December 23, 2024
AVO 37449.004

Ms. Ramie Hammonds
Development Services Director/Building Official
City of Sanger
201 Bolivar Street
P.O. Box 1729
Sanger, Texas 76266

Re: **Blue Star Industrial Addition -Review #1**

Dear Ms. Hammonds,

Halff Associates, Inc. was requested by the City of Sanger to review the Final Plat and Civil Plans for Blue Star Industrial Addition Phase 2. The submittal was prepared by Animas Civil Engineering and was received December 10, 2024.

We have completed our review and offer the following comments:

Please address comments on attached markups and provide annotated responses on markups. Please note, not all comments are written on letter since some comments are easier to show and explain on the markups. Please annotate markup with responses.

Final Plat

1. This final plat is not in accordance with the preliminary plat, but generally, the drainage plan does conform to the accepted drainage study.
2. Callout/show drainage easement for proposed SD lines. drainage infrastructure cannot be lumped into a general utility easement
3. The name, address and phone number of all utilities providing service to the development is required. A signature from each provider or a will-serve letter, signifying their ability to provide service to the subdivision is required.
4. Include certificate for designated city official signatures on all final plats

Civil Plan Comments

Cover Sheet Comments

1. The final plat is not in accordance with the preliminary plat, but generally, the drainage plan does conform to the accepted drainage study.
2. Confirm detention facility is online and functioning as intended, else provide an interim drainage plan/study.
3. See comment on page number on the sheet, see markup.

halff

Paving Plan and Dimension Control Comments

1. All steel reinforcing shall be deformed No. 4 bars on eighteen-inch (18") centers both ways per Ordinance § 10.106(b)(2)(B)(ii)
2. Collector streets and alleys shall, at a minimum, be designed and constructed with eight-inch (8") thickness of four thousand (4,000) p.s.i. reinforced concrete pavement on a compacted sub-base. All steel reinforcing shall be deformed No. 4 bars on eighteen-inch (18") centers both ways per Ordinance § 10.106(b)(2)(B)(ii)
3. Where the plasticity index of the soil is twelve (12) or greater, stabilization of the subbase with an eight-inch (8") thickness of six percent (6%) hydrated lime by weight will be required per Ordinance § 10.106(b)(2)(B)(iii)
4. Per Denton County Fire Code, fire lanes shall have a minimum interior turning radius of thirty (30) feet and exterior turning radius of fifty (50) feet. Please review and revise all turning radii to meet minimums
5. Driveway returns onto commercial and industrial property shall be a minimum of fifteen feet (15') and a maximum of twenty-five feet (25') except in special cases per § 10.106(b)(3)(C)(ii)

Grading Plan Comments

1. Is there an agreement for the offsite grading?
2. A previous plan review associated with the pond and Lot 2 called for rip rap at the confluence of these channels. Confirm rip rap has been installed and/or provide additional rip rap as needed for this project if existing rip rap is not adequate. ~100 cfs at 6fps or greater is expected to discharge here, please protect
3. Provide offsite flow arrows

Drainage Area Map Comments

1. Please provide 5, 10, 25, and 100 yr calcs
2. Intensity from 2020 iSWM hydrology manual? please note source. to be consistent with accepted drainage study, recommend using intensity data in from accepted study (2014 iSWM hydrology manual).
3. See comments related to surcharge for circled inlets (see markups)
4. There appear to be two sheets labelled C-6.01, the DAM should be C-4.01
5. The areas around Drainage areas A2 and A3 appears to be flowing offsite, please verify and revise drainage areas according

Storm Drain Plan Comments

1. Water out of the inlet per calcs. Confirm this surcharge does not overflow to adjacent lot. Else revise SD to remove surcharge. See markups.
2. Is the GV included in any lowering?

3. Recommend adding a junction/manhole for access at least every 500'
4. Show min 10' DE on all proposed SD and show on plat.
5. Minimum pipe size for 10-foot curb inlets is 21" per § 10.106(d)(5)(C). Please upsize laterals to 21"
6. For areas outside the platted boundary a DE by separate instrument must be recorded. DE should include any energy dissipation (rip rap) and extend min 25' beyond the rip rap.

Storm Drain Plan and Profile Comments

1. Show headwall and energy dissipation (rip rap)
2. Provide rip rap calcs to support apron length, width, and thickness
3. Note the source of the stating water surface elevation
4. Label separation distances between SD and SS/W - all crossings
5. Water out of the inlet? Confirm this surcharge does not overflow to adjacent lot. See markups.
6. The hydraulic grade line shall in no case be closer to the surface of the ground or street than one (1) foot per § 10.106(d)(6)(D)(ii). Please review and revise.
7. HGL for SD Lat B-4 not consistent with calcs. please review/revise. See markups.

Hydraulic Calculations Comments

1. The minimum velocities in conduit shall be 2.5 feet per second per § 10.106(d)(6)(B)(i)
2. The maximum velocity in the pipe shall not exceed 12 feet per second per § 10.106(d)(6)(B)(ii)

Utility Plan Comments

1. The manholes shall be placed at points of change in alignment, grade, size of sewer, the intersection of sewers; at the right-of-way lines of major and secondary thoroughfares, whether existing or proposed, and the end of all sanitary sewer mains subject to extension per § 10.106(f)(1)(A)(iii)
2. Ensure all TCEQ crossing requirements are met

Erosion Control Comments

1. Please add SF at the toe of all graded slopes to reduce sediment. See markups.
2. Please show or ensure SF is added behind the curb once curb is installed to minimize sediment on the street. See markups.
3. Consider installing a rock filter dam at the outflow for erosion control

Paving Details

1. Please provide pavement repair details

Drainage Details

1. Please provide bedding detail for SD.

Utility Details

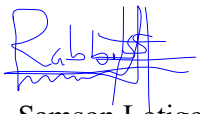
1. Please provide water line embedment detail

Landscape Comments

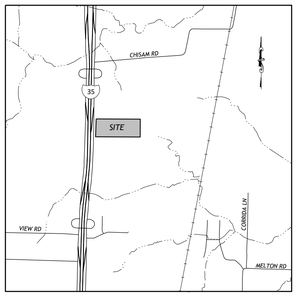
1. Please show that minimum landscaping requirements for non-residential uses per ordinance § 14A-48.5.2 I-1 and I-2 Industrial Districts have been met. Include narrative per ordinance on the plans to verify requirements have been met.

If you have any questions or need additional information, please do not hesitate to call me at (817) 764-7498.

Sincerely,



Samson Lotigo, PE
HALFF ASSOCIATES, INC.
Firm No. 0312
Attachments: Plans markups



*** VICINITY MAP ***
(NOT TO SCALE)

*** LEGEND ***

CIRF	IRON ROD FOUND WITH CAP
CIRS	5/8" IRON ROD WITH CAP STAMPED "SPOONER 5922" SET
MON.	MONUMENT
INS. NO.	INSTRUMENT NUMBER
O.P.R.D.C.T.	OFFICIAL PUBLIC RECORDS DENTON COUNTY, TEXAS
EX.	EXISTING
P.F.C.	POINT FOR CORNER
SSMH	SANITARY SEWER MANHOLE

E1
EX. WATER ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

E2
EX. DRAINAGE ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

INTERSTATE HIGHWAY 35
(VARIABLE WIDTH PUBLIC R.O.W.)

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

0 25' 50'
GRAPHIC SCALE IN FEET
1" = 50'

POINT OF BEGINNING
"X" CUT FOUND
N:7,199,172.14
E:2,372,793.16
(NAD83~GRID)

TXDOT MON. FOUND AT NORTH CORNER OF ROAD RIGHT OF WAY BEARS N00°45'55"W ~ 994.78'
(SEE INSET "A")

CIRS

S89°37'16"E ~ 1,234.56'

REMAINDER OF CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

10' WATER EASEMENT (PROPOSED)
70.0'
ACCESS & UTILITY EASEMENT (PROPOSED)

CIRS
N:7,199,663.78
E:2,374,042.33
(NAD83~GRID)

Show water and drainage easement

CL=500.13'
CB=N01°41'55"E
L=500.15'
R=16,615.00'

30.0'
ACCESS & UTILITY EASEMENT (PROPOSED)

LOT 5, BLOCK A
14.2225 ACRES
(619,533 SQ. FT.)

JOSE MARIA RUIZ SURVEY
ABSTRACT NO. 1066

PORTION OF CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

18.0'
S00°22'44"W ~ 500.00'

REMAINDER OF CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

26.0'
ACCESS & UTILITY EASEMENT (PROPOSED)
17.68'
ACCESS & UTILITY EASEMENT (PROPOSED)

N89°37'16"W ~ 1,246.08'

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.
E2
E1
APPROX. SURVEY LINE

P.F.C. ON
EX. SSMH LID

CALLED 1.6470 ACRES
STATE OF TEXAS
INS. NO. 2022-170941,
O.P.R.D.C.T.

BENJAMIN F. LYNCH SURVEY
ABSTRACT NO. 725

LOT 2, BLOCK A
BLUE STAR INDUSTRIAL ADDITION
INS. NO. 20220525000223, O.P.R.D.C.T.

1. The name, address and phone number of all utilities providing service to the development is required. A signature from each provider or a will-serve letter, signifying their ability to provide service to the subdivision is required.
2. Include certificate for designated city official signatures on all final plats

1. This final plat is not in accordance with the preliminary plat, but generally, the drainage plan does conform to the accepted drainage study.

2. callout/show private drainage easements for proposed SD lines. drainage infrastructure cannot be lumped into a general utility easement.

*** OWNER'S CERTIFICATION ***

STATE OF TEXAS §

COUNTY OF DENTON §

WHEREAS SANGER TEXAS INDUSTRIAL, LLC, is the sole owners of a 14.2225 acre tract of land located in the Jose Maria Ruiz Survey, Abstract No. 1066, City of Sanger, Denton County, Texas, said 14.2225 acre tract of land being a portion of a called 211.36 acre tract of land conveyed to **SANGER TEXAS INDUSTRIAL, LLC,** by deed thereof filed for record in Denton County Clerk's Instrument Number (D.C.C.I.No.) 2022-122553, Official Public Records, Denton County, Texas (O.P.R.D.C.T.), said 14.2225 acre tract of land being more particularly described by metes and bounds as follows:

BEGINNING at an X-cut in concrete found at the northwest lot corner of Lot 2, Block A, Blue Star Industrial Addition, being an addition to the said City and State, according to the plat thereof filed for record in D.C.C.I. No. 20220525000223, O.P.R.D.C.T., said beginning point being on the common property line of the said 211.36 acre tract and a called 3.6810 acre tract of land conveyed to the State of Texas, by deed thereof filed for record in D.C.C.I. No. 2020-141152, O.P.R.D.C.T., said common property line being the east right-of-way line of Interstate Highway 35 (a variable width public right-of-way with state controlled access), said beginning point also being at the beginning of a curve to the left having a radius of 16,615.00 feet;

THENCE along the west property line of the said 211.36 acre tract, along the said east right-of-way line of Interstate Highway 35, and along said curve to the left, an arc length of 500.15 feet, and across a chord which bears North 01°41'55" East, a chord length of 500.13 feet to a 5/8-inch iron rod with a cap stamped "SPOONER 5922" set (hereinafter referred to as an iron rod set), from which a 5/8 inch iron rod with a 2-inch pink plastic cap stamped "TEXAS DEPARTMENT OF TRANSPORTATION" found at the north property corner of the said 3.6610 acre tract, same being a northwest property corner of the said 211.36 acre tract, bears North 00°45'55" West, a distance of 994.78 feet;

THENCE over and across the said 211.36 acre tract the following courses and distances:

South 89°37'16" East, a distance of 1,234.56 feet to an iron rod set;

South 00°22'44" West, a distance of 500.00 feet to a point for corner on an existing sanitary sewer manhole lid found at the northeast lot corner of said Lot 2;

THENCE North 89°37'16" West, along the north lot line of said Lot 2, a distance of 1,246.08 feet to the **POINT OF BEGINNING**, containing **14.2225 acres (619,533 square feet)** of land more or less.

NOW, THEREFORE KNOWN BY ALL MEN THESE PRESENTS:

THAT, I, _____, a duly authorized agent for SANGER TEXAS INDUSTRIAL, LLC hereby certify that SANGER TEXAS INDUSTRIAL, LLC, is the owner of Blue Star Industrial Addition, and do accept this as its plan for subdividing into lots and blocks and do hereby dedicate to the public forever the streets and easement shown hereon.

SANGER TEXAS INDUSTRIAL, LLC

By:_____

Printed Name: _____Date_____

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, the undersigned, a Notary Public in and for the said County and State, on this day personally appeared _____, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, on this the _____ day of_____, 2024.

_____
Notary Public, State of Texas

*** GENERAL NOTES ***

- The bearings shown hereon are referenced to the Texas Coordinate System of 1983, Texas North Central Zone 4202, and are based on the North American Datum of 1983, 2011 Adjustment. All areas shown hereon are calculated based on surface measurements.
- This survey was prepared without the benefit of a Title Commitment prepared by a title company. The easements shown hereon are the only easements known by Spooner & Associates and does not imply that any other easements, covenants, restrictions, or other matters of record do not affect the subject property. No other research was performed by Spooner & Associates, Inc.
- According to the Flood Insurance Rate Map published by the Federal Emergency Management Agency, Department of Homeland Security and by graphic plotting only, the subject property appears to be located in Zone "X" (areas determined to be outside the 0.2 % annual chance floodplain) as shown on Map No. 48121C0070G; map revised April 18, 2011, for Denton County and incorporated areas.
- All lots comply with the minimum size requirements of the zoning district.
- This property may be subject to change related to impact fee4s and the applicant should contact the City regarding any applicable fees due.
- All common areas, drainage easements, and detention facilities will be owned and maintained by the HOA/POA. Any common area within the City's right-of-way will require a facilities agreement, to be reviewed and approved by the City.
- Notice-selling a portion of this addition by metes and bounds is a violation of City Ordinance and State Law and is subject to fines and withholding of utilities and building permits.
- This plat does not alter or remove existing deed restrictions, if any, on this property.
- The purpose of this plat is to establish a new lot and easements for the development of the property.

