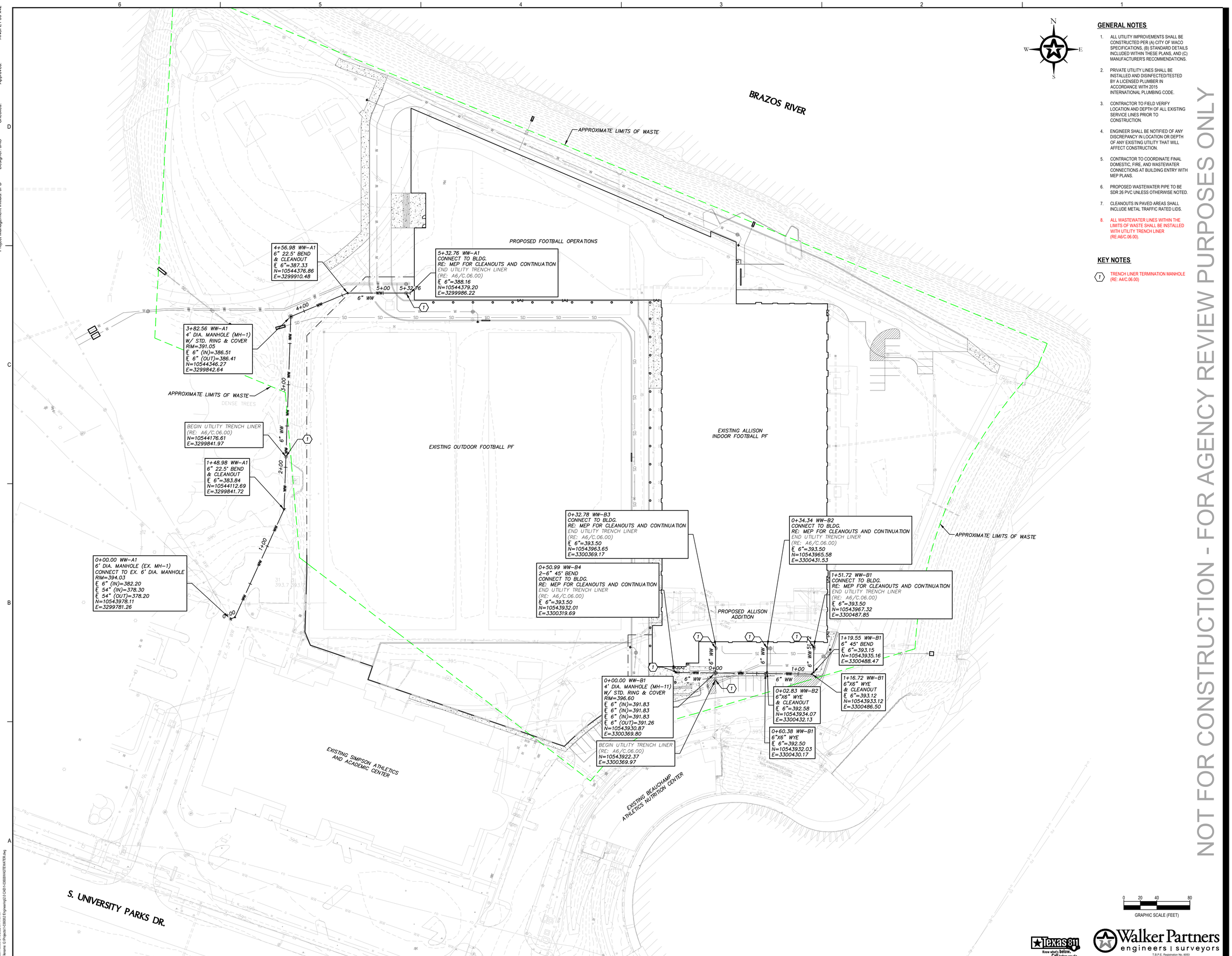

GENERAL NOTES

1. ALL UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED PER (A) CITY OF WACO SPECIFICATIONS, (B) STANDARD DETAILS INCLUDED WITHIN THESE PLANS, AND (C) MANUFACTURER'S RECOMMENDATIONS.
2. PRIVATE UTILITY LINES SHALL BE INSTALLED AND DISINFECTED/TESTED BY A LICENSED PLUMBER IN ACCORDANCE WITH 2015 INTERNATIONAL PLUMBING CODE.
3. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING SERVICE LINES PRIOR TO CONSTRUCTION.
4. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY IN LOCATION OR DEPTH OF ANY EXISTING UTILITY THAT WILL AFFECT CONSTRUCTION.
5. CONTRACTOR TO COORDINATE FINAL DOMESTIC, FIRE, AND WASTEWATER CONNECTIONS AT BUILDING ENTRY WITH MEP PLANS.
6. PROPOSED WASTEWATER PIPE TO BE SDR 26 PVC UNLESS OTHERWISE NOTED.
7. CLEANOUTS IN PAVED AREAS SHALL INCLUDE METAL TRAFFIC RATED LIDS.
8. ALL WASTEWATER LINES WITHIN THE LIMITS OF WASTE SHALL BE INSTALLED WITH UTILITY TRENCH LINER (RE:A6/C.06.00).

KEY NOTES

1 TRENCH LINER TERMINATION MANHOLE (RE: A4/C.06.00)

0 20 40 80
GRAPHIC SCALE (FEET)

NOT FOR CONSTRUCTION - FOR AGENCY REVIEW PURPOSES ONLY

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FUDGE FOOTBALL OPERATIONS CENTER at BAYLOR UNIVERSITY
1504 S UNIVERSITY PARKS DRIVE
WACO, TX 76798

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OJB LANDSCAPE ARCHITECTURE
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AECOM TECHNICAL SERVICES, INC
STRUCTURAL

CAMPISE CONSULTING AND INSPECTIONS, LLC
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DOWNSTREAM
SIGNAGE / GRAPHICS / BRANDING

REGISTRATION

STATE OF TEXAS
JONATHAN A. CANNON
122060
LICENSED
PROFESSIONAL ENGINEER

02/16/2022
DATE
JONATHAN A. CANNON

REGISTRATION

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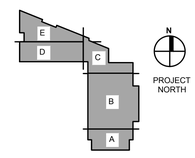
DESIGN DEVELOPMENT

KEY PLAN



ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER 60668614
DATE 03/04/22

SHEET TITLE
OVERALL WASTEWATER PLAN

SHEET NUMBER
C.05.00

Texas 811 Know what's below. Call before you dig.

Walker Partners engineers | surveyors
T.B.P.E. Registration No. 8053

ANSI E1 30"x42"
Approved:
Checked:
Designer: JAC
Project Management Initials: JPB

0+00.00 WW–A1
6" DIA. MANHOLE (EX. MH–1)
W/ STD. RING & COVER
RIM=394.03
℄ 6" (IN)=382.20
℄ 54" (IN)=378.30
℄ 54" (OUT)=378.20
N=10543978.11
E=3299781.26

1+48.98 WW–A1
6" 22.5° BEND
& CLEANOUT
℄ 6"=383.84
N=10544112.69
E=3299841.72

BEGIN UTILITY TRENCH LINER
(RE: A6/C.06.00)
N=10544176.61
E=3299841.97

3+82.56 WW–A1
4' DIA. MANHOLE (MH–1)
W/ STD. RING & COVER
RIM=391.05
℄ 6" (IN)=386.51
℄ 6" (OUT)=386.41
N=10544346.27
E=3299842.64

4+56.98 WW–A1
6" 22.5° BEND
& CLEANOUT
℄ 6"=387.33
N=10544376.86
E=3299910.48

5+32.76 WW–A1
CONNECT TO BLDG.
RE: MEP FOR CLEANOUTS AND CONTINUATION
END UTILITY TRENCH LINER
(RE: A6/C.06.00)
℄ 6"=388.16
N=10544379.20
E=3299986.22

Ex. 54" WW
6" WW
APPROXIMATE LIMITS OF WASTE
EXISTING OUTDOOR FOOTBALL PF
PROPOSED FOOTBALL OPERATIONS
DENSE TREES

0+00.00 6" DIA. MANHOLE (EX. MH–1) RIM=394.03 ℄ 6" (IN)=382.20 ℄ 54" (IN)=378.30 ℄ 54" (OUT)=378.20
0+05.49 6" 22.5° BEND & CLEANOUT ℄ 6"=382.26
1+48.98 6" 22.5° BEND & CLEANOUT ℄ 6"=383.84
3+82.56 4' DIA. MANHOLE (MH–1) RIM=391.05 ℄ 6" (IN)=386.51 ℄ 6" (OUT)=386.41
4+56.98 6" 22.5° BEND & CLEANOUT ℄ 6"=387.33
5+32.76 CONNECT TO BLDG. RE: MEP FOR CLEANOUTS AND CONTINUATION ℄ 6"=388.16

143.00 LF ~ 6" WW @ 1.10%
231.33 LF ~ 6" WW @ 1.10%
72.17 LF ~ 6" WW @ 1.10%
75.53 LF ~ 6" WW @ 1.10%
2.25 LF ~ 6" WW @ 1.10%

400 396 392 388 384 380 376
0+00 1+00 2+00 3+00 4+00 5+00

GENERAL NOTES

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KEY NOTES

1. TRENCH LINER TERMINATION MANHOLE (RE: A4/C.06.00)

PROFILE LEGEND

N.G. ~ CENTERLINE
F.G. ~ CENTERLINE

0 10 20 40
GRAPHIC SCALE (FEET)

Texas 811 Dig Safely. Call before you dig.

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STATE OF TEXAS
JONATHAN A. CANNON
122060
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02/16/2022
DATE
JONATHAN A. CANNON

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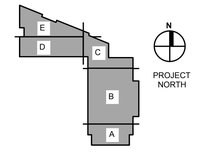
DESIGN DEVELOPMENT

KEY PLAN



ISSUE/REVISION

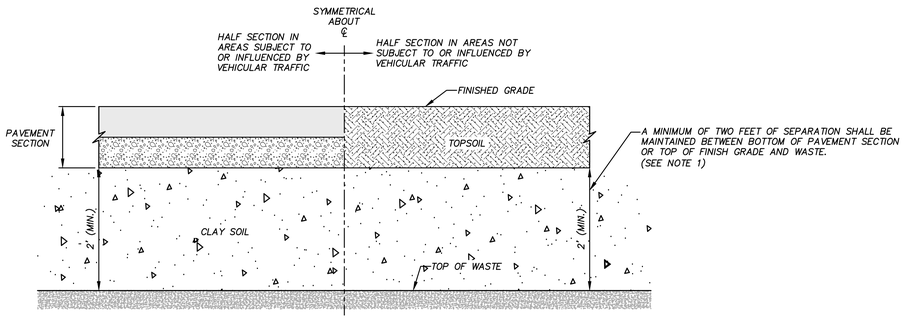
I/R	DATE	DESCRIPTION

PROJECT NUMBER 60668614
DATE 03/04/22

SHEET TITLE
WASTEWATER PLAN & PROFILE

SHEET NUMBER
C.05.01

Last Plotted: 2/16/2022 5:15:43 AM
Filename: G:\Projects\-5\60668\Engineering\2-5 CAD\-5\60668ASTEWATER.dwg



NOTES:

1. IF WASTE MATERIAL IS ENCOUNTERED DURING EXCAVATION/GRADING, TWO FEET OF IMPORTED CLAY MATERIAL SHALL BE PLACED ABOVE THE TOP OF WASTE.
2. IMPORTED CLAY MATERIAL SHALL BE SC (CLAYEY SAND) OR CL (LEAN CLAY). PLASTICITY INDEX SHALL BE LESS THAN 25. NATIVE SOIL MAY BE USED IF IT IS FREE OF WASTE AND MEETS THE SOIL CLASSIFICATION REQUIREMENTS.
3. ALL WASTE AND EXCAVATED SOILS THAT HAVE CONTACTED WASTE SHALL BE STORED SEPARATELY FROM CLEAN SOIL AND DISPOSED OF OFFSITE IN A DISPOSAL FACILITY PERMITTED BY THE STATE TO RECEIVE SOLID WASTE.
4. WASTE MATERIALS STORED ON SITE MUST BE KEPT IN WATERTIGHT CONTAINERS OR STOCKPILED ON THE GROUND IN A BERMED AREA THAT IS COVERED TO PROTECT CONTENTS FROM RAINFALL AND STORMWATER RUN-ON.

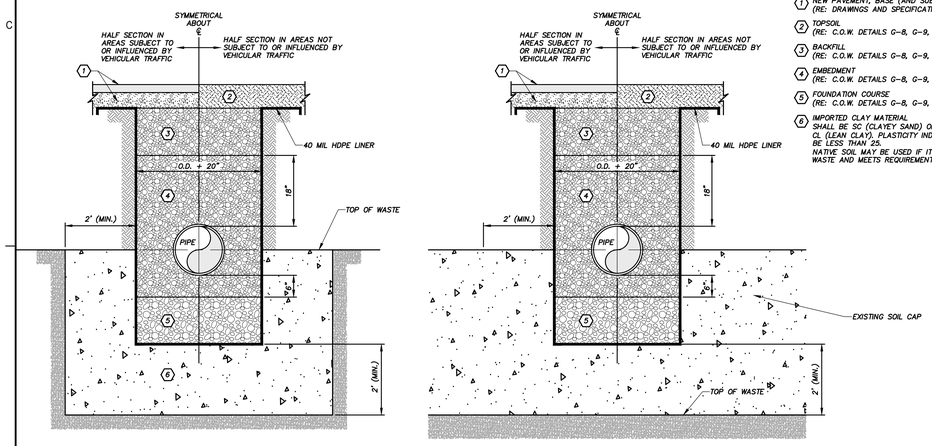
C6 PAVEMENT SECTION DETAIL (WITHIN LIMITS OF WASTE)

N.T.S.

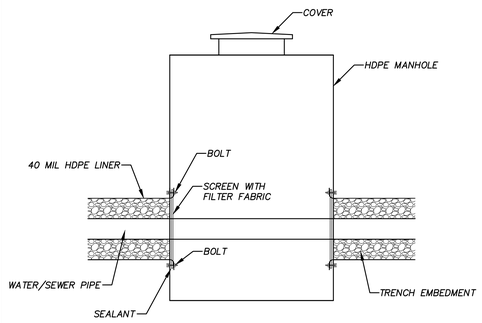
C4

B6 UTILITY TRENCH SECTION WITH LINER DETAIL

N.T.S.



1. NEW PAVEMENT, BASE (AND SUBGRADE) (RE: DRAWINGS AND SPECIFICATIONS)
2. TOPSOIL (RE: C.O.W. DETAILS G-8, G-9, & G-10)
3. BACKFILL (RE: C.O.W. DETAILS G-8, G-9, & G-10)
4. EMBEDMENT (RE: C.O.W. DETAILS G-8, G-9, & G-10)
5. FOUNDATION COURSE (RE: C.O.W. DETAILS G-8, G-9, & G-10)
6. IMPORTED CLAY MATERIAL SHALL BE SC (CLAYEY SAND) OR CL (LEAN CLAY). PLASTICITY INDEX SHALL BE LESS THAN 25. NATIVE SOIL MAY BE USED IF IT'S FREE OF WASTE AND MEETS REQUIREMENTS ABOVE.

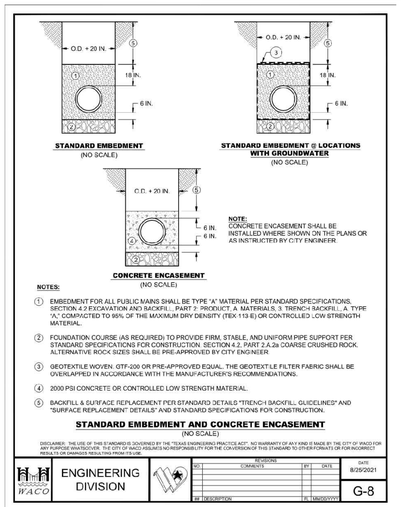


IN PAVEMENT AREAS THE MANHOLE SHALL BE TRAFFIC RATED H-20 LOADING.

