

CONSTRUCTION NOTES:

1. NO VALES, HYDRANTS, CLEAN-OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL SEWER PIPE ASTM 3034 (115 PSI)
3. ALL MANHOLES SHALL BE 48" DIAMETER.
4. ALL RING AND COVER SHALL BE 32" DIAMETER.
5. EXISTING MANHOLES, RIM AND FLOWLINE ELEVATIONS SURVEYED BY HMT ENGINEERING & SURVEYING DATED DECEMBER 23.2013.
6. REFERENCE SHEET C0.1 FOR GBRA NOTES.
7. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSING OF ALL OTHER UTILITIES INCLUDING DRY UTILITIES SERVICE, WASTEWATER LATERALS AND FIRE HYDRANT LEADS.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTORS IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

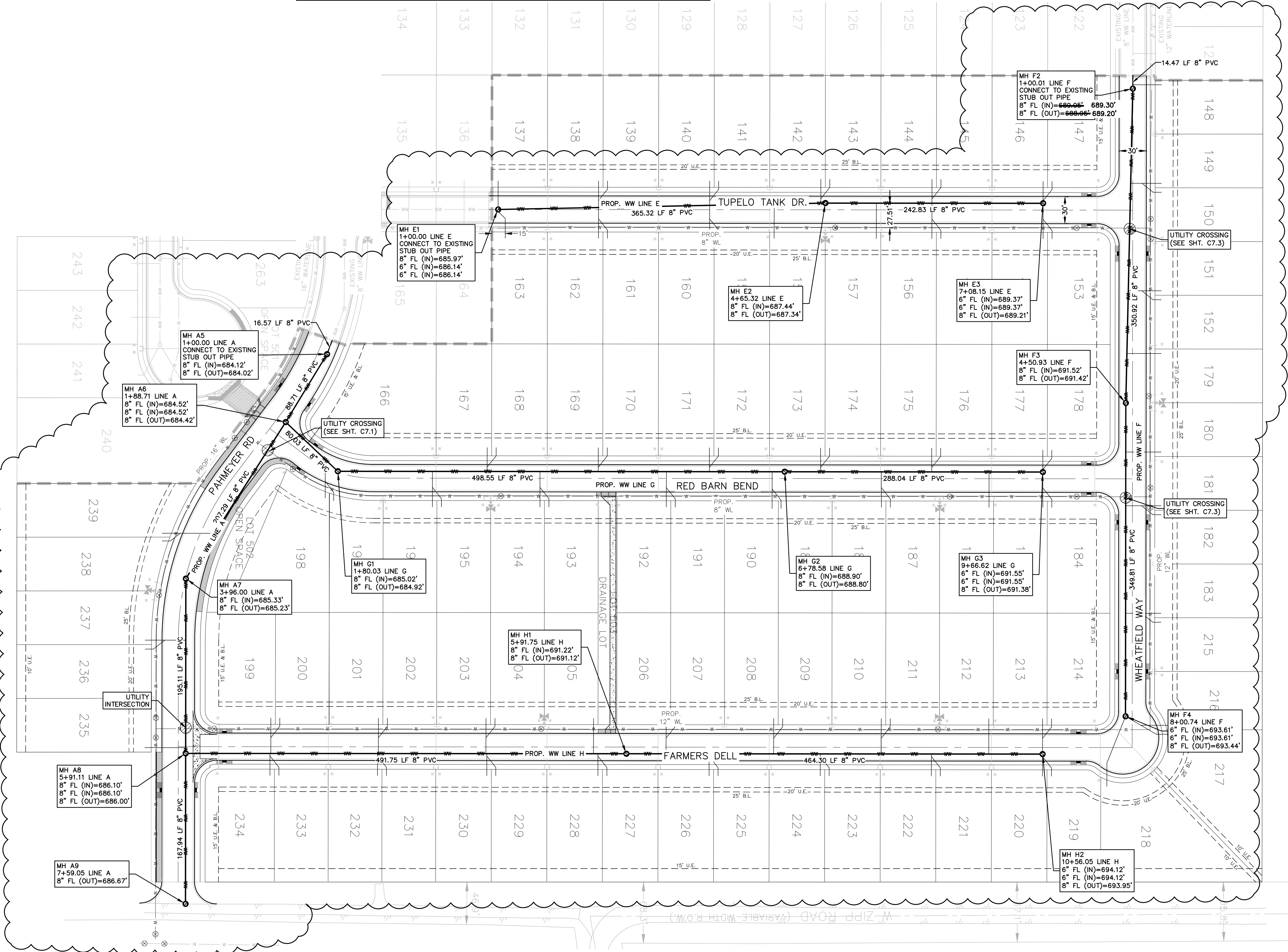
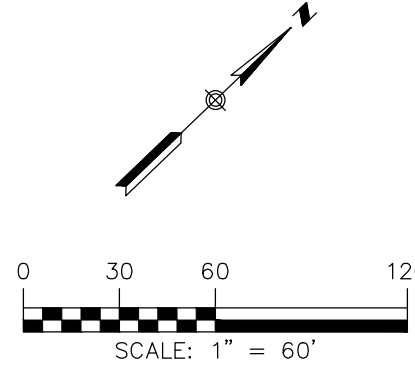
DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

CONTRACTOR TO INSTALL TRENCH PROTECTION FOR GEOTECHNICAL ACCESS.

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- UTILITY CROSSING



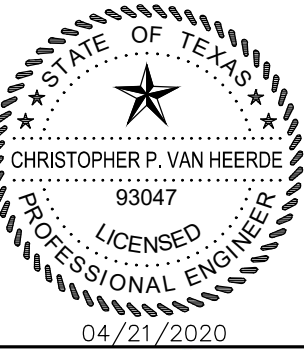
RECORD DRAWING

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DATE: APRIL 2020 BY: *Chris Van Heerde, P.E.*
HMT ENGINEERING AND SURVEYING

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TBE FIRM F-10961
TBE FIRM 10153600



Chris Van Heerde, P.E.

OVERALL WASTEWATER PLAN

THE SILOS UNIT 3

NO.	REVISION	DATE	DESCRIPTION
1	GERA COMMENTS	05/30/2018	
2	GERA COMMENTS	06/21/2018	
3	CUSD COMMENTS	09/11/2018	
4	ASBUILTS	04/2020	

DATE: SEPTEMBER 2018

DRAWN BY: MM

DESIGNED BY: AM/MM

REVIEWED BY: SMH/SCH

HMT PROJECT NO.:

056.013

SHEET

C7.0

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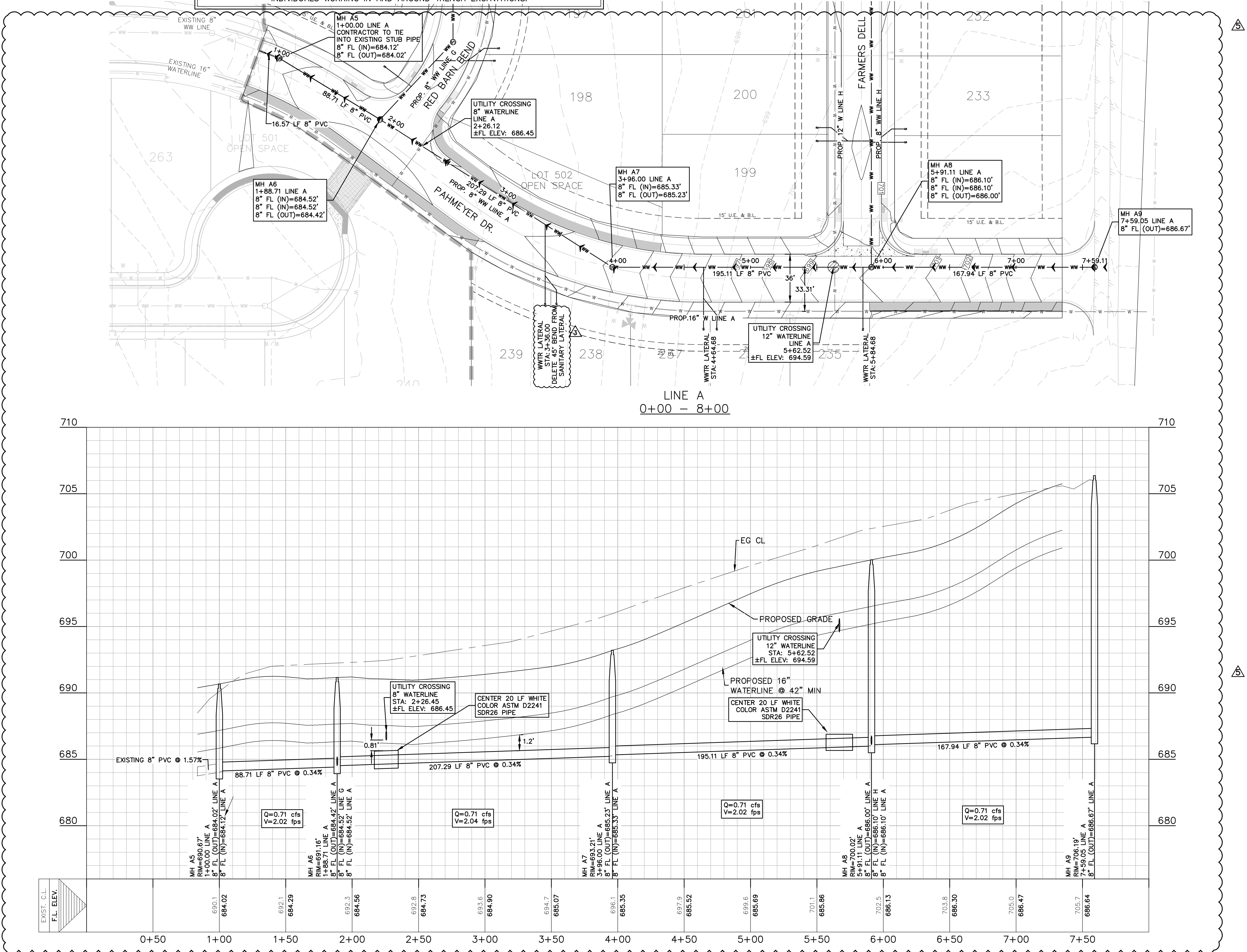
CONTRACTOR TO INSTALL TRENCH PROTECTION FOR GEOTECHNICAL ACCESS.

LEGEND

- 700 EXISTING CONTOURS
- 700 PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- WW EXISTING WASTEWATER LINE
- WW PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- UTILITY CROSSING

TYPICAL COLLECTOR SECTION - 60' R.O.W.

NOT TO SCALE



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DATE: APRIL 2020 BY: Christopher P. Van Heerde, P.E.

