X-27970

FORT WORTH

CURRENT CONSTRUCTION STANDARDS FOR DEVELOPMENTS OCTOBER 6, 2023 SHALL GOVERN ON THIS PROJECT.

THE CITY OF FORT WORTH, TEXAS

PLANS FOR THE CONSTRUCTION OF

SANITARY SEWER

TO SERVE

MORNINGSTAR WESTPOINT - 24" SANITARY SEWER LINE

"MUD 1 AND 2"

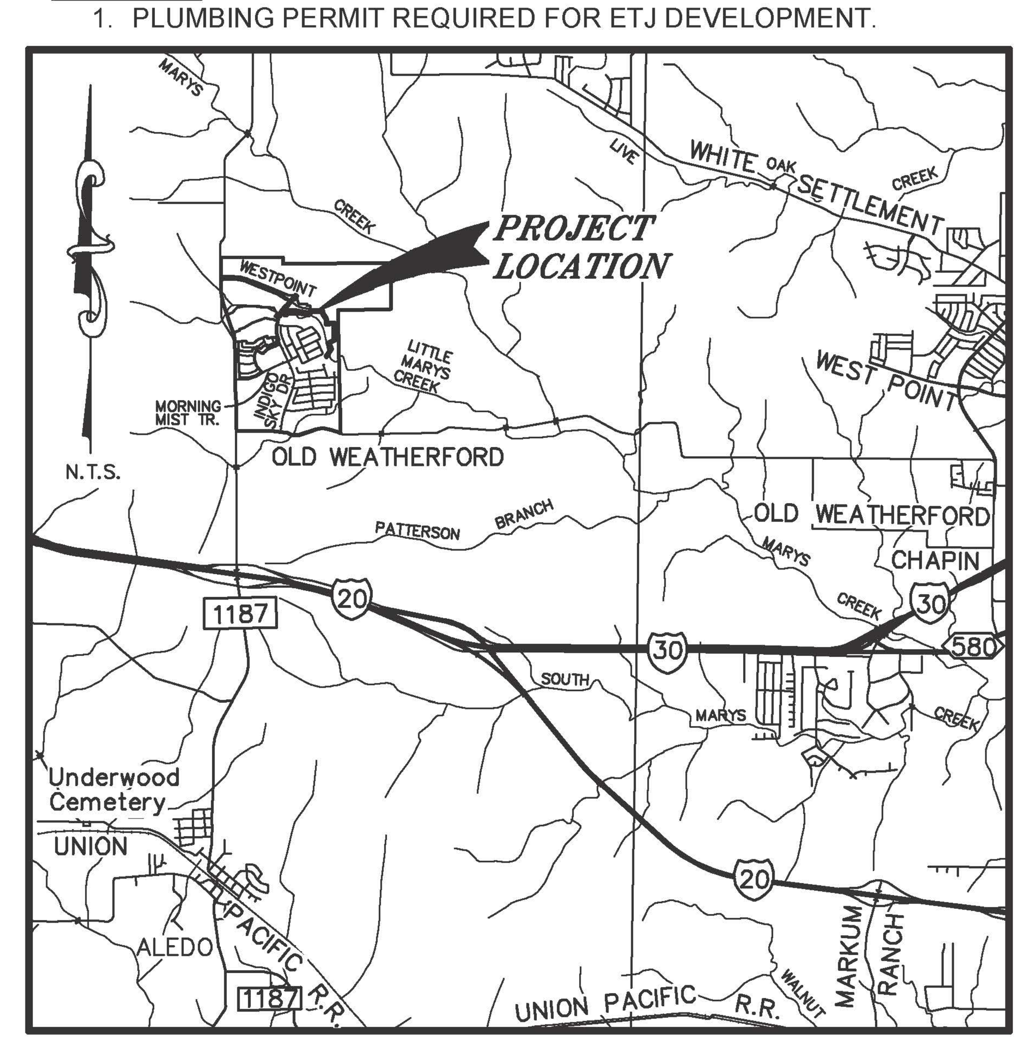
MATTIE PARKER
MAYOR

DAVID COOKE
CITY MANAGER

MICHAEL OWEN, P.E.
CITY ENGINEER, TRANSPORTATION AND PUBLIC WORKS DEPARTMENT

CHRISTOPHER P. HARDER, P.E.
DIRECTOR, WATER DEPARTMENT

NOTES:
1. PLUMBING PERMIT REQUIRED FOR ETJ DEVELOPMENT.



LOCATION MAP
MAPSCO NO. 710-Z

INDEX OF SHEETS

UNIT I - WATER AND SANITARY SEWER IMPROVEMENTS

STATE OF TEXAS
TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

DEVELOPER
FG ALEDO DEVELOPMENT, LLC
3045 LACKLAND ROAD
FT. WORTH, TEXAS 76116
(817) 925-9297

WEI

WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)
1308 NORWOOD DRIVE • SUITE 200 • BEDFORD, TEXAS 76022
(817)284-1175 LOCAL • (817)589-2900 METRO • (817)589-0990 FAX

IPRC RECORD NO. 23-0151
CITY PROJECT NO. 105124
FID NO. 30114-0200431-105124-E07685

OCTOBER 2023

Andrew Goodman, P.E. — Nov 1, 2023
DIRECTOR'S DESIGNEE FOR CONSTRUCTION PLAN APPROVAL — DATE
RESOLUTION NO. 01-10-2020 George Marquez — Oct 31, 2023

REVIEWED: PROJECT MANAGER — DATE

X-27970

IPRC Record No. 23-0151
City Project No. 105124

FID NO. 30114-0200431-105124-E07685

Plans for the Construction of Sanitary Sewer to serve MORNINGSTAR WESTPOINT - 24" SANITARY SEWER LINE

NO.	DATE	DESCRIPTION	BY

GENERAL NOTES:

1. SURVEYS: SURVEY LAYOUT, HORIZONTAL AND VERTICAL ALIGNMENT FOR CONSTRUCTION SHALL BE FURNISHED BY THE CONTRACTOR. THE DEVELOPER WILL PROVIDE THE PROPERTY CORNERS AND ONE BENCH MARK.

2. EXISTING STRUCTURES: THE PLANS SHOW THE LOCATIONS OF ALL KNOWN SURFACE AND SUBSURFACE STRUCTURES. HOWEVER, THE DEVELOPER ASSUMES NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS, OR TO SHOW THEM IN THEIR EXACT LOCATIONS. IT IS MUTUALLY AGREED THAT SUCH FAILURE SHALL NOT BE CONSIDERED SUFFICIENT BASIS FOR CLAIMS FOR ADDITIONAL COMPENSATION FOR EXTRA WORK OR FOR INCREASING THE PAY QUANTITIES IN ANY MANNER WHATSOEVER, UNLESS THE OBSTRUCTION ENCOUNTERED IS SUCH AS TO NECESSITATE CHANGES IN THE LINES OR GRADES, OR REQUIRES THE BUILDING OF SPECIAL WORK, PROVISIONS FOR WHICH ARE NOT MADE IN THE PLANS.

3. BARRICADES AND WARNING SIGNS: CONSTRUCTION OF SIGNING AND BARRICADES SHALL CONFORM WITH THE "2011 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, REVISION 2, OCTOBER 2014".

4. SPECIFICATIONS: CONSTRUCTION OF GRADING, PAVING AND UTILITIES SHALL BE GOVERNED BY THE STANDARD SPECIFICATIONS FOR TRANSPORTATION AND PUBLIC WORKS CONSTRUCTION FOR THE CITY OF FORT WORTH.

5. DRAINAGE CHANNELS: WHERE SURFACE DRAINAGE CHANNELS ARE TEMPORARILY DISTURBED OR BLOCKED DURING CONSTRUCTION, THEY SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR GRADE AND CROSS SECTION AFTER THE WORK OF CONSTRUCTION IS COMPLETED.

6. VENDOR'S CERTIFICATION: ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A VENDOR'S CERTIFIED TEST REPORT. TEST REPORTS SHALL BE DELIVERED TO THE ENGINEER BEFORE PERMISSION WILL BE GRANTED FOR USE OF THE MATERIAL. ALL VENDOR'S TEST REPORTS SHALL BE SUBJECT TO REVIEW BY THE ENGINEER, AND SHALL BE SUBJECT TO VERIFICATION BY TESTING OF SAMPLES OF MATERIALS AS RECEIVED FOR USE ON THE PROJECT. IN THE EVENT ADDITIONAL TESTS ARE REQUIRED, THEY SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY AND SHALL BE PAID FOR BY THE CONTRACTOR.

7. CLEAN-UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN-UP OF ALL PARTS OF THE WORK BEFORE ACCEPTANCE BY THE DEVELOPER OR HIS REPRESENTATIVE. THIS CLEAN-UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN AN ORDERLY MANNER OF APPEARANCE.

8. PUBLIC CONVENIENCE AND SAFETY: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

   MATERIALS STORED ABOUT THE WORK SITE SHALL BE SO PLACED, AND THE WORK SHALL AT ALL TIMES BE SO CONDUCTED, AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAVELING PUBLIC THAN IS CONSIDERED NECESSARY BY THE CITY. LANE CLOSURE AND/OR MATERIALS STORED WITHIN THE PUBLIC RIGHT-OF-WAY IS ALLOWED VIA PERMIT ONLY FROM THE CITY. THE MATERIALS EXCAVATED SHALL BE PLACED SO AS NOT TO ENDANGER THE WORK OR PREVENT FREE ACCESS TO ALL FIRE HYDRANTS, WATER VALVES, GAS VALVES, MANHOLES (TELEPHONE, TELEGRAPH OR ELECTRICAL CONDUITS, AND SANITARY SEWERS) AND FIRE ALARM OR POLICE CALL BOXES IN THE VICINITY.

   THE DEVELOPER RESERVES THE RIGHT TO REMEDY ANY NEGLECT ON THE PART OF THE CONTRACTOR AS REGARDS TO THE PUBLIC CONVENIENCE AND SAFETY WHICH MAY COME TO THE DEVELOPER'S ATTENTION, AFTER 24 HOURS NOTICE IN WRITING TO THE CONTRACTOR, SAVE IN CASES OF EMERGENCY, WHEN THE DEVELOPER SHALL HAVE THE RIGHT TO REMEDY ANY NEGLECT WITHOUT NOTICE; AND, IN EITHER CASE, THE COST OF SUCH WORK DONE BY THE DEVELOPER SHALL BE DEDUCTED FROM THE MONIES DUE OR TO BECOME DUE THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE DEVELOPER AND THE CITY WHEN ANY STREET IS TO BE CLOSED OR OBSTRUCTED; SUCH NOTICE SHALL IN THE CASE OF MAJOR THOROUGHFARES OR STREETS UPON WHICH TRANSIT BY THE DEVELOPER OR THE CITY, KEEP ANY STREET OR STREETS IN CONDITION FOR UNOBSTRUCTED USE BY EMERGENCY SERVICES. WHERE THE CONTRACTOR IS REQUIRED TO CONSTRUCT TEMPORARY BRIDGES OR TO MAKE OTHER ARRANGEMENTS FOR CROSSING OVER DITCHES OR STREAMS, HIS RESPONSIBILITY FOR ACCIDENTS SHALL INCLUDE THE ROADWAY APPROACHES AS WELL AS THE STRUCTURES OF SUCH CROSSINGS.

9. PROPERTY LINES AND MONUMENTS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET AT THE EXPENSE OF THE CONTRACTOR.

10. WATER FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR PURCHASING WATER FROM THE CITY.

11. PARKING OF CONSTRUCTION EQUIPMENT: AT NIGHT AND DURING ALL OTHER PERIODS OF TIME WHEN EQUIPMENT IS NOT BEING ACTIVELY USED ON THE CONSTRUCTION WORK, THE CONTRACTOR SHALL PARK THE EQUIPMENT AT LOCATIONS WHICH ARE APPROVED BY THE DEVELOPER. THE CONTRACTOR SHALL PROVIDE ADEQUATE BARRICADES, MARKERS AND LIGHTS TO PROTECT THE DEVELOPER, THE CITY, THE PUBLIC AND THE OTHER WORK. ALL BARRICADES, LIGHTS, AND MARKERS MUST MEET THE REQUIREMENTS OF CITY, STATE AND FEDERAL REGULATIONS.

12. ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS: ALL HAUL ROADS AND ACCESS ROUTES AND THE LOCATION OF ALL STAGING AREAS AND STORAGE AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL ROADS AND OTHER FACILITIES USED DURING CONSTRUCTION. UPON COMPLETION OF THE PROJECT ALL EXISTING ROADS SHALL BE LEFT IN A CONDITION EQUAL TO AND OR BETTER THAN THAT AT THE TIME THE CONTRACTOR COMMENCES WORK ON THIS PROJECT.

13. EXISTING UTILITIES: THE LOCATION AND DIMENSIONS SHOWN ON THE PLANS RELATIVE TO EXISTING UTILITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING STRUCTURES, IMPROVEMENTS AND UTILITIES WHICH MAY BE ENCOUNTERED.

    ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS/HER EXPENSE.

14. TRENCH SAFETY: PER TEXAS HOUSE BILL 1569, EFFECTIVE AS OF SEPTEMBER 1, 1989, IT SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO PROVIDE AND MAINTAIN A VIABLE TRENCH SAFETY SYSTEM ALL TIMES DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS DIRECTED TO BECOME KNOWLEDGEABLE AND FAMILIAR WITH THE STANDARDS AS SET BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) FOR TRENCH SAFETY THAT WILL BE IN EFFECT DURING THE PERIOD OF CONSTRUCTION OF THE PROJECT.

15. COORDINATION WITH OTHERS: IN THE EVENT THAT OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH THIS PROJECT, THE CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH THAT OF THE OTHER CONTRACTORS.

16. COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH EXIST OR WHICH MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT.

    THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, IMPACT AND INSPECTION FEES, ANY CITY FEES AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHEREVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE CITY OR OTHER PUBLIC AUTHORITIES, DUPLICATE COPIES OF SUCH PERMITS SHALL BE FURNISHED TO THE ENGINEER BY THE CONTRACTOR HEREUNDER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED.

    ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, HE SHALL IMMEDIATELY REPORT THIS TO THE DEVELOPER FOR RESOLUTION.

17. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK WHICH HAS BEEN REJECTED OR CONDEMNED SHALL BE REPAIRED, OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT PROPER INSPECTION, OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT THE CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE DEVELOPER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORILY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE DEVELOPER, THE DEVELOPER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMEDIED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF FROM ANY MONIES DUE OR TO BECOME DUE THE CONTRACTOR.

18. DURING CONSTRUCTION: DURING CONSTRUCTION OF THE WORK, THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE OF THE WORK AND ADJACENT PREMISES AS FREE FROM MATERIAL, DEBRIS AND RUBBISH AS IS PRACTICABLE AND SHALL REMOVE SAME FROM ANY PORTION OF THE SITE IF, IN THE OPINION OF THE OWNER, SUCH MATERIAL, DEBRIS OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE. IN CASE OF FAILURE ON THE PART OF THE CONTRACTOR TO MAINTAIN A CLEAN SITE, THE DEVELOPER MAY, UPON 24 HOUR WRITTEN NOTICE, CLEAN THE SITE, AND THE COST THEREOF SHALL BE DEDUCTED FROM ANY MONIES DUE OR TO BECOME DUE TO THE CONTRACTOR UNDER HIS CONTRACT, OR WHERE SUFFICIENT CONTRACT FUNDS ARE UNAVAILABLE FOR THIS PURPOSE, THE CONTRACTOR OR HIS SURETY SHALL REIMBURSE THE DEVELOPER FOR ALL SUCH COSTS.

19. RECORD DRAWINGS: EACH CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY HIS CONTRACTUAL AGREEMENT. THESE RECORD PRINTS WILL BE REVIEWED BY THE DEVELOPER EACH MONTH PRIOR TO THE PRELIMINARY REVIEW OF CONTRACTOR'S REQUEST FOR PAYMENT. IF THE DRAWINGS ARE NOT COMPLETE, ACCURATE AND UP-TO-DATE, THE PAYMENT REQUEST WILL NOT BE ACCEPTED BY THE DEVELOPER. THE COMPLETED SET OF "RECORD" DRAWINGS MUST BE DELIVERED TO THE DEVELOPER BEFORE REQUESTING FINAL PAYMENT.

20. INSPECTION: INSPECTION OF THE PROPOSED CONSTRUCTION WILL BE PROVIDED BY THE DEVELOPER AND/OR THE CITY. COSTS FOR INSPECTION SERVICES WILL BE ASSUMED BY THE DEVELOPER.

21. DISPOSITION AND DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS: ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING EXCESS MATERIAL AND UNSUITABLE MATERIAL SUCH AS CONCRETE, LARGE ROCKS, (THOSE IN EXCESS OF 9" IN GREATEST DIMENSION), REFUSE AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT.

    CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE.

22. THE TOPOGRAPHIC SURVEY WAS PREPARED BY MILLER SURVEYING, INC. WELCH ENGINEERING, INC. DOES NOT ASSUME RESPONSIBILITY TO THE ACCURACY OF THE CONTOURS OR SPOT ELEVATIONS. ACTUAL EXISTING GRADES SHOULD BE VERIFIED IN THE FIELD.

23. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): CONTRACTORS SHALL BE REQUIRED TO COMPLY WITH THE CONDITIONS OF THE SWPPP WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWPPP INCLUDES CONFORMANCE TO CERTAIN PRACTICES AND PROCEDURES (IDENTIFIED IN THE SWPPP) DURING PROJECT CONSTRUCTION. CONTRACTORS SHALL BE REQUIRED TO SIGN A NOTICE OF INTENT, CONTRACTOR CERTIFICATION AND NOTICE OF TERMINATION, ALL OF WHICH WILL BE PROVIDED BY THE DEVELOPER.

24. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT PREPARED BY ELLERBEE-WALCZAK, INC, DATED NOVEMBER, 2013 AND SHALL ADHERE TO SAID RECOMMENDATIONS UNLESS DIRECTED OTHERWISE BY THE REPRESENTATIVE FOR THE OWNER OR DEVELOPER.

25. MAINTAIN EXISTING STORM DRAIN SYSTEM UNTIL THE PROPOSED SYSTEM IS IN SERVICE. IN NO CASE SHOULD THE CONTRACTOR LEAVE THE EXISTING SYSTEM OUT OF SERVICE WHEREBY RUNOFF WOULD CAUSE DAMAGE TO ADJACENT PROPERTY.

26. CONSTRUCT ALL DRAINAGE IMPROVEMENTS FROM THE DOWNSTREAM END TO THE UPSTREAM END TO ALLOW CONTINUED STORM DRAIN SERVICE. IF THE CONTRACTOR PROPOSES TO CONSTRUCT THE SYSTEM OTHERWISE, THE CONTRACTOR SHALL SUBMIT A SEQUENCING PLAN TO THE CITY FOR APPROVAL.

27. TAKE APPROPRIATE MEASURES TO PRESERVE WILDLIFE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES.

"MUD 1 AND 2"

STATE OF TEXAS
TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

Morningstar Westpoint

GENERAL NOTES

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: DRAWN: R.K.H. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NONE	SHEET: 2

CITY OF FORT WORTH
STANDARD CONSTRUCTION GENERAL NOTES
Revised October 6, 2023

General Notes

Division 01 - General Requirements

General:

1. The Contractor shall be responsible for locating all utilities, whether public or private, prior to excavation. The information and data shown with respect to existing underground facilities at or contiguous to the site is approximate and based on information furnished by the owners of such underground facilities or on physical appurtenances observed in the field. The City and Engineer shall not be responsible for the accuracy or completeness of any such information or data. The Contractor shall have full responsibility for reviewing and checking all such information or data, for locating all underground facilities, for coordination of the work with the owners of such underground facilities during construction and for the safety and protection thereof and repairing any damage thereto resulting from the Work. This Work shall be considered as a subsidiary item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items. The Contractor shall notify any affected owners (utility companies) or agencies in writing at least 48 hours prior to construction.
   a. Notify TEXAS 811 (1-800-DIG-TESS or www.texas811.org) to locate existing utilities prior to construction.
   b. Caution! Buried electric lines may exist along this project. Contact electrical providers 48 hours prior to excavation :
      · TXU ELECTRIC 1-800-233-2133
      · ONCOR ELECTRIC DELIVERY 1-888-313-6862
   c. Caution! Buried gas lines may exist along this project. Contact TXU GAS 48 hours prior to excavation, and within two (2) hours of encountering a gas line (1-800-817-8090)
   d. Caution! Buried communication cables may exist along this project. Contact communication companies 48 hours prior to excavation:
      · CHARTER COMMUNICATIONS 1-800-395-0440
      · A.T. & T. 1-800-878-8711
      · WESTERN UNION CABLE 214-939-1930
   e. The Contractor shall contact the following at least 48 hours prior to excavating at each location.
      · ENERVEST OPERATING, LLC 817-441-5844
      · ENLINK MIDSTREAM 214-721-9320
      · BARNETT GATHERING, LP 817-584-5371
   f. Caution! When doing work within 200 feet of any signalized intersection, the Contractor shall notify Traffic Management Division of City of Fort Worth T/PW, 72 hours prior to excavation (Darryl Ruffin: 817-999-7923). The Contractor shall protect existing signal hardware, ground boxes, detection loops, and underground conduit at signalized intersections. Any damages at signalized intersections shall be replaced at the expense of the Contractor. The Contractor shall contact the City at 817-392-8100 to perform conduit line locates at signalized intersections 72 hours prior to commencing work at the intersection.
   g. The Contractor shall notify the City of Fort Worth Project Manager 48 hours prior to the start of any excavation (George Marquez: 817-392-6826)
2. The location of all driveways, retaining walls, structures, etc. which may be shown on these plans are approximate. The Contractor shall verify the exact size, location, elevation, and configuration of all structures prior to construction.
3. Protect concrete curb and gutter, driveways, and sidewalks that are not designated for removal. Removal and replacement of these items shall be as designated in the drawings.
4. Contractor shall be responsible for maintaining the general safety at and adjacent to the project area, including the personal safety of public and private property. Contractor shall provide temporary sanitary sewer facilities to affected property owners, if necessary per Section 01 50 00 Temporary Facilities and Controls. Not a separate pay item.
5. Contractor's personnel shall have identifying clothing, hats or badges at all times which identify the Contractor's name, logo or company.
6. The contractor shall distribute notices (Door Hanger) to all affected property owners prior to beginning work on each property per Section 01 35 13.
7. The Contractor shall video all potentially impacted private property areas prior to work. Videos shall include date, notation, and audio identification of property address and main/lateral name and station number. This pre-construction video of impacted properties shall be considered subsidiary work per Section 01 32 33 Preconstruction Video.
8. Contractor's personnel shall have identifying clothing or hats at all times. The contractor shall also have identification on all vehicles.
9. Construction activities shall be limited to the hours of 7:00 AM to 6:00 PM Monday thru Friday unless approved or directed by the City. At the pre-construction meeting, the Contractor shall provide a construction schedule in accordance with Section 01 32 16, and provide monthly updates along with the progress payment per General Conditions, Section 00 72 00, Article 6.04. Any proposed work beyond regular working hours will require written request by the Contractor per General Conditions, Section 00 72 00, Article 6.02.
10. Shop drawings shall be submitted to the City Inspector, City Project Manager at the pre-construction meeting for review. Any construction activity, materials, etc. that are identified by the City as non-compliant with the standard details and specifications shall be removed and replaced with materials that conform with the standard details and specifications at the contractor's expense. Reference Section 01 33 00 Submittals and Section 01 60 00 Product Requirements, and the General Conditions.
11. The Contractor is responsible for keeping streets and sidewalks adjacent to project free of mud and debris from the construction per Section 01 74 23. Work associated with this item is considered subsidiary to various items bid.
12. The Contractor shall clean up and restore the area of operations to a condition as good as or better than that which existed prior to work, per Section 01 74 23.
13. Prior to scheduling the Project Final, the Contractor shall provide redlines, cut sheets, final approved pipe shop drawings, CCTV video/reports, liner results, etc., Pipe Report and Service Report per Sections 01 77 19, 01 78 39, and 33 01 31 to the City for review, revisions, and final acceptance.
14. When it is required that a Contractor work or enter private property, the Contractor shall contact the property owner 48 hours prior to construction per Section 01 11 00. Do not store equipment or material on private property unless and until the specified approval of the property owner has been secured in writing by the Contractor and a copy furnished to the City.
15. The contractor shall remove from the project area all surplus material. This shall be incidental and not a separate pay item. Surplus materials from excavation including dirt, trash, etc. shall be properly disposed of at a site acceptable to the City's Flood Plain Administrator if within the City limits. If the location is not within the City limits, the Contractor shall provide a letter stating so. Surplus material may not be placed in natural drainage way without written permission from the affected property owner and the City's Flood Plain Administrator. If the Contractor places excess material in the areas without written permission, Contractor shall responsible for all damage resulting from such fill and shall remove the material at their own cost.
16. Costs associated with proposed connections to existing facilities shall be included in each respective bid item, if no specific bid item is included. No separate pay, except as specifically indicated within these plans or the contract documents.
17. Contractor shall contact local schools prior to beginning construction to inform Principals and Administrators of construction in the area. A note on the school marquee is suggested to inform parents and students of construction, construction duration, and possible alternative routes around construction sites. One lane shall remain open at all times, and all lanes of traffic shall be open up at the end of each work day.
18. Street Use permit shall be submitted per Section 01 55 26 to the City Inspector and TPW for work in City ROW.
19. The Contractor shall remove all fences, located within easements, interfering with construction operation and provide temporary fencing during construction. Removed fences, wooden or chain link, shall be replaced with a new fence or undamaged original fencing. All affected property owners shall be notified prior to construction. Removal and replacement of existing and temporary fences per Section 01 11 00 Summary of Work, shall be considered subsidiary to the project cost and reflected in the unit bid prices for various items listed in the proposal.

Division 02 - Existing Conditions

1. No separate pay item will be made for the removal and disposal of existing public facilities (pipes, valves, etc.) within a proposed utility trench unless otherwise indicated within the project specifications. Items to be removed or abandoned outside of a proposed utility trench shall be paid as a separate pay item per Section 02 41 14.
2. Contractor shall protect concrete curb and gutter, driveways, and sidewalks that are not designated for removal. Removal and replacement of these items shall be as designated.
3. The Contractor shall preserve and protect or remove and replace when shown on the plans (with prior approval of City Parks and Community Services and/or affected property owners) all trees, shrubs, hedges, retaining walls, landscaping, buildings, walks, etc. in or near proposed construction area. If specific bid item(s) are not included, this work shall be considered incidental and not a separate pay item.
4. Where applicable, two (2) permanent painted drive addresses must be installed at the base of the curb on each side of every driveway. Address signs shall be posted in a position to be plainly visible and legible. Numbers shall be at least 3-inches in height and contrast.
5. Contractor shall not crack, break, mar, or otherwise damage tile street name markers. In the event a tile street name marker is located in an area of construction and cannot be protected, contractor should remove the section of curb and gutter containing the full tile street name marker. Contractor shall replace the full section of the curb and street marker.

Division 03 - Concrete

1. Horizontal blocking for water lines has been omitted for clarity. However, blocking shall be constructed and shop drawings submitted to the City Inspector for review, in accordance with Section 03 30 00.

Division 31 - Earthwork

1. The contractor must review and maintain a copy of the storm water pollution prevention plan with all conditions, attachments, exhibits, and permit modifications in good condition at the construction site. The complete permit must be available for review upon request.
2. Erosion control measures may only be placed in front of inlets, or in channels, drainage ways, or borrow ditches at risk of contractor. Contractor shall remain liable for any damage caused by the measures, including flooding damage, which may occur due to blocked drainage. At the conclusion of any project, all channels, drainage ways, and borrow ditches in the work zone shall be dredged of any sediment generated by the project or deposited as a result of erosion control measures.
3. The contractor shall comply with all federal, state, and local erosion, conservation, and siltation ordinances. The contractor shall use sediment filters or other measures approved by the engineer and construction manager to prevent silt and construction debris from clogging storm sewer pipes or proposed or existing inlets, or from being transported to adjacent properties and street right-of-ways. All erosion control devices shall be installed prior to site disturbance and shall remain in place until final grading and paving is complete and permanent soil stabilization is achieved.
4. Construction operations shall be managed so that as much of the site as possible is left covered with existing topsoil and vegetation.
5. All slopes and areas disturbed by construction shall be graded smooth. Sodding or seeding shall be per Sections 32 92 13 “Sodding” or 32 92 14 “Non-Native Seeding”, respectively.
6. Contractor shall construct a stabilized construction entrance at all primary points of access. Contractor is responsible for ensuring that all construction traffic utilizes the stabilized entrance at all times for ingress and egress to the site.
7. Site entry and exit locations shall be maintained in a condition which shall prevent tracking or flowing of sediment onto public roadways. All sediment spilled, dropped, washed, or tracked on a public roadway shall be removed immediately. When washing is required to remove sediment prior to entrance to a public roadway, it shall be done on an area stabilized with crushed stone which drains into an approved sediment basin. All fines imposed for tracking onto public roads shall be paid by the contractor.
8. Contractor is responsible for proper maintenance of the required erosion control devices throughout the entire construction process. Erosion controls shall be repaired or replaced as inspection deems necessary, or as directed by the owner's representative. Accumulated silt in any erosion control device shall be removed and shall be distributed on site in a manner not contributing to additional siltation. The contractor is responsible for re-establishing any erosion control device which is disturbed.
9. Before any earthwork is done, the contractor shall stake out and mark the limits of construction and other items established by the plans. The contractor shall protect and preserve control points at all times during the course of the project. The grading contractor shall provide all necessary engineering and surveying for line and grade control points related to earthwork.
10. Contractor staging area to be agreed upon by owner prior to beginning construction.
11. Take appropriate measures to preserve wildlife in accordance with applicable federal, state and local guidelines.

Division 32 - Exterior Improvements

General:

1. At locations where the curb and gutter are to be replaced, the Contractor shall assume all responsibility for the re-establishment of existing street and gutter grades. If bid item from Construction Staking is not included, establishment of grades shall be considered as a subsidiary item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items.
2. All driveways, which are open cut, shall have at least a temporary driving surface at the end of each day. The temporary surface shall be considered as a subsidiary item of Work. The cost of which shall be included in the price bid in the Proposal for various bid items.
3. Contractor shall verify with City Project Manager the location of all City owned parkland associated with and adjacent to the project and City owned land that is maintained by PARD. Additionally, the Contractor may need a separate agreement in order to access City parkland for staging and/or construction. Contact Park Planner at 817-392-5764 to verify need for separate agreement.

Sidewalks and Curb Ramps:

1. The curb ramp standard details are intended to show typical layouts for the construction of the curb ramps. The information shown on the standard details meet the requirements shown in the “2012 Texas Accessibility Standards” (TAS) and the “2010 ADA Standards for Accessible Design” by the Department of Justice.
2. The Contractor may not make changes to the sidewalk and curb ramp layout without approval of the City. The Contractor may propose changes to the sidewalk and curb ramp layout due to field conditions, but any proposed changes must be approved by the City.
3. Landings shall be provided at the top or bottom of curb ramps, as shown on drawings. The landing clear length shall be 5 feet minimum from the end of ramp. The landing clear width shall be at least as wide as the curb ramp, excluding flares. The landing shall have a maximum slope of 2% in any direction.
4. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 5% (20:1) in any direction.
5. Contractor shall protect concrete curb and gutter, driveways, and sidewalks that are not designated for removal. Removal and replacement of these items shall be as designated. At locations where the curb and gutter are to be replaced, the contractor shall assume all responsibility for the re-establishment of existing street and gutter grades. Establishment of grade shall be performed prior to construction and is not a separate pay item, but shall be considered incidental to the project price.
6. All driveways, shall have at least a temporary riding surface at the end of each day. The temporary surface will be considered a non-pay item.
7. Contractor shall saw cut existing curb and gutter, pavement, driveways, sidewalks at areas where pavement or concrete is to be removed. Saw cutting shall be considered subsidiary to the item being installed.
8. Contractor shall provide compacted subgrade as needed to repair damaged drives, streets, walks, and patios.

Park & Recreation Department (PARD) Notes: Pertains to all work in and through City parkland, land managed and maintained by PARD including right-of-way, medians, roundabouts, corner cuts, parkways, and may pertain to work adjacent to City parkland

City Parks (Contact Park Planner 817-392-5764):

1. All proposed utility improvements outside of a recorded easement(s) and located in and/or through a park shall require parkland conversion in accordance to State of Texas, Parks and Wildlife Code Chapter 26.
2. Construction equipment and/or staging, materials storage, and materials testing may not occur on City parkland without prior written approval from PARD.
3. Prior to beginning work on parkland, contact PARD at 817/392-5764, to schedule an on-site meeting to locate PARD utilities, tree protection, and parkland fencing. Provide 72-hours minimum notice.
4. Install fencing at park property line to protect parkland. Fencing to remain until construction completed.
5. All disturbance to existing soil, vegetation, irrigation, or equipment on must be repaired or replaced to existing pre-construction conditions or better at no additional cost to PARD.
6. Soil shall be free of construction debris and rocks greater than 1-inch. Backfill with clean soil prior to seeding or sodding. (Refer to 32 91 19, 32 92 13 and 32 92 14)
7. Turf installation must comply with CFW Standard Construction Specification Documents 32 92 13-Sodding and/or 32 92 14-Non-Native Seeding.
8. Upon request, the contractor shall provide to PARD a copy of certifications on soil, sod, seeding, and hydromulching prior to installation; along with the delivery ticket. (Refer to 32 92 13 and 32 92 14
9. All erosion control materials and fencing to be removed, including silt fence and tree protection, at completion of project.