OWNER:
SANGER TEXAS INDUSTRIAL, LLC
C/O BLUE STAR LAND LP
1 COWBOYS WAY
FRISCO, TEXAS 75034

ENGINEER
ANIMAS CIVIL ENGINEERING
PO BOX 830974
RICHARDSON, TX 75083
(214) 803-1099
ATTN: MICHAEL DOGGETT, P.E.

SURVEYOR
SPOONER AND ASSOCIATES, INC.
309 BYERS STREET, #100
EULESS, TEXAS 76039
(817) 685-8448
ATTN: ERIC SPOONER, RPLS

Approved for Preparation of Final Plat

_____ _____
City of Sanger, TX Date
Planning and Zoning

STATE OF TEXAS §

COUNTY OF TARRANT §

THAT, I, Eric S. Spooner, a Registered Professional Land Surveyor, in the State of Texas, do hereby certify that this plat is true and correct and was prepared from an actual survey of the property made on the ground under my supervision.

Surveyed on the ground during the month of October, 2024.

_____
Eric S. Spooner, R.P.L.S. Date
Texas Registration No. 5922

THIS DOCUMENT IS
PRELIMINARY
FOR REVIEW PURPOSES ONLY
ERIC S. SPOONER, R.P.L.S.
December 15, 2022

STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned, a Notary Public in and for the said County and State, on this day personally appeared ERIC S. SPOONER, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, on this the _____ day of _____, 2024.

_____
Notary Public, State of Texas

CITY OF SANGER
PROJECT NO. _____
FINAL PLAT

LOT 5, BLOCK A

BLUE STAR INDUSTRIAL ADDITION

BEING A PLAT OF A 14.2225 ACRE TRACT OF LAND LOCATED IN THE JOSE MARIA RUIZ SURVEY, ABSTRACT NO. 1066, CITY OF SANGER, DENTON COUNTY, TEXAS, SAID 14.2225 ACRE TRACT BEING A PORTION OF A CALLED 211.36 ACRE TRACT OF LAND CONVEYED TO SANGER TEXAS INDUSTRIAL, LLC, BY DEED THEREOF FILED FOR RECORD IN DENTON COUNTY CLERK'S INSTRUMENT NO. 2022-122553, O.P.R.D.C.T.

1 INDUSTRIAL LOT
14.2225 ACRES ~ ZONED I-1
December 2024

County Clerk's Recording Box

CONSTRUCTION PLANS
FOR
BLUE STAR INDUSTRIAL BLDG. L
LOT 5R, BLOCK A, BLUE STAR ADDITION

INTERSTATE HIGHWAY 35
THE TOWN OF SANGER
DENTON COUNTY, TEXAS

Stormwater Comments
12/20/2024
Erin Storey
estorey@halff.com

1. The final plat is not in accordance with the preliminary plat, but generally, the drainage plan does conform to the accepted drainage study.
2. confirm detention facility is online and functioning as intended, else provide an interim drainage plan/study

VICINITY MAP
N.T.S.

see comment on page number on the sheet

Sheet List Table	
Sheet Number	Sheet Title
C-1.00	COVER SHEET
C-1.01	KEYMAP
C-1.02	FINAL PLAT
C-2.01	PAVING AND DIMENSION CONTROL PLAN
C-2.02	PAVING AND DIMENSION CONTROL PLAN
C-3.01	GRADING PLAN
C-3.02	GRADING PLAN
C-4.01	DRAINAGE AREA MAP
C-5.01	STORM PLAN
C-5.02	STORM PLAN
C-5.03	STORM PROFILES
C-5.04	STORM PROFILES
C-5.05	STORM PROFILES
C-5.06	DRAINAGE CALCULATIONS
C-6.01	UTILITY PLAN
C-6.02	UTILITY PLAN
C-7.01	EROSION CONTROL PLAN
C-8.01	EROSION CONTROL DETAILS
C-8.02	PAVING DETAILS
C-8.03	DRAINAGE DETAILS
C-8.04	DRAINAGE DETAILS
C-8.05	UTILITY DETAILS
C-8.06	UTILITY DETAILS
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE PLAN
L-3	LANDSCAPE PLAN
L-4	PLANTING DETAILS
L-5	PLANTING SPECS
L-6	TURF SPECS

ARCHITECT:
COLT MALLOY, ASSOC. AIA,
PROJECT MANAGER
CORE ARCHITECTS
(479) 903-7417
CDMALLOY@CORE-ARCH.COM

DEVELOPER:
JOE HICKMAN
SANGER TEXAS INDUSTRIAL, LLC
c/o BLUE STAR LAND, LP
1 COWBOYS WAY
FRISCO, TX 75034
(214) 437-3651
JOEHICKMAN@DALLASCOWBOYS.NET

ENGINEER:
ANIMAS CIVIL ENGINEERING, LLC.
MICHAEL DOGGETT, P.E.
P.O. BOX 830974
RICHARDSON, TEXAS 75083
(214) 803-1099
Michael@AnimasCivil.com

CIVIL ENGINEERING

DECEMBER 2024

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT 98628 LICENSED PROFESSIONAL ENGINEER
12/7/2024

ANIMAS CIVIL ENGINEERING

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
COVER SHEET

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-1.00

C:\Users\mdoggt\OneDrive\Documents\Projects\01101-Blue Star Industrial Sanger\CAD\Plan Sheets\KeyMap.dwg

Saturday, December 7, 2024 2:48:07 PM

INTERSTATE HIGHWAY 35
(VARIABLE WIDTH PUBLIC R.O.W.)

MAG NAIL FND W/ SHINER

NORTEX FIBER

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

MATCH LINE A-A

CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

VICINITY MAP
N.T.S.

N
W E
S

0 50' 100'
GRAPHIC SCALE 50'

BUILDING 'L'
290,940 S.F.
155 CAR SPACES
62 TRUCK SPACES

LOT 5
14.22 ACRES

FIBER MARKER
800-395-0440
(NO COMPANY
STATED)

FIBER VAULT

FOR LEASE SIGN

DO NOT CROSS DOUBLE LINE SIGN

X-OUT FND

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

18" RCP

27" RCP

8" PVC

42" RCP

ELEC VAULT

FIBER VAULT

WATER UTILITY

FIRE DEPT CONN

FIRE PUMP TEST HEADER

PUMP ROOM

ELEC ROOM

INDUSTRIAL BUILDING
F.F.E. = 715.4'

LOT 2, BLOCK A
BLUE STAR INDUSTRIAL ADDITION
INS. NO. 20220525000223, O.P.R.D.C.T.

CALLED 1.6470 ACRES
STATE OF TEXAS
INS. NO. 2022-170941,
O.P.R.D.C.T.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR
INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
KEYMAP

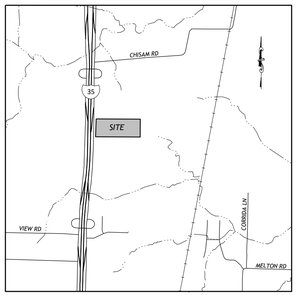
ACE PROJECT:
01101

DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

SHEET NUMBER
C-1.01



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STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

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STATE OF TEXAS
INS. NO. 2022-170941,
O.P.R.D.C.T.

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SANGER TEXAS INDUSTRIAL, LLC
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O.P.R.D.C.T.

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SANGER TEXAS INDUSTRIAL, LLC
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O.P.R.D.C.T.

JOSE MARIA RUIZ SURVEY
ABSTRACT NO. 1066

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EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

APPROX. SURVEY LINE

BENJAMIN F. LYNCH SURVEY
ABSTRACT NO. 725

LOT 2, BLOCK A
BLUE STAR INDUSTRIAL ADDITION
INS. NO. 20220525000223, O.P.R.D.C.T.

1. This final plat is not in accordance with the preliminary plat, but generally, the drainage plan does conform to the accepted drainage study.

2. callout/show private drainage easements for proposed SD lines. drainage infrastructure cannot be lumped into a general utility easement.

1. The name, address and phone number of all utilities providing service to the development is required. A signature from each provider or a will-serve letter, signifying their ability to provide service to the subdivision is required.
2. Include certificate for designated city official signatures on all final plats

*** OWNER'S CERTIFICATION ***

STATE OF TEXAS §

COUNTY OF DENTON §

WHEREAS SANGER TEXAS INDUSTRIAL, LLC, is the sole owners of a 14.2225 acre tract of land located in the Jose Maria Ruiz Survey, Abstract No. 1066, City of Sanger, Denton County, Texas, said 14.2225 acre tract of land being a portion of a called 211.36 acre tract of land conveyed to **SANGER TEXAS INDUSTRIAL, LLC,** by deed thereof filed for record in Denton County Clerk's Instrument Number (D.C.C.I.No.) 2022-122553, Official Public Records, Denton County, Texas (O.P.R.D.C.T.), said 14.2225 acre tract of land being more particularly described by metes and bounds as follows:

BEGINNING at an X-cut in concrete found at the northwest lot corner of Lot 2, Block A, Blue Star Industrial Addition, being an addition to the said City and State, according to the plat thereof filed for record in D.C.C.I. No. 20220525000223, O.P.R.D.C.T., said beginning point being on the common property line of the said 211.36 acre tract and a called 3.6810 acre tract of land conveyed to the State of Texas, by deed thereof filed for record in D.C.C.I. No. 2020-141152, O.P.R.D.C.T., said common property line being the east right-of-way line of Interstate Highway 35 (a variable width public right-of-way with state controlled access), said beginning point also being at the beginning of a curve to the left having a radius of 16,615.00 feet;

THENCE along the west property line of the said 211.36 acre tract, along the said east right-of-way line of Interstate Highway 35, and along said curve to the left, an arc length of 500.15 feet, and across a chord which bears North 01°41'55" East, a chord length of 500.13 feet to a 5/8-inch iron rod with a cap stamped "SPOONER 5922" set (hereinafter referred to as an iron rod set), from which a 5/8 inch iron rod with a 2-inch pink plastic cap stamped "TEXAS DEPARTMENT OF TRANSPORTATION" found at the north property corner of the said 3.6610 acre tract, same being a northwest property corner of the said 211.36 acre tract, bears North 00°45'55" West, a distance of 994.78 feet;

THENCE over and across the said 211.36 acre tract the following courses and distances:

South 89°37'16" East, a distance of 1,234.56 feet to an iron rod set;

South 00°22'44" West, a distance of 500.00 feet to a point for corner on an existing sanitary sewer manhole lid found at the northeast lot corner of said Lot 2;

THENCE North 89°37'16" West, along the north lot line of said Lot 2, a distance of 1,246.08 feet to the **POINT OF BEGINNING**, containing **14.2225 acres (619,533 square feet)** of land more or less.

NOW, THEREFORE KNOWN BY ALL MEN THESE PRESENTS:

THAT, I, _____, a duly authorized agent for SANGER TEXAS INDUSTRIAL, LLC hereby certify that SANGER TEXAS INDUSTRIAL, LLC, is the owner of Blue Star Industrial Addition, and do accept this as its plan for subdividing into lots and blocks and do hereby dedicate to the public forever the streets and easement shown hereon.

SANGER TEXAS INDUSTRIAL, LLC

By:_____

Printed Name: _____Date_____

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, the undersigned, a Notary Public in and for the said County and State, on this day personally appeared _____, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, on this the _____ day of_____, 2024.

_____
Notary Public, State of Texas

*** GENERAL NOTES ***

- The bearings shown hereon are referenced to the Texas Coordinate System of 1983, Texas North Central Zone 4202, and are based on the North American Datum of 1983, 2011 Adjustment. All areas shown hereon are calculated based on surface measurements.
- This survey was prepared without the benefit of a Title Commitment prepared by a title company. The easements shown hereon are the only easements known by Spooner & Associates and does not imply that any other easements, covenants, restrictions, or other matters of record do not affect the subject property. No other research was performed by Spooner & Associates, Inc.
- According to the Flood Insurance Rate Map published by the Federal Emergency Management Agency, Department of Homeland Security and by graphic plotting only, the subject property appears to be located in Zone "X" (areas determined to be outside the 0.2 % annual chance floodplain) as shown on Map No. 48121C0070G; map revised April 18, 2011, for Denton County and incorporated areas.
- All lots comply with the minimum size requirements of the zoning district.
- This property may be subject to change related to impact fee4s and the applicant should contact the City regarding any applicable fees due.
- All common areas, drainage easements, and detention facilities will be owned and maintained by the HOA/POA. Any common area within the City's right-of-way will require a facilities agreement, to be reviewed and approved by the City.
- Notice-selling a portion of this addition by metes and bounds is a violation of City Ordinance and State Law and is subject to fines and withholding of utilities and building permits.
- This plat does not alter or remove existing deed restrictions, if any, on this property.
- The purpose of this plat is to establish a new lot and easements for the development of the property.

OWNER:
SANGER TEXAS INDUSTRIAL, LLC
C/O BLUE STAR LAND LP
1 COWBOYS WAY
FRISCO, TEXAS 75034

ENGINEER
ANIMAS CIVIL ENGINEERING
PO BOX 830974
RICHARDSON, TX 75083
(214) 803-1099
ATTN: MICHAEL DOGGETT, P.E.

SURVEYOR
SPOONER AND ASSOCIATES, INC.
309 BYERS STREET, #100
EULESS, TEXAS 76039
(817) 685-8448
ATTN: ERIC SPOONER, RPLS

Approved for Preparation of Final Plat

_____ _____
City of Sanger, TX Date
Planning and Zoning

STATE OF TEXAS §

COUNTY OF TARRANT §

THAT, I, Eric S. Spooner, a Registered Professional Land Surveyor, in the State of Texas, do hereby certify that this plat is true and correct and was prepared from an actual survey of the property made on the ground under my supervision.

