

HISTORIC AND DESIGN REVIEW COMMISSION

August 07, 2019

HDRC CASE NO: 2019-404
ADDRESS: 7400 STATE HWY 151
LEGAL DESCRIPTION: NCB 15330 BLK 49 LOT P-2C .475, P-3A 21.605, P-4D 40.338
ZONING: I-1
CITY COUNCIL DIST.: 6
APPLICANT: Beth Wells/Bender Wells Clark Design
OWNER: Arthur Rossman/CITY OF SAN ANTONIO
TYPE OF WORK: Park improvements
APPLICATION RECEIVED: July 17, 2019
60-DAY REVIEW: September 15, 2019
CASE MANAGER: Adam Rajper
REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to carry out various park improvements, including the addition of parking to the existing lot, construction of six-foot wide concrete walking path loop on the Highway 151 side of the park. The applicant has also proposed project alternatives that include the installation of a shade canopy over the existing basketball court, two solar light fixtures, and two emergency call boxes.

APPLICABLE CITATIONS:

UDC Sec. 35-641. - Design Considerations for Historic and Design Review Commission Recommendations.

In reviewing an application, the historic and design review commission shall be aware of the importance of attempting to find a way to meet the current needs of the City of San Antonio, lessee or licensee of public property. The historic and design review commission shall also recognize the importance of recommending approval of plans that will be reasonable to implement. The best urban design standards possible can and should be employed with public property including buildings and facilities, parks and open spaces, and the public right-of-way. Design and construction on public property should employ such standards because the use of public monies for design and construction is a public trust. Public commitment to quality design should encourage better design by the private sector. Finally, using such design standards for public property improves the identity and the quality of life of the surrounding neighborhoods.

UDC Sec 35-642. – New Construction of Buildings and Facilities:

In considering whether to recommend approval or disapproval of a certificate, the historic and design review commission shall be guided by the following design considerations. These are not intended to restrict imagination, innovation or variety, but rather to assist in focusing on design principles, which can result in creative solutions that will enhance the city and its neighborhoods. Good and original design solutions that meet the individual requirements of a specific site or neighborhood are encouraged and welcomed.

(a) Site and Setting.

(1) Building sites should be planned to take into consideration existing natural climatic and topographical features. The intrusive leveling of the site should be avoided. Climatic factors such as sun, wind, and temperature should become an integral part of the design to encourage design of site-specific facilities which reinforces the individual identity of a neighborhood and promotes energy efficient facilities.

(2) Special consideration should be given to maintain existing urban design characteristics, such as setbacks, building heights, streetscapes, pedestrian movement, and traffic flow. Building placement should enhance or create focal points and views. Continuity of scale and orientation shall be emphasized.

(3) Accessibility from streets should be designed to accommodate safe pedestrian movement as well as vehicular traffic. Where possible, parking areas should be screened from view from the public right-of-way by attractive fences, berms, plantings or other means.

(4) Historically significant aspects of the site shall be identified and if possible incorporated into the site design. Historic relationships between buildings, such as plazas or open spaces, boulevards or axial relationships should be maintained.

(b) Building Design.

(1) Buildings for the public should maintain the highest quality standards of design integrity. They should elicit a pride of ownership for all citizens. Public buildings should reflect the unique and diverse character of San Antonio and should be responsive to the time and place in which they were constructed.

- (2) Buildings shall be in scale with their adjoining surroundings and shall be in harmonious conformance to the identifying quality and characteristics of the neighborhood. They shall be compatible in design, style and materials. Reproductions of styles and designs from a different time period are not encouraged, consistent with the secretary of the interior's standards. Major horizontal and vertical elements in adjoining sites should be respected.
- (3) Materials shall be suitable to the type of building and design in which they are used. They shall be durable and easily maintained. Materials and designs at pedestrian level shall be at human scale, that is they shall be designed to be understood and appreciated by someone on foot. Materials should be selected that respect the historic character of the surrounding area in texture, size and color.
- (4) Building components such as doors, windows, overhangs, awnings, roof shapes and decorative elements shall all be designed to contribute to the proportions and scale of their surrounding context. Established mass/void relationships shall be maintained. Patterns and rhythms in the streetscape shall be continued.
- (5) Colors shall be harmonious with the surrounding environment, but should not be dull. Choice of color should reflect the local and regional character. Nearby historic colors shall be respected.
- (6) Mechanical equipment or other utility hardware should be screened from public view with materials compatible with the building design. Where possible, rooftop mechanical equipment should be screened, even from above. Where feasible, overhead utilities should also be underground or attractively screened. Exterior lighting shall be an integral part of the design. Interior lighting shall be controlled so that the spillover lighting onto public walkways is not annoying to pedestrians.
- (7) Signs which are out of keeping with the character of the environment in question should not be used. Excessive size and inappropriate placement on buildings results in visual clutter. Signs should be designed to relate harmoniously to exterior building materials and colors. Signs should express a simple clear message with wording kept to a minimum.
- (8) Auxiliary design. The site should take into account the compatibility of landscaping, parking facilities, utility and service areas, walkways and appurtenances. These should be designed with the overall environment in mind and should be in visual keeping with related buildings, structures and places.

FINDINGS:

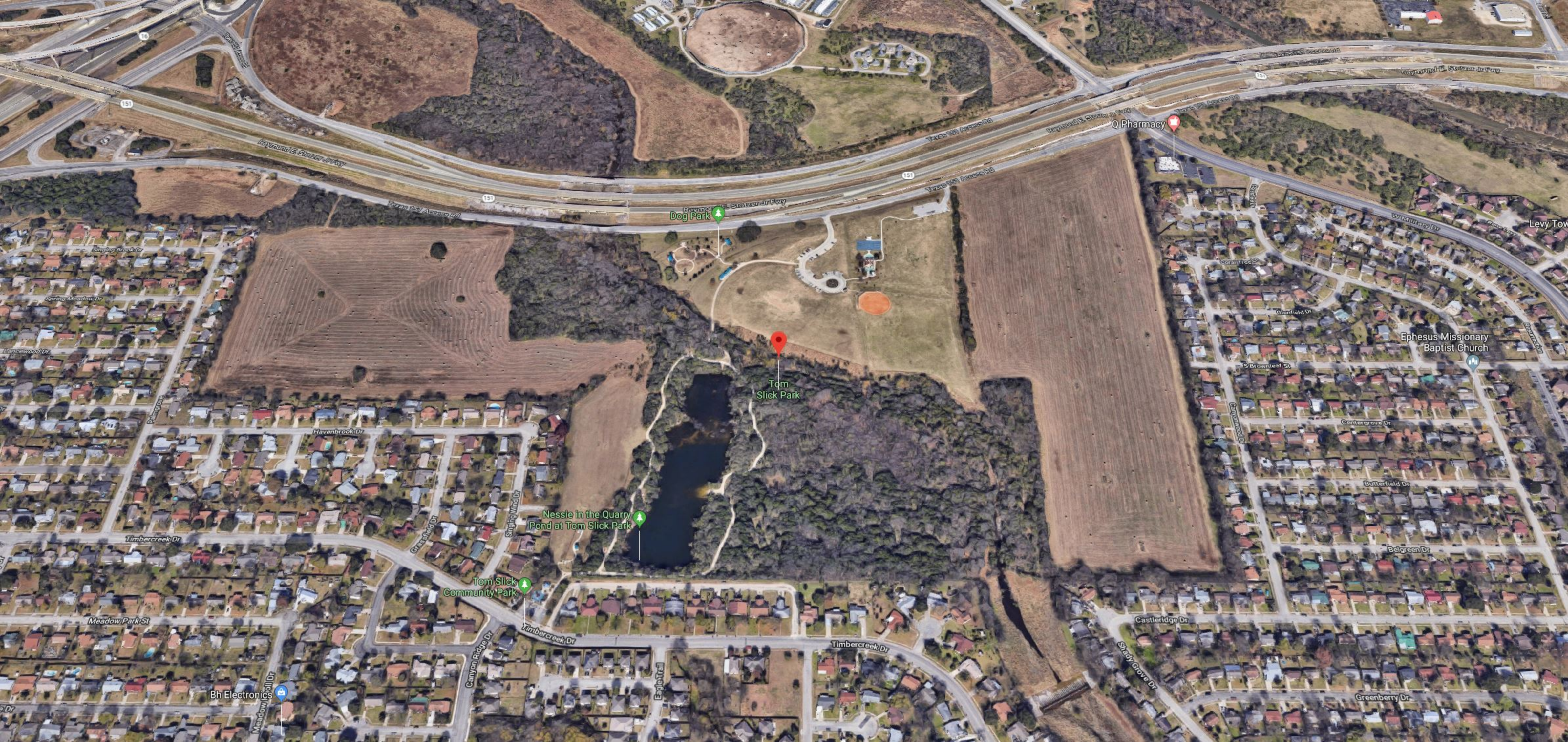
- a. The property located at 7400 State Highway 151, west of Downtown, is a public park with the common name of Tom Slick Park. The applicant is requesting approval to carry out various park improvements.
- b. PARK IMPROVEMENTS – The applicant has proposed various park improvements, including the addition of parking to the existing lot, construction of six-foot wide concrete walking path loop on the Highway 151 side of the park. Staff finds the proposal consistent with the UDC.
- c. ALTERNATIVE ITEMS – The applicant has proposed project alternatives that include the installation of a shade canopy over the existing basketball court, two solar light fixtures, and two emergency call boxes. Based on the submitted documents, staff finds that all of the project alternatives are consistent with the UDC and the documentation level qualifies the requests for final approval. The applicant should notify OHP staff in writing regarding the final project scope prior to the issuance of a Certificate of Appropriateness.
- d. ARCHAEOLOGY – The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology.

RECOMMENDATION:

Staff recommends approval of the proposed park improvements based on findings a through d with the following stipulations:

- i. That the applicant notify OHP staff in writing regarding the final project scope prior to the issuance of a Certificate of Appropriateness.
- ii. ARCHAEOLOGY – The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology.

—— User drawn lines



Kavanaugh & Starker Jr Fwy
Dog Park

Tom Slick Park

Nessie in the Quarry
Pond at Tom Slick Park

Tom Slick
Community Park

Q Pharmacy

Ephesus Missionary
Baptist Church

Bh Electronics

PROJECT DESCRIPTION- TOM SLICK PARK

The project adds parking to the existing lot as well as a new 6' wide concrete walking path loop on the Hwy 151 side of the park.

Alternates for in Construction will include shade over the existing basketball court, 2 solar light fixtures, and 2 solar emergency call boxes.

All the proposed improvements will be accessible, constructed of long-lived materials. All the improvements were approved through neighborhood meetings.

Date: Jul 02, 2019, 4:22pm User ID: brcville
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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.
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:

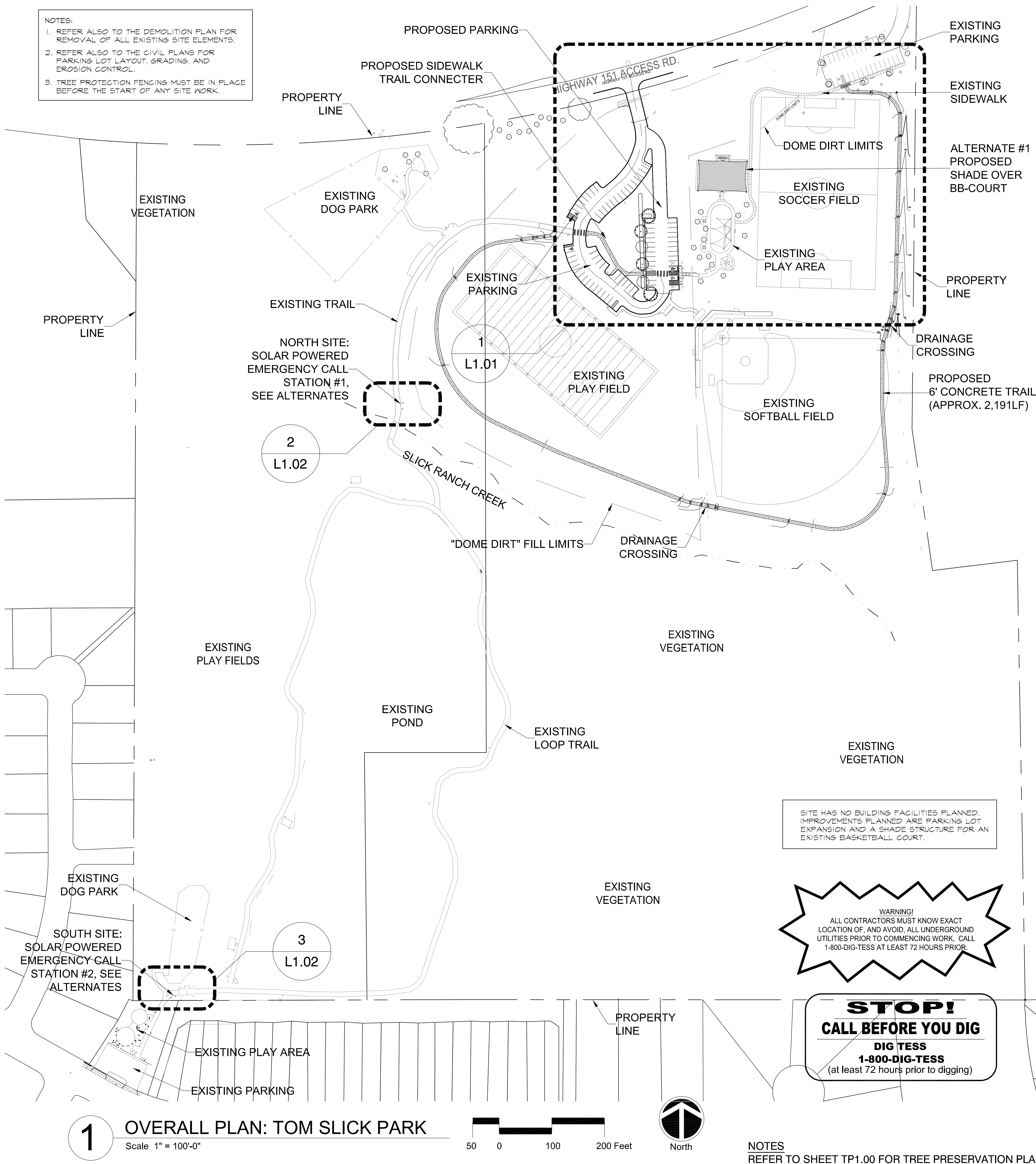
1. CONTRACTOR SHALL LIMIT EXCAVATION ACTIVITY IN THE ALAMODOME FILL ("DOME DIRT") AREA LIMITS. EXCAVATION ACTIVITY SHALL BE KEPT WITHIN 2 FEET OF THE SURFACE AS MUCH AS POSSIBLE. IN AREAS WHERE EXCAVATION DEPTH WILL EXCEED 2 FEET FROM THE SURFACE, THE EXCESS SOIL (SOILS DEEPER THAN 2 FEET) MUST BE PLACED 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.

- NOTES:
1. REFER ALSO TO THE DEMOLITION PLAN FOR REMOVAL OF ALL EXISTING SITE ELEMENTS.
 2. REFER ALSO TO THE CIVIL PLANS FOR PARKING LOT LAYOUT, GRADING, AND EROSION CONTROL.
 3. TREE PROTECTION FENCING MUST BE IN PLACE BEFORE THE START OF ANY SITE WORK.



1 OVERALL PLAN: TOM SLICK PARK

Scale 1" = 100'-0"

50 0 100 200 Feet



NOTES
REFER TO SHEET TP1.00 FOR TREE PRESERVATION PLANS

ISSUE DATE

No.	Date	Issue Description
1	07/02/19	CD 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



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CIVIL ENGINEER
BAIN MEDINA BAIN
7073 San Pedro Ave.
San Antonio, Texas 78216
(210) 494-7223

LANDSCAPE ARCHITECT'S LICENSURE

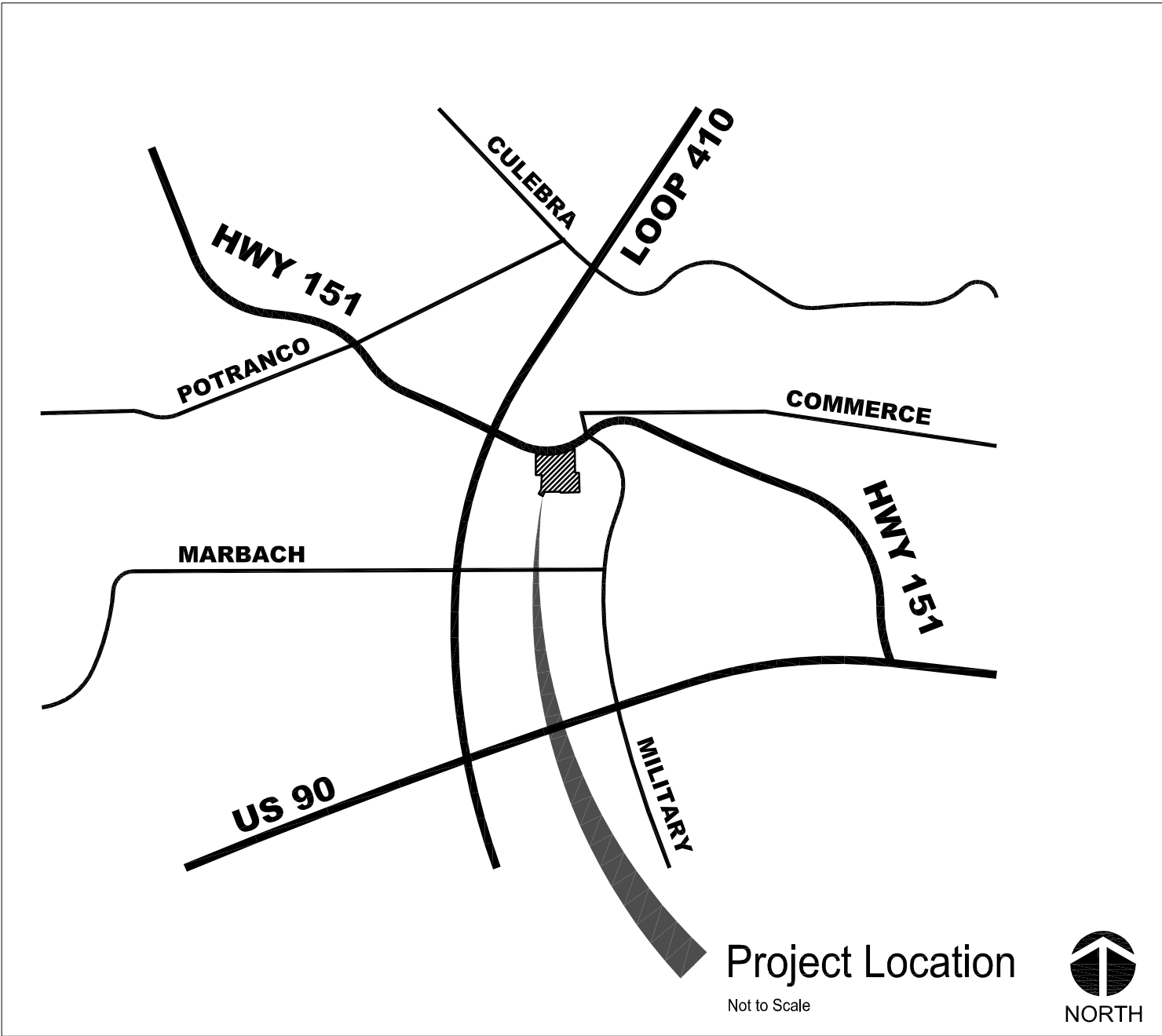
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CONSTRUCTION PURPOSES.

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

Overall Site
Improvements
Plan

L1.00

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

CONSTRUCTION DOCUMENTS SUBMITTAL
Submitted: 07 / 02 / 2019



DRAWINGS INDEX:

- G1.00 GENERAL NOTES
- TP1.00 TREE PRESERVATION PLAN & NOTES
- TP2.00 TREE PRESERVATION INVENTORY, NOTES & DETAILS
- L1.00 OVERALL SITE PLAN & PROJECT NOTES
- L1.01 ENLARGED PLAN (NORTH)
- L1.02 ENLARGED PLANS
- L1.03 ENLARGED TREE PLANTING & ORDINANCE PLANS
- L2.00 LANDSCAPE SITE DETAILS
- L2.01 LANDSCAPE PLANTING DETAILS & NOTES
- TR1.00 OVERALL TRAIL PLAN
- TR1.01 ENLARGED TRAIL PLANS
- TR1.02 ENLARGED TRAIL PLANS

- C-1.0 EXISTING SITE PLAN
- C-2.0 DEMOLITION PLAN
- C-3.0 PROPOSED SITE PLAN
- C-4.0 DIMENSION CONTROL PLAN
- C-5.0 GRADING PLAN
- C-6.0 SWPPP
- C-6.1 SWPPP DETAILS
- C-7.0 CIVIL DETAILS

LANDSCAPE ARCHITECT'S LICENSURE

LAWRENCE C. CLARK
LANDSCAPE ARCHITECT

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CONSTRUCTION PURPOSES.

LANDSCAPE ARCHITECT / PRIME CONSULTANT
BENDER WELLS CLARK DESIGN
830 N. ALAMO ST.
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(210) 692-9221 FAX (210) 223-8582



**Landscape
Architecture**
Urban Design
Planning

830 North Alamo Street
San Antonio, Texas 78215

210-692-9221
www.bwcdesign.com

PROJECT DESCRIPTION

Tom Slick Park is an established park located on the City of San Antonio's northwest side in Council District 6. The park is accessible from both Highway 151 on the north, and from local streets and sidewalks within the Meadow Village neighborhood to the south.

The park contains a pavilion, shaded play area, basketball court, sports fields, dog park, portable toilet enclosure, parking lot, fitness equipment, and other park amenities on the Hwy. 151 side of the park.

A pavilion, shaded play area, portable toilet enclosure, small dog park area, and limited parking exist on the neighborhood side.

The two areas are separated by a quarry pond (with Nessie artwork) connected by a concrete walking path.

The design intent is to add parking to the existing parking lot on the Hwy. 151 side of the park and to add a new 6' wide concrete walking trail around the athletic fields on the Hwy 151 side of the park. Minor shallow regrading will be required over some areas of the park containing "Dome Dirt" fill, but will not penetrate the cap of the landfill.

Alternates for Construction will include a new shade structure over the existing basketball court, 2 solar light fixtures, and 2 solar emergency call boxes.

Designs and Specifications are provided by Bender Wells Clark Design, the landscape architect of record, and from the Civil Engineer sub-consultant, Bain Medina Bain.

PROJECT NUMBER: -
FUNDING: 2017 - 2022 BOND

CITY COUNCIL
MAYOR
Ron Nirenberg

COUNCIL

Roberto Treviño	District 1	Mellisa Cabello Hvarda	District 6
Jada Andrews-Sullivan	District 2	Ana Sandoval	District 7
Rebecca Viagran	District 3	Manny Pelaez	District 8
Adriana Rocha Garcia	District 4	John Courage	District 9
Shirley Gonzales	District 5	Clayton Perry	District 10

CITY MANAGER
Erik Walsh

INTERIM DIRECTOR OF TRANSPORTATION & CAPITAL IMPROVEMENTS / CITY ENGINEER
Rozi Hosseini, P.E

TCI PROJECT MANAGER
Jamaal Moreno - Project Manager
City of San Antonio, Transportation & Capital Improvements
Municipal Plaza Building, 114 West Commerce Street, 4th Floor
P.O. Box 839966 | San Antonio, Tx 78283-3966

Phone: (210) 207-6924 Email: Jamaal.Moreno@san.antonio.gov
Facsimilie: (210) 207-2197

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."

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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.

Any conflicts between Contract Drawings and Specifications shall be brought to the attention of Landscape Architect.
- N18.

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.
- N25.

City of San Antonio Parks & Recreation Dept. provided the survey for this project. It was re-formatted for use in and in preparation of these documents. Contractor shall obtain a copy of the survey and become familiar with it, the existing conditions and context of the site prior to construction. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR RESOLUTION IMMEDIATELY. Landscape Architect shall not be responsible for errors or emissions associated with the preparation or documentation of the survey.
- N26.

Geotechnical investigation report has been prepared by Raba Kistner Inc. for the project. It has been referenced in the preparation of these documents. Contractor shall obtain an officially signed copy of the report and become familiar with it prior to construction. Any discrepancies should be brought to the attention of the Landscape Architect for resolution immediately. Landscape Architect shall not be responsible for errors or emissions associated with the preparation or documentation of the report. Contractor is invited and encouraged to make his own interpretation and evaluation of the information and by starting work shall be assumed to have fully accepted responsibility for the subsurface conditions that may hereafter be encountered in performing the excavation work.

- N27.

Contractor is expected to examine the project site and the record of investigation and make, to whatever extent they deem appropriate, his own investigation of existing subsurface conditions to determine the nature, kind and character of materials to be encountered. Extra payment will not be authorized for work which should have been anticipated or could have been anticipated upon careful examination of the site, or upon soil investigation, or upon consideration of factors generally recognized as being inherent in excavation work of the nature indicated by the Contract Documents.
- N28.

Contractor is responsible for detmrining means and methods per note N19, above. These drawings may indicate a limit of proposed improvements, limits of site demolition, etc. for delineation of expected extents of disturbance. However, final impact shall be determined in the field. Should the limits of disturbance exceed the boundaries defined in Drawings, the Contractor shall contact Landscape Architect for resolution.
- N29.

Contractor is responsible for repairing all work disturbed by construction outside of limit lines defined on drawings or through Contracor and Sub-contractor's means and methods to a condition better than or equal to the existing conditions prior to commencement of construction at no additional cost to the Owner.
- N30.

The Drawings and Specifications are complimentary to one another and implied to correspond with one another. Any discrepancies should be brought to the attention of the Landscape Architect for resolution immediately.

GENERAL CONSTRUCTION NOTES

1.

Construction Staging Area
Contractor shall coordinate with the Owner the location of the construction staging area.
2.

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.
3.

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 Specifications.
1.

Remove items shown to be removed to the full depth of the their construction unless noted otherwise.
2.

Verify the extent and location of items to remain vis-a-vis items to be demolished prior to commencement of work.
3.

Structures or items encountered below grade and not shown on the Drawings shall be brought to the attention of the Landscape Architect for clarification.
4.

Contact the local underground utility locate and identification service prior to commencement of work.
5.

The locations of underground utilities shown on the drawings may vary in relation to actual conditions on the site: additional utilities may not be shown. Verify all information in the field and report any discrepancies to the Landscape Architect.

GENERAL CONCRETE NOTES

1.

All forms shall be well braced and straight.
2.

All steel shall be free of grease, scale, & dirt.
3.

Concrete shall reach a minimum strength of 2500 psi at 28 day test. Concrete shall not be placed in excess of 5 ½' slump without prior approval of the engineer.
4.

All #3 reinforcing bars shall be 40 grade steel, all #4 or larger bars shall be ASTM A-615 grade 60.
5.

Contractor shall verify all the dimensions with the plan.
6.

Expansion joints (EJs) shall be provided at joints where concrete flatwork meets vertical structures such as walls, curbs, steps and building elements, and as indicated on the Drawings. EJs at concrete walks shall be placed at intervals not less that 5 X the width of the walk.
7.

Contraction (or control) joints (CJs) shall be provided on flatwork at a width of 1 X the width of concrete walks, typically, and as shown on the Drawings. Form CJs by saw cutting, typical, within 4 to 12 hours of placement, to a depth of ¼ the thickness of the slab.

SITE LAYOUT NOTES

1.

Layout and verify dimensions prior to construction. Bring any discrepancies to the attention of the Landscape Architect for clarification.
2.

Do not scale Drawings. Written dimensions take precedence over scale.
3.

Where dimensions are called as "equal" space, reference items equally, measured to their center lines.
4.

Install intersecting items at 90 degrees to one another, unless noted otherwise.

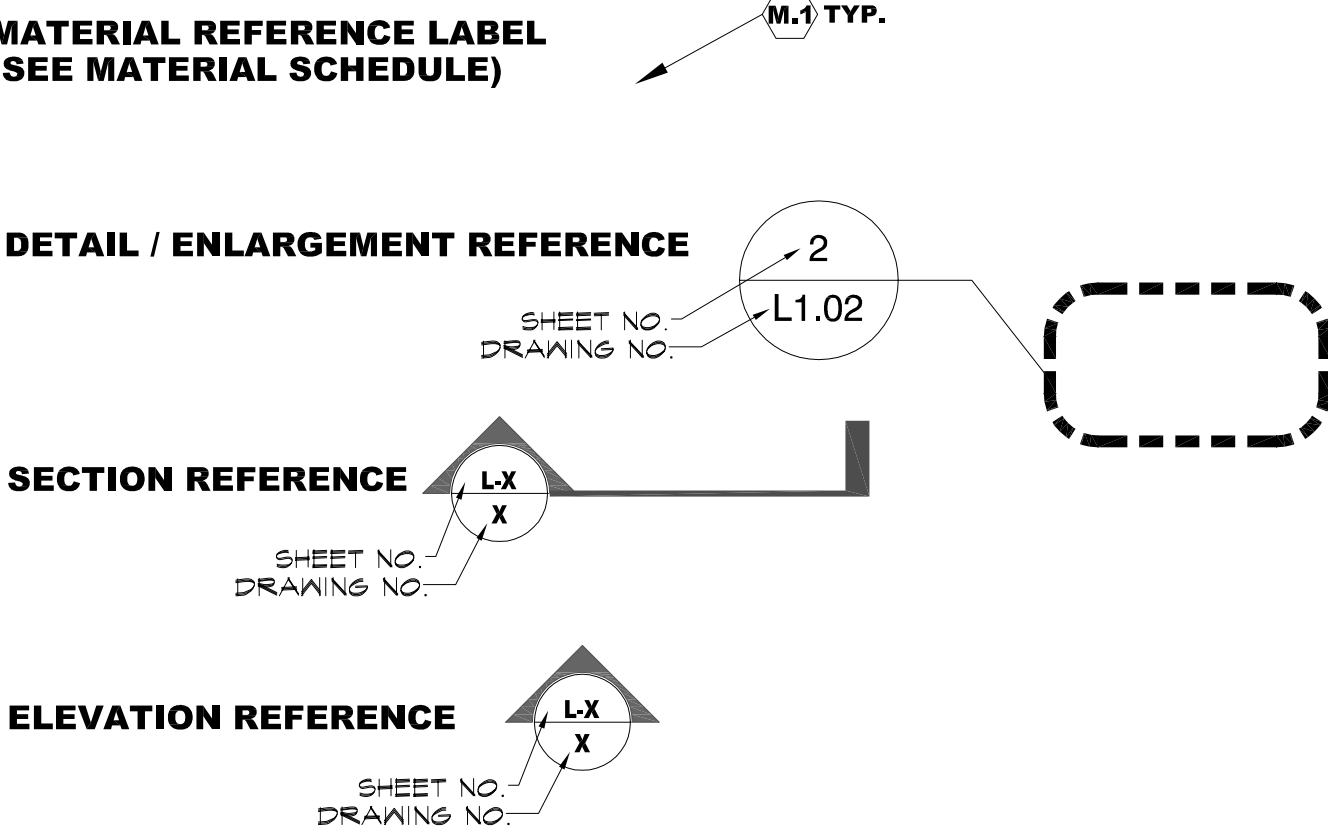
ABBREVIATIONS

A.F.F.A.	ABOVE FINISH FLOOR
ACCS.	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
ENG.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXTG.	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.ARCH.	LANDSCAPE ARCHITECT/ LANDSCAPE ARCHITECTURAL
MUTCD	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
REQ'D.	REQUIRED
R.S.	ROUGH SAWN
SCH.	SCHEDULE
SHT.	SHEET
SL.	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

DRAWING KEY



SYMBOLS & LEGEND



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.

ISSUE DATE

No.	Date	Issue Description
1	07/ 02 /19	CD 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

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Drawn By :

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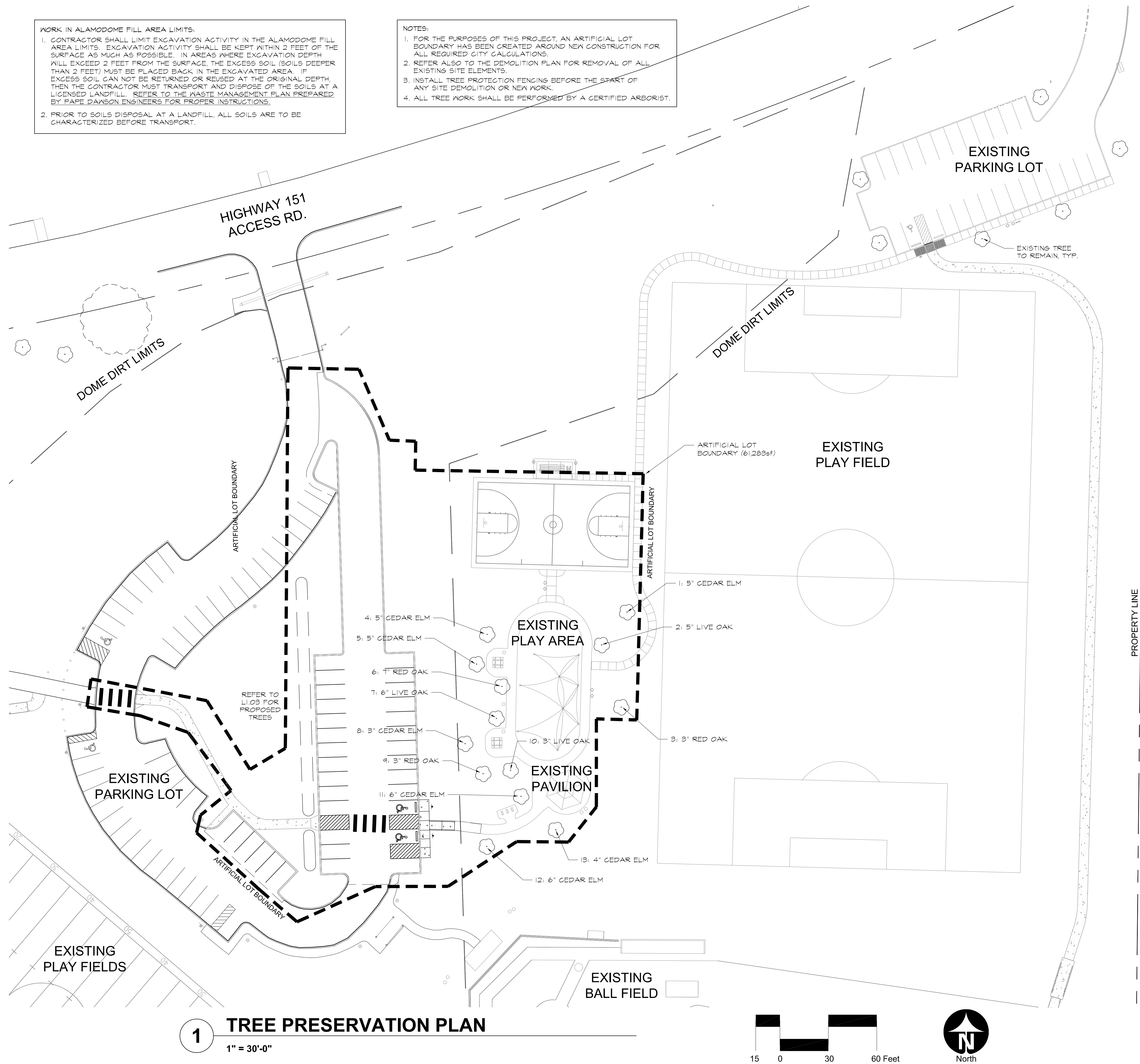
GENERAL
NOTES

G1.00

Date: Jul 02, 2019, 4:26pm User ID: bvleville
File: S:\2018 PROJECTS\Tom Slick Park 2017 Bond\Workflow\2019-07-02 - TSP-Tree Preservation.dwg

WORK IN ALAMODOME FILL AREA LIMITS:
1. 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.
2. PRIOR TO SOILS DISPOSAL AT A LANDFILL, ALL SOILS ARE TO BE CHARACTERIZED BEFORE TRANSPORT.