City Trees (Contact City Forester 817-392-5738):

10. Per Chapter 33, Park & Recreation-Forestry Section (PARD-Forestry) has jurisdiction over trees on city-owned property including right-of-way. Approval of plans does not constitute approval to proceed with work until corresponding permit has been issued. Permits for removal, planting or pruning of city-owned trees shall be obtained from PARD-Forestry. Pruning required for preconstruction purposes requires the utilization of an ISA-Certified Arborist, as stated in the permit, at no expense to PARD. Contact PARD-Forestry: www.fortworthtexas.gov/departments/parks/services/forestry or CityTreePermits@fortworthtexas.gov or 817/392-5738 or 817/392-5729.
    a. Tree protection shall be put in place before grading/construction begins, be inspected by City Forester and remain until completion of the project.
       i. 4-foot tall, chain link fencing installed at the tree dripline with bilingual sign on protective fencing in English and Spanish that reads, “Keep Out, Tree Protection Area” (“No Entre, Área de Protección de Árboles”).
       ii. No entry, grading, excavation, parking or storing of equipment or supplies inside the protective tree fencing without City Forester approval.
       iii. All work inside protective tree fencing to be done by hand, unless prior approval given by City Forester.
       iv. Roots 2-inch or larger shall not be cut without City Forester approval. Roots shall be clean cut with a saw.
       v. All cuts on oak trees, including roots, shall be painted with general purpose spray paint within 30 minutes of exposure to prevent oak wilt spread.
    b. Assessment of Damages to Trees
       i. The Contractor will check trees in the contract area before contract work begins, any damage will be noted and reported to the Contract Administrator.
       ii. The Contract Administrator will conduct random checks of the trees during the contract period.
       iii. A check of all trees may be made at the end of the contract period. City Forester, Contract Administrator, and Contractor will attend the inspection.
       iv. Damages shall be documented by memo to the City Forester with copy to contract file and the Contractor.
       v. Contractor may have the option of replacement or payment for severely damaged trees at a location to be designated by PARD. Replacement shall be made on a caliper inch per caliper inch basis with a minimum size of replacement tree of 2-inch in caliper for trees damaged or removed which are less than 30-inch DBH and 2-inch per inch for trees which are 30-inch DBH or greater. The Contractor shall be responsible for the planting, watering, mulching and maintenance of replacement trees for a period of not less than 2-years. Any tree that does not survive the 2-year establishment period shall be compensated for by the Contractor to Tree Fund at a rate of $200 per caliper inch.
       vi. Slight damage shall be defined, in the opinion of the City Forester, as damage that may compartmentalize. Examples include but are not limited to: scarring of the trunk into the cambial layer Y ' to 2-inch in width, but less than 1 /3 trunk circumference; or breaking of limbs less than 2-inch in diameter or limbs less than 1 /3 trunk caliper, whichever is less. Slight damage shall also include: removal or laying down of protective tree fencing prior to end of construction; storing equipment or supplies within the critical root zone (CRZ); or disposing of paint or concrete within the CRZ, but not closer to the trunk than 50% radius of the CRZ. Slight damage to trees shall be assessed at a rate of $100.00 for each instance. Each day tree fencing is not properly placed, equipment or supplies are stored within CRZ, or fill is stored within the CRZ shall be considered one instance.
       vii. Moderate damage shall be defined, in the opinion of the City Forester, as damage that contributes to the poor health and reduced longevity of the tree. Examples include, but are not limited to: scarring of the trunk into the cambial layer greater than 2-inch, but less than 1 /3 the trunk circumference; or breaking of limbs more than 2-inch in diameter, but less than 1/3 trunk caliper. Moderate damage shall also include: compaction of soil; grading or filling in 20% of the CRZ on 1 of 4 sides, but outside the 50% radius of the CRZ; or disposing of paint or concrete within 50% radius of the CRZ. Moderate damages shall be calculated at a rate of % the assessed value of the tree per each instance of damage.
       viii. Severe damage or removal of trees is subject to penalty of $200 per diameter inch of trees removed or damaged for trees less than 30-inch DBH or $400 per diameter inch for trees 30-inch DBH or greater. Severe damage or removal shall include, but is not limited to: scarring of the trunk to the cambial layer greater than 1/3 the trunk circumference; uprooting or causing a tree to lean; or damage to a scaffolding branch or any branch greater than 1/3 of trunk caliper. Severe damage shall also include: compaction of soil, grading or filling more than 20% of the CRZ, or within 50% radius of the CRZ, or on more than one of 4 sides. Cutting 1 /3 of the buttress roots within 3 times the distance of the DBH of the trunk, or cutting 4 roots 4-inch or greater in diameter within 4-feet of the trunk shall also be considered severe damage.
       ix. Branches shall be measured at the point of attachment or at the lateral to which the branch would be pruned back to according to ANSI standards. Trees caliper shall be measured according to accepted industry standards. Trees greater than 6-inch in caliper shall be measured using diameter at breast height (DBH). Trees that must be removed due to damage caused by the Contractor shall be removed by the Forestry Section's tree removal contractor at the Contractor's expense.
       x. All damages shall be paid to the City Tree Fund. Failure to replace or pay for damaged trees shall result in a breach of contract and the Contractor will be automatically assessed damages. Damages as described herein shall be deduced from payments otherwise due the Contractor.

Landscaping and Irrigation (Contact Park Planner 817-392-5479):

11. All planting material shall be warrantied for a period of two years. A Maintenance bond shall be posted for all landscaping materials (hardscapes, irrigation, plantings).
12. All plant identification tags must remain on plant materials for PARD inspection. Contact PARD 72-hours in advance for inspection of tree and landscape plantings.
13. Irrigation systems must comply with Texas Commission on Environmental Quality (TCEQ) Title 30, Texas Administrative Code (TAC) Chapter 344, Rules for Landscape Irrigation and City of Fort Worth Texas Ordinance number 18444-01-2009. Any irrigation system that is connected to a public or private potable water supply must be connected through an approved backflow prevention assembly, and must be tested upon installation, or repair by a licensed Backflow Prevention Assembly Tester (BPAT) who is registered with the City of Fort Worth Water Department. For additional information regarding permitting, contact Development Services Customer Services 817-392-2222.
    a. Once irrigation lines have been inspected, approved and 'green tag' has been supplied, trees and planting materials can be installed.
    b. If existing median is altered, contact PARD 72 hours in advance for inspection of all irrigation lines, depth, and pressure PRIOR to backfilling. Contact 817-392-5479. Right-of-Way including parkways, medians, corner clips, roundabouts maintained by PARD (Contact Park Planner 817-392-5479):
14. Sod shall be replaced in all areas disturbed by construction. Sod shall match existing grasses, per Section 32 92 13.
15. Soil shall be free of construction debris and rocks greater than 1-inch. Backfill with clean soil prior to seeding or sodding. (Refer to 32 91 19, 32 92 13 and 32 92 14)
16. Turf installation must comply with CFW Standard Construction Specification Documents 32 92 13-Sodding and/or 32 92 14-Non-Native Seeding.
17. Upon request, the contractor shall provide to PARD a copy of certifications on soil, sod, seeding, and hydromulching prior to installation; along with the delivery ticket. (Refer to 32 92 13 and 32 92 14)
18. All disturbance to existing soil, vegetation, or irrigation must be repaired or replaced to existing pre-construction conditions or better at no additional cost to PARD.
19. Construction equipment and/or staging, materials storage, and materials testing may not occur on existing medians maintained by PARD without prior written approval from PARD.

Division 33 - Utilities

General:

1. When it is required that a Contractor work on private property within utility easements, the Contractor shall contact the property owner 48 hours prior to construction. Once the pipe has been installed or rehabilitated, the Contractor shall immediately commence surface restoration. Surface restoration must be completed to the owner's satisfaction within ten (10) working days. Failure to maintain and/or complete site restoration, as noted above, may result in deferment of further pipe installation activities.
2. Existing vertical deflections and pipe slopes shown on the plans were obtained from record drawings and have not been field verified. Some pipeline slopes were adjusted to match surveyed manhole flow lines. Rim elevations, flow lines, and horizontal locations of existing manholes were determined from field survey. However, if conflicts with paving, additional fill, storm sewer, drainage headwalls, inlets, bridge piers, embankments, MSE walls, retaining walls, above ground structures, franchise utilities, etc. have been identified, the utilities in conflict shall be located and potholed using vacuum excavation method per Section 33 05 30 prior to construction of the main. Contractor shall provide all pothole data and other documentation of these conflicts (plans, shop drawings, survey data, etc.) to the City Inspector, Water Engineering, Water Field Operations, as plans shall be revised and submitted for review by the City in order to avoid a conflict.
3. Maintain all existing water and sewer connections to customers in working order at all times, except for brief interruptions in service for water and sewer services to be reinstated. In no case shall services be allowed to remain out of service overnight.
4. Provide and follow approved Confined Space Entry Program in accordance with OSHA requirements. Confined Spaces shall include manholes and all other confined spaces in accordance with OSHA's Permit required for Confined Spaces.
5. Only City prequalified Contractors, by appropriate Water Department work category, shall be allowed to adjust valve boxes, manholes, ring & covers, etc.
6. Contractor is responsible for all trench safety. The contractor shall construct the proposed work utilizing a trench safety plan prepared by a Licensed Professional Engineer in the State of Texas, for this project, in accordance with OSHA excavation safety standards, Federal and State requirements, per Section 33 05 10. A trench safety plan shall be submitted at the pre-construction meeting. This would also include a Ground Water Control Plan if conditions meeting criteria outlined in Section 33 05 10 exist.
7. All embedment and backfill shall be in accordance with specification 33 05 10. Contractor shall provide the embedment/backfill density test plan which outlines testing notification, frequency, testing lab, test methods, test result format, contact information etc. Contractor shall notify the City Inspector in writing to obtain samples and perform standard proctor test in accordance with ASTM D698. Upon commencing of backfill placement, Contractor shall schedule a demonstration of means and methods to obtain the required densities. Depth of lifts for backfill shall not exceed 12-inches. Test reports shall be posted within 48 hours. Includes the installation of the trench geotextile fabric and utility marker tape in accordance with Section 33 05 26. All pavement repair shall be per Sections 32 01 17, 32 01 18, and 32 01 29. All non-conforming work shall be removed and replaced.
8. Existing utility information is provided for information only. Although this data is shown as accurately as possible, the Contractor is cautioned that the City and the Engineer neither assumes nor implies any responsibility for the accuracy of the data.
9. Existing utility crossings shown on the profile are from reference plans, and from information obtained from the utility companies. It shall be the Contractor's responsibility to field verify the horizontal and vertical locations of the existing utilities

Water:

1. Provide thrust restraint by means of restraining joints at fittings and concrete blocking. When specifically indicated on the Drawings, provide thrust restraint at designated joints beyond the fittings. Each method shall be capable of thrust restraint independent of the other system. The Contractor shall refer to City Standard Details for area required to install concrete blocking.
2. All ductile iron mechanical joint fittings shall be restrained to pipe using retainer glands.
3. Proposed water mains shall have a minimum cover of 48-inches cover above the top of pipe, unless shown otherwise on the drawings or details.
4. All water services shall be installed above storm sewers, except where shown otherwise in the drawings.
5. Elevation adjustment at connections may be made with bends, offsets, or joint deflections. Joint deflections shall not exceed fifty percent (50%) of manufacturer's recommendations.
6. Temporary pressure plugs required for sequencing of construction and testing of proposed water lines shall be considered subsidiary to the work and shall be included in the price bid in the Proposal for various bid items.

NO.	DATE	DESCRIPTION	BY

"MUD 1 AND 2"

STATE OF TEXAS
TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

Morningstar Westpoint

CITY OF FORT WORTH
GENERAL NOTES

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED:	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: R.K.H. CHECKED: T.J.W.	OCT., 2023	IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	NONE	3

7. 12-inch diameter and smaller water mains shall be installed with a minimum cover of 48-inches and 16-inch and larger water mains shall be installed a minimum cover of 60-inches, measured from top of surface (existing and proposed) except where shown otherwise in these plans.
8. Valves shall be installed where designated on these plans in accordance and shop drawings provided to the City Inspector for review per Section 33 12 20. Vaults shall be installed on all mains 16-inch diameter and larger per Sections 33 12 20, 33 05 16, and 03 30 00.
9. Fire hydrants shall be a minimum of 3 ft. behind the back of curb (maximum 9 ft.) and in line with the property/lot lines except where shown otherwise in these plans. Construction and shop drawing submittals to the City Inspector per Section 33 12 40.
10. Contractor shall provide a cleaning plan and disinfection plan for 24-inch and larger water mains, prior to construction in accordance with Section 33 04 40, Part 1.5, Submittals. Insert cleaning pig in water main where directed. Cleaning pig shall be provided by Contractor in accordance with Section 33 04 40. Flushing is only permitted when specially designated in the Drawings, and the Contractor shall provide the plan submittals to the City Inspector, City Project Manager, Water Field Operations and Water Engineering for review at least 1 week prior to start of construction.
11. Install chlorination and sampling points at designated locations per Section 33 04 40.
12. Corporation stops shall be tested for full flow when the system is pressure tested. Construction and shop drawing submittals per Section 33 12 10.
13. All water mains crossing below storm sewer lines shall be ductile iron pipe per Section 33 11 10 and backfilled with CLSM per Section 03 34 13, unless noted otherwise.
14. Contractor shall provide pipe shop drawings in accordance with the Specifications. Detailed pipe shop drawings/lay schedule water mains 16-inch diameter and larger, signed and sealed by a Licensed Professional Engineer in Texas for Ductile Iron Pipe, Concrete, and Steel Pipe are required submittals before start of construction. Elevation adjustment at connections may be made with bends, offsets, or joint deflections (for example, PVC joint deflections not to exceed 50% of the manufacturer's recommendations per Section 33 11 12). Reference Ductile Iron, Concrete, and Steel Pipe per Sections 33 11 10, 33 11 13, 33 11 14, for the deflection requirements. Prior to scheduling the Project Final, the Contractor shall provide redlines, cut sheets, final approved pipe shop drawings, etc., Pipe Report and Service Report per Sections 01 77 19, 01 78 39, and 33 01 31 to the City for review, revisions, and final acceptance.
15. All non-standard bends shall be made by using the closest standard MJ fittings or fittings with the required joint deflections. Joint deflections and associated shop drawing submittals, shall be in accordance with Sections 33 11 10, 33 11 11, 33 11 13, and 33 11 14.
16. All existing ¾-inch water service lines shall be replaced with 1-inch type K copper service lines (per ASTM B88), with 1-inch corporation stops and if required 1-inch tapping saddle and 1-inch x ¾-inch reducer at the ¾-inch curb stop as directed by the Engineer. Shop drawings shall indicate flared copper tubing with thread dimensions per AWWA C800 and service saddles shall be double strap per Section 33 12 10.
17. All existing water meters shall be relocated 3 ft. behind the curb or as directed by the Engineer (Section 33 12 10).
18. The Contractor shall install a 2-inch temporary water service main per Section 33 04 30. Large domestic services (3-inch and larger) and fire lines shall require a larger main for temporary water service during construction.
19. All PVC water mains 12-inch diameter and smaller shall be DR-14 per Section 33 11 12. All ductile iron water mains shall be poly wrapped per Section 33 11 10, 33 11 11. Cathodic protection study is required on all pipes other than PVC. In accordance with the recommendations from the cathodic protection study, the drawings and specifications for cathodic protection shall apply.
20. All water mains shall have temporary plugs per Sections 33 04 40, 33 12 25 and detail at the end of each work day. Deflect water mains at joints to clear curb inlets. Minimum horizontal separation from outer wall of main to outer wall of inlet shall be 5 feet. Minimum horizontal separation from outer wall of main to outer diameter drilled shafts, and outer wall of headwalls shall be 10 ft.
21. Unless otherwise noted on the plans, the gate valves shall be installed to line up with the property/ROW line.
22. Contractor and City Inspector shall contact Water Field Operations prior to all items being removed or salvaged. Contractor shall provide the documents to the City Inspector for all items removed and salvaged to Water Field Operations Warehouse. Contact Warehouse Supervisor and deliver all salvaged materials to the Warehouse located at 1608 11th Ave. Fort Worth TX 76102.

Sanitary Sewer:
1. Verify that all connections to the sanitary sewer system are for sanitary sewer only. Notify City of any discovered illicit connections.
2. The Contractor shall be liable for all damages to properties, homes, and basements from backup, which may result during the installation of new pipe and/or abandonment of existing pipe. The Contractor will be allowed to open clean outs where available. The Contractor will be responsible for all clean up associated with opening clean outs.
3. For all sanitary sewer service connections at manholes, provide a hydraulic slide in accordance with the details.
4. The proposed sanitary sewer lines at times will be laid close to other existing utilities and structures both above and below ground. The Contractor shall make necessary provisions for the support and protection of all utility poles, gas mains, telephone cables, sanitary sewer mains, water mains, drainage pipes, utility services, and all other utilities and structures both above and below ground during construction. Contractor shall submit shop drawings at the pre-construction meeting per Section 01 33 00 for support/protection of large diameter water mains (16-inch and larger) and sanitary sewer mains (15-inch and larger) for review by City Inspector, Water Engineering, and Water Field Operations prior to construction in these areas. In addition, the Contractor shall submit a Contingency Plan and Emergency Plan to the same personnel which includes acceptable pipe materials on-site for repairs. The Contractor is liable for all damages to existing water and sanitary sewer mains as a result of the Contractor's operations.
5. Contractor shall conduct a Pre-Construction Television Inspection (CCTV) of all existing sanitary sewer lines, which are to be abandoned or rehabilitated via trenchless methods, to verify locations of all sanitary sewer service connections prior to construction of the entire project. Format of the CCTV video, plan exhibits, and report shall be in accordance with Section 33 01 31. Report shall clearly identify existing sanitary sewer main/lateral number, manholes, station number (from and to), street address, pipe size, pipe material, service locations, pipe material changes, etc. Copies of the CCTV video, layout, marked up plans showing limits, and report shall be provided to the City Inspector, City Project Manager, Water Engineering, and Water Field Operations, as the schedule shall allow for a review time of 2 weeks.
6. Contractor shall ensure that all active services can be reconnected and/or rerouted to the new sanitary sewer main/lateral per Section 33 31 50. Contactor shall notify the City Inspector, City Project Manager, Water Engineering, and Water Field Operations of any potential conflicts prior to construction, so modifications to the plans can be made if necessary. Not a separate pay item, as this work shall be subsidiary to the Pre-Construction Television Inspection of sanitary sewer lines.
7. Contractor shall bypass pump sewage around section of pipe prior to being replaced or rehabilitated per Section 33 03 10. Not a separate pay item for lines 15-inch diameter and smaller. Payment shall be incidental to the replacement of sewer.
8. New manholes shall be constructed such that the manhole cover is at finished surface grade, or as noted on the plans. Concrete collars per specification 33 05 13 and detail shall be installed with all new manholes (including manholes outside of pavement and/or on easements), as required for this project. Concrete collars identified in the field that are not in compliance with the specifications and details (i.e. incorrect collar thickness, no steel reinforcement) shall be removed and replaced at the Contractor's expense.
9. Sanitary Sewer Services larger than 6-inch diameter shall connect to a manhole. For all sanitary sewer service connections at the manhole, Contractor shall provide a hydraulic slide in accordance with Section 33 39 20 and standard detail.
10. Sanitary sewer manholes called out for interior corrosion protection shall conform to Section 33 39 60 Liner System for Sanitary Sewer Structures. This shall include manholes on mains with 3% or greater grade, all drop manholes, siphons, junction structures on large collector mains 15-inch diameter and larger, and other manholes where turbulence is an issue.
11. Odor control is required for all sanitary sewer manholes in City Park areas, public spaces, near residences, or other areas as determined by the City on mains 15-inch diameter and larger.

Storm Drain:
1. Maintain the existing storm drainage system until the proposed system is in service. In no case should the Contractor leave the existing storm drain out of service whereby runoff would cause damage to adjacent property.
2. Construct all drainage improvements from the downstream end to the upstream end to allow continued storm drain service. If the Contractor proposes to construct the system otherwise, the Contractor shall submit a sequencing plan to the City for approval.

Division 34 - Transportation

Traffic Signals:
1. Prior to activating traffic signals with new or revised signal timing, the contractor shall e-mail Aziz Rahman, Engineering Manager, at aziz.rahman@fortworthtexas.gov at least three (3) weeks in advance to schedule that.
2. If new cabinets and controllers are being installed and the controllers need to be programmed and tested by City Forces; the contractor shall deliver them to the City of Fort Worth, Signal Shop at 5001 James Ave., at least three (3) weeks in advance to schedule that. If a cellular modem is being installed the contractor shall also deliver the modem with the cabinet to the City of Fort Worth Signal Shop so the modem can be activated prior to installation .
3. Unless there is a compelling reason with approval by the Traffic Signal Engineering Group, a new traffic signal will be put on flash on Thursdays and working colors the following Tuesday.
4. Switching from old traffic signal to a new one, this shall be done between Tuesday and Thursdays only.
5. Notify Traffic Management Division (817-392-7738) Project Representative at least 48 hours in advance of all concrete pours. Inspector must be present when concrete is placed on the project site.
6. If applicable, equipment supplied by the City will be available for pick up from the Transportation/Public Works (T/PW) Warehouse at 5001 James Avenue. The Project Representative must authorize all equipment pickups.

7. Contractor shall provide a 5-year manufacturer warranty on APS systems. The warranty documentation shall include the start date (when material is delivered to job site) and the end date of the warranty and the serial number of the equipment.
8. The City will not provide traffic signal cabinet or traffic signal controller to the Contractor. The cost for these items must be included in the City project budget, or for all privately funded projects, the cost must be included in the bid package for purchase from the vendor.
9. The Contractor shall provide all materials needed to construct a fully operational traffic signal as called out for in the plans and specifications.
10. All existing signal equipment shall remain in place and operating until new equipment is in place and ready to operate.
11. The Contractor shall contact Adrian Olguin, TPW Superintendent, at 817-392-7239 or Adrian.Olguin@fortworthtexas.gov at least one (1) week in advance of any disposal of material to coordinate any material that the city may need salvaged. The Contractor is responsible for hauling and properly disposing of salvaged material from the job site to a disposal site of their choosing. The Contractor will not be allowed to drop off salvaged materials at the City yards unless otherwise directed by TPW Superintendent for the specified material only.

Foundations:
1. Dimensions shown on plans for locations of signal foundations, conduit, and other items may vary in order to meet local conditions. All locations of foundations, conduit, and ground boxes shall be approved by City Traffic Signal Engineer.
2. Contractor shall contact the City traffic signal inspector prior to pouring cabinet foundation to be sure that template and bolt patterns are correct for type of cabinet being supplied. Foundation shall be installed per City Specification and City Detail.
3. Pier Foundations shall be poured together in one piece.
4. No signal poles shall be placed on foundations prior to five (5) calendar days following pouring of concrete.
5. Contractor shall clean up and remove all loose material resulting from construction operations each day prior to the work is being suspended.
6. Controller cabinet concrete apron shall be subsidiary to the bid item for the controller cabinet foundation. Cabinet foundation and apron shall be poured together in one piece.

Controller and Cabinet:
1. Contractor shall install controller cabinet and connect all associated field wiring.
2. Ethernet cable shall be provided to connect controller to communication device. Material and installation shall be subsidiary to install of controller or controller cabinet bid item.
3. City will install signal timing and program controller.

Conduit:
1. A continuous grounded system shall be provided in PVC conduit by running a No. 8 bare copper stranded ground wire in conduit between foundations and grounding at each foundation ground rod.
2. Grounding shall not exceed 25 ohms at each ground rod.
3. All conduits shall be Schedule 40 PVC.

Signal heads:
1. All signal heads shall be either McCain™, Econolite™, or approved equivalent style and dimensions.
2. All signal heads shall be covered with burlap or other approved material from the time of installation until the signal is placed in operation.
3. All signal head attachments shall be designed such that the wiring to each signal head shall pass from the mast arm through a raintight connector to the signal head bracing or attachment hardware to the signal head. A small amount of exposed signal cable shall form a drip loop.
4. All LED signal indications shall be General Electric (GE) Gelcore™ or equivalent and shall meet the latest ITE standards.
5. Signal heads (all displays) and pedestrian Walk and Don't Walk heads with countdown displays shall have LED inserts.
6. Clam-Shell mounting assemblies shall be used for pedestrian indications.
7. All LED signals shall be of the incandescent appearance.
8. All signal heads shall have black aluminum, louvered, single piece back plates compatible with McCain™, Econolite™, or approved equivalent signal head housings.

Traffic Signs and Pavement Markings:
1. All traffic signs and mounting hardware shown on the plans will be furnished and installed by the contractor including the metro street name signs. The contractor shall provide a detail sheet for the metro street name signs with block numbers to the City for approval prior to fabrication and installation.
2. Existing stop signs and posts will be removed by the contractor upon, or before, the signal turn-on.

Detection System:
1. The Contractor shall furnish and install the detection system and cable unless otherwise called out in the plans.
2. Ethernet cable shall be provided connecting the detection central control unit to the communication device. Material and installation shall be subsidiary to the installation detection system bid item.
3. The Contractor shall install, aim and program all detectors as per City Standard Specifications and City Details.
4. The Contractor shall refer to City Standard Details and project plans for detection zones placement.

Emergency Vehicle Preemption Equipment (EVP):
1. The Contractor shall furnish and install the Opticom™ EVP (detectors, cable, and discriminator units) unless otherwise called out in the plans.
2. The Contractor shall install the EVP detectors on the mast arm as shown on the plans and appropriate City Detail, and run one continuous EVP cable from the detector to the cabinet. Installation of the EVP system will be paid for per bid item.

Accessible Pedestrian Signal (APS):
1. APS units with audible message shall be installed on all TxDOT locations or as called out in the plans.
2. Ethernet cable shall be connected from APS central control unit to communication device. Material and installation shall be subsidiary to installation of APS bid item.
3. APS units shall comply with the latest version of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
4. APS units shall be installed per City Standard Specification and City Detail.
5. APS units shall be programmed by the Contractor.

Powder Coating and Paint:
1. All new signal poles, pedestrian poles, and mast arms shall be powder coated black (RAL 9017). If called outs in the plans, all existing signal poles, pedestrian poles, and mast arms shall be painted black (RAL 9017).

Battery Backup:
1. If called out for in the plans, battery backup units supplied shall be Alpha or approved equivalent. Installation shall be completed per City Standard Specifications and City Detail.
2. Ethernet cable shall be provided for BBUs connecting BBU to the communication device. When mounting an external BBU, ensure cable is routed into the cabinet. Ethernet cable shall be subsidiary to the installation of BBU bid item.

PTZ Camera:
1. If called out for in the plans, PTZ Camera units shall comply with the City Standard Specifications.
2. Power supply and ethernet cable material and installation shall be subsidiary to installation of PTZ camera bid item.

Cellular Modem:
1. Antenna, ethernet cable, power supply, and unmanaged network switch material and installation shall be subsidiary to installation of Cellular Modem bid item.

Traffic Control:
1. The Contractor shall submit a Work Schedule, Traffic Control Plan, and acquire a Street-use Permit from TPW Department, at 200 Texas Street. Contact Chuck McLure (817-392-7219).
2. The Contractor shall be responsible for the safety of pedestrians and motorists in the area of the traffic signal construction site.
3. Roads and streets shall be kept open to traffic at all times. Contractor shall arrange construction so as to close only one lane of a roadway at a time.
4. All construction operations shall be conducted to provide minimal interference to traffic. All traffic signal equipment installations shall be arranged so as to permit continuous movement of traffic in all directions at all times.
5. Contractor shall be responsible for any signage necessary during construction.
6. Unless otherwise noted, it is the contractor's responsibility to ensure that signal indications and timing are adjusted and maintained to ensure safety in work zone at all times.

7. Any traffic signal modifications during construction are subsidiary to traffic control plan (TCP) pay item.
8. Any traffic signal modifications shall be in compliance with the latest version of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and the City of Fort Worth Standards.
9. The contractor shall submit any proposed traffic signal modifications to the Traffic Signal Engineering Section for their approval ten (10) days prior to any changes.
10. Two-way traffic must be maintained at all times. One lane of traffic around construction operations in progress with adequate safeguards will be acceptable on minor streets only, unless otherwise directed by the Engineer.

Electric Service:
1. Install the required electric services and obtain an electrical service permit in each instance, cost of which will be paid by the Contractor.
2. The electrical service shall comply with City Lighting Standards, Specifications and Details as applicable per plans.

Luminaires:
1. The pre-qualified lighting contractor shall submit a contractor material package along with a copy of applicable plan sheets of the project to the Transportation Public Works, Street Light Department for review and approval before purchasing any lighting material for said project. All materials located within the City lighting system shall be an approved product.
2. The City will not furnish lighting system material to the contractor. The pre-qualified lighting contractor shall furnish and install lighting system in accordance with the latest City Standard Specifications, City Details, and plans.
3. The lighting system must follow the current City Lighting Standards, Specifications, and Details. Contact the City Street Light Section for direction on light pole types allowed and design requirements.

Erosion Control Notes:
1. Soil Erosion and Sediment Control shall be provided in accordance with City of Fort Worth erosion regulations.
2. Responsibility for installation, routine inspection, and maintenance of erosion control should be defined and assigned to appropriate person(s) prior to commencement of any soil disturbing activity.
3. Erosion control measures must be constructed and functional before any grading of land disturbance takes place.
4. Temporary or permanent soil stabilization must be applied to all denuded areas with final grade is reached on any portion of site. Temporary soil stabilization must be applied to disturbed areas left dormant for 14 days.
5. In the event that measures being used are deemed to be ineffective by city inspectors, additional measures or changes in the original plan may be required by the City of Fort Worth.
6. All erosion control devices shall be inspected by the site foreman daily. Any structure or control device which is damaged or inoperative will be repaired or replaced immediately.
7. Sanitary facilities shall be provided on the site and regularly serviced as recommended by the supplier. Trash and debris shall be stored in covered bins or enclosures.
8. Construction entrances/exits should be limited and protection provided to prevent tracking of soils onto city streets.
9. Remove silt or sediments from streets, curbs, gutters, flumes, handicap access ramps, curb inlets, storm drains, and any other public drainage facilities daily or as accumulation occurs.
10. Erosion control should be evaluated to determine the effectiveness of those devices by the person assigned to inspect erosion control devices and changes made if necessary.
11. Soil tracked onto public roads shall be removed DAILY if feasible, or when visibly accumulated sediment has been deposited. Discharged sediment shall be removed AS SOON AS POSSIBLE.
12. Using wash water to wash sediment from streets is prohibited.

ROW Dedication:
1. If Median/ROW is to be dedicated to the City upon completion, a CFA must be executed prior to construction. Contact 817-392-2222 for more information. If Median /ROW will be privately maintained, an Adopt-a-Median must be executed prior to construction. Contact 817-392-5722 for more information.
2. Provide a running acreage tabulation summary for all Medians, ROWs, Corner Clips and Parks/Open Space within site.
3. Parkways (the strip between the sidewalk and the curb) will be maintained by adjacent landowner.

Construction:
1. Prior to construction, ensure that tree surveys are complete, included in the Construction Plan. Permit is required to remove, plant or prune trees in the City ROW/Parkland. This is separate from Urban Forestry Compliance. 33.6.
2. Prior to construction, install tree protection.
3. Provide tree protection details for trees in Medians/ROWs.
4. Provide a running acreage tabulation summary for all Median/ROWs within site.
5. Unless otherwise specified in Construction Plans, all Medians/Parkways (back of curb to row line), ROWs shall be finished in accordance with the City of Fort Worth Standard Specifications 32 91 19 and 32 92 13 of the contract specifications.
6. Grading on Median/ROW shall not exceed a 4:1 slope.
7. On Construction Plan, show any wall or fencing that may impact ROW.
8. Do not store equipment or debris on Median/ROW unless permission is granted by PARD to do so.

Finishing Soil:
1. All Median soil shall have clean soil to a depth of 24 inches.
2. Soil shall be free of construction debris and rocks greater than 1 inch. Backfill with clean soil prior to seeding or sodding.
3. The top 6 inches shall be clean topsoil; free of rocks greater than 1 inch.
4. The contractor shall provide to PARD a copy of certifications on soil, sod, seeding & hydromulching prior to installation; along with the delivery ticket.
5. All dirt mounds shall be removed from Medians/ROWs prior to seeding after construction is completed.
6. Remove silt fencing from Median/ROWs once vegetation is successfully established.
7. In Enhanced Landscape options, soil shall be 50% native soil 50% organic material.

Maintenance Prior to Greensheet:
1. Medians/ROWs must be stabilized with perennial vegetation cover, fully established with 100% coverable or other approved stabilization method.
2. Medians/ROWs shall be maintained by Contractor for high grass and weeds every 14 days until PARD acceptance.
3. All Medians/ROWs disturbed during construction shall be returned to their original state or better upon completion of the project. In the event that grass has been disturbed, grass shall be established at 100% by Contractor.
4. All Medians/ROWs shall be watered, mowed and maintained by Contractor until 100% grass coverage is established prior to PARD acceptance.

