



ADDENDUM NO. 1

PROJECT NAME: Tom Slick Park

DATE: 03/07/2025

PROJECT NO: 23-04027

This addendum is separated into sections for convenience; however, all respondents, bidders, contractors, subcontractors, material men, and other parties must be responsible for reading the entire addendum. The failure to list an item or items in all affected sections of this addendum does not relieve any party affected from performing as per instructions, providing that the information is set forth one time any place in this addendum. These documents will be attached to and will become part of the Contract Documents for this project. The respondent/bidder is required to acknowledge the receipt of this addendum.

GENERAL:

1. The following changes and/or additions to the Contract Documents, via this addendum, must apply to proposals made for and to the execution of the various parts of the work affected thereby.
2. Careful note of the Addendum must be taken by all interested parties and all trades affected must be fully advised in their performance of the work involved.
3. This Addendum is hereby made part of the project requirements and contract documents for the above reference project. Ensure to acknowledge this Addendum in CivCast when downloading this Addendum. Acknowledgement of this Addendum is a requirement in order to submit bid in CivCast. This addendum consists of the items and their associated attachments as listed below:

A. CHANGES TO PLANS / SPECIFICATIONS:

1. There are no Alternatives in the project. The Specification Section 01 23 00 Alternatives have been removed from the Specification Book and the previously provided Specification Book has been replaced with the revised Specification Book attached herein.

SIGNED AND SEALED BY CONSULTANT (Engineer/Architect of Record)

By signing and sealing this addendum, the Engineer/Architect of Record acknowledges that the sign/seal is only for changes/clarifications to the items associated with the Engineer's/Architect's work referenced in this addendum.



David Rios

David Rios
Procurement Manager
Finance Department - Procurement Division

END OF ADDENDUM NO. 1

**SPECIFICATIONS FOR:
TOM SLICK PARK IMPROVEMENTS
CONSTRUCTION DOCUMENTS**



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RON NIRENBERG

CITY COUNCIL
SUKH KAUR
JALEN MCKEE RODRIGUEZ
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FUNDING:
2022-2027 BOND FUNDS

CITY ADMINISTRATION

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SECTION 00 01 07

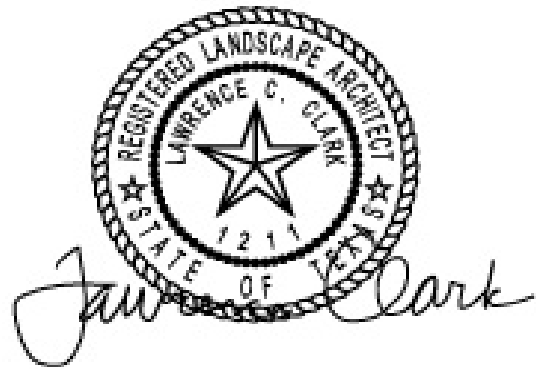
PROFESSIONAL SEALS

OWNER

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SECTION 00 01 10

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LIST OF GOVERNING SPECIFICATIONS

ALL SPECIFICATIONS, SPECIAL SPECIFICATIONS, AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS:

- CITY OF SAN ANTONIO – STANDARD SPECIFICATIONS FOR CONSTRUCTION (JUNE 2008 or latest revisions and additions)
-

CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION

ITEM

100	MOBILIZATION
101	PREPARING RIGHT-OF-WAY
103	REMOVE CONCRETE
104	EXCAVATION
200	FLEXIBLE BASE
202	PRIME COAT
203	TACK COAT
205	HOT MIX ASPHALTIC CONCRETE PAVEMENT
300	CONCRETE
301	REINFORCING STEEL
500	CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER
502	CONCRETE SIDEWALKS
515	TOPSOIL
516	SODDING
520	HYDROMULCHING
530	BARRICADES, SIGNS, AND TRAFFIC HANDLING
535	HOT APPLIED THERMOPLASTIC PAVEMENT MARKINGS
540	TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION AND CONTROL
550	TRENCH EXCAVATION SAFETY PROTECTION
556	CAST IN PLACE DETECTABLE WARNING SURFACE TILES

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Tom Slick Park Improvements, 7400 Hwy 151, San Antonio, Texas 78227.
- B. Owner's Name: City of San Antonio - PW.
- C. Design Consultant's Name: Bender Wells Clark Design, 830 N. Alamo Street, SA, TX 78215.
- D. The Project consists of the construction of parking, tree planting, solar lights, and concrete walks. A basketball court cover, fabric shade cover over the existing neighborhood play equipment, and additional solar lights are Alternates to the project.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price

1.03 OWNER OCCUPANCY

- A. Owner intends to occupy a certain portion of the Project prior to the completion date for the conduction of normal operations.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Contractor shall maintain an accessible route for public and emergency ingress and egress to facility at all times. Contractor shall coordinate with Owner as required.

1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Use of site and premises by the public.
- C. Provide access to and from site and facilities as required by law and by Owner:
- D. Do not obstruct roadways, sidewalks, or other public ways without permit.
- E. Limit disruption of utility services to hours the site is unoccupied.
 - 1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.

1.05 WORK SEQUENCE

- A. The Project is to be completed as specified in the contract for construction.
 - 1. Liquidated damages shall be as specified in contract.

1.06 SPECIFICATION SECTIONS APPLICABLE TO CONTRACT

- A. Unless otherwise noted, all provisions of the sections listed below apply to the contract. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 50 00 - Temporary Facilities and Controls.
- C. Section 01 57 13 – Temporary Erosion Control.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers, enclosures, and fencing.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, and water required for construction purposes.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

- A. Construction: Contractor's option. Contractor has option to provide security fencing until construction of improvements requires the removal of the fence.

1.06 SECURITY

- A. Contractor is responsible for providing security and facilities to protect work.

1.07 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Provide means of removing mud from vehicle wheels before entering streets.
- D. Provide temporary parking areas to accommodate construction personnel. Contractor shall be responsible to make arrangements off-site.
 - 1. Parking on site is to be limited to the new drive and new parking lot.

1.08 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and

orderly condition.

- B. Provide containers with lids. Remove trash from site daily.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.09 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 SUBMITTALS

- A. See SWPPP for all measures necessary.

PART 3 EXECUTION

2.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

2.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

2.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required. See SWPPP for all necessary measures.
- B. Construction Entrances: Traffic-bearing aggregate surface.
 - 1. Width: As required; 20 feet, minimum.
 - 2. Length: 50 feet, minimum.
 - 3. Provide at each construction entrance from public right-of-way.
 - 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
 - 1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
 - b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.
 - c. Along the toe of cut slopes and fill slopes.
 - d. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart.
 - e. Across the entrances to culverts that receive runoff from disturbed areas.
 - 2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet.
 - b. Slope Between 2 and 5 Percent: 75 feet.
 - c. Slope Between 5 and 10 Percent: 50 feet.
 - d. Slope Between 10 and 20 Percent: 25 feet.
 - e. Slope Over 20 Percent: 15 feet.
- C. Soil Stockpiles: Protect using one of the following measures:

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1. Cover with polyethylene film, secured by placing soil on outer edges.
2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.

2.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 1. Excavate minimum of 6 inches.
 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
 3. Place and compact at least 6 inches of 1.5 to 3.5 inch diameter stone.
- B. Silt Fences:
 1. Store and handle fabric in accordance with ASTM D 4873.
 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
 3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
 4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
 5. Install with top of fabric at nominal height and embedment as specified.
 6. Embed bottom of fabric in a trench on the upslope side of fence, with 2 inches of fabric laid flat on bottom of trench facing upslope; backfill trench and compact.
 7. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
 8. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
 9. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

2.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
 1. Promptly replace fabric that deteriorates unless need for fence has passed.
 2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Clean out temporary sediment control structures weekly and relocate soil on site.
- E. Place sediment in appropriate locations on site; do not remove from site.

2.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Owner.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of built site elements.

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 10 00 - Summary: Sequencing and staging requirements.
- C. Section 01 10 00 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- D. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- E. Section 01 57 13 - Temporary Erosion and Sedimentation Control.
- F. Section 31 10 00 - Site Clearing: Vegetation and existing debris removal.
- G. Section 31 22 00 - Grading: Topsoil removal.
- H. Section 31 22 00 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- I. Section 31 23 23 - Fill and Backfill: Filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCES

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; latest edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; latest edition.

1.04 SUBMITTALS

- A. Submittal procedures, per Construction Contract.
- B. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 PROJECT CONDITIONS

- A. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- B. Comply with other requirements as per City of SA Contract for Construction.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fill Material: As specified in Section 31 23 23 - Fill and Backfill

PART 3 EXECUTION

3.01 SCOPE

- A. Remove other items indicated, for salvage, relocation, and recycling.
- B. Fill excavations, open pits, and holes in ground areas generated as result of removals, using

specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Provide, erect, and maintain temporary barriers and security devices.
 - 4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 6. Do not close or obstruct roadways or sidewalks without permit.
 - 7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
- E. If hazardous materials are discovered during removal operations, stop work and notify Design consultant and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- F. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.
- G. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- H. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
 - 1. Contractor shall be responsible to notify Texas One Call (800-245-4545) a minimum of 72 hours prior to initiation of any demolition or excavation activity.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected

and abandoned utilities.

1. Note dimensioned locations of underground abandoned items left in place on record drawings.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on field observation, limited surveys, and existing record documents only.
 1. Verify that construction and utility arrangements are as shown.
 2. Report discrepancies to Design Consultant before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00.
- C. Remove existing work as indicated and as required to accomplish new work.
 1. Remove items indicated on drawings.
- D. Protect existing work to remain.
 1. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 2. Repair adjacent construction and finishes damaged during removal work.
 3. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 07 90 00

JOINT SEALERS (SITEWORK)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing for sidewalks.

1.02 REFERENCES

- A. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; latest edition.
- B. ASTM C 1193 - Standard Guide for Use of Joint Sealants; latest edition.
- C. ASTM D 1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; latest edition.
- D. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); latest edition.
- E. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov; latest edition.
- F. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; latest edition; www.aqmd.gov.

1.03 SUBMITTALS

- A. See CoSA Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.05 COORDINATION

- A. Coordinate the work with all sections referencing this section.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Polyurethane Sealants:
 - 1. Bostik, Inc: www.bostik-us.com.
 - 2. Pecora Corporation: www.pecora.com.
 - 3. Degussa Building Systems/Sonneborn: www.chemrex.com.
 - 4. Tremco, Inc.

2.02 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.
- B. Type GPX - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.
 - 1. Color: Color as selected.
 - 2. Applications: Use for:
 - a. Control, expansion, and soft joints in masonry.
 - b. Joints between concrete and other materials.

- c. Joints between metal frames and other materials.
 - d. Other exterior joints for which no other sealant is indicated.
- C. Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, I, M and A; single component.
- 1. Color: Color to match concrete.
 - 2. Applications: Use for:
 - a. Joints in sidewalks and vehicular paving.
- D. Nonsag Polyurethane Sealant: ASTM C 920, Grade NS, Class 25, Uses NT, None M, A; single component, chemical curing, non-staining, non-bleeding, non-sagging type.
- 1. Color: Colors as selected.
 - 2. Applications: Use for:
 - a. Vertical Expansion Joints.

2.03 ACCESSORIES

- A. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- B. Joint Backing: Round foam rod compatible with sealant; ASTM D 1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
- C. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter which might impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C 1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.
- H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

- A. Protect sealants until cured.

END OF SECTION

SECTION 12 93 00

SITE AND STREET FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Trash/ Recycling Receptacle
- A. Solar Pedestrian Security Lights

1.02 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: Two complete color charts representing manufacturer's full range of available colors.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery requirements with Owner and other installers.
- B. Store products in manner to prevent damage prior to installation.
- C. Where products need to be stored outdoors, store off the ground and place so that water will drain.

PART 2 PRODUCTS

2.01 MANUFACTURERS, MATERIALS

- A. Trash & Recycle Receptacles:
 - 1. Standard City of San Antonio Trash and Recycle receptacles- double unit as manufactured by: Zamorano Enterprises, 8603 S. Flores St, San Antonio (210) 924-2320.
 - a. In-ground mount.
- B. Solar Lights (see plans): Provide solar lights Model GFS-STEALTH (single head and double head) on a 20' round aluminum pole and concrete footing as manufactured by: Green Frog Systems, www.greenfrogsystems.com. (Color: Black) One existing single fixture light will be replaced with a double fixture.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Design Consultant of unsatisfactory preparation before proceeding.

3.02 COLOR SELECTION

- A. Colors for site and street furnishings to be selected from manufacturer's availability color range and as shown in the Materials legend. Samples of available colors are to be submitted by Contractor for verification and approval by Owner and Design Consultant.

3.03 PREPARATION

- A. Coordinate installation of embedded anchors and plates so that locations will be within required tolerances.

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- B. Clean surfaces thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.04 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Anchor Bolt Mounted Application:
 - 1. Core drill hole for anchor fastener sized per manufacturer's recommendations; hammer or masonry drilling not acceptable.
 - 2. Clean holes with high-pressure air blast to remove all loose debris and residue.
 - 3. Install fastener with non-expansive epoxy type grout.
- C. Install straight, level, plumb, and true, without offset in plane between adjacent members.
- D. Remove dust, debris, and soil from installed products immediately after installation.

3.05 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Replace damaged products with new replacements.

END OF SECTION

SECTION 13 31 23

PRE-ENGINEERED SHADE STRUCTURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections apply to this section.

1.2 SUMMARY

- A. The shade structure contractor shall be responsible for all permitting required and the design, engineering, fabrication, supply, and installation (including foundations) of the work specified herein. The intent of this specification is to have only one single contractor be responsible for all the above functions.

1.3 REFERENCES

- A. Shade Structures must comply with the latest revision of applicable codes and regulations including IBC 2021.
- B. American Society for Testing Materials (ASTM)
- C. American Welding Society: Structural Welding Code AWS D1.1: Symbols for Welding and Nondestructive Testing AWS 2.3.
- D. International Accreditation Services (IAS)
- E. American Institute of Steel Construction (AISC): Specifications for the design, fabrication, and erection of structural steel.

1.4 SUBMITTALS

- A. Provide proof of installed reference sites with six structures for similar scope of project and installation that are engineered to IBC Specifications.
- B. Provide a minimum of 13 fabric samples to demonstrate fabric color range and powder color selections.
- C. Provide proof of all quality assurance items including:
 - 1. A list of at least three reference projects of similar type structures that have been installed in the last 10 years as described below in 2.1 General, Scope.
 - 2. Proof of general liability, professional liability, and umbrella insurance as per section 1.5 D.
 - 3. Proof of a minimum of \$25,000,000 aggregate bonding capacity as per Section 1.5 E.
 - 4. Proof of IAS Certification per Section 1.5 F.
 - 5. Proof of current status as an ISNetworld Member Contractor.
 - 6. Proof of a Corporate Safety Program along with an Injury & Illness Prevention Program.
 - 7. Proof of Corporate Quality Control Manual as per Section 1.5 H

1.5. QUALITY ASSURANCE

Fabrication and erection are limited to firms with proven experience in design and construction of fabric shade structures and such firms shall meet the following minimum requirements. No substitutions shall be allowed for the following:

- A. A single shade contractor shall design, engineer, manufacture, and erect the fabric shade structures including the foundations.
- B. All bidders shall have at least 15 years' experience in the design, engineering, manufacturing, and installation of shade structures.
- C. All bidders shall engineer to IBC 2021 requirements with similar scope.

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- D. All bidders shall be able to provide proof of a minimum of \$1,000,000 general/public liability insurance, \$3,000,000 professional liability (PL) insurance, and an additional \$10,000,000 umbrella/excess liability insurance.
- E. All bidders shall be licensed and bonded with a minimum bonding capacity of \$6,000,000 and aggregate bonding capacity of \$25,000,000.
- F. Steel manufacturer shall be accredited by IAS (International Accreditation Service) for Structural Steel Fabrication under UBC 97 & 2000 Section 1701.7 and IBC 2021 Section 1704.2.2.
- G. Proof of current status as an ISNetwork Member Contractor.
- H. The shade contractor shall have a Corporate Quality Control program and manual describing their complete quality assurance program.
- I. All bidders must have an in-house warranty & service department and local office to assist in repairs and service calls.

1.7 WARRANTY

- A. The successful bidder shall provide a 12-month warranty on all labor and materials.
- B. A supplemental warranty from the manufacturer shall be provided for a period of 10 years (pro-rated) on fabric and 10 years on the structural integrity of the steel from the date of substantial completion.
- C. The warranty shall not deprive the Owner of other rights under the provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 – PRODUCTS

2.1 GENERAL – ALTERNATES

- 1. Scope: BASKETBALL SHADE - ALTERNATE # 1
Provide one (1) Six Post Super Span Hip Structure, Model # SBB-6PSSH-56-90-15 measuring 56' x 90' x 15' entry height per CON-JUN-037-17 (1000) Columns shall be minimum of HSS10 x 10 x 3/8", and upper framing shall be HSS8 x 6 x 3/8". No exceptions. Steel columns and upper frame must be designed and built to accommodate integrated wiring and lighting fixtures. Appropriate openings (with covers) shall be designed to allow wiring to be pulled through the hollow inside of the structure's steel, resulting in electrical power to be available for light fixtures, which will be attached to the steel's upper frame. Wiring and lighting fixtures will be installed by others after the erection of the steel structure. Once wiring is placed, fitted covers in the same steel texture and color shall be placed over the openings to create a polished look.
- 2. Scope: PLAY EQUIPMENT SHADE - ALTERNATE # 2
Provide one (1) 30' HEX Structure entry height per plans and sales drawing Q063185. Columns shall be minimum of 4.50 GA 07, and upper framing shall be 3.50 GA 08. No exceptions.
- A. The structure shall be provided and permitted by Capital Shade, LLC, or approved equivalent and include the structural steel frame, fabric roof, steel cables, all fasteners, and installation. Project management and foundations will also be included.
Capital Shade, LLC
15511 Hwy 71 W, Suite 110-128
Austin TX 78738
Contact Name: Michelle Botha – Phone: 512-937-6430
mbotha@capitalshade.com

- B. To qualify as an approved equivalent, please submit product documentation, fabric samples and all quality assurance criteria as per Section 1.4 at least 10 days prior to bid date. Approved equals will be issued per addendum prior to bid date.
- C. The shade structure shall conform to the current adopted version of the International Building Code 2015 and local agency additions and amendments.
- D. All shade structures are engineered and designed to meet a minimum of 90 mph wind load, Exposure C, live load of 5 lbs/sf² and a 5 lbs/sft² snow load. When ASD Steel Design Method is used based on IBC 2021 Section 1605.3.1, the Dead + 0.75 of Live + 0.75 of Wind Load cases must be combined. NO EXCEPTIONS.
- E. Steel:
 - 1. All steel members of the shade structure shall be designed in strict accordance with the requirements of the "American Institute of Steel Construction" (AISC) Specifications and the "American Iron and Steel Institute" (AISI) Specifications for Cold Formed Members and manufactured in a IAS (International Accreditation Service) accredited facility for Structural Steel Fabrication as per IBC 2021 Section 1704.2.2.
 - 2. All connections shall have a maximum internal sleeving tolerance of .0625 inches using high tensile strength steel sections with a minimum sleeve length of 6 inches.
 - 3. All non-hollow structural steel members shall comply with ASTM A-36. All hollow structural steel members shall be cold formed, high strength steel and comply with ASTM A-500, Grade C. All steel plates shall comply with ASTM A-572, Grade 50. All galvanized steel tubing shall be triple coated for rust protection using an in-line electro-plating coat process. All galvanized steel tubing shall be internally coated with zinc and organic coatings to prevent corrosion.
- F. Welding:
 - 1. All shop-welded connections of the shade structure shall be designed and performed in strict accordance with the requirements of the "American Welding Society" (AWS) Specifications. Structural welds shall be made in compliance with the requirements of the "Prequalified" welded joints where applicable and by certified welders. No onsite or field welding shall be permitted.
 - 2. All full penetration welds shall be continuously inspected by an independent inspection agency and shall be tested to the requirement of IBC 2021 and local agency additions and amendments.
- G. Powder Coating:
 - 1. Galvanized steel tubing preparation prior to powder coating shall be executed in accordance to solvent cleaning SSPC-SP1. Solvent such as water, mineral spirits, xylol, toluol, which are to be used to remove foreign matter from the surface. A mechanical method prior to solvent cleaning prior to surface preparation shall be executed according to Power Tool Cleaning SSPC-SP3 and utilizing wire brushed abrasive wheels and needle gun, etc.
 - 2. Carbon structural steel tubing preparation prior to powder coating shall be executed in accordance to commercial blast cleaning SSPC-SP6 or NACE #3. A commercial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, mill scale, rust, coating, oxides, corrosion, products and other foreign material.
 - 3. Powder coating shall be sufficiently applied, with a minimum three mils thickness and cured at the recommended temperature to provide proper adhesion and stability to meet salt spray and adhesion tests as defined by the American Society of Testing Materials.
 - 4. Powder used in the powder coat process shall have the following characteristics:
 - a. Specific Gravity: 1.77 +/- 0.05 g/cm³
 - b. Coverage at 1.0 mils: 109sq.ft/lb/mil
 - c. Storage: 80° F
 - d. Interpron 800 HR is a series of high durability TGIC powder coatings designed for exterior exposure. Tested against the most severe specifications, Interpron 800 HR gives significantly improved gloss retention and resistance to color

change.

- e. Rust Protection Powder Under Coat Primer will be required on all structures. POWDURA® Epoxy Powder Coating Z.R. Primer shall be applied in accordance with the manufacturers' specifications. Primer should be fused only and then top coated with the selected powder coat to ensure proper intercoat adhesion.
- H. Tension Cable: Steel cable is determined based on calculated engineering loads.
 - 1. For light and medium loads, ¼" (nominal) galvanized 7 x 19 strand cable to be used.
 - 2. For heavy loads, 3/8" (nominal) galvanized 7 x 19 cable to be used.
- I. Fabric Roof Systems
 - 1. UV shade fabric is made of UV stabilized Shadesure® cloth as manufactured by MultiKnit Ltd and made of a UV stabilized high-density polyethylene mesh. Mesh shall be raschel knitted with monofilament and tape yarn filler to ensure that material will not unravel if cut. Panels to be 10ft. wide.
 - 2. Fabric Properties:
 - a. Life Expectancy: A minimum of 8 years continuous exposure to the sun
 - b. Fading: Minimum fading after 5 years (3 years for red)
 - c. Fabric Mass: 2.43-2.58 oz/sqft (190-200g/sm)
 - d. Fabric Width: 9.8425 (3m)
 - e. Roll Length: 164.04 (50m)
 - f. Roll Dimensions: 62.99"x16.5354" (160 cm x 42 cm)
 - g. Roll Weight: +/- 66 lbs (+/-30 kg)
 - h. Minimum Temperature: -13°F (-25° C)
 - i. Maximum Temperature: +176°F (80° C)
 - 3. Stitching & Thread:
 - a. All sewing threads are to be double stitched.
 - b. Thread shall be GORE Tenara Sewing Thread manufactured from 100% expanded PTFE (Teflon); mildew resistant exterior approved thread. Thread shall meet or exceed the following:
 - 1) Flexible temperature range
 - 2) Very low shrinkage factor
 - 3) Extremely high strength, durable in outdoor climates
 - 4) Resists flex and abrasion of fabric
 - 5) Unaffected by cleaning agents; acid rain, mildew, salt water and rot resistant, unaffected by most industrial pollutants
 - 6) Treated for prolonged exposure to the sun

2.2 SHIPPING AND HANDLING

- A. All steel surfaces touched by tie down straps are to be padded before final clinching. This can be accomplished by using carpet pads or factory manufactured padding.
- B. All dunnage must be padded before painted products are set in place. Smaller and loose pieces must be padded and totally separate from paint padding.
- C. Unloading: Lift forks to be covered with padding. All dunnage must be padded vertically and horizontally to prevent damage to painted surfaces. When unloading, take care to prevent tools and other hard surface items from making contact.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Installation of shade structures shall be performed by manufacturer or manufacturer-approved contractor, which shall be bonded and holding a current contractor's license with

the State of Texas Contractors State License Board. All installation personnel must have experience in the erection of tensioned fabric structures.

- B. The contractor installing the structure shall comply with manufactures instructions for assembly, installation, and erection per approved drawings.
- C. Concrete:
 - 1. Unless noted otherwise for footing and piers by General Contractor's Engineer, concrete specification for footings, piers, slabs, curbs and walkways shall meet a minimum 2,500 psi at 28-day strength.
 - 2. Concrete work is executed in strict accordance with the latest American Concrete Institute Building Code (ACI 318-99).
 - 3. Slump 4" maximum.
 - 4. Whenever daily ambient temperatures are below 80 degrees Fahrenheit, the contractor may have mix accelerators and hot water added at the batch plant.
 - a. Temperature range between 75-80 degrees, 1% accelerator High Early (non-calcium)
 - b. Temperature range between 70-75 degrees, 2% accelerator High Early (non-calcium)
 - c. Temperature range below 70 degrees, 3% accelerator High Early (non-calcium)
 - 5. The contractor shall not pour any concrete when daily ambient temperature is below 55 degrees Fahrenheit.

Temperature Range	% Accelerator	Type Accelerator
75-80 degrees	1%	High Early (non-calcium)
70-75 degrees	2%	High Early (non-calcium)
Below 70 degrees	3%	High Early (non-calcium)

- D. Foundations:
 - 1. All Anchor Bolts set in new concrete shall be ASTM F-1554 GR 55
 - 2. All Anchor Bolts shall be Hot Dipped Galvanized
 - 3. Pier Footings:
 - Structure 1 - Minimum footing size shall be 30" diameter x 13' depth and placed in accordance with/ and conform to manufacturers engineered specifications and drawings.
 - Structure 2 - Minimum footing size shall be 24" diameter x 6' depth and placed in accordance with/ and conform to manufacturers engineered specifications and drawings.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Clearing and protection of vegetation.
- B. Removal of existing debris.

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 57 13 - Temporary Erosion and Sedimentation Control.
- D. Section 02 40 00 - Demolition: Removal of built elements and utilities.
- E. Section 31 22 00 - Grading: Topsoil removal.
- F. Section 31 22 00 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- G. Section 31 23 23 - Fill and Backfill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- H. Section 31 23 23 - Fill and Backfill: Filling holes, pits, and excavations generated as a result of removal operations.
- I. Section 32 01 90.33 – Tree Preservation: Protection and pruning of existing trees to remain.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fill Material: As specified in Section 31 00 00 - Grading

PART 3 EXECUTION

3.01 EXISTING UTILITIES AND BUILT ELEMENTS

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Protect existing structures and other elements that are not to be removed.

3.02 VEGETATION

- A. Scope: Remove brush, and stumps in areas to be covered by new improvements.
 - 1. Stake out layout of improvements for approval by Landscape Architect and Owner prior to initiating clearing activity.
 - 2. Place barricade fencing:
 - a. Obtain approval of installation of barricade fencing from COSA Tree Inspector, Landscape Architect and Owner prior to initiating clearing activity.
 - 3. Adjustments in location of pedestrian paving and trails as may be required for field conditions including but not limited to existing trees/vegetation and site features as may be

directed by Landscape Architect and Owner to the extent that the overall value of the work is not substantially changed.

- a. In the event of a substantial change in the work, as determined by agreement between Contractor and Owner, a Field Alteration/Change Order will be issued.
- B. Do not begin clearing until vegetation to be relocated has been removed.
- C. Do not remove or damage vegetation beyond the following limits:
 1. 5 feet each side of roadway curbs.
 2. 5 feet; 2 feet each side of walkways and trails.
 3. 5 feet; 3 feet each side of utility trenches.
 4. 5 feet each side of roadway curbs, walkways, and main utility trenches.
 5. Exception: Specific trees and vegetation indicated on drawings to be removed.
 6. Exception: Selective thinning of undergrowth specified elsewhere.
- D. Install substantial, highly visible fences at least 4 feet high to prevent inadvertent damage to vegetation to remain:
 1. Around trees to remain within vegetation removal limits; locate no closer to tree than at the drip line.
- E. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

3.03 DEBRIS

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 31 22 00

GRADING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal and storage of topsoil.
- B. Rough grading the site for paving.
- C. Topsoil and finish grading.

1.02 RELATED SECTIONS

- A. Section 01 57 13- Temporary Erosion Control
- B. Section 31 10 00 - Site Clearing.
- C. Section 31 23 16 - Excavation.
- D. Section 31 23 23 - Fill and Backfill: Filling and compaction.
- E. Section 32 92 19 - Seeding: Finish ground cover.
- F. Section 32 01 90.33 – Tree Preservation: Protection of existing trees.

1.03 UNIT PRICES

- A. Topsoil:
 - 1. Measurement Method: By the cubic yard.
 - 2. Includes: Excavating existing topsoil; or Supplying topsoil; stockpiling, scarifying substrate surface, placing where required, and compacting.

1.04 PROJECT CONDITIONS

- A. Protect above - and below-grade utilities that remain.
- B. Protect plants and other features not indicated to be removed from excavating equipment and vehicular traffic.
- C. Protect bench marks, survey control points, existing structures, sidewalks, paving, and curbs from grading equipment and vehicular traffic.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Topsoil: See Section 31 23 23.
- B. Other Fill Materials: See Section 31 23 23.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
 - 1. Contractor is to notify Texas One Call (800-245-4545) 72 hours in prior to any excavation. Contractor shall be responsible for making himself familiar with all underground utilities, pipes and structures.

2. Contractor shall take sole responsibility for any cost incurred due to damage of said utilities whether or not Texas One Call is notified.

3.03 ROUGH GRADING (SEE PLAN SHEETS FOR NOTES & COSA ENVIRONMENTAL REQUIREMENTS)

- A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, marked areas; entire site; or to prevent mixing with foreign materials.
- B. Do not remove topsoil when wet.
- C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded; marked areas; entire site; or as directed.
- D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- E. When excavating through roots, perform work by hand and cut roots with sharp axe.
- F. See Section 31 23 23 for filling procedures.
- G. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key fill material to slope for firm bearing.
- H. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

3.04 SOIL REMOVAL and STOCKPILING (FOLLOW COSA ENVIRONMENTAL REQUIREMENTS)

- A. Stockpile excavated topsoil on site for reuse on site.
- B. Stockpile topsoil to be re-used on site; remove remainder from site.
- C. Remove excavated topsoil from site.
- D. Stockpile excavated subsoil on site for use on site.
- E. Stockpile subsoil to be re-used on site; remove remainder from site.
- F. Remove excavated subsoil from site.
- G. Stockpiles: Use areas designated on site; pile depth not to exceed 8 feet; protect from erosion.
 1. Area(s) to be determined on site with approval of Owner.

3.05 FINISH GRADING (SEE PLAN SHEETS FOR NOTES & COSA ENVIRONMENTAL REQUIREMENTS)

- A. All areas disturbed by grading are to receive topsoil and finish grading.
- B. Before Finish Grading:
 1. Verify trench backfilling has been inspected.
 2. Verify subgrade has been contoured and compacted.
- C. At subgrade, remove debris, roots, branches, stones, in excess of 2 inch in size. Remove soil contaminated with petroleum products.
- D. Where topsoil is to be placed, scarify surface to depth of 3 inches.
- E. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 6 inches.
- F. Place topsoil in areas where seeding, sodding, and planting are indicated.
- G. Place topsoil to establish finish grade and where required to level grade.
- H. Place topsoil where required to level finish grade.
- I. Place topsoil to the following compacted thicknesses in areas disturbed by grading unless directed otherwise in field by Landscape Architect:

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1. Areas to be Seeded with Grass: 6 inches or as shown on the plans.
- J. Place topsoil during dry weather.
- K. Remove roots, weeds, rocks, and foreign material while spreading.
- L. Near plants spread topsoil manually to prevent damage.
- M. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
 1. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove soil contaminated with petroleum products.
 2. Applies to areas not disturbed by grading.
- N. Lightly compact placed topsoil by rolling.
- O. See plan sheets for specific grading notes for soccer fields.

3.06 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.
- B. Top Surface of Finish Grade: Plus or minus 1/2 inch.

3.07 FIELD QUALITY CONTROL

- A. See Section 31 23 23 for compaction density testing.

3.08 CLEANING AND PROTECTION

- A. Protect plants, lawns, rock outcroppings, existing boundaries, fences, sidewalks, paving, and curbs not indicated to be removed from excavating equipment and vehicular traffic.
- B. Remove unused stockpiled topsoil and subsoil. Grade stockpiled area to prevent standing water.
- C. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

SECTION 31 23 23

FILL AND BACKFILL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Backfilling and compacting for utilities.
- B. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.
- C. Topsoil placement in landscape areas.

1.02 RELATED SECTIONS

- A. Section 31 00 00 - Grading: Site grading.
- B. Section 32 01 90.33 – Tree Preservation: Preservation of existing trees.

1.03 UNIT PRICES

- A. See Section 01 22 00 - Unit Prices, for general requirements applicable to unit prices for earthwork.
- B. General Fill:
 - 1. Measurement Method: By the cubic yard.
 - 2. Includes: Excavating existing soil, supplying fill; stockpiling, scarifying substrate surface, placing where required, and compacting.

1.04 REFERENCES

- A. ASTM C 33 - Standard Specifications for Concrete Aggregates; latest edition.
- B. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; latest edition.
- C. ASTM D 448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction; latest edition.
- D. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); latest edition.
- E. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; latest edition.
- F. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); latest edition.
- G. ASTM D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; latest edition.
- H. ASTM D 2940 - Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports; latest edition.
- I. ASTM D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); latest edition.
- J. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; latest edition.

1.05 DEFINITIONS

- A. Finish Grade Elevations: Indicated on drawings.

- B. Subgrade Elevations: As required to establish finish grade elevations.

1.06 SUBMITTALS

- A. See CoSA Contract for Construction Administrative Requirements, for submittal procedures.
- B. Samples: 10 lb sample of each type of fill; submit in air-tight containers to testing laboratory or as required by testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- E. Compaction Density Test Reports.

1.07 PROJECT CONDITIONS

- A. Provide sufficient quantities of fill if needed to supplement material obtained from the site to meet project schedule and requirements. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated by Owner's Representative.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.
- C. Verify that survey bench marks and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. General Fill- Backfill and fill materials ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM: free from rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter and having a plasticity index (PI) of less than 30.
 - 1. Unsatisfactory soil materials include ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
 - 2. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- C. Subbase and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2 inch sieve and not more than 8 percent passing a No. 200 sieve.
- D. Topsoil (stripped from site): Topsoil stripped from site for use in landscape work shall be screened to remove all stone debris and undesirable matter 1/2 inch in size or greater.
- E. Topsoil (supplemental): Topsoil to be furnished, when required to supplement topsoil stripped from site, shall be secured from an approved off-site location. It shall be fertile, friable, natural loam containing a liberal amount of humus and shall be capable of sustaining vigorous plant growth. It shall be free of stone, lumps and clods of hard earth 1/2 inch diameter and greater, plants or their roots, sticks and other extraneous matter. Under no circumstances will topsoil be accepted unless it is free of the aforementioned contaminants. Use of non-cohesive "sandy loam" shall not be acceptable.

2.02 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, test and analyze samples

for compliance before delivery to site.

- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Identify required lines, levels, contours, and datum locations.
- B. See Sections 31 22 00 for additional requirements.

3.02 PREPARATION

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- H. Slope grade away from structures and improvements minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- I. Correct areas that are over-excavated.
 - 1. Load-bearing foundation surfaces: Fill with concrete.
 - 2. Load-bearing foundation surfaces: Use structural fill, flush to required elevation, compacted to 100 percent of maximum dry density.
 - 3. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.
- J. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction; 95 percent of maximum dry density.
 - 2. At other locations: 90 percent of maximum dry density.
- K. Reshape and re-compact fills subjected to vehicular traffic.

3.04 FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.

3.05 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.

- B. Top Surface of Filling Under Paved Areas: Plus or minus 1/2 inch from required elevations.

3.06 FIELD QUALITY CONTROL

- A. See CoSA Quality Requirements, for general requirements for field inspection and testing.
- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556 or ASTM D2167
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor").
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: as per contract requirements.
- F. Proof roll compacted fill at surfaces that will be under slabs-on-grade, pavers, and paving.

3.07 CLEAN-UP

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpiled area to prevent standing surface water. Unused material may be distributed on site at approval of Owner's Representative.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 32 01 90.33

TREE PRESERVATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Protection, pruning and feeding of existing trees to be saved within the limits of project.
- B. Installation of protection barricade fence.
- C. Installation of tree armor.

1.02 RELATED SECTIONS

- A. Section 02 41 00 - Demolition
- B. Section 31 10 00 - Site Clearing
- C. Section 31 22 00 - Grading
- D. Section 31 23 23 - Fill and Backfill

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - 1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - 2. ANSI Z60.1 (Latest edition) Nursery Stock.
 - 3. ANSI Z133.1 (Latest edition) Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush.Maintenance - Standard Practices.
 - 4. ANSI A300 (Latest edition)

1.04 SITE CONDITIONS:

- A. Inspection:
 - 1. Contractor, Arborist, Owner's Representative and Design Consultant shall review pruning work to be completed prior to initiating work.
 - 2. Obtain approval of installation of tree barricade fencing from COSA Tree Inspector, Owner and Design Consultant prior to the initiation of any removal of vegetation and construction.

1.05 QUALITY CONTROL:

- A. Employ qualified certified Arborist for pruning and feeding as approved by the Design Consultant. Arborist shall have the following minimum qualifications:
 - 1. Membership in:
 - a. NAA - National Arborist Association
 - b. ISA - International Society of Arborists
 - 2. Meet state requirements for insurance.
 - 3. Licensed for application and use of pesticides.
 - 4. Bonded.

1.06 SUBMITTALS:

- A. Furnish at Design Consultant's office, prior to installation, the following samples:
 - 1. Certification: Copy of Arborist qualifications.
 - 2. Mulch: Label from bag (Supplier's statement of analysis if bulk), and 1-gallon container of mulch sample.
 - 3. Fertilizer: Label from bag or Supplier's brochure.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Fertilizer for Trees: Davey Arbor Green, 30-10-7 for liquid suspended application, distributed by The Davey Company in San Antonio, Texas (210) 698-0515 or approved equal.
- B. Tree Barricade Fencing: Fabric of square link orange 4' width, high density polyethylene with 5-7 year life. Posts of 6' height studded T-posts with painted on finish for rust protection.
- C. Mulch: Mulch shall be free of deleterious material and shall be stored as to prevent inclusion of foreign material. Mulch shall be native shredded hardwood mulch, manufactured by Gardenville Horticultural Products, San Antonio, Texas, 210-651-6115.
 - 1. Mulch resulting from double shredding/grinding of trees removed from the site would be an acceptable alternative.
- D. Tree Wound Paint: Bituminous based paint of standard manufacture specifically formulated for tree wounds.

PART 3 - EXECUTION

3.01 PROTECTION FOR EXISTING TREES TO BE PRESERVED:

- A. All trees to be preserved on the property shall be protected against damage from construction operations.
 - 1. Includes associated understory.
- B. Only those trees located within the limits of improvements to be constructed, or as indicated, are to be removed.
 - 1. All trees to remain shall be flagged for review after the location of improvements to be constructed are staked in the field.
 - 2. Any tree to be removed shall be reviewed by the Design Consultant and Owner for approval prior to removal.
 - 3. Trees to be preserved are represented by a solid line. Trees to be removed are represented by a dashed or ghosted line. Trees to be planted are graphically differentiated from existing trees.
 - 4. Obtain approval of installation of tree barricade fencing from COSA Tree Inspector, Owner and Design Consultant prior to the initiation of any removal of vegetation and construction.
- C. Erect fencing and armor protection prior to beginning any clearing, demolition or construction activity, and unless otherwise instructed, maintain in place until construction is completed.
 - 1. Obtain approval of installation of tree barricade fencing from COSA Tree Inspector, Owner and Design Consultant prior to the initiation of any removal of vegetation and construction.
 - 2. Tree protection barricade shall be erected at the edge of the dripline where possible; in extreme circumstances and with the approval of the Design Consultant, fencing may be located at the edge of the root protection zone.
 - a. For trees 10 inch caliper and less, the minimum distance the barrier shall be erected is ten (10) feet from the trunk of tree or clump of trees.
 - 3. Trees immediately adjacent to and within one hundred feet (100) of any construction activities are to be protected by barricade fencing; subject to approval of the Design Consultant and Owner.
 - 4. Trees exposed to construction activity within the dripline or within twenty-five (25) feet of any construction activity are to have trunks protected with tree armor in addition to barricade fencing.
 - 5. The tree protection barricade shall be placed before any excavating or grading is begun and maintained in repair for the duration of the construction work unless otherwise directed.
 - 6. No material shall be stored or construction operation shall be carried on within the tree protection barricade.