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

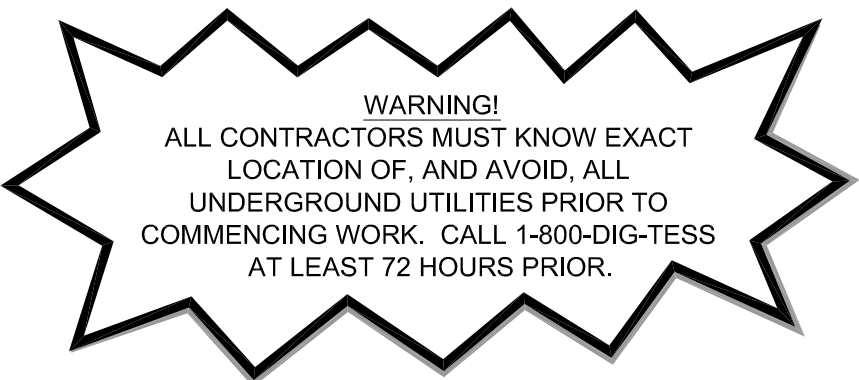


TREE PRESERVATION NOTES

1. 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.
2. Tree locations are based on a tree survey.
3. 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.
4. All woody material to be removed shall be shipped 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.
5. Significant & heritage trees shall be removed only under the following situations & only with prior approval of Landscape Architect & Owner.
 - A. Cut/fill greater than three (3") inches to take place beneath the dripline of a tree exceeds 50% of the root protection zone (rpz).
 - B. Construction of a building or other improvements require the removal of more than 30% of the viable portion of a tree crown.
 - C. Poor condition of tree.
6. 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.
7. 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.

NOTE:
REFER TO SHEET L1.03 FOR
LANDSCAPE ORDINANCE,
PARKING LOT SHADING,
CANOPY REQUIREMENTS/
CALCULATIONS AND
PROPOSED TREE PLANTING.

NOTE:
REFER TO SHEET TP2.00 FOR
EXISTING TREE INVENTORY,
NOTES AND DETAILS.



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

ISSUE DATE		
No.	Date	Issue Description
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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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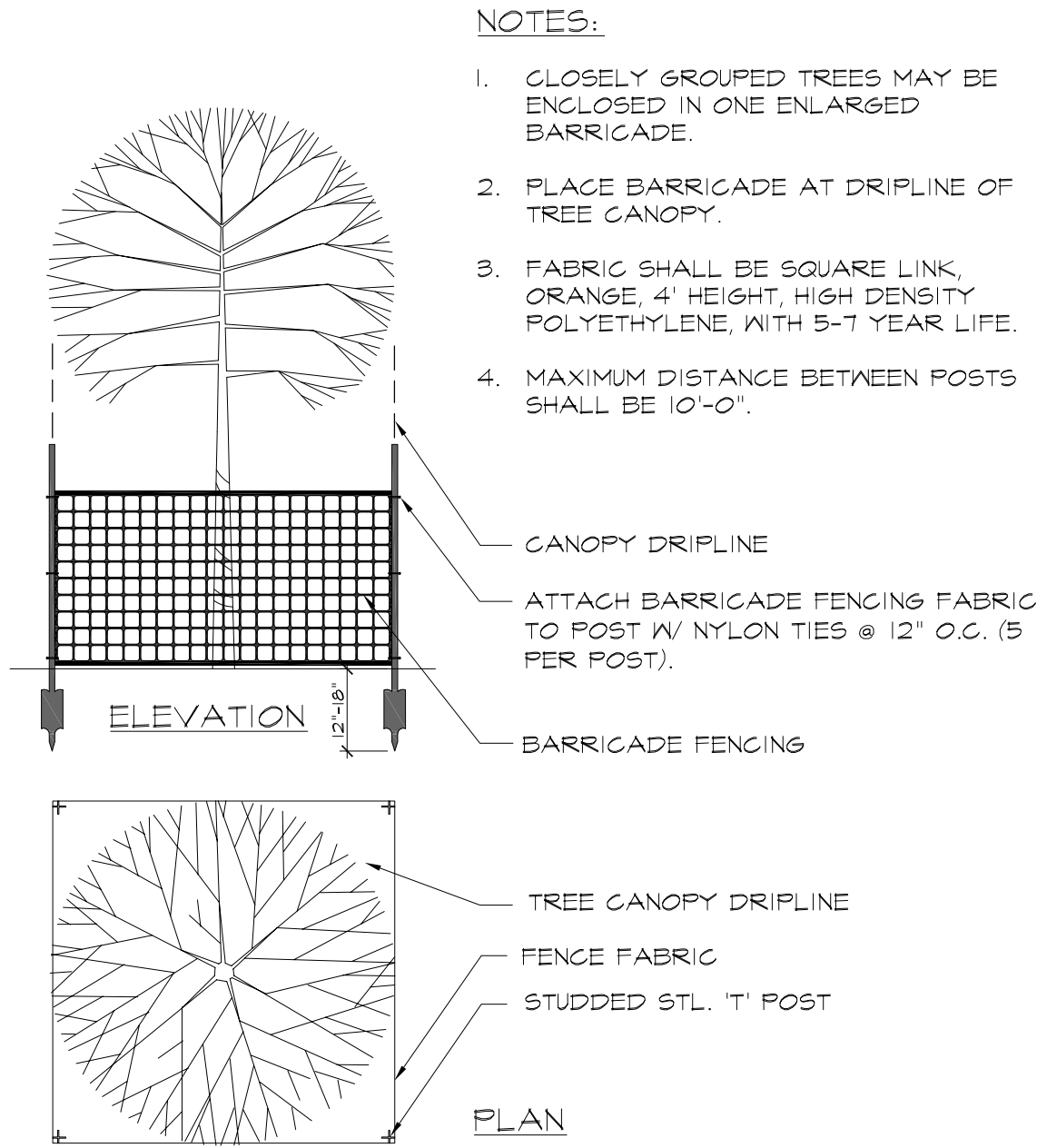
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SHEET TITLE & NO. :

TREE PRESERVATION PLAN & NOTES

TP1.00

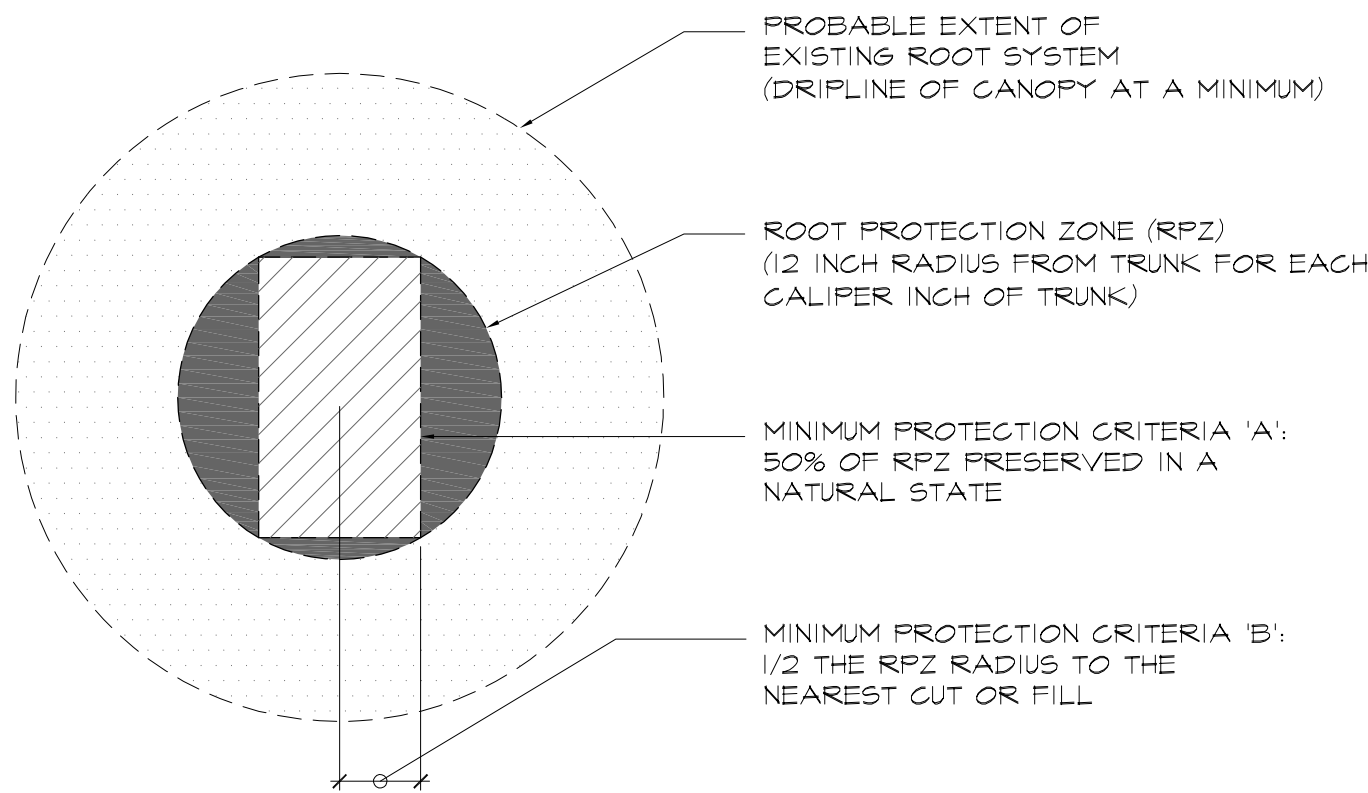
TREE INVENTORY												
Tag #	Species	Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Significant Tree** 10.0" - 23.5"		Heritage 3:1		Heritage 1:1		Additional Inches Preserved for Mitigation ***
		Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	
	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		25		0		0		0	
Preservation percentage=		#DIV/0!		Significant Preservation		100%		Heritage Preservation		#DIV/0!		0
Mitigation required (Commercial) =		0		Commercial (inches)		-15		Heritage Mitigation (inches)		0		
Mitigation required (Residential) =		0		Residential (inches)		-16.25						
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: Cordalia, 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												



1

TREE PROTECTION FENCING

NTS



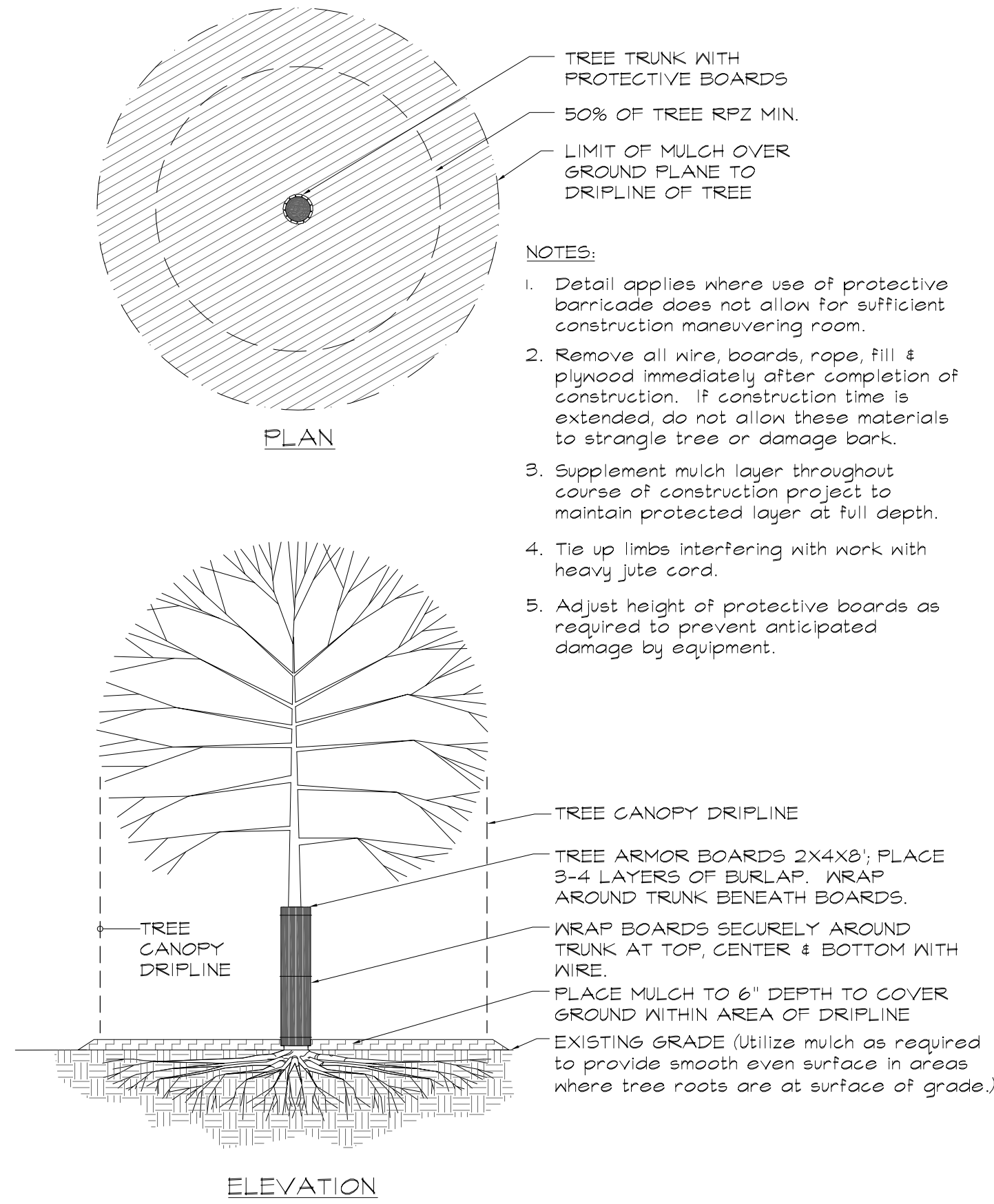
NOTES:

- Diagram indicates relationship between maximum allowable impacts of Root Protection Zone (RPZ) and typical root system.
- Maintain RPZ in natural state: no fill, equipment, liquids, construction debris, or vehicular or mechanical traffic.
- Cover RPZ with 4" depth mulch from chipped woody debris removed from site.
- Repair damage to tree crowns & root systems immediately. Cleanly cut roots exposed during construction operations. Wounds to live oaks shall be painted with pruning paint within 30 minutes after damage.

2

PLAN: ROOT PROTECTION ZONE

NTS



3

PLAN / ELEVATION: TREE PROTECTION

NTS

TREE PROTECTION & PRESERVATION NOTES

1. ALL TREES SHALL REMAIN UNLESS NOTED ON THE CITY APPROVED PLANS.

2. NO DISTURBANCE SHALL OCCUR IN THE ROOT PROTECTION ZONE AREA.

3. NO CONSTRUCTION SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.

4. 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.

5. 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.

6. EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE WORK DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.

7. 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.

8. 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.

9. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST.

10. TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.

11. 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.

12. SAPPLINGS, 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.

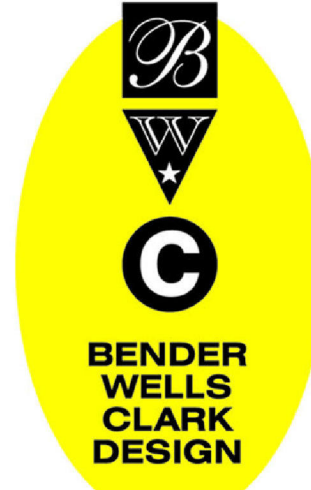
ISSUE DATE

No.	Date	Issue Description
1	07/02/19	CD 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



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TREE PRESERVATION
NOTES & DETAILS

TP2.00

Date: Jul 02, 2019, 4:22pm User ID: bvleville
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GENERAL NOTES

- ALL PLANT MATERIAL LOCATIONS SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL VERIFY ALL BUILDING SETBACK LINES, EASEMENT LINES, FIRE LANES AND VISIBILITY LINES IN THE FIELD PRIOR TO CONSTRUCTION.
- 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.
- PROVIDE POSITIVE DRAINAGE AWAY FROM ALL SITE FEATURES.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL CLEARED BRUSH, DEBRIS, ETC. FROM THE LIMITS OF CONSTRUCTION. DISPOSE OF MATERIALS OFF SITE.
- 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.
- 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:

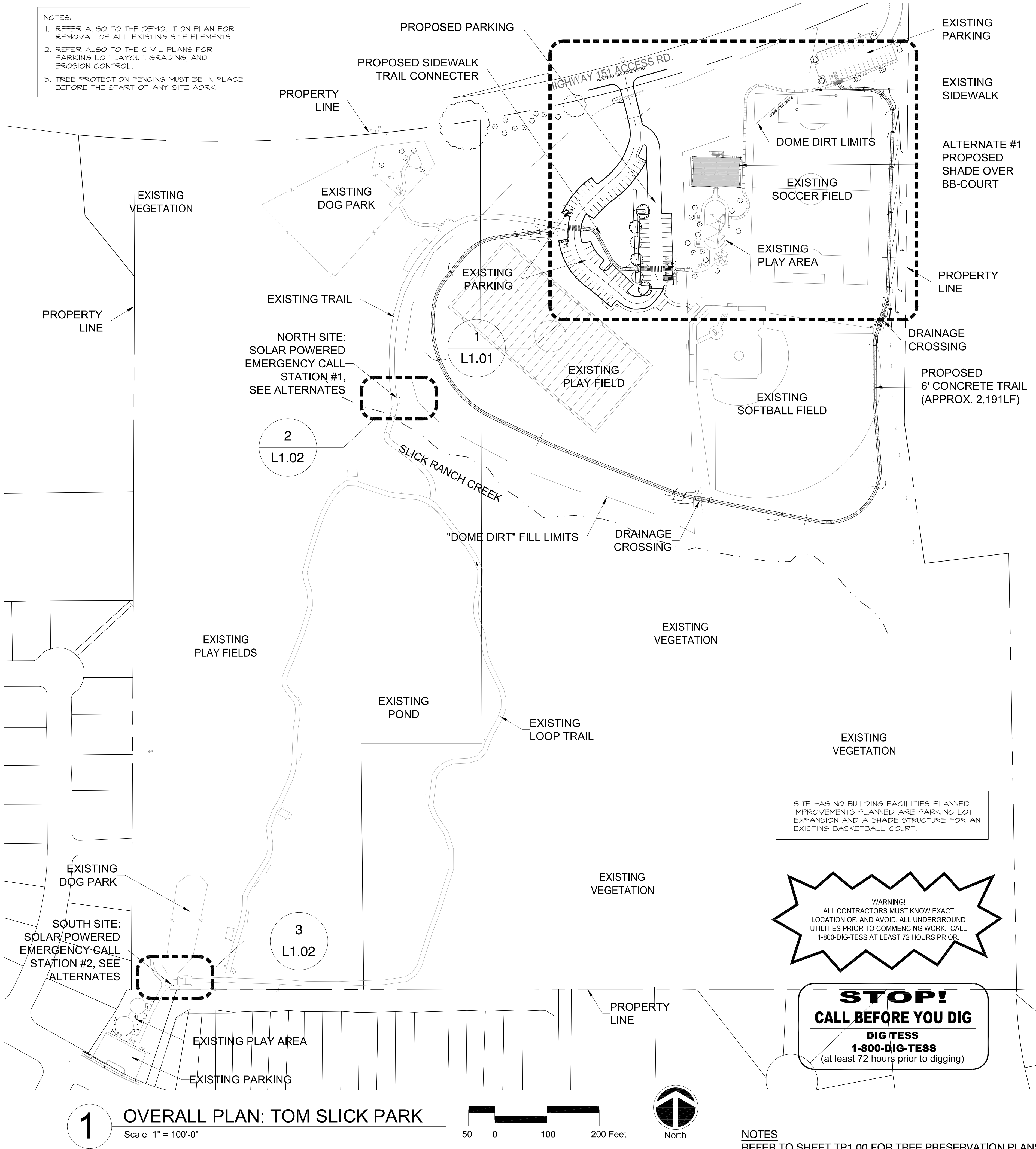
- CONTRACTOR SHALL LIMIT EXCAVATION ACTIVITY IN THE ALAMODOME FILL ("DOME DIRT") AREA LIMITS. EXCAVATION ACTIVITY SHALL BE KEPT WITHIN 2 FEET OF THE SURFACE AS MUCH AS POSSIBLE. IN AREAS WHERE EXCAVATION DEPTH WILL EXCEED 2 FEET FROM THE SURFACE, THE EXCESS SOIL (SOILS DEEPER THAN 2 FEET) MUST BE PLACED 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.
- PRIOR TO SOILS DISPOSAL AT A LANDFILL, ALL SOILS ARE TO BE CHARACTERIZED BEFORE TRANSPORT.
- REFER ALSO TO THE CIVIL PLANS FOR PARKING LOT GRADING AND EROSION CONTROL.
- 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

- 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.
- 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.

- NOTES:
- REFER ALSO TO THE DEMOLITION PLAN FOR REMOVAL OF ALL EXISTING SITE ELEMENTS.
 - REFER ALSO TO THE CIVIL PLANS FOR PARKING LOT LAYOUT, GRADING, AND EROSION CONTROL.
 - TREE PROTECTION FENCING MUST BE IN PLACE BEFORE THE START OF ANY SITE WORK.



NOTES
REFER TO SHEET TP1.00 FOR TREE PRESERVATION PLANS

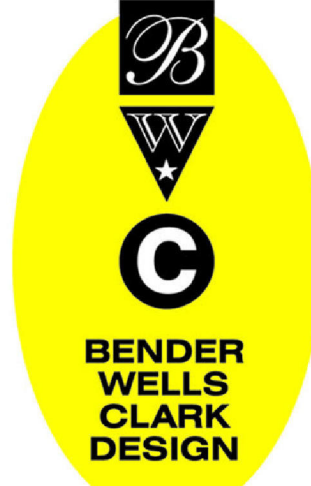
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Tom Slick Park Site Improvements

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

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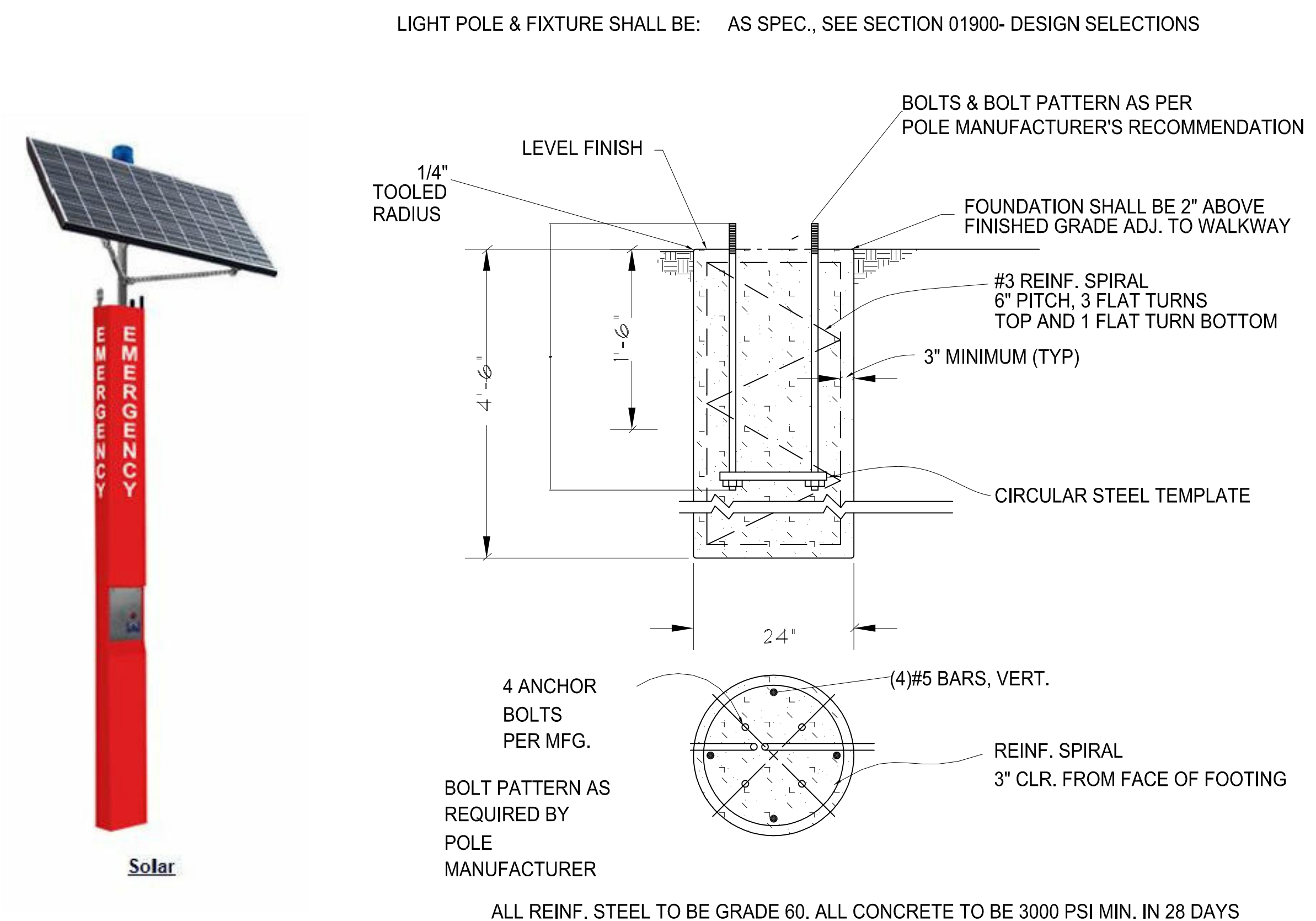
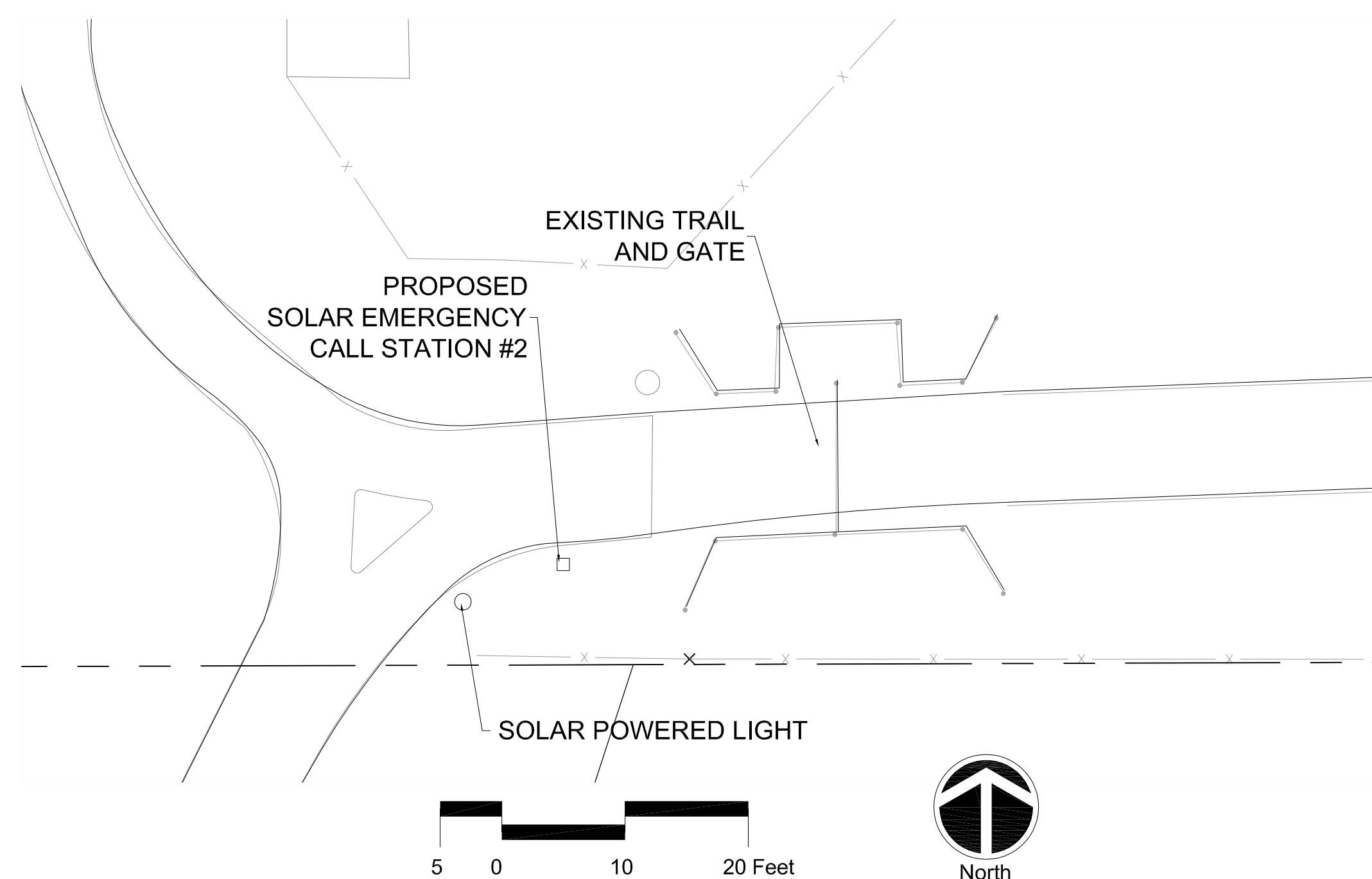
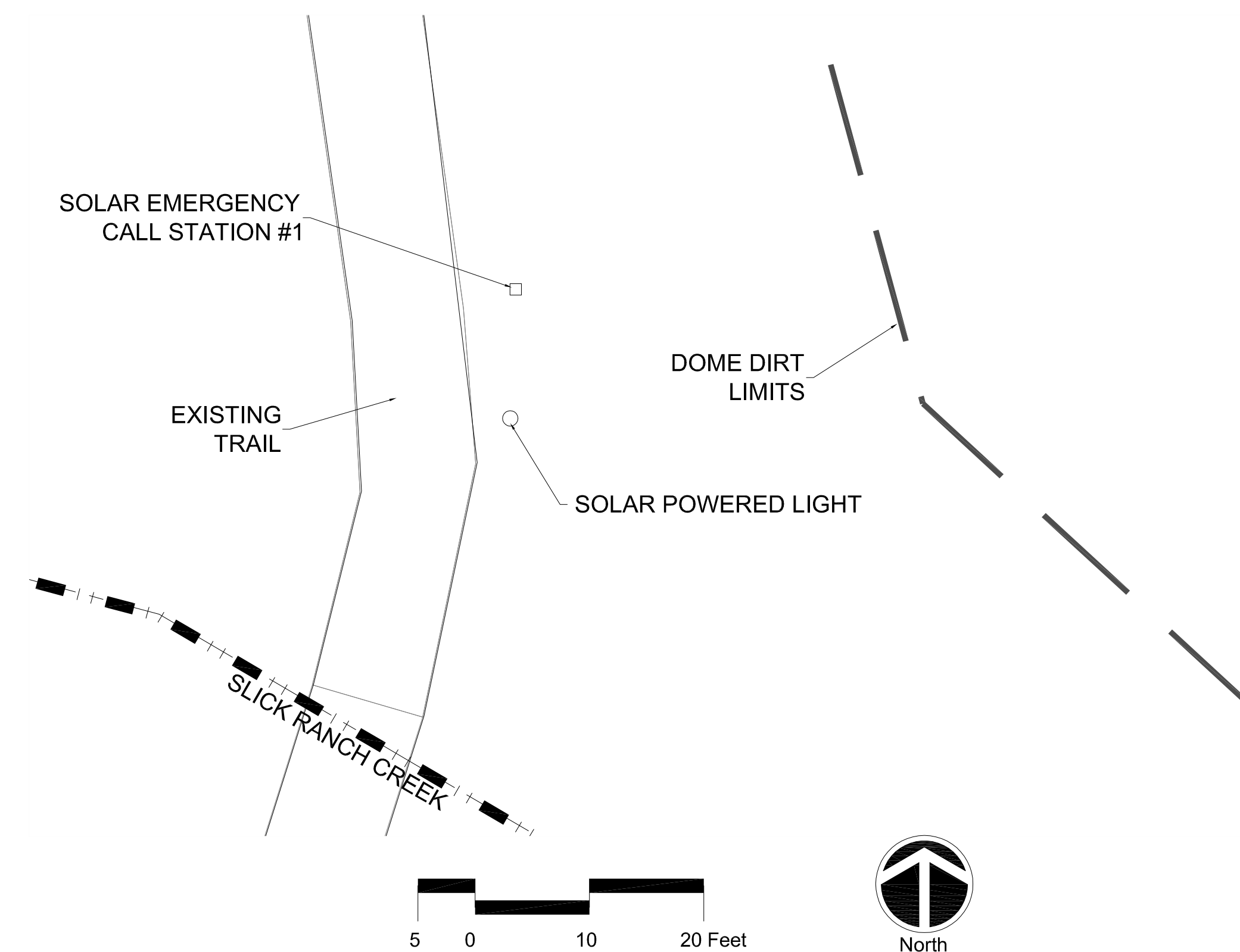
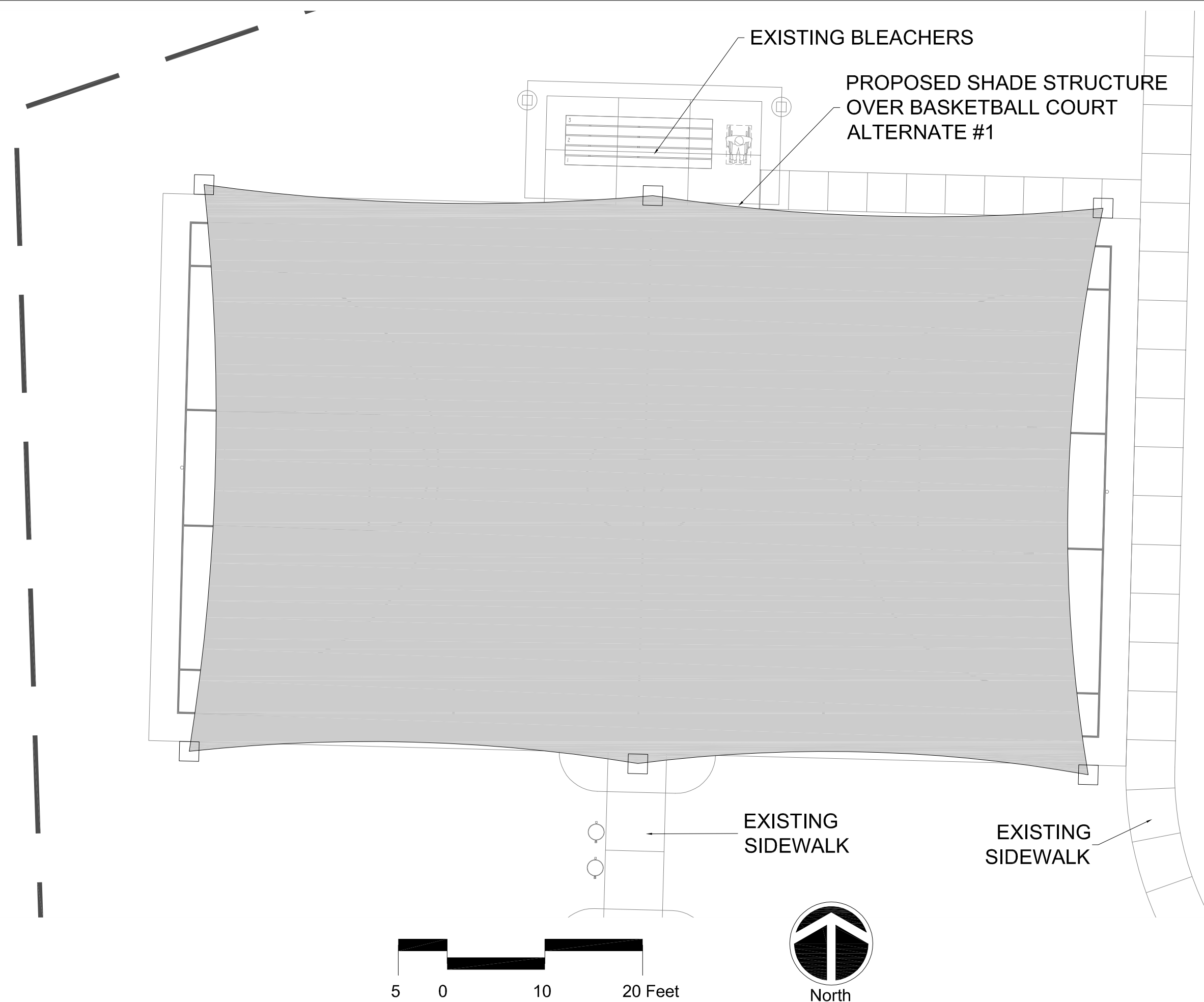
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Overall Site
Improvements
Plan

