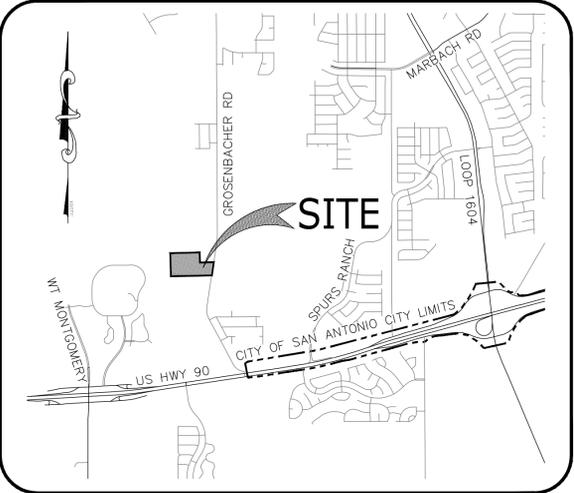


# CONSTRUCTION PLANS FOR

# GROSENBACHER RD DUPLEX

**SUBMITTED BY:**  
MOY TARIN RAMIREZ ENGINEERS, LLC.  
12770 CIMARRON PATH, SUITE 100  
SAN ANTONIO, TEXAS 78249  
TEL: (210) 698-5051  
FAX: (210) 698-5085

**OWNER/DEVELOPER**  
SS, LLC  
CLAY SCHLINKE  
22202 CIELO VISTA  
SAN ANTONIO, TEXAS 78255  
(210) 771-0861



**VICINITY MAP**  
N.T.S.

**SUBMITTAL DATE:**

**LEGAL DESCRIPTION:**

A 17.528 ACRE (763,498.93 SQUARE FOOT) TRACT OF LAND, SITUATED IN THE T.A. COOKE SURVEY NUMBER 65 1/4, ABSTRACT 1076, AND THE CAROLINE LOGAN SURVEY NUMBER 65 1/2, ABSTRACT 1011, BOTH IN BEXAR COUNTY, TEXAS, BEING ALL OF THAT CERTAIN 17.526 ACRE TRACT AS CONVEYED TO TTM DEVELOPMENT LLC, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 20230038200, OF THE OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.



**Sheet List Table**

| Sheet Number                    | Sheet Title                                  |
|---------------------------------|----------------------------------------------|
| <b>COVER SHEET</b>              |                                              |
| C0.0                            | OVERALL COVER                                |
| <b>UTILITY PLANS</b>            |                                              |
| C1.0                            | UTILITY COVER                                |
| C1.1                            | UTILITY OVERALL                              |
| <b>SEWER PLANS</b>              |                                              |
| C2.0                            | SEWER COVER                                  |
| C2.1                            | SEWER OVERALL                                |
| C2.2                            | SANITRAY SEWER PLAN & PROLINE LINE A         |
| C2.3                            | SANITARY SEWER PLAN & PROFILE LINE B         |
| C2.4                            | SANITARY SEWER DETAILS                       |
| <b>WATER PLANS</b>              |                                              |
| C3.1                            | OVERALL WATER                                |
| C3.2                            | WATER DETAILS                                |
| C3.0                            | WATER COVER                                  |
| C3.3                            | WATER DETAILS                                |
| <b>STREET &amp; DRAIN PLANS</b> |                                              |
| C4.0                            | STREET COVER                                 |
| C4.1                            | STREET PLAN & PROFILE STREET 1               |
| C4.2                            | STREET PLAN & PROFILE STREET 2 & STREET 3    |
| C4.3                            | STANDARD STREET DETAILS                      |
| C4.4                            | STANDARD STREET DETAILS                      |
| C4.5                            | DRAINAGE PLAN & PROFILE DRAIN A              |
| C4.6                            | DRAINAGE PLAN & PROFILE DRAIN B              |
| <b>GRADING PLANS</b>            |                                              |
| C5.0                            | GRADING AND DRAINAGE PLAN                    |
| C5.1                            | GRADING AND DRAINAGE PLAN                    |
| C5.2                            | RETAINING WALL DETAILS                       |
| <b>SW3P PLANS</b>               |                                              |
| C6.0                            | STORMWATER POLLUTION PREVENTION PLAN         |
| C6.1                            | STORMWATER POLLUTION PREVENTION PLAN DETAILS |



**Moy Tarin Ramirez Engineers, LLC**

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R:\Grosenbacher Rd Duplex\Grosenbacher Rd Duplex\Drawings\23079\_C0.0 Overall Cover.dwg  
Plot Date: September 5, 2024 User ID: Dallas Garcia

SUBMITTED BY:  
 MOY TARIN RAMIREZ ENGINEERS, LLC.  
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# CONSTRUCTION PLANS FOR

# GROSENBACHER RD DUPLEX UTILITY IMPROVEMENTS

## 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 provide for adequate trench excavation safety protection that comply with as a minimum, 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.

## UTILITY GENERAL NOTES

- LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF ALL UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
- ALL EXCAVATION IS UNCLASSIFIED. THERE IS NO ADDITIONAL PAYMENT FOR ROCK EXCAVATION.
- ALL SPILL AND UNUSABLE MATERIAL FROM THIS PROJECT SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THE PROJECT.
- CONSTRUCTION STAKING TO BE PROVIDED BY CONSULTANT IS AS FOLLOWS:
  - STREET CENTERLINE STAKING FOR CLEARING.
  - STREET STAKING (ONE SIDE) FOR STREET EXCAVATION AND WATER MAIN INSTALLATION.
  - SEWER STAKING AT 100-FT INTERVALS.
  - STAKING FOR WATER SERVICES.
  - STAKING FOR DRAINAGE CHANNELS.
  - FINAL STREET STAKING.
  - METER BOX STAKING.
  - CPS STAKING.
  - SETTING OF LOT CORNERS.

## CPS NOTES:

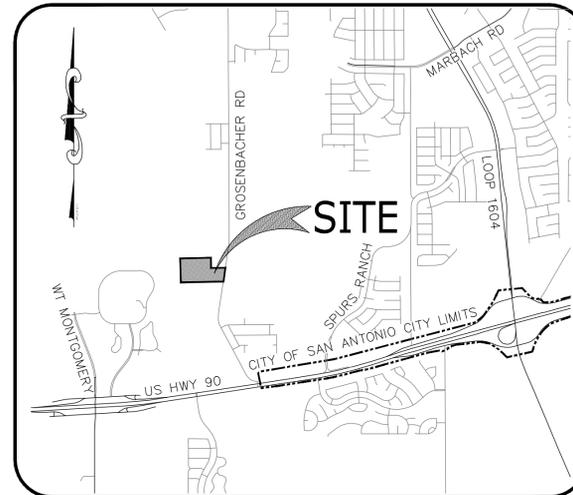
- CPS TO SUPPLY ALL ELECTRIC CONDUITS FOR TRENCH AS FOLLOWS:
  - PRIMARY - 2 1/2" HDPE SCHEDULE 40
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## NOTE :

TELEPHONE AND CABLE LINES TO GO IN JOINT TRENCH WITH CITY PUBLIC SERVICE.

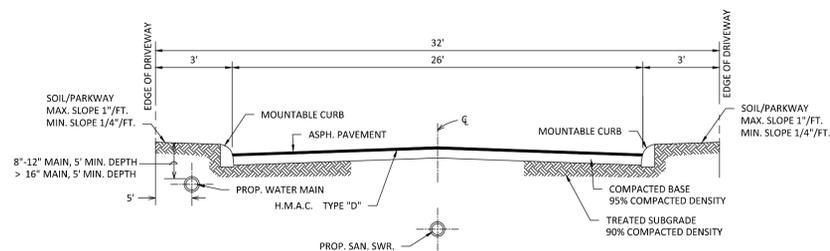
## LEGEND

|                                                 |              |
|-------------------------------------------------|--------------|
| EXISTING WATER MAIN                             | ----- E8"W   |
| PROPOSED WATER MAIN                             | ----- 8"W    |
| PROPOSED FIRE HYDRANT                           | ▲            |
| EXISTING FIRE HYDRANT                           | ▲            |
| PROPOSED GATE VALVE                             | ●            |
| EXISTING GATE VALVE                             | ●            |
| PROPOSED SANITARY SEWER MAIN                    | ----- 8"SS   |
| EXISTING SANITARY SEWER MAIN                    | ----- E8"SS  |
| EXISTING OVERHEAD ELECTRIC                      | ----- OHE    |
| EXISTING UNDERGROUND ELECTRIC                   | ----- UE     |
| EXISTING UNDERGROUND TELEPHONE                  | ----- UGT    |
| EXISTING STREET LIGHT                           | ☼            |
| OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS  | D.P.R.B.C.T. |
| OFFICIAL PUBLIC RECORDS OF MEDINA COUNTY, TEXAS | O.P.R.M.C.T. |
| PROPOSED STREET LIGHT UG, 100W AND SINGLE ARM   | ■            |
| PROPOSED STREET LIGHT UG, 250W AND SINGLE ARM   | ☼            |
| EXISTING POWER POLE                             | PP           |
| EXISTING SECONDARY ENCLOSURE                    | ⊙            |
| PROPOSED SECONDARY ENCLOSURE                    | ⊙            |
| PROPOSED POWER POLE                             | PP           |
| PROPOSED TRANSFORMER                            | ■            |
| PROPOSED WATER SERVICE                          | —            |
| PROPOSED SERVICE LATERAL WITH ONE-WAY CLEANOUT  | —            |
| EXISTING TRANSFORMER                            | ■            |
| EXISTING IRRIGATION CONTROL VALVE               | □            |
| EXISTING WATER METER                            | ⊙            |

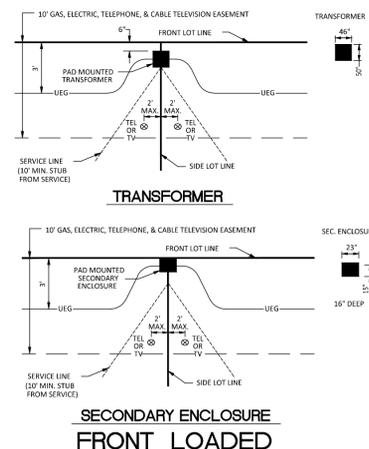


## Sheet Index

| Sheet Number | Sheet Title     |
|--------------|-----------------|
| C1.0         | UTILITY COVER   |
| C1.1         | UTILITY OVERALL |



TYPICAL STREET CROSS-SECTION (26' PAVEMENT)  
 N.T.S.



SUBMITTAL DATE:  
 DECEMBER, 2023

## LEGAL DESCRIPTION:

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## NOTE TO CONTRACTOR:

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.

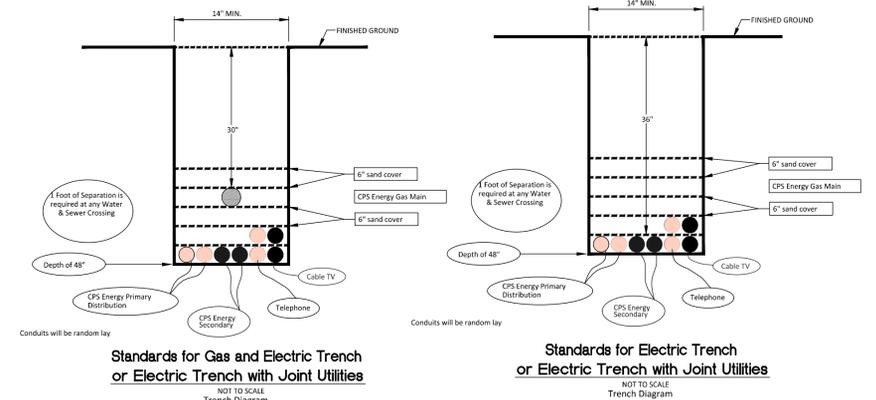
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**Moy Tarin Ramirez Engineers, LLC**  
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 TEL: (210) 698-5051  
 FAX: (210) 698-5085

- Engineers
- Surveyors
- Planners



Standards for Gas and Electric Trench  
 or Electric Trench with Joint Utilities  
 NOT TO SCALE  
 Trench Diagram

## TRENCH DETAILS

BEXAR COUNTY

SUBMITTAL SET

TEXAS C1.0

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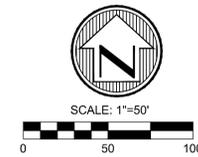
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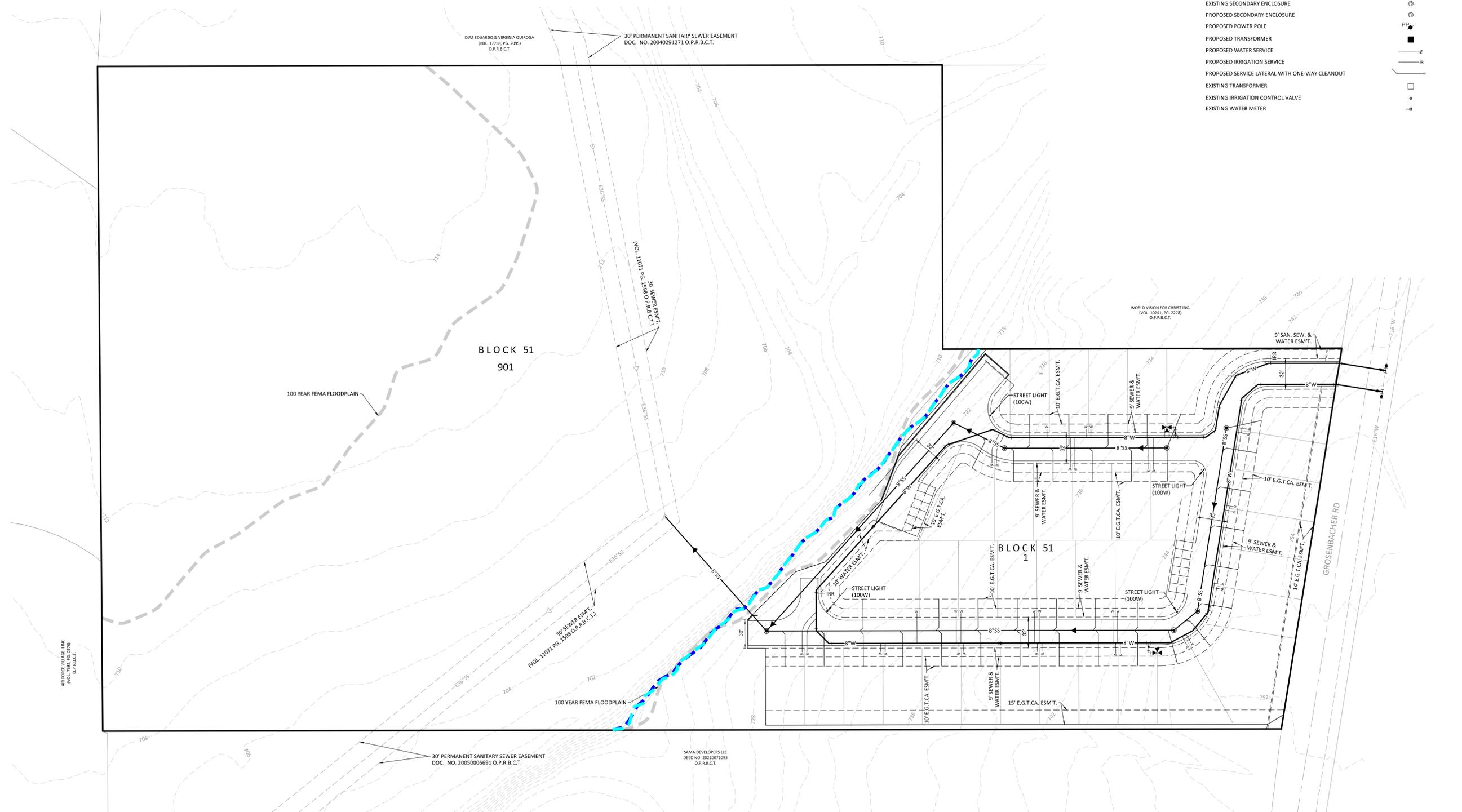
TELEPHONE AND CABLE LINES TO GO IN JOINT TRENCH WITH CITY PUBLIC SERVICE.

**CAUTION: EXISTING UNDERGROUND UTILITIES, CONTRACTOR TO VERIFY PRIOR TO START OF ANY CONSTRUCTION.**



**LEGEND**

- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- PROPOSED SANITARY SEWER MAIN
- EXISTING SANITARY SEWER MAIN
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING STREET LIGHT
- OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS
- PROPOSED STREET LIGHT UG, 100W AND SINGLE ARM
- PROPOSED STREET LIGHT UG, 250W AND SINGLE ARM
- EXISTING POWER POLE
- EXISTING SECONDARY ENCLOSURE
- PROPOSED SECONDARY ENCLOSURE
- PROPOSED POWER POLE
- PROPOSED TRANSFORMER
- PROPOSED WATER SERVICE
- PROPOSED IRRIGATION SERVICE
- PROPOSED SERVICE LATERAL WITH ONE-WAY CLEANOUT
- EXISTING TRANSFORMER
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING WATER METER



| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

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

**MIR**

**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297 / SURVEYING: F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
OVERALL UTILITY IMPROVEMENTS PLAN

# CONSTRUCTION PLANS FOR

**SUBMITTED BY:**  
 MOY TARIN RAMIREZ ENGINEERS, LLC.  
 12770 CIMARRON PATH, SUITE 100  
 SAN ANTONIO, TEXAS 78249  
 TEL: (210) 698-5051  
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**OWNER/DEVELOPER**

SS, LLC  
 CLAY SCHLINKE  
 22202 CIELO VISTA  
 SAN ANTONIO, TEXAS 78255  
 (210) 771-0861

# GROSENBACHER RD DUPLEX SANITARY SEWER IMPROVEMENTS

**SAWS CONSTRUCTION NOTES  
 COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT  
 JANUARY 2022**

**General Section**

- All materials and construction 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:
  - Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.
  - Current TxDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
  - Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
  - Current City of San Antonio "Standard Specifications for Public Works Construction".
  - Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
- The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter 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 Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.
- 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.
- 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.
- 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.
- 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 locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:
  - SAWS Utility Locates: <http://www.saws.org/Service/Locates>
  - COSA Drainage (210) 207-0724 or (210) 207-6026
  - COSA Traffic Signal Operators (210) 206-3480
  - COSA Traffic Signal Damages (210) 207-3951
  - Texas State Wide One Call Locator 1-800-545-6005 or 811
- The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.
- 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.
- The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
- The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
- Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to [costworkreq@saws.org](mailto:costworkreq@saws.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 [costworkreq@saws.org](mailto:costworkreq@saws.org). Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
- 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 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.
- A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

**Sewer Notes**

- The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:
  - Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210) 233-2014. Provide the address of the spill and an estimated volume or flow.
  - Attempt to eliminate the source of the SSO.
  - Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.
  - Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.
  - Clean the affected sewer mains and remove any debris.
  - Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at SAWS direction) within 24 hours.
- Should the Contractor fail to address an SSO immediately and to SAWS satisfaction, they will be responsible for all costs incurred by SAWS, including any fines from EPA, TCEQ and/or any other Federal, State or Local Agencies. No separate measurement or payment shall be made for this work. All work shall be done according to guidelines set by the TCEQ and SAWS.
- If bypass pumping is required, the Contractor shall perform such work in accordance with SAWS Standard Specification for Water and Sanitary Sewer Construction, Item No. 864, "Bypass Pumping".
- Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the SAWS Construction Inspection Division at (210) 233-2973 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 at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.
- Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(e)(4)(B). Contractor shall center a 20" joint of 160 psi pressure rated PVC at the proposed water crossing.
- ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: It shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project's improvements. (NSPI)
- Spills, Overflows, or Discharges of Wastewater: All spills, overflows, or discharges of wastewater, recycled water, petroleum products, or chemicals must be reported immediately to the SAWS Inspector assigned to the Counter Permit or General Construction Permit (GCP). This requirement applies to every spill, overflow, or discharge regardless of size.

**ADDITIONAL SEWER NOTES**

- 98% COMPACTION NOTE:**  
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

**NOTES:**

- SANITARY SEWER LATERALS TO BE LOCATED AS SHOWN ON THE SANITARY SEWER PLANS.
- PAY CUTS FOR SANITARY SEWERS LOCATED IN STREETS ARE ESTIMATED TO THE FINISHED SUBGRADE ELEVATION. PAY CUTS ARE TO EXISTING GROUND IN UNPAVED AREAS.
- EXTEND ALL SANITARY SEWER LATERALS TO THE PROPERTY LINE OR TO THE EASEMENT LINE AS INDICATED. ALL LATERALS ARE 35' LONG UNLESS OTHERWISE NOTED.
- SANITARY SEWER LINES AND LATERALS WILL BE PVC SDR 26 ASTM D 3034 UNLESS OTHERWISE NOTED ON PLAN AND PROFILE SHEETS.
- SDR FITTINGS WILL MATCH SDR SEWER MAIN, NO SEPARATE PAY ITEM.
- ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE SEWER TRENCH THUS ALLOWING THE TRENCH TO INTERCEPT ANY SILT CONTAMINATED RUNOFF.
- QUANTITIES ARE BASED ON CURRENT SAWS SPECIFICATIONS.
- ALL MANHOLES TO HAVE WATERTIGHT RING AND COVERS.
- ALL MANHOLES TO BE CONCRETE RING ENCASED.
- MANHOLES TO BE VENTED AS SHOWN ON THE SANITARY SEWER PLANS.
- AN "\*" DENOTES AN EXISTING TEE.
- ALL SANITARY SEWER LATERALS SHALL HAVE A MIN. 2.0 % SLOPE TO THE PROPERTY LINE.
- MINIMUM COVER FROM TOP OF SANITARY SEWER LATERALS TO TOP OF CURB WILL BE:
 

| WATER MAIN | COVER |
|------------|-------|
| 6"         | 5.5'  |
| 8"         | 5.7'  |
| 12"        | 6.0'  |
| 16"        | 7.4'  |
- ALL MANHOLE OPENINGS SHALL BE 30".

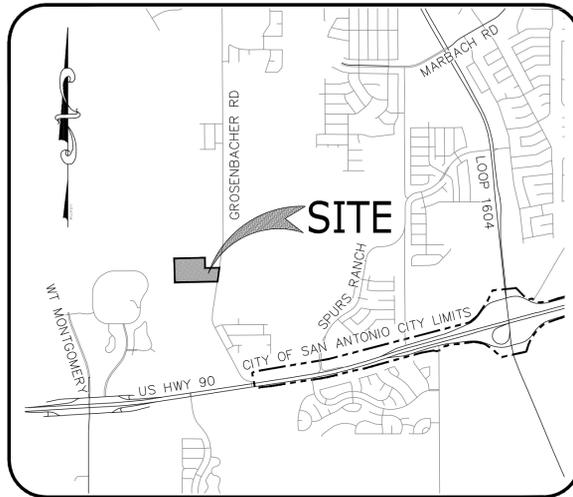
**SAN ANTONIO WATER SYSTEM  
 CRITERIA FOR SEWER MAIN CONSTRUCTION  
 IN THE VICINITY OF WATER MAINS**

- WHERE A SEWER MAIN CROSSES OVER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE (9) FEET, ALL PORTIONS OF THE SEWER MAIN WITHIN NINE FEET (9) OF THE WATER LINE SHALL BE CONSTRUCTED USING 150 PSI PRESSURE RATED DUCTILE IRON, CAST IRON OR PVC PIPE AND JOINED WITH EQUALLY PRESSURE RATED PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL. A SECTION OF 150 PSI PRESSURE RATED PIPE AT LEAST EIGHTEEN (18) FEET IN LENGTH MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS. (NO SEPARATE PAY ITEM)
  - WHERE A SEMI-RIGID OR RIGID SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET BUT GREATER THAN TWO FEET, THE INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND (TWO OR MORE BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF THE SEWER WITHIN NINE FEET OF THE WATER MAIN.
  - WHERE A SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN TWO FEET, THE SEWER MAIN SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI WITHIN NINE FEET OF THE WATER MAIN. SHALL HAVE A SECTION OF SEWER PIPE CENTERED ON THE WATER MAIN. SHALL BE PLACED NO CLOSER THAN SIX INCHES BETWEEN OUTER DIAMETERS, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL. A SECTION OF 150 PSI PRESSURE RATED PIPE OF A LENGTH GREATER THAN EIGHTEEN (18) FEET MAY BE CENTERED ON THE WATER MAIN IN LIEU OF PIPE CONNECTION REQUIREMENTS. (NO SEPARATE PAY ITEM)
  - WHERE A SEWER MAIN PARALLELS A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE FEET, THE SEWER MAIN SHALL BE BELOW THE WATER MAIN. SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI FOR BOTH PIPE AND JOINTS FOR A DISTANCE OF NINE FEET BEYOND THE POINT OF CONFLICT. SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE BETWEEN OUTER DIAMETERS OF TWO FEET VERTICALLY AND FOUR FEET HORIZONTALLY, AND SHALL BE JOINED WITH PRESSURE RING GASKET CONNECTIONS OR CORROSION PROTECTED MECHANICAL COUPLING DEVICES OF A CAST IRON OR DUCTILE IRON MATERIAL.
- SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED ANY CLOSER THAN NINE FEET TO WATER MAINS.

**NOTE TO CONTRACTOR:**

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.