Standard Landscaping:
1. Add grass/sod seeding information in Construction Plan.
2. The Contractor shall provide to PARD a copy of all certifications on soil, sod, seeding, or hydromulching prior to installation; along with a copy of the Delivery Ticket.
3. Medians, ROWs, and Park land must be stabilized with perennial vegetation cover, fully established with 100% coverable or other approved stabilization method.
4. Seed: Vendor's certification that seeds meet Texas State Seed Law including: testing and labeling for Pure Live Seed (PLS), name and type of seed. All seed shall be tested in a laboratory with certified results presented to the City in writing, prior to planting. All seed to be of the previous season's crop and the date on the container shall be within 12 months of seeding date. (CFS Standard Construction Specification Document 32 92 13-3 Hydromulching, Seeding, and Sodding)

NO.	DATE	DESCRIPTION	BY

Enhanced Landscaping:
1. Enhanced landscaping (trees, shrubs, flowers and grasses other than standard turf) will require an Adopt-A-Median agreement (817-392-5722); which must be executed PRIOR to Final Inspection by PARD. Greensheet will not be signed off until an agreement is in place and vegetation is established with irrigation.
2. A CFA for dedicated Median/ROW must be executed prior to Greensheet. Call 817-392-2222 for more information.
3. A tree planting permit must be obtained from the City Forester (817-392-5738) prior to planting.
4. Provide an Irrigation Plan in Construction Plan.
5. All planting material shall be warrantied for a period of two years. A Maintenance bond shall be posted for all landscaping materials, (hardscapes, irrigation, plantings).
6. Provide a Landscape Plan in Construction Plan that denotes locations, species and sizes.
7. All plant identification tags must remain on plant materials for PARD inspection.
8. Contact PARD 72 hours in advance for inspection of tree and landscape plantings.
9. Keep all sight lines clear in ROWs at intersections. No structure, object or plant of any type may obstruct vision from a height of 24-inches to a height of 11-feet above the top of the curb, including, but not limited to buildings, fences, walks, signs, trees, shrubs, cars, trucks, etc., in the public open space easement as shown on this plat. (Ord. 17851 § 1 (App. C, Ch. 6, Art. IV), passed 10-30-2007; Ord. 20382-09-2012, § 7, passed 9-11-2012)
10. If applicable, see preferred list of native landscaping plant material for consideration: CC Appendix A, Chapter 6, Article 3: 6.301 LANDSCAPING Table A. Recommended List of Native Plants for Landscape Use in North Central Texas.
11. PARD Director signature required.

Irrigation:
1. Provide Irrigation Plan in Construction Plan.
2. An Irrigator shall prepare an Irrigation Plan as described in subsection (d), for each site prior to installation or Alteration of an Irrigation System. An easily available paper or electronic copy of the Irrigation Plan must be on site at all times during such installation of the Irrigation System. (Section 35-162)
3. During Median/ROW construction, contact PARD 72 hours in advance for inspection of all irrigation lines, depth, and pressure PRIOR to backfilling.
4. Once irrigation lines have been inspected and approved then trees and planting materials can be installed.

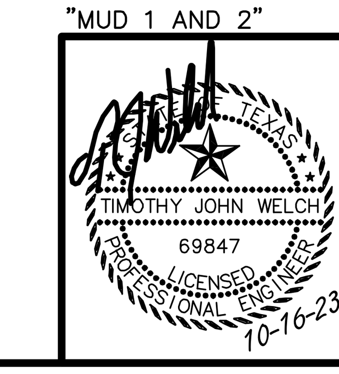
Greensheet:
1. PARD will not sign off on Greensheet if the ROW/Medians conditions are not met.

Standard Landscaping (grass only)
Finishing Soil
Comply with CFS Standard Construction Specification Document 32 91 19-Topsoil Placement and Finishing of Parkways.
Soil shall be free of construction debris and rocks greater than 1 inch. Backfill with clean soil prior to seeding or sodding. (32 91 19)
The top 6 inches shall be clean topsoil; free of rocks greater than 1 inch. (32 91 19)
Upon request, the contractor shall provide to PARD a copy of certifications on soil, sod, seeding, and hydromulching prior to installation; along with the delivery ticket.

Preparing and Installation
Comply with CFW Standard Construction Specification Documents 32 92 13-Sodding, and 32 92 14-Non-Native Seeding.
Vegetation coverage may be attained through sodding, seeding, or hydromulching.
No stumps, stones, debris or objects greater than 1 inch on finished grade for sod/seed.
All areas to be sodded or seeded shall have 3 inches of clean topsoil.
Sod should be harvested and planted at project within 72 hours of delivery. Keep stacked sod moist and protected from exposure to wind, sun and freezing until planting. Sod shall be alive, healthy, free from insects and disease. No weeds such as Johnsongrass, nutgrass or millet allowed (32 92 14). Cool season Elbon rye (Secale cereale) may be overseeded for temporary erosion control.
Upon request, Contractor shall provide certificates, labels and/or samples of seed, fertilizer, compost, soil amendments or other materials including certificate indicating seed is free from weeds (32 92 13 and 32 92 14)

Maintenance Prior to Greensheet
Sodding is considered established once it has started to peg down (roots growing into the soil) and is free from dead blocks of sod and once area has 100 percent growth to a height of 3 inches with 2 mow cycles with minimum of 10 days apart (32 92 13).
Warranty - until project acceptance or through required maintenance period.
Non-Native Seeding is considered established with a minimum of 70% uniform ground coverage without bare areas greater than 6 inches square and a blade height of 3 inches with 2 mow cycles, minimum 10 days apart (32 92 14). Warranty - seed to be replaced if coverage does not exceed 70% within 45 days from germination.
Water and mow grass until completion and final acceptance of the Project or as directed by the City.

"MUD 1 AND 2"



C.P.N. 105124

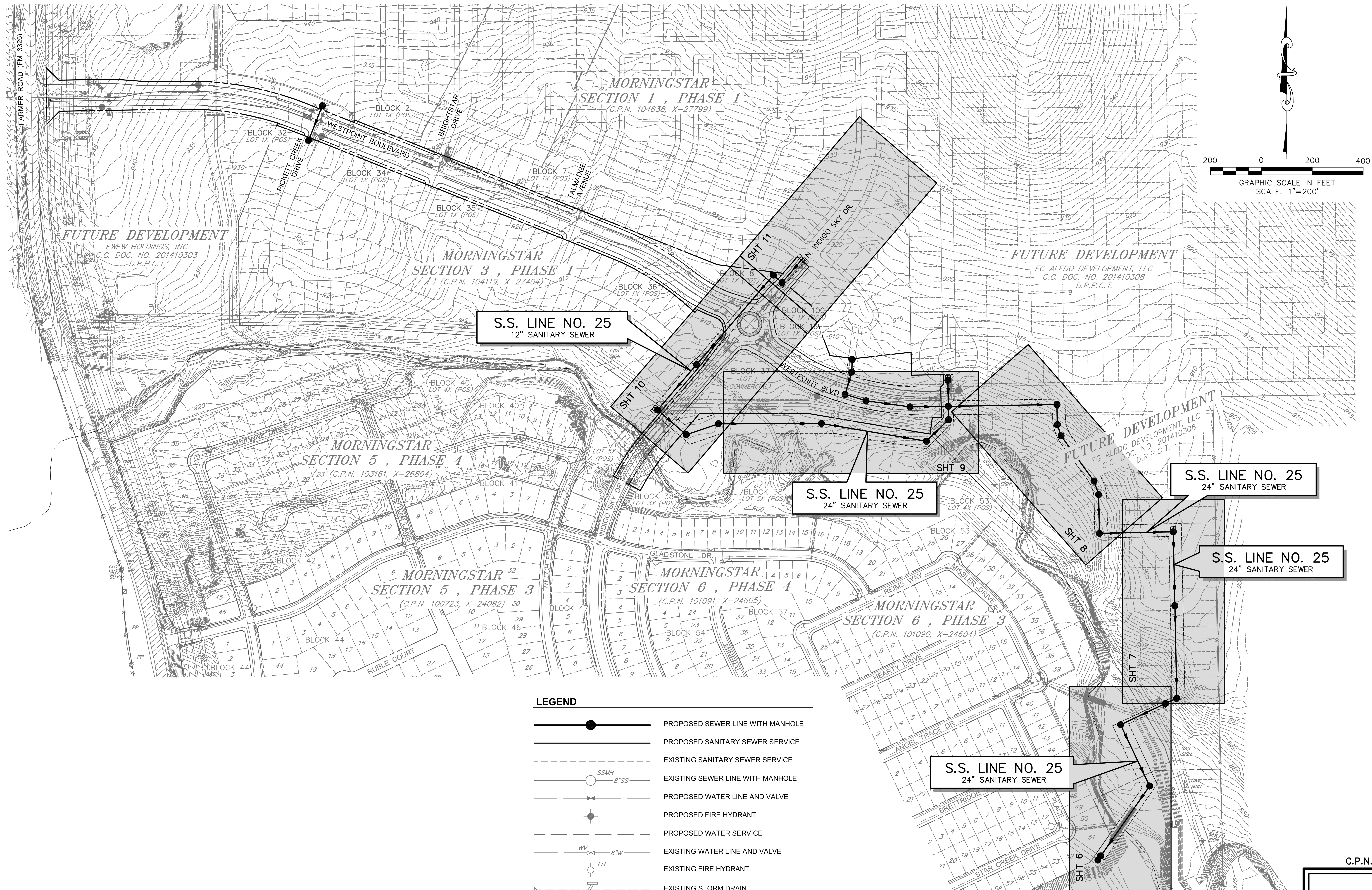
FORT WORTH

Morningstar Westpoint

CITY OF FORT WORTH
GENERAL NOTES

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: DRAWN: R.K.H. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NONE	SHEET: 4



NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

LEGEND

PROPOSED SEWER LINE WITH MANHOLE
PROPOSED SANITARY SEWER SERVICE
EXISTING SANITARY SEWER SERVICE
SSMH 8"SS EXISTING SEWER LINE WITH MANHOLE
PROPOSED WATER LINE AND VALVE
PROPOSED FIRE HYDRANT
PROPOSED WATER SERVICE
WV 8"W EXISTING WATER LINE AND VALVE
FH EXISTING FIRE HYDRANT
EXISTING STORM DRAIN
PROPOSED STORM DRAIN
800 EXISTING CONTOUR

WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

LEGEND

SHEET NUMBER — SHT 13

SHEET LOCATION

CITY SEWER MAP NO. 1970-392S
CITY WATER MAP NO. 1970-392W

"MUD 1 AND 2"

TIMOTHY JOHN WELCH 69847 LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

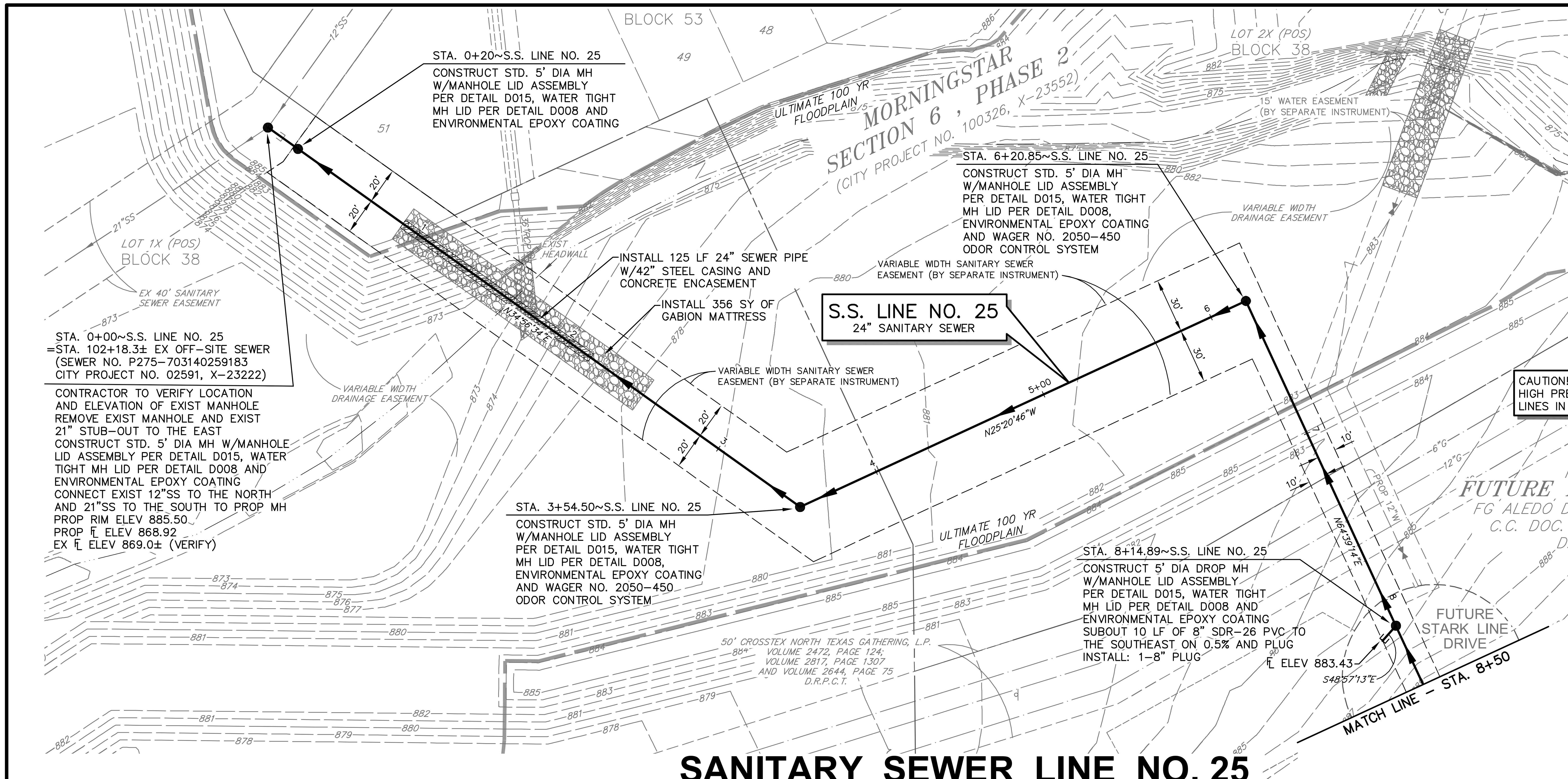
FORT WORTH

Morningstar Westpoint

GENERAL SANITARY SEWER LAYOUT AND KEY MAP

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H. DRAWN: L.B.P. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: 1"=200'	SHEET: 5



SANITARY SEWER LINE NO. 25

LEGEND

	PROPOSED SEWER LINE WITH MANHOLE
	PROPOSED SANITARY SEWER SERVICE
	EXISTING SANITARY SEWER SERVICE
SSMH 8"SS	EXISTING SEWER LINE WITH MANHOLE
	PROPOSED WATER LINE AND VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER SERVICE
WV 8"W	EXISTING WATER LINE AND VALVE
FH	EXISTING FIRE HYDRANT
	EXISTING STORM DRAIN
	PROPOSED STORM DRAIN
880	EXISTING CONTOUR

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

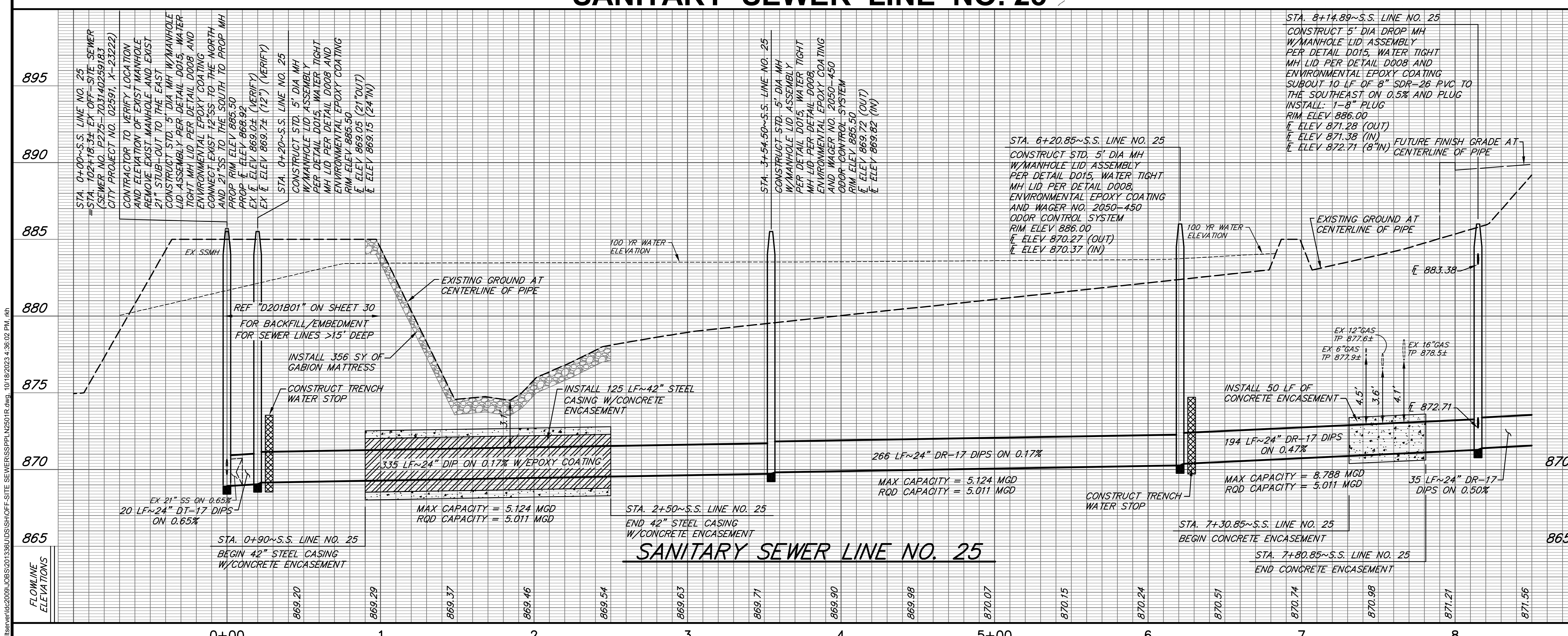
WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

40 0 40 80

GRAPHIC SCALE IN FEET
SCALE: 1"=40'

CITY SEWER MAP NO. 1970-392S



"MUD 1 AND 2"

TIMOTHY JOHN WELCH 69847 LICENSED PROFESSIONAL ENGINEER 10-16-23

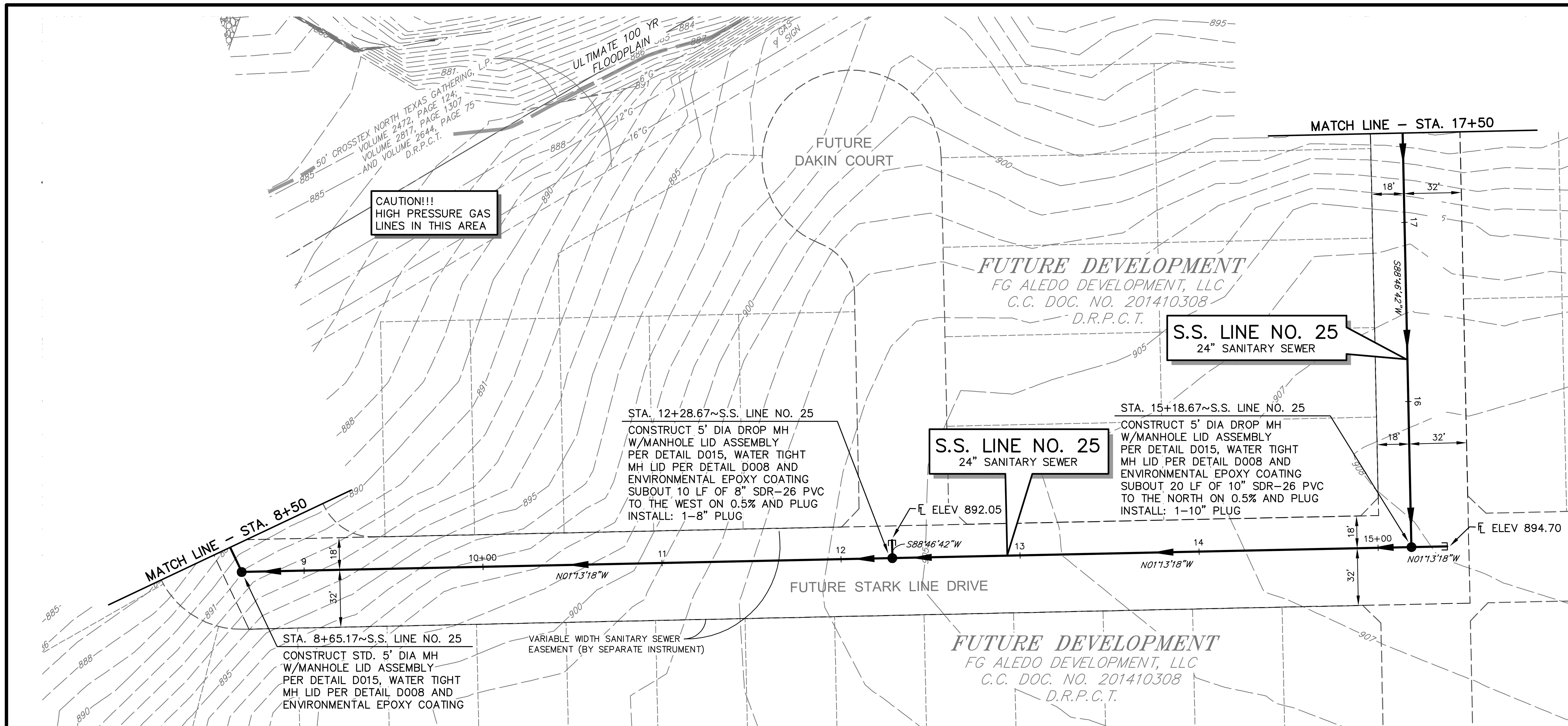
FORT WORTH

Morningstar Westpoint

SANITARY SEWER PLAN–PROFILE
S.S. LINE NO. 25~STA. 0+10± TO STA. 8+50

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H.	DATE:	PROJECT NO: PRC NO. 23-0151, FID 30114-0200431-E07685, PLAN FILE NO. X-	SCALE: HORZ: 1"=40' VERT: 1"=4'	SHEET:
DRAWN: R.K.H.	OCT., 2023			6
CHECKED: T.J.W.				



LEGEND

- PROPOSED SEWER LINE WITH MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- EXISTING SANITARY SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING CONTOUR

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

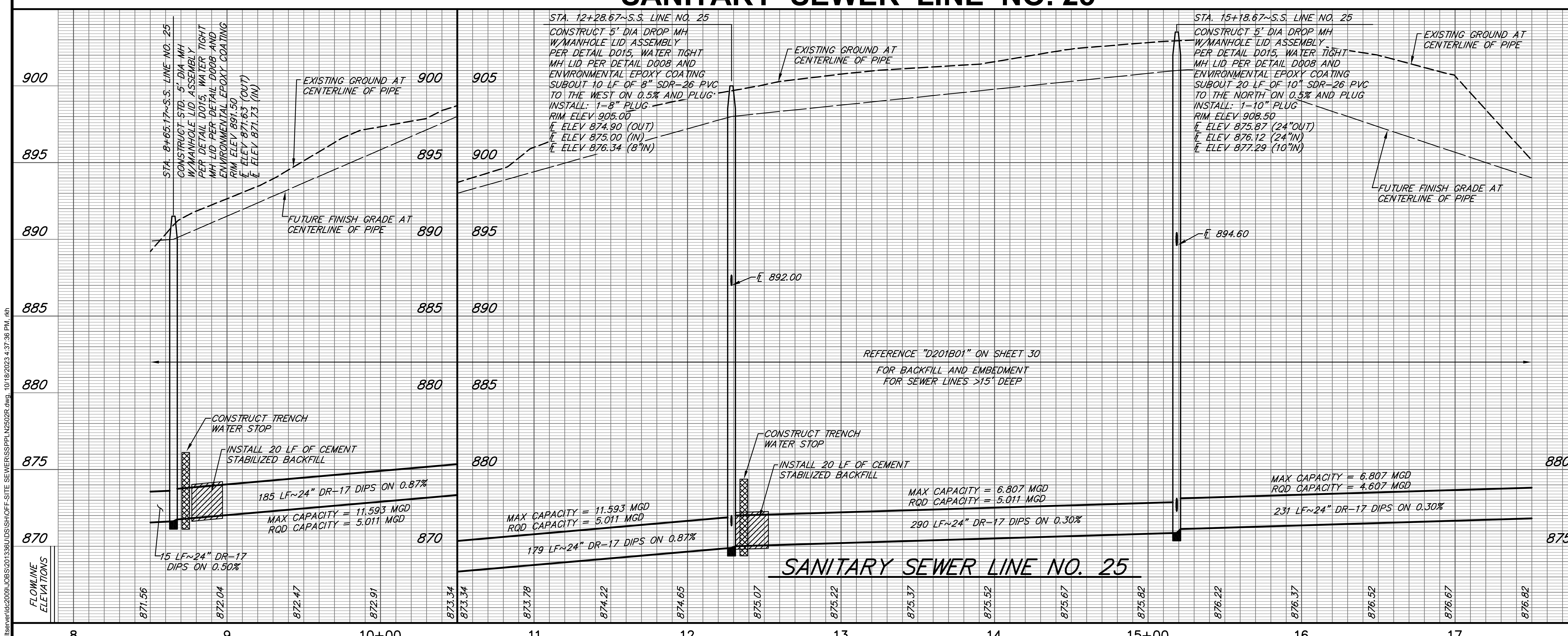
WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

GRAPHIC SCALE IN FEET
SCALE: 1"=40'

CITY SEWER MAP NO. 1970–392S

SANITARY SEWER LINE NO. 25



"MUD 1 AND 2"

TIMOTHY JOHN WELCH 69847 LICENSED PROFESSIONAL ENGINEER 10-16-23

C.P.N. 105124

FORT WORTH

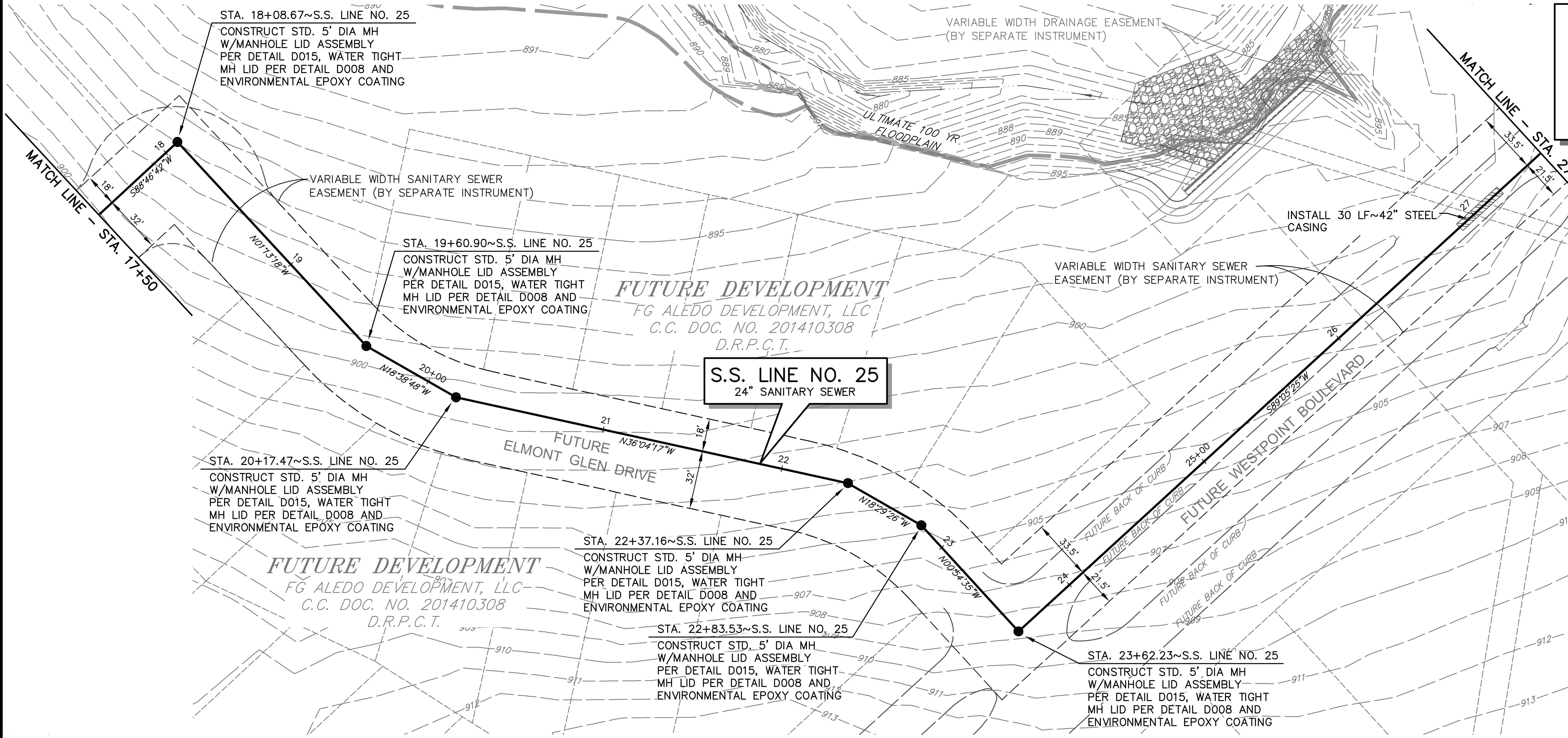
Morningstar Westpoint

SANITARY SEWER PLAN–PROFILE
S.S. LINE NO. 25~STA. 8+50 TO STA. 17+50

WEI WELCH ENGINEERING, INC. CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H.	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: R.K.H.	OCT., 2023	PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	HORZ: 1"=40'	7
CHECKED: T.J.W.			VERT: 1"=4'	

SANITARY SEWER LINE NO. 25



WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

NO.	DATE	DESCRIPTION	BY

LEGEND

- PROPOSED SEWER LINE WITH MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- EXISTING SANITARY SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING CONTOUR

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

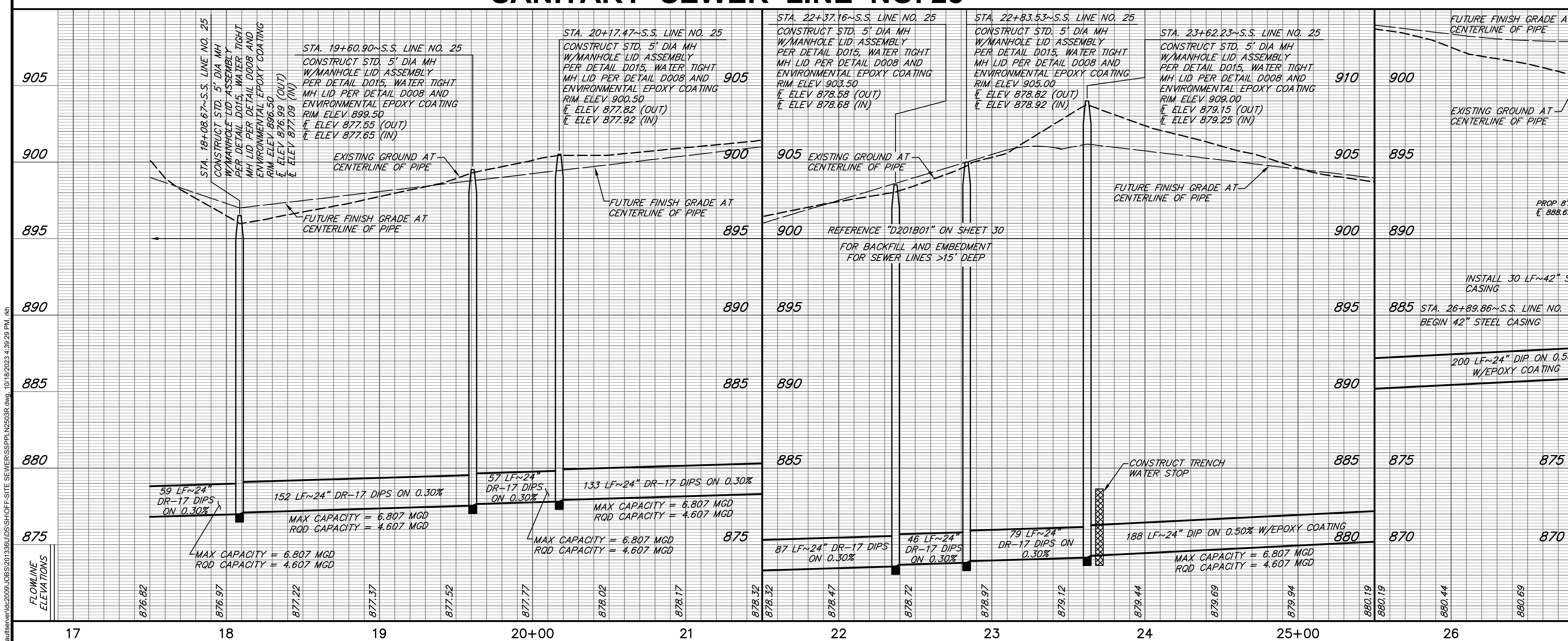
GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

40 0 40 80

GRAPHIC SCALE IN FEET
SCALE: 1"=40'

CITY SEWER MAP NO. 1970-392S



"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

FORT WORTH

Morningstar Westpoint

SANITARY SEWER PLAN/PROFILE
S.S. LINE NO. 25~STA. 17+50 TO STA. 27+50

WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: T.J.W. DRAWN: R.K.H. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: HORZ: 1"=40' VERT: 1"=4'	SHEET: 8