L1.00



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Tom Slick Park Site Improvements

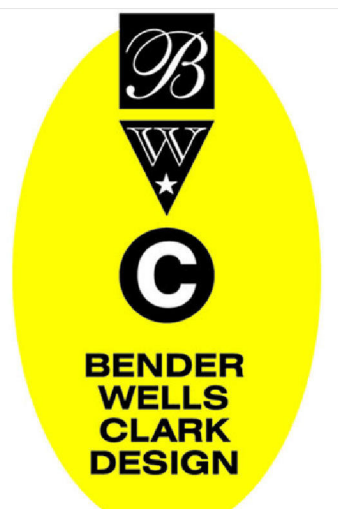
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OWNER

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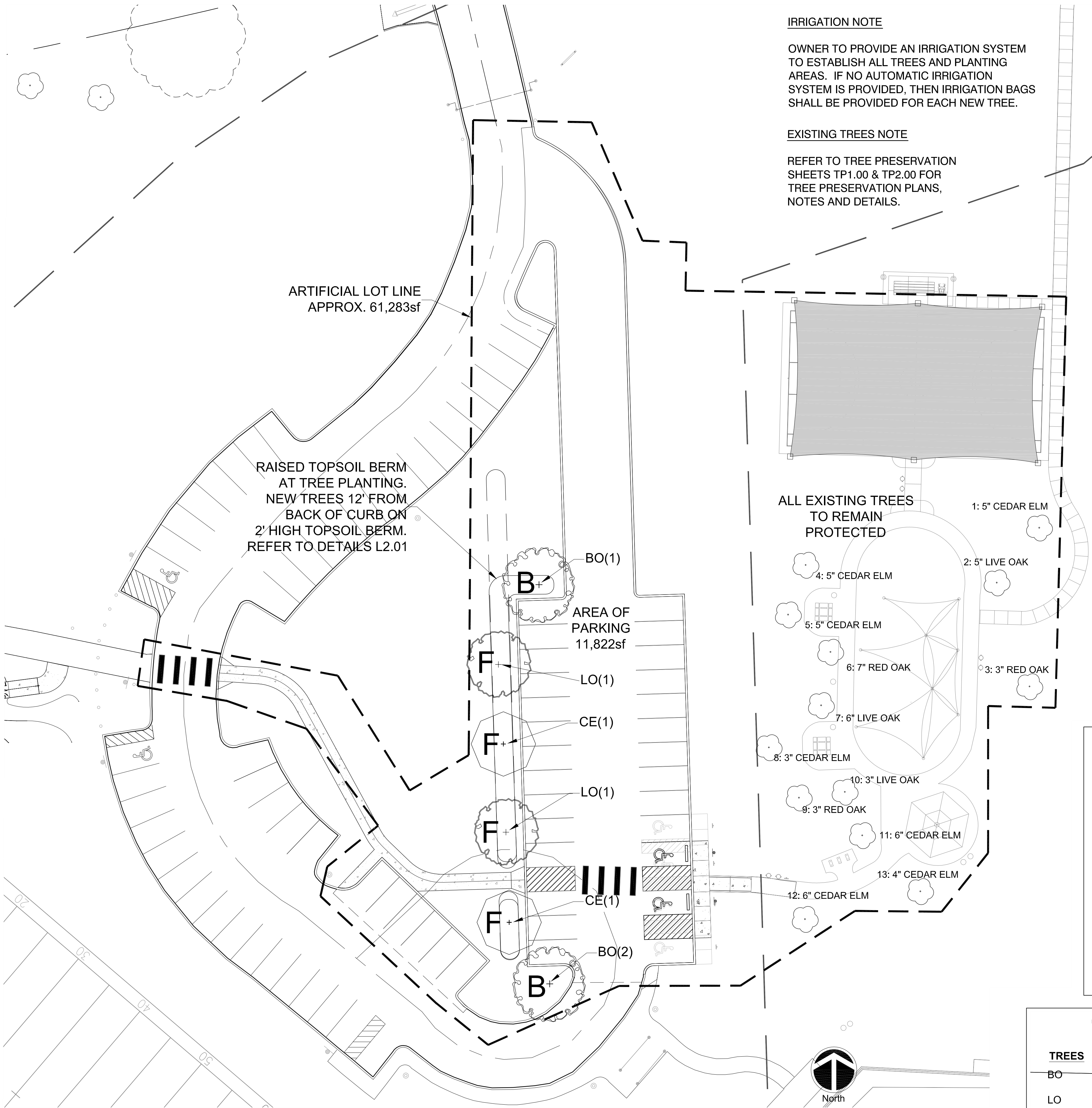
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**ENLARGED PLAN
BB-COURT SHADE &
EMERGENCY PHONE**

L1.02

Date: Jul 03, 2019, 8:43am User ID: bvlerville
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IRRIGATION NOTE

OWNER TO PROVIDE AN IRRIGATION SYSTEM TO ESTABLISH ALL TREES AND PLANTING AREAS. IF NO AUTOMATIC IRRIGATION SYSTEM IS PROVIDED, THEN IRRIGATION BAGS SHALL BE PROVIDED FOR EACH NEW TREE.

EXISTING TREES NOTE

REFER TO TREE PRESERVATION SHEETS TP1.00 & TP2.00 FOR TREE PRESERVATION PLANS, NOTES AND DETAILS.

PARKING LOT SHADING CALCULATIONS

PROJECT

Total Parking Lot Area*	11,822 sf
Percent Shade Coverage Required	25%
Total Shade Coverage Required	2,955.5 sf

KEY

LARGE TREES	SQ. FT. /TREE	NUMBER	TOTAL SF
A Existing Tree	1200	0	0
B Island or Peninsula Tree	800	2	1,800
C Within 12 feet of the edge of parking	600	0	0

MEDIUM / LARGE TREES

D Existing Tree	875	0	0
E Island or Peninsula Tree	656.25	0	0
F Within 12 feet of the edge of parking	437.5	4	1,750

MEDIUM TREES

G Existing Tree	550	0	0
H Island or Peninsula Tree	412.5	0	0
I Within 12 feet of the edge of parking	275	0	0

MEDIUM / SMALL TREES

J Existing Tree	275	0	0
K Island or Peninsula Tree	206.25	0	0
L Within 12 feet of the edge of parking	137.5	0	0

ST = TREES COUNTED TOWARD STREET TREE POINTS	Total Parking Lot Shading	3,550 sf
	Percent of Parking Lot Shading	30.03 %

* New parking lot area only

LANDSCAPE ORDINANCE POINTS TABULATION

Elective Requirements - 25 points required

Tree Preservation - 40 points, maximum	Qty.	Points
4 to 6 inch trees 3 points each	5	15
6 to 12 inch trees 4 points each	4	16
12 to 18 inch trees 6 points each	-	-
18 inch trees and larger 8 points each	-	-

Inside Streetyard:
full credit up to 30 points
1/2 credit for total above 30 points

-
-

Outside Streetyard:
1/2 credit up to a maximum of 15 points

-

Total Points: Tree Preservation 31

Parking Lot Shading	Points
Percent Shaded	
25%	20
35%	25
50%	35

Total Points: Parking Lot Shading 20

Screening of Surface Parking - 25 points

-

Street Trees - 25 points

-

Understory Preservation or Restoration - 15 points

-

Tree Preservation - 40 points

31

Infill or Retrofit Use Pattern - 25 points

-

Total Points - Elective Criteria 51

SITE CANOPY CALCULATIONS

61,283sf(site area) x 25% = 15,320.75sf(canopy required)

1200sf x 3(existing large trees) = 3,600sf (existing large tree canopy)
875sf x 10(existing mdm/lrg trees) = 8,750sf (existing mdm/lrg tree canopy)
550sf x 1(existing medium trees) = 550sf (existing medium trees)
275sf x 1(existing small tree) = 275sf (existing small tree canopy)
Total Existing Canopy Provided = 12,350sf (existing tree canopy)

1080sf x 2 (new large trees) = 2,160sf (new large tree canopy)
788sf x 4(new mdm/lrg trees) = 3,152sf (new mdm/lrg tree canopy)
495sf x 1(new medium trees) = 495sf (new medium trees)
248sf x 1(new small tree) = 248sf (new small tree canopy)
Total New Canopy Provided = 5,312sf (new tree canopy)

Canopy Required = 15,321sf
Canopy Provided = 17,662sf (of existing canopy to remain preserved)

TREE SCHEDULE

TREES			
BO	2	Bur Oak	Quercus macrocarpa 3" cal., 12' ht., full container grown
LO	2	Live Oak	Quercus virginiana 3" cal., 8' ht., full container grown
CE	2	Cedar Elm	Ulmus crassifolia 3" cal., 8' ht., full container grown

Note: All trees are to be boxed or containerized, nursery grown specimens.

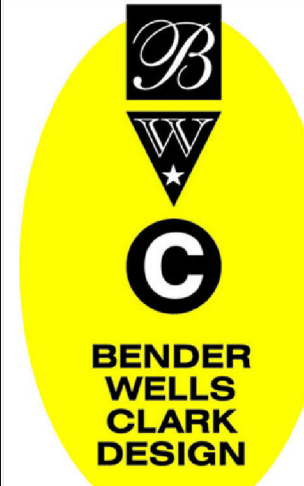
ISSUE DATE

No.	Date	Issue Description
1	07/ 02 /19	CD 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
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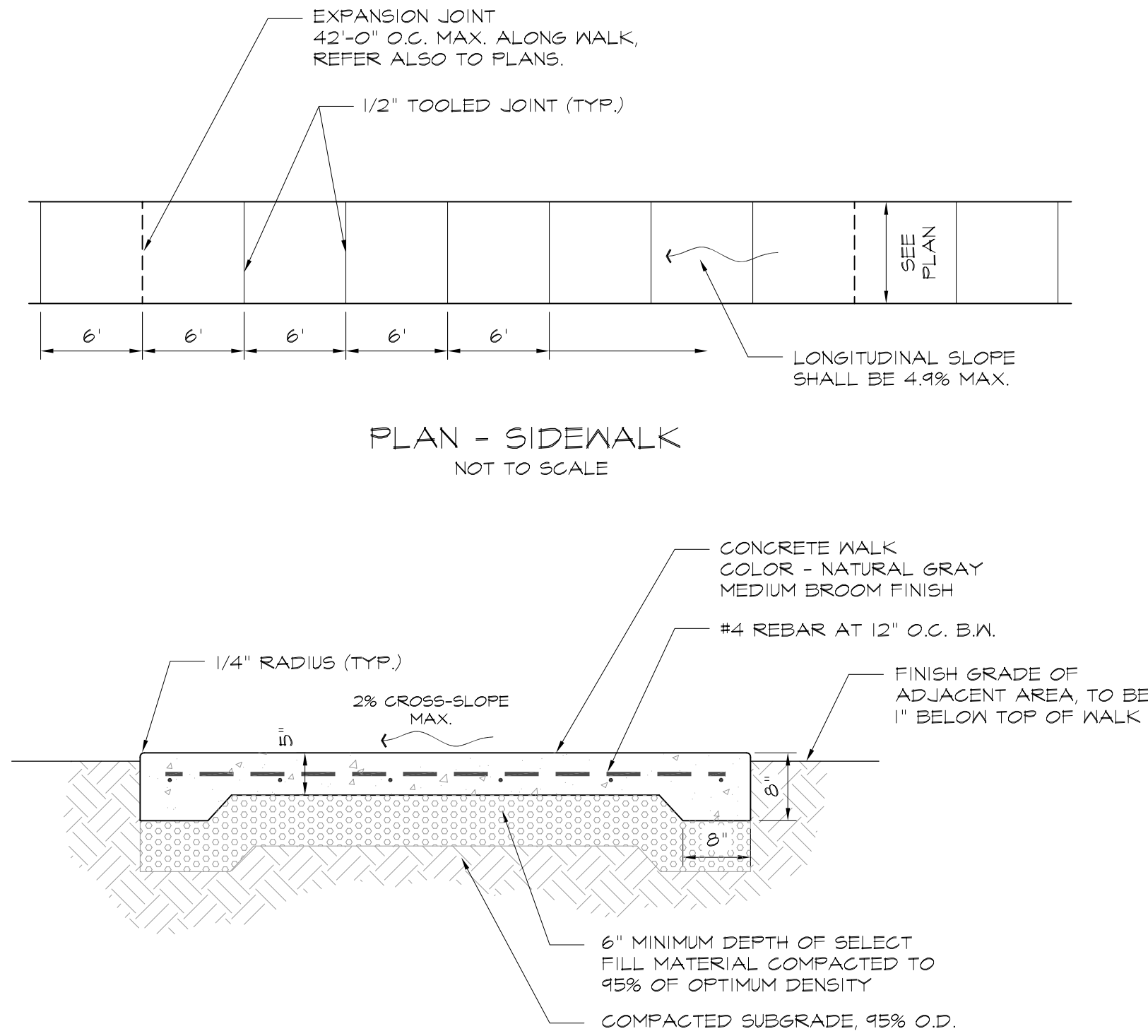
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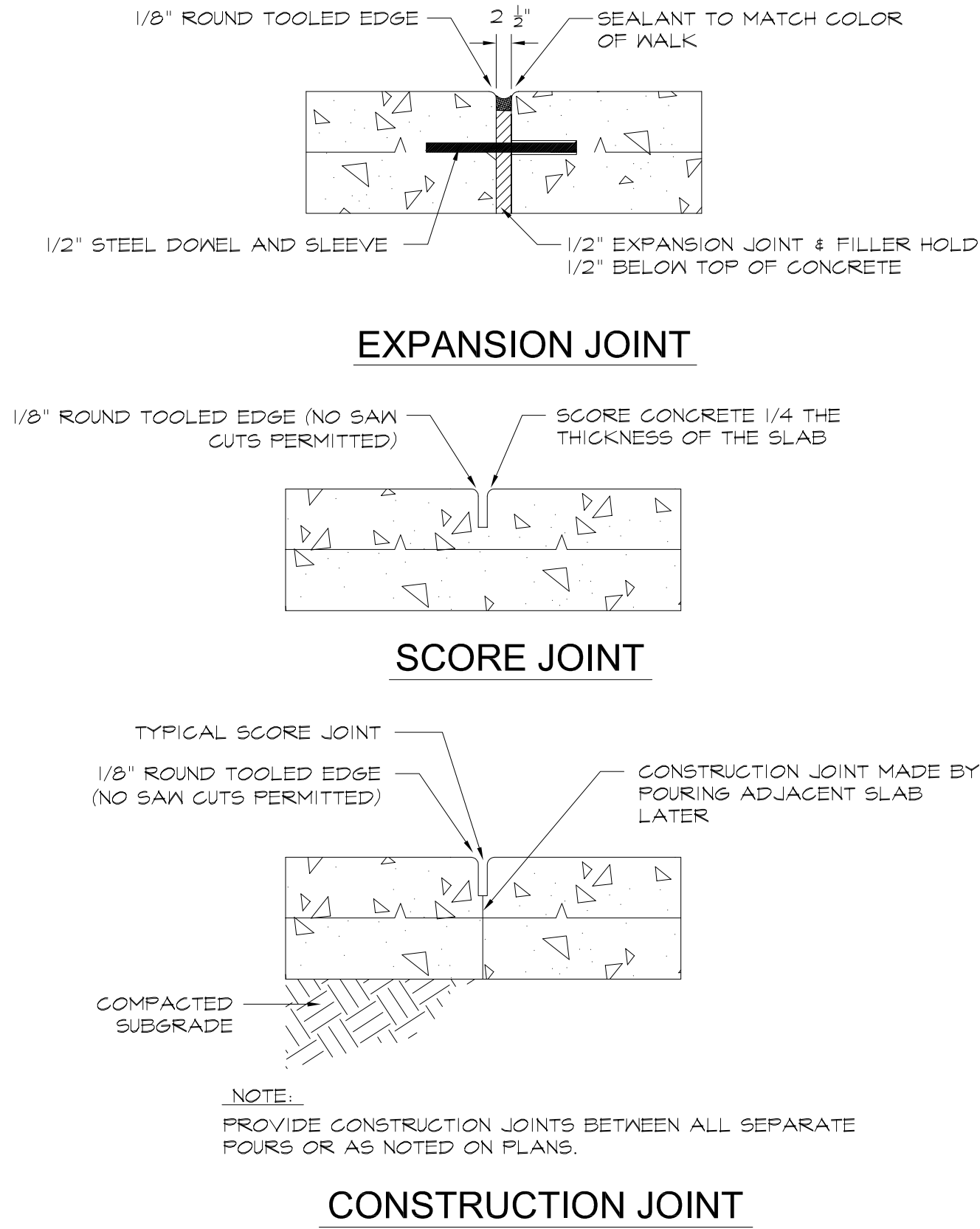
ENLARGED PLAN
TREE PLANTING
& ORDINANCE

L1.03

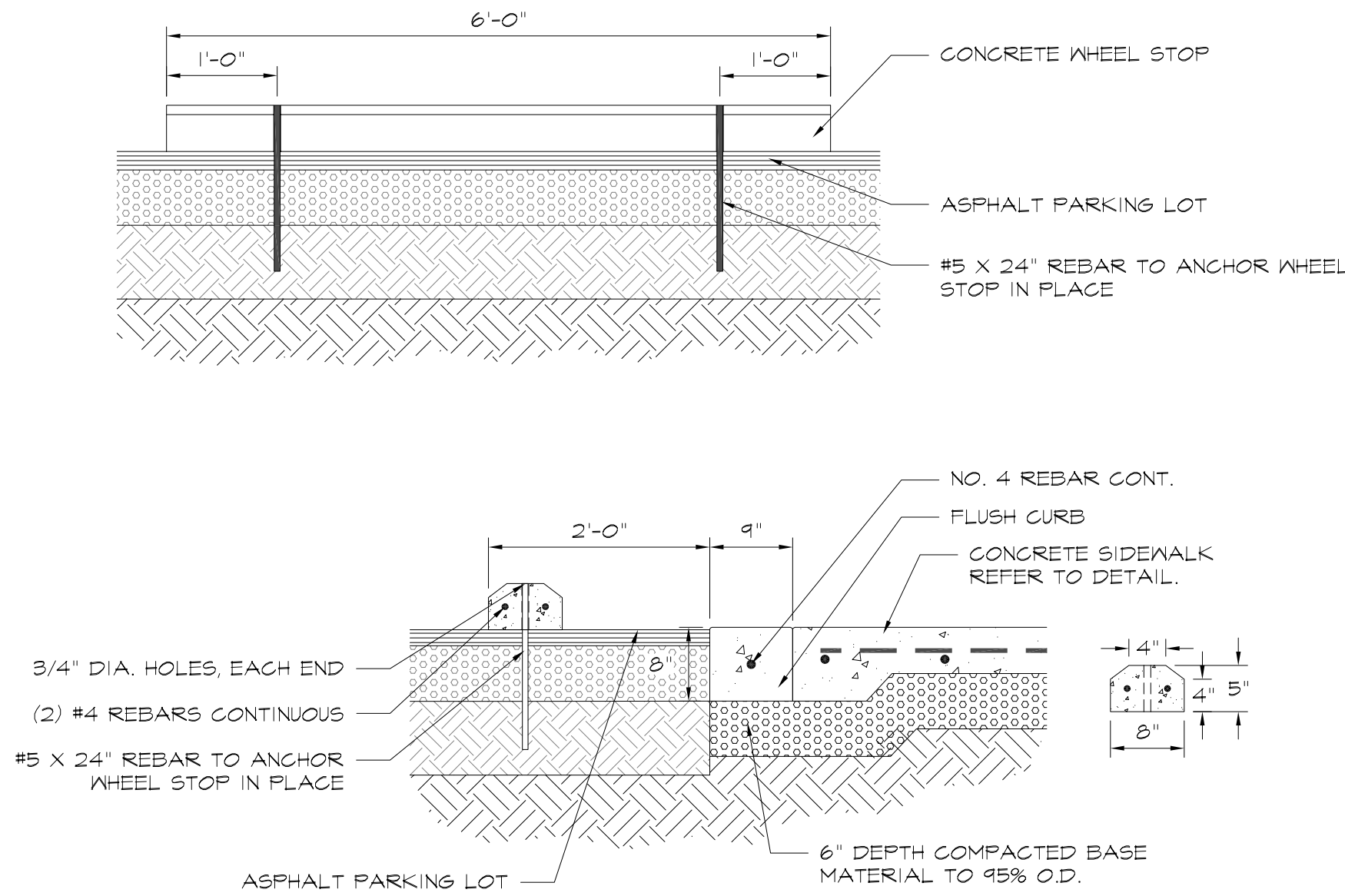
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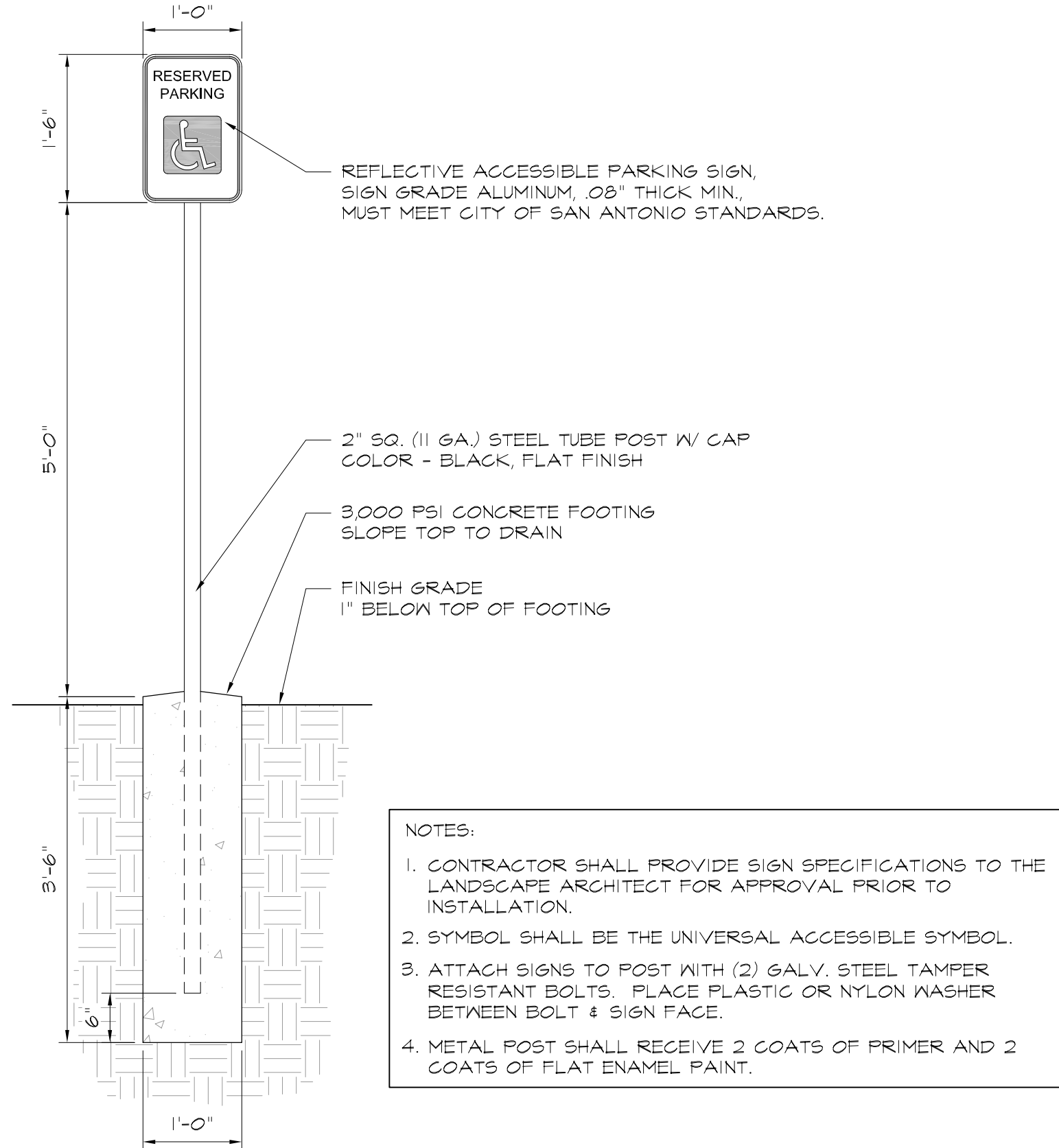
1 TYPICAL SIDEWALK AND CONC. TRAIL
3/4" = 1'-0"



2 TYPICAL JOINTS
NO SCALE



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



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

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SHEET TITLE & NO. :

LANDSCAPE DETAILS

L2.00

PLANTING NOTES:

1.

Contractor shall be responsible for being familiar with all underground utilities, pipes and structures.
2.

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.
3.

The Contractor shall be responsible for any coordination with subcontractors as required to accomplish planting operations.
4.

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.
5.

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 FL5/1000 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.
6.

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.

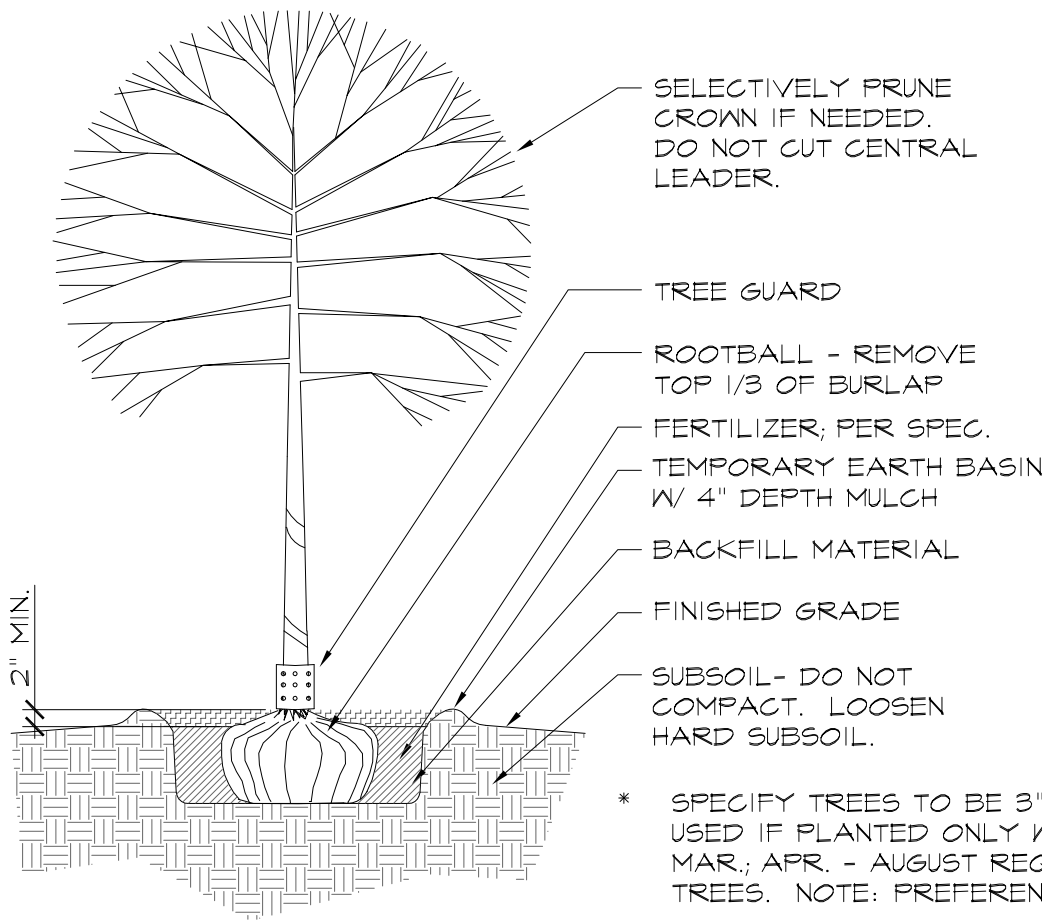
Maintain plant material by pruning removal of dead wood, watering and weeding. Restore planting saucers at trees in turf areas. Tighten and repair stake and guy supports and reset trees to proper grades or vertical position as required. Spray as required to keep plant materials free of insects and disease.

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.
7.

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.
8.

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 areas 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:

1.

PIT SIZE: EXTEND TO TWICE WIDTH OF ROOTBALL AT OUTSIDE EDGE PLANTINGS.
2.

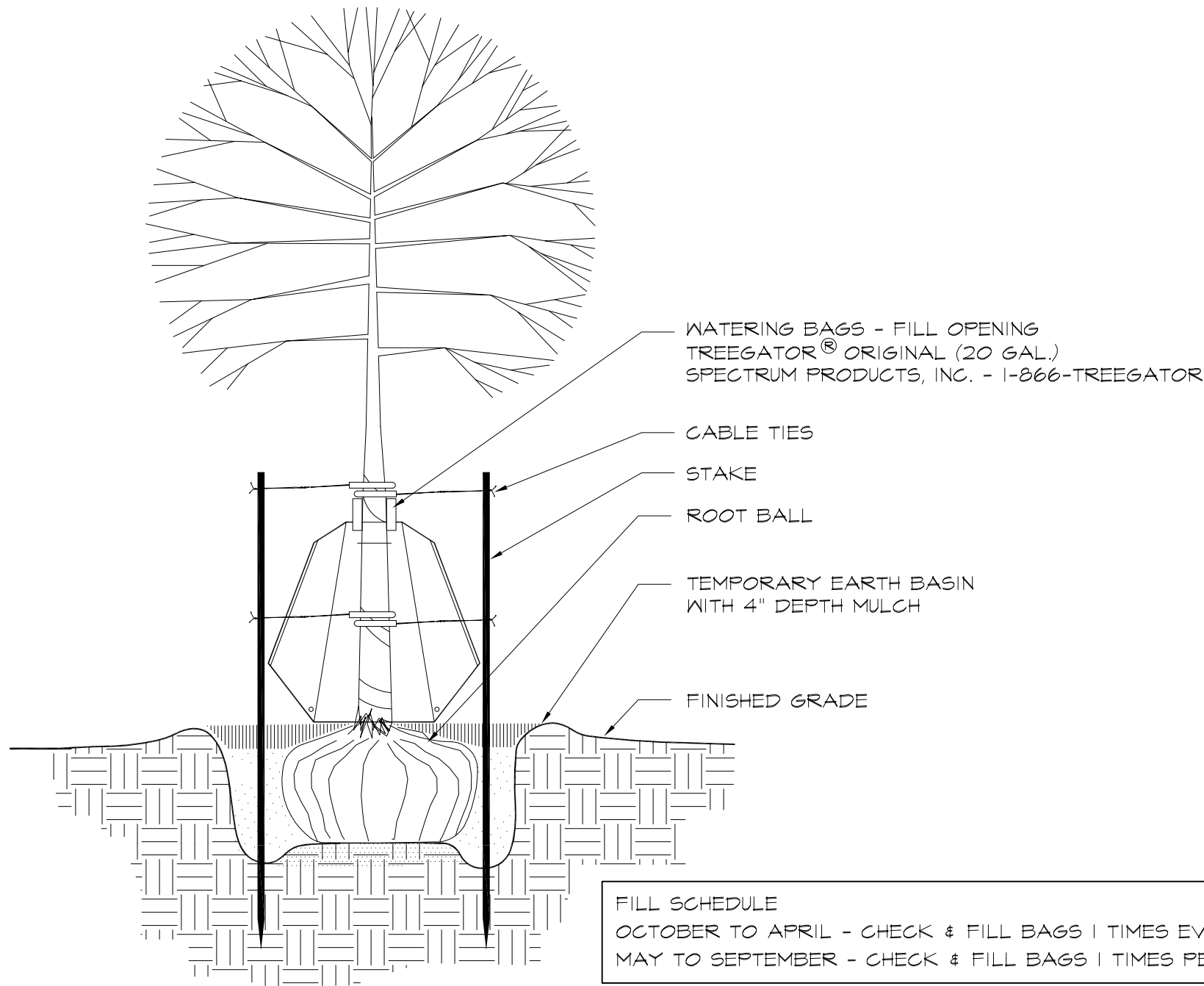
PLANTING DEPTH: TOP OF ROOT BALL 2 INCHES MIN./4" MAX. ABOVE FIN. GRADE.
3.

