

SECTION 01555
TRAFFIC CONTROL AND REGULATION

PART 1 GENERAL

1.0 SECTION INCLUDES

- 1.1 Requirements for signs, signals, control devices, flares, lights and traffic signals, as well as construction parking control, designated haul routes and bridging of trenches and excavations.
- 1.2 Requirement for and qualifications of flagmen.

2.0 SUBMITTALS

- 2.1 A traffic control plan responsive to the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and sealed by a Registered Professional Engineer is incorporated into the Drawings. If the Contractor proposes to implement traffic control without modification to the plan provided, he shall submit a letter confirming that decision. If the Contractor proposes to implement traffic control different than the plan provided, he shall submit a traffic control plan in conformance with the TMUTCD and sealed by a Registered Professional Engineer.
- 2.2 For both the traffic control plan and flagmen use, submit schedules of values within 30 days following the Notice to Proceed. Refer to Section 01292 - Schedule of Values. **(PWE web link)**
http://pwecms.cityofhouston.net/forms-amp-policies/search_result-2.html
- 2.3 The Contractor shall provide such information and records regarding the use of qualified flagmen to verify that the Contractor's use of "peace officers" as flagmen is in compliance with the Contract Documents and Texas law, including but not limited to, Article 4413 (29bb), commonly referred to as the Private Investigators and Private Security Agencies Act, and Article 2.12, Texas Code of Criminal Procedure.
- 2.4. The Contractor shall provide such information and records regarding the use of qualified flagmen to verify that the Contractor's use of "certified flagmen" as flagmen is in compliance with the Contract Documents and applicable City ordinance.
- 2.5. Make submittals in accordance with Section 01330 - Submittal Procedures. (page 41)

3.0 UNIT PRICES

- 3.1. Traffic Control and Regulation. Measurement is on a lump sum basis for traffic control and regulation, including submittal of a traffic control plan if different from the plan shown on the Drawings, provision of traffic control devices, and provision of equipment and personnel as necessary to protect the work and the public. The amount invoiced shall be determined

based on the schedule of values submitted for traffic control and regulation.

3.2 Flagmen. Measurement is on a lump sum basis for flagmen as required for the Project. The amount invoiced shall be determined based on the schedule of values submitted for flagmen.

3.3 Refer to Section 01270 - Measurement and Payment for unit price procedures. (pg 29)

4.0 FLAGMEN

4.1. Use flagmen, qualified as described under paragraph 4.2, Uniformed Peace Officers, or paragraph 4.4, Certified Flagmen, to control, regulate, and direct the even flow or movement of vehicular or pedestrian traffic when construction operations encroach on public traffic lanes.

4.2. Uniformed Peace Officer: A person who has full-time employment as a peace officer and who receives compensation as a flagman for private employment as an individual employee or independent contractor. Private employment may be either an employee-employer relationship or on an individual basis. A flagman may not be in the employ of another peace officer and may not be a reserve peace officer.

4.2.1 A peace officer is defined as:

4.2.1.1 Sheriffs and their deputies;

4.2.1.2 Constables and deputy constables;

4.2.1.3 Marshals or police officers of an incorporated city, town, or village; or

4.2.1.4 As otherwise provided by Article 2.12, Code of Criminal Procedure, as amended.

4.3 A person who has full-time employment as a peace officer is one who is actively employed in a full-time capacity as a peace officer working, on average, a minimum of 32 paid hours per week, being paid at a rate of pay not less than the prevailing minimum hourly wage rate as set by the federal Wage and Hour Act and entitled to the full benefits of participation in any retirement plan, vacation, holidays, and insurance benefits. A reserve peace officer does not qualify, under this definition, as a peace officer.

4.4 Certified Flagman: A person who receives compensation as a flagman and who meets the following qualifications and requirements:

4.4.1 Formally trained and certified in traffic control procedures through the City's Department of Public Works & Engineering's E. B. Cape Center.

4.4.2 Required to wear a distinctive uniform, bright-colored vest, and be equipped with appropriate flagging and communication devices.

4.4.3 English speaking, with Spanish as an advantageous, but not required, primary or secondary language.

4.4.4 Paid as a Certified Flagman, equivalent to the hourly wage rate set for Rough Carpenter under, Wage Scale for Engineering Construction, "SECTION B-3".

4.4.5 Required to carry proof of training / certification, such as photographic identification card issued by the training institute, to allow the City Engineer to easily determine that necessary full-time traffic control is actually provided, when and where construction work encroaches upon traffic lanes.

PART 2 PRODUCTS

1.0 SIGNS, SIGNALS, AND DEVICES

1.1 Comply with Texas State Manual on Uniform Traffic Control Devices.

1.2 Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.

PART 3 EXECUTION

1.0 PUBLIC ROADS

1.1 Abide by laws and regulations of governing authorities when using public roads. If the Contractor's work requires that public roads be temporarily impeded or closed, approvals shall be obtained from governing authorities and permits paid for before starting any work. Coordinate activities with the City Engineer.

1.2 Contractor shall maintain at all times a 10-foot-wide all-weather lane adjacent to work areas which shall be kept free of construction equipment and debris and shall be for the use of emergency vehicles, or as otherwise provided in the traffic control plan.

1.3 Contractor shall not obstruct the normal flow of traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on designated major arterials or as directed by the City Engineer.

1.4 Contractor shall maintain local driveway access to residential and commercial properties adjacent to work areas at all times.

1.5 Cleanliness of Surrounding Streets:

1.5.1 Keep streets used for entering or leaving the job area free of excavated material, debris, and any foreign material resulting from construction operations. Comply with City of Houston Ordinance No. 5705, Construction or Demolishing Privileges.

2.0 CONSTRUCTION PARKING CONTROL

2.1 Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and City's operations.

2.2 Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

2.3 Prevent parking on or adjacent to access roads or in non-designated areas.

3.0 FLARES AND LIGHTS

3.1 Provide flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

4.0 HAUL ROUTES

4.1 Utilize haul routes designated by authorities or shown on the Drawings for construction traffic.

4.2 Confine construction traffic to designated haul routes.

4.3 Provide traffic control at critical areas of haul routes to regulate traffic and minimize interference with public traffic.

5.0 TRAFFIC SIGNS AND SIGNALS

5.1 Install traffic control devices at approaches to the site and on site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.

5.2 Install and operate traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control and areas affected by Contractor's operations.

5.3 Relocate traffic signs and signals as Work progresses to maintain effective traffic control.

6.0 BRIDGING TRENCHES AND EXCAVATIONS

6.1 Whenever necessary, bridge trenches and excavation to permit an unobstructed flow of traffic.

6.2 Secure bridging against displacement by using adjustable cleats, angles, bolts or other devices whenever bridge is installed:

6.2.1 On an existing bus route;

6.2.2 When more than five percent of daily traffic is comprised of commercial or truck traffic;

6.2.3 When more than two separate plates are used for the bridge; or

6.2.4 When bridge is to be used for more than five consecutive days.

6.3 Install bridging to operate with minimum noise.

6.4 Adequately shore the trench or excavation to support bridge and traffic.

6.5 Extend steel plates used for bridging a minimum of one foot beyond edges of trench or excavation. Use temporary paving materials (premix) to feather edges of plates to minimize wheel impact on secured bridging.

6.6 Use steel plates of sufficient thickness to support H-20 loading, truck or lane, that produces maximum stress.

7.0 REMOVAL

7.1 Remove equipment and devices when no longer required.

7.2 Repair damage caused by installation.

7.3 Remove post settings to a depth of 2 feet.

**THE FOLLOWING ITEMS SHOULD BE CHECKED
FOR COORDINATION DURING DESIGN:**

1.0 Coordinate this specification with other related specifications including the following related Sections.

2.0 RELATED SECTIONS

2.1 Section 01270 - Measurement and Payment: Unit price procedures
(pg 29)

2.2 Section 01292 - Schedule of Values (**PWE web link**)
http://pwecms.cityofhouston.net/forms-amp-policies/search_result-2.html

2.3 Section 01330 – Submittals (page 41)

SECTION 01576
WASTE MATERIAL DISPOSAL

PART 1 GENERAL

1.0 SECTION INCLUDES

1.1 Disposal of waste material and salvageable material.

2.0 UNIT PRICES

2.1 No separate payment will be made for waste material disposal under this Section. Include payment in unit price for related sections.

3.0 SUBMITTALS

3.1 Submittals shall conform to requirements of Section 01330 - Submittal Procedures, on page 41.

3.2 Submit a copy of an approved "Development Permit", as defined in Chapter 19 of the Flood Plain Ordinance (City Ordinance Number 81-914 and Number 85-1705), prior to disposal of excess material in areas designated as being in a "100-year Flood Hazard Area" within the City. Contact the City of Houston Floodplain Manager, 3300 Main Street, at (713) 525-7605 for floodplain information.

3.3 Obtain and submit disposal permits for proposed disposal sites if required by local ordinances.

3.4 Submit a copy of written permission from property owner, along with description of property, prior to disposal of excess material adjacent to the Project. Submit a written and signed release from property owner upon completion of disposal work.

*PART 2 PRODUCTS -*** Not Used****

PART 3 EXECUTION

1.0 SALVAGEABLE MATERIAL

1.1 Excavated Material: When indicated on Drawings, load, haul, and deposit excavated material at a location or locations shown on Drawings outside the limits of Project.

1.2 Base, Surface, and Bedding Material: Load shell, gravel, bituminous, or other base and surfacing material designated for salvage into City of Houston trucks.

1.3 Pipe Culvert: Load culverts designated for salvage into City of Houston trucks.

1.4 Other Salvageable Materials: Conform to requirements of individual Specification Sections.

1.5 Coordinate loading of salvageable material on City of Houston trucks with City Engineer.

2.0 EXCESS MATERIAL

2.1 Vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage, shall become the property of Contractor and shall be removed from the job site and legally disposed of.

2.2 Excess soil may be deposited on private property adjacent to the Project when written permission is obtained from property owner. See Paragraph 1.03 D above.

2.3 Verify the flood plain status of any proposed disposal site. Do not dispose of excavated materials in an area designated as within the 100-year Flood Hazard Area unless a "Development Permit" has been obtained. Excess material placed in a "100-year Flood Hazard Area" within the City, without a "Development Permit", shall be removed by Contractor at no additional cost to the City.

2.4 Waste materials shall be removed from the site on a daily basis, such that the site is maintained in a neat and orderly condition.

SECTION 01610
BASIC PRODUCT REQUIREMENTS

PART 1 GENERAL

1.0 SECTION INCLUDES

1.1 Requirements for transportation, delivery, handling, and storage of material and equipment.

2.0 PRODUCTS

2.1 Products: Means material, equipment, or systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components designated for reuse.

2.2 Do not reuse materials and equipment, designated to be removed, except as specified by the Contract Documents.

2.3 Provide equipment and components from the fewest number of manufacturers as is practical, in order to simplify spare parts inventory and to allow for maximum interchangeability of components. For multiple components of the same size, type or application, use the same make and model of component throughout the project.

3.0 TRANSPORTATION

3.1 Make arrangements for transportation, delivery, and handling of equipment and materials required for timely completion of the Work.

3.2 Transport and handle products in accordance with instructions.

3.3 Consign and address shipping documents to the proper party giving name of Project, street number, and City. Shipments shall be delivered to the Contractor.