B4 TRENCH LINER TERMINATION MANHOLE

N.T.S.

B3



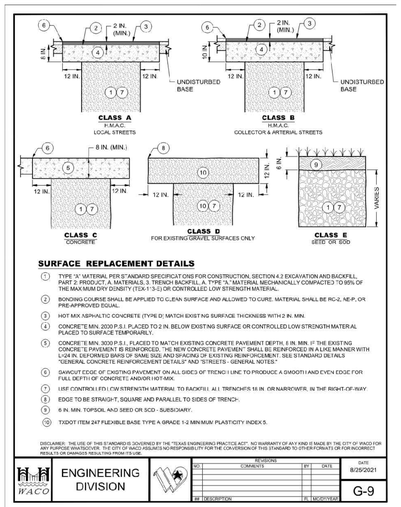
NOTE: CONCRETE ENCASEMENT SHALL BE INSTALLED WHERE SHOWN ON THE PLANS OR AS INSTRUCTED BY CITY ENGINEER.

NOTES:

1. EMBEDMENT FOR ALL PUSLIC MAINS SHALL BE TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS, SECTION 4.2 EXCAVATION AND BACKFILL, PART 2: PRODUCT, A. MATERIALS, 3. TRENCH BACKFILL, A. TYPE "A," COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E) OR CONTROLLED LOW STRENGTH MATERIAL.
2. FOUNDATION COURSE (AS REQUIRED) TO PROVIDE FIRM, STABLE, AND UNIFORM PIPE SUPPORT PER STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 4.2, PART 2.A.2a COARSE CRUSHED ROCK. ALTERNATIVE ROCK SIZES SHALL BE PRE-APPROVED BY CITY ENGINEER.
3. GEOTEXTILE WOVEN: GTF-200 OR PRE-APPROVED EQUAL. THE GEOTEXTILE FILTER FABRIC SHALL BE OVERLAPPED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. 2000 PSI CONCRETE OR CONTROLLED LOW STRENGTH MATERIAL.
5. BACKFILL & SURFACE REPLACEMENT PER STANDARD DETAILS "TRENCH BACKFILL, GUIDELINES" AND "SURFACE REPLACEMENT DETAILS" AND STANDARD SPECIFICATIONS FOR CONSTRUCTION.

STANDARD EMBEDMENT AND CONCRETE ENCASEMENT
(NO SCALE)

CITY OF WACO | ENGINEERING DIVISION | G-8



SURFACE REPLACEMENT DETAILS

1. TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 4.2 EXCAVATION AND BACKFILL, PART 2: PRODUCT, A. MATERIALS, 3. TRENCH BACKFILL, A. TYPE "A," MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E) OR CONTROLLED LOW STRENGTH MATERIAL.
2. BONDING COURSE SHALL BE APPLIED TO CLEAN SURFACE AND ALLOWED TO CURE. MATERIAL SHALL BE RC-2, NE-P, OR PRE-APPROVED EQUAL.
3. HOT MIX ASPHALTIC CONCRETE (TYPE D) MATCH EXISTING SURFACE THICKNESS WITH 2 IN. MIN.
4. CONCRETE MIN. 3000 P.S.I. PLACED TO 2 IN. BELOW EXISTING SURFACE OR CONTROLLED LOW STRENGTH MATERIAL PLACED TO SURFACE TEMPORARILY.
5. CONCRETE MIN. 3000 P.S.I. PLACED TO MATCH EXISTING CONCRETE PAVEMENT DEPTH, 8 IN. MIN. IF THE EXISTING CONCRETE PAVEMENT IS REINFORCED, THE NEW CONCRETE PAVEMENT SHALL BE REINFORCED IN A LIKE MANNER WITH L-GA IN. DEFORMED BARS OF SAME SIZE AND SPACING OF EXISTING REINFORCEMENT. SEE STANDARD DETAILS "GENERAL CONCRETE REINFORCEMENT DETAILS" AND "STREETS - GENERAL NOTES."
6. DAWCUT EDGE OF EXISTING PAVEMENT ON ALL SIDES OF TRENCH LINE TO PRODUCE A SMOOTH AND EVEN EDGE FOR FULL DEPTH OF CONCRETE AND/OR HOT MIX.
7. LIME CONTROLLED (LCB) LOW STRENGTH MATERIAL TO BACKFILL ALL TRENCHES 16 IN. OR NARROWER, IN THE RIGHT-OF-WAY
8. EDGE TO BE STRAIGHT, SQUARE AND PARALLEL TO SIDES OF TRENCH.
9. 6 IN. MIN. TOPSOIL AND SEED OR SOD - SUBSIDIARY.
10. TXDOT ITEM 247 FLEXIBLE BASE TYPE A GRADE 1-2 MIN MUM PLASTICITY INDEX 5.

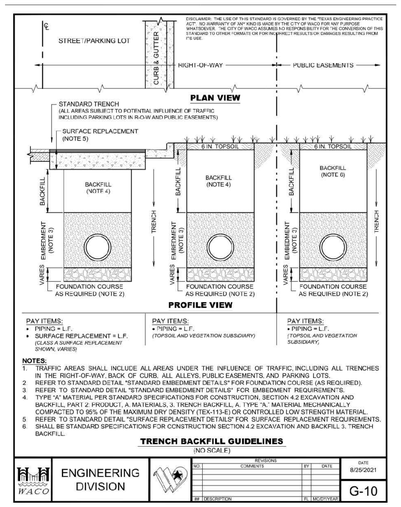
CITY OF WACO | ENGINEERING DIVISION | G-9

A6 STANDARD EMBEDMENT - CONCRETE ENCASEMENT

N.T.S.

A5 SURFACE REPLACEMENT DETAILS

N.T.S.



NOTES:

1. TRAFFIC AREAS SHALL INCLUDE ALL AREAS UNDER THE INFLUENCE OF TRAFFIC, INCLUDING ALL TRENCHES IN THE RIGHT-OF-WAY, BACK OF CURB, ALL ALLEYS, PUBLIC EASEMENTS, AND PARKING LOTS.
2. REFER TO STANDARD DETAIL "STANDARD EMBEDMENT DETAILS" FOR FOUNDATION COURSE (AS REQUIRED).
3. REFER TO STANDARD DETAIL "STANDARD EMBEDMENT DETAILS" FOR EMBEDMENT REQUIREMENTS.
4. TYPE "A" MATERIAL PER STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 4.2 EXCAVATION AND BACKFILL, PART 2: PRODUCT, A. MATERIALS, 3. TRENCH BACKFILL, A. TYPE "A," MATERIAL MECHANICALLY COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (TEX-113-E) OR CONTROLLED LOW STRENGTH MATERIAL.
5. REFER TO STANDARD DETAIL "SURFACE REPLACEMENT DETAILS" FOR SURFACE REPLACEMENT REQUIREMENTS.
6. SHALL BE STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 4.2 EXCAVATION AND BACKFILL 3. TRENCH BACKFILL.

TRENCH BACKFILL GUIDELINES
(NO SCALE)

CITY OF WACO | ENGINEERING DIVISION | G-10

A4 TRENCH BACKFILL GUIDLINES

N.T.S.

A3

AECOM

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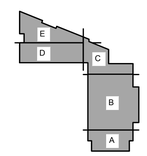


ISSUE/REVISION

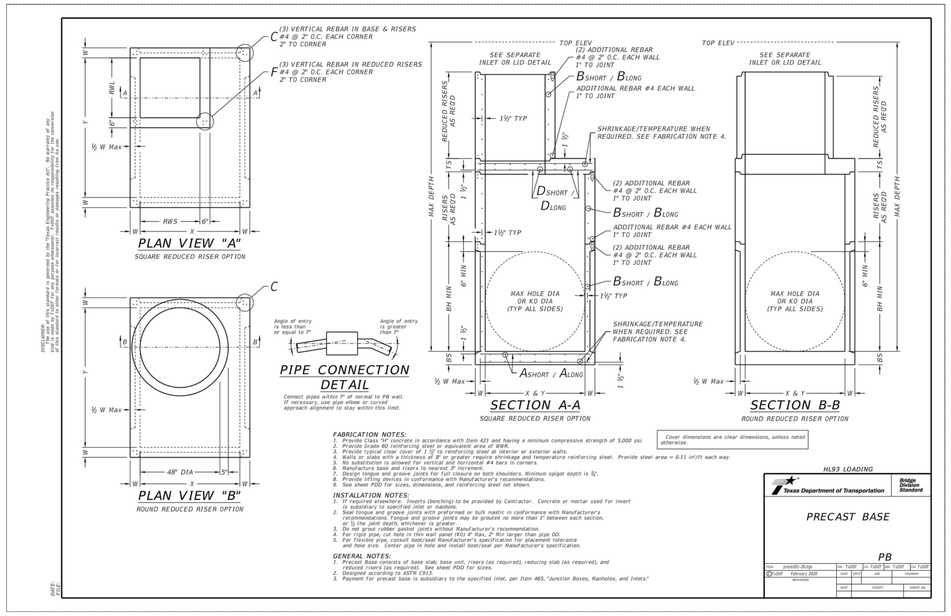
I/R	DATE	DESCRIPTION

PROJECT NUMBER 60668614
DATE 03/04/22

SHEET TITLE
ENVIRONMENTAL DETAILS

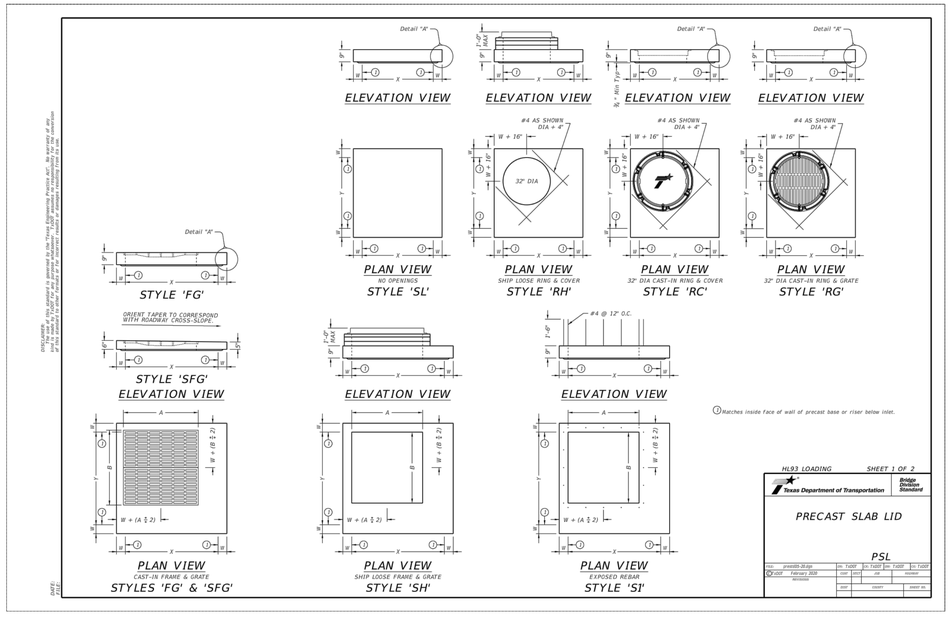
SHEET NUMBER
C.06.00

Walker Partners engineers | surveyors
T.B.P.E. Registration No. 8053



C6 PRECAST BASE

N.T.S.



A6 PRECAST SLAB LID (1 OF 2)

N.T.S.

	Size	Base Slab: Short Span Reinf Steel Area	Base Slab: Long Span Reinf Steel Area	Base Slab: Thickness	Base Unit or Riser Walls: Short Span Reinf Steel Area	Base Unit or Riser Walls: Long Span Reinf Steel Area	Base Unit or Riser Walls: Thickness	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Required Mesh Size	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Short Span Reinf Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Long Span Reinf Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Thickness	Max Height (Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fabrication Note 2)
	X x Y	Ashort	Along	BS	Bshort	Blong	W	RWS×RWL or ID	Dshort	Dlong	TS	BH MIN	HOLE DIA	KO DIA
	ft.	in²/ft	in²/ft	in.	in²/ft	in²/ft	in.	ft. **	in²/ft	in²/ft	in.	ft.	in.	in.
Precast Junction Box (PJB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9	5.5	60	60
	5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9	5.5	60/72	60/72
	6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9	6.5	72	72
	8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12	8.5	96	72
Precast Base (PB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	3x3	0.30	0.34	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x3	0.30	0.30	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	4x4	0.30	0.30	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9	5.5	60	60
	5x5	0.38	0.38	6	0.34	0.34	6	48"	0.36	0.36	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9	5.5	60	60
	5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9	5.5	60/72	60/72
	5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9	5.5	60/72	60/72
	6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9	6.5	72	72
	6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9	6.5	72	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12	8.5	96	72

** Unless otherwise indicated.

FABRICATION NOTES:
1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.
GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, riser (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-8".
HL93 LOADING
Texas Department of Transportation
Bridge Division Standard
DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX
PDD
file: pnetd03-26.dgn
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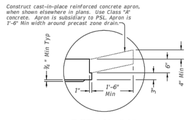
REVISIONS
DIST | COUNTY | SHEET NO.
DATE: FILE:

C4 DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

N.T.S.

Style	Size (X x Y)	W ②	A x B (nominal)	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	6"	n/a	0.37 in²/ft	0.37 in²/ft
R4,RC,RG,SH,S1,FG	3'x3'	6"	3'x3' or 32" Dia	0.37 in²/ft	0.37 in²/ft
SFG	3'x3'	6"	3'x3'	0.32 in²/ft	0.32 in²/ft
SL	4'x4'	6"	n/a	0.34 in²/ft	0.34 in²/ft
R4,RC,RG,SH,S1,FG	4'x4'	6"	3'x3' or 32" Dia	0.41 in²/ft	0.41 in²/ft
SH,S1,FG	4'x4'	6"	4'x4'	0.41 in²/ft	0.41 in²/ft
SFG	4'x4'	6"	4'x4'	0.32 in²/ft	0.32 in²/ft
SL	5'x5'	6"	n/a	0.48 in²/ft	0.48 in²/ft
R4,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.48 in²/ft	0.48 in²/ft
SH,S1,FG	5'x5'	6"	4'x4'	0.48 in²/ft	0.48 in²/ft
SFG	5'x5'	6"	5'x5'	0.32 in²/ft	0.32 in²/ft
SL	4'x5'	6"	n/a	0.42 in²/ft	0.42 in²/ft
R4,RC,RG,SH,S1,FG	4'x5'	6"	3'x3' or 32" Dia	0.42 in²/ft	0.42 in²/ft
SH,S1,FG	4'x5'	6"	4'x4'	0.63 in²/ft	0.63 in²/ft
SH,S1,FG	4'x5'	6"	5'x5'	0.66 in²/ft	0.66 in²/ft
SL	5'x5'	6"	n/a	0.36 in²/ft	0.36 in²/ft
R4,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.63 in²/ft	0.63 in²/ft
SH,S1,FG	5'x5'	6"	4'x4'	0.63 in²/ft	0.63 in²/ft
SH,S1,FG	5'x5'	6"	5'x5'	0.63 in²/ft	0.63 in²/ft
SL	5'x6'	6"/8"	n/a	0.48 in²/ft	0.48 in²/ft
R4,RC,RG,SH,S1,FG	5'x6'	6"/8"	3'x3' or 32" Dia	0.48 in²/ft	0.48 in²/ft
SH,S1,FG	5'x6'	6"/8"	4'x4'	0.60 in²/ft	0.60 in²/ft
SH,S1,FG	5'x6'	6"/8"	5'x5'	0.60 in²/ft	0.60 in²/ft
SL	6'x6'	6"/8"	n/a	0.43 in²/ft	0.43 in²/ft
R4,RC,RG,SH,S1,FG	6'x6'	6"/8"	3'x3' or 32" Dia	0.56 in²/ft	0.56 in²/ft
SH,S1,FG	6'x6'	6"/8"	4'x4'	0.56 in²/ft	0.56 in²/ft
SH,S1,FG	6'x6'	6"/8"	5'x5'	0.58 in²/ft	0.58 in²/ft
SL	8'x8'	8"/10"	n/a	0.45 in²/ft	0.45 in²/ft
R4,RC,RG,SH,S1,FG	8'x8'	8"/10"	3'x3' or 32" Dia	0.45 in²/ft	0.45 in²/ft
SH,S1,FG	8'x8'	8"/10"	4'x4'	0.45 in²/ft	0.45 in²/ft
SH,S1,FG	8'x8'	8"/10"	5'x5'	0.45 in²/ft	0.45 in²/ft

② See sheet PDD for corresponding wall thickness (W) of base unit or riser.