Surveyed on the ground during the month of October, 2024.

_____
Eric S. Spooner, R.P.L.S. Date
Texas Registration No. 5922

THIS DOCUMENT IS
PRELIMINARY
FOR REVIEW PURPOSES ONLY
ERIC S. SPOONER, R.P.L.S.
December 15, 2022

STATE OF TEXAS §

COUNTY OF TARRANT §

BEFORE ME, the undersigned, a Notary Public in and for the said County and State, on this day personally appeared ERIC S. SPOONER, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purpose and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, on this the _____ day of _____, 2024.

_____
Notary Public, State of Texas

CITY OF SANGER
PROJECT NO. _____
FINAL PLAT

LOT 5, BLOCK A

BLUE STAR INDUSTRIAL ADDITION

BEING A PLAT OF A 14.2225 ACRE TRACT OF LAND LOCATED IN THE JOSE MARIA RUIZ SURVEY, ABSTRACT NO. 1066, CITY OF SANGER, DENTON COUNTY, TEXAS, SAID 14.2225 ACRE TRACT BEING A PORTION OF A CALLED 211.36 ACRE TRACT OF LAND CONVEYED TO SANGER TEXAS INDUSTRIAL, LLC, BY DEED THEREOF FILED FOR RECORD IN DENTON COUNTY CLERK'S INSTRUMENT NO. 2022-122553, O.P.R.D.C.T.

1 INDUSTRIAL LOT
14.2225 ACRES ~ ZONED I-1
December 2024

County Clerk's Recording Box

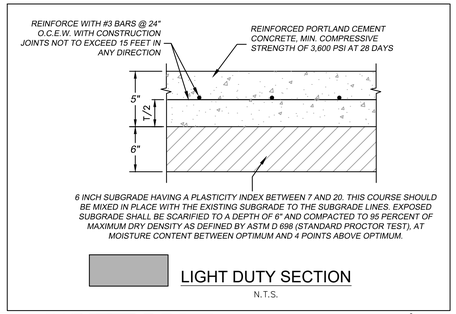
All steel reinforcing shall be deformed No. 4 bars on eighteen-inch (18") centers both ways per Ordinance § 10.106(b)(2)(B)(ii)

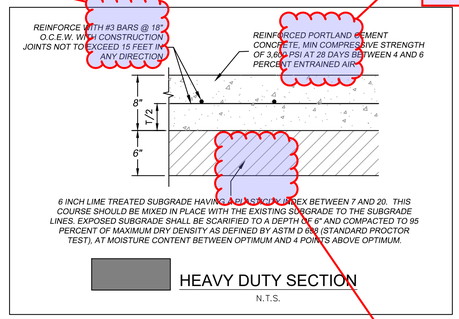
Collector streets and alleys shall, at a minimum, be designed and constructed with eight-inch (8") thickness of four thousand (4,000) p.s.i. reinforced concrete pavement on a compacted sub-base. All steel reinforcing shall be deformed No. 4 bars on eighteen-inch (18") centers both ways per Ordinance § 10.106(b)(2)(B)(ii)

Where the plasticity index of the soil is twelve (12) or greater, stabilization of the subbase with an eight-inch (8") thickness of six percent (6%) hydrated lime by weight will be required per Ordinance § 10.106(b)(2)(B)(iii)

Know what's **below.**
Call before you dig.

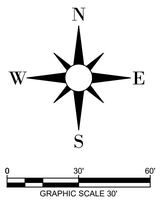
**THESE SECTIONS BELOW ARE SHOWN FOR REFERENCE ONLY. PAVEMENT DESIGN AND SOIL PREPARATION RECOMMENDATIONS BY RONE ENGINEERS (REPORT NO. 22-26269 DATED APRIL 2022) SHALL BE ADHERED TO FOR BOTH MATERIALS AND PRACTICE OF INSTALLATION*





LEGEND

- PROPERTY LINE
- SIDEWALK PAVEMENT
- ACCESSIBLE PARKING SYMBOL
- ACCESSIBLE ROUTE
- T — PROPOSED TRANSFORMER LOCATION
- 10 — NUMBER OF PARKING SPACES PER ROW
- EXISTING LIGHT POLE
- EXISTING FIRE HYDRANT
- EXISTING SAN. SWR. MANHOLE
- WATER METER
- FH — FIRE HYDRANT
- FDC — FIRE DEPARTMENT CONNECTION
- S — SANITARY SEWER MANHOLE
- EXISTING SIGN
- TYP. — TYPICAL



NOTES

1. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING FOOT PRINT DIMENSIONS.
2. ALL DIMENSIONS ARE FROM THE FACE OF CURB , FACE OF BUILDING, OR PROPERTY LINE UNLESS NOTED OTHERWISE.
3. ALL CURB RADII ARE 2' UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND FINAL GEOTECH REPORT FOR BUILDING SUB GRADE PREPARATION REQUIREMENTS.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR DUMPSTER ENCLOSURE CONSTRUCTION SPECIFICATIONS.
6. CONTRACTOR SHALL REFER TO M.E.P. AND LANDSCAPE PLANS FOR CONDUIT PLACEMENT PRIOR TO PAVING.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

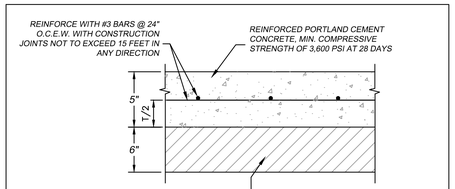
ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
PAVING AND DIMENSION CONTROL PLAN

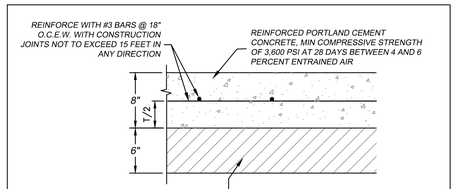
ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-2.01



6 INCH SUBGRADE HAVING A PLASTICITY INDEX BETWEEN 7 AND 20. THIS COURSE SHOULD BE MIXED IN PLACE WITH THE EXISTING SUBGRADE TO THE SUBGRADE LINES. EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6" AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY AS DEFINED BY ASTM D 698 (STANDARD PROCTOR TEST), AT MOISTURE CONTENT BETWEEN OPTIMUM AND 4 POINTS ABOVE OPTIMUM.

LIGHT DUTY SECTION

N.T.S.



6 INCH LIME TREATED SUBGRADE HAVING A PLASTICITY INDEX BETWEEN 7 AND 20. THIS COURSE SHOULD BE MIXED IN PLACE WITH THE EXISTING SUBGRADE TO THE SUBGRADE LINES. EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6" AND COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY AS DEFINED BY ASTM D 698 (STANDARD PROCTOR TEST), AT MOISTURE CONTENT BETWEEN OPTIMUM AND 4 POINTS ABOVE OPTIMUM.

HEAVY DUTY SECTION

N.T.S.

*THESE SECTIONS BELOW ARE SHOWN FOR REFERENCE ONLY. PAVEMENT DESIGN AND SOIL PREPARATION RECOMMENDATIONS BY RONE ENGINEERS (REPORT NO. 22-26269 DATED APRIL 2022) SHALL BE ADHERED TO FOR BOTH MATERIALS AND PRACTICE OF INSTALLATION

NOTES

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2. ALL DIMENSIONS ARE FROM THE FACE OF CURB , FACE OF BUILDING, OR PROPERTY LINE UNLESS NOTED OTHERWISE.
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LEGEND

- PROPERTY LINE
- SIDEWALK PAVEMENT
- ACCESSIBLE PARKING SYMBOL
- ACCESSIBLE ROUTE
- T — PROPOSED TRANSFORMER LOCATION
- 10 — NUMBER OF PARKING SPACES PER ROW
- EXISTING LIGHT POLE
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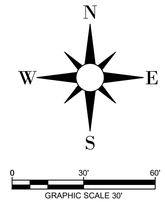
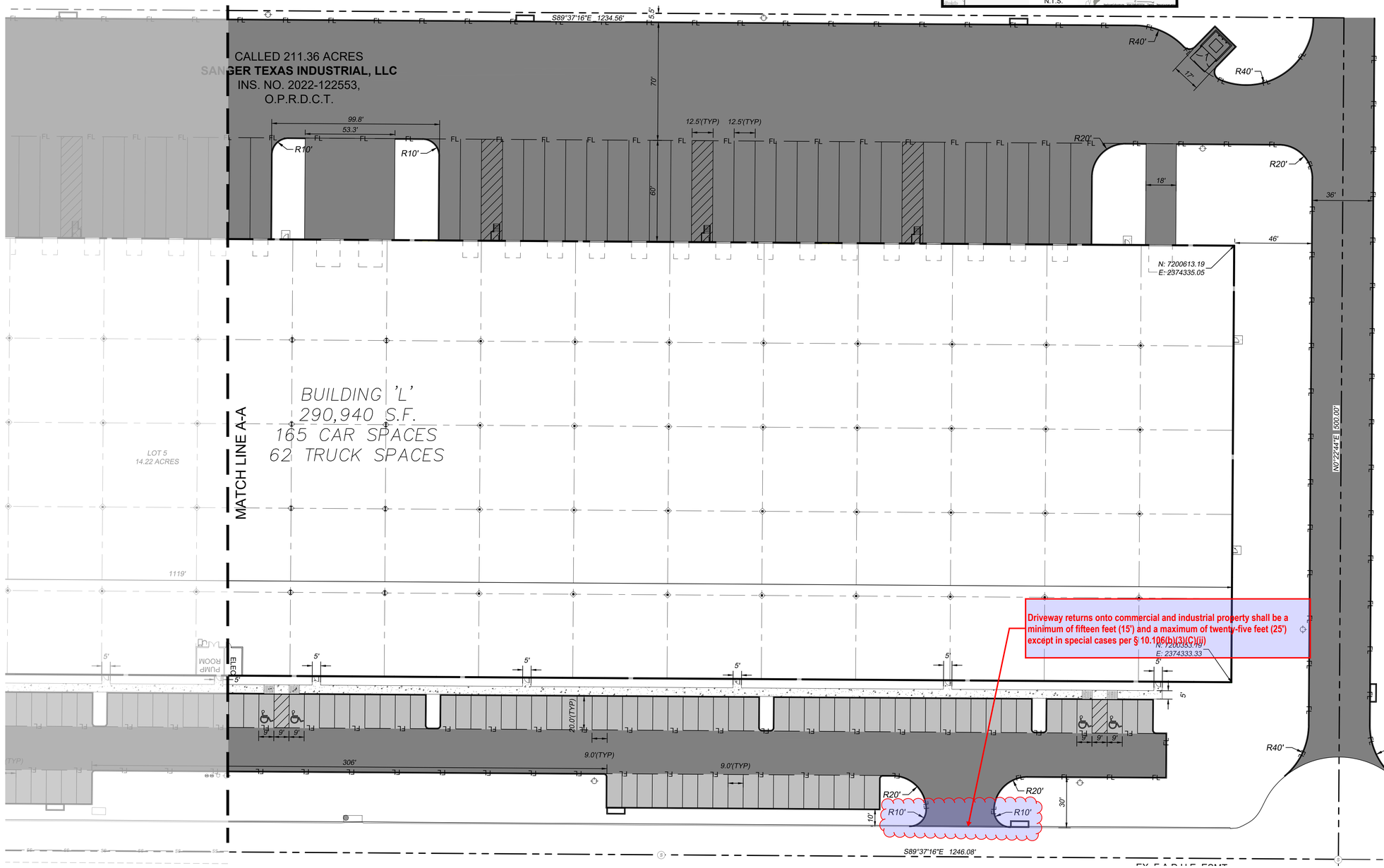
- WATER METER
- FH — FIRE HYDRANT
- FDC — FIRE DEPARTMENT CONNECTION
- S — SANITARY SEWER MANHOLE
- EXISTING SIGN
- TYP. — TYPICAL

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





Driveway returns onto commercial and industrial property shall be a minimum of fifteen feet (15') and a maximum of twenty-five feet (25') except in special cases per § 10.106(b)(3)(C)(ii)

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
PAVING AND DIMENSION CONTROL PLAN

ACE PROJECT: 01101

DATE: DECEMBER 2024

SCALE: AS SHOWN

DRAWN BY: MD

SHEET NUMBER: C-2.02

1. Provide offsite flow arrows

Is there an agreement for the offsite grading?

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

GRADING NOTES

1. SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR SUBGRADE PREPARATIONS SPECIFICATIONS FOR ALL PROPOSED BUILDINGS.
3. ALL FILL MATERIAL SHALL BE COMPACTED PER GEOTECH RECOMMENDATION. REFER TO PAVING SECTION DETAILS FOR SUBGRADE PREPARATION REQUIREMENTS UNDER ALL PAVED AREAS. (REFER TO GEOTECH REPORT)
4. CONTRACTOR SHALL VERIFY ALL SIDEWALKS HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%. IF THE CONTRACTOR IDENTIFIES SLOPES GREATER, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO CONSTRUCTION.
5. SPOT ELEVATIONS IDENTIFIED AS "MATCH EXISTING" SHALL BE FIELD VERIFIED. CONTRACTOR SHALL NOTIFY CIVIL ENGINEERING CONSULTANT (CEC) OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH GRADING ACTIVITIES.