7. Tree protection barricade shall remain until all work is completed.
 8. Remove tree protection barricade at commencement of finish grading.
 9. Remove tree armor immediately prior to Substantial Completion.
- D. Protect tree trunk with tree armor to a height of 8' or to the limits of lower branching (when exposed to construction activity within the drip line) with 2x4's butted side to side completely around trunk.
1. Wire wrap do not nail, around trees.
- E. Protect trees that are to remain, whether within barricade fencing or not, from the following:
1. Compaction of root area by equipment or material storage; construction materials shall not be stored closer to trees than the farthest extension of their limbs (dripline).
 2. The proposed finished grade within the root protection zone of any preserved tree shall not be raised or lowered more than three (3) inches.
 - a. Retaining methods can be used to protect and/or provide lateral support to the area outside the root protection zone.
 3. Trunk damage by moving equipment, material storage, nailing or bolting.
 4. Strangling by tying ropes or guy wires to trunks or large branches.
 5. Poisoning by pouring solvents, gas, paint, etc., on or around trees and roots.
 6. Cutting on roots by excavating, ditching, etc.
 - a. Prior to excavation within the tree drip lines or the removal of trees adjacent to other trees that are to remain, make a clean cut between the disturbed and undisturbed root zones with a rock saw or similar equipment to minimize root damage.
 - b. Refer to EXCAVATION AROUND TREES for additional information.
 7. Damage of branches by improper pruning.
 8. Drought from failure to water or by cutting or changing normal drainage pattern past roots. Contractor shall provide means as necessary to ensure positive drainage.
 9. Changes of soil pH factor by disposal of lime base materials such as concrete, plaster, lime treatment at pavement subgrade, etc. When installing concrete adjacent to the root zone of a tree, use a minimum 6 mil. plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.
 10. Do not cut roots 3/4" in diameter or over without approval of Owner's Representative. All excavation and earthwork within the drip line of trees shall be done by hand.
 11. Protect all existing trees near areas to be stabilized from underground contaminations by placing a 6 mil. Plastic film barrier along exposed vertical cut extending a minimum 12" into undisturbed subgrade below depth of stabilization.
 12. No vehicular traffic shall occur within the drip line of any tree; including parking of vehicles.
 13. No soil shall be spread, spoiled or otherwise disposed of under any tree within the drip line.
- F. Any damage done to existing tree crowns or root systems shall be repaired by the Arborist to the satisfaction of the Design Consultant and Owner's Representative.
1. Broken branches shall be cut cleanly.
 2. Any roots cut shall be cut cleanly with a saw other means approved by the Design Consultant and Owner's Representative.
- G. Repairs to the trees necessitated by damage caused through negligence of Contractor or his employees will be completed at the Contractor's expense.
1. When trees other than those approved for removal are destroyed or killed, or badly damaged as a result of construction operations, the contract sum will be reduced by the value of the tree as determined by using the accepted International Society of Arboriculture's formula.

3.02 ROOT PROTECTION ZONE:

- A. The root protection zone (RPZ) is measured with a radius from the trunk of 12" for each caliper inch of trunk measured at four and one-half (4-1/2') feet above grade or at the point where the smallest diameter closest to the branching occurs.
1. No disturbance shall occur closer to the tree than one-half the radius of the RPZ or within

five (5) feet of the tree whichever is greater.

3.03 ROOT PROTECTION ZONE IMPACTS:

- A. Those trees to remain which have some encroachment on their root protection zone shall have the following maximum allowable impacts:
 - 1. Minimum Protection Criteria 'A': No disturbance of natural grade, e.g. trenching or excavation, can occur closer to the tree than one-half the radius of the RPZ or within five (5) feet of the tree whichever is greater.
 - 2. Minimum Protection Criteria 'B': No cut or fill greater than three (3) inches will be located closer to the tree trunk than $\frac{1}{2}$ the RPZ radius distance.
- B. Trees impacted shall have a minimum of a six (6) inch layer of mulch placed and maintained over the root protection zone and the undisturbed area within the dripline.
 - 1. Immediate pruning and fertilization shall occur per the pruning and fertilization sections of this specification.
 - 2. Provide water in a slow drip manner to impacted trees as approved by the *Design Consultant* and Owner's Representative.
 - 3. Provide water to apply equivalent to 1 inch once per week to deeply soak in over the area within the dripline of the tree during periods of hot, dry weather.
 - 4. Spray tree crowns periodically to reduce dust accumulation on the leaves.

3.04 EXCAVATING AROUND TREES

- A. Excavate within the dripline of trees only where required and when absolutely necessary.
 - 1. Any excavation within the dripline of trees shall be under the direction of the Arborist.
 - 2. Arborist shall be at site at all times while excavation is occurring within the dripline.
 - 3. Refer to ROOT PROTECTION ZONE.
- B. When excavating for new construction is required within dripline of trees, hand excavate to minimize damage to root systems.
 - 1. Use narrow tine spading forks and comb soil to expose roots.
 - 2. Relocate roots back into backfill areas wherever possible.
 - 3. If large main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking.
 - 4. If root relocation is not practical, clean cut roots using sharp ax approximately three (3) inches back from new construction.
- C. Where existing grade is above new finish grade, carefully excavate within the dripline to the new finish grade.
 - 1. Carefully hand excavate an additional eight (8) inches below the finish grade.
 - 2. Use narrow tine spading forks to comb the soil to expose the roots, and prune the exposed root structure as recommended by the Arborist.
 - 3. Keep the exposed roots damp.
 - 4. Treat the cut roots as specified and as recommended by the Arborist.
 - 5. After pruning and treatment of the root structure is complete, backfill to finish grade with eight (8) inches of approved plant mix.
- D. Temporarily support and protect roots against damage until permanently relocated and covered with recommended landscape material.

3.05 GOVERNING STANDARDS:

- A. Work procedures will be guided by the current provisions of the American National Standard Institute. Complete detail of the provisions are to be found in the references listed. The two basic objectives of the pruning operation shall include:
 - 1. Hazard Reduction Pruning: Hazard reduction pruning shall be completed to remove visible hazards in a tree. Hazard pruning shall consist of one or more of the maintenance pruning types.
 - 2. Maintenance Pruning: Maintenance pruning shall be completed to maintain and improve

tree health and structure and includes hazard reduction pruning.

- B. City of San Antonio, Texas Tree Preservation Ordinance, Ordinance No. 85262. trees are to have a one (1) year warranty; refer to Section EXTERIOR PLANTS.

3.06 APPROVAL: No major limbs or structure will be cut or removed without prior approval of the Design Consultant and Owner's Representative.

3.07 FERTILIZATION OF PRESERVED TREES:

- A. All existing trees to be reserved impacted by construction activities taking place within the dripline, including but not limited to trenching and grading, shall be fertilized.
- B. Feeding of existing trees to be impacted by construction shall be accomplished in accordance with the following specifications:
 - 1. Feeding shall be completed prior to construction of permanent improvements adjacent to all trees including site fill or paving including trenching operations.
 - 2. Liquid tree fertilizer applied with a standard hydrant sprayer at a pressure of 100 to 200 psi shall be injected in slightly slanted holes approximately twelve (12) inches in depth.
 - 3. Concentration of suspension to be forty (40) pounds of fertilizer for trees in each 100 gallons of water. Application rate: six (6) pounds of actual nitrogen per 1,000 square feet of area under drip-line.
 - 4. Holes are to be made in concentric circles and 3' on center around the tree with the last ring located at the dripline of the foliage of the trees.
 - 5. Area beneath the dripline of the trees is to be well watered after the fertilization is placed.

3.08 MULCH:

- A. Mulch base of all existing trees four (4') feet radius with 6" deep mulch layer.
 - 1. If existing trees are grouped, the entire area is to be mulched in between the trees.
- B. Mulch base of all existing trees impacted by construction activities ten (10') feet radius past dripline of canopy with 6" deep mulch layer.
 - 1. If existing trees are grouped, the entire area is to be mulched in between the trees.

3.09 CLEANUP:

- A. Wood and debris shall become property of the Contractor and shall be removed from the site. Cost of disposal to be paid by Contractor.
- B. If acceptable to Owner, wood from tree removal and pruning activities can be double shredded/grinded and used on site as mulch at locations as approved by Design Consultant and Owner.

END OF SECTION

SECTION 32 01 90

LANDSCAPE MAINTENANCE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Maintenance of the landscape to be provided.

1.02 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
 - 1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - 2. ANSI Z60.1 (Latest edition) Nursery Stock.
 - 3. ANSI Z133.1 (Latest edition) Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush.
 - 4. ANSI A300 (Latest edition) Tree, Shrub and Other Woody Plant Maintenance- Standard Practices.

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 32 01 90.33 – Tree Preservation
- B. Section 32 92 19 - Seeding
- C. Section 32 93 00 – Exterior Plants

1.04 QUALITY ASSURANCE

- A. Landscape maintenance must be supervised by a staff member of the Contractor who possesses at least one of the following:
 - 1. Certified Landscape Professional Contractor (CLPC) as administered by Texas Association of Landscape Contractors (TALC).
 - 2. College degree relating to the landscape industry or an approved equivalent.

1.05 SUBMITTALS

- A. After completion of the project, submit the following:
 - 1. Watering Schedule.

1.06 JOB CONDITIONS

- A. Maintenance operations shall be conducted under favorable weather conditions during the seasons which are normal for such work as determined by acceptable practice in the locality.
- B. Maintenance operations:
 - 1. Conduct for a minimum 60 day period after substantial completion for turf areas.
 - 2. Conduct for a minimum 1 year period after substantial completion for trees.
 - 3. Terminate after Final Acceptance of Project (or otherwise specified).

PART 2 - PRODUCTS

2.01 MATERIALS- Refer to respective landscape sections for applicable materials.

PART 3 - EXECUTION

3.01 GENERAL

- A. Obtain and follow the maintenance instructions provided by the installer of new plant materials.
- B. General Cleanup: Remove debris from turf areas before each mowing.
 - 1. Debris consists of trash, rubbish, dropped leaves, downed branches and limbs of all sizes, dead vegetation, rocks, and other material not belonging in landscaped areas.

2. Remove debris from site and dispose of properly.
- C. Watering, Soil Erosion, and Sedimentation Control: Comply with Federal, state, local, and other regulations in force; prevent over-watering, run-off, erosion, puddling, and ponding.
 1. Repair temporary erosion control mechanisms provided by others.
 2. Repair eroded areas and replant, when caused by inadequate maintenance.
 3. Prevent sediment from entering storm drains.
- D. Earth Mound Watering Basins and Tree Watering Bags: Maintain in good condition and as required to permit efficient application of water without waste; reapply mulch if soil surface shows.
- D. Trees:
 1. Exercise care to avoid girdling trees.
 2. Provide protective collars if necessary.
 3. Remove protective collars at end of maintenance period.
- E. Fertilizing: Apply fertilizer only when necessary.
- F. Earth Mound Watering Basins: Maintain in good condition and as required to permit efficient application of water without waste; reapply mulch if soil surface shows.
- G. Drainage Channels: Remove obstructions in gutters, catch basins, storm drain inlets, yard drains, swales, ditches, and overflows.
- H. Health Maintenance: Inspect all trees regularly for health:
 1. Eradicate diseases and damaging pests, regardless of severity or speed of effect.
 2. Treat accidental injuries and abrasions.
 3. If a tree is unhealthy but not yet dead, according to specified definitions, determine reason(s) and take remedial action immediately.
 4. Remove dead trees immediately upon determining that they are dead.
- I. Pesticide and Herbicide Application: Comply with manufacturer's instructions and recommendations and applicable regulations.
 1. Obtain Owner's approval prior to each application.
 2. Apply in manner to prevent injury to personnel and damage to property due to either direct spray or drifting, both on and off Owner's property.
 3. Use backflow preventers on hose bibs used for mixing water; prevent spills.
 4. Inspect equipment daily before application; repair leaks, clogs, wear, and damage.
 5. Do not dispose of excess mixed material, unmixed material, containers, residue, rinse water, or contaminated articles on site; dispose of off site in legal manner.
 6. Rinse water may be used as mix water for next batch of same formulation.
 7. Contractor is responsible for all recordkeeping, submissions, and reports required by laws and regulations.

3.02 MAINTENANCE

- A. Maintain trees by pruning removal of dead wood, cultivating, watering, weeding and mulching as required for normal, healthy growth.
 1. Restore planting saucers.
 2. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required.
 3. Spray as required to keep trees free of insects and disease.
 4. Provide water in tree watering bags until Final Acceptance to provide 1 inch water per week.
 - a. period requires equivalent of 4- 5 gallon buckets of water minimum per week.
- B. Maintain turf/grass areas by watering, fertilizing, weeding, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable turf, free of eroded or bare areas (total bare area no greater than 2 percent of total area).

1. Mowing shall be accomplished to maintain grass at a 1-3/8- to 1½-inch height.
 - a. Mowing shall not remove more than 1/3 height of the grass at each mowing.
 2. Water turf/grass areas until Final Acceptance of project.
 3. Water to provide an equivalent of 1 inch water per week for the establishment of all turf/grass areas to the satisfaction of the Owner.
 4. Keep turf relatively free of thatch, woody plant roots, diseases, nematodes, soil-borne insects, stones larger than 1-1/2 inches in diameter, and other materials detrimental to grass growth.
 5. Limit broadleaf weeds and patches of foreign grass to a maximum of 2 percent of the total area.
- C. Fertilize all turf/grass areas within the project limits, 30 days following initial installation as per recommendation of fertilizer analysis at rate to provide 1# nitrogen/1,000 SF.

3.03 OPERATIONAL INSTRUCTIONS

- A. Watering Schedule:
1. The watering schedule is to include the duration and frequency per week.
 2. This will be worked out jointly with the Landscape Irrigation Contractor and shall be programmed on to the controller after review by Owner.
 3. Program shall be submitted to the Owner as part of the final acceptance process.

3.04 CLEANUP AND PROTECTION

- A. Protect existing vegetation, pavements, and facilities from damage due to maintenance activities; restore damaged items to original condition or replace, at no extra cost to Owner.
- B. Remove and dispose of general cleanup debris and biodegradable debris in a proper manner.
1. Biodegradable Debris: Owner's trash collection facilities may not be used; dispose of off site in accordance with applicable regulations.
 2. Non-Biodegradable Debris: Owner's trash collection facilities may not be used; dispose of off site in accordance with applicable regulations.
- C. After maintenance operations are finished, all paved areas which may have become strewn with soil or other material shall be thoroughly cleaned by sweeping, and if necessary, power washing.
- D. Protect landscape work from damage due to maintenance operations, operations by other contractors and trades and trespassers.
1. Treat, repair or replace damaged landscape work as directed.

3.05 INSPECTION AND ACCEPTANCE

- A. When maintenance period is complete, Owner will, upon written request by the Contractor, make an inspection to determine acceptability.
- B. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by the Owner and found to be acceptable.

END OF SECTION

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete sidewalks.

1.02 RELATED SECTIONS

- A. Section 31 00 00 - Grading: Preparation of site for paving and base.
- B. Section 31 23 23 - Fill and Backfill: Compacted subbase for paving.
- C. Section 07 90 00 - Joint Sealers: Sealant for joints.

1.03 UNIT PRICES

- A. See Section 01 22 00 - Unit Prices, for additional unit price requirements.
- B. Concrete Placed: By the square yd per specified inch thickness. Includes preparing base, placing, floating and finishing, testing.

1.04 REFERENCES

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; latest edition.
- B. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; latest edition.
- C. ACI 305R - Hot Weather Concreting; American Concrete Institute International; latest edition.
- D. ACI 306R - Cold Weather Concreting; American Concrete Institute International; latest edition.
- E. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; latest edition.
- F. ASTM C 33 - Standard Specification for Concrete Aggregates; latest edition.
- G. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; latest edition.
- H. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; latest edition.
- I. ASTM C 150 - Standard Specification for Portland Cement; latest edition.
- J. ASTM C 173/C 173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; latest edition.
- K. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; latest edition.
- L. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; latest edition.
- M. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; latest edition.
- N. ASTM C 685/C 685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; latest edition.
- O. ASTM C 1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete; latest edition.
- P. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving

and Structural Construction (nonextruding and Resilient Bituminous Types); latest edition.

1.05 SUBMITTALS

- A. Product Data: Provide data on joint filler, admixtures, and curing compound.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain cementitious materials from same source throughout.
- C. Follow recommendations of ACI 305R when concreting during hot weather.
- D. Follow recommendations of ACI 306R when concreting during cold weather.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.01 FORM MATERIALS

- A. Form Materials: Conform to ACI 301.
- B. Wood or Steel form material, profiled to suit conditions.
- C. Joint Filler: Preformed; non-extruding bituminous type (ASTM D 1751).
 - 1. Thickness: 1/2 inch.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A 615/A 615M Grade 40 (280); deformed billet steel bars; unfinished finish.
- B. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60; unfinished finish. Cut bars true to length with ends square and free of burrs.

2.03 CONCRETE MATERIALS

- A. Concrete Materials: As specified in Section 03 30 00.
- B. Cement: ASTM C 150 Normal - Type I Portland type, grey color.
- C. Use one brand of cement throughout project, unless otherwise acceptable to Landscape Architect.
- D. Normal Weight Aggregates: ASTM C 33, and as herein specified. Provide aggregates from a single source for exposed concrete.
- E. For exterior exposed surfaces, do not use fine or course aggregates containing spalling-causing deleterious substances.
- F. Course Aggregate: Crushed rock or washed gravel with minimum size between 3/4 inch and 1 1/2 inch, and with a maximum size number 4.
- G. Fine Aggregate: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8 inch screen, of which at least 12% shall pass a 50- mesh screen.
- H. Water: Clean, and not detrimental to concrete.
- I. Air Entrainment Admixture: ASTM C 260.
- J. Chemical Admixtures: ASTM C 494/C 494M, Type A - Water Reducing.

2.04 ACCESSORIES

- A. Curing Compound: ASTM C 309, Type 1;1-D, or 2, Class A.
- B. Joint Sealer: Type as specified in Section 07 90 00.

2.05 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of trial mixtures, as specified in ACI 301.
 - 1. For trial mixtures method, employ independent testing agency acceptable to Design Consultant for preparing and reporting proposed mix designs.
 - 2. Do not use Owner's field quality-control testing agency as the independent testing agency.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.
- D. Fiber Reinforcement: Add to mix at rate of 1.5 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.
- E. Concrete Properties:
 - 1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 3,000 psi. As scheduled; or As indicated on drawings.
 - a. General Pedestrian Paving: 3,000 psi.
 - b. Skate Park Slab: 6,000 psi.
 - 2. Cement Content: Minimum 480 lb per cubic yard.
 - 3. Water-Cement Ratio: Maximum 40 percent by weight.
 - 4. Total Air Content: 4 percent, determined in accordance with ASTM C 173/C 173M.
 - 5. Maximum Slump: 5 inches.
 - 6. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of plus or minus 1 1/2 percent.
 - a. Air Content: 5.5 percent for 1 1/2 inch maximum aggregate.
 - b. Air Content: 6.0 percent for 1 inch maximum aggregate.
 - c. Air Content: 6.00 percent for 3/4 inch maximum aggregate.
 - 7. Mix adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.
 - 8. Maximum Aggregate Size: 1 1/2 inch. Minimum size between 3/4 inch and 1 1/2 inch and with a maximum size number 4.

2.06 MIXING

- A. Transit Mixers: Comply with ASTM C 94, except as may be modified by the following:
 - 1. Delete references for allowing additional water to be added to batch for material with slump. Addition of water to the batch will not be permitted.
 - 2. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.
 - 3. When air temperature is in between 85 degrees F and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.02 SUBBASE

- A. See Section 31 23 23 for construction of base for work of this Section.

3.03 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Notify Design Consultant minimum 24 hours prior to commencement of concreting operations.

3.04 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.05 REINFORCEMENT

- A. Place reinforcement as indicated on plans and details.
- B. Interrupt reinforcement at expansion joints.
- C. Place dowels; or reinforcement to achieve pavement alignment as detailed.
- D. Provide doweled joints 24 inch on center at transverse joints; interruptions of concrete; with one end of dowel set in capped sleeve to allow longitudinal movement.

3.06 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during placement of concrete.
- C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- D. Place concrete to pattern indicated.
- E. Apply surface retarder to all exposed surfaces in accordance with manufacturer's instructions.

3.07 JOINTS

- A. Align sidewalk joints.
- B. Place 1/2 inch wide expansion joints at 20 foot; 40 foot maximum intervals and to separate paving from vertical surfaces and other components and in pattern indicated; or None - N/A.
 - 1. Form joints with joint filler extending from bottom of pavement to within 1/2 inch of finished surface.
 - 2. Secure to resist movement by wet concrete.
- C. Provide scored or sawn joints:
 - 1. At intervals equal in width to pavement unless indicated otherwise.
- D. Saw cut contraction joints 3/16 inch wide at an optimum time after finishing. Cut 1/3 into depth of slab.

3.08 FINISHING

- A. Area; or Paving: Light broom, texture perpendicular to pavement direction.
- B. Sidewalk Paving: Light broom, texture perpendicular to direction of travel; Light broom, texture parallel to direction of travel; Wood float; Exposed aggregate; or with troweled and radiused edge 1/4 inch radius.

- C. Direction of Texturing: Transverse to pavement direction or as indicated.
- D. Pedestrian Ramps: Medium Broomed perpendicular to slope.
- E. Inclined Vehicular Ramps: Medium Broomed perpendicular to slope.
- F. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.10 JOINT SEALING

- A. See Section 07 90 00 for joint sealer requirements.

3.11 TOLERANCES

- A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.
- B. Maximum Variation From True Position: 1/4 inch.

3.12 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests.
 - 1. Provide free access to concrete operations at project site and cooperate with appointed firm.
 - 2. Submit proposed mix design of each class of concrete testing firm for review prior to commencement of concrete operations.
 - 3. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- B. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 75 cu yd or less of each class of concrete placed.
 - 1. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
 - 2. Perform one slump test for each set of test cylinders taken.
- C. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.13 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian or vehicular traffic over pavement until 75 percent design strength of concrete has been achieved.

3.14 SCHEDULES

- A. Pedestrian Walk: 3,000 psi 28 day concrete, 5 inches thick, #4 rebar at 18 inch on center each way reinforcement, wood float finish or as shown in details.

END OF SECTION

SECTION 32 92 19

SEEDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Seeding or hydroseeding; mulching and fertilizer.
- B. Maintenance.

1.02 RELATED SECTIONS

- A. Section 31 22 00 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.
- B. Section 31 23 23 - Fill and Backfill: Topsoil material.
- C. Section 32 01 90 Landscape Maintenance: Post-occupancy maintenance.

1.03 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.04 SUBMITTALS

- A. Products:
 - 1. Mulching Agent.
 - 2. Certification of seed.

1.05 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.07 MAINTENANCE SERVICE

- A. Furnish maintenance of seeded areas for three months from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 SEED MIXTURE

- A. Seed Mixture:
 - 1. Grass Seed: Provide fresh, clean, new crop seed complying with tolerance for purity and germination established by the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and the Texas Seed Law.
 - a. Seed which has become wet, moldy or otherwise damaged in transition in storage will not be accepted.
 - b. Seed to be completely free of any objectionable foreign material that will hinder proper distribution.
 - c. Seed to be treated with an approved fungicide by commercial or state laboratory not more than 6 months prior to date of planting.

- d. Seed rate to be Pure Live Seed (PLS). Minimum percent of PLS to be 85%. Seed type to be planted at the mixture, rate and planting conditions as follows:
 - 1) Blackjack bermudagrass (warm season grass) - 4 pounds per 1,000 square feet distributed by Douglas King Co., San Antonio, Texas - March 20 to September 1.

2.02 ACCESSORIES

- A. Mulching Agent: Weyerhaeuser virgin wood fiber mulch, Silva Fiber distributed by James Lincoln Corp., Garland, Texas 972/840-2440 or approved equal.
- B. Starter Fertilizer: 13-13-13 water soluble fertilizer.
- C. Lawn Fertilizer: Premium Plant Care Formula (with soil microbes) by Agrigro, available at Gardenville or approved equal.
- D. Recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.
- E. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
- F. Herbicide: Post emergent herbicide Round-Up by Monsanto Corp., or approved equal.

2.03 TESTS

- A. Provide analysis of topsoil fill under provisions of Section 01 40 00.
- B. Submit minimum 10 oz; 16 oz sample of topsoil proposed. Forward sample to approved testing laboratory in sealed containers to prevent contamination.
- C. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.
- D. Provide recommendations on fertilization requirements for turf.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this Section.

3.02 PREPARATION

- A. Prepare subgrade in accordance with Section 31 22 00 and notes on drawings.
- B. Place topsoil in accordance with Section 31 22 00.

3.03 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions; or at a rate recommended by the soils analysis.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.04 HYDROMULCH SEEDING APPLICATION

- A. Apply hydromulch slurry with a hydraulic seeder at rate of 45 pounds per 1,000 square feet mulching agent and 7.6 pounds per 1,000 square feet starter fertilizer.
 - 1. Include seed at rate noted.

- B. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- C. Maintain watering as required to establish grass.

3.05 SEED PROTECTION

- A. Staking of perimeter: Identify seeded areas with 3/8" x 2" x 48" wood surveyor's laths (stakes) and string around area periphery. Set string height to 12 inches. Space stakes at 36 inches.
- B. Erosion fabric: Cover seeded slopes where grade is 20% slope (1:5) or greater with erosion fabric.
 - 1. Roll fabric onto slopes without stretching or pulling.
 - 2. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Provide 12 inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
 - 3. Lay blanket smoothly on surface, bury top end of each section and overlap adjacent rolls per manufacturer's instructions. Backfill trench and rake smooth, level with adjacent soil.
 - 4. Secure outside edges and overlaps at 36 inch intervals with stakes.
 - 5. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
 - 6. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

3.06 MAINTENANCE

- A. Begin maintenance immediately after seeding. Maintenance shall continue until final acceptance of the project. Refer to Section 32 01 90 Landscape Maintenance.
- B. Water to prevent grass and soil from drying out.
 - 1. Water for a minimum 30 day period after grass installation for acceptance of grass per approval of Project Inspector.
- C. Roll surface to remove minor depressions or irregularities.
- D. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- E. Immediately reseed areas which show bare spots. Bare spots over 6 inch diameter in size will not be acceptable.
- F. 30 days following establishment of the turf, fertilize the turf with lawn fertilizer at the rate to apply 1 pound of nitrogen per 1,000 square feet.

3.08 CLEAN UP AND PROTECTION

- A. After seeding operations are finished, all paved areas shall be thoroughly cleaned by sweeping, and if necessary power washing.
- B. Protect seeded areas with warning signs during maintenance period.

END OF SECTION

SECTION 32 93 00

EXTERIOR PLANTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Tree planting.

1.02 RELATED SECTIONS

- A. Section 31 22 00 - Grading
- B. Section 31 23 23 - Fill and Backfill
- C. Section 32 92 19 - Seeding
- D. Section 32 01 90.33 – Tree Preservation

1.03 REFERENCES

- A. Plant material shall conform to the following documents which are to be considered part of these Specifications:
 - 1. "Standardized Plant Names," American Joint Committee on Horticultural Nomenclature, latest edition. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.
 - 2. "American Standard for Nursery Stock," American Association of Nurserymen, Inc., latest edition. A plant shall be dimensioned as it stands in its natural position.
 - 3. "Grades and Standards for Nursery Stock," Texas Association of Nurserymen.
 - 4. "Principles and Practice of Planting Trees and Shrubs" by Gary W. Watson and E.B. Himelick.

1.04 SITE CONDITIONS

- A. Verification of Dimensions:
 - 1. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and sizes, etc., and shall assume full responsibility for the correctness of all such items.
- B. Existing Conditions:
 - 1. New work shall be tied to existing conditions and controls such as existing grades.
 - 2. Finished grades shall bear proper relationship to such controls. The Contractor shall adjust new work as necessary and as directed to meet existing conditions and fulfill intent of the plans.
- C. Obstructions:
 - 1. If any unknown utilities and obstacles are encountered during the construction period, stop work and immediately contact the Design Consultant before proceeding.
 - 2. Such obstructions shall be removed or relocated or the work adjusted as directed by the Design Consultant.
 - 3. If work proceeds without contacting the Design Consultant, shall be held liable for any and all damages.
- D. Underground Utilities: Prior to initiating any work of this section, the Contractor shall contact the appropriate authorities in order that their personnel can locate existing underground utilities that may be encountered.
- E. Existing Vegetation:
 - 1. Portions of the existing vegetation shall remain as indicated on the drawings.
 - 2. Take all means necessary to protect the existing vegetation.
 - 3. Any existing vegetation to remain that is damaged shall be replaced.

4. New work shall be tied to existing conditions and controls such as existing planting beds.
5. Bed expansions shall bear proper relationship to such controls.
6. Adjust new work as necessary and as directed to meet existing conditions and fulfill intent of the plans.

1.05 DEFINITIONS

- A. Weeds: Any plant life not specified or scheduled. Includes:
1. Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, Brome Grass and Green Briar.

1.06 QUALITY ASSURANCE

- A. Landscape installation and maintenance must be supervised by a staff member of the Contractor who possesses at least one of the current certifications/designations:
1. Certified Landscape Professional Contractor (CLPC) as administered by Texas Association of Landscape Contractors (TALC).
 2. College degree relating to the landscape industry or an approved equivalent.
 3. It is the obligation of the Contractor to provide the Owner or Design Consultant with documentation that the above qualification is met.
- B. Source Quality Control:
1. General: Planting materials shall meet or exceed the Specifications of Federal, State and local laws requiring inspection for plant disease and insect control.
 2. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project.
 3. Stock furnished shall be at least the minimum size indicated.
 - a. Larger stock is acceptable, at no additional cost and providing that the larger plants will not be cut back to size indicated.
 - b. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum size indicated and 75% are of the maximum size indicated.
 4. Contractor shall provide written notice of request for inspection to the Design Consultant a minimum of two (2) weeks prior to date of inspection.
 5. Trees may be inspected and approved at the place of growth for compliance with specification requirements for quality, size and variety.
 - a. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.
 6. Analysis and Standards:
 - a. Package standard products with manufacturer's certified analysis.
 - b. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable.
 7. Trees that are undersized or in poor and unviable condition, if planted, shall not be accepted and must be replaced to accomplish the landscape contract.
 8. Conditions where the site is left at an irregular grade are not acceptable.

1.07 EXPLANATION OF DRAWINGS

- A. Due to the scale of drawings, it is not possible to indicate all conditions affecting work.
1. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such elements as may be required to meet such conditions.
 2. Drawings are generally diagrammatic and indicative of the work to be installed.
 3. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, existing planting and trees and other construction on site.

- B. All work called for on the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.
- C. The Contractor shall not willfully install the planting as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in design.
 - 1. Such obstructions or differences should be brought to the attention of the Owner's authorized representative and Design Consultant.
 - 2. In the event this notification is not performed, the contractor shall assume full responsibility for any revisions necessary.
- D. Contractor shall be responsible for all costs involved with work.

1.08 SUBMITTALS

- A. Furnish at Design Consultant's office, prior to installation, the following samples:
 - 1. Soil Conditioner: Label from bag (Supplier's statement of analysis if bulk), and one ounce sample.
 - 2. Soil Amendment: Label from bag (Supplier's statement of analysis if bulk), and one ounce sample.
 - 3. Mulch: Label from bag (Supplier's statement of analysis if bulk), and 1-gallon container of mulch sample.
 - 4. Fertilizer: Label from bag or Supplier's brochure.
 - 5. Herbicide: Label from container or Supplier's brochure.
 - 6. Root Stimulator: Label from container or Supplier's brochure.
 - 7. Plant Schedule: Indicate quantities and species of plant material, with complete source information (nursery name, address, phone number).

1.09 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials:
 - 1. Deliver packaged materials in original containers showing weight, analysis and name of manufacturer.
 - 2. Protect materials from deterioration during delivery, and while stored at site.
- B. Trees:
 - 1. Do not prune prior to delivery unless otherwise approved by Design Consultant.
 - 2. Do not bend or bind-tie trees in such manner as to damage bark, break branches or destroy natural shape
 - 3. Provide protective covering during delivery to prevent wind burn.
- C. Deliver trees after preparations for planting have been completed and plant immediately.
 - 1. Protect all trees from drying out.
 - 2. Use all means necessary to protect trees before, during and after installation and to protect the installed work and materials of all other trades.
- D. Do not remove container grown stock from containers until planting time.
 - 1. Do not drop stock during delivery; broken and loose balls shall not be accepted.

1.10 ABBREVIATIONS

- | | |
|---------------------------------------|------|
| A. Balled & Burlapped | B&B |
| B. Gallon Container Size as Indicated | Gal. |
| C. Multi-Trunk | M.T. |
| D. On Center | O.C. |
| E. Square Yard | S.Y. |
| F. Square Feet | S.F. |

G. Caliper	Cal.
H. Linear Feet	L.F.
I. Tree-form	T.F.
J. Height	Ht.
K. Spread	Sprd.

1.11 JOB CONDITIONS

- A. Basic Regulations:
1. Planting operations shall be conducted under favorable weather conditions during the seasons which are normal for such work as determined by acceptable practice in the locality.
 2. Contractor is hereby notified of active utilities and caution shall be exercised to avoid interruption of services.
 3. The Contractor is responsible for replacement of any existing buried utilities, irrigation lines, etc., if they are broken during the planting operations.
 4. Contact the appropriate utility to get the locations of underground utilities. The replacement costs are at the Contractor's expense.
 5. Protect curbing or walks, protection against damage when it is necessary to cross paved areas.
 6. When conditions detrimental to plant growth are encountered during soil preparation or planting, such as rubble fill, adverse drainage conditions, or obstructions, notify Design Consultant before planting.
- B. Work Sequence:
1. Plant trees after final grades are established and prior to planting of turf, unless otherwise acceptable to Design Consultant.
 2. If planting of trees occurs after turf work, protect turf areas and promptly repair damage to turf resulting from planting operations.
- C. Planting Period:
1. Plant materials as a standard are to be provided as nursery grown containerized condition.
 2. Conditions in which B&B plant material to be utilized shall only be with approval of Owner and Design Consultant and with equitable adjustment.
 3. B&B plant material shall not be planted within the period of April - August; only container grown stock is to be installed during this period.
 4. Soil Preparation (weed treatment):
 - a. Initiate a minimum 8 weeks prior to planting.
 - b. Complete post emergent herbicide applications at a minimum of 2 week intervals. Four applications or as required to be provided.

1.12 WARRANTY & GUARANTEES

- A. TREES:
1. Warranty trees for a period of one (1) year following the date of final acceptance to be alive and in satisfactory growth at the end of the warranty period.
 - a. Trees damaged or killed as a result of hail, winds over 75 miles per hour, lightning, fire, winter kill caused by extreme cold and severe winter conditions not typical of the planting area, theft, vandalism, occupancy of the building, or Owner neglect of proper maintenance are not covered by the warranty.
 2. Replacement:
 - a. By the end of the guarantee period, any tree that is dead or 50 percent or more of the main branch structure dead, or not in satisfactory growth as determined by the Owner or the Design Consultant, shall be removed from the site and shall be replaced.
 - b. All replacements shall be of the same kind and size as specified in the plant list and shall be furnished and planted as originally specified.

- c. Cost of such replacements shall be borne by the Contractor.
- d. Replacement plants shall be guaranteed for one (1) year or as noted in the warranty.
- e. Replacement shall be made within 10 days after notification, or as soon as weather conditions are satisfactory for planting.

1.13 POST CONSTRUCTION PHASE WARRANTY WALKTHROUGH

- A. Conduct quarterly inspections over the one year warranty period.
- B. 3rd quarter inspection to be at 3 months prior to 1 year expiration date.
- C. Submit written report to Owner and Design Consultant stating overall condition of work under warranty and items requiring replacement/repair.

PART 2 - PRODUCTS

2.01 SOIL ADDITIVES

- A. Soil Conditioner: Compost, composted for a period of eight (8) weeks or longer, organic, derived from animal manure, wood shavings, hay, seed hulls, stable bedding, or other organic residue, without dust, objectionable odors, viable weed seed; aerobic and friable, manufactured by Gardenville, San Antonio, Texas, (210) 651-6115 or approved equal. A maximum of 10% cedar flakes/shavings is allowed in conditioner.
- B. Soil Amendment (Lawn): Lawn Dressing (sand and compost), screened, manufactured by Gardenville, San Antonio, Texas, (210) 651-6115, or approved equal.
- C. Planting Bed Soil: Reference material specified in Section 31 23 23 - Fill and Backfill.
- D. Sand: Clean, No. 4 to 100 Colorado River Sand, i.e., sharp or torpedo sand. Trinity River Sand is acceptable.
- E. Fertilizer for Trees: Davey Arbor Green, 30-10-7 for liquid suspended application, distributed by The Davey Company in San Antonio, Texas (210) 698-0515.
- F. Pre-Emergence Weed Control (for use after cultivation): XL-2G by Dow Elanco or approved equal.
- G. Post-Emergence Herbicide: Round-Up by Monsanto Corp., or approved equal.
- H. Root Stimulator:
 - 1. Super Thrive 2% solution.
 - 2. Up Start by Ortho.
 - 3. Medina Soil Activator.

2.02 PLANT MATERIALS

- A. Plant Quantities:
 - 1. The quantities of plants calculated and shown on the plans define only the general magnitude of plants required.
 - 2. The Contractor shall furnish the number of plants at the specified spacing required to accomplish the planting.
- B. Plant Schedule: Refer to Plant Schedule indicating plant material, common and botanical name and size specifications indicated on the drawings.
- C. Quality:
 - 1. Provide trees of size, genus, species and variety shown and scheduled for landscape work as per the following:
 - a. Provide plants typical of their species or variety; with normal, densely-developed branches and vigorous, fibrous root systems.
 - 1) Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs,

borers, and all forms of infestation.

(a) All plants shall have a fully developed form without voids and open spaces.

- b. Dig balled and burlapped plants with firm, natural balls of earth sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant.
 - 1) Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.
2. All trees shall be nursery grown; field collected materials are not acceptable without prior approval of Design Consultant.
 - a. All plants to be container grown.
- D. Bare root plants are not acceptable.
- E. Trees:
 1. Provide tree species that mature at heights over 25'-0" with a single main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.
 2. Height of branching should bear a relationship to the size and variety of tree specified and with the crown in good balance with the trunk. Trees shall not be "poled" or the leader removed.
 3. Trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader for single-stem trees.
 4. For multi-stem trees, all countable stems, in aggregate, shall average the size specified. To be considered a stem, there should be no division of the trunk which branches more than six (6) inches from ground level.
 5. For specimen trees, a plant shall be provided that is well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.
- F. Plant Size:
 1. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the plant list.
- G. No pruning wounds shall be present with a diameter of more than one (1) inch and such wounds must show vigorous bark on all edges.
- H. Substitutions:
 1. Permitted only upon submission of proof at least sixty (60) days prior to planting that the plant specified is not reasonably obtainable.
 2. The substitution shall be authorized by the Owner by change order.

2.03 MISCELLANEOUS LANDSCAPE MATERIALS

- A. Dress Mulch: Regular, double shredded, unscreened hardwood or approved equal.
- B. Wound Dressing: Cabot Tree Paint or approved equal.
- C. Water: Furnished by the Contractor. Hose and other watering equipment to be provided by Contractor.
- D. Anti-Desiccant: Emulsion type, film forming agent designed to permit transpiration but retard excessive loss of moisture from plants.
- E. Tree Guard: Arbor-Guard polyethylene with U.V. inhibitors (minimum eight inch high for up to four inch caliper tree) by Deep Root Corporation, Westminster, California, 714-898-0563 or approved equal.

2.04 MATERIALS FOR STAKING TREES

- A. As per plan details..

PART 3 – EXECUTION

3.01 PLANTING DETAILS

- A. Planting details regarding tree planting are included on the drawings.

3.02 PLANTING LAYOUT

- A. Layout individual tree for plantings.
 - 1. Stake tree locations.
 - 2. The Design Consultant reserves the right to inspect all layouts prior to the start of, during, and after planting work.
 - 3. Make adjustments as may be requested at no additional cost to the Owner.
- B. Set trees in the planting pit to proper grade and alignment.
 - 1. Set upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure.
 - 2. No filling will be permitted directly over root ball or around trunks.
 - 3. Do not use frozen or muddy mixtures for backfilling.
 - 4. Form a ring of soil around the edge of each planting pit to retain water.
- C. After trees are in place, muddle planting soil mixture around sides of balls and fill all voids.
- E. Prior to backfilling with planting soil mixture, remove all burlap, ropes, and wires from the top 1/3 of balls on all balled and burlapped plant material.

3.03 PLANTING TREES IN PITS

- A. Planting Pits:
 - 1. Excavate pits with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage.
 - 2. Minimum diameter is twice the diameter of rootball or size pit to receive rootball.
- B. Drainage Holes:
 - 1. Where tree pits are dug in rock, a 4-inch diameter drainage hole will be drilled to drainage material or rock fracture and filled with gravel.
 - a. The drain hole must meet the test of draining the pit filled with water within a 24 hour period of time.
 - b. Additional drain holes shall be drilled if required to meet drainage test herein described.
 - c. Prior to planting tree, place soil separation fabric over drainage holes.
 - 2. Where tree pits are dug in clay, a 4-inch diameter drainage hole will be drilled to drain and backfill with gravel when required to insure proper drainage.
 - a. The drain hole must meet the test of draining the pit filled with water within a 24 hour period of time.
 - b. Additional drain holes shall be drilled if required to meet drainage test herein described.
 - c. Prior to planting tree place soil separation fabric over drainage holes.
 - 3. Fill excavations for trees with water and allow to percolate out before planting.
- C. Elevation:
 - 1. Set trees 2 to 3 inches above finish grade.
- D. Setting Plants:
 - 1. After placing the plant in the specified pit, planting soil shall be placed around the ball and compacted to avoid injury to the roots and to fill all voids.
 - 2. When pits are nearly filled with soil, add water and allow to soak away.
 - 3. Fill the pit to finished grade with planting soil allowing for mulching material.
 - 4. Form a shallow saucer around each plant by placing a ridge of planting soil around the edge of each pit to retain water.