4.0 DELIVERY

4.1 Arrange deliveries of products to accommodate the short term site completion schedules and in ample time to facilitate inspection prior to installation. Avoid deliveries that cause lengthy storage or overburden of limited storage space.

4.2 Coordinate deliveries to avoid conflict with Work and conditions at the site and to accommodate the following:

4.1.1 Work of other contractors or the City.

4.1.2 Limitations of storage space.

4.1.3 Availability of equipment and personnel for handling products.

4.1.4 City's use of premises.

4.3 Have products delivered to the site in manufacturer's original, unopened, labeled containers.

4.4 Immediately upon delivery, inspect shipment to assure:

4.3.1 Product complies with requirements of Contract Documents.

4.3.2 Quantities are correct.

4.3.3 Containers and packages are intact; labels are legible.

4.3.4 Products are properly protected and undamaged.

5.0 PRODUCT HANDLING

5.1 Coordinate the off-loading of materials and equipment delivered to the job site. If necessary to move stored materials and equipment during construction, Contractor shall relocate materials and equipment at no additional cost to the City.

5.2 Provide equipment and personnel necessary to handle products, including those provided by the City, by methods to prevent damage to products or packaging.

5.3 Provide additional protection during handling as necessary to prevent breaking, scraping, marring, or otherwise damaging products or surrounding areas.

5.4 Handle products by methods to prevent over bending or overstressing.

5.5 Lift heavy components only at designated lifting points.

5.6 Handle materials and equipment in accordance with Manufacturer's recommendations.

5.7 Do not drop, roll, or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

6.0 STORAGE OF MATERIAL

6.1 Store and protect materials in accordance with manufacturer's recommendations and requirements of these Specifications.

- 6.2 Make necessary provisions for safe storage of materials and equipment. Place loose soil materials, and materials to be incorporated into the Work to prevent damage to any part of the Work or existing facilities and to maintain free access at all times to all parts of the Work and to utility service company installations in the vicinity of the Work. Keep materials and equipment neatly and compactly stored in locations that will cause a minimum of inconvenience to other contractors, public travel, adjoining owners, tenants, and occupants. Arrange storage in a manner to provide easy access for inspection.
- 6.3 Restrict storage to areas available on the construction site for storage of material and equipment as shown on Drawings or approved by the City Engineer.
- 6.4 Provide off-site storage and protection when on-site storage is not adequate.
- 6.5 Do not use lawns, grass plots, or other private property for storage purposes without written permission of the owner or other person in possession or control of such premises.
- 6.6 Protect stored materials and equipment against loss or damage.
- 6.7 Store in manufacturers' unopened containers.
- 6.8 Materials delivered and stored along the line of the Work shall be neatly, safely, and compactly stacked along the work site in such manner as to cause the least inconvenience and damage to property owners and the general public, and shall be not closer than 3 feet to any fire hydrant. Public and private drives and street crossings shall be kept open.
- 6.9 Damage to lawns, sidewalks, streets or other improvements shall be repaired or replaced to the satisfaction of the City Engineer. The total length which materials may be distributed along the route of construction at any one time is 1000 lineal feet, unless otherwise approved in writing by the City Engineer.

*PART 2 PRODUCTS -*** Not Used****

*PART 3 EXECUTION -*** Not Used****

SECTION 01725
FIELD SURVEYING

PART 1 GENERAL

1.0 QUALITY CONTROL

- 1.1 Conform to State of Texas laws for surveys requiring licensed surveyors. Employ a land surveyor acceptable to City Engineer, if required.

2.0 SUBMITTALS

- 2.1 Submit to City Engineer the name, address, and telephone number of Surveyor before starting survey work.
- 2.2 Submit documentation verifying accuracy of survey work on request.
- 2.3 Submit certificate signed by surveyor, that the elevations and locations of the Work are in conformance with Contract Documents.
- 2.4 Submit information under provisions of Section 01330 - Submittal Procedures, on page 41.

3.0 PROJECT RECORD DOCUMENTS

- 3.1 Maintain a complete and accurate log of control and survey work as it progresses.
- 3.2 Prepare a certified survey setting forth dimensions, locations, angles, and elevations of construction and site Work upon completion of foundation walls and major site improvements.
- 3.3 Submit Record Documents under provisions of Section 01785 - Project Record Documents. (page 80)

4.0 EXAMINATION

- 4.1 Verify locations of survey control points prior to starting Work.
- 4.2 Notify City Engineer immediately of any discrepancies discovered.

5.0 SURVEY REFERENCE POINTS

- 5.1 Control datum for survey is that established by City-provided survey as required in the General Conditions and indicated on Drawings.
"REFER TO E-BID SYSTEM, VENDOR LOG IN, SEE DOCUMENT 00700"
- 5.2 Locate and protect survey control points prior to starting site work; preserve permanent reference points during construction.

- 5.3 Notify City Engineer 48 hours in advance of need for relocation of reference points due to changes in grades or other reasons.
- 5.4 Report promptly to City Engineer the loss or destruction of any reference point.
- 5.5 Contractor shall reimburse City for cost of re-establishment of permanent reference points disturbed by Contractor's operations.

6.0 SURVEY REQUIREMENTS

- 6.1 Utilize recognized engineering survey practices.
- 6.2 Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on Project Record Documents.
- 6.3 Establish elevations, lines and levels to provide quantities required for measurement and payment and to provide appropriate controls for the Work. Locate and lay out by instrumentation and similar appropriate means:
 - 6.3.1 Site improvements including pavements; stakes for grading; fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 6.3.2 Grid or axis for structures.
 - 6.3.3 Building foundation, column locations, ground floor elevations.
- 6.4 Verify periodically layouts by same means.

SECTION 01770
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.0 SECTION INCLUDES

- 1.1 Substantial Completion Procedures.
- 1.2 Closeout procedures for final submittals, operation and maintenance data, warranties, spare parts and maintenance materials.
- 1.3 Texas Department of Licensing and Regulation (TDLR) inspection for ADA compliance.

2.0 SUBSTANTIAL COMPLETION

- 2.1 Comply with Document 00700 - General Conditions, regarding substantial completion when Contractor considers the Work, or portion thereof designated by City Engineer, to be substantially complete.
"REFER TO E-BID SYSTEM, VENDOR LOG IN, SEE DOCUMENT 00700"

- 2.1.1 Insure the following items have been completed when included in the Work, prior to presenting a list of items to be inspected by Project Manager for issuance of a Certificate of Substantial Completion:

- 2.1.1.1 Cutting, plugging, and abandoning of water, wastewater, and storm sewer lines, as required by specifications for each item;

- 2.1.1.2 Construction of, and repairs to, pavement, driveways, sidewalks, and curbs and gutters;

- 2.1.1.3 Sodding and hydromulch seeding, unless waived by City Engineer in writing;

- 2.1.1.4 General clean up including pavement markings, transfer of services, successful testing and landscape;

- 2.1.1.5 Installation of all bid items, and

- 2.1.1.6 Any additional requirements in Section 01110-Summary of Work on page 18.

- 2.2 Assist Project Manager with inspection of Contractor's list of items and complete or correct the items, including items added by project Manager, within a time period of 30 days or as mutually agreed.

2.3 Should Project Manager's inspection show failure of Contractor to comply with substantial completion requirements, including those items in Paragraph 2.1.1 of this specification, Contractor shall complete or correct the items, before requesting another inspection by Project Manager.

2.4 Comply with Document 00700 - General Conditions, Iregarding Final Completion and Final Payment when Work is complete and ready for City Engineer's final inspection.

"REFER TO E-BID SYSTEM, VENDOR LOG IN, SEE DOCUMENT 00700"

2.5 Provide Project Record Documents in accordance with Section 01785 - Project Record Documents on page 80.

2.6 Complete or correct items on punch list, with no new items added. Address new items during warranty period.

2.7 City will occupy portions of Work as specified in other Sections.

3.0 FINAL CLEANING

3.1 Execute final cleaning prior to final inspection.

3.2 For facilities, clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

3.3 Clean equipment and fixtures to sanitary condition.

3.4 Clean or replace filters of operating equipment.

3.5 Clean debris from roofs, gutters, down spouts, and drainage systems.

3.6 Clean site; sweep paved areas, rake landscaped surfaces clean.

3.7 Remove waste and surplus materials, rubbish, and temporary construction facilities from site following final test of utilities and completion of Work.

4.0 ADJUSTING

4.1 Adjust operating equipment to ensure smooth and unhindered operation. Value of this testing and adjusting is 5 percent of Lump Sum Price in Schedule of Values for item being tested.

5.0 OPERATION AND MAINTENANCE DATA

5.1 Submit operations and maintenance data as noted in Section 01330 - Submittal Procedures on page 41.

5.2 Five percent of lump sum amount of each piece of equipment as indicated in Schedule of Unit Price Work or Schedule of Values shall be paid after required O&M data submissions are received and approved by City Engineer.

6.0 WARRANTIES

6.1 Provide one original and two copies of each warranty from subcontractors, suppliers, and manufacturers.

6.2 Provide Table of Contents and assemble warranties in 3-ring/D binder with durable plastic cover.

6.3 Submit warranties prior to final progress payment.

6.4 Warranties shall commence in accordance with requirements in Document 00700 - General Conditions.

"REFER TO E-BID SYSTEM, VENDOR LOG IN, SEE DOCUMENT 00700"

7.0 SPARE PARTS AND MAINTENANCE MATERIALS

7.1 Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification sections.

7.2 Deliver to location within City limits as directed by City Engineer; obtain receipt prior to final Payment Application.

8.0 TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR) INSPECTION

8.1 Contact TDLR's Houston Regional Office, 5425 Polk Street, Houston, Texas, 77023, telephone 713-924-6303, fax 713-921-3106, to verify schedule an inspection for ADA compliance prior to final completion.

8.2 Provide results of TDLR's inspection to City prior to final inspection.

9.0 FINAL PHOTOS

9.1 Provide per Specification Section 01322 - Construction Photographs for Facility Projects. **(PWE web link)**
http://pwecms.cityofhouston.net/forms-amp-policies/search_result-2.html

10.0 PROJECT RECORD DOCUMENTS

10.1 Provide per Specification Section 01785 - Project Record Documents. (page 80)

*PART 2 PRODUCTS -***Not Used****

*PART 3 EXECUTION -*** Not Used****

SECTION 01785
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.0 SECTION INCLUDES

1.1 Maintenance and Submittal of Record Documents and Samples.

2.0 MAINTENANCE OF DOCUMENTS AND SAMPLES

2.1 Maintain one record copy of documents at the site in accordance with Document 00700 - General Conditions, paragraph 3.14, Documents and Samples at the Site.

"REFER TO E-BID SYSTEM, VENDOR LOG IN, SEE DOCUMENT 00700"

2.2 Store Record Documents and samples in field office if a field office is required by Contract Documents, or in a secure location. Provide files, racks, and secure storage for Record Documents and samples.

2.3 Label each document "PROJECT RECORD" in neat, large, printed letters.

2.4 Maintain Record Documents in a clean, dry, and legible condition. Do not use Record Documents for construction purposes.