LEGEND

	PROPERTY LINE
475	PROPOSED CONTOUR
475	EXISTING CONTOUR
TC	PROPOSED TOP OF CURB ELEVATION
TP	PROPOSED TOP OF PAVEMENT ELEVATION
ME	MATCH EXISTING

0 ACRES
TEXAS
-141152,
C.T.

CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

BUILDING 'L'
290,940 S.F.
165 CAR SPACES
62 TRUCK SPACES

LOT 5
14.22 ACRES

FF: 715.00

MATCH LINE A-A

ELEC. VAULT

NORTEX FIBER

FIBER VAULT

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

NO.	REVISIONS	DATE	BY

PROJECT NAME:
BLUE STAR
INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
GRADING PLAN

ACE PROJECT:
01101

DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

SHEET NUMBER
C-3.01

1. Provide offsite flow arrows

CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

BUILDING 'L'
290,940 S.F.
165 CAR SPACES
62 TRUCK SPACES

LOT 5
14.22 ACRES

MATCH LINE A-A

FF: 715.00

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

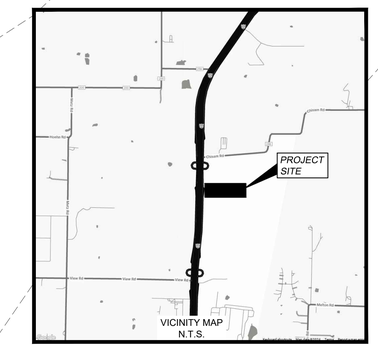
EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

WATER UTILITY

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

N
W E
S

0 30' 60'
GRAPHIC SCALE 30'



VICINITY MAP
N.T.S.

LEGEND

	PROPERTY LINE
475	PROPOSED CONTOUR
475	EXISTING CONTOUR
TC	PROPOSED TOP OF CURB ELEVATION
TP	PROPOSED TOP OF PAVEMENT ELEVATION
ME	MATCH EXISTING

GRADING NOTES

1. SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
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a previous plan review associated with the pond and Lot 2 called for rip rap at the confluence of these channels.
1. confirm rip rap has been installed
2. provide additional rip rap as needed for this project if existing rip rap is not adequate. ~100 cfs at 6fps or greater is expected to discharge here, please protect.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
GRADING PLAN

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-3.02

1. please provide 5, 10, 25, and 100 yr calcs
2. intensity from 2020 iSWM hydrology manual? please note source. to be consistent with accepted drainage study, use intensity data in from accepted study (2014 iSWM hydrology manual).
3. see comments related to surcharge for circled inlets

DRAINAGE AREA TABLE

DRAINAGE AREA NO.	AREA (ac)	RUNOFF COEFFICIENT "C"	RAINFALL INTENSITY "I" 100 (in/hr)	TIME OF CONCENTRATION (minutes)	TOTAL FLOW Q100 (cfs)	COLLECTION POINT
A1	0.27	0.90	9.58	10.0	2.3	CURB INLET
A2	0.70	0.90	9.58	10.0	6.0	CURB INLET
A3	0.55	0.90	9.58	10.0	4.7	CURB INLET
A4	0.68	0.90	9.58	10.0	5.8	CURB INLET
A5	0.45	0.90	9.58	10.0	3.9	CURB INLET
B1	0.81	0.90	9.58	10.0	7.0	CURB INLET
B2	0.80	0.90	9.58	10.0	6.9	CURB INLET
B3	0.87	0.90	9.58	10.0	7.5	CURB INLET
B4	0.87	0.90	9.58	10.0	7.5	CURB INLET
B5	0.93	0.90	9.58	10.0	8.0	CURB INLET
OFF-1	0.25	0.90	9.58	10.0	2.2	EX. SWALE
OFF-2	1.48	0.90	9.58	10.0	12.8	AREA B5
RD-1	1.67	0.90	9.58	10.0	14.4	ROOF DRAIN
RD-2	1.67	0.90	9.58	10.0	14.4	ROOF DRAIN
RD-3	1.67	0.90	9.58	10.0	14.4	ROOF DRAIN
RD-4	1.67	0.90	9.58	10.0	14.4	ROOF DRAIN

BASIN / AREA / FLOW
- BASIN NAME
- ACRES
- 100 YR FLOW (CFS)
- DRAINAGE AREA
- FLOW ARROW
- 425 — PROPOSED CONTOUR
- 425 — EXISTING CONTOUR
- PROPOSED STORM SEWER LINE
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER LINE
- PROPERTY LINE
- EXISTING STORM LINE

VICINITY MAP
N.T.S.

N W E S
0 50' 100'
GRAPHIC SCALE 50'

INTERSTATE HIGHWAY 35
(VARIABLE WIDTH PUBLIC R.O.W.)

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

CALLED 20.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

BUILDING 'L'
290,940 S.F.
185 CAR SPACES
62 TRUCK SPACES

LOT 5
14.22 ACRES

4003
714.563
GCP

4001
705.490
GCP

4000
714.136
GCP

4004
714.364
GCP

4005
721.044
GCP

B5 0.93 ac 8.0 cfs
B4 0.87 ac 7.5 cfs
B3 0.87 ac 7.5 cfs
B2 0.80 ac 6.9 cfs
B1 0.81 ac 7.0 cfs
A5 0.45 ac 3.9 cfs
A4 0.68 ac 5.8 cfs
A3 0.55 ac 4.7 cfs
A2 0.70 ac 6.0 cfs
A1 0.27 ac 2.3 cfs
OFF-1 0.25 ac 2.2 cfs
OFF-2 1.48 ac 12.8 cfs
RD-1 1.67 ac 14.4 cfs
RD-2 1.67 ac 14.4 cfs
RD-3 1.67 ac 14.4 cfs
RD-4 1.67 ac 14.4 cfs

FOR LEASE SIGN
DO NOT CROSS DOUBLE LINE SIGN
INDUSTRIAL BUILDING
FIRE DEPT CONN
LOT 2, BLOCK A

This area appears to be flowing offsite, please verify and revise drainage areas according

C-4.01 per cover index

Saturday, December 7, 2024 2:49:23 PM

NO.	BY	DATE	REVISIONS

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
DRAINAGE AREA MAP

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-6.01

water out of the inlet per calcs.
Confirm this surcharge does not overflow to adjacent lot. else revise SD to remove surcharge.

1. is the GV included in any lowering?
2. recommend adding a junction/manhole for access at least every 500'
3. show min 10' private DE on all proposed SD and show on plat.

Minimum pipe size for 10 foot curb inlets is 21" per § 10.106(d)(5)(C)

Please upsize laterals to 21" per § 10.106(d)(5)(C)

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

CALLED 211.36 ACRE
SANGER TEXAS INDUSTRI
INS. NO. 2022-12255
O.P.R.D.C.T.

LOT 5
14.22 ACRES

MATCH LINE A-A

STA: 14+23.07 SD LINE B
INSTALL:
10' CURB INLET
TC: 708.99
FL 30" OUT: 703.99
N: 7200750.04
E: 2373375.22

STA: 0+14.64 SD LAT B-4
INSTALL:
10' CURB INLET
TC: 708.74
FL 24" OUT: 703.74
N: 7200748.28
E: 2373642.04

STA: 14+08.43 SD LINE B
INSTALL:
45° BEND
FL 30": 703.95
N: 7200739.47
E: 2373385.15

STA: 11+46.61 SD LINE B
PIPE SIZE CHANGE
FL 30": 703.27
FL 42": 702.27
N: 7200737.74
E: 2373646.97

STA: 11+41.61 SD LINE B
STA: 0+00.00 SD LAT B-4
INSTALL:
45° WYE
FL 42": 702.25
FL 24": 703.00
N: 7200737.71
E: 2373651.97

STA: 15+13.01 SD LINE A
INSTALL:
CURB INLET
TC: 713.10
FL 18" OUT: 709.10
N: 7200531.36
E: 2373202.37

STA: 14+95.05 SD LINE A
INSTALL:
45° BEND
FL 18": 708.98
N: 7200519.10
E: 2373189.44

STA: 12+98.21 SD LINE A
INSTALL:
45° BEND
FL 18": 707.70
N: 7200322.27
E: 2373188.14

STA: 12+84.07 SD LINE A
INSTALL:
45° BEND
FL 18": 707.61
N: 7200312.20
E: 2373198.07

STA: 10+72.40 SD LINE A
STA: 0+00.00 SD LAT A-4
INSTALL:
45° WYE
FL 24": 705.74
FL 18": 705.98
N: 7200310.80
E: 2373409.73

STA: 10+77.40 SD LINE A
PIPE SIZE CHANGE
FL 18": 706.27
FL 24": 705.77
N: 7200310.80
E: 2373404.73

STA: 8+19.59 SD LINE A
STA: 0+00.00 SD LAT A-3
INSTALL:
45° WYE
FL 24": 704.09
FL 18": 704.34
N: 7200309.13
E: 2373662.53

STA: 0+40.10 SD LAT A-4
INSTALL:
CURB INLET
TC: 713.42
FL 18" OUT: 707.42
N: 7200282.49
E: 2373381.54

STA: 0+40.10 SD LAT A-3
INSTALL:
CURB INLET
TC: 713.24
FL 18" OUT: 707.24
N: 7200280.82
E: 2373634.34

14+00 13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 15+00

30" RCP @ 0.26%
42" RCP @ 0.26%
15" RCP @ 0.65%
18" RCP @ 0.65%
24" RCP @ 0.65%
18" RCP @ 3.58%
18" RCP @ 7.23%

4003
714.563
GCP

4005
721.04
GCP

4004
714.364
GCP

FIBER MARKER
800-395-0440
(NO COMPANY
STATED)

NORTEX FIBER

FIBER VAULT

FOR LEASE SIGN

DO NOT CROSS

WATER UTILITY

ELEC VAULT

PUMP ROOM

BUILD
290,9
165 CAR
62 TRUC

Know what's **below.**
Call before you dig.

N W E S

0 30' 60'
GRAPHIC SCALE 30'

VICINITY MAP
N.T.S.

LEGEND

- PROPERTY LINE
- PROPOSED STORM LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED WATER LINE
- EXISTING STORM LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER LINE
- EXISTING SEWER LINE
- PROPOSED SANITARY SEWER MANHOLE (SS MH)
- PROPOSED FIRE HYDRANT (FH)
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- EXISTING FIRE HYDRANT
- EXISTING STORM MANHOLE
- EXISTING SAN. SWR. MANHOLE

STORM DRAINAGE NOTES:

1. *THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.*
2. *CONTRACTOR SHALL FIELD VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES IN FIELD PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.*
3. *STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:*
   A) RCP - ASTM C76 CLASS III - REQUIRED IN PUBLIC RIGHT OF WAY AND AT CONNECTION POINTS TO PUBLIC STORM SEWER.
   B) HDPE - AASHTO M252 TYPE S , M294 TYPE S R ASTM F 2306 SMOOTH WALL
4. *ALL EXISTING AND PROPOSED PIPES AND STRUCTURES ARE TO BE CLEANED OUT AT THE COMPLETION OF CONSTRUCTION TO REMOVE ALL SILT AND DEBRIS.*
5. *ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.*
6. *ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".*
7. *ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.*

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
STORM PLAN

ACE PROJECT:
01101

DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

SHEET NUMBER
C-5.01

C:\Users\mdogg\OneDrive\Documents\Projects\01101-Blue Star Industrial Sanger\CAD\Plan Sheets\Storm Plan.dwg

Saturday, December 7, 2024 2:49:51 PM

1. recommend adding a junction/manhole for access at least every 500'
2. show min 10' private DE on all proposed SD and show on plat.

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

N W E S

0 30' 60'
GRAPHIC SCALE 30'

STA: 0+14.64 SD LAT B-3
INSTALL:
10' CURB INLET
TC: 708.90
FL 24" OUT: 703.90
N: 7200746.48
E: 2373913.49

STA: 0+14.64 SD LAT B-2
INSTALL:
10' CURB INLET
TC: 708.76
FL 24" OUT: 703.76
N: 7200744.54
E: 2374206.72

24" RCP @ 12.70%
42" RCP @ 0.26%
48" RCP @ 0.26%
24" RCP @ 16.92%
48" RCP @ 1.26%

STA: 8+75.16 SD LINE B
PIPE SIZE CHANGE
FL 42": 701.56
FL 48": 701.06
N: 7200735.95
E: 2373918.42

STA: 8+70.16 SD LINE B
STA: 0+00.00 SD LAT B-3
INSTALL:
45° WYE
FL 48": 701.04
FL 24": 702.04
N: 7200735.91
E: 2373923.42

STA: 5+00.95 SD LINE B
INSTALL:
45° BEND
FL 48": 700.08
N: 7200733.47
E: 2374292.62

STA: 5+76.92 SD LINE B
STA: 0+00.00 SD LAT B-2
INSTALL:
45° WYE
FL 48": 700.28
FL 24": 701.28
N: 7200733.98
E: 2374216.65

STA: 3+35.18 SD LINE B
INSTALL:
45° BEND
FL 48": 699.65
N: 7200615.48
E: 2374409.05

PROJECT SITE

VICINITY MAP
N.T.S.

4001
705.490
GCP

BUILDING 'L'
290,940 S.F.
165 CAR SPACES
62 TRUCK SPACES

LOT 5
14.22 ACRES

MATCH LINE A-A

LEGEND

- PROPERTY LINE
- PROPOSED STORM LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED WATER LINE
- EXISTING STORM LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER LINE
- EXISTING SEWER LINE
- PROPOSED SANITARY SEWER MANHOLE (SS MH)
- PROPOSED FIRE HYDRANT (FH)
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- EXISTING FIRE HYDRANT
- EXISTING STORM MANHOLE
- EXISTING SAN. SWR. MANHOLE

STORM DRAINAGE NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
2. CONTRACTOR SHALL FIELD VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES IN FIELD PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
3. STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
   A) RCP - ASTM C76 CLASS II - REQUIRED IN PUBLIC RIGHT OF WAY AND AT CONNECTION POINTS TO PUBLIC STORM SEWER.
   B) HDPE - AASHTO M252 TYPE S , M294 TYPE S R ASTM F 2306 SMOOTH WALL
4. ALL EXISTING AND PROPOSED PIPES AND STRUCTURES ARE TO
5. ALL TO
6. ALL FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
7. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.