BACKFILL MATERIAL: 3 PARTS APPROVED TOPSOIL (SOIL EXCAVATED FROM PIT), 2 PARTS SOIL CONDITIONER AND 1 PART ORANGE SAND. TAMP LIGHTLY TO REDUCE SETTLING.
4.

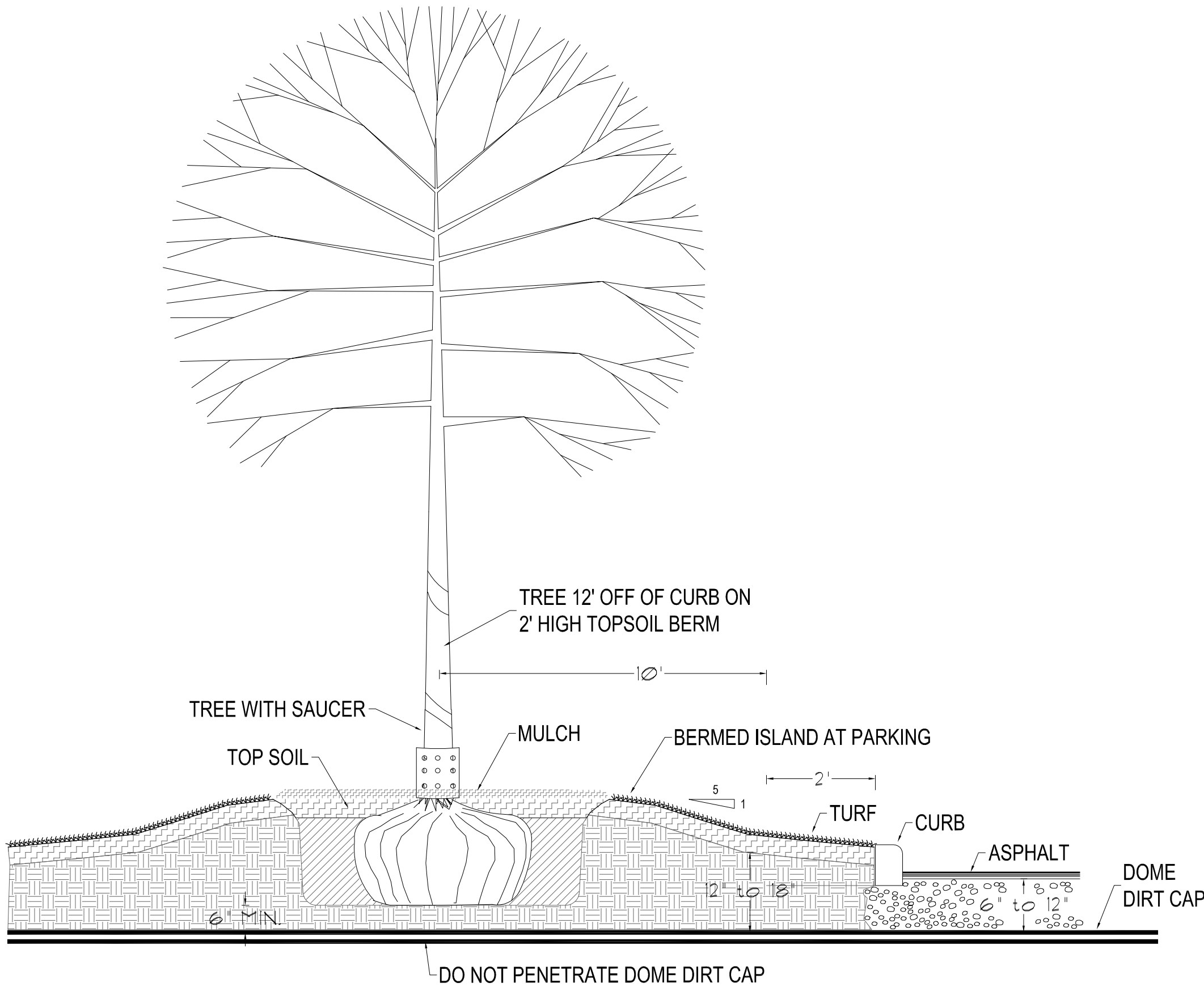
FERTILIZER: SLOW-RELEASE LIQUID INJECTED PER SPEC.
5.

EARTH BASIN: 12" DIA. LARGER THAN ROOT BALL AT OUTSIDE EDGE OF PLANTING AREA.
6.

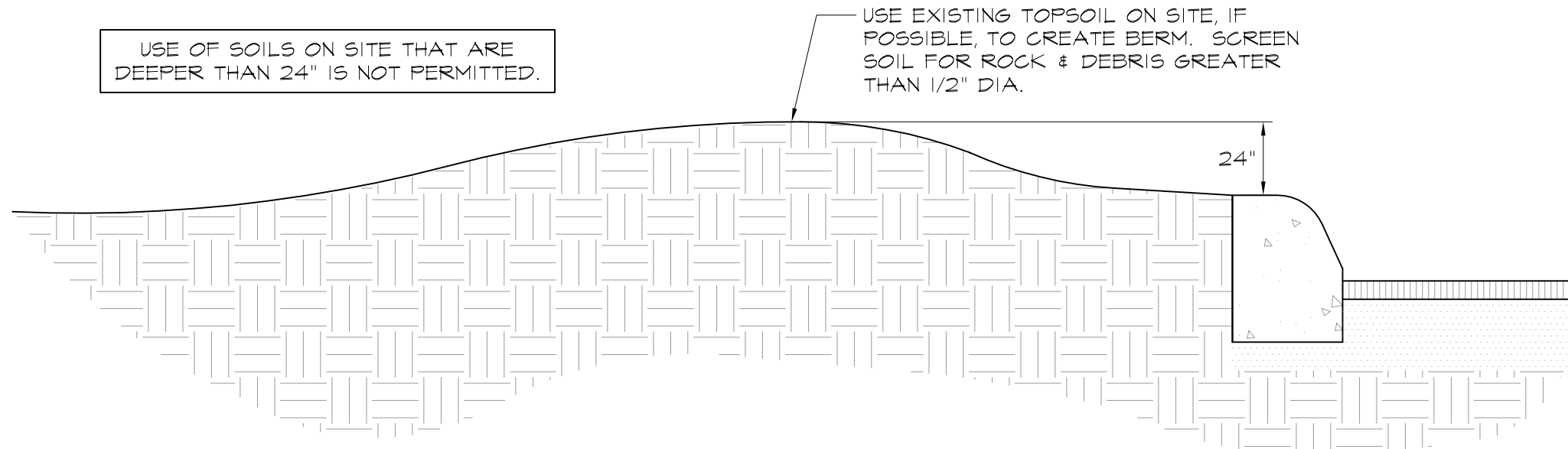
MULCH: SHREDDED HARDWOOD; 4" MIN DEPTH.



2 TREE WATERING BAG
NO SCALE



4 BERMED TREE PLANTING
NO SCALE



3 BERMED AREAS WITH TREE PLANTING
NO SCALE

ISSUE DATE

No.	Date	Issue Description
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Tom Slick Park
Site Improvements

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

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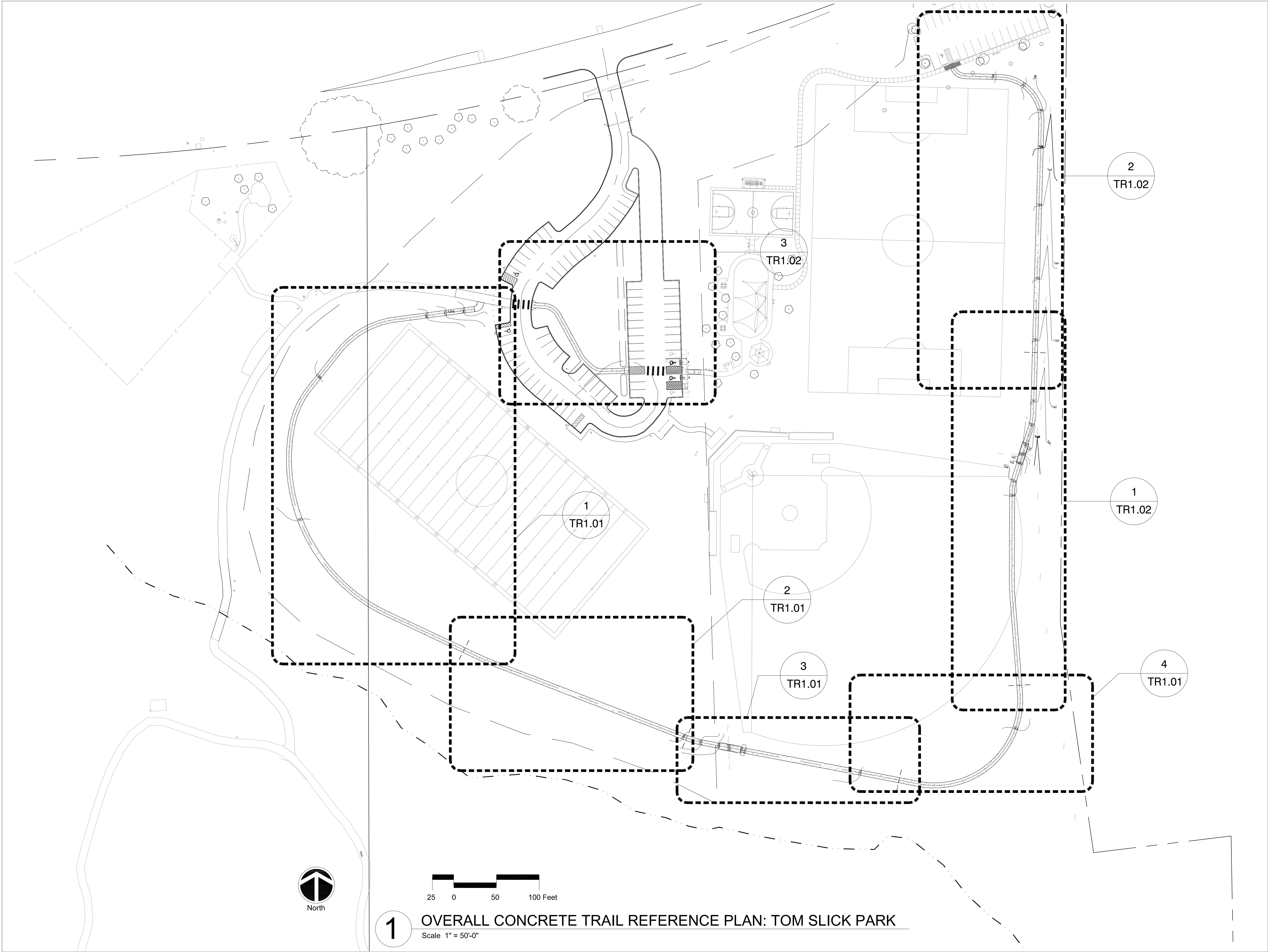
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LANDSCAPE
PLANTING NOTES
& DETAILS

L2.01

Date: Jul 02, 2019, 4:08pm User ID: bvleville
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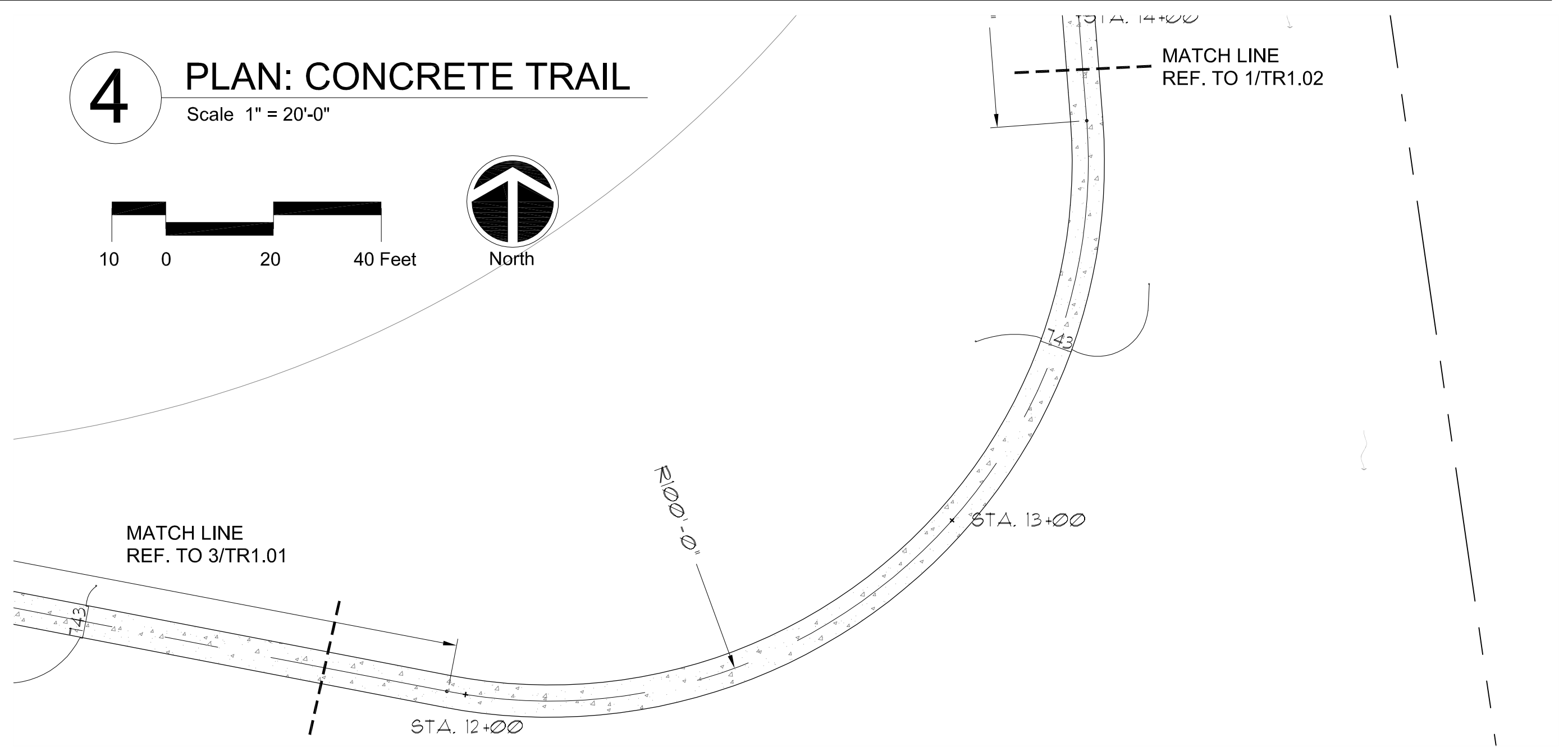
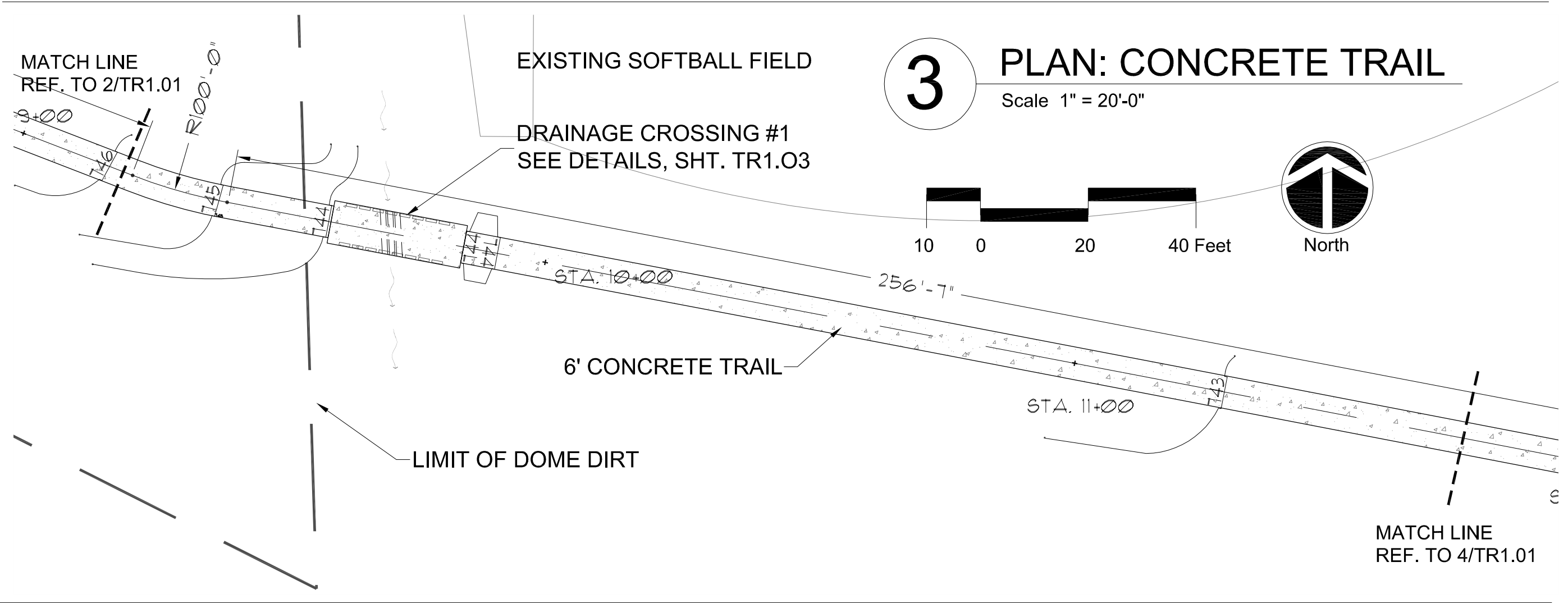
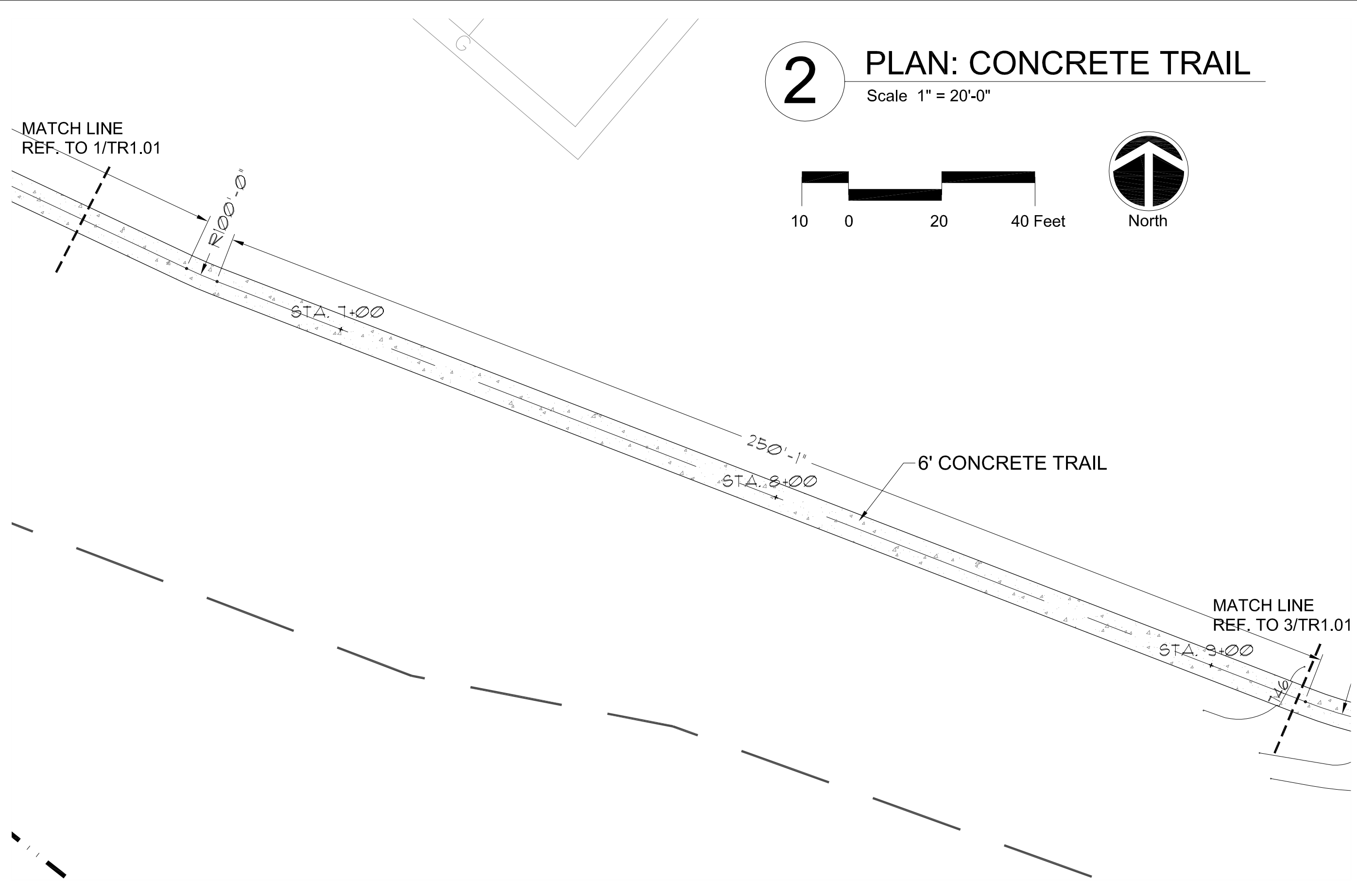
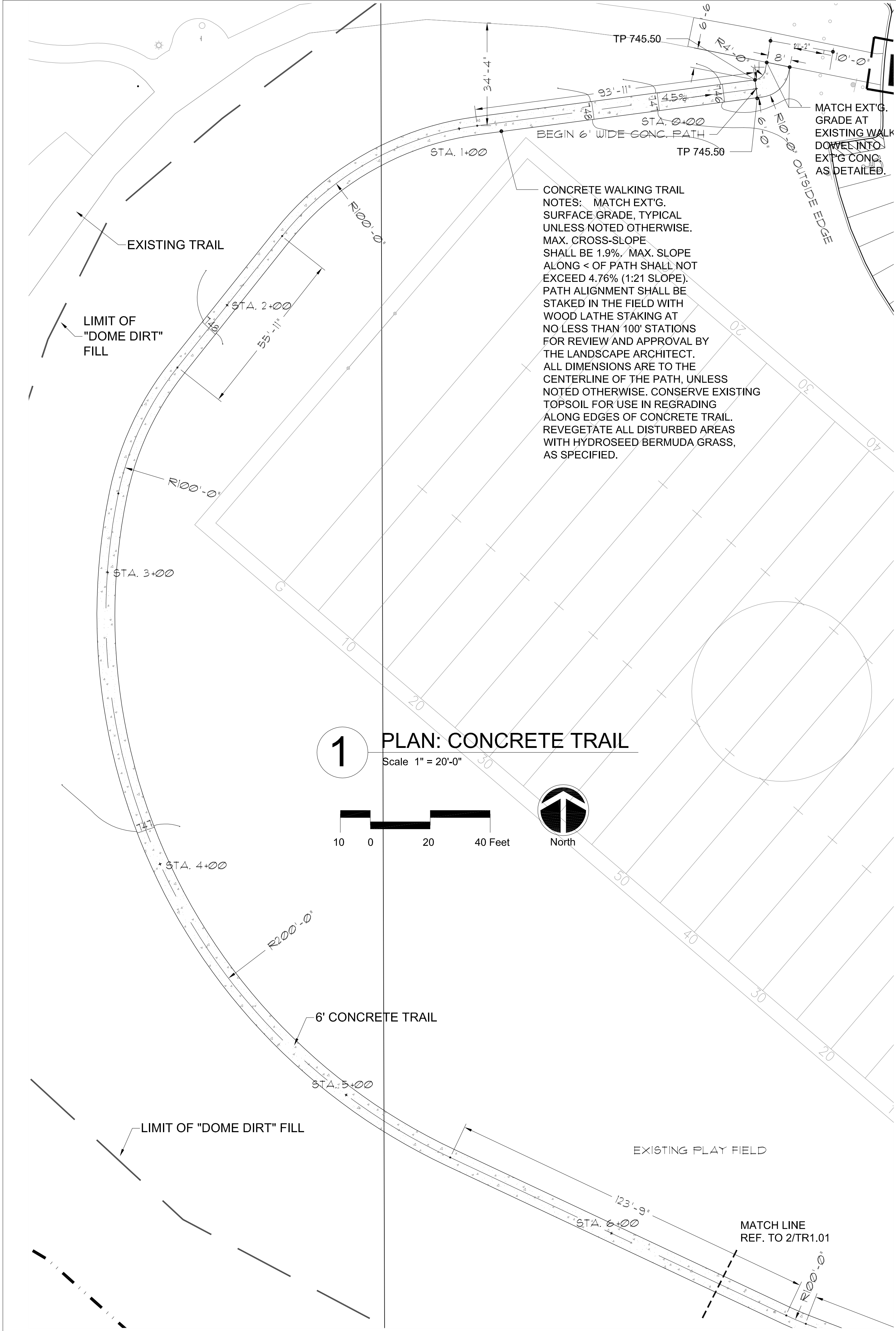
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SHEET TITLE & NO. :

Drawn By :
Overall
Trail Plan

TR1.00

Date: Jul 02, 2019, 4:07pm User ID: bvlerville
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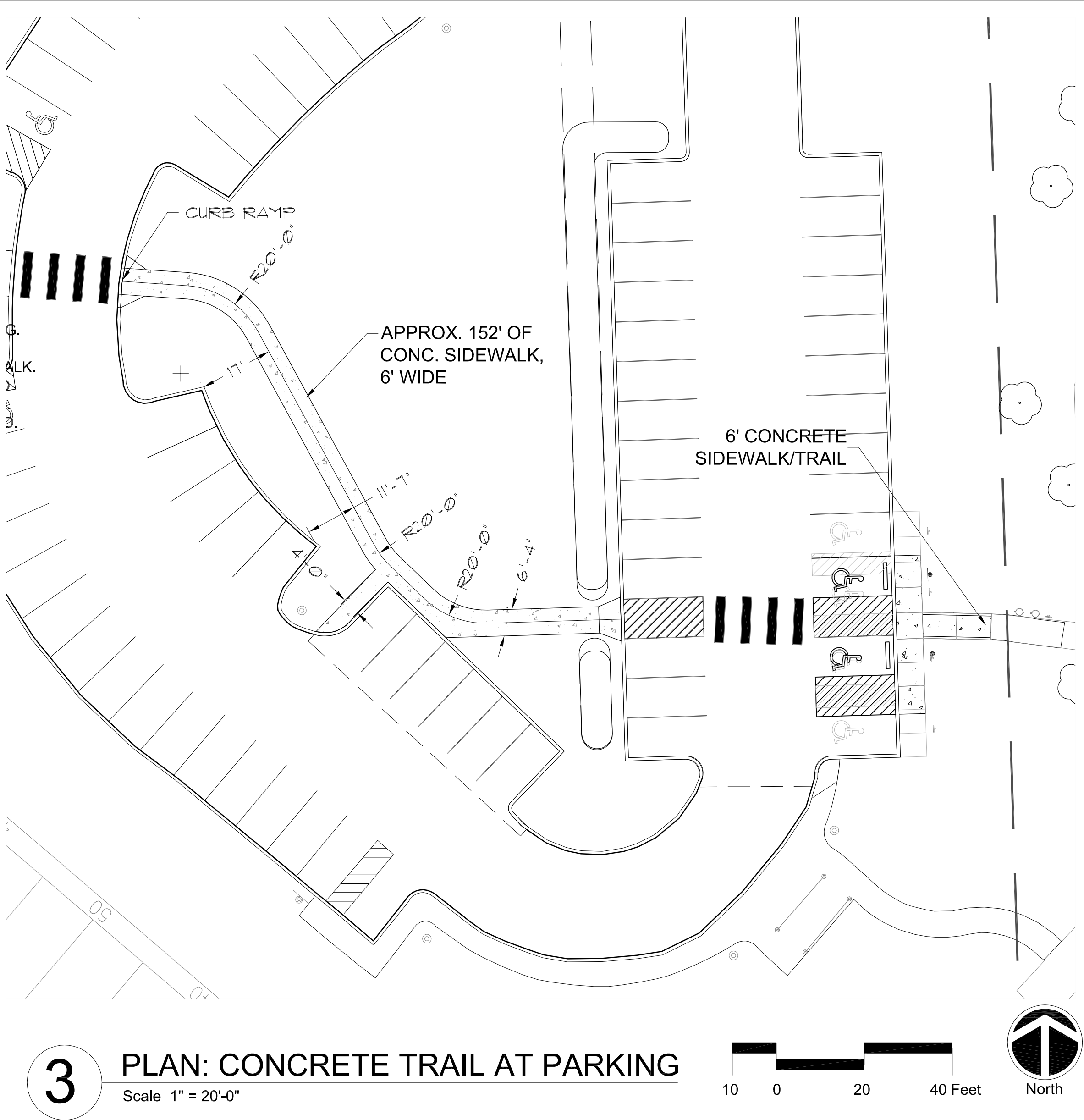
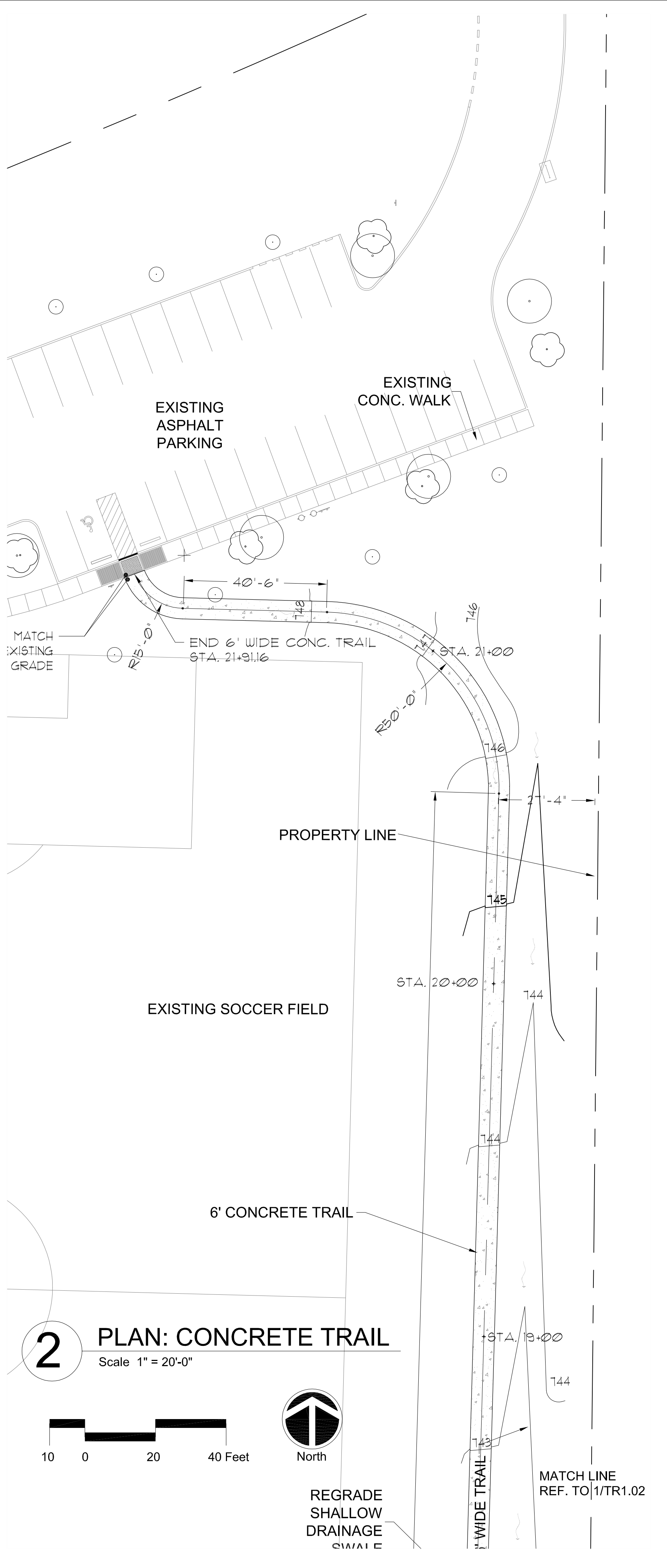
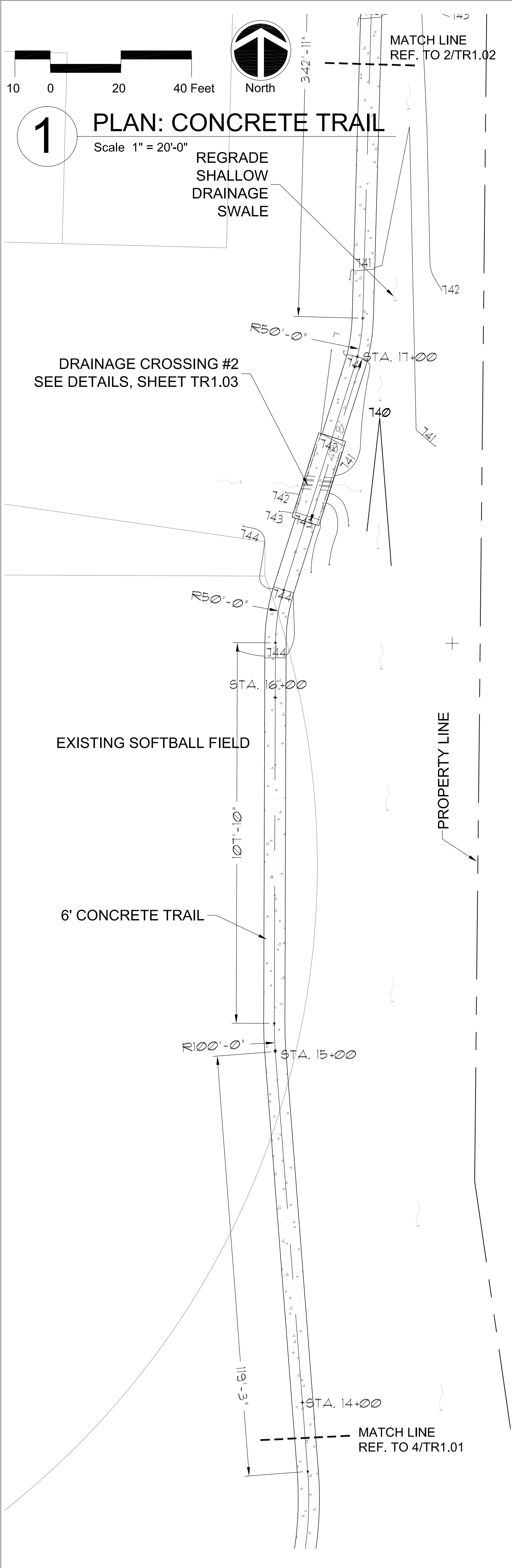
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Drawn By :
Enlarged Trail Plan