2.5 Keep Record Documents and Samples available for inspection by City Engineer.

3.0 RECORDING

3.1 Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

3.2 Contract Drawings and Shop Drawings: Legibly mark each item to record all actual construction, or "as built" conditions, including:

3.2.1 Measured depths of elements of foundation in relation to finish first floor datum.

3.2.2 Measured horizontal locations and elevations of underground utilities and appurtenances, referenced to permanent surface improvements.

3.2.3 Elevations of underground utilities referenced to City of Houston bench mark utilized for project.

3.2.4 Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.

3.3 Field changes of dimension and detail.

3.3.1 Changes made by modifications.

3.3.2 Details not on original contract drawings.

3.3.3 References to related shop drawings and Modifications.

3.4 Record information with a red felt-tip marking pen on a set of blue line opaque drawings, provided by City Engineer.

4.0 SUBMITTALS

4.1 At contract closeout, deliver Project Record Documents to City Engineer.

*PART 2 PRODUCTS - ***Not Used****

*PART 3 EXECUTION - ***Not Used****

SECTION 02952
MUDJACKING (SLABJACKING) RIGID PAVEMENTS

PART 1 GENERAL

1.0 SECTION INCLUDES

1.1 Mudjacking Rigid Pavement.

2.0 MEASUREMENT AND PAYMENT

2.1 Measurement shall be made of the actual number of holes drilled necessary to accomplish the work and the area in square feet raised by this process.

2.2 Payment at the unit price shall be full compensation for furnishing all labor, equipment, tools, materials, constructing and filling the holes. In addition, waste material shall be removed and surrounding area restored.

2.3 Payment shall be made at the unit price bid per item.

3.0 REFERENCE

3.1 TxDOT Tex 120-E – Unconfined Compressive Strength.

PART 2 PRODUCTS

1.0 MATERIALS

1.1 Grout Mixtures: Portland cement grout mixture used for slabjacking shall consist of Portland cement, pozzolan or fly ash, limestone dust, sand, and water. The mix shall contain a minimum of 2 sacks of cement per cubic yard of grout, providing a minimum compressive strength of 650 psi at 7 days following TxDOT Tex 120-E. The use of accelerators, high range water reducers and fluidifiers are subject to the approval of the City Engineer.

1.2 Mineral Aggregate: Aggregate to be used for slabjacking may consist of natural sand, manufactured sand, or a combination of natural and manufactured sand and limestone dust. If the aggregate is a combination of separately processed sized from the same or different sources, or a blend of different materials, the different components shall be batched separately or blended prior to delivery to the batching plant under approved conditions.

2.0 EQUIPMENT

2.1 Grout Plant: The grout plant shall consist of a positive displacement grout injection pump capable of applying up to 250 psi pressure, a high speed colloidal mixing machine, and a grout mill connected to the cone-

shaped bottom or a cylindrical dram. The colloidal mill shall operate between 800 to 2,000 RPM, creating a high shearing action and subsequent pressure release to make a homogeneous mixture. The injection system shall be capable of continuously pumping grout at rates as low as 1-1/2 gallons per minute and shall be equipped with pressure monitoring devices and a quick action valve system that can be closed instantly and provide for the grout to be re-circulated through the system.

PART 3 EXECUTION

1.0 PREPARATION

- 1.1 General Requirements: The Contractor shall furnish all equipment, tools, and other apparatus necessary for the proper construction and acceptable completion of the work specified under this contract. The equipment shall be approved by the City Engineer prior to starting the work, and maintained in good working condition by the Contractor during the progress of the work.
- 1.2 Pavement Inspection: Prior to jacking any pavement, the slabs shall be closely examined for any existing cracks. A representative of the Contractor and the City Engineer shall perform this investigation, and both parties shall satisfy themselves as to the existing condition of the pavement, and all existing cracks noted or marked.

2.0 EXECUTION

- 2.1 Drilling Holes for Grout Injection: Grout injection holes shall be drilled in a pattern as shown on the plans or as directed by the City Engineer. Holes shall not be larger than 2 inches in diameter drilled vertically to a depth sufficient to penetrate through any chemically stabilized base, but not more than three inches into the subgrade. Spacing of holes shall be a maximum of 24 inches on center. Holes shall be drilled in such a manner that breakout shall not occur at the bottom of the slab.
- 2.2 Drilling An air compressor and rock drills or other device capable of drilling the grout injections holes through the pavement and base material shall be provided. The holes are vertical and round. Down-feed pressure whether by hand or mechanical equipment shall be in good condition and operated in such a manner that the means shall not exceed 200 psi. Holes shall be drilled in such a manner so as to prevent breakout at the bottom of the pavement. All necessary hoses, valving and valve manifolds and positive cut-off and bypass provisions to control pressure and volume, pressure gauges with gauge protectors, expanding packers for positive seal grout injection, wood plugs, hole washing tools, drill steel and bits shall be provided by the Contractor.
- 2.3 Jacking: Prior to jacking operations the Contractor shall erect string lines that will be blocked up from the pavement high points to monitor movement. An expanding rubber packer or other approved device providing a positive seal and connected to the discharge hose on the

grout plant shall be lowered into the holes. The discharge end of the packer or hose shall not extend below the lower surface of the concrete pavement. The Contractor shall pump in a pattern and in the amount required to raise the pavement to within 0.01 foot from a string line grade.

Grade tolerances shown in this section shall be applicable to transverse grades as well as longitudinal grades. Continuous pressures to 200 psi will be permitted. Pressures to 300 psi will be allowed only for short periods. Loss of grout through cracks, joints, other injection holes, or from back pressure in the hose or in the shoulder area will not be tolerated. Grout held in the mixer or in the injection pump or hose for more than one hour after mixing shall not be used for jacking.

2.4 Raising of Slabs: The slabs shall not be raised more than $\frac{1}{4}$ inch when pumping in any one hole at any time. No part of the slab shall lead any other part of the slab or any adjacent slab more than $\frac{1}{4}$ inch at a time. The entire slab and all adjacent slabs shall be kept on the same plane at all times, within the $\frac{1}{4}$ inch tolerance. The Contractor shall make observations to assure that when pumping from one hole, the grout flows to adjacent holes to insure that all voids are filled. The Contractor may cut a slab to prevent breakage when it is bound against an adjoining slab. If the temperature is 27 degrees C, 80 degrees F, or higher during the jacking operation, the slabs shall be sufficiently moistened to prevent expansion of the slabs.

2.5 Plan Grade Requirements: At all times during the raising of the slabs, the Contractor shall furnish and utilize qualified personnel and equipment for determining the proper elevations required to conform to the plan elevations. Upon completion of jacking operations, all slabs within the work area shall present an even grade at each joint and shall not vary from the plan elevations by more than (0.02) foot. If slabs are found that are lower than the specified tolerance from the plan grade, these slabs shall be further jacked until the tolerance is met. (If slabs are found that are higher than the specified tolerance, the Contractor shall raise the grade of the surrounding pavement, as determined by the City Engineer, to a newly established grade.) (Individual sections of pavement that are raised about the specified tolerances shall be brought to grade by grinding.) Should the over-jacking be greater than $\frac{1}{4}$ inch, the City Engineer has the option to require removal and replacement of the pavement. These repairs shall be accomplished at no additional cost to the City.

2.6 Sealing of Injection Holes: After jacking has been completed at any one hole, the packer shall be removed and the hole temporarily plugged immediately with a tapered wooden plug. The temporary wooden plugs shall not be removed until sufficient time has elapsed to permit the grout to set sufficiently so that back pressure will not force it through the holes. Each hole shall be permanently sealed flush with the pavement surface with a fast setting sand/cement or other patch material approved by the City Engineer. The patch material shall have a minimum thickness of 3 inches.

3.0 PROTECTION OF PAVEMENT

3.1 Weather Limitations: Pavement slabjacking shall be performed when the ambient temperature at the bottom of the pavement slab is less than 5 degrees C, 40 degrees F, or when the subgrade or subbase is frozen.

3.2 Traffic: Traffic shall not be permitted on the pavement until the grout has obtained a minimum set in 12 hours.

3.3 Replacing and Repair of Damaged Pavement: The Contractor shall replace or repair any slabs broken due to jacking as determined by the City Engineer at no cost to the City.

SECTION 02953
CRACK SEALING

PART 1 GENERAL

1.0 SECTION INCLUDES

1.1 Sealing Asphaltic Concrete Pavement Cracks.

1.2 Sealing Portland Cement Concrete Pavement Cracks.

1.3 MEASUREMENT AND PAYMENT

1.4 Measurement will be made by the linear foot of crack cleaned and sealed.

1.5 The work performed and material furnished as prescribed by this item at the unit price bid for Crack Sealing shall be full compensation for cleaning, furnishing and placing all materials and for all labor, equipment and incidentals necessary to complete the work.

PART 2 PRODUCTS

1.0 MATERIALS

1.1 2SS-IP Polymer Emulsion: This shall be a slow-setting anionic emulsion produced from a polymer-modified asphalt and shall be suitable for sealing fine cracks in asphaltic concrete pavement.

1.2 HFRS-2P High Float Emulsion: This shall be a rapid-setting anionic emulsion produced from a polymer-modified asphalt and shall be suitable for sealing fine cracks in asphaltic concrete pavement.

1.3 Rubber Asphalt Crack Sealing Compound: This material shall be a blend of rubber and asphalt and shall be suitable for sealing 1/8-inch or larger width cracks in Portland Cement concrete pavement. It shall be capable of being melted and applied by suitable oil-jacketed kettle equipped with pressure pump, hose and nozzle at a temperature of 400 F. or less. It shall contain no water or highly-volatile matter and shall not track by traffic as soon as cooled to road temperature.

2.0 EQUIPMENT

2.1 A reservoir, pump, hose, nozzle, and squeegee system capable of handling and applying the asphalt emulsion at ambient temperatures of 40 F. Or above in such a manner that it will seal cracks 1/16 to 1/8 inch in width. The City Engineer shall approve the system prior to use.

2.2 An oil jacketed kettle equipped with a pressure pump, hose and nozzle capable of applying the rubber asphalt crack sealing compound at the temperature of 400 or less. The equipment shall be approved by the City

Engineer.

- 2.3 Other equipment, tools and machinery necessary for proper prosecution of the work shall be on the project and approved by the City Engineer prior to beginning of joint sealing operations.

PART 3 EXECUTION

1.0 PREPARATION

- 1.1 Cracks 1/16- to 1/8-inch-width shall be blown out with compressed air and sealed with polymer-modified emulsion by a method satisfactory to the Engineer. If directed by the Engineer, a light coating of fmc sand shall be applied to the emulsion treated cracks prior to opening to traffic to prevent tracking.
- 1.2 Cracks 1/8 inch and larger than 1/8 inch width shall be cleaned of infiltrated material and blown dry with compressed air. The rubber asphalt material shall then be heated and applied to seal the cracks in a manner satisfactory to the City Engineer.
- 1.3 No sealing of any cracks shall be done unless the pavement temperature is above 40F and pavement and cracks are dry.

