CITY OF FORT WORTH PARK & RECREATION DEPARTMENT

PARK FACILITY STANDARDS MANUAL

PREPARED BY: PARK & RECREATION DEPARTMENT PLANNING & RESOURCE MANAGEMENT DIVISION



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SECTION 1: INTRODUCTION

Background

The Park & Recreation Department's (PARD) mission is to enrich the lives of our citizens through the stewardship of our natural and developed resources and the responsive provision of quality services and recreational opportunities. Throughout the history of the development of the Fort Worth park system, the Department has effectively anticipated and responded to the park, recreation and open space needs of the community.

The City of Fort Worth Park system is comprised of 289 parks totaling over 12,322 acres of parkland. The City of Fort Worth Park & Recreation Department is committed to providing a quality public park system that will meet the anticipated needs and demands of the residents.

Purpose

The purpose of the City of Fort Worth Park Facility Standards Manual (Standards) is to ensure that the quality and look of park facilities are equitable throughout the City. Additionally, these Standards ensure conformance to safety guidelines and accessibility requirements as found in the following publications:

- City of Fort Worth Neighborhood and Community Park Dedication Policy
- City of Fort Worth Subdivision Ordinance
- City of Fort Worth Standard Specifications for Street and Storm Drain Construction
- U.S. Consumer Product Safety Commission Handbook for Public Playground Safety (Pub. No. J25 August 1998)
- Texas Accessibility Standards (TAS) of the Architectural Barriers Act (Article 9102, Texas Civil Statutes effective April 1, 1994)
- Americans with Disabilities Act

These standards shall guide:

- Park & Recreation Department staff in the development of Fort Worth park infrastructure and facilities
- Consultants and contractors utilized by the City of Fort Worth for capital improvement projects which incorporate park infrastructure and facilities
- Developers in achieving compliance with the City of Fort Worth Neighborhood and Community Park Dedication Policy
- Citizens in regard to the development standards utilized by the City of Fort Worth in the design and construction of park infrastructure and facilities

SECTION 2: NEIGHBORHOOD PARK DEVELOPMENT

Introduction

New residential development or an increase in density by redevelopment in existing neighborhoods creates the need for additional park and recreation facilities. The purpose of the Neighborhood and Community Park Dedication Policy is to ensure that adequate park and recreational areas in the form of Neighborhood Based Parks and Community Parks are provided to meet this increased need.

The Neighborhood and Community Park Dedication Policy was most recently updated on January 29, 2019 (M&C G-19470) and went into effect March 1, 2019. A copy of this policy is included as **Appendix A**. The information provided in this section is provided for developers who want to develop and dedicate parkland in accordance with this policy.

Proposed Parkland

All proposed parkland must first be reviewed by PARD for determination as to whether or not the property is acceptable for City of Fort Worth parkland. Additionally, all parkland shall conform to the Park, Recreation and Open Space Master Plan, revised January 27, 2015, with emphasis on the following:

- Neighborhood Based Parks open spaces encompassing less than one (<1) to thirty (30) acres
- Community Based Parks open spaces encompassing thirty (30) to five hundred (500) acres
- Proposed park sites shall be located, where possible, adjacent to and contiguous with other publically accessible sites; i.e. schools, hospitals, municipal buildings, etc.
- Proposed park sites shall have reasonable access to improved street frontage for readily accessible entry
- Water bodies and waterways, existing or proposed may be considered for incorporation as parkland, pending approval of their classification and jurisdiction.

Careful consideration shall be given to the need for development of linear parks around natural drainage and wooded areas which provide potential recreational uses as outlined in the Park, Recreation and Open Space Master Plan and the Neighborhood and Community Park Dedication Policy. Refer to the Neighborhood and Community Park Dedication V.G., additional information.

Additional guidelines for consideration of drainage ways and swales include:

- Parkland development shall strive to preserve existing trees/tree canopy.
- Clearing of trees/vegetation for the purpose of constructing drainage ways / swales / areas shall be kept to a maximum of fifteen (15') feet width from the top of slope.
- Parkland development shall not create negative drainage conditions that affect any other property.

- If required, erosion control measures shall extend from the top of slope to toe of slope on all sides.
- All sub-surface storm water pipelines to be located within parkland boundaries shall be constructed in accordance to City of Fort Worth Transportation and Public Works (TPW) standards.
- Storm pipe headwalls/outfalls shall be placed a minimum of fifty feet (50') from any surface structure (street, building, etc.). The PARD reserves the right to amend the minimum distance required of storm pipe headwall/outfall locations as site conditions dictate.
- A minimum eight foot wide (8') pre-fabricated pedestrian bridge with pier/footings designed by an Engineer registered in the State of Texas, is required when access across a drainage way / swale / area is unavoidable. The bridge will need to meet all required Texas Accessibility Standards (TAS) of the Architectural Barriers Act.

Upon the PARD's agreement to accept the dedication of parkland, the developer shall be responsible for the location and installation of permanent property corner markers for all dedicated parkland property corners, in accordance with the property metes and bounds description.

NO on-site topsoil, within the proposed parkland limits, shall be excavated and hauled off-site for use elsewhere. Topsoil excavated from within existing and/or proposed parkland shall be stockpiled and used on-site as finish grade material in predesignated areas.

Park Facilities

If a developer chooses to develop a neighborhood park per the requirements of the Neighborhood and Community Park Dedication Policy, the park facilities shall be consistent with the details, specifications and requirements outlined in this Park Facility Standards Manual.

A current list of estimated costs for standard park facilities is included in **Appendix B**. These estimated costs will be updated annually based on an average of current bid tabulations.

Additional guidelines for neighborhood park development include:

- All local, state and federal permitting requirements apply, including but not limited to compliance with the Texas Accessibility Standards.
- Vertical park improvements shall be placed out of the floodplain (i.e. playgrounds, shelters, light poles, etc.)
- Horizontal park improvements may be placed within the floodplain (i.e. trails, parking areas, sport courts and fields, etc.)
- All parkland open spaces to be used as soccer, baseball, football practice fields, shall be graded to provide slopes at one and one half percent to two percent (1.5 - 2%) to ensure positive drainage.

- All proposed trails and walkways shall be a minimum six feet (6') wide, should provide a minimum sixty feet (60') clear visual sight line in both directions, and be built in open space areas that provide appropriate access.
- All proposed pavement including trails, playground edging, parking, etc., shall maintain a five foot (5') minimum distance from the edge of vegetation and trunks of trees.
- All proposed pavement improvements shall not abut residential fences.
- All proposed parkland development projects shall be submitted to the Texas Department of Licensing and Regulation (TDLR) when the estimated construction costs exceed fifty thousand dollars (\$50,000).
- Playgrounds shall utilize the one of three prototypes included in Appendix C -Standard Park Construction Details. Playground equipment colors schemes shall be selected by the Park & Recreational Department.

SECTION 3: PRODUCT STANDARDS

Introduction

The City of Fort Worth utilizes the following standard products in order to ensure that the quality and look of park facilities is equitable in recreational opportunities and uniform throughout the City. Each product is reviewed by park maintenance staff in order to determine that park facilities can be properly maintained and replacement parks are readily available.

New products are evaluated periodically as new product information is available.

ATHLETIC FIELD EQUIPMENT			
Item	Model #	Vendor	Description
Soccer Goals	BSN-STSNCAA- S-F 4x4 SEMI- PORTABLE	BSN Sports 800-527-7510	BSN Sports - 4" Classic Alumagoal
Bleachers	A205-00-024S	Sturdisteel 800-433-3116	Sturdisteel - 42 Standard 18" Seats, Galvanize Steel
Player's Benches	D201-00-015	Sturdisteel 800-433-3116	Sturdisteel - 15' with Backrest Surface Mounted, Galvanize Steel
Scoreboard	Model 1620	Nevco 800-851-4040	Nevco - Baseball/Softball/Soccer/Football/ Lacrosse, Field Hockey Outdoor Scorebard (10' x 4' x 8")
Scoreboard Handheld Controller	Model MPCX2 (Pitch Count / Soccer / Football / Lacrosse / Field Hockey)	Nevco 800-851-4040	Nevco - Baseball/Softball/Soccer/Football/ Lacrosse/Field Hockey Outdoor Wireless Remote Control
ATHLETIC FIELD IRRIG	ATION EQUIPMEN	Т	
Remote Control system		Interspec 940-440-9757	IRRInet Remote System Controller by Interspec (for athletic field)
ATHLETIC FIELD LIGHT	ING		
Light fixture type	S1500	Musco 800-756-1205	Light Structure Green Sports lighting Fixture
	F SERIES	Genlyte 800-331-3579	Widelite - 1500 watt Metal Halide

Poles	LSS60A / 2B	KW Industries	Galv. tube steel w/ lighting fixture
	LSS60AA / 2B		racks - 65'-8" ht.
Electrical enclosure	Model M Type	Universal Enclosure Systems Inc. 972-298-0531	Model M type aluminum single door enclosure
		Hennessy Products, Inc	Model M type aluminum single door enclosure
Remote Lighting Controller		Interspec 940-440-9757	IRRInet Remote System Controller (for athletic field)
TREE PLANTING			
	15 BG		RootAnchor - 10/15 gallon or 17" root ball
	30 BG	Tree Stake	RootAnchor - 20/30 gallon or 22" root ball
Below Ground Safety Stake	45/65 BG	Solutions, LLC 281-778-1400	RootAnchor - 45/65 gallon or 27"- 30" root ball
	100 / 150 BG		RootAnchor - 95 / 100 gallon or 36" root ball
	200 / 300 BG		RootAnchor - 200 gallon or 48" root ball
SECURITY LIGHTING (L	ED – on grid)		
Fixture Type	SFP-T2-5- 120LA-NW-240- FINISH-LF-SPR	Dealers Electrical Supply. 817-831-0054	Philips GARDCO SLENDERFORM SERIES Area Lighting Fixture 2-3/8" x 4" Tenon, Type 5 Distribution, 530mA Single Array, 4000k Color Temperature, 70 CRI, In-Line Fusing, ANSI C62.41.2 Surge Protection.
Pole	RSP30-5.0-7- (F)-2-BC	Dealers Electrical Supply. 817-831-0054	30' Pole, Round Non-Tapered Steel 7 Gauge, 5 inch diam., shall comply with AASHTO LTS-4-M, Individual cast anchor bolt/nut covers.
SECURITY LIGHTING (LED – off grid / solar)			
Fixture Type	1SA-ALT3P35- 60L4K	Dealers Electrical Supply. 817-831-0054	Kim Lighting - Altitude LED - single, one piece, low copper, aluminum extrusion is mechanically secured with stainless steel fasteners to low copper aluminum die-cast

			electrical compartment and end
			cap
Solar Panel	SEPA300-QM	Dealers Electrical Supply. 817-831-0054	Sepco - Solar Panel
Pole	DS210- 800A280-D1	Dealers Electrical Supply. 817-831-0054	28' Round Steel, Shall Comply with AASHTO LTS-4-M, for solar array-FP Kim Dark Bronze-HH- NC-AB
Battery		Dealers Electrical Supply. 817-831-0054	Deka - Solar Photovoltaic Batteries - Four 112 amp hour sealed gel batteries, totaling 448 amp hours.
SECURITY LIGHTING (L	.ED – on grid Pede	estrian)	
Fixture Type	SFP-T2-5- 120LA-NW-240- LF-SPR	Dealers Electrical Supply. 817-831-0054	Phillips GARDCO SLENDERFORM SERIES Area Lighting Fixture, 2-3/8" x 4" Tenon, Distribution Determined by Lighting Calculation for site, 530 mA Single Array, 4000k Color Temperature, 70 CRI, In-Line Fusing, ANSI C62.41.2 Surge Protection, Post Top Mounted or Standard Arm Mounted.
Pole	RSP-15-5.0-7- (F)-2-BC	Dealers Electrical Supply. 817-831-0054	15'-0" Pole, Round Non-Tapered Steel, 7 Gauge, 5 Inch Diameter, shall comply with AASHTO LTS-4- m, Individual cast anchor bolt/nut covers, KW Poles.
SECURITY LIGHTING (L	ED – on grid Deco	orative Pedestrian)	
Fixture Type	GVD-40-3K-AS- MB5N, with LMD-R5-PN- BBD-OPT-U- LESS-FINIAL- RFD153748	Dealers Electrical Supply. 817-831-0054	American Electric/Holophane GVD Retro Classic Series Decorative Pedestrian Lighting Fixture, Post Top Decorative Glove, 3000k Color Temperature, 215mA Driver, Auto-Sensing Voltage, Type 5 Distribution Optics, GVDRETRO GRANVILLE II LED Retrofit, Modern Housing, Black Housing Color, LMD Marietta Prismatic Clear Top Acrylic Glob, Without Decorative Cage, Internal Uplight Shield, No Finial, Nema Twist-Off Photocontrol Receptacle W/Photocell Shorting Cap.
Pole	CLA14.6(OAL)F TJ20PO7BK- MOD,	Dealers Electrical Supply.	Decorative Pedestrian Pole, 14'-6" Tall Aluminum, Fluted, Tapered, 20" Diameter Base 3" O.D. x 3"

	AB-31-4 RFD110737	817-831-0054	High Tenon., 22" Tall Base, shall comply with AASHTO LTS-4-M, Holophane – Columbia Aluminum Pole Series
DRINKING FOUNTAINS			
Standard Fountain	MDF 440 SMSSFR / Pet Fountain SSFR	Most Dependable Fountain 800-552-6331	Most Dependable Fountain - Outdoor Drinking Fountain / Pet Fountain with Freeze Resistant Kit (mechanical), with Pet Fountain
Trail / Athletic Field Drinking Fountain	MDF10145 SMFA	Most Dependable Fountain 800-552-6331	Most Dependable Fountain - Outdoor Drinking Fountain / Bottle Filler with Freeze Resistant Kit (mechanical)
SKATE PARK – Surface	Mounted Equipme	ent	
Skate Park – Option 1	ARC-SOLO G2 (#2839)	American Ramp Company	American Ramp Company - ARC- SOLO G@ Skatepark Rules Sign with Park Site Name (Rules to be review by PARD Staff), to be installed on a 60' x 120' reinforced concrete slab @ 5" depth & grade beams and surrounded by a 10' Chanin link fence w/ 4 rails and a 30' gap entrance.
Skate Park – Option 2	ARC-SOLO G2 (#22124)	American Ramp Company	American Ramp Company - ARC- SOLO G@ Skatepark Rules Sign with Park Site Name (Rules to be review by PARD Staff), to be install on a 60 x 120' reinforced concrete slab @ 5" depth & grade beams and surrounded by a 10' Chanin link fence w/ 4 rails and a 30' gap entrance.
PICNIC SHELTER			
24'x24' Square Shelter	SQR 24MR / 9MCH / K01 / Powder Coat Frame	InSite Amenities 817-236-5439	Poligon Shelters - Square 24, Multi-Rib Deck, 9' Minimum Clarence Height, Pin Base, Plain Square, Powder Coat Frame.
Prototype Option No. 1			
Burke	36-115661-1	Child's Play, Inc. 972-484-0600	Playground Prototype No. 1 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along equipment piece
Gametime	FWPT1-GT	Total Recreation Products 800-392-9909	Playground Prototype No. 1 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along equipment piece

Miracle	714MRECFW1	Webuildfun, Inc. 972-727-0653	Playground Prototype No. 1 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along
		572-727-0000	equipment piece
Prototype Option No. 2			
Burke	36-115662-1	Child's Play, Inc. 972-484-0600	Playground Prototype No.2 2 composite Play Structures, 3 Bay Swings and 3 Stand Along equipment pieces
Gametime	FWPT2-GT	Total Recreation Products 800-392-9909	Playground Prototype No.2 2 Composite Play Structures, 3 Bay Swings and 3 Stand Along equipment pieces
Miracle	714MRECFW2	Webuildfun, Inc. 972-727-0653	Playground Prototype No.2 2 Composite Play Structures, 3 Bay Swings and 3 Stand Along equipment pieces
Prototype Option No. 3			
Burke	36-115663-1	Child's Play, Inc. 972-484-0600	Playground Prototype No.3 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along equipment pieces
Gametime	FWPT3-GT	Total Recreation Products 800-392-9909	Playground Prototype No.3 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along equipment pieces
Miracle	714MRECFW3	Webuildfun, Inc. 972-727-0653	Playground Prototype No.3 2 Composite Play Structures, 3 Bay Swings and 2 Stand Along equipment pieces
Playground Surfacing			
Engineered Hardwood Fiber Surfacing	Engineered Hardwood Playground Chips	GWG Wood Group, Inc. 1-972-842-8996	Random sized hardwood fibers with 85% material passing 3/8" sieve with 1" size max. as manufactured
Filter Fabric	Mirafi 140N		Non-woven engineering geotextile fabric.
Site Furnishings			
Picnic Table - 6'	238-P6	Total Recreation Products, Inc. 817-430-3331	Ultra Site - 6' Picnic Table, top and painted frame - color TBD

Picnic Table - 6'	238-P6	Child's Play, Inc. 972-484-0600	Ultra Site - 6' Picnic Table, top and painted frame - color TBD
Picnic Table (ADA) - 8',		Total Recreation Products, Inc. 817-430-3331	Ultra Site - 8' Handicap Picnic
Double Sided	238H-P8	Child's Play, Inc. 972-484-0600	Table, top and painted frame - color TBD (ADA Double-Sided)
Game Table		Total Recreation Products, Inc. 817-430-3331	Ultra Site - 46" S. pedestal square table, Surf. M. perforated with
Game Table 358-P-GT		Child's Play, Inc. 972-484-0600	game top
Game Table (ADA) 338SMH3		Total Recreation Products, Inc. 817-430-3331	Ultra Site - 46", 3 seat single pedestal game table
	3303Wi 13-F - G T	Child's Play, Inc. 972-484-0600	
6' Bench		Total Recreation Products, Inc. 817-430-3331	Ultra Play - 6' Lex. bench - with
6' Bench 954-PL6	Child's Play, Inc. 972-484-0600	CFW Molly logo & letters (surface mount)	
PARD 6' Memorial Bench Program	281-6XR	Lea Park & Play Inc. 800-237-4739	Iron Mountain Forge - In-ground 6' with Black Powder coated Frame
Cooker	51	Total Recreation Products, Inc. 817-430-3331	Gametime - Standard Stove.

Cooker	580-0098	Child's Play, Inc. 972-484-0600	Burke - Single Grill.
Standard 55 Gallon	PR-55, RBR-55- 08, Cable, PL-55	Total Recreation Products, Inc. 1-817-430-3331	Ultra Site - 55 Gal. Trash Receptacle, W/Rain Bonnet Top,
Trash Receptacle	Liner	Child's Play, Inc. 972-484-0600	Two 8" Cable Attachment & Trash Can Liner.
Standard 55W/LGallon Recycle TrashRBIReceptacleCat	PR-55-CL W/Logo		Ultra Site - 55 Gal. Recycle Trash Receptacle, W/Rain Bonnet Top,
	RBR-55-08, Cable, PL-55 Liner.	Child's Play, Inc. 972-484-0600	Two 8" Cable Attachment & Trash Can Liner.
Compacting Trash Receptacle (Community Parks) BB4 SB4 Companion	BB4		BigBelly Solar Trash Compactor
	Adrite 817-946-3107	SmartBelly Solar Bottles/Cans Compactor	
Basketball Goal	590-0040	Child's Play, Inc. 972-484-0600	Burke - 4 1/2" O.D. Heavy Duty Bent Post w/ Backstop Steel Fan and Nylon Net or approved equal
Bike Rack	5821SM	Total Recreation Products, Inc. 817-430-3331	Ultra Play - Contemporary Bouble Sided Bike Rack - Surface Mount -
		Child's Play, Inc. 972-484-0600	color TBD

SECTION 4: TREE AND PLANT SELECTION

Plant Selection for Public Parks

Trees and plants provide many benefits to public parks, including shade, wildlife habitat and beautification. All recommended plant species shall be reviewed and are subject to approval by Park & Recreation Department staff. Additionally, the City of Fort Worth prohibits any species of tree, shrub, vine or grasses listed in the Nonnative Invasive Plants of Southern Forests published by the United States Department of Agriculture Forest Service.

The following criteria shall be followed for the selection and planting of trees on parkland:

- Balled and burlapped trees shall only be planted during the dormant season after leaf fall in the autumn and before bud break in the spring.
- Container Grown Trees and Shrubs may be planted during any season.
- Trees should be locally grown stock, and trees from outside the state should be avoided.
- Trees to be held on site longer than 24 hours before planting should be held in the shade or with enough mulch to cover the root ball. The root ball shall be sufficiently watered to prevent drying.
- Trees provided by the City shall be planted within 24 hours of delivery or pick-up.

Parkway Street Trees

Trees planted on street right of ways shall meet the City's Guidelines for Landscaping in Parkway. A copy of these guidelines are included as **Appendix E** to these Standards

The following tree species are recommended for street tree planting.

Small Tress (less than 30 feet tall or 10 inches in diameter)

Common Name	Scientific Name
Redbud	Cercis Canadensis
Crepemyrtle	Lagerstroemia indica
Yaupon Holly	llex vomitoria
Mexican Plum	Prunus mexicana
Laurel Cherry	Prunus caroloniana
Japanese Maple	Acer palmatum
Eve's Necklace	Sophora affinis
Crab Apple	Malus angustifolia
Ornamental Plum	Prunus cerasifera

Medium Trees (30 to 50 feet tall, 10 to 20 inches in diameter)

Common Name	Scientific Name
Western Soapberry	Sapindus saponaria var. drummondi
Honey Locust	Gleditsia triacanthos
Golden Raintree	Koelrueteria paniculata

River Birch	Betula nigra
Red Cedar	Juniperus virginiana
Arizona Cypress	Cupresses glabra
Japanese Black Pine	Pinus thunbergiana
Afghan Pine	Pinus elderica
'Cado' Sugar Maple	Acer saccharum
Red Maple	Acer rubrum
Desert Willow	Chilopsis linearis

Large Trees (over 30 feet and 20 inches or more in diameter)

Common Name	Scientific Name
Bur Oak	Quercus macrocarpa
Chinquapin Oak	Quercus muhlenbergii
Live Oak	Quercus virginiana
Texas Red Oak	Quercus buckleyi
Red Oak	Quercus shumardii
Chinese Pistache	Pistache chinensis
Pecan	Ulmus parvifolia
Cedar Elm	Ulmus crassifolia
Sweetgum	Liquidambar styraciflua
Bald Cypress	Taxodium distichum
Black Walnut	Carya nigra

The following species are prohibited for street tree planting*

Common Name	Scientific Name
Hackberry	Celtis laevigata
Sycamore	Platanus occidentalis
Silver Maple	Acer saccharinum
Mulberry	Morus alba
Siberian Elm	Ulmus pumila
Mimosa	Albizia julibrissin
Ash	Fraxinus sp.
Cottonwood	Populus deltoides
Willow	Salix sp.
Bradford Pear	Pyrus calleryana var. Bradford

*Or any species of tree, shrub, vine or grasses listed in the Nonnative Invasive Plants of Southern Forests published by the United States Department of Agriculture Forest Service.

APPENDIX A

NEIGHBORHOOD AND COMMUNITY PARK DEDICATION POLICY

NEIGHBORHOOD AND COMMUNITY PARK DEDICATION POLICY

I. PREMISE

The premise of the Neighborhood and Community Park Dedication Policy is that these "local, close-to-home" park facilities are integral City infrastructure that are needed in residential neighborhoods to ensure the health, safety, welfare and quality of life of the citizens of Fort Worth.

II. PURPOSE

This policy shall ensure the provision of adequate park and recreational areas with needed facilities in the form of Neighborhood Based Parks and Community Parks. New residential development or an increase in density by redevelopment in existing neighborhoods creates the need for additional park and recreation facilities. This Policy shall govern all park dedication and improvement requirements within the corporate limits of the City of Fort Worth. The implementation of the policy shall furnish developed Neighborhood Based Parks that are in place when neighborhoods are built. The policy also shall provide for needed land acquisition for Community Parks that serve new residential development or an increase in density by redevelopment in existing neighborhoods. The City has developed and adopted standards for Neighborhood Based and Community Parks that are included in the Park, Recreation and Open Space Master Plan adopted in Resolution 4399-01-2015 by the City Council on January 27, 2015. These standards are the basis for the adoption and application of amendments to this existing policy.

III. DEFINITION OF TERMS

- A. For purposes of this policy, the following terms shall be defined as follows:
 - 1. Central City (PPD4) will be defined as the area within I-820.
 - 2. City Council The City Council of the City of Fort Worth, Texas
 - 3. Community Park Open space area encompassing 30 to 500 acres within a one and a half (1 1/2) mile service radius serving approximately 18,000 to 36,000 in population and six Neighborhood Park Units for the purpose of providing both

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preservation of natural features within the urban environment and programmed recreational needs on a community-wide basis. (Refer to the Park, Recreation and Open Space Master Plan for a more detailed description, recreation activity menu and an example of a typical Community Park.)

- 4. Community Park Unit A Community Park Unit consists of a minimum of six Neighborhood Park Units and is the designated service area of one Community Park. Community Park Units are defined by the Park & Recreation Department and result from the service area definition included in the Park, Recreation and Open Space Master Plan.
- 5. Consumer Price Index The published price index of the United States Department of Labor that indicates increases or decreases in prices of goods and services.
- 6. Developer or Owner Individual, firm, association, corporation or any other organization dividing or proposing to divide land for the purpose of developing or making improvements to such land.
- 7. Director The ranking official of the Park & Recreation Department, or any successor department of the City of Fort Worth charged with the management of the City parks system.
- Dwelling Unit A building, or any portion thereof, containing a complete set of independent living facilities for occupancy and use by one family, including permanent provisions for living, sleeping, eating, sanitation and cooking within a kitchen for the exclusive use of the occupants whose intent is to live in the dwelling unit.
- 9. Family Any individual or two or more persons related by blood, adoption, marriage or guardianship, or not more than five unrelated persons operating as a single housekeeping unit and expressly excluding lodging, boarding, fraternity, and sorority houses.
- 10. Neighborhood Based Park A classification of parks that include Neighborhood Parks, Pocket Parks and Urban Parks, which are easily accessible by park users and are typically within walking distance of homes in the adjacent neighborhoods.

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- 11. Neighborhood Park Open space area generally encompassing five (5) to thirty (30) acres. Neighborhood Based Parks should provide a one-quarter (1/4) to one-half (1/2) mile service radius serving approximately 3,000 to 6,000 in population for the purpose of providing daily unprogrammed recreational needs of residential areas within the Neighborhood Unit. (Refer to the Park, Recreation and Open Space Master Plan for a more detailed description, recreation activity menu and an example of a typical Neighborhood Based Park).
- 12. Neighborhood Based Park Development Concept Plan A park site plan drawn at an appropriate scale that indicates the required park facilities and the relationship of those facilities to the proposed park development. The Neighborhood Based Park Development Concept Plan must indicate the following: (1) Scale, (2) North arrow, (3) Topography indicating existing one foot (1') contours and any proposed grading with appropriate spot elevations, (4) Location of required facilities proposed for the Neighborhood Based Park. The plan must identify existing and proposed easements, existing vegetation, and indicate if the vegetation will remain or be removed. The plan must indicate the 100 year floodplain, the 100 year floodway and the course of any stream, river, creek, or drainage channel in the proposed Neighborhood Based Park.
- 13. Neighborhood Park Unit A residential area bounded by major thoroughfares and geographical boundaries which generally encompasses approximately one square mile and serves approximately 3,000 to 6,000 in population. The Neighborhood Park Unit is defined in the Park, Recreation and Open Space Master Plan.
- 14. Park & Recreation Department (PARD) the department of the City of Fort Worth charged with design, construction and management of the City's park system.
- 15. Park Planning Districts (PPD's) geographic areas defined by the Park & Recreation Department and derived from the physical characteristics of the City, based on population size, roadways, rivers, creeks, topographic features and/or defined political boundaries.
- 16. Pocket Parks are a subset of Neighborhood Based Parks that are less than five (5) acres. Dedication of land for use as a public Pocket Park shall be considered for sites 1.0 acres and greater, at the discretion of the Park & Recreation Department.