FABRICATION NOTES:
1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per corner.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of ½" to reinforcing from lower outside shoulder of slab for exterior walls. Provide 1" clear cover for all other interior and exterior reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in²/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Saw cut or tool grooved joints for full closure on both shoulders. Minimum groove depth is ½".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
INSTALLATION NOTES:
1. Not for use in areas intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Seal precast rubber gasket joints without Manufacturer's recommendation.
4. Install installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments with precast or CIP concrete. Structure must be evaluated if Max depth will be exceeded.
6. Grout long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans
GENERAL NOTES:
1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).
Cover dimensions are clear dimensions, unless noted otherwise.
HL93 LOADING
SHEET 2 OF 2
Texas Department of Transportation
Bridge Division Standard
PRECAST SLAB LID
PSL
file: pnetd05-26.dgn
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REVISIONS
DIST | COUNTY | SHEET NO.
DATE: FILE:

A4 PRECAST SLAB LID (2 OF 2)

N.T.S.

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AECOM

FUDGE FOOTBALL OPERATIONS CENTER at BAYLOR UNIVERSITY
1504 S UNIVERSITY PARKS DRIVE
WACO, TX 76798

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BAYLOR UNIVERSITY
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WALKER PARTNERS
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OJB LANDSCAPE ARCHITECTURE
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AECOM TECHNICAL SERVICES, INC
MECHANICAL / ELECTRICAL / PLUMBING / FIRE PROTECTION

DOWNSTREAM
SIGNAGE / GRAPHICS / BRANDING

REGISTRATION

STATE OF TEXAS
JONATHAN A. CANNON
122060
LICENSED
PROFESSIONAL ENGINEER

02/16/2022
DATE

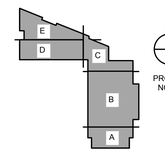
JONATHAN A. CANNON

REGISTRATION

These Schematic Design drawings represent the current status of the design process and have been issued for Consultants coordination, Owner review and approval, and for updating estimates of probable construction cost. They do not illustrate the complete and total design or scope of work required for construction of the project and is not, under any circumstances, intended to be used by the CMaR or other Contractor, or any other person for construction, for preparation of shop drawings or other submittals or for bidding or awarding subcontracts.

DESIGN DEVELOPMENT

KEY PLAN



ISSUE/REVISION

I/R	DATE	DESCRIPTION

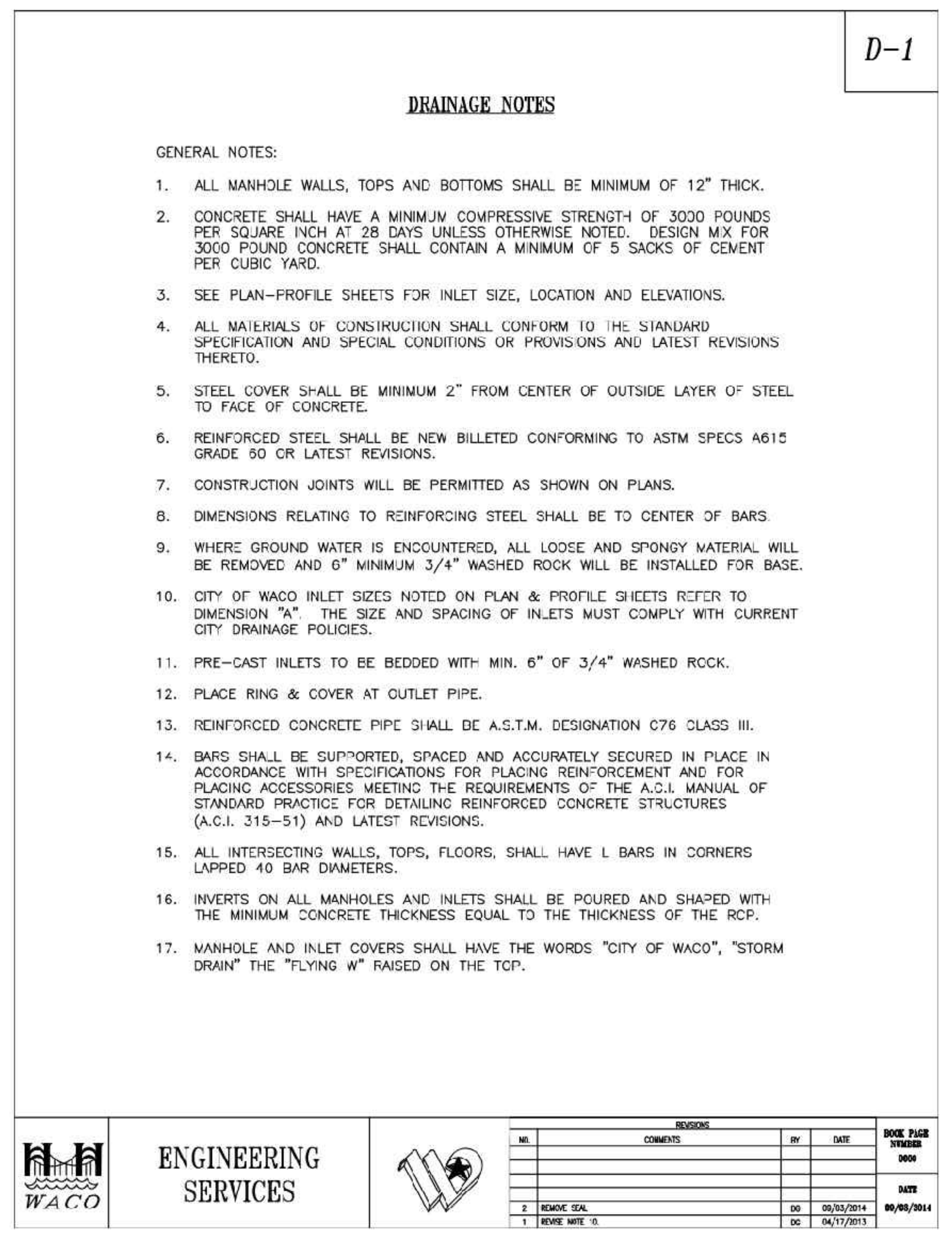
PROJECT NUMBER: 60668614
DATE: 03/04/22

SHEET TITLE
DRAINAGE DETAILS

SHEET NUMBER
C.06.01

Walker Partners engineers | surveyors
T.B.P.E. Registration No. 8053

ANSI E1 30"x42" Approved: Checked: Designer: JAC Project Management Initials: JPB



D-1

DRAINAGE NOTES

GENERAL NOTES:

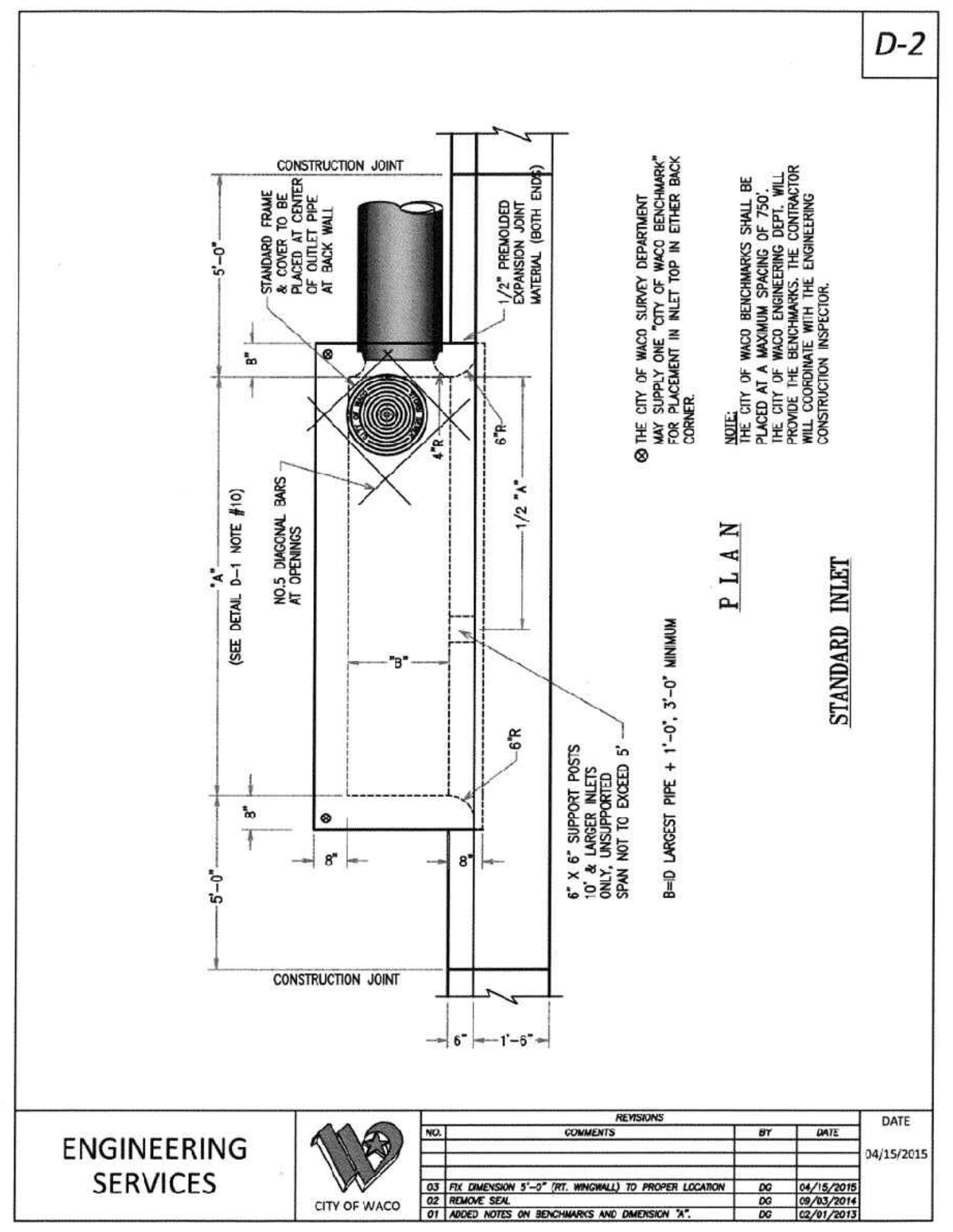
1. ALL MANHOLE WALLS, TOPS AND BOTTOMS SHALL BE MINIMUM OF 12" THICK.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 POUNDS PER SQUARE INCH AT 28 DAYS UNLESS OTHERWISE NOTED. DESIGN MIX FOR 3000 POUND CONCRETE SHALL CONTAIN A MINIMUM OF 5 SACKS OF CEMENT PER CUBIC YARD.
3. SEE PLAN-PROFILE SHEETS FOR INLET SIZE, LOCATION AND ELEVATIONS.
4. ALL MATERIALS OF CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATION AND SPECIAL CONDITIONS OR PROVISIONS AND LATEST REVISIONS THERETO.
5. STEEL COVER SHALL BE MINIMUM 2" FROM CENTER OF OUTSIDE LAYER OF STEEL TO FACE OF CONCRETE.
6. REINFORCED STEEL SHALL BE NEW BILLETED CONFORMING TO ASTM SPECS A615 GRADE 60 OR LATEST REVISIONS.
7. CONSTRUCTION JOINTS WILL BE PERMITTED AS SHOWN ON PLANS.
8. DIMENSIONS RELATING TO REINFORCING STEEL SHALL BE TO CENTER OF BARS.
9. WHERE GROUND WATER IS ENCOUNTERED, ALL LOOSE AND SPONGY MATERIAL WILL BE REMOVED AND 6" MINIMUM 3/4" WASHED ROCK WILL BE INSTALLED FOR BASE.
10. CITY OF WACO INLET SIZES NOTED ON PLAN & PROFILE SHEETS REFER TO DIMENSION "A". THE SIZE AND SPACING OF INLETS MUST COMPLY WITH CURRENT CITY DRAINAGE POLICIES.
11. PRE-CAST INLETS TO BE BEDDED WITH MIN. 6" OF 3/4" WASHED ROCK.
12. PLACE RING & COVER AT OUTLET PIPE.
13. REINFORCED CONCRETE PIPE SHALL BE A.S.T.M. DESIGNATION C76 CLASS III.
14. BARS SHALL BE SUPPORTED, SPACED AND ACCURATELY SECURED IN PLACE IN ACCORDANCE WITH SPECIFICATIONS FOR PLACING REINFORCEMENT AND FOR PLACING ACCESSORIES MEETING THE REQUIREMENTS OF THE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (A.C.I. 315-51) AND LATEST REVISIONS.
15. ALL INTERSECTING WALLS, TOPS, FLOORS, SHALL HAVE L BARS IN CORNERS LAPPED 40 BAR DIAMETERS.
16. INVERTS ON ALL MANHOLES AND INLETS SHALL BE POURED AND SHAPED WITH THE MINIMUM CONCRETE THICKNESS EQUAL TO THE THICKNESS OF THE RCP.
17. MANHOLE AND INLET COVERS SHALL HAVE THE WORDS "CITY OF WACO", "STORM DRAIN" THE "FLYING W" RAISED ON THE TOP.