SECTION 02954
SAWED JOINTS

PART 1 GENERAL

1.0 SECTION INCLUDES

- 1.1 Sawing a joint to provide a clean break with a straight neat edge for removal of concrete pavement, concrete base and asphaltic concrete resurfacing, concrete curb or concrete curb and gutter.
- 1.2 Bid Line Items 4 and 5 (repair of concrete curbs and driveways) are covered by this specification.
- 1.3 If limit of removal of existing concrete or asphaltic pavement does not fall on existing joint, depth of saw cut shall be minimum of 1-1/2-inch to provide a straight, smooth joint surface without chipping, spalling, or cracking.
- 1.4 Sawing for full depth of pavement as required by plan drawings or as directed by the City shall provide a straight, smooth joint surface without chipping, spalling or cracking.

2.0 MEASUREMENT AND PAYMENT

- 2.1 Measurement for saw-cutting existing concrete pavement, concrete base asphaltic surfacing shall be by linear foot.
- 2.2 Saw-cutting existing standard concrete curbs will be considered as 1.5 linear feet and existing standard concrete curb and gutter as 3 linear feet.
- 2.3 Bid Items 5 and 6 are covered by this specification. Payment will depend upon 1-1/2-inch cut depth or full pavement cut depth. Payment at the respective unit price bid shall be full compensation for furnishing all labor, equipment, tools, materials and incidentals to complete the work.
- 2.4 Contraction joints and longitudinal weakened plane joints constructed in new pavement by saw-cutting will be considered incidental to the unit price for Concrete Pavement.
- 2.5 Joints for Curb, Curb and Gutters, Concrete Sidewalks, Concrete Pavement, Concrete Driveways and Wheel Chair Ramps constructed by saw-cutting in new construction will be considered incidental to the unit price for that application item.

3.0 SUBMITTALS

- 3.1 Submit Manufacturer's data and specifications for saw cutting equipment.

*PART 2 PRODUCTS – ***NOT USED****

PART 3 EXECUTION

1.0 SAW-CUT METHOD

- 1.1 Sawed joints shall be cut with a power-driven concrete pavement saw.
- 1.2 Circular cutter shall be capable of cutting straight line groove of minimum ½ inch width.

- 1.3 Concrete saw: Provide sawing equipment adequate in power to complete sawing to required dimensions and within required time. Provide at least one standby saw that is in good working order. Maintain an ample supply of saw blades at work site at all times during sawing operations. Sawing equipment shall be on job at all times during concrete placement.
- 1.4 Sawed joints may also be used as an alternate to formed contraction or weakened plane joints in newly constructed concrete pavement, curbs, curb and gutters, sidewalks and driveways. Ref to 2.2 above.
- 1.5 Circular cutter shall be capable of cutting straight line groove minimum of ½ inch wide. Depth shall be 1-1/2 inches or full depth according to plans or as directed by the City Engineer.
- 1.6 For newly constructed pavement, commence sawing as soon as concrete has hardened sufficiently to permit cutting without chipping, spalling or tearing and prior to initiation of cracks. Once sawing has commenced, it shall be continued until completed. Make saw cut with one pass. Complete sawing within 24 hours of new concrete placement. Saw joints at required spacing consecutively in sequence of concrete placement.

SECTION 023205
UTILITY BACKFILL MATERIALS

Refer to the following web link:

<https://purchasing.houstontx.gov/bids/C23150/Section%2002320S%20Utility%20Backfill%20Materials.pdf>

STANDARD DRAWINGS FOR CONCRETE PAVEMENT REPAIR

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Table of Contents

This is a Work Order contract. Additional drawings may be provided to the Contractor with each Work Order, and at that time will become part of the Contract Documents.

Sheet Number	Drawing Title
547-S	Concrete Headwalls Details (Attachment A)
02751-01	Concrete Pavement Details
02754-01	Driveway Details (Streets with Curbs)
02754-02	Driveway Details (Open Ditches)
02775-02	Wheelchair Ramp Details
2902-01	Pavement Repair Detail
TXDOT PED-05 (1)	Curb Ramps
TXDOT PED-05 (2)	Detectable Warnings
TXDOT PED-05 (3)	Sidewalks
TXDOT PED-05 (4)	Intersection Layouts

A PDF version of the four TXDOT PED-05 Drawings can be viewed on line at the following web link:
<https://purchasing.houstontx.gov/bids/C23150/pedestrian%20facilities%20stds%20new%20drawing.pdf>

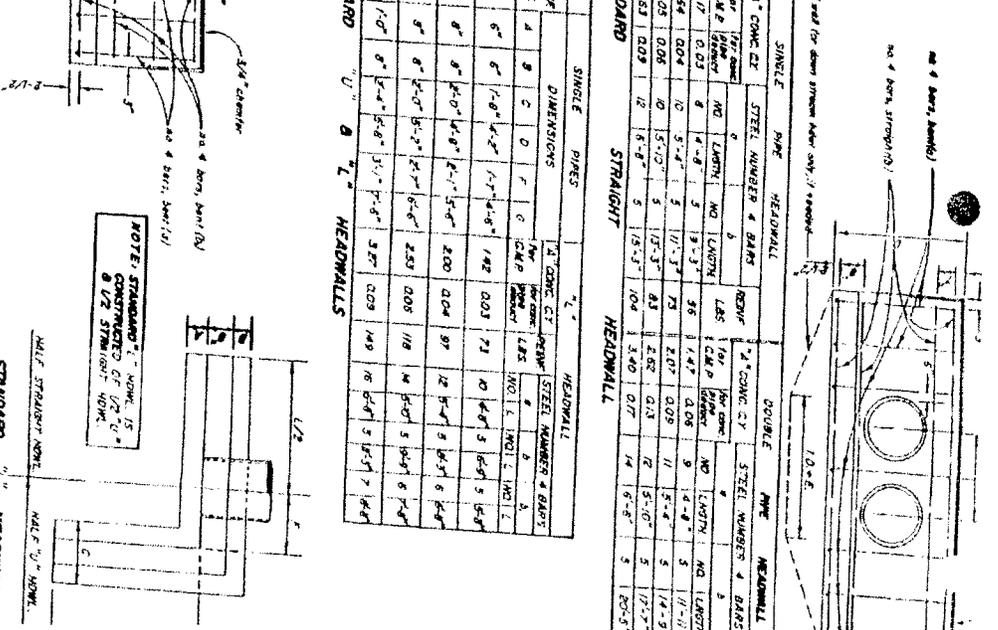
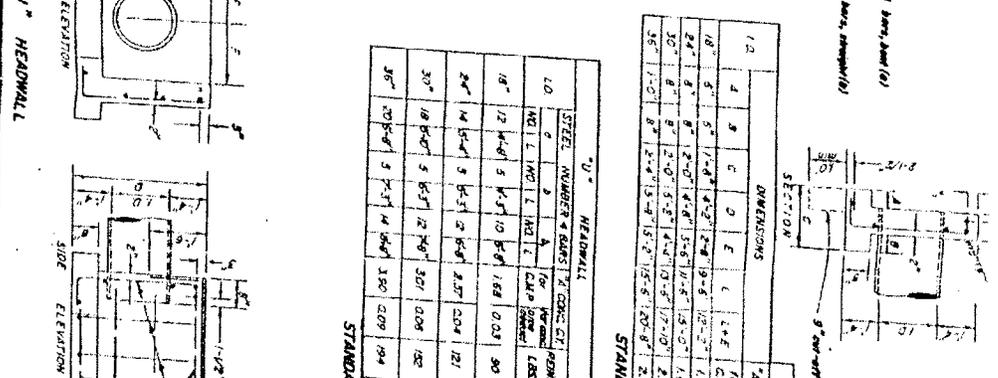
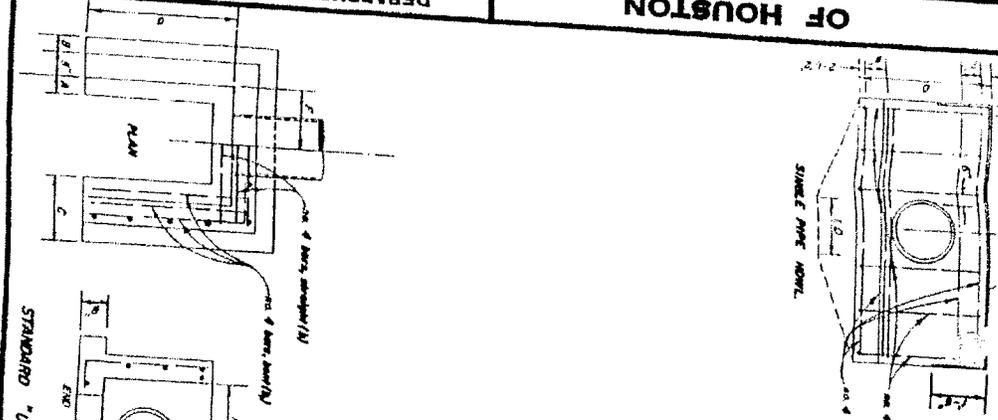
Drawing 547-S

LOCAL SECTIONS FOR:
RAIGHT, "L", AND "U" TYPE
INFORCED CONCRETE
ADWALLS

OF HOUSTON

DEPARTMENT OF PUBLIC WORKS
 APPROVALS
 ASSISTANT DIRECTOR OF PUBLIC WORKS
 ASSISTANT DIRECTOR OF PUBLIC WORKS
 DESIGNED BY A.H.D.
 DRAWN BY Baird
 SHEET NO. / OF / SHEETS
 DWG. NO.