TR1.01

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City of San Antonio, TCI
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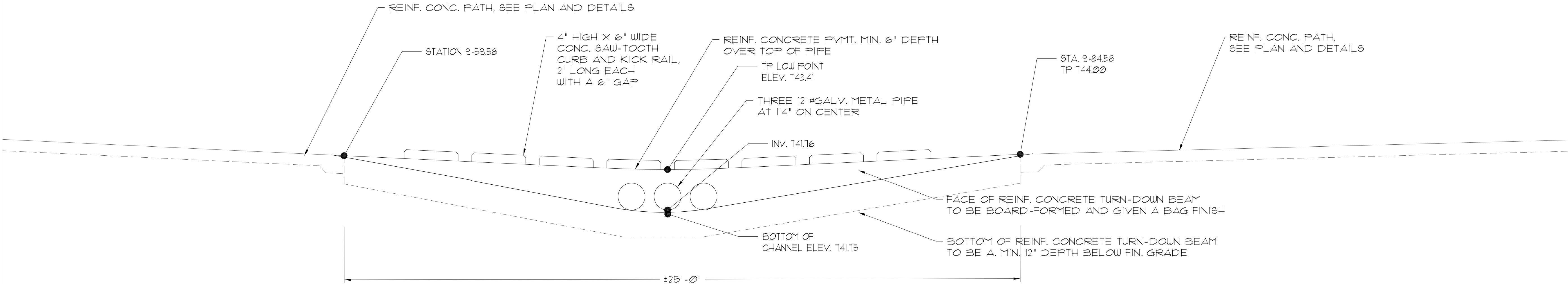
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Enlarged Trail Plan

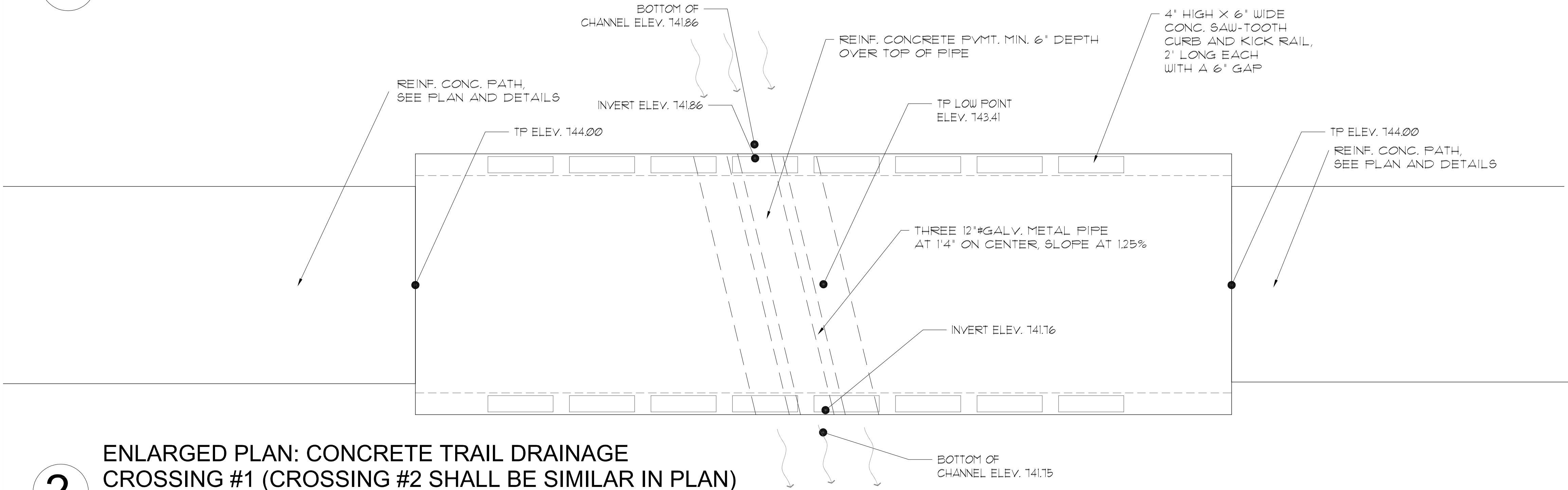
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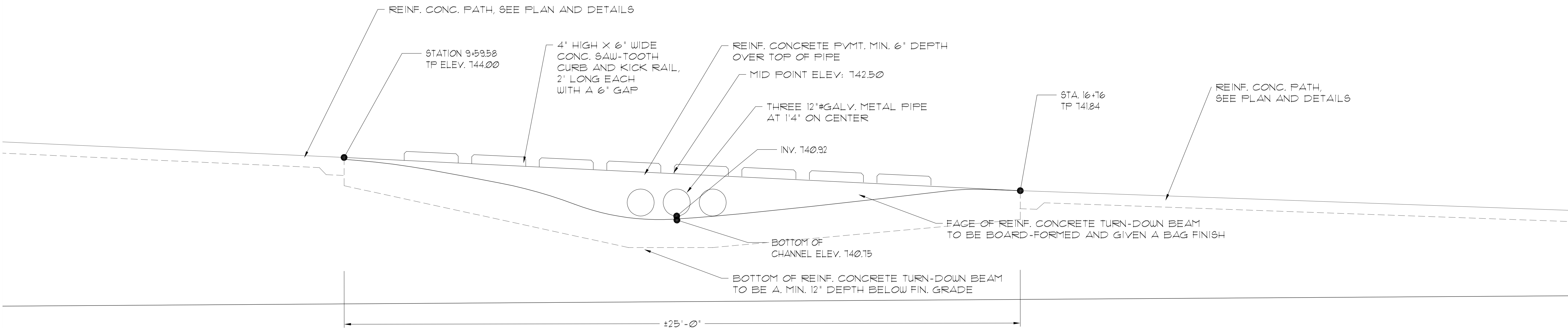
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Scale 1/2" = 1'-0"



2 ENLARGED PLAN: CONCRETE TRAIL DRAINAGE CROSSING #1 (CROSSING #2 SHALL BE SIMILAR IN PLAN)

Scale 1/2" = 1'-0"



3 SECTION/PROFILE: CONCRETE TRAIL DRAINAGE CROSSING #2

Scale 1/2" = 1'-0"

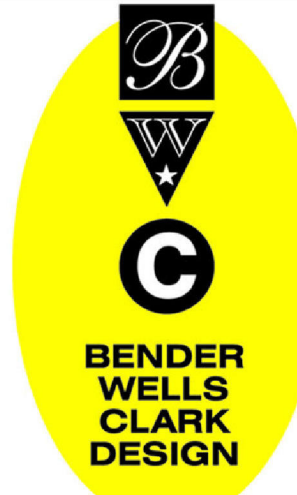
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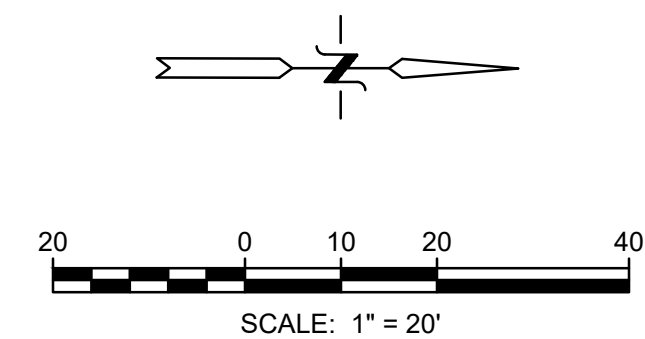
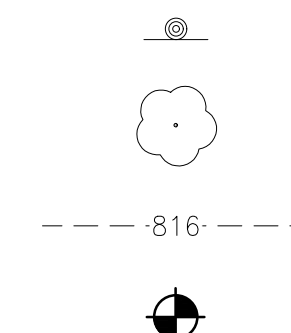
Enlarged
Trail Plan Details

TR1.03



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No.	Date	Issue Description

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City of San Antonio, TCI**

**Contact:
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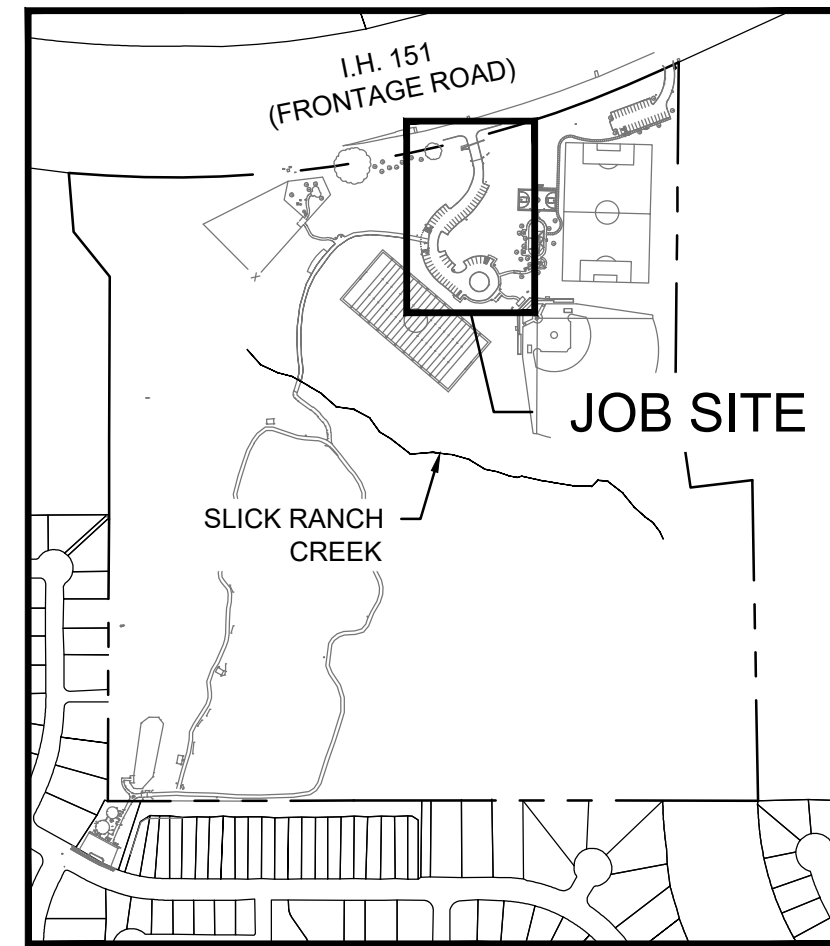
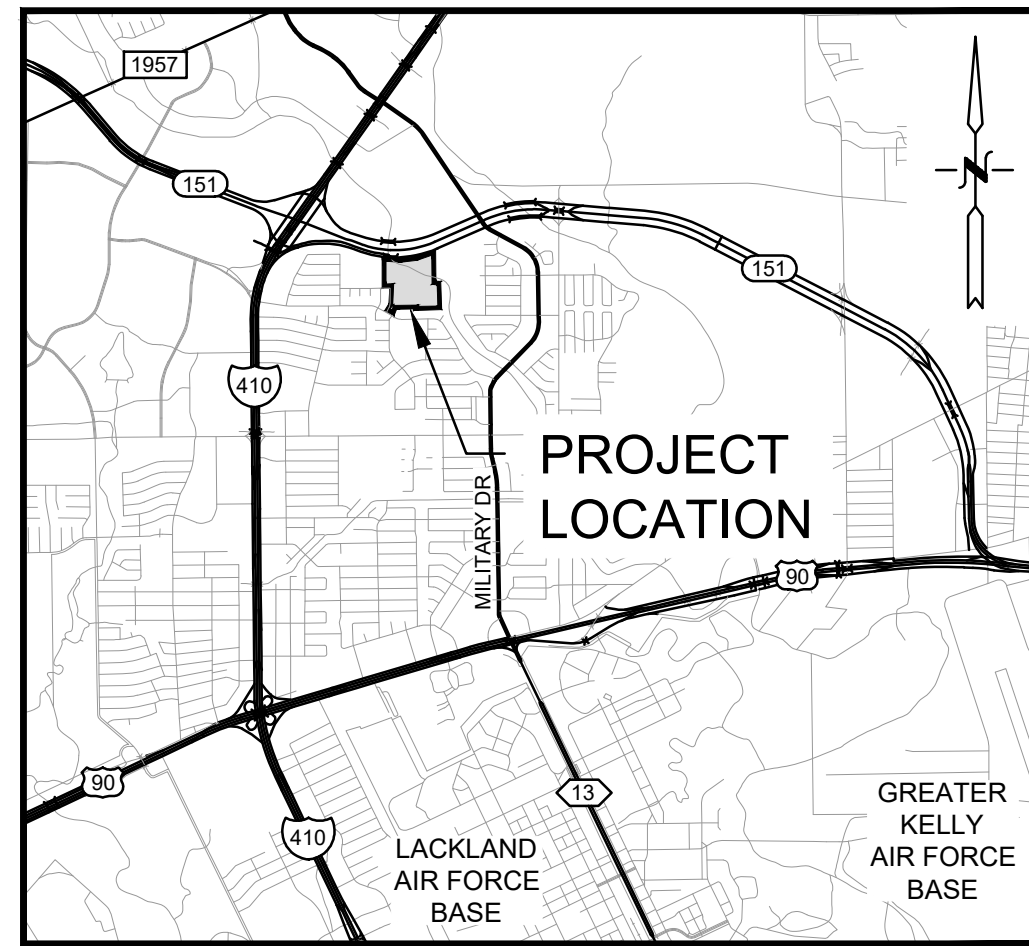
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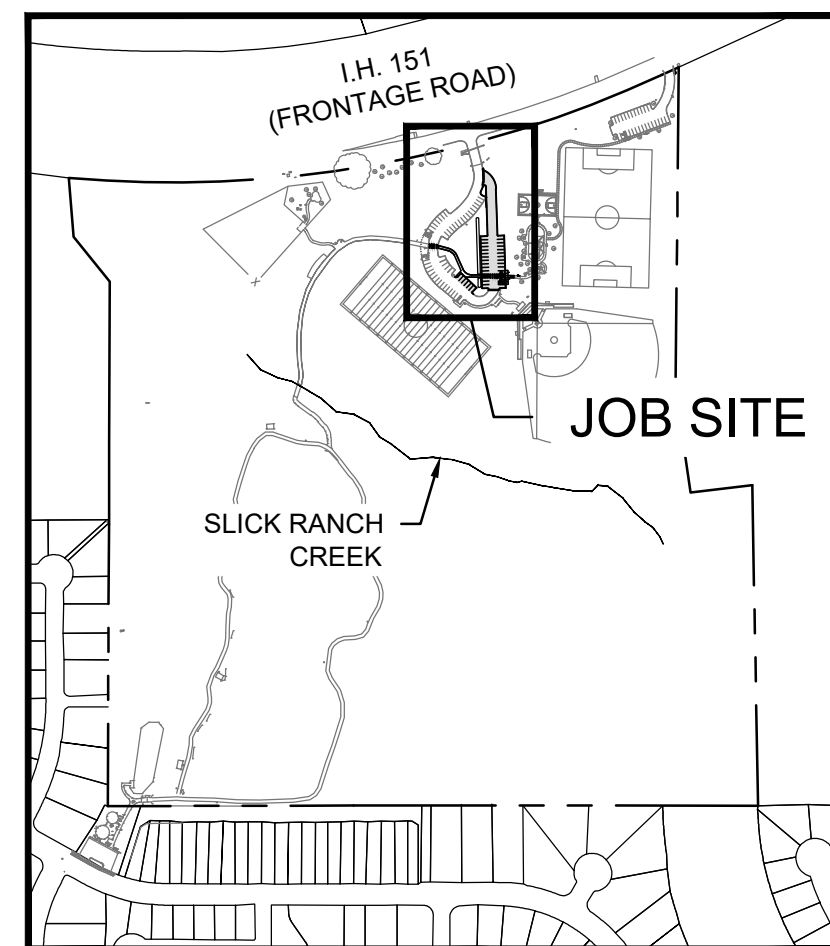
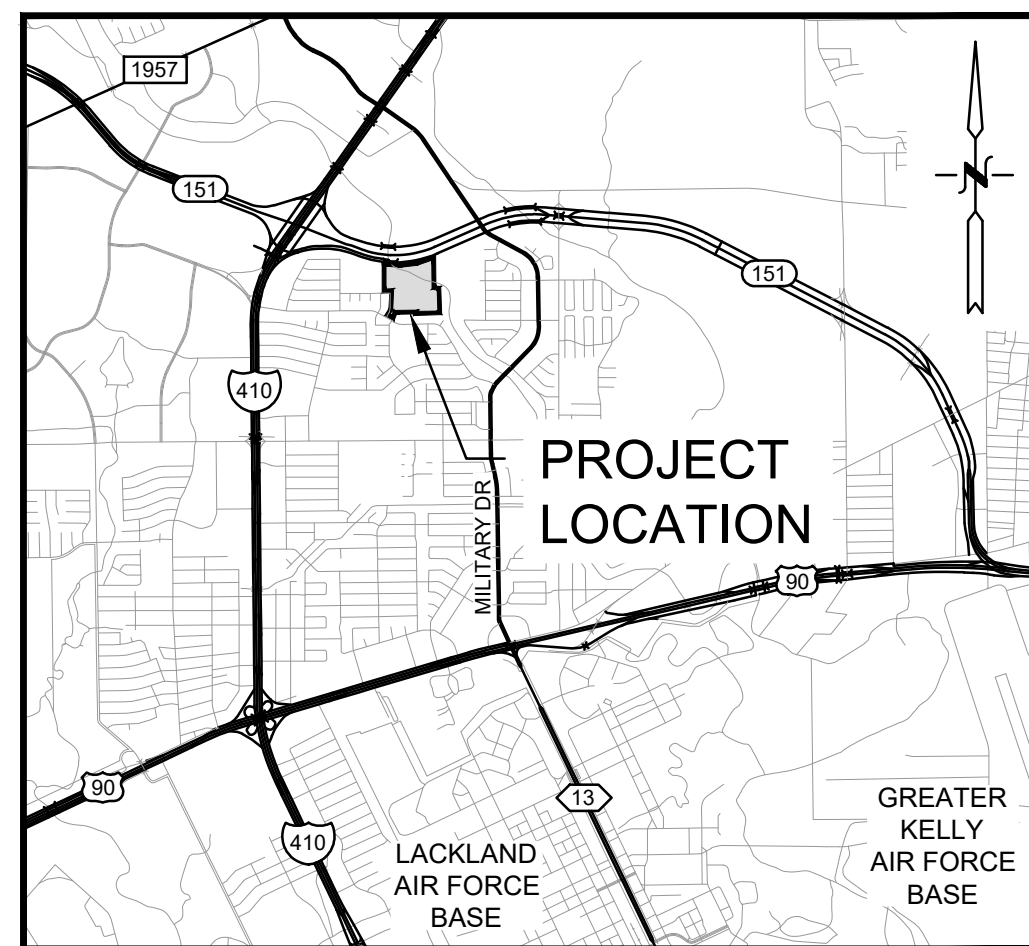
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 San Antonio, Texas 78216
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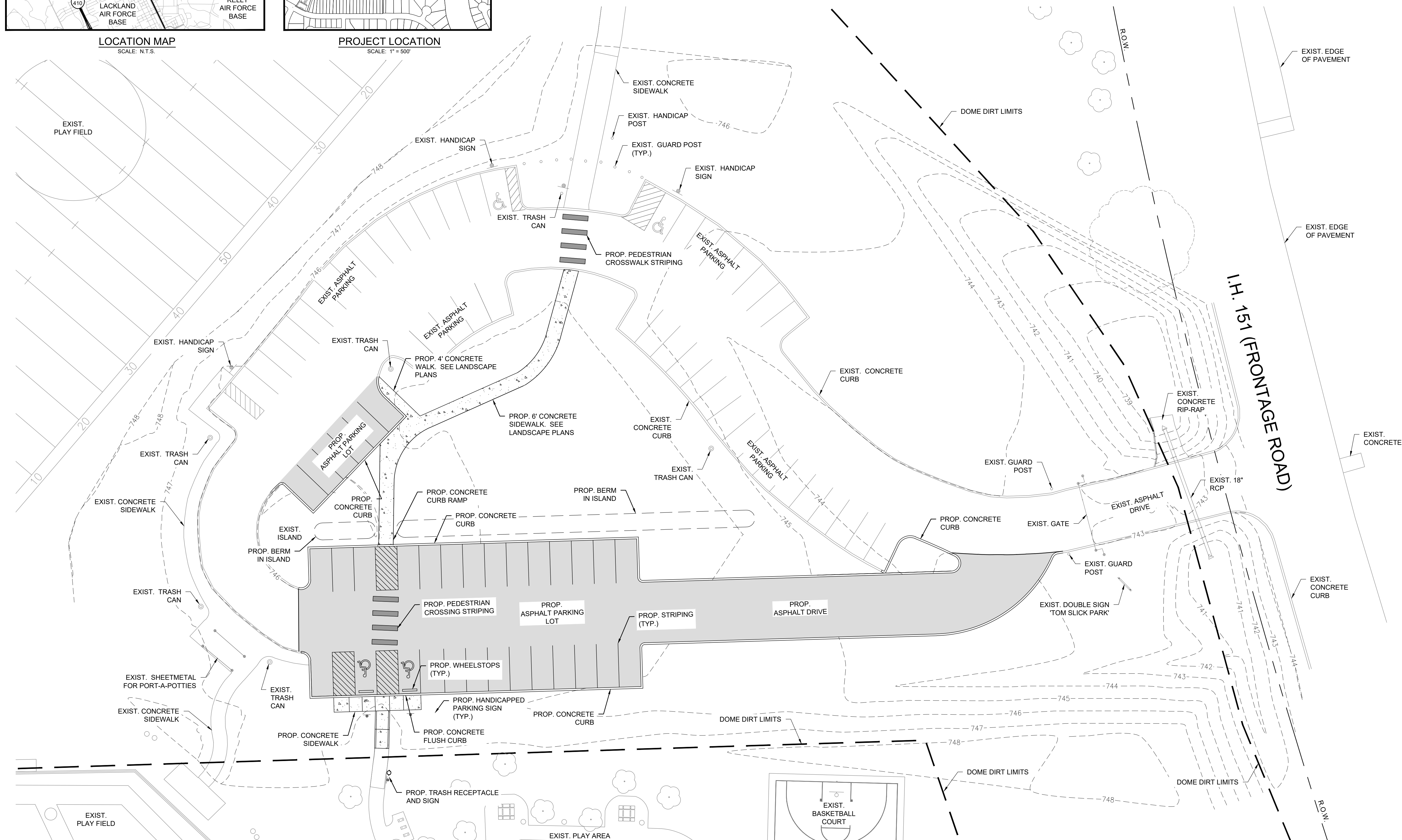
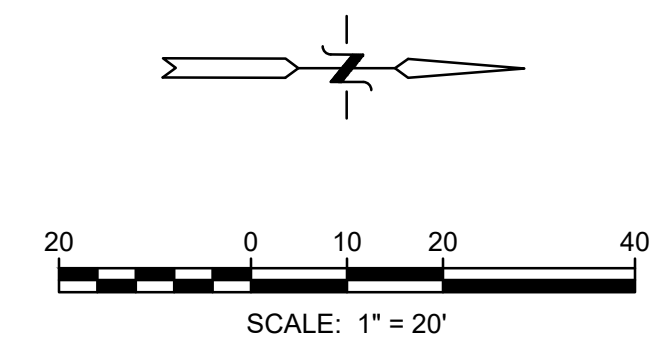


C-2.0



LEGEND

- EXISTING SIGN
- EXISTING TREE
- EXISTING CONTOURS
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE



ISSUE DATE

No.	Date	Issue Description

Tom Slick Park Site Improvements

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

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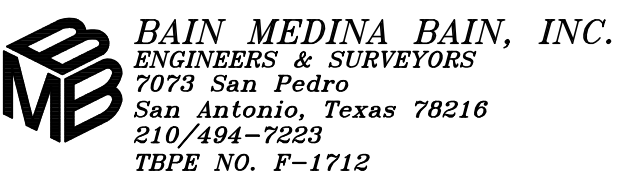


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BAIN MEDINA BAIN, INC.

Engineer:

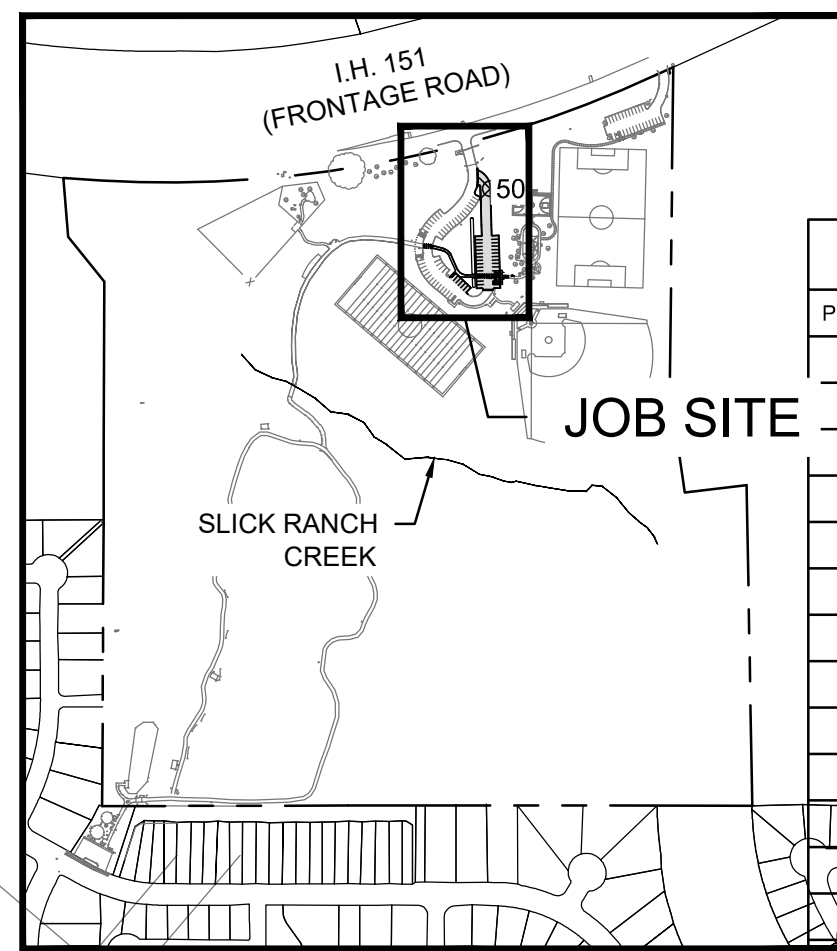
LORENA CARTER	06/28/19
P.E. No. 116832	Date

BWCD Proj. No. :	Drawn By : JML
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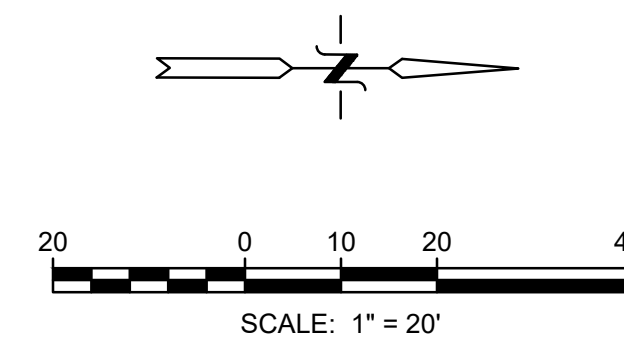
PROPOSED SITE PLAN

C-3.0



LEGEND


- | | |
|---------------------------|---|
| EXISTING SIGN |  |
| EXISTING TREE |  |
| EXISTING CONTOURS |  |
| PROPOSED ASPHALT PAVEMENT |  |
| PROPOSED CONCRETE |  |



POINT TABLE			
POINT NO.	NORTHING	EASTING	
1	13706675.2973	2085111.048	
7	13706632.3812	2085175.693	
8	13706752.2611	2085067.223	
9	13706758.2915	2085067.916	
10	13706745.0641	2085093.532	
11	13706750.8514	2085095.115	
12	13706733.0472	2085109.793	
13	13706736.2595	2085114.860	
14	13706692.8680	2085127.712	
15	13706696.9440	2085132.464	
16	13706676.3458	2085139.155	
17	13706682.1291	2085154.952	
18	13706675.7719	2085180.882	
19	13706681.7750	2085180.700	
20	13706647.3090	2085182.491	
21	13706647.6079	2085195.237	
22	13706642.6638	2085199.223	
23	13706643.8079	2085224.847	
24	13706647.8074	2085228.724	
25	13706648.1558	2085243.493	
26	13706657.1745	2085243.978	
27	13706657.3566	2085249.968	
28	13706674.4205	2085249.451	
29	13706674.6229	2085264.794	
30	13706679.9789	2085264.942	
31	13706680.3441	2085249.271	
32	13706693.3401	2085248.877	
33	13706693.1579	2085242.877	
34	13706784.0932	2085239.365	
35	13706783.6090	2085239.365	
36	13706785.5476	2085221.310	
37	13706953.9884	2085185.885	
38	13706955.0292	2085183.852	
39	13706958.1228	2085183.502	
40	13706912.8350	2085184.148	
41	13706913.3127	2085184.866	
42	13706912.1745	2085192.456	
43	13706897.3954	2085177.572	
44	13706889.7355	2085180.592	
45	13706884.4745	2085191.793	
46	13706883.4766	2085191.258	
47	13706784.7928	2085196.322	
48	13706782.7333	2085194.393	
49	13706782.2477	2085178.383	
50	13706906.1245	2085217.652	
51	13706677.5595	2085119.607	
52	13706686.1519	2085187.851	
53	13706648.7671	2085166.817	
54	13706637.2210	2085155.741	
55	13706634.5250	2085156.632	



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BAIN MEDINA BAIN, INC.
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 210/494-7223
 TBPE NO. F-1712

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 BAIN MEDINA BAIN, INC.