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

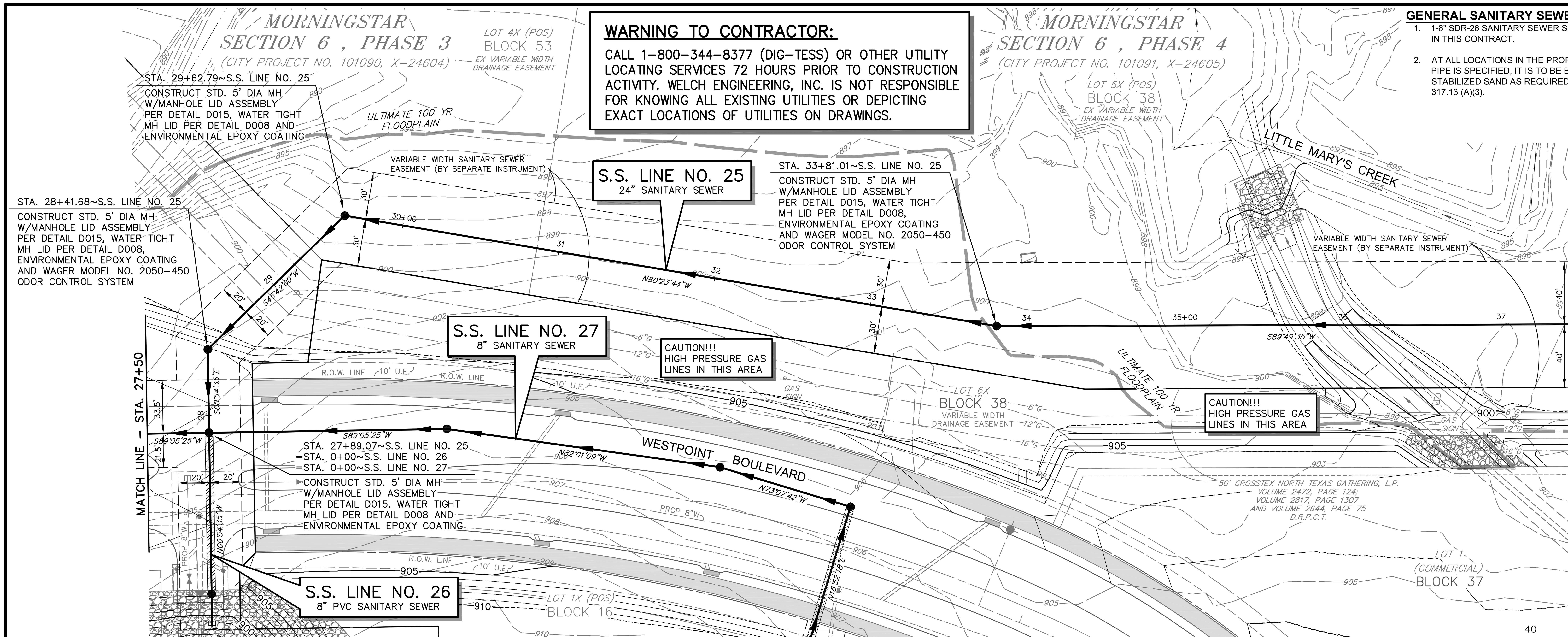
ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

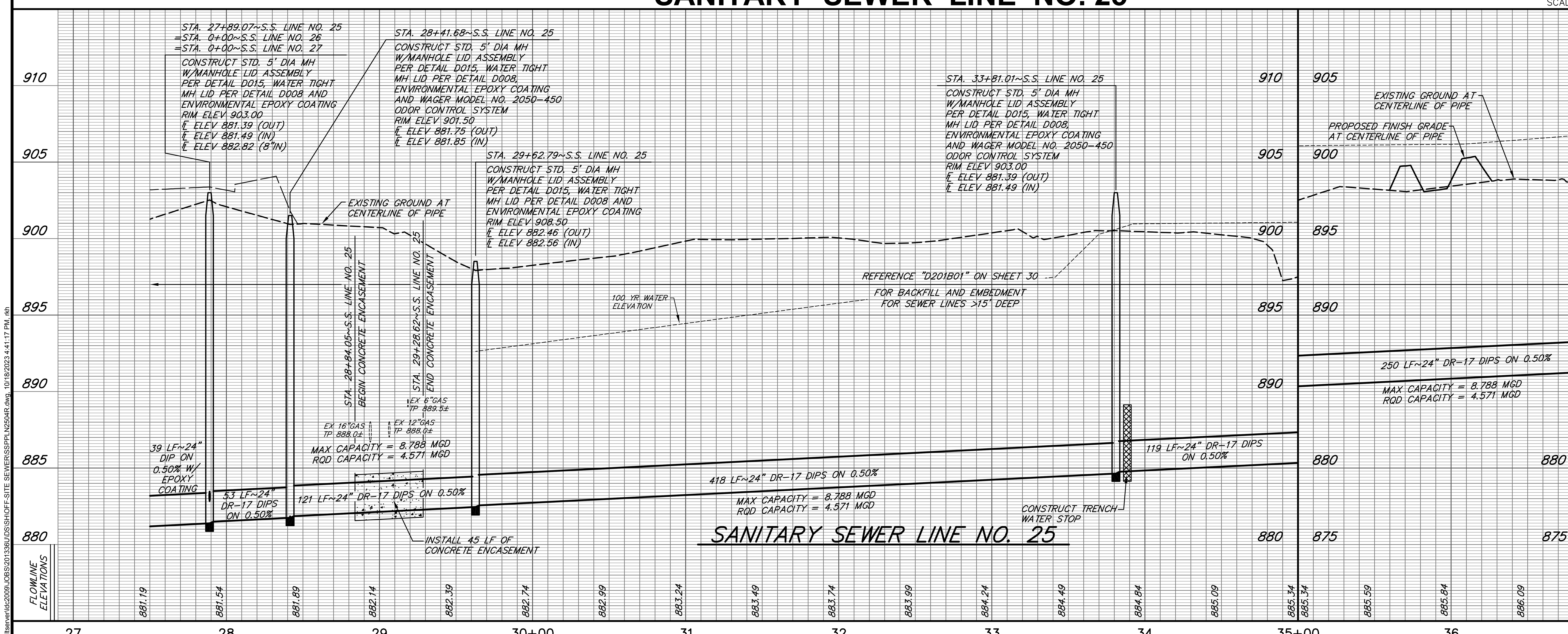
LEGEND

- PROPOSED SEWER LINE WITH MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- EXISTING SANITARY SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE (SSMH 8"SS)
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- EXISTING WATER LINE AND VALVE (WV 8"W)
- EXISTING FIRE HYDRANT (FH)
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING CONTOUR (880)



SANITARY SEWER LINE NO. 25

CITY SEWER MAP NO. 1970-392S



"MUD 1 AND 2"

TIMOTHY JOHN WELCH 69847 LICENSED PROFESSIONAL ENGINEER 10-16-23

C.P.N. 105124

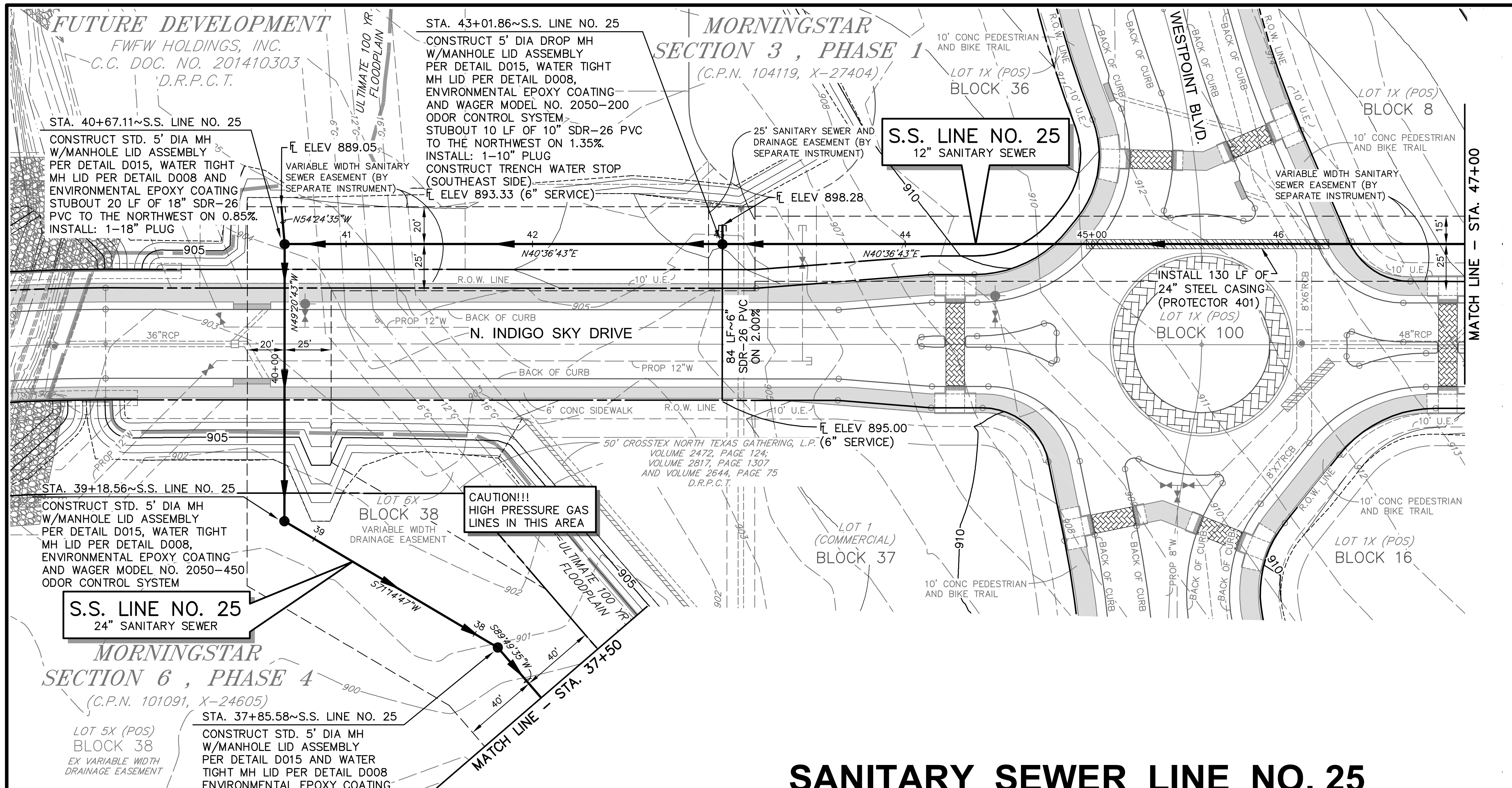
FORT WORTH

Morningstar Westpoint

SANITARY SEWER PLAN-PROFILE
S.S. LINE NO. 25~STA. 27+50 TO STA. 37+50

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H.	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: R.K.H.	OCT., 2023	PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	HORZ: 1"=40'	9
CHECKED: T.J.W.			VERT: 1"=4'	



LEGEND

- PROPOSED SEWER LINE WITH MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- EXISTING SANITARY SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING CONTOUR

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

WARNING TO CONTRACTOR:

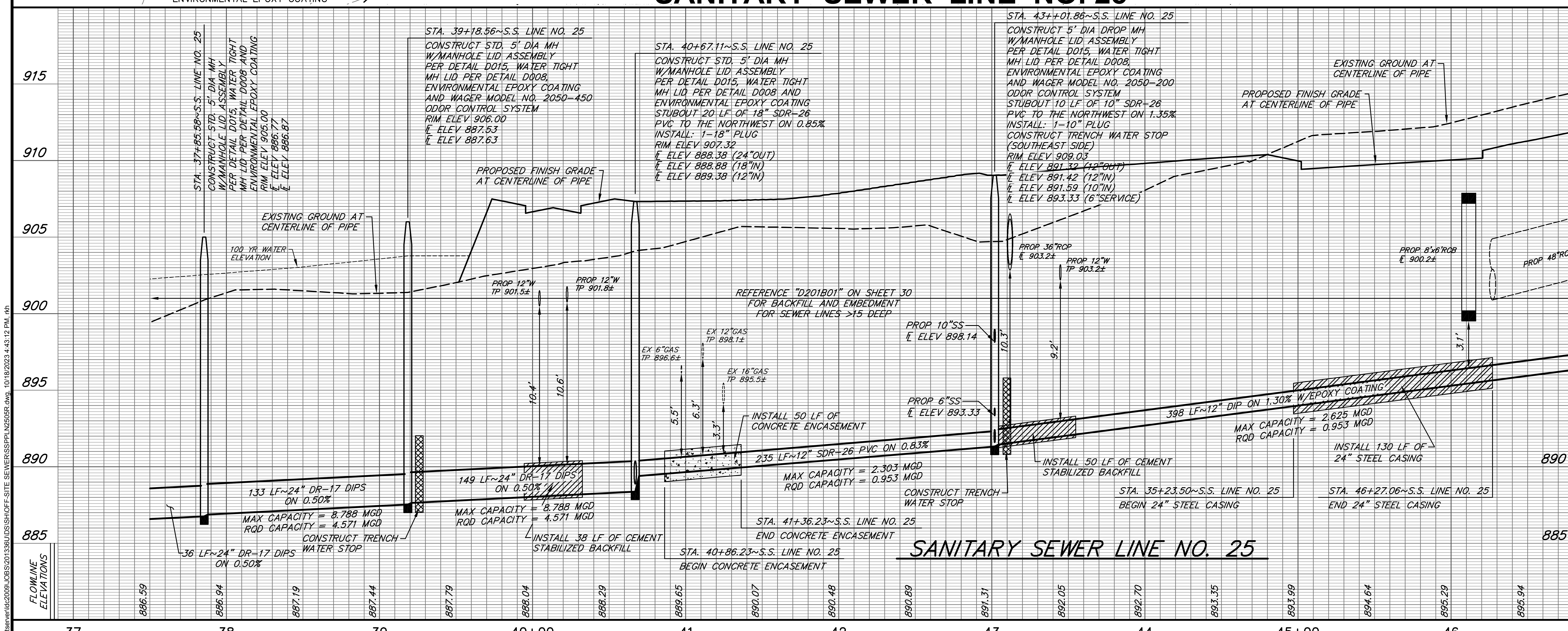
CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.

40 0 40 80

GRAPHIC SCALE IN FEET
SCALE: 1"=40'

CITY SEWER MAP NO. 1970-392S

SANITARY SEWER LINE NO. 25



TIMOTHY JOHN WELCH
69847
LICENSED
PROFESSIONAL ENGINEER
10-16-23

FORT WORTH

Morningstar Westpoint

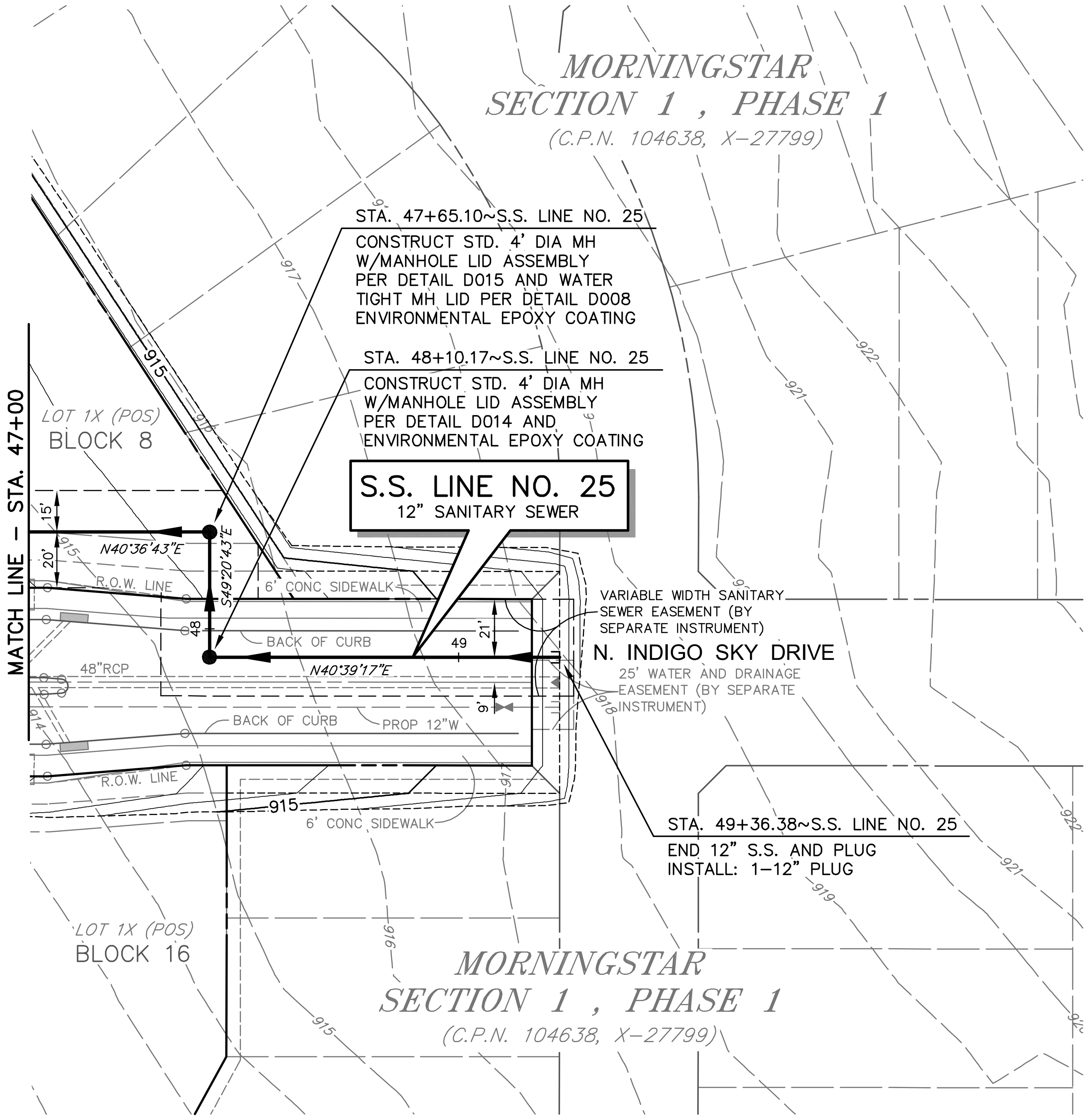
SANITARY SEWER PLAN-PROFILE
S.S. LINE NO. 25~STA. 37+50 TO STA. 47+00

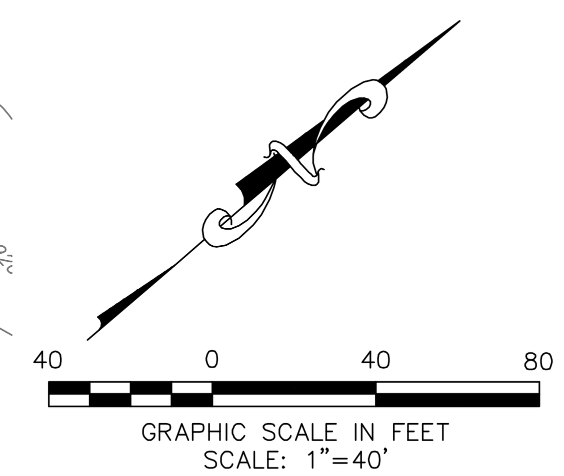
WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H. DRAWN: R.K.H. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: HORZ: 1"=40' VERT: 1"=4'	SHEET: 10

WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.





SANITARY SEWER LINE NO. 25

LEGEND

- PROPOSED SEWER LINE WITH MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- EXISTING SANITARY SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE
- PROPOSED WATER LINE AND VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- EXISTING WATER LINE AND VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING CONTOUR

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

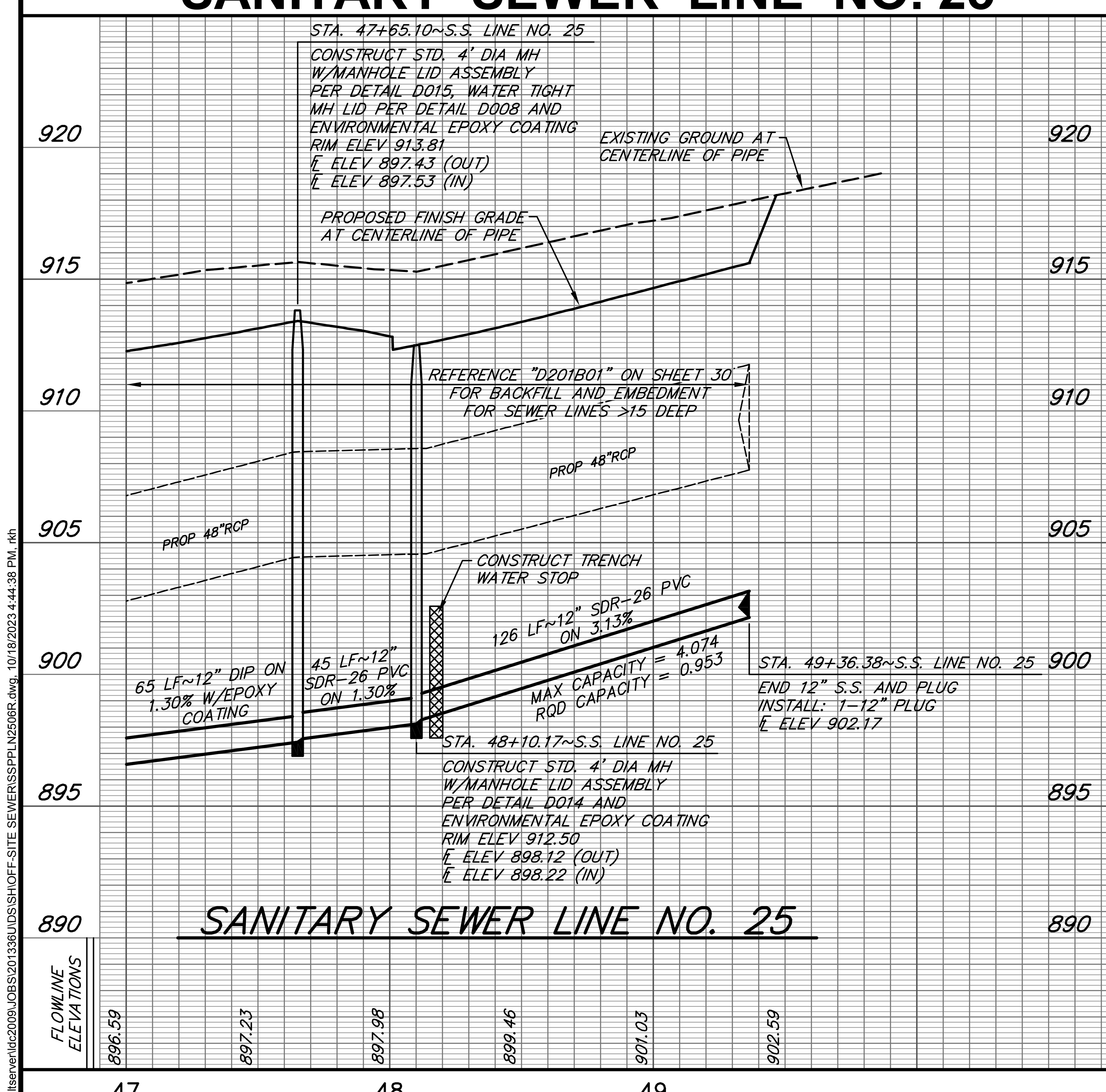
BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

GENERAL SANITARY SEWER NOTES:

1. 1-6" SDR-26 SANITARY SEWER SERVICES TO BE INSTALLED IN THIS CONTRACT.
2. AT ALL LOCATIONS IN THE PROFILES WHERE SDR-26 PVC PIPE IS SPECIFIED, IT IS TO BE BACK FILLED WITH CEMENT STABILIZED SAND AS REQUIRED BY TCEQ REGULATION 317.13 (A)(3).

CITY SEWER MAP NO. 1970-392S



"MUD 1 AND 2"

TIMOTHY JOHN WELCH 69847 LICENSED PROFESSIONAL ENGINEER 10-16-23

C.P.N. 105124

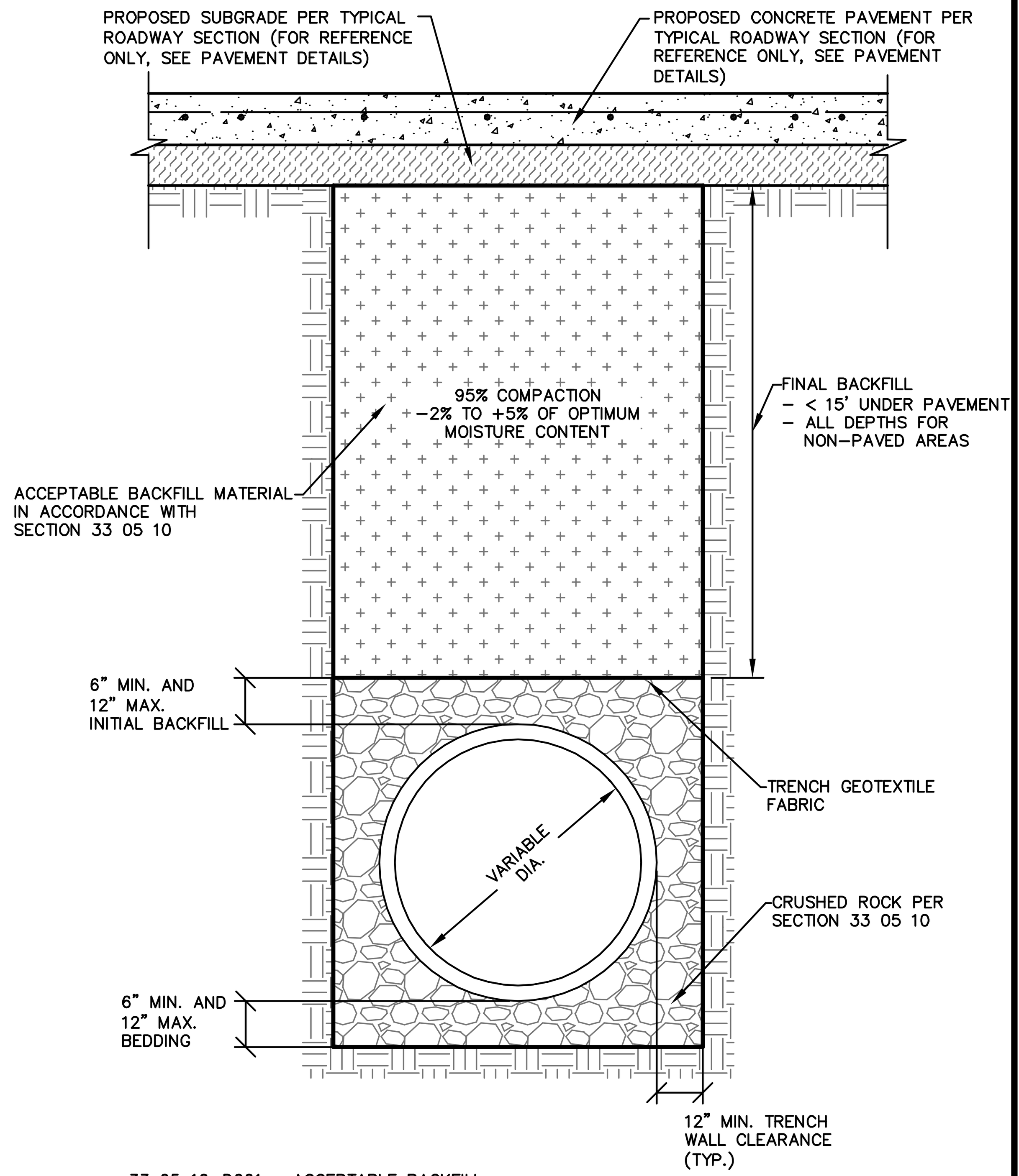
FORT WORTH

Morningstar Westpoint

SANITARY SEWER PLAN–PROFILE
S.S. LINE NO. 25~STA. 47+00 TO STA. 49+36.38

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H. DRAWN: R.K.H. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: HORZ: 1"=40' VERT: 1"=4'	SHEET: 11

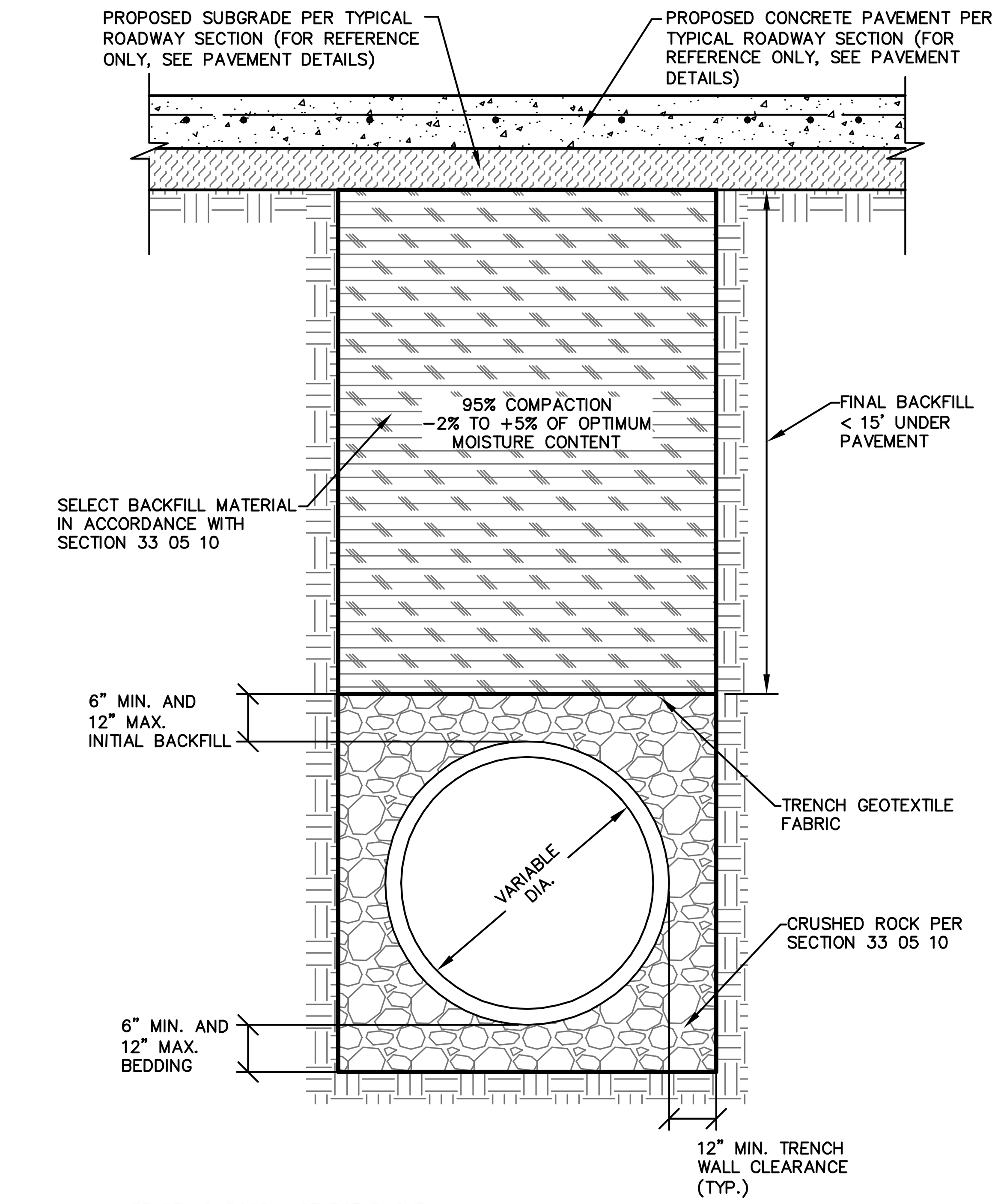


33 05 10-D001 ACCEPTABLE BACKFILL
33 05 10-D201A EMBEDMENT FOR SANITARY SEWER UP TO 15-INCH DIAMETER
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201A01

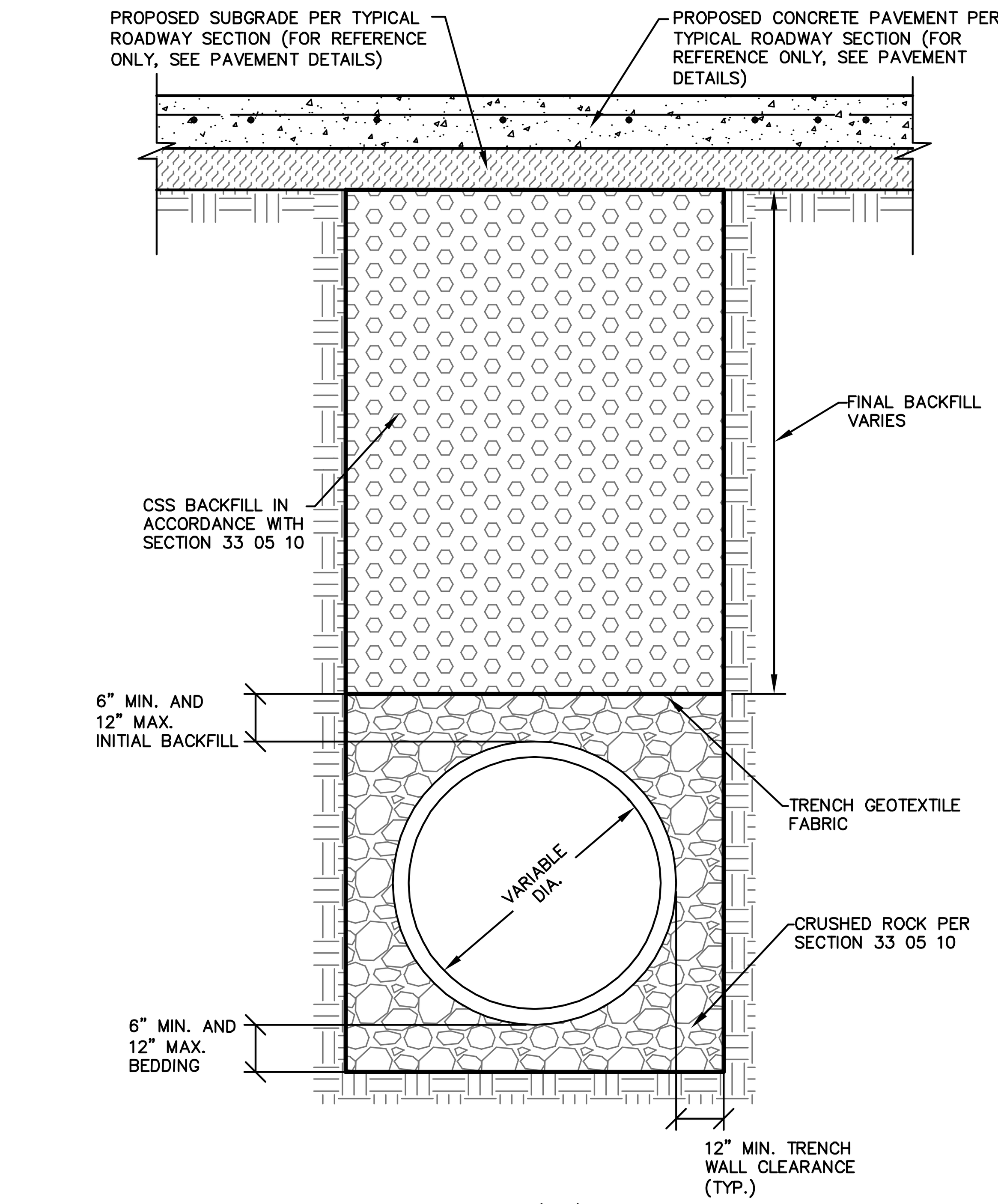


33 05 10-D002 SELECT BACKFILL
33 05 10-D201A EMBEDMENT FOR SANITARY SEWER UP TO 15-INCH DIAMETER
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201A02

