

# CLINE TRACT, UNIT 1

## WATER IMPROVEMENTS

## General Section

1. All materials and construn procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:
  - A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 3 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 3 Chapter 290
  - B. Current "TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
  - C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
  - D. Current City of San Antonio "Standard Specifications for Public Works Construction".
  - E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
2. The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Current Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction Inspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Current Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.
3. The contractor shall obtain the SAWS Standard Details from the SAWS website, [http://www.saws.org/business\\_center/specs](http://www.saws.org/business_center/specs). Unless otherwise noted within the design plans.
4. The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.
5. Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.
6. The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locations requesting pipe location materials. SAWS fact sheet on the following contact information are provided for verification purposes:
  - SAWS Utility Locations: <http://www.saws.org/Service/Locates>
  - COSA Drainage (210) 207-0724 or (210) 207-6026
  - COSA Traffic Signal Operations (210) 206-8480
  - COSA Traffic Signal Managers (210) 207-3951
  - Texas State Wide One Call Locator 1-800-455-6005 or 811
7. The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original condition if damaged as a result of the project's construction.
8. All work in Texas Department of Transportation (TXDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.
9. The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
10. The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
11. Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to [costworkweek@saaws.org](mailto:costworkweek@saaws.org).
- Weekend Work: Contractors are required to notify the SAWS Inspection Construction Department 48 hours in advance to request weekend work. Request should be sent to [costworkweek@saaws.org](mailto:costworkweek@saaws.org).
- Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
12. Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS inspector and/or the test administrator, per each 12-inch loose lift per 400 cubic yards of material placed. The contractor shall be responsible for arranging and finalizing by SAWS without this requirement being met and verified by providing all necessary documented test results.
13. A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

## Water Section

1. Prior to tie-ins, any shutdown of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is not an additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.
2. For water mains 12" or higher: SAWS Emergency Operations Center (210) 203-2014
3. Asbestos Cement (AC) pipe, also known as transit pipe which is known to contain asbestos: containing material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".
4. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSRP)
5. Submittals and drawings for blocking or joint seal shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.
5. All valves shall read "open right".
6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 565 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 565 feet, the Developer or Subcontractor shall install an approved pressure regulator on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if:
  - \* PRV is/are required for such lot(s), only single service connections shall be allowed.
  - \* Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

- 8. Backflow Prevention Devices:**
- All irrigation services within residential areas are required to have backflow prevention devices.
  - All commercial backflow prevention devices must be approved by SAWS prior to installation.
- 9. Final connection to the existing water main shall not be made until the water main has been pressure tested, the valves, and SAWS have released the main for use.**
- 10. Division Valves:** Division Valves shown on plans or not shown on plans but found in the field shall only be operated by SAWS Distribution and Collection staff and only with prior written approval of the SAWS Director of Production and Operations and proper coordination with all SAWS departments. Contractor shall provide written notification to the inspector to minimize disruption to the system. The cost of the valve and the work will be billed by the Inspector when the division valve will be operated by the SAWS Distribution and Collection staff. The Division Valve can only be operated by SAWS Distribution and Collection staff member not the inspector or the contractor.
- Operation of a Division Valve without the express prior written approval of the SAWS Distribution and Collection staff constitutes a material breach of the contract. The contractor shall be held liable for the cost of the valve and the contractor for liability for any and all fines, fees, or other damages, direct or consequential, that may arise from or be caused by the operation of the valve without prior written permission. Please be informed that the approval of the operation or opening or closing of a division valve can take several weeks for approval. Division Valves will also have a valve lid labeled Division Valve. The valve lid mechanism is also a key. The lock and key mechanism will be paid for by the contractor but will be installed by SAWS Distribution and Collection staff.**

BY THE ACT OF SUBMITTING A BID FOR THIS PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS, SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HIS SUBCONTRACTORS' AND MATERIAL SUPPLIERS' KNOWLEDGE, ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES.

THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAS BEEN BASED UPON RECORD INFORMATION ONLY AND MAY NOT MATCH LOCATIONS AND/OR DEPTHS AS CONSTRUCTED. THE CONTRACTOR SHALL CONTACT EACH INDIVIDUAL UTILITY, FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS AND DEPTHS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL UTILITY CROSSINGS PRIOR TO BEGINNING ANY CONSTRUCTION.

NECESSARY TRAFFIC CONTROL, FLAGMEN, DETOUR ROUTING AROUND WORK ACTIVITIES AND MAINTENANCE OF DETOUR SIGNS ARE THE CONTRACTOR'S RESPONSIBILITY. UNLESS DIRECTED OTHERWISE BY THE PLANS, ALL AREAS WHERE WORK IS ADJACENT TO OR CROSSING ROADWAYS, THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE OPEN TRAFFIC LANE (12 FT.), CONTROLLED WITH FLAGMEN, DURING WORKING HOURS, DURING ALL NON-WORKING HOURS A MINIMUM OF TWO TRAFFIC LANES (24 FT.) SHALL BE OPEN TO TRAFFIC. CONTRACTOR WILL FURNISH AND MAINTAIN ALL REQUIRED TRAFFIC CONTROL DEVICES PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD), TO PROPERLY WARN, GUIDE AND CONTROL TRAFFIC AT ALL TIMES DURING CONSTRUCTION.

