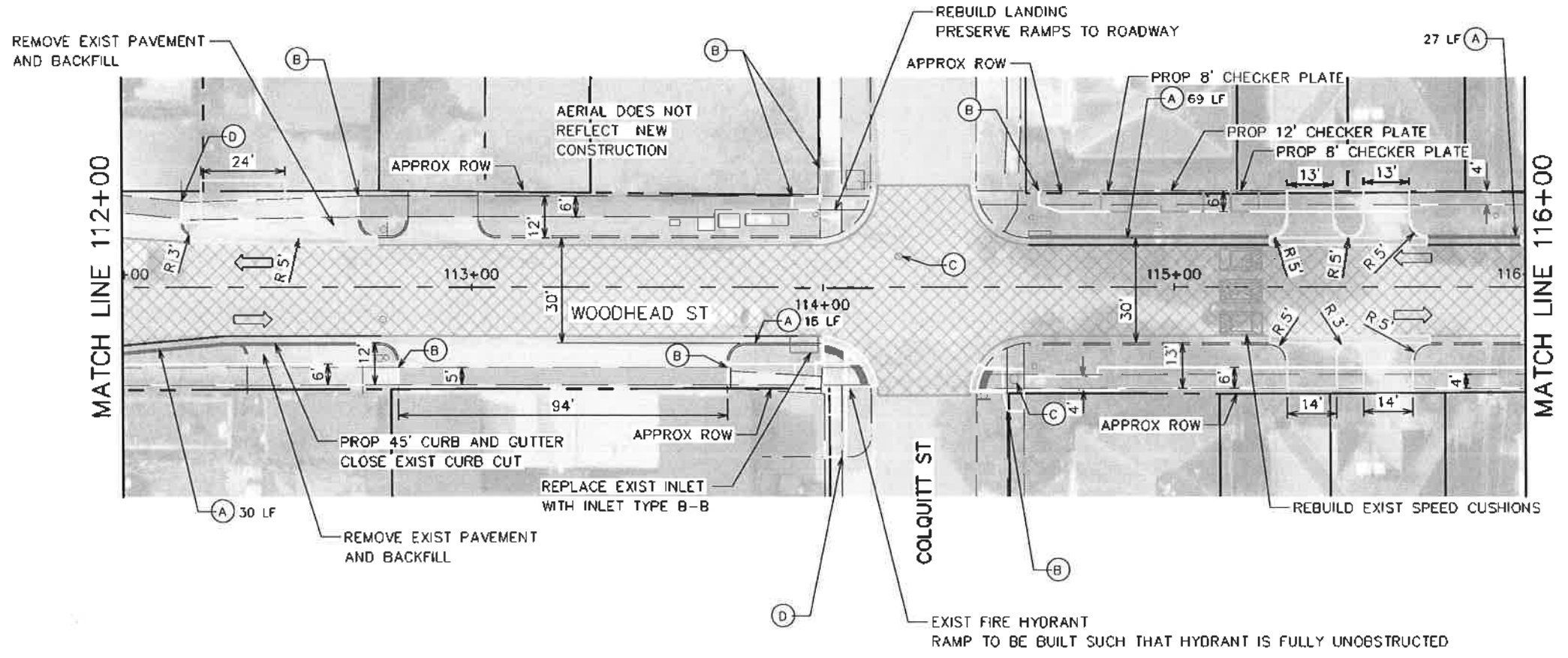


LEGEND

- RIGHT-OF-WAY
- EXISTING LANE
- - - EXISTING DRIVEWAY
- EXISTING SIDEWALK/DRIVEWAY
- EXISTING SIDEWALK TO REMAIN
- ▨ EXISTING DETECTABLE WARNING TO REMAIN
- ▩ 1.5 INCH ASPHALT MILL AND OVERLAY
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- PROPOSED SIDEWALK
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TRAFFIC ENGINEERS, INC.
11/16/2021
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www.TrafficEngineers.com
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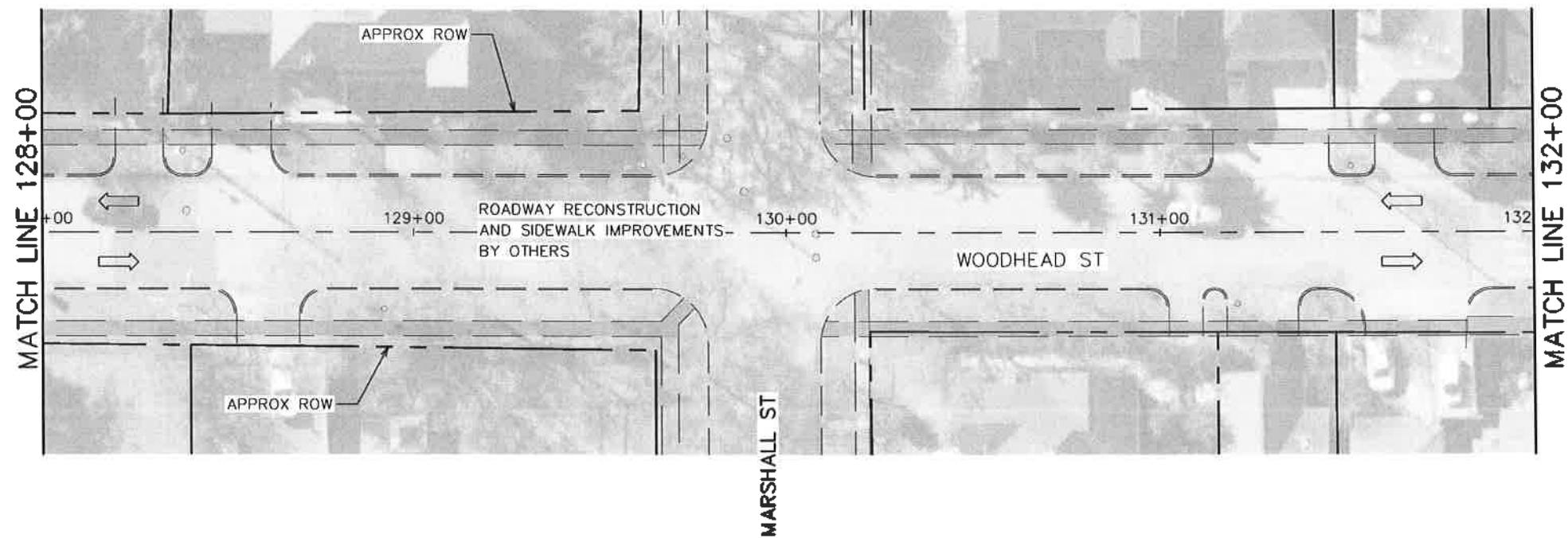
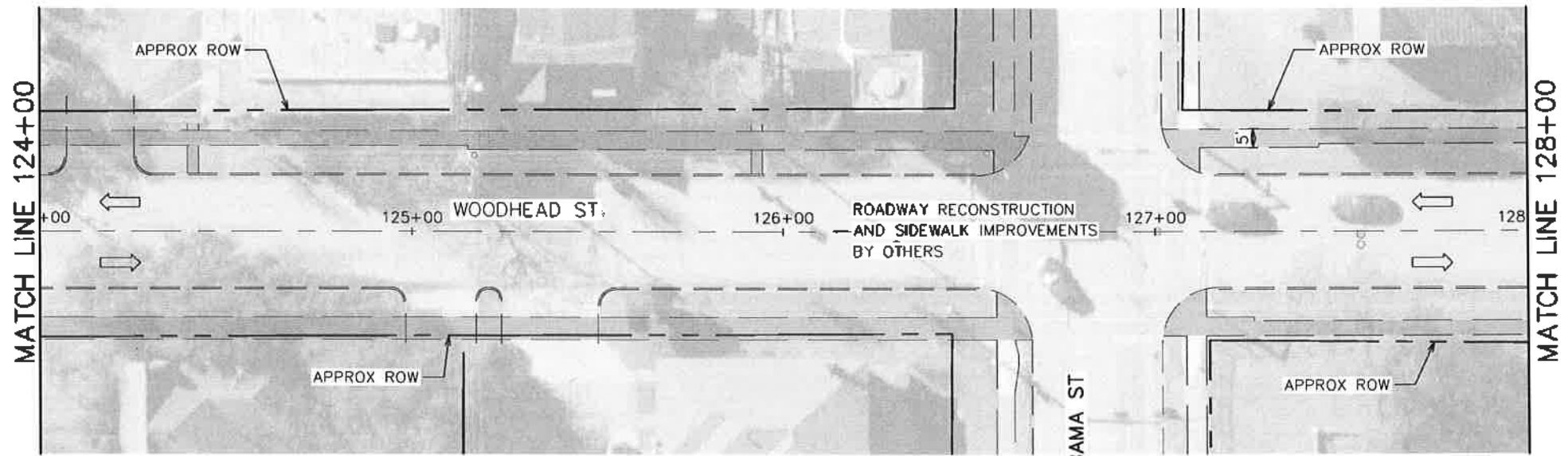
SARAH L. WETMORE
130442
LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WOODHEAD STREET
ROADWAY AND SIDEWALK PLAN
SHEET 2 OF 12

WBS NUMBER: N-127000-0002
FOR CITY OF HOUSTON USE ONLY
AS NOTED
CITY OF HOUSTON PROJECT NO. 2019-0000000000
SHAPOOR GOLSHAN
SHEET NO. 48 OF 247

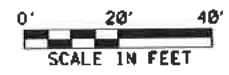
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LEGEND

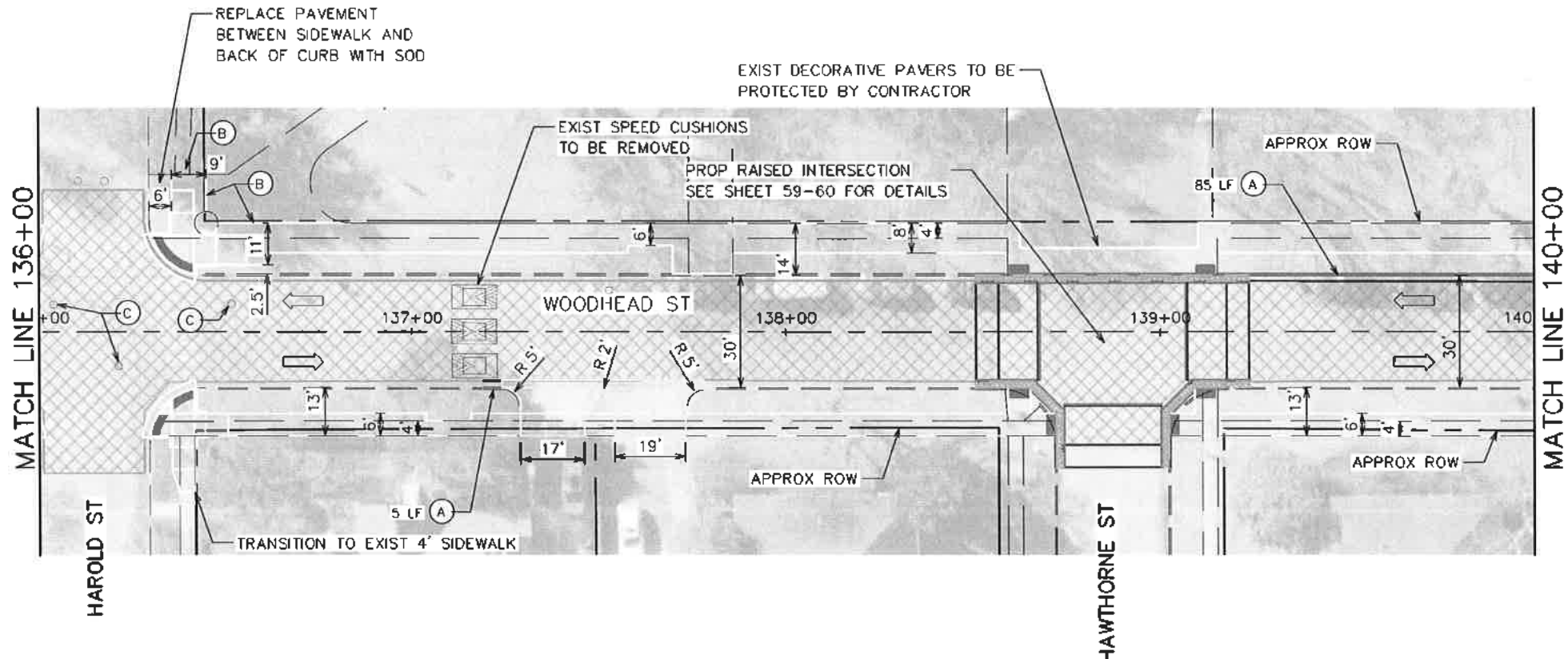
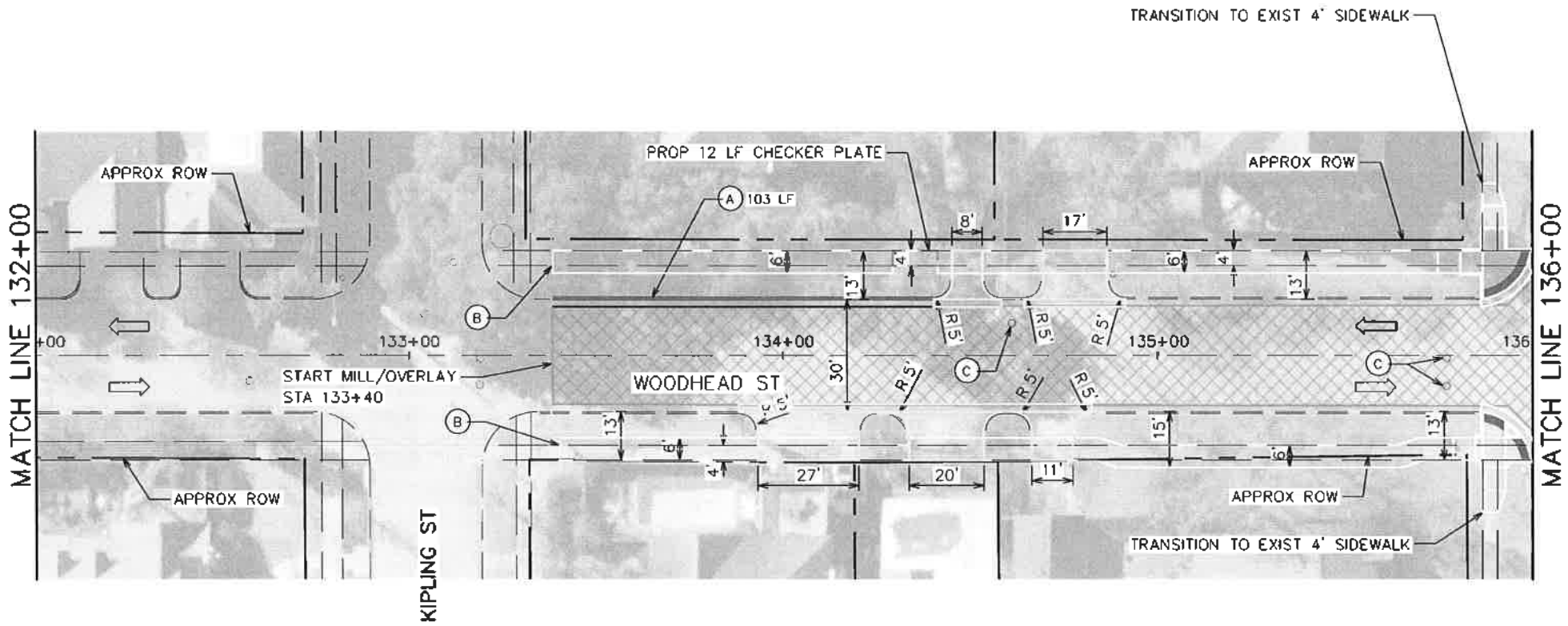
- RIGHT-OF-WAY
- ⇨ EXISTING LANE
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<p>TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</p>		<p><i>Sarah L. Wetmore</i> 11/16/2021</p>
<p>SURVEYED BY:</p>		
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>		
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET ROADWAY AND SIDEWALK PLAN. SHEET 4 OF 12</p>		
<p>WBS NUMBER N-127000-0007</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p style="font-size: 24pt; font-weight: bold; text-align: center;">7 2 2 4 8</p>	
<p>AS NOTED</p>		
<p>CITY OF HOUSTON</p>		
<p>SHAPOOR COLSHAN</p>		
<p>SHEET NO. 50 OF 247</p>		



LEGEND

- RIGHT-OF-WAY
- ⇨ EXISTING LANE
- - - EXISTING CURB
- ▬ EXISTING SIDEWALK/DRIVEWAY
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Sarah L. Wetmore
 11/18/2021

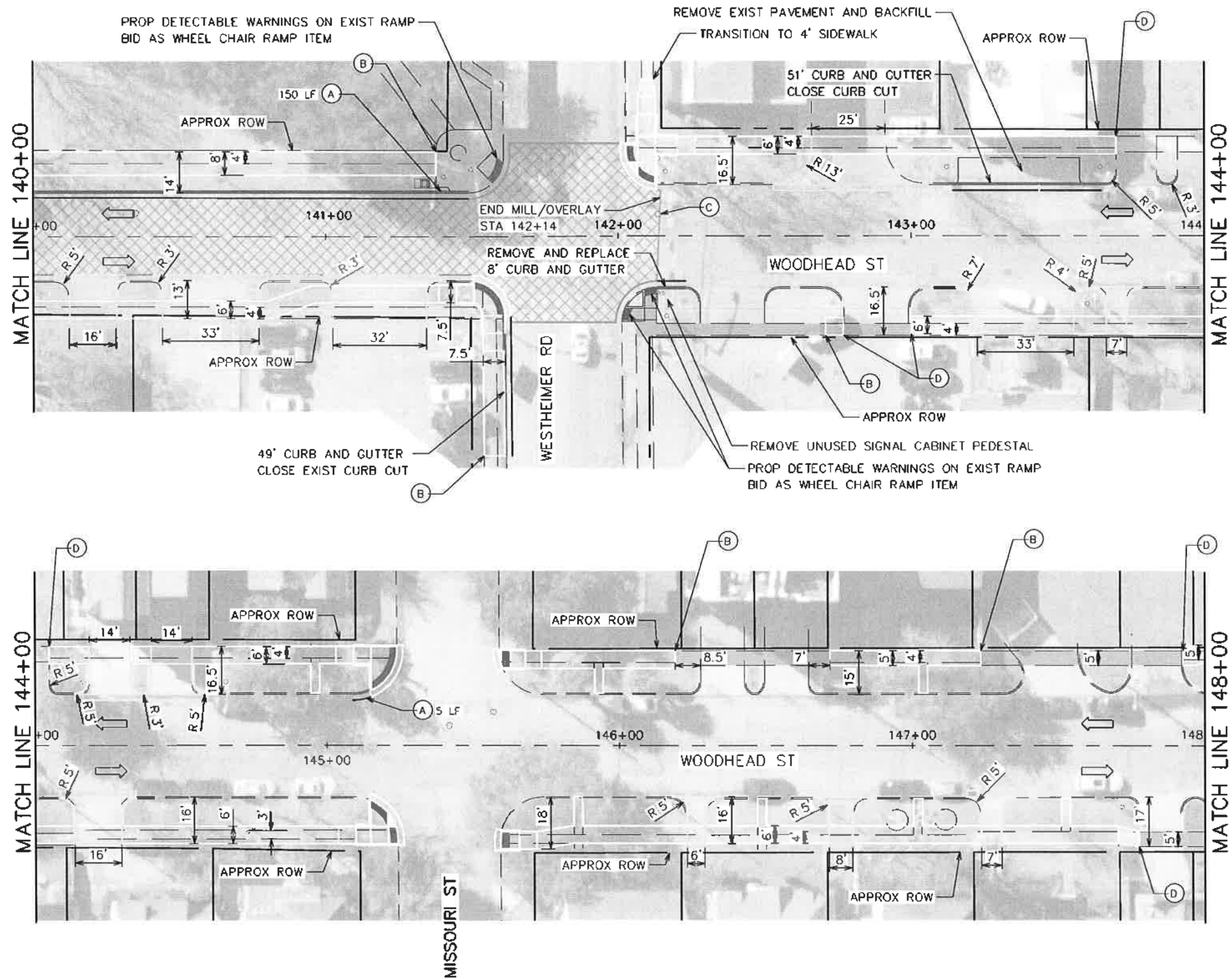
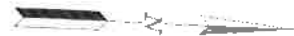
CITY OF HOUSTON
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M-127000-0002	
AS NOTED	
CITY OF HOUSTON PROJECT	
SHAPOOR COLSHAN	
SHEET NO. 51 OF 247	

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Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\11/18/2021 Projects\Woodhead\Design\PlanSet Sheets\Roadway and Sidewalk Plan - Sheet 5.dgn
 NO. DATE REVISION
 1 11/18/2021



LEGEND

- RIGHT-OF-WAY
- ⇨ EXISTING LANE
- - - EXISTING CURB
- EXISTING SIDEWALK/DRIVEWAY
- EXISTING SIDEWALK TO REMAIN
- ▨ EXISTING DETECTABLE WARNING TO REMAIN
- ▩ 1.5 INCH ASPHALT MILL AND OVERLAY
- PROPOSED CONCRETE MEDIAN
- ▬ PROPOSED SIDEWALK
- ▬ PROPOSED CURB AND GUTTER
- ▬ PROPOSED DRIVEWAY
- ▨ PROPOSED DETECTABLE WARNING
- (A) REMOVE AND REPLACE CURB AND GUTTER
- (B) MATCH EXIST SIDEWALK
- (C) ADJUST TO GRADE
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- NOTES**
1. ALL DISTANCES ARE APPROXIMATE.
 2. ALL INTERSECTIONS AND DRIVEWAYS SHALL BE FEATHERED. SEE PROJECT MANUAL FOR MORE DETAILS.
 3. PROPOSED SIDEWALK SHALL MATCH EXISTING SIDEWALK WIDTH, GRADE, CROSS-SLOPE AT CONNECTION POINTS.
 4. ADJUST ALL MANHOLES/RIMS/WATER VALVE BOXES/METER BOXES TO PROPOSED GRADE ELEVATION.
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 10. OVERLAY FINISHED SURFACE SHALL BE CONSTRUCTION FLUSH WITH EXISTING GUTTER. SEE SHEET 77.

TRAFFIC ENGINEERS, INC.
INCORPORATED IN AND REGISTERED IN TEXAS
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3156

11/16/2021
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 ROADWAY AND SIDEWALK PLAN
 SHEET 6 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-0002-7	
AS NOTED	72248
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 52 OF 247	

Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\TRZ 27 Monrose\Design Projects\Woodhead\Design\PlanSet Sheets\Roadway and Sidewalk Plan - Sheet 6.dgn
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 REV: 01

SWetmore

10:18:40 PM

Plotted on: 11/16/2021

Pen Table: color; pens=MOD; tdl
Plot Driver: USTN+PDF+Color; plrctg

4X PROP BOLLARDS AT CORNERS OF UTILITY CABINET
SEE SHEET 75 BOLLARD DETAIL
NOT TO OBSTRUCT PEDESTRIAN CLEAR AREA

REMOVE EXIST PAVEMENT AND BACKFILL

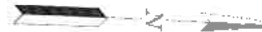
50' CURB AND CUTTER
CLOSE EXIST CURB CUT

TRANSITION TO 4' SIDEWALK
(A) 8 LF WEST OF EXIST INLET

TRANSITION TO 4' SIDEWALK
(A) 60 LF

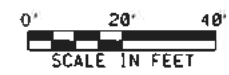
MILL/OVERLAY 5' ON BOTH SIDES OF REBUILT SPEED HUMP

APPROX ROW



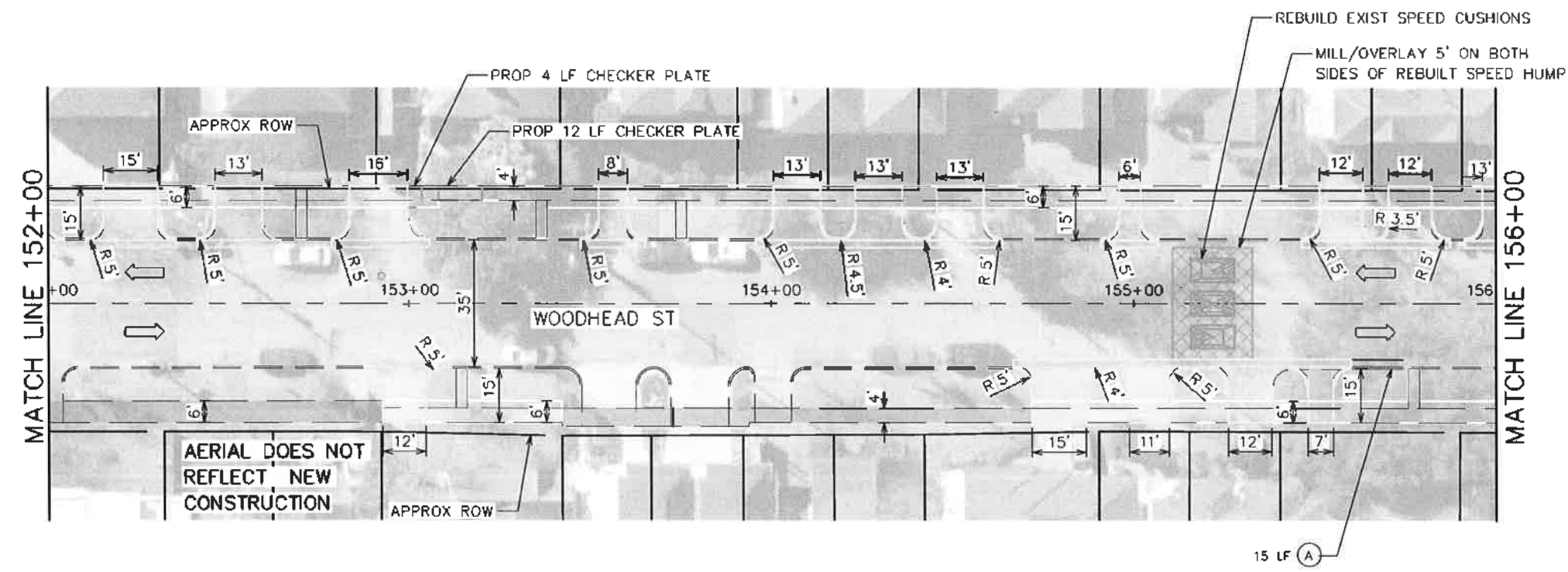
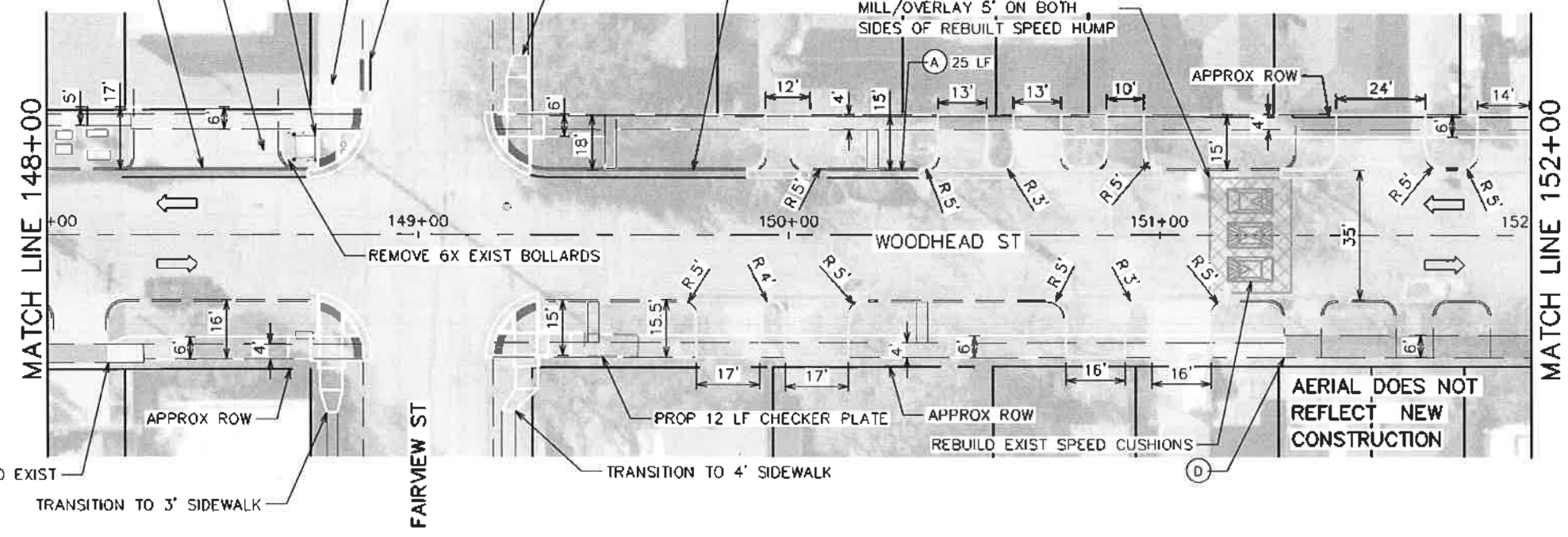
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NOTES

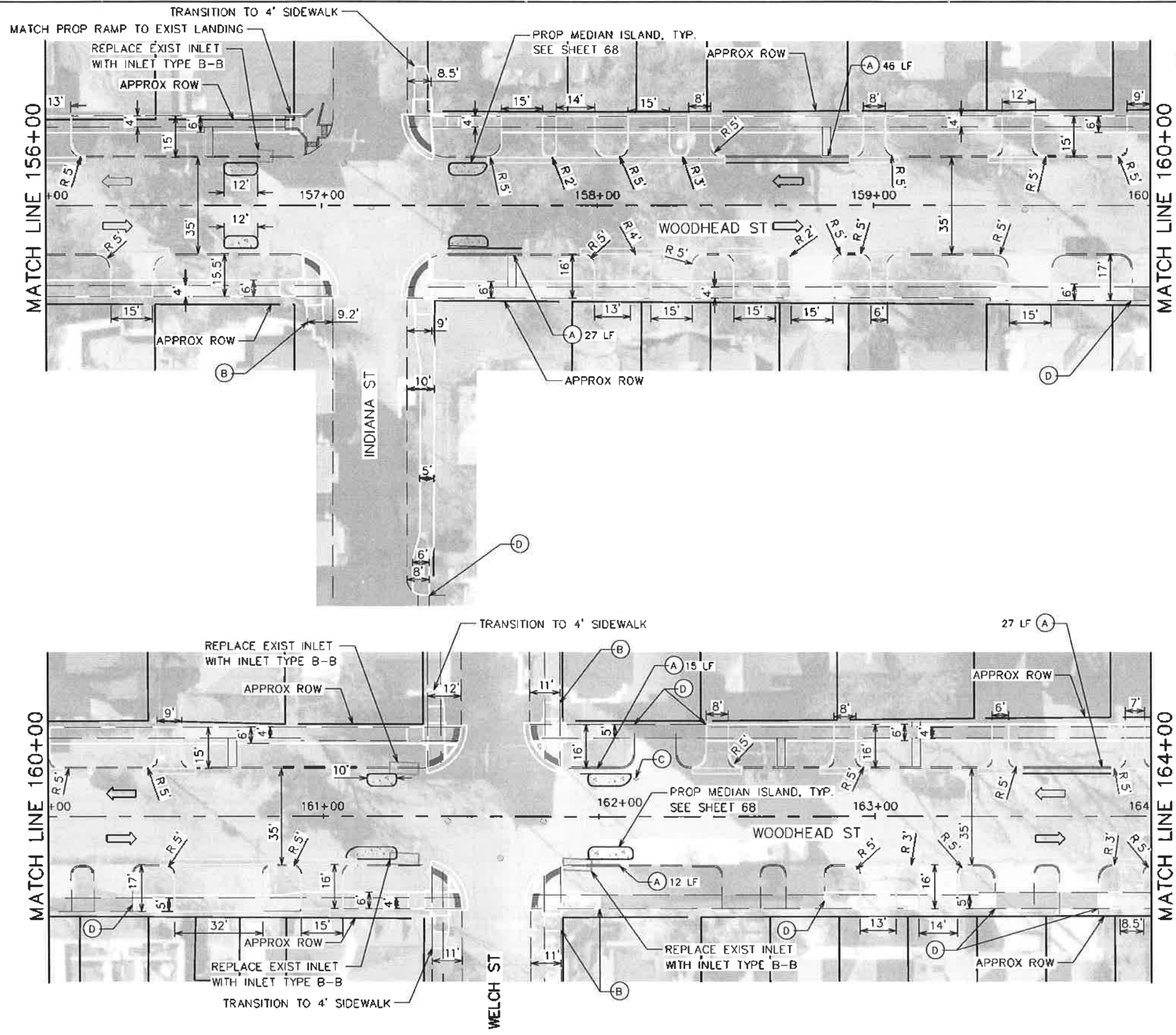
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TRAFFIC ENGINEERS, INC. 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURETY: RY		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET ROADWAY AND SIDEWALK PLAN SHEET 7 OF 12		
WBS NUMBER H-127000-00-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON SHAFIQUR COLSHAN		
SHEET NO. 53 OF 247		

Design File Name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\1127 27 Montrose\Design\1127 27 Montrose\Woodhead\Design\Final\Sheet 7.dgn

Pen Table: color+pens+WD, rbj
 Plot Driver: LUSTN+PDF+Color, dlfcfg
 Plotted on: 11/16/2021 10:18:50 PM Swetmore



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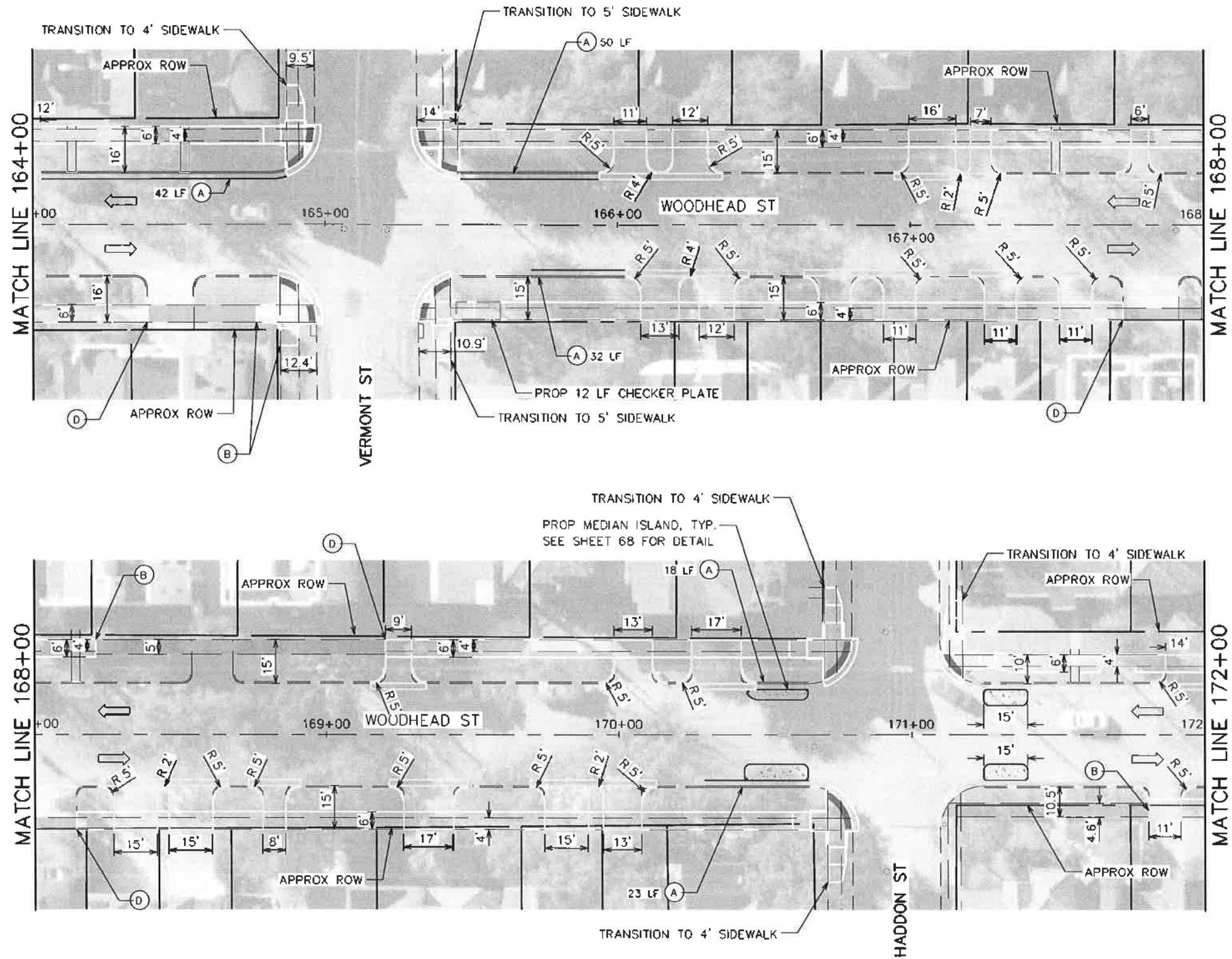
TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
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Sarah L. Wetmore
 11/15/2021
 STATE OF TEXAS
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
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 ROADWAY AND SIDEWALK PLAN
 SHEET 8 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-Z	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON	
SHAPOR GOLSHAN	
SHEET NO. 54 OF 241	

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LEGEND

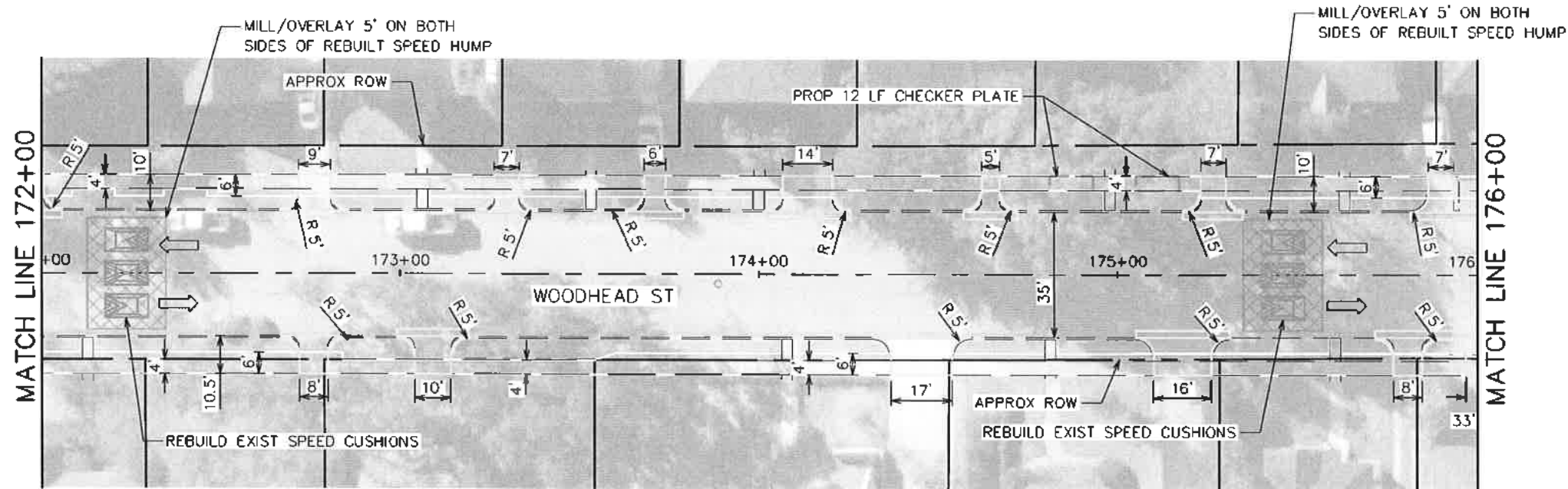
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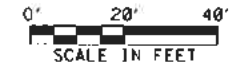
TRAFFIC ENGINEERS, INC. <small>INDEPENDENT ENGINEERING & CONSULTING</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SIGNED BY: <i>Sarah L. Wetmore</i>		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET ROADWAY AND SIDEWALK PLAN SHEET 9 OF 12		
WBS NUMBER N-T27000-000	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>	
AS NOTED CITY OF HOUSTON SHARPOOR GOLSHAN	SHEET NO. 55 OF 24	

Project: Woodhead St Intersection
 Date: 11/16/2021
 Sheet: 9 of 12
 Designer: Sarah L. Wetmore
 Checker: Sharpoor Golshan



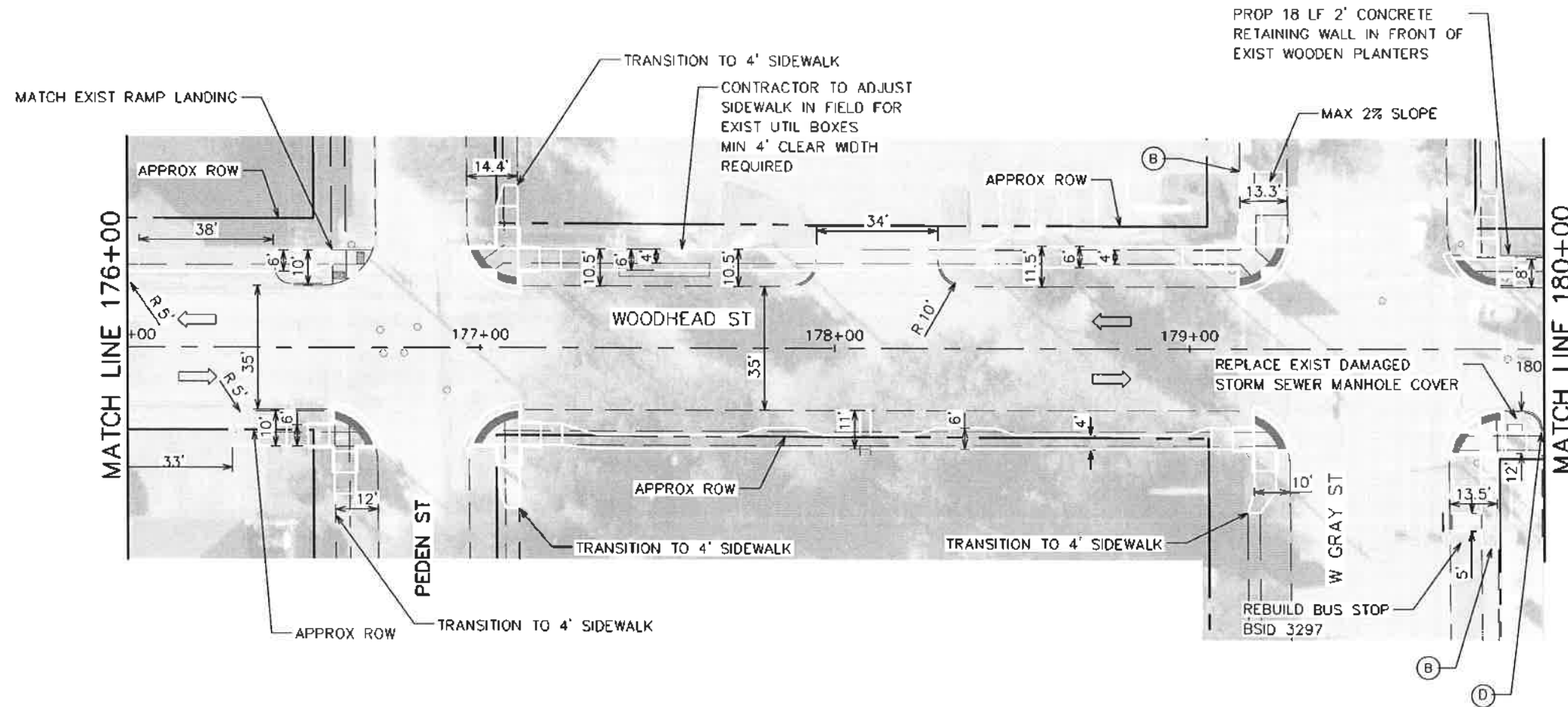
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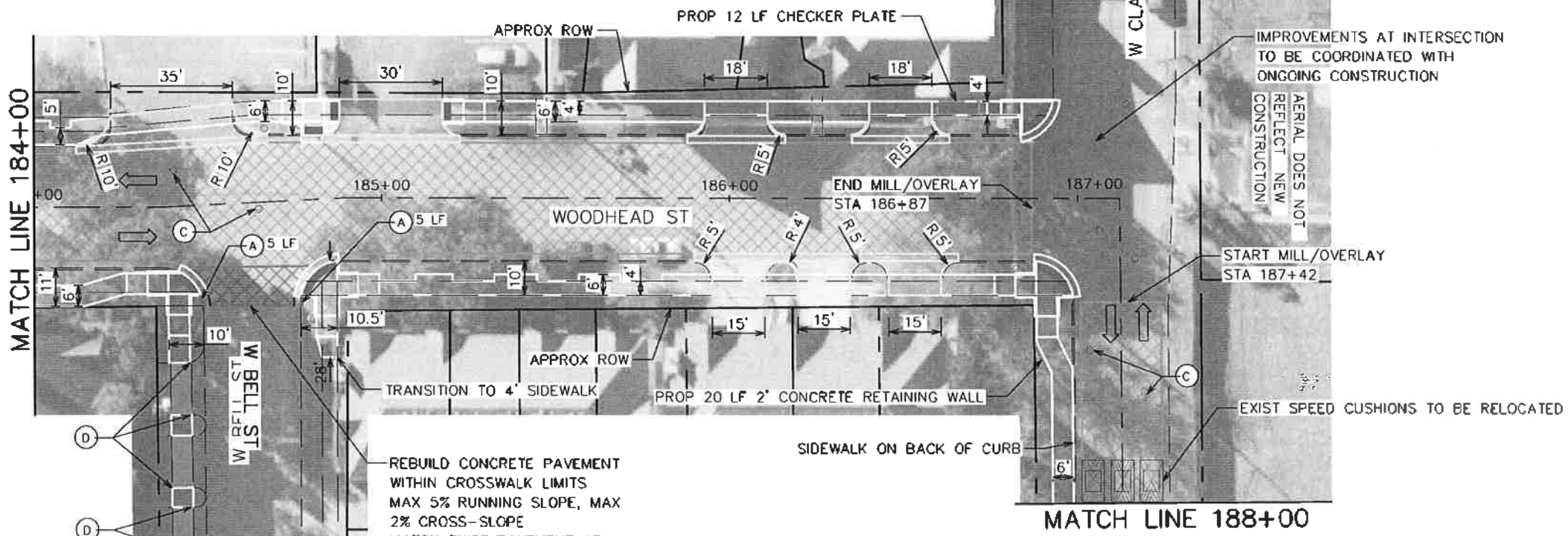
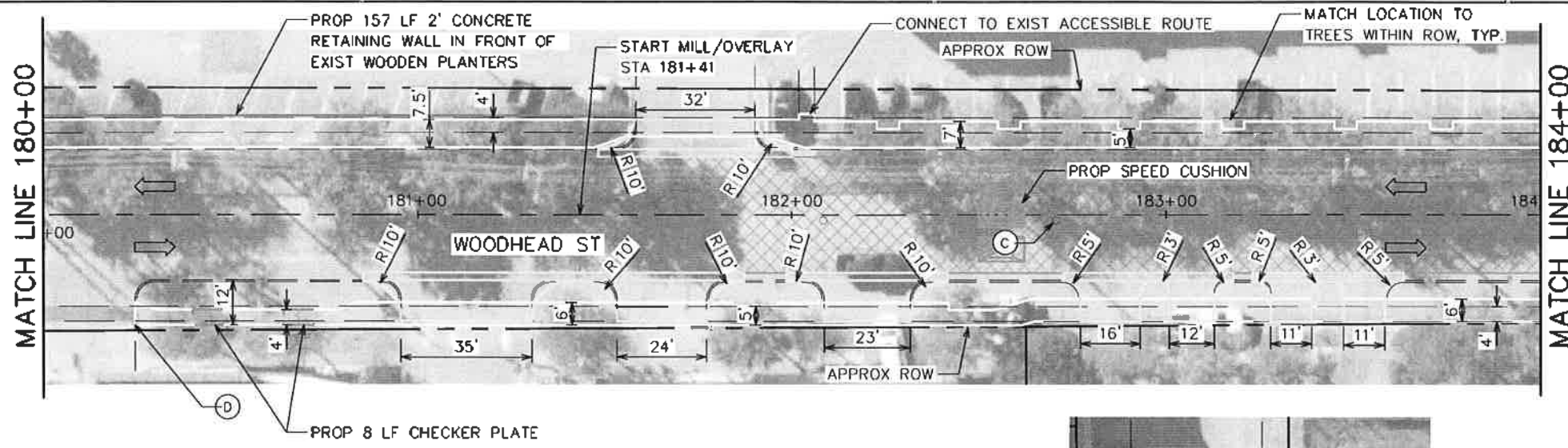
TRAFFIC ENGINEERS, INC.
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11/15/2021
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 SHEET 10 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM	
SHARON GOLSHAN	
SHEET NO. 56 OF 241	

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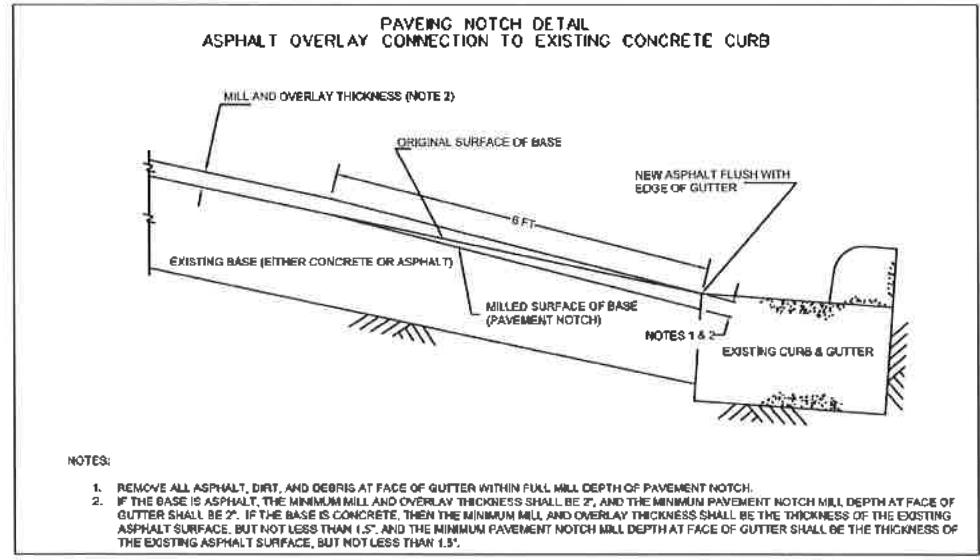


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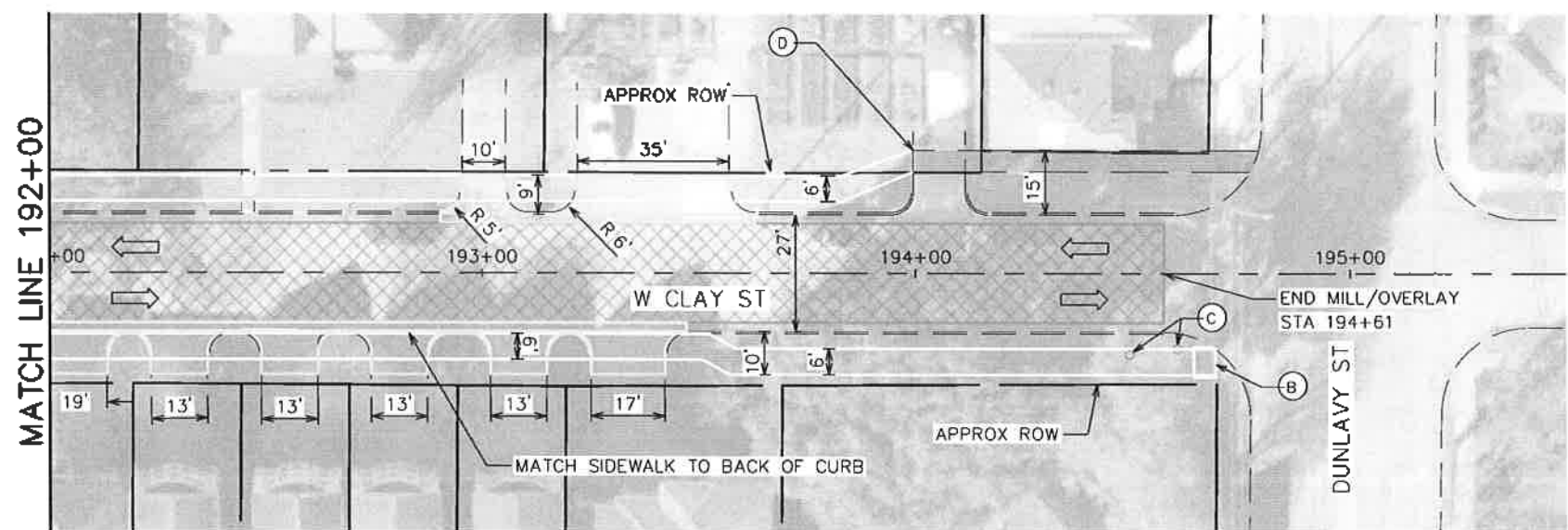
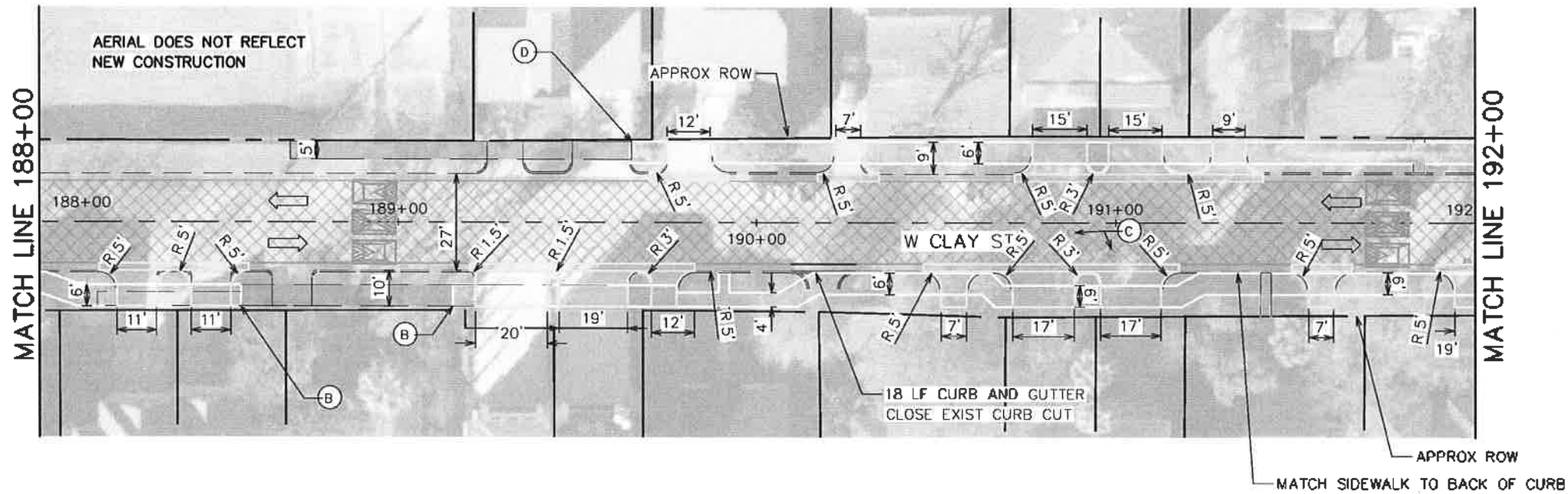
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CITY OF HOUSTON
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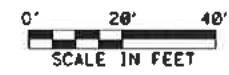
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 CITY OF HOUSTON PH
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FOR CITY OF HOUSTON USE ONLY
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LEGEND

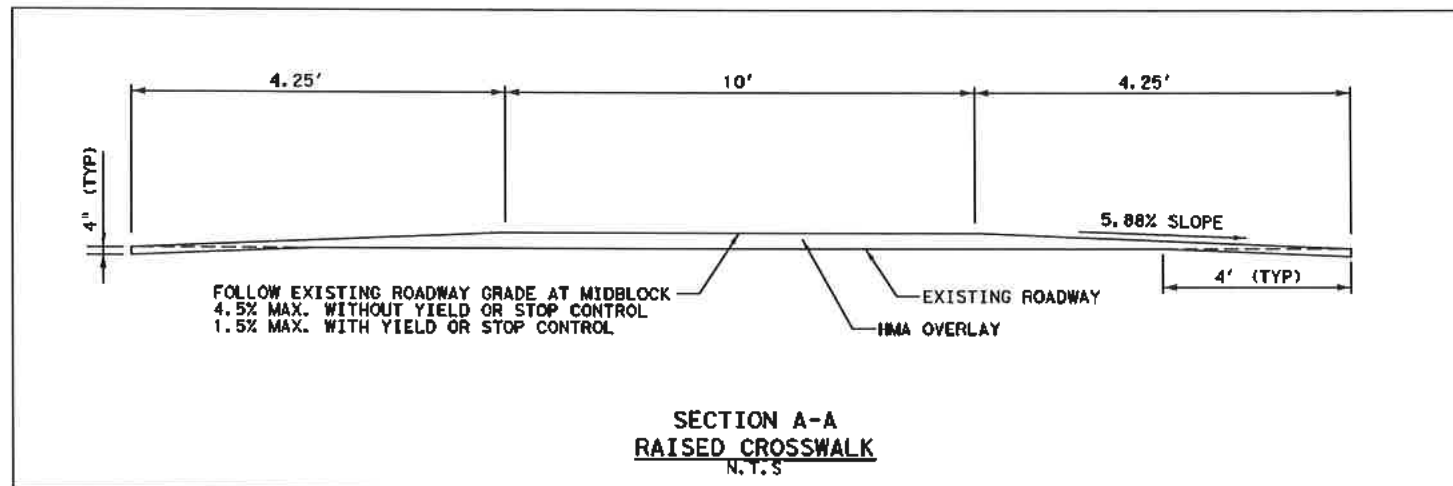
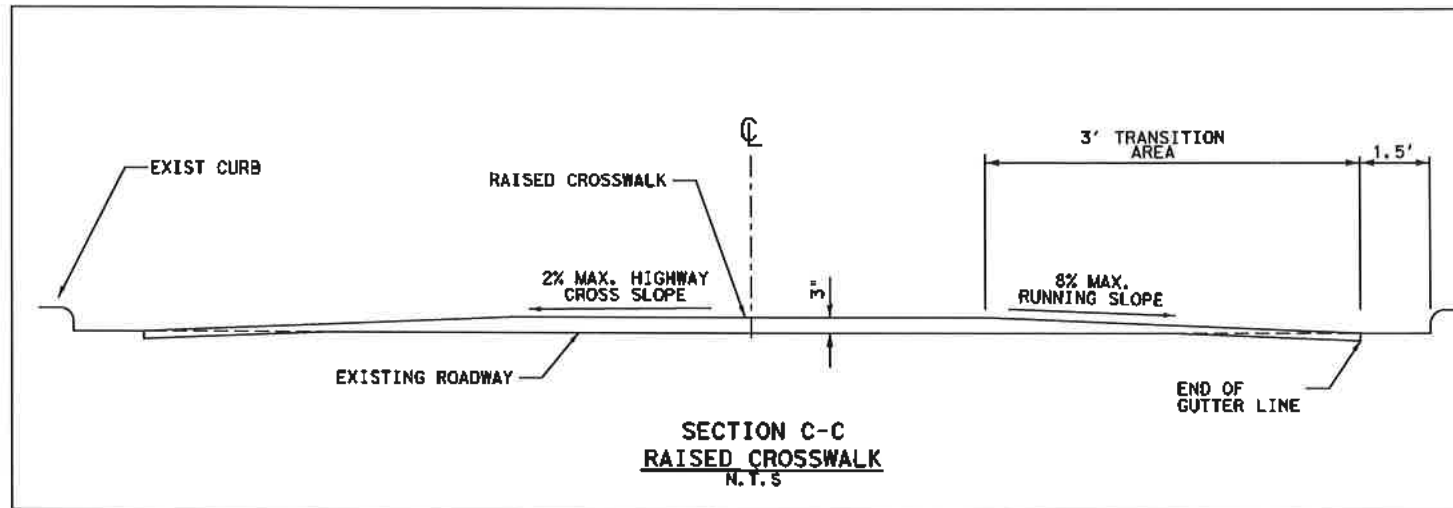
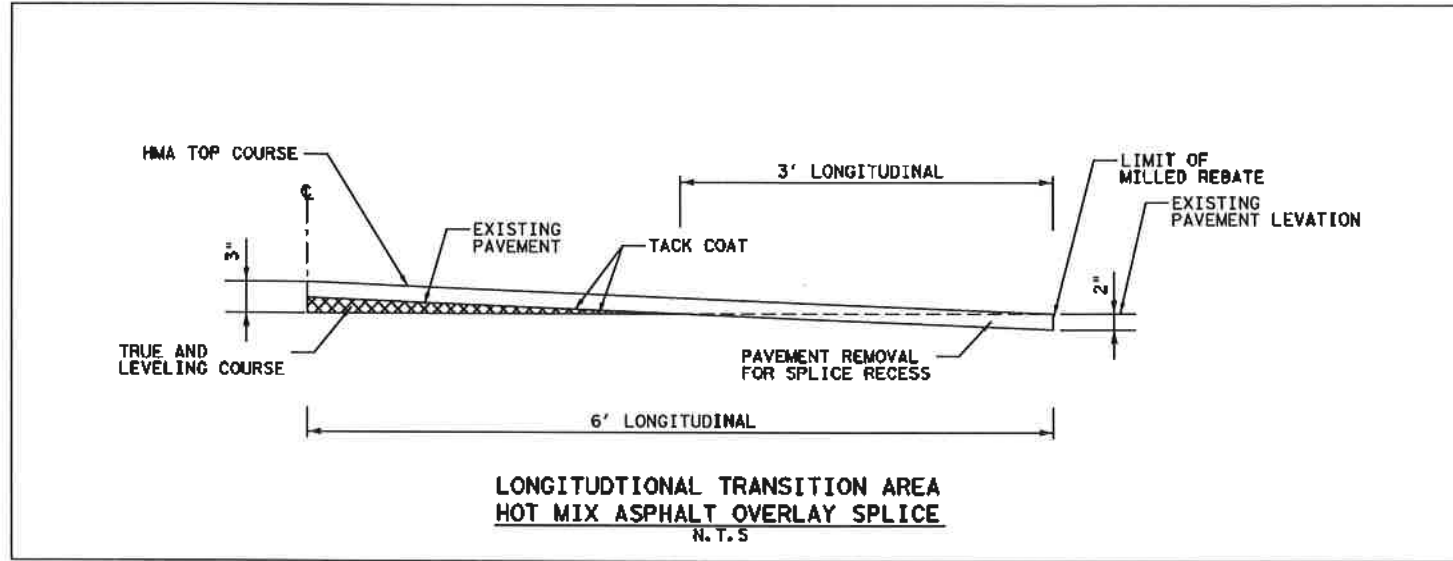
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 9. OVERLAY FINISHED SURFACE SHALL BE CONSTRUCTION FLUSH WITH EXISTING GUTTER. SEE SHEET 77.

TRAFFIC ENGINEERS, INC. <small>801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</small>		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET ROADWAY AND SIDEWALK PLAN SHEET 12 OF 12		
WBS NUMBER N-T27000-04-1-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>	
AS NOTED CITY OF HOUSTON SAMPUR GOLSHAN SHEET NO. 58 OF 2		

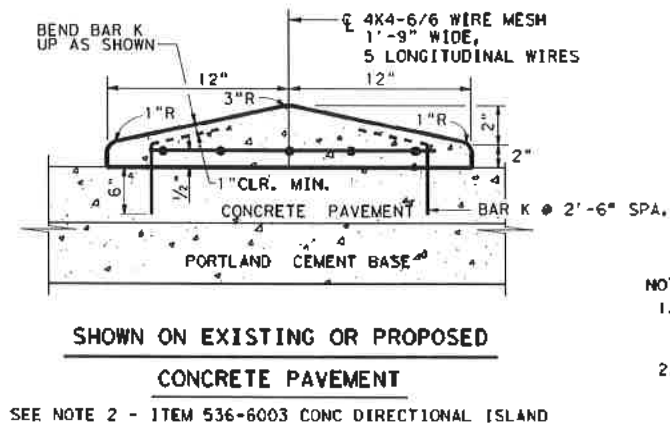
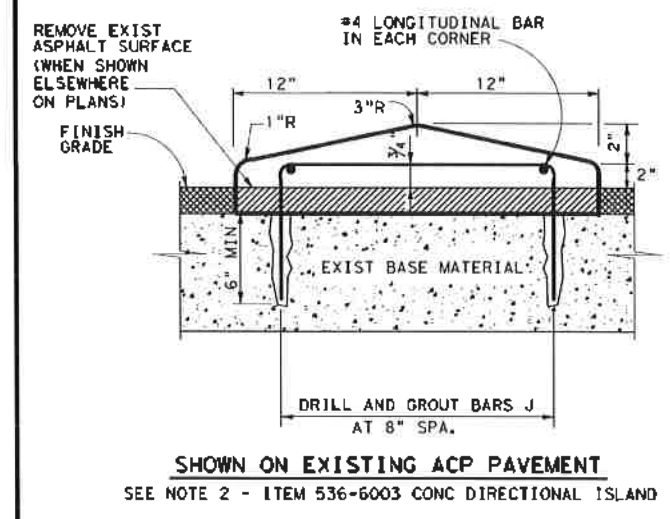
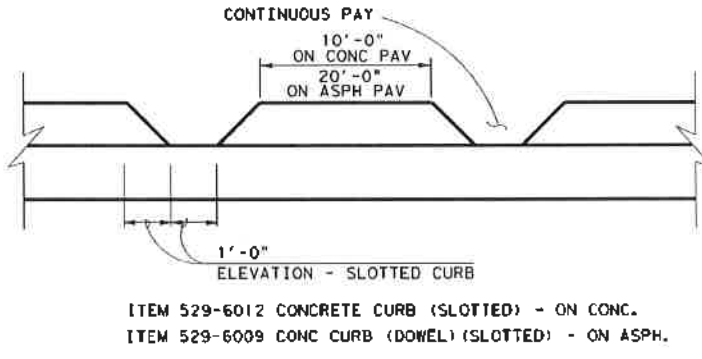
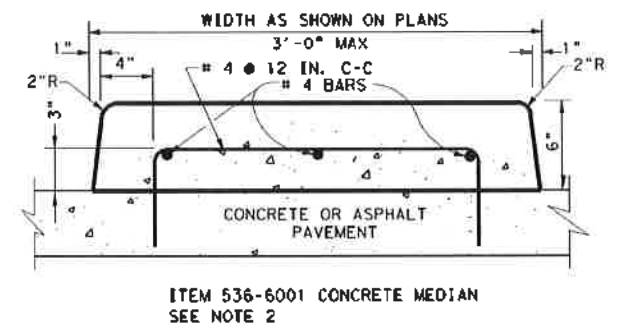
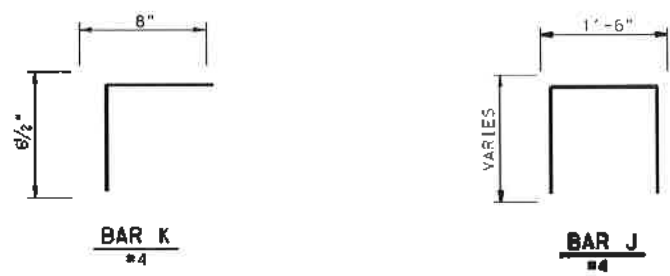
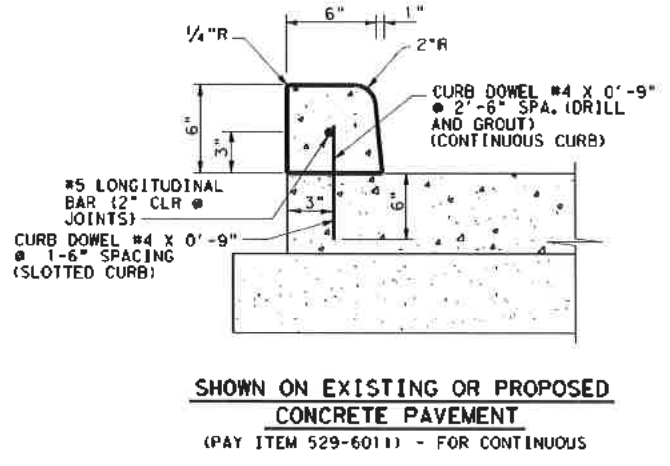
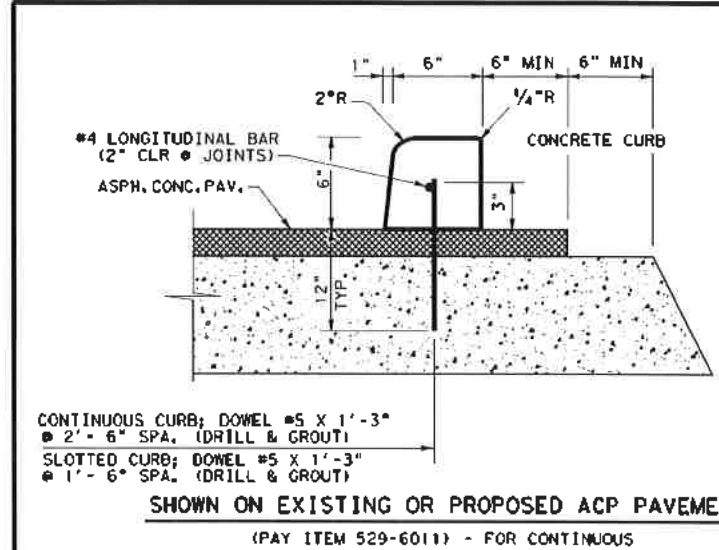
Des: [Name], E: [Email], [Address] (Traffic Engineers) \Clients\Gauge Engineering\TRZ 27 Monrose\Design Projects\WoodHead\Design\PlanSet Sheets\Roadway and Sidewalk Plan - Sheet 12.dgn
 NO. DATE REVISION APP.



NO.	DATE	REVISION	APP.

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>		
SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS RAISED CROSSWALK DETAIL		
SHEET NO. 58A OF 24		SHEET 1 OF 1
WBS NUMBER: N-127000-02-1 DRAWING SCALE: AS NOTED CITY OF HOUSTON SHAPOR GOLSIAN	FOR CITY OF HOUSTON USE ONLY 2248	

NO.	DATE	REVISION	APP.



- NOTES:
- DRILL AND GROUT BARS SHOWN AS PER ITEM 420, 4, 7, 10, 6" EMBEDMENT, MINIMUM ON CONC.
 - INSTALL A 2 INCH DRAINAGE OPENING AT 10 FT C-C WHEN CURB/ISLAND IS NOT ON TOP OF CROSS SECTION. (LOCATED ON A 2 OR 3 PERCENT TRANSVERSE GRADE, OR SUPERELEVATION.)

CONCRETE DIRECTIONAL ISLAND

Texas Department of Transportation
 Houston District

CONCRETE CURB AND DIRECTIONAL ISLAND DETAILS
 CC & DID

FILED	STDB-9.dgn	DATE	2014	DIST	HOU	CD	6	PROJECT NO.		SHEET	
REVISED		NO.		COUNTY		CONTROL		SECT		JOB	

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 Houston, TX 77042
 www.GaugeEngineering.com
 Texas PE Firm Reg. #F-20017

STATE OF TEXAS
 KARAM M. GADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

SURVEYED BY:

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET IMPROVEMENTS
 CONCRETE CURB AND DIRECTIONAL ISLAND
 DETAIL CC & DID
 SHEET 1 OF 1

RBS NUMBER: N-T27000-002-
 DRAWING SCALE: AS NOTED
 CITY OF HOUSTON PM: SIMPOOR GOLSHAN
 SHEET NO. 59 OF 247

72248

SWetmore

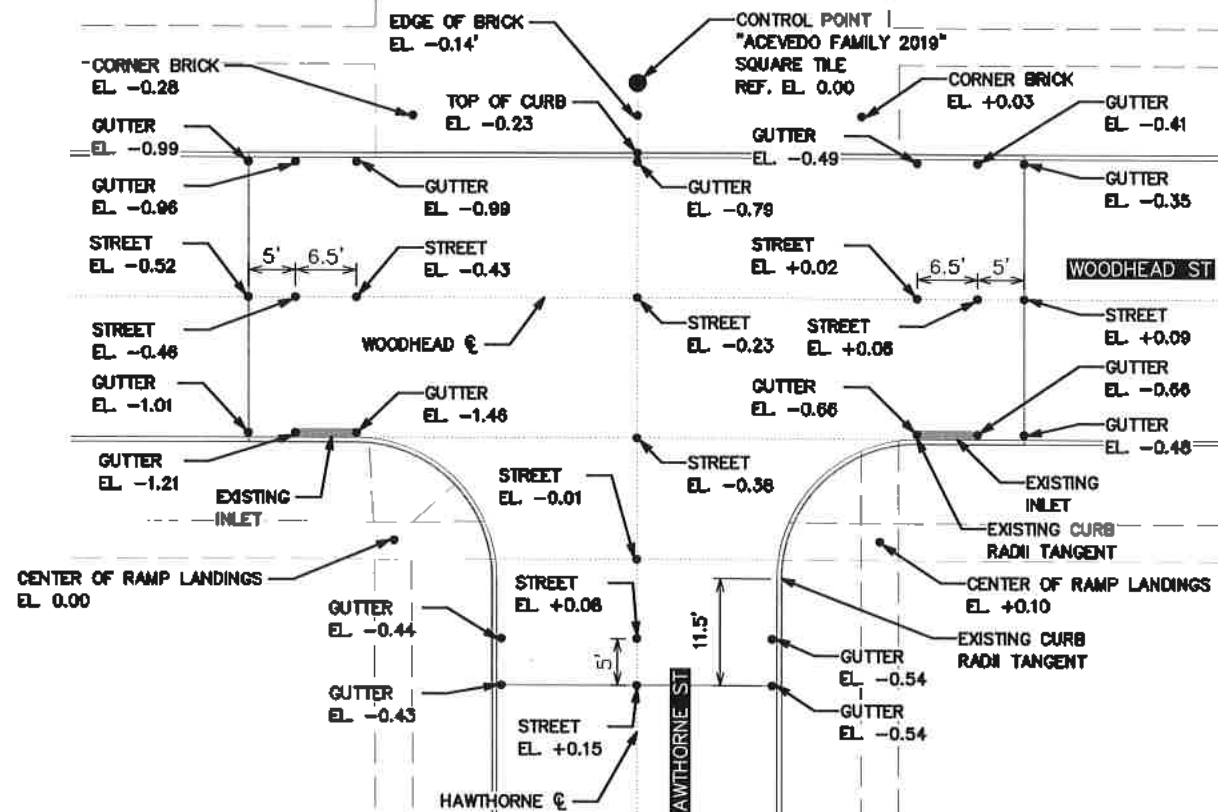
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12/10/2021

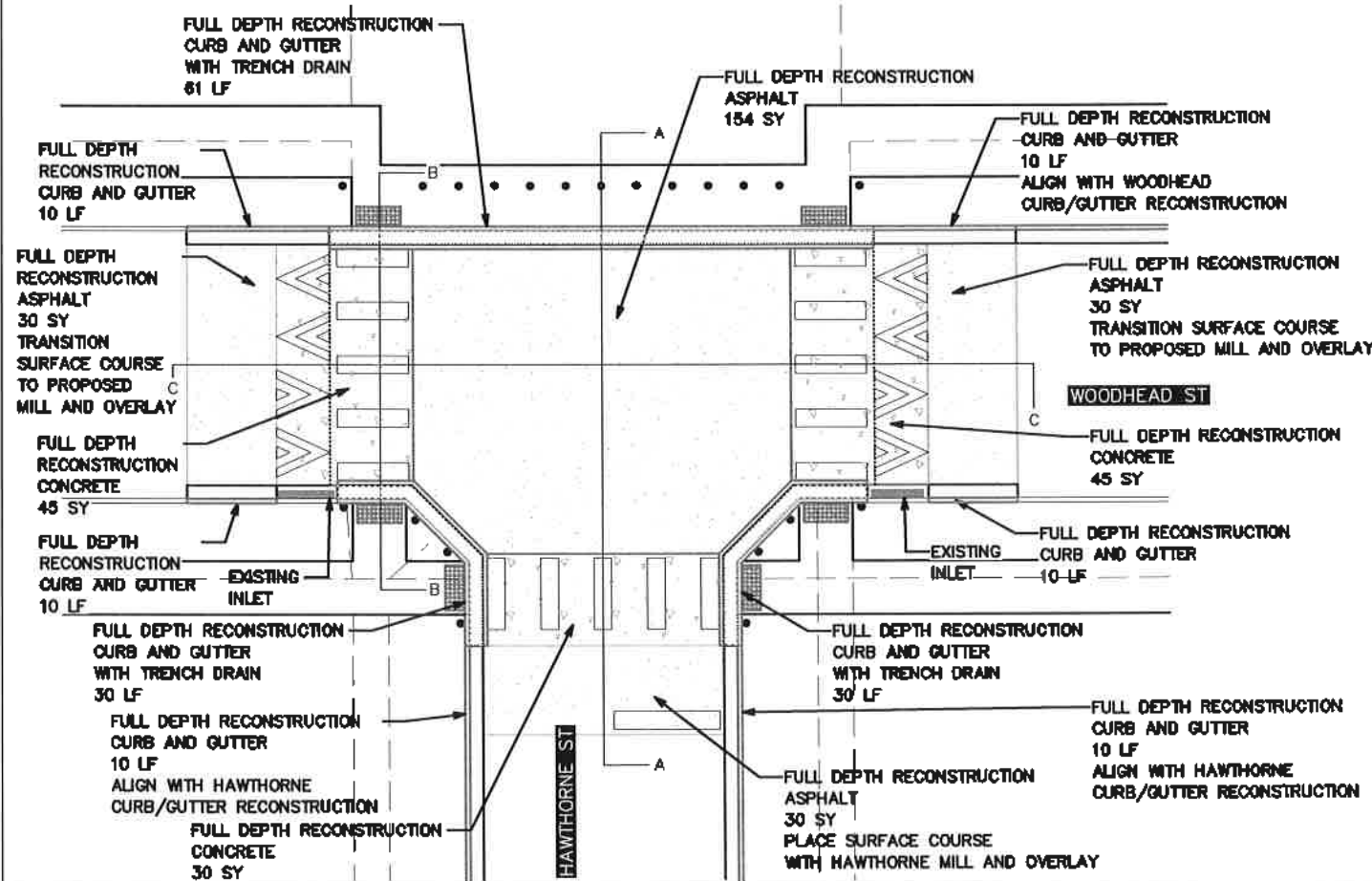
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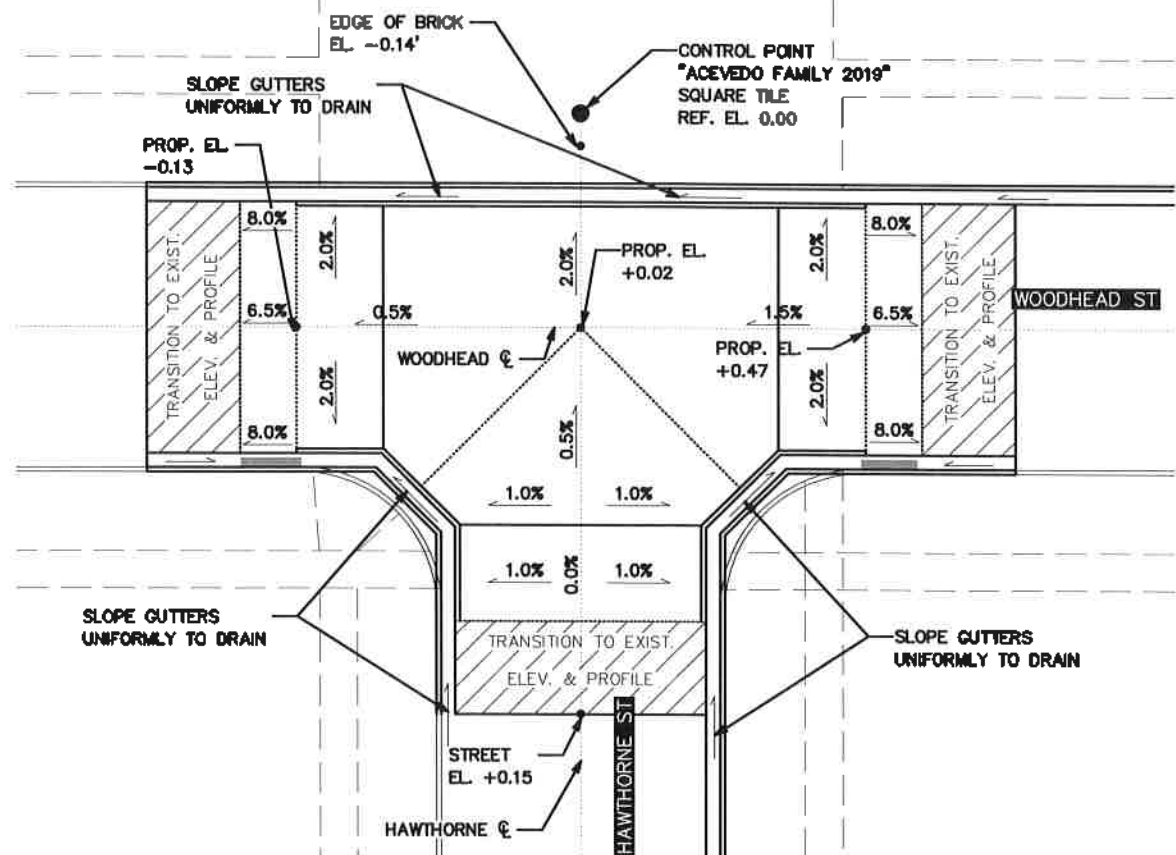
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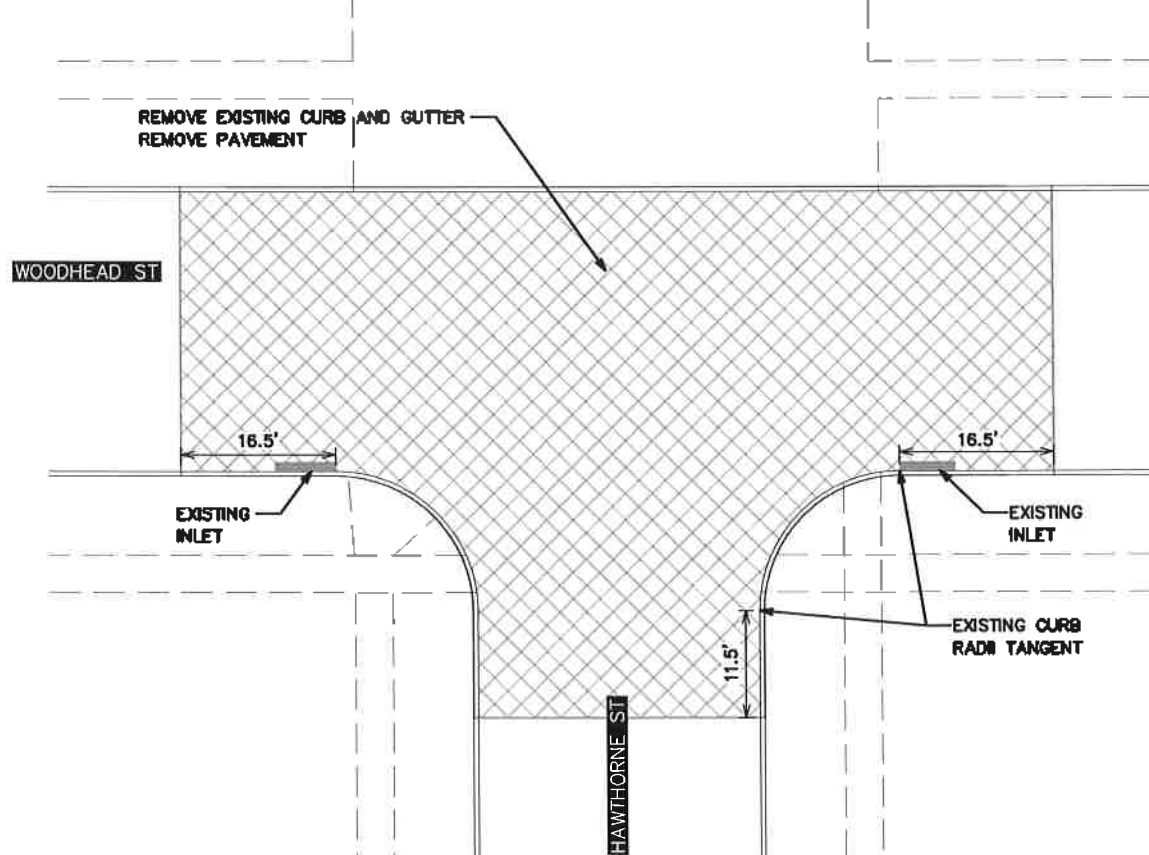
PAVING



PROPOSED GRADING



REMOVAL



TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

12/10/2021

SARAH L. WETMORE
 LICENSED PROFESSIONAL ENGINEER
 130442

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
 WOODHEAD STREET
 RAISED INTERSECTION DETAIL
 WOODHEAD AT HAWTHORNE
 SHEET 1 OF 3

WBS NUMBER: N-T27000-0002

AS NOTED
 CITY OF HOUSTON PM
 SHAPOR COLSUM

SHEET NO. 60 OF 247

72248

NO.	DATE	REVISION	APP.

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SWetmore

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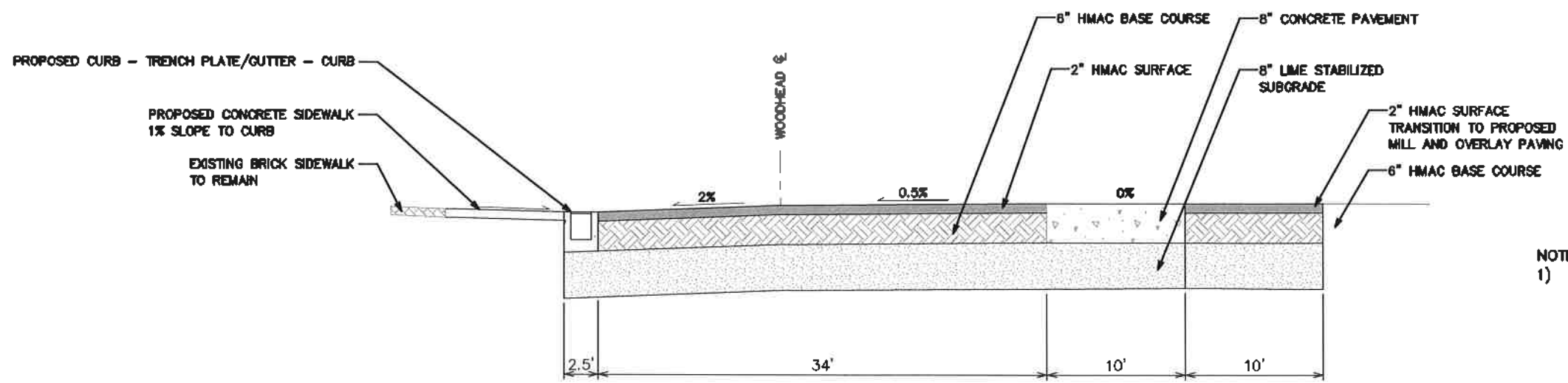
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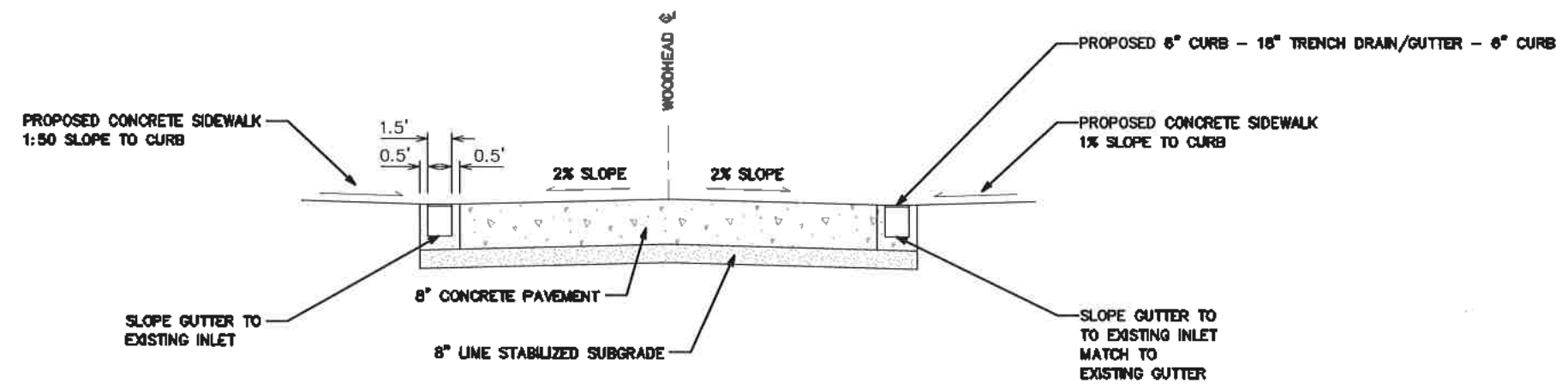
NO.	DATE	REVISION	APP.

SECTION A-A

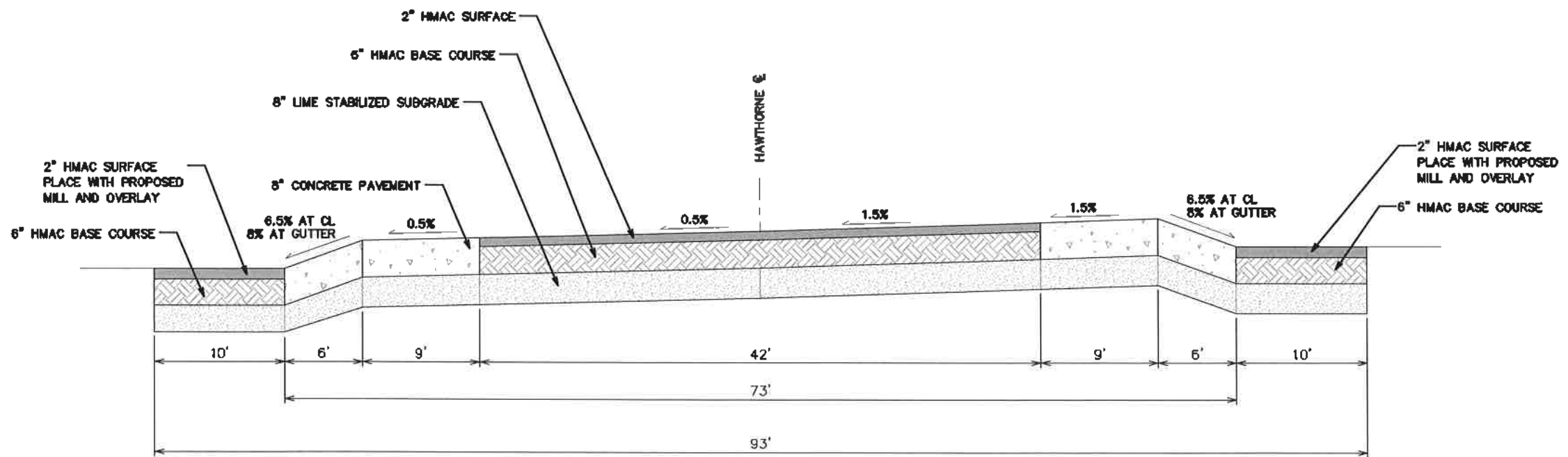



NOTES:
 1) SLOTTED TRENCH DRAIN (ADA COMPLIANT)
 WITH END CAP - SEE SHEET 82 FOR DETAILS.

SECTION B-B



SECTION C-C

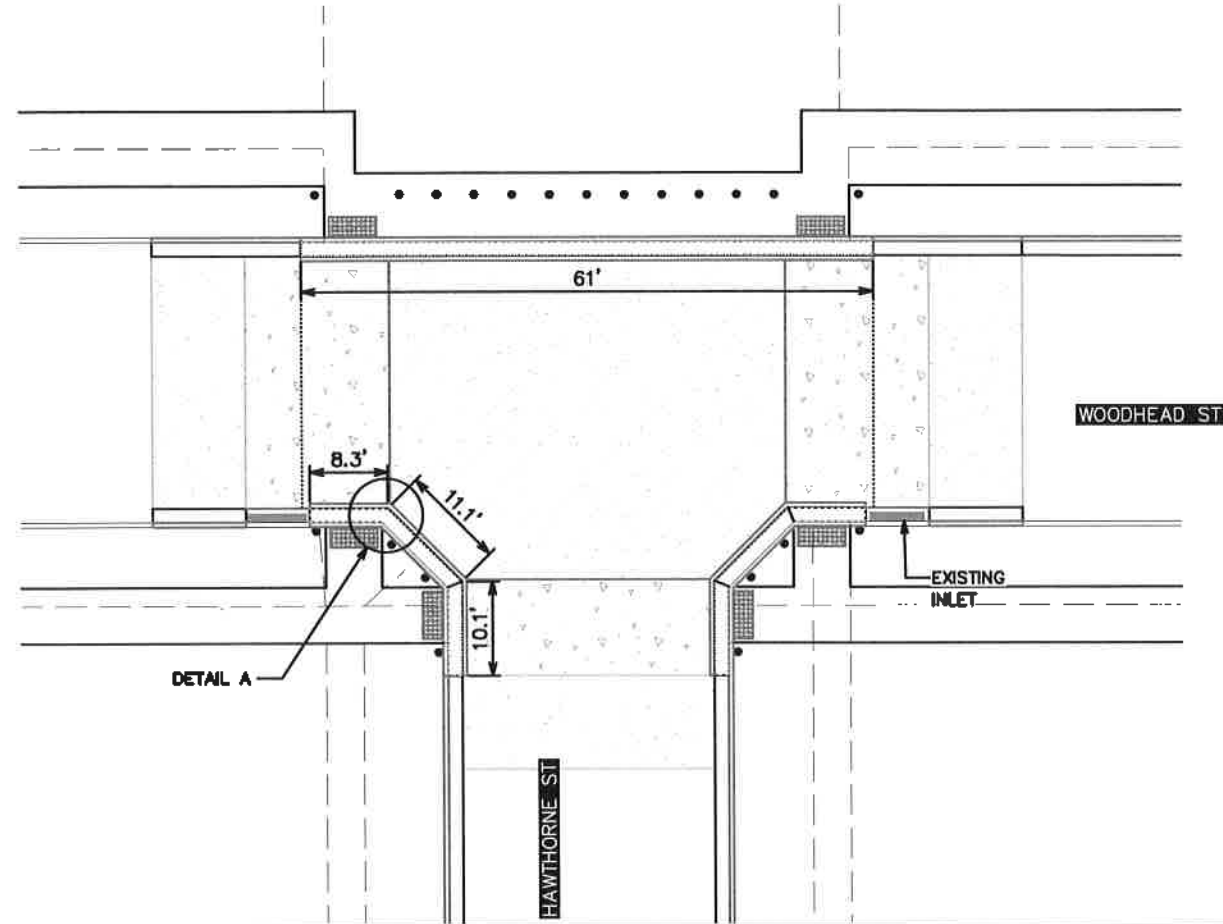


TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		12/10/2021 
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET RAISED INTERSECTION DETAIL WOODHEAD AT HAWTHORNE SHEET 2 OF 3		
WBS NUMBER N-T27000-000	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON PUBLIC WORKS SHAPOR GOLSHIN		
SHEET NO. 61 OF 247		

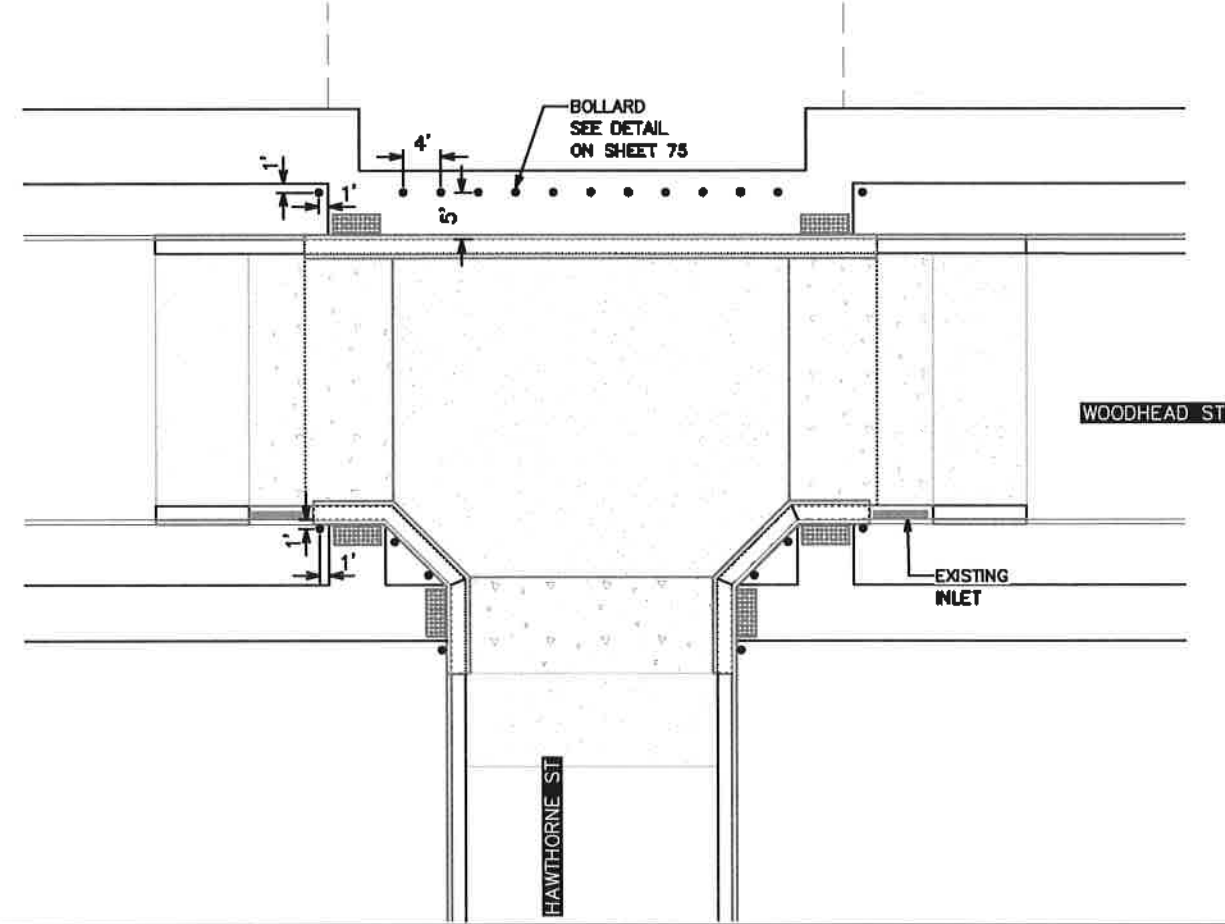
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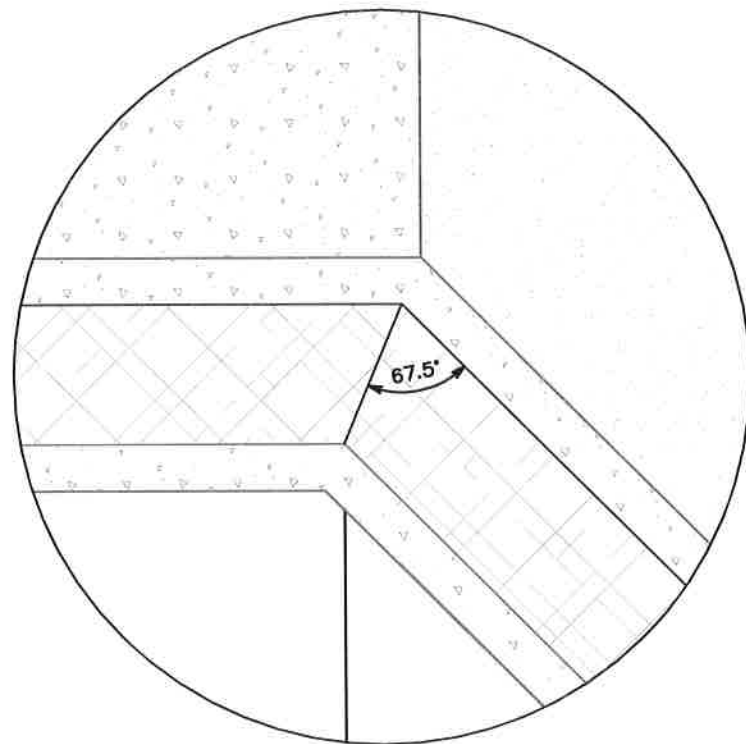
TRENCH DRAIN DETAILS



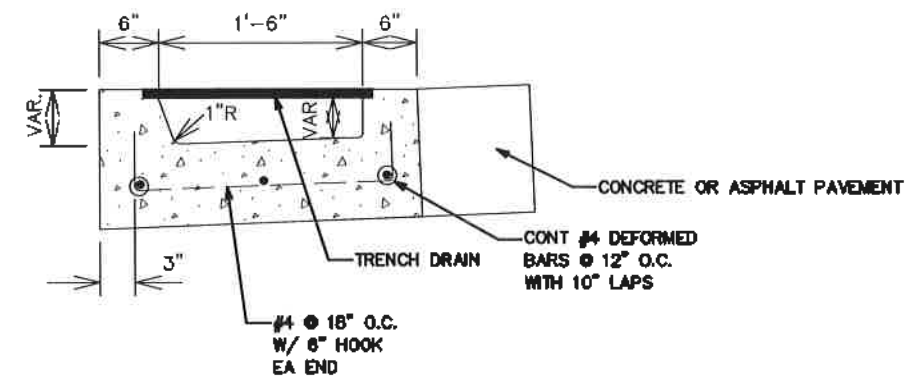
BOLLARD DETAILS



DETAIL A



CURB-GUTTER-CURB DETAIL



TRAFFIC ENGINEERS, INC.
 Innovative Transportation Solutions
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-315B

2/7/2022
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 RAISED INTERSECTION DETAIL
 WOODHEAD AT HAWTHORNE
 SHEET 3 OF 3**

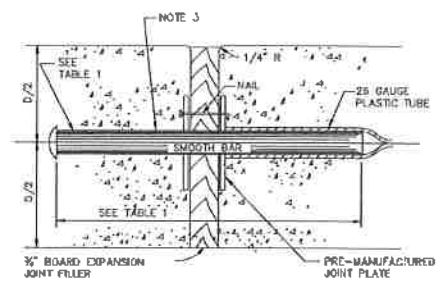
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 AS NOTED
 CITY OF HOUSTON PM
 SHAFQUR GOLSHAN
 SHEET NO. 59 OF 246

72248

NO.	DATE	REVISION	APP.

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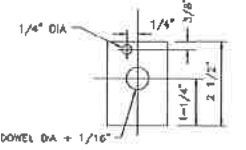
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SECTION DOWEL TYPE EXPANSION JOINT N.T.S.



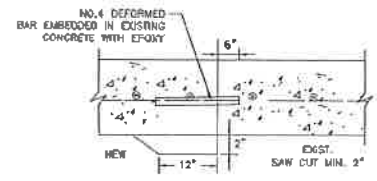
PLAN - JOINT PLATE N.T.S.



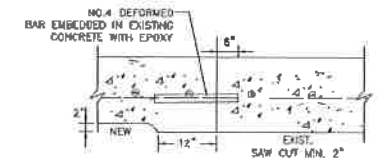
ELEVATION - JOINT PLATE N.T.S.

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

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS NTS



SECTION SIDEWALK TO EXISTING SIDEWALK N.T.S.



SECTION SIDEWALK TO EXISTING DRIVEWAY N.T.S.

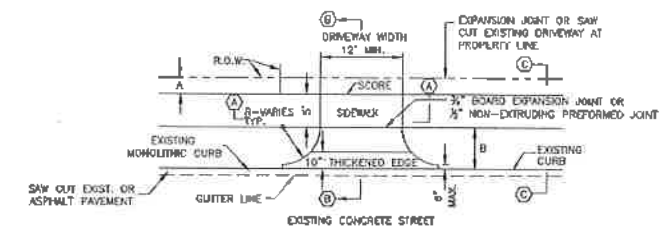


SECTION CONTROL JOINT N.T.S.

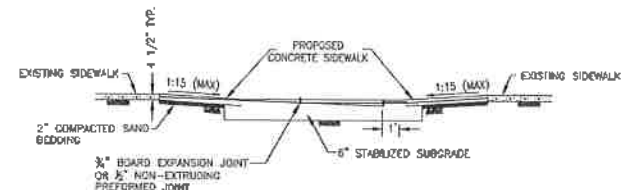
TABLE 1

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

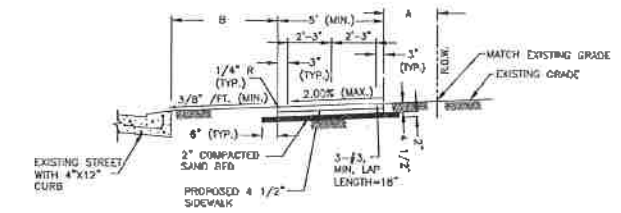
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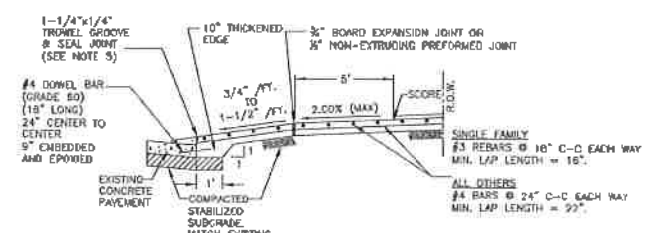
PLAN VIEW - DRIVEWAY



SECTION (A) PROPOSED SIDEWALK, THROUGH DRIVEWAY WITH EXCESSIVE GRADES N.T.S.



SECTION (C) TYPICAL SIDEWALKS SECTION N.T.S.



SECTION (B) TYPICAL DRIVEWAY SECTION N.T.S.

DRIVEWAY / LOCAL RESIDENTIAL STREETS NTS

- NOTES:
1. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IOM REQUIREMENT, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
 2. DRIVEWAYS SHALL BE 6' THICK FOR SINGLE FAMILY.
 3. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 3 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
 4. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM END OF PROPOSED EDGE OF DRIVEWAY RETURN. EXTEND DOWEL 3" INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADIUS RETURN BOTH SIDES.
 5. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
 6. EXPANSION & CONSTRUCTION JOINTS ALONG SIDEWALK SHALL BE ACCORDING TO DRAWING NO. 02752-02.
 7. REFER CHAPTER 17 DESIGN REQUIREMENTS FOR A AND B.
 8. CEMENT STABILIZED SAND 1.6 SACKS OF CEMENT PER TON OF DRY SAND.
 9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 RAMPS THAT ARE STEEPER THAN A 1:1.5 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02752-02 THROUGH 02754-01A

APPROVED BY: *[Signature]*
CITY ENGINEER

APPROVED BY: *[Signature]*
DEPUTY DIRECTOR

DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

STATE OF TEXAS
KARAM M. QADDO
125811
LICENSED PROFESSIONAL ENGINEER

SURVEYED BY: *[Signature]*
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS

SIDEWALK EXPANSION AND DRIVEWAY,
LOCAL RESIDENT STREETS DETAILS

SHEET 1 OF 1

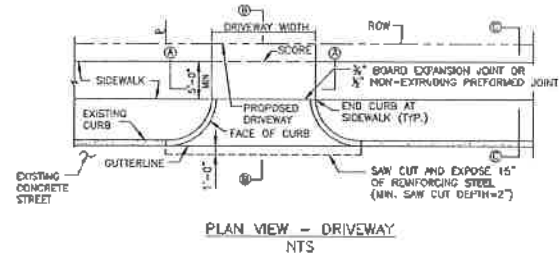
FOR CITY OF HOUSTON USE ONLY

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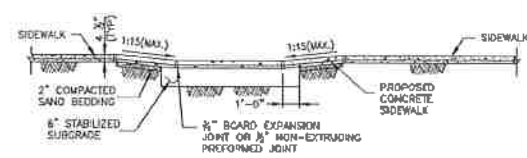
SHEET NO. 62 OF 247

NO.	DATE	REVISION	APP.

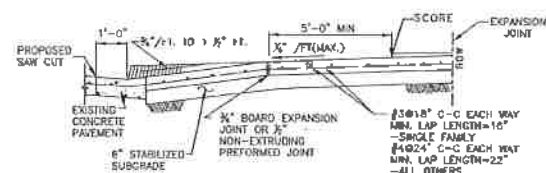
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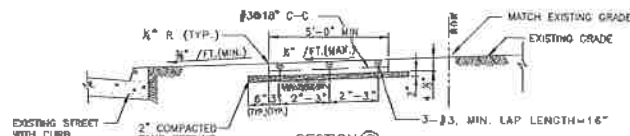
PLAN VIEW - DRIVEWAY
NTS



SECTION A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK
NTS



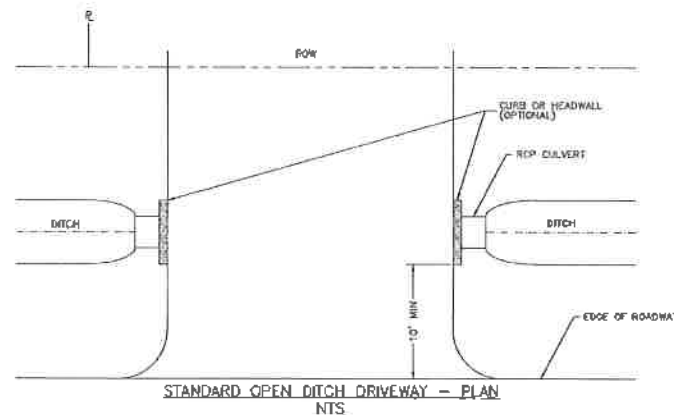
SECTION B
TYPICAL DRIVEWAY SECTION
NTS



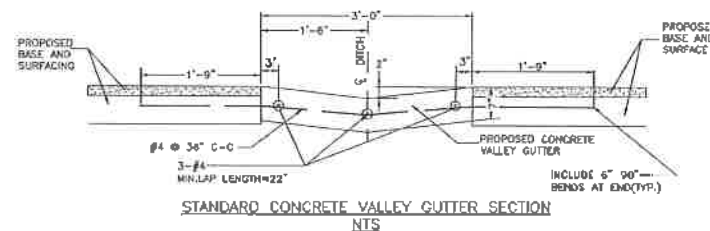
SECTION C
TYPICAL SIDEWALK SECTION
NTS

DRIVEWAY DETAIL WITH 6" CURBED STREETS
NTS

02754-02



STANDARD OPEN DITCH DRIVEWAY - PLAN
NTS



STANDARD CONCRETE VALLEY GUTTER SECTION
NTS

NOTES:

1. REINFORCED CONCRETE PIPE (RCP) CULVERTS AND CONCRETE VALLEY GUTTER GRADES SHALL BE SET BY CITY ENGINEER. PROFILE SHOWING THE PROPOSED AND EXISTING DITCH FLOWLINE WILL BE REQUIRED WHERE CONCRETE VALLEY GUTTERS ARE TO BE CONSTRUCTED IN LIEU OF CULVERTS.
2. CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 24" DIAMETER MINIMUM.
3. SPACING OF TYPE "D" OR "D-1" INLETS SHALL BE DETERMINED BY CITY ENGINEER. SEE DRAWING NO. 02632-97 FOR TYPE "D" OR DRAWING NO. 02632-08 FOR TYPE "D-1".
4. DRIVEWAY MAY BE CONCRETE, ASPHALT OR ANY OTHER MATERIAL WHICH WILL NOT PERMIT WIND OR WATERBORNE EROSION.
5. A 3-FOOT CONCRETE VALLEY GUTTER SECTION SHALL BE CONSTRUCTED THROUGH THE PROPOSED DRIVEWAY WHERE THE CITY ENGINEER DETERMINES THE INSTALLATION OF DITCH CULVERTS TO BE IMPRACTICAL DUE TO INSUFFICIENT DEPTH. THE VALLEY GUTTER SECTION WILL BE CONSTRUCTED OF 5-1/2 SACK CEMENT PER CUBIC YARD OF CONCRETE.

DRIVEWAYS WITH CULVERTS OR VALLEY GUTTERS
ON OPEN DITCH TYPE STREETS
NTS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02754-01B THROUGH 02754-02

APPROVED BY: *[Signature]* APPROVED BY: *[Signature]*
 CITY ENGINEER DEPUTY DIRECTOR
 APPROVED BY: *[Signature]*
 DIRECTOR OF HOUSTON PUBLIC WORKS
 EFFECTIVE DATE: JUL-01-2020
 FOR CITY OF HOUSTON USE ONLY

SHEET NO.

Gauge
 ENGINEERING
 3200 Wilcrest Drive, Suite 220
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 www.GaugeEngineering.com
 Texas PE Firm Reg. #F-20017



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
DRIVEWAY WITH 6" IN CURBED
ST AND DRIVEWAYS IN OPEN
DITCH AT DETAILS

SHEET 1 OF 1

NBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002	72248
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON EN	
SAMPOOR GOLSHAN	
SHEET NO. 63 OF 241	

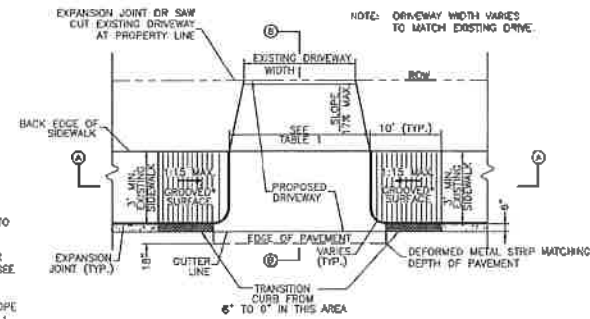
NO.	DATE	REVISION	APP.

02754-03

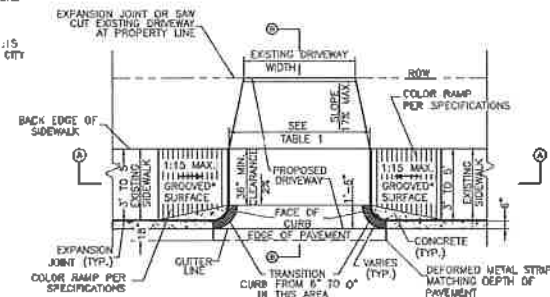
NOTES:

1. DRIVEWAY WIDTH VARIES TO MATCH EXISTING DRIVE.
2. DRIVEWAY DETAIL TO PROVIDE FOR SIDEWALK TRANSITION FROM EXISTING BACK OF CURB TO PROPOSED DRIVEWAY EDGE.
3. RAMPS WITH GROOVES AND CONTRAST COLOR REQUIRED ON SLOPES GREATER THAN 2% (SEE OPTION 1 AND OPTION 2 PLANS)
4. DRIVEWAY WITH WIDTH > 5' @ 2% CROSS SLOPE QUALIFIES AS PASSING SPACE. (SEE OPTION 1 AND OPTION 2 PLANS)
5. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

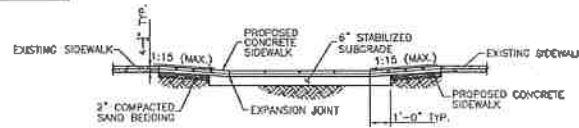
DRIVEWAY WIDTH	RESIDENTIAL	ALL OTHERS
ONE-WAY	12' MIN.-20' MAX.	15' MIN.-20' MAX.
TWO-WAY	12' MIN.-24' MAX.	24' MIN.-35' MAX.



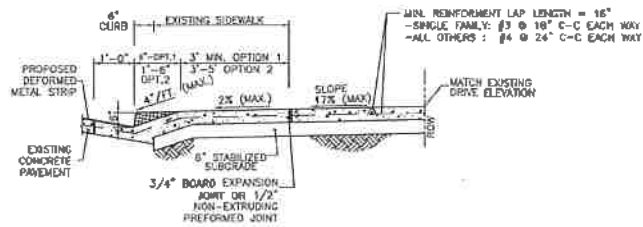
OPTION 1 - CURB LEVEL SIDEWALK
PLAN VIEW - DRIVEWAY



OPTION 2 - CURB LEVEL SIDEWALK
PLAN VIEW - DRIVEWAY



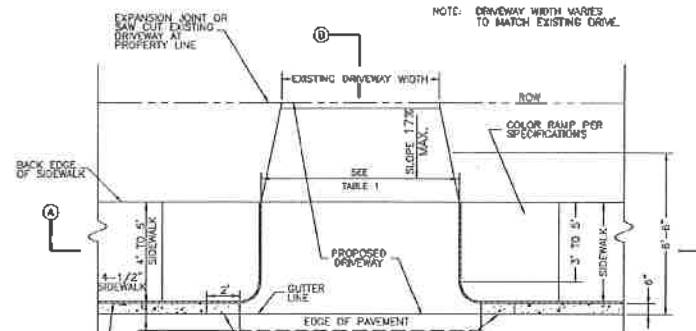
SECTION A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK



SECTION B
TYPICAL DRIVEWAY SECTION

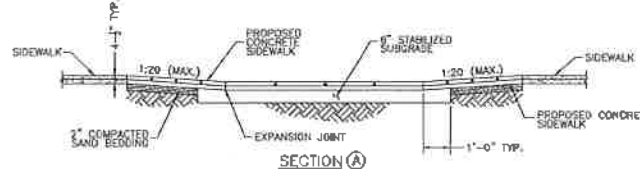
PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE
NTS

02754-04

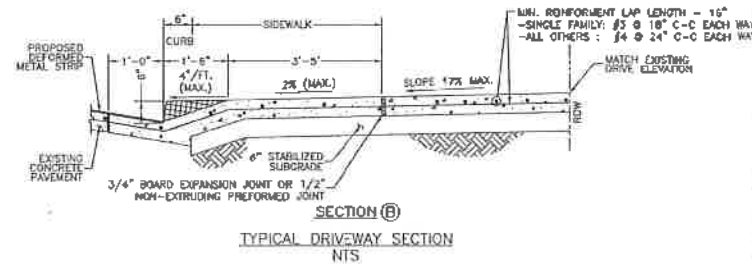


PLAN VIEW - DRIVEWAY
NTS

DRIVEWAY WIDTH	RESIDENTIAL	ALL OTHERS
ONE-WAY	12' MIN.-20' MAX.	15' MIN.-20' MAX.
TWO-WAY	12' MIN.-24' MAX.	24' MIN.-35' MAX.



SECTION A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH MINIMAL ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK
NTS



SECTION B
TYPICAL DRIVEWAY SECTION
NTS

EXISTING/PROPOSED CURB LEVEL SIDEWALK CONDITIONS
NTS

NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02754-03 THROUGH 02754-04

APPROVED BY: *[Signature]*
CITY ENGINEER

APPROVED BY: *[Signature]*
DEPUTY DIRECTOR

APPROVED BY: *[Signature]*
DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

STATE OF TEXAS
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
SIDEWALK THROUGH DRIVEWAY AND
CURB LEVEL SIDEWALK CONDITIONS

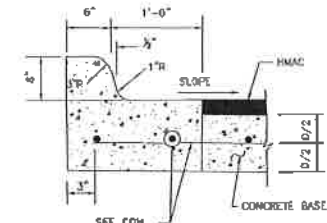
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-	
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AS NOTED	
CITY OF HOUSTON	
SHAPOOR GOLSMAN	
SHEET NO. 64 OF 241	

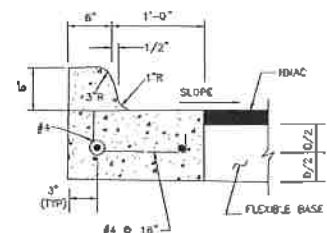
72248

NO.	DATE	REVISION	APP.

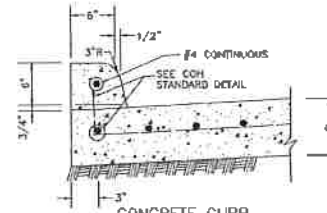
02771-01



ESPLANADE CURB CONNECTED TO CONCRETE BASE

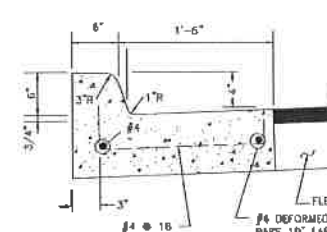


ESPLANADE CURB CONNECTED TO FLEXIBLE BASE

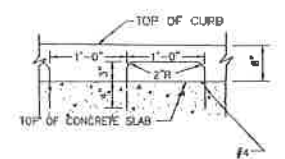


CONCRETE CURB

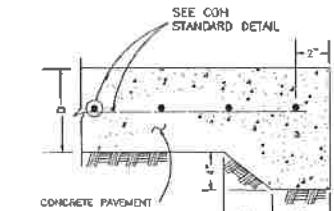
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 @ 18" LONG, DOWELED AND SET BY EPOXY GROUT. SET #4 DOWELS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



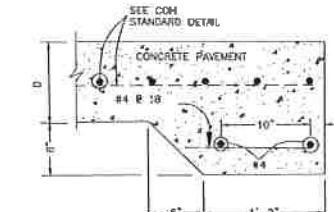
MONOLITHIC CURB AND GUTTER



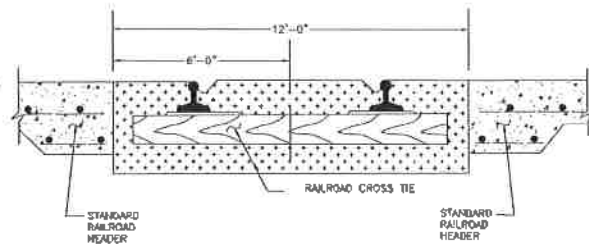
ALTERNATE CONCRETE CURB REINFORCEMENT



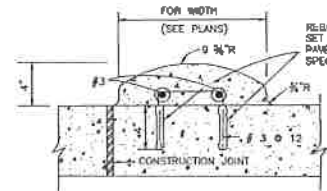
STANDARD CONCRETE PAVING HEADER



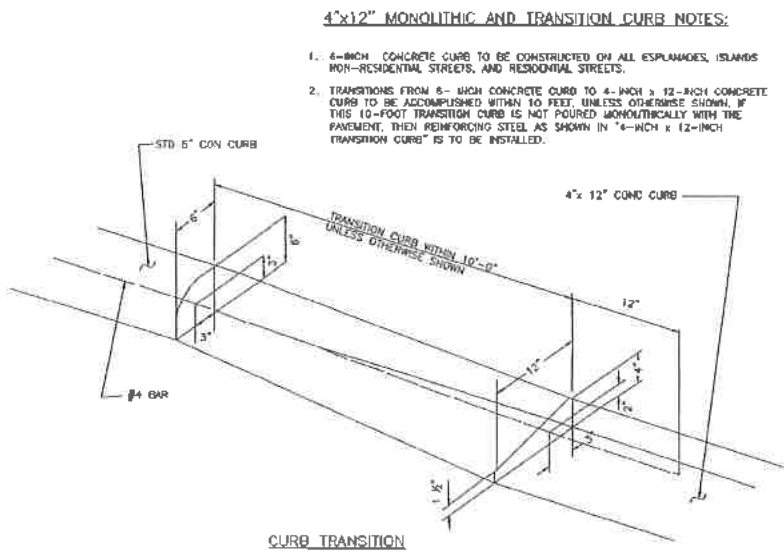
STANDARD RAILROAD HEADER



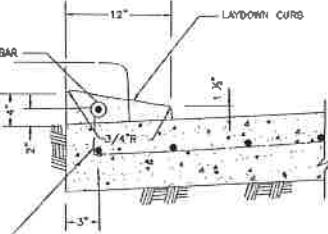
STANDARD RAILROAD CROSSING - SINGLE TRACK



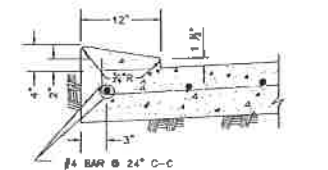
MOUNTABLE CURB



CURB TRANSITION



4-INCH x 12-INCH TRANSITION CURB



4-INCH x 12-INCH MONOLITHIC CURB

- 4"x12" MONOLITHIC AND TRANSITION CURB NOTES:**
- 4-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS, NON-RESIDENTIAL STREETS, AND RESIDENTIAL STREETS.
 - TRANSITIONS FROM 6-INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 10 FEET, UNLESS OTHERWISE SHOWN. IF THIS 10-FOOT TRANSITION CURB IS NOT POURED MONOLITHICALLY WITH THE PAVEMENT, THEN REINFORCING STEEL AS SHOWN IN 4-INCH x 12-INCH TRANSITION CURB IS TO BE INSTALLED.

CURB, CURB AND GUTTER AND HEADER DETAILS
 NTS

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
 02771-01

APPROVED BY: *[Signature]*
 CITY ENGINEER

APPROVED BY: *[Signature]*
 DEPUTY DIRECTOR

APPROVED BY: *[Signature]*
 DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
 FOR CITY OF HOUSTON USE ONLY

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Gauge
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 Texas PE Firm Reg. #F-20017

STATE OF TEXAS
 KARAM M. GADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

SURVEYED BY: *[Signature]*

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS

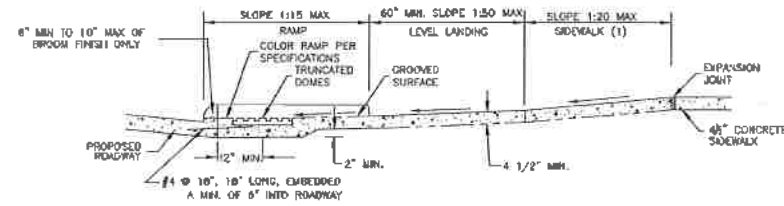
CONCRETE CURB AND GUTTER
 AND HEADER DETAILS

SHEET 1 OF 1

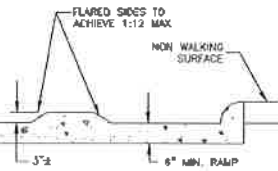
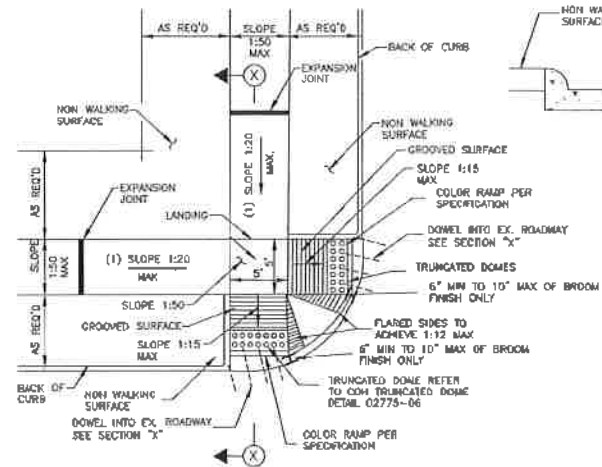
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N-127000-002	72248
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PW	
SHAPORH GCS/SMH	
SHEET NO. 65 OF 247	

NO.	DATE	REVISION	APP.