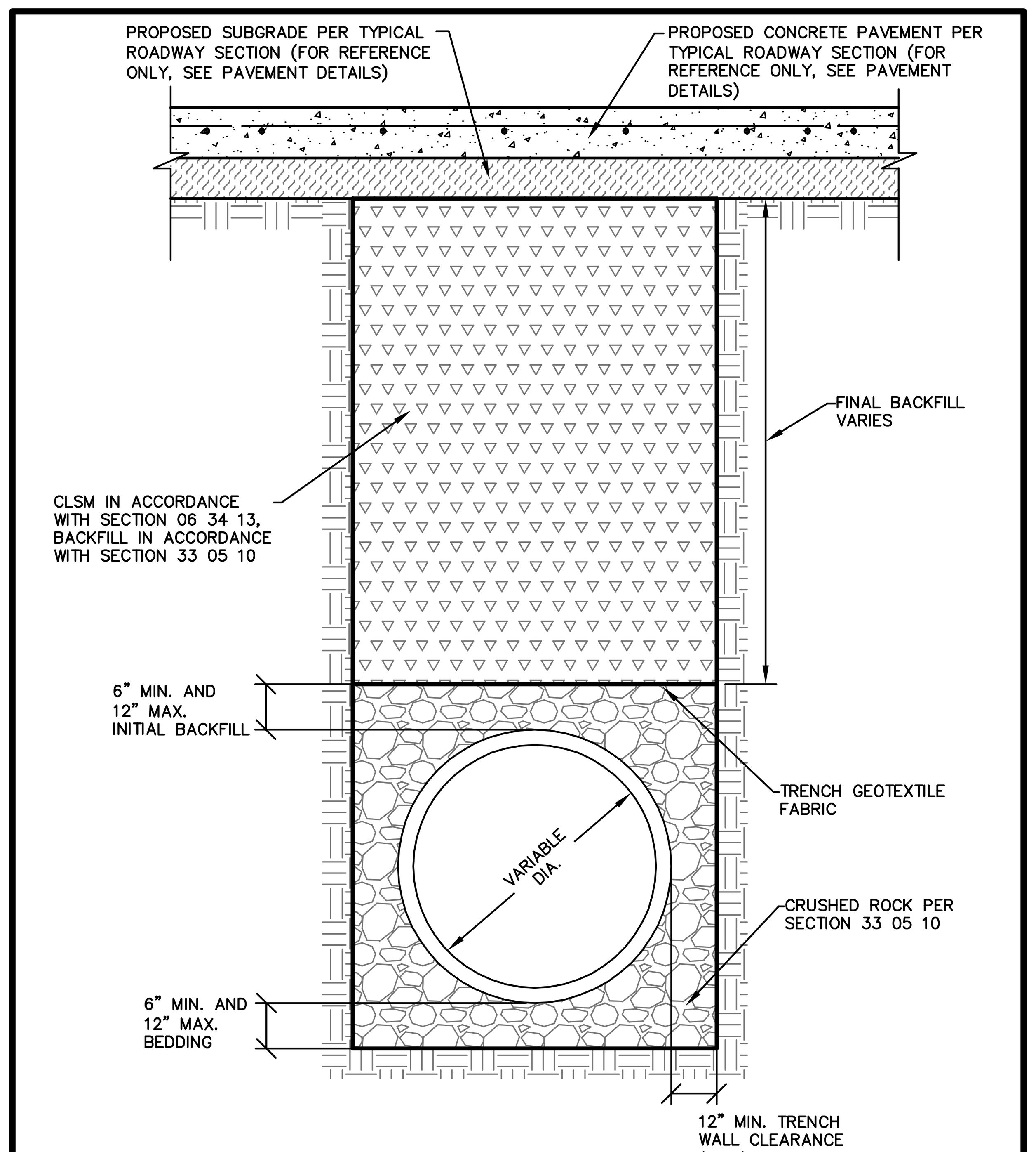


33 05 10-D003 CEMENT STABILIZED SAND (CSS) BACKFILL
33 05 10-D201A EMBEDMENT FOR SANITARY SEWER UP TO 15-INCH DIAMETER
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201A03

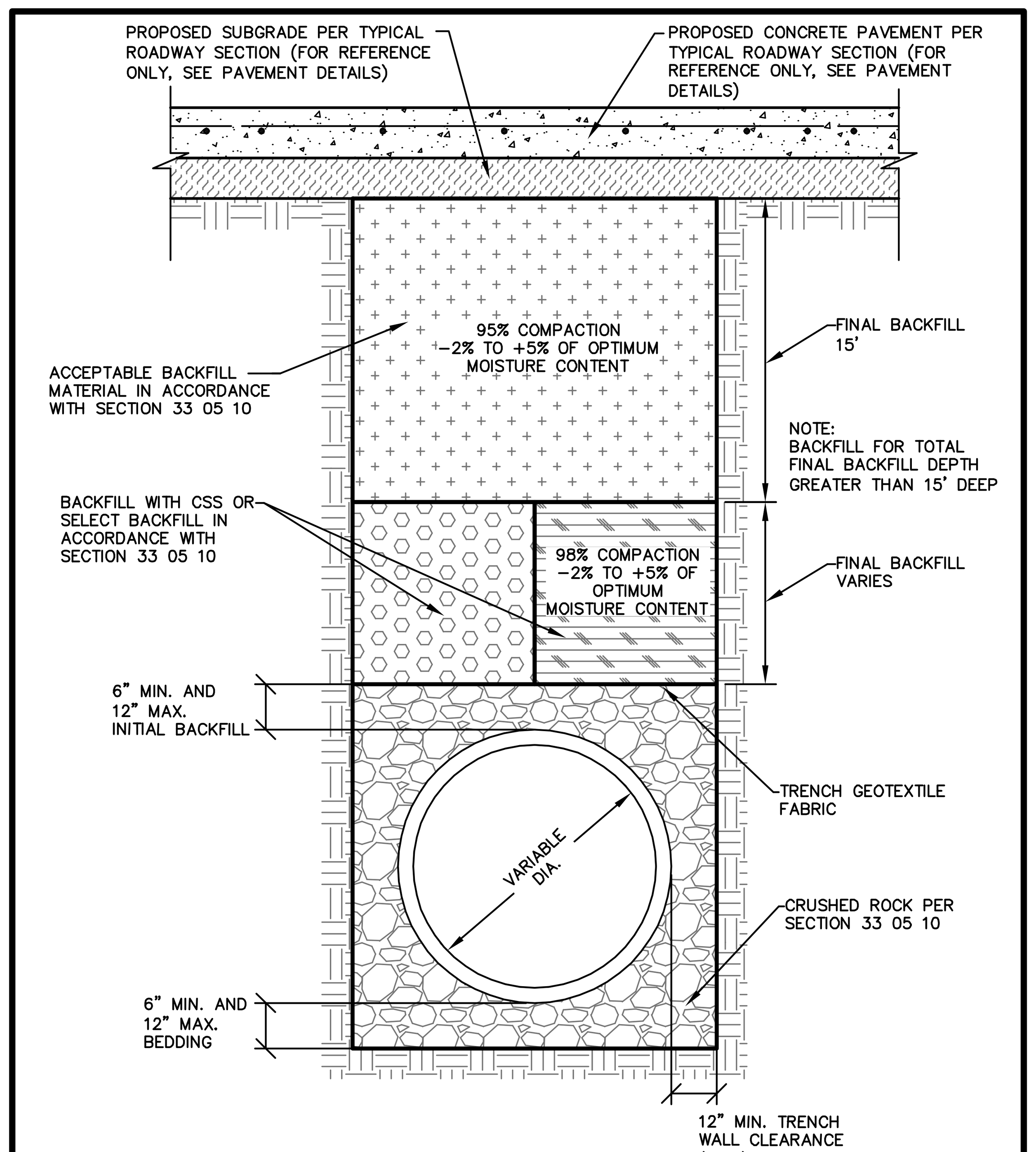


33 05 10-D004 CONTROLLED LOW STRENGTH MATERIAL (CLSM) BACKFILL
33 05 10-D201A EMBEDMENT FOR SANITARY SEWER UP TO 15-INCH DIAMETER
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201A04

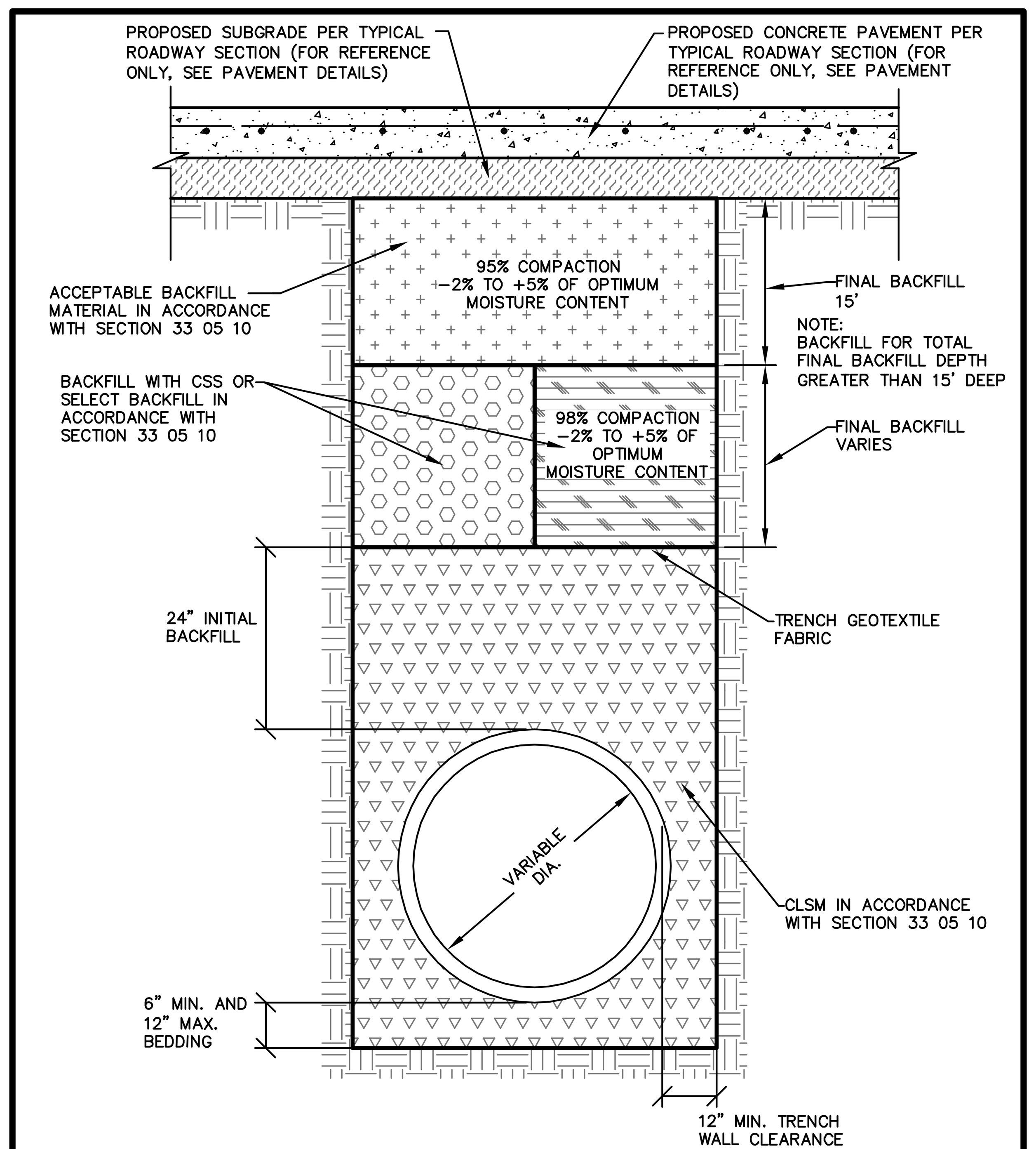


33 05 10-D005 DEEP TRENCH BACKFILL
33 05 10-D201A EMBEDMENT FOR SANITARY SEWER UP TO 15-INCH DIAMETER
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201A05



33 05 10-D005 DEEP TRENCH BACKFILL
33 05 10-D201B EMBEDMENT FOR SANITARY SEWER 18-INCH DIAMETER AND LARGER

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER PIPES

N.T.S.

D201B01

NO.	DATE	DESCRIPTION	BY

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

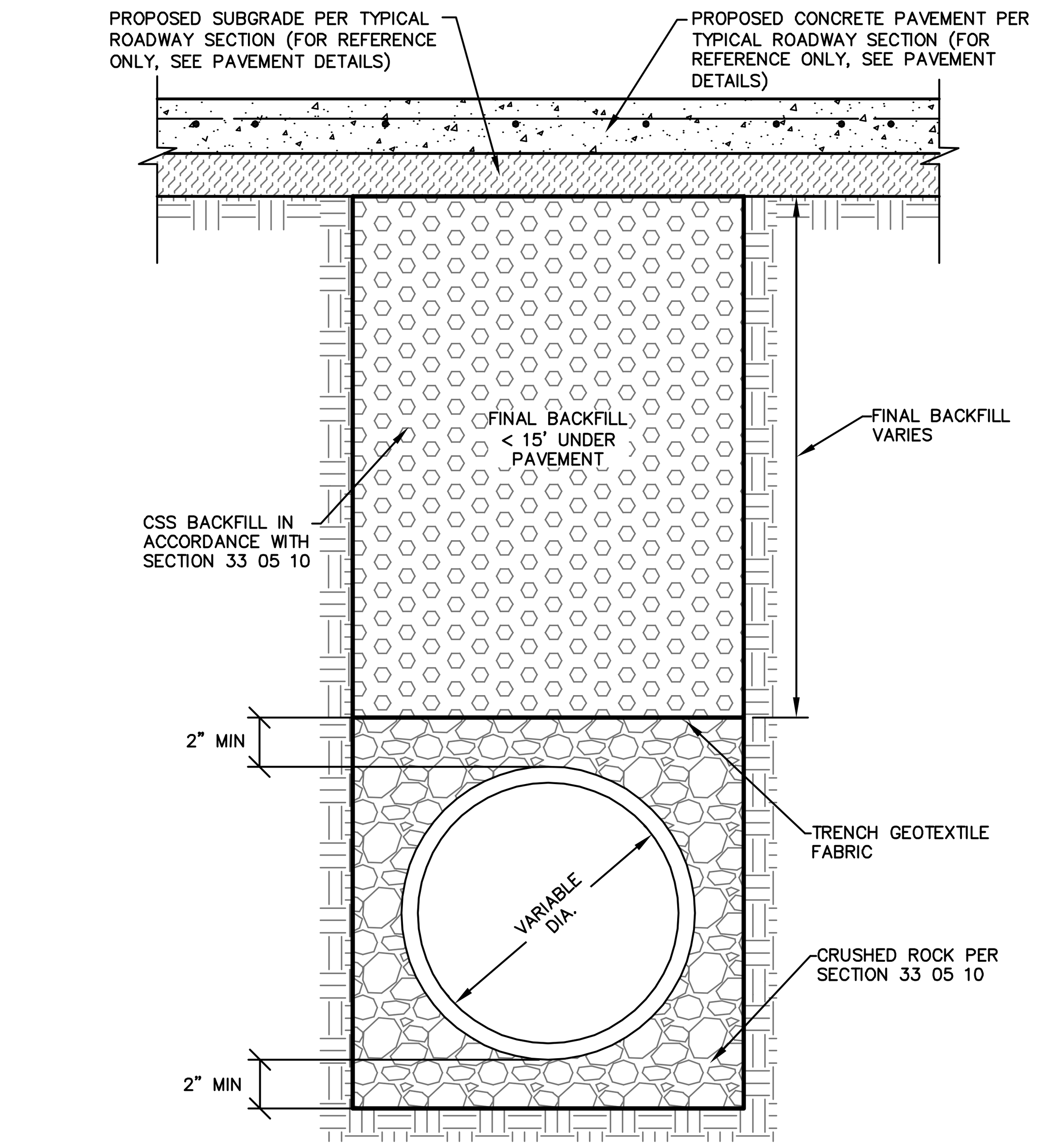
FORT WORTH

Morningstar Westpoint

SANITARY SEWER DETAILS
(SHEET 6 OF 10)

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: C.F.W. DRAWN: C.F.W. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NO SCALE	SHEET: 12

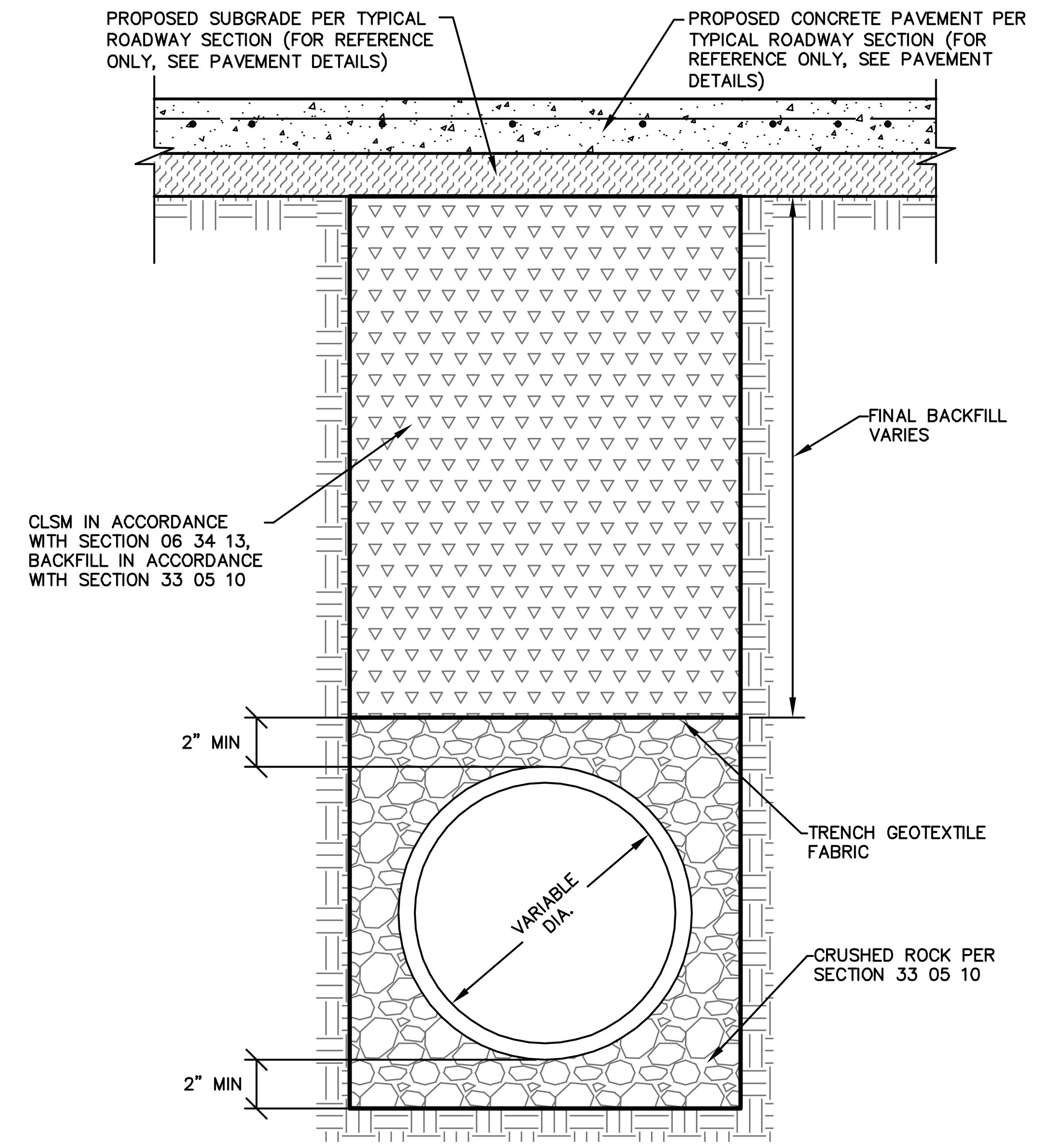


33 05 10-D003 CEMENT STABILIZED SAND (CSS) BACKFILL
33 05 10-D202 EMBEDMENT FOR SANITARY SEWER SERVICES

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER SERVICES

N.T.S.

D20203

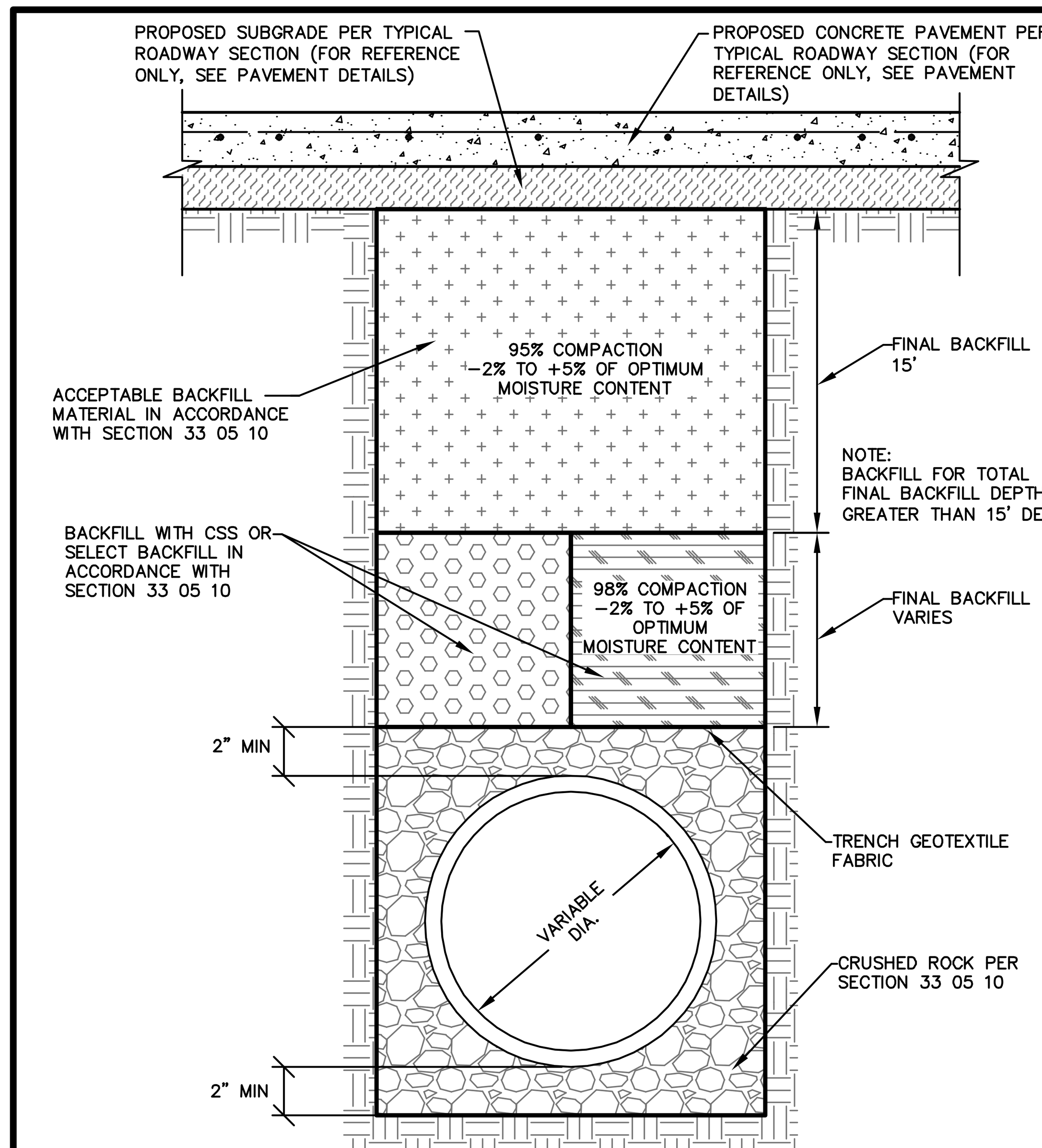


33 05 10-D004 CONTROLLED LOW STRENGTH MATERIAL (CLSM) BACKFILL
33 05 10-D202 EMBEDMENT FOR SANITARY SEWER SERVICES

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER SERVICES

N.T.S.

D20204



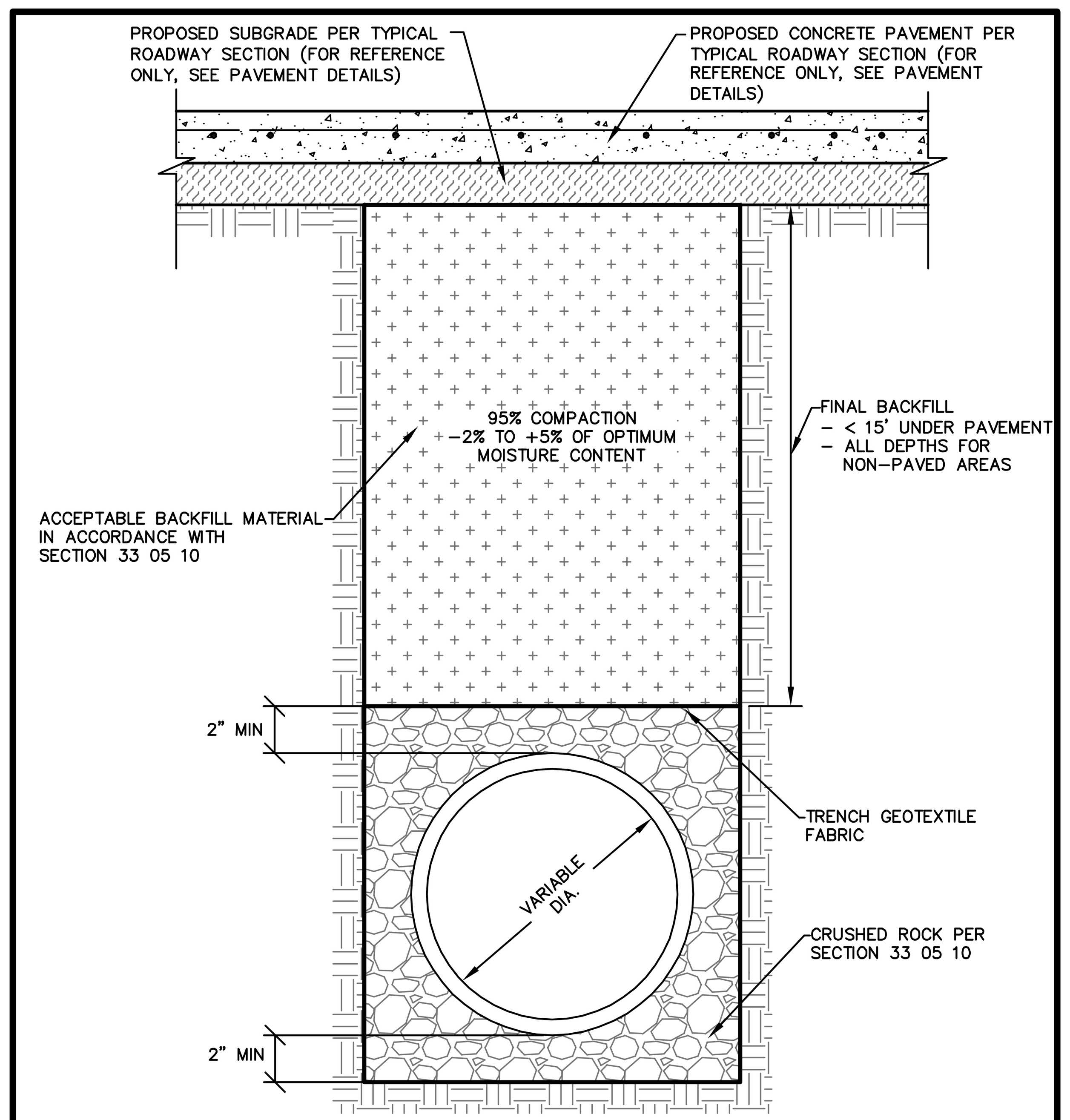
33 05 10-D005 DEEP TRENCH BACKFILL
33 05 10-D202 EMBEDMENT FOR SANITARY SEWER SERVICES

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER SERVICES

N.T.S.

D20205

NO.	DATE	DESCRIPTION	BY

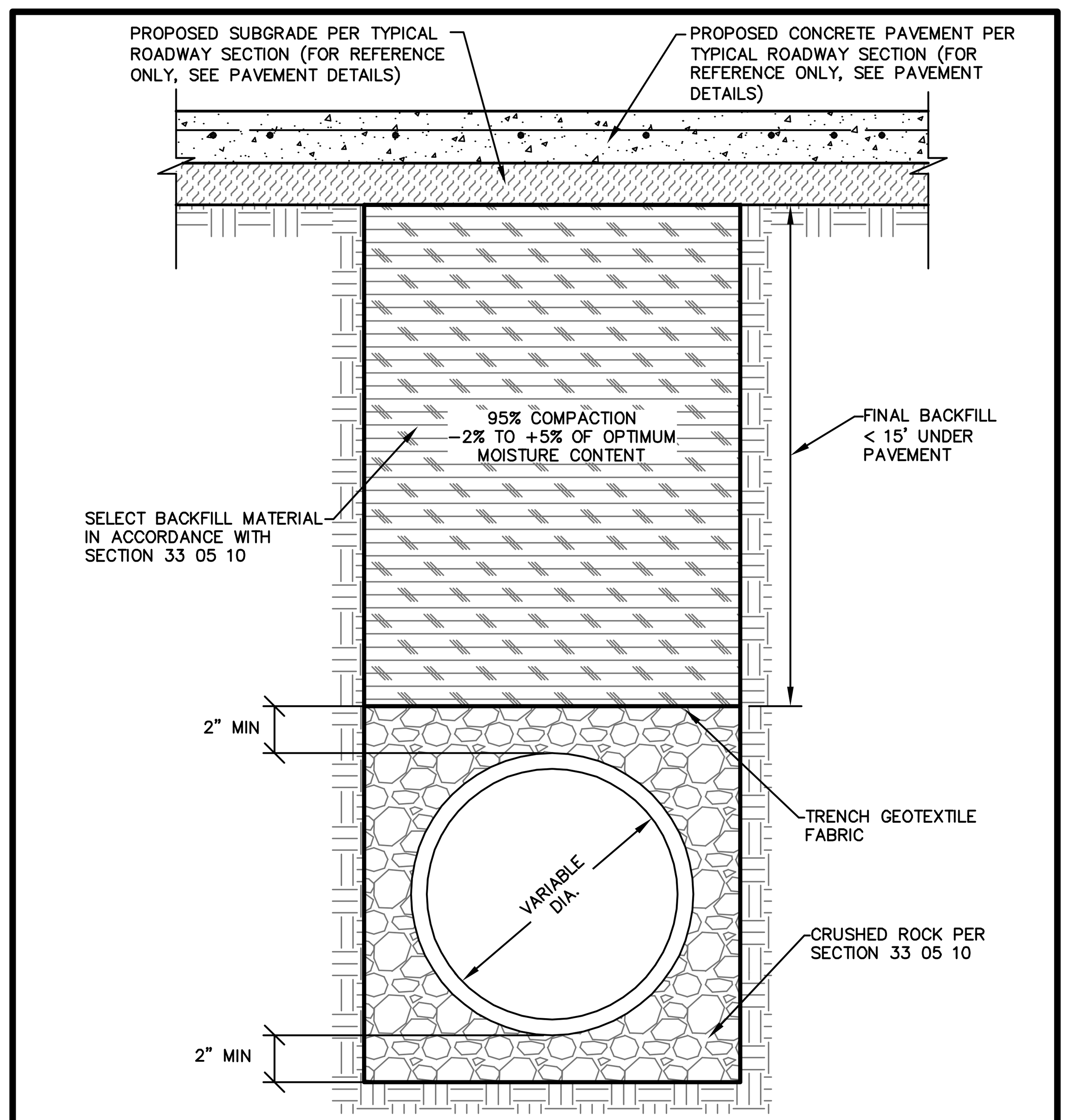


33 05 10-D001 ACCEPTABLE BACKFILL
33 05 10-D202 EMBEDMENT FOR SANITARY SEWER SERVICES

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER SERVICES

N.T.S.