Upsize laterals to minimum 21inch for 10 ft curb inlets

for areas outside the platted boundary a private DE by separate instrument must be recorded. DE should include any energy dissipation (rip rap) and extend min 25' beyond the rip rap.

STA: 4+86.44 SD LINE A
STA: 0+00.00 SD LAT A-2
INSTALL:
45° WYE
FL 24": 701.93
FL 18": 702.18
N: 7200306.93
E: 2373995.68

STA: 2+40.16 SD LINE A
STA: 0+00.00 SD LAT A-1
INSTALL:
45° WYE
FL 24": 700.33
FL 18": 700.58
N: 7200305.30
E: 2374241.95

STA: 1+59.87 SD LINE A
INSTALL:
45° BEND
FL 24": 699.81
N: 7200319.81
E: 2374316.13

STA: 0+14.76 SD LAT B-1
INSTALL:
CURB INLET
TC: 705.47
FL 18" OUT: 701.46
N: 7200347.13
E: 2374419.28

STA: 0+93.65 SD LINE B
INSTALL:
45° BEND
FL 48": 699.01
N: 7200373.96
E: 2374407.46

STA: 0+55.81 SD LINE B
STA: 0+00.00 SD LAT B-1
INSTALL:
45° WYE
FL 48": 698.92
FL 18": 700.17
N: 7200347.03
E: 2374434.04

SD LINE B
48" RCP @ 0.26%

SD LINE A
24" RCP @ 0.65%

STA: 1+81.08 SD LINE A
INSTALL:
45° BEND
FL 24": 699.95
N: 7200304.91
E: 2374301.03

STA: 0+21.21 SD LINE A
INSTALL:
45° BEND
FL 24": 698.91
N: 7200318.89
E: 2374454.78

STA: 0+00.00 SD LINE B
INSTALL:
DUAL HEADWALL
N: 7200307.30
E: 2374473.24

STA: 0+00.00 SD LINE A
INSTALL:
DUAL HEADWALL
N: 7200303.79
E: 2374469.68

STA: 0+40.10 SD LAT A-2
INSTALL:
CURB INLET
TC: 712.75
FL 18" OUT: 706.75
N: 7200278.61
E: 2373967.49

STA: 0+49.10 SD LAT A-1
INSTALL:
CURB INLET
TC: 711.75
FL 18" OUT: 707.75
N: 7200270.66
E: 2374207.35

18" RCP @ 11.40%
18" RCP @ 43.65%
24" RCP @ 0.65%
18" RCP @ 7.23%

water out of the inlet per calcs. Confirm this surcharge does not overflow to adjacent lot. else revise SD to remove surcharge. the surcharge here appears significant and could impact the southern parcel. please review carefully.

1. recommend adding a junction/manhole for access at least every 500'
2. show min 10' private DE on all proposed SD and show on plat.

4000
704.538
GCP

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

NO.	REVISIONS	DATE	BY

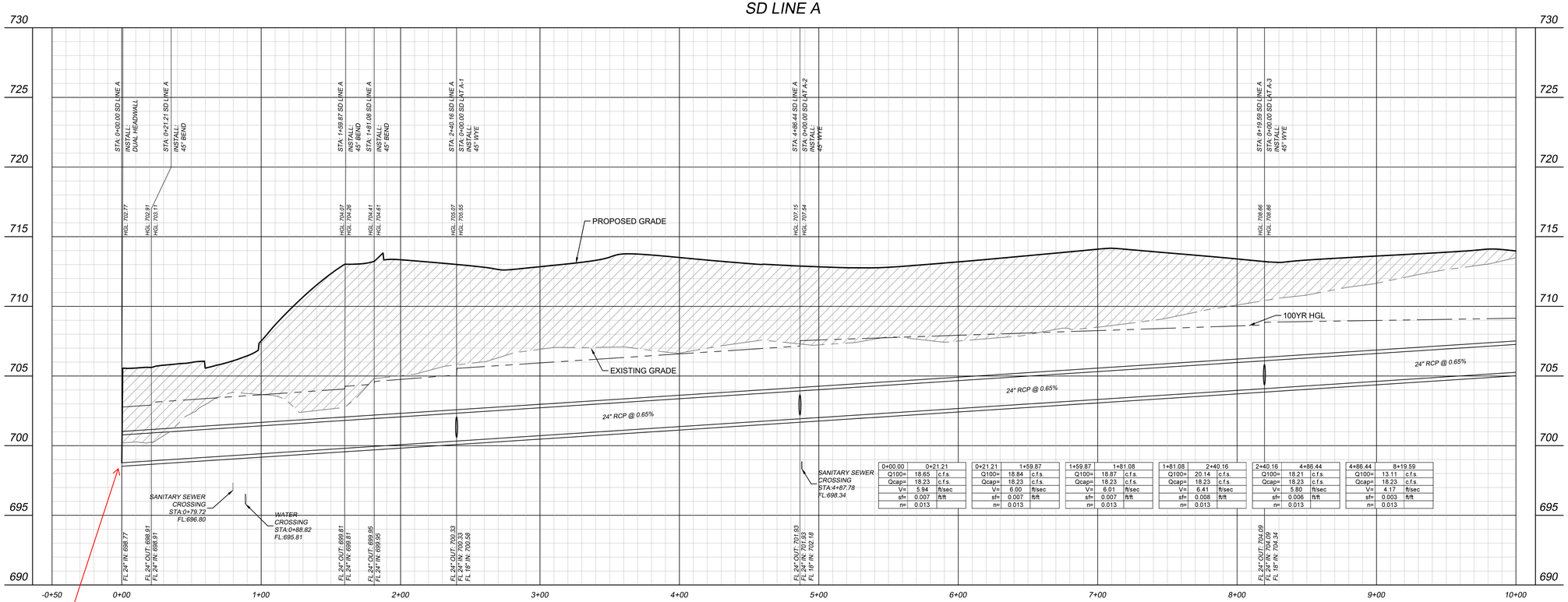
PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
STORM PLAN

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD

SHEET NUMBER
C-5.02

SD LINE A



0+00.00	0+21.21	
Q100=	18.65	c.f.s.
Qcap=	18.23	c.f.s.
V=	5.94	ft/sec
sf=	0.007	ft/ft
n=	0.013	

0+21.21	1+59.87	
Q100=	18.84	c.f.s.
Qcap=	18.23	c.f.s.
V=	6.00	ft/sec
sf=	0.007	ft/ft
n=	0.013	

1+59.87	1+81.08	
Q100=	18.87	c.f.s.
Qcap=	18.23	c.f.s.
V=	6.01	ft/sec
sf=	0.007	ft/ft
n=	0.013	

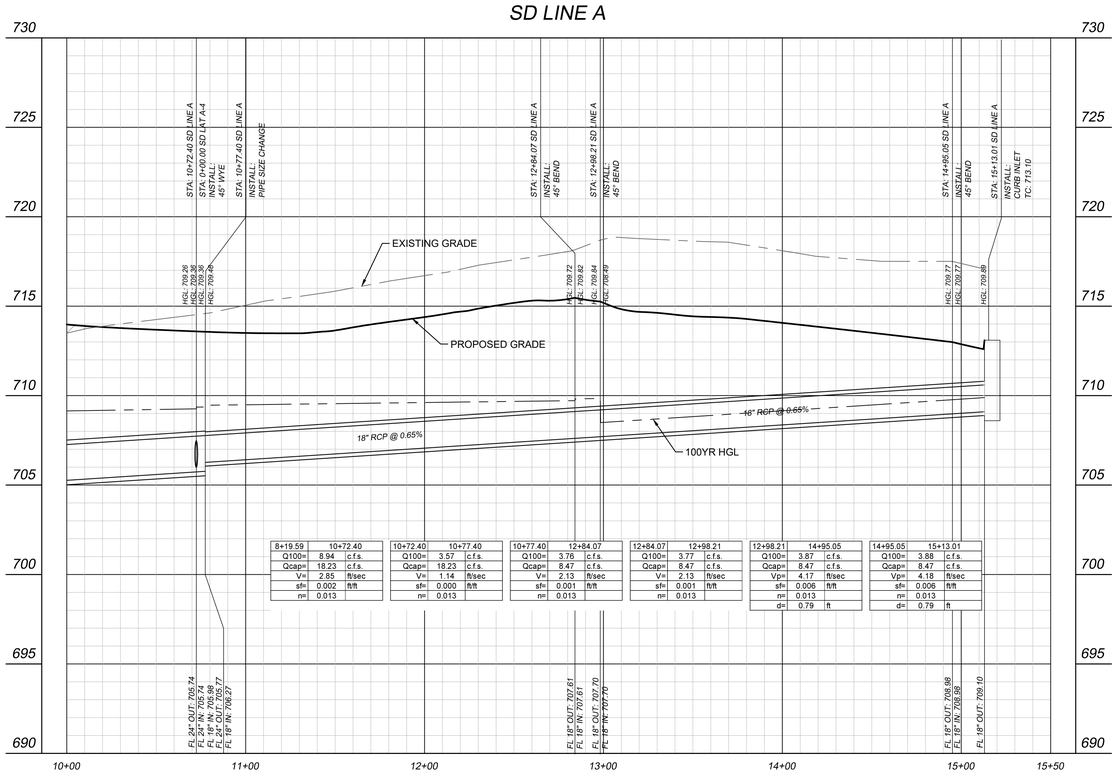
1+81.08	2+40.16	
Q100=	20.14	c.f.s.
Qcap=	18.23	c.f.s.
V=	6.41	ft/sec
sf=	0.008	ft/ft
n=	0.013	

2+40.16	4+86.44	
Q100=	18.21	c.f.s.
Qcap=	18.23	c.f.s.
V=	5.80	ft/sec
sf=	0.006	ft/ft
n=	0.013	

4+86.44	8+19.59	
Q100=	13.11	c.f.s.
Qcap=	18.23	c.f.s.
V=	4.17	ft/sec
sf=	0.003	ft/ft
n=	0.013	

1. show headwall and energy dissipation (rip rap)
2. provide rip rap calcs to support apron length, width, and thickness
3. note the source of the stating water surface elevation
4. label separation distances between SD and SS/W - all crossings

SD LINE A



8+19.59	10+72.40	
Q100=	8.94	c.f.s.
Qcap=	18.23	c.f.s.
V=	2.85	ft/sec
sf=	0.002	ft/ft
n=	0.013	

10+72.40	10+77.40	
Q100=	3.57	c.f.s.
Qcap=	18.23	c.f.s.
V=	1.14	ft/sec
sf=	0.000	ft/ft
n=	0.013	

10+77.40	12+84.07	
Q100=	3.76	c.f.s.
Qcap=	8.47	c.f.s.
V=	2.13	ft/sec
sf=	0.001	ft/ft
n=	0.013	

12+84.07	12+98.21	
Q100=	3.77	c.f.s.
Qcap=	8.47	c.f.s.
V=	2.13	ft/sec
sf=	0.001	ft/ft
n=	0.013	

12+98.21	14+95.05	
Q100=	3.87	c.f.s.
Qcap=	8.47	c.f.s.
Vp=	4.17	ft/sec
sf=	0.006	ft/ft
n=	0.013	
d=	0.79	ft

14+95.05	15+13.01	
Q100=	3.88	c.f.s.
Qcap=	8.47	c.f.s.
Vp=	4.18	ft/sec
sf=	0.006	ft/ft
n=	0.013	
d=	0.79	ft

PROFILE SCALE
1"=40' HORIZONTAL
1" = 4' VERTICAL

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
STORM PROFILES

ACE PROJECT:
01101

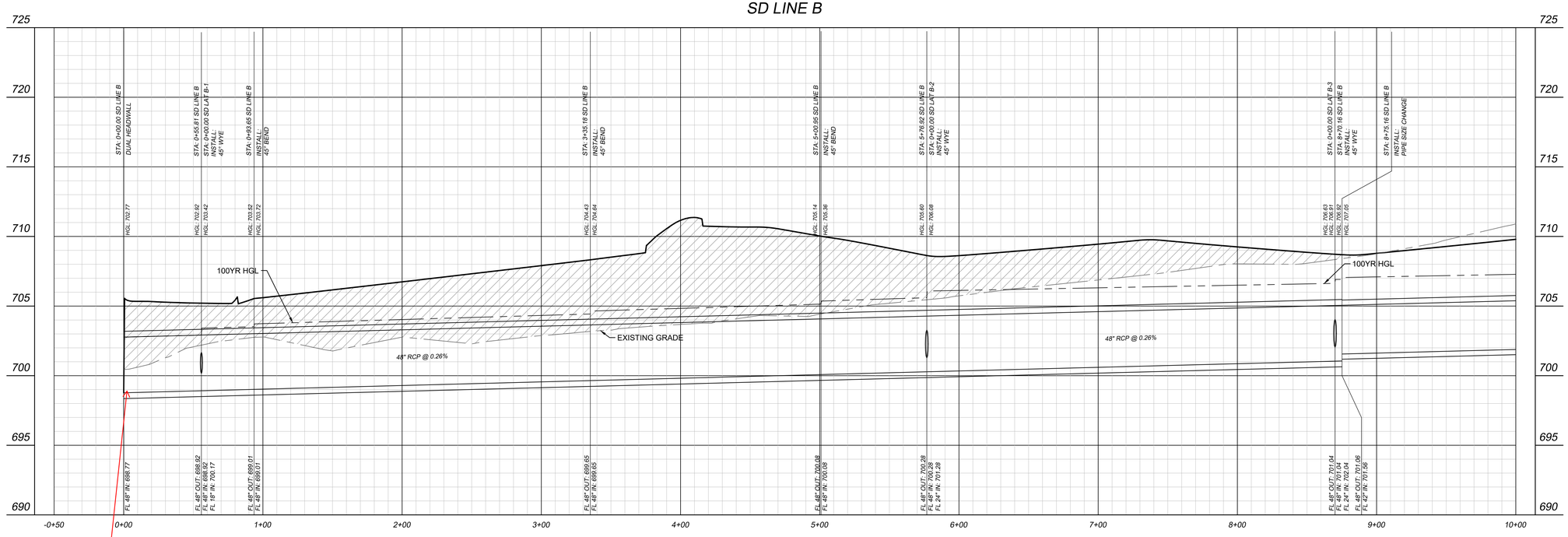
DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