DATE: December 7, 1978

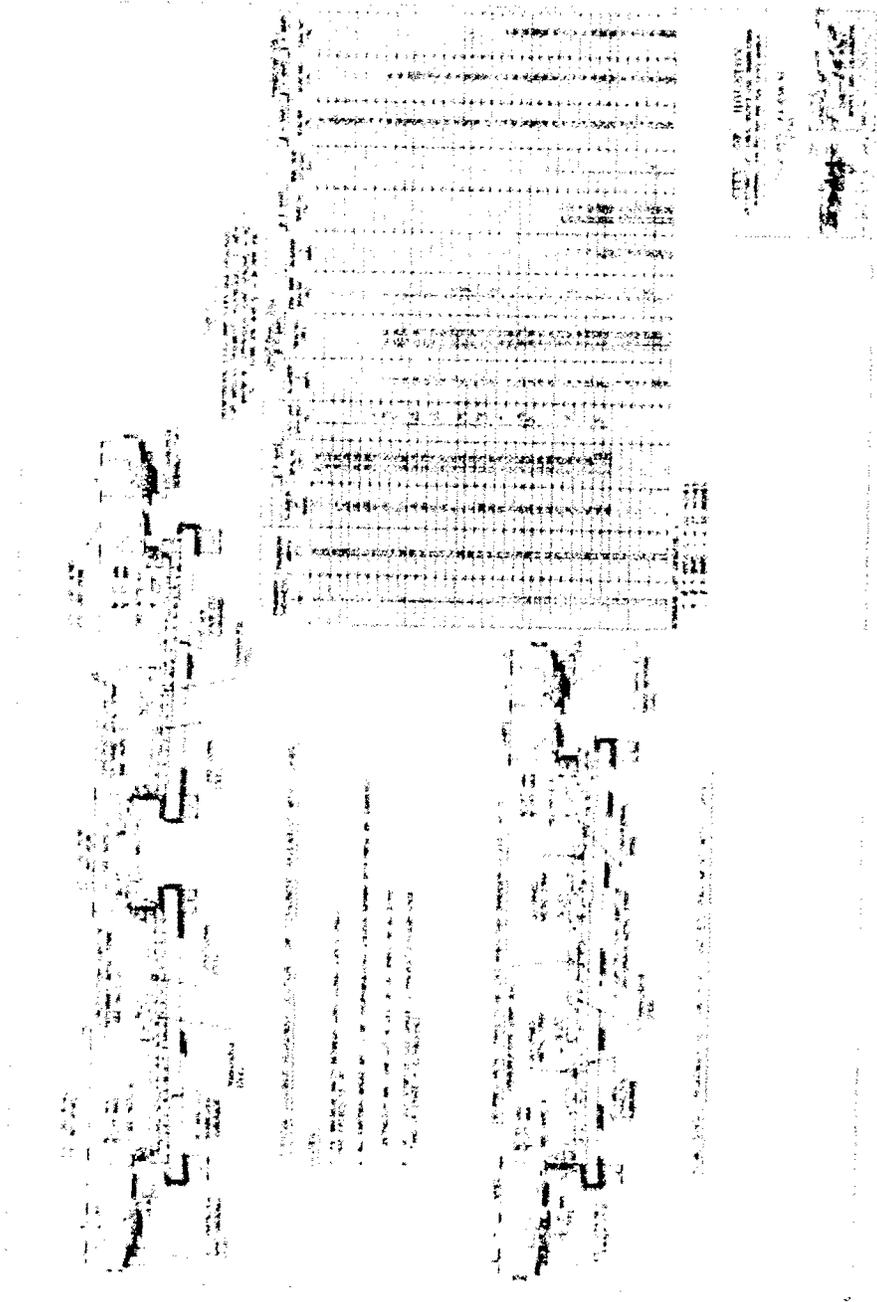


L.O.	"U" HEADWALL				"L" HEADWALL			
	STEEL NUMBER & BARS	CONC. CT	REIN. FOR	REIN. FOR	STEEL NUMBER & BARS	CONC. CT	REIN. FOR	REIN. FOR
18"	5 #1 @ 12" O.C.	18"	18"	18"	5 #1 @ 12" O.C.	18"	18"	18"
24"	5 #1 @ 12" O.C.	24"	24"	24"	5 #1 @ 12" O.C.	24"	24"	24"
30"	5 #1 @ 12" O.C.	30"	30"	30"	5 #1 @ 12" O.C.	30"	30"	30"
36"	5 #1 @ 12" O.C.	36"	36"	36"	5 #1 @ 12" O.C.	36"	36"	36"

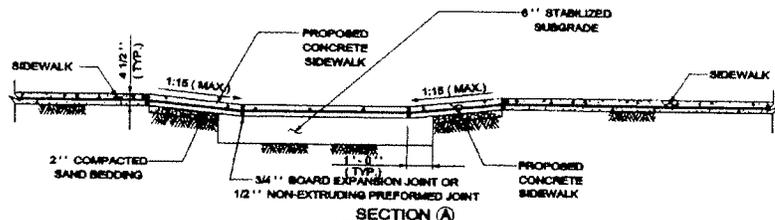
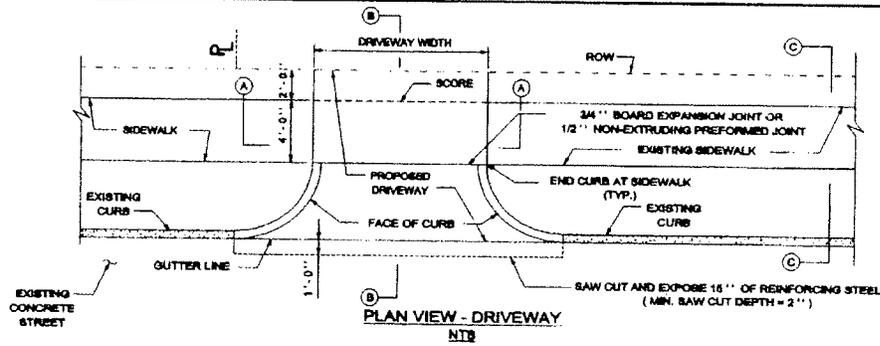
L.O.	"U" HEADWALL				"L" HEADWALL			
	STEEL NUMBER & BARS	CONC. CT	REIN. FOR	REIN. FOR	STEEL NUMBER & BARS	CONC. CT	REIN. FOR	REIN. FOR
18"	5 #1 @ 12" O.C.	18"	18"	18"	5 #1 @ 12" O.C.	18"	18"	18"
24"	5 #1 @ 12" O.C.	24"	24"	24"	5 #1 @ 12" O.C.	24"	24"	24"
30"	5 #1 @ 12" O.C.	30"	30"	30"	5 #1 @ 12" O.C.	30"	30"	30"
36"	5 #1 @ 12" O.C.	36"	36"	36"	5 #1 @ 12" O.C.	36"	36"	36"

NOTE: STANDARD "U" HEADWALLS
 CONSTRUCTED OF 12" "U"
 & 1/2" STRAIGHT PIPE.

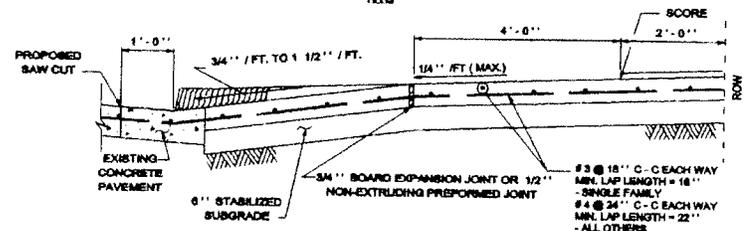
NOTE: STANDARD "L" HEADWALLS
 CONSTRUCTED OF 12" "L"
 & 1/2" STRAIGHT PIPE.



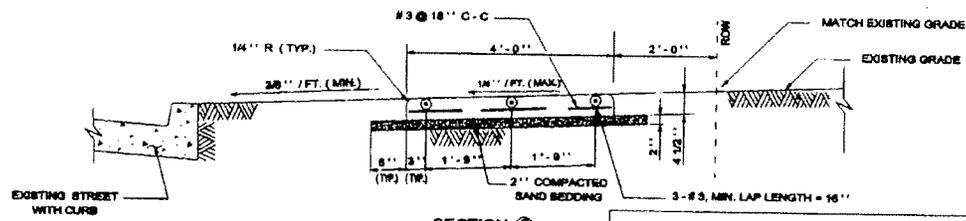
Drawing 02751-01



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



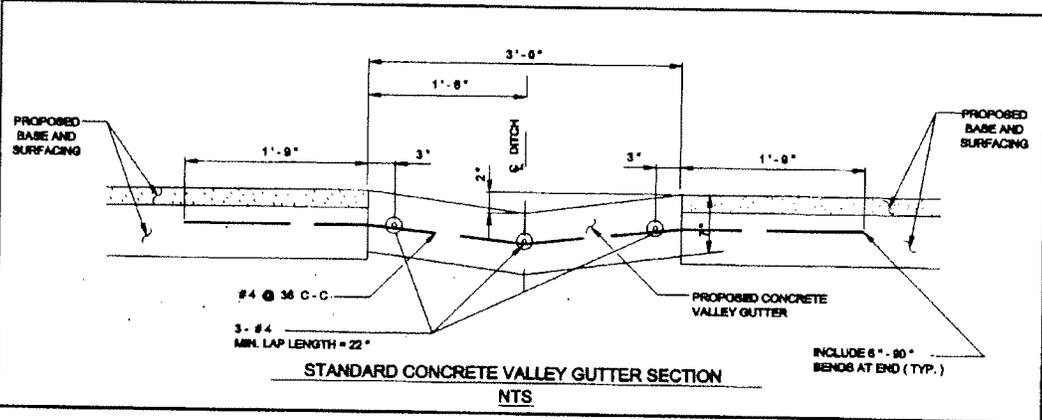
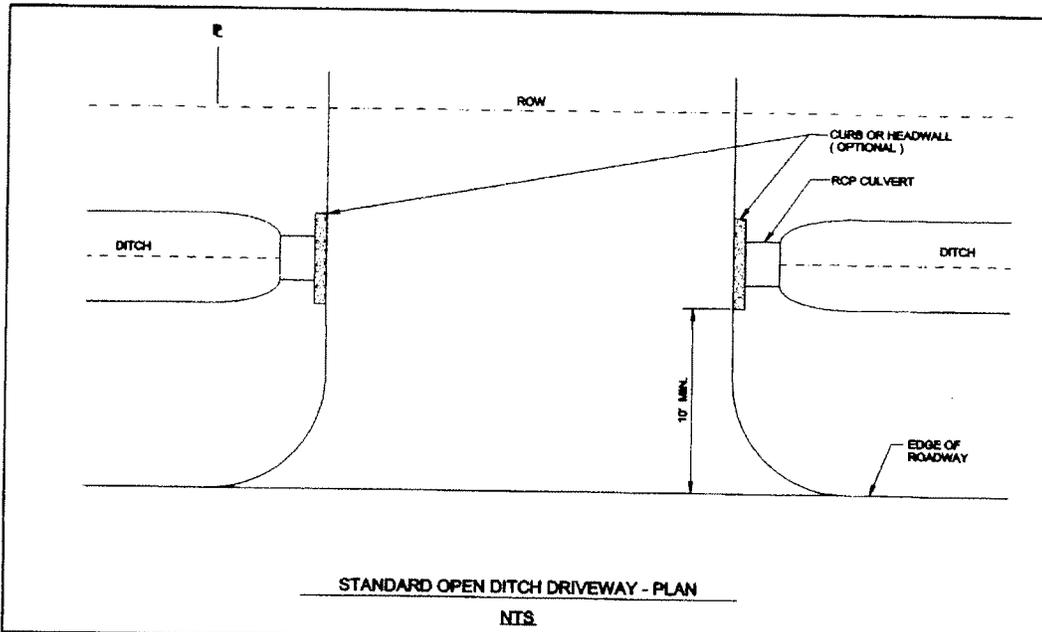
SECTION B
TYPICAL DRIVEWAY SECTION
 NTS



SECTION C
TYPICAL SIDEWALK SECTION
 NTS

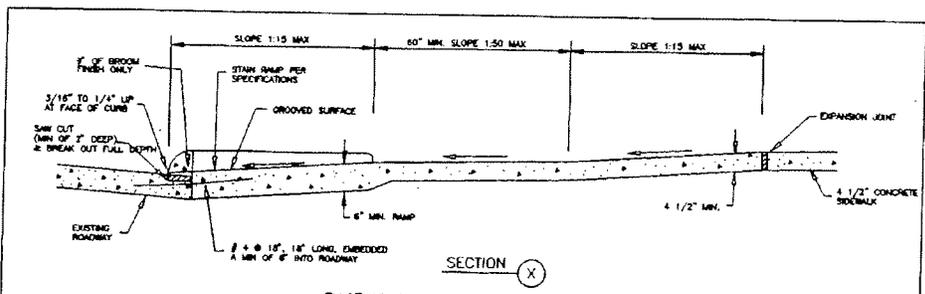
- NOTES:**
- 1 - DRIVEWAYS SHALL BE 8" THICK FOR SINGLE FAMILY USE AND 7" THICK FOR ALL OTHERS (I. E. COMMERCIAL, INDUSTRIAL, ETC.)
 - 2 - DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 - 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
 - 3 - 8 X 8 - W 2.9 X W 2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL.
 - 4 - EXPANSION & CONSTRUCTION JOINTS ALONG SIDEWALKS SHALL BE ACCORDING TO DRAWING NO. 02752-02