- E. Absolutely no topsoil or planting mixture shall be placed over top of rootball.
- F. Trees and shrubs shall not be set plumb by adjusting the ball.
- G. When plants are set at proper elevation, planting soil shall be replaced around the ball and compacted, avoiding injury to the roots and filling all voids.
- H. Place fertilizer tablets in planting of trees, at rate shown in table under fertilization section, when approximately half the backfill is in place.
- I. Trees shall be thoroughly watered and then water allowed to soak away.
- J. After settlement, add planting soil as necessary to bring bed to finish grade and again thoroughly water entire plant bed.
- K. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice.
 - 1. Prune trees to retain required height and spread.
 - 2. Unless otherwise directed by Owner or Design Consultant, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any.
- L. Maintain a minimum 3'-0" diameter saucer at base of trees within lawn areas clear of any grass.
- M. All tree pits are to receive a treatment of pre-emergent herbicide just prior to placement of mulch.
- N. Staking trees:
 - 1. Stake trees immediately after planting, only when required to maintain a plumb condition due to wind, weight of plant material, etc.
- O. PVC Tree Guard: Provide tree guards at all trees located within lawn areas.

3.04 FERTILIZATION OF NEWLY PLANTED TREES

- A. Fertilization of new trees shall be accomplished after soil preparation work is complete in accordance with the following specifications:
 - 1. Concentration of suspension to be 40 pounds of fertilizer for trees in each 100 gallons of water. Application rate shall be 6 pounds of actual nitrogen per 1,000 square feet of area under dripline.
 - 2. Suspended tree fertilizer applied with a standard hydrant sprayer at a pressure of 100 to 200 psi shall be injected in slightly slanted holes approximately 12 inches in depth. Injection time at full concentration is 3 to 4 seconds; at half concentration (20 pounds per 100 gallons) for 6 to 8 seconds.
 - 3. Suspended tree fertilizer is to be applied in both the planting pit and the parent undisturbed soil surrounding the pit.
 - 4. Apply suspended tree fertilizer at tree ball within the tree pit at full concentration. In parent soil 12 inches beyond the edge of the pit with holes made at 1-1/2 to 2 feet on center inject half concentration mixture.
- B. Liquid fertilization within the tree pit shall be injected according to the following schedule:
 - 1. Trees 1 to 2" Caliper: One (1) injection
 - 2. Trees 2-1/2 to 3-1/2" Caliper: Two (2) injections
 - 3. Trees 4 to 5-1/2" Caliper: Three (3) injections
 - 4. Trees 6" and Greater Caliper: Inject at 3 feet o.c. in concentric circles around tree with last ring located at drip line. First ring to be located at edge of root ball.
- C. Area beneath dripline of the trees is to be well watered after the fertilization is placed.

3.05 MULCHING:

- A. Dress Mulching:
 - 1. Within two days after planting not less than four (4) inches of dress mulch shall be placed

- on entire area of tree pits.
- 2. Keep mulch six (6) inches away from tree trunk.

3.6 MAINTENANCE

- A. Begin maintenance immediately after each plant is planted. Maintenance shall continue until final acceptance of the project. Refer to Section - Landscape Maintenance.

3.7 CLEANUP AND PROTECTION

- A. During landscape work, all rope, wire, burlap, empty containers, rocks, clods and other debris, shall be removed daily and the site kept neat at all times.
- B. Any excess excavated subsoil or topsoil shall be removed from the site.
- C. After planting operations are finished, all paved areas which may have become strewn with soil or other material shall be thoroughly cleaned by sweeping, and if necessary, power washing.
- D. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.
 - 1. Maintain protection during installation and maintenance periods.
 - 2. Treat, repair or replace damaged landscape work as directed.

3.8 INSPECTION AND ACCEPTANCE

- A. When landscape work is completed, including maintenance, Design Consultant will, upon written request by the Contractor, make an inspection to determine acceptability.
- B. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by the Owner or Design Consultant and found to be acceptable.
 - 1. Remove rejected plants and materials promptly from the project site.

END OF SECTION

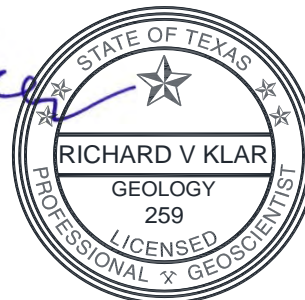
**REVISED
WASTE AND WATER MANAGEMENT SPECIFICATION**

**TOM SLICK PARK IMPROVEMENTS
(HALL'S 151 SITE – ALAMODOME-RELATED SITE)
7400 HIGHWAY 151
SAN ANTONIO, BEXAR COUNTY, TEXAS
SWR NO. 30549
RN102322336**

Prepared for:

CITY OF SAN ANTONIO
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October 15, 2024



10/15/24

Consultant Identification

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SECTION 1: BACKGROUND ENVIRONMENTAL ASSESSMENT INFORMATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Introduction
- C. Project Description and Background
- D. Instructions to Contractor
- E. Additional Information Available for Contractor Review

1.2 RELATED SECTIONS

- A. Section 2: Affected Soils and Water Handling and Disposal

1.3 INTRODUCTION

- A. This bid specification was prepared on behalf of the City of San Antonio (CoSA) Public Works Department (PWD) – Environmental Management Division to describe special soil and water management procedures to be followed during construction activities for the currently proposed Tom Slick Park Improvements project. Tom Slick Park, a portion of which is constructed over a closed industrial waste landfill, is subject to deed restrictions pertaining to the disturbance of the landfill final cover system or cap.
- B. The overall development property is located near the intersection of Highway 151 and Loop 410 in west San Antonio, Bexar County, Texas (hereinafter referred to as SITE). A Site Location Map is provided as **Figure 1** (see *Supplemental Information*). A portion of the SITE (i.e., approximately the western half) is host to fill soils that originated from the former Alamo Iron Works (Industrial Hazardous Waste Solid Waste Registration No. SWR 30549) property during construction of the Alamodome Sports Complex during the early 1990s. This property was previously designated as “Alamodome-related Hall’s 151 Site”.
- C. Significant quantities of Alamodome soils containing intermixed construction/demolition (C/D) debris such as concrete, asphalt pavement, and wood were excavated from the Alamodome site during construction and transported to several off-site locations, including the Hall's 151 Site, for use as general fill. Construction spoils originating from the Alamodome site were subsequently determined to be affected primarily with petroleum hydrocarbons and heavy metal constituents (primarily lead), and contained incidental foundry waste such as slag and casting sands. The Texas Natural Resource Conservation Commission (TNRCC – predecessor of the Texas Commission on Environmental Quality [TCEQ]) identified lead and total petroleum hydrocarbons (TPH) as the primary contaminants of concern in the Alamodome Materials.

- D. A Site Plan depicting the area of planned improvements within Tom Slick Community Park and the reported landfill boundaries associated with Alamodome Materials placement is provided as **Figure 2** (see *Supplemental Information*).

1.4 PROJECT DESCRIPTION AND BACKGROUND

A. Project Description

Planned improvements to the SITE include demolition of portions of the existing asphalt-paved parking lot and flatwork, followed by the construction of a total of 35 additional parking spaces, a 6-foot wide concrete sidewalk/trail connecting the newly-installed and existing parking lots, and a concrete sidewalk connecting the newly-installed parking area and the park amenities. Minor grading on the order of 0.5-1 foot associated with additional parking space and sidewalk/trail construction will be conducted over previously emplaced (and capped) Alamodome Materials (i.e., affected fill soils). If encountered, these soils are subject to special handling, management and disposal requirements promulgated by the TCEQ. Water coming into contact with affected soils will require special management as well. This document was prepared specifically to provide the Contractor with environmental media management procedures developed and recommended to meet these requirements.

Construction plans additionally call for planting six juvenile shade trees within a 24-30 inch high (raised) earthen berm/island to be constructed adjacent to the new parking lot, in accordance with City of San Antonio ordinance. The tree root balls will be planted within the raised earthen berm/island specifically to maintain the integrity of the existing landfill functional cap.

Minor excavations and/or augering on the order of 1.5-8 feet below existing grade are additionally planned to facilitate the installation of a fabric shade structure over an existing basketball court, Handicap Parking and traffic control signage, trash/recycling receptacles, and caissons (i.e., anchors) for three additional solar light poles to augment the existing illumination system installed throughout the SITE. These earthwork activities will be conducted outside of the capped Alamodome Materials footprint, and therefore soils generated as a result are not subject to special management requirements, unless otherwise determined on the basis of concurrent environmental monitoring indications.

A map depicting referenced improvements is provided as **Figure 3** (see *Supplemental Information*). As further discussed below, the continued development and improvement of this land as a community park is consistent with State-mandated post-closure care requirements in a manner that maintains this property as a public asset.

B. Background

Pursuant to previous regulatory closure requirements for the closed Hall's 151 Site, a work plan is required by the TCEQ Remediation Division to facilitate planned construction activities; specifically excavation/earthwork that will affect the soil cap/impervious cover overlying the landfill area. **Raba Kistner, Inc. (RKI)** previously prepared a *Work Plan for Construction for Tom Slick Community Park (Hall's 151 site – Alamodome-Related Site) 7400 Highway 151 San Antonio, Bexar County, Texas SWR No. 30549 RN102322336, report dated April 15, 2019* (Work Plan) on behalf of the CoSA-PWD. The Work Plan addressed environmental requirements to facilitate construction of the referenced improvements. The TCEQ approved the Work Plan in correspondence dated April 30, 2019. A copy of the Work Plan and TCEQ approval letter is provided as **Attachment A** (see *Supplemental Information*).

Per TCEQ rules and guidance that govern land use or development over Alamodome soil disposal sites, it is a continuing obligation of the City of San Antonio (and its contractors) to appropriately manage affected soils, waste or water that may be generated as part of new construction or land development activities. This bid specification was prepared to outline required procedures associated with management of affected soils, intermixed waste, and/or water that comes into contact with affected soils that must be followed by the Contractor. The procedures outlined herein must be implemented by Contractor to properly handle, manage, and dispose of affected environmental media. It is anticipated that the environmental Consultant for the project will conduct concurrent environmental monitoring and sampling activities on behalf of CoSA-PWD in order to confirm that tenets of the Work Plan are being followed.

1.5 INSTRUCTIONS TO CONTRACTOR

A. There is the possibility that Alamodome Materials (as previously described) will be encountered in conjunction with this phase of planned Tom Slick Park improvements for the following reasons:

1. shallow grading to facilitate the construction of asphalt pavements and concrete flatwork; and
2. augering for improvements requiring subgrade anchors/caissons. Note: all planned augering activities will be conducted outside of the reworked/capped Alamodome Materials footprint.

If Alamodome Materials, obviously-affected, and/or potentially affected soils and/or water are encountered, at the direction of CoSA-PWD and as recommended by the Consultant, the Contractor shall be responsible for the proper handling, management and disposal of these materials.

- B. The accuracy or completeness of previous environmental assessment data described herein is not guaranteed in any respect by CoSA-PWD, and the City accepts no responsibility for interpretation or conclusions drawn therefrom. The information is made available such that the Contractor may have ready access to the same information available to CoSA as of this date. The Contractor is invited and encouraged to make his own interpretation and evaluation of environmental assessment information, and by starting work shall be assumed to have fully accepted responsibility for the subsurface conditions that may be encountered during performance of site earthwork. Contractor responsibilities are fully discussed herein in **Section 2 – Waste and Water Handling and Disposal**.
- C. Contractor is expected to examine the SITE, in addition to previously generated environmental assessment data, in order to make, to whatever extent they deem appropriate, their own evaluation of existing subsurface conditions to the extent that this will have a bearing on bid costs. Extra payment will not be authorized for work that should have or could have been anticipated based upon examination of the SITE, or upon consideration of existing environmental information in addition to factors generally recognized as being inherent in soil excavation work, particularly given the presence of buried C/D debris, wastes and/or environmentally-affected fill soils.
- D. Pending completion of SITE evaluation/review activities and prior to the initiation of earthwork activities, the Contractor shall advise CoSA-PWD of the discovery of any unknown or undetermined items or conditions, if any are encountered and/or suspected.

1.6 ADDITIONAL INFORMATION AVAILABLE FOR CONTRACTOR REVIEW

- A. Contractor should refer to **Figure 2** provided in *Supplemental Information* for a graphical illustration depicting areas where Alamodome Materials were consolidated and capped in conjunction with previous corrective actions conducted by Cook-Joyce Inc. (CJI) on behalf of the City of San Antonio.
- B. The following environmental documents and assessment data used to develop this specification are available from the designated CoSA-PWD point-of-contact upon request.
 1. *City of San Antonio – Alamodome Project: Work Plan for Alamodome Materials at the Hall’s 151 Site* dated January 31, 2000 that was prepared by Cook-Joyce Inc.
 2. *Technical Specifications for Construction of Tom Slick Creek Park Environmental Closure Project San Antonio, Texas* dated January 2001 that was prepared by Cook-Joyce Inc. on behalf of the City of San Antonio Public Works Department.
 3. *Final Closure Report for Alamodome Materials at the Hall’s 151 Site* dated April 22, 2002 that was prepared by Cook-Joyce Inc. on behalf of the City of San Antonio Environmental Services.

4. *Work Plan for Landfill Cap Disturbance, Tom Slick Community Park Improvements Project, 7400 Highway 151, San Antonio, Bexar County, Texas* dated April 15, 2019 that was prepared by **RKI** on behalf of the City of San Antonio (see **Attachment A**).
5. *Memorandum – Tom Slick Community Park: Environmental Restrictions and Post-Closure Care Requirements* dated June 7, 2002 that was prepared by Cook-Joyce Inc. on behalf of the City of San Antonio.

END OF SECTION

SECTION 2: WASTE AND WATER HANDLING AND DISPOSAL

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Definitions
- C. Submittals
- D. Regulatory Requirements

1.2 RELATED SECTIONS

- A. Section 1 – Background Environmental Assessment Information

1.3 DEFINITIONS

- A. Alamodome Materials: Soils containing intermixed C/D debris and/or foundry waste such as slag and casting sands, which will be staged separately at the temporary soils staging area pending waste characterization sampling, profile development, and landfill disposal.
- B. Affected Soils: All existing subgrade soils to be removed from the designated Alamodome Dirt landfill footprint (and anywhere else Alamodome Materials are encountered) as necessary to achieve project design grades will be considered “affected” due to their proximity to the Alamodome Materials, and will require special management. These soils will be staged with stockpiled Alamodome Materials and managed in a similar manner.
- C. Potentially-Affected Soils: Soils generated in conjunction with shallow excavation and/or augering activities conducted within areas that are located outside of the mapped buried Alamodome Materials footprint that exhibit visual/olfactory or instrumental indications of impact will be considered as “potentially affected”. These soils will be staged separately from Alamodome Materials/affected soils at the temporary soils staging area, pending environmental sampling and analysis for onsite reuse suitability determination.
- D. Unaffected Materials: Soils or water generated outside the limits of the mapped Alamodome Materials footprint that the Consultant determines does not exhibit any of the above-referenced conditions.
- E. Class 1 Non-Hazardous Soils: Soils generated in conjunction with planned construction activities with reported constituent of concern (COC) testing results above applicable COC-specific concentration threshold values that are listed in *Title 30 Texas Administrative Code (30 TAC) §335.501-335.521*.

- F. Class 2 Non-Hazardous Soils: Soils generated in conjunction with planned construction activities with reported COC testing results below applicable COC-specific concentration threshold values that are listed in *30 TAC §335.501-335.521*.
- G. Consultant: Environmental consultant engaged independently on behalf of CoSA-PWD to evaluate compliance with procedures set forth in this document in conjunction with planned construction activities. Within the context of this project, Consultant will act as agent of CoSA to observe, monitor, and document earthwork/soil management activities performed by Contractor, and will conduct waste characterization/reuse suitability sampling/testing activities (as needed) at the conclusion of earthwork/augering activities.
- H. Contractor: The General Contractor (GC) and all sub-contractors conducting project earthwork, shallow excavation, and augering activities that generate excess soil. Contractor is responsible for implementing all soil and water handling/disposal procedures set forth in this specification.
- I. Waste Disposal Contractor: Industry qualified environmental contractor engaged by Contractor to coordinate waste disposal activities (including transportation of) for Alamodome Materials and affected soils (as defined herein) to a permitted landfill facility, and/or disposal/recycling of affected water (if necessary) at a permitted facility.
- J. Landfill/Treatment Facility Customer: For the purposes of this document and in accordance with ongoing phases of improvement at Tom Slick Park, either the Contractor and/or the Waste Disposal Contractor shall be responsible for the load-out, and proper offsite transportation and disposal of all wastes (i.e., stockpiled Alamodome Materials/affected soils and affected water, and as such will assume the role of the Landfill/Treatment Facility Customer for the project.

The Contractor or the Waste Disposal Contractor will be responsible for all landfill/treatment facility coordination to facilitate obtaining waste profile(s) and/or other waste acceptance mechanism(s) as necessary to remove all wastes generated in conjunction with the project, as defined in this Specification. The Consultant will provide signed analytical testing reports (as generated) to assist with this waste profiling process.

- K. Generator: The City of San Antonio will sign any/all waste disposal manifests associated with the permitted disposal of wastes generated in conjunction with this project as the “Generator” of the waste (i.e., property owner). It is anticipated that CoSA-PWD will provide third-party authorization for the Consultant to sign the offsite waste transportation manifests on behalf of the Generator.

1.4 SUBMITTALS

- A. A site-specific Health and Safety Plan (HASP) shall be made available to Consultant and designated CoSA-PWD representative for review and approval no later than 10 working days after notification from CoSA-PWD that Contractor has been selected for the project.

The HASP should meet general requirements set forth in *OSHA 29 CFR Part 1926* and describe procedures and equipment to be utilized during the project to provide safe working conditions for personnel. Contractor will remain ultimately responsible for implementation (as well as any necessary updates) of the HASP. Consultant will respond with HASP review comments and/or questions within 5-7 working days after receipt.

- B. Provide Consultant and/or CoSA-PWD with copies of all waste profiling and waste code(s) approval documentation. Please note that Consultant will conduct environmental sampling and testing activities necessary to facilitate the waste profiling process. The contractor bid should not include costs for analytical chemistry. Analytical results for soil and/or water will be provided to Contractor and/or Waste Disposal Contractor for inclusion in the waste profiling submittal(s). For contractor planning purposes, standard turnaround time for analytical chemistry will be on the order of 5-7 working days.
- C. All soils generated in conjunction with this project that are transported offsite, either as waste or for reuse at another City-sponsored project, must be tracked. Therefore, copies of the waste manifests/bills-of-lading (BOLs) for offsite disposal of all wastes and/or excess soils generated in conjunction with this project must be provided to Consultant. Completed copies of all waste disposal documentation (signed by the transporter and receiving facility) must be returned to Consultant within 10-15 working days following waste disposal.

1.5 REGULATORY REQUIREMENTS

- A. Contractor (and Waste Disposal Contractor, if engaged) must perform all work in accordance with applicable local, State, and Federal regulations including but not limited to the following:
 - 1. The TCEQ-approved Work Plan (see **Attachment A**) that was prepared specifically for this project and constitutes the regulatory authority to disturb the final cover system for the Alamodome-Related Hall's 151 Site in accordance with the referenced Agreed Order and subsequent RRS 3 closure conditions (maintenance of existing physical controls).
 - 2. All applicable City of San Antonio Land Development Ordinances including those pertaining to construction-phase storm water pollution prevention requirements.

PART 2 – EXECUTION

2.1 SECTION INCLUDES

- A. Preparation
- B. Excavation
- C. Temporary Staging of Alamodome Materials and Affected Soils
- E. Disposal of Waste Materials
- F. Water Management
- G. Contractors Bid Items

2.2 PREPARATION

- A. SITE preparatory work shall include, but not be limited to the following:
 - 1. Initial SITE visit to assess current conditions.
 - 2. Prior to the initiation of construction activities, in the event that monitoring wells or other installations associated with past environmental studies are determined to be present, mark the locations and notify the CoSA-PWD point-of-contact.
 - 3. Attend pre-construction meeting(s) with Consultant as directed by CoSA-PWD to discuss specific project environmental requirements.
 - 4. Develop appropriate affected soils and water handling procedures to be implemented by Contractor personnel throughout the duration of the project. Although it is anticipated that the information provided in this document will assist the Contractor with the development of site-specific material handling procedures, ultimately, it is the responsibility of the Contractor (and sub-contractors) to follow the tenets of the TCEQ-approved Work Plan.
- B. Make necessary provisions to protect structures, utilities, and/or other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- C. Install appropriate erosion and sedimentation controls and appropriate storm water best management practices (BMPs) to be utilized during subsequent earthwork operations in accordance with project Storm Water Pollution Prevention Plan (SWPPP) requirements.
- D. Designate temporary soil containment/staging areas. Contractor will be prepared to place 6-mil polyethylene sheeting beneath the Alamodome Materials/affected soils and (separate) potentially-affected soils staging areas, construct a berm around the stockpiles, and cover the stockpiles at the conclusion of daily earthwork activities.

- E. Although it is not anticipated in consideration of the scope of this project, the Contractor should be prepared to purchase or rent appropriately-sized holding tank(s) for temporary storage of potentially affected excavation water if generated. Contractor should have the ability to place receptacles onsite for potentially affected water storage within 24 hours of determination by Consultant or CoSA-PWD that excavation water should be contained.

2.3 EXCAVATION

- A. As indicated in **Section 1**, the presence of Alamodome Materials was confirmed by Cook-Joyce Inc. in two separate areas of the SITE. These materials were subsequently consolidated and closed in-place by constructing a protective cover system over the entire area containing Alamodome Materials, as depicted on **Figure 2** (see *Supplemental Information*).

Due to the shallow excavation depths to achieve design grade for the new parking areas and sidewalk trail connectors within the “Alamodome Dirt” placement limits, Alamodome Materials may not be encountered during grading excavation activities. However, should these be encountered and generated, these shall be handled in accordance with **Section 2.4 – Temporary Staging of Alamodome Materials and Affected Soils** of this document.

- B. For purposes of this specification the SITE was divided into two areas, the first being the “Alamodome Dirt” placement area and the second being the area outside of the “Alamodome Dirt” placement limits, as depicted on **Figure 3**. Excavated soils and auger cuttings that will be generated from areas outside of the mapped buried Alamodome Materials footprint that exhibit visual/olfactory indications of impact and/or intermixed debris will be considered as potentially-affected. These soils will be staged separately from Alamodome Materials /affected soils at the temporary staging area.

Potentially-affected soils will be stockpiled on bermed 6-mil plastic sheeting pending sampling and analysis to determine suitability for beneficial onsite reuse, or if the excess soils cannot be reused onsite as part of the Tom Slick Park improvements project, offsite reuse on other CoSA-sponsored projects.

- C. Consultant will be present to conduct concurrent environmental monitoring on a full-time basis in conjunction with grading excavation and augering activities that are conducted within the mapped buried Alamodome Materials footprint, and on an as-needed basis if Alamodome Materials and/or obviously impacted soils are encountered by the Contractor outside the mapped buried Alamodome Materials footprint. Consultant will assist the Contractor with identification/segregation of obviously affected soils or water that has been in contact with affected soils.
- D. Unaffected soils can be reused onsite without temporary staging or testing. It is anticipated that excess unaffected soils (i.e., topsoil) generated in conjunction with

planned project surface grading activities will be reused onsite as (bottom) fill for the proposed parking area shade tree installation berm/island structures.

- E. Consultant will conduct ambient air monitoring within the Contractor work zone on a full-time basis during excavation/earthwork activities conducted with the designated Alamodome Materials landfill footprint and on an as-needed basis in other areas. Monitoring will be conducted to evaluate for the presence of volatile organic compounds (VOCs) using a calibrated portable photoionization detector (PID).

In the referenced Final Closure Report, Cook- Joyce Inc. states that the principal, potential airborne hazard associated with the Hall's 151 Site remedial activities was the generation of dust during construction activities over the identified Alamodome Materials areas. As such, air monitoring will additionally be performed utilizing a PM-10 monitoring device to ensure that potentially harmful dust in the SITE worker's breathing zone during demolition activities. Utilizing the PID and PM-10 real-time air monitoring instruments, the Consultant will confirm no potentially un-protective conditions exist in areas where wastes are encountered.

The Consultant will immediately notify the affected earthwork contractor(s) in the event that: (i) PID readings exceed 10 parts per million (ppm) for a sustained period of 1 minute; or (ii) PM-10 readings within the worker breathing space exceed 150 $\mu\text{g}/\text{m}^3$. All work in the area will stop, and the area will be cleared of personnel until such time that VOC vapors have dissipated to a safe level or work will be ceased temporarily pending implantation of additional dust control/suppression methods.

Per the tenets of the TCEQ-approved Work Plan, the Contractor will need to maintain a water truck onsite during parking lot/roadway demolition activities, and during subsequent grading excavation activities to control excess dust generation.

- F. Contractor must stop work and notify Consultant and the CoSA point-of-contact if obviously affected soils or other environmental concerns are encountered outside the designated (i.e., mapped) Alamodome Materials landfill area.
- G. Although not anticipated, at the completion of daily activities, Contractor shall place appropriate safety barricades and signage around any excavation greater than 1-2 feet in depth that has to be left open.
- H. Inspect vehicles leaving the SITE to assure that no contaminated materials adhere to wheels or undercarriage.
- I. Protect and maintain appropriate erosion/sedimentation controls and BMPs per the project SWPPP (see **Part 2, Section 2.2** of this Specification).

- J. Contractor is responsible for providing updated construction schedules on a weekly basis to Consultant during the project, and notifying Consultant to be present when needed during project earthwork activities per the approved construction schedule.

2.4 TEMPORARY STAGING OF ALAMODOME MATERIALS AND AFFECTED SOILS

- A. Prior to the onset of grading excavation activities that will disturb the existing Hall's 151 Site "functional" cap, the Contractor in consultation with the Consultant will designate and prepare separate temporary staging areas for placement of (i) Alamodome Materials/affected soils; and (ii) potentially-affected soils as defined in **Section 1.3 – Definitions**. The temporary staging areas will be established at locations that do not cover utilities, manholes or other structures that may serve as preferential pathways to the subsurface.
- B. In conjunction with environmental monitoring efforts, or when notified about potential environmental concerns, Consultant will make the determination as to which materials require specific segregation and staging, and will direct their placement as appropriate.
- C. In order to effectively isolate Alamodome Materials and affected or potentially-affected soils, all segregated materials shall be placed on 6-mil polyethylene sheeting. Approximately 6-inch berms shall be constructed around the individual stockpiles to prevent runoff into or out of the waste materials staging area. All waste materials stockpiles will be covered with 6-mil polyethylene sheeting at the conclusion of daily excavation/earthwork activities.
- D. Unaffected soils (as defined herein) may be beneficially reused directly without testing within the project area if appropriate geotechnical standards for the project are met.
- E. It is required that all Contractor employees (and subcontractors) working in or near the mapped "Alamodome Dirt" placement areas where waste/debris or obviously affected soils may be encountered successfully complete a certified 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training course in accordance with applicable U.S. Occupational Health and Safety Administration (OSHA) regulations (i.e., 29 CFR 1910.120). The site health and safety supervisor(s) for the project shall complete an additional 8-hour HAZWOPER Supervisory training course, and must be present at all times when project excavation/earthwork activities are occurring. All current certifications should be readily available for review.

2.5 DISPOSAL OF WASTE MATERIALS

- A. All Alamodome Materials/affected soils (and potentially-affected soils determined to not be suitable for onsite reuse) shall be profiled as waste and transported to a permitted landfill facility for disposal. Upon completion of waste profiling activities and receipt of

landfill waste acceptance code(s), Contractor will coordinate load, haul, and dispose of all waste materials generated in conjunction with project activities.

- B. Payment for disposal of waste materials will be made upon receipt of documentation for the total volume by weight of manifested waste received by the permitted landfill facility. Consultant must be notified and present onsite during soil load out to confirm manifest volumes and sign waste manifests on behalf of the Generator.

2.6 WATER MANAGEMENT

- A. To the extent practicable, Contractor shall prevent storm water runoff from coming in contact with exposed Alamodome Materials or accumulating in excavations. Appropriate storm water BMPs shall also be employed to direct storm water away from excavated area(s) and away from the temporary staging area.
- B. In the event that water accumulates in the additional parking area excavations prior to the completion of final construction activities and it is necessary to pump the water, Contractor will make necessary arrangements for proper handling and disposal activities, as directed by the Consultant and/or CoSA-PWD. In coordination with the Contractor and/or Waste Disposal Contractor, the Consultant will conduct waste characterization sampling and analysis to facilitate waste profile development process, as warranted.

2.7 CONTRACTORS BID ITEMS

- A. Contractor should provide unit pricing as approved by CoSA-PWD for the following:
 - 1. Site Safety and Hazardous Materials Training. It is required that all contractor employees and subcontractors working in or near the areas of known impacted environmental media successfully complete a 40-hour HAZWOPER training course. The site health and safety supervisor(s) for the project shall complete an additional 8-hour HAZWOPER Supervisory training course, and must be present at all times when project excavation/earthwork activities are occurring.

Unit Cost for Site Safety and Hazardous Materials Training:

_____ **40-Hour Training Per Trainee**
_____ **8-Hour Supervisory Training**

- 2. Site Specific Health and Safety Plan. The Contractor's Health and Safety Plan (HASP) must comply with applicable regulations contained in Title 29 of the Code of Federal Regulations (29 CFR) 1910.120. The Contractor shall remain responsible for implementation of the HASP throughout the project duration, as updated based on environmental monitoring results and/or as other considerations warrant.

Unit Cost for Health and Safety Plan Preparation and Implementation:
_____ **Lump sum.**

3. Site preparatory work shall include but not be limited to:
- i. Initial site visit to assess current conditions.
 - ii. Developing procedures for handling and management of Alamodome Materials/affected soils, potentially-affected soils and pumped excavation water.

Item Cost: _____ **Lump sum**

4. Preparing temporary staging areas of sufficient size for: (i) Alamodome Materials/affected soils; and (ii) potentially-affected soils. Contractor should include costs associated with procuring and placing 6-mil plastic sheeting beneath the stockpiles, berming, and covering the stockpiles at the conclusion of daily activities.

Item Cost: _____ **Lump sum**

5. Installation of storm water BMPs in accordance with the project SWPPP.

Item Cost: _____ **Lump sum**

6. Excavation and Staging of soils generated within (i.e., “affected”) or outside (i.e., potentially-affected) the designated Alamodome landfill footprint that require segregation and staging should be bid on a unit basis based on volume of loose soil excavated.

Item Cost: _____ **Per cubic yard**

7. Profile, Load, Haul, and Disposal of Soil. The contractor should provide per unit costs for profiling and disposal of waste/affected soil as:

- i. Class 1 non-hazardous soil; and
- ii. Class 2 non-hazardous soil.

Class 1 non-hazardous waste: _____ **Per ton**

Class 2 non-hazardous waste: _____ **Per ton**

Trucks used for disposal are preferred to have a capacity of 20 cubic yards. Payment for this item will be made upon receipt of documentation for the total amount of manifested soil that has been properly received by the disposal facility.

Consultant will be onsite during soil load out to confirm manifest volumes and sign offsite transport manifests on behalf of the Generator.

8. Profile, Handle, transport, and disposal of non-hazardous water. Water pumped from an excavation should be based on a unit price per gallon of water removed. Such costs will include additional costs of handling, temporary storage, transportation, and disposal. The Contractor should assume that analytical results will be available one week from the time of sampling.

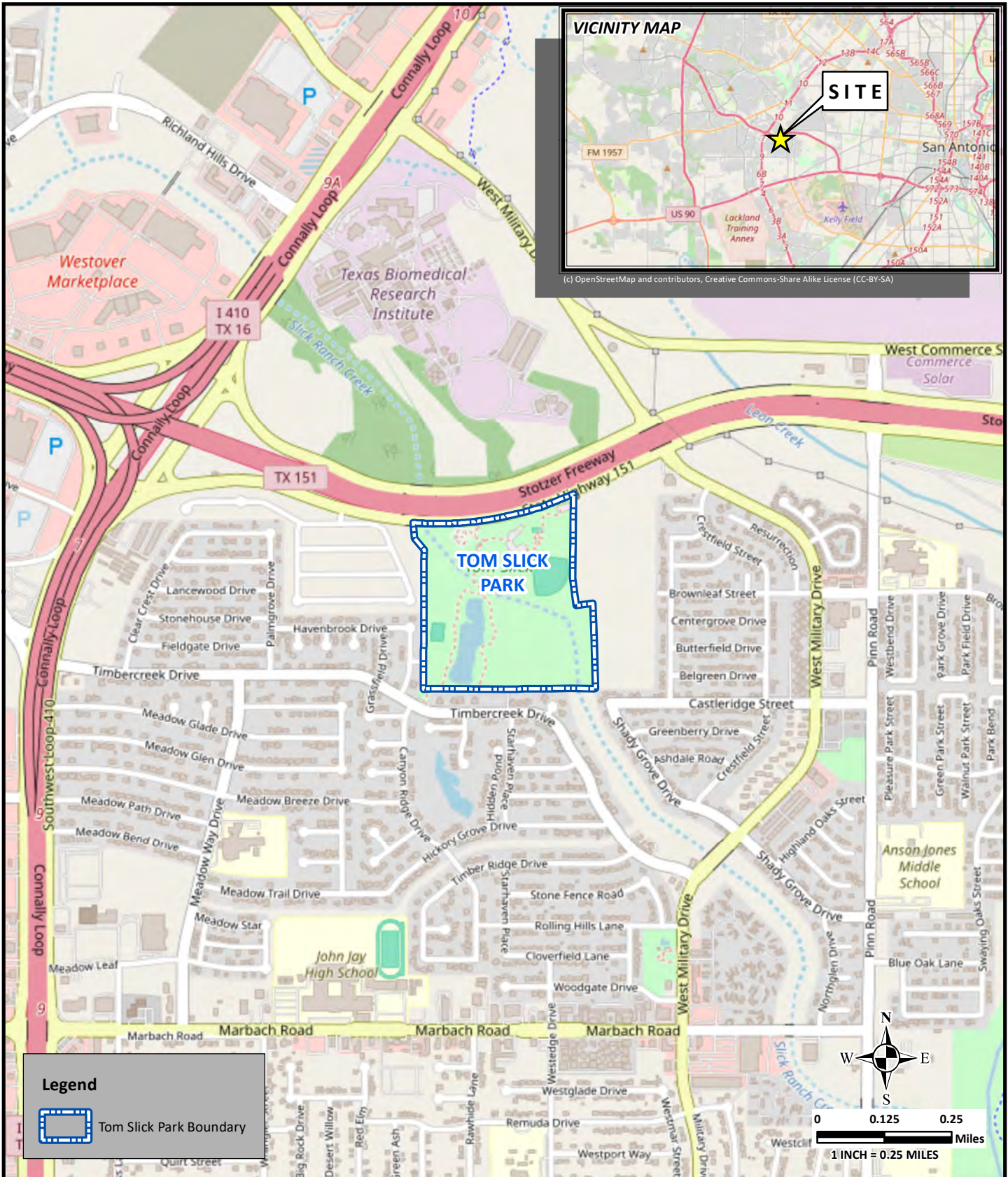
Unit Cost for disposal

Class 1: _____ **Per gallon**

Class 2: _____ **Per gallon**

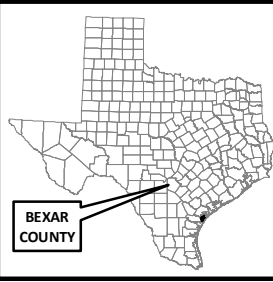
SUPPLEMENTAL INFORMATION

FIGURES



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 www.rkci.com
 TBPE Firm F-3257

SITE LOCATION MAP
 WASTE AND WATER MANAGEMENT SPECIFICATION
 TOM SLICK PARK IMPROVEMENTS
 7400 HIGHWAY 151
 SAN ANTONIO, BEXAR COUNTY, TEXAS
 WBS: 23-04027-04-02-01; EPC: 06-613-E4-160-CIPIII



PROJECT No.: ASF22-027-89
 ISSUE DATE: 10/15/2024
 DRAWN BY: LAW
 CHECKED BY: PMS
 REVIEWED BY: RVK
FIGURE 1

NOTE: This Drawing is Provided for Illustration Only, May Not be to Scale and is Not Suitable for Design or Construction Purposes

ATTACHMENT A

TCEQ-APPROVED WORK PLAN

Project No. ASF17-155-47
April 15, 2019



Mr. Robert Espinosa
Environmental Project Manager
City of San Antonio
Transportation and Capital Improvements Department
Environmental Management Division
114 W. Commerce, 2nd Floor
San Antonio, Texas 78205

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**RE: Work Plan for Landfill Cap Disturbance
Tom Slick Community Park Improvements Project
7400 Highway 151
San Antonio, Bexar County, Texas 78227
WBS No: 23-01712-04-02-01; GL: 5201040; EPC: 06-613-E4-160-CIPIII**

Dear Mr. Espinosa:

Raba Kistner Environmental, Inc. (RKEI) is pleased to submit this Work Plan to the City of San Antonio (CoSA) Transportation and Capital Improvements (TCI) Environmental Management Department in support of planned improvements at Tom Slick Community Park, a portion of which is constructed over a closed industrial waste landfill with deed restrictions pertaining to the disturbance of the landfill final cover system or cap (i.e., landfill previously described as "Alamodome-related Hall's 151 Site"). The subject park is located near the intersection of Highway 151 and Loop 410 in west San Antonio, Bexar County, Texas, (hereinafter referred to as SITE). The SITE is registered with the Texas Commission on Environmental Quality (TCEQ) as an industrial and hazardous waste landfill (Solid Waste Registration [SWR] No. 30549). Land use restrictions imposed as a condition of regulatory closure of SWR 30549 stipulate that any planned exploration or construction activities that penetrate or disturb existing soil cover and/or pavements are regulated by the TCEQ and require prior agency coordination and approval. A Work Plan is required by the TCEQ Remediation Division to facilitate planned construction activities, specifically excavation/earthwork that will affect the soil cap/impervious cover pursuant to previous regulatory closure requirements for the Hall's 151 Site, the western portion of which hosts Tom Slick Community Park.

On behalf of the project team, this Work Plan has been submitted to the TCEQ Remediation Division project manager (Ms. Eleanor Wehner) for review. **RKEI** has requested an expedited review of the SWP and Ms. Wehner is aware of the urgency of the review timeframe.

We appreciate the opportunity to have been of continued service on this important project.

Very truly yours,

RABA KISTNER ENVIRONMENTAL, INC.

Paul M. Sak, P.G.
Environmental Geologist

Richard V. Klar, P.G.
Vice President

PMS/RVK/srw
Attachments

Copies Submitted: Above (1 Original, 2 CDs)

Project No. ASF17-155-47
April 15, 2019



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Ms. Eleanor Wehner, P.G.
Senior Project Manager
Texas Commission on Environmental Quality
Remediation Division, Building D, MC 221
VCP-CA Section
12100 Park 35 Circle
Austin, Texas 78753

**RE: Work Plan for Landfill Cap Disturbance
Tom Slick Community Park Improvements Project
7400 Highway 151
San Antonio, Bexar County, Texas 78227**

Dear Ms. Wehner:

Raba Kistner Environmental, Inc. (RKEI) is pleased to submit the attached Work Plan on behalf of the City of San Antonio Transportation and Capital Improvements (TCI) Environmental Management Department (EMD) in support of planned improvements at Tom Slick Community Park, a portion of which is constructed over a closed industrial waste landfill with deed restrictions pertaining to the disturbance of the landfill final cover system or cap (i.e., landfill previously designated as “Alamodome-related Hall’s 151 Site”). The subject park is located near the intersection of Highway 151 and Loop 410 in west San Antonio, Bexar County, Texas. This property is registered with the Texas Commission on Environmental Quality (TCEQ) as an industrial and hazardous waste landfill (Solid Waste Registration [SWR] No. 30549). Land use restrictions imposed as a condition of regulatory closure of SWR 30549 stipulate that any planned exploration or construction activities that penetrate or disturb existing soil cover and/or pavements are regulated by the TCEQ and require prior agency coordination and approval. A Work Plan is therefore required by the TCEQ Remediation Division to facilitate planned construction activities, specifically excavation/earthwork that will affect the soil cap/impervious cover pursuant to previous regulatory closure requirements for the Hall’s 151 Site.

This Work Plan was prepared to establish the methods, materials, work tasks and temporary best management practices to be enacted during excavation, drilling and other construction-related activities to be conducted as part of the planned Tom Slick Community Park improvements project. The attached plan provides a summary of pertinent background information, a description of planned construction and concurrent environmental monitoring activities, and a discussion of how the proposed physical changes to the facility cover system (i.e., asphaltic and concrete pavements, landscaping materials, etc.) will function to continue to preserve the effectiveness and integrity of the existing cover system. The attached Work Plan also discusses the methods by which soil (construction spoil) and storm water generated as a result of the planned excavation/earthwork and construction activities will be properly managed and disposed of.

If you have any questions regarding the information provided in this submittal, please do not hesitate to contact either of the undersigned at your earliest convenience. On behalf of the City of San Antonio, we would appreciate your review and approval of this Work Plan at the earliest opportunity.

Very truly yours,

RABA KISTNER ENVIRONMENTAL, INC.