D20201



33 05 10-D002 SELECT BACKFILL
33 05 10-D202 EMBEDMENT FOR SANITARY SEWER SERVICES

BACKFILL AND EMBEDMENT DETAIL FOR SANITARY SEWER SERVICES

N.T.S.

D20202

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

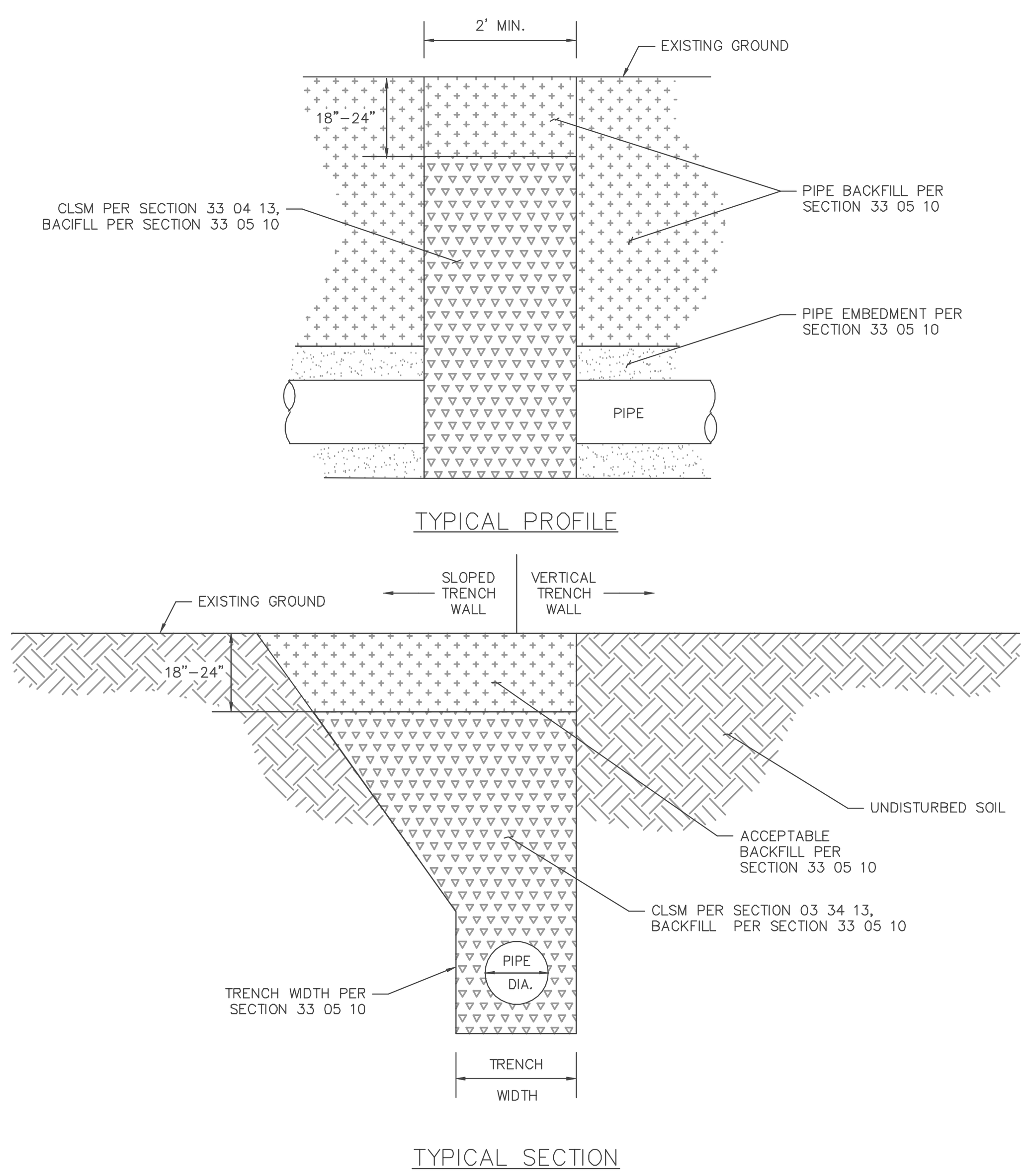
Morningstar Westpoint

SANITARY SEWER DETAILS
(SHEET 7 OF 10)

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

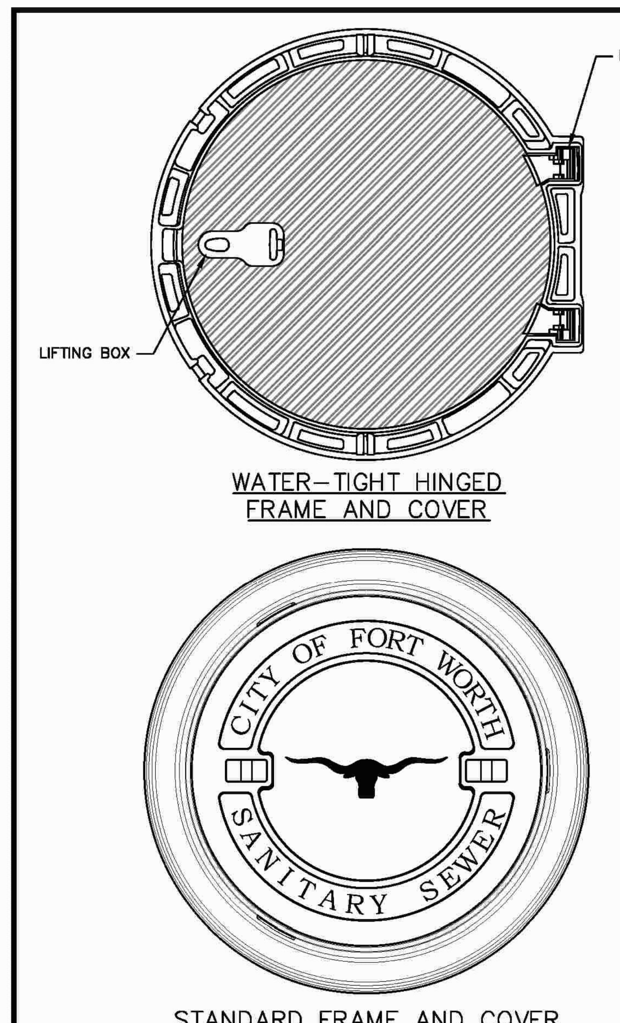
DESIGNED: C.F.W.	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: C.F.W.	OCT., 2023	IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	NO SCALE	13
CHECKED: T.J.W.				

NO.	DATE	DESCRIPTION	BY

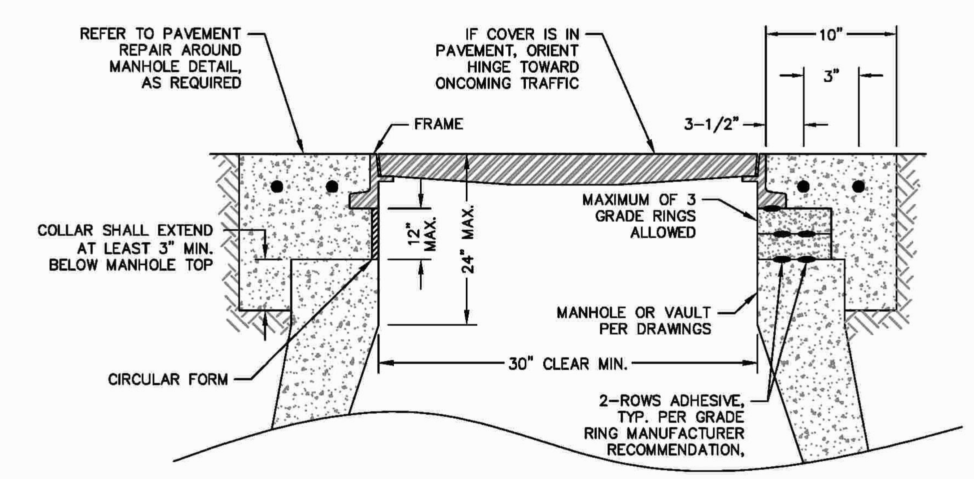


FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 08-31-2012

TRENCH WATER STOP — 33 05 10-D006



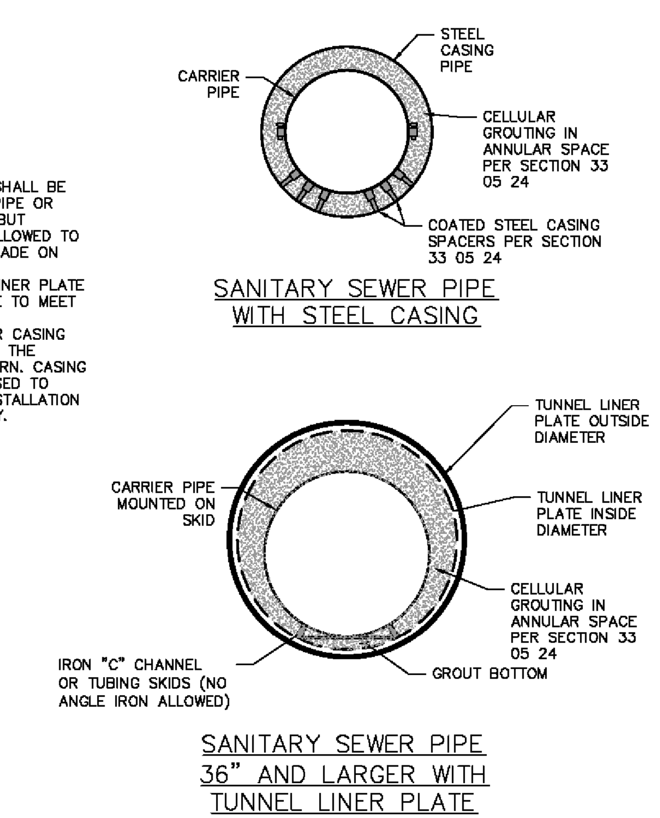
NOTES:
1. PROVIDE HINGED FRAME AND COVER WHERE INDICATED IN THE DRAWINGS, ON DETAILS OR IN SPECIFICATIONS.
2. COVERS SHALL BE INTEGRALLY MARKED INDICATING "WATER" OR "SANITARY SEWER" AS DESIGNATED ALONG WITH FORT WORTH LOGO PER SECTION 33 05 13.
3. ALL FRAMES AND COVERS SHALL REQUIRE A WATER–TIGHT GASKET.
4. FOR WATER AND SANITARY SEWER, ALL TYPES OF FRAMES SHALL ALLOW MINIMUM 30–INCH OPENING, UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS.
5. CAST IRON HINGED LIDS SHALL BE REQUIRED FOR ALL SANITARY SEWER MANHOLES WITH A RIM ELEVATION GREATER THAN 12–INCHES ABOVE NATURAL GROUND.
6. DO NOT WIPE JOINTS OR GRADE RINGS WITH GROUT, MORTAR OR CEMENT.
7. THE MAXIMUM HEIGHT OF GRADE RINGS MAY EXCEED 12–INCHES WHEN APPROVED BY THE PROJECT MANAGER FOR THE CITY TO ALLOW FOR PAVEMENT DEPTH AND PAVEMENT CONSTRUCTION. THE MAXIMUM HEIGHT OF THE NARROW PART OF THE MANHOLE SHALL NOT EXCEED 24–INCHES REGARDLESS OF THE HEIGHT OF GRADE RINGS.
8. MANHOLES SHALL NOT PROTRUDE ABOVE GRADE MORE THAN 24–INCHES.
9. MANHOLES IN PAVEMENT SHALL BE ORIENTED SO THE HINGE IS TOWARD ONCOMING TRAFFIC.
10. CONCRETE GRADE RINGS ARE NOT PERMITTED, GRADE RINGS SHALL BE AS APPROVED.
11. IN LIEU OF GRADE RINGS, CIRCULAR FORMS, "SONO–TUBE", MAY BE USED.



FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 12-01-2021

SANITARY SEWER MANHOLE FRAME, COVER AND GRADE RINGS — 33 05 13-D219

NOTE:
1. SEWER CARRIER PIPE SHALL BE CENTERED IN CASING PIPE OR TUNNEL LINER PLATE, BUT VARIATIONS MAY BE ALLOWED TO ACHIEVE PROPOSED GRADE ON DRAWINGS.
2. CASING AND TUNNEL LINER PLATE DIAMETERS SHOWN ARE TO MEET MINIMUM INSTALLATION REQUIREMENTS. LARGER CASING SIZES AS INDICATED IN THE DRAWINGS SHALL GOVERN. CASING SIZES MAY BE INCREASED TO ALLOW FOR CASING INSTALLATION TOLERANCE VARIABILITY.



CASING PIPE SCHEDULE

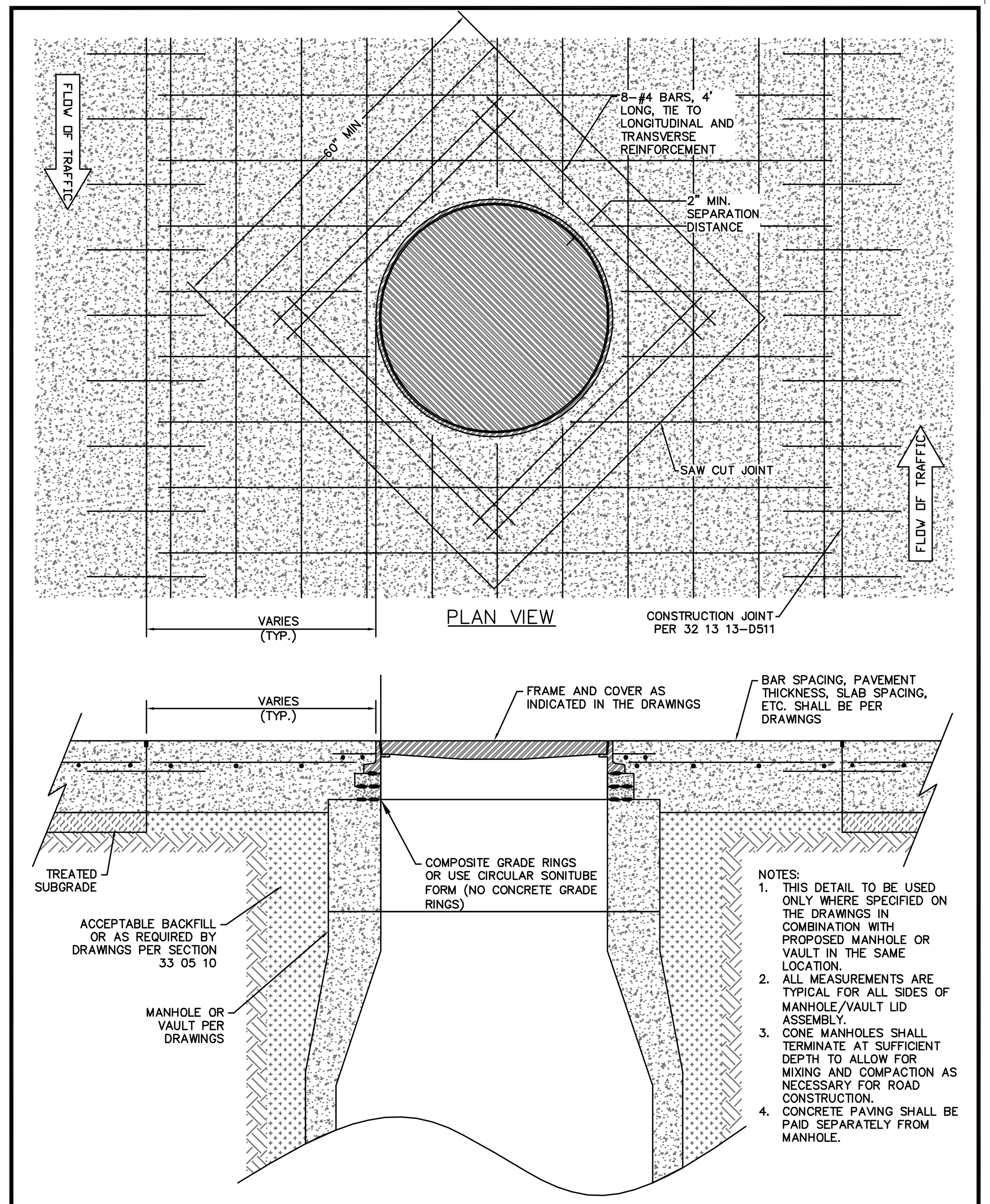
NOMINAL CARRIER PIPE SIZE	SDR 26 PVC CARRIER PIPE BELL OD	MIN CASING STEEL ID	DI CARRIER PIPE BELL OD	MIN CASING STEEL ID	FIBERGLASS CARRIER PIPE COUPLING OD	MIN CASING STEEL ID
8"	9.692"	20"	11.16"	20"	–	–
10"	12.116"	20"	13.25"	20"	–	–
12"	14.424"	24"	15.22"	20"	–	–
15"	17.652"	24"	–	–	–	–
16"	–	–	19.86"	30"	–	–
18"	–	–	22.16"	36"	21.3"	30"
20"	–	–	24.28"	36"	23.4"	30"
21"	–	–	25.39"	36"	–	–
24"	–	–	28.50"	42"	27.6"	42"
27"	–	–	–	–	29.8"	42"
30"	–	–	34.95"	48"	33.9"	48"
36"	–	–	41.37"	54"	40.2"	54"
42"	–	–	48.27"	60"	46.5"	60"

TUNNEL LINER PLATE SCHEDULE

NOMINAL CARRIER PIPE SIZE	DI CARRIER PIPE BELL OD	NOMINAL TLP ø	SS FIBERGLASS CARRIER PIPE COUPLING OD	NOMINAL TLP ø
18"	22.16"	48"	21.3"	48"
20"	24.28"	48"	23.4"	48"
21"	–	–	–	–
24"	28.50"	48"	27.6"	48"
27"	–	48"	29.8"	48"
30"	34.95"	52"	33.9"	52"
36"	41.37"	58"	40.2"	52"
42"	48.27"	66"	46.5"	62"
48"	–	–	52.9"	68"
54"	–	–	59.4"	76"
60"	–	–	65.5"	82"
66"	–	–	72"	88"
72"	–	–	78.3"	94"
78"	–	–	84.7"	100"
84"	–	–	90.2"	106"
90"	–	–	97.8"	114"
96"	–	–	103.1"	118"

FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 05-31-2016

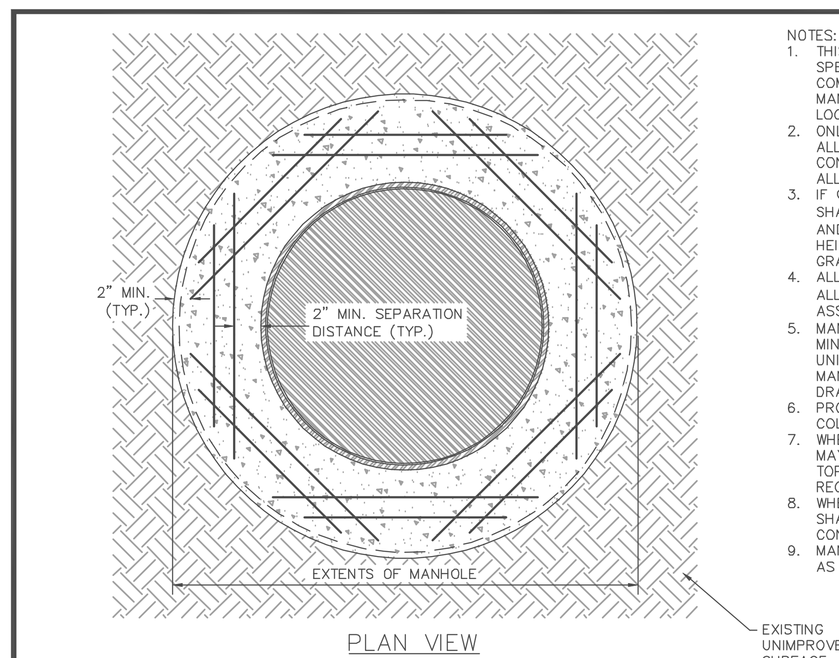
SANITARY SEWER CARRIER PIPE INSTALLATION IN STEEL CASING AND TUNNEL LINER PLATE — 33 05 24-D203



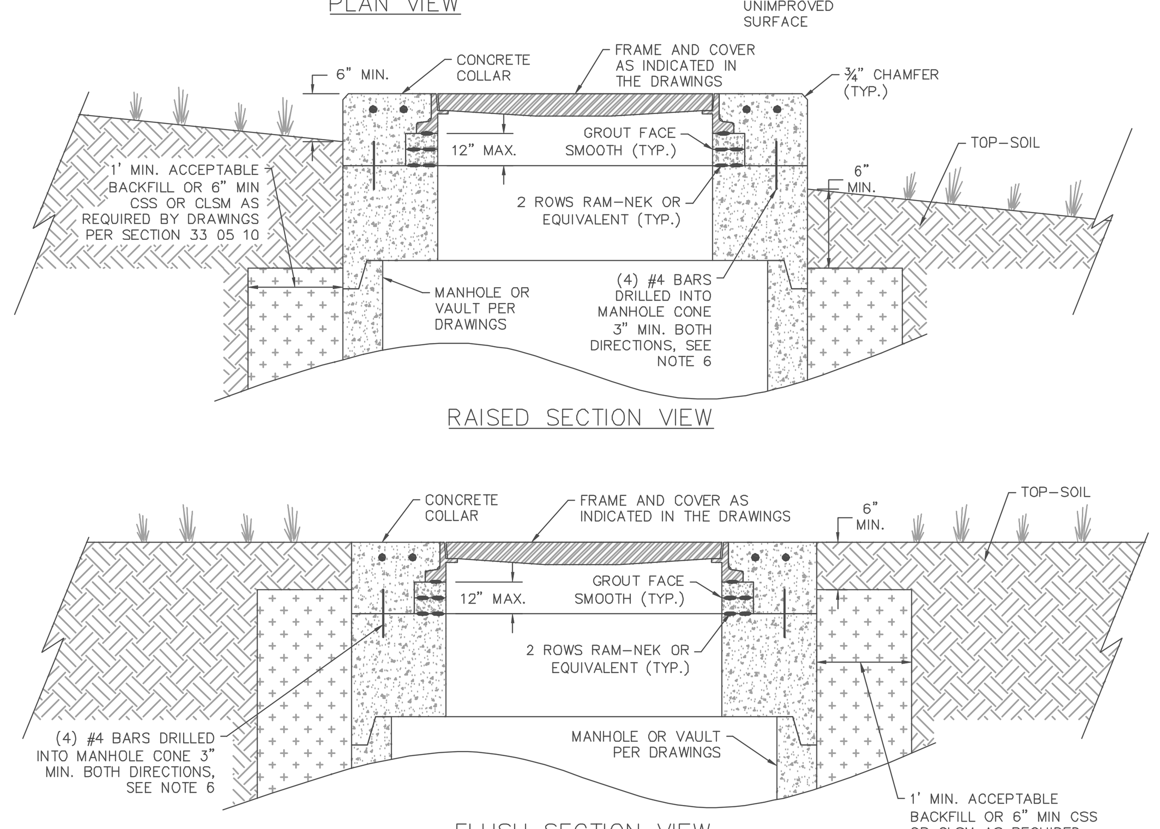
NOTES:
1. THIS DETAIL TO BE USED ONLY WHERE SPECIFIED ON THE DRAWINGS IN COMBINATION WITH PROPOSED MANHOLE OR VAULT IN THE SAME LOCATION.
2. ALL MEASUREMENTS ARE TYPICAL FOR ALL SIDES OF MANHOLE/VAULT LID ASSEMBLY.
3. CONE MANHOLES SHALL TERMINATE AT SUFFICIENT DEPTH TO ALLOW FOR MIXING AND COMPACTION AS NECESSARY FOR ROAD CONSTRUCTION.
4. CONCRETE PAVING SHALL BE PAID SEPARATELY FROM MANHOLE.

FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 09-09-2022

PROPOSED CONCRETE PAVEMENT AROUND MANHOLE (CONE) — 33 05 13-D014



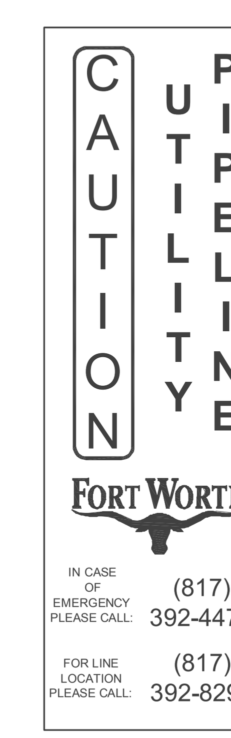
NOTES:
1. THIS DETAIL TO BE USED ONLY WHERE SPECIFIED ON THE DRAWINGS IN COMBINATION WITH PROPOSED MANHOLE OR VAULT IN THE SAME LOCATION.
2. ONLY FLAT TOP MANHOLES SHALL BE ALLOWED FOR UNIMPROVED SURFACES. CONE MANHOLES WILL NOT BE ALLOWED.
3. IF GRADE RINGS ARE USED THEY SHALL BE NO LESS THAN 2" THICK, AND SHALL NOT EXCEED 12" IN TOTAL HEIGHT. NO MORE THAN 3 TOTAL GRADE RINGS. SHALL BE ALLOWED.
4. ALL MEASUREMENTS ARE TYPICAL FOR ALL SIDES OF MANHOLE/VAULT LID ASSEMBLY.
5. MANHOLE FLAT TOP SHALL EXTEND 6" MIN. ABOVE HIGHEST ADJACENT UNIMPROVED SURFACE WHEN RAISED MANHOLE IS INDICATED IN THE DRAWINGS.
6. PROVIDE REINFORCEMENT TYING COLLAR TO MANHOLE.
7. WHERE POSSIBLE, RING AND FRAME MAY BE INTEGRALLY CAST INTO FLAT TOP, PROVIDED ALL OTHER SPACING REQUIREMENTS ARE MET.
8. WHEN USED, CONCRETE COLLARS SHALL BE POURED TO EXTENTS OF CONCRETE FLAT TOP.
9. MANHOLE SHALL BE RAISED OR FLUSH AS INDICATED ON THE DRAWINGS.



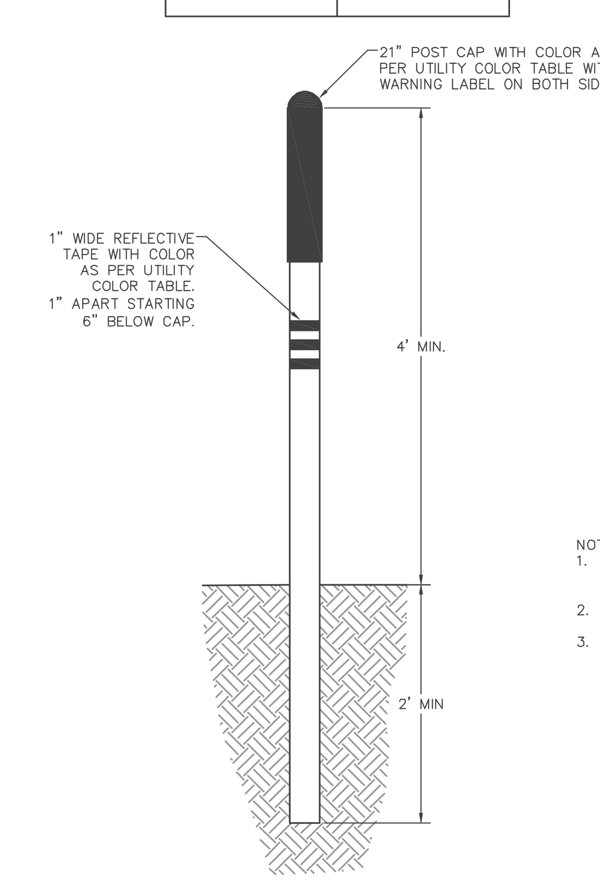
FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 08-31-2012

MANHOLE LID ASSEMBLY - UNIMPROVED SURFACE (FLAT TOP) — 33 05 13-D015

UTILITY COLOR TABLE	
UTILITY	COLOR
POTABLE WATER	BLUE
RECLAIMED WATER	PURPLE
SANITARY SEWER	GREEN
STORM DRAIN	RED



UTILITY WARNING LABEL N.T.S.



NOTES:
1. MARKERS SHALL BE REQUIRED FOR ALL POTABLE WATER, RECLAIMED WATER, AND SANITARY SEWER LINES GREATER THAN 12".
2. MARKERS SHALL BE REQUIRED FOR STORM DRAINS WHEN INDICATED ON THE DRAWINGS.
3. PLACE MARKERS AT EACH RIGHT–OF–WAY CROSSING AND AT MAJOR UTILITY CROSSINGS AS INDICATED IN THE DRAWINGS.

FORT WORTH | CITY OF FORT WORTH, TEXAS | REVISED: 08-31-2012

UTILITY MARKER POLE — 33 05 26-D016

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

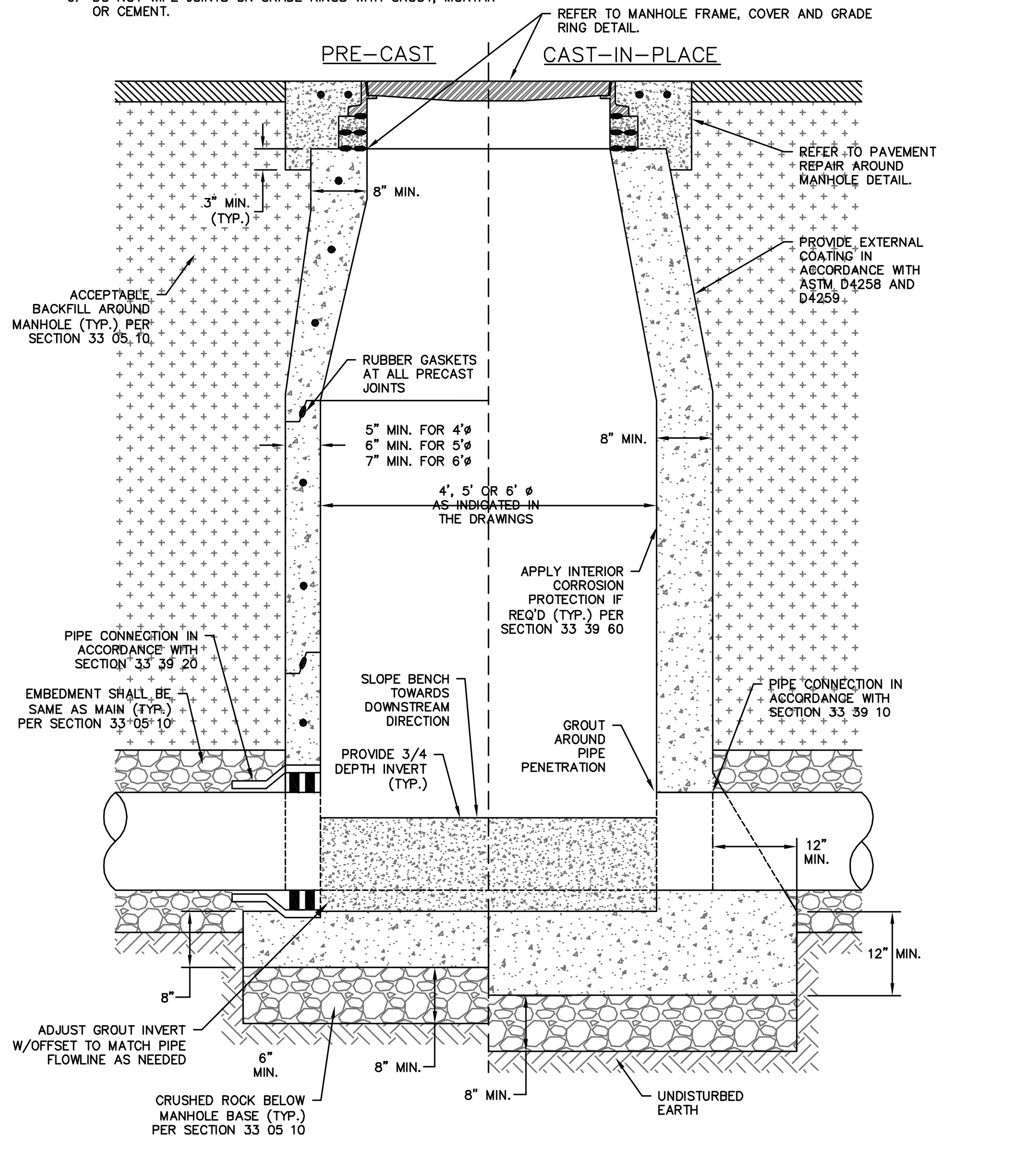
Morningstar Westpoint

SANITARY SEWER DETAILS
(SHEET 8 OF 10)

WEI — WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F–1859)

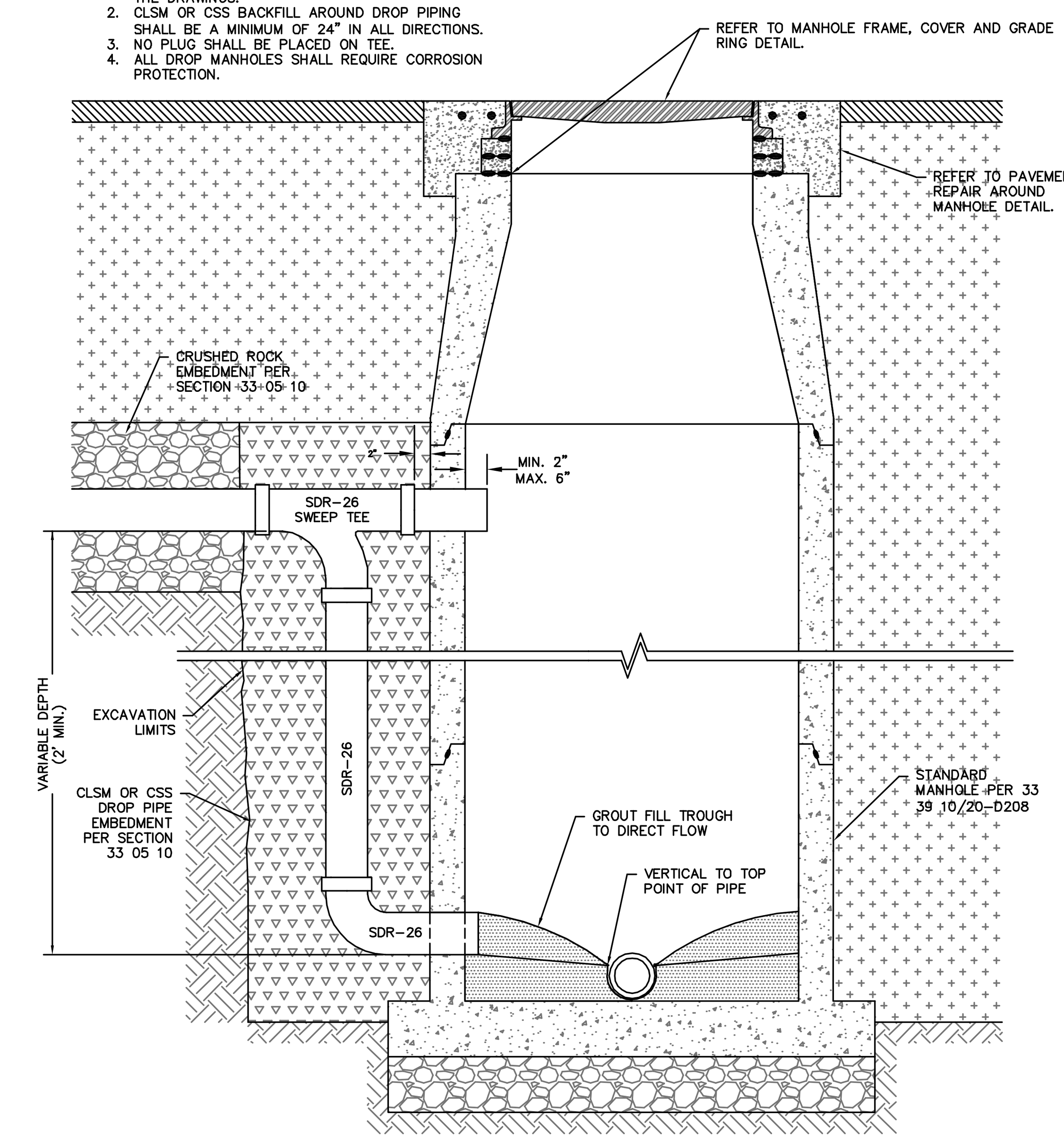
DESIGNED: C.F.W.	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: C.F.W.	OCT., 2023	IPRC NO. 23–0151; FID 30114–0200431–E07685; PLAN FILE NO. X–	NO SCALE	14
CHECKED: T.J.W.				