HMT ENGINEERING AND SURVEYING

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WASTEWATER LINE A

PLAN & PROFILE

THE SILOS

UNIT 3

NO.	REVISION	DESCRIPTION	DATE
1	GERA COMMENTS		05/30/2018
2	GERA COMMENTS		06/21/2018
3	GERA COMMENTS		06/29/2018
4	GSUD COMMENTS		09/11/2018
5	ASBUILTS		04/2020

DATE: SEPTEMBER 2018

DRAWN BY: MM

DESIGNED BY: AM/MM

REVIEWED BY: SWH/SCH

HMT PROJECT NO.:

056.013

SHEET

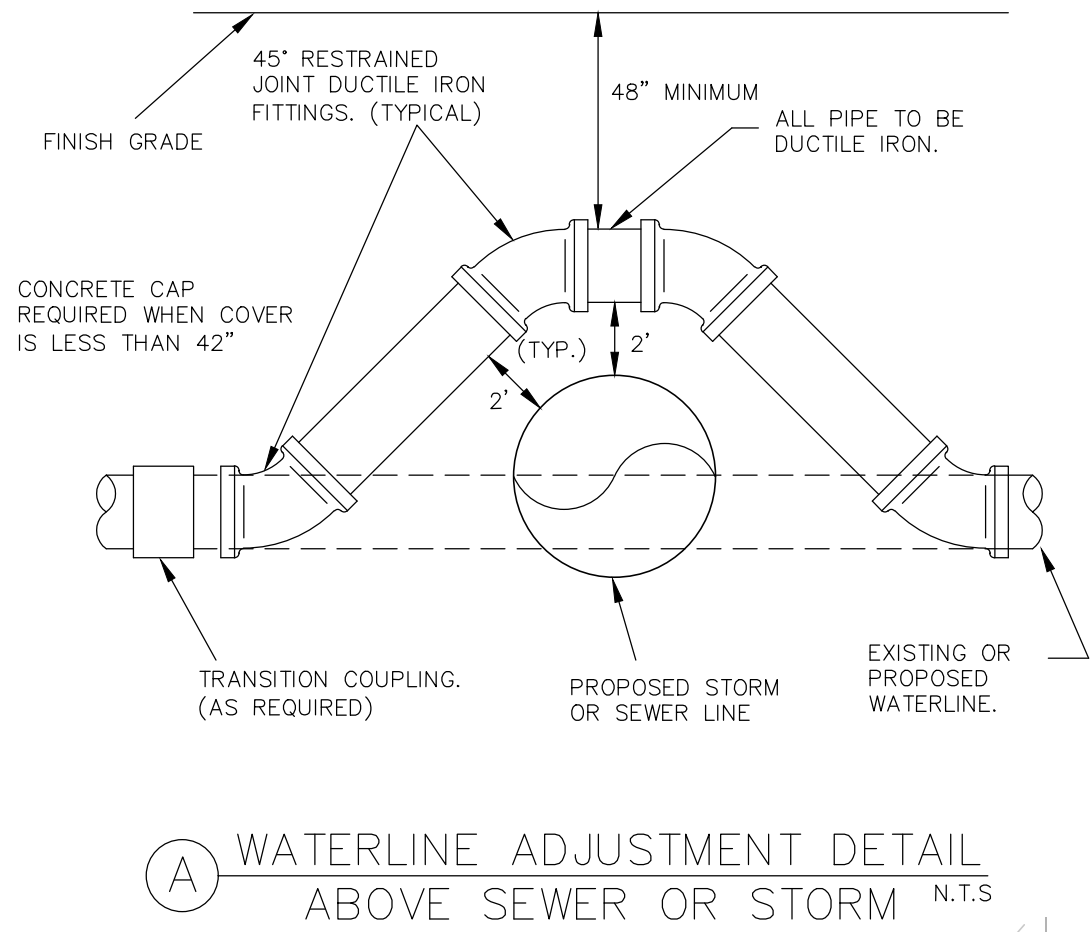
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T:830/25-8559 • F:830/25-8560

HMT
ENGINEERING & SURVEYING



Christopher P. Van Heerde, P.E.



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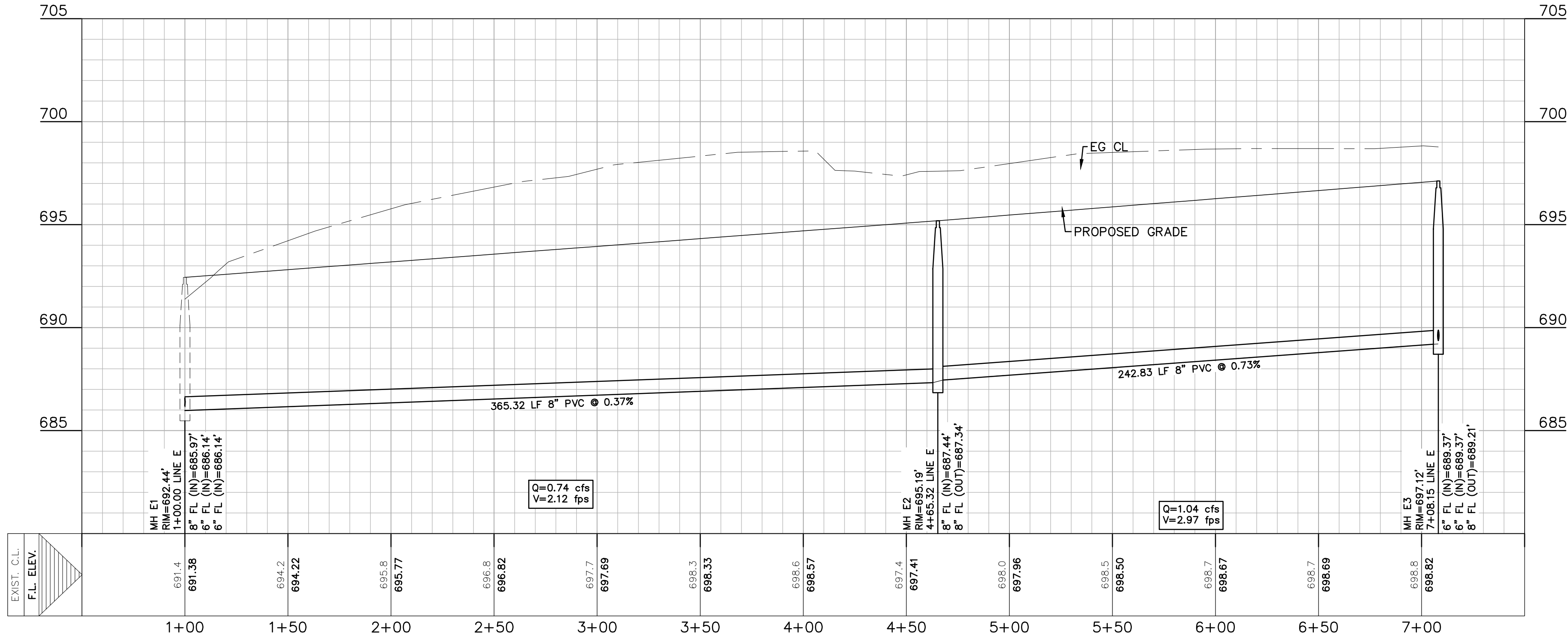
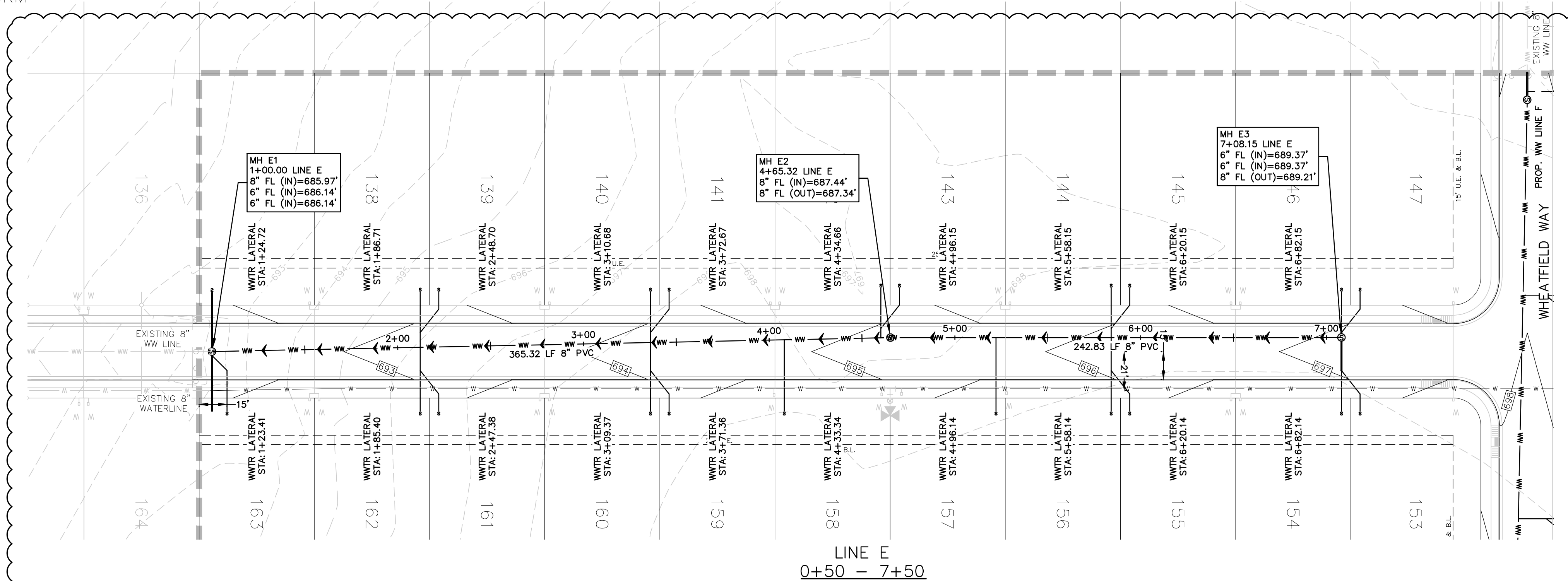
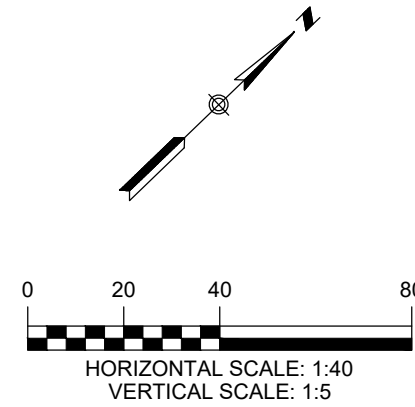
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LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	BUILDING SETBACK LINE
	UTILITY EASEMENT
	DRAINAGE EASEMENT
	EXISTING WASTEWATER LINE
	PROPOSED WASTEWATER LINE
	PROPOSED WASTEWATER SERVICE
	EXISTING WATER LINE
	PROPOSED WATER LINE
	UTILITY CROSSING



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TBEPLS FIRM 10153600

HMT
ENGINEERING & SURVEYING



Chris Van Heerde, P.E.