WACO — ENGINEERING SERVICES

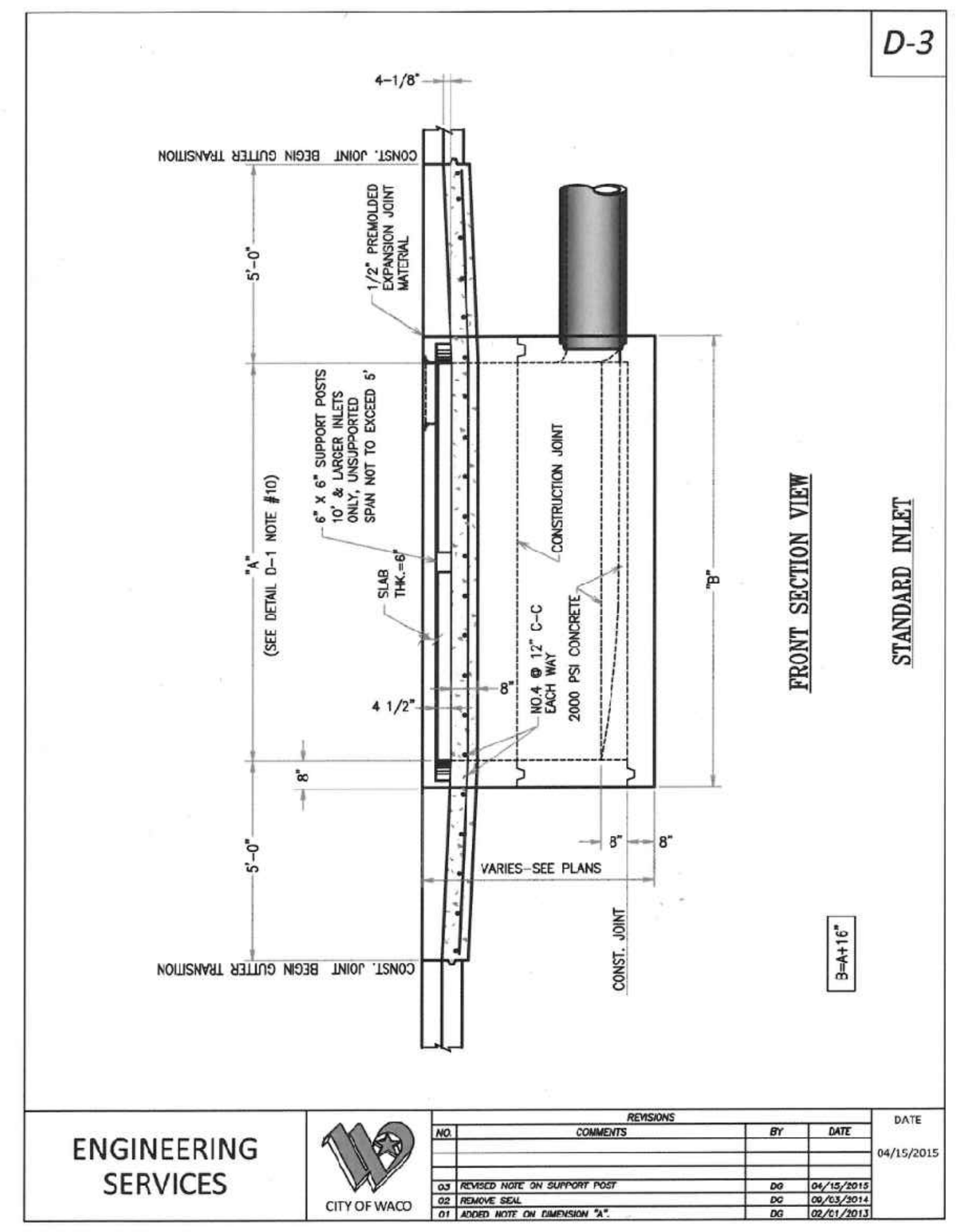
NO.	COMMENTS	BY	DATE
2	REMOVE SEAL	DG	09/03/2014
1	REVISE NOTE 10	DG	04/17/2013

BOOK PAGE NUMBER D600 — DATE 09/03/2014

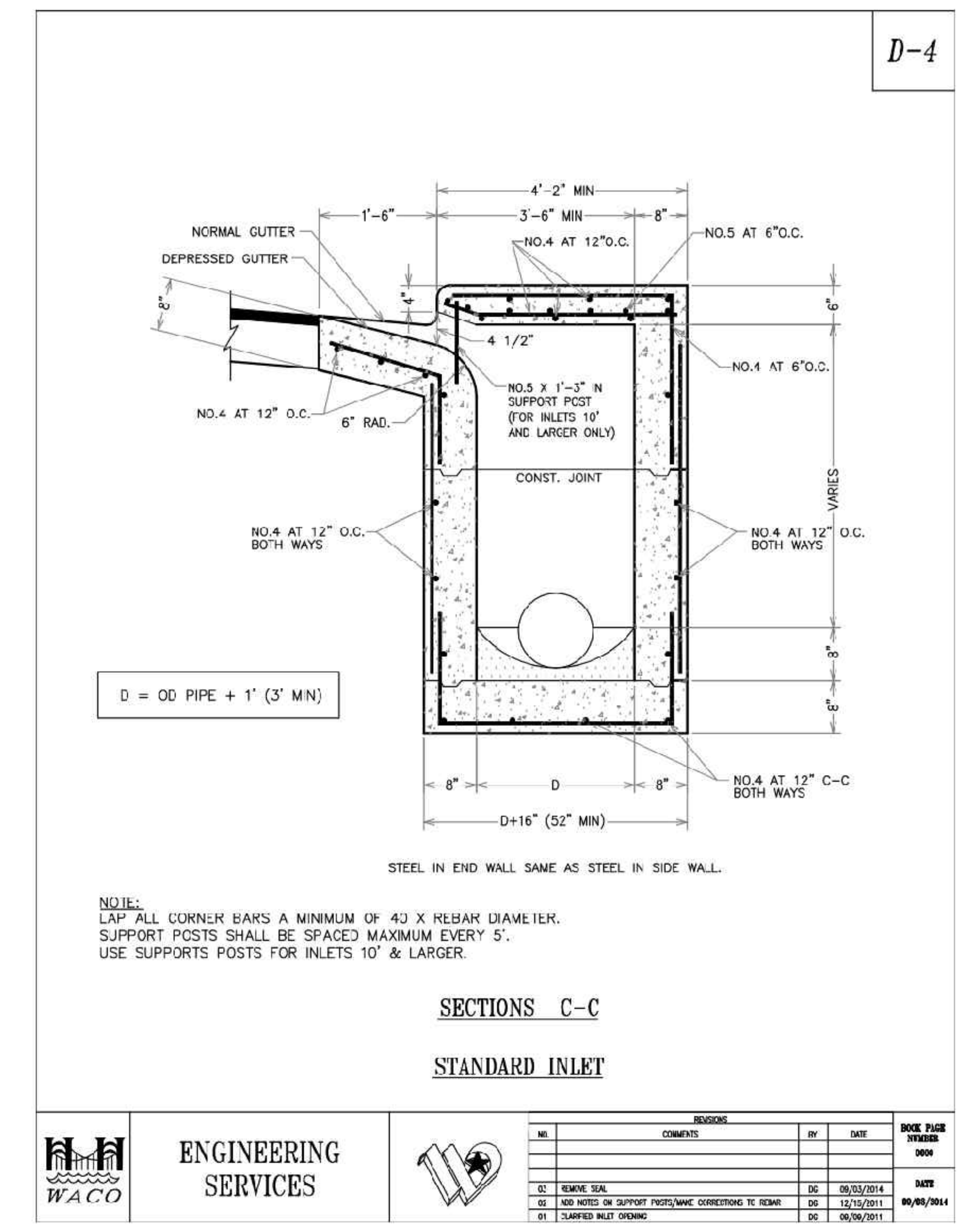
C6 DRAINAGE NOTES
N.T.S.



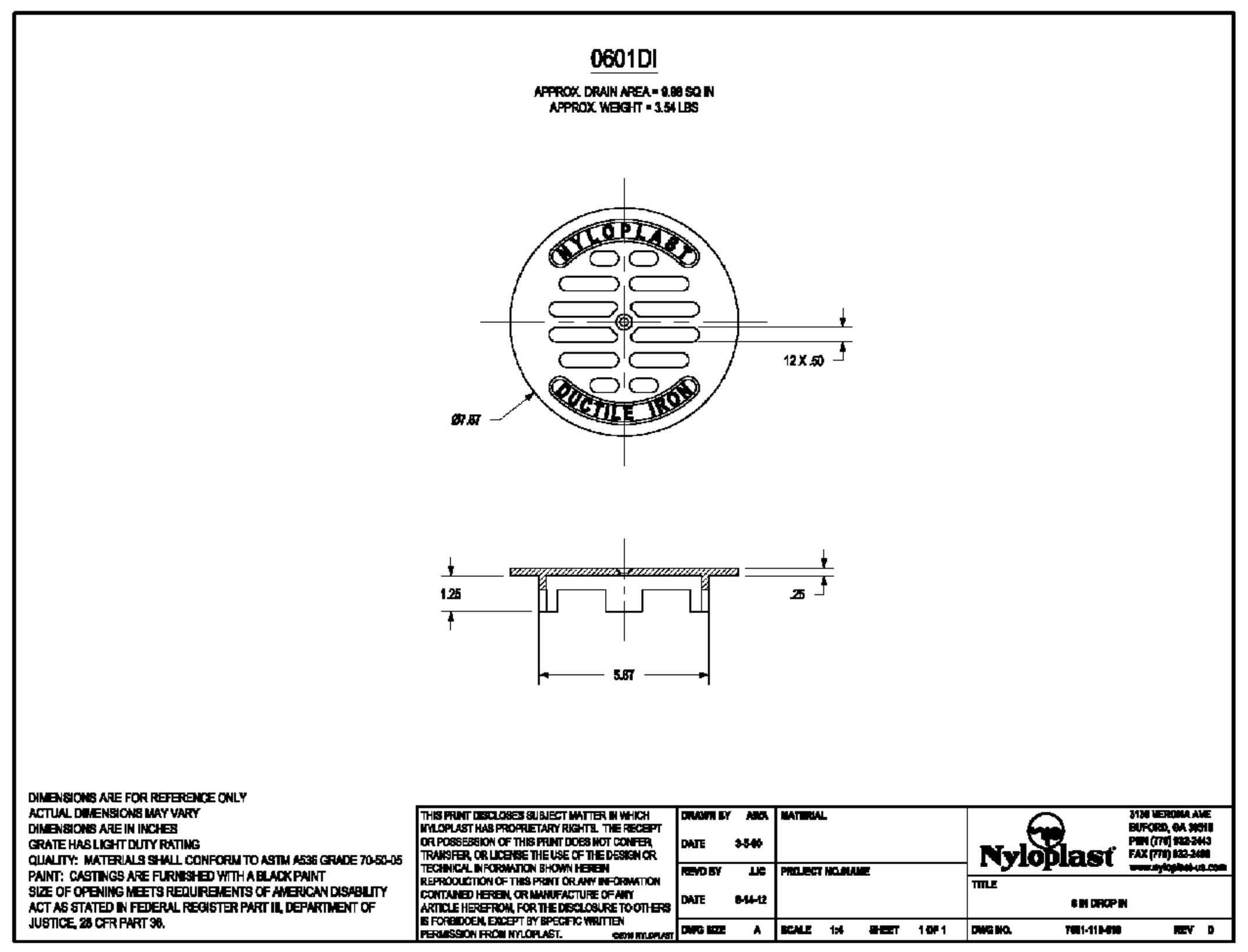
C5 STANDARD INLET - PLAN VIEW
N.T.S.



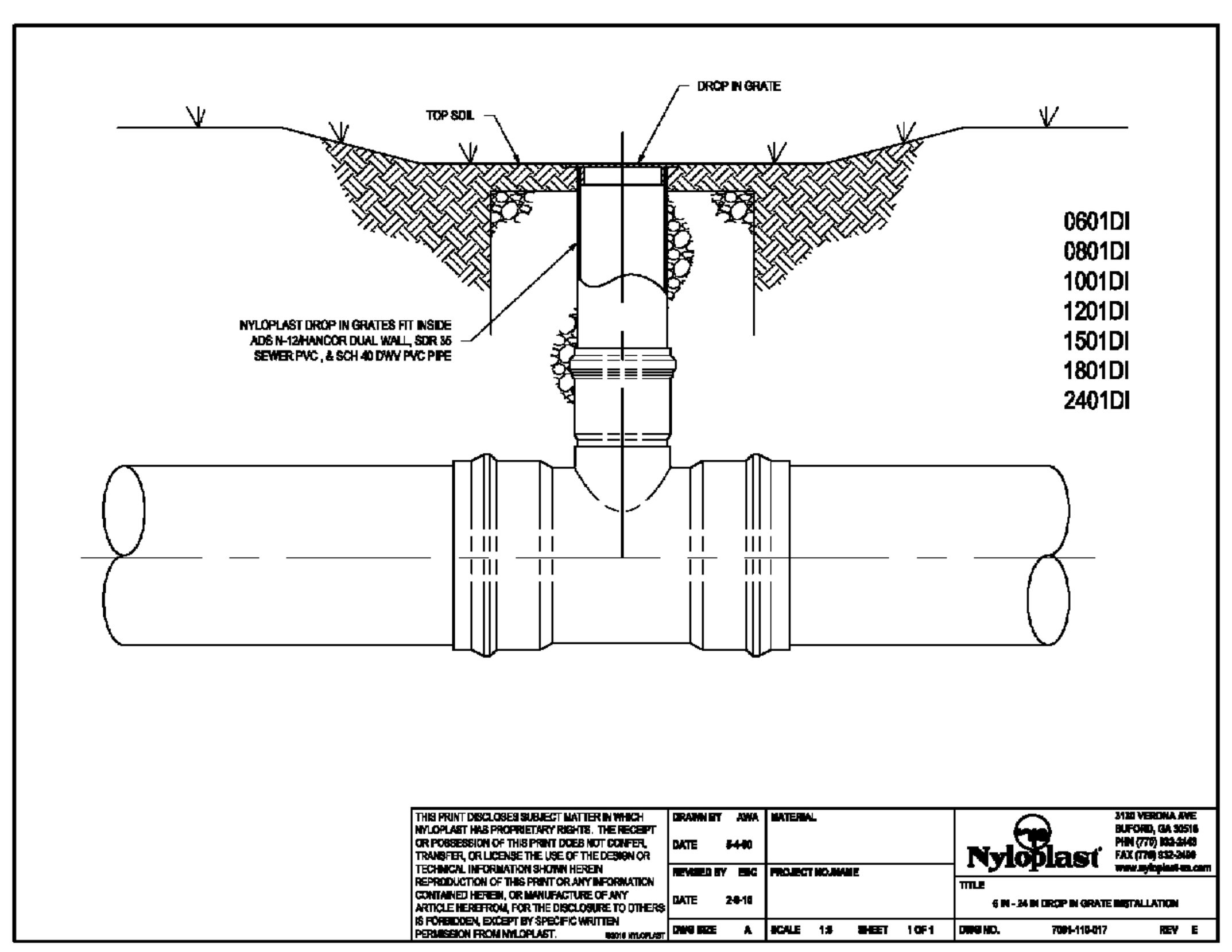
C4 STANDARD INLET - FRONT SECTION VIEW
N.T.S.



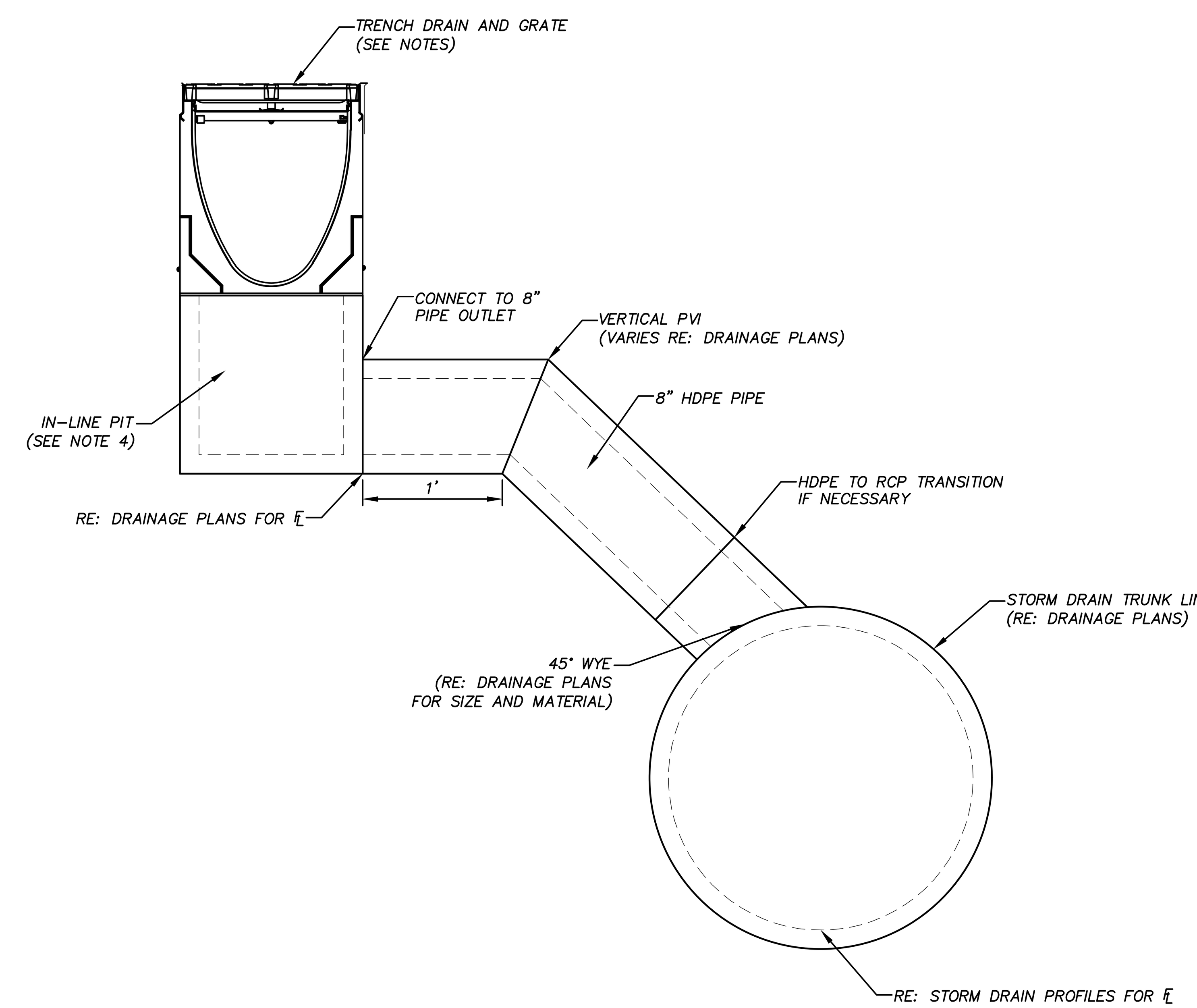
C2 STANDARD INLET - SIDE SECTION C-C VIEW
N.T.S.