Paul M. Sak, P.G.
Environmental Geologist



Richard V. Klar, P.G.
Vice President

PMS/RVK/srw

Attachments

Copies submitted: Above – 1 Original, 1 Copy
Mr. Robert Espinosa – City of San Antonio TCI-EMD (1 Original, 2 CDs)
Mr. Cameron Lopez – TCEQ Region 13 (1 Copy)

WORK PLAN FOR CONSTRUCTION

For

**TOM SLICK COMMUNITY PARK
(HALL'S 151 SITE – ALAMODOME-RELATED SITE)
7400 HIGHWAY 151
SAN ANTONIO, BEXAR COUNTY, TEXAS
SWR NO. 30549
RN102322336**

Prepared for:

**CITY OF SAN ANTONIO
TRANSPORTATION AND CAPITAL IMPROVEMENTS
ENVIRONMENTAL MANAGEMENT DEPARTMENT**

c/o Mr. Robert Espinosa
Environmental Project Manager
City of San Antonio
Transportation and Capital Improvements Department
Environmental Management Division
114 W. Commerce, 2nd Floor
San Antonio, Texas 78205
(210) 207-1448
Robert.Espinosa@sanantonio.gov

Prepared by

RABA KISTNER ENVIRONMENTAL, INC.
San Antonio, Texas

Richard V. Klar

4/15/19

Project No. ASF17-155-47

April 2019

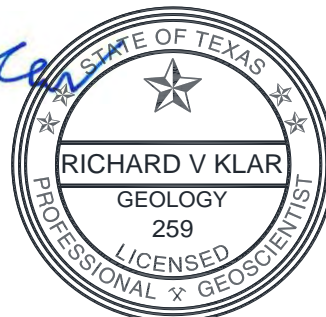


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Attachment B – Agreed Order Docket No. 96-1973-MLM-E (Alamodome-Related Site: Hall's 151 Site)

Attachment C – Example Environmental Monitoring Field Log Sheet

1.0 INTRODUCTION

Raba Kistner Environmental, Inc. (RKEI) has prepared this Work Plan on behalf of the City of San Antonio (CoSA) Transportation and Capital Improvements (TCI) Environmental Management Department (EMD) for planned improvements at Tom Slick Community Park, a portion of which is constructed over a closed industrial waste landfill with deed restrictions pertaining to the disturbance of the landfill final cover system or cap (i.e., landfill previously designated as “Alamodome-related Hall’s 151 Site”). The subject park is located near the intersection of Highway 151 and Loop 410 in west San Antonio, Bexar County, Texas, (hereinafter referred to as SITE). A SITE location map is provided as **Figure 1**. A Work Plan is required by the Texas Commission on Environmental Quality (TCEQ) Remediation Division to facilitate planned construction activities; specifically excavation/earthwork that will affect the soil cap/impervious cover pursuant to previous regulatory closure requirements for the Hall’s 151 Site.

2.0 BACKGROUND

2.1 General Project Description

On the basis of a review of *Tom Slick Park Improvements 2017 Bond – Schematic Design & Design Development Submittal dated 08/16/2018* (i.e., construction plans) that were prepared by Bender Wells Clark Design (project landscape architect) and are provided as **Attachment A**, RKEI understands that planned improvements to the SITE include demolition of portions of the existing asphalt-paved parking lot and flatwork, followed by the construction of a total of 55 additional parking spaces and an eight-foot wide concrete trail and a connector to the existing hiking trail for the park. Construction plans additionally call for planting seven juvenile shade trees within a 24-30 inch high (raised) earthen berm/island to be constructed adjacent to the new parking lot, in accordance with City of San Antonio ordinance. Minor excavations are additionally planned to facilitate the installation of Handicap Parking signs and trash/recycling receptacles.

A portion of the SITE (i.e., approximately the western half) is host to fill soils that originated from the former Alamo Iron Works (Industrial Hazardous Waste Solid Waste Registration No. SWR 30549) property during construction of the Alamodome Sports Complex during the early 1990s. Significant quantities of Alamodome soils and demolition debris such as concrete, asphalt pavement, and wood were excavated and transported to several off-site locations, including the Hall's 151 Site, for use as general fill. Construction spoils originating from the Alamodome site were subsequently determined to be affected primarily with petroleum hydrocarbons and heavy metal constituents (primarily lead), and contained incidental foundry waste such as slag and casting sands. The Texas Natural Resource Conservation Commission (TNRCC – predecessor of the TCEQ) identified lead and total petroleum hydrocarbons (TPH) as the primary contaminants of concern in the Alamodome materials.

2.2 Agreed Order - Hall’s 151 Site

On February 5, 1997, the TNRCC, the City, and VIA Metropolitan Transit (VIA) entered into an Agreed Order (i.e. Docket No. 96-1973-MLM-E). The preamble of the referenced Agreed Order states: “*The City and Via have executed a legal agreement whereby the City will assume all responsibility for penalties imposed under this Agreed Order and all responsibility for completion of technical requirements in this*

Agreed Order applicable to that portion of the Alamodome Site owned by the City, as well as those related to all off-site locations, in exchange for a money settlement paid by Via to the City.” The Agreed Order preamble also states: *“The term ‘Alamodome-related Site’ means all disposal sites that contain industrial solid wastes from the Alamodome Site and which did not have a TNRCC permit authorizing receipt of such wastes.”* The Agreed Order preamble lists the Hall’s 151 Site as one of nine “Alamodome-related Sites”.

Item 3 (technical requirements) (g) of the Agreed Order, states: *“The City shall conduct an assessment to define the Alamodome-related areas of concern at all known Alamodome-related Sites.”*, and *“...the City shall submit an assessment report which provides the information on which the assessment was based, the conclusions of the assessment, and a proposal for the closure/remediation of the Alamodome-related industrial solid wastes at all known Alamodome-related Sites. The proposal shall be submitted in accordance with 30 Tex. Admin. Code Ch. 335, Subchapter S, also known as the Commission’s Risk Reduction Rules.”* Item 3(g) goes on to state: *“Upon the Executive Director’s approval (of the proposed closure/remediation proposal) schedule, the City shall implement the proposal in accordance with the approved implementation schedule and the requirements of the Risk Reduction Rules.”*

2.3 Hall’s 151 Site Regulatory Closure (Risk Reduction Rule Standard No. 3)

The following subsections provide an overview of the regulatory closure process for the Hall’s 151 Site Alamodome-related site pursuant to the referenced Agreed Order.

2.3.1 SITE Assessment and Closure/Remediation Activities (Cook Joyce, Inc. 1997 – 2002)

Subsequent to establishment of the referenced Agreed Order, the City of San Antonio engaged Cook Joyce, Inc. (CJI) to conduct environmental assessment and subsequent closure/remediation activities at the SITE. As stated in *Final Closure for Alamodome Materials at the Hall’s 151 Site – Risk Reduction Standard 3, report dated April 22, 2002* (Final Closure Report) that was prepared by CJI on behalf of the City of San Antonio, *“The TNRCC identified lead and total petroleum hydrocarbons (TPH) as the contaminants of concern in the Alamodome materials. Extensive chemical analyses were conducted by CJI to characterize the nature of the Alamodome materials, as described in the Closure Plan. Based on these analytical results, the Alamodome materials at the Hall’s 151 Site are appropriately classified as Class 2 non-hazardous waste.”*

The presence of Alamodome materials was confirmed by CJI in two separate areas of the SITE. These materials were subsequently consolidated and closed in-place by constructing a protective cover system over the entire area containing Alamodome materials. The closure of Alamodome materials was performed in accordance with the TNRCC requirements for closure under Risk Reduction Standard Number 3 (RRS No. 3) pursuant to *Title 30 of the Texas Administrative Code (30 TAC), Chapter 335* rules. In the referenced Final Closure Report, CJI states: *“The closure activities were performed in substantial conformance with CJI’s Closure Plan for Alamodome Materials at the Hall’s 151 Site (Closure Plan) dated 20 August 1999, and CJI’s Remedial Workplan for Alamodome Materials at the Hall’s 151 Site (Remedial Workplan) dated 31 January 2000 and approved by the TNRCC on 25 April 2000 (including assessment findings and conclusions).”* The Final Closure Report included:

- a description of the completed remedial construction activities;
- a description of completed and anticipated future park development activities;
- proposed language for deed recordation;
- a discussion of post-closure care requirements; and
- a discussion of future park development environmental considerations.

2.3.2 Post-Closure Care

The post-closure care requirements included semi-annual inspection of the cover system to determine if differential settlement, erosion, or areas of potential storm water ponding have developed, and inspection of the vegetative cover for bare spots to determine if any re-seeding is necessary. The proposed semi-annual inspection period was 10 years. Proposed maintenance activities included repair to the cover system where and when differential settlement was identified, re-seeded vegetative cover bare spots where and when necessary, and regular watering and mowing over vegetated portions of the cover system to promote healthy and continued growth.

The City conducted the semi-annual inspections, and reported inspection findings and associated maintenance/repair activities annually (as directed – see below) to the TNRCC/TCEQ until subsequent TCEQ approval of a discontinuance request submitted by the City of San Antonio in correspondence dated October 17, 2013.

2.3.3 Future Park Development

In Section 4.0 of the Final Closure Report (Future Park Development), CJI states:

Future park development may occur over the protective cover system that overlies the Alamodome materials. These activities may include the construction of fixed trash cans, picnic tables, athletic field monuments, bleachers, and additional sidewalks. Future development over the protective cover system will be conducted in a manner that maintains the effectiveness and integrity of the cover system, consistent with the deed recordation to be filed in accordance with Risk Reduction Standard No. 3. In addition, any future park development will not reduce the ability of the cover system to adequately remove storm water over the surface of the Alamodome fill area. Any Alamodome materials underlying the protective cover system that must be excavated during future park development will be considered potentially contaminated. These materials will be contained upon excavation and disposed as Class 2 non-hazardous waste at an authorized facility. All construction excavations will be backfilled with clean materials comparable to the excavated materials (backfill soils for excavated Alamodome materials, clay soil for the excavated clay cap, etc.); backfill materials will be placed in a manner comparable to the initial placement of the excavated materials.

The TNRCC approved the Final Closure Report, including the post-closure care and deed-recordation recommendations, in correspondence dated April 29, 2002, with the stipulation that the semi-annual inspection findings be reported to the TNRCC on an annual basis.

2.3.4 Deed-Recordation

In accordance with the approved Final Closure Report, as a required institutional control for regulatory closure, the City filed *Deed Recordation Proof: associated with Final Closure for Alamodome Materials at the Hall's 151 Site – Risk Reduction Standard 3, filing dated July 12, 2002* in the Deed of Records of Bexar County (i.e. Industrial Solid Waste Certificate of Remediation). The deed-recordation reiterates the engineering control (i.e., physical control) and post-closure care requirements set forth in the referenced CJI Final Closure Report, states that future use of the property as a municipal park is considered appropriate in accordance with TNRCC RRS No. 3, and lists the institutional controls applicable to the property, including: (i) non-residential land use; (ii) local government ownership; (iii) continued maintenance of the parkland as a publically-owned and controlled park; and (iv) prohibition of installation of wells into the shallow water-bearing strata for the purposes of surface applications (i.e., landscape irrigation) or human consumption. As requested by the TCEQ Remediation Division, a copy of the deed-recordation is provided herein as **Attachment B**.

Following receipt of proof of deed-recordation for the subject property (i.e. Tom Slick Community Park), the TNRCC issued concurrence with remediation of contaminants (i.e., lead and TPH) at the SITE to meet non-residential (i.e., commercial/industrial) soil criteria under RRS No. 3 standards pursuant to *30 TAC, Chapter 335* rules and discontinuation of the semi-annual inspections in correspondence dated December 11, 2013.

3.0 SCOPE AND TENETS OF WORK PLAN

This Work Plan has been prepared to describe the proposed physical changes to the existing landfill closure cover system (i.e., the RRS No. 3 physical control) and is supported with appropriate engineering and environmental considerations to demonstrate that the proposed changes will function to continue to preserve the effectiveness and integrity of the existing cover system. This Work Plan provides the following:

- Description of construction activities that will disturb or penetrate the existing Hall's 151 Site cover system including a summary of earthwork/excavation activities;
- Procedures for environmental monitoring to detect any zones of contamination requiring special segregation and as otherwise necessary to confirm suitability for onsite reuse;
- Reuse and disposal plans for soils (i.e., ultimate disposition of soils that will not and/or cannot be reused onsite); and
- Description of cover system restoration construction activities and how this modified cover system will be equivalent to the existing cover system to maintain RRS No. 3 closure requirements.

It is anticipated that **RKEI** (acting as the environmental consultant for the project on behalf of CoSA TCI-EMD) will conduct construction-phase environmental monitoring activities as further discussed in **Section 5** in order to confirm that tenets of the Work Plan are being followed.

4.0 PROPOSED CONSTRUCTION ACTIVITIES

The following subsections discuss the planned Tom Slick Community Park improvements activities in addition to concurrent environmental monitoring activities to be conducted.

4.1 Pre-Construction and Site Preparation Activities

At the project onset, the project General Contractor (GC) will be provided with a copy of Agreed Order Docket No. 96-1973 MLM-E (Agreed Order). Pertinent information will be discussed at a pre-construction meeting to assure the GC has a thorough understanding of landfill conditions and final cover system requirements. It will be the responsibility of the GC to ensure that its employees and subcontractors prevent actions, or conditions caused by their actions, that represent non-compliance with the terms of the Agreed Order.

Prior to initiation of existing parking lot demolition earthwork activities, an 8-foot tall chain link construction fence will be erected surrounding the construction limits as depicted by the “artificial lot boundary” on *Sheet TP1.00 – Tree Preservation Plan & Notes dated 08/16/18* that is provided in **Attachment A**. The construction fence will prevent public access to open excavations and heavy equipment, and will prevent contact with any “affected” stockpiled soils by the public.

Silt fencing will be installed downgradient of all areas that will be disturbed, in accordance with the project Storm Water Pollution Prevention Plan (SWP3). The silt fencing will prevent excessive suspended solids in storm water runoff from leaving the SITE until impervious surfaces (i.e., paved parking lot and concrete hiking trail and sidewalk-to-trail connector) and vegetative cover are established. Additionally, a stabilized construction entrance will be constructed to prevent the tracking of sediments off-site.

The GC will prepare a Site-Specific Health and Safety Plan (HASP) prior to the initiation of excavation activities. At a minimum, the HASP will meet requirements set forth in *OSHA 29 CFR Part 1926* and describe safety procedures and equipment to be utilized during the project in order to provide safe working conditions for personnel at the SITE. The GC will be responsible for disseminating the HASP to all personnel that enter the work areas for the project and enforcing all elements of the HASP as the project moves forward. Although no special personal protective equipment (PPE) is anticipated for onsite construction workers, a heightened sense of awareness should be maintained as isolated zones or pockets of affected soils may be present. The GC will remain ultimately responsible for any necessary updates and/or implementation of additional measures to protect worker safety and health.

4.2 Demolition and Grading Activities within the Buried Alamodome Materials Footprint

In conjunction with all excavation/earthwork activities conducted within the mapped buried Alamodome materials footprint, RKEI acting as the environmental consultant on behalf of CoSA TCI-EMD, will conduct full-time construction-phase environmental monitoring, as further discussed in **Section 5**. Existing conditions within the planned park improvements area are depicted on **Figure 2 – Site Plan**. Planned parking lot improvements and shade tree planting locations are depicted on **Figure 3**, and additional park improvements locations are depicted on **Figure 4**. A description of demolition, grading excavation and

augering activities within the mapped buried Alamodome materials footprint to facilitate planned Tom Slick Community Park improvements is provided in the following subsections.

4.2.1 Existing Parking Lot and Roadway Demolition

Sheet D1.00 – Enlarged Plan North (Demolition Plan) dated 08/16/18 that is provided in **Attachment A** depicts those portions of Tom Slick Community Park that overlie the Alamodome materials that were consolidated and capped in conjunction with remedial and closure activities conducted from 2001 to 2002 under the oversight of CJI. As depicted on the referenced demolition plan, existing parking lot and sidewalk demolition and subsequent grading activities within this portion of the park will be within the limits of the consolidated and capped Alamodome materials. Subgrade soils in these areas constitute the 6-inch (under pavements) and 18-inch (earthen) compacted clay “cap” that historically was constructed over the consolidated Alamodome materials in order to achieve regulatory closure.

The asphaltic pavements comprising northern two-thirds of the existing circular parking lot will be removed. Additionally, a small area of asphaltic roadway pavements along the park entranceway will be removed. Reinforced concrete sidewalks and curbs adjacent to the planned asphalt pavements removal will also be saw-cut and removed as part of the project. The asphalt will be milled and the concrete broken into rubble with subsequent steel reinforcing bar (rebar) removal. The underlying base course materials (under asphalt pavement) and select fill subgrade (under concrete sidewalks) will additionally be removed and stockpiled for subsequent reuse, as applicable.

4.2.2 Parking Lot and Flatwork Grading

As depict on *Sheet D1.00*, the currently non-paved area constituting the earthen cap where two new parking areas are planned for construction will be graded to design elevations to facilitate the placement of subgrade (i.e., compacted clay-rich soil) and base course materials prior to construction of the new parking areas. Areas where new segments of a 6-foot wide concrete sidewalk connector to the existing hiking trail to be constructed will be similarly graded. In a manner similar to the 2001 – 2002 remediation/closure effort, within the areas to be paved with asphalt (parking areas) or concrete (hiking trail and sidewalk-to-trail connector) over the mapped buried Alamodome materials footprint, grading excavation will achieve a uniform depth as necessary to allow for the placement of a minimum of 6-10 inches of compacted clay-rich soil to reach design grade elevations prior to the placement of base course materials (parking areas) or select fill (sidewalk-to-trail connector and hiking trail), as further discussed in **Section 4.4.1**. For the small portion of the existing circular parking area that will be demolished but will not be re-paved to host additional parking spaces, grading excavation will achieve a uniform depth as necessary to allow for the placement of a minimum of 12 inches of compacted clay-rich soil and 6 inches of topsoil to reach design grade elevations prior to the application of hydro-mulch grass seed.

As depicted on *Sheet L2.00 – Landscape Details dated 08/16/18*, several 18-inch diameter holes will be augered to a depth of 3-4 feet in order to facilitate the installation of concrete footings for trash and recycling receptacles. Several 12-inch diameter holes will also be augered to a depth of 4 feet in order to facilitate the installation of concrete footings for Handicap Parking signs. As the receptacle and parking sign footing holes will be augered within the buried Alamodome materials footprint, special soil management procedures will be enacted for auger cuttings generated as a result.

As depicted on *Sheet L1.00 – Overall Site Improvements Plan dated 08/16/18*, an 8-foot wide hiking trail extending north-south along the eastern perimeter of the park is planned. The hiking trail will also extend east-west along the northern bank of Slick Ranch Creek. The planned hiking trail will have a total length of approximately 2,120 feet. The western half of the east-west trending portion of the hiking trail will be constructed outside of, but immediately adjacent to, the mapped extent of the buried Alamodome materials footprint. It is therefore proposed that grading activities conducted within the western half of the east-west trending hiking trail (i.e., west of the mapped drainage crossing – approximately 500 linear feet) will be considered as occurring within the “affected” portion of the SITE, and special soils management procedures will be enacted, as discussed in the following subsection.

As indicated on the referenced *Sheet L1.00*, existing ground/grade surface for the portions of Tom Slick Community Park that host the consolidated and buried Alamodome materials have been established. Grading depths within the existing parking space demolition area of concern (AOC), the new parking spaces AOCs, and the western portion of the east-west trending hiking trail will be confirmed by survey (as will compacted clay-rich soil subgrade placement thicknesses discussed in **Section 4.4**) to ensure that minimum cover thicknesses are achieved. Topographic surveys will be conducted on minimum 50-foot centers.

4.2.3 “Affected” Soils Management (Temporary Soil Staging Area)

All existing subgrade soils to be removed from the mapped buried Alamodome materials footprint (and anywhere else Alamodome materials are encountered) as necessary to achieve design grades for the parking area expansion and new hiking trail/sidewalk connector will be considered “affected” due to their proximity to the immediately underlying Alamodome materials, which will require special management. Prior to existing parking lot/sidewalk demolition and grading activities, an onsite temporary soil staging area will be selected and covered with bermed 6-mil plastic sheeting.

The temporary soil staging area will be selected at a level location inside the chain link construction fence (i.e., “artificial lot boundary” or project limits) that does not host storm drains, manholes or underground utilities which would provide a preferential pathway for the infiltration of storm water runoff coming into contact with stockpiled waste soils. Excavated or otherwise removed (i.e., augered) subgrade soils will be transferred to and placed on the plastic sheeting at the temporary soil staging area pending waste characterization sampling in support of waste profile development and eventual disposal at a local permitted landfill facility, as further discussed in **Sections 5.3.2** and **6**, respectively. At the end of each workday, the stockpiled soil will be covered with secured plastic sheeting to prevent contact with rain. Any stockpiled existing base course and/or select fill materials that cannot be reused onsite will be profiled and disposed of at a local permitted landfill facility.

4.3 Grading and Augering Activities Outside of the Buried Alamodome Materials Footprint

The following subsections discuss planned excavation/earthwork activities to be conducted outside of the mapped buried Alamodome materials footprint and the associated proposed soil management strategy (i.e., stockpiling for beneficial reuse suitability testing).

4.3.1 Hiking Trail Grading and Shade Structure Support Post Augering

As depicted on *Sheet L1.00*, hiking trail grading and construction activities for the north-south trending portion of the hiking trail along the park eastern perimeter, and the eastern half (i.e., east of the mapped drainage crossing) of the east-west trending hiking path, will be occurring outside of the mapped buried Alamodome materials footprint. Additionally planned improvements for the portions of the park outside the mapped Alamodome materials footprint is the construction of a shade structure over the existing basketball court, which will involve augering six approximately 9-foot deep holes in which the shade structure support poles will be anchored. As depicted on *Sheet L1.01 - Enlarged Plan North dated 08/16/18*, the shade structure support pole holes will be augered outside of the buried Alamodome materials footprint. Two 1-foot diameter holes will also be augered to an approximate depth of four feet to facilitate the installation of concrete footings for solar-powered emergency call stations, both of which are currently planned for outside of the mapped buried Alamodome materials footprint.

Therefore, these activities will not require special soil management procedures or concurrent environmental monitoring. However, all excavation/earthwork activities outside of the mapped buried Alamodome materials footprint will be conducted with a heightened awareness that isolated pockets of Alamodome materials (i.e., TPH-affected soils, casting sand, slag and/or other foundry wastes) may be encountered during grading excavation and/or augering activities. In the event visual/olfactory indications of impact are encountered by the earthwork contractor(s), the environmental consultant and project team will immediately be notified, and special soil management procedures will be enacted for the “affected” soils.

4.3.2 Potentially Affected Soils Management (Temporary Soil Staging Area)

In consideration of the fact that Alamodome materials were or may have been historically placed as fill throughout the Hall’s 151 Site, hiking trail grading excavation soils in addition to shade structure support pole and emergency call station pedestal auger cuttings that will be generated from areas outside of the mapped buried Alamodome materials footprint will be considered as “potentially affected”. These soils will be staged separately from “affected” soils at the temporary soils staging area. Potentially affected soils will be stockpiled on bermed 6-mil plastic sheeting pending sampling and analysis, as further discussed in **Section 5.3.1**, to determine suitability for beneficial onsite reuse, or if the soils cannot be reused onsite as part of the Tom Slick Community Park improvements project, offsite reuse on other CoSA-sponsored projects. At the end of each workday, the stockpile will be covered with secured plastic sheeting to prevent contact with rain.

4.4 Parking Lot and Hiking Trail Construction Backfilling

The following subsections discuss grading excavation backfilling activities to be conducted in accordance with the TNRCC-approved remediation/closure process in a manner that will restore (and enhance) the existing cover system to maintain RRS No. 3 commercial/industrial closure requirements.

4.4.1 Within the Mapped Buried Alamodome Materials Footprint

In a manner similar to the 2001 – 2002 Hall’s 151 Site remediation/closure effort, within the area to be paved with asphalt (parking lot) or concrete (hiking trail and sidewalk connector) over or immediately adjacent to the mapped buried Alamodome materials footprint (i.e., new parking spaces), a minimum of 6 inches of compacted clay-rich soil will be placed prior to the placement of base course materials or select fill subgrade, respectively.

As depict on *Sheet L2.00 – Landscape Details dated 08/16/18* that is provided in **Attachment A**, a minimum of 6 inches of compacted select fill will underlie poured reinforced concrete on the order of 6-8 inches in thickness, totaling a 12-14 inch thickness. With the placement of 6 inches of compacted clay-rich soil as subgrade prior to placement of select fill and poured concrete, the total thickness will be at least 18 inches overlying the buried Alamodome materials. For paved surfaces (i.e., the new parking spaces), the construction drawing also depicts a thickness of 8 inches for the asphaltic pavement and underlying compacted base course materials. With the placement of 10 inches of compacted clay rich soil as subgrade beneath the base course materials and asphaltic pavement prior to placement of these materials, the total thickness will be at least 18 inches overlying the buried Alamodome materials. For all impervious surfaces, the overall thickness of compacted clay-rich soil, base course material or select fill and the asphaltic pavements or concrete flatwork will be a minimum of 18 inches.

For the small portion of the existing circular parking area that will be demolished but will not be re-paved to host additional parking spaces, a minimum of 12 inches of compacted clay-rich soil and a minimum of 6 inches of topsoil will be placed to reach design grade elevations prior to seeding to achieve a minimum 18-inch cap thickness. The placement of compacted clay-rich soil, the majority of which will be overlain by impervious asphalt or concrete cover, will ensure that this modified cover system will be equivalent to the existing cover system to maintain RRS No. 3 commercial/industrial closure requirements.

4.4.2 Outside the Mapped Buried Alamodome Materials Footprint

In the event that foundry wastes and/or otherwise obviously impacted soils are not encountered in conjunction with augering and/or hiking trail grading activities conducted outside of the mapped buried Alamodome materials footprint, grading excavations and augered holes will be backfilled with compacted clay-rich soil to design grade prior to construction of the improvements.

If, in conjunction with shade structure support pole and emergency call station pedestal augering and/or hiking trail grading activities discussed above conducted outside of the mapped buried Alamodome materials footprint, if foundry wastes and/or otherwise obviously impacted soils are encountered, the “affected” soils will be completely removed, and the resultant excavation will be backfilled to design grade with compacted clay-rich soil prior to construction of the improvements. The excavated soils and/or auger cuttings will be managed in a manner similar to stockpiled “affected” soils, and will be profiled for disposal at a local permitted landfill.

4.5 Tree Planting

As depicted on revised *Sheet L2.01* in **Attachment A**, in accordance with City of San Antonio ordinance, a total of seven shade trees will be planted adjacent to the western perimeter of the newly constructed parking area. As depicted on revised *Sheet L2.01 – Landscape Planting Notes & Details dated 02/11/19* that is provided in **Attachment A**, in order to maintain a minimum 6-inch layer of compacted clay-rich subgrade (i.e., cap material), topsoil removed in conjunction with preliminary parking lot and hiking trail grading activities will be placed and compacted in such a manner as to create a berm/island with heights on the order of 24-30 inches to allow for a minimum of 10-12 inches of compacted clay-rich subgrade soil (i.e., pre-existing cover system cap), and to facilitate burial of the tree root balls without contacting the underlying Alamodome materials. This approach meets or exceeds the 18-24 inch optimum rooting soil depth referenced in *Revegetating Landfills and Waste Containment Areas Fact Sheet dated October 2006* that is published by the U.S. Environmental Protection Agency (EPA) (i.e., EPA542-F-06-001).

5.0 ENVIRONMENTAL MONITORING

5.1 General Excavation Monitoring

RKEI, acting as the project environmental consultant, will be present at the SITE to conduct environmental monitoring on a full-time basis in conjunction with grading excavation and augering activities that are conducted within the mapped buried Alamodome materials footprint, and on an as-needed basis if Alamodome materials and/or obviously impacted soils are encountered by the earthwork contractor(s) over the project duration. **RKEI** will assist the GC and subcontractor(s) with the segregation, management, and disposal of “affected” soils generated as part of the project. A specific construction/monitoring schedule will be set by GC and earthwork subcontractor(s) and communicated to **RKEI** and the construction team at the beginning of each week.

During each work day that environmental monitoring takes place during mass excavation, **RKEI** will document the work location(s), work tasks, and soil observation and worker breathing zone ambient air monitoring results on an environmental monitoring field log sheet, an example of which is provided as **Attachment C**. All soil observations and air monitoring results will be summarized in a final report. In the event that there is an issue requiring immediate attention, the **RKEI** will coordinate with the GC and project team and provide supporting field information, notes, photographs, and recommendations for next appropriate action.

5.2 Worker Breathing Zone Ambient Air Monitoring

The following subsections discuss the two types of worker breathing zone ambient air monitoring that will be conducted in conjunction with grading excavation and augering activities conducted within the mapped buried Alamodome materials footprint (and elsewhere, as warranted).

5.2.1 Volatile Organic Compounds (VOCs)

RKEI will conduct real-time monitoring for the presence of VOCs in the worker breathing using a calibrated portable photoionization detector (PID). In the event PID readings exceed 10 parts per million (ppm) for

a sustained period of 1 minute, **RKEI** will immediately notify the affected earthwork contractor(s). All work in the area will stop, and the area will be cleared of personnel until such time that the VOCs have dissipated to a safe level. On the basis of historical data, it is unlikely that VOCs will be present in the worker breathing zone.

5.2.2 Particulate (Dust) Monitoring

In the referenced Final Closure Report, CJI states that the principal, potential airborne hazard associated with the Hall's 151 Site remedial activities was the generation of dust during construction activities over the identified Alamodome materials areas. On the basis of collective (lead) analysis results for continuous (i.e., 8-hour time-weighted average) air sampling conducted at the onset of project activities, CJI reported that the project environmental contractor did not require that field personnel to use respirators for the duration of the remediation/closure project. That said, air monitoring will be performed for the current park improvements project utilizing a PM-10 monitoring device to ensure that potentially harmful dust in the SITE worker's breathing zone during demolition activities.

In 1987, the U.S. Environmental Protection Agency (EPA) revised regulations and measurement procedures regarding solids suspended in air from total suspended particulate (TSP) to a PM-10 program focused on airborne particles ≤ 10 micrometers in size. Suspended particles with a nominal measurement of ≤ 10 micrometers are considered particularly harmful as they are capable of passing through the nose and esophagus and into the lungs. When airborne particulates are considered a potential threat in the workplace environment, the use of specific equipment designed to test PM-10 concentrations is required. EPA's health-based NAAQS for PM-10 is $150 \mu\text{g}/\text{m}^3$ (measured as a daily concentration).

In conjunction with existing parking lot and roadway demolition activities, a PM-10 monitor will be deployed in the breathing space of onsite personnel during asphalt milling, concrete break up and materials loading operations. If PM-10 readings within the worker breathing space exceed $150 \mu\text{g}/\text{m}^3$ at any time during daily monitoring, work will be ceased temporarily and additional dust control/suppression methods will be employed. The GC or earthwork subcontractor will maintain a water truck onsite during parking lot/roadway demolition activities, and during subsequent grading excavation activities if warranted, to suppress excess dust generation. Care will be taken to not over-apply dust suppression water.

6.0 REUSE SUITABILITY AND WASTE CHARACTERIZATION SAMPLING AND ANALYSIS

The following subsections discuss the two types of environmental sampling and analytical testing programs that will be employed for the project.

6.1 Potentially Affected Soils (Reuse Suitability Testing)

Stockpiled potentially affected soils will be sampled for chemical testing at a rate of one sample for every 100 loose cubic yards for reuse suitability evaluation purposes. Representative soil samples will be composited from four discrete collection locations. Sample collection locations, as well as a unique sample identification number, will be recorded in the field and subsequently indicated on a stockpile sample location map. Samples will be collected and handled in accordance with standard environmental

protocols (i.e., immediately placed in labeled laboratory-provided containers and stored in a cooler with sufficient ice to maintain a 2-6° Celsius temperature). All soil samples submitted for chemical testing will be delivered with accompanying chain of custody documentation to an accredited analytical laboratory within 24 to 48 hours of collection for analysis of constituents listed in the following table:

POTENTIALLY AFFECTED SOIL EVALUATION

AREA OF CONCERN	ASSOCIATED ANALYTES	FREQUENCY OF ENVIRONMENTAL SAMPLES
		Soil
Potentially Affected Soils (Outside the Buried Alamodome Materials Footprint)	Total Petroleum Hydrocarbons (TPH) Volatile Organic Compounds (VOCs) Semi-Volatile Organic Compounds (SVOCs) RCRA 8 Metals	1 Sample per 100 Cubic Yards
	* Synthetic Precipitation Leaching Procedure	Samples Exhibiting Elevated RCRA 8 Metals Concentrations

Notes:

1. Total Petroleum Hydrocarbons (TPH) by Texas Method TX-1005
2. Volatile Organic Compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 826
3. Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270
4. RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EPA Methods 6010b and 7471
5. *SPLP /Hold for Synthetic Precipitation Leaching Procedure (SPLP) by EPA Method 1312 pending initial RCRA 8 testing results.

Samples exhibiting select Resource Conservation and Recovery Act (RCRA) 8 metals concentrations in excess of applicable Texas Risk Reduction Program (TRRP) groundwater protection screening standards will be additionally analyzed following extraction by the Synthetic Precipitation Leaching Procedure (SPLP) to evaluate leachability to shallow groundwater or storm water.

Pending favorable sampling results (as follows), soils segregated and staged onsite as potentially affected can be reused onsite or transported offsite for beneficial reuse at CoSA-approved site(s).

- VOC indicator petroleum hydrocarbons benzene, toluene, ethylbenzene and total xylenes (BTEX), gasoline additive methyl tertiary-butyl ether (MTBE) and TPH concentrations below respective TRRP Tier 1 residential human health and groundwater protection Protective Concentration Levels (PCLs);
- RCRA 8 metals concentrations below respective TRRP Tier 1 residential human health exposure PCLs and/or SPLP testing results below respective TRRP Tier 1 groundwater ingestion PCLs.

Soils exhibiting analytical results in excess of TRRP Tier 1 residential human health exposure and/or groundwater ingestion PCLs will be profiled as waste and disposed at a permitted landfill. It should be noted that depending on specific landfill requirements, additional characterization analyses may be necessary as further discussed in **Section 6.2**.

6.2 Affected Soils (Waste Characterization Testing)

At the project onset, **RKEI** will coordinate with the designated landfill facility to evaluate the sampling frequency and analytical testing requirements to characterize excess soils for landfill disposal. In the

referenced Final Closure Report, CJI stated that analytical testing data reported in conjunction with their environmental assessment of the Hall’s 151 Site supported classification of soils to be disposed of as Class 2 non-hazardous waste. Over the duration of the Tom Slick Community Park improvements project, as space constraints dictate, **RKEI** will collect representative composite samples from the affected soil stockpiles. On the basis of landfill requirements, it is anticipated that samples will be collected at a minimum frequency of 1 sample per 250 loose cubic yards stockpiled and submitted for analytical testing by EPA and State of Texas analytical testing methods listed below.

WASTE PROFILING

AREA OF CONCERN (AOC)	ASSOCIATED ANALYTES	FREQUENCY OF ENVIRONMENTAL SAMPLES
		Soil
“Affected” Soils from Requiring Landfill Disposal	TCLP VOCs TPH (TX-1005) TCLP RCRA 8 Metals TCLP Semi-VOCs	Every 250 cubic yards
	TCLP Chlorinated Herbicides TCLP Organochlorine Pesticides Polychlorinated Biphenyls	25% of samples (or as directed by landfill)

Notes:

1. Volatile Organic Compounds (VOCs) by EPA Method 826
2. Total Petroleum Hydrocarbons (TPH) by Texas Method TX-1005
3. RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EPA Methods 6010b and 7471
4. Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270
5. Chlorinated Herbicides – EPA Method 8150A
6. Organochlorine Pesticides – EPA Method 608/8081
7. Polychlorinated Biphenyls (PCBs) – EPA Method 8082A
8. Toxicity Characteristic Leaching Procedure (TCLP) – EPA Method 1311

As presented in the preceding table, the number of samples submitted for testing will be based on the waste volume actually generated and specific landfill requirements (anticipated to be Waste Management’s Covel Gardens Landfill). Waste characterization analytical testing results will be compared to threshold values pursuant to TCEQ waste coding guidelines as set forth in *(Guidelines for the Classification and Coding of Industrial and Hazardous Wastes, RG-022, Revised February 2005)* in order to confirm continued classification as Texas Class 2 non-hazardous waste for landfill disposal.

7.0 WASTE (SOIL) DISPOSAL

Following waste profile development and acceptance by the selected landfill, affected soils will be loaded out by the earthwork contractor for offsite transport and disposal. **RKEI** will obtain waste manifests from the selected landfill and provide them to CoSA for signature. A designated CoSA representative or general contractor staff will be onsite at the temporary staging area to facilitate the earthwork contractor’s soil load out and disposal process. It is anticipated that **RKEI** will coordinate with the selected landfill and CoSA TCI-EMD as necessary to secure third-party authorization to sign waste manifests on behalf of the generator. Pending notification of load out date(s) by the GC and/or the earthwork contractor responsible for waste soil disposition, it is anticipated that a **RKEI** environmental professional will be present at the

temporary soil staging area on a regular (as-needed) basis to obtain copies of signed manifests and document soil load out (for disposal) activities on behalf of CoSA. Following disposal as the landfill customer, the earthwork contractor will be responsible for obtaining signed copies of final manifests from the landfill and provide signed copies of final manifests to necessary environmental personnel on behalf of CoSA. These manifests will be used to officially track the total volume of disposed soil and will be included in a final project report to be prepared to document proper soils management.

It will be the earthwork contractor's responsibility to load, haul, and dispose of all waste soils generated in conjunction with the referenced construction project activities. To minimize load out effort, it is recommended that trucks used for bulk soil disposal have a minimum capacity of 20 cubic yards. An environmental professional will be present at the temporary soil staging area regularly during the soil load out process to confirm manifest volumes.

8.0 WATER MANAGEMENT

Due to the depth of excavation and augering, it is not anticipated that shallow groundwater will be encountered in conjunction with project excavation/earthwork activities. However, any storm water runoff accumulating in an excavation for more than 24 hours will require containment and subsequent analytical testing to evaluate disposal options/requirements. The GC (or as subcontracted) will enact SWP3 best management practices (BMPs) to minimize storm water runoff entering open excavations. The GC (or as subcontracted) will additionally be prepared to pump accumulated excavation water into a suitable containment structure (i.e., frac tank or equivalent) pending sampling and analytical testing. Pending favorable testing results, pumped excavation water will be discharge back to the SITE surface at areas outside the mapped buried Alamodome materials footprint.

In the event the containerized water exhibits hydrocarbon impacts, **RKEI** will submit a Notice of Intent (NOI) for Texas Pollution Discharge Elimination System (TPDES) General Permit TXG830000. If water does not meet applicable discharge standards, the water will be treated using appropriate methods (e.g., activated carbon treatment) and re-tested. If discharge levels do not meet acceptable MS4 levels following treatment, the affected water will be disposed of by a licensed disposal/recycling contractor.

9.0 PROTECTIVE COVER RESTORATION

The proposed Tom Slick Community Park improvements project will result in a net increase of impervious cover (i.e., asphaltic pavements at new parking areas and concrete pavements for the hiking trail and sidewalk connector) over and immediately adjacent to (south of) the consolidated buried Alamodome materials footprint. The following specific improvements will be constructed to preserve the integrity of the existing cover:

- With respect to the construction of the new parking areas and flatwork, grading excavation and subsequent placement of compacted clay-rich subgrade soils and base course/select fill materials will be conducted in a manner that ensures the overall 18-inch minimum thickness of the existing functional cap (earthen and impervious cover) will be restored to the surface of the pavements as a result of the proposed construction activities.

- The trash/recycling receptacle and Handicap Parking sign footing auger holes (which will penetrate the buried Alamodome materials) will be drilled to appropriate depths to allow for placement of compacted clay rich soil prior to pouring the concrete footings on the order of 3-4 feet thick.
- The small portion of the existing parking circle that will be demolished but not replaced with new pavements (i.e., earthen cap) will be backfilled with a minimum of 12 inches of compacted clay-rich subgrade soil and a minimum of 6 inches of topsoil in order to achieve the minimum 18 inch protective cover system restoration. Establishment and maintenance of vegetative cover (i.e., grass) in this area will reduce the potential for erosion.
- The area of the existing earthen cap extending northward adjacent to the proposed new parking spaces will additionally host the 24-30 inch earthen berm/island in which seven shade trees will be planted. The earthen berm/island will allow for a minimum of 10-12 inches of compacted clay-rich subgrade soil (i.e., pre-existing cover system cap). This original clay cap thickness, plus the actual tree root ball and minimum 2-inch thick overlying topsoil, will provide an at least 18 inch protective cover over the buried Alamodome materials.

Generally speaking, the placement of compacted clay-rich soil, the majority of which will be overlain by impervious asphalt or concrete cover, will ensure that this modified cover system will be equivalent to the existing Hall's 151 Site cover system to maintain RRS No. 3 commercial/industrial closure requirements. All other planned excavation/earthwork (i.e., augering) activities for the Tom Slick Community Park improvements project will be conducted outside of the mapped buried Alamodome materials footprint.