SHEET NUMBER
C-5.03

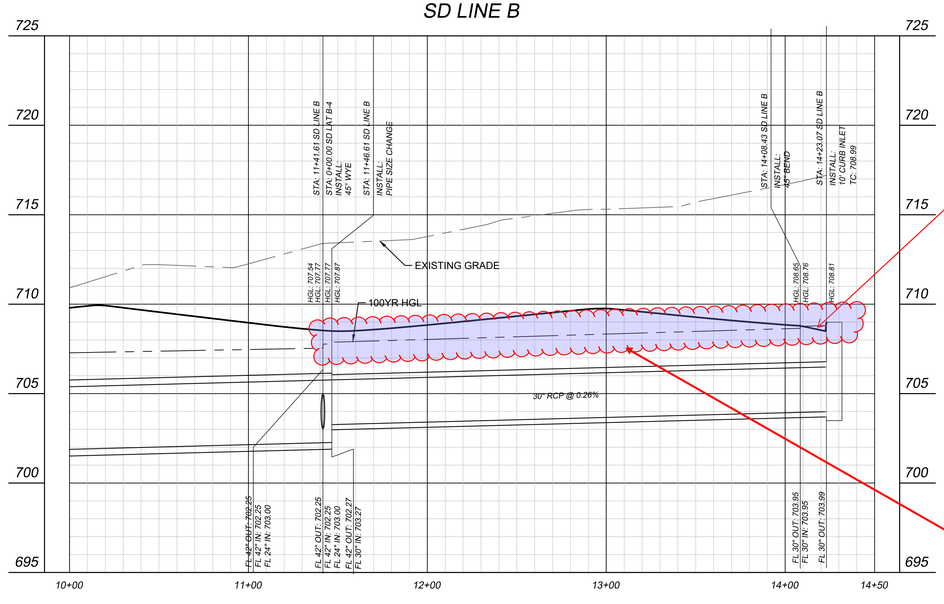
SD LINE B



0+00.00	0+55.81		0+55.81	0+93.65		0+93.65	3+35.18		3+35.18	5+00.95		5+00.95	5+76.92		5+76.92	8+70.16		8+70.16	8+75.16	
Q100=	82.42	c.f.s.	Q100=	76.35	c.f.s.	Q100=	77.80	c.f.s.	Q100=	78.83	c.f.s.	Q100=	81.19	c.f.s.	Q100=	61.89	c.f.s.	Q100=	41.43	c.f.s.
Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.	Qcap=	73.42	c.f.s.
Vact=	6.56	ft/sec	V=	6.08	ft/sec	V=	6.19	ft/sec	V=	6.27	ft/sec	V=	6.46	ft/sec	V=	4.93	ft/sec	V=	3.30	ft/sec
sf=	0.003	ft/ft	sf=	0.003	ft/ft	sf=	0.003	ft/ft	sf=	0.003	ft/ft	sf=	0.003	ft/ft	sf=	0.002	ft/ft	sf=	0.001	ft/ft
n=	0.013		n=	0.013		n=	0.013		n=	0.013		n=	0.013		n=	0.013		n=	0.013	
d=	4.00	ft																		

1. show headwall and energy dissipation (rip rap)
2. provide rip rap calcs to support apron length, width, and thickness
3. note the source of the stating water surface elevation
4. label separation distances between SD and SS/W - all crossings

SD LINE B



8+75.16	11+41.61		11+41.61	11+46.61		11+46.61	14+08.43		14+08.43	14+23.07	
Q100=	42.81	c.f.s.	Q100=	21.67	c.f.s.	Q100=	22.38	c.f.s.	Q100=	22.42	c.f.s.
Qcap=	51.43	c.f.s.	Qcap=	51.43	c.f.s.	Qcap=	20.97	c.f.s.	Qcap=	20.97	c.f.s.
V=	4.45	ft/sec	V=	2.25	ft/sec	V=	4.56	ft/sec	V=	4.57	ft/sec
sf=	0.002	ft/ft	sf=	0.000	ft/ft	sf=	0.003	ft/ft	sf=	0.003	ft/ft
n=	0.013		n=	0.013		n=	0.013		n=	0.013	

water out of the inlet?
Confirm this surcharge does not overflow to adjacent lot

The hydraulic grade line shall in no case be closer to the surface of the ground or street than one (1) foot per § 10.106(d)(6)(D)(ii). Please review and revise.

PROFILE SCALE
1"=40' HORIZONTAL
1" = 4' VERTICAL

BY	DATE	REVISIONS	NO.

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
STORM PROFILES

ACE PROJECT:
01101

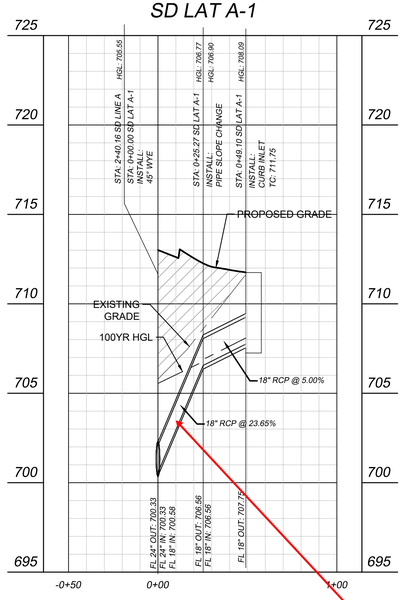
DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

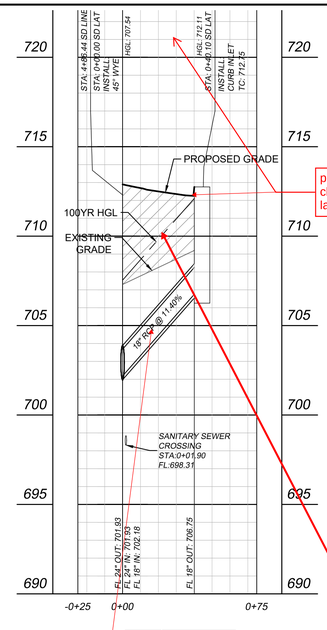
SHEET NUMBER
C-5.04

SD LAT A-1



0+00.00	0+25.27	
Q100=	2.32	c.f.s.
Qcap=	51.08	c.f.s.
Vp=	17.21	ft/sec
sf=	0.237	ft/ft
n=	0.013	
d=	0.21	ft

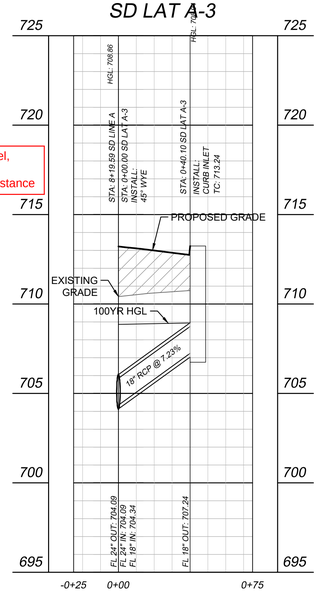
0+25.27	0+49.10	
Q100=	2.33	c.f.s.
Qcap=	23.49	c.f.s.
Vp=	8.08	ft/sec
sf=	0.050	ft/ft
n=	0.013	
d=	0.34	ft



provide profile label, check surcharge label separation distance

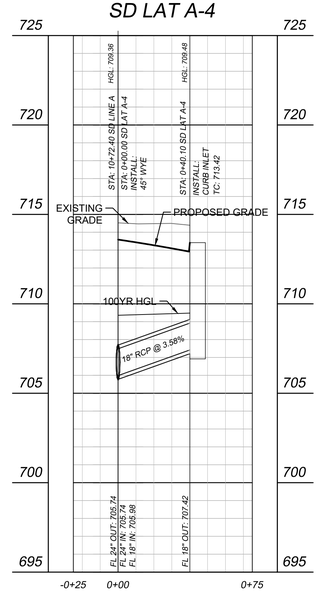
0+00.00	0+40.10	
Q100=	6.04	c.f.s.
Qcap=	35.47	c.f.s.
Vp=	12.38	ft/sec
sf=	0.114	ft/ft
n=	0.013	
d=	0.49	ft

SD LAT A-3



0+00.00	0+40.10	
Q100=	4.74	c.f.s.
Qcap=	28.24	c.f.s.
V=	2.68	ft/sec
sf=	0.002	ft/ft
n=	0.013	

SD LAT A-4

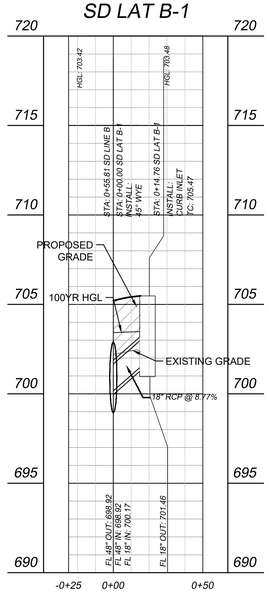


0+00.00	0+40.10	
Q100=	5.86	c.f.s.
Qcap=	19.88	c.f.s.
V=	3.32	ft/sec
sf=	0.003	ft/ft
n=	0.013	

Recommend deepening inlet slightly to reduce slopes and velocity to under 12fps

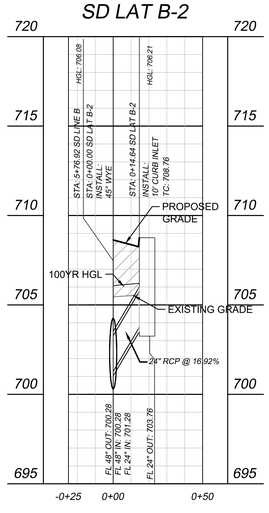
The hydraulic grade line shall in no case be closer to the surface of the ground or street than one (1) foot per § 10.106(d)(6)(D)(ii). Please review and revise.

SD LAT B-1



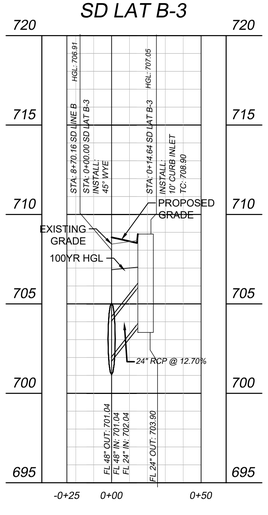
0+00.00	0+14.76	
Q100=	6.98	c.f.s.
Qcap=	31.11	c.f.s.
V=	3.95	ft/sec
sf=	0.004	ft/ft
n=	0.013	

SD LAT B-2



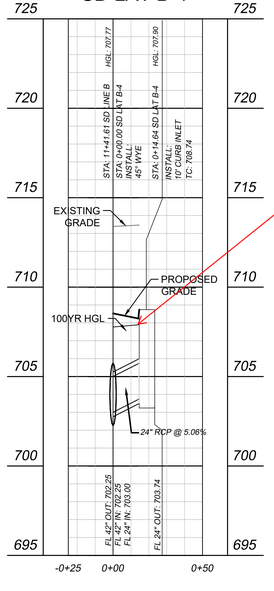
0+00.00	0+14.64	
Q100=	21.30	c.f.s.
Qcap=	93.05	c.f.s.
V=	6.78	ft/sec
sf=	0.009	ft/ft
n=	0.013	

SD LAT B-3



0+00.00	0+14.64	
Q100=	21.90	c.f.s.
Qcap=	80.62	c.f.s.
V=	6.97	ft/sec
sf=	0.009	ft/ft
n=	0.013	

SD LAT B-4



hgl not consistent with calcs. please review/revise.