NOTES:
1. MANHOLE TOP SHALL BE PER MANHOLE FRAME, COVER AND GRADE RING DETAIL AS INDICATED IN THE DRAWINGS.
2. FOR CAST-IN-PLACE MANHOLES, CURE FOR THREE DAYS BEFORE BACKFILLING AROUND STRUCTURE
3. IF SOIL CONDITIONS OR GROUND WATER PREVENT USE OF COARSE AGGREGATE BASE A 2-INCH MUD SLAB MAY BE SUBSTITUTED.
4. CAST-IN-PLACE CONCRETE SHALL BE PER SECTOIN 03 30 00.
5. PRE-CAST JOINTS SHALL CONFORM TO ASTM C478.
6. DO NOT WIPE JOINTS OR GRADE RINGS WITH GROUT, MORTAR OR CEMENT.
7. UNLESS OTHERWISE INDICATED IN THE DRAWINGS, 4'ø MANHOLES SHALL BE USED FOR 21" AND SMALLER SANITARY SEWER LINES AND 5'ø MANHOLES SHALL BE USED 24" UP TO 36" SANITARY SEWER LINES.
8. 6'ø STANDARD MANHOLES SHALL BE REQUIRED FOR 90° BENDS ON 36" SANITARY SEWER LINES.
9. CAST IRON HINGED LIDS SHALL BE REQUIRED FOR ALL SANITARY SEWER MANHOLES WITH A RIM ELEVATION GREATER THAN 12-INCHES ABOVE NATURAL GROUND.



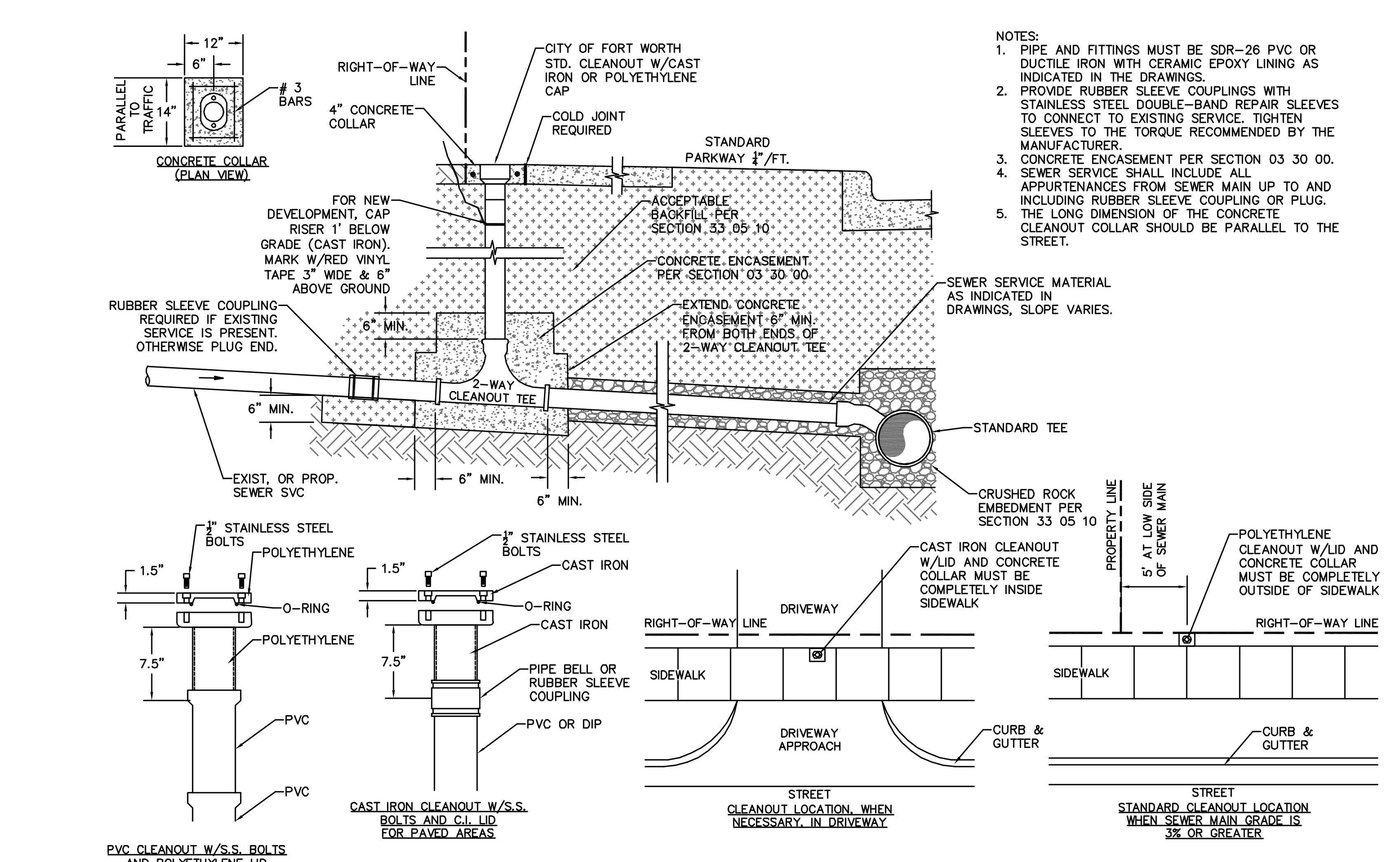
FORT WORTH	CITY OF FORT WORTH, TEXAS STANDARD SANITARY SEWER MANHOLE	REVISED: 12-01-2021 33 39 10/20-D208

NOTES:
1. MANHOLE TOP SHALL BE PER MANHOLE FRAME, COVER AND GRADE RING DETAIL AS INDICATED IN THE DRAWINGS.
2. CLSM OR CSS BACKFILL AROUND DROP PIPING SHALL BE A MINIMUM OF 24" IN ALL DIRECTIONS.
3. NO PLUG SHALL BE PLACED ON TEE.
4. ALL DROP MANHOLES SHALL REQUIRE CORROSION PROTECTION.

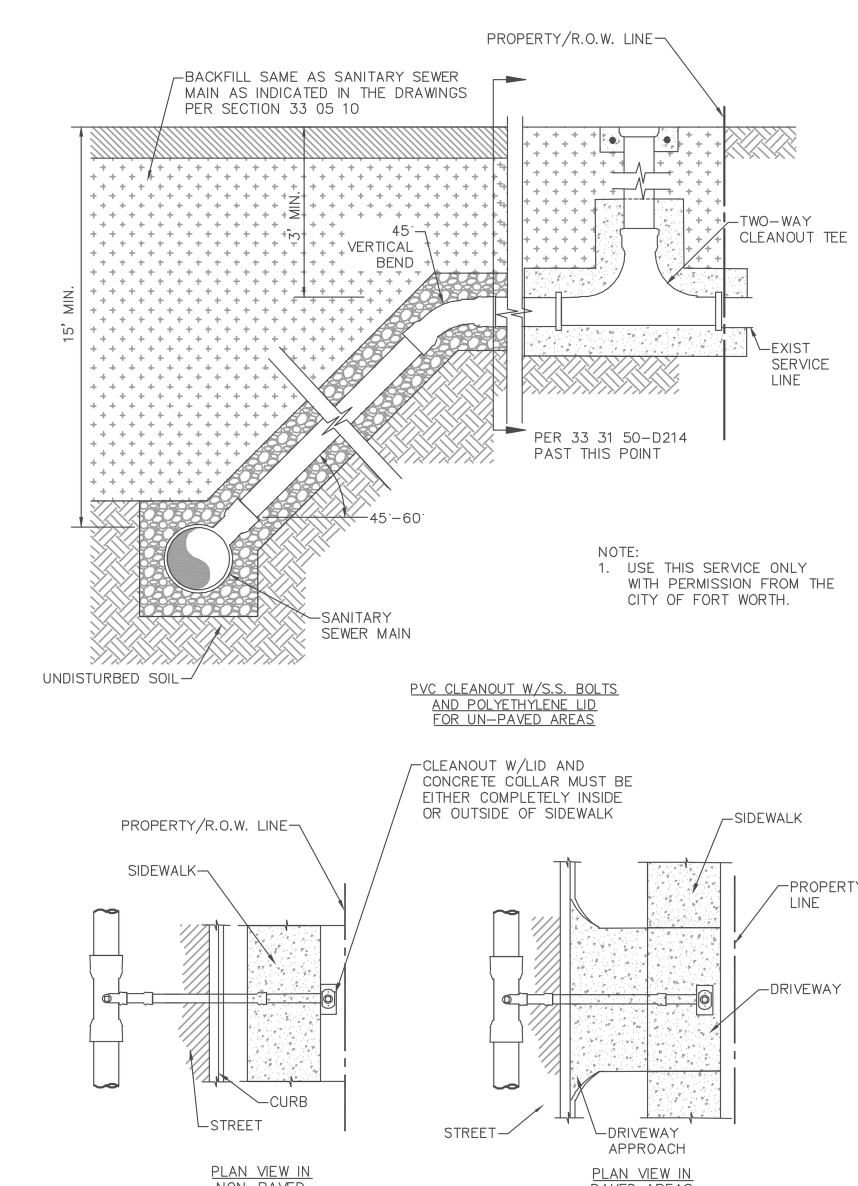


FORT WORTH	CITY OF FORT WORTH, TEXAS STANDARD 4' DIAMETER DROP SANITARY SEWER MANHOLE	REVISED: 10-15-2021 33 39 10/20-D209

NOTES:
1. PIPE AND FITTINGS MUST BE SDR-26 PVC OR DUCTILE IRON WITH CERAMIC EPOXY LINING AS INDICATED IN THE DRAWINGS.
2. PROVIDE RUBBER SLEEVE COUPLINGS WITH STAINLESS STEEL DOUBLE-BAND REPAIR SLEEVES TO CONNECT TO EXISTING SERVICE. TIGHTEN SLEEVES TO THE TORQUE RECOMMENDED BY THE MANUFACTURER.
3. CONCRETE ENCASEMENT PER SECTION 03 30 00.
4. SEWER SERVICE SHALL INCLUDE ALL APPURTENANCES FROM SEWER MAIN UP TO AND INCLUDING RUBBER SLEEVE COUPLING OR PLUG.
5. THE LONG DIMENSION OF THE CONCRETE CLEANOUT COLLAR SHOULD BE PARALLEL TO THE STREET.



FORT WORTH	CITY OF FORT WORTH, TEXAS SANITARY SEWER SERVICE	REVISED: 09-16-2021 33 31 50-D214



NOTE:
1. USE THIS SERVICE ONLY WITH PERMISSION FROM THE CITY OF FORT WORTH.

FORT WORTH	CITY OF FORT WORTH, TEXAS DEEP SANITARY SEWER SERVICE	REVISED: 08-31-2012 33 31 50-D215

NO.	DATE	DESCRIPTION	BY

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

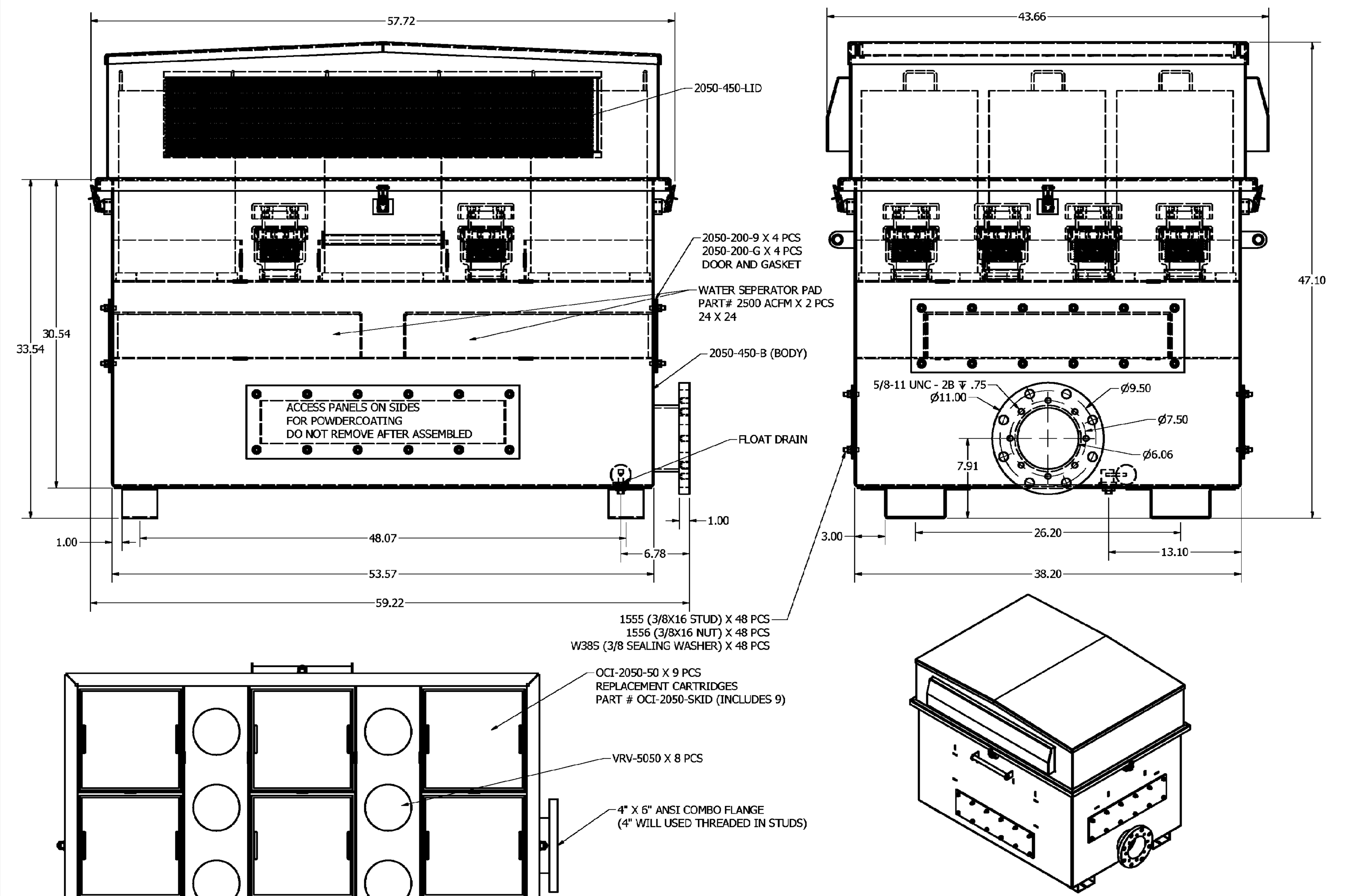
FORT WORTH

Morningstar Westpoint

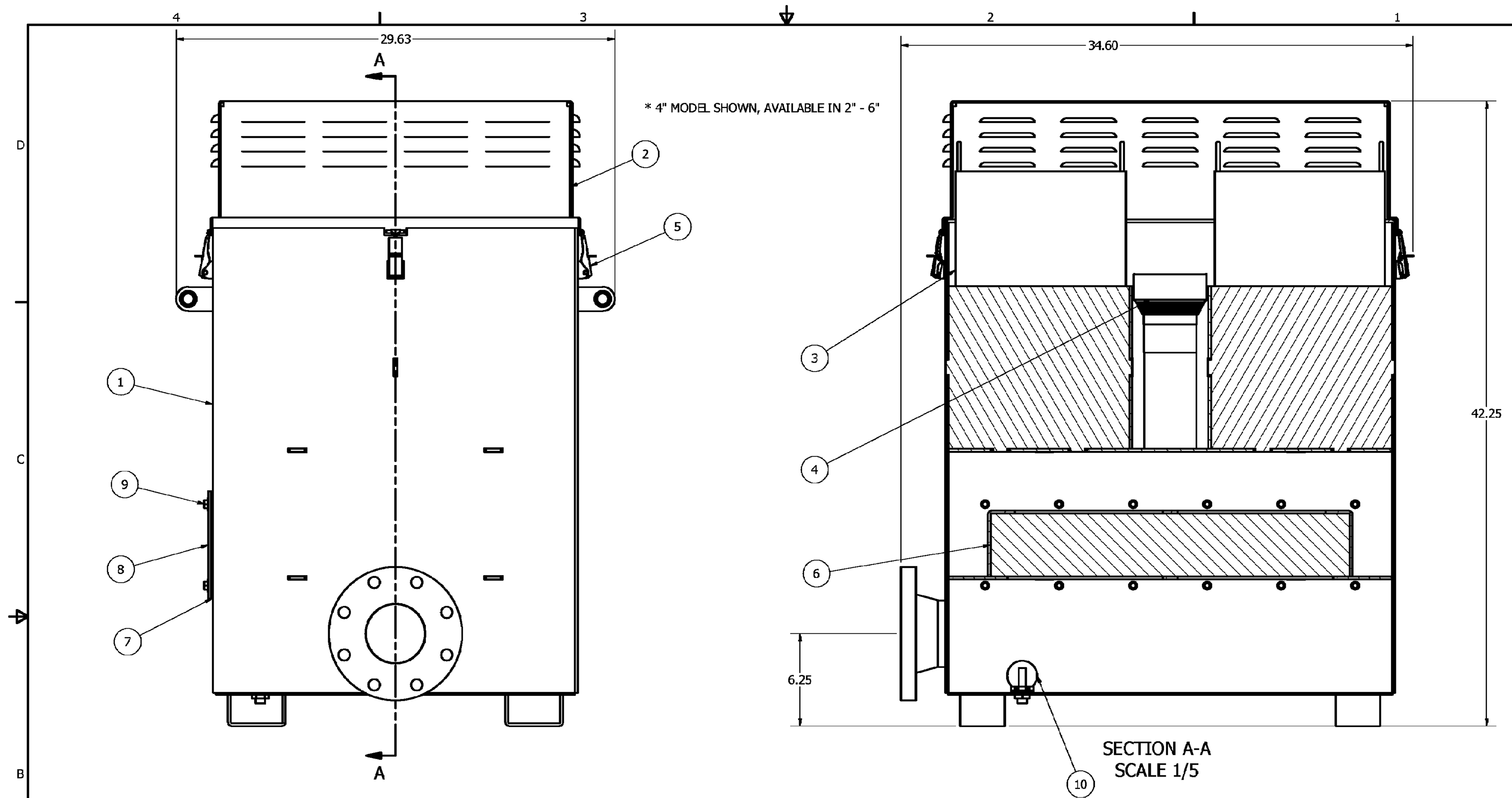
SANITARY SEWER DETAILS
(SHEET 9 OF 10)

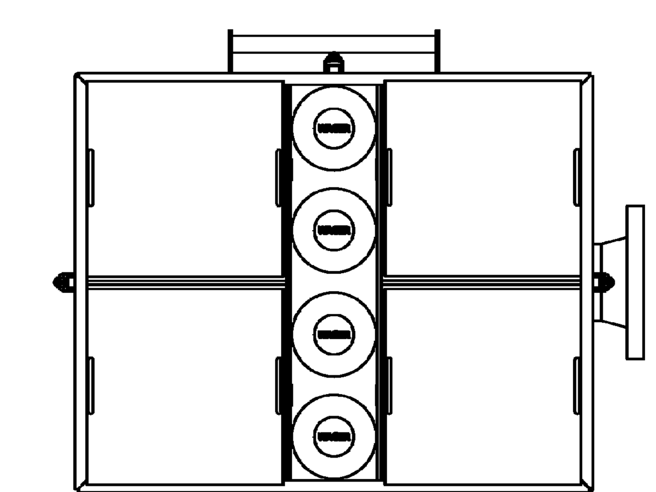
WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: C.F.W. DRAWN: C.F.W. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NO SCALE	SHEET: 15



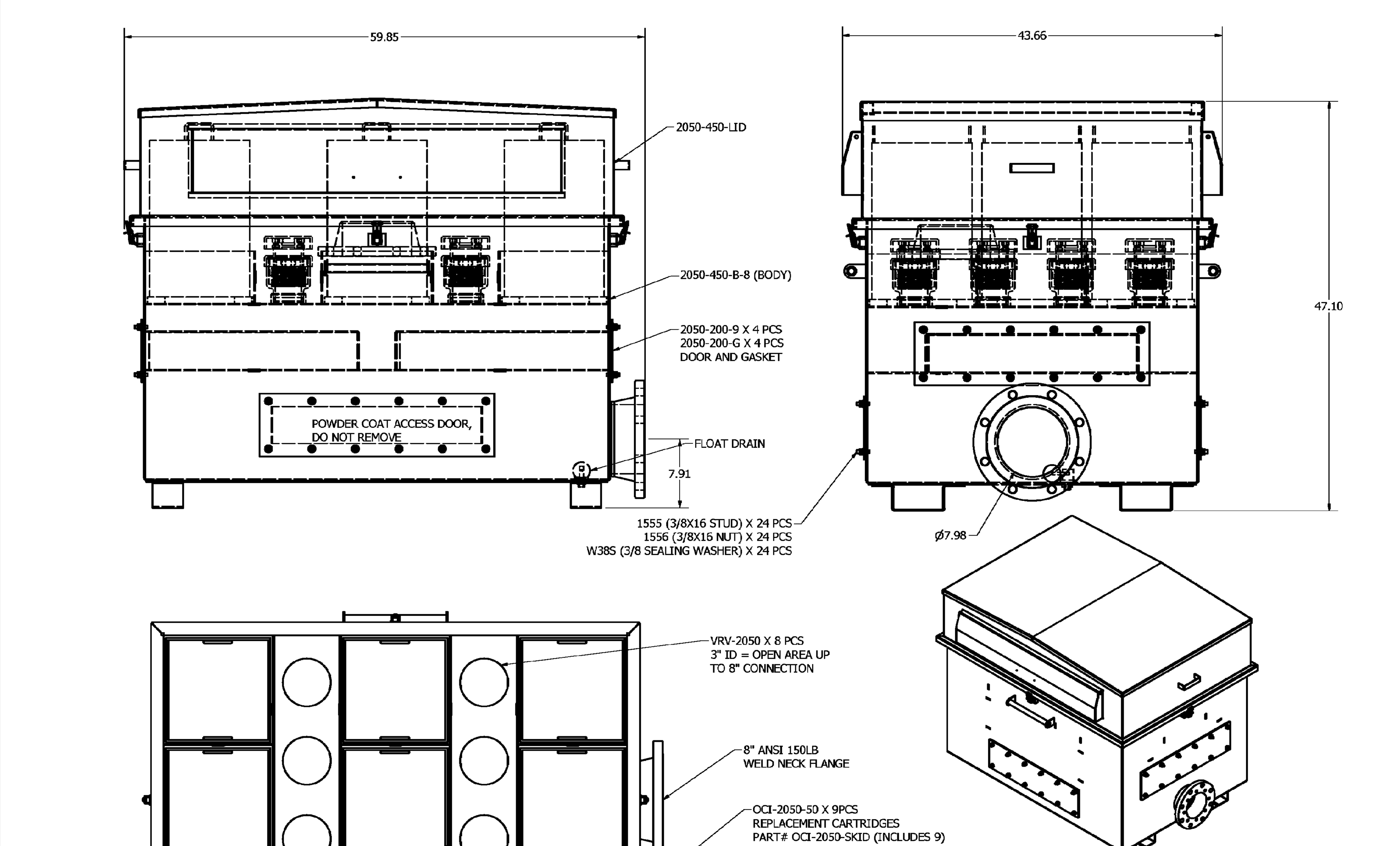
DRAWN shardy	3/2/2021	RPBERT H. WAGER CO., INC.	
CHECKED			
QA		TITLE 4"/6" SEWER VENT W/ INTAKE AND WATER SEPERATOR, 450 LBS. MEDIA	
MFG			
APPROVED			
		SIZE C / DWG NO 2050FAPC-IWS-450	REV
		SCALE	SHEET 1 OF 1





PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	AAU-200-B	SEWER VENT, IWS
2	1	2050-200-T	TOP COVER
3	4	P4EM-2050-50	MEDIA CARTRIDGE
4	4	VRV-2050	VACUUM RELIEF VALVE
5	4	SV-LATCH	COVER LATCH
6	1	2500 ACFM	WATER SEPARATOR PAD
7	1	AAU-200-G	PAD COVER GASKET
8	1	AAU-200-9	PAD COVER
9	12	BOLT-3/8-1	PAD COVER BOLTS
10	1	WS-DRAIN-ASSY	BOTTOM DRAIN

DRAWN shardy	8/30/2016	ROBERT H. WAGER CO., INC.	
CHECKED			
QA		TITLE SIDE ACCESS SEWER VENT, ODOR CONTROL W/ INTAKE AND WATER SEPARATOR, 200 LBS. MEDIA	
MFG			
APPROVED			
		SIZE C / DWG NO 4-2050FAPC-IWS-200	REV
		SCALE 1/5	SHEET 1 OF 1



DRAWN shardy	6/28/2022	ROBERT H. WAGER CO., INC.	
CHECKED			
QA		TITLE 8" SEWER VENT W/ INTAKE AND WATER SEPARATOR, 450 LBS MEDIA	
MFG			
APPROVED			
		SIZE C / DWG NO 8-2050FAPC-IWS-450	REV
		SCALE 1/8	SHEET 1 OF 1

NO.	DATE	DESCRIPTION	BY

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

Morningstar Westpoint

SANITARY SEWER DETAILS
(SHEET 10 OF 10)

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: C.F.W. DRAWN: C.F.W. CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NO SCALE	SHEET: 16

NO.	DATE	DESCRIPTION	BY

BENCHMARKS:

BM NO.1 BOX ON TOP OF CONCRETE HEADWALL ON THE WEST SIDE OF FM 3325, APPROXIMATELY 1730' NORTH OF THE CENTERLINE OF OLD WEATHERFORD ROAD. N-6956663.7, E-2245081.7

ELEVATION: 964.18

BM NO.2 CAPPED STEEL ROD APPROXIMATELY 8' NORTHEAST OF THE TXDOT MONUMENT FOUND AT THE NORTHWEST CORNER OF THE 737 ACRE TRACT. N-6961756.306, E-2244609.802

ELEVATION: 968.95

EROSION CONTROL GENERAL NOTES

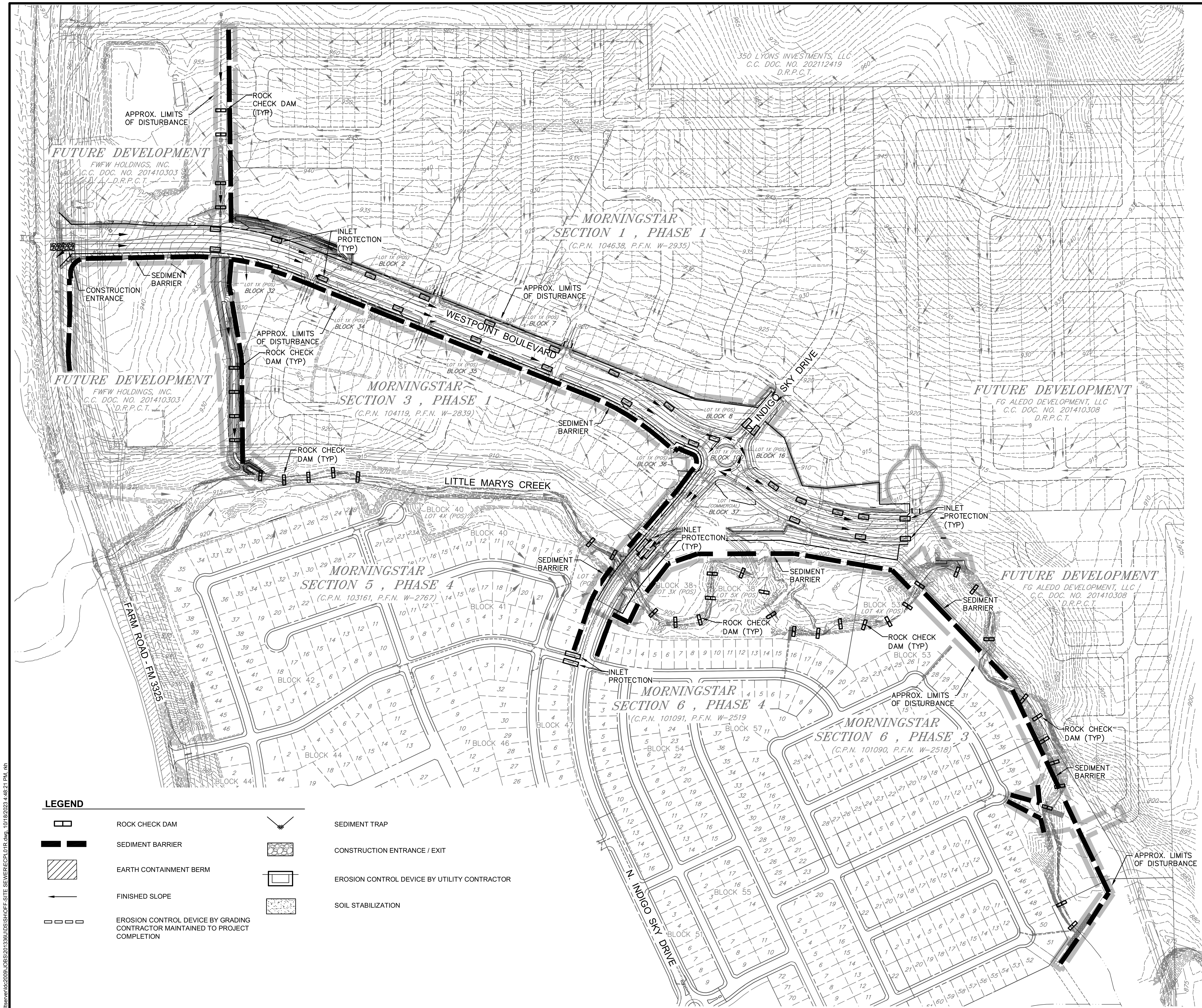
EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGES CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.

GENERAL NOTES:

1. TOTAL AREA BEING DISTURBED ON THIS PROJECT IS APPROXIMATELY 33 ACRES.

WARNING TO CONTRACTOR:

CALL 1-800-344-8377 (DIG-TESS) OR OTHER UTILITY LOCATING SERVICES 72 HOURS PRIOR TO CONSTRUCTION ACTIVITY. WELCH ENGINEERING, INC. IS NOT RESPONSIBLE FOR KNOWING ALL EXISTING UTILITIES OR DEPICTING EXACT LOCATIONS OF UTILITIES ON DRAWINGS.