**WASTEWATER LINE E
PLAN & PROFILE
THE SILOS
UNIT 3**

NO.	REVISION	DESCRIPTION	DATE
1	ASBUILTS		04/2020

DATE: SEPTEMBER 2018

DRAWN BY: MM

DESIGNED BY: AM/MM

REVIEWED BY: SWH/SCH

HMT PROJECT NO.:

056.013

SHEET

C7.2

CONSTRUCTION NOTES:

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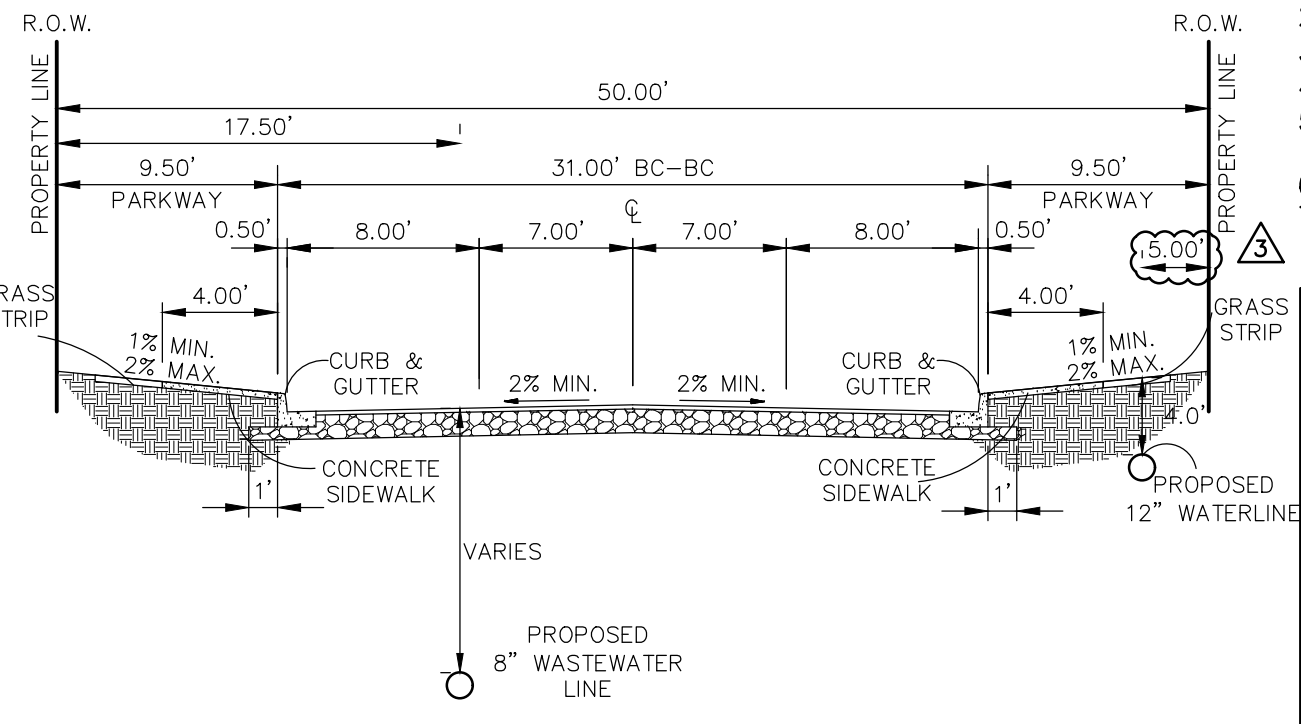
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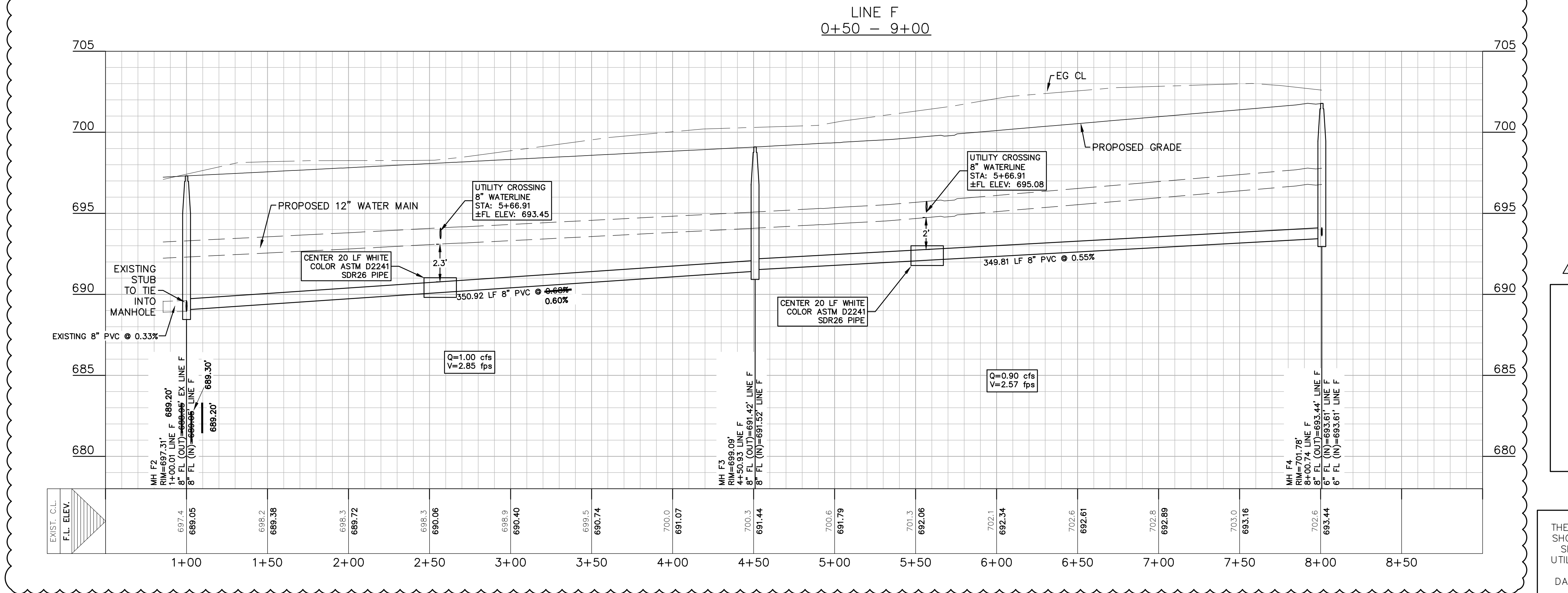
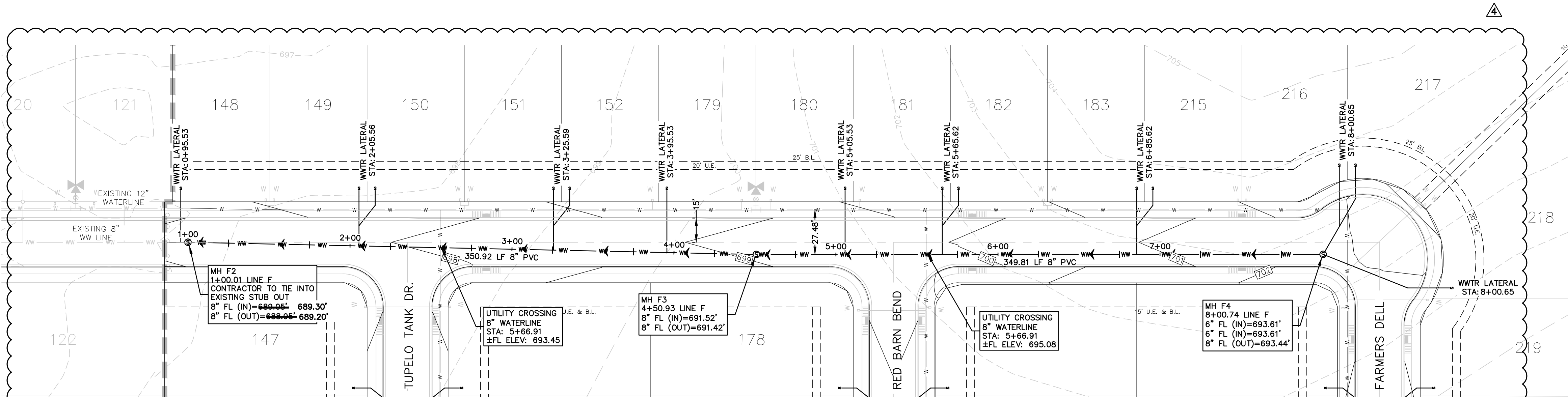
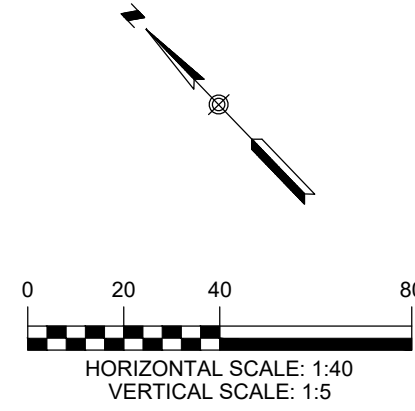
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TYPICAL RESIDENTIAL SECTION - 50' R.O.W.
NOT TO SCALE

LEGEND	
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	PROPOSED CONTOURS
	BUILDING SETBACK LINE
	UTILITY EASEMENT
	DRAINAGE EASEMENT
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RECORD DRAWING

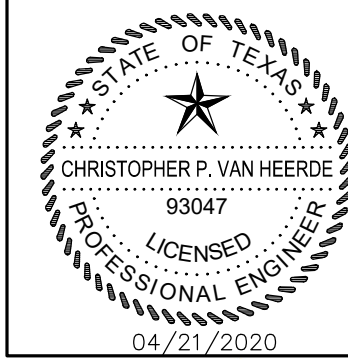
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TBE: FIRM F-10961
TBE: FIRM 1015360



Chris Van Heerde, P.E.