**VICINITY MAP  
 N.T.S.**

**SUBMITTAL DATE:**  
 DECEMBER, 2023

**REVISION DATE:**  
 DATE

**LEGAL DESCRIPTION:**

A 17.528 ACRE (763,498.93 SQUARE FOOT) TRACT OF LAND, SITUATED IN THE T.A. COOKE SURVEY NUMBER 65 1/4, ABSTRACT 1076, AND THE CAROLINE LOGAN SURVEY NUMBER 65 1/2, ABSTRACT 1011, BOTH IN BEXAR COUNTY, TEXAS, BEING ALL OF THAT CERTAIN 17.528 ACRE TRACT AS CONVEYED TO TFM DEVELOPMENT LLC, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 20230039200, OF THE OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.



**Moy Tarin Ramirez Engineers, LLC**

FIRM TBPELS ENG F-5297 SVY F-10131500  
 12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

- Engineers
- Surveyors
- Planners

**Sheet Index**

| Sheet Number | Sheet Title                          |
|--------------|--------------------------------------|
| C2.0         | SEWER COVER                          |
| C2.1         | SEWER OVERALL                        |
| C2.2         | SANITARY SEWER PLAN & PROLINE LINE A |
| C2.3         | SANITARY SEWER PLAN & PROFILE LINE B |
| C2.4         | SANITARY SEWER DETAILS               |

**ESTIMATED SEWER QUANTITIES**

| ITEM | DESCRIPTION                                                | UNIT | EST/QTY |
|------|------------------------------------------------------------|------|---------|
| 1    | TIE INTO EXISTING SANITARY SEWER MAIN                      | E.A. | 1       |
| 2    | TRENCH EXCAVATION SAFETY PROTECTION                        | L.F. | 1,300   |
| 3    | 8" SANITARY SEWER PIPE, SDR-26 (0'-6")                     | L.F. | 184     |
| 4    | 8" SANITARY SEWER PIPE, SDR-26 (6'-10")                    | L.F. | 270     |
| 5    | 8" SANITARY SEWER PIPE, SDR-26 (10'-14")                   | L.F. | 201     |
| 6    | 8" SANITARY SEWER PIPE, SDR-26 (14'-18")                   | L.F. | 456     |
| 7    | 8" SANITARY SEWER PIPE, SDR-26 (18'-22")                   | L.F. | 158     |
| 8    | 8" SANITARY SEWER PIPE, SDR-26 (22'-26")                   | L.F. | 31      |
| 9    | STANDARD SANITARY SEWER MANHOLE                            | EA.  | 7       |
| 10   | ADJUST EXISTING SANITARY SEWER MANHOLE- ADD DROP STRUCTURE | EA.  | 1       |
| 11   | DROP MANHOLE                                               | EA.  | 1       |
| 12   | EXTRA DEPTH MANHOLE                                        | V.F. | 47.0    |
| 13   | VERTICAL STACK                                             | V.F. | 208.0   |
| 14   | 6" SANITARY SEWER LATERALS, SDR-26                         | L.F. | 1,170   |
| 15   | 8" SEWER MAIN TELEVISION INSPECTION                        | L.F. | 1,269   |

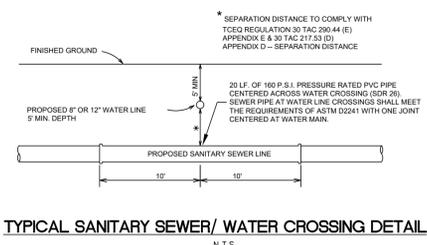
**CAUTION!**  
 THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS 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 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 provide for adequate trench excavation safety protection that comply with as a minimum, 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.

|                              |                   |
|------------------------------|-------------------|
| Developer's Name             | SS, LLC           |
| Developer's Address          | 22202 CIELO VISTA |
| City                         | SAN ANTONIO       |
| State                        | TEXAS             |
| Zip                          | 78255             |
| Phone #                      | (210) 771-0861    |
| Fax #                        |                   |
| SAWS Block Map #             | 086564            |
| Total EDU's                  | 39                |
| Total Acreage                | 17.52             |
| Total Linear Footage of Pipe | 1,300 - 8" PVC    |
| Plat No.                     | 23-11800489       |
| Number of Lots               | 1 LOT, 73 UNITS   |
| SAWS Job No.                 | 23-1671           |

**BEXAR COUNTY**

SUBMITTAL SET **TEXAS** C2.0



**CAUTION:**

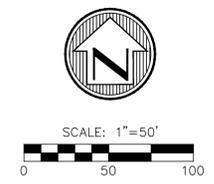
EXISTING UTILITIES:

1. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY CONTRACTOR PRIOR TO THE CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SAME DURING CONSTRUCTION.
2. IT IS ESSENTIAL THAT 48 HOURS PRIOR TO CONSTRUCTION ALL UTILITY COMPANIES BE NOTIFIED TO LOCATE AND TAG THEIR UNDERGROUND FACILITIES PRIOR TO EXCAVATION.
3. THE CONTRACTOR NEEDS TO ALLOW FOR THE POSSIBILITY OF UNDETECTED UNDERGROUND UTILITIES. ALSO, THE CONTRACTOR MUST ALLOW FOR CHANGES DUE TO UTILITIES BEING IN LOCATIONS DIFFERENT FROM THOSE SHOWN ON THE UTILITY RECORD DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND EXPOSING CONFLICTS PRIOR TO CONSTRUCTION.

REVIEWED BY THE  
**SAN ANTONIO WATER SYSTEM**

THIS DOES NOT RELIEVE THE DESIGNING ENGINEER,  
CONTRACTOR OR SUB-CONTRACTOR OF THE  
RESPONSIBILITY FOR COMPLYING WITH ALL OF THE  
SAN ANTONIO WATER SYSTEM AND T.C.E.Q. RULES  
AND REGULATIONS

BY: *[Signature]*  
DATE: 12-16-25



**LEGEND**

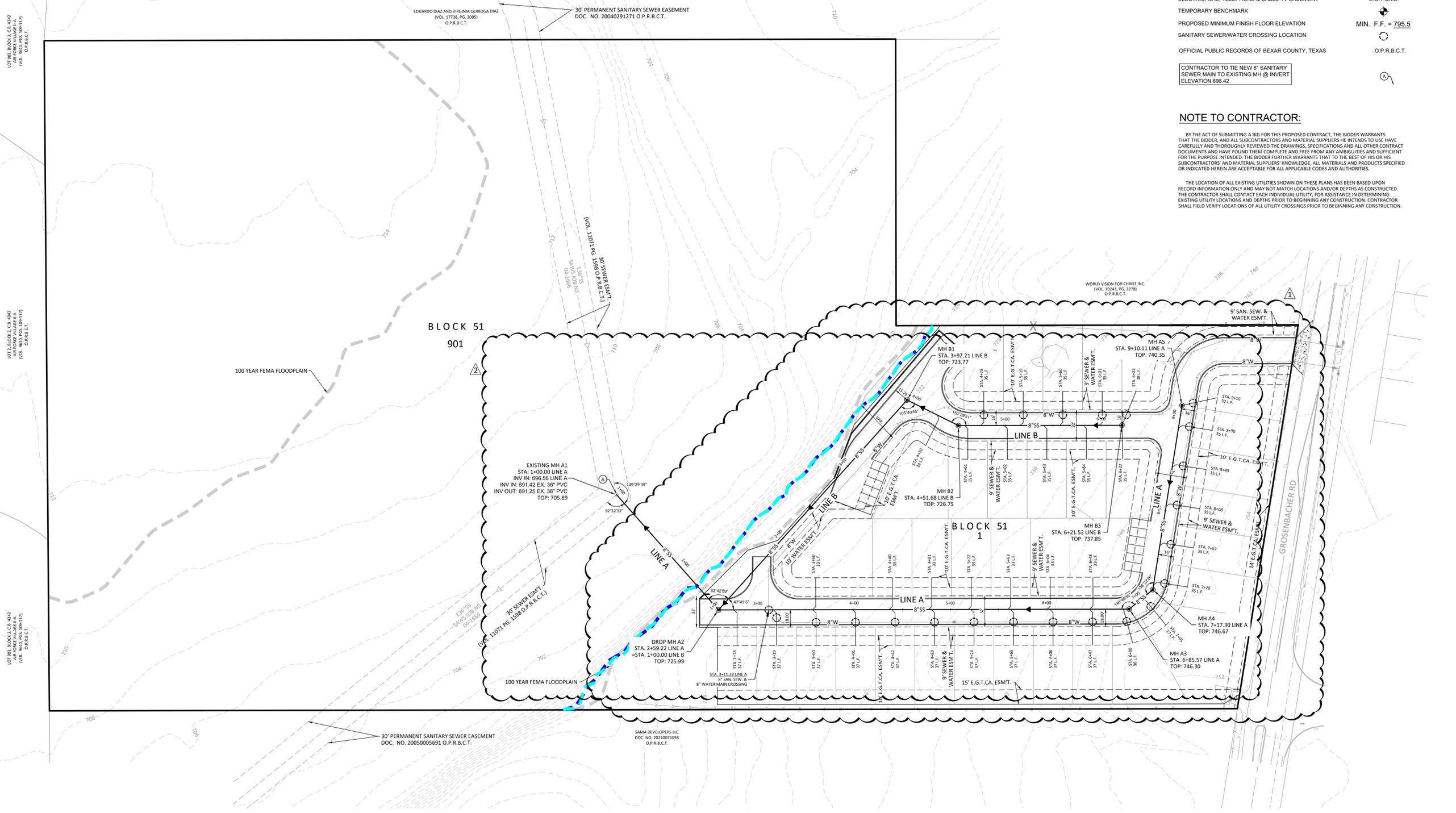
|                                                 |                   |
|-------------------------------------------------|-------------------|
| EXISTING WATER MAIN                             | --- EX 8"W ---    |
| PROPOSED WATER MAIN                             | 8"W               |
| PROPOSED FIRE HYDRANT                           |                   |
| EXISTING FIRE HYDRANT                           |                   |
| PROPOSED GATE VALVE                             |                   |
| EXISTING GATE VALVE                             |                   |
| PROPOSED SANITARY SEWER MAIN & MANHOLE          | 8"SS              |
| EXISTING SANITARY SEWER MAIN & MANHOLE          | EX 8"SS           |
| PROPOSED SERVICE LATERAL WITH ONE-WAY CLEAN-OUT |                   |
| VERTICAL STACK                                  | VS                |
| ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT    | E.G.T.C.A.E.      |
| TEMPORARY BENCHMARK                             | MIN. F.F. = 795.5 |
| PROPOSED MINIMUM FINISH FLOOR ELEVATION         |                   |
| SANITARY SEWER/WATER CROSSING LOCATION          |                   |
| OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS  | O.P.R.B.C.T.      |

**NOTE TO CONTRACTOR:**

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CONTRACTOR TO THE NEW 8" SANITARY SEWER MAIN TO EXISTING MH @ INVERT ELEVATION 696.42



**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 provide for adequate trench excavation safety protection that comply with as a minimum, 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.

**BEXAR COUNTY R.O.W. NOTE:**

BEXAR COUNTY PERMIT REQUIRED FOR STREET TIE-IN & INTERSECTION PAVEMENT REPLACEMENT AND/OR ANY WORK BEING DONE IN BEXAR COUNTY R.O.W.

|                              |                      |              |             |
|------------------------------|----------------------|--------------|-------------|
| Developer's Name             | TTM DEVELOPMENT, LLC |              |             |
| Developer's Address          | 22202 CIELO VISTA    |              |             |
| City                         | SAN ANTONIO          | State        | TEXAS       |
| Zip                          | 78255                |              |             |
| Phone #                      | (210) 771-0861       | Fax #        |             |
| SAWS Block Map #             | 086564               | Total EDU's  | 39          |
| Total Acreage                | 17.52                |              |             |
| Total Linear Footage of Pipe | 1,332 - 8" PVC       | Plat No.     | 23-11800489 |
| Number of Lots               | 1 LOT, 74 UNITS      | SAWS Job No. | 23-1671     |

| NO. | DATE     | DESCRIPTION          |
|-----|----------|----------------------|
| 1   | 12/02/24 | REMOVAL OF SIDEWALKS |
| 2   | 12/02/25 | UPDATED SEWER DESIGN |

PROJ. # 23079  
CHKD. BY: [Signature]  
DATE: [Signature]

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

**MIR**  
**Moy Tarin Ramirez Engineers, LLC**  
12770 CHARRON PATH, SUITE 100  
SAN ANTONIO, TEXAS 78249  
TEL: (210) 698-5051  
FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
**SANITARY SEWER OVERALL PLAN**

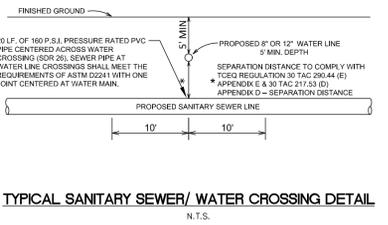
SHEET  
**C2.1**



**CAUTION:**  
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**TRENCH EXCAVATION SAFETY PROTECTION**

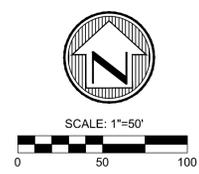
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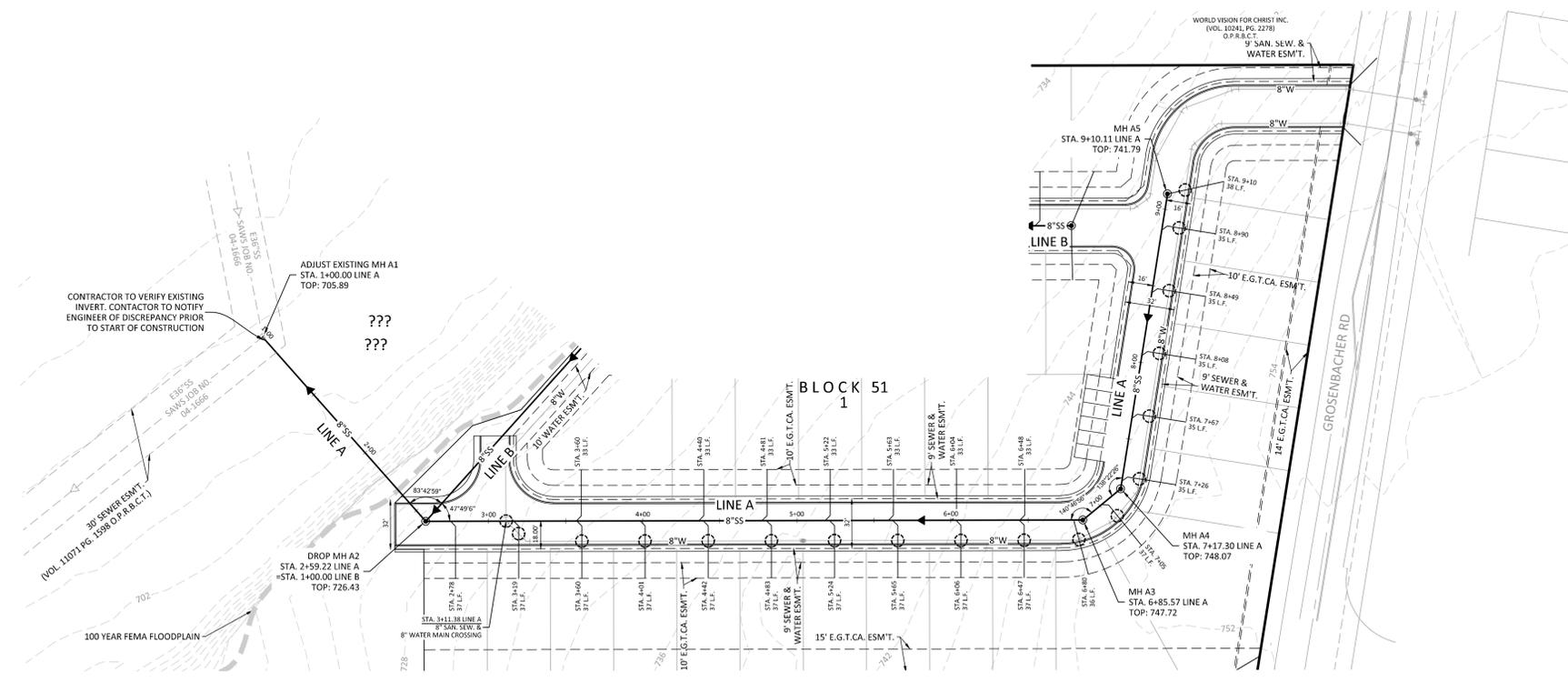
**BEXAR COUNTY R.O.W. NOTE:**  
BEXAR COUNTY PERMIT REQUIRED FOR STREET TIE-IN & INTERSECTION PAVEMENT REPLACEMENT AND/OR ANY WORK BEING DONE IN BEXAR COUNTY R.O.W.

**LEGEND**

|                                                 |                   |
|-------------------------------------------------|-------------------|
| EXISTING WATER MAIN                             | EX 8"W            |
| PROPOSED WATER MAIN                             | 8"W               |
| PROPOSED FIRE HYDRANT                           | 8"FH              |
| EXISTING FIRE HYDRANT                           | 8"FH              |
| PROPOSED GATE VALVE                             | 8"GV              |
| EXISTING GATE VALVE                             | 8"GV              |
| PROPOSED SANITARY SEWER MAIN & MANHOLE          | 8"SS              |
| EXISTING SANITARY SEWER MAIN & MANHOLE          | EX 8"SS           |
| PROPOSED SERVICE LATERAL WITH ONE-WAY CLEAN-OUT | 8"SL              |
| VERTICAL STACK                                  | VS                |
| ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT    | E.G.T.C.A.E.      |
| TEMPORARY BENCHMARK                             | MIN. F.F. = 795.5 |
| PROPOSED MINIMUM FINISH FLOOR ELEVATION         | MIN. F.F. = 795.5 |
| SANITARY SEWER/WATER CROSSING LOCATION          | O.P.R.B.C.T.      |
| OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS  | O.P.R.B.C.T.      |

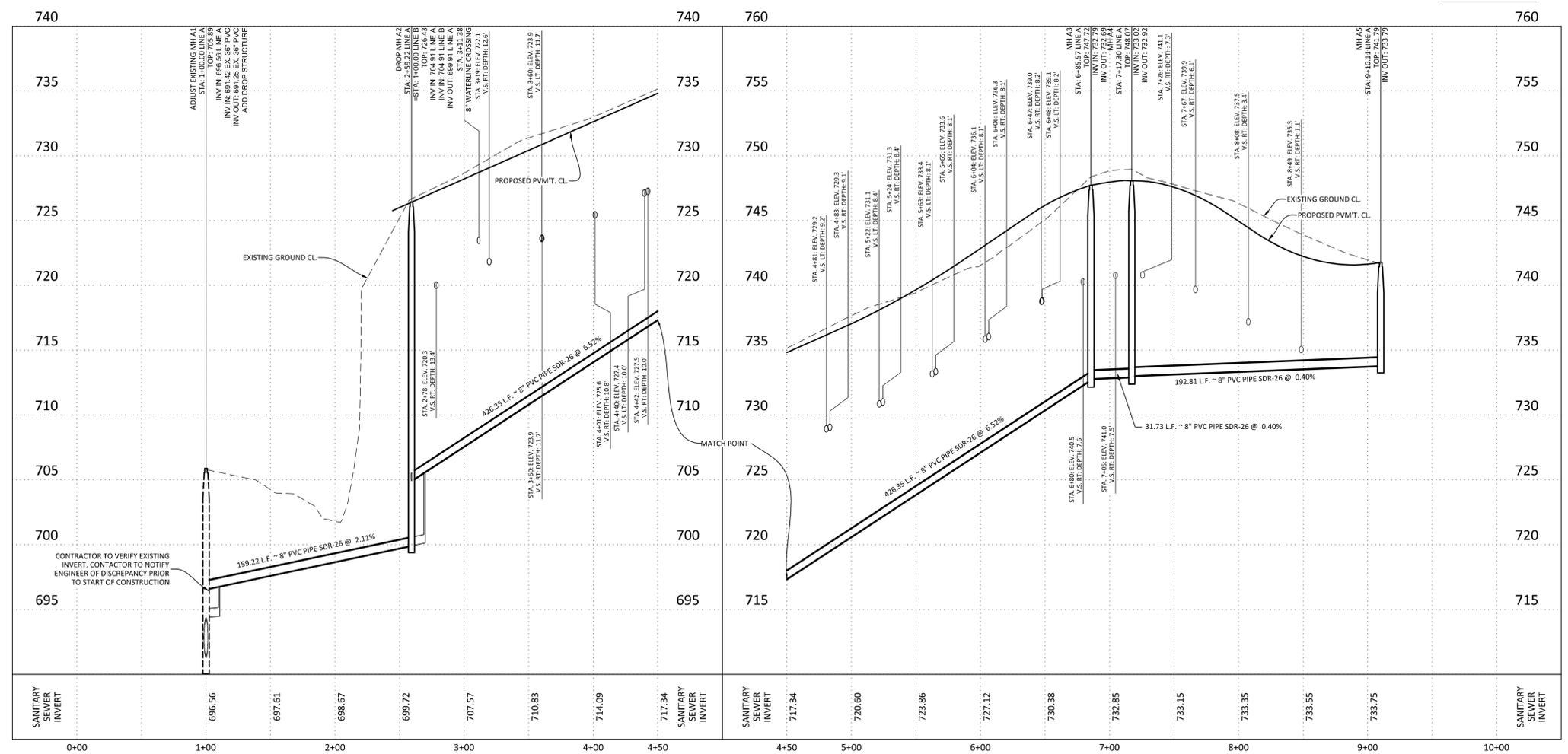


|                              |                   |
|------------------------------|-------------------|
| Developer's Name             | SS, LLC           |
| Developer's Address          | 22202 CIELO VISTA |
| City                         | SAN ANTONIO       |
| State                        | TEXAS             |
| Zip                          | 78255             |
| Phone #                      | (210) 771-0861    |
| Fax #                        |                   |
| SAWS Block Map #             | 086564            |
| Total EDU's                  | 39                |
| Total Acreage                | 17.52             |
| Total Linear Footage of Pipe | 1,300 - 8" PVC    |
| Plat No.                     | 23-11800489       |
| Number of Lots               | 1 LOT, 73 UNITS   |
| SAWS Job No.                 | 23-1671           |



**LINE A**  
STA. 1+00.00 TO STA. 9+10.11

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'



**REVISIONS**

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |
|     |      |             |
|     |      |             |

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

**MIR**

**Moy Tarin Ramirez Engineers, LLC**  
12770 CHARRON PATH, SUITE 100  
SAN ANTONIO, TEXAS 78249  
TEL: (210) 698-5051  
FAX: (210) 698-5065



GROSENBACHER RD DUPLEX  
**SANITARY SEWER PLAN & PROFILE**  
LINE A  
STA. 1+00.00 TO STA. 9+10.11

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING AND COVER DETAIL

DD 852-07

SIP Industries

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 1 OF 5

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING AND COVER DETAIL

DD 852-07

ERGO Assembly

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 2 OF 5

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING AND COVER DETAIL

DD 852-07

ERGO XL Assembly

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 3 OF 5

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING AND COVER DETAIL

DD 852-07

NEENAH FOUNDRY

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 4 OF 5

REASONS FOR REVISIONS

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.

Developer's Name: 55, LLC  
 Developer's Address: 22202 CIELO VISTA  
 City: SAN ANTONIO, State: TEXAS, Zip: 78255  
 Phone #: (210) 771-0861, Fax #: [blank]  
 SAWS Block Map #: 085564, Total EDUs: 39, Total Acreage: 17.52  
 Total Linear Footage of Pipe: 1,300 - 8" PVC, Plat No.: 23-11800489  
 Number of Lots: 1 LOT, 73 UNITS, SAWS Job No.: 23-1671

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING AND COVER DETAIL

DD 852-07

NEENAH FOUNDRY

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 5 OF 5

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

STANDARD PRECAST MANHOLE

DD-852-01

APPROVED: MAY 2013, REVISED: AUG 2019

SHEET 1 OF 2

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

MANHOLE RING ENCASEMENT DETAIL

DD 852-03

APPROVED: AUGUST 2009, REVISED: AUG 2019

SHEET 1 OF 2

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

PRECAST MANHOLE BASE 45° ANGLE

DD-852-06

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 1 OF 1

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

TYPICAL CONCRETE DETAILS

DD-858-02

APPROVED: MARCH 2008, REVISED: APRIL 2014

SHEET 1 OF 1

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

SANITARY SEWER PIPE LAID IN TRENCH

DD-804-01

APPROVED: MARCH 2008, REVISED: DEC 2018

SHEET 1 OF 1

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

GO, NO GO DEFLECTION TESTING MANDREL

DD-848-01

APPROVED: MARCH 2008, REVISED: APRIL 2014

SHEET 1 OF 2

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

GO, NO GO DEFLECTION TESTING MANDREL CHART

DD-848-01

APPROVED: MARCH 2008, REVISED: APRIL 2014

SHEET 2 OF 2

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

TYPICAL THRUST BLOCKS (SEWER ONLY)

DD-839-03

APPROVED: MARCH 2008, REVISED: AUG 2019

SHEET 1 OF 1

GROENBACHER RD DUPLEX SANITARY SEWER DETAILS

SHEET C2.4

SUBMITTAL SET

REASONS FOR REVISIONS

DESCRIPTION

DATE

NO.