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- 17. Subdivision of Land Division of any lot, tract, or parcel of land into a minimum of five (5) or more lots for the purpose of developing residential dwelling units or the submission of a Multi-Family Development Site Plan whether immediate or future.
- 18. Urban Park are a subset of Neighborhood Based Parks and are less than one (1) acre. Dedication of land for use as an Urban Park shall be considered for sites less than 1.0 acres, at the discretion of the Park & Recreation Department.

IV. PLANNING

- A. The overall program and full implementation of the Fort Worth Neighborhood and Community Park Dedication Policy shall generally follow the City of Fort Worth's Comprehensive Plan and the officially adopted Park, Recreation and Open Space Master Plan. The Park & Recreation Department may develop implementation guidelines to ensure the fair and objective application of this park policy.
- B. There should be a minimum of one Neighborhood Based Park within each designated "Neighborhood Unit" as defined by the Park, Recreation and Open Space Master Plan and delineated by the Park & Recreation Department. The park should include needed recreational facilities to service the recreation needs of the neighborhood unit.
- C. The City of Fort Worth shall require residential developers to dedicate subdivision land and recreation improvements for parks to meet the recreational needs as a condition of the platting process and/or the submission of a Multi-Family Development Site Plan, just as land for streets, alleys, utility easements and other improvements directly attributable to the development of a new residential neighborhood is dedicated. A combination of fees and parkland dedication shall be considered at the sole discretion of the Park & Recreation Department.
- D. Where private recreation facilities are built for the residents of a subdivision development, a credit may be given to the Developer/Owner for Neighborhood Based Park Development Fee, neighborhood land dedication or fee-in-lieu thereof, based on the value of such neighborhood park recreational facility development. If the proposed development falls outside the Central City, at the discretion of PARD Director or his/her designee, credit may be issued for up to 50% of the total amount of Neighborhood Based Park Development Fee, and up to 50% of the fair market value

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of the required land dedication or fee-in-lieu thereof from such development. Credits exceeding 50%, and up to 75%, will require prior written approval from the Director. Credits greater than 75% will require City Council approval before they can be issued on any development. Credit will be granted for those recreation facilities that are listed as part of the minimum neighborhood park configuration. (See Section IV. G.) Credit may also be given for recreation facilities that address the specific neighborhood recreational needs of the development. The developer must provide sufficient documentation to the Park & Recreation Department demonstrating that the recreational needs of the proposed neighborhood are different than the needs of a typical Neighborhood Park Unit. The Park & Recreation Department may at the discretion of the Director or his/her designee award credit for those recreational facilities that are deemed to meet the neighborhood recreational needs of a new community. If the proposed residential development falls within the Central City (Park Planning District 4), the PARD Director may issue up to 100% credit for qualifying private plazas and recreational facilities that are publicly accessible.

- E. Should a submitted subdivision development be located within a previous development concept or preliminary plat in which park dedication requirements have been met and the submitted development does not increase the overall population density, then additional park dedication requirements shall not be required. However, if the submitted subdivision development reflects an increased population density, then additional park dedication requirements will be required for the increase in population. New preliminary plats within an existing concept plan shall require community park dedication and will also be subject to the application of the Neighborhood Based Park Development Fee based on the portion of the neighborhood park dedication that can be attributed to that preliminary plat. The requirements of this paragraph do not apply to Park Planning District 4.
- F. Neighborhood Park Infrastructure The Developer shall bear the cost of all improvements, including streets, water, sewer, storm drainage and street frontage directly related to the Neighborhood Based Park site.
 - 1. Required Street Frontage The Developer shall provide street frontage that is equal to thirty five percent (35%) of the linear measurement of a square area equal to the required Neighborhood Based Park dedication. In the event the subdivision requires the payment of a fee in lieu of park dedication, a fee must also be submitted for Neighborhood Based Park Infrastructure. The Park & Recreation Department may

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participate in a Community Facilities Agreement for additional street frontage and infrastructure when there is a need determined by the Park & Recreation Department or it is in the interest of the City of Fort Worth to provide additional street frontage. The determination of the need for additional frontage is at the sole discretion of the Park & Recreation Department.

- 2. In the event that additional land is donated to the City of Fort Worth for park purposes at the same time as a required park dedication the Park & Recreation Department may elect to participate in park infrastructure development. Any additional street, utility and storm drainage frontage participation is contingent on the availability of capital improvement funds for additional street frontage and City Council approval. The Park & Recreation Department may participate in up to fifty percent (50%) of the cost of additional street frontage, water and sewer front foot charges generated by the additional donation of parkland. When the street frontage is related to a Neighborhood Based Park the 50% participation cap applies to only a residential street section. The Park & Recreation Department will only participate in up to fifty percent (50%) of storm drainage improvements that are directly related to storm water run-off generated by park development. Costs for the required extension of neighborhood storm drainage systems to the cut bank of any existing channels, streams, creeks, rivers or other park water bodies are the responsibility of the developer. Any participation in additional infrastructure is at the sole discretion of the Park & Recreation Department.
- G. Neighborhood Park Development
 - 1. The Developer shall bear a proportional cost of improvements of a Neighborhood Based Park which shall include the following recreational facilities as a minimum Neighborhood Based Park configuration:
 - i. Playground;
 - ii. Picnic shelter;
 - iii. Practice field with backstop;
 - iv. Walking trail;

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- v. Multi-Use Slab with basketball backboard and goal;
- vi. Site grading and preparation; and
- vii. Turf and vegetation
- 2. The Developer shall pay a Neighborhood Based Park Development Fee for each acre of land required to be dedicated for the subdivision plat which shall be calculated in accordance with section VI(B)(ii) of this Policy. The Per Acre Rate for the Neighborhood Based Park Development Fee shall be as follows:

Calendar Year	Per Acre Rate for the Neighborhood Based Park Development Fee
2018	\$30,000.00
2019	\$47,000.00
2020	\$64,000.00
2021	\$81,000.00
2022	\$98,000.00
2023	\$115,000.00

The Neighborhood Based Park Development Fee is based on the current construction costs of recreational facilities and may be adjusted administratively by the Park & Recreation Department Director or their designee up to the annual amount of the change in the Consumer Price Index. Any fee adjustment greater than the annual amount of change in the Consumer Price Index shall require City Council approval. The acreage of required Neighborhood Based Park dedication will be determined at the time of the preliminary plat. This fee shall be in addition to the amount needed for the developer to provide the Neighborhood Based Park infrastructure development.

3. Development Options and Offsets - If mutually agreed between the Developer and the Park & Recreation Department, the Developer may choose to develop the park site prior to final plat approval in lieu of submitting the Neighborhood Based Park

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Development Fee. The cost of the Developer to provide the Neighborhood Based Park and recreation facilities shall offset the required Neighborhood Based Park Development Fee by the amount of the estimated cost of the Developer to design and construct the Neighborhood Based Park recreational facilities based on Park & Recreation Department Facility Standards. The estimated costs for recreational facilities shall be based on current bid prices for similar recreational facilities and be annually updated by January 1 by the Park & Recreation Department. Prior to approval of a Neighborhood Based Park development agreement, the Developer must submit a Neighborhood Based Park Concept Plan to the City indicating the proposed Neighborhood Based Park facilities and their locations. Upon approval of the proposed Neighborhood Based Park Development Concept Plan the Developer may authorize preparation of construction documents for neighborhood park development.

In the event that the Park & Recreation Department and the Developer reach a development agreement for park development prior to final plat approval, the developer shall be required to submit Neighborhood Based Park development construction plans that conform to Park & Recreation Department design, construction and specification standards. The Park & Recreation Department will review the construction documents for compliance with City park construction requirements. The Developer must agree to standard City construction inspections of Neighborhood Based Park improvements. Neighborhood Based Park construction must be approved and accepted by the City of Fort Worth before Neighborhood Based Park fees that have been paid by the Developer are reimbursed to the developer.

V. SITE SELECTION/CHARACTERISTICS OF PARK

- A. In selecting a site for a park, the City shall avoid an accumulation of unrelated parcels of land or an accumulation of land unsuitable for park purposes.
- B. Parks sites shall be selected on the basis of obtaining natural, park-like settings where available and shall consist of diverse topography and open space suitable for the development of recreational facilities.
- C. Neighborhood Park size should generally be a minimum of five (5) acres and obtained as one complete parcel. If a Developer cannot provide the minimum five acre (5) parcel

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Neighborhood and Community Park Dedication Policy Revised November 21, 1995 G-11306 Adopted April 18, 2000 G-12893 Revised September 19, 2000 G-13015 Revised December 19, 2000 G-13114 Revised September 25, 2001 G-13388 Revised December 11, 2001 G-13463 Revised January 27, 2004 G-14225 Revised June 9, 2009 G-16592 Revised January 29, 2019 G-19470 (effective March 1, 2019)

or a smaller parcel which can potentially be contiguous to existing or future park parcels, then a fee in lieu of parkland or a combination of a fee in lieu of parkland and parkland dedication shall be required at the discretion of the Park & Recreation Department.

- D. Parcels less than five (5) acres outside of Park Planning District 4 will only be considered for a park if they are contiguous with an existing park or school property, unless approved by the Director. Credits for publicly accessible private open spaces less than 1.0 acre will be considered on a case-by-case basis. (See Section IV. D.)
- E. Neighborhood Based Parks to be dedicated as public parkland must meet the following criteria:
 - 1. Park sites to be dedicated to the City as public parkland shall be the appropriate size for the classification;
 - 2. Over 50% of the neighborhood must not be served by existing public or private parkland;
 - 3. Property should meet the needs of the neighborhood;
 - 4. Site should be easily accessible from the neighborhood;
 - 5. No drainage structures shall cut through or drain onto the public park site without the approval of the Director or the Director's designee;
 - 6. Topographically the site shall be suitable for Neighborhood Based Park uses as further defined in the Park, Recreation and Open Space Master Plan, Section V;
 - 7. Land must be out of the floodway and be accessible by maintenance and emergency vehicles;
 - 8. Funding must be identified for maintenance; and
 - 9. Permanent or ongoing maintenance operations must be addressed.

The Director of the PARD or the Director's designee shall have the discretion to allow

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Neighborhood Based Parks that do not meet all of the criteria outlined above.

- F. Both Neighborhood Based and Community Park sites shall be located, whenever possible, adjacent to and contiguous with school sites and other public or non-profit agency sites in order to make maximum use of common facilities and grounds.
- G. Careful consideration shall be given to the need for development of linear parks around natural drainage and wooded areas which provide potential recreational uses. Criteria for floodplain area (based upon 100 year floodplain) usage is as follows:
 - 1. Floodplain and natural drainage areas shall generally not exceed seventy five (75%) percent of the total park site.
 - 2. Additional floodplain acreage may be acquired at a ratio of three acres of floodplain for each acre of non-floodplain property required to be dedicated. Any such consideration of additional floodplain acreage shall be as agreed upon between the Park & Recreation Department and the Developer/ Owner.
- H. Proposed parkland boundaries of Community Park dedications shall provide reasonable access to improved street frontage for readily accessible entry into the park area by the public. The minimum size for a Community Park dedication is thirty (30) acres. When the subdivision development is not of sufficient size to generate a thirty (30) acre Community Park, a dedication fee in lieu of park dedication will be assessed or a combination of a fee in lieu of park dedication and park dedication may occur at the discretion of the Park & Recreation Department. The Park & Recreation Department at its sole discretion may determine that land in an amount less than the minimum dedication for a community park is needed: (1) when the property adjoins unplatted land that is zoned residential; (2) when the proposed land use according to the City's Comprehensive plan is residential; (3) when market and development patterns in the area indicate that the property is likely to be rezoned as a residential use; or (4) when there is a larger park system need that will be met by the dedication of Community Park land in an amount less than the minimum size.

VI. LAND DEDICATION AND DEVELOPMENT FEE

A. If the proposed residential development falls within the Central City (Park Planning District 4), the Developer shall pay a Central City Flat Fee per each additional

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Neighborhood and Community Park Dedication Policy Revised November 21, 1995 G-11306 Adopted April 18, 2000 G-12893 Revised September 19, 2000 G-13015 Revised December 19, 2000 G-13114 Revised September 25, 2001 G-13388 Revised December 11, 2001 G-13463 Revised January 27, 2004 G-14225 Revised June 9, 2009 G-16592 Revised January 29, 2019 G-19470 (effective March 1, 2019)

residential dwelling unit in lieu of a land dedication and associated fees. Fees will be assessed at the time of building permitting. Fees must be paid before a building permit will be issued. If mutually agreed between the Developer and the Park & Recreation Department, credits against this fee may be granted when there is public or private parkland proposed for the site and/or when park facility development is proposed. Agreements concerning parkland classification and acceptability, and determinations of allowable fee credits, must be formalized prior to release of the first building permit. The Central City Flat Fee is based on current costs for land acquisition and park development and may be adjusted administratively on an annual basis up to the annual amount of change in the Consumer Price Index (CPI). Any fee increase or decrease greater than the CPI shall require the approval of the City Council. The Central City Flat Fee shall be:

Calendar Year	Central City Flat Fee Per Each Additional Residential Dwelling Unit
2018	\$500.00
2019	\$660.00
2020	\$820.00
2021	\$980.00
2022	\$1,140.00
2023	\$1,300.00

- B. For all areas outside of Central City (Park Planning District 4), this policy requires 3.25 acres of Neighborhood Based Park dedication and 3.75 acres of Community Park dedication per 1,000 population. For each submitted residential preliminary plat subdivision or Multi-Family Development Site Plan, the following formula shall apply for the calculation of parkland needs.
 - 1. Neighborhood Based Park Dedication Formula:

<u>3.25 Acres X (No. of Dwelling Units) X (Persons/Unit)</u> = Acres to be dedicated 1,000 population

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2. Neighborhood Based Park Development Fee Calculation:

Neighborhood Based Park Acres to be dedicated X Per Acre Neighborhood Based Park Development Fee Rate (see Section IV.G.2.) = Neighborhood Park Development Fee

3. Community Park Dedication Formula:

<u>3.75 Acres X (No. of Dwelling Units) X (Persons/Unit) = Acres to be dedicated</u> 1,000 population

C. The number of persons per dwelling unit shall be based on both current U.S. Census information and population data compiled by the City and shall be reviewed and adjusted administratively by the Director of the Park & Recreation Department or their designee as necessary to fairly and accurately reflect trends in household size. The following figures represent the average number of persons per unit by current density categories, and shall be used to calculate parkland dedication.

1. Single Family Detached/Duplex	3.0 Persons/unit
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- 2. Multi-Family 2.0 Persons/Unit
- D. Where a subdivision plat is submitted indicating multi-family residential development, and a table of information is not provided indicating the number of dwelling units, the City shall assume the highest density allowed in the zoning classification to be applied to the property by which to determine projected population in order to determine park dedication policy requirements.
- E. All determinations of required land dedication shall be based upon review of all preliminary subdivision plats submitted through the City of Fort Worth's Planning and Development Department to the Park & Recreation Department. Failure to indicate proposed park dedications on the submitted preliminary plat shall be sufficient grounds for the Plan Commission to deny a concept plan or preliminary plat. Upon final agreement between the Park & Recreation Department and the Developer/Owner regarding mutually acceptable parkland, such land shall be indicated on the revised preliminary plat and final plat. Such park property shall be conveyed by General Warranty Deed before the Neighborhood Based Park fees are reimbursed to the

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Developer. Submission of park dedication documents is required for final plat and Multi-Family Development Site Plan release. Park dedication documents include: (1) a general warranty deed; (2) a metes and bounds description of the park dedication property; (3) a survey plat of the park property only; (4) an abstractors certificate that indicates that the Developer has clear title to the property and the legal ability to deliver the title to the City of Fort Worth; and (5) an environmental statement that indicates that the park site is free of environmental contamination or hazards. The Park & Recreation Department can provide Developers with example documents for use in meeting this submission requirement.

- F. The land required to be conveyed for Neighborhood Based Park dedications may be located inside or outside the subdivision development so long as the land is so located within the Neighborhood Unit and is of such proximity to the development so as to serve or benefit the neighborhood residents. Land required to be conveyed for Community Park dedications may be located within the Park Planning District of the subdivision.
- G. If a replat is filed, the dedication requirements shall be controlled by the policy in effect at the time of replat. Additional land dedication (or fee in lieu of) shall be required if the actual density of structures constructed on the property is greater than the former assumed density.
- H. Prior to dedication of land and/or improvements, the Developer/Owner shall make full disclosure of the presence of any hazardous substances and/or underground storage tanks (U.S.T.'s) and all construction processes affecting the site of which the Developer/Owner has knowledge. The City, at its discretion, may proceed to conduct such initial construction inspections, environmental tests and surveys on the land and improvements as it may deem appropriate, and the Developer/Owner shall grant to the City and its agents and employees such reasonable access to the land as is necessary to conduct such construction inspections, surveys, and tests.

If the results of such construction inspections, surveys and tests indicate a reasonable possibility of construction failure, construction dumping, flawed construction, environmental contamination or the presence of U.S.T.s, or other environmental hazards the City may require further surveys and tests to be performed at the Developer/Owner's expense as the City may deem necessary prior to its acceptance of the dedication and improvements, or in the alternative, the Developer/Owner may be

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required to identify alternative property or pay the Neighborhood Based Park Fee in lieu of dedicating parkland.

I. In areas where the residential density is lower than one unit per acre or it is in the interests of the City, the Park & Recreation Department may combine the Neighborhood and Community Park dedication and development requirements to create an adjoining neighborhood and community park facility that meets the recreational needs of these suburban and rural neighborhoods.

VII. PAYMENT OF FEES IN LIEU OF PARKLAND DEDICATION

- A. If the proposed residential development falls within the Central City (Park Planning District 4), see Section VI(A).
- B. If the calculation for required Neighborhood Based Park dedication within the proposed subdivision development that falls outside Park Planning District 4 results in less than five (5) acres and/or the calculation for required Community Park dedication does not result in thirty (30) acres and/or does not meet site selection criteria as per Section V. of this policy, the Park & Recreation Department may recommend that a fee-in-lieu of Neighborhood Based and/or Community Park land dedication be required.
- C. All fees received for Neighborhood Based Park acquisition and development and Community Park acquisition will be dedicated for the purpose of acquiring and developing parkland within the proposed subdivision development. However, if acquisition and development of a Neighborhood Based or Community Park is not achievable within the proposed subdivision development, then the Park & Recreation Department shall:
 - 1. Have the discretion of determining if park and recreational needs of the proposed subdivision development would be served by the expansion of existing park sites located within the same Neighborhood Unit where the proposed subdivision development is located.
 - 2. If such acquisition opportunities are not available within the Neighborhood Unit, then areas within the adjacent contiguous Neighborhood Unit(s) may be considered for acquisition if it will beneficially serve the residents of the proposed subdivision development.

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- 3. If such acquisition opportunities are not available within the adjacent contiguous Neighborhood Unit(s), then areas within the adjacent contiguous Community Park Unit(s) or within the Park Planning District may be considered for acquisition if it will beneficially serve the residents of the proposed subdivision development. Additionally, funding for Community Park acquisition may be accumulated from Community Park Units with the Park Planning District, adjacent contiguous Community Park Units or adjacent Park Planning District equal to the percentage of service radius (1.5 mile) within the adjacent Park Planning District.
- 4. Notwithstanding subsections (1) through (3) above, for the Central Business District Community Park Unit and the Near Southside Community Park Unit, as those units are identified in Exhibit A to this Policy, the following rules shall apply:
 - i. All Central City Flat Fees collected within the Central Business District Community Park Unit shall only be spent within the Central Business District Community Park Unit;
 - ii. Central City Flat Fees collected outside the Central Business District Community Park Unit shall not be spent within the Central Business District Community Park Unit;
 - All Central City Flat Fees collected within the Near Southside Community Park Unit shall only be spent within the Near Southside Community Park Unit;
 - iv. Central City Flat Fees collected outside the Near Southside Community Park Unit shall not be spent within the Near Southside Community Park Unit;
- D. The amount of the fee in lieu of parkland dedication shall be determined by the following method:
 - 1. The amount equal to the Fair Market Value of the required land dedication, and, if applicable, less a credit for the value of the land actually dedicated for park

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and recreational purposes. The Fair Market Value will be determined by the City of Fort Worth.

- 2. The Developer/Owner, at their own expense, may obtain an appraisal of the property by a State of Texas certified real estate appraiser, mutually agreed upon by the City and the Developer/Owner, which may be considered by the City in determining fair market value.
- 3. If the property was acquired by the developer within the last year the developer may submit the contract for sale or appraisal documents related to the acquisition of the property to be considered by the City in determining Fair Market Value.
- E. Submission of fees related to final plats, which are part of larger preliminary plats.
 - 1. All fee payments made in lieu of land dedication in accordance with this policy shall be pro-rated on a per dwelling unit charge based on the Fair Market Value of the required dedication of the land and relative to the number of dwelling units included in the final plat submittal or the Multi-Family Development Site Plan.
 - 2. Fees for Neighborhood Based Park development will be pro-rated on a per dwelling unit rate based on the required dedication for that portion of the preliminary plat being submitted as a final plat or a Multi-Family Development Plan.
 - 3. Time of Payment/Calculation
 - i. <u>Outside Central City (Park Planning District 4)-</u> Fees established at the time of preliminary plat submittal shall apply to subsequent final plats submitted on any or all portions thereof for a period of two years from the date of preliminary plat approval by the Plan Commission. Subsequent Final plat submittals after such two year period shall be reassessed new fee values per dwelling unit as per current Fair Market Value of the land and the current Neighborhood Park Development Fee at time of Final plat submittal.
 - ii. <u>Inside the Central City (Park Planning District 4)</u> Applicable fees will be assessed and should be paid prior to issuance of a building permit.

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- F. For residential developments occurring outside Park Planning District 4, all required fees shall be paid and received before release of the final plat on any or all portions of the subdivision indicated on the original preliminary plat thereof by the City for filing in the County plat record. For residential developments occurring within Park Planning District 4, all fees will be due prior to issuance of a building permit.
- G. All payments made in accordance with this policy shall be deposited in a designated Neighborhood Park Unit Acquisition and Development Fund and/or a Community Park Unit Acquisition Fund. The City shall account for all such funds paid with reference to each subdivision development, neighborhood unit and community park unit.
- H. Interest earned on accumulated park acquisition and development fees designated for a specific subdivision development shall be used for additional acquisition and development as described in this policy.
- I. All fees received must be expended within five years from date of receipt of the last fee paid on the original preliminary plat. If such fees are not expended, the Developer/Owner shall be entitled to a refund on interest earned, less inflation as determined by the Consumer Price Index as published by the U.S. Department of Labor, with the principal held by the City. The Developer/Owner must request such refund in writing within ninety (90) days of entitlement or such right shall be waived.

VIII. INSTALLATION OF PARK IMPROVEMENTS

- A. Installation of Neighborhood Based Park improvements by the City generally will occur when there is:
 - 1. A minimum population of 2,000 or, at the City's discretion, a minimum fifty (50%) percent build out within the Neighborhood Park Unit;
 - 2. Availability of funds for such improvement; and
 - 3. Appropriation of maintenance funds for ongoing maintenance operations.
- B. Installation of Community Park improvements by the City generally will occur when there is:

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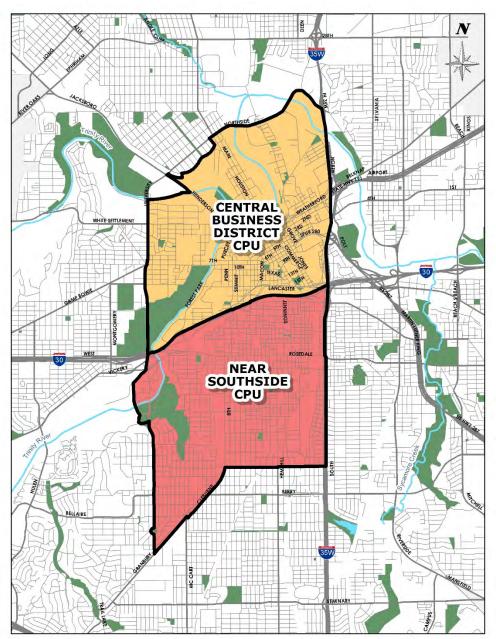
- 1. A minimum population of 8,000 or, at the City's discretion, a minimum fifty (50%) percent build out within the Community Park Unit, and
- 2. Availability of funds for such improvement; and
- 3. Appropriation of maintenance funds for ongoing Community Park maintenance and operations.

IX. DECISION MAKING; APPEALS

- A. Unless otherwise provided in this policy, any decision shall initially be made by the Park & Recreation Department Director or their designee in the exercise of his/her reasonable discretion. In the event that the determination is made by the Director's designee the first recourse of the Developer is an appeal of the decision to the Director.
- B. Decisions of the Park & Recreation Department Director with regard to this policy may be appealed to the City Council in accordance with State law.

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EXHIBIT A



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APPENDIX B

NEIGHBORHOOD PARK FACILITIES ESTIMATED COSTS

APPENDIX B: NEIGHBORHOOD PARK FACILITIES – ESTIMATED COSTS

The following estimated costs are provided for developers who wish to develop and dedicate a neighborhood park through the Neighborhood & Community Park Dedication Policy. These estimated costs are updated annually, and will be used as the basis for determining the credit given for Neighborhood Park Development.