B6 NYLOPLAST 6" INLET GRATE DETAIL
N.T.S.



A6 NYLOPLAST INLET INSTALLATION DETAIL
N.T.S.



NOTES:

1. TRENCH DRAINS SHALL BE ACO KLASSIKDRAIN K300 SERIES OR APPROVED EQUAL.
2. TRENCH DRAIN K300 CHANNEL INVERT SHALL HAVE A V-PROFILE TO ALLOW EFFICIENT DRAINAGE. SLOPED CHANNELS SHALL HAVE A BUILT-IN SLOPE OF 0.5%. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.
3. TRENCH DRAIN GRATES SHALL BE ACO DRAIN TYPE 876D OR APPROVED EQUAL; MUST BE DUCTILE IRON, HEAVY DUTY TRAFFIC RATED, ADA COMPLIANT & HEELPROOF.
4. IN-LINE PIT TO BE ACO KLASSIKDRAIN K300 SERIES MODEL K3-903G OR APPROVED EQUAL.
5. RE: TRENCH DRAIN SECTION DETAIL A4/C.07.02 FOR CONCRETE ENCASEMENT, EMBEDMENT, AND BACKFILL.

A3 TRENCH DRAIN OUTLET AND LATERAL CONNECTION

NOT FOR CONSTRUCTION - FOR AGENCY REVIEW PURPOSES ONLY

Walker Partners engineers | surveyors
T.B.P.E. Registration No. 8053

AECOM

FUDGE FOOTBALL OPERATIONS CENTER at BAYLOR UNIVERSITY
1504 S UNIVERSITY PARKS DRIVE
WACO, TX 76798

CLIENT
BAYLOR UNIVERSITY
ONE BEAR PLACE
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ARCHITECTURE

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AECOM TECHNICAL SERVICES, INC
MECHANICAL / ELECTRICAL / PLUMBING / FIRE PROTECTION

DOWNSTREAM
SIGNAGE / GRAPHICS / BRANDING

REGISTRATION

STATE OF TEXAS — JONATHAN A. CANNON — 122060 — LICENSED PROFESSIONAL ENGINEER
02/16/2022 DATE — JONATHAN A. CANNON

REGISTRATION

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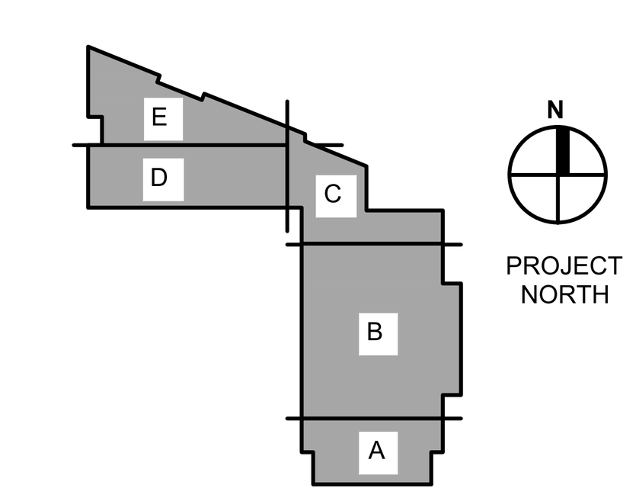
DESIGN DEVELOPMENT

KEY PLAN



ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER 60668614 — **DATE** 03/04/22

SHEET TITLE
DRAINAGE DETAILS

SHEET NUMBER
C.06.02

Last Plotted: 2/16/2022 9:18:52 AM
Filename: G:\Projects\1-03608\2 Engineering\2.0 CAD\1-03608DETAILS-TCEQ.dwg

ANSI E1 30"x42"

Approved: Checked: Designer: JAC Project Management Initials: JPB

C6 GENERAL NOTES & SERVICE TAP NOTES

N.T.S.

WATER GENERAL NOTES

1. PVC WATER MAIN COLOR SHALL BE BLUE.
2. ALL WATER LINES SHALL BE COMPLETE IN PLACE INCLUDING ALL BENDS, BLOCKS, FITTINGS, SERVICES AND APPURTENANCES BEFORE PRESSURE TESTING.
3. SURFACE REPLACEMENT SHALL BE INCLUDED IN THE UNIT PRICE FOR WATER SERVICES.
4. PLACE METALLIC TRACER WIRE ON TOP OF EMBEDMENT PRIOR TO PLACEMENT OF WATER LINE AND CONNECT TO EACH SERVICE, VALVE AND FIRE HYDRANT. SEE DETAIL W-34
5. METALLIC TRACER WIRE SHALL BE #12 AWG SOLID WIRE WITH A BLUE COATING. LOCATOR WIRE MUST TERMINATE IN AN APPROVED TRACER WIRE BOX. SEE DETAIL W-34
6. ALL DUCTILE IRON WATER PIPE AND FITTINGS MUST BE POLY-WRAPPED PER CITY SPECIFICATIONS.
7. A STAMPED "W" OF 4 IN. IN HEIGHT AND 3/8 IN. IN DEPTH SHALL BE PLACED IN THE CENTER OF FACE OF CURB AT EACH NEW SERVICE LOCATION AND IN ANY NEW CURB AT EXISTING SERVICES.
8. ALL COPPER SERVICE PIPE MUST BE TYPE K-SOFT.
9. ALL POLYETHELINE SERVICE PIPE SHALL BE SDR-9 WITH EXTERIOR BLUE COLOR. CONTRACTOR SHALL USE 1 IN. OR 2 IN. CTS TUBING WITH STAINLESS STEEL INSERTS. ALL PIPE MUST MEET NSF 61, AWWA C901, ASTM D3350 AND ASTM D2737 STANDARD SPECIFICATIONS.
10. 3/4 IN. WASHED ROCK SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM A.2.a, CRUSHED STONE EMBEDMENT, OF SECTION 4.2 PART 2, EXCEPT THE GRADATION SHALL BE:

3/4 IN. WASHED ROCK	
SIEVE	PERCENTAGE RETAINED
1 1/2 IN.	0%
3/4 IN.	100%

11. ALL SUBSTITUTIONS FOR USE AS A PRE-APPROVED EQUAL MUST BE SUBMITTED IN WRITING, AND APPROVED BY CITY ENGINEER, IN ADVANCE, IN ACCORDANCE WITH THE CURRENT VERSION OF THE CITY OF WACO STANDARD SPECIFICATIONS FOR CONSTRUCTION.
12. ANY DEVIATION FROM STANDARD DETAILS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER AND APPROVED IN WRITING BY CITY ENGINEER.

WATER SERVICE TAP NOTES

13. WHERE NEW WATER SERVICES ARE INSTALLED UNDER EXISTING CURB AND GUTTER, THE CONTRACTOR WILL HAVE THE FOLLOWING OPTIONS.
    A. REMOVE AND REPLACE CURB AND GUTTER SECTION FROM JOINT TO JOINT, TYPICALLY 10 FT.
    B. CONSTRUCT MINIMUM SIZE TUNNEL NECESSARY TO INSTALL NEW WATER SERVICE AND THEN PLACE CONTROLLED LOW STRENGTH MATERIAL BENEATH THE EXISTING CURB AND GUTTER.
    C. INSTALL SERVICE THROUGH A HOLE AT THE SAME LOCATION AS THE EXISTING PIPE, AND APPROXIMATELY THE SAME DIAMETER AS THE EXISTING PIPE.
14. ALL SERVICE TAPS MUST BE MADE UNDER PRESSURE AND FLUSHED, OR TAPPED DRY AND THEN HAVE A SWAB PULLED THROUGH THE PIPE BEFORE CONNECTING THE TAPPED PIPE TO THE MAIN.
15. 1-1/2 IN. AND 2 IN. METERS MUST BE BROUGHT TO THE WATER OFFICE TO BE TESTED. 3 IN. AND LARGER ARE TESTED IN THE FIELD BEFORE SERVICE IS APPROVED.
16. ALL 1-1/2 IN. AND LARGER METERS SHALL BE SENSUS OMNI METERS WITH ITRON CONNECTORS.
17. ALL EXTERNAL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL.
18. ALL SERVICE TAPS MUST BE APPROVED IN ADVANCE BY THE CITY OF WACO AND MUST BE PERFORMED UNDER THE DIRECT SUPERVISION OF A DESIGNATED CITY OF WACO UTILITY INSPECTOR. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN.

WACO ENGINEERING DIVISION — REVISIONS: NO. | COMMENTS | BY | DATE; ## DESCRIPTION | FL | MO/DY/YEAR — DATE 8/25/2021 — W-1

C5 WATER METER VAULT & LID NOTES

N.T.S.

WATER METER VAULT AND LID - NOTES

1. STANDARD METER BOX FOR 3/4 IN. AND 1 IN. METERS IS A CARSON 1017 12 IN. BOX WITH SOLID POLYMER LID OR PRE-APPROVED EQUAL.
2. ALL 1-1/2 IN. AND LARGER METERS SHALL BE SENSUS OMNI METERS WITH ITRON CONNECTORS.
3. THE STANDARD METER BOX FOR 1-1/2 IN. METERS IS AN OLDCASTLE SERIES 65 METER BOX OR POLYMER DFW65C-14-AF1T BODY. LID SHALL BE 65 C DFW POLYMER LID WITH AMI HOLE OR PRE-APPROVED EQUAL.
4. METERS 2 IN. AND LARGER SHALL BE INSTALLED IN A CONCRETE VAULT.
5. METERS 8 IN. AND LARGER REQUIRE PROJECT SPECIFIC DESIGN PLANS SEALED BY A PROFESSIONAL ENGINEER.
6. VAULTS SHALL HAVE A MINIMUM 12 IN. WORKING CLEARANCE, EXCEPT FOR PENETRATIONS WHICH SHALL HAVE 6 IN OF CLEARANCE BETWEEN FIRST FITTING AND INSIDE FACE OF WALL.
7. CONCRETE VAULTS SHALL HAVE VAULT WALLS AND FOUNDATIONS OF A MINIMUM THICKNESS OF 6 INCHES.
8. SWEATED, GALVANIZED, OR PVC JOINTS SHALL NOT BE ACCEPTED. NON-LEADED BRASS, COPPER TUBING WITH THREADED OR COMPRESSION COUPLINGS, OR POLY PIPE WITH STAINLESS STEEL INSERTS WILL BE ACCEPTED.
9. THE METER IS TO BE LOCATED IN A NON-TRAFFIC GREEN SPACE IN THE RIGHT OF WAY. ALL OTHER LOCATIONS MUST BE APPROVED BY THE CITY ENGINEER.
10. WITH PRIOR APPROVAL FROM THE CITY, A METER MAY BE LOCATED IN AN AREA EXPOSED TO TRAFFIC. IN THIS CASE THE STANDARD BOX FOR METERS OF THESE SIZES IS AN OLDCASTLE SERIES 30 METER BOX WITH 1324 DFW POLYMER LID WITH AMI HOLE OR PRE-APPROVED EQUAL. WHERE METER BOX IS EXPOSED TO TRAFFIC, OR IN SIDEWALK, USE A CONCRETE BOX WITH DFW POLYMER LID WITH AMI HOLE.
11. ALL METER BY-PASS INSTALLATIONS SHALL BE LOCKABLE.

MINIMUM VAULT CHARACTERISTICS

MAIN SIZE	BY PASS	L	W	H	INSIDE DIMENSIONS
2 IN.	1 IN.	6' 0"	6' 0"	4' 5"	5' 0"X 5' 0"X 3' 5"
3 IN.	2 IN.	8'-6"	5'-6"	5'-6"	7'-6"X 4'-6"X 4'-6"
4 IN.	2 IN.	8'-6"	5'-6"	5'-6"	7'-6"X 4'-6"X 4'-6"
6 IN.	4 IN.	13'-0"	7'-0"	6'-0"	12'-0"X 5'-0"X 5'-0"

NON-TRAFFIC LOCATION

1. STANDARD ACCESS DOOR IS 3 FT. X 6 FT. CLEAR, ALUMINUM HATCHWAY AND SPRING ASSISTED. DOOR SHALL BE CAST IN AND MOUNTED FLUSH. HINGED 1/4 IN. ALUMINUM DIAMOND PLATE COVER, WITH 1/4 IN. EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH STAINLESS STEEL HARDWARE.
2. CONCRETE: CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. ALL CONCRETE JOINTS SEALED WATERTIGHT WITH MANUFACTURERS GASKET.
3. ALL WALLS AND SLABS SHALL BE DESIGNED FOR HS20 LOADING.

TRAFFIC LOCATION - REQUIRES PRIOR APPROVAL OF CITY OF WACO ENGINEER

1. STANDARD ACCESS DOOR IS 3 FT. X 5 FT. CLEAR, AND SPRING ASSISTED. DOOR SHALL BE CAST IN FLUSH.
2. SINGLE OR DOUBLE LEAF STEEL LID. DESIGNED TO WITHSTAND AASHTO HS20 LOADINGS.
3. VAULT SHALL BE PLACED ON A 6 IN. BASE OF 1 IN. WASHED ROCK.
4. CONCRETE DESIGN IN ACCORDANCE WITH AASHTO HS20 TRAFFIC LOADING USING 4200 PSI COMPRESSIVE STRENGTH ASTM A-706 STEEL REINFORCEMENT PER CALCULATION NUMBER. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. ALL CONCRETE JOINTS SEALED WATERTIGHT WITH MANUFACTURERS GASKET.