Engineer: LORENA CARTER 06/28/19
P.E. No. 116832 Date

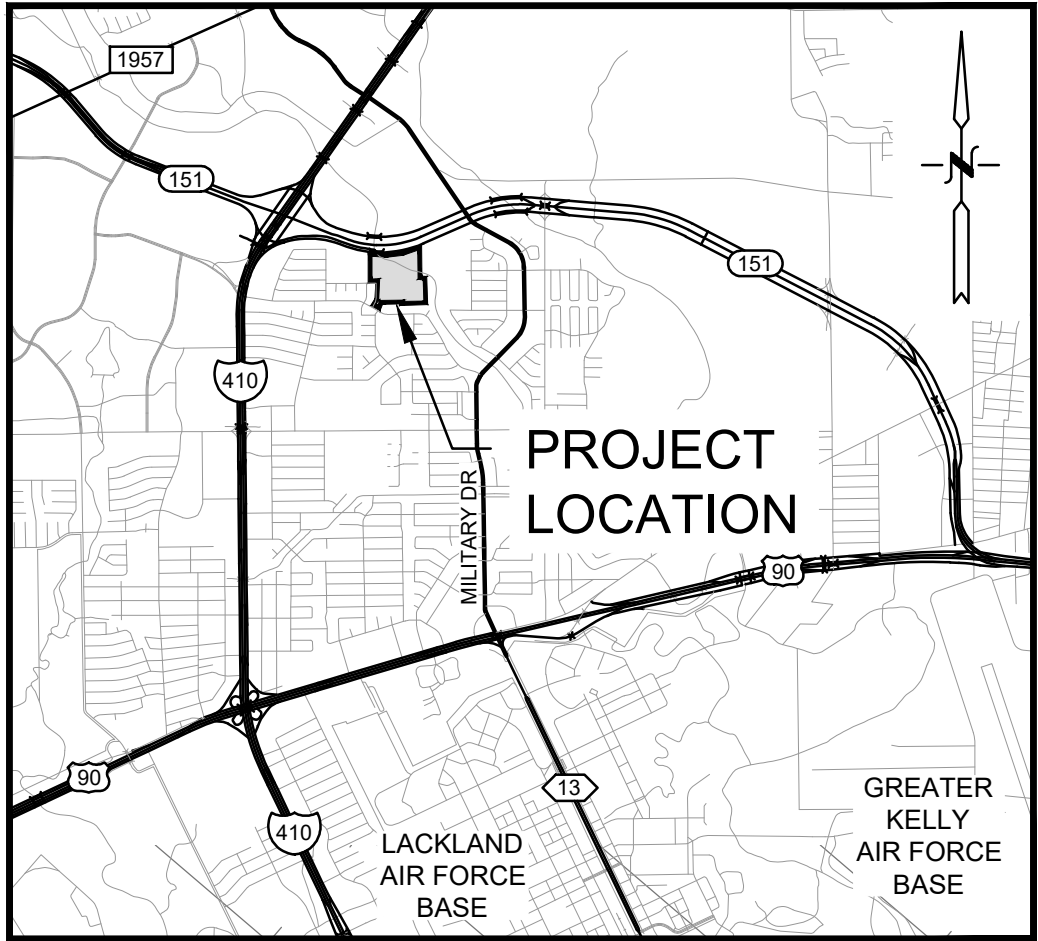
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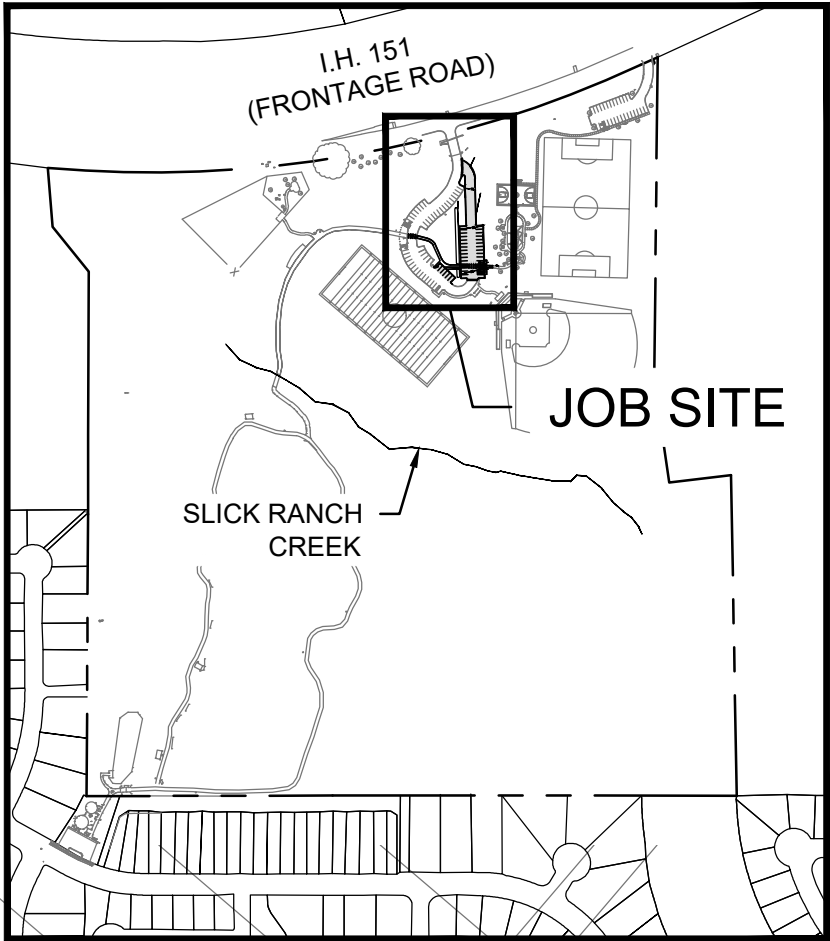
DIMENSION CONTROL PLAN

C-4.0

Date: Jun 28, 2019, 2:41pm User ID: MLinton
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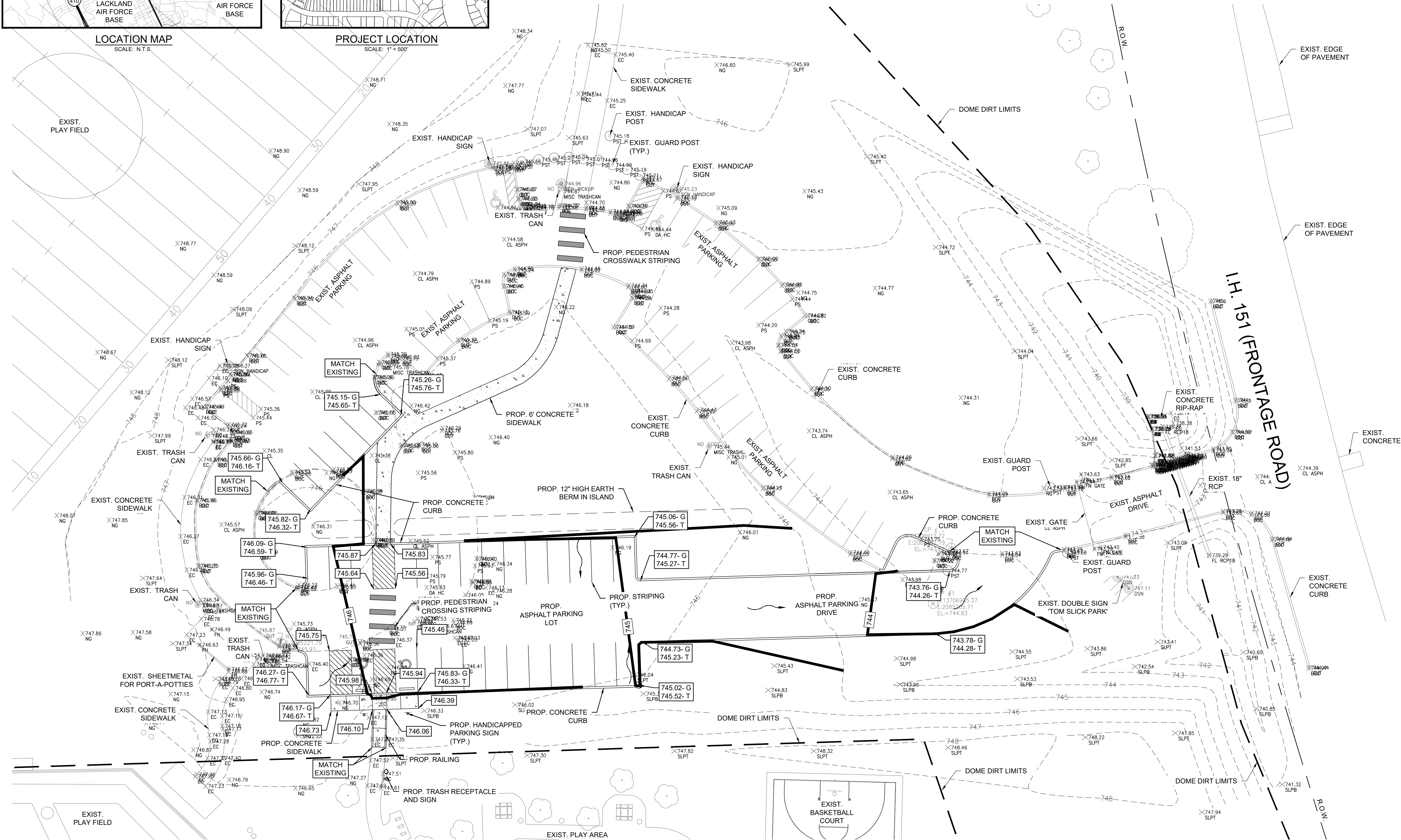
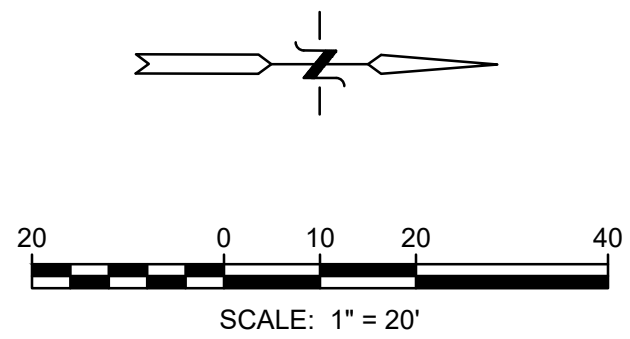
LOCATION MAP
SCALE: N.T.S.



PROJECT LOCATION
SCALE: 1" = 500'

LEGEND

- EXISTING SIGN
- EXISTING TREE
- EXISTING CONTOURS
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE
- PROPOSED DRAINAGE FLOW ARROW



ISSUE DATE

No.	Date	Issue Description

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



BENDER WELLS CLARK DESIGN

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Engineer:
LORENA CARTER
P.E. No. 116832

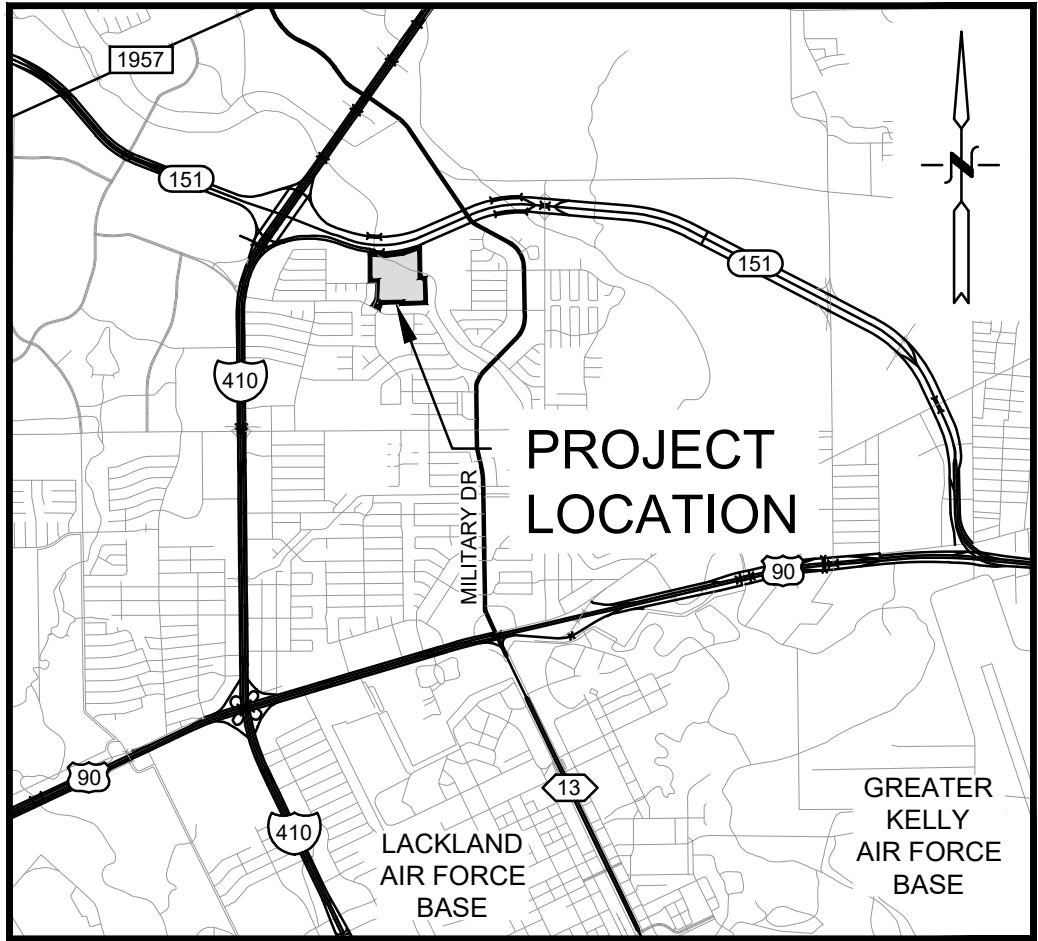
06/28/19
Date

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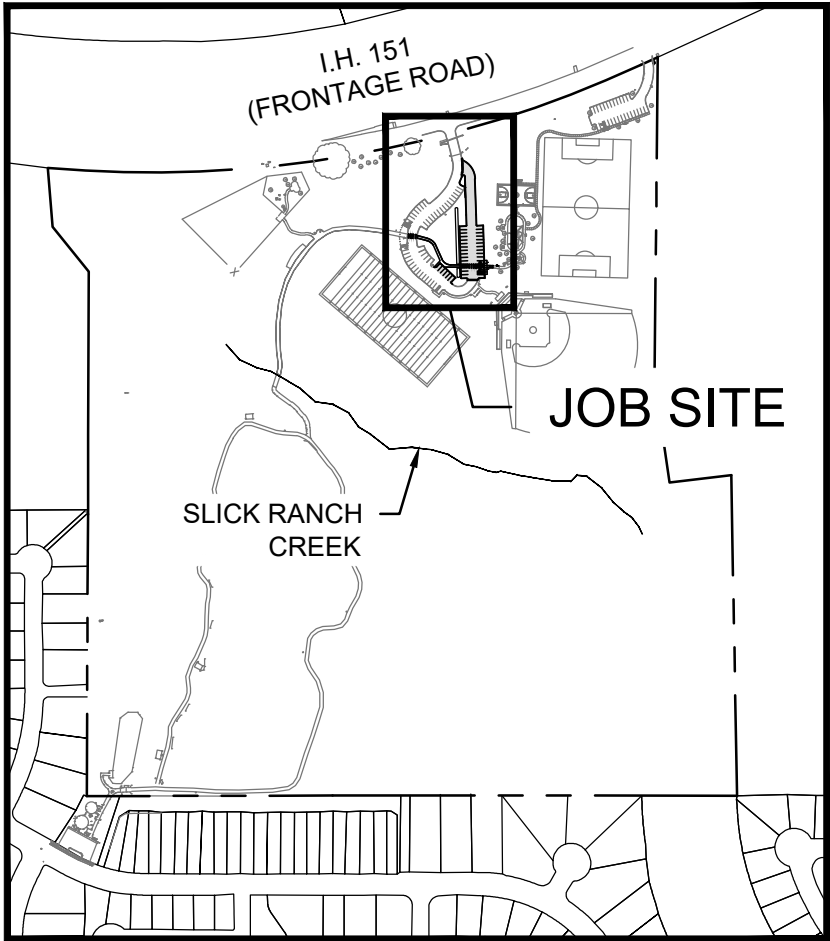
GRADING PLAN

C-5.0

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LOCATION MAP
SCALE: N.T.S.



PROJECT LOCATION
SCALE: 1" = 500'

EROSION AND SEDIMENT CONTROLS

SITE DESCRIPTION

PROJECT LIMITS: Tom Slick Park is located off of Raymond E. Stotzer Jr. Freeway and W. Military Drive.

PROJECT DESCRIPTION: Construction of additional parking lot to tie into existing parking lot.

MAJOR SOIL DISTURBING ACTIVITIES: Soil disturbing activities will include preparing site clearing, and grubbing, grading and excavation.

TOTAL PROJECT AREA: 64.42 Acres

TOTAL AREA TO BE DISTURBED: 0.54 Acres (0.82%)

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.75

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: Lewisville Silty Clay (LvB) (1 to 3 percent slopes), Patrick Soils (PaC) (3 to 5 percent slopes) rarely flooded

NAME OF RECEIVING WATERS: Leon Creek

SOIL STABILIZATION PRACTICES:

- ☒ TEMPORARY SEEDING
- ☒ PERMANENT PLANTING, SODDING, OR SEEDING
- ☒ MULCHING
- ☒ SOIL RETENTION BLANKET
- ☒ BUFFER ZONES
- ☒ PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume and do within 21 days.

STRUCTURAL PRACTICES:

- ☒ SILT FENCES
- ☒ HAY BALES
- ☒ ROCK BERMS
- ☒ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ☒ DIVERSION DIKE AND SWALE COMBINATIONS
- ☒ PIPE SLOPE DRAINS
- ☒ PAVED FLUMES
- ☒ ROCK BEDDING AT CONSTRUCTION EXIT
- ☒ TIMBER MATTING AT CONSTRUCTION EXIT
- ☒ CHANNEL LINERS
- ☒ SEDIMENT TRAPS
- ☒ SEDIMENT BASINS
- ☒ STORM INLET SEDIMENT TRAP
- ☒ STONE OUTLET STRUCTURES
- ☒ CURBS AND GUTTERS
- ☒ STORM SEWERS
- ☒ VELOCITY CONTROL DEVICES

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

- The order of activities will be as follows:
1. Install controls.
2. Clear, grub and excavate.
3. Haul in fill.
4. When all construction activity is complete and the site is stabilized and approved by the project engineer, remove all temporary structural controls and reseed any area disturbed by their removal.
5. The contractor is responsible for implementing and maintaining the storm water pollution prevention plan.

STORM WATER MANAGEMENT: Storm water drainage will be conveyed by overland flow.

NON-STORM WATER DISCHARGE: None.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: An inspection will be performed by a CITY inspector every week as well as after every half inch or more of rain (as recorded on a non-freezing rain gauge to be located at the Project Site). An inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulations and the trash will be hauled to a local dump. No construction waste material will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning, masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization or concrete curing compounds and additives. In the event of a hazardous material spill, the spill coordinator shall be contacted immediately.

SANITARY WASTE: All sanitary waste will be collected from portable units as necessary, or as required by local regulations by a Licensed Sanitary Waste Management Contractor.

OFFSITE VEHICLE TRACKING:

- ☐ HAUL ROADS DAMPENED FOR DUST CONTROL
- ☐ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- ☒ EXCESS DIRT ON ROAD REMOVED DAILY
- ☐ STABILIZED CONSTRUCTION ENTRANCE

PERMITS:

REMARKS: Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.

LEGEND

EXISTING SIGN



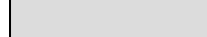
EXISTING TREE



EXISTING CONTOURS



PROPOSED ASPHALT PAVEMENT



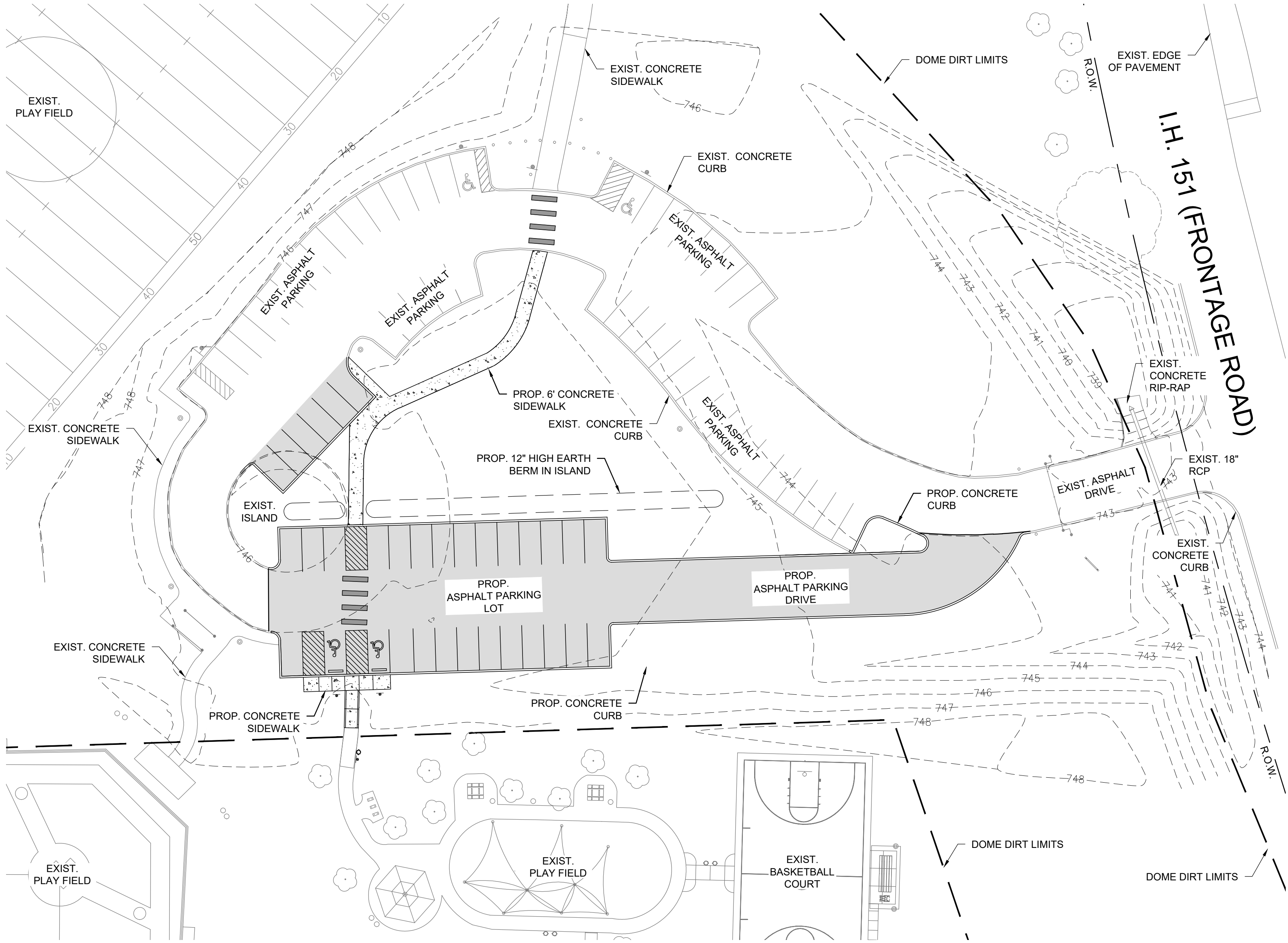
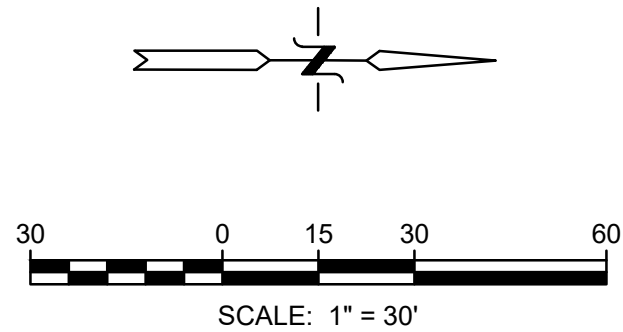
PROPOSED CONCRETE



SILT CONTROL FENCE



GRAVEL FILTER BAG



Notes:

1. All temporary erosion and sedimentation controls shall be removed by the contractor and areas disturbed by their removal shall be stabilized before final acceptance of the project.
2. Contractor is required to clean up daily and maintain sidewalks around work areas free of mud, dirt, and debris.
3. Contractor shall prepare a storm water pollution prevention plan and shall submit a notice of intent for storm water discharges associated with construction activity under the TPDES general permit to the EPA.

OWNERS CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE

DATE

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification plan.

SIGNATURE (CONTRACTOR)

DATE

ISSUE DATE

No.	Date	Issue Description

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
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SAN ANTONIO, TEXAS 78215



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TBPE NO. F-1712

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Engineer:
LORENA CARTER
P.E. No. 116832

06/28/19
Date

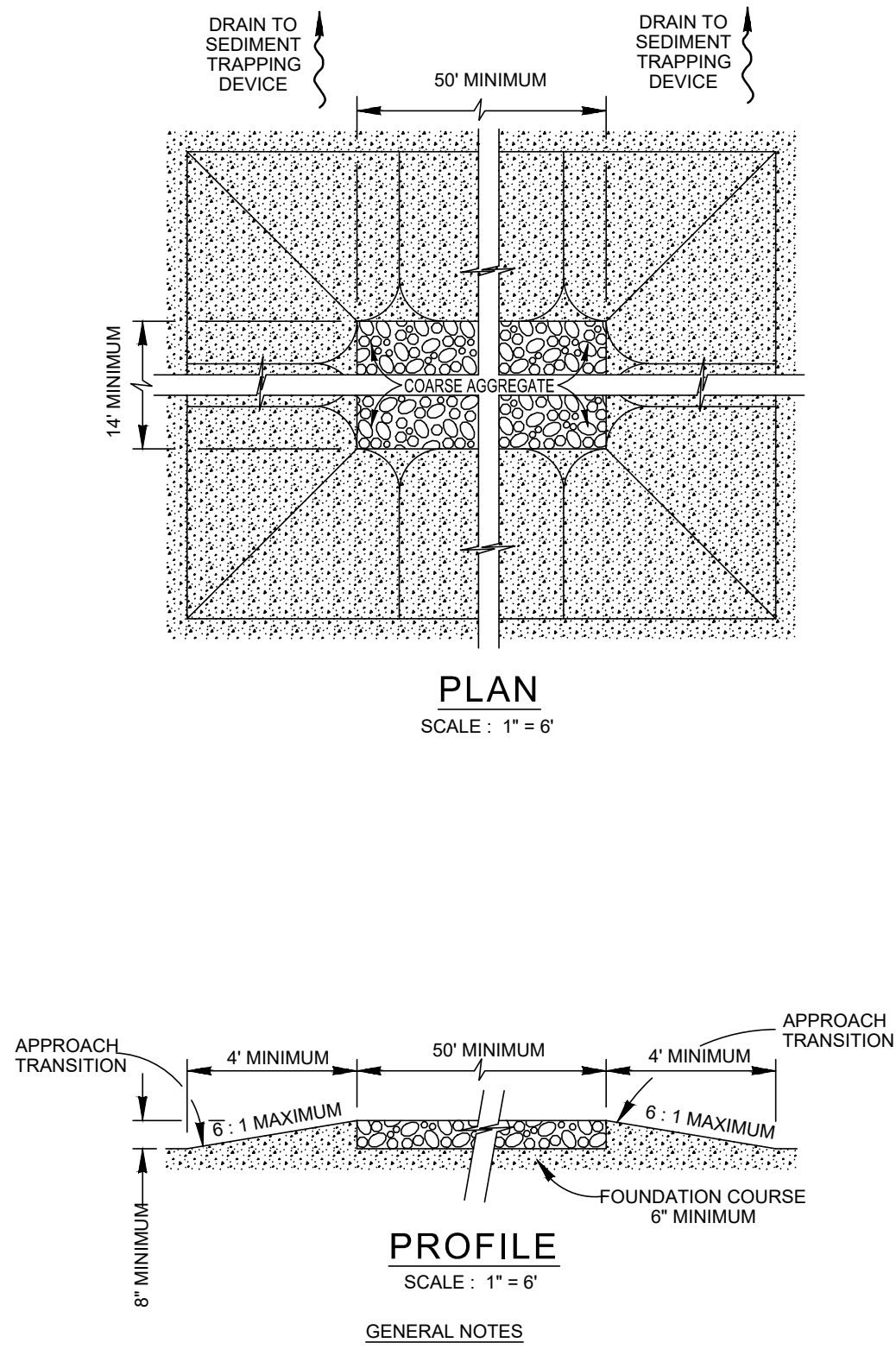
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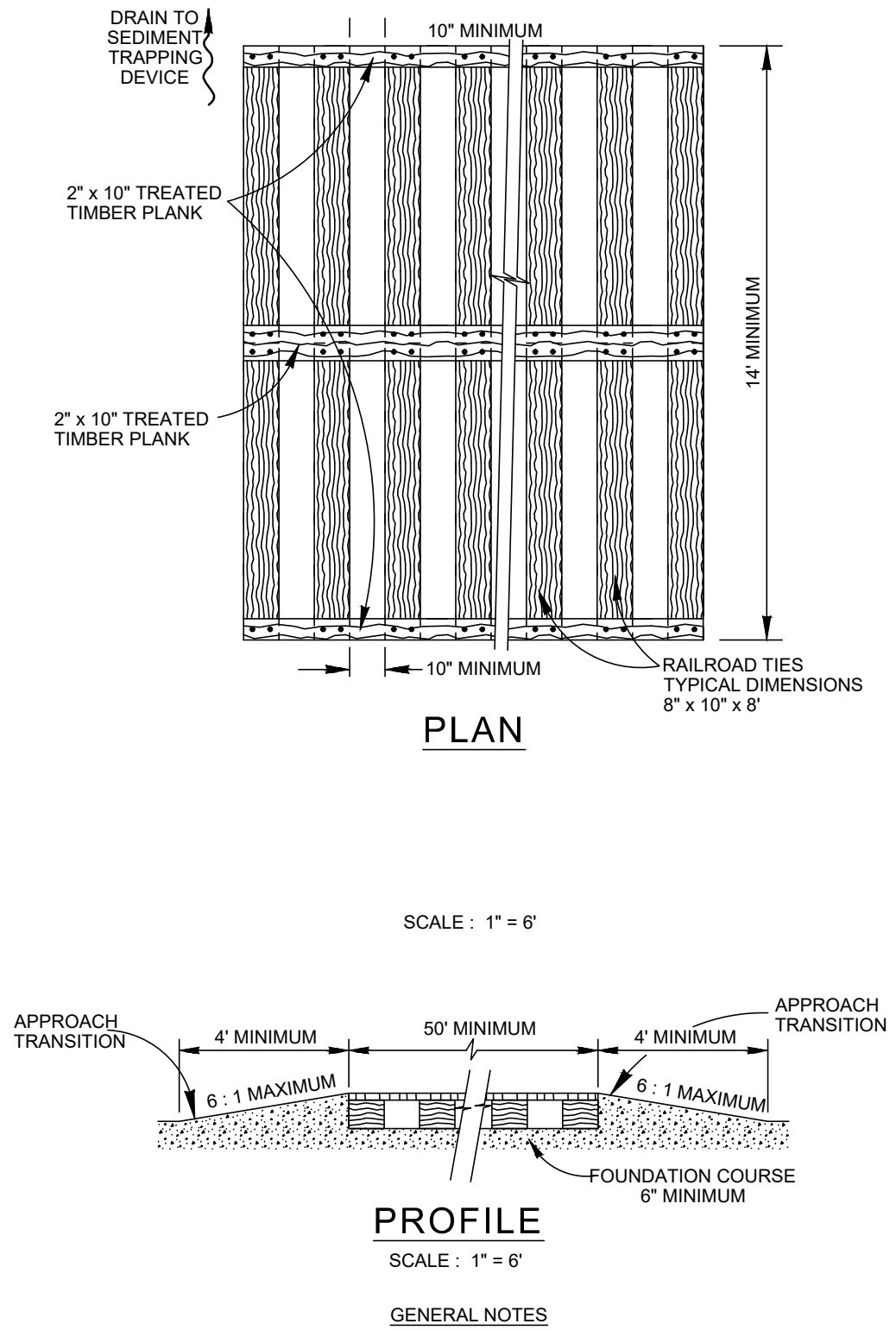
STORM WATER POLLUTION PREVENTION PLAN

C-6.0

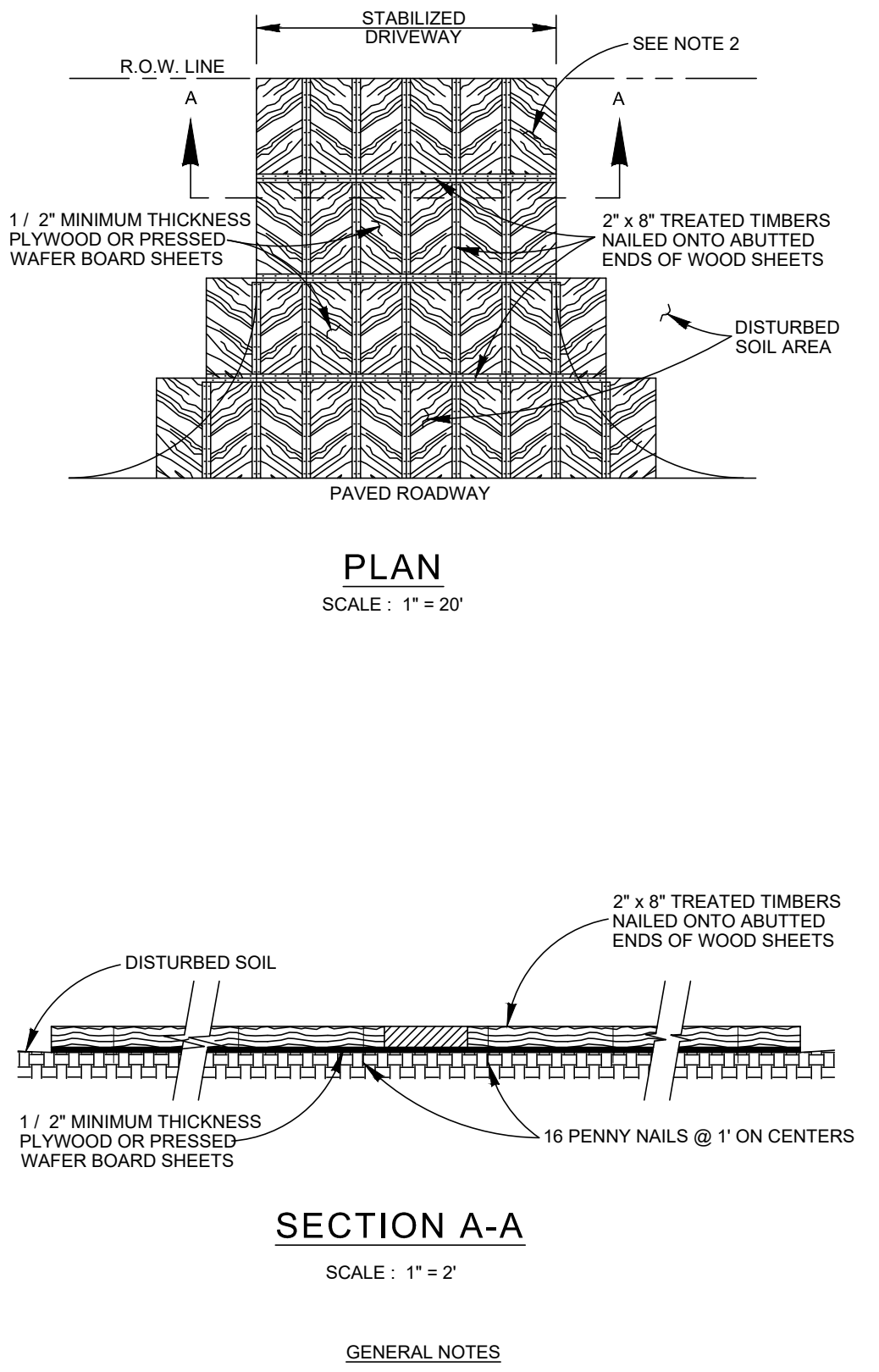
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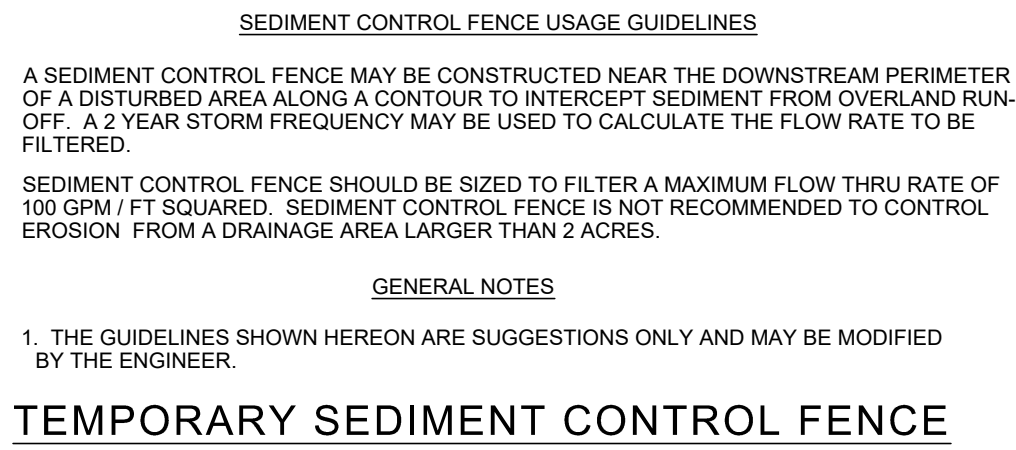
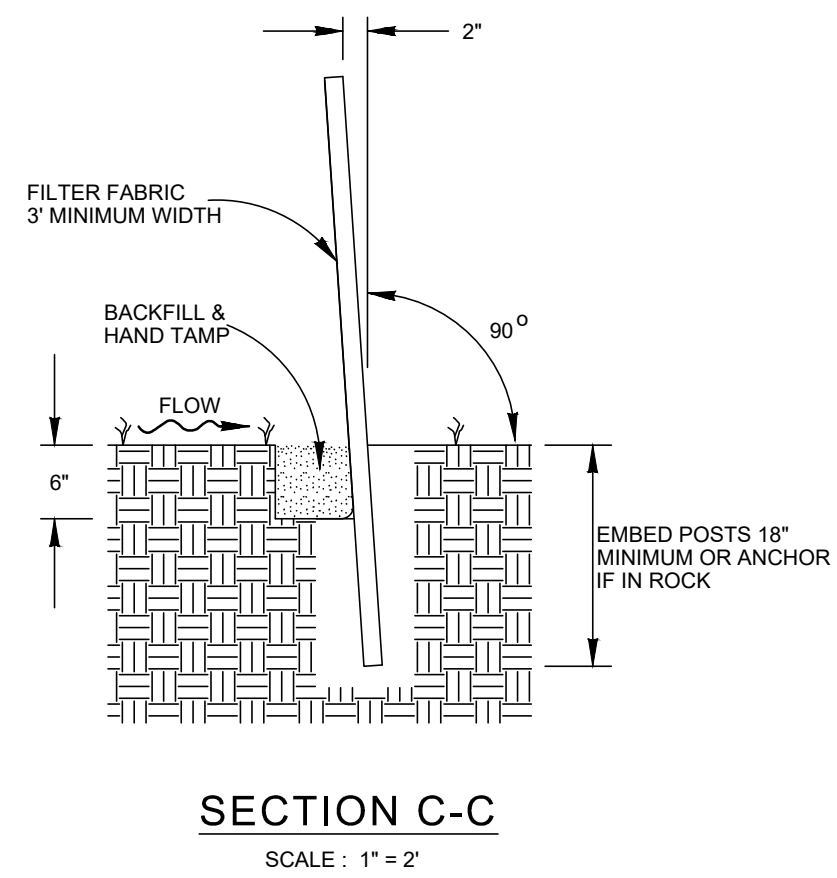
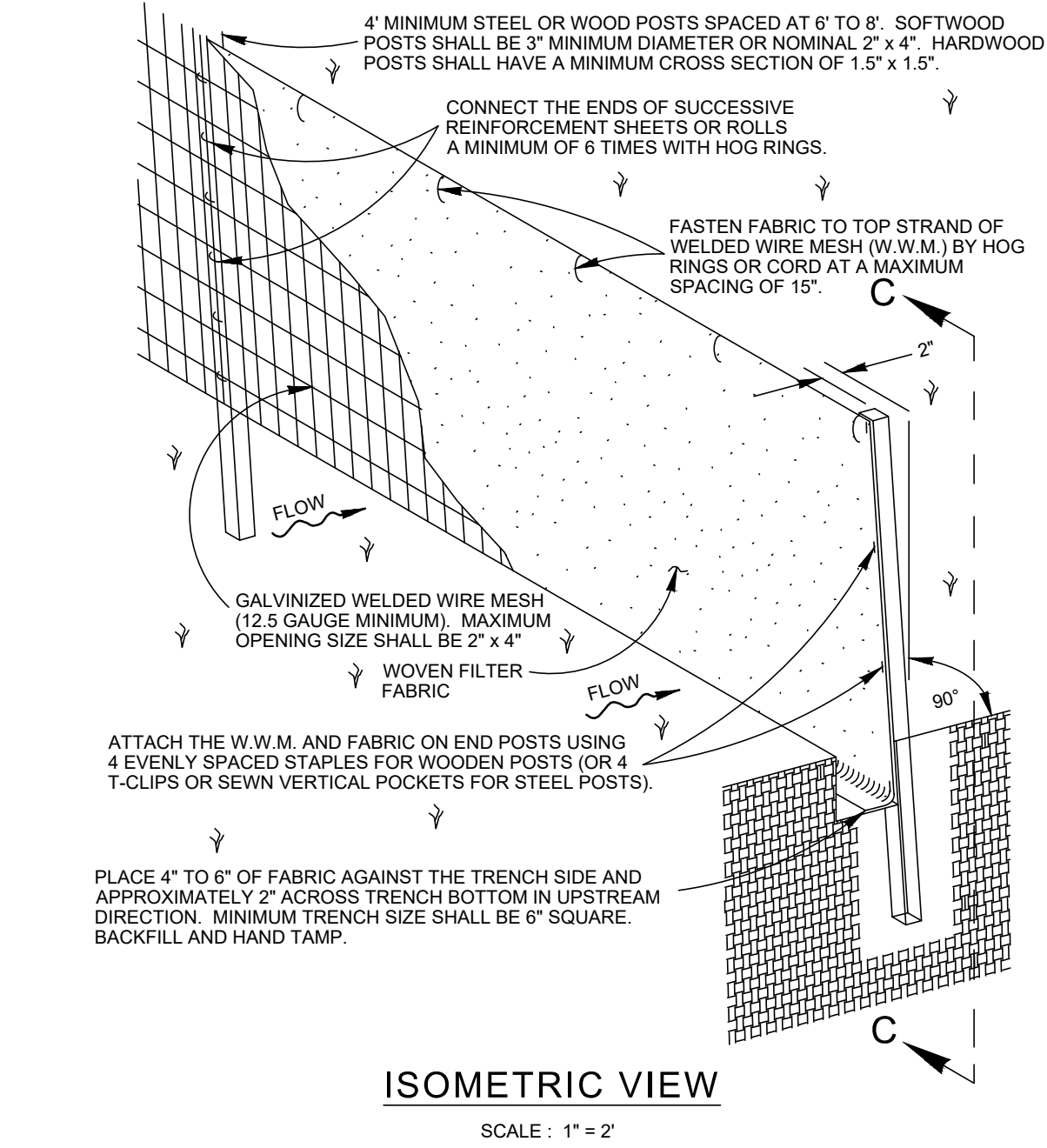
CONSTRUCTION EXIT - TYPE 1