Facility	Estimated Cost
Site Preparation/Grading	\$10,000 per acre
Turf (hydro seeding with temporary irrigation)	\$5,000 per acre
Concrete Walks - 6' wide	\$40 per linear foot
6' Bench with concrete slab	\$2,250 each
8' Picnic Table (ADA compliant) with concrete slab	\$2,750 each
Multi-use Court (30' x 30') with basketball goal	\$16,400
Practice Field Backstop	\$3,200
Security lights (on-grid or solar)	\$10,000 each
Playground (standard playground, concrete mow edge, drainage system and surfacing)	\$250,000 complete
32' Picnic Shelter with reinforced concrete slab and picnic tables	\$75,000 each
24' Picnic Shelter with reinforced concrete slab and picnic tables/benches	\$50,000 each
Trees (large)	\$1,000
Trees (ornamental)	\$750

APPENDIX C

STANDARD PARK CONSTRUCTION DETAILS

Sheet PKD-1 – Erosion Control Details

Sheet PKD-2 – Tree Protection Details

Sheet PKD-3 – Drainage Details

Sheet PKD-4 – Paving Details

Sheet PKD-5 – Playground Installation Details

Sheet PKD-6 – 32 ft. Hexagon Picnic Pavilion Details

Sheet PKD-7 – 24 ft. Square Picnic Shelter Details

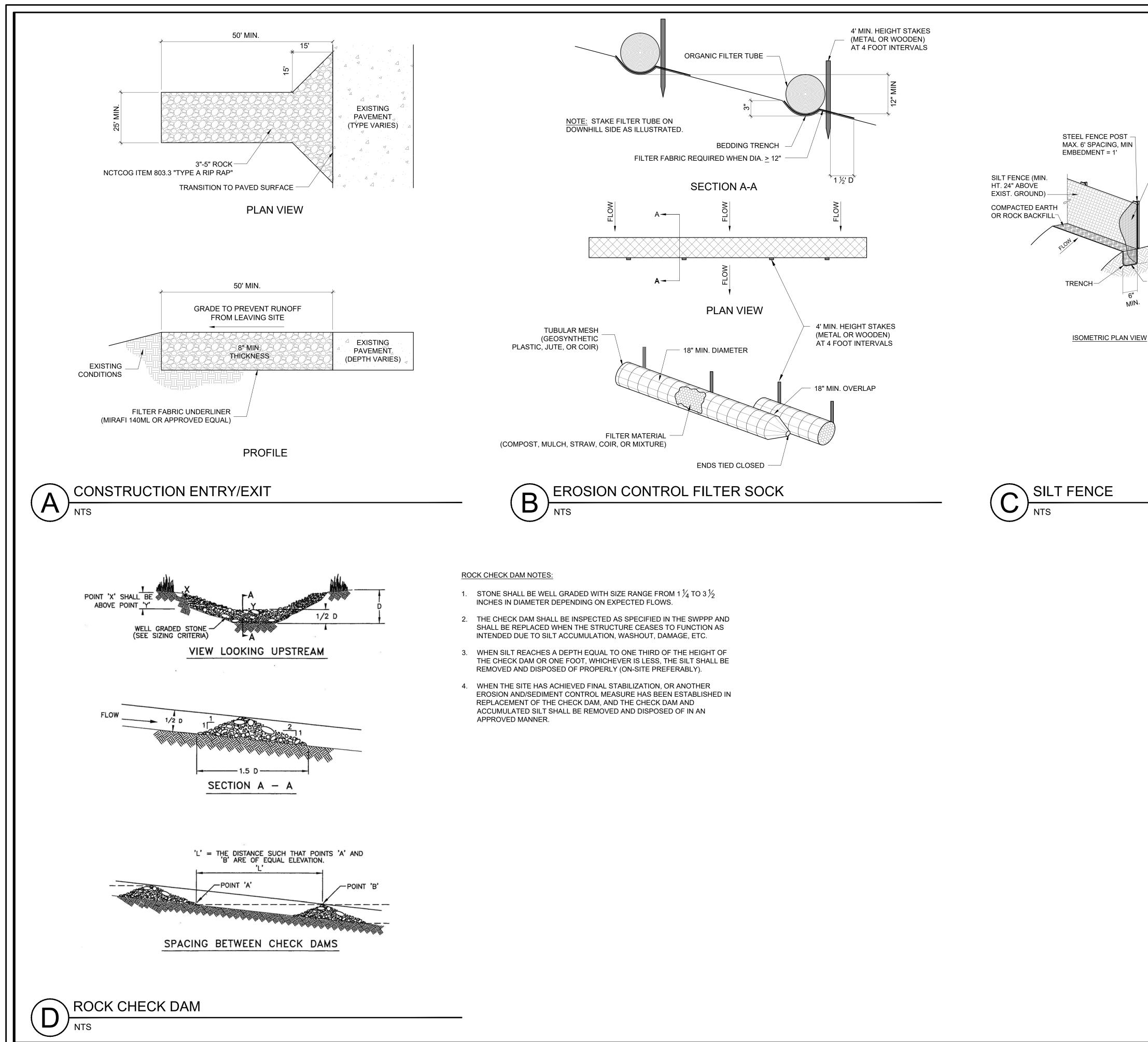
Sheet PKD-8 – Basketball Court Details

Sheet PKD-9 – Post and Cable Gate/Fencing Details

Sheet PKD-10 – Playground Option No. 1

Sheet PKD-11 – Playground Option No. 2

Sheet PKD-12 – Playground Option No. 3



SILT FENCE NOTES

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

CITY OF FORT WORTH	PARK & RECREATION DEPARTMENT	PARK FACILITY STANDARDS	EROSION CONTROL DETAILS
DATE SHEET NUMBER		03/01/2 PKD	

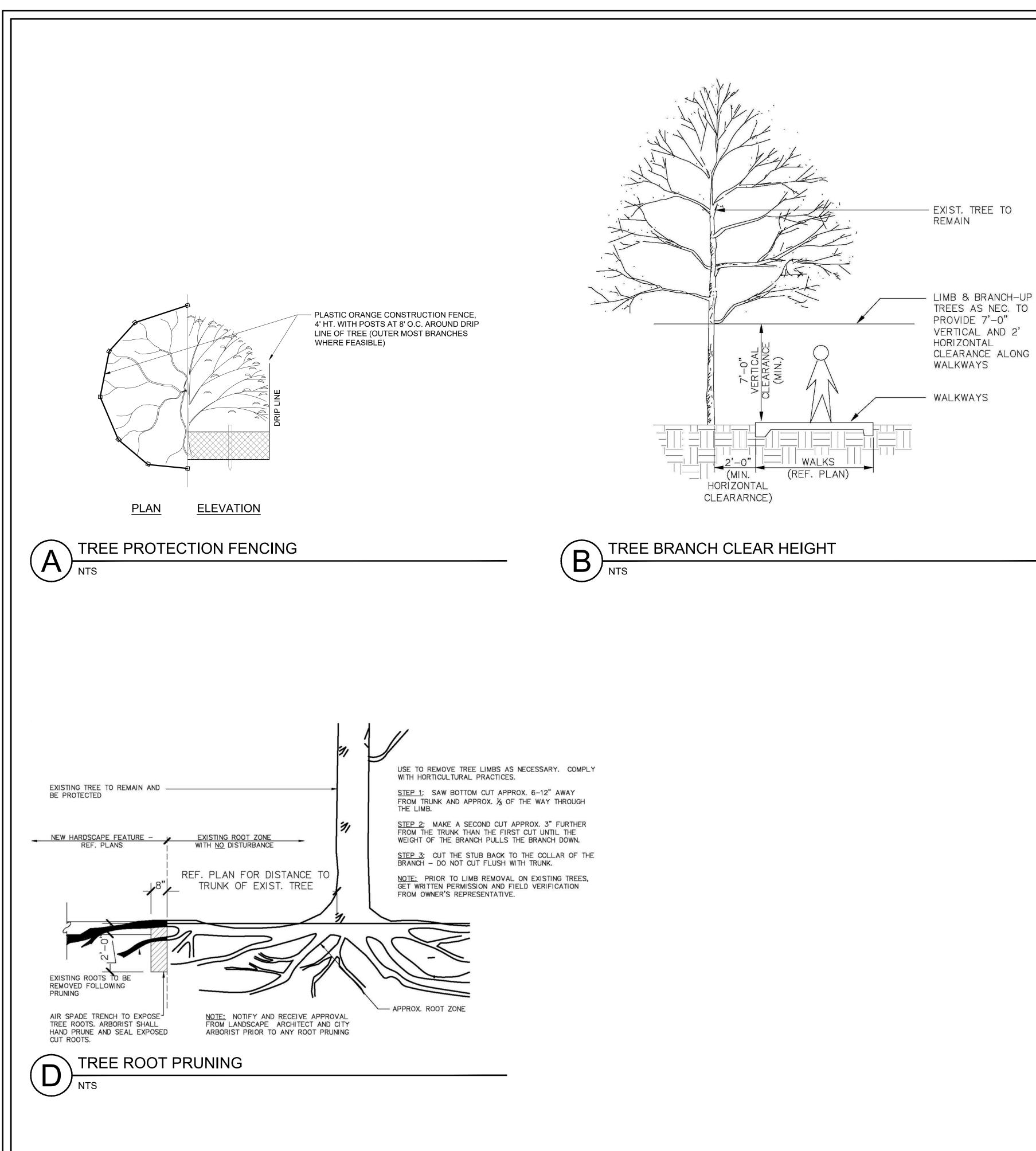
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- WIRE MESH BACKING SUPPORT 4 X 4 -W1.4 x W1.4 MIN. ALLOWABLE, TYP. CHAIN LINK FENCE FABRIC IS ACCEPTABLE.

MIN.

-FABRIC TOE-IN



(C)

NTS

HORTICULTURAL PRACTICES.

STEP 1: SAW BOTTOM CUT APPROX. 6-12" AWAY FROM TRUNK AND APPROX. 3 OF THE WAY THROUGH THE LIMB. STEP 2: MAKE A SECOND CUT APPROX. 3" FURTHER FROM THE TRUNK THAN THE FIRST CUT UNTIL THE WEIGHT OF THE BRANCH PULLS THE BRANCH DOWN. STEP 3: CUT THE STUB BACK TO THE COLLAR OF THE BRANCH - DO NOT CUT FLUSH WITH TRUNK. REMOVE AND DISPOSE OF ALL BRANCHES PER NOTES ON SHEET L1.01

BRANCH

- COLLAR

—TRUNK-

AND SPECIFICATIONS.

NOTE: PRIOR TO LIMB REMOVAL ON EXISTING TREES, OBTAIN WRITTEN PERMISSION AND FIELD VERIFICATION FROM CITY ARBORIST.

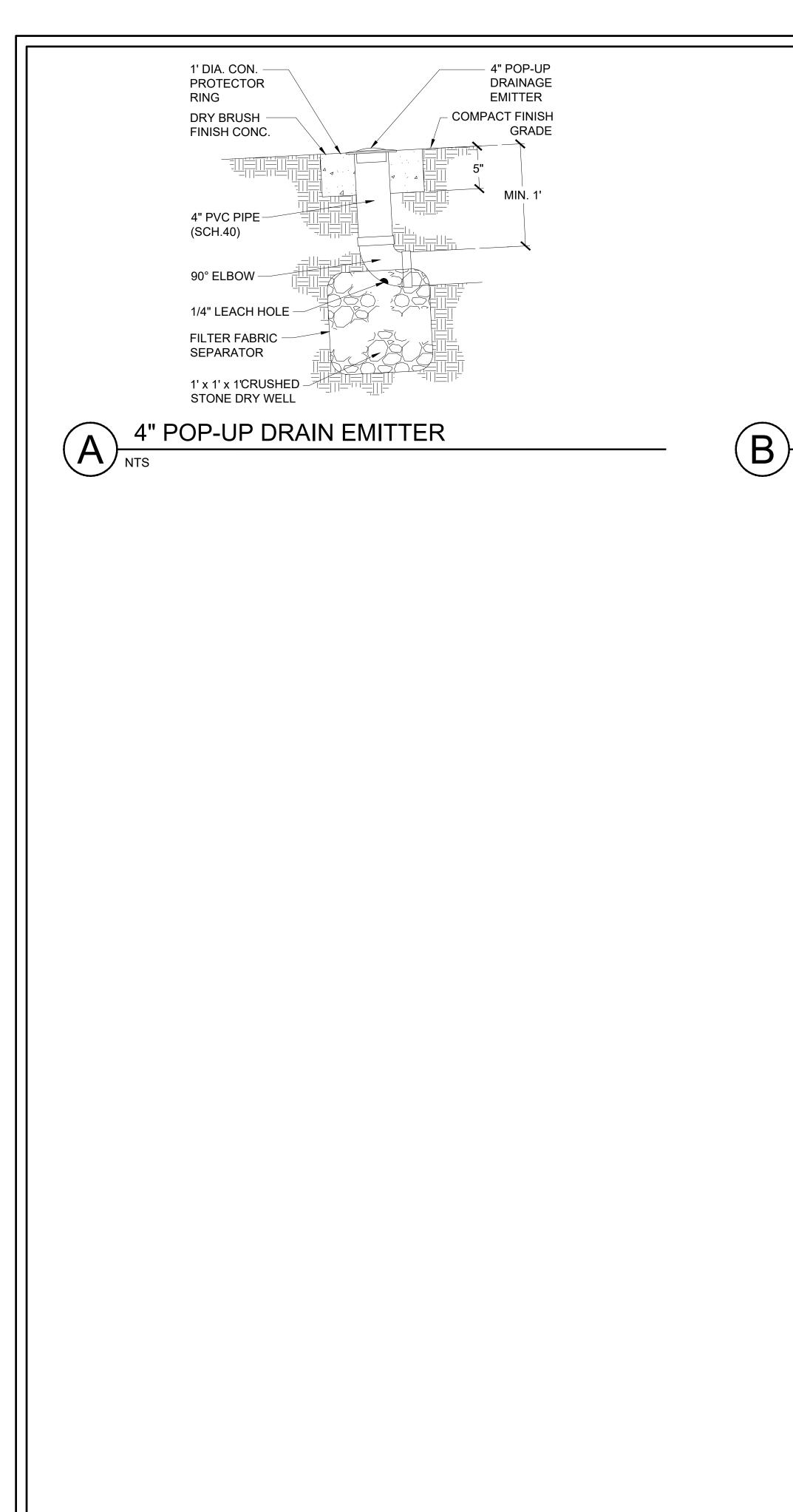


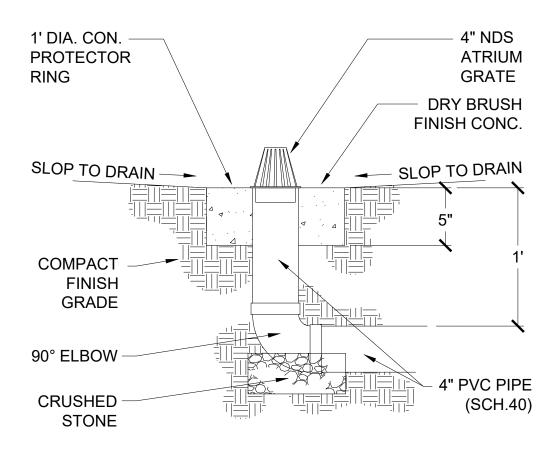
TREE BRANCH 3-POINT PRUNING

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CITY OF FORT WORTH	PARK & RECREATION DEPARTMENT	PARK FACILITY STANDARDS	TREE PROTECTION DETAILS
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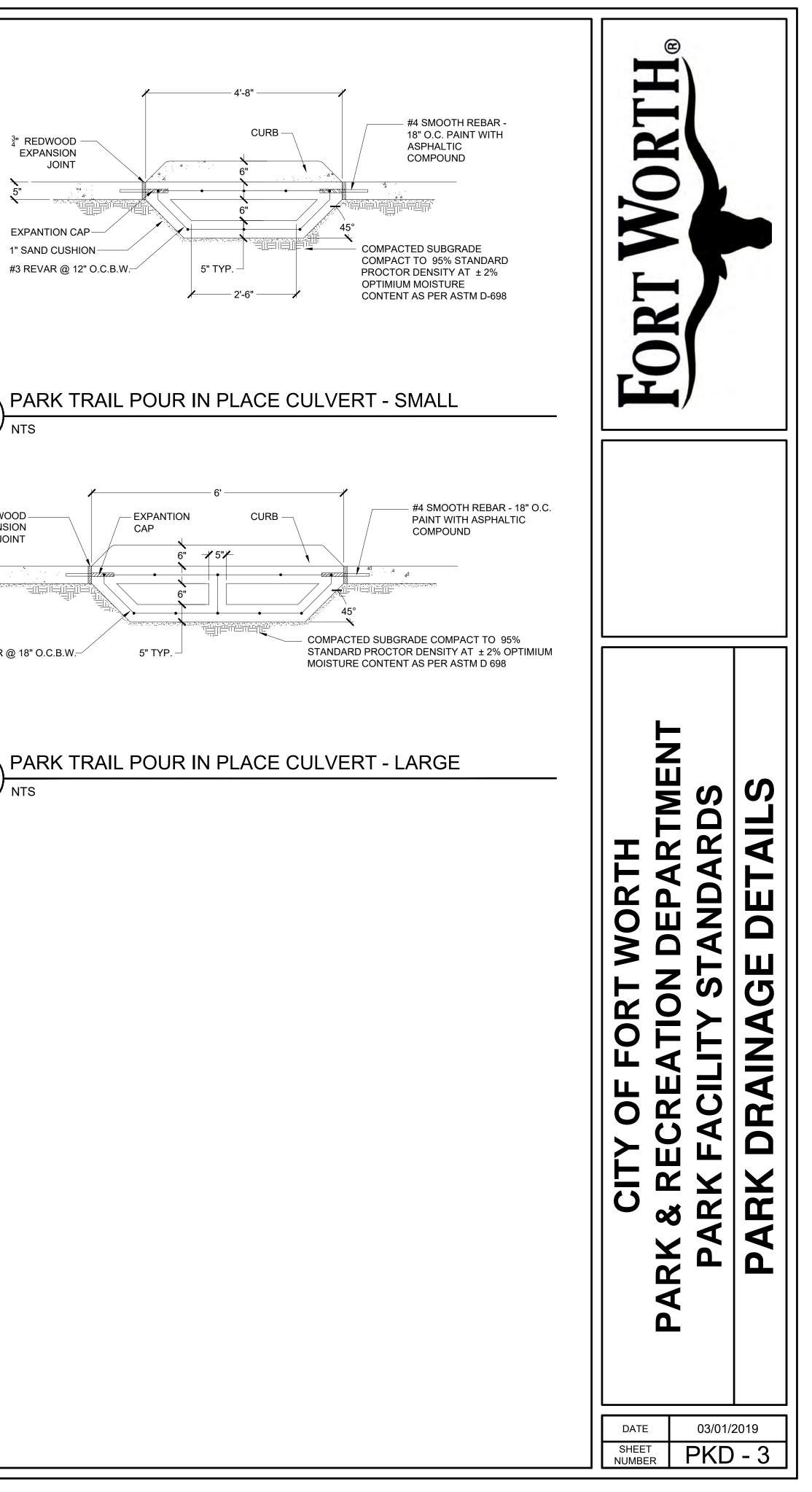
USE TO REMOVE TREE LIMBS AS NECESARY. COMPLY WITH