BY

DATE

PROJ. # DDW BY: DDW BY: CHD BY: DATE:

23079

Engineers  
 Surveyors  
 Planners

MIR

Moy Tarin Ramirez Engineers, LLC

ENGINEERING F-5297/SURVEYING F-10131500

12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055

SALES OF TEXAS

PAUL LANDA, JR.

100182

LICENSED PROFESSIONAL ENGINEER

# CONSTRUCTION PLANS FOR

**SUBMITTED BY:**  
 MOY TARIN RAMIREZ ENGINEERS, LLC.  
 12770 CIMARRON PATH, SUITE 100  
 SAN ANTONIO, TEXAS 78249  
 TEL: (210) 698-5051  
 FAX: (210) 698-5085

**OWNER/DEVELOPER**

SS, LLC  
 CLAY SCHLINKE  
 22202 CIELO VISTA  
 SAN ANTONIO, TEXAS 78255  
 (210) 771-0861

# GROSENBACHER RD DUPLEX WATER IMPROVEMENTS

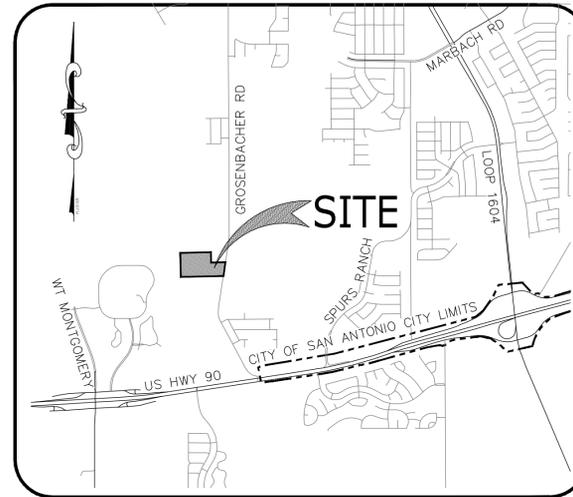
**SAWS CONSTRUCTION NOTES**  
**COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT**  
**JANUARY 2022**

General Section

- All materials and construction 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:
  - Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.
  - Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
  - Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
  - Current City of San Antonio "Standard Specifications for Public Works Construction".
  - Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
- The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter 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 Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.
- 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.
- 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.
- 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.
- 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 locates requesting pipe location markers on SAWS facilities. The following contact information is supplied for verification purposes:
  - SAWS Utility Locates: <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 Damages (210) 207-3951
  - Texas State Wide One Call Locator 1-800-545-6005 or 811
- The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.
- 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.
- The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
- The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
- Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to [constworkreq@saws.org](mailto:constworkreq@saws.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 [constworkreq@saws.org](mailto:constworkreq@saws.org).
- Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
- 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 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.
- A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

Water Section

- Prior to tie-ins, any shutdowns 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 at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.
  - For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014
- Asbestos Cement (AC) pipe, also known as transite 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".
- 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 (NSP).
- Suitable anchorage/thrust blocking or joint restraint 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 DO-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.
- All valves shall read "open right".
- PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 745 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 745 feet, the Developer or Builder shall install at each lot, 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).
- 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.
- 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.
- Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.
- 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 a minimum of two weeks in advance to start the coordination process and will be informed 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 will constitute a material breach of any written SAWS contract or permit in addition to subjecting the Contractor to 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 and a locking mechanism installed with a key. The lock and key mechanism will be paid for by the contractor but will be installed by SAWS Distribution and Collection staff.



**VICINITY MAP**  
 N.T.S.

**NOTE TO CONTRACTOR:**

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.

**TRAFFIC CONTROL NOTE:**

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, IN 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.

**MISCELLANEOUS GENERAL NOTES**

- JUMPER CONNECTIONS TO EXISTING WATER SERVICE TO BE PROVIDED AS REQUIRED OR DIRECTED BY THE SAWS INSPECTOR.
- ALL MAINS ARE ON-SITE.
- FITTINGS WEIGHT IS BASED ON M.J. DUCTILE IRON FITTINGS (COMPACT).
- CONTRACTOR TO OBTAIN STREET CUT PERMITS AS NECESSARY FOR WATER MAIN INSTALLATION. REPLACEMENT OF CURB, SIDEWALKS, BASE AND PAVEMENT WILL BE SUBORDINARY TO THE ITEMS THAT THE STREET CUT WAS NEEDED FOR.
- MINIMUM COVER OVER WATER MAIN BASED ON FINISHED GROUND.  

|                 |            |
|-----------------|------------|
| WATER LINE DIA. | MIN. DEPTH |
| 8"-12"          | 5'         |
| 24"             | 5'         |

**LEGAL DESCRIPTION:**

A 17.528 ACRE (763,498.93 SQUARE FOOT) TRACT OF LAND, SITUATED IN THE T.A. COOKE SURVEY NUMBER 65 1/4, ABSTRACT 1076, AND THE CAROLINE LOGAN SURVEY NUMBER 65 1/2, ABSTRACT 1011, BOTH IN BEXAR COUNTY, TEXAS, BEING ALL OF THAT CERTAIN 17.526 ACRE TRACT AS CONVEYED TO TTM DEVELOPMENT LLC, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 20230038200, OF THE OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.

**Sheet Index**

| Sheet Number | Sheet Title   |
|--------------|---------------|
| C3.0         | WATER COVER   |
| C3.1         | OVERALL WATER |
| C3.2         | WATER DETAILS |
| C3.3         | WATER DETAILS |

**ESTIMATED WATER QUANTITIES**

| ITEM            |                                                            | UNIT | EST/QTY |
|-----------------|------------------------------------------------------------|------|---------|
| <b>Phase I</b>  |                                                            |      |         |
| 1               | 16" Water Tie-In                                           | EA.  | 2       |
| 2               | Trench Excavation Protection                               | L.F. | 1,562   |
| 3               | 8" Pipe, C900 DR 18 PVC Class 235 (Incl. Joint Restraints) | L.F. | 1,562   |
| 4               | 16" Gate Valve, M.J. with 6" Valve Box, Complete           | EA.  | 2       |
| 5               | 8" Gate Valve, M.J. with 6" Valve Box, Complete            | EA.  | 4       |
| 6               | Standard Fire Hydrant                                      | EA.  | 2       |
| 7               | 3/4" Single Service: Short (Shared Trench)                 | EA.  | 21      |
| 8               | 3/4" Single Service: Long (Shared Trench)                  | EA.  | 15      |
| 9               | Irrigation Service (5/8 Meter)                             | EA.  | 2       |
| 10              | D.I. Fittings                                              | TON  | 0.66    |
| 11              | Hydrostatic Testing                                        | EA.  | 1       |
| <b>Phase II</b> |                                                            |      |         |
| 12              | Meter Box                                                  | EA.  | 38      |

**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 DUCT 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 1-800-ENG-FESS. 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 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 provide for adequate trench excavation safety protection that comply with as a minimum, 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.

**PRESSURE ZONE 930**

|                              |                   |
|------------------------------|-------------------|
| Developer's Name             | SS, LLC           |
| Developer's Address          | 22202 CIELO VISTA |
| City                         | SAN ANTONIO       |
| State                        | TEXAS             |
| Zip                          | 78255             |
| Phone #                      | (210) 771-0861    |
| Fax #                        |                   |
| SAWS Block Map #             | 086564            |
| Total EDU's                  | 38.5              |
| Total Acreage                | 17.52             |
| Total Linear Footage of Pipe | 1,562             |
| Plat No.                     | 23-11800489       |
| Number of Lots               | 1 LOT, 73 UNITS   |
| SAWS Job No.                 | 23-1199           |

**MIR**  
**Moy Tarin Ramirez Engineers, LLC**  
 FIRM TBPELS ENG F-5297 SVY F-10131500  
 12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

- Engineers
- Surveyors
- Planners

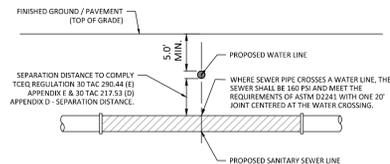
**BEXAR COUNTY**

SUBMITTAL SET **TEXAS** C3.0

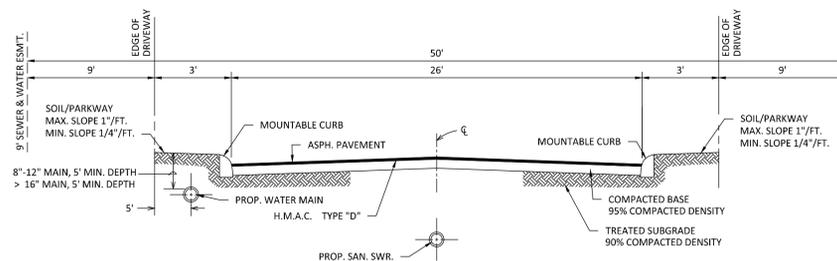
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**RESTRAINT JOINTS**

- 1 ALL TEES RESTRAINT JOINT AS REQUIRED PER SAWS DD-839-04
- 2 ALL BENDS RESTRAINT JOINT AS REQUIRED PER SAWS DD-839-08
- 3 ALL VALVES/DEAD ENDS RESTRAINT JOINT AS REQUIRED PER SAWS DD839-05
- 4 ALL VERTICAL BENDS RESTRAINT JOINT AS REQUIRED PER SAWS DD-839-06



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL  
N.T.S.



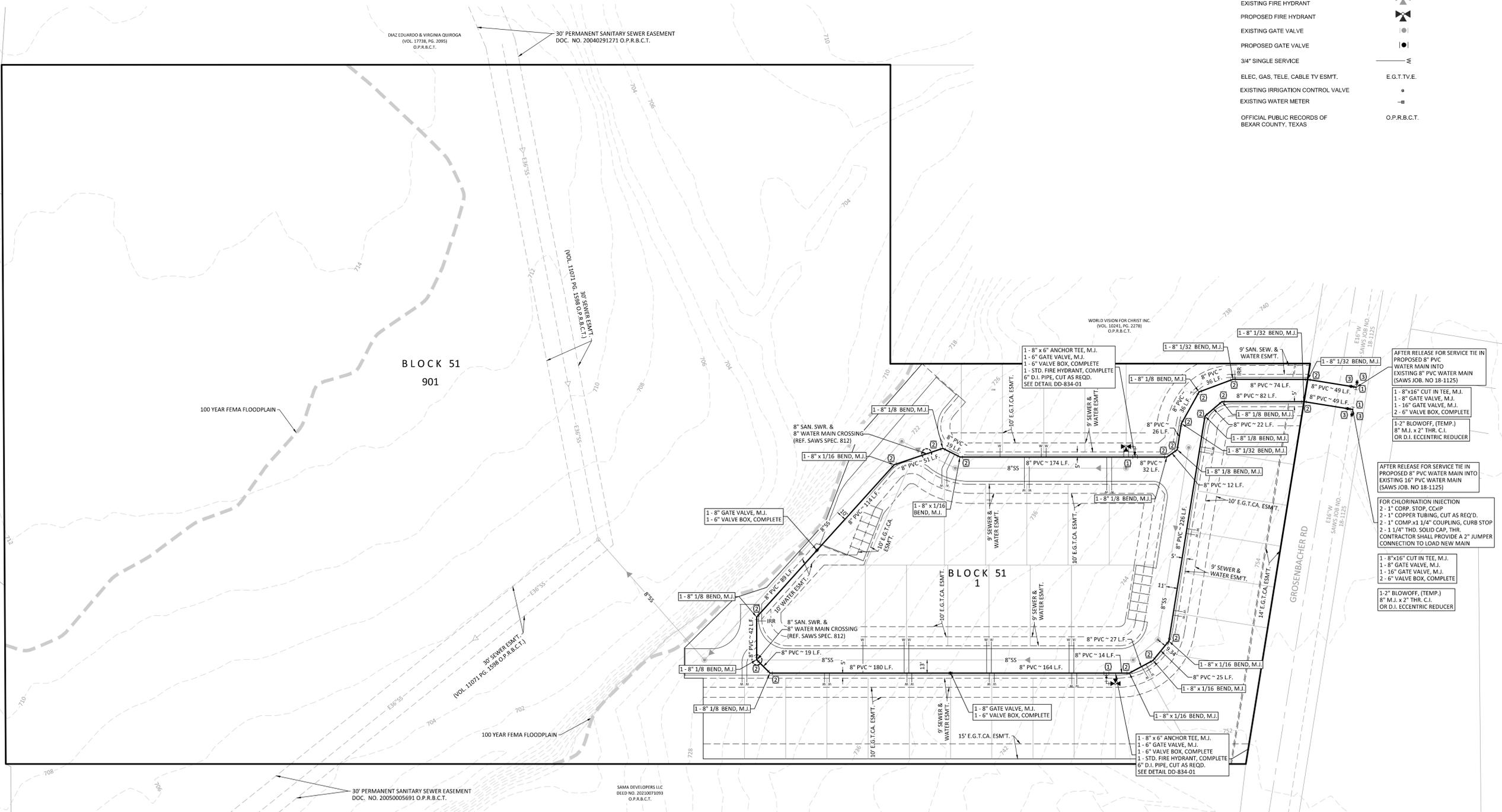
TYPICAL STREET CROSS-SECTION (26' PAVEMENT)  
N.T.S.



SCALE: 1"=50'  
0 50 100

**LEGEND**

- EXISTING WATER MAIN  E8"W
- PROPOSED WATER MAIN  8" PVC
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING GATE VALVE
- PROPOSED GATE VALVE
- 3/4" SINGLE SERVICE
- ELEC. GAS, TELE, CABLE TV ESMT.  E.G.T.V.E.
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING WATER METER
- OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS  O.P.R.B.C.T.



AFTER RELEASE FOR SERVICE TIE IN PROPOSED 8" PVC WATER MAIN INTO EXISTING 8" PVC WATER MAIN (SAWS JOB NO. 18-1125)

- 1- 8"x16" CUT IN TEE, M.J.
- 1- 8" GATE VALVE, M.J.
- 1- 16" GATE VALVE, M.J.
- 2- 6" VALVE BOX, COMPLETE

AFTER RELEASE FOR SERVICE TIE IN PROPOSED 8" PVC WATER MAIN INTO EXISTING 16" PVC WATER MAIN (SAWS JOB NO. 18-1125)

- 1- 2" BLOWOFF, (TEMP.) 8" M.J. x 2" THR. C.I. OR D.I. ECCENTRIC REDUCER

FOR CHLORINATION INJECTION

- 2- 2" COPR. STOP, CCKIP
- 2- 2" COMP-X1 1/4" COUPLING, CURB STOP
- 2- 1 1/4" THD. SOLID CAP, THR. CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN

1- 8"x16" CUT IN TEE, M.J.

- 1- 8" GATE VALVE, M.J.
- 1- 16" GATE VALVE, M.J.
- 2- 6" VALVE BOX, COMPLETE

1- 2" BLOWOFF, (TEMP.) 8" M.J. x 2" THR. C.I. OR D.I. ECCENTRIC REDUCER

**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 provide for adequate trench excavation safety protection that comply with as a minimum, 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.

**BEXAR COUNTY R.O.W. NOTE:**  
BEXAR COUNTY PERMIT REQUIRED FOR STREET TIE-IN & INTERSECTION PAVEMENT REPLACEMENT AND/OR ANY WORK BEING DONE IN BEXAR COUNTY R.O.W.

**PRESSURE\_ZONE 930**

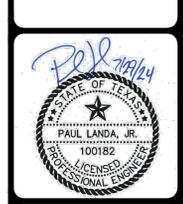
Developer's Name: 55, LLC  
 Developer's Address: 22202 CIELO VISTA  
 City: SAN ANTONIO, State: TEXAS, Zip: 78255  
 Phone #: (210) 771-0861 Fax #: \_\_\_\_\_  
 SAWS Block Map #: 086564 Total EDU's: 38.5 Total Acreage: 17.52  
 Total Linear Footage of Pipe: 1,562 Plot No.: 23-11800489  
 Number of Lots: 1 LOT, 73 UNITS SAWS Job No.: 23-1199

SUBMITTAL SET

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

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

**May Tarin Ramirez Engineers, LLC**  
 TBPELS: ENGINEERING F-5297/SURVEYING: F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
WATER OVERALL DISTRIBUTION PLAN

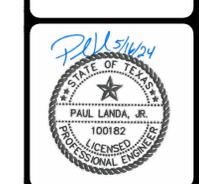
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| NO. | DATE | DESCRIPTION | BY |
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

**REVISIONS**

• Engineers  
• Surveyors  
• Planners

**MTR**

**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297/SURVEYING F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX

**WATER DETAILS**

SHEET

**C3.2**

**METER / METER BOX SCHEDULE**

| Meter Size        | Meter Box                                           |
|-------------------|-----------------------------------------------------|
| 3/4", 1" & 1 1/4" | Plastic Oval, S.A.W.S. Material Specification 10-30 |
| 1 1/2" & 2"       | RZ Cast Iron, S.A.W.S. Material Specification 10-30 |

**NEW SINGLE OR DEVELOPER CUSTOMER INSTALLATION**

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

COPPER or HDPE SERVICE INSTALLATION MAIN IN TERRACE or IMPROVED STREET

APPROVED MARCH 2008, REVISED AUG 2019

DD-824-01 SHEET 1 OF 3

**SINGLE SERVICE LINE - SINGLE METER**

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT

APPROVED MARCH 2008, REVISED DECEMBER 2018

DD-824-05 SHEET 1 OF 3

**THRUST BLOCKS FOR FITTINGS (WATER ONLY)**

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

APPROVED MARCH 2008, REVISED AUG 2019

DD-839-01 SHEET 1 OF 2

**RESTRAINED LENGTHS FOR TEES**

| PIPE SIZE (inch) | BRANCH SIZE (inch) | LENGTH OF RUN (ft.) | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi |
|------------------|--------------------|---------------------|---------------------------------------------------------|---------------------------------------------------------|
| 6                | 4                  | 0                   | 42                                                      | 31                                                      |
| 6                | 4                  | 5                   | 7                                                       | 1                                                       |
| 6                | 4                  | 10                  | 1                                                       | 1                                                       |
| 6                | 6                  | 0                   | 59                                                      | 44                                                      |
| 6                | 6                  | 5                   | 35                                                      | 20                                                      |
| 6                | 6                  | 10                  | 11                                                      | 1                                                       |
| 8                | 4                  | 0                   | 42                                                      | 31                                                      |
| 8                | 4                  | 5                   | 1                                                       | 1                                                       |
| 8                | 6                  | 0                   | 59                                                      | 44                                                      |
| 8                | 6                  | 5                   | 28                                                      | 13                                                      |
| 8                | 6                  | 10                  | 1                                                       | 1                                                       |
| 8                | 8                  | 0                   | 77                                                      | 58                                                      |
| 8                | 8                  | 5                   | 53                                                      | 34                                                      |
| 8                | 8                  | 10                  | 30                                                      | 11                                                      |
| 8                | 8                  | 15                  | 6                                                       | 1                                                       |

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

RESTRAINED LENGTHS FOR TEES

APPROVED MARCH 2008, REVISED AUG 2019

DD-839-04 SHEET 1 OF 2

**RESTRAINED LENGTH DESIGN**

RESTRAINED length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

| PIPE SIZE (inch) | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi |
|------------------|---------------------------------------------------------|---------------------------------------------------------|
| 6                | 50                                                      | 44                                                      |
| 8                | 77                                                      | 58                                                      |
| 10               | 93                                                      | 69                                                      |
| 12               | 109                                                     | 82                                                      |

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES

APPROVED MARCH 2008, REVISED AUG 2019

DD-839-05 SHEET 1 OF 1

**RESTRAINED LENGTH DESIGN**

RESTRAINED length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

| PIPE SIZE (inch) | BEND ANGLE (deg) | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi | RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi |
|------------------|------------------|---------------------------------------------------------|---------------------------------------------------------|
| 6                | 90               | 23                                                      | 17                                                      |
| 6                | 45               | 9                                                       | 7                                                       |
| 6                | 22.5             | 5                                                       | 3                                                       |
| 6                | 11.25            | 2                                                       | 2                                                       |
| 8                | 90               | 30                                                      | 22                                                      |
| 8                | 45               | 12                                                      | 9                                                       |
| 8                | 22.5             | 6                                                       | 4                                                       |
| 8                | 11.25            | 3                                                       | 2                                                       |
| 12               | 90               | 43                                                      | 32                                                      |
| 12               | 45               | 18                                                      | 13                                                      |
| 12               | 22.5             | 8                                                       | 6                                                       |
| 12               | 11.25            | 4                                                       | 3                                                       |

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

RESTRAINED LENGTHS FOR HORIZONTAL BENDS

APPROVED MARCH 2008, REVISED AUG 2019

DD-839-08 SHEET 1 OF 1

**2" (TEMPORARY) BLOW-OFF ASSEMBLY ON 8" & 6" MAINS (JOINT RESTRAINT)**

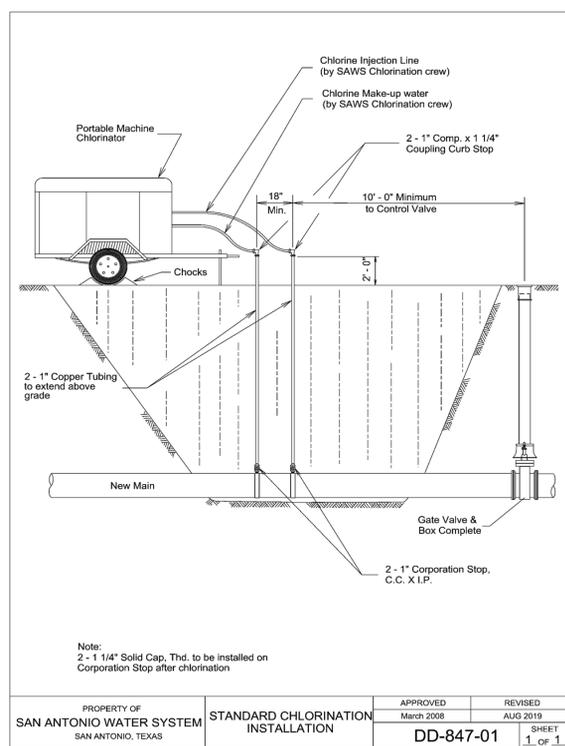
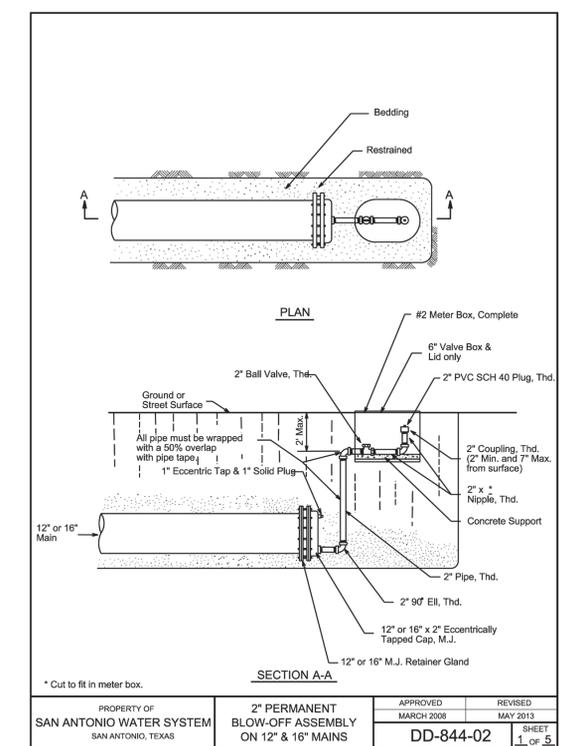
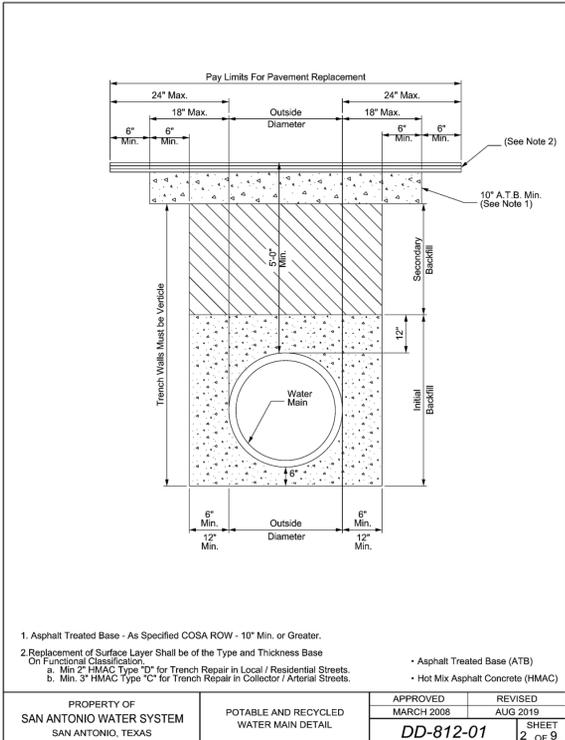
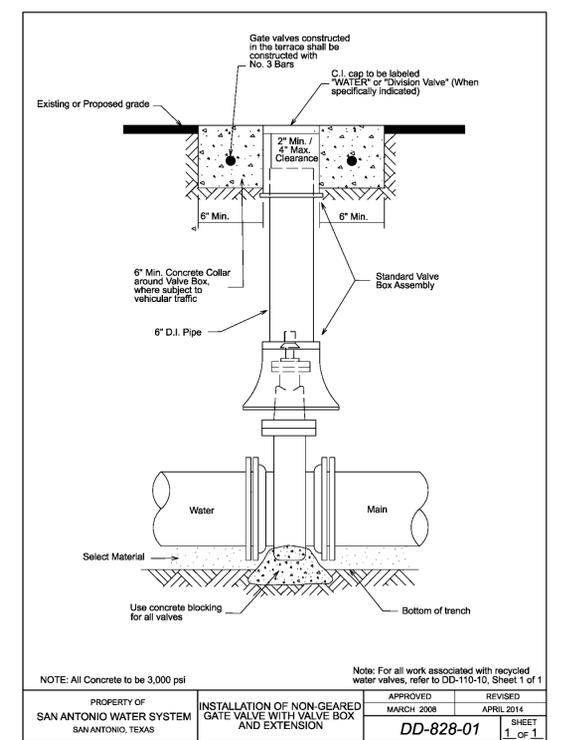
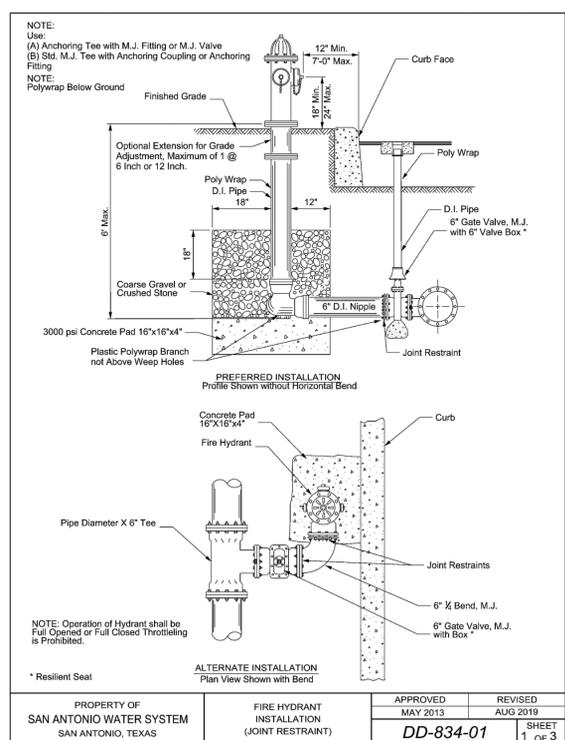
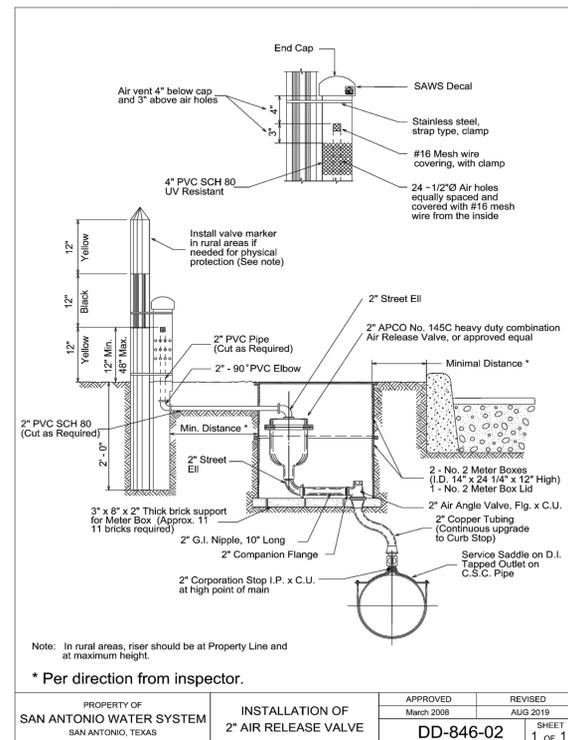
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS

APPROVED MARCH 2008, REVISED AUG 2019

DD-844-01 SHEET 3 OF 4

**PRESSURE ZONE 930**

|                              |                   |
|------------------------------|-------------------|
| Developer's Name             | SS, LLC           |
| Developer's Address          | 22202 CIELO VISTA |
| City                         | SAN ANTONIO       |
| State                        | TEXAS             |
| Zip                          | 78255             |
| Phone #                      | (210) 771-0861    |
| Fax #                        |                   |
| SAWS Block Map #             | 086564            |
| Total EDU's                  | 38.5              |
| Total Acreage                | 17.52             |
| Total Linear Footage of Pipe | 1,562             |
| Plat No.                     | 23-11800489       |
| Number of Lots               | 1 LOT, 73 UNITS   |
| SAWS Job No.                 | 23-1199           |



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**REVISIONS**

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |
|     |      |             |
|     |      |             |

**MTI**  
**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297/SURVEYING F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
**WATER DETAILS**

# CONSTRUCTION PLANS FOR

**SUBMITTED BY:**  
 MOY TARIN RAMIREZ ENGINEERS, LLC.  
 12770 CIMARRON PATH, SUITE 100  
 SAN ANTONIO, TEXAS 78249  
 TEL: (210) 698-5051  
 FAX: (210) 698-5085

**OWNER/DEVELOPER**

SS, LLC  
 22202 CIELO VISTA  
 SAN ANTONIO, TEXAS 78255  
 (210) 771-0861

**NOTES:**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE TO THE CITY OF SAN ANTONIO SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- ALL CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF SAN ANTONIO.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES DURING CONSTRUCTION. THE LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
 

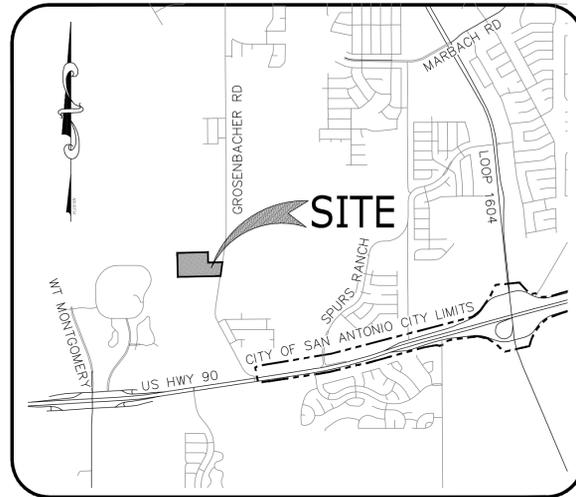
|                                   |                         |
|-----------------------------------|-------------------------|
| SAN ANTONIO WATER SYSTEM          | TELE. NO.: 210-704-7109 |
| TEXAS STATE WIDE ONE CALL LOCATOR | TELE. NO.: 800-545-6005 |
| CITY PUBLIC SERVICE               |                         |
| AT&T                              |                         |
| TIME WARNER CABLE                 |                         |
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
- THE CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT THE TELEPHONE COMPANY DURING CONSTRUCTION.
- THE CONTRACTOR HAS THE RESPONSIBILITY OF RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGE DONE TO THE EXISTING PAVEMENT, STRUCTURES OR FENCES (NO SEPARATE PAY ITEM).
- MATERIAL SPECIFICATIONS:
 

|                                                                                                   |
|---------------------------------------------------------------------------------------------------|
| CONCRETE/CONCRETE RIPRAP: CLASS A 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED ON PLANS             |
| REINFORCING STEEL: CONFORM TO A.S.T.M. A-615, GRADE 60 (2" COVER UNLESS OTHERWISE NOTED ON PLANS) |
| PIPE RAILING: CONFORM TO A.S.T.M. A-53, GRADE B, OR A-501                                         |
| STRUCTURAL STEEL: CONFORM TO A.S.T.M. A-36                                                        |
- CONTRACTOR TO COORDINATE CONCRETE CURB DEPRESSIONS WITH THE DEVELOPER (NO SEPARATE PAY ITEM).
- TRANSITION TO/FROM WASHOUT CROWNS IN TWENTY-FIVE FEET (25').
- IMPROVED EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SUBGRADE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CHANNEL IS ACCEPTED FOR MAINTENANCE. REFER TO 35-504 OF THE CITY OF SAN ANTONIO UDC. NO EXTRA PAY ITEM.

**LEGEND**

|                                |  |
|--------------------------------|--|
| EXISTING TOP OF CURB ELEVATION |  |
| PROPOSED TOP OF CURB ELEVATION |  |
| WASH-OUT CROWN                 |  |
| POSSIBLE DRIVEWAY LOCATION     |  |
| PROPERTY LINE                  |  |
| EXISTING CONTOUR               |  |
| PROPOSED CONTOUR               |  |
| PROPOSED CONCRETE CURB         |  |
| FLOW ARROW                     |  |

# GROSENBACHER RD DUPLEX STREET AND DRAINAGE IMPROVEMENTS



**VICINITY MAP**  
N.T.S.

**SUBMITTAL DATE:**  
DECEMBER, 2023

**LEGAL DESCRIPTION:**

A 17.528 ACRE (763,498.93 SQUARE FOOT) TRACT OF LAND, SITUATED IN THE T.A. COOKE SURVEY NUMBER 65 1/4, ABSTRACT 1076, AND THE CAROLINE LOGAN SURVEY NUMBER 65 1/2, ABSTRACT 1011, BOTH IN BEXAR COUNTY, TEXAS, BEING ALL OF THAT CERTAIN 17.526 ACRE TRACT AS CONVEYED TO TTM DEVELOPMENT LLC, BY SPECIAL WARRANTY DEED AS RECORDED IN DOCUMENT NUMBER 20230038200, OF THE OFFICIAL PUBLIC RECORDS OF BEXAR COUNTY, TEXAS.



**Sheet List Table**

| Sheet Number | Sheet Title                               |
|--------------|-------------------------------------------|
| C4.0         | STREET COVER                              |
| C4.1         | STREET PLAN & PROFILE STREET 1            |
| C4.2         | STREET PLAN & PROFILE STREET 2 & STREET 3 |
| C4.3         | STANDARD STREET DETAILS                   |
| C4.4         | STANDARD STREET DETAILS                   |
| C4.5         | DRAINAGE PLAN & PROFILE DRAIN A           |
| C4.6         | DRAINAGE PLAN & PROFILE DRAIN B           |
| C4.7         | DRAIN DETAILS                             |

**BEXAR COUNTY**

**MTR**  
**Moy Tarin Ramirez Engineers, LLC**  
 FIRM TBPELS ENG F-5297 SVY F-10131500  
 12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

- Engineers
- Surveyors
- Planners

SUBMITTAL SET **TEXAS** C4.0

R:\Grosenbacher Rd Duplex\Grosenbacher Rd Duplex\Drawings\23079\_C4.0 Street Cover.dwg

**NOTE:**  
ALL PERMANENT REGULATORY, WARNING, AND STREET NAME SIGNS ARE TO BE PROVIDED AND INSTALLED BY THE DEVELOPER TO COUNTY SPECIFICATIONS.

**PAINT SPECIFICATION NOTES:**  
THE PAVEMENT MARKING PAINT TO BE USED ON THIS PROJECT WILL BE CHLORINATED RUBBER ZONE MARKING PAINT FROM SHERWIN WILLIAMS OR APPROVED EQUAL. WHITE PAINT TMS126 AND LEAD-FREE YELLOW TMS127.

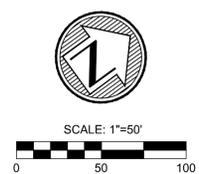
**BEXAR COUNTY R.O.W. NOTE:**  
BEXAR COUNTY PERMIT REQUIRED FOR STREET TIE-IN & INTERSECTION PAVEMENT REPLACEMENT AND/OR ANY WORK BEING DONE IN BEXAR COUNTY R.O.W.

- GENERAL NOTES:**
- ALL TRAFFIC SIGNS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE (T.M.U.T.C.D.).
  - INSTALL SIGNS SUCH THAT THEIR VIEW IS NOT BLOCKED BY LOW HANGING VEGETATION, UTILITY POLES, OTHER TRAFFIC SIGNS, ETC... REFER TO CITY OF SAN ANTONIO TRAFFIC SIGNAL DETAILS.
  - ALL PAVEMENT MARKINGS SHALL COMPLY WITH THE T.M.U.T.C.D. REFER TO CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
  - "DEAD END" WITH ARROW AND "NO OUTLET" WITH ARROW SHALL BE ON BOTH SIDES OF SIGN WHICH IS MOUNTED ABOVE STREET NAMES.
  - FINAL SIGN INSTALLATION LOCATIONS TO BE DETERMINED BY CITY OF SAN ANTONIO (INSIDE CITY LIMITS) AND/OR BEXAR COUNTY. CONTRACTOR TO COORDINATE WITH SAME. PROPOSED SIGN LOCATIONS ARE FOR REFERENCE ONLY.

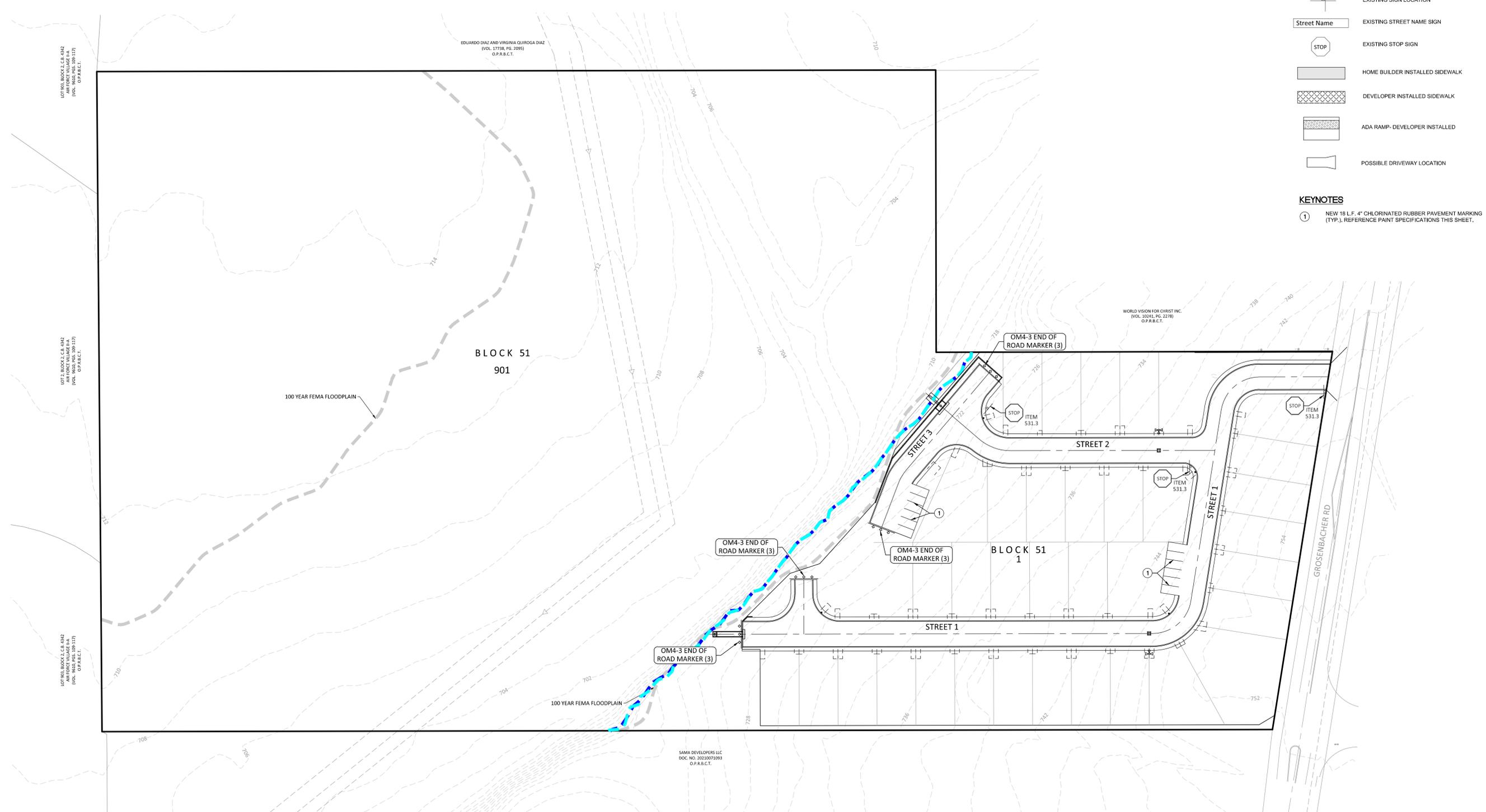
**SURFACE PREPARATION:** SURFACES WILL BE CLEAN, DRY AND FREE FROM LOOSE OR PEELING SURFACES. DO NOT APPLY WHEN AIR TEMPERATURES ARE BELOW 50DEG. F. OR WHEN THE RELATIVE HUMIDITY EXCEEDS 85% OR WHEN THE TEMPERATURE FALLS BELOW THE DEW POINT. IT IS RECOMMENDED TO PLACE AN INCONSPICUOUS TEST STRIP TO DETERMINE IF THE NEW ASPHALT SURFACES HAVE CURED SUFFICIENTLY TO PAINT. WAIT 24 HOURS AFTER A RAIN TO PAINT ASPHALT SURFACES.

**APPLICATION RATES:** APPLY PAINT AT FILM THICKNESS AND SPREADING RATE AS RECOMMENDED BY THE PAINT SUPPLIER. ALL OF THE NEW ASPHALT SURFACES WILL BE PAINTED WITH TWO (2) COATS OF 15.0 MILS WET, 8.0 MILS DRY. THE FIRST COAT MUST BE COMPLETELY DRY BEFORE THE SECOND COAT IS APPLIED. WAIT A MINIMUM OF 10 DAYS BETWEEN THE ASPHALT PLACEMENT AND THE PERMANENT TRAFFIC STRIPING AND MARKINGS.

IF 10 DAYS CANNOT BE ACHIEVED CONTRACTOR TO PROVIDE TWO (2) ADDITIONAL COATS OF 15.0 MILS WET, 8.0 MILS DRY 10 DAYS AFTER ASPHALT PLACEMENT. THE ADDITIONAL COATS ARE TO BE COORDINATED WITH THE OWNER AND WILL NOT DISRUPT OPERATIONS.



- LEGEND**
- R1-1 STOP SIGN (30" X 30")
  - D-3 STREET NAME
  - R2-1 SPEED LIMIT SIGN
  - DOUBLE LINE
  - PROPOSED SIGN LOCATION
  - PROPOSED STREET LIGHT LOCATION
  - PROPERTY LINE
  - TYPE II BLUE RAISED PAVEMENT MARKERS
  - EXISTING SIGN LOCATION
  - EXISTING STREET NAME SIGN
  - EXISTING STOP SIGN
  - HOME BUILDER INSTALLED SIDEWALK
  - DEVELOPER INSTALLED SIDEWALK
  - ADA RAMP- DEVELOPER INSTALLED
  - POSSIBLE DRIVEWAY LOCATION
- KEYNOTES**
- 1 NEW 18 L.F. 4" CHLORINATED RUBBER PAVEMENT MARKING (TYP.). REFERENCE PAINT SPECIFICATIONS THIS SHEET.



| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |
|     |      |             |    |

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

**MTR**

**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297/SURVEYING: F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
OVERALL TRAFFIC PLAN

Plot Date: September 12, 2024, User: C. Della C. Della  
 C:\Users\c. Della\OneDrive\Documents\2024\Grosenbacher Rd Duplex\Drawings\2024\C4.0A Traffic Plan.dwg

REVISIONS

| NO. | DATE | DESCRIPTION |
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|     |      |             |
|     |      |             |

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

NO. \_\_\_\_\_ DATE: \_\_\_\_\_

PROJ. # DOK. BY: DWK. BY: CHD. BY: DATE: \_\_\_\_\_

25079

• Engineers  
• Surveyors  
• Planners

**MIR**

**Moy Tarin Ramirez Engineers, LLC**

IBELTS: ENGINEERING F-5297/SURVEYING, F-10131500  
12770 CHAMBERLAIN PATH, SUITE 100 TEL: (210) 698-5051  
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055

PAUL LANDAU, JR.  
100182  
LICENSED PROFESSIONAL ENGINEER



GROSENBACHER RD DUPLEX

TRAFFIC PLAN DETAILS

SHEET

C4.0B

GENERAL NOTES

- The Engineer may require that a Schedule 80 post be used in place of a 10 80W where a sign height is greater than 10 ft. due to a 10 ft. sign.
- Sign supports shall not be bolted except where shown. Sign supports shall not be bolted except where shown. Sign supports shall not be bolted except where shown.
- Aluminum sign panels shall conform to Departmental Material Specifications 800-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, U-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When the triangular slipbase supports are used to support a sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Excess pipe, wing channel, or window shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front). Repair galvanized coating of cut support ends per Item 445, "Galvanizing."
- Sign brackets shall meet ASTM A 1011 SS or 50 and be galvanized per ASTM A 123.
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- Post open ends shall be fitted with Friction Caps.

| SIGN DESCRIPTION                         | SUPPORT              |
|------------------------------------------|----------------------|
| 48-inch STOP sign (R1-1)                 | TY 1086(1)(XX)(T)    |
| 60-inch YIELD sign (R1-2)                | TY 1086(1)(XX)(P-80) |
| 48x48-inch ONE-WAY sign (R6-1)           | TY 1086(1)(XX)(T)    |
| 36x48, 48x36, and 48x48-inch signs       | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48x48-inch signs (diamond or square)     | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48-inch Advance School X-ing sign (S1-1) | TY 1086(1)(XX)(T)    |
| 48-inch School X-ing sign (S2-1)         | TY 1086(1)(XX)(T)    |
| Large Arrow sign (W1-6 & W1-7)           | TY 1086(1)(XX)(T)    |

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- When the triangular slipbase supports are used to support a sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Excess pipe, wing channel, or window shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front). Repair galvanized coating of cut support ends per Item 445, "Galvanizing."
- Sign brackets shall meet ASTM A 1011 SS or 50 and be galvanized per ASTM A 123.
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- Post open ends shall be fitted with Friction Caps.

| SIGN DESCRIPTION                         | SUPPORT              |
|------------------------------------------|----------------------|
| 48-inch STOP sign (R1-1)                 | TY 1086(1)(XX)(T)    |
| 60-inch YIELD sign (R1-2)                | TY 1086(1)(XX)(P-80) |
| 48x48-inch ONE-WAY sign (R6-1)           | TY 1086(1)(XX)(T)    |
| 36x48, 48x36, and 48x48-inch signs       | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48x48-inch signs (diamond or square)     | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48-inch Advance School X-ing sign (S1-1) | TY 1086(1)(XX)(T)    |
| 48-inch School X-ing sign (S2-1)         | TY 1086(1)(XX)(T)    |
| Large Arrow sign (W1-6 & W1-7)           | TY 1086(1)(XX)(T)    |

REQUIRED SUPPORT

| SIGN DESCRIPTION                         | SUPPORT              |
|------------------------------------------|----------------------|
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| 60-inch YIELD sign (R1-2)                | TY 1086(1)(XX)(P-80) |
| 48x48-inch ONE-WAY sign (R6-1)           | TY 1086(1)(XX)(T)    |
| 36x48, 48x36, and 48x48-inch signs       | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48x48-inch signs (diamond or square)     | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
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GENERAL NOTES

- The Engineer may require that a Schedule 80 post be used in place of a 10 80W where a sign height is greater than 10 ft. due to a 10 ft. sign.
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- Aluminum sign panels shall conform to Departmental Material Specifications 800-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
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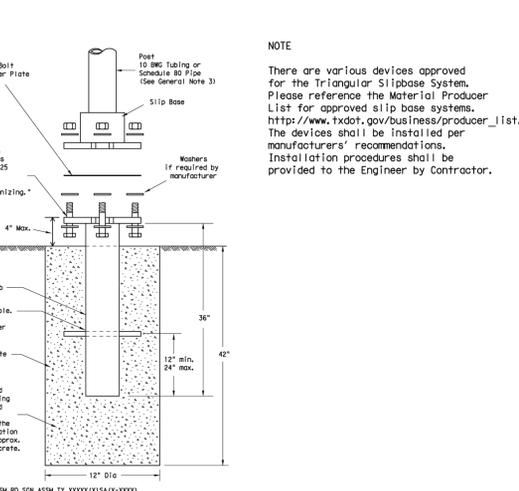
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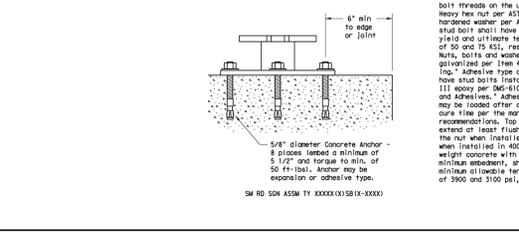
REQUIRED SUPPORT

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|------------------------------------------|----------------------|
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| 36x48, 48x36, and 48x48-inch signs       | TY 1086(1)(XX)(T)    |
| 48x48-inch signs                         | TY 1086(1)(XX)(T)    |
| 48x48-inch signs (diamond or square)     | TY 1086(1)(XX)(T)    |
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| 48-inch School X-ing sign (S2-1)         | TY 1086(1)(XX)(T)    |
| Large Arrow sign (W1-6 & W1-7)           | TY 1086(1)(XX)(T)    |

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



CONCRETE ANCHOR



GENERAL NOTES

- Slip base shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to approval of the TxDOT Traffic Operations Engineer.
- Material used on post with this system shall conform to the following specifications: 10 80W Tubing (ASTM A 513) outside diameter: 6.314 nominal wall thickness; Schedule 80 Pipe (ASTM A 53) outside diameter: 6.314 nominal wall thickness; Steel shall be A516 or 50 per ASTM A1011 or ASTM A1008; Concrete shall be used if they meet the following: 70,000 PSI minimum tensile strength; 200 minimum elongation in 2"; 1011 thickness (uncoated) shall be within the range of 0.121" to 0.131"; Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"; Galvanization per ASTM A123 or ASTM A653; For precast steel tubing (ASTM A653), recoat tube outside diameter weld seam by metalizing with zinc wire per ASTM B833; Schedule 80 Pipe (ASTM A 53) outside diameter: 6.314 nominal wall thickness; Steel tubing per ASTM A500 or C; Other species or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following: 46,000 PSI minimum tensile strength; 82,000 PSI minimum yield strength; 215 minimum elongation in 2"; 1011 thickness (uncoated) shall be within the range of 0.248" to 0.264"; Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"; Galvanization per ASTM A123.
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be bolted except where shown. Sign support posts shall not be bolted.