02775-02



SECTION "C"

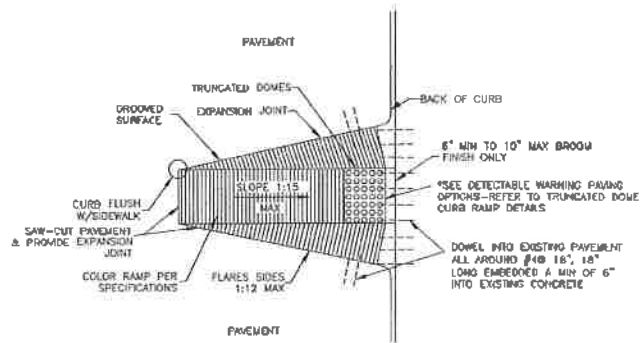


ELEVATION
LOOKING UP RAMP
NTS

NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. SLOPES GREATER THAN 1:20 BUT LESS THAN 1:15 (MAX) REQUIRE GROOVES AND COLORING
3. BROOM FINISH IS MEASURED FROM FACE OF CURB.
4. ALL RAMP AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

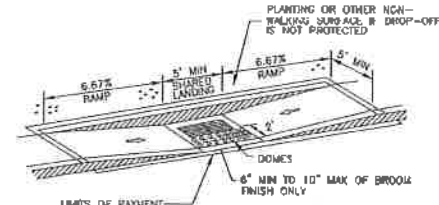
STREETS WITH NON-WALKING SURFACE BEHIND CURB
NTS



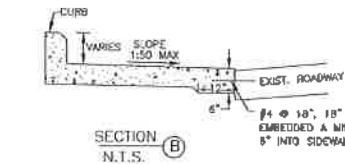
RAMP CONSTRUCTION FOR EXISTING PAVEMENT

WHEEL CHAIR RAMP DETAILS
NTS

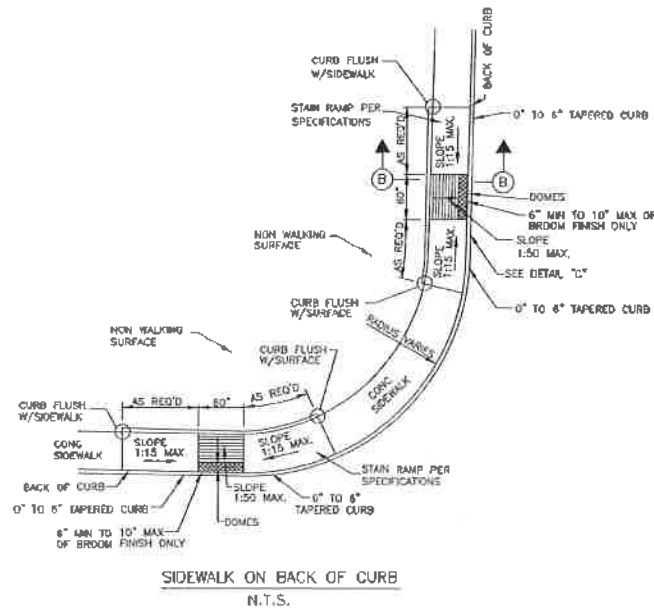
02775-03



DETAIL "C"



SECTION "B"
N.T.S.



SIDEWALK ON BACK OF CURB
N.T.S.

PARALLEL CURB RAMP
NTS

NOTES:

1. ALL RAMP AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02775-02 THROUGH 02775-03

APPROVED BY: *[Signature]*
CITY ENGINEER
APPROVED BY: *[Signature]*
DEPUTY DIRECTOR
DIRECTOR OF HOUSTON PUBLIC WORKS
EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
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STATE OF TEXAS
KARAM M. QADDO
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11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS

WHEEL CHAIR RAMP AND PARALLEL
CURB RAMP DETAILS

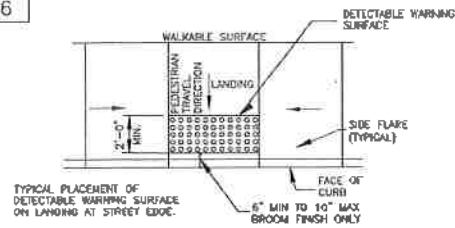
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-000	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON	
SHAPOOR GILSHANI	
SHEET NO. 66 OF	

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NO.	DATE	REVISION	APP.

02775-06

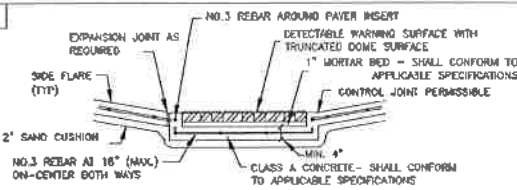


GENERAL NOTES FOR DETECTABLE WARNINGS

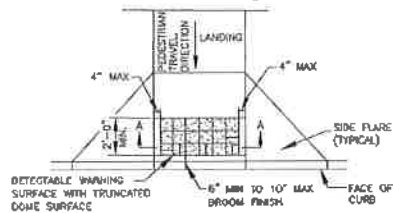
1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
2. ALL NEW CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJACENT SURFACE, INCLUDING SIDE FLARES. FINISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED OTHERWISE 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 EXCEED 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. REFERENCE CURB RAMP DETAILS FOR RAMP GROOVED SURFACE.
10. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
11. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

DETECTABLE WARNING CURB RAMP DETAILS
 NTS

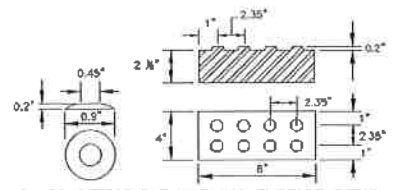
02775-07



PAVER SECTION (A)



DETECTABLE WARNING SURFACE



PAVER DETECTABLE WARNING SURFACE DETAIL

DETECTABLE WARNING SURFACE (OPTIONS)
 NTS

GENERAL NOTES

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PAVERS

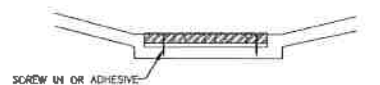
1. FINISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C-938, C-33, LAY IN A TWO BY TWO UNIT BASKET REAVE PATTERN OR AS DIRECTED.
2. LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 5% PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING POWER UNITS USING A POWER 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 TERRAZZOTA (BRICK-FED) COLOR AND COLORED THROUGHOUT TO GUARANTEE THE ADA REQUIRED COLOR CONTRAST.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING ASTM-BASED "STANDARDS" FOR CONCRETE MATERIALS:
 - A. COMPRESSIVE STRENGTH > 12,500 PSI PER ASTM C 39-04
 - B. WATER ABSORPTION < 0.25% PER ASTM C 97-09

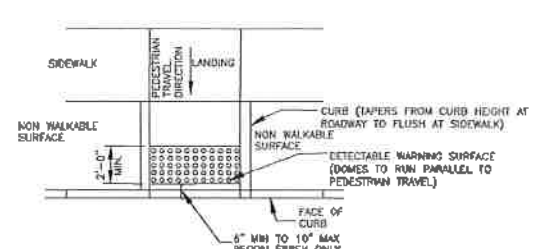
PAIS

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

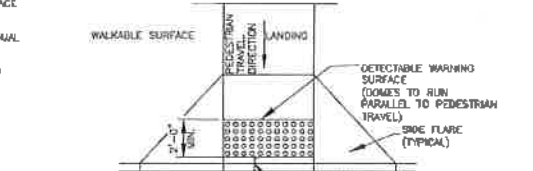


SCREW IN OR ADHESIVE

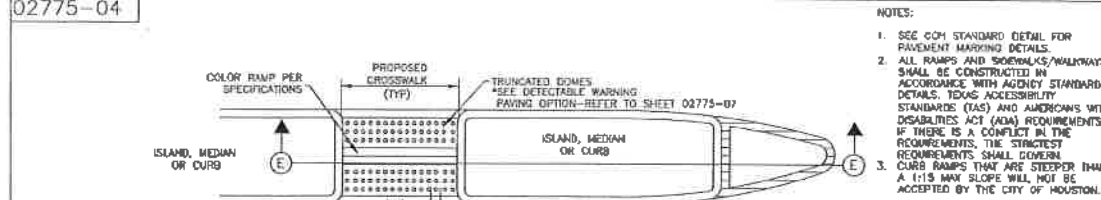
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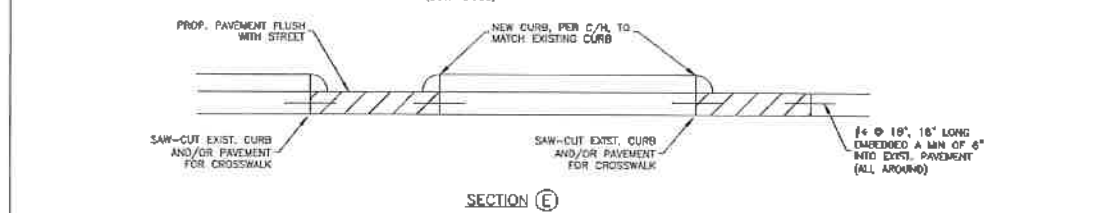
DETECTABLE WARNING SURFACE (DOMES TO RUN PARALLEL TO PEDESTRIAN TRAVEL)



TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN



SECTION E

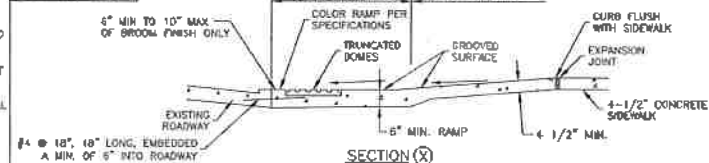


FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

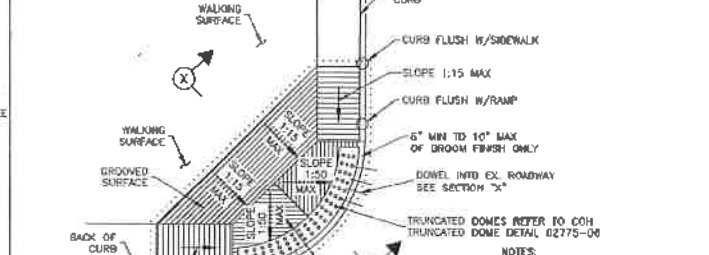
CURB MODIFICATIONS FOR WHEEL CHAIR RAMPS & CROSSWALKS
 NTS

- NOTES:
1. SEE COH STANDARD DETAIL FOR PAVEMENT MARKING DETAILS.
 2. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
 3. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

02775-05



SECTION X



COMMERCIAL CURB RAMP DETAILS
 NTS

- NOTES:
1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
 02775-04 THROUGH 02775-07

APPROVED: [Signature] DATE: 11/15/2021
 CITY ENGINEER

APPROVED: [Signature] DATE: 11/15/2021
 DEPUTY DIRECTOR

APPROVED: [Signature] DATE: 11/15/2021
 DIRECTOR OF HOUSTON PUBLIC WORKS

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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
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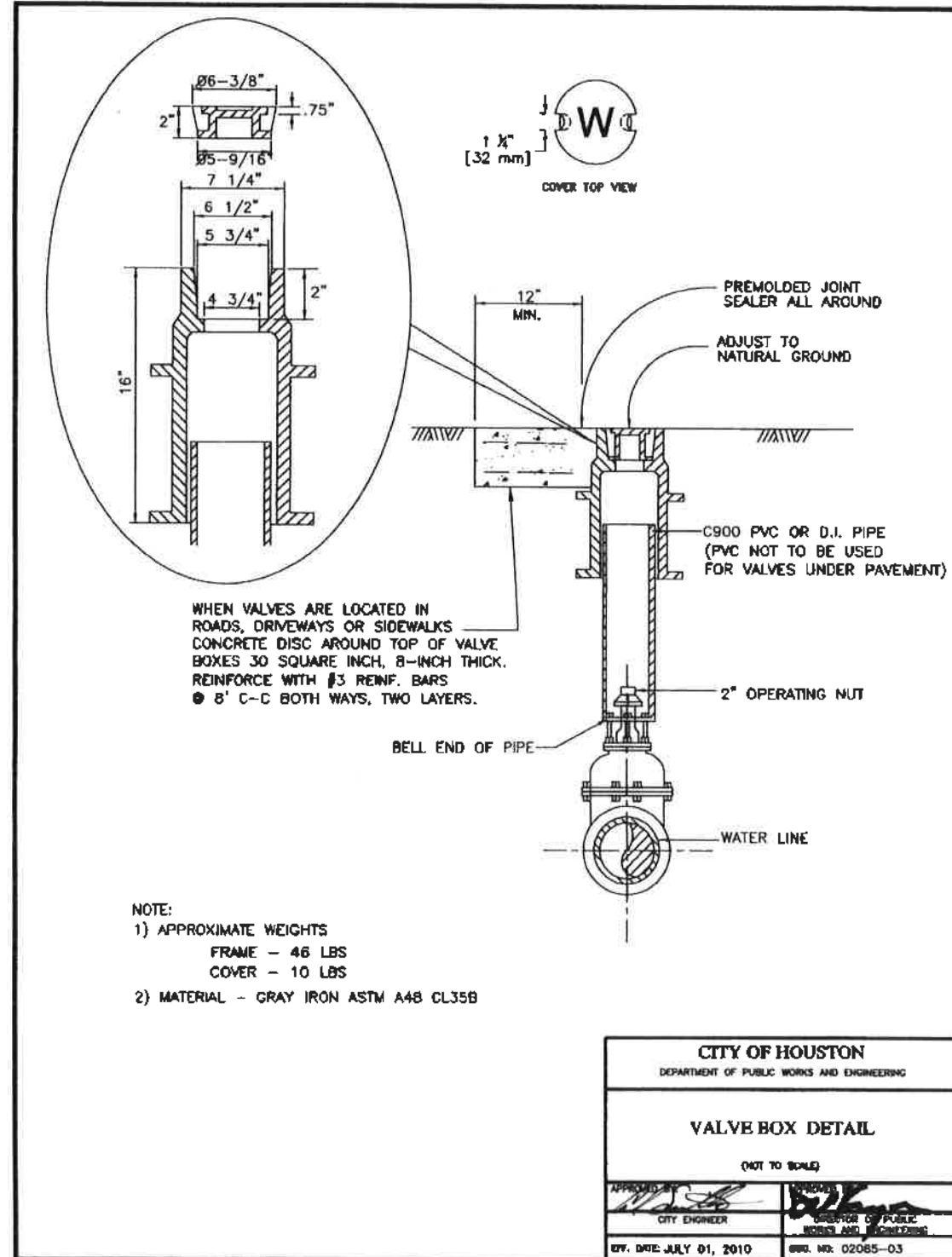
**DETECTABLE WARNING
 AND RAMP DETAILS**

SHEET 1 OF 1
 FOR CITY OF HOUSTON USE ONLY

WBS NUMBER: N-T27000-002
 DRAWING SCALE: AS NOTED
 CITY OF HOUSTON: SHUPOR GOLSHAN
 SHEET NO. 67 OF 241

72248

NO.	DATE	REVISION	APP.



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
VALVE BOX DETAIL (NOT TO SCALE)	
[Signature] CITY ENGINEER	[Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING
REV. DATE: JULY 01, 2010	REV. NO: 02065-03

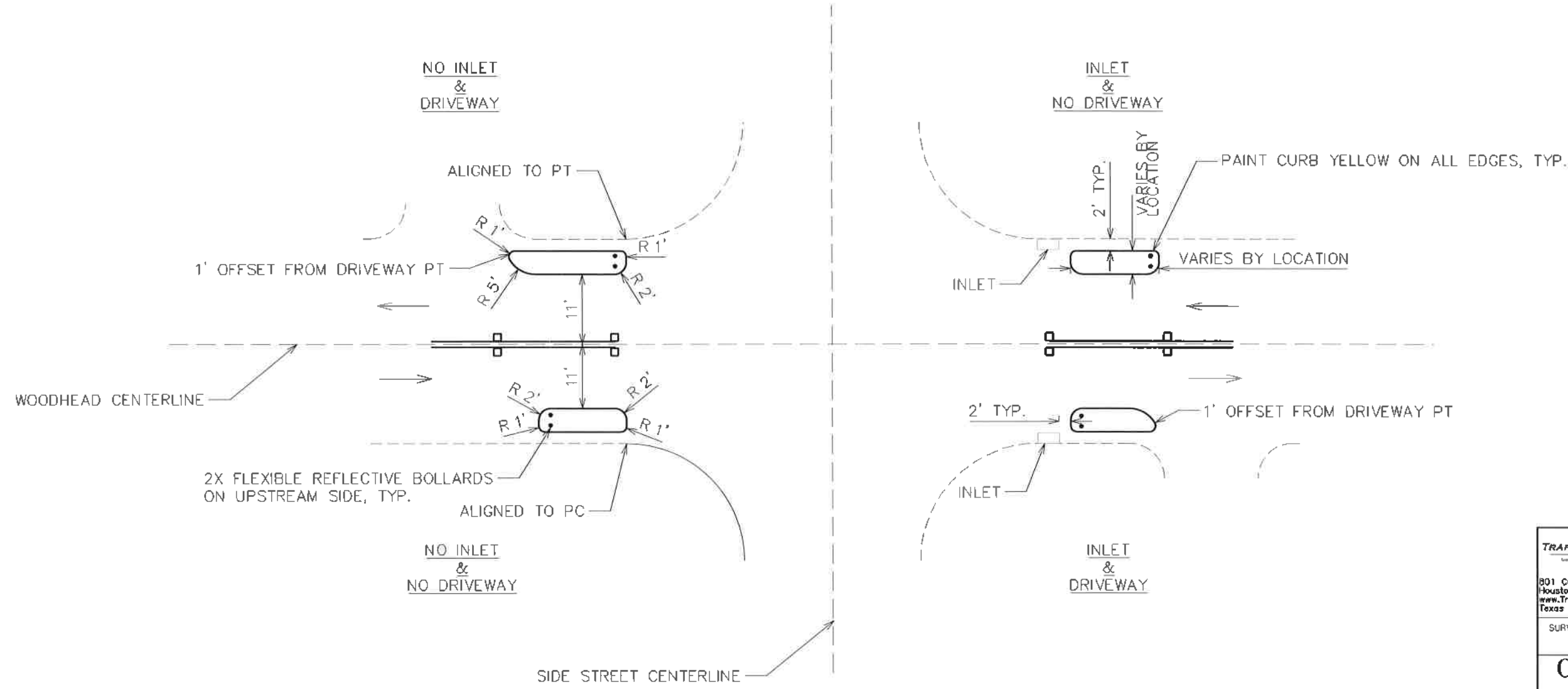
<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p> <p>SURVEYED BY: [Signature] 11/15/2021</p>	<p style="text-align: center;"> CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS VALVE BOX DETAILS </p> <p style="text-align: right;">SHEET 1 OF 1</p>
WBS NUMBER N-127000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON SHAPOOR COLSHAN	
SHEET NO. 68 OF 2	

NO.	DATE	REVISION	APP.

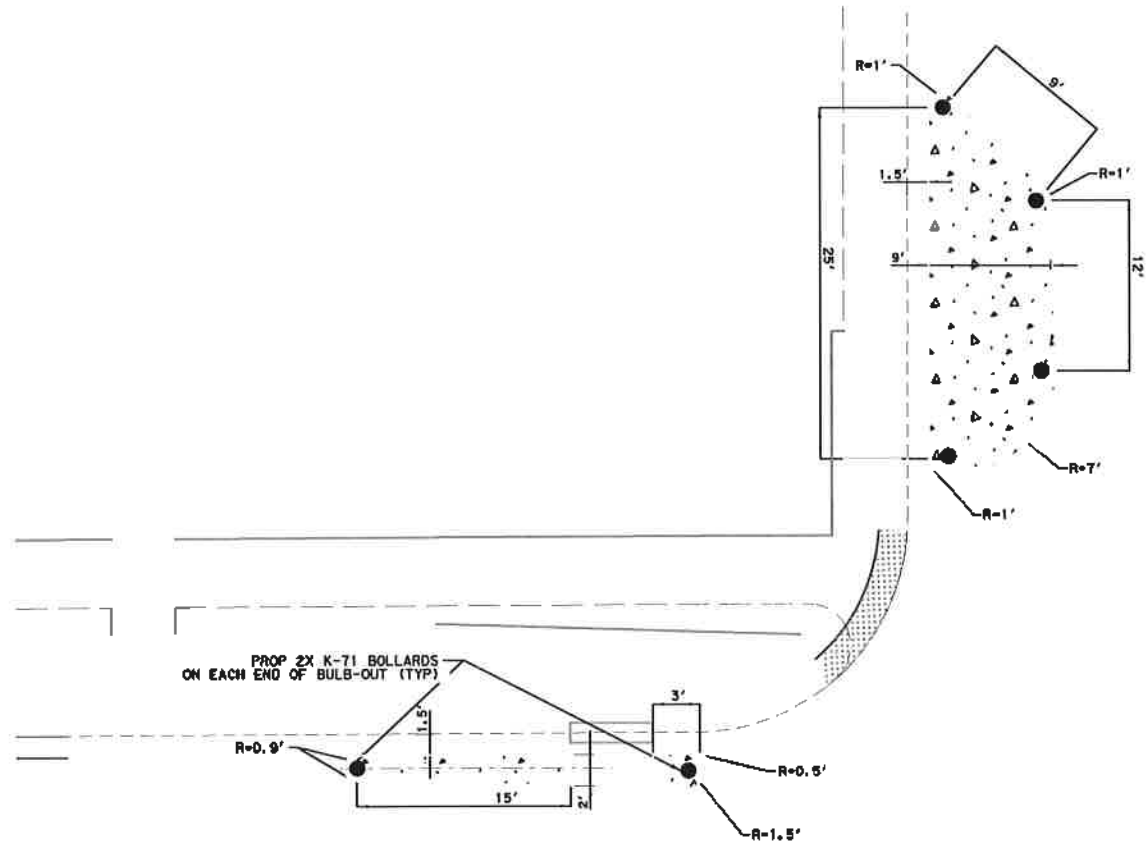
NOTES:

- 1. CURB EXTENSIONS TO BE FILLED WITH COLORED CONCRETE - COH SPEC 02761.
- 2. CURB EXTENSION LENGTH AND WIDTH VARIES BY LOCATION.

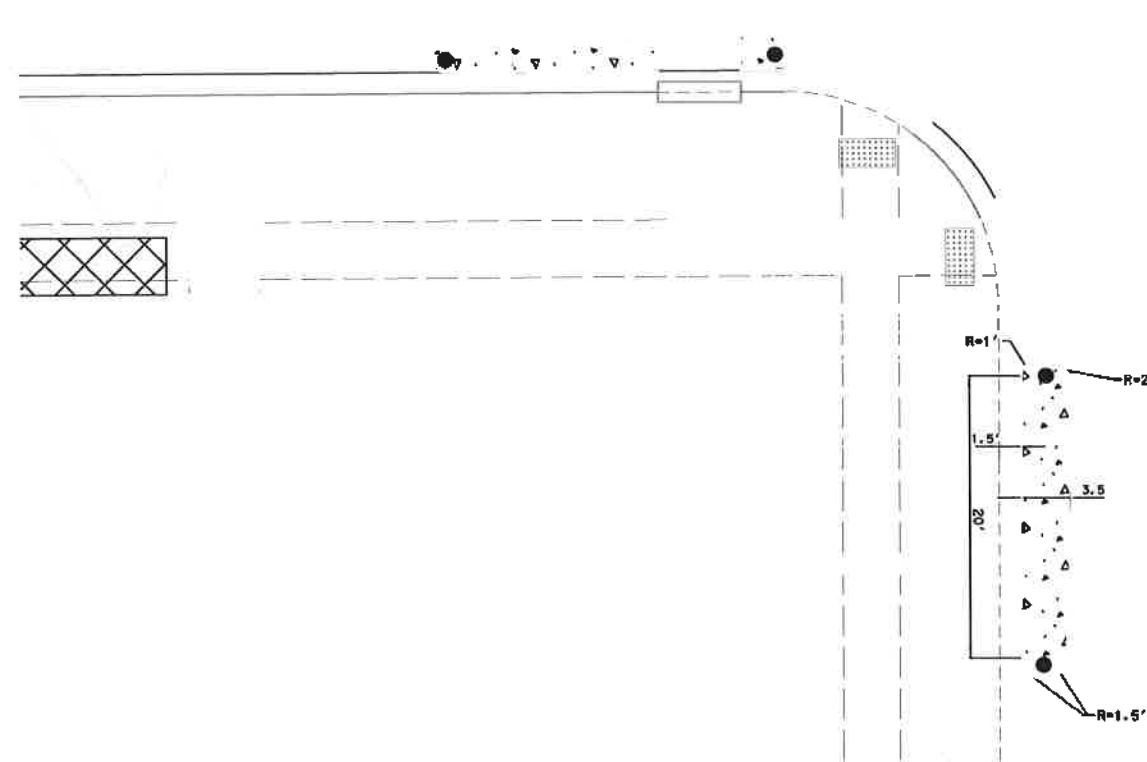
NO.	DATE	REVISION	APP.



TRAFFIC ENGINEERS, INC. <small>801 CONGRESS ST. Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</small>		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		SURVEYED BY: <i>Sarah L. Wetmore</i> 11/16/2021
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET CURB EXTENSION DETAILS		
WBS NUMBER N-T27000-0002	FOR CITY OF HOUSTON USE ONLY 72248	
AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSHAN	SHEET NO. 69 OF 241	

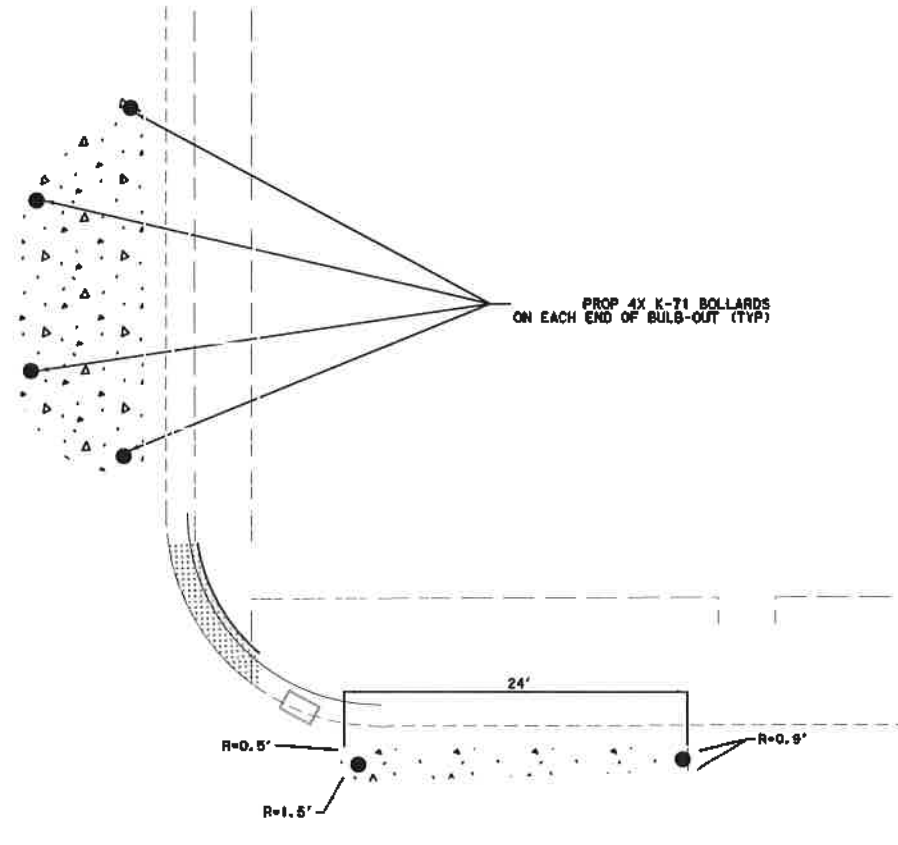


HAWTHORNE ST.

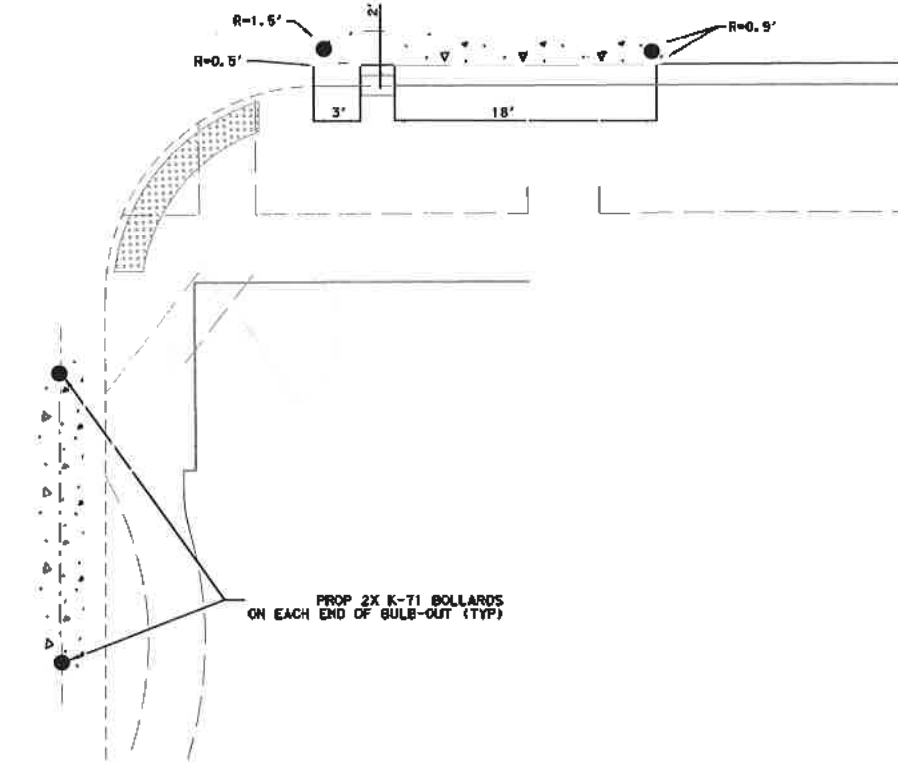


DUNLAVY ST.

DUNLAVY ST.

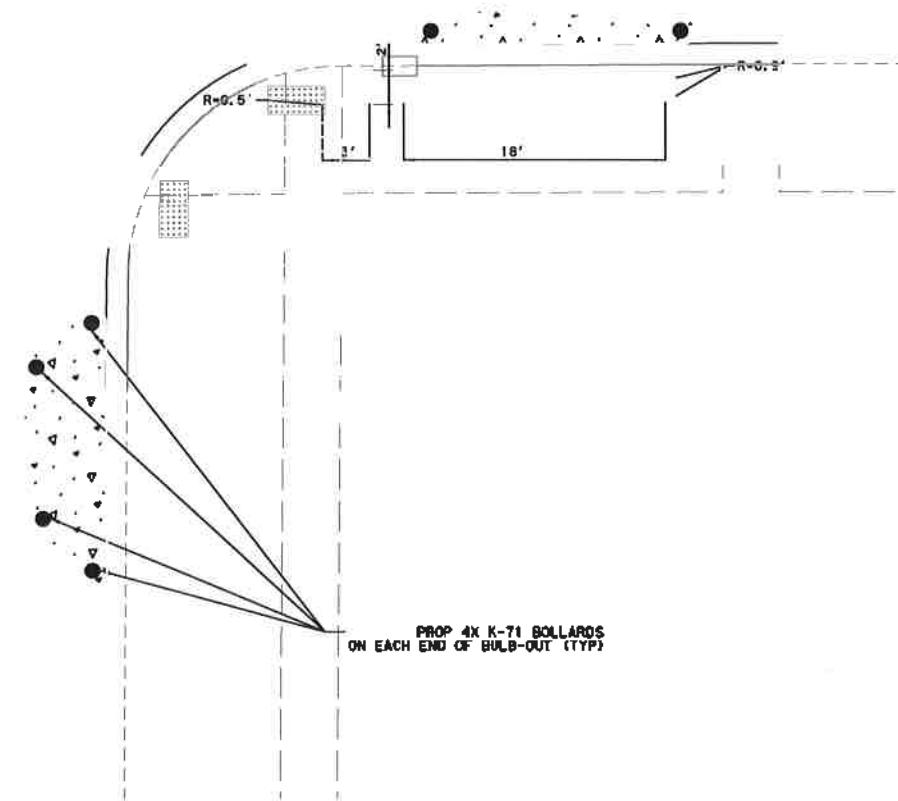
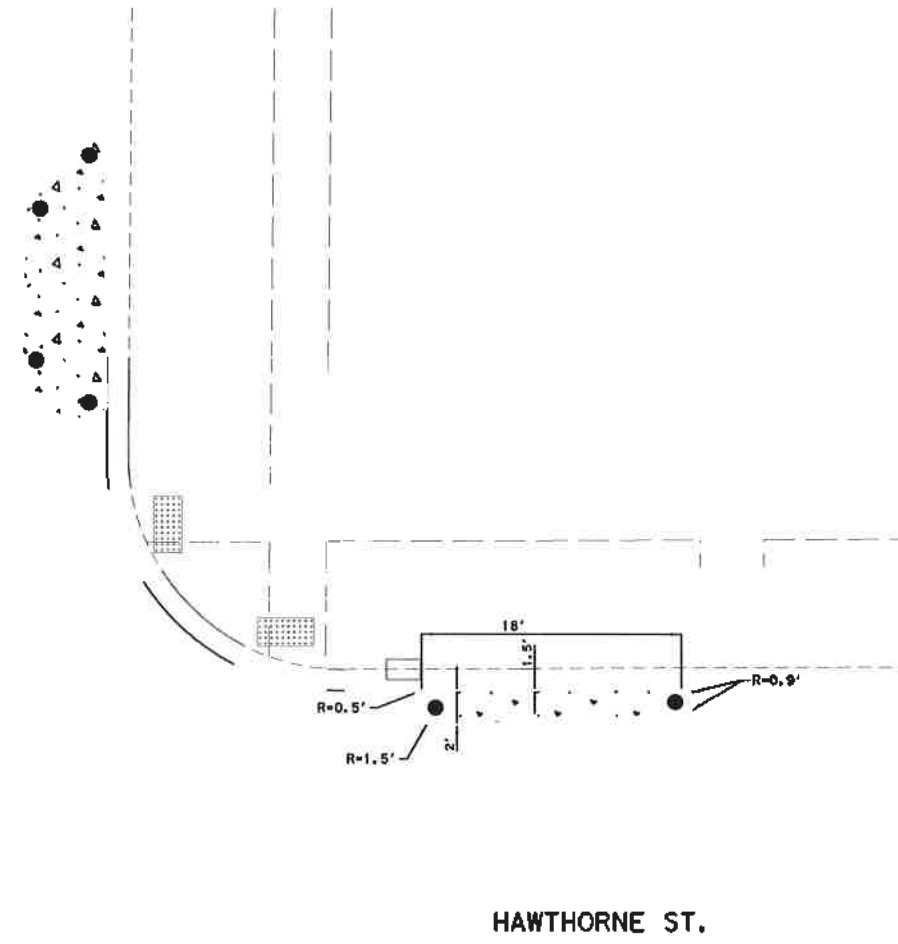
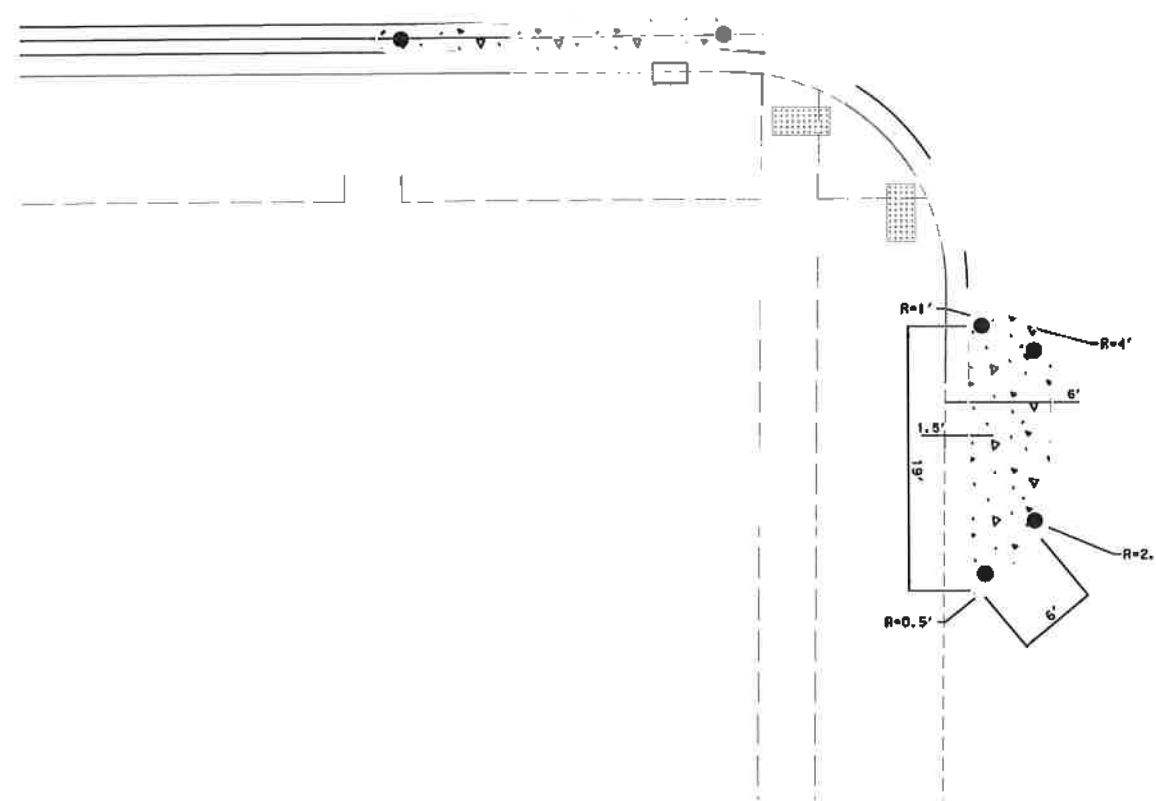
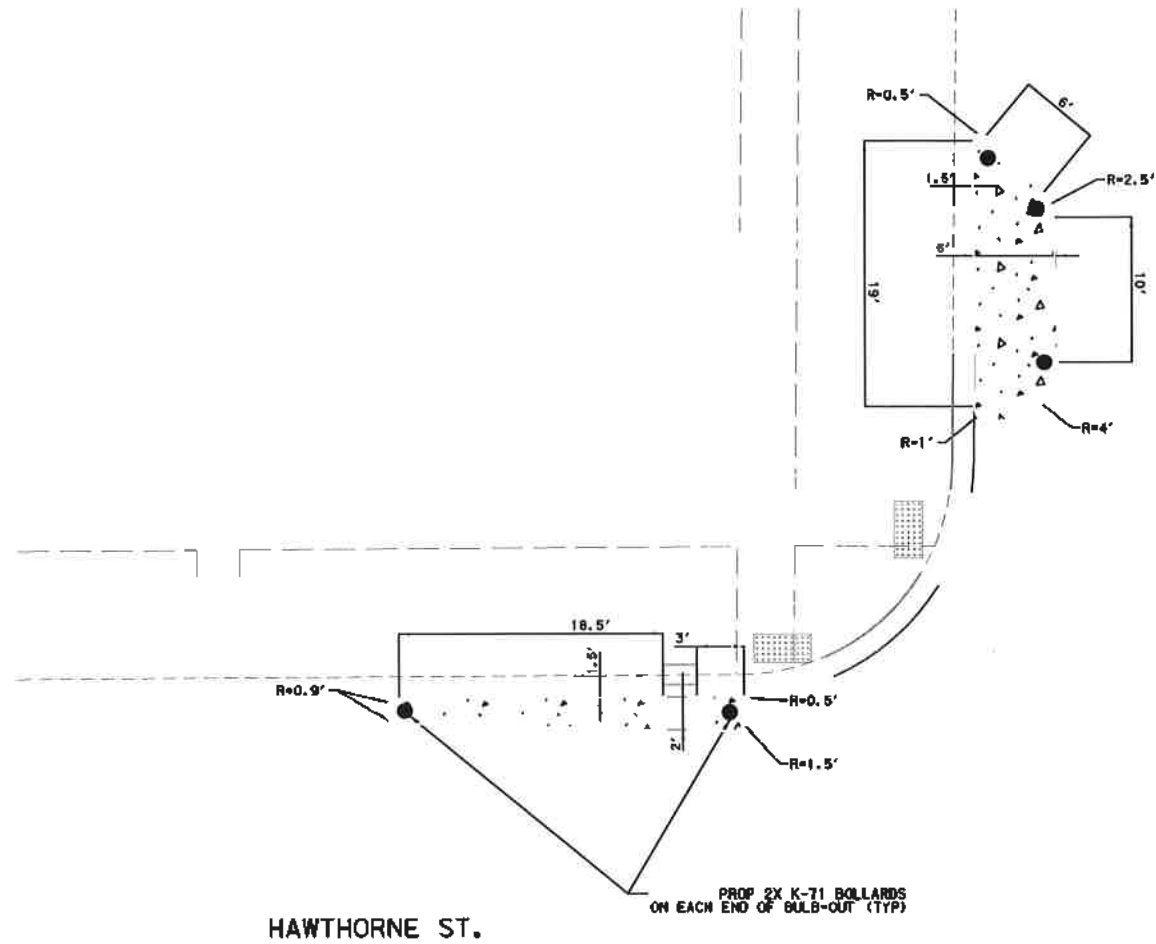


HAWTHORNE ST.



Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	STATE OF TEXAS KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 2/8/2022
	SURVEYED BY: <i>Karam M. Qaddo</i>
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
CURB EXTENSION DETAILS	
SHEET 1 OF 3	
MBS NUMBER N-127000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	72248
CITY OF HOUSTON PM SHAMPOO GOLSHAN	
SHEET NO. 70 OF 247	

NO.	DATE	REVISION	APP.



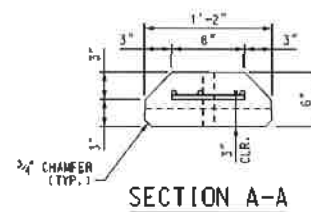
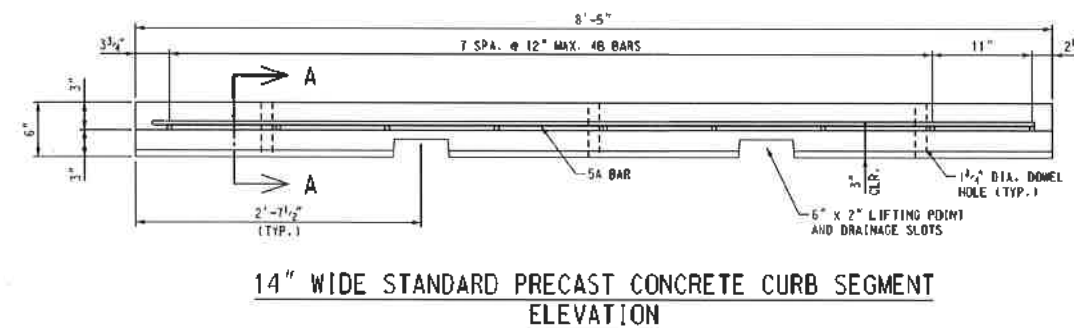
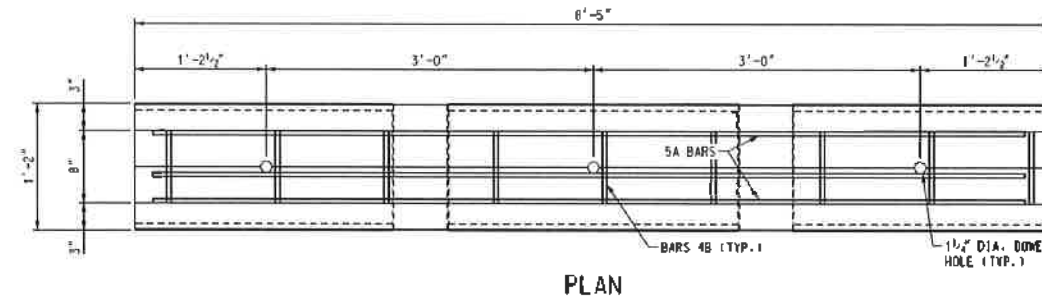
Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	STATE OF TEXAS KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 2/8/2022
	SURVEYED BY: <i>Karam Qaddo</i>
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
CURB EXTENSION DETAILS	
SHEET 2 OF 3	
WBS NUMBER N-T27000-002	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON SHAPOOR GOLSHAN	
SHEET NO. 71 OF 247	

NO.	DATE	REVISION	APP.

TEG REGISTRATION NUMBER: 10564

14" WIDE STANDARD PRECAST CONCRETE CURB SEGMENT QUANTITIES		
PART NAME	REBAR	
	QTY	WEIGHT (lbs)
5A	3	25.0
4B	9	4.0
TOTAL STEEL		29.0
CONCRETE (cyd)	0.15	596
TOTAL WEIGHT		625

TRI-Curb™ - Type A



These drawings have been sealed on Mar. 24, 2021.

CARLOS TORRES
 105765
 LICENSED PROFESSIONAL ENGINEER

NOTICE:
 THE DESIGN CONTAINED IN THESE DRAWINGS IS BASED ON THE TRICON PRECAST, LTD. SPECIFICATIONS AND THE INFORMATION PROVIDED BY THE OWNER. TEG ENGINEERING, LLC. IS ONLY RESPONSIBLE FOR THE INTERNAL AND EXTERNAL STABILITY OF THE MSE WALL SYSTEM. GLOBAL STABILITY AND BEARING CAPACITY IS NOT THE RESPONSIBILITY OF TEG ENGINEERING, LLC.
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Tricon Precast Limited
 15055 HENRY ROAD
 HOUSTON, TEXAS 77060
 (281) 931-9832
 (281) 931-0061
 www.triconprecast.com

TEG CIVIL STRUCTURAL ENGINEERING
 4545-466 STREET, SUITE B
 HOUSTON, TX 77049
 TEL: (281) 214-6128

DESIGNED BY: ZS	PROJECT NO.:	CSJ NO.:
CHECKED BY: CT	STRUCTURE NO.:	DATE:
	TRICON JOB NO.:	SHEET 1 of 3

TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

SURVEYED BY: *Sarah L. Wetmore*

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
WOODHEAD STREET TYPE A PRECAST CURB DETAIL

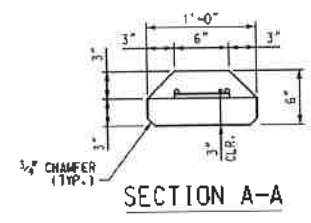
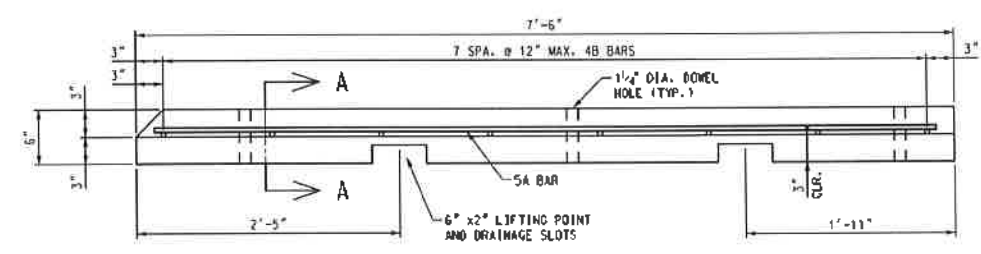
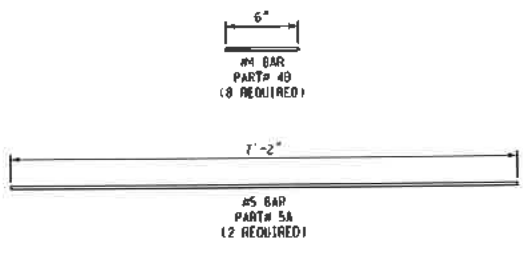
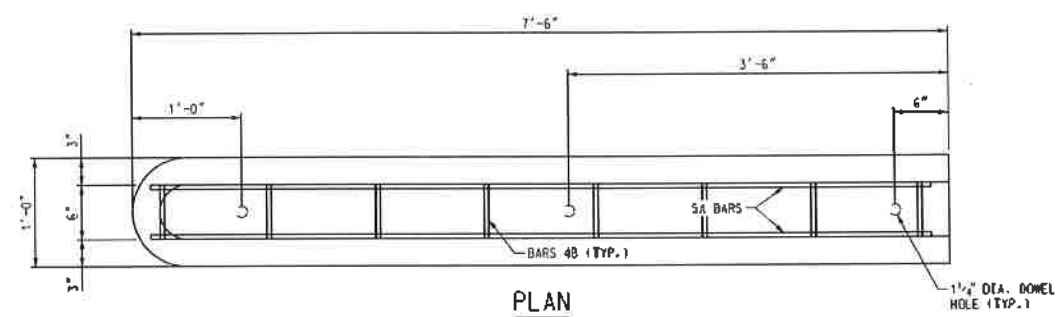
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	72248
AS NOTED	
CITY OF HOUSTON PM	
SHPOOR COLSHW	
SHEET NO. 74 OF 247	

NO.	DATE	REVISION	APP.

TEG REGISTRATION NUMBER: 10564

ONE END ROUNDED CAP PRECAST CONCRETE CURB SEGMENT QUANTITIES

REBAR		
PART NAME	QTY	WEIGHT (lbs)
5A	2	15.0
4B	8	2.7
TOTAL STEEL		17.6
CONCRETE (cyd)	0.12	472
TOTAL WEIGHT		489



ONE END ROUNDED CAP PRECAST CONCRETE CURB SEGMENT ELEVATION



NOTICE:

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Tricon Precast Limited
15055 HENRY ROAD
HOUSTON, TEXAS 77060
(281) 931-9632
(281) 931-0081
www.triconprecast.com

TEG CIVIL STRUCTURAL ENGINEERING
886 440 STREET SUITE B
HOUSTON, TEXAS
PH: 281-931-8282

HARRIS COUNTY

DESIGNED BY: NC	PROJECT NO.:	CSJ NO.:
CHECKED BY: CT	STRUCTURE NO.:	DATE:
	TRICON JOB NO.:	SHEET 2 of 3

TRAFFIC ENGINEERS, INC.
801 CONGRESS ST, Suite 325
Houston, TX 77022
www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

STATE OF TEXAS
BARAH L. WETMORE
130442
Professional Engineer

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
WOODHEAD STREET
TYPE B PRECAST CURB DETAIL

WBS NUMBER: N-T27000-0002

FOR CITY OF HOUSTON USE ONLY: 72248

AS NOTED

CITY OF HOUSTON PROJECT: SHAPOR GOLSMAN

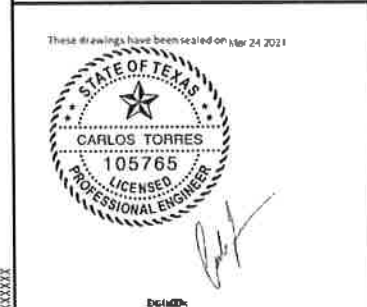
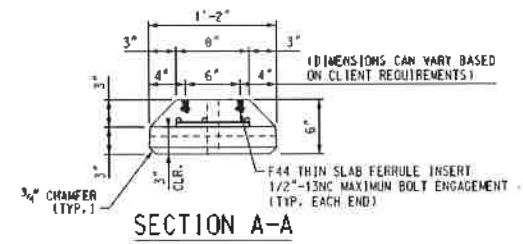
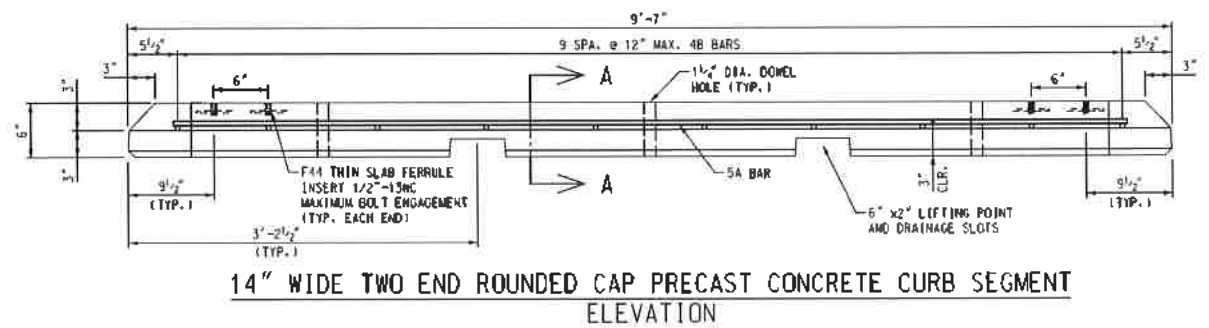
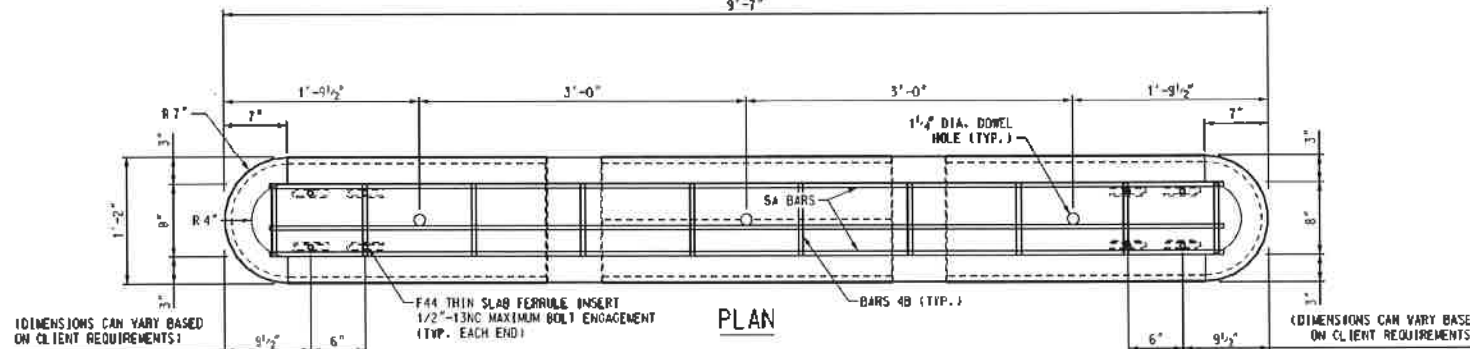
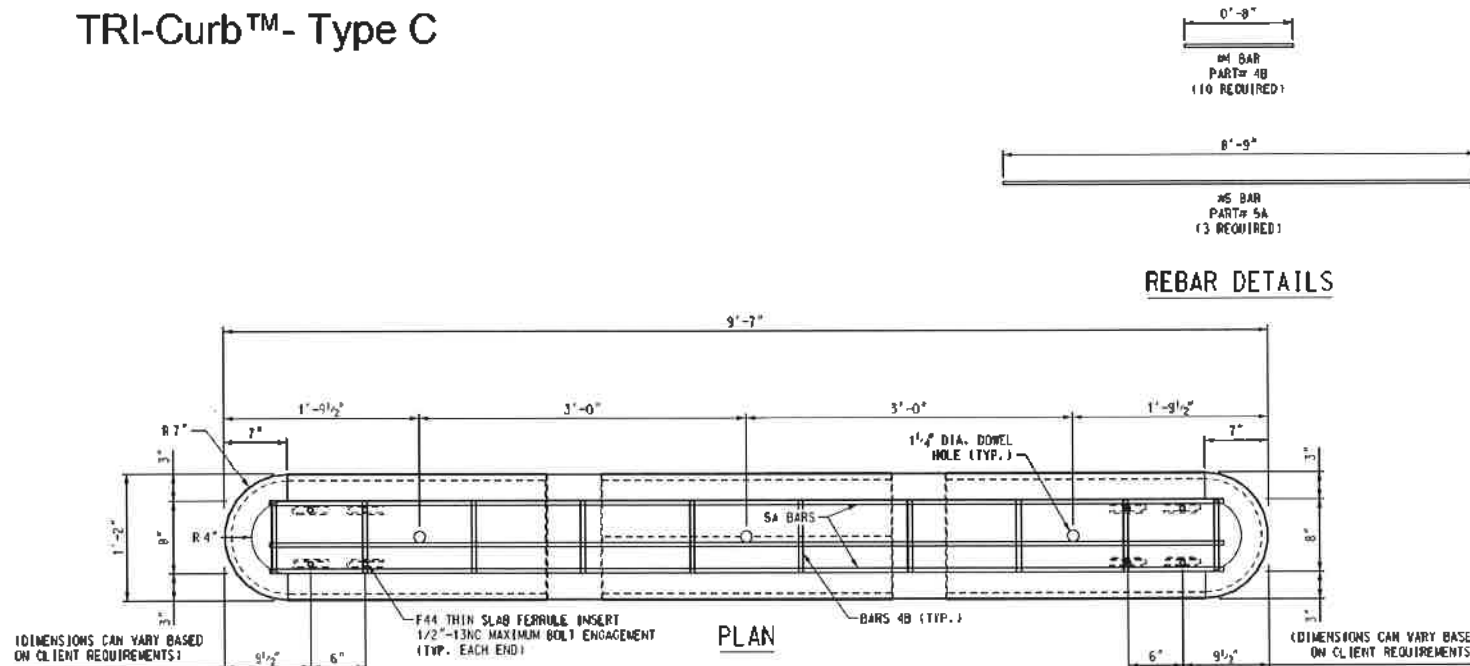
SHEET NO. 75 OF 247

NO.	DATE	REVISION	APP.

TEG REGISTRATION NUMBER: 10564

14" WIDE TWO END ROUNDED CAP PRECAST CONCRETE CURB SEGMENT QUANTITIES		
PART NAME	REBAR	
	QTY	WEIGHT (lbs)
5A	3	27.4
4B	10	4.5
TOTAL STEEL		31.8
CONCRETE (CY)	0.17	657
TOTAL WEIGHT		689

TRI-Curb™ - Type C



NOTICE:
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15065 HENRY ROAD
HOUSTON, TEXAS 77060
(281) 931-9802
(281) 931-0081
www.triconprecast.com

TEG CIVIL STRUCTURAL ENGINEERING
1501 4th STREET SUITE 5
HOUSTON, TX 77002
PH: 281-931-9802

DRAWN BY: KC	PROJECT NO.:	ESJ NO.:
DESIGNED BY: ZS	STRUCTURE NO.:	DATE:
CHECKED BY: CT	TATCON JOB NO.:	SHEET 3 of 3

TRAFFIC ENGINEERS, INC.
12/10/2021
801 CONGRESS ST, Suite 325
Houston, TX 77022
www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

STATE OF TEXAS
BARAH L. SWETMORE
130442
PROFESSIONAL ENGINEER

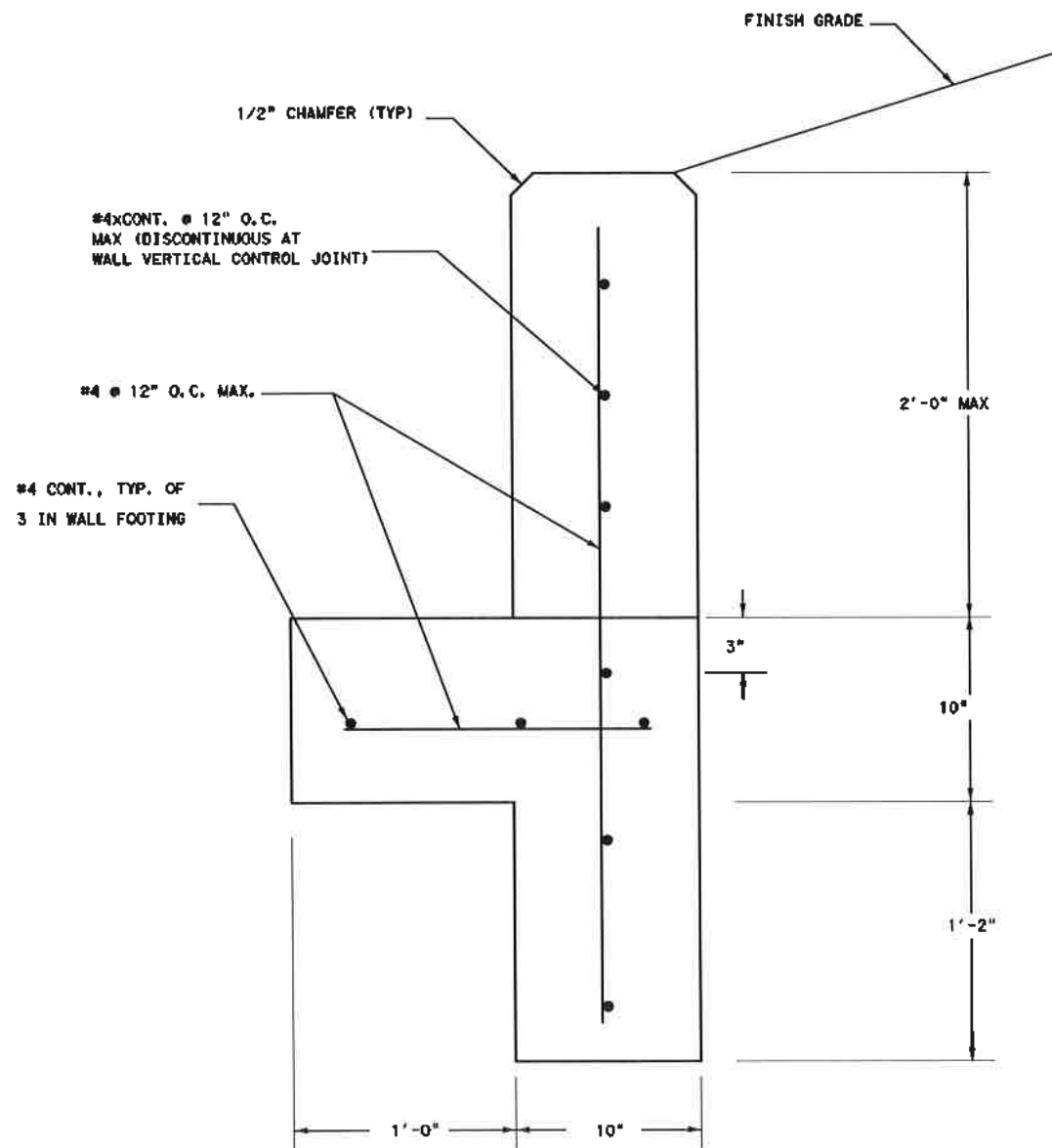
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WOODHEAD STREET
TYPE C PRECAST CURB DETAIL

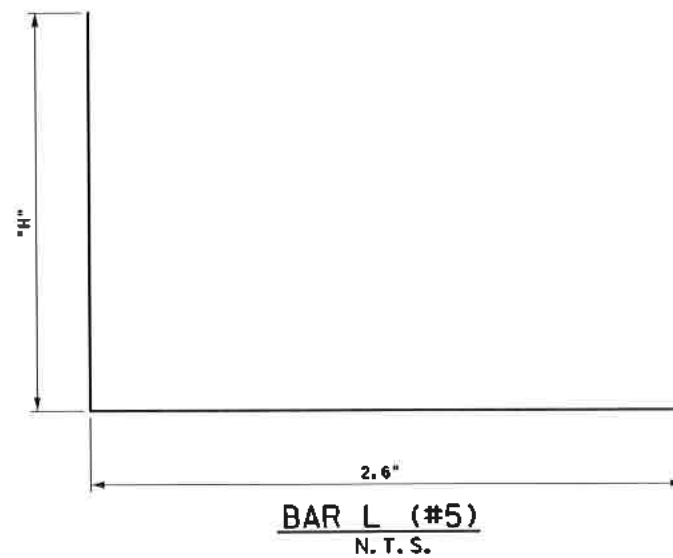
WBS NUMBER: N-T27000-0001-7
FOR CITY OF HOUSTON USE ONLY
7 2 2 4 8

SHEET NO. 75A OF 24

NO.	DATE	REVISION



CONCRETE TOE WALL
 N. T. S.



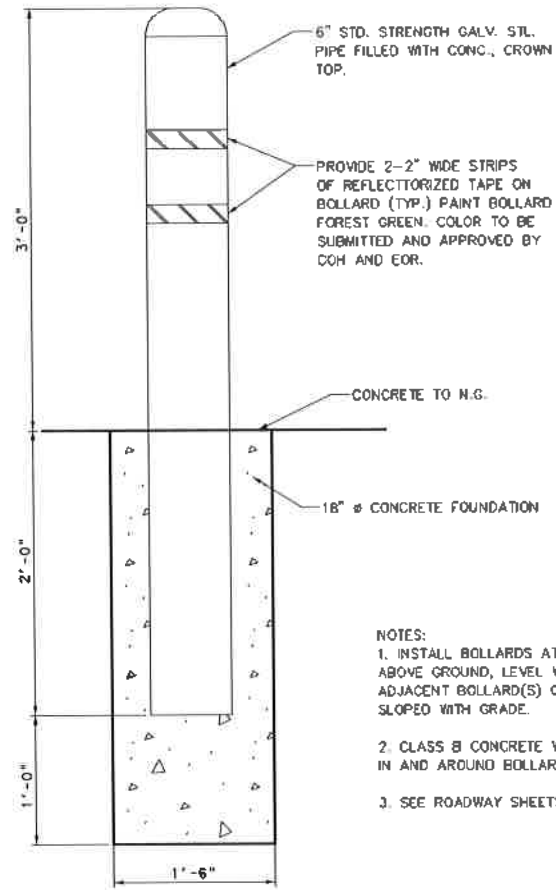
NOTE:

1. CONTRACTOR TO PROVIDE EXPANSION JOINTS IN RETAINING WALL AT 8' O.C. MAX SPACING SHALL BE DETERMINED BY WALL LENGTH TO ACHIEVE EQUAL SPACING RECEIVED 1/2" VERTICAL CHAMFERS, TYP.
2. MINIMUM WALL HEIGHT OF 4".
3. CONCRETE STRENGTH F C=4,000 PSI.
4. ALL STRUCTURAL STEEL SHALL BE GRADE 60.

NO.	DATE	REVISION	APP.

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
RETAINING WALL DETAIL	
SHEET 1 OF 1	
WBS NUMBER N-T27000-00-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON SHUPCOB GOLSHAN	
SHEET NO. 76 OF 24	

BOLLARD DETAIL



6" STD. STRENGTH GALV. STL. PIPE FILLED WITH CONC., CROWN TOP.

PROVIDE 2-2" WIDE STRIPS OF REFLECTORIZED TAPE ON BOLLARD (TYP.) PAINT BOLLARD FOREST GREEN. COLOR TO BE SUBMITTED AND APPROVED BY COH AND EOR.

CONCRETE TO H.G.

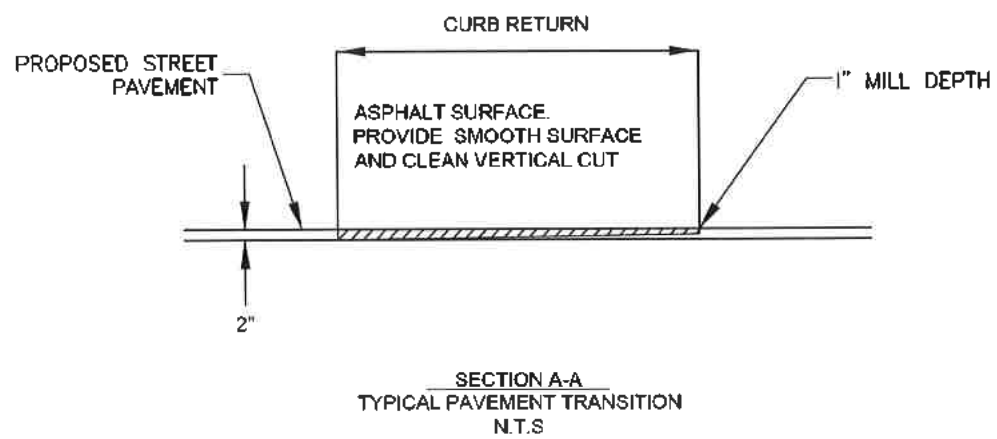
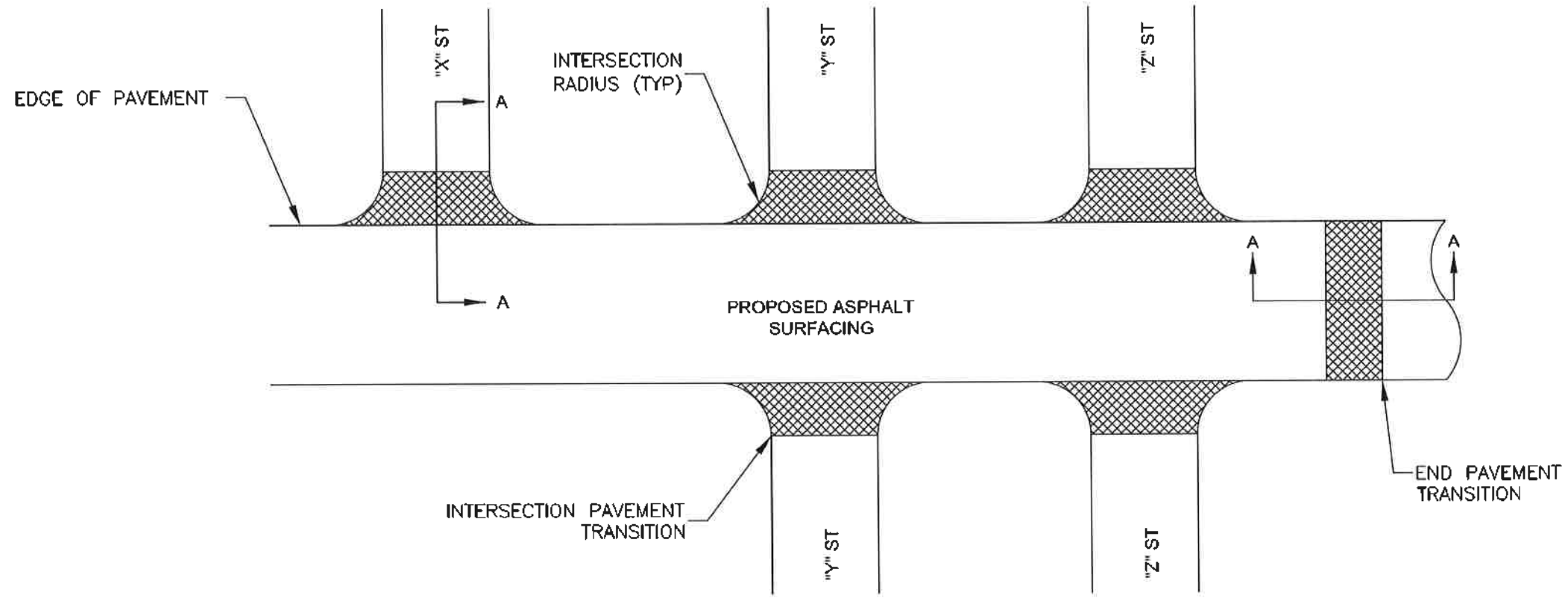
18" ϕ CONCRETE FOUNDATION

- NOTES:
1. INSTALL BOLLARDS AT 3'± ABOVE GROUND, LEVEL WITH ADJACENT BOLLARD(S) OR EVENLY SLOPED WITH GRADE.
 2. CLASS 8 CONCRETE WILL BE USED IN AND AROUND BOLLARDS.
 3. SEE ROADWAY SHEETS FOR SPACING

NO.	DATE	REVISION	APP.

TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		<i>Sarah L. Wetmore</i> 11/16/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET BOLLARD DETAIL		
WBS NUMBER N-T27000-0002	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>	
AS NOTED CITY OF HOUSTON PM SHAPOOR QOLSHAN	SHEET NO. 77 OF 247	

Per TabletHW.tbl
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 11/15/2021 4:27:12 PM mhdalee1



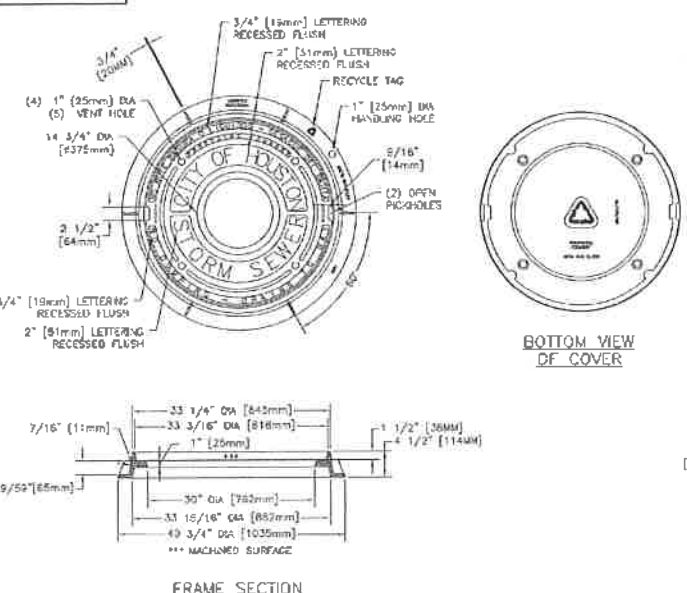
 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
	SURVEYED BY: 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS CONSTRUCTION STANDARDS PAVEMENT TRANSITION DETAILS	
SHEET 1 OF 1	
WBS NUMBER N-127000-002	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8
DRAWING SCAL AS NOTED	
CITY OF HOUSTON PM SHAPOR GOLSUN	
SHEET NO. 79 OF 247	

NO.	DATE	REVISION	APP.

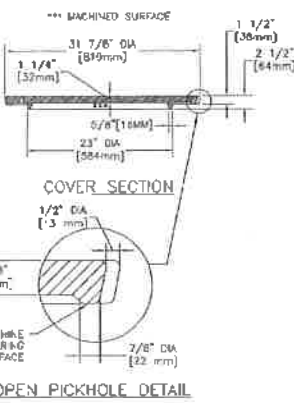
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NO.	DATE	REVISION	APP.

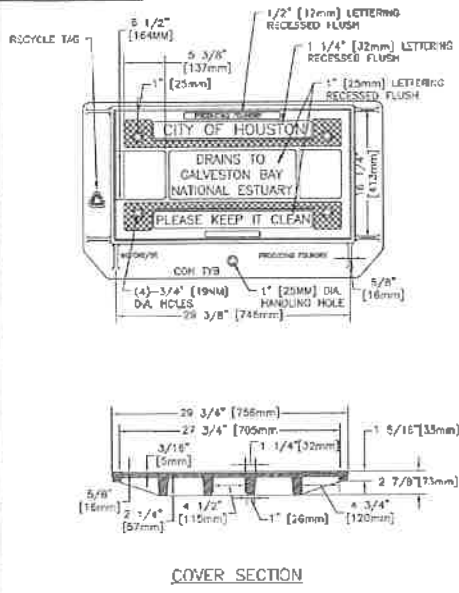
02084-02



- NOTES:**
- APPROXIMATE WEIGHTS:
FRAME - 170 LBS (77KGS)
COVER - 276 LBS (123KGS)
UNIT - 440 LBS (200KGS)
 - MATERIALS - GRAY IRON ASTM A48 CLASS B
 - CASTING TO MEET MS&C PROOF LOAD SPECIFICATION
 - EJW V-1420 ASTY OR APPROVED EQUAL

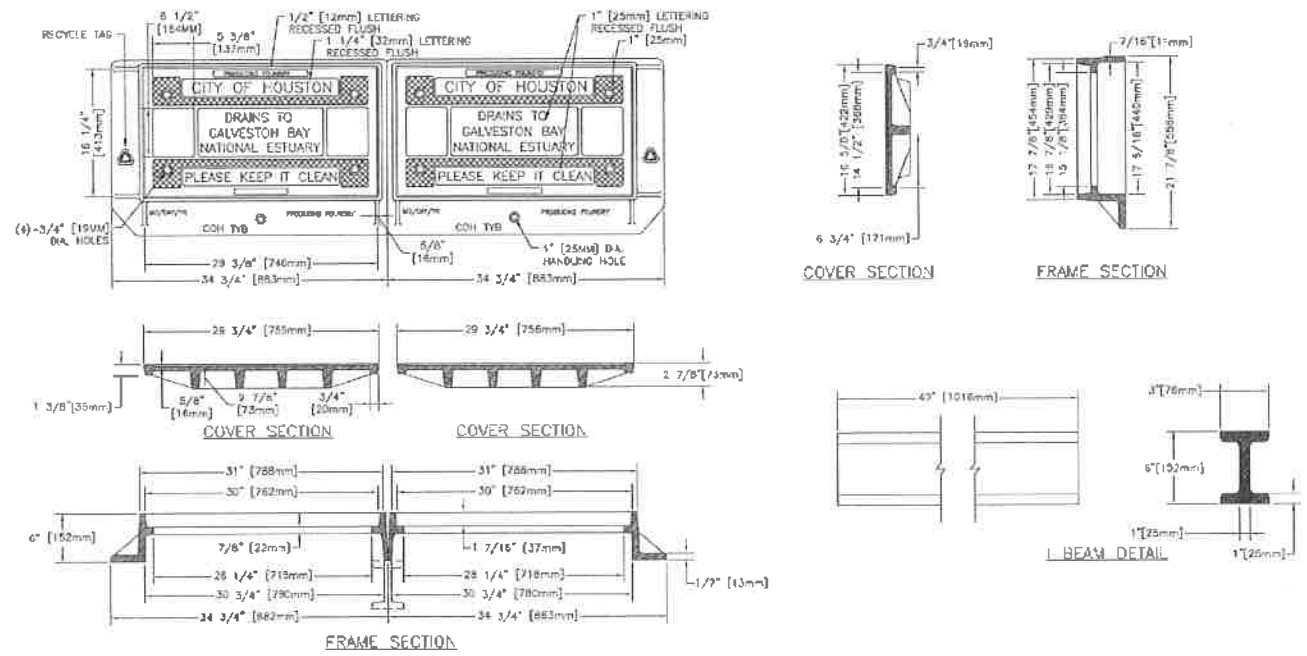


02084-03



- NOTES:**
- APPROXIMATE WEIGHTS:
FRAME - 125 LBS (57KGS)
COVER - 130 LBS (59KGS)
UNIT - 220 LBS (100KGS)
 - MATERIALS - GRAY IRON ASTM A48 CLASS B
 - CASTING TO MEET MS&C PROOF LOAD SPECIFICATION
 - EJW V-1421 ASTY OR APPROVED EQUAL

02084-04



- NOTES:**
- APPROXIMATE WEIGHTS:
FRAME - 125 LBS (57KGS)
COVER - 120 LBS (55KGS)
UNIT - 107 LBS (48KGS)
 - MATERIALS - GRAY IRON ASTM A48 CLASS B
 - CASTING TO MEET MS&C PROOF LOAD SPECIFICATION
 - EJW V-1243 ASTY OR APPROVED EQUAL

FIRM INFORMATION		ENGINEER'S SEAL		
CITY OF HOUSTON HOUSTON PUBLIC WORKS				
STORM SEWER 02084-02 THROUGH 04				
APPROVED BY: <i>Amel T. M...</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> SENIOR DIRECTOR			
APPROVED BY: <i>Carl Haddock</i> DIRECTOR	EFFECTIVE DATE: JULY-01-2019 FOR CITY OF HOUSTON USE ONLY			
SHEET NO.				

Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	

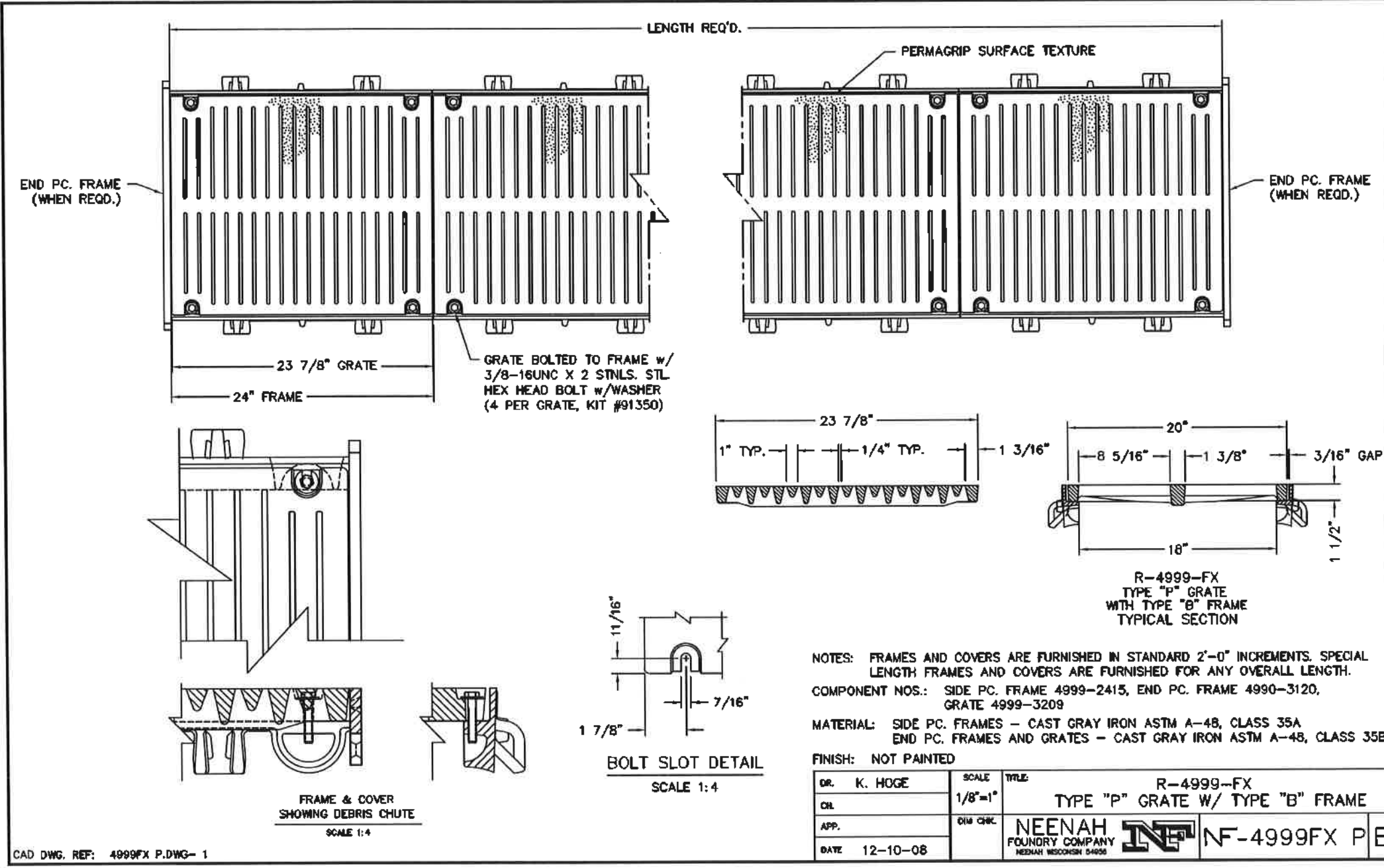
CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS

TYPE "B" INLET ASSEMBLY

SHEET 1 OF 1

NBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	72248
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	SHAPOR GOLSHAN
SHEET NO. 80 OF 247	

NO.	DATE	REVISION	APP.



TRAFFIC ENGINEERS, INC.
11/15/2021

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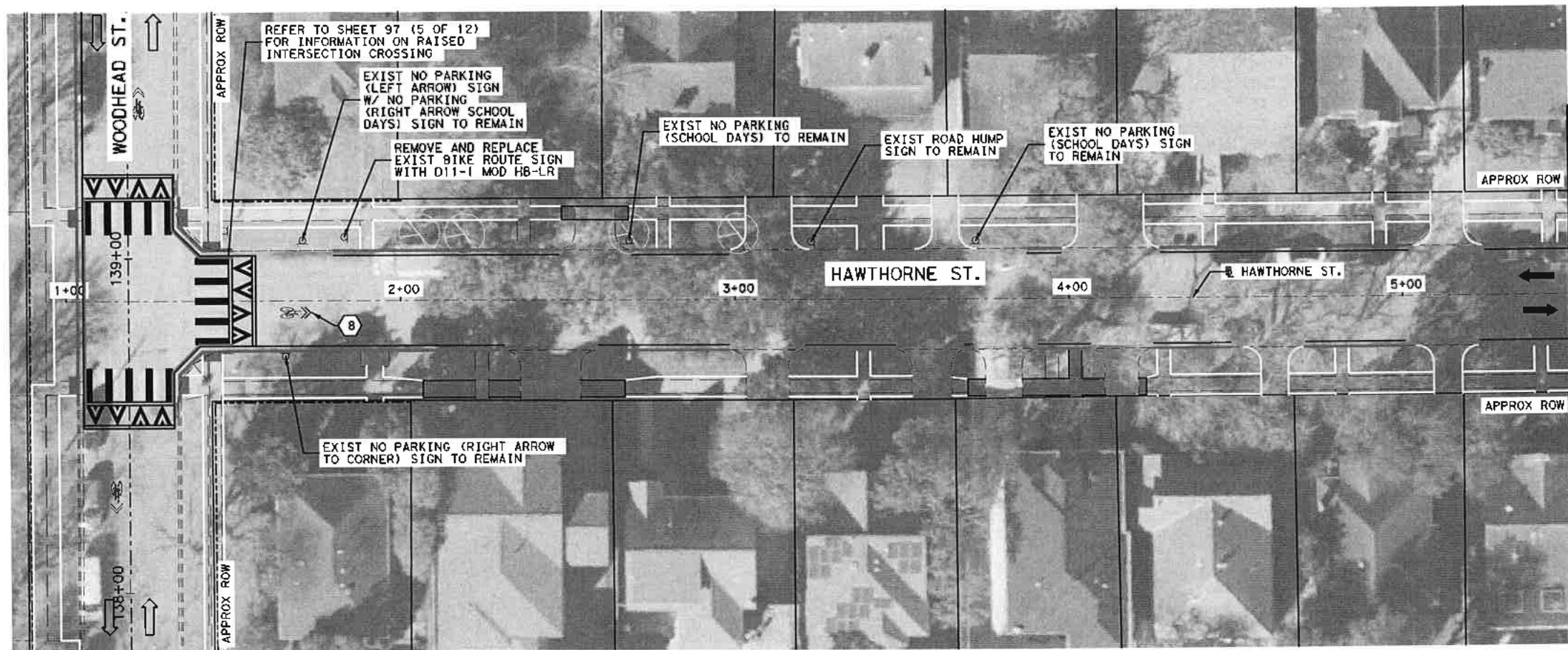
SURVEYED BY: Sarah L. Wetmore

STATE OF TEXAS
SARAH L. WETMORE
130442
PROFESSIONAL ENGINEER

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WOODHEAD STREET
TRENCH DRAIN DETAIL

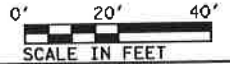
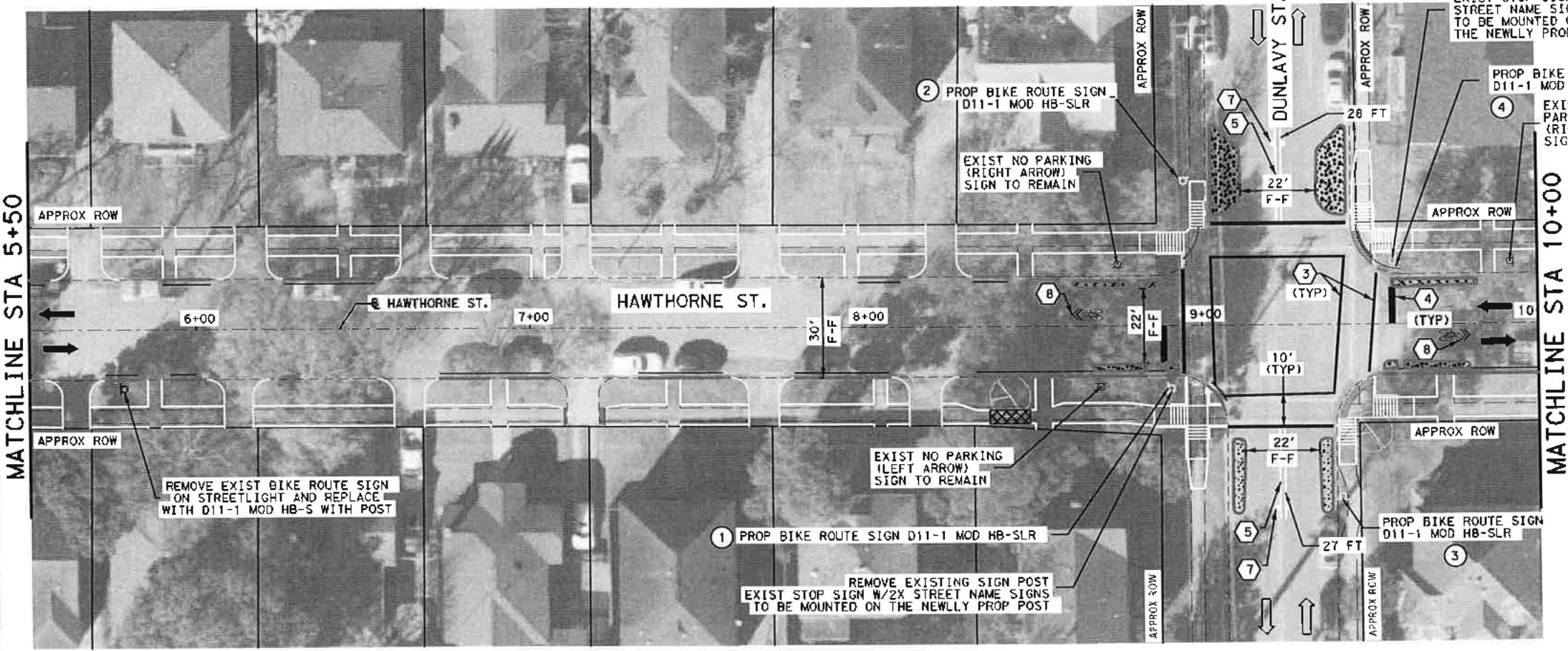
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0007	
AS NOTED	7 2 2 4 8
CITY OF HOUSTON	
SHAMPOOR GOLSHAN	
SHEET NO. 01 OF 24	



LEGEND

- ➔ PROPOSED LANE
- ➡ EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- - - EXIST EOP
- ① REFL PAV MRK (W) 4" (SLD)
- ② REFL PAV MRK (W) 6" (SLD)
- ③ REFL PAV MRK (W) 12" (SLD)
- ④ REFL PAV MRK (W) 24" (SLD)
- ⑤ REFL PAV MRK (Y) 4" (DBL SLD)
- ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
- ⑦ REFL PAV MRK TYP II-A-A
- ⑧ REFL PAV MRK (W) SHARROW
- ⑨ REFL PAV MRK (W) 4" (BRK)
- ⑩ REFL PAV MRK TYP I-C

- NOTES:**
1. ALL DISTANCES ARE APPROXIMATE SEE TYPICAL SECTION FOR MORE INFORMATION
 2. SEE COH STANDARD DETAILS FOR BIKE LANE PAVEMENT MARKINGS.
 3. SEE COH SIGNS STANDARD DETAILS FOR MORE INFORMATION.
 4. ALL PAVEMENT MARKINGS SHALL CONFIRM TO COH STANDARDS AND SPECIFICATION AND GUIDELINE OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
 5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE, CENTER OF DOUBLE OF LANE LINE, FACE OF CURB OF EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 6. ALL RAISED PAVEMENT MARKERS (RPMs) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF THE TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
 7. CONTRACTOR SHALL ENSURE ALL SIGNS ARE INSTALLED IN MANNER SO AS NOT CONFLICT WITH OTHER SIGNS, OR BE OBSTRUCTED EXISTING TREES OR POLES, COORDINATE SIGN LOCATION WITH CONSTRUCTION MANAGER FOR APPROVAL BEFORE INSTALLATION.
 8. ALL SIGNS ARE TO REMAIN UNLES SPECIFIED ON PLANS.
 9. RELOCATE ALL THE STOP SIGN TO PROPOSED STOP BAR.



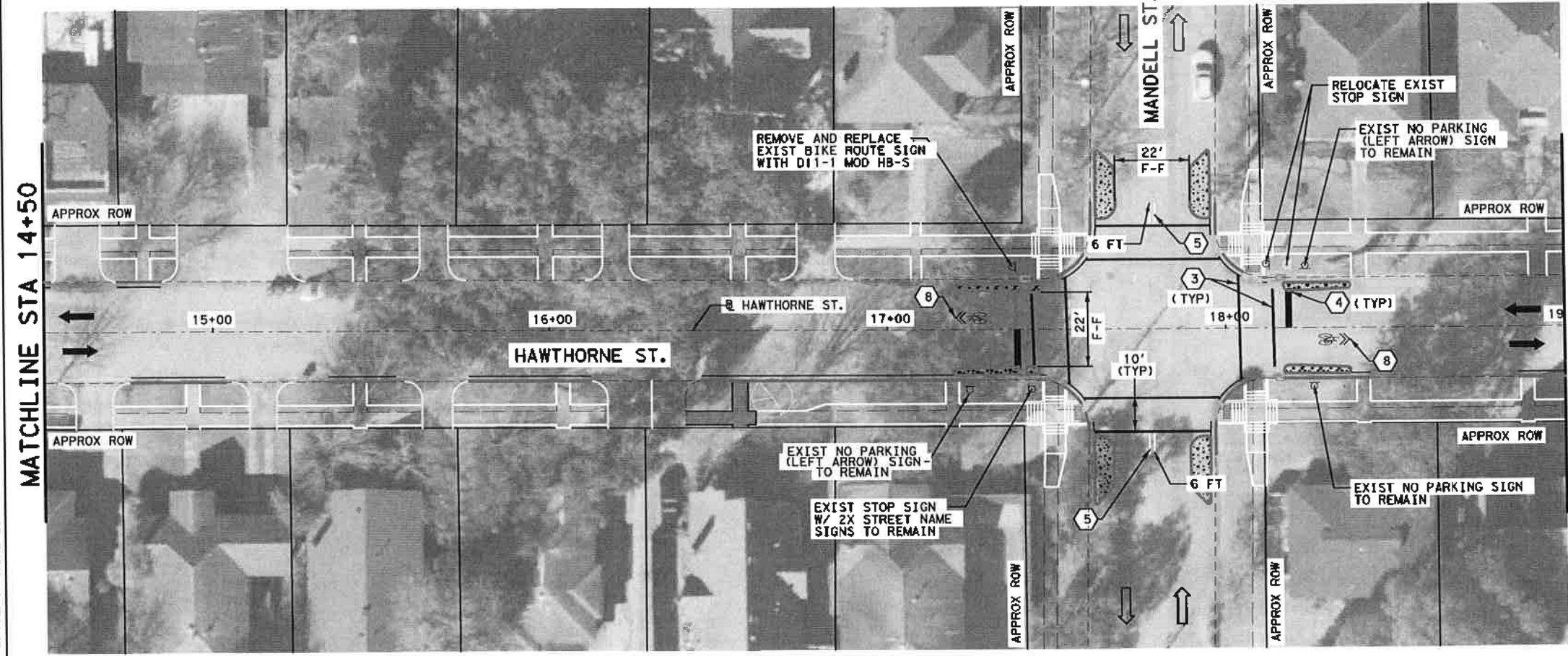
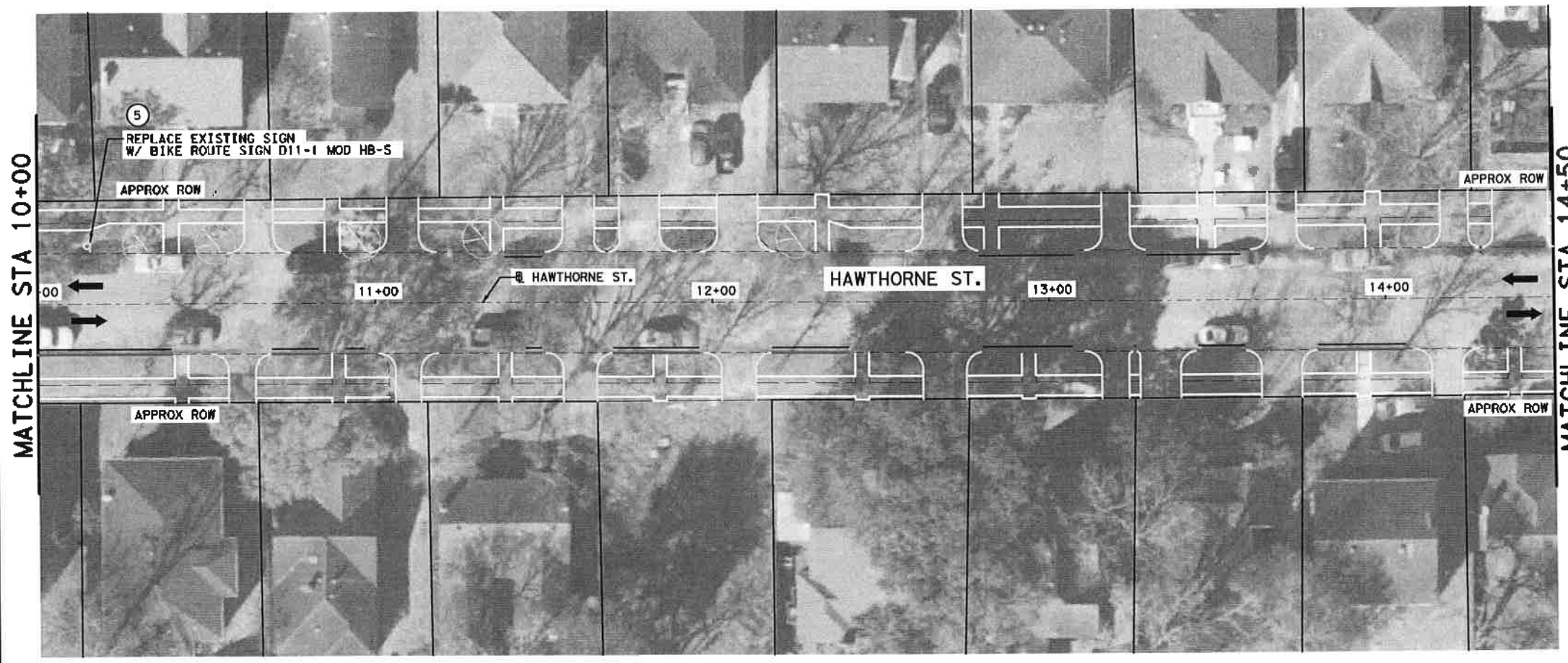
Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

SURVEYED BY: [Signature]
11/15/2021



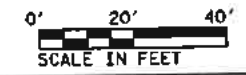
CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
HAWTHORNE STREET
SIGNING AND PAVEMENT MARKING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002	72248
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PE	SHAPOOR GULSHAN
SHEET NO. 02 OF 247	



- LEGEND**
- ➔ PROPOSED LANE
 - ➡ EXISTING LANE
 - RIGHT-OF-WAY
 - PROP CURB
 - - - EXIST EOP
 - ① REFL PAV MKR (W) 4" (SLD)
 - ② REFL PAV MKR (W) 6" (SLD)
 - ③ REFL PAV MKR (W) 12" (SLD)
 - ④ REFL PAV MKR (W) 24" (SLD)
 - ⑤ REFL PAV MKR (Y) 4" (OBL SLD)
 - ⑥ REFL PAV MKR TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL PAV MKR TYP II-A-A
 - ⑧ REFL PAV MKR (W) SHARROW
 - ⑨ REFL PAV MKR (W) 4" (BRK)
 - ⑩ REFL PAV MKR TYP I-C

- NOTES:**
1. ALL DISTANCES ARE APPROXIMATE SEE TYPICAL SECTION FOR MORE INFORMATION
 2. SEE COH STANDARD DETAILS FOR BIKE LANE PAVEMENT MARKINGS.
 3. SEE COH SIGNS STANDARD DETAILS FOR MORE INFORMATION.
 4. ALL PAVEMENT MARKINGS SHALL CONFIRM TO COH STANDARDS AND SPECIFICATION AND GUIDELINE OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
 5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE, CENTER OF DOUBLE OF LANE LINE, FACE OF CURB OF EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 6. ALL RAISED PAVEMENT MARKERS (RPMs) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF THE TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
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 8. ALL SIGNS ARE TO REMAIN UNLES SPECIFIED ON PLANS.
 9. RELOCATE ALL THE STOP SIGN TO PROPOSED STOP BAR.



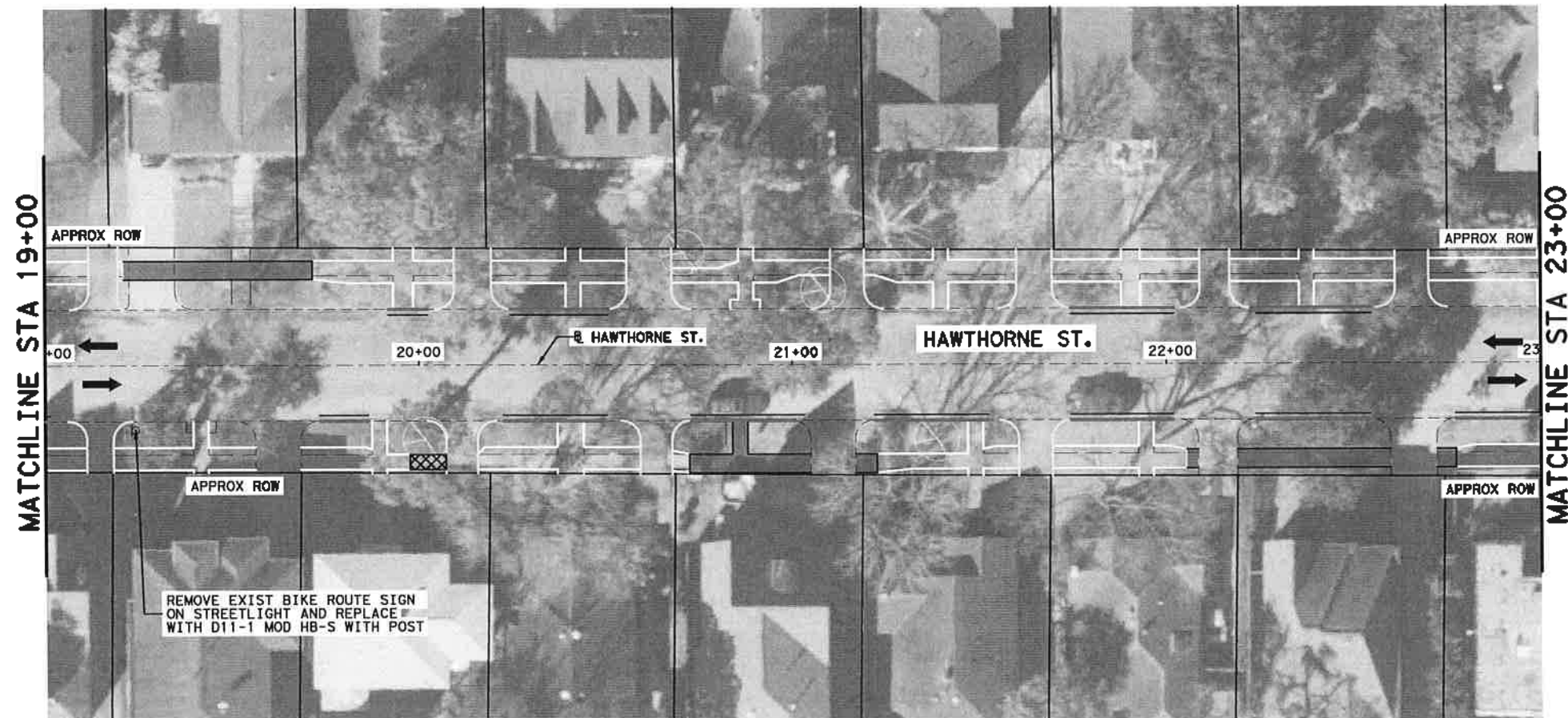
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Texas PE Firm Reg. #F-20017

SURVEYED BY:
KARAM M. QADUO
125811
LICENSED PROFESSIONAL ENGINEER
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
HAWTHORNE STREET
SIGNING AND PAVEMENT MARKING PLAN

SHEET 2 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	7 2 2 4 8
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PW	
SHAPOOR GOLSHAI	
SHEET NO. 83 OF 247	



LEGEND

	PROPOSED LANE
	EXISTING LANE
	RIGHT-OF-WAY
	PROP CURB
	EXIST EOP
	REFL PAV MRK (W) 4" (SLD)
	REFL PAV MRK (W) 6" (SLD)
	REFL PAV MRK (W) 12" (SLD)
	REFL PAV MRK (W) 24" (SLD)
	REFL PAV MRK (Y) 4" (DBL SLD)
	REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
	REFL PAV MRK TYP II-A-A
	REFL PAV MRK (W) SHARROW
	REFL PAV MRK (W) 4" (BRK)
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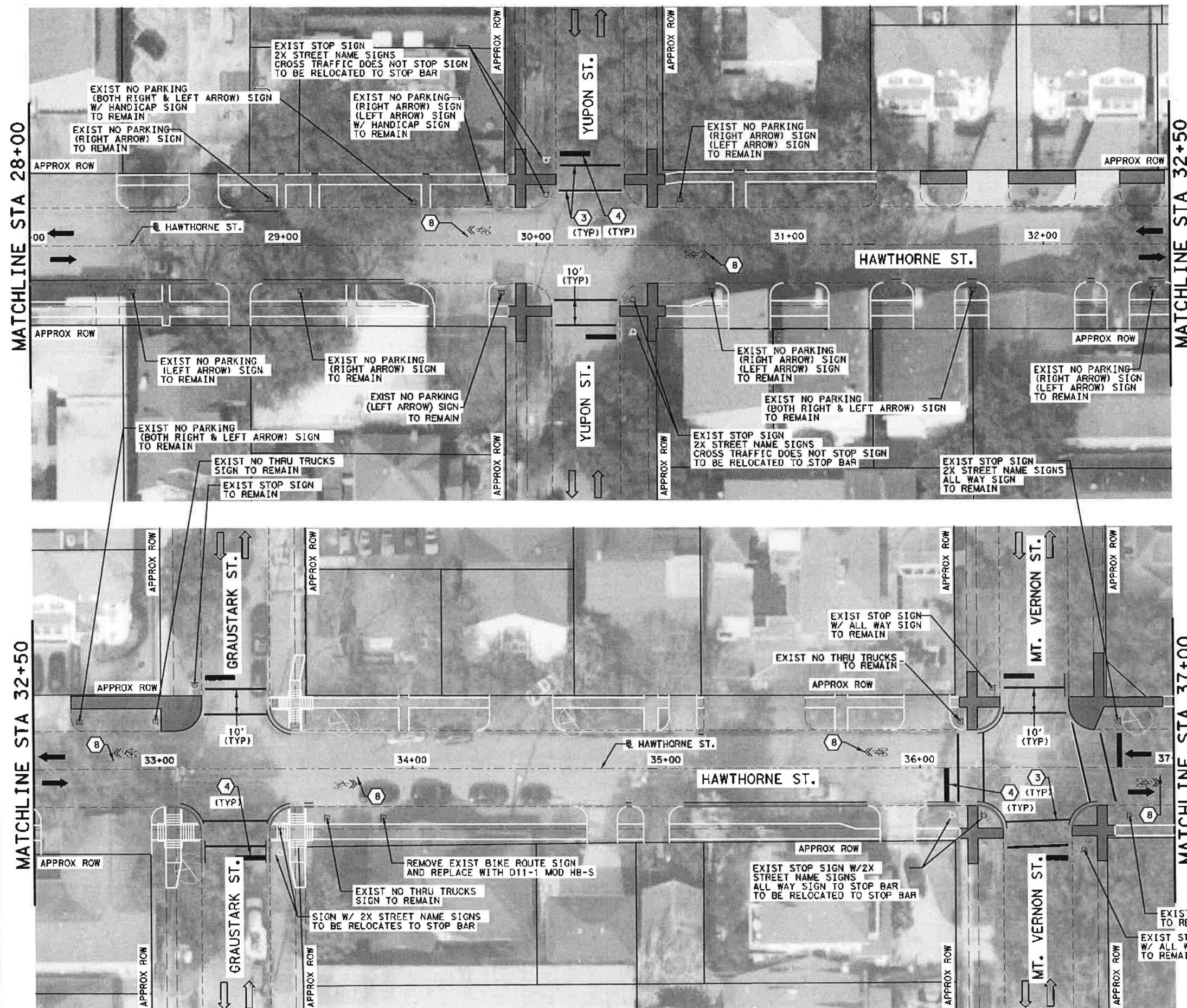


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 LICENSED PROFESSIONAL ENGINEER
 12561
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
HAWTHORNE STREET SIGNING AND PAVEMENT MARKING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	7 2 2 4 8
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 84 OF 247	



LEGEND

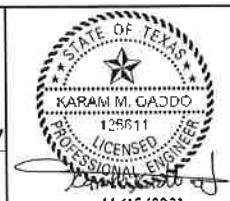
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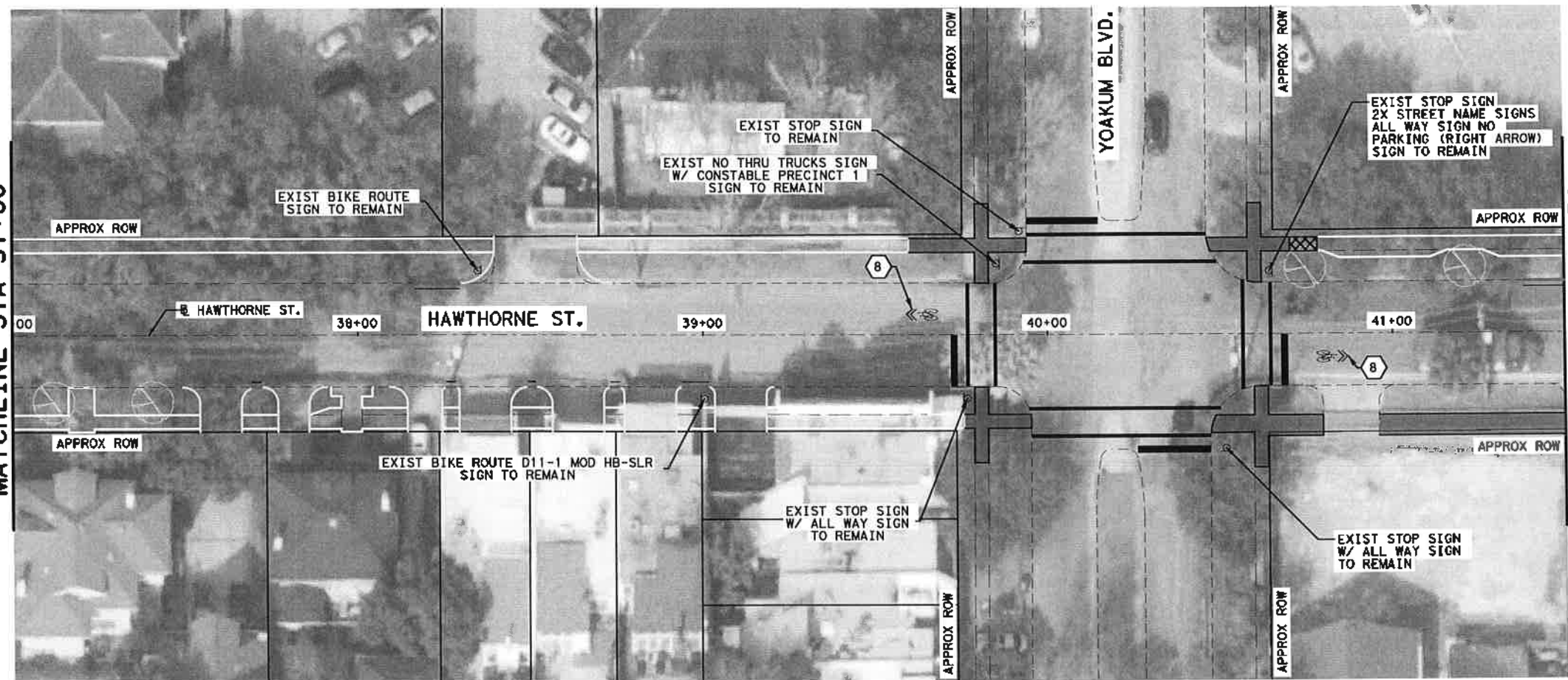


CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 SIGNING AND PAVEMENT MARKING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PROJECT NUMBER	
SHAPOOR OLSHAH	
SHEET NO. 80 OF 241	

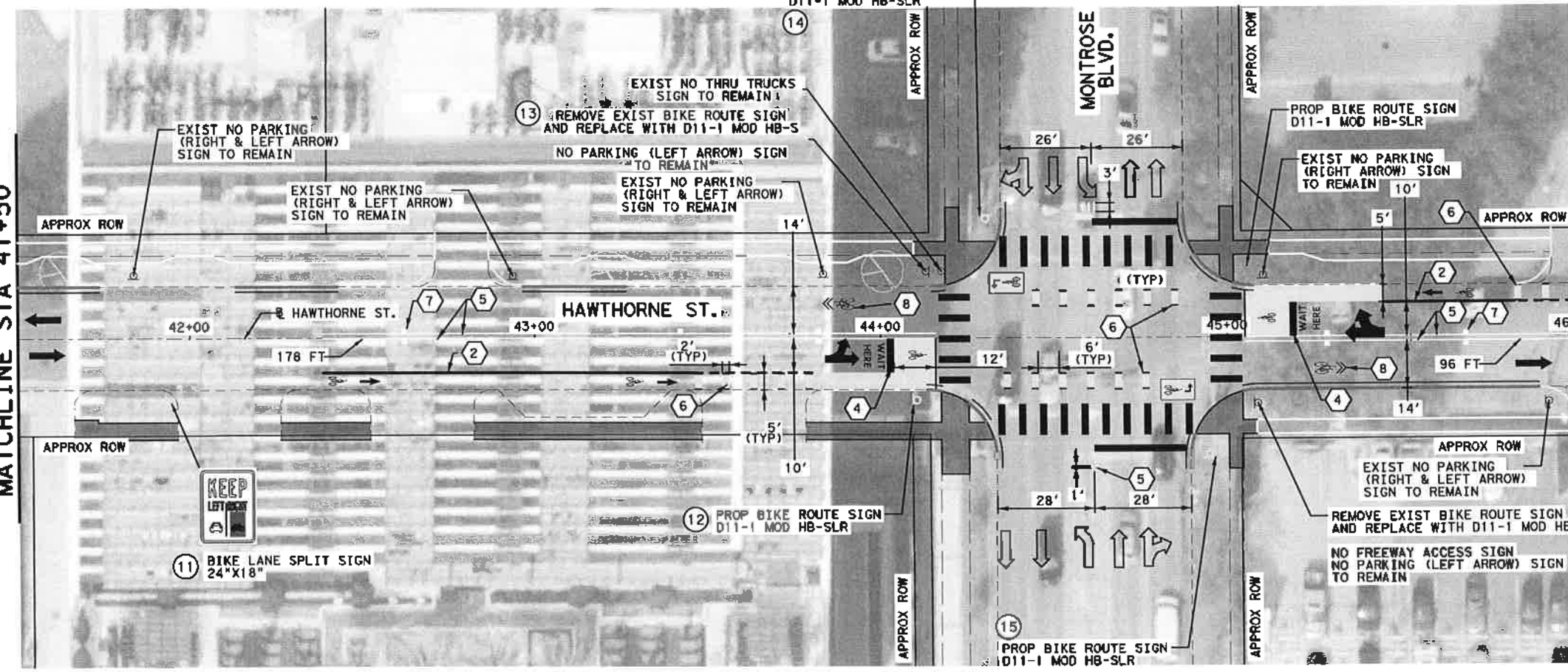
72248

MATCHLINE STA 37+00



MATCHLINE STA 41+50

MATCHLINE STA 41+50



MATCHLINE STA 46+00

LEGEND

- ➔ PROPOSED LANE
- ➡ EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- - - EXIST EOP
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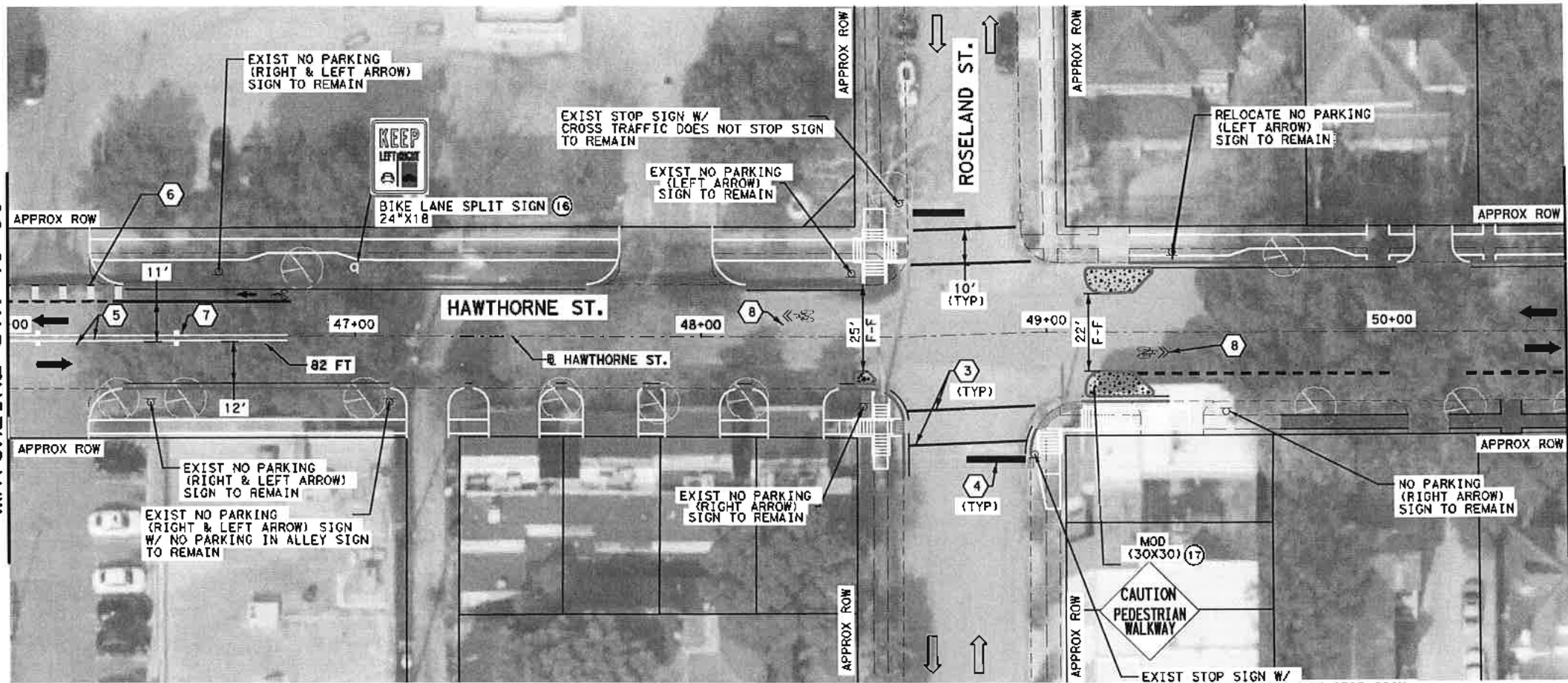


CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET IMPROVEMENTS
HAWTHORNE STREET
SIGNING AND PAVEMENT MARKING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0017	
DRAWING NUMBER	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON	
SHAPOOR GOLSHAN	
SHEET NO. 87 OF	

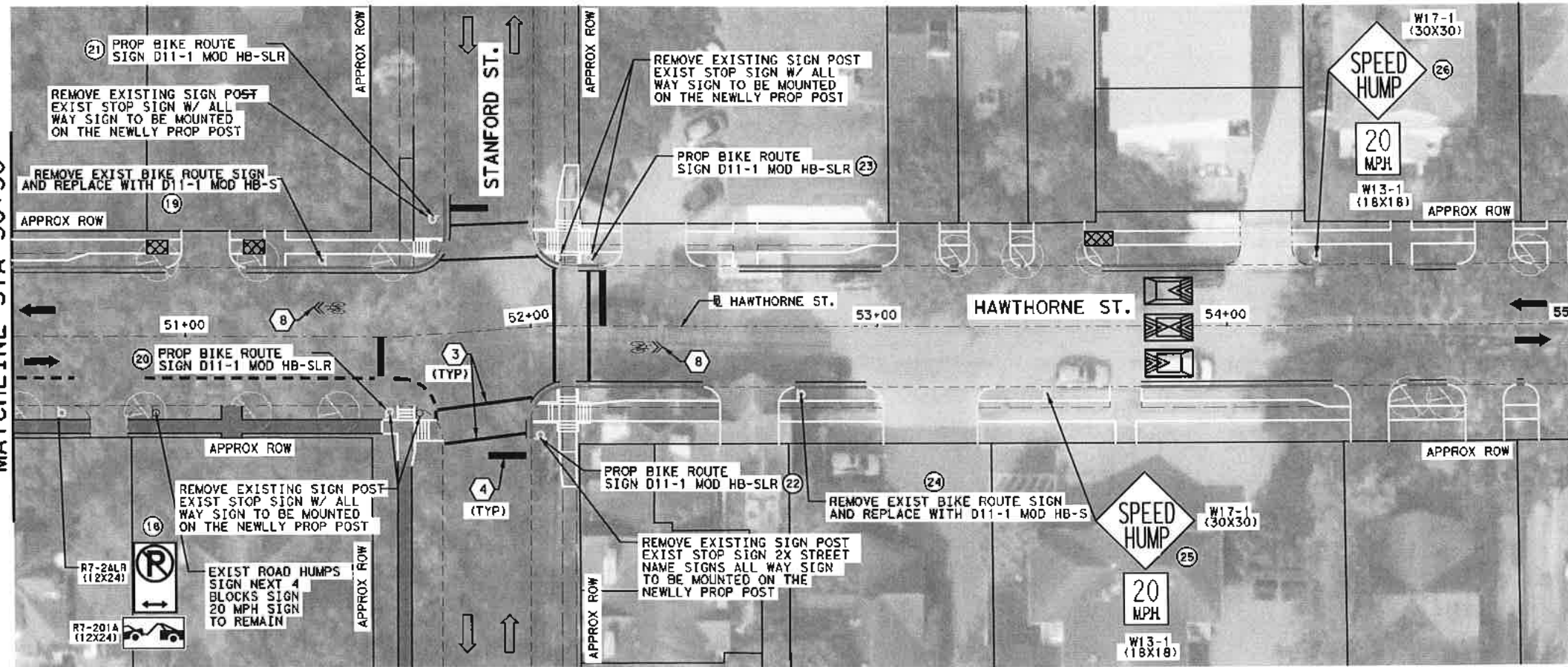
MATCHLINE STA 46+00

MATCHLINE STA 50+50



MATCHLINE STA 50+50

MATCHLINE STA 55+00



LEGEND

- ➔ PROPOSED LANE
- ➔ EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- EXIST EOP
- ① REFL PAV MRK (W) 4" (SLD)
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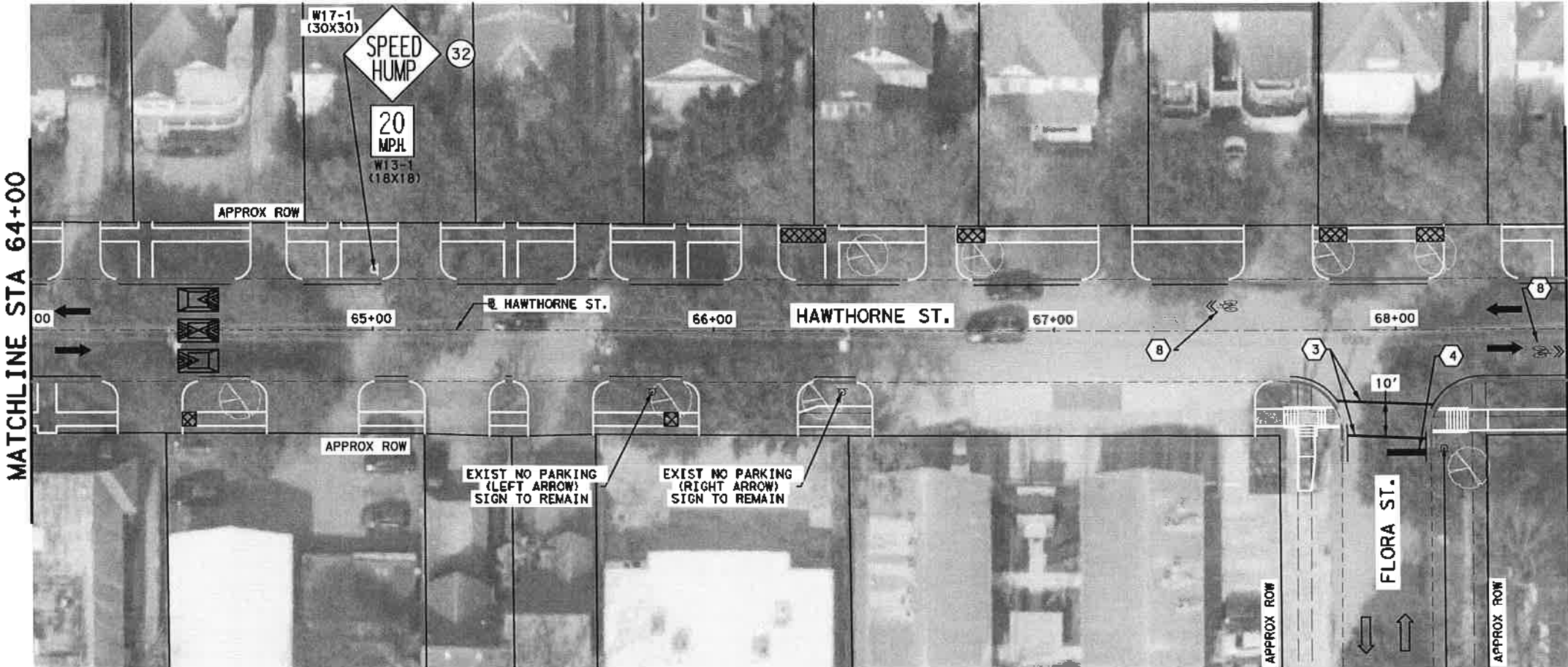


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CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
HAWTHORNE STREET
SIGNING AND PAVEMENT MARKING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	72248
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PW	SHAPOOR GOLSHAN
SHEET NO. 88 OF 247	



LEGEND

- ➔ PROPOSED LANE
- ➔ EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- - - EXIST EOP
- ① REFL PAV MRK (W) 4" (SLD)
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EXIST STOP SIGN
 2X STREET NAME SIGNS
 NO PARKING (RIGHT ARROW) SIGN
 SIGN TO REMAIN



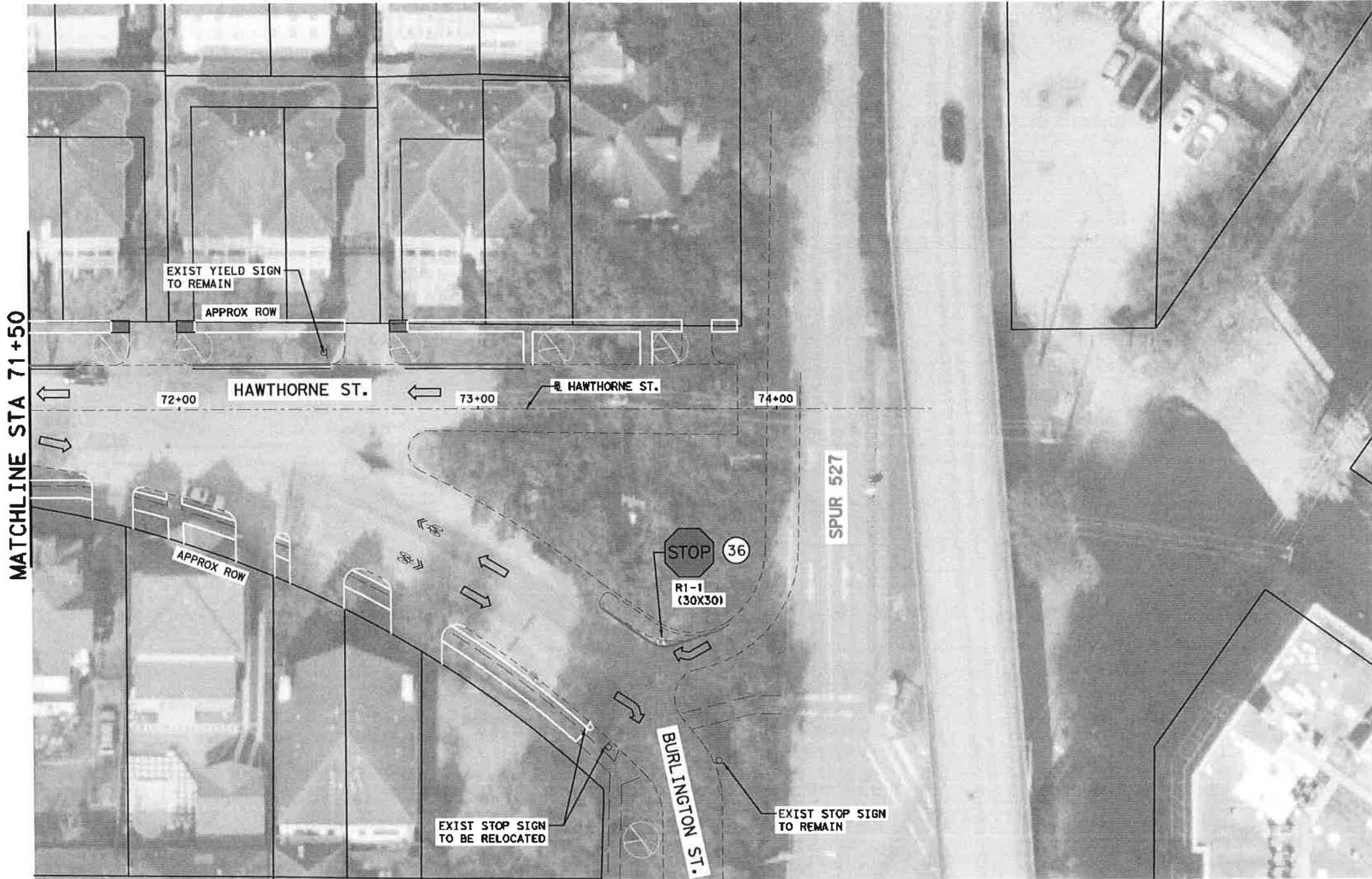
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SURVEYED BY:
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 125611
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 SIGNING AND PAVEMENT MARKING PLAN

SHEET 9 OF 10

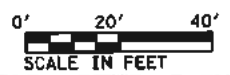
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N-T27000-22-7	
DRAWING SCALE	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON	
SHPOOR COLSIAN	
SHEET NO. 90 OF 211	



LEGEND

	PROPOSED LANE
	EXISTING LANE
	RIGHT-OF-WAY
	PROP CURB
	EXIST EOP
	REFL PAV MRK (W) 4" (SLD)
	REFL PAV MRK (W) 6" (SLD)
	REFL PAV MRK (W) 12" (SLD)
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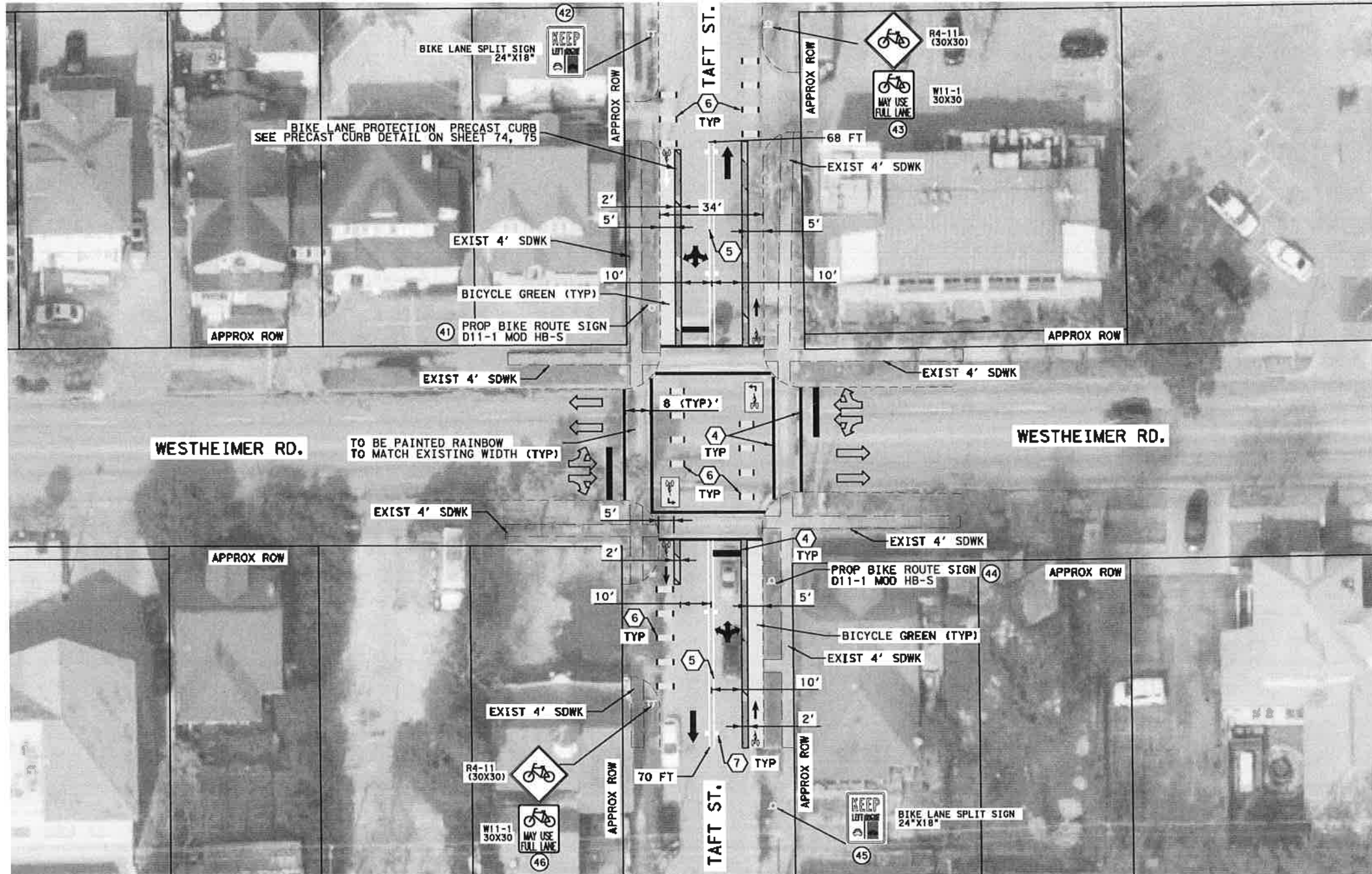
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SURVEYED BY:

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HAWTHORNE STREET
SIGNING AND PAVEMENT MARKING PLAN

SHEET 10 OF 10

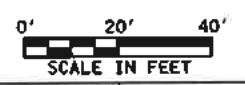
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-Y27000-00	
DRAWING SCALE	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON	
SHAFIQ GOLSIAN	
SHEET NO. 01 OF 24	



LEGEND

	PROPOSED LANE
	EXISTING LANE
	RIGHT-OF-WAY
	PROP CURB
	EXIST EOP
	REFL PAV MRK (W) 4" (SLD)
	REFL PAV MRK (W) 6" (SLD)
	REFL PAV MRK (W) 12" (SLD)
	REFL PAV MRK (W) 24" (SLD)
	REFL PAV MRK (Y) 4" (DBL SLD)
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 10. CENTER OF SHARROW PAVEMENT MARKINGS SHALL BE PLACED 6 FT FROM THE CENTER LINE OF THE ROAD.