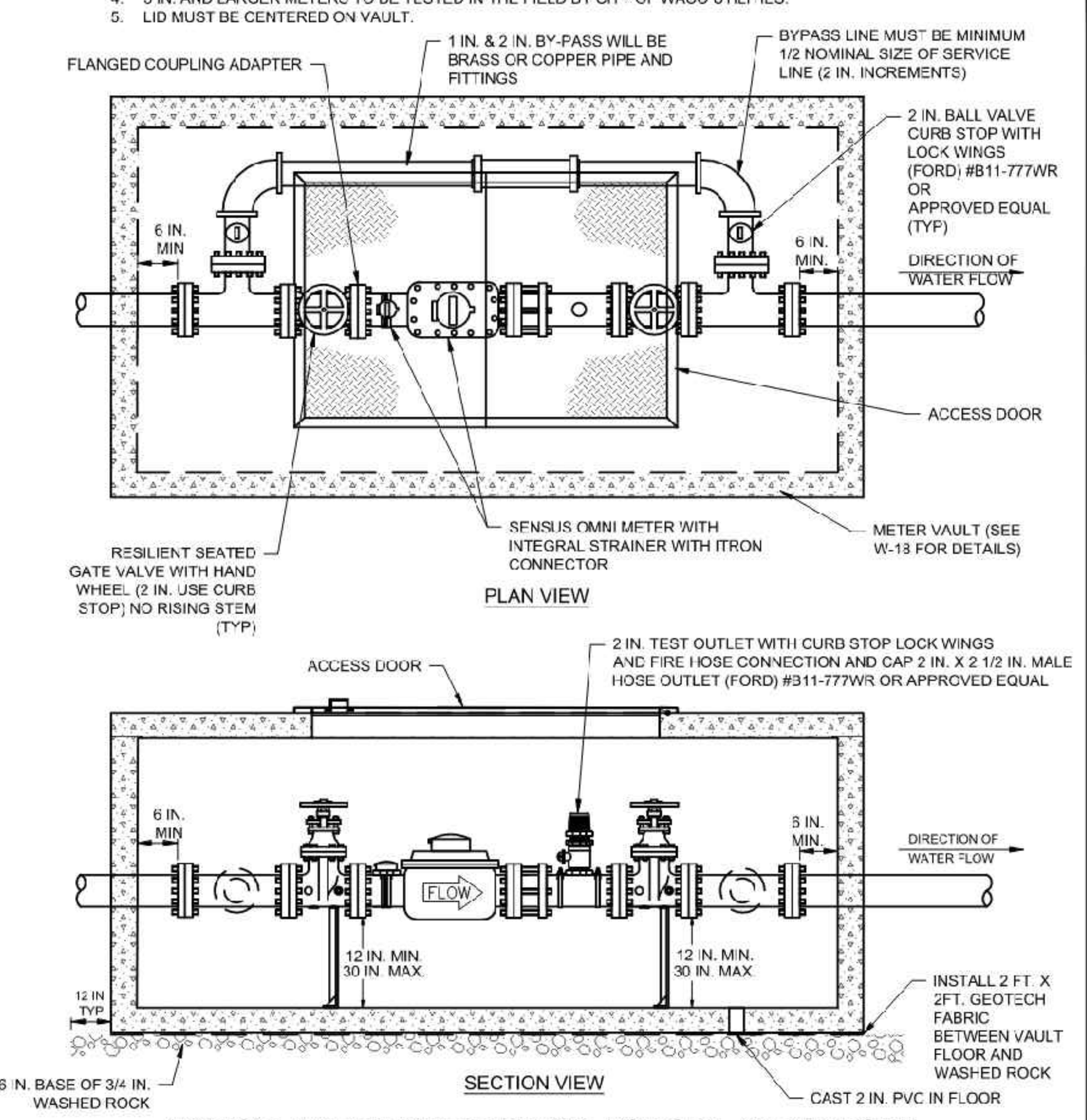
DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF WACO FOR ANY PURPOSE WHATSOEVER. THE CITY OF WACO ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

WACO ENGINEERING DIVISION — DATE 8/25/2021 — W-19

C4 TYPICAL 2" AND LARGER WATER METER

N.T.S.

NOTES:
1. ALL EXTERNAL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL.
2. THREADED JOINTS ON BRASS PIPE BYPASS SHALL BE ACCEPTED.
3. NO SWEATED FITTINGS WILL BE ACCEPTED.
4. 3 IN. AND LARGER METERS TO BE TESTED IN THE FIELD BY CITY OF WACO UTILITIES.
5. LID MUST BE CENTERED ON VAULT.



TYPICAL WATER METER DETAIL FOR 2 IN. AND LARGER

(NO SCALE)

DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF WACO FOR ANY PURPOSE WHATSOEVER. THE CITY OF WACO ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

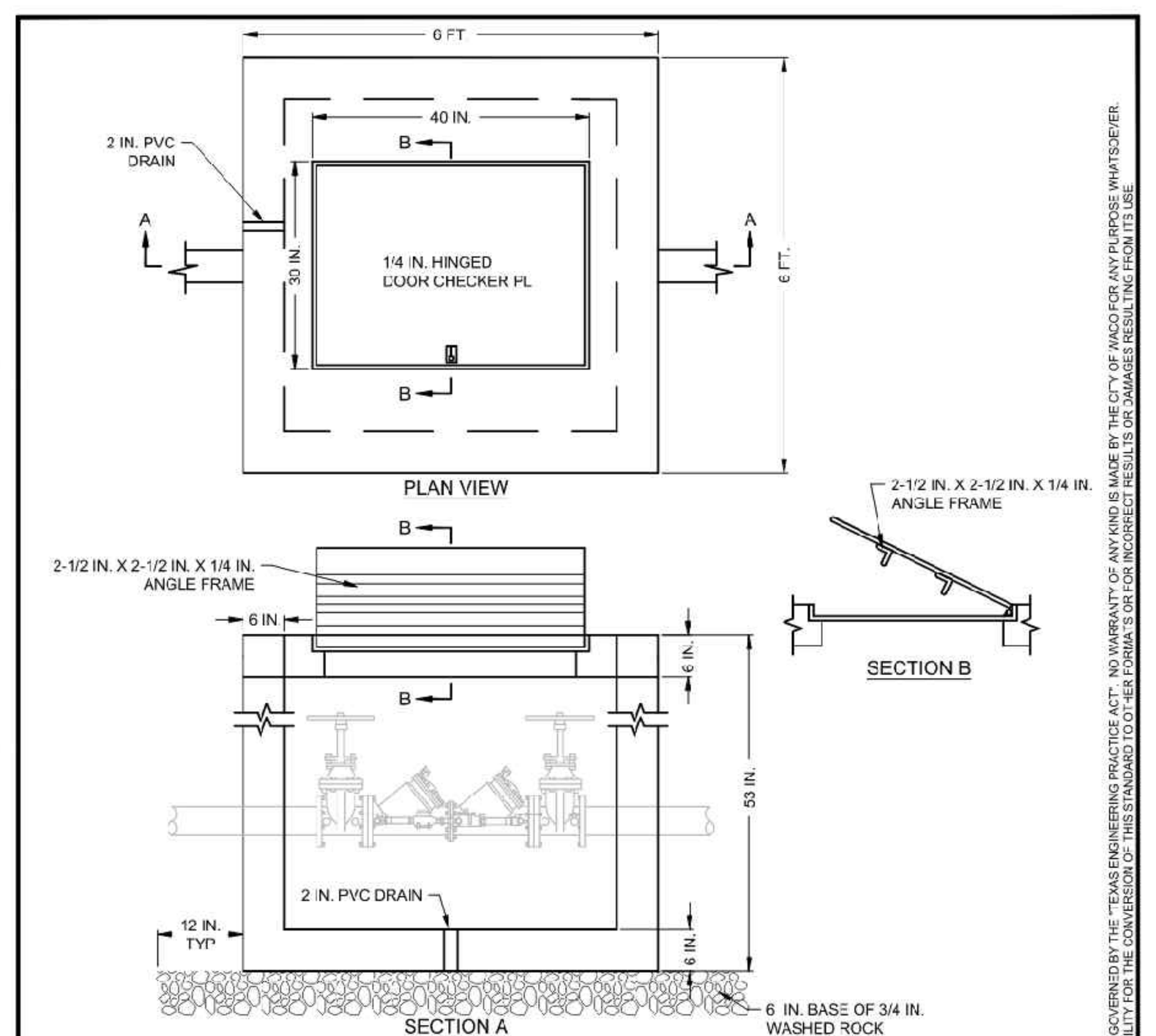
WACO ENGINEERING DIVISION — DATE 8/25/2021 — W-20

C2

N.T.S.

B6 DOUBLE CHECK VALVE VAULT

N.T.S.



NOTES:
1. DOUBLE DETECTOR CHECK ASSEMBLY TO BE HOUSED IN A PRECAST METER VAULT AND SHALL BE RATED HS20.
2. ASSEMBLIES 2 IN. AND SMALLER SHALL HAVE AT LEAST A 6 IN. CLEARANCE BELOW AND ON BOTH SIDES OF THE ASSEMBLY. ALL ASSEMBLIES LARGER THAN 2 IN. SHALL HAVE A MINIMUM CLEARANCE OF 12 IN. ON THE BACK SIDE, 24 IN. ON THE TEST PORT SIDE, AND 12 IN. BELOW THE ASSEMBLY.
3. ALL TEST PORTS SHALL FACE UPWARD AND SHALL HAVE PROTECTIVE CAPS.
4. UPON INSTALLATION, ASSEMBLY MUST BE TESTED BY CERTIFIED TESTER AND RESULTS FURNISHED TO THE CITY OF WACO, UTILITY DEPARTMENT. TEST RESULTS SHALL BE FURNISHED BY OWNER ON ANNUAL BASIS.
5. ALL NEW FIRE LINE SERVICES, AND THOSE ENCOUNTERED IN A CONSTRUCTION PROJECT SHALL HAVE INSTALLED A BACKFLOW DEVICE BASED ON THE DEGREE OF HAZARD. THE AUXILIARY LINE SHALL CONSIST OF AN APPROVED BACKFLOW PREVENTER AND WATER METER WITH ITRON CONNECTOR.
6. DOUBLE CHECK VAULTS SHALL BE LOCATED ON PRIVATE PROPERTY IN GREEN SPACE AS CLOSE AS PRACTICAL TO THE PUBLIC MAIN. DO NOT LOCATE WITHIN PUBLIC UTILITY EASEMENT.

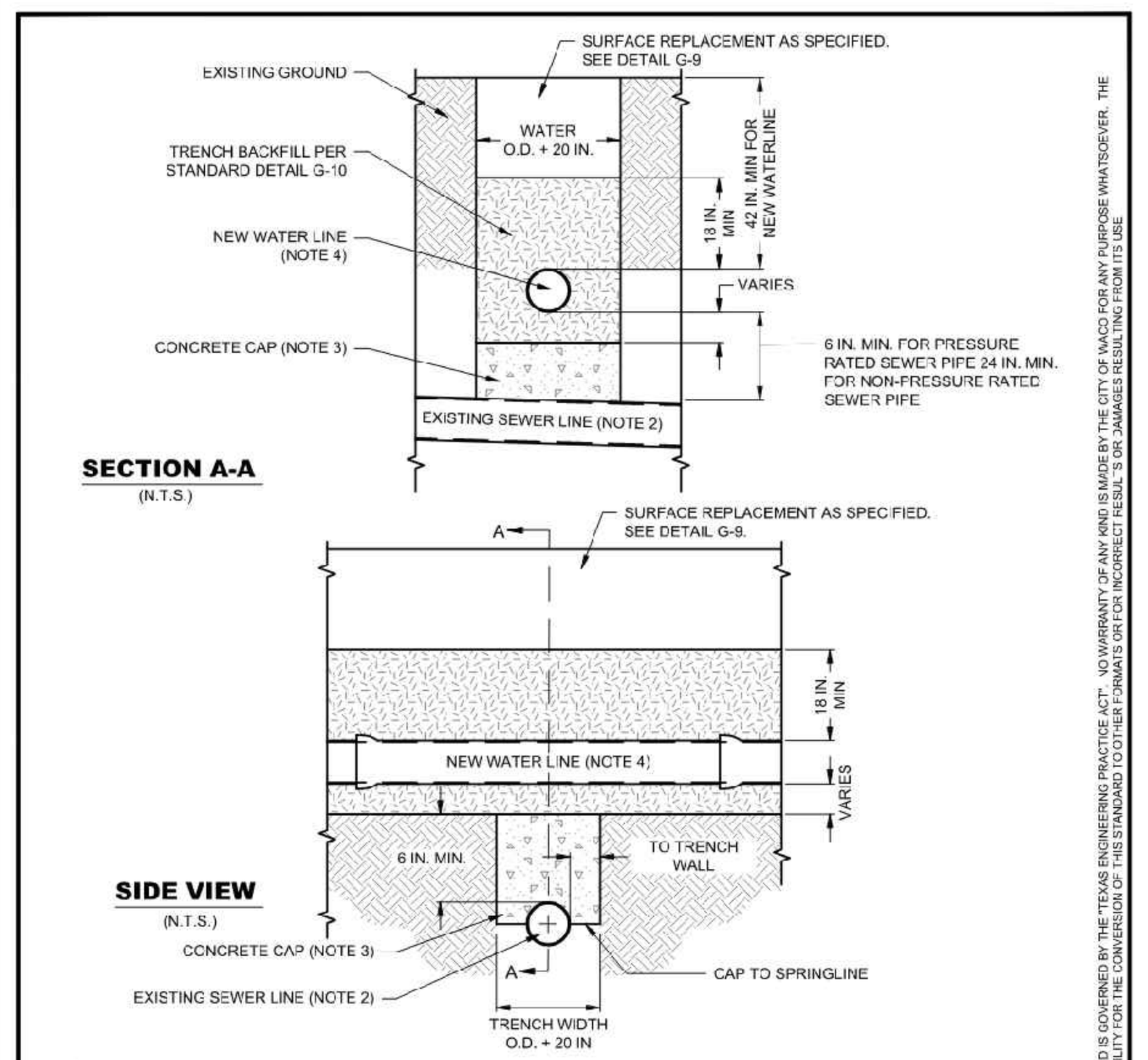
DOUBLE CHECK VALVE VAULT

(NO SCALE)

WACO ENGINEERING DIVISION — DATE 8/25/2021 — W-21

B5 EMBEDMENT FOR NEW WATER LINE CROSSING OVER EXISTING SEWER

N.T.S.



NOTE:
1. THIS DETAIL NEED NOT BE APPLIED FOR CROSSINGS INVOLVING WATER OR SEWER SERVICE CONNECTIONS.
2. IF EXISTING SEWER LINE IS DISTURBED OR SHOWS SIGNS OF LEAKING, REPLACE WITH SINGLE PIPE JOINT, MIN. 18 FT., CENTERED UNDER NEW WATER LINE. NEW SEWER LINE SHALL BE PVC PRESSURE-RATED AT 150 PSI MIN. SEE DETAIL G-8 FOR EMBEDMENT REQUIREMENTS
3. CONCRETE CAP. 2000 PSI CONCRETE OR CONTROLLED LOW STRENGTH MATERIAL OVER ENTIRE WIDTH OF WATER LINE TRENCH WHEN DISTANCE BETWEEN UTILITY LINES IS LESS THAN 24 IN. WHEN DISTANCE IS GREATER THAN 24 IN. REF. G-8 FOR STANDARD EMBEDMENT REQUIREMENTS.
4. NEW WATER LINE. CENTER ONE SECTION OF PIPE OVER SEWER PIPE. PIPE SECTION MUST BE MIN. 18 FT. LONG.

EMBEDMENT FOR NEW WATER LINE CROSSING OVER EXISTING SEWER LINE

(NO SCALE)

WACO ENGINEERING DIVISION — DATE 8/25/2021 — W-33

B4

N.T.S.

B3

N.T.S.

A6 SEWER NOTES

N.T.S.