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
REINFORCED CONCRETE DRIVEWAY AND SIDEWALK DETAILS ON CURBED TYPE STREETS	
APPROVED BY: <i>Brandagi</i> CITY ENGINEER	APPROVED BY: <i>Tom Chubb</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
DATE: 05 - 23 - 03	
DWG NO: 02754 - 01	DWG NO: 17201-1 (BUILDING CODE)

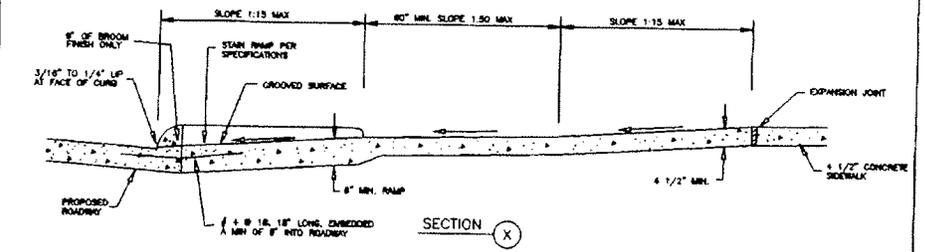


1. REINFORCED CONCRETE PIPE (RCP) CULVERTS AND CONCRETE VALLEY GUTTER GRADES SHALL BE SET BY CITY ENGINEER. PROFILE SHOWING THE PROPOSED AND EXISTING DITCH FLOWLINE WILL BE REQUIRED WHERE CONCRETE VALLEY GUTTERS ARE TO BE CONSTRUCTED IN LIEU OF CULVERTS.
2. CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 18" DIAMETER MINIMUM.
3. SPACING OF TYPE "D" OR "D-1" INLETS SHALL BE DETERMINED BY CITY ENGINEER. SEE DRAWING NO. 02632 - 07 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.

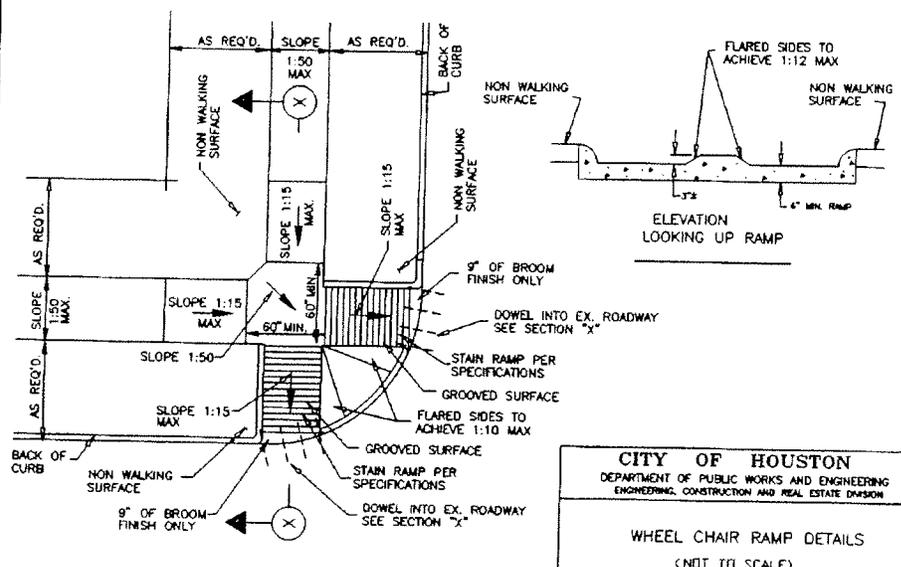
CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
DRIVEWAYS WITH CULVERTS OR VALLEY GUTTERS ON OPEN DITCH TYPE STREETS	
APPROVED BY: <i>Brandagari</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
DATE: 06 - 23 - 03	
DWG NO: 02754 - 02	DWG NO: 17201 - 2 (BUILDING CODE)



SECTION X
EXISTING CONCRETE PAVEMENT CONSTRUCTION



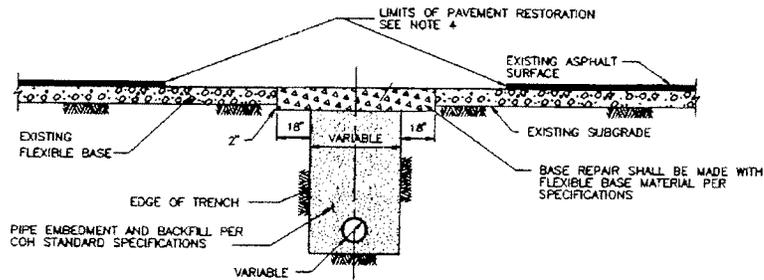
SECTION X
NEW CONCRETE PAVEMENT CONSTRUCTION



ELEVATION
LOOKING UP RAMP

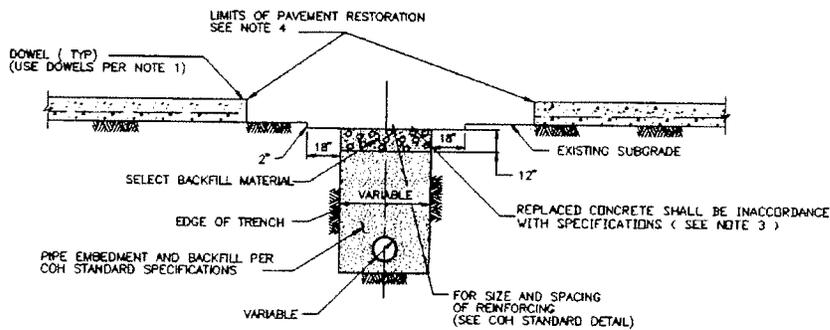
RESIDENTIAL & RURAL CONDITIONS
N.T.S.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
WHEEL CHAIR RAMP DETAILS (NOT TO SCALE)	
APPROVED BY: <i>Bouda</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE OCT-01-2002	DWG NO: 02775-02



SECTION (A)

REPAIR OF FLEXIBLE BASE PAVEMENT



SECTION (B)

REPAIR OF REINFORCED CONCRETE PAVEMENT

NOTE:

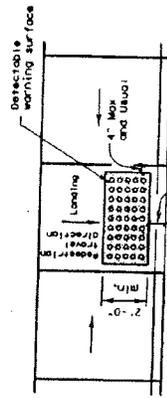
1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE # 6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMA SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENTS
4. REFER TO STANDARD DETAIL 02951-01 FOR PAVEMENT RESTORATION LIMITS.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
PAVEMENT REPAIR DETAILS FOR STREET CUTS (NOT TO SCALE)	
APPROVED BY: <i>Ernaud Agui</i> CITY ENGINEER	APPROVED BY: <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO 02902-01

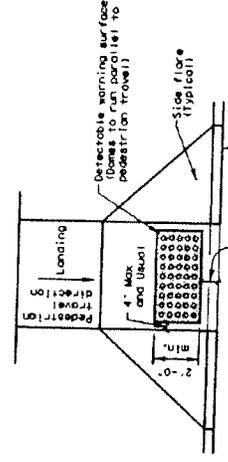
DETECTABLE WARNINGS

General Notes for Detectable Warnings

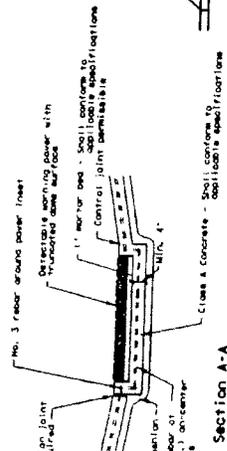
1. Curb ramps must contain a detectable warning surface that consists of raised truncated domes in the direction of travel. The Texas Accessibility Standards (TAS) Section 4.29 of the Texas Accessibility Standards (TAS) Section 4.29, including side-sloped adjacent surfaces, detectable warning surfaces adjacent to detectable concrete, or detectable warning surfaces in the plane, shall be slip resistant and not allow water to accumulate.
2. Detectable warning domes in the direction of pedestrian travel when entering the street.
3. Aligned truncated domes in the direction of pedestrian travel shall be located at the approximate location for the detectable warning surface for each curb ramp type.
4. Detectable warning surfaces shall be located so that the edge nearest the curb line is a minimum of 24" in the direction of pedestrian travel, and extend the full width of the curb ramp. The detectable warning surface shall be curved along the corner radius.
5. Detectable warning surfaces shall be located so that the edge nearest the curb line is a minimum of 24" in the direction of pedestrian travel, and extend the full width of the curb ramp. The detectable warning surface shall be curved along the corner radius.
6. Detectable warning surfaces shall be located so that the edge nearest the curb line is a minimum of 24" in the direction of pedestrian travel, and extend the full width of the curb ramp. The detectable warning surface shall be curved along the corner radius.
7. Tactile markings, a list of qualified detectable warning materials, details, or other materials for the placement of detectable warning surfaces shall be provided by the manufacturer's product manual for proper installation.



Typical placement of detectable warning surface on landing at street edge.



Typical placement of detectable warning surface on sloping ramp run.

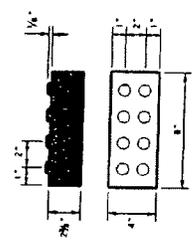


General Notes (Pavers)

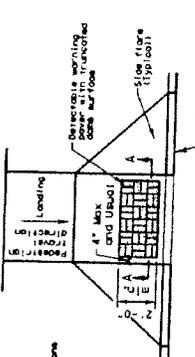
Furnish detectable warning pavers that meet all requirements of ASTM C-936, C-937, C-938, C-939, C-940, C-941, C-942, C-943, C-944, C-945, C-946, C-947, C-948, C-949, C-950, C-951, C-952, C-953, C-954, C-955, C-956, C-957, C-958, C-959, C-960, C-961, C-962, C-963, C-964, C-965, C-966, C-967, C-968, C-969, C-970, C-971, C-972, C-973, C-974, C-975, C-976, C-977, C-978, C-979, C-980, C-981, C-982, C-983, C-984, C-985, C-986, C-987, C-988, C-989, C-990, C-991, C-992, C-993, C-994, C-995, C-996, C-997, C-998, C-999, C-1000.

Pedestrian Facilities General Notes

1. All grades are maximum allowable. The least possible slope that will drain properly should be used. Adjust curb ramp length or grade of approach sidewalk as directed.
2. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to a building, the sidewalk width is 6'. The minimum 5' sidewalk can not be achieved if a sidewalk width is required, where 0.5' sidewalk with 5' x 5' paving area of inlets is not to exceed 200'. It is required.
3. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
4. Wherever slope at the bottom of curb ramps shall be a minimum of 4' x 4' wheelchair travel path.
5. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
6. Curb ramps with returned curbs may be used only where pedestrians would be planting walk across the ramp, either because the adjacent surface is substantially obstructed, otherwise, provide flared slope.
7. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC §§81.102.
8. To serve as a pedestrian refuge area, the median should be a minimum of 5' wide. Medians should be designed to provide accessible passage over or through them.
9. Small channelization islands, which do not provide a minimum 5' x 5' landing area, should be designed to provide accessible passage over the street.
10. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown on the plans. At intersections where crosswalk markings are not required, curb ramps shall be aligned with theoretical crosswalks or as directed by the Engineer.
11. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.
12. Nonparallel and non-parallel curb ramps shall be constructed in accordance with Item 311 "Sidewalks".
13. Curb ramps and landings shall be constructed and paved in accordance with Item 311 "Sidewalks".
14. Separate curb ramp and landings from adjacent sidewalk and any other elements with a smooth transition where the curb ramps connect to the street.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curb shown on sheet 1 within the limits of pavement are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Flare slope shall not exceed 10% measured along curb line.