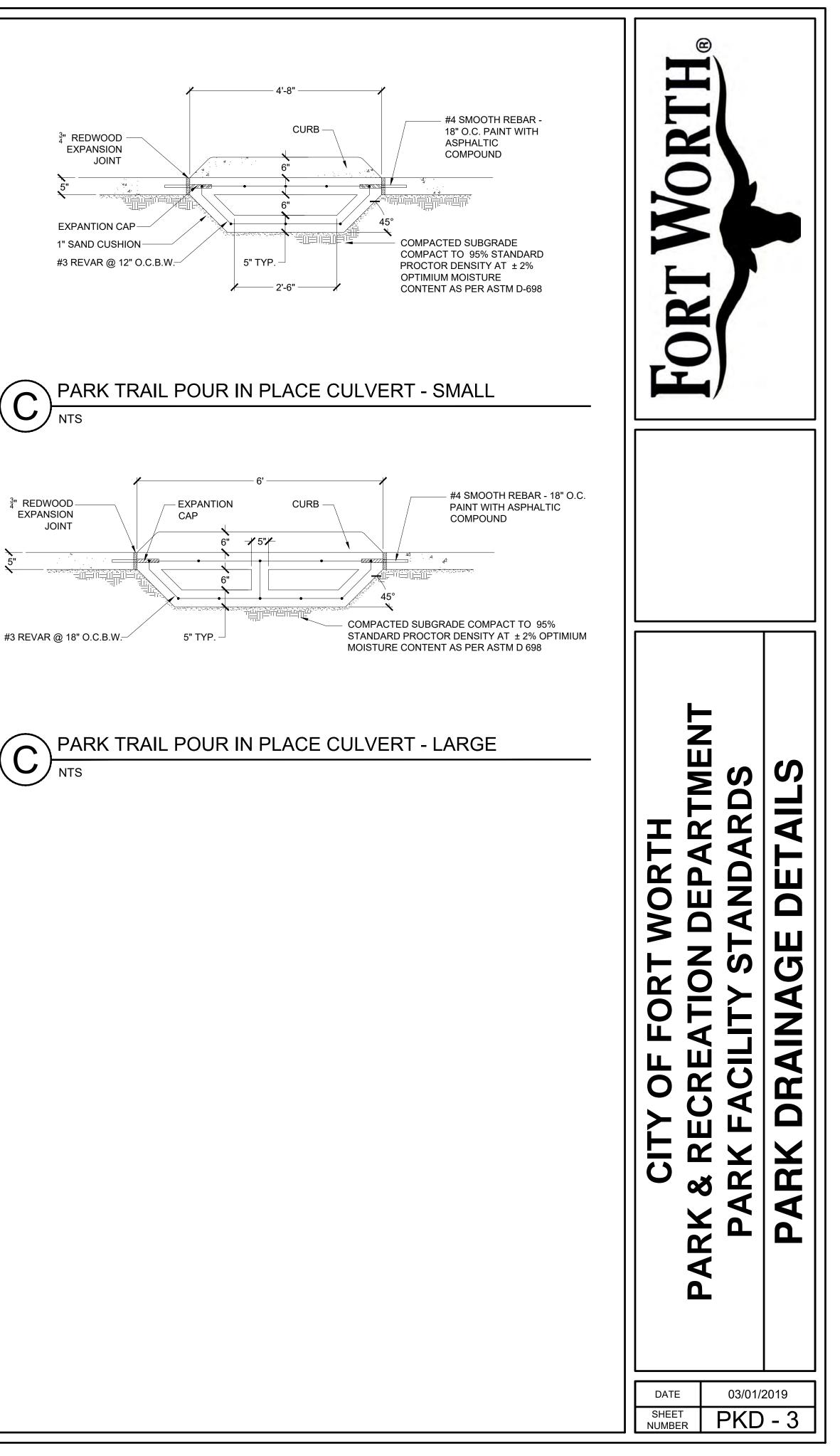


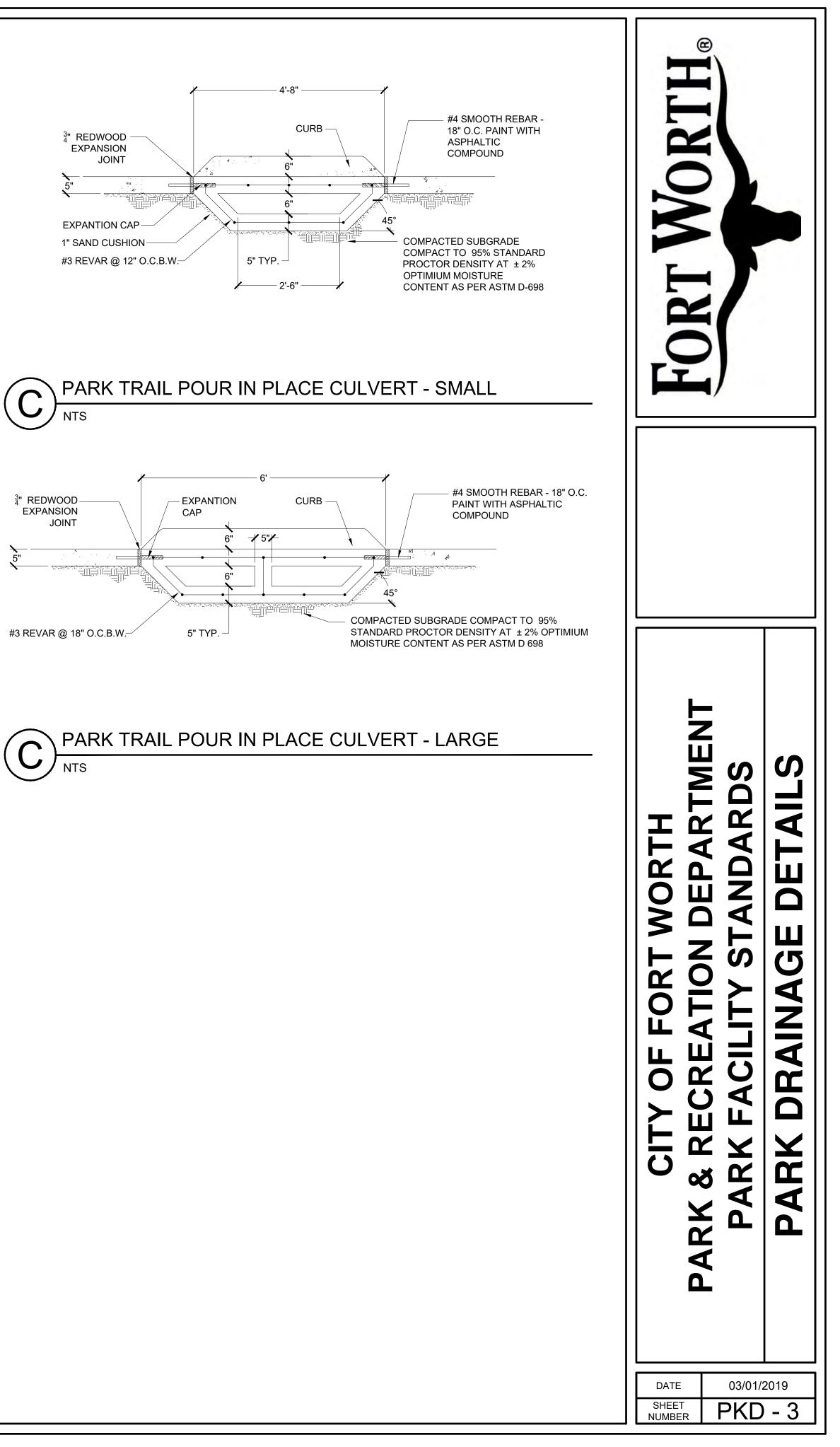


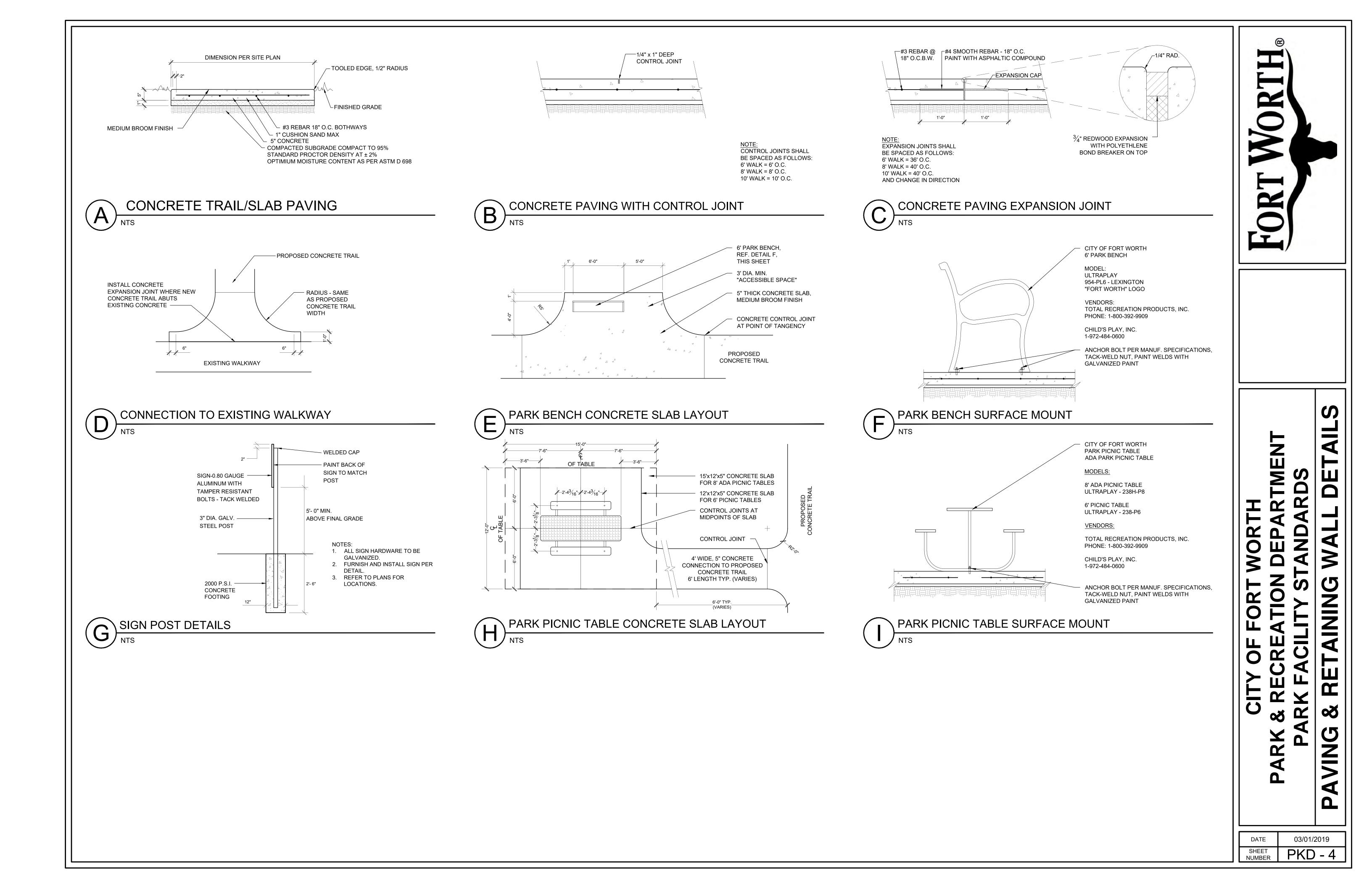
4" ATRIUM GRATE

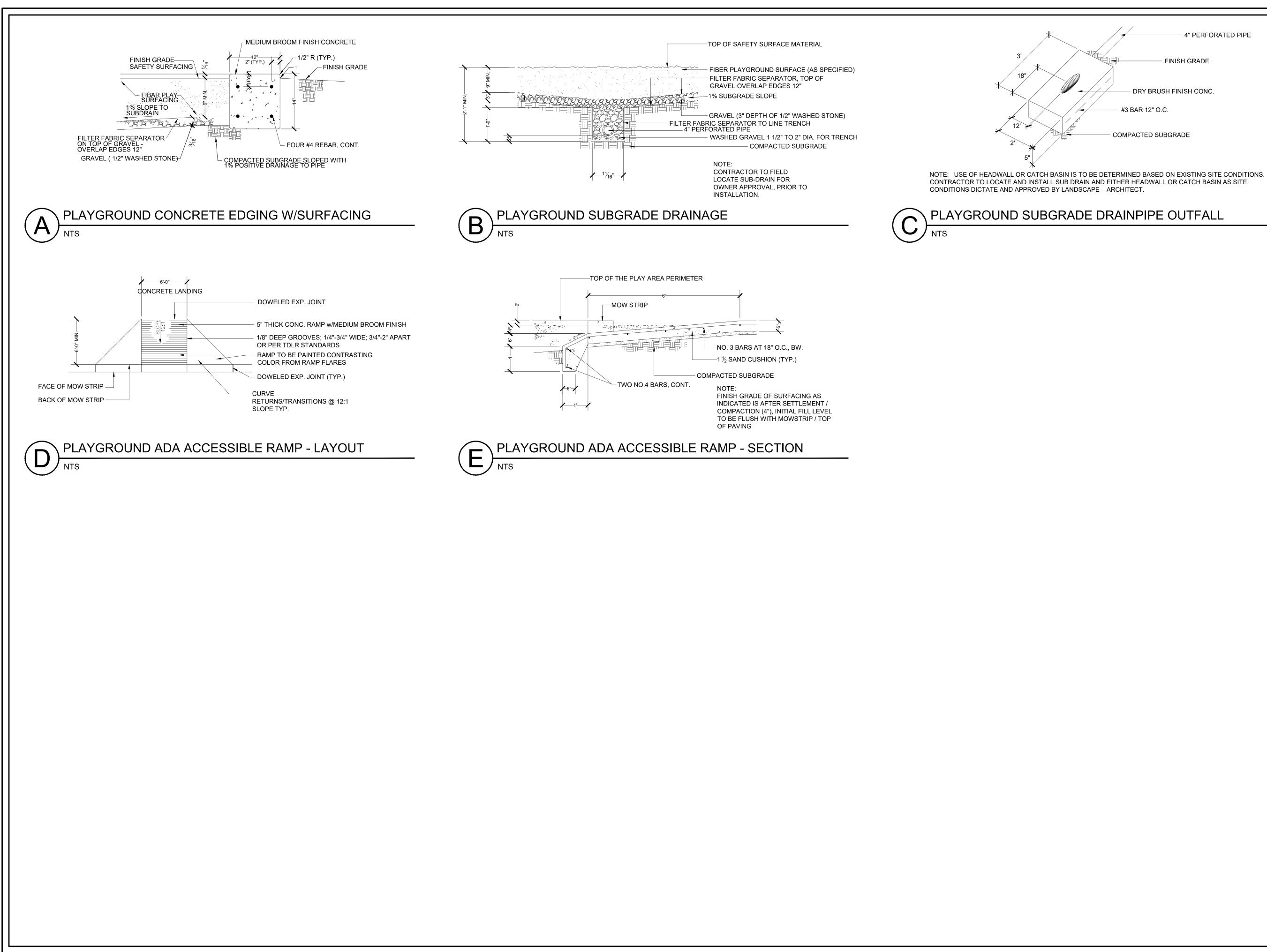
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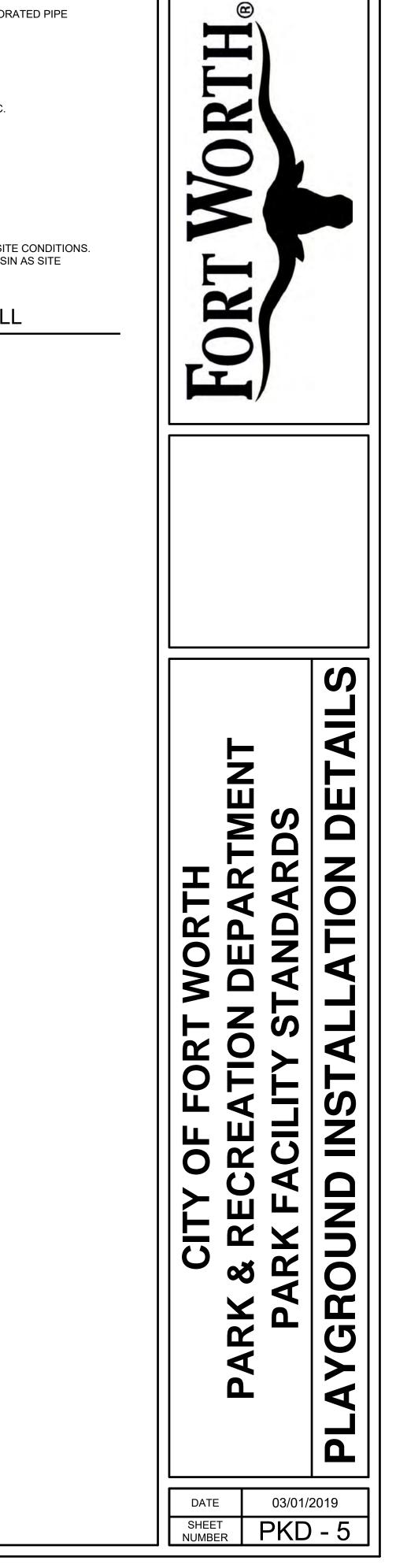