ASSEMBLY PROCEDURE

- Foundation: 1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock. 2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be approved by Engineer. Concrete shall be Class A. 3. Push the pipe end of the slip base into the center of the concrete, rotate the stub and continue with pushing the slip base into the concrete to assure good contact between the concrete and stub. Continue to push the stub into the concrete until it is between 2 to 4 inches above the ground. 4. Place the steel plate on top of the slip base. Tighten the nuts and washers to the specified torque. 5. The triangular slipbase system is multi-directional and is designed to release when struck from any direction.
- Support: 1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of pavement. The cut shall be clean and straight. 2. Attach sign to supporting connections shown. When multiple signs are installed on the support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearance based on sign types.

Texas Department of Transportation  
Traffic Operations Division

**SIGN MOUNTING DETAILS  
SMALL ROADSIDE SIGNS  
TRIANGULAR SLIPBASE SYSTEM**

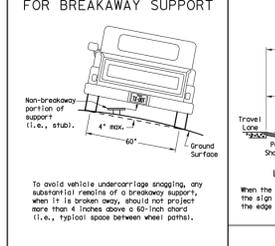
SMD (SLIP-1) - 08

| DATE | REVISION | BY | CHKD | APP'D |
|------|----------|----|------|-------|
| 9-08 | REVISED  |    |      |       |

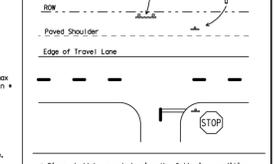
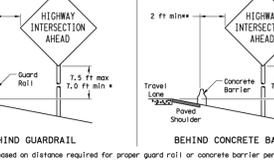
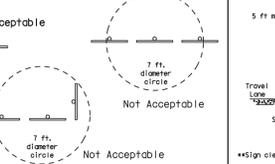
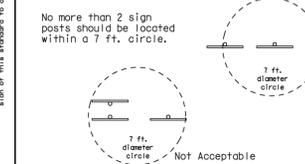
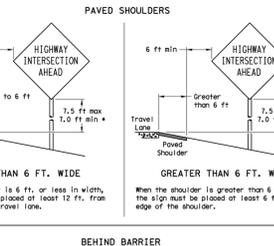
SIGN SUPPORT DESCRIPTIVE CODES

- SM RD SGN ASSM TY XXXX(X)(X-XXXX)
- Post Type:  
FRP - Fiberglass Reinforced Plastic Pipe (see SMD(FRP))  
TW - Thin-Walled Tubing (see SMD(TW))  
1086W - 10 80W Tubing (see SMD(SLIP-1) to (SLIP-3))  
S80 - Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))
- Number of Posts (1 or 2)
- Anchor Type:  
UA - Universal Anchor - Concrete (see SMD(FRP) and (TW))  
UB - Universal Anchor - Bolted steel (see SMD(FRP) and (TW))  
WS - Wedge Anchor Steel (see SMD(TW))  
WA - Wedge Anchor Concrete (see SMD(SLIP-1) to (SLIP-3))  
SA - S-1 (see SMD(SLIP-1) to (SLIP-3))  
SB - S-2 (see SMD(SLIP-1) to (SLIP-3))
- Sign Mounting Designation:  
P - Prefabricated "Post" (see SMD(SLIP-1) to (SLIP-3), (TW), (FRP))  
T - Prefabricated "T" (see SMD(SLIP-1) to (SLIP-3), (TW))  
U - Prefabricated "U" (see SMD(SLIP-1) to (SLIP-3), (TW))  
EXT or EXT - Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TW))  
W - 1.12 4/11 Wing Channel (see SMD(SLIP-1) to (SLIP-3))  
EXL - Extruded Aluminum Sign Panels (see SMD(SLIP-1) to (SLIP-3))

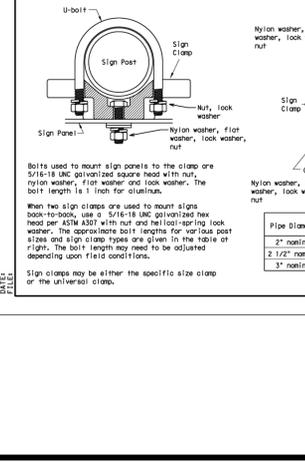
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



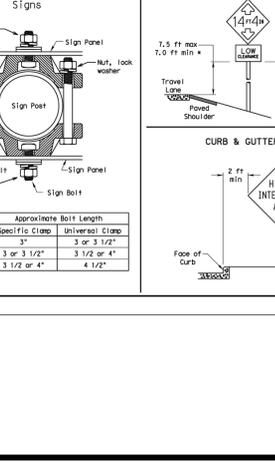
SIGN LOCATION



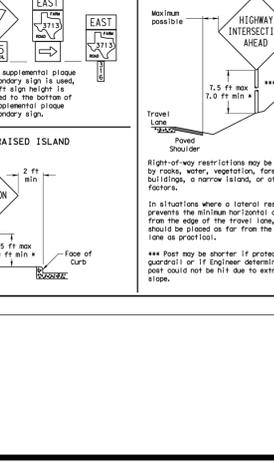
TYPICAL SIGN ATTACHMENT DETAIL



SIGNS WITH PLAQUES



RESTRICTED RIGHT-OF-WAY



SIGN MOUNTING DETAILS

Texas Department of Transportation  
Traffic Operations Division

**SIGN MOUNTING DETAILS  
SMALL ROADSIDE SIGNS  
GENERAL NOTES & DETAILS**

SMD (GEN) - 08

| DATE | REVISION | BY | CHKD | APP'D |
|------|----------|----|------|-------|
| 9-08 | REVISED  |    |      |       |

GENERAL NOTES

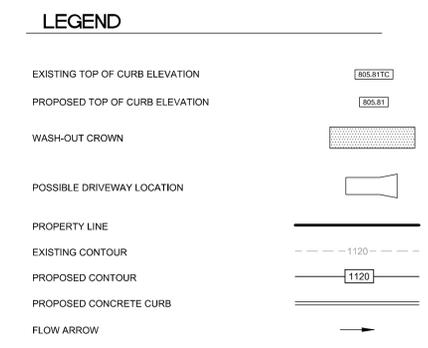
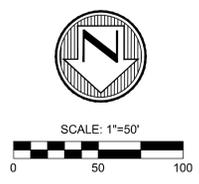
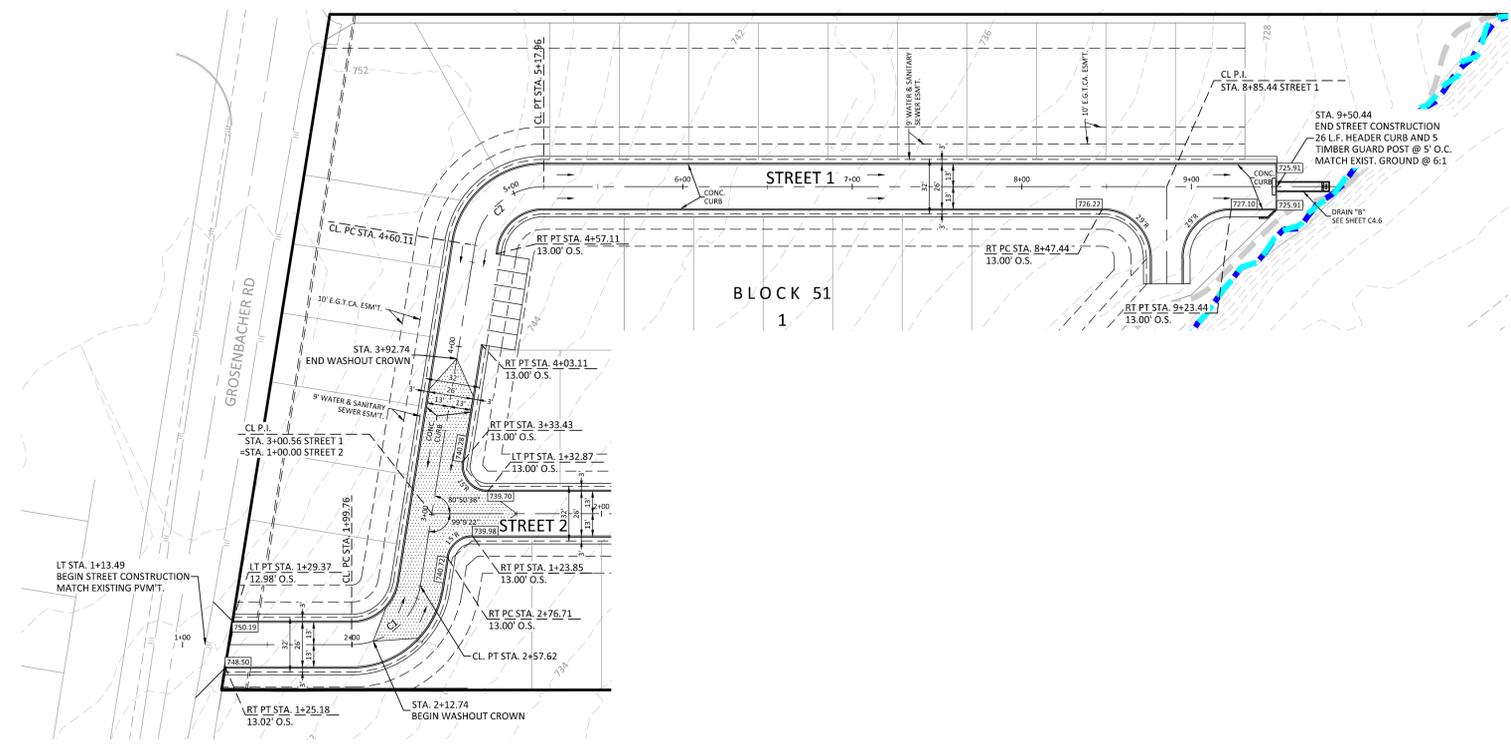
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| SIGN DESCRIPTION         | SUPPORT           |
|--------------------------|-------------------|
| 48-inch STOP sign (R1-1) | TY 1086(1)(XX)(T) |

**CAUTION!!!**  
CONTRACTOR TO VERIFY EXISTING CONDITIONS BEFORE CONSTRUCTION. IF ANY DISCREPANCIES NOTIFY ENGINEER

**BEXAR COUNTY R.O.W. NOTE:**  
BEXAR COUNTY PERMIT REQUIRED FOR STREET TIE-IN & INTERSECTION PAVEMENT REPLACEMENT AND/OR ANY WORK BEING DONE IN BEXAR COUNTY R.O.W.

| CURVE TABLE |        |        |           |         |        |
|-------------|--------|--------|-----------|---------|--------|
| CURVE       | LENGTH | RADIUS | DELTA     | TANGENT | CHORD  |
| C1          | 57.84' | 41.00' | 80°50'08" | 34.92'  | 53.17' |
| C2          | 57.85' | 41.00' | 80°50'38" | 34.92'  | 53.17' |

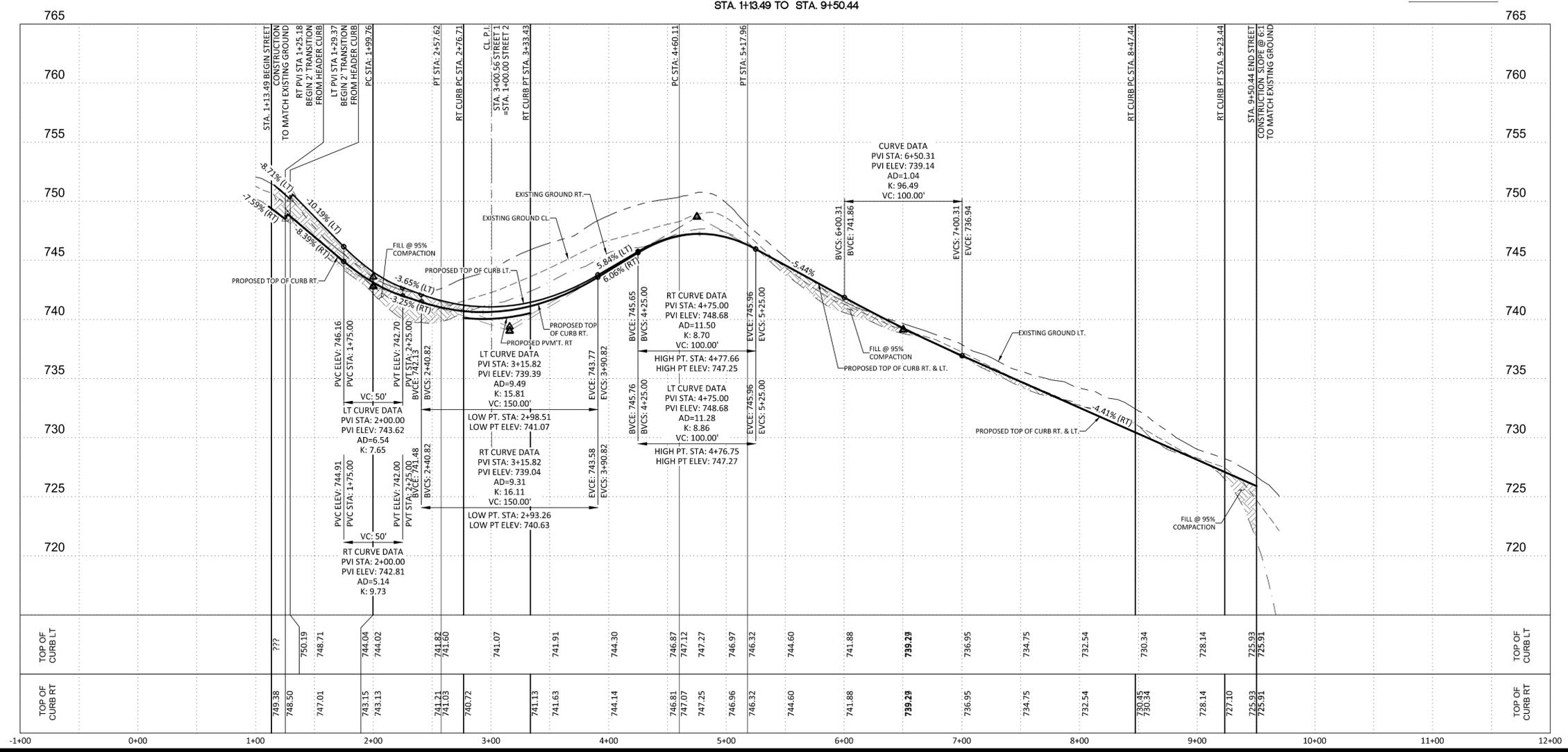


| REVISIONS |  | NO. | DATE | DESCRIPTION |
|-----------|--|-----|------|-------------|
|           |  |     |      |             |

**MTI**  
 Engineers  
 Surveyors  
 Planners  
**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297/SURVEYING F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055

**STREET 1**  
STA. 1+13.49 TO STA. 9+50.44

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

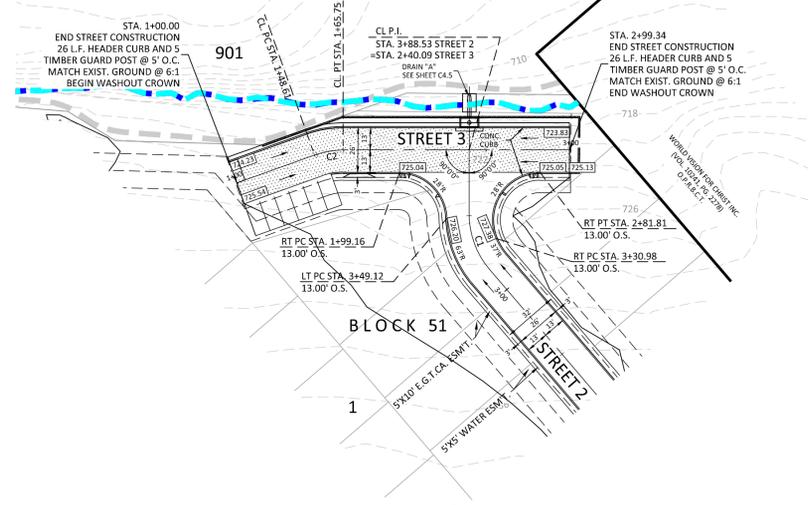
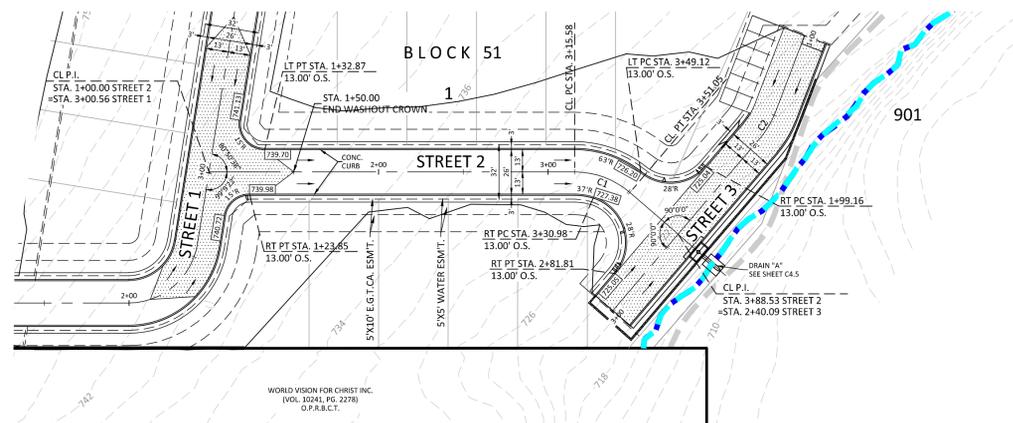
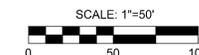


GROSENBACHER RD DUPLEX  
**STREET PLAN & PROFILE**  
 STREET 1  
 STA. 1+13.49 TO STA. 9+50.44

Plot Date: September 11, 2024. User: D. Della Colaba  
 C:\Users\delcolab\OneDrive\Documents\2024\C4.1 Street Plan & Profile.dwg

LEGEND

- EXISTING TOP OF CURB ELEVATION 805.81C
- PROPOSED TOP OF CURB ELEVATION 805.81
- WASH-OUT CROWN
- POSSIBLE DRIVEWAY LOCATION
- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED CONCRETE CURB
- FLOW ARROW



| CURVE TABLE |        |        |           |        |
|-------------|--------|--------|-----------|--------|
| CURVE       | LENGTH | RADIUS | DELTA     | CHORD  |
| C1          | 35.47' | 50.00' | 40°38'34" | 18.52' |
| C2          | 17.14' | 50.00' | 19°38'40" | 8.66'  |

**STREET 2**

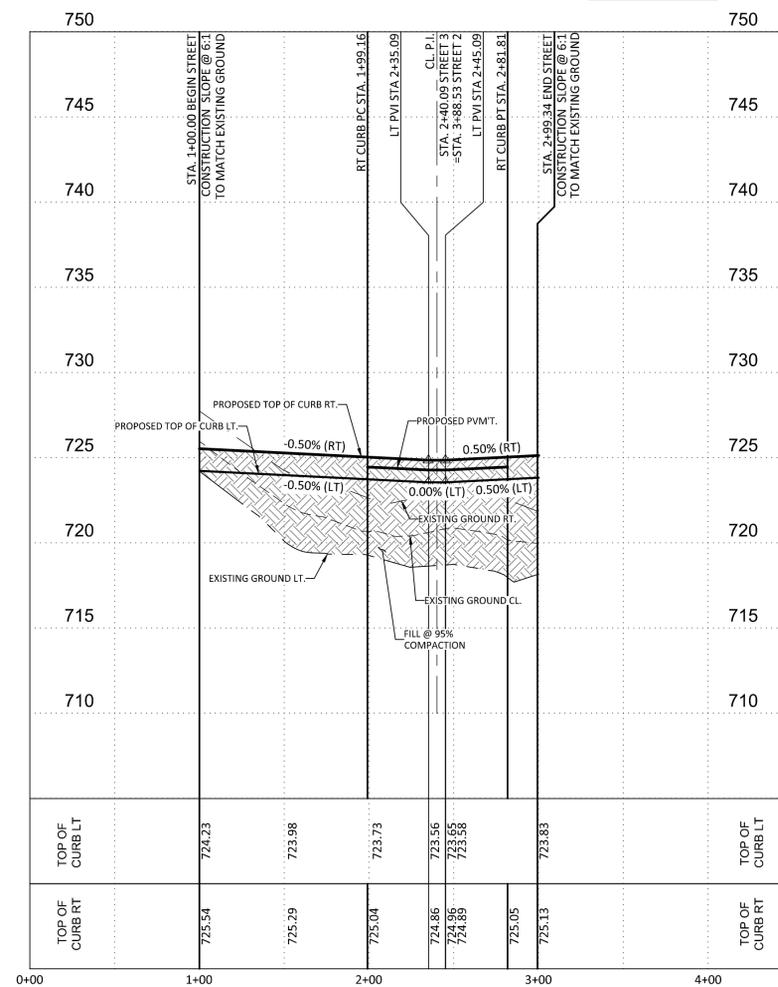
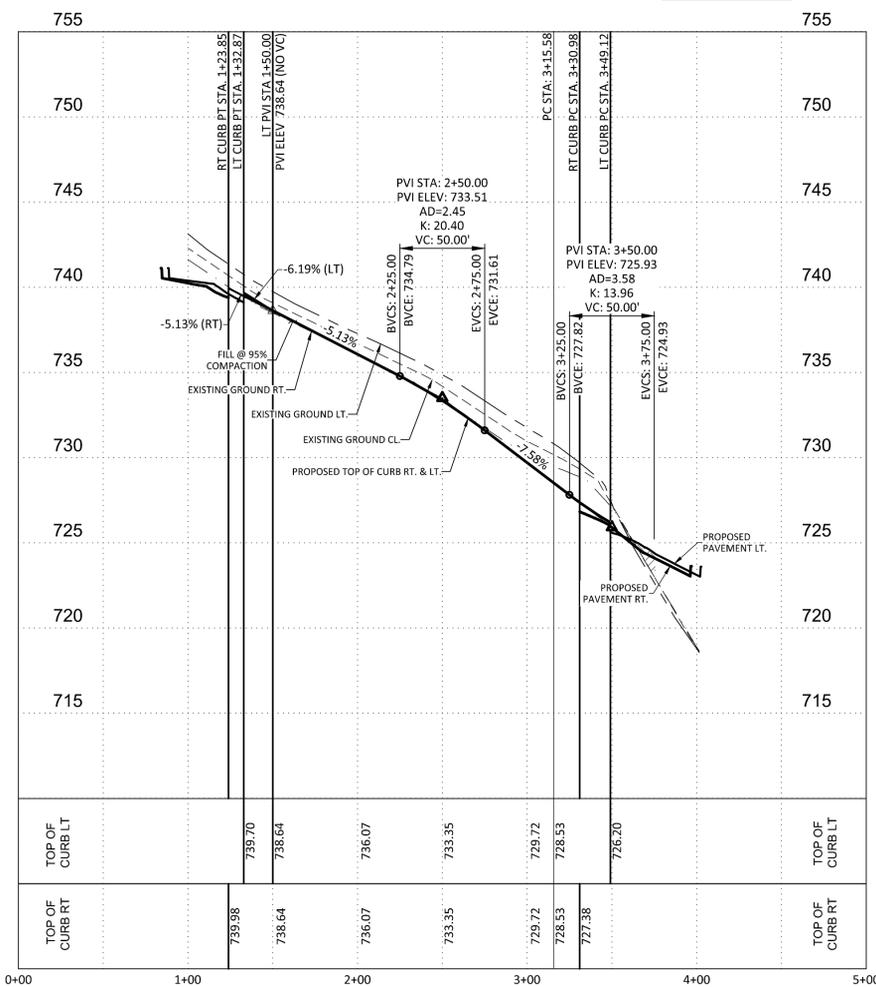
STA. 1+00.00 TO STA. 3+49.12

**STREET 3**

STA. 1+00.00 TO STA. 3+09.50

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'

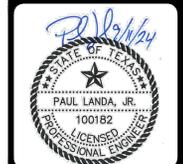


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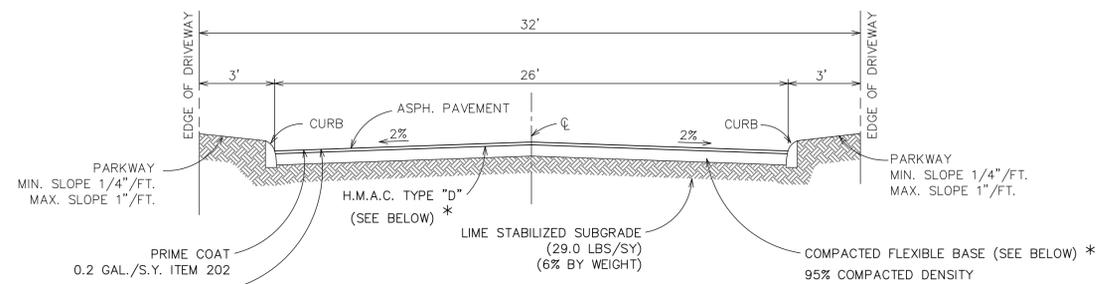
| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |

**MTR**  
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 Planners  
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 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
**STREET PLAN & PROFILE**  
 STREET 2 STREET 3  
 STA. 1+00.00 TO STA. 3+49.12 STA. 1+00.00 TO STA. 3+09.50

Plot Date: September 11, 2024 User: D. Della Colina  
 C:\Users\delcolina\OneDrive\Documents\2024\23-11800489\23-11800489\_C4.2 Street Plan & Profile.dwg Plot: P. 4. 2. 1. 1.dwg



TYPICAL STREET CROSS-SECTION (26' PAVEMENT)

N.T.S.  
 STREET 1 ~ STA. 1+00.00 TO STA. 9+50.44  
 STREET 2 ~ STA. 1+00.00 TO STA. 3+88.53  
 STREET 3 ~ STA. 1+00.00 TO STA. 2+99.34

\* PAVEMENT SECTION TO BE DETERMINED BY ENGINEER AFTER INSPECTION OF SUBGRADE DURING CONSTRUCTION.