0+00.00	0+14.64	
Q100=	21.90	c.f.s.
Qcap=	50.89	c.f.s.
V=	6.97	ft/sec
sf=	0.009	ft/ft
n=	0.013	

PROFILE SCALE
1"=40' HORIZONTAL
1" = 4' VERTICAL

NO.	DATE	BY	REVISIONS

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
STORM PROFILES

ACE PROJECT:
01101

DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

SHEET NUMBER
C-5.05

STORM DRAIN HYDRAULIC CALCULATIONS TABLE

FROM	TO	PIPE LENGTH	DRAINAGE AREA INCREMENTAL NO.	AREA	TOTAL AREA	RUNOFF COEFF. "C"	INCRE-MENTAL "CA"	TOTAL "CA"	TIME OF CONCENTRATION INLET (MIN.)	TRAVEL (MIN.)	TOTAL (MIN.)	5-YEAR INTENSITY (IN/HR)	100-YEAR INTENSITY (IN/HR)	Q5 RUNOFF (CFS)	Q100 RUNOFF (CFS)	INLET BYPASS (CFS)	Q PIPE (CFS)	PIPE SIZE (IN)	n	Sf (FT/FT)	HGL D/S Elev.	HGL U/S Elev.	HEADLOSS CALCULATIONS V1(IN) ft/sec	V2(OUT) ft/sec	V1^2/2g (FT)	V2^2/2g (FT)	Kj	KjV1^2/2G (FT)	Hk (FT)	DESIGN HGL Elev.	INVERT ELEV. FROM (FT)	INVERT ELEV. TO (FT)	T/C ELEV. (FT)	COMMENTS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
LINE A																																		
14+95.05	15+13.01	17.96	A5	0.450	0.450	0.90	0.405	0.405	10.00	0.00	10.00	5.71	9.58	2.31	3.88	0.00	3.88	18	0.013	0.0065	709.77	709.89	0.00	4.18	0.00	0.27	1.25	0.00	0.34	710.23	708.98	709.10	713.10	CURB INLET
12+98.21	14+95.05	196.84			0.450	0.90		0.405	10.00	0.07	10.07	5.69	9.56	-	-	0.00	3.87	18	0.013	0.0065	708.49	709.77	4.18	4.17	0.27	0.27	0.35	0.09	0.10	709.77	707.70	708.98	712.99	45° BEND
12+84.07	12+98.21	14.14			0.450	0.90		0.405	10.00	0.86	10.86	5.53	9.31	-	-	0.00	3.77	18	0.013	0.0013	709.82	709.84	4.17	2.13	0.27	0.07	0.35	0.09	0.10	708.49	707.61	707.70	715.26	45° BEND
10+77.40	12+84.07	206.67			0.450	0.90		0.405	10.00	0.97	10.97	5.51	9.27	-	-	0.00	3.76	18	0.013	0.0013	709.46	709.72	2.13	2.13	0.07	0.07	0.35	0.02	0.10	709.82	706.27	707.61	715.47	45° BEND
10+72.40	10+77.40	5.00			0.450	0.90		0.405	10.00	2.59	12.59	5.21	8.81	-	-	0.00	3.57	24	0.013	0.0002	709.36	709.36	2.13	1.14	0.07	0.02	0.10	0.01	0.10	709.46	705.74	705.77	713.57	PIPE SIZE CHANGE
8+19.59	10+72.40	252.81	A4	0.680	1.130	0.90	0.612	1.017	10.00	2.66	12.66	5.20	8.79	3.18	5.38	0.00	8.94	24	0.013	0.0016	708.86	709.26	1.14	2.85	0.02	0.13	0.75	0.02	0.10	709.36	704.09	705.74	713.59	45° WYE, LAT A4
4+86.44	8+19.59	333.15	A3	0.550	1.680	0.90	0.495	1.512	10.00	4.14	14.14	4.95	8.41	2.45	4.16	0.00	13.11	24	0.013	0.0034	707.54	708.66	2.85	4.17	0.13	0.27	0.75	0.09	0.20	708.86	701.93	704.09	713.22	45° WYE, LAT A3
2+40.16	4+86.44	246.28	A2	0.700	2.380	0.90	0.630	2.142	10.00	5.47	15.47	4.76	8.10	3.00	5.10	0.00	18.21	24	0.013	0.0065	705.55	707.15	4.17	5.80	0.27	0.52	0.75	0.20	0.39	707.54	700.33	701.93	712.89	45° WYE, LAT A2
1+81.08	2+40.16	59.08	A1	0.270	2.650	0.90	0.243	2.385	10.00	6.18	16.18	4.66	7.94	1.13	1.93	0.00	20.14	24	0.013	0.0079	704.61	705.07	5.80	6.41	0.52	0.64	0.75	0.39	0.48	705.55	699.95	700.33	713.01	45° WYE, LAT A1
1+59.87	1+81.08	21.21			2.650	0.90		2.385	10.00	6.34	16.34	4.64	7.91	-	-	0.00	18.87	24	0.013	0.0070	704.26	704.41	6.41	6.01	0.64	0.56	0.35	0.22	0.20	704.61	699.81	699.95	713.23	45° BEND
0+21.21	1+59.87	138.66			2.650	0.90		2.385	10.00	6.40	16.40	4.63	7.90	-	-	0.00	18.84	24	0.013	0.0069	703.11	704.07	6.01	6.00	0.56	0.56	0.35	0.20	0.20	704.26	698.91	699.81	713.02	45° BEND
0+00.00	0+21.21	21.21			2.650	0.90		2.385	10.00	6.78	16.78	4.58	7.82	-	-	0.00	18.65	24	0.013	0.0068	702.77	702.91	6.00	5.94	0.56	0.55	0.35	0.20	0.19	703.11	698.77	698.91	705.74	45° BEND
LINE B																																	
14+08.43	14+23.07	14.64	B5, RD-4	2.600	2.600	0.90	2.340	2.340	10.00	0.00	10.00	5.71	9.58	13.36	22.42	0.00	22.42	30	0.013	0.0030	708.76	708.81	0.00	4.57	0.00	0.32	1.25	0.00	0.41	709.21	703.95	703.99	708.99	CURB INLET
11+46.61	14+08.43	261.82			2.600	0.90		2.340	10.00	0.05	10.05	5.70	9.56	-	-	0.00	22.38	30	0.013	0.0030	707.87	708.65	4.57	4.56	0.32	0.32	0.35	0.11	0.11	708.76	703.27	703.95	708.79	45° BEND
11+41.61	11+46.61	5.00			2.600	0.90		2.340	10.00	1.01	11.01	5.50	9.26	-	-	0.00	21.67	42	0.013	0.0005	707.77	707.77	4.56	2.25	0.32	0.08	0.10	0.03	0.10	707.87	702.25	702.27	708.50	PIPE SIZE CHANGE
8+75.16	11+41.61	266.45	B4, RD-3	2.540	5.140	0.90	2.286	4.626	10.00	1.05	11.05	5.49	9.25	12.56	21.14	0.00	42.81	42	0.013	0.0018	707.05	707.54	2.25	4.45	0.08	0.31	0.75	0.06	0.23	707.77	701.56	702.25	708.53	45° WYE, LAT B-4
8+70.16	8+75.16	5.00			5.140	0.90		4.626	10.00	2.05	12.05	5.31	8.96	-	-	0.00	41.43	48	0.013	0.0008	706.91	706.92	4.45	3.30	0.31	0.17	0.10	0.03	0.14	707.05	701.04	701.06	708.69	PIPE SIZE CHANGE
5+76.92	8+70.16	293.24	B3, RD-2	2.540	7.680	0.90	2.286	6.912	10.00	2.07	12.07	5.30	8.95	12.12	20.46	0.00	61.89	48	0.013	0.0019	706.08	706.63	3.30	4.93	0.17	0.38	0.75	0.13	0.28	706.91	700.28	701.04	708.72	45° WYE, LAT B-3
5+00.95	5+76.92	75.97	B2, RD-1	2.470	10.150	0.90	2.223	9.135	10.00	3.06	13.06	5.13	8.68	11.40	19.30	0.00	81.19	48	0.013	0.0032	705.36	705.60	4.93	6.46	0.38	0.65	0.75	0.28	0.49	706.08	700.08	700.28	708.63	45° WYE, LAT B-2
3+35.18	5+00.95	165.77			10.150	0.90		9.135	10.00	3.26	13.26	5.10	8.63	-	-	0.00	78.83	48	0.013	0.0030	704.64	705.14	6.46	6.27	0.65	0.61	0.35	0.23	0.21	705.36	699.65	700.08	710.01	45° BEND
0+93.65	3+35.18	241.53			10.150	0.90		9.135	10.00	3.70	13.70	5.02	8.52	-	-	0.00	77.80	48	0.013	0.0029	703.72	704.43	6.27	6.19	0.61	0.60	0.35	0.21	0.21	704.64	699.01	699.65	708.68	45° BEND
0+55.81	0+93.65	37.84			10.150	0.90		9.135	10.00	4.35	14.35	4.92	8.36	-	-	0.00	76.35	48	0.013	0.0028	703.42	703.52	6.19	6.08	0.60	0.57	0.35	0.21	0.20	703.72	698.92	699.01	706.55	45° BEND
0+00.00	0+55.81	55.81	B1	0.810	10.960	0.90	0.729	9.864	10.00	4.45	14.45	4.91	8.33	3.58	6.07	0.00	82.42	48	0.013	0.0026	702.77	702.92	6.08	6.56	0.57	0.67	0.75	0.43	0.50	703.42	698.77	698.92	706.31	45° WYE, LAT B-1
LAT A1																																	
0+25.27	0+49.10	23.83	A1	0.270	0.270	0.90	0.243	0.243	10.00	0.00	10.00	5.71	9.58	1.39	2.33	0.00	2.33	18	0.013	0.0500	706.90	708.09	0.00	8.08	0.00	1.01	1.25	0.00	1.27	709.36	706.56	707.75	711.75	CURB INLET
0+00.00	0+25.27	25.27			0.270	0.90		0.243	10.00	0.05	10.05	5.70	9.56	-	-	0.00	2.32	18	0.013	0.2365	705.55	706.77	8.08	17.21	1.01	4.61	0.10	0.10	0.46	706.90	700.58	706.56	712.26	PIPE SLOPE CHANGE
LAT A2																																	
0+00.00	0+40.10	40.10	A2	0.700	0.700	0.90	0.630	0.630	10.00	0.00	10.00	5.71	9.58	3.60	6.04	0.00	6.04	18	0.013	0.1140	707.54	712.11	0.00	12.38	0.00	2.38	1.25	0.00	2.98	715.09	702.18	706.75	712.75	CURB INLET
LAT A3																																	
0+00.00	0+40.10	40.10	A3	0.550	0.550	0.90	0.495	0.495	10.00	0.00	10.00	5.71	9.58	2.83	4.74	0.00	4.74	18	0.013	0.0020	708.86	708.94	0.00	2.68	0.00	0.11	1.25	0.00	0.14	709.08	704.34	707.24	713.24	CURB INLET
LAT A4																																	
0+00.00	0+40.10	40.10	A4	0.680	0.680	0.90	0.612	0.612	10.00	0.00	10.00	5.71	9.58	3.49	5.86	0.00	5.86	18	0.013	0.0031	709.36	709.48	0.00	3.32	0.00	0.17	1.25	0.00	0.21	709.69	705.98	707.42	713.42	CURB INLET
LAT B1																																	
0+00.00	0+14.76	14.76	B1	0.810	0.810	0.90	0.729	0.729	10.00	0.00	10.00	5.71	9.58	4.16	6.98	0.00	6.98	18	0.013	0.0044	703.42	703.48	0.00	3.95	0.00	0.24	1.25	0.00	0.30	703.79	700.17	701.46	705.46	CURB INLET
LAT B2																																	
0+00.00	0+14.64	14.64	B2, RD-1	2.470	2.470	0.90	2.223	2.223	10.00	0.00	10.00	5.71	9.58	12.69	21.30	0.00	21.30	24	0.013	0.0089	706.08	706.21	0.00	6.78	0.00	0.71	1.25	0.00	0.89	707.11	701.28	703.76	708.76	CURB INLET
LAT B3																																	
0+00.00	0+14.64	14.64	B3, RD-2	2.540	2.540	0.90	2.286	2.286	10.00	0.00	10.00	5.71	9.58	13.05	21.90	0.00	21.90	24	0.013	0.0094	706.91	707.05	0.00	6.97	0.00	0.76	1.25	0.00	0.94	707.99	702.04	703.90	708.90	CURB INLET
LAT B4																																	
0+00.00	0+14.64	14.64	B4, RD-3	2.540	2.540	0.90	2.286	2.286	10.00	0.00	10.00	5.71	9.58	13.05	21.90	0.00	21.90	24	0.013	0.0094	707.77	707.90	0.00	6.97	0.00	0.76	1.25	0.00	0.94	708.85	703.00	703.74	708.74	CURB INLET

The minimum velocities in conduit shall be 2.5 feet per second per § 10.106(d)(6)(B)(i)

see comments on P&P sheet all circled instances

Maximum velocity in the pipe shall not exceed 12 feet per second per § 10.106(d)(6)(B)(ii)

BY | DATE | REVISIONS | NO.

MICHAEL T. DOGGETT 98628 LICENSED PROFESSIONAL ENGINEER
12/7/2024

ANIMAS CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
DRAINAGE CALCULATIONS

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-5.06

C:\Users\mdoggi\OneDrive\Documents\Projects\01101-Blue Star Industrial Sanger\CAD\Plan Sheets\Utility Plan.dwg

INTERSTATE HIGHWAY 35
(VARIABLE WIDTH PUBLIC R.O.W.)