Gauge
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3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

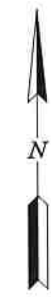
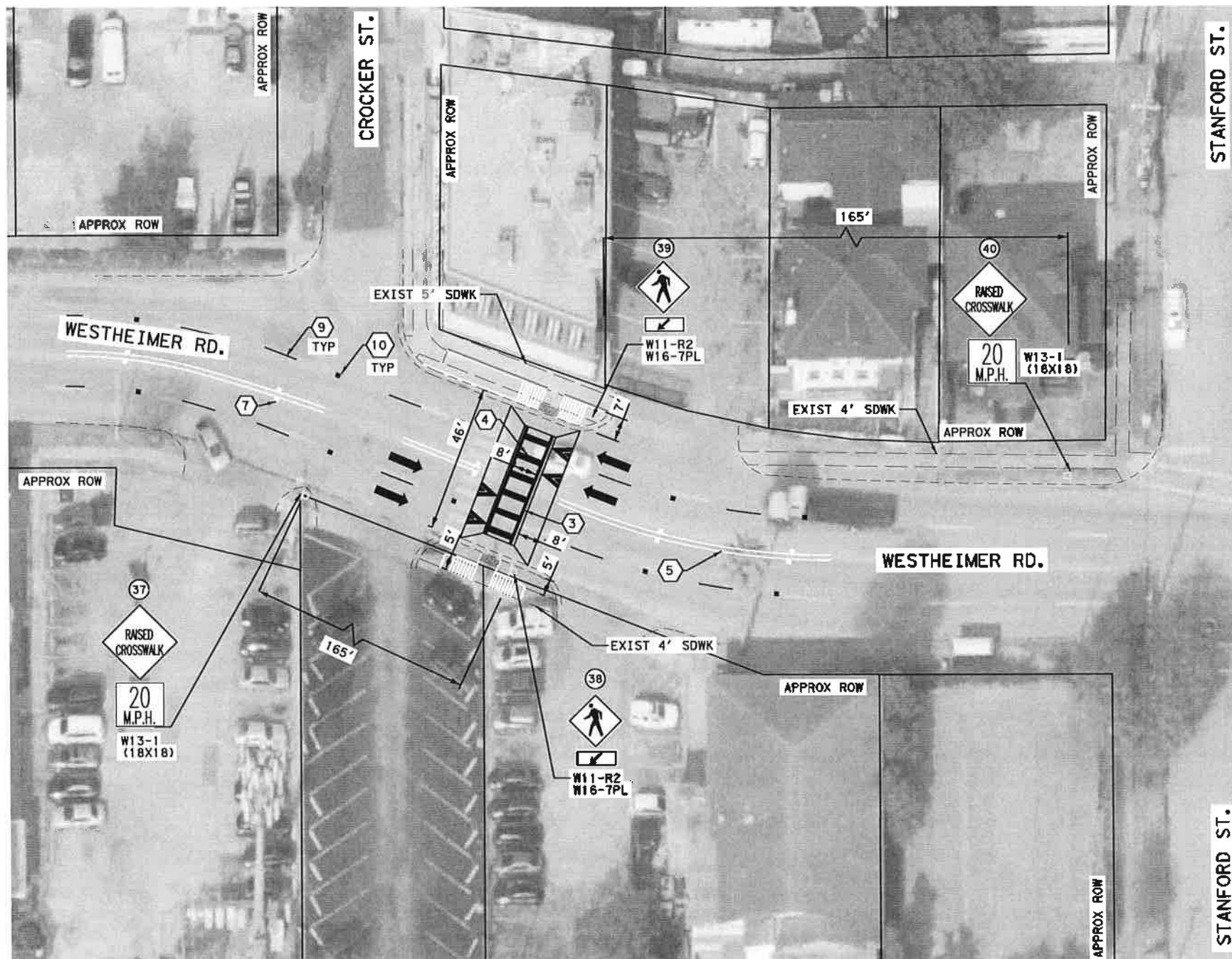
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11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WESTHEIMER RD. AND TAFT ST.
SIGNING & PAVEMENT MARKING

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSIAN	
SHEET NO. 92 OF 247	

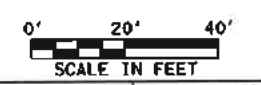
7 2 2 4 8



LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- EXIST EOP
- 1 REFL PAV MRK (W) 4" (SLD)
- 2 REFL PAV MRK (W) 6" (SLD)
- 3 REFL PAV MRK (W) 12" (SLD)
- 4 REFL PAV MRK (W) 24" (SLD)
- 5 REFL PAV MRK (Y) 4" (DBL SLD)
- 6 REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
- 7 REFL PAV MRK TYP II-A-A
- 8 REFL PAV MRK (W) SHARROW
- 9 REFL PAV MRK (W) 4" (BRK)
- 10 REFL PAV MRK TYP I-C

- NOTES:**
1. ALL DISTANCES ARE APPROXIMATE SEE TYPICAL SECTION FOR MORE INFORMATION
 2. SEE COH STANDARD DETAILS FOR BIKE LANE PAVEMENT MARKINGS.
 3. SEE COH SIGNS STANDARD DETAILS FOR MORE INFORMATION.
 4. ALL PAVEMENT MARKINGS SHALL CONFIRM TO COH STANDARDS AND SPECIFICATION AND GUIDELINE OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
 5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE, CENTER OF DOUBLE OF LANE LINE, FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 6. ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF THE TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
 7. CONTRACTOR SHALL ENSURE ALL SIGNS ARE INSTALLED IN MANNER SO AS NOT CONFLICT WITH OTHER SIGNS, OR BE OBSTRUCTED BY EXISTING TREES OR POLES. COORDINATE SIGN LOCATION WITH CONSTRUCTION MANAGER FOR APPROVAL BEFORE INSTALLATION.
 8. ALL SIGNS ARE TO REMAIN UNLESS SPECIFIED ON PLANS.
 9. RELOCATE ALL THE STOP SIGN TO PROPOSED STOP BAR.
 10. CENTER OF SHARROW PAVEMENT MARKINGS SHALL BE PLACED 6 FT FROM THE CENTER LINE OF THE ROAD.

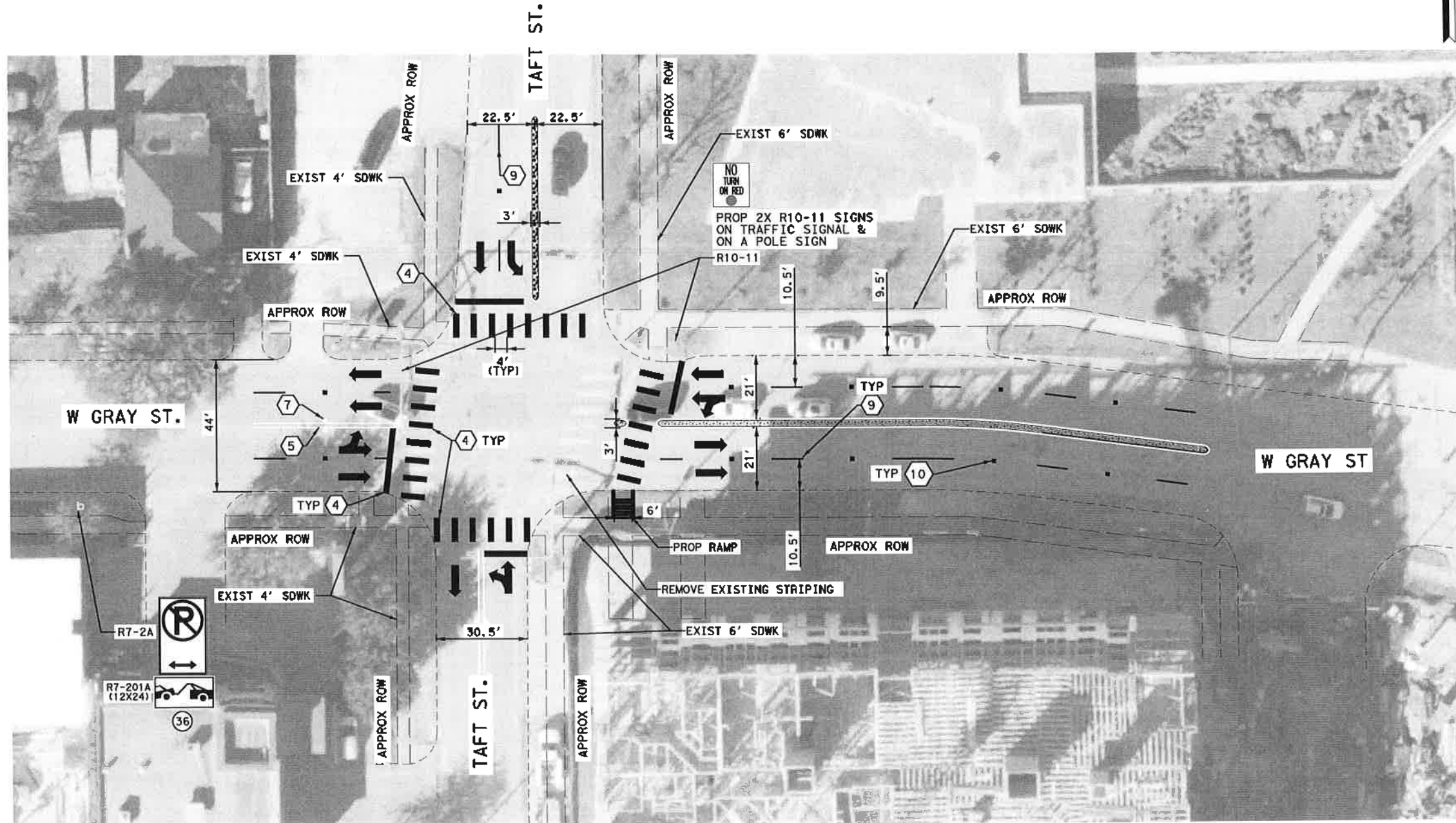


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SURVEYED BY:
 KARAM M. GADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
WESTHEIMER & CROCKER ST
 SIGNING & PAVEMENT MARKING

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-T	72248
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PW	
SHAPOUR BOLSIAN	
SHEET NO. 93 OF 247	



LEGEND

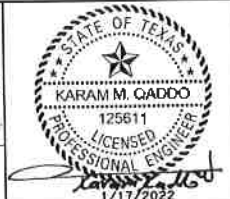
- ➔ PROPOSED LANE
- ➡ EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- - - EXIST EOP
- ① REFL PAV MRK (W) 4" (SLD)
- ② REFL PAV MRK (W) 6" (SLD)
- ③ REFL PAV MRK (W) 12" (SLD)
- ④ REFL PAV MRK (W) 24" (SLD)
- ⑤ REFL PAV MRK (Y) 4" (DBL SLD)
- ⑥ REFL PAV MRK TY C PERFORM SYMBOL (WHITE/GREEN)
- ⑦ REFL PAV MRK TYP II-A-A
- ⑧ REFL PAV MRK (W) SHARROW
- ⑨ REFL PAV MRK (W) 4" (BRK)
- ⑩ REFL PAV MRK TYP I-C

NOTES:

1. ALL DISTANCES ARE APPROXIMATE SEE TYPICAL SECTION FOR MORE INFORMATION
2. SEE COH STANDARD DETAILS FOR BIKE LANE PAVEMENT MARKINGS.
3. SEE COH SIGNS STANDARD DETAILS FOR MORE INFORMATION.
4. ALL PAVEMENT MARKINGS SHALL CONFIRM TO COH STANDARDS AND SPECIFICATION AND GUIDELINE OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE, CENTER OF DOUBLE OF LANE LINE, FACE OF CURB OF EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF THE TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF THE TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
7. CONTRACTOR SHALL ENSURE ALL SIGNS ARE INSTALLED IN MANNER SO AS NOT CONFLICT WITH OTHER SIGNS, OR BE OBSTRUCTED EXISTING TREES OR POLES. COORDINATE SIGN LOCATION WITH CONSTRUCTION MANAGER FOR APPROVAL BEFORE INSTALLATION.
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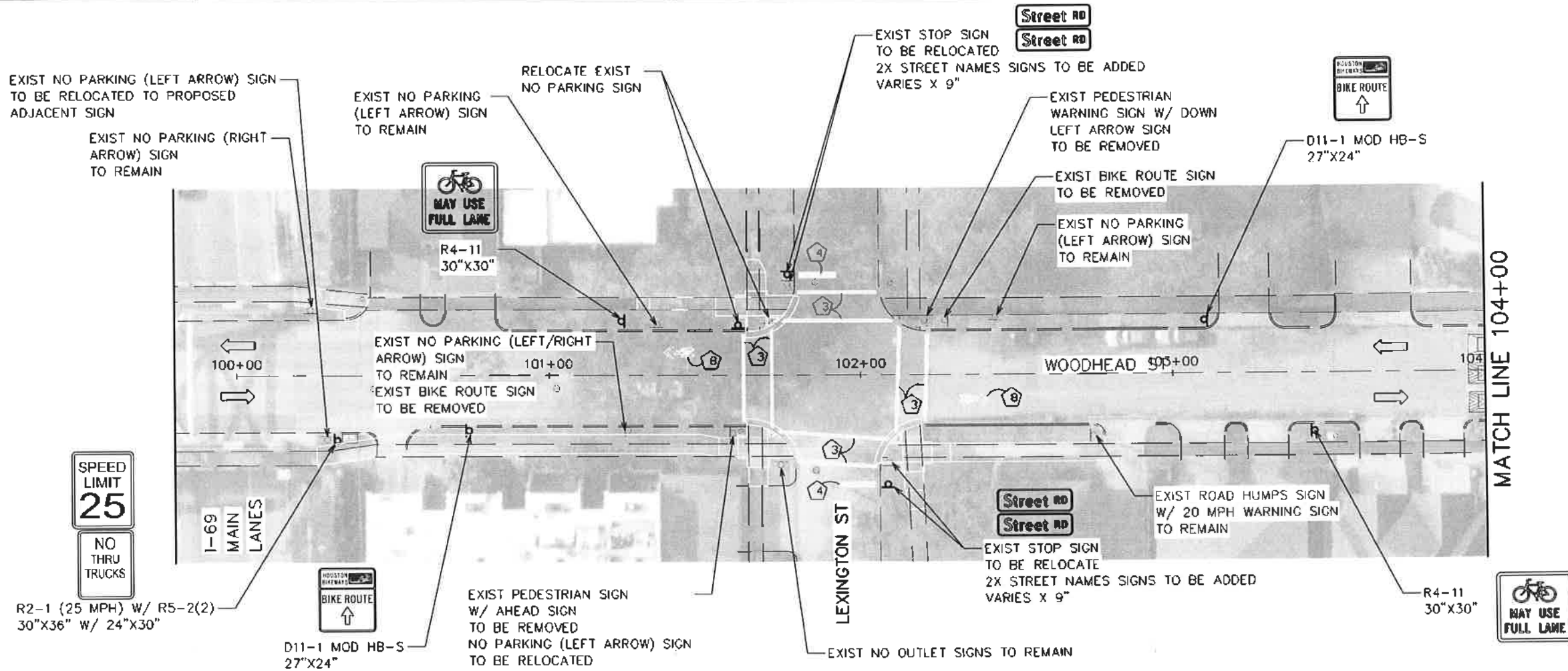
SURVEYED BY:

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 TAFT ST AND WEST GRAY ST
 SIGNING & PAVEMENT MARKING**

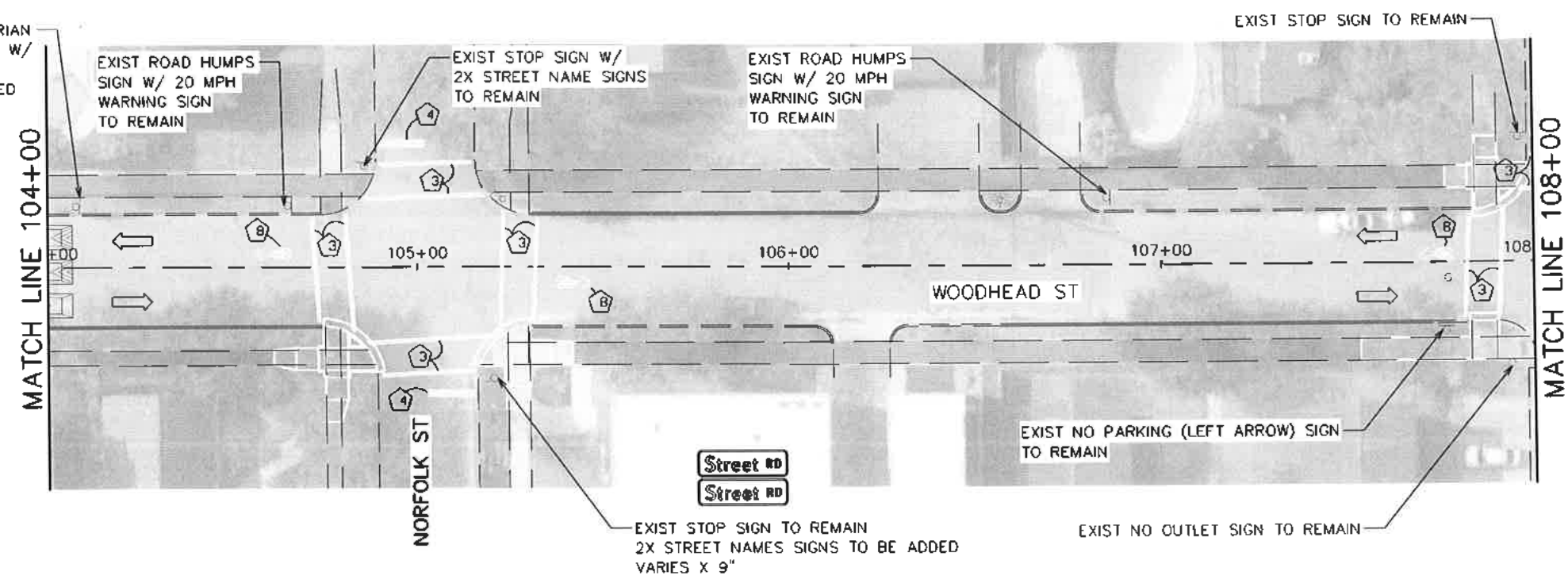
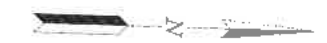
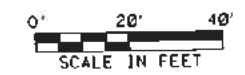
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-	
DRAWING SCALE	
AS NOTED	7 2 2 4 8
CITY OF HOUSTON PROJECT	
SHARPOUR BOLSHAN	
SHEET NO. 94 OF 247	

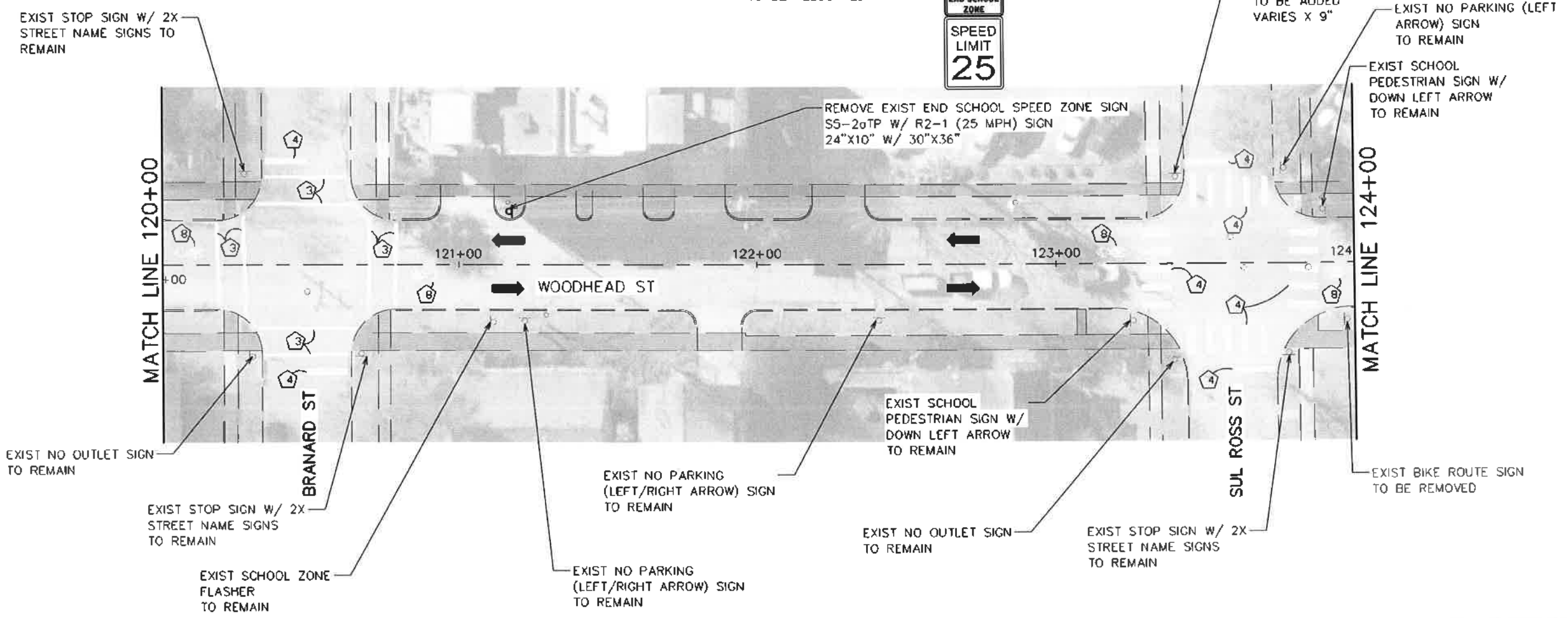
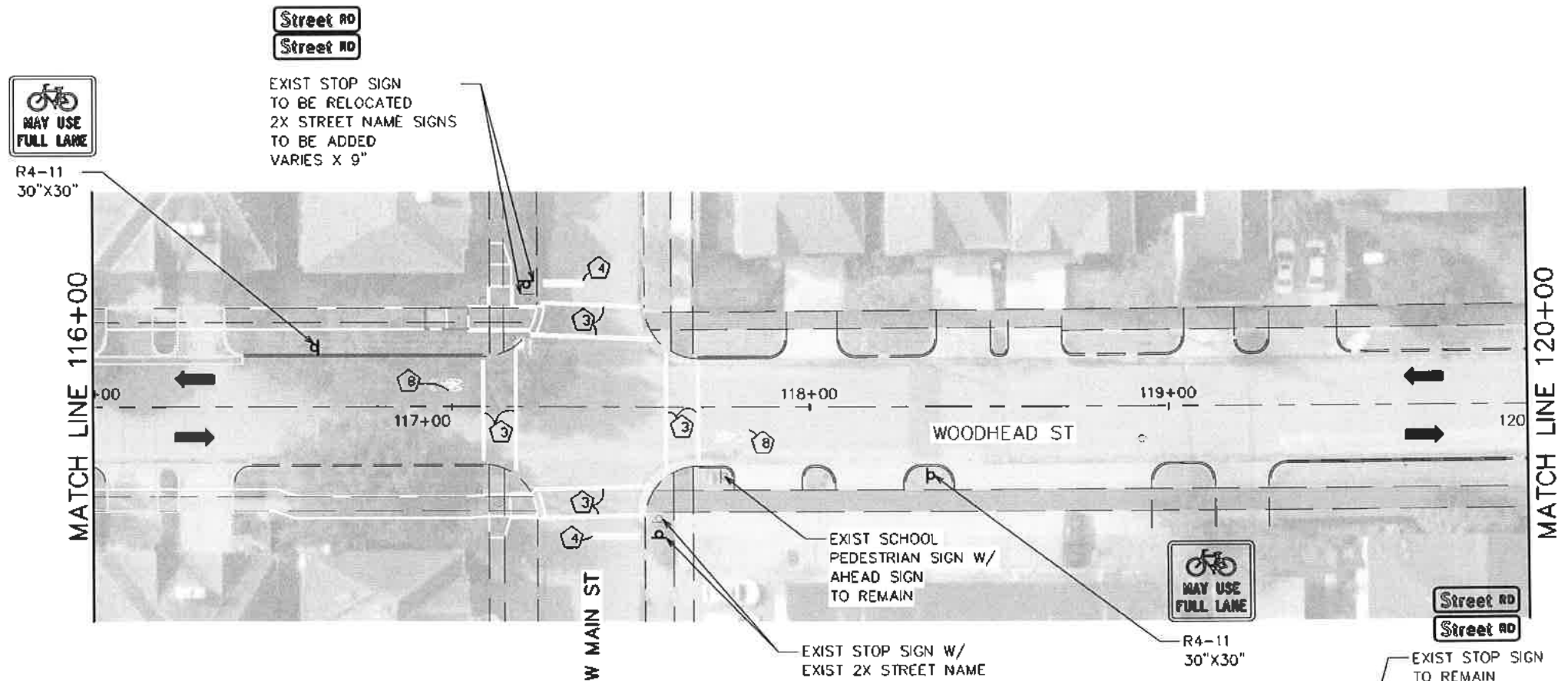


LEGEND

- RIGHT-OF-WAY
- ⇨ EXISTING LANE
- ⇨ PROPOSED LANE
- PROPOSED CURB
- ① REFL PAV MRK (W) 4" (SLD)
- ② REFL PAV MRK (W) 6" (SLD)
- ③ REFL PAV MRK (W) 12" (SLD)
- ④ REFL PAV MRK (W) 24" (SLD)
- ⑤ REFL PAV MRK (Y) 4" (SLD)
- ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
- ⑦ REFL RAISED PAV MRK (TYPE A)
- ⑧ REFL PAV MARK WORD OR SYMBOL (W)
- ⑨ 2.5' YIELD TRIANGLE
- ⑩ PRECAST CONCRETE CURB WITH FLEX POST
- ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)

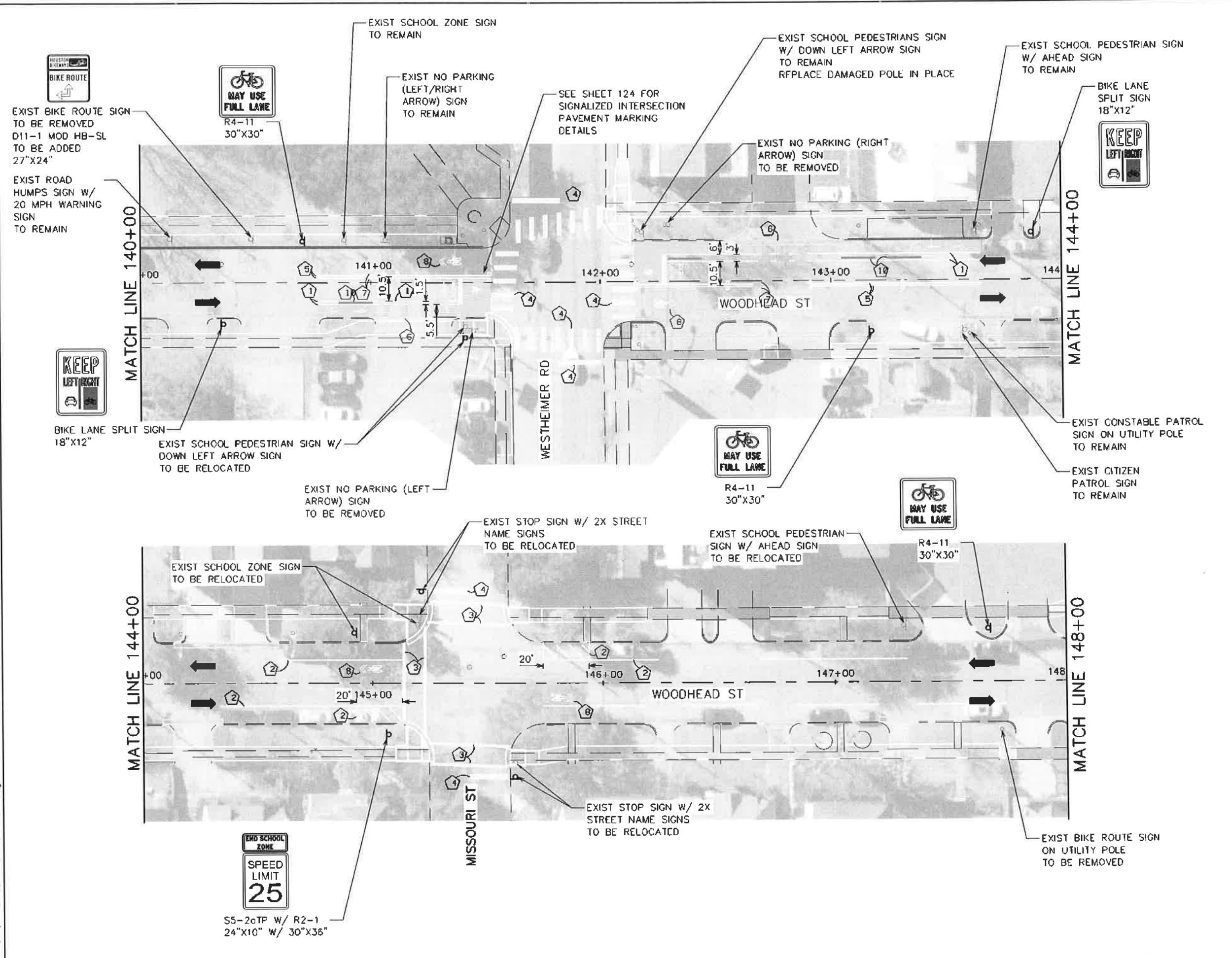


TRAFFIC ENGINEERS, INC. <small>HOUSTON, TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		SUPERVED BY:
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SIGNING AND PAVEMENT MARKING PLAN SHEET 1 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON PM SHAFPOOR COLSHAW		
SHEET NO. 95 OF 247		



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CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SIGNING AND PAVEMENT MARKING PLAN SHEET 3 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON PA SHAFPOOR GOLSHAN SHEET NO. 97 OF 247		

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- LEGEND**
- RIGHT-OF-WAY
 - ⇨ EXISTING LANE
 - ⇨ PROPOSED LANE
 - PROPOSED CURB
 - ① REFL PAV MRK (W) 4" (SLD)
 - ② REFL PAV MRK (W) 6" (SLD)
 - ③ REFL PAV MRK (W) 12" (SLD)
 - ④ REFL PAV MRK (W) 24" (SLD)
 - ⑤ REFL PAV MRK (Y) 4" (SLD)
 - ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL RAISED PAV MRK (TYPE A)
 - ⑧ REFL PAV MARK WORD OR SYMBOL (W)
 - ⑨ 2.5' YIELD TRIANGLE
 - ⑩ PRECAST CONCRETE CURB WITH FLEX POST
 - ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)



TRAFFIC ENGINEERS, INC.
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 SURVEYED BY: *Sarah Wetmore* 11/16/2021



CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 SIGNING AND
 PAVEMENT MARKING PLAN
 SHEET 6 OF 12

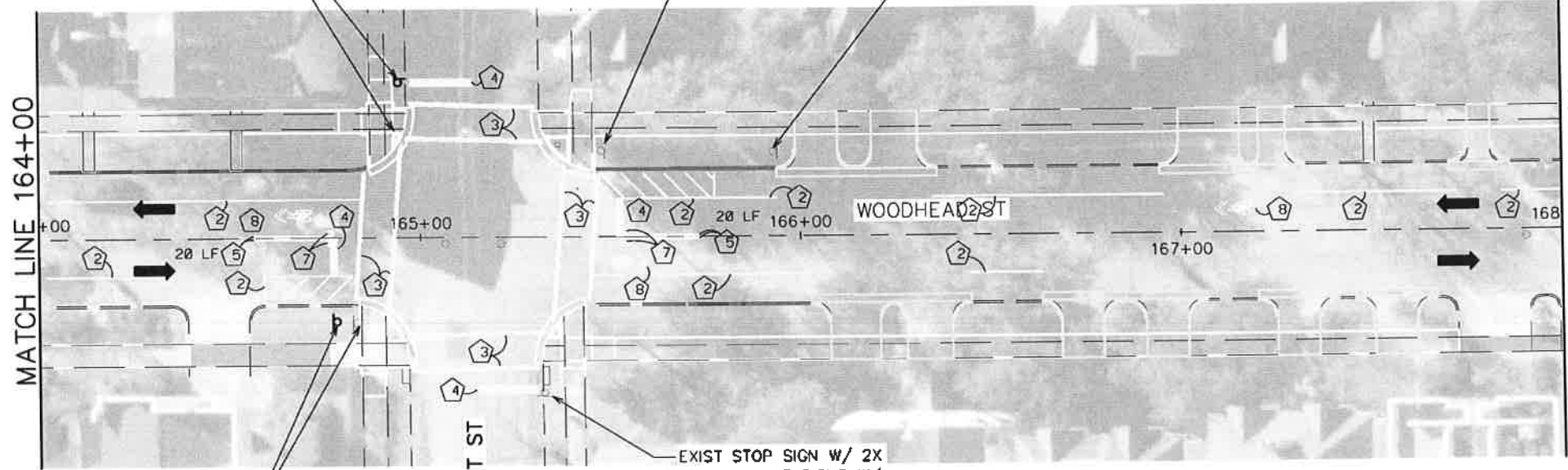
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHUPOR GOLSHAN	
SHEET NO. 100 OF 247	7 2 2 4 8

Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\TIRZ 27 Montrose\Design Projects\Woodhead\Design\PlanSet Sheets\Signing and Pavement Marking Plan - Sheet 6.dgn

RELOCATE EXIST STOP SIGN
W/ 2X STREET NAME SIGNS
W/ ALL-WAY SIGN

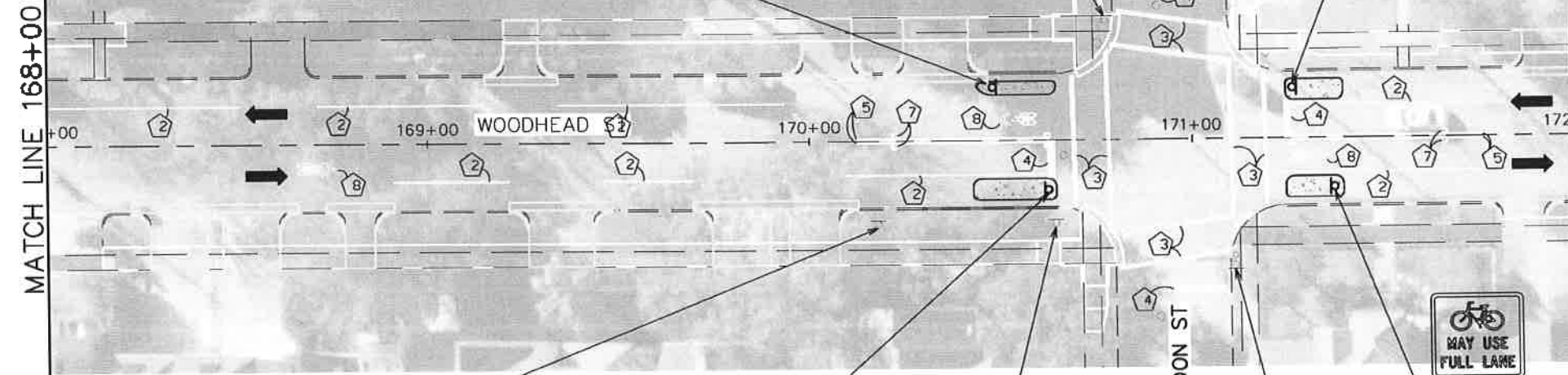
EXIST STOP SIGN
W/ ALL-WAY
TO REMAIN

EXIST BIKE ROUTE SIGN
TO BE REMOVED
ADD D11-1 MOD HB-S
27"X24"



RELOCATE EXIST
STOP SIGN W/
ALL-WAY SIGN

EXIST STOP SIGN W/ 2X
STREET NAME SIGNS W/
ALL-WAY SIGN
TO REMAIN



EXIST NO PARKING (LEFT ARROW) SIGN
TO REMAIN

STOP
ALL WAY
R1-1 W/ R1-3P
36"X36" W/ 18"X6"

EXIST NO PARKING
(RIGHT ARROW) SIGN
TO REMAIN

EXIST STOP SIGN W/ 2X STREET NAME SIGNS
TO REMAIN
ADD R1-3P
18"X6"

LEGEND

- RIGHT-OF-WAY
- EXISTING LANE
- ➔ PROPOSED LANE
- PROPOSED CURB
- ① REFL PAV MRK (W) 4" (SLD)
- ② REFL PAV MRK (W) 6" (SLD)
- ③ REFL PAV MRK (W) 12" (SLD)
- ④ REFL PAV MRK (W) 24" (SLD)
- ⑤ REFL PAV MRK (Y) 4" (SLD)
- ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
- ⑦ REFL RAISED PAV MRK (TYPE A)
- ⑧ REFL PAV MARK WORD OR SYMBOL (W)
- ⑨ 2.5' YIELD TRIANGLE
- ⑩ PRECAST CONCRETE CURB WITH FLEX POST
- ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)



TRAFFIC ENGINEERS, INC.
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11/16/2021

STATE OF TEXAS
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

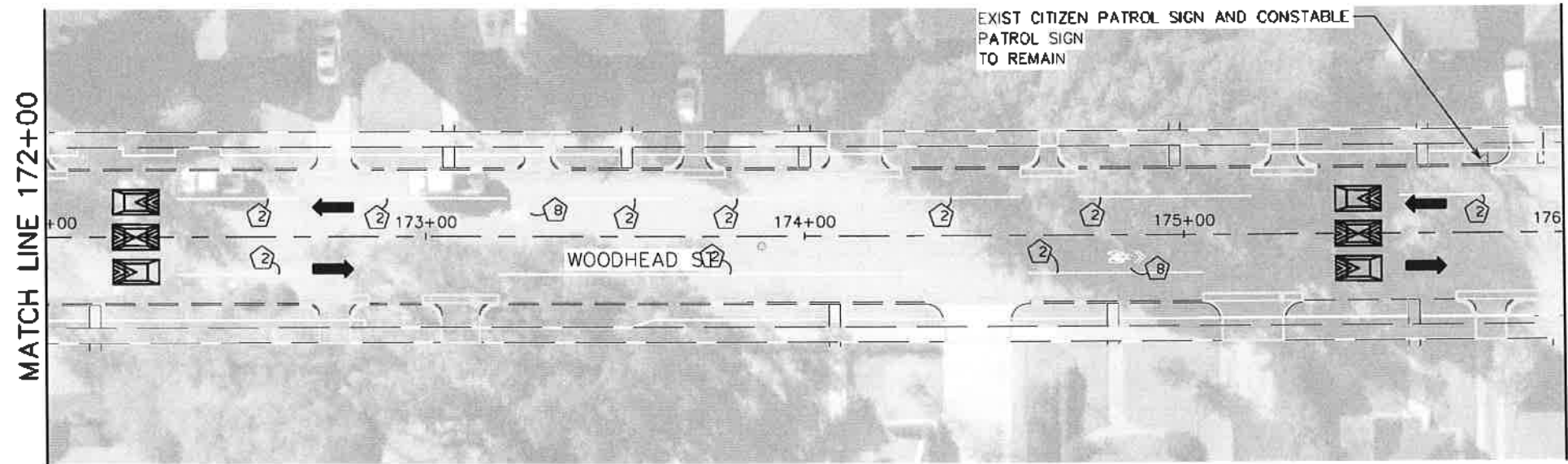
SURVEYED BY:

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

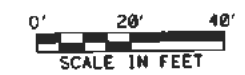
**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 SIGNING AND
 PAVEMENT MARKING PLAN
 SHEET 9 OF 12**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHUPOR BOLSHAN	
SHEET NO. 103 OF 247	

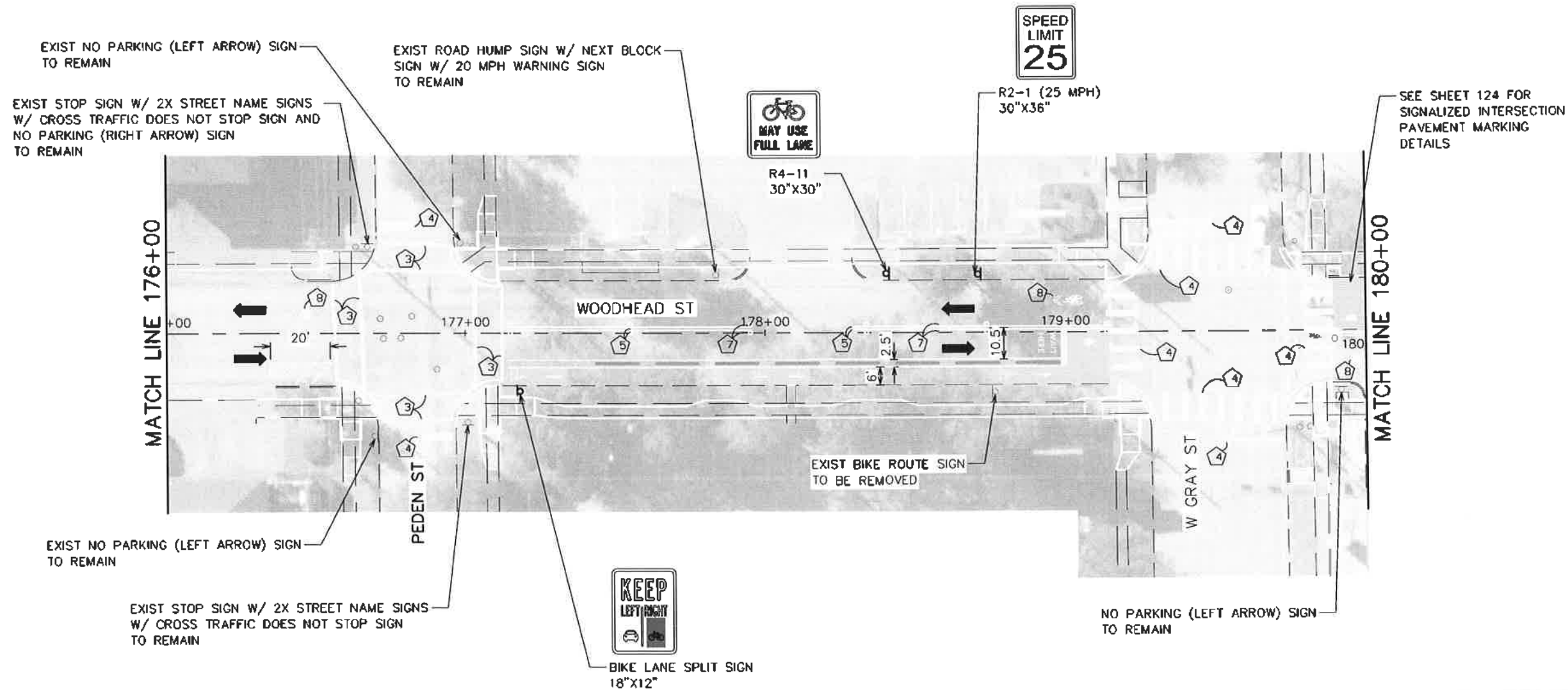
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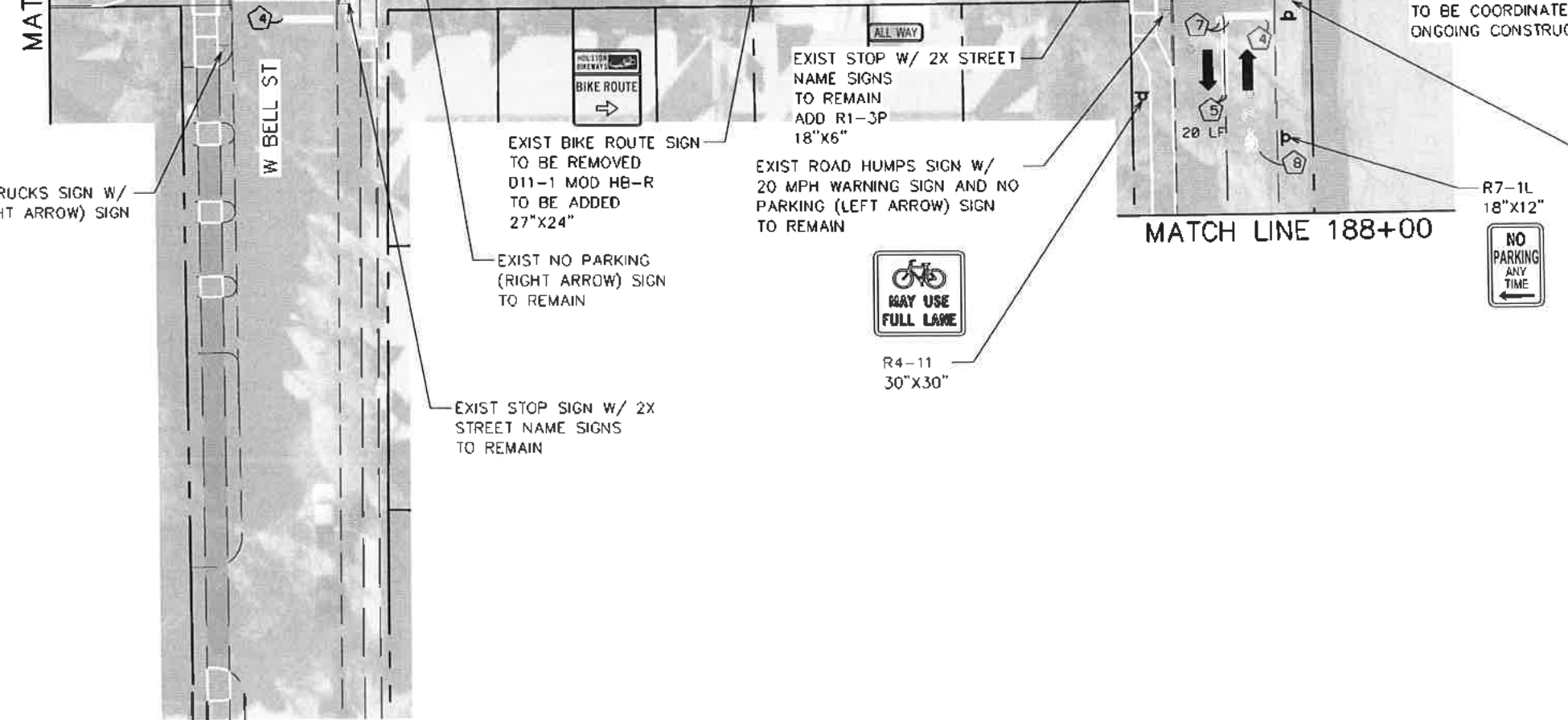
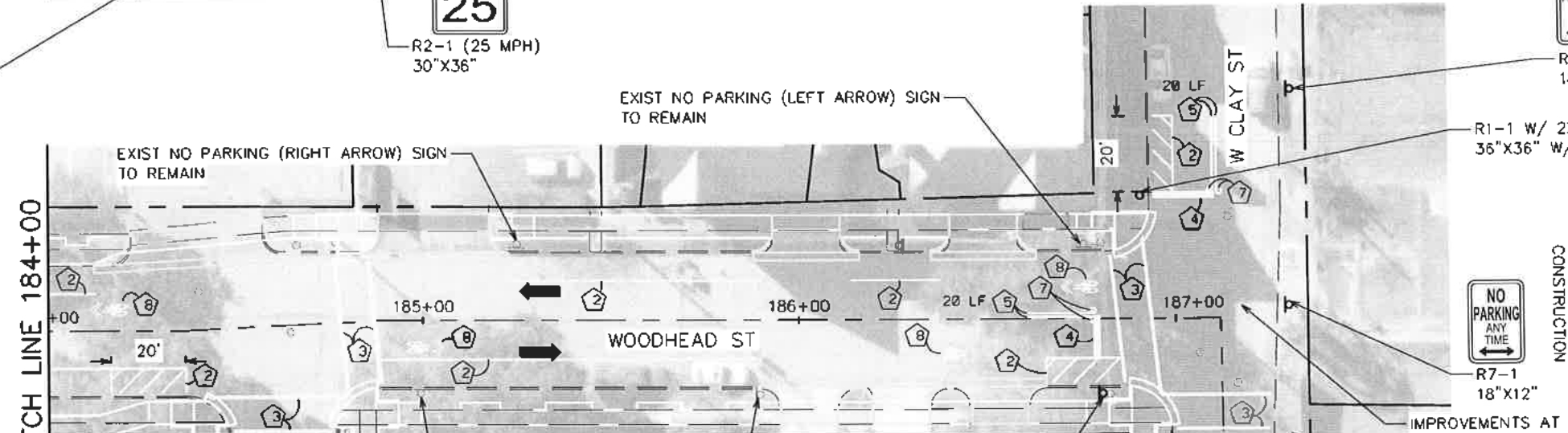
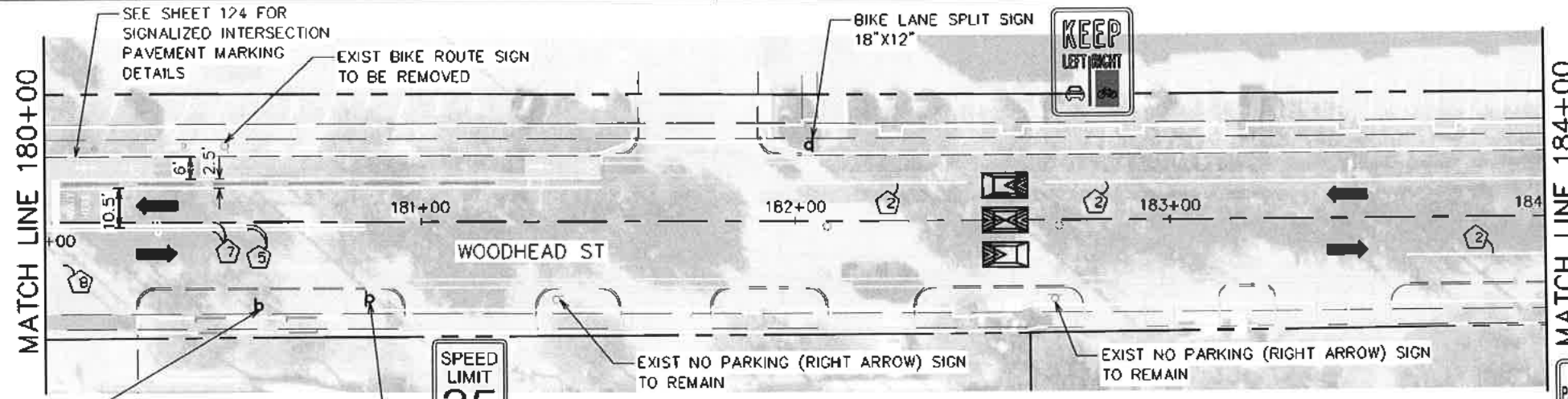
- LEGEND**
- RIGHT-OF-WAY
 - ⇨ EXISTING LANE
 - ⇨ PROPOSED LANE
 - PROPOSED CURB
 - ① REFL PAV MRK (W) 4" (SLD)
 - ② REFL PAV MRK (W) 6" (SLD)
 - ③ REFL PAV MRK (W) 12" (SLD)
 - ④ REFL PAV MRK (W) 24" (SLD)
 - ⑤ REFL PAV MRK (Y) 4" (SLD)
 - ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL RAISED PAV MRK (TYPE A)
 - ⑧ REFL PAV MARK WORD OR SYMBOL (W)
 - ⑨ 2.5' YIELD TRIANGLE
 - ⑩ PRECAST CONCRETE CURB WITH FLEX POST
 - ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)



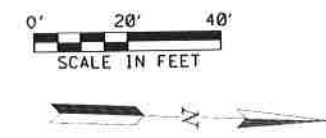
NO.	DATE	REV.	BY



TRAFFIC ENGINEERS, INC. 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SIGNING AND PAVEMENT MARKING PLAN SHEET 10 OF 12		
WBS NUMBER N-127000-0002-7	FOR CITY OF HOUSTON USE ONLY AS NOTED CITY OF HOUSTON PM SHAPOR COLSHAM SHEET NO. 104 OF 24	
		7 2 2 4 8



- LEGEND**
- RIGHT-OF-WAY
 - ⇨ EXISTING LANE
 - ⇨ PROPOSED LANE
 - PROPOSED CURB
 - ① REFL PAV MRK (W) 4" (SLD)
 - ② REFL PAV MRK (W) 6" (SLD)
 - ③ REFL PAV MRK (W) 12" (SLD)
 - ④ REFL PAV MRK (W) 24" (SLD)
 - ⑤ REFL PAV MRK (Y) 4" (SLD)
 - ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL RAISED PAV MRK (TYPE A)
 - ⑧ REFL PAV MARK WORD OR SYMBOL (W)
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 - ⑩ PRECAST CONCRETE CURB WITH FLEX POST
 - ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)



TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

11/16/2021

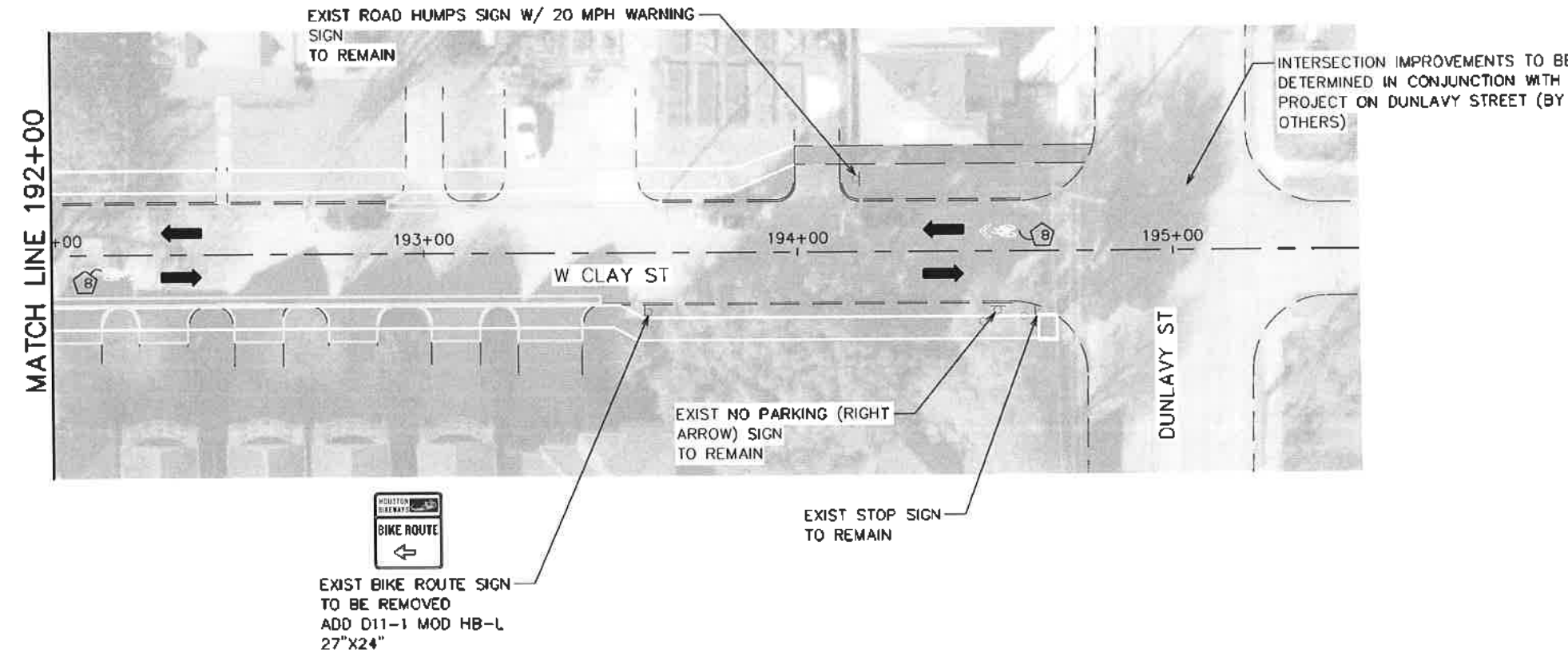
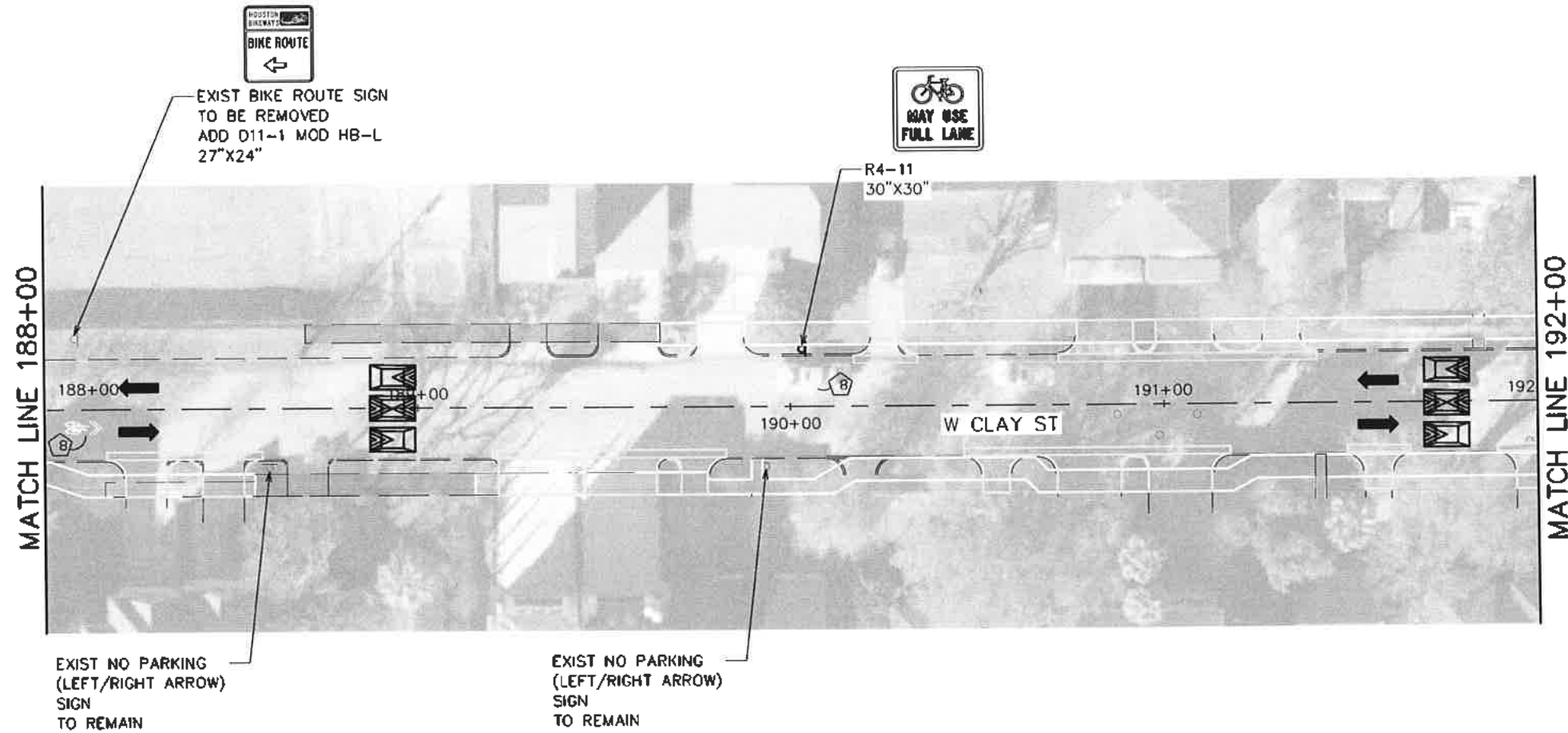
STATE OF TEXAS
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 SIGNING AND
 PAVEMENT MARKING PLAN
 SHEET 11 OF 12**

WDS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 105 OF 247	

72248





- LEGEND**
- RIGHT-OF-WAY
 - ⇨ EXISTING LANE
 - ➔ PROPOSED LANE
 - PROPOSED CURB
 - ① REFL PAV MRK (W) 4" (SLD)
 - ② REFL PAV MRK (W) 6" (SLD)
 - ③ REFL PAV MRK (W) 12" (SLD)
 - ④ REFL PAV MRK (W) 24" (SLD)
 - ⑤ REFL PAV MRK (Y) 4" (SLD)
 - ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL RAISED PAV MRK (TYPE A)
 - ⑧ REFL PAV MARK WORD OR SYMBOL (W)
 - ⑨ 2.5' YIELD TRIANGLE
 - ⑩ PRECAST CONCRETE CURB WITH FLEX POST
 - ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)



TRAFFIC ENGINEERS, INC. <small>MEMBERSHIP TRANSPORTATION ENGINEERS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas FE Firm Reg. #F-3158		
SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SIGNING AND PAVEMENT MARKING PLAN SHEET 12 OF 12		
WBS NUMBER N-127000-0002-7	FOR CITY OF HOUSTON USE ONLY <h1 style="text-align: center;">7 2 2 4 8</h1>	
AS NOTED CITY OF HOUSTON PM SHAMPOOR GOLSHAN		
SHEET NO. 106 OF 247		

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSION	SIGNAL MOUNT SQUARE POST	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN POST SIZE (TABLE A)
HAWTHORNE ST. 1 OF 10	1	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	2	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	3	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	4	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
2 OF 10 4 OF 10	5	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	6	D11-1 MOD HB-L	BIKE ROUTE SIGN	24X27	X		1	
6 OF 10	7	D11-1 MOD HB-R	BIKE ROUTE SIGN	24X27	X		1	
	8	D11-1 MOD HB-R	BIKE ROUTE SIGN	24X27	X		1	
	9	D11-1 MOD HB-L	BIKE ROUTE SIGN	24X27	X		1	
	10	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	11	CUSTOM - BL	BIKE LANE SPLIT SIGN	24X18	X		1	
	12	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	13	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	14	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	15	D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
	7 OF 10	16	CUSTOM - BL	BIKE LANE SPLIT SIGN	24X18	X		1
17		CUSTOM - BL	CAUTION PEDESTRIAN WALKWAY	36X36			1	
18		R7-2ALR	NO PARKING SIGN	24X18			1	
		R7-201A	TOWING VIOLATION SIGN	12X24			1	
19		D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
20		D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
21		D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
22		D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
23		D11-1 MOD HB-SLR	BIKE ROUTE SIGN	24X27	X		1	
24		D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
8 OF 10	25	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
	26	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
	27	D11-1 MOD HB-SL	BIKE ROUTE SIGN	24X27	X		1	
	28	D11-1 MOD HB-LR	BIKE ROUTE SIGN	24X27	X		1	
	29	D11-1 MOD HB-SR	BIKE ROUTE SIGN	24X27	X		1	
9 OF 10	30	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	31	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18			1	
	32	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
10 OF 10	33	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
	34	W17-1	SPEED HUMP	30X30			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
W GRAY ST/TAFT ST	35	R1-1	STOP SIGN	30X30			1	
	36	R7-2ALR	NO PARKING SIGN	24X18			1	
WESTHEIMER RD/CROC		R7-201A	TOWING VIOLATION SIGN	12X24			1	
	37	CUSTOM - BL	RAISED CROSSWALK SIGN	36X36			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
	38	W11-R2	PEDESTRIAN CROSSING SIGN	36X36			1	
		W16-7PL	POINTING ARROW SIGN	24X12			1	
	39	W11-R2	PEDESTRIAN CROSSING SIGN	36X36			1	
Westheimer RD/Taf		W16-7PL	POINTING ARROW SIGN	24X12			1	
	40	CUSTOM - BL	RAISED CROSSWALK SIGN	36X36			1	
		W13-1	20 M.P.H SPEED LIMIT	18X18	X		1	
	41	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	42	CUSTOM - BL	BIKE LANE SPLIT SIGN	24X18	X		1	
	43	R4-11	BIKE LANE	30X30			1	
		W11-1	BIKE MAY USE FULL LANE	30X30	X		1	
	44	D11-1 MOD HB-S	BIKE ROUTE SIGN	24X27	X		1	
	45	CUSTOM - BL	BIKE LANE SPLIT SIGN	24X18	X		1	
	46	R4-11	BIKE LANE	30X30			1	
		W11-1	BIKE MAY USE FULL LANE	30X30	X		1	

 Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 STATE OF TEXAS KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET SUMMARY OF SIGNS	
SHEET 1 OF 1	
W95 NUMBER N-Y27000-002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PW SAMPUR GOLSHAN	
SHEET NO. 107 OF 247	

PLAN SHEET NO.	SIGN NO. NOMENCLATURE	SIGN TEXT	DIMENSION	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. (FOR INFORMATION ONLY NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
WOODHEAD ST. 1 OF 12	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	R1-2	YIELD SIGN	36X36	X			1	9	
	R1-2	YIELD SIGN	36X36	X			1	9	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"LEXINGTON ST"	VARIES X9	X			1	VARIES	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
2 OF 12	R1-2	YIELD SIGN	36X36	X			1	9	
	R1-2	YIELD SIGN	36X36	X			1	9	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"LEXINGTON ST"	VARIES X9	X			1	VARIES	
	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	R2-1	SPEED LIMIT	24X18	X			1	3	
	R5-2(2)	NO THRU TRUCKS	24X30	X			2	5	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"NORFOLK ST"	VARIES X9	X			1	VARIES	
3 OF 12	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	R2-1	SPEED LIMIT	24X18	X			1	3	
	R2-1	SPEED LIMIT	24X18	X			1	3	
	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"COLQUITT ST"	VARIES X9	X			1	VARIES	
	R7-1L	NO PARKING ANY TIME (LEFT)	18X12	X			1	2	
	R7-1	NO PARKING ANY TIME (LEFT/RIGHT)	18X12	X			1	2	
	R7-1L	NO PARKING ANY TIME (LEFT)	18X12	X			1	2	
4 OF 12	R2-1	SPEED LIMIT	24X18	X			1	3	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	R1-2	YIELD SIGN	36X36	X			1	9	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"W MAIN ST"	VARIES X9	X			1	VARIES	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R6-5P	ROUNDABOUT	30X30	X			1	7	
	R1-2	YIELD SIGN	36X36	X			1	9	
5 OF 12	R1-2	YIELD SIGN	36X36	X			1	9	
	R1-2	YIELD SIGN	36X36	X			1	9	
	S5-2aTP	END SCHOOL ZONE	24X10	X			1	2	
	R2-1	SPEED LIMIT	24X18	X			1	3	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"SUL ROSS ST"	VARIES X9	X			1	VARIES	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	S5-2aTP	END SCHOOL ZONE	24X10	X			1	2	
	R2-1	SPEED LIMIT	24X18	X			1	3	
6 OF 12	R1-3P	ALL-WAY	18X16	X			1	9	
	R1-1	STOP	36X36	X			1	VARIES	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"HAROLD ST"	VARIES X9	X			1	VARIES	
	R1-3P	ALL-WAY	18X16	X			1	9	
	R1-1	STOP	36X36	X			1	VARIES	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"HAROLD ST"	VARIES X9	X			1	VARIES	
	R1-3P	ALL-WAY	18X16	X			1	9	
	R1-3P	ALL-WAY	18X16	X			1	9	
7 OF 12	CUSTOM - RI	RAISED INTERSECTION PLAQUE	24X10	X			1	2	
	CUSTOM - RI	RAISED INTERSECTION PLAQUE	24X10	X			1	2	
	D11-1 MOD HB-SR	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	R1-3P	ALL-WAY	18X16	X			1	9	
	D11-1 MOD HB-SL	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
8 OF 12	S5-2aTP	END SCHOOL ZONE	24X10	X			1	2	
	R2-1	SPEED LIMIT	24X18	X			1	3	
	R1-3P	ALL-WAY	18X16	X			1	9	
	R1-1	STOP	36X36	X			1	VARIES	
	STREET NAME	"WOODHEAD ST"	VARIES X9	X			1	VARIES	
	STREET NAME	"HAROLD ST"	VARIES X9	X			1	VARIES	
	R1-3P	ALL-WAY	18X16	X			1	9	
	R1-3P	ALL-WAY	18X16	X			1	9	
	CUSTOM - RI	RAISED INTERSECTION PLAQUE	24X10	X			1	2	
	CUSTOM - RI	RAISED INTERSECTION PLAQUE	24X10	X			1	2	

TRAFFIC ENGINEERS, INC.
Innovative Transportation Solutions
801 CONGRESS ST, Suite 325
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www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

SURVEYED BY: *Sarah L. Wetmore* 11/16/2021



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
SUMMARY OF SMALL SIGNS
SHEET 1 OF 2**

NBS NUMBER: N-T27000-0002-7

AS NOTED

CITY OF HOUSTON PM

SHAPOOR GOLSHAN

SHEET NO. 108 OF 247

FOR CITY OF HOUSTON USE ONLY

7 2 2 4 8

NO.	DATE	REVISION	APP.

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSION	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. (FOR INFORMATION ONLY NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
WOODHEAD ST. 7 OF 12	57	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	58	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	59	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	60	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	61	R1-3P	ALL-WAY	18X16	X			1	2	
	62	R1-1	STOP	36X36	X			1	9	
	61	R1-3P	ALL-WAY	18X16	X			1	2	
	61	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	62	R1-3P	ALL-WAY	18X16	X			1	2	
	63	R1-1	STOP	36X36	X			1	9	
	64	R1-3P	ALL-WAY	18X16	X			1	2	
	64	R2-1	SPEED LIMIT	24X18	X			1	3	
	65	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	66	STREET NAME	"WOODHEAD ST"	VARIABLES X9 X					1	VARIABLES
9 OF 12	67	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	68	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	69	R2-1	SPEED LIMIT	24X18	X			1	3	
	70	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	71	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	72	D11-1 MOD HB-S	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	73	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	74	R1-3P	ALL-WAY	18X16	X			1	2	
	75	R1-1	STOP	36X36	X			1	9	
	76	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	77	R1-3P	ALL-WAY	18X16	X			1	2	
	78	R1-1	STOP	36X36	X			1	9	
	79	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	80	R2-1	SPEED LIMIT	24X18	X			1	3	
10 OF 12	81	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	82	CUSTOM - BL	BIKE LANE SPLIT	24X18	X			1	3	
	83	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
11 OF 12	84	R2-1	SPEED LIMIT	24X18	X			1	3	
	85	R1-1	STOP	36X36	X			1	9	
		STREET NAME	"WOODHEAD ST"	VARIABLES X9 X				1	VARIABLES	
		STREET NAME	"W CLAY ST"	VARIABLES X9 X				1	VARIABLES	
		R1-3P	ALL-WAY	18X16	X			1	2	
	86	R7-1R	NO PARKING ANY TIME (RIGHT)	18X12	X			1	2	
	87	R7-1L	NO PARKING ANY TIME (LEFT)	18X12	X			1	2	
	88	R7-1	NO PARKING ANY TIME (LEFT/RIGHT)	18X12	X			1	2	
	89	R1-1	STOP	36X36	X			1	9	
	90	R1-3P	ALL-WAY	18X16	X			1	2	
	90	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	91	R1-3P	ALL-WAY	18X16	X			1	2	
	92	D11-1 MOD HB-R	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
	93	D11-1 MOD HB-L	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
12 OF 12	94	R4-11	BIKE MAY USE FULL LANE	30X30	X			1	7	
	95	D11-1 MOD HB-L	HOUSTON BIKE ROUTE SIGN	24X27	X			1	5	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
		R10-11a	NO TURN ON RED	24X32	X			6	6	
		R10-11a	NO TURN ON RED	24X32	X			6	6	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
		R5-2(2)	NO THRU TRUCKS	24X30	X			5	5	
		R5-2(2)	NO THRU TRUCKS	24X30	X			5	5	
		R10-11a	NO TURN ON RED	24X32	X			6	6	
		R10-11a	NO TURN ON RED	24X32	X			6	6	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
		R10-10b	BIKE SIGNAL SIGN	30X18	X			4	4	
W Gray at Woodhead Signal					X					
Westheimer at Woodhead Signal					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
W Alabama at Woodhead Signal					X					
Richmond at Woodhead Signal					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
Montrose at Hawthorne Signal					X					
Taft at Westheimer Signal					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					
					X					

TRAFFIC ENGINEERS, INC.
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11/18/2021
BARAH L. WETMORE
130442
PROFESSIONAL ENGINEER

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
SUMMARY OF SMALL SIGNS
SHEET 2 OF 2**

WBS NUMBER
N-T27000-0002

AS NOTED

CITY OF HOUSTON
SHAPOOR GOLSHAN

SHEET NO. 109 OF 2

FOR CITY OF HOUSTON USE ONLY
72248

NO.	DATE	REVISION	APP.

REGULATORY SIGNS		
Stop	R1-1	36x36
Yield	R1-2	36x36x36
All Way Plaque	R1-3P	18x6
Yield Here to Pedestrians	R1-5a	36x48
Except Right Turn (Plaque)	R1-10P(1)	24x18
Except Buses (Plaque)	R1-10P(2)	24x18
Speed Limit	R2-1	30x36
Minimum Speed Limit (Plaque)	R2-4P	24x30
No Right Turns	R3-1	36x36
No Left Turns	R3-2	36x36
No U-Turns	R3-4	36x36
Left/Right Turn Only	R3-5	30x36
Thru Only	R3-5a	30x36
Left Turn/Thru	R3-6	30x36
Left/Right Lane Must Turn Left/Right	R3-7	36x36
Advance Intersection Lane Control (Varies)	R3-8	Varies x 30
Two-Way Left Turn Only (Overhead)	R3-9a	30x36
Two-Way Left Turn Lane (Post Mounted)	R3-9b	24x36
BEGDN	R3-9cP	30x12
END	R3-9dP	30x12
Reversible Lane Control (Symbol)	R3-9e	108x48
Reversible Lane Control (Post Mounted)	R3-9f	36x54
Advance Reversible Lane Control Transition	R3-9g,9h	108x36
End Reversible Lane	R3-9i	108x48
Bike Lane	R3-17	24x18
Slower Traffic Keep Right	R4-3	24x30
Begin right Turn Lane Yield to Bikes	R4-4	36x30
Keep Right	R4-7	24x30
Keep Left	R4-8	24x30
Do Not Drive on Shoulder	R4-17	24x30
Do Not Pass on Shoulder	R4-18	24x30
Do Not Enter	R5-1	36x36
Wrong Way	R5-1a	42x30
No Trucks (Symbol)	R5-2(1)	24x24
No Thru Trucks (Text)	R5-2(2)	24x30
One Way (Long)	R6-1	54x18
One Way	R6-2	30x36
Roundabout Directional (2 Chevrons)	R6-4	30x24
Roundabout Circulation (Plaque)	R6-5P	30x30
Begin One Way	R6-6	30x36
End One Way	R6-7	30x36
Parking Restriction (Arrow)	R7-2 (1)	12x18
Parking Restriction (To Corner)	R7-2 (2)	12x18
Parking Restriction (Bus Zone)	R7-2 (3)	12x18

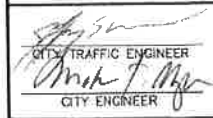
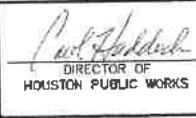
REGULATORY SIGNS		
Parking Restriction (Valet Zone)	R7-2 (4)	12x18
Parking Restriction (Peak Period)	R7-2 (5)	12x18
Parking Restriction (Emergency Veh. Only)	R7-2 (6)	12x18
Parking Restriction (Taxi Zone)	R7-2 (7)	12x18
Parking Restriction (No Stopping or Standing)	R7-2 (8)	12x18
Parking Restriction (Limousine Stop)	R7-2 (9)	12x18
Parking Restriction (Pod-Cab Zone)	R7-2 (10)	12x18
Parking Restriction (Limo Zone)	R7-2 (11)	12x18
Parking Restriction (Commercial Veh. Zone)	R7-2 (12)	12x18
Parking Restriction (Fed./City Authorized Veh. Only)	R7-2 (13)	12x18
Parking Restriction (U.S. Marshal Parking Only)	R7-2 (14)	12x18
Parking Restriction (Emergency)	R7-2 (15)	12x18
Parking Time Limit (Varies)	R7-108	12x18
Handicapped Parking	R7-9T	12x18
Tow Away Zone (Plaque)	R7-201P	12x6
Parking Meter (COH)	R7-110	12x18
On Tracks (Plaque)	R8-3aP	24x18
Cross Only At Crosswalks (Symbol)	R8-2	12x18
No Pedestrian Crossing (Symbol)	R9-3	18x18
No Pedestrian Crossing	R9-3a	12x18
Pedestrian Crossing	R9-9	36x18
Sidewalk Closed	R9-9	24x12
Sidewalk Closed-Use Other Side	R9-10	24x12
Sidewalk Closed Cross Here	R9-11a	24x12
Push Button For Pedestrian Crossing	R10-1e	9x15
Left on Green Arrow Only	R10-5	30x36
Stop Here on Red	R10-6	24x36
Do Not Block Intersection	R10-7	24x30
Left/Right Turn Signal	R10-10	30x36
No Turn on Red (Text)	R10-11a	36x48
Left Turn Yield on Green	R10-12	30x36
Crosswalk, Stop on Red	R10-23	24x30
Keep Off Median	R11-1	24x30
Road Closed	R11-2	48x30
Road Closed Local Traffic Only	R11-3a	60x30
Bridge Out Local Traffic Only	R11-3b	60x30
Road Closed to Thru Traffic	R11-4	60x30
Weight Limit xx Tons	R12-1	24x30
Axle Weight Limit xx Tons/Lbs	R12-2	24x30
No Trucks Over xx Tons/Lbs Empty Weight	R12-3	24x36
Weight Limit xx Tons per Axle xx Tons Gross	R12-4	36x24
Load Zoned Bridge	R12aT	Varies x 36
Track Route	R14-1	24x18
Grade Crossing (Crossbuck)	R15-1	48x9
Number of Tracks (Plaque)	R15-2P	27x18



CONSTRUCTION WORK SIGNS		
Right Angle Turn	CW1-1	36x36
Horizontal Curve	CW1-2	36x36
Reverse Right Angle Turns	CW1-3	36x36
Reverse Horizontal Curves	CW1-4	36x36
Reverse Curve (2 Lanes)	CW1-4b	36x36
Reverse Curve (More Than 2 Lanes)	CW1-4c	36x36
One-Direction Lane Arrow	CW1-6	48x24
Upward Sloping Arrow	CW1-6aT	36x36
Chevron	CW1-8	18x24
Stop Ahead	CW3-1	36x36
Signal Ahead	CW3-3	36x36
Be Prepared to Stop	CW3-4	36x36
Road Narrows	CW5-1	36x36
Narrow Bridge	CW5-2	36x36
Two-Way Traffic Flow	CW6-3	24x36
Two-Way Traffic	CW6-4	12x18
Bump	CW8-1	36x36
Dip	CW8-2	36x36
Soft Shoulder	CW8-4	36x36
Truck Crossing	CW9-6	36x36
Rough Road	CW9-8	36x36
Uneven Lanes	CW9-1(1)	36x36
Left Lane Ends	CW9-1(2)	36x36
Right Lane Ends	CW9-1(2)	36x36
Double Arrow	CW12-1	30x30
Advisory Speed (plaque)	CW13-1P	24x24
XX Feet (plaque)	CW16-2P	24x18
Ahead (Plaque)	CW16-3	24x12
Road Work Ahead	CW20-1	36x36
Detour Ahead	CW20-2	36x36
Road Closed Ahead	CW20-3	36x36
One Lane Road	CW20-4	36x36
Left Lane Closed	CW20-5(1)	36x36
Right Lane Closed	CW20-5(2)	36x36
Flagger (Symbol)	CW20-7	36x36
Narrow Lanes Ahead	CW20-8T	36x36
Shoulder Work Ahead	CW21-5	36x36
Utility Work Ahead	CW21-7	36x36
Double Reverse Curve (1 Lane)	CW24-1	36x36
Double Reverse Curve (2 Lanes)	CW24-1a	36x36
Double Reverse Curve (3 Lanes)	CW24-1b	36x36
Bad Road Work	G20-1	36x18
Detour With Arrows	M4-9	30x24
End Detour	M4-8a	24x18
Pedestrian Detour	M4-9b	30x24
Detour	M4-10	48x18

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TYPICAL CITY OF HOUSTON SIGNS

(NOT TO SCALE)

 CITY TRAFFIC ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01509-05

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS TYPICAL CITY OF HOUSTON SIGNS	
SHEET 1 OF 2	
WBS NUMBER N-127000-002-7 DRAWING SCALE AS NOTED CITY OF HOUSTON PM SHAPOR GOLSMAN SHEET NO. 110 OF 247	7 2 2 4 8

NO.	DATE	REVISION	APP.

WARNING SIGNS		
Right Angle Turn Curve	W1-1	30x30
Right Angle Turn With Speed Limit	W1-1a	36x36
Horizontal Curve	W1-2	30x30
Horizontal Curve With Speed Limit	W1-2a	36x36
Reverse Right Angle Turn	W1-3	30x30
Reverse Horizontal Curve	W1-4	30x30
Winding Road	W1-5	30x30
One Direction Large Arrow	W1-6	48x24
Two Direction Large Arrow	W1-7	48x24
Chevron Alignment	W1-8	18x24
Hairpin Curve	W1-11	30x30
Truck Rollover	W1-13	36x36
Cross Road	W2-1	30x30
Side Street T-Intersection (Symbol)	W2-2	30x30
T-Intersection (Symbol)	W2-4	30x30
Y-Intersection (Symbol)	W2-5	30x30
Roundabout (Symbol)	W2-6	30x30
Stop Ahead	W3-1	30x30
Signal Ahead	W3-3	30x30
Reduced Speed Limit Ahead	W3-5	36x36
Merge	W4-1	36x36
Lane Ends	W4-2	36x36
Added Lane	W4-3	36x36
Cross Traffic Does Not Stop (Plaque)	W4-4P	24x12
Road Narrows	W5-1	36x36
Narrow Bridge	W5-2	36x36
Divided Highway	W6-1	36x36
Divided Highway Ends	W6-2	36x36
Two Way Traffic (Symbol)	W6-3	36x36
Bump	W8-1	30x30
Dip	W8-2	30x30
Pavement Ends	W8-3	36x36
Soft Shoulder	W8-4	36x36
Truck Crossing	W8-6	36x36
Loose Gravel	W8-7	36x36
Rough Road	W8-8	36x36
Uneven Lanes	W8-11	36x36
Watch for ICE on Bridge	W8-13T	36x36
Shoulder Drop-Off (Symbol)	W8-17	30x30
Shoulder Drop-Off (Plaque)	W8-17P	24x18

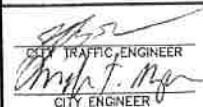
WARNING SIGNS		
Flood Gauge	W8-19	12x72
No Shoulder	W8-23	36x36
Shoulder Ends	W8-25	36x36
Left Lane Ends	W9-1(1)	36x36
Right Lane Ends	W9-1(2)	36x36
Lane Ends Merge Left	W9-2(1)	36x36
Lane Ends Merge Right	W9-2(2)	36x36
Grade Crossing Advance Warning	W10-1	30Dia
No Train Horn	W10-9	36x36
No Train Horn (Plaque)	W10-9P	30x24
Bicycle	W11-1	30x30
Pedestrian	W11-2	36x36
Emergency Vehicle	W11-8	30x30
Handicapped	W11-9	30x30
Truck	W11-10	30x30
Emergency Signal Ahead (Plaque)	W11-12P	36x30
Bicycle/Pedestrian	W11-15	30x30
Trail Crossing (Plaque)	W11-15P	24x18
Double Arrow	W12-1	30x30
Low Clearance With Arrows	W12-2	36x36
Low Clearance	W12-2a	78x24
Loaded Zoned Bridge	W12-5I	36x36
Advisory Speed (Plaque)	W13-1P	18x18
No Outlet	W14-2	24x24
No Outlet With Arrow	W14-2a	36x6
Share the Road (Plaque)	W16-1P	18x24
xx Feet (Plaque)	W16-2P	24x18
Next xx Feet (Plaque)	W16-4P	30x24
Supplemental Left Arrow (Plaque)	W16-5P(1)	24x18
Supplemental Right Arrow (Plaque)	W16-5P(2)	24x18
Diagonal Arrow (Plaque)	W16-7P	24x12
Ahead (Plaque)	W16-9P	24x12
When Flashing (Plaque)	W16-13P	24x18
Roundabout (Plaque)	W16-17	24x12
Speed Hump	W17-1	30x30
Type 3 Object Marker (Left)	OM3-L	12x36
Type 3 Object Marker (Right)	OM3-R	12x36
Type 3 Object Marker (Center)	OM3-C	12x36
Type 4 Object Marker	OM4-1	18x18

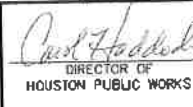
BICYCLE SIGNS		
Stop	R1-1	18x18
Street Name	D3-1	varies x 6
Yield	R1-2	18x18x18
To Request Green Wait on Symbol	R10-22	12x18
Yield to Pedestrian	R9-6	18x18
No Parking Bike Lane	R7-9	12x18
Bike Route	D11-1	24x18
Bike Route to Downtown	D11-1c	24x18
Bike Sign Auxiliary Signs	M4-1, -M4-14	12x6
Bicycle Route Arrow Signs	M5-1.2, M6-1.2, 3, 4, 5, 6, 7	12x9
Walk Your Bike (custom sign)	R9-8 CoH	12x18
Yield To Ped/Bike (custom sign)	R1-5 PB	36x36
Turning Vehicles Yield to Ped/Bike (custom sign)	R10-15 PB	36x36

SCHOOL SIGNS		
School	S1-1 (FYG)	36x36
xx:xx to xx:xx AM and PM (Plaque)	S4-1P	24x10
School (Plaque)	S4-3P (FYG)	24x8
When Flashing (Plaque)	S4-4P	24x10
Reduced School Speed Limit Ahead	S4-5a (FYG)	36x36
School Speed Limit xx When Flashing	S5-1 (FYG)	24x48
End School Zone	S5-2	24x30
End School Zone (Plaque)	S5-2aTP	24x10
Call Phone Use Prohibited	S7-1T	24x18
Turn Arrow (Plaque)	SW16-5P (FYG)	24x12
Advance Turn Arrow (Plaque)	SW16-6P (FYG)	24x12
Diagonal Arrow (Plaque)	SW16-7P (FYG)	24x12
Ahead (Plaque)	S16-9P (FYG)	24x12
FYG - Fluorescent Yellow-Green Background Color		


CITY OF HOUSTON
HOUSTON PUBLIC WORKS


TYPICAL CITY OF HOUSTON SIGNS
(NOT TO SCALE)


 CITY ENGINEER


 DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018 DWG NO: 01509-06


 ENGINEERING
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 www.GaugeEngineering.com
 Texas PE Firm Reg. #F-20017


 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

SURVEYED BY: *[Signature]*
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET IMPROVEMENTS

TYPICAL CITY OF HOUSTON SIGNS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-1	7 2 2 4 8
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PROJECT NUMBER	
SNAPCOR NUMBER	
SHEET NO. 111 OF 241	

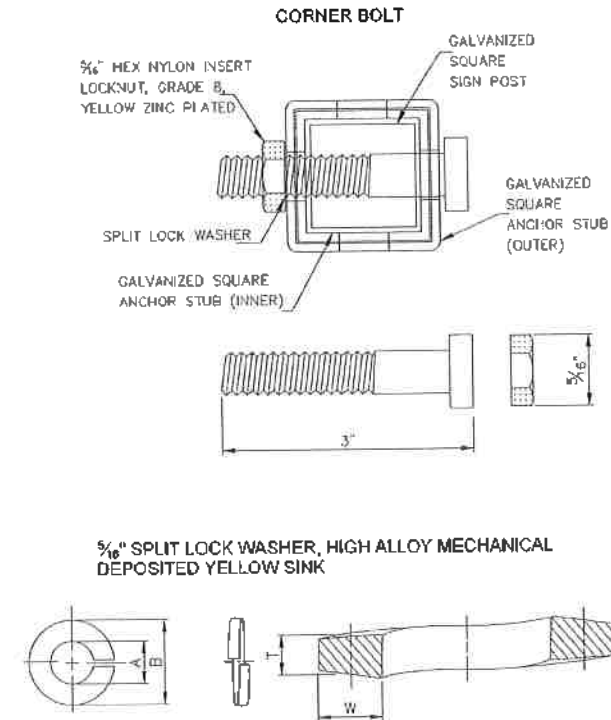
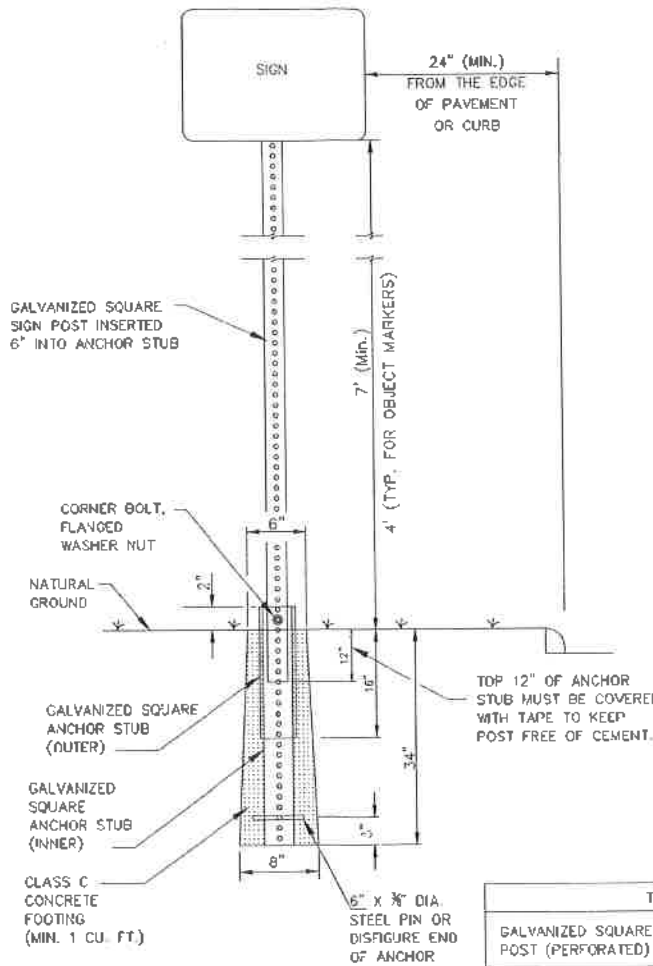
NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.

GENERAL NOTES

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

TYPICAL GROUND SIGN INSTALLATION PERFORATED SQUARE METAL TUBING



NOMINAL WASHER SIZE	INSIDE DIAMETER		OUTSIDE DIAMETER	MEAN SECTION (Thickness)	SECTION WIDTH
	MAX	MIN	MAX		
5/16"	0.322"	0.314"	0.583"	0.078"	0.125"

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

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

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GENERAL NOTES AND GROUND MOUNTING SIGN (NOT TO SCALE)

CITY TRAFFIC ENGINEER: *[Signature]*
CITY ENGINEER

DIRECTOR OF HOUSTON PUBLIC WORKS: *[Signature]*

EFF DATE: JUL-29-2019 DWG NO: 01509-01

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

STATE OF TEXAS
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET IMPROVEMENTS

GENERAL NOTES AND GROUND MOUNTING SIGN DETAILS

SHEET 1 OF 1

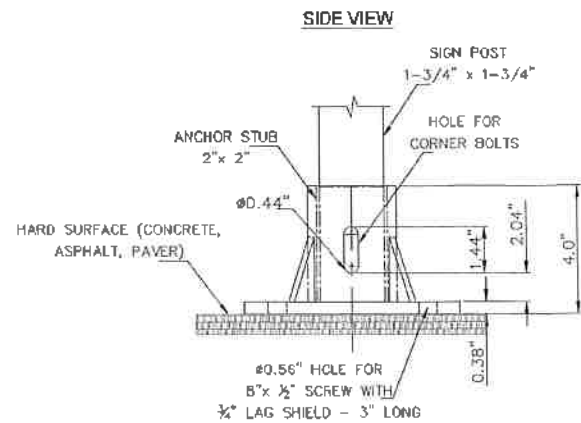
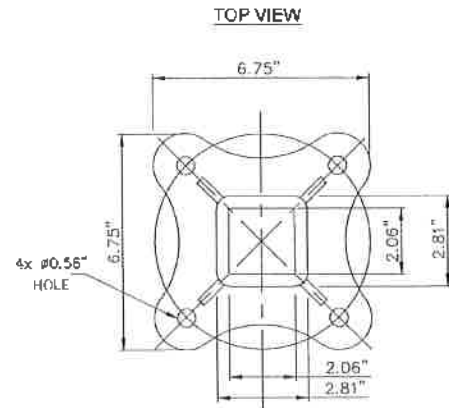
WBS NUMBER: N-127000-002-7
DRAWING SCALE: AS NOTED
CITY OF HOUSTON PUBLIC WORKS
SHAFIQ GOLSHAN
SHEET NO. 112 OF 247

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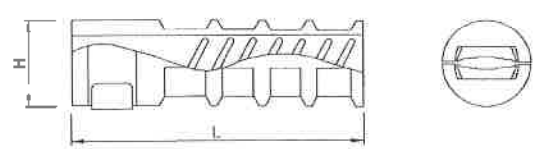
NO.	DATE	REVISION	APP.

TYPICAL HARD SURFACE INSTALLATION GALVANIZED SIGN BASE



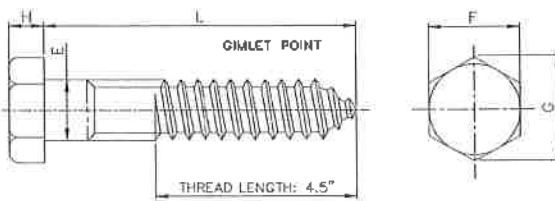
- NOTES:
1. MATERIAL: ASTM A-536 GRADE 65-45-12 DUCTILE IRON
 2. HOT DIP GALVANIZE PER ASTM A-153
 3. ALL DIMENSIONS ARE IN INCHES

ANCHOR LAG SHIELD - ZINC ALLOY



LAG THREAD SIZE	L	H
1/2"	2"	3/4"

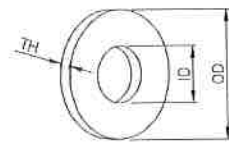
8" HEX LAG SCREWS, HOT DIPPED GALVANIZED



DIAMETER	E		F		G		H		L
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
1/2"	0.515"	0.482"	0.750"	0.725"	0.866"	0.826"	0.364"	0.302"	8"

MATERIAL: PER A307 GRADE A
 COATING: HOT DIP ZINC PER ASTM F2329 OR IN ACCORDANCE WITH CLASS C OF ASTM A153 AND CLASS D FOR 1/2" DIAMETER AND LESS

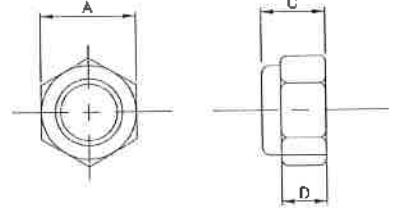
1/2" FLAT WASHERS, LOW CARBON, SAE, ZINC PLATED



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

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

HEX NYLON INSERT LOCKNUTS (NE), GRADE 6, YELLOW ZINC PLATED



SIZE	C		A		D
	MAX	Min	MAX	Min	Min
1/4"	0.359"	0.329"	0.502"	0.489"	0.250"

DIMENSIONS: ASME B18.16.6
 MATERIAL: CARBON STEEL, GRADE 6 PER ASME B18.16.6, NYLON 6/6
 THREAD REQUIREMENTS: ASME B1.1 UNC & UNF CLASS 2B

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

SIGN BASE
 MOUNTING DETAILS
 (NOT TO SCALE)

CITY TRAFFIC ENGINEER
 CITY ENGINEER

DIRECTOR OF
 HOUSTON PUBLIC WORKS

EFF DATE: JULY-29-2019 DWG NO: 01509-01A

Gauge
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 Texas PE Firm Reg. #F-20017

STATE OF TEXAS
 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

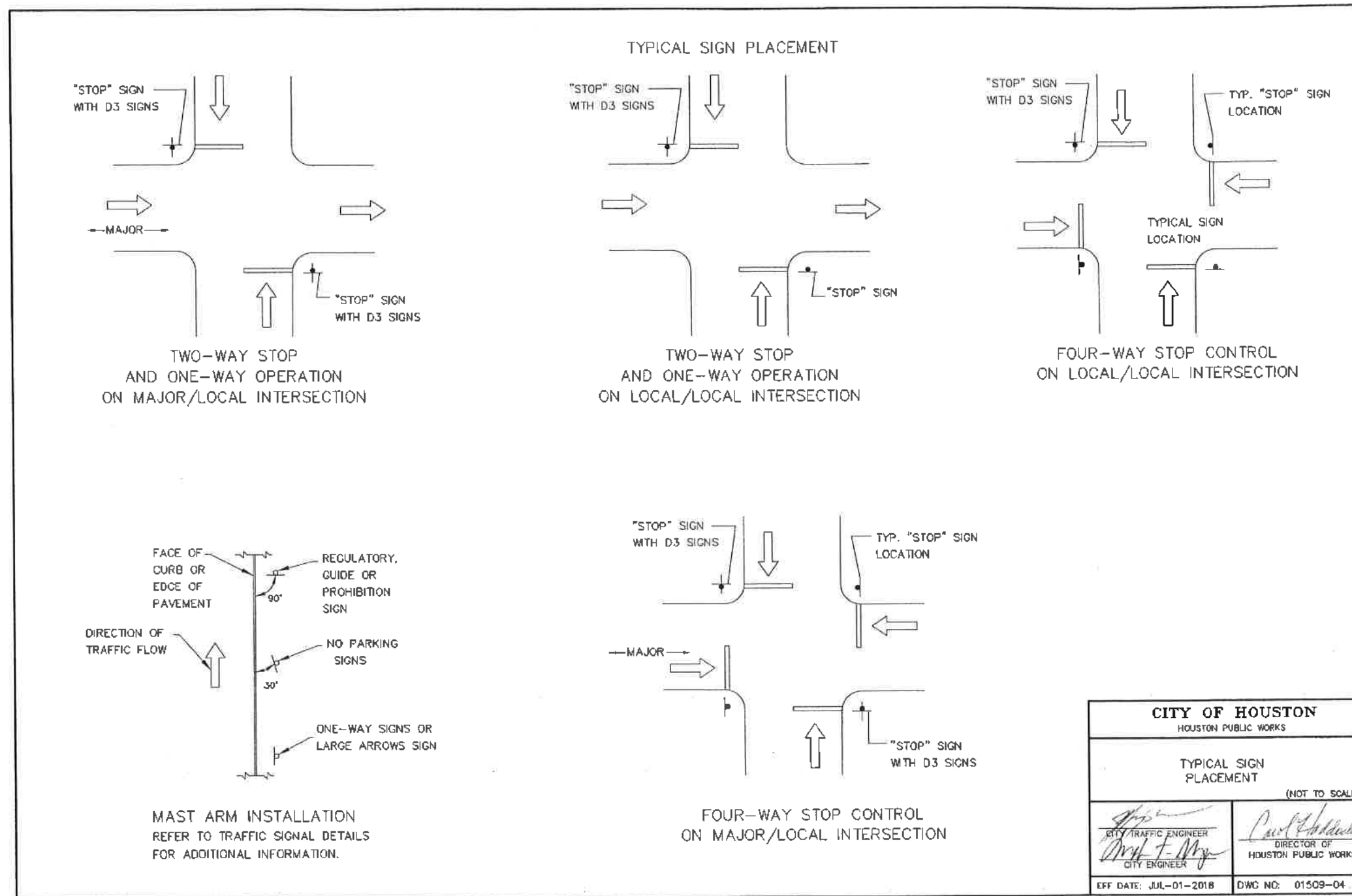
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS

SIGN BASE MOUNTING DETAILS

SHEET 1 OF 1

WBS NUMBER: N-127000-002-7
 DRAWING SCALE: AS NOTED
 CITY OF HOUSTON PROJECT NUMBER: SHPOOR 01509
 SHEET NO. 113 OF 2

FOR CITY OF HOUSTON USE ONLY
72248



MAST ARM INSTALLATION
 REFER TO TRAFFIC SIGNAL DETAILS
 FOR ADDITIONAL INFORMATION.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
TYPICAL SIGN PLACEMENT (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER CITY OF HOUSTON	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01509-04

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SURVEYED BY: 	WBS NUMBER N-T27000-002-7
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON PM SHAFIQ GOLSHAN	
SHEET NO. 114 OF 24	

NO.	DATE	REVISION	APP.

GENERAL PAVEMENT MARKING NOTES:

- PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
- ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
- THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
- THE DESIGN SPEED FOR THE ROAD IS: ____ THE POSTED SPEED LIMIT IS: ____
- ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
- THE FINAL LONGITUDINAL STRIPINGS SHALL BE 90 MIL (0.090") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
- ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
- ALL RAISED PAVEMENT MARKERS (RPMs) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
- ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF HOUSTON STANDARD SPECIFICATION 02782. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
- THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
- BLUE RPMs MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
- FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
- FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRANSPORTATION & DRAINAGE OPERATION REPRESENTATIVE (713-803-3064).

Description and Application of Pavement Marking Lines

Line Series	Color	Description	Width Inches	Typical Applications
WB	White	Broken (10' stripe w/ 30' gap)	4"	- Lane lines between travel lanes in the same direction where changing of lanes is permitted.
WS	White	Solid	4"	- Edge lines to delineate the right edge of the roadway.
			6"	- Left edge of bicycle lane and lane lines between travel lanes in the same direction where changing of lanes is discouraged.
			12"	- Perpendicular crosswalk lines.
			24"	- Stop bars at intersections (signalized and unsignalized).
WG	White	Guide (2' stripe w/6' gap)	6"	- Hatching at high visibility crosswalks.
			12", 24"	- Diagonal hatching used in gores between same direction of travel lanes.
YS	Yellow	Solid	4"	- Guide lines through intersections.
			12", 24"	- Taper lines for turn lanes.
YDS	Yellow	Double Solid	4" - (4") - 4" (gap)	- Guide lines for bicycle lanes.
YDB	Yellow	Double Broken	4" - (4") - 4" (gap)	- Edge lines to delineate the left edge of a divided roadway, a one-way road, or ramp.
YB	Yellow	Broken (10' stripe w/ 30' gap)	4"	- Centerline that separates opposing travel lanes and delineation of median islands.
YB (BIKE)	Yellow	Broken (3' stripe w/ 9' gap)	4"	- Defines the edges of center reversible lanes that are used as TWLTLs during intermittent periods.
YSB	Yellow	Solid & Broken Broken (10' stripe w/ 30' gap)	4" - (4") - 4" (gap)	- Separates travel lanes in opposite directions where passing is permitted in both directions of travel.
				- Separates bicycle travel lanes in opposite directions where passing is permitted in both directions of travel.
BICYCLE GREEN	Green	Solid Colored Pavement	Varies	- Separates travel lanes in opposite directions where passing is permitted in one direction and prohibited in the opposite direction.
YIELD LINE	White	Triangle	16" x 24"	- Used for edge of two-way left-turn lanes (TWLTL).
				- Ped/Bike crossing
				- Vehicle / Bike/ Conflict Area
				- Mid-Block crossing.

Description and Application of Reflective Raised Pavement Markers (RPM)

RRPM Types	Color	COH Spec. Sec. 02764 Equivalent	Description
C	Clear	Type I-C	- Approach face that reflects white light, and the other side does not reflect.
R	Clear & Red	Type II-C-R	- Approach face that reflects white light, and the other side reflects red light.
A	Amber & Amber	Type II-A-A	- Approach face and the other side both reflect amber light.

Line Style Designation : YSB4 - A40/A40



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GENERAL NOTES AND LEGENDS
(NOT TO SCALE)

<i>[Signature]</i> CITY TRAFFIC ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-01

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

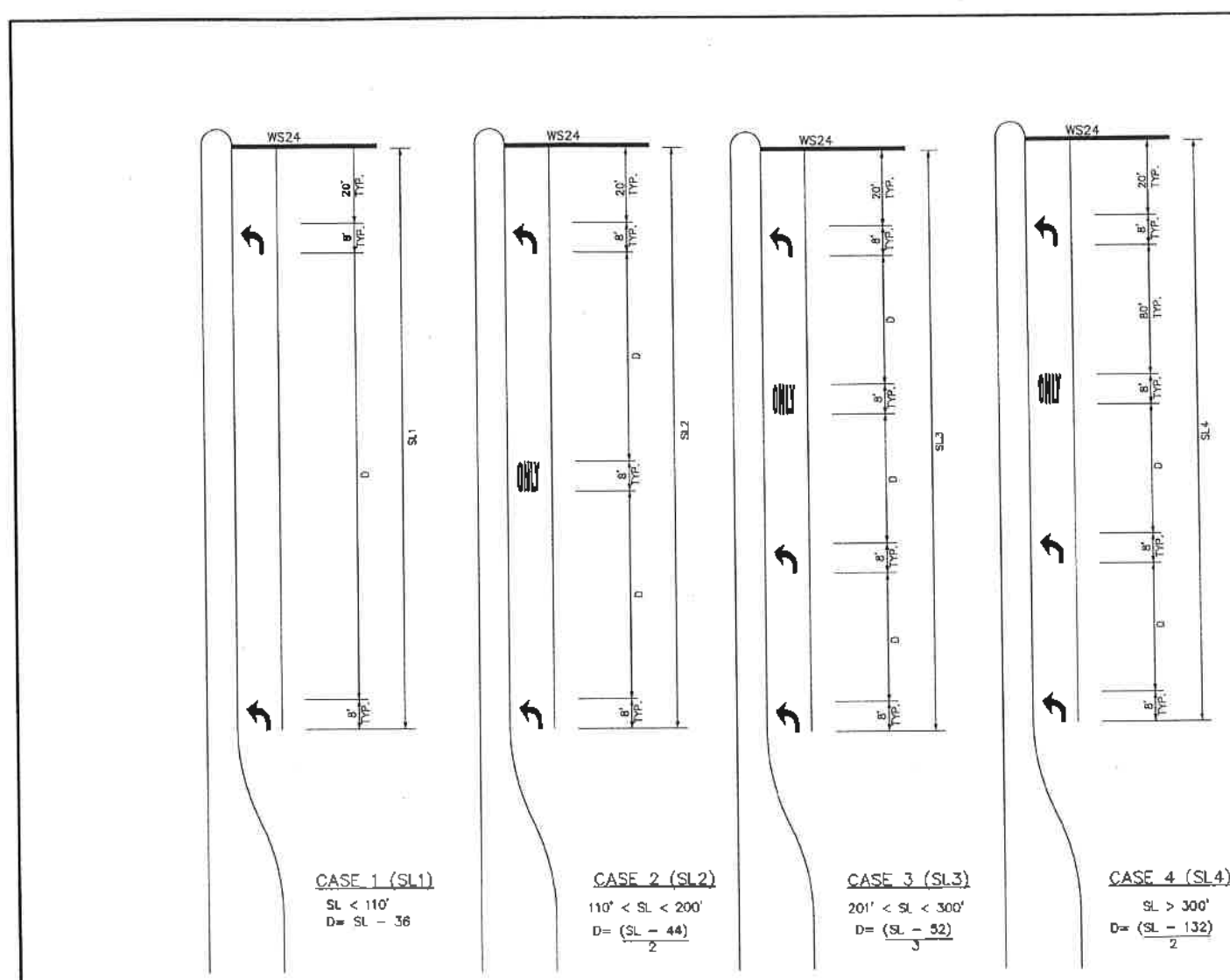
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS

GENERAL NOTES AND LEGEND

SHEET 1 OF 1

NBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	
DRAWING SCALE	
AS NOTED	7 2 2 4 8
CITY OF HOUSTON PUBLIC WORKS	
SHAPOOR GOLSHAN	
SHEET NO. 115 OF 247	

NO.	DATE	REVISION	APP.



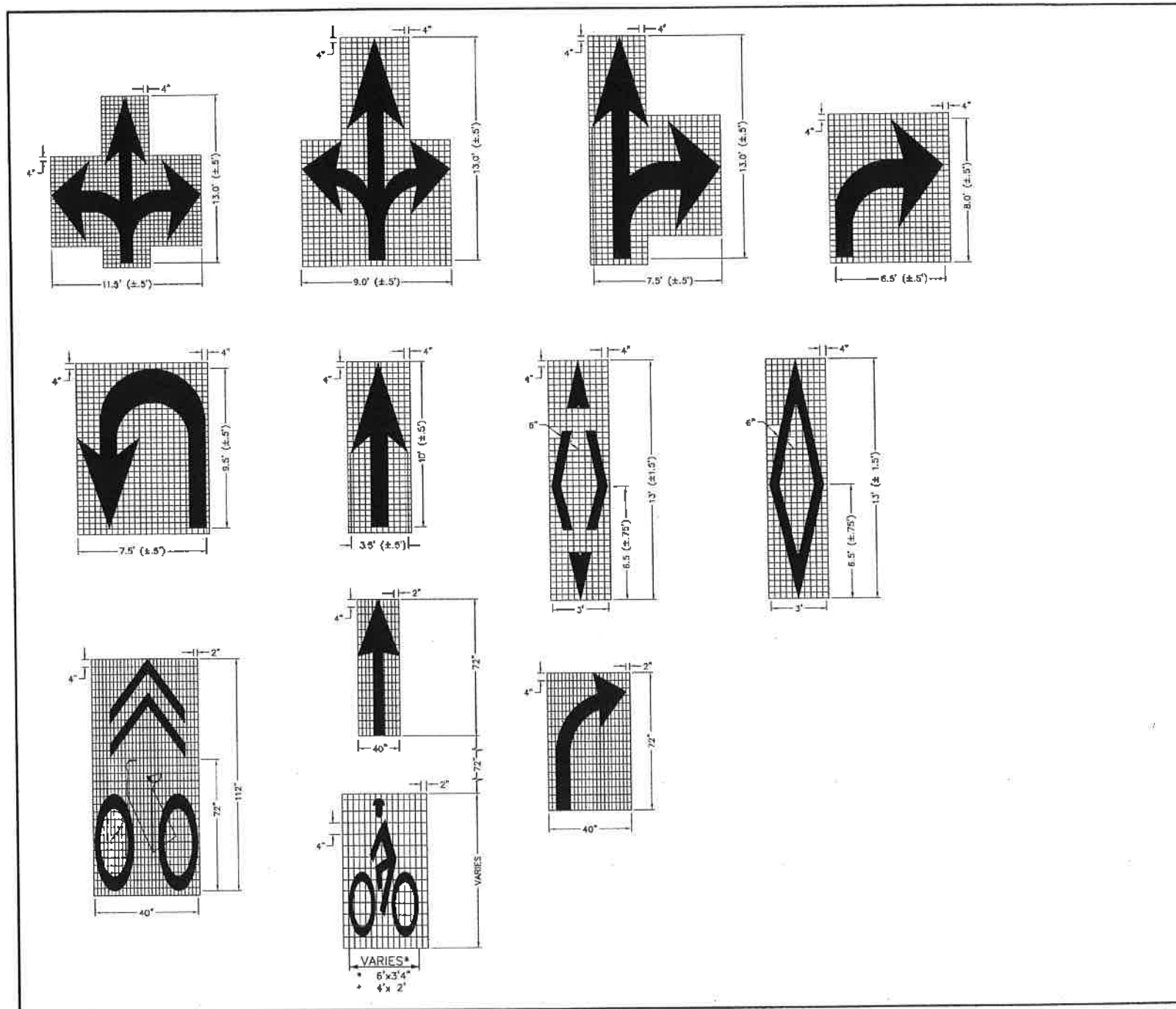
KEY (FOR TURN LANES ONLY):
 SL - STORAGE LENGTH (FEET)
 D - DISTANCE BETWEEN ARROWS AND/OR WORDS (FEET)

GENERAL NOTES:
 1. ALL CASES AND DETAILS ALSO APPLY TO RIGHT-TURN LANES.
 2. FOR DUAL-TURN LANES, DIMENSIONS SHALL BE THE SAME FOR EACH LANE.
 3. SL DIMENSION IS FROM BACK OF STOP LINE TO END OF TURN LANE. NOTE: DO NOT INCLUDE TAPER LENGTH.
 4. PAVEMENT ARROWS AND "ONLY" LEGEND MARKINGS ARE TYPICALLY USED AT ALL SIGNALIZED INTERSECTIONS AND AT ALL UNSIGNALIZED INTERSECTIONS THAT HAVE TURN LANES.
 5. MINIMUM SL = 100'. SL MAY BE LESS THAN 100 FEET ONLY BY APPROVAL OF THE CITY TRAFFIC ENGINEER.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-02

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SURVEYED BY:	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING	
SHEET 1 OF 1	
NBS NUMBER N-T27000-002-1	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON PW SAMPUR GULSHAN	
SHEET NO. 116 OF 247	

NO.	DATE	REVISION	APP.



NOTES FOR PAVEMENT MARKINGS "SYMBOLS" AND "ARROWS":

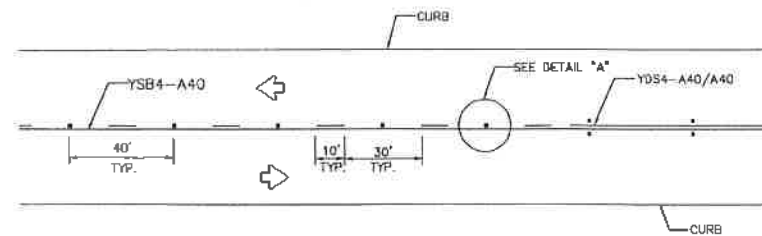
- MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
- THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION. SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE-THIRD OF STANDARD SIZES.
- THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET, OR AS INDICATED ON THE PLANS.
- MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:
 - A. REGULATORY
 - STOP
 - RIGHT (LEFT) TURN ONLY. SYMBOL ARROWS.
 - B. WARNING
 - STOP AHEAD
 - SIGNAL AHEAD
 - SCHOOL
 - SCHOOL X-ING
 - PEDESTRIAN X-ING
 - R X R (SEE SHEET 01510-06 DETAILS)
 - OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.
- UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
- THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL-WAY STOP).
- PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VI OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON-STANDARD SIZE LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER. SPECIAL PERMISSION NEEDED FOR NON-STANDARD SIZE "LETTER" AND/OR "ARROWS".
- LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
- PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STANDARD PAVEMENT MARKING - SYMBOLS (NOT TO SCALE)	
 CITY TRAFFIC ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-04

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	 KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021
SURVEYED BY: 11/15/2021	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
STANDARD PAVEMENT MARKING - SYMBOLS	
SHEET 1 OF 1	
WBS NUMBER N-T27000-002-T	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAIPOOR GOLSHAN	
SHEET NO. 117 OF 247	

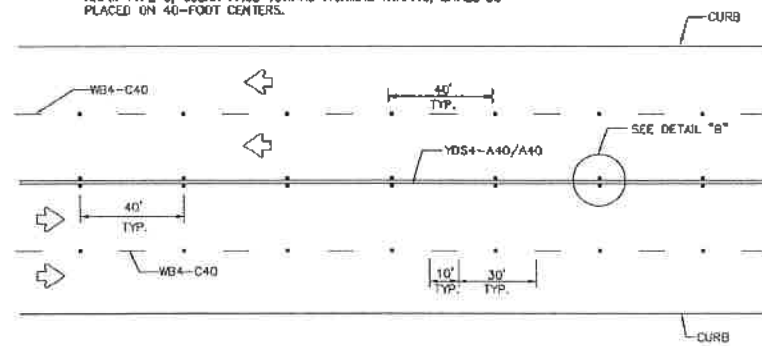
NO.	DATE	REVISION	APP.

CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE

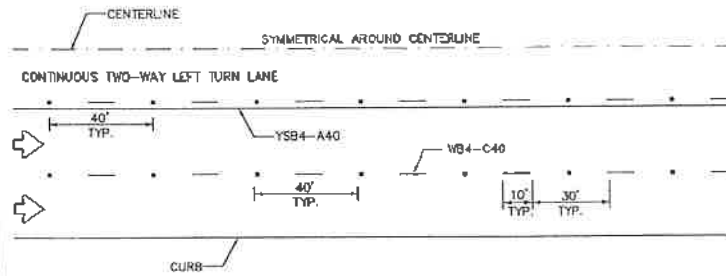


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY STREETS

RRPM TYPE C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.

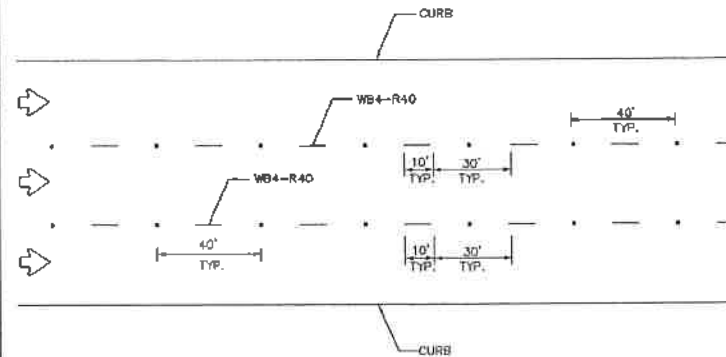


CENTERLINE & LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY MULTILANE STREET

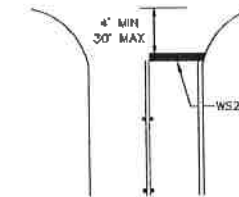
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.



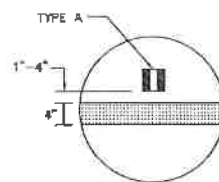
GENERAL NOTES:

1. EDGE LINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAY SHALL BE MEASURED FROM THE INSIDE OF EDGE LINE TO INSIDE OF EDGE LINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.