SANITARY SEWER GENERAL NOTES AND SERVICE TAP NOTES

1. PVC SEWER MAIN PIPE COLOR SHALL BE GREEN.
2. ALL PVC SANITARY SEWER PIPE AND FITTINGS SHALL BE SDR26 OR PS115.
3. ALL PVC SANITARY SEWER SERVICES SHALL BE SCHEDULE 40 OR SDR26.
4. A STAMPED "S" OF 4 IN. IN HEIGHT AND 3/8 IN. IN DEPTH SHALL BE PLACED IN THE CENTER OF THE FACE OF CURB, AT EACH NEW TAP LOCATION AND IN ANY NEW CURB IN GUTTER AT EXISTING SERVICES.
5. PLEASE REFER TO STANDARD DETAIL S-2 FOR SEWER CLEANOUTS SITUATED IN A TRAFFIC AREA INCLUDING SIDEWALKS.
6. FOR BEDDING EMBEDMENT AND BACK FILL ABOVE EMBEDMENT REFER TO STANDARD DETAILS G-8, G-9 AND G-10.
7. BID ITEM FOR SEWER SERVICE INCLUDES EXCAVATION, WYE, SERVICE LINE, CLEANOUT, BOX, ALL FITTINGS, BACKFILL AND SURFACE REPLACEMENT.
8. ALL WYES SHALL BE SAME MATERIAL SPECIFICATION AS THE MAIN IN REGARDS TO MATERIAL, SDR AND ASTM DESIGNATIONS.
9. ALL SERVICE CONNECTIONS TO EXISTING SEWER PIPE SHALL BE MADE BY USING NON-SHEAR COUPLINGS AND RIGID FITTINGS.
10. ALL FLEXIBLE ADAPTERS, BENDS, AND TEES ON SERVICE LINES SHALL BE FULLY ENCASED IN 6 IN. OF CONCRETE.
11. WHERE NEW SANITARY SEWER SERVICES ARE INSTALLED UNDER EXISTING CURB AND GUTTER, THE CONTRACTOR WILL HAVE THE FOLLOWING OPTIONS:
    A. REMOVE AND REPLACE ADEQUATE AMOUNT OF CURB AND GUTTER.
    B. PLACE CONTROLLED LOW STRENGTH MATERIAL BENEATH THE EXISTING CURB AND GUTTER.
    C. INSTALL SERVICE THROUGH A HOLE AT THE SAME LOCATION AS THE EXISTING PIPE, AND APPROXIMATELY THE SAME DIAMETER.
12. ALL WATER AND SEWER CROSSINGS SHALL MEET TCEQ SEPARATION REQUIREMENTS. MINIMUM SEPARATION SHALL BE 6 INCHES. SEE STANDARD DETAIL S-19 AND S-20
13. ANY UNDERGROUND DUCTILE IRON PIPE SHALL BE LINED WITH TNEMEC PERMA-SHIELD 431 OR A PRE-APPROVED EQUAL. USE OF DUCTILE IRON SANITARY SEWER PIPE SHALL BE PREAPPROVED BY THE CITY ENGINEER.
14. STEEL PIPE CASING USED FOR AERIAL CROSSING SHALL BE PAINTED WITH TNEMEC SERIES 46H-413 COAL TAR EPOXY AT 60.0 DRY MILS. PAINTING IS SUBSIDIARY TO THE CASING.
15. SEWER MAINS AND/OR SERVICES ENTERING INTO A MANHOLE MORE THAN 24 IN. ABOVE AN INVERT MUST HAVE A DROP FIXTURE.
16. ALL SERVICE TAPS MUST BE APPROVED IN ADVANCE BY THE CITY OF WACO AND MUST BE PERFORMED UNDER THE DIRECT SUPERVISION OF A DESIGNATED CITY OF WACO UTILITY INSPECTOR. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN.
17. PLEASE REFER TO CITY OF WACO STANDARD DETAILS FOR AIR RELEASE VALVES ON FORCE MAINS.
18. FILL ALL ABANDONED CONDUITS GREATER THAN 6 IN. DIAMETER WITH CONTROLLED LOW STRENGTH MATERIAL.

WACO ENGINEERING DIVISION — DATE 8/25/2021 — S-1

A5 MANHOLE NOTES

N.T.S.

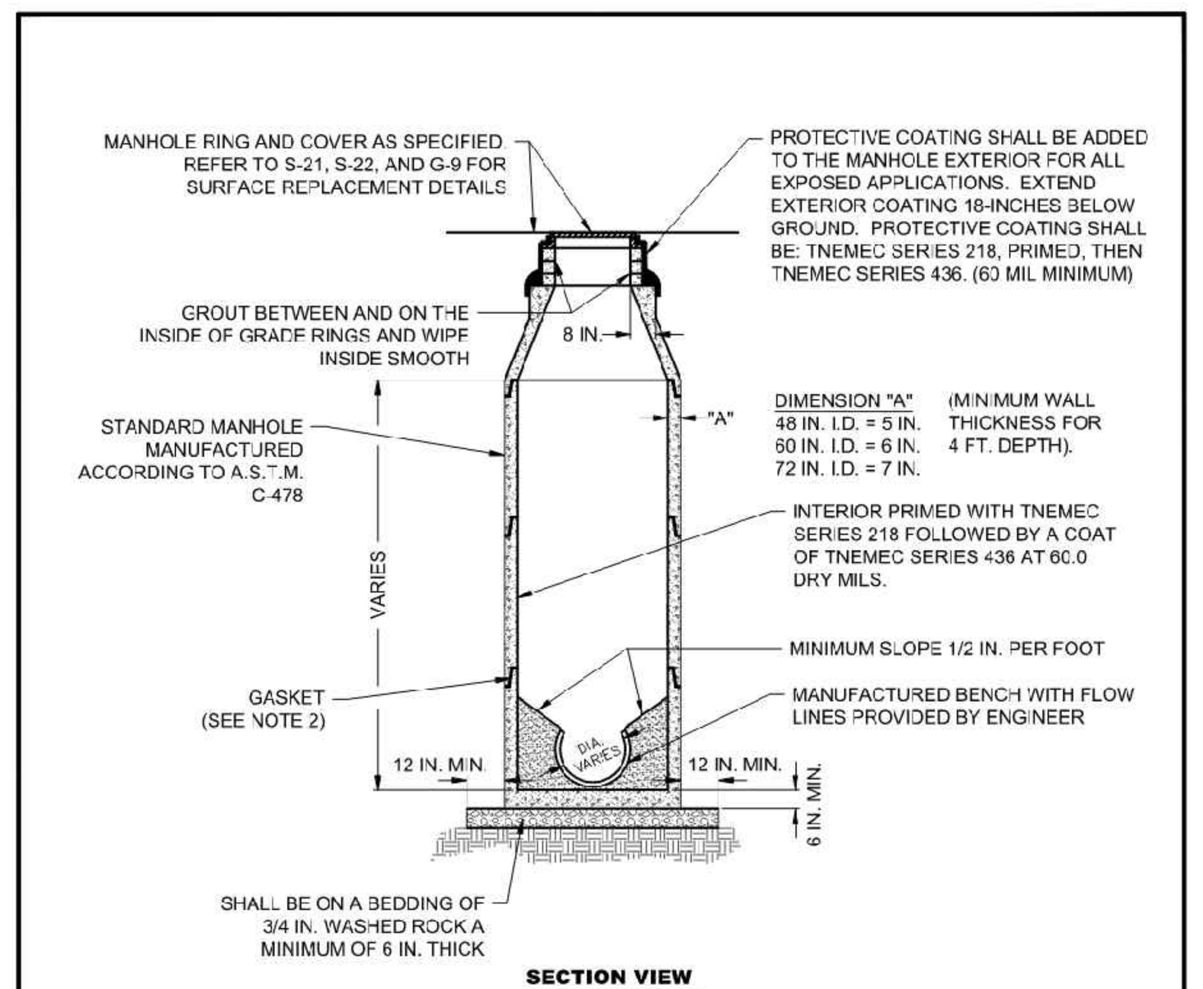
MANHOLE NOTES

1. PIPES LAID THROUGH MANHOLES ARE TO BE CAREFULLY REMOVED TO ALLOW ACCESS TO SEWER MAIN AFTER INVERT IS CONCRETED.
2. INVERT TO BE SHAPED AND FINISHED SMOOTH BY HAND FLOAT AND TROWEL.
3. STANDARD 4 FT. DIAMETER MANHOLES TO BE CONSTRUCTED ON PIPE 10 IN. AND SMALLER IN DIAMETER AND LESS THAN 10 FT. DEEP.
4. STANDARD 5 FT. DIAMETER MANHOLES TO BE CONSTRUCTED ON PIPE 12 TO 15 IN. DIAMETER AND LESS THAN 20 FT. DEEP. EXCEPT FOR THE CONE, MANHOLE RISER DIAMETER REDUCTIONS ARE NOT PERMITTED.
5. STANDARD 6 FT. DIAMETER MANHOLES TO BE CONSTRUCTED ON PIPE GREATER THAN 15 IN. IN DIAMETER. EXCEPT FOR THE CONE, MANHOLE RISER DIAMETER REDUCTIONS ARE NOT PERMITTED.
6. A MAXIMUM OF 2 IN. OF MORTAR MAY BE USED TO BRING RING AND COVER TO GRADE.
7. IN STREET SECTION ONLY, GRADE RINGS AND GROUT MAY BE APPLIED TO A MANHOLE CONE TO ALLOW FOR FUTURE ADJUSTMENT. TOTAL DEPTH OF GRADE RING AND GROUT SHALL BE BETWEEN 4 IN. MINIMUM AND 12 IN. MAXIMUM. GRADE RINGS AND COVER SHALL BE SECURED IN A SET BED OF GROUT.
8. MANHOLE COVERS SHALL HAVE THE WORDS "SANITARY SEWER", "CITY OF WACO". AND THE "FLYING W" LOGO RAISED ON THE OUTWARD FACE.
9. STANDARD DETAIL S-13 SHALL BE USED WHERE MANHOLES ARE INSTALLED IN UNDEVELOPED AREAS, SUCH AS FIELDS.
10. PRECAST CONCRETE MANHOLES, WITH APPROVED COATING, ARE PERMITTED. THE MANHOLES SHALL CONFORM TO CITY OF WACO MANHOLE DETAILS AND TO ASTM C-478. CONTRACTOR SHALL SUBMIT DESIGN INFORMATION ON PRECAST MANHOLES STAMPED BY A PROFESSIONAL ENGINEER FOR CITY ENGINEER'S APPROVAL. IF PRECAST MANHOLES ARE USED, THEY SHALL BE PLACED ON A BEDDING OF 6 IN. MINIMUM OF 3/4 IN. WASHED ROCK.
11. MEASUREMENT DEPTH FOR PAYMENT OF MANHOLES SHALL BE FROM THE FLOWLINE TO THE TOP SURFACE OF THE MANHOLE COVER.
12. VACUUM AIR TEST MANHOLES AFTER GRADE RINGS AND COVER RINGS ARE IN PLACE IN ACCORDANCE TO TESTING PROCEDURES IN ASTM #C1244. (COVER OMITTED FOR TESTING).
13. SURFACE REPLACEMENT SHALL BE INCLUDED IN THE PRICE FOR THE MANHOLE.
14. MANHOLE GRADE RINGS AND THE INTERIOR AND EXTERIOR SURFACES OF THE MANHOLE SHALL BE PRIMED WITH TNEMEC SERIES 218 FOLLOWED BY A COAT OF TNEMEC SERIES 436 AT 60.0 DRY MILS.
15. CAST IN PLACE MANHOLE WILL REQUIRE A SEALED DESIGN SUBMITTED BY A LICENSED PROFESSIONAL ENGINEER, AND APPROVED BY CITY ENGINEER. CAST IN PLACE BASE MUST BE MINIMUM 8 IN. THICK WITH #5 BARS @ 12 IN. OCEW AND SHALL EXTEND 1 FT. BEYOND MANHOLE.
16. MAXIMUM MANHOLE SPACING IS 450 LF.
17. 3/4 IN. WASHED ROCK SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM A.2.a, CRUSHED STONE EMBEDMENT, OF SECTION 4.2 PART 2, EXCEPT THE GRADATION SHALL BE:

WACO ENGINEERING DIVISION — DATE 8/25/2021 — S-5

A4 PRECAST REINFORCED CONCRETE MANHOLE

N.T.S.



NOTES:
1. PLEASE REFER TO S-5 AND S-6 FOR ADDITIONAL REQUIREMENTS.
2. GASKET MEETING MANUFACTURER'S SPECIFICATIONS SHALL BE PLACED AT EACH JOINT PRIOR TO PLACING NEXT SECTION.
3. ALL SEWER PENETRATIONS FOR NEW MANHOLES SHALL BE MANUFACTURED. ALL SEWER PENETRATIONS INTO EXISTING MANHOLES SHALL BE CORED.
4. ALL MANHOLE STRUCTURES SHALL BE HS-20 RATED.
5. MAY ELIMINATE THE USE OF INTERIOR AND WHEN REQUIRED EXTERIOR TNEMEC SERIES 218 FOLLOWED BY A COAT OF TNEMEC SERIES 436 AT 60 DRY MILS BY USE OF PRECAST CONCRETE ADMIXTURE: CONMICSHIELD® OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE A 5-YEAR MAINTENANCE BOND WARRANTY FOR PARTS AND LABOR FOR MANHOLE INSTALLATIONS IF THIS OPTION IS USED.

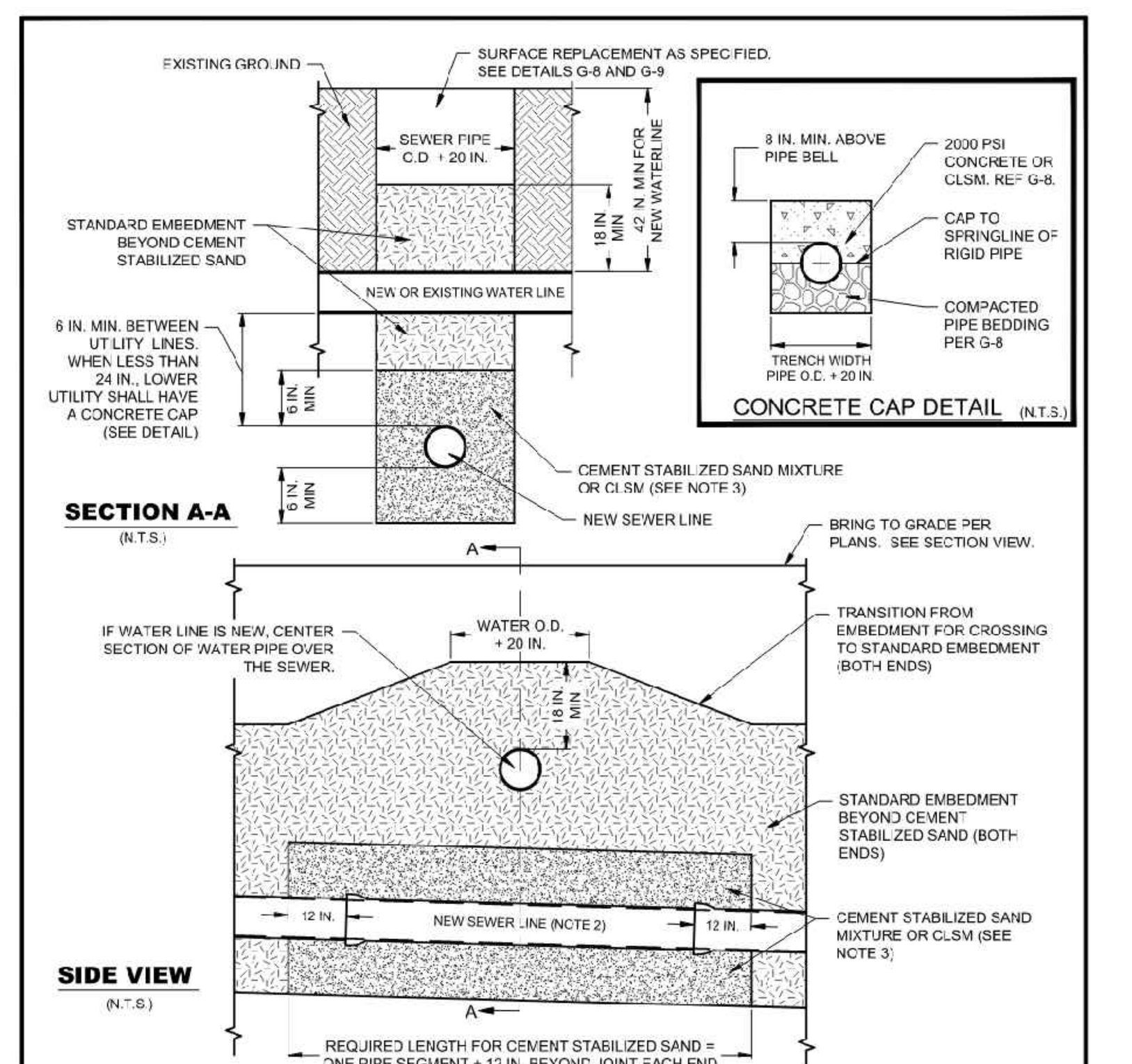
PRECAST REINFORCED CONCRETE MANHOLE

(NO SCALE)

WACO ENGINEERING DIVISION — REVISIONS: 1 | NOTE 4 & 5, MOD COATINGS & GASKET | MZ | 01/10/2022 — DATE 01/10/2022 — S-11

A3 NEW SEWER CROSSING UNDER NEW OR EX. WATER

N.T.S.