Detectable Warning Paver



Truncated Dome Pattern Curb Ramp

DETECTABLE WARNING PAVER (OPTION)

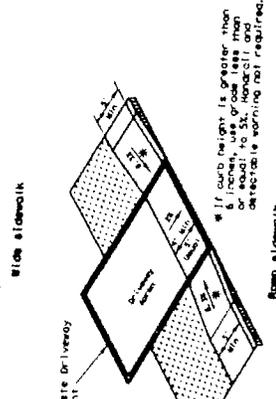
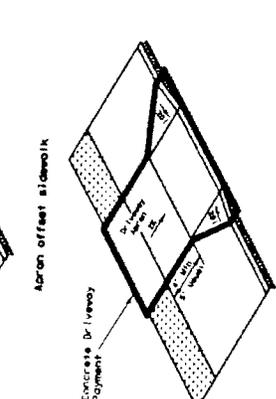
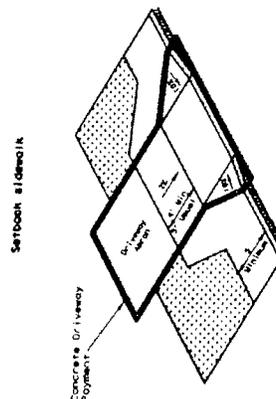
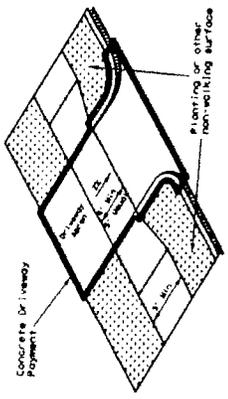
Texas Department of Transportation
 (Texas A&M University)

PEDESTRIAN FACILITIES
 GENERAL NOTES
 AND
 DETECTABLE WARNINGS

PED-05 SHEET 3 OF 4

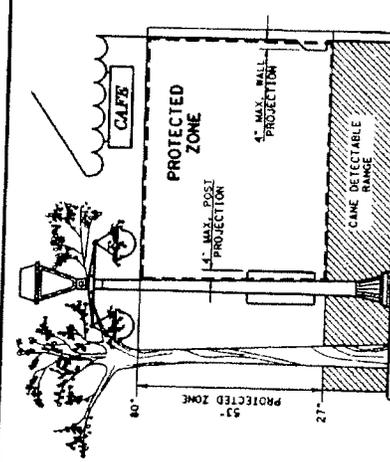
PROJECT NO.	DATE	SCALE	DATE

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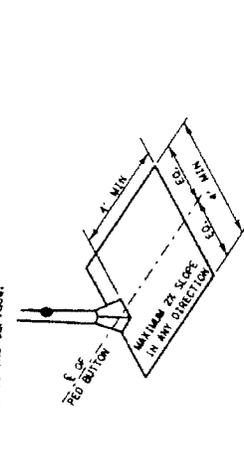
SIDEWALK TREATMENT AT DRIVEWAYS

If curb height is greater than 6" or curb height is less than 4" or curb height is equal to 5", handicapped detectable warning not required.



PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for objects mounted above the surface.

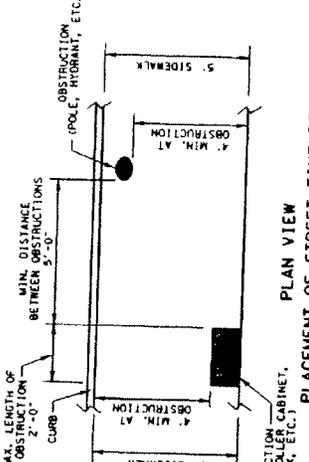


CLEAR GROUND SPACE CENTERED AT PEDESTRIAN PUSH BUTTON

MIN. DISTANCE BETWEEN OBSTRUCTIONS 5'-0"

MAX. LENGTH OF OBSTRUCTION 2'-0"

MIN. AT OBSTRUCTION (POLE, SIGN, ETC.)

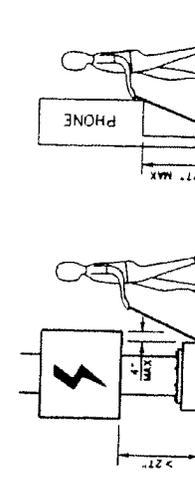


PLAN VIEW

ITEMS NOT INTENSELY USED IN USE MINIMUM 4" x 4" CLEAR GROUNDSpace REQUIRED AT PUBLIC USE FIXTURES.

General Notes

1. All signs and markings shall be made. The layout includes those that will apply to the project and those that will be installed.
2. Place traffic signals or illumination poles, signs, signs, controller boxes, signs, and other facilities and other items as shown on the drawing. Do not place any items on the ground surface.
3. All signs and markings shall be made. The layout includes those that will apply to the project and those that will be installed.
4. Street signs and other signs shall be shown in the plan. Signs shall be shown in the plan. Signs shall be shown in the plan.
5. Signs shall be shown in the plan. Signs shall be shown in the plan. Signs shall be shown in the plan.
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10. Signs shall be shown in the plan. Signs shall be shown in the plan. Signs shall be shown in the plan.



When an obstruction of a height greater than 27" from the surface would create a hazard to pedestrians, the obstruction shall be removed or the obstruction shall be treated with a detectable warning. If provided, handicapped must comply with TMS 4.8.5. Accessibility requirements shall not be applied into the warning leading area or into the warning leading area.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation
Center Street (Houston)

PEDESTRIAN FACILITIES
SIDEWALKS

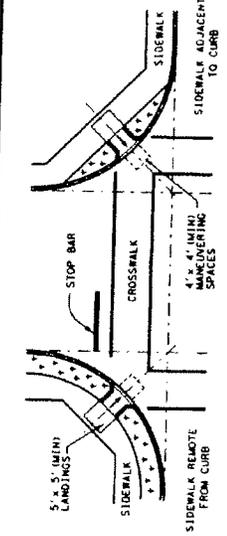
PED-05

SHEET 3 OF 4

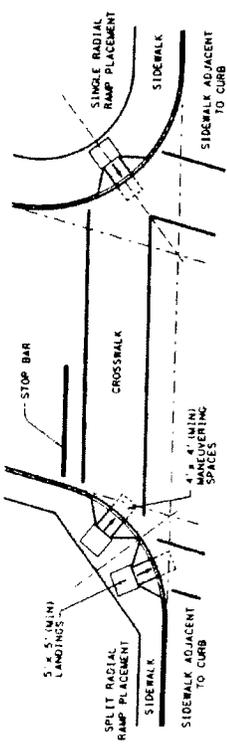
DATE	NO. OF SHEETS	TOTAL SHEETS
10/20/2011	3	3

DISCLAIMER: This drawing is prepared by the Texas Engineering Practice Act. No warranty of any kind is made by TCEP or its employees, contractors, or subcontractors for the completion of this drawing or for the results of its use. The user assumes all responsibility for the completion of this drawing and for the results of its use.

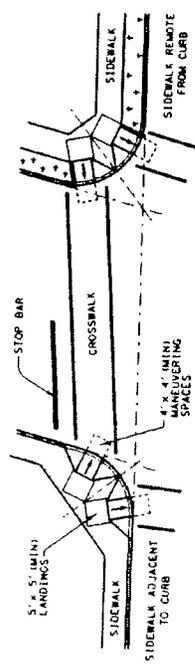
- General Notes**
1. Street grades and cross slopes shall be as shown elsewhere in the plans.
 2. Kerosene oil shall be used for all markings on the pavement. The color of the paint shall be as shown on the S.D. Standard Specifications for Road and Bridge Construction, 2003 Edition, Part 2, and in accordance with the details shown here.
 3. Small crosswalks, including those with a ramp, shall be not through least with the surface of the street.



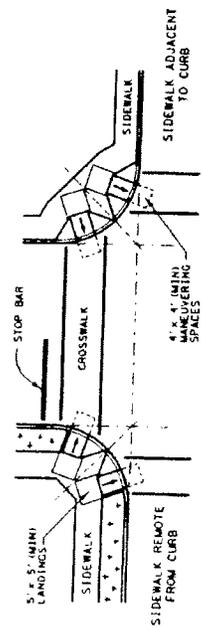
NORMAL INTERSECTION WITH "LARGE" RADIUS



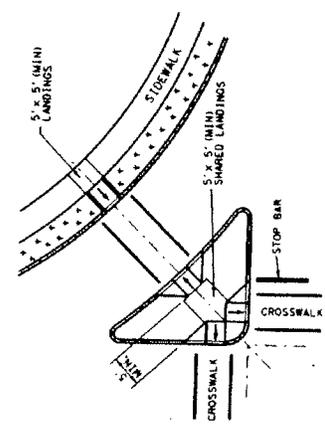
SKewed INTERSECTION WITH "LARGE" RADIUS



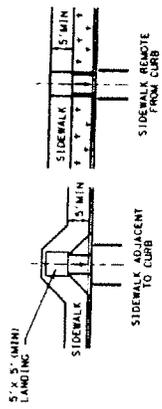
SKewed INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMP

TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS

Texas Department of Transportation
Design Division (Houston)

PEDESTRIAN FACILITIES
INTERSECTION LAYOUTS

PED-05 SHEET 4 OF 4

DATE	PROJECT NO.	DATE	DATE	DATE	DATE

DISCLAIMER:
The use of this standard is governed by the Texas Engineering Practice Act. No warranty or representation is made by TxDOT for any purpose whatsoever. Other formats or for incorrect results or designs resulting from the use.

PAYMENT OF SUBCONTRACTORS:

Contractor shall make timely payments to all persons and entities supplying labor, materials or equipment for the performance of this Contract. Contractor agrees to protect, defend, and indemnify the City from any claims or liability arising out of Contractor's failure to make such payments. (Disputes relating to payment of City of Houston Certified MWBE subcontractors shall be submitted to arbitration in the same manner as any other disputes under the City of Houston Certified MWBE subcontract. Failure of the Contractor to comply with the decisions of the arbitrator may, at the sole discretion of the City, to be deemed a material breach leading to termination of this Contract.)

PERFORMANCE BOND/PAYMENT BOND:

- 1.1 The successful Contractor(s) shall be required to provide a Performance and Payment Bond on a per year basis in the total amount (100%) of the Contract if the award is in excess of \$50,000.00.
- 1.2 The successful Contractor shall be required to provide a Performance Bond or a Clean Irrevocable Letter of Credit in the amount of **the annual dollar amount accepted in the bid response** throughout the term of the contract. The Contract term is an initial three-year with two one-year options to renew for a total five-year term. The bond will be renewed for each year of the Contract term including extension terms.
- 1.3 The Performance and/or Payment Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this bidder (as "Principal") and by an incorporated surety company licensed to do business in the State of Texas. If the amount of the bond is greater than \$100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury.
- 1.4 The Contractor(s) shall be required to provide a Performance and/or Payment Bond as outlined above, which will be delivered to the City Purchasing Agent of the City, on or before the tenth (10th) day following the day the bidder receives notice from the City.