10.0 REGULATORY REPORTING

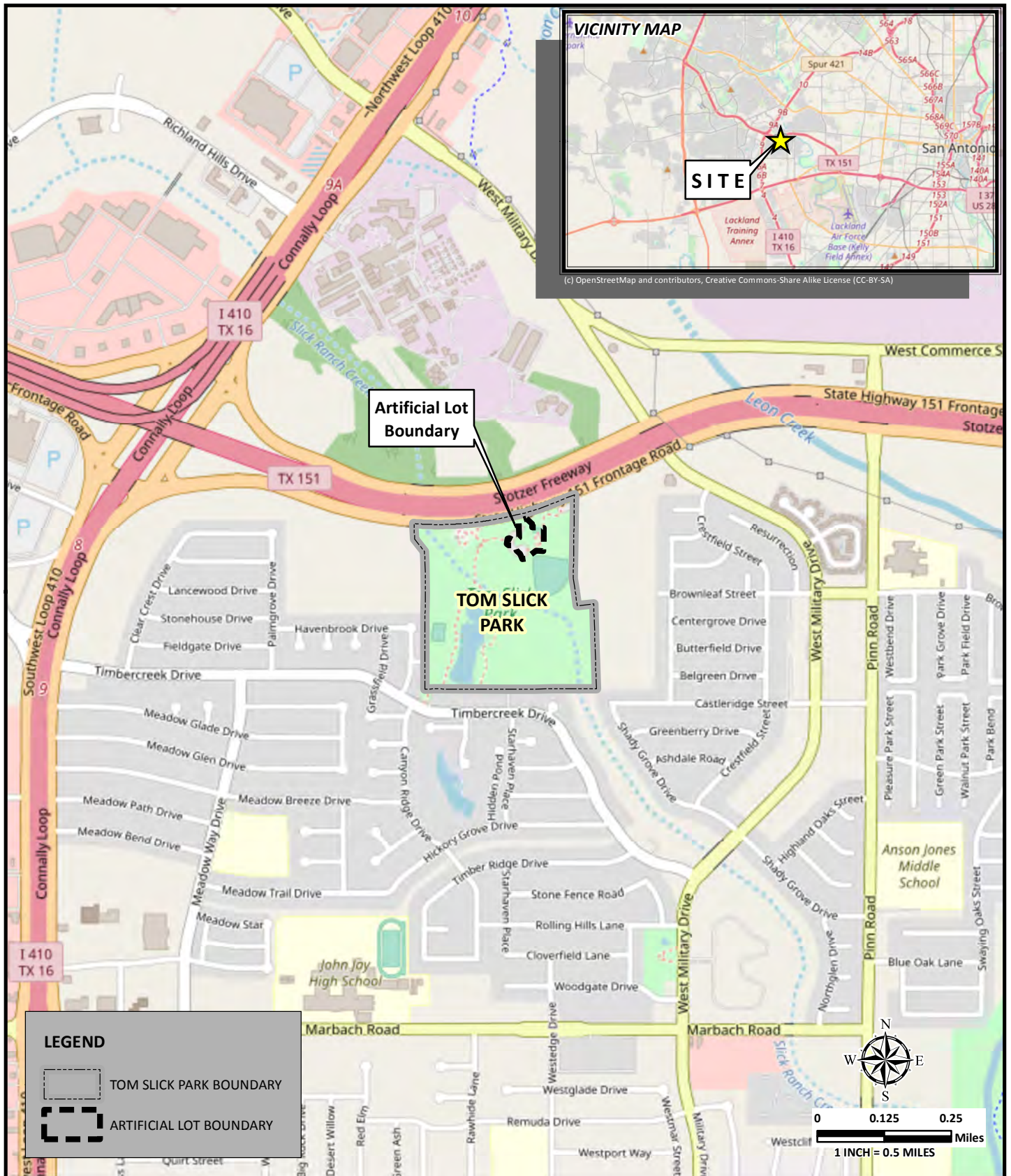
Upon completion of Tom Slick Community Park improvements that penetrate/disturb the existing SITE cover system, **RKEI** will prepare a written report for TCEQ review documenting proper soils and water management and disposal activities and the complete restoration of the facility cover system. It is anticipated that the final report will contain the following elements at a minimum:

- Description of specific soils and water management procedures implemented for the project and discussion of environmental conditions encountered;
- Graphical attachments depicting the locations of the Tom Slick Community Park improvements and all locations where environmental conditions of concern were encountered (if any);
- Discussion of reuse suitability sampling and testing methods and findings, in addition to onsite beneficial reuse of excess soils generated outside of the mapped buried Alamodome footprint;
- Discussion of waste characterization (affected soil, and accumulated excavation water if generated and contained) sampling methods and analytical testing results, in addition to waste profile development for landfill disposal;
- Tabulated analytical testing results, as well as signed laboratory reports of analysis and accompanying chain of custody documentation;
- Documentation of the proper disposition of soils and water generated as part of the Tom Slick Community Park improvements construction project;

- A discussion of how the physical changes to the existing Hall's 151 Site closure cover system function to continue to preserve the effectiveness and integrity of the existing cover system; and
- Professional opinion as to whether project activities were conducted in accordance with applicable regulatory requirements and the TCEQ-approved Work Plan.

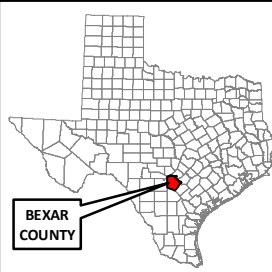
RKEI, on behalf of CoSA TCI-EMD, will submit two report copies to the TCEQ Remediation Division for review and approval. **RKEI** will additionally provide one report copy to the TCEQ Region 13 office.

FIGURES



50 YEARS
RABA KISTNER
Building Better Tomorrows
 Raba Kistner Environmental, Inc.
 12821 West Golden Lane
 San Antonio, Texas 78249
 www.rkci.com
 P 210 :: 699 :: 9090
 F 210 :: 699 :: 6426
 TBPE Firm F-3257 / TBPG Firm #50220

SITE LOCATION MAP
 WORK PLAN FOR CONSTRUCTION
 TOM SLICK COMMUNITY PARK
 (HALL'S 151 SITE-ALAMODOME-RELATED SITE)
 7400 HIGHWAY 151
 SAN ANTONIO, BEXAR COUNTY, TEXAS

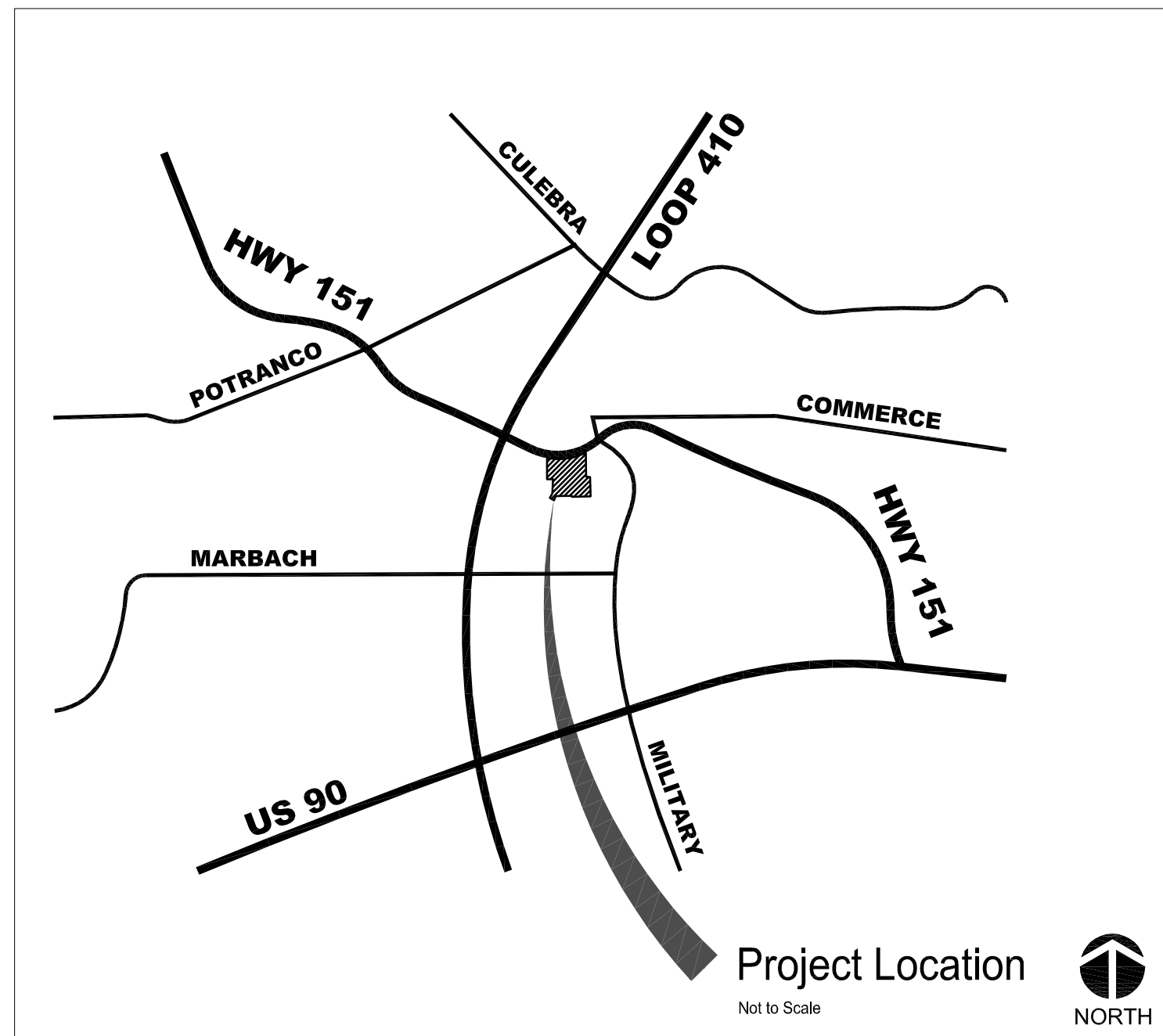


PROJECT No.:
 ASF17-155-47
 ISSUE DATE: 04-15-19
 DRAWN BY: LAW
 CHECKED BY: PMS
 REVIEWED BY: RVK
FIGURE 1

NOTE: This Drawing is Provided for Illustration Only, May Not be to Scale and is Not Suitable for Design or Construction Purposes

ATTACHMENT A
CONSTRUCTION DRAWINGS

VICINITY MAP



City of San Antonio, Texas Transportation & Capital Improvements (TCI)
Vertical Projects Division
 114 West Commerce Street, San Antonio, Texas 78205

Tom Slick Park

Improvements 2017 Bond

7400 HWY. 151, SAN ANTONIO, TX 78227

SCHEMATIC DESIGN & DESIGN DEVELOPMENT SUBMITTAL
 Submitted: 07 / 16 / 2018



DRAWINGS INDEX:

- G1.00 GENERAL NOTES
- TP1.00 TREE PRESERVATION PLAN & NOTES
- TP2.00 TREE PRESERVATION INVENTORY, NOTES & DETAILS
- D1.00 DEMOLITION PLAN
- L1.00 OVERALL SITE PLAN & PROJECT NOTES
- L1.01 ENLARGED PLAN (NORTH)
- L1.02 ENLARGED PLANS
- L2.00 LANDSCAPE SITE DETAILS
- L2.01 LANDSCAPE PLANTING DETAILS & NOTES

CoSA Permit: AP # _____

PROJECT NUMBER: -
 FUNDING: 2017 - 2022 BOND

CITY COUNCIL
 MAYOR
 Ron Nirenberg

COUNCIL

Roberto Treviño	District 1	Greg Brockhouse	District 6
Cruz Shaw	District 2	Ana Sandoval	District 7
Rebecca Viagran	District 3	Manny Pelaez	District 8
Rey Saldana	District 4	John Courage	District 9
Shirley Gonzales	District 5	Clayton Perry	District 10

CITY MANAGER
 Sheryl Sculley

DIRECTOR OF TRANSPORTATION & CAPITAL IMPROVEMENTS / CITY ENGINEER
 Michael Frisbie, P.E

TCI PROJECT MANAGER
 Mark Wittlinger - Project Manager
 City of San Antonio, Transportation & Capital Improvements
 Municipal Plaza Building, 114 West Commerce Street, 4th Floor, San Antonio, Tx 78283-3966
 Phone: (210) 207-2874

NOTE:
 AS A PART OF THE PROJECT THE CONTRACTOR SHALL MAINTAIN A COMPLETE, UP-TO-DATE SET OF DRAWINGS AND TECHNICAL SPECIFICATIONS AVAILABLE FOR REVIEW AT THE CONSTRUCTION SITE BY THE OWNER'S REPRESENTATIVE, INSPECTORS OR CONSULTANTS. IN ADDITION, THE CONTRACTOR SHALL ENSURE ALL INSTALLATIONS AND COORDINATION BY ALL TRADES OCCURS IN ACCORDANCE WITH THE ABOVE DOCUMENT ISSUANCE & ANY REVISIONS.

"Although it is not the responsibility of the City to provide sets of drawings and/or specifications to the successful Contractor for the construction of this project, the City may provide extra or returned sets that are available, if any from the bidding process. All other sets as deemed required by the Contractor, for the purposes of construction of this project, shall be obtained and paid by the Contractor."

LANDSCAPE ARCHITECTS LICENSURE

LAWRENCE C. CLARK
 LANDSCAPE ARCHITECT

THESE DOCUMENTS ARE INCOMPLETE AND ARE RELEASED FOR INTERIM REVIEW ONLY, AND NOT INTENDED FOR REGULATORY APPROVAL, BIDDING, PERMIT, OR CONSTRUCTION PURPOSES.

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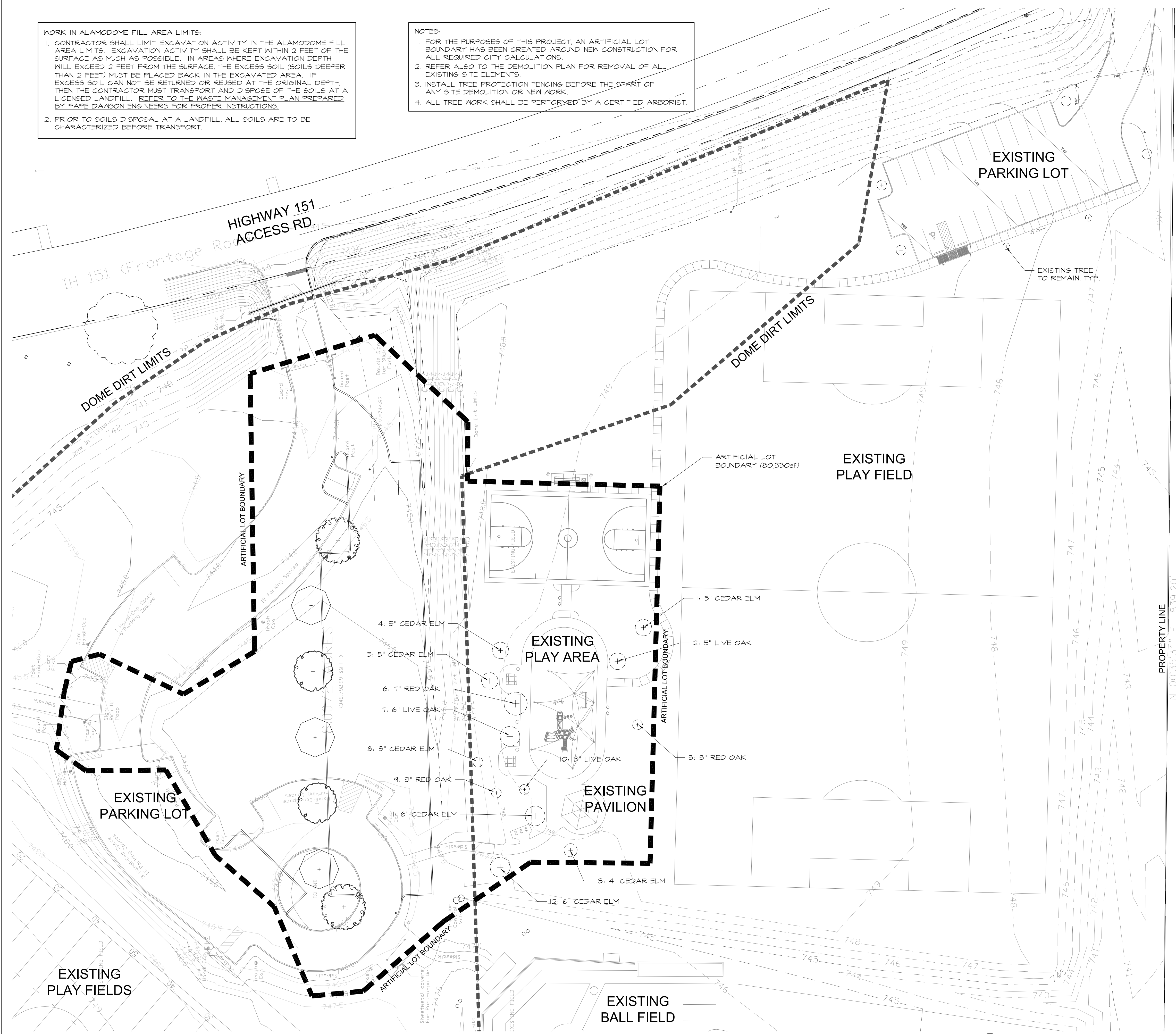
Date: Aug 16, 2018, 2:31pm User ID: bvterville
 File: S:\2018 PROJECTS\Tom Slick Park 2017 Bond\Workfile\2018-08-16 - BWC - Tom Slick Park.dwg

WORK IN ALAMODOME FILL AREA LIMITS:

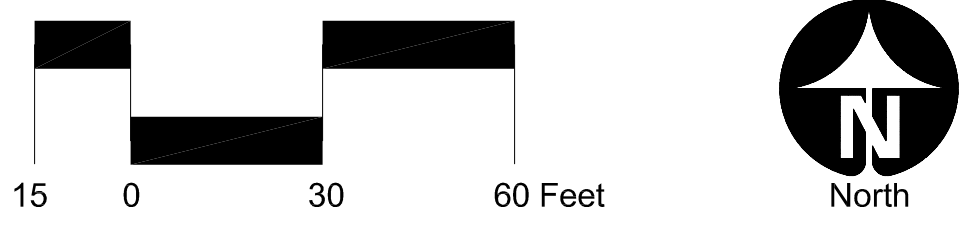
- CONTRACTOR SHALL LIMIT EXCAVATION ACTIVITY IN THE ALAMODOME FILL AREA LIMITS. EXCAVATION ACTIVITY SHALL BE KEPT WITHIN 2 FEET OF THE SURFACE AS MUCH AS POSSIBLE. IN AREAS WHERE EXCAVATION DEPTH WILL EXCEED 2 FEET FROM THE SURFACE, THE EXCESS SOIL (SOILS DEEPER THAN 2 FEET) MUST BE PLACED BACK IN THE EXCAVATED AREA. IF EXCESS SOIL CAN NOT BE RETURNED OR REUSED AT THE ORIGINAL DEPTH, THEN THE CONTRACTOR MUST TRANSPORT AND DISPOSE OF THE SOILS AT A LICENSED LANDFILL. REFER TO THE WASTE MANAGEMENT PLAN PREPARED BY PAPE DAWSON ENGINEERS FOR PROPER INSTRUCTIONS.
- PRIOR TO SOILS DISPOSAL AT A LANDFILL, ALL SOILS ARE TO BE CHARACTERIZED BEFORE TRANSPORT.

NOTES:

- FOR THE PURPOSES OF THIS PROJECT, AN ARTIFICIAL LOT BOUNDARY HAS BEEN CREATED AROUND NEW CONSTRUCTION FOR ALL REQUIRED CITY CALCULATIONS.
- REFER ALSO TO THE DEMOLITION PLAN FOR REMOVAL OF ALL EXISTING SITE ELEMENTS.
- INSTALL TREE PROTECTION FENCING BEFORE THE START OF ANY SITE DEMOLITION OR NEW WORK.
- ALL TREE WORK SHALL BE PERFORMED BY A CERTIFIED ARBORIST.



1 TREE PRESERVATION PLAN
 1" = 30'-0"



TREE PRESERVATION NOTES

- TREE PRESERVATION: Tree Preservation Requirements shall be accomplished in accordance with Section 35-523 of the current Unified Development Code of the City of San Antonio, Texas.
- Tree locations are based on a tree survey.
- All conditions necessitating the removal or pruning of a tree shall be reviewed by Landscape Architect. Locations of any improvements with the potential of impacting trees shall be staked/delineated prior to the field review. Contractor will be required to make reasonable adjustments in layout of elements (including curbs, paving and walks) per approval of Owner.
- All woody material to be removed shall be chipped into mulch. Subsequent mulch material may be placed on site within areas disturbed along utility corridors, and on site within RPZ's at trees adjacent to construction & natural areas. Material not used on site is to be removed and properly disposed of by Contractor.
- Significant & heritage trees shall be removed only under the following situations & only with prior approval of Landscape Architect & Owner.
 - Cut/fill greater than three (3') inches to take place beneath the dripline of a tree exceeds 50% of the root protection zone (rpz).
 - Construction of a building or other improvements require the removal of more than 30% of the viable portion of a tree crown.
 - Floor condition of tree.
- Barricade fencing shall be placed to protect RPZ of all trees to remain unless otherwise approved by Landscape Architect to provide access to work. In these instances the minimum distance for barricade fencing from trunk shall be equal to 50% minimum of RPZ. Minimum distance barricade to be erected is 5'-0" from trunk of tree or clump of trees for trees 10" caliper or less. Refer to tree preservation related details for tree barricade fencing and root protection zone work restrictions.
- Construction envelope at site improvements shall be limit of area within selective cleared area which can be completely disturbed by construction. Any significant or heritage trees encountered are to be reviewed on an individual basis to determine modification to location of pathway/trail/improvements. Routing of utilities to be confirmed with Landscape Architect and Owner; make adjustments as directed at no additional cost to contract.

Site Canopy Calculations

80,330sf(site area) x 25% = 20,082.5sf(required)

Existing Canopy
 1,200sf x 3(existing large trees) = 8,750 sf
 875sf x 10(existing mdm/lrg trees) = 3,600 sf

Proposed Canopy
 1,080sf x 2(existing large trees) = 2,160 sf
 787.5sf x 5(existing mdm/lrg trees) = 3,937.5 sf
 (REFER TO SHEET L1.01 FOR PROPOSED TREES)

Total Canopy Provided = 18,449.5 sf

Canopy Required = 20,082.5 sf
 Canopy Provided = 18,449.5 sf

WARNING!
 ALL CONTRACTORS MUST KNOW EXACT LOCATION OF, AND AVOID, ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK. CALL 1-800-DIG-TESS AT LEAST 72 HOURS PRIOR.

STOP!
CALL BEFORE YOU DIG
 DIG TESS
 1-800-DIG-TESS
 (at least 72 hours prior to digging)

ISSUE DATE		
No.	Date	Issue Description
1	08/16/18	SD/DD Submittal For Review

**Tom Slick Park
 Site Improvements**

7400 Highway 151
 San Antonio, Texas 78227
 OWNER
 City of San Antonio, TCI
 Contact: Project Manager
 Tel: _____

LANDSCAPE ARCHITECT / PRIME CONSULTANT
BENDER WELLS CLARK DESIGN
 830 N. ALAMO ST.
 SAN ANTONIO, TEXAS 78215

Landscape Architecture
Urban Design
Planning

830 North Alamo Street
 San Antonio, Texas 78215
 210-692-9221
 www.bwcdesign.com

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CIVIL ENGINEER
 XX
 San Antonio, Texas 782--
 (210) -----

ELECTRICAL ENGINEER
 XX
 San Antonio TX 782--
 (210) -----

LANDSCAPE ARCHITECTS LICENSURE

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BWCD Proj. No. : _____ Drawn By : _____
 SHEET TITLE & NO. : _____

TREE PRESERVATION PLAN & NOTES

TP1.00

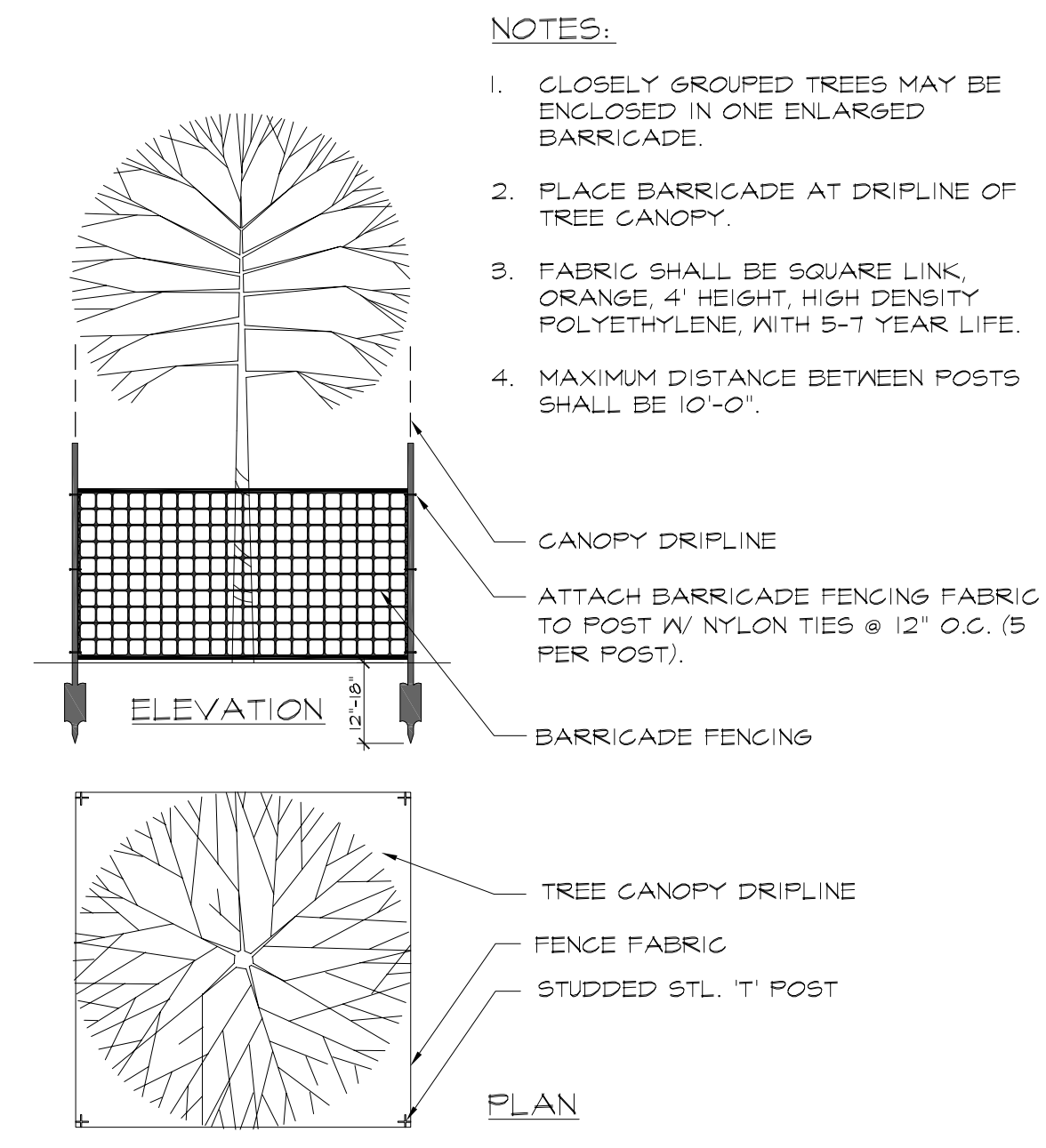
TREE INVENTORY												
Tag #	Species	Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Significant Tree** 10.0" - 23.5"		Heritage 3:1		Heritage 1:1		Additional Inches Preserved for Mitigation ***
		Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	
1	5" CEDAR ELM											
2	5" LIVE OAK											
3	3" RED OAK											
4	5" CEDAR ELM											
5	5" CEDAR ELM											
6	7" RED OAK				7							
7	6" LIVE OAK				6							
8	3" CEDAR ELM											
9	3" RED OAK											
10	3" LIVE OAK											
11	6" CEDAR ELM				6							
12	6" CEDAR ELM				6							
13	4" CEDAR ELM											
Sub. Tot. Inches=		0	0	0	25	0	0	0	0	0	0	0
Total inches by category=		0	0	0	25	0	0	0	0	0	0	0
Preservation percentage=		#DIV/0!		Significant Preservation		100%		Heritage Preservation		#DIV/0!		0
Mitigation required (Commercial) =		0		Commercial (inches)		-15						
Mitigation required (Residential) =		0		Residential (inches)		-18.25		Heritage Mitigation (inches)		0		

No category to fall below 20% preservation.
 Preserved- Tree to remain that meets root protection zone requirements described in section 35-523 of the UDC.
 Mitigation 1:1 for significant trees below minimum preservation requirements; 3:1 for heritage trees below 100% preservation
 * Small species: Condonia, Redbud, Tx. Mountain Laurel, Tx. Persimmon, Hawthorn, Possumhaw - these are mitigated at 1:1 for Heritage Trees
 ** Ashe Juniper, Huisache, Mesquite, Arizona Ash, Hackberry protected at 10" dbh and mitigated at 1:1 for heritage trees
 *** Mitigation Trees: Unprotected-sized trees to be used for mitigation calculations; subtract inches from mitigation owed

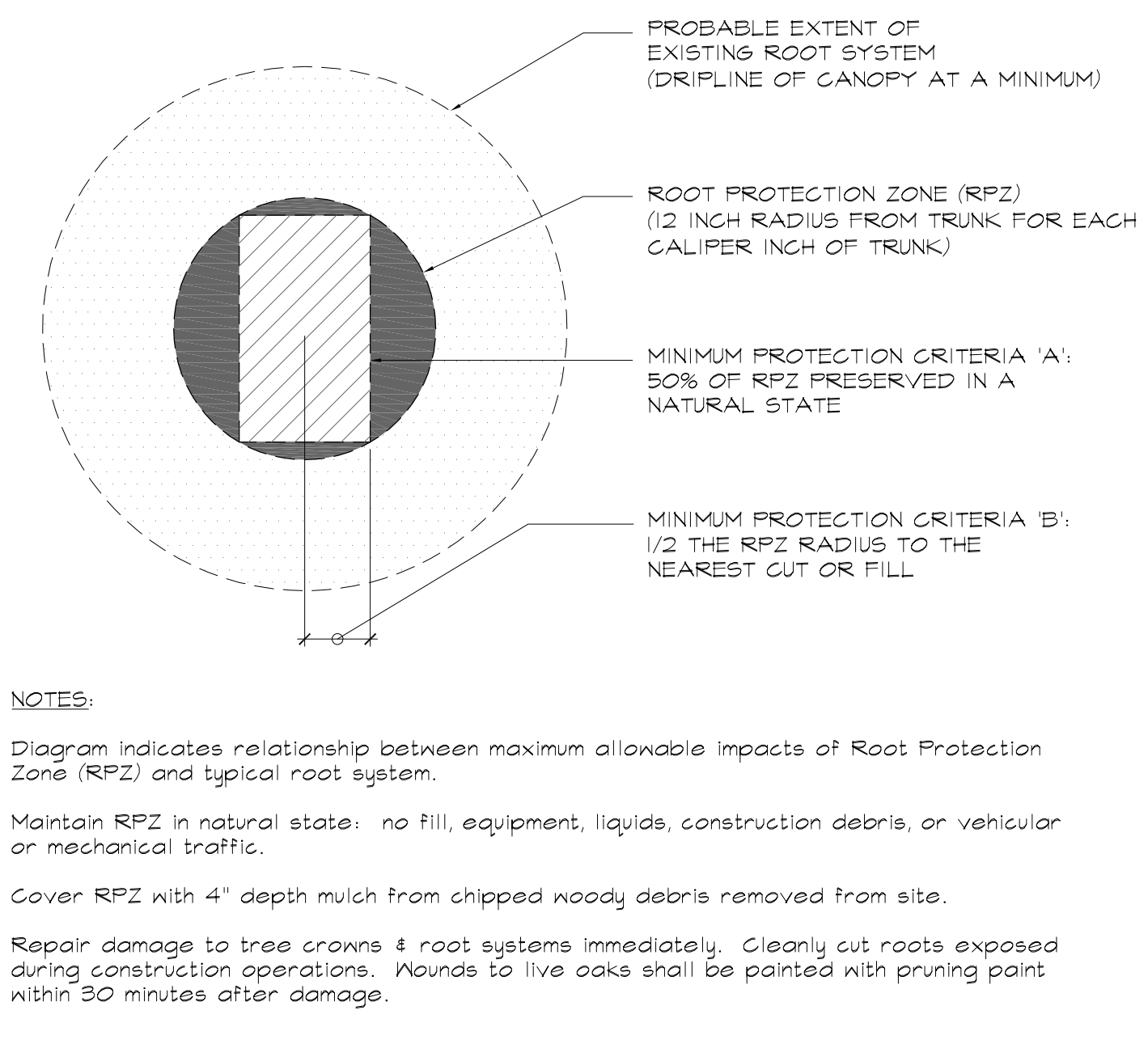
TREE PROTECTION & PRESERVATION NOTES

- ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY APPROVED PLANS.
- NO DISTURBANCE SHALL OCCUR IN THE ROOT PROTECTION ZONE AREA.
- NO CONSTRUCTION SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. REFER TO TP01-102 FOR TREE PRESERVATION FENCING.
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE-INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATIONS IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE WORK DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL BE OPERATED OR STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. THE ROOT PROTECTION ZONE FOR ALL PROTECTED TREES SHALL BE AN 8 FOOT DIAMETER (MIN.) ROOT PROTECTION ZONE.
- ROOT OR BRANCHES IN CONFLICT WITH CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. ALL OAK WOUNDS SHALL BE PAINTED WITHIN 30 MINUTES TO PREVENT 'OAK WILT' INFECTION.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST.
- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE STREET OR ALLEY RIGHT-OF-WAY OR PAVEMENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES MAY BE NEATLY TRIMMED BY THE CONTRACTOR ONLY AFTER APPROVAL FROM THE INSPECTOR.
- SAPLINGS, SHRUBS, OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A PROTECTED TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.

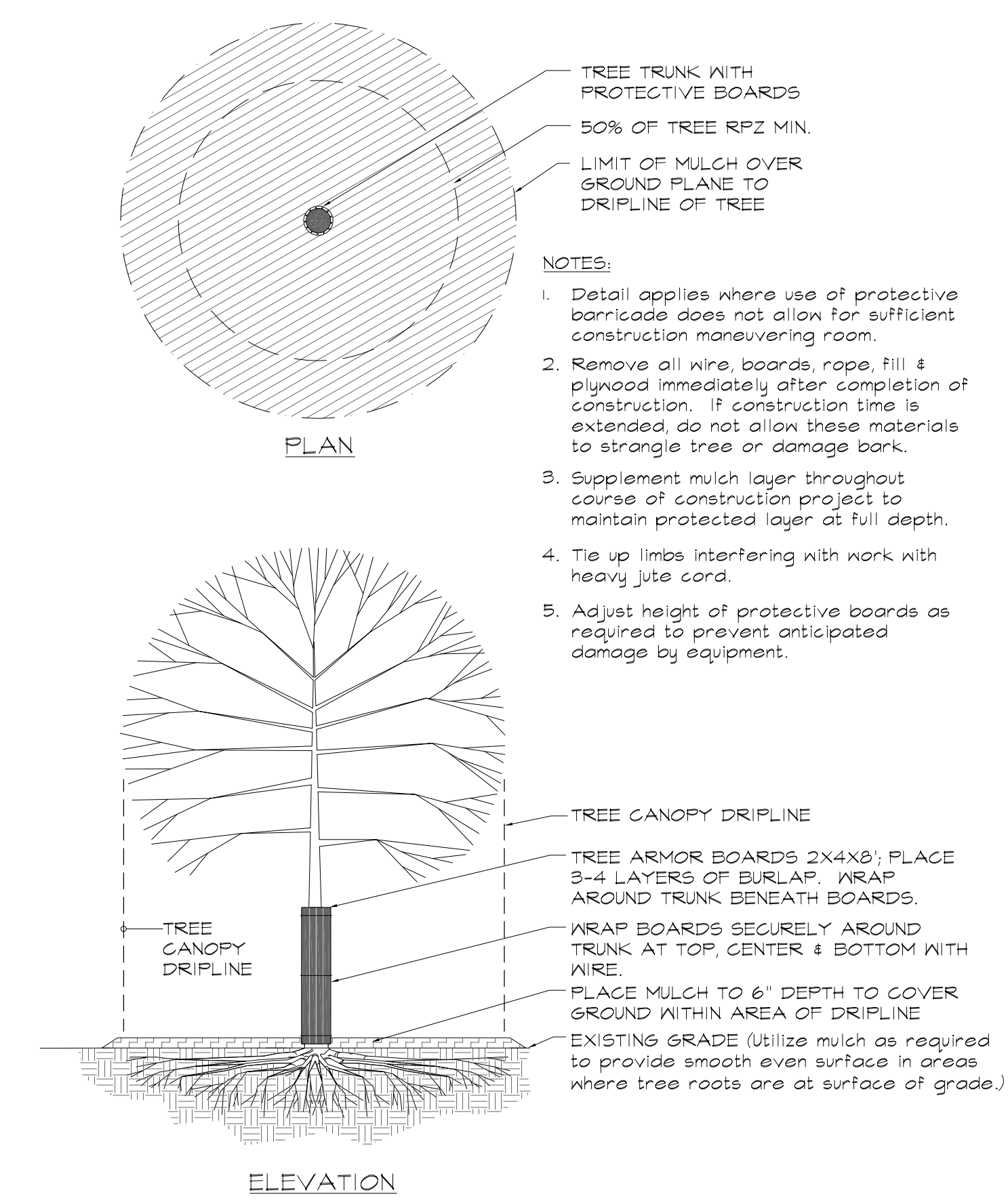
1 TREE PROTECTION FENCING
 NTS



2 PLAN: ROOT PROTECTION ZONE
 NTS



3 PLAN / ELEVATION: TREE PROTECTION
 NTS



ISSUE DATE		
No.	Date	Issue Description
1	08/ 16 /18	SD/DD Submittal For Review

**Tom Slick Park
Site Improvements**

7400 Highway 151
San Antonio, Texas 78227
OWNER: City of San Antonio, TCJ
Contact: Project Manager
Tel: _____

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LANDSCAPE ARCHITECT'S LICENSURE

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BWCD Proj. No. :	Drawn By :
SHEET TITLE & NO. :	

TREE PRESERVATION NOTES & DETAILS

TP2.00

Date: Aug 16, 2018, 2:37pm User ID: bvterville
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GENERAL NOTES

1. ALL PLANT MATERIAL LOCATIONS SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL VERIFY ALL BUILDING SETBACK LINES, EASEMENT LINES, FIRE LANES AND VISIBILITY LINES IN THE FIELD PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES SHOWN ON THIS PLAN AND NOT SHOWN ON THESE PLANS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK.
4. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL SITE FEATURES.
5. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL CLEARED BRUSH, DEBRIS, ETC. FROM THE LIMITS OF CONSTRUCTION. DISPOSE OF MATERIALS OFF SITE.
6. EXISTING TREES THAT ARE IDENTIFIED ON THE DRAWINGS TO BE PRESERVED SHALL RECEIVE TREE PRESERVATION FENCING AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. CONSTRUCTION EQUIPMENT SHALL NOT OPERATE, PARK, OR BE STOPPED UNDER THE CANOPIES OF EXISTING TREES. REFER TO TREE PRESERVATION FENCING SHEET.
7. ALL GRADES SHALL BE FINISHED TO A SMOOTH, FLOWING CONTOUR, MAINTAINING EXISTING FLOW PATTERNS UNLESS DIRECTED OTHERWISE.