WASTEWATER LINE F
PLAN & PROFILE
THE SILOS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE
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DATE: SEPTEMBER 2018
DRAWN BY: MM
DESIGNED BY: AM/MM
REVIEWED BY: SWH/SCH
HMT PROJECT NO.: 056.013

SHEET
C7.3

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UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

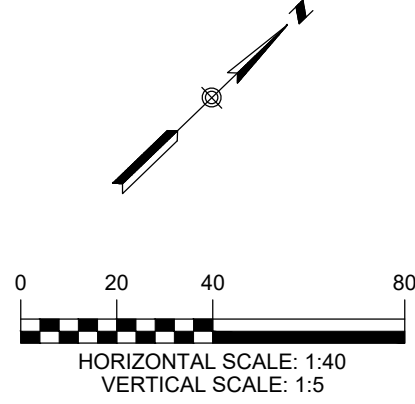
DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

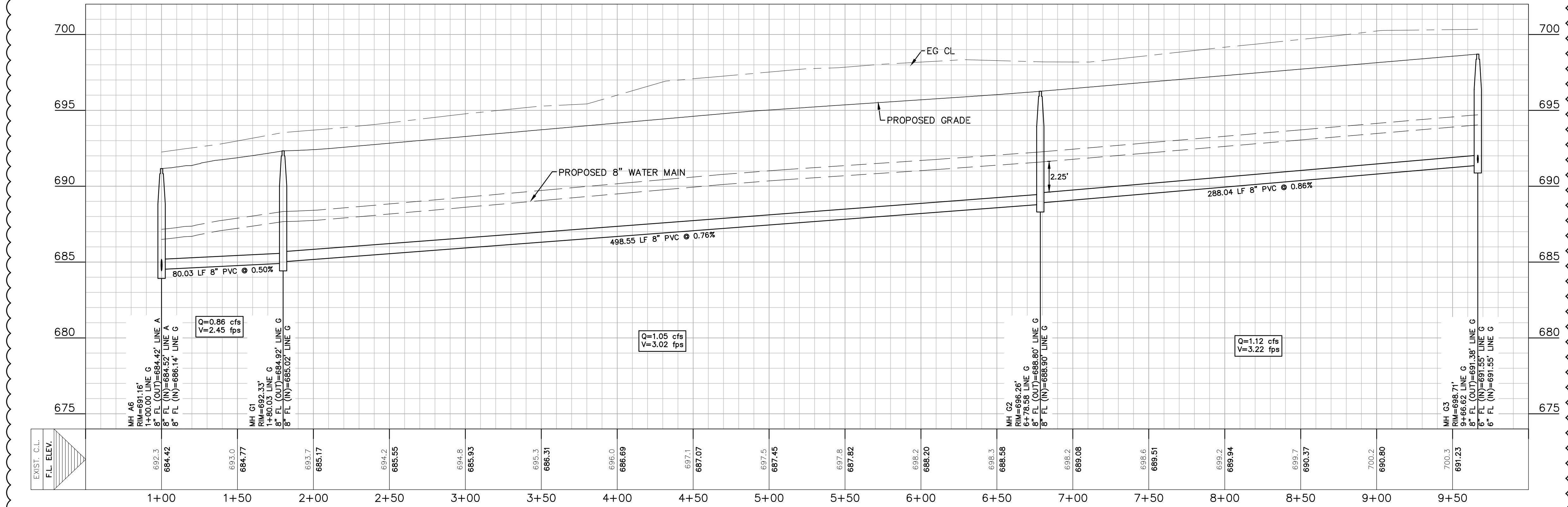
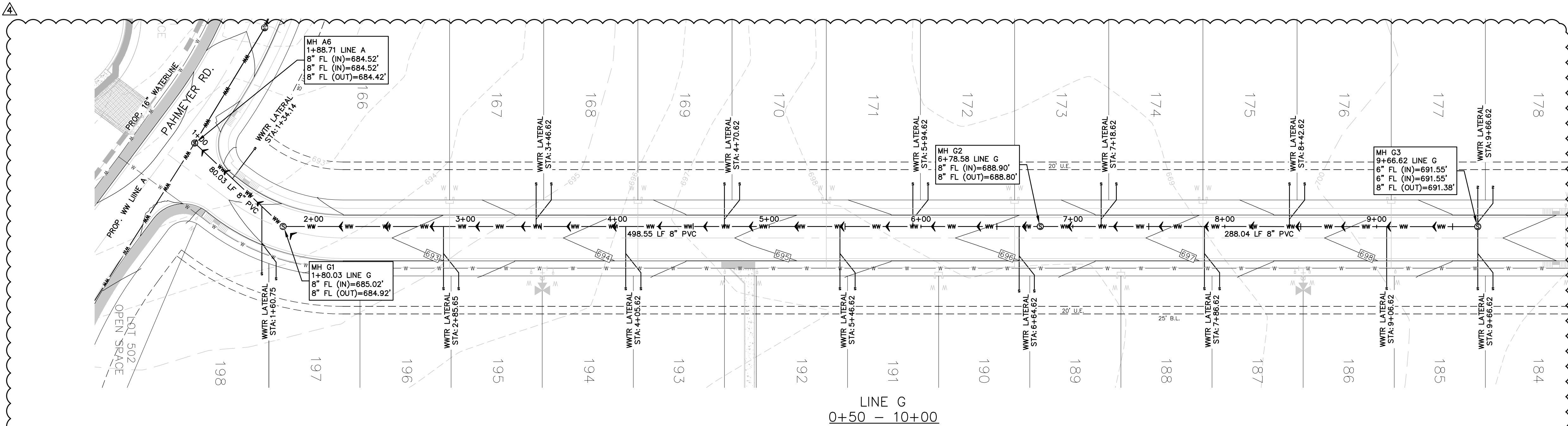
CONTRACTOR TO INSTALL TRENCH PROTECTION FOR GEOTECHNICAL ACCESS.

LEGEND

- 700 EXISTING CONTOURS
- 700 PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- WW EXISTING WASTEWATER LINE
- WW PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- W EXISTING WATER LINE
- W PROPOSED WATER LINE
- UTILITY CROSSING



TYPICAL RESIDENTIAL SECTION - 50' R.O.W.
NOT TO SCALE



4

RECORD DRAWING

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DATE: APRIL 2020 BY: *Chris Van Heerde, P.E.*
HMT ENGINEERING AND SURVEYING

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TBPLS FIRM 10153600

HMT
ENGINEERING & SURVEYING



Chris Van Heerde, P.E.

WASTEWATER LINE G
PLAN & PROFILE
THE SILOS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE
1	GERA COMMENTS		05/30/2018
2	GERA COMMENTS		06/21/2018
3	GVSD COMMENTS		09/11/2018
4	ASBUILTS		04/2020

DATE: SEPTEMBER 2018
DRAWN BY: MM
DESIGNED BY: AM/MM
REVIEWED BY: SWH/SCH

HMT PROJECT NO.:
056.013

SHEET
C7.4

CONSTRUCTION NOTES:

1. NO VALES, HYDRANTS, CLEAN-OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL SEWER PIPE ASTM 3034 (115 PSI)
3. ALL MANHOLES SHALL BE 48" DIAMETER.
4. ALL RING AND COVER SHALL BE 32" DIAMETER.
5. EXISTING MANHOLES, RIM AND FLOWLINE ELEVATIONS SURVEYED BY HMT ENGINEERING & SURVEYING DATED DECEMBER 23, 2013.
6. REFERENCE SHEET C0.1 FOR GBR NOTES.
7. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSING OF ALL OTHER UTILITIES INCLUDING DRY UTILITIES SERVICE, WASTEWATER LATERALS AND FIRE HYDRANT LEADS.

TRENCH EXCAVATION SAFETY PROTECTION

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CONTRACTOR TO INSTALL TRENCH PROTECTION FOR GEOTECHNICAL ACCESS.

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DATE: APRIL 2020

BY:

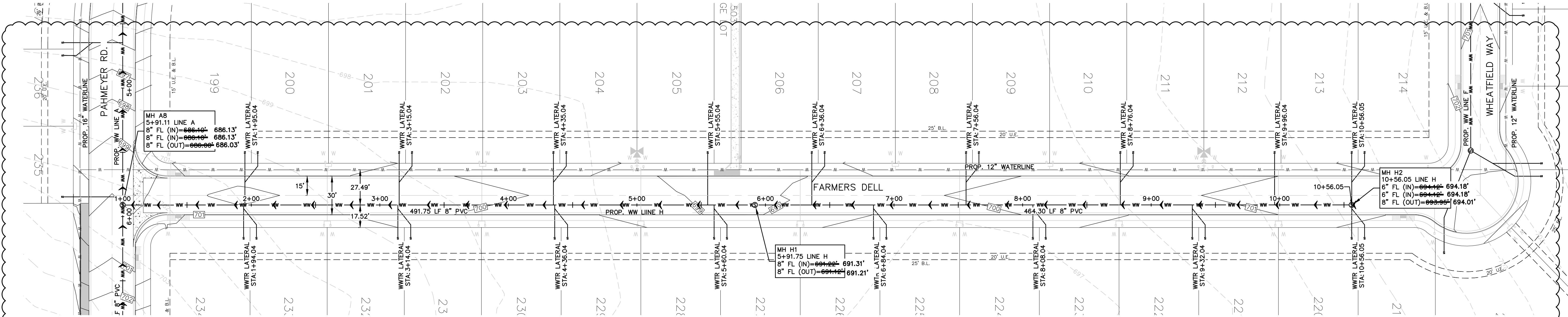
Chris Van Huden, P.E.

HMT ENGINEERING AND SURVEYING

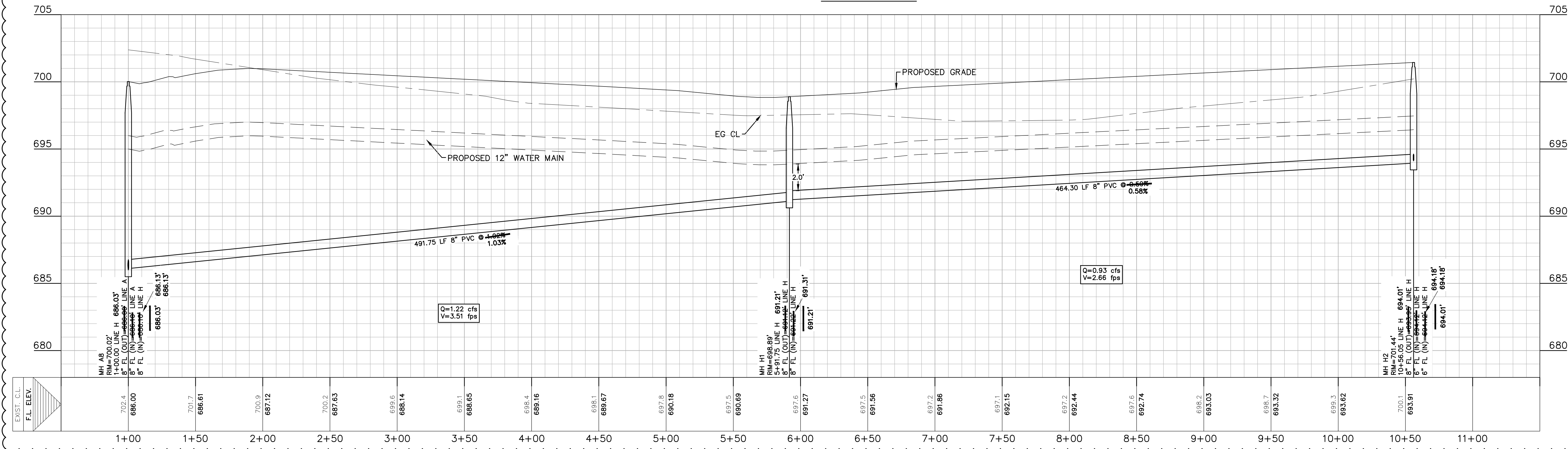
LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	BUILDING SETBACK LINE
	UTILITY EASEMENT
	DRAINAGE EASEMENT
	EXISTING WASTEWATER LINE
	PROPOSED WASTEWATER LINE
	PROPOSED WASTEWATER SERVICE
	EXISTING WATER LINE
	PROPOSED WATER LINE
	UTILITY CROSSING

TYPICAL RESIDENTIAL SECTION - 50' R.O.W.