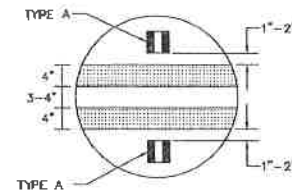
GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



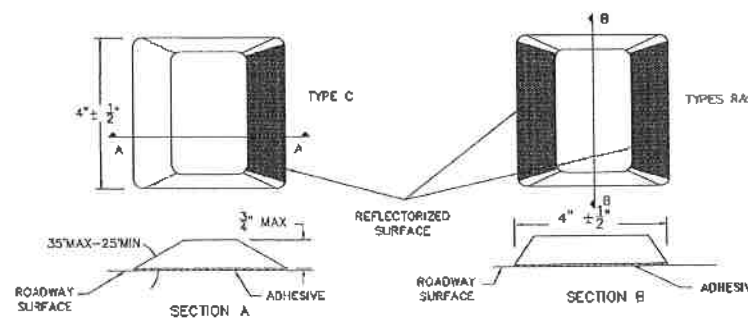
DETAIL "A"



DETAIL "B"



REFLECTIVE RAISED PAVEMENT MARKERS



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE (NOT TO SCALE)

[Signature]
CITY TRAFFIC ENGINEER
CITY ENGINEER

[Signature]
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018 DWG NO: 01510-05

Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

STATE OF TEXAS
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER

SURVEYED BY: *[Signature]*
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS

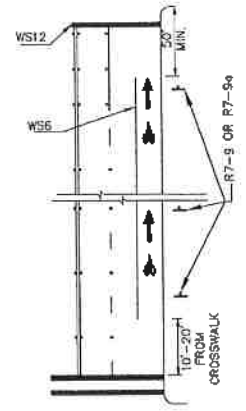
STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

SHEET 1 OF 1

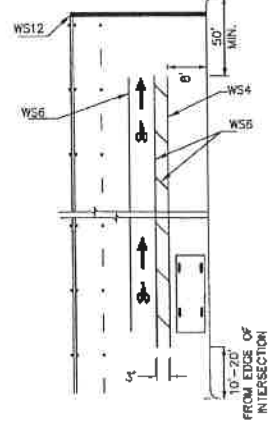
WBS NUMBER: N-T27000-002-7
DRAWING SCALE: AS NOTED
CITY OF HOUSTON PM: SHAIPOOR GOLSHAN
SHEET NO. 118 OF 247

FOR CITY OF HOUSTON USE ONLY
72248

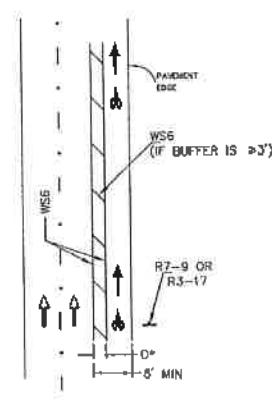
NO.	DATE	REVISION	APP.



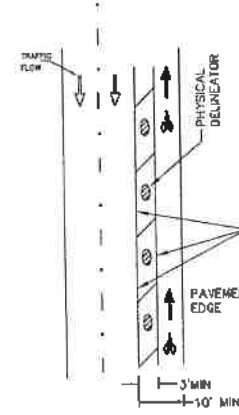
STANDARD BIKE LANES
NO ON-STREET PARKING
ALONG BICYCLE LANE



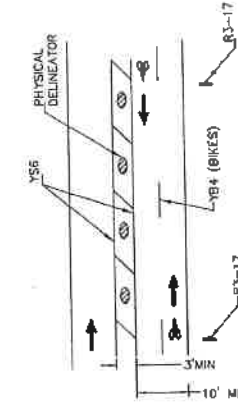
STANDARD BIKE LANES
ON-STREET PARKING
ALONG BICYCLE LANE



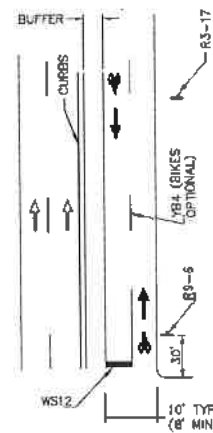
BUFFERED BIKE LANES
*DELINEATOR REQUIRED IF D < 2'



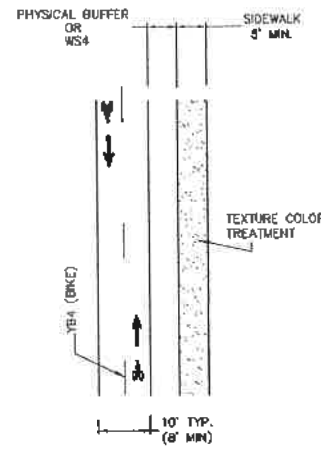
SEPARATED BIKE LANES
ONE-WAY (CONTRA-FLOW)



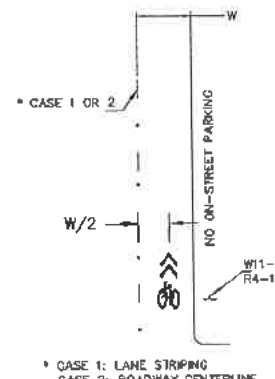
SEPARATED BIKE LANES
TWO-WAY



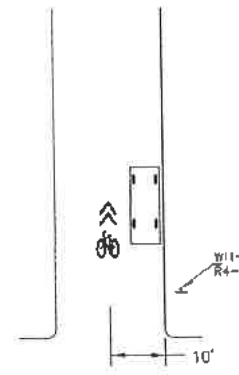
TWO-WAY SIDE PATH



**SIDEPATH WITH DEDICATED
SIDEWALK**



ROADWAY WITH SHARED LANE
* CASE 1: LANE STRIPING
CASE 2: ROADWAY CENTERLINE
• NEIGHBORHOOD BIKEWAY
• COLLECTOR/ THOROUGHFARE
• NO ON-STREET PARKING



ROADWAY WITH SHARED LANE
• NEIGHBORHOOD STREET
• NO CENTER LINE OR LANE MARKING
• ON STREET PARKING

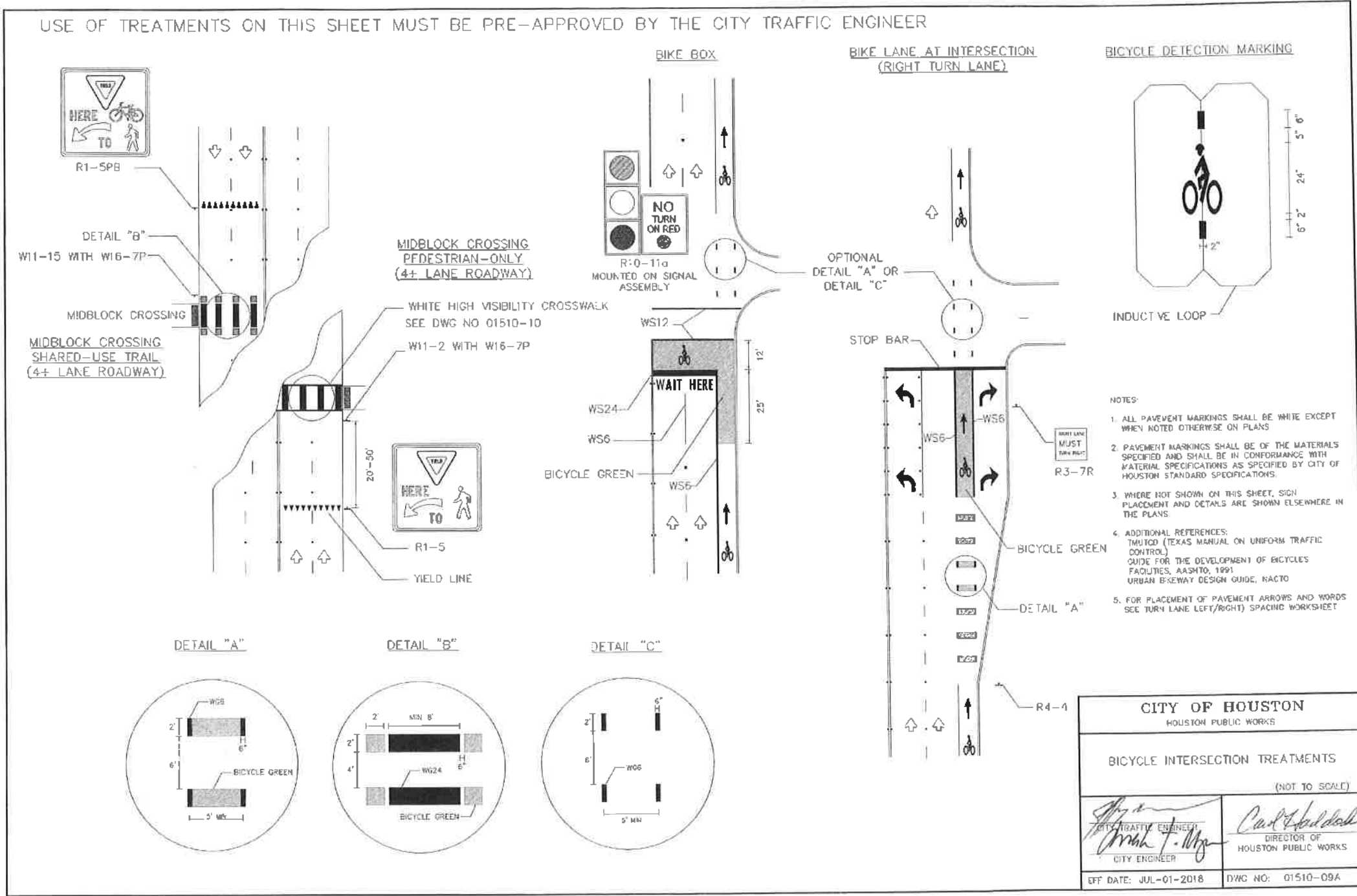
NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE WHITE EXCEPT WHEN NOTED OTHERWISE ON PLANS.
2. PAVEMENT MARKINGS SHALL BE OF THE MATERIALS SPECIFIED AND SHALL BE IN CONFORMANCE WITH MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.
3. EXACT SIGN PLACEMENT AND DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.
4. ADDITIONAL REFERENCES: TMUTCD (TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL) GUIDE FOR THE DEVELOPMENT OF BICYCLES FACILITIES, AASHTO, LATEST EDITION.
5. SHARED LANE MARKING SHALL BE IMPLEMENTED ONLY ON ROADWAY SEGMENT BUT NOT WITHIN THE FUNCTIONAL LIMITS OF AN INTERSECTION.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
BICYCLE LANE PAVEMENT MARKINGS	
(NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: Q1510-09

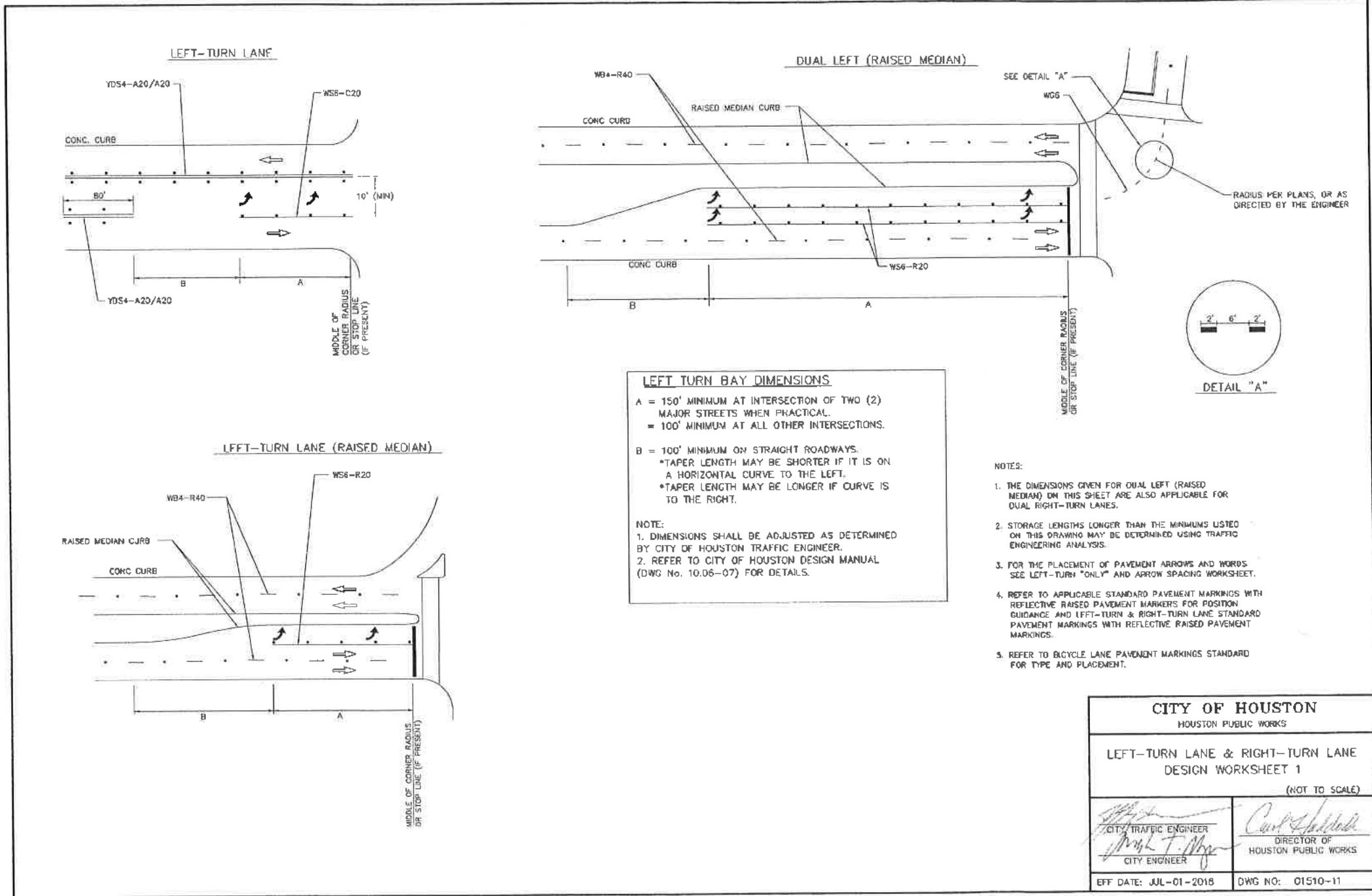
 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SHEET 1 OF 1	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	
DRAWING SCALE	7 2 2 4 8
AS NOTED	
CITY OF HOUSTON PM	
SUPPOR GULSHN	
SHEET NO. 119 OF 247	

NO.	DATE	REVISION	APP.



<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	<p>KARAM M. QADDO 12561 LICENSED PROFESSIONAL ENGINEER 11/15/2021</p>
	<p>SURVEYED BY: <i>[Signature]</i> 11/15/2021</p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>BICYCLE INTERSECTION TREATMENTS (NOT TO SCALE)</p>	
<p><i>[Signature]</i> CITY TRAFFIC ENGINEER</p>	<p><i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS</p>
<p>EFF DATE: JUL-01-2018</p>	<p>DWG NO: 01510-09A</p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p> <p>BICYCLE INTERSECTION TREATMENT DETAILS</p> <p style="text-align: right;">SHEET 1 OF 1</p>	
<p>WBS NUMBER N-127000-002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p style="font-size: 2em; text-align: center;">72248</p>
<p>DRAWING SCALE AS NOTED</p>	
<p>CITY OF HOUSTON PM SHAFIQ BULSINAH</p>	
<p>SHEET NO. 120 OF 247</p>	

NO.	DATE	REVISION	APP.



CITY OF HOUSTON HOUSTON PUBLIC WORKS	
LEFT-TURN LANE & RIGHT-TURN LANE DESIGN WORKSHEET 1 (NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01510-11

 Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
SHEET 1 OF 1	
NBS NUMBER N-127000-002-7	
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAPOOR GOLSHANI	
SHEET NO. 122 OF 247	

72248

NO.	DATE	REVISION	APP.

D11-1 MOD HB-TR



D11-1 MOD HB-SL



D11-1 MOD HB-S



D11-1 MOD HB-LR



D11-1 MOD HB-SR



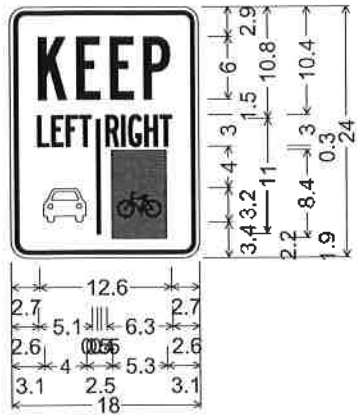
D11-1 MOD HB-SLR



NO.	DATE	REVISION	APP.

<p>Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017</p>	<p>KARAM M. QADDO 125611 LICENSED PROFESSIONAL ENGINEER 11/15/2021</p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS</p>	
<p>BIKEWAY SIGNS DETAILS</p>	
<p>SHEET 1 OF 1</p>	
<p>WBS NUMBER N-T27000-002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p>7 2 2 4 8</p>
<p>DRAWING SCALE AS NOTED</p>	
<p>CITY OF HOUSTON PM</p>	
<p>SNIPPOOR RLS/SHH</p>	
<p>SHEET NO. 125 OF 247</p>	

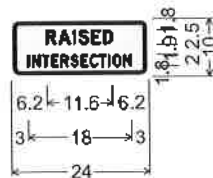
BIKE LANE AND BIKE BOX AT SIGNALIZED INTERSECTION



R9-7_12x18;
 1.5" Radius, 0.4" Border, 0.4" Indent, Black on White;
 "KEEP", B 108% spacing;
 "LEFT", B 50% spacing;
 Symbol Driving Tour;
 "RIGHT", B 50% spacing;
 Rectangle Green;
 Table of distances between letter and object lefts

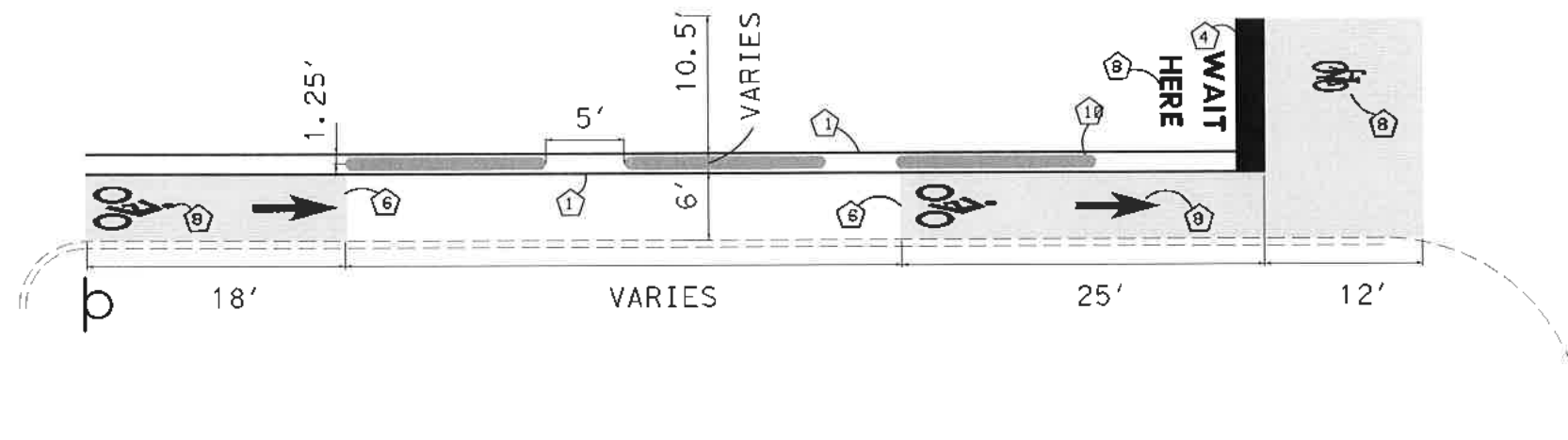
	K	E	E	P	
2.7	3.6	3.2	3.3	2.5	2.7
	L	E	F	T	
2.6	1.3	1.4	1.3		

1.6					
	R	I	G	H	T
0.9	1.5	0.7	1.5	1.5	1.1
3.1	6.5	5.3	3.1		



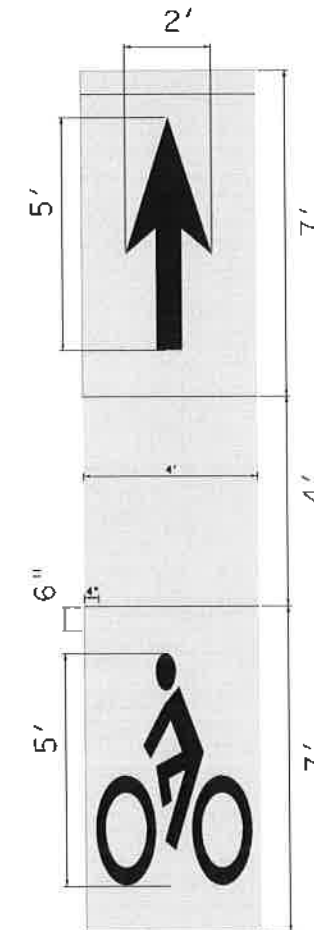
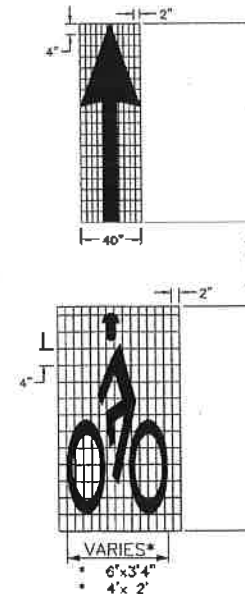
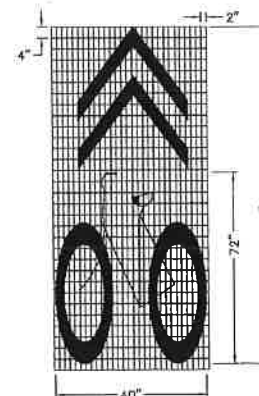
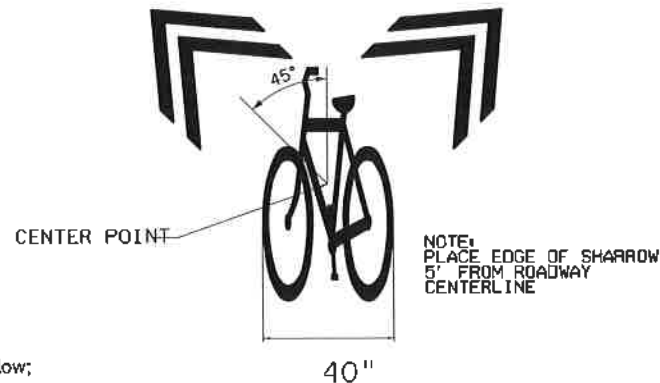
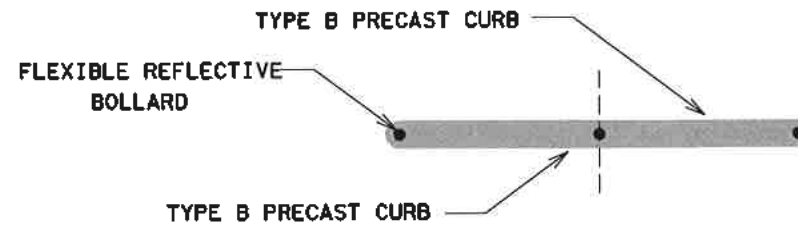
S5-2aTP_24x10;
 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Fluorescent yellow;
 "RAISED", D;
 "INTERSECTION", D;
 Table of widths and spaces

6.2	1.7	0.4	2.1	0.5	0.4	0.6	1.7	0.5	1.6	0.4	1.7	6.2
3.0	0.3	0.5	1.3	0.4	1.2	0.4	1.2	0.4	1.3	0.4	1.3	3.0



- #### LEGEND
- RIGHT-OF-WAY
 - ⇨ EXISTING LANE
 - ⇨ PROPOSED LANE
 - PROPOSED CURB
 - ① REFL PAV MRK (W) 4" (SLD)
 - ② REFL PAV MRK (W) 6" (SLD)
 - ③ REFL PAV MRK (W) 12" (SLD)
 - ④ REFL PAV MRK (W) 24" (SLD)
 - ⑤ REFL PAV MRK (Y) 4" (SLD)
 - ⑥ REFL PAV MRK TY C PREFORM SYMBOL (WHITE/GREEN)
 - ⑦ REFL RAISED PAV MRK (TYPE A)
 - ⑧ REFL PAV MARK WORD OR SYMBOL (W)
 - ⑨ 2.5' YIELD TRIANGLE
 - ⑩ PRECAST CONCRETE CURB WITH FLEX POST
 - ⑪ REFL PAV MRK (W) 4" (2' SLD, 6' GAP)

PRECAST CURB WITH FLEX POST DETAIL



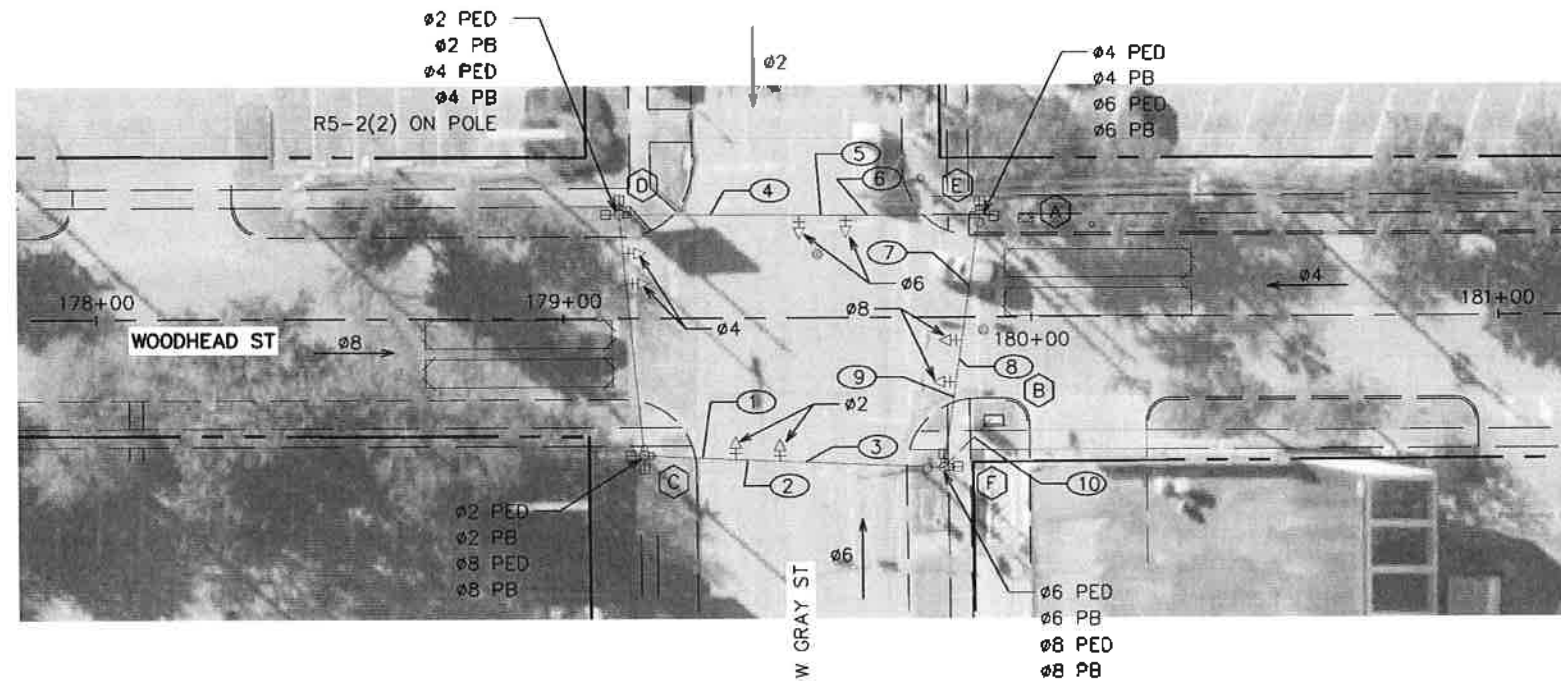
TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

11/15/2021
 SARAH L. WETMORE
 PROFESSIONAL ENGINEER
 130442

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 BIKE DETAILS

WDS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOR COLSON	
SHEET NO. 126 OF 247	

7 2 2 4 8



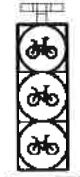
- LEGEND**
- + VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - ⊞ BIKE LOOP DETECTOR
 - ⊞ POLE W/ MAST ARM
 - ⊞ PEDESTRIAN SIGNAL HEAD
 - ⊞ PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - ⊞ PULL BOX - TYPE C
 - - - CONDUIT
 - ⊞ LUMINAIRE
 - ⊞ MAST ARM SIGN
 - ⊞ CONTROLLER CABINET
 - ⊞ SIGNAL MOUNTED SIGN



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<p>SURVEYED BY:</p>		
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>		
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W GRAY ST AT WOODHEAD ST SIGNAL EXISTING CONDITIONS</p>		
<p>NBS NUMBER N-121000-0002-7</p>		<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED CITY OF HOUSTON PM SHAPOR GOLSMAN</p>		<p>7 2 2 4 8</p>
<p>SHEET NO. 127 OF 241</p>		

PROPOSED SIGNAL HEAD SCHEDULE

ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD



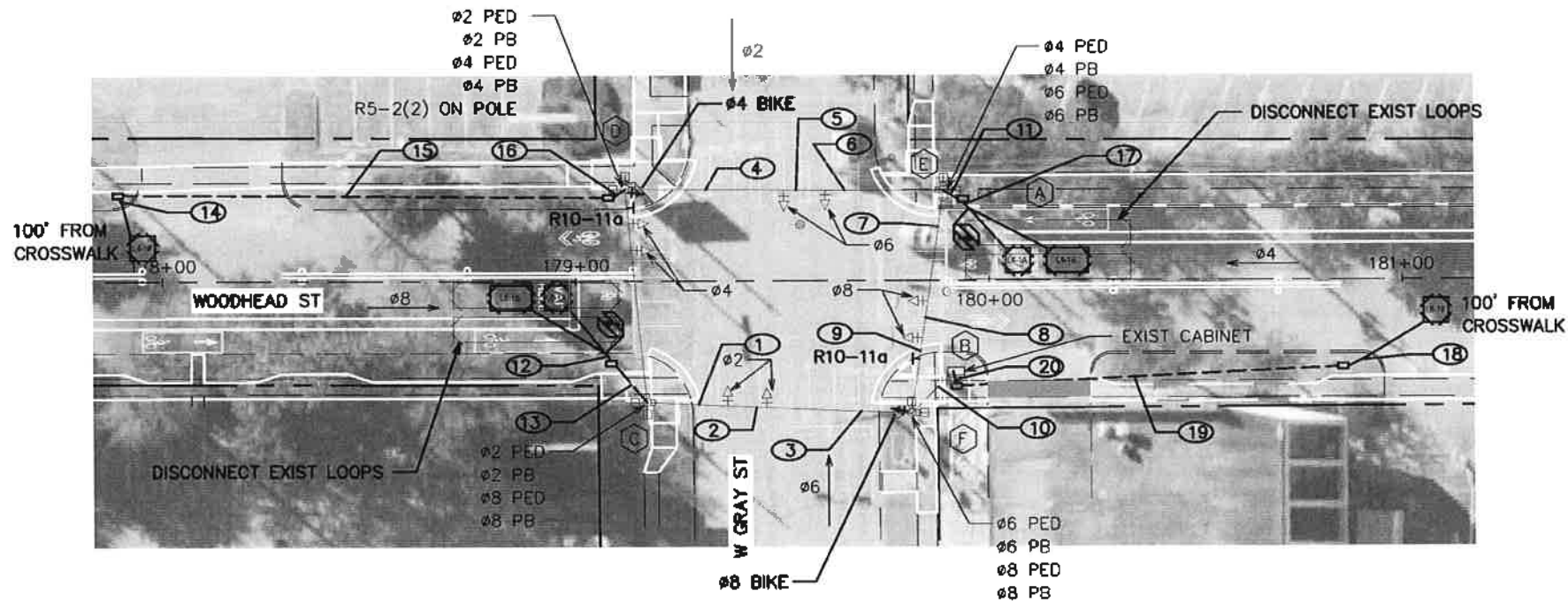
R10-10b
30"x18"

#4 BIKE, #8 BIKE

PROPOSED SIGN SCHEDULE

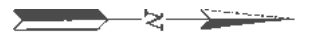
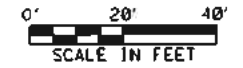


R10-11a
24"x32"



LEGEND

- VEHICLE SIGNAL HEAD
- LOOP DETECTOR
- BIKE LOOP DETECTOR
- POLE W/ STRAIN WIRE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX - TYPE B
- PULL BOX - TYPE C
- CONDUIT
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET
- SIGNAL MOUNTED SIGN



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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>			
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W GRAY ST AT WOODHEAD ST SIGNAL LAYOUT</p>			
<p>WBS NUMBER H-272000-0002-7</p>		<p>FOR CITY OF HOUSTON USE ONLY</p>	
<p>AS NOTED</p>		<p>7 2 2 4 8</p>	
<p>CITY OF HOUSTON PM SHAPOOR GOLSHAN</p>		<p>SHEET NO. 128 OF 247</p>	

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
	EXIST STRAIN POLE	-	NO	-	-	-	-	-	EXISTING	-
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-83	-	-	EXIST R5-2/2 SIGN PROP R10-10b SIGN PROP R10-11a SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	-	-	-	-	-	EXISTING	-
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-83	-	-	PROP R10-10b SIGN PROP R10-11a SIGN	EXISTING	-

LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
SOUTHBOUND		
PH 4 CALL LOOP L4-1A LEADING EDGE	180+04	5' L
PH 4 CALL LOOP L4-1B LEADING EDGE	180+14	5' L
PH 4 SYSTEM LOOP L4-1# LEADING EDGE	177+93	8' L
BIKE LOOP	179+92	11' L
NORTHBOUND		
PH 8 CALL LOOP L8-1A LEADING EDGE	178+98	4' R
PH 8 CALL LOOP L8-1B LEADING EDGE	178+89	4' R
PH 8 SYSTEM LOOP L8-1# LEADING EDGE	181+11	7.5' R
BIKE LOOP	179+11	11.5' R

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
	-	-	-	EXISTING TO REMAIN	EXISTING	-
	332 CALTRANS	MODEL 2070N NEMA	-	ADD 1 DETECTOR CARD FOR BIKE DETECTORS ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	-

NOTES

1. EXISTING SIGNAL CABINET AND ELECTRICAL METER TO BE REUSED.

2. ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.

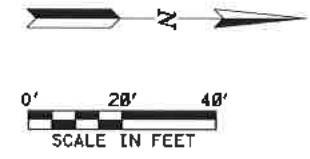
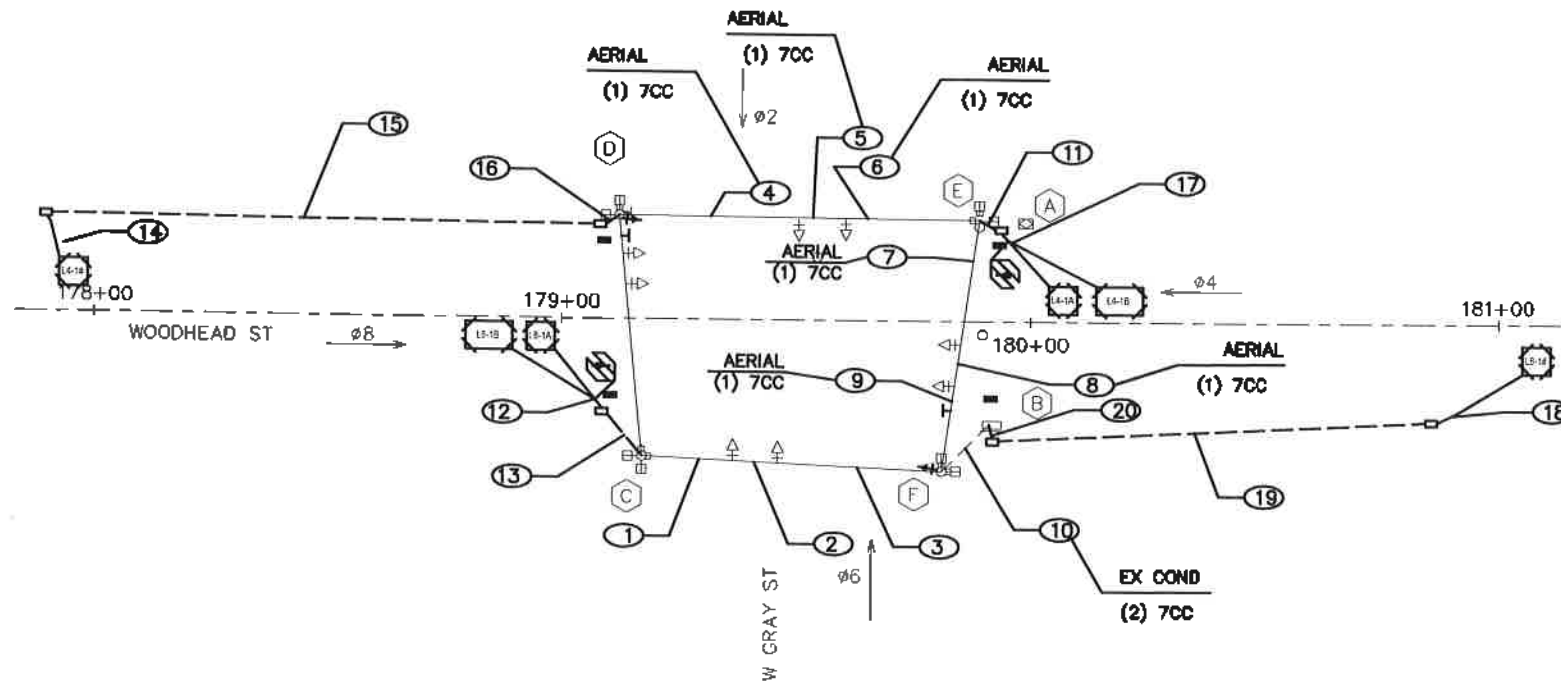
3. INSTALL LUMINAIRES PARALLEL TO MAST ARM.

4. REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.

5. BASED ON WOODHEAD STREET CENTERLINE FROM SOUTH TO NORTH.

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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W GRAY ST AT WOODHEAD ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-T27000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED</p>	<p>7 2 2 4 8</p>
<p>CITY OF HOUSTON PM SHARON COLSMAN</p>	
<p>SHEET NO. 129 OF 247</p>	

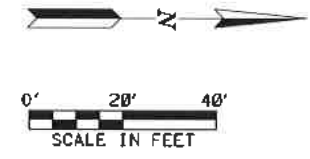
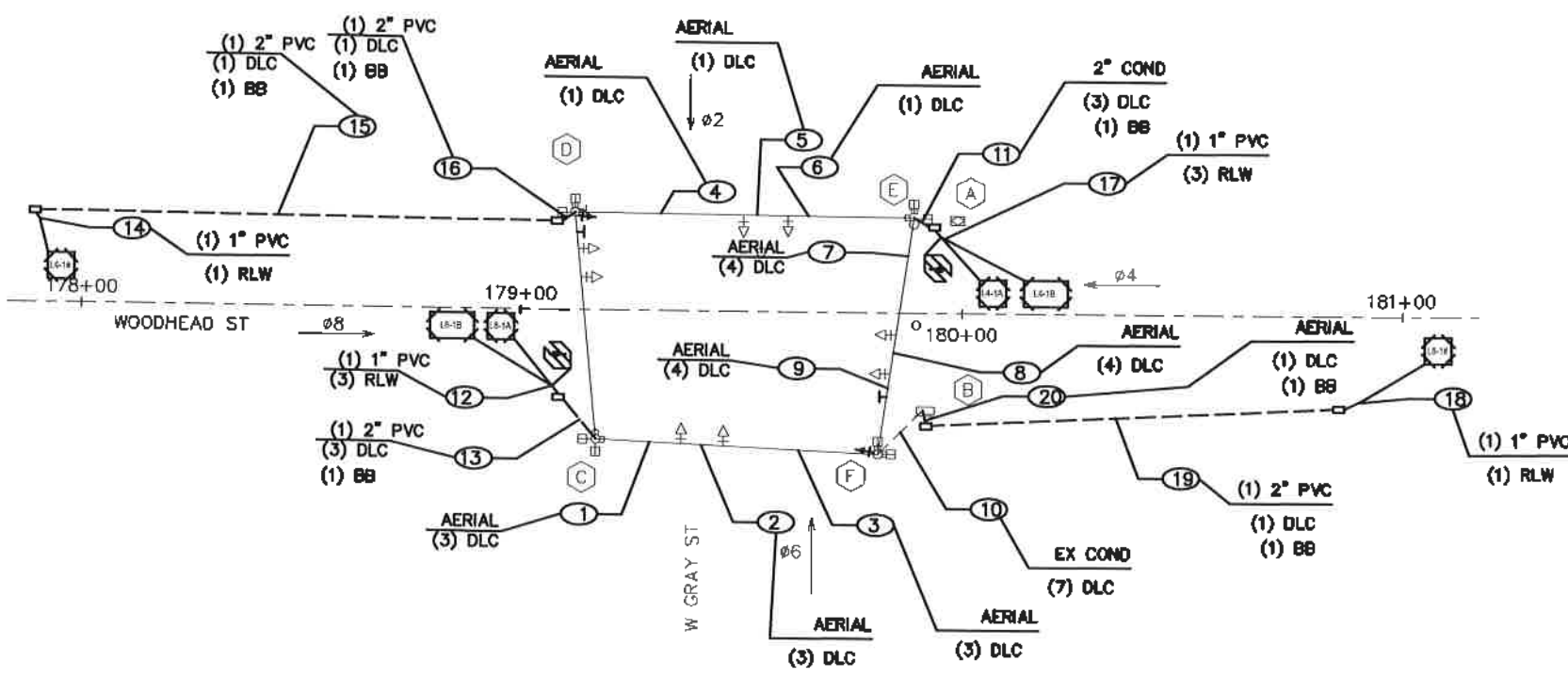
NO.	DATE	REVISION	APP.



HIGH VOLTAGE CIRCUIT

- (X) Y" C = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW

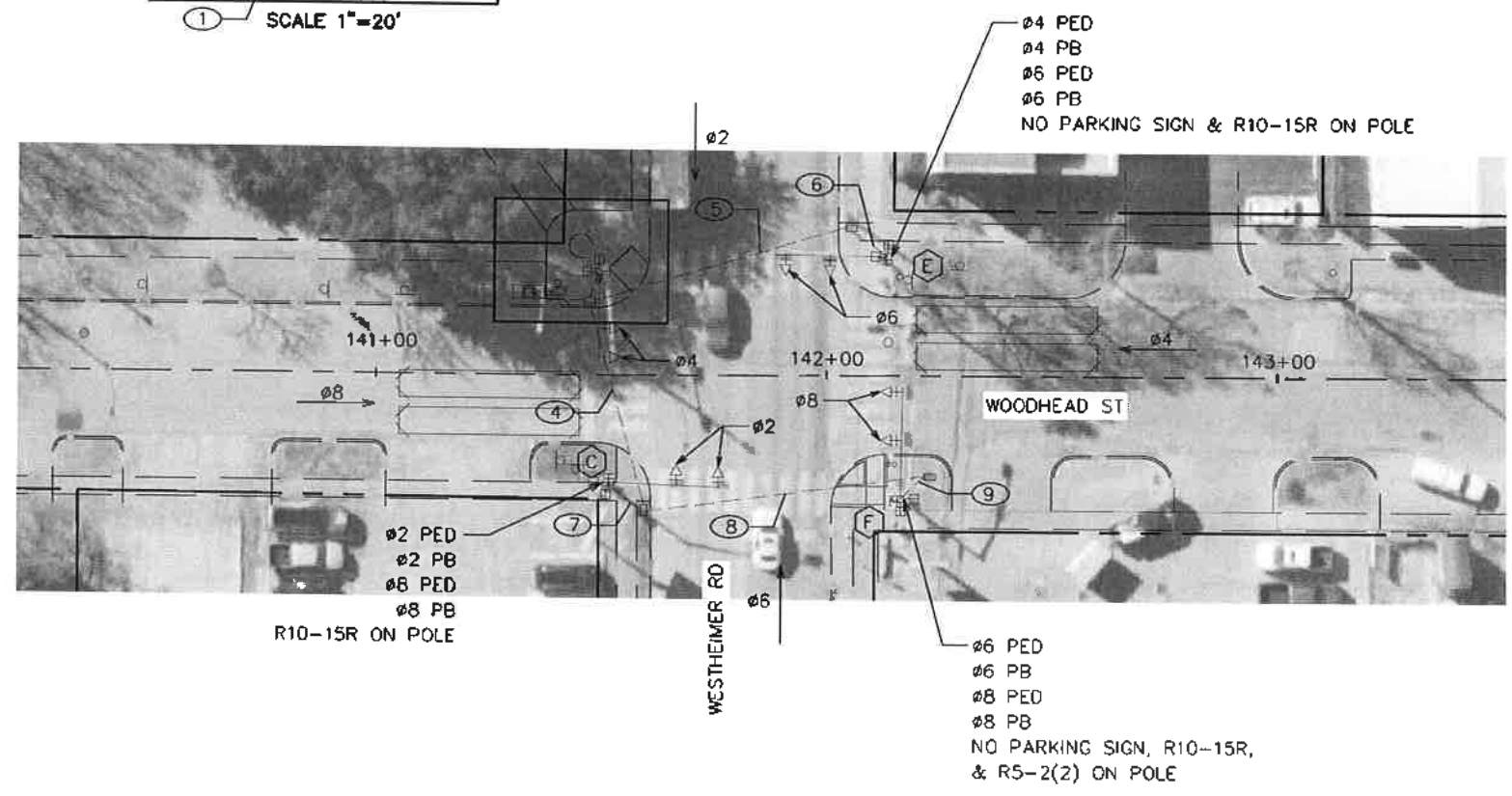
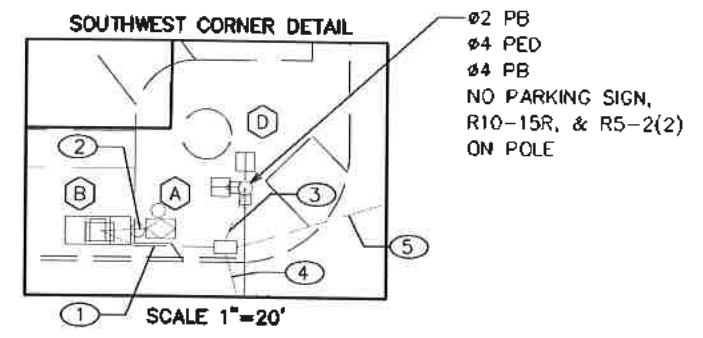
TRAFFIC ENGINEERS, INC. <small>PROFESSIONAL ENGINEERING SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/15/2021 SARAH L. WETMORE PROFESSIONAL ENGINEER
SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W GRAY ST AT WOODHEAD ST HIGH VOLTAGE WIRING		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PUBLIC WORKS SHAMPOO COLSHAN		
SHEET NO. 130 OF 24		



LOW VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE, AND TYPE OF CONDUIT
 DLC = DETECTOR LEAD-IN CABLE, #14 AWG (MSA 50-2-1984)
 SC = #20 3CC-SHIELDED CABLE (3M MODEL 138)
 CAT5 = CAT5E #24 AWG
 RLW = ROADWAY LOOP DETECTOR WIRE, #14 AWG (MSA 51-5-1985)
 BB = BARE BOND #8 AWG SOLID

TRAFFIC ENGINEERS, INC. <small>TRANSPORTATION SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/15/2021 SARAH L. WETMORE PROFESSIONAL ENGINEER
SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W GRAY ST AT WOODHEAD ST LOW VOLTAGE WIRING		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PM SIMPOOR GOLSHAN	SHEET NO. 131 OF 247	



LEGEND

- VEHICLE SIGNAL HEAD
- LOOP DETECTOR
- BIKE LOOP DETECTOR
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX - TYPE B
- PULL BOX - TYPE C
- CONDUIT
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET
- SIGNAL MOUNTED SIGN

0' 20' 40'
SCALE IN FEET

<p>TRAFFIC ENGINEERS, INC. 11/15/2021</p> <p>801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3156</p> <p>SJRYEYED BY</p>		
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT WOODHEAD ST SIGNAL EXISTING CONDITIONS</p>		
<p>WBS NUMBER</p> <p>N-127000-0002-T</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p>7 2 2 4 8</p>	
<p>AS NOTED</p> <p>CITY OF HOUSTON</p> <p>SHAPOOR GOLSMAN</p> <p>SHEET NO. 132 OF 124</p>		

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
C	EXIST 25' MAST ARM	-	NO	-	-	-	RELOCATE EXIST PED PB AND SIGN TO WEST SIDE OF POLE	EXIST R0-15R	EXISTING	-
D	EXIST 20' MAST ARM	-	NO	1-ASTROBRAC	1-83	-	RELOCATE EXIST PED PB AND SIGN TO WEST SIDE OF POLE	EXIST NO PARKING SIGN EXIST RS-2(2) PROP R10-10b SIGN RELOCATE EXIST R10-15R SIGN FROM POLE TO MAST ARM PROP R10-11a	EXISTING	-
E	EXIST 25' MAST ARM	-	NO	-	-	-	RELOCATE EXIST PED PB AND SIGN TO WEST SIDE OF POLE	EXIST NO PARKING SIGN ROTATE EXIST R10-15R TO FACE EAST	EXISTING	-
F	EXIST 25' MAST ARM	-	NO	1-ASTROBRAC	1-83	-	RELOCATE EXIST PED PB AND SIGN TO WEST SIDE OF POLE	EXIST RS-2(2) EXIST NO PARKING SIGN PROP R10-10b SIGN RELOCATE EXIST R10-15R SIGN FROM POLE TO MAST ARM PROP R10-11a	EXISTING	-


LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
SOUTHBOUND		
PH 4 CALL LOOP L4-1A LEADING EDGE	142+29	4.5' L
PH 4 CALL LOOP L4-1B LEADING EDGE	142+39	4.5' L
PH 4 SYSTEM LOOP L4-1# LEADING EDGE	140+32	7' L
BIKE LOOP	140+18	12' L
NORTHBOUND		
PH 8 CALL LOOP L8-1A LEADING EDGE	141+38	3.5' R
PH 8 CALL LOOP L8-1B LEADING EDGE	141+28	3.5' R
PH 8 SYSTEM LOOP L8-1# LEADING EDGE	143+36	8.5' R
BIKE LOOP	141+49	9.5' R

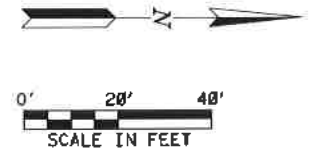
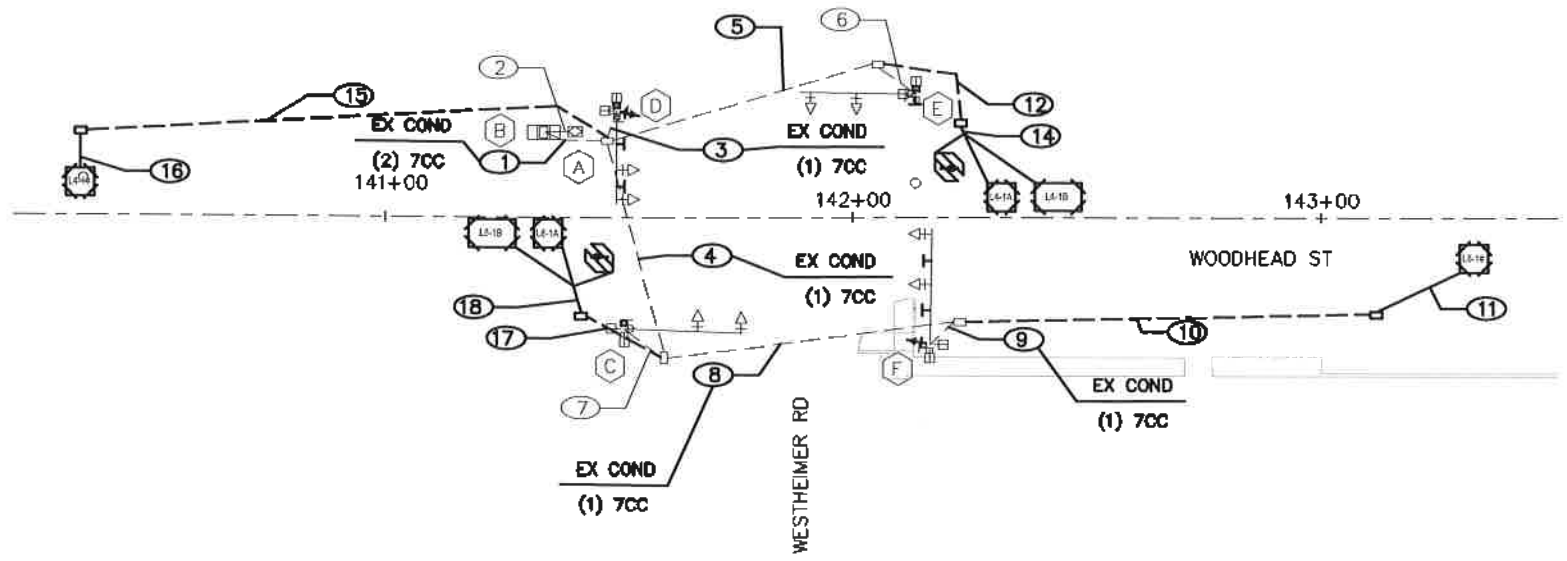
TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
A				EXISTING TO REMAIN	EXISTING	-
B		332 CALTRANS	MODEL 2070N NEMA	ADD 1 DETECTOR CARD FOR BIKE LOOPS ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	-

NOTES

- EXISTING SIGNAL CABINET AND ELECTRICAL METER TO BE REUSED.
- ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.
- INSTALL LUMINAIRES PARALLEL TO MAST ARM.
- REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.
- BASED ON WOODHEAD STREET CENTERLINE FROM SOUTH TO NORTH.

<p>TRAFFIC ENGINEERS, INC. <small>INCORPORATED ENGINEERING SOLUTIONS</small> 501 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</p>	<p><i>Sarah L. Wetmore</i> 11/15/2021</p> 
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT WOODHEAD ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-T27000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED</p>	<p>7 2 2 4 8</p>
<p>CITY OF HOUSTON PM SHAPOOR GOLSHAN</p>	
<p>SHEET NO. 134 OF 247</p>	

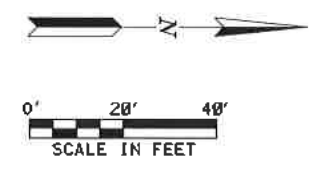
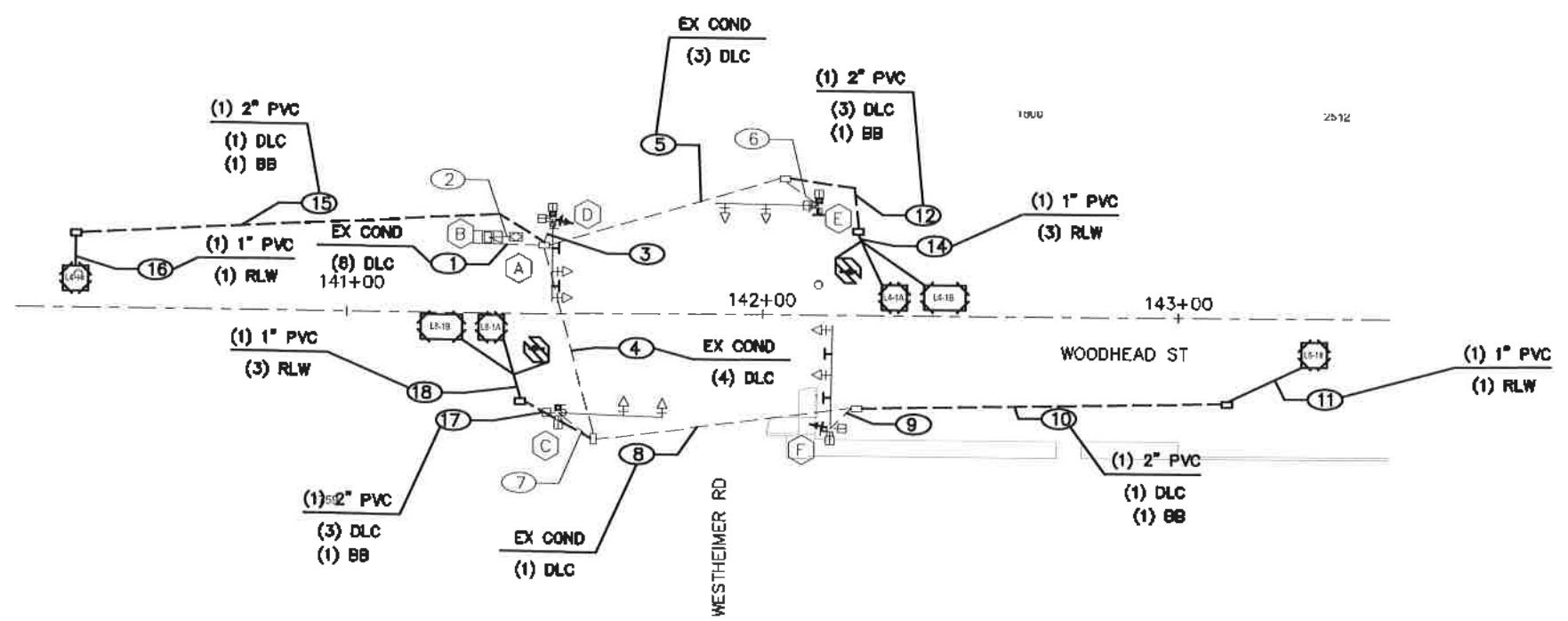


HIGH VOLTAGE CIRCUIT

- (X)Y"C = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW

NO.	DATE	REVISION	APP.

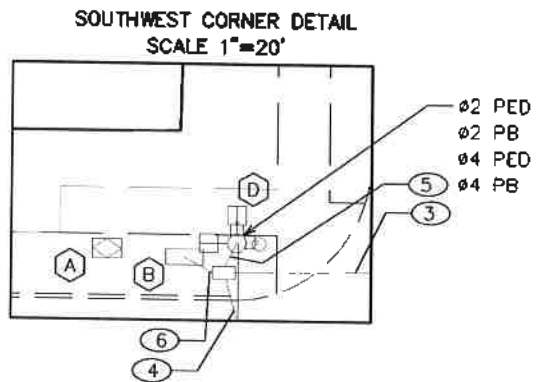
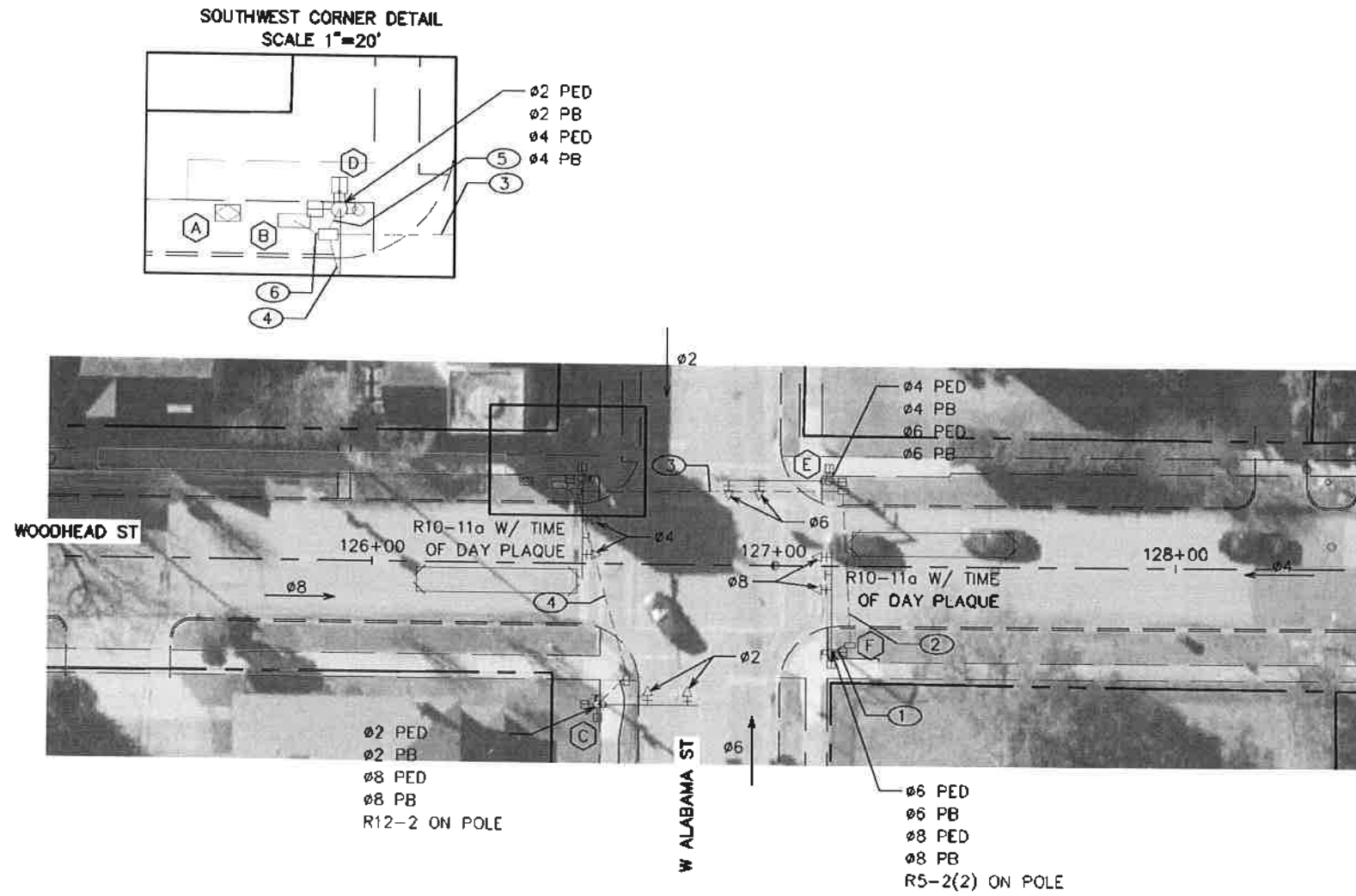
TRAFFIC ENGINEERS, INC. <small>INCORPORATED EXAMINATION BILL 1078</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		
SURVEYED BY: <i>Sarah L. Wetmore</i> 11/15/2021		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT WOODHEAD ST SIGNAL HIGH VOLTAGE WIRING		
NBS NUMBER N-127000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PM		
SHAPOOR GOLSHAN		
SHEET NO. 135 OF 247		



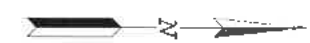
LOW VOLTAGE CIRCUIT

(X)Y\"C = NUMBER, SIZE, AND TYPE OF CONDUIT
 DLC = DETECTOR LEAD-IN CABLE, #14 AWG (IMSA 50-2-1984)
 SC = #20 3CC-SHIELDED CABLE (3M MODEL 138)
 CAT5 = CAT5E #24 AWG
 RLW = ROADWAY LOOP DETECTOR WIRE, #14 AWG (IMSA 51-5-1985)
 BB = BARE BOND #8 AWG SOLID

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CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT WOODHEAD ST SIGNAL LOW VOLTAGE WIRING		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY AS NOTED CITY OF HOUSTON PUBLIC WORKS SHAPOOR GOLSHAN SHEET NO. 136 OF 24	
72248		



- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ MAST ARM
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN



TRAFFIC ENGINEERS, INC. <small>TRAFFIC ENGINEERS, INC. IS AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER</small> 901 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SUPERVISOR: RV			
CITY OF HOUSTON HOUSTON PUBLIC WORKS			
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W ALABAMA ST AT WOODHEAD ST SIGNAL EXISTING CONDITIONS			
WBS NUMBER N-T27000-0002-7		FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED		CITY OF HOUSTON PW	
SHAIPOOR GOLSHAN		SHEET NO. 137 OF 247	

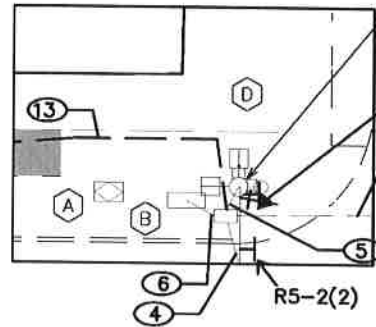
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 Plot Driver:u5TnPDF#Color,.plfcfg

PROPOSED SIGN SCHEDULE



R5-2(2)
24"X30"

**SOUTHWEST CORNER DETAIL
SCALE 1"=20'**

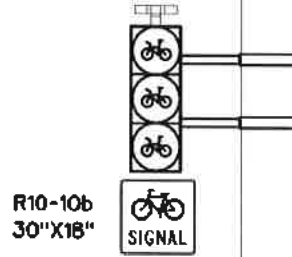


Ø2 PED
Ø2 PB
Ø4 PED
Ø4 PB

Ø4 BIKE
SIGNAL HEAD TO BE ON 2-FOOT
EXTENDERS TO EAST SIDE OF SIGNAL
POLE FOR VISIBILITY

PROPOSED SIGNAL HEAD SCHEDULE

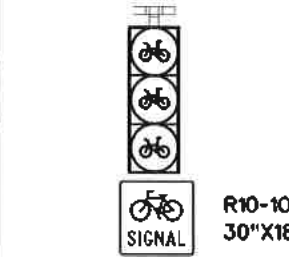
ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD



R10-10b
30"X18"

Ø4 BIKE

ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD

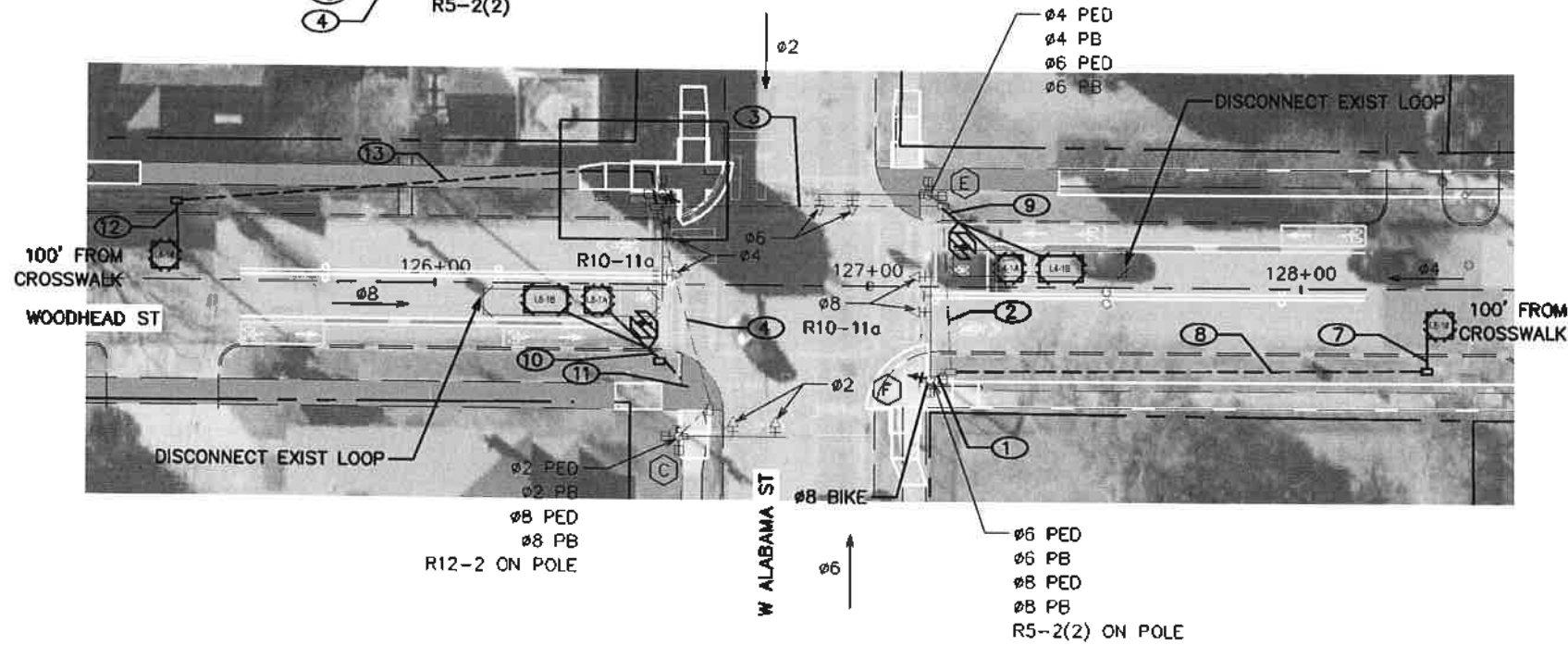
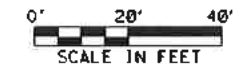


R10-10b
30"X18"

Ø8 BIKE

LEGEND

- ➔ VEHICLE SIGNAL HEAD
- ◻ LOOP DETECTOR
- ◻ BIKE LOOP DETECTOR
- POLE W/ STRAIN WIRE
- ◻ PEDESTRIAN SIGNAL HEAD
- ◻ PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- ◻ PULL BOX - TYPE B
- ◻ PULL BOX - TYPE C
- CONDUIT
- ☼ LUMINAIRE
- MAST ARM SIGN
- ◻ CONTROLLER CABINET
- SIGNAL MOUNTED SIGN



100' FROM
CROSSWALK
WOODHEAD ST

100' FROM
CROSSWALK

NOTES:
1. EXIST TIME OF DAY PLAQUES TO BE REMOVED FROM MAST
ARM POLES D AND F

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CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W ALABAMA ST AT WOODHEAD ST SIGNAL LAYOUT		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">7 2 2 4 8</div>	
AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSHAN	SHEET NO. 138 OF 247	

Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\11RZ 27 Monrose\Design\PlanSet\Signal Sheets\Signal Layout.dgn

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
C	EXIST 25' MAST ARM		NO					EXIST R12-2 SIGN	EXISTING	
D	EXIST 25' MAST ARM		NO	1-ASTROBRAC	1-B3			EXIST R10-11a SIGN REMOVE EXIST TIME OF DAY PLAQUE PROP R10-10b SIGN PROP R5-2(2) SIGN	EXISTING	
E	EXIST 25' MAST ARM		NO						EXISTING	
F	EXIST 25' MAST ARM		NO	1-ASTROBRAC	1-B3			EXIST R10-11a SIGN REMOVE EXIST TIME OF DAY PLAQUE PROP R10-10b SIGN PROP R5-2(2) SIGN	EXISTING	


LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
SOUTHBOUND		
PH 4 CALL LOOP L4-1A LEADING EDGE	127+29	5' L
PH 4 CALL LOOP L4-1B LEADING EDGE	127+39	5' L
PH 4 SYSTEM LOOP L4-1# LEADING EDGE	125+35	10.5' L
BIKE LOOP	127+19	5.5' L
NORTHBOUND		
PH 8 CALL LOOP L8-1A LEADING EDGE	126+41	4' R
PH 8 CALL LOOP L8-1B LEADING EDGE	126+31	4' R
PH 8 SYSTEM LOOP L8-1# LEADING EDGE	128+35	8.5' R
BIKE LOOP	126+52	10' R

TRAFFIC SIGNAL CONTROLLER

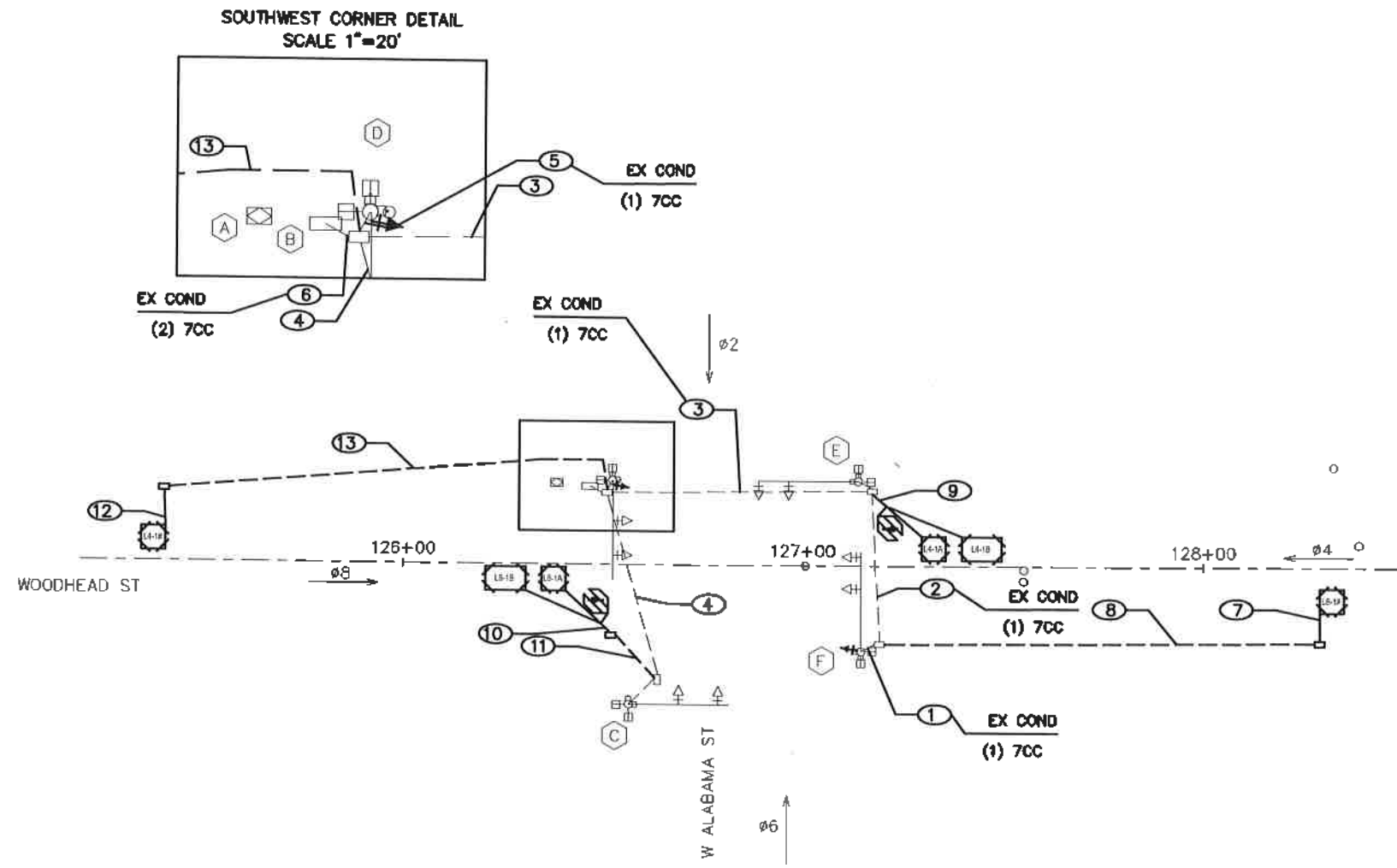
CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
A				EXISTING TO REMAIN	EXISTING	
B		TS1 TECHNOLOGIES		ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	

NOTES

- EXISTING SIGNAL CABINET AND ELECTRICAL METERS TO BE REUSED.
- ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.
- INSTALL LUMINAIRES PARALLEL TO MAST ARM.
- REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.
- BASED ON WOODHEAD STREET CENTERLINE FROM SOUTH TO NORTH.

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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W ALABAMA ST AT WOODHEAD ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-T27000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED CITY OF HOUSTON PM SHAIPOOR GULSHAN</p>	<p>7 2 2 4 8</p>
<p>SHEET NO. 139 OF 247</p>	

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 Plot Driver: STN.PDF Color.plt cfbg
 Plotted on: 11/15/2021 11:35:35 AM S.Wetmore



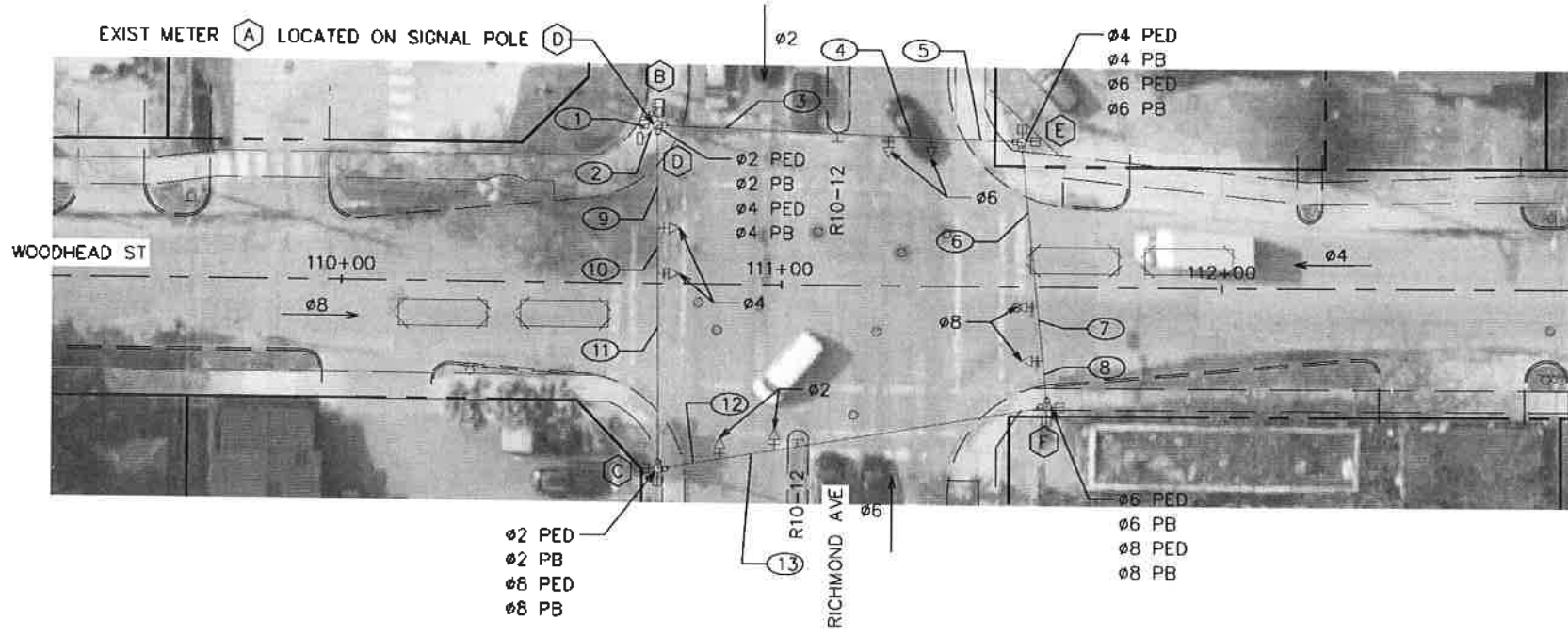
HIGH VOLTAGE CIRCUIT

- (X) C = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW

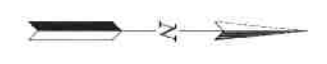
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SURVEYED BY:		11/15/2021	
CITY OF HOUSTON HOUSTON PUBLIC WORKS			
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET W ALABAMA ST AT WOODHEAD ST HIGH VOLTAGE WIRING			
WBS NUMBER N-T27000-0002-7		FOR CITY OF HOUSTON USE ONLY	
AS NOTED		7 2 2 4 8	
CITY OF HOUSTON PM SAMPUR COLSHAN			
SHEET NO. 140 OF 247			

NO.	DATE	REVISION	APP.

Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\TIRZ 27 Mantrouse\Design\PlanSet Steers\Signal Sheets\Signal Sheets - Alabama High Voltage Wiring.dgn



- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ MAST ARM
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN

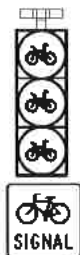


TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas P.E. Firm Reg. #T-3158		11/15/2021
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT RICHMOND AVE SIGNAL EXISTING CONDITIONS		
WDS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON PM SHARPOOR GOESMAN		
SHEET NO. 142 OF 247		

Plotted on: 11/15/2021 11:35:46 AM S Wetmore
 Pen TabletColor: pens4000.tbl
 Plot Driver: DUSTNA.DWGSCALE.PLOT.DWG

PROPOSED SIGNAL HEAD SCHEDULE

ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD



R10-10b
30"X18"

ø4 BIKE, ø8 BIKE

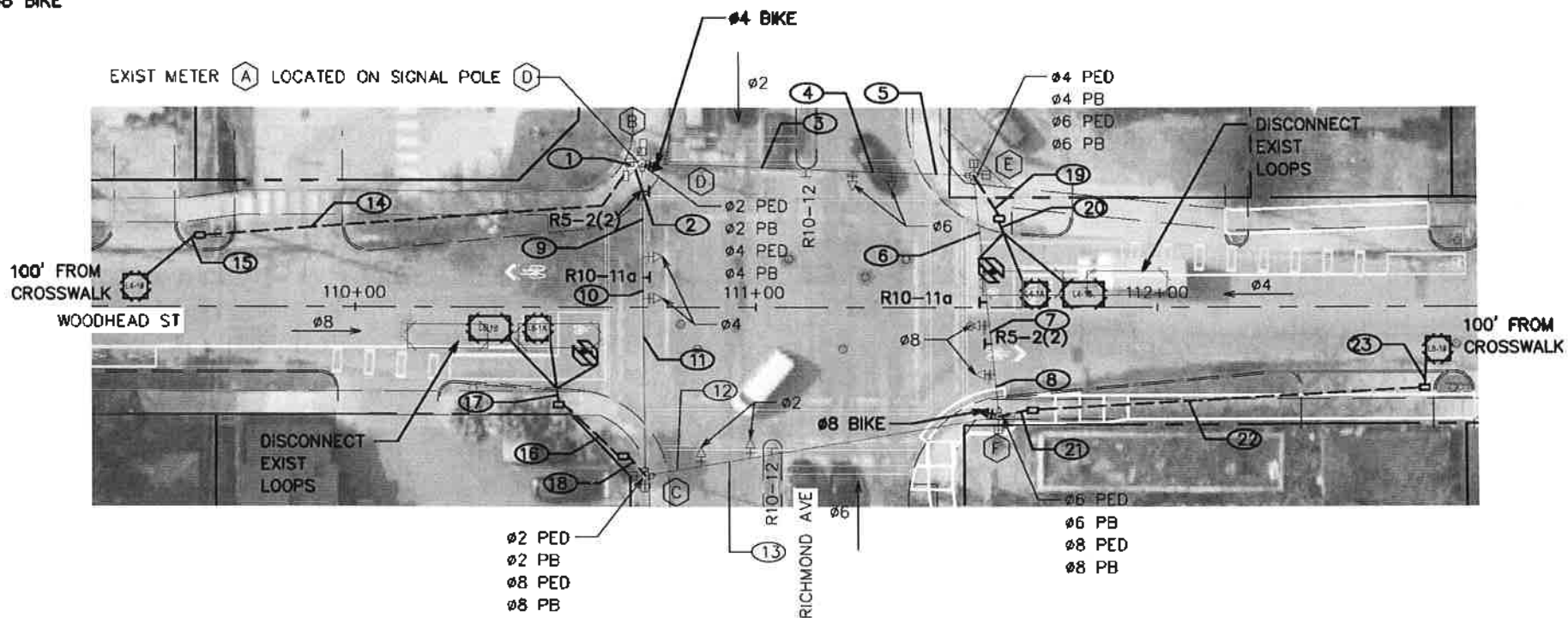
PROPOSED SIGN SCHEDULE



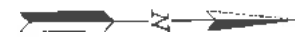
R5-2(2)
24"X30"



R10-11a
24"X32"



- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ STRAIN WIRE
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN

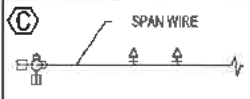
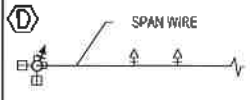

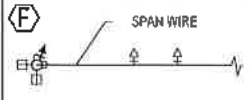


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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT RICHMOND AVE SIGNAL SIGNAL LAYOUT</p>	
<p>WBS NUMBER N-127000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED</p>	
<p>CITY OF HOUSTON PW SHAPOOR GOLSHAN</p>	
<p>SHEET NO. 143 OF 247</p>	

72248

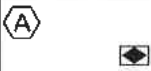

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 Richmond Signal Layout.dgn

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
	EXIST STRAIN POLE	-	NO	-	-	-	-	EXIST R10-12 SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-B3	-	-	PROP R10-10b SIGN PROP R5-2(2) SIGN PROP R10-11a SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	-	-	-	-	EXIST R10-12 SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-B3	-	-	PROP R10-10b SIGN PROP R5-2(2) SIGN PROP R10-11a SIGN	EXISTING	-


LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
SOUTHBOUND		
PH 4 CALL LOOP L4-1A LEADING EDGE	111+67	3.5' L
PH 4 CALL LOOP L4-1B LEADING EDGE	111+76	3.5' L
PH 4 SYSTEM LOOP L4-1# LEADING EDGE	111+56	5' L
BIKE LOOP	109+42	10' L
NORTHBOUND		
PH 8 CALL LOOP L8-1A LEADING EDGE	110+49	6' R
PH 8 CALL LOOP L8-1B LEADING EDGE	110+39	6' R
PH 8 SYSTEM LOOP L8-1# LEADING EDGE	112+73	10.5' R
BIKE LOOP	110+60	12' R

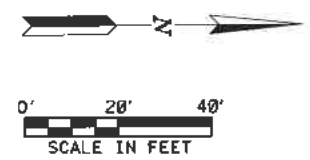
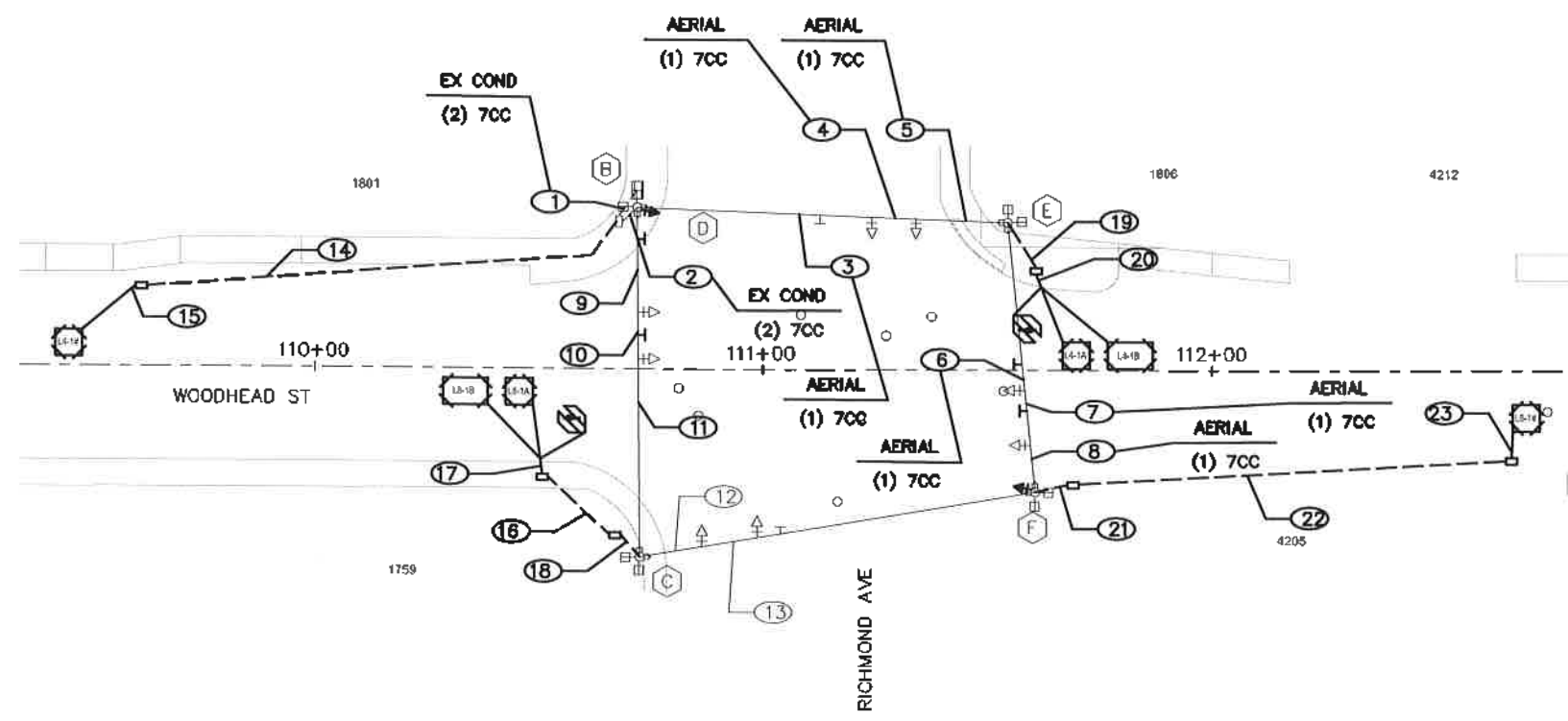
TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
	-	-	-	EXISTING TO REMAIN LOCATED ON SOUTH SIDE OF SIGNAL POLE D	EXISTING	-
	TSI TECHNOLOGY	MODEL 2070N NEMA	-	ADD 1 DETECTOR CARD FOR BIKE DETECTORS ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	-

NOTES

- EXISTING SIGNAL CABINET AND ELECTRICAL METER TO BE REUSED.
- ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.
- INSTALL LUMINAIRES PARALLEL TO MAST ARM.
- REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.
- BASED ON WOODHEAD STREET CENTERLINE FROM SOUTH TO NORTH.

<p>TRAFFIC ENGINEERS, INC. <small>INCORPORATED ENGINEERING PROFESSIONAL CORPORATION</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</p>	<p><i>Sarah L. Wetmore</i> 11/15/2021 </p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET RICHMOND AVE AT WOODHEAD ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-127000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>AS NOTED CITY OF HOUSTON PM SHAPOR GOLSHAN</p>	<p>7 2 2 4 8</p>
<p>SHEET NO. 144 OF 247</p>	

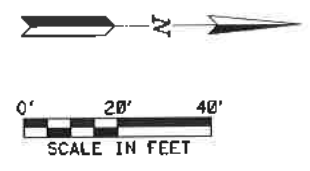
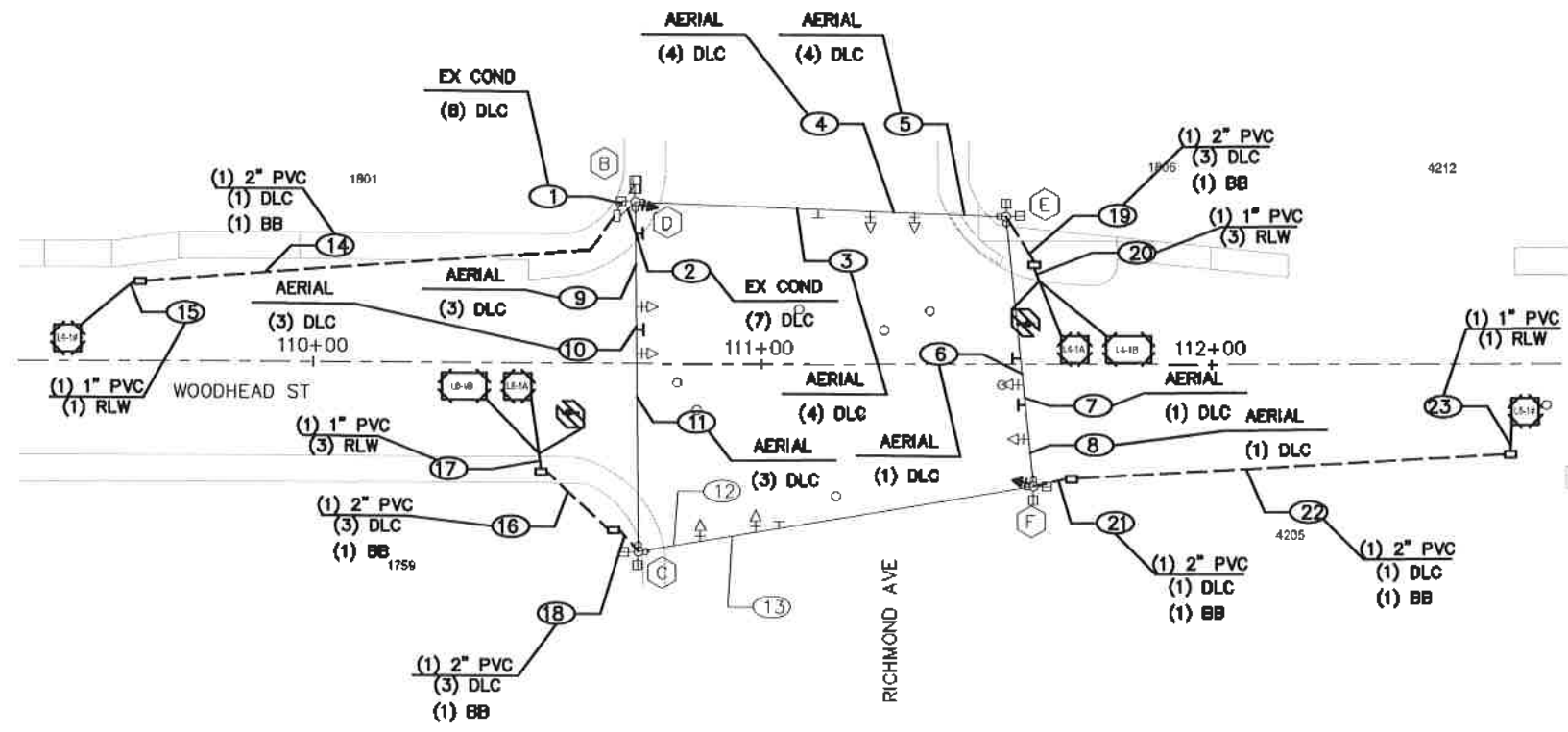


HIGH VOLTAGE CIRCUIT

- (X)Y^ZC = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW

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WBS NUMBER	FOR CITY OF HOUSTON USE ONLY	
N-T27000-0002-7		
AS NOTED		
CITY OF HOUSTON PM		
SHAPOOR GOLSIAN		
SHEET NO. 145 OF 247	7 2 2 4 8	

NO.	DATE	REVISION	APP.

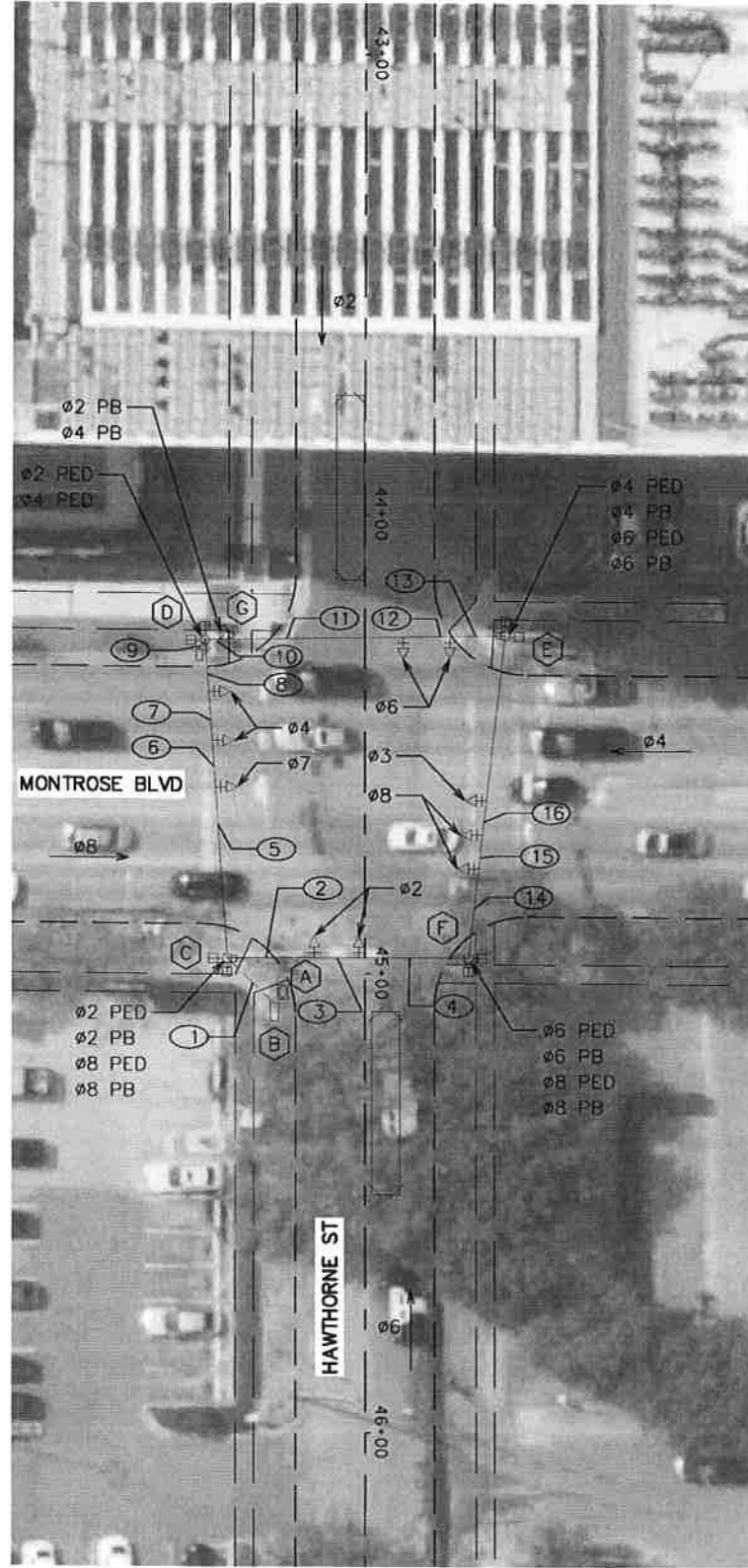


LOW VOLTAGE CIRCUIT

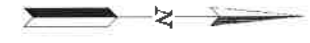
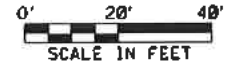
(X)Y\"C = NUMBER, SIZE, AND TYPE OF CONDUIT
 DLC = DETECTOR LEAD-IN CABLE, #14 AWG (IMSA 50-2-1984)
 SC = #20 3CC-SHIELDED CABLE (3M MODEL 138)
 CAT5 = CAT5E #24 AWG
 RLW = ROADWAY LOOP DETECTOR WIRE, #14 AWG (IMSA 51-5-1985)
 BB = BARE BOND #8 AWG SOLID

TRAFFIC ENGINEERS, INC. <small>CONVERTING THE TRAFFIC ENGINEERING SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT RICHMOND AVE SIGNAL LOW VOLTAGE WIRING		
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY	
N-T27000-0002-7		
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PM		
SHAPOOR GOLSHAN		
SHEET NO. 146 OF 247		

NO.	DATE	REVISION	APP.



- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ MAST ARM
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN



NO.	DATE	REVISION	APP.

TRAFFIC ENGINEERS, INC. <small>INNOVATIVE TRANSPORTATION SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		
SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET MONTROSE BLVD AT HAWTHORNE ST SIGNAL EXISTING CONDITIONS		
WBS NUMBER N-127000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PM SHAPOOR GOLSHAN		
SHEET NO. 147 OF 247		

PROPOSED SIGNAL HEAD SCHEDULE

ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD



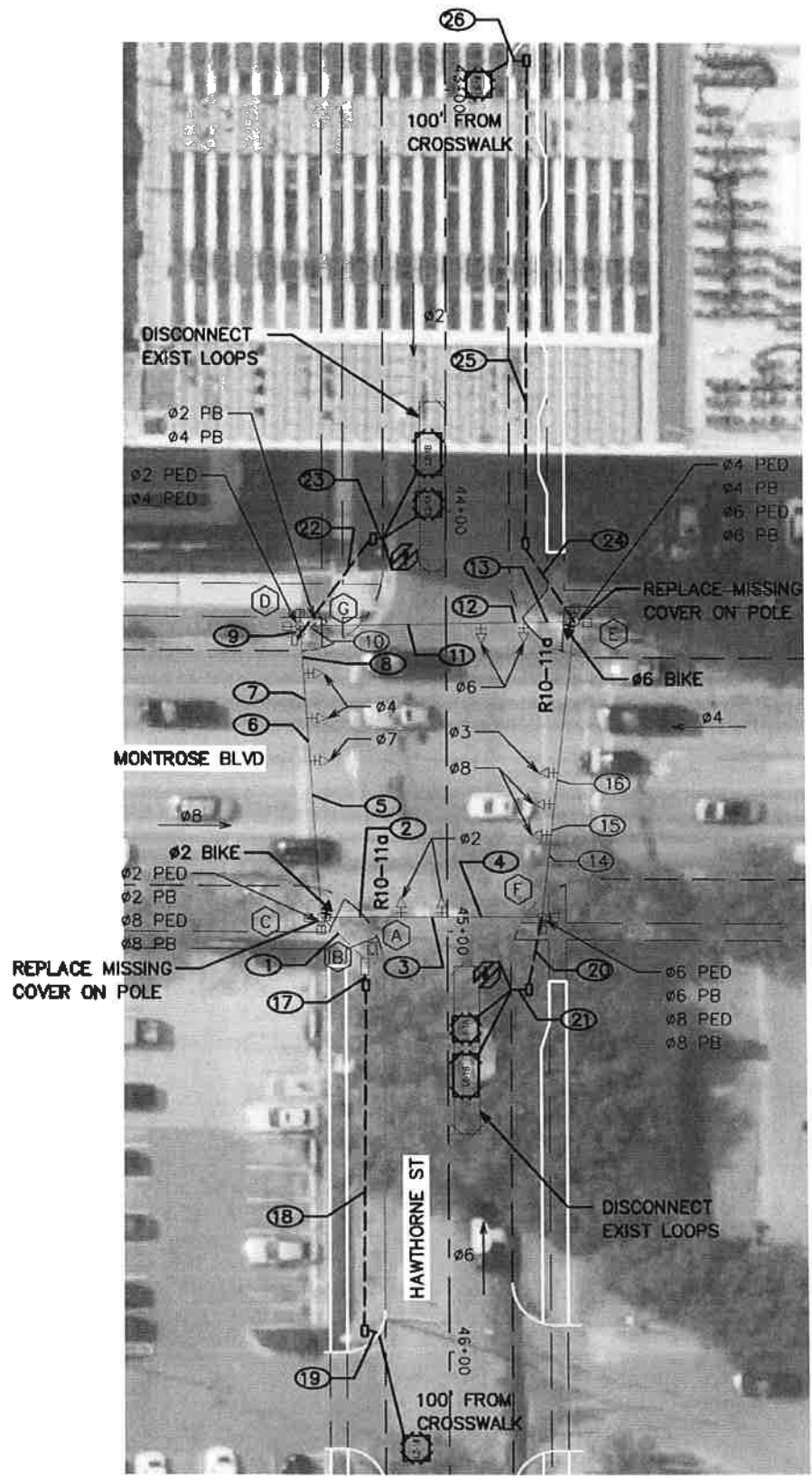
R10-10b
30"X18"

#2 BIKE, #6 BIKE

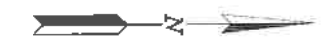
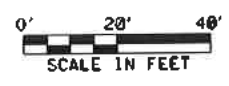
PROPOSED SIGN SCHEDULE



R10-11a
24"X32"



- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ STRAIN WIRE
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN



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CITY OF HOUSTON HOUSTON PUBLIC WORKS		
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WBS NUMBER N-127000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED	7 2 2 4 8	
CITY OF HOUSTON PM SHAPOOR GOLSHANI		
SHEET NO. 148 OF 247		

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-B3	-	-	PROP R10-11a PROP R10-10b SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	-	-	-	-	-	EXISTING	-
	EXIST STRAIN POLE	-	NO	1-ASTROBRAC	1-B3	-	-	PROP R10-11a PROP R10-10b SIGN	EXISTING	-
	EXIST STRAIN POLE	-	NO	-	-	-	-	-	EXISTING	-
	EXIST PED POLE	-	-	-	-	-	-	-	EXISTING	-

LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
EASTBOUND		
PH 2 CALL LOOP L2-1A LEADING EDGE	44+01	4' R
PH 2 CALL LOOP L2-1B LEADING EDGE	43+91	4' R
PH 2 SYSTEM LOOP L2-1# LEADING EDGE	46+26	8' R
BIKE LOOP	44+14	11' R
WESTBOUND		
PH 6 CALL LOOP L6-1A LEADING EDGE	45+20	4' L
PH 6 CALL LOOP L6-1B LEADING EDGE	45+29	4' L
PH 6 SYSTEM LOOP L6-1# LEADING EDGE	42+96	8' L
BIKE LOOP	45+07	10' L

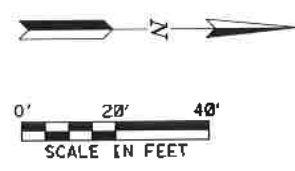
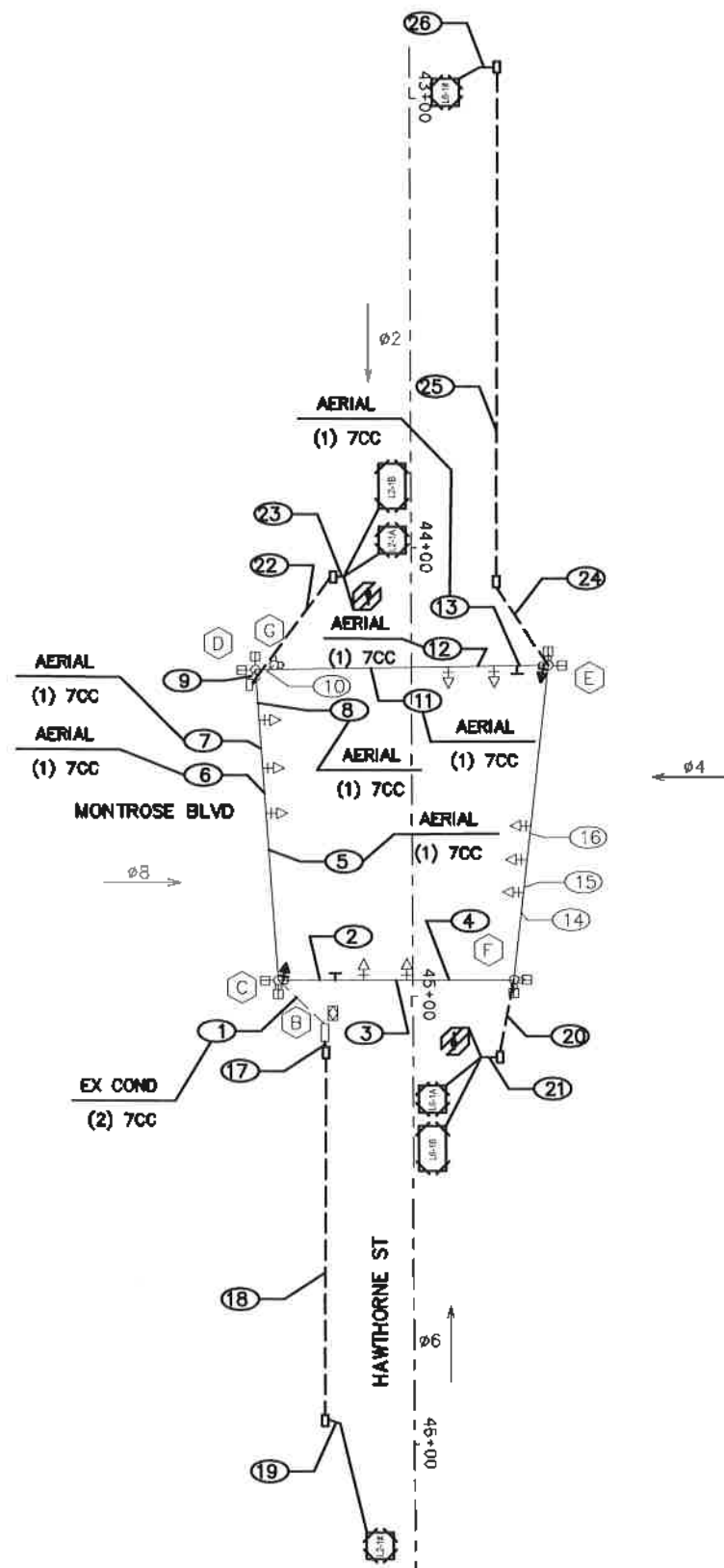
TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
	-	-	-	EXISTING TO REMAIN	EXISTING	-
	TS1 TECHNOLOGIES	MODEL 2070N NEMA	-	ADD 1 DETECTOR CARD FOR BIKE LOOPS ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	-

NOTES

- EXISTING SIGNAL CABINET AND ELECTRICAL METER TO BE REUSED.
- ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.
- INSTALL LUMINAIRES PARALLEL TO MAST ARM.
- REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.
- BASED ON HAWTHORNE STREET CENTERLINE FROM WEST TO EAST.

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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET MONSTROSE BLVD AT HAWTHORNE ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-T27000-0002-7</p> <p>AS NOTED</p> <p>CITY OF HOUSTON PM SHAPOOR GOLSHAN</p> <p>SHEET NO. 149 OF 247</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p>7 2 2 4 8</p>

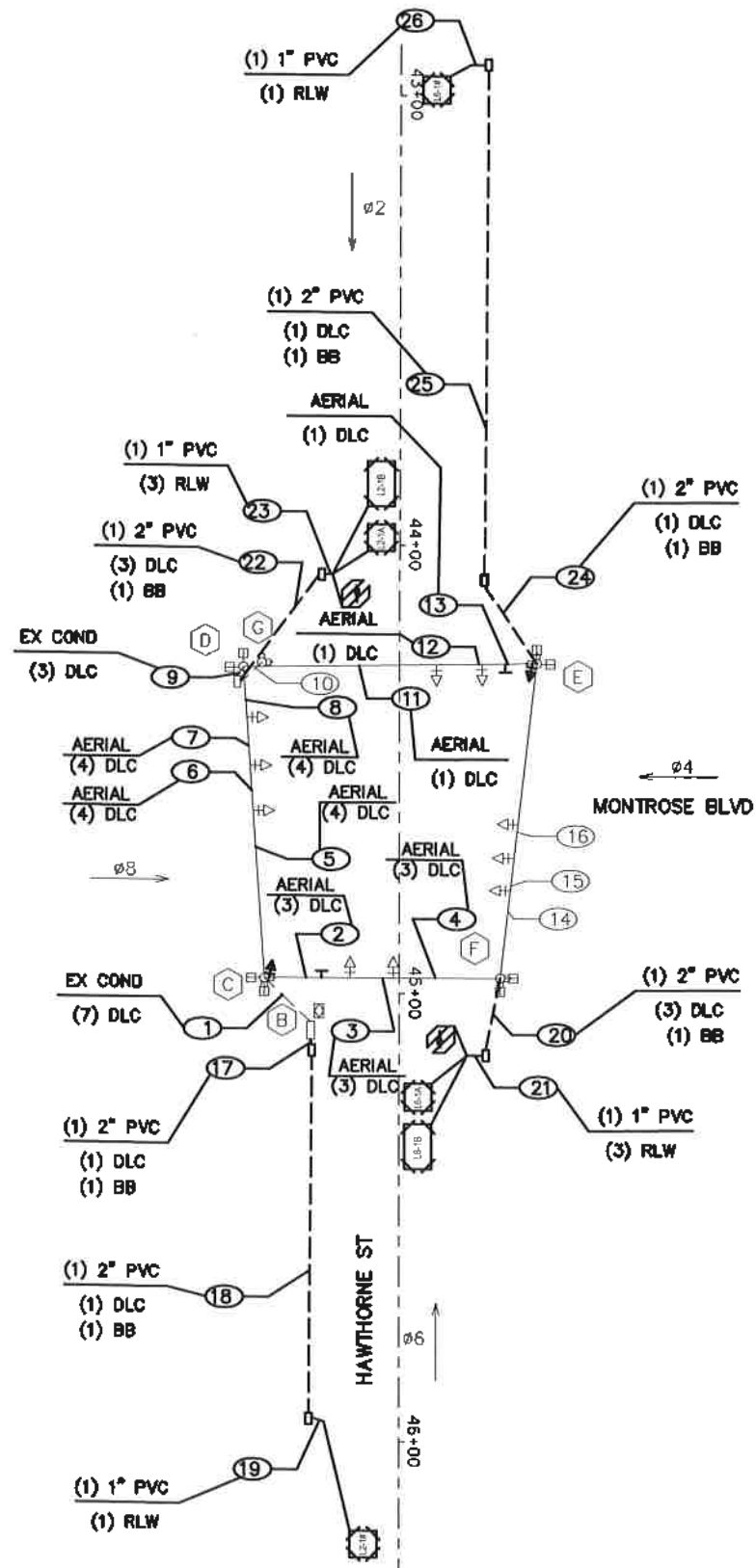


HIGH VOLTAGE CIRCUIT

- (X)YC = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW

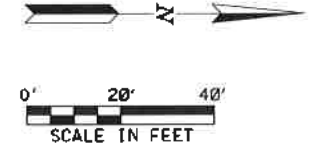
TRAFFIC ENGINEERS, INC. <small>TRAFFIC ENGINEERING & TRANSPORTATION SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/15/2021 	
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WBS NUMBER		FOR CITY OF HOUSTON USE ONLY	
N-T27000-0002-T			
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CITY OF HOUSTON PM			
SHAPOOR GULSHAN			
SHEET NO. 150 OF 247			

NO.	DATE	REVISION	APP.



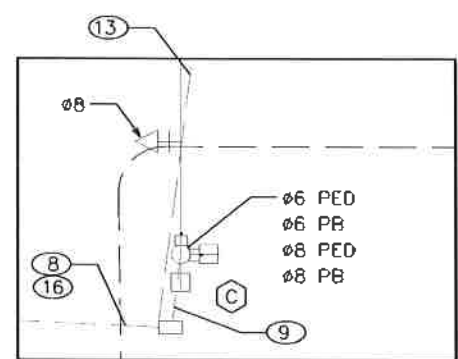
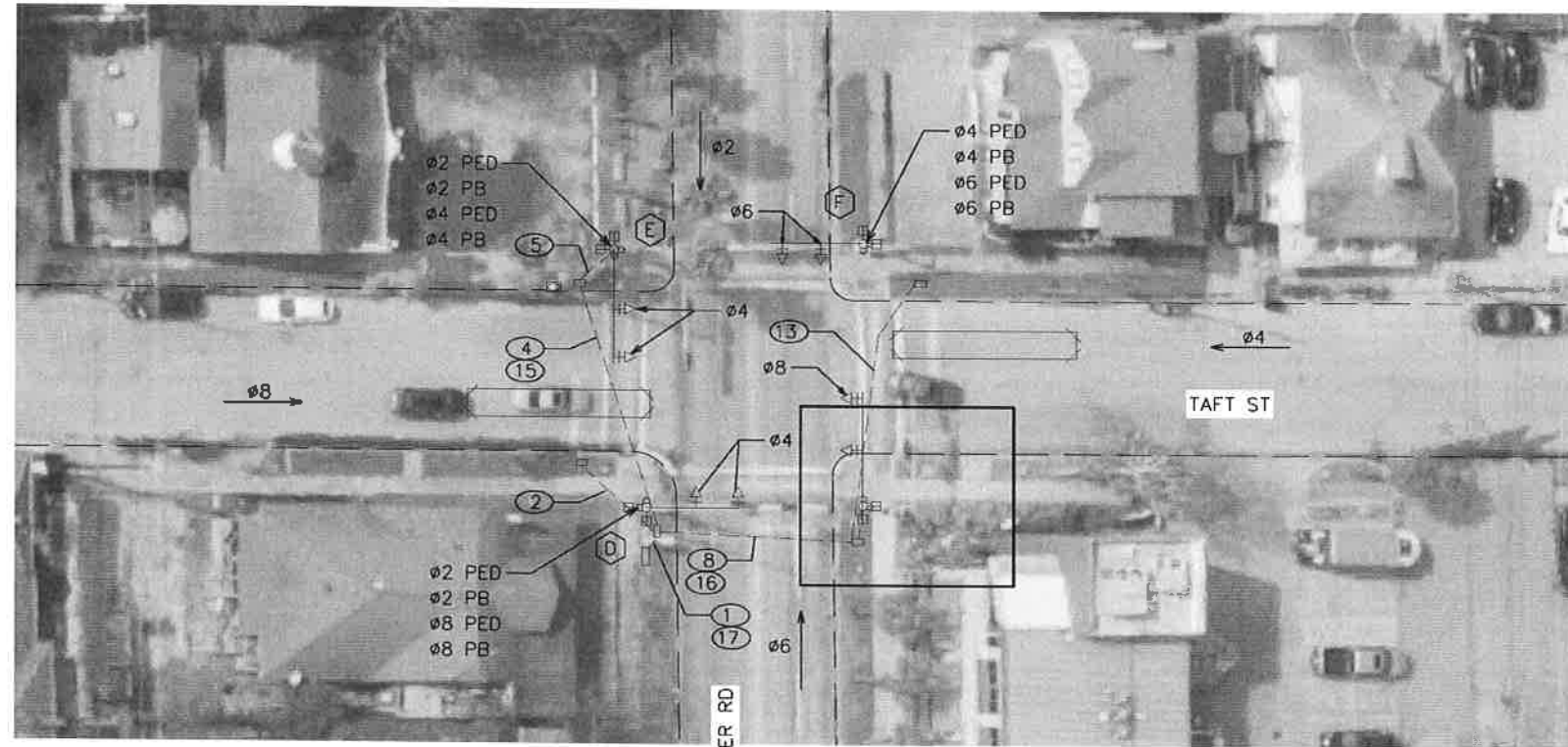
LOW VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE, AND TYPE OF CONDUIT
 DLC = DETECTOR LEAD-IN CABLE, #14 AWG (IMSA 50-2-1984)
 SC = #20 3CC-SHIELDED CABLE (3M MODEL 138)
 CAT5 = CAT5E #24 AWG
 RLW = ROADWAY LOOP DETECTOR WIRE, #14 AWG (IMSA 51-5-1985)
 BB = BARE BOND #8 AWG SOLID



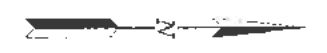
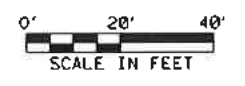
TRAFFIC ENGINEERS, INC. <small>ILLUSTRATIVE TELEPHONOGRAPH SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/15/2021
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET MONTROSE BLVD AT HAWTHORNE ST LOW VOLTAGE WIRING		
NBS NUMBER N-T27000-0002-7		FOR CITY OF HOUSTON USE ONLY
AS NOTED		
CITY OF HOUSTON PM SHAPOOR DOLSKAN		
SHEET NO. 151 OF 247		

72248



NORTHEAST CORNER DETAIL
SCALE 1"=20'

- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ STRAIN WIRE
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN



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www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

SUPERVISED BY: *Sarah L. Wetmore*

STATE OF TEXAS
SARAH L. WETMORE
130442
LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WOODHEAD STREET
WESTHEIMER RD AT
TAFT ST SIGNAL
EXISTING CONDITIONS**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR COL SHAN	
SHEET NO. 152 OF 247	

7 2 2 4 8

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 Plot Driver:USTNUPDF*Color.pltcf9
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PROPOSED SIGN SCHEDULE



R10-11a
24"X32"

PROPOSED SIGNAL HEAD SCHEDULE

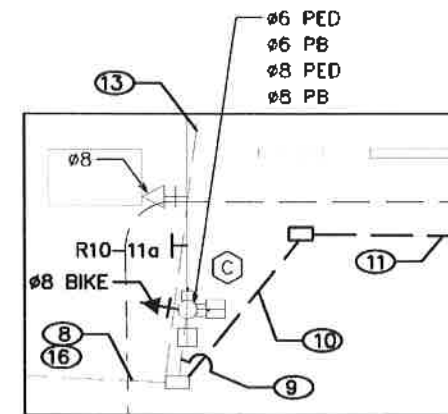
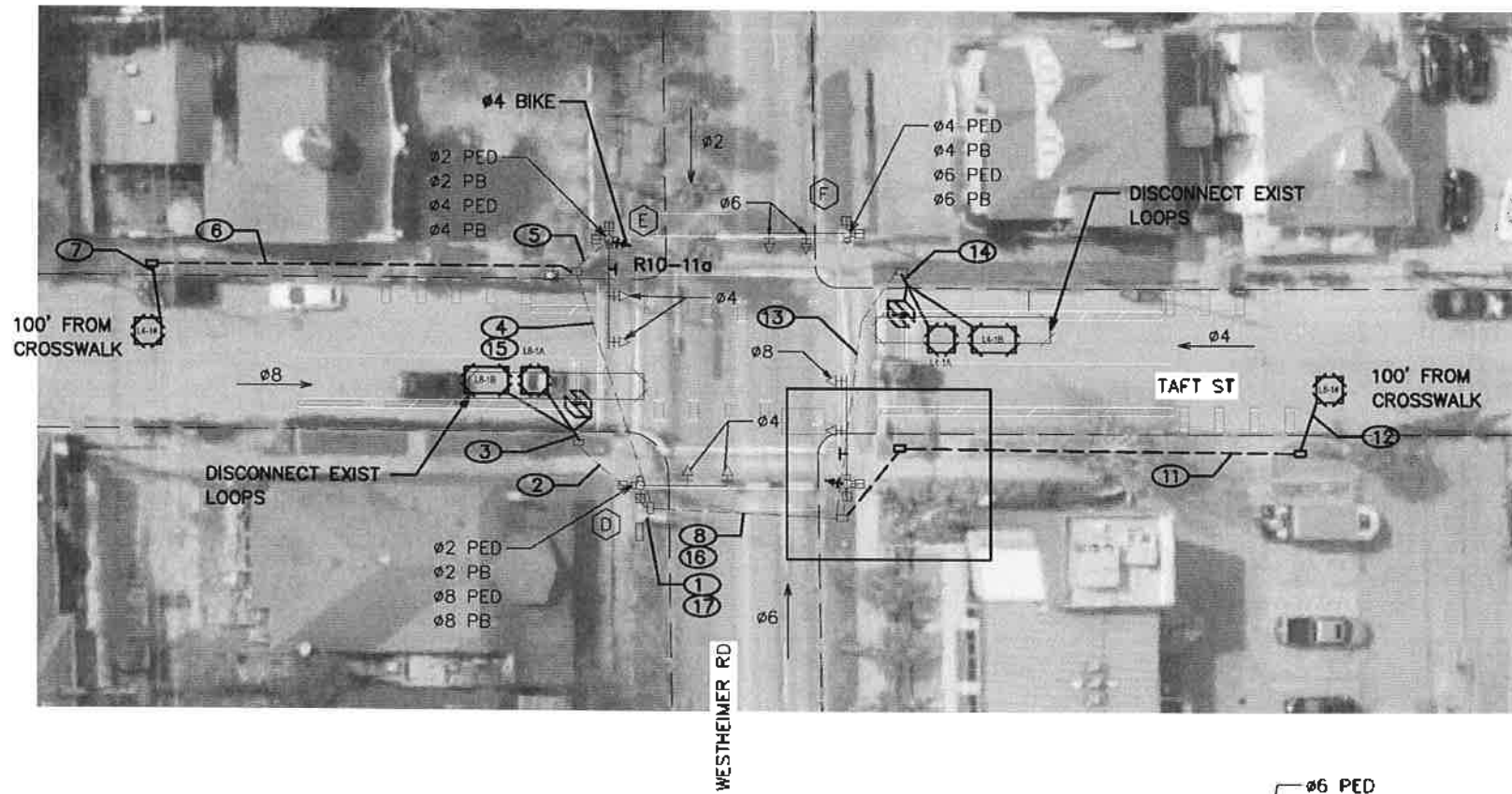
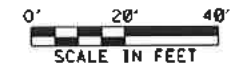
ONE-WAY
3-SECTION VERTICAL
12" LED BIKE SIGNAL HEAD



R10-10b
30"X18"

ø4 BIKE, ø8 BIKE

- LEGEND**
- VEHICLE SIGNAL HEAD
 - LOOP DETECTOR
 - BIKE LOOP DETECTOR
 - POLE W/ STRAIN WIRE
 - PEDESTRIAN SIGNAL HEAD
 - PEDESTRIAN PUSH BUTTON
 - PEDESTAL POLE
 - PULL BOX - TYPE B
 - PULL BOX - TYPE C
 - CONDUIT
 - LUMINAIRE
 - MAST ARM SIGN
 - CONTROLLER CABINET
 - SIGNAL MOUNTED SIGN



NORTHEAST CORNER DETAIL
SCALE 1"=20'

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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD AT TAFT ST SIGNAL LAYOUT</p>	
<p>WBS NUMBER N-127000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY 72248</p>
<p>AS NOTED</p>	
<p>CITY OF HOUSTON PM SHAPOOR GOLSHAM</p>	
<p>SHEET NO. 153 OF 247</p>	

Design File name: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\TRZ 27 Montrose\Design\PlanSet Sheets\Signal Layout.dgn

POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
	EXIST 25' MAST ARM	-	NO	1-ASTROBRAC	1-63	-	-	PROP R10-10b PROP R10-11a	EXISTING	-
	EXIST 20' MAST ARM	-	YES	-	-	-	-	-	EXISTING	-
	EXIST 25' MAST ARM	-	NO	1-ASTROBRAC	1-63	-	-	PROP R10-10b PROP R10-11a	EXISTING	-
	EXIST 20' MAST ARM	-	NO	-	-	-	-	-	EXISTING	-

LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION	OFFSET
SOUTHBOUND		
PH 4 CALL LOOP L4-1A LEADING EDGE	STOP BAR	5' FROM ROADWAY CENTERLINE
PH 4 CALL LOOP L4-1B LEADING EDGE	10' FROM STOP BAR	5' FROM ROADWAY CENTERLINE
PH 4 SYSTEM LOOP L4-1# LEADING EDGE	100' FROM STOP BAR	5' FROM ROADWAY CENTERLINE
BIKE LOOP	9' IN FRONT OF STOP BAR	11.5' FROM ROADWAY CENTERLINE
NORTHBOUND		
PH 8 CALL LOOP L8-1A LEADING EDGE	STOP BAR	6' FROM ROADWAY CENTERLINE
PH 8 CALL LOOP L8-1B LEADING EDGE	10' FROM STOP BAR	6' FROM ROADWAY CENTERLINE
PH 8 SYSTEM LOOP L8-1# LEADING EDGE	100' FROM STOP BAR	6.5' FROM ROADWAY CENTERLINE
BIKE LOOP	9' IN FRONT OF STOP BAR	12' FROM ROADWAY CENTERLINE

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
	-	-	-	EXISTING TO REMAIN	EXISTING	-
	332 CALTRANS	MODEL 2070N NEMA	-	ADD 1 DETECTOR CARD FOR BIKE LOOPS ADD 2 LOAD SWITCHES FOR BIKE SIGNAL HEADS	EXISTING	-

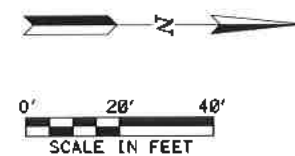
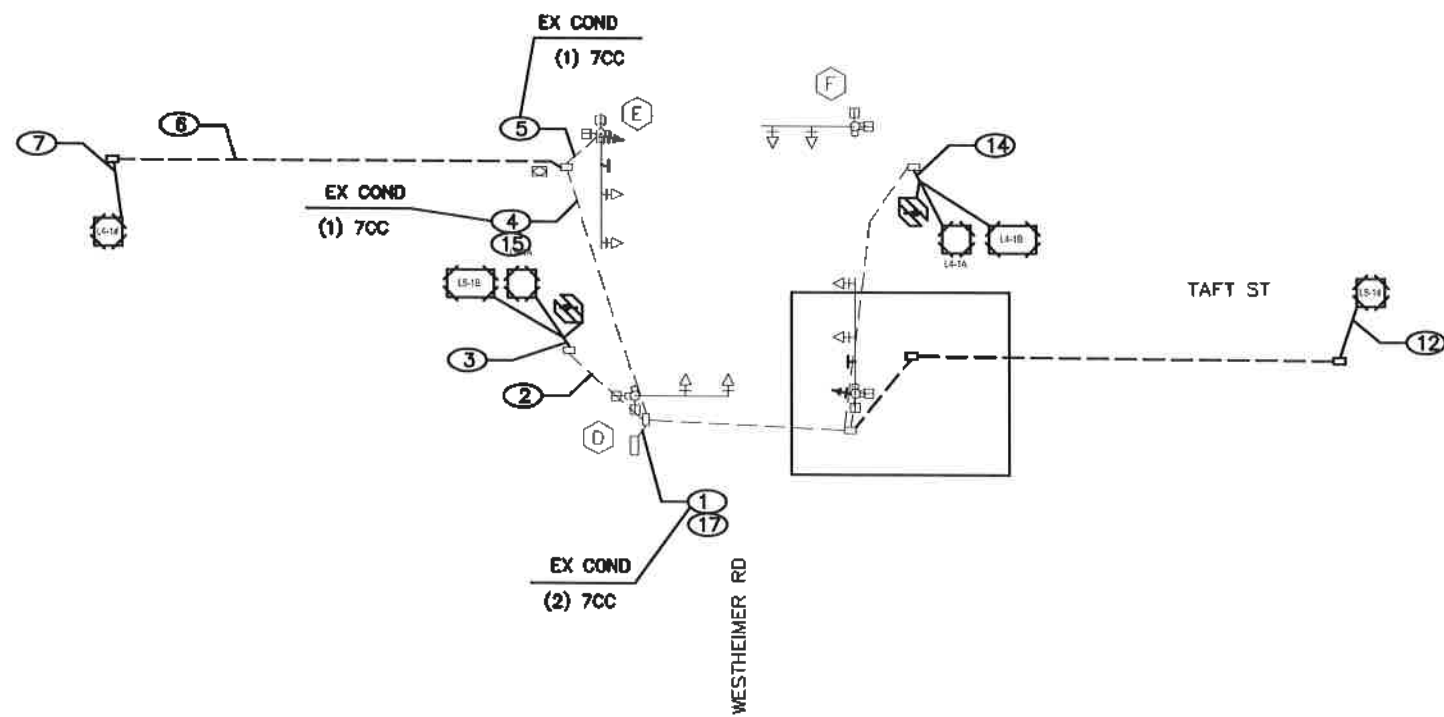
NOTES

- EXISTING SIGNAL CABINET AND ELECTRICAL METER TO BE REUSED.
- ALL EXISTING AERIAL AND UNDERGROUND HARDWARE INTERCONNECT, IF PRESENT, TO BE PULLED BACK TO NEAREST POLE AND/OR PULL BOX AND COILED FOR FUTURE TERMINATION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AS THE COST WILL BE CONSIDERED SUBSIDIARY TO THE OTHER CONTRACT ITEMS.
- INSTALL LUMINAIRES PARALLEL TO MAST ARM.
- REFER TO SIGNING AND PAVEMENT MARKINGS PLANS FOR STOP BAR LOCATIONS.