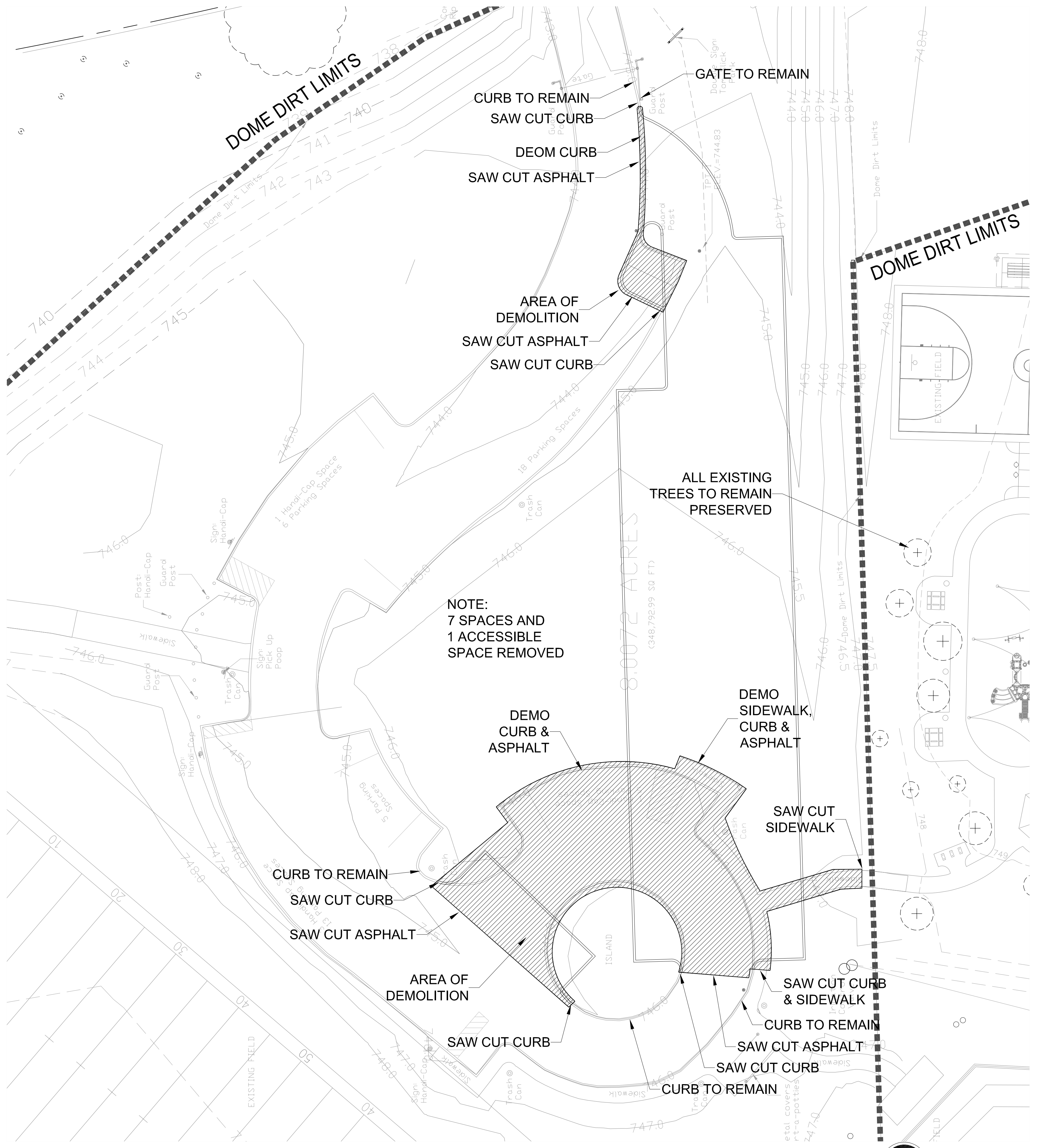
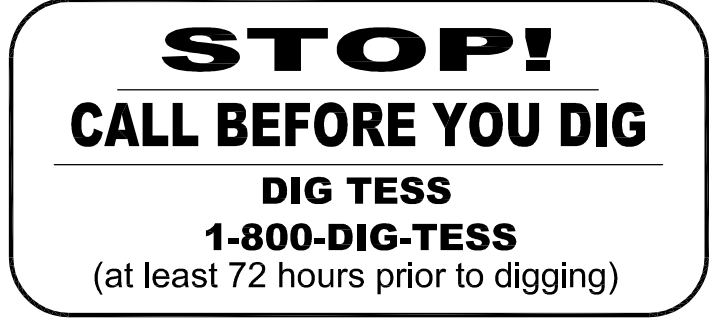
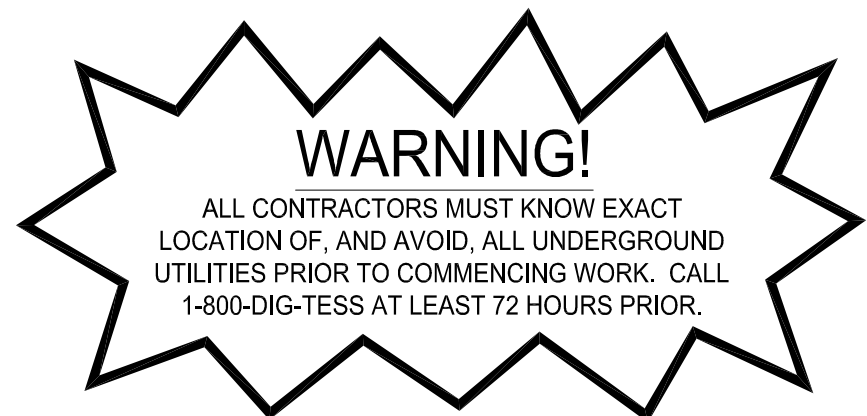
TREE PROTECTION FENCING NOTE:
 EXISTING TREE TRUNKS & BRANCHES (HEIGHT AND ANGLE) MAY INFLUENCE TREE PROTECTION FENCING LAYOUT, CONTRACTOR SHALL ANTICIPATE ADJUSTMENTS IN THE FIELD.

ALL EXISTING TREES WITHIN AREA OF CONSTRUCTION SHALL RECEIVE TREE PROTECTION/PRESERVATION FENCING. REFER TO DETAILS & NOTES.

ALL TREES ARE TO REMAIN PROTECTED/PRESERVED IN PLACE UNLESS NOTED OTHERWISE ON THE CITY APPROVED PLANS.

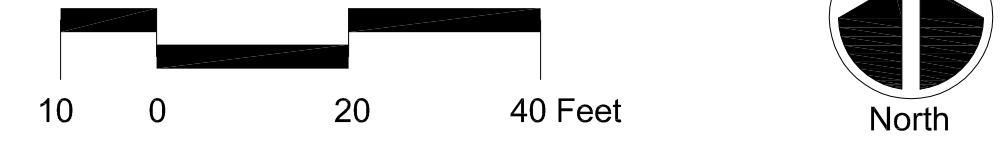
DAMAGED OR DEAD TREES SHALL BE MITIGATED BY THE CONTRACTOR TO THE CITY'S SATISFACTION.

THE DOME DIRT LIMIT SHOWN ON THE PLAN IS CONSIDERED THE LATEST INFORMATION OBTAINED BY THE DESIGNER. BENDER WELLS CLARK DESIGN CAN NOT ATTEST TO ITS ACCURACY. CONTRACTOR SHALL WORK WITH CARE IN THE VICINITY OF THE LIMIT. CONTRACTOR SHALL ALSO BE FAMILIAR WITH THE ENVIRONMENTAL SITE ASSESSMENT (2012) ASSOCIATED WITH THIS PARK.



NOTE:
 7 SPACES AND
 1 ACCESSIBLE
 SPACE REMOVED

1 ENLARGED PLAN: DEMOLITION PLAN
 Scale 1" = 20'-0"



ISSUE DATE		
No.	Date	Issue Description
1	08/16/18	SD/DD Submittal For Review
<h2 style="text-align: center;">Tom Slick Park Site Improvements</h2> <p style="text-align: center;">7400 Highway 151 San Antonio, Texas 78227 OWNER: City of San Antonio, TCI Contact: Project Manager Tel: _____</p>		
<p>LANDSCAPE ARCHITECT / PRIME CONSULTANT BENDER WELLS CLARK DESIGN 830 N. ALAMO ST. SAN ANTONIO, TEXAS 78215</p>		
<p>Landscape Architecture Urban Design Planning</p> <p>830 North Alamo Street San Antonio, Texas 78215 210-692-9221 www.bwcdesign.com</p>		
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<p>LANDSCAPE ARCHITECT'S LICENSURE</p>		
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<p>BWCD Proj. No. : _____</p>		<p>Drawn By : _____</p>
<p>SHEET TITLE & NO. : ENLARGED PLAN NORTH</p>		
<h1 style="text-align: center;">D1.00</h1>		

ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR
ACCESS.	ACCESSIBLE
ADJ.	ADJACENT or ADJUSTABLE
ALT.	ALTERNATE
ALUM.	ALUMINUM
A.D.A.	AMERICAN DISABILITIES ACT
A.B.	ANCHOR BOLT
L	ANGLE
ANOD.	ANODIZED
APPRVD.	APPROVED
APPROX.	APPROXIMATE
ARCH.	ARCHITECT/ ARCHITECTURAL
@	AT
BM.	BEAM
BET.	BETWEEN
BLT.	BOLT
BOT./ BTM.	BOTTOM
BLDG.	BUILDING
B/S	BUILDING STANDARD
B.U.	BUILT UP
CTR.	CENTER
CL. OR	CENTER LINE
CRS.	CENTERS
C.L.F.	CHAIN LINK FENCE
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COMP.	COMPACTED
CONC.	CONCRETE
CONT.	CONTINUOUS
C.J.	CONTROL JOINT
C.F.	CUBIC FOOT
C.Y.	CUBIC YARD
DTL.	DETAIL
DIA.	DIAMETER
E.W.	EACH WAY
ENS.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXTS.	EXISTING
EXP. JT./ E.J.	EXPANSION JOINT
FIN.	FINISH
FTG.	FOOTING
GALV.	GALVANIZED
ga.	GAUGE
H/A	HANDICAP/ACCESSIBLE
HT.	HEIGHT
HORIZ.	HORIZONTAL
HDG	HOT-DIPPED-GALVANIZED
I.D.	INSIDE DIAMETER
INT.	INTERIOR
JT.	JOINT
L.A.R.C.H.	LANDSCAPE ARCHITECT/ LANDSCAPE ARCHITECTURAL
M.T.C.D.	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
MFR.D.	MANUFACTURED
MFR.	MANUFACTURER
MDD.	MAXIMUM DRY DENSITY
O.C.	ON CENTER
O.C.E.W.	ON CENTER EACH WAY
O.D.	OUTSIDE DIAMETER
PNTD	PAINTED
PVMT.	PAVEMENT
PVG.	PAVING
PLT.	PLATE
P.D.	PROCTOR DENSITY
P.L.	PROPERTY LINE
RAD.	RADIUS
REF.	REFERENCE or REFER TO
REINF.	REINFORCING
REQD.	REQUIRED
R.S.	ROUGH SAWN
SCH.	SCHEDULE
SHT.	SHEET
SLT.	SLOPE
SQ.	SQUARE
S.F.	SQUARE FOOT
STL.	STEEL
STRUCT.	STRUCTURAL
S4S	SMOOTH FOUR SIDES
S.Y.P.	SOUTHERN YELLOW PINE
THK.	THICK
TYP.	TYPICAL
VERT.	VERTICAL
WP.	WATERPROOFING
W/	WITH or WITHIN

GENERAL NOTES

- N1. Applicable Codes Ordinances (or most current edition as required by City of San Antonio):
 a. 2012 International Building Code
 b. 2012 International Fire Code
 c. 2012 Uniform Plumbing Code
 d. 2012 Uniform Mechanical Code
 e. 2011 National Electrical Code
 f. 2012 International Energy Conservation Code
 g. 2012 International Residential Code
 h. City of San Antonio Unified Development Code, most current edition and Amendments
- N2. All provisions of Texas Accessibility Standards (TAS) of the Architectural Barriers Act (Article 9102, Texas Civil Statutes) must be followed.
- N3. Signage: All signage placement and mounting is to comply with all provisions of TAS.
- N4. Slope Criteria
 a. Walkway/path cross slope 2% maximum (1% preferred)
 b. Walkway/path running slope 5% maximum
 c. Ramp running slope 8.33% maximum
 d. Ramp cross slopes 1% maximum
 e. Curb ramp 8.33% maximum (6.25% preferred)
 f. Walkway landings at drainage in direction 2% maximum cross slope. (1.5% preferred)
 g. Ramp landings 2% maximum cross slope/running slope.
- N5. Complete repairs and finish outs are to be done as a result of any relocations, modifications, repairs, construction, demolition, etc.
- N6. Any items, procedures, or any other items that are unclear are to be brought to the attention of Landscape Architect, Owner and Consultant(s) related to that particular item prior to proceeding with work.
- N7. All safety provisions and codes must be followed during demolition and construction of all areas. Provide temporary construction fences where work will occur and maintain through Substantial Completion of Project. Coordinate location with Landscape Architect and Owner.
- N8. All holes or rips must be patched to a flush condition and must match existing adjacent surfaces.
- N9. Any existing surfaces to be repainted must first be prepared by repairing any holes, changing any rotted wood, replacing rusted metal, making any repairs needed, etc.
- N10. Where existing surface mounted items have been removed, all holes and chips must be repaired and patched with like materials of existing surface finish.
- N11. Any items requested by Owner to be salvaged must be salvaged and protected until further direction by Owner, and delivered to a location as directed by Owner.
- N12. All surrounding sites and adjacent buildings/structures must be protected and unaffected during construction.
- N13. All areas around construction areas must be safe for pedestrian traffic before, during and after construction. Work sites shall be cleaned daily from all construction trash, debris, materials, etc.
- N14. Any items that create an obstruction of any kind to demolition and construction is to be brought to the attention of Landscape Architect, Owner and Consultant(s) related to this item prior to proceeding with work.
- N15. Any unusual or unexpected items are to be brought to the attention of Landscape Architect, Owner and Consultant(s) related to this item prior to proceeding with work.
- N16. Contractor and Fabricator shall verify all quantities, dimensions, and conditions and notify Landscape Architect of any discrepancies or inconsistencies before proceeding with work. DO NOT scale drawings for dimensions.
- N17. General Contractor shall inspect job for completion before scheduling any observation by Landscape Architect and Consultants.
- N18. Any conflicts between Contract Drawings and Specifications shall be brought to the attention of Landscape Architect. Landscape Architect reserves the right to make appropriate decision without any extra cost to Owner.
- N19. Landscape Architect and Consultant(s) shall not have control of, and shall not be responsible for construction means, methods, techniques, sequences, or procedures for safety, precautions and programs in connection with the work, for the acts or omissions of Contractor, Subcontractor(s), or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.
- N20. Periodic site observation by field representatives of the Landscape Architect and Consultant(s) is solely for the purpose of determining if the work contract of Contractor is proceeding in accordance with the contract documents. This limited site observation is not intended to be a check of the quality or quantity of the work, but rather periodic in an effort to inform Owner of defects and deficiencies in the work of Contractor.
- N21. Contractor shall be responsible for making himself familiar with all underground utilities, pipes, and structures. Contractor is to trace out and verify location of all existing utilities whether shown or not shown prior to digging. It is the Contractor's responsibility to protect all utilities and request call-out of utility locations by Texas One Call and others as required.
- N22. Construction crew(s) to remain within designated work areas at all times. It is Contractor's responsibility to maintain public safety and welfare within and adjacent to project work areas.
- N23. Do not willingly proceed with construction as designed when it is obvious that unknown obstruction and/or grade differences exist that may not have been known/considered during design. Such conditions shall be immediately brought to the attention of the Landscape Architect. The Contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- N24. The Contractor shall be responsible for any coordination with sub contractors as required to accomplish any and all operations.

GENERAL CONCRETE NOTES

- All forms shall be well braced and straight.
- All steel shall be free of grease, scale, & dirt.
- Concrete shall reach a minimum strength of 2500 psi at 28 day test. Concrete shall not be placed in excess of 5 1/2' slump without prior approval of the engineer.
- All #3 reinforcing bars shall be 40 grade steel, all #4 or larger bars shall be ASTM A-615 grade 60.
- Contractor shall verify all the dimensions with the plan.
- Refer also to the specifications.

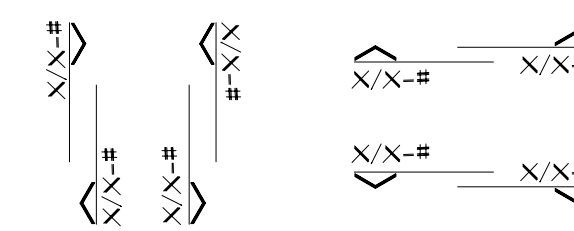
WORK IN ALAMODOME FILL AREA

- Contractor shall be familiar with the Environmental Site Assessment Report prepared by URS Corporation for Tom Slick Park.
- Contractor shall limit excavation activity in the Alamodome fill area limits. Excavation activity shall be kept within 2 feet of the surface as much as possible. In areas where excavation depth will exceed 2 feet from the surface, the excess soil (soils deeper than 2 feet) must be placed back in the excavated area. If excess soil can not be returned or reused at the original depth, then the contractor must transport and dispose of the soils at a licensed landfill.
- Refer to the Waste Management Plan prepared by Pope Dawson Engineers for proper soil disposal instructions.
- Prior to soils disposal at a landfill, all soils are to be characterized before transport.

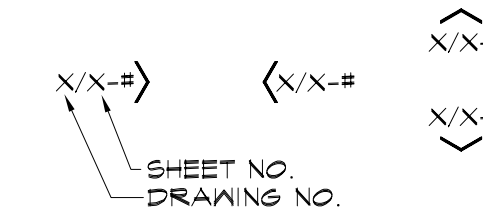
GENERAL CONSTRUCTION NOTES

- Construction Staging Area**
Contractor shall coordinate with the Owner the location of the construction staging area.
- Construction Fencing**
Contractor is responsible for the safety and security of all activities around the construction site. Provide construction chainlink fencing around the proposed site work.
- Erosion and Sediment Control**
All erosion and sediment control measures must be in place before any site work begins and must remain in place for the duration of construction. Refer to the Stormwater Prevention and Pollution Plans.

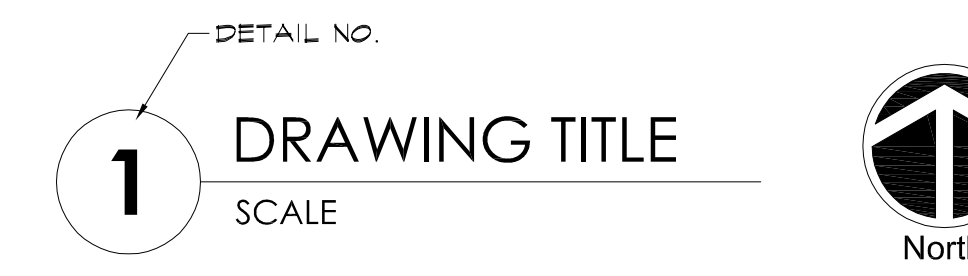
SECTION REFERENCE



ELEVATION REFERENCE



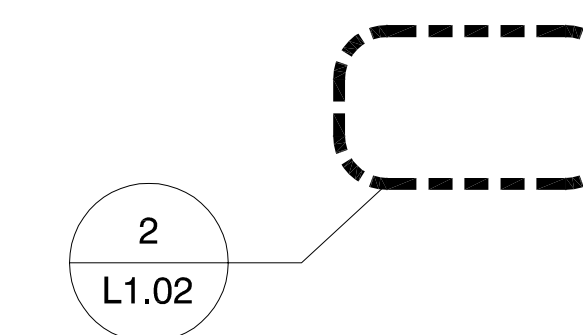
DRAWING KEY



NOTE REFERENCE



ZOOM DETAILS



ISSUE DATE

No.	Date	Issue Description
1	08/ 16 /18	SD/DD Submittal For Review

**Tom Slick Park
Site Improvements**

7400 Highway 151
San Antonio, Texas 78227
OWNER
City of San Antonio, TCI
Contact: Project Manager
Tel: -

LANDSCAPE ARCHITECT / PRIME CONSULTANT
BENDER WELLS CLARK DESIGN
 830 N. ALAMO ST.
 SAN ANTONIO, TEXAS 78215

Landscape Architecture
Urban Design
Planning

830 North Alamo Street
 San Antonio, Texas 78215
 210-692-9221
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ELECTRICAL ENGINEER
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 San Antonio TX 782--
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BWCD Proj. No. : Drawn By :

SHEET TITLE & NO. :

GENERAL NOTES

G1.00

Date: Aug 16, 2018, 2:38pm User ID: bvierville
 File: S:\2018 PROJECTS\Tom Slick Park 2017 Bond\Workfile\2018-08-16 - BWC - Tom Slick Park.dwg

GENERAL NOTES

1. ALL PLANT MATERIAL LOCATIONS SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
3. THE CONTRACTOR SHALL VERIFY ALL BUILDING SETBACK LINES, EASEMENT LINES, FIRE LANES AND VISIBILITY LINES IN THE FIELD PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES SHOWN ON THIS PLAN AND NOT SHOWN ON THESE PLANS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK.
5. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL SITE FEATURES.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL CLEARED BRUSH, DEBRIS, ETC. FROM THE LIMITS OF CONSTRUCTION. DISPOSE OF MATERIALS OFF SITE.
7. EXISTING TREES THAT ARE IDENTIFIED ON THE DRAWINGS TO BE PRESERVED SHALL RECEIVE TREE PRESERVATION FENCING AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION.
8. CONSTRUCTION EQUIPMENT SHALL NOT OPERATE, PARK, OR BE STOPPED UNDER THE CANOPIES OF EXISTING TREES. REFER TO TREE PRESERVATION FENCING SHEET.
9. ALL GRADES SHALL BE FINISHED TO A SMOOTH, FLOWING CONTOUR, MAINTAINING EXISTING FLOW PATTERNS UNLESS DIRECTED OTHERWISE.

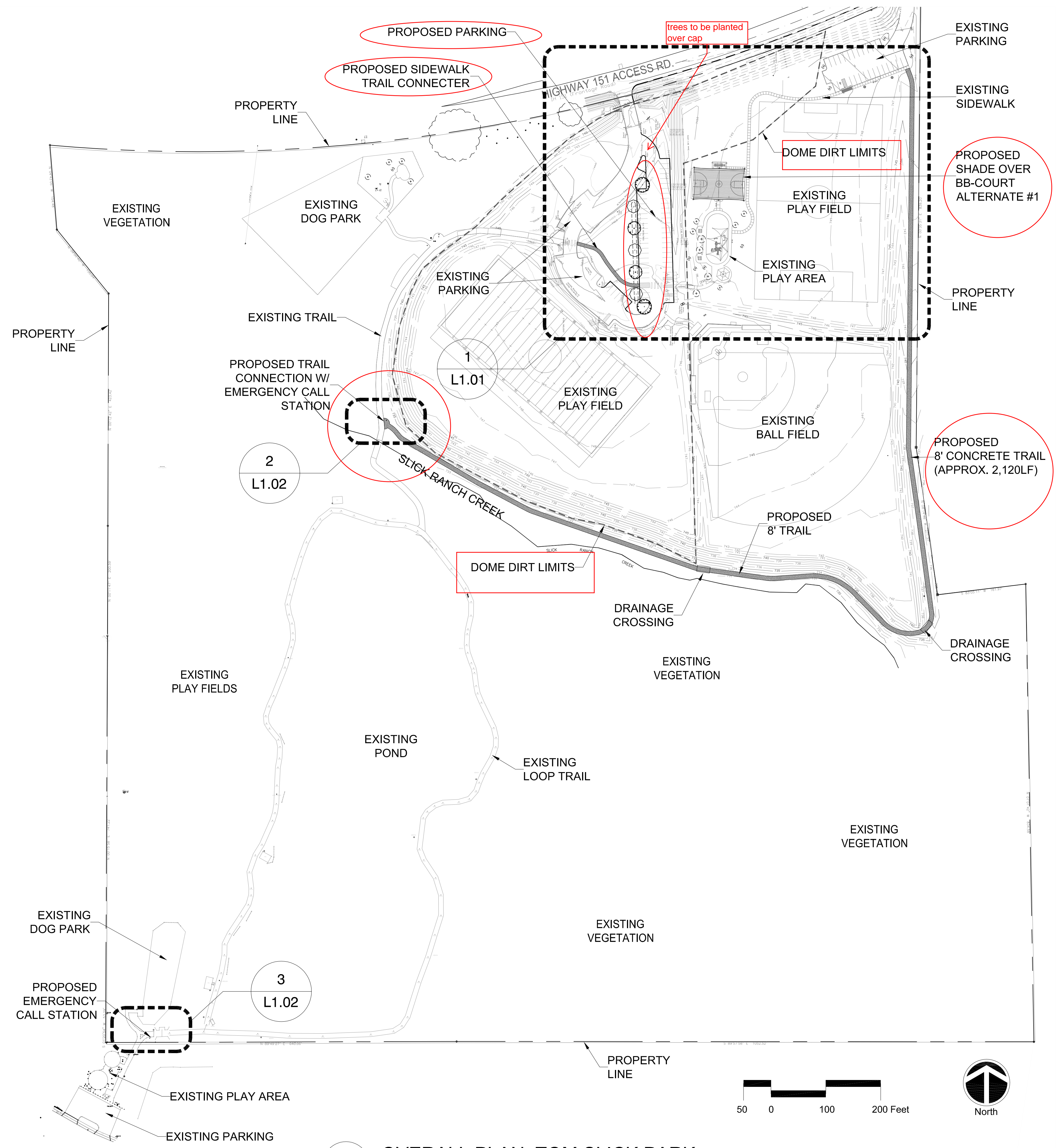
WORK IN ALAMODOME FILL "DOME DIRT" AREA LIMITS:

1. CONTRACTOR SHALL LIMIT EXCAVATION ACTIVITY IN THE ALAMODOME FILL ("DOME DIRT") AREA LIMITS. EXCAVATION ACTIVITY SHALL BE KEPT WITHIN 2 FEET OF THE SURFACE AS MUCH AS POSSIBLE. IN AREAS WHERE EXCAVATION DEPTH WILL EXCEED 2 FEET FROM THE SURFACE, THE EXCESS SOIL (SOILS DEEPER THAN 2 FEET) MUST BE PLACED BACK IN THE EXCAVATED AREA. IF EXCESS SOIL CAN NOT BE RETURNED OR REUSED AT THE ORIGINAL DEPTH, THEN THE CONTRACTOR MUST TRANSPORT AND DISPOSE OF THE SOILS AT A LICENSED LANDFILL. REFER TO THE WASTE MANAGEMENT PLAN PREPARED BY PAPE DAWSON ENGINEERS FOR PROPER INSTRUCTIONS.
2. PRIOR TO SOILS DISPOSAL AT A LANDFILL, ALL SOILS ARE TO BE CHARACTERIZED BEFORE TRANSPORT.
3. REFER ALSO TO THE CIVIL PLANS FOR PARKING LOT GRADING AND EROSION CONTROL.
4. CONTRACTOR SHALL USE TOPSOIL STRIPPED FROM THE SITE, IF POSSIBLE, FOR BERM WORK IN THE LANDSCAPE ISLANDS. SOIL DEEPER THAN 2 FEET FROM SURFACE IS NOT ALLOWED TO BE USED. SCREEN TOPSOIL FOR 1/2" DIAMETER OR GREATER ROCKS.

IRRIGATION NOTE

1. ALL TREES SHALL BE IRRIGATED USING TREE WATERING BAGS. CONTRACTOR IS RESPONSIBLE FOR FILLING UP THE BAGS FOR THE DURATION OF THE 60 DAY MAINTENANCE PERIOD.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY IRRIGATION TO ESTABLISH ALL NEW GRASS AREAS. PROVIDE A METHOD TO THE LANDSCAPE ARCHITECT & OWNER FOR APPROVAL.

THE DOME DIRT LIMIT SHOWN ON THE PLAN IS CONSIDERED THE LATEST INFORMATION OBTAINED BY THE DESIGNER. BENDER WELLS CLARK DESIGN CAN NOT ATTEST TO ITS ACCURACY. CONTRACTOR SHALL WORK WITH CARE IN THE VICINITY OF THE LIMIT. CONTRACTOR SHALL ALSO BE FAMILIAR WITH THE ENVIRONMENTAL SITE ASSESSMENT (2012) ASSOCIATED WITH THIS PARK.



1 OVERALL PLAN: TOM SLICK PARK
 Scale 1" = 100'-0"

NOTES
 REFER TO SHEET TP1.00 FOR TREE PRESERVATION PLANS

ISSUE DATE		
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1	08/16/18	SD/DD Submittal For Review

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 Site Improvements**

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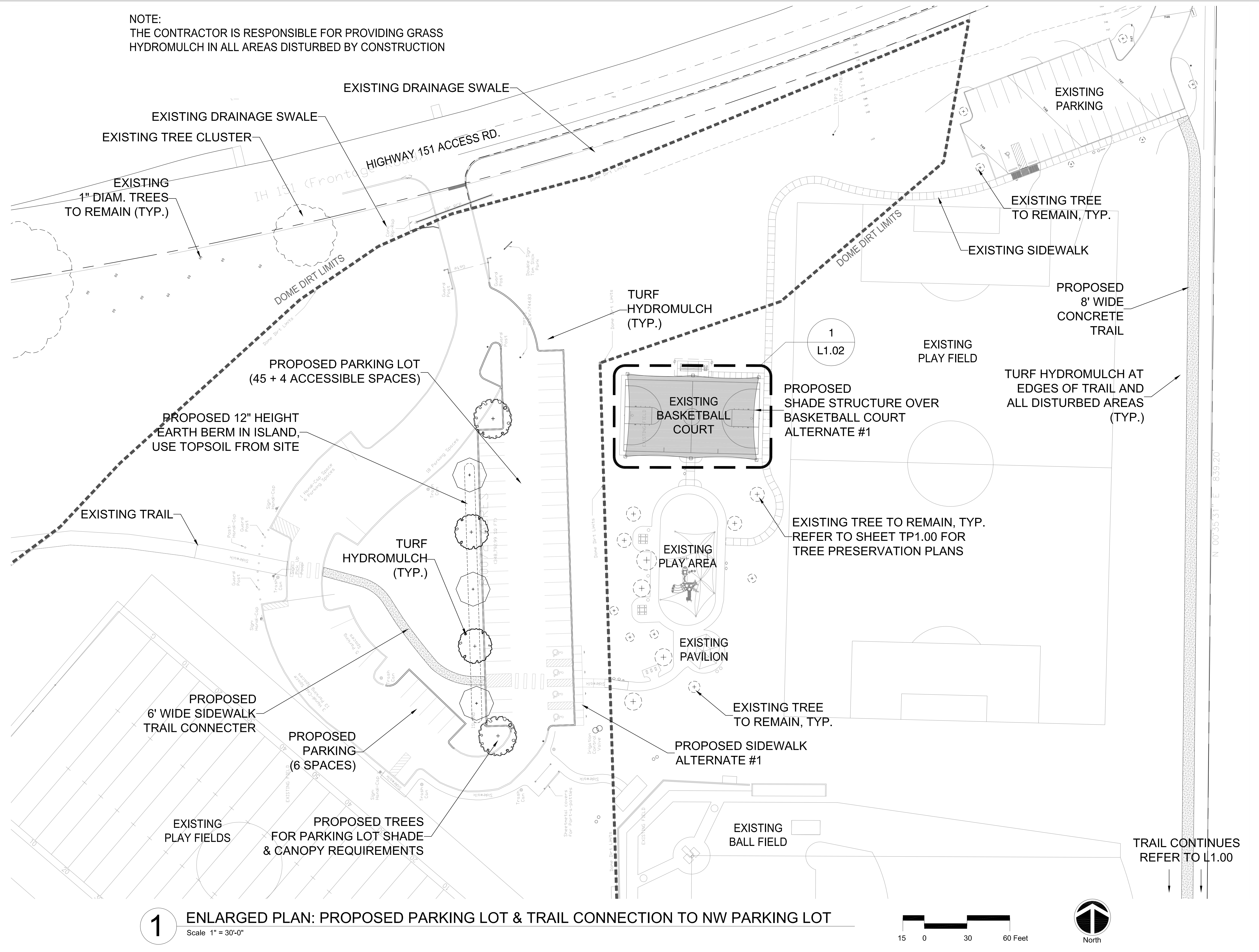
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SHEET TITLE & NO. :
Overall Site Improvements Plan
L1.00

Date: Aug 16, 2018, 2:39pm User ID: bvterville
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NOTE:
 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING GRASS
 HYDROMULCH IN ALL AREAS DISTURBED BY CONSTRUCTION



1 ENLARGED PLAN: PROPOSED PARKING LOT & TRAIL CONNECTION TO NW PARKING LOT
 Scale 1" = 30'-0"

15 0 30 60 Feet



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 Site Improvements**

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 San Antonio, Texas 78227
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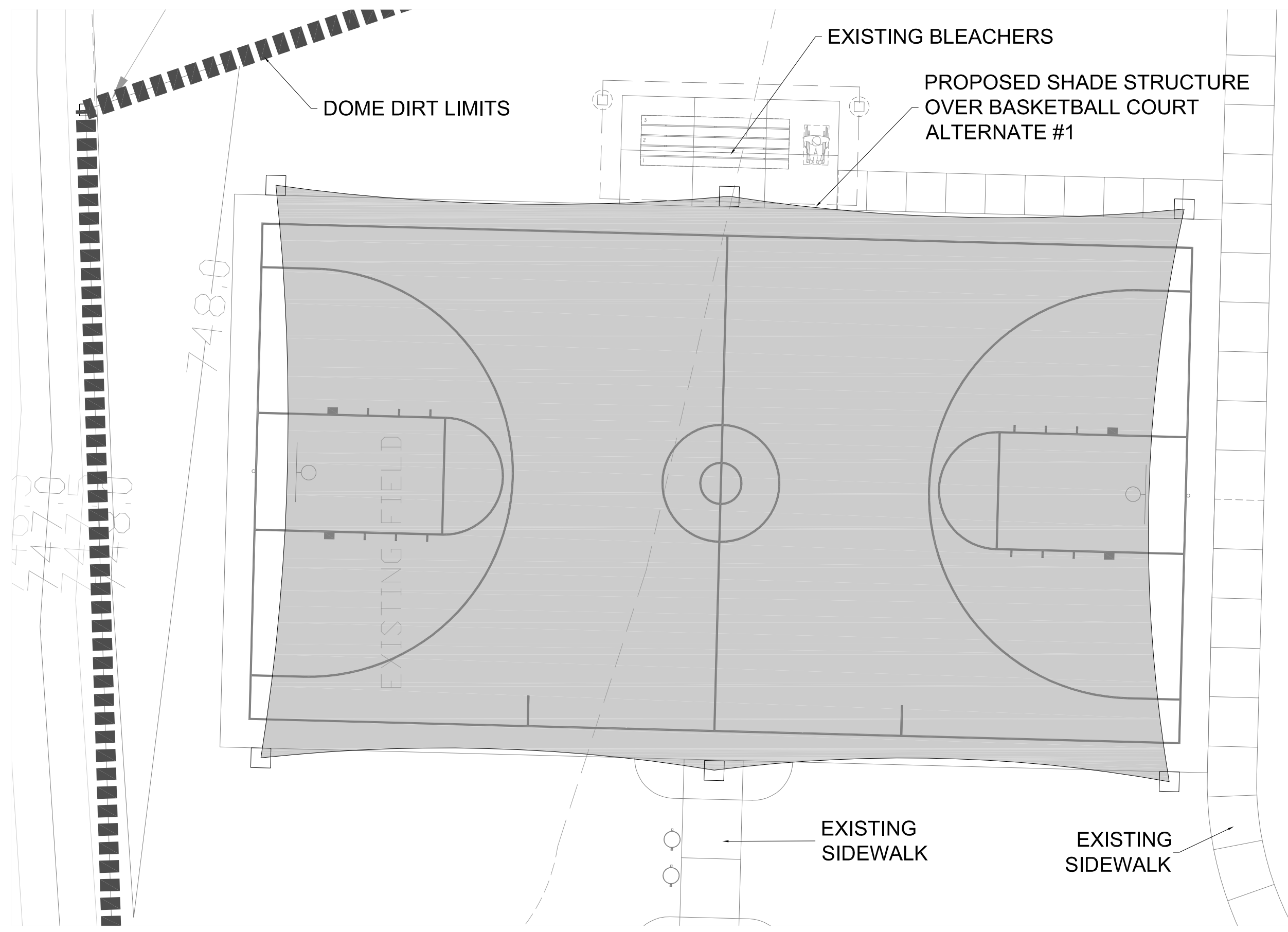
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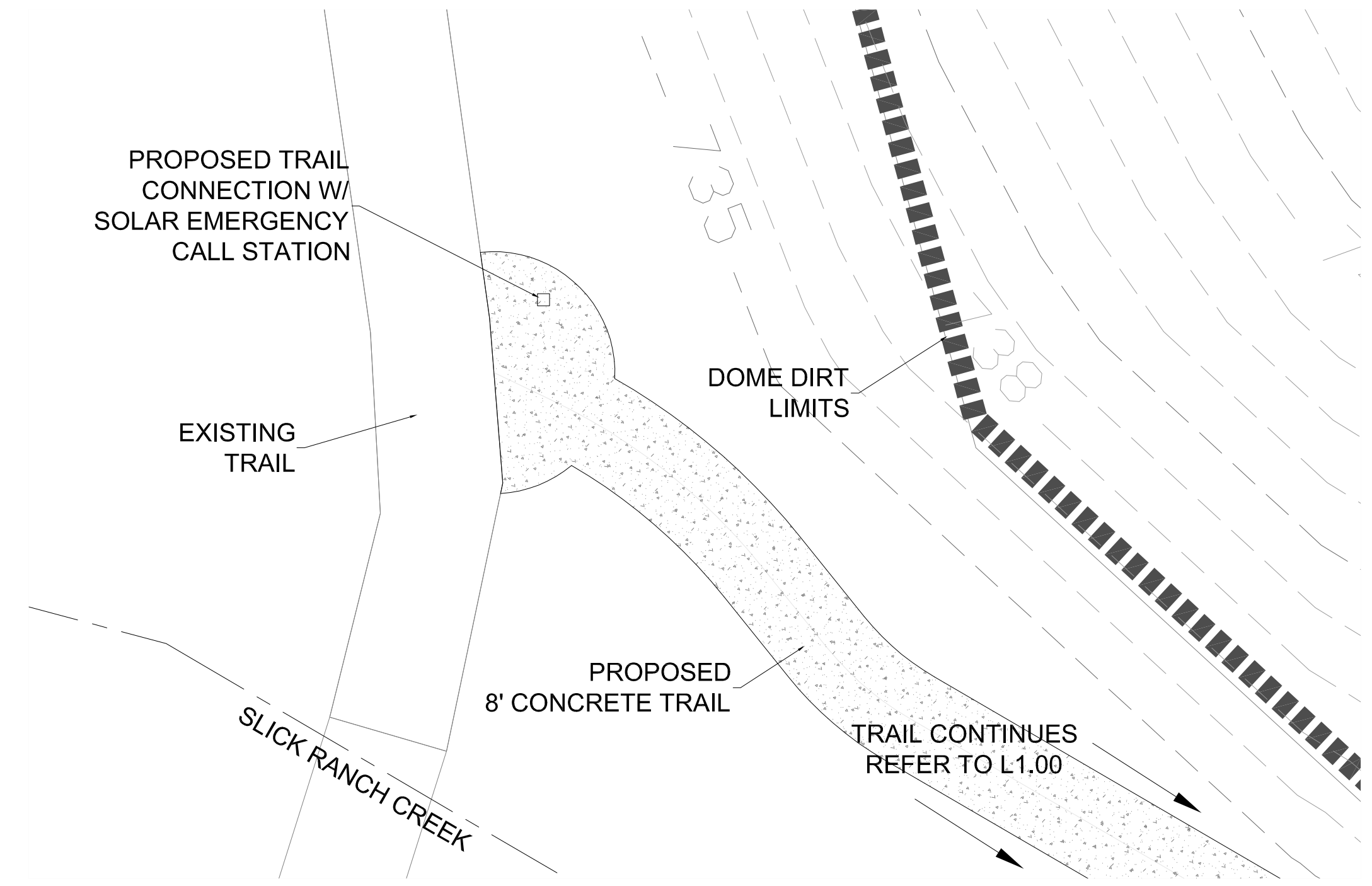
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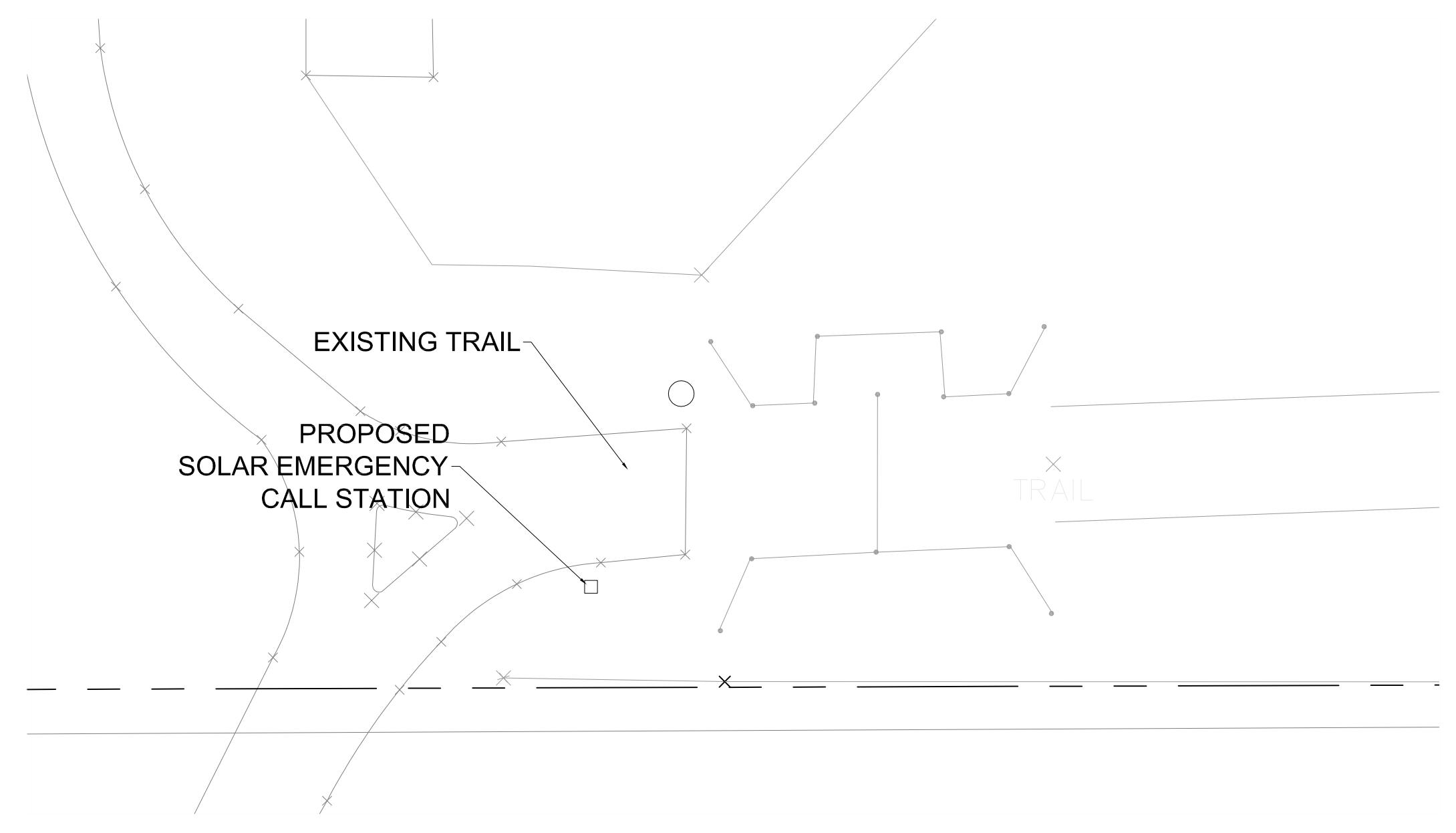
BWCD Proj. No. : _____ Drawn By : _____
 SHEET TITLE & NO. :
ENLARGED PLAN NORTH
L1.01