CONSTRUCTION EXIT - TYPE 2

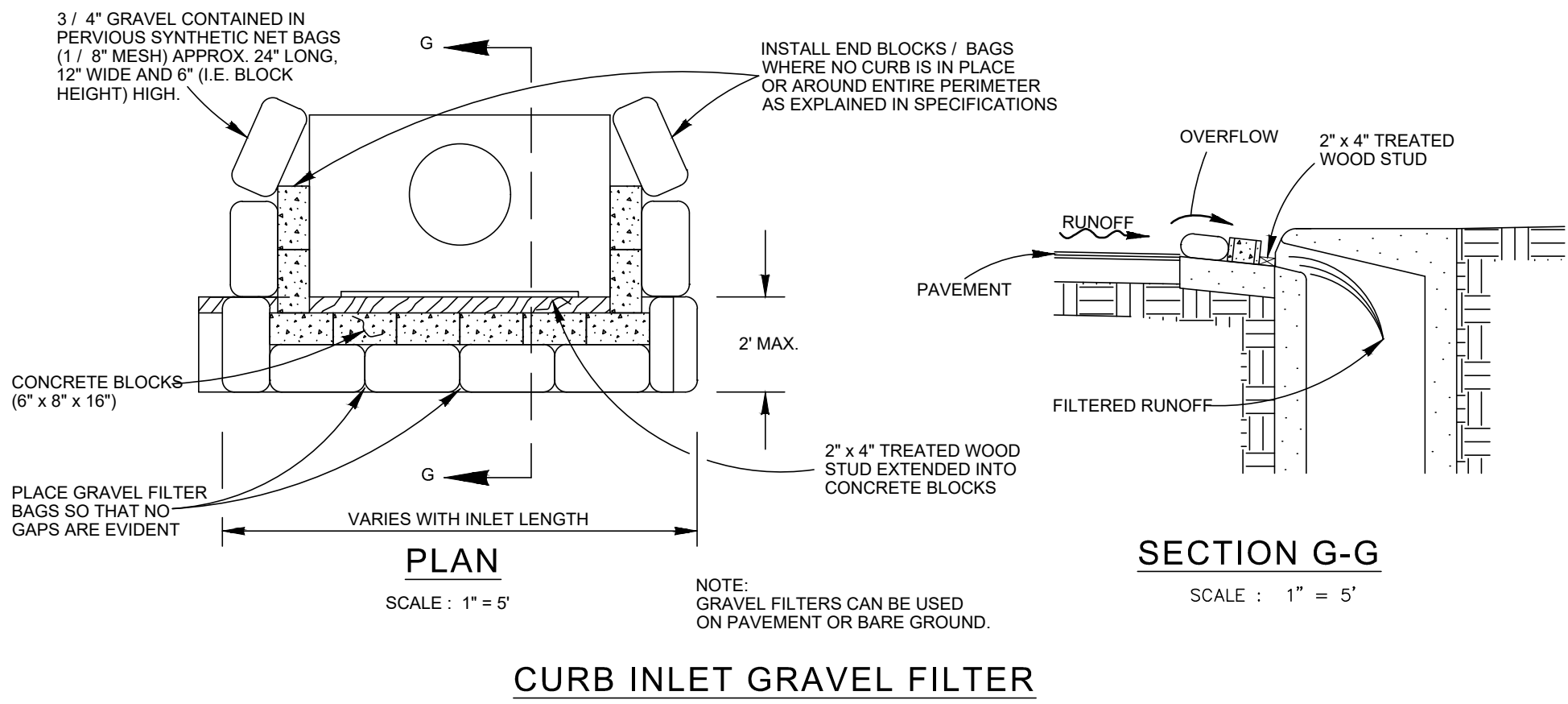
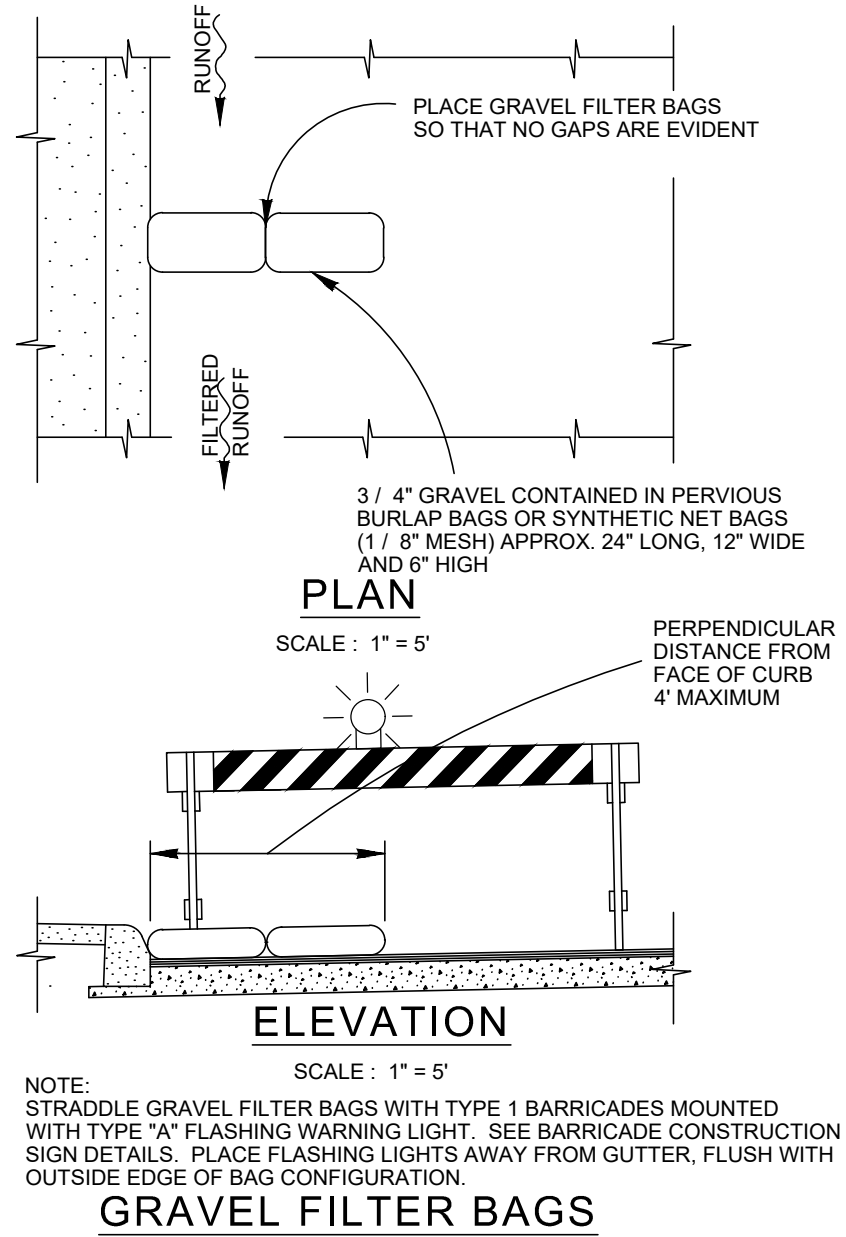


CONSTRUCTION EXIT - TYPE 3



TEMPORARY SEDIMENT CONTROL FENCE

JANUARY 2005			
CITY OF SAN ANTONIO			
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1			
% SUBMITTAL	PROJECT NO.:	DATE:	
DRWN. BY:	DSGN. BY:	CHKD. BY:	SHEET NO.: OF



ISSUE DATE

No.	Date	Issue Description

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
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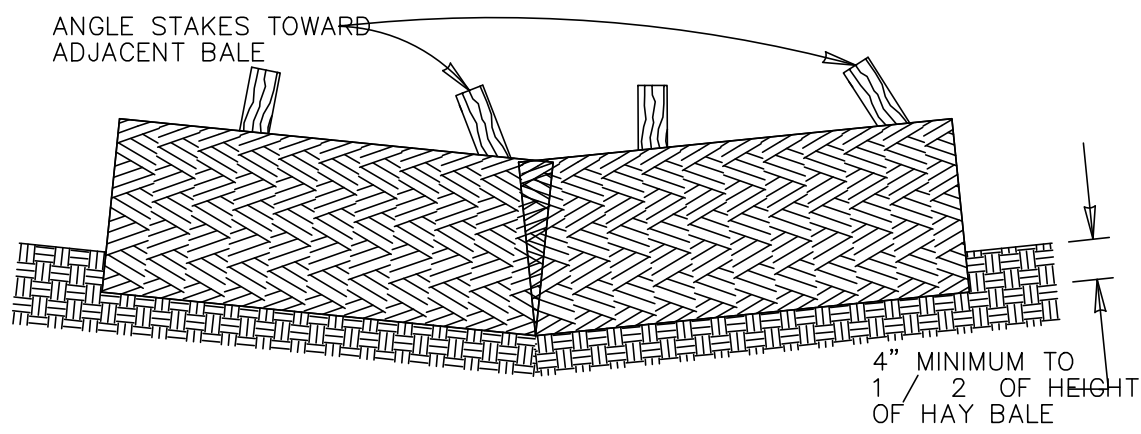
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SHEET TITLE & NO. :

Drawn By : JML

STORM WATER
POLLUTION
PREVENTION PLAN
DETAILS 1

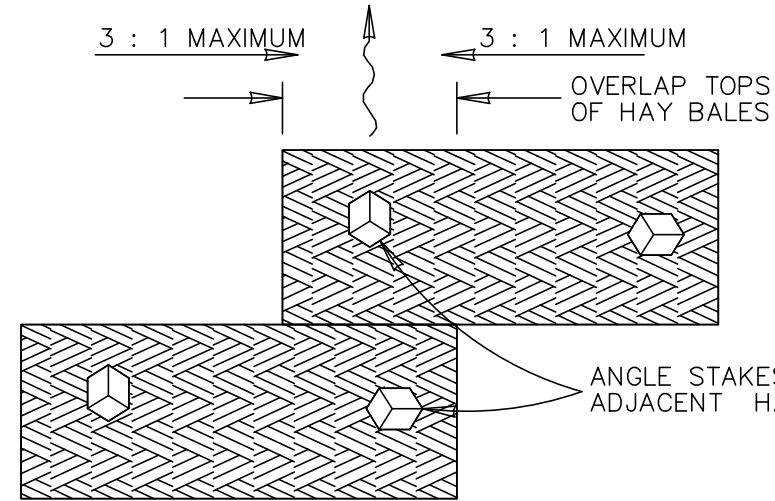
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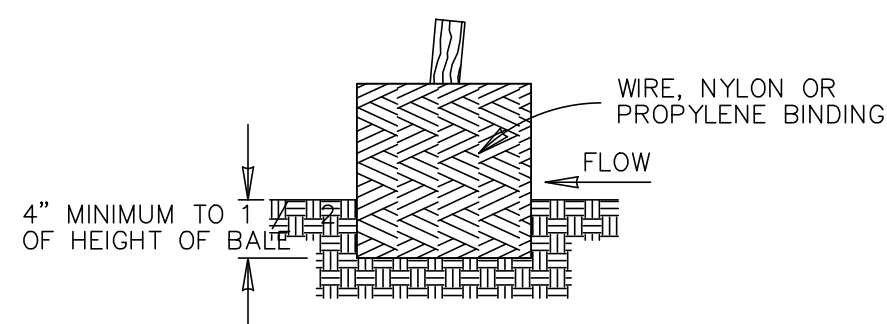
PROFILE VIEW

SCALE : 1" = 1'



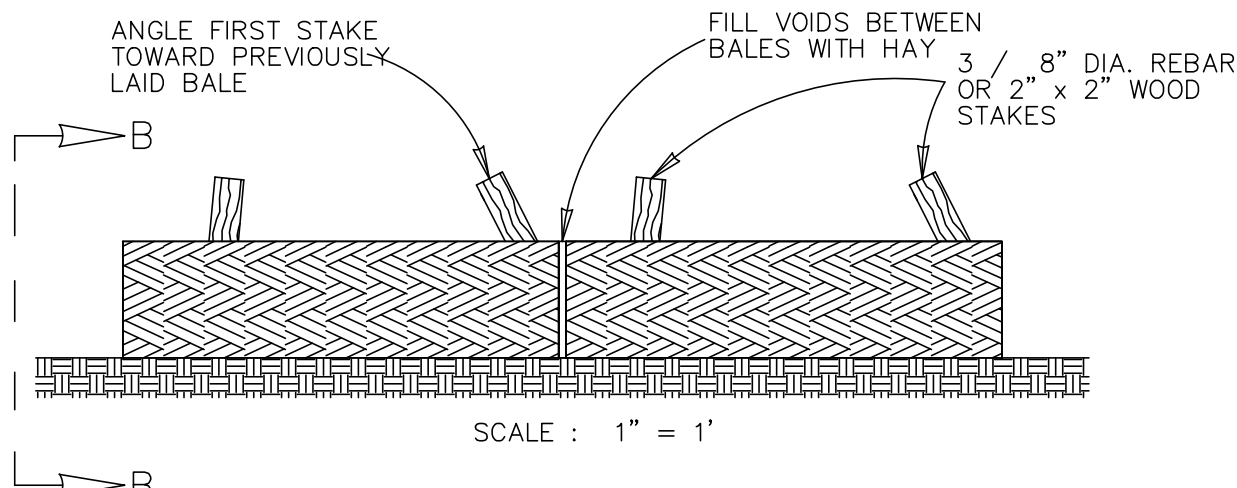
PLAN VIEW

SCALE : 1" = 1'



SECTION B-B

SCALE : 1" = 1'



BALED HAY USAGE GUIDELINES

A BAILED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM / FT SQUARED OF CROSS SECTIONAL AREA. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

1. WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10 %, THE LENGTH OF SLOPE UPSTREAM OF THE BAILED HAY SHOULD BE LESS THAN 50'.
2. WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.
3. WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 / 2 ACRE.

FOR BALED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONDI-
TIONAL CONSIDERATIONS APPLY:

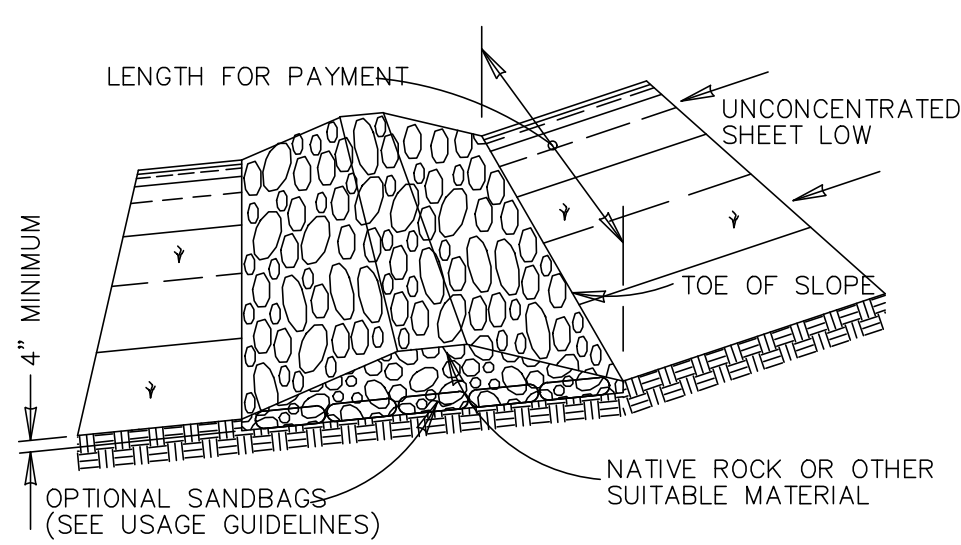
1. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
2. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BAILED HAY.

BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTEGRITY IS ACCELERATED.

GENERAL NOTES

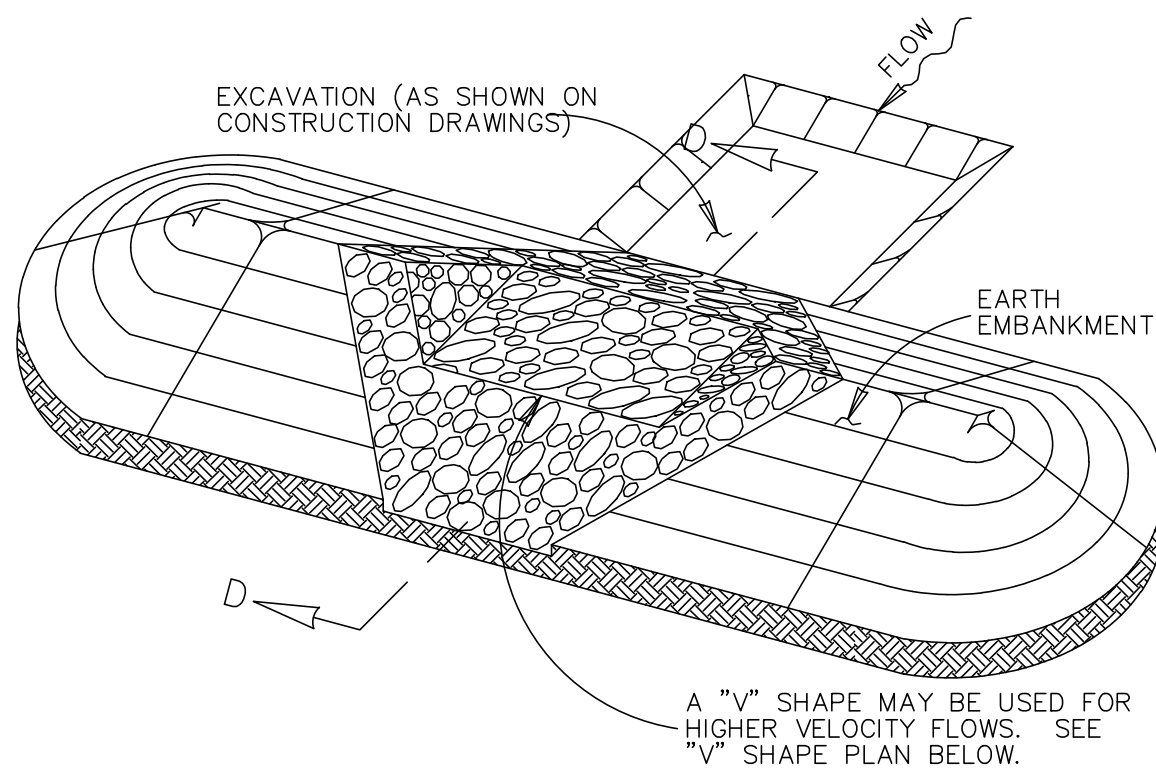
1. HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
2. HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
3. HAY BALES SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND, WHERE POSSIBLE, ONE-HALF THE HEIGHT OF THE BALE.
4. HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
5. HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3 / 8" DIA. REBAR OR 2" x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TO-
WARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

BALED HAY FOR EROSION CONTROL



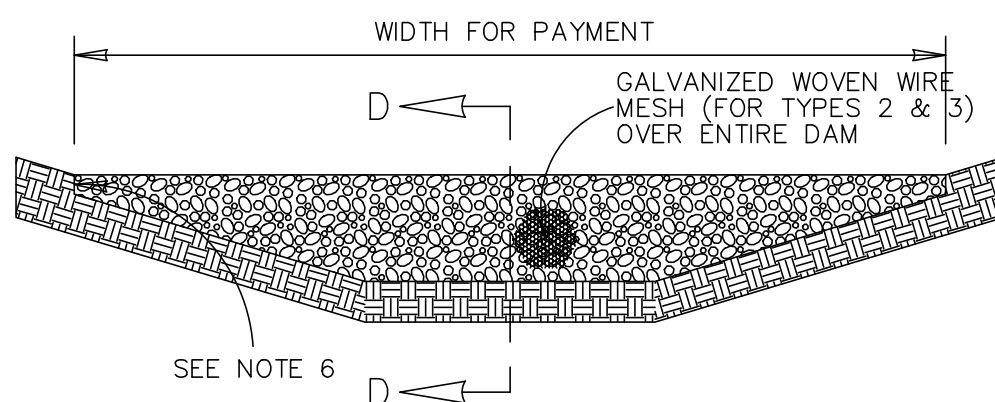
TYPE 1 FILTER DAM AT
TOE OF SLOPE

SCALE : 1" = 5'



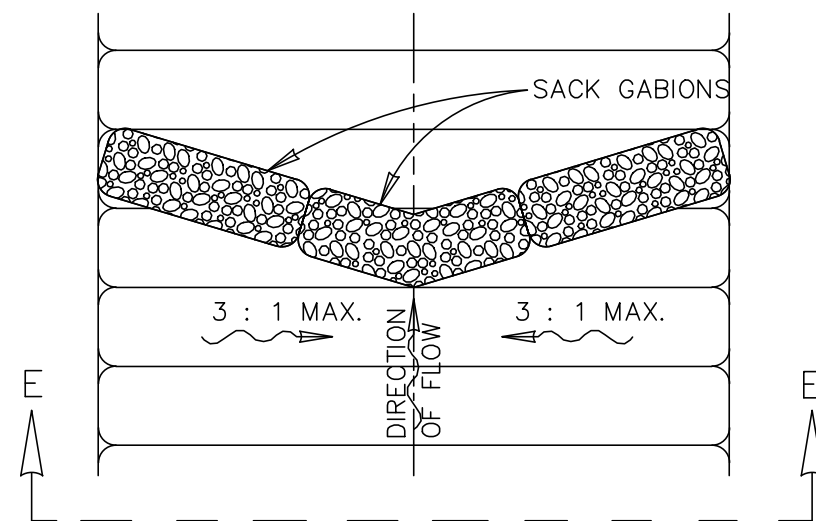
TYPE 1 & 2 FILTER DAM AT
SEDIMENT TRAP

SCALE : 1" = 5'



TYPE 1, 2 & 3 FILTER DAM
AT CHANNEL SECTIONS

SCALE : 1" = 3'



PLAN VIEW

SCALE : 1" = 5'

TYPE 4 FILTER DAM AT DITCHES
& SMALLER CHANNELS PLAN VIEW

ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND / OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM / FT SQUARED OF CROSS SECTIONAL AREA. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

TYPE 1 (18" HIGH WITH NO WIRE MESH) :

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCEN-
TRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT. / SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH) :

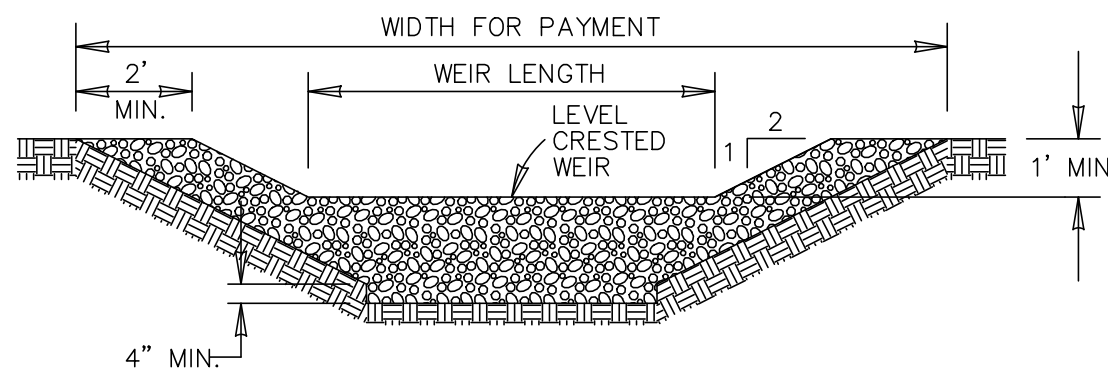
TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH) :

TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

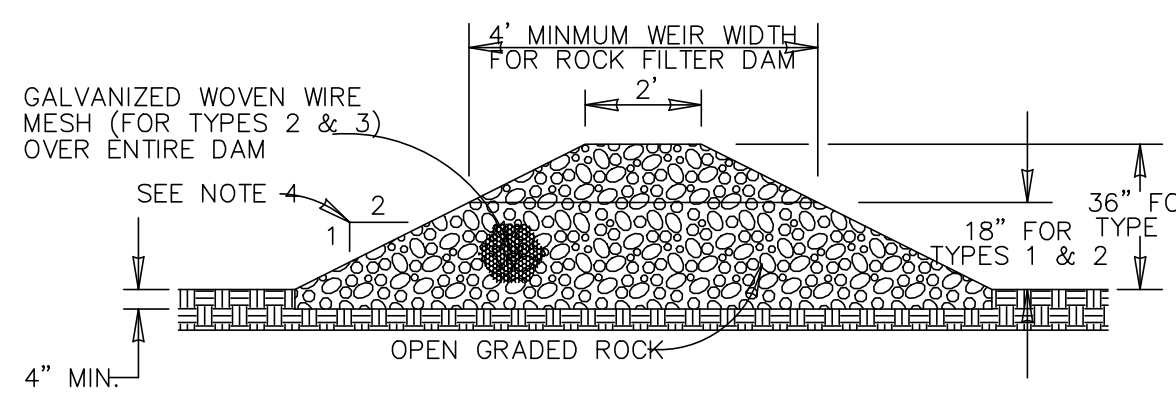
TYPE 4 (SACK GABIONS) :

TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.



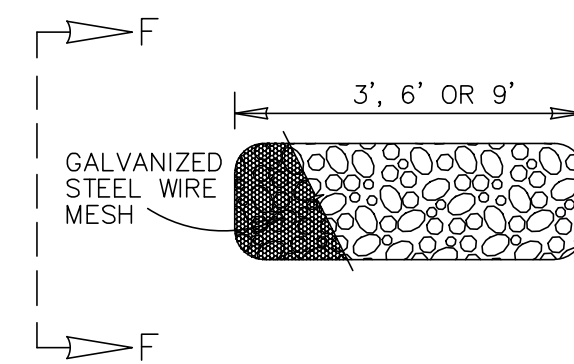
PROFILE OF TYPE 1 & 2 FILTER
DAM AT SEDIMENT TRAP

SCALE : 1" = 3'



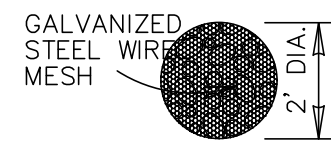
SECTION D-D

SCALE : 1" = 3'



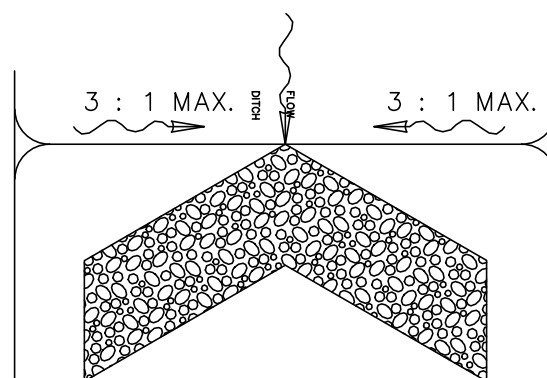
TYPE 4 SACK GABION DETAIL

SCALE : 1" = 3'



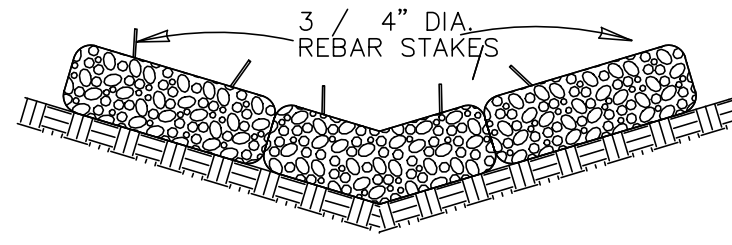
SECTION F-F

SCALE : 1" = 3'



"V" SHAPE
PLAN VIEW

NOT TO SCALE



SECTION E-E

SCALE : 1" = 5'

ROCK FILTER DAMS

GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.
5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 / 4" DIA. REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

JANUARY 2005

STANDARD PLANS CITY OF SAN ANTONIO, TEXAS DEPARTMENT OF PUBLIC WORKS			
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 2			
DRAWN BY: V. VASQUEZ	DATE:	REVISIONS	SCALE: SEE ABOVE
CHECKED BY: NAT HARDY, P.E.			SHEET: OF

ISSUE DATE

No.	Date	Issue Description

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



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BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
7073 San Pedro
San Antonio, Texas 78216
210/494-7220
TBPE NO. F-1712

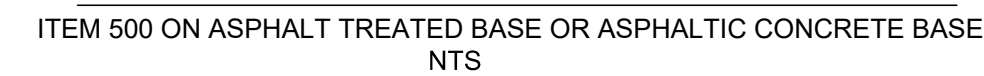
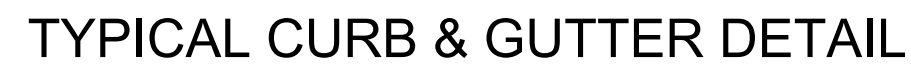
PRELIMINARY	
FOR REVIEW ONLY Not for construction, bidding or permit purposes.	
	BAIN MEDINA BAIN, INC.
Engineer:	
LORENA CARTER	06/28/19
P.E. No. 116832	Date

BWCD Proj. No. : Drawn By : JML

SHEET TITLE & NO. :

**STORM WATER
POLLUTION
PREVENTION PLAN
DETAILS 2**

C-6.2



1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS.
3. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
4. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
5. THE HEIGHT OF LETTERS SHOULD BE APPROXIMATELY 4 INCHES. THE WIDTH OF LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES.
6. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED BY STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
7. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED ELSEWHERE IN THE PLANS.