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<p>SURVEYED BY:</p>	
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET WESTHEIMER RD. AT TAFT ST POLE SCHEDULE</p>	
<p>WBS NUMBER N-T27000-0002-7</p>	<p>for city of HOUSTON USE ONLY</p>
<p>AS NOTED</p>	<p>72248</p>
<p>CITY OF HOUSTON PM SHAPOOR COLSHAN</p>	
<p>SHEET NO. 154 OF 247</p>	

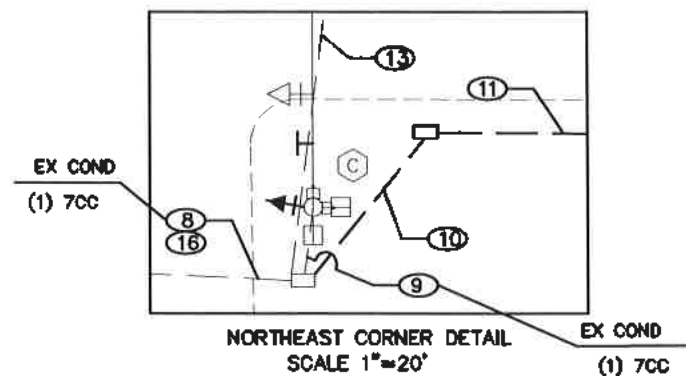
NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.



HIGH VOLTAGE CIRCUIT

- (X)Y°C = NUMBER, SIZE, AND TYPE OF CONDUIT
- (X) = NUMBER OF CABLES (SIGNAL)
- CC = #14 AWG SOLID CONDUCTOR CABLE
- SL = STREET LIGHTING, 2-#10 AWG XHHW
- BB = BARE BOND, #8 AWG SOLID
- SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW



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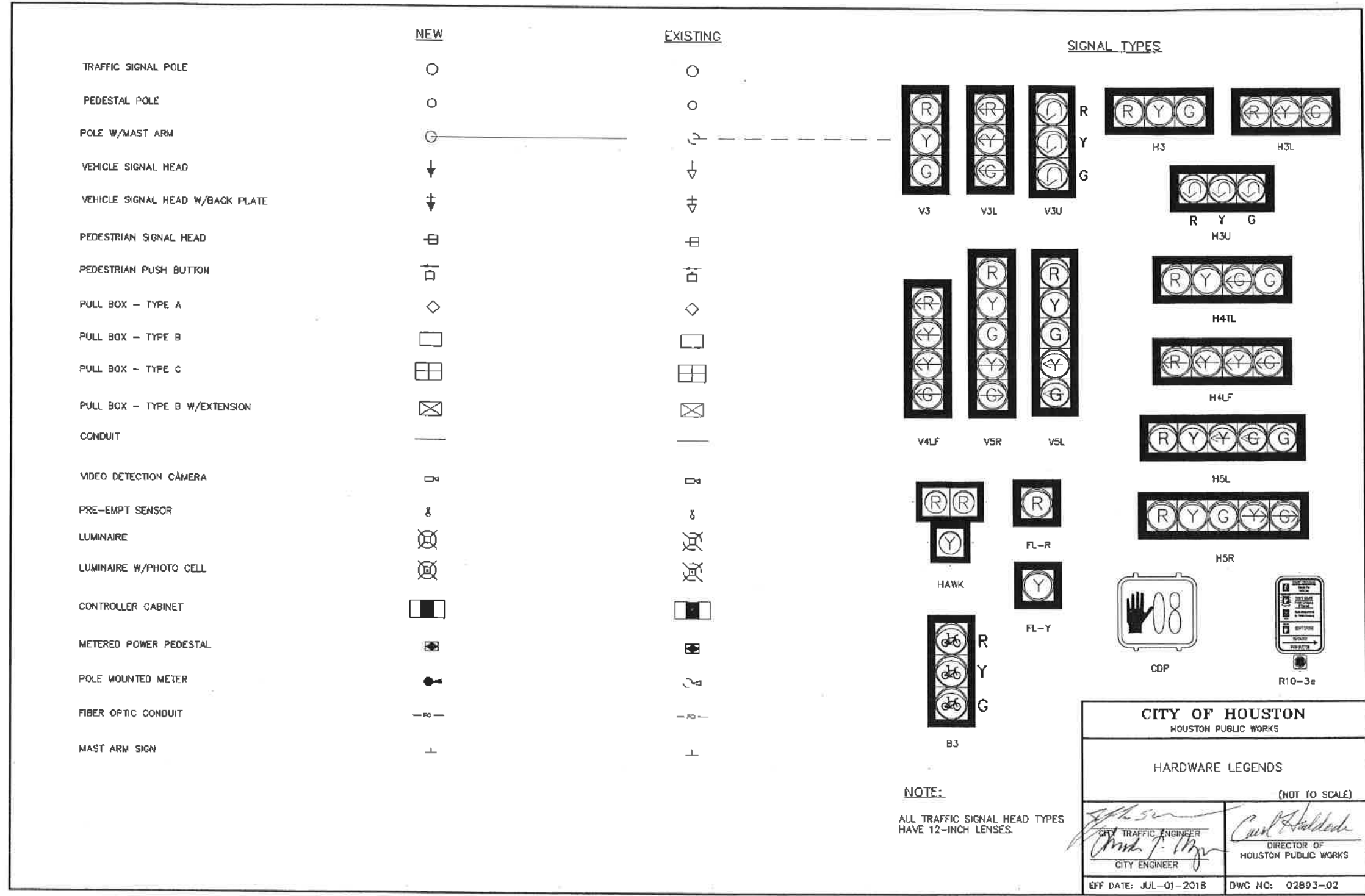
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 WESTHEIMER RD. AT
 TAFT ST SIGNAL
 HIGH VOLTAGE WIRING**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 155 OF 247	

72248



NOTE:
ALL TRAFFIC SIGNAL HEAD TYPES
HAVE 12-INCH LENSES.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HARDWARE LEGENDS
(NOT TO SCALE)

[Signature]
CITY TRAFFIC ENGINEER
CITY ENGINEER

[Signature]
DIRECTOR OF
HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018 DWG NO: 02893-02

TRAFFIC ENGINEERS, INC.
11/15/2021

801 CONGRESS ST, Suite 325
Houston, TX 77022
www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

SURVEYED BY:
[Signature]
BARAH L. WETMORE
130442
PROFESSIONAL ENGINEER

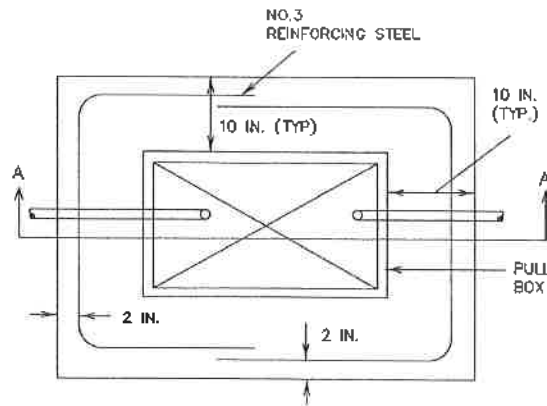
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HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
WOODHEAD STREET
TRAFFIC SIGNAL DETAILS
SHEET 1 OF 9

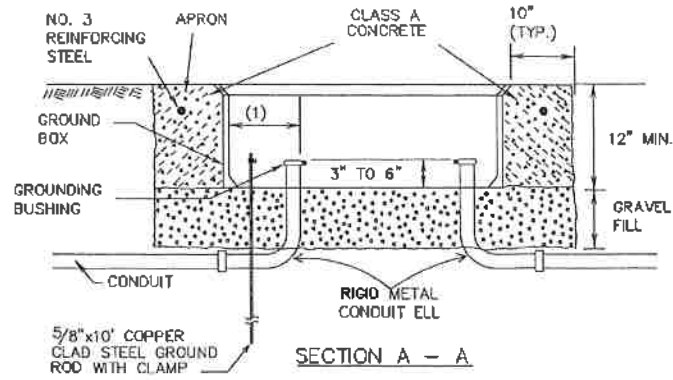
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N-127000-0002-7	
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CITY OF HOUSTON PM	
SHAPOR GOLSHAN	
SHEET NO. 157 OF 247	

72248

NO.	DATE	REVISION	APP.



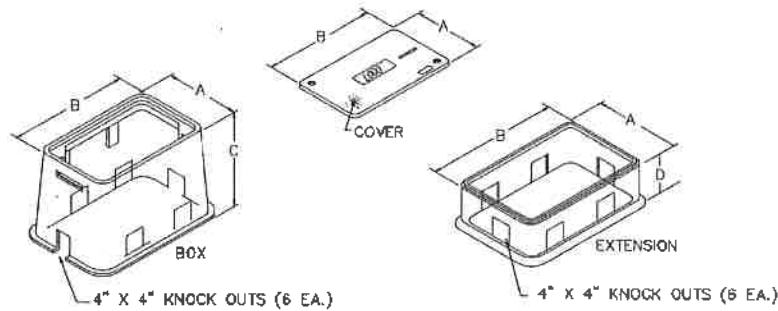
PLAN VIEW



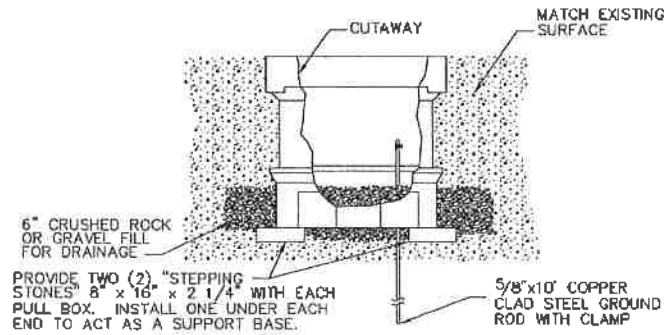
SECTION A - A

APRON FOR PULL BOXES

- (1) FINAL POSITION OF END OF CONDUIT SHALL NOT EXCEED ONE-HALF THE DISTANCE TO THE SIDE OF BOX OPPOSITE THE CONDUIT ENTRY.
- (2) PLACE GRAVEL "UNDER" THE BOX, NOT "IN" THE BOX. GRAVEL SHOULD NOT ENCR OACH ON THE INTERIOR VOLUME OF THE BOX.
- (3) INSTALL BUSHING ON THE UPPER END OF ALL ELLS.
- (4) PROVIDE A 5/8" GROUND ROD IN ALL PULL BOXES AND CONNECT IT TO ANY AND ALL EQUIPMENT GROUNDING CONDUCTORS USING A LISTED CONNECTOR.
- (5) MAINTAIN SUFFICIENT SPACE BETWEEN ALL CONDUITS SO AS TO ALLOW FOR PROPER INSTALLATION OF BUSHINGS.
- (6) ALL CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
- (7) ALL CONDUITS INSTALLED IN THE GROUND BOX SHALL BE SEALED AFTER COMPLETION OF CONDUCTOR INSTALLATION AND ANY REQUIRED PULL TESTS. SILICONE SHALL NOT BE USED AS THE SEALANT.



NOMINAL DIMENSIONS FOR TRAFFIC SIGNAL PULL BOXES				
Type	A	B	C	D
DETECTOR TYPE A	13"	16"	24"	12"
TRAFFIC SIGNAL TYPE B	17"	30"	24"	12"
COMMUNICATION TYPE C	26"	38"	24"	12"



SIDE VIEW ELECTRICAL PULL BOX ASSEMBLY

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

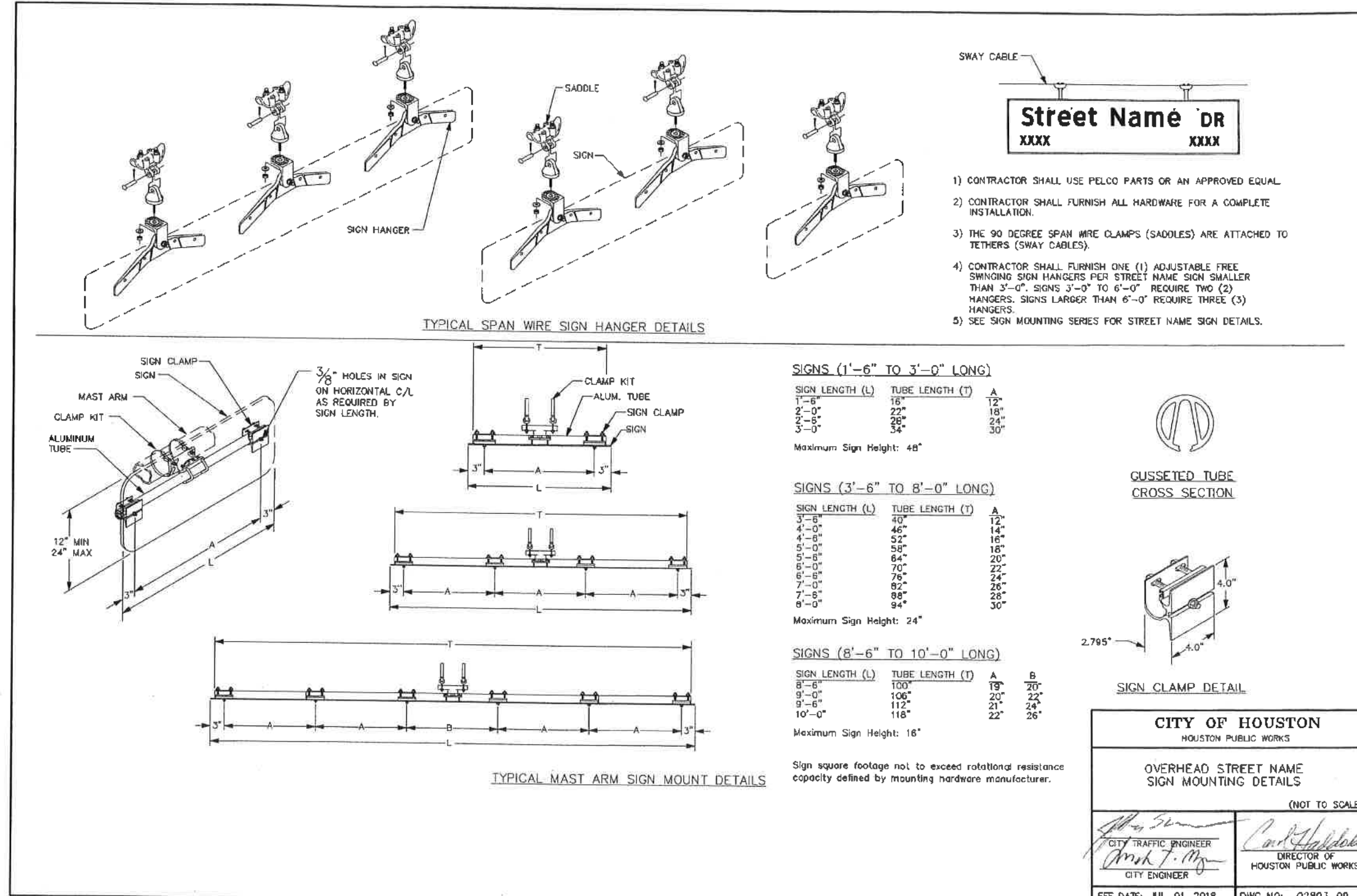
PULL BOXES

(NOT TO SCALE)

 CITY TRAFFIC ENGINEER CITY ENGINEER	 DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 02893-08

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<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p> <p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET TRAFFIC SIGNAL DETAILS SHEET 2 OF 9</p>	
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 72248
AS NOTED	
CITY OF HOUSTON PM SHAPCOOR GOLSMAN	
SHEET NO. 158 OF 247	

APP. REVISION INCL. DATE
 Design: Filenames: E:\Dropbox (Traffic Engineers)\Clients\Gauge Engineering\TIRZ 27 Montrose\Design\PlanSet Sheets\Detail Sheet - Signal 2.dgn



- 1) CONTRACTOR SHALL USE PELCO PARTS OR AN APPROVED EQUAL.
- 2) CONTRACTOR SHALL FURNISH ALL HARDWARE FOR A COMPLETE INSTALLATION.
- 3) THE 90 DEGREE SPAN WIRE CLAMPS (SADDLES) ARE ATTACHED TO TETHERS (SWAY CABLES).
- 4) CONTRACTOR SHALL FURNISH ONE (1) ADJUSTABLE FREE SWINGING SIGN HANGERS PER STREET NAME SIGN SMALLER THAN 3'-0". SIGNS 3'-0" TO 6'-0" REQUIRE TWO (2) HANGERS. SIGNS LARGER THAN 6'-0" REQUIRE THREE (3) HANGERS.
- 5) SEE SIGN MOUNTING SERIES FOR STREET NAME SIGN DETAILS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

OVERHEAD STREET NAME SIGN MOUNTING DETAILS

(NOT TO SCALE)

Alan S. ...
CITY TRAFFIC ENGINEER

Carol ...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018 DWG NO: 02893-09

TRAFFIC ENGINEERS, INC.
11/15/2021

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Houston, TX 77022
www.TrafficEngineers.com
Texas PE Firm Reg. #F-3158

SURVEYED BY:

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HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
WOODHEAD STREET TRAFFIC SIGNAL DETAILS
SHEET 3 OF 9

WBS NUMBER: N-T27000-0002

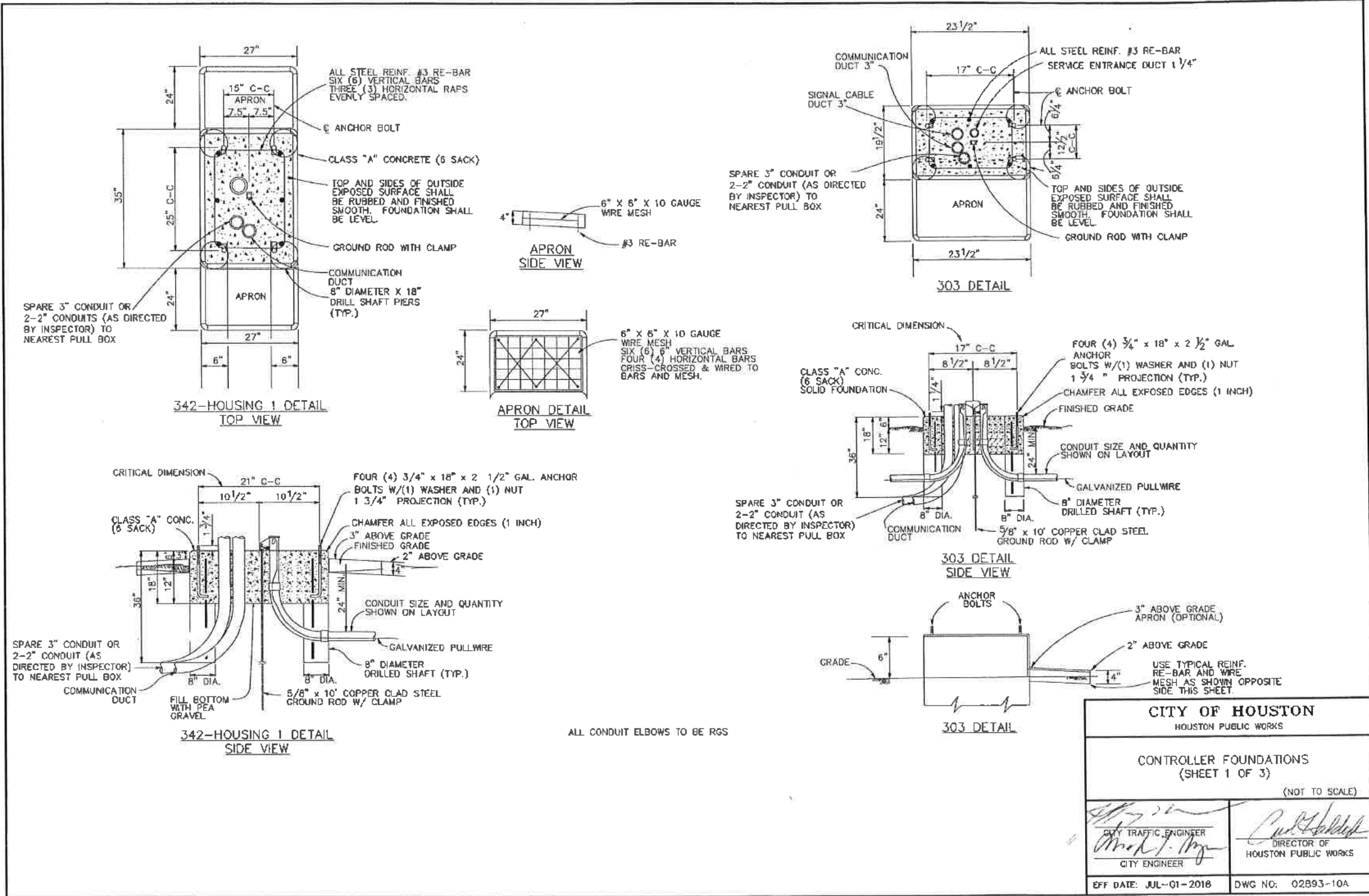
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SMAPOOR GOLSHAN

SHEET NO. 159 OF 247

72248

NO.	DATE	REVISION	APP.



ALL CONDUIT ELBOWS TO BE RGS

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
CONTROLLER FOUNDATIONS (SHEET 1 OF 3)	
(NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER CITY ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 02893-10A

TRAFFIC ENGINEERS, INC.
 ENGINEERING TRANSPORTATION SOLUTIONS
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11/15/2021
SARAH L. WETMORE
 130442
 PROFESSIONAL ENGINEER

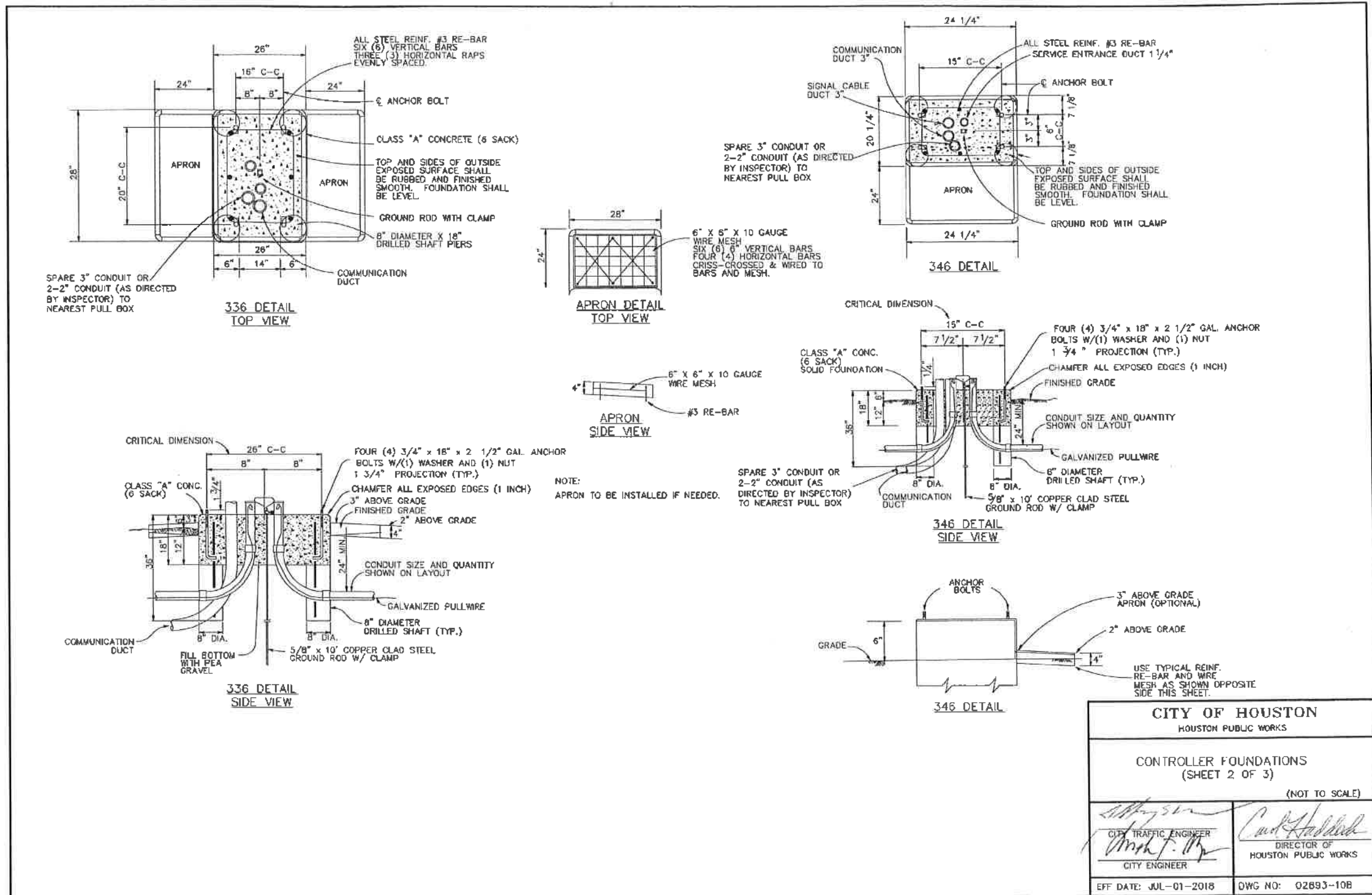
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 TRAFFIC SIGNAL DETAILS
 SHEET 4 OF 9

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 160 OF 247	

72248

NO.	DATE	REVISION	APP.



CITY OF HOUSTON HOUSTON PUBLIC WORKS	
CONTROLLER FOUNDATIONS (SHEET 2 OF 3)	
(NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 02893-108

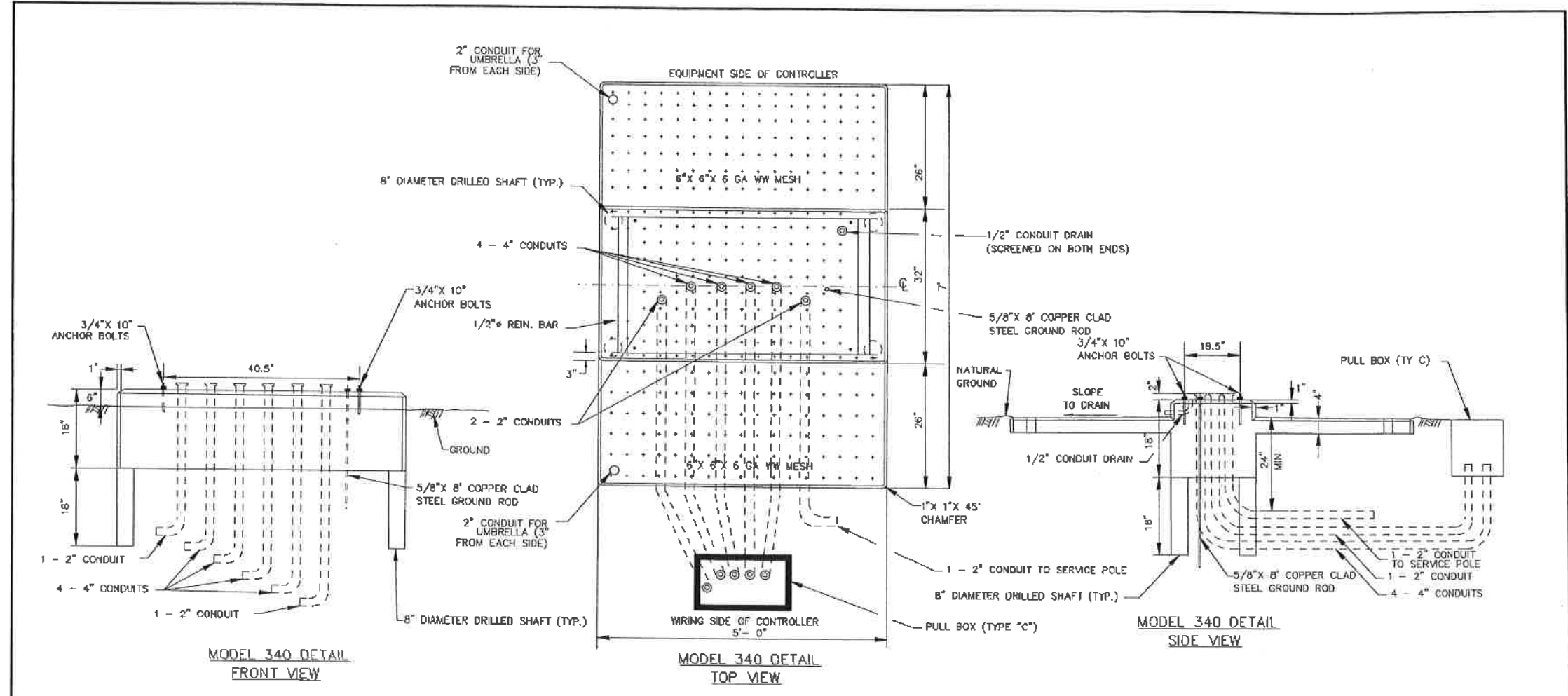
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[Signature]
 11/15/2021
 STATE OF TEXAS
 BARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 TRAFFIC SIGNAL DETAILS
 SHEET 5 OF 9

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-	
AS NOTED	72248
CITY OF HOUSTON PM	
SHAIPOOR GULSHAN	
SHEET NO. 161 OF 247	

NO.	DATE	REVISION



ALL CONDUIT ELBOWS TO BE RGS

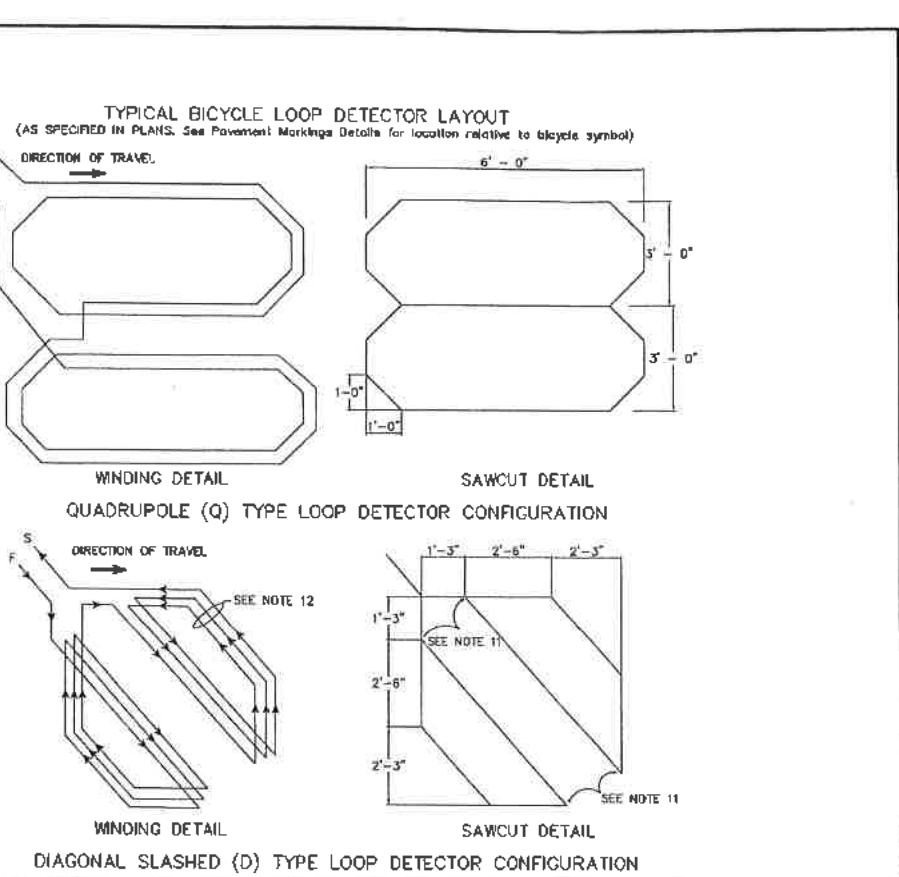
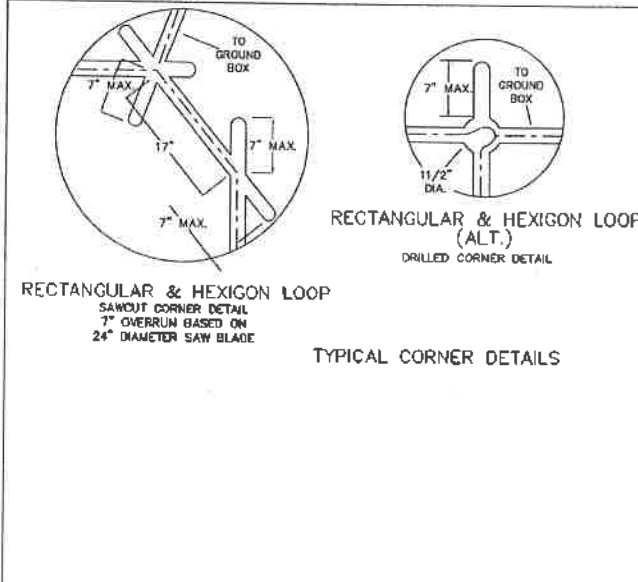
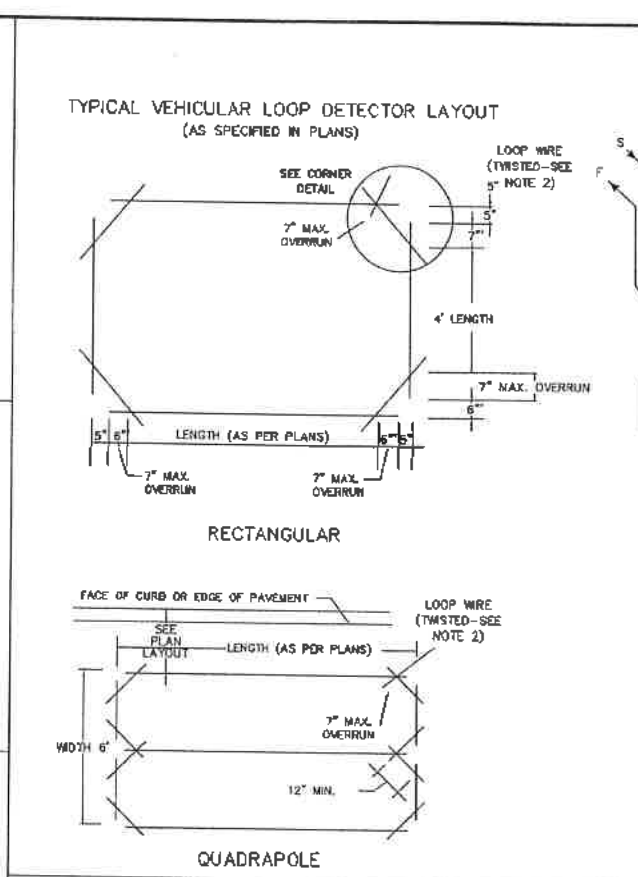
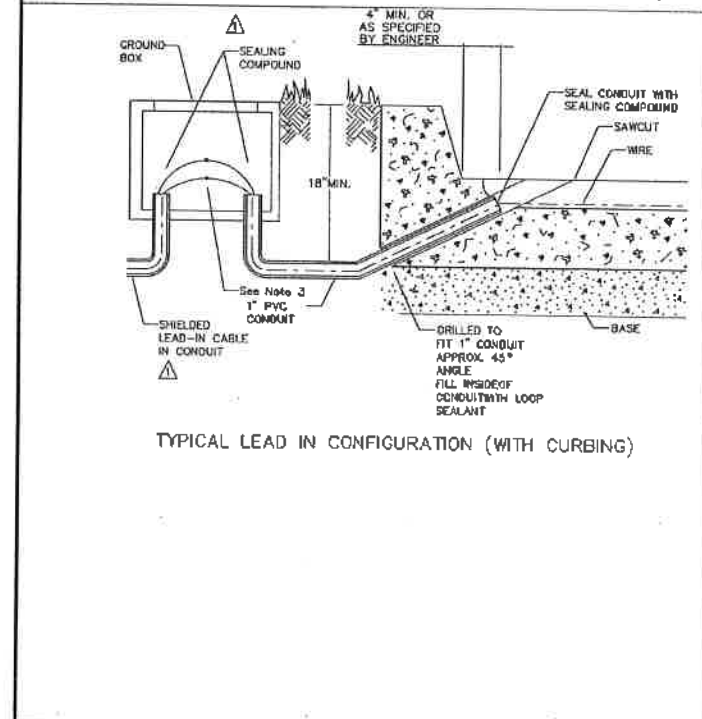
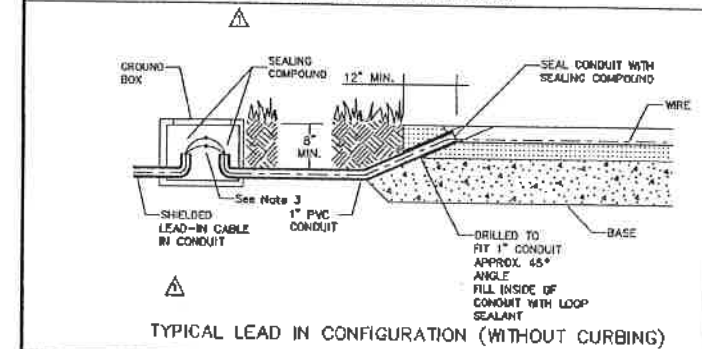
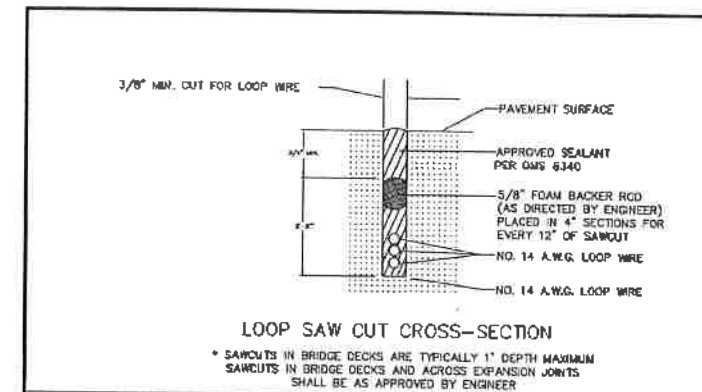
CONTROLLER FOUNDATION NOTES:

1. ALL CONCRETE TO BE IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 03310.
2. SET THE TOP OF THE STEP OF THE CONTROLLER FOUNDATION NO LOWER THAN THE LEVEL OF THE PAVEMENT SURFACE. ANY NECESSARY ADJUSTMENT SHALL BE APPROVED BY THE ENGINEER.
3. CENTER THE CABINET ON THE FOUNDATION.
4. THE FOUNDATION SHALL BE SUPPORTED BY UNDISTURBED SOIL OR BY SOIL THAT HAS BEEN COMPACTED TO 90% PROCTOR DENSITY IN 6" LIFTS.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
CONTROLLER FOUNDATIONS (SHEET 3 OF 3)	
(NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2016	OWG NO: 02893-10C

TRAFFIC ENGINEERS, INC. REGISTERED TRANSPORTATION SOLUTIONS 901 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		<i>[Signature]</i> 11/15/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET TRAFFIC SIGNAL DETAILS SHEET 6 OF 9		
WBS NUMBER N-T27000-0002-7		FOR CITY OF HOUSTON USE ONLY 72248
AS NOTED CITY OF HOUSTON PM SHAIPOOR GOLSHAM		
SHEET NO. 162 OF 247		

NO.	DATE	REVISION	APP.



GENERAL NOTES:

- The pavement cut is to be made with a concrete saw to neat lines and loose material removed. The cut shall be clean and dry when the wire and sealing compound is placed.
- Loop wire shall be 14 AWG Stranded Type XHHW. Wire from the loop to the ground box shall be twisted a minimum of 5 turns per foot. No splices shall be permitted in the loop or in the run to the ground box.
- The home run cable from the pull box to the controller shall be IMSA 50-2 shielded cable and shall be soldered to the loop wire. The solder joints shall be sealed with Scotchcast or other method acceptable to the Engineer. The shield shall be grounded only at the controller end. Loop home run cable shall be two conductor 14 AWG shielded, Type XHHW.
- All wire placed in the saw cut shall be sealed by fully encapsulating it in a sealant acceptable to the Engineer. Sealing compound shall be in accordance with DMS 6340.
- The loop location, configuration and number of turns shall be as indicated on the plans or as directed by the Engineer.
- Splices between the loop lead-in cable and loop detector shall be made only in the ground box near the loop it is serving.
- Circular loops may use prewound loops enclosed in continuous pvc tubing. Sawcut width may be adjusted to accommodate tubing.
- The lead-in wire in the circular loop shall be coiled at the 3 inch drilled corner to reduce bending stress.
- Loop duct may be used as specified by Engineer. For additional information refer to "Texas Traffic Signal Detector" manual, TTI Report 1163-1.
- Round corners of acute angles to prevent damage to conductors.
- Install 3 turns when only one type D loop is on a single channel. Install 5 turns when one type D is connected w/3-6'x6' loops on a single channel.

Recommended Number of Turns for Loop Detectors

LOOPS PERIMETER SIZE (FT.)	NUMBER OF TURNS	APPROXIMATE LOOP SIZES INCLUDED
24' or Less	3 or 4	5' x 5', 6' x 6'
25' - 110'	2 or 3	6' x 10', 6' x 45'
110' or More	1 or 2	6' x 50' or Longer

6. A separate saw cut shall be made from each loop to the edge of pavement or as specified by the Engineer.

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

LOOP DETECTOR INSTALLATION DETAILS

(NOT TO SCALE)

[Signature]
 CITY TRAFFIC ENGINEER

[Signature]
 DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018 DWG NO: 02893-11

TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
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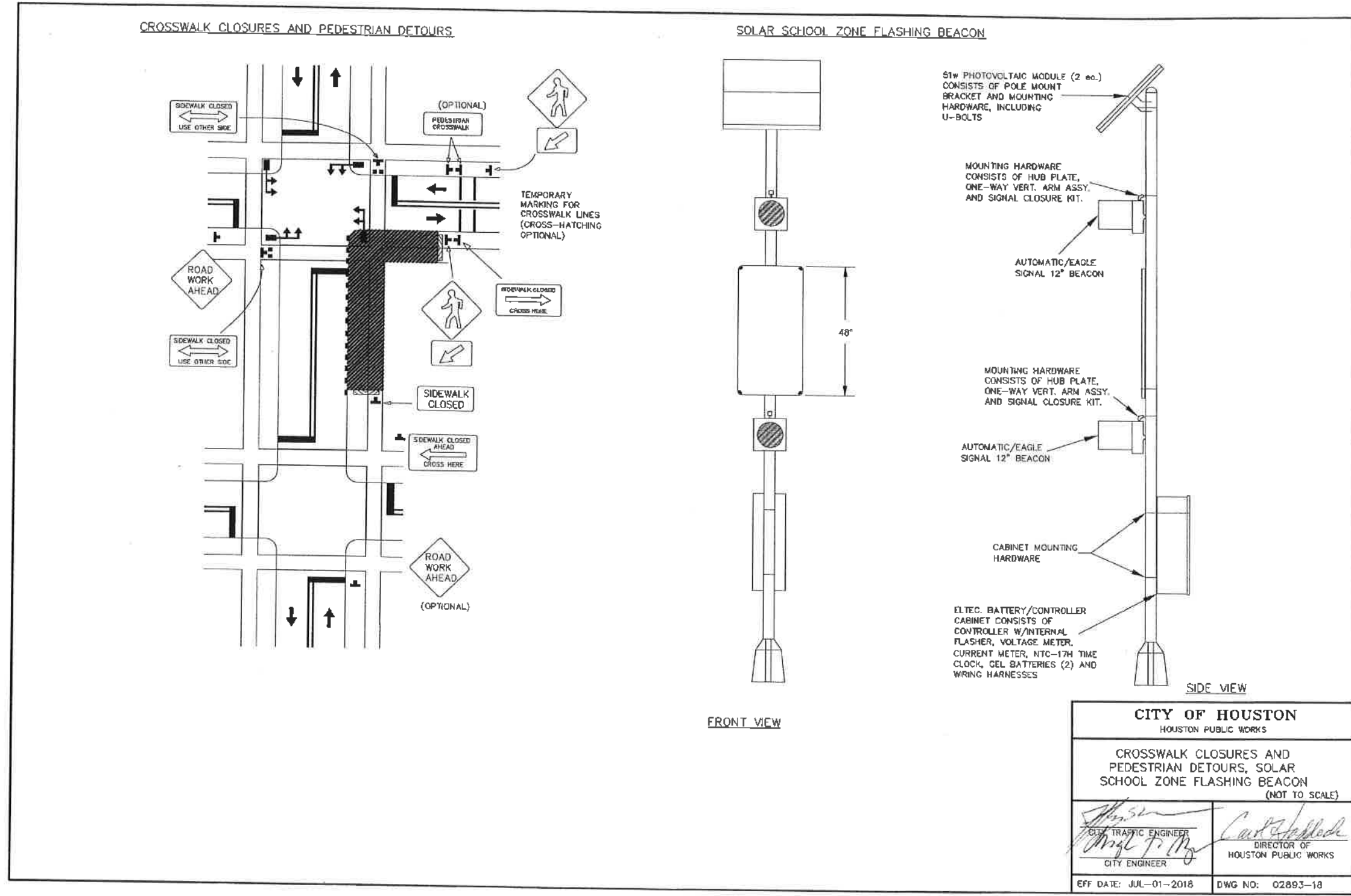
[Signature]
 11/15/2021
 STATE OF TEXAS
 BARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS
WOODHEAD STREET TRAFFIC SIGNAL DETAILS.
SHEET 7 OF 9

WBS NUMBER: N-T27000-0002-7
 AS NOTED
 CITY OF HOUSTON PM: SHAPOOR GOLSHAN
 SHEET NO. 163 OF 247

72248



CITY OF HOUSTON HOUSTON PUBLIC WORKS	
CROSSWALK CLOSURES AND PEDESTRIAN DETOURS, SOLAR SCHOOL ZONE FLASHING BEACON (NOT TO SCALE)	
<i>[Signature]</i> CITY TRAFFIC ENGINEER CITY ENGINEER	<i>[Signature]</i> DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 02893-18

TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

[Signature]
 11/15/2021
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

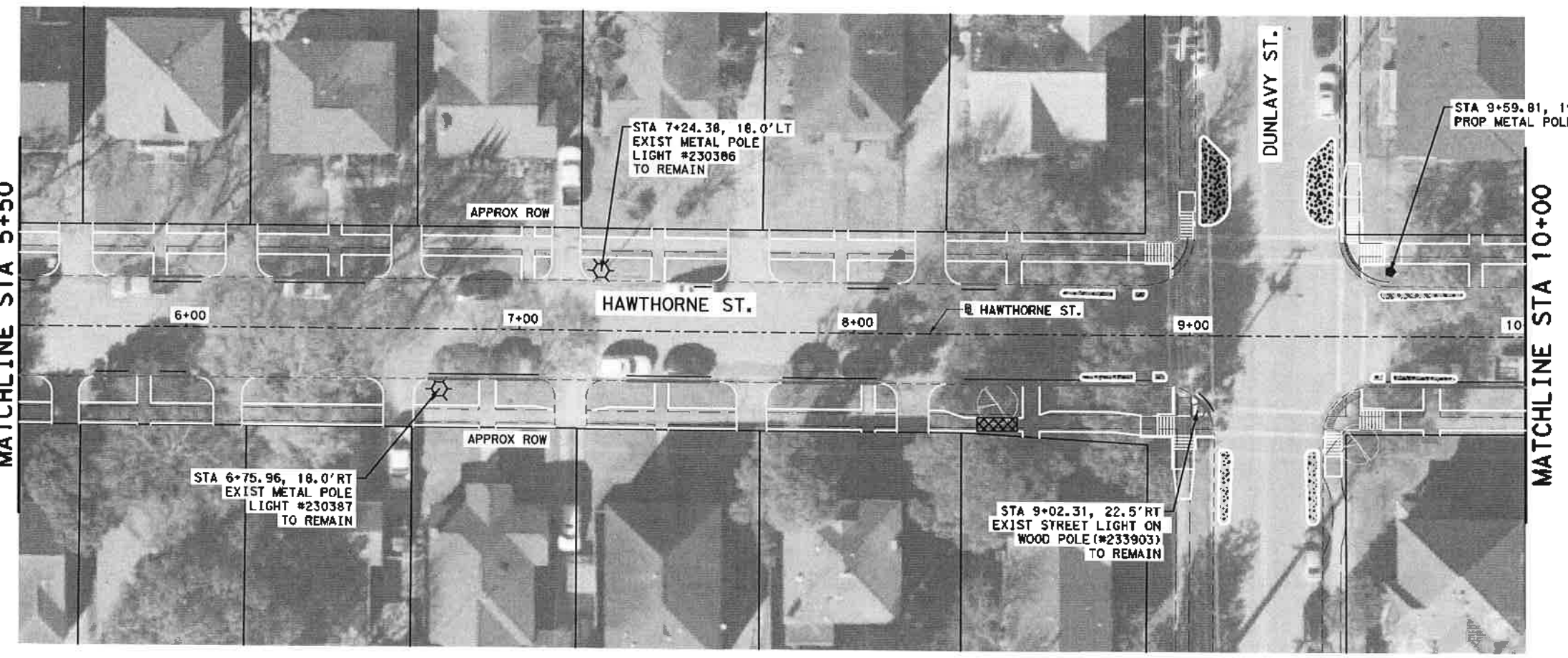
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 TRAFFIC SIGNAL DETAILS
 SHEET 9 OF 9

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T2700-0002	
AS NOTED	
CITY OF HOUSTON	
SHAPOOR COLSIAN	
SHEET NO. 165 OF 247	

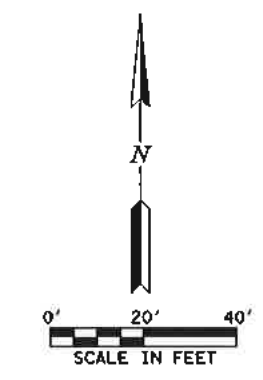
72248

NO.	DATE	REVISION	APP.



LEGEND

- EXIST WOODEN POLE WITH STREET LIGHT
- EXIST METAL POLE WITH STREET LIGHT
- EXIST DECORATIVE METAL POLE WITH STREET LIGHT
- PROP STANDARD METAL POLE WITH STREET LIGHT (TO BE INSTALLED BY OTHERS)
- PROP STREET LIGHT ON EXIST WOOD POLE
- PROP PULL BOX
- PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)



NO.	DATE	REVISION	APP.

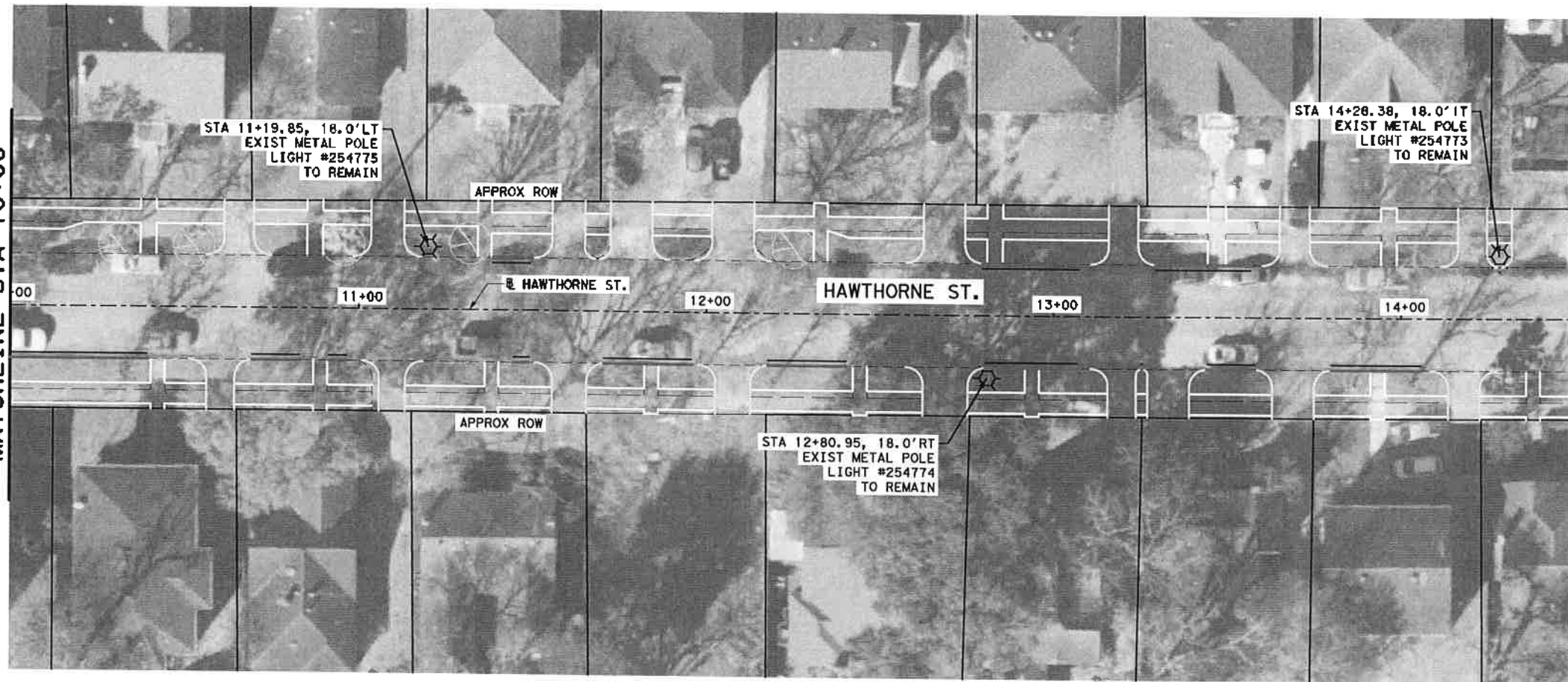
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MATCHLINE STA 5+50

MATCHLINE STA 10+00

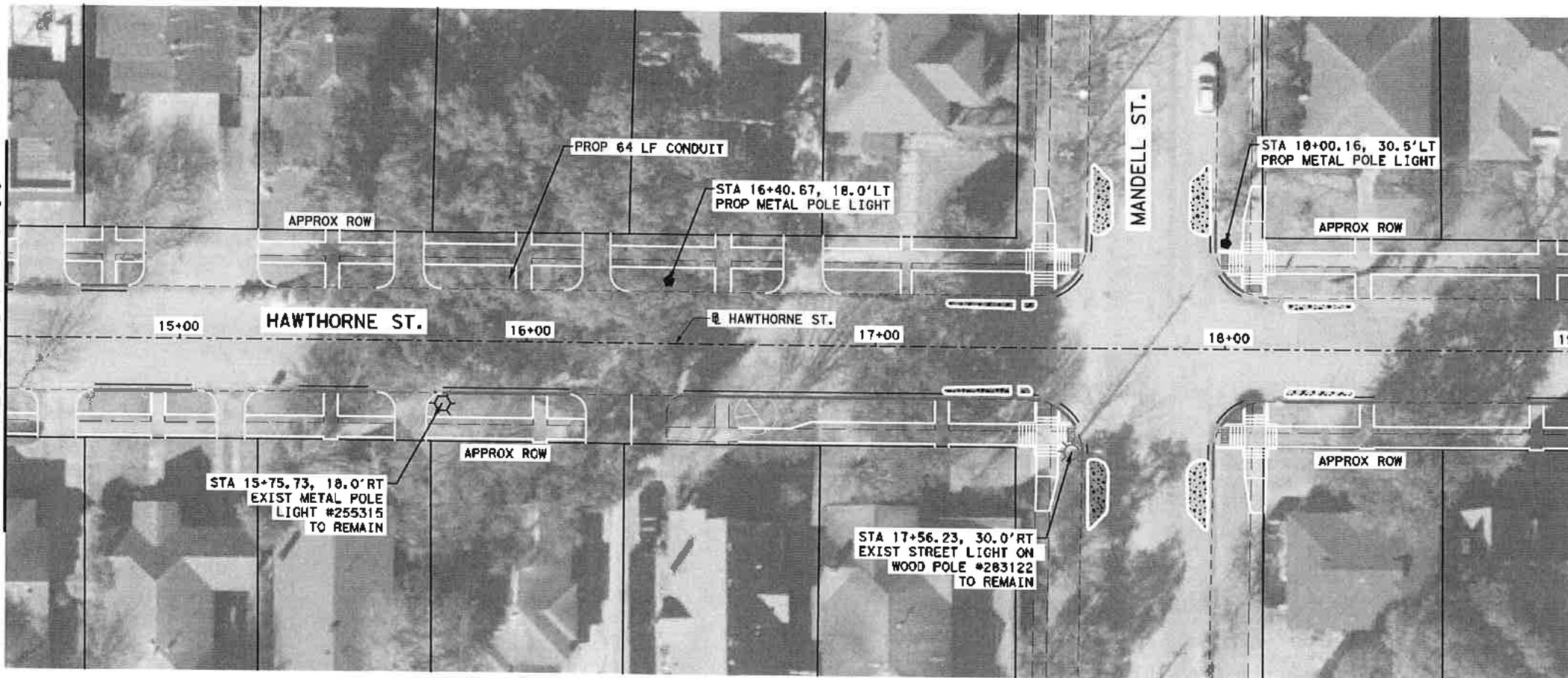
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CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET LIGHTING PLAN	
SHEET 1 OF 10	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">72248</div>
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MATCHLINE STA 14+50

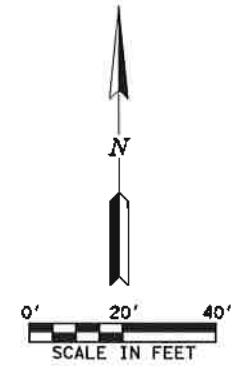
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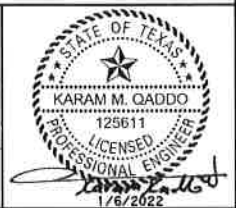
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LEGEND

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- EXIST METAL POLE WITH STREET LIGHT
- EXIST DECORATIVE METAL POLE WITH STREET LIGHT
- PROP STANDARD METAL POLE WITH STREET LIGHT (TO BE INSTALLED BY OTHERS)
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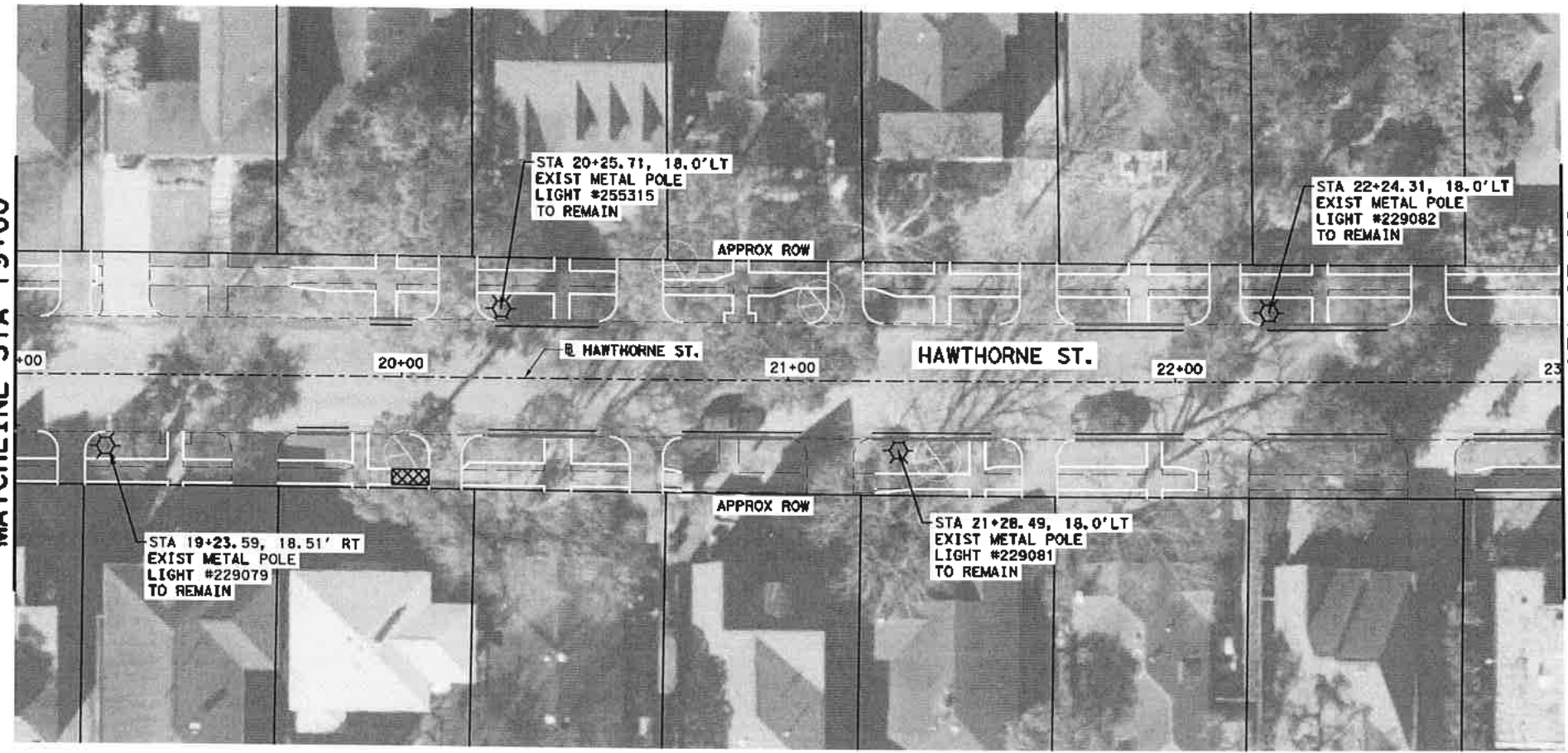
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 LIGHTING PLAN

SHEET 2 OF 10

WDS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127090-002-7	
DRAWING SCALE	72248
AS NOTED	
CITY OF HOUSTON PM	
SHUPOOR GOLSHAN	
SHEET NO. 167	OF 247

MATCHLINE STA 19+00

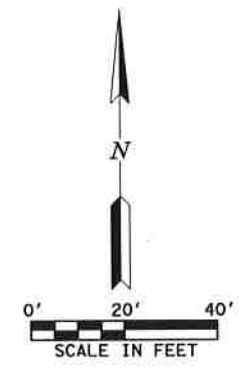


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LEGEND

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- EXIST METAL POLE WITH STREET LIGHT
- EXIST DECORATIVE METAL POLE WITH STREET LIGHT
- PROP STANDARD METAL POLE WITH STREET LIGHT (TO BE INSTALLED BY OTHERS)
- PROP STREET LIGHT ON EXIST WOOD POLE
- PROP PULL BOX
- PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)

NO.	DATE	REVISION	APP.



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STATE OF TEXAS
 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 1/20/2022

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
 HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 HAWTHORNE STREET
 LIGHTING PLAN

WBS NUMBER	N-T27000-002-7
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	SUPFOR BLS/SHM
SHEET NO. 168	OF 247

72248

MATCHLINE STA 23+00

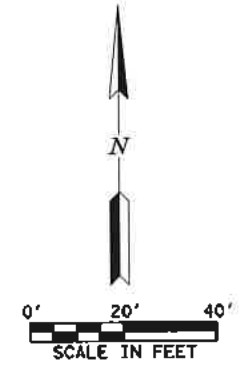


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LEGEND

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- EXIST METAL POLE WITH STREET LIGHT
- EXIST DECORATIVE METAL POLE WITH STREET LIGHT
- PROP STANDARD METAL POLE WITH STREET LIGHT (TO BE INSTALLED BY OTHERS)
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- PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)

NO.	DATE	REVISION	APP.



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 Texas PE Firm Reg. #F-20017

STATE OF TEXAS
 KARAM M. GADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

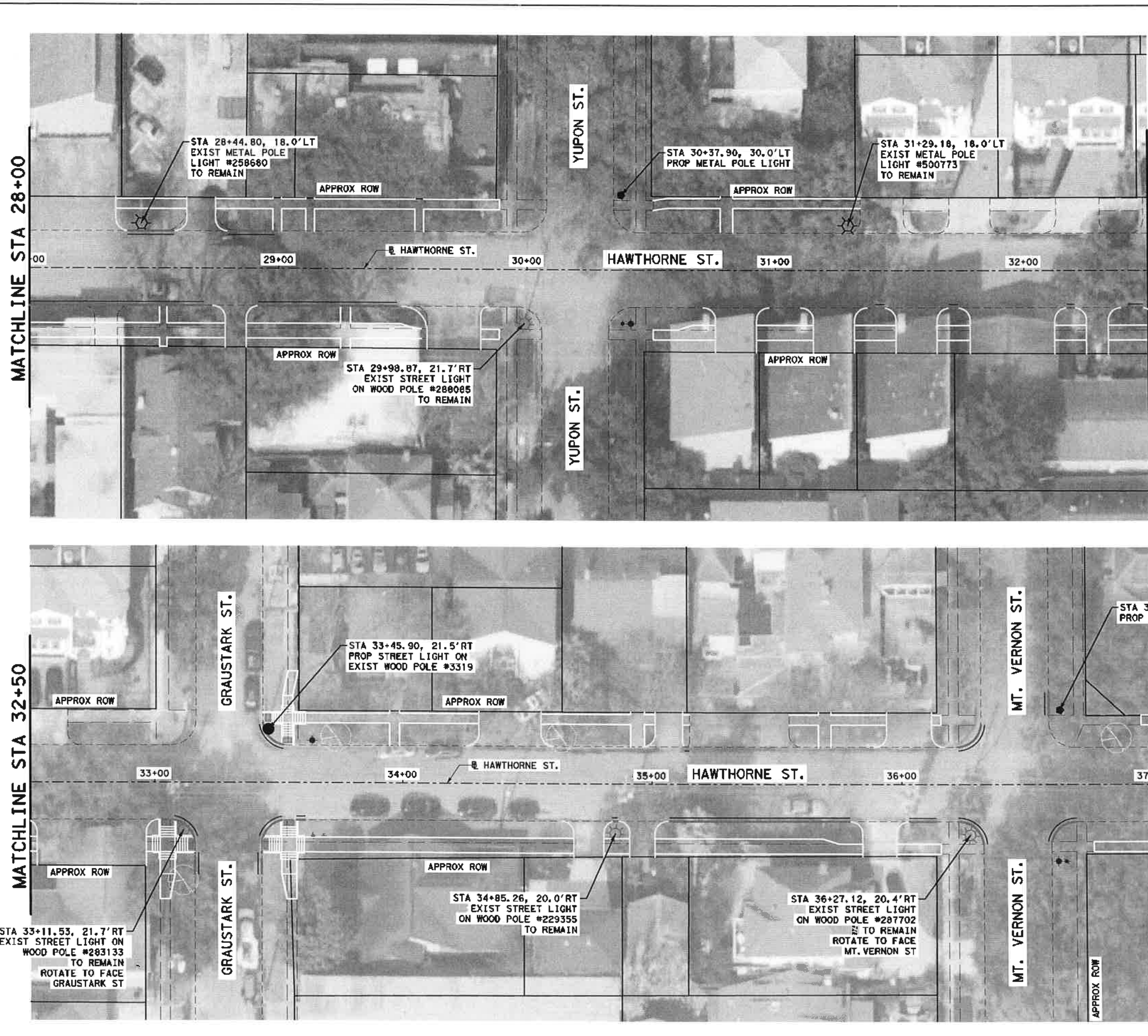
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

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 IMPROVEMENTS
 HAWTHORNE STREET
 LIGHTING PLAN**

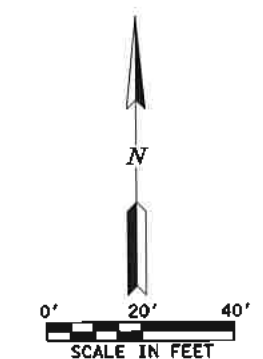
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NBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAMPOOR GOLSHANI	
SHEET NO. 169 OF 247	

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- LEGEND**
- EXIST WOODEN POLE WITH STREET LIGHT
 - EXIST METAL POLE WITH STREET LIGHT
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 - PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)

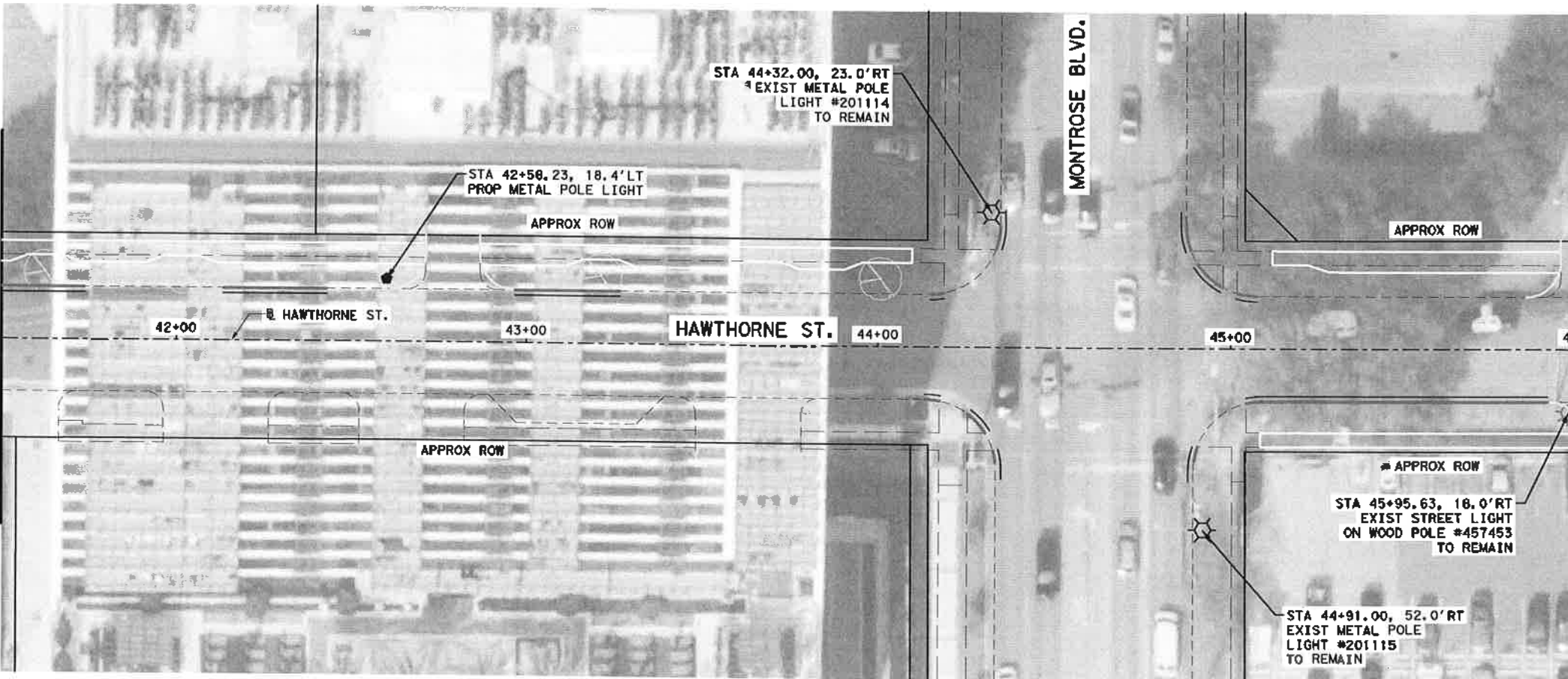
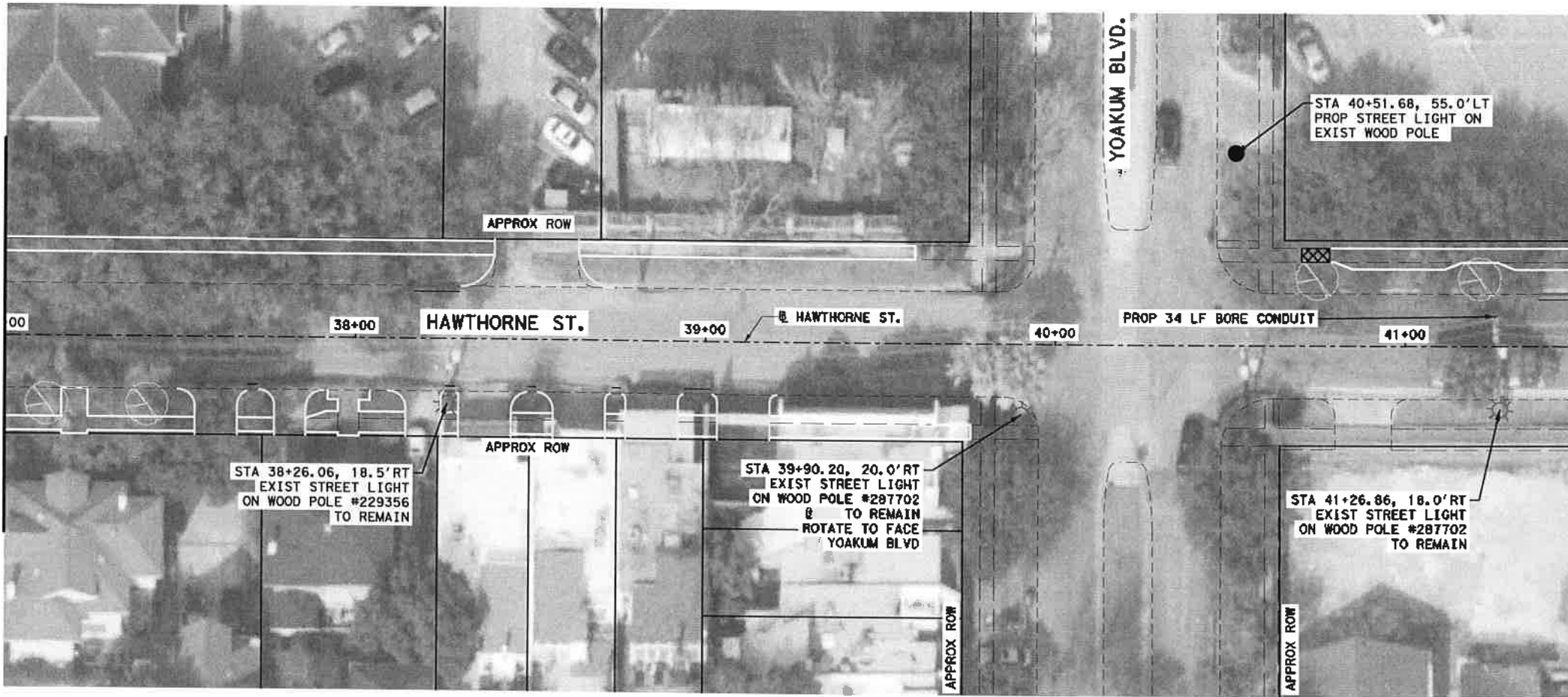


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CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET LIGHTING PLAN	
SHEET 5 OF 10	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAMPOOR GOLSHAN	
SHEET NO. 170 OF 247	

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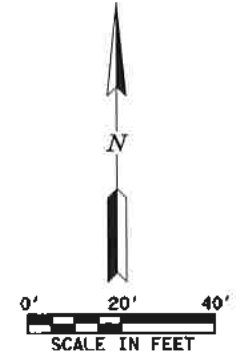
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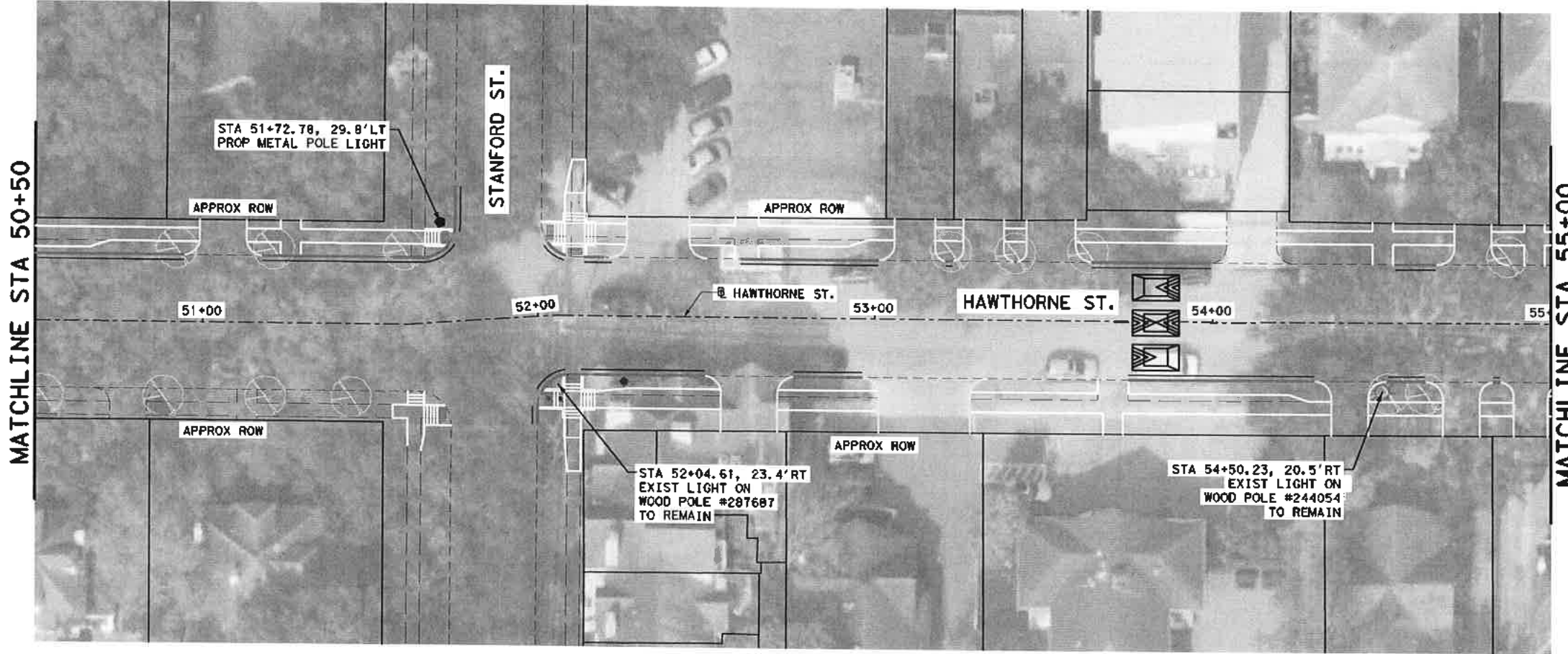
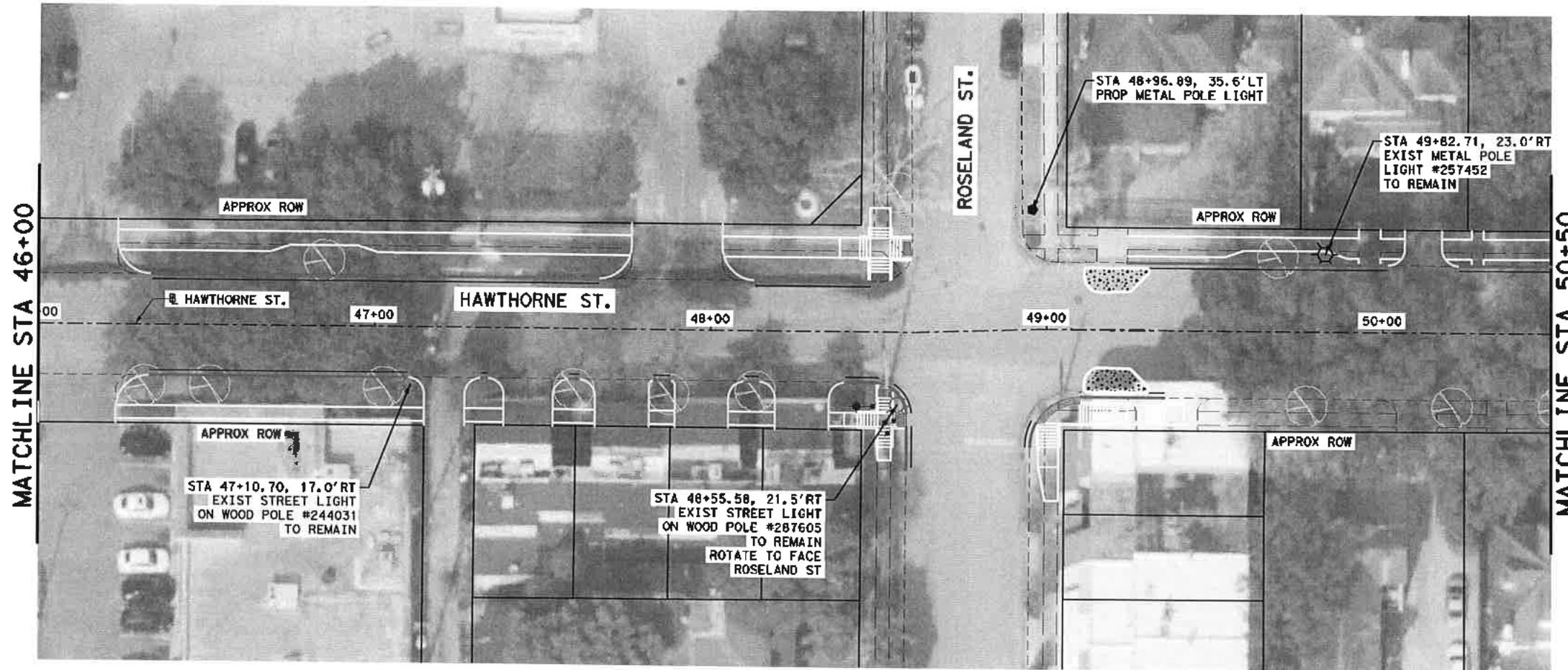


LEGEND

- EXIST WOODEN POLE WITH STREET LIGHT
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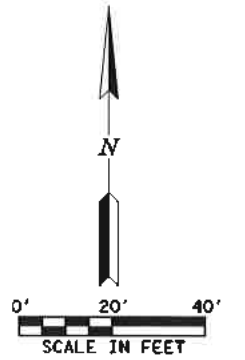


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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET LIGHTING PLAN	
SHEET 6 OF 10	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SHAIPOUR GOLSHANI	
SHEET NO. 171 OF 247	



LEGEND

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	SURVEYED BY: 1/6/2022

CITY OF HOUSTON
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HAWTHORNE ST. & WOODHEAD ST.
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 IMPROVEMENTS
**HAWTHORNE STREET
 LIGHTING PLAN**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 172	OF 247

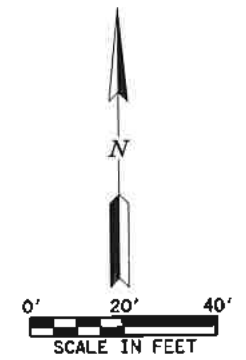
72248

NO.	DATE	REVISION	APP.

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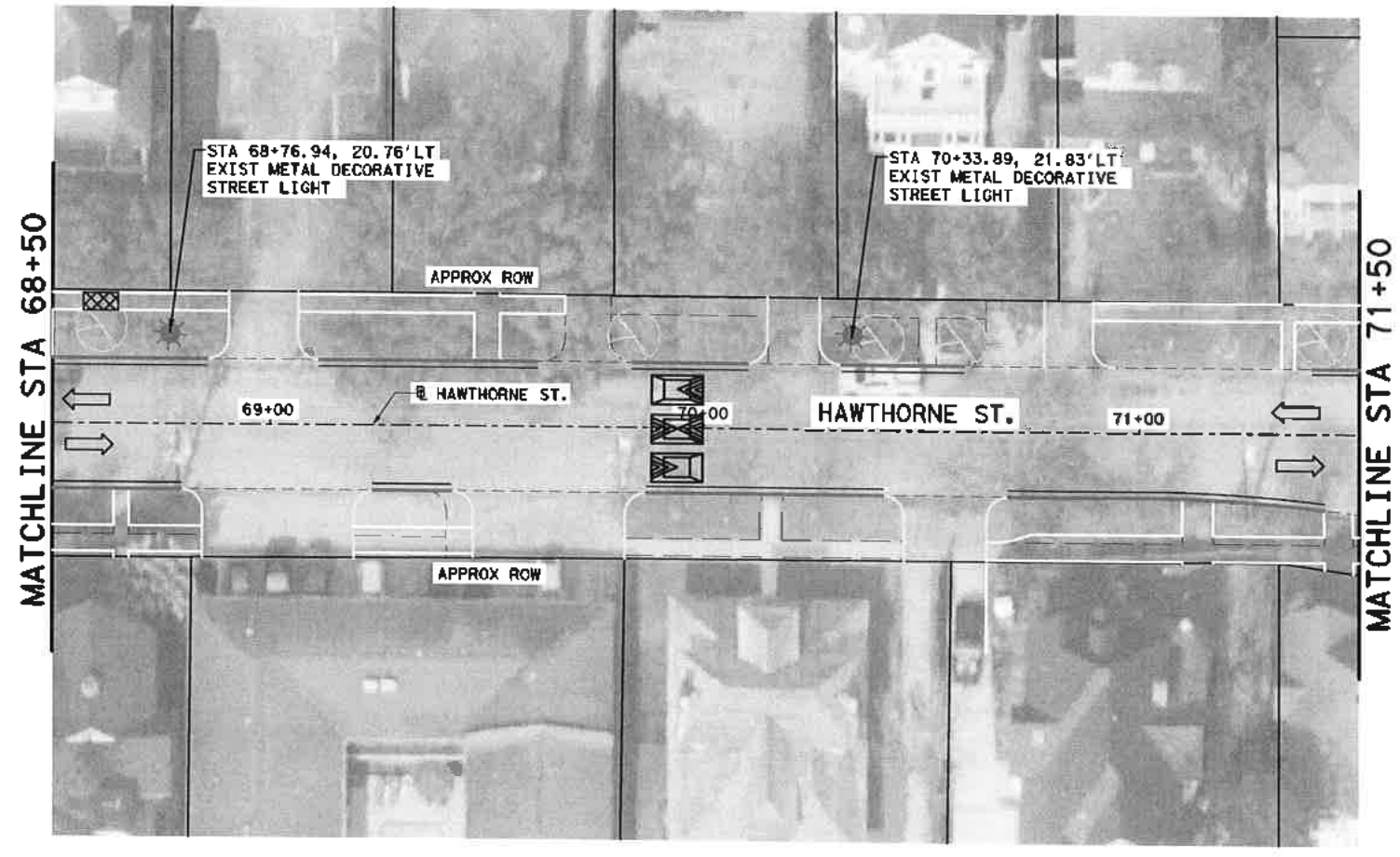


- LEGEND**
- EXIST WOODEN POLE WITH STREET LIGHT
 - EXIST METAL POLE WITH STREET LIGHT
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 - PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)

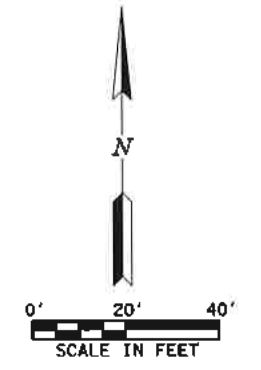


Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET LIGHTING PLAN	
SHEET 8 OF 10	
WBS NUMBER N-T27000-002	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	
CITY OF HOUSTON SHAPOOR GULSHAN	
SHEET NO. 173 OF 247	

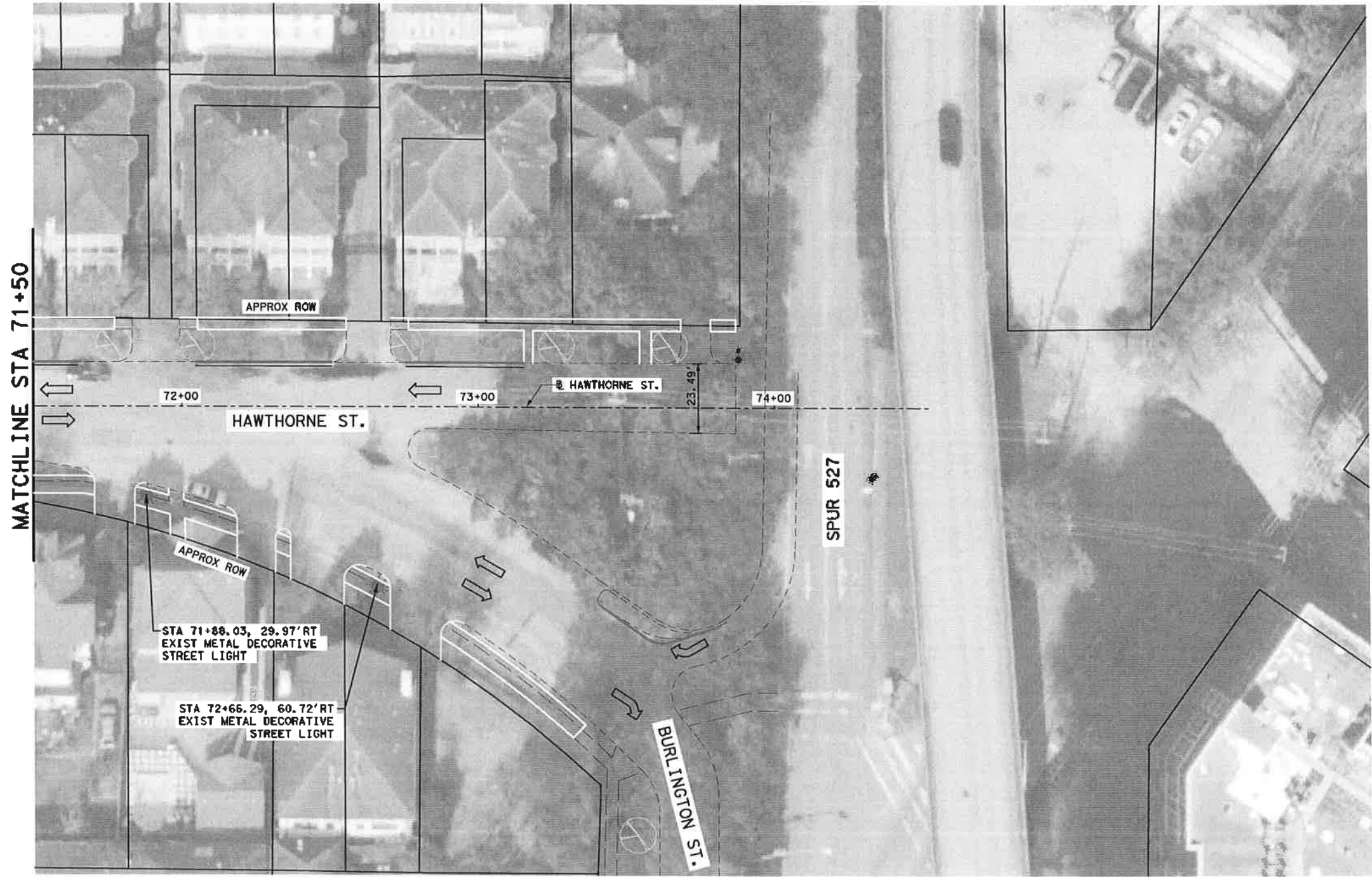
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- LEGEND**
- EXIST WOODEN POLE WITH STREET LIGHT
 - EXIST METAL POLE WITH STREET LIGHT
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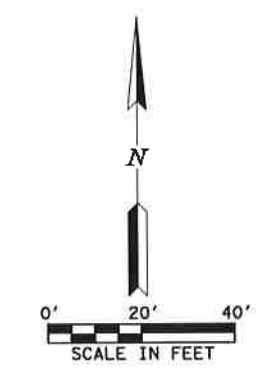
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<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET LIGHTING PLAN</p>	
SHEET 9 OF 10	
NBS NUMBER N-127000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	<p style="font-size: 2em; font-weight: bold;">72248</p>
CITY OF HOUSTON PM SHAPOR GOLSHAN	
SHEET NO. 174 OF 247	



LEGEND

- EXIST WOODEN POLE WITH STREET LIGHT
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- PROP STREET LIGHT ON EXIST WOOD POLE
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- PROP UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)

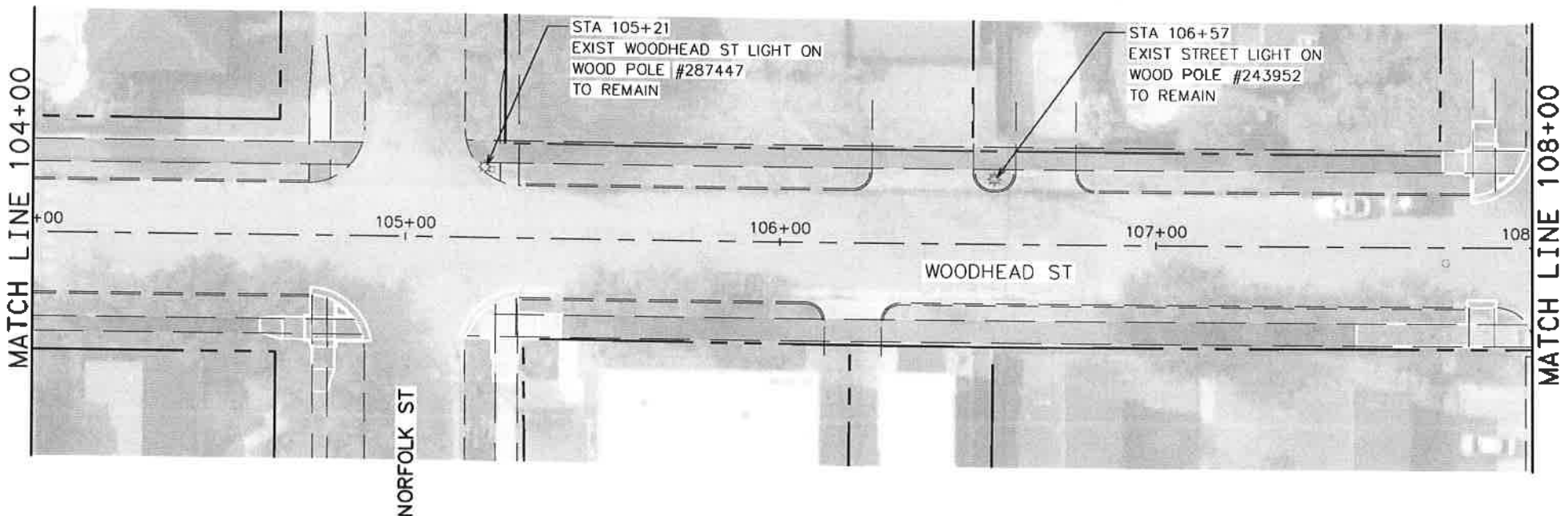
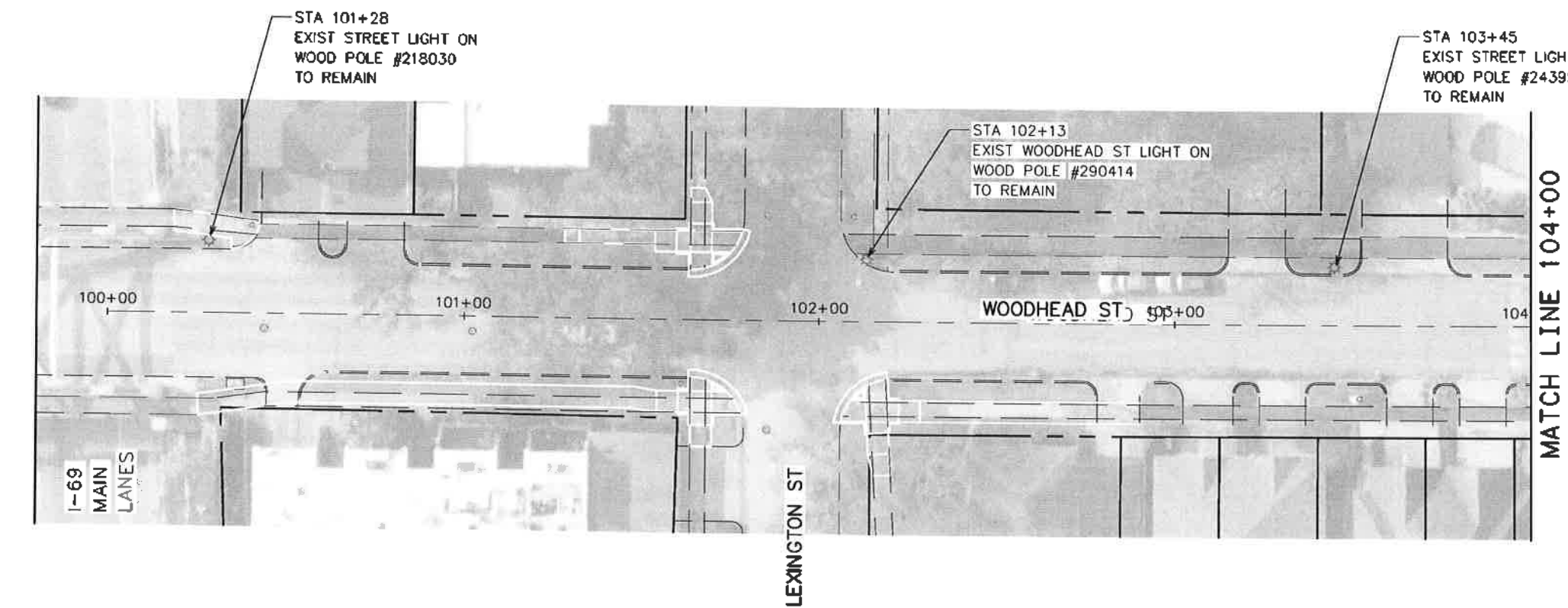
NO.	DATE	REVISION	APP.



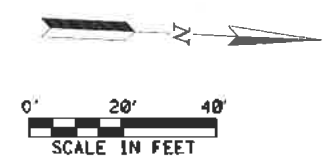
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
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 IMPROVEMENTS
HAWTHORNE STREET
 LIGHTING PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-727000-0007	72248
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON	
SHAPOOR GOLSHAN	
SHEET NO. 175 OF	



- LEGEND**
- ☼ EXIST WOODEN POLE WITH STREET LIGHT
 - ☼ EXIST METAL POLE WITH STREET LIGHT
 - ☼ EXIST DECORATIVE METAL POLE WITH STREET LIGHT
 - PROP STANDARD METAL POLE WITH STREET LIGHT (TO BE INSTALLED BY OTHERS)
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 - PROP PULL BOX
 - PROPOSED UNDERGROUND STREET LIGHT CONDUIT (2-INCH PVC, SCHEDULE 80)
 - PROP BORED CONDUIT AND CONDUCTORS



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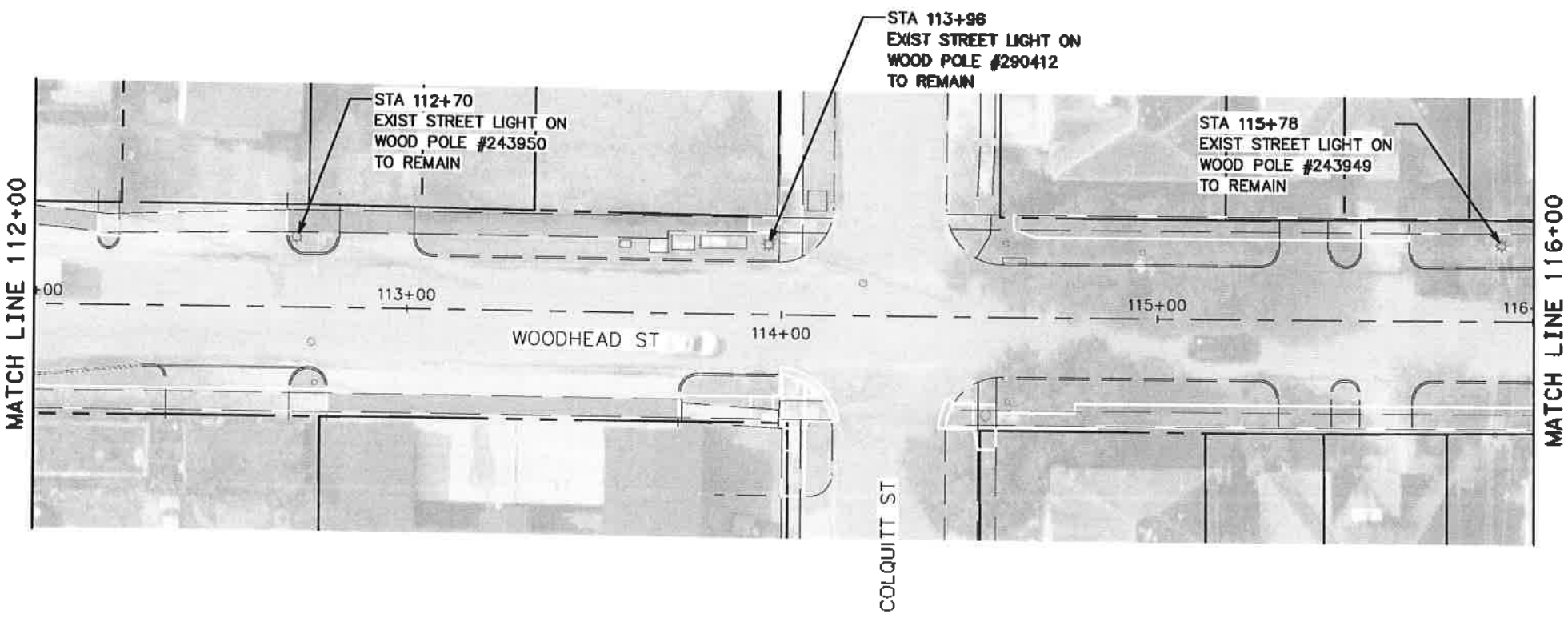
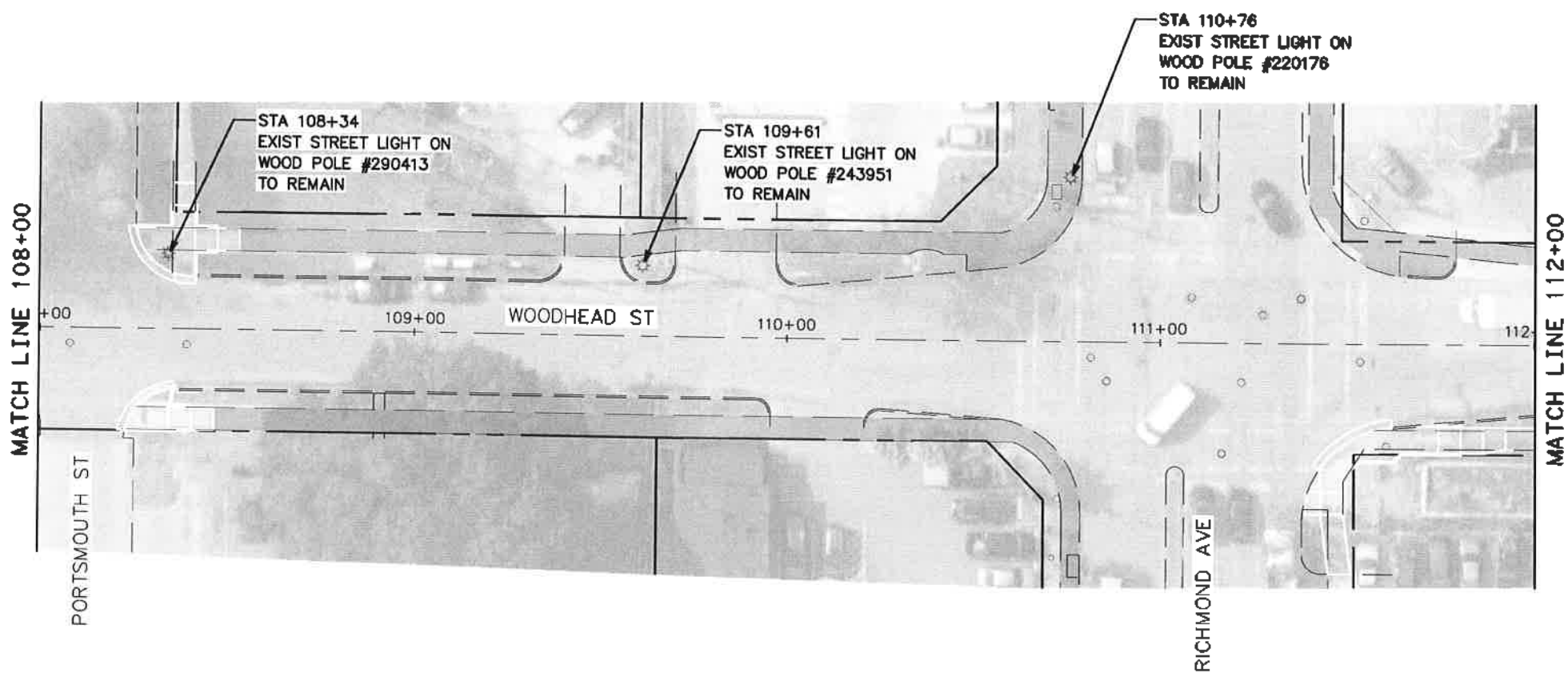
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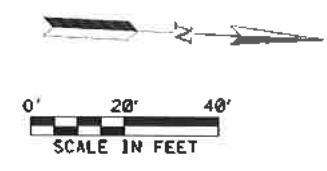
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 LIGHTING PLAN
 SHEET 1 OF 12**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002-7	72248
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR OOLSHAN	
SHEET NO. 176 OF 247	



- LEGEND**
- ☼ EXIST WOODEN POLE WITH STREET LIGHT
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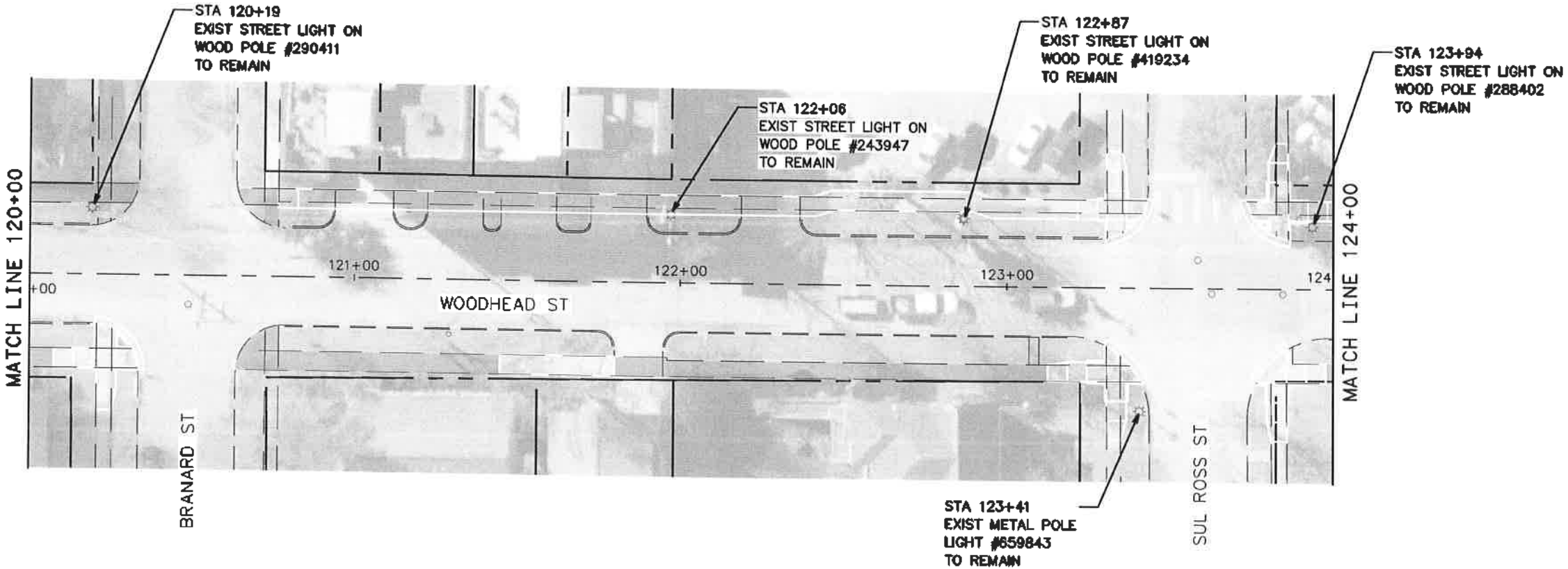
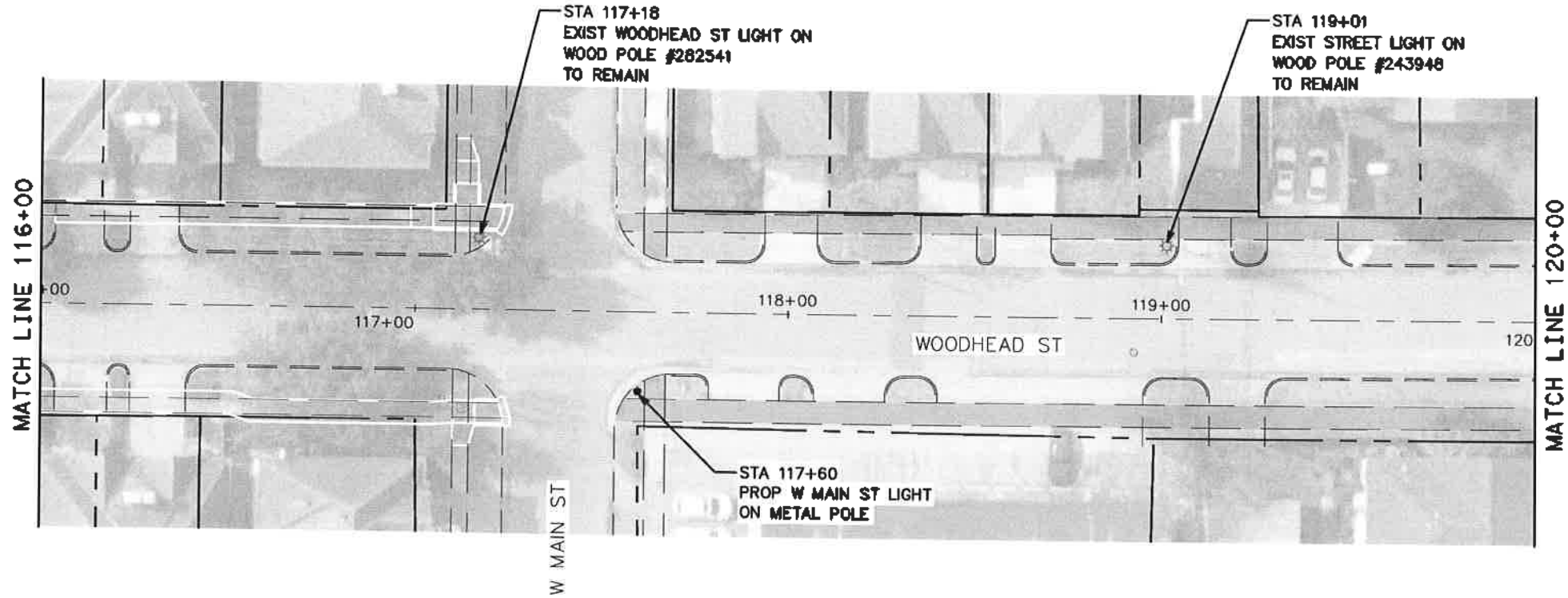
11/16/2021

SARAH L. WETMORE
 LICENSED PROFESSIONAL ENGINEER
 130442

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

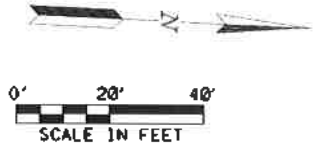
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 WOODHEAD STREET
 LIGHTING PLAN
 SHEET 2 OF 12**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002	72248
AS NOTED	
CITY OF HOUSTON	
SHARPOO COLSHAN	
SHEET NO. 177 OF 247	

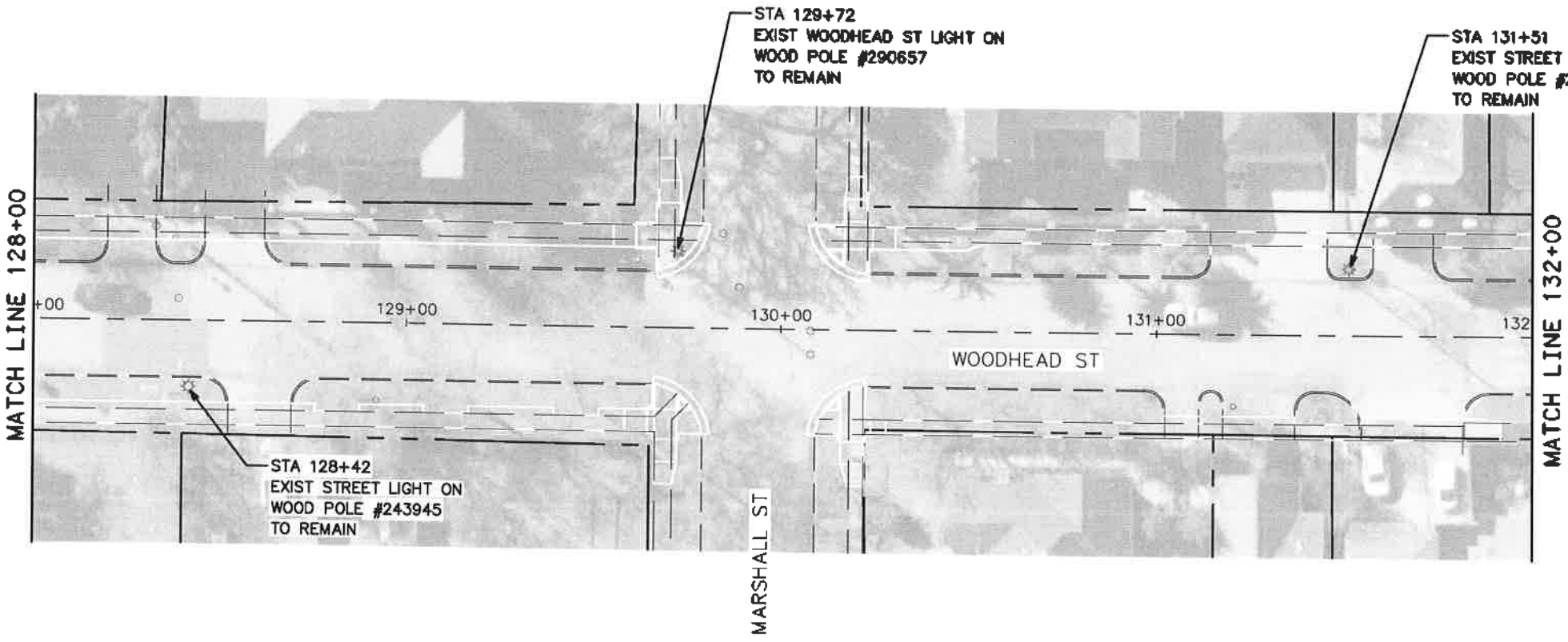
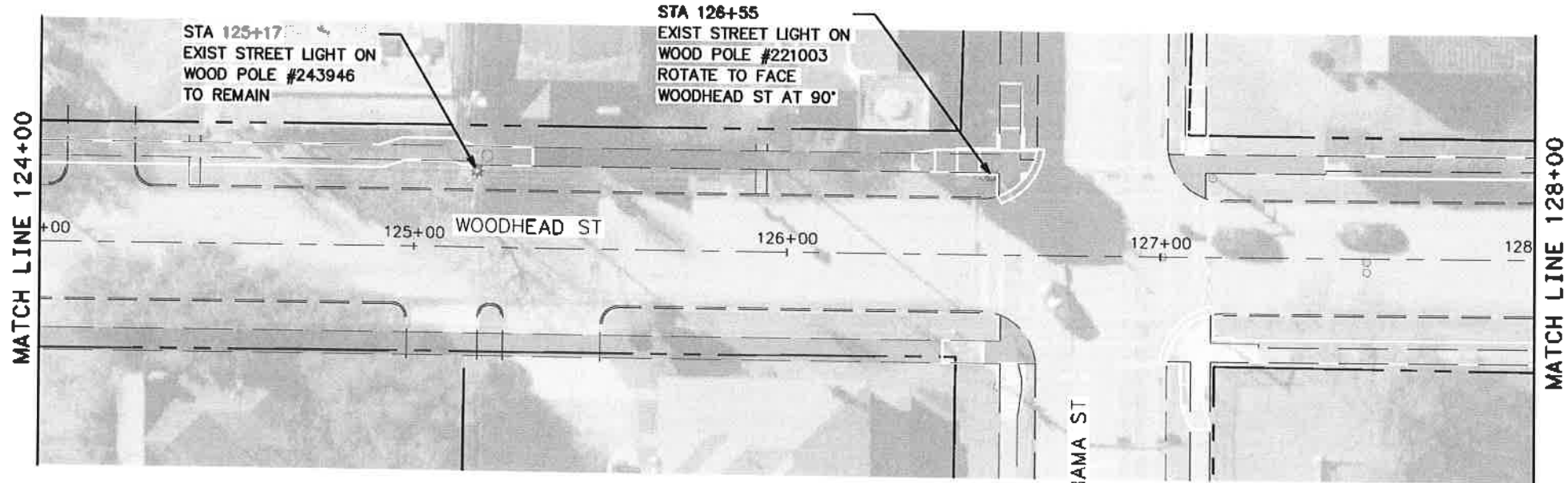


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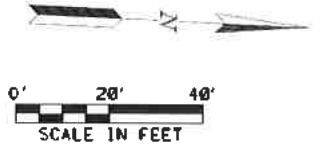
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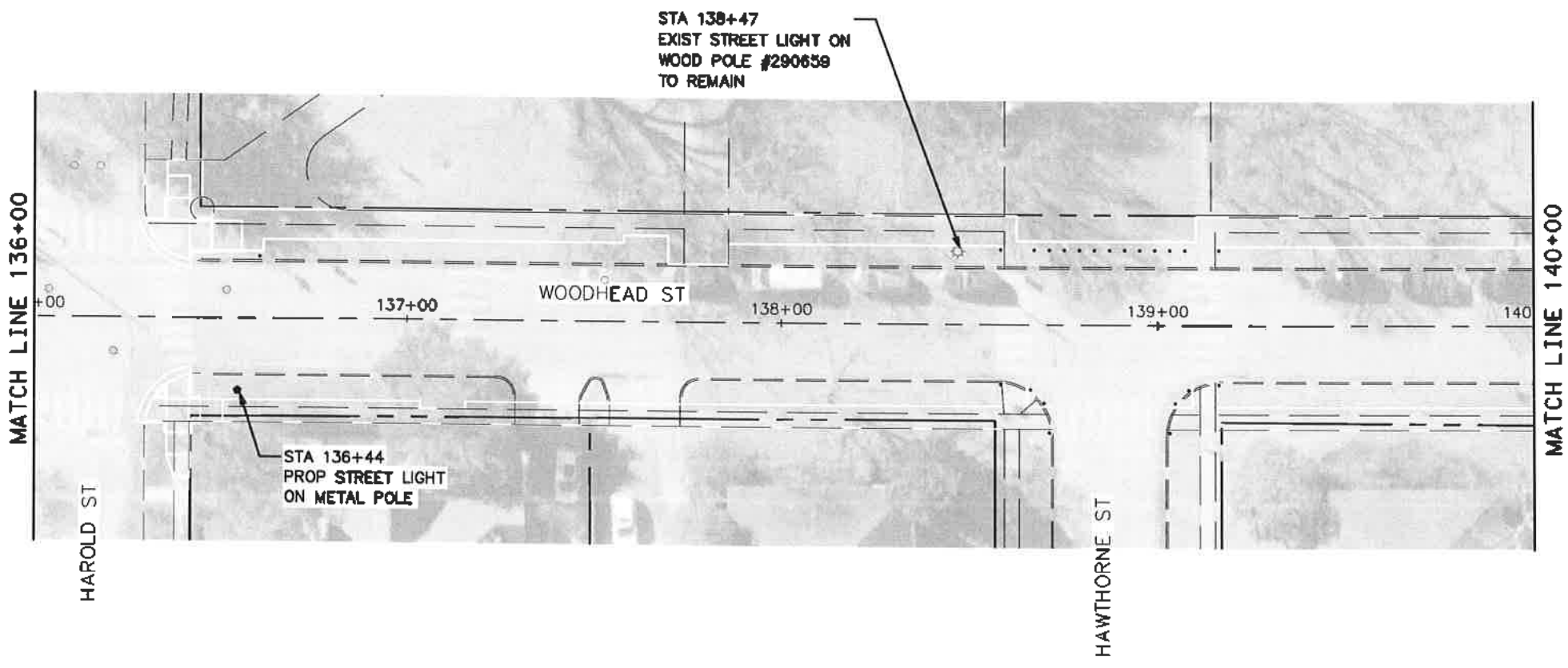
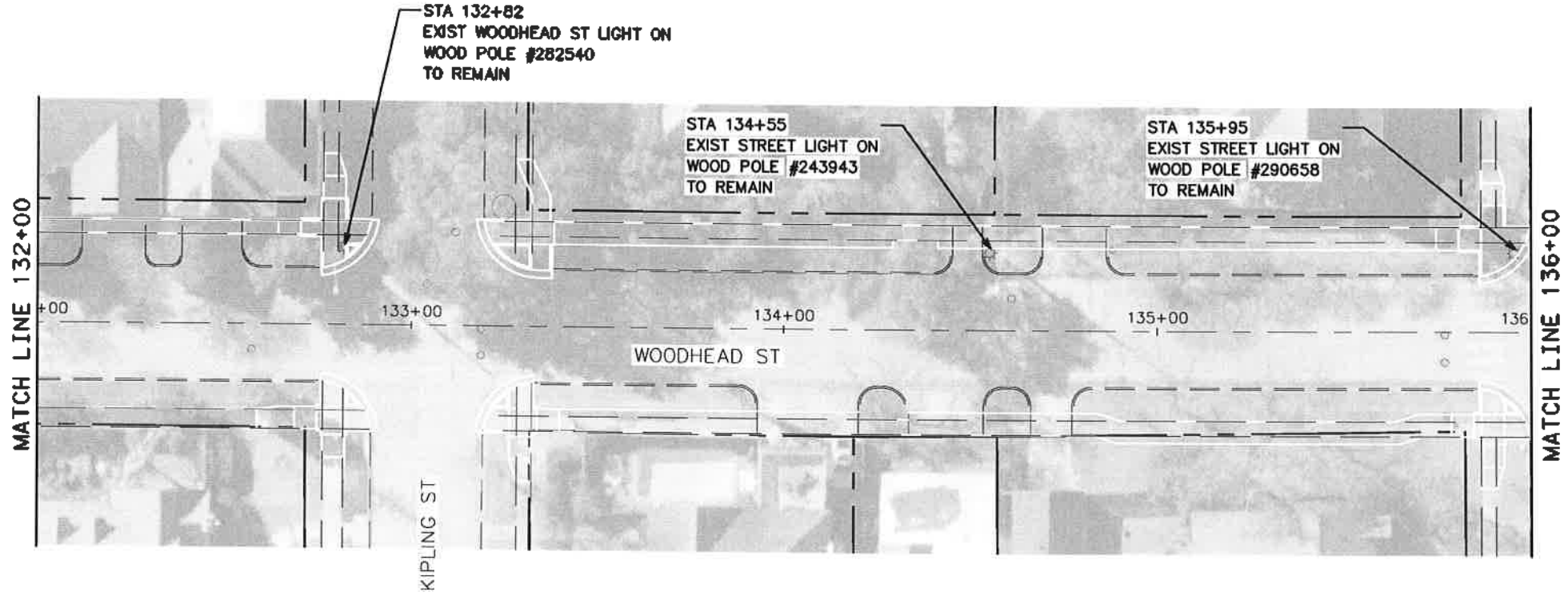
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AS NOTED	72248	
CITY OF HOUSTON PM SHAIPOOR GOLSHAN		
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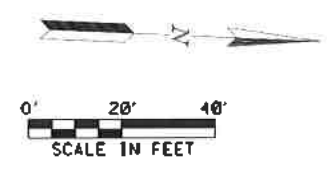
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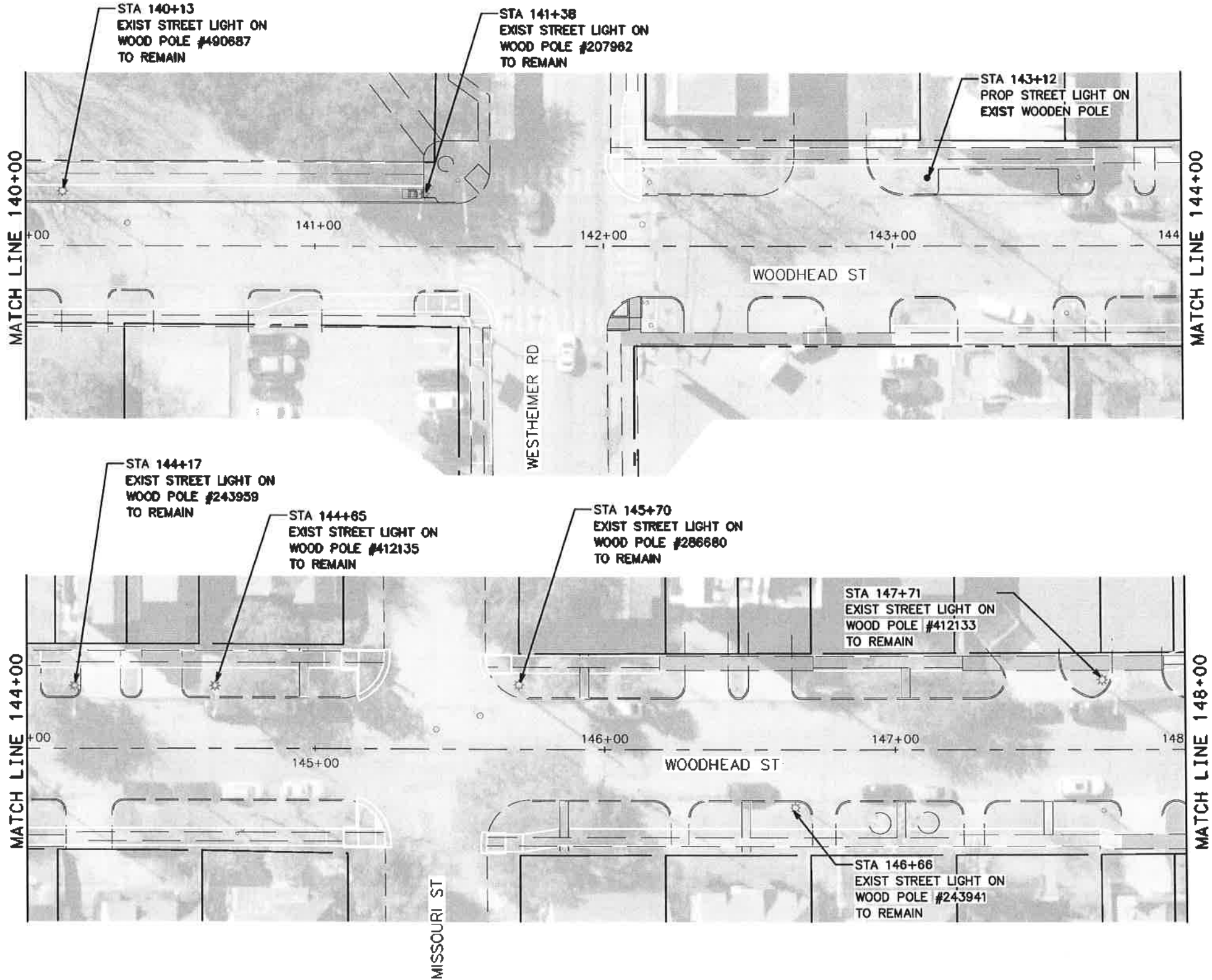
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CITY OF HOUSTON		
SHAPOR GOLSHAN		
SHEET NO. 179 OF 247		