1 ENLARGED PLAN: SHADE STRUCTURE AT BASKETBALL COURT AREA
Scale 1" = 10'-0"



2 ENLARGED PLAN: EMERGENCY CALL STATION
Scale 1" = 10'-0"



3 ENLARGED PLAN: EMERGENCY CALL STATION
Scale 1" = 10'-0"



SOLAR EMERGENCY CALL STATION

ISSUE DATE		
No.	Date	Issue Description
1	08/16/18	SD/DD Submittal For Review

**Tom Slick Park
Site Improvements**

7400 Highway 151
San Antonio, Texas 78227
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Tel: _____

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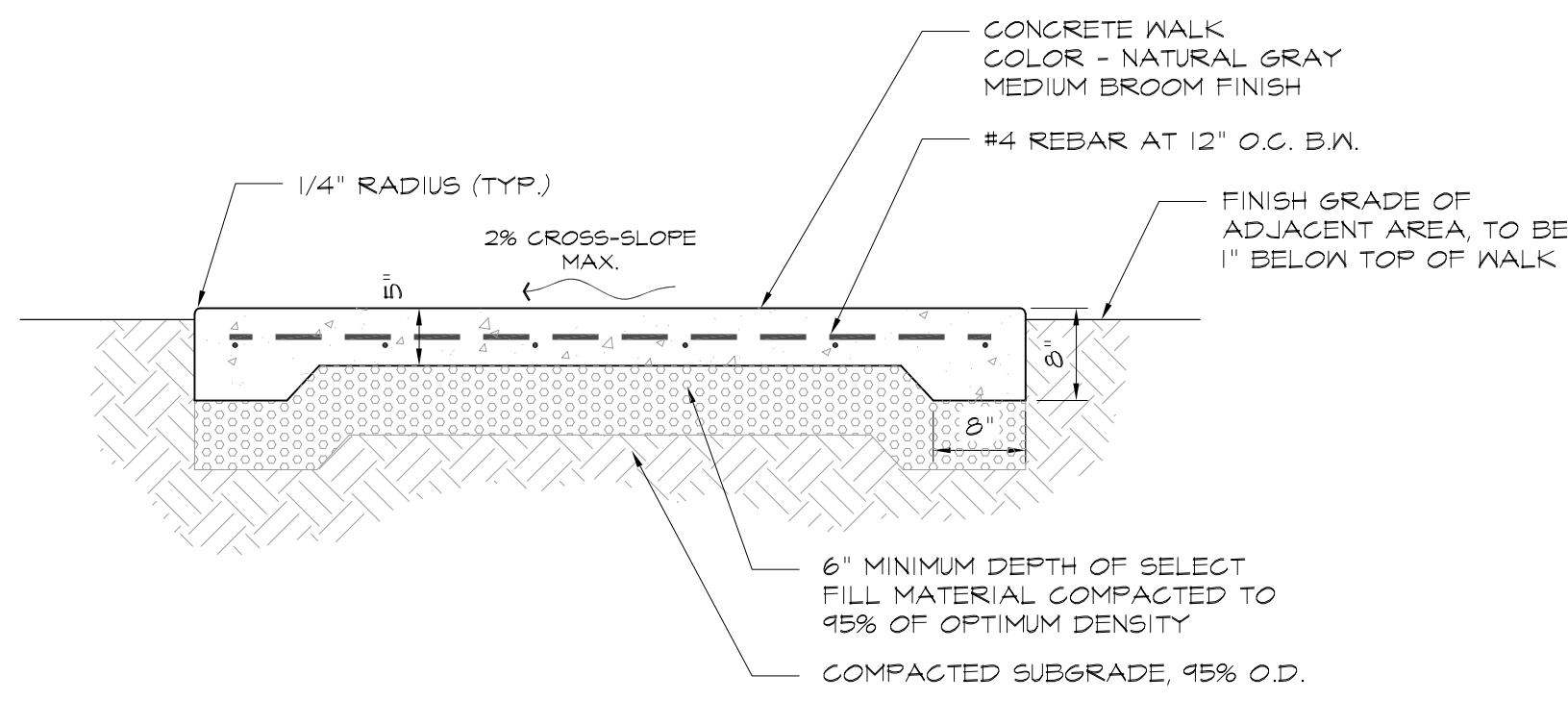
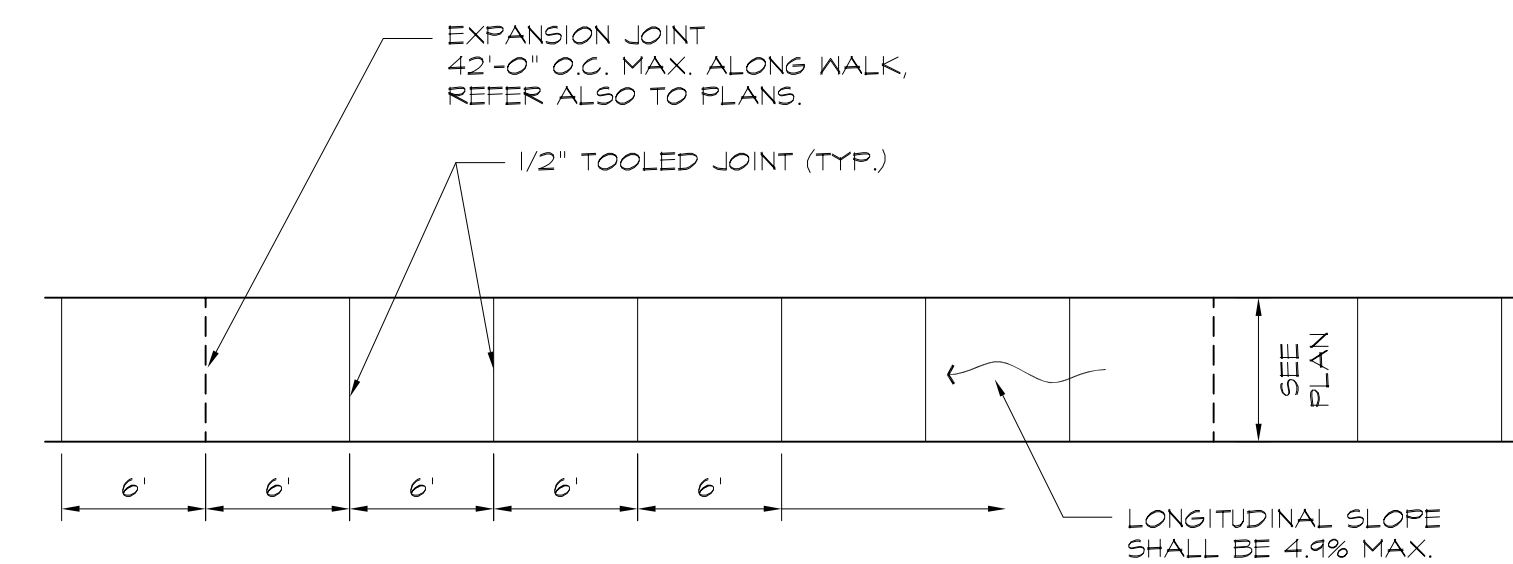
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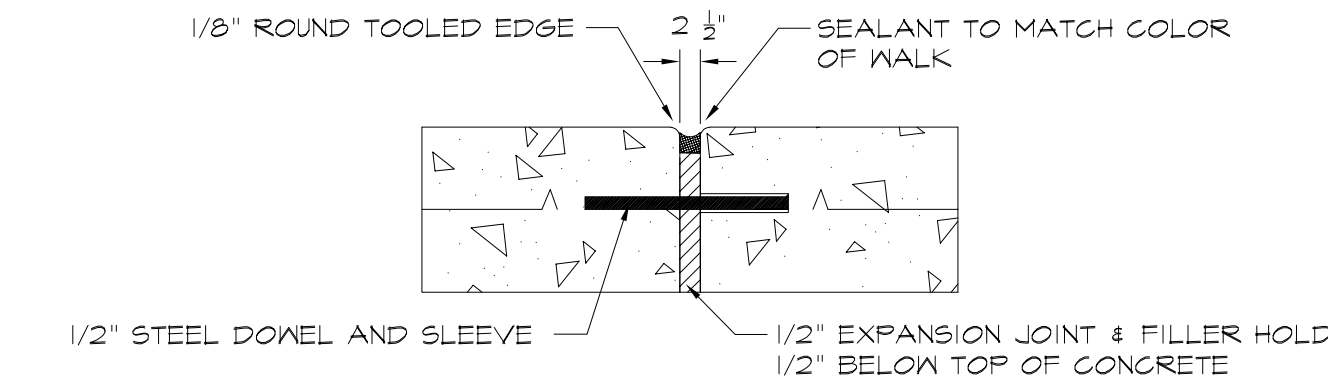
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SHEET TITLE & NO. :
**ENLARGED PLAN
BB-COURT SHADE &
EMERGENCY PHONE
L1.02**

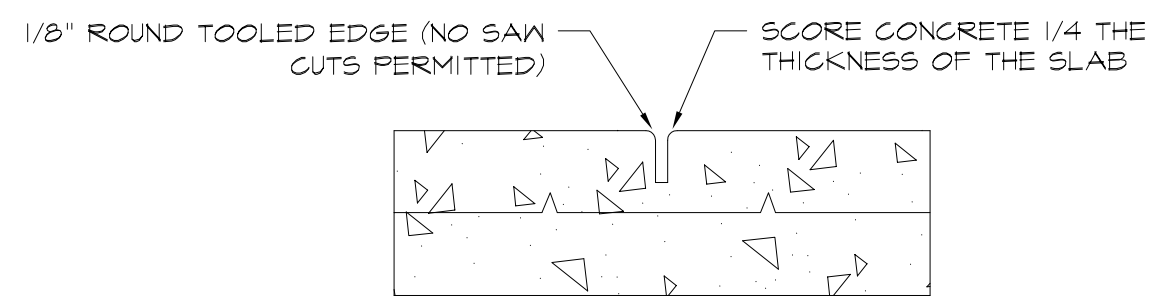
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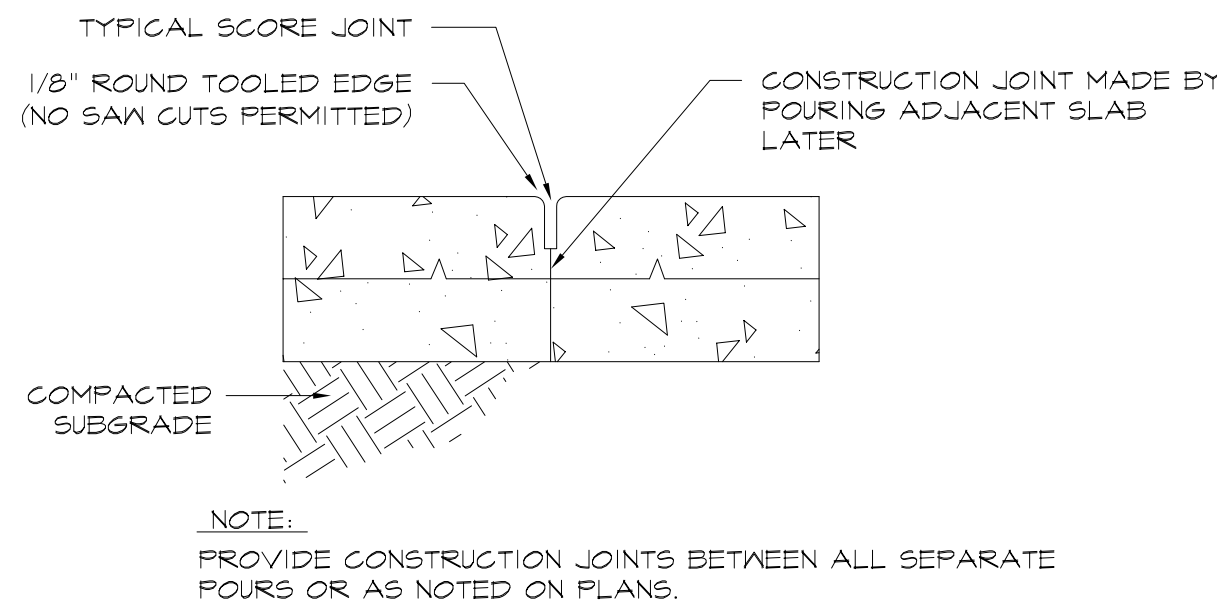
1 TYPICAL SIDEWALK
3/4" = 1'-0"



EXPANSION JOINT

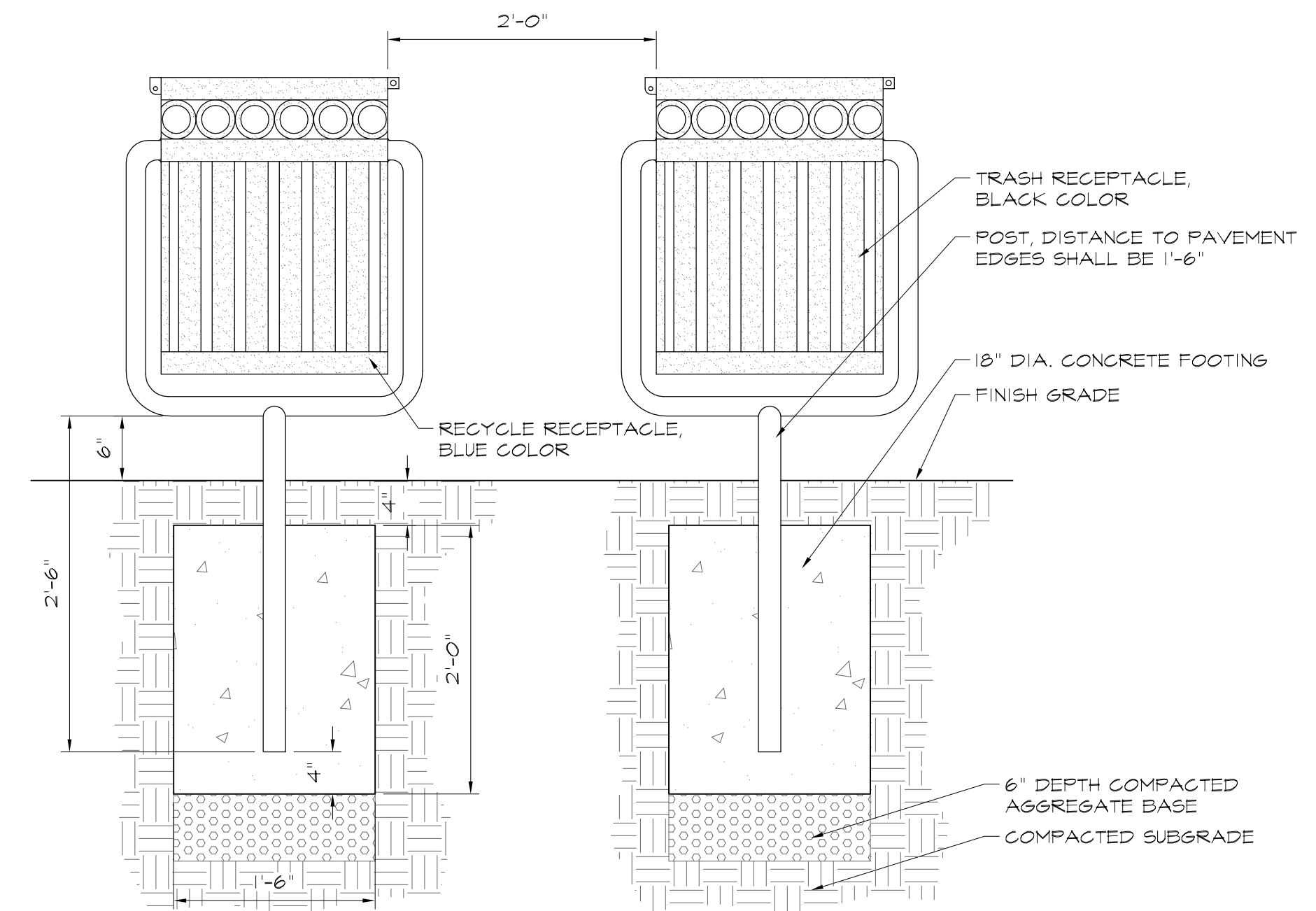


SCORE JOINT



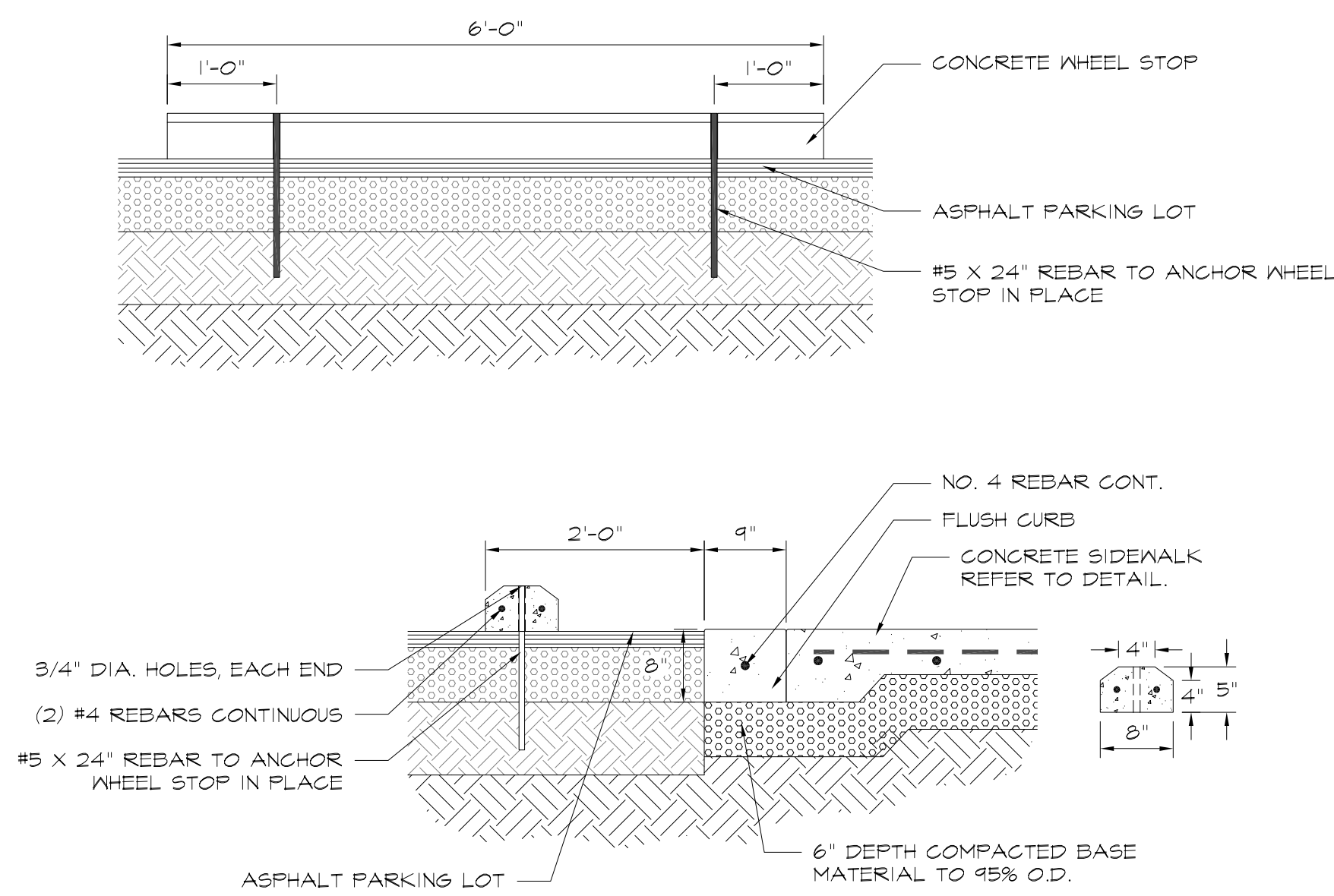
CONSTRUCTION JOINT

2 TYPICAL JOINTS
NO SCALE

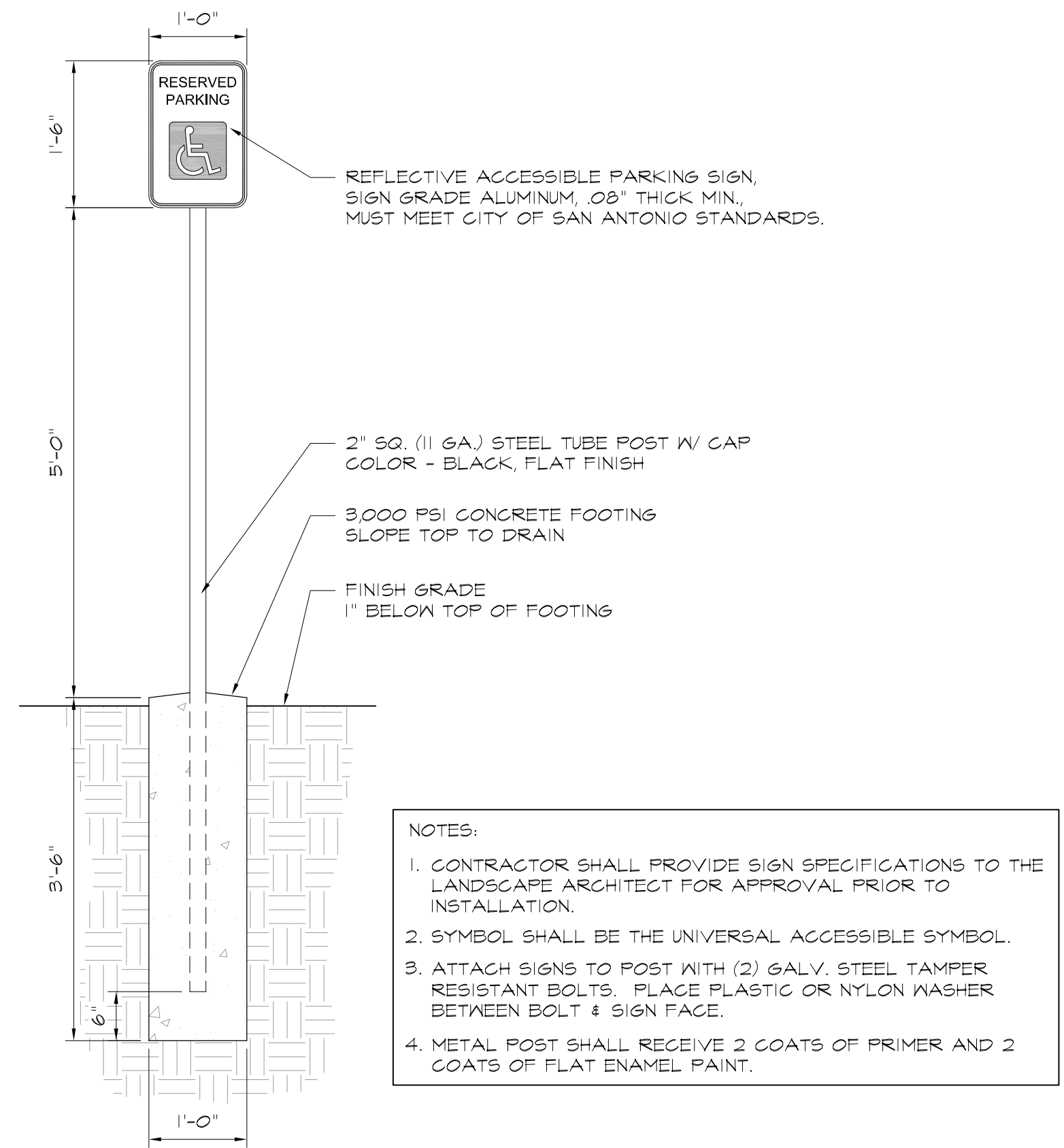


- NOTES:
- CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL RECEPTACLES & FOOTINGS.
 - REFER TO THE MATERIALS LEGEND FOR LOCAL MANUFACTURER OF THE STANDARD COSA TRASH & RECYCLE RECEPTACLES.
 - ALL RECEPTACLE POSTS SHALL BE INSTALLED 1'-6" FROM A PAVEMENT EDGE.

3 TYPICAL TRASH RECEPTACLE UNITS
1" = 1'-0"



4 WHEEL STOP - ALT.
3/4" = 1'-0"



5 ACCESSIBLE PARKING SIGN-ALT.
3/4" = 1'-0"

ISSUE DATE

No.	Date	Issue Description
1	08/16/18	SD/DD Submittal For Review

**Tom Slick Park
Site Improvements**

7400 Highway 151
San Antonio, Texas 78227
OWNER
City of San Antonio, TCI
Contact:
Project Manager
Tel: _____

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SAN ANTONIO, TEXAS 78215

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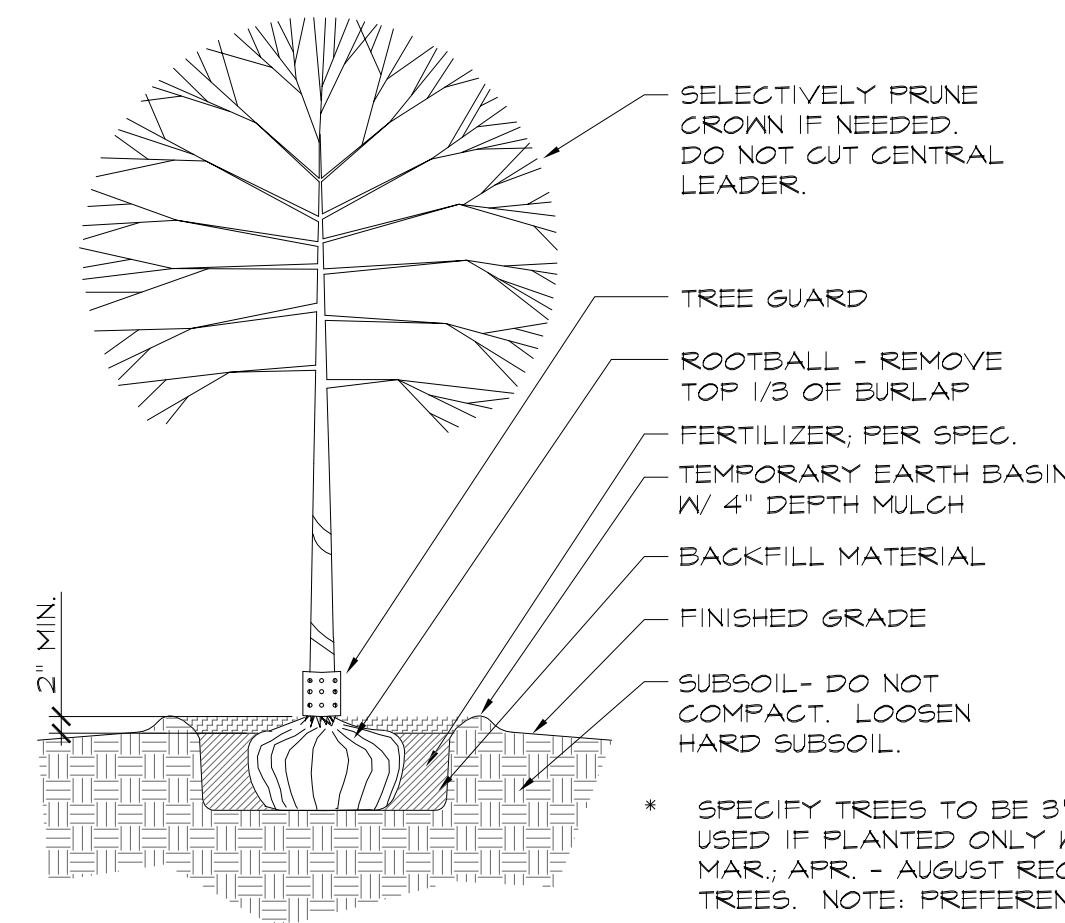
BWCD Proj. No. : _____ Drawn By : _____

SHEET TITLE & NO. :
**LANDSCAPE
DETAILS**

L2.00

PLANTING NOTES:

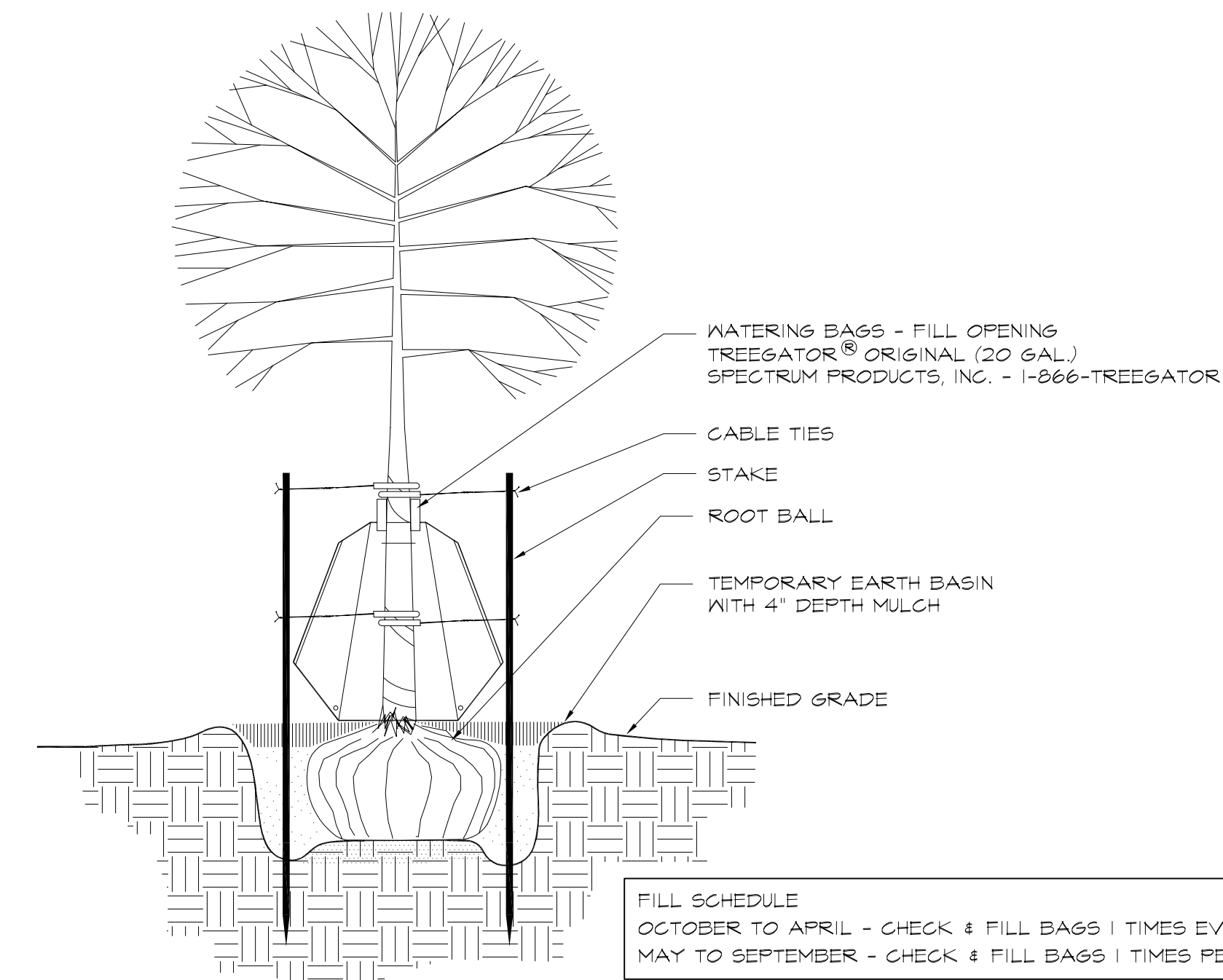
- Contractor shall be responsible for being familiar with all underground utilities, pipes and structures.
- Do not willingly proceed with construction as designed when it is obvious that unknown obstruction and/or grade differences exist that may not have been known during design. Such conditions shall be immediately brought to the attention of the Landscape Architect. The Contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
- The Contractor shall be responsible for any coordination with subcontractors as required to accomplish planting operations.
- If conflicts arise between size of areas and plans, Contractor is to contact Landscape Architect for resolution. Failure to make such conflicts known will result in Contractor's liability to relocate the materials.
- TOPSOIL:** Fertile agricultural sandy loam free of all roots, rocks and debris over 1/2" in diameter/size. If acceptable to Landscape Architect, topsoil stripped from site may be used after removal of all vegetative matter from the top 4". Prior to placement of topsoil stripped from site, screen topsoil to remove all rocks and miscellaneous debris larger than 1/2" diameter.
- TOPSOIL PLACEMENT:** Place topsoil in turf areas to 4" depth minimum, within planting beds at 8" minimum. Prior to placement, cultivate subgrade to depth of 6" to alleviate compaction. Finish grade of topsoil to be 1" below paving/top of curb. Spray all existing grass/vegetation in planting/turf areas with Roundup to provide complete kill and removal prior to placement of topsoil.
- SOIL PREPARATION:**
Turf Areas: Prior to placing turf, rake surface to remove all rocks and misc. debris 1/2" diameter and larger. Roll surface to provide even/smooth surface to satisfaction of Landscape Architect.
Planting Bed: Till 4" of organic weed free compost to provide planting mix to 8" depth. Rake surface to provide even/smooth finish grade to satisfaction of Landscape Architect.
- HYDROMULCH SEEDING BERMUDA GRASS:** Apply slurry to areas indicated and areas disturbed by construction operations. Slurry to consist of:
 45#s/1000 sf virgin wood fiber mulch, Silva Fiber by Meyerhauser or equal.
 20#s/1000 sf 13-13-13 water soluble fertilizer.
 2#s PLS/1000 sf hulled common bermuda grass.
 Contractor responsible to provide 100% coverage and establishment of turf areas. Following 30 days after establishment, apply Premium Plant Care Fertilizer by Agrigro to provide 1#/1000 sf nitrogen; water in after placement to dissolve fertilizer.
 Spray all existing grass/vegetation in turf areas with Roundup to provide complete kill and removal prior to seeding operations.
- PLANTING:** Plant material shall be located as indicated on plan; triangular spaced unless indicated otherwise. Spray all existing grass/vegetation in planting areas with Roundup to provide complete kill and removal prior to planting operations. Prior to placement of weed barrier fabric and mulch, apply pre-emergent herbicides per manufacturer's recommendations over entire mulched area.
- PLANT FERTILIZER:** Fertilize all plant material with Agriform 21 gram tablets (20-10-5) by Sierra Chemical Co. at rate of 3- tablets per 5 gallon size plant and 8- tablets per tree.
- WOOD MULCH:** Install shredded hardwood mulch, at minimum depth of 4" over weed barrier fabric, overall planting beds or where indicated on plan.
- MAINTENANCE:** Begin maintenance immediately after planting operations and continue to final acceptance of project.
 Maintain plant material by pruning removal of dead wood, watering and weeding. Restore planting saucers at trees in turf areas. Tighten and repair stake and guy supports and reset trees to proper grades or vertical position as required. Spray as required to keep plant materials free of insects and disease.
 Maintain turf by watering, fertilizing, weeding, mowing, trimming and other operations such as regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas. Mowing shall be accomplished to maintain grass height of 1 3/8" - 1 1/2". Mowing shall not remove more than 1/3 height of the grass at each mowing.
- WARRANTY:**
Turf: Guarantee at end of 30 days following final acceptance, all turf areas have established grass, uniform color and quality and reasonably free from visible imperfections. Deficiencies noted after 30 day period are to be corrected.
Trees and Shrubs: Warranty for a period of one (1) year following date of final acceptance to be alive and of satisfactory growth. Plants damaged or killed as a result of hail, winds over 75 miles per hour, lightning, fire, winter kill caused by extreme cold and severe winter conditions not typical of the locale, theft, vandalism, occupancy of the building, or Owner neglect of the locale, theft, vandalism, occupancy of the building, or Owner neglect of proper maintenance are not covered by the warranty.
- CONSTRUCTION STAGING AREA:** The construction staging area for this project will be determined after the project has been awarded. The location of the staging area will be coordinated between Contractor and Owner's Representative. Contractor will insure protection for all trees and significant landscaping which fall within the selected boundaries of the staging area by barricading the grass beneath all existing tree canopies and landscaping. Refer to tree preservation details for Root Protection Zone, Tree Barricade Fencing and Tree Armor. There will be no building materials or equipment placed, or stored, within the above mentioned barricaded areas.



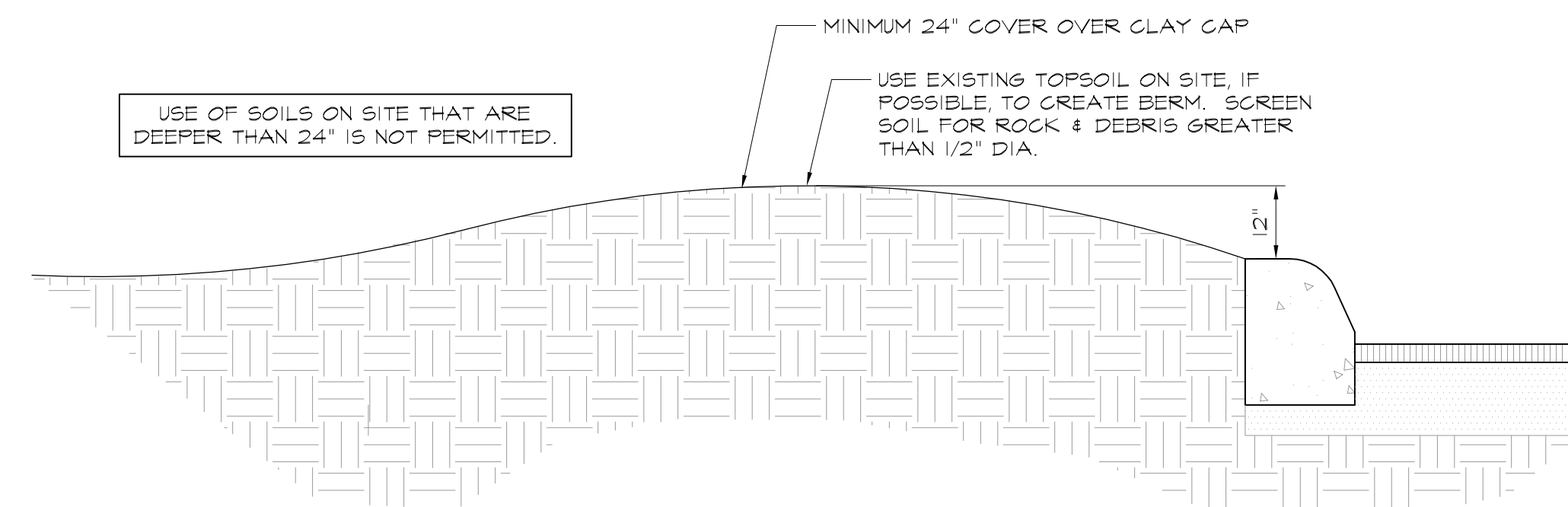
1 TREE PLANTING
NO SCALE

NOTES:

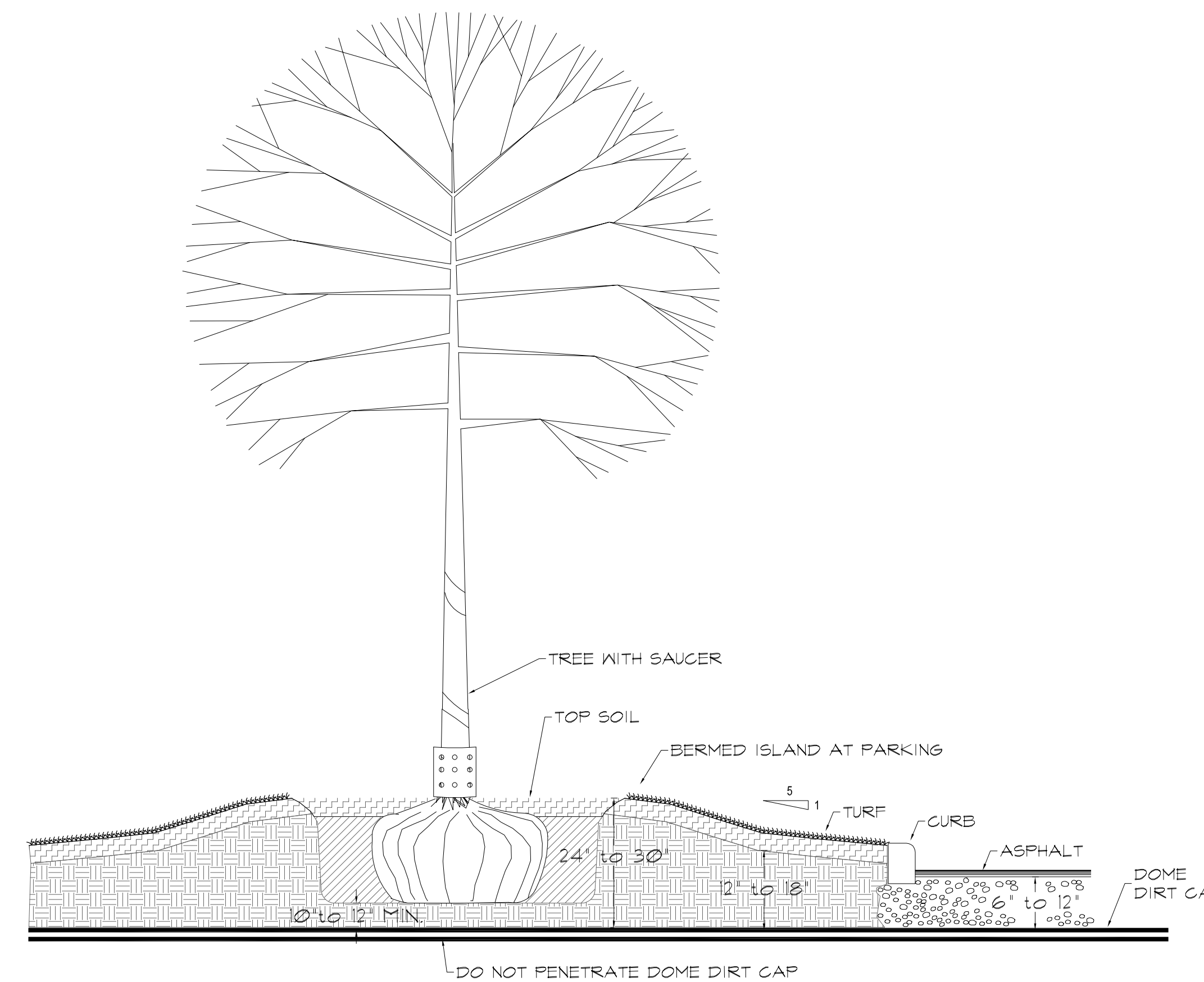
- PIT SIZE: EXTEND TO TWICE WIDTH OF ROOTBALL AT OUTSIDE EDGE PLANTINGS.
- PLANTING DEPTH: TOP OF ROOT BALL 2 INCHES MIN/4" MAX. ABOVE FIN. GRADE.
- BACKFILL MATERIAL: 3 PARTS APPROVED TOPSOIL (SOIL EXCAVATED FROM PIT), 2 PARTS SOIL CONDITIONER AND 1 PART ORANGE SAND. TAMP LIGHTLY TO REDUCE SETTLEING.
- FERTILIZER: SLOW-RELEASE LIQUID INJECTED PER SPEC.
- EARTH BASIN: 12" DIA. LARGER THAN ROOT BALL AT OUTSIDE EDGE OF PLANTING AREA.
- MULCH: SHREDDED HARDWOOD; 4" MIN DEPTH.