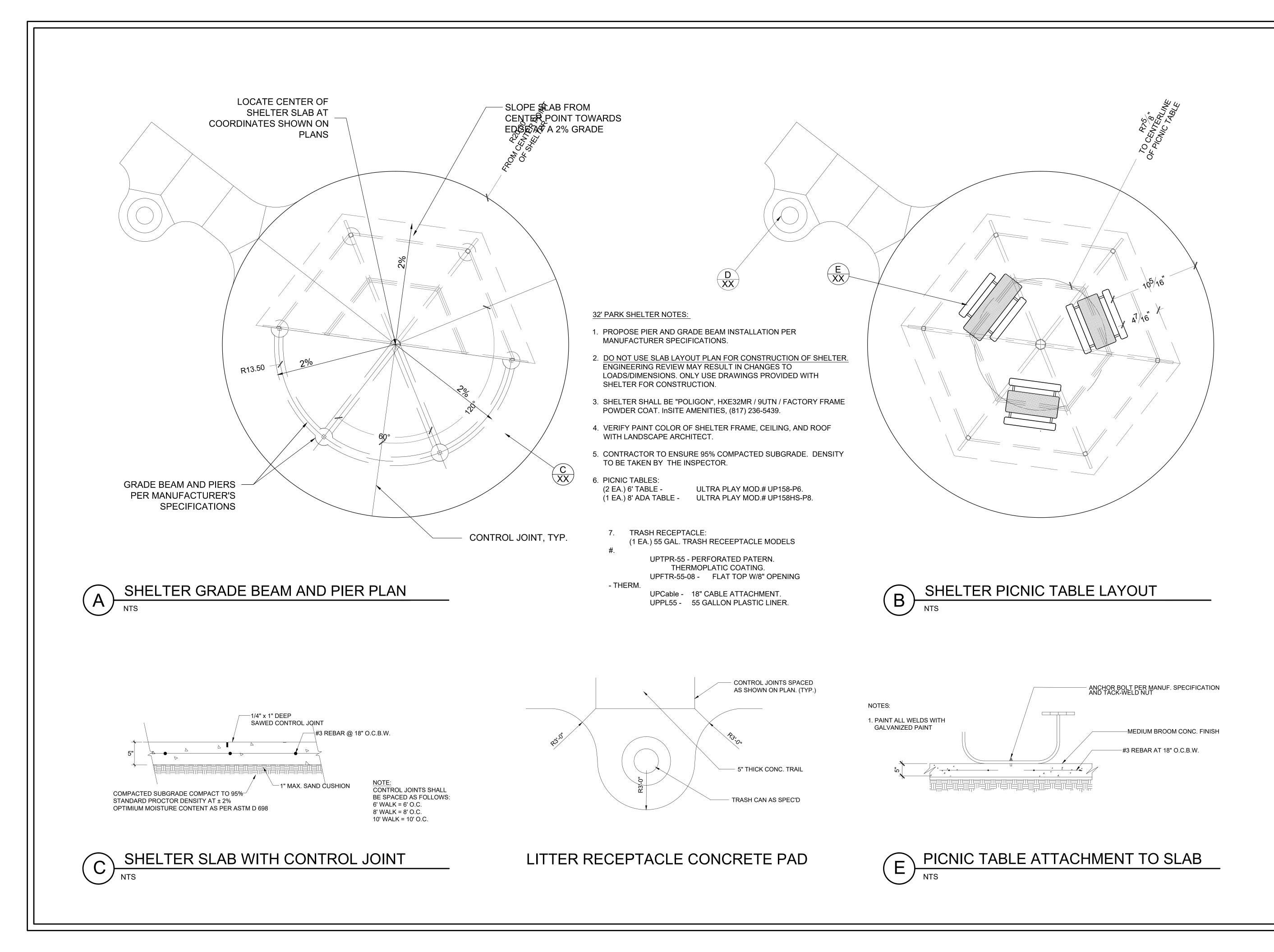


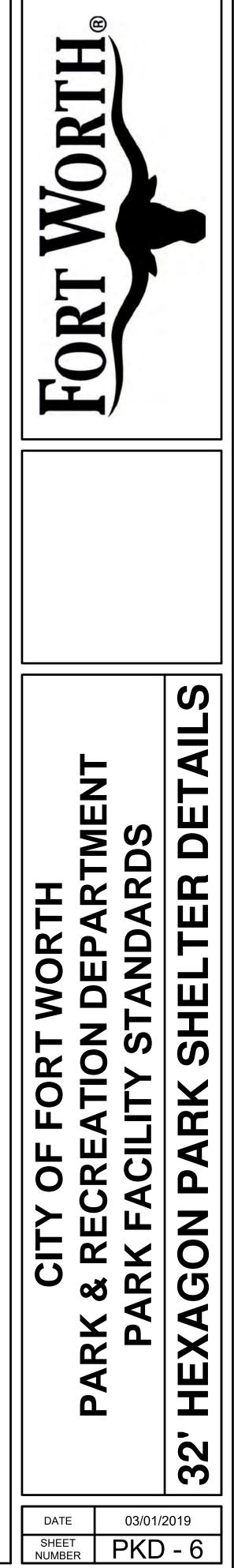


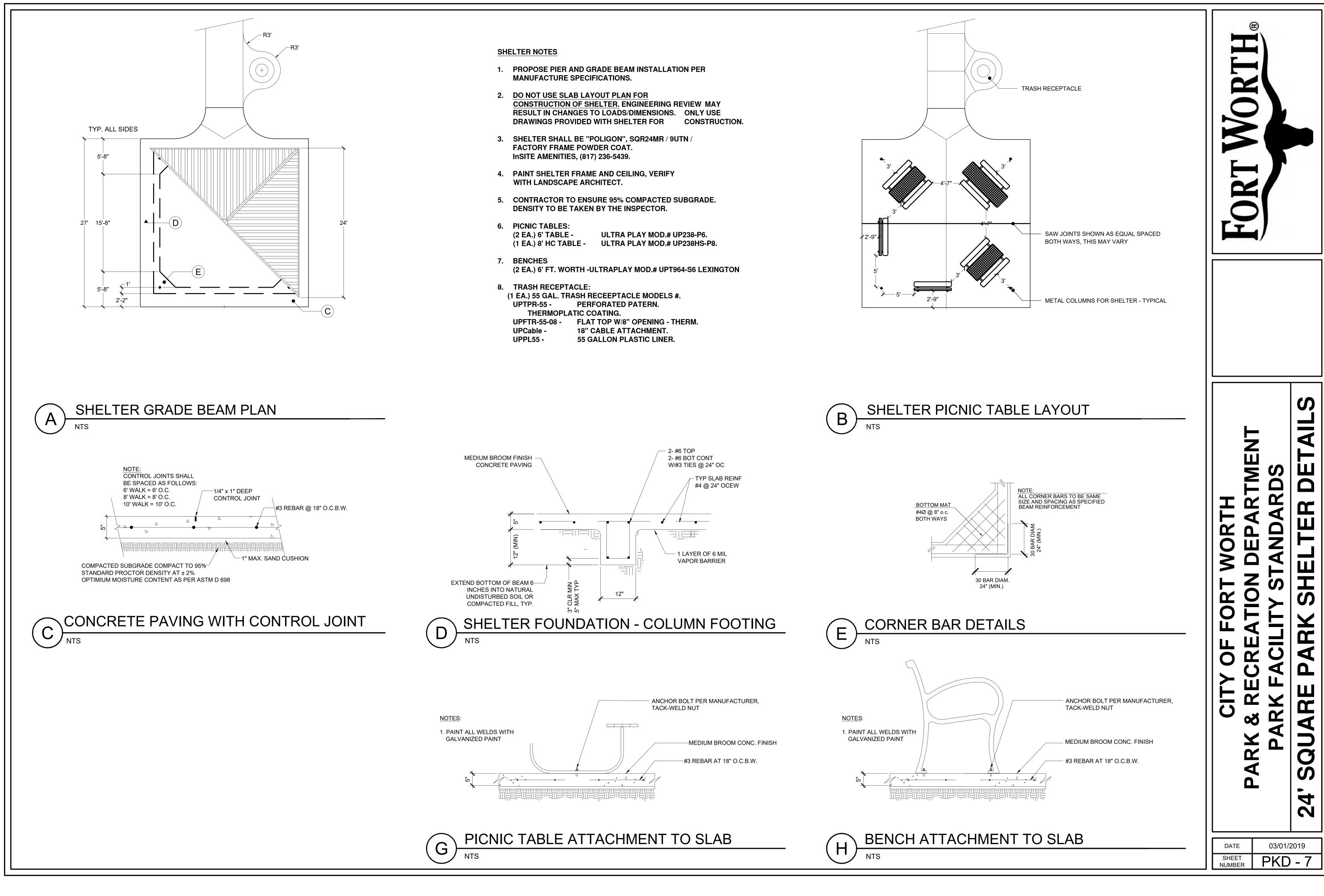




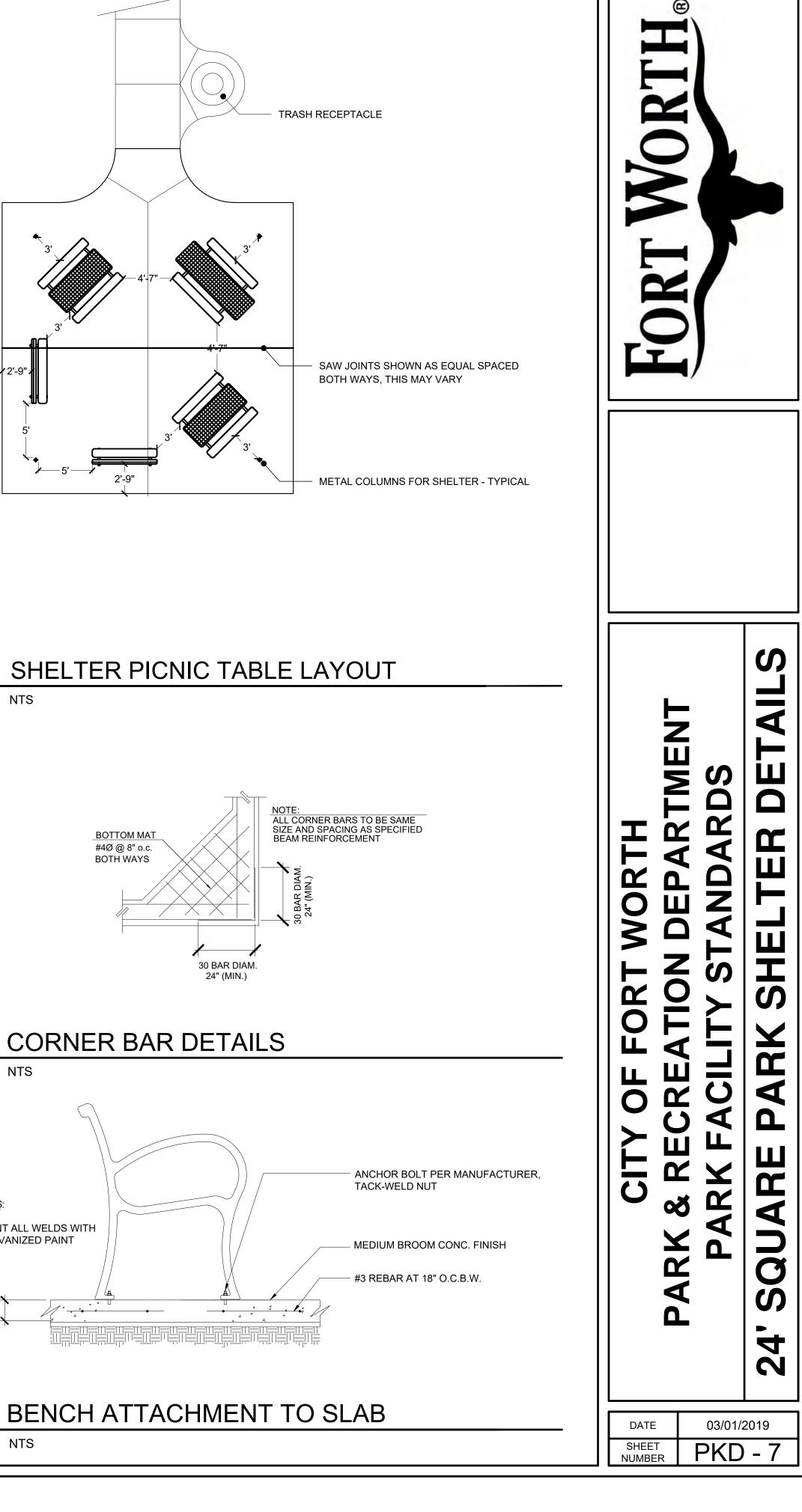


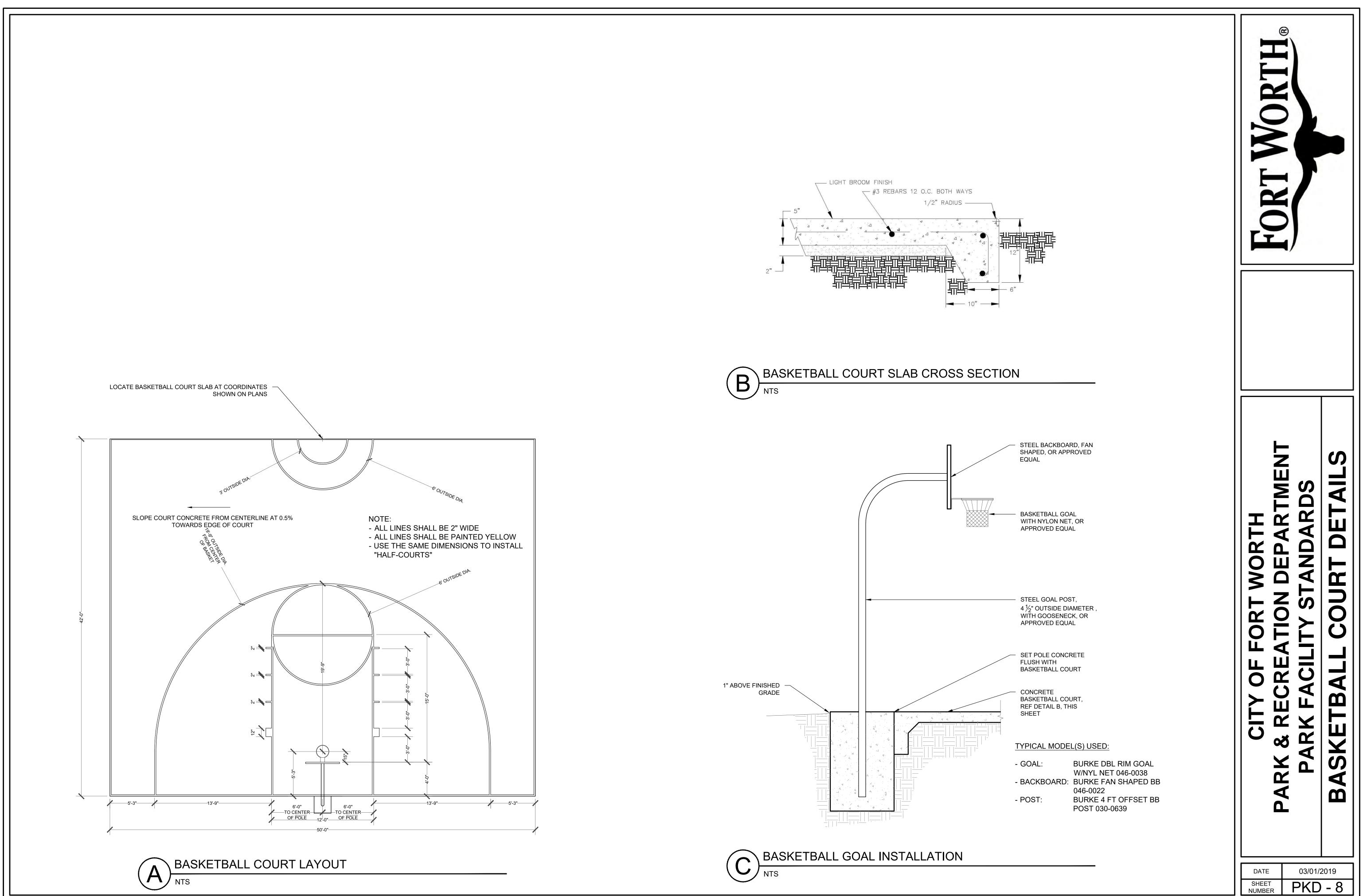


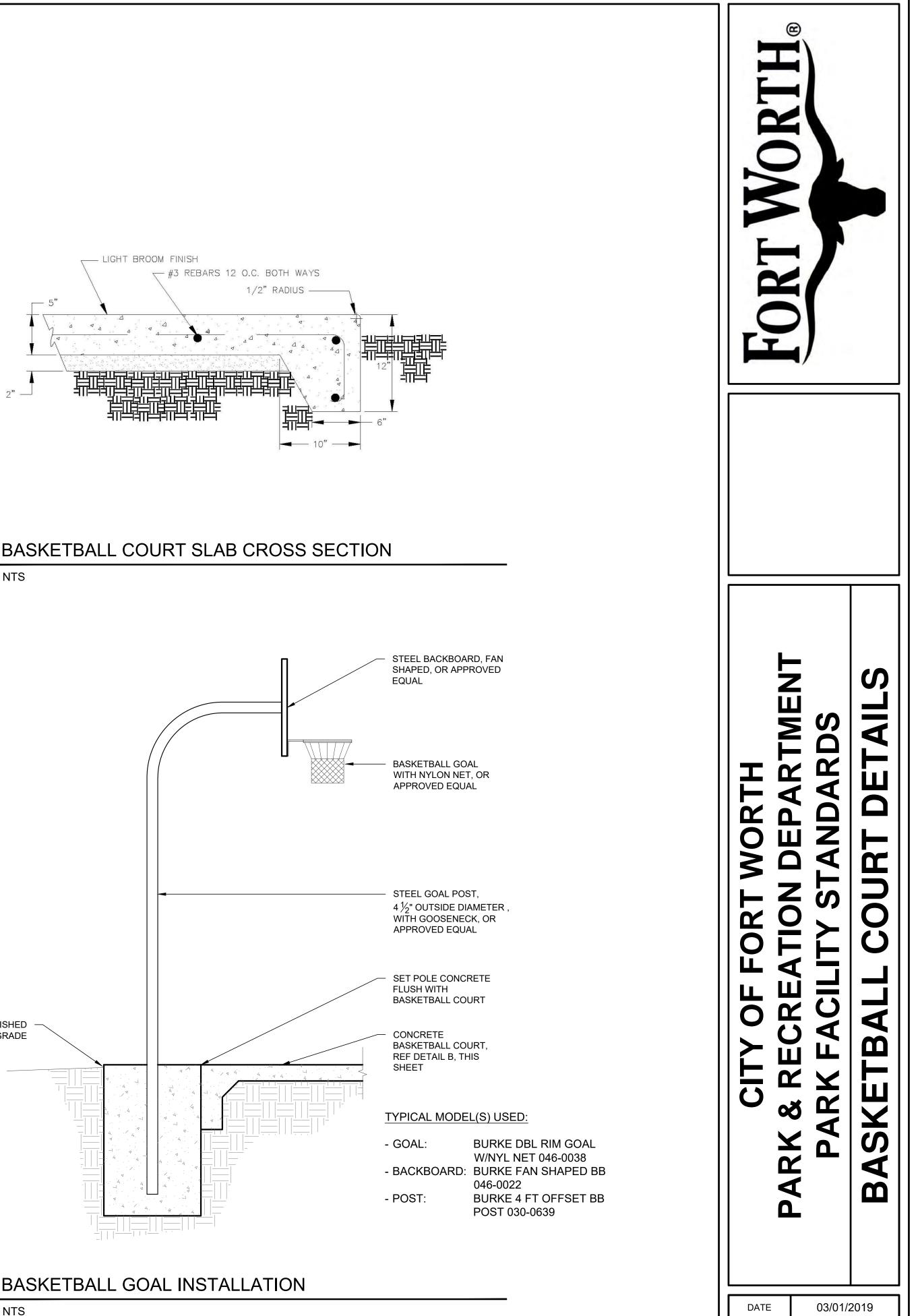


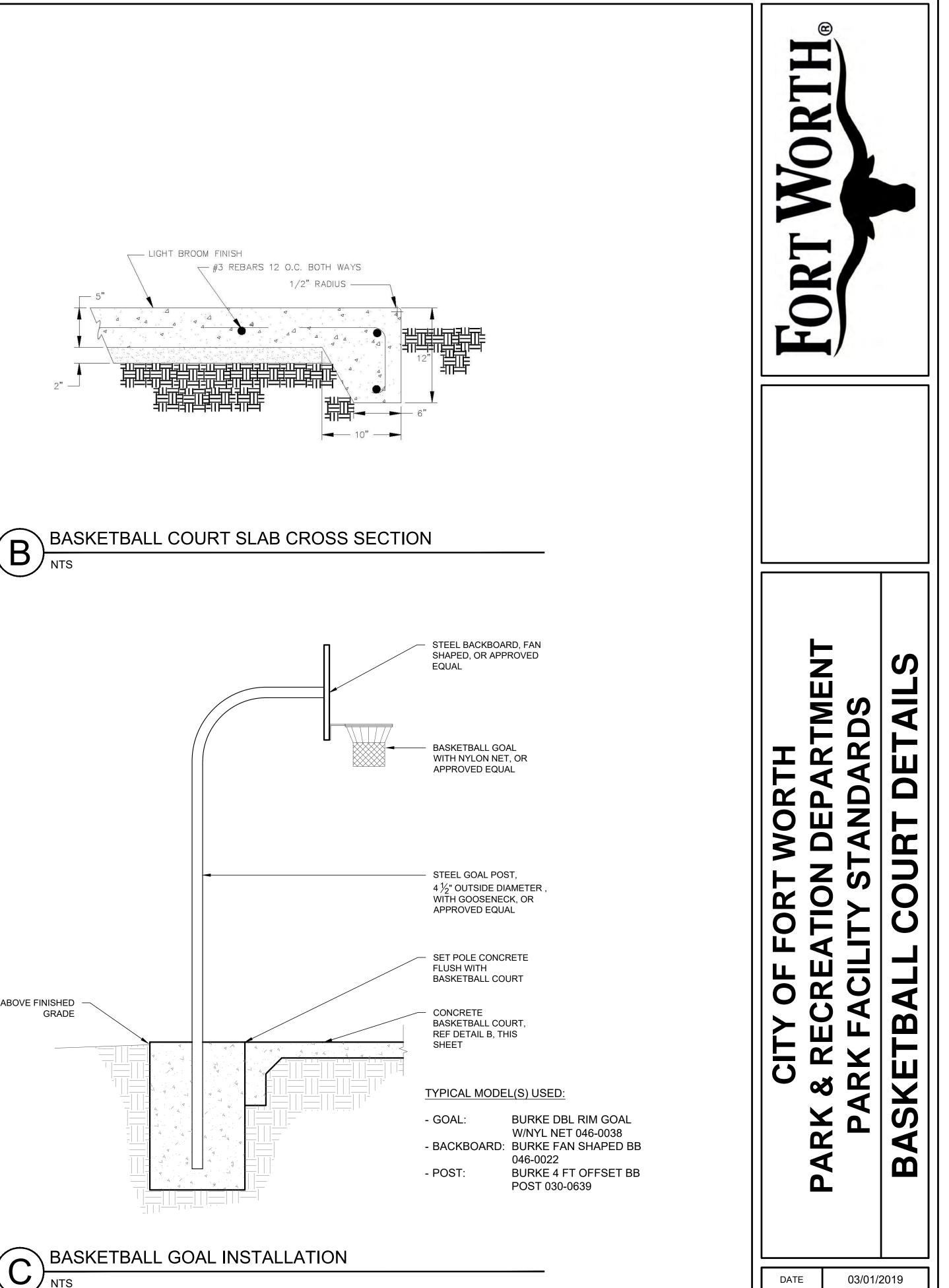


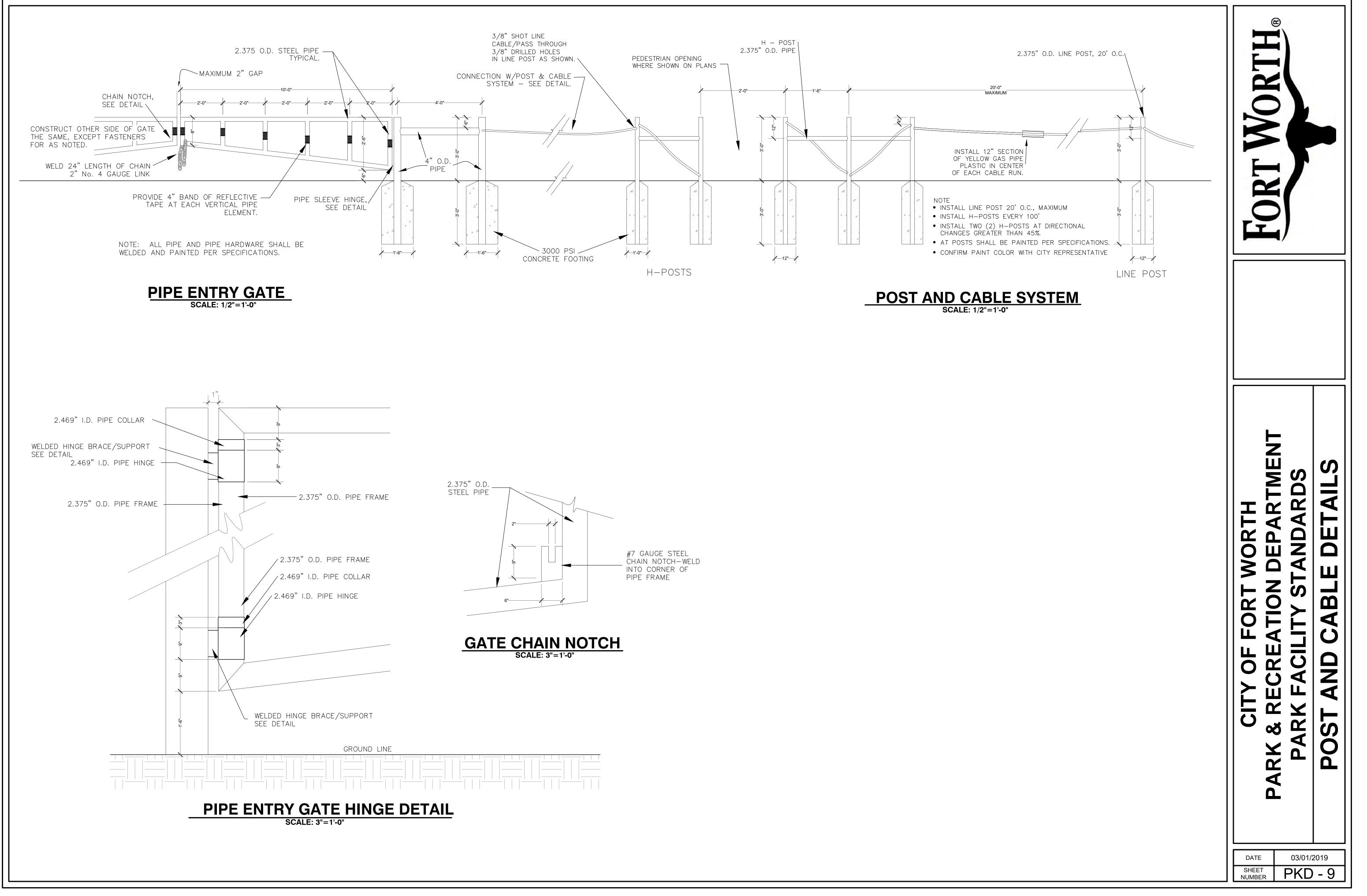
(1 EA.) 55 GAL. TRASH RECEEPTACLE MODELS #.				
UPTPR-55 -	PERFORATED PATERN.			
THERMOPLA	TIC COATING.			
UPFTR-55-08 -	FLAT TOP W/8" OPENING - THERM.			
UPCable -	18" CABLE ATTACHMENT.			
UPPL55 -	55 GALLON PLASTIC LINER.			





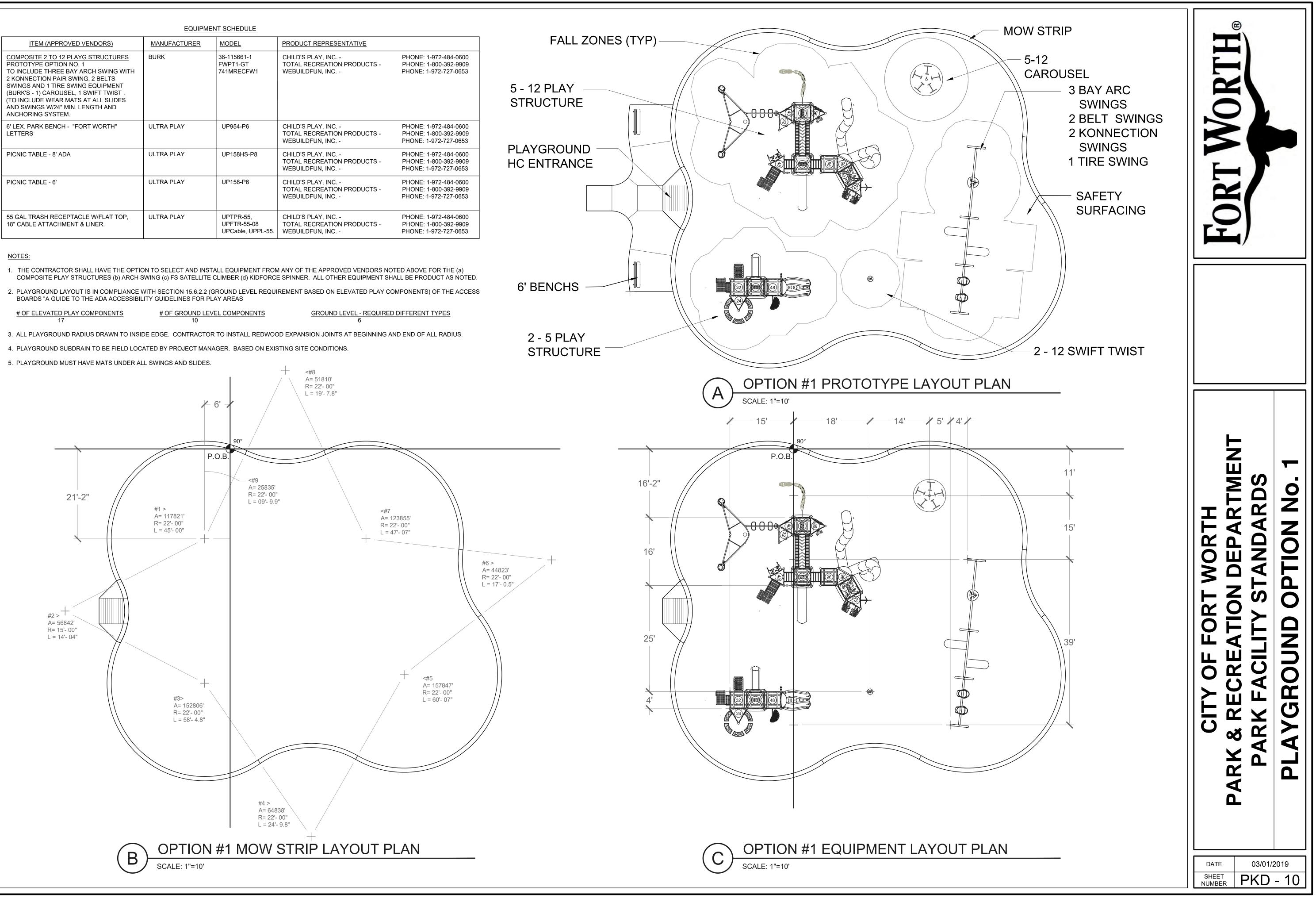






		IT SCHEDULE		
ITEM (APPROVED VENDORS)	MANUFACTURER	MODEL	PRODUCT REPRESENTATIVE	
COMPOSITE 2 TO 12 PLAYG STRUCTURES PROTOTYPE OPTION NO. 1 TO INCLUDE THREE BAY ARCH SWING WITH 2 KONNECTION PAIR SWING, 2 BELTS SWINGS AND 1 TIRE SWING EQUIPMENT (BURK'S - 1) CAROUSEL, 1 SWIFT TWIST . (TO INCLUDE WEAR MATS AT ALL SLIDES AND SWINGS W/24" MIN. LENGTH AND ANCHORING SYSTEM.	BURK	36-115661-1 FWPT1-GT 741MRECFW1	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHONE PHONE PHONE
6' LEX. PARK BENCH - "FORT WORTH" LETTERS	ULTRA PLAY	UP954-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHONE PHONE PHONE:
PICNIC TABLE - 8' ADA	ULTRA PLAY	UP158HS-P8	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHONE PHONE PHONE:
PICNIC TABLE - 6'	ULTRA PLAY	UP158-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHONE PHONE PHONE:
55 GAL TRASH RECEPTACLE W/FLAT TOP, 18" CABLE ATTACHMENT & LINER.	ULTRA PLAY	UPTPR-55, UPFTR-55-08 UPCable, UPPL-55.	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHONE PHONE PHONE:

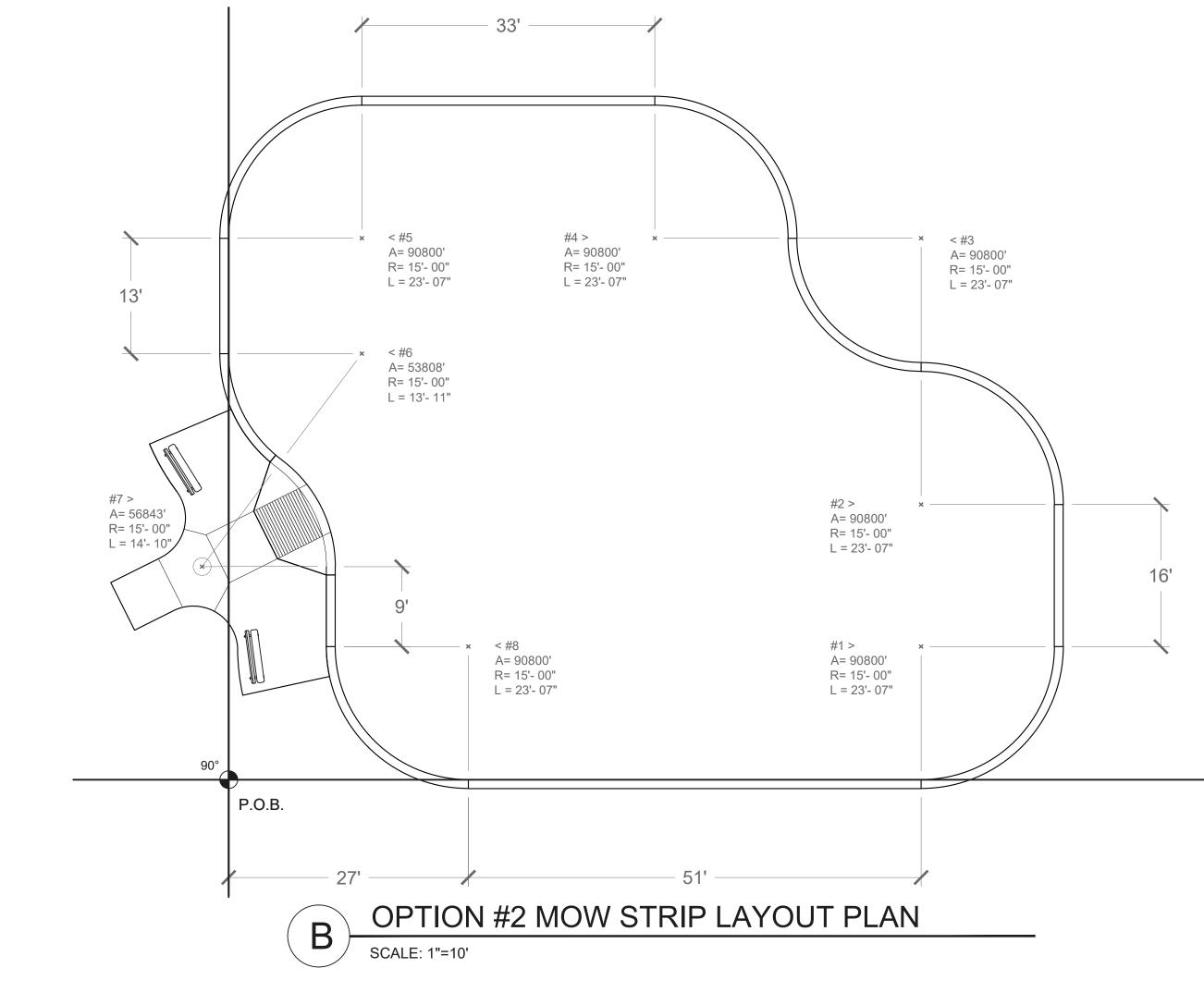
BOARDS "A GUIDE TO THE ADA ACCESSIBILITY GUIDELINES FOR PLAY AREAS

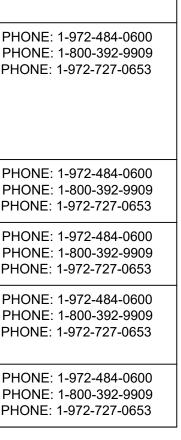


EQUIPMENT SCHEDULE				
ITEM (APPROVED VENDORS)	MANUFACTURER	MODEL	PRODUCT REPRESENTATIVE	
COMPOSITE 2 TO 12 PLAYG STRUCTURES PROTOTYPE OPTION NO. 2 TO INCLUDE THREE BAY ARCH SWING WITH 2 TOT, 2 BELTS, & 1 HC SWING, STAND ALONG EQUIPMENT (BURK'S - 1 ORBITRON, & 1KIDFORCE SPINNER)	BURK	36-115662-1 FWPT2-GT 741MRECFW2	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	F F F
6' LEX. PARK BENCH - "FORT WORTH" LETTERS	ULTRA PLAY	UP954-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	F F F
PICNIC TABLE - 8' ADA	ULTRA PLAY	UP158HS-P8	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	F F F
PICNIC TABLE - 6'	ULTRA PLAY	UP158-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	F F F
55 GAL TRASH RECEPTACLE W/FLAT TOP, 18" CABLE ATTACHMENT & LINER.	ULTRA PLAY	UPTPR-55, UPFTR-55-08 UPCable, UPPL-55.	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	F F F

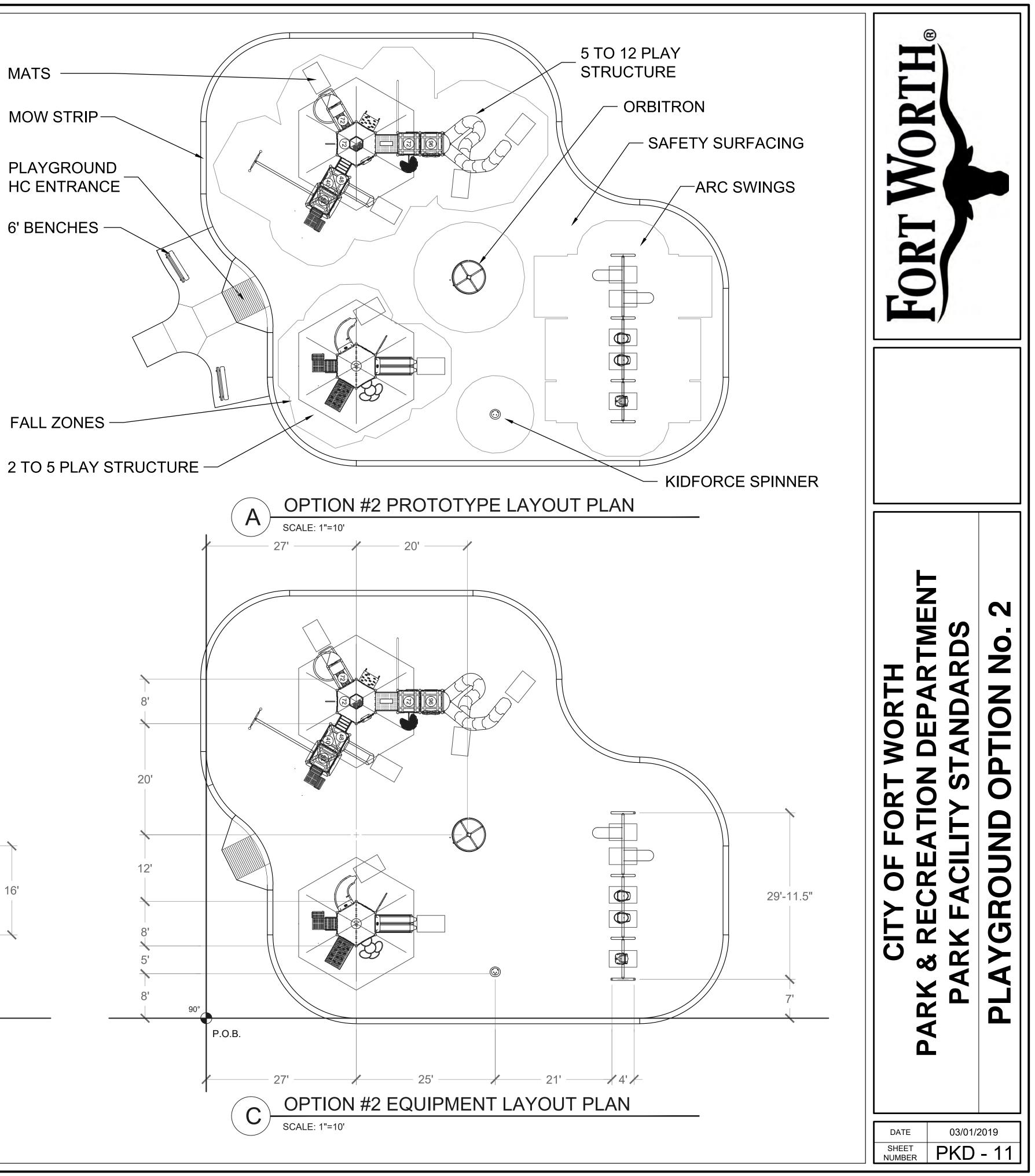
NOTES:

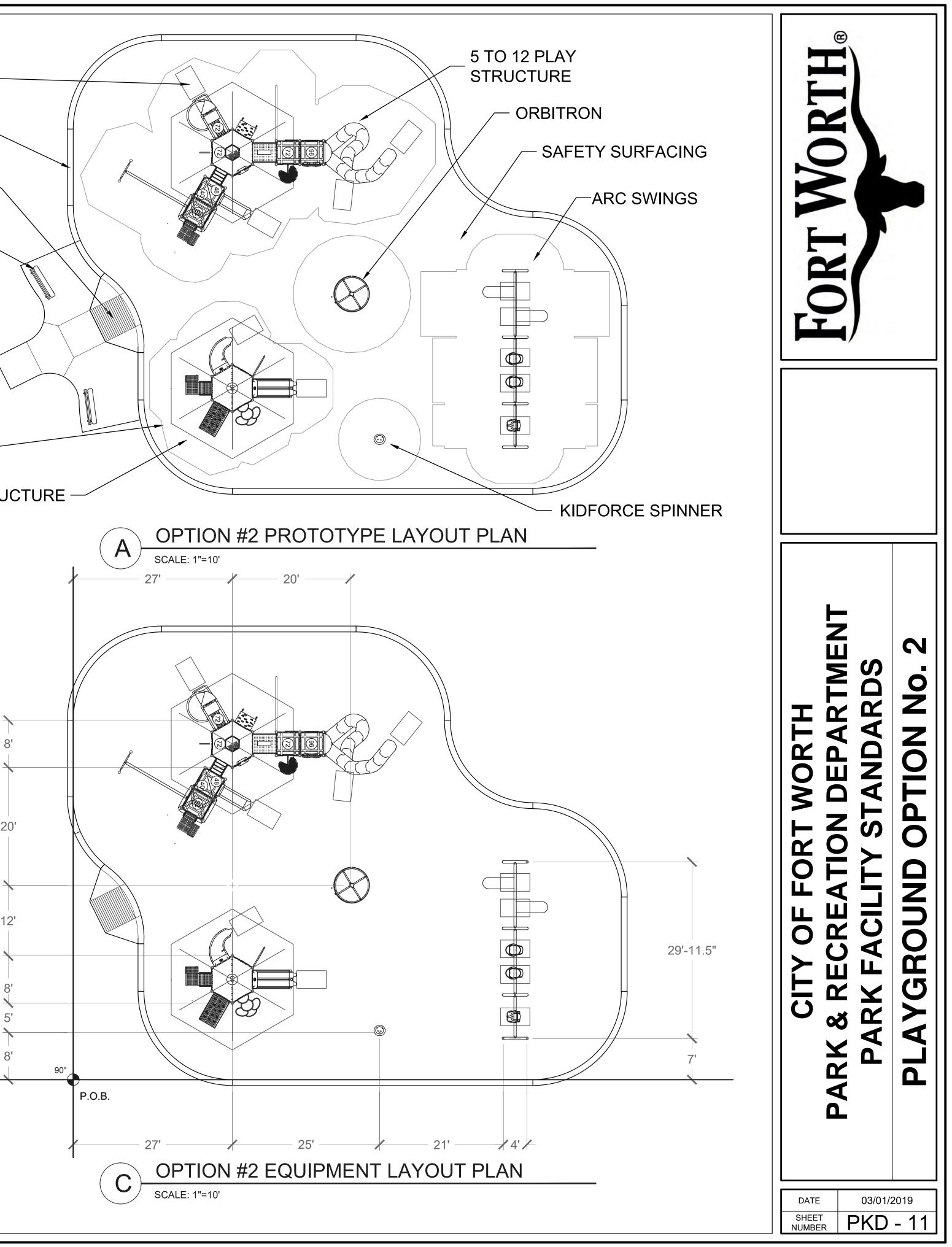
- 1. THE CONTRACTOR SHALL HAVE THE OPTION TO SELECT AND INSTALL EQUIPMENT FROM ANY OF THE APPROVED VENDORS NOTED ABOVE FOR THE (a) COMPOSITE PLAY STRUCTURES (b) ARCH SWING (c) FS SATELLITE CLIMBER (d) KIDFORCE SPINNER. ALL OTHER EQUIPMENT SHALL BE PRODUCT AS NOTED.
- 2. PLAYGROUND LAYOUT IS IN COMPLIANCE WITH SECTION 15.6.2.2 (GROUND LEVEL REQUIREMENT BASED ON ELEVATED PLAY COMPONENTS) OF THE ACCESS BOARDS "A GUIDE TO THE ADA ACCESSIBILITY GUIDELINES FOR PLAY AREAS
- # OF ELEVATED PLAY COMPONENTS 17
- # OF GROUND LEVEL COMPONENTS 10
- 3. ALL PLAYGROUND RADIUS DRAWN TO INSIDE EDGE. CONTRACTOR TO INSTALL REDWOOD EXPANSION JOINTS AT BEGINNING AND END OF ALL RADIUS.
- 4. PLAYGROUND SUBDRAIN TO BE FIELD LOCATED BY PROJECT MANAGER. BASED ON EXISTING SITE CONDITIONS.
- 5. PLAYGROUND MUST HAVE MATS UNDER ALL SWINGS AND SLIDES.