NOT TO SCALE



LINE H
0+50 - 11+50



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WASTEWATER LINE H
PLAN & PROFILE
THE SILOS
UNIT 3

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DATE: SEPTEMBER 2018

DRAWN BY: MM

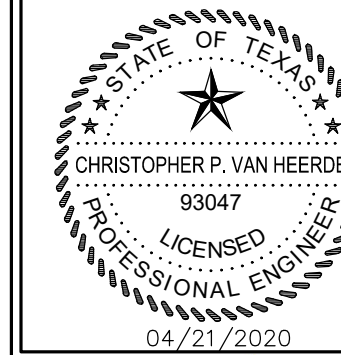
DESIGNED BY: AM/MM

REVIEWED BY: SMH/SCH

HMT PROJECT NO.:

056-013

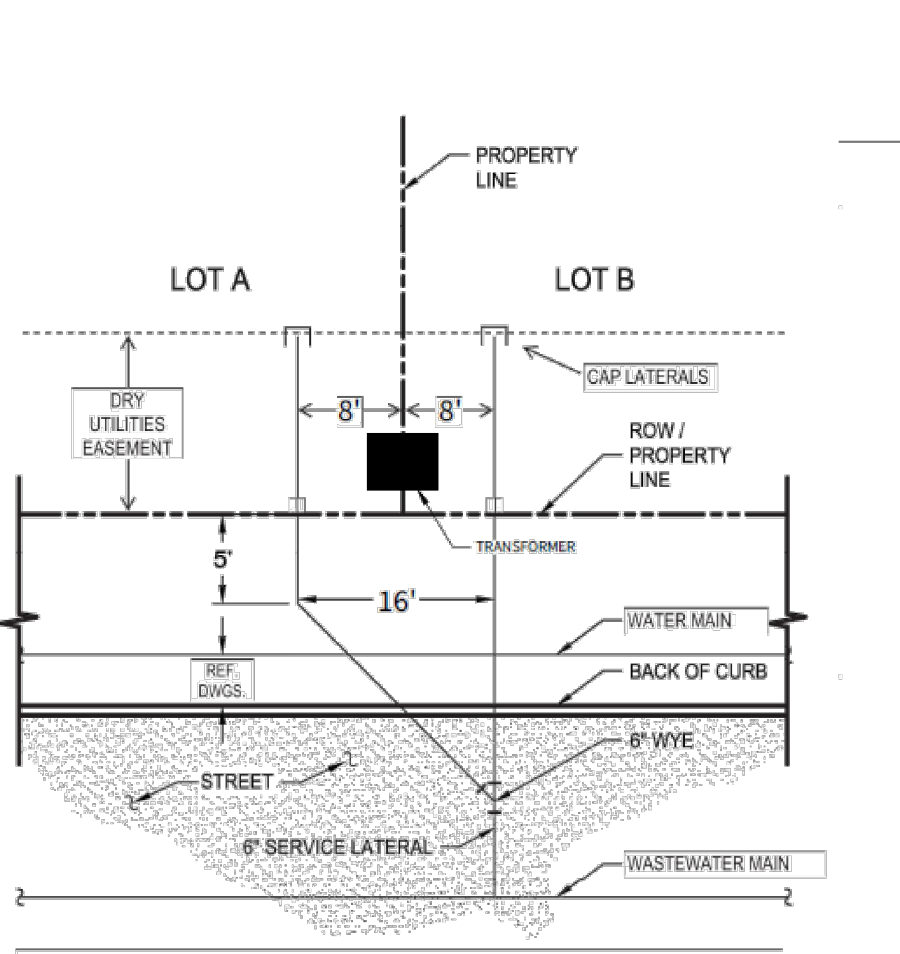
SHEET
C7.5



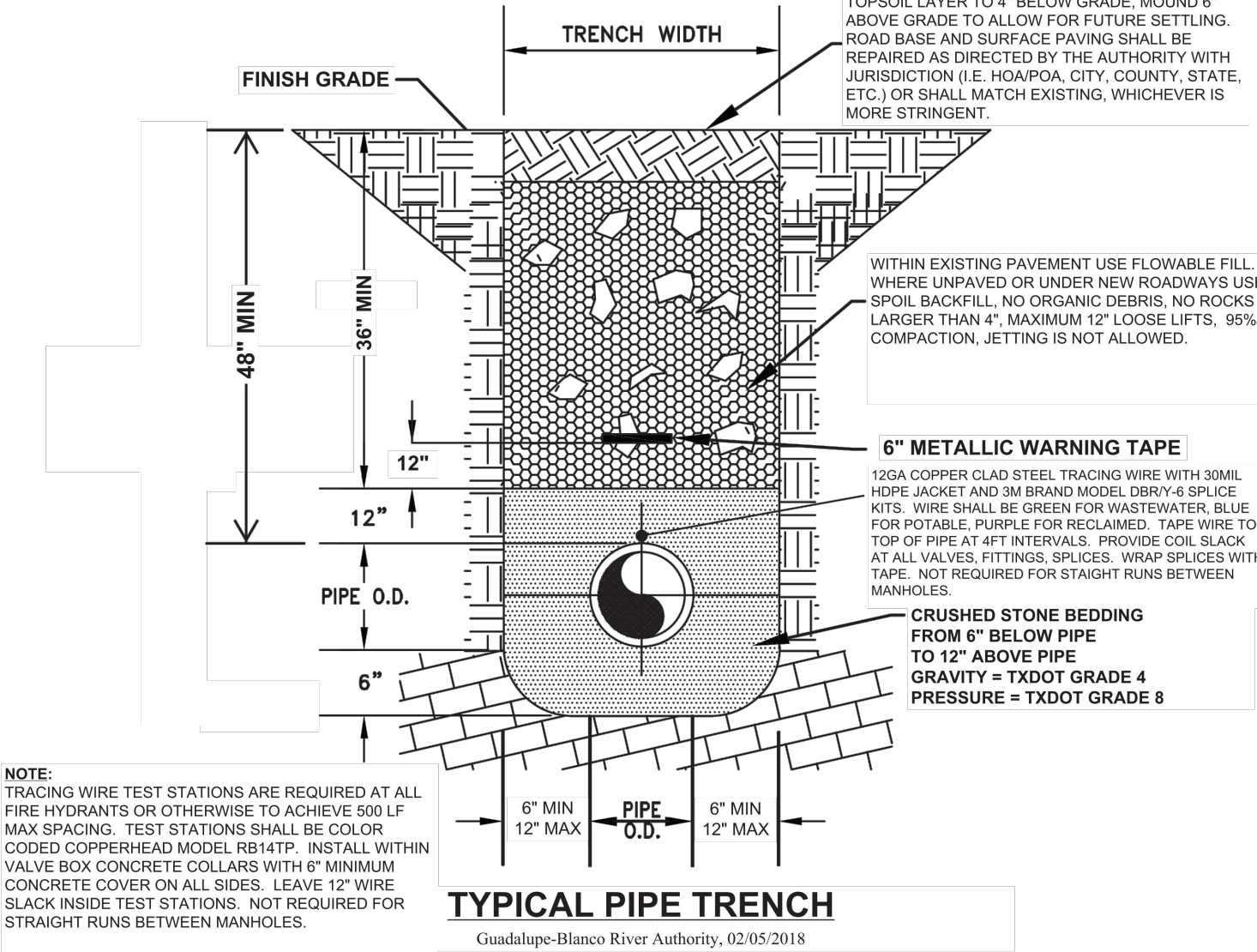
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HMT
ENGINEERING & SURVEYING

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T(830)825-8655 • F(830)825-8656
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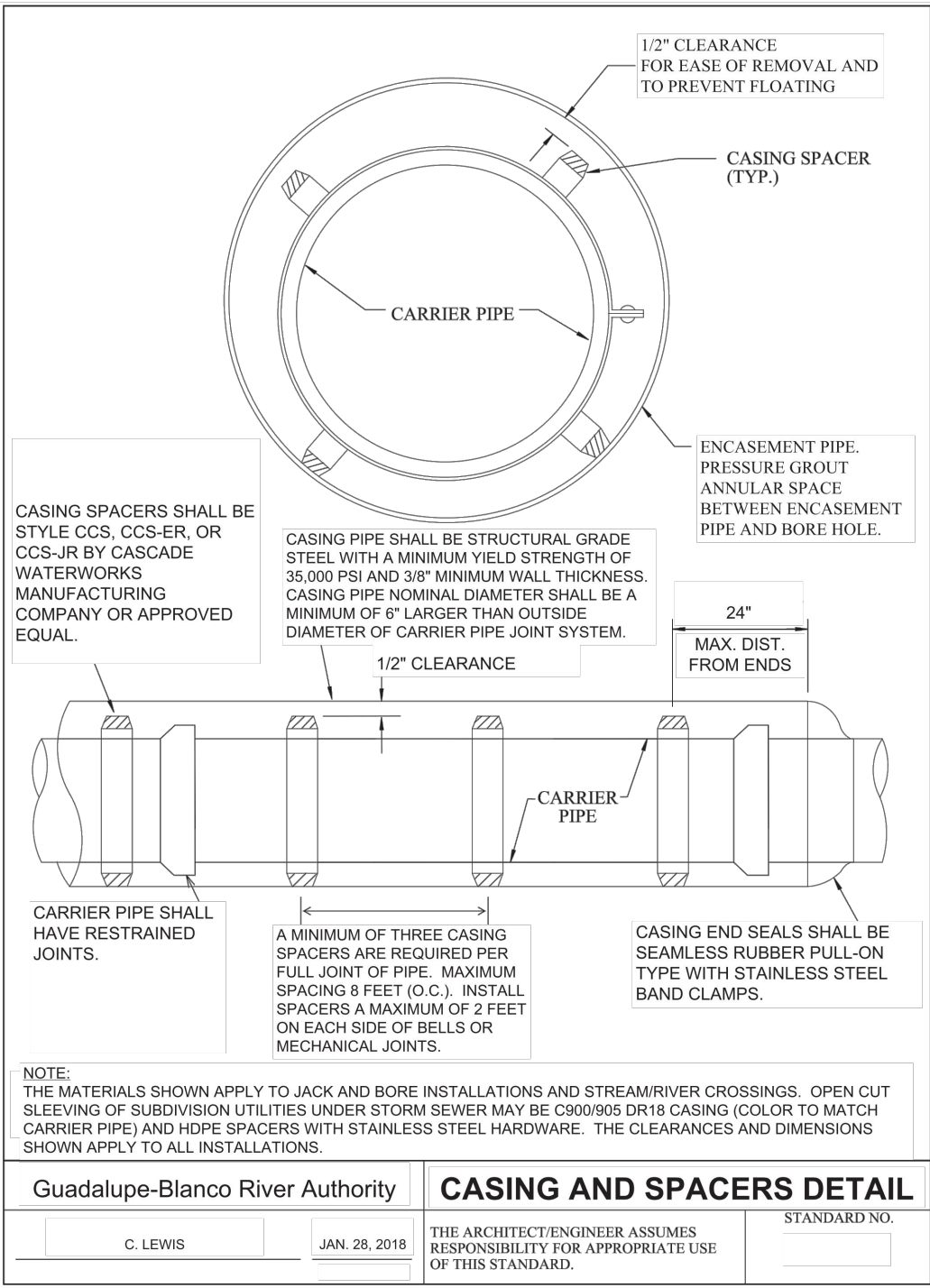
NOTE: REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.