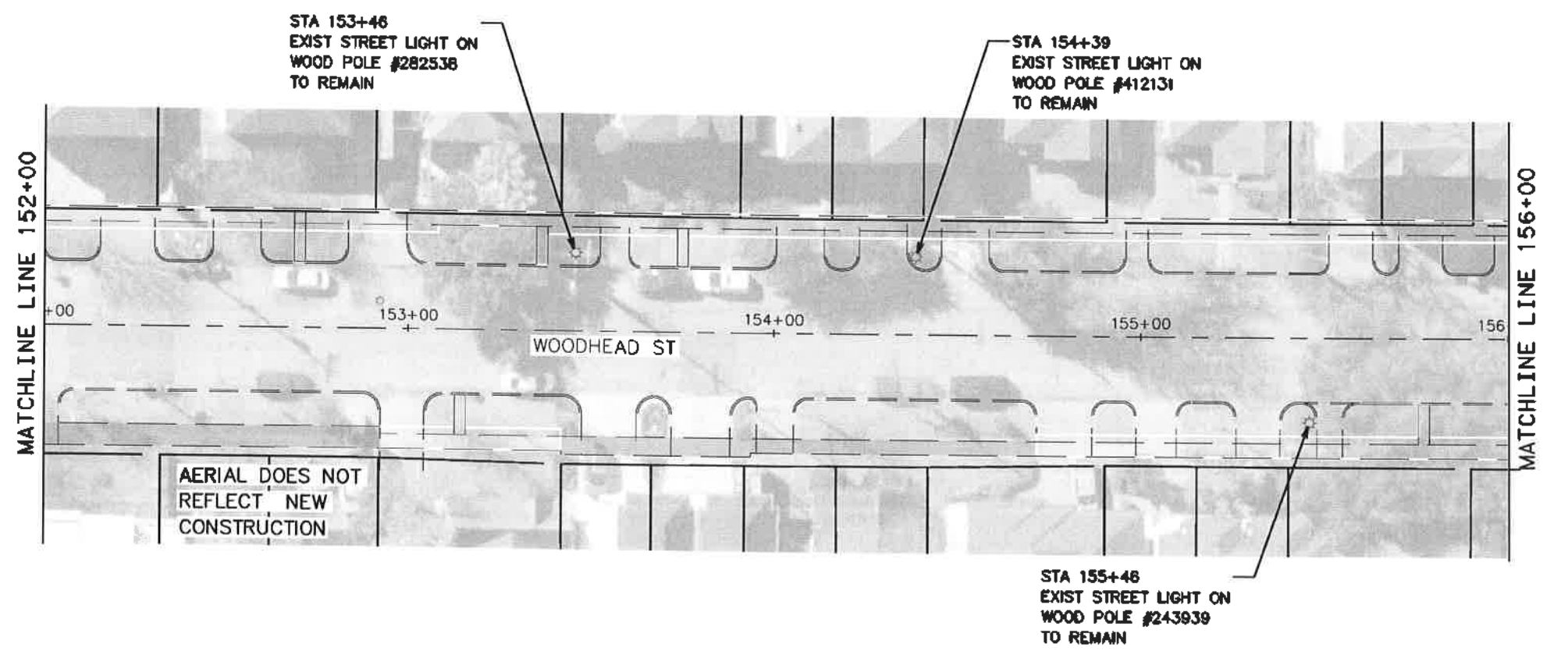
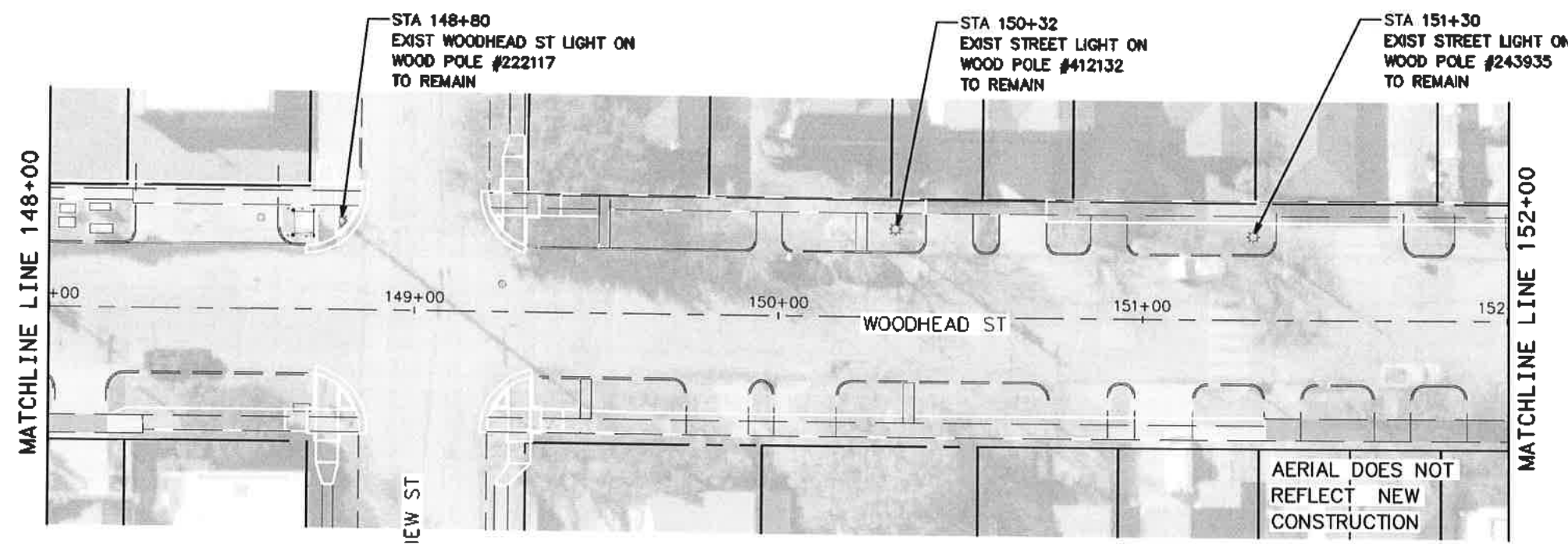
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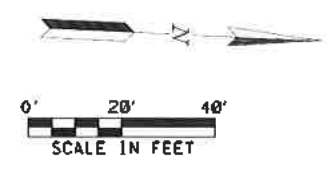
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET LIGHTING PLAN SHEET 5 OF 12		
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AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSHAN		
SHEET NO. 180 OF 247		



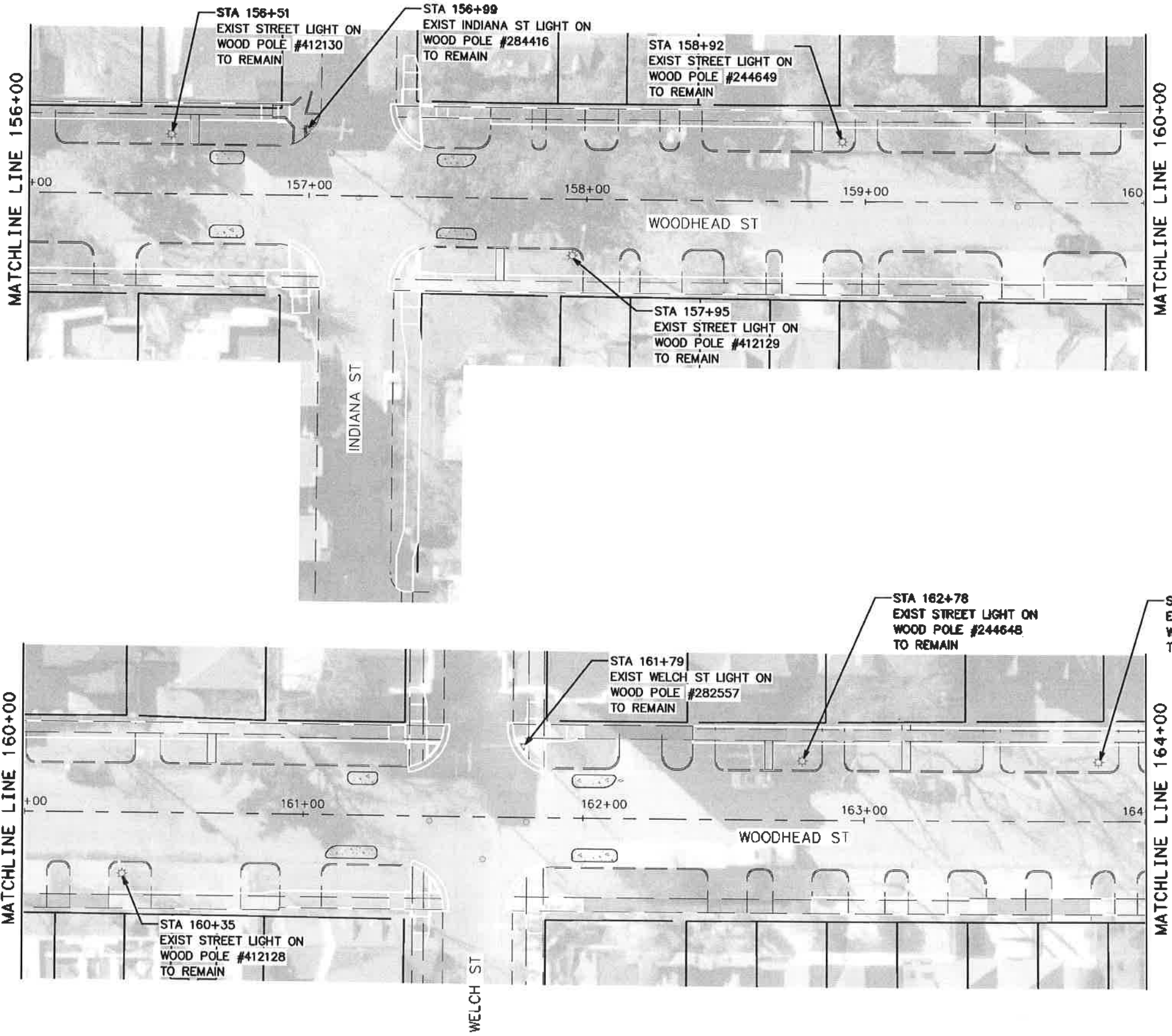
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CITY OF HOUSTON PD SHAFIQ COLSHAN		
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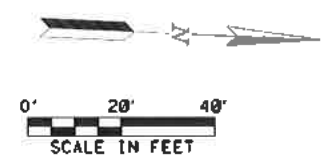
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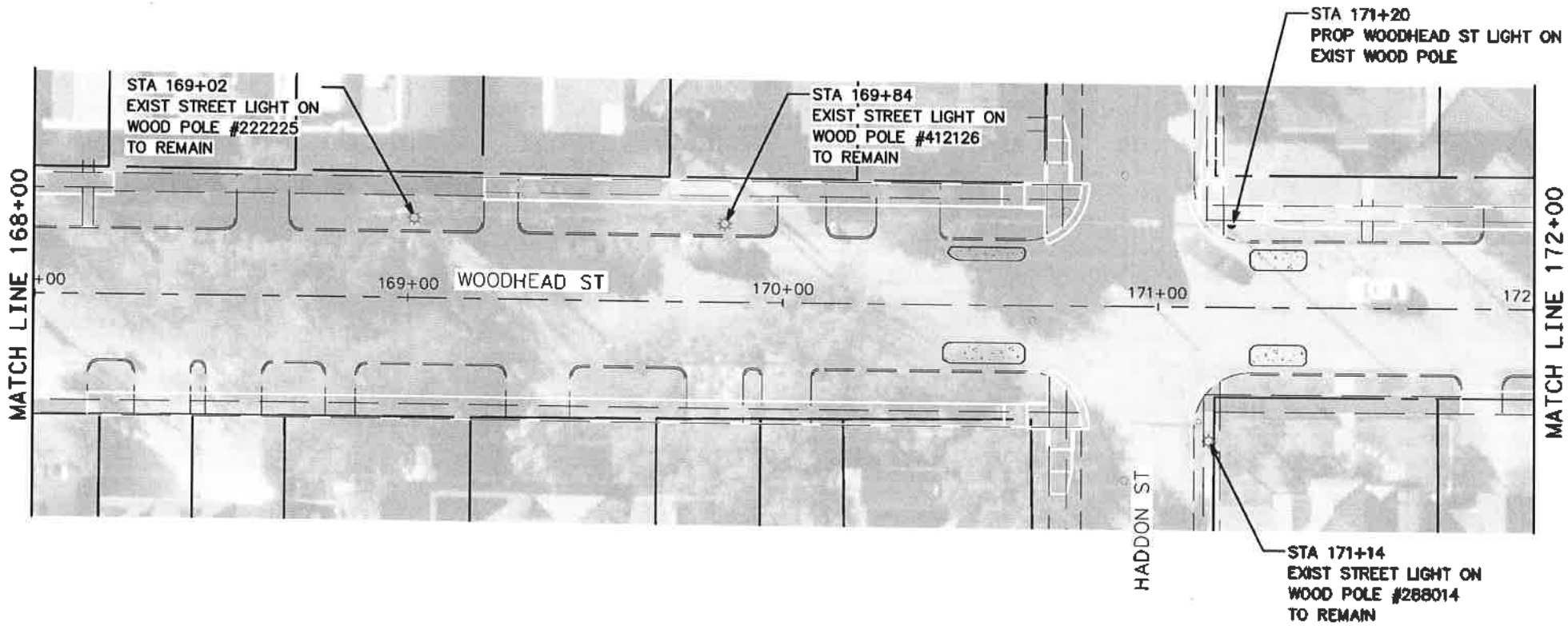
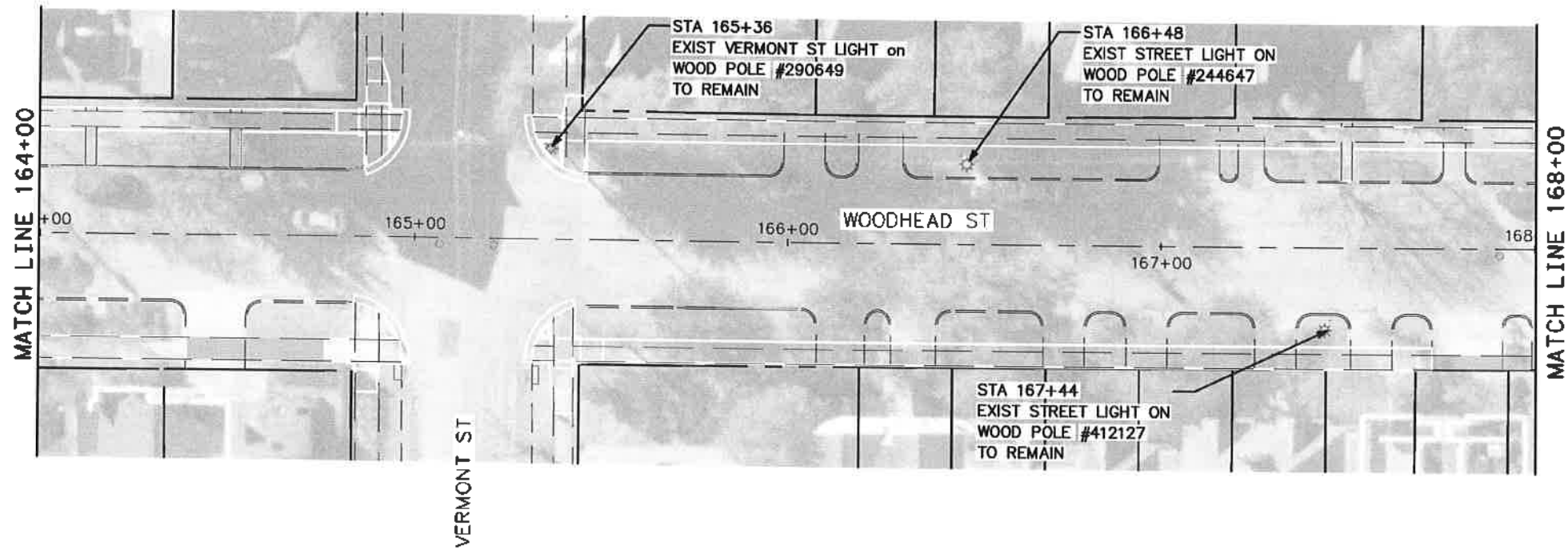
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HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET LIGHTING PLAN SHEET 7 OF 12		
WBS NUMBER N-T27000-0002	FOR CITY OF HOUSTON USE ONLY: 72248	
AS NOTED CITY OF HOUSTON PUBLIC WORKS SHAPOOR GOLSHAN	SHEET NO. 182 OF 247	



- LEGEND**
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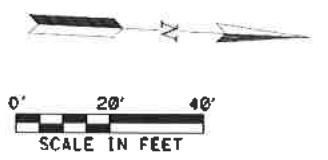


<p>TRAFFIC ENGINEERS, INC. 901 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158</p>	<p><i>Sarah L. Wetmore</i> 11/16/2021 STATE OF TEXAS SARAH L. WETMORE 130442 LICENSED PROFESSIONAL ENGINEER</p>
<p>CITY OF HOUSTON HOUSTON PUBLIC WORKS</p>	
<p>HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET LIGHTING PLAN SHEET 8 OF 12</p>	
<p>WBS NUMBER N-T27000-0002-7</p>	<p>FOR CITY OF HOUSTON USE ONLY 72248</p>
<p>AS NOTED</p>	
<p>CITY OF HOUSTON PM SHAPOOR GOLSHANI</p>	
<p>SHEET NO. 183 OF 247</p>	

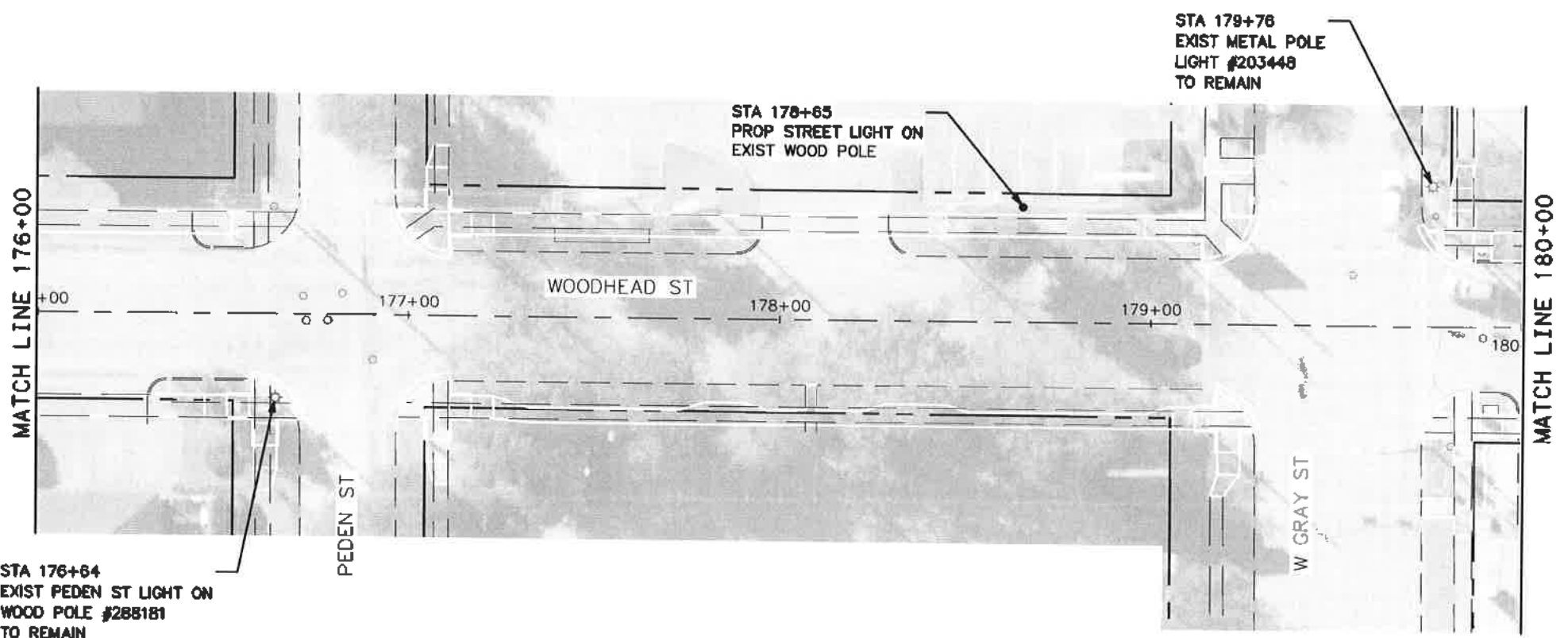
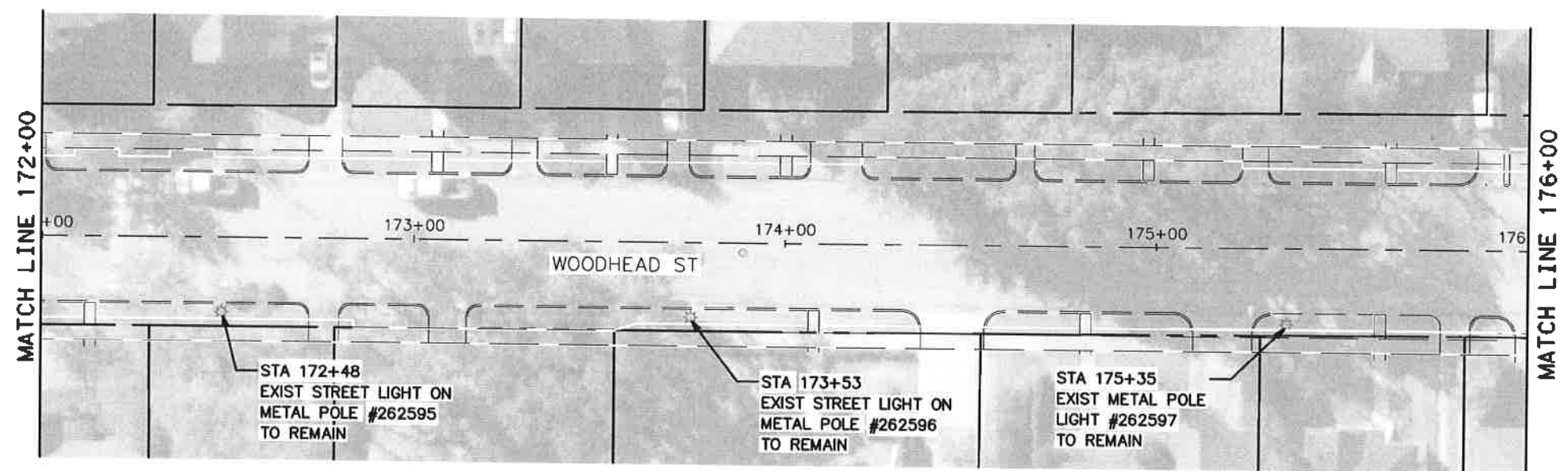


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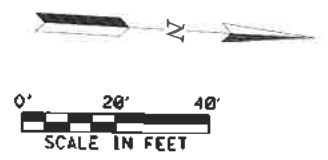
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CITY OF HOUSTON PM		
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- LEGEND**
- ☼ EXIST WOODEN POLE WITH STREET LIGHT
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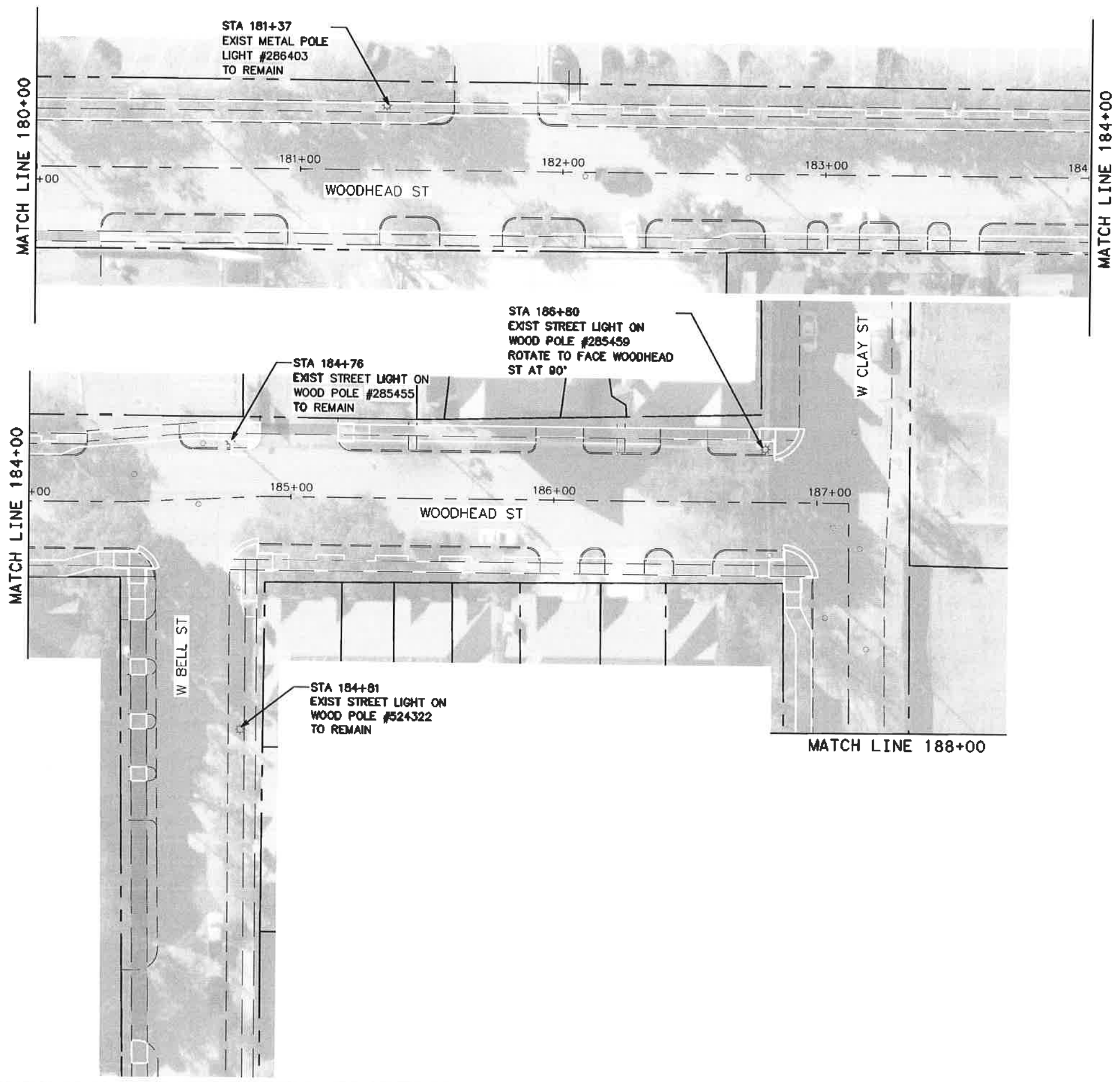
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SURVEYED BY: *Sarah L. Wetmore*

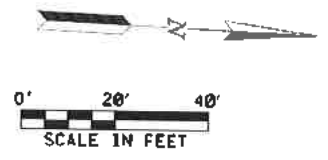
STATE OF TEXAS
 SARAH L. WETMORE
 130442
 LICENSED PROFESSIONAL ENGINEER

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 HOUSTON PUBLIC WORKS
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 NEIGHBORHOOD SAFE STREET
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 WOODHEAD STREET
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 SHEET 10 OF 12

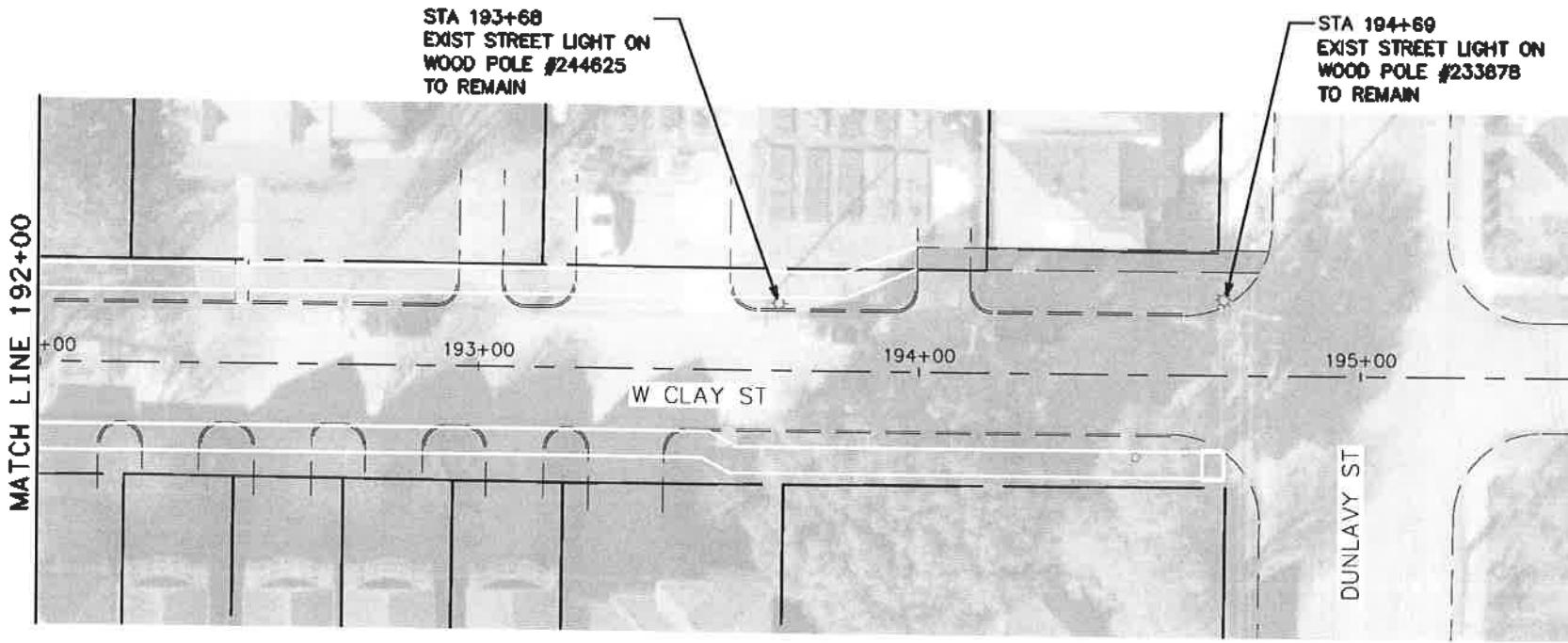
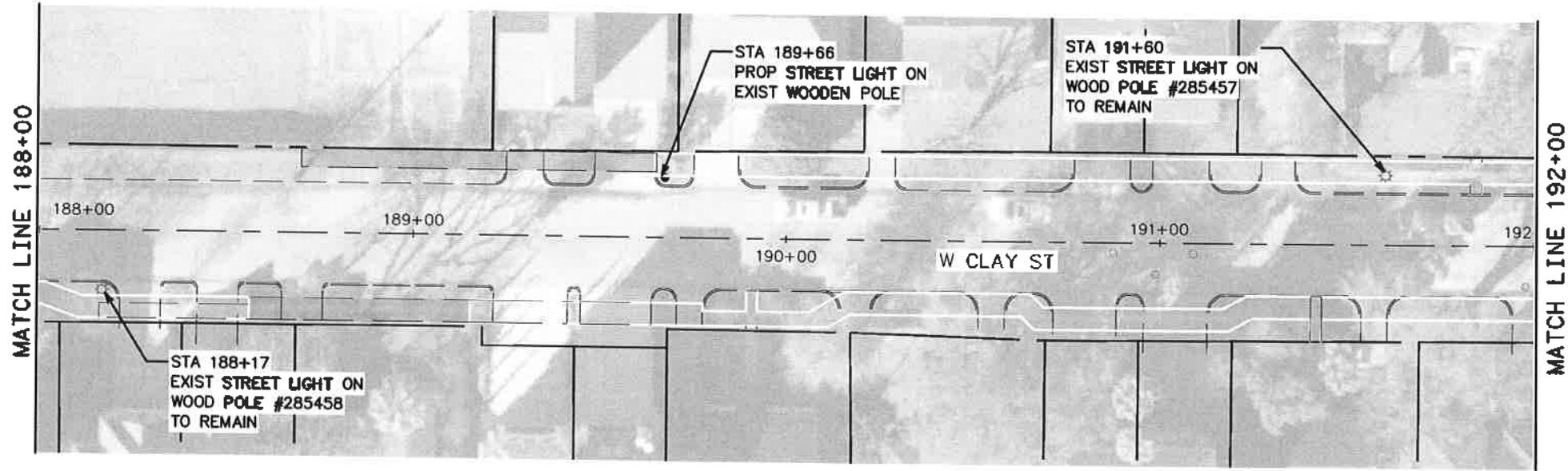
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- LEGEND**
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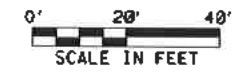


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CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET LIGHTING PLAN SHEET 11 OF 12		
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AS NOTED CITY OF HOUSTON PM SHAIPOOR GOLSHARI SHEET NO. 186 OF 247		



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Sarah L. Wetmore
 11/17/2021

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 LIGHTING PLAN
 SHEETS 12 OF 12**

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N-127000-0002-	72248
AS NOTED	
CITY OF HOUSTON PM	
SHAMPOOR GOLSHAN	
SHEET NO. 187 OF 247	

SPECIFICATION

FOR

INSTALLATION OF CONDUIT SYSTEM FOR THOROUGHFARE STREET LIGHTING

CenterPoint Energy
Distribution Engineering
P.O. Box 1700
Houston, Texas 77251

REFERENCE DRAWINGS:
 004-237-16 Revision 4




REFERENCE STANDARDS:

CenterPoint Energy HOUSTON, TEXAS										
					WRITTEN	9-13-90	N.T. Khanh			
					CHECKED	9-13-90	JCD / RKM			
5	7-25-07	Revised for practical application	KTN	JCD	MMG	APPROVED	9-14-90	Robert Boucher		
4	2-23-99	Added conduit run for high density area	KTN	JCD	LIH					
Sheet 1 of 16										
NO.	DATE	ITEMS REVISED	BY	CH	APP	SPEC ID.		007	371	08

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 <p> Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017 </p>	 <p> SURVEYED BY:  11/15/2021 </p>
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CENTERPOINT CONDUIT SPECIFICATIONS	
SHEET 1 OF 8	
WBS NUMBER N-TZ7000-002	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">72248</div>
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PROJECT	
SUPPORT DLSHW	
SHEET NO. 108 OF 247	

NO.	DATE	REVISION	APP.

NO.	DATE	REVISION	APP.

	1.0	SCOPE				
			This Specification covers CenterPoint Energy (CNP) requirements concerning the installation of pull-boxes and conduits for underground electrical service to street lights. Number, size and direction of conduits to be specified on layout at CNP's discretion. Where there is a conflict between this specification and the CNP project drawing, the drawing will take precedence.			
	2.0	GENERAL				
			The following sub-articles state the general procedures to be followed for coordination of conduit system installation:			
	2.1		For City/County Contractor installed conduit: City/County Street Light Division shall approve proposed street light locations. City/County shall forward proposed locations to CNP. CNP shall design the conduit system and return design to City/County for contracting.			
	2.2		For Metro Contractor installed conduit: Metro shall forward construction drawings to COH Street Light Division for proposed street light locations. COH shall submit their approved locations to CNP. CNP shall design the conduit system and return design to COH. (For conduit to be located in utility or side lot easements, CNP will perform the work in conjunction with street light installation, with reimbursement from Metro).			
	2.3		CNP shall require, and note on drawings, when pull-boxes are required at the beginning and ending of each continuous conduit run, in addition to those areas where pull-boxes are currently required for crossings or distance.			
	2.4		CNP Street Light Engineering shall attend City/County/Metro utility coordinating meeting prior to the start of construction. The proposed conduit installation (as well as potential conflicts with existing CNP facilities) will be reviewed at that time.			
	2.5		In conjunction with the utility coordinating meeting, Contractor, CNP representative, Metro (if applicable) and City/County or other municipal representative shall review proposed light locations in the field.			
	2.6		Contractor will notify CNP Street Light Engineering, at least 2 (two) working days in advance, of Contractor's schedule for conduit installation. CNP Street Light Engineering will perform final inspections with Contractor present when all conduits had been installed.			
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	2.7		Contractor shall attempt to determine if existing underground utilities or any other obstructions would prohibit CNP's installation of proposed new street lights. If such obstructions exist, Contractor may revise the proposed location of the light up to 5 feet in any direction within street right-of-way in order to avoid obstructions. For revised street light locations greater than 5 feet in any direction, Contractor must obtain prior approval as follows:			
			For projects being performed for City/County, Contractor shall notify the City Inspector, who will notify the City/County's Public Works Department. Public Works will review the problem with the City's Street Light Division and CNP for approval of any changes. (In the case of municipalities other than City/County, Contractor shall notify City Inspector who shall notify appropriate Department of City. City shall consult with CNP for approval of any changes)			
			For projects being performed for Metro, Contractor must notify the Metro Inspector, who will in turn contact Metro's Utility Coordination Section. The Utility Coordination Section will review the problem with the COH's Street Light Division (or other municipality if applicable) and CNP for approval of any changes.			
	2.8		For <u>any</u> contractor-proposed changes to CNP's conduit system design, Contractor must obtain prior approval from CNP. Contractor shall first notify City/County or Metro Inspector of requested changes, who will in turn notify City/County Public Works, other municipality or Metro's Utility Coordination Section. City/County Public Works, other municipality or Metro Utility Coordination will review the requested changes with CNP for approval.			
	2.9		For proposed street lights on bridges or elevated roads, Contractor shall design and install foundations that meet the loading requirements of CNP Specification for Galvanized Street Light Standards 007-371-04. For information on pull-boxes and conduit, see Article 8.0.			
	3.0	MATERIAL FURNISHED BY CNP				
			CNP shall only furnish the pull-boxes (see Article 4.0) and the warning tape (see Article 5.0). Pull-boxes will not be furnished for installation on bridges or elevated roads.			
	3.1		The Customer's Contractor shall notify CNP Street Light Engineering when pull-boxes and warning tape are required, seven working days in advance of planned pick-up. Pull-boxes and tape can be obtained Tuesday through Friday, excluding holidays, from the South Houston Complex-Building D, located at 4500 South Shaver, Houston, Texas, 77034.			
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CENTERPOINT CONDUIT SPECIFICATIONS	
SHEET 2 OF 8	
WBS NUMBER N-727000-002-1	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PW	SUNPOOR GULSHAN
SHEET NO. 189 OF 247	

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3.2 After Contractor's notification, CNP will provide Contractor with a work order number for reference when picking up materials at the South Houston Complex-Building D.

4.0 PULL-BOX

The following sub-articles state the general requirements for pull-boxes:

- 4.1 The pull-boxes shall be furnished by CNP and shall be installed by the Customer's Contractor as a part of the conduit system.
- 4.2 Pull-boxes shall be installed in accordance with sheet 9 & 10 of this specification. The conduit layout will specify the type of pull-box to be installed.
- 4.3 At the point of entrance to the pull-box, the conduits shall always have a minimum ground cover as noted on pull-box drawing. Conduit shall run up a maximum of 5 inches into the pull-box. The bends to be used with the pull-box shall have a minimum radius as shown on pull-box drawing.

5.0 WARNING TAPE

- 5.1 Warning tape shall be furnished by CNP and installed by the Customer's Contractor (see sheet 11).
- 5.2 Warning tape shall be installed approximately 12 inches above the street light conduit.

6.0 MATERIAL FURNISHED BY THE CUSTOMER

The Customer or Customer's Contractor shall furnish the conduits (see Article 7.0), the conduits and pull-boxes installed in bridges or elevated roadways (see Article 8.0), the conduit plugs (see Article 9.0), and all other materials not furnished by CNP.

7.0 CONDUIT

The following sub-articles state the general requirements, unless specifically stated otherwise on the layout, for the number, size and installation of the conduit system from the pull-box to the street light or terminal pole.

- 7.1 Conduit shall be PVC Nema Tc2 Schedule 40 or Schedule 80, U.L. label, US trade size, and meet the standards of the National Electrical Code (NEC). Size to be determined by layout.

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- 7.2 A No. 14 Aluminum or Copper wire, and a fiber pulling cord of at least 1200 pounds breaking strength shall be installed in the conduit. Pulling cord shall be installed in such a manner as to provide adequate access and be free to pull without hindrance. Pulling cord shall not be glued or permanently attached to conduit in any manner. The pulling cord and wire shall be viewable from outside the end of conduit run.

- 7.3 The conduit runs shall be made "continuous" with all sections connected from beginning to end, including the conduit crossing the street. Stub-out will be required at all conduit end and street light locations (see drawing #004-237-16).

- 7.4 The conduit shall be placed 3 feet behind curb unless sidewalk is to be installed. Where sidewalks exist, conduit shall be placed up to 6 inches behind the sidewalk (or in grassy area between the curb and the start of sidewalk, where 12 inches or more of grassy area exists) (see sheet 12). Even though sidewalks exist, CNP will install street light approximately 3 feet back of curb. City/County/Metro Contractor shall design a block-out area for the street light installation in concrete area (see sheet 16).

- 7.5 The conduit shall have a minimum cover of 36 inches from final grade except as noted on pull-box and manhole drawing, or where city, county or state regulators require a greater depth, and shall consist of PVC conduit.

- 7.6 For the burial of street light conduits crossing under driveways or sidewalks, schedule 40 PVC or better is required. When crossing under streets, the conduit shall be PVC conduit schedule 80.

- 7.7 For terminal pole source locations specified on the layout, the bend of the conduits at the terminal pole shall be 90 degrees, 24 inch radius bend, schedule 40 PVC conduit. This bend shall be brought to the face of the pole and stubbed out approximately 12 inches above the final grade (see sheet 14).

- 7.8 For pad mounted transformer source locations specified on the layout, conduit shall be brought to within 1 foot of transformer pad, opposite the small notch "V" on the pad, stubbed out approximately 12 inches above the final grade.

- 7.9 For secondary pedestal source locations specified on the layout, conduit shall be brought to within 1 foot of pedestal and stubbed out approximately 12 inches above the final grade.

- 7.10 For manhole source location, the conduit shall enter the manhole a minimum of 12 inches from the inside ceiling or as specified on the layout. A ductbell terminator will be installed in the manhole wall for conduit termination. CNP shall be notified 48 hours prior to the actual coring of the manhole wall so that CNP can verify the location in each manhole to be penetrated. CNP will stand-by only during the actual coring. The contractor shall do the coring and installation of the ductbell terminator. The contractor shall seal around the ductbell terminator with packaged, dry, rapid hardening cementitious material conforming to ASTM C928-80 specifications, to ensure a water

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CITY OF HOUSTON HOUSTON PUBLIC WORKS	
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CENTERPOINT CONDUIT SPECIFICATIONS	
SHEET 3 OF 8	
NBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE AS NOTED	7 2 2 4 8
CITY OF HOUSTON PM SAPOOR OULSHAY	
SHEET NO. 190 OF 247	

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8.0 CONDUIT INSTALLED IN BRIDGE OR ELEVATED ROADWAY

Customer or Customer's Contractor shall be responsible for designing, furnishing and installing the conduits and pull-boxes. The pull-boxes should be located to provide CNP personnel safe and reasonable access, without using ladders or other special equipment, for cable installation, inspection and maintenance. Where there are junction-boxes in addition to the pull-boxes, reasonable access shall also be provided.

- 8.1 The conduit shall be at least 2 inches, in diameter and meet all requirements of the latest National Electrical Code (NEC) and National Electrical Safety Code (NESC).
- 8.2 The conduits shall run to each street light location. The conduits shall be arranged to allow the source conductor to be pulled in and out of each street light location or Contractor shall provide junction-boxes on main conduit run at each street light location and run tap conduit to the street light location (see sheet 15 for examples of conduit runs).
- 8.3 A #14 Aluminium or Copper wire, and a fiber pulling cord of at least 1200 pound breaking strength shall be installed in the conduit.

A toning wire and pulling cord shall be installed in such a manner as to provide adequate access and be free to pull without hindrance. Pulling cord shall not be glued or permanently attached to conduit in any manner. The wire and pulling cord shall be attached and viewable outside the end of conduit run.
- 8.4 The pull-boxes used to pull the main circuit cable through the conduit system shall have a minimum opening of 15" x 15" x 12".
- 8.5 Junction boxes used as tap location shall meet all requirements of the latest NEC.

9.0 CONDUIT PLUGS

Plugs shall be installed on all conduit terminator points at the time the conduits are installed, to prevent blockage, until the cable is installed.

10.0 LIABILITY



- 10.1 Upon completion of the conduit installation, the Customer (or Customer's Contractor) shall forward to CNP Street Light Engineering notification in writing from a City or County Inspector that the installation meets CNP Specifications. In addition, Customer shall provide CNP with as-built drawings (showing conduits, pull-box, blockout, etc.).

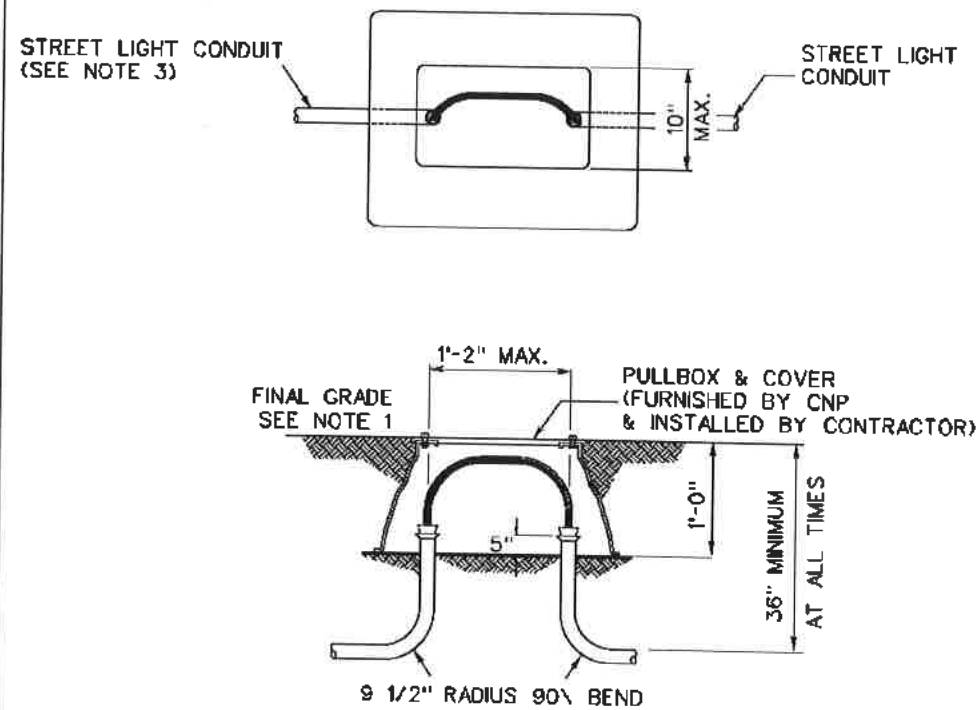
REV. NO. #5	SPEC. ID.	007	371	08	Sheet 7 of 16
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- 10.2 The Customer shall be responsible for either: (1) correcting any violations of said Specifications and clearing any blockage or repairing any breaks within the street light conduits prior to street lights and circuit installation by CNP, or (2) reimbursing CNP for correcting violation.
- 10.3 Upon installation of street lights, with the exception of street lights on bridges or elevated roadways, CNP shall furnish, install, own, and at all times have complete control over said street light service conduit system and shall be responsible for the location and maintenance thereof. Maintenance of conduit systems on bridges or elevated roadways will be the Customer's responsibility.

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CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS CENTERPOINT CONDUIT SPECIFICATIONS SHEET 4 OF 8			
WBS NUMBER		FOR CITY OF HOUSTON USE ONLY	
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DRAWING SCALE		AS NOTED	
CITY OF HOUSTON		SHP00R 60LS0M	
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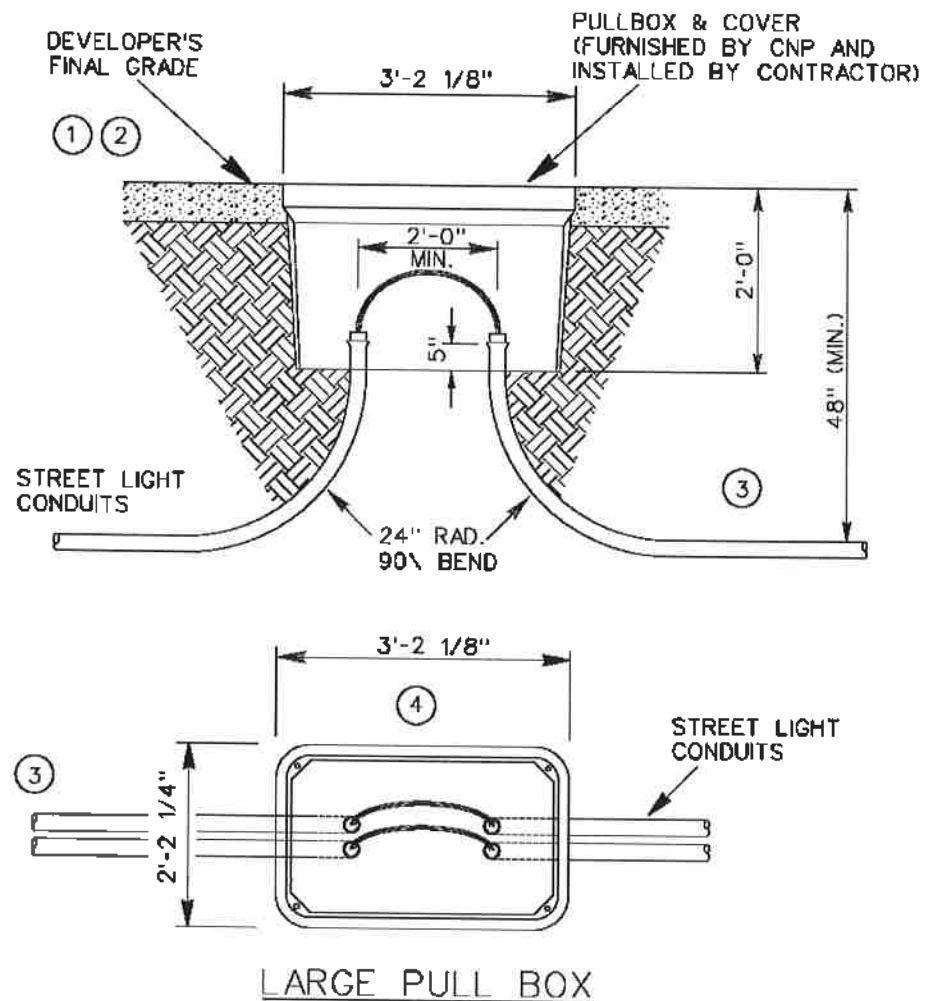


SMALL PULL BOX

NOTES:

- ① GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERED DEVELOPER'S FINAL GRADE.
- ② THE SMALL CONCRETE PULL-BOX CAN BE INSTALLED IN DRIVEWAYS AND PARKING LOTS BUT NOT IN STREET.
- ③ THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED ON CNP CONDUIT LAYOUT.

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LARGE PULL BOX

- ① GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERED DEVELOPER'S FINAL GRADE.
- ② WHEN INSTALLING PULL BOXES IN INCIDENTAL TRAFFIC LOADING AREA, DEVELOPER'S FINAL GRADE REFERS TO THE SURFACE OF THE PAVEMENT.
- ③ THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED ON CNP CONDUIT LAYOUT.
- ④ THIS PULL-BOX CAN BE INSTALLED IN DRIVEWAYS AND PARKING LOTS BUT NOT IN STREET.

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 125611
 LICENSED PROFESSIONAL ENGINEER
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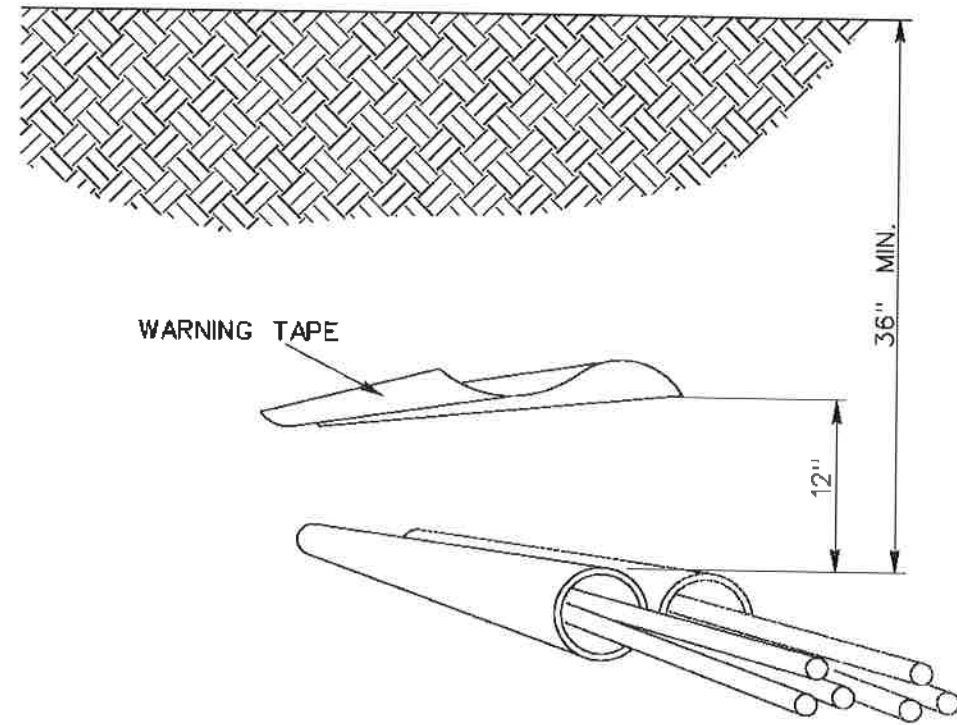
CITY OF HOUSTON
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 CENTERPOINT CONDUIT
 SPECIFICATIONS

SHEET 5 OF 8
 FOR CITY OF HOUSTON USE ONLY

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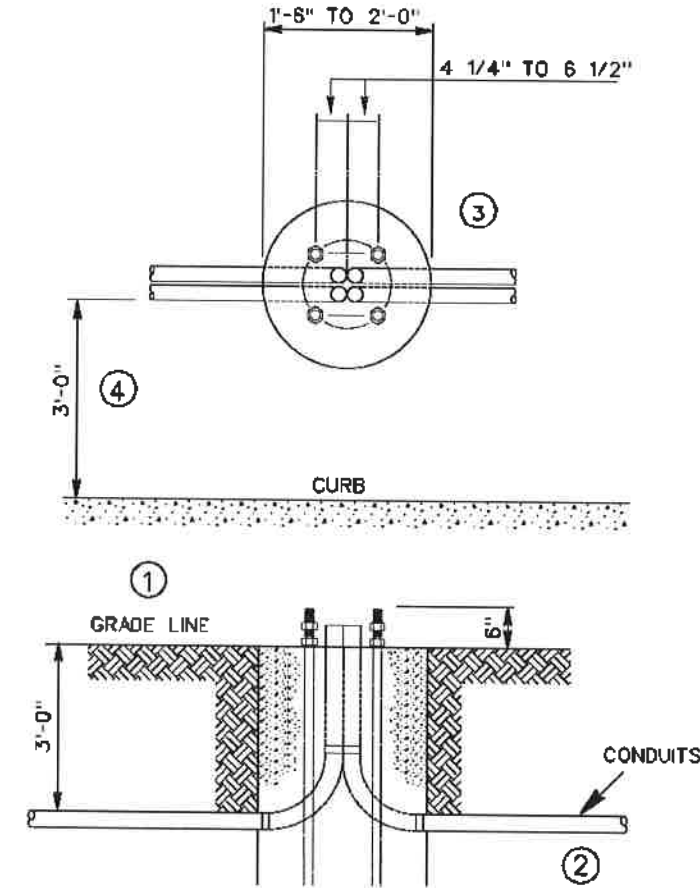
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TYPICAL STREET LIGHT CONDUIT LAYOUT

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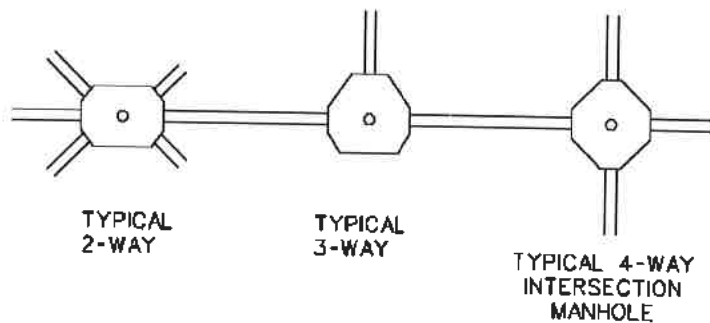
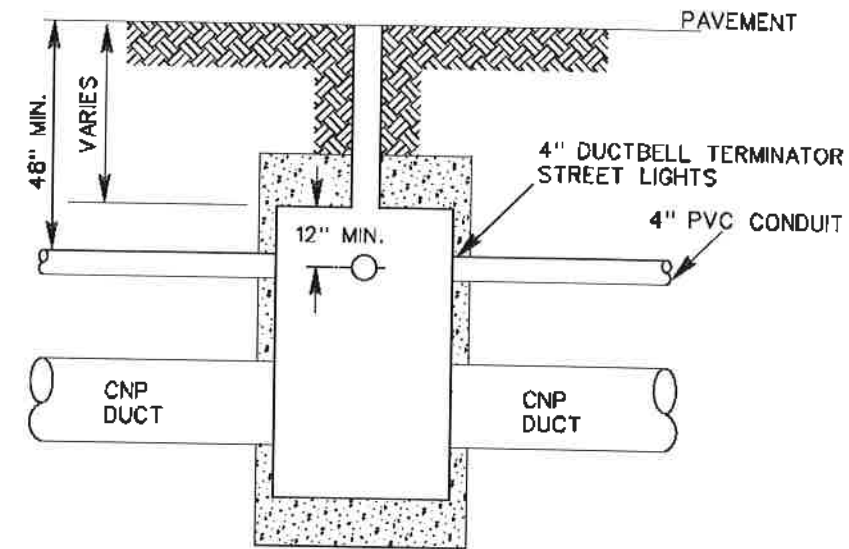
MULTIPLE CONDUIT RUN IN STREET LIGHT FOUNDATION

- ① GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERED DEVELOPER'S FINAL GRADE.
- ② THE QUANTITY, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED BY ENGINEERING DEPARTMENT.
- ③ SEE ACCOMPANYING CNP STANDARDS FOUNDATION FOR ACTUAL SIZE AND ANCHOR BOLT POSITION.
- ④ CNP STANDARD LOCATION OF STREET LIGHT IS 3' BEHIND THE 6" CURB, UNLESS SPECIFIED DIFFERENTLY BY CITY / COUNTY / METRO.

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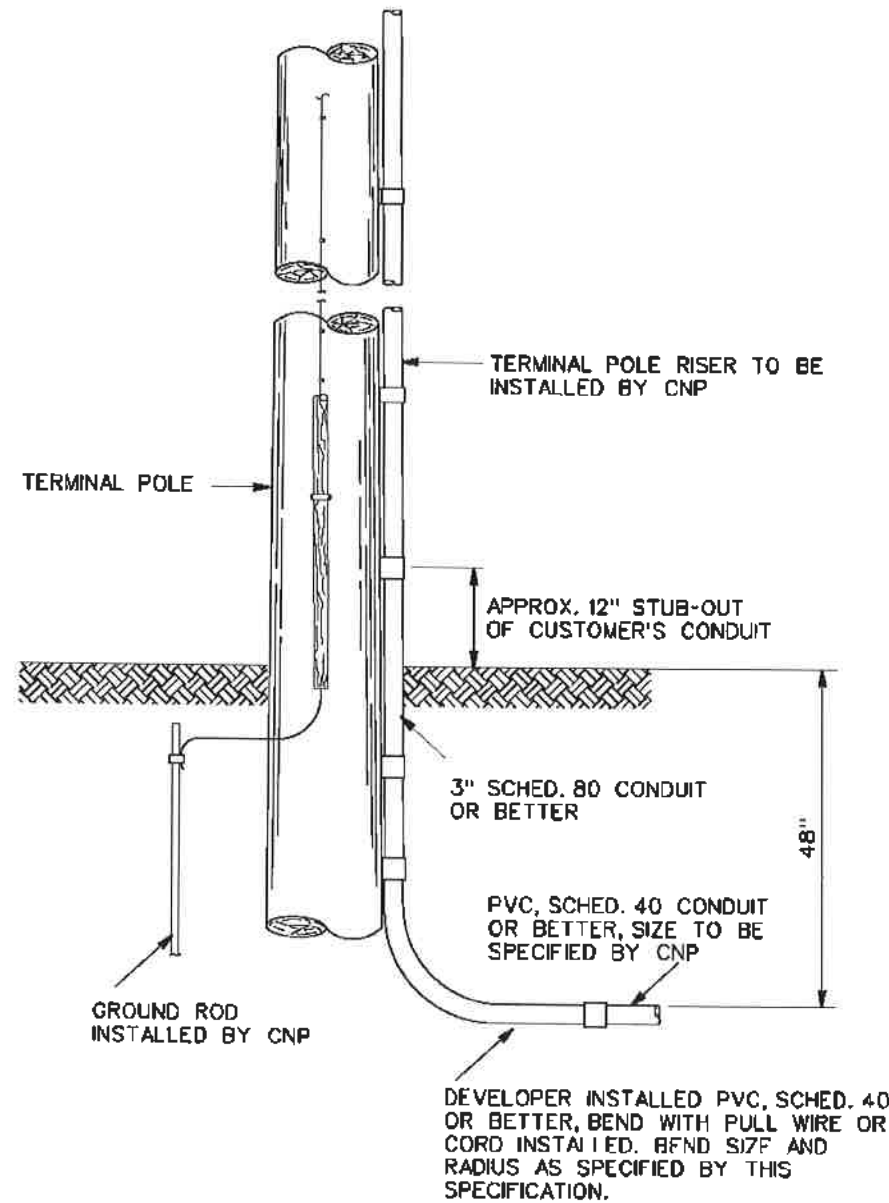
NO.	DATE	REVISION	APP.



STREET LIGHT CONDUIT RUN FROM MANHOLE

- ① CONDUITS SHALL TYPICALLY ENTER THE MANHOLE THROUGH THE SHORT WALLS. CNP MUST APPROVE ENTRY THROUGH OTHER WALLS.
- ② THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED BY ENGINEERING DEPARTMENT.
- ③ CNP TO BE NOTIFIED 48 HOURS PRIOR TO THE ACTUAL CORING TO THE MANHOLE WALL.

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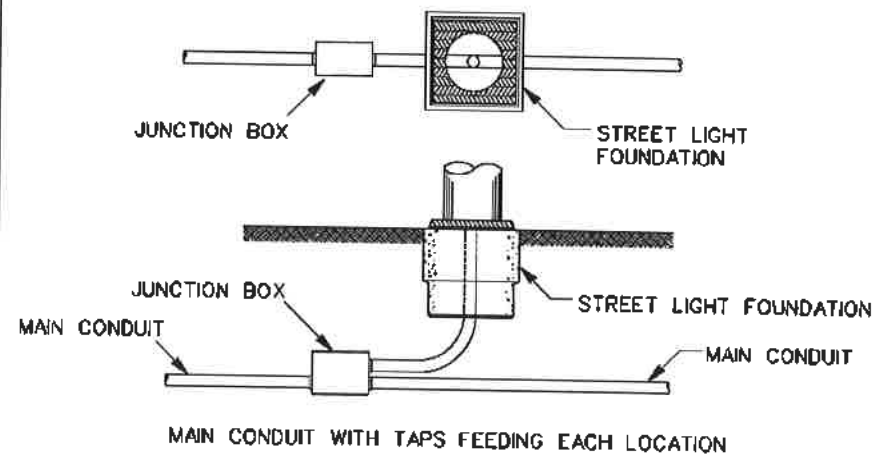
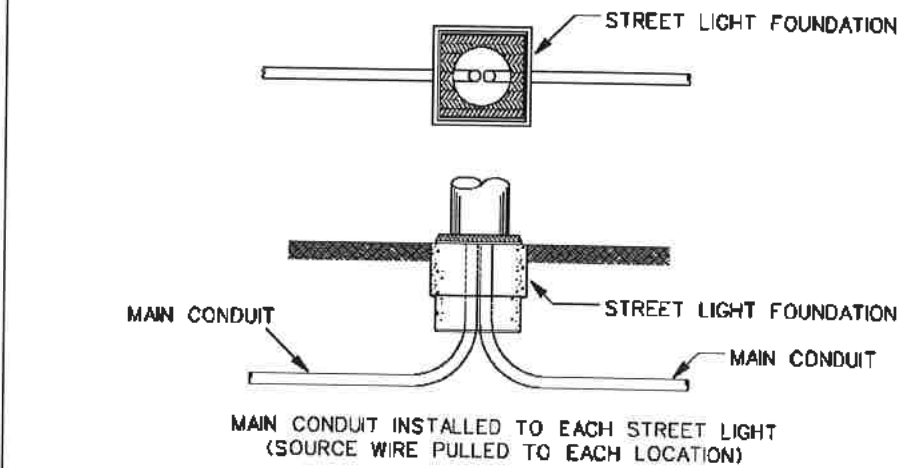
TYPICAL TERMINAL POLE LAYOUT

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WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
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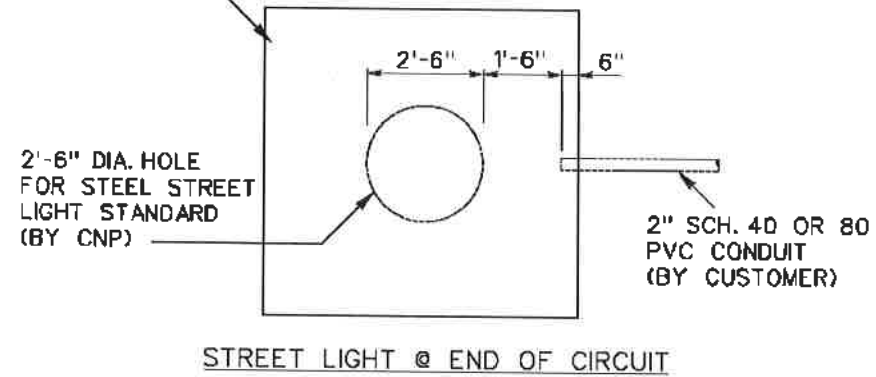


NOTE:
 ALL MATERIAL INSTALLED IN BRIDGE OR
 ELEVATED ROADWAY CONSTRUCTION SHALL
 BE FURNISHED BY CUSTOMER.

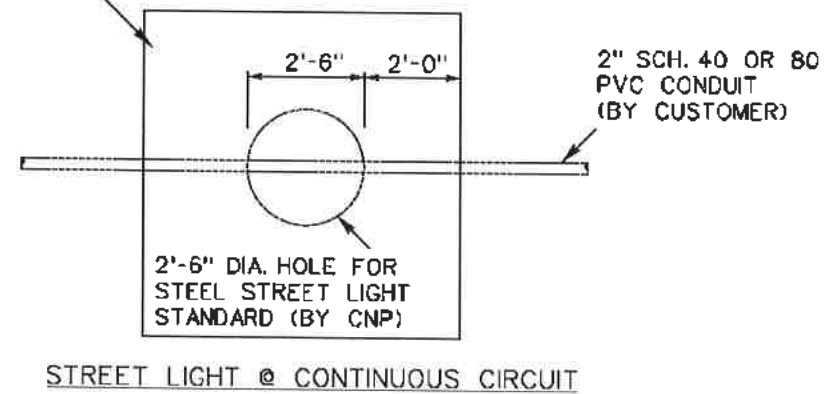
CONDUIT INSTALLED IN BRIDGE
 OR ELEVATED ROADWAY

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6'-6" X 6'-6" CONCRETE BLOCK-OUT
 REQUIRED FOR STREET LIGHT INSTALLATION
 (BLOCK-OUT TO BE CENTERED ON PROPOSED
 STREET LIGHT LOCATION (BY CUSTOMER).



6'-6" X 6'-6" CONCRETE BLOCK-OUT
 REQUIRED FOR STREET LIGHT INSTALLATION
 (BLOCK-OUT TO BE CENTERED ON PROPOSED
 STREET LIGHT LOCATION (BY CUSTOMER).



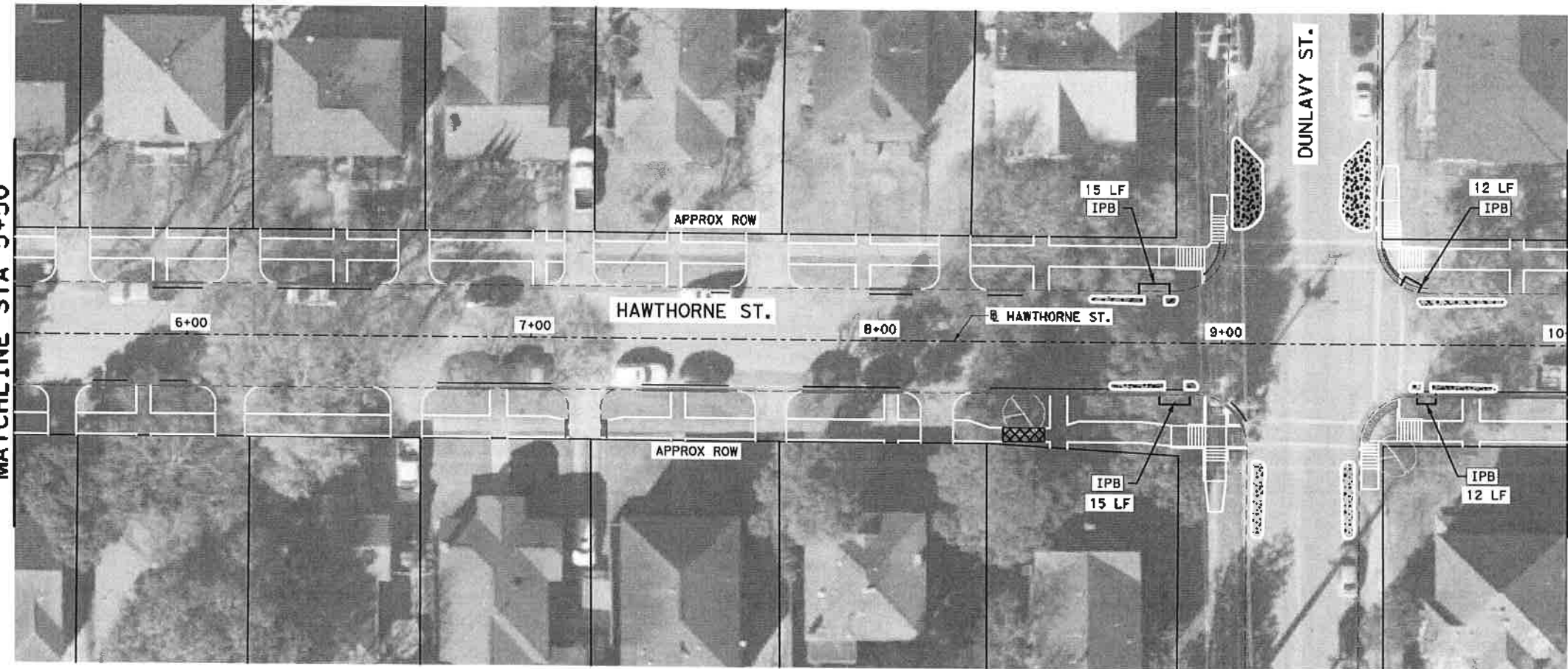
BLOCK-OUT DETAIL FOR STREET LIGHTS
 LOCATED IN CONCRETE AREAS

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SHEET 8 OF 8	
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DRAWING SCALE AS NOTED	CITY OF HOUSTON PM SHAPOR BOLSHAN
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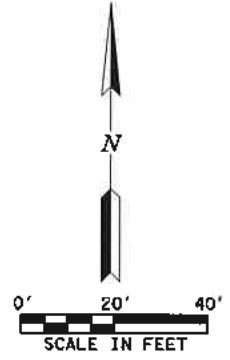
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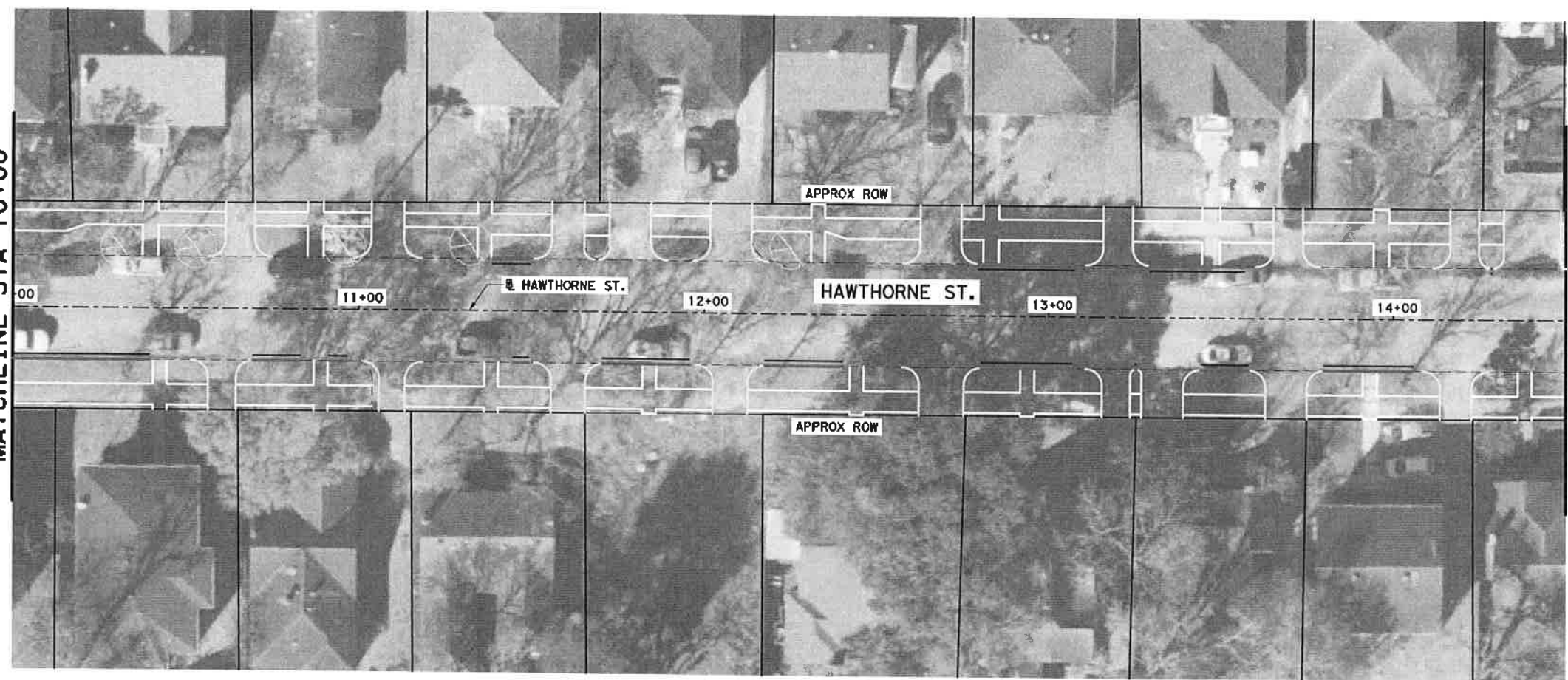


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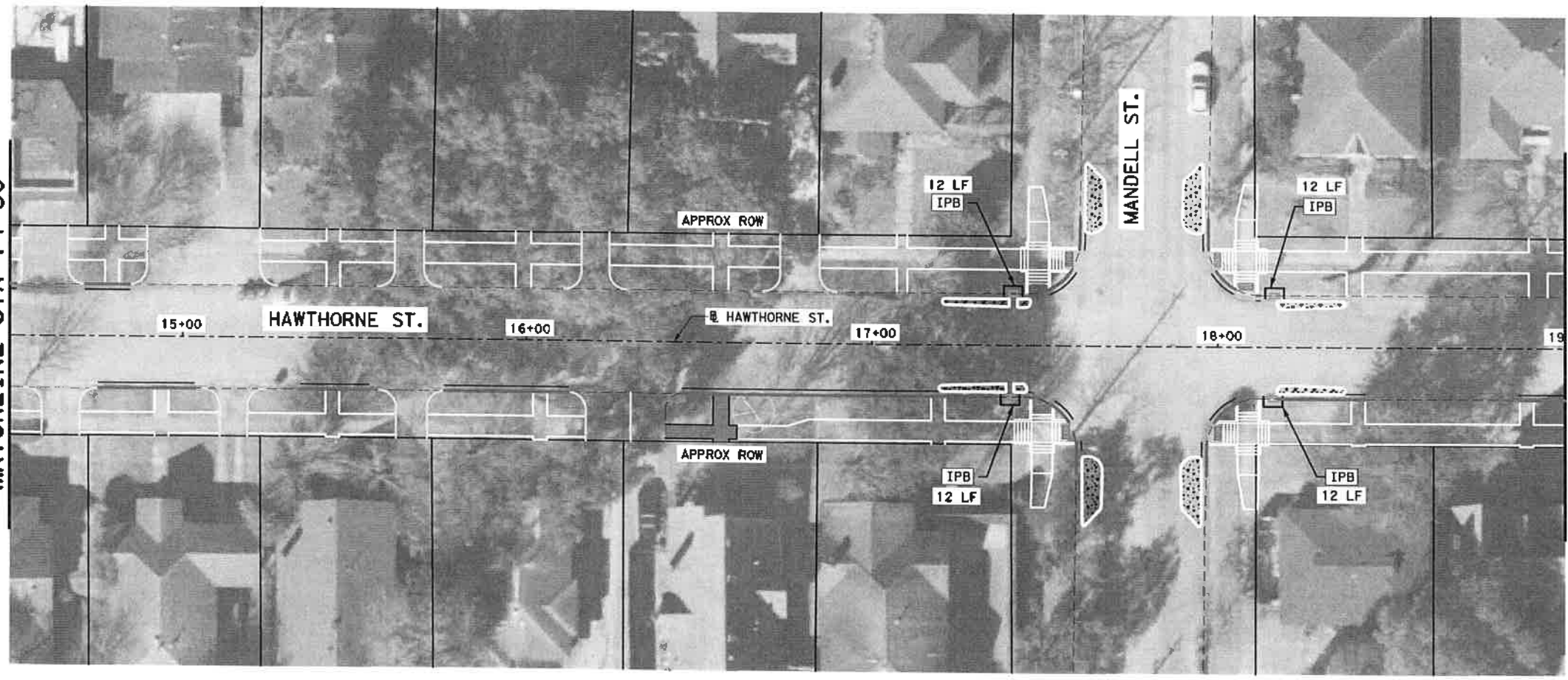
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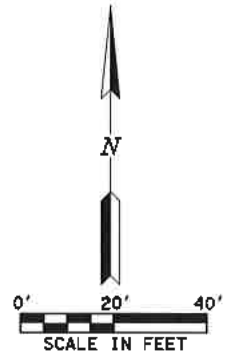
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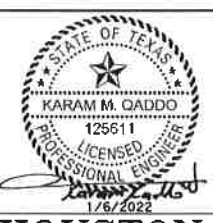
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 IMPROVEMENTS

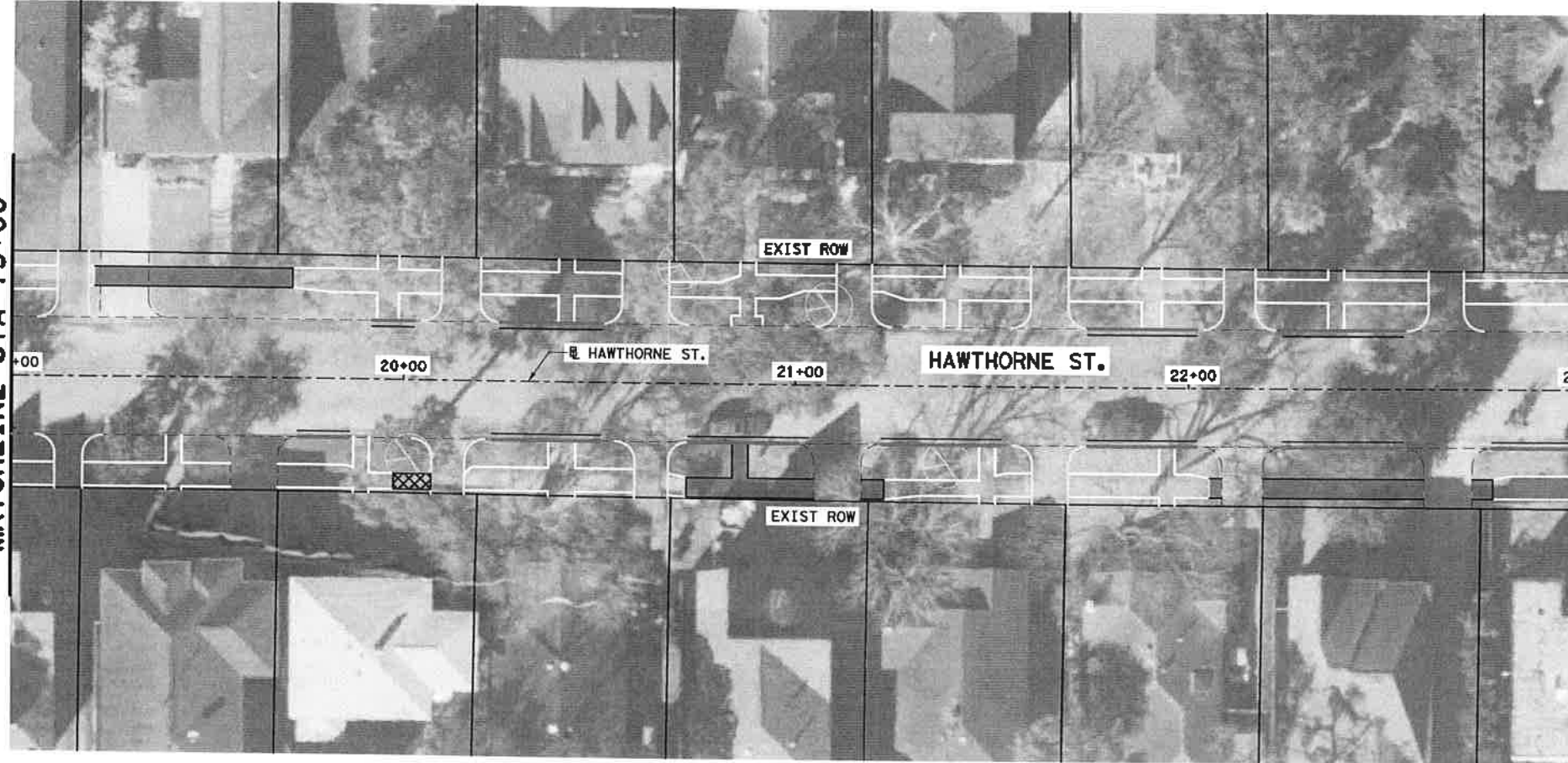
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 STA 10+00 TO STA 19+00

SHEET 2 OF 10

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SHEET NO. 197 OF 241	

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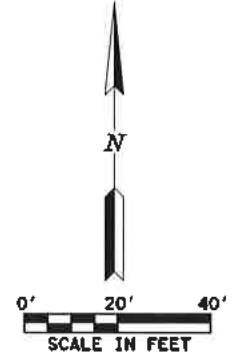
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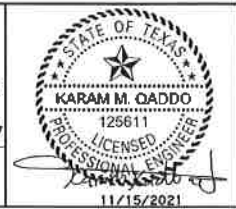
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 Texas PE Firm Reg. #F-20017



SURVEYED BY:

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS**

**HAWTHORNE STREET SWPPP PLAN
 STA 19+00 TO STA 23+00**

SHEET 3 OF 10

WBS NUMBER

N-127000-002-T

DRAWING SCALE

AS NOTED

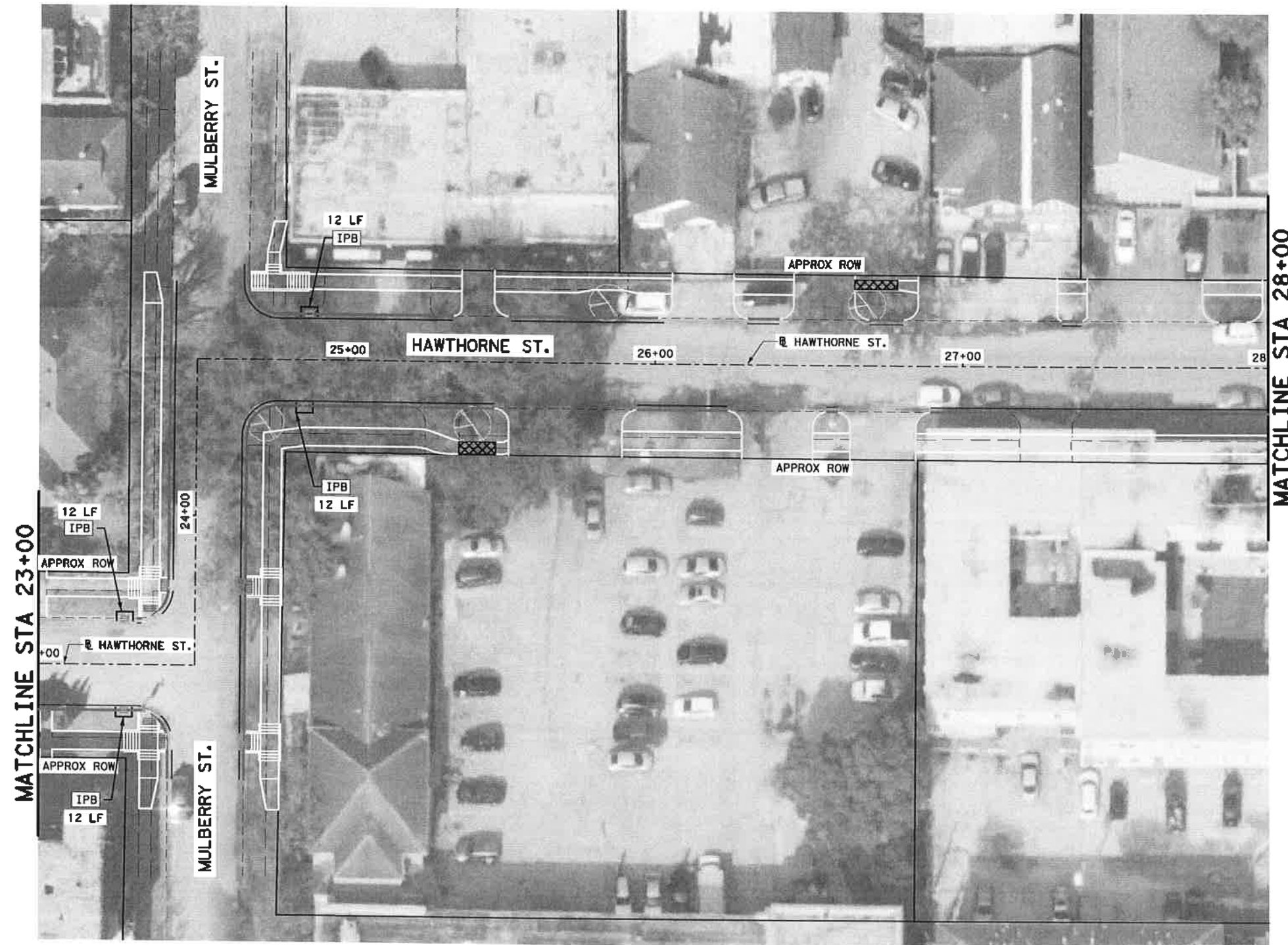
CITY OF HOUSTON PM

SHAPOUR GOLSHAN

SHEET NO. 198 OF 247

FOR CITY OF HOUSTON USE ONLY

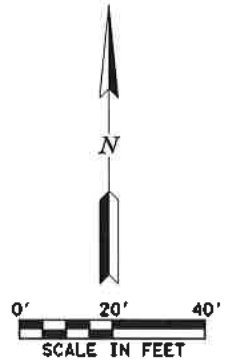
72248



LEGEND

IPB INLET PROTECTION BARRIER

NO.	DATE	REVISION	APP.



Gauge
 ENGINEERING
 3200 Wilcrest Drive, Suite 220
 Houston, TX 77042
 www.GaugeEngineering.com
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CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS**

**HAWTHORNE STREET SWPPP PLAN
 STA 23+00 TO STA 28+00**

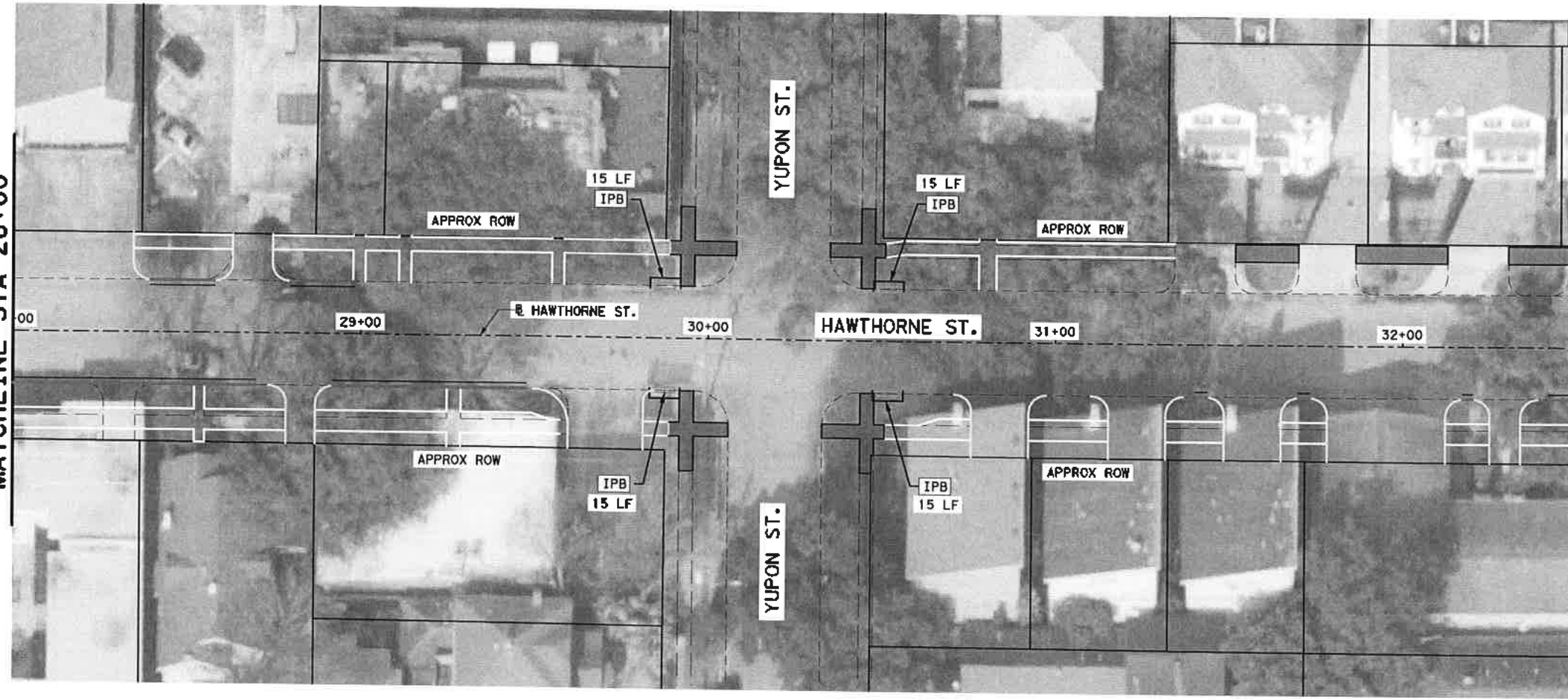
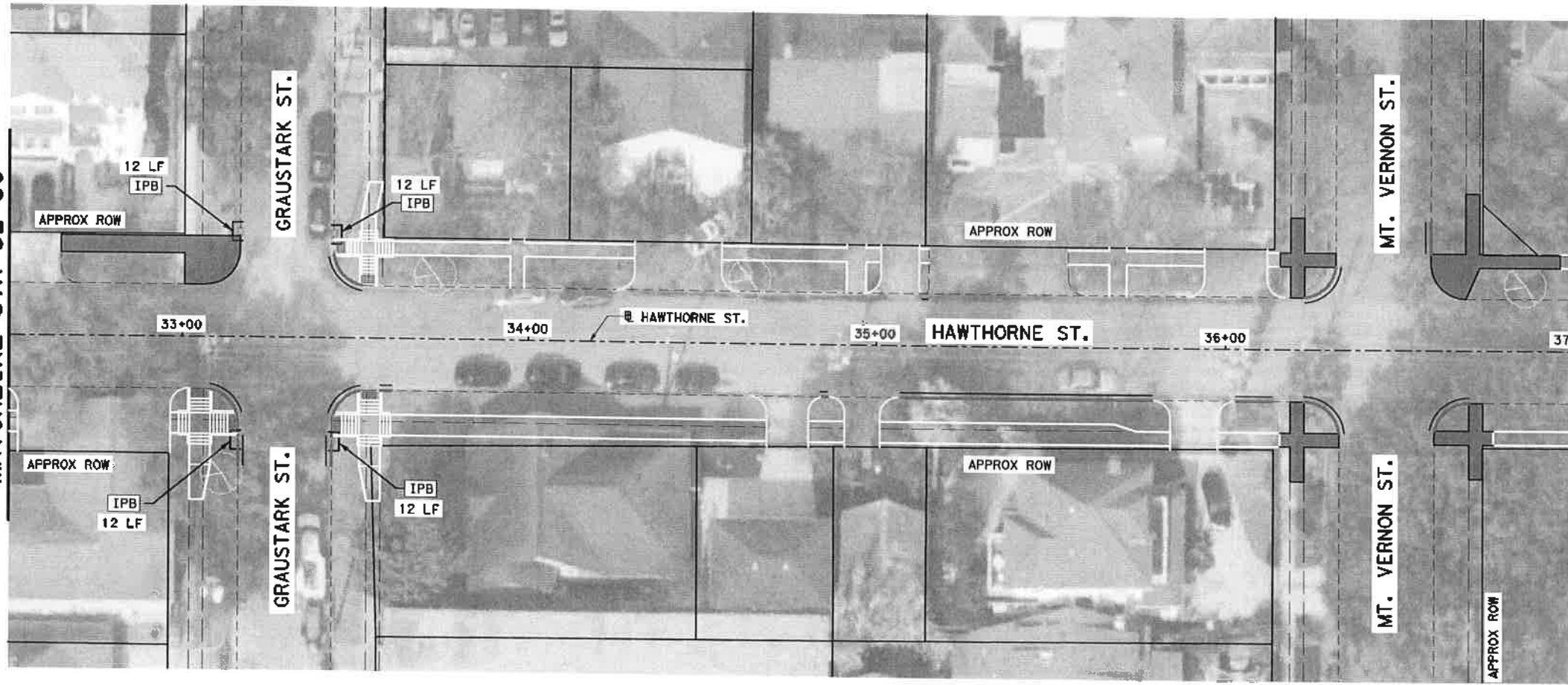
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CITY OF HOUSTON PM	SHAPOR GOLSMAN
SHEET NO.	199 OF 247

72248

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MATCHLINE STA 32+50

MATCHLINE STA 28+00



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Houston, TX 77042
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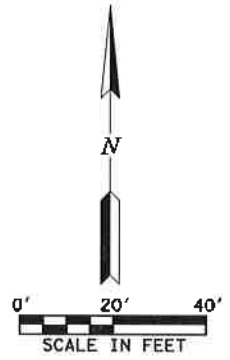
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11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS**

HAWTHORNE STREET SWPPP PLAN
STA 28+00 TO STA 37+00

FOR CITY OF HOUSTON USE ONLY
SHEET NO. 200 OF 247



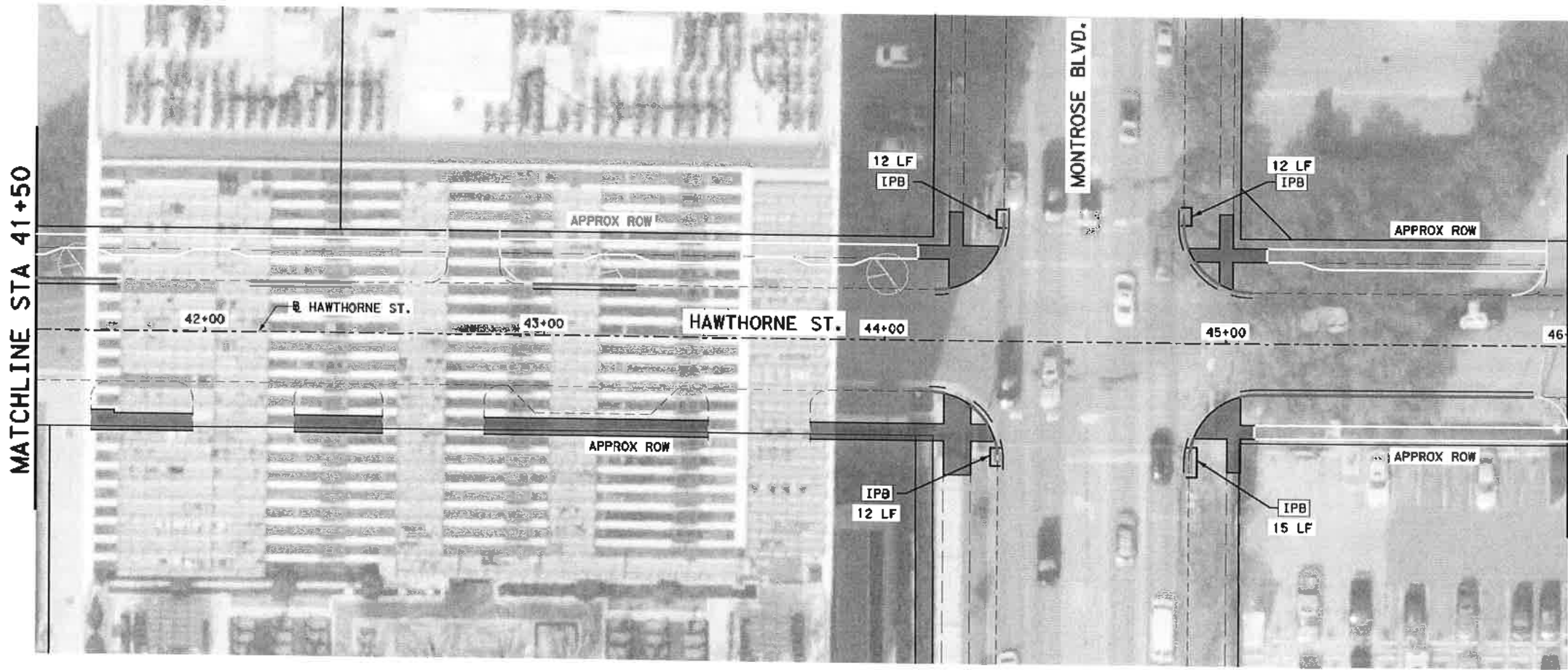
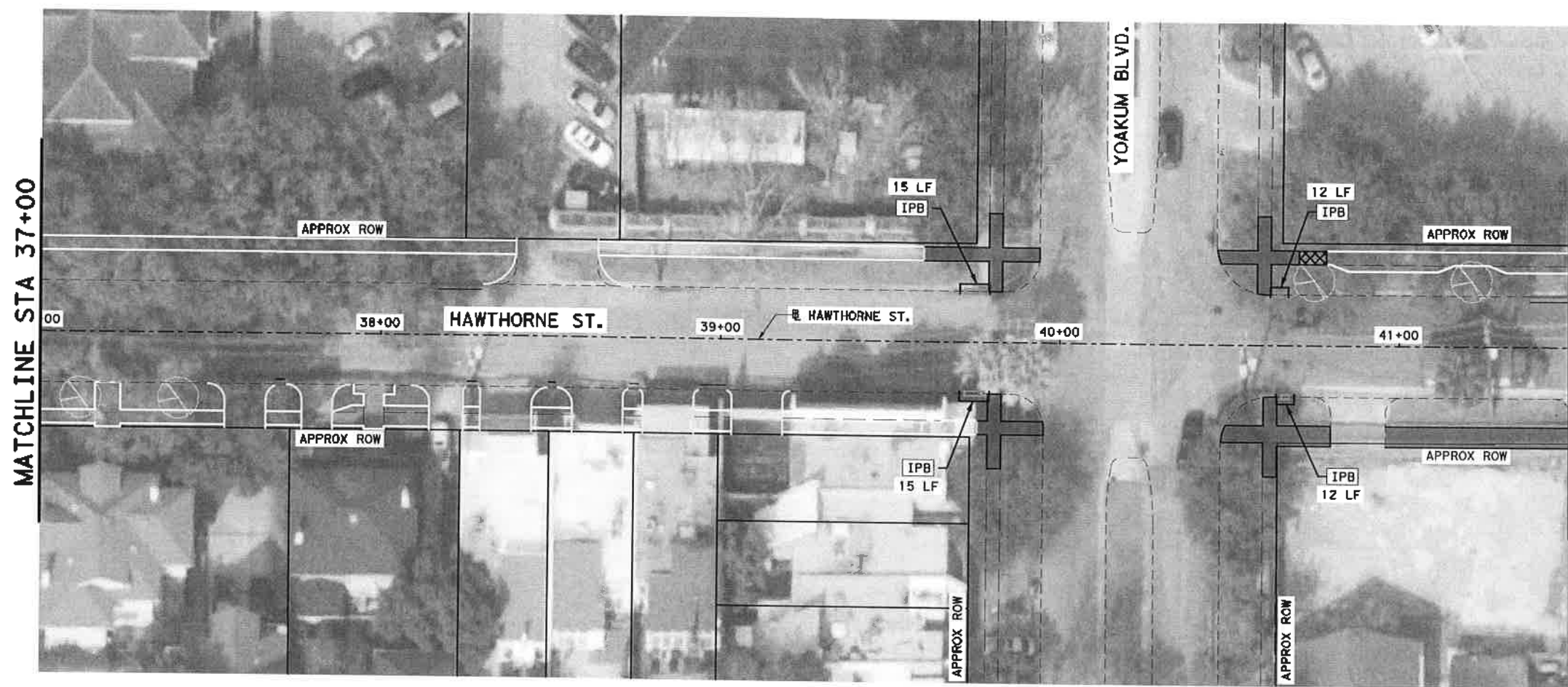
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IPB INLET PROTECTION BARRIER

NO.	DATE	REVISION	APP.

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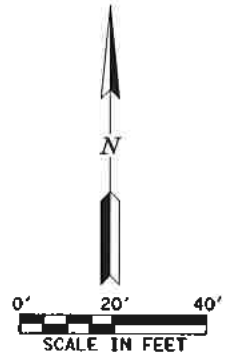
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LEGEND

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NO.	DATE	REVISION	APP.

Gauge
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 3200 Wilcrest Drive, Suite 220
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STATE OF TEXAS
 KARAM M. QADDO
 125611
 LICENSED PROFESSIONAL ENGINEER
 11/15/2021

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HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS

HAWTHORNE STREET SWPPP PLAN
 STA 37+00 TO STA 46+00

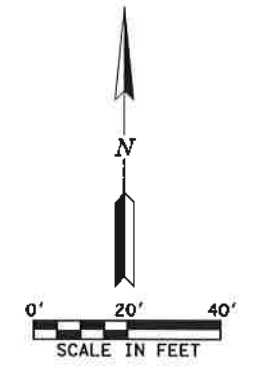
SHEET 6 OF 10

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N-127000-000	72248
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AS NOTED	
CITY OF HOUSTON	
SHAPOOR GOLSHAN	
SHEET NO. 201 OF 24	

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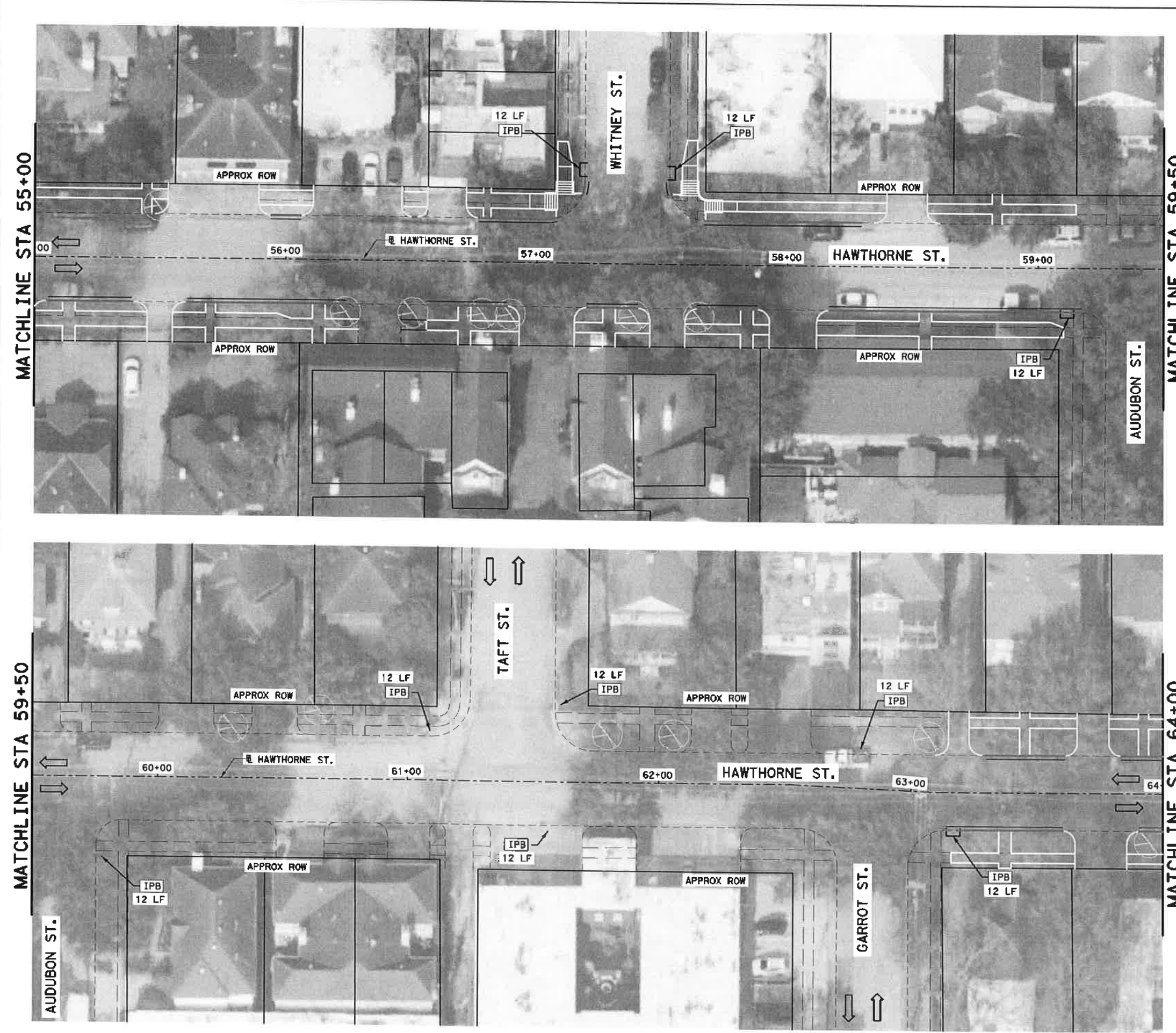
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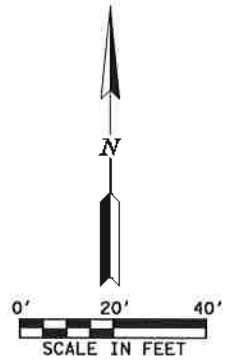
NO.	DATE	REVISION	APP.

Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
HAWTHORNE STREET SWPPP PLAN STA 46+00 TO STA 55+00	
SHEET 7 OF 10	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8
DRAWING SCALE AS NOTED	
CITY OF HOUSTON PM SNAPOOR BOLSHAN	
SHEET NO. 202 OF 247	

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LEGEND
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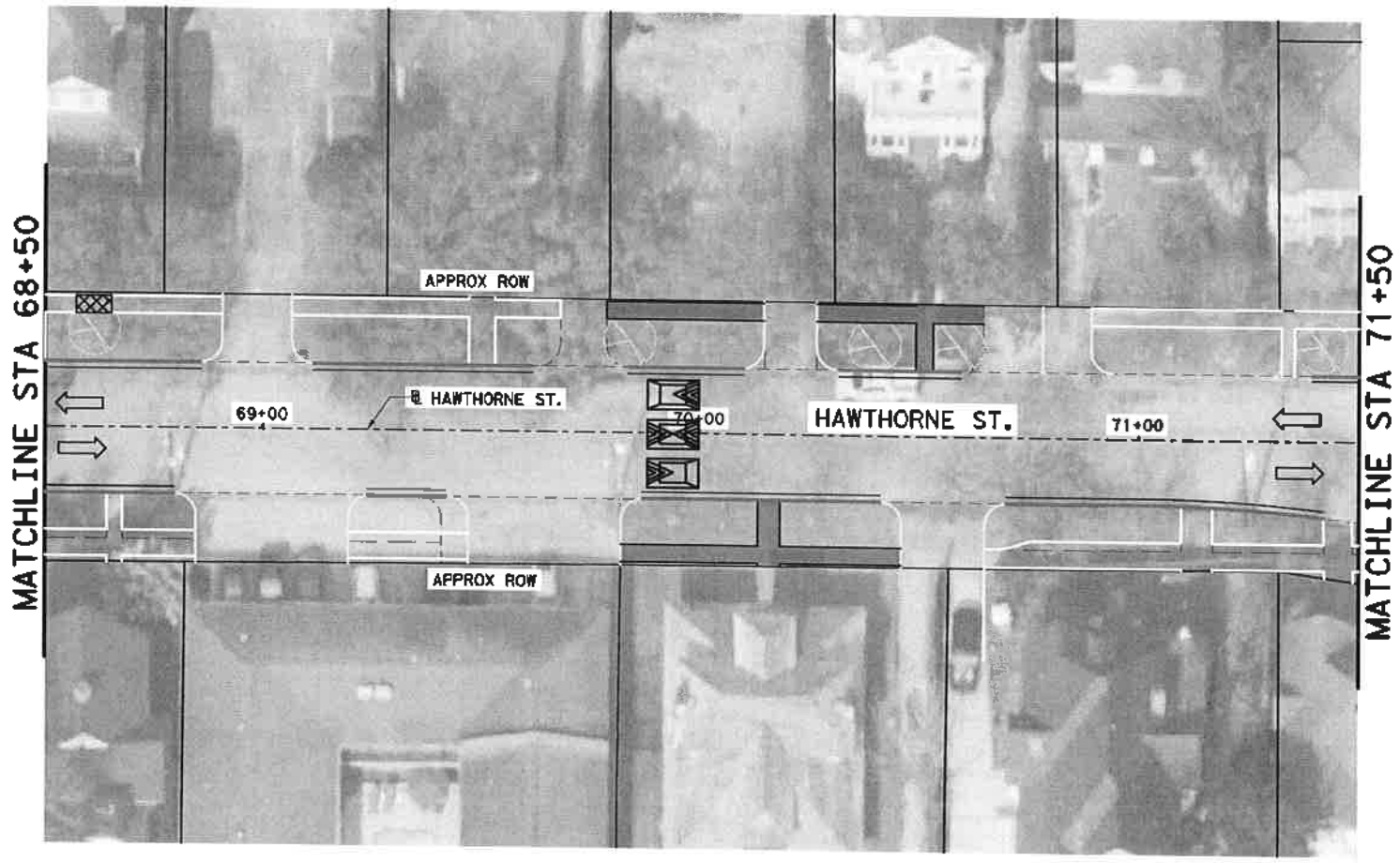
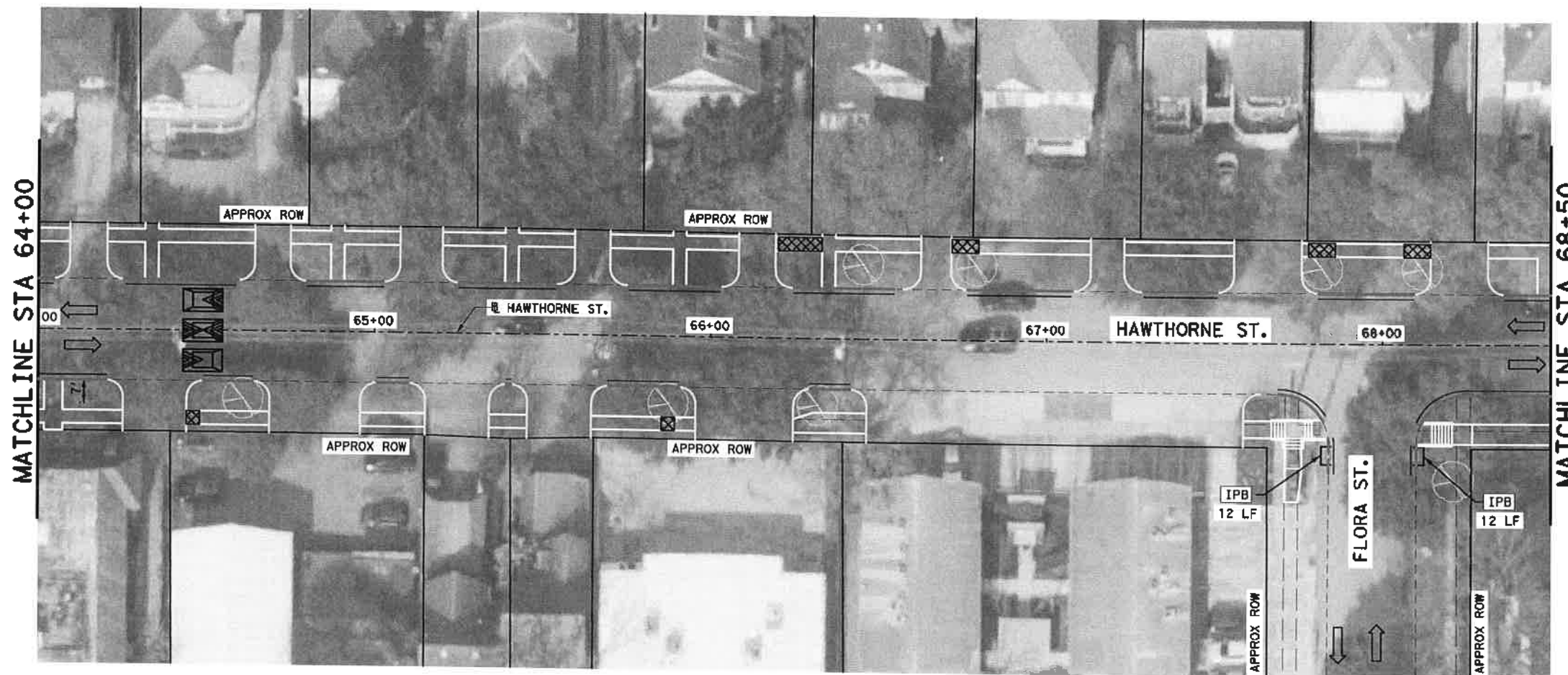


NO.	DATE	REVISION	APP.

 ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS	
HAWTHORNE STREET SWPPP PLAN STA 55+00 TO STA 64+00 SHEET 8 OF 10	
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SHEET NO. 203 OF 247	

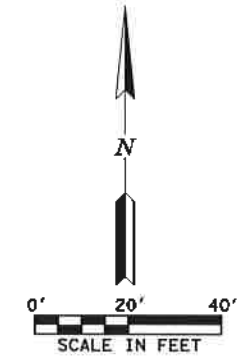
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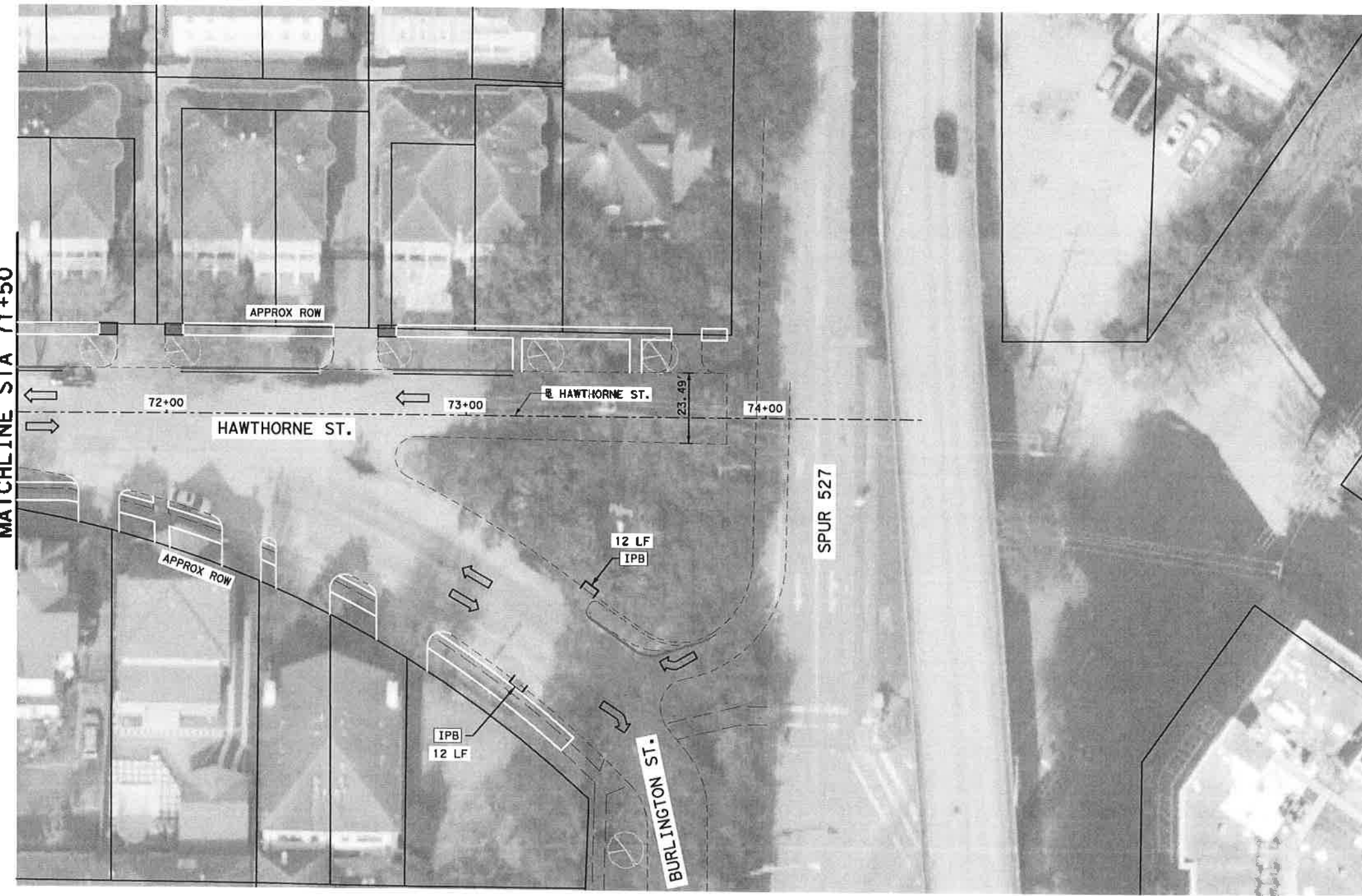
NO.	DATE	REVISION	APP.

 Gauge ENGINEERING 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS HAWTHORNE STREET SWPPP PLAN STA 64+00 TO STA 71+50 SHEET 9 OF 10	
WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY 72248
DRAWING SCALE AS NOTED	CITY OF HOUSTON PM SHAIPOOR GOLSHAN
SHEET NO. 204 OF 247	

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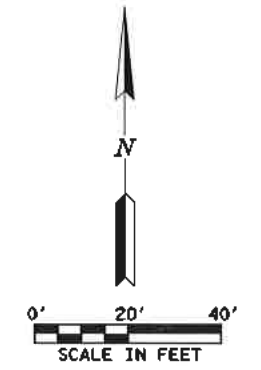
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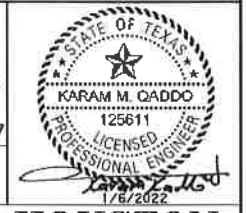
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NO.	DATE	REVISION	APP.