Tom Slick Park Site Improvements



**BENDER
WELLS
CLARK
DESIGN**

**Landscape
Architecture**


Urban Design

Planning

830 North Alamo Street
San Antonio, Texas 78215

210-692-9221
www.bwcdesign.com

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BAIN MEDINA BAIN, INC.
ENGINEERS & SURVEYORS
7073 San Pedro
San Antonio, Texas 78216
210/494-7223
TBPE NO. F-1712

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 Not for construction,
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MB **BAIN MEDINA BAIN, INC.**

Engineer:

LORENA CARTER	06/28/19
P.E. No. 116832	Date

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

CIVIL DETAILS

C-7.0

SPECIFICATIONS FOR:
TOM SLICK PARK IMPROVEMENTS
CONSTRUCTION DOCUMENTS



MAYOR
RON NIRENBERG

CITY COUNCIL
ROBERTO C. TREVIÑO
JADA ANDREWS-SULLIVAN
REBECCA J. VIAGRAN
ADRIANA ROCHA GARCIA
SHIRLEY GONZALES
MELLISA CABELLO HVARDA
ANA SANDOVAL
MANNY PELAEZ
JOHN COURAGE
CLAYTON PERRY

FUNDING:
2017-2022 BOND FUNDS

CITY ADMINISTRATION

CITY MANAGER
ERIK WALSH

**INTERIM DIRECTOR OF
TRANSPORTATION & CAPITAL
IMPROVEMENTS**
RAZI HOSSEINI, P.E.

**DIRECTOR OF PARKS AND
RECREATION**
XAVIER URRUTIA

PROJECT MANAGER
ARTHUR ROSSMAN- TCI

LANDSCAPE ARCHITECT:
BENDER WELLS CLARK DESIGN
830 N. ALAMO STREET
SAN ANTONIO, TEXAS 78215
(210) 692-9221

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS
P.O. BOX 839966
SAN ANTONIO, TX 78283
(210) 207-3392

SECTION 00 01 07

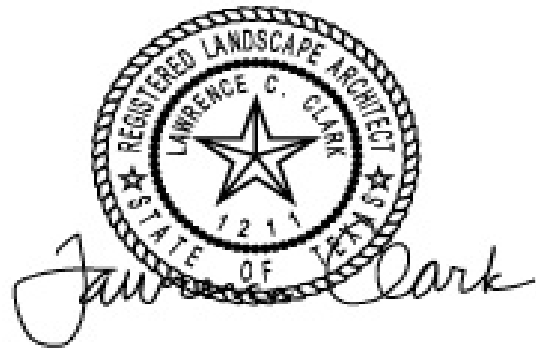
PROFESSIONAL SEALS

OWNER

CITY OF SAN ANTONIO
TRANSPORTATION & CAPITAL IMPROVEMENTS DEPARTMENT
114 W. COMMERCE
SAN ANTONIO, TX 78205

LANDSCAPE ARCHITECT

BENDER WELLS CLARK DESIGN
830 N. ALAMO
SAN ANTONIO, TX 78215
TEL.: 210-692-9221 FAX: 210-223-8582



SECTION 00 01 10**TABLE OF CONTENTS****INTRODUCTORY INFORMATION, BIDDING AND CONTRACTING REQUIREMENTS**

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Unless otherwise specified, the items referenced in these specifications shall refer to City of San Antonio specifications. The latest editions of these can be found at:

CIVIL/TECHNICAL SITE SPECIFICATIONS – Contractor to verify latest specifications.

City of San Antonio Specifications for Public Works Construction (June 2008 or latest revision)

<https://www.sanantonio.gov/Portals/0/Files/CIMS/StandardSpecifications/CIMSConstructionSpecifications062008.pdf>

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Tom Slick Park Improvements, , San Antonio, Texas 782.
- B. Owner's Name: City of San Antonio - TCI.
- 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 and concrete walks. A basketball court cover, solar lights and solar emergency call stations 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 30 00 - Administrative Requirements.
- C. Section 01 40 00 - Quality Requirements.
- D. Section 01 50 00 - Temporary Facilities and Controls.
- E. Section 01 60 00 - Product Requirements.
- F. Section 01 70 00 - Execution Requirements.

TOM SLICK PARK IMPROVEMENTS

G. Section 01 78 00 - Closeout Submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 22 00

UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project is bid as a lump sum amount. List of unit prices included will be used in adding or deleting elements of the work.
- B. Measurement and payment criteria applicable to both prior approved additional Work and Work added or deducted from scope.

1.02 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for additions/deletion purposes only.

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- B. Measurement by Area: Measured by square dimension using mean length and width or radius.
- C. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- D. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed or deducted item or unit of the Work.

1.05 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work which is incorporated in and accepted by the Design Consultant, multiplied by the unit sum/price.

1.07 SCHEDULE OF UNIT PRICES (See *attached Form 024 – Unit Pricing Form*)

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 23 00

ALTERNATIVES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Documentation of changes to Contract Price.

1.02 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option.
 - 1. Accepted alternates will be identified in the Owner-Contractor Agreement.
 - 2. Numerical sequence of the alternates does not indicate priority of selection.
 - 3. Selection of any or all of the alternates is at the sole discretion of the Owner for the best value to the Owner including Base Bid and the selected Alternate(s).
- B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.03 SCHEDULE OF ALTERNATES

- A. Add Alternate No. 1 – Shade over existing Basketball Court:
 - 1. Add Alternate Item encompasses the construction of a fabric shade structure and associated lighting over the existing basketball court as shown on plans.
 - 2. Base Bid Item includes no work at the existing basketball court.
- B. Add Alternate No. 2 – Solar Lights:
 - 1. Add Alternate Item encompasses the supply and installation of 2 solar lights as described on plans.
 - 2. Base Bid Item includes no solar lights.
- B. Add Alternate No. 3 – Solar Emergency Call Stations:
 - 1. Add Alternate Item encompasses the supply and installation of 2 solar emergency call stations as described on plans.
 - 2. Base Bid Item includes no emergency call stations.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Site mobilization meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Submittals for review, information, and project closeout.
- F. Number of copies of submittals.
- G. Submittal procedures.

1.02 RELATED SECTIONS

- A. Section 01 70 00 - Execution Requirements: Additional coordination requirements.
- B. Section 01 78 00 - Closeout Submittals: Project record documents.

1.03 PROJECT COORDINATION

- A. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- B. During construction, coordinate use of site and facilities through the Project Coordinator.
- C. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- D. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- E. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- F. Make the following types of submittals to the Design Consultant:
 - 1. Requests for interpretation.
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Manufacturer's instructions and field reports.
 - 6. Applications for payment and change order requests.
 - 7. Progress schedules.
 - 8. Coordination drawings.
 - 9. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Design Consultant(s).

TOM SLICK PARK IMPROVEMENTS

3. Contractor.

C. Agenda:

1. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
2. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
3. Scheduling.

3.02 SITE MOBILIZATION MEETING

- A. Owner will schedule a meeting at the Project site prior to Contractor occupancy if necessary.

B. Attendance Required:

1. Contractor.
2. Owner.
3. Design Consultant.
4. Special Consultants.
5. Contractor's Superintendent.

C. Agenda:

1. Use of premises by Owner and Contractor.
2. Owner's requirements and occupancy prior to completion.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Security and housekeeping procedures.
6. Schedules.
7. Application for payment procedures.
8. Procedures for testing.
9. Procedures for maintaining record documents.
10. Requirements for start-up of equipment.
11. Inspection and acceptance of equipment put into service during construction period.

- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Design Consultant, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

- A. Progress meetings to be held at intervals approved and coordinated with the City and Design Professional.

- B. Attendance Required: Job superintendent, Owner, Design Consultant, and Design sub-consultants as appropriate to agenda topics for each meeting.

C. Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Maintenance of quality and work standards.
11. Effect of proposed changes on progress schedule and coordination.
12. Other business relating to Work.

3.04 CONSTRUCTION PROGRESS SCHEDULE

- A. Shall be submitted per the City of San Antonio's General Conditions

3.05 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to Design Consultant for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - CLOSEOUT SUBMITTALS.

3.06 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Design Consultant's knowledge as contract administrator or for Owner.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Sheets, Not Larger than 8-1/2 x 11 inches: Submit through PrimeLink for Consultant review.
- B. Documents for Information: Submit through PrimeLink for Consultant review..
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed.
- D. Samples: Submit the number specified in individual specification sections; one of which will be retained by Design Consultant.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

- A. Transmit each submittal with approved form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Deliver submittals to Design Consultant at business address.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 14 calendar days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Design Consultant review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Mock-ups.
- D. Control of installation.
- E. Tolerances.
- F. Testing services.
- G. Manufacturers' field services.

1.02 RELATED SECTIONS

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCES

- A. ASTM C 802 - Standard Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction; latest edition.
- B. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; latest edition.
- C. ASTM E 329 - Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; latest edition.
- D. ASTM E 543 - Standard Practice for Agencies Performing Nondestructive Testing; latest edition.

1.04 SUBMITTALS

- A. Design Data: Submit for Design Consultant's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Design Consultant and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Design Consultant, provide interpretation of results.
 - 2. Test reports are submitted for Design Consultant's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Design Consultant, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- E. Manufacturer's Field Reports: Submit reports for Design Consultant's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- F. Erection Drawings: Submit drawings for Design Consultant's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Design Consultant or Owner.

1.05 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Design Consultant before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Design Consultant shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AGENCIES

- A. Owner will employ services of an independent testing agency to perform specified testing only (Quality Assurance Testing) as indicated in the City's General Conditions and Contract for Construction.
- B. The Owner will select and pay for an independent testing agency (ITA) to perform inspections and tests of portions of the Work specifically scheduled herein (Quality Assurance Testing). The Owner reserves the right to obtain or perform additional tests as deemed necessary.
 - 1. Associated Service: Contractor shall cooperate with testing technicians while they are engaged in performing inspections and tests, and assist them with necessary auxilliary services when requested by them.
 - 2. Contractor shall provide minimum 48-hour notice to the ITA, Owner or Engineer when respective testing activities are scheduled.
 - 3. Contractor shall provide for security and protection of samples and test equipment at the Project site.

4. Costs for Retesting: Contractor shall absorb all costs for retesting when initial test results prove unsatisfactory or do not indicate compliance with Contract Documents.
- C. Duties directed to the testing agency: Cooperate with Owner, Engineer, and Contractor in the performance of the work, and provide qualified personnel to perform the specified inspections and tests.
 1. Notice: Notify promptly the Inspector and the Contractor of deficiencies observed during performance of its services.
 2. Restrictions: Make no cause to release, revoke, alter, or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
 3. Reports: Submit a certified written report of each inspection and test to the Owner, the Inspector, the Landscape Architect and the Contractor.
- D. Submittals: Have ITA provide certified written report of each inspection and test to the Owner, the Inspector, the Landscape Architect and the Contractor.
- E. Employment of agency in no way relieves Contractor of obligation to perform Work or quality control testing in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Design Consultant before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Design Consultant and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Design Consultant before proceeding.

- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING

- A. Have ITA perform the following laboratory and field tests in accordance with the requirements specified for the respective section referenced and per the City's General Conditions and Contract for Construction.
1. Contractor is responsible for all quality control testing. Contractor to coordinate with City of San Antonio along with Contractor's Testing Geotechnical Consultant. Location of test will be determined by City.
- B. See individual specification sections for additional information concerning testing required. At a minimum, testing will include but not be limited to:
1. Earthwork: At sub-grade and at each compacted fill and backfill layer, at least 1 test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than 3 tests.
 2. Cement Concrete Paving: Obtain at least 1 composite sample for each 5,000 sq. ft. or fraction thereof of each concrete mix placed each day.
 3. Aggregate Base Course: One test for each 500 square yards of each layer of aggregate base course.
 4. Concrete: 1 - set of 4 - cylinders (paving, curbs and walls) Break at 3 days; 7 days; and 28 days.
 5. Cement Stabilized Base (pugmill): Obtain at least 1 composite sample for each 5,000 sq. ft. or fraction thereof of each cement stabilized base mix placed each day.
 6. Stabilized Soil (insitu): Obtain at least 1 composite sample for each 5,000 sq. ft. or fraction thereof of each stabilized soil mix placed each day.
 7. Topsoil: Fertility samples as required by specifications.
- C. Testing Agency Duties:
1. Test samples of mixes submitted by Contractor.
 2. Provide qualified personnel at site. Cooperate with Design Consultant and Contractor in performance of services.
 3. Perform specified sampling and testing of products in accordance with specified standards.
 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 5. Promptly notify Design Consultant and Contractor of observed irregularities or non-conformance of Work or products.
 6. Perform additional tests and inspections required by Design Consultant.
 7. Submit reports of all tests/inspections specified.
- D. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- E. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Design Consultant, Owner, and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional

- samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- F. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Design Consultant. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.
1. When testing agency reports the sub-grades, fills or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, re-compact and retest until required density is obtained.

3.05 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, and letter of conformation, ex. playground, as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Design Consultant, it is not practical to remove and replace the Work, Design Consultant will direct an appropriate remedy or adjust payment.

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

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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 Section 01 30 00 - Administrative Requirements, for submittal procedures.

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.
- 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 Design Consultant.
- 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 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Spare parts and maintenance materials.

1.02 RELATED SECTIONS

- A. Section 01 40 00 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Notice to Proceed.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- D. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:

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1. Made of wood from newly cut old growth timber.
- C. Provide interchangeable components of the same manufacture for components being replaced.

2.03 PRODUCT OPTIONS

- A. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request for substitution constitutes a representation that the submitter:
 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 2. Will provide the same warranty for the substitution as for the specified product.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse Owner and Design Consultant for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 3. The Design Consultant will notify Contractor in writing of decision to accept or reject request.

3.02 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

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- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Surveying for laying out the work.
- F. Cleaning and protection.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, except payment procedures.

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures.
- C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 50 00 - Temporary Facilities and Controls: Temporary Facilities and Controls.
- E. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.

1.03 QUALIFICATIONS

- A. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in Texas.

1.04 PROJECT CONDITIONS

- A. Grade areas of work to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
- D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- E. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

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- F. Pest Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- G. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.05 COORDINATION

- A. See Section 01 10 00 for occupancy-related requirements.
- B. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate occupancy requirements.
- C. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- D. Notify affected utility companies and comply with their requirements.
 - 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.
- E. Verify utility requirements and characteristics of operating equipment are compatible with site utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that demolition is complete in alterations areas and areas are ready for installation of new work.
- C. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- D. Examine and verify specific conditions described in individual specification sections.

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- E. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- F. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- G. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Cut, move, or remove items as necessary for access to alterations and renovation work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surfaces and remove surface finishes to provide for proper installation of new work and finishes.
- E. Clean substrate surfaces prior to applying next material or substance.
- F. Seal cracks or openings of substrate prior to applying next material or substance.
- G. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Design Consultant four days in advance of meeting date.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Design Consultant of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- E. Promptly report to Design Consultant the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Design Consultant.
- G. Utilize recognized engineering survey practices.
- H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
- I. Periodically verify layouts by same means.

- J. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation 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 alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 3. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to Plumbing and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 - 4. Verify that abandoned services serve only abandoned facilities.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.
- E. Adapt existing work to fit new work:
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Design Consultant.

2. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Design Consultant review and request instructions.
- F. Refinish existing surfaces as indicated:
 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
 - a. Patch as specified for patching new work.
- G. Clean existing systems and equipment.
- H. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- I. Do not begin new construction in alterations areas before demolition is complete.
- J. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.
- B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- C. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- E. Restore work with new products in accordance with requirements of Contract Documents.
- F. Fit work air tight to pipes, sleeves, conduit, and other penetrations through surfaces.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- H. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- I. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- C. Collect and remove waste materials, debris, and trash/rubbish from site daily and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Protect finished concrete work, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic from landscaped areas.
- F. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.11 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Use cleaning materials that are non-hazardous.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces.
- E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.12 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Design Consultant and Owner.
- B. Notify Design Consultant when work is considered ready for Substantial Completion.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Design Consultant's review.
- D. Correct items of work listed in executed Certificates of Substantial Completion.
- E. Notify Design Consultant when work is considered finally complete.
- F. Complete items of work determined by Design Consultant's final inspection.

END OF SECTION

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and Bonds.

1.02 RELATED SECTIONS

- A. General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Design Consultant with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Design Consultant comments. Revise content of all document sets as required prior to final submission.
 - 2. Submit 3 sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. Make submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

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1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 2. Field changes of dimension and detail.
 3. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Include performance curves, with engineering data and tests.
 4. Complete nomenclature and model number of replaceable parts.
- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Include manufacturer's printed operation and maintenance instructions.
- F. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- G. Additional Requirements: As specified in individual product specification sections.

3.04 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.
- C. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.

- F. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Design Consultant, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Operating instructions.
 - b. Maintenance instructions for equipment and systems.
 - c. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.

3.05 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Manual: Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers.
- G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

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 01 60 00 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- G. Section 01 70 00 - Execution Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.
- H. Section 31 10 00 - Site Clearing: Vegetation and existing debris removal.
- I. Section 31 22 00 - Grading: Topsoil removal.
- J. Section 31 22 00 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- K. 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. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- 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 specified in Section 01 70 00.

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, recycling, and return to the Parks Department.
- 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.

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- 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 Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.
- C. Samples: Submit two samples, 1x1 inch in size illustrating sealant colors for selection.

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.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

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.

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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.

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- 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 (ALT.)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solar Pedestrian Security Lights (Alternate 2)
- B. Solar Emergency Call Stations (Alternate 3)

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. Solar Lights (Alternate 2- see plans): Provide 2 solar lights Model #SCL2 on a 20' square aluminum pole and concrete footing as manufactured by: First Light Technologies, www.firstlighttechnologies.com. (Color: Black)
- B. Solar Emergency Call Stations (Alternate 3- see plans): Provide 2 solar emergency call stations Model # 2100-TSC and associated footings as manufactured by: Rathe Security and provided by Beckwith, www.beec.com

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.
- B. Clean surfaces thoroughly prior to installation.

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- 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 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 2015.
- 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 2015 requirements with similar scope.

- 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 2015 Section 1704.2.2.
- G. Proof of current status as an ISNetworld 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.

- A. The structure shall be manufactured by Shade Structures, Inc. dba USA SHADE & Fabric Structures, 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.

Contact: Shade Structures, Inc.
 Dba USA SHADE & Fabric Structures
 8505 Chancellor Row
 Dallas, Texas 75247
 Contact Name: Michelle Botha – Phone: 512-937-6430
 mbotha@usa-shade.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 2015 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 2015 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 2015 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, 1/4" (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 8' depth and placed in accordance with/ and conform to manufacturers engineered specifications and drawings.

Structure 2 - Minimum footing size shall be 24" diameter x 7' depth and placed in accordance with/ and conform to manufacturers engineered specifications and drawings.

Structure 3 - Minimum footing size shall be 24" diameter x 6' depth and placed in accordance with/ and conform to manufacturers engineered specifications and drawings.

Alternate Structure #01 - Minimum footing size of 30" diameter x 12' depth, reinforced with full rebar cage and placed in accordance with/and conform to manufacturers engineered specifications and drawings.

Alternate Structure #04 - Minimum footing size of 30" diameter x 7' depth, reinforced with full rebar cage 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 01 70 00 - Execution Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.
- E. Section 02 40 00 - Demolition: Removal of built elements and utilities.
- F. Section 31 22 00 - Grading: Topsoil removal.
- G. Section 31 22 00 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- H. Section 31 23 23 - Fill and Backfill: 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.
- J. Section 32 01 90.33 – Tree Preservation: Protection and pruning of existing trees to remain.

1.03 PROJECT CONDITIONS

- A. Comply with other requirements specified in Section 01 70 00.

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

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- 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)

- 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

- 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)

- 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:
 1. Areas to be Seeded with Grass: 6 inches or as shown on the plans.

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- 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 16

EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Trenching for utilities.

1.02 RELATED SECTIONS

- A. Section 31 22 00 - Grading.
- B. Section 31 23 23 - Fill and Backfill: Fill materials, filling, and compacting.
- C. Section 32 01 90.33 – Tree Preservation: Protection of existing tree and vegetation.

1.03 PROJECT CONDITIONS

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.
- B. Protect plants, lawns, and other features to remain.
- C. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. See Section 31 22 00 for additional requirements.
- C. Locate, identify, and protect utilities that remain and protect from damage.

3.02 EXCAVATING

- A. Excavate to accommodate construction operations.
- B. Notify Landscape Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- D. Cut utility trenches wide enough to allow inspection of installed utilities.
- E. Hand trim excavations. Remove loose matter.
- F. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume.
- G. Correct areas that are over-excavated surfaces that are disturbed
- H. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- I. Remove excavated material that is unsuitable for re-use from site.
- J. Stockpile excavated material to be re-used in area designated on site in accordance with Section 31 22 00.
- K. Remove excess excavated material from site.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of load-bearing excavated surfaces before placement of foundations.

3.04 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.

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 31 23 00 - Excavation: Removal and handling of soil to be re-used.
- C. 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

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- A. Finish Grade Elevations: Indicated on drawings.
- B. Subgrade Elevations: As required to establish finish grade elevations.

1.06 SUBMITTALS

- A. See Section 01 30 00 - 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

TOM SLICK PARK IMPROVEMENTS

- A. See Section 01 40 00 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. 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 and 31 23 16 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.

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- B. Structural Fill:
 - 1. Use structural fill.
 - 2. Fill up to subgrade elevations.
 - 3. Maximum depth per lift: 6 inches, compacted.
 - 4. Compact to minimum 95 percent of maximum dry density.
- D. Over Buried Drain Piping from Drinking Fountain:
 - 1. Bedding: Use sand.
 - 2. Cover with general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- F. At Lawn Areas:
 - 1. Use general fill.
 - 2. Fill up to 6 inches below finish grade elevations.
 - 3. Compact to 95 percent of maximum dry density.
 - 4. See Section 31 22 00 for topsoil placement.
- G. At Sports Fields:
 - 1. Use general fill.
 - 2. Fill up to 6 inches below finish grade elevations.
 - 3. Compact to 95 percent of maximum dry density.
 - 4. See notes and drawings for sports field soils placement.
- H. Under Monolithic Paving:
 - 1. Compact subsoil to 95 percent of its maximum dry density before placing fill.
 - 2. Use general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact to 95 percent of maximum dry density.
 - 5. See Section 32 11 23 for aggregate base course placed over fill.

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 Section 01 40 00 - 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. See Section 01 40 00 for procedures.
- 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 16 - Excavation
- E. 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.

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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.

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- 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
- . 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 90 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.

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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 plants 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 plant is unhealthy but not yet dead, according to specified definitions, determine reason(s) and take remedial action immediately.
 4. Remove dead plants 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, shrubs and other plants 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 and shrubs 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).

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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 and concrete pads.

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.
- D. Section 32 17 23 - Pavement markings.

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. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on joint filler, admixtures, and curing compound.
- C. Samples: Provide sample panel a minimum 5' X 5' X 4" thick indicating concrete finish and other detailing for approval by *Design Consultant*. Provide number of samples as required until acceptable. Approved sample is to be maintained for duration of project. Remove sample(s) after completion of concrete paving work. Sample may be portion of sidewalk to be constructed pending acceptance of Owner.

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.

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- 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. Parking Area and Drive Pavement: 4,000 psi 28 day concrete, 5 inches thick, #4 rebar at 12 inch on center each way reinforcement, wood float finish or as shown in details.
- B. 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.

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- 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.

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- 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, shrub and ground cover 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 92 23 - Sodding
- E. 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. Provide "specimen" plants with a special height, shape or character of growth.
 - a. Tag specimen trees or shrubs at the source of supply.
 - b. The Design Consultant shall inspect specimen selections at the source of supply for suitability and adaptability to selected location.
 - c. When specimen plants cannot be purchased locally, provide sufficient photographs of the proposed specimen plants for approval.
 5. Contractor shall provide written notice of request for inspection to the Design Consultant a minimum of two (2) weeks prior to date of inspection.
 6. Plants 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.
 7. 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.
 8. Label at least one plant of each variety in each delivery with a securely attached waterproof tag bearing legible designation of botanical and common name.
 - a. Same species with different flower color varieties shall have a label on each plant.
 9. Inspections:
 - a. All necessary state, federal, and other inspection certificates shall accompany the invoice for each shipment or order for plant materials as may be required by law.

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- b. All plants shall be subject to inspection and approval at the site or elsewhere. The Design Consultant reserves the right to reject, at any time or place, prior to final acceptance of the work, any or all of the plants which fail to meet requirements of these specifications.
- 10. Trees, shrubs, perennials and annuals that are undersized or in poor and unviable condition, if planted, shall not be accepted and must be replaced to accomplish the landscape contract.
- 11. 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. Erosion Control Netting: Supplier's brochure and 12" x 12" section of fabric.
 - 8. Edging: Sample minimum 12" length.
 - 9. Gravel: 1-pound sample.
 - 10. Drainage Fill: 1-pound sample.
 - 11. Soil Separation Fabric: Suppliers brochure and 12" x 12" section of fabric.
 - 12. Weed Barrier Fabric: Suppliers brochure and 12" x 12" section of fabric.
 - 13. Decomposed Granite: One (1) quart container.
 - 14. 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.

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- B. Trees and Shrubs:
 - 1. Do not prune prior to delivery unless otherwise approved by Design Consultant.
 - 2. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape
 - 3. Provide protective covering during delivery to prevent wind burn.
 - 4. Spray deciduous plants in foliage with approved anti-desiccant immediately after digging to prevent dehydration.
- C. Deliver plant materials after preparations for planting have been completed and plant immediately.
 - 1. Protect all plants from drying out.
 - 2. Use all means necessary to protect plant materials 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 and shrubs after final grades are established and prior to planting of turf, unless otherwise acceptable to Design Consultant.
 - 2. If planting of trees and shrubs 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. TREE, SHRUB AND GROUND COVER:
1. Warranty trees and shrubs and groundcovers 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. 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 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 plant 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 plants 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.

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- F. Fertilizer for Shrubs and Groundcovers: Agriform 10 and 21 gram tablets manufactured by Sierra Chemical Co. Composition by weight 20-10-5 tablet form, dry and unbroken or approved equal.
- G. Pre-Emergence Weed Control (for use after cultivation): XL-2G by Dow Elanco or approved equal.
- H. Post-Emergence Herbicide: Round-Up by Monsanto Corp., or approved equal.
- I. 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, shrubs, and ground covers 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 plant materials and 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. Container Grown stock:
 - 1. Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
 - 2. No plants shall be loose in the container.
 - 3. Container stock shall not be pot bound.
- F. 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.

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- 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.
- G. 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.
 2. Shrubs and small plants shall equal or exceed the requirements for spread and height indicated in the plant list.
 - a. The measurements for height shall be taken from the ground level (top of root ball) to the average height of the top of the plant and not the longest branch.
 - b. Single stemmed or thin plants will not be accepted.
 - c. Side branches shall be generous, well-twigged and the plant as a whole well-bushed to the ground.
 - d. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.
- H. 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.
- I. Matched:
1. Plants planted in rows shall be matched in form.
 2. Plants labeled as matched on plans or plant schedule shall select stock chosen for uniform height, spread and general character; label with number to assure symmetry in planting.
- J. 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. Decomposed Granite: Hard, durable particles or fragments of Texas Hill Country decomposed granite gravel with fines evenly mixed throughout the aggregate, available from Keller Material, Inc., San Antonio, Texas, (210) 648-4221.
- E. Soil Separation Fabric: Mirafi 140N as manufactured by Mirafi, Inc., Charlotte, N.C., or approved equal.
- F. Wood Edging: Of sizes shown on following wood species:
1. Redwood, all heartwood
 2. Tidewater Red Cypress, all heartwood
 3. Western Red Cedar, all heartwood
 4. Southern Yellow Pine, pressure treated with water-borne preservative for ground contact use complying with AWPB LP-22.
 5. Provide wood stakes of treated Southern Yellow Pine, 2"x2"x18" long and hot dipped galvanized nails for anchoring stakes to edging.
- G. Steel Edging: 3/16" x 4" commercial steel edging fabricated in sections to receive stakes. Provide tapered steel stakes 16" long. Finish shall be manufacturer's standard green paint.
- H. Gravel: Crushed, hard, durable gravel, washed free of soil, sand, clay and other foreign

substances. Provide the following stone, color and size range:

1. Limestone: Uniform tan/beige color range.
 2. Modified Grade 3, TCS Code #369.
 - a. Standard Limestone Base, TCS Code #115.
 - b. Railroad Ballast, TCS Code #066.
 - c. Rip Rap, TCS Code #012.
 3. Granite: Readily available natural gravel color range acceptable to Design Consultant.
 4. River Rock: Readily available material gravel, color range acceptable to Design Consultant.
 - a. Size Range: 3/8" to 3/4"
 - b. Size Range: 3/8" to 1-1/2"
 - c. Size Range: 3/4" to 1-1/2"
- I. Drainage Fill: AASHTON M43 #6 (3/8 to 3/4 inch) clean uniformly graded stone or gravel.
- J. Anti-Desiccant: Emulsion type, film forming agent designed to permit transpiration but retard excessive loss of moisture from plants.
- K. Plastic Sheet: Black, weather-resistant polyethylene sheeting complying with FS-L-P512, type III, 0.008" (8 mils) thick.
- L. Weed Barrier Fabric: Pro-5 Weed Barrier as manufactured by DeWitt Company or approved equal.
- M. Erosion Control Netting: "Soil Saver", a heavy, woven jute mesh with one inch openings as manufactured by Jim Walls, Co., Dallas, Texas or approved equal.
- N. Erosion Control Netting: Polyjute, open weave geotextile as distributed by A.M. Leonard, Inc., 800/543-8955.
- O. 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. Stakes: Six (6) foot height studded T-posts with painted finish for rust protection.
- B. Wire: Provide wire ties to 2-strand, pliable galvanized iron wire not lighter than 10 gauge.
- C. Plastic Chain Ties: Adj-A-Tye, as manufactured by A.M. Leonard, Inc., Piqua, Ohio, or approved equal.
- D. Hose (to encase wires): 2 ply reinforced green rubber or plastic garden hose, 3/4" in diameter cut to required lengths to protect tree trunk from damage by wire guy wires.

PART 3 – EXECUTION

3.01 PLANTING DETAILS

- A. Planting details regarding tree planting, shrub pit planting, shrub and groundcover planting, and planting bed soil preparations are included on the drawings.

3.02 PLANTING LAYOUT

- A. Layout individual tree, shrub and planting bed areas for plantings.
1. Stake tree locations, pit planted shrubs and outline planting bed areas.
 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 plant material in the planting pit to proper grade and alignment.
1. Set plants 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 or stems.
- 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. Groundcover and shrubs shall be set at a level that, after settlement, they shall bear the same relationship to the finish grade as specified in PLANTING TREES AND SHRUBS IN PITS, this section.
- D. After plants 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 GROUND COVER AND SHRUBS IN BEDS

- A. Space ground cover plants in accordance with indicated dimensions providing the quantity of plants necessary to evenly fill planting bed area.
 - 1. Plant layout is to be equidistantly triangular spaced.
 - 2. Plant to within 12 inches of the trunks of trees and shrubs within planting bed and to within 6 inches of edge of bed but in no instance less than ½ the spacing distance of the plant.
- B. All plant material shall be set at a level that, after settlement, they shall bear the same relationship to the finish grade that they bore to the soil from which they were dug/grown.
- C. 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.
 - 1. Absolutely no topsoil or planting soil shall be placed over top of any rootball or portion of rootball.
- D. Place fertilizer tablets, at rate shown in table under fertilization section, when approximately half the backfill is in place.
- E. Planting beds shall be raked smooth and thoroughly watered and then water allowed to soak away.
- F. After settlement, add planting soil as necessary to bring bed to finish grade and again thoroughly water entire plant bed.
- G. After planting operation and prior to mulching, pre-emergent weed control shall be applied to the entire bed area according the manufacturer's recommendations.
- H. Prune, thin out and shape shrubs in accordance with Standard Horticultural Practice if deemed necessary by Design Consultant.
 - 1. Prune shrubs to retain natural character.
 - 2. Pruning shall be limited to the minimum necessary to remove injured twigs and branches.
- I. Following a minimum two (2) week waiting period after planting is completed, all beds shall be inspected by the Contractor and treated as required with an appropriate post-emergent herbicide to remove weed growth.
 - 1. Treatment shall be continued as necessary to remove weeds.
 - 2. No beds shall be accepted with weeds.

3.04 PLANTING TREES AND SHRUBS 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 and shrubs with water and allow to percolate out before planting.
- C. Elevation:
 - 1. All plants, other than trees, shall be set at a level so that, after settlement, they shall bear the same relationship to the finished grade of the surrounding soil from which they were dug or from the container they were grown in.
 - 2. 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 shrubs, at rate shown in table under fertilization section, when approximately half the backfill is in place.
- I. Planting beds/pits shall be raked smooth and 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. After planting operation and prior to mulching, pre-emergent weed control shall be applied to the entire pit/basin area according the manufacturer's recommendations.
- L. When pit planted plants are in a mass two or more rows in depth, the entire bed area shall be receive pre-emergent herbicide and mulch as specified for planting beds.
- M. 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.
 - 3. Prune shrubs to retain natural character.
 - 4. Cuts on plants over 3/4-inch in diameter to be cut back to sound tissue, smoothed and shaped so as not to hold rain water and painted with an approved tree wound paint.
 - 5. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

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- N. Maintain a minimum 3'-0" diameter saucer at base of trees within lawn areas clear of any grass.
- O. All tree and shrub pits are to receive a treatment of pre-emergent herbicide just prior to placement of mulch.
- P. Staking trees:
 - 1. Stake trees immediately after planting, only when required to maintain a plumb condition due to wind, weight of plant material, etc.
 - 2. Under no circumstances is a tree to be plumbed with extreme tautness of guy wires or cable.
 - 3. Locate and drive stakes at equal spaced intervals outside the tree pit(s). Provide wire ties from each stake to encircle trunk at 40% to 50% of the tree height. Encase tie wire at tree in rubber hose. Slightly tighten wire tie to hold trunk firmly, but under no circumstances is tree to be plumbed by extreme tautness of ties.
 - 4. Provide 3- stakes when required to keep trees plumb on slopes or in varying wind conditions.
- Q. PVC Tree Guard: Provide tree guards at all trees located within lawn areas.

3.05 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.

3.07 FERTILIZATION FOR SHRUBS AND GROUND COVER

- A. For Shrubs and Ground Cover: When plant pit has been backfilled 50% place fertilizer tablets, equally spaced around rootball in accordance with the following schedule:

1. 1 gallon	3 tablets	10 gram
2. 5 gallons	3 tablets	21 gram
3. 7 gallons	4 tablets	21 gram
4. 15 gallons	8 tablets	21 gram

 - a. * Reduce number of tablets as per manufacturer's recommendation for plants less than 1 gallon.

3.08 MULCHING:

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

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- on entire area of planting beds, and not less than four (4) inches over shrub and tree pits.
- 2. Keep mulch six (6) inches away from tree trunk.

3.09 RECONDITIONING EXISTING PLANTING BEDS

- A. Recondition existing planting beds to remain:
 - 1. Replace any plantings damaged by Contractor's operations including storage of materials and equipment and movement of vehicles to restore the beds to the satisfaction of the Owner and Design Consultant.
 - 2. Remove weeds from all existing beds; apply pre-emergent herbicide and dress mulching as here before specified.
 - 3. Work shall conform with all requirements of this Section.

3.10 MISCELLANEOUS LANDSCAPE WORK

- A. Steel Edging: Install steel edging where shown. Anchor with steel stakes spaced not more than 3 feet o.c., and driven at least 1 inch below top elevation of edging or as directed by manufacturer.
 - 1. Provide edger to separate bed areas and lawn areas.
- B. Erosion Control Matting: Install erosion mat on slopes of greater than 3:1. Install according to manufacturers instructions for the particular situation, including method of attachment and overlapping required.
- C. Weed Barrier Fabric: Place fabric according to manufacturer's recommendation over surface of planting beds after application of pre-emergent herbicide and prior to placement of mulch.
- D. Gravel Mulch:
 - 1. Place gravel mulch where shown.
 - 2. Compact soil subgrades before placing gravel.
 - 3. Place filtration/separation fabric over compacted subgrade prior to placing gravel.

3.11 MAINTENANCE

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

3.12 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.

3.13 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