GROUND LEVEL - REQUIRED DIFFERENT TYPES

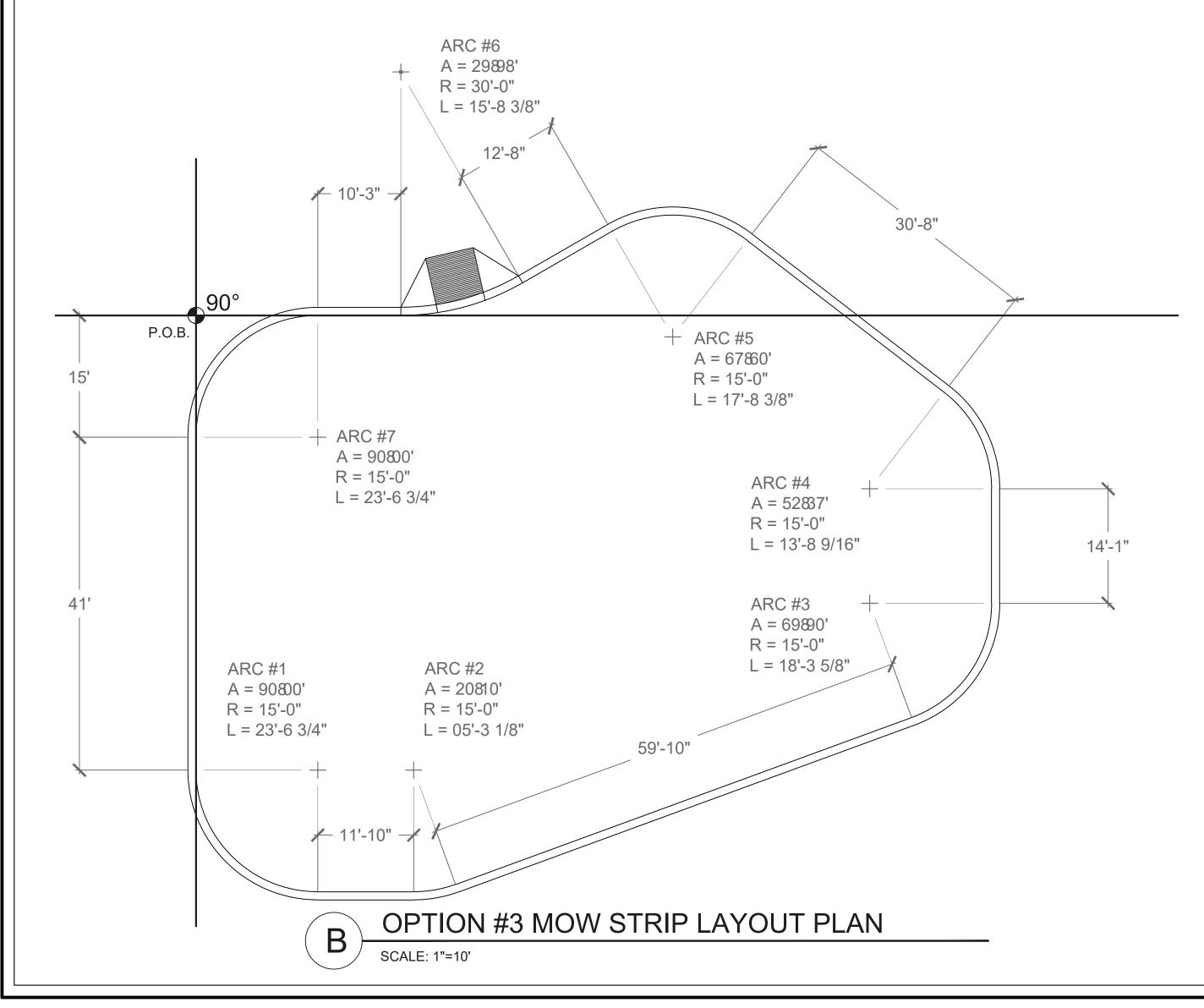


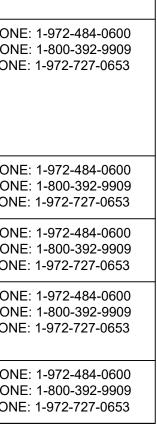


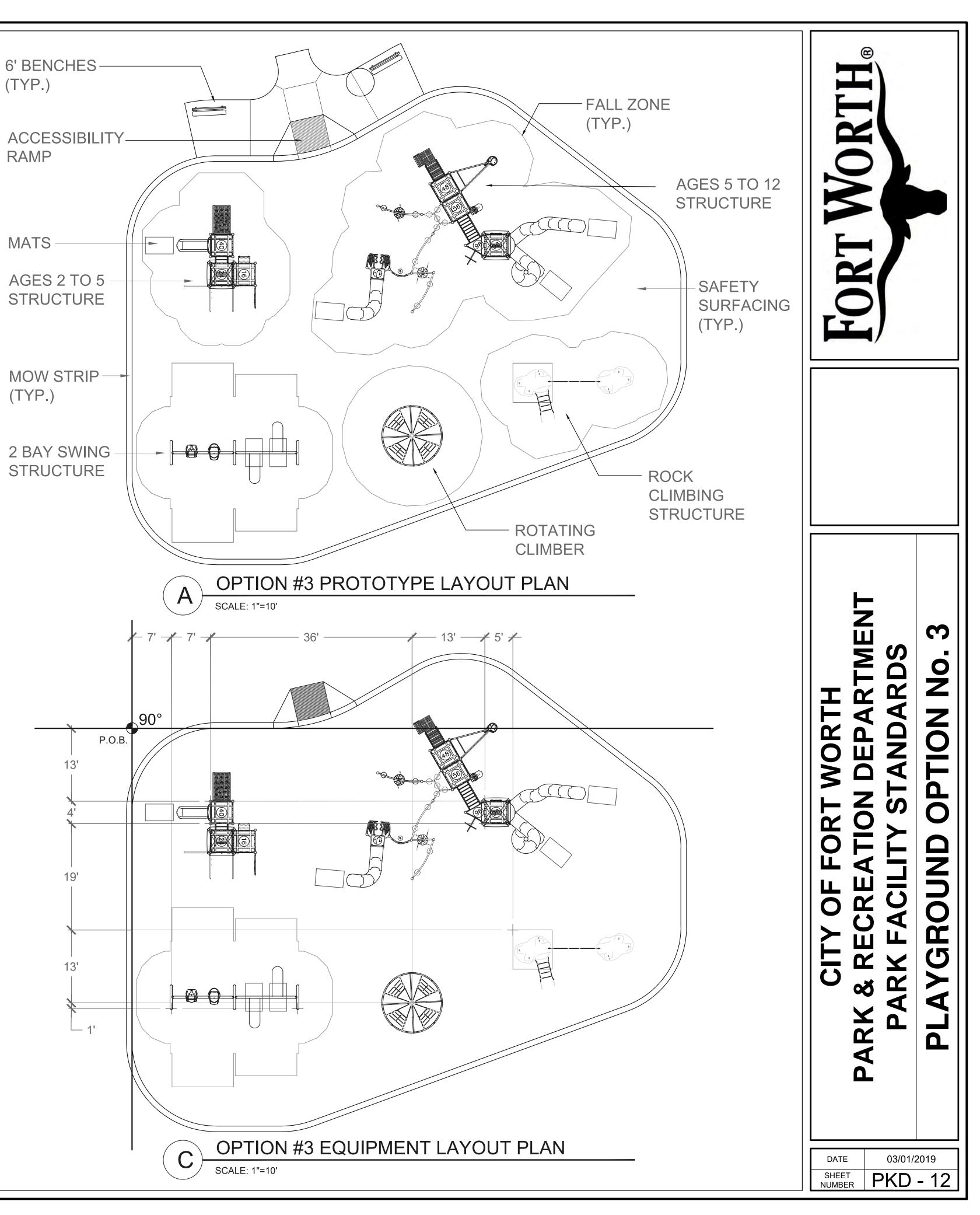
	EQUIPME		IT SCHEDULE	
ITEM (APPROVED VENDORS)	MANUFACTURER	MODEL	PRODUCT REPRESENTATIVE	
COMPOSITE 2 TO 12 PLAYG STRUCTURES PROTOTYPE OPTION NO. 3 TO INCLUDE TWO BAY ARCH SWING WITH 2 TOT, 2 BELTS, STAND ALONG EQUIPMENT (BURK'S - 1 ROTATING CLIMBER, & 2 FREE- STANDING NATUREPLAY ROCKVENTRUE BOULDERS.	BURK	36-115663-1 FWPT3-GT 741MRECFW3	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHON PHON PHON
6' LEX. PARK BENCH - "FORT WORTH" LETTERS	ULTRA PLAY	UP954-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHON PHON PHON
PICNIC TABLE - 8' ADA	ULTRA PLAY	UP158HS-P8	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHON PHON PHONI
PICNIC TABLE - 6'	ULTRA PLAY	UP158-P6	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHON PHON PHON
55 GAL TRASH RECEPTACLE W/FLAT TOP, 18" CABLE ATTACHMENT & LINER.	ULTRA PLAY	UPTPR-55, UPFTR-55-08 UPCable, UPPL-55.	CHILD'S PLAY, INC TOTAL RECREATION PRODUCTS - WEBUILDFUN, INC	PHON PHON PHON

NOTES:

- 1. THE CONTRACTOR SHALL HAVE THE OPTION TO SELECT AND INSTALL EQUIPMENT FROM ANY OF THE APPROVED VENDORS NOTED ABOVE FOR THE (a) COMPOSITE PLAY STRUCTURES (b) ARCH SWING (c) FS ROTATING CLIMBER (d) CLIMBING BOULDER. ALL OTHER EQUIPMENT SHALL BE PRODUCT AS NOTED.
- 2. PLAYGROUND LAYOUT IS IN COMPLIANCE WITH SECTION 15.6.2.2 (GROUND LEVEL REQUIREMENT BASED ON ELEVATED PLAY COMPONENTS) OF THE ACCESS BOARDS "A GUIDE TO THE ADA ACCESSIBILITY GUIDELINES FOR PLAY AREAS
- # OF ELEVATED PLAY COMPONENTS GROUND LEVEL - REQUIRED DIFFERENT TYPES **# OF GROUND LEVEL COMPONENTS** 14
- 3. ALL PLAYGROUND RADIUS DRAWN TO INSIDE EDGE. CONTRACTOR TO INSTALL REDWOOD EXPANSION JOINTS AT BEGINNING AND END OF ALL RADIUS.
- 4. PLAYGROUND SUBDRAIN TO BE FIELD LOCATED BY PROJECT MANAGER. BASED ON EXISTING SITE CONDITIONS.
- 5. PLAYGROUND MUST HAVE MATS UNDER ALL SWINGS AND SLIDES.







APPENDIX D

PARK FACILITY CONSTRUCTION SPECIFICATIONS

 City of Fort Worth Standard Construction Specification Documents – Table of Contents

These specifications can be downloaded at the following link: <u>https://projectpoint.buzzsaw.com/_bz_rest/Web/Home/Index?folder=3733</u> 1#/ bz_rest/Web/Item/Items?folder=180863

2. Park & Recreation Department Standard Specifications

11 68 13	Playground Equipment
26 56 00	Exterior Lighting
32 18 16.13	Playground Protective Surfacing
32 33 00	Site Furnishings
33 46 00	Subdrainage Piping

SECTION 00 00 00

TABLE OF CONTENTS

[*Text in Blue is for information or guidance. Remove all blue text in the project final document.*] **Division 00 - General Conditions**

- 00 05 10 Mayor and Council Communication
- 00 05 15 Addenda
- 00 11 13 Invitation to Bidders
- 00 21 13 Instructions to Bidders
- 00 31 15 Engineer Project Schedule
- 00 32 15 Construction Project Schedule
- 00 35 13 Conflict of Interest Affidavit
- 00 41 00 Bid Form
- 00 42 43 Proposal Form Unit Price
- 00 43 13 Bid Bond
- 00 43 37 Vendor Compliance to State Law Nonresident Bidder
- 00 45 11 Bidders Prequalifications
- 00 45 12 Prequalification Statement
- 00 45 13 Bidder Prequalification Application
- 00 45 26 Contractor Compliance with Workers' Compensation Law
- 00 45 40 Minority Business Enterprise Goal
- 00 45 41 Small Business Enterprise Goal
- 00 52 43 Agreement
- 00 61 13 Performance Bond
- 00 61 14 Payment Bond
- 00 61 19 Maintenance Bond
- 00 61 25 Certificate of Insurance
- 00 72 00 General Conditions
- 00 73 00 Supplementary Conditions

Division 01 - General Requirements [Include appropriate Sections below. Delete or strike-thru if not used.]

- 01 11 00 Summary of Work
- 01 25 00 Substitution Procedures
- 01 31 19 Preconstruction Meeting
- 01 31 20 Project Meetings
- 01 32 16 Construction Progress Schedule
- 01 32 33 Preconstruction Video
- 01 33 00 Submittals
- 01 35 13 Special Project Procedures
- 01 45 23 Testing and Inspection Services
- 01 50 00 Temporary Facilities and Controls
- 01 55 26 Street Use Permit and Modifications to Traffic Control
- 01 57 13 Storm Water Pollution Prevention Plan
- 01 58 13 Temporary Project Signage
- 01 60 00 Product Requirements
- 01 66 00 Product Storage and Handling Requirements
- 01 70 00 Mobilization and Remobilization
- 01 71 23 Construction Staking and Survey
- 01 74 23 Cleaning

- 01 77 19 Closeout Requirements
- 01 78 23 Operation and Maintenance Data
- 01 78 39 Project Record Documents

Technical Specifications which have been modified by the Engineer specifically for this Project; hard copies are included in the Project's Contract Documents

[List only specifications which have been modified for this specific project]

Division 02 - Existing Conditions [Include appropriate Sections below. Delete or strike-thru if not used.]

- 02 41 13 Selective Site Demolition
- 02 41 14 Utility Removal/Abandonment
- 02 41 15 Paving Removal

Division 03 - Concrete [Include appropriate Sections below. Delete or strike-thru if not used.]

- 03 30 00 Cast-In-Place Concrete
- 03 34 13 Controlled Low Strength Material (CLSM)
- 03 34 16 Concrete Base Material for Trench Repair
- 03 80 00 Modifications to Existing Concrete Structures

Division 26 - Electrical [Include appropriate Sections below. Delete or strike-thru if not used.]

- 26 05 00 Common Work Results for Electrical
- 26 05 10 Demolition for Electrical Systems
- 26 05 33 Raceways and Boxes for Electrical Systems
- 26 05 43 Underground Ducts and Raceways for Electrical Systems

Division 31 - Earthwork [Include appropriate Sections below. Delete or strike-thru if not used.]

- 31 10 00 Site Clearing
- 31 23 16 Unclassified Excavation
- 31 23 23 Borrow
- 31 24 00 Embankments
- 31 25 00 Erosion and Sediment Control
- 31 36 00 Gabions
- 31 37 00 Riprap

Division 32 - Exterior Improvements [Include appropriate Sections below. Delete or strike-thru if

- not used.]
- 32 01 17 Permanent Asphalt Paving Repair
- 32 01 18 Temporary Asphalt Paving Repair
- 32 01 29 Concrete Paving Repair
- 32 11 23 Flexible Base Courses
- 32 11 29 Lime Treated Base Courses
- 32 11 33 Cement Treated Base Courses
- 32 11 37 Liquid Treated Soil Stabilizer
- 32 12 16 Asphalt Paving
- 32 12 73 Asphalt Paving Crack Sealants
- 32 13 13 Concrete Paving
- 32 13 20 Concrete Sidewalks, Driveways and Barrier Free Ramps
- 32 13 73 Concrete Paving Joint Sealants
- 32 14 16 Brick Unit Paving

- 32 16 13 Concrete Curb and Gutters and Valley Gutters
- 32 17 23 Pavement Markings
- 32 17 25 Curb Address Painting
- 32 31 13 Chain Fences and Gates
- 32 31 26 Wire Fences and Gates
- 32 31 29 Wood Fences and Gates
- 32 32 13 Cast-in-Place Concrete Retaining Walls
- 32 91 19 Topsoil Placement and Finishing of Parkways
- 32 92 13 Hydro-Mulching, Seeding, and Sodding
- 32 93 43 Trees and Shrubs

Division 33 - Utilities [Include appropriate Sections below. Delete or strike-thru if not used.]

- 33 01 30 Sewer and Manhole Testing
- 33 01 31 Closed Circuit Television (CCTV) Inspection
- 33 03 10 Bypass Pumping of Existing Sewer Systems
- 33 04 10 Joint Bonding and Electrical Isolation
- 33 04 11 Corrosion Control Test Stations
- 33 04 12 Magnesium Anode Cathodic Protection System
- 33 04 30 Temporary Water Services
- 33 04 40 Cleaning and Acceptance Testing of Water Mains
- 33 04 50 Cleaning of Sewer Mains
- 33 05 10 Utility Trench Excavation, Embedment, and Backfill
- 33 05 12 Water Line Lowering
- 33 05 13 Frame, Cover and Grade Rings-Cast Iron
- 33 05 13.01 Frame, Cover and Grade Rings-Composite
- 33 05 14 Adjusting Manholes, Inlets, Valve Boxes, and Other Structures to Grade
- 33 05 16 Concrete Water Vaults
- 33 05 17 Concrete Collars
- 33 05 20 Auger Boring
- 33 05 21 Tunnel Liner Plate
- 33 05 22 Steel Casing Pipe
- 33 05 23Hand Tunneling
- 33 05 24 Installation of Carrier Pipe in Casing or Tunnel Liner Plate
- 33 05 26 Utility Markers/Locators
- 33 05 30 Location of Existing Utilities
- 33 11 05 Bolts, Nuts, and Gaskets
- 33 11 10 Ductile Iron Pipe
- 33 11 11 Ductile Iron Fittings
- 33 11 12 Polyvinyl Chloride (PVC) Pressure Pipe
- 33 11 13 Concrete Pressure Pipe, Bar-Wrapped, Steel Cylinder Type
- 33 11 14 Buried Steel Pipe and Fittings
- 33 12 10 Water Services 1-inch to 2-inch
- 33 12 11 Large Water Meters
- 33 12 20Resilient Seated Gate Valve
- 33 12 21AWWA Rubber-Seated Butterfly Valves
- 33 12 25Connection to Existing Water Mains
- 33 12 30 Combination Air Valve Assemblies for Potable Water Systems
- 33 12 40Fire Hydrants
- 33 12 50Water Sample Stations
- 33 12 60 Standard Blow-off Valve Assembly

- 33 31 12Cured in Place Pipe (CIPP)
- 33 31 13 Fiberglass Reinforced Pipe for Gravity Sanitary Sewers
- 33 31 15 High Density Polyethylene (HDPE) Pipe for Sanitary Sewer
- 33 31 20 Polyvinyl Chloride (PVC) Gravity Sanitary Sewer Pipe
- 33 31 21 Polyvinyl Chloride (PVC) Closed Profile Gravity Sanitary Sewer Pipe
- 33 31 22 Sanitary Sewer Slip Lining
- 33 31 23 Sanitary Sewer Pipe Enlargement
- 33 31 50 Sanitary Sewer Service Connections and Service Line
- 33 31 70 Combination Air Valve for Sanitary Sewer Force Mains
- 33 39 10 Cast-in-Place Concrete Manholes
- 33 39 20Precast Concrete Manholes
- 33 39 30Fiberglass Manholes
- 33 39 40 Wastewater Access Chamber (WAC)
- 33 39 60Epoxy Liners for Sanitary Sewer Structures
- 33 41 10 Reinforced Concrete Storm Sewer Pipe/Culverts
- 33 41 11 High Density Polyethylene (HDPE) Pipe for Storm Drain
- 33 41 12Reinforced Polyethlene (SRPE) Pipe
- 33 46 00 Subdrainage
- 33 46 01 Slotted Storm Drains
- 33 46 02 Trench Drains
- 33 49 10 Cast-in-Place Manholes and Junction Boxes
- 33 49 20Curb and Drop Inlets
- 33 49 40Storm Drainage Headwalls and Wingwalls

Division 34 - Transportation [Include appropriate Sections below. Delete or strike-thru if not used.]

- 34 41 10Traffic Signals
- 34 41 10.01 Attachment A Controller Cabinet
- 34 41 10.02 Attachment B Controller Specification
- 34 41 10.03 Attachment C Software Specification
- 34 41 11 Temporary Traffic Signals
- 34 41 13 Removing Traffic Signals
- 34 41 15 Rectangular Rapid Flashing Beacon
- 34 41 16Pedestrian Hybrid Signal
- 34 41 20 Roadway Illumination Assemblies
- 34 41 20.01 Arterial LED Roadway Luminaires
- 34 41 20.02 Freeway LED Roadway Luminaires
- 34 41 20.03 Residential LED Roadway Luminaires
- 34 41 30 Aluminum Signs
- 34 71 13Traffic Control

Technical Specifications listed below are included for this Project by reference and can be viewed/downloaded from the City's Buzzsaw site at:

htps://projectpoint.buzzsaw.com/client/fortworthgov/Resources/02%20-%20Construction%20Documents/Specifications

[Only list Specifications which the Engineer has determined are appropriate for this specific project]

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33 04 12	Magnesium Anode Cathodic Protection System
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- 34 41 20.03 Residential LED Roadway Luminaires
- 34 41 30 Aluminum Signs
- 34 71 13 Traffic Control

[Appendix to be included for all projects]

Appendix [Include appropriate Sections below. Delete or strike-thru if not used.] GC-4.01 Availability of Lands GC-4.02 Subsurface and Physical Conditions GC-4.04 **Underground Facilities** GC-4.06 Hazardous Environmental Condition at Site Minority and Women Owned Business Enterprise Compliance GC-6.06.D Wage Rates GC-6.07 GC-6.09 Permits and Utilities Nondiscrimination GC-6.24 **Product Requirements** GR-01 60 00

END OF SECTION

1		SECTION 11 68 13					
2		PLAYGROUND EQUIPMENT					
3	PAF	RT 1 - GENERAL					
4	1.1	SUMMARY					
5		A. Section Includes:					
6		1. Composite Playground Structure					
7		2. Rope Climber					
8		3. Spring Rider					
9		4. Swing Structure					
10		B. Related Specification Sections include but are not necessarily limited to					
11		1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the					
12		Contract.					
12		 Division 1 - General Requirements. 					
13		 Section 11 68 13 - Site Furnishings 					
14		 Section 11 68 15 - Site Fullishings Section 11 68 16 - Wood Fiber Playground Surfacing 					
15		 Section 11 08 10 - Wood Floer Playground Surfacing Section 32 13 13 - Concrete Paving 					
		5. Section 52 15 15 - Concrete Paving					
17 18	1.2	PRICE AND PAYMENT PROCEDURES					
18 19	1.4	A. Measurement and Payment					
20		1. Measurement					
20 21							
21		a. Measurement for this Item shall be lump sum complete in place 2. Payment					
22		5					
		a. The work performed and the materials furnished in accordance with this					
24 25		Item shall be paid for at the unit price bid per lump sum					
25 26		3. The price bid shall include:					
26		a. Furnishing and installing the specified Inlet					
27		b. Mobilization					
28		c. Excavation					
29		d. Hauling					
30		e. Disposal of excess materials					
31		f. Excavation, forming, backfill and compaction of footings					
32		g. Concrete					
33		h. Reinforcing steel					
34	1 2	i. Clean-up					
35	1.3						
36		A. Abbreviations and Acronyms					
37		1. CPSC – U.S. Consumer Product Safety Commission					
38		2. IPEMA - International Play Equipment Manufacturers Association					
39		3. TAS – Texas Accessibility Standard					
40		4. TDLR – Texas Department of Licensing and Regulation					
41		B.Reference Standards					
42		1. ASTM Designation F1487 (Standard Consumer Safety Performance Specification					
43		2. ASTM Designation F1487 (Standard Consumer Safety Performance Specification					
44	1.4	for Playground Equipment for Public Use)					
45	1.4	ADMINISTRATIVE REQUIREMENTS [NOT USED]					
46	1.5	SUBMITTALS					
47		A. Submittals shall be in accordance with Section 01 33 00					
48		B. Submittals must be received and approved by the Project Manager prior to ordering					
49		equipment.					
50	1.6	ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS					

1		A. The Contractor shall be required to submit a Safety Plan indicating the use of
2		temporary construction fencing, signage and barriers necessary to prevent park
3		users from utilizing unfinished equipment for Owner approval at the Pre-
4		Construction meeting.
5		B. Submit manufacturers' documentation of product compliance with CPSC and ASTM
6		F1487 Standards including:
7		1. All paints and other similar finishes must meet the current CPSC regulation for lead
8		in paint (0.06 percent maximum lead by dry weight).
9		2. Regardless of the material or the treatment process, the manufacturer shall ensure
10		that the users of the playground equipment cannot ingest, inhale, or absorb any
11		potentially hazardous amounts of substances through body surfaces as a result of
12		contact with the equipment.
13	1.7	CLOSEOUT SUBMITTALS
14		A. Submittals Prior to Project Acceptance – Contractor shall submit all manufacturers'
15		literature to the Project Manager prior to acceptance of the project. This shall include:
16		1. Operation and Maintenance Manuals
17		2. Warranty/Guarantee Documentation
18	1.8	MAINTENANCE MATERIAL SUBMITTALS
19		A. Spare Parts
20		B. Extra Stock Materials
21		C. Tools
22	1.9	QUALITY ASSURANCE
23		A. Qualifications
24		1. Manufacturers
25		2. Suppliers
26		3. Fabricators
27		4. Installers / Applicators / Erectors
28		5. Testing Agencies
29		6. Licensed Professionals
30		B. Certifications
31		C. Preconstruction Testing
32		D. Field [Site] SamplesE. Mock-ups
33 34	1 10	DELIVERY, STORAGE, AND HANDLING
35	1.10	A. Protect from inclement weather: wet, damp, extreme heat or cold.
36		B. Store in a manner to prevent warpage, bowing or damage.
37		C. The Contractor will not be allowed to deliver on site and install any playground
38		equipment until grading, mow strip, subsurface drainage and all other hardscape items
39		have been installed and approved by the Project Manager. The Contractor will be
40		required to remove any equipment from the site at own expense and at no additional
41		contract time if found to be in non-compliance to this specification note.
42	1.11	WARRANTY
43		A. Per manufacture specifications.
44	PAR	T 2 - PRODUCTS
45	2.1	OWNER-FURNISHED PRODUCTS [NOT USED]
46	2.2	EQUIPMENT
47		A. Manufacturers
48		1. Approved play component structures for the selected playground prototype option
49		and ancillary equipment are listed in the Materials List in the plans.

1			SORIES [NOT			
2	2.4					
3			XECUTION			
4		EXAMINATION [NOT USED]				
5	3.2	INSTALLERS				
6		A. Subs	titution Limitat	ions		
7	3.3	PREPA	RATION			
8		A. Gene	eral:			
9		1. N	Mark paving rer	noval limits for City approval prior to beginning removal.		
10		2. I	dentify known	utilities below grade - Stake and flag locations.		
11	3.4	INSTAL	LATION			
12		A. GEN	ERAL: All iter	ms shall be supplied by Contractor and installed as per		
13		manu	ufacturer's recon	mmendations.		
14				INGS: The finished grade of all concrete footings shall be set a		
15		mini	mum twelve inc	thes below the finish grade of surfacing material.		
16		C. FAS	TENERS: All 1	nuts and bolts shall be upset and tack welded to prevent disassembly		
17		on al	l equipment tha	t is not installed with specialized fasteners.		
18	3.5	REPAIF	R [NOT USED]			
19	3.6	RE-INSTALLATION				
20		A. FALL ZONES: Contractor shall verify all fall zone clearances onsite prior to				
21		installing the equipment. Notify the Landscape Architect of any conflicts or				
22		discrepancies. The Contractor will be required to remove and reinstall any mow				
23	strips / hardscape at own expense and at no additional contract time if fall zone					
24		discrepancies are found and require remedy.				
25	3.7	3.7 FIELD QUALITY CONTROL [NOT USED]				
26	3.8	SYSTEN	M STARTUP [NOT USED]		
27	3.9	3.9 ADJUSTING [NOT USED]				
28		3.10 CLEANING [NOT USED]				
29	3.11 CLOSEOUT ACTIVITIES [NOT USED]					
30	3.12 PROTECTION [NOT USED]					
31	3.13 MAINTENANCE [NOT USED]					
32	3.14 ATTACHMENTS [NOT USED]					
33				END OF SECTION		
34						
				Revision Log		
	DATE		NAME	SUMMARY OF CHANGE		

35

1		SECTION 26 56 00		
2 3	EXTERIOR LIGHTING			
3 4	PART 1 - GENERAL 1.1 SUMMARY			
4 5	1.1 5	A. Section Includes		
6		1. Exterior luminaires and accessories		
7		2. Lamps		
8		3. Ballasts		
9		4. Poles		
10		5. Concrete foundations		
11		6. Conduit and wiring		
12		7. Lighting controls		
13		8. Luminaire ballast fuses.		
14	1.2	ENVIRONMENTAL REQUIREMENTS		
15		A. Provide luminaires, lamps, and ballasts suitable for operation at an		
16		elevation of 7500 feet above sea level and in the environment in which		
17		they will be used.		
18		B. Provide poles suitable for use with a basic wind speed of 90 miles per		
19		hour.		
20		C. Provide finishes on poles and luminaires that are resistant to color change		
21		and chalking in the ultraviolet exposure at an elevation of 7500 feet		
22		above sea level.		
23	1.3	DEFINITIONS		
24		A. Unless otherwise specified or indicated, terms used in this Section are as		
25		defined in the National Electrical Code or the IESNA Lighting		
26		Handbook.		
27	1.4	SUBMITTALS		
28		A. Submit the following in accordance with <u>Section 01 33 00</u> , Submittal		
29		Procedures.		
30		1. Catalog Data: Submit catalog data describing poles, luminaires,		
31		lamps, and ballasts. Include data substantiating that materials comply		
32		with specified requirements. Arrange data for luminaires in the order		
33 34		of luminaire designation.2. Performance Curves/Data: Submit certified photometric data for		
34 35		2. Performance Curves/Data: Submit certified photometric data for each type of luminaire.		
36		 Shop Drawings: Submit manufacturer's drawings for non-standard 		
30 37		luminaires.		
38		4. Maintenance Data: Submit maintenance instructions for inclusion in		
39		the operations and maintenance manuals.		
40	1.5	QUALITY ASSURANCE		
41		A. Comply with the National Electrical Code (NEC) for components and		
42		installation.		
43		B. Comply with the New Mexico Night Sky Protection Act.		
44		C. Provide luminaires listed and labeled by a nationally recognized testing		
45		laboratory (NRTL) for the application, installation condition, and the		
46		environments in which installed.		

1 2 3		D.	Use manufacturers that are experienced in manufacturing poles, luminaires, lamps and ballasts similar to those indicated for this Project and have a record of successful in-service performance.
4	1.6	EXTRA	A MATERIALS
5	1.0	A.	Furnish the following extra materials matching products installed.
6		Δ.	Package with protective covering for storage and identify with labels
7			describing contents.
8			1. Provide 5 percent of quantity of high intensity discharge (HID)
9			lamps of each type, but no fewer than two lamps of each type.
10			 Provide 1 percent of quantity of ballasts of each type, but not less
10			than one of each type.
12	1.7	RECEI	VING, STORING AND PROTECTING
12	1.7	A.	Receive, inspect, handle, and store products according to the
15 14		А.	manufacturer's written instructions and NECA/IESNA 501,
14 15			Recommended Practice for Installing Exterior Lighting Systems.
	PART	2 DD(DUCTS
16			JCT OPTIONS AND SUBSTITUTIONS
17	2.1		
18		А.	Alternate products may be accepted; follow Section 01 2500 Substitution Procedures.
19 20	2.2	FINISH	
20	2.2		
21		А.	Furnish luminaires, poles, and accessories with finishes that are resistant
22			to fading, chalking, and other changes due to aging and exposure to heat
23			and ultraviolet light. Acceptable finishes for metals are:
24 25			 Hot-dipped galvanized steel per ASTM A 123/A 123M. Brushed natural aluminum
25			
26			3. Anodized aluminum per AAMA 611, Voluntary Specification for
27			Anodized Architectural Aluminum, Class I.
28			4. Polyester TGIC powder coat per AAMA 2604, Voluntary
29			Specification, Performance Requirements and Test Procedures for
30			High Performing Organic Coatings on Aluminum Extrusions and
31			Panels over chrome phosphate conversion coated aluminum.
32			5. Polyester TGIC powder coat per AAMA 2604, Voluntary
33			Specification, Performance Requirements and Test Procedures for
34 25			High Performing Organic Coatings on Aluminum Extrusions and
35		D	Panels over zinc phosphate conversion coated shot-blasted steel.
36		В.	Reject luminaires, poles, and accessories with finish having runs, streaks,
37		C	stains, holidays and defects.
38		C.	Replace luminaires, poles, and accessories showing evidence of
39			yellowing, fading, chalking, and other changes indicating failure during
40		D	warranty period.
41	0.0	D. Evted	Use stainless steel for exposed hardware.
42	2.3		RIOR LUMINAIRES
43		А.	Furnish exterior luminaires that comply with requirements specified in this Section and in the luminaire schedule on the Drawings
44		P	this Section and in the luminaire schedule on the Drawings.
45		В.	Furnish metal parts free from burrs and sharp corners and edges.