MAG NAIL FND "W SMITH"

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

STA: 5+53.26 WATER LINE A
INSTALL:
45° BEND
N: 7200730.44
E: 2373239.11

STA: 5+05.50 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
15 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200696.97
E: 2373205.03

STA: 4+70.86 WATER LINE A
INSTALL:
45° BEND
N: 7200672.69
E: 2373180.32

STA: 7+83.72 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
25 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200728.92
E: 2373469.56

10' WATER ESMT

6+00 8" PVC WATER LINE A 7+00 8+00 9+00 10+00

5+00 4+00 3+00 2+00 1+50

see previous comments on GV and lowering

FIBER MARKER
800-395-0440
(NO COMPANY
STATED)

STA: 2+14.63 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
15 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200416.47
E: 2373178.05

NORTEX FIBER

STA: 0+89.03 WATER LINE A
INSTALL:
45° BEND
N: 7200290.88
E: 2373176.94

STA: 0+79.02 WATER LINE A
INSTALL:
45° BEND
N: 7200283.75 FND
E: 2373183.97

18" RCP
EL=719.72'

403

18" RCP

FOR LEASE SIGN

18" RCP EL=719.55'

DO NOT CROSS DOUBLE LINE SIGN

FIBER VAULT

STA: 0+30.23 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
18 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200283.43
E: 2373232.78

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

STA: 0+08.15 WATER LINE A
INSTALL:
45° BEND
N: 7200283.28
E: 2373254.84

STA: 0+00.00 WATER LINE A
CONNECT TO EXISTING 8" STUB
INSTALL:
1-45° BEND
(CONTRACTOR TO FIELD VERIFY
LOCATION AND ELEVATION)
N: 7200277.48
E: 2373260.56

27" RCP

INSTALL:
1-12"x6" TAPPING SLEEVE AND VALVE
35 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
CUT & REPLACE PAVING AS NECESSARY
N: 7200265.72
E: 2373498.50

8" PVC

402

ELEC. VAULT

FIBER VAULT

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

LOT 5
14.22 ACRES

MATCH LINE A-A

PUMP ROOM

ELEC

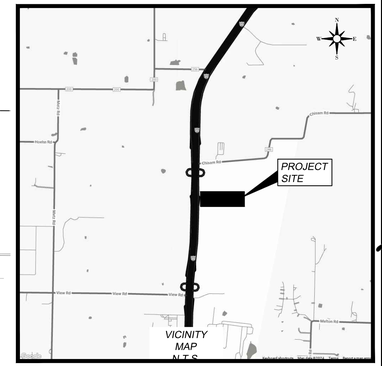
WATER UTILITY

INSTALL:
12"x6" TAPPING S
90 LF 6" FIRE LIN
REFER TO MEP F
CUT & REPLACE
N: 7200263.18
E: 2373280.05

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

N W E S

0 30' 60'
GRAPHIC SCALE 30'



LEGEND

- PROPERTY LINE
- SETBACK LINE
- PROPOSED EASEMENT
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- PROPOSED STORM SEWER LINE
- FL — PROPOSED FIRE LANE
- OHP — EXISTING OVERHEAD POWER LINE
- CBL — EXISTING CABLE LINE
- GAS — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- PROPOSED FIRE HYDRANT (FH)
- PROPOSED FIRE DEPARTMENT CONNECTION (FDC)
- PROPOSED WATER METER
- PROPOSED WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING STORM MANHOLE
- EXISTING SAN. SWR. MANHOLE
- EXISTING SIGN

UTILITY NOTES

1. SEE MEP PLANS FOR ALL UTILITY CONNECTIONS INTO BUILDING.
2. WATER AND SEWER LINES SHALL STUB 5 FEET FROM BUILDING FOR SERVICE CONNECTIONS UNLESS OTHERWISE NOTED.
3. REFER TO DETAILS FOR WATER METER, METER BOX, VALVES, VALVE BOXES AND SERVICE INSTALLATION.
4. REFER TO DETAILS FOR TRENCHING, BEDDING, BACK FILL, AND TRENCH COMPACTION REQUIREMENTS.
5. WATER AND SANITARY SEWER PIPE SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, ASBESTOS-CEMENT PRESSURE PIPE, PRETREATED CONCRETE PIPE, OR PVC PIPE.

CAUTION!!
THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE. CALL 811 AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION IN VICINITY.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
UTILITY PLAN

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-6.01

Saturday, December 7, 2024 2:50:36 PM

C:\Users\mdogg\OneDrive\Documents\Projects\01101-Blue Star Industrial Sanger\CAD\Plan Sheets\Utility Plan.dwg

Saturday, December 7, 2024 2:50:42 PM

10' WATER ESMT

10' WATER ESMT

10' WATER ESMT

10' WATER ESMT

10' WATER ESMT

20' WATER ESMT

10' WATER ESMT

10' WATER ESMT

10' WATER ESMT

10+00 11+00 12+00 8" PVC WATER LINE A 13+00 14+00 15+00 16+00 17+00

STA: 10+74.83 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
55 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200726.99
E: 2373760.67

STA: 13+69.28 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
55 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200725.04
E: 2374055.10

STA: 16+02.59 WATER LINE A
INSTALL:
45° BEND
N: 7200723.50
E: 2374288.41

STA: 16+59.60 WATER LINE A
INSTALL:
1-8"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
20 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200682.92
E: 2374328.46

STA: 17+46.09 WATER LINE A
INSTALL:
45° BEND
N: 7200621.36
E: 2374389.21

MATCH LINE A-A

LOT 5
11.22 ACRES

BUILDING 'L'
290,940 S.F.
165 CAR SPACES
62 TRUCK SPACES

18+00 19+00 8" PVC WATER LINE A 20+00 21+00

STA: 19+82.69 WATER LINE A
INSTALL:
1-6"x6" TEE
1-8" GATE VALVE
1-6" GATE VALVE
15 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200384.77
E: 2374387.64

STA: 1+85.53 SSWR LINE B
(REFER TO MEP PLANS FOR CONTINUATION)
FL 6" OUT: 705.10
N: 7200387.55
E: 2374333.56

1+88

6" PVC @ 9.29%

STA: 0+76.85 SSWR LINE B
REMOVE EX. 6" PLUG
CONNECT TO EX. 6" SSWR LINE
(CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION)
FL 6" IN: 696.87
FL 6" OUT: 696.87
N: 7200324.84
E: 2374396.26

STA: 21+08.55 WATER LINE A
INSTALL:
12"x6" TAPPING SLEEVE AND VALVE
(CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATOIN)
CUT & REPLACE PAVING AS NECESSARY
N: 7200258.91
E: 2374386.81

INSTALL:
1-12"x6" TAPPING SLEEVE AND VALVE
35 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
CUT & REPLACE PAVING AS NECESSARY
N: 7200259.76
E: 2374242.88

8" PVC

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

42" RCP

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

0+02 0+00 0+42 6" PVC @ 0.82%

STA: 0+61.66 SSWR LINE A
(REFER TO MEP PLANS FOR CONTINUATION)
FL 6" OUT: 698.79
N: 7200355.43
E: 2373994.68

STA: -0+02.05 SSWR LINE A
REMOVE EX. 6" PLUG
CONNECT TO EX. 6" SSWR LINE
(CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION)
FL 6" IN: 698.20
FL 6" OUT: 698.20
N: 7200291.73
E: 2373994.26

INSTALL:
60 LF 6" FIRE LINE
1-FDC
N: 7200357.22
E: 2373731.58

PUMP ROOM

ELEC.

20' WATER ESMT

CONNECT TO EX. 8" STUB
INSTALL:
1-8"x6" REDUCER
22' LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
N: 7200276.00
E: 2373735.93

INSTALL:
1-IRR. TAP
35 LF 1" IRR. LINE
1-1" IRR. METER
N: 7200263.10
E: 2373727.18

INSTALL:
1-2" DOM. TAP
90 LF 2" DOM. LINE
1-2" DOM. METER
N: 7200263.13
E: 2373724.18

WATER UTILITY

INSTALL:
12"x6" TAPPING SLEEVE AND VALVE
90 LF 6" FIRE LINE
REFER TO MEP PLANS FOR CONTINUATION
CUT & REPLACE PAVING AS NECESSARY
N: 7200263.18
E: 2373720.05

INSTALL:
1-12"x6" TAPPING SLEEVE AND VALVE
35 LF 6" WATER LINE
1-FIRE HYDRANT ASSEMBLY
CUT & REPLACE PAVING AS NECESSARY
N: 7200261.09
E: 2373954.42

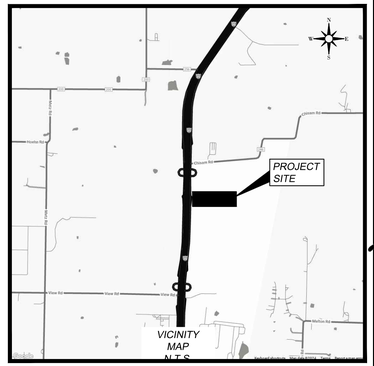
461

400

Know what's **below.**
Call before you dig.

N W E S

0 30' 60'
GRAPHIC SCALE 30'



LEGEND

- PROPERTY LINE
- SETBACK LINE
- PROPOSED EASEMENT
- SS PROPOSED SANITARY SEWER LINE
- W PROPOSED WATER LINE
- PROPOSED STORM SEWER LINE
- FL PROPOSED FIRE LANE
- OHP EXISTING OVERHEAD POWER LINE
- CBL EXISTING CABLE LINE
- GAS EXISTING GAS LINE
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The manholes shall be placed at points of change in alignment, grade, size of sewer, the intersection of sewers; at the right-of-way lines of major and secondary thoroughfares, whether existing or proposed, and the end of all sanitary sewer mains subject to extension per § 10.106(f)(1)(A)(iii).

CAUTION!
THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE. CALL 811 AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION IN VICINITY.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
UTILITY PLAN

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-6.02

BMP MAINTENANCE SCHEDULE

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO ENSURE THAT THE FACILITY IS FUNCTIONING PROPERLY. AGGREGATE PAD SHALL BE WASHED DOWN OR REPLACED WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN THE STONES OR MUD IS BEING TRACKED ONTO THE PUBLIC ROADWAY. RUNOFF FROM WASHDOWN OPERATION SHALL BE FILTERED THROUGH ANOTHER B.M.P. PRIOR TO DRAINING OFF-SITE. CONSTRUCTION ENTRANCE LOCATIONS SHOWN ARE RECOMMENDED LOCATIONS AND MAY BE RELOCATED AT THE CONTRACTOR'S DISCRETION.

SILT FENCE:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-THIRD THE HEIGHT OF THE FENCE ABOVE GRADE. FENCE SHALL BE INSPECTED FOR GAPS AT BASE. INSPECT SUPPORTING POSTS AND FILTER FABRIC. REPLACE IF REQUIRED.

CURB INLET/GRATE INLET/WYE INLET:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA SURROUNDING THE INLET/GRATE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-HALF OF THE PROTECTION HEIGHT. DEVICE SHALL BE INSPECTED FOR GAPS AT BASE, AND SHALL BE REPLACED AS NEEDED.

EROSION CONTROL SCHEDULE AND PHASING

THE PROJECT SHALL GENERALLY CONFORM TO THE FOLLOWING:

PHASE A - GRADING
1. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, DIKE, AND TREE PROTECTION FENCE ACCORDING TO THE APPROXIMATE LOCATION AND SHOWN ON GRADING AND EROSION CONTROL PLAN NOTES AND DETAIL SHEET.
2. BEGIN CLEARING AND GRADING OF SITE.
3. SEED AND REVEGETATE SLOPES WHERE SHOWN.

PHASE B - UTILITIES
1. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE.
2. INSTALL STORM DRAINS, SANITARY SEWER, AND WATER AS SPECIFIED ON PLAN SHEETS.

PHASE C - PAVING
1. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE. REMOVE AS NEEDED TO PAVE.
2. STABILIZE SUBGRADE.
3. PAVE STREETS AND SIDEWALKS AS SPECIFIED ON PLAN SHEETS.
4. RE-INSTALL ANY STORM WATER POLLUTION PREVENTION MEASURES REMOVED FOR PAVING OPERATIONS.

PHASE D - LANDSCAPING AND SOIL STABILIZATION.
1. REVEGETATE LOT AND PARKWAYS
2. LANDSCAPE CONTRACTOR SHALL REVEGETATE ALL AREAS RESERVED FOR LANDSCAPE VEGETATIVE COVERS.
3. REMOVE EROSION CONTROL DEVICES WHEN MINIMUM 70% GROUND COVER IS ESTABLISHED. VEGETATION MUST BE ESTABLISHED BEFORE STRUCTURAL CONTROLS REMOVED.

SITE MAP GENERAL NOTES

1. *CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.*
2. *CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.*
3. *DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS, FLOW ARROWS AND/OR SLOPES.*
4. *TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.*
5. *BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.*
6. *SANITARY SEWER EFFLUENT IS DISPOSED OF VIA AN ONSITE SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.*

LEGEND

- *PROPERTY LINE*
- 475 — *PROPOSED CONTOUR*
- 475 — *EXISTING CONTOUR*
- SF — *SILT FENCE*
- *LIMITS OF DISTURBANCE 14.59 AC*
- IP — *INLET PROTECTION*
- CE — *CONSTRUCTION ENTRANCE*
- CW — *CONCRETE WASHOUT*
- *FLOW ARROW*

VICINITY MAP
N.T.S.

N
W E
S

0 50' 100'
GRAPHIC SCALE 50'

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

INTERSTATE HIGHWAY 35
(VARIABLE WIDTH PUBLIC R.O.W.)

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

CALLED 211.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

4003
714.563
GCP

4001
705.490
GCP

4000
704.336
GCP

4004
714.364
GCP

4005
721.044
GCP

BUILDING 'L'
290,940 S.F.
165 CAR SPACES
62 TRUCK SPACES

FF: 715.00

please add SF at the toe of all graded slopes to reduce sediment

please show or ensure SF is added behind the curb once curb is installed to minimize sediment on the street

Consider installing a rock filter dam at the outflow for erosion control

FOR LEASE SIGN

DO NOT CROSS DOUBLE LINE SIGN

FIRE DEPT CONN.

INDUSTRIAL BUILDING
F.F.E. = 715.4'

LOT 2, BLOCK A
BLUE STAR INDUSTRIAL ADDITION
INS. NO. 20220525000223, O.P.R.D.C.T.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
EROSION CONTROL PLAN

ACE PROJECT: 01101

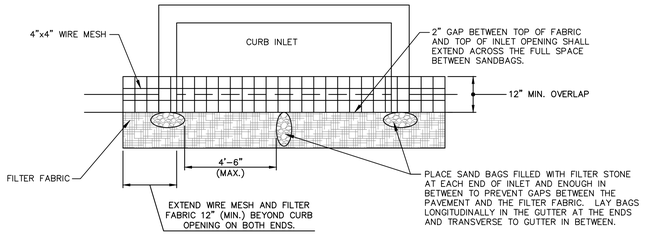
DATE: DECEMBER 2024

SCALE: AS SHOWN

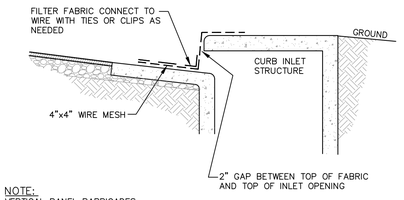
DRAWN BY: MD

SHEET NUMBER
C-07.01

Saturday, December 7, 2024 2:50:48 PM



PLAN VIEW