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SURVEYED BY:

CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

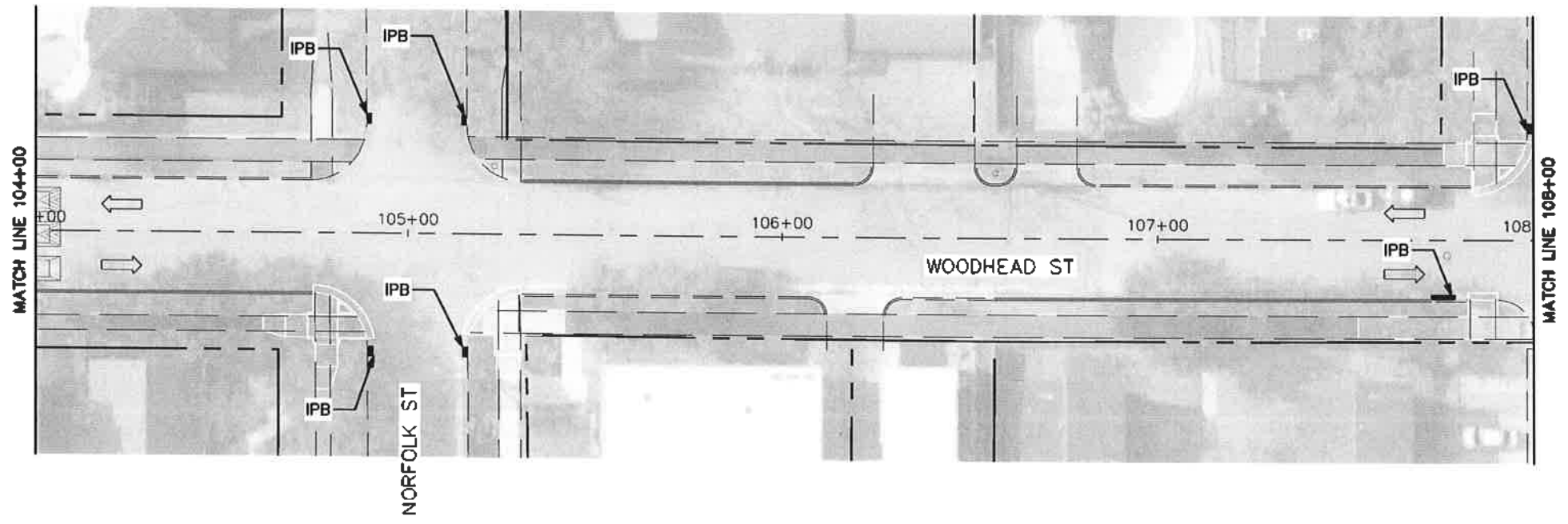
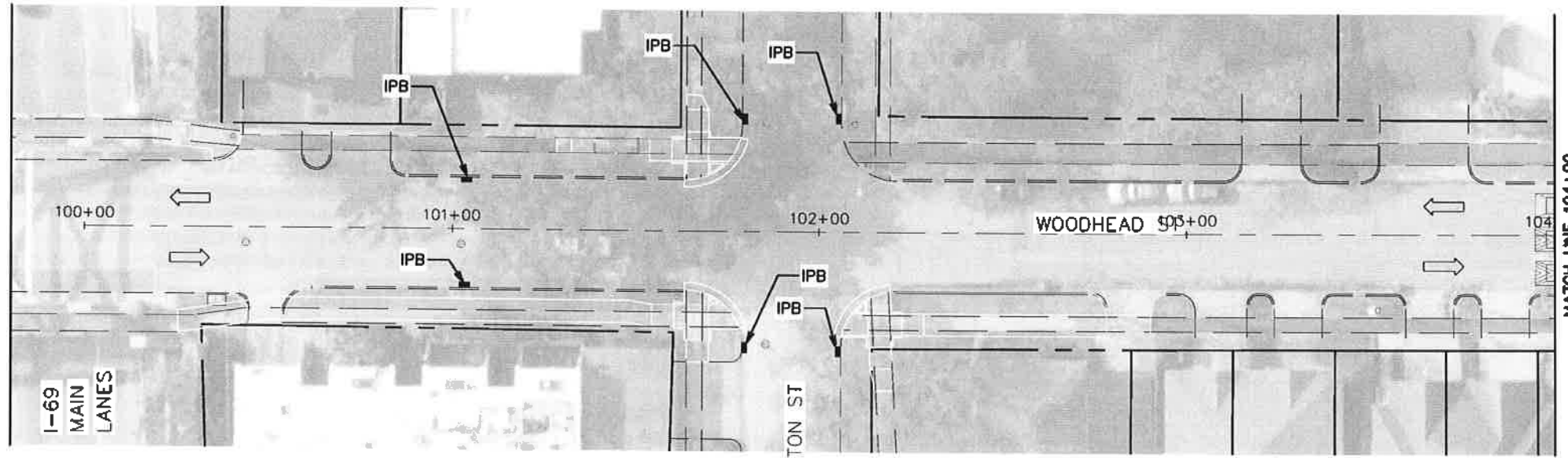
**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS**

**HAWTHORNE STREET SWPPP PLAN
 STA 71+50 TO END PROJECT**

SHEET 10 OF 10

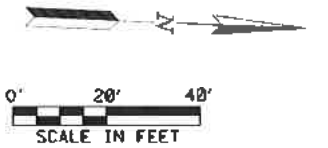
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SHAPOOR BOLSHAN	
SHEET NO. 205	OF 247

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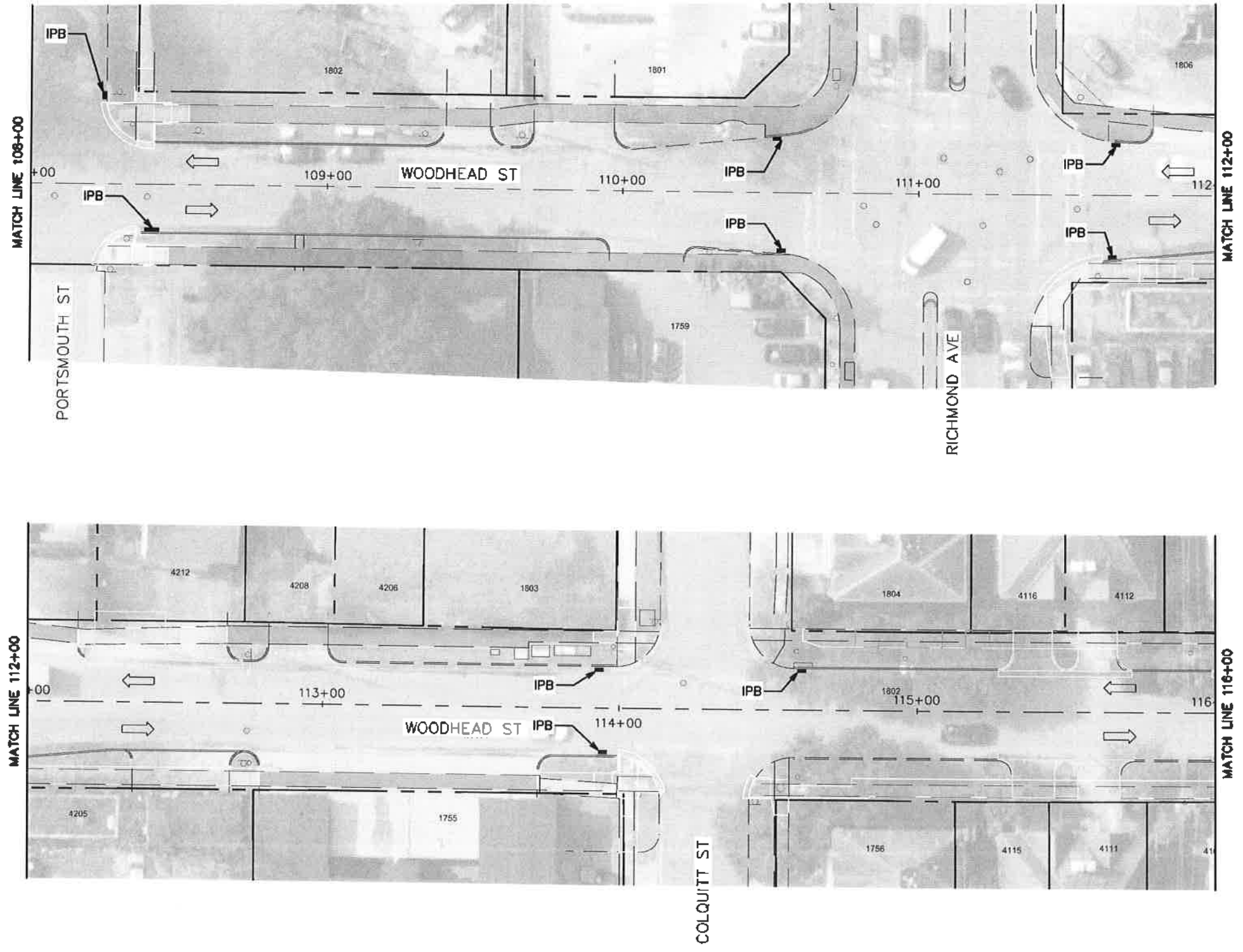
TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.TrafficEngineers.com
 Texas PE Firm Reg. #F-3158

SURVEYED BY: *Sarah L. Wetmore* 11/16/2021

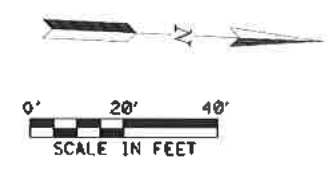
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 SWPP PLAN
 SHEET 1 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-0002	72248
AS NOTED	
CITY OF HOUSTON	
SHAIPOOR GOLSHAN	
SHEET NO. 206 OF 247	



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NO.	DATE	REVISION	APP.

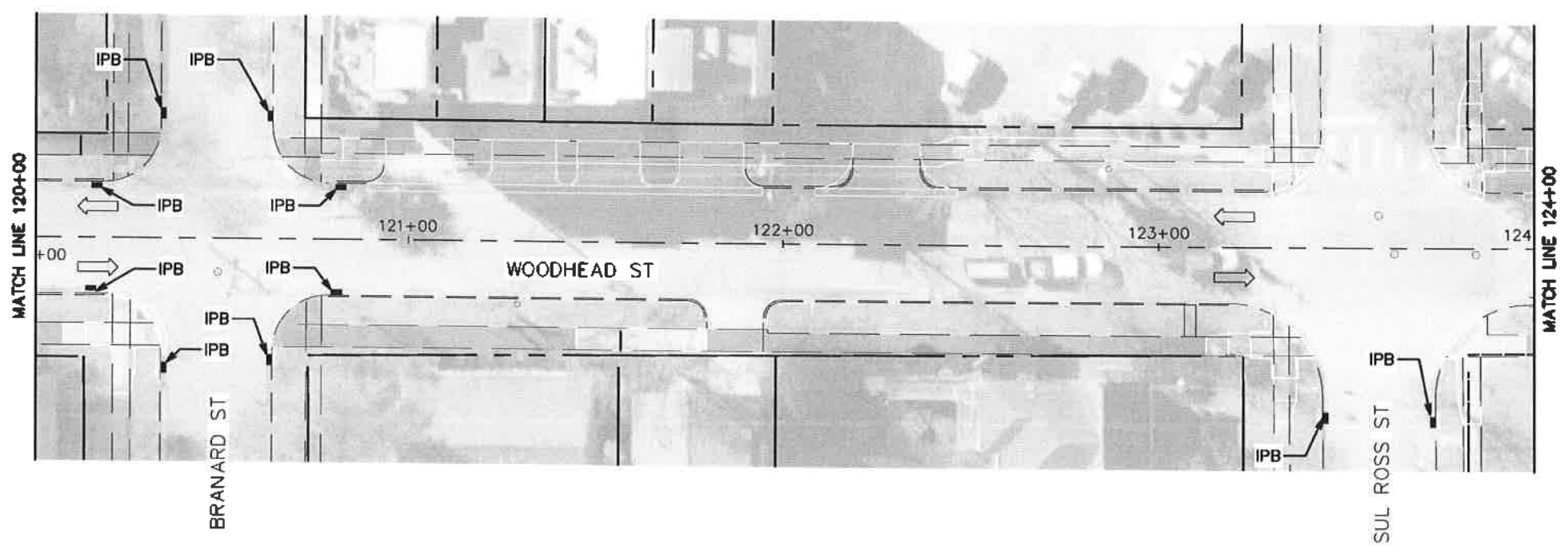
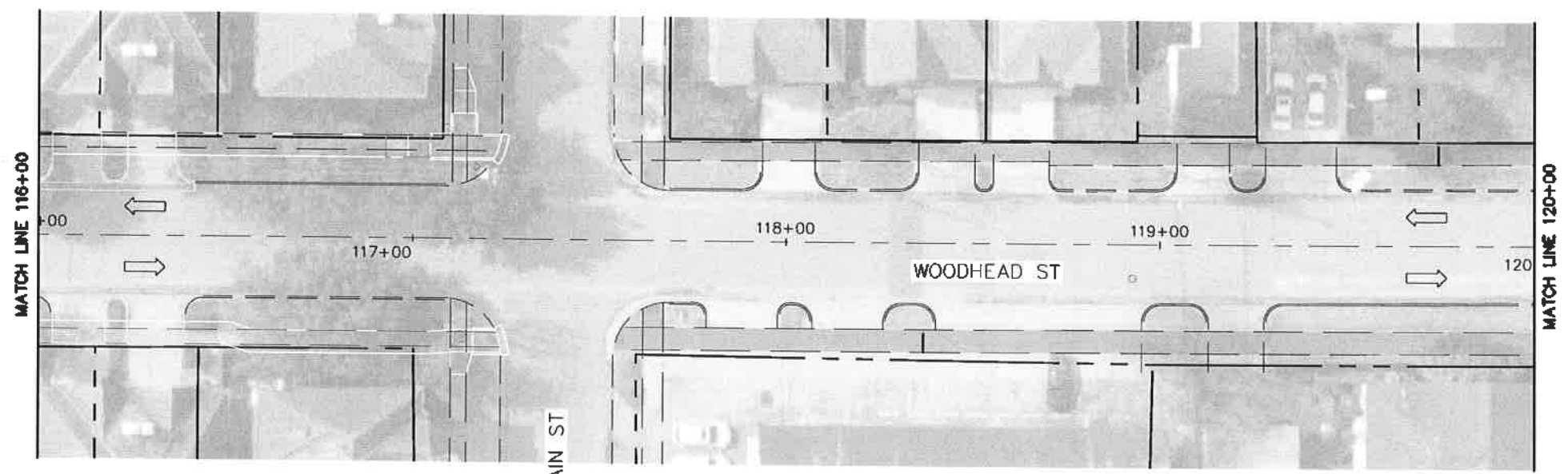
TRAFFIC ENGINEERS, INC.
 801 CONGRESS ST, Suite 325
 Houston, TX 77022
 www.trafficengineers.com
 Texas PE Firm Reg. #F-3158

SURVEYED BY: *Sarah L. Wetmore* 11/14/2021

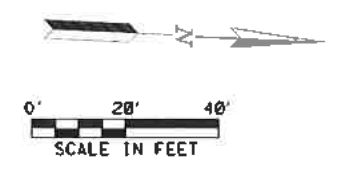
CITY OF HOUSTON
 HOUSTON PUBLIC WORKS

**HAWTHORNE ST. & WOODHEAD ST.
 NEIGHBORHOOD SAFE STREET
 IMPROVEMENTS
 WOODHEAD STREET
 SWPP PLAN
 SHEET 2 OF 12**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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AS NOTED	72248
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 207 OF 247	

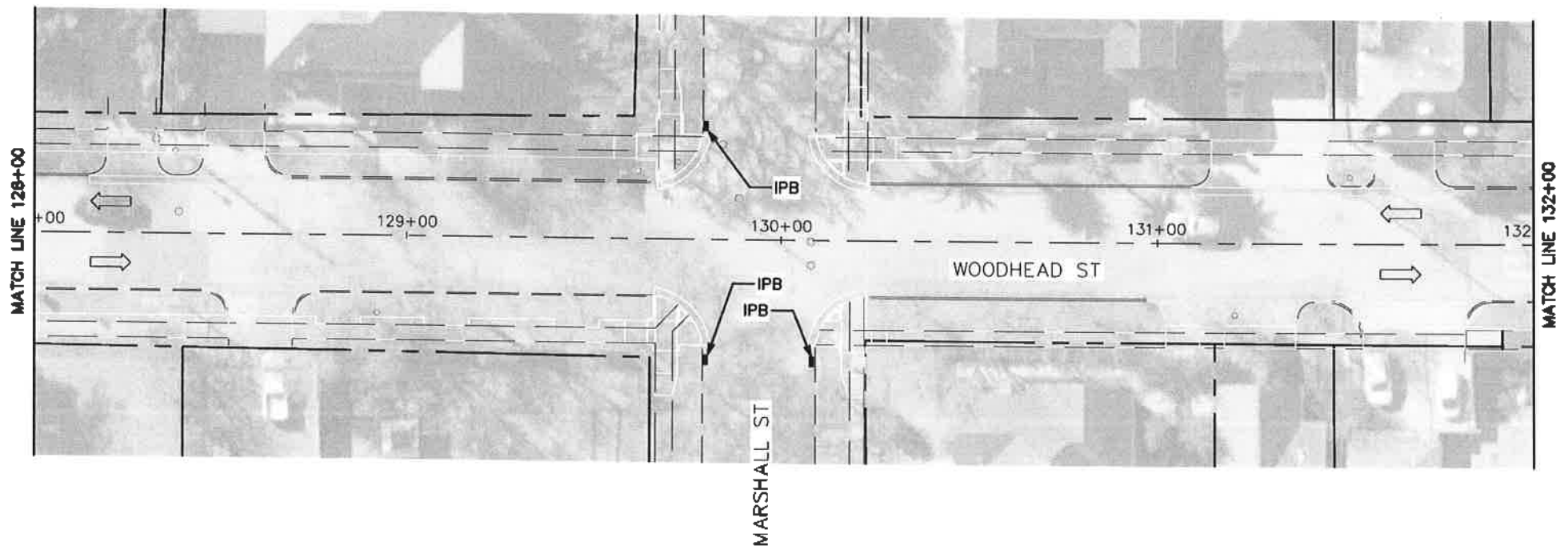
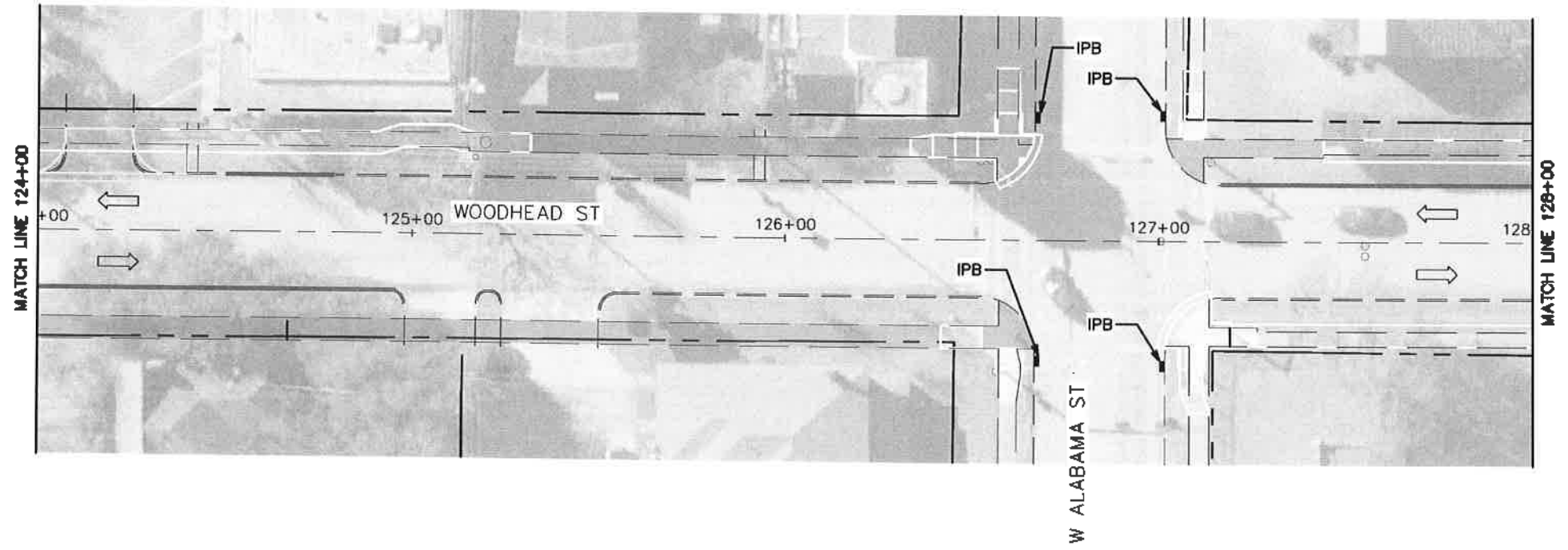


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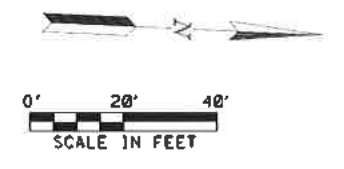


NO.	DATE	REVISION	APP.

TRAFFIC ENGINEERS, INC. <small>Professional Engineers & Surveyors</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/16/2021
SURVEYED BY:		CITY OF HOUSTON HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 3 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 72248	
AS NOTED	CITY OF HOUSTON PM SHAMPOOR COLSHAN	
SHEET NO. 208 OF 247	SHEET NO. 208 OF 247	

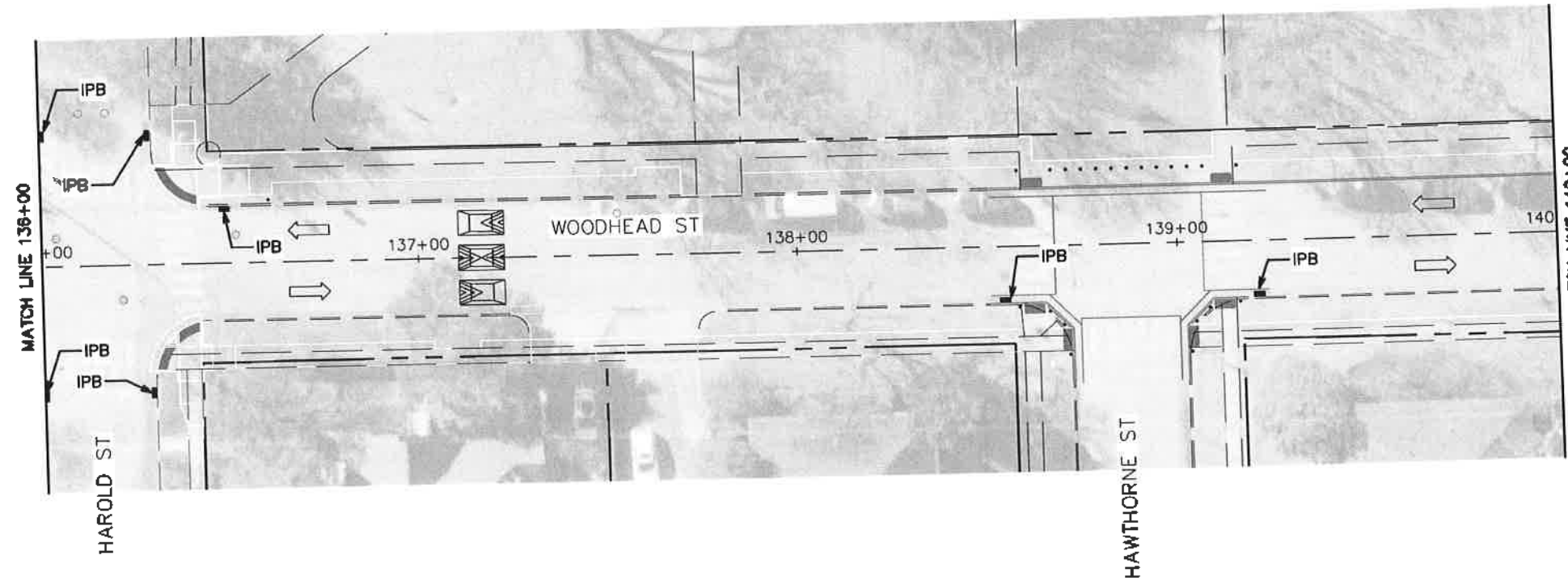
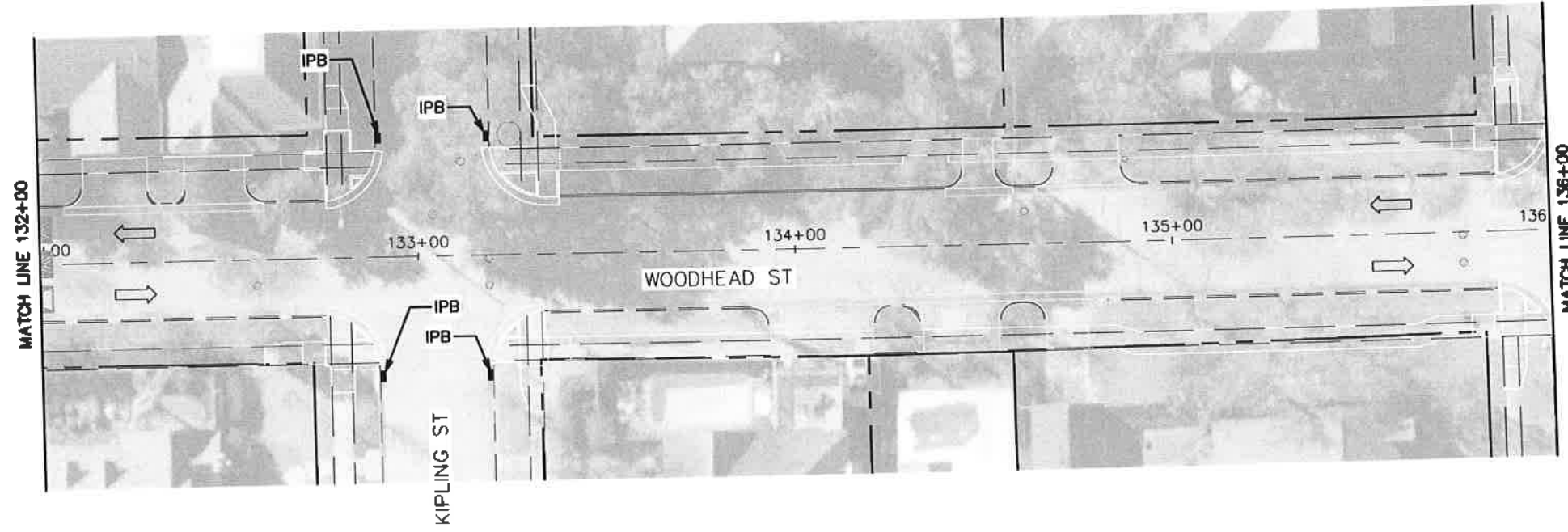


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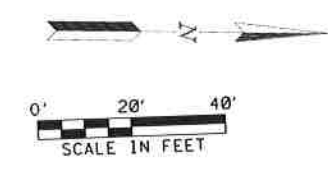


NO.	DATE	REVISION	BY

TRAFFIC ENGINEERS, INC. 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158		11/16/2021 SARAH L. WETMORE LICENSED PROFESSIONAL ENGINEER
SURVEYED BY:		CITY OF HOUSTON HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 4 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY	
AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSHAN	7 2 2 4 8	
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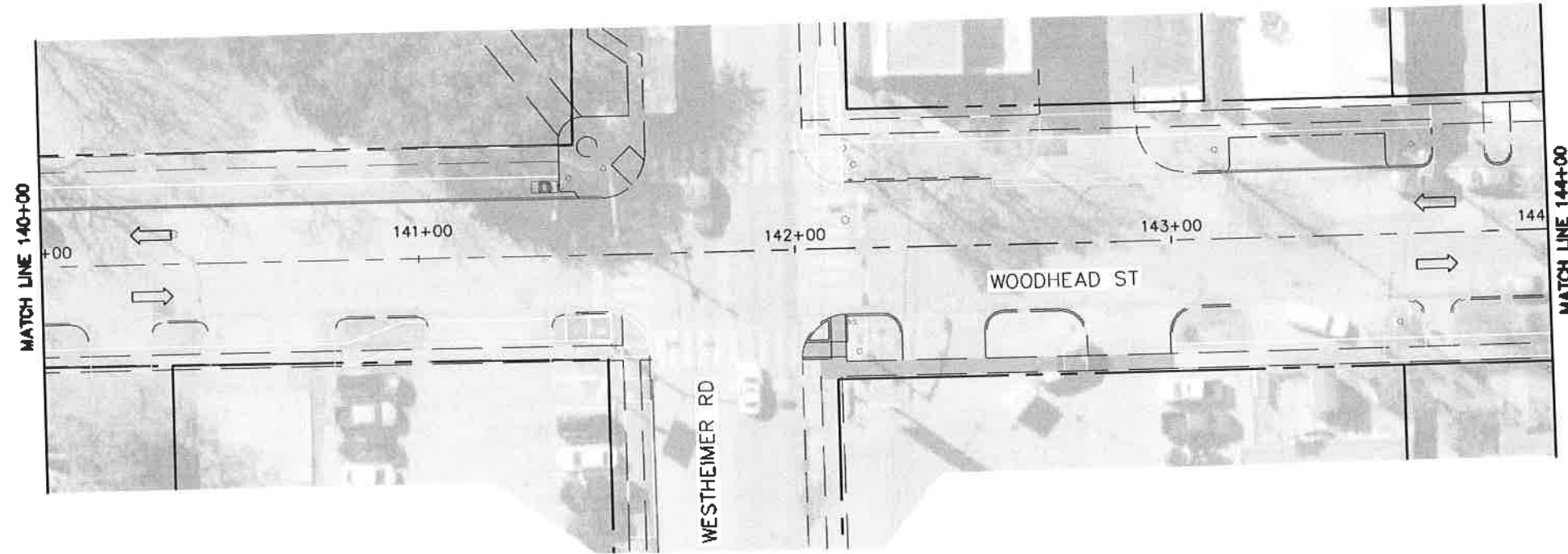
LEGEND
 IPB = INLET PROTECTION BARRIER



TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 5 OF 12		
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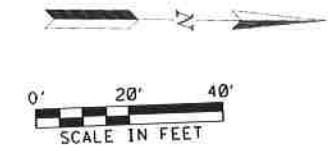
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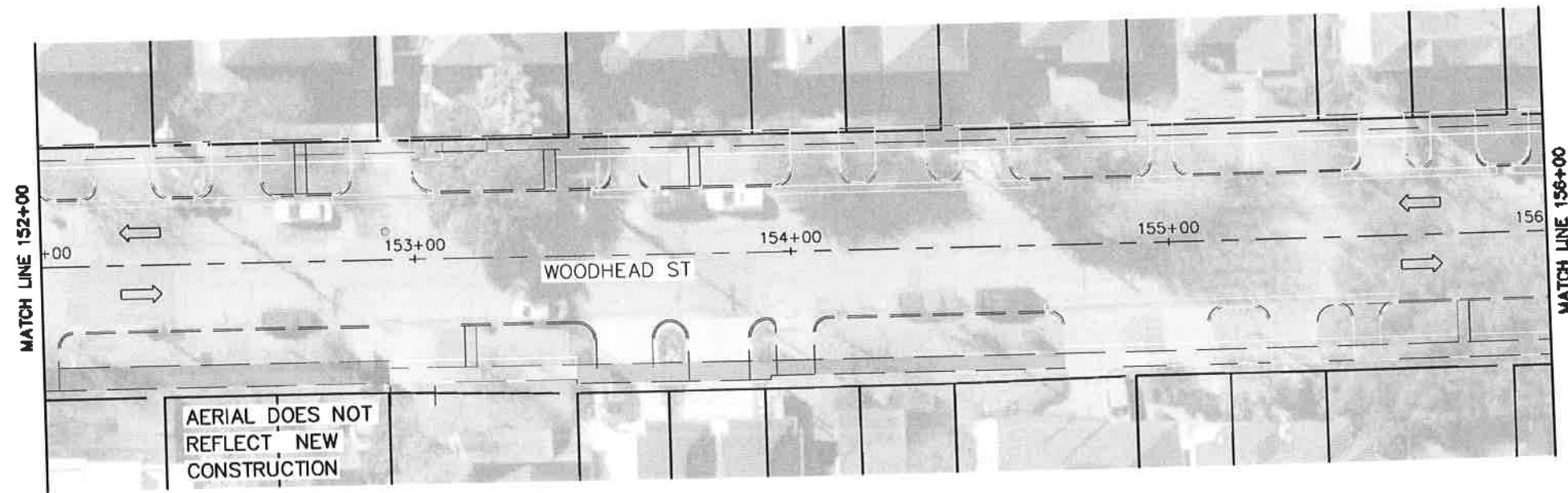
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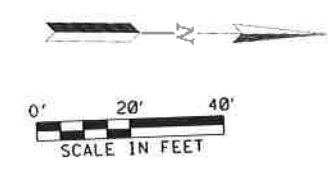


TRAFFIC ENGINEERS, INC. <small>HOUSTON, TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 6 OF 12		
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AS NOTED CITY OF HOUSTON PM SHAIPOOR GOLSHAN SHEET NO. 211 OF 247		

NO.	DATE	REVISION	APP.



LEGEND
IPB = INLET PROTECTION BARRIER



TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.trafficengineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY: <i>Sarah L. Wetmore</i>		11/16/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 7 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY 7 2 2 4 8	
AS NOTED CITY OF HOUSTON PM SHARPOOR GILSHAW SHEET NO. 212 OF 247		

NO.	DATE	REVISION

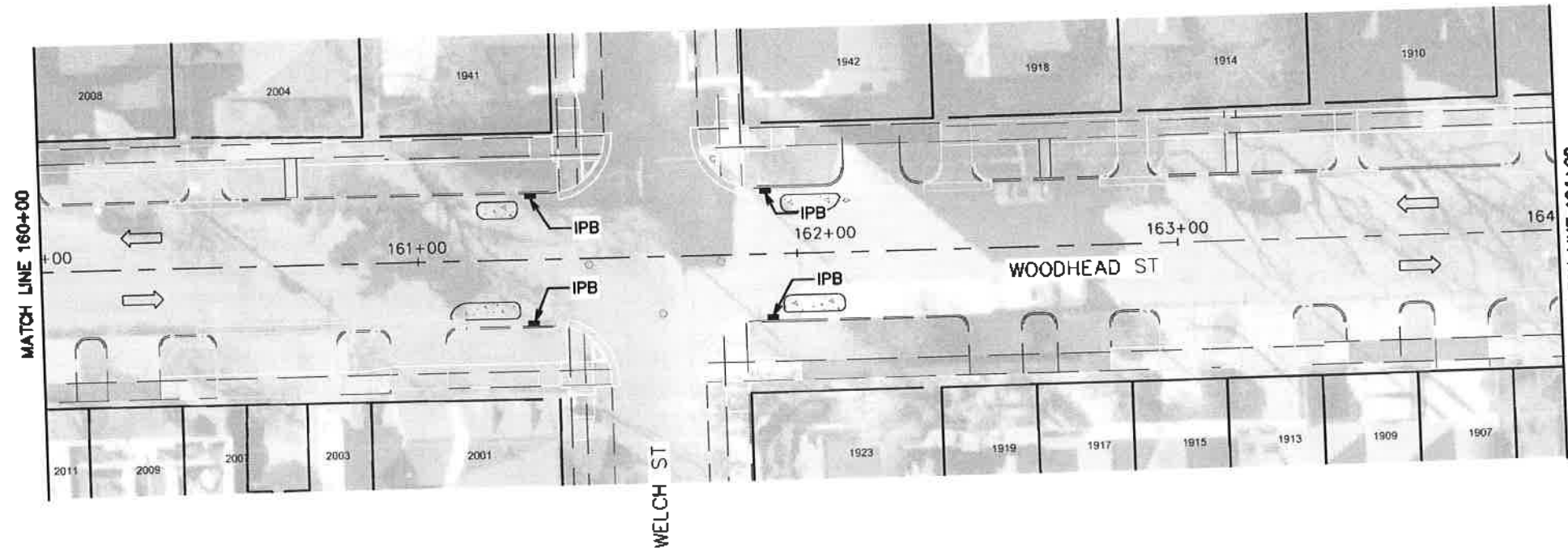
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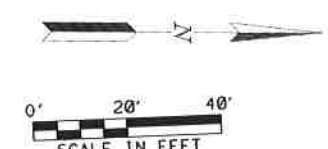
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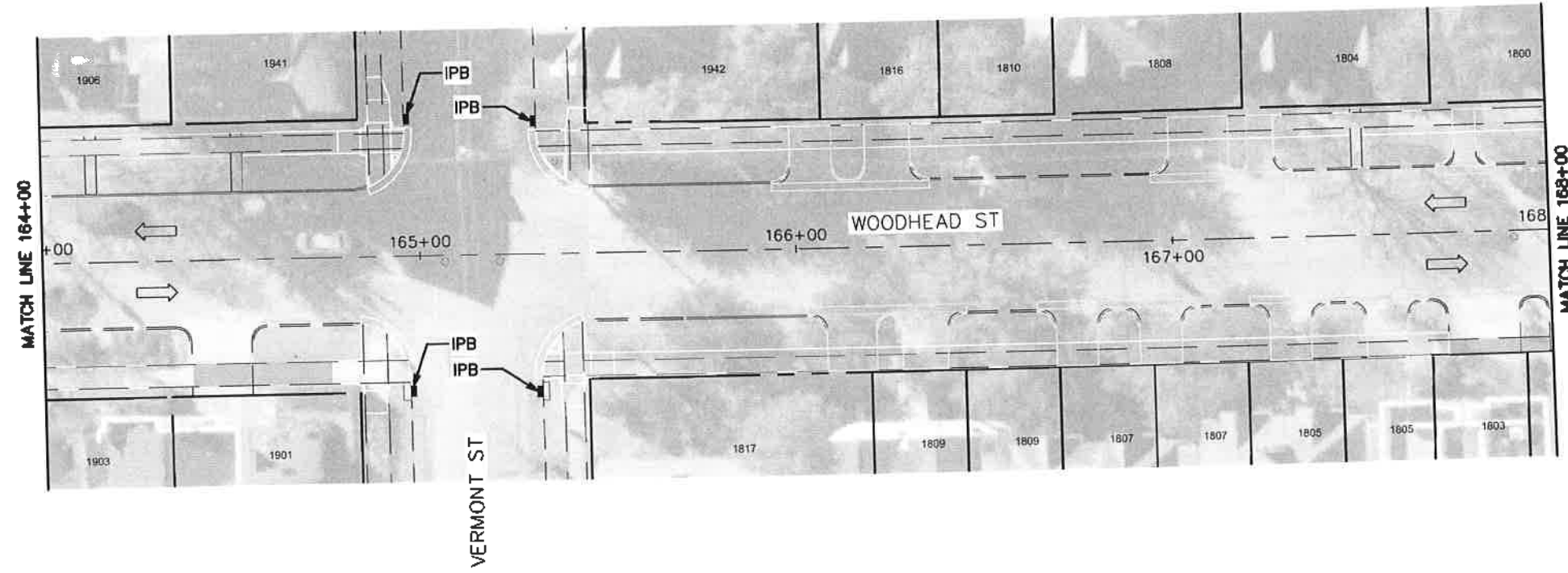
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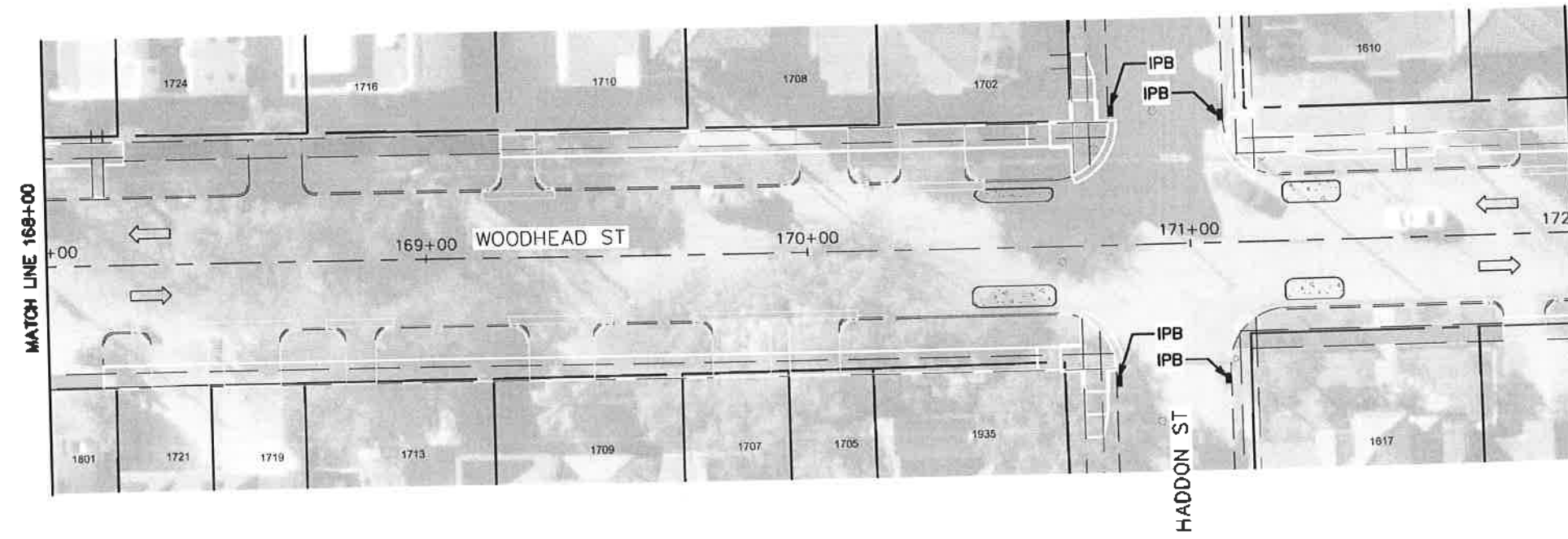
TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.trafficengineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		<i>Sarah L. Wetmore</i> 11/16/2021
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 8 OF 12		
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AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSAHI SHEET NO. 213 OF 247		

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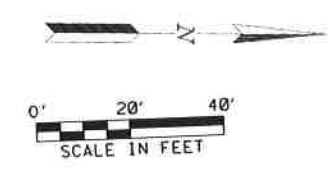


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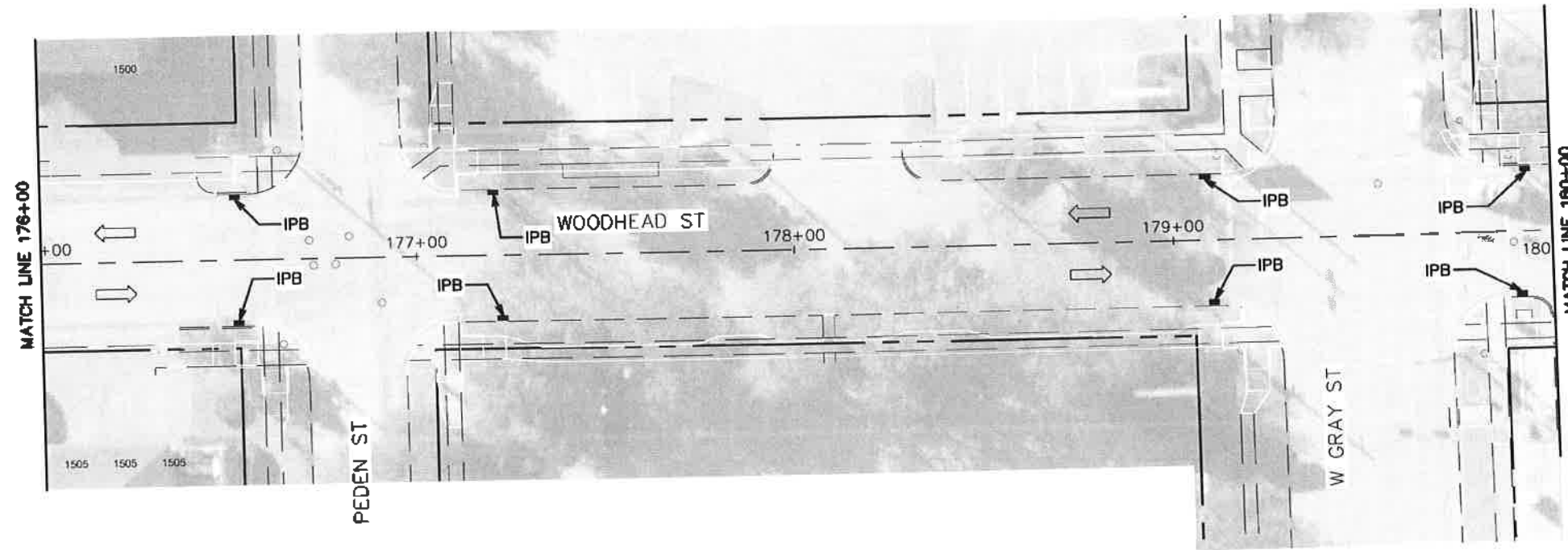
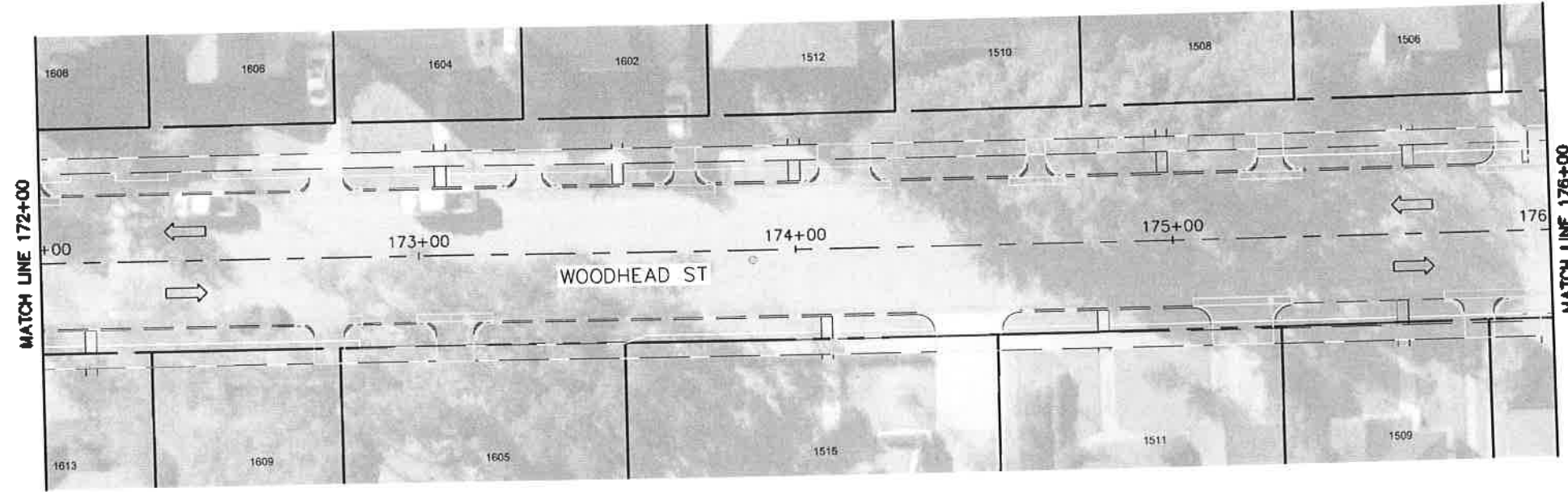
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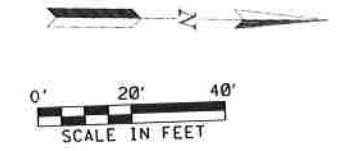


NO.	DATE	REVISION

TRAFFIC ENGINEERS, INC. <small>INCORPORATED IN THE STATE OF TEXAS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.TrafficEngineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 9 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">72248</div>	
AS NOTED CITY OF HOUSTON PM SHAPPOO COLSAHN SHEET NO. 214 OF 247		

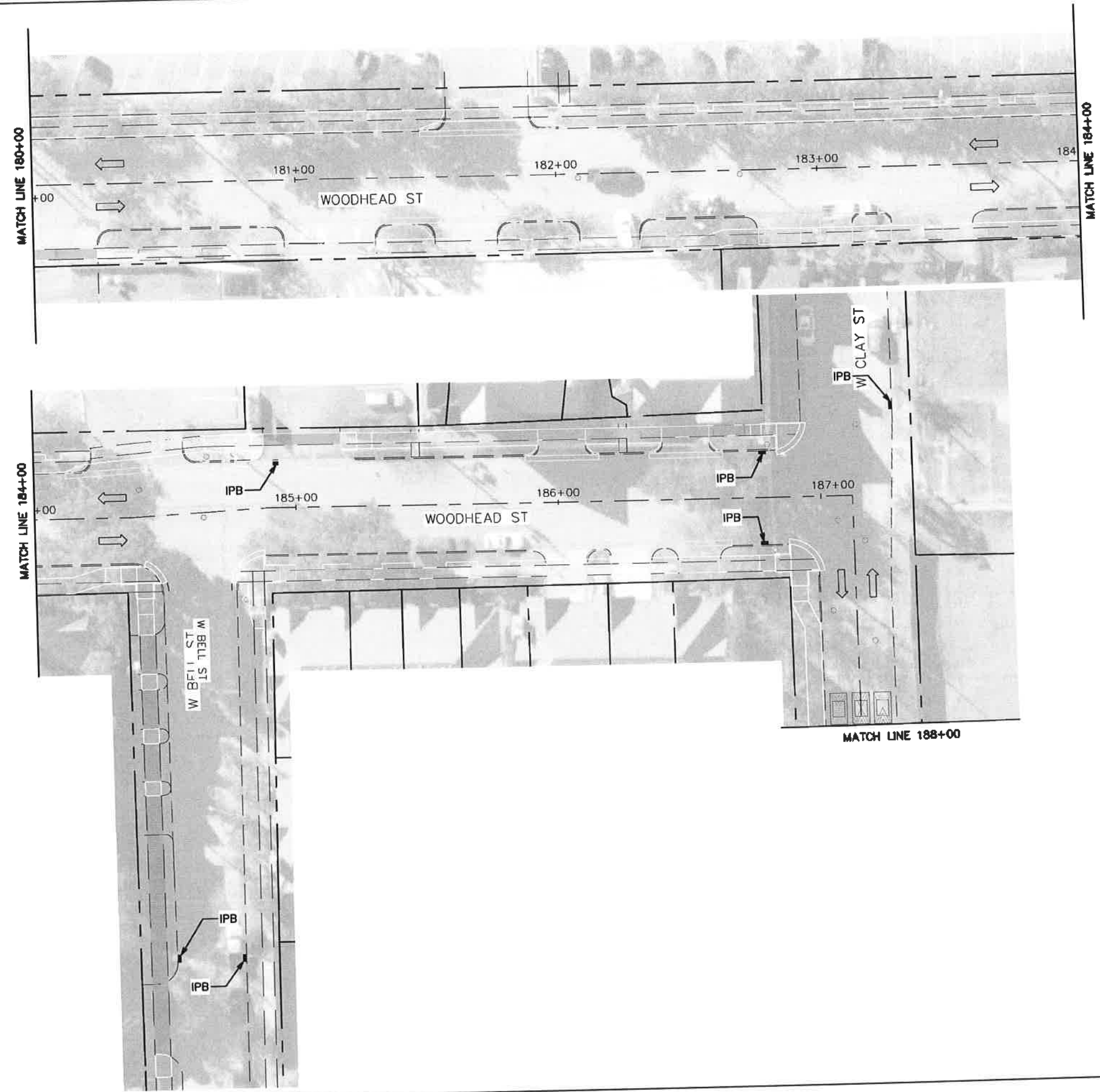


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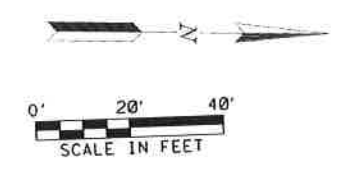


NO.	DATE	REVISION

TRAFFIC ENGINEERS, INC. <small>INDEPENDENT TRANSPORTATION SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.trafficengineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 11 OF 12		
WBS NUMBER N-T27000-0002-7	FOR CITY OF HOUSTON USE ONLY <div style="font-size: 2em; font-weight: bold; text-align: center;">72248</div>	
AS NOTED CITY OF HOUSTON PM SHAPOOR GOLSHAN SHEET NO. 215 OF 247		

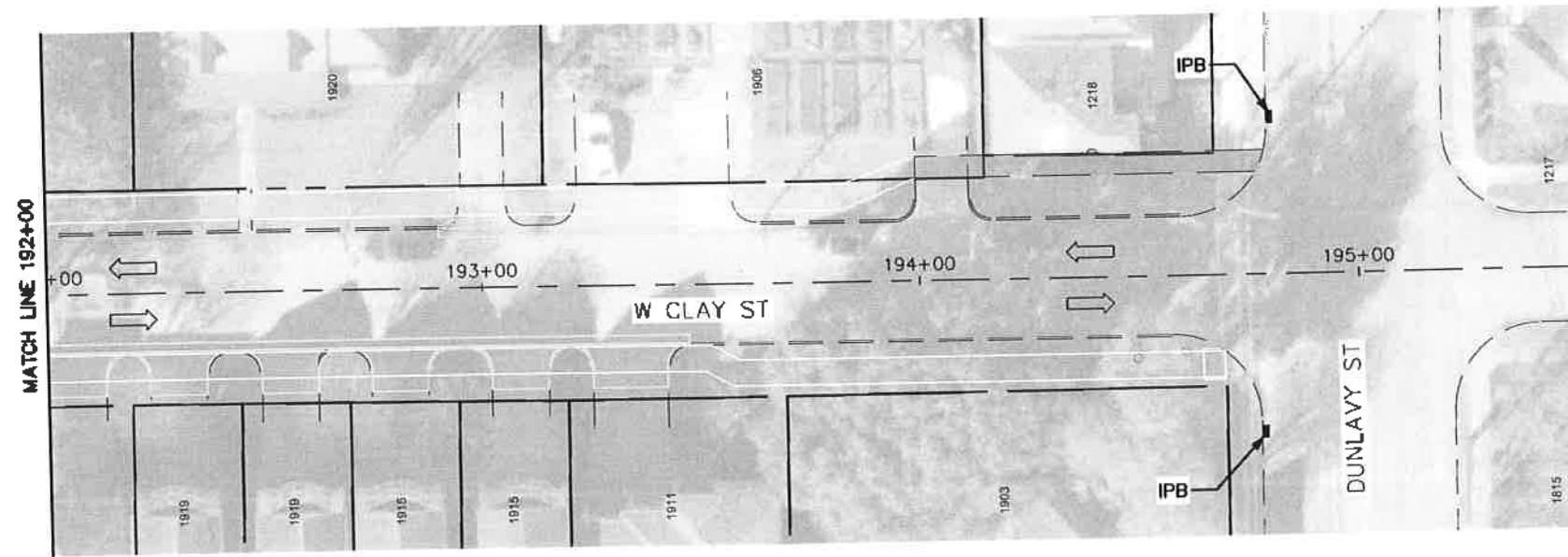
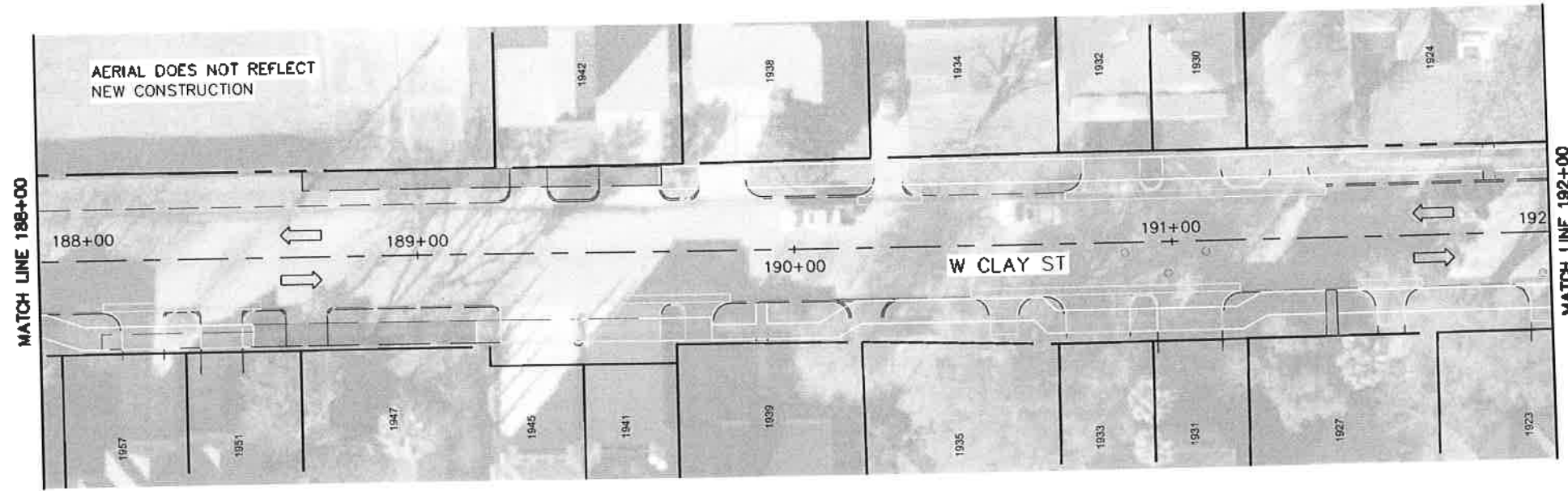


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CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 11 OF 12		
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AS NOTED CITY OF HOUSTON PM SHAPOUR GOLSHAN	SHEET NO. 216 OF 247	



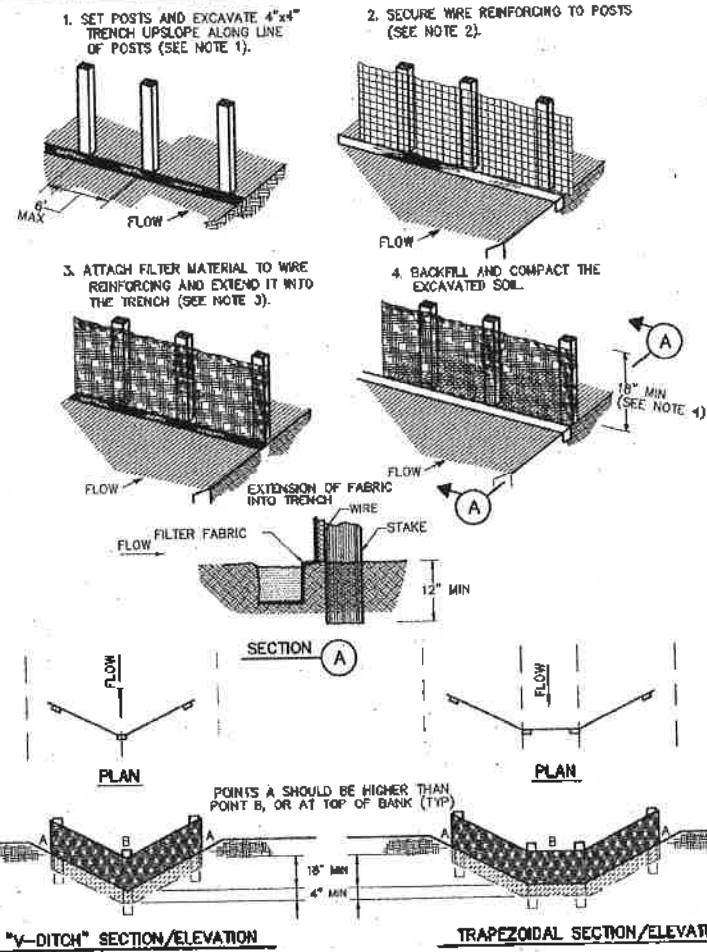
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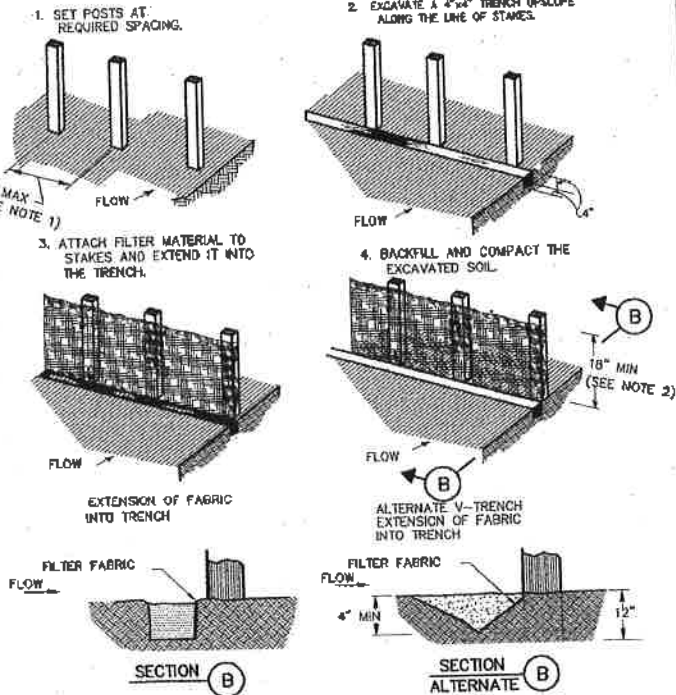
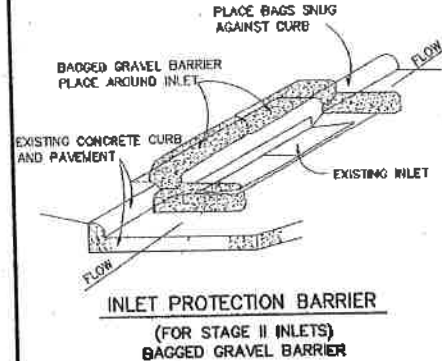
TRAFFIC ENGINEERS, INC. <small>INDUSTRIES TRANSPORTATION SOLUTIONS</small> 801 CONGRESS ST, Suite 325 Houston, TX 77022 www.trafficengineers.com Texas PE Firm Reg. #F-3158 SURVEYED BY:		
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST NEIGHBORHOOD SAFE STREET IMPROVEMENTS WOODHEAD STREET SWPP PLAN SHEET 12 OF 12		
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AS NOTED CITY OF HOUSTON PM SHARPOOR COLSKUB	SHEET NO. 217 OF 247	

NO.	DATE	REVISION	APP.



CONSTRUCTION NOTES:

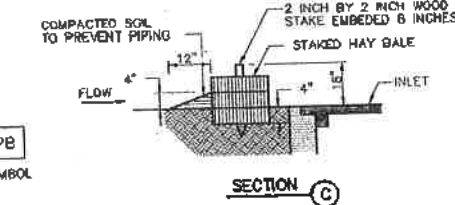
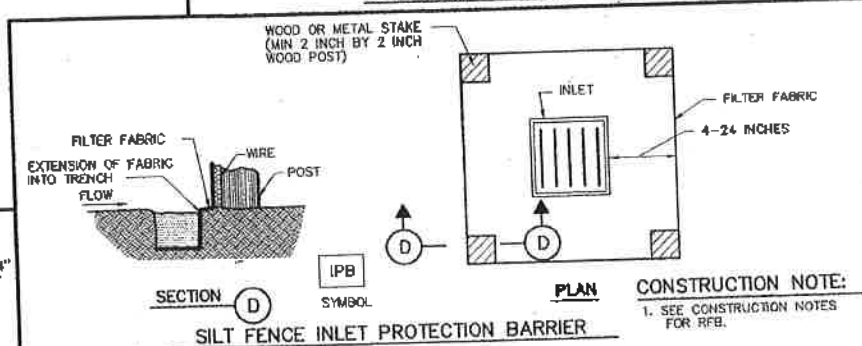
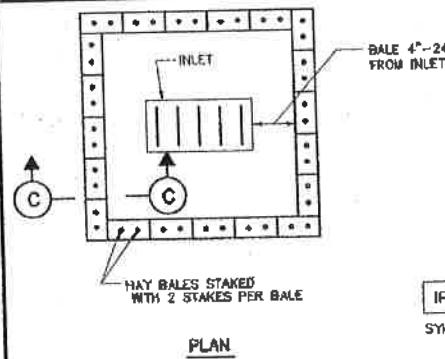
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 8 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 8 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.



CONSTRUCTION NOTES:

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

FILTER FABRIC BARRIER



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS
(NOT TO SCALE)

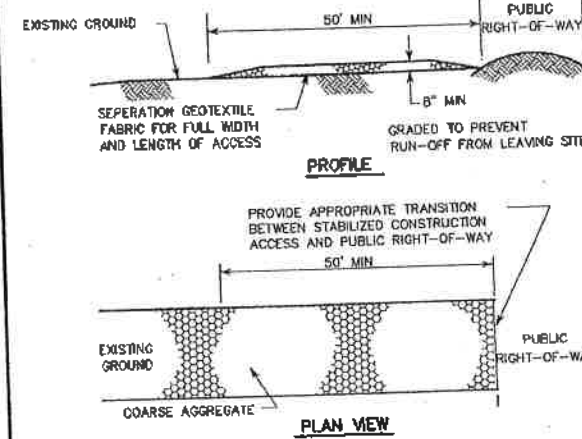
APPROVED: [Signature] CITY ENGINEER

APPROVED: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010 DWG NO: 01571-01

CONSTRUCTION NOTES:

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



Gauge
ENGINEERING
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

STATE OF TEXAS
KARAM M. QADDO
125611
LICENSED PROFESSIONAL ENGINEER
11/15/2021

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

SHEET 1 OF 1

FOR CITY OF HOUSTON USE ONLY

WBS NUMBER: N-T27000-002-7

DRAWING SCALE: AS NOTED

CITY OF HOUSTON PW

SHUPOR GOLSMAN

SHEET NO. 218 OF 247

72248

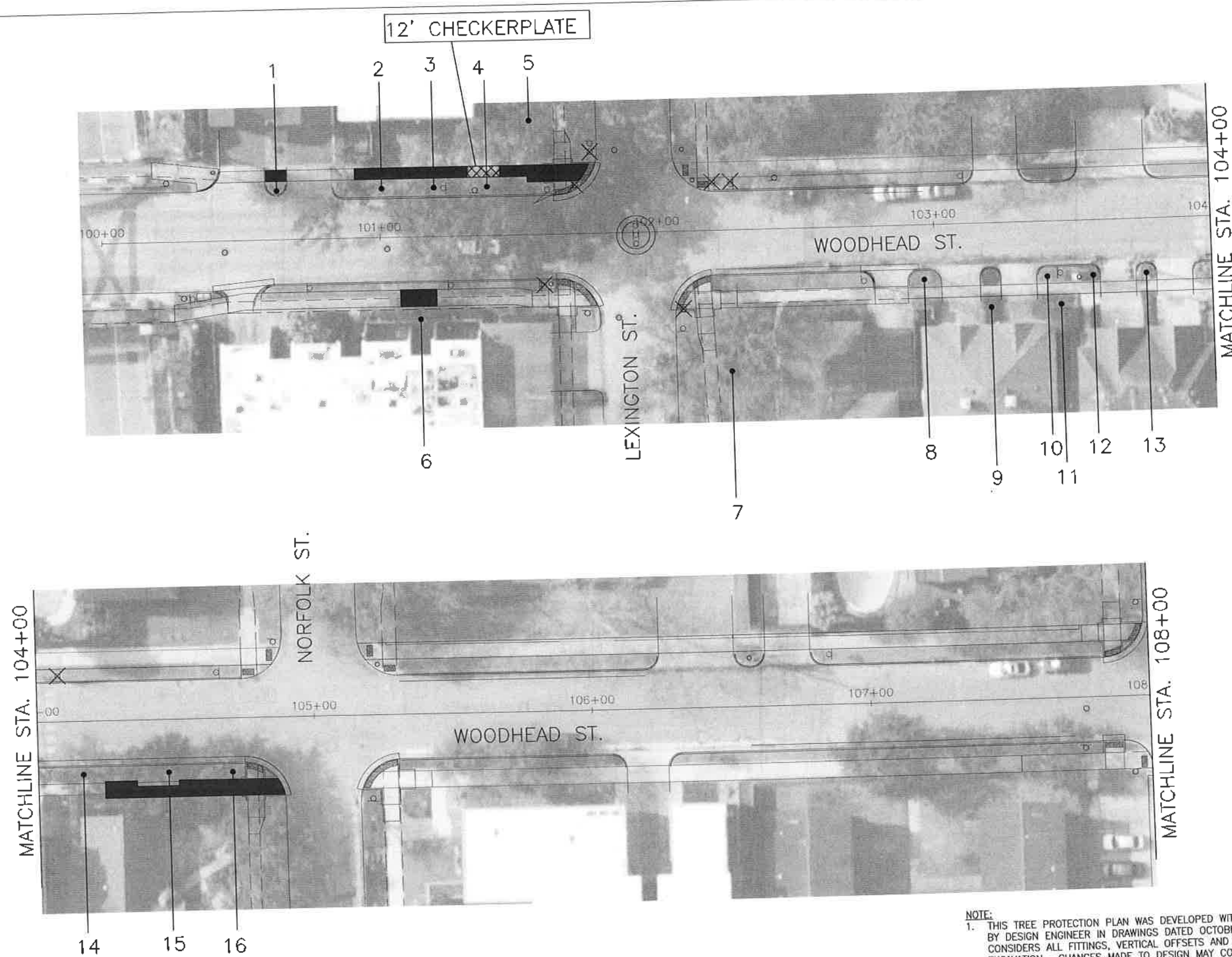
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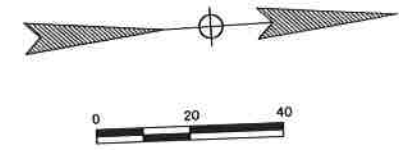
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Pen Table: \$PENTBL\$
Plot Driver: \$PLTRVL\$



TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

C.N. Koehl
Urban Forestry, Inc.
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281-391-0022 c.koehl@koehlurbanforestry.com
APPROVED: *Craig N. Koehl* 11-03-2021

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Houston, TX 77042
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 1 OF 29

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	
1 INCH = 20 FEET	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR COLSM	
SHEET NO. 219 OF 247	

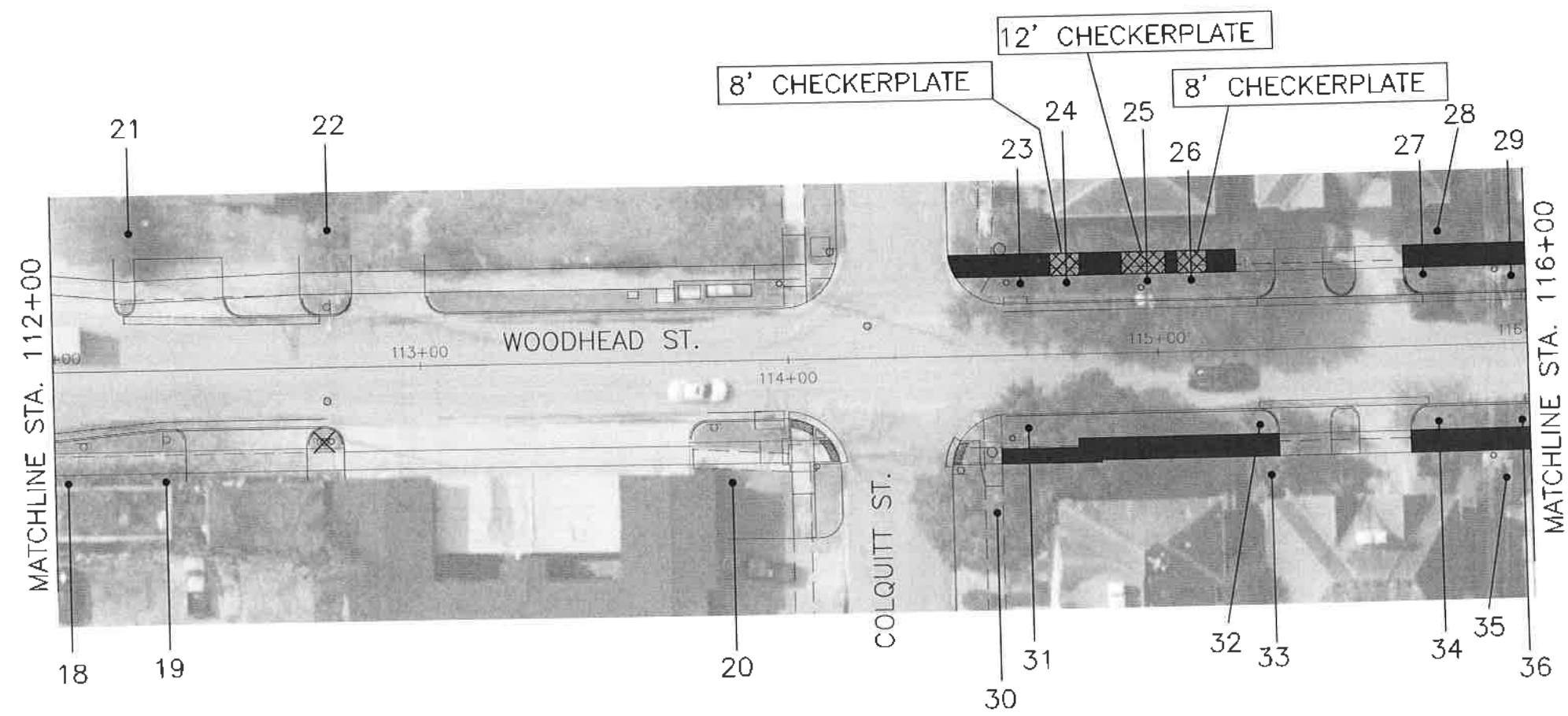
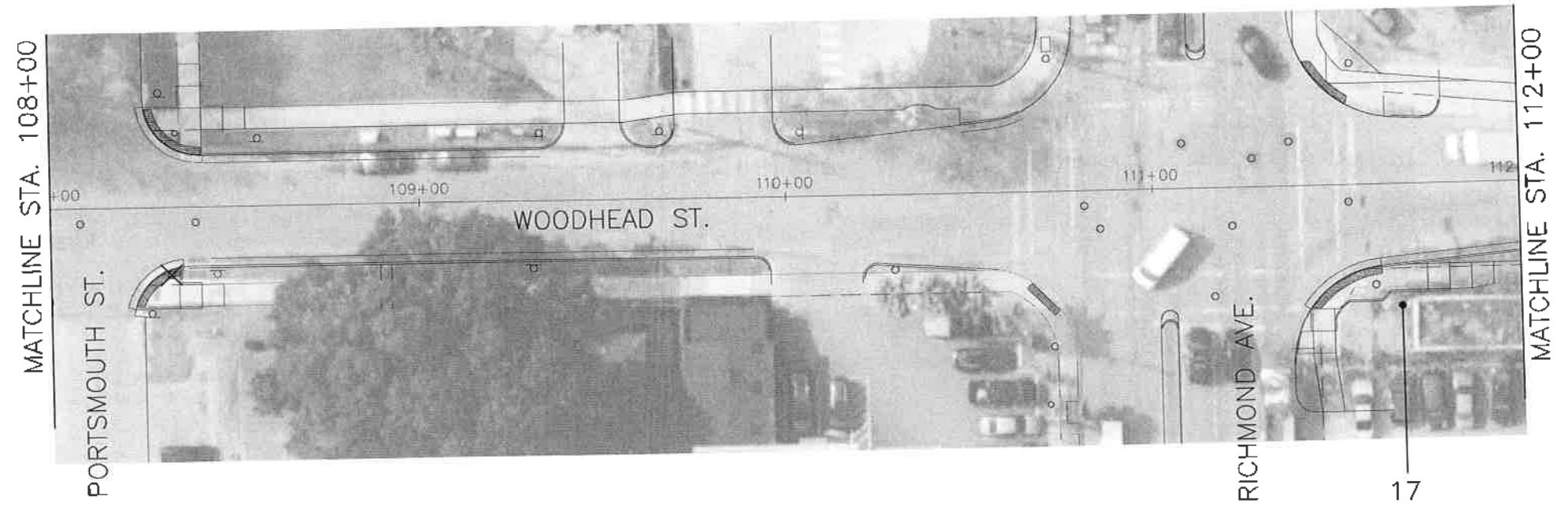
72248

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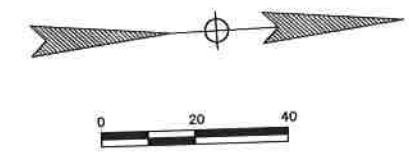
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TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



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C.N. Koehl
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281-391-0022 ckoehl@koehlurbanforestry.com
APPROVED: *Craig N. Koehl* 11-03-2021

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www.GaugeEngineering.com
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HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 2 OF 29

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-	72248
1 INCH = 20 FEET	
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CITY OF HOUSTON PM	
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SHEET NO. 220 OF 247	

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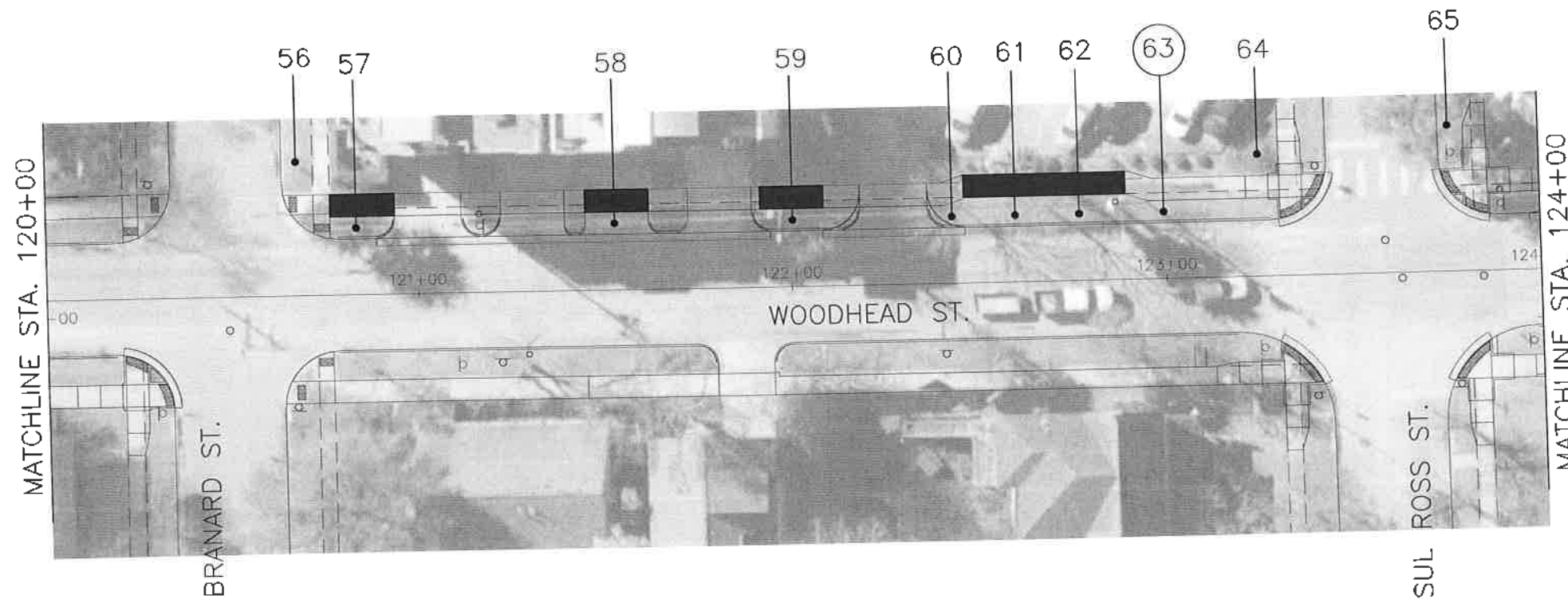
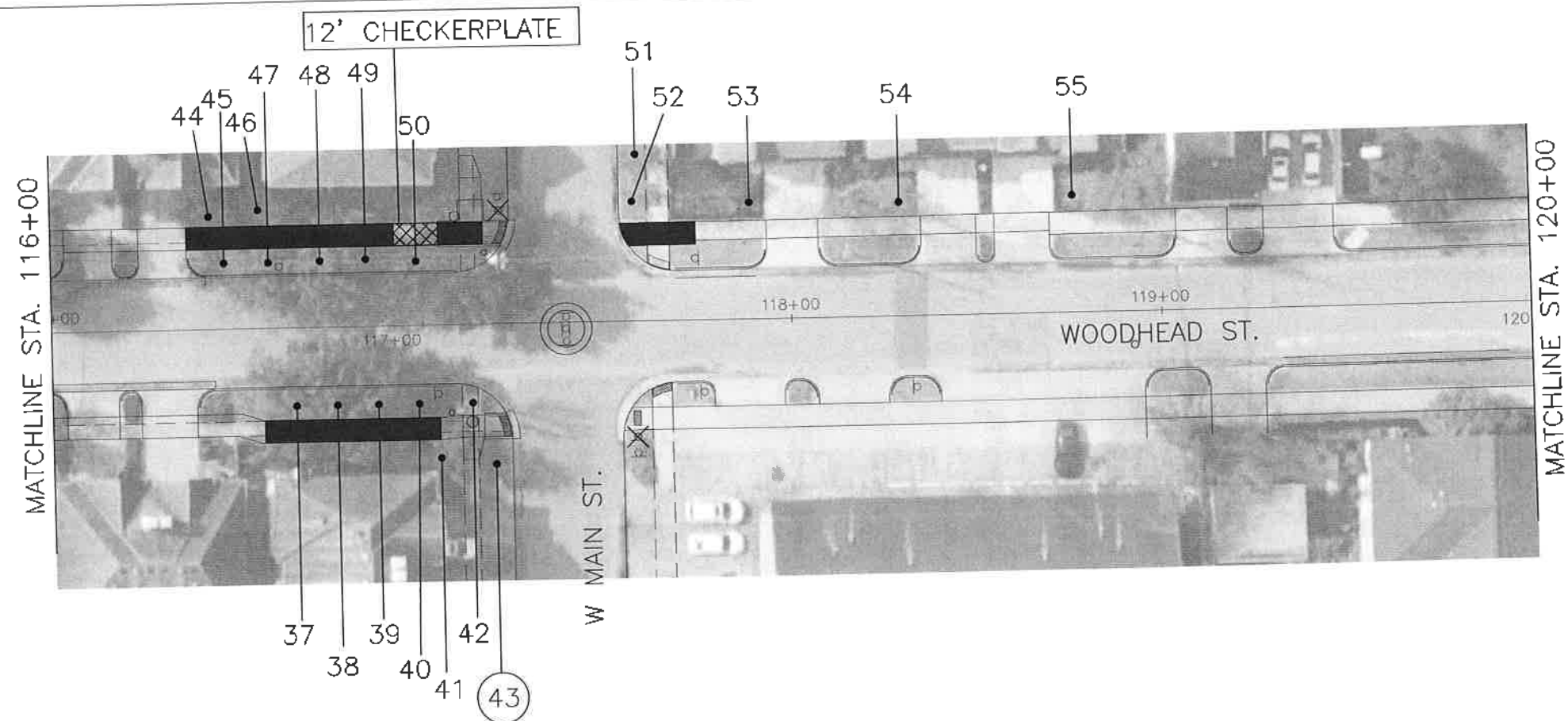
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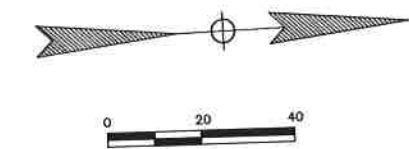
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TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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APPROVED: *Craig N. Koehl* 11-03-2021

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TREE PROTECTION PLAN
SHEET 3 OF 29

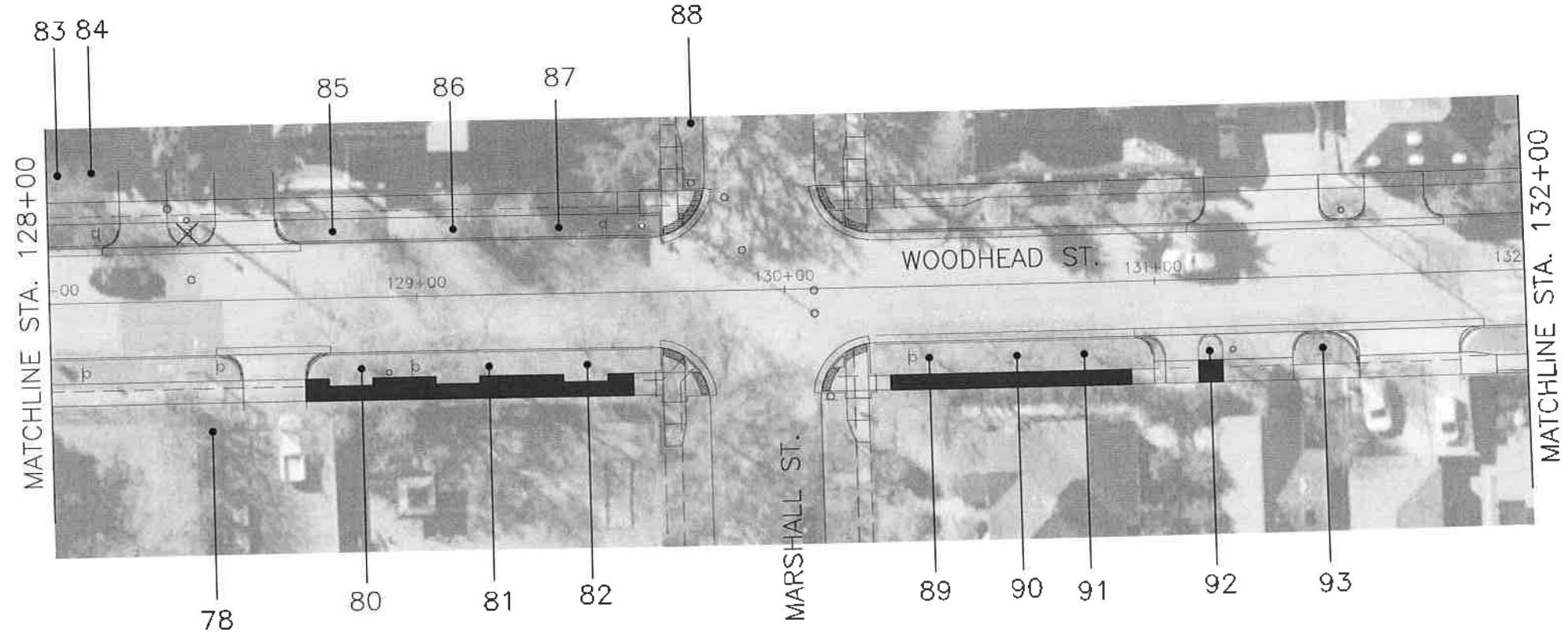
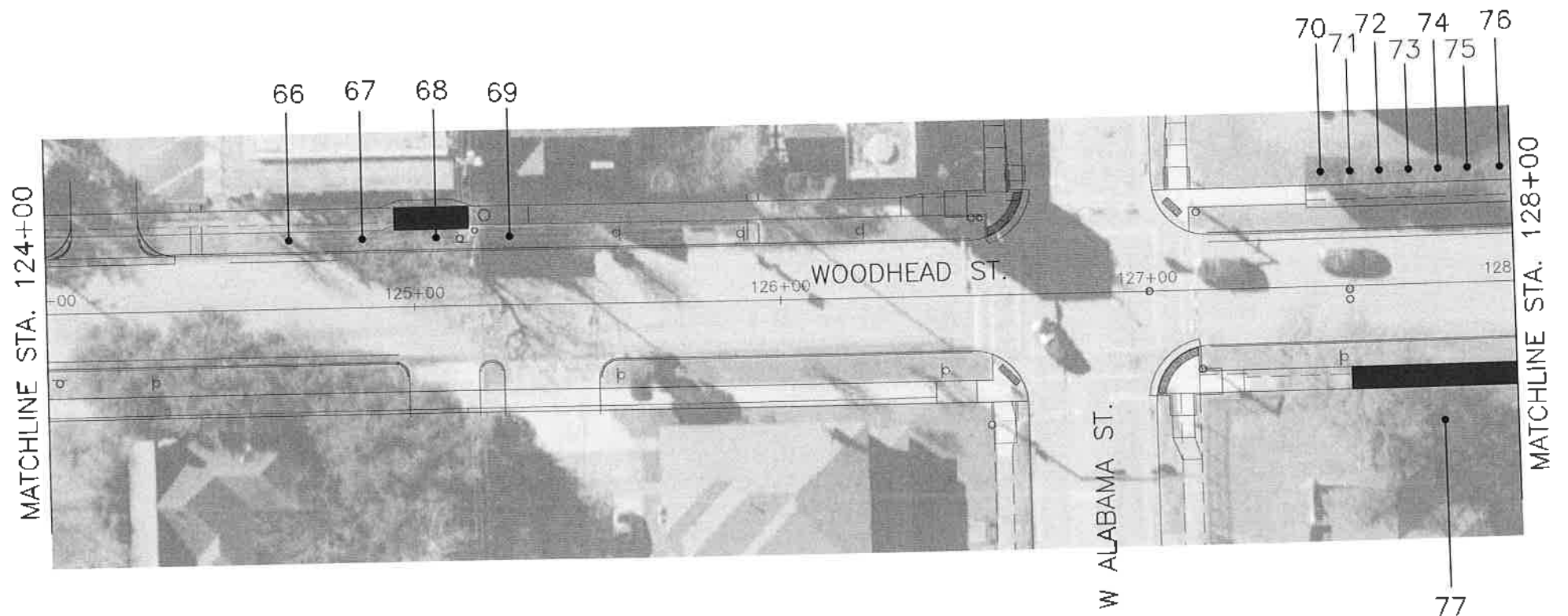
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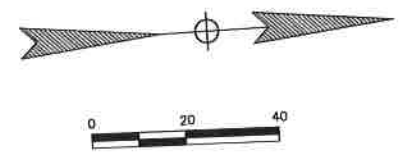
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TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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Pen Table: \$CENTBL\$
Plot Driver: \$PLDRAWL\$

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281-391-0022 ckoehl@cochlurbanforestry.com
APPROVED: *Craig N. Koehl* (1-03-2021)

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NEIGHBORHOOD SAFE STREET
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TREE PROTECTION PLAN
SHEET 4 OF 29

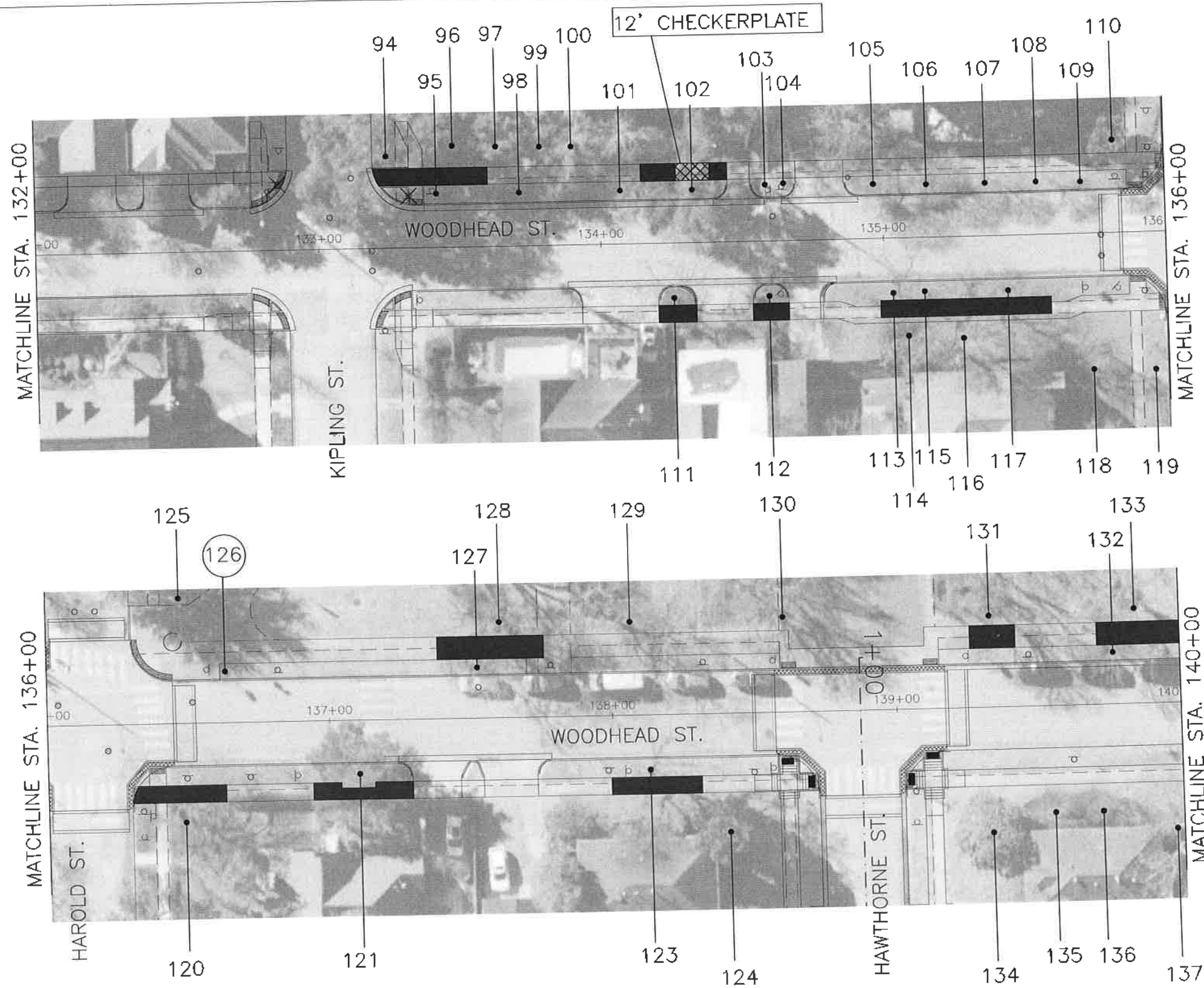
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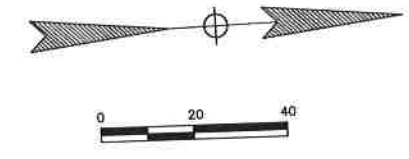
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TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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SHEET 5 OF 29

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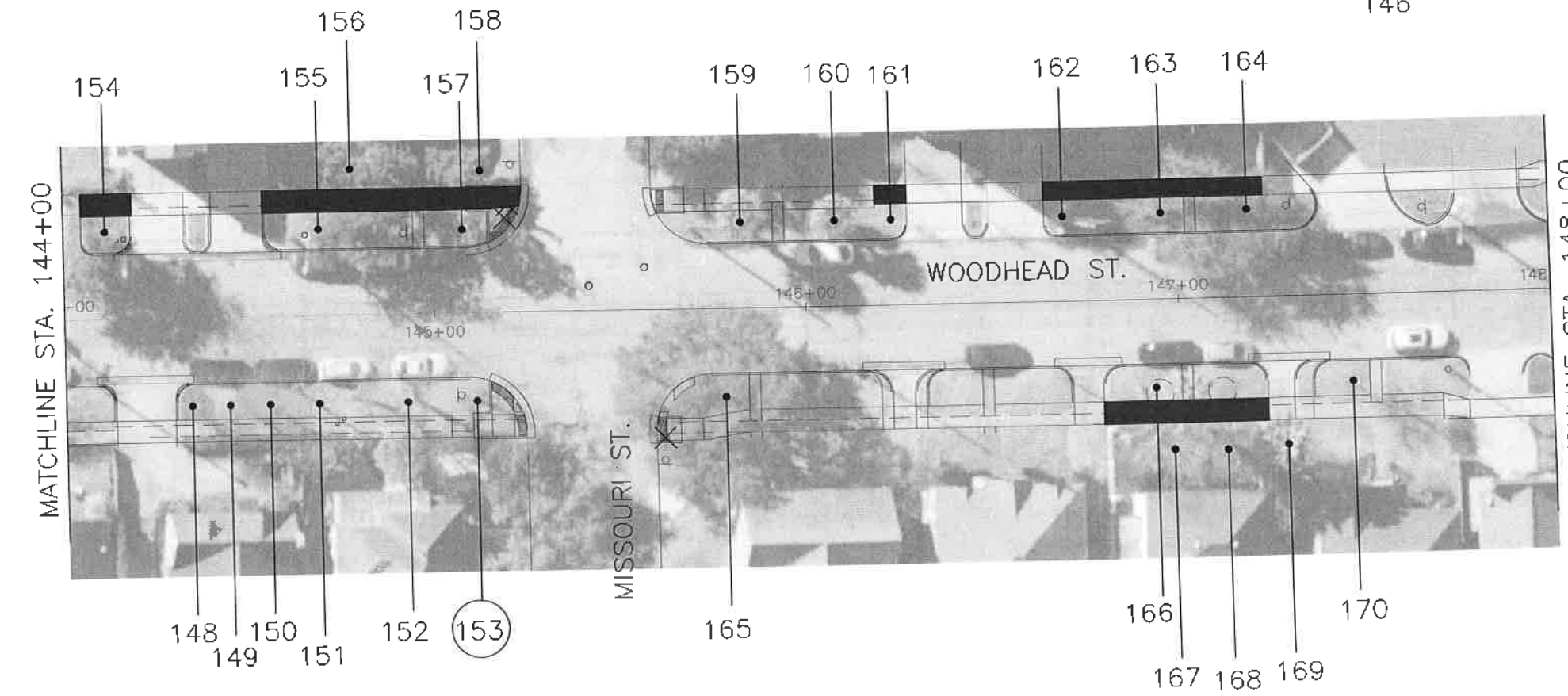
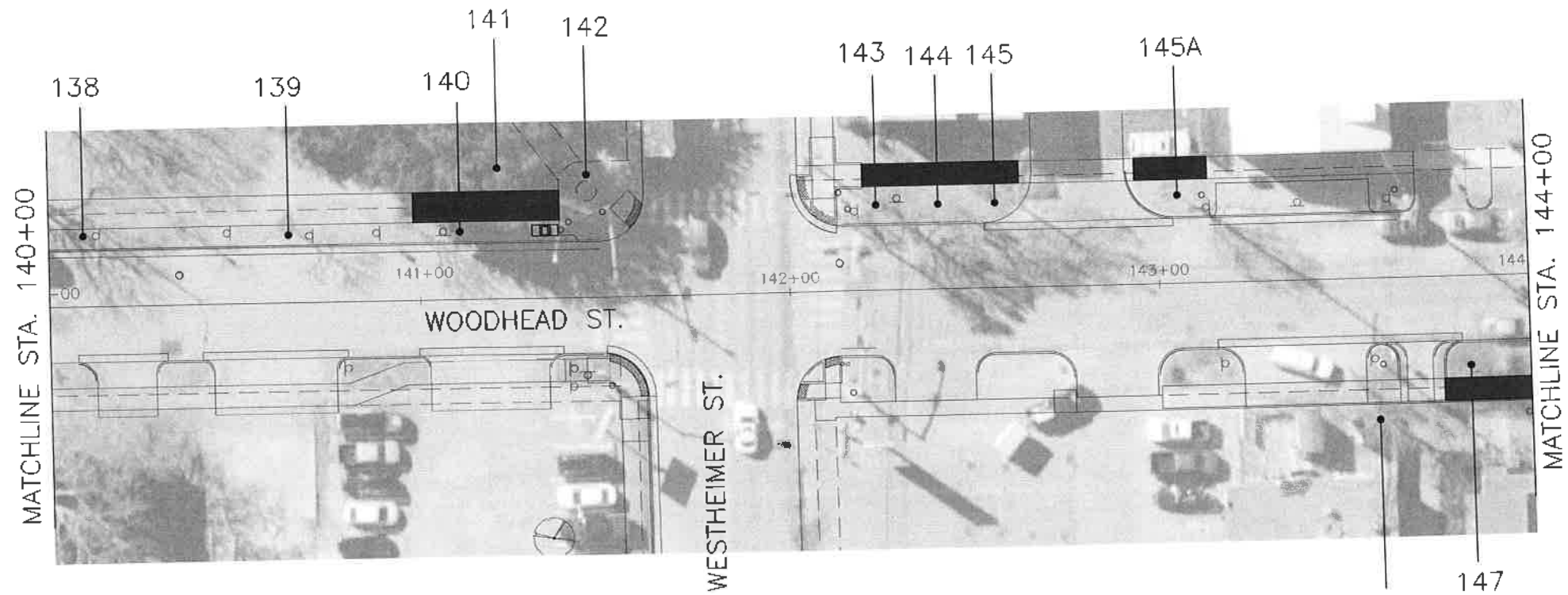
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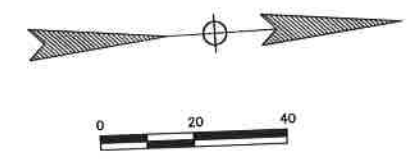
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TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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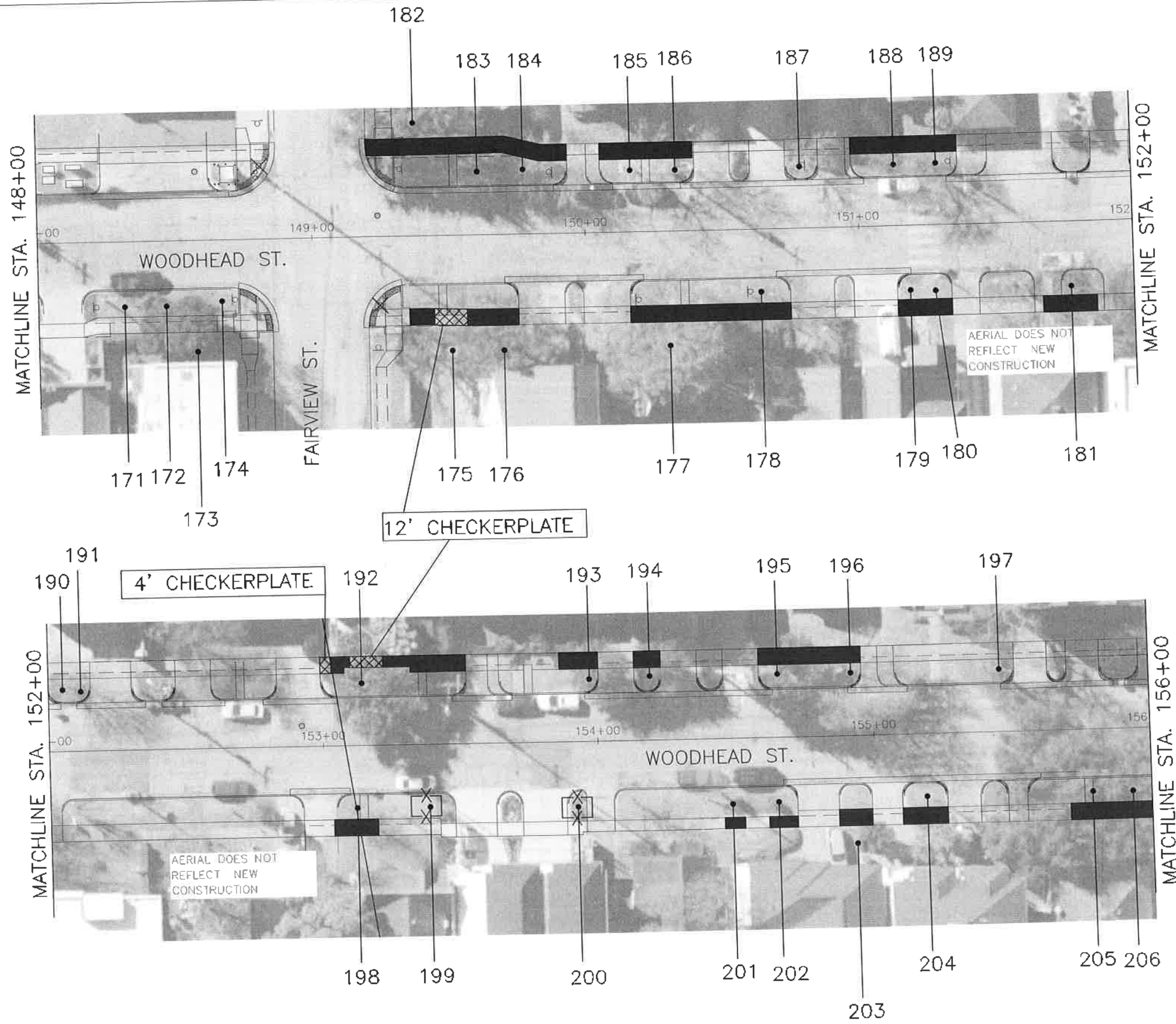
C.N. Koehl Urban Forestry, Inc. 210 Stone Bush Ct. • Katy, Texas 77493 281-391-0022 ckoehl@ckoehlurbanforestry.com APPROVED: <i>Craig A. Koehl</i> 11-03-2021	
Gauge 3200 Wilcrest Drive, Suite 220 Houston, TX 77042 www.GaugeEngineering.com Texas PE Firm Reg. #F-20017 SURVEYED BY:	
CITY OF HOUSTON HOUSTON PUBLIC WORKS HAWTHORNE ST. & WOODHEAD ST. NEIGHBORHOOD SAFE STREET IMPROVEMENTS TREE PROTECTION PLAN SHEET 6 OF 29	
WBS NUMBER N-T27000-002-	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM SHAPOOR WALSH	
SHEET NO. 224 OF 247	

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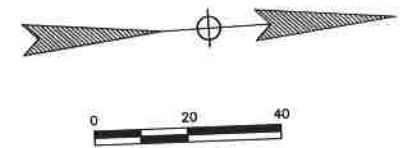
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TREE PRESERVATION PLAN LEGEND	
	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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TREE PROTECTION PLAN
SHEET 7 OF 29

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CITY OF HOUSTON PM	
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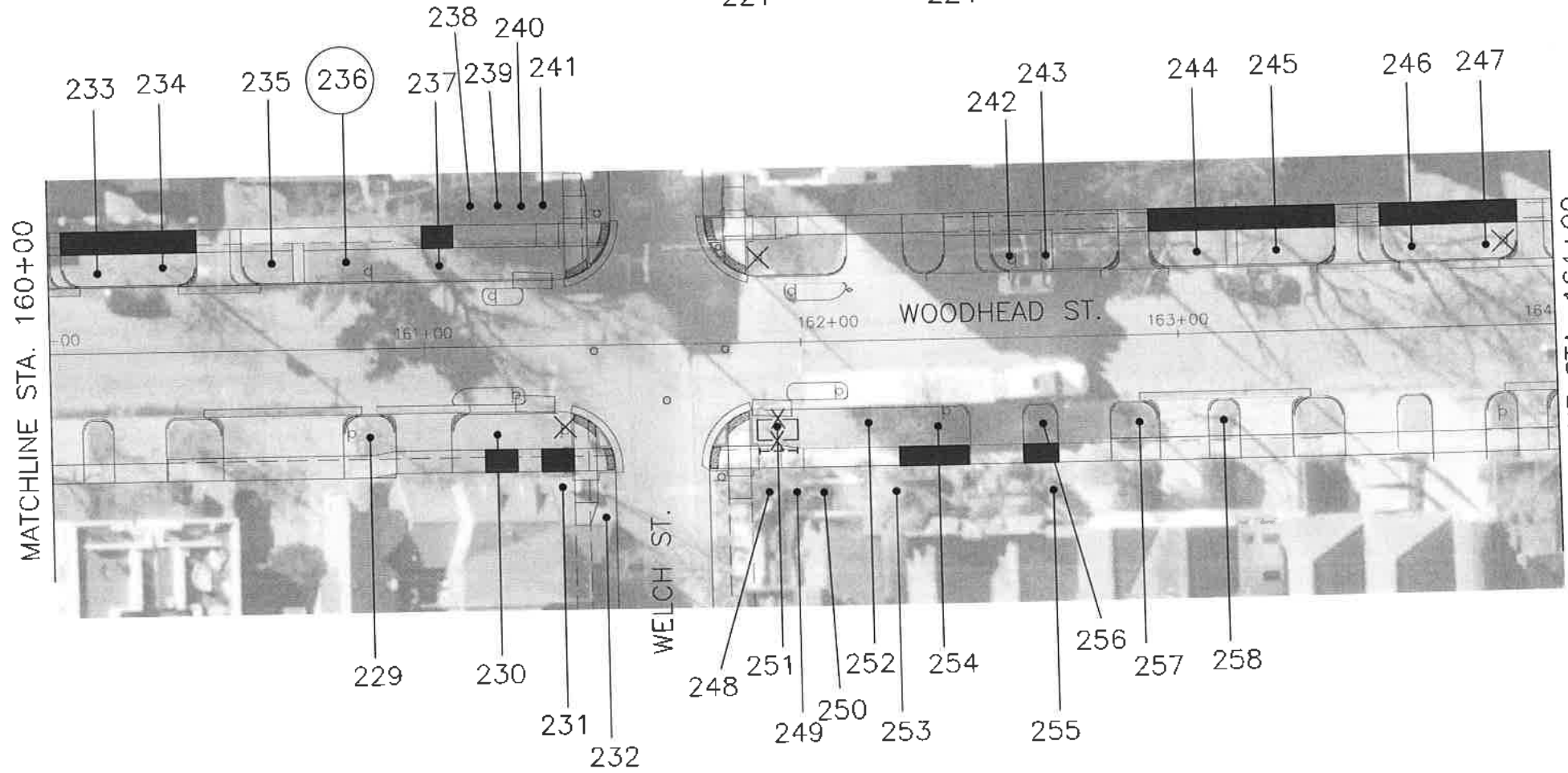
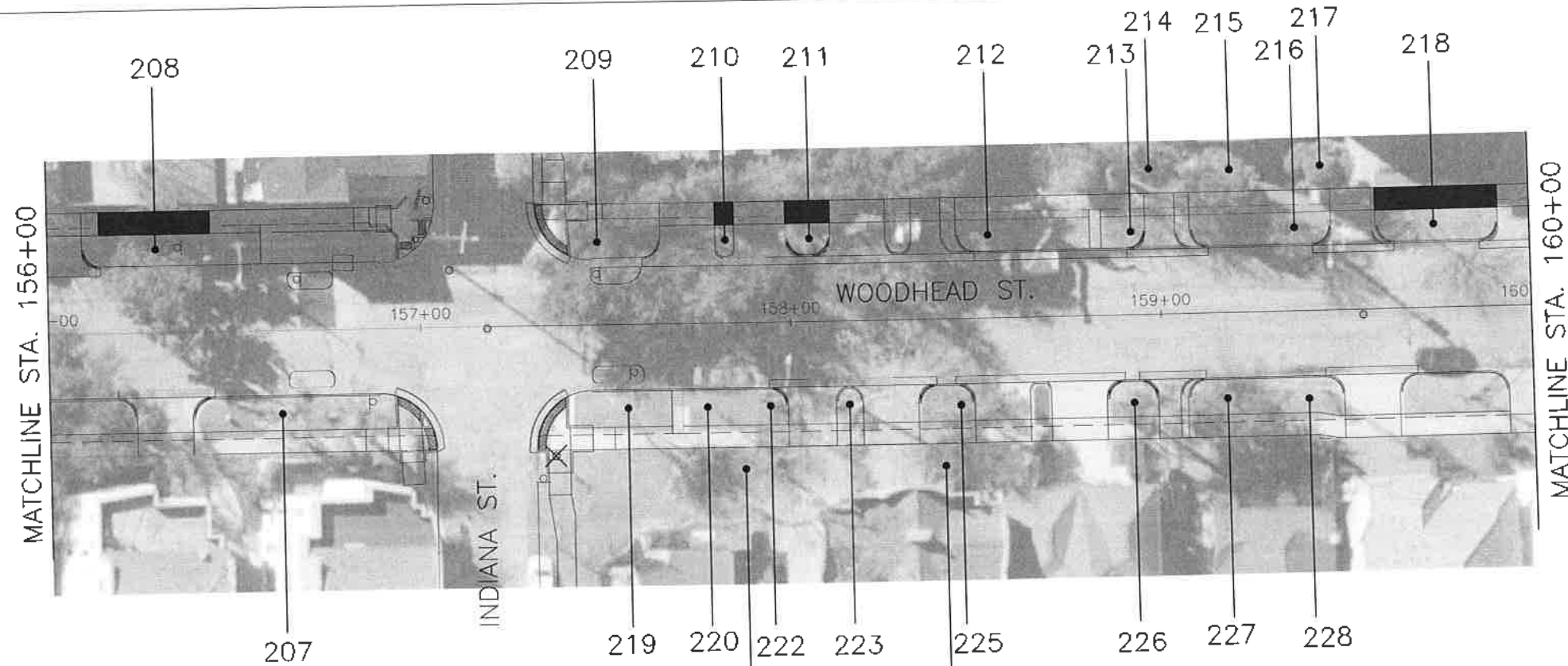
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Plot Driver: \$PLTDRL\$



	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE

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SHEET 8 OF 29

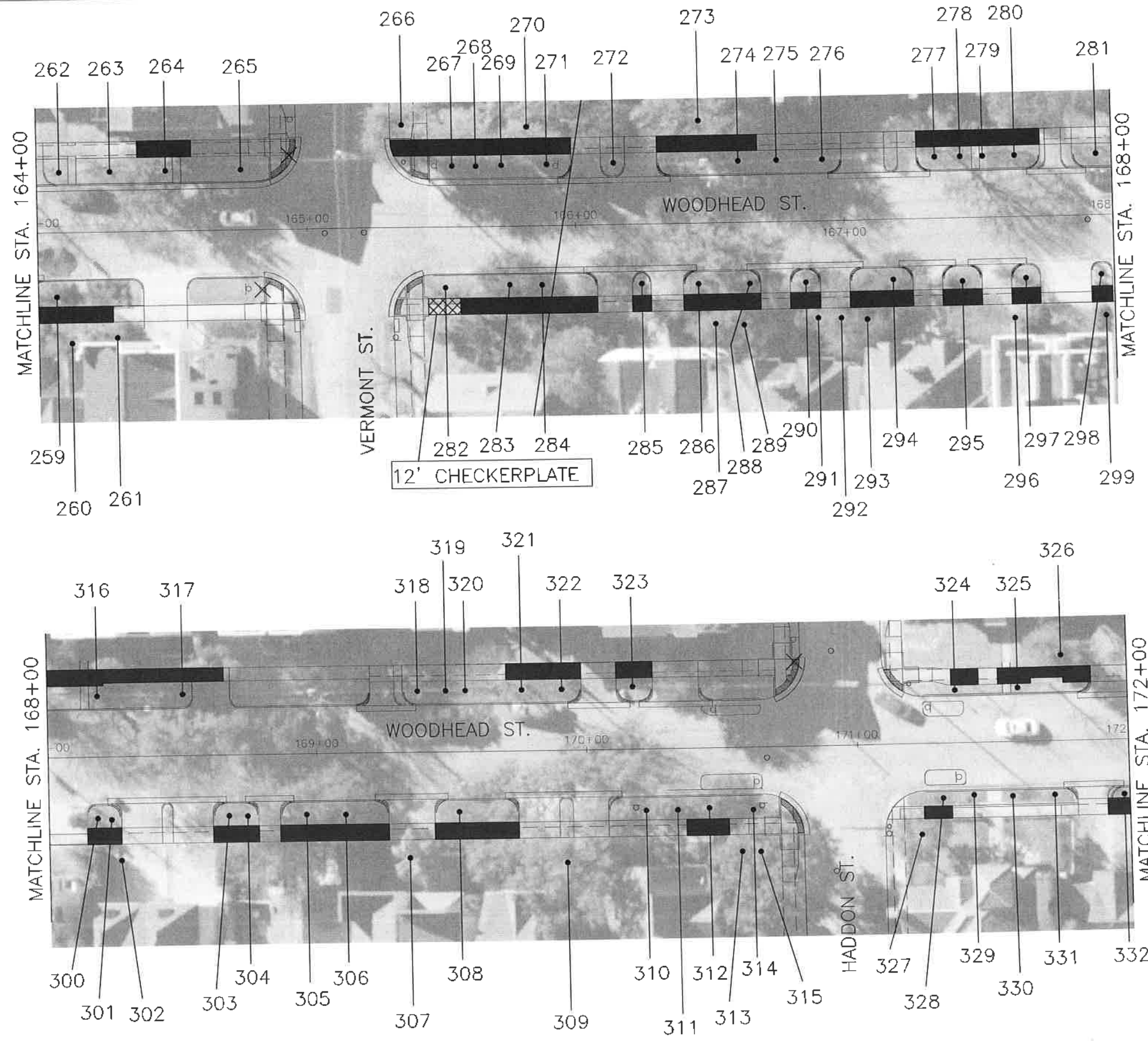
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NO.	DATE	REVISION	APP.

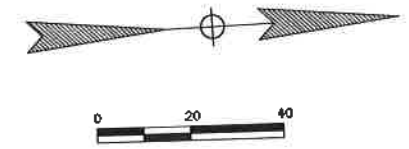
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\$USERS\$
\$TIME\$
\$DATE\$
Plotted on:

Pen Table: \$PENTBL\$
Plot Driver: \$PLTDRL\$



	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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NO.	DATE	REVISION	APP.

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TREE PROTECTION PLAN
SHEET 9 OF 29

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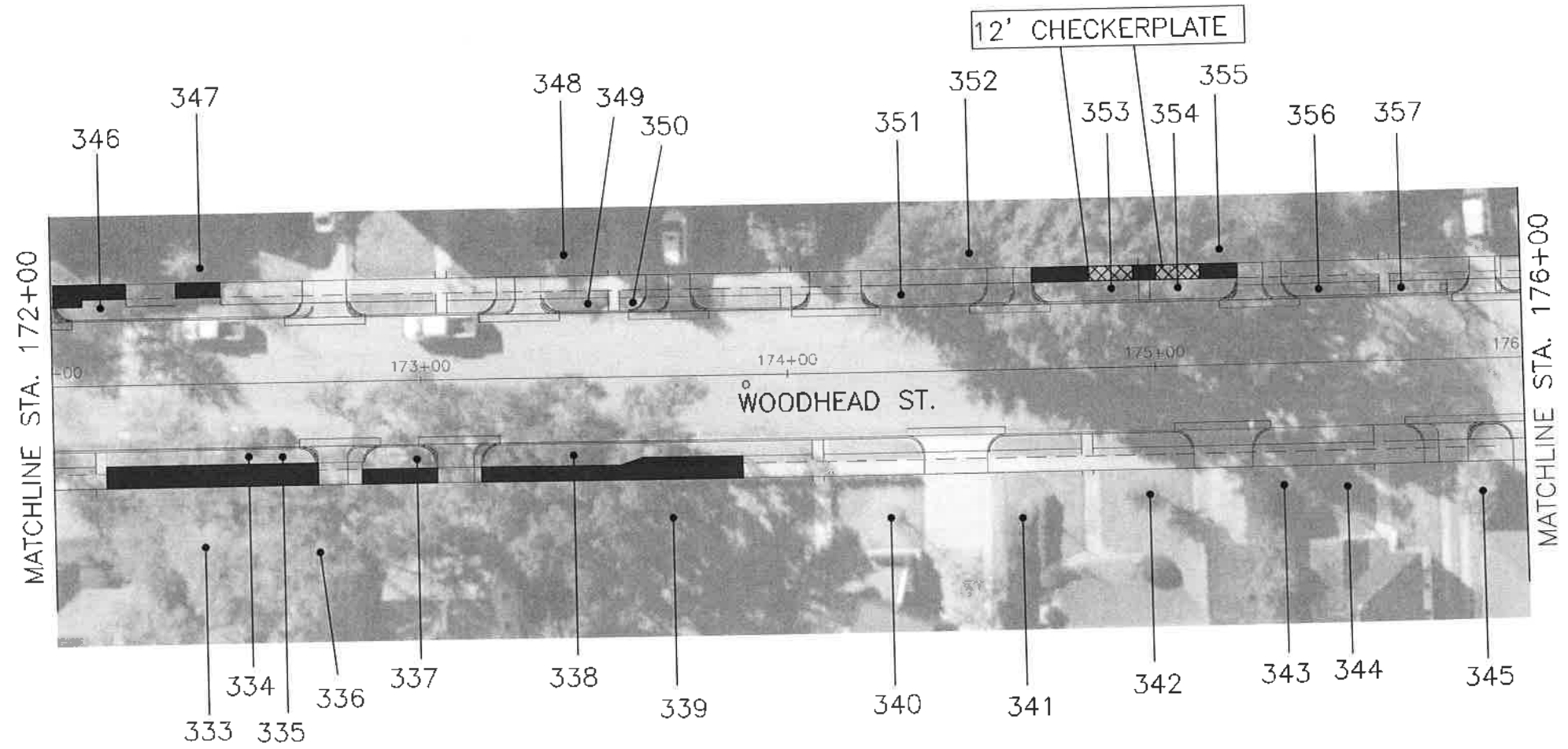
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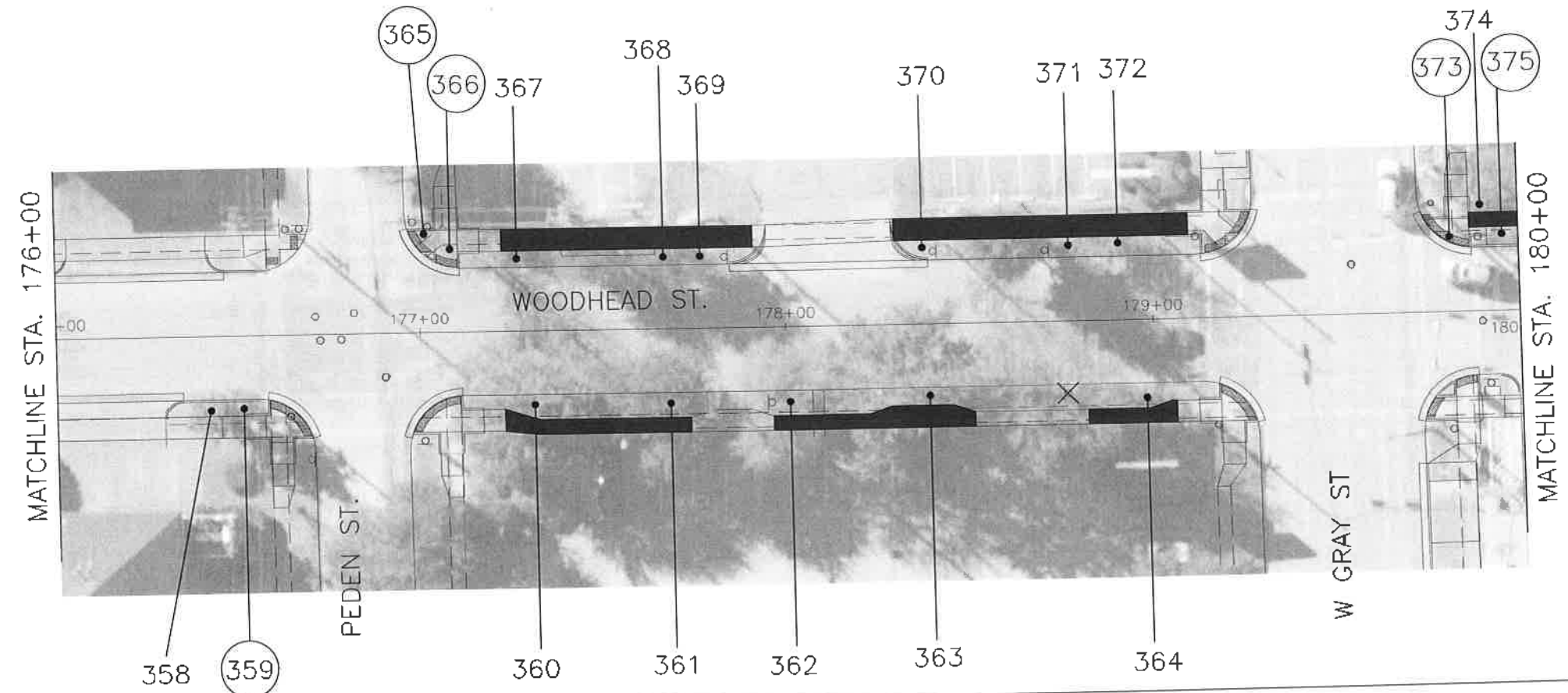
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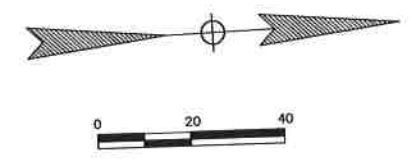


MATCHLINE STA. 176+00

MATCHLINE STA. 180+00

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



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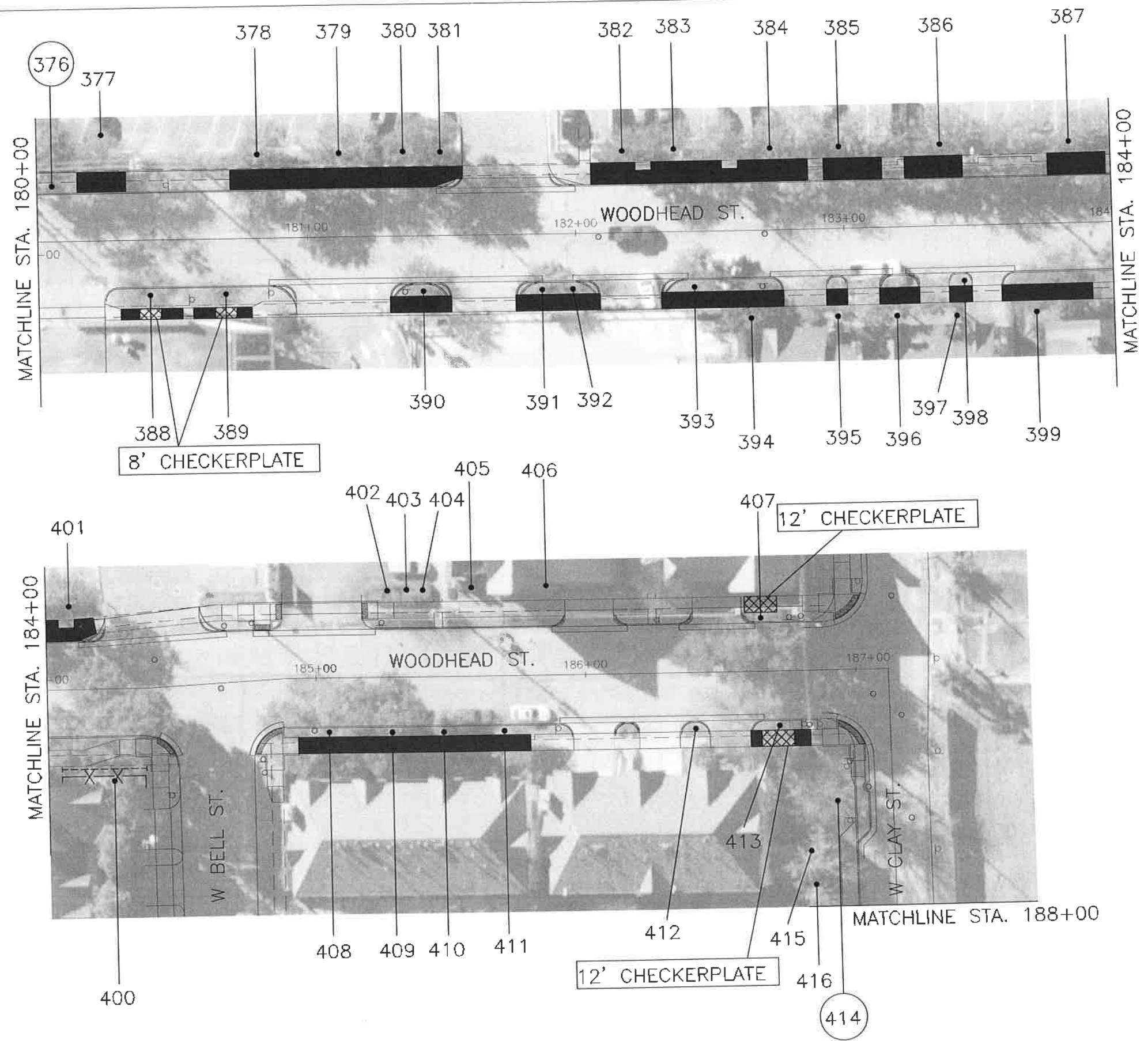
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TREE PROTECTION PLAN
SHEET 10 OF 29

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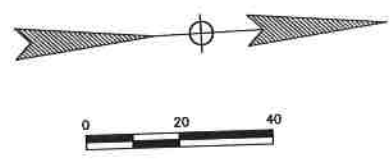
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 Plotted on:



TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



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Pen Table: \$PENTBL\$
 Plot Driver: \$PLTDRL\$

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 SHEET 11 OF 29

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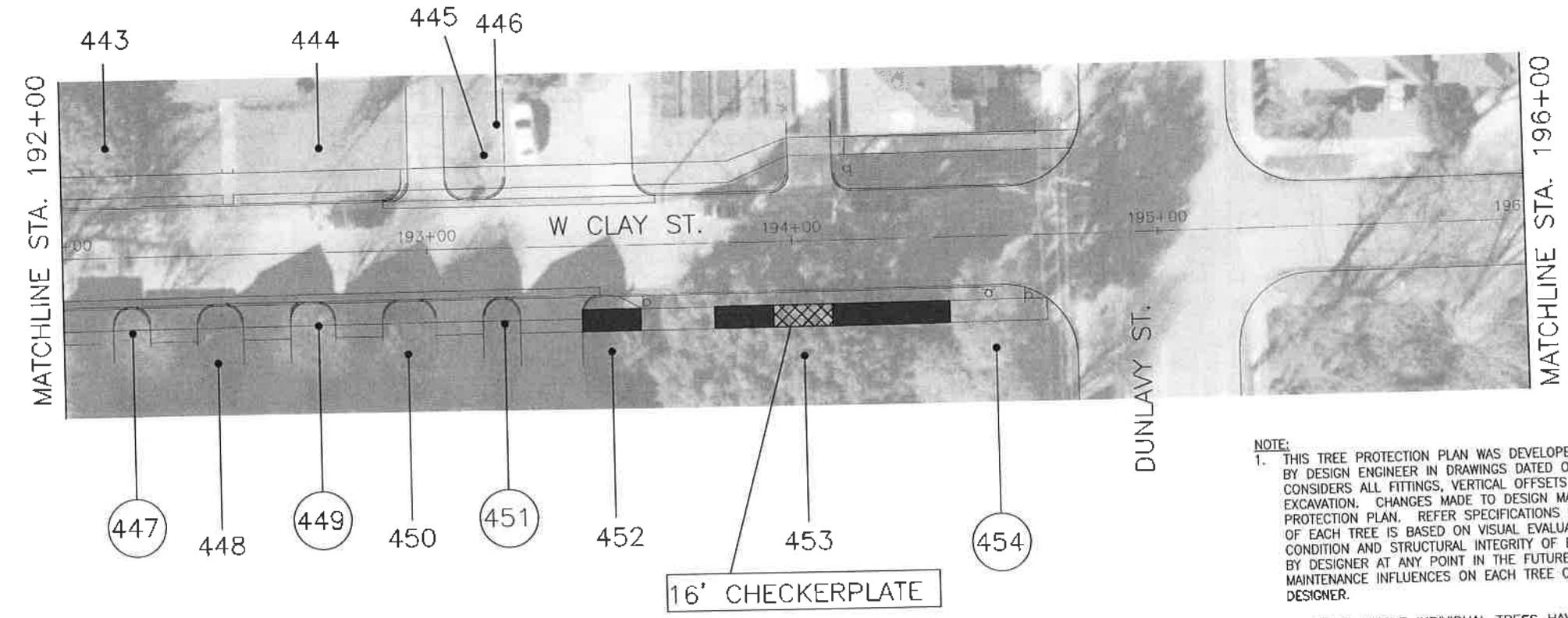
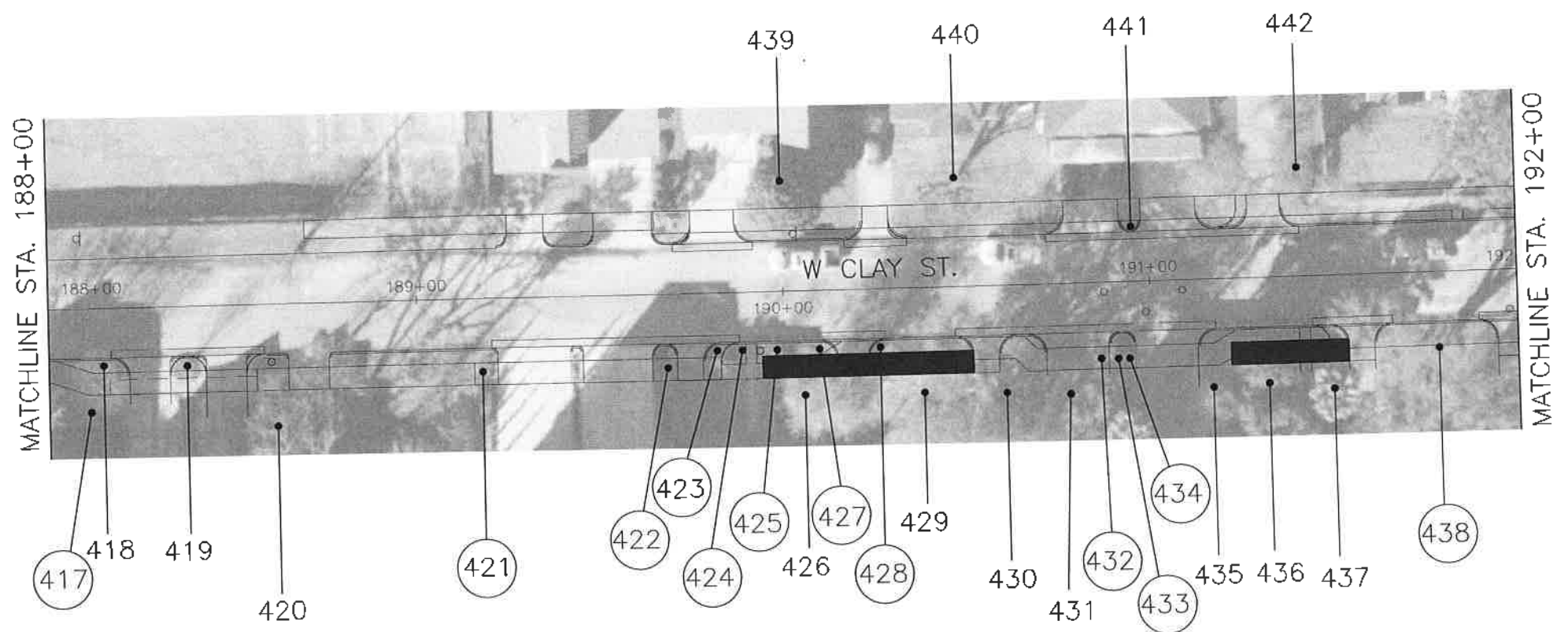
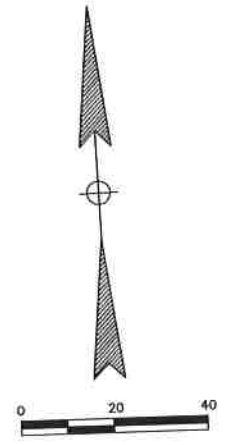
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NO.	DATE	REVISION	APP.