NOTES:
1. THIS DETAIL NEED NOT TO BE APPLIED FOR CROSSINGS INVOLVING WATER OR SEWER SERVICE CONNECTIONS.
2. CENTER 18 FT. MIN. SECTION OF SEWER PIPE UNDER WATER PIPE. SEWER LINE SHALL BE PVC PRESSURE- RATED AT 150 PSI MIN.
3. CEMENT STABILIZED SAND MIXTURE MUST HAVE MINIMUM 10% CEMENT BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 3-54 LBS BAGS OF CEMENT PER C.Y. OF MIXTURE). CITY STANDARD CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE USED AS AN ALTERNATE.

EMBEDMENT FOR NEW SEWER CROSSING UNDER NEW OR EXISTING WATER LINE

(NO SCALE)

WACO ENGINEERING DIVISION — DATE 8/25/2021 — S-19

NOT FOR CONSTRUCTION - FOR AGENCY REVIEW PURPOSES ONLY

Walker Partners engineers | surveyors
T.B.P.E. Registration No. 8053

AECOM

FUDGE FOOTBALL OPERATIONS CENTER at BAYLOR UNIVERSITY
1504 S UNIVERSITY PARKS DRIVE
WACO, TX 76798

CLIENT
BAYLOR UNIVERSITY
ONE BEAR PLACE
WACO, TX 76798
HTTP://baylor.edu

AECOM TECHNICAL SERVICES, INC
ARCHITECTURE

JENSEN HUGHES
CODE COMPLIANCE / LIFE SAFETY

WALKER PARTNERS
CIVIL / SITE UTILITIES

OJB LANDSCAPE ARCHITECTURE
LANDSCAPE / SITE DESIGN

AECOM TECHNICAL SERVICES, INC
STRUCTURAL

CAMPISE CONSULTING AND INSPECTIONS, LLC
VERTICAL TRANSPORTATION

IDIBRI a SALAS O'BRIEN COMPANY
AV / TELECOM / IT / SECURITY / ACOUSTIC ISOLATION

AECOM TECHNICAL SERVICES, INC
MECHANICAL / ELECTRICAL / PLUMBING / FIRE PROTECTION

DOWNSTREAM
SIGNAGE / GRAPHICS / BRANDING

REGISTRATION

STATE OF TEXAS — JONATHAN A. CANNON — 122060 — LICENSED PROFESSIONAL ENGINEER

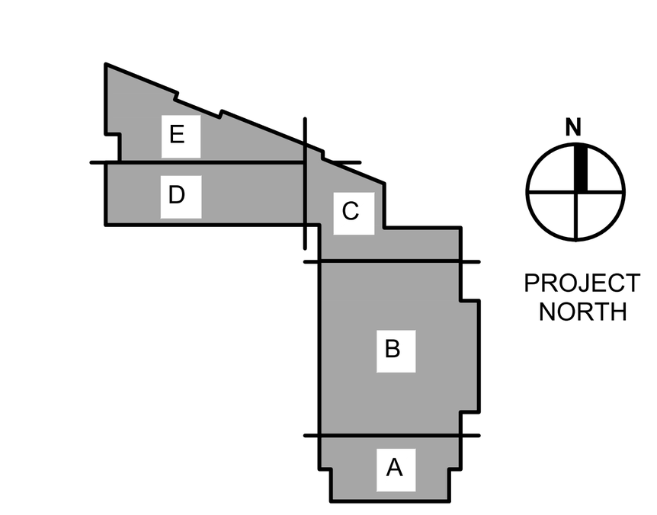
02/16/2022 DATE — JONATHAN A. CANNON

REGISTRATION

These Schematic Design drawings represent the current status of the design process and have been issued for Consultants coordination, Owner review and approval, and for updating estimates of probable construction cost. They do not illustrate the complete and total design or scope of work required for construction of the project and is not, under any circumstances, intended to be used by the CMaR or other Contractor, or any other person for construction, for preparation of shop drawings or other submittals or for bidding or awarding subcontracts.

DESIGN DEVELOPMENT

KEY PLAN



ISSUE/REVISION

I/R	DATE	DESCRIPTION

PROJECT NUMBER	DATE
60668614	03/04/22

SHEET TITLE
UTILITY DETAILS

SHEET NUMBER
C.06.03

Last Plotted: 2/16/2022 9:18:59 AM
Filename: G:\Projects\1-03608\2 Engineering\2.0 CAD\1-03608DETAILS-TCEQ.dwg

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Appendix C

Landfill Safety Requirements

SECTION 01190

HEALTH AND SAFETY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirement for submittal and implementation of a Health and Safety Plan, including the implementation of trench safety systems (as applicable).

B. Potential landfill and landfill gas hazards.

C. General requirements for furnishing services of a Safety Monitor.

D. General requirements for the protection of Health and Safety of personnel involved in the execution of the Work.

E. Trench safety system requirements.

1.2 RELATED SECTIONS

A. General Provisions

B. Section 01010 – Summary of Work

C. Section 01300 – Submittals

D. Section 01560 – Environmental Protection and Special Controls

1.3 SUBMITTALS

A. Contractor shall submit a Health and Safety Plan prepared and signed by qualified health and safety person addressing worker safety during execution of the Work as shown on the Construction Plans. Although the Contractor shall submit a copy of the Health and Safety Plan to the Owner and Engineer for the file; the Owner or Engineer will not be responsible for the adequacy of the plan in providing worker protection, or execution of the measures set forth in the plan.

B. Contractor's Health and Safety Plan shall include trench safety systems required for the construction of all trench excavation for completion of Work, precautions necessary for excavation and disposal of municipal solid waste (MSW), and including all additional excavation and backfill necessitated by the Work. A trench shall be defined as a narrow excavation (in relation to its length) made below the surface of the ground. Trench safety systems are further specified in **Part 1.7** of this Section.

1.4 POTENTIAL LANDFILL AND LANDFILL GAS HAZARDS

A. The Contractor is advised that the construction of this project is being performed at a municipal solid waste landfill on or near buried wastes and refuse. As these buried materials decompose anaerobically, they will generate landfill gas (LFG), which normally consists of carbon dioxide (CO_2), methane (CH_4), and occasionally hydrogen sulfide (H_2S) and other gases, depending on the composition of the buried materials. These gases usually vent to the atmosphere through the cover soil, but may migrate laterally over 1,000 feet to adjacent areas depending on site and weather conditions.

B. Although, the landfill is a municipal solid waste landfill, waste streams may include incidental hazardous substances, medical wastes, and other hazards. Care shall be taken in protecting workers from exposure to hazards, and executing the Work using procedures that provide worker protection.

C. The following landfill and LFG related information is included to assist the Contractor in developing his Health and Safety Plan and is not intended to encompass all steps that may be necessary to protect the workers or to comply with applicable regulations.

1. Landfill gases usually vent to the atmosphere through the cover soils, but may migrate laterally to adjacent areas depending on site and weather conditions.

2. Landfill gases have the potential to create hazardous conditions if not controlled or recognized. Some of the hazards are:

a. Fires may start spontaneously from exposed and/or decomposing refuse.

b. Fires and explosions may occur from the presence of methane gas. Methane is explosive in approximate concentrations of 5 to 15 percent by volume in air.

c. Landfill gases may cause an oxygen deficiency in underground trenches, vaults, conduits, and structures.

d. Hydrogen sulfide, a highly toxic and flammable gas, or other toxic gas may be present.

e. Possible caving of trenches and excavations when working over or in refuse fills.

3. Landfill materials (solids and liquids) have the potential to contain pathogens, fungus, viruses, infectious materials; sharp, puncturing, and cutting objects; and other hazards. Dust control during waste excavation is important to controlling dust-borne transmission of harmful elements. Preventing dermal contact with waste by workers, including preventing walking over or in exposed waste, also will reduce the risks of worker exposure. Dust control and worker exposure during excavation shall be addressed in the Health and Safety Plan.

1.5 SAFETY MONITOR

A. The Contractor shall designate a person who will be designated as the Safety Monitor. The Safety Monitor shall be thoroughly trained in rescue procedures, trench safety (if trenching greater in depth than 3 feet is included in Work), and in the use of safety equipment and gas detectors, as deemed appropriate for the Work. The Safety Monitor shall also have up-to-date health and safety certifications as required by local, State, and Federal regulations. The Safety Monitor shall be present at all times during working hours whenever open trenches or excavations are greater than 3 feet in depth, when the Contractor is working on or near exposed refuse, or when LFG is likely to be present.

B. The Safety Monitor shall have appropriate instruments (detector[s], gas monitors, etc.) to test for oxygen deficiency and for the presence of methane gas and hydrogen sulfide gas, as deemed necessary within the Health and Safety Plan. The Safety Monitor should periodically calibrate these instruments and regularly test the excavation areas and other workspace for safe working conditions and ensure that appropriate safety equipment is available at the site.

C. The Safety Monitor shall have the delegated authority to order Contractor's workers, subcontractors, vendors, and suppliers on the project site to comply with the safety requirements. Failure to observe Safety Monitor orders shall be cause for removal of the worker from the project.

1.6 SAFETY PRECAUTIONS AND PROGRAM

A. This section supplements the requirements specified in the General Provisions. If the requirements of this Section and conditions noted above conflict, the Contractor shall adhere to the more stringent requirement as determined by the Owner and/or Engineer.

B. Nothing in this Section shall preclude the Contractor from complying with the more stringent requirements of the applicable Federal, State, County, or Owner rules and regulations.

C. The Contractor should be familiar with the Safety Guidelines as prepared by the Solid Waste Association of North America (SWANA) National Landfill Gas Committee in December 1983. Copies may be obtained by writing to SWANA, 1100 Wayne Avenue, Suite 650, Silver Spring, Maryland 20910, telephone number (800) 467-9262. Neither Owner nor Engineer make representation regarding the adequacy or completeness of these guidelines in addressing the issues associated with working in or near waste or landfills.

D. Supplemental to the Contractor's regular safety program, the Contractor shall develop and institute procedures to inform all workers and site visitors of the potential for the presence of methane and other landfill gases emanating from the natural decomposition of refuse buried at or near the job site and the importance of safety precautions to ensure the safety of workers and the public. The Contractor shall also instruct all workers and maintain strict control of construction activities to protect and maintain the integrity of the work features as they are installed.

E. In addition to conforming to the safety rules and regulations of governmental authorities having jurisdiction, the Contractor shall take the following precautionary measures:

1. Periodically during construction, the workspace should be monitored for concentrations of methane and hydrogen sulfide. Workers shall not be permitted to enter a workspace where there is an oxygen deficiency or a combustible mixture of gases without appropriate protection. Positive fan-forced ventilation to dilute gas mixtures and avoid oxygen deficiency should be provided when work is necessary in any workspace.

2. Smoking shall be prohibited at all times on the landfill property.

3. In the event toxic gases are present at concentrations hazardous to the workers and the general public, the Contractor shall immediately evacuate all persons from the area until the area is determined safe by the Safety Monitor.

4. Soil shall be stockpiled adjacent to work space in areas of exposed refuse for firefighting purposes.

5. The use of explosives or firearms shall not be permitted on the site.

6. If refuse is exposed during construction activities, it shall be covered as soon as possible after exposure with at least a 6-inch layer of soil. In no event shall the refuse remain exposed overnight, unless otherwise approved by the Owner/Engineer and the Texas Commission on Environmental Quality (TCEQ).

7. If refuse is excavated during construction activities, it shall be disposed of at the working face of the active landfill, as directed by the Owner. Refuse shall be disposed each day.

8. Care shall be taken not to track waste outside of the work area on construction equipment. Waste that is tracked outside the limits of waste by Contractor's activities shall be removed daily and disposed, as directed by the Owner or Engineer.

9. No welding shall be permitted in trenches, enclosed areas, or over refuse unless performed in areas of the site tested and approved by the Safety Monitor.

10. Combustion engine powered construction equipment shall be equipped with vertical exhaust and spark arrestors.

11. Electric motors and controls utilized in excavation areas and in below ground workspace shall be explosion proof.

12. Workers shall not be allowed to work alone at any time in an excavation. Work parties of at least three workers shall be mandatory with one worker outside of the hazard area and another worker within hailing distance to assist in an emergency.

13. Inhalation of landfill gases shall be avoided. Such gases or oxygen-deficient air may cause nausea and dizziness, which could lead to accidents. Work upwind of the excavation where possible, unless the excavation is constantly monitored and declared safe by the Safety Monitor.

14. Workers shall avoid contact with exposed refuse, condensate, or leachate.

15. Fire extinguishers with a rating of at least A, B, and C shall be available at all times on the site.

16. Startup and shutdown of equipment shall be avoided in areas of exposed refuse.

17. Personnel, when in an open excavation or in the presence of landfill gas, shall be fully clothed with non-sparking cloth, wear shoes with non-metallic soles, and wear a hard hat and safety goggles or glasses. The excavation shall be monitored continuously in a manner satisfactory to the Safety Monitor for the presence of methane, hydrogen sulfide, and oxygen for the duration that personnel are in an excavation. Workers should immediately vacate an excavation if methane, hydrogen sulfide, or oxygen deficiency are detected therein at standard industry and/or OSHA action levels, and shall not be permitted to re-enter the excavation unless satisfactory precautionary measures for a safe work environment are implemented.

18. Assembly of construction work shall be performed outside of trenches or excavations. Prefabricated items shall be lowered into excavations. Only final connections may be made within trenches with the necessary precautions stated.

1.7 TRENCH SAFETY SYSTEMS

A. As specified in **Part 1.3**, the Contractor's Health and Safety Plan shall include trench safety systems. At a minimum, trench safety shall be performed in accordance with Excavations, Trenching and Shoring, Federal Occupational Safety and Health Administration (OSHA) Standards, 29 CFR, Part 1926, Subpart P, as amended, including Proposed Rules published in the Federal Register (Vol. 52, No. 72) on Wednesday April 15, 1987, and any subsequent amendments or changes.

B. The trench safety systems provided in the Contractor's Health and Safety Plan shall include, but is not limited, to specifications for sloping, benching, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.

C. The Contractor is responsible for obtaining borings and soil analysis as required for trench safety.

D. The Contractor shall make daily inspections of the trench safety systems to ensure that the systems meet OSHA requirements. Daily inspection is to be made by a "competent person" provided by the Contractor.

E. If evidence of possible cave-ins or slides is apparent, all work in the trench shall cease until the necessary precautions have been taken by the Contractor to safeguard personnel entering the trench. It is the sole duty, responsibility and prerogative of the Contractor, not the Owner or Engineer, to

determine the specific applicability of the designed trench safety systems to each field condition encountered on the project. The Contractor shall maintain a permanent record of daily inspections.

F. Any property damage, bodily injury or death that arises from use of the trench safety or from the Owner's failure to note exceptions to trench safety shall remain the sole responsibility of the Contractor.

G. No trenching in excess of five (5) feet below existing grade will be allowed until the implementation of trench safety procedures. Any changes in the trench safety system after the initiation of construction will not be cause for extension of time or change order and will require the same review process.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Appendix G

Landfill Gas Analysis