200 0 200 400

GRAPHIC SCALE IN FEET
SCALE: 1"=200'

C.P.N. 105124

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
10-16-23

FORT WORTH

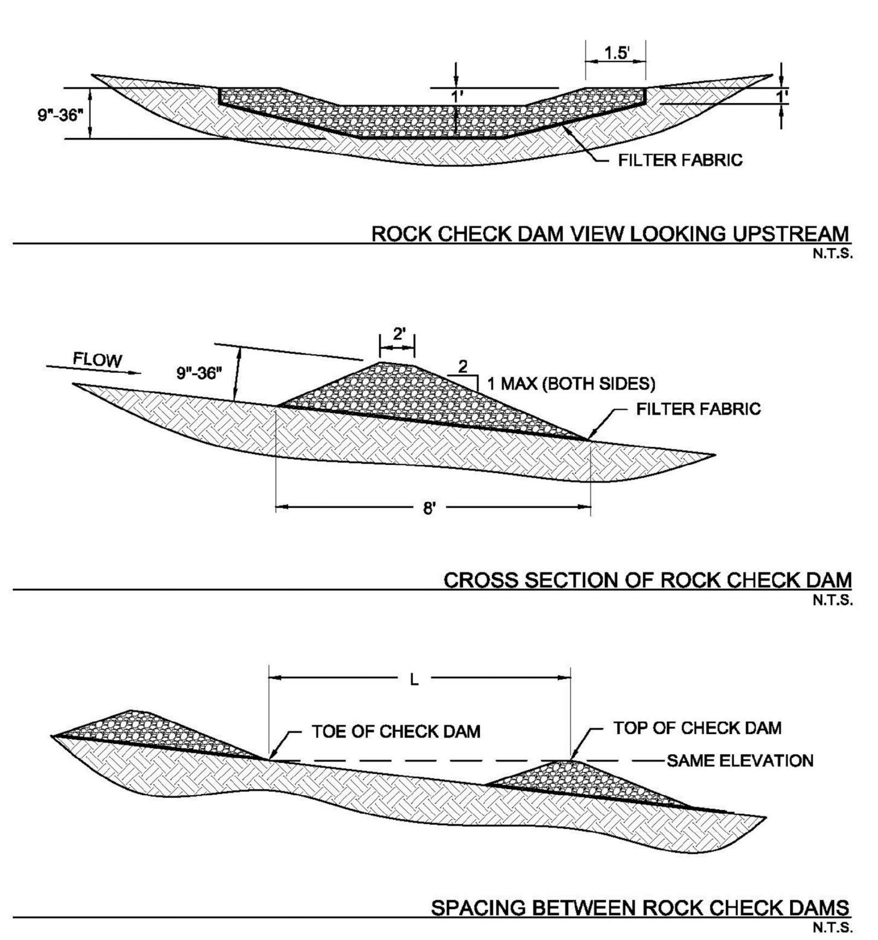
Morningstar Westpoint

iSWM CONSTRUCTION PLAN

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: R.K.H.	DATE:	PROJECT NO:	SCALE:	SHEET:
DRAWN: L.B.P.	OCT., 2023	PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	1"=200'	17
CHECKED: T.J.W.				

\\vaultserver\dc2009\JOBS\201336\DS\OFF-SITE SEWER\ECPL01R.dwg, 10/18/2023 4:48:21 PM, rkh



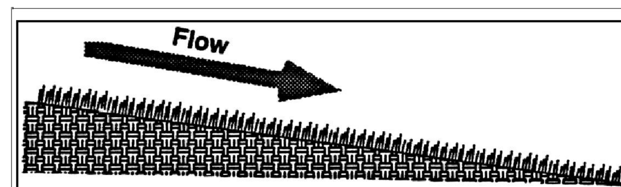
NOTES: ACTUAL DIMENSIONS OF THE CHECK DAMS SHALL BE DESIGNED BASED ON FLOW CONDITIONS IN THE DRAINAGE SWALE OR DITCH. PROVIDE CALCULATIONS THAT DOCUMENT THE FOLLOWING PARAMETERS USED TO DESIGN THE CHECK DAMS.

- HEIGHT OF CHECK DAMS BASED ON SWALE OR DITCH DIMENSIONS AND FLOW CONDITIONS.
- SPACING OF CHECK DAMS BASED ON GRADE OF THE SWALE OR DITCH. TOP OF DOWNSTREAM DAM SHALL BE AT SAME ELEVATION AS TOE OF UPSTREAM DAM

Figure 2.1 Schematics of Rock Check Dams
(Source: Modified from Stormwater Management Manual for Western Washington)

2.9 Vegetation

Erosion Control



Description: Vegetation, used as an erosion control, is the sowing or sodding of grasses, small grains, or legumes to provide temporary and final vegetative stabilization for disturbed areas.

KEY CONSIDERATIONS

DESIGN CRITERIA:

- Specify preparation of the soil surface before seeding or sodding
- Minimum of 4 to 6 inches of top soil required, depending on subsurface conditions
- Specify soil amendments depending on soil conditions
- Select seed or sod species appropriate for the climate, season, and soil

ADVANTAGES / BENEFITS:

- More effective and easier to maintain than sediment controls during a long construction period
- May be used for temporary or final stabilization

DISADVANTAGES / LIMITATIONS:

- Not appropriate for areas with heavy pedestrian, vehicular traffic, or concentrated, high velocity flow
- May require days to weeks for adequate establishment
- Alternate erosion control is needed until vegetation is established

MAINTENANCE REQUIREMENTS:

- Inspect regularly
- Protect newly seeded areas from excessive runoff, high velocity flow, and traffic until vegetation is established
- Water and fertilize until vegetation is established
- Reseed and/or provide mulch or another control for bare spots
- Rake accumulations of sediment from the vegetation

APPLICATIONS

- Perimeter Control
- Slope Protection
- Sediment Barrier
- Channel Protection
- Temporary Stabilization
- Final Stabilization
- Waste Management
- Housekeeping Practices

Fe=0.90
(When fully established; lower while vegetation is first growing)

IMPLEMENTATION CONSIDERATIONS

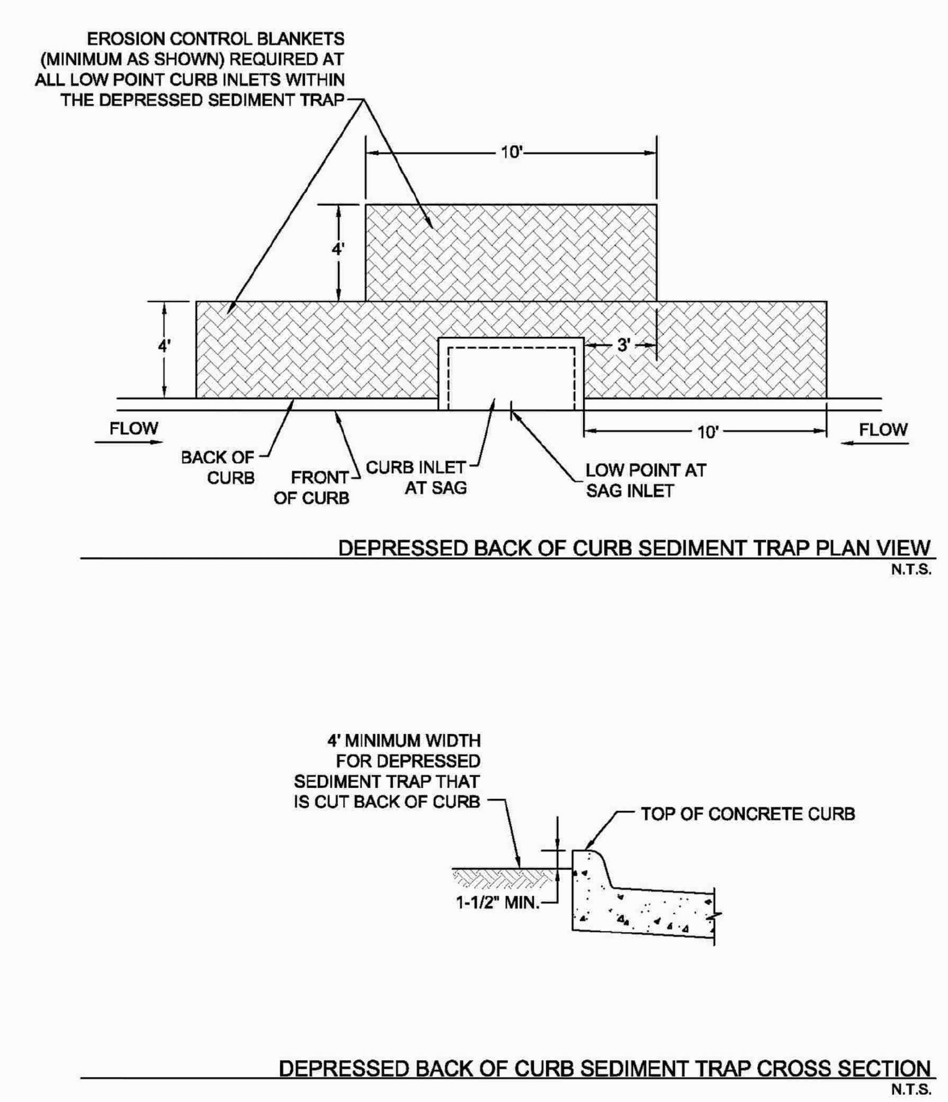
- Capital Costs
- Maintenance
- Training
- Suitability for Slopes > 5%

Other Considerations:

- *Design is unique to soil and other conditions at each site*
- *Watering and other maintenance required until vegetation is established*

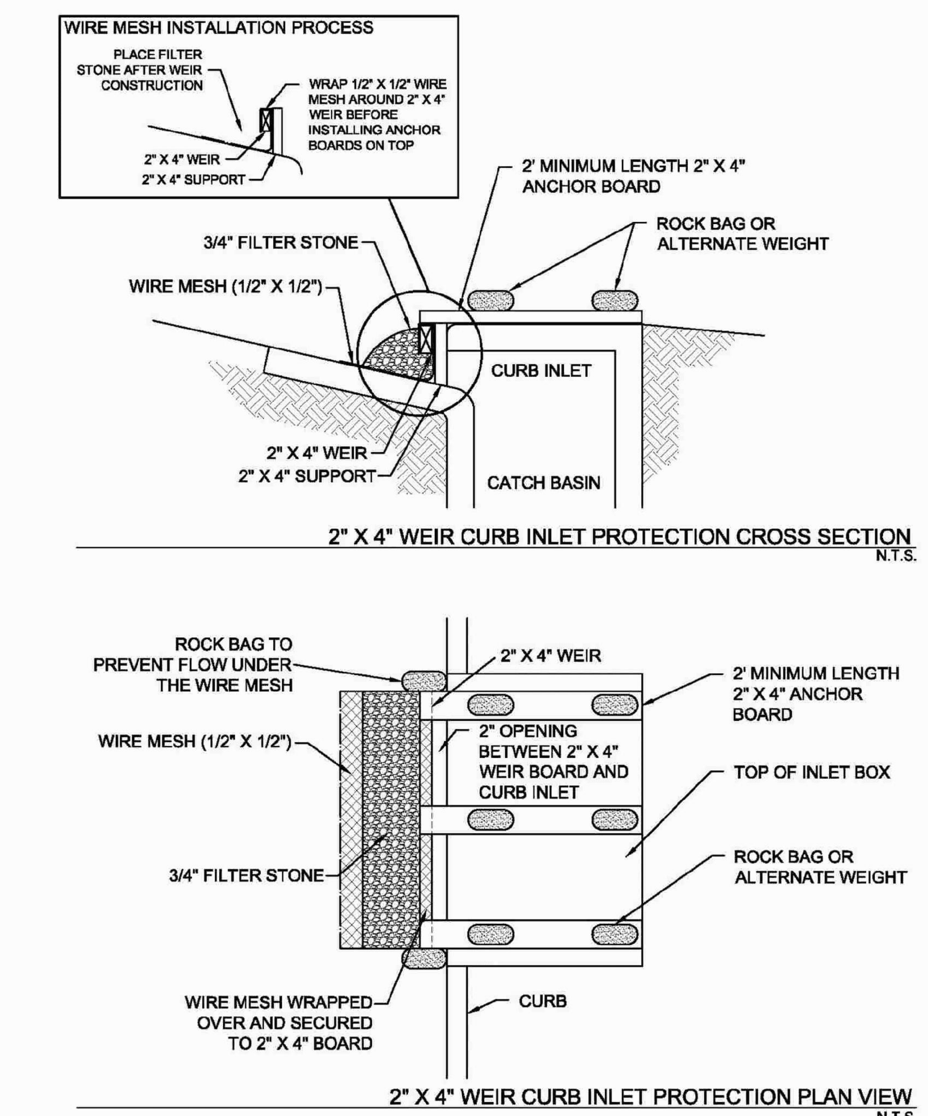
TARGETED POLLUTANTS

- Sediment
- Nutrients & Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes



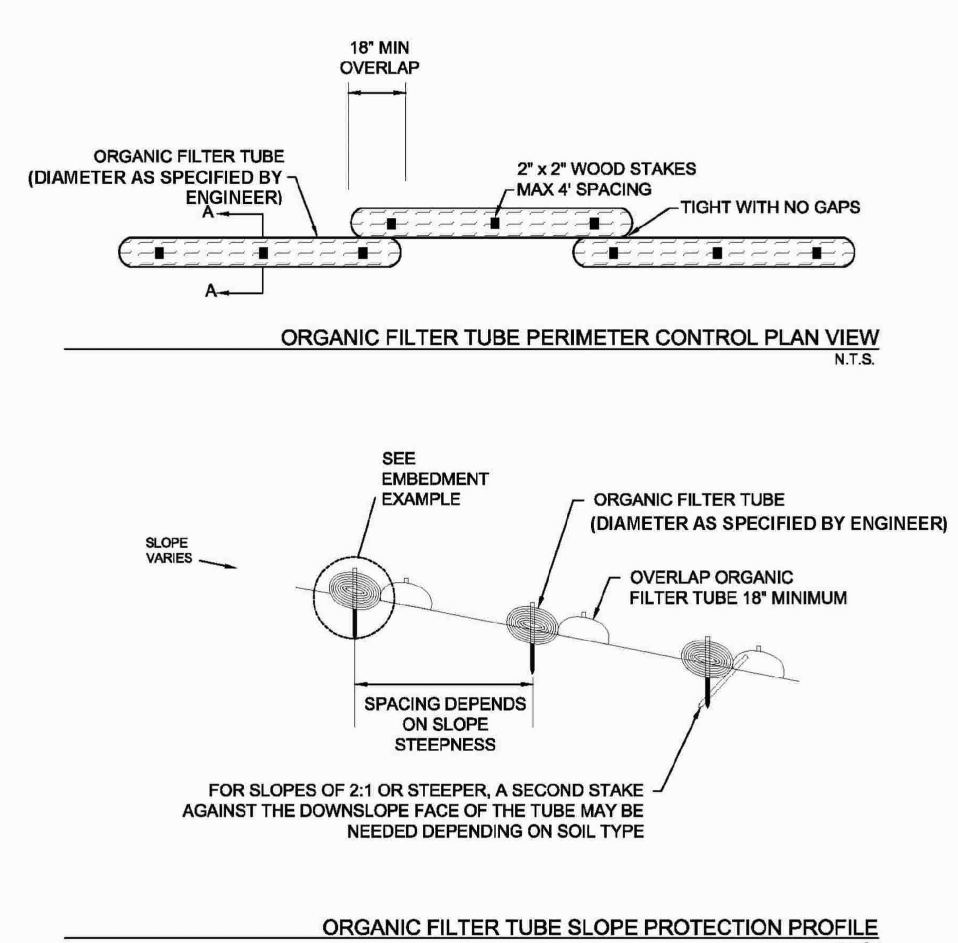
NOTES: 1. THE DEPRESSED SEDIMENT TRAP MAY BE OFFSET A MAXIMUM DISTANCE OF 5 FEET FROM THE CURB IF NECESSARY TO AVOID UTILITY BOXES.
2. WHEN A CURB CUT FOR A FUTURE DRIVEWAY IS ENCOUNTERED, INSTALL 2" X 4" BOARDS ACROSS THE CURB TO FORM A TEMPORARY "CURB" FOR THE SEDIMENT TRAP.

Figure 3.2 Schematics of Depressed Grade (Curb Cut-Back) Sediment Trap
(Source: City of Plano BMP SP-12)



NOTE: THIS CONTROL WILL DECREASE THE CAPACITY OF THE INLET. IT SHALL ONLY BE USED WHEN AN ENGINEER HAS DETERMINED THERE IS ADEQUATE STORAGE OR POSITIVE OVERFLOW.

Figure 3.5 Schematics of 2"x4" Weir Curb Inlet Protection
(Source: Modified from Washington Suburban Sanitary Commission Detail SC-16.0)

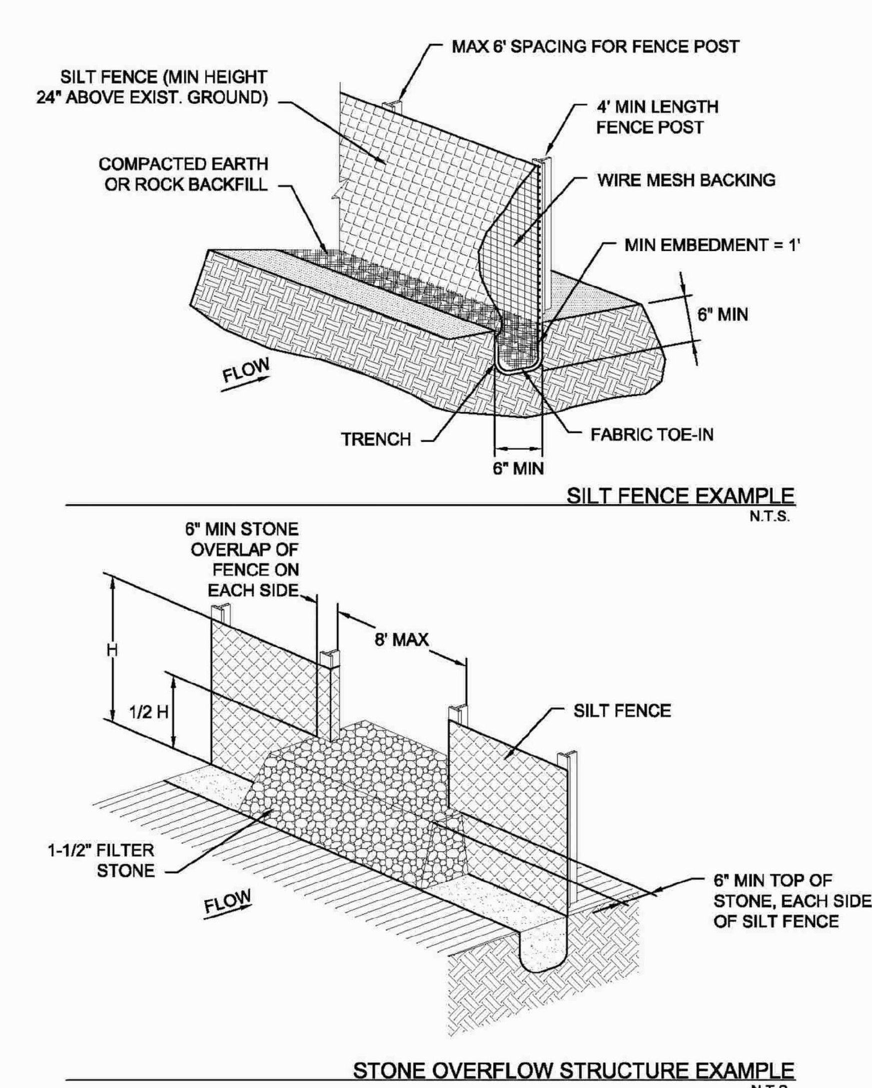


NOTES: 1. TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS.

- SIZE OF CONTRIBUTING DRAINAGE AREA
- STEEPNESS OF SLOPE
- GROUND CONDITIONS (SOIL OR PAVEMENT)

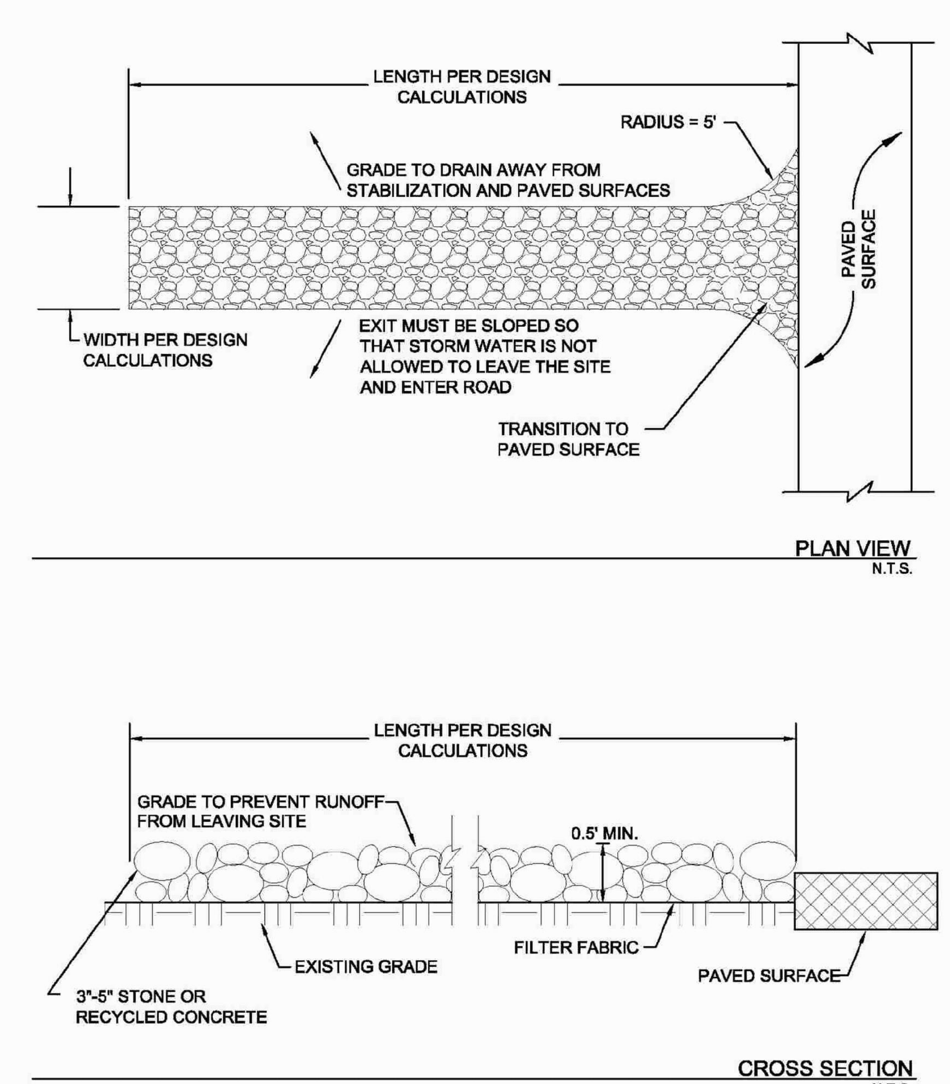
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBES ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.

Figure 3.15 Schematics of Organic Filter Tubes



NOTES: 1. DESIGN SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE OVERFLOW STRUCTURES SHALL BE INSTALLED. OVERFLOW STRUCTURES ARE REQUIRED AT ALL LOW POINTS AND AT A SPACING OF APPROXIMATELY 300 FT WHERE NO LOW POINT IS APPARENT.
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE SILT FENCE IS TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE A MINIMUM OF 10 FEET.

Figure 3.28 Schematics of Silt Fence



NOTE: INSTALL SILT FENCE, CONSTRUCTION SAFETY FENCING, OR SIMILAR BARRIER ALONG THE EXIT TO DIRECT TRAFFIC INTO THE EXIT.

Figure 3.29 Schematics of Stabilized Construction Exit

NO.	DATE	DESCRIPTION	BY

STORM WATER DISCHARGE AUTHORIZATION:

1. A Notice of Intent (NOI) shall be submitted to TCEQ and/or to the local jurisdiction environmental department prior to commencement of construction activities.
2. All contractors and subcontractors providing services related to the SWPPP shall sign a Contractor Certification statement acknowledging their responsibilities as specified in the SWPPP.
3. A copy of the SWPPP, including Contractor Certifications and any Revisions, shall be submitted to the City and filed with the construction plans, and shall be retained on-site during construction.
4. A Notice of Termination (NOT) shall be submitted to TCEQ when the site has 100% of the disturbed areas stabilized and the site no longer has storm water discharges associated with industrial activities (construction), or the NOT permittee or co-permittee no longer holds operational control of the construction.
5. All details or procedures shall comply with the latest edition of the NCTCOG iSWM technical manual.

iSWM CONTROL NOTES:

1. Prior to commencing grading operations, erosion control devices shall be installed as indicated on the Erosion Control Plan or other areas as may be directed by the Owner's representative or City inspector.
2. Site entry and/or exit locations shall be maintained in a condition which will prevent tracking or flowing of sediment onto public roadways. All sediment spilled, dropped, washed or tracked on a public roadway must be removed immediately. When washing is required to remove sediment prior to entrance to a public roadway, it shall be done on an area stabilized with crushed stone which drains into an approved sediment basin. All fines imposed for tracking onto public roads shall be paid by the contractor.
3. Temporary seeding or other method of stabilization shall be initiated within 14 days of the last disturbance on any area of the site, unless additional construction on the area is expected within 21 days of the last disturbance.
4. Upon completion of fine grading, all areas not otherwise permanently stabilized shall be seeded and maintained until a uniform coverage of 70% minimum density, as determined by the Owner's representative, is achieved.
5. Erosion control devices may be added or reduced in the field as directed by the Owner's representative.
6. MAINTENANCE - Erosion controls shall be repaired or replaced as inspection deems necessary or as directed by the Owner's representative. Accumulated silt at any erosion control device shall be removed when it reaches a depth of 6", and shall be distributed on site in a manner not contributing to additional siltation.
7. The Contractor is responsible for re-establishing any erosion control device which is disturbed. Each Contractor shall notify the Owner's representative of any deficiencies in the established erosion control measures which may lead to unauthorized discharge or storm water pollution, sedimentation or other pollutants. Unauthorized pollutants include, but are not limited to, excess concrete dumping or concrete residue, paints, solvents, greases, fuel and lube oil, pesticides, any solid waste materials.
8. The contractor has an option to construct an "Earth Containment Berm" for storage of fuel, maintenance, cleaning, and wash downs. No separate payment will be made for this item.

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED
PROFESSIONAL ENGINEER
10-16-23

C.P.N. 105124

FORT WORTH

Morningstar Westpoint

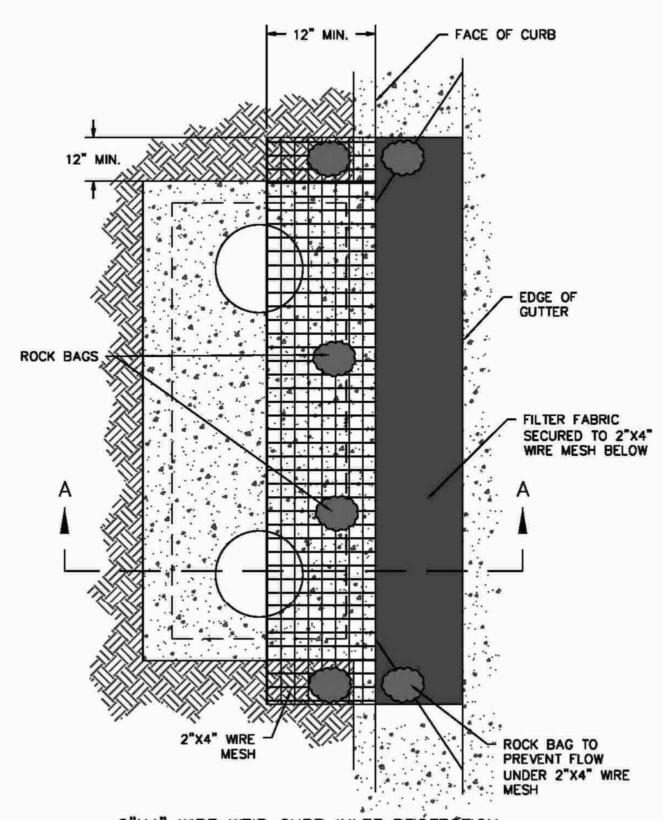
iSWM CONSTUCTION DETAILS

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: iSWM DRAWN: iSWM CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: PRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NO SCALE	SHEET: 18

\\vaultserver\dc2009\JOBS\2013360\DS\HOFF-SITE SEWER\EC01R.dwg 10/18/2023 4:49:22 PM, rkh

NO.	DATE	DESCRIPTION	BY



2"X4" WIRE WEIR CURB INLET PROTECTION

NOTES:

GENERAL

- DRAINAGE PATTERNS SHALL BE EVALUATED TO ENSURE INLET PROTECTION WILL NOT DIVERT FLOW OR FLOOD THE ROADWAY OR ADJACENT PROPERTIES AND STRUCTURES.
- INLET PROTECTION MEASURES OR DEVICES THAT COMPLETELY BLOCK THE INLET ARE PROHIBITED. THEY MUST ALSO INCLUDE A BYPASS CAPABILITY IN CASE THE PROTECTION MEASURES ARE CLOGGED.
- A POSITIVE OVERLOW PATH SHALL BE CONSIDERED IN THE DESIGN OF INLET PROTECTION CONTROL MEASURED AT SUMP INLETS.

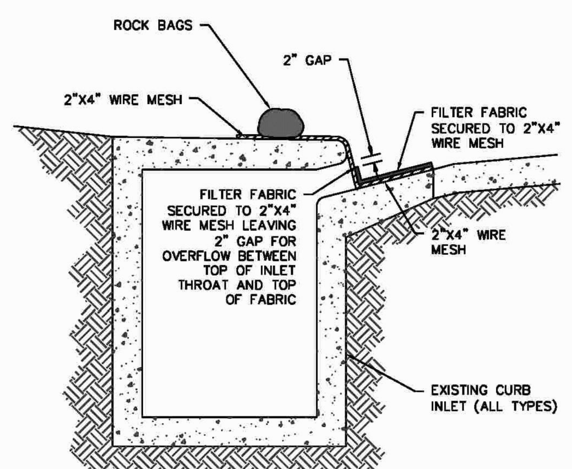
CURB INLET PROTECTION

- MUNICIPALITY APPROVAL IS REQUIRED BEFORE INSTALLING INLET PROTECTION ON PUBLIC STREETS.
- SPECIAL CAUTION MUST BE EXERCISED WHEN INSTALLING CURB INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS. ENSURE THAT INLET PROTECTION IS PROPERLY DESIGNED, INSTALLED AND MAINTAINED TO AVOID FLOODING OF THE ROADWAY OR ADJACENT PROPERTIES AND STRUCTURES.
- A TWO INCH OVERFLOW GAP OR WEIR IS REQUIRED ON ALL CURB INLET PROTECTION DEVICES.
- TRAFFIC CONES, WARNING SIGNS, OR OTHER MEASURES SHALL BE INSTALLED TO WARM MOTORISTS WHEN THE INLET PROTECTION MEASURES EXTEND BEYOND THE GUTTER LINE.
- 2"X4" WEIR PROTECTION:
  BEND WIRE MESH AROUND THE 2" X4" BOARD AND STAPLE TO THE BOARD. BEND WIRE MESH AROUND THE BOTTOM OF THE BOARD, THE CURB OPENING, AND ALONG THE PAVEMENT TO FORM A CAGE FOR THE ROCK.

  ROCK BAGS SHALL BE PLACED PERPENDICULAR TO THE CURB, AT BOTH ENDS OF THE WOODEN FRAME, TO DISRUPT THE FLOW AND DIRECT WATER INTO THE ROCK FILTER. STACK THE BAGS TWO HIGH IF NEEDED.
- 2"X4" WIRE (HOG WIRE) WEIR PROTECTION
  THE FILTER FABRIC AND WIRE MESH SHALL EXTEND A MINIMUM OF 12 INCHES PAST THE CURB OPENING ON EACH SIDE OF THE INLET.

  FILTER FABRIC SHALL BE PLACED ON 2" X 4" WIRE MESH TO PREVENT THE TUBE FROM SAGGING INTO THE INLET.

  ROCK BAGS ARE USED TO HOLD THE WIRE MESH AND FILTER FABRIC IN CONTACT WITH THE PAVEMENT. AT LEAST ONE BAG SHALL BE PLACED ON EITHER SIDE OF THE OPENING, PARALLEL TO AND UP AGAINST THE CONCRETE CURB. THE BAGS ARE INTENDED TO DISRUPT AND SLOW THE FLOW AND ENSURE IT DOES NOT GO UNDER THE FABRIC. ADD BAGS IF NEEDED.



FORT WORTH	CITY OF FORT WORTH, TEXAS	REVISED 04-30-2021
	2"X4" WIRE WEIR CURB INLET PROTECTION	01 57 13-D430

"MUD 1 AND 2"

TIMOTHY JOHN WELCH
69847
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
10-16-23

C.P.N. 105124

FORT WORTH

Morningstar Westpoint

iSWM CONSTRUCTION DETAILS

WEI WELCH ENGINEERING, INC.
CONSULTING ENGINEERS (# F-1859)

DESIGNED: iSWM DRAWN: iSWM CHECKED: T.J.W.	DATE: OCT., 2023	PROJECT NO: IPRC NO. 23-0151 FID 30114-0200431-E07685 PLAN FILE NO. X-	SCALE: NO SCALE	SHEET: 19