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



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SHEET 12 OF 29

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SHAPOOR GOLSIAM	
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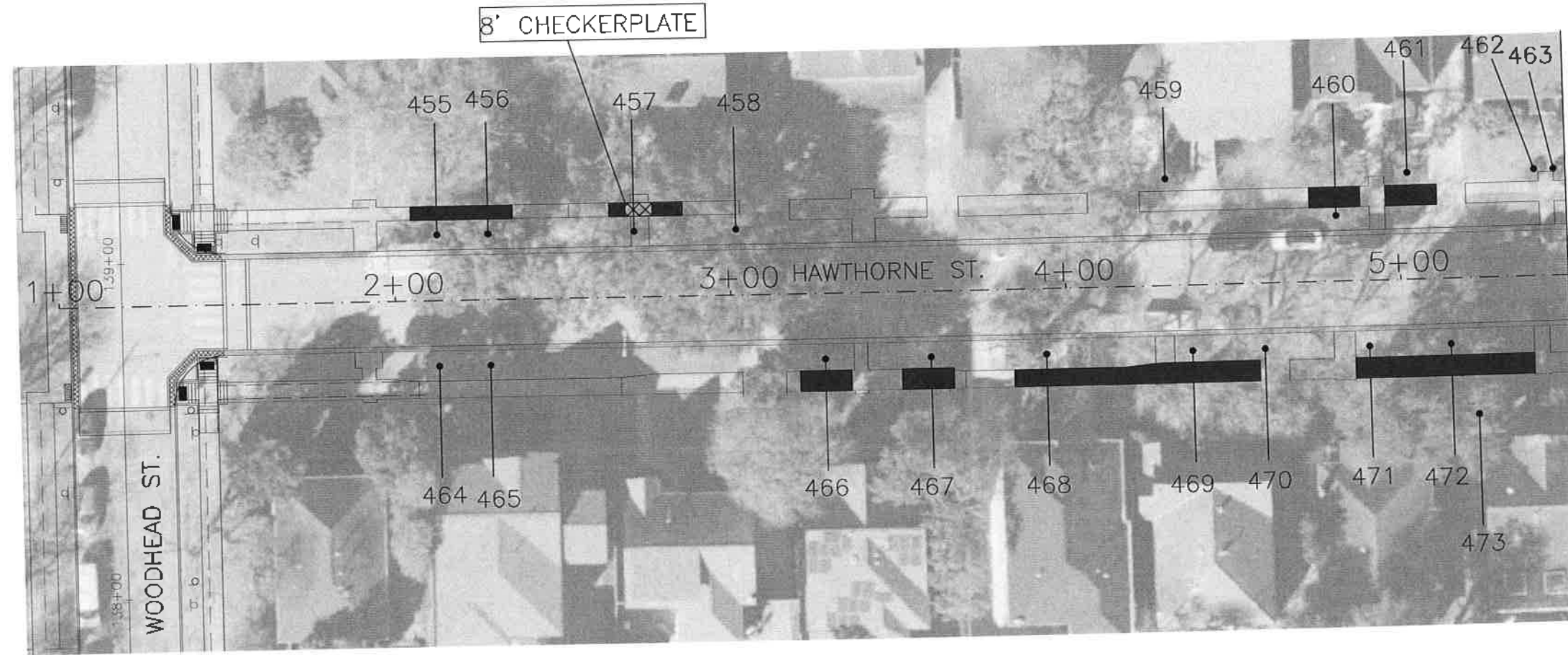
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MATCHLINE STA. 5+50

TREE PRESERVATION PLAN LEGEND

	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

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MATCHLINE STA. 5+50

MATCHLINE STA. 10+00

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SHEET 13 OF 29

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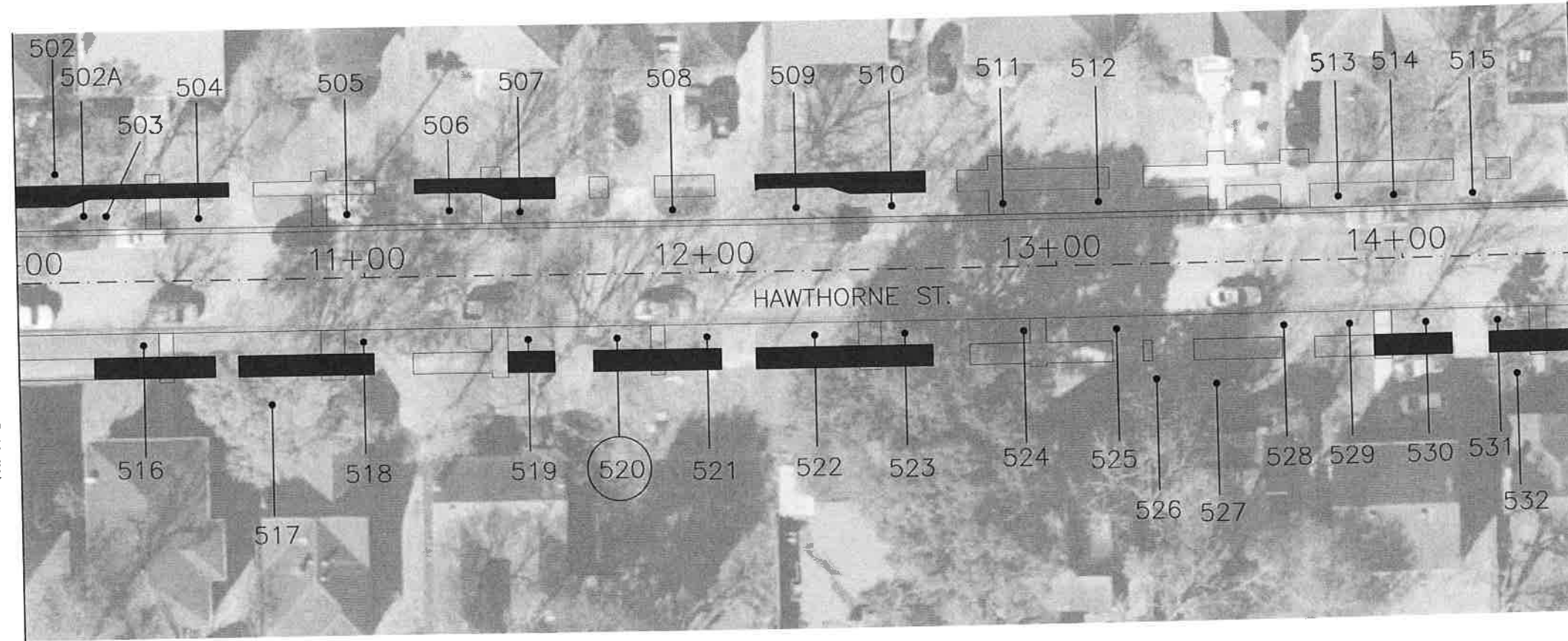
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Plot Driver: \$PLTDRL\$

MATCHLINE STA. 10+00



MATCHLINE STA. 14+50

TREE PRESERVATION PLAN LEGEND

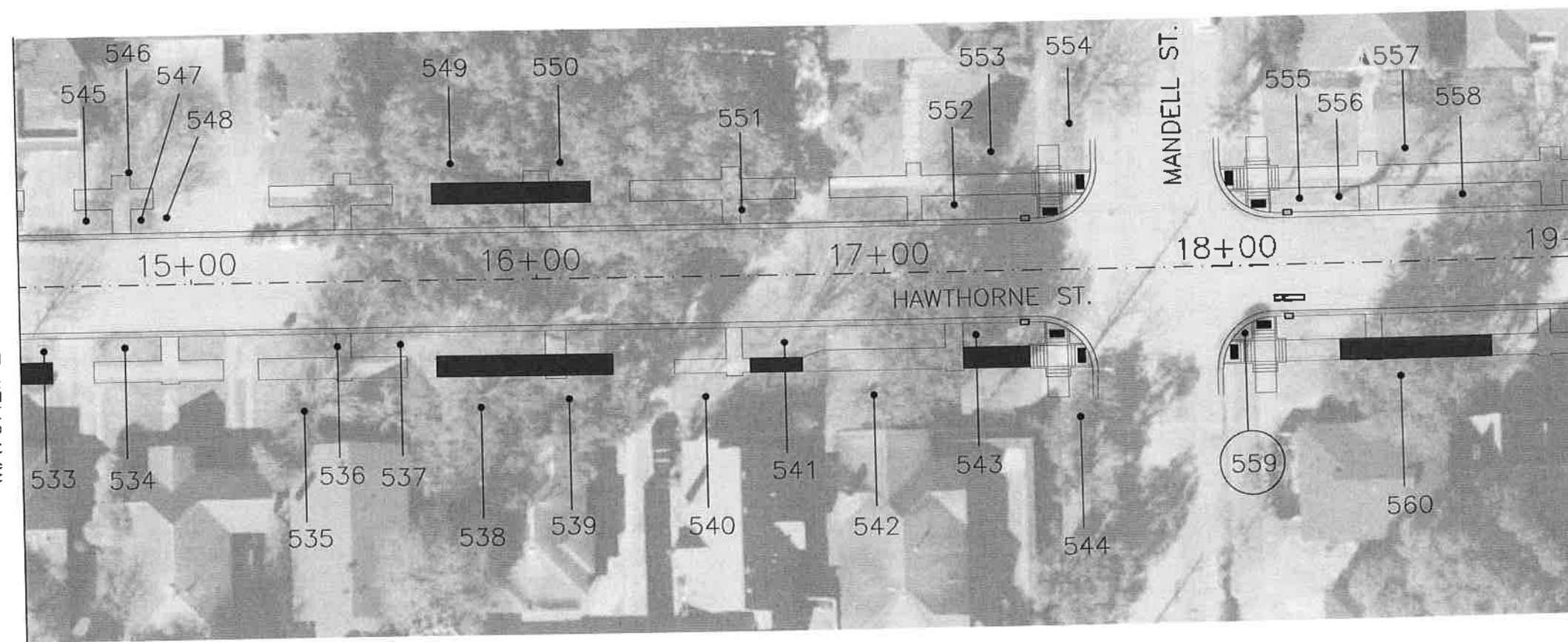
	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

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MATCHLINE STA. 14+50



MATCHLINE STA. 19+00

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APPROVED: *Craig N. Koehl* 11-03-2021

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CITY OF HOUSTON
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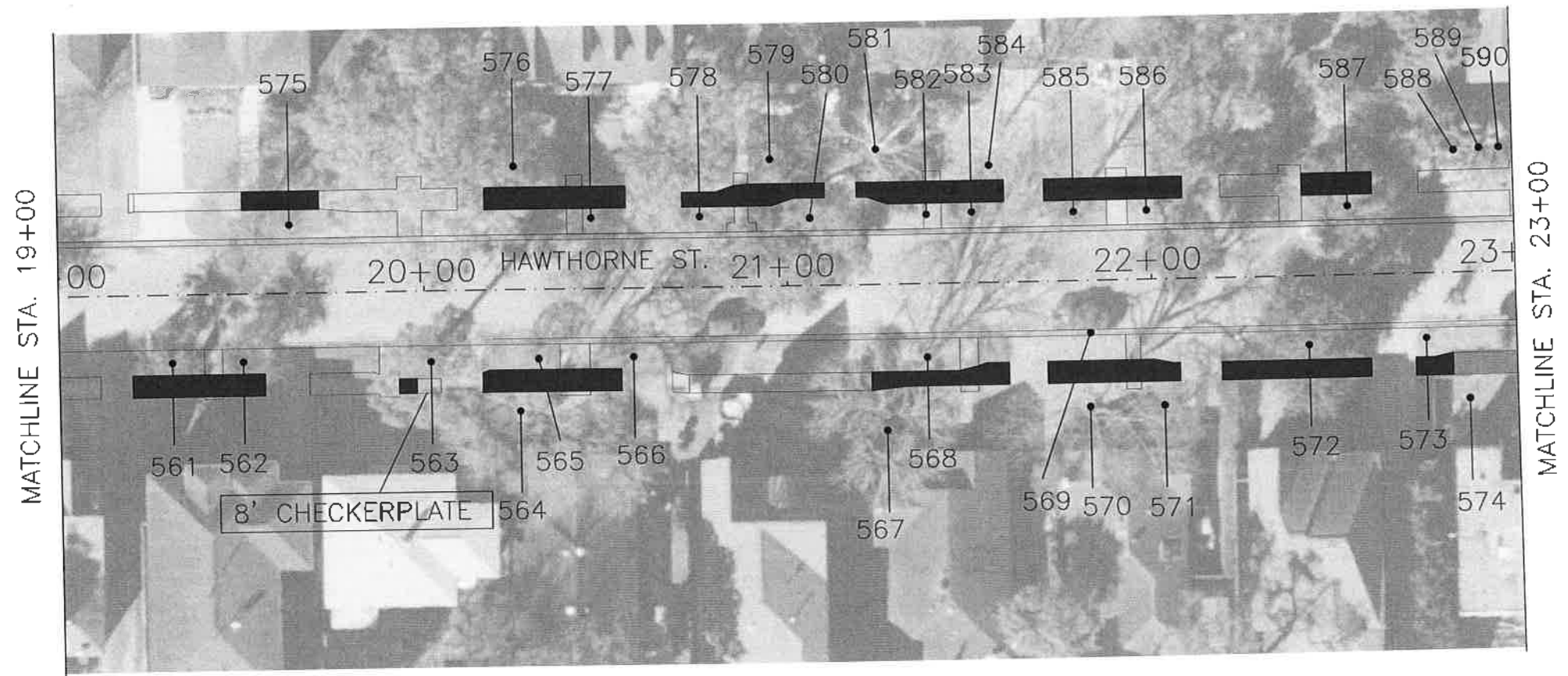
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 14 OF 29

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-T27000-002-7	7 2 2 4 8
1 INCH = 20 FEET	
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CITY OF HOUSTON PW	
SHAPPOOR COLSJM	
SHEET NO. 232 OF 247	

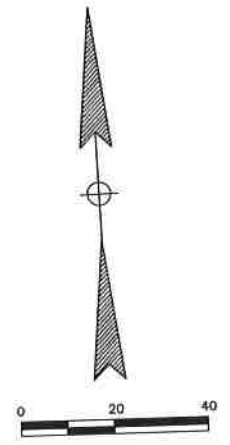
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Plotted on: \$DATE\$ \$TIME\$ \$USER\$

Pen Table: \$PENTBL\$
Plot Driver: \$PLTDV\$



	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

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TREE PROTECTION PLAN
SHEET 15 OF 29

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\$USER\$

\$TIME\$

\$DATE\$

Plotted on:

Pen Table: \$PENTBL\$
Plot Driver: \$PLDRVL\$



	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE



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NO.	DATE	REVISION	APP.

MATCHLINE STA. 23+00

MATCHLINE STA. 29+00

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SHEET 16 OF 29

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SHAPOOR GOLSM	
SHEET NO. 234 OF 247	

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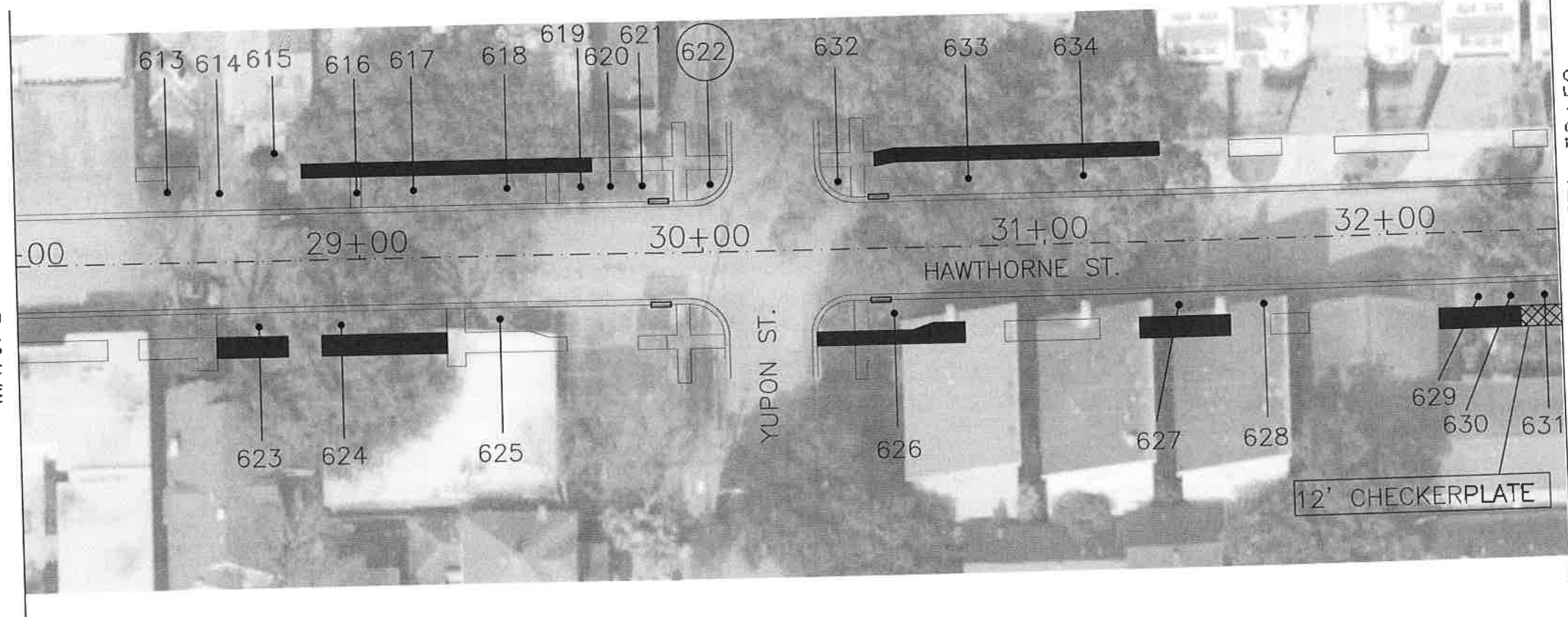
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Plot Driver: \$PLTRVLS\$

MATCHLINE STA. 29+00



MATCHLINE STA. 32+50

TREE PRESERVATION PLAN LEGEND

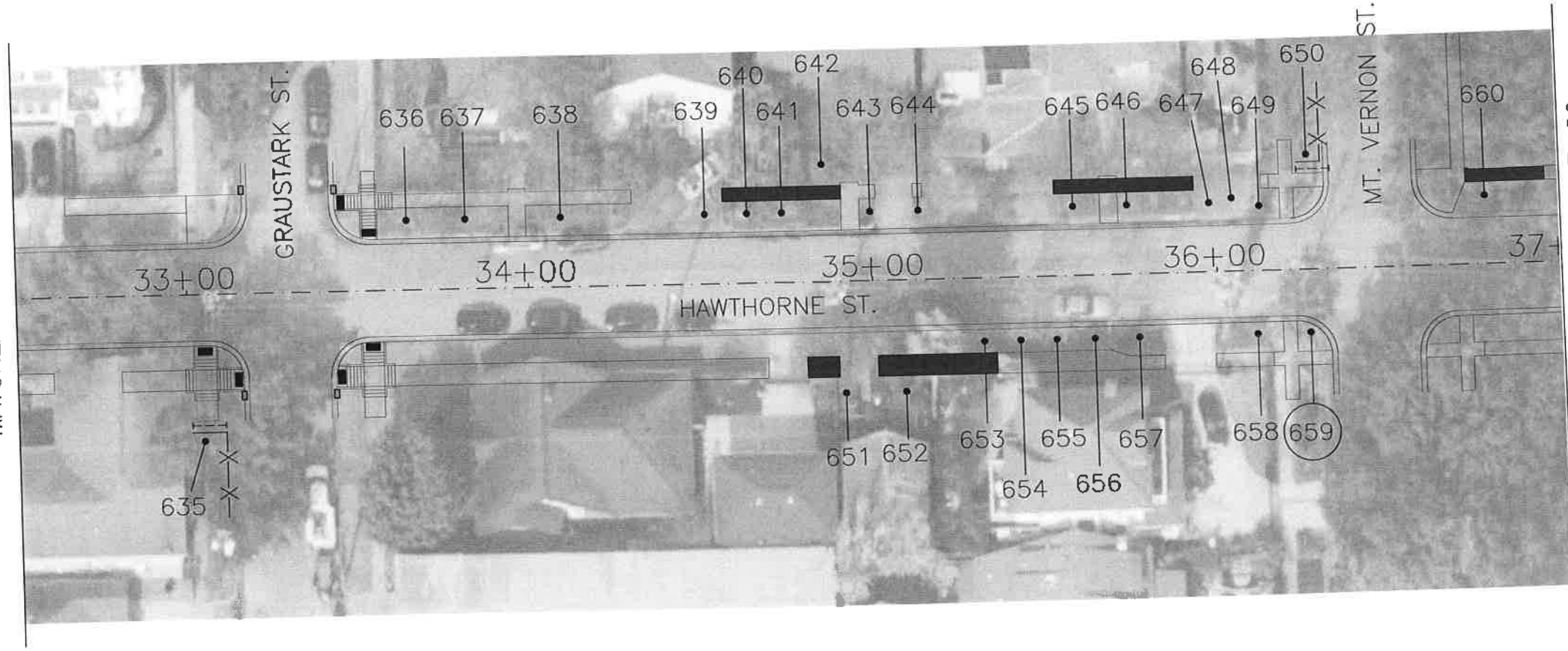
- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

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MATCHLINE STA. 32+50



MATCHLINE STA. 37+00

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SHEET 17 OF 29

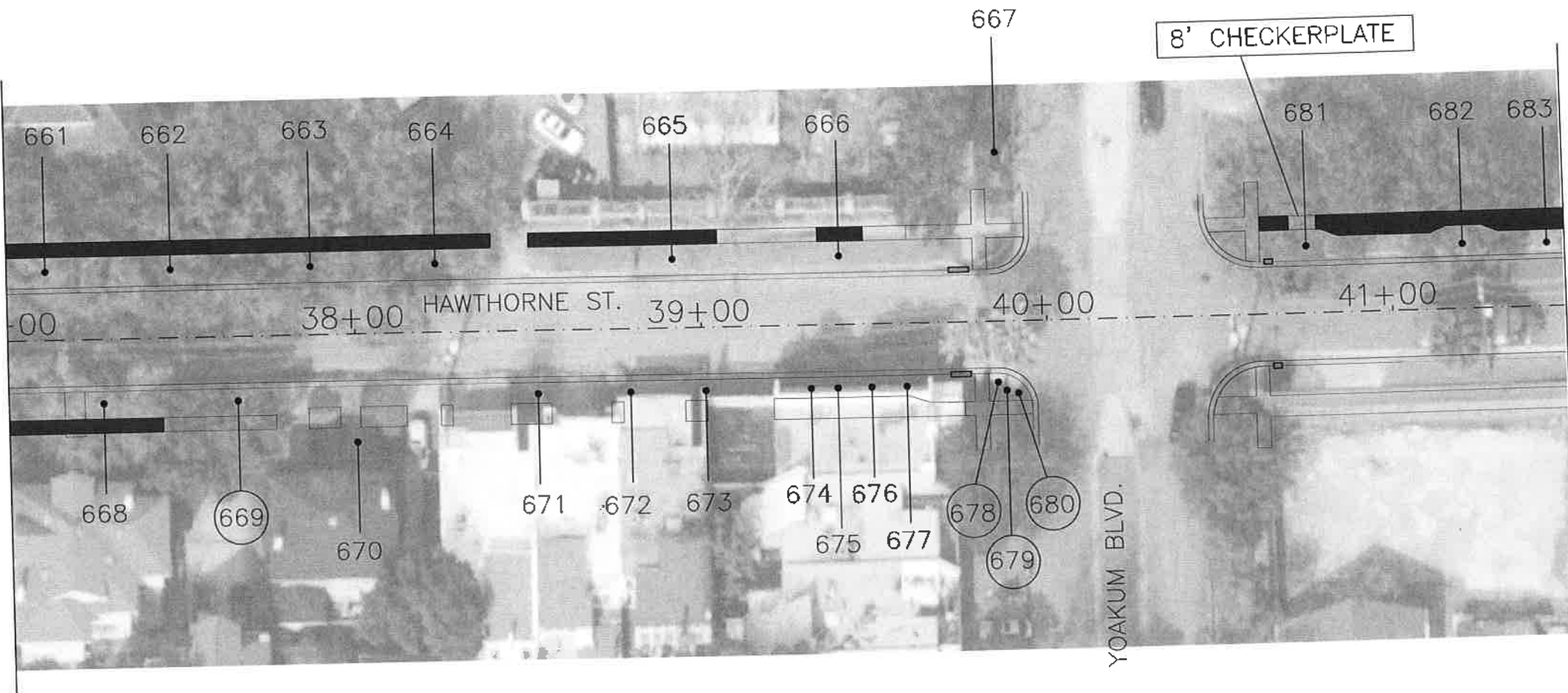
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CITY OF HOUSTON PH	
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SHEET NO. 235 OF 247	

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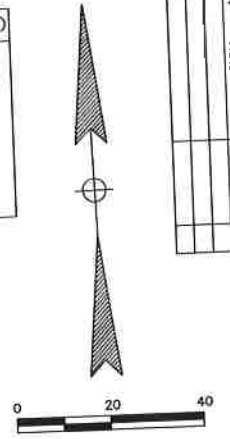
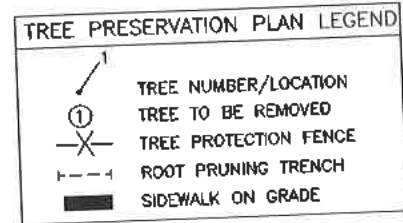
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Plotted on: \$DATES \$TIMES \$USERS

MATCHLINE STA. 37+00



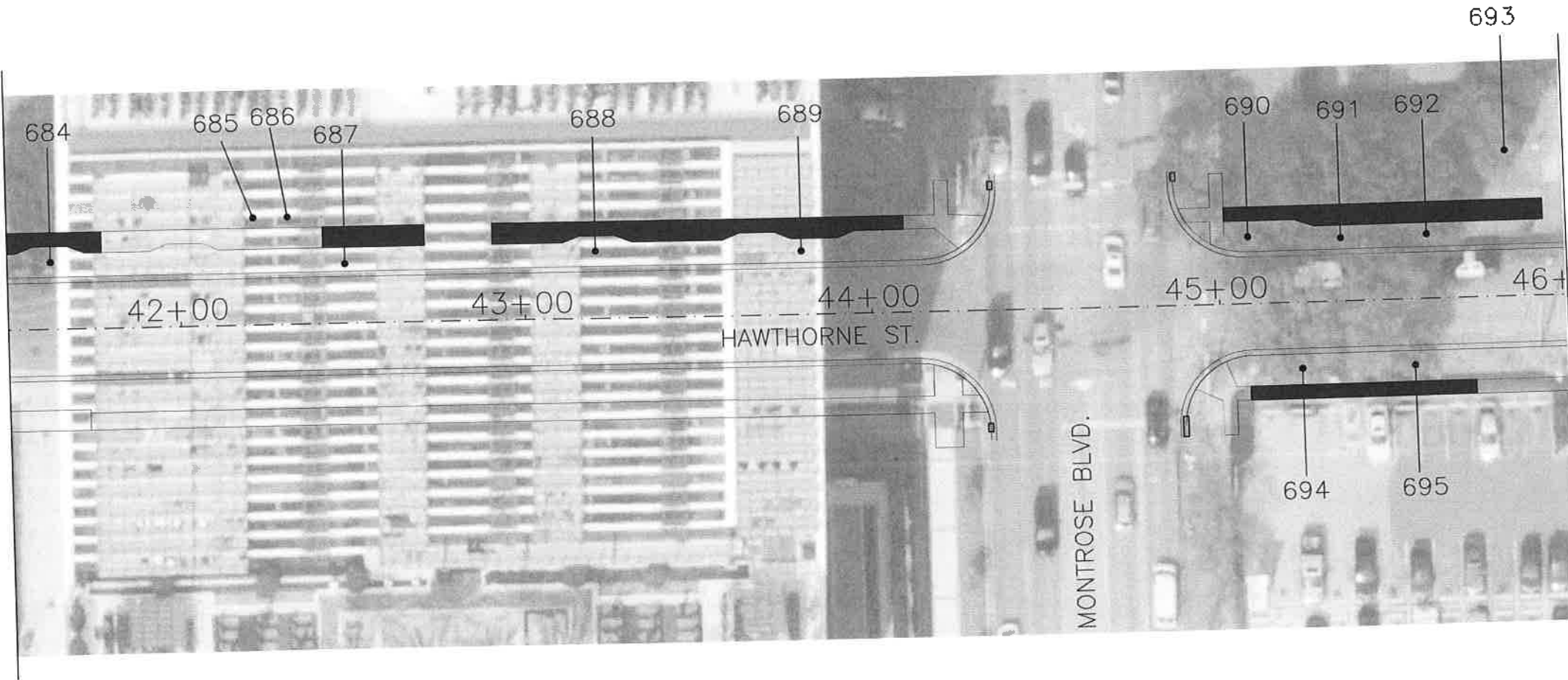
MATCHLINE STA. 41+50



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MATCHLINE STA. 41+50



MATCHLINE STA. 46+00

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TREE PROTECTION PLAN
SHEET 18 OF 29

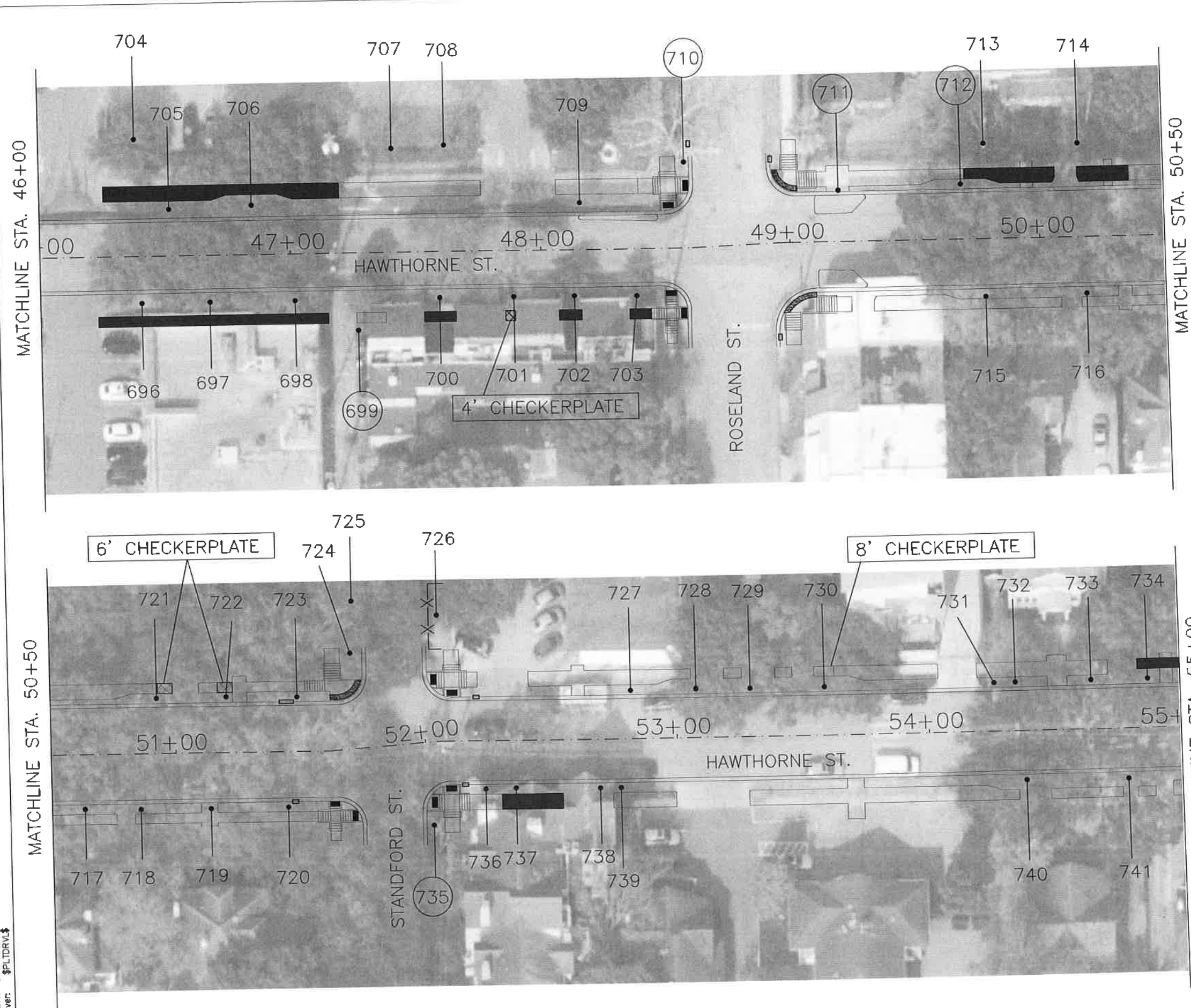
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1 INCH = 20 FEET	
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SHAPOOR COLSM	
SHEET NO. 236 OF 247	

Pen Table: \$PENTBL\$
Plot Driver: \$PLTRVL\$

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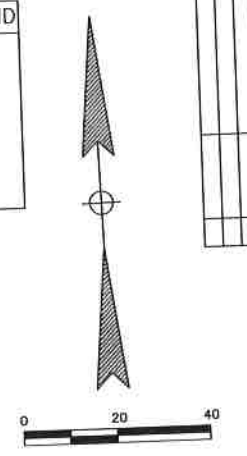
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Pen Table: \$PENTBL\$
Plot Driver: \$PLTDV\$



TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- SIDEWALK ON GRADE



NO.	DATE	REVISION	APP.

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APPROVED: *Craig A. Koehl* 11-03-2021

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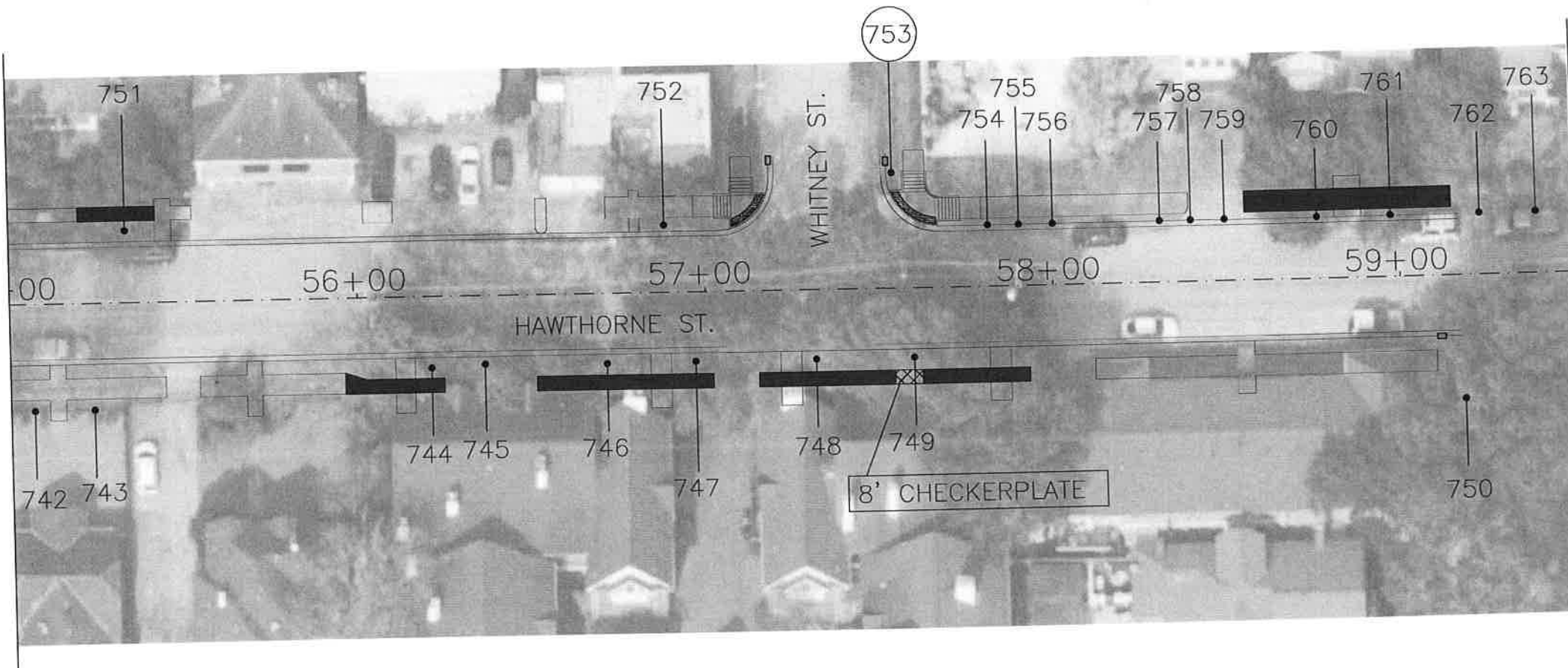
CITY OF HOUSTON
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NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 19 OF 29

WBS NUMBER N-T27000-002-7	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM	
SHAPOOR COLSM	
SHEET NO. 237 OF 247	

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Plotted on:

MATCHLINE STA. 55+00

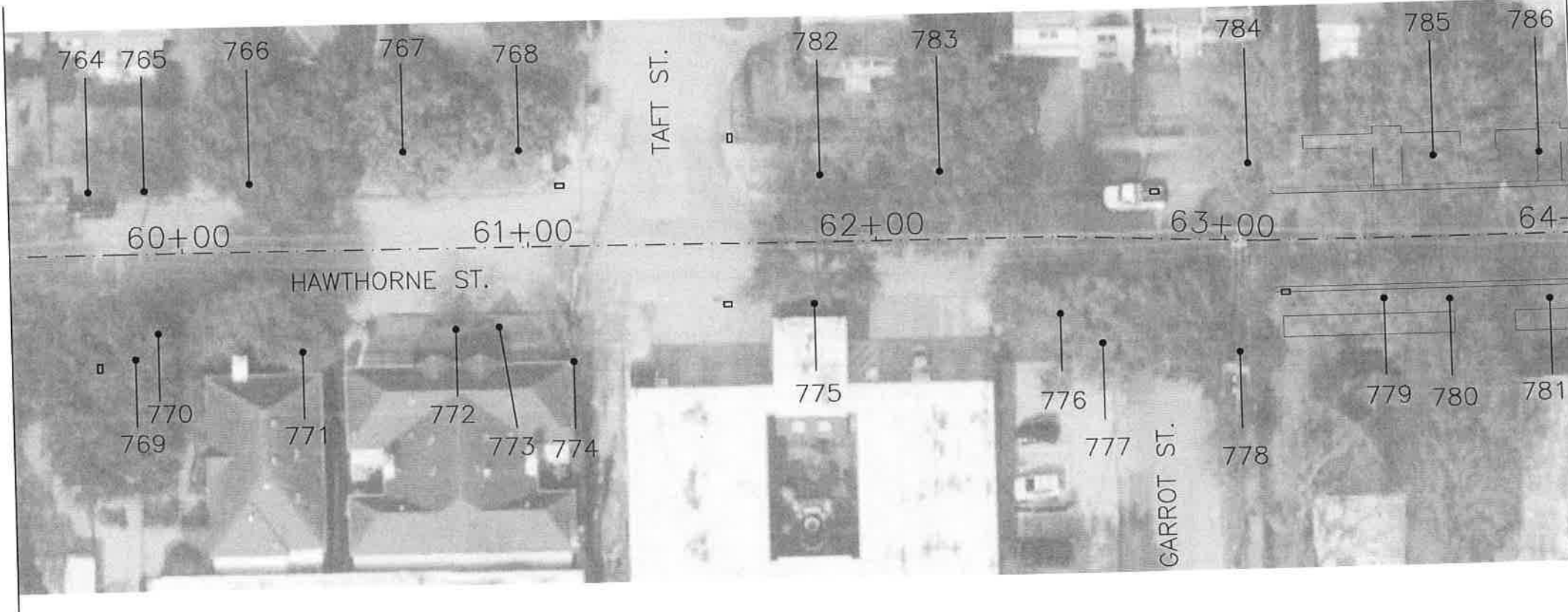


MATCHLINE STA. 59+50

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Pen Table: \$PENTBL\$
Plot Driver: \$PLDRVL\$

MATCHLINE STA. 59+50



MATCHLINE STA. 64+00

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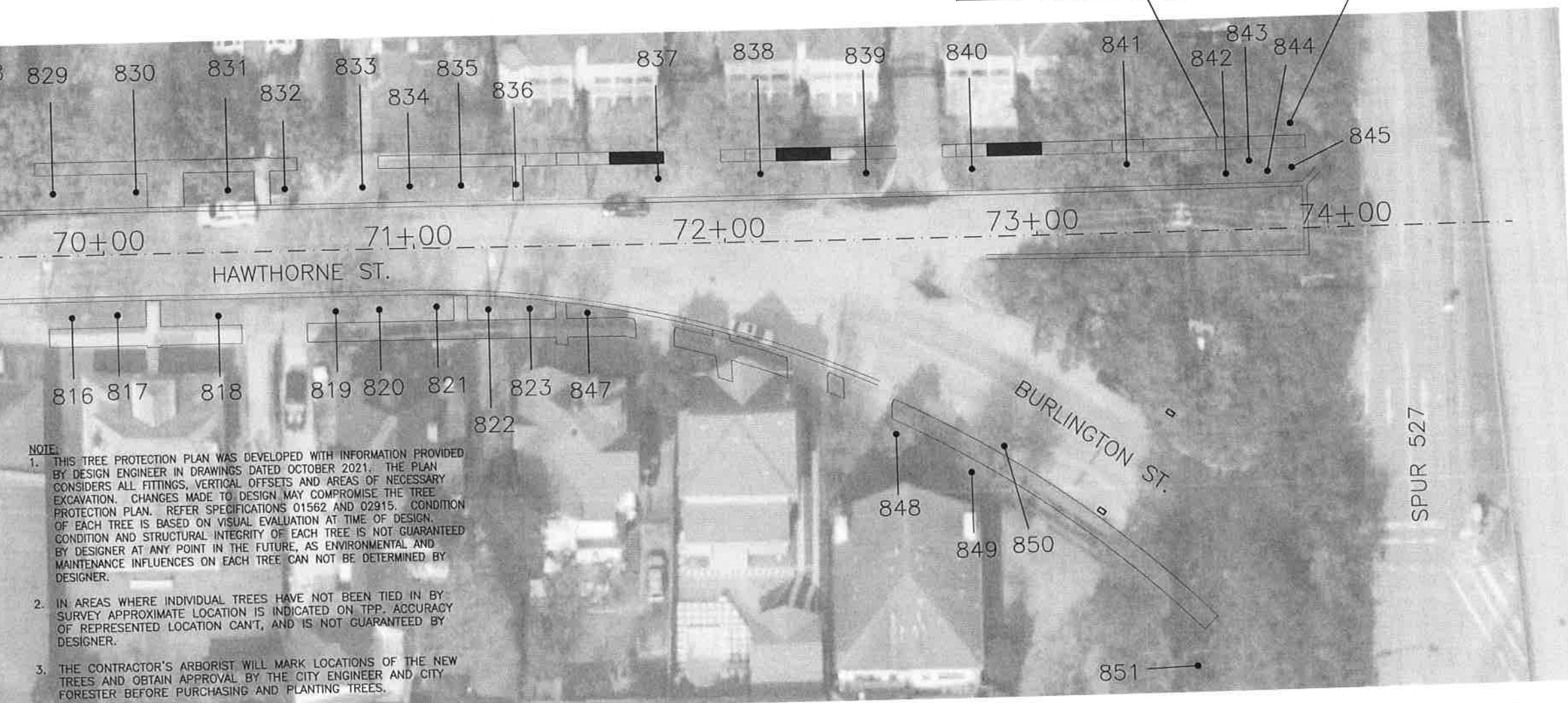
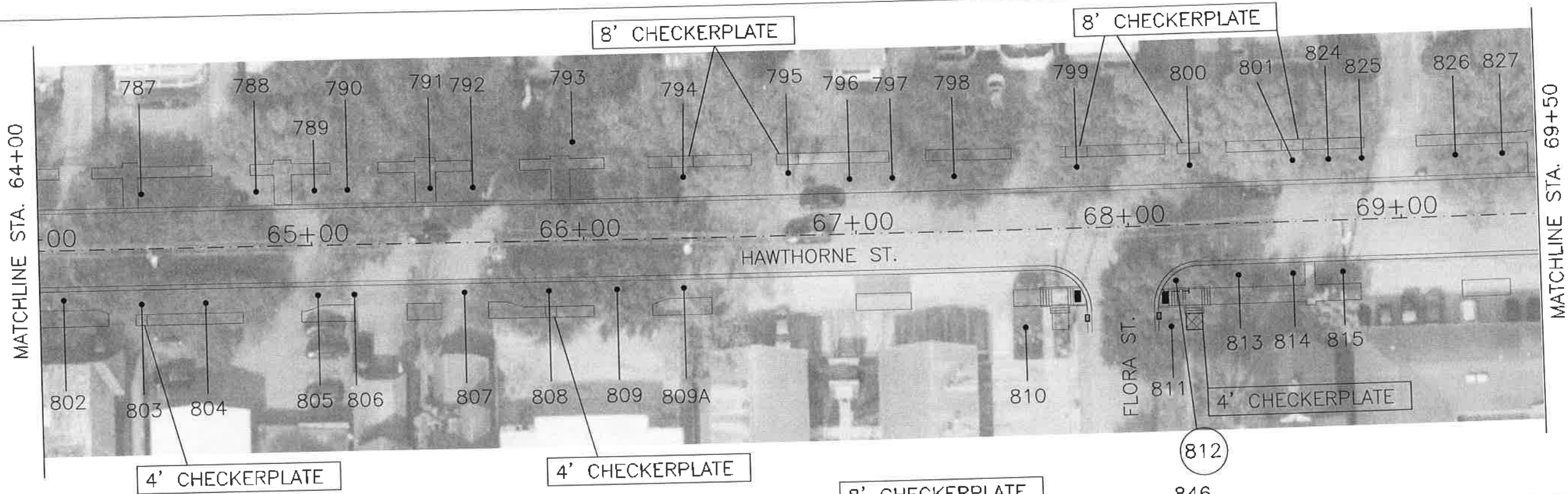
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SHEET 20 OF 29

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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1 INCH = 20 FEET	
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SHAPOOR GOLSM	
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Plotted on:



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TREE PRESERVATION PLAN LEGEND	
	TREE NUMBER/LOCATION
	TREE TO BE REMOVED
	TREE PROTECTION FENCE
	ROOT PRUNING TRENCH
	SIDEWALK ON GRADE

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SHEET 21 OF 29

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1 INCH = 20 FEET	
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SHEET NO. 239 OF 247	

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Plot Driver: \$PLTDRL\$

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NO.	DATE	REVISION	APP.

\$USERS

\$TIME

\$DATE


Plotted on:

Pen Tablet: \$PENTBL\$
Plot Driver: \$PLDRVL\$

Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
1	4610 Woodhead	8" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
2	4610 Woodhead	23" Live Oak	70% dieback, Chlorotic, Poor, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
3	1801 Lexington	22" Live Oak	25% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
4	1801 Lexington	24" Live Oak	30% dieback, Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
5	1801 Lexington	27" Live Oak	Ordinance tree	
6	4603 Woodhead	10" Crepe Myrtle	Private tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
7	1750 Lexington	28" Water Oak	40% dieback, Ordinance tree	
8	4507 Woodhead	13" Arizona Ash	Not ordinance tree	
9	4507 Woodhead	6" Crepe Myrtle	Topped, Private tree, Not impacted	
10	4507 Woodhead	12" Crepe Myrtle	Topped, Not ordinance tree	
11	4507 Woodhead	16" Crepe Myrtle	Topped, Private tree, Not impacted	
12	4503 Woodhead	2" Crepe Myrtle	Topped, Not ordinance tree	
13	4503 Woodhead	35" Palm	Freeze damage, Poor, Not ordinance tree	
14	4503 Woodhead	25" Palm	Freeze damage, Poor, Not ordinance tree	
15	1751 Norfolk	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
16	1751 Norfolk	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
17	Not available	11" Rain tree	Private tree	Clearance prune
18	Not available	14" Rain tree	Private tree	Clearance prune
19	Not available	9" Rain tree	Private tree, not impacted	
20	1755 Colquitt	4" Ligustrum	Private tree	Clearance prune
21	4212 Woodhead	18" Sugarberry	Trunk cavities, Poor, Private, Not impacted	
22	4212 Woodhead	17" Sugarberry	Topped, Private tree, Not impacted	
23	1902 Colquitt	13" Live Oak	Trunk scars, Topped utility, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
24	1802 Colquitt	13" Live Oak	Utility pruned, Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
25	1802 Colquitt	12" Live Oak	Utility pruned, Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
26	1802 Colquitt	12" Live Oak	Utility pruned, Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
27	4112 Woodhead	9" Little Gem Magnolia	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
28	4112 Woodhead	9" Little Gem Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
29	4110 Woodhead	14" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
30	1756 Colquitt	15" Live Oak	Ordinance tree, Not impacted	
31	1756 Colquitt	18" Live Oak	Large roots against walk, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
32	4115 Woodhead	8" Eastern Red Cedar	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
33	4115 Woodhead	9" Eastern Red Cedar	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
34	4111 Woodhead	10" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
35	4107 Woodhead	7" Little Gem Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
36	4107 Woodhead	5" Little Gem Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
37	1759 W Main	7" Bradford Pear	Not ordinance tree	
38	1759 W Main	15" Live Oak	Large roots against walk, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
39	1759 W Main	15" Live Oak	Large roots against walk, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
40	1759 W Main	7" Loquat	Not ordinance tree	
41	1759 W Main	9" Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
42	1759 W Main	11" Crepe Myrtle	Private tree, not impacted	
43	1759 W Main	9" Bradford Pear	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
44	4106 Woodhead	9" Little Gem Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
45	4106 Woodhead	6" Little Gem Magnolia	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
46	1801 W Main	14" Crepe Myrtle	Private tree, not impacted	
47	1801 W Main	11" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
48	1801 W Main	12" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
49	1801 W Main	9" Crepe Myrtle	Not ordinance tree	
50	1801 W Main	19" Live Oak	Utility pruned, Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
51	4016 Woodhead	10" Pine	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
52	4016 Woodhead	8" Pine	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
53	4016 Woodhead	4" Shumard Oak	Topped, Private tree, Not impacted	
54	4014 Woodhead	4" Water Oak	Private tree, not impacted	
55	4012 Woodhead	4" Fringe Tree	Private tree, not impacted	

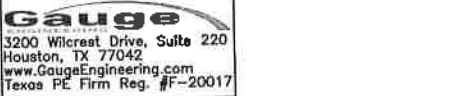
Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
56	1916 Woodhead	6" Crepe Myrtle	Not ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
57	3918 Woodhead	11" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
58	3912 Woodhead	5" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
59	3910 Woodhead	5" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
60	1807 Sul Ross	12" Bur Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
61	1807 Sul Ross	13" Bur Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
62	1807 Sul Ross	12" Bur Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
63	1807 Sul Ross	12" Overcup Oak	Dead, Remove for safety concerns	Remove tree, No replacement required
64	1807 Sul Ross	10" Vitex	Private tree	Clearance prune
65	1800 Sul Ross	21" Live Oak	30% dieback, Ordinance tree	
66	1800 Sul Ross	11" Crepe Myrtle	Utility pruned, Not ordinance tree	
67	1800 Sul Ross	9" Crepe Myrtle	Utility pruned, Not ordinance tree	
68	1800 Sul Ross	21" Tallow	Utility pruned, Not ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
69	Not available	11" Crepe Myrtle	Utility pruned, Not ordinance tree	
70	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
71	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
72	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
73	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
74	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
75	1802 W Alabama	4" Redtip Photinia	Private tree	Clearance prune
76	1802 W Alabama	9" Crepe Myrtle	Private tree	Clearance prune
77	1756 W Alabama	52" Water Oak	Included bark, Co-dominant stems, Private tree, Poor conditions	Demo-form-pour walk without damage to tree roots 1" diameter or larger
78	1756 W Alabama	17" Rain tree	Private tree	
79	Not used			
80	1755 Marshall	23" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
81	1755 Marshall	22" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
82	1755 Marshall	23" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
83	1802 W Alabama	12" Crepe Myrtle	Private tree	Clearance prune
84	1802 W Alabama	14" Crepe Myrtle	Private tree	Clearance prune
85	1801 Marshall	8" Black Willow	Topped, Not ordinance tree	Clearance prune
86	1801 Marshall	8" Black Willow	Topped, Not ordinance tree	Clearance prune
87	1801 Marshall	8" Black Willow	Topped, Not ordinance tree	Clearance prune
88	1801 Marshall	42" Live Oak	80% dieback, Ordinance tree, Poor, Not impacted	
89	1754 Marshall	16" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
90	1754 Marshall	15" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
91	1754 Marshall	16" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
92	1754 Marshall	19" Baldcypress	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
93	1754 Marshall	16" Bradford Pear	Not ordinance tree	
94	1802 Kipling	35" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
95	1802 Kipling	9" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
96	1802 Kipling	8" Yaupon	Private tree	Clearance prune
97	1802 Kipling	8" Yaupon	Private tree	Clearance prune
98	1802 Kipling	10" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
99	1802 Kipling	8" Yaupon	Private tree	Clearance prune
100	1802 Kipling	8" Yaupon	Private tree	Clearance prune
101	1802 Kipling	15" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
102	1802 Kipling	23" Live Oak	Utility pruned, Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
103	1801 Harold	2" Pecan	Private tree, not impacted	
104	1801 Harold	2" Pecan	Private tree, not impacted	
105	1801 Harold	15" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
106	1801 Harold	12" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
107	1801 Harold	11" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
108	1801 Harold	10" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
109	1801 Harold	9" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	Clearance prune
110	1801 Harold	11" Juniper	Private tree, not impacted	
111	3509 Woodhead	15" Pecan	Poor, Dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
112	3509 Woodhead	17" Pecan	Topped by utility, Poor, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
113	1759 Harold	17" Crepe Myrtle	Not ordinance tree	
114	1759 Harold	7" Loquat	Private tree	Clearance prune
115	1759 Harold	23" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
116	1759 Harold	23" Sugarberry	Trunk cavities, Poor, Private, Not impacted	
117	1759 Harold	21" Tallow	Suppressed, Poor, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
118	1759 Harold	10" Rain tree	Private tree, not impacted	
119	1759 Harold	10" Crepe Myrtle	Private tree, not impacted	
120	1760 Harold	20" Shumard Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger

NO.	DATE	REVISION	APP.



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APPROVED: *Craig A. Koehl* 11-03-2021



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SURVEYED BY:

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 22 OF 29

WBS NUMBER: N-127000-002-7
FOR CITY OF HOUSTON USE ONLY

AS NOTED
CITY OF HOUSTON PM
SUPPORT GOLSM

SHEET NO. 240 OF 247

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Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
121	1760 Harold	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
122	Not used			
123	1759 Hawthorne	25" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
124	1759 Hawthorne	16" Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
125	Lanier Middle School	23" Live Oak	Ordinance tree, Not impacted	
126	Lanier Middle School	13" Crepe Myrtle	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
127	Lanier Middle School	10" Chinese Pistache	Suppressed, Not ordinance tree	
128	Lanier Middle School	23" Tallow	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
129	Lanier Middle School	18" Tallow	Private tree, not impacted	
130	Lanier Middle School	17" Tallow	Suppressed by Pear, Private, Not impacted	
131	Lanier Middle School	14" Bradford Pear	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
132	Lanier Middle School	12" Chinese Pistache	Utility pruned, Not ordinance tree	
133	Lanier Middle School	25" Tallow	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
134	1760 Hawthorne	14" Magnolia	Private tree, not impacted	
135	1760 Hawthorne	10" Bradford Pear	Private tree	Clearance prune
136	1760 Hawthorne	10" Bradford Pear	Private tree	Clearance prune
137	1760 Hawthorne	51" Willow Oak	Topping cuts at end of major branches, Private tree, Not impacted	
138	Lanier Middle School	7" Chinese Pistache	Not ordinance tree	
139	Lanier Middle School	9" Chinese Pistache	Not ordinance tree	
140	Lanier Middle School	8" Chinese Pistache	Not ordinance tree	
141	Lanier Middle School	28" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
142	Lanier Middle School	12" Crepe Myrtle	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
143	1800 Westheimer	15" Baldcypress	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
144	1800 Westheimer	11" Baldcypress	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
145	1800 Westheimer	13" Baldcypress	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
145A	1800 Westheimer	14" Baldcypress	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
146	2519 Woodhead	12" Sugarberry	Private tree	Clearance prune
147	2519 Woodhead	8" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
148	2507 Woodhead	15" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
149	2507 Woodhead	12" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
150	2507 Woodhead	13" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
151	2501 Woodhead	15" Tallow	Not ordinance tree	
152	2501 Woodhead	18" Tallow	Not ordinance tree	
153	2501 Woodhead	17" Tallow	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
154	2510 Woodhead	15" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
155	2502 Woodhead	14" Magnolia	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
156	2502 Woodhead	13" Magnolia	30% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
157	2502 Woodhead	12" Magnolia	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
158	2502 Woodhead	13" Magnolia	Poor condition, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
159	2422 Woodhead	15" Palm	Not ordinance tree	
160	2422 Woodhead	12" Palm	Not ordinance tree	
161	2418 Woodhead	6" Baldcypress	Ordinance tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
162	2416 Woodhead	6" Riverbirch	Ordinance tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
163	2416 Woodhead	15" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
164	2412 Woodhead	11" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
165	2423 Woodhead	25" Live Oak	Ordinance tree	
166	2415 Woodhead	50" Palm	Freeze damage, Poor, Not ordinance tree	
167	2415 Woodhead	17" Crepe Myrtle	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
168	2415 Woodhead	17" Crepe Myrtle	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
169	2415 Woodhead	35" Palm	Freeze damage, Private, Not impacted	
170	2413 Woodhead	11" Crepe Myrtle	Not ordinance tree	Clearance prune
171	1925 Fairview	8" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
172	1925 Fairview	5" Sago	Freeze damage, Poor, Not ordinance tree	Clearance prune
173	1925 Fairview	5" Sago	Freeze damage, Private, Not impacted	Clearance prune
174	1925 Fairview	7" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
175	2323 Woodhead	15" Bur Oak	Private tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
176	2323 Woodhead	23" Live Oak	30% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
177	2323 Woodhead	28" Cherrybark Oak	New home construction damage, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
178	2323 Woodhead	14" Lacebark Elm	Not ordinance tree	
179	2303 Woodhead	3" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
180	2303 Woodhead	2" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger

Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
181	2303 Woodhead	2" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
182	2318 Woodhead	26" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
183	2318 Woodhead	12" Red Maple	Co-dominant @ 3', Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
184	2318 Woodhead	12" Red Maple	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
185	2314 Woodhead	14" Sycamore	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
186	2314 Woodhead	12" Lacebark Elm	Not ordinance tree	
187	2310 Woodhead	3" Lacebark Elm	Girdled by old planting guy, Not ordinance tree	
188	2310 Woodhead	10" Lacy Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
189	2310 Woodhead	12" Lacy Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
190	2220 Woodhead	14" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
191	2220 Woodhead	16" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
192	2210 Woodhead	18" Live Oak	Utility pruned, Ordinance tree	4' checker plate & 12' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
193	2214 Woodhead	11" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
194	2214 Woodhead	10" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
195	2118 Woodhead	14" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
196	2118 Woodhead	23" Shumard Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
197	2114 Woodhead	14" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
198	2129 Woodhead	11" Baldcypress	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
199	2129 Woodhead	4" Water Oak	Ordinance tree	Fence
200	2123 Woodhead	3" Water Oak	Ordinance tree	Fence
201	2117 Woodhead	3" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
202	2117 Woodhead	3" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
203	2115 Woodhead	10" Little Gem Magnolia	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
204	2113 Woodhead	10" Red Maple	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
205	2111 Woodhead	26" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
206	2108 Woodhead	22" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
207	1933 Indiana	12" Palm	Freeze damage, Poor, Not ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
208	2108 Woodhead	17" Magnolia	Ordinance tree	
209	2032 Woodhead	21" Live Oak	Ordinance tree	12' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
210	2032 Woodhead	20" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
211	2028 Woodhead	13" Live Oak	Utility pruned, Ordinance tree	
212	2026 Woodhead	17" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
213	2018 Woodhead	13" Chinese Pistache	Not ordinance tree	
214	2018 Woodhead	9" Riverbirch	Private tree, not impacted	
215	2018 Woodhead	11" Camphor	Freeze damage, Private, Not impacted	
216	2018 Woodhead	16" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
217	2018 Woodhead	11" Camphor	Freeze damage, Private, Not impacted	
218	2014 Woodhead	15" Shumard Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
219	2025 Woodhead	13" Crepe Myrtle	Not ordinance tree	
220	2025 Woodhead	13" Crepe Myrtle	Not ordinance tree	
221	2025 Woodhead	19" Sugarberry	80% dead, Private, Not impacted	
222	2025 Woodhead	4" Palm	Not ordinance tree	
223	2025 Woodhead	16" Sycamore	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
224	2025 Woodhead	10" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
225	2025 Woodhead	15" Palm	Freeze damage, Poor, Not ordinance tree	
226	2019 Woodhead	20" Palm	Freeze damage, Poor, Not ordinance tree	
227	2017 Woodhead	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
228	2017 Woodhead	3" Little Gem Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
229	2001 Woodhead	12" Sweetgum	Co-dominant @ 3', Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
230	2001 Woodhead	3" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
231	2001 Woodhead	7" Crepe Myrtle	Topped, Multi-trunk, Not ordinance tree	
232	2001 Woodhead	16" Riverbirch	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
233	2008 Woodhead	10" Sweetgum	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
234	2008 Woodhead	14" Sweetgum	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
235	2004 Woodhead	4" Crepe Myrtle	Not ordinance tree	
236	2004 Woodhead	23" Camphor	Decay, Structurally compromised, Remove for safety concerns	Remove tree, No replacement required
237	1941 Welch	4" Little Gem Magnolia	Ordinance tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
238	1941 Welch	4" Italian Cypress	Private tree, not impacted	
239	1941 Welch	4" Italian Cypress	Private tree, not impacted	
240	1941 Welch	4" Italian Cypress	Private tree, not impacted	
241	1941 Welch	4" Italian Cypress	Private tree, not impacted	

NO.	DATE	REVISION	APP.

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APPROVED: *Craig Koehl* 11-03-2021

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 SHEET 23 OF 29

WES NUMBER: N-277000-002-7

AS NOTED

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SHEET NO. 241 OF 247

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Pen Table: \$PENTBL\$
Plot Driver: \$PLDRVR\$

Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
242	1942 Welch	11" Ligustrum	Not ordinance tree	Clearance prune
243	1942 Welch	11" Ligustrum	Not ordinance tree	Clearance prune
244	1914 Welch	16" Pecan	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
245	1914 Welch	17" Pecan	50% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
246	1910 Welch	11" Riverbirch	Co-dominant @ 3', Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
247	1910 Welch	10" Red Maple	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
248	1923 Woodhead	10" Palm	Private tree	Clearance prune
249	1923 Woodhead	10" Palm	Private tree	Clearance prune
250	1923 Woodhead	10" Palm	Private tree	Clearance prune
251	1923 Woodhead	9" Sweetgum	Ordinance tree	Root prune for walk, Fence, Clearance prune
252	1923 Woodhead	8" Mexican Sycamore	Not ordinance tree	
253	1923 Woodhead	10" Palm	Private tree	Clearance prune
254	1915 Woodhead	23" Crepe Myrtle	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
255	1917 Woodhead	5" Holly	Private tree, not impacted	
256	1917 Woodhead	4" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
257	1915 Woodhead	3" Sago	Freeze damage, Poor, Not ordinance tree	
258	1913 Woodhead	15" Catalpa	50% dieback, Not ordinance tree	
259	1903 Woodhead	15" Pecan	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
260	1903 Woodhead	9" Riverbirch	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
261	1903 Woodhead	11" Riverbirch	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
262	1906 Woodhead	15" Crepe Myrtle	Not ordinance tree	
263	1906 Woodhead	15" Crepe Myrtle	Not ordinance tree	
264	1906 Woodhead	19" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
265	1906 Woodhead	13" Crepe Myrtle	Topped, Not ordinance tree	
266	1940 Vermont	15" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
267	1940 Vermont	15" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
268	1940 Vermont	5" Crepe Myrtle	Not ordinance tree	
269	1940 Vermont	5" Crepe Myrtle	Not ordinance tree	
270	1940 Vermont	23" Water Oak	60% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
271	1816 Woodhead	12" Crepe Myrtle	Not ordinance tree	Clearance prune
272	1816 Woodhead	12" Crepe Myrtle	Not ordinance tree	Clearance prune
273	1810 Woodhead	17" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
274	1806 Woodhead	2" Redbud	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
275	1908 Woodhead	4" Sago	Not ordinance tree	
276	1808 Woodhead	5" Crepe Myrtle	Topped, Not ordinance tree	
277	1806 Woodhead	19" Shumard Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
278	1804 Woodhead	8" White Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
279	1800 Woodhead	8" Crepe Myrtle	Not ordinance tree	
280	1800 Woodhead	10" Red Maple	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
281	1800 Woodhead	5" Crepe Myrtle	Topped, Not ordinance tree	
282	1817 Woodhead	19" Water Oak	Ordinance tree	12' checkplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
283	1817 Woodhead	4" Crepe Myrtle	Topped, Not ordinance tree	
284	1817 Woodhead	17" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
285	1817 Woodhead	14" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
286	1809 Woodhead	10" Crepe Myrtle	Not ordinance tree	
287	1809 Woodhead	10" Crepe Myrtle	Private tree	Clearance prune
288	1809 Woodhead	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
289	1809 Woodhead	19" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
290	1807 Woodhead	9" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
291	1807 Woodhead	8" Photinia	Private tree	Clearance prune
292	1807 Woodhead	17" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
293	1805 Woodhead	16" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
294	1805 Woodhead	9" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
295	1805 Woodhead	5" Holly	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
296	1803 Woodhead	20" Crepe Myrtle	Private tree, not impacted	
297	1803 Woodhead	8" Little Gem Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
298	1803 Woodhead	7" Sweetgum	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
299	1803 Woodhead	9" Crepe Myrtle	Private tree	Clearance prune
300	1719 Woodhead	5" Little Gem Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger

Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
301	1719 Woodhead	5" Crepe Myrtle	Not ordinance tree	
302	1719 Woodhead	6" Photinia	Private tree	Clearance prune
303	1719 Woodhead	13" Crepe Myrtle	Not ordinance tree	
304	1719 Woodhead	11" Magnolia	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
305	1713 Woodhead	20" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
306	1713 Woodhead	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
307	1709 Woodhead	15" Palm	Freeze damage, Private, Not impacted	
308	1705 Woodhead	14" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
309	1705 Woodhead	53" Live Oak	40% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
310	1935 Haddon	3" Crepe Myrtle	Not ordinance tree	
311	1935 Haddon	3" Crepe Myrtle	Not ordinance tree	
312	1935 Haddon	12" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
313	1935 Haddon	3" Crepe Myrtle	Not ordinance tree	
314	1935 Haddon	7" Crepe Myrtle	Private tree, not impacted	
315	1935 Haddon	7" Crepe Myrtle	Private tree, not impacted	
316	1720 Woodhead	24" Live Oak	60% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
317	1720 Woodhead	34" Live Oak	45% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
318	1710 Woodhead	11" Loquat	Freeze damage, Poor, Not ordinance tree	Clearance prune
319	1710 Woodhead	4" Sago	Freeze damage, Poor, Not ordinance tree	
320	1710 Woodhead	11" Crepe Myrtle	Topped, Not ordinance tree	
321	1708 Woodhead	19" Shumard Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
322	1708 Woodhead	11" Shumard Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
323	1710 Woodhead	13" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
324	1610 Woodhead	8" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
325	1610 Woodhead	10" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
326	1608 Woodhead	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
327	1611 Woodhead	14" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
328	1611 Woodhead	11" Crepe Myrtle	Not ordinance tree	Clearance prune
329	1611 Woodhead	11" Crepe Myrtle	Not ordinance tree	Clearance prune
330	1611 Woodhead	11" Crepe Myrtle	Not ordinance tree	Clearance prune
331	1611 Woodhead	11" Crepe Myrtle	Not ordinance tree	Clearance prune
332	1613 Woodhead	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
333	1609 Woodhead	24" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
334	1609 Woodhead	4" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
335	1609 Woodhead	4" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
336	1609 Woodhead	25" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
337	1605 Woodhead	22" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
338	1605 Woodhead	23" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
339	1605 Woodhead	45" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
340	1515 Woodhead	9" Shumard Oak	Private tree, not impacted	
341	1511 Woodhead	6" Swamp Chestnut Oak	Private tree, not impacted	
342	1511 Woodhead	3" Live Oak	Private tree, not impacted	
343	1508 Woodhead	8" Ligustrum	Private tree	Clearance prune
344	1509 Woodhead	5" Viburnum	Private tree	Clearance prune
345	1505 Woodhead	5" Pittosporum	Private tree	Clearance prune
346	1608 Woodhead	10" Live Oak	Ordinance tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
347	1608 Woodhead	9" Water Oak	Private tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
348	1602 Woodhead	3" Sago	Private tree, not impacted	
349	1602 Woodhead	2" Yaupon	Not ordinance tree	Clearance prune
350	1602 Woodhead	2" Yaupon	Not ordinance tree	Clearance prune
351	1610 Woodhead	11" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
352	1510 Woodhead	22" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
353	1508 Woodhead	23" Live Oak	Ordinance tree	12' checkplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
354	1508 Woodhead	24" Live Oak	Ordinance tree	12' checkplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
355	1506 Woodhead	14" Crepe Myrtle	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
356	1506 Woodhead	14" Raintree	Not ordinance tree	
357	1506 Woodhead	12" Raintree	Not ordinance tree	
358	1505 Woodhead	4" Crepe Myrtle	Topped, Not ordinance tree	
359	1505 Woodhead	13" Magnolia	Trunk cavities, Structurally compromised, Remove for safety concerns	Remove tree, No replacement required

NO.	DATE	REVISION	APP.

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APPROVED: *Craig N. Koehl* 11-03-2021

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Texas PE Firm Reg. #F-20017

SURVEYED BY:

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 24 OF 29

WBS NUMBER: N-12700-002-7
AS NOTED
CITY OF HOUSTON PW
SHAPOOR GOLSMI
SHEET NO. 242 OF 241

72248

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Plotted on:

Pen Table: \$PENTBL\$ Plot Driver: \$PLTRVL\$

Tree No.	Location	Description	Comments	Treatment
Trees on Woodhead				
360	1919 Peden	20" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
361	1919 Peden	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
362	1919 Peden	17" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
363	1919 Peden	21" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
364	1919 Peden	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
365	1927 W Gray	2" Palm	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
366	1927 W Gray	1" Palm	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
367	1927 W Gray	16" Baldcypress	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
368	1927 W Gray	10" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
369	1927 W Gray	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
370	1927 W Gray	12" Baldcypress	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
371	1927 W Gray	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
372	1927 W Gray	11" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
373	1938 W Gray	15" Palm	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
374	1938 W Gray	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
375	1938 W Gray	15" Palm	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
376	1938 W Gray	15" Palm	Not ordinance tree, Remove for ramp	Remove tree, No replacement required
377	1938 W Gray	13" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
378	1938 W Gray	11" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
379	1938 W Gray	14" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
380	1938 W Gray	12" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
381	1938 W Gray	14" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
382	1938 W Gray	12" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
383	1938 W Gray	12" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
384	1938 W Gray	13" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
385	1938 W Gray	11" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
386	1938 W Gray	12" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
387	1938 W Gray	13" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
388	1934 W Gray	12" Live Oak	Ordinance tree	8' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
389	1934 W Gray	12" Live Oak	Ordinance tree	8' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
390	1920 W Gray	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
391	1920 W Gray	12" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
392	1920 W Gray	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
393	1920 W Gray	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
394	1920 W Gray	14" Japanese Blueberry	Private tree, not impacted	
395	1920 W Gray	15" Pine	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
396	1920 W Gray	13" Pine	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
397	1920 W Gray	11" Pine	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
398	1920 W Gray	3" Crepe Myrtle	Topped, Not ordinance tree	
399	1920 W Gray	14" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
400	1920 W Gray	27" Live Oak	Ordinance tree	Root prune for walk, Fence
401	1938 W Gray	13" Live Oak	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
402	1314 Woodhead	10" Crepe Myrtle	Topped, Private tree	
403	1314 Woodhead	10" Crepe Myrtle	Topped, Private tree	
404	1314 Woodhead	10" Crepe Myrtle	Topped, Private tree	
405	River Oaks Commons	15" Crepe Myrtle	Topped, Private tree	
406	River Oaks Commons	15" Crepe Myrtle	Topped, Private tree	
407	River Oaks Commons	22" Live Oak	Ordinance tree	12' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
408	1323 Woodhead	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
409	1323 Woodhead	17" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
410	1323 Woodhead	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
411	1317 Woodhead	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
412	1803 W Clay	6" Holly	Ordinance tree	Clearance prune, Demo-form-pour walk without damage to tree roots 1" diameter or larger
413	1803 W Clay	15" Live Oak	Heavy Midge infestation, Ordinance tree	12' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger

Tree No.	Location	Description	Comments	Treatment
Trees on W Clay Street				
414	1803 W Clay	20" Shumard Oak	Ordinance tree, Remove for new walk	Remove tree, Provide 20" in replacement plantings
415	1803 W Clay	19" Sweetgum	Manhole repair damage, Private tree, Poor condition, Not impacted by walk	
416	1803 W Clay	16" Camphor	Dead, Private, Not impacted	
417	1957 W Clay	15" Crepe Myrtle	Not ordinance tree, Remove for walk	Remove tree, No replacement required
418	1957 W Clay	9" Ligustrum	Private tree	Clearance prune
419	1951 W Clay	11" Tallow	Not ordinance tree	Clearance prune
420	1951 W Clay	45" Sweetgum	60% dieback, Private tree, Not impacted	
421	1945 W Clay	4" Italian Cypress	Not ordinance tree, Remove for walk	Remove tree, No replacement required
422	1941 W Clay	4" Italian Cypress	Not ordinance tree, Remove for walk	Remove tree, No replacement required
423	1939 W Clay	11" Crepe Myrtle	Not ordinance tree, Remove for walk	Remove tree, No replacement required
424	1939 W Clay	10" Crepe Myrtle	Not ordinance tree, Remove for walk	Remove tree, No replacement required
425	1939 W Clay	5" Crepe Myrtle	Not ordinance tree, Remove for walk	Remove tree, No replacement required
426	1935 W Clay	15" Water Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
427	1935 W Clay	4" Sago	Not ordinance tree, Remove for walk	Remove tree, No replacement required
428	1935 W Clay	4" Sago	Not ordinance tree, Remove for walk	Remove tree, No replacement required
429	1933 W Clay	20" Pine	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
430	1933 W Clay	33" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
431	1931 W Clay	2" Rain tree	Private tree, not impacted	
432	1931 W Clay	1" Boxwood	Not ordinance tree, Remove for walk	Remove tree, No replacement required
433	1931 W Clay	1" Boxwood	Not ordinance tree, Remove for walk	Remove tree, No replacement required
434	1931 W Clay	1" Boxwood	Not ordinance tree, Remove for walk	Remove tree, No replacement required
435	1927 W Clay	6" Crepe Myrtle	Private tree, not impacted	
436	1927 W Clay	17" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
437	1927 W Clay	20" Palm	Freeze damage, Private, Not impacted	
438	1923 W Clay	3" Magnolia	Ordinance tree, Remove for new walk	Remove tree, Provide 3" in replacement plantings
439	1924 W Clay	14" Locust	Freeze damage, Private, Not impacted	
440	1924 W Clay	21" Pecan	Topped, Private tree, Not impacted	
441	1832 W Clay	8" Sago	Freeze damage, Poor, Not ordinance tree	
442	1930 W Clay	35" Willow Oak	60% dieback, Private, Poor condition	Root prune for walk
443	1920 W Clay	21" Crepe Myrtle	Topped, Private tree, Not impacted	
444	1920 W Clay	22" Crepe Myrtle	Private tree	Root prune for walk
445	1920 W Clay	2" Citrus	Freeze damage, Private, Not impacted	
446	1920 W Clay	20" Baldcypress	Private tree, not impacted	
447	1919 W Clay	21" Crepe Myrtle	Ordinance tree, Remove for new walk	Remove tree, Provide 21" in replacement plantings
448	1919 W Clay	5" Pittosporum	Private tree	Clearance prune
449	1915 W Clay	21" Crepe Myrtle	Ordinance tree, Remove for new walk	Remove tree, Provide 21" in replacement plantings
450	1915 W Clay	22" Bradford Pear	Private tree, not impacted	
451	1913 W Clay	(8) 1" Boxwoods	Not ordinance tree, Remove for walk	Remove tree, No replacement required
452	1911 W Clay	9" Shumard Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
453	1903 W Clay	47" Live Oak	Private tree	16' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
454	1903 W Clay	27" Water Oak	Private tree, Remove for proposed ramp per 9/23/2021 site meeting with City Forestry and Property owner, TCE required prior to start of any tree removal work	Remove tree, Provide 27" in replacement plantings

NO.	DATE	REVISION	APP.

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APPROVED: *Craig N. Koehl* 11-03-2021

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SURVEYED BY:

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 25 OF 29

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-127000-002-7	
AS NOTED	
CITY OF HOUSTON PM	
SHAPOOR GOLSHAN	
SHEET NO. 243 OF 247	

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\$USER\$

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Plotted on:

Pen Table: \$PENTBL\$
Plot Driver: \$PLDRV\$

Tree No.	Location	Description	Comments	Treatment
Trees on Hawthorne Street				
455	1754 Hawthorne	25" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
456	1754 Hawthorne	19" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
457	1750 Hawthorne	20" Live Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
458	1750 Hawthorne	36" Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
459	1734 Hawthorne	8" Pittosporum	Not ordinance tree	Clearance prune
460	1730 Hawthorne	8" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
461	1730 Hawthorne	7" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
462	1728 Hawthorne	3" Chinese Privet	Not ordinance tree	Clearance prune
463	1728 Hawthorne	3" Chinese Privet	Not ordinance tree	Clearance prune
464	1755 Hawthorne	4" Crepe Myrtle	Not ordinance tree	
465	1755 Hawthorne	4" Crepe Myrtle	Not ordinance tree	
466	1745 Hawthorne	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
467	1745 Hawthorne	10" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
468	1741 Hawthorne	34" Catalpa	60% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
469	1737 Hawthorne	17" Arizona Ash	30% dieback, Not ordinance tree	
470	1737 Hawthorne	22" Arizona Ash	Not ordinance tree	
471	1733 Hawthorne	15" Arizona Ash	Not ordinance tree	
472	1733 Hawthorne	20" Arizona Ash	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
473	1733 Hawthorne	27" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
474	1728 Hawthorne	21" Pecan	Private tree, not impacted	
475	1726 Hawthorne	11" Crepe Myrtle	Not ordinance tree	
476	1726 Hawthorne	20" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
477	1726 Hawthorne	17" Tallow	Not ordinance tree	
478	1726 Hawthorne	7" Crepe Myrtle	60% dieback, Not ordinance tree	
479	1722 Hawthorne	6" Sago	Freeze damage, Private, Not impacted	
480	1714 Hawthorne	4" Sago	Private tree, not impacted	
481	1714 Hawthorne	4" Sago	Private tree, not impacted	
482	1702 Hawthorne	16" Nuttall Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
483	1702 Hawthorne	15" Live Oak	Suppressed, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
484	1702 Hawthorne	15" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
485	1702 Hawthorne	14" Baldcypress	Private tree	Leave existing retaining wall in place, Demo-form-pour walk without damage to tree roots 1" diameter or larger
486	1721 Hawthorne	6" Sago	Not ordinance tree	
487	1721 Hawthorne	32" Water Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
488	1721 Hawthorne	5" Sago	Not ordinance tree	
489	1721 Hawthorne	33" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
490	1721 Hawthorne	20" Water Oak	Chlorotic, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
491	1717 Hawthorne	16" Crepe Myrtle	Poor, Not ordinance tree	
492	1717 Hawthorne	15" Crepe Myrtle	Poor, Not ordinance tree	
493	1707 Hawthorne	16" Bradford Pear	Not ordinance tree	
494	1707 Hawthorne	15" Bradford Pear	Not ordinance tree	
495	1701 Hawthorne	27" Pine	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
496	1701 Hawthorne	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
497	1701 Hawthorne	22" Live Oak	Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
498	1701 Hawthorne	15" Magnolia	Dead, Private, Not impacted	
499	1661 Hawthorne	45" Water Oak	60% dieback, Private tree	Leave existing retaining wall in place, Demo-form-pour walk without damage to tree roots 1" diameter or larger
500	1660 Hawthorne	17" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
501	1660 Hawthorne	18" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
502	1660 Hawthorne	15" Shumard Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
502A	1656 Hawthorne	7" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
503	1656 Hawthorne	25" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
504	1656 Hawthorne	12" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
505	1652 Hawthorne	50" Palm	Freeze damage, Poor, Not ordinance tree	
506	1648 Hawthorne	18" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
507	1648 Hawthorne	18" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
508	1644 Hawthorne	8" Crepe Myrtle	Not ordinance tree	
509	1640 Hawthorne	19" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
510	1640 Hawthorne	10" Red Maple	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
511	1638 Hawthorne	14" Crepe Myrtle	Not ordinance tree	
512	1638 Hawthorne	15" Crepe Myrtle	Not ordinance tree	
513	1628 Hawthorne	16" Crepe Myrtle	Not ordinance tree	
514	1628 Hawthorne	15" Crepe Myrtle	Not ordinance tree	
515	1624 Hawthorne	12" Tallow	Topped, Not ordinance tree	
516	1655 Hawthorne	23" Tallow	50% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
517	1651 Hawthorne	25" Water Oak	30% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
518	1651 Hawthorne	16" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
519	1645 Hawthorne	3" Polymorpha Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
520	1641 Hawthorne	11" Red Maple	Dead, Remove for safety concerns	Remove tree, No replacement required
521	1641 Hawthorne	15" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
522	1639 Hawthorne	13" White Oak	Trunk cankers, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
523	1639 Hawthorne	12" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
524	1637 Hawthorne	13" Crepe Myrtle	Topped, Not ordinance tree	
525	1637 Hawthorne	17" Crepe Myrtle	Topped, Not ordinance tree	
526	1635 Hawthorne	3" Boxwood	Private tree	Clearance prune
527	1635 Hawthorne	3" Boxwood	Private tree	Clearance prune
528	1635 Hawthorne	5" Crepe Myrtle	Not ordinance tree	Clearance prune
529	1627 Hawthorne	12" Lacebark Elm	Not ordinance tree	
530	1625 Hawthorne	15" White Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
531	1623 Hawthorne	12" Palm	Freeze damage, Poor, Not ordinance tree	
532	1623 Hawthorne	11" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
533	1623 Hawthorne	13" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
534	1623 Hawthorne	3" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
535	1615 Hawthorne	16" Bradford Pear	Private tree, not impacted	

Tree No.	Location	Description	Comments	Treatment
Trees on Hawthorne Street				
530	1615 Hawthorne	9" Crepe Myrtle	Not ordinance tree	Clearance prune
537	1615 Hawthorne	9" Crepe Myrtle	Not ordinance tree	Clearance prune
538	1611 Hawthorne	21" Shumard Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
539	1611 Hawthorne	21" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
540	1609 Hawthorne	11" Crepe Myrtle	Private tree, not impacted	
541	1609 Hawthorne	21" Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
542	1601 Hawthorne	17" Bradford Pear	Private tree, not impacted	
543	1601 Hawthorne	16" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
544	1601 Hawthorne	9" Sugarbany	Not ordinance tree	
545	1624 Hawthorne	11" Crepe Myrtle	Not ordinance tree	
546	1620 Hawthorne	17" Crepe Myrtle	Private tree, not impacted	
547	1620 Hawthorne	8" Vitex	Not ordinance tree	Clearance prune
548	1620 Hawthorne	8" Vitex	Not ordinance tree	Clearance prune
549	1612 Hawthorne	53" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
550	1612 Hawthorne	35" Live Oak	25% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
551	1610 Hawthorne	7" Crepe Myrtle	Topped, Not ordinance tree	
552	1610 Hawthorne	13" Bradford Pear	Not ordinance tree	
553	1610 Hawthorne	8" Magnolia	Private tree, not impacted	
554	1602 Hawthorne	11" Lacebark Elm	Not ordinance tree	
555	1540 Hawthorne	8" Palm	Freeze damage, Poor, Not ordinance tree	
556	1540 Hawthorne	8" Palm	Freeze damage, Poor, Not ordinance tree	
557	1540 Hawthorne	12" Crepe Myrtle	Private tree	Clearance prune
558	1536 Hawthorne	14" Arizona Ash	Not ordinance tree	
559	1539 Hawthorne	5" Sago	Visibility Triangle, Remove for traffic safety	Remove tree, No replacement required
560	1539 Hawthorne	25" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
561	1527 Hawthorne	10" Live Oak	Girdled by old planting guy, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
562	1527 Hawthorne	9" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
563	1525 Hawthorne	21" Pine	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
564	Not available	47" Arizona Ash	40% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
565	Not available	3" Loquat	Freeze damage, Poor, Not ordinance tree	
566	Not available	3" Weeping Mulberry	Not ordinance tree	
567	1507 Hawthorne	22" Green Ash	Private tree, not impacted	
568	1507 Hawthorne	17" Green Ash	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
569	1505 Hawthorne	3" Saucer Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
570	1505 Hawthorne	25" Pecan	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
571	1505 Hawthorne	11" Mexican Plum	Private tree, not impacted	
572	1503 Hawthorne	20" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
573	1503 Hawthorne	6" Shumard Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
574	1501 Hawthorne	3" Laurel Oak	Private tree, not impacted	
575	1530 Hawthorne	19" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
576	1526 Hawthorne	34" Water Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
577	1522 Hawthorne	5" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
578	1522 Hawthorne	11" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
579	1520 Hawthorne	26" Water Oak	30% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
580	1520 Hawthorne	24" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
581	1516 Hawthorne	16" Mexican Sycamore	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
582	1516 Hawthorne	9" Crepe Myrtle	Topped, Not ordinance tree	
583	1516 Hawthorne	9" Crepe Myrtle	Topped, Not ordinance tree	
584	1516 Hawthorne	14" Mexican Sycamore	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
585	1508 Hawthorne	20" Green Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
586	1508 Hawthorne	19" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
587	1502 Hawthorne	14" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
588	1502 Hawthorne	10" Palm	Private tree, not impacted	
589	1502 Hawthorne	10" Palm	Private tree, not impacted	
590	1502 Hawthorne	5" Live Oak	Private tree, not impacted	
591	1501 Hawthorne	7" Juniper	Not ordinance tree	
592	1501 Hawthorne	7" Juniper	Not ordinance tree	
593	1501 Hawthorne	3" Live Oak	Private tree, not impacted	
594	3316 Mulberry	21" Tallow	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
595	3316 Mulberry	5" Loquat	Freeze damage, Poor, Not ordinance tree	
596	3316 Mulberry	12" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
597	3316 Mulberry	19" Pecan	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
598	3316 Mulberry	14" Crepe Myrtle	Topped, Not ordinance tree	
599	Not available	20" Tallow	Ordinance tree, Not impacted	
600	Not available	23" Live Oak	20% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
601	Not available	26" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
602	Not available	37" Live Oak	Ordinance tree	12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
603	Not available	4" Crepe Myrtle	Private tree, not impacted	
604	Not available	10" Crepe Myrtle	Private tree, not impacted	
605	Not available	12" Crepe Myrtle	Private tree, not impacted	
606	1419 Hawthorne	5" Crepe Myrtle	Topped, Not ordinance tree	
607	1419 Hawthorne	5" Crepe Myrtle	Topped, Not ordinance tree	
608	1419 Hawthorne	5" Crepe Myrtle	Topped, Not ordinance tree	
609	1435 Westheimer	23" Mulberry	Topped, Poor, Ordinance tree	Root prune for walk, Fence, Clearance prune
610	1435 Westheimer	22" Raintree	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
611	Not available	23" Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
612	1420 Hawthorne	6" Crepe Myrtle	Not ordinance tree	
613	1412 Hawthorne	8" Crepe Myrtle	Not ordinance tree	
614	1412 Hawthorne	6" Crepe Myrtle	Not ordinance tree	
615	1408 Hawthorne	7" Yew	Not ordinance tree	
616	1400 Hawthorne	19" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
617	1400 Hawthorne	21" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger

NO.	DATE	REVISION	APP.

C.N. Koehl
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APPROVED: Craig A. Koehl 11-03-2021

Gauge
3200 Wilcrest Drive, Suite 220
Houston, TX 77042
www.GaugeEngineering.com
Texas PE Firm Reg. #F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 26 OF 29

WES NUMBER: N-T27000-002-7
AS NOTED
CITY OF HOUSTON PW
SHAPOOR GILSON
SHEET NO. 244 OF 247

FOR CITY OF HOUSTON USE ONLY
72248

Design: Files\name: C:\Users\jacob\Desktop\Win 7\Desktop\JULIUS\VEDS\GAUGE HAWTHORNE WOODHEAD\GAUGE HAWTHORNE TP-26.dwg

\$USER\$

\$TIME\$


\$DATE\$

Plotted on:


Pen Table: \$PENTBL\$ Plot Driver: \$PLDRV\$

Tree No.	Location	Description	Comments	Treatment
Trees on Hawthorne Street				
618	1400 Hawthorne	15' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
619	1400 Hawthorne	7' Crepe Myrtle	Not ordinance tree	
620	1400 Hawthorne	10' Palm	Not ordinance tree	
621	1400 Hawthorne	10' Palm	Not ordinance tree	
622	1400 Hawthorne	15' Crepe Myrtle	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
623	1411 Hawthorne	22' Pecan	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
624	1411 Hawthorne	25' Pecan	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
625	1407 Hawthorne	17' Bradford Pear	Not ordinance tree	
626	1327 Hawthorne	21' Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
627	1319 Hawthorne	23' Bur Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
628	1319 Hawthorne	5' Crepe Myrtle	Not ordinance tree	
629	Not available	35' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
630	Not available	5' Palm	Not ordinance tree	
631	Not available	25' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
632	Not available	25' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
633	Not available	38' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
634	Not available	37' Live Oak	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
635	Not available	32' Live Oak	Ordinance tree	Root prune for walk, Fence, Clearance prune
636	1220 Hawthorne	18' Lacebark Elm	Scheduled to be removed by HPARD	
637	1220 Hawthorne	16' Lacebark Elm	Not ordinance tree	
638	1216 Hawthorne	16' Lacebark Elm	Not ordinance tree	
639	1216 Hawthorne	31' Tallow	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
640	1210 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
641	1210 Hawthorne	14' Crepe Myrtle	Not ordinance tree	
642	1210 Hawthorne	14' Crepe Myrtle	Private tree, not impacted	
643	1210 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
644	1210 Hawthorne	10' Lacebark Elm	Not ordinance tree	
645	1202 Hawthorne	23' Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
646	1202 Hawthorne	22' Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
647	1202 Hawthorne	20' Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
648	1202 Hawthorne	22' Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
649	1202 Hawthorne	4' Swamp Chestnut Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
650	1202 Hawthorne	23' Crepe Myrtle	Ordinance tree	Root prune for walk, Fence, Clearance prune
651	3402 Mt Vernon	20' Crepe Myrtle	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
652	3402 Mt Vernon	19' Magnolia	40% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
653	3402 Mt Vernon	10' Crepe Myrtle	Not ordinance tree	
654	3402 Mt Vernon	10' Crepe Myrtle	Not ordinance tree	
655	3402 Mt Vernon	10' Crepe Myrtle	Not ordinance tree	
656	3402 Mt Vernon	10' Crepe Myrtle	Not ordinance tree	
657	3402 Mt Vernon	8' Crepe Myrtle	Not ordinance tree	
658	3402 Mt Vernon	35' Palm	Not ordinance tree	
659	3402 Mt Vernon	15' Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
660	Not available	33' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
661	Not available	5' Live Oak	75% dieback, Suppressed, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
662	Not available	28' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
663	Not available	31' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
664	Not available	38' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
665	Not available	25' Sycamore	35% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
666	Not available	5' Pecan	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
667	Not available	23' Sweetgum	Ordinance tree	Root prune for walk, Fence, Clearance prune
668	1113 Hawthorne	42' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
669	1113 Hawthorne	29' Live Oak	Major branch does not meet ADA and TAS height clearance requirements, Tree to be removed per site meeting with City Forestry and homeowner on 9/23/2021, Ordinance tree, Poor condition	Remove tree, No replacement required
670	1111 Hawthorne	16' Crepe Myrtle	Private tree, not impacted	
671	1109 Hawthorne	14' Crepe Myrtle	Topped, Not ordinance tree	
672	1107 Hawthorne	10' Crepe Myrtle	Topped, Not ordinance tree	
673	1105 Hawthorne	11' Crepe Myrtle	Topped, Not ordinance tree	
674	1101 Hawthorne	7' Ligustrum	Not ordinance tree	Clearance prune
675	1101 Hawthorne	7' Ligustrum	Not ordinance tree	Clearance prune
676	1101 Hawthorne	7' Ligustrum	Not ordinance tree	Clearance prune
677	1101 Hawthorne	7' Ligustrum	Not ordinance tree	Clearance prune
678	1101 Hawthorne	15' Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
679	1101 Hawthorne	20' Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
680	1101 Hawthorne	20' Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
681	Not available	25' Live Oak	Ordinance tree	8' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
682	Not available	26' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
683	Not available	20' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
684	Not available	21' Live Oak	30% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
685	Not available	15' Crepe Myrtle	Private tree, not impacted	
686	Not available	15' Crepe Myrtle	Private tree, not impacted	
687	Not available	14' Live Oak	20% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
688	Not available	22' Live Oak	20% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
689	Not available	18' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
690	3317 Montrose	24' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
691	3317 Montrose	23' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
692	3317 Montrose	21' Live Oak	Large trunk tear wound, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
693	3317 Montrose	12' Live Oak	Private tree, not impacted	
694	3407 Montrose	22' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
695	3407 Montrose	15' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
696	3407 Montrose	13' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
697	3407 Montrose	16' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
698	3407 Montrose	18' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
699	907 Hawthorne	10' Arbutus	Not ordinance tree, Remove for ramp	Remove tree, No replacement required

Tree No.	Location	Description	Comments	Treatment
Trees on Hawthorne Street				
700	907 Hawthorne	21' Water Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
701	905 Hawthorne	17' Water Oak	Utility pruned, Ordinance tree	4' checker plate & 12' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
702	903 Hawthorne	11' Magnolia	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
703	901 Hawthorne	8' Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
704	3317 Yoakum	13' Live Oak	Private tree, not impacted	
705	3317 Yoakum	15' Live Oak	50% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
706	3317 Yoakum	30' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
707	3317 Yoakum	15' Shumard Oak	Private tree, not impacted	
708	3317 Yoakum	17' Shumard Oak	Private tree, not impacted	
709	3317 Yoakum	12' Raintree	Not ordinance tree	
710	3317 Yoakum	22' Sycamore	Remove for ramp, Utility pruned, Poor condition, Ordinance tree	Remove tree, No replacement required
711	816 Hawthorne	40' Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
712	816 Hawthorne	15' Sugarberry	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
713	812 Hawthorne	27' Pecan	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
714	812 Hawthorne	23' Pecan	Topped, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
715	3401 Roseland	35' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
716	3401 Roseland	28' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
717	803 Hawthorne	49' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
718	803 Hawthorne	21' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
719	803 Hawthorne	22' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
720	803 Hawthorne	21' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
721	804 Hawthorne	23' Live Oak	Ordinance tree	6' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
722	804 Hawthorne	26' Live Oak	Ordinance tree	6' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
723	804 Hawthorne	22' Live Oak	Ordinance tree, No proposed sidewalk, Not impacted	
724	804 Hawthorne	35' Palm	Not ordinance tree	
725	804 Hawthorne	35' Palm	Not ordinance tree	
726	3321 Stanford	27' Live Oak	Ordinance tree	Fence
727	3321 Stanford	7' Crepe Myrtle	Not ordinance tree	
728	710 Hawthorne	22' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
729	710 Hawthorne	20' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
730	710 Hawthorne	17' Live Oak	Ordinance tree	8' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
731	704 Hawthorne	18' Crepe Myrtle	Hollow, Poor, Not ordinance tree	
732	704 Hawthorne	13' Crepe Myrtle	Hollow, Poor, Not ordinance tree	
733	704 Hawthorne	17' Crepe Myrtle	Hollow, Poor, Not ordinance tree	
734	536 Hawthorne	28' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
735	3401 Stanford	9' Magnolia	Remove for ramp, Ordinance tree	Remove tree, Provide 5" in replacement plantings
736	3401 Stanford	15' Crepe Myrtle	Not ordinance tree	
737	719 Hawthorne	15' Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
738	719 Hawthorne	8' Yew	Not ordinance tree	
739	719 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
740	701 Hawthorne	25' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
741	701 Hawthorne	38' Live Oak	40% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
742	637 Hawthorne	18' Crepe Myrtle	Not ordinance tree	
743	637 Hawthorne	16' Crepe Myrtle	Not ordinance tree	
744	627 Hawthorne	23' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
745	627 Hawthorne	26' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
746	627 Hawthorne	25' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
747	627 Hawthorne	33' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
748	623 Hawthorne	33' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
749	623 Hawthorne	23' Live Oak	Utility pruned, Ordinance tree	Root prune for walk, Fence
750	611 Hawthorne	27' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
751	612 Hawthorne	15' Live Oak	Ordinance tree	
752	620 Hawthorne	15' Palm	Not ordinance tree	
753	515 Hawthorne	15' Crepe Myrtle	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
754	616 Hawthorne	16' Crepe Myrtle	Not ordinance tree	
755	616 Hawthorne	16' Crepe Myrtle	Not ordinance tree	
756	616 Hawthorne	16' Crepe Myrtle	Not ordinance tree	
757	612 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
758	612 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
759	612 Hawthorne	12' Crepe Myrtle	Not ordinance tree	
760	608 Hawthorne	14' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
761	608 Hawthorne	14' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
762	608 Hawthorne	21' Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
763	608 Hawthorne	26' Tallow	Decay, Structurally compromised, Remove for safety concerns, Not in project scope, to be addressed by City PARO	
764	586 Hawthorne	10' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
765	588 Hawthorne	10' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
766	524 Hawthorne	23' Live Oak	Ordinance tree	8' checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
767	516 Hawthorne	23' Magnolia	50% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
768	516 Hawthorne	13' Magnolia	40% dieback, Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
769	3401 Audubon	15' Ligustrum	Private tree, not impacted	
770	3401 Audubon	3' Palm	Not ordinance tree	
771	3401 Audubon	25' Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
772	517 Hawthorne	5' Crepe Myrtle	Topped, Not ordinance tree	
773	517 Hawthorne	5' Crepe Myrtle	Topped, Not ordinance tree	
774	515 Hawthorne	21' Bradford Pear	Private tree, not impacted	
775	3402 Garot	21' Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
776	3402 Garot	14' Live Oak	Not in project scope, Ordinance tree, Not impacted	
777	3402 Garot	17' Live Oak	Not in project scope, Ordinance tree, Not impacted	
778	435 Hawthorne	21' Live Oak	Not in project scope, Ordinance tree, Not impacted	
779	435 Hawthorne	25' Water Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
780	435 Hawthorne	8' Sugarberry	Not ordinance tree	
781	429 Hawthorne	15' Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger



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SURVEYED BY:

CITY OF HOUSTON
HOUSTON PUBLIC WORKS
HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 27 OF 29

WBS NUMBER: N-127000-002-7
AS NOTED
CITY OF HOUSTON PN
SHAPOOR COLSON
SHEET NO. 245 OF 247

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 Plot Driver:

Tree No.	Location	Description	Comments	Treatment
Trees on Hawthorne Street				
782	Not available	24" Pecan	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
793	Not available	27" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
784	502 Hawthorne	23" Water Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
785	435 Hawthorne	26" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
786	435 Hawthorne	13" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
787	428 Hawthorne	11" Monterey Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
788	424 Hawthorne	14" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
789	424 Hawthorne	16" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
790	424 Hawthorne	14" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
791	420 Hawthorne	25" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
792	420 Hawthorne	24" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
793	416 Hawthorne	14" Magnolia	Private tree, not impacted	
794	412 Hawthorne	27" Water Oak	40% dieback, Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
795	412 Hawthorne	39" Water Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
796	408 Hawthorne	23" Tallow	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
797	408 Hawthorne	17" Crepe Myrtle	Topped, Not ordinance tree	
798	408 Hawthorne	21" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
799	324 Hawthorne	25" Water Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
800	324 Hawthorne	22" Water Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
801	318 Hawthorne	19" Water Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
802	428 Hawthorne	14" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
803	425 Hawthorne	18" Live Oak	Utility pruned, Ordinance tree	4" checker plate & 12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
804	425 Hawthorne	19" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
805	425 Hawthorne	13" Crepe Myrtle	Not ordinance tree	
806	425 Hawthorne	5" Live Oak	Girdled by old planting guy, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
807	419 Hawthorne	10" Crepe Myrtle	Not ordinance tree	
808	415 Hawthorne	25" Live Oak	Utility pruned, Ordinance tree	4" checker plate & 12" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
809	415 Hawthorne	23" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
809A	415 Hawthorne	11" Crepe Myrtle	Not ordinance tree	
810	405 Hawthorne	10" Lacebark Elm	Private tree, not impacted	
811	319 Hawthorne	29" Live Oak	Ordinance tree	Root prune for ramp along Hawthorne, 4" Checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
812	319 Hawthorne	10" Palm	Remove for ramp, Not ordinance tree	Remove tree, No replacement required
813	319 Hawthorne	11" Crepe Myrtle	Cavities, Not ordinance tree	
814	319 Hawthorne	15" Crepe Myrtle	Cavities, Not ordinance tree	
815	319 Hawthorne	18" Crepe Myrtle	Topped, Not ordinance tree	
816	303 Hawthorne	15" Crepe Myrtle	Not ordinance tree	
817	303 Hawthorne	15" Crepe Myrtle	Not ordinance tree	
818	303 Hawthorne	15" Crepe Myrtle	Not ordinance tree	
819	219 Hawthorne	16" Post Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
820	219 Hawthorne	9" Possum Haw	Not ordinance tree	Clearance prune
821	219 Hawthorne	9" Possum Haw	Not ordinance tree	Clearance prune
822	219 Hawthorne	9" Possum Haw	Not ordinance tree	Clearance prune
823	215 Hawthorne	14" Crepe Myrtle	Cavities, Not ordinance tree	
824	318 Hawthorne	16" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
825	316 Hawthorne	10" Crepe Myrtle	Topped, Not ordinance tree	
826	316 Hawthorne	10" Crepe Myrtle	Topped, Not ordinance tree	
827	312 Hawthorne	35" Willow Oak	50% dieback, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
828	312 Hawthorne	16" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
829	306 Hawthorne	17" Water Oak	Trunk cavities, Structurally compromised, no new sidewalk, to be addressed by City PARD	
830	306 Hawthorne	16" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
831	304 Hawthorne	18" Magnolia	Trunk cavities, Structurally compromised, no new sidewalk, to be addressed by City PARD	
832	304 Hawthorne	20" Magnolia	Trunk cavities, Structurally compromised, no new sidewalk, to be addressed by City PARD	
833	218 Hawthorne	5" Crepe Myrtle	Not ordinance tree	
834	218 Hawthorne	5" Crepe Myrtle	Not ordinance tree	
835	218 Hawthorne	21" Crepe Myrtle	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
836	214 Hawthorne	18" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
837	214 Hawthorne	17" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
838	210 Hawthorne	22" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
839	210 Hawthorne	7" Little Gem Magnolia	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
840	208 Hawthorne	18" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
841	116 Hawthorne	34" Live Oak	Ordinance tree	8" checkerplate, Demo-form-pour walk without damage to tree roots 1" diameter or larger
842	116 Hawthorne	21" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
843	116 Hawthorne	7" Cherrylaurel	Not ordinance tree	Clearance prune
844	116 Hawthorne	10" Crepe Myrtle	Not ordinance tree	Clearance prune
845	116 Hawthorne	6" Water Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
846	116 Hawthorne	12" Live Oak	Private tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
847	215 Hawthorne	10" Crepe Myrtle	Topped, Not ordinance tree	Clearance prune
848	205 Hawthorne	10" Logum	Freeze damage, Poor, Private, Not impacted	
849	205 Hawthorne	10" Crepe Myrtle	Private tree	Clearance prune
850	205 Hawthorne	8" Live Oak	Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger
851	205 Hawthorne	46" Live Oak	Utility pruned, Ordinance tree	Demo-form-pour walk without damage to tree roots 1" diameter or larger

Tree Removal List			
Tree No.	Location	Description	Replacement requirement
43	1759 W Main	9" Bradford Pear	0
63	1807 Sul Ross	12" Overcup Oak	0
126	Lanier Middle School	13" Crepe Myrtle	0
153	2501 Woodhead	17" Tallow	0
236	2004 Woodhead	23" Camphor	0
359	1505 Woodhead	13" Magnolia	0
365	1927 W Gray	2" Palm	0
366	1927 W Gray	1" Palm	0
373	1938 W Gray	15" Palm	0
375	1938 W Gray	15" Palm	0
376	1938 W Gray	15" Palm	0
414	1803 W Clay	20" Shumard Oak	20
417	1957 W Clay	15" Crepe Myrtle	0
421	1945 W Clay	4" Italian Cypress	0
422	1941 W Clay	4" Italian Cypress	0
423	1939 W Clay	11" Crepe Myrtle	0
424	1939 W Clay	10" Crepe Myrtle	0
425	1939 W Clay	5" Crepe Myrtle	0
427	1935 W Clay	4" Sago	0
428	1935 W Clay	4" Sago	0
432	1931 W Clay	1" Boxwood	0
433	1931 W Clay	1" Boxwood	0
434	1931 W Clay	1" Boxwood	0
438	1923 W Clay	3" Magnolia	3
447	1919 W Clay	21" Crepe Myrtle	21
449	1915 W Clay	21" Crepe Myrtle	21
451	1913 W Clay	(8)1" Boxwoods	0
454	1903 W Clay	27" Water Oak	27
520	1641 Hawthorne	11" Red Maple	0
559	1539 Hawthorne	5" Sago	0
622	1400 Hawthorne	15" Crepe Myrtle	0
659	3402 Mt Vernon	15" Palm	0
659	1113 Hawthorne	29" Live Oak	0
678	1101 Hawthorne	15" Palm	0
679	1101 Hawthorne	20" Palm	0
680	1101 Hawthorne	20" Palm	0
699	907 Hawthorne	10" Arbovitae	0
710	3317 Yoakum	22" Sycamore	0
711	816 Hawthorne	40" Palm	0
712	816 Hawthorne	15" Sugarberry	0
735	3401 Stanford	9" Magnolia	9
753	616 Hawthorne	15" Crepe Myrtle	0
812	319 Hawthorne	10" Palm	0
TOTAL REPLACEMENT INCHES REQUIRED			101


Tree Replacement List			
Quantity	Caliper Size	Species	Container/Tree Spade size
7	3	Dahoon Holly (<i>Ilex cassine</i>)	65 gallon container
6	4	Eastern Redbud (<i>Cercis canadensis</i>)	100 gallon container
7	4	Live Oak (<i>Quercus virginiana</i>)	100 gallon container
7	4	Polymorpha Oak (<i>Quercus polymorpha</i>)	100 gallon container
TOTAL REPLACEMENT INCHES INCLUDED IN PLAN			101

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.

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 Forestry.

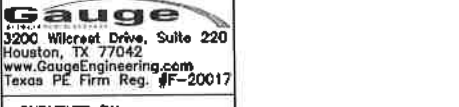
Tree replacement locations shall comply with Houston Public Works spec sections 02811, 02911, 02912, 02915, 02921 & 02922. In general trees along sides of street right of ways shall be no closer than 3' to back of curb or 20' from another tree. Trees in medians shall be no closer than 6' back of curb, 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.

Arboriculturally Significant Tree List		
Tree No.	Location	Description
4	1801 Lexington	24" Live Oak
5	1801 Lexington	27" Live Oak
7	1750 Lexington	28" Water Oak
77	1756 W Alabama	52" Water Oak
88	1801 Marshall	42" Live Oak
94	1802 Kipling	35" Live Oak
137	1760 Hawthorne	51" Willow Oak
141	Lanier Middle School	28" Live Oak
165	2423 Woodhead	25" Live Oak
177	2323 Woodhead	28" Cherrybark Oak
182	2318 Woodhead	26" Live Oak
205	2111 Woodhead	26" Live Oak
309	1705 Woodhead	53" Live Oak
316	1720 Woodhead	24" Live Oak
317	1720 Woodhead	34" Live Oak
333	1509 Woodhead	24" Live Oak
336	1609 Woodhead	25" Shumard Oak
339	1605 Woodhead	45" Live Oak
354	1508 Woodhead	24" Live Oak
400	1820 W Gray	27" Live Oak
420	1851 W Clay	45" Sweetgum
442	1930 W Clay	35" Willow Oak
453	1903 W Clay	47" Live Oak
454	1903 W Clay	27" Water Oak
458	1750 Hawthorne	38" Live Oak
466	1741 Hawthorne	34" Catalpa
473	1733 Hawthorne	27" Live Oak
487	1721 Hawthorne	32" Water Oak
495	1701 Hawthorne	27" Pine
499	1666 Hawthorne	45" Water Oak
517	1651 Hawthorne	25" Water Oak
549	1612 Hawthorne	53" Live Oak
550	1612 Hawthorne	35" Live Oak
560	1539 Hawthorne	25" Live Oak
570	1505 Hawthorne	25" Pecan
579	1520 Hawthorne	28" Water Oak
580	1520 Hawthorne	24" Live Oak
601	Not available	26" Live Oak
602	Not available	37" Live Oak
624	1411 Hawthorne	25" Pecan
629	Not available	35" Live Oak
631	Not available	25" Live Oak
632	Not available	25" Live Oak
633	Not available	38" Live Oak
634	Not available	37" Live Oak
635	Not available	32" Live Oak
660	Not available	33" Live Oak
662	Not available	28" Live Oak
663	Not available	31" Live Oak
664	Not available	38" Live Oak
665	Not available	25" Sycamore
688	1113 Hawthorne	42" Live Oak
689	1113 Hawthorne	39" Live Oak
881	Not available	25" Live Oak
882	Not available	26" Live Oak
890	3317 Montrose	24" Live Oak
706	3317 Yoakum	30" Live Oak



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APPROVED: *Craig A. Koehl* 11-03-2021



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HOUSTON PUBLIC WORKS

HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS

TREE PROTECTION PLAN
SHEET 28 OF 29

WBS NUMBER: N-T27000-002-7

AS NOTED

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SHEET NO. 246 OF 247

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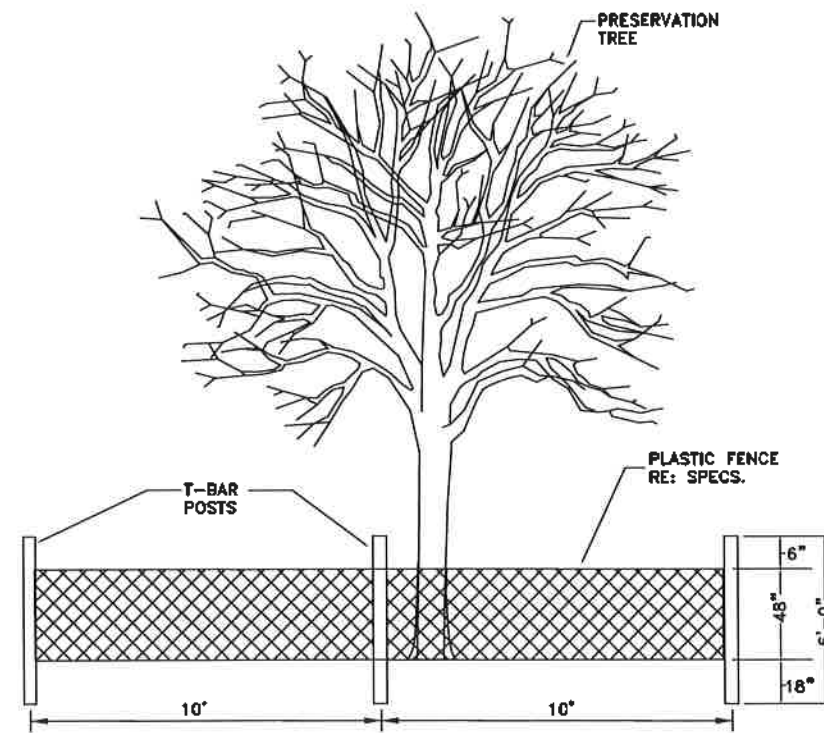
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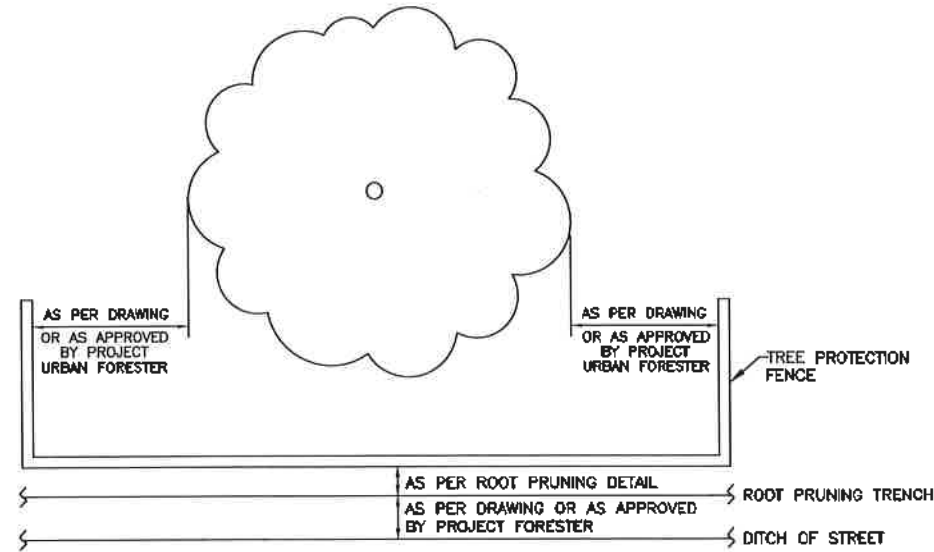
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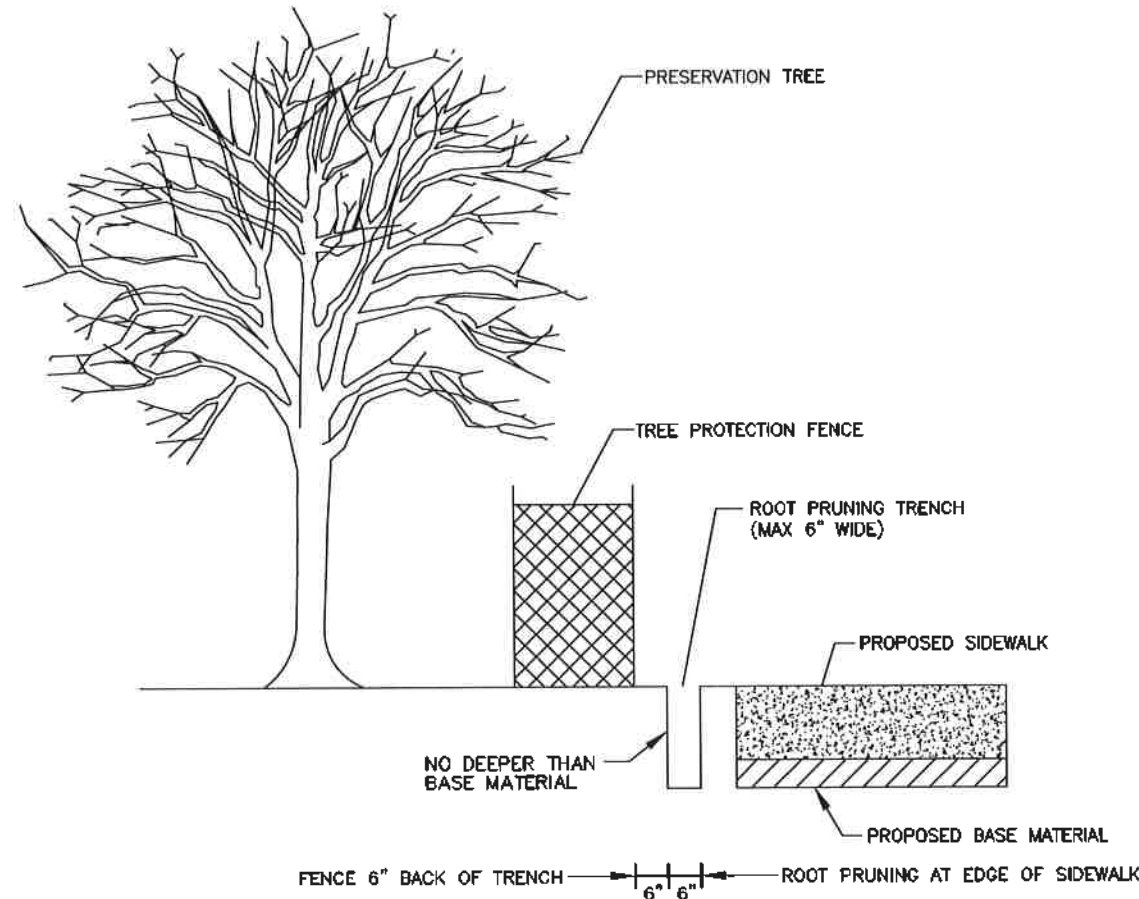
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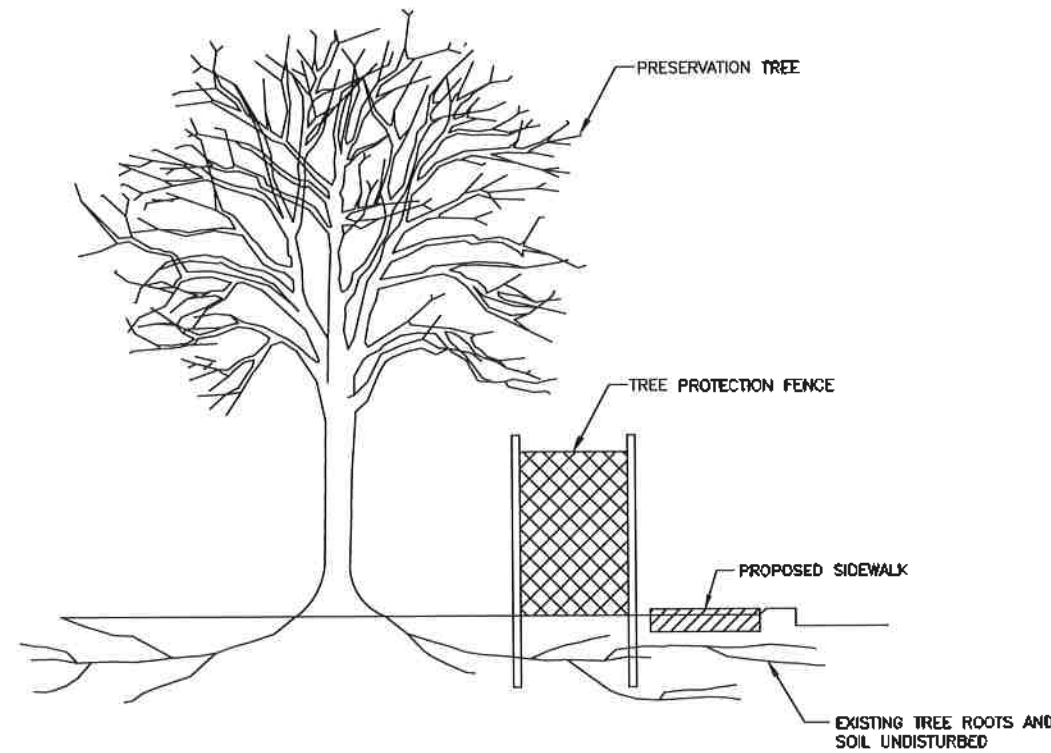
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NOT TO SCALE



TREE PROTECTION FENCING DETAIL B
NOT TO SCALE



ROOT PRUNE FOR SIDEWALK
NOT TO SCALE



DEMO-FORM-POUR WALK WITHOUT DAMAGE TO ROOTS
NOT TO SCALE

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HAWTHORNE ST. & WOODHEAD ST.
NEIGHBORHOOD SAFE STREET
IMPROVEMENTS
TREE PROTECTION PLAN
SHEET 29 OF 29

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