BID BOND:

The Contractor shall be required to provide and submit with the bid a Bid Bond in the amount of 10% of the **Five Years Grand Total bid**. The Bid Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this Bidder (as "Principal") and by a corporate surety company licensed to do business in the State of Texas, and if the amount of the bond is greater than \$100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury, or a Cashier's or a Certified check in a like amount. Company or personal checks are not acceptable.

MAINTENANCE BOND:

The Contractor shall furnish a maintenance bond on a per year basis in the total amount for each contract year in the form required by the City (samples attached). One bond, also referred to as the One Year Maintenance Bond, will be conditioned upon Contractor's repair, replacement or restoration of any work or any portion of the work which is found to be defective or fails in any way to comply strictly with this contract or the plans and specifications for such work within a period of one (1) year from the date of

acceptance of such work by the City Council or after the date that the "CO", or his designee in writing, determines, in a written notice to the Contractor, to be the date upon which the project is both substantially complete and available for the full and beneficial occupancy or use of the City.

Date: February 19, 2009

Subject: Letter of Clarification No.1 for Concrete Pavement Repair Service for the Public Works and Engineering Department

Reference: Bid Inv. No: S50-C23150

To: All Prospective Contractors:

This Letter of Clarification is issued for the following reasons:

The Pre-Bid Meeting time has changed on February 24, 2009, 10:00 AM to 8:30 AM.

When issued, Letter(s) of Clarification shall automatically become a part of the bid documents and shall supersede any previous specification(s) and/or provision(s) in conflict with the Letter(s) of Clarification. It is the responsibility of the bidders to ensure that it has obtained all such letter(s). By submitting a bid on this project, bidders shall be deemed to have received all Letter(s) of Clarification and to have incorporated them into this bid.

Furthermore, it is the responsibility of each Contractor to obtain any previous Letter of Clarification associated with this solicitation.

Arturo Lopez

Arturo Lopez
Senior Procurement Specialist
832-393-8731

Date: March 2, 2009

Subject: Letter of Clarification No. 2 for Concrete Pavement Repair Services
for the Public Works and Engineering Department

Reference: Bid Inv. No: S50-C23150

To: All Prospective Contractors:

This Letter of Clarification is issued for the following reasons: To answer questions about the Scope of Work

1. Question:

What about the described quantities in CU.FT, SQ. FT., and LN. FT.. for each year (year one, year two, year three, year four, year five) in the price tables/lists which need to be filled out from us and submit to you as our bid? Are these quantities estimated quantities from you for each year? Can these quantities change?

Answer: Yes, these quantities are estimated quantities, the quantities could change.

2. Question:

Do you need total price for the total described quantities or only unit price for ONE CU. FT, SQ. FT., and LN. FT.?

Answer: If the e-bidding system is used to prepare the bid, the bidder will only have to input the unit price. The e-bidding system will calculate the total price for that item.

3. Question:

Obviously these quantities are not coming all in one time for one job but "piece by piece" during one year? Then what quantities would be minimum quantity per job? Are the total quantities for each year guaranteed for each year's work performed? The issue on how big or how small each job will be will affect our price for mobilization for each job!!

Answer: Please refer to, page 13 of 119, "Technical Specifications", Section 5.0, "Quantities Are Not Guaranteed".

4. Question:

Obviously all our other costs and expenses, insurances, labor, material, bonds and other costs have to be included in the quantity prices for each year?

Answer: Yes

5. Question:

Item "15" Retaining Wall, is it 12 feet and 18 inches or 12"-18"?

Answer: 12-18 inches

6. Question:

GROUP TWO EACH YEAR: Amount \$10,000, is this a firm price from the city? What expenses do you mean?

Answer: This is an estimated expenditure.

7. Question:

In regards to your estimated quantities for each year (CU. FT., SQ. FT. and LN. FT.), What is your maximum and minimum working crews, manpower, material in percentage of the total quantities to be set at one time? What will be the maximum or minimum amount of each contract? Approx. how often or how many contracts/jobs are involved in one year cycle to cover the estimated quantities? What size maximum or minimum of operation are you expecting to cover each year's quantities?

Answer: The City accounts for actual work performed (not crews, manpower etc.). With regards to the last question, as a result of this solicitation, only one contract will be awarded. The successful contractor will be issued "work orders" against the contract pursuant to the contract terms and conditions and technical specifications.

8. Question:

How about unexpected price changes in the market for manpower, materials, administration over the next 5 years? Which paragraph in your table of contents of documents is covering this risk issue/question?

Answer: This is a business decision on the bidder's part as to how he/she bids each contract year. This is the reason bidders are given the opportunity to increase/decrease their price each contract year.

9. Question:

How accurate are your estimated quantities? Your estimated quantities may vary up or down, to what percent?

Answer: Use the quantities shown for each contract year. The exact percentage is unknown. The estimated usage is based on the best available information at the time this bid was issued.

10. Question:

How do we include cost per year or all 5 years? How are we to invoice out year bonds if not covered with, out year pay item?

Answer: In the e-bidding line item detail, there will be an individual line item per year, bid as a lump sum to be invoiced in the first work order commencing each new year.

Note: No further questions will be accepted after the publication of this Letter of Clarification.

When issued, Letter(s) of Clarification shall automatically become a part of the bid documents and shall supersede any previous specification(s) and/or provision(s) in conflict with the Letter(s) of Clarification. It is the responsibility of the bidders to ensure that it has obtained all such letter(s). By submitting a bid on this project, bidders shall be deemed to have received all Letter(s) of Clarification and to have incorporated them into

Furthermore, it is the responsibility of each Contractor to obtain any previous Letter of Clarification associated with this solicitation.

Arturo Lopez

Arturo Lopez
Senior Procurement Specialist
832-393-8731

EQUAL EMPLOYMENT OPPORTUNITY

1. The contractor, subcontractor, vendor, supplier, or lessee will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, or age. The contractor, subcontractor, vendor, supplier, or lessee will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, sex, national origin, or age. Such action will include, but not be limited to, the following: employment; upgrading; demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation and selection for training, including apprenticeship. The contractor, subcontractor, vendor, supplier or lessee agrees to post in conspicuous places available to employees, and applicants for employment, notices to be provided by the City setting forth the provisions of this Equal Employment Opportunity Clause.
2. The contractor, subcontractor, vendor, supplier, or lessee states that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin or age.
3. The contractor, subcontractor, vendor, supplier, or lessee will send to each labor union or representatives of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer advising the said labor union or worker's representative of the contractor's and subcontractor's commitments under Section 202 of Executive Order No. 11246, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor, subcontractor, vendor, supplier, or lessee will comply with all provisions of Executive Order No. 11246 and the rules, regulations, and relevant orders of the Secretary of Labor or other Federal Agency responsible for enforcement of the equal employment opportunity and affirmative action provisions applicable and will likewise furnish all information and reports required by the Mayor and/or Contractor Compliance Officer(s) for purposes of investigation to ascertain and effect compliance with this program.
5. The contractor, subcontractor, vendor, supplier, or lessee will furnish all information and reports required by Executive Order No. 11246, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to all books, records, and accounts by the appropriate City and Federal Officials for purposes of investigations to ascertain compliance with such rules, regulations, and orders. Compliance reports filed at such times as directed shall contain information as to the employment practice policies, program, and work force statistics of the contractor, subcontractor, vendor, supplier, or lessee.
6. In the event of the contractor's, subcontractor's, vendor's, supplier's, or lessee's non-compliance with the non-discrimination clause of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the contractor, subcontractor, vendor, supplier, or lessee may be declared ineligible for further City contracts in accordance with procedures provided in Executive Order No. 11246, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as may otherwise be provided by law.
7. The contractor shall include the provisions of paragraphs 1-8 of this Equal Employment Opportunity Clause in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontractor or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.
8. The contractor shall file and shall cause his or her subcontractors, if any, to file compliance reports with the City in the form and to the extent as may be prescribed by the Mayor. Compliance reports filed at such times as directed shall contain information as to the practices, policies, programs, and employment policies and employment statistics of the contractor and each subcontractor.

DRUG POLICY COMPLIANCE AGREEMENT

I, CRAIG KING PRESIDENT as an owner or officer of
(Name) (Print/Type) (Title)
MAIN LANE INDUSTRIES, LTD. (Contractor)
(Name of Company)

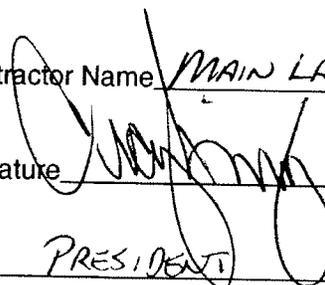
have authority to bind Contractor with respect to its bid, offer or performance of any and all contracts it may enter into with the City of Houston; and that by making this Agreement, I affirm that the Contractor is aware of and by the time the contract is awarded will be bound by and agree to designate appropriate safety impact positions for company employee positions, and to comply with the following requirements before the City issues a notice to proceed:

1. Develop and implement a written Drug Free Workplace Policy and related drug testing procedures for the Contractor that meet the criteria and requirements established by the Mayor's Amended Policy on Drug Detection and Deterrence (Mayor's Drug Policy) and the Mayor's Drug Detection and Deterrence Procedures for Contractors (Executive Order No. 1-31).
2. Obtain a facility to collect urine samples consistent with Health and Human Services (HHS) guidelines and a HHS certified drug testing laboratory to perform the drug tests.
3. Monitor and keep records of drug tests given and the results; and upon request from the City of Houston, provide confirmation of such testing and results.
4. Submit semi-annual Drug Policy Compliance Declarations.

I affirm on behalf of the Contractor that full compliance with the Mayor's Drug Policy and Executive Order No. 1-31 is a material condition of the contract with the City of Houston.

I further acknowledge that falsification, failure to comply with or failure to timely submit declarations and/or documentation in compliance with the Mayor's Drug Policy and/or Executive Order No. 1-31 will be considered a breach of the contract with the City and may result in non-award or termination of the contract by the City of Houston.

Date APRIL 9, 2008

Contractor Name MAIN LANE INDUSTRIES, LTD.
Signature 
Title PRESIDENT



April 9, 2009

City of Houston
Administrative and Regulatory Affairs Department
Strategic Purchasing Division

Att: Mr. Arturo Lopez
Senior Procurement Specialist

Re: S50-C23150 for Concrete Pavement Repair Service
For the Public Works and Engineering Department

Safety Impact Positions

Mr. Lopez,

Main Lane Industries, Ltd. respectfully submits that all Main Lane Industries' employees are categorized as being in a "Safety Impact Position". Main Lane Industries maintains a strict safety and drug policy; and abides by all statutory regulations pertaining to a safe work place.

Should there be any further information needed regarding this matter please feel free to contact me at 713-941-0052, or by email at eking@mainlaneind.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig King", is written over the typed name and title. The signature is stylized with large loops and a long horizontal stroke at the end.

Mr. Craig King
President