NOTE: TRACING WIRE TEST STATIONS ARE REQUIRED AT ALL FIRE HYDRANTS OR OTHERWISE TO ACHIEVE 500 LF MAX SPACING. TEST STATIONS SHALL BE COLOR CODED COPPERHEAD MODEL R8147. INSTALL WITHIN VALVE BOX CONCRETE COLLARS WITH 6" MINIMUM CONCRETE COVER ON ALL SIDES. LEAVE 12" WIRE SLACK INSIDE TEST STATIONS. NOT REQUIRED FOR STRAIGHT RUNS BETWEEN MANHOLES.

TYPICAL PIPE TRENCH

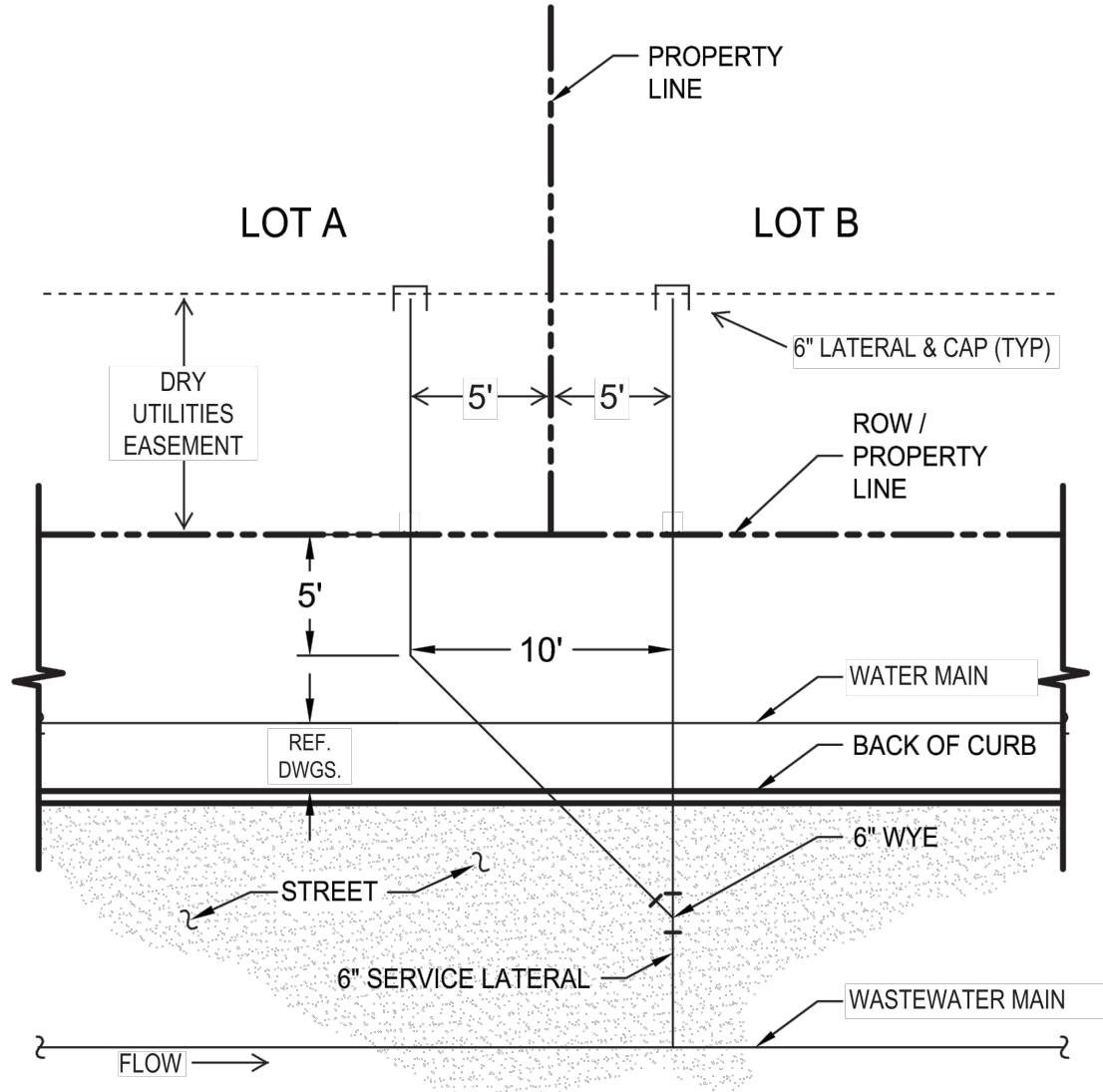
Guadalupe-Blanco River Authority, 02/05/2018



NOTE: THE MATERIALS SHOWN APPLY TO JACK AND BORE INSTALLATIONS AND STREAM/RIVER CROSSINGS. OPEN CUT SLEEVING OF SUBDIVISION UTILITIES UNDER STORM SEWER MAY BE COORDINATE WITH CASING (COLOR TO MATCH CARRIER PIPE) AND HOPE SPACERS WITH STAINLESS STEEL HARDWARE. THE CLEARANCES AND DIMENSIONS SHOWN APPLY TO ALL INSTALLATIONS.

CASING AND SPACERS DETAIL

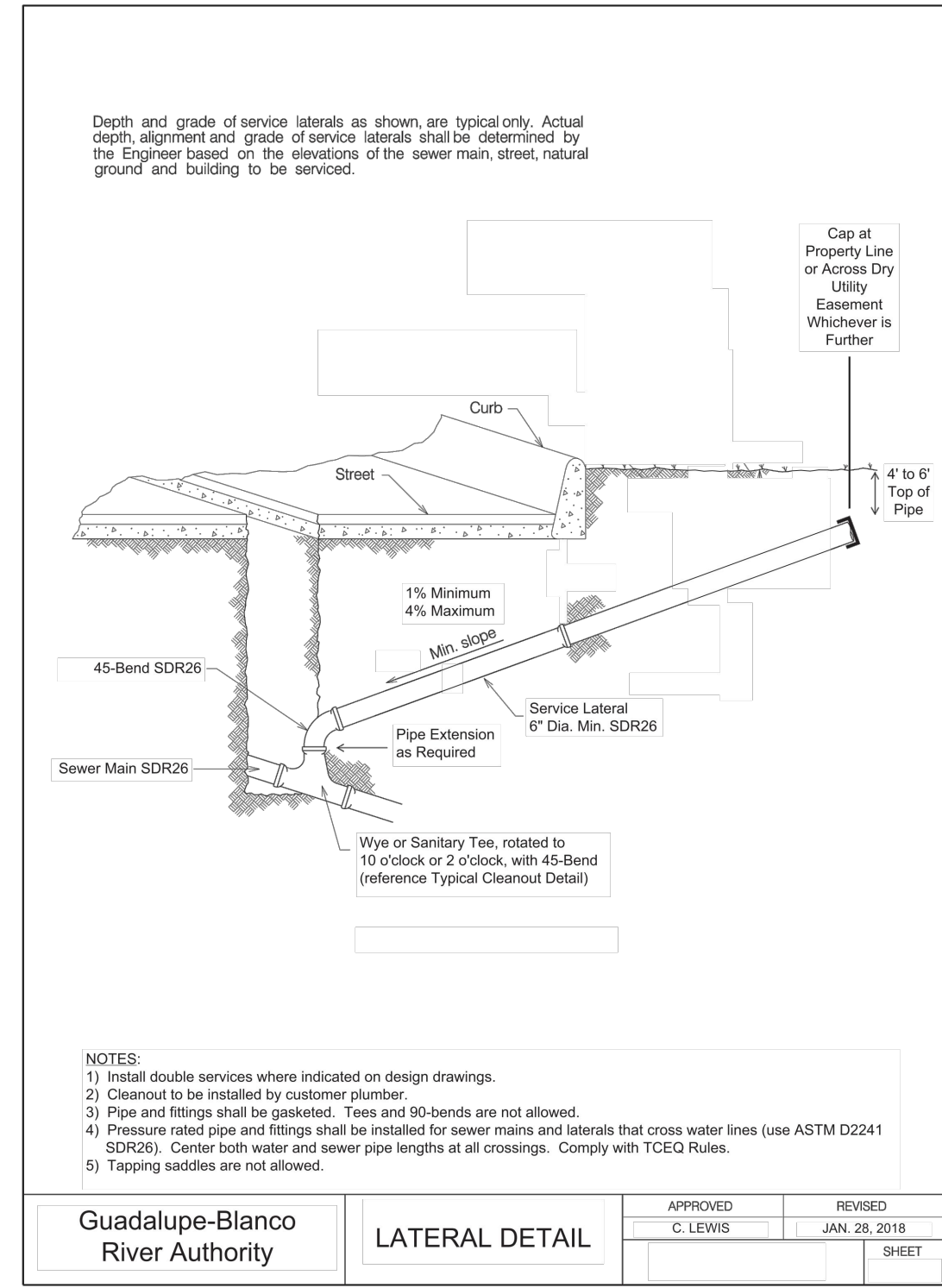
Guadalupe-Blanco River Authority THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD STANDARD NO. C. LEWIS JAN. 28, 2018



NOTE: REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.

DOUBLE WASTEWATER LATERAL DETAIL (N.T.S.)