\* PAVEMENT SECTIONS

| PAVEMENT MATERIAL                             | CLAY SUBGRADE (CBR 2.5) |
|-----------------------------------------------|-------------------------|
| TYPE D ASPHALTIC CONCRETE                     | 2.0 IN.                 |
| FLEXIBLE BASE (TxDOT ITEM 247 TYPE A GRADE 2) | 10 IN.                  |
| LIME STABILIZED SUBGRADE (33.0 LBS/SY)        | 6.0 IN.                 |

NOTE:  
 THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF LIME OR CEMENT

NOTE:  
 SELECT FILL MATERIAL SHALL HAVE A MAXIMUM PLASTICITY INDEX OF 65 AND A CALIFORNIA BEARING RATIO (CBR) OF AT LEAST 2.5

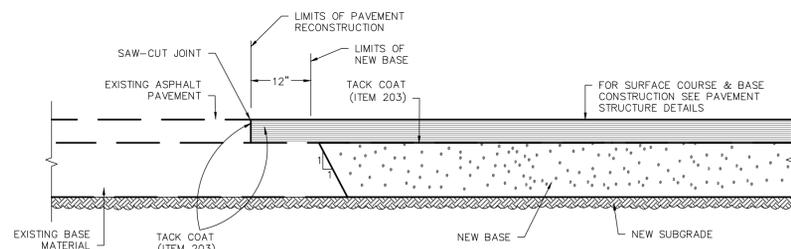
GEOTECHNICAL REPORT:  
 INTEGRATED TESTING AND ENGINEERING COMPANY OF SAN ANTONIO, L.P.  
 SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS  
 PROPOSED NEW STREETS  
 TERRA BUONA, UNITS 4, 5, 6, 7  
 INTEC PROJECT NO. S211129 (MAY 27, 2021)

NOTES:

1. APPLICABLE SPECIFICATIONS FROM "CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION" - JUNE 2008  
 200 - FLEXIBLE BASE  
 202 - PRIME COAT  
 203 - TACK COAT  
 205 - HOT MIX ASPHALT CONCRETE PAVEMENT
2. REFER TO INTEC GEOTECHNICAL REPORTS FOR ADDITIONAL PAVEMENT CONSTRUCTION INFORMATION A. "SUBSURFACE EXPLORATION & PAVEMENT ANALYSIS FOR PROPOSED NEW STREETS - TERRA BUONA, UNITS 4, 5, 6, 7, SAN ANTONIO, TEXAS, DATED MAY 27, 2021.
3. CONTRACTOR TO COORDINATE ALL MATERIAL TESTING

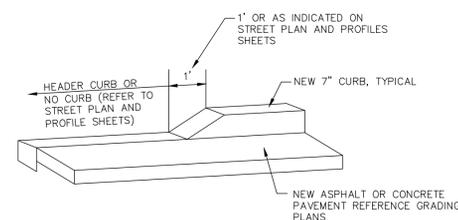
FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
- AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 3/4 INCH SIEVE FROM THE SAMPLE):
  - MINIMUM PASSING 1 1/4 SIEVE 100
  - MINIMUM PASSING 3/4 SIEVE 85
  - MINIMUM PASSING NO. 4 SIEVE 60
- SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD) IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN ±1.0 INCH.



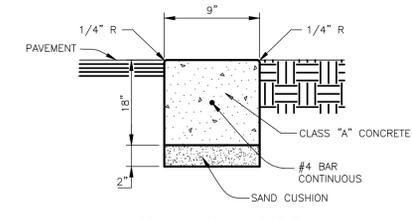
PAVEMENT JUNCTION DETAILS

N.T.S.



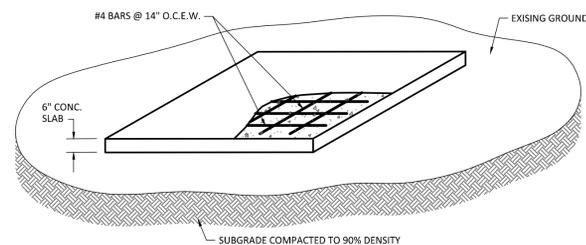
CURB TRANSITION DETAIL

N.T.S.



HEADER CURB

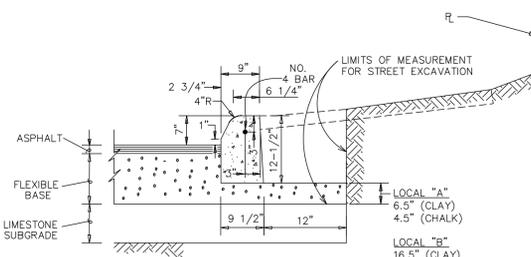
N.T.S.



NOTES:

- 1) THE CONTRACTOR WILL CONSTRUCT CONCRETE SLABS FOR "TEMPORARY MAIL BOX COLLECTION PAD" FOR THE UNITED STATES POSTAL SERVICE AT THE LOCATIONS AND SIZES SPECIFIED BY THE CITY ENGINEER DURING CONSTRUCTION.
- 2) THE CONSTRUCTION OF SLABS SHALL CONFORM TO ITEM NO. 502 "CONCRETE SIDEWALKS AND DRIVEWAYS"
- 3) PAYMENT WILL BE MADE UNDER ITEM NO. 502-2 DRIVEWAYS - PER SQUARE YARD.
- 4) UNIT PRICE WILL INCLUDE REMOVAL OF "TEMPORARY MAIL BOX COLLECTION PAD" SLABS AT THE END OF THE PROJECT. NO SEPARATE PAY ITEM.

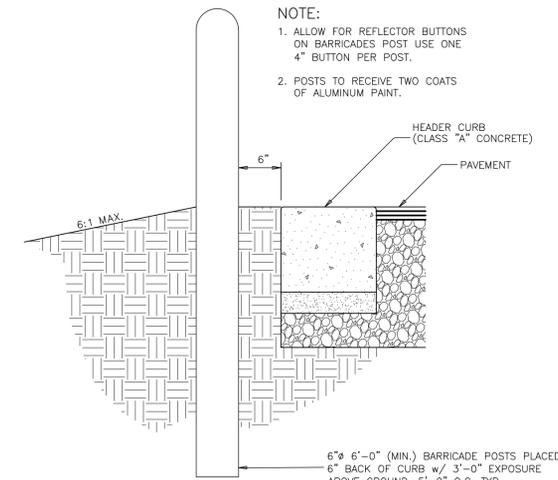
TEMPORARY MAIL BOX COLLECTION PAD



CURB NOTE: THE COST OF BASE MATERIAL UNDER & BEHIND THE CURB SHALL BE INCLUDED IN THE COST OF THE CURB.

MACHINE LAID CURB

N.T.S. ITEM 500

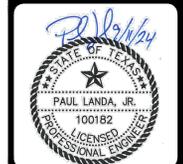


GUARD POST

N.T.S.

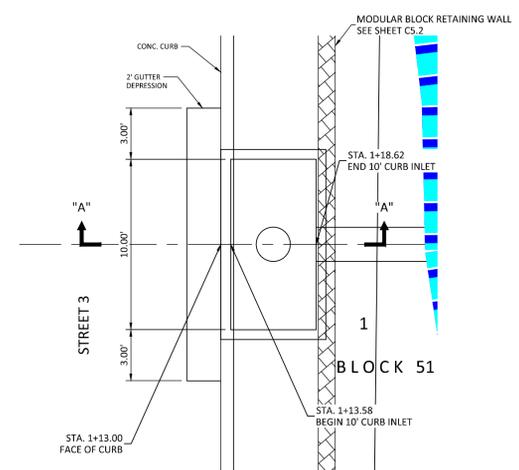
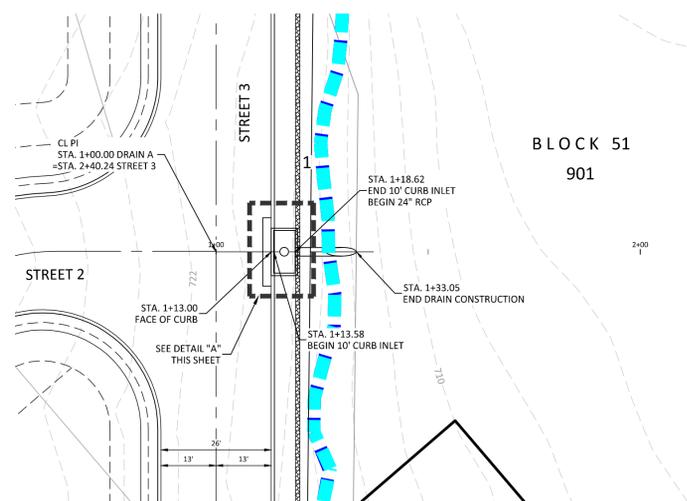
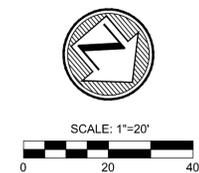
| NO. | DATE | DESCRIPTION | BY |
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**MTI**  
 Engineers  
 Surveyors  
 Planners  
**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297/SURVEYING: F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROENBACHER RD DUPLEX  
 STANDARD STREET DETAILS

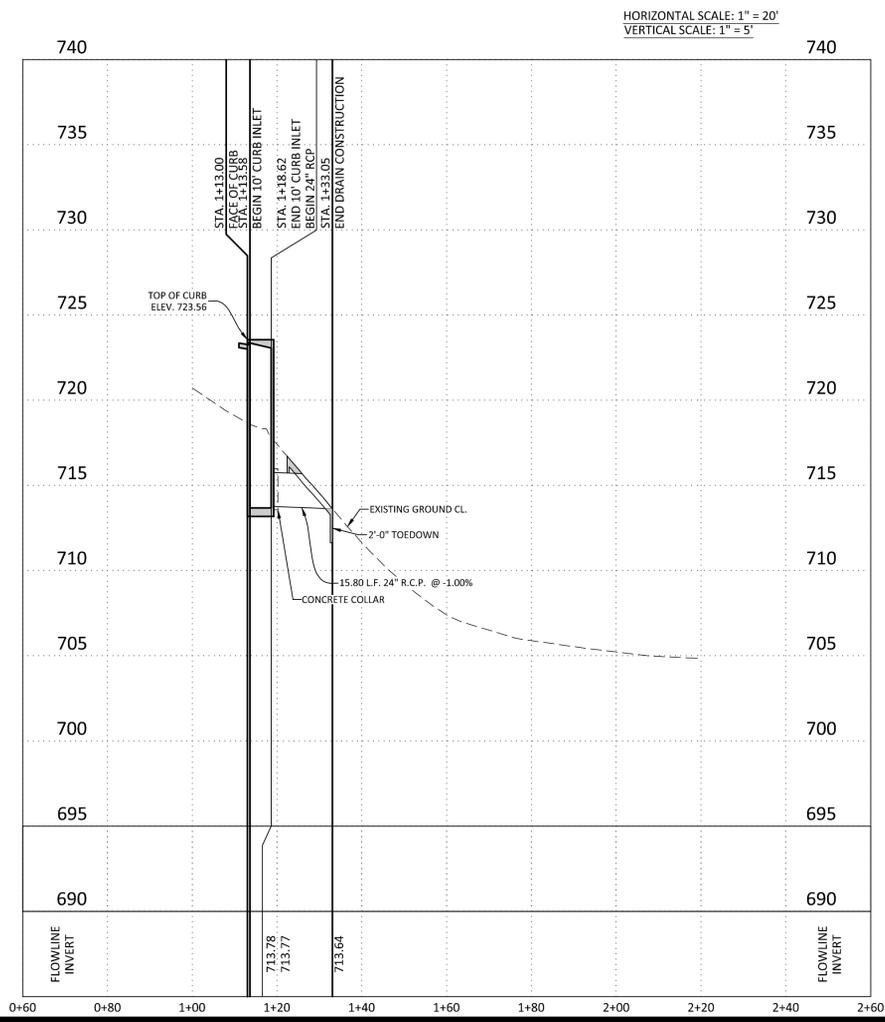




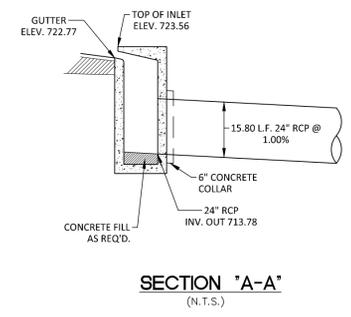
**DETAIL A**  
SCALE: 1" = 5'

- NOTES:**
- COVER FOR REINFORCING STEEL IS 2" UNLESS OTHERWISE NOTED.
  - SEE GENERAL NOTES ON SHEET C4.0 FOR MATERIAL SPECIFICATIONS.
  - MINIMUM BAR DEVELOPMENT LENGTH FOR SPLICE AND BENDS AT WALL AND FLOOR CONNECTIONS SHALL BE 30 INCHES.
  - ALL CONCRETE SHALL RESIST A MINIMUM 3000 PSI 28 DAY BREAK, UNLESS OTHERWISE NOTED.
  - PROVIDE CONCRETE APRONS ON ALL INLETS, REFERENCE DETAILS FOR CONSTRUCTION REQUIREMENTS.
  - 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.
  - ALL STORM PIPE MATERIAL IS CONCRETE REINFORCEMENT PIPE, UNLESS NOTED OTHERWISE.
  - IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA WILL HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE. REFER TO SECTION 16.2.1 OF THE STORM WATER DESIGN CRITERIA MANUAL.

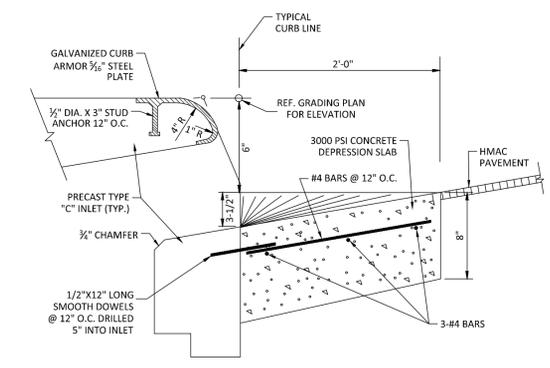
**DRAIN "A"**



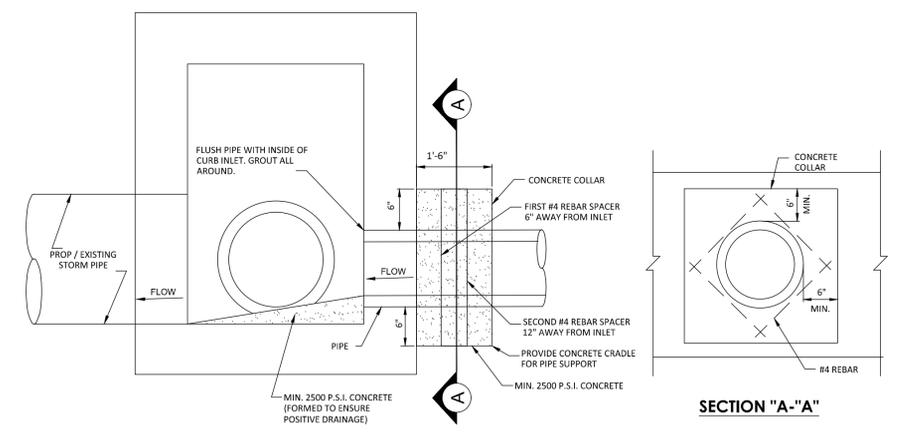
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 5'



**SECTION "A-A"**  
(N.T.S.)



**INLET OPENING DETAIL**  
(N.T.S.)



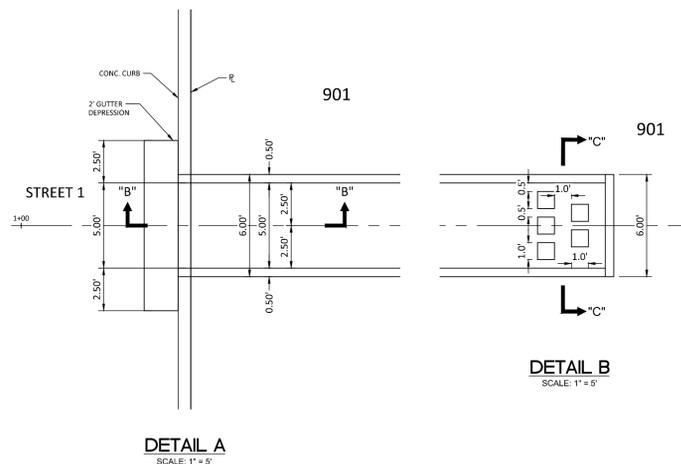
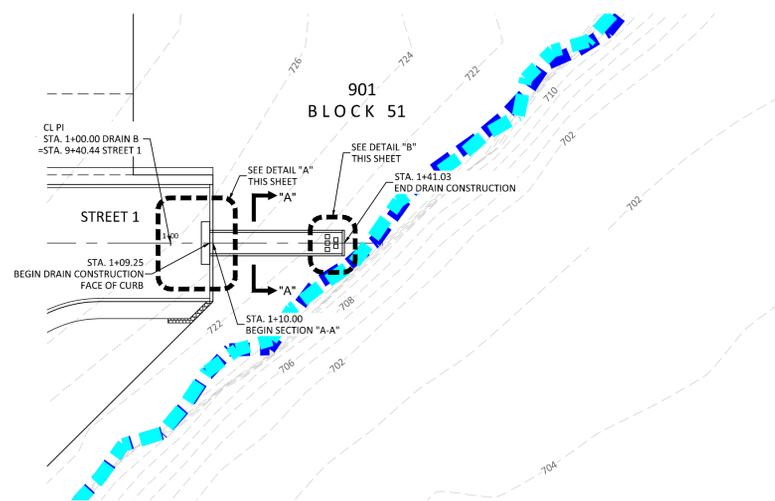
**JUNCTION BOX/INLET CONCRETE COLLAR DETAIL**  
(N.T.S.)

| NO. | DATE | DESCRIPTION | BY |
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|     |      |             |    |
|     |      |             |    |

**MTR**  
 • Engineers  
 • Surveyors  
 • Planners  
**Moy Tarin Ramirez Engineers, LLC**  
 ENGINEERING F-5297 / SURVEYING: F-10131500  
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROENBACHER RD DUPLEX  
**DRAIN PLAN & PROFILE**  
**DRAIN "A"**



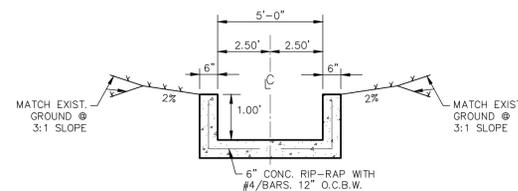
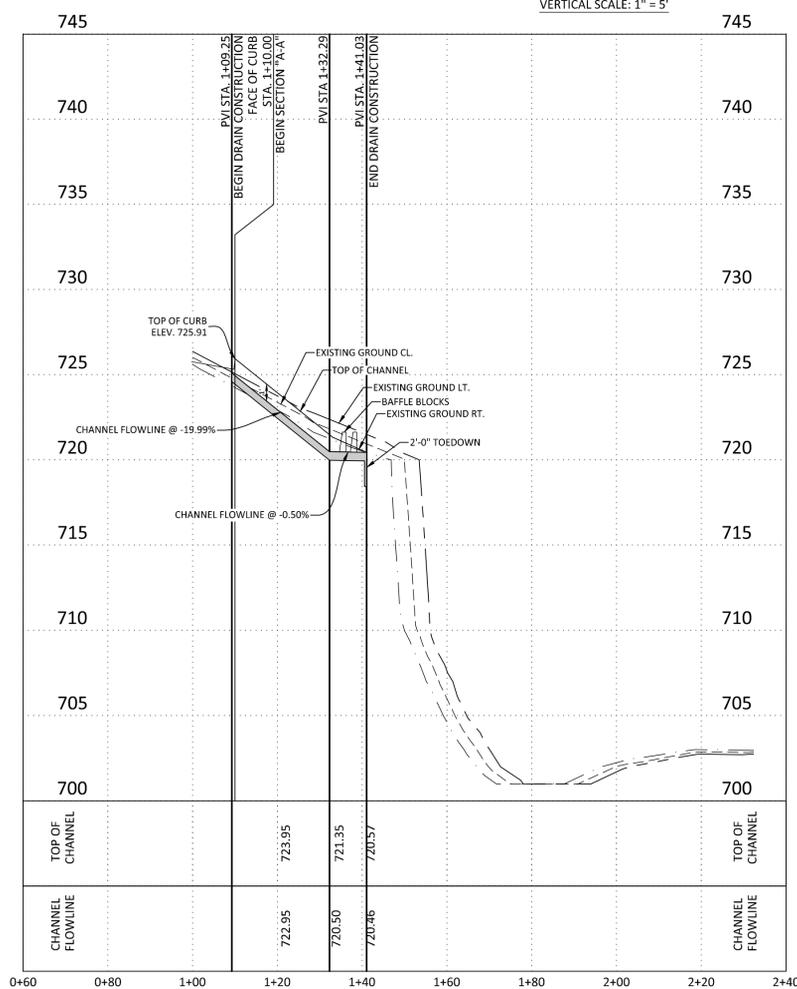
**NOTES:**

1. COVER FOR REINFORCING STEEL IS 2" UNLESS OTHERWISE NOTED.
2. SEE GENERAL NOTES ON SHEET C4.0 FOR MATERIAL SPECIFICATIONS.
3. MINIMUM BAR DEVELOPMENT LENGTH FOR SPLICE AND BENDS AT WALL AND FLOOR CONNECTIONS SHALL BE 30 INCHES.
4. ALL CONCRETE SHALL RESIST A MINIMUM 3000 PSI 28 DAY BREAK, UNLESS OTHERWISE NOTED.
5. PROVIDE CONCRETE APRONS ON ALL INLETS, REFERENCE DETAILS FOR CONSTRUCTION REQUIREMENTS.
6. 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.
7. ALL STORM PIPE MATERIAL IS CONCRETE REINFORCEMENT PIPE, UNLESS NOTED OTHERWISE.
8. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE CHANNEL SURFACE AREA WILL HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE. REFER TO SECTION 16.2.1 OF THE STORM WATER DESIGN CRITERIA MANUAL.