1			Furnish sheet metal components fabricated from corrosion-resistant
2			aluminum, formed and supported to prevent sagging and warping.
3			Provide doors and frames that are smooth operating and free from light
4			leakage under operating conditions.
5		1	
6		2	
7			accidental falling during relamping and when secured in the
8			operating position.
9		3	e i e
10			Provide luminaires with minimum reflecting surface reflectance as
11			follows unless scheduled otherwise:
12		1	1
13		2	1 1
14		3	
15			Provide lenses, diffusers, covers and globes as scheduled on the
16			Drawings fabricated from materials that are resistant to yellowing and
17			other changes due to aging or exposure to heat and ultraviolet radiation.
18			Provide resilient gaskets in doors that are heat-resistant and aging-
19			resistant to seal and cushion lens and refractor.
20			Provide high intensity discharge (HID) luminaries that conform to UL
21	~ (1598 - Luminaires.
22	2.4		RESSURE SODIUM LAMPS
23			Furnish high pressure sodium lamps that comply with requirements
24			specified below and the luminaire schedule on the Drawings.
25			Furnish lamps that conform to ANSI Standards, C78.42 Guidelines for
26			High-Pressure Sodium Lamps.
27	0.5		Manufacturers: General Electric, North American Phillips, Sylvania
28	2.5		RESSURE SODIUM LAMP BALLASTS
29			Provide high pressure sodium (HPS) lamp ballasts with associated
30			capacitors and ignitors that comply with requirements specified below for
31			lamps specified in this Section and in the luminaire schedule on the
32			Drawings.
33			Conform to UL 1029 - High-Intensity-Discharge Lamp Ballasts and
34			ANSI C82.4 - Ballasts for High-Intensity-Discharge and Low-Pressure
35			Sodium Lamps.
36			Provide HPS ballasts with the following circuit types:
37		1	
38		2	autotransformer – high power factor (HX-HPF).
39		2	
40		D	(CWA).
41			Provide core and coil ballasts constructed with class H or higher
42			insulation system that is vacuum impregnated with a 100 percent solids-
43			based resin. Polleste shall he designed te energite for et least 180 aveles of 12 hours
44 45			Ballasts shall be designed to operate for at least 180 cycles of 12 hours
45			off and 12 hours on, with lamp in an open or a short-circuited condition
46		,	without undue reduction in ballast life.

1	F.	Provide ballast and ignitor combination that will reliably start HPS lamp
2		to -40 C.
3		1. Provide HPS ballasts with a solid-state ignitor/starter or accessory
4		that will automatically deactivate if a lamp arc cannot be initiated
5		after 10 to 12 minutes.
6		2. Where scheduled on the Drawings, provide HPS ballasts for 150
7		watt and smaller lamps with an instant re-strike starter that will
8		generate a multiple pulse to re-strike lamp arc after a momentary
9		power interruption.
10	G.	Provide oil-filled capacitors having metal cans and circuit interrupter
11		devices to prevent catastrophic failure. Provide bleeder resistor with each
12		capacitor
13	H.	Manufacturer: GE Lighting
14	2.6 POLES	S AND ACCESSORIES
15	********	***************************************
16	********	**********
. –		
17	NOTE: Edit th	e following articles to match project requirements.
18	*****	************************
19	*********	*********
20	А.	Furnish poles and accessories that comply with requirements specified in
21		this Section and the luminaire schedule on the Drawings.
22	В.	Conform to AASHTO LTS-4 Standard Specifications for Structural
23		Supports for Highway Signs, Luminaires and Traffic Signals, including
24		interim revisions.
25	C.	Provide pole, base and anchorage rated to carry the luminaires, supports,
26		and appurtenances at the indicated height above grade without deflection
27		or whipping with a basic wind speed of 90 mph.
28	D.	Provide mountings, fastenings and other appurtenances fabricated from
29		corrosion-resistant materials that are compatible with poles and
30		luminaires and will not cause galvanic action at contact points. Provide
31		mountings that will correctly position luminaires to provide scheduled
32		light distribution.
33	E.	Provide reinforced access handhole in wall of each metal pole.
34	F.	Provide a welded 1/2 inch grounding lug in each metal pole, accessible
35		through the handhole.
36	G.	Provide metal poles with anchor type bases and galvanized steel anchor
37		bolts, leveling nuts and bolt covers.
38	Н.	Where poles are indicated are indicated as "breakaway" type on the
39		Drawings, provide each pole with a frangible aluminum transformer base
40		that meets the requirements of AASHTO LTS-4.
41	I.	Provide each non-breakaway metal pole with a metal base cover that
42		covers the entire base plate and anchorage.
43		

1	***************************************			
2	******			
3 4	NOTE: Edit the following article to match project requirements; delete if steel poles are not used.			
5 6	***************************************			
7 8 9 10 11 12 13 14 15 16 17 18 19	 J. Provide steel poles that are fabricated from tubing conforming to ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psi. 1. Poles shall be one-piece construction up to 40 feet in length. 2. Poles over 40 feet in length may be in two or more sections with overlapping joints. 3. Provide steel poles with [hot dipped galvanized finish per ASTM A 123.][polyester TGIC powder coat per AAMA 2604, Voluntary Specification, Performance Requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels with color as scheduled on the Drawings over zinc phosphate conversion coated shot-blasted steel.] 			
20 21	NOTE: Edit the following article to match project requirements; delete if tapered aluminum poles are not used.			
22 23	***************************************			
24 25 26 27 28 29 30 31 32 33	 K. Provide tapered aluminum poles that are fabricated from 5052-H34 alloy and conform to ASTM 13209. 1. Provide aluminum poles with [anodized finish per AAMA 611, Voluntary Specification for Anodized Architectural Aluminum, Class I, with color as scheduled on the Drawings.][polyester TGIC powder coat per AAMA 2604, Voluntary Specification, Performance Requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels, with color as scheduled on the Drawings.]] 			

1	*******			
2	***********			
3	NOTE: Edit the following article to match project requirements; delete if straight			
4	aluminum poles are not used.			
5	*************************************			
6	********************			
7	L. Provide straight aluminum poles that are fabricated from 6063-T6 alloy			
8 9	and conform to ASTM B 429 - Standard Specification of Aluminum- Alloy Extruded Structural Pipe and Tube.			
10	1. Provide aluminum poles with [anodized finish per AAMA 611,			
11	Voluntary Specification for Anodized Architectural Aluminum,			
12	Class I, with color as scheduled on the Drawings.][polyester TGIC			
13	powder coat per AAMA 2604, Voluntary Specification, Performance			
14	Requirements and Test Procedures for High Performing Organic			
15	Coatings on Aluminum Extrusions and Panels, with color as scheduled on the Drawings over chrome phosphate conversion			
16 17	coating.]			
18	coanng.] ************************************			
19	*****			
20 21	NOTE: Edit the following article to match project requirements; delete if wood poles are not used.			
22	***************************************			
23	************			
24	M. Provide pressure treated wood poles that conform to ATIS Standard			
25	O5.1, Specifications and Dimensions (for Wood Poles).			
26	1. Treatment material shall be copper naphthenate.			
27	2. Treatment shall conform to AWPA C4, Poles - Preservative			
28 29	 Treatment, Pressure Processes for the wood species used. Bore, roof and gain poles before treatment. 			
29 30	5. Dole, foor and gain poles before iteament. ************************************			
30 31	************			
32	NOTE: Edit the following article to match project requirements; delete if steel mast arms			
33	are not used.			
34	*******************************			
35	*****************			
36	N. Provide steel mast arms that are fabricated from 2 inch pipe, continuously			
37	welded to pole attachment plate and have span and rise as indicated on			
38	the Drawings. Provide with same finish as pole.			

1 2	***************************************			
3 4	NOTE: Edit the following article to match project requirements; delete if aluminum mast arms are not used.			
5 6	**************************************			
7 8 9 10 11	*****	Provide aluminum mast arms that are tapered oval tubing, continuously welded to pole attachment plate and have span and rise as indicated on the Drawings. Provide with same finish as pole.		
12 13	NOTE: Edit the following article to match project requirements; delete if metal pole brackets are not used.			
14 15	**************************************			
16 17 18 19 20	*****	Provide metal pole brackets that are designed to match pole metal and finish. Provide cantilever brackets without underbrace, in the sizes and styles indicated on the Drawings, with straight tubular end section to accommodate the luminaire.		
21	******	*********		
22 23	NOTE: Edit the brackets are not	following article to match project requirements; delete if wood pole used.		
24 25	***************************************			
26 27 28 29	******	Provide wood pole brackets that conform to ANSI C136.13 - Roadway Lighting Metal Brackets for Wood Poles. ************************************		
30 31	NOTE: Edit the following article to match project requirements; delete if pole-top tenons are not used.			
32 33	**************************************			
34 35 36	R.	Provide pole-top tenons that conform to IEEE C136.21 and are fabricated to support the luminaire indicated and are securely fastened to the pole top.		

2.7 GROUNDING 1 Provide grounding for exterior lighting using materials specified in 2 Α. Section 26 0526, Grounding and Bonding For Electrical Systems. 3 Provide a 10 foot long, 5/8 inch diameter copper-clad ground rod at each 4 B. pole. 5 ******************* 6 ************************ 7 NOTE: Edit the following article to match project requirements. Comply with exterior 8 lighting system control requirements in LANL Engineering Standards Manual, Chapter 7, 9 Section G4020. The building automation system may be used to good advantage instead 10 of timeclocks and photocontrols for control of exterior lighting so long as LANL ESM 11 12 functional requirements are met. 13 **** 14 15 2.8 LIGHTING CONTROL EQUIPMENT Provide photoelectric relays to control exterior lighting as indicated on 16 Α. the Drawings. 17 For photoelectric relays mounted on luminaires provide products that 18 1. 19 conform to UL 733, Plug-in, Locking Type Photocontrols for Use with Area Lighting with single-pole single-throw contacts arranged 20 21 to fail in the "ON" position. For each luminaire provide a luminairemounted locking-type receptacle conforming to IEEE C136.10. 22 For photoelectric relays not mounted on luminaires provide products 2. 23 conforming to either UL 773 or UL 773A, Non-industrial 24 25 Photoelectric Switches for Lighting Control. Provide the photoelectric relays with single-pole double-throw contacts to switch 26 mechanically-held contactors. 27 Photoelectric relay contacts shall be factory set to turn exterior 28 3. 29 lighting "ON" at or below 3 footcandles and "OFF" at 4 to 10 footcandles. A time delay shall prevent switching from transient 30 light sources. 31 Provide one or more time switches to control exterior lighting as 32 Β. indicated on the Drawings. 33 34 Provide mechanical astronomic dial type or electronic type time 1. switch, arranged to turn "ON" at sunset and turn "OFF" at 35 predetermined time between 8:30 p.m. and 2:30 a.m. or sunrise, 36 automatically changing the settings each day in accordance with 37 seasonal changes 38 Provide time switch with either an automatically wound spring 2. 39 mechanism or an energy-storage capacitor to maintain accurate time 40 for a minimum of 7 hours following power failure. 41 Provide time switch with a double-throw contacts to switch 3. 42 mechanically-held contactors and a manual on-off bypass switch. 43

1		4. Provide time switch with NEMA 3R housing if installed outdoors or
2		NEMA 1 housing if installed indoors.
3		C. Provide one or more multi-pole lighting contactors to control exterior
4		lighting as indicated on the Drawings.
5		1. Provide mechanically-held or contactors that conform to NEMA ICS
6		2 Industrial Controls and Systems: Controllers, Contactors, and
7		Overload Relays.
8		2. Provide number of contacts as indicated on the Drawings or as
9		required by the number of circuits to be controlled. Contacts shall
10		have a minimum rating of 30 amperes at 277 volts AC per pole for
11		ballast loads. Contacts shall be field-convertible from normally-open
12		to normally-closed.
13		3. Provide 120 volts AC operating coils.
14		4. Provide contactor with NEMA 3R housing if installed outdoors or
15		NEMA 1 housing if installed indoors.
16	2.9	FUSES AND FUSE HOLDERS
17		A. Provide fuse overcurrent protection for each pole-mounted luminaire to
18		isolate faulted ballasts from the lighting circuit.
19		1. Use 600 volt, Class CC, time-delay, current-limiting fuses.
20		2. Select fuses rated between 200% and 300% of the luminaire ballast
21		maximum current.
22		3. Manufacturer: Bussman "LP-CC"
23		B. Provide in-line fuse holders for installation in pole hand hole or
24		transformer base.
25		1. Use non-breakaway type fuse holders unless breakaway poles are
26		indicated on the Drawings.
27		2. Use breakaway type fuse holders where breakaway poles are
28		indicated on the Drawings.
29		3. Provide load and line terminal sizes and types corresponding to line
30		and load conductor sizes and quantities.
31		4. Provide insulating boots for both breakaway and non-breakaway
32		fuse holders.
33		5. Manufacturers: Ferraz Shawmut "FEC" for phase conductor(s), "FEBN" for neutral conductor.
34 25	0.40	
35	2.10	RACEWAYS AND BOXES
36		A. Provide conduit system for exterior lighting using materials specified in
37	2.11	Section 26 0533, Raceways and Boxes for Electrical Systems. BUILDING WIRE
38 39	2.11	A. Provide wiring system for exterior lighting using materials specified in
39 40		A. Provide wiring system for exterior lighting using materials spectried in Section 26 0519, Low Voltage Electrical Power Conductors and Cables.
40		Section 20 0519, Low voltage Electrical Fower Conductors and Cables.

1 2	PART 3 EXECUTION 3.1 EXISTING WORK			
3	**************************************			
4	ጥጥጥጥ •	* * * * * * * * *	• • • • • • • • • • • • • • • • • • •	
5 6	Delete this article when existing construction is not affected.			
7	****	******	*********	
8 9		А.	Disconnect and remove abandoned exterior luminaires as indicated on the Drawings.	
10		B.	Disconnect and remove abandoned luminaire poles and associated	
11 12		C.	foundations as indicated on the Drawings Maintain electrical circuit to existing exterior luminaires that are to	
13		C.	remain active.	
14 15		D.	Clean and repair existing exterior luminaires that are to remain or be reinstalled.	
16	3.2	EXAM	IINATION	
17		А.	Examine areas, spaces, and surfaces to receive exterior luminaire (s) or	
18			poles for compliance with installation tolerances and other conditions	
19 20			affecting performance of the product. Do not proceed with installation	
20 21	3.3	INISTA	until unsatisfactory conditions have been corrected.	
22	0.0	A.	Install products in accordance with manufacturer's instructions,	
23			NECA/IESNA 501, and approved shop drawings.	
24		В.	Locations of luminaires and poles shown on the Drawings are	
25			diagrammatic. Coordinate luminaire locations with building finishes,	
26			building structure, utility piping, security fences, and existing trees.	
27			Obtain approval for location changes through LANL Subcontract	
28		~	Technical Representative (STR).	
29		C.	Set poles and luminaires plumb, square, level and secure.	
30 31		D.	Install surface mounted luminaires directly to an outlet box which is supported from structure.	
32		E.	Install lamps in luminaires in accordance with manufacturer's	
33		Ľ.	instructions.	
34	3.4	CONC	RETE FOUNDATIONS	
35		А.	Construct concrete foundations with 4000 psi, 28 day concrete and	
36			reinforcing conforming to Section 03 3001, Reinforced Concrete.	
37		В.	Comply with details on the Drawings and manufacturer's	
38			recommendations for foundation dimensions, reinforcing, anchor bolts,	
39			nuts and washers.	
40		С.	Position power conduits to terminate within the pole shaft area and one	
41			inch above the top of the foundation; refer to Section 26 0533, Raceways	
42		р	and Boxes for Electrical Systems.	
43 44		D.	In addition to power conduits, install a 1 inch PVC conduit in the pole base for the ground lead described below.	
44			base for the ground lead described below.	

1 2	3.5	E. Pole	Cure concrete foundations for 7 full curing days before erecting poles. ERECTION
2	3.5	A.	Use fabric web slings to raise and set poles.
4		A. B.	Tighten anchor bolt nuts and other pole hardware to torque recommended
4 5		D.	by manufacturer.
6		C.	After pole is leveled, pack non-shrink grout between anchor base and
7		C.	concrete foundation to provide a full bearing surface.
8		D.	Set embedded poles to depth indicated on the Drawings, but not less than
8 9		D.	1/6 of pole length below finish grade.
10			1. Auger holes large enough to permit the use of tampers the full depth
11			of the hole.
12			2. Backfill in 6 inch layers and thoroughly tamp each layer so
13			compaction of backfill is equal to or greater than that of the
14			undisturbed earth.
15	3.6	GROU	INDING
16		А.	Install grounding for exterior lighting using methods specified in Section
17			26 0526, Grounding and Bonding for Electrical Systems.
18		В.	Install a 10 foot long, 5/8 inch diameter copper-clad ground rod at each
19			pole.
20	****	*****	***************************************
21	*****	*****	**********
22	NOTE	: Edit tl	ne following articles to match project requirements.
23	*****	*****	******
24	*****	*****	*****
.		G	
25		C.	Connect ground lug of metal pole to ground rod using a 6 AWG copper
26		P	conductor.
27		D.	Ground metallic components of lighting unit with non-metallic pole to
28	*****	*****	ground rod using a 6 AWG copper conductor.
29			**************************************
30	ጥ ጥ ጥ ጥ ጥ	ጥ ጥ ጥ ጥ ጥ ጥ •	* * * * * * * * * * * * * * * * * *
31	NOTE	: Edit tl	ne following article to match project requirements.
32	****	*****	***************************************
33	*****	*****	*********
34	3.7	LIGH	TING CONTROL SYSTEM
35	5.7	A.	Install exterior lighting control system components in accordance with
		А.	the manufacturers' instructions. Have installation instructions available at
36 27			the construction site.
37		Р	
38 20		В.	Install a HAND-OFF-AUTO selector switch in the control system to allow for testing of luminaires.
39 40		C	Provide separate control of exterior lighting system as follows:
40		С.	rovide separate control of exterior righting system as follows.

26 56 00 - 12 EXTERIOR LIGHTING Page 12 of 19

1		1. Safety, security, pedestrian walkway, and roadway lighting: "ON" at
2		dusk, "OFF" at dawn.
3		 Parking facility and landscape lighting: "ON" at dusk, "OFF" at
4		predetermined time. Approximately 10 percent of parking lot
5		lighting shall remain on until dawn for personnel security.
6	3.8	FUSES AND FUSE HOLDERS.
7		A. Install fuse(s) and fuse holders in pole hand hole or transformer base for
8		each luminaire.
9		1. Install fuse holder and fuse in each phase conductor.
10		2. Install fuse holder with permanently mounted dummy fuse in neutral
11		conductor.
12		B. Orient breakaway fuse holders so no energized conductors will be
13		exposed in the event of a pole knockdown.
14		C. Install insulator boots over fuse holders and tape wrap where conductor
15		enters boot.
16	3.9	RACEWAYS AND BOXES
17		A. Install conduit system for exterior lighting using methods specified in
18		Section 26 0533, Raceways and Boxes for Electrical Systems.
19	3.10	BUILDING WIRE
20		A. Install wiring for exterior lighting using methods specified in Section
21		26 0519, Low Voltage Electrical Power Conductors and Cables.
22	3.11	FIELD QUALITY CONTROL
23		A. Inspect each installed lighting unit for damage. Replace damaged
24		luminaires, poles and components.
25		B. Test installed luminaires for proper operation.
26		1. Provide instruments to make and record test results.
27 28		2. Replace or repair malfunctioning luminaires and components then re-test.
28 29		 Repeat procedure until all luminaires operate properly.
29 30		C. Replace inoperative lamps.
30 31	3.12	ADJUSTING AND CLEANING
32	5.12	A. Clean each luminaire inside and out, including plastics and glassware.
33		Use methods and materials recommended by manufacturer.
34	NOTI	E: Edit the following articles to match project requirements.
•	11011	
35		B. Aim adjustable luminaires to provide required light intensities as
36		indicated on the Drawings or as directed by the LANL STR.
37		C. Adjust exterior lighting controls to obtain the following performance
38		unless otherwise indicated on the Drawings or directed by the LANL
39		STR:
40		1. Safety, security, pedestrian walkway, and roadway lighting: "ON"
41		when ambient lighting becomes less than 1.6 times the illuminance
42		design level or 1.5 footcandles, whichever is higher; "OFF" when
43		ambient lighting exceeds approximately 5 footcandles.

26 56 00 - 13 EXTERIOR LIGHTING Page 13 of 19

1 2 3 4				2. Parking facility and landscape lighting: "ON" when ambient lighting becomes less than 1.6 times the illuminance design level or 1.5 footcandles, whichever is higher; "OFF" at 10:00 p.m. END OF SECTION
5		A.	:	
6 7			1.	Installation of pipe subdrains at the locations, lines and grades shown on the Drawings.
8 9				a. If details are not shown on the Drawings, construct the subdrain in accordance with this Section and standard storm drain details.
10		В.	De	eviations from this City of Fort Worth Standard Specification
11			1.	None.
12		C.	Re	elated Specification Sections include, but are not necessarily limited to:
13 14			1.	Division 0 – Bidding Requirements, Contract Forms and Conditions of the Contract
15			2.	Division 1 – General Requirements
16			3.	Section 31 37 00 – Riprap
17			4.	Section 32 91 19 – Topsoil Placement and Finishing of Parkways
18			5.	Section 32 92 13 – Hydro-Mulching, Seeding and Sodding
19			6.	Section 33 05 10 – Utility Trench Excavation, Embedment and Backfill
20 21	1.2			E AND PAYMENT PROCEDURES easurement and Payment
22			1.	Measurement
23 24				a. Measured by the linear foot along the top of the pipe and includes the length of elbows, wyes, tees, and cleanouts
25			2.	Payment
26 27 28				a. The work performed and material furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid per linear foot of "Pipe Underdrain" installed for:
29				1) Various types
30				2) Various sizes
31				b. The price bid shall include:

1) Europhing and installing the specified Underdesin
 Furnishing and installing the specified Underdrain
2) Pipe
3) Couplers
4) Plugs
5) Screens
6) Filter material
7) Filter fabric
8) Excavation
9) Hauling
10) Disposal of excess materials
11) Connection to existing structures
12) Riprap
13) Furnishing, placing and compaction of embedment
14) Furnishing, placing and compaction of backfill
15) Clean-up
1.3 REFERENCES A. Reference Standards
1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
 American Association of State Highway and Transportation Officials (AASHTO):
a. M36, Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains.
 M190, Standard Specification for Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches
c. M196, Corrugated Aluminum Pipe for Sewers and Drains.
d. M252, Standard Specification for Corrugated Polyethylene Drainage Pipe.
e. M278, Standard Specification for Class PS46 Polyvinyl Chloride (PVC) Pipe.

1	3. ASTM International (ASTM):
2	a. C33, Standard Specification for Concrete Aggregates.
3 4	b. D448, Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
5 6	 c. D2751, Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
7 8	 F949, Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings.
9	4. Texas Department of Transportation (TxDOT):
10	a. Departmental Materials Specification (DMS):
11	1) DMS 6200, Filter Fabric.
12 13 14 15 16	 1.4 ADMINISTRATIVE REQUIREMENTS [NOT USED] 1.5 SUBMITTALS [NOT USED] 1.6 ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS A. Product Data – Submit the following information in accordance with Section 01 33 00.
17	1. Subdrain pipe material to be used.
18	2. Filter fabric material to be used.
19	3. Sieve Analysis for filter material to be used.
20 21 22 23 24 25 26 27 28 29	 1.7 CLOSEOUT SUBMITTALS [NOT USED] 1.8 MAINTENANCE MATERIAL SUBMITTALS [NOT USED] 1.9 QUALITY ASSURANCE [NOT USED] 1.10 DELIVERY, STORAGE, AND HANDLING [NOT USED] 1.11 FIELD [SITE] CONDITIONS [NOT USED] 1.12 WARRANTY [NOT USED] 1.12 WARRANTY [NOT USED] PART 2 - PRODUCTS 2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS [NOT USED] 2.2 MATERIALS A. Pipe
30	1. Use only 1 type of pipe for any subdrain system on the project.
31 32	a. Use perforated pipe in areas to be drained and non-perforated pipe between the perforated pipe and the outfall.

1 2			 Corrugated steel pipe conforming to any type specified in AASHTO M36, fabricated from corrugated galvanized sheet.
3		3.	Type 2
4 5			a. Corrugated aluminum pipe conforming to AASHTO M196, Type I or IA, fabricated from corrugated sheet.
6		4.	Type 3
7 8 9 10			a. Bituminous-coated corrugated steel pipe conforming to the requirements of Type 1 and uniformly coated inside and out with a minimum thickness of 0.05 inches with a bituminous material meeting the requirements of AASHTO M190.
11		5.	Type 4
12 13 14 15			a. Bituminous-coated corrugated aluminum pipe conforming to the requirement of Type 2 and uniformly coated inside and out with a minimum thickness of 0.05 inches with a bituminous material meeting the requirements of AASHTO M190.
16		6.	Type 5
17 18			 a. Acrylonitrile-butadiene-styrene pipe conforming to ASTM D2751, SDR- 35
19			b. Perforations must meet the requirements of AASHTO M278.
20		7.	Type 6
21			a. Corrugated polyethylene plastic tubing conforming to ASTM M252.
22		8.	Type 7
23			a. Corrugated polyvinyl chloride (PVC) pipe conforming to ASTM F949.
24		9.	Type 8
25			a. Smooth-wall PVC pipe conforming to AASHTO M278, Class PS 46.
26	B.	Fil	ter Material
27		1.	Furnish Crushed Rock in accordance with Section 33 05 10.
28		2.	Use only 1 type of filter material for any subdrain system on a project.
29	C.	Fil	ter Fabric
30 31		1.	Use filter fabric that meets the requirements of DMS-6200, "Filter Fabric," Type 1.

1 D. Riprap

1. When required, provide concrete riprap in accordance with Section 31 37 00. 2 3 2.3 ACCESSORIES [NOT USED] 2.4 SOURCE QUALITY CONTROL [NOT USED] 4 **PART 3 - EXECUTION** 5 3.1 INSTALLERS [NOT USED] 6 3.2 EXAMINATION [NOT USED] 7 3.3 PREPARATION [NOT USED] 8 9 3.4 INSTALLATION A. Excavation 10 1. Begin excavation of the trench at the outfall and proceed toward its upper 11 end, following the lines and grades shown on the Drawings or as directed by 12 13 the Engineer. 2. Hold the minimum horizontal limits of excavation for filter material to the 14 dimensions shown in Table 3 or as shown on the Drawings. 15 16 Table 3 17 **Minimum Horizontal Limits of Excavation for Filter Material** 18 **Depth of Trench Width** Trench 19 0 to 6 Over 6 to 10 25 Over 10 to 15 31 Over 15 37 19 B. Filter Fabric 20 1. In areas to be drained, place filter fabric in the bottom and sides of the trench 21 before placing pipe or filter material. 22 2. Provide enough width of fabric to overlap on top of the filter material. 23 C. Subdrain Pipe 24 1. Center perforated pipe in the excavated ditch with the perforations below the 25 horizontal axis. 26 2. Lay pipe according to Drawing Details with the perforations on the 27 underside of the pipe, unless otherwise directed by the Engineer. 28

		_	
1 2		3.	Join the pipe with appropriate couplers in accordance with the manufacturer's recommendations.
3 4		4.	Install non-perforated pipe sections between the perforated pipe and the outfall.
5 6			a. The sections of non-perforated pipe do not require filter fabric or filter material.
7		5.	Place a2-inch layer of filter material as a bottom course.
8		6.	Firmly embed the subdrain pipe in the filter material.
9 10 11		7.	Install cleanouts at the upstream end of the line, at approximately 200-foot spacing, at bends and other locations shown on the Drawings, and in accordance with City Standard Details.
12 13		8.	Place plugs recommended by the pipe manufacturer in the upper ends of all pipe.
14	D.	Fi	lter Material
15 16		1.	Place filter material at least 10 inches above the top of the pipe or as shown on the Drawings.
17		2.	Do not allow filter material to displace the pipe.
18 19 20		3.	After placing pipe and filter material, lap filter fabric over the top of the filter material according to the manufacturer's recommendation or as shown on the Drawings.
21	E.	Co	onnection to Existing Structures
22		1.	Storm Drain Structures
23 24			a. Core hole in drainage structures such as inlets, manholes and junction boxes and connect downstream end of subdrain pipe.
25			b. Seal connection with non-shrink grout.
26		2.	Drainage Channels
27 28			a. Where the subdrain discharges into a drainage channel, center the pipe outlet in a 2-foot by 2-foot concrete riprap pad.
29 30			b. Place the riprap to match the contour and grade of the embankment slope.
31			c. Cut the pipe to the slope of the riprap.
32		3.	Retaining Walls

- a. Where the subdrain discharges through the face of a retaining wall, cut pipe to be flush with the face of wall.
- 3 F. Backfill

1

2

4

5

7

1. Place backfill over the pipe in accordance with City Standard Details and Section 33 05 10 or as shown on the Drawings

6 3.5 RESTORATION

- A. Surface Restoration
- In unpaved areas, restore surface in accordance with Section 32 91 19 and
 Section 32 92 13, as appropriate.

10 3.6 RE-INSTALLATION [NOT USED]

- 11 3.7 FIELD [OR] SITE QUALITY CONTROL [NOT USED]
- 12 **3.8 SYSTEM STARTUP [NOT USED]**
- 13 **3.9 ADJUSTING [NOT USED]**
- 14 3.10 CLEANING [NOT USED]
- 15 3.11 CLOSEOUT ACTIVITIES [NOT USED]
- 16 **3.12 PROTECTION [NOT USED]**
- 17 **3.13 MAINTENANCE [NOT USED]**
- 18 3.14 ATTACHMENTS [NOT USED]

19

END OF SECTION

20

		Revision Log
DATE	NAME	SUMMARY OF CHANGE
12/20/2012	D. Johnson	 1.2.B – Bid Item name updated to match Bid List 2.2.B – Updated reference for Filter Material

21

1 2		SECTION 32 18 16.13 PLAYGROUND PROTECTIVE SURFACING
3 4	PAF	RT 1 – GENERAL
5 6	1.1	SUMMARY
7 8		A. Section Includes:
9		1. Composite Playground Structure
10		2. Rope Climber
11		3. Spring Rider
12		4. Swing Structure
13		B. Related Specification Sections include but are not necessarily limited to
14		1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the
15		Contract.
16		2. Division 1 - General Requirements.
17		3. Section 11 68 13 - Site Furnishings
18 19	1.2	PRICE AND PAYMENT PROCEDURES
20	1.2	A. Measurement and Payment
20		1. Measurement
22		a. Measurement for this Item shall be lump sum complete in place
23		2. Payment
24		a. The work performed and the materials furnished in accordance with this Item
25		shall be paid for at the unit price bid per lump sum
26		3. The price bid shall include:
27		a. Furnishing and installing the specified Inlet
28		b. Mobilization
29		c. Excavation
30		d. Hauling
31		e. Disposal of excess materials
32		f. Excavation, forming, backfill and compaction of footings
33		g. Clean-up
34 35	1.3	REFERENCES
36	1.5	
30 37		 A. Abbreviations and Acronyms 1. CPSC – U.S. Consumer Product Safety Commission
38		 IPEMA - International Play Equipment Manufacturers Association
39		 TAS – Texas Accessibility Standard
40		4. TDLR – Texas Department of Licensing and Regulation
41		B.Reference Standards
42		1. ASTM Designation F1487 (Standard Consumer Safety Performance Specification
43		2. ASTM Designation F1487 (Standard Consumer Safety Performance Specification for
44		Playground Equipment for Public Use)
45	1.4	ADMINISTRATIVE REQUIREMENTS [NOT USED]
46	1.5	SUBMITTALS
47		A. Submittals shall be in accordance with Section 01 33 00
48		B. Submittals must be received and approved by the Project Manager prior to ordering
49		equipment.
50	1.6	ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS

1		A. The Contractor shall be required to submit a Safety Plan indicating the use of
2		temporary construction fencing, signage and barriers necessary to prevent park users
3		from utilizing unfinished equipment for Owner approval at the Pre- Construction
4		meeting.
5		B. Submit manufacturers' documentation of product compliance with CPSC and ASTM F1487
6		Standards including:
7		1. All paints and other similar finishes must meet the current CPSC regulation for lead in
8		paint (0.06 percent maximum lead by dry weight).
		2. Regardless of the material or the treatment process, the manufacturer shall ensure that the
9		
10		users of the playground equipment cannot ingest, inhale, or absorb any potentially
11		hazardous amounts of substances through body surfaces as a result of contact with the
12	1 7	equipment.
13	1.7	CLOSEOUT SUBMITTALS
14		A. Submittals Prior to Project Acceptance – Contractor shall submit all manufacturers' literature
15		to the Project Manager prior to acceptance of the project. This shall include:
16		1. Operation and Maintenance Manuals
17		2. Warranty/Guarantee Documentation
18	1.8	MAINTENANCE MATERIAL SUBMITTALS
19		A. Spare Parts
20		B. Extra Stock Materials
21		C. Tools
22	1.9	QUALITY ASSURANCE
		A. Qualifications
23		1. Manufacturers
24 25		
25		2. Suppliers
26		3. Fabricators
27		4. Installers / Applicators / Erectors
28		5. Testing Agencies
29		6. Licensed Professionals
30		B. Certifications
31		C. Preconstruction Testing
32		D. Field [Site] Samples
33		E. Mock-ups
34	1.10	DELIVERY, STORAGE, AND HANDLING
35		A. Protect from inclement weather: wet, damp, extreme heat or cold.
36		B. Store in a manner to prevent warpage, bowing or damage.
37		C. The Contractor will not be allowed to deliver on site and install any playground equipment
38		until grading, mow strip, subsurface drainage and all other hardscape items have been
39		installed and approved by the Project Manager. The Contractor will be required to remove
40		any equipment from the site at own expense and at no additional contract time if found to be
41		in non-compliance to this specification note.
42	1.11	WARRANTY
43		A. Per manufacture specifications.
44		
45		
46	рарт	2 – PRODUCTS
40 47	1 / 1/ 1	
47	2.1	MATERIALS
48 49	~.1	
49 50		A. ENGINEERED WOOD FIBER SURFACING
50 51		
52		1. Surfacing material shall consist of:

1			a. Hardwood tree stock in which 80% of material is $1^{-11/2}$ in length X $1/4^{-1}$
2			to 3/8" diameter maximum size. A delivery ticket from the mill of origin will be required to verify that material is 100% hardwood stock.
3 4			b. The contractor shall be required to submit samples for approval. However,
5 6			approval shall in no way mean acceptance of material delivered to the site in the guart the Project Manager finds that the delivered material does not meet
			the event the Project Manager finds that the delivered material does not meet
7			specifications.
8			To the constant of the constant of the line of the discount of the site of the site of the
9			In the event that the material delivered to the project sites is found to
10			be unacceptable, the Contractor shall be required to remove such
11			material off the site and provide acceptable material.
12			c. Softwood fibers, standard wood chips, bark mulch, recycled wood
13			from pallets or waste wood, shredded or otherwise, twigs, bark, leaf
14			debris or other organic material incorporated within <u>will not be</u>
15			accepted.
16			2. All material shall be compacted to the depth indicated on plans.
17		D	
18		В.	DRAINAGE FABRIC
19			
20			1. Product used shall be FibarFelt, DuraLiner, or aproved equal polyester nonwoven
21			engineering geotextile fabric.
22			2. Bidder will provide enough material to allow for 12" overlap on all seams.
23			
24		-	
25		C.	DRAINAGE MATRIX
26			
27			1. 4" diameter ADS perforated pipe with sock installed within the subgrade gravel
28			trench as indicated on plans.
29			
30		D.	WEAR MATS
31			
32			1. Product used shall be per playground equipment manufacturer's recommendation
33			and meet ASTM F1292-91 playground surfacing standard for a drop height not to
34			exceed 3.5 feet. Must be installed under all swings and slides to preserve
35			warranty. Method of installation / anchorage shall be per manufacturer's
36			recommendations.
37			
38	PART	3 - SPI	ECIAL REQUIREMENTS
39			
40	3.1	QUA	LITY CONTROL
41			
42		A.	The Bidder will provide the owner or its designated contractor with all necessary licenses
43			prior to start of construction in accordance with U.S. Patents.
44			
45		В.	Supplier must provide test results for impact attenuation in accordance with ASTM
46			F1292-93; Standard Specification for Impact Attenuation of Surface Systems Under and
47			Around Playground Equipment. Results must be provided for new material and for 5-
48			year-old material.
49			
50		C.	Testing must show "g" ratings of not more than 155g for the 8" thick system, or 120g for
51			the 12" system at 12' fall heights, and HIC values of less than 1,000 for both new and 8-
52			year-old material.
53			
		D.	Product must be wheelchair accessible and meet the requirements of the 1990 Americans

1 2		with Disabilities Act (ADA) in accordance with ASTM PS83-97.
3 4 5 6 7 8		E. The Bidder will provide copies of flammability testing procedures and results using (i) Section 1500.44 of the Federal Hazardous Substance Act, Title 16, Chapter II, Subchapter C, for rigid and pliable solids, and (ii) 16 CFR Part 1630 Standard for the Surface Flammability of Carpets and Rugs (FF 1-70), Modified Procedure. Testing should be performed by an independent testing laboratory.
9 10 11 12 13		F. The Bidder will provide copies of testing procedures and results of (i) new shredded wood fibre, and (ii) shredded wood fibre not less than five years old taken from an existing site, performed by an independent testing source using the ASTM F1292-91 playground safety surfacing standard.
14 15 16 17 18		G. The Bidder will provide at least three references of handicapped-accessible playgrounds that have been installed with said surface.
19 20	3.2	WARRANTY
21 22 23 24 25 26		All materials and labor under this Section shall be installed by a contractor authorized by the manufacturer. Safety surface shall be warranted for labor and materials for a period of no less than two years. Written warranty must be submitted by the manufacturer and the authorized installer.
27 28	PART	[•] 4 – EXECUTION
29	4.1	EXAMINATION [NOT USED]
30	4.2	INSTALLERS
31		A. Substitution Limitations
32	4.3	PREPARATION
33		A. Installer shall thoroughly examine the site and specifications, carefully checking the
34 35	4.4	dimensions before starting work. SUBGRADE
36	7.7	SUDGRADE
37		1. The subgrade shall be graded a minimum of 1.5% (percent) – max. 2%. All roots,
38		stones, and vegetation shall be removed.
39		2. The drainage matrix must be connected to the drainage system.
40 41		3. The first 6" of subgrade shall be compacted to at least 95 percent of the dry density, as determined by the provisions of AASHTO or T 205, as modified in 203.24.
42		as determined by the provisions of Artistitio of 1 203, as mounted in 203.21.
43	4.5	APPLICATION
44		
45 46		A. Wood fiber surfacing system with gravel and sub drain. Install per plans and
46 47		specifications.
48		a. Aggregate Drainage Material
49		
50 51		 Install sub drain trench per plan. Cover subgrade with washed stone, 3/8" to 1/2" diameter, at a uniform
52		depth of three inches.

1 2 3 4 5 6 7 8 9 10 11 12		3. 4.	at least 12". Cut to fit around equipment as necessary and overlap seams as previously mentioned.
13 14			END OF SECTION
14			Revision Log
	DATE	NAME	SUMMARY OF CHANGE
15			

1		SECTION 32 33 00
2		SITE FURNISHINGS
3		1 GENERAL
4	1.1	RELATED DOCUMENTS
5	А.	Provisions established within the General and Supplementary General Conditions of the
6		Contract, Division 1 - General Requirements, and the Drawings are collectively
7 8	1.2	applicable to this Section. SCOPE
8 9	1.2 А.	Work included: the work includes, but is not necessarily limited to:
10	л.	1. Remove existing benches, picnic grills, trash receptacles and picnic tables.
11		2. Furnish and install exterior benches, litter receptacles, picnic grills, and picnic
12		tables.
13		3. Furnish and install basketball goal with back board and netting.
14		4. Furnish and install concrete footings for playground equipment.
15		5. Furnish and install concrete pads and walks.
16		6. Warranty and replacements
17		7. Provide touch-up paint
18	1.3	REFERENCES
19	А.	Requirements of Regulatory Agencies:
20		1. Perform work in accordance with all applicable laws, codes and regulations
21	-	required.
22	В.	American Association of State Highway and Transportation Officials (AASHTO):
23		1. AASHTO LTS-4 - Standard Specifications for Structural Supports for Highway
24	C	Signs, Luminaires and Traffic Signals
25 26	C.	ASTM International (Formerly known as American Society for Testing and Materials):
26 27		1. ASTM A123 - Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
27 28		
28 29		2. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105
29 30		ksi Minimum Tensile Strength
31		3. ASTM A507 - Standard Specification for Drawing Alloy Steel, Sheet and Strip,
32		Hot-
33		Rolled and Cold-Rolled
34		4. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings
35		5. ASTM B85 - Standard Specification for Aluminum-Alloy Die Castings
36		6. ASTM B137 - Standard Test Method for Measurement of Coating Mass per Unit
37		Area
38		on Anodically Coated Aluminum
39		7. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet
40		and Plate
41		8. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy
42		Extruded Bars, Rods, Wire, Profiles, and Tubes
43		9. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time
44		of Burning of Plastics in a Horizontal Position
45		10. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or
46		Expanded Rubber
47 48		11. ASTM D1400 - Standard Test Method for Nondestructive Measurement of Dry
48 49		Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base
49 50		Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base12. ASTM D2240 - Standard Test Method for Rubber Property - Durometer Hardness
50		12. ASTALD2240 - Standard Test Method for Rubber Property - Durometer Haldness

	Б			
1	D.	National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code		
2	_	(NEC)		
3	E.	The Society for Protective Coatings (Formerly known as Steel Structures Painting		
4		Council) (SSPC): SSPC-SP 10 - Near-White Blast Cleaning		
5	F.	Underwriters Laboratories, Inc. (UL):		
6		1. UL 496 - UL Standard for Safety Edison-Base Lampholders		
7		2. UL 508 - UL Standard for Safety Industrial Control Equipment		
8		3. UL 542 - UL Standard for Safety Lampholders, Starters, and Starter Holders for		
9		Fluorescent Lamps		
10		4. UL 935 - UL Standard for Safety Fluorescent-Lamp Ballasts		
11		5. UL 1029 - UL Standard for Safety High-Intensity-Discharge Lamp Ballasts		
12		6. UL 1598 - UL Standard for Safety Luminaires		
13	1.3	QUALITY ASSURANCE		
14	А.	Installer qualifications: minimum of 5 years of experience in installation of site		
15		furnishings and playground equipment. Provide documentation of specific project		
16		experience and references as required by Owner.		
17	1.4	SUBMITTALS		
18	А.	Submit manufacturer's product data and warranty for each type of furniture or material		
19		specified, including finish and color indicated including light pole and fixture. Submit		
20		cut sheets for ADA signage.		
21	В.	Submit footing detail as recommended by the manufacturer for each type of site furniture		
22		including pavilion.		
23	С.	Submit manufacturer's installation instructions.		
24	D.	Samples:		
25		1. Submit two samples 2x2 inch in size illustrating finish material and color for		
26		substitutions.		
27	E.	Submittals to be submitted to Landscape Architect for review and approval no less than		
28		60 days prior to installation.		
29	1.5	DELIVERY, STORAGE, AND HANDLING		
30	А.	Remove designated existing benches and picnic tables.		
31	В.	Furnish all materials in manufacturer's unopened, original containers, bearing original		
32		labels showing quantity, description and name of manufacturer.		
33	C.	Deliver and unload at the site on pallets and bound in such a manner that no damage		
34		occurs to the product.		
35	D.	Store products in a manner which will preclude all damages. Damaged materials will be		
36		rejected. Remove all damaged materials from the job site immediately, and replace at		
37		no cost to the Owner.		
38	E.	Furnish suitable equipment and locate all site furnishing materials carefully and		
39		efficiently. Lift materials using lifting inserts provided by the manufacturer where		
40		applicable.		
41	F.	Protect site furniture and accessories from damage until final acceptance. Owner reserves		
42		right to reject site furniture damaged prior to and during and after installation.		
43		2 PRODUCTS		
44	2.1	MANUFACTURERS OF EQUIPMENT, SITE FURNITURE AND ACCESSORIES		
45	Α.	Acceptable Manufacturers are listed on the drawings.		
46	В.	All playground equipment is pre-approved equipment. All remaining components		
47		structures are subject for substitution.		
48	C.	Substitutions: Under provisions of General and Special Conditions and Drawings.		
40		Substitutions must be of equal quality of motorial and finish specified All substitutions		

1 2		must be approved by Park and Recreation Department and Landscape Architect prior to bid submittal with explanation of variances to specified items.
2 3	D.	General Requirements for Mounting Poles for signs:
4	D.	1. Mounting poles: Steel, straight, round, and as shown. Complete assembly of anchor
5		bolts, pole, arms, and luminaire designed to withstand wind pressure (P) developed
6		by wind speed (V) of 80 MPH, in accordance with AASHTO LTS-4. Pole assembly
7		to be designed in accordance with AASHTO requirements for permissible stresses,
8		deflection, vibration, and fatigue. Ratio of deflection to pole height under action of
9		applicable static loading not to exceed 1/60.
10	2.2	CONCRETE
11	 A.	ASTM C94 ready mixed concrete, minimum 28 day compressive strength of 3,000 psi,
12		air-entrained 2% to 45.
13		
14	B.	Grout: Section 03305, "Portland Cement Concrete", nonshrink. Where recommended by
15		manufacturer. Prime surfaces to be grouted
16	2.3	FINISHES
17	А.	Specified on drawings.
18		3 EXECUTION
19	3.1	INSPECTION
20	А.	Examine final grades and installation conditions. Do not proceed with work until
21	-	unsatisfactory conditions are corrected.
22	В.	Beginning of installation means acceptance of existing conditions.
23	3.2	PREPARATION
24	A.	Remove foreign substances from surfaces to receive metal items.
25	В.	Locate and layout all site furniture and site accessories. Obtain Owner's
26 27	C	Representative's acceptance of layout prior to installation.
27	C.	Coordinate setting drawings, diagrams, templates, instructions and directions for the
28 29		installation of items having integral anchors which are to be embedded in concrete construction. Coordinate delivery of such items with concrete work.
29 30	D.	Restore protective covering that have been damaged in shipment or in the installation of
31	D.	the item. Remove protective covering from surfaces only when there is no possibility of
32		damage from work yet to be performed after installation. Retain covering on all similarly
33		finished items and remove only when all are in place to preclude non-uniform oxidation
34		and discoloration.
35	3.4	INSTALLATION OF SITE FURNISHINGS
36	A.	Install where and as shown on plans and details. Install per Manufacturer's directions.
37		Install all pieces level and plumb.
38	В.	Provide and install vandal-proof anchors into pavement to secure the site furnishings.
39	C.	Paint exposed installation hardware to match furnishing color.
40	D.	Shim and level furnishings as required at approved locations.
41	E.	Guard against staining or damaging of existing pavements and plantings where site
42		furnishings are to be installed.
43	F.	Provide Owner with manufacturer's touch-up paint (1 pint minimum) for each painted
44		furnishing. Supply literature necessary for ordering touch-up paint at a later date.
45	3.5	TOLERANCES
46	А.	Maximum Variation From Plumb: 1/32 inch per foot.
47	3.6	CLEANING
48	А.	Perform cleaning during installation of the work and upon completion of the work.
49		Maintain clean surfaces until final acceptance. Remove from site all debris and
50	25	equipment. Repair all damage resulting from play fields and equipment installation.
51	3.7	CLEANING/TOUCH-UP

51 3.7 CLEANING/TOUCH-UP

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1	A.	As Work proceeds, promptly remove concrete where spilled, splashed, or spattered onto
2		site furniture.
3	В.	During progress of Work maintain premises free of unnecessary accumulation of tools,
4		equipment, surplus materials, and debris.
5	C.	Perform cleaning during installation of the work and upon completion of the work.
6		Maintain clean surfaces until final acceptance. Remove from site all debris and
7		equipment. Repair all damage resulting from furniture and equipment installation.
8		Replace damaged furniture as requested by the Owner's Representative.
9		
10		END OF SECTION
11		
12		
		Revision Log

Revision Log		
DATE	NAME	SUMMARY OF CHANGE
[2010 JAN 06]		

13

1 2		SECTION 33 41 16 SUBDRAINAGE PIPING			
3 4	PAR	Γ I - GENERAL			
5 6 7 8 9	1.01	SCOPE: Work in this section includes furnishing all labor, materials, equipment, and services required to construct and/or install subdrainage piping to the required lines, grades, and/or outfalls as specified herein and on the plans.			
10	1.02	RELATED WORK SPECIFIED ELSEWHERE:			
11 12		A. Section 31 22 00 - Earthwork.			
13 14		B. Section 32 13 13 - Cast-in-Place Concrete			
15 16	PAR	Γ 2 - PRODUCTS			
17 18 19 20 21 22 23 24	2.01	SUBDRAINAGE PIPE: Pipe and fittings shall be flexible, corrugated tubing manufactured of high-density polyethylene resins and conforming to ASTM Product Specifications F-405 and F-667. Drainage tubing shall be as manufactured by Advanced Drainage Systems (ADS), Inc., of Columbus, Ohio. The local manufacturing plant which will provide a list of suppliers is in Ennis, Texas - telephone (972) 878-9600.			
24 25 26 27 28 29 30		A. Perforated Pipe: Perforations shall be linear slots cut radially into the tubing wall between corrugations. Perforated pipe will be furnished complete with the Cerex nylon "Drain Guard" screen. The screen will completely surround the pipe and will have a lapped, welded longitudinal joint.			
30 31 32 33 34		B. Non-Perforated Pipe: Non-perforated pipe shall be used for collector lines which convey the water from perforated pipe to the concrete inlet or outfall.	\$		
34 35 36 37 38 39		C. Fittings: All couplings, reducers, tees, ells, plugs, caps, and other fittings shall be non-perforated and shall be of the same manufacturer as the drainage tubing. A fitting shall be used at each pipe junction/termination, as appropriate.			
 39 40 41 42 43 	2.02	FILTER MATERIAL: Filter material for use in backfilling trenches over and around subdrainages shall consist of 1 1/2" to 2" gravel washed free of organic or other deleterious matter.			
43 44 45 46	2.03	FILTER FABRIC: Filter fabric to line and lap over gravel filled subdrainage trench shall be Mirafi 14ON drainage fabric as manufactured by Celanese Corporation, (800) 223-9811, or approved equal.			

1		
2	PART	3 - EXECUTION
3 4 5	3.01	VERTICAL AND HORIZONTAL CONTROLS:
6 7 8		A. The Contractor shall establish or shall employ a licensed surveyor to establish all lines and grades necessary for each stage of the work described herein.
9 10 11		B. Provide blue tops for reference in dressing trench bottoms at intervals not to exceed 30 feet along the centerline of each trench.
12 13 14 15 16 17 18 19 20 21	3.02	SUBDRAINAGE TRENCHING: Trenches for subdrainage piping shall be dug after the subgrade is prepared. The excavation of each trench shall begin at its outlet and proceed toward its upper end. The trench must not be excavated below the proposed grade line. Trenches will be cleaned of all loose material and their bottoms will be dressed and fine graded to blue tops set as previously described. Trenches shall be lined with filter fabric and subdrainage piping shall be set on the trench bottom. All fittings shall be securely coupled and all open ends will be capped. The pipe shall be carefully covered with the gravel filter material and the filter fabric shall be lapped over the trench.
22 23 24 25 26 27 28		Care shall be taken not to damage the pipe or its fabric filter screen. Subdrainage pipe shall be connected to solid pipe joints and to outfall at the concrete structure/collar as indicated in the plans. Care shall be taken not to loosen or cave-in the trench walls. Any such damage will be re-constructed, by excavating a determined area, and then backfilling in that area with mechanically tamped lifts not to exceed eight inches each, until height of the trench is met.
29 30 31	3.03	SETTLEMENT: After the trench has been backfilled it shall be thoroughly soaked. This process shall be repeated two times allowing the backfill material to dry twenty-four hours before wetting again.
32		
33		END OF SECTION
34		

	Revision Log		
DATE	NAME	SUMMARY OF CHANGE	

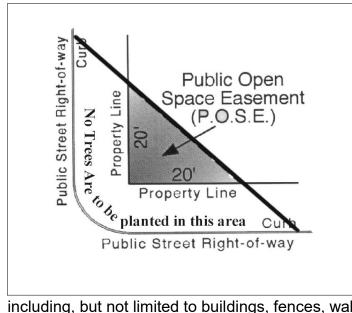
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<u>APPENDIX E</u>

GUIDELINES FOR LANDSCAPING IN PARKWAY

Guidelines for Landscaping in Parkway

Public Open Space Easement (P.O.S.E.)



A 20-foot by 20-foot triangular public open space easement is required on corner lots at the intersection of two streets. A 15-foot by 15-foot triangular public open space of easement is required on corner lots at the intersection of an alley and a street. In addition, at the intersection of a driveway or turnout section and a dedicated alley, a 10foot by 10-foot triangular open space easement is to be provided on each side at the driveway or turnout at the time the driveway and/or alley is constructed.

No structure, object, or plant of any type may obstruct vision from a height of 24-inches to a height of 11 feet above the top of the curb,

including, but not limited to buildings, fences, walks, signs, trees, shrubs, cars, trucks, etc., in the public open space easement as shown on the illustration.

Landscaping in Parkways

- A medium or large tree shall be planted a minimum of 2 feet from the face of the curb, sidewalk, or other structure.
- A small tree or shrub shall be planted a minimum of 1.5 feet from the face of the curb, sidewalk, or other structure.
- A minimum planting area of 3 feet must be available between back of curb and sidewalk to plant any small tree or large shrub and a minimum of 4 feet to plant large trees. A large tree shall be defined as a species that reach a height of 50 feet at maturity.
- In residential areas a minimum spacing of twenty-five feet is recommended between shade trees planted on parkways and is required in commercial districts or major arterial streets.
- All landscaping shall be located so that pedestrians can walk parallel to the street within the parkway whether a paved sidewalk is or is not provided.
- No tree or shrub shall obstruct the view of any traffic signal, sign, or other public sign.
- Trees planted under power lines will be a species that reaches a height of 30' or less upon maturity.
- Any tree or shrub planted in the parkway is the property of the City and the City reserves the right to prune or remove such tree or shrub if it becomes a traffic hazard or poses risk.
- Planting trees or shrubs on any public property requires a permit from Parks and Community Services and can be obtained by calling the City Forester at 817-392-5738.
- The following trees are prohibited on city parkways: hackberry (*Celtis sp.*), sycamore (*Platanus occidentalis*), silver maple (*Acer saccharinum*), mulberry (*Morus sp.*), Siberian elm (*Ulmus pumila*), mimosa (*Albizia julibrissin*), ash (*Fraxinus sp.*), cottonwood (*Populus deltoids*), willow (*Salix sp.*), Bradford pear (*Pyrus calleryana*) or any species of tree, shrub vine or grasses listed in the Nonnative Invasive Plants of Southern Forests published by United State Department of Agriculture Forest Service.