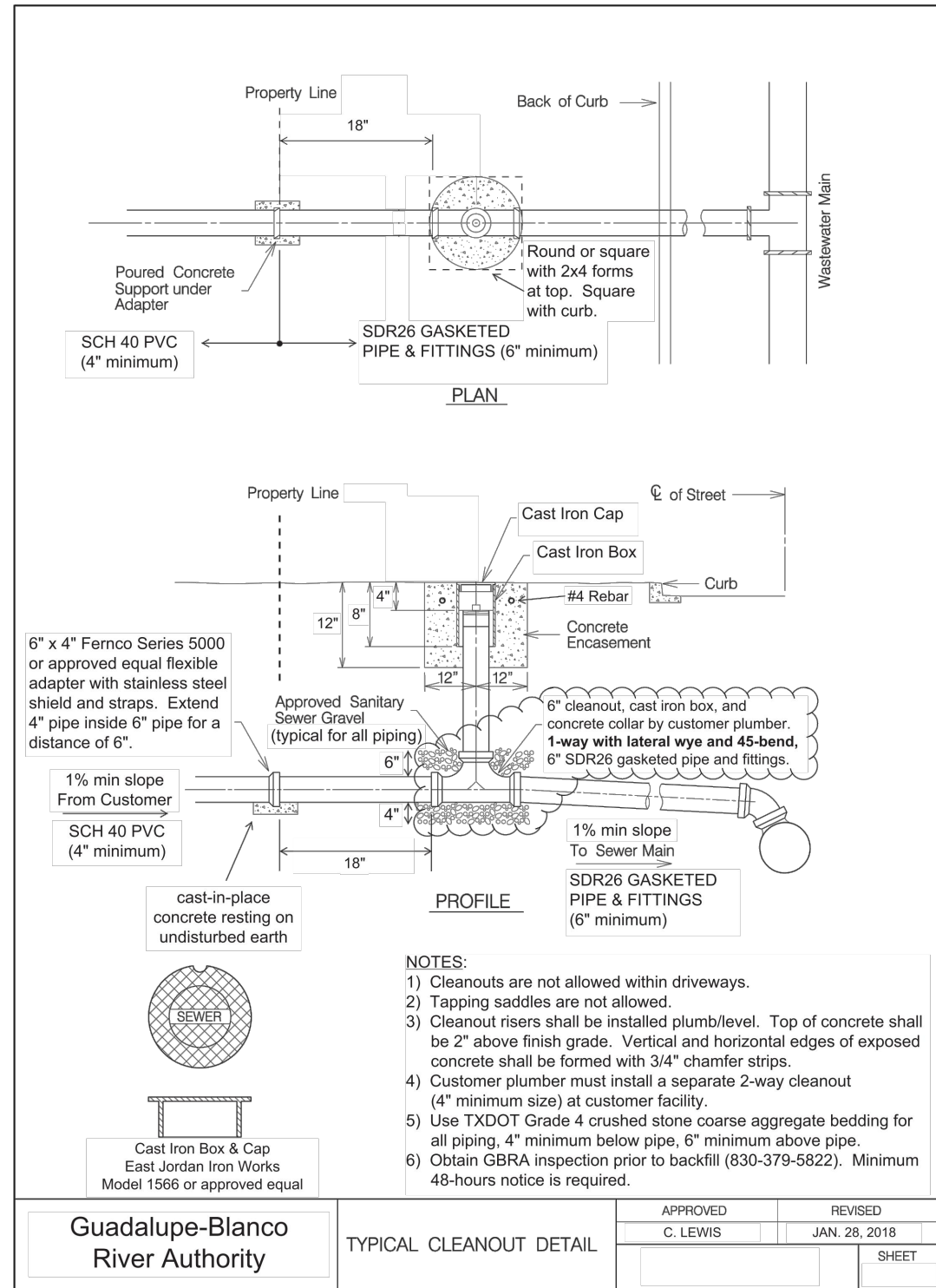
Guadalupe-Blanco River Authority, 01/28/2018



NOTES:
1) Install double services where indicated on design drawings.
2) Cleanout to be installed by customer plumber.
3) Pipe and fittings shall be gasketed. Ties and 90-bends are not allowed.
4) Pressure rated pipe and fittings shall be installed for sewer mains and laterals that cross water lines (use ASTM D2241 SDR26). Center both water and sewer pipe lengths at all crossings. Comply with TCEQ Rules.
5) Tapping saddles are not allowed.

LATERAL DETAIL

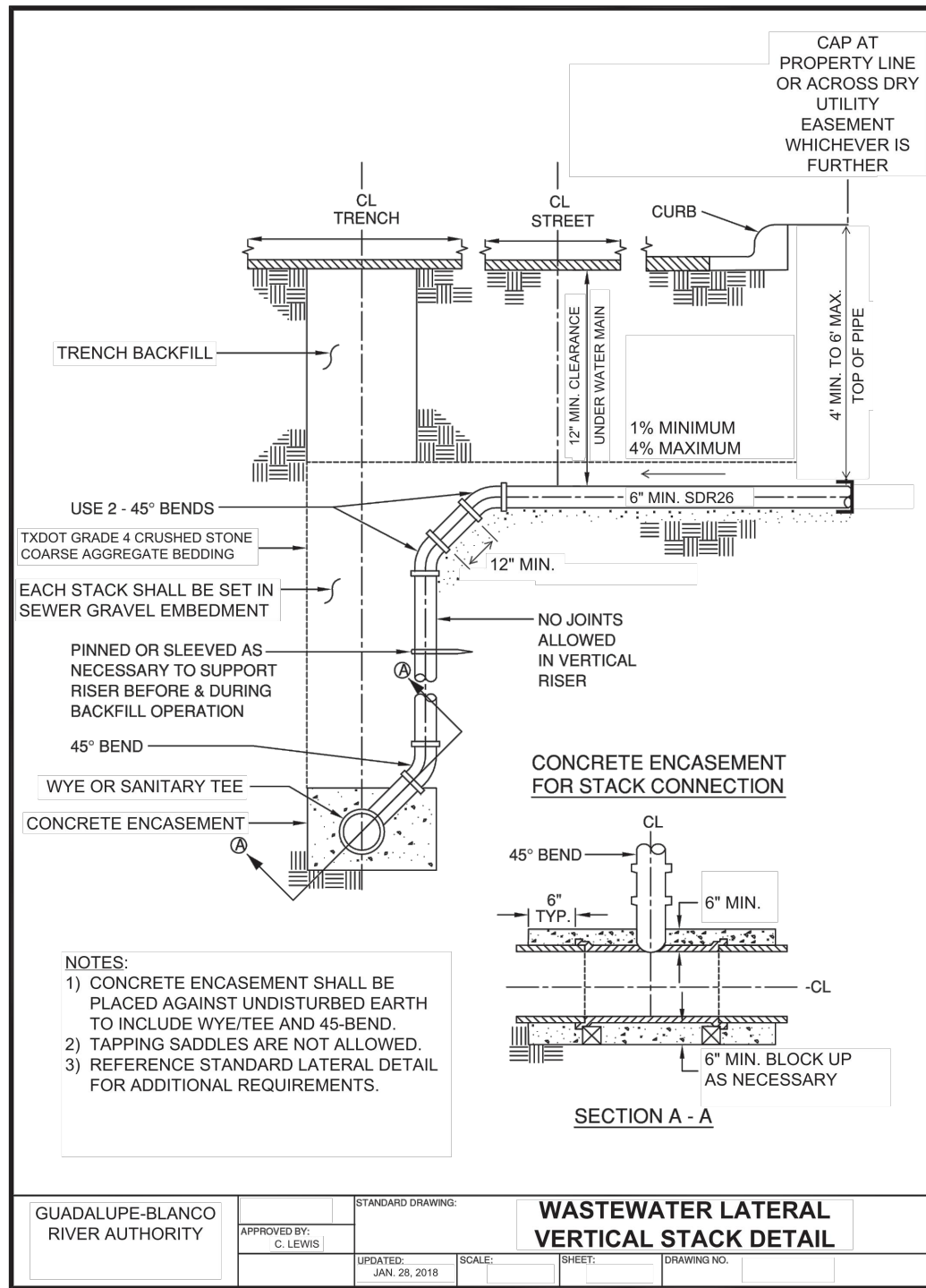
Guadalupe-Blanco River Authority APPROVED C. LEWIS JAN. 28, 2018 REVISED SHEET



NOTES:
1) Cleanouts are not allowed within driveways.
2) Tapping saddles are not allowed.
3) Cleanout risers shall be installed plumblined. Top of concrete shall be 2" above finish grade. Vertical and horizontal edges of exposed concrete shall be formed with 3/4" chamfer strips.
4) Customer plumber must install a separate 2-way cleanout (4" minimum size) at customer facility.
5) Use TXDOT Grade 4 crushed stone coarse aggregate bedding for all piping. 4" minimum below pipe, 6" minimum above pipe.
6) Obtain GBRA inspection prior to backfill (830-378-5822). Minimum 48-hours notice is required.

TYPICAL CLEANOUT DETAIL

Guadalupe-Blanco River Authority APPROVED C. LEWIS JAN. 28, 2018 REVISED SHEET

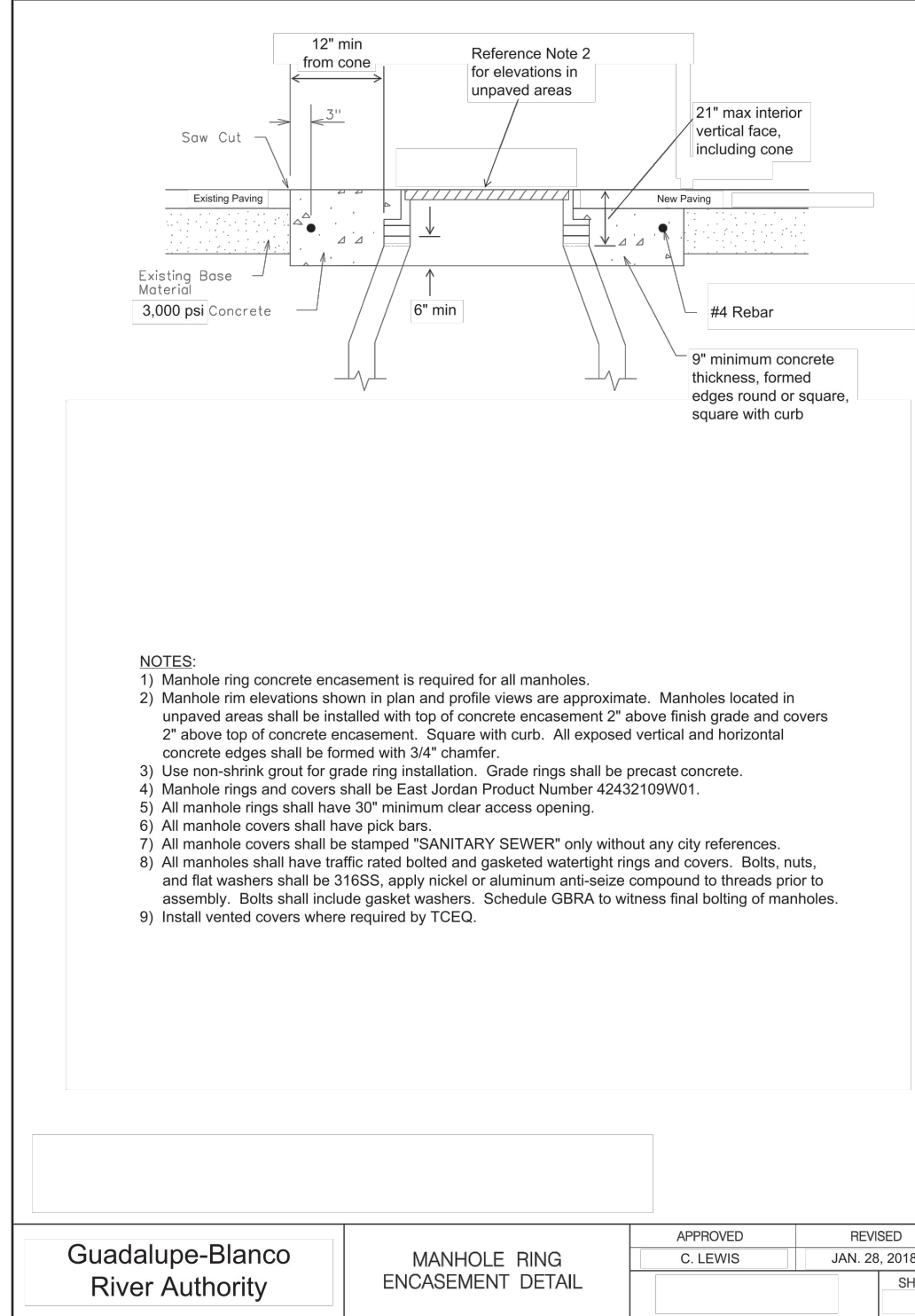


NOTES:
1) CONCRETE ENCASEMENT SHALL BE PLACED AGAINST UNDISTURBED EARTH TO INCLUDE WYE/TIE AND 45-BEND.
2) TAPPING SADDLES ARE NOT ALLOWED.
3) REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.