**DRAIN "B"**

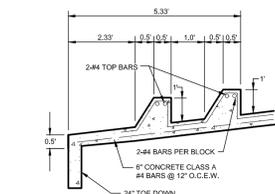
STA. 1+09.25 TO STA. 1+41.03

HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 5'



**SECTION "A-A"**

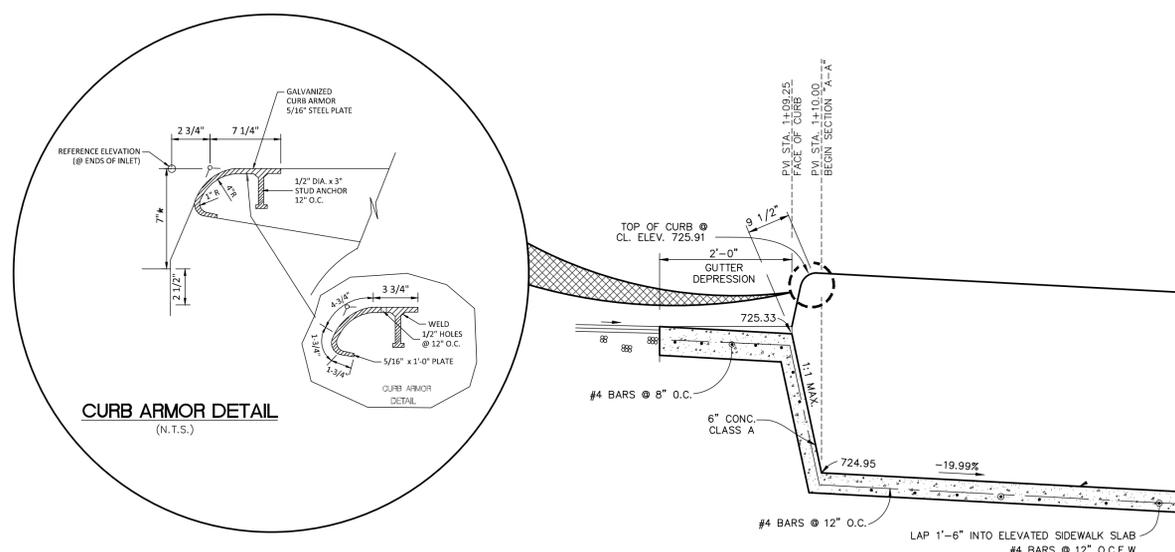
(N.T.S.)  
STA. 1+10.00 TO STA. 1+41.03



**BAFFLE BLOCK DETAIL**

**SECTION C-C**

(N.T.S.)

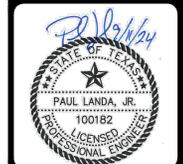


**SECTION "B-B"**

(N.T.S.)

| NO. | DATE | DESCRIPTION | BY |
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|     |      |             |    |

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 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROENBACHER RD DUPLEX  
 DRAIN PLAN & PROFILE  
 DRAIN "B"  
 STA. 1+09.25 TO STA. 1+41.03

Plot Date: September 11, 2024. User: D. Della Colina  
 C:\Users\delcolina\OneDrive\Documents\2024\Grosenbacher Rd Duplex\Drawings\2024\Grosenbacher Rd Duplex - Profile.dwg

### REINFORCING STEEL

| LOWER UNIT 10' X 3'-0" (TYPE I) |      |       |        | LOWER UNIT 10' X 5'-0" (TYPE II) |      |       |        |
|---------------------------------|------|-------|--------|----------------------------------|------|-------|--------|
| BAR NO.                         | SIZE | SPAC. | LENGTH | BAR NO.                          | SIZE | SPAC. | LENGTH |
| A                               | #4   | 12"   | 10'-0" | A                                | #4   | 12"   | 10'-0" |
| B                               | #4   | 12"   | 10'-0" | B                                | #4   | 12"   | 10'-0" |
| C                               | #4   | 12"   | 10'-0" | C                                | #4   | 12"   | 10'-0" |
| D                               | #4   | 12"   | 10'-0" | D                                | #4   | 12"   | 10'-0" |
| E                               | #4   | 12"   | 10'-0" | E                                | #4   | 12"   | 10'-0" |
| F                               | #4   | 12"   | 10'-0" | F                                | #4   | 12"   | 10'-0" |
| G                               | #4   | 12"   | 10'-0" | G                                | #4   | 12"   | 10'-0" |
| H                               | #4   | 12"   | 10'-0" | H                                | #4   | 12"   | 10'-0" |
| I                               | #4   | 12"   | 10'-0" | I                                | #4   | 12"   | 10'-0" |
| J                               | #4   | 12"   | 10'-0" | J                                | #4   | 12"   | 10'-0" |
| K                               | #4   | 12"   | 10'-0" | K                                | #4   | 12"   | 10'-0" |
| L                               | #4   | 12"   | 10'-0" | L                                | #4   | 12"   | 10'-0" |
| M                               | #4   | 12"   | 10'-0" | M                                | #4   | 12"   | 10'-0" |
| N                               | #4   | 12"   | 10'-0" | N                                | #4   | 12"   | 10'-0" |
| O                               | #4   | 12"   | 10'-0" | O                                | #4   | 12"   | 10'-0" |
| P                               | #4   | 12"   | 10'-0" | P                                | #4   | 12"   | 10'-0" |
| Q                               | #4   | 12"   | 10'-0" | Q                                | #4   | 12"   | 10'-0" |
| R                               | #4   | 12"   | 10'-0" | R                                | #4   | 12"   | 10'-0" |
| S                               | #4   | 12"   | 10'-0" | S                                | #4   | 12"   | 10'-0" |
| T                               | #4   | 12"   | 10'-0" | T                                | #4   | 12"   | 10'-0" |
| U                               | #4   | 12"   | 10'-0" | U                                | #4   | 12"   | 10'-0" |
| V                               | #4   | 12"   | 10'-0" | V                                | #4   | 12"   | 10'-0" |
| W                               | #4   | 12"   | 10'-0" | W                                | #4   | 12"   | 10'-0" |
| X                               | #4   | 12"   | 10'-0" | X                                | #4   | 12"   | 10'-0" |
| Y                               | #4   | 12"   | 10'-0" | Y                                | #4   | 12"   | 10'-0" |
| Z                               | #4   | 12"   | 10'-0" | Z                                | #4   | 12"   | 10'-0" |

### GENERAL NOTES

- IF INLETS AND EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST "ROAD CURE INLET TYPE I AND II" AND "ROAD CURE INLET TYPE II".
- THIS CURB INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
- QUANTITIES SHOWN ARE FOR CONCRETE QUANTITIES ONLY.
- CONCRETE FOR STRUCTURES SHALL BE CLASS "A" 3000 P.S.I. IN CLASS.
- ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2" FROM BOTTOM SURFACE UNLESS OTHERWISE SPECIFIED.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-618 GRADE 60 REQUIREMENTS.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- DEPRESSION SLAB SHALL RECEIVE A WOOD FLIGHT FINISH.
- FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
- ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
- FINISH FOR ALL EXPOSED SURFACES SHALL BE CONCRETE FINISH WITH GALVANIZED CURB ANCHOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 413 FROM STREET JUNCTION BOXES AND INLETS.
- CUT IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE EXCEPT FOR VERTICAL CURB INLET IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
- GALVANIZED BARS WITH WELDED PLATES AND ANCHORS ARE SUBORDINATE TO INLETS.
- THE CONTRACTOR SHALL PROVIDE AN ANCHOR MEANS TO LIFT AND PLACE THE INLETS WHEN USING PRECAST INLETS.
- ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BENT.
- ALL LOWER UNITS SHALL RECEIVE IMPACT MORTAR FINISHING.
- PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 2" BEYOND THE OUTER SKIN OF THE INLET WALLS AND ACCORD TO THE SLOPE OF THE PIPE AS NECESSARY. CONNECTION JOINT MAY BE FINISHED A MAXIMUM OF 1/2".

### PHASE CONSTRUCTION

- THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH 2" BELOW THE INLET AND EXTENSION OUTER LINE ELEVATION.
- CUT THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
- AFTER THE ROADWAY IS COMPLETED BUT PRIOR TO THE FINAL FINISH CONCRETE SAW CUT THE FINISH GRADE OF THE PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND CURB EXTENSION.

### CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

MAY 2009  
CITY OF SAN ANTONIO  
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT  
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS  
SHEET 1 OF 3

### REINFORCING STEEL (FOR Hu = 11")

| UPPER UNIT 10' X 3'-0" (TYPE I) |      |       |        | UPPER UNIT 10' X 5'-0" (TYPE II) |      |       |        |
|---------------------------------|------|-------|--------|----------------------------------|------|-------|--------|
| BAR NO.                         | SIZE | SPAC. | LENGTH | BAR NO.                          | SIZE | SPAC. | LENGTH |
| A                               | #4   | 12"   | 10'-0" | A                                | #4   | 12"   | 10'-0" |
| B                               | #4   | 12"   | 10'-0" | B                                | #4   | 12"   | 10'-0" |
| C                               | #4   | 12"   | 10'-0" | C                                | #4   | 12"   | 10'-0" |
| D                               | #4   | 12"   | 10'-0" | D                                | #4   | 12"   | 10'-0" |
| E                               | #4   | 12"   | 10'-0" | E                                | #4   | 12"   | 10'-0" |
| F                               | #4   | 12"   | 10'-0" | F                                | #4   | 12"   | 10'-0" |
| G                               | #4   | 12"   | 10'-0" | G                                | #4   | 12"   | 10'-0" |
| H                               | #4   | 12"   | 10'-0" | H                                | #4   | 12"   | 10'-0" |
| I                               | #4   | 12"   | 10'-0" | I                                | #4   | 12"   | 10'-0" |
| J                               | #4   | 12"   | 10'-0" | J                                | #4   | 12"   | 10'-0" |
| K                               | #4   | 12"   | 10'-0" | K                                | #4   | 12"   | 10'-0" |
| L                               | #4   | 12"   | 10'-0" | L                                | #4   | 12"   | 10'-0" |
| M                               | #4   | 12"   | 10'-0" | M                                | #4   | 12"   | 10'-0" |
| N                               | #4   | 12"   | 10'-0" | N                                | #4   | 12"   | 10'-0" |
| O                               | #4   | 12"   | 10'-0" | O                                | #4   | 12"   | 10'-0" |
| P                               | #4   | 12"   | 10'-0" | P                                | #4   | 12"   | 10'-0" |
| Q                               | #4   | 12"   | 10'-0" | Q                                | #4   | 12"   | 10'-0" |
| R                               | #4   | 12"   | 10'-0" | R                                | #4   | 12"   | 10'-0" |
| S                               | #4   | 12"   | 10'-0" | S                                | #4   | 12"   | 10'-0" |
| T                               | #4   | 12"   | 10'-0" | T                                | #4   | 12"   | 10'-0" |
| U                               | #4   | 12"   | 10'-0" | U                                | #4   | 12"   | 10'-0" |
| V                               | #4   | 12"   | 10'-0" | V                                | #4   | 12"   | 10'-0" |
| W                               | #4   | 12"   | 10'-0" | W                                | #4   | 12"   | 10'-0" |
| X                               | #4   | 12"   | 10'-0" | X                                | #4   | 12"   | 10'-0" |
| Y                               | #4   | 12"   | 10'-0" | Y                                | #4   | 12"   | 10'-0" |
| Z                               | #4   | 12"   | 10'-0" | Z                                | #4   | 12"   | 10'-0" |

### CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

| DEPRESSION SLAB | C.Y. | UPPER UNIT (ONLY)      | C.Y. |
|-----------------|------|------------------------|------|
| 10' INLET       | 0.7  | 10' X 3'-0" CURB INLET | 1.9  |
| 10' EXTENSION   | 0.7  | 10' X 5'-0" CURB INLET | 2.7  |
|                 |      | 10' EXTENSION          | 1.9  |

### MANHOLE LID & RING DETAIL (ITEM 409)

- FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, SEE "SAN ANTONIO PUBLIC WORKS DEPT."
- LOAD BEARING CAPABILITY OF 15-20 MINIMUM.
- THE LOAD BEARING SURFACES SHALL BE MACHINE GRINDING.
- THE COMBED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 200 LBS.

### CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

MAY 2009  
CITY OF SAN ANTONIO  
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT  
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS  
SHEET 2 OF 3

### UPPER UNIT

### LOWER UNIT

### INLET BOLTING DETAILS

### INLET BOLTING DETAILS SHOWING CURB INLET TO EXTENSION

### PLATES

### SECTION A-A CURB INLET EXTENSION TYPE E

### TYPE "C" INLET WITH INLET EXTENSION BOXES

### GENERAL NOTES

- WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSIONS SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
- FOR CURB INLET EXTENSION REINFORCING STEEL NOTES A THROUGH OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET REFER TO SHEETS 1 & 2.

MAY 2009  
CITY OF SAN ANTONIO  
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT  
TYPE "C" INLET (TYPE I & II) & INLET EXTENSION STANDARDS  
SHEET 3 OF 3

- CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
- ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
- REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM, A-15. THE DEFORMATION SHALL CONFORM TO ASTM, A-305.
- ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
- WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
- INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).

### CONCRETE COLLAR DETAIL (NOT TO SCALE)

### PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY

JANUARY 2006  
STANDARD PLANS  
CITY OF SAN ANTONIO, TEXAS  
DEVELOPMENT SERVICES  
CONCRETE COLLAR DETAIL

DRAWN BY: [ ] DATE: [ ] REVISIONS: [ ] SCALE: SEE ABOVE  
CHECKED BY: [ ] DATE: 19 JANUARY 2006  
DESIGNED BY: [ ] DATE: [ ] SHEET: 1 OF 1

BY: [ ] DATE: [ ]  
DESCRIPTION: [ ]  
NO. [ ] DATE: [ ]  
NO. [ ] DATE: [ ]

Engineers  
Surveyors  
Planners

**MTR**  
Moy Tarin Ramirez Engineers, LLC  
TELE: ENGINEERING F-5297/SURVEYING F-10131500  
12770 CHAMBERLAIN PATH, SUITE 100 TEL: (210) 698-5051  
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055

STATE OF TEXAS  
PAUL LANDAU, JR.  
100152  
LICENSED PROFESSIONAL ENGINEER

GROENBACHER RD DUPLEX  
DRAIN PLAN & PROFILE  
DRAIN DETAILS

SHEET  
C4.7

SUBMITTAL SET

GENERAL SPECIFICATIONS FOR SITE PREPARATION

1. GENERAL DESCRIPTION

THIS ITEM SHALL CONSIST OF ALL CLEARING AND GRUBBING, DEMOLITION, PREPARATION OF LAND TO BE FILLED, FILLING OF THE LAND, SPREADING, COMPACTION TESTING AND INSPECTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE AREA AND TO CONFORM WITH THE LINES, GRADES AND SLOPES AS SHOWN ON THE APPROVED PLANS.

ALL LOT GRADING MUST MEET REQUIREMENTS OF FHWA/HUD HANDBOOK 4140.3, SPECIFICATIONS FOR LAND DEVELOPMENTS ON CONTROLLED EARTHWORK, DATASHEET 79g, HUD 79g REQUIREMENTS FOR FILL MATERIAL OF 6 INCHES AND MORE WILL BE CONDUCTED. ALL CUT AREAS WILL ALSO MEET THE REQUIREMENTS FOR HUD 79g COMPACTION TESTING. IN ADDITION, ENGINEERS MUST PROVIDE VERIFICATION OF ALL AREAS WHICH DO NOT REQUIRE HUD 79g.

2. CLEARING THE AREA TO BE FILLED

ALL TIMBER, LOGS, TREES, BRUSH AND RUBBISH SHALL BE REMOVED FROM THE SITE.

3. SCARIFYING THE AREA TO BE FILLED

ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND THE SURFACE SHALL THEN BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"). ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING. WHERE FILLS ARE MADE ON HILLSIDES OR SLOPES, THE SLOPE OF THE ORIGINAL GROUND UPON WHICH THE FILL IS TO BE PLACED SHALL BE DISKED OR SCARIFIED. WHERE THE SLOPE RATIO OF THE ORIGINAL GROUND IS STEEPER THAN 5 HORIZONTAL TO 1 VERTICAL, THE BANK SHALL BE STEPPED OR BENCHED. GROUND SLOPES WHICH ARE FLATTER THAN 5 TO 1 SHALL BE BENCHED WHEN CONSIDERED NECESSARY BY THE GEOTECHNICAL ENGINEER.

4. COMPACTING THE AREA TO BE FILLED

FOLLOWING THE CLEARING AND DISKING OR SCARIFYING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLOUDS. THE AREA SHALL BE BROUGHT TO THE ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT THD--TEX--113--E COMPACTION PROCEDURE.

5. FILL MATERIALS

THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH, AND SHALL NOT CONTAIN ROCKS OR LUMPS HAVING A DIAMETER OF MORE THAN SIX INCHES (6").

6. DEPTH AND MIXING OF FILL LAYERS

THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO THAT STIPULATED ABOVE. EACH LAYER SHALL BE THOROUGHLY MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS MAY VARY DEPENDING ON EQUIPMENT OF DEMONSTRATED CAPABILITY. THE MAXIMUM LOOSE DEPTH FOR ANY MATERIAL SHALL NOT EXCEED TWELVE INCHES (12"). FOR TESTING REQUIREMENTS OF FILL MATERIAL, SEE DENSITY TESTING.

7. ROCK

WHEN FILL MATERIAL INCLUDES ROCK, THE MAXIMUM ROCK SIZE SHALL BE AS APPROVED BY THE GEOTECHNICAL ENGINEER. NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE FILLED WITH SMALL STONES OR SOIL AND ADEQUATELY COMPACTED. NO LARGE ROCKS WILL BE PERMITTED WITHIN EIGHTEEN INCHES (18") OF THE FINISHED GRADE.

8. COMPACTION OF FILL LAYER

THE COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTION SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

9. COMPACTION OF SLOPES

THE FACES OF FILL SLOPES SHALL BE COMPACTED. COMPACTION OPERATIONS SHALL BE CONTINUED UNTIL THE SLOPE FACES ARE STABLE BUT NOT TOO DENSE FOR PLANTING ON THE SLOPES. COMPACTION OF THE SLOPE FACES MAY BE DONE PROGRESSIVELY IN INCREMENTS OF THREE TO FIVE FEET (3' TO 5') IN FILL HEIGHT AS THIS FILL PROGRESSES OR AFTER THE FILL HAS BEEN BROUGHT TO ITS TOTAL HEIGHT.

10. MOISTURE CONTENT

THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOIL BEING USED. APPROPRIATE MOISTURE CONTENT IS DEFINED, TYPICALLY, AS OPTIMUM MOISTURE CONTENT; HOWEVER, FOR EXPANSIVE SOILS IT MAY BE GREATER THAN OPTIMUM MOISTURE CONTENT, AND OTHER MOISTURE CONTENTS MAY BE NECESSARY TO PRODUCE THE DESIRED RESULTS WITH CERTAIN SOILS.

11. DENSITY TESTS

FIELD DENSITY TESTS SHALL BE PERFORMED ON LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE TWELVE INCHES (12") AND AS SPECIFIED BY GEOTECHNICAL ENGINEER. ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. NOTIFICATION BY THE CONTRACTOR FOR GEOTECHNICAL ENGINEER TO CONDUCT TESTS SHALL BE AT LEAST THE DAY BEFORE. THIS NOTIFICATION SHALL INCLUDE THE FILL AREA LOCATION (LOT AND BLOCK), THE LIFT OR HEIGHT OF FILL, AND APPROXIMATE DESIRED TIME OF TESTING. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED AND RETESTED AT THE EXPENSE OF THE CONTRACTOR UNLESS THE CONTRACTOR CAN SHOW EVIDENCE THAT CIRCUMSTANCES BEYOND HIS CONTROL REQUIRED THE RETESTING. GENERALLY, THE SPECIFIC TESTING WILL BE AS FOLLOWS AND CONDUCTED BY GEOTECHNICAL ENGINEER.

1. THE LAND TO BE FILLED (PREPARED SUBGRADE) SHALL BE PREPARED AND TESTED AT A FREQUENCY AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
2. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 6" TO 12-IN) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
3. FILLS SHALL BE TESTED A MAXIMUM OF EACH TWELVE INCHES (12") AND AS SPECIFIED BY GEOTECHNICAL ENGINEER, OF FILL.
4. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR WHEN POSSIBLE. HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL TEST RESULTS.

12. CUT/FILL LOTS

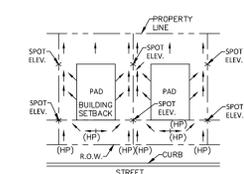
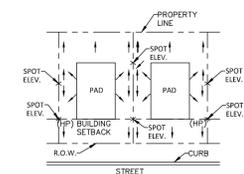
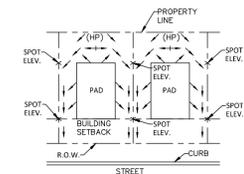
AREAS INVOLVING CUT ON ONE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6-IN. AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. A MINIMUM OF TWO (2) FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES.

NOTES:

- MINIMUM SLAB EXPOSURE IS 1.0'.
- ALL ELEVATIONS AT FRONT PROPERTY LINE ARE 0.18' ABOVE CURB ELEVATION.
- CONTRACTOR TO VERIFY 1.5% MINIMUM SLOPE ON LOTS AND REGRADE TO MEET MINIMUM PROPOSED ELEVATIONS IF NECESSARY.
- CONTRACTOR TO CLEAR ALL RIGHT OF WAY, EASEMENTS AND PRESERVE ANY TREE 10" AND LARGER OUTSIDE OF THESE AREAS.

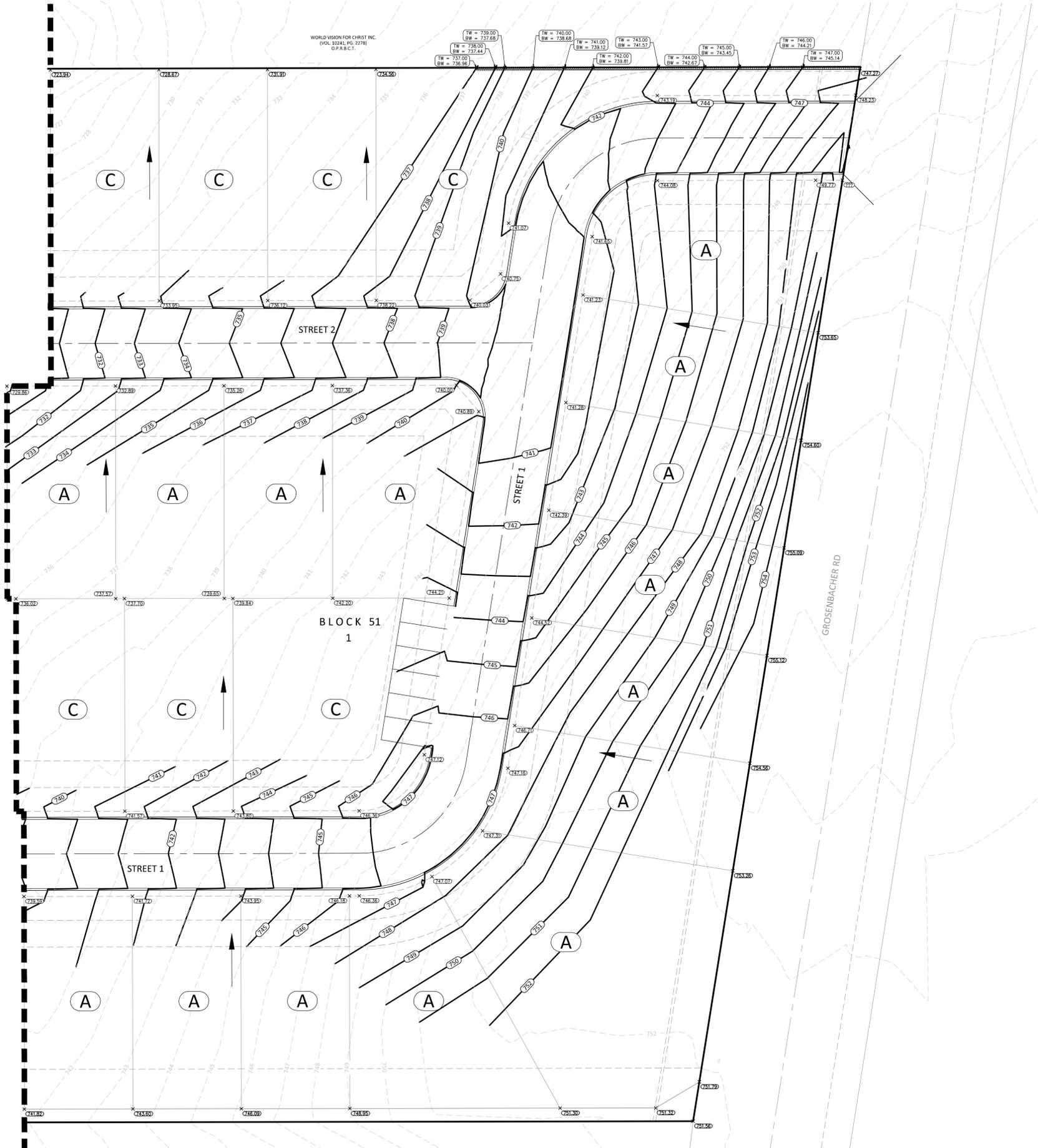


SCALE: 1"=20'  
0 20 40



- LEGEND
- A = DRAINAGE TO FRONT OF LOT
  - B = DRAINAGE TO BOTH FRONT AND REAR LOT
  - C = DRAINAGE TO REAR OF LOT
  - [Hatched Box] = CLEARING AND/OR GRADING OF UTILITY EASEMENTS
  - x 1024.00 = PROPOSED ELEVATION
  - x 1024.00E = EXISTING ELEVATION
  - - - 1024 = EXISTING CONTOUR
  - - - 1024 = PROPOSED CONTOUR
  - = PROPERTY LINE
  - = FLOW DIRECTION
  - TW = TOP OF WALL
  - BW = BOTTOM OF WALL

MATCHLINE "A" SEE SHEET C5.1



WORLD VISION FOR CHRIST INC.  
VOL. 10241, PG. 22781  
O.P.A.B.C.T.

