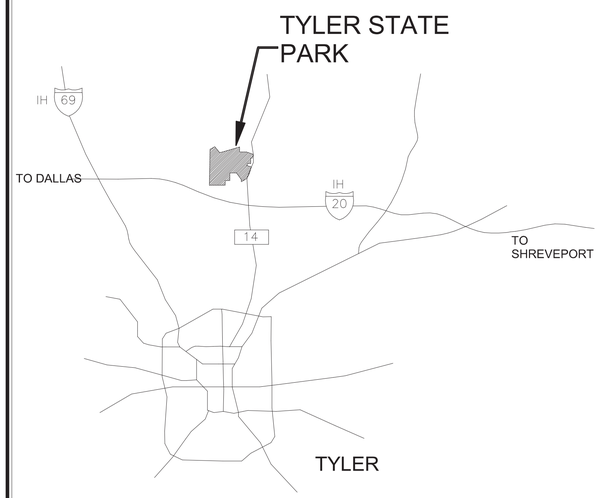
COUNTY LOCATION MAP

NOT TO SCALE

NORTH

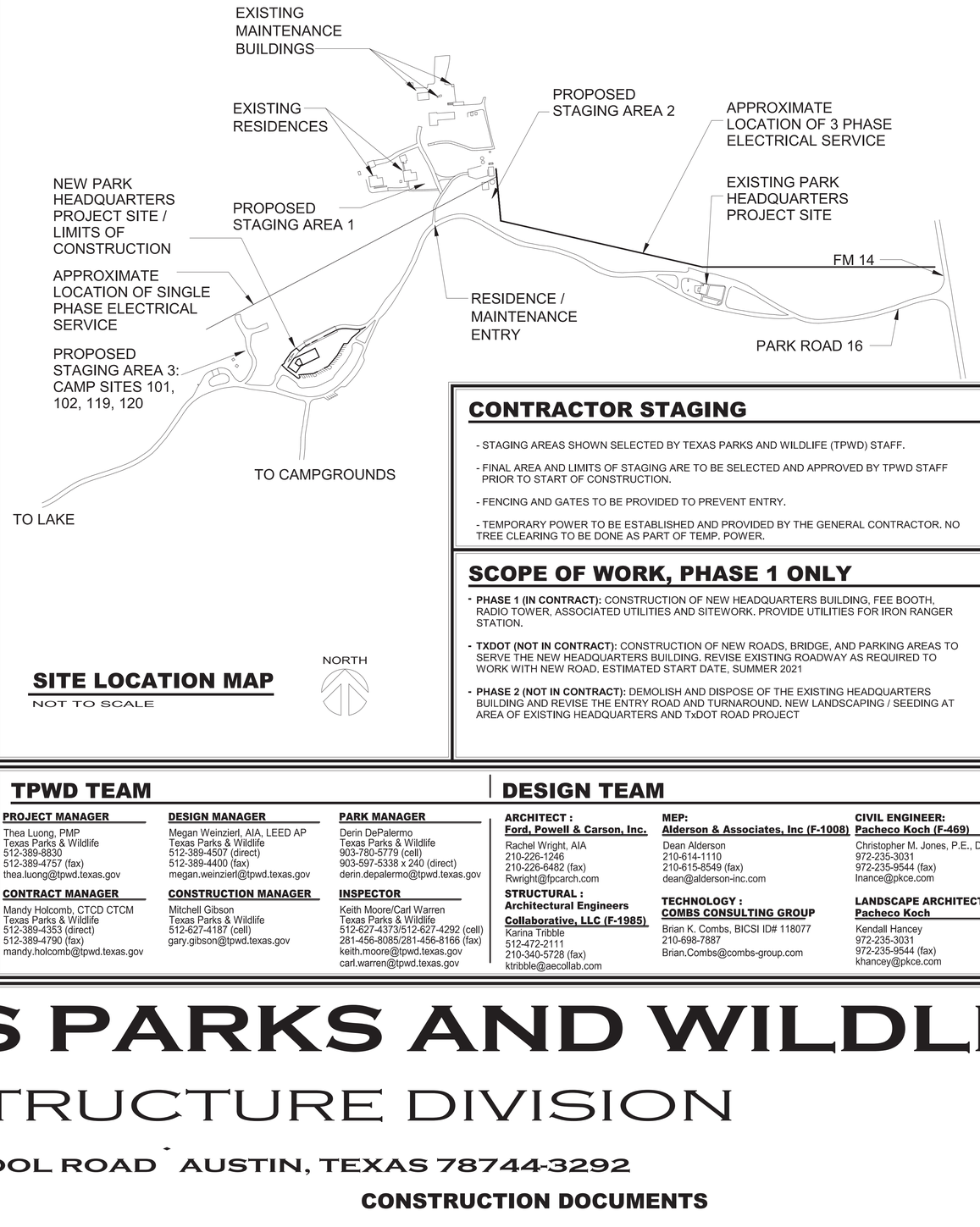


VICINITY MAP

NOT TO SCALE

NORTH

TYLER STATE PARK



SITE LOCATION MAP

NOT TO SCALE

NORTH

CONTRACTOR STAGING

- STAGING AREAS SHOWN SELECTED BY TEXAS PARKS AND WILDLIFE (TPWD) STAFF.
- FINAL AREA AND LIMITS OF STAGING ARE TO BE SELECTED AND APPROVED BY TPWD STAFF PRIOR TO START OF CONSTRUCTION.
- FENCING AND GATES TO BE PROVIDED TO PREVENT ENTRY.
- TEMPORARY POWER TO BE ESTABLISHED AND PROVIDED BY THE GENERAL CONTRACTOR. NO TREE CLEARING TO BE DONE AS PART OF TEMP. POWER.

SCOPE OF WORK, PHASE 1 ONLY

- **PHASE 1 (IN CONTRACT):** CONSTRUCTION OF NEW HEADQUARTERS BUILDING, FEE BOOTH, RADIO TOWER, ASSOCIATED UTILITIES AND SITEWORK. PROVIDE UTILITIES FOR IRON RANGER STATION.
- **TXDOT (NOT IN CONTRACT):** CONSTRUCTION OF NEW ROADS, BRIDGE, AND PARKING AREAS TO SERVE THE NEW HEADQUARTERS BUILDING. REVISE EXISTING ROADWAY AS REQUIRED TO WORK WITH NEW ROAD. ESTIMATED START DATE, SUMMER 2021
- **PHASE 2 (NOT IN CONTRACT):** DEMOLISH AND DISPOSE OF THE EXISTING HEADQUARTERS BUILDING AND REVISE THE ENTRY ROAD AND TURNAROUND. NEW LANDSCAPING / SEEDING AT AREA OF EXISTING HEADQUARTERS AND TxDOT ROAD PROJECT

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PROJECT

TYLER STATE PARK

HEADQUARTERS REPLACEMENT PHASE 1

PROJECT NO: 112741

DATE: JULY 03,2020

INDEX OF DRAWINGS

Part 1 of 2

BUILDING CODE SUMMARY

A. INTERNATIONAL CODE COUNCIL

i. BUILDING CODE	INTERNATIONAL BUILDING CODE 2015
ii. RESIDENTIAL CODE	INTERNATIONAL RESIDENTIAL CODE 2015
iii. EXISTING BUILDINGS	INTERNATIONAL EXISTING BUILDINGS CODE 2015
iv. STRUCTURAL CODE	INTERNATIONAL BUILDING CODE 2015
v. PLUMBING CODE	INTERNATIONAL PLUMBING CODE 2015
vi. MECHANICAL CODE	INTERNATIONAL MECHANICAL CODE 2015
vii. ENERGY CODE	INTERNATIONAL ENERGY CODE 2015
viii. GAS CODE	INTERNATIONAL FUEL GAS CODE 2015

B. NATIONAL FIRE PROTECTION ASSOCIATION

i. ELECTRICAL CODE	NATIONAL ELECTRICAL CODE 2017

C. STATE ENERGY CONSERVATION OFFICE (SECO)/TEXAS COMPTROLLER'S OFFICE

1. ENERGY CODES FOR STATE BUILDINGS - See Energy Conservation Design Standards: Texas Administrative Code, Title 34, Part 1, Ch.19, Subchapter C
   a. COMPLIANCE WITH THE ENERGY CONSERVATION DESIGN STANDARD OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AN D AIR CONDITIONING ENGINEERS (ASHRAE) /ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA), ENERGY STANDARD FOR BUILDINGS, ASHRAE/IESNA STANDARD 90.1 (2013)
   See SECO website for State Funded Buildings, New Construction and Major Renovation Requirements and SECO Compliance Certification Forms
2. WATER CONSERVATION STANDARDS FOR STATE BUILDINGS - Energy Conservation Design Standards: Texas Administrative Code, Title 34, Part 1, Ch.19, Subchapter C
   a. COMPLIANCE WITH THE WATER CONSERVATION DESIGN STANDARDS FOR STATE BUILDINGS AND INSTITUTIONS OF HIGHER EDUCATION FACILITIES, STATE ENERGY CONSERVATION OFFICE (SECO), 2016

See SECO website for Texas Water Conservation Design Standards, Requirements and SECO Compliance Certification I Reporting Form

D. ACCESSIBILITY CODE

i. U.S. DEPT. OF JUSTICE, 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
ii. U.S. DEPT. OF JUSTICE, ARCHITECTURAL BARRIERS ACT, ACCESSIBILITY GUIDELINES FOR OUTDOOR DEVELOPED AREAS ON FEDERAL LANDS, EFFECTIVE NOVEMBER-25-2013
iii. 2012 TEXAS ACCESSIBILITY STANDARDS, ELIMINATION OF ARCHITECTURAL BARRIERS, TEXAS GOVERNMENT CODE, CHAPTER 469

E. PLAYGROUND SAFETY CODE

i. Public Playground Safety Handbook, U.S. Consumer Product Safety Commission.

TEXAS PARKS & WILDLIFE

TEXAS PARKS AND WILDLIFE

INFRASTRUCTURE DIVISION

4200 SMITH SCHOOL ROAD · AUSTIN, TEXAS 78744-3292

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT · RACHEL L. H. WRIGHT · 20948 · STATE OF TEXAS

RELEASED FOR SOLICITATION

Thea Luong — 7/21/2020
PROJECT MANAGER, INFRASTRUCTURE DIVISION — DATE

Lori Sons — DATE
DESIGN BRANCH HEAD, INFRASTRUCTURE DIVISION

Tim A. Malinovsky — 07/31/2020
PM BRANCH HEAD, INFRASTRUCTURE DIVISION — DATE

07/31/202
DEPUTY DIRECTOR, INFRASTRUCTURE DIVISION — DATE

SET NO:

CONSTRUCTION DOCUMENTS

THE FOLLOWING SECTION OF DETAILS PROVIDES INFORMATION ON REQUIREMENTS FOR DISABLED ACCESSIBILITY. THE REQUIREMENTS COMBINE MINIMUM REQUIREMENTS OF STATE AND FEDERAL AGENCIES. THE PURPOSE OF THIS SECTION IS TO HELP AVOID INSTALLATION OF MATERIALS ON CONSTRUCTION PROJECTS THAT WOULD LIMIT ACCESSIBILITY. THE SCOPE OF THIS SECTION IS LIMITED AND THE INDIVIDUALS WORKING ON THE PROJECT SHOULD FAMILIARIZE THEMSELVES WITH TEXAS ACCESSIBILITY STANDARD (TAS) AND AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR ADDITIONAL INFORMATION AND REQUIREMENTS. COPIES OF THESE DOCUMENTS MAY BE OBTAINED BY CONTACTING THE FOLLOWING:

TAS:
TEXAS DEPT. OF LICENSING & REGULATION
P.O. BOX 12157
AUSTIN, TEXAS 78711
(800) 803-9202
TDD (800) 735-2989
www.tdlr.texas.gov/ab/abtas

ADAAG:
SOUTHWEST ADA CENTER
TIRR Memorial Hermann - ILRU 1333 Moursund
HOUSTON, TEXAS 77030
ADA HOTLINE:
(800) 949-4232
TDD: (713) 797-7171
FAX: (713) 520-5785
www.southwestada.org/index

IN THE EVENT THE INFORMATION ON THE PLAN SHEETS DOES NOT MEET THE MINIMUM REQUIREMENTS OF THE SECTION, THEN THE INFORMATION SHALL BE PRESENTED TO THE ARCHITECT FOR CLARIFICATION PRIOR TO CONSTRUCTION OF SPECIFIC AREA OF WORK.

ELIMINATION OF ARCHITECTURAL BARRIERS UNIFORM FEDERAL ACCESSIBILITY STANDARDS (ADA)

In accordance with accessibility requirements, the following standards shall be included when bidding on projects involving renovation of or new facilities for public accommodation or commercial facilities. Any items not conforming to these or any other standards, codes, or ordinances shall be brought to the attention of the project architect for this interpretation. In the event the information listed in this document conflicts with any portion of the work described in the Contract Documents, the contractor shall notify the architect, in writing, of his need for a solution to resolve the conflict. The mounting heights indicated are for items that require accessibility by disabled individuals. Where two or more items are grouped in one area (mirrors, sinks, toilets, drinking fountains, urinals, shelves, telephones, etc.) not all items in the area have to be mounted at handicap height.
Contractor to coordinate these installation heights with other materials for neat, trimmed out and finished appearance. Items for disabled individual use shall be mounted at height indicated for age level as noted.

CHAPTER 1: APPLICATION AND ADMINISTRATION

TAS SECTION 104 - CONVENTIONS
A. All dimensions are subject to conventional industry tolerances except where the requirement is stated as a range with specific minimum and maximum points.
B. Unless specifically stated otherwise, figures are provided for informational purposes only.

CHAPTER 2: SCOPING REQUIREMENTS

TAS SECTION 201.1 - SCOPE
A. All areas of newly designed and newly constructed buildings and facilities an altered portions of existing buildings and facilities shall comply with these requirements.

TAS SECTION 202 - EXISTING BUILDINGS AND FACILITIES
A. Each addition to an existing building or facility shall comply with the requirements for new construction. Each addition that affects or could effect the usability of or access to an area containing a primary function shall comply with 202.4
B. Where existing elements, spaces, or common use areas are altered, each altered element, space, or common use area shall comply with the applicable requirements of Chapter 2.
C. An alteration that decreases the accessibility of a building or facility below the requirements for new construction at the time of the alteration is prohibited.
D. An alteration of an existing element, space, or area of a building or facility shall not impose a requirement for accessibility greater than required for new construction.
E. Alterations that affect the usability or access to an area containing a primary function shall be made so as to ensure usage by individuals with disabilities.

TAS SECTION 204 - PROTRUDING OBJECTS
A. Protuding objects on circulation paths shall comply with 307.
B. Within areas of sports activity, protruding objects on circulation paths shall not be required to comply with 307.
B. Within play areas, protruding objects on circulation paths shall not be required to comply with 307 provided that ground level accessible routes provide vertical clearance in compliance with 1008.2.

TAS SECTION 205 - OPERABLE PARTS
A. Operable parts on accessible elements, accessible routes, and in accessible rooms and spaces shall comply with 309.
B. Operable parts intended for use only by service or maintenance personnel shall not be required to comply with 309.
C. Electrical or communication receptacles serving a dedicated use shall not be required to comply with 309.
D. Floor Outlets, HVAC diffusers, exercise equipment, redudant light controls, redudant outlets are required to comply with 309.

TAS SECTION 206 - ACCESSIBLE ROUTES
A. At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones; public streets and sidewalks; and public transportation stops to the accessible building or facility entrance they serve.
B. At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the same site.
C. At least one accessible route shall connect each story and mezzanine in multi-story buildings and facilities.
D. In restaurants and cafeterias, an accessible route shall be provided to all dining areas, including raised or sunken dining areas, and outdoor dining areas.
E. Where a circulation path directly connects a performance area to an assembly area, an accessible route shall directly connect the assembly seating area with the performance area. An accessible route shall be provided from performance areas to ancillary areas or facilities used by performers.
F. Common use circulation paths within employee work areas shall comply with 402.

TAS SECTION 207 - ACCESSIBLE MEANS OF EGRESS
A. Means of egress shall comply with section 1003.2.13 of the International Building Code (2000 edition and 2001 Supplement) or section 1007 of the International Building Code (2003 edition.)
B. Standby power shall be provided for platform lifts permitted by section 1003.2.13.4 of the International Building Code (2000 edition and 2001 supplement) or section 1007.5 of the International Building Code (2003 edition) to serve as a part of an accessible means of egress.

TAS SECTION 208 - PARKING SPACES
A. Parking Spaces shall comply with 502 and shall be provided in accordance with Table 208.2 except required by 208.2.1, 208.2.2, and 208.2.3. Where more than one parking facility is provided on a site, the number of accessible spaces provided on the site shall be calculated according to the number of spaces required for each parking facility.

Table 208.2 Parking Spaces

TOTAL PARKING IN LOT	MIN. NUMBER OF ACCESSIBLE SPACES REQUIRED	TOTAL PARKING IN LOT	MIN. NUMBER OF ACCESSIBLE SPACES REQUIRED
1 TO 25	1	201 TO 300	7
26 TO 50	2	301 TO 400	8
51 TO 75	3	401 TO 500	9
76 TO 100	4	501 TO 1000	2 PERCENT OF TOTAL
101 TO 150	5	1000 AND OVER	20, PLUS 1 FOR EACH 100, OR FRACTION THEREOF, OVER 1000
151 TO 200	6		

TAS SECTION 208.2.4 - VAN PARKING SPACES
A. For every six or fraction of six parking spaces required by 208.2 to comply with 502, at least one shall be a van parking space complying with 502.

TAS SECTION 208.3 - LOCATION
A. Parking spaces complying with 502 that serve a particular building or facility shall be located on the shortest possible accessible route from parking lot to an entrance complying with 206.4. Where parking serves more than one accessible entrance, parking spaces complying with 502 shall be dispersed and located at the shortest accessible route to the accessible entrances.
B. Van parking spaces shall be permitted to be grouped on one level within a multi-story parking facility.

TAS SECTION 209 - PASSENGER LOADING ZONES AND BUS STOPS
A. Passenger loading zones, except those required to comply with 209.2.2 and 209.2.3, shall provide at least one passenger loading zone complying with 503 in every continuous 100 linear feet (30m) of loading zone space, or fraction thereof.
B. In bus loading zones restricted to use by designated or specified public transportation vehicles,each bus bay, bus stop, or other area designated for lift or ramp deployment shall comply with 810.2

TAS SECTION 210 - STAIRWAYS
A. Interior and exterior stairs that are part of a means of egress shall comply with 504. Although handrails on stairs that are not part of a means of egress, State or local building codes may require handrails or guards.

TAS SECTION 211 - DRINKING FOUNTAINS
A. No fewer than two drinking fountains shall be provided. One drinking fountain shall comply with 602.1 through 602.6 and one drinking fountain shall comply with 602.7.
B. More than the minimum number of drinking fountains specified in 211.2 are provided, 50 percent of the total number of drinking fountains provided shall comply with 602.1 through 602.6, and 50 percent of the total number of drinking fountains provided shall comply with 602.7

TAS SECTION 212 - KITCHENS, KITCHENETTES, AND SINKS
A. Kitchens and kitchenettes shall comply with 212 and 804. Sinks shall comply with 212.
B. Where sinks are provided, at least 5 percent, but no fewer than one, of each type provided in each accessible room or space shall comply with 606.

TAS SECTION 213 - TOILET FACILITIES AND BATHING FACILITIES
A. Where toilet facilities and bathing facilities are provided, they shall comply with 213. Toilet facilities and bathing facilities shall be provided on a story connected by an accessible route to an accessible entrance.
B. Toilet restrooms and bathing rooms shall comply with 603.
C. Where multiple single user toilet rooms are clustered at a single location, no more than 50% of the single user toilet rooms for each use at each cluster shall be required to comply with 603.
D. Unisex toilet rooms and unisex bathing rooms shall contain not more than one lavatory, and two water closets without urinals or one water closet and one urinal. Unisex bathing rooms contain one shower or one shower and one bathtub, one lavatory, and one water closet. Doors to unisex restrooms and bathing rooms shall have privacy latches.

TAS SECTION 214 - WASHING MACHINES AND CLOTHES DRYERS
A. Where three or fewer washing machines are provided, at least one shall comply with 611. Where more than three washing machines are provided, at least two shall comply with 611.
B. Where three or fewer clothes dryers are provided, at least one shall comply with 611. Where more than three clothes dryers are provided, at least two shall comply with 611.

TAS SECTION 215 - FIRE ALARM SYSTEMS
A. Alarms in public use areas and common use areas shall comply with 702.
B. Where employee work areas have audible alarm coverage, the wiring system shall be designed so that the visible alarms complying with 702 can be integrated into the alarm system.

TAS SECTION 216 - SIGNS
A. Signs shall comply with 703. Building directories, menus, seat and row designations in assembly areas, occupant names, building addresses, and company names and logos shall not be required to comply with 216.
B. Signs required by section 1003.2.13.5.4 of the International Building Code (2000 edition) or section 1007.6.4 of the International Building Code (2003 edition) to provide instructions in areas of refuge shall comply with 703.5
C. Directional signs required by section 1003.2.13.6 of the International Building Code (2000 edition) or section 707.7 of the International Building Code (2003 edition) to provide directions to accessible means of egress shall comply with 703.5
D. Exit Doors. Doors at exit passageways, exit discharge, and exit stairways shall be identified by tactile signs complying with 703.1, 703.2, and 703.5.
E. Where not all entrances comply with 404, entrances complying with 404 shall be identified by the International Symbol of Accessibility complying with 703.7.2.1. Directional signs complying with 703.5 that indicate the location of the nearest entrance complying with 404 shall be provided at entrances that do not comply with 404.

TAS SECTION 217 - TELEPHONES
A. Where public telephone are provided, wheelchair accessible telephones complying with 704.2 shall be provided in accordance with Table 217.2.

TAS SECTION 219 - ASSISTIVE LISTENING SYSTEMS
A. In each assembly area where audible communication is integral to the use of the space, an assistive listening system shall be provided.
B. Receivers complying with 706.2 shall be provided for assistive listening systems in each assembly area in accordance with table 219.3. 25% minimum of receivers provided, but no fewer than two, shall be hearing-aid compatible in accordance with 706.3

TAS SECTION 220 - AUTOMATIC TELLER MACHINES AND FARE MACHINES
A. Where automatic teller machines or self-service fare vending, collection, or adjustment machines are provided, at least one of each type provided at each location shall comply with 707. Where bins are provided for envelopes, waste paper, or other purposes, at least one of each shall comply with 811.

TAS SECTION 221 - ASSEMBLY AREAS
A. Assembly areas shall provide wheelchair spaces, companion seats, and designated aisle seats complying with 221 and 802. In addition, lawn seating shall comply with 221.5.
B. Wheelchair spaces complying with 802.1 shall be provided in accordance with table 221.2.1.
C. Wheelchair spaces shall be an integral part of the seating plan. At least one companion seat complying with 802.3 shall be provided for each wheelchair space required by table 221.2.1.
D. Wheelchair spaces shall provide lines of sight complying with 802.2. In providing lines of sight, wheelchair spaces shall be dispersed. Wheelchair spaces shall provide spectators with choices of seating locations or viewing angles equal to or better than seating locations and viewing angles of other spectators. Wheelchair spaces shall be dispersed horizontally.
E. At least 5% of the total number of aisle seats provided shall comply with 802.4 and shall be the aisle seats located closest to the accessible routes.

NUMBER OF SEATS	MIN. NUMBER OF WHEELCHAIR SPACES REQUIRED	NUMBER OF SEATS	MIN. NUMBER OF WHEELCHAIR SPACES REQUIRED
4 TO 25	1	501 TO 5000	6, plus 1 for each 150, or fraction thereof, between 501 through 5000
26 TO 50	2		
51 TO 150	4	5001 AND OVER	36, plus 1 for each 200, or fraction thereof, over 5000
151 TO 300	5		
301 TO 500	6		

TAS SECTION 222 - DRESSING, FITTING, AND LOCKER ROOMS
A. Where dressing rooms, fitting rooms, or locker rooms are provided, at least 5%, but no fewer than one, of each type of use in each cluster provided shall comply with 803.
B. Where coat hooks or shelves are provided in dressing fitting or locker rooms w/o individual compartments, at least one of each type shall comply with 803.5. Where coat hooks or shelves are provided in individual compartments at least one of each type shall be provided in accordance with 222.1.

TAS SECTION 223 - MEDICAL CARE AND LONG-TERM CARE FACILITIES
A. In licensed medical care facilities and licensed long-term care facilities where the period of stay exceeds twenty-four hours, patient or resident sleeping rooms shall be provided in accordance with 223. Toilet rooms part of critical or intensive care patient sleeping rooms shall not be required to comply with 603.

TAS SECTION 224 - TRANSIENT LODGING FACILITIES AND GUEST ROOMS
A. Entrances, doors, and doorways providing user passage into and within the guest rooms that are not required to provide mobility features complying with 806.2 shall comply with 404.2.3.
B. In transient lodging facilities, guest rooms with mobility features complying with 806.2 shall be provided in accordance with Table 224.2.
C. In guest rooms having more than 25 beds, 5% minimum of the beds shall have clear floor space complying with 806.2.3.

TAS SECTION 225 - STORAGE
A. Where storage is provided, at least one of each type shall comply with 811.
B. Where lockers are provided, at least 5%, but no fewer than one of each type, shall comply with 811.
C. Self-service storage facilities shall provide individual self-service storage spaces complying with these requirements in accordance with Table 225.3.

TAS SECTION 226 - DINING SURFACES AND WORK SURFACES
A. Where dining surfaces are provided for the consumption of food or drink, at least 5% of the seating spaces and standing spaces at the dining surfaces shall comply with 902. In addition, where work surfaces are provided for use by other than employees, at least 5% shall comply with 902.

TAS SECTION 227 - SALES AND SERVICE
A. Where provided, check-out aisles, sales counters, service counters, food service lines, queues, and waiting lines shall comply with 227 and 904.
B. Where counters are provided, at least one of each type of sales counter and service counter shall comply with 904.4. Where counters are dispersed throughout the facility, counters complying with 904.4 shall also be dispersed.
C. Queues and waiting lines servicing counters or check-out aisles required to comply with 904.3 or 904.4 shall comply with 403.

TAS SECTION 228 - DEPOSITORIES, VENDING MACHINES, CHANGE MACHINES, MAIL BOXES
A. Where provided, at least one of each type of depository, vending machine, change machine, and fuel dispenser shall comply with 309.
B. Where mail boxes are provided in an interior location, at least 5%, but no fewer than one of each type shall comply with 309.

TAS SECTION 229 - WINDOWS
A. Where glazed openings are provided in accessible rooms or spaces for operation by occupants, at least one must opening shall comply with 309. Each glazed opening required by an administrative authority to be operable shall comply with 309.

TAS SECTION 230 - TWO-WAY COMMUNICATION SYSTEMS
A. Where a two-way communication system is provided to gain admittance to a building or facility or to be restricted areas within a building or facility, the system shall comply with 708.

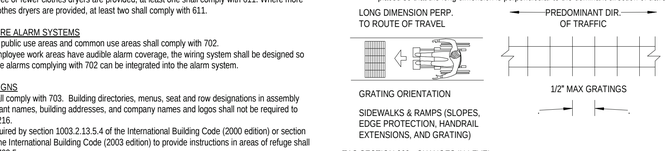
TAS SECTION 236 - EXERCISE MACHINES AND EQUIPMENT
A. At least one of each type of exercise machine and equipment shall comply with 1004.

TAS SECTION 240 - PLAY AREAS
A. Where ground level play components are provided, at least one of each type shall be on an accessible route and shall comply with 1008.4.
B. When elevated play components are provided, at least 50% shall be on an accessible route and shall comply with 1008.4

TAS SECTION 242 - SWIMMING POOLS, WADING POOLS, AND SPAS
A. At least two accessible means of entry shall be provided for swimming pools.
B. At least one accessible means for entry for wading pools and spas.

CHAPTER 3: BUILDING BLOCKS

TAS SECTION 302 - FLOOR OR GROUND SURFACES
A. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.
B. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2" maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Edge trim to comply w/303.
C. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2" diameter except as allowed in 407.4.3, 409.4.3., 410.4, 810.5.3. and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.



TAS SECTION 303 - CHANGES IN LEVEL
A. Changes in level of 1/4" high maximum shall be permitted to be vertical. (Fig. 303)
B. Changes in level between 1/4"-1/2" maximum shall be beveled at a slope not steeper than 1:2 (Fig. 303)
C. Changes in level greater than 1/2" high shall be ramped and comply with 405 or 406

Figure 303

TAS SECTION 304 - TURNING SPACE
A. The turning space shall be a space 60" diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.
B. Slopes steeper than 1:48 are not permitted.
C. Doors shall be permitted to swing into turning spaces.
D. The T-shaped turning space shall be a T-shaped space within a 60" square minimum with arms and base 36" wide minimum. Each arm of the T shall be clear of obstructions 12" minimum in each direction and the base shall be clear of obstructions 24" minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm. (Fig. 304.3.2)

Figure 304.3.2 T-shaped turning space

TAS SECTION 305 - CLEAR FLOOR OR GROUND SPACE
A. Floor of ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted. Slopes steeper than 1:48 are not permitted.
B. The clear floor or ground space shall be 30" minimum by 48" minimum. (Fig. 305.3)
C. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearances complying with 306.
D. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element. (Fig. 305.5)
E. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.
F. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with below:
1. Alcoves shall be 36" wide minimum where the depth exceeds 24" for forward approach (Fig. 305.7.1)
2. Alcoves shall be 60" wide minimum where the depth exceeds 15" for parallel approach (Fig. 305.7.2)

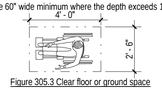


Figure 305.3 Clear floor or ground space

Forward approach Parallel approach

Figure 305.5 Position of clear floor or ground space

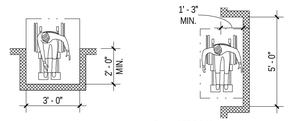


Figure 305.7.1 Maneuvering clearance in an alcove, forward approach

Figure 305.7.2 Maneuvering clearance in an alcove, parallel approach

TAS SECTION 306 - KNEE AND TOE CLEARANCE
A. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

TAS SECTION 306.2 - TOE CLEARANCE
A. Space under an element between the finish floor or ground and 9" above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.
B. Toe clearance shall extend 25" maximum under an element
C. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17" minimum under the element.
D. Space extending greater than 6" beyond the available knee clearance at 9" above the finish floor or ground shall not be considered toe clearance.
E. Toe clearance shall be 30" wide minimum.

TAS SECTION 306.3 - KNEE CLEARANCE
A. Space under an element 9"-27" above the finish floor shall be considered knee clearance.
B. Knee clearance shall extend 25" maximum under an element at 9" above the finish floor.
C. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11" deep minimum at 9" above the finish floor or ground, and 8" deep minimum at 27" above finish floor or ground.
D. Between 9"-27" above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1" in depth for each 6" in height
E. Knee clearance shall be 30" wide minimum.

TAS SECTION 307 - PROTRUDING OBJECTS
A. Objects projecting from walls with leading edges more than 27" and not more than 80" above the finish floor shall protrude no more than 4" horizontally into the circulation path.
B. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12" max when located 27"-80" above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12", the lowest edge of such sign or obstruction shall be 27"-80" above the finish floor.
C. Vertical clearance shall be 80" high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80" high. The leading edge of such guardrail or barrier shall be located 27" maximum above the finish floor.

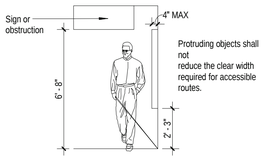


Figure 307.2 Limits of protruding objects

TAS SECTION 308 - REACH RANGES
A. Refer to Table 308.1 showing children's reach ranges.

TAS SECTION 308.2 - FORWARD REACH
A. Where a forward reach is unobstructed, the high forward reach shall be 48" maximum and the low forward reach shall be 15" minimum above the finish floor or ground. (Fig. 308.2.1)
B. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48" maximum where the reach depth is 20" maximum. Where the reach depth exceeds 20", the high forward reach shall be 44" maximum and the reach depth shall be 25" maximum. (Fig. 308.2.2)

TAS SECTION 308.3 - SIDE REACH
A. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48" maximum and the low side reach shall be 15" minimum above the finish floor or ground. (Fig. 308.2.1)
1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10" maximum.
B. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34" maximum and the depth of the obstruction shall be 24" maximum. The high side reach shall be 48" maximum for a reach depth of 10" maximum. Where the reach depth exceeds 10", the high side reach shall be 46" maximum for a reach depth of 24" maximum. (Fig. 308.2.3)
1. The top of washing machines and clothes dryers shall be permitted to be 36" maximum above the finish floor.

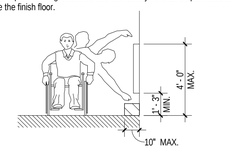


Figure 308.2.1 Unobstructed forward/side reach

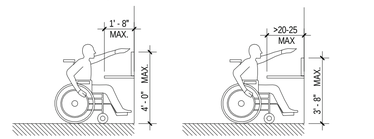


Figure 308.2.2 Obstructed high forward reach

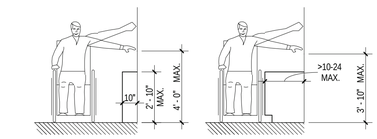


Figure 308.3.2 Obstructed high side reach

TAS SECTION 309 - OPERABLE PARTS
A. A clear floor space complying with 305 shall be provided.
B. Operable parts shall be placed within one or more of the reach ranges specified in 308.
C. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum.

CHAPTER 4: ACCESSIBLE ROUTES

TAS SECTION 402 - ACCESSIBLE ROUTES
A. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts.

TAS SECTION 403 - WALKING SURFACES
A. Floor and ground surfaces shall comply with 302. Changes in level shall comply with 303.
B. The running slope shall not be steeper than 1:20. The cross slope of the walking surfaces shall not be steeper than 1:48.
C. The clear width of walking surfaces shall be 36" minimum.
1. The clear width shall be permitted to be reduced to 32" minimum for a length of 24" maximum provided that reduced width segments are separated by segments that are 48" long minimum and 36" wide minimum.
D. Where the accessible route makes a 180° turn around an element less than 48" wide, the clear width shall be 42" minimum approaching the turn, 48" minimum at the turn and 42" minimum leaving the turn.
E. Where the accessible route makes a 180° turn around an element less than 48" wide and the clear width at the end of the turn is 60" minimum, the clear width may be 36" approaching and leaving the turn.
F. An accessible route with a clear width less than 60" shall provide passing spaces at intervals of 200' maximum. Passing spaces shall either be 60"x60" or comply with 304.3.2 where the base and arms of the T-shaped space extend 48" minimum beyond the intersection.

TAS SECTION 404 - DOORS, DOORWAYS, AND GATES
A. Doorways shall provide a clear opening of 32" minimum, with the door open 90°. (Fig. 404.2.3)
1. Clear opening shall be measured between the face of the door and opposite stop.
2. Openings more than 24" in depth shall provide a clear opening of 36" minimum.
3. There shall be no projections into the required clear opening width lower than 34" above the finish floor or ground. Projections into the clear opening width between 34"-80" AFF shall not exceed 4".

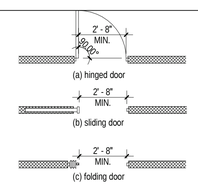
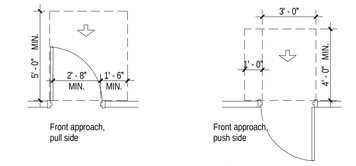


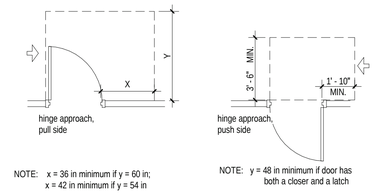
Figure 404.2.3
Clear width at doorways

TAS SECTION 404.2 - MANEUVERING CLEARANCES AT DOORS
A. Front approach pull side - 60" min. width & 18" min. beside strike edge . Front approach push side - 48" min. width & 0" beside strike edge. (12" @ strike if door has both a closer and a latch) (Fig. 404.2.4.1 (a))
B. Hinge side approach pull side - 60" min. width, 36" min. beside strike edge; or 54" min. width, 42" min. beside strike edge. Hinge side approach push side - 42" min. width and 22" min. beside hinge edge (48" min. width if door has both a closer and a latch) (Fig. 404.2.4.1 (b))
C. Latch side approach pull side - 48" min. width and 24" min. beside strike edge (54" min. width if door has a closer); Latch side approach push side - 42" min. width and 24" min. beside strike edge (48" min. width if door has a closer) (Fig. 404.2.4.1 (c))

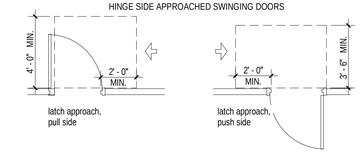
TAS SECTION 404.2.5 - THRESHOLDS AT DOORWAYS
A. Maximum threshold height: 1/2" , shall comply with 302 and 303.



(a)
FRONT APPROACHES SWING DOORS



(b)
HINGE SIDE APPROACHED SWINGING DOORS



(c)
LATCH SIDE APPROACHES - SWINGING DOORS

NOTE: all doors in alcoves or recesses shall comply with the clearance for front approaches, per 404.2.4.3

Figure 404.2.4.1 Maneuvering clearances at manual swinging doors and gates

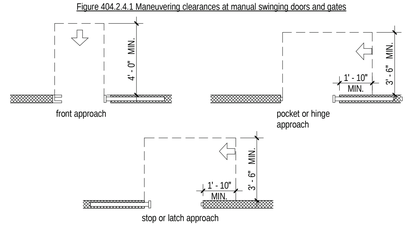


Figure 404.2.4.2 Maneuvering clearances at doorways without doors, sliding doors, gates, and folding doors

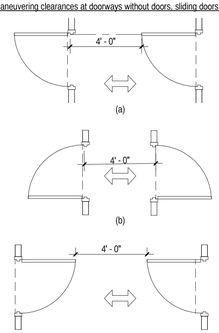


Figure 404.2.6 Doors in series and gates in series

TEXAS PARKS & WILDLIFE

FORD POWELL &CARSON
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Planning
Preservation
Interior Design
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REGISTERED ARCHITECT
RACHEL L. H. WRIGHT
20948
STATE OF TEXAS

TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
PROJECT NUMBER: 112741

DATE: 07/03/2020
DESIGNED BY: Designer
DRAWN BY: Author
REVIEWED BY: Checker

no.	revision	date

SHEET TITLE
TAS STANDARDS

SHEET NUMBER
G101

CONSTRUCTION DOCUMENTS

TAS SECTION 404.2.7 - DOOR AND GATE HARDWARE

A. Handles, pulls, latches, locks, and other operating devices shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate. Hardware required for accessible door passage shall be mounted 34"-48" above finished floor or ground.

TAS SECTION 404.2.8.1 - DOOR CLOSERS AND GATE CLOSERS

A. If a door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 90°, the door will take at least 5 seconds to move the door 12° from the latch.

TAS SECTION 404.2.9 - DOOR AND GATE OPENING FORCE

A. The maximum force for pushing or pulling open a door shall be as follows:
1. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.
2. Other doors
a. Exterior hinged doors: no requirement.
b. Interior hinged doors: 5.0 lb.
c. Sliding or folding doors: 5.0 lb.

These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.

TAS SECTION 404.2.11 - VISION LIGHTS

A. Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43" maximum above the floor.

TAS SECTION 405 - RAMPS (See table 405.2 for existing conditions)

A. Ramp runs shall have a slope not steeper than 1:12. In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not have to comply with 405. Cross ramp shall not be steeper than 1:48.
B. The clear width of the ramp run and the clear width between handrails where handrails are provided shall be 36" minimum.
C. The rise for any ramp shall be 30" maximum. The least possible slope shall be used for any ramp.
D. Level landings required at top and bottom of each run, with the following features:
1. Minimum Width: Equal to width of ramp
2. Length: Minimum 60" clear
3. At change of direction landing shall be 60" x 60" min.
E. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by 404.2.4 and 404.3.2 shall be permitted to overlap the required landing area.

TAS SECTION 405.8 - HANDRAILS

A. Handrails are required at all ramps with > 6" rise.
B. Height: 34"-38" above ramp surface
C. The clear space between the handrail and the wall shall be 1 1/2" minimum.

TAS SECTION 405.9 - EDGE PROTECTION

A. Ramps and landings with drop offs in excess of 1/2" shall have curbs, walls, railings, or projecting surfaces that prevent slipping off the ramp.
B. A curb or barrier shall be provided that prevents the passage of a 4" diameter sphere, where any portion of the sphere is within 4" of the finish floor or ground surface.
C. The extended floor or ground surface of the ramp run or landing shall extend 12" minimum beyond the inside face of a handrail complying with 505. (see Figure 405.9.1)

TABLE 405.2 Maximum ramp slope & rise for Existing Conditions

SLOPE	MAXIMUM RISE
steeper than 1:10, but not steeper than 1:8	3"
steeper than 1:12, but not steeper than 1:10	6"
CROSS SLOPE SHALL NOT EXCEED 1:48	

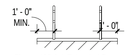


Figure 405.9.1 Extended floor or ground surface edge protection

TAS SECTION 406 - CURB RAMPS

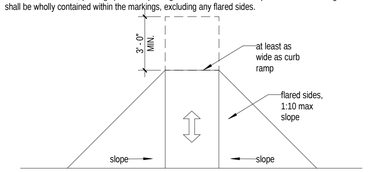
A. Curb ramps shall comply with 405.2 - 405.5, 405.10
B. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

TAS SECTION 406.4 - LANDINGS

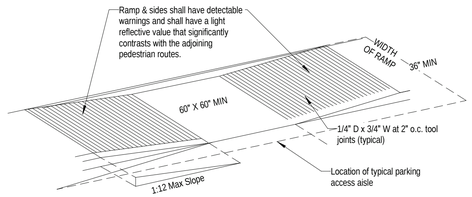
A. Landings shall be provided at the tops of curb ramps. the landing clear length shall be 36" minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing. (Fig. 406.4)

TAS SECTIONS 406.5 - LOCATION

A. Curb ramps and the flared sides of curb rams shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.



Standard Curb Ramp



Curb Ramp Parallel to Curb

Figure 406.4 Landings at the top of curb ramps

TAS SECTION 406.6 - DIAGONAL CURB RAMPS

A. If diagonal curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48" minimum clear space. If diagonal curb ramps are provided at marked crossings, the 48" clear space shall be within the markings. Diagonal curb ramps with flared sides shall have at least a 24" long segment of straight curb located on each side of the curb ramp and within the marked crossing.

TAS SECTION 4.7.11 - ISLANDS

A. Any raised islands in crossings shall be cut through level with the street or curb ramps at both sides and a level area at least 48" long by 36" wide minimum between the curb ramps in the part of the island intersected by the crossings. Each minimum 48" x 36" area shall be oriented so that the 48" minimum length is in the direction of the running slope of the curb ramp it serves.

TAS SECTION 407 - ELEVATORS

A. Elevators shall comply with ASME A17.1. They shall be passenger elevators as classified by ASME A17.1 Elevator operation shall be automatic.

TAS SECTION 407.2 - ELEVATOR LANDING REQUIREMENTS

A. Call buttons shall be raised or flush and located within one of the reach ranges specified in 308, measured to the centerline of the highest operable point.
1. Call buttons shall be 3/4" minimum in the smallest dimension.
2. A clear floor space complying with 305 shall be provided at the controls.
3. The call button that designates the up direction shall be located above the call button that designates the down direction.
4. Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.
B. Keypads shall be in a standard telephone keypad arrangement.
C. Visible and audible signals shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.
1. Visible signal features shall be centered 72" minimum above the finish floor or ground. The visible signal elements shall be 2 1/2" minimum measured along the vertical centerline of the element. Signals shall be visible from the floor area adjacent to the hall call button.
2. Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500Hz max. Verbal annunciators shall have a frequency of 300 Hz min - 3000 HZ max.
D. Floor designation shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both tactile characters and braille. Tactile characters shall be 2" high minimum. A tactile star shall be provided on both jambs at the main entry level.

TAS SECTION 407.3 - ELEVATOR DOOR REQUIREMENTS

A. Elevator doors shall be horizontal sliding type. Car gates are prohibited.
B. Elevator doors shall be provided with a reopening device that shall stop and open a door and hoistway door automatically if the door becomes obstructed by an object or person.
1. The device shall be activated by sensing an obstruction passing through the opening at 5" nominal and 29" nominal above the finish floor.
2. The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses. Door reopening devices shall remain effective for 20 seconds minimum.
3. Elevator doors shall remain fully open in response to a car call for 3 seconds minimum.

TAS SECTION 410 - PLATFORM LIFTS

A. Platform lifts shall comply with ASME A18.1 (1999 edition or 2003 edition). Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from lift.
B. The clearance between the platform sill and the edge of any runway landing shall be 1" maximum.
C. Platform lifts shall have low-energy power-operated doors or gates complying with 404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32" minimum. Side doors and gates shall provide a clear 42" width minimum.
NOTE: REQUIRES A VARIANCE FROM THE T.D.L.R. TO USE IN LIEU OF AN ELEVATOR

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

TAS SECTION 502 - PARKING SPACES (REFERENCE FIGURE 502.3)

A. Accessible car parking spaces shall be at least 96" minimum wide and van accessible parking shall be 132" minimum wide.
1. Van parking spaces may be 96" wide minimum where there is an access aisle 96" wide minimum.
2. Access aisles serving car and van parking shall be a minimum 60" wide and shall adjoin an accessible route.
3. Access aisles should be marked to discourage people from parking in them and extend the full length of the parking space.
B. Surface slope shall not exceed 1:48 in all directions (Note: no built up curb ramp may be located in an accessible parking access aisle.)
C. Access aisles shall not overlap the vehicular way.
D. Access aisles shall be permitted to be placed on either side of the parking space except for angled van parking spaces, which shall have access aisles located on the passenger side of the parking space.

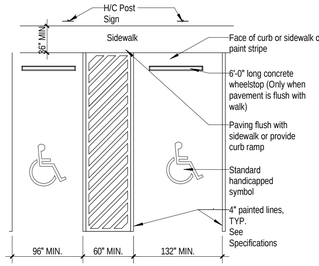
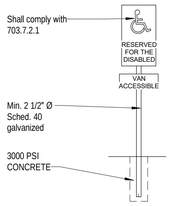


Figure 502.3 Parking space access aisle



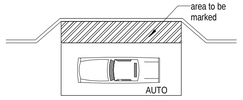
NOTE: Provide one sign at each disabled (designated) parking space

TAS SECTION 503 - PASSENGER LOADING ZONES

A. Passenger loading zones shall provide a vehicular pull-up space 96" wide minimum and 20' long minimum.

TAS SECTION 503.3 - ACCESS AISLE (REFERENCE FIGURE 503.3)

A. Passenger loading zones shall provide access aisles complying with 503 adjacent to the vehicle pull up space. Access aisles shall adjoin an accessible route and shall not overlap the vehicular way.
1. Access aisles serving vehicular pull-up spaces shall be 60" wide minimum and extend the full length of the vehicle pull-up spaces they serve
2. Slopes steeper than 1:48 are not permitted. Changes in level of the floor and ground surface are not permitted.
B. Vehicle pull-up spaces, access aisles serving them, and a vehicular route from an entrance to the passenger loading zone, and from the passenger loading zone to a vehicular exit shall provide a vertical clearance of 144" minimum.



ACCESS AISLE AT AUTOMOBILE PASSENGER LOADING ZONES

Figure 503.3 Passenger loading zone access aisle

TAS SECTION 504 - STAIRWAYS

TAS SECTIONS 504.2 - TREADS AND RISERS

A. All steps on a flight of stairs shall have uniform riser heights and tread widths
1. Minimum tread depth shall be 11", measured from riser to riser (not including nosing)
2. Open risers are not permitted
3. Risers shall be 4" high min. - 7" high max.

TAS SECTIONS 504.5 - NOSINGS (REFERENCE FIGURE 504.5)

A. Radius of the curvature at the leading edge shall be 1/2" maximum. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1 1/2" maximum over the tread below.

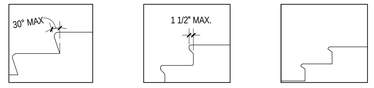


Figure 504.5 Stair nosings

TAS SECTION 505 - HANDRAILS (REFERENCE FIGURES 505.10.1, 505.10.2, 3)

A. Handrails shall be provided on both sides of stairs and ramps. Non-continuous stair handrails shall extend 12" beyond the top riser and the width of one tread beyond the bottom riser. At the top, the extension shall be parallel to the floor. At the bottom, the handrail shall continue to slope for a distance of one tread width. Non continuous ramp handrails shall extend 12" minimum beyond the top and bottom of ramp runs.
B. Height: 34"-38", measured from the stair nosing.
C. Clearance between handrail and adjacent surfaces shall be 1 1/2" minimum.
D. Handrails shall not rotate within their fittings.
E. Handrails are required on ramp runs greater than 6" in rise.

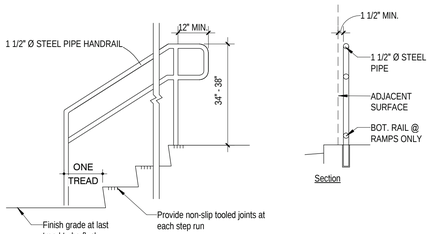


Figure 505.10.2.3 Top and bottom handrail extension at stairs

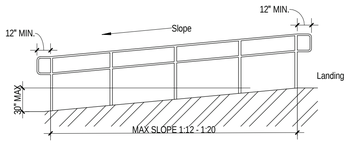
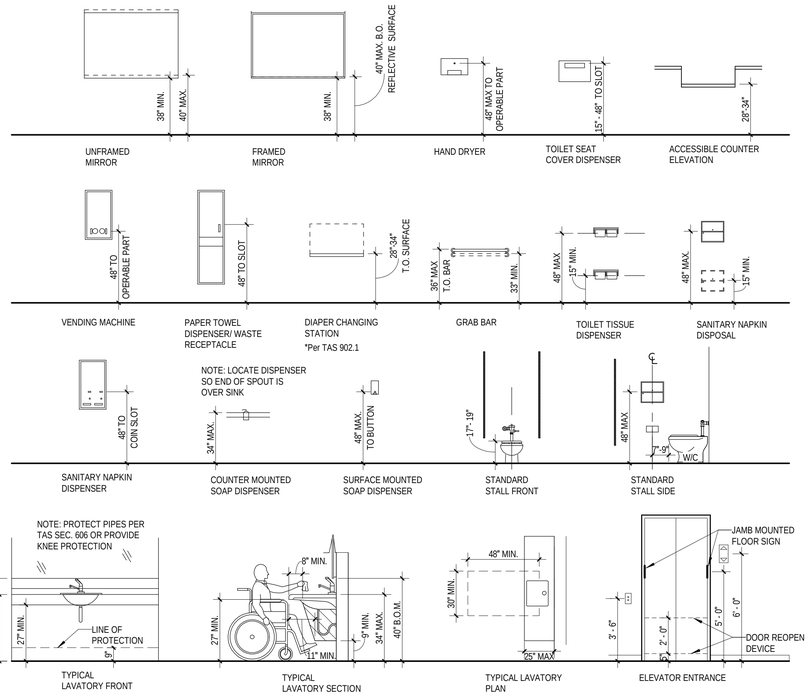


Figure 505.10.1 Top and bottom handrail extension at ramp

MOUNTING HEIGHTS - CHAPTER 3



CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

TAS SECTION 602 - DRINKING FOUNTAINS

A. Drinking fountains shall comply with 307 (protruding objects) and 602.
B. Units shall have a clear floor or ground space complying with 305 positioned for a forward approach and centered on the unit. Knee and toe clearances must comply with 306. Operable parts shall comply with 309. (Fig. 602.5)

TAS SECTION 602.4 - SPOUT HEIGHT (REFERENCE FIGURE 602.4 FOR ACCESSIBLE UNIT)

A. Accessible spout outlets shall be a maximum 36" above the finish floor or ground.

TAS SECTION 602.5 - SPOUT LOCATION (REFERENCE FIGURE 602.5)

A. The spout shall be located 15" minimum from the vertical support and 5" maximum from the front edge of the unit, including bumpers.
B. The spout shall provide a flow of water at least 4" high and shall be located 5" maximum from the front of the unit.
C. Where spouts are located less than 3" from the front of the unit, the water stream shall be 30 degrees maximum. Where the spout is located between 3"-5" maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

TAS SECTION 602.7 - DRINKING FOUNTAINS FOR STANDING PERSONS

A. Spout outlets of drinking fountains for standing persons shall be 38" minimum and 43" maximum above the finish floor or ground. (Fig. 602.4)

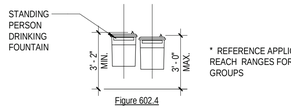


Figure 602.4

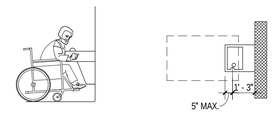


Figure 602.5 Drinking fountain spout location

TAS SECTION 603 - TOILET AND BATHING ROOMS

A. Turning space complying with 304 shall be provided within the room. (60" diameter or T-shaped space per 304.3.2)
B. Required clear floor spaces, clearance at fixtures, and turning space shall be permitted to overlap.
C. Door swings shall not swing into the clear floor space or clearance required for any fixture. Doors can swing into the required turning space.

TAS SECTION 603.3 - MIRRORS

A. Mirrors located above lavatories or countertops shall be installed so the bottom edge of the reflecting surface is 40" maximum above the finish floor or ground. Mirrors not installed above lavatories or countertops shall be 35" maximum above the finish floor or ground.

TAS SECTION 603.4 - COAT HOOKS AND SHELVES

A. Coat hooks shall be located within the reach ranges specified in 308. Shelves shall be located 40"-48" above the finish floor.

TAS SECTION 604 - WATER CLOSETS AND TOILET COMPARTMENTS

A. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16" minimum and 18" maximum from the side wall or partition, except in an ambulatory accessible toilet compartment where the centerline of the water closet may be 17" minimum and 19" maximum from the side wall or partition. Water closets shall be arranged for a left-hand or right-hand approach. (FIG. 604.3.1, 604.8.2)

TAS SECTION 604.3 - CLEARANCE

A. Clearances around water closets and in toilet compartments shall comply with Figure 604.3.1

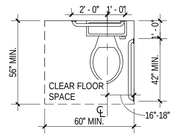


Figure 604.3.1 Clear Floor Space at Water Closets

TAS SECTION 604.3.2 - OVERLAP

A. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

TAS SECTION 604.4 - SEATS (REFERENCE FIGURE 604.4)

A. The seat height of a water closet above finish floor shall be 17"-19" maximum measured to the top of seat.
1. Seats shall not be sprung to return to a lifted position

TAS SECTION 604.5 - GRAB BARS (REFERENCE FIGURES 604.4, 604.5.2)

A. Grab bars shall comply with 609 and be provided on the side wall closest to the water closet and on the rear wall.
1.Grab bars shall not be required in a toilet room for a single use occupant accessed only through a private office and not for common or public use provided that reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with 604.5
B. For water closets not located in toilet stalls, the following grab bars shall be provided, 33"-36" above the finish floor*
1. Side wall: 42" long minimum, located 12" maximum from back wall. (Figure 604.3.1)
2. Rear wall: 36" long minimum and extend from the centerline of the water closet 12" minimum on one side and 24" minimum on the other side. (Figure 604.3.1)
C. Refer to 609 grab bars for size and structural elements.

TAS SECTION 604.6 - FLUSH CONTROLS (REFERENCE FIGURE 604.5.2)

A. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2.

TAS SECTION 604.7 - DISPENSERS (REFERENCE FIGURE 604.4)

A. Toilet paper dispensers shall comply with 309.4 and shall be 7" minimum and 9" maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15" minimum and 48" maximum above the finish floor and shall not be located behind grab bars. Dispensers that control delivery or do not permit continuous paper flow shall not be used.

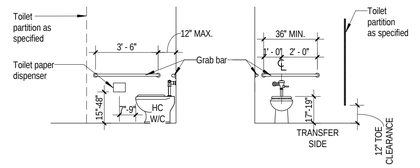


Figure 604.5.1 Side wall grab bar at water closets/toilet compartments

Figure 604.5.2 Rear wall grab bar at water closets/toilet compartments

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PROJECT NUMBER: 112741

DATE: 07/03/2020
DESIGNED BY: Designer
DRAWN BY: Author
REVIEWED BY: Checker

no.	revision	date

CONSTRUCTION DOCUMENTS

SHEET TITLE
TAS STANDARDS

SHEET NUMBER
G102

TAS SECTION 604.8 - TOILET COMPARTMENTS.

A. Wheelchair accessible toilet compartments shall meet the requirements of 604.8.1 and 604.8.3 Compartments containing more than one plumbing fixture shall comply with 603. Ambulatory accessible compartments shall comply with 604.8.2 and 604.8.3.

TAS SECTION 604.8.1 - WHEELCHAIR ACCESSIBLE COMPARTMENTS

A. Wheelchair accessible compartments shall comply with 604.8.1

B. Wheelchair accessible compartments shall be 60" wide minimum measured perpendicular to the side wall, and 56" deep minimum for wall hung water closets and 59" deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60" wide minimum measured perpendicular to the wall and 59" deep minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

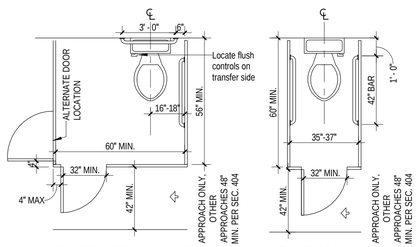
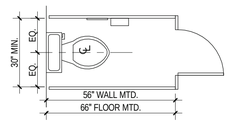


Figure 604.8.1.2 Wheelchair accessible toilet compartment doors

Figure 604.8.2 Ambulatory accessible toilet compartments



Non-Accessible Stall

CLEARANCES INDICATED ARE MINIMUM REQUIREMENTS FOR ACCESSIBILITY. REFER TO TOILET ROOMS AND LAVATORY DETAILS FOR MOUNTING HEIGHTS.

TAS SECTION 604.8.1.2 - DOORS (REFERENCE FIGURES 604.8.1.2, 604.8.2)

A. Toilet compartments doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42" minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4" maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4" maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

B. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

TAS SECTION 604.8.1.4 - TOE CLEARANCE

A. The front partition and at least one side partition shall provide a toe clearance of 9" minimum above finish floor and 6" deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide 12" minimum toe clearance above finish floor.

TAS SECTION 604.8.2 - AMBULATORY ACCESSIBLE COMPARTMENTS

A. Ambulatory accessible compartments shall comply with figure 604.8.2

B. Ambulatory accessible compartments shall have a depth of 60" minimum and a width of 35"-37" maximum.

C. Grab bars in ambulatory accessible compartments shall comply with 609. A side-wall grab bar that is 42" long minimum, located 12" maximum from the rear wall and extending 54" minimum from the rear wall shall be located on both sides of compartment.

D. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40"-48" maximum above the finish floor.

TAS SECTION 605 - URINALS

A. Urinals shall be stall-type or wall-hung with the rim 17" maximum above the finish floor or ground. Urinals shall be 13 1/2" deep minimum measured from the outer face of the urinal rim to the back side of the fixture. (Fig. 605.2)

B. A clear floor space complying with 305 (30" min. wide by 48" min. deep) positioned for forward approach shall be provided.

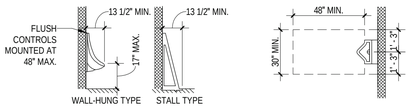


Figure 605.2 Height and depth of urinals

TAS SECTION 606 - LAVATORIES AND SINKS

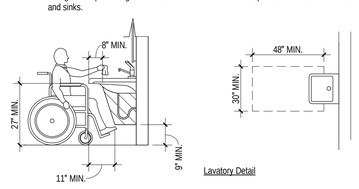
A. A clear floor space complying with 305 (30" min. wide by 48" min. deep) positioned for a forward approach, and knee and toe clearances complying with 306 shall be provided.

1. Soap and towel dispensers must also be located within the reach ranges specified in 308. Locate soap and towel dispensers so they are easy to use by a person at the accessible lavatory.

B. Lavatories and sinks shall be installed with the front of the higher rim or counter surface 34" maximum above the finish floor or ground.

C. Controls for faucets shall comply with 309. Hand-operated metering faucets shall remain for 10 seconds minimum.

D. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.



Lavatory Detail

TAS SECTION 607 - BATHTUBS

A. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches wide minimum. A lavatory complying with 606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12" minimum beyond the wall at the head end of the bathtub.

B. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with 610.

C. Grab bars for bathtubs shall comply with 609 and shall be provided in accordance with figures 607.4.1

TAS SECTION 608 - SHOWER COMPARTMENTS

A. Shower stalls shall be 36" x 36" clear inside dimension at transfer type shower compartments and have a 36" minimum wide by 48" minimum long clearance measured from the control wall. Roll-in type shower compartments shall be 30" minimum wide by 60" minimum long and shall have a 30" min wide x 60" min long entry on the face of the shower compartment. Alternate roll-in shower type compartments shall be 36" minimum wide and 60" minimum deep clear inside dimensions with a 36" wide minimum entry provided at one end of the long side of the compartment.

TAS SECTION 608.3.1 - TRANSFER TYPE SHOWER COMPARTMENT

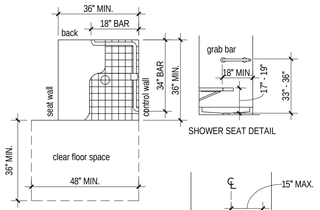
A. In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18" from the control wall.

B. A folding or non-folding seat shall be provided in transfer type shower compartments.

C. Controls, faucets, and shower spray units shall comply with 309.4

TAS SECTION 608.7 - THRESHOLDS

A. Thresholds in roll-in type shower compartments shall be 1/2" high maximum in accordance with 308. In transfer type shower compartments, thresholds 1/2" high shall be beveled, rounded, or vertical.



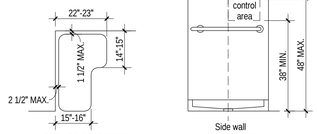


Figure 608.2.1. Transfer Type shower compartment size and clearance

TAS SECTION 609 - GRAB BARS

A. Grab bars with circular cross sections shall have an outside diameter of 1 1/4" minimum and 2" maximum. Grab bars with non-circular cross sections shall have a cross-section dimension of 2" maximum and a perimeter dimension of 4" minimum and 4.8" maximum.

B. The space between the wall and grab bar shall be 1 1/2". The space between the grab bar and projecting objects below shall be 1 1/2" minimum. The space between the grab bar and projecting objects above shall be 12" minimum.

C. Grab bars shall be installed in a horizontal position, 33" minimum and 36" maximum above the finish floor measured to the top of the gripping surface. Refer to chart for children accessible heights for exceptions.

D. Allowable stresses shall not be exceeded for materials used when a horizontal or vertical force of 250 pounds is applied at any point of the grab bar or any of its components.

TAS SECTION 610.2 - BATHTUB SEATS

A. Seat shall be able to stand vertical and horizontal forces of 250 pounds and shall have the following features:

1. Shall be 17"-19" above finish floor
2. Removable seats shall be 15"-16" deep and capable of secure placement.
3. Permanent seats shall be 15" deep minimum and extend from the back wall to or beyond the outer edge of the bathtub.

TAS SECTION 610.3 - SHOWER SEATS

A. Seats shall be L-shaped with the rear edge 2 1/2" maximum from the wall and 15"-16" maximum from the seat wall. The rear edge of the "L" portion shall be 1 1/2" maximum from the wall and the front edge shall be 14"-15" from the wall. The end of the "L" shall be 22"-23" from the main seat wall. Seats shall have be able to stand vertical and horizontal forces of 250 lbs.

1. Shall be 17"-19" above finish floor
2. Where a seat is provided in a roll in type shower it must be the fold-up type.

TAS SECTION 611 - WASHING MACHINES AND CLOTHES DRYERS

A. Top loading machines shall have the door to the laundry compartment located 36" maximum above the finish floor. Front loading machines shall have the bottom of the opening to the laundry compartment located 15"-36" above the finish floor.

CHAPTER 7: COMMUNICATION ELEMENTS AND FEATURES

TAS SECTION 702 - FIRE ALARM SYSTEMS

A. Fire alarm systems shall have permanently installed audible and Visual alarms complying with NFPA 72 (1999 or 2002 addition) except that the maximum allowable sound level of audible notification appliances complying with section 4-3.2.1 of NFPA 72 (1999 addition) shall have a sound level no more than 110dB at the maximum hearing distance from the audible audiences.

TAS SECTION 703 - SIGNS

A. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

B. Characters shall be uppercase and raised 1/32" minimum above their background.

C. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative,or of any other unusual form. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55-110 percent of the height of the uppercase letter "I."

D. Character height measured vertically from the baseline of the character shall be 5/8"-2" maximum based on the letter "I."

E. Braille shall be contracted (Grade 2) and shall comply with table 703.3.1. Braille shall be located below the entire text.

F. Tactile characters on signs shall be located 48" minimum above the finish floor measured from the baseline of the lowest character and 60" maximum above finish floor measured from the baseline of the highest tactile character.

TAS SECTION 703.4.2 - LOCATION

A. Where a tactile sign is provided at a door, the sign shall be located alongside the latch side. Where a tactile sign is provided at double doors with two active leafs, the sign shall be placed on the inactive leaf. If the double door has two active leafs, the tactile sign shall be placed to the right of the right hand door. Where there is no wall space at the latch side of the door or the right side of the double doors, signs shall be located on the adjacent wall. Signs containing tactile letters shall be located so that a minimum clear space of 18"x18," centered on the tactile letters is provided, beyond the arc of any door swing between the closed position and 45 degrees open position.

TAS SECTION 703.5 - VISUAL CHARACTERS

A. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or vice versa.

B. Characters shall be uppercase or lowercase or a combination of both.

C. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative,or of any other unusual form. Characters shall be selected from fonts where the width of the uppercase letter "O" is 55-110% of the height of the uppercase letter "I."

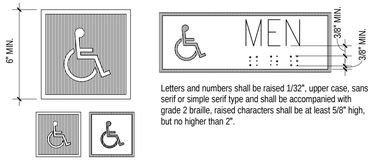
D. Character height shall comply with table 703.5.5 Visual Character Height

E. Visual characters shall be 40" maximum above the finish floor or ground.

TAS SECTION 703.6 - PICTOGRAMS

A. Pictograms shall have a field height of 6" minimum. Characters and braille shall not be located in the pictogram field.

B. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their background with either light characters on a dark background or vice versa.



Letters and numbers shall be raised 1/32", upper case, sans serif or simple serif type and shall be accompanied with grade 2 braille, raised characters shall be at least 5/8" high, but no higher than 2".

Figure 703.7.2.1 International Symbol of Accessibility

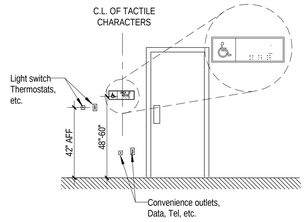


Figure 703.4.1 Height of tactile characters above finish floor or ground

TAS SECTION 704.2 - WHEELCHAIR ACCESSIBLE TELEPHONES

A. A clear floor or ground space complying with 305 shall be provided. The clear floor or ground space shall not be obstructed by bases, enclosures, or seats.

B. Parallel Approach - The distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10" maximum. (Fig. 704.2.1.1)

C. Forward Approach - The distance from the front edge of a counter within the telephone enclosure to the face of the telephone unit shall be 20" maximum. (Fig. 704.2.1.2)

D. The cord from the telephone to the handset shall be 29" minimum long.

TAS SECTION 704.3 - VOLUME CONTROL TELEPHONES

A. Volume control must provide a gain adjustable to 20 dB minimum. For incremental volume control,provide at least intermediate step of 12 dB of gain minimum. An automatic reset shall be provided.

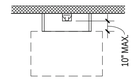


Figure 704.2.1.1 Parallel approach to telephone

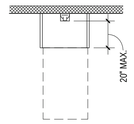


Figure 704.2.1.2 Forward approach to telephone

TAS SECTION 705 - DETECTABLE WARNINGS

A. Truncated domes in a detectable warning surface shall have a base diameter of .9"-1.4" maximum, a top diameter of 50-65% of the base diameter, and a height of .2"

B. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on light

C. Platform boarding edges shall be 24" wide and shall extend the full length of the public use areas of the platform.

TAS SECTION 706 - ASSISTIVE LISTENING SYSTEMS

A. Receivers required for use with an assistive listening system shall include a 1/8" standard mono jack.

B. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neckloops.

C. Assistive listening systems shall be capable of providing a sound pressure level of 110-118 dB with a dynamic range on the volume control of 50dB.

D. the signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum. Peek clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

CHAPTER 8: SPECIAL ROOMS, SPACES, AND ELEMENTS

TAS SECTION 802.1 - WHEELCHAIR SPACES

A. The floor or ground surface of wheelchair spaces shall comply with 302. Changes in level are not permitted.

B. A single wheelchair space shall be 36" wide minimum.

C. Where a wheelchair space can be entered from the front or rear, the wheelchair space shall be 48" deep minimum. Where a wheelchair space can be entered only from the side, the wheelchair space shall be 60" deep minimum.

D. Wheelchair spaces shall adjoin accessible routes. Accessible routes shall not overlap wheelchair spaces.

E. Lines of sight to the screen, performance area, or playing field for spectators shall comply with 802.2 (have line of sight over heads of spectators, dependent on spectators position)

TAS SECTION 802.3 - COMPANION SEATS

A. Companion seats should be positioned to have shoulder alignment with adjacent wheelchair spaces. The shoulder alignment point shall be measured 36" from the front of the wheelchair space. The floor surface should be the same for the wheelchair space and companion space.

B. Companion seats should be equal in size, quality, comfort, and the amenities of immediate seating.

TAS SECTION 802.4 - AISLE SEATS

A. Each designated aisle seat shall be identified by a sign or marker. Where armrests are provided on other seating in the immediate area, folding or retractable armrests must be provided on the aisle side of the seat.

TAS SECTION 803 - DRESSING, FITTING, AND LOCKER ROOMS

A. Turning space complying with 304 shall be provided within the room.

B. Doors shall not swing into the room unless a clear floor or ground space complying with 305.3 is provided beyond the arc of the swing.

C. A bench that is 42" long minimum x 20"-24" deep set at a height of 17"-19" shall be provided within the room. The bench shall provide for back support or shall be affixed to a wall.

D. Coat hooks shall be located within reach ranges specified in 308. Shelves shall be 40"-48" maximum above the finish floor or ground.

TAS SECTION 804 - KITCHENS AND KITCHENETTES

A. A kitchen or kitchenette is any room or space that has fixed or built-in cooking facilities (fixed or built-in range, cooktop, oven, or microwave OR appliances attached to a cabinet,shelf or wall and connected to plumbing gas or hardwired to electricity). These spaces must comply with 212 and 804.

B. In a pass through kitchens where counters or appliances are on opposing sides, there must be a 40" minimum clearance between opposing sides and an entrance from each side.

C. In a U-shaped kitchen enclosed on 3 continuous sides, clearance between all opposing sides must be 60" minimum.

D. Kitchen work surface shall be 34" above finish floor or ground.

E. In a room without a cook-top or conventional range, knee clearance is not required under the sink.

F. Storage NOT in a kitchen/kitchenette only needs to comply with 811, one of each type must be accessible.

CHAPTER 9: BUILT-IN ELEMENTS

TAS SECTION 902 - DINING SURFACES AND WORK SURFACES

A. A clear floor space complying with 305 positioned for a forward approach shall be provided. Knee and toe clearance must comply with 306.

B. Tops of dining surfaces and work surfaces shall be 28"-34" maximum above the finish floor or ground.

TAS SECTION 902.4 - DINING SURFACES AND WORK SURFACES FOR CHILDREN'S USE

A. A. A clear floor space complying with 305 positioned for a forward approach shall be provided. Knee and toe clearance must comply with 306, except the knee clearance shall be 24" minimum above the finish floor or ground.

B. Tops of dining surfaces and work surfaces shall be 26"-30" maximum above the finish floor or ground.

TAS SECTION 903 - BENCHES

A. Clear floor or ground space complying with 305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

B. Benches shall have seats 42" minimum long and 20"-24" maximum deep.

C. Bench shall provide back support or be affixed to a wall.

D. Top of bench seat shall be 17"-19" maximum above the finish floor or ground.

E. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds is applied at any point on the seat or its components.

TAS SECTION 904 - SALES AND SERVICE COUNTERS

A. Parallel Approach - A portion of the counter surface that is 36" long minimum and 36" high maximum shall be provided. A clear floor space complying with 305 shall be positioned for a parallel or approach adjacent to the 36" high minimum length of the counter.

B. Forward Approach - A portion of the counter surface that is 30" long minimum and 36" high maximum shall be provided. Knee and toe spaces complying with 306 shall be provided under the counter. A clear floor space complying with 305 shall be positioned for a parallel or approach adjacent to the 36" high minimum length of the counter.

C. The accessible portion of the countertop shall extend the same depth as the sales/service counter.

AGE BASED DIMENSIONAL INFORMATION TABLE FOR CHILDREN

		ADULT (AGE 12 +)	AGE 9-12	AGE 5-8	AGE 3-4	TAS SECTION
	HANDRAILS	34" MIN - 38" MAX	SECONDARY HANDRAIL @ 28" MAX WITH MIN 9" CLEARANCE BETWEEN UPPER HANDRAIL RECOMMENDED			505.4
	REACH RANGE - FORWARD OR SIDE	15" MIN - 48" MAX	16" MIN - 44" MAX	18" MIN - 40" MAX	20" MIN - 36" MAX	308.2
WC/TOILET	WC CENTERLINE TO WALL	16" - 18"	15" - 18"	12" - 15"	12"	604.9
WC/TOILET	WC CENTERLINE TO WALL (AMBULATORY)	17" - 19"	—	—	—	604.2
WC/TOILET	WC TOP OF SEAT	17" - 19"	15" - 17"	12" - 15"	11" - 12"	604.9
WC/TOILET	GRAB BARS (TO TOP)	33" - 36"	25" - 27"	20" - 25"	18" - 20"	604.9
WC/TOILET	DISPENSER HEIGHT	15" - 48"	17" - 19"	14" - 17"	14"	604.9
LAV/MIRRORS	LAV. MIN. KNEE CLEAR.	27" FORWARD APPROACH ONLY	24" FORWARD APPROACH ONLY	24" FORWARD APPROACH ONLY	PARALLEL APPROACH ALLOWD	606.2.4
LAV/MIRRORS	LAV. MAX RIM/COUNTERTOP	34"	31"	31"	—	606.2.4
LAV/MIRRORS	LAV. MAX TO FAUCETS FROM FRONT	24"	—	—	—	308.1
LAV/MIRRORS	MIRRORS ABOVE LAV., MAX TO BOTTOM OF REFLECTIVE SURFACE	40"	—	—	—	603.3
LAV/MIRRORS	MIRRORS NOT ABOVE LAV., MAX TO BOTTOM OF REFLECTIVE SURFACE	35"	—	—	—	603.3
LAV/MIRRORS	MIN TOP OF MIRROR	74"	—	—	—	603.3
DRINKING FOUNTAINS	MAX TO LOW SPOUT	36"	30" (SPOUT MUST BE 3 1/2" FM. FRONT)	30" (SPOUT MUST BE 3 1/2" FM. FRONT)	30" (SPOUT MUST BE 3 1/2" FM. FRONT)	602.2
DRINKING FOUNTAINS	MAX TO HIGH/STANDARD PERSON SPOUT	38" - 43"	—	—	—	602.7

**NOTE: * * INDICATES NO EXCEPTIONS MADE FOR THAT ITEM PER TAS 2012 STANDARDS

TEXAS PARKS & WILDLIFE

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210/226-1246
FPC# 92705

REGISTERED ARCHITECT RACHEL L. H. WRIGHT 20948 STATE OF TEXAS

TYLER STATE PARK

HEADQUARTERS REPLACEMENT PHASE 1

PROJECT NUMBER: 112741

DATE: 07/03/2020
DESIGNED BY: Designer
DRAWN BY: Author
REVIEWED BY: Checker

no.	revision	date

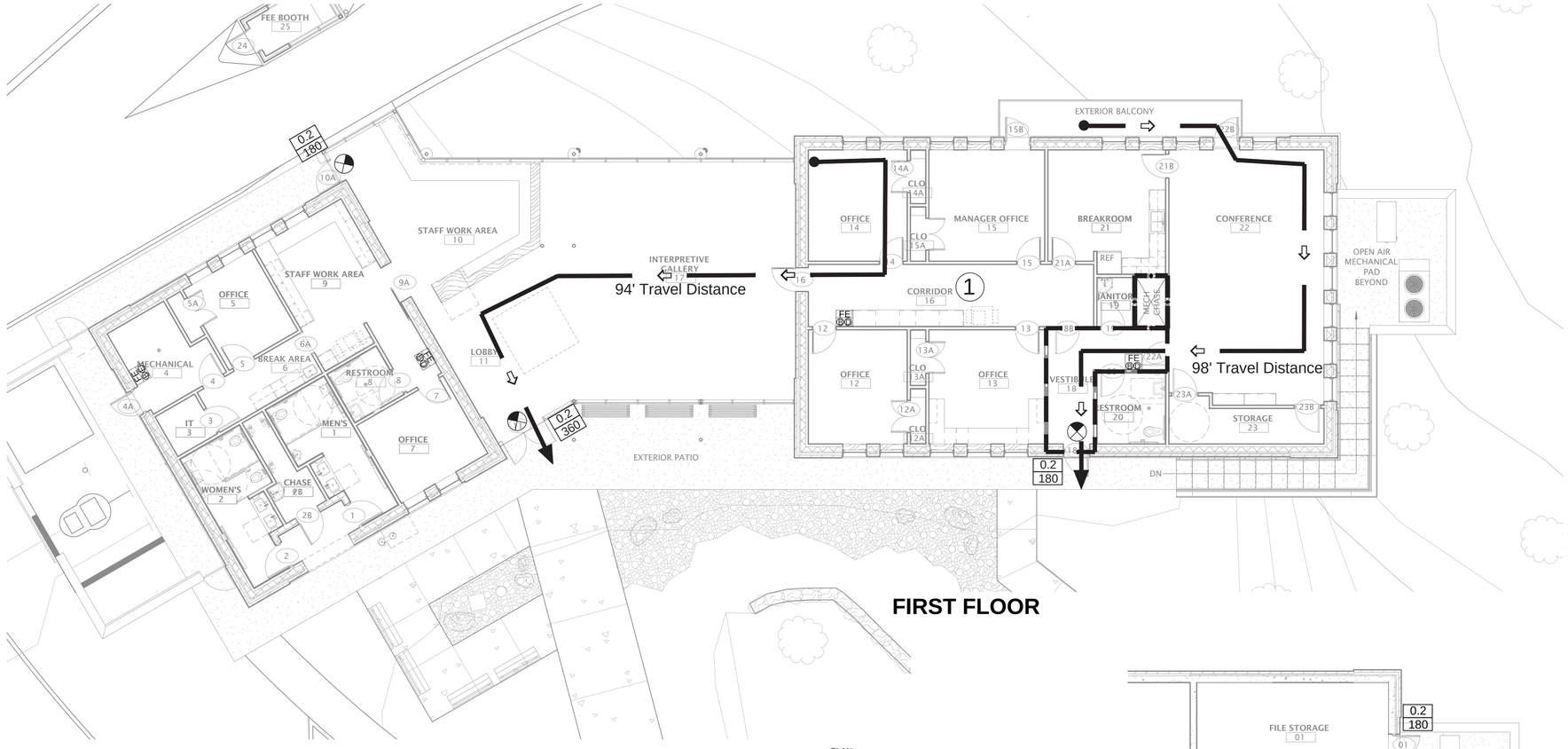
SHEET TITLE

TAS STANDARDS

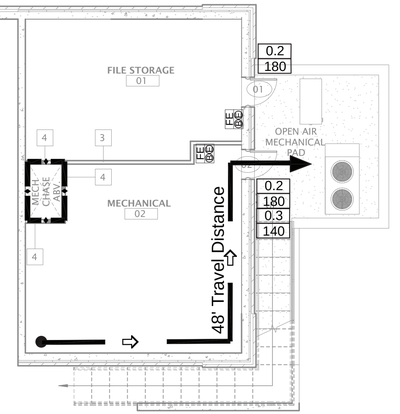
SHEET NUMBER

G103

CONSTRUCTION DOCUMENTS



FIRST FLOOR



BASEMENT

1 LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"

8' 4' 0' 8'

PLAN NORTH

Applicable Code

2015 International Building Code
2015 International Fire Code

Basic Building Information

Primary Building Occupancy:	Group B
Building Construction:	Type VB
Building Height Classification:	Single Story with Basement
Automatic Sprinkler System:	No
Fire Alarm System:	No

Allowable Area (Group B)

Basic Area per Floor:	9,000 SF
Yard Increase (75%):	6,750 SF
Total Allowable Area per Floor:	15,750 SF
Actual Building Total Area:	5,405 SF*

*Basement not required to be included in the building area

Compliance: YES

General Notes - Portable Fire Extinguishers

FE — Portable Fire Extinguisher
#/# — Extinguisher Type and Mounting Detail

(A) Final location and quantity of portable fire extinguishers may be modified upon final field inspection of the Fire Inspector.
(B) All multi-purpose dry chemical portable fire extinguishers to have a UL Rating of 3A:40BC. Provide Potter Roemer Model 3005-3 or equal.
(C) Fire extinguisher placement in all other areas (light hazard) is based upon IBC Table 906.3(1) with a maximum distance of travel to extinguishers of 75 feet.
(D) Unless otherwise directed by the architect, provide a fire extinguisher cabinet, JL Products Model 99G or equal.
(E) Fire extinguisher to be mounted on hook (no cabinet required).

Portable Fire Extinguisher Inventory

Floor	Quantity: Multi-Purpose Dry Chemical	Quantity: Class K Wet Chemical	Total
First Floor	4	0	4
Basement	2	0	2
Total	6	0	6

Key Note(s)

(1) Corridor 16 will not be rated based on IBC 1020.1, Exception 4.

Egress Information - First Floor

Floor Occupant Load:	133
# Exits Required:	2
# Exits Provided:	3
Door Exit Width Required:	2.2'
Door Exit Width Provided:	12.0'
Maximum Allowed Travel Distance:	200'

Occupant Load Calculations - First Floor

Room Number	Room Name	Area	Use	Factor	Occupant Load
1	Men's Restroom	132	restroom	100	2.0
2	Women's Restroom	135	restroom	100	2.0
3	IT	33	mechanical	300	1.0
4	Mechanical	107	mechanical	300	1.0
5	Office	116	office	100	2.0
2B	Chase	57	mechanical	300	1.0
6	Break Area	85	assembly	15	6.0
7	Office	142	office	100	2.0
8	Restroom	50	restroom	100	1.0
9	Staff Work Area	260	office	100	3.0
10	Staff Work Area	358	office	100	4.0
11	Lobby	292	corridor	100	3.0
12	Office	175	office	100	2.0
13	Office	211	office	100	3.0
14	Office	180	office	100	2.0
15	Manager Office	204	office	100	3.0
16	Corridor	281	corridor	100	3.0
17	Interpretive Gallery	884	museum	30	30.0
18	Vestibule	128	corridor	100	2.0
19	Janitor	29	office	100	1.0
20	Restroom	78	restroom	100	1.0
21	Break Room	220	assembly	15	15.0
22	Conference	620	assembly	15	42.0
23	Storage	97	storage	300	1.0
			TOTAL CALCULATED OCCUPANT LOAD		133

Egress Information - Basement

Floor Occupant Load:	4
# Exits Required:	1
# Exits Provided:	2
Door Exit Width Required:	0.07'
Door Exit Width Provided:	6.0'
Stair Exit Width Required:	0.1'
Stair Exit Width Provided:	3.5'
Maximum Allowed Travel Distance:	200'

Occupant Load Calculations - Basement

Room Number	Room Name	Area	Use	Factor	Occupant Load
01	File Storage	370	storage	300	2.0
02	Mechanical	522	mechanical	300	2.0
			TOTAL CALCULATED OCCUPANT LOAD		4

SYMBOLS & ABBREVIATIONS

0.2 / ### — Level egress width per person served (Inch, IBC 1005.1); Calculated number of persons served (Divide scaled clear egress width by 0.2" / person served)
0.3 / ### — Stair egress width per person served (Inch, IBC 1005.1); Calculated number of persons served (Divide scaled clear egress width by 0.3" / person served)
Exit Sign (See electrical drawings for details).
Denotes scaled travel distance to an exit.
FE — Portable Fire Extinguisher
#/# — Extinguisher Type and Mounting Detail

1-Hour Fire Partition
2-Hour Fire Wall
3-Hour Fire Wall
4-Hour Fire Wall
1-Hour Fire Barrier
2-Hour Fire Barrier
3-Hour Fire Barrier
Smoke Barrier
Smoke Partition

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July 7, 2020

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TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
PROJECT NUMBER: 112741

CONSTRUCTION DOCUMENTS

DATE: 07/03/2020
DESIGNED BY:
DRAWN BY: mme
REVIEWED BY: DRE
no. revision date

SHEET TITLE
LIFE SAFETY PLAN

SHEET NUMBER
LSP100

NOTE:
CONTRACTOR TO PROPOSE CONSTRUCTION STAGING AREA. CONTRACTOR SHALL SUBMIT PLAN FOR REVIEW AT THE PRE-CONSTRUCTION MEETING FOR APPROVAL BY TPWD CONSTRUCTION MANAGER.

FEE BOOTH
PHASE 1

PROPOSED GENERATOR AND UNDERGROUND PROPANE TANK AT CAMPSITE 102 PHASE I

HEADQUARTERS BUILDING
PHASE I

REFER TO TXDOT PLANS FOR SIDEWALK CONTINUATION

REFER TO TXDOT PLANS FOR SIDEWALK CONTINUATION

REFER TO TXDOT PLANS FOR SIDEWALK CONTINUATION

INSTALLATION OF IRON RANGER IS IN TPWD PHASE II

VAN

VAN

FORCE MAIN ALIGNMENT PHASE 1

PARK ROAD 16

CCC STONE CULVERT INV-IN 558.51'

CCC STONE CULVERT TO BE PROTECTED DURING ALL PHASES OF CONSTRUCTION

CCC STONE CULVERT INV-OUT = 557.60'

PARK ROAD 16

PARK ROAD 16

GENERAL NOTE:
SHOULD CULTURAL DEPOSITS OR FEATURES BE ENCOUNTERED, STOP WORK IN THE IMMEDIATE AREA AND CALL THE TPWD CULTURAL RESOURCES COORDINATOR BY CELL (903-258-0828). WORK MAY RESUME IN THE AREA OF THE FIND ONCE TPWD HAS RECORDED AND EVALUATED THE CULTURAL DEPOSIT OR FEATURE.

MATCH LINE – THIS SHEET

MATCH LINE – THIS SHEET

0 10 20 40 60
GRAPHIC SCALE IN FEET

LEGEND

- TPWD SCOPE LIMITS PHASE I
- TxDOT SCOPE LIMITS FUTURE PHASE NOT IN CONTRACT
- TxDOT CONSTRUCTION FUTURE PHASE NOT IN CONTRACT

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED
PROFESSIONAL ENGINEER
07/03/2020

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TBAE FIRM ARCHITECTURAL CORPORATION

TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
SITE SCOPE EXHIBIT

SHEET NUMBER
C100

CONSTRUCTION DOCUMENTS

PATH:
DATE: JGARILLAS
8/31/2020 11:40 AM
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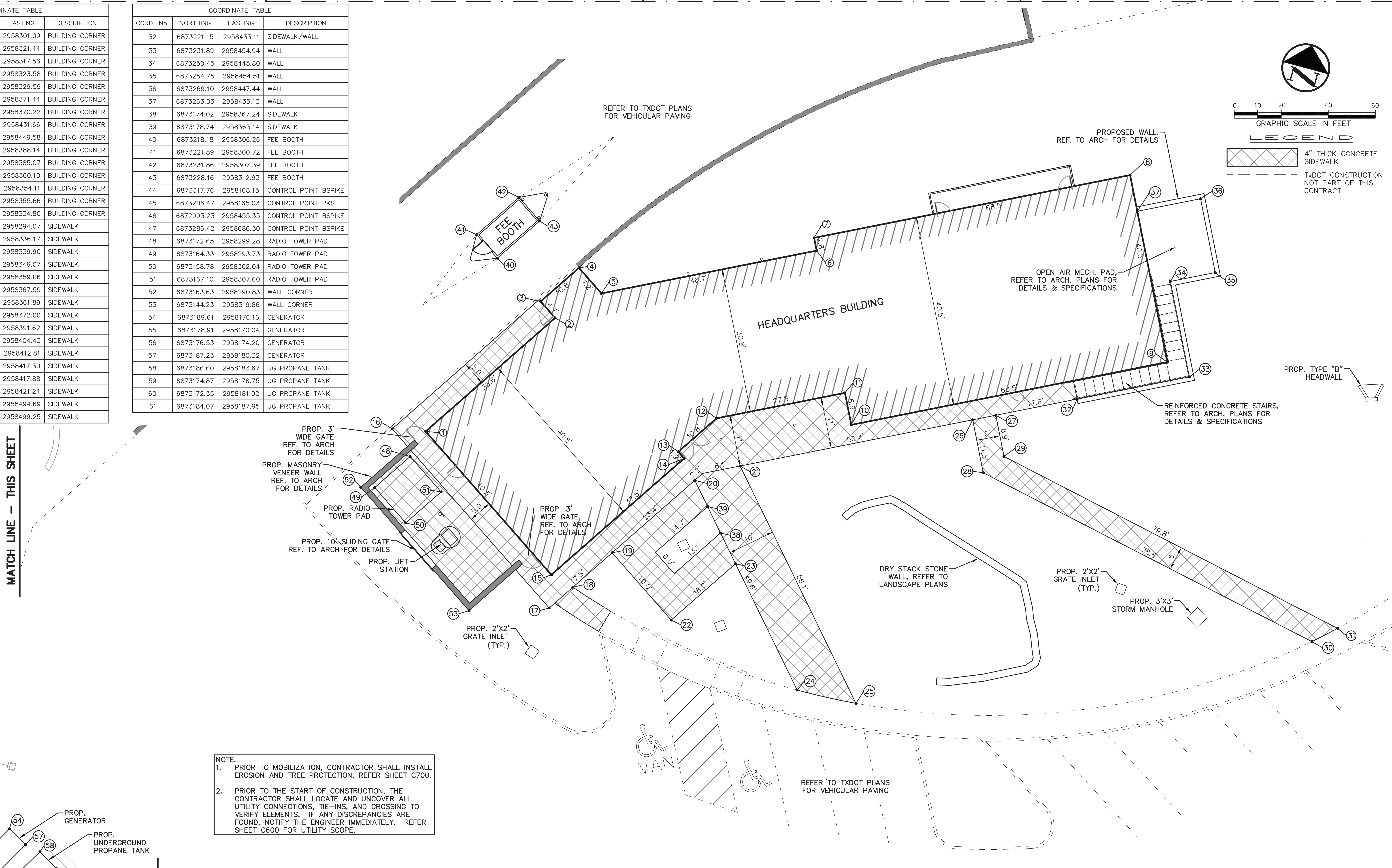
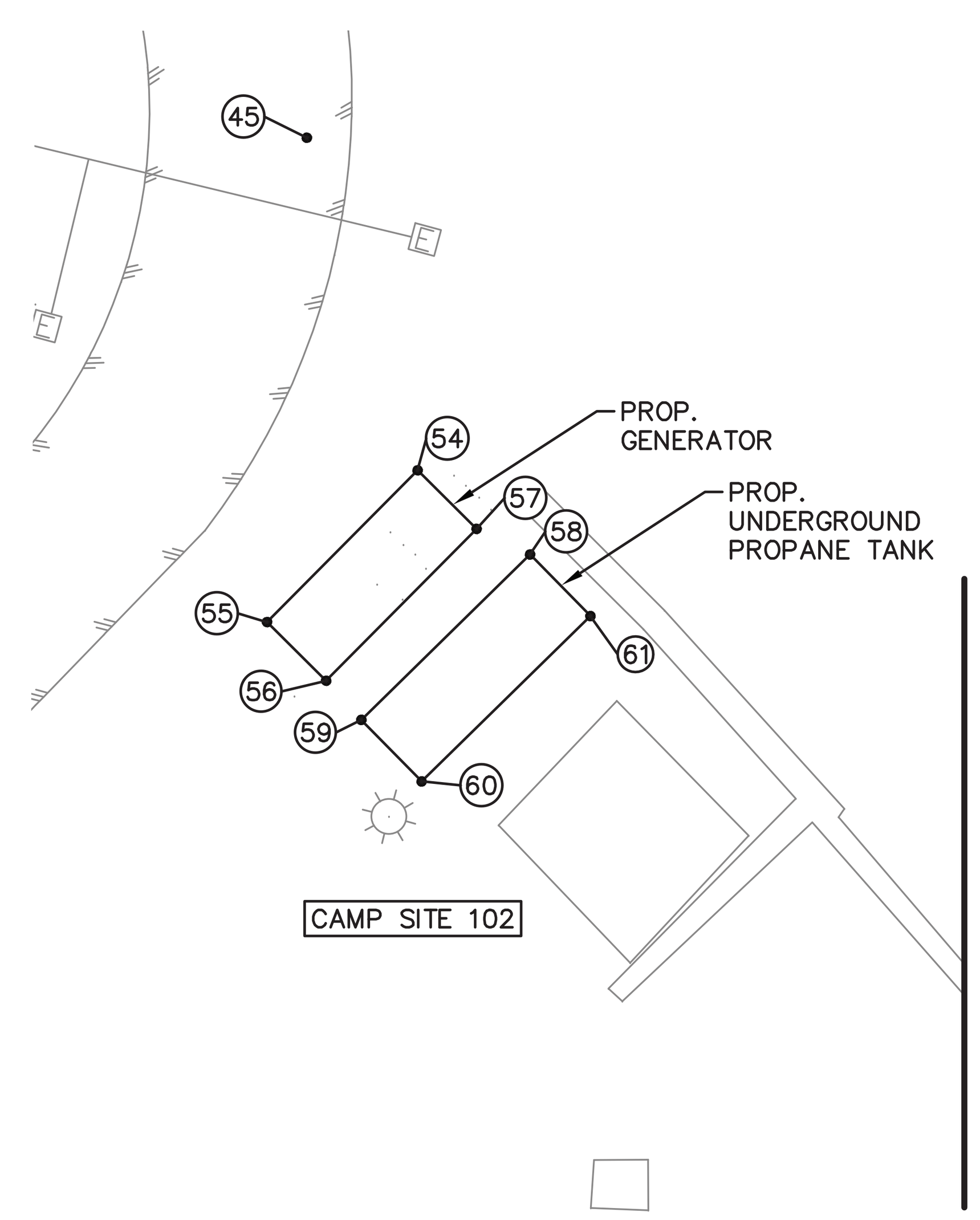
COORDINATE TABLE			
CORD. No.	NORTHING	EASTING	DESCRIPTION
1	6873178.66	2958301.09	BUILDING CORNER
2	6873209.09	2958321.44	BUILDING CORNER
3	6873211.69	2958317.56	BUILDING CORNER
4	6873220.70	2958323.58	BUILDING CORNER
5	6873216.68	2958329.59	BUILDING CORNER
6	6873237.31	2958371.44	BUILDING CORNER
7	6873239.79	2958370.22	BUILDING CORNER
8	6873270.08	2958431.66	BUILDING CORNER
9	6873233.71	2958449.58	BUILDING CORNER
10	6873203.43	2958388.14	BUILDING CORNER
11	6873209.65	2958385.07	BUILDING CORNER
12	6873197.34	2958360.10	BUILDING CORNER
13	6873188.38	2958354.11	BUILDING CORNER
14	6873187.34	2958355.66	BUILDING CORNER
15	6873156.13	2958334.80	BUILDING CORNER
16	6873177.34	2958294.07	SIDEWALK
17	6873149.19	2958336.17	SIDEWALK
18	6873154.77	2958339.90	SIDEWALK
19	6873164.00	2958346.07	SIDEWALK
20	6873183.43	2958359.06	SIDEWALK
21	6873188.86	2958367.59	SIDEWALK
22	6873153.42	2958361.89	SIDEWALK
23	6873168.54	2958372.00	SIDEWALK
24	6873145.98	2958391.62	SIDEWALK
25	6873146.49	2958404.43	SIDEWALK
26	6873211.15	2958412.81	SIDEWALK
27	6873213.36	2958417.30	SIDEWALK
28	6873200.87	2958417.88	SIDEWALK
29	6873205.36	2958421.24	SIDEWALK
30	6873184.26	2958494.69	SIDEWALK
31	6873188.39	2958499.25	SIDEWALK

COORDINATE TABLE			
CORD. No.	NORTHING	EASTING	DESCRIPTION
32	6873221.15	2958433.11	SIDEWALK/WALL
33	6873231.89	2958454.94	WALL
34	6873250.45	2958445.80	WALL
35	6873254.75	2958454.51	WALL
36	6873269.10	2958447.44	WALL
37	6873263.03	2958435.13	WALL
38	6873174.02	2958367.24	SIDEWALK
39	6873178.74	2958363.14	SIDEWALK
40	6873218.18	2958306.26	FEE BOOTH
41	6873221.89	2958300.72	FEE BOOTH
42	6873231.86	2958307.39	FEE BOOTH
43	6873228.16	2958312.93	FEE BOOTH
44	6873317.76	2958168.15	CONTROL POINT BSPIKE
45	6873206.47	2958165.03	CONTROL POINT PKS
46	6872993.23	2958455.35	CONTROL POINT BSPIKE
47	6873286.42	2958686.30	CONTROL POINT BSPIKE
48	6873172.65	2958299.28	RADIO TOWER PAD
49	6873164.33	2958293.73	RADIO TOWER PAD
50	6873158.78	2958302.04	RADIO TOWER PAD
51	6873167.10	2958307.60	RADIO TOWER PAD
52	6873163.63	2958290.83	WALL CORNER
53	6873144.23	2958319.86	WALL CORNER
54	6873189.61	2958176.16	GENERATOR
55	6873178.91	2958170.04	GENERATOR
56	6873176.53	2958174.20	GENERATOR
57	6873187.23	2958180.32	GENERATOR
58	6873186.60	2958183.67	UG PROPANE TANK
59	6873174.87	2958176.75	UG PROPANE TANK
60	6873172.35	2958181.02	UG PROPANE TANK
61	6873184.07	2958187.95	UG PROPANE TANK



NOTE:
1. PRIOR TO MOBILIZATION, CONTRACTOR SHALL INSTALL EROSION AND TREE PROTECTION, REFER SHEET C700.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND UNCOVER ALL UTILITY CONNECTIONS, TIE-INS, AND CROSSING TO VERIFY ELEMENTS. IF ANY DISCREPANCIES ARE FOUND, NOTIFY THE ENGINEER IMMEDIATELY. REFER SHEET C600 FOR UTILITY SCOPE.



PAVING GENERAL NOTES

1. ALL DIMENSIONS ARE FROM BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL CONCRETE SHALL CONFORM TO TXDOT STANDARDS AND BE CLASS "A" (3000 PSI) UNLESS OTHERWISE SHOWN ON THESE PLANS OR STATED IN TXDOT STANDARD SPECIFICATIONS.
3. ALL FILL PLACED UNDER PAVING SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN 6 INCH LIFTS, UNLESS OTHERWISE NOTED. REFER TO STRUCTURAL SPECIFICATIONS FOR FILL PLACED BENEATH BUILDING AREAS. ALL OTHER FILL AREAS TO BE COMPACTED TO 90% STANDARD PROCTOR.
4. THE CONTRACTOR SHALL SUBMIT A JOINT SPACING PLAN TO THE ENGINEER FOR APPROVAL.
5. ALL PAVING TO BE REMOVED SHALL BE SAWCUT TO A NEAT LINE, MINIMUM 1-1/2" DEEP, AND THE PAVEMENT REMOVED IN SUCH A MANNER AS TO PRESERVE THE EXISTING TRANSVERSE REINFORCING STEEL TO THE MAXIMUM EXTENT POSSIBLE.
6. INSTALLATION AND PLACEMENT OF IRRIGATION SLEEVES AND UTILITY CONDUITS SHALL BE IN ACCORDANCE WITH LANDSCAPE ARCHITECT AND MEP PLANS. CONTRACTOR TO VERIFY ALL SLEEVES HAVE BEEN PLACED PRIOR TO PAVING BEING PLACED.
7. SIDEWALKS AND ACCESSIBLE ROUTES SHALL HAVE A RUNNING SLOPE NO GREATER THAN 5% (UNLESS OTHERWISE NOTED) AND A CROSS SLOPE NO GREATER THAN 2%.

GENERAL NOTES

1. ALL WORK, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TPWD AND TxDOT STANDARDS AND SPECIFICATIONS.
2. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL BE FAMILIAR WITH THE PLANS, ALL NOTES, TPWD STANDARDS, TxDOT STANDARDS AND SPECIFICATIONS, TCEQ REQUIREMENTS AND REGULATIONS, AND ANY OTHER APPLICABLE STANDARDS AND SPECIFICATIONS RELEVANT TO THE PROPER COMPLETION OF THE WORK SPECIFIED. FAILURE ON THE PART OF THE CONTRACTOR TO BE FAMILIAR WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THIS WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY OF PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
3. THE HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING SUBSURFACE UTILITIES HAVE BEEN DETERMINED FROM DATA RECORDED BY OTHERS. CONTRACTOR SHALL VERIFY THAT NECESSARY CROSSING CLEARANCES BETWEEN EXISTING AND PROPOSED UTILITIES EXIST PRIOR TO CONSTRUCTION OF ANY SUCH CROSSINGS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR TO VERIFY SIZE AND LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL MANHOLES, CLEANOUTS, VALVE BOXES, AND FIRE HYDRANTS, ETC.. CONTRACTOR TO ADJUST TO PROPER LINE AND GRADE PRIOR TO AND AFTER THE PLACING OF PERMANENT PAVING AND GRADING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING THE CONSTRUCTION OF THE PAVING FOR THIS DEVELOPMENT.
5. A. PROTECT AND MAINTAIN ROADWAY TRAFFIC THROUGHOUT THE PROJECT, PROVIDING A MINIMUM OF ONE (1) LANE OPEN IN EACH DIRECTION;
   B. PROVIDE AND MAINTAIN INTERIM ACCESS FROM ROADWAYS CURRENTLY IN USE TO ALL DRIVEWAYS AND INTERSECTING STREETS;
   C. MAINTAIN NORMAL PROJECT DRAINAGE UNTIL NEW DRAINAGE FACILITIES ARE FUNCTIONAL, INCLUDING, WHERE NECESSARY, INTERIM REPLACEMENT OF EXISTING DRAINAGE STRUCTURES REMOVED FOR CONSTRUCTION OF NEW DRAINAGE FACILITIES;
   D. MAINTAIN ALL WORK AND MATERIAL STORAGE AREAS IN ORDERLY CONDITION, FREE OFDEBRIS AND WASTE. ON COMPLETION OF CONSTRUCTION, CLEAN UP THE PROJECT AND ADJACENT AFFECTED AREAS TO ACCEPTABLE CONDITION, ALL AS PROVIDED IN THE GENERAL CONDITIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL AND STATE REGULATIONS REGARDING TRENCH SAFETY.
7. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS TO VERIFY ALL BUILDING DIMENSIONS.
8. REFER TO ARCHITECTURAL PLANS FOR DETAILED BUILDING ENTRANCE LAYOUTS, RAMPS, LANDSCAPE, AND SIDEWALKS.
9. BARRICADING AND PROJECT SIGNS SHALL CONFORM TO TEXAS DEPARTMENT OF TRANSPORTATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND LATEST UPDATES.
10. EXACT SAWCUT PAVEMENT REMOVAL AND REPLACEMENT LIMITS WITHIN THE PUBLIC RIGHT-OF-WAY IS TO BE IN ACCORDANCE WITH TPWD AND TxDOT STANDARDS AND SPECIFICATIONS AND INCLUDED IN THE BASE BID.

NOTE:
FOR CONCRETE WALK DETAIL SEE SHEET C600, DETAIL 1

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED PROFESSIONAL ENGINEER
07/03/2020

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TEXAS PARKS & WILDLIFE

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210/226-1246
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Koch

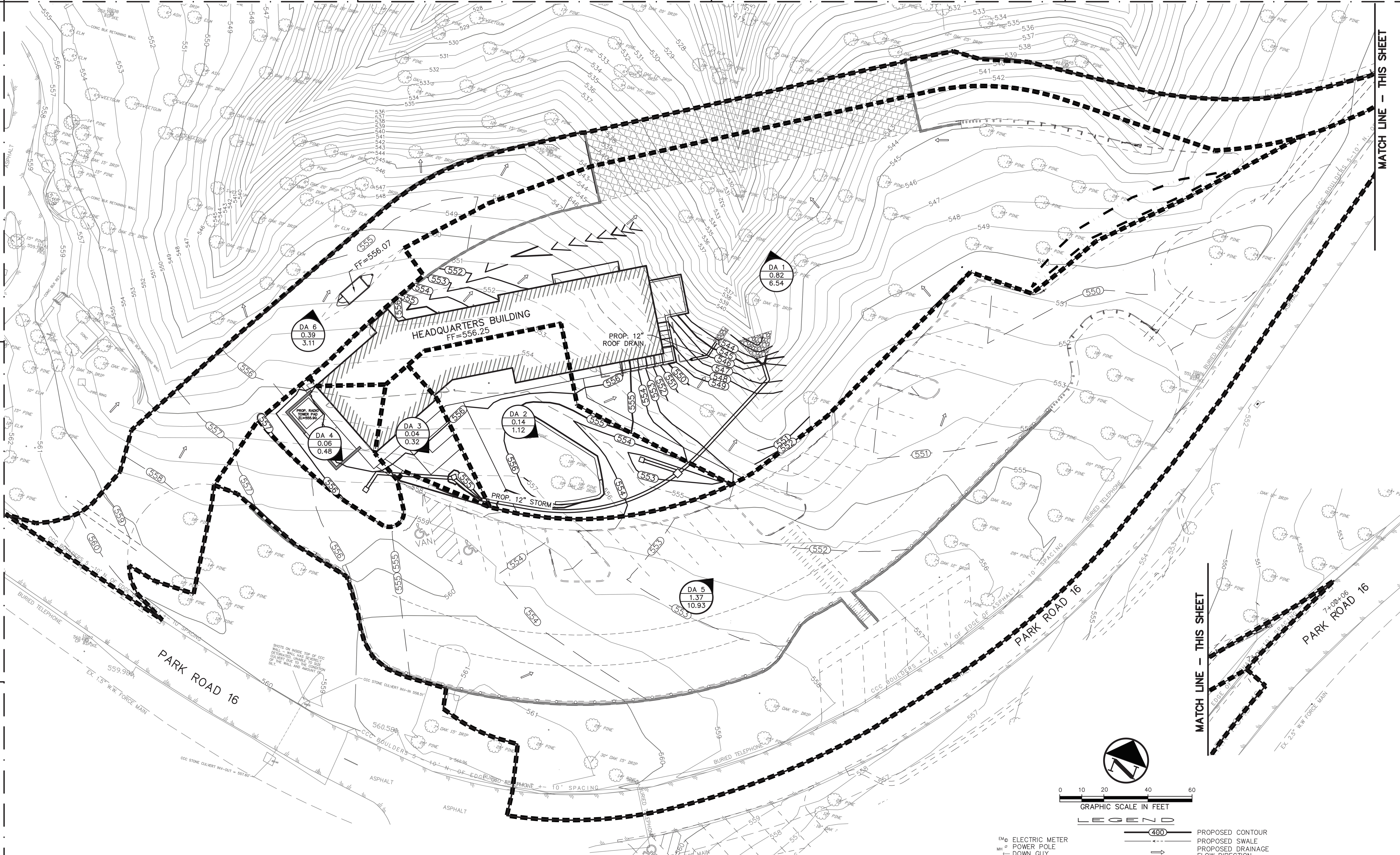
TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
DIMENSIONAL CONTROL PLAN

SHEET NUMBER
C200

CONSTRUCTION DOCUMENTS



LEGEND

EM	ELECTRIC METER
MH	POWER POLE
←	DOWN GUY
	LANTERN HOLDER
ICV	IRRIGATION CONTROL VALVE
FH	FIRE HYDRANT
CO	CLEANOUT
◎	MANHOLE
	WATER METER
	WATER VALVE
	TELEPHONE PEDESTAL
IRS	1/2-INCH IRON ROD W/ "PACHECO KOCH" CAP SET
	CONTROL POINT
	CONCRETE MONUMENT
	TREE
	PROPERTY LINE
X	FENCE
OHL	OVERHEAD UTILITY LINE
613	EXIST CONTOUR
400	PROPOSED CONTOUR
	PROPOSED SWALE
	PROPOSED DRAINAGE FLOW DIRECTION
	PROPOSED DRAINAGE AREA
	PROPOSED BIO-RETENTION AREA
DA 8 / 1.00 / 7.99	PROPOSED DRAINAGE AREA ID; AREA IN ACRES; Q_{100} IN CUBIC FEET PER SECOND
	PROPOSED BRIDGE
	TxDOT CONSTRUCTION–NOT PART OF THIS CONTRACT
613	CONTOUR FROM TxDOT CONSTRUCTION NOT PART OF THIS CONTRACT

DRAINAGE AREA TABLE

DRAINAGE AREA ID	AREA (acres)	C	Tc (minutes)	STORM FREQUENCY	I_{10} (inch/hour)	I_{100} (inch/hour)	Q_{10} (cfs)	Q_{100} (cfs)	COMMENTS
DA 1	0.82	0.70	10	100 YEAR	8.20	11.40	4.71	6.54	
DA 2	0.14	0.70	10	100 YEAR	8.20	11.40	0.80	1.12	DRAINS TO PROPOSED GRATE INLET
DA 3	0.04	0.70	10	100 YEAR	8.20	11.40	0.23	0.32	DRAINS TO PROPOSED GRATE INLET
DA 4	0.06	0.70	10	100 YEAR	8.20	11.40	0.34	0.48	DRAINS TO PROPOSED GRATE INLET
DA 5	1.37	0.70	10	100 YEAR	8.20	11.40	7.86	10.93	
DA 6	0.39	0.70	10	100 YEAR	8.20	11.40	2.24	3.11	

NOTE:
TOPOGRAPHIC SURVEY PROVIDED BY TEXAS PARKS AND WILDLIFE.

NOTE:
TO THE BEST OF OUR KNOWLEDGE, THE DOWNSTREAM CONDITIONS WILL NOT BE ADVERSELY AFFECTED BY PROPOSED DRAINAGE DESIGN

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED PROFESSIONAL ENGINEER
07/03/2020

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PATH:
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TEXAS PARKS & WILDLIFE

FORD POWELL & CARSON
Architects & Planners, Inc.
Architecture
Planning
Preservation
Interior Design
1138 East Commerce Street
San Antonio, Texas 78205
210/226-1246
FPC# 92705

Koch

TYLER STATE PARK

HEADQUARTERS PHASE 1

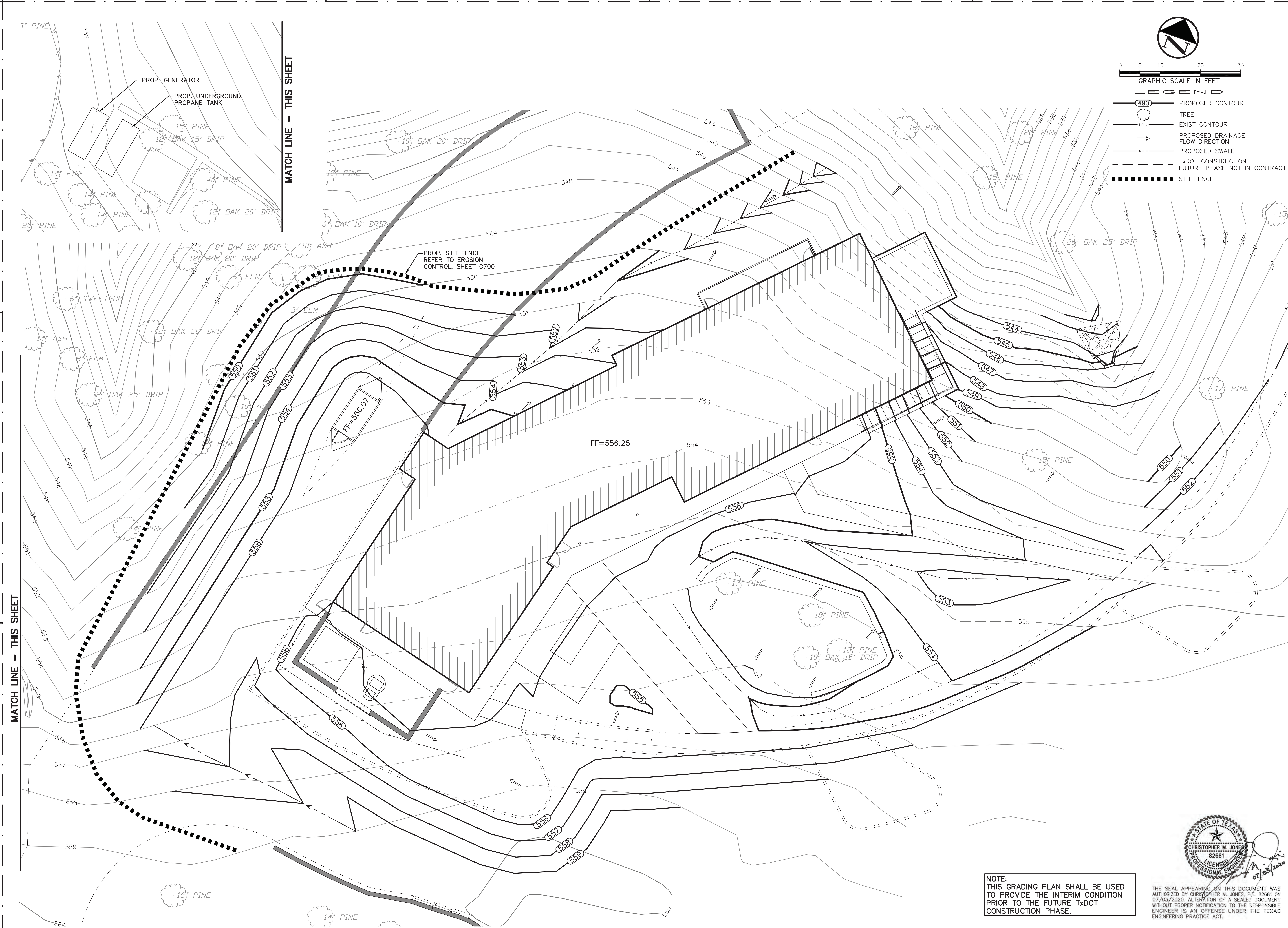
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
DRAINAGE AREA MAP

SHEET NUMBER
C300

CONSTRUCTION DOCUMENTS



NOTE:
THIS GRADING PLAN SHALL BE USED TO PROVIDE THE INTERIM CONDITION PRIOR TO THE FUTURE TxDOT CONSTRUCTION PHASE.

STATE OF TEXAS
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Koch

TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: JHB
DRAWN BY: JTS
REVIEWED BY: LHN
no. revision date

SHEET TITLE
INTERIM GRADING PLAN

SHEET NUMBER
C400

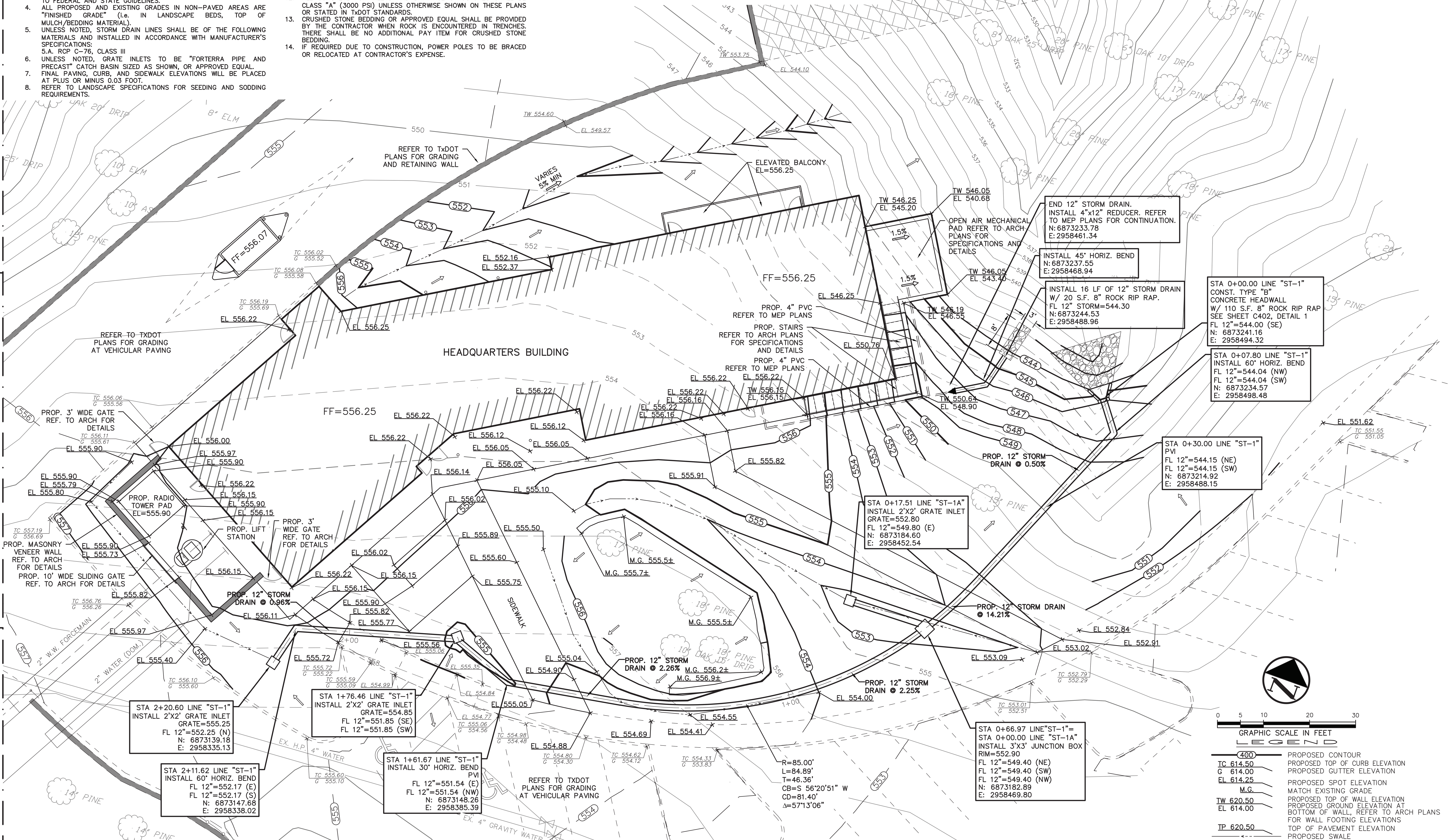
CONSTRUCTION DOCUMENTS

PATH:
DATE:

GRADING & DRAINAGE GENERAL NOTES

1. UNLESS NOTED, ALL FILL IS TO BE COMPACTED TO A MINIMUM OF 95% DRY WEIGHT BY ASTM D 698 AND MOISTURE CONDITIONED TO WITHIN 3% OF OPTIMUM MOISTURE CONTENT. FILL TO BE PLACED IN MAXIMUM COMPACTED LIFTS OF 6 INCHES.
2. SIDEWALKS AND ACCESSIBLE ROUTES SHALL HAVE A RUNNING SLOPE NO GREATER THAN 5% (UNLESS OTHERWISE NOTED) AND A CROSS SLOPE NO GREATER THAN 2%.
3. GRADING OF ALL HANDICAPPED SPACES AND ROUTES TO CONFORM TO FEDERAL AND STATE GUIDELINES.
4. ALL PROPOSED AND EXISTING GRADES IN NON-PAVED AREAS ARE "FINISHED GRADE" (i.e. IN LANDSCAPE BEDS, TOP OF MULCH/BEDDING MATERIAL).
5. UNLESS NOTED, STORM DRAIN LINES SHALL BE OF THE FOLLOWING MATERIALS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS:
   5.A. RCP C-76, CLASS III
6. UNLESS NOTED, GRATE INLETS TO BE "FORTERRA PIPE AND PRECAST" CATCH BASIN SIZED AS SHOWN, OR APPROVED EQUAL.
7. FINAL PAVING, CURB, AND SIDEWALK ELEVATIONS WILL BE PLACED AT PLUS OR MINUS 0.03 FOOT.
8. REFER TO LANDSCAPE SPECIFICATIONS FOR SEEDING AND SODDING REQUIREMENTS.
9. ANY CONCRETE, ROCK, OR MATERIAL DEEMED BY THE ENGINEER TO BE UNSUITABLE FOR SUBGRADE SHALL BE DISPOSED OF OFFSITE AT CONTRACTOR'S EXPENSE.
10. TRENCH BACKFILL MATERIAL SHALL CONFORM TO TxDOT REQUIREMENTS AND SHALL BE MECHANICALLY COMPACTED IN 6-INCH LIFTS TO THE TOP OF SUBGRADE TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY UNLESS OTHERWISE SHOWN ON THESE PLANS OR STATED IN THE TxDOT STANDARDS.
11. EMBEDMENT SHALL CONFORM TO TxDOT REQUIREMENTS UNLESS OTHERWISE SHOWN ON THESE PLANS.
12. ALL CONCRETE FOR INLETS AND DRAINAGE STRUCTURES SHALL BE CLASS "A" (3000 PSI) UNLESS OTHERWISE SHOWN ON THESE PLANS OR STATED IN TxDOT STANDARDS.
13. CRUSHED STONE BEDDING OR APPROVED EQUAL SHALL BE PROVIDED BY THE CONTRACTOR WHEN ROCK IS ENCOUNTERED IN TRENCHES. THERE SHALL BE NO ADDITIONAL PAY ITEM FOR CRUSHED STONE BEDDING.
14. IF REQUIRED DUE TO CONSTRUCTION, POWER POLES TO BE BRACED OR RELOCATED AT CONTRACTOR'S EXPENSE.

NOTE:
ROCK RIP-RAP AT PIPE OUTFALLS SHALL MATCH THE STONE MASONRY VENEER OF THE PROPOSED BUILDING. "OKLAHOMA MOSS ROCK" OR BE THE BLACK AND BROWN IRONSTONE ROCKS INDIGENOUS TO THE PARK



HEADQUARTERS BUILDING
FF=556.25
FF=556.07
REFER TO TxDOT PLANS FOR GRADING AND RETAINING WALL
REFER TO TxDOT PLANS FOR GRADING AT VEHICULAR PAVING
ELEVATED BALCONY EL=556.25
VARIES 5% MIN
OPEN AIR MECHANICAL PAD REFER TO ARCH PLANS FOR SPECIFICATIONS AND DETAILS
PROP. 4" PVC REFER TO MEP PLANS
PROP. STAIRS REFER TO ARCH PLANS FOR SPECIFICATIONS AND DETAILS
PROP. 3' WIDE GATE REF. TO ARCH FOR DETAILS
PROP. RADIO TOWER PAD EL=555.90
PROP. LIFT STATION
PROP. MASONRY VENEER WALL REF. TO ARCH FOR DETAILS
PROP. 10' WIDE SLIDING GATE REF. TO ARCH FOR DETAILS
SIDEWALK
END 12" STORM DRAIN. INSTALL 4"x12" REDUCER. REFER TO MEP PLANS FOR CONTINUATION. N: 6873233.78 E: 2958461.34
INSTALL 45' HORIZ. BEND N: 6873237.55 E: 2958468.94
INSTALL 16 LF OF 12" STORM DRAIN W/ 20 S.F. 8" ROCK RIP RAP. FL 12" STORM=544.30 N: 6873244.53 E: 2958488.96
STA 0+00.00 LINE "ST-1" CONST. TYPE "B" CONCRETE HEADWALL W/ 110 S.F. 8" ROCK RIP RAP SEE SHEET C402, DETAIL 1 FL 12"=544.00 (SE) N: 6873241.16 E: 2958494.32
STA 0+07.80 LINE "ST-1" INSTALL 60" HORIZ. BEND FL 12"=544.04 (NW) FL 12"=544.04 (SW) N: 6873234.57 E: 2958498.48
STA 0+30.00 LINE "ST-1" PVI FL 12"=544.15 (NE) FL 12"=544.15 (SW) N: 6873214.92 E: 2958488.15
STA 0+17.51 LINE "ST-1A" INSTALL 2'X2' GRATE INLET GRATE=552.80 FL 12"=549.80 (E) N: 6873184.60 E: 2958452.54
STA 0+66.97 LINE"ST-1"= STA 0+00.00 LINE "ST-1A" INSTALL 3'X3' JUNCTION BOX RIM=552.90 FL 12"=549.40 (NE) FL 12"=549.40 (SW) FL 12"=549.40 (NW) N: 6873182.89 E: 2958469.80
STA 2+20.60 LINE "ST-1" INSTALL 2'X2' GRATE INLET GRATE=555.25 FL 12"=552.25 (N) N: 6873139.18 E: 2958335.13
STA 2+11.62 LINE "ST-1" INSTALL 60" HORIZ. BEND FL 12"=552.17 (E) FL 12"=552.17 (S) N: 6873147.68 E: 2958338.02
STA 1+76.46 LINE "ST-1" INSTALL 2'X2' GRATE INLET GRATE=554.85 FL 12"=551.85 (SE) FL 12"=551.85 (SW)
STA 1+61.67 LINE "ST-1" INSTALL 30' HORIZ. BEND PVI FL 12"=551.54 (E) FL 12"=551.54 (NW) N: 6873148.26 E: 2958385.39
PROP. 12" STORM DRAIN @ 0.96%
PROP. 12" STORM DRAIN @ 2.26%
PROP. 12" STORM DRAIN @ 2.25%
PROP. 12" STORM DRAIN @ 14.21%
PROP. 12" STORM DRAIN @ 0.50%
R=85.00' L=84.89' T=46.36' CB=S 56°20'51" W CD=81.40' Δ=57°13'06"
2" W.W. FORCEMAIN
2" WATER (DOM.)
EX. H.P. 4" WATER
EX. 4" GRAVITY WATER

NOTE:
1. PRIOR TO MOBILIZATION, CONTRACTOR SHALL INSTALL EROSION AND TREE PROTECTION, REFER SHEET C700.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND UNCOVER ALL UTILITY CONNECTIONS, TIE-INS, AND CROSSING TO VERIFY ELEMENTS. IF ANY DISCREPANCIES ARE FOUND, NOTIFY THE ENGINEER IMMEDIATELY. REFER SHEET C600 FOR UTILITY SCOPE.

STATE OF TEXAS
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0 5 10 20 30
GRAPHIC SCALE IN FEET

LEGEND

400	PROPOSED CONTOUR
TC 614.50 / G 614.00	PROPOSED TOP OF CURB ELEVATION / PROPOSED GUTTER ELEVATION
EL 614.25	PROPOSED SPOT ELEVATION
M.G.	MATCH EXISTING GRADE
TW 620.50 / EL 614.00	PROPOSED TOP OF WALL ELEVATION / PROPOSED GROUND ELEVATION AT BOTTOM OF WALL, REFER TO ARCH PLANS FOR WALL FOOTING ELEVATIONS
TP 620.50	TOP OF PAVEMENT ELEVATION
	PROPOSED SWALE
	PROPOSED DRAINAGE FLOW DIRECTION
CO	CLEANOUT
MH	MANHOLE
	WATER METER
	WATER VALVE
	TREE
613	EXIST CONTOUR
	PROPOSED BRIDGE
	TxDOT CONSTRUCTION– FUTURE PHASE NOT IN CONTRACT
613	CONTOUR FROM TxDOT CONSTRUCTION FUTURE PHASE NOT IN CONTRACT
TC 554.65 / G 554.15	SPOT ELEVATION FROM TxDOT CONSTRUCTION FUTURE PHASE NOT IN CONTRACT

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TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
GRADING & DRAINAGE PLAN

SHEET NUMBER
C401

CONSTRUCTION DOCUMENTS

PATH: M:\DWG-39\3914-17.006\DWG\CIVIL C3D 2015\3914-17.006GRAD.DWG
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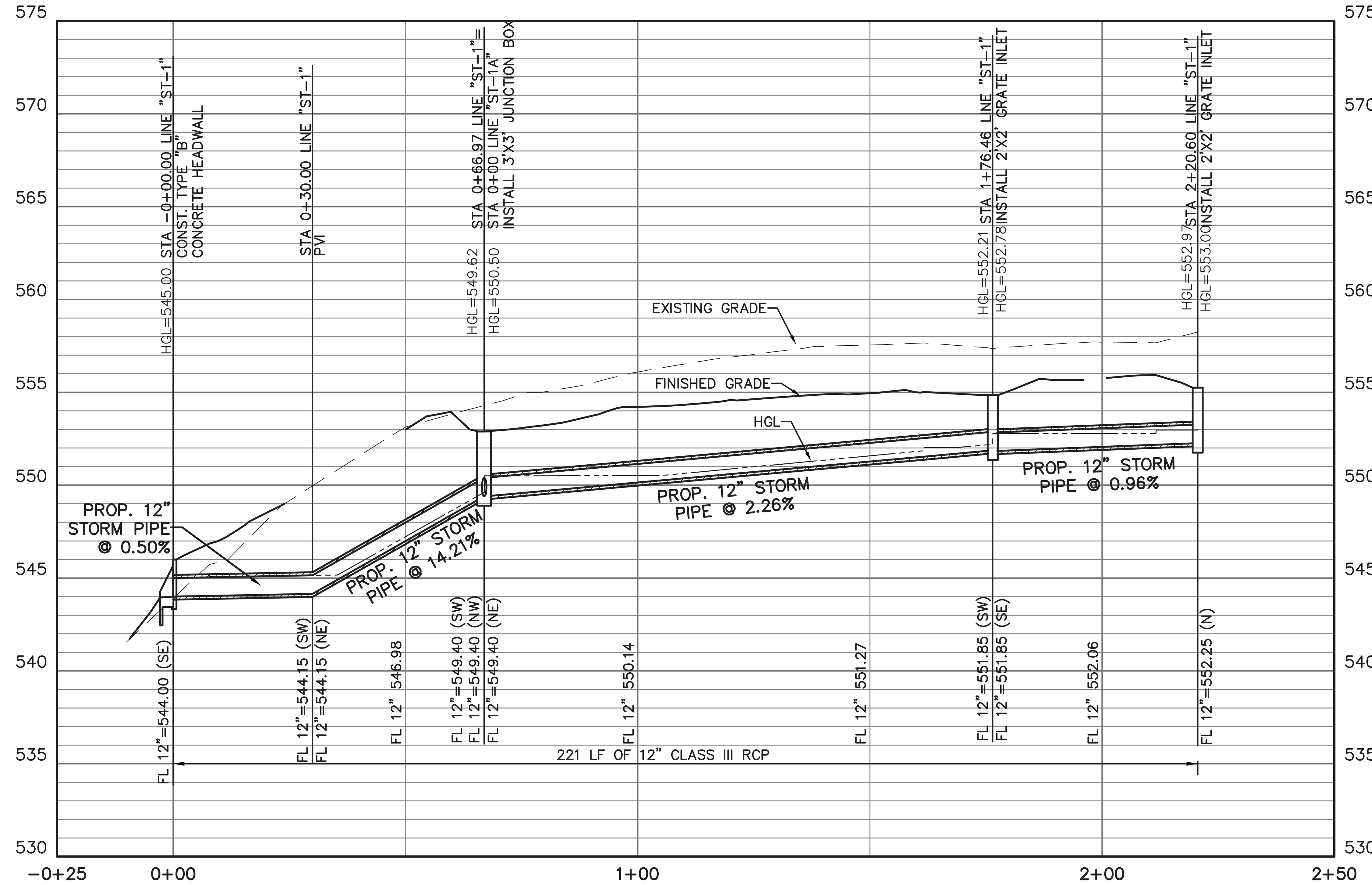
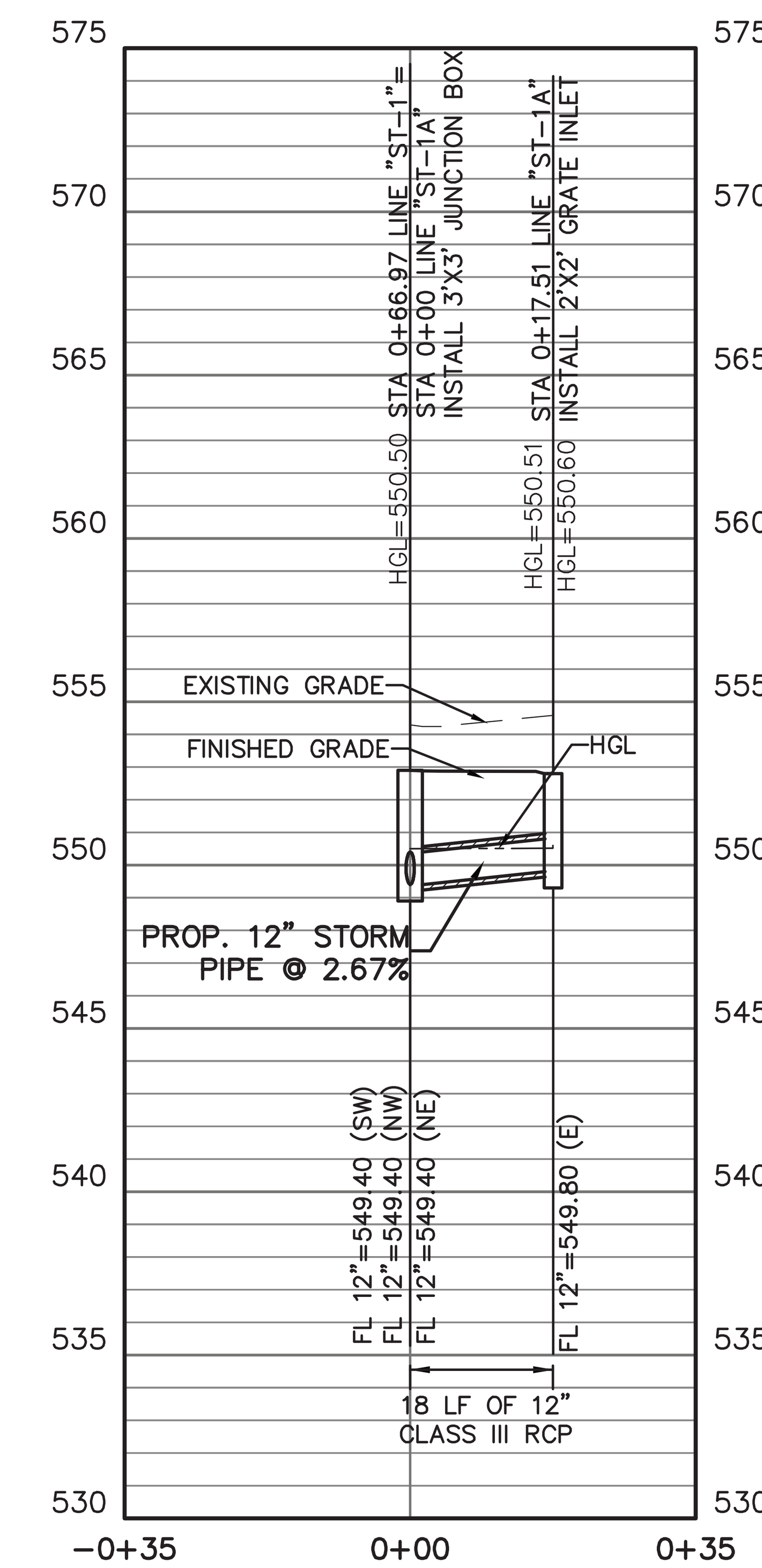


PROFILE: ST-1



PROFILE: ST-1A

SOLVE EQUATIONS 1 & 2 FOR D_{50}
USE THE LARGER OF THE TWO TO DETERMINE GRADATION TABLE

1)

$$D_{50} = \frac{\gamma_W * V_{all}^2}{2G(\gamma_S - \gamma_W)C^2} = \textbf{XX}'$$

V_{all}=**1.88**fps

C=0.86 (HIGH TURBULENCE), 1.2 (LOW TURBULENCE)
γ_W=62.4 lb/cf
γ_S=155 lb/cf
G=32.2 ft/s^2

RESULTS
D_{50}=**0.05**", LESS THAN 1-INCH

2)

$$D_{50} = \frac{C}{T_W}\left(\frac{Q}{D_O}\right)^{4/3}$$

D_O=DIAMETER OR WIDTH OF STORM DRAIN (ft)
Q=STORM DRAIN DISCHARGE (cfs)
T_W=TAILWATER DEPTH ABOVE DRAIN INVERT (ft)
C=0.02 FOR HORIZONTAL BLANKET

RESULTS
D_{50}=**0.06**" LESS THAN 1-INCH

3)

$$L_{SP} = D_O\left[1.7\left(\frac{Q}{(D_O)^{5/2}}\right)+8\right]$$

L_{SP}=**13'**

D_O=DIAMETER OR WIDTH OF STORM DRAIN (ft)
Q=STORM DRAIN DISCHARGE

RESULTS
L_{SP}=**13'**

DRY STONE RIP-RAP SPECIFICATIONS & GRADING

THE FOLLOWING SPECIFICATIONS AND GRADATIONS ARE MINIMUMS TO BE USED IN CONSTRUCTION.

1. USE FILED OR QUARRY DRY STONE RIP-RAP.
2. ALL STONES SHALL HAVE A MINIMUM UNIT WEIGHT OF 155 lb/cf. QUARRY DATA SHEETS FOR RIP-RAP TO BE APPROVED PRIOR TO INSTALLATION.
3. MINIMUM BED DEPTH OF RIP-RAP SHALL BE **XX**".
4. STONES SHALL BE PLACED IN A SINGLE LAYER WITH CLOSED JOINTS. THE UPRIGHT AXIS OF THE STONES SHALL BE NEARLY PERPENDICULAR TO THE EMBANKMENT SLOPE. THE COURSES SHALL BE PLACED FROM THE BOTTOM OF THE EMBANKMENT UPWARDLY, WITH LARGER STONES BEING PLACED IN THE LOWER COURSES. OPEN JOINTS SHALL BE FILLED WITH SPALLS. STONES THAT PROJECT MORE THAN THE ALLOWABLE AMOUNT IN THE FINISHED WORK SHALL BE REPLACED, EMBEDDED DEEPER, OR CHIPPED.
5. RIP RAP SHALL BE STOCKPILED AND APPROVED PRIOR TO INSTALLATION.

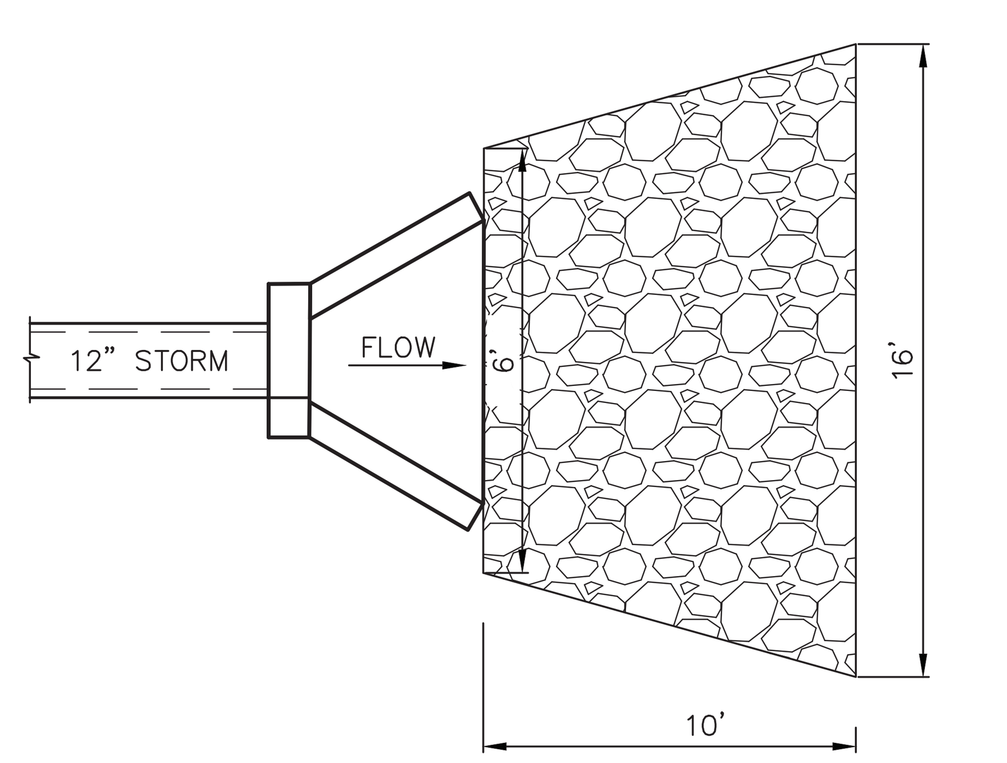
GRADATION TABLES

D50=3.75"-6" SELECT 8" RIP-RAP
D50=6"-9" SELECT 12" RIP-RAP
D50=9"-15" SELECT 18" RIP-RAP
D50=15"-20" SELECT 24" RIP-RAP
D50=20"-26.5" SELECT 30" RIP-RAP
D50=26.5"-30" SELECT 36" RIP-RAP

NOTE:

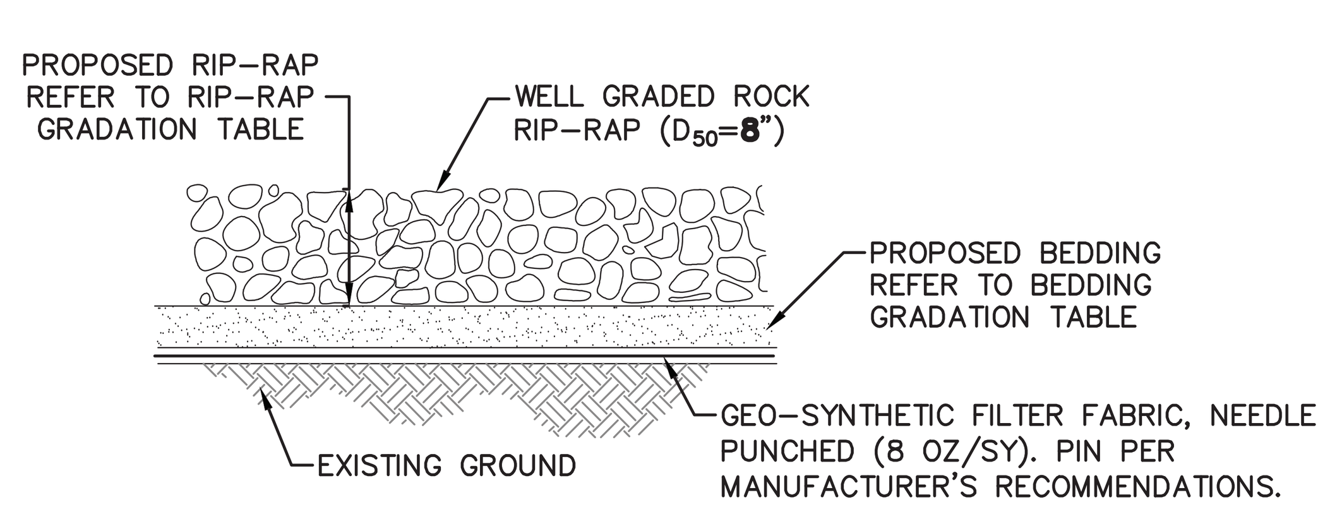
1. EQUATION 1 CAME FROM THE US ARMY ENGINEERS WATERWAYS EXPERIMENT STATION, CE, HYDRAULIC DESIGN CRITERIA, SHEET 712-1, 1970
2. EQUATION 2 CAME FROM THE US ARMY ENGINEERS WATERWAYS EXPERIMENT STATION, CE, HYDRAULIC DESIGN CRITERIA, SHEET 722-7, 1970
3. EQUATION 3 CAME FROM THE US ARMY ENGINEERS WATERWAYS EXPERIMENT STATION, CE, HYDRAULIC DESIGN CRITERIA, HYDRAULIC DESIGN CHART 722-5, 1970

Line ST-	1																					
Downstream Station	**Upstream Station**	**Q (cfs)**	**Pipe Type**	**Size Box (W x H) Pipe (")**	**'n" Value**	**Design Slope (ft/ft)**	**Upstream Junction Type** (1)	**Connect or FL**	**Dwn HGL**	**Up HGL**	**Up HGL w/ Jump**	**Dwn FL**	**Up FL**	**V (fps)**	**$V^2/2g$ (ft)**	**S_f**	**Q_{cap} (cfs)**	**D_n (ft)**	**D_p (ft)**	**V_p (fps)**	**$V_p^2/2g$ (ft)**	**Partial Station** (2)	**Partial Elevation** (3)
0+00.00	0+07.80	1.92	Pipe	12"	0.013	0.0050	Bend - 60°	Flowlines	545.00	545.02	545.08	544.00	544.04	2.44	0.09	0.0029	2.52	0.65	0.98	2.45	0.09	N/A	N/A
0+07.80	0+30.00	1.92	Pipe	12"	0.013	0.0050	None	Flowlines	545.08	545.14	545.14	544.04	544.15	2.44	0.09	0.0029	2.52	0.65	0.99	2.45	0.09	N/A	N/A
0+30.00	0+66.97	1.92	Pipe	12"	0.013	0.1410	Inlet	Flowlines	545.14	549.62	550.50	544.15	549.36	2.44	0.09	0.0029	13.38	0.26	0.26	12.10	2.27	0+35.34	545.16
0+66.97	1+61.67	0.80	Pipe	12"	0.013	0.0236	Bend - 30°	Soffits	550.50	551.86	552.03	549.36	551.60	1.02	0.02	0.0005	5.47	0.26	0.26	4.98	0.38	1+05.11	550.52
1+61.67	1+76.46	0.80	Pipe	12"	0.013	0.0236	Inlet	Flowlines	552.03	552.21	552.78	551.60	551.95	1.02	0.02	0.0005	5.47	0.26	0.26	4.98	0.38	1+69.16	552.03
1+76.46	2+11.62	0.48	Pipe	12"	0.013	0.0096	Bend - 60°	Flowlines	552.78	552.79	552.97	551.95	552.28	0.61	0.01	0.0002	3.49	0.25	0.50	4.44	0.31	N/A	N/A
2+11.62	2+20.60	0.48	Pipe	12"	0.013	0.0096	Inlet	552.25	552.97	552.97	553.00	552.28	552.37	0.61	0.01	0.0002	3.49	0.25	0.60	0.97	0.01	N/A	N/A
Line ST-	1A	**Connects to Line ST-**	1	**At Station**	0+66.97	**Junction Type**	Wye	Centerlines															
Downstream Station	**Upstream Station**	**Q (cfs)**	**Pipe Type**	**Size Box (W x H) Pipe (")**	**'n" Value**	**Design Slope (ft/ft)**	**Upstream Junction Type**	**Connect or FL**	**Dwn HGL**	**Up HGL**	**Up HGL w/ Jump**	**Dwn FL (Auto Calc)**	**Up FL**	**V (fps)**	**$V^2/2g$ (ft)**	**S_f**	**Q_{cap} (cfs)**	**D_n (ft)**	**D_p (ft)**	**V_p (fps)**	**$V_p^2/2g$ (ft)**	**Partial Station**	**Partial Elevation**
0+00.00	0+17.51	0.96	Pipe	12"	0.013	0.0307	Inlet	552.80	550.50	550.51	550.60	549.36	549.90	1.22	0.02	0.0007	6.24	0.27	0.61	1.90	0.06	N/A	N/A



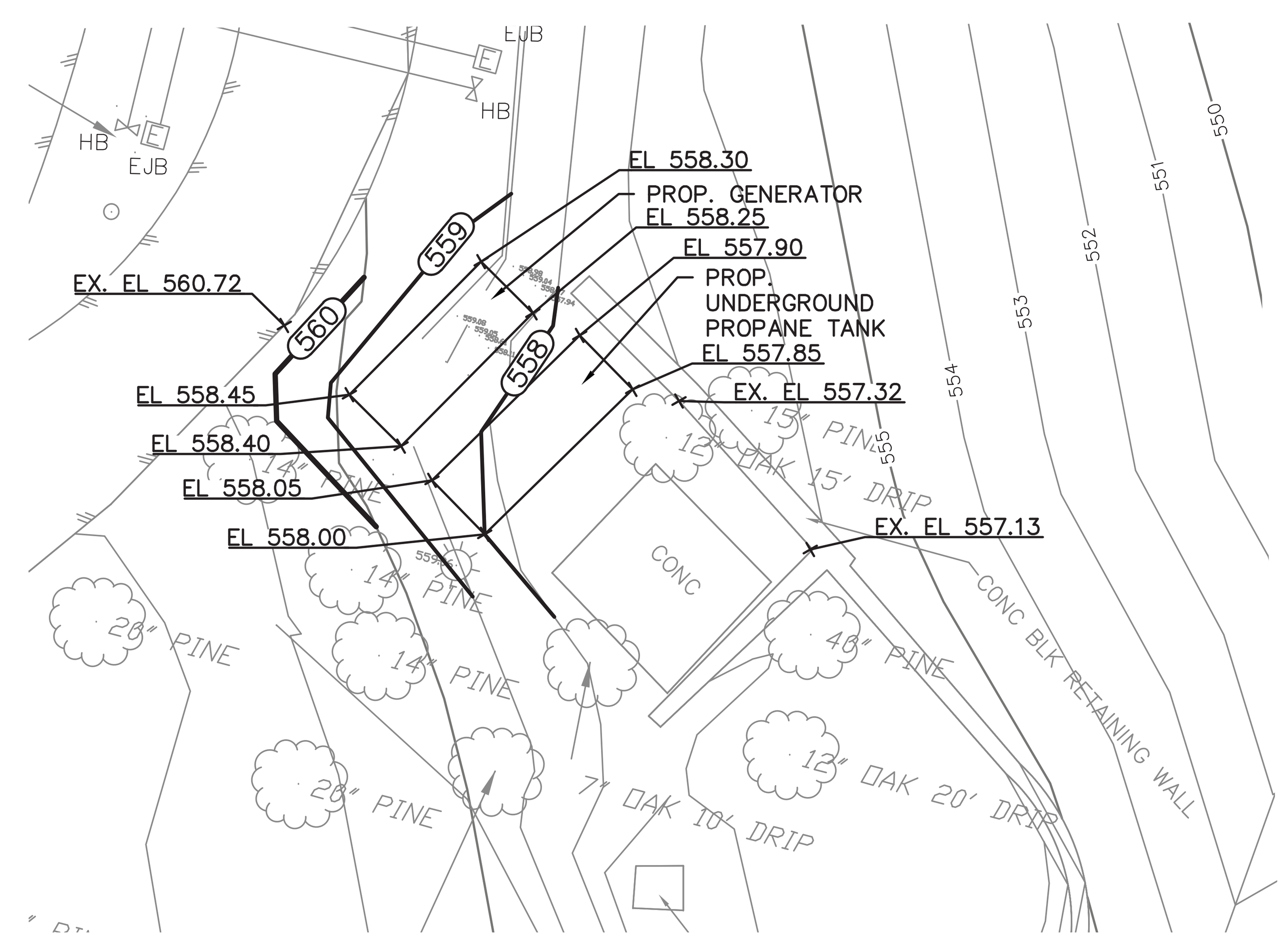
PLAN VIEW

NOTE:
ROCK RIP-RAP AT PIPE OUTFALLS SHALL MATCH THE STONE MASONRY VENEER OF THE PROPOSED BUILDING. "OKLAHOMA MOSS ROCK" OR BE THE BLACK AND BROWN IRONSTONE ROCKS INDIGENOUS TO THE PARK



1 RIP-RAP DETAIL FREE DISCHARGE

NOT TO SCALE



2 CAMPSITE 102 GRADING DETAIL

NOT TO SCALE

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TYLER STATE PARK

HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
STORM PROFILES & CALCULATIONS

SHEET NUMBER
C402

CONSTRUCTION DOCUMENTS

PATH:
DATE:
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8/31/2020 11:55 AM
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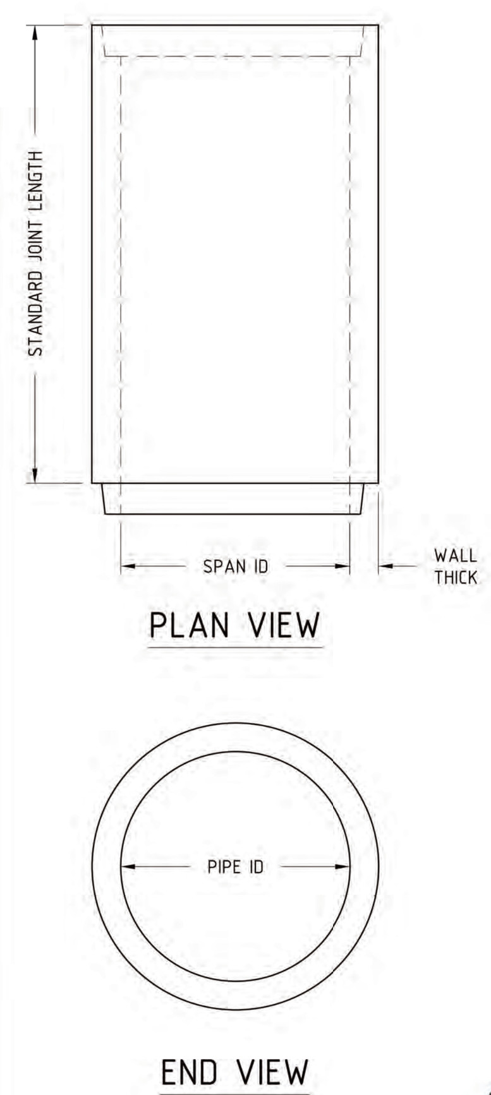


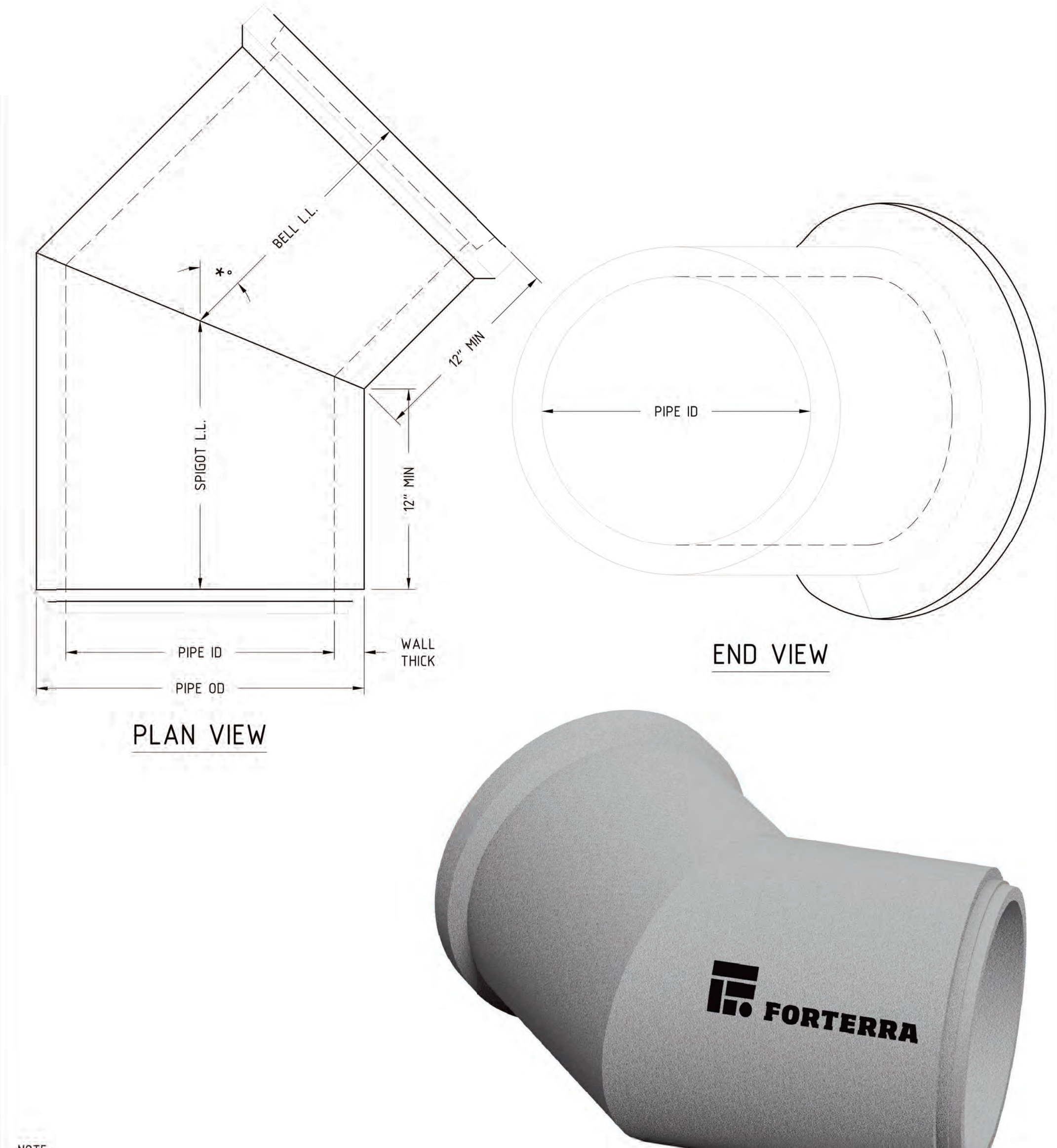
	B-WALL DIMENSIONS				C-WALL DIMENSIONS			
PIPE ID Ø in.	PIPE OD Ø in.	WALL THICK in.	JOINT LENGTHS ft.	WEIGHT lbs. / ft.	PIPE OD Ø in.	WALL THICK in.	JOINT LENGTHS ft.	WEIGHT lbs. / ft.
12	16	2.00	4 - 6	92	-	-	-	-
15	19	2.00	4 - 6	111	-	-	-	-
18	23	2.50	4 - 6 - 8	168	-	-	-	-
21	26.5	2.75	4 - 6 - 8	214	-	-	-	-
24	30	3.00	4 - 6 - 8	265	-	-	-	-
27	33.5	3.25	4 - 6 - 8	322	-	-	-	-
30	37	3.50	4 - 6 - 8	384	-	-	-	-
33	40.5	3.75	4 - 8	451	-	-	-	-
36	44	4.00	4 - 6 - 8	524	-	-	-	-
39	47.5	4.25	8	614	-	-	-	-
42	51	4.50	4 - 6 - 8	685	-	-	-	-
45	-	-	-	-	-	-	-	-
48	58	5.00	4 - 6 - 8	885	-	-	-	-
54	65	5.50	4 - 6 - 8	1092	-	-	-	-
60	72	6.00	4 - 6 - 8	1322	73.5	6.75	8	1528
66	79	6.50	4 - 6 - 8	1573	80.5	7.25	8	1773
72	86	7.00	4 - 6 - 8	1846	87.5	7.75	8	2063
78	-	-	-	-	94.5	8.25	8	2391
84	-	-	-	-	101.5	8.75	8	2727
90	-	-	-	-	108.5	9.25	8	3085
96	-	-	-	-	115.5	9.75	8	3464
108	-	-	-	-	129.5	10.75	8	4289
120	-	-	-	-	143.5	11.75	8	5201

NOTE:

AVAILABLE IN CLASS III, IV, V
CONFORMS TO CURRENT ASTM C-76 OR C-655 SPECIFICATIONS FOR REINFORCED CONCRETE PIPE.
* DIMENSIONS MAY VARY BETWEEN LOCATIONS - PLEASE INQUIRE.

FORTERRA | REGION, STATE: NORTH TX | DATE: 2018 | SECT.PAGE: 1.1.1

REINFORCED CONCRETE PIPE
TONGUE & GROOVE - STRAIGHT WALL



NOTE:

-AVAILABLE IN CLASS III, IV & V
-CONFORMS TO CURRENT ASTM C-76 OR C-655 SPECIFICATIONS FOR REINFORCED CONCRETE PIPE.
-STANDARD BEND ANGLES AVAILABLE FOR 12"-60" RCP: 10°, 15°, 22.5°, 30°, 45°, 60°, 90°
-66"-120" RCP BENDS - CUSTOM BEND ANGLES AVAILABLE
-CUSTOM BEND ANGLES AVAILABLE

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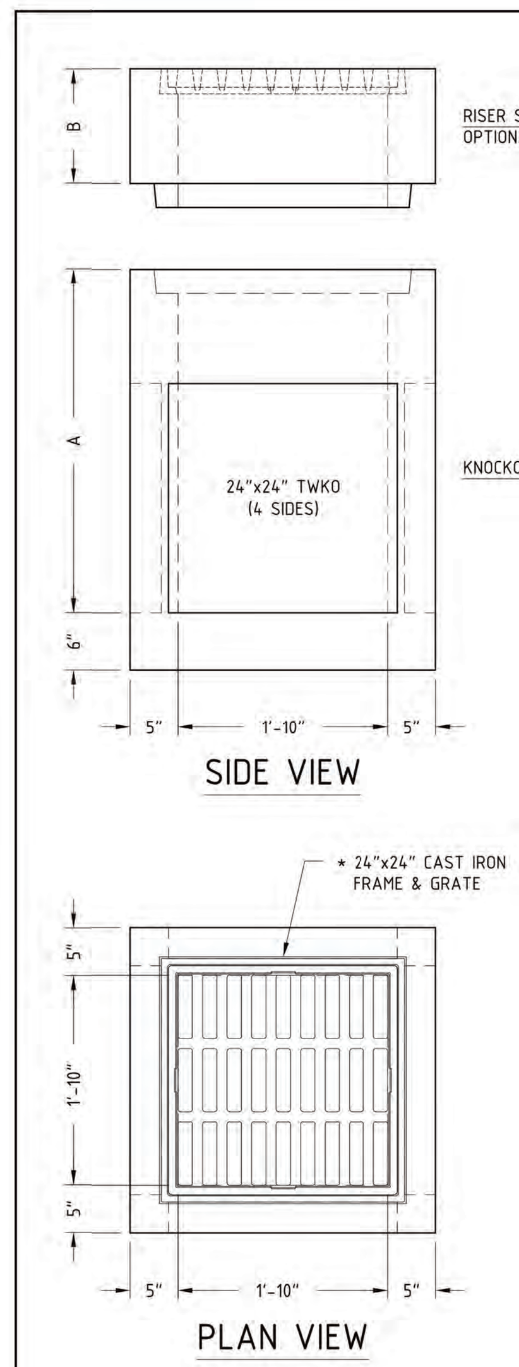
REINFORCED CONCRETE PIPE BEND
SINGLE OFFSET JOINT



BASE	
A	WEIGHT
2'-6"	1,325#
3'-0"	1,600#
4'-0"	1,875#
5'-0"	2,175#

RISER	
B	WEIGHT
1'-0"	575#
1'-6"	850#

NOTE:

-MAX. PIPE CONNECTION: 18"ϕ RCP AT 0° SKEW
-MADE IN ACCORDANCE WITH ASTM C913
-STEEL REINFORCEMENT: ASTM A615 GRADE 60 OR EQ. ASTM A1064 WWR
-MAX BURIAL DEPTH 10'-0" FROM INSIDE FLOOR TO FINISHED GRADE
-STEPS NOT AVAILABLE
-CAST IRON FRAME IS CAST INTO THE BASE SECTION
-ADA & BEEHIVE GRATE OPTIONS AVAILABLE

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CATCH BASIN # 24
1'-10" x 1'-10"

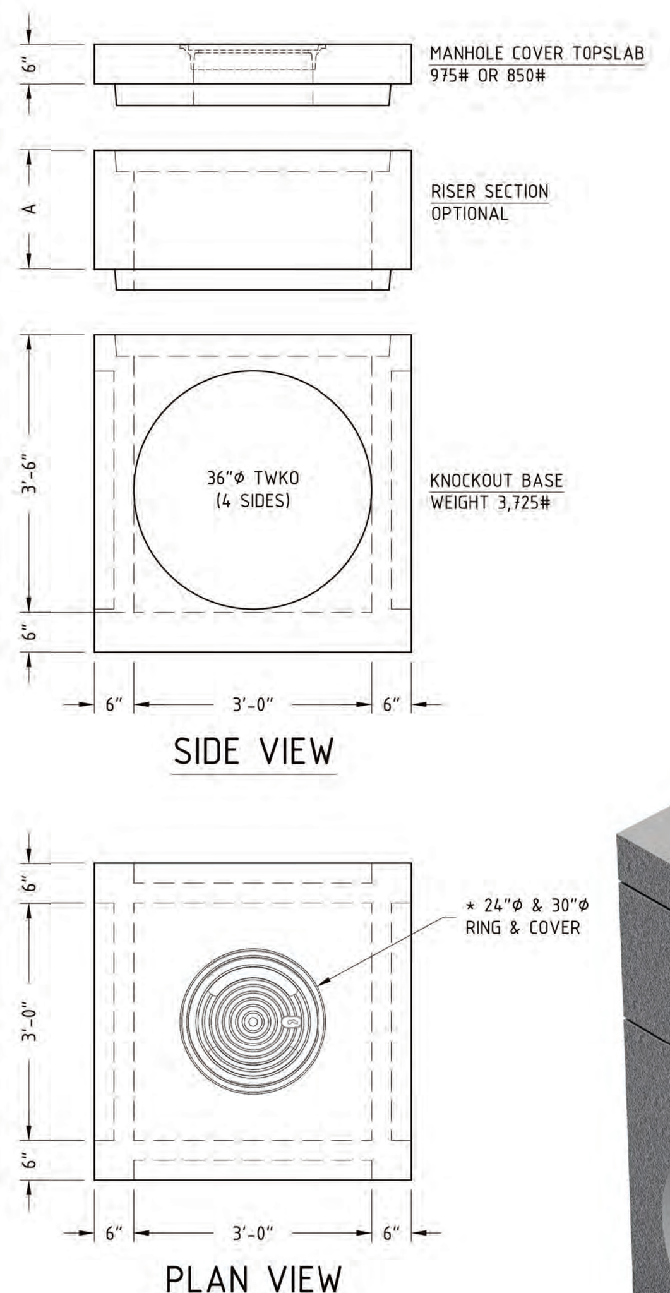
NOTE:
TRENCH WIDTHS BASED ON 1.25 Bc+1.0 WHERE Bc IS THE OUTSIDE DIAMETER OF THE PIPE IN FEET.

PIPE DIAMETER (INCHES)	TRENCH WIDTH (FEET)
15	3.0
18	3.4
21	3.8
24	4.1
27	4.5
33	5.2
36	5.6
42	6.3
48	7.0
54	7.8
60	8.5
66	9.2
72	10.0
78	10.7
84	11.4
90	12.1
96	12.9

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D (Inside Diameter)	d (Min)
27" OR SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

TRENCH WIDTHS SHOWN ARE MINIMUM FOR PROPER PLACEMENT AND COMPACTION OF EMBEDMENT AND BACKFILL.

TRENCH WIDTHS SHOWN WILL BE USED FOR CALCULATION OF ROCK EXCAVATION WHEN DESIGNATED AS A PAY ITEM.



RISER	
A	WEIGHT
1'-0"	1,075#
1'-6"	1,600#
2'-0"	2,150#
3'-0"	3,225#

NOTE:

-MAX. PIPE CONNECTION: 27"ϕ RCP AT 0° SKEW
-MADE IN ACCORDANCE WITH ASTM C913
-STEEL REINFORCEMENT: ASTM A615 GRADE 60 OR EQ. ASTM A1064 WWR
-MAX BURIAL DEPTH 25'-0" FROM INSIDE FLOOR TO FINISHED GRADE
-PER TxDOT PRECAST BASE DETAIL TYPE 'PB' JANUARY 2015.
-STEPS NOT AVAILABLE
-NUMEROUS RING & COVER LOCATIONS & OPTIONS ARE AVAILABLE.
-RING CAST INTO SLAB TOP

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MANHOLE OUTSIDE PAVEMENT
3'-0" x 3'-0"

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Maximum Wingwall Height Hw	Dimensions W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of wing length (2~wings) (3) Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:
(All values are in feet.)

Hw = H + T + C - 0.250'
A = (Hw - 0.333') (SL)
B = (A) tangent (30°)
Lw = (A) ÷ cosine (30°)

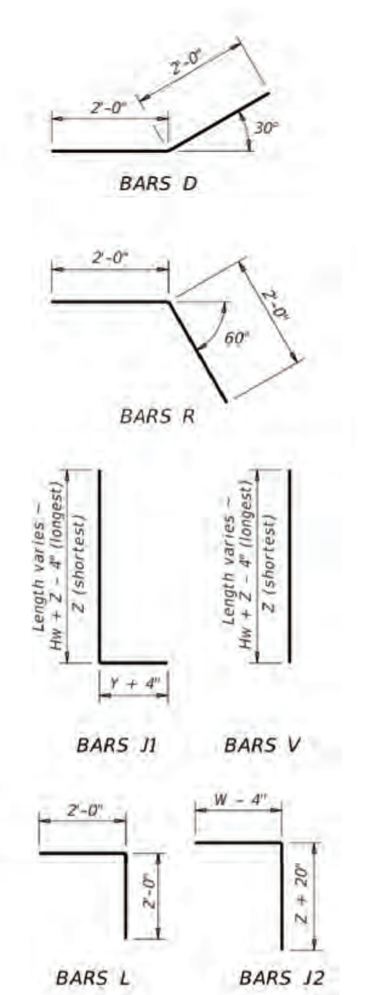
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

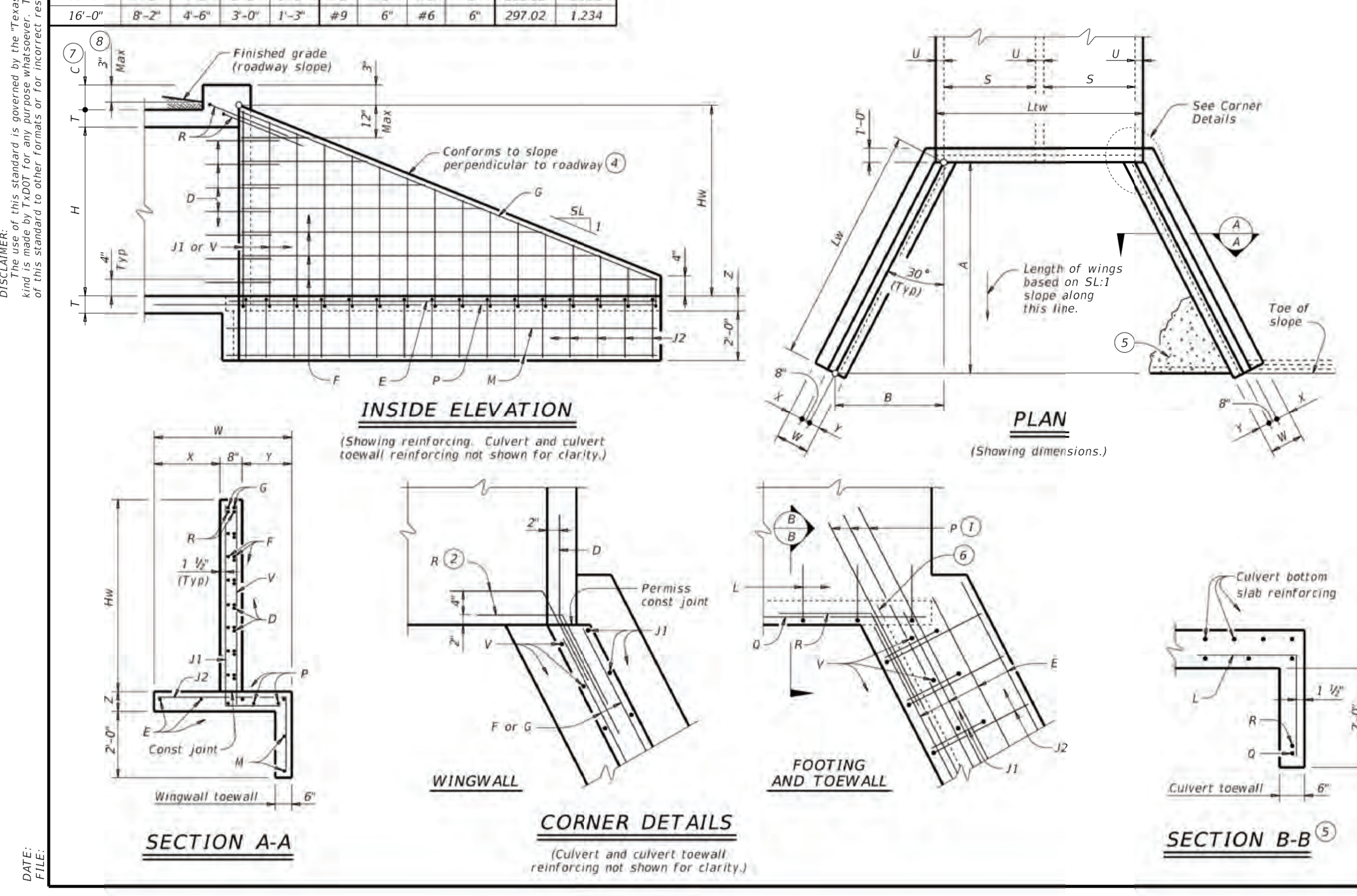
For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total wingwall area (two wings ~ SF) = (Hw + 0.333') (Lw)

Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.





(1) Extend Bars P 3'-0" minimum into bottom slab of box culvert.

(2) Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

(3) Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

(4) Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

(5) When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

(6) At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

(7) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(8) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

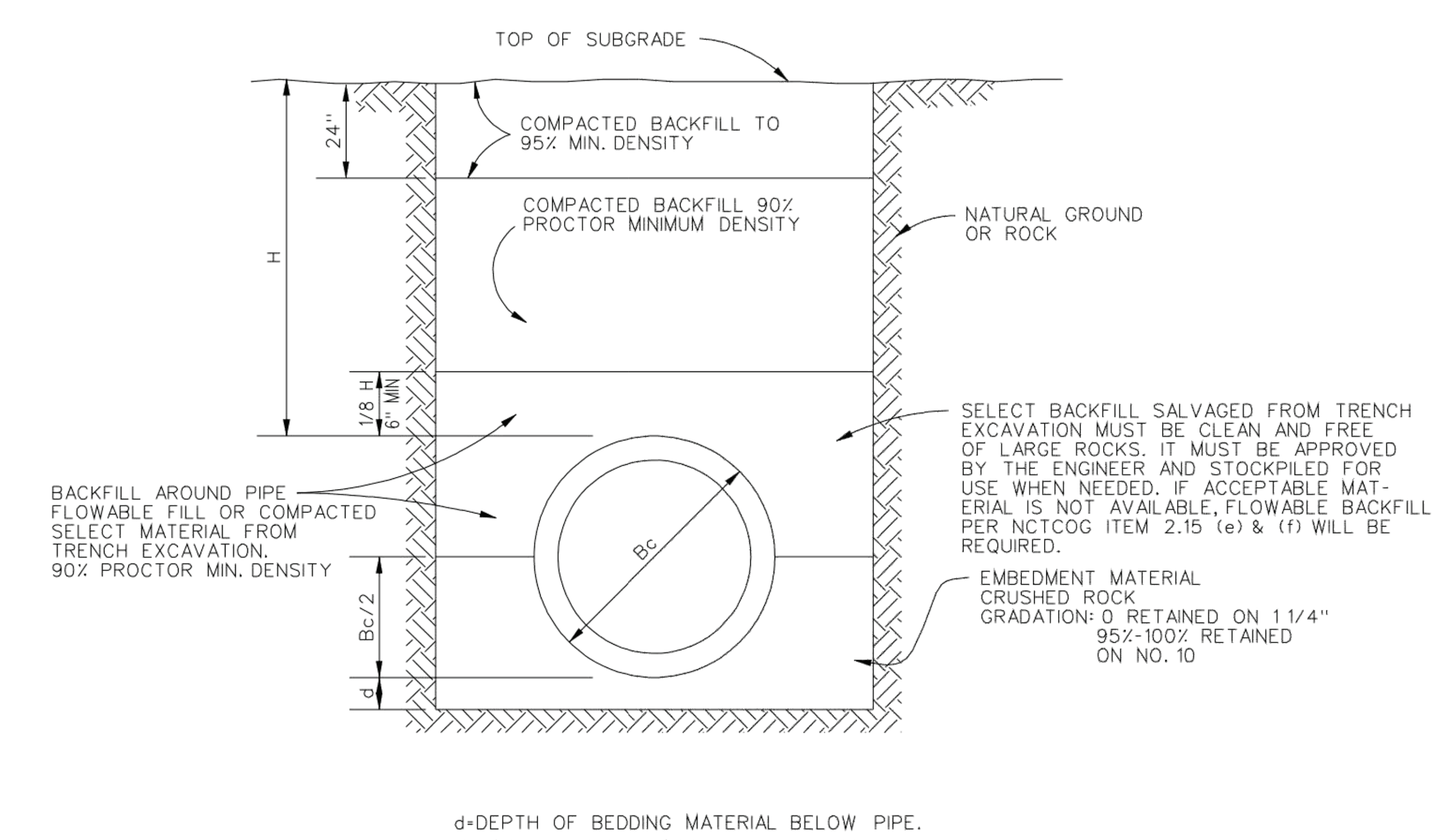
GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation | Bridge Division Standard

CONCRETE WINGWALLS
WITH FLARED WINGS FOR
0° SKEW BOX CULVERTS

FW-0



d=DEPTH OF BEDDING MATERIAL BELOW PIPE.
H=BACKFILL COVER ABOVE TOP OF PIPE.

REINFORCED CONCRETE CLASS III
PIPE INSTALLATION

INSTALLATION WILL BE AS SHOWN OR AS DESCRIBED IN THE GENERAL SPECIFICATIONS FOR CONSTRUCTION

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED PROFESSIONAL ENGINEER
07/03/2020

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Preservation
Interior Design
1138 East Commerce Street
San Antonio, Texas 78205
210/226-1246
FPC# 92705

Koch

TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: LHN
DRAWN BY: JTS
REVIEWED BY: CMJ
no. revision date

SHEET TITLE
STORM DETAILS

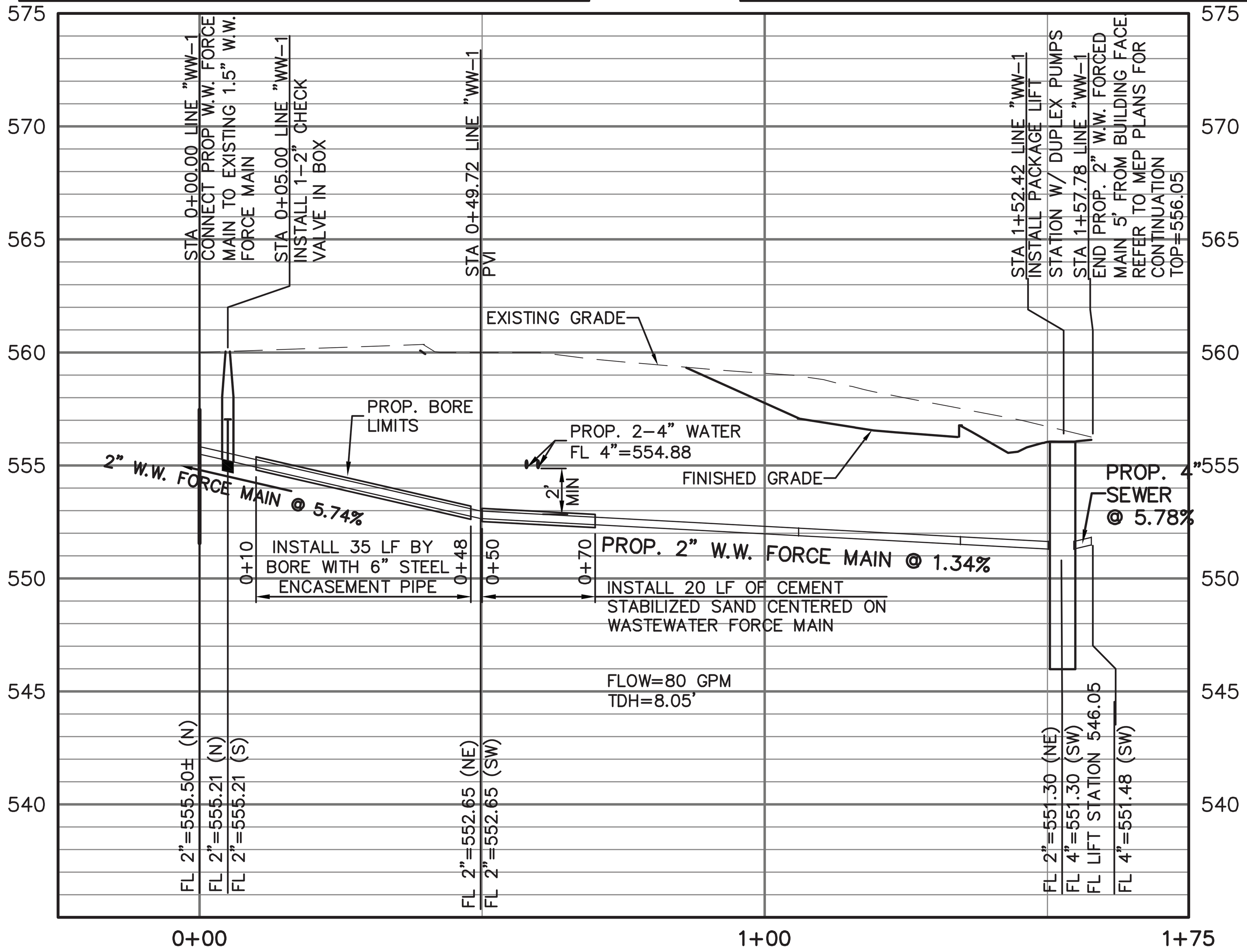
SHEET NUMBER
C403

CONSTRUCTION DOCUMENTS

PATH:
DATE:
JSCOTT
7/2/2020 11:13 AM
M:\DWG-39\3914-17.006\DWG\CIVIL C3D 2015\3914-17.006DETAILS.DWG

NOTE:
REFER TO SHEET C600, DETAIL 4 FOR CONNECTION TO EXISTING 1.5" FORCE MAIN

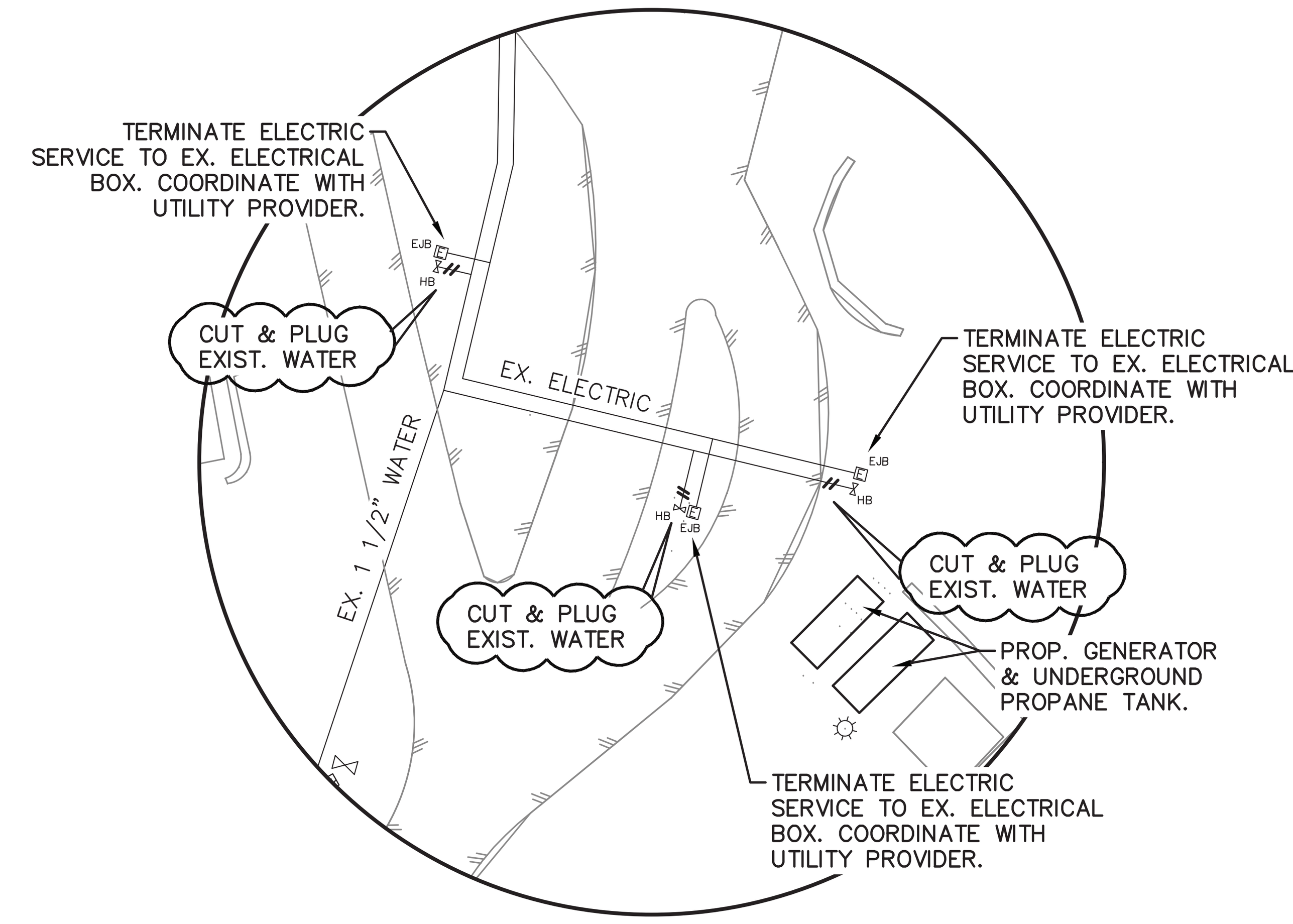
NOTE:
REFER TO SHEET C600 AND SPECIFICATION 33-3010 FOR PACKAGE LIFT STATION



STA 0+00.00 LINE "WW-1" CONNECT PROP. W.W. FORCE MAIN TO EXISTING 1.5" W.W. FORCE MAIN
STA 0+05.00 LINE "WW-1" INSTALL 1-2" CHECK VALVE IN BOX
STA 0+49.72 LINE "WW-1" PVI
STA 1+52.42 LINE "WW-1" INSTALL PACKAGE LIFT STATION W/ DUPLEX PUMPS
STA 1+57.78 LINE "WW-1" END PROP. 2" W.W. FORCED MAIN 5' FROM BUILDING FACE REFER TO MEP PLANS FOR CONTINUATION TOP=556.05
EXISTING GRADE
PROP. BORE LIMITS
PROP. 2-4" WATER FL 4"=554.88
FINISHED GRADE
2" W.W. FORCE MAIN @ 5.74%
PROP. 2" W.W. FORCE MAIN @ 1.34%
PROP. 4" SEWER @ 5.78%
INSTALL 35 LF BY BORE WITH 6" STEEL ENCASEMENT PIPE
INSTALL 20 LF OF CEMENT STABILIZED SAND CENTERED ON WASTEWATER FORCE MAIN
FLOW=80 GPM
TDH=8.05'
FL 2"=555.50± (N)
FL 2"=555.21 (N)
FL 2"=555.21 (S)
FL 2"=552.65 (NE)
FL 2"=552.65 (SW)
FL 2"=551.30 (NE)
FL 4"=551.30 (SW)
FL LIFT STATION 546.05
FL 4"=551.48 (SW)

PROFILE: WW-1

SCALE: H:1"=20'
V:1"=5'



WATER DETAIL 3

SCALE: H:1"=20'

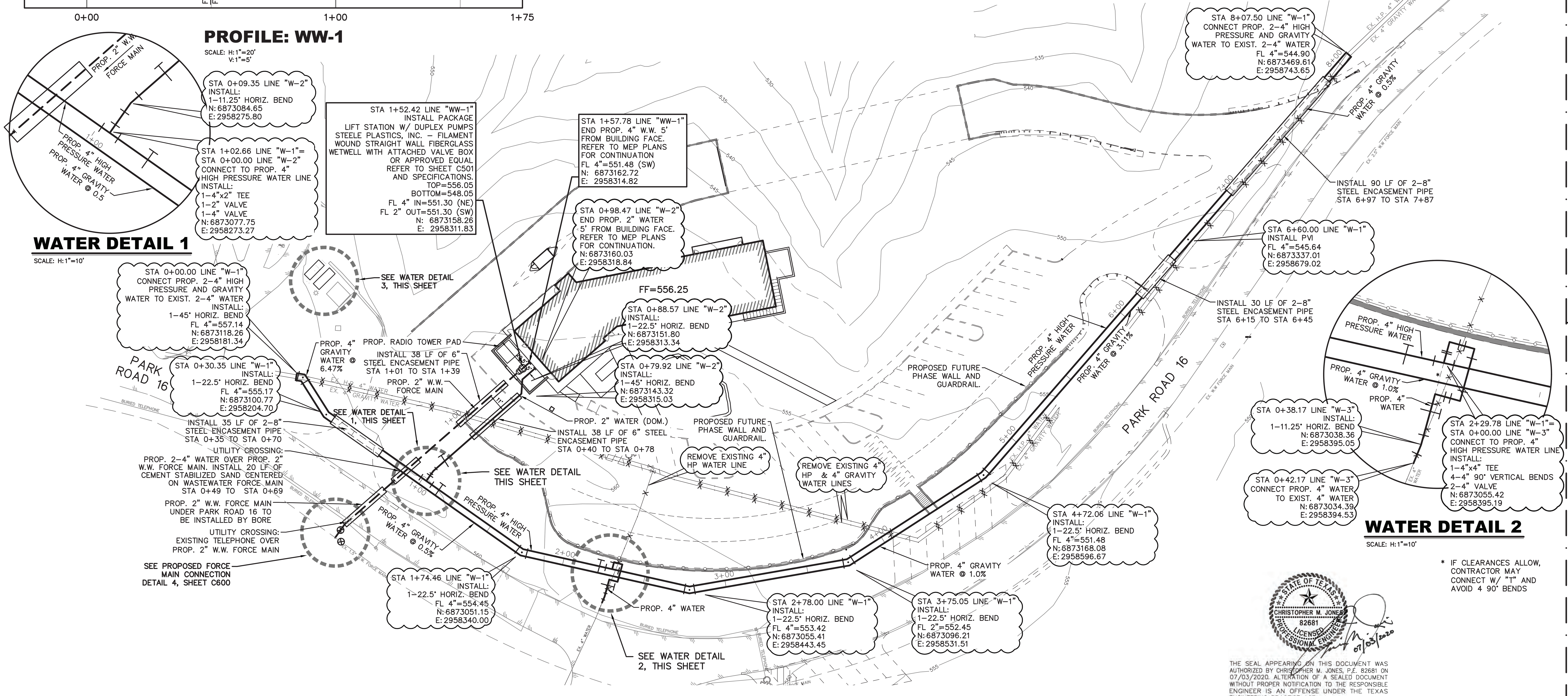
WATER & SANITARY SEWER GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS "A" (3000 PSI), UNLESS OTHERWISE NOTED.
2. ALL WATER MAINS SHALL BE PVC C900, DR 18, CLASS 235.
3. WATER AND SANITARY SEWER SERVICES SHALL MEET PLUMBING CODE REQUIREMENTS.
4. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 48 INCHES BELOW IMPROVED FINISHED GRADE, UNLESS OTHERWISE NOTED.
5. SANITARY SEWER PIPE SHALL BE PVC SDR-35.
6. WHEN WATER AND SANITARY SEWER MAINS, SERVICES, AND LATERALS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO EACH OTHER THAN NINE FEET IN ALL DIRECTIONS AND PARALLEL LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING TCEQ CHAPTERS SHALL APPLY:
   - 6.A. TCEQ CHAPTER 217.53 PIPE DESIGN, SECTION (d) SEPARATION DISTANCES.
   - 6.B. TCEQ CHAPTER 290.44 WATER DISTRIBUTION, SECTION (e) LOCATION OF WATERLINES.
7. CONTRACTOR TO VERIFY ALL EXISTING SEWER FLOW LINES BEFORE BEGINNING CONSTRUCTION.
8. CONTRACTOR SHALL TIE A ONE INCH WIDE PIECE OF RED PLASTIC FLAGGING TO THE END OF SEWER SERVICE AND SHALL LEAVE A MINIMUM OF 36 INCHES OF FLAGGING EXPOSED AFTER BACKFILL. AFTER CURB AND PAVING IS COMPLETED, CONTRACTOR SHALL MARK THE LOCATION OF THE SEWER SERVICE ON THE CURB.
9. ALL SANITARY SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH TECQ REQUIREMENTS.
10. THE UTILITY CONTRACTOR SHALL INSTALL THE WATER SERVICES TO A POINT TWO FEET BACK OF THE CURB LINE AT A DEPTH OF 12 INCHES. THE METER BOX SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AFTER THE PAVING CONTRACTOR HAS COMPLETED THE FINE GRADING BEHIND THE BACK OF THE CURB. EACH SERVICE LOCATION SHALL BE MARKED ON THE CURB WITH A BLUE LETTER "W" BY THE UTILITY CONTRACTOR AND TIED TO PROPERTY CORNERS ON THE "RECORD DRAWINGS."
11. ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS.
12. TRENCH BACKFILL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TECQ REQUIREMENTS AND SHALL BE MECHANICALLY COMPACTED IN 6-INCH LIFTS TO THE TOP OF SUBGRADE TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY UNLESS OTHERWISE SHOWN ON THESE PLANS OR STATED IN THE TECQ REQUIREMENTS.
13. EMBEDMENT SHALL CONFORM TO THE REQUIREMENTS OF TCEQ CHAPTER 217 UNLESS OTHERWISE SHOWN ON THESE PLANS.
14. VALVE BOXES SHALL BE FURNISHED AND SET ON EACH GATE VALVE. AFTER THE FINAL CLEAN-UP AND ALIGNMENT HAS BEEN COMPLETED, THE UTILITY CONTRACTOR SHALL POUR A 24"X24"X6" CONCRETE BLOCK AROUND ALL VALVE BOX TOPS LEVEL WITH THE FINISHED GRADE.
15. CONTRACTOR SHALL RECONNECT ALL EXISTING SERVICES AND MAINTAIN EXISTING SERVICES THROUGHOUT CONSTRUCTION.
16. IF REQUIRED DUE TO CONSTRUCTION, POWER POLES TO BE BRACED OR RELOCATED AT CONTRACTOR'S EXPENSE.

GRAPHIC SCALE IN FEET (0, 15, 30, 60, 90)

LEGEND

- BOLLARD
- ELECTRIC METER
- POWER POLE
- DOWN GUY
- LANTERN HOLDER
- IRRIGATION CONTROL VALVE
- FIRE HYDRANT
- CLEANOUT
- MANHOLE
- WATER METER
- WATER VALVE
- TELEPHONE PEDESTAL
- FLOOD LIGHT
- FLAG POLE
- TRAFFIC SIGN
- IRS 1/2-INCH IRON ROD W/"PACHECO KOCH" CAP SET
- CONTROL POINT
- CONCRETE MONUMENT
- PROPERTY LINE
- FENCE
- OVERHEAD UTILITY LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND CABLE LINE
- UNDERGROUND WATER LINE
- UNDERGROUND SANITARY SEWER
- TREE
- EXISTING POWER POLE
- PROPOSED POWER POLE
- PROPOSED WATER VALVE
- TxDOT CONSTRUCTION – FUTURE PHASE NOT IN CONTRACT



PROP. 2" W.W. FORCE MAIN
PROP. 4" HIGH PRESSURE WATER
PROP. 4" GRAVITY WATER @ 0.5
STA 0+09.35 LINE "W-2" INSTALL: 1-11.25' HORIZ. BEND N: 6873084.65 E: 2958275.80
STA 1+02.66 LINE "W-1"= STA 0+00.00 LINE "W-2" CONNECT TO PROP. 4" HIGH PRESSURE WATER LINE INSTALL: 1-4"x2" TEE 1-2" VALVE 1-4" VALVE N: 6873077.75 E: 2958273.27
WATER DETAIL 1
SCALE: H:1"=10'
STA 1+52.42 LINE "WW-1" INSTALL PACKAGE LIFT STATION W/ DUPLEX PUMPS STEELE PLASTICS, INC. - FILAMENT WOUND STRAIGHT WALL FIBERGLASS WETWELL WITH ATTACHED VALVE BOX OR APPROVED EQUAL REFER TO SHEET C501 AND SPECIFICATIONS. TOP=556.05 BOTTOM=548.05 FL 4" IN=551.30 (NE) FL 2" OUT=551.30 (SW) N: 6873158.26 E: 2958311.83
STA 1+57.78 LINE "WW-1" END PROP. 4" W.W. 5' FROM BUILDING FACE. REFER TO MEP PLANS FOR CONTINUATION FL 4"=551.48 (SW) N: 6873162.72 E: 2958314.82
STA 0+98.47 LINE "W-2" END PROP. 2" WATER 5' FROM BUILDING FACE. REFER TO MEP PLANS FOR CONTINUATION. N: 6873160.03 E: 2958318.84
FF=556.25
STA 0+88.57 LINE "W-2" INSTALL: 1-22.5' HORIZ. BEND N: 6873151.80 E: 2958313.34
STA 0+79.92 LINE "W-2" INSTALL: 1-45' HORIZ. BEND N: 6873143.32 E: 2958315.03
STA 0+00.00 LINE "W-1" CONNECT PROP. 2-4" HIGH PRESSURE AND GRAVITY WATER TO EXIST. 2-4" WATER INSTALL: 1-45' HORIZ. BEND FL 4"=557.14 N: 6873118.26 E: 2958181.34
SEE WATER DETAIL 3, THIS SHEET
PROP. 4" GRAVITY WATER @ 6.47%
PROP. RADIO TOWER PAD
INSTALL 38 LF OF 6" STEEL ENCASEMENT PIPE STA 1+01 TO STA 1+39
PROP. 2" W.W. FORCE MAIN
PARK ROAD 16
STA 0+30.35 LINE "W-1" INSTALL: 1-22.5' HORIZ. BEND FL 4"=555.17 N: 6873100.77 E: 2958204.70
SEE WATER DETAIL 1, THIS SHEET
INSTALL 35 LF OF 2-8" STEEL ENCASEMENT PIPE STA 0+35 TO STA 0+70
UTILITY CROSSING: PROP. 2-4" WATER OVER PROP. 2" W.W. FORCE MAIN. INSTALL 20 LF OF CEMENT STABILIZED SAND CENTERED ON WASTEWATER FORCE MAIN STA 0+49 TO STA 0+69
PROP. 2" W.W. FORCE MAIN UNDER PARK ROAD 16 TO BE INSTALLED BY BORE
UTILITY CROSSING: EXISTING TELEPHONE OVER PROP. 2" W.W. FORCE MAIN
SEE PROPOSED FORCE MAIN CONNECTION DETAIL 4, SHEET C600
PROP. 2" WATER (DOM.)
INSTALL 38 LF OF 6" STEEL ENCASEMENT PIPE STA 0+40 TO STA 0+78
SEE WATER DETAIL THIS SHEET
PROP. 4" HIGH PRESSURE WATER
PROP. 4" GRAVITY WATER @ 0.5%
STA 1+74.46 LINE "W-1" INSTALL: 1-22.5' HORIZ. BEND FL 4"=554.45 N: 6873051.15 E: 2958340.00
PROP. 4" WATER
SEE WATER DETAIL 2, THIS SHEET
PROPOSED FUTURE PHASE WALL AND GUARDRAIL.
REMOVE EXISTING 4" HP WATER LINE
REMOVE EXISTING 4" HP & 4" GRAVITY WATER LINES
PROPOSED FUTURE PHASE WALL AND GUARDRAIL.
STA 2+78.00 LINE "W-1" INSTALL: 1-22.5' HORIZ. BEND FL 4"=553.42 N: 6873055.41 E: 2958443.45
STA 3+75.05 LINE "W-1" INSTALL: 1-22.5' HORIZ. BEND FL 2"=552.45 N: 6873096.21 E: 2958531.51
PROP. 4" GRAVITY WATER @ 1.0%
STA 4+72.06 LINE "W-1" INSTALL: 1-22.5' HORIZ. BEND FL 4"=551.48 N: 6873168.08 E: 2958596.67
PROP. 4" HIGH PRESSURE WATER
PROP. 4" GRAVITY WATER @ 3.11%
PARK ROAD 16
INSTALL 30 LF OF 2-8" STEEL ENCASEMENT PIPE STA 6+15 TO STA 6+45
STA 6+60.00 LINE "W-1" INSTALL PVI FL 4"=545.64 N: 6873337.01 E: 2958679.02
INSTALL 90 LF OF 2-8" STEEL ENCASEMENT PIPE STA 6+97 TO STA 7+87
PROP. 4" GRAVITY WATER @ 0.5%
STA 8+07.50 LINE "W-1" CONNECT PROP. 2-4" HIGH PRESSURE AND GRAVITY WATER TO EXIST. 2-4" WATER FL 4"=544.90 N: 6873469.61 E: 2958743.65
PROP. 4" HIGH PRESSURE WATER
PROP. 4" GRAVITY WATER @ 1.0%
PROP. 4" WATER
STA 0+38.17 LINE "W-3" INSTALL: 1-11.25' HORIZ. BEND N: 6873038.36 E: 2958395.05
STA 0+42.17 LINE "W-3" CONNECT PROP. 4" WATER TO EXIST. 4" WATER N: 6873034.39 E: 2958394.53
STA 2+29.78 LINE "W-1"= STA 0+00.00 LINE "W-3" CONNECT TO PROP. 4" HIGH PRESSURE WATER LINE INSTALL: 1-4"x4" TEE 4-4" 90' VERTICAL BENDS 2-4" VALVE N: 6873055.42 E: 2958395.19
WATER DETAIL 2
SCALE: H:1"=10'

* IF CLEARANCES ALLOW, CONTRACTOR MAY CONNECT W/ "T" AND AVOID 4 90' BENDS

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED PROFESSIONAL ENGINEER
07/03/2020

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TEXAS PARKS & WILDLIFE

FORD POWELL & CARSON
Architects & Planners, Inc.
Architecture Planning Preservation Interior Design
1138 East Commerce Street
San Antonio, Texas 78205
210/226-1246
FPC# 92705

Koch

TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

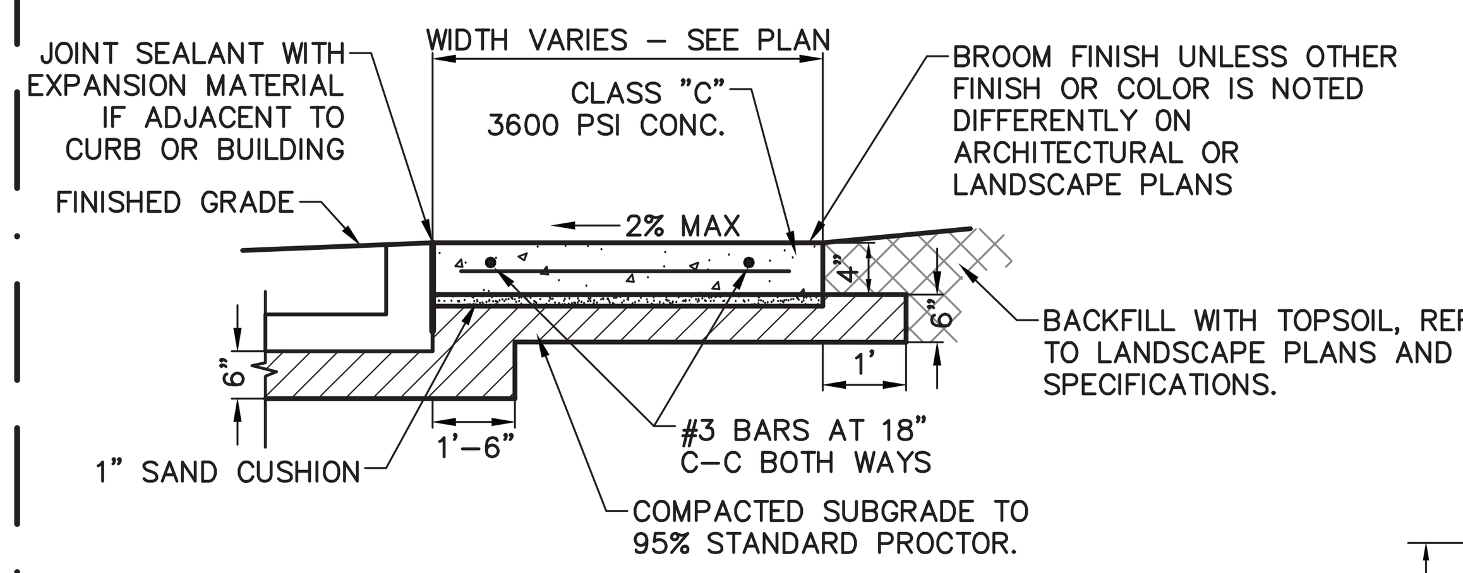
DATE: 0/03/2020
DESIGNED BY: JHB
DRAWN BY: JTS
REVIEWED BY: LHN
no. revision date

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
C500

CONSTRUCTION DOCUMENTS

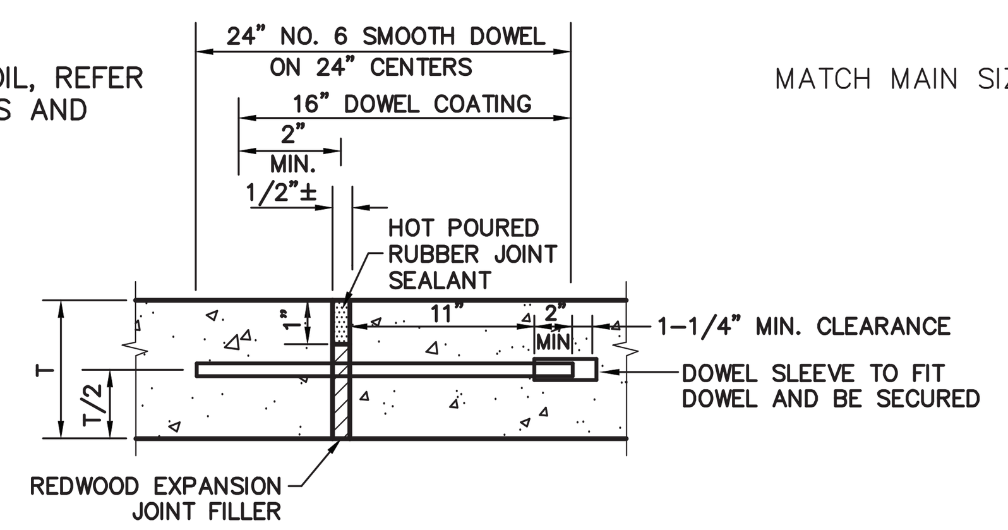
DATE: JBARILLAS 8/31/2020 11:40 AM
PATH: M:\DWG-39\3914-17.006\DWG\CIVIL C3D 2015\3914-17.006UTIL.DWG



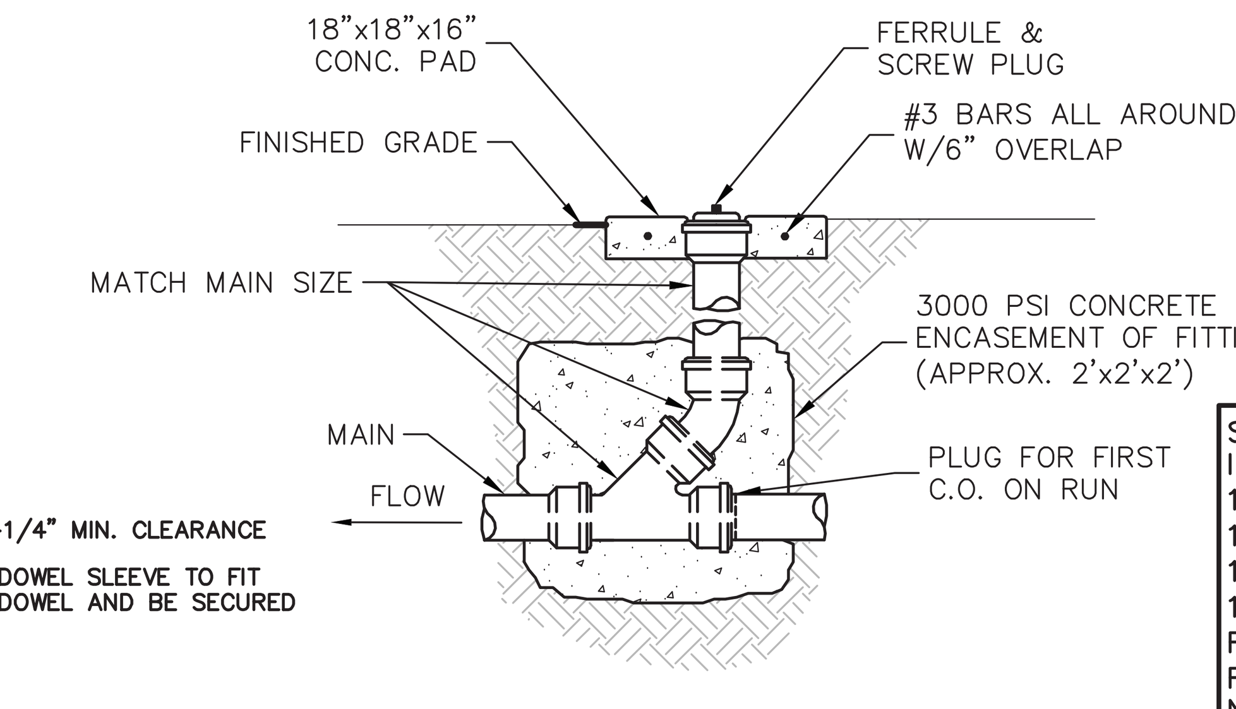
PROVIDE BITUMINOUS EXPANSION MATERIAL WHERE WALK ABUTS EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE

PROVIDE TOOLED JOINTS AT SPACING EQUAL TO WIDTH. PROVIDE REDWOOD EXPANSION JOINTS AT 32' SPACING UNLESS NOTED DIFFERENTLY ON ARCHITECTURAL OR LANDSCAPE PLANS

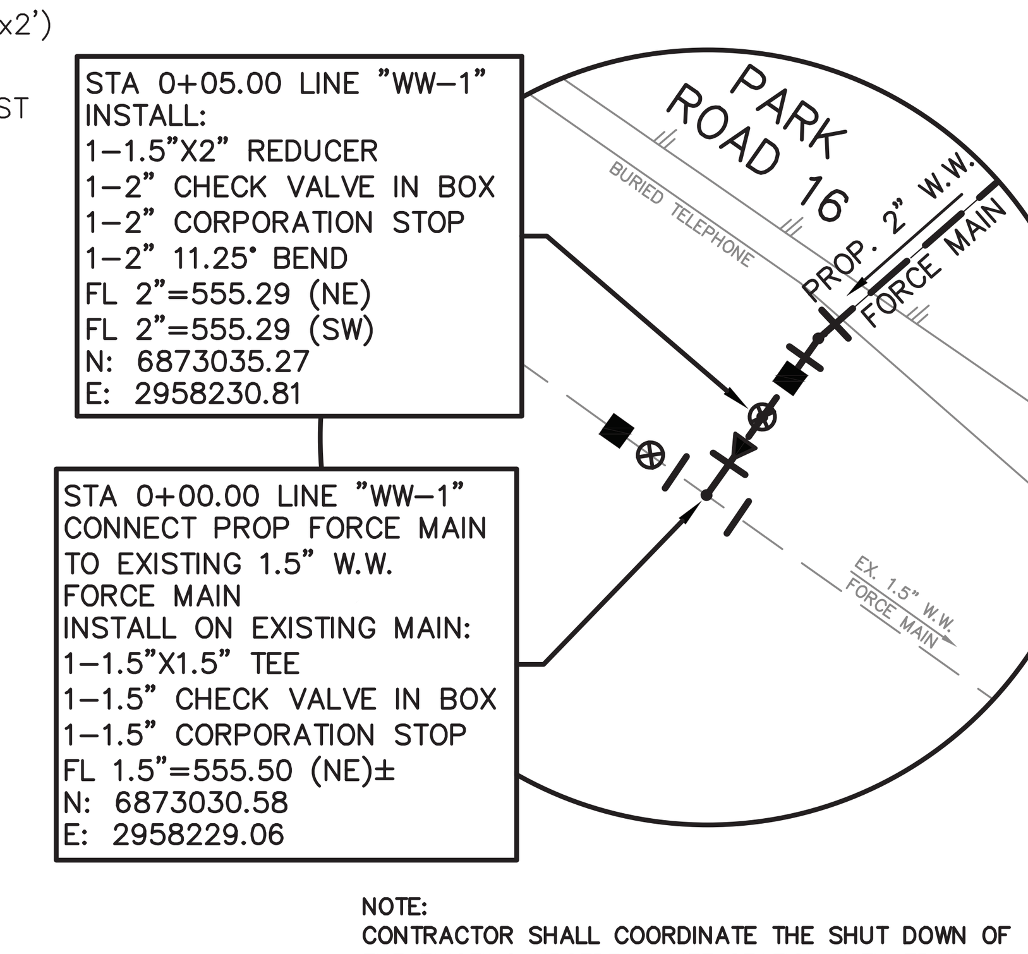
1 CONCRETE WALK
NOT TO SCALE



2 EXPANSION JOINT
NOT TO SCALE

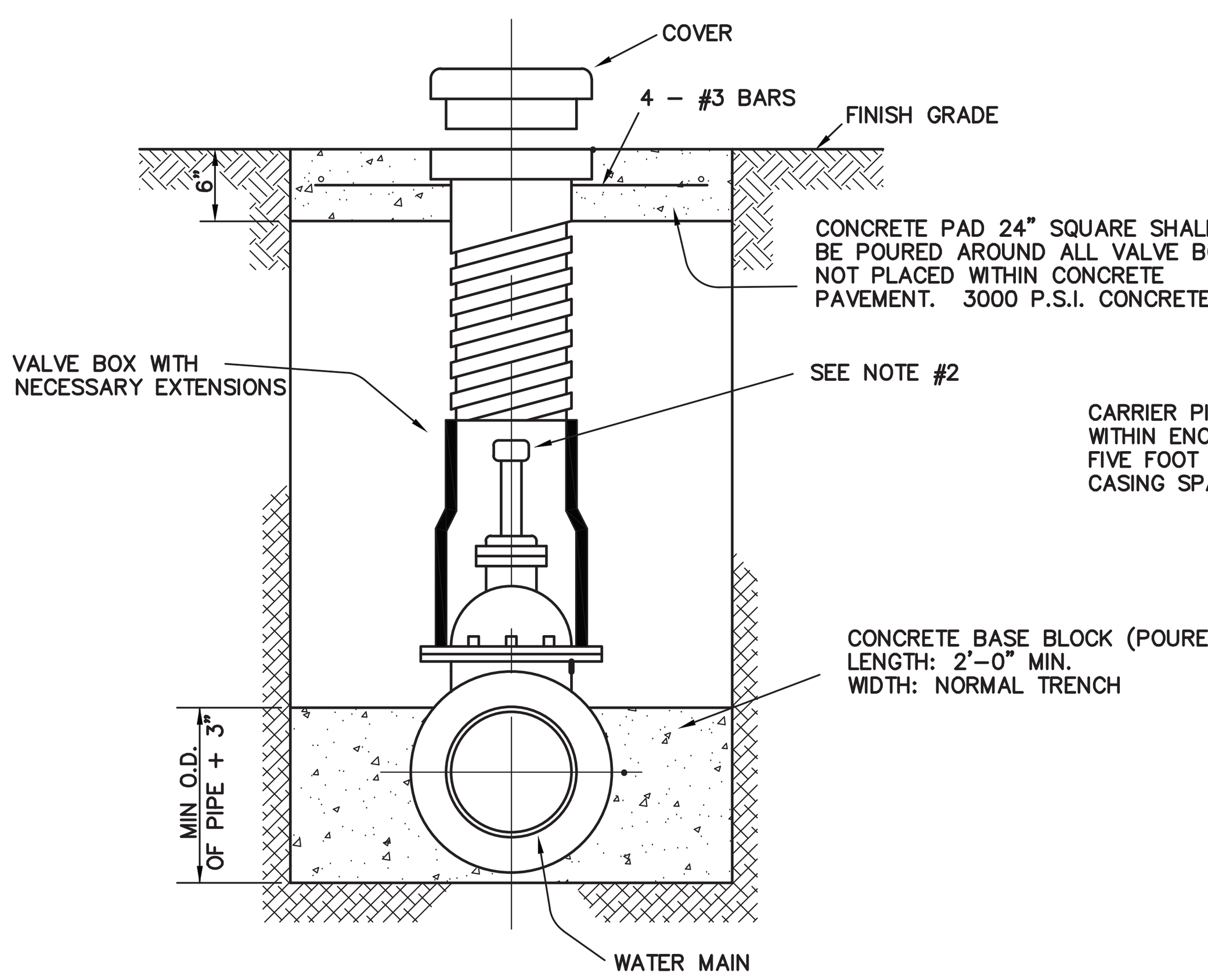


3 SANITARY SEWER CLEANOUT
NOT TO SCALE



NOTE:
CONTRACTOR SHALL COORDINATE THE SHUT DOWN OF THE EXISTING UPSTREAM LIFT STATION WITH TPWD WHILE CONNECTION TO EXISTING FORCE MAIN IS BEING MADE

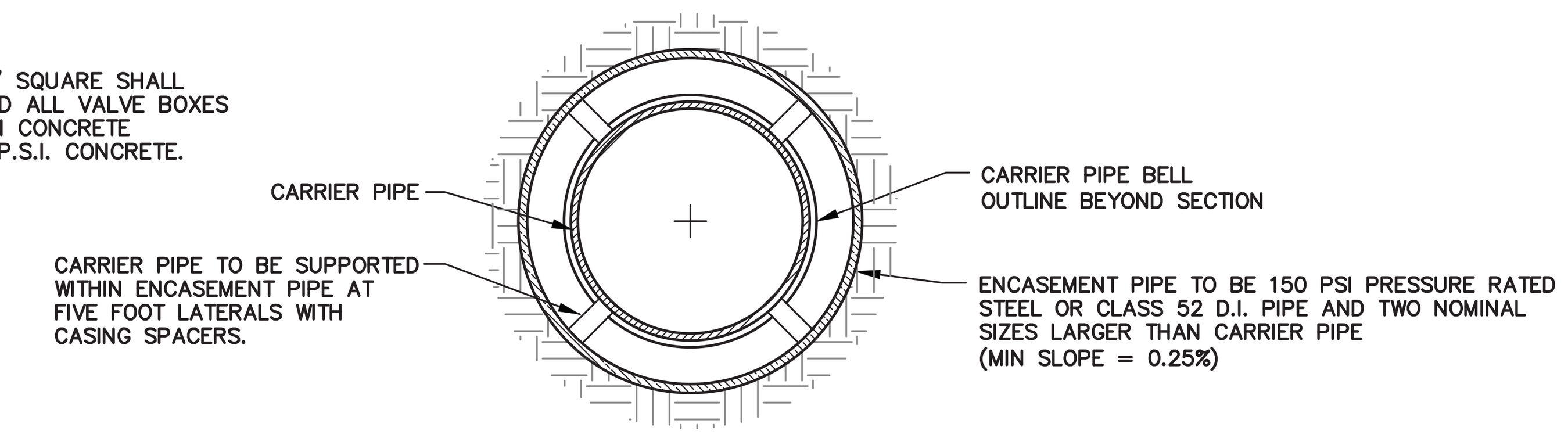
4 PR16 FORCE MAIN CONNECTION DETAIL
SCALE: 1"=10'



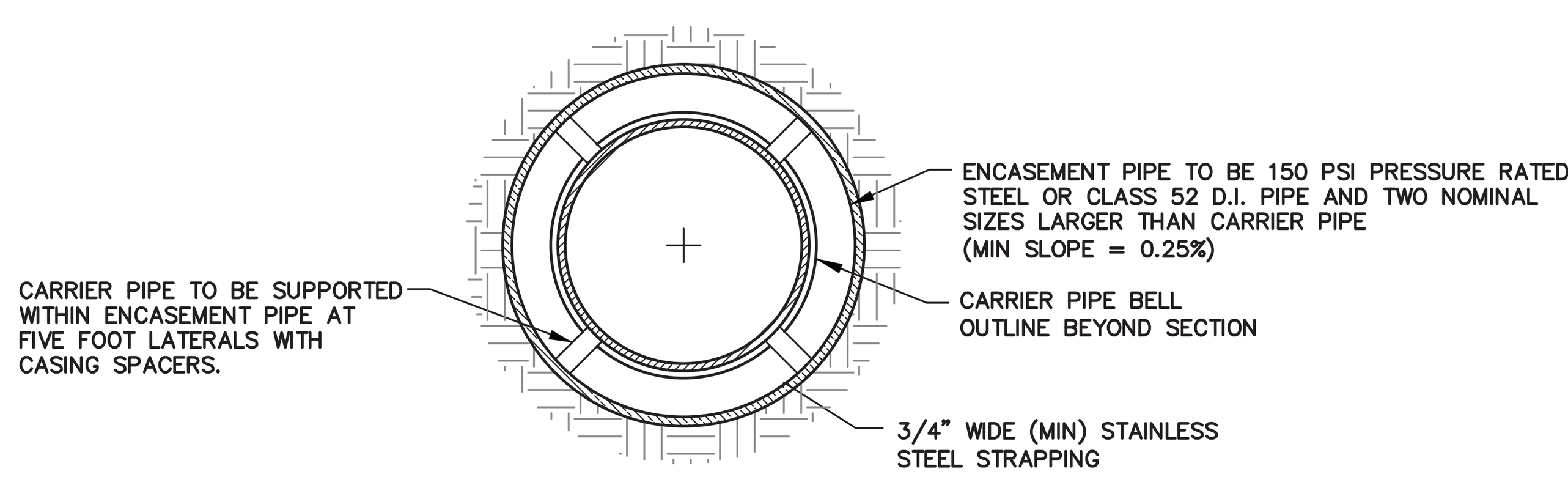
NOTES:

1. RESILIENT SEAT VALVES 4" THRU 12" IN SIZE SHALL BE IN ACCORDANCE WITH AWWA STANDARD C-509.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE THATS OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4 FEET OF VALVE BOX LID.
3. DUCTILE IRON OR C-900 PVC PIPE SHALL BE USED FOR VALVE STACKS WITH ADJUSTABLE VALVE BOXES.
4. CUT A "V" SHAPED SYMBOL ON THE NEAREST CURB FACE WITH THE POINT OF THE "V" SYMBOL POINTING TOWARDS THE VALVE LOCATION.

5 TYPICAL VALVE SETTING AND BOX
NOT TO SCALE



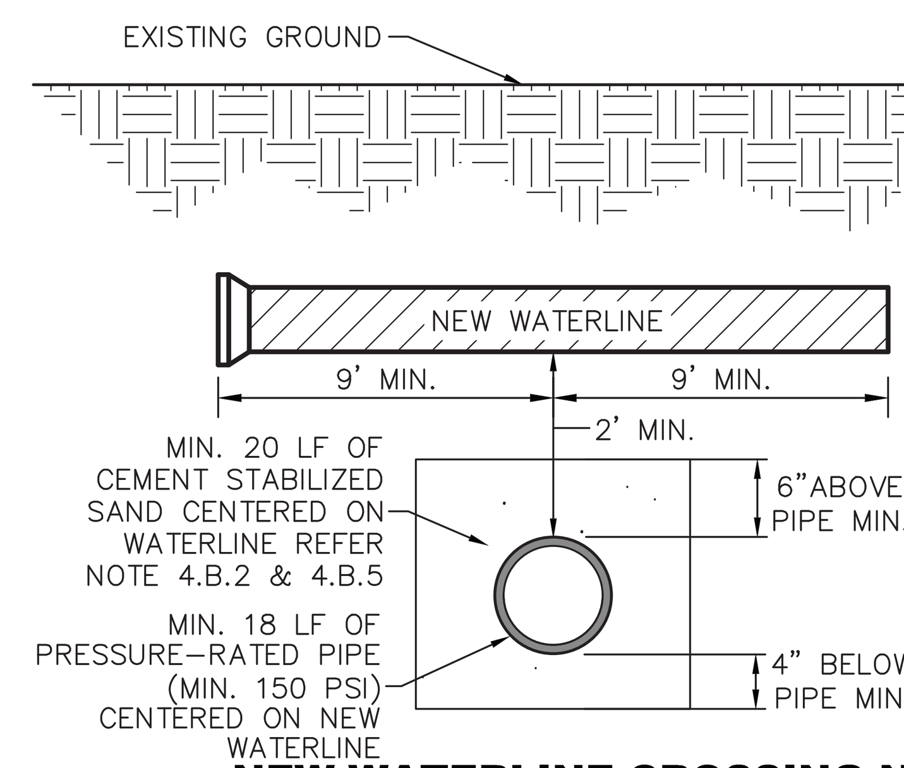
WATER MAIN ENCASEMENT



SEWER MAIN ENCASEMENT

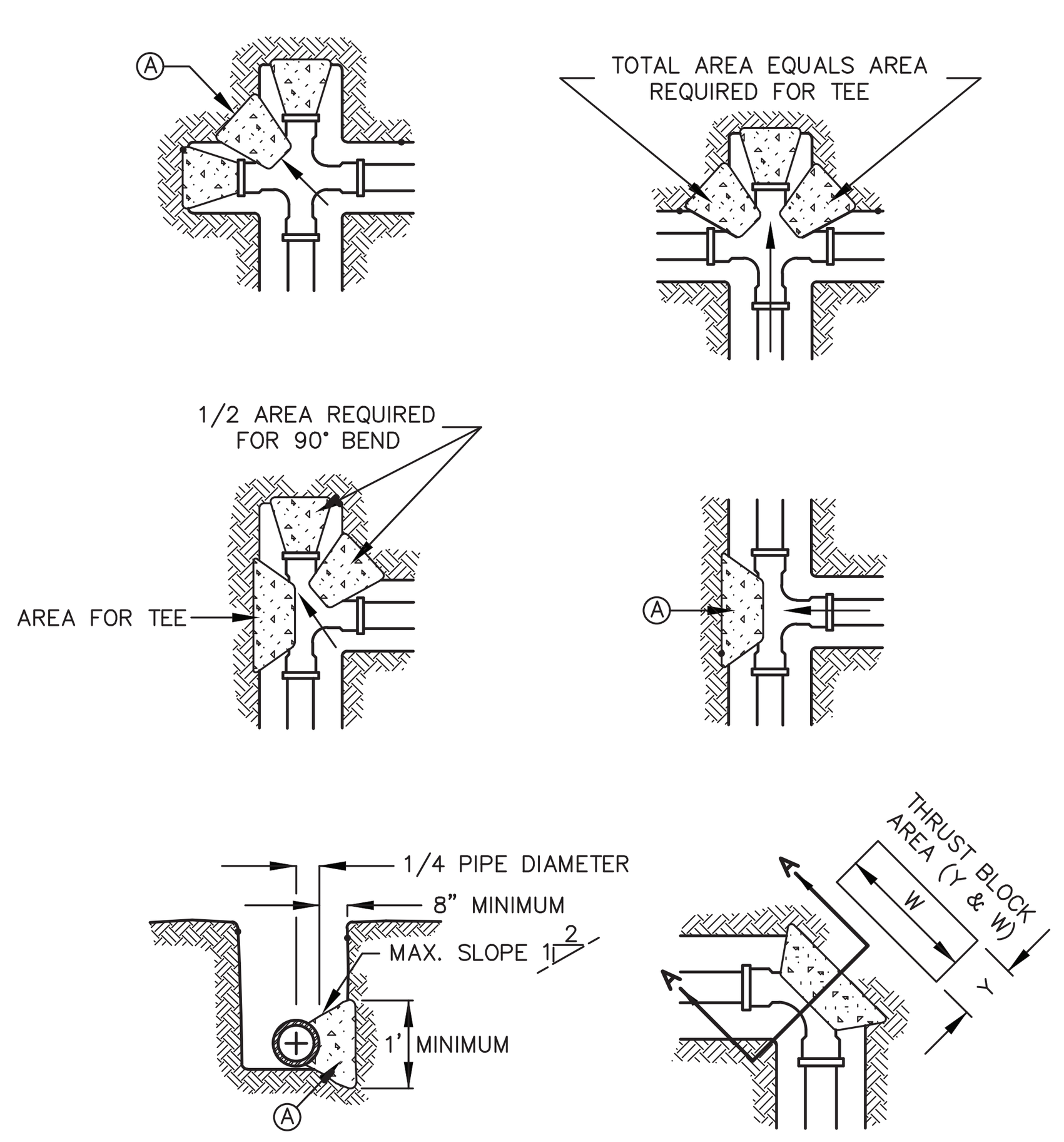
NOTE:
SEAL THE SPACE BETWEEN THE ENCASEMENT PIPE AND THE CARRIER WITH A MANUFACTURED SEAL TO PREVENT SOIL MIGRATION INTO THE ENCASEMENT PIPE.

6 MAIN ENCASEMENTS
NOT TO SCALE



7 NEW WATERLINE CROSSING NEW WASTEWATER (NON-PRESSURE-RATED - OPTION 1)
NOT TO SCALE

REFER NOTE: 4.B.2/4.B.2.a/4.B.5



GENERAL NOTES:

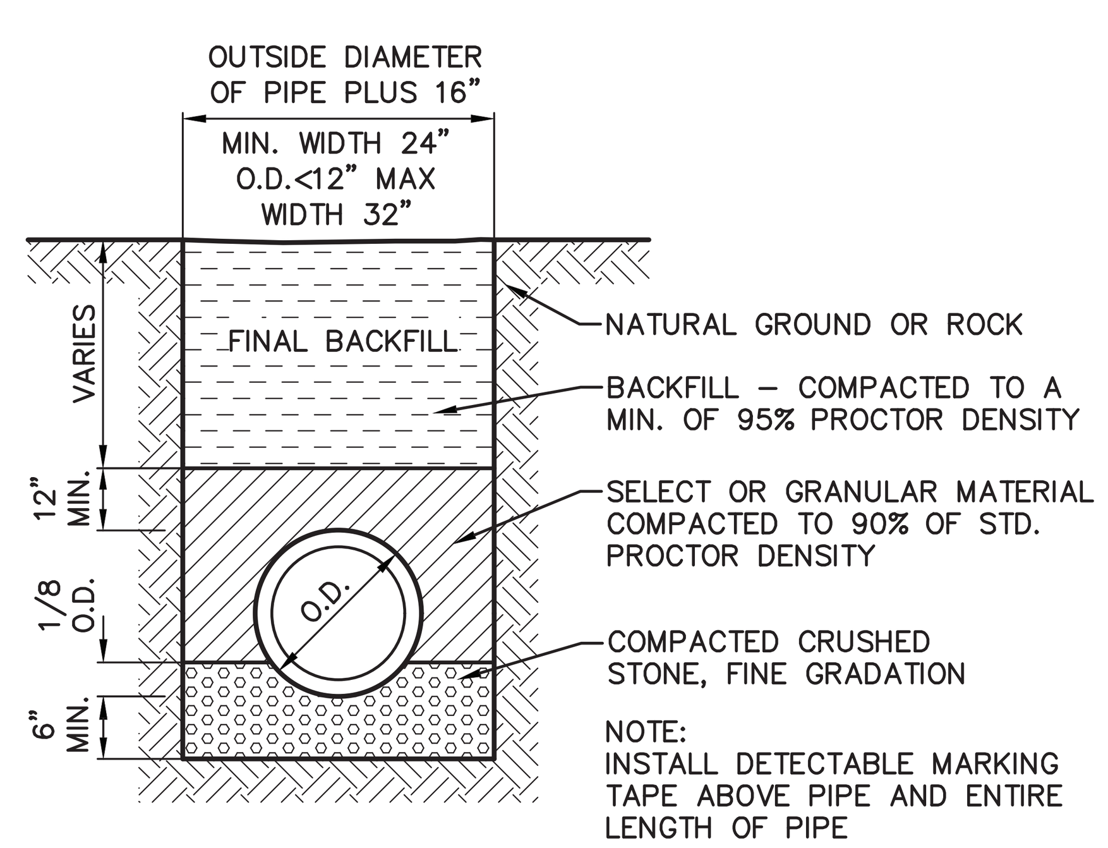
1. TABLE IS BASED ON 2000#/SQ. FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18" SHALL BE CALCULATED.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 2500 PSI.
4. THRUST BLOCK IS TO EXTEND TO UNDISTURBED SOIL.
5. SIZE MAY BE DECREASED FOR LESSER DEGREE BENDS AS DETERMINED BY ENGINEER.
6. KEEP CONCRETE CLEAR OF M.J. OR BELL AND SPIGOT JOINTS.
7. BLOCK IN A SIMILAR MANNER AT TEES, HYDRANTS, PLUG OR OTHER LOCATIONS AS REQUIRED.
8. IF CONCRETE BLOCKS CANNOT BE POURED, THEN USE TIE-RODS OR OTHER APPROVED METHOD TO RESTRAIN THRUST.

CONSTRUCTION KEY NOTES:

A. LENGTH "Y & W" AS REQUIRED TO OBTAIN BEARING AREA AGAINST UNDISTURBED SOIL.
B. ADDITIONAL EXCAVATION IF NECESSARY TO OBTAIN REQUIRED BEARING AREA.
C. MINIMUM THRUST BLOCK AREA REQUIREMENTS FOR (Y & W) AS FOLLOWS:

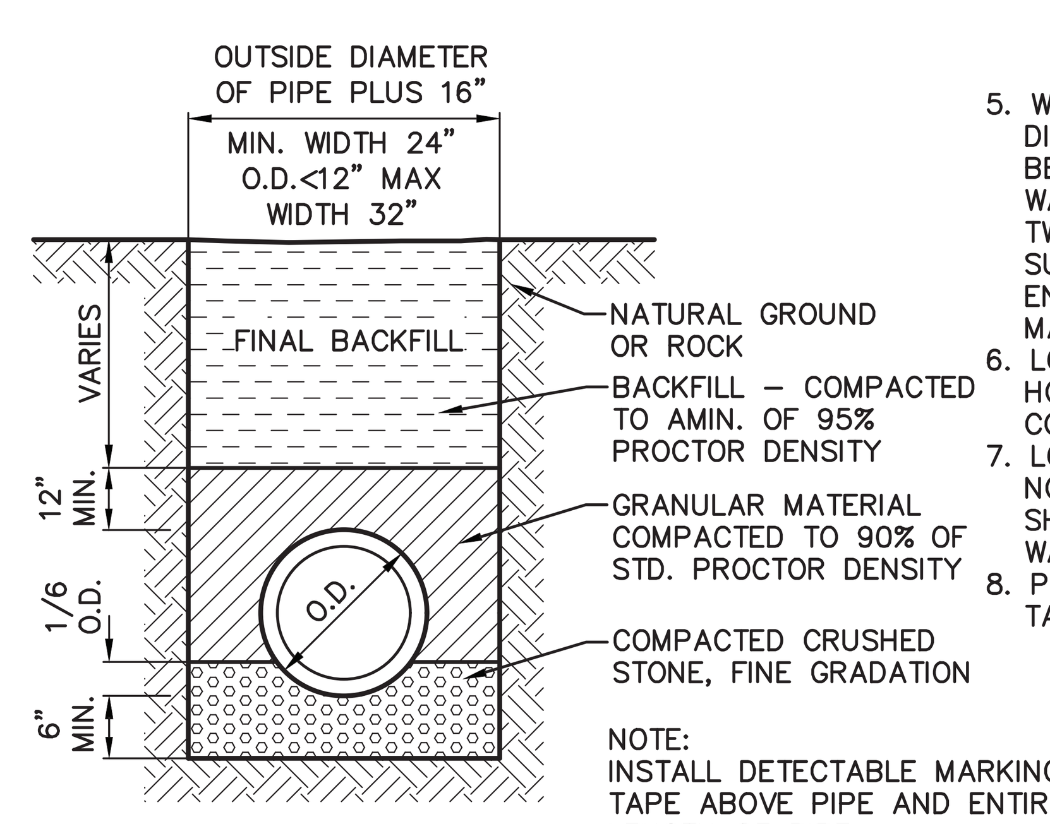
PIPE SIZE	WATER PIPE	
	TEE, DEAD END 90° BEND	45° AND 22 1/2° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

8 THRUST BLOCKING
NOT TO SCALE



NOTE:
INSTALL DETECTABLE MARKING TAPE ABOVE PIPE AND ENTIRE LENGTH OF PIPE

9 CLASS "B-1a" WASTEWATER EMBEDMENT
NOT TO SCALE



NOTE:
INSTALL DETECTABLE MARKING TAPE ABOVE PIPE AND ENTIRE LENGTH OF PIPE

10 CLASS "C+" WATER EMBEDMENT
NOT TO SCALE

TCEQ WATER NOTES:

REFERENCE: TCEQ CHAPTER 290.44 WATER DISTRIBUTION, SECTION (e) LOCATION OF WATERLINES, EFFECTIVE JULY 1, 2015. ANY UPDATED VERSION TO THIS CHAPTER SUPERSEDES THE REQUIREMENTS LISTED BELOW AND SHALL BE FOLLOWED BY THE CONTRACTOR.

LOCATION OF WATERLINES. THE FOLLOWING RULES APPLY TO INSTALLATIONS OF WATERLINES, WASTEWATER MAINS OR LATERALS, AND OTHER CONVEYANCES/APPURTENANCES IDENTIFIED AS POTENTIAL SOURCES OF CONTAMINATION. FURTHERMORE, ALL RATINGS SPECIFIED SHALL BE DEFINED BY ASTM OR AWWA STANDARDS UNLESS STATED OTHERWISE. NEW MAINS, SERVICE LINES, OR LATERALS ARE THOSE THAT ARE INSTALLED WHERE NO MAIN, SERVICE LINE, OR LATERALS ARE PLACED WITH PIPES OF DIFFERENT SIZE OR MATERIAL.

1. WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.
2. POTABLE WATER DISTRIBUTION LINES AND WASTEWATER MAINS OR LATERALS THAT FORM PARALLEL UTILITY LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.
3. NO PHYSICAL CONNECTION SHALL BE MADE BETWEEN A DRINKING WATER SUPPLY AND A SEWER LINE. ANY APPURTENANCE SHALL BE DESIGNED AND CONSTRUCTED SO AS TO PREVENT ANY POSSIBILITY OF SEWAGE ENTERING THE DRINKING WATER SYSTEM.
4. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.
   - 4.A NEW WATERLINE INSTALLATION – PARALLEL LINES:
     - 4.A.1 WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING, NON-PRESSURE OR PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS IS ABLE TO DETERMINE THAT THE EXISTING WASTEWATER MAIN OR LATERAL IS NOT LEAKING, THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE EXISTING WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE EXISTING WASTEWATER MAIN OR LATERAL. EVERY EFFORT SHALL BE EXERTED NOT TO DISTURB THE BEDDING AND BACKFILL OF THE EXISTING WASTEWATER MAIN OR LATERAL.
     - 4.A.2 WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING PRESSURE-RATED WASTEWATER MAIN OR LATERAL AND IT CANNOT BE DETERMINED BY THE LICENSED PROFESSIONAL ENGINEER IF THE EXISTING LINE IS LEAKING, THE EXISTING WASTEWATER MAIN OR LATERAL SHALL BE REPLACED WITH AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE NEW WASTEWATER LINE, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE REPLACED WASTEWATER MAIN OR LATERAL.
     - 4.A.3 WHERE A NEW POTABLE WATERLINE PARALLELS A NEW WASTEWATER MAIN, THE WASTEWATER MAIN OR LATERAL SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE WASTEWATER MAIN OR LATERAL.
   - 4.B NEW WATERLINE INSTALLATION – CROSSING LINES:
     - 4.B.1 WHERE A NEW POTABLE WATERLINE CROSSES ABOVE A WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND MUST BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. WHEN CROSSING AN EXISTING WASTEWATER MAIN OR LATERAL AND IT IS DISTURBED OR SHOWS SIGNS OF LEAKING, THE WASTEWATER MAIN OR LATERAL SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND (REFER NOTE 4.B.5) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
       - 4.B.1.a THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE AN EXISTING, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL.
       - 4.B.1.b THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE AN EXISTING, PRESSURE-RATED WASTEWATER MAIN OR LATERAL.
     - 4.B.2 WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (REFER NOTE 4.B.5) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:
       - 4.B.2.a WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.
       - 4.B.2.b ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRING-LINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.
     - 4.B.3 WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL, THE WATERLINE SHALL BE ENCASED AS DESCRIBED FOR WASTEWATER MAINS OR LATERALS IN 4.B.2.b OR CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN, THE PROCEDURES IN THE TCEQ WASTEWATER NOTES OF THIS TITLE RELATING TO PIPE DESIGN MUST BE FOLLOWED.
     - 4.B.4 WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (REFER NOTE 4.B.5) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
     - 4.B.5 WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.
5. WATERLINE AND WASTEWATER MAIN MANHOLE OR LATERAL MANHOLE OR CLEANOUT SEPARATION. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN MANHOLE OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZED LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
6. LOCATION OF FIRE HYDRANTS. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OF HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
7. LOCATION OF POTABLE OR RAW WATER SUPPLY OR SUCTION LINES. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.
8. PROXIMITY OF SEPTIC TANK DRAINFIELDS. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED
PROFESSIONAL ENGINEER
07/03/2020

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Planning
Preservation
Interior Design
1138 East Commerce Street
San Antonio, Texas 78205
210/226-1246
FPC# 92705

Koch

TYLER STATE PARK
HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: JHB
DRAWN BY: JTS
REVIEWED BY: LHN
no. revision date

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C600

CONSTRUCTION DOCUMENTS

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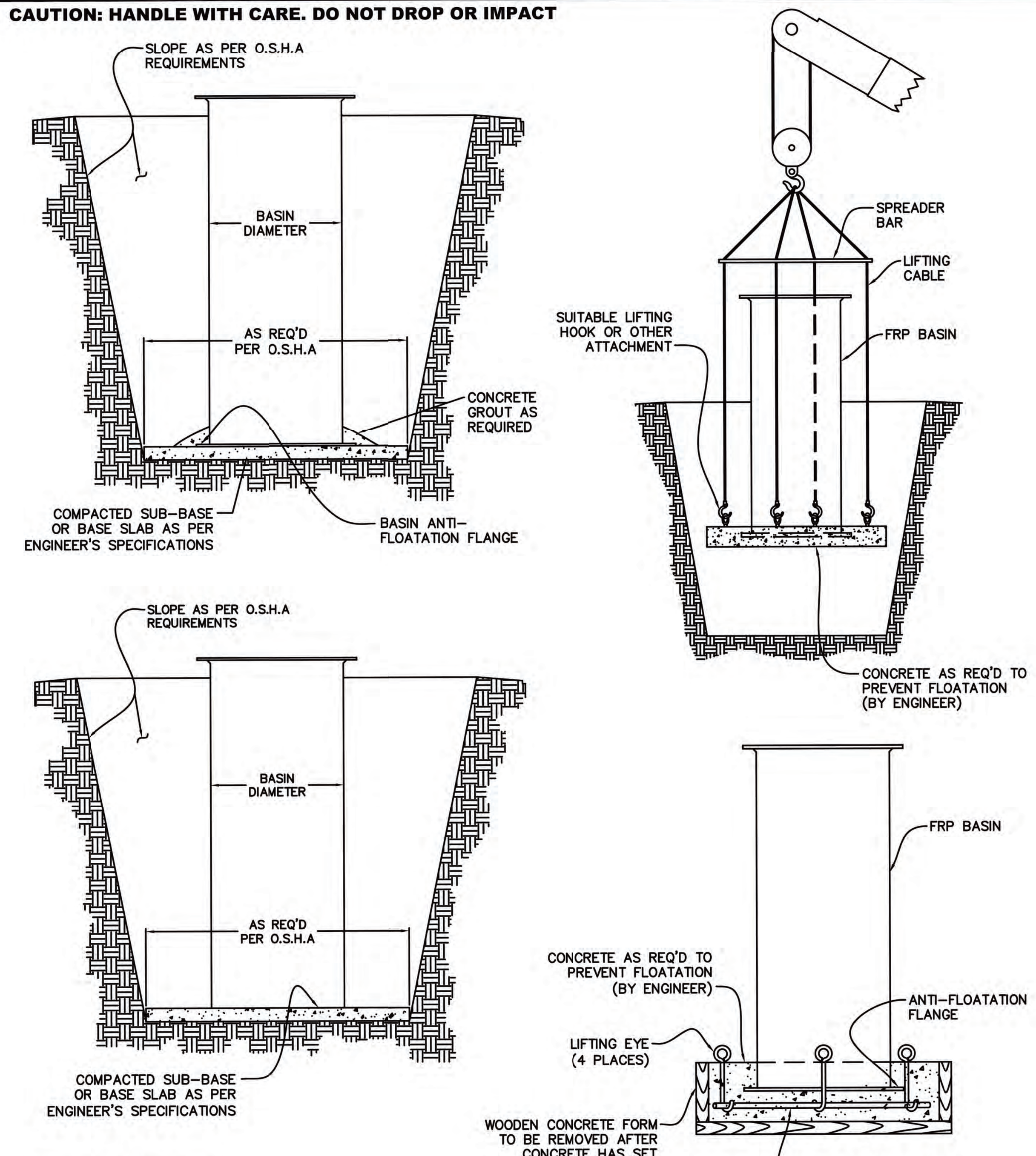


-INSTALLATION INSTRUCTIONS:
1. EXCAVATE HOLE TO THE REQUIRED SIZE.
2. INSTALL BASE, ENSURE THAT BASE IS LEVEL AND SMOOTH.
3. SET BASIN IN THE CENTER OF THE HOLE.
4. POUR CONCRETE GROUT AROUND ANTI-FLOATATION FLANGE AS REQUIRED.

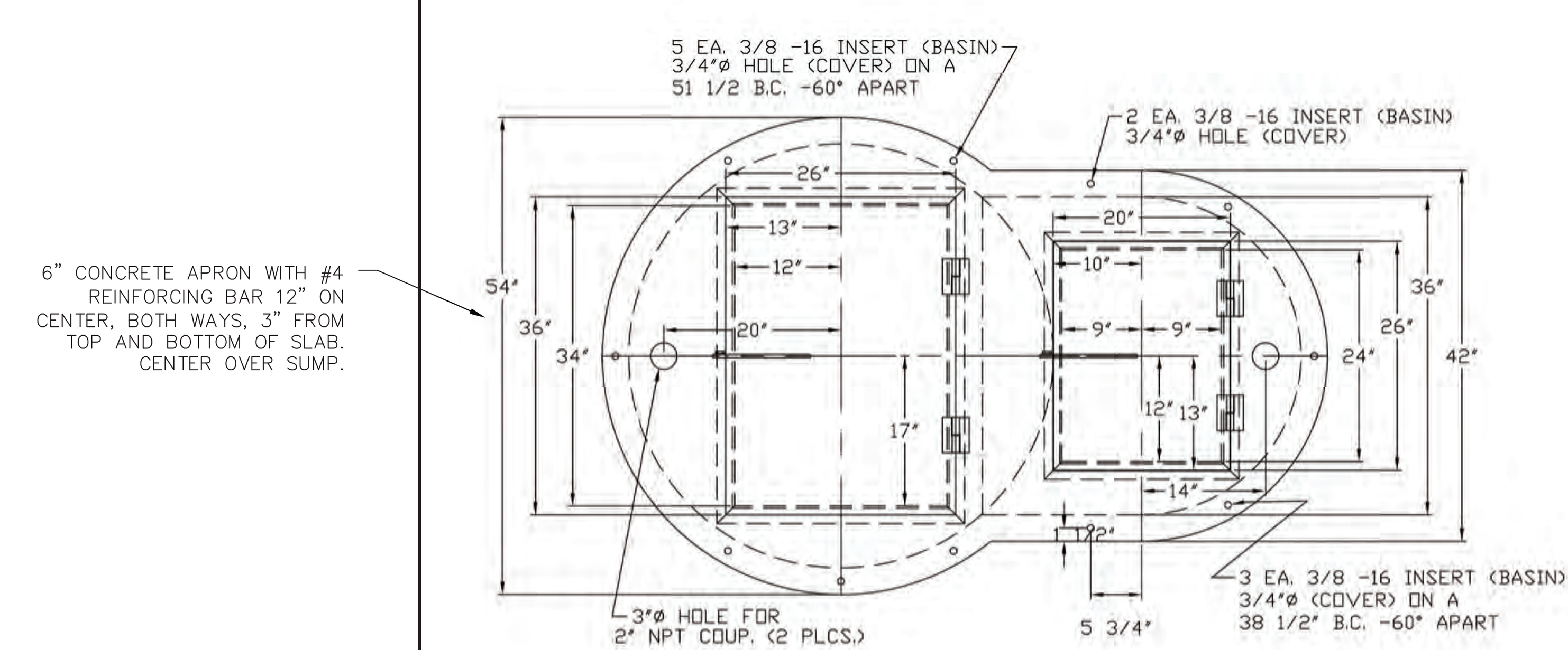
-BACK FILL REQUIREMENTS:
1. BACK FILL IMMEDIATELY AFTER BASIN HAS BEEN SET IN PLACE.
2. PLACE BACK FILL MATERIAL IN 12" LIFTS AROUND THE BASIN AND COMPACT TO 700 SOIL MODULUS.

-INLET AND OUTLET INSTALLATION:
1. INSTALL INLETS AND OUTLETS AS REQUIRED WHEN BACKFILL IS WITHIN 2 ft. OF THAT ELEVATION.

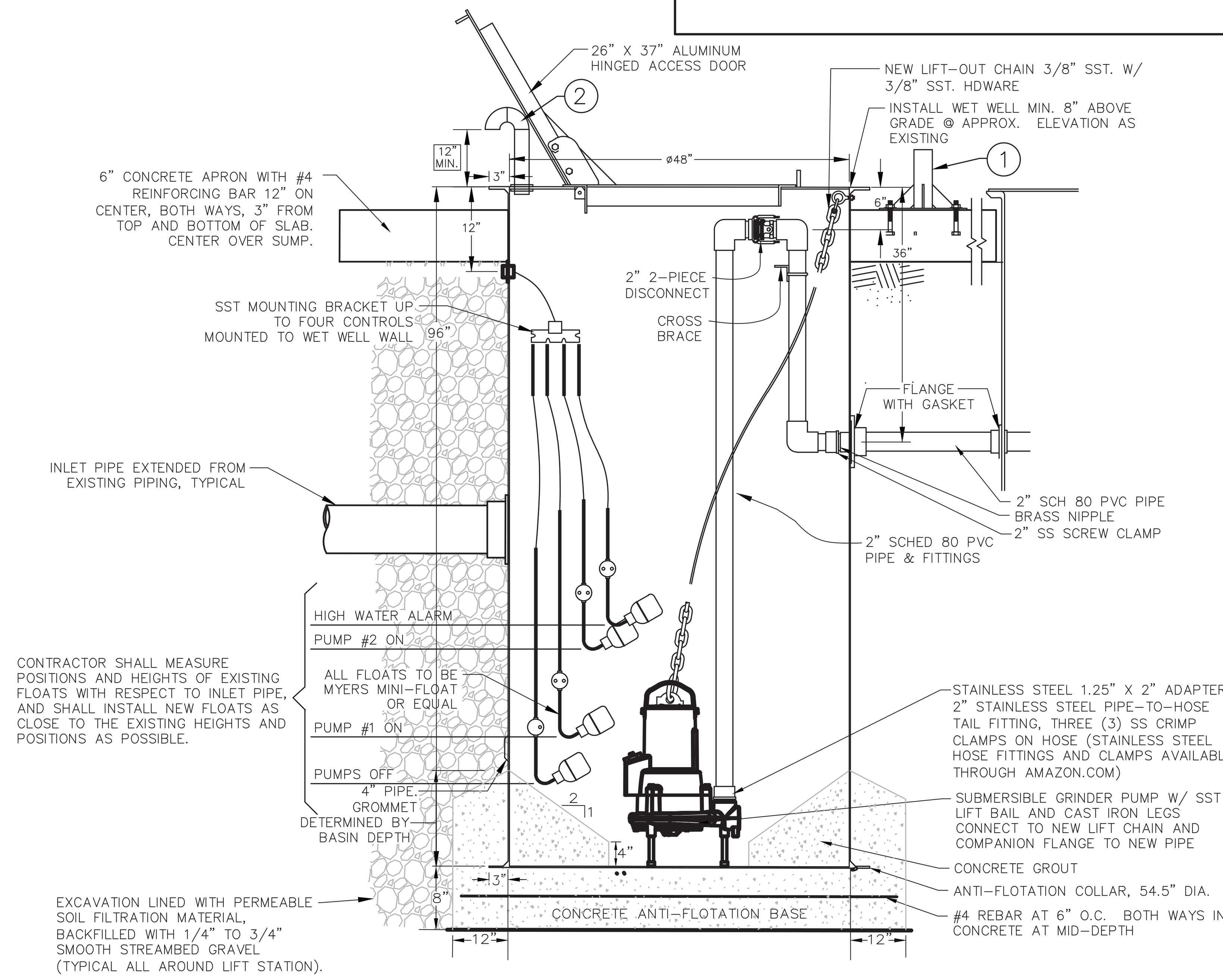
THE INTENT OF THESE INSTALLATION INSTRUCTIONS IS TO ENSURE THAT DAMAGE TO THE BASIN OR WETWELL WILL NOT OCCUR. THESE INSTALLATION INSTRUCTIONS ARE NOT INTENDED TO PRECLUDE NORMAL SAFETY PROCEDURES WHICH SHOULD BE FOLLOWED TO PREVENT INJURY TO PERSONNEL. SAFE INSTALLATION PROCEDURES SHALL BE ENTIRELY THE RESPONSIBILITY OF THE INSTALLER.

STEELE PLASTICS, INC.
1280 Sturgis Rd.
Conway, AR 72034
(501) 327-5122 Fax (501) 327-0807

TITLE RECOMMENDED BASIN INSTALLATION INSTRUCTIONS
PROJECT
CUSTOMER
JOB NO.
P.O. NO.
DWG. NO. 411-001



1. PROVIDE NEW PORTABLE JIB HOIST. HOIST SHALL MATCH EXISTING HOIST NEAR PARK MAINTENANCE AREA. COORDINATE WITH TPWD ON MANUFACTURER MODEL. PROVIDE 316 STAINLESS STEEL DAVIT (JIB) HOIST FLOOR MOUNT (VERIFY REQUIRED SIZE OF DAVIT SLEEVE ON SITE WITH TPWD TO MATCH EXISTING DAVIT NEAR PARK MAINTENANCE AREA. IMBED STAINLESS STEEL BOLTS IN PAD BEFORE CONCRETE POUR. ALL FASTENERS AND HARDWARE SHALL BE 316 STAINLESS STEEL.
2. PROVIDE A 2" GALVANIZED STEEL VENT WITH FITTINGS TO FORM A GOOSENECK. SEAL THE VENT PIPE INTO THE SUMP LID, IN APPROXIMATE LOCATION AND AS INDICATED IN THE DETAILS.



WET WELL TABLE							
WET WELL DIAMETER (FEET)	WET WELL DEPTH (FEET)	RELATIVE BOTTOM ELEVATION (FEET)	PUMPS OFF (FEET)	FIRST PUMP ON (FEET)	SECOND PUMP ON (FEET)	ALARM ON (FEET)	FORCE MAIN PIPE DIAMETER (INCHES)
4	8.0	0.0	1.0	2.0	2.5	2.67 (2" BELOW INFLUENT PIPE)	2.0

PUMP TABLE							
NUMBER OF PUMPS	DESIGN FLOW (GPM)	TOTAL DYNAMIC HEAD(FEET)	PUMP HORSEPOWER	MOTOR (RPM)	MOTOR VOLTS	MOTOR PHASE	HOMA PUMP MODEL#
2	80.0	8.05	2.4	3450	230	SINGLE PHASE	GRP 26/1/C

NOTES
1. CONTRACTORS SHALL INSTALL ALL NECESSARY CONDUIT, WIRE, BREAKERS, AND OTHER ELECTRICAL APPURTENANCES AS REQUIRED TO SERVICE THE CONTROL PANEL AND LIFT STATION
2. PUMP MODEL IS FOR DESIGN POINT PARAMETERS. IT IS NOT THE INTENT TO SOLE SOURCE THE PUMP STATION. ALTERNATE PUMP SYSTEM MAY BE SUBMITTED FOR ACCEPTANCE AS APPROVED EQUAL.

STEELE PLASTICS, INC.
1280 Sturgis Rd.
Conway, AR 72034
(501) 327-5122 Fax (501) 327-0807

TITLE 48" X 96" DUPLEX LIFTOUT SYSTEM 2" PVC PIPING
PROJECT
CUSTOMER
JOB NO.
P.O. NO.
DWG. NO. Q19015

STATE OF TEXAS
CHRISTOPHER M. JONES
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HEADQUARTERS PHASE 1
PROJECT NUMBER: 112741

DATE: 0/03/2020
DESIGNED BY: JHB
DRAWN BY: JTS
REVIEWED BY: LHN
no. revision date

SHEET TITLE
LIFT STATION

SHEET NUMBER
C601

CONSTRUCTION DOCUMENTS

FILAMENT WOUND STRAIGHT WALL FIBERGLASS BASIN/WETWELL WITH "KEY HOLE" STYLE ATTACHED VALVE BOX

SCOPE

This specification is intended to describe the minimum design and manufacturing requirements for Filament Wound Fiberglass Reinforced Plastic Sump Basins and Wetwells supplied by Steele Plastics Inc.

REFERENCED STANDARDS

- ASTM D2583, Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
- ASTM D3753, Standard Specification for Glass-Fiber Reinforced Polyester Manholes and Wetwells.
- AWWA C950, Fiberglass Pressure Pipe.

DESIGN

General: Design of flat bottoms shall account for both limiting stress and deflection. Design shall be based on industry standard lamination analysis for the glass reinforcement layers and resins system. Design shall determine cylinder and flat bottom thicknesses.

Laminate Properties: The minimum flexural modulus in the circumferential direction shall be 2,000,000 psi and in the longitudinal directions shall be 1,000,000 psi.

Wall Thickness: Wall thickness shall vary with basin/wetwell height. Calculated wall thicknesses shall be based on the following site assumed conditions:

- Soil Modulus: 700 PSI.
- Soil Density: 120 Lbs. per cubic foot.

Calculations shall employ a Luchers's safety factor of 2.

MATERIALS

Resin: Resins used shall be commercial grade unsaturated polyester type, suitable for the intended service as indicated by usage history or resin manufacturer's recommendation.

Cure System: Resin promotion and catalyst system used shall follow resin manufacturers' guidelines.

Fillers and additives: No fillers or resin extenders of any type shall be utilized. A maximum of two percent by weight of any commercial grade thixotropic agent may be added to resins for the purpose of viscosity control.

Reinforcing Materials: Reinforcing material shall be commercial grade "E" type glass fibers in the form of chopped strand mat, chopped roving, woven roving or continuous roving. Uni-directional glass shall be used in addition to any other glass used. Glass fibers shall be treated with a coupling agent that facilitates bonding between the reinforcement and the resin.

LAMINATE

General: Basin laminates shall consist of three layers (inner surface, interior layer and structural layer).

Inner Surface: The inner surface shall consist of a resin rich layer with no exposed fibers.

Interior Layer: The interior layer shall consist of a resin rich reinforced layer with a nominal fiber content of 30 percent. Reinforcements shall be chopped strand mat or chopped roving.

Structural Layer: The structural layer shall be chop-hoop filament wound consisting of chopped strand and continuous roving reinforcement oriented in the hoop direction. As required, uni-directional roving shall be incorporated into this layer to enhance longitudinal properties. The exterior surface shall be relatively smooth and with no exposed fibers or sharp projections. Nominal fiber content on the structural layer shall be a minimum of 62 percent.

APPURTENANCES

Top Flange: The basin shall have a top flange that is 3" larger in diameter than the interior diameter of the tank.

Bottom: The bottom of the wet well shall be built to withstand full exterior water column with a maximum deflection 3/8".

Bottom Anti-floatation Flange: The bottom anti-float flange shall be a minimum of 3" larger in diameter than the wet well and be constructed to withstand the maximum uplifting force that could be exerted with an empty wet well and full water column outside the tank.

Basin/Wetwell: Shall be designed to withstand H-20 traffic load when properly installed.

Attached Valve Box: Shall be "Key Hole" style. Valve box bottoms shall be designed to drain any accumulated liquid toward the wet well, and exit the dry well into the wet well thru a simple drain, or check valve drain assembly. The attached valve box is designed for one piece installation with no valves in the wet well. The valve box shall be attached in a manner as to be structurally sound and properly aligned with wet well. The valve box shall be sized in width and depth to accept the piping required to meet the specification.

Cover Attachments: Stainless steel threaded inserts shall be installed in the top flange of the basin/wetwell to accommodate attachment of cover. The inserts shall be 3/8 inch diameter in a bolt pattern as required to secure cover.

QUALITY ASSURANCE

Visual Acceptance: The inner surface shall be free of exposed fiber, crazing and delaminations. No Blisters larger than 1/2 inch or wrinkles more than 1/8 inch in depth will be allowed.

Laminate Cure: Laminate cure shall be indicated by means of Barcol hardness measured in accordance with ASTM D2583. The average Barcol hardness shall not be less than 90 percent of the resin manufacturer's recommendation for clear resin castings.

Workmanship: All workmanship and materials throughout shall be of the highest quality available.

INSTALLATION
Installation Instructions shall be laminated into the wall of each basin/wetwell. The installation must comply with the Installation Instructions.

This tank shall be as manufactured by Steele Plastics Inc, Conway Arkansas.

Aluminum Hatch Cover

SCOPE

This specification is intended to describe the minimum design and manufacturing requirements for Aluminum Hatch Covers as manufactured by Steele Plastics Inc.

STYLE: Standard Hatch.

SIZES: 24", 30", 36", 42", 48", 54", 60", 72" (as measured inside basin/wetwell diameter).

Material: 5086-H32 or equal.
Thickness: ¼" minimum.
Type: Mill finish Diamond Tread Plate.

- The cover shall be 6" larger in diameter than the wet well.
- The cover shall support a live load of 300 psf.
- The cover plate shall have a flush fitting access door, and a stainless steel drop handle.
- The door shall open to a minimum of 90 degrees and be held in place with an automatically engaging hold open arm.
- The hinges and fastening hardware shall be stainless steel with stainless steel Nylock nuts.
- The cover shall be equipped with a padlock provision.
- The cover shall have 6ea ¾" diameter holes around the perimeter on a 60 degree bolt pattern for attaching to sump.
- The cover shall be blank, have a vent grommet, or a vent coupling as required to meet the application.
- The cover shall be supplied with Gasket and Stainless Steel bolts and washers for attachment to basin/wetwell.

This cover shall be as manufactured by Steele Plastics Inc, Conway Arkansas.

Steele Plastics, Inc

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Conway Arkansas 72034
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Recommendations

Buoyancy Calculations for Concrete Ballast

SCOPE

This recommendation is intended to help determine the amount of uplift created by water table and the amount of ballast in cubic yards of concrete required to offset that uplift.

Example: 48" dia. x 120" deep basin holds 940 gallons. The basin displaces 940 gallons of water when installed with water table to the top of the ground.

940 gal X 8.33 (weight of water) = 7,830.2 lbs uplift

Weight of concrete:	137.3 lbs per cu ft
Weight of water:	- 62.4 lbs per cu ft
Equivalent weight of concrete under water:	74.9 lbs per cu ft

Concrete ballast required to keep basin anchored in the ground:

7,830.2 lbs uplift
---------- = 3.87 yards X SF of 1.2 = 4.64 cu yd concrete
(74.9 X 27)2,022.3 lbs /cu yd

Complete Formula:

(Basin gallons) X 8.33
---------- = (Cu yd) X SF (1.2) = Cu yd concrete
2,022.3 lbs per cu yd

Constants:

- Water = 8.33 pounds per gallon
- Water = 62.42 pounds per cubic foot
- Concrete above ground has a SG of 2.2 (Ref. Machinery's Handbook)
- Concrete above ground weighs 137.324 pounds per cubic foot
- Concrete equivalent ballast under water = 74.9 lbs per cu ft. (2,022.3 lbs per cu yd)

Factors not considered:

- Weight of basin
- Weight of cover
- Weight of piping, pumps and accessories
- Shear strength and weight of soil around anti-float ring
- Water level inside basin
- Design assumes that the basin will fill with water if tank should ever become flooded

Installation Notes:

- Concrete backfill must be poured evenly around the basin and in no more than 12 inch lifts per curing cycle.
- Concrete backfills of greater than 12 inches per curing cycle run the risk of collapsing the basin.
- Fiberglass basins are designed to be buried with the top of the basin at ground level. The backfill is required to have a minimum soil modulus of 700. This soil modulus, or soil support, adds strength to the basin wall enabling it to withstand hydrostatic loads of water table.
- Concrete in its liquid state has no modulus and with a SG of 2.2 is over 2 times the weight of water. Remember, the basin is not designed to withstand water table or water backfill without the added support of soil modulus. Therefore any concrete backfill should be handled with care. It must be evenly distributed around the basin in pours of no more than 12 inches at a time and allowed to set. Once the concrete has set, the basin wall support has been established and it is ok to continue the next pour.
- Please note that this procedure is the same as the "Recommended Basin Install Instructions" laminated to the wall of the basin. Under Backfill Requirements, number two states "Place backfill material in 12" lifts around the basin and compact to 700 soil modulus."
- Additional factor: When making first concrete pour, basin must be filled with water or other ballast which is equal to the weight of concrete if it were displacing the first 12 inches of the inside of the basin. Otherwise, basin lift may occur. If filling with water, that would be 2.2 times the volume of concrete.

TEXAS PARKS & WILDLIFE

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Koch

TYLER STATE PARK
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SHEET TITLE
LIFT STATION

SHEET NUMBER
C602

CONSTRUCTION DOCUMENTS

STATE OF TEXAS
CHRISTOPHER M. JONES
82681
LICENSED
PROFESSIONAL ENGINEER
07/03/2020

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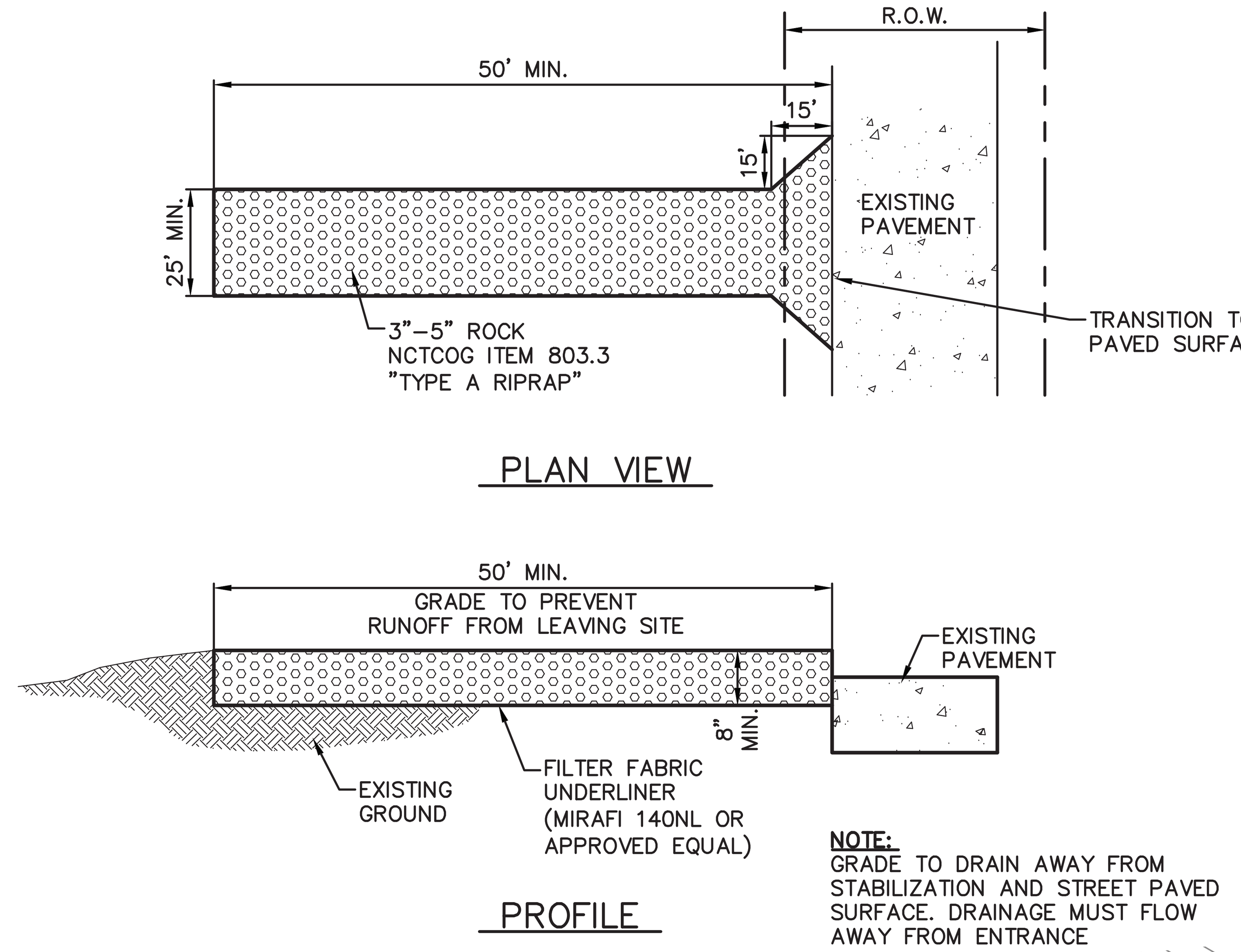
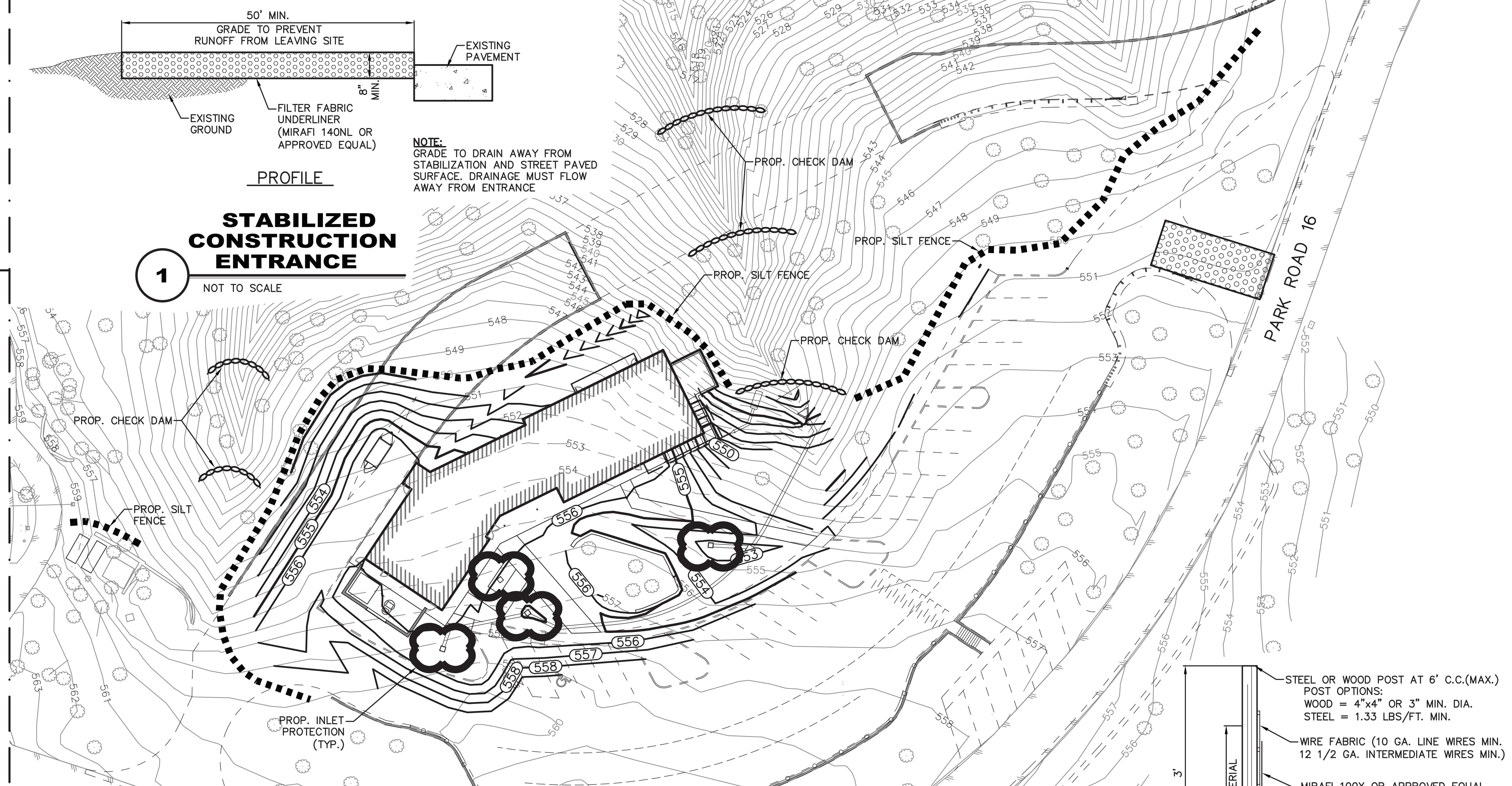
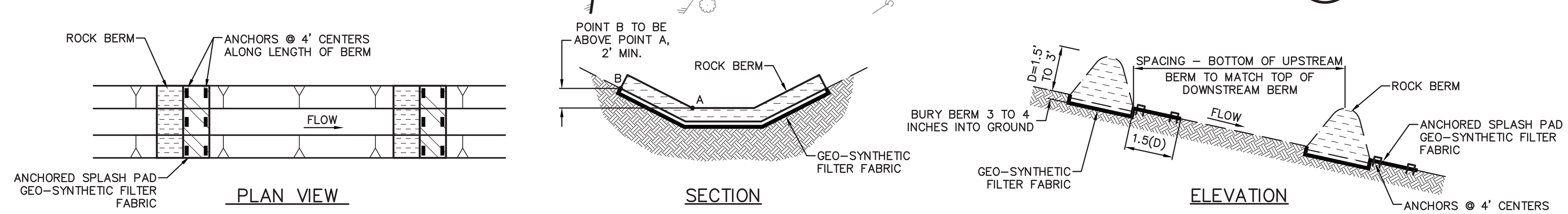


1 **STABILIZED CONSTRUCTION ENTRANCE**

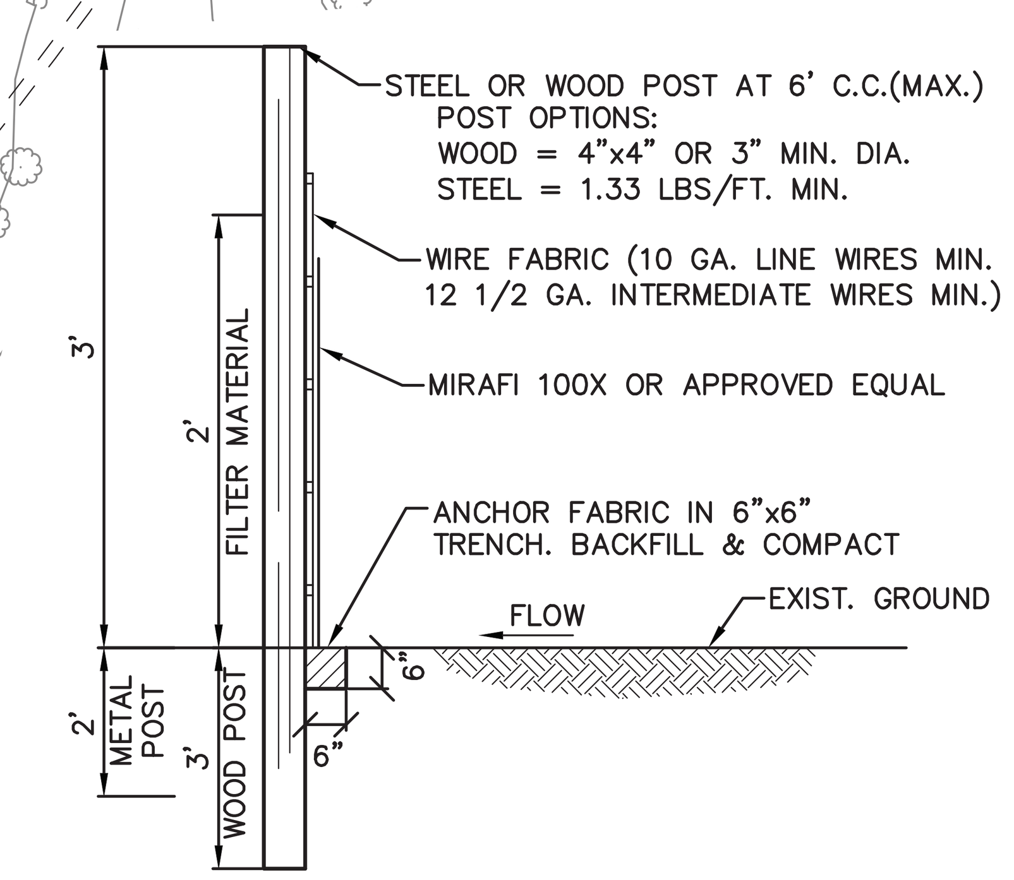
NOT TO SCALE





2 **CHECK DAMS**

NOT TO SCALE

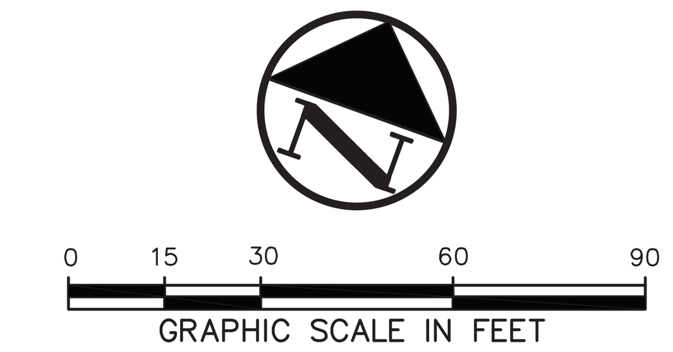


3 **SILT FENCE**

NOT TO SCALE

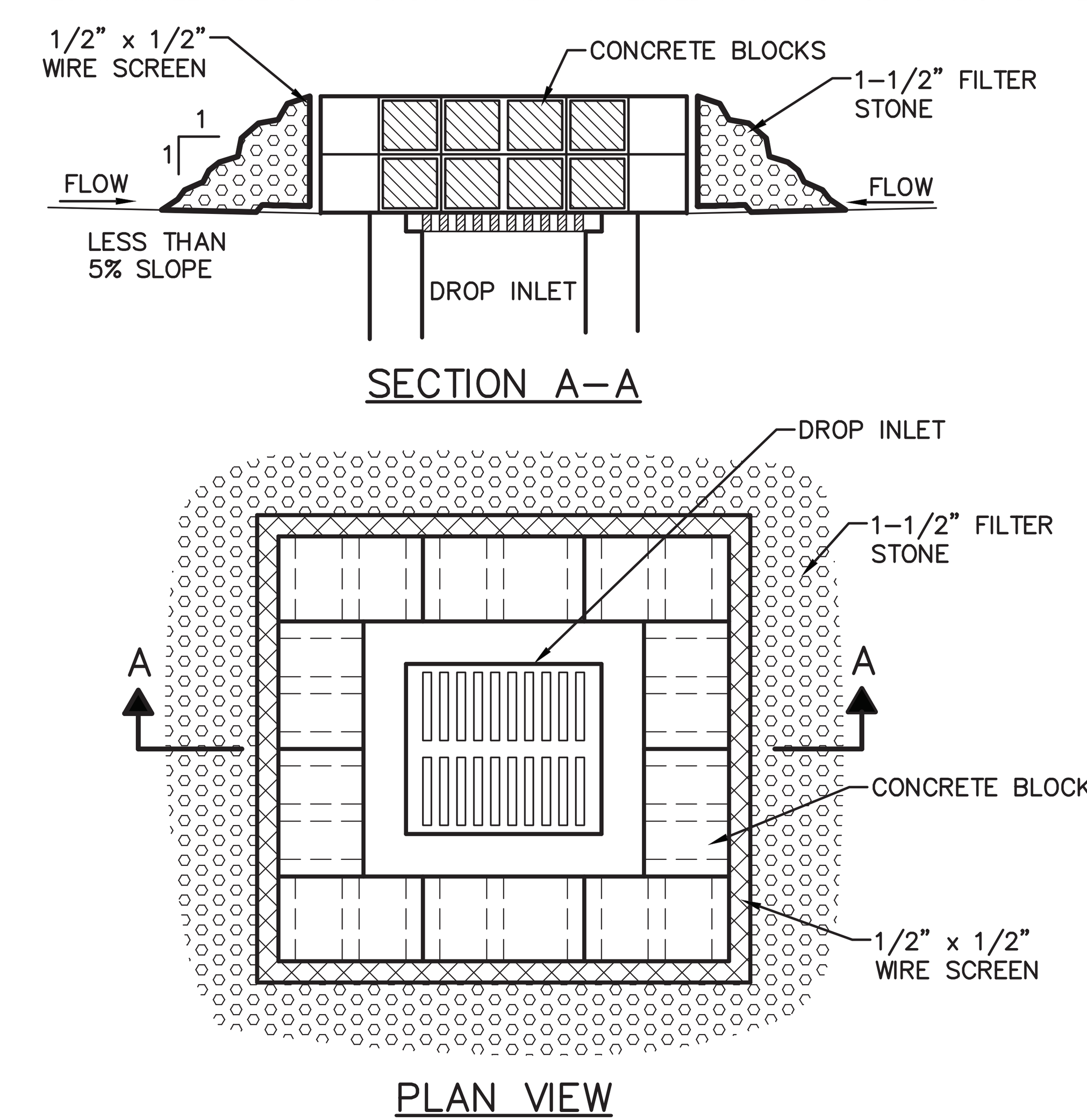
LEGEND

EM	ELECTRIC METER
SIGN	TRAFFIC SIGN
IRS	1/2-INCH IRON ROD W/"PACHECO KOCH" CAP SET
(C.M.)	CONTROLLING MONUMENT
613	EXIST CONTOUR
450	PROPOSED CONTOUR
	PROPOSED DRAINAGE FLOW DIRECTION
	PROPOSED CONSTRUCTION ENTRANCE
	INLET PROTECTION
	CHECK DAM
	SILT FENCE
	TxDOT CONSTRUCTION-FUTURE PHASE NOT IN CONTRACT
613	CONTOUR FROM TxDOT CONSTRUCTION FUTURE PHASE NOT IN CONTRACT



POLLUTION CONTROL GENERAL NOTES

1. THIS PLAN HAS BEEN PREPARED TO PROVIDE MEANS TO PREVENT OR MINIMIZE POLLUTION OF STORM WATER.
2. THE CONSTRUCTION ACTIVITY INCLUDED IN THIS PLAN WILL INCLUDE:
   - 2.A. CLEARING AND GRUBBING
   - 2.B. ROUGH GRADING
   - 2.C. FINAL GRADING
   - 2.D. UTILITY INSTALLATION
   - 2.E. PAVEMENT INSTALLATION
   - 2.F. BUILDING CONSTRUCTION
3. THE TOTAL ESTIMATED LAND AREA TO BE DISTURBED IS 1.85 ACRES.
4. THE ESTIMATED RUNOFF COEFFICIENT UPON COMPLETION OF THE PROJECT IS 0.70.
5. THE STORM WATER EXITING SURFACE DRAINS TO THE PARK LAKE MAINTAINED BY TPWD.
6. THE SOILS ON THE SITE ARE GENERALLY SANDY LOAN CONDUCIVE TO EROSION.
7. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN EROSION PROTECTION AROUND THE WORK AREA PERIMETER AND AT ALL INLET MOUTHS PRIOR TO COMMENCING WORK AND UNTIL THE WORK AREA HAS BEEN STABILIZED.
8. THE CONTRACTOR WILL REMOVE ALL EXCESS SOIL FROM CONSTRUCTION VEHICLES PRIOR TO EXITING THE SITE.
9. ALL DISTURBED AREAS WHICH WILL NOT BE RE-DISTURBED MUST BEGIN BEING STABILIZED IMMEDIATELY BY THE CONTRACTOR TO CONTROL EROSION. THE CONTRACTOR HAS 14 DAYS TO HAVE ALL STABILIZATION AND EROSION CONTROL DEVICES IN PLACE.
10. THE CONTRACTOR SHALL UNDERTAKE PROPER METHODS TO REDUCE DUST GENERATION FROM THE SITE.
11. THE CONTRACTOR MUST COMPLY WITH FEDERAL AND STATE REGULATIONS REGARDING SEDIMENT AND EROSION CONTROL.
12. A COPY OF THIS PLAN, AS PART OF THE SWPPP, MUST BE KEPT AT THE CONSTRUCTION FACILITY DURING THE ENTIRE CONSTRUCTION PERIOD.
13. CONSTRUCTION SEQUENCING MUST PROVIDE FOR THE EXCAVATION OF AN ON-SITE BASIN AS A SEDIMENT COLLECTION BASIN PRIOR TO THE DISTURBANCE OF GREATER THAN 10 ACRES OF LAND.
14. ALL FINISHED GRADES ARE TO BE HYDROMULCHED, SPOT SODDED OR SEEDED AND WATERED UNTIL GROWTH IS ESTABLISHED ON AND OFF-SITE.
15. A PIT OR WASH OUT BASIN SHALL BE CONSTRUCTED ON-SITE BY THE CONTRACTOR FOR THE "WASH OUT" OF CONCRETE TRUCKS.
16. A BERM OR OTHER SPILL PROTECTION MEASURE SHALL BE USED FOR ANY TEMPORARY FUEL STORAGE TANK ON-SITE.
17. IF "SUMP" PUMPS ARE USED TO REMOVE WATER FROM EXCAVATED AREAS, FILTER THE DISCHARGE TO REMOVE SEDIMENT AND OTHER POLLUTANTS BEFORE THE WATER LEAVES THE SITE.
18. TO PREVENT DAMAGE TO VEGETATION IN DOWNSTREAM WATER COURSES, LIMIT ANY PROPOSED LIME STABILIZATION OPERATIONS TO THAT WHICH CAN BE MIXED AND COMPACTED BY THE END OF EACH WORK DAY. GEOTEXTILE FABRIC IS NOT EFFECTIVE IN FILTERING LIME SINCE THE GRAIN SIZE IS SMALLER THAN THE OPENING IN THE FABRIC.
19. VEHICLE PARKING AREAS, STAGING AREAS, STOCKPILES, SPOILS, ETC. SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. OTHERWISE, COVERING OR ENCIRCLING THE AREAS WITH PROTECTIVE MEASURES SHALL BE NECESSARY.
20. STORE ALL TRASH AND BUILDING MATERIALS WASTE IN AN ENCLOSURE UNTIL IT CAN BE PROPERLY DISPOSED OF AT THE APPROPRIATE OFF-SITE FACILITIES.
21. TRACKING OF SEDIMENT OFF-SITE BY TRUCK TRAFFIC SHALL BE HANDLED THROUGH REGULAR CLEANING.
22. INSPECTIONS SHALL BE CONDUCTED BY THE PERMITEE ONCE EVERY TWO WEEKS AND WITHIN 24 HOURS AFTER STORM EVENT OF 0.5 INCHES OR MORE OR ONCE PER WEEK ON A SPECIFIC PRE-DEFINED DAY. THE INSPECTIONS WILL INCLUDE:
    - 22.A. DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN STABILIZED.
    - 22.B. AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
    - 22.C. STRUCTURAL CONTROL MEASURES.
    - 22.D. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
    - 22.E. IDENTIFICATIONS OF MEASURES THAT NEED TO BE MAINTAINED, MODIFIED, OR ADDED TO CORRECT PROBLEMS.
23. CONTRACTOR SHALL MINIMIZE THE EXPOSURE OF BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS PRESENT ON THE SITE TO PRECIPITATION AND TO STORMWATER.
24. PERMANENTLY STABILIZE EXPOSED SOIL, WITHIN AND ADJACENT TO THE SITE, THAT IS DISTURBED BY VEHICLES, GRADING AND OTHER CONSTRUCTION ACTIVITIES.
25. CONTAIN ALL RUNOFF FROM MATERIAL USED IN SUBGRADE STABILIZATION.
26. MATERIAL STOCKPILES SHALL BE COVERED BY PLASTIC OR SURROUNDED BY EROSION CONTROL STRUCTURES TO CONTROL SEDIMENT RELEASES.
27. CONTRACTOR SHALL PROTECT SLOPES IN EXCESS OF 15% IN ORDER TO MINIMIZE EROSION OF SOILS AND THE DISTURBANCE OF SLOPES.
28. VEGETATION TO BE PRESERVED WHERE EVER POSSIBLE TO HELP REDUCE EROSION. WHERE VEGETATION MUST BE REMOVED, PRESERVE NATIVE TOPSOIL IN ALL AREAS POSSIBLE.
29. MINIMIZE SOIL COMPACTION IN AREAS INTENDED FOR POST CONSTRUCTION PERVIOUS SURFACE.



4 **DROP INLET PROTECTION**

NOT TO SCALE

STATE OF TEXAS · CHRISTOPHER M. JONES · 82681 · LICENSED · PROFESSIONAL ENGINEER · 07/03/2020

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SHEET TITLE
EROSION CONTROL PLAN

SHEET NUMBER
C700

CONSTRUCTION DOCUMENTS

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TREE PRESERVATION GENERAL NOTES

1. TREES TO BE MARKED AND APPROVED BY TPWD FOR STOCKPILE OR HAULING PRIOR TO CUTTING OF TREES. CONTRACTOR IS TO CUT STOCKPILED TREES INTO 16' LENGTHS AND COORDINATE WITH TPWD ON THE STOCKPILE LOCATION FOR TREES. CUT AND HAUL TREES WILL BECOME PROPERTY OF THE CONTRACTOR.

2. DURING CONSTRUCTION, TREES TO BE REMOVED SHOULD BE REMOVED FROM THE SITE IN A MANNER TO AVOID INJURY TO REMAINING TREES, INCLUDING THE REMOVAL OF STUMPS AND/OR ROOT SYSTEMS. HEAVY EQUIPMENT SHALL NOT ENCROACH ON THE ROOT SYSTEMS OF TREES TO BE RETAINED OR OTHER TREES OF HIGH VALUE. IF NECESSARY, TREES SHOULD BE REMOVED MANUALLY WITH CHAIN SAWS, AND STUMPS SHOULD BE GROUND OUT INSTEAD OF USING HEAVY EQUIPMENT.

3. PROHIBITED ACTIVITIES IN CANOPY DRIP-LINE: THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF ANY PROTECTED TREE.
   A. MATERIAL STORAGE: NO MATERIALS INTENDED FOR USE IN CONSTRUCTION OR WASTE MATERIALS ACCUMULATED DUE TO EXCAVATION OR DEMOLITION SHALL BE PLACED WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF ANY PROTECTED TREE.

   B. EQUIPMENT CLEANING/LIQUID DISPOSAL: NO EQUIPMENT SHALL BE CLEANED OR OTHER LIQUIDS DEPOSITED OR ALLOWED TO FLOW OVERLAND WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF A PROTECTED TREE. THIS INCLUDES, WITHOUT LIMITATION, PAINT, OIL, SOLVENTS, ASPHALT, CONCRETE, MORTAR OR SIMILAR MATERIALS.

   C. TREE ATTACHMENTS: NO SIGNS, WIRES OR OTHER ATTACHMENTS, OTHER THAN THOSE A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY PROTECTED TREE.

   D. VEHICULAR TRAFFIC: NO VEHICULAR AND/OR CONSTRUCTION EQUIPMENT TRAFFIC OR PARKING SHALL TAKE PLACE WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF ANY PROTECTED TREE OTHER THAN ON EXISTING STREET PAVEMENT. THIS RESTRICTION DOES NOT APPLY TO SINGLE INCIDENT ACCESS WITHIN THE CANOPY DRIP-LINE FOR PURPOSES OF CLEARING UNDERBRUSH, ESTABLISHING THE BUILDING PAD AND ASSOCIATED LOT GRADING, VEHICULAR TRAFFIC NECESSARY FOR ROUTINE UTILITY MAINTENANCE, EMERGENCY RESTORATION OF UTILITY SERVICE, OR ROUTINE MOWING OPERATIONS.

   E. GRADE CHANGES: NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF ANY PROTECTED TREE UNLESS ADEQUATE CONSTRUCTION METHODS ARE APPROVED BY THE LANDSCAPE ADMINISTRATOR.

   F. IMPERVIOUS PAVING: NO PAVING WITH ASPHALT, CONCRETE OR OTHER IMPERVIOUS MATERIALS THAT MAY REASONABLY BE EXPECTED TO KILL A TREE SHALL BE PLACED WITHIN THE LIMITS OF THE CANOPY DRIP-LINE OF A PROTECTED TREE EXCEPT AS OTHERWISE ALLOWED IN THE CITY ORDINANCE.

   G. NO HEAVY EQUIPMENT, INCLUDING BUT NOT LIMITED TO TRUCKS, TRACTORS, TRAILERS, BULLDOZERS, BOBCAT TRACTORS, TRENCHERS, COMPRESSORS, AND HOISTS, SHALL BE ALLOWED INSIDE THE CANOPY DRIP-LINE OF ANY PROTECTED TREE ON ANY CONSTRUCTION SITE WITHOUT THE SPECIFIC APPROVAL OF THE LANDSCAPE ADMINISTRATOR.

4. PROCEDURES REQUIRED PRIOR TO CONSTRUCTION: THE FOLLOWING PROCEDURES SHALL BE FOLLOWED ON ALL TYPES OF CONSTRUCTION PROJECTS (INCLUDING WITHOUT LIMITATION RESIDENTIAL, COMMERCIAL, AND MUNICIPAL/PUBLIC DOMAIN PROJECTS).

   A. PROTECTIVE FENCING: PRIOR TO CONSTRUCTION, THE CONTRACTOR OR SUBCONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE FENCING AS SHOWN ON THE PLANS, ENCLOSING THE OUTER LIMITS OF THE CANOPY DRIP-LINE OF THE TREES TO PROTECT THEM FROM CONSTRUCTION ACTIVITY. ALL PROTECTIVE FENCING SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.

   B. TREES TO BE REMOVED SHOULD BE REMOVED FROM THE SITE IN A MANNER TO AVOID INJURY TO REMAINING TREES. HEAVY EQUIPMENT SHALL NOT ENCROACH ON THE ROOT SYSTEMS OF TREES TO BE RETAINED OR OTHER TREES OF HIGH VALUE. IF NECESSARY, TREES SHOULD BE REMOVED MANUALLY WITH CHAIN SAWS.

   C. WHERE EXCAVATIONS ARE NECESSARY WITHIN THE CANOPY DRIP-LINE OF TREES, TRENCHING SHOULD BE PERFORMED MANUALLY, OR BY USING A VIBRATORY PLOW, DIRECTIONAL BORER, OR BY AIR SPADING. WHEN TRENCHING OR MODIFICATION OF THE ROOT ZONE ENCROACHES HEAVILY ONTO ESTABLISHED TREES, A ROOT PRUNING METHOD SHOULD BE EMPLOYED ONLY WHERE DEEMED NECESSARY BY, AND UNDER THE DIRECTION OF, A CERTIFIED ARBORIST. TEARING OF ROOTS IS TO BE AVOIDED. SUPPLEMENTAL IRRIGATION SHALL BE IMPLEMENTED IF NEEDED. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH TO THE SOIL AND SEALED USING SEALING COMPOUND OR APPROVED EQUAL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE (I.E. WITHIN THE SAME WORKDAY). IF ROOTS ARE NOT BACKFILLED WITHIN THIS TIME, THEY SHALL BE COVERED WITH ORGANIC MATERIAL SUCH AS COMPOSTED MULCH TO A DEPTH OF 4 INCHES, WHICH WILL REDUCE TEMPERATURE AND MINIMIZE WATER LOSS DUE TO EVAPORATION.

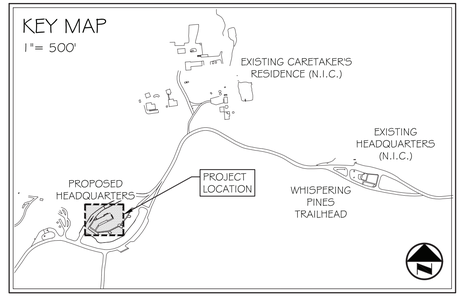
5. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO TREES THAT ARE TO REMAIN. CONTRACTOR TO INSTALL NEW TREE OF EQUIVALENT SIZE IF DAMAGED DURING CONSTRUCTION.

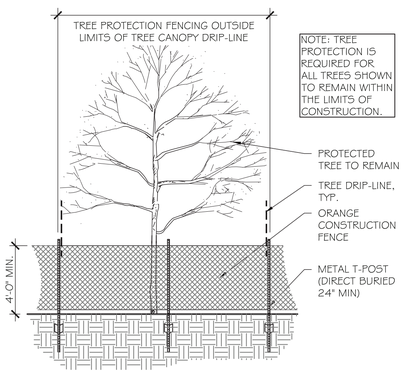
TREE REMOVAL SUMMARY (PROPOSED HEADQUARTERS)

TREE SPECIES	CUT & STOCKPILE (>20" DIA. EACH)	CUT & HAUL (≤20" DIA. EACH)
ASH	0	0
CEDAR	0	1
ELM	0	0
OAK	0	5
PINE	5	34
SWEETGUM	0	0
TOTAL	5	40

CONTRACTOR TO COORDINATE LOCATION OF TREE STOCKPILE WITH TEXAS PARKS & WILDLIFE DEPARTMENT PRIOR TO TREE REMOVAL.

NO TREE REMOVAL AT WHISPERING PINES TRAILHEAD





2 TREE PROTECTION FENCING
3/4" = 1'-0"

TREE REMOVAL LEGEND

- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING
- LIMIT OF WORK

1 PROPOSED HEADQUARTERS
1" = 20'-0"

0 10 20 40 60
GRAPHIC SCALE IN FEET

TEXAS PARKS & WILDLIFE

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FPC# 92705

REGISTERED LANDSCAPE ARCHITECT
KENDALL HANCEY
3366
STATE OF TEXAS
07/03/2020

Pacheco Koch
T 210.293.5301
F 210.293.5444
7550 IH-10 WEST, SUITE 1400
SAN ANTONIO, TEXAS 78229
TX REG. ENGINEERING FIRM F-469
TX REG. SURVEYING FIRM LS-100050-00

TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
PROJECT NUMBER: 112741

DATE: 07/03/2020
DESIGNED BY: KJH
DRAWN BY: KJH
REVIEWED BY: MRC

no.	revision	date

SHEET TITLE
TREE REMOVAL, PROTECTION, AND SALVAGE PLAN

SHEET NUMBER
L101

CONSTRUCTION DOCUMENTS

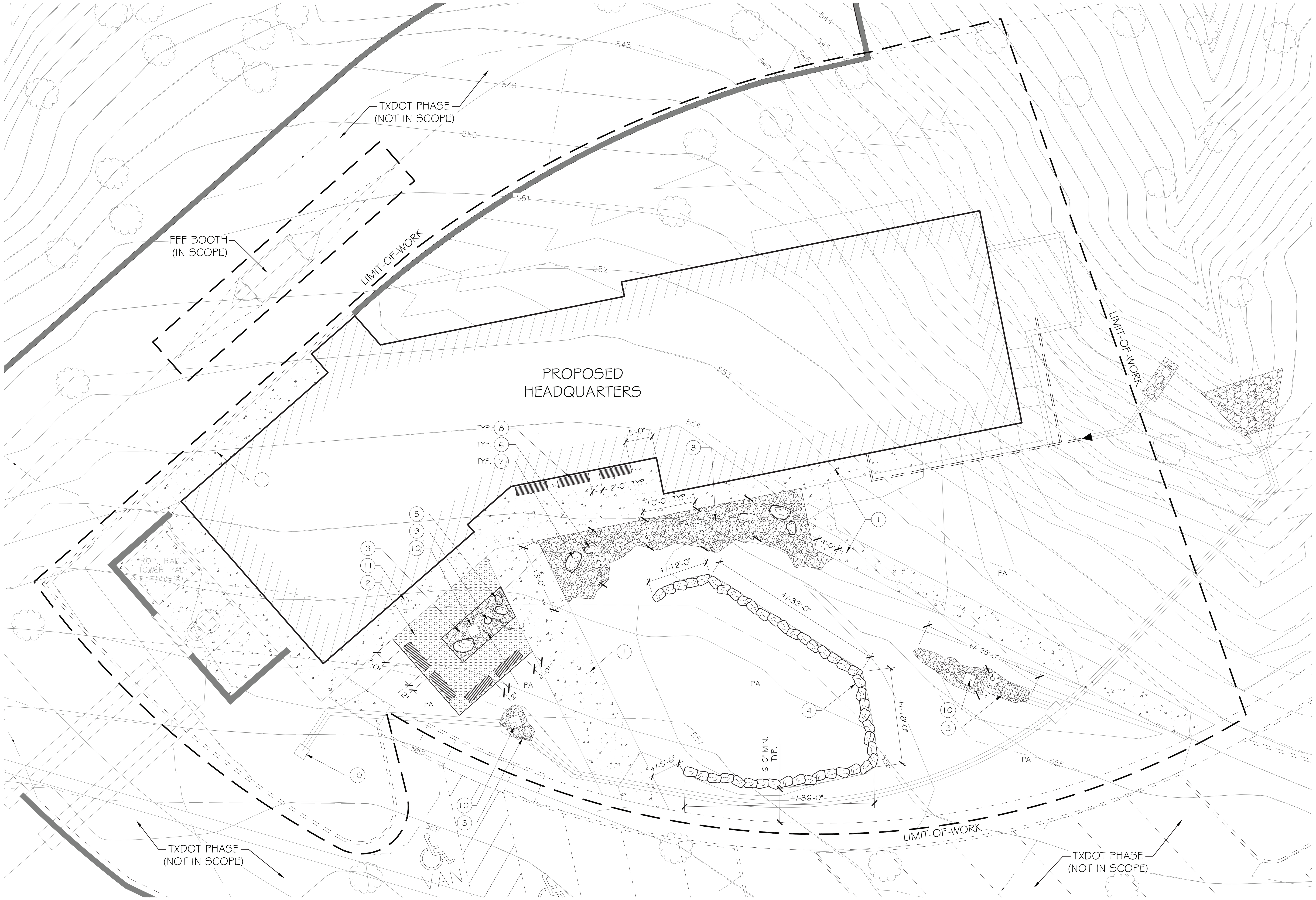
PATH: M:\LDWG-SJN\3914-17,006\DWG\Landscape C3D 2015\Sheets\Phase 1 - Prop. HQ, Utilities, & Site.dwg

DATE: 3/19/2020

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	DETAIL
1	CONCRETE PAVEMENT, REF. CIVIL FOR LAYOUT	REF. CIVIL
2	CONCRETE PAVEMENT, TYPE 2 EXPOSED AGGREGATE FINISH TO MATCH AT EXISTING HEADQUARTERS AND PARK PLAYGROUND. REF. CIVIL FOR LAYOUT AND DETAILING.	REF. CIVIL
3	1"-2" RIVER ROCK BY A3 GRASS & STONE OR APPROVED EQUAL.	1/L202
4	DRY STACK STONE WALL EXISTING CCC BOULDERS, SEE LAYOUT & DIMENSION GENERAL NOTES	2/L202
5	BOULDER, TYPE 1 12"X12"X12" NOMINAL SIZE. EXISTING CCC BOULDERS, SEE LAYOUT & DIMENSION GENERAL NOTES	4/L202
6	BOULDER, TYPE 2 24"X24"X24" NOMINAL SIZE. EXISTING CCC BOULDERS, SEE LAYOUT & DIMENSION GENERAL NOTES	4/L202
7	BOULDER, TYPE 3 36"X36"X36" NOMINAL SIZE. EXISTING CCC BOULDERS, SEE LAYOUT & DIMENSION GENERAL NOTES	4/L202 PER MANUF.
8	BENCH 6` HUDSON BENCH BY FORMS+SURFACES OR APPROVED EQUAL. MODEL NO. SBHUD-72S. SURFACE MOUNT PER MANUFACTURER`S RECOMMENDATION.	REF. ARCH
9	FLAG POLE	REF. CIVIL
10	STORM DRAIN	REF. MEP
11	DRINKING FOUNTAIN	
P.A.	PLANTING AREA	

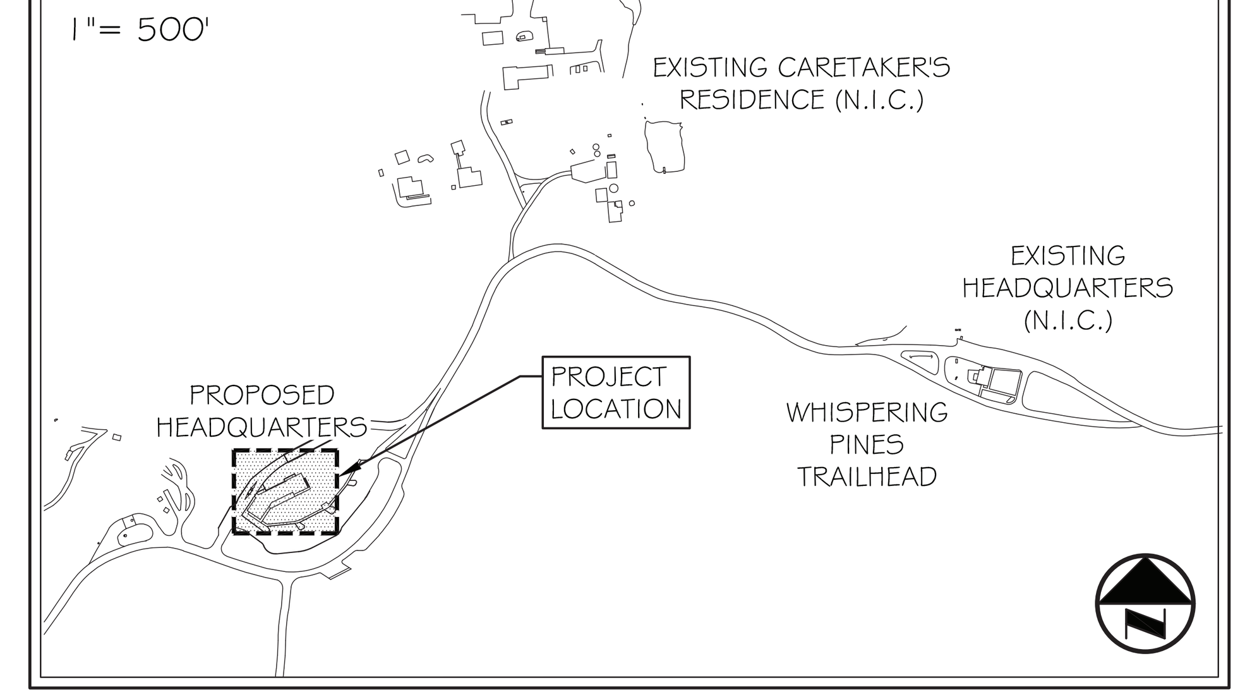
CONTRACTOR SHALL PROVIDE UNIT PRICING AS PART OF HIS BID FOR ALL MATERIALS.



1 PROPOSED HEADQUARTERS
1" = 20'-0"

GRAPHIC SCALE IN FEET

KEY MAP
1" = 500'



LAYOUT & DIMENSION GENERAL NOTES

1. WRITTEN DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
2. ALL IMPROVEMENTS SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION OR INSTALLATION. NOTIFICATION SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT ONE WEEK PRIOR TO REVIEW.
3. CONTRACTOR SHALL VERIFY ALL UTILITIES SHOWN ON THE PLANS AS WELL HAVE THE SITE UTILITIES LOCATED ON THE GROUND PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. IN THE EVENT THAT THE CONTRACTOR DISCOVERS AN UNDERGROUND UTILITY THAT IS NOT REPRESENTED WITHIN THE CONSTRUCTION DOCUMENTS OR AS MARKED ON THE SITE, HE SHALL IMMEDIATELY CONTACT THE OWNERS REPRESENTATIVE TO DETERMINE NEXT STEPS PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE AREA OF THE NEWLY DISCOVERED UNDERGROUND UTILITY.
4. THE CONTRACTOR SHALL EXAMINE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND DETAILS.
5. ALL DIMENSIONS ARE TO BACK OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
6. HANDICAP RAMPS TO BE LOCATED AND INSTALLED AS SHOWN IN DRAWINGS. CONTRACTOR SHALL ENSURE THAT ALL TAS/ADA GUIDELINES ARE FOLLOWED.
7. REINFORCEMENT SHALL BE PROVIDED IN THE CONCRETE IMPROVEMENTS AS SHOWN WITHIN THE CONSTRUCTION DETAILS AND SPECIFICATIONS AND SHALL BE INSTALLED CONTINUOUS THROUGH CONTROL JOINTS, AND PER DETAIL DRAWINGS FOR THE EXPANSION JOINTS.
8. EXPANSION JOINT AND CONTROL JOINT SPACING SHALL BE LOCATED AS SHOWN ON PLANS AND DETAILS.
9. CONTRACTOR SHALL PROVIDE AN EXPANSION JOINT WHERE PROPOSED CONCRETE MEETS EXISTING WALKS OR CURBS.
10. GRADING IMPROVEMENTS HAVE BEEN DESIGNED WITH THE INTENT OF THE FOLLOWING GUIDELINES:
    - ALL WALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2% IN THE DIRECTION OF THE DOWNHILL SIDE.
    - THE RUNNING SLOPE OF THE WALKS SHALL BE NO GREATER THAN 5%.
    - ALL GRADES SHALL BE FINISHED TO A SMOOTH, FLOWING CONTOUR, MAINTAINING FLOW PATTERNS THAT ALLOW THE WATER TO FLOW FROM PLANTED AREAS, ACROSS PAVED AREAS TO DRAINAGE COLLECTION POINTS AS DEPICTED IN THE CONSTRUCTION DOCUMENTS.
11. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION ACTIVITIES FOR THE PROJECT. ACCUMULATION OF STANDING WATER WILL NOT BE PERMITTED.
12. THE CONTRACTOR IS TO LOCATE, DOCUMENT, AND PROTECT ALL CONTROL BENCH MARKS THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
13. ALL QUANTITIES PROVIDED ARE TO BE VERIFIED AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
14. IF DISCREPANCIES WITH PLAN AND MATERIAL/FURNISHING SCHEDULE SHOULD OCCUR, THE CONTRACTOR IS RESPONSIBLE TO VERIFY WITH LANDSCAPE ARCHITECT, PRIOR TO START OF CONSTRUCTION.
15. EXISTING ON-SITE CCC BOULDERS SHALL BE RE-PURPOSED FOR BOULDER RETAINING WALL AND ACCENT BOULDERS (SEE REFERENCE NOTES 4-7). APPROXIMATELY FORTY ONE (41) BOULDERS AT AN AVERAGE SIZE OF 3'-6" WIDTH X 6'-0" LENGTH X 18" - 24" HEIGHT IDENTIFIED ON-SITE. CONTRACTOR SHALL REFER TO OWNER FOR SOURCE OF EXISTING BOULDERS. CONTRACTOR IS RESPONSIBLE TO VERIFY QUANTITY OF EXISTING AND REQUIRED MATERIAL. CONTRACTOR SHALL INCLUDE IN HIS BID ANY COSTS FOR PURCHASING AND FURNISHING ADDITIONAL BOULDERS (TO MATCH EXISTING) FROM OFF-SITE SOURCES.

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REGISTERED LANDSCAPE ARCHITECT
KENDALL HANCEY
3366
STATE OF TEXAS
07/03/2020

Pacheco Koch

TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
PROJECT NUMBER: 112741

DATE: 07/03/2020
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SHEET TITLE
LAYOUT PLAN

SHEET NUMBER
L201

CONSTRUCTION DOCUMENTS

PATH: M:\DWG-39\3914-17.006\DWG\Landscape C3D 2015\Sheets\Phase 1 - Prop. HQ, Utilities, & Sitework

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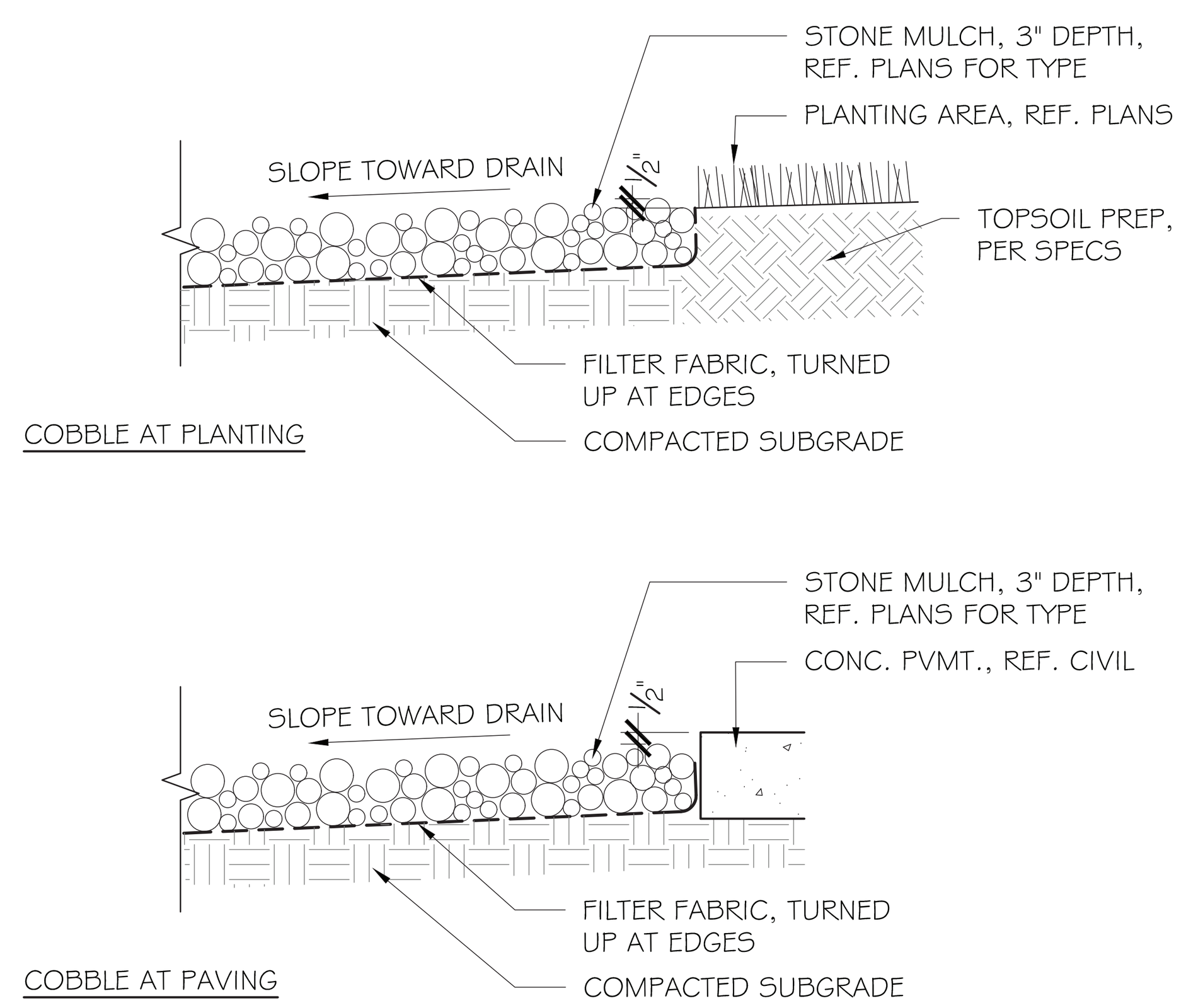
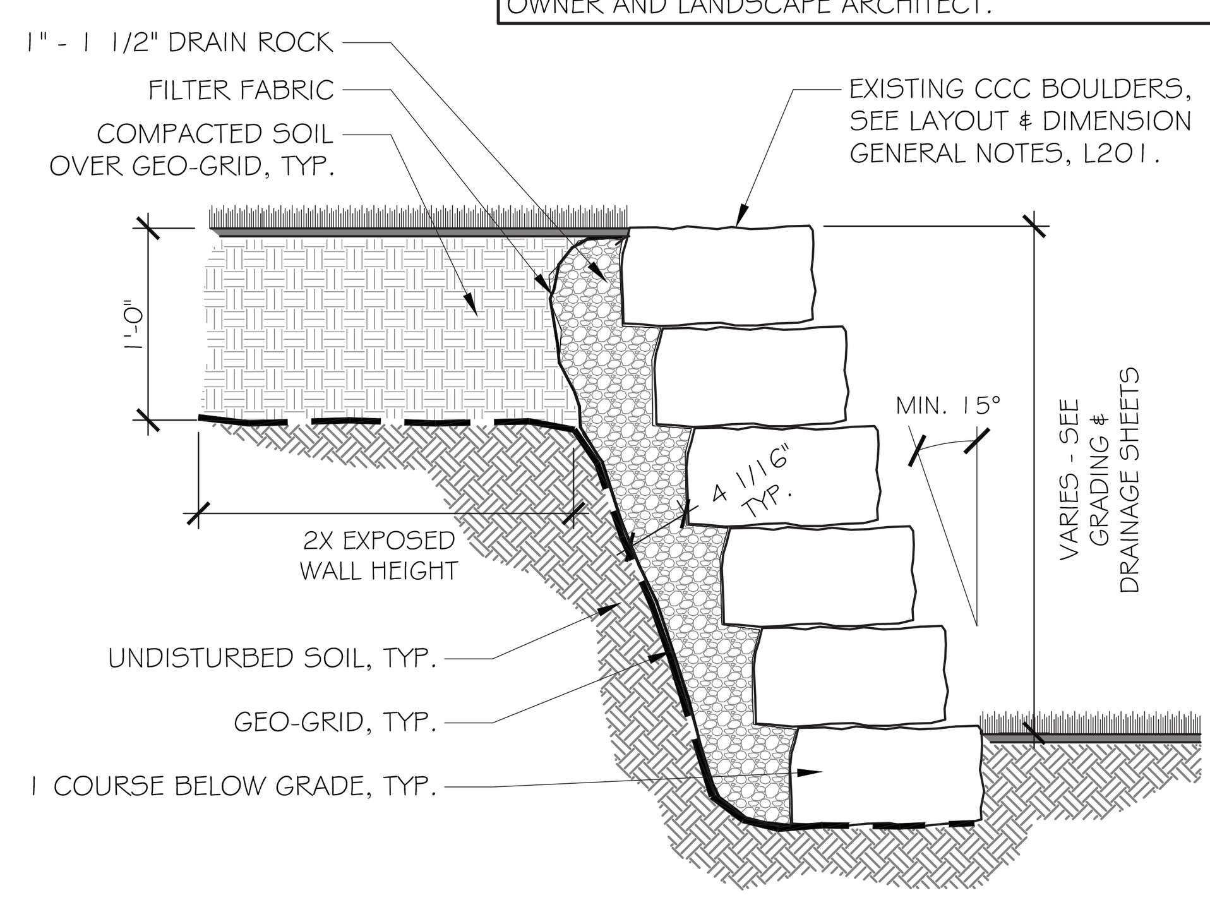
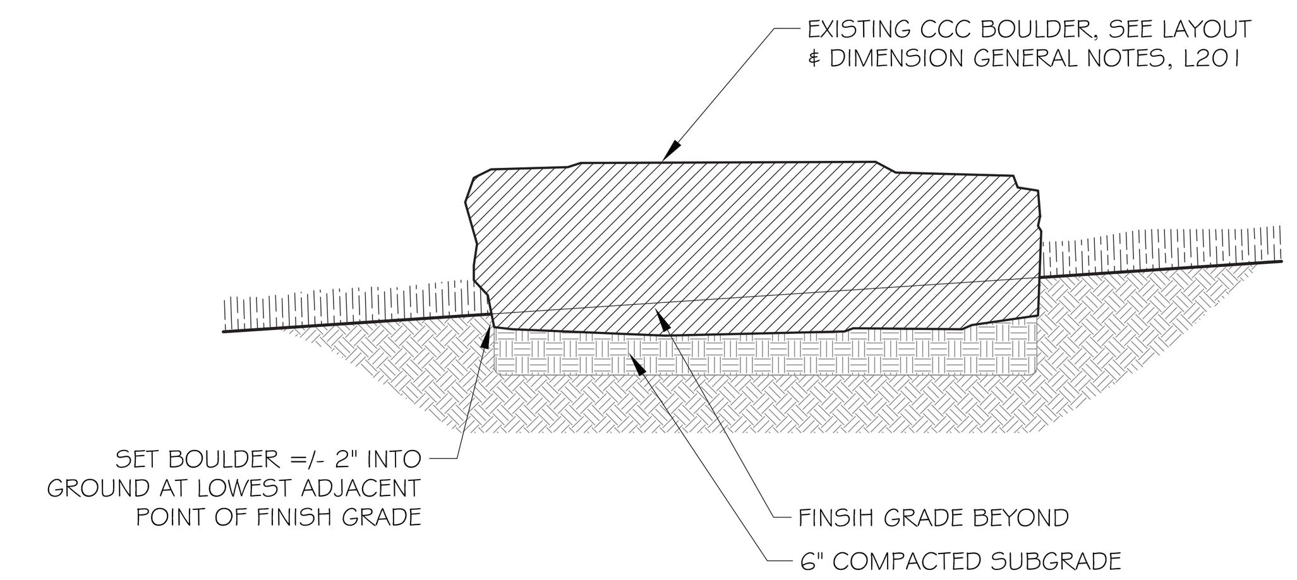
BOULDERS SHOWN IN THIS DETAIL ARE FOR ILLUSTRATIVE PURPOSES. CONTRACTOR SHALL PROVIDE A MINIMUM 4' X 2' HT MOCK UP STONE RETAINING WALL FOR APPROVAL BY OWNER AND LANDSCAPE ARCHITECT.

FOR DESIGN INTENT PURPOSES ONLY







1 TYPICAL STONE MULCH SECTION
1" = 1'-0"

2 DRY STACK STONEWALL
1" = 1'-0"

3 PRECEDENT IMAGE - DRY STACK STONE WALL
1" = 1'-0"

4 BOULDER-SECTION
1/2" = 1'-0"

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TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
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SHEET TITLE
HARDSCAPE DETAILS

SHEET NUMBER
L202

CONSTRUCTION DOCUMENTS

PATH: M:\DWG-39\3914-17.006\DWG\Landscape C3D 2015\Sheets\Phase 1 - Prop. HQ, Utilities, & Sitework

DATE: 3/19/2020

PLANT SCHEDULE - PROPOSED HEADQUARTERS

CANOPY TREES	QTY	BOTANICAL / COMMON NAME	SIZE/COND.	SPACING	REMARKS
AR	3	ACER RUBRUM RED MAPLE	30 GAL		2" CALIPER, FULL, MATCHING
LS	2	LIQUIDAMBAR STYRACIFLUA AMERICAN SWEETGUM	30 GAL		2" CALIPER, FULL, MATCHING
ORNAMENTAL TREE	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE/COND.**		**REMARKS**
CT2	3	CERCIS CANADENSIS `TEXENSIS` EASTERN REDBUD	30 GAL		2" CALIPER, FULL, MATCHING
CF	9	CORNUS FLORIDA FLOWERING DOGWOOD	30 GAL		2" CALIPER, FULL, MATCHING
SHRUBS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
RA	13	RHUS AROMATICA FRAGRANT SUMAC	7 GAL	48" o.c.	FULL, MATCHING
ORNAMENTAL GRASSES	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
PV	10	PANICUM VIRGATUM SWITCH GRASS	3 GAL	36" o.c.	FULL, MATCHING
SL	11	SCHIZACHYRIUM SCOPARIUM LITTLE BLUESTEM GRASS	3 GAL	24" o.c.	FULL, MATCHING
PERENNIALS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
EP	16	ECHINACEA PURPUREA PURPLE CONEFLOWER	1 GAL	24" o.c.	FULL, MATCHING
RH	12	RUDBECKIA HIRTA BLACK-EYED SUSAN	1 GAL	24" o.c.	FULL, MATCHING
SEED	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
NH	24,070 SF	SOUTHEAST RECOVERY SEED MIX BY NATIVE AMERICAN SEED	SEED		OR APPROVED EQUAL. 8 LBS/AC. PROVIDE 20 LBS/AC. CEREAL RYE COVER CROP IF PLANTING IN THE FALL.

PLANTING GENERAL NOTES

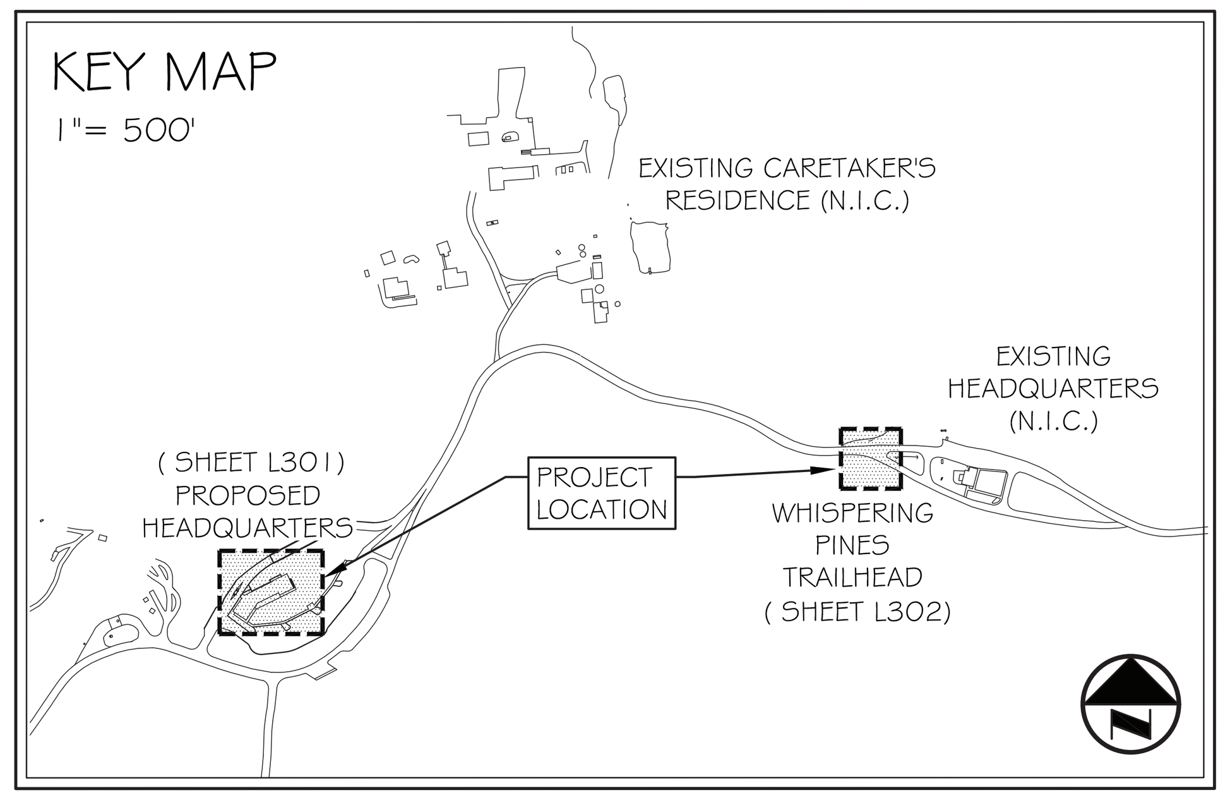
1. ALL PLANTS SHALL BE SET OUT FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
2. FINE GRADING SHALL BE PERFORMED IN ALL AREAS TO BE LANDSCAPED. FINE GRADING SHALL INCLUDE THE REMOVAL OF DEBRIS, ROCKS, ETC. FROM THE SITE AND INSURE POSITIVE DRAINAGE IN ALL AREAS.
3. THE CONTRACTOR SHALL LOCATE ALL UTILITIES AND EASEMENTS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES DURING THE COURSE OF CONSTRUCTION.
4. WRITTEN DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
5. IT IS PREFERABLE THAT NO TREE BE STAKED. HOWEVER, CONDITIONS AND PLANT MATERIAL SIZE MAY NECESSITATE STAKING. THE OWNER'S REP SHALL DETERMINE IF SUPPORT IS NEEDED AND SHALL DIRECT THE CONTRACTOR ACCORDINGLY.
6. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS ASSOCIATED WITH THE LANDSCAPE AND ACCESSORIES.
7. ALL PLANT MATERIALS SHALL MEET ANSI Z60.1 STANDARDS FOR CALIPER, HEIGHT AND ROOT BALL SIZE. ANY MATERIALS THAT DO NOT MEET OR EXCEED SUCH STANDARDS SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. BALLED AND BURLAPPED TREES SHALL HAVE THE WIRE BASKET AND BURLAP REMOVED.
9. QUANTITIES ARE SHOWN FOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES

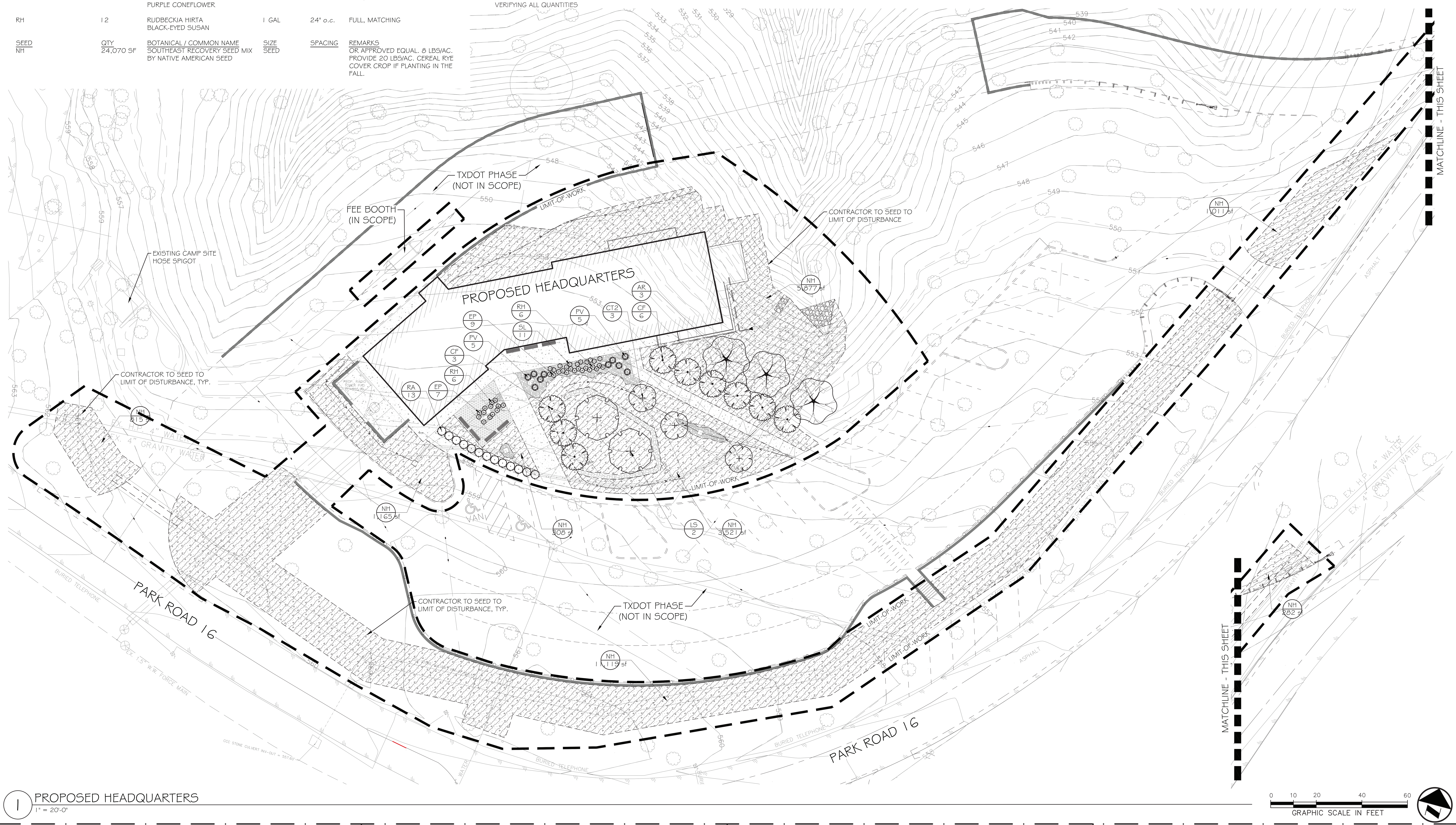
TEMPORARY IRRIGATION NOTES

1. ALL PROPOSED PLANTINGS SHALL RECEIVE TEMPORARY WATERING FOR THE ESTABLISHMENT PERIOD DEFINED IN THE SPECIFICATIONS.
2. CONTRACTOR SHALL COORDINATE WITH OWNER FOR LOCATION OF EXISTING WATER SOURCE FOR TEMPORARY IRRIGATION, MEETING REQUIREMENTS OF ALL APPLICABLE STATE PLUMBING AND IRRIGATION CODES.
3. CONTRACTOR IS RESPONSIBLE FOR METHODS, COST, FREQUENCY, QUANTITY, AND ALL MAINTENANCE UNTIL LANDSCAPE HAS BEEN ESTABLISHED & ACCEPTED BY THE OWNER'S REPRESENTATIVE & MEETS THE REQUIREMENTS OF THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL UTILIZE TEMPORARY IRRIGATION BY ANY METHOD APPROVED BY THE OWNER'S REPRESENTATIVE ON THE CONDITION THAT PLANTING ESTABLISHMENT AND ACCEPTANCE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR SHALL PROVIDE UNIT PRICING AS PART OF HIS BID FOR ALL LANDSCAPE PLANTS AND MATERIALS.

KEY MAP
1"= 500'





1 PROPOSED HEADQUARTERS
1" = 20'-0"

0 10 20 40 60
GRAPHIC SCALE IN FEET

PATH: M:\DWG-39\3914-17.006\DWG\Landscape C3D 2015\Sheets\Phase 1 - Prop. HQ, Utilities, & Sitework

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TYLER STATE PARK
HEADQUARTERS REPLACEMENT PHASE 1
PROJECT NUMBER: 112741

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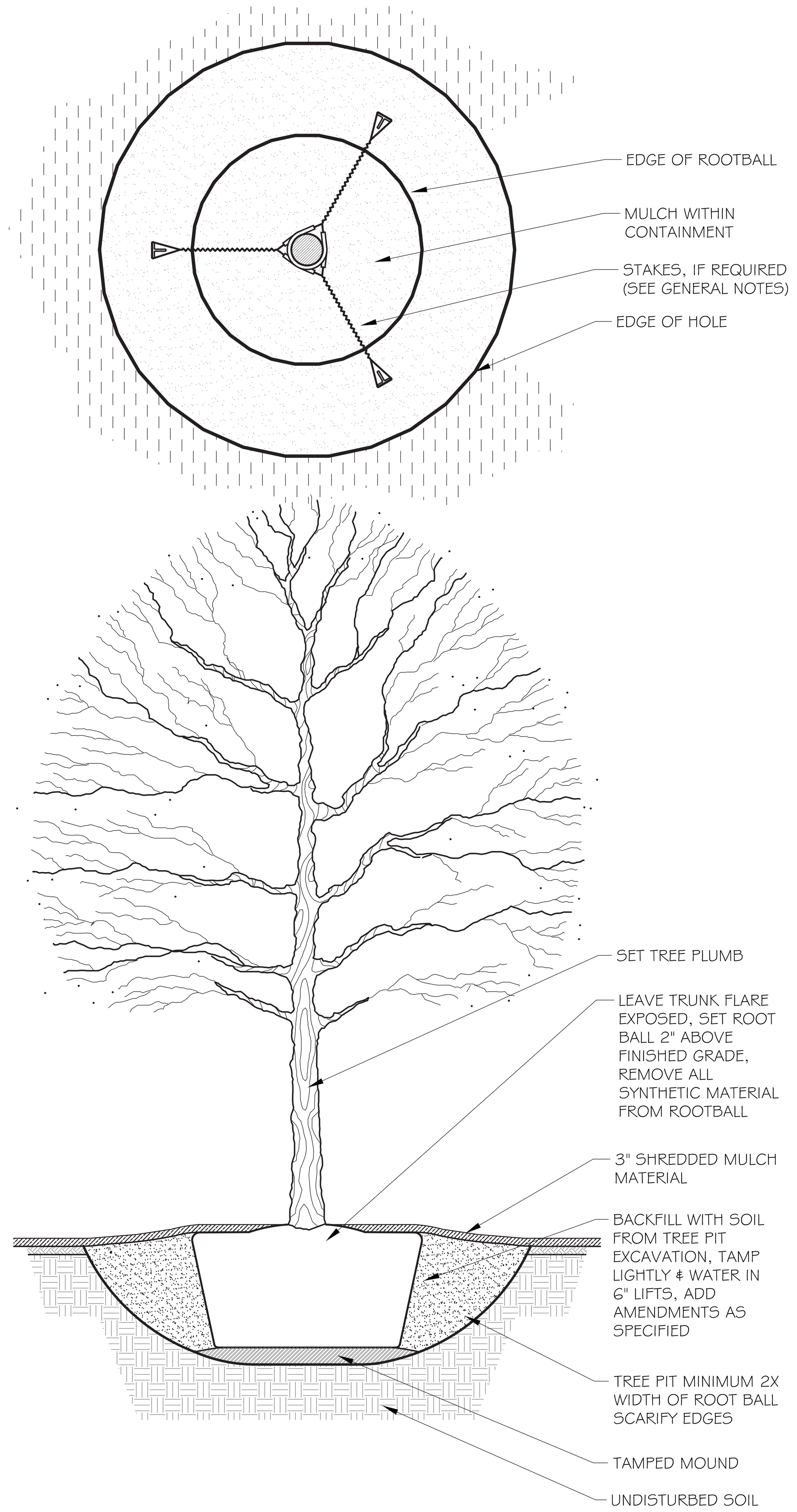
SHEET TITLE
PLANTING PLAN

SHEET NUMBER
L301

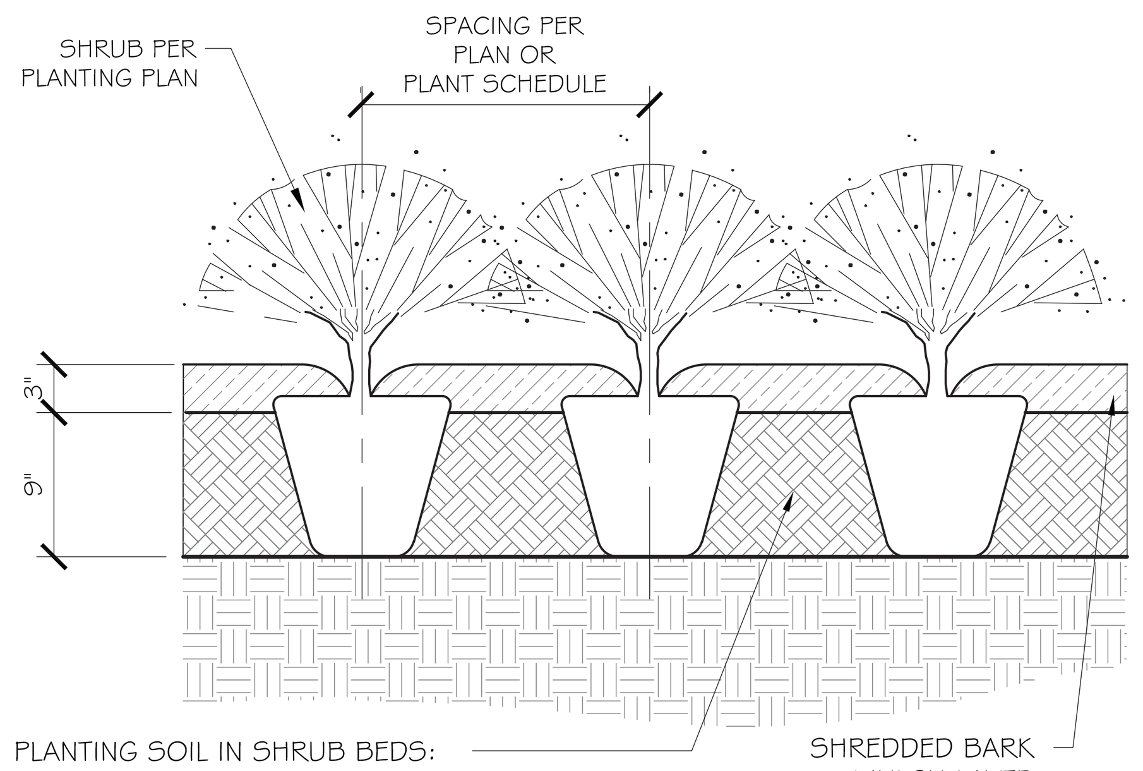
CONSTRUCTION DOCUMENTS



NOTE: UNLESS OTHERWISE SPECIFIED, OR REQUIRED BY OWNER TREES 3" CAL, AND UNDER SHALL NOT BE STAKED.

1 CANOPY TREE W/ NO STAKES

3/4" = 1'-0"

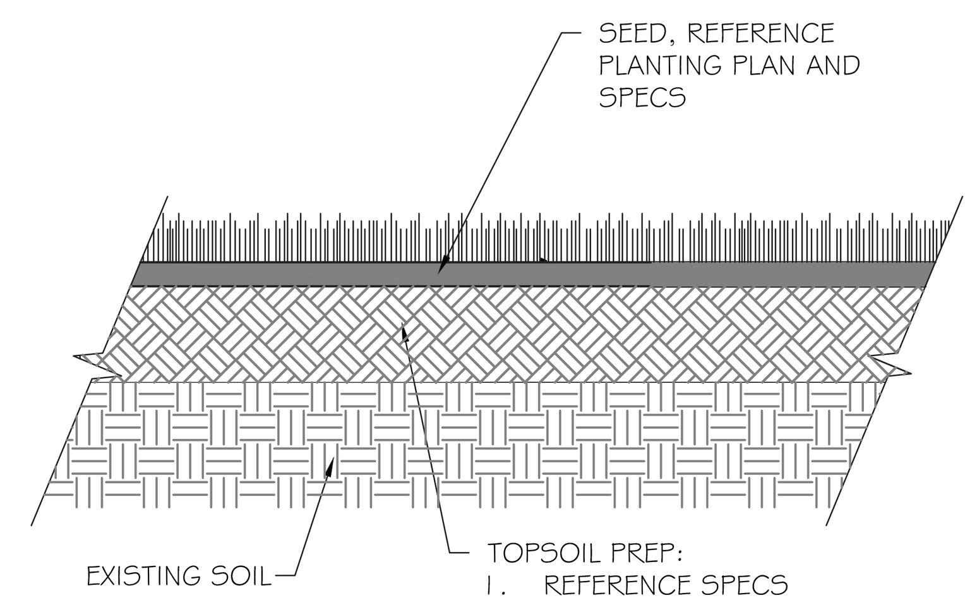


PLANTING SOIL IN SHRUB BEDS:

1. EXCAVATE EXISTING SOILS 4" BELOW ADJACENT CURB OR SIDEWALK
2. ADD 3" COMPOST ¢ TILL INTO 6" EXISTING SOILS, CREATING 9" PLANTING SOIL
3. ADD 3" MULCH AFTER PLANTING

2 TYP. SHRUB PLANTING

1" = 1'-0"



3 NATIVE SEED MIX

1 1/2" = 1'-0"

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SHEET TITLE
PLANTING DETAILS

SHEET NUMBER
L302

CONSTRUCTION DOCUMENTS

PLANT SCHEDULE - WHISPERING PINES TRAILHEAD

ORNAMENTAL TREE	QTY	BOTANICAL / COMMON NAME	SIZE/COND.		REMARKS
VR	4	VIBURNUM RUFIDULUM RUSTY BLACKHAW	30 GAL		2" CALIPER, FULL, MATCHING

SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING	REMARKS
RA	15	RHUS AROMATICA FRAGRANT SUMAC	7 GAL	48" o.c.	FULL, MATCHING

PLANTING GENERAL NOTES

1. ALL PLANTS SHALL BE SET OUT FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
2. FINE GRADING SHALL BE PERFORMED IN ALL AREAS TO BE LANDSCAPED. FINE GRADING SHALL INCLUDE THE REMOVAL OF DEBRIS, ROCKS, ETC. FROM THE SITE AND INSURE POSITIVE DRAINAGE IN ALL AREAS.
3. THE CONTRACTOR SHALL LOCATE ALL UTILITIES AND EASEMENTS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES DURING THE COURSE OF CONSTRUCTION.
4. WRITTEN DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
5. IT IS PREFERABLE THAT NO TREE BE STAKED. HOWEVER, CONDITIONS AND PLANT MATERIAL SIZE MAY NECESSITATE STAKING. THE OWNER'S REP SHALL DETERMINE IF SUPPORT IS NEEDED AND SHALL DIRECT THE CONTRACTOR ACCORDINGLY.
6. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS ASSOCIATED WITH THE LANDSCAPE AND ACCESSORIES.
7. ALL PLANT MATERIALS SHALL MEET ANSI Z60.1 STANDARDS FOR CALIPER, HEIGHT AND ROOT BALL SIZE. ANY MATERIALS THAT DO NOT MEET OR EXCEED SUCH STANDARDS SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. BALLED AND BURLAPPED TREES SHALL HAVE THE WIRE BASKET AND BURLAP REMOVED.
9. QUANTITIES ARE SHOWN FOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES

TEMPORARY IRRIGATION NOTES

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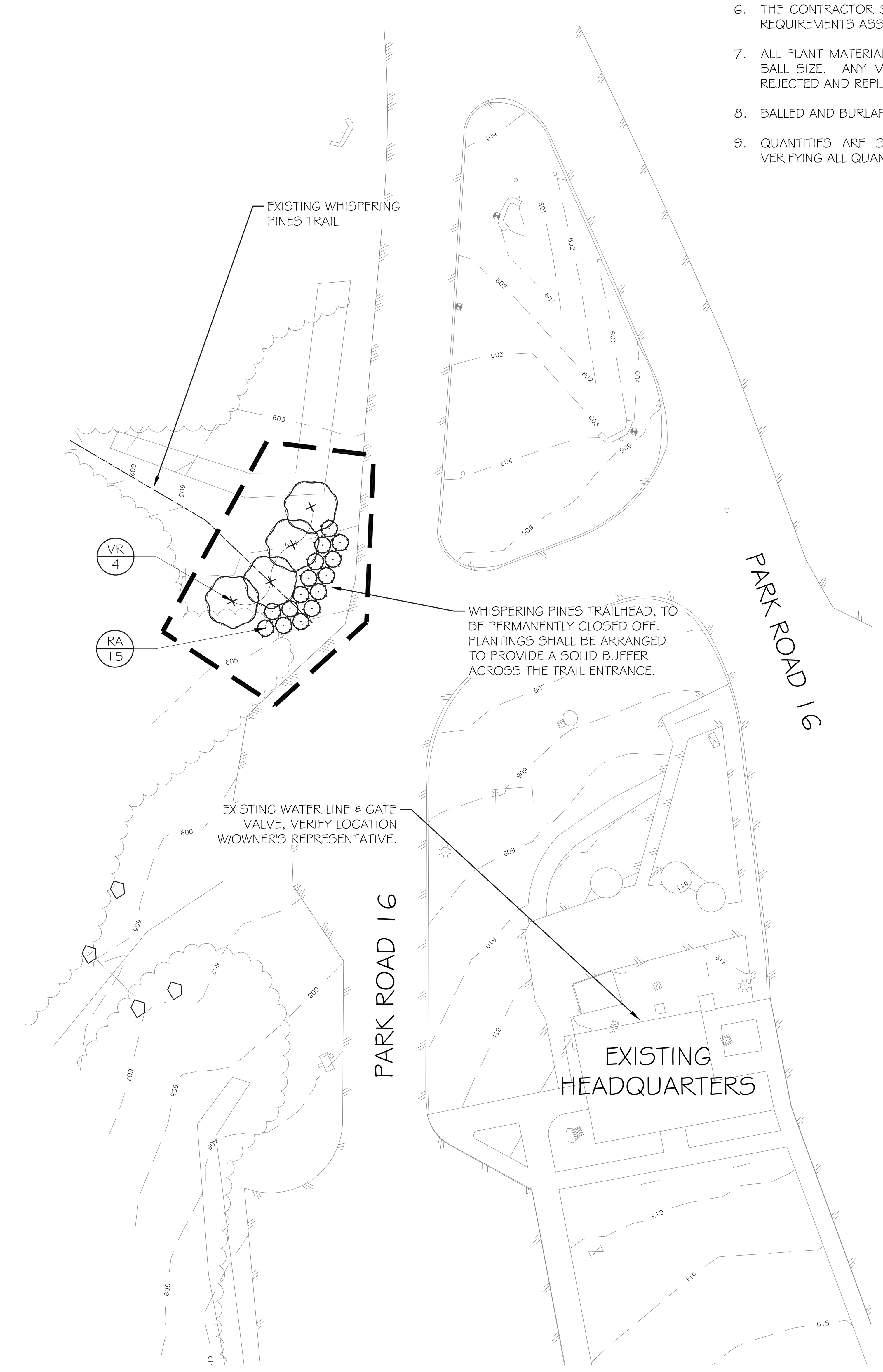
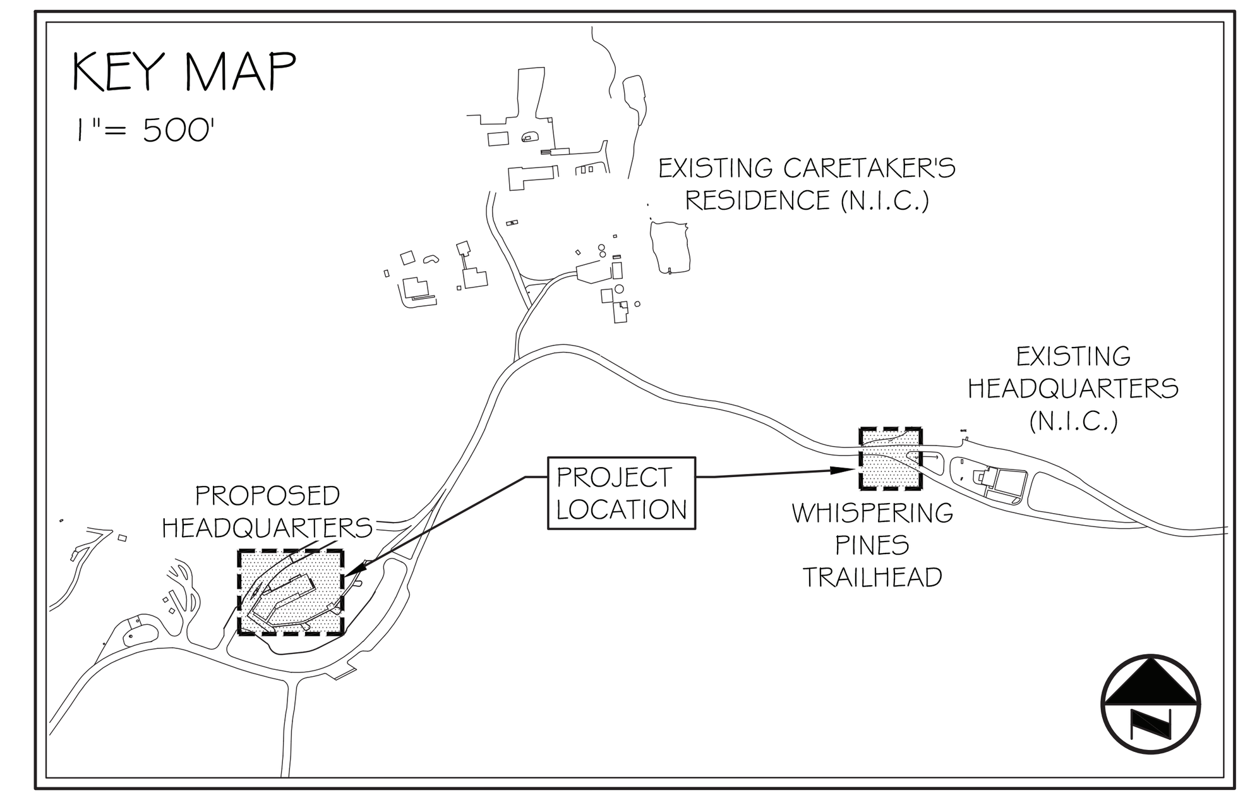


1 WHISPERING PINES TRAILHEAD
1" = 20'-0"

0 10 20 40 60
GRAPHIC SCALE IN FEET

KEY MAP



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REGISTERED LANDSCAPE ARCHITECT KENDALL HANCEY 3366 STATE OF TEXAS
07/03/2020

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SHEET TITLE
PLANTING PLAN

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