SECTION A - A

WASTEWATER LATERAL VERTICAL STACK DETAIL

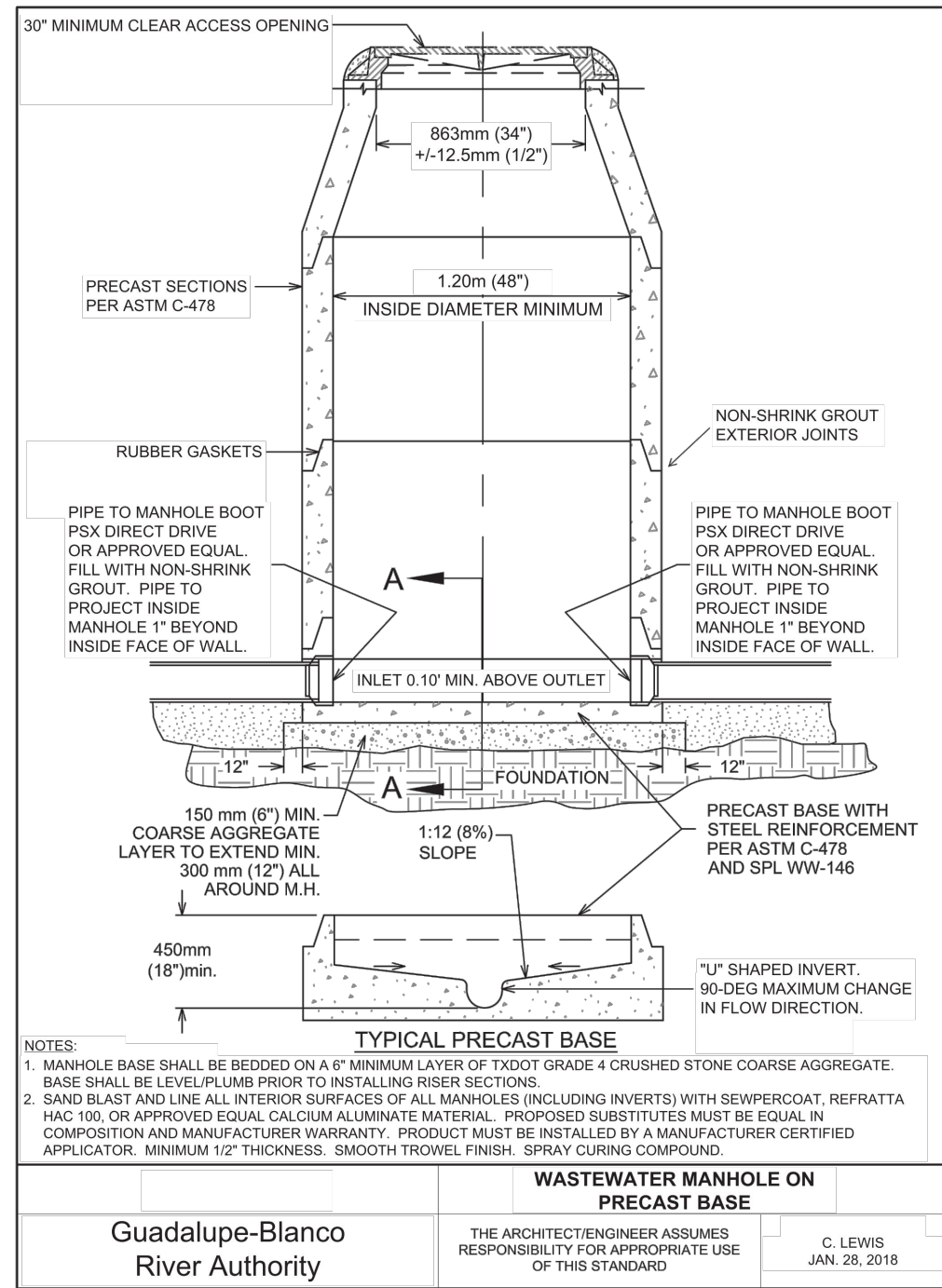
Guadalupe-Blanco River Authority APPROVED C. LEWIS JAN. 28, 2018 REVISED SHEET



NOTES:
1) Manhole ring concrete encasement is required for all manholes.
2) Manhole rim elevations shown in plan and profile views are approximate. Manholes located in unpaved areas shall be installed with top of concrete encasement 2" above finish grade and covers 2" above top of concrete encasement. Square with curb. All exposed vertical and horizontal concrete edges shall be formed with 3/4" chamfer.
3) Use non-shrink grout for grade ring installation. Grade rings shall be precast concrete.
4) Manhole rings and covers shall be East Jordan Product Number 4242109W01.
5) All manhole rings shall have 30" minimum clear access opening.
6) All manhole covers shall have pick bars.
7) All manhole covers shall be stamped "SANITARY SEWER" only without any city references.
8) All manholes shall have traffic rated bolted and gasketed watertight rings and covers. Bolts, nuts, and flat washers shall be 316SS, apply nickel or aluminum anti-oxidant compound to threads prior to assembly. Bolts shall include gasket washers. Schedule GBRA to witness final bolting of manholes.
9) Install vented covers where required by TCEQ.

MANHOLE RING ENCASEMENT DETAIL

Guadalupe-Blanco River Authority APPROVED C. LEWIS JAN. 28, 2018 REVISED SHEET

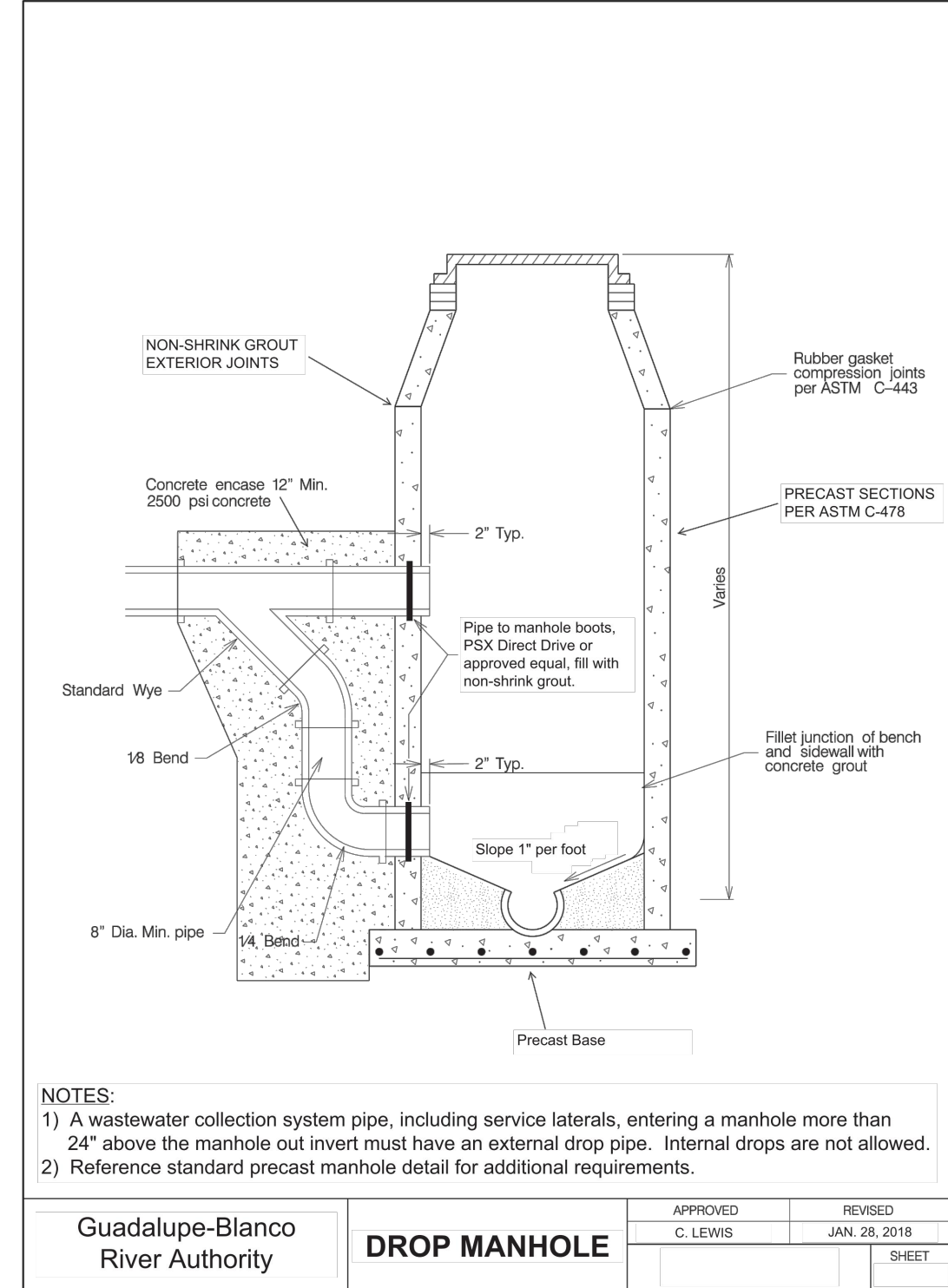


NOTES:
1) MANHOLE BASE SHALL BE BEDDED ON A 6" MINIMUM LAYER OF TXDOT GRADE 4 CRUSHED STONE COARSE AGGREGATE. BASE SHALL BE LEVEL/PLUMB PRIOR TO INSTALLING RISER SECTIONS.
2) SAND BLAST AND LINE ALL INTERIOR SURFACES OF ALL MANHOLES (INCLUDING INVERTS) WITH SEPPERCOAT REFRATTA HAC 100, OR APPROVED EQUAL CALCIUM ALUMINATE MATERIAL. PROPOSED SUBSTITUTES MUST BE EQUAL IN COMPOSITION AND MANUFACTURER WARRANTY. PRODUCT MUST BE INSTALLED BY A MANUFACTURER CERTIFIED APPLICATOR. MINIMUM 1/2" THICKNESS. SMOOTH TROWEL FINISH. SPRAY CURING COMPOUND.

TYPICAL PRECAST BASE

WASTEWATER MANHOLE ON PRECAST BASE

Guadalupe-Blanco River Authority THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD C. LEWIS JAN. 28, 2018



NOTES:
1) A wastewater collection system pipe, including service laterals, entering a manhole more than 24" above the manhole out invert must have an external drop pipe. Internal drops are not allowed.
2) Reference standard precast manhole detail for additional requirements.

DROP MANHOLE

Guadalupe-Blanco River Authority APPROVED C. LEWIS JAN. 28, 2018 REVISED SHEET

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