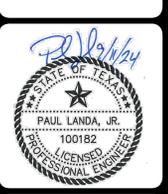
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Engineers  
Surveyors  
Planners

**MIR**

May Tarin Ramirez Engineers, LLC  
12770 CHARLTON PATH, SUITE 100  
SAN ANTONIO, TEXAS 78249  
TEL: (210) 698-5051  
FAX: (210) 898-5051



GROSEBACHER RD DUPLEX  
GRADING AND DRAINAGE PLAN

SHEET  
C5.0

SUBMITTAL SET

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1. GENERAL DESCRIPTION

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2. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8 TO 12-IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
3. FILLS SHALL BE TESTED A MAXIMUM OF EACH TWELVE INCHES (12") AND AS SPECIFIED BY GEOTECHNICAL ENGINEER, OF FILL.
4. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR. WHEN POSSIBLE, HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL TEST RESULTS.

12. CUT/FILL LOTS

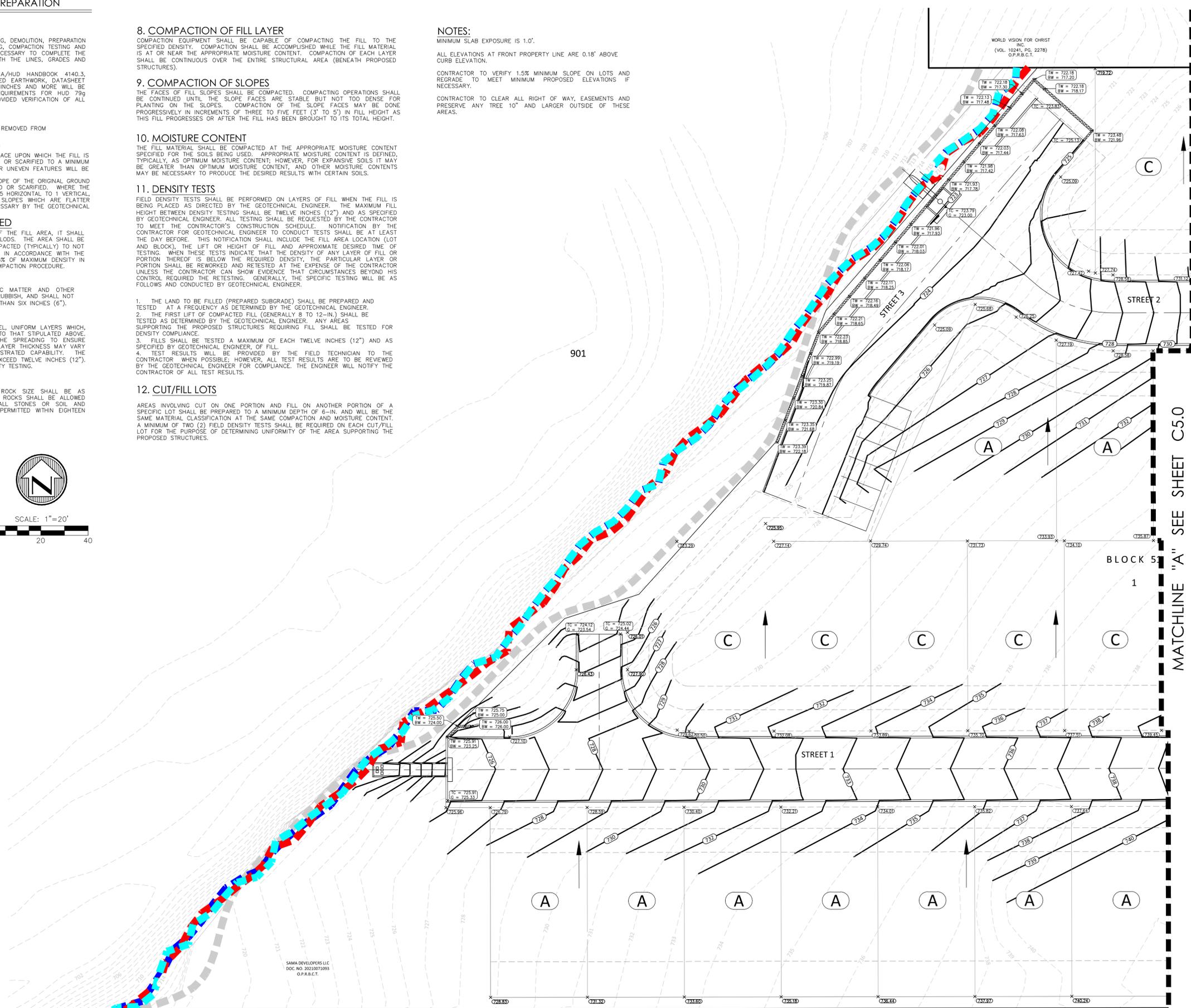
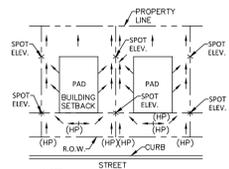
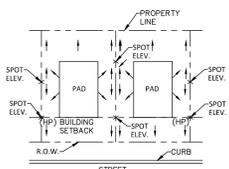
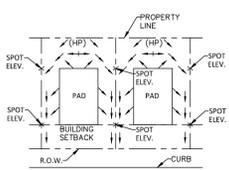
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NOTES:

- MINIMUM SLAB EXPOSURE IS 1.0'.
- ALL ELEVATIONS AT FRONT PROPERTY LINE ARE 0.18' ABOVE CURB ELEVATION.
- CONTRACTOR TO VERIFY 1.5% MINIMUM SLOPE ON LOTS AND REGRADE TO MEET MINIMUM PROPOSED ELEVATIONS IF NECESSARY.
- CONTRACTOR TO CLEAR ALL RIGHT OF WAY, EASEMENTS AND PRESERVE ANY TREE 10" AND LARGER OUTSIDE OF THESE AREAS.

LEGEND

- A = DRAINAGE TO FRONT OF LOT
- B = DRAINAGE TO BOTH FRONT AND REAR LOT
- C = DRAINAGE TO REAR OF LOT
- [Hatched] = CLEARING AND/OR GRADING OF UTILITY EASEMENTS
- X 1024.000 = PROPOSED ELEVATION
- X 1024.00E = EXISTING ELEVATION
- 1024 = EXISTING CONTOUR
- 1023 = PROPOSED CONTOUR
- = PROPERTY LINE
- ← = FLOW DIRECTION
- TW = TOP OF WALL
- BW = BOTTOM OF WALL



MATCHLINE "A" SEE SHEET C5.0

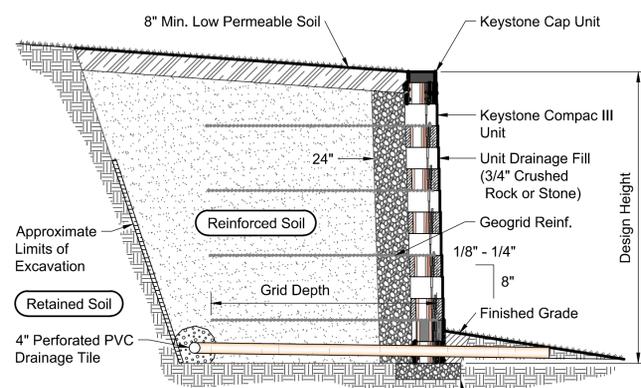
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• Engineers
   
 • Surveyors
   
 • Planners
   
**Moy Tarin Ramirez Engineers, LLC**
  
 TBPELS: ENGINEERING F-5297/SURVEYING: F-10131500
   
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051
   
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



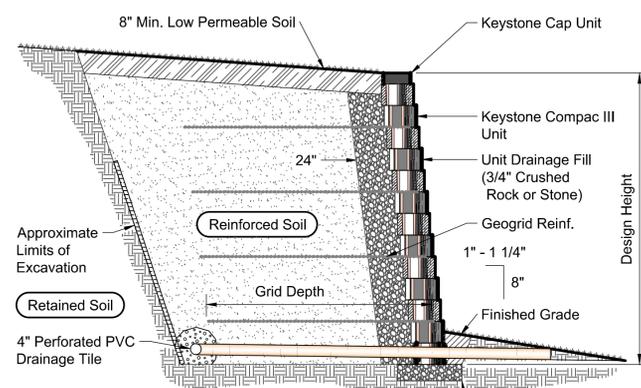
GROSENBACHER RD DUPLEX  
 GRADING AND DRAINAGE PLAN

NOTE:  
MODULAR RETAINING WALL DETAILS SHOWN  
ON THIS DRAWING ARE FOR REFERENCE  
PURPOSES ONLY. MODULAR BLOCK  
MANUFACTURER WILL BE REQUIRED TO SUBMIT  
SHOP DRAWINGS AND ENGINEERED PLAN.



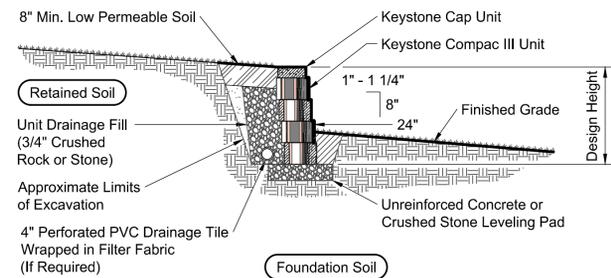
**Note:**  
When site conditions require, wrap drainage tile in 3/4\"/>

**Typical Reinforced Wall Section**  
Compac III Unit - Near Vertical Setback



**Note:**  
When site conditions require, wrap drainage tile in 3/4\"/>

**Typical Reinforced Wall Section**  
Compac III Unit - 1\"/>

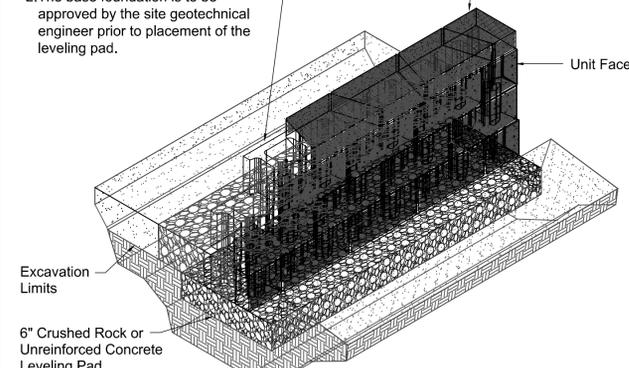


**Typical Gravity Wall Section**  
Compac III Unit - 1\"/>

**Base Leveling Pad Notes:**

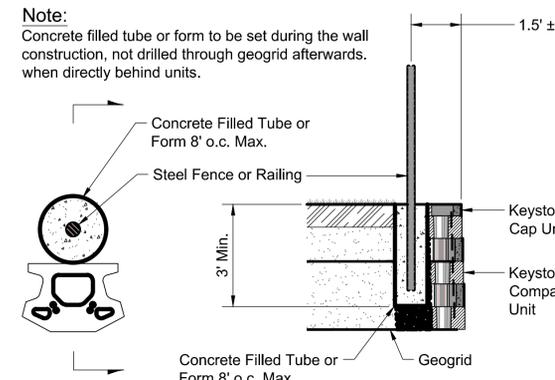
- The leveling pad is to be constructed of crushed stone or 2,000 psi unreinforced concrete.
- The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

| Compac III Unit |        | Universal Cap Unit |         |
|-----------------|--------|--------------------|---------|
| Width:          | 18"    | Width:             | 18"/12" |
| *Depth:         | 12"    | *Depth:            | 10 1/2" |
| Height:         | 8"     | Height:            | 4"      |
| *Weight:        | 75 lbs | *Weight:           | 49 lbs  |

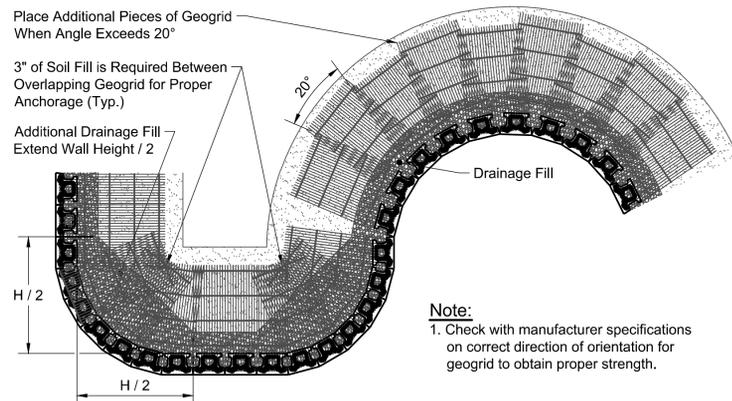


**Compac III Unit/Base Pad Isometric Section View**

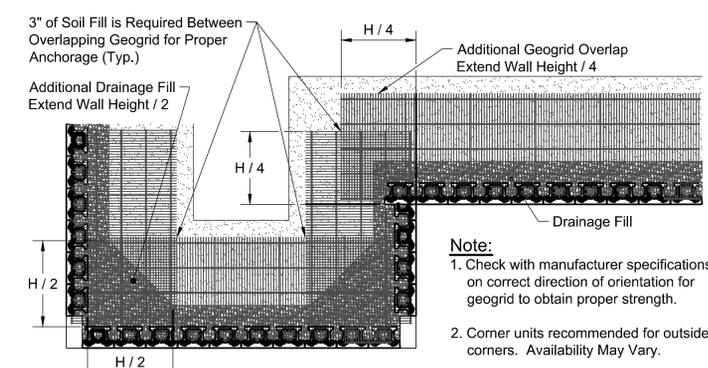
\* Dimensions & Weight May Vary by Region



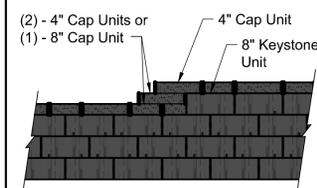
**Fence Plan Detail**  
**Fence Section & Plan Detail**  
Compac III Unit - Near Vertical Setback



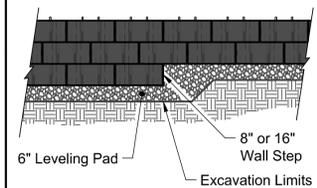
**Geogrid Installation on Curves**



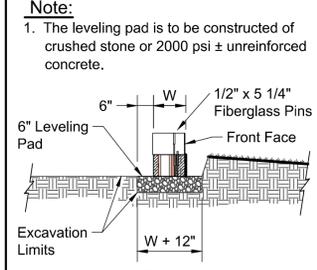
**Geogrid Installation at Corners**



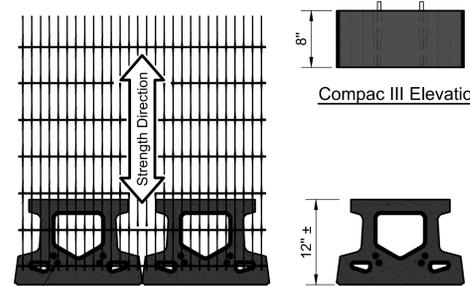
**Top of Wall Steps**



**Leveling Pad Detail - Elevation**

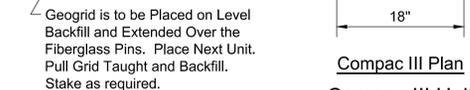


**Leveling Pad Detail - Section**

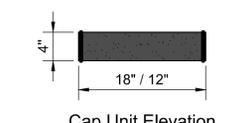


**Compac III Elevation**

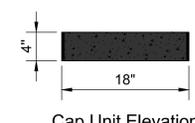
**Compac III Plan**



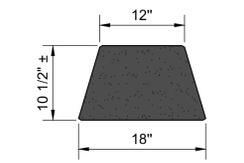
**Grid & Pin Connection**



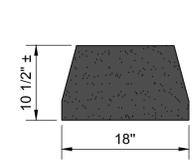
**Cap Unit Elevation**



**Cap Unit Elevation**



**Cap Unit Plan**



**Cap Unit Plan**

**Universal Cap Unit Option**

\* Dimensions & Availability Will Vary by Region

**Straight Split Cap Unit Option**

\* Dimensions & Availability Will Vary by Region

REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |
|     |      |             |
|     |      |             |

**MTI**  
 Engineers  
 Surveyors  
 Planners  
**Moy Tarin Ramirez Engineers, LLC**  
 TEPELS: ENGINEERING F-5937/SURVEYING F-10131500  
 12770 CHAMBERLAIN PATH, SUITE 100 TEL: (210) 698-5051  
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5095

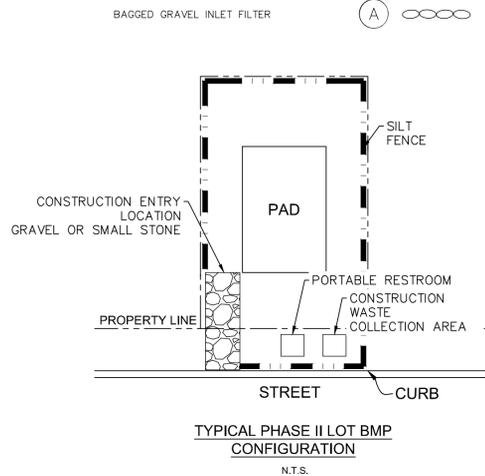


GROSENBACHER RD DUPLEX  
**RETAINING WALL DETAILS**

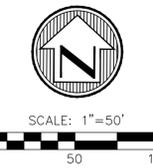
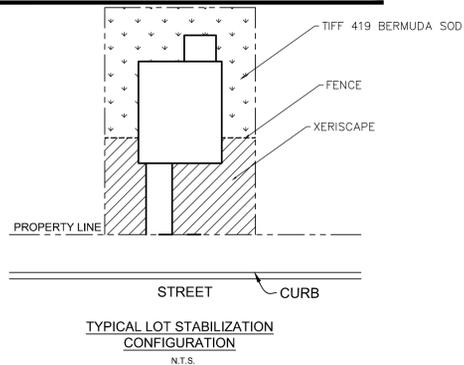
ESTIMATED QUANTITIES

| ITEM | DESCRIPTION                                              | UNIT | QUANTITY |
|------|----------------------------------------------------------|------|----------|
| 1    | STABILIZED CONSTRUCTION ENT./EXIT                        | L.S. | 1        |
| 2    | SILT FENCE                                               | L.F. | 909      |
| 3    | ROCK BERM - TYPE II                                      | L.F. | 12       |
| 4    | BAGGED GRAVEL INLET FILTER AND/OR APPROPRIATE SUBSTITUTE | L.F. | 30       |
| 5    | CONSTRUCTION STAGING AREA                                | L.S. | 1        |
| 6    | CONCRETE WASHOUT PIT                                     | L.S. | 1        |

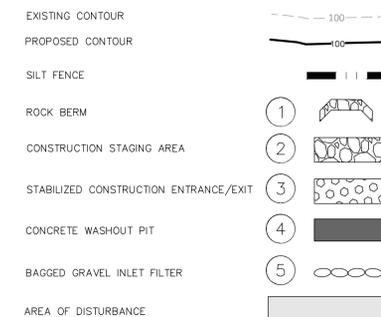
PHASE II BMP LEGEND



PERMANENT STABILIZATION



LEGEND



GENERAL NOTES:

**WASHING** - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED STRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.

**MAINTENANCE** - THE ENTRANCE/EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.

**DRAINAGE** - ENTRANCE/EXIT MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

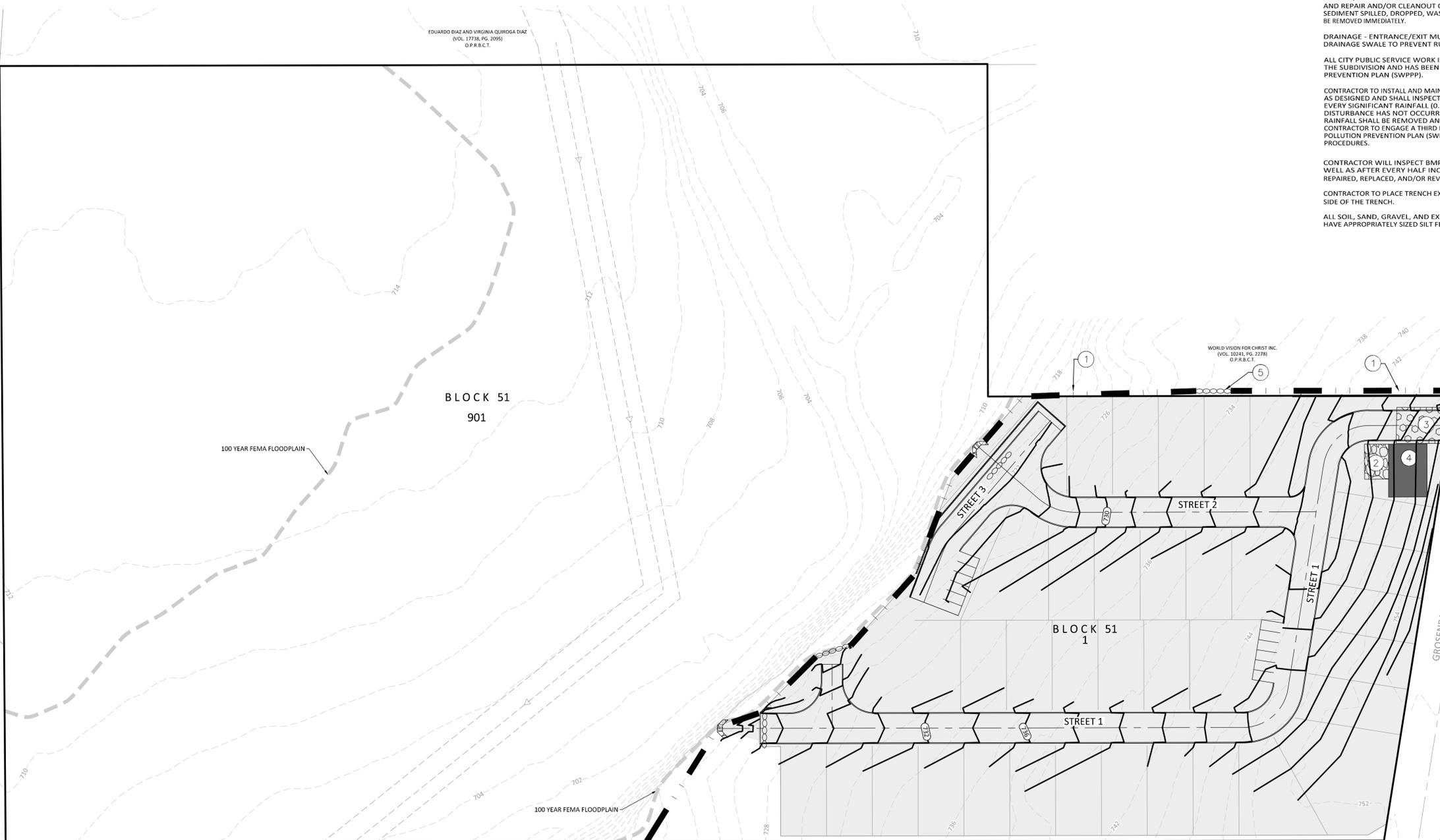
**ALL CITY PUBLIC SERVICE WORK IS INCLUDED AS PART OF THE CONSTRUCTION OF THE SUBDIVISION AND HAS BEEN CONSIDERED IN THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP).**

**CONTRACTOR TO INSTALL AND MAINTAIN THE EROSION AND SEDIMENTATION CONTROLS AS DESIGNED AND SHALL INSPECT THE CONTROLS BI-WEEKLY (14 DAYS) AND AFTER EVERY SIGNIFICANT RAINFALL (0.5 INCHES OR GREATER) TO ENSURE SIGNIFICANT DISTURBANCE HAS NOT OCCURRED. SEDIMENT DEPOSITED AFTER A SIGNIFICANT RAINFALL SHALL BE REMOVED AND PLACED IN A DESIGNATED SOIL DISPOSAL AREA. CONTRACTOR TO ENGAGE A THIRD PARTY FIRM TO PROVIDE A DETAILED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHICH INCLUDES INSPECTION AND REPORTING PROCEDURES.**

**CONTRACTOR WILL INSPECT BMP'S AT LEAST TWICE A WEEK (EVERY 14 DAYS) AS WELL AS AFTER EVERY HALF INCH OR MORE OF RAINFALL. CONTROLS WILL BE REPAIRED, REPLACED, AND/OR REVISED AS NECESSARY.**

**CONTRACTOR TO PLACE TRENCH EXCAVATION MATERIAL ON THE UPGRADE (HIGH) SIDE OF THE TRENCH.**

**ALL SOIL, SAND, GRAVEL, AND EXCAVATED MATERIALS STOCKPILED ON-SITE WILL HAVE APPROPRIATELY SIZED SILT FENCE PLACED UPGRADE AND DOWN GRADIENT.**



SAMA DEVELOPERS LLC  
DOC NO. 20110071093  
O.P.R.B.C.T.

| NO. | DATE | DESCRIPTION | BY |
|-----|------|-------------|----|
|     |      |             |    |
|     |      |             |    |

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

**MTR**  
**Moy Tarin Ramirez Engineers, LLC**  
ENGINEERING F-5297/SURVEYING: F-10131500  
12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051  
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5055



GROSENBACHER RD DUPLEX  
OVERALL STORM WATER POLLUTION  
PREVENTION PLAN