2 TREE WATERING BAG
NO SCALE



3 BERMED UP AREAS WITH TREE PLANTING IN PARKING AREA
NO SCALE



4 BERMED TREE PLANTING IN PARKING AREA
NO SCALE

ISSUE DATE

No.	Date	Issue Description
1	08/16/18	SD/DD Submittal For Review
2	02/11/19	Tree Planting Detail Revisions

Tom Slick Park Site Improvements

7400 Highway 151
San Antonio, Texas 78227
OWNER: City of San Antonio, TC
Contact: Project Manager
Tel: -

LANDSCAPE ARCHITECT / PRIME CONSULTANT
BENDER WELLS CLARK DESIGN
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LANDSCAPE
PLANTING NOTES
& DETAILS

L2.01

ATTACHMENT B

AGREED ORDER DOCKET NO. 96-1973-MLM-E
(Alamodome-Related Site: Hall's 151 Site)

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



IN THE MATTER OF
THE CITY OF SAN ANTONIO AND
VIA METROPOLITAN TRANSIT
AUTHORITY
SWR NO. 30549

§ BEFORE THE
§
§ TEXAS NATURAL RESOURCE
§
§ CONSERVATION COMMISSION

Part of EDB
AGREED ORDER

DOCKET NO. 96-1973-MLM-E

Assessing Administrative Penalties and Requiring Certain Actions of
the City of San Antonio and VIA Metropolitan Transit Authority
Under the Authority of the TEX. HEALTH AND SAFETY CODE ANN. Chapter 361 and
the TEX. WATER CODE, Chapters 5, 26 and 32

At its **FEB 05 1997**, 1997 agenda, the Texas Natural Resource Conservation Commission (the "Commission" or "TNRCC") considered the Executive Director's Preliminary Report to the Commission alleging violations of the Solid Waste Disposal Act, TEX. HEALTH AND SAFETY CODE ANN. Chapter 361 (Vernon 1992 and Supp. 1996) (the "Act"), the Texas Water Code, TEX. WATER CODE ANN. Chapters 5, 26 and 32 (Vernon 1988 and Supp. 1996) (the "Code"), and the rules of the TNRCC, and requesting appropriate relief, including the imposition of administrative penalties. Petitioner is the Executive Director of the Commission, represented by the Commission's Litigation Support Division. The respondents made the subject of this Agreed Order are the City of San Antonio (the "City") and VIA Metropolitan Transit Authority ("VIA"), in San Antonio, Bexar County, Texas. The City is represented in these matters by Mr. Erich Birch, of the law firm Lloyd, Gosselink, Fowler, Blevins & Mathews, P.C., of Austin, Texas, and VIA is represented in these matters by Mr. Louis S. Zimmerman, of the law firm Fulbright & Jaworski, L.L.P., of Austin, Texas.

After proper notice, the parties appeared and announced before the Commission that they had reached a settlement and requested the Commission to enter this Agreed Order.

The City and VIA understand that they respectively have certain procedural rights, including, but not limited to, the right to formal notice of violations, notice of an evidentiary hearing, the right to an evidentiary hearing, and a right to appeal. By entering into this Agreed Order, the City and VIA agree to waive all notice and procedural rights in the interest of a more timely resolution of this matter.

It is further understood and agreed that this Agreed Order represents the complete and fully-integrated agreement of the parties. The provisions of this Agreed Order are deemed severable and, if a court of competent jurisdiction or other appropriate authority deems any provision of this Agreed Order unenforceable, the remaining provisions shall be valid and enforceable.

The parties acknowledge that the terms of this Agreed Order apply to industrial solid wastes originating from the "Alamodome Site," as defined below. Some of the sites addressed in this Agreed Order are not owned by the City or VIA, and the history of activities at these sites is unknown. TNRCC, the City and VIA agree that investigative and/or remedial activities at these sites will be directed toward addressing the Alamodome Site-related industrial solid wastes, in accordance with the Commission's Risk Reduction Rules; will not address constituents unrelated to the Alamodome Site; and will not necessarily involve comprehensive investigations of the sites. The parties also recognize that no action may be required at sites which meet appropriate risk-based standards.

The parties further understand that, through extensive chemical analysis of Alamodome Site-related industrial solid wastes, the constituents of concern have been identified as non-hazardous levels of lead and Total Petroleum Hydrocarbons (TPH) and that, where Alamodome Site-related industrial solid wastes are known to be present, they may be identified by the visual presence of foundry wastes, including casting sands, baghouse dust and slag. The objective of this Agreed Order is to address these specifically-identified constituents at the "Alamodome Project," as defined below. The background values for the Alamodome Project are 100 mg/kg for lead and 35 mg/kg for TPH, unless alternative values are established in accordance with Commission rules.

The City and VIA have executed a legal agreement whereby the City will assume all responsibility for penalties imposed under this Agreed Order and all responsibility for completion of technical requirements in this Agreed Order applicable to the portion of the Alamodome Site owned by the City, as well as those related to all off-site locations, in exchange for a money settlement paid by VIA to the City. A copy of the agreement is attached to this Agreed Order as Attachment A. Under the agreement between the City and VIA, the City will perform the applicable technical requirements described in the Ordering Provisions of this Agreed Order and will be the sole contact to the TNRCC for completion of the applicable requirements. The TNRCC recognizes the benefit of having a single party with which to coordinate on the technical issues addressed through this Agreed Order.

The parties agree that any statement herein designated as a "Finding of Fact" that should instead be designated as a "Conclusion of Law" shall be construed as a Conclusion of Law, and

any statement herein designated as a "Conclusion of Law" that should instead be designated as a "Finding of Fact" shall be construed as a Finding of Fact.

The parties agree that this Agreed Order specifically does not address or resolve the violations that were alleged in the Executive Director's Preliminary Report regarding the Roland Avenue, Palo Alto and Hall's Marcum Road sites. The City and VIA understand and agree that, upon further investigation, the Executive Director may choose to bring further enforcement action(s), requesting appropriate relief, including the imposition of administrative penalties, regarding these sites, and that such enforcement action(s) may or may not include the City, and/or VIA in accordance with Ordering Provision 5 of this Order.

For the purpose of this Agreed Order, the term "Alamodome Site" includes the Alamodome Sports Complex, the Robert C. Thompson Transit Center Station, and the Sunset Depot Site. The term "Alamodome-related Site" means all disposal sites that contain industrial solid wastes from the Alamodome Site and which did not have a TNRCC permit authorizing receipt of such wastes. The term "Alamodome Project" includes the Alamodome Site, all presently known Alamodome-related Sites, and any other Alamodome-related Site that may be discovered in the future. The Alamodome-related Sites include, but are not necessarily limited to, the following sites at the following approximate locations:

- * The Pearsall Road Landfill (Lat 29°19'52" Long 98°37'30")
- * Soil Recovery Services (Lat 29°18'3" Long 98°33'20")
- * Loop 410 Site (Lat 29°20'60" Long 98°34'52")
- * Oak Meadow Elementary School (Lat 29°32'5" Long 98°34'42")
- * Rigsby Road Site (Lat 29°25'58" Long 98°24'2")
- * New Laredo Highway II Site (Lat 29°19'20" Long 98°35'59")
- * H. Arocha Site (Lat 29°16'25" Long 98°36'27")
- * Hall's 151 Site (Lat 29°23'7" Long 98°41'24")
- * Petroleum Drive Site (Lat 29°24'22" Long 98°28'57")

The Commission, after considering the pleadings and other papers in the matters addressed herein, for the purposes of this Agreed Order, makes the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1. The Alamodome Site is located on the east side of downtown San Antonio in Bexar County, Texas. The Alamodome Site is located within a mixed residential, commercial and industrial area.

2. The Alamodome Site was formerly the location of the following commercial/industrial operations: a ferrous and non-ferrous foundry; a roofing materials company; a railroad freight depot; an electrical services company; auto repair facilities; service stations; a chrome plating facility; a telephone service and operations facility; a heavy-duty vehicle shop; an asphalt plant; and multiple other commercial/industrial activities. Portions of the property were formerly used only for residential purposes.

3. The City and VIA are each owners and operators of parts of the Alamodome Site. The City and VIA initiated construction on the Alamodome Site in 1990. The City and VIA completed the majority of the site construction activities in 1993. The City and VIA generated industrial solid wastes during construction of the Alamodome when site-excavation activities removed foundry wastes in the subsurface resulting from the historic operations of the Alamo Iron Works ("AIW") industrial facility.

4. Collectively, the City and VIA caused to be transported at least 250,000 cubic yards of Alamodome Site soils, some containing industrial solid waste, to off-site locations and the Alamodome On-Site Landfill. The City and VIA caused, suffered, allowed, or permitted the disposal and/or storage of industrial solid wastes without a permit or other authorization from the TNRCC. Soils from the Alamodome Site were transported to the following locations:

- a. The Pearsall Road Landfill (Lat 29°19'52" Long 98°37'30"): Alamodome Site soils were initially disposed at this location in August 1992;
- b. Soil Recovery Services (Lat 29°18'3" Long 98°33'20"): Alamodome Site soils were initially disposed at this location in February 1993;
- c. Loop 410 Site (Lat 29°20'60" Long 98°34'52"): Alamodome Site soils were initially disposed at this location in February 1992;
- d. Oak Meadow Elementary School (Lat 29°32'5" Long 98°34'42"): Alamodome Site soils were initially disposed at this location in February 1992;
- e. Rigsby Road Site (Lat 29°25'58" Long 98°24'2"): The initial date of disposal at this site is unknown but based on information in TNRCC files, disposal of Alamodome Site soils occurred by September 1993;
- f. New Laredo Highway II Site (Lat 29°19'20" Long 98°35'59"): The initial date of disposal at this site is unknown but based on information in TNRCC files, disposal of Alamodome Site soils occurred by September 1993;

- g. H. Arocha Site (Lat 29°16'25" Long 98°36'27"): Alamodome Site soils were initially disposed at this location in October 1990;
- h. Hall's 151 Site (Lat 29°23'7" Long 98°41'24"): Alamodome Site soils were initially disposed at this location in October 1990; and
- i. On-Site Alamodome Landfill: Alamodome Site soils were deposited in the on-site landfill and the landfill was not subject to the permit exemption provided for in 30 TEX. ADMIN. CODE Section 335.2(d). Neither the City nor VIA obtained a permit for the landfill. Furthermore, the landfill was not constructed in accordance with the landfill construction requirements contained in Provision 5(b) of the May 17, 1993 Agreed Order entered into by the Texas Water Commission and VIA (the "May 17, 1993 Agreed Order").

5. Following the issuance of the May 17, 1993 Agreed Order, neither the City nor VIA covered or fenced the contaminated soil stockpile until June 14, 1993. During this period of time, children were observed playing on this stockpile located at the Alamodome Site. Materials in the on-site landfill were subsequently characterized for off-site disposal by the City and were determined to contain primarily Class 2 wastes with minor amounts of Class 1 wastes.

6. On December 14, 1994, the Alamodome dewatering sump pumps for the Dakota Street Pedestrian Underpass failed. Alamodome personnel subsequently mobilized a water truck to dewater the area and then discharged the chromium-contaminated groundwater across the Alamodome Site onto Cherry Street, where it ultimately discharged into downgradient storm drains. On December 15, 1994, the TNRCC San Antonio Regional Office documented that the sump system had failed. The City did not notify the TNRCC of this discharge.

7. Between September 12, 1994 and September 19, 1994, VIA excavated soils contaminated with industrial solid wastes and stockpiled them adjacent to the VIA bus facility control tower. VIA did not cover the stockpiled soils with plastic, as required by Provision 1 of the May 17, 1993 Agreed Order, until September 22, 1994.

8. During construction of the Alamodome Site, dewatering sumps were utilized to remove accumulated groundwater and stormwater from the site construction excavations, primarily the VIA bus facility excavation, the stadium footprint excavation, the Montana Street excavation, and the Dakota Street pedestrian underpass excavation. The City and VIA obtained 30 TEX. ADMIN. CODE Ch. 321, Subch. H discharge registrations ("Subch. H discharge registrations") for Leaking Petroleum Storage Tank Identification Numbers (LPST ID Nos.) 93820 and 95796. Prior to gaining the Subch. H discharge registrations, the City and VIA

possessed analytical data that showed the presence of industrial solid wastes other than those that are applicable to discharges under Subch. H. Prior to gaining Discharge Registration No. 95796, the City encountered historic Alamo Iron Works ("AIW") foundry wastes in the stadium footprint excavation. Prior to gaining Discharge Registration No. 93820, VIA encountered historic AIW foundry wastes in the VIA bus facility excavation. The presence of the historic AIW wastes in the excavation areas, combined with the non-petroleum product groundwater-contaminant data summarized above, showed that the dewatering discharges contained non-petroleum product contaminants, contrary to the requirements of Subch. H. Thus, the City and VIA did not have proper authority to discharge the accumulated groundwater and stormwater from the site construction excavations.

9. Following the issuance of the May 17, 1993 Agreed Order, neither the City nor VIA initiated efforts to cover and fence around the remaining contaminated stockpiles located at the Alamodome Site until requested to do so by the TNRCC following a December 9-10, 1993 TNRCC inspection of the Alamodome site property. These soils were subsequently characterized for disposal by the City and were determined to contain primarily Class 2 industrial waste with minor amounts of Class 1 industrial waste.

10. The City and VIA failed to perform hazardous waste determinations on wastes generated during the construction of the Alamodome. Some samples found to contain total lead concentrations in excess of 40 times the TCLP lead concentration standard of five (5) parts per million (ppm) were not subjected to hazardous waste determinations. The following is a list of locations at the Alamodome Site where appropriate hazardous waste determinations were not performed:

- a. VIA Bus Facility Excavation;
- b. Montana Street Excavation;
- c. Dakota Street Excavation;
- d. Shoo-Fly Excavation;
- e. South Nevada Street Stadium Parking Area;
- f. Cherry Street at MLK Boulevard Area;
- g. Former LPST 96978-Former City Water Board Facility;
- h. Alamo Iron Works (AIW) sump samples;
- i. AIW sumps, S-1 and S-2;
- j. Chief's Automotive sump remediation activities;
- k. Southeast corner of the intersection of Montana Street and the SPRR tracks;
and
- l. Three USTs discovered in the east wall of the site excavation at the former AIW fleet maintenance facility.

11. The City failed to register the 10,000-gallon emergency generator UST, located at the southwest area of the Alamodome facility with the Commission. An examination of the Commission's Petroleum Storage Tank Registration database on January 10, 1995 revealed that the UST at the Alamodome facility was not registered with the Commission.

12. On January 17, 1995, an inspector from the TNRCC's San Antonio Regional Office documented that the 10,000-gallon emergency generator UST, located at the southwest portion of the Alamodome facility, was not equipped with the required overfill prevention equipment. The City failed to install overfill prevention equipment when the referenced UST was installed in March 1993.

13. On January 17, 1995, an inspector from the TNRCC's San Antonio Regional Office documented that the UST located at the southwest area of the Alamodome Site had been installed without the installation of the required four-inch observation well into the UST tank hole. The City failed to install a four-inch diameter observation well into the tank hole when the referenced UST was installed in March 1993.

14. The City failed to maintain all appropriate records adequate to demonstrate compliance with Commission release detection requirements. An inspection of the Alamodome facility on January 17, 1995 revealed that the records relating to installation, performance claims, maintenance, and calibration of the release detection system of the UST located at the southwest area of the Alamodome Site were not available.

15. The City and VIA, collectively, failed to properly abandon 73 wells and borings at the Alamodome Site.

CONCLUSIONS OF LAW

1. As evidenced by Finding of Fact Nos. 1-3 and 15, the City and VIA have managed industrial solid waste and possessed abandoned wells at the Alamodome Site and are therefore subject to the jurisdiction of the TNRCC pursuant to the Solid Waste Disposal Act, TEX. HEALTH AND SAFETY CODE ANN. Chapter 361 (Vernon 1992 and Supp. 1996) (the "Act"), the Texas Water Code, TEX. WATER CODE ANN. Chapters 5, 26 and 32 (Vernon 1988 and Supp. 1996) (the "Code"), and the rules of the TNRCC.

2. As evidenced by Finding of Fact Nos. 1-4, the City and VIA caused, suffered and allowed the storage, processing, or disposal of industrial solid waste without a permit, amended permit, or other authorization from the TNRCC in violation of 30 TEX. ADMIN. CODE Section 335.2.

3. As evidenced by Finding of Fact Nos. 1-9, the City and VIA caused, suffered and allowed the collection, handling, storage, processing, or disposal of industrial solid waste in violation of the TEX. WATER CODE, Section 26.121; 30 TEX. ADMIN. CODE Section 335.4; and the May 17, 1993 Agreed Order.
4. As evidenced by Finding of Fact No. 6, the City failed to notify the TNRCC of an accidental discharge or spill as soon as possible and not less than 24 hours after the occurrence, in violation of the TEX. WATER CODE, Section 26.039(b).
5. As evidenced by Finding of Fact No. 10, the City and VIA failed to perform hazardous waste determinations on wastes generated during the construction of the Alamodome, in violation of 30 TEX. ADMIN. CODE Section 335.62.
6. As evidenced by Finding of Fact No. 11, the City failed to register with the Commission the 10,000-gallon emergency generator UST, located at the southwest area of the Alamodome facility, in violation of 30 TEX. ADMIN. CODE Section 334.7(a)(1).
6. As evidenced by Finding of Fact No. 12, the City failed to equip the 10,000-gallon emergency generator UST, located at the southwest portion of the Alamodome facility, with the required overfill prevention equipment, in violation of 30 TEX. ADMIN. CODE Section 334.45(b)(2).
7. As evidenced by Finding of Fact No. 13, the City failed to install a four-inch diameter observation well into the tank hole when the UST was installed in March 1993, in violation of 30 TEX. ADMIN. CODE Section 334.45(e)(4)(B)(i).
8. As evidenced by Finding of Fact No. 14, the City failed to maintain all appropriate records adequate to demonstrate compliance with Commission release detection requirements, in violation of 30 TEX. ADMIN. CODE Section 334.50(e)(2).
9. As evidenced by Finding of Fact No. 15, the City and VIA each failed to properly abandon wells and borings at the Alamodome Site, in violation of the TEX. WATER CODE, Section 32.017 and 30 TEX. ADMIN. CODE Sections 338.47, 338.48, and 338.49.
11. The Commission has the authority to assess administrative penalties for violations of the Act and the Code pursuant to Section 361.252 of the Act and Sections 26.136 and 32.011 of the Code.

in the Executive Director's Preliminary Report regarding the Roland Avenue, Palo Alto and Hall's Marcum Road sites.

2. In light of the agreement between the City and VIA, which is attached hereto as Attachment A, it is intended that this Order and its Ordering Provisions shall make the City primarily responsible for all penalties and deferred amounts, and for completion of all technical requirements applicable to the City-owned portion of the Alamodome Site, as well as those related to all off-site locations, and that VIA shall be held responsible for compliance with these provisions of the Order, to the extent provided in Ordering Provision 5 of this Order. VIA shall be responsible for performing all technical requirements at the Robert C. Thompson Transit Center Station and at Sunset Depot required under this Order. VIA shall be responsible for all soils transported from Robert C. Thompson Transit Center Station and from Sunset Depot after the Conveyance Agreement between the City and VIA, dated April 27, 1994.

3. Unless otherwise noted, all technical requirements listed below pertain to the Alamodome Project. The City and VIA have already completed remedial activities at some sites. As a result of these activities, no further action is required for the Rigsby Road and Oak Meadow School sites, removal of the On-Site Landfill, and procurement of a discharge permit. The Technical Requirements shall be completed as follows:

- a. Immediately upon the effective date of this Order, the City and VIA, as applicable, shall cease any future disposal of industrial solid wastes from the Alamodome Project for which a permit is required until such time that the City or VIA, as applicable, receives a permit or other authorization for such activity from the TNRCC, as required by 30 TEX. ADMIN. CODE Section 335.2.
- b. Immediately upon the effective date of this Order, the City and VIA, as applicable, shall comply with all the requirements of 30 TEX. ADMIN. CODE Section 335.62 -Hazardous Waste Determination for all Alamodome Project newly generated wastes or formerly generated wastes being sent for disposal, and all wastes shall be classified in accordance with the requirements of the 30 TEX. ADMIN. CODE Ch. 335, Subch. R Waste Classification rules.
- c. Within 10 days of the effective date of this Order, the City shall determine whether Alamodome Project industrial solid wastes at Alamodome-related Sites are causing the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or endangerment of the public health and welfare. In making the determination, the City may use

accumulated analytical data regarding previously-investigated Alamodome-related industrial solid wastes as an indicator of potential impact. If the soils are causing any of the above-described conditions, within 30 days of such determination, the City shall take action which controls site run-on, run-off or potential air emissions which have off-site impact. These actions may include the covering of stockpiles, construction of berms, installation of silt fencing, placement of hay bales, performance of necessary dust suppression activities or other similar actions.

- d. Immediately upon the effective date of this Order, the City and VIA, as applicable, are prohibited from creating future Alamodome Project stockpiles of contaminated soils without proper segregation and containment techniques.
- e. Immediately upon the effective date of this Order, the City and VIA shall each have the responsibility for ensuring that all future Alamodome Project soil borings and monitoring wells they each install are installed by licensed drillers pursuant to the provisions of 30 TEX. ADMIN. CODE Sections 338.91 through 338.99 and abandoned according to the provisions of 30 TEX. ADMIN. CODE Sections 338.48 and 338.49. The City, and VIA with respect to Robert C. Thompson Transit Center Station and Sunset Depot, shall address all existing monitoring wells and borings that are inactive or abandoned in accordance with the provisions of 30 TEX. ADMIN. CODE Sections 338.48 and 338.49. To the extent that wells cannot be addressed in accordance with these provisions, because of the existence of physical structures above the wells or the lack of sufficient surveys or other data to demonstrate the location of these wells, the City and VIA, as applicable, shall evaluate the presence of such wells on the Alamodome Site and shall consider the results of this evaluation as part of the overall closure of the Alamodome Site required pursuant to Ordering Provision 3(g) below. However, with respect to the Robert C. Thompson Transit Center Site and the Sunset Depot Site, VIA will not be required to conduct further investigation of such borings or wells beyond that already approved by the TNRCC in the Site Closure Plan for those two Sites.
- f. Within 60 days of the effective date of this Order, the City shall complete the following site security measures at each Alamodome-related Site, unless the City receives written concurrence from the Executive Director that these actions or a portion of these actions are not needed for a particular site due to site-specific conditions:

- 1) Warning signs shall be placed at each Alamodome-related Site.
 - 2) Each Alamodome-related Site shall be secured to restrict access to Alamodome-related industrial solid wastes by personnel not authorized by the TNRCC, the City, or the landowner or the lessee of the property.
- g. The City shall conduct an assessment to define the Alamodome-related areas of concern at all known Alamodome-related Sites. In conducting the assessments, the City may rely upon, but are not limited to, the visual presence/absence of foundry wastes through surface examination, borings and/or trenching; visual distinctions in soil type/color; aerial photographs; available analytical data; the volume of Alamodome materials taken to each site; and/or information from persons knowledgeable about the locations at which the Alamodome materials were placed. Within 120 days of the effective date of this Order, the City shall submit an assessment report which provides the information on which the assessment was based, the conclusions of the assessment, and a proposal for the closure/remediation of the Alamodome-related industrial solid wastes at all known Alamodome-related Sites. The proposal shall be submitted in accordance with 30 Tex. Admin. Code Ch. 335, Subch. S, also known as the Commission's Risk Reduction Rules. The constituents of concern for the assessment of Alamodome-related Sites and the closure/remediation of the Alamodome-related industrial solid wastes are lead and Total Petroleum Hydrocarbons (TPH). The closure/remediation proposal, including a schedule for completion of the proposal, shall be submitted to the Executive Director for review, possible modification, and approval. Upon the Executive Director's approval of the schedule, the City shall implement the proposal in accordance with the approved implementation schedule and the requirements of the Risk Reduction Rules. Based on the City's preliminary investigation and knowledge of certain sites, the City expects the investigation and remediation of Alamodome soils to proceed according to defined plans. The remedial approaches which the City anticipates using to meet the requirements of the Risk Reduction Rules for each Alamodome-related Site are provided in Attachment C. The Executive Director recognizes the feasibility of these approaches under the Risk Reduction Rules, although the Executive Director is withholding final review, possible modification and approval of the closure/remediation activities until the City submits a final report detailing the closure/remediation activities that have been completed in accordance with the Risk Reduction Rules.

- h. If additional Alamodome-related Sites are discovered after the effective date of this Order, then these sites shall be subject to all of the requirements of this Order that pertain to Alamodome-related Sites, with all time frames to run from the date of the discovery. In addition, the City is required to complete, within 60 days of discovery of such site(s), all site security actions required pursuant to Ordering Provision 3(f) above. Based upon site-specific circumstances, the Executive Director may require that site security actions be taken on a more expedient basis at Alamodome-related Sites discovered after the effective date of this Order.
- i. Within 30 days of the effective date of this Order, the City shall prepare a schedule for covering the Alamodome soils at the Pearsall Road landfill with a final cover that meets the requirements listed in 30 TEX. ADMIN. CODE Section 330.253 and shall submit that proposed schedule to the Executive Director for review, possible modification and approval. Upon the Executive Director's approval of the schedule, the City shall implement the activities called for in the schedule in accordance with the approved schedule. Prior to placing the final cover, the Alamodome-related industrial solid wastes shall be characterized in accordance with the requirements of the 30 TEX. ADMIN. CODE Ch. 335, Subch. R Waste Classification rules. Analytical data available from the City's investigation and classification of the Petroleum Drive Site soils may be used as a basis for classification of the soils at the Pearsall Site. If the results of the implementation of the Alamodome-related industrial solid waste characterization activities indicate the presence of hazardous waste, the Executive Director may rescind authority to close the Alamodome-related industrial solid wastes with a final cover that meets the requirements listed in 30 TEX. ADMIN. CODE Section 330.253, and may direct the City to submit an alternate closure plan for the Alamodome-related industrial solid wastes.
- j. Immediately upon the effective date of this Order, the City shall maintain records adequate to demonstrate compliance with the release detection requirements as required under 30 TEX. ADMIN. CODE Section 334.50 for UST's located at the Alamodome Site. Additionally, within 30 days of the effective date of this Order, the City shall certify compliance with 30 TEX. ADMIN. CODE Section 334.50. Certification shall be provided in writing.
- k. The City and VIA, as applicable, shall notify the TNRCC San Antonio Regional Office at least ten (10) working days prior to conducting any field

investigation, monitoring or remedial activities to give region personnel the opportunity to observe the activities and to split any soil, groundwater, or other samples to be collected.

1. If the City and/or VIA receive, discover, or possess information regarding a site(s) which may have received Alamodome-related industrial solid waste, the City and/or VIA shall immediately notify the Executive Director of its receipt, discovery or possession of such information and, within 10 working days, shall investigate the site(s). Within an additional 10 working days of the City's and/or VIA's receipt, discovery or possession of such information, the City and/or VIA shall provide the Executive Director with a written summary of the investigation's findings.
- m. All submittals related to this enforcement action shall be submitted to:

Executive Director
c/o Manager
Multi-Media Section
Enforcement Division
Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-3087

and a copy of the materials shall be submitted to:

Region Manager, Region 13 Office
Texas Natural Resource Conservation Commission
San Antonio, Texas

Enforcement Coordinator: Mr. John Sadlier
Multi-Media Section
Enforcement Division

Field Inspector: Mr. Henry Karnei
TNRCC Region 13 Office, San Antonio
Field Operations Division

4. If the City or VIA fail to comply with any of the Ordering Provisions in this Agreed Order, including the performance of the SEPs set forth in Attachment B of this Agreed Order, within the prescribed schedules, and that failure is caused by an Act of God or other

catastrophe beyond the control of the City or VIA, or if that failure is caused because site landowners withhold or restrict access to the sites, that failure shall be subject to Section 26.132 of the Code. The City or VIA have the burden of establishing to the Executive Director's satisfaction that such an event has occurred. The City or VIA shall notify the Executive Director within seven (7) days after the City and VIA become aware of a delaying event and shall take all reasonable measures to mitigate and minimize the delay. The occurrence of an Act of God, a catastrophe or an access dispute shall not excuse the City and/or VIA from performing their respective duties under this Agreed Order, but shall, upon the Executive Director's approval, provide the basis for a delay in time to complete such duties. The extension of time necessary for any particular situation arising under this Provision shall be determined by the Executive Director.

5. If the City fails to perform any of the requirements of Ordering Provisions 1, 2 or 3, the Executive Director may elect to seek enforcement of applicable portions of Ordering Provisions 1, 2 or 3 against VIA; provided however, the Executive Director may not initiate any enforcement action against VIA concerning the requirements of this Agreed Order to be performed by the City under its agreement with VIA, attached hereto as Attachment A, unless and until the Executive Director has exhausted the administrative and judicial remedies available to the Executive Director for enforcement of Ordering Provisions 1, 2 or 3 of this Agreed Order against the City. In such event, the references to "the City" in Ordering Provisions 3(c), 3(f), 3(g), and 3(h), shall be read as "the City and VIA." If an enforcement action is initiated against VIA under the terms of this Ordering Provision, the Executive Director shall not seek penalties against VIA for the delay or non-performance of the City.

6. The Executive Director may grant an extension of any deadline in this Agreed Order or in any plan, report, or other document submitted pursuant to this Agreed Order, upon a written and-substantiated showing of good cause. All requests for extensions by the City and VIA shall be made in writing to the Executive Director and shall not extend any deadlines contained in this Agreed Order until the City and VIA have received written approval for extension from the Executive Director. The determination of what constitutes good cause rests solely with the Executive Director.

7. Except with regard to any failure of the City and/or VIA to meet a deadline in this Agreed Order or in an approved plan, report or other document submitted pursuant to this Agreed Order, if a dispute arises concerning the implementation of this Agreed Order, the City and/or VIA and the TNRCC staff shall make a good faith attempt to resolve it informally. If informal consultation fails to resolve the dispute, either party may refer the dispute to an appropriate Deputy Executive Director or his or her designee. The referral shall be in writing and shall contain the specific issue(s) in dispute with copies provided to both parties. The designee shall not be the former or current primary staff assigned to this matter. Once a dispute has been referred to a Deputy Executive Director, any requirement or deadline that is the subject of the

dispute shall be stayed pending the Deputy Executive Director's decision. All parties agree not to invoke the dispute resolution procedures for minor matters or otherwise in bad faith. The decision of the Deputy Executive Director (or designee) or notice of termination of dispute resolution by either party shall constitute final agency action for purposes of Section 5.351 of the TEX. WATER CODE: provided, however, that the 30-day filing period under that section does not commence until either (i) the City and/or VIA have/has received the final written decision of the Deputy Executive Director (or designee), or (ii) any party has received written notice that the other considers dispute resolution terminated.

8. The City and VIA, as applicable, are ordered to give notice of this Agreed Order to outside closure/remediation contractors who have control over any facet of operations that involve handling or movement of soils at the Alamodome-related Sites referenced in this Agreed Order. The City and VIA, as applicable, are further ordered to provide a copy of this Agreed Order to supervisory personnel at the Alamodome-related Sites who are responsible for activities that could involve the handling or movement of soils.

9. The Executive Director may refer this matter to the Office of the Attorney General of the State of Texas for further enforcement proceedings without notice to the City or VIA if the Executive Director determines that the City or VIA is noncompliant with or in violation of any of the terms and conditions set forth in this Agreed Order for which the City or VIA is responsible, consistent with Ordering Provision 5 of this Agreed Order.

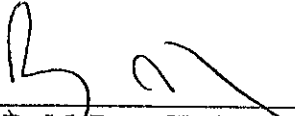
10. This Agreed Order shall not be admissible against the City or VIA in a civil proceeding, unless the proceeding is brought by the attorney general's office to: (1) enforce the terms of this Order; or (2) pursue violations of the TEX. WATER CODE or the TEX. HEALTH & SAFETY CODE.

11. This Agreed Order shall terminate five years from its effective date or upon compliance with all terms and conditions set forth in this Agreed Order, whichever is later.

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12. The Chief Clerk shall provide a copy of this Order to each of the parties. By law, the effective date of this Order is the mailing date, as provided by 30 TEX. ADMIN. CODE Section 70.10(b).

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



Barry R. McBee, Chairman

ATTEST:



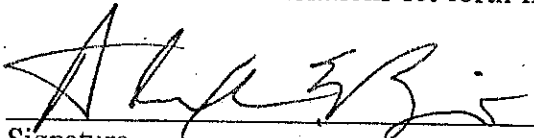
Eugenia K. Brown
Chief Clerk

SEAL

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I, the undersigned, have read and understand the attached Agreed Order in the matter of the City of San Antonio and VIA Metropolitan Transit Authority. I am authorized to agree to the attached Agreed Order on behalf of the City of San Antonio and do agree to the specified terms and conditions.

I understand that by entering into this Agreed Order, the City of San Antonio waives certain procedural rights, including, but not limited to, the right to formal notice of violations addressed by this Agreed Order, notice of an evidentiary hearing, the right to an evidentiary hearing, and the right to appeal. The City of San Antonio agrees to the terms of the Agreed Order in lieu of an evidentiary hearing. This Agreed Order constitutes full and final adjudication by the Commission of the violations set forth in this Agreed Order.


Signature

January 10, 1997
Date

Alexander E. Briseno
Name (printed or typed)
Authorized Representative
The City of San Antonio

City Manager
Title

I, the undersigned, have read and understand the attached Agreed Order in the matter of the City of San Antonio and VIA Metropolitan Transit Authority. I am authorized to agree to the attached Agreed Order on behalf of VIA Metropolitan Transit Authority and do agree to the specified terms and conditions.

I understand that by entering into this Agreed Order, VIA Metropolitan Transit Authority waives certain procedural rights, including, but not limited to, the right to formal notice of violations addressed by this Agreed Order, notice of an evidentiary hearing, the right to an evidentiary hearing, and the right to appeal. VIA Metropolitan Transit Authority agrees to the terms of the Agreed Order in lieu of an evidentiary hearing. This Agreed Order constitutes full and final adjudication by the Commission of the violations set forth in this Agreed Order.

Signature

Date

John M. Milam

Title

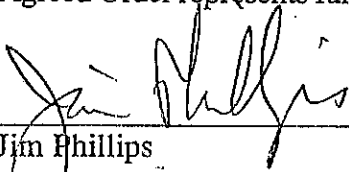
Name (printed or typed)
Authorized Representative
VIA Metropolitan Transit Authority

General Manager

1/13/97

City of San Antonio and
VIA Metropolitan Transit Authority
Agreed Order
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I, the undersigned, on behalf of the Executive Director of the Texas Natural Resource Conservation Commission, hereby agree to the terms of this Agreed Order in lieu of an evidentiary hearing. This Agreed Order represents full and final adjudication of the violations giving rise to this Agreed Order.



Jim Phillips
Deputy Director
Office of Legal Services
Texas Natural Resource Conservation Commission

11/17/97

Date

ATTACHMENT C

**EXAMPLE ENVIRONMENTAL MONITORING
FIELD LOG SHEET**

TCEQ APPROVAL LETTER
April 30, 2019

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 30, 2019

Mr. Robert Espinosa
Environmental Project Manager
CoSA Transportation and Capital Improvements Dept.
Environmental Management Division
City of San Antonio
114 W. Commerce, 2nd Floor
San Antonio, Texas 78205

Re: TCEQ Approval of City of San Antonio's *Work Plan for Landfill Cap Disturbance*, dated April 15, 2019
Proposed Improvements Project for the Hall's 151 Site (Tom Slick Community Park)
TCEQ SWR No. 30549; EPA ID No. TXD008111320; Customer No. CN600394795;
Regulated Entity No. RN102322336

Dear Mr. Espinosa:

The Texas Commission on Environmental Quality (TCEQ) Remediation Division is in receipt of the above referenced work plan dated April 15, 2019, prepared by representatives of Raba Kistner Environmental, Inc. on behalf of the City of San Antonio (CoSA) for the Halls' 151 Site (Site). The TCEQ previously approved the *Closure Report for the Alamodome Materials at the Hall's 151 Site*, dated April 22, 2002 in a letter issued April 29, 2002. The deed recordation materials (filed July 12, 2002) note the location, maintenance and post closure care requirements associated with the protective cover system. The recordation also requires the maintenance of the protective cover system and preservation of the effectiveness and integrity of the cover system in response to any future park development.

The April 15, 2019 work plan proposes several modifications within and surrounding the existing cover system associated with the Site. The planned improvements to the Site include demolition of portions of the existing asphalt-paved parking lot and flatwork, followed by the construction of a total of additional parking, a concrete trail, installation of shade trees within a 24-30 inch raised earthen berm, installation of signs and trash/recycling receptacles. Based on our review, the engineering design detail, water and soil (waste) management plans, and particulate monitoring plan supporting the proposed park improvements provided in the April 15, 2019 *Work Plan for Landfill Cap Disturbance* are acceptable for implementation by the City of San Antonio. Please submit a final report documenting the water and soil management and disposal activities and complete restoration of the Site cover system within sixty (60) days of final construction completion activities.

The City of San Antonio is advised that it is the continuing obligation of persons associated with a site to ensure that municipal hazardous waste and industrial solid waste are managed in a manner which does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by 30 TAC §335.4. If the activities proposed in the April 15, 2019 *Work Plan for Landfill Cap Disturbance* fails to comply with these requirements, please take any

Mr. Robert Espinosa, M.S.
Page 2
April 30, 2019
TCEQ SWR No. 30549

necessary and authorized action to correct such conditions. A TCEQ field inspector may conduct an inspection of your site to ensure on-going compliance with the notifications.

Questions concerning this letter should be directed to me at (512) 239-6542. When responding by mail, please submit one paper copy and one electronic copy (on USB or disc) of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127. An additional copy should be submitted in electronic format to the local TCEQ Region 13 Office. The information in the reference block should be included in all submittals. Note that the electronic and hard copies should be identical, complete copies. A Correspondence ID Form (TCEQ Form 20428) must accompany each document submitted to the Remediation Division and should be affixed to the front of your submittal. The Correspondence ID Form helps ensure that your documents are identified correctly and are routed to the applicable program for a timely response.

Sincerely,



Eleanor T. Wehner, P.G.
Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

ETW/mdh

cc: Mr. Cameron Lopez, Waste Section Manager, TCEQ Region 13 Office, San Antonio