1. MACHINE CHLORINATION BY THE SAN ANTONIO WATER SYSTEM FOR NEW WATER MAINS GREATER THAN 800 FEET. CONTRACTOR SHALL CHLORINATE NEW MAINS WITH HTM FOR NEW WATER MAINS 750 FEET AND LESS.
2. JUMPER CONNECTIONS TO EXISTING WATER SERVICE TO BE PROVIDED AS REQUIRED OR DIRECTED BY THE SAWS INSPECTOR.
3. ALL MAINS ARE ON-SITE.

RESTRAINT LENGTHS WERE CALCULATED USING EBAA RESTRAINT DESIGN CALCULATION SOFTWARE VERSION 7.1.2. THE FOLLOWING PARAMETERS WERE USED:

SOIL TYPE: CL  
TRENCH TYPE: 4  
SAFETY FACTOR : 1.5 TO 1  
DEPTH OF BURY : 5  
TEST PRESSURE : 150 psi

**CAUTION!**

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DISTRIBUTION BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES AT A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

## TRENCH EXCAVATION SAFETY PROTECTION

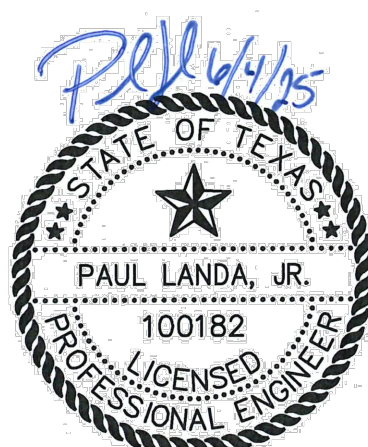
Contractor and/or Contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures for the project described in the contract documents. The Contractor's implementation of these systems, programs and/or procedures shall be in accordance with the OSHA standards for trench excavation, as a minimum, and shall comply with all applicable OSHA standards for trench excavations. Specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.

N.T.S.

LEGAL DESCRIPTION:

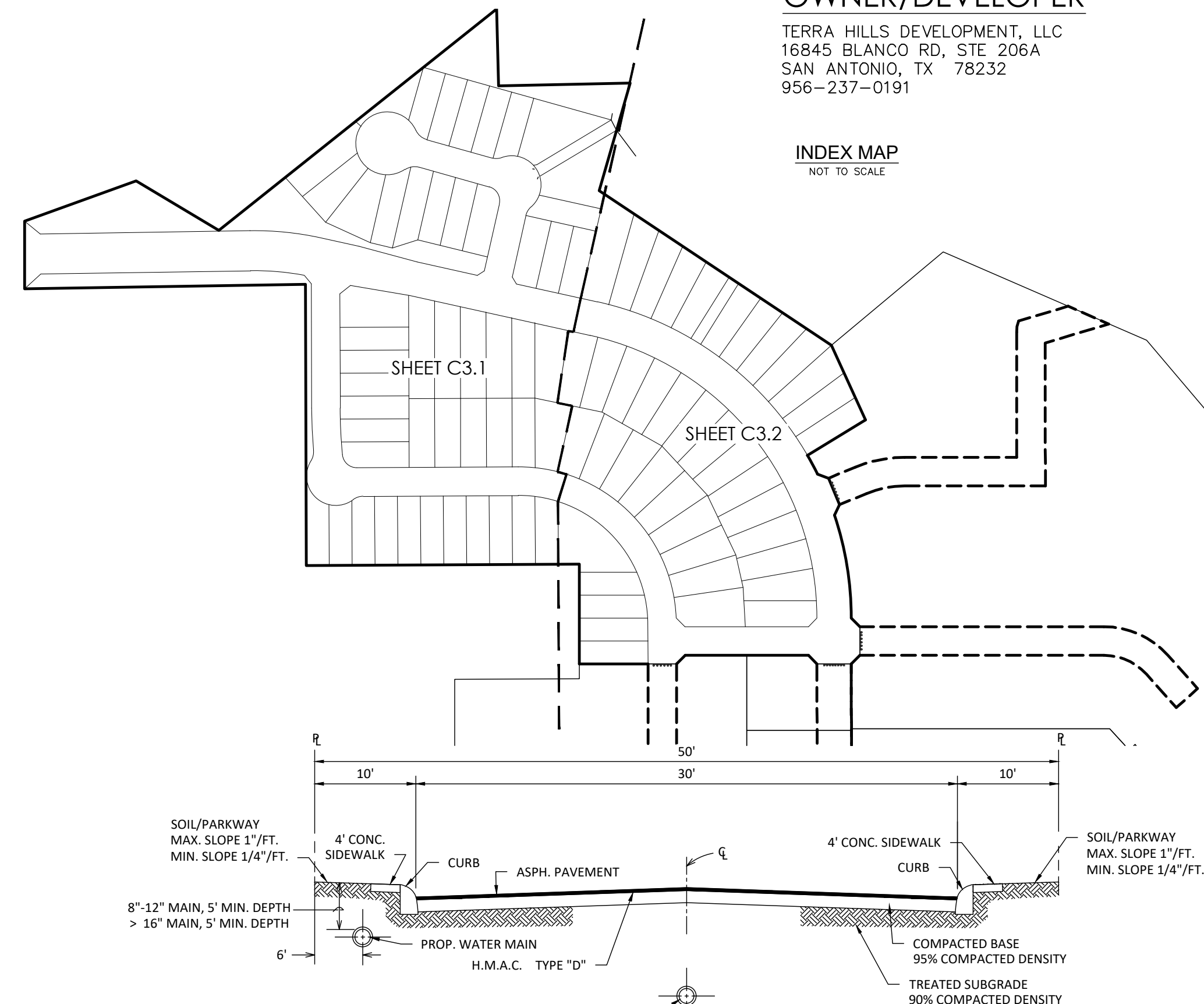
A 20.638 ACRE TRACT OF LAND SITUATED IN THE JOSE MARIA SAES SURVEY NUMBER 40, ABSTRACT NUMBER 418, COUNTY BLOCK 4201, BEXAR COUNTY, TEXAS, BEING A PORTION OF A 24.778 ACRE TRACT AS CONVEYED TO TERRA HILLS DEVELOPMENT, LLC BY WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 20230134902 AND A PORTION OF A 29.243 ACRE TRACT AS CONVEYED TO TERRA HILLS DEVELOPMENT, LLC BY SPECIAL WARRANTY DEED WITH VENDOR'S LIEN AS RECORDED IN DOCUMENT NUMBER 20230067413, BOTH OF THE OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.

ITEM	DESCRIPTION	UNIT	EST/QTY
1	8" WATER MAIN TIE-IN	L.S.	1
2	TRENCH EXCAVATION PROTECTION	L.F.	4,040
3	8" PIPE, C900 DR 18 PVC CLASS 235 (Includes Joint Restraints)	L.F.	3,758
4	8" GATE VALVE, M.J. (COMPLETE WITH RESTRAINTS)	EA.	18
5	16" GATE VALVE, M.J. (COMPLETE WITH RESTRAINTS)	EA.	2
6	STANDARD FIRE HYDRANT (COMPLETE WITH TEE, VALVE, BENDS AND RESTRAINTS)	EA.	8
7	2" PERMANENT BLOW-OFF	EA.	5
8	2" TEMPORARY BLOW-OFF	EA.	1
9	3/4" SINGLE SERVICE with 5/8" METER - SHORT	EA.	54
10	3/4" SINGLE SERVICE with 5/8" METER - LONG	EA.	34
11	D.I. FITTINGS (RESTRAINED)	TON	2.3
12	HYDROSTATIC TESTING	EA.	1
13	METER BOXES	EA.	88



12770 CIMARRON PATH, SUITE 100  
SAN ANTONIO, TEXAS 78249

- **Engineers**
- **Surveyors**
- **Planners**



N.T.S.

13' 60' 34' 13'

6' CONC. SIDEWALK

CURB

ASPH. PAVEMENT

6' CONC. SIDEWALK

CURB

SOIL/PARKWAY  
MAX. SLOPE 1/4" / FT.  
MIN. SLOPE 1/4" / FT.

PROP. WATER MAIN  
H.M.A.C. TYPE "D"

PROP. SAN. SWR.

COMPACTED BASE  
95% COMPACTED DENSITY

TREATED SUBGRADE  
90% COMPACTED DENSITY

N.T.S.

6' CONC. SIDEWALK

SOIL/PARKWAY  
MAX. SLOPE 1 1/4%/FT.  
MIN. SLOPE 1/4%/FT.

8'-12" MAIN, 5' MIN. DEPTH  
> 16" MAIN, 5' MIN. DEPTH

5'

CURB

ASPH. PAVEMENT

PROP. WATER MAIN  
H.M.A.C. TYPE "D"

70'

40'

15'

6' CONC. SIDEWALK

SOIL/PARKWAY  
MAX. SLOPE 1 1/4%/FT.  
MIN. SLOPE 1/4%/FT.

5'

CURB

COMPACTED BASE  
95% COMPACTED DENSITY

TREATED SUBGRADE  
90% COMPACTED DENSITY

PROP. SAN. SWR.

N.T.S.

Developer's Name TERRA HILLS DEVELOPMENT, LLC  
Developer's Address 16845 BLANCO RD, STE 206A  
City SAN ANTONIO State TX Zip 78232  
Phone # 956-237-0191 Fax # \_\_\_\_\_  
SAWS Block Map # 132512 Total EDU's 88 Total Acreage 19.659  
Total Linear Footage of Pipe 2"-282 L.F., 8"-3,758 L.F. Plat No. 24-11800190  
Number of Lots 88 SAWS Job No. 24-1168

Sheet Number	Sheet Title
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C3.0	WATER COVER
C3.1	WATER OVERALL
C3.2	WATER OVERALL
C3.3	WATER DETAILS SAWS
C3.4	WATER DETAILS SAWS

SUBMITTAL SET

**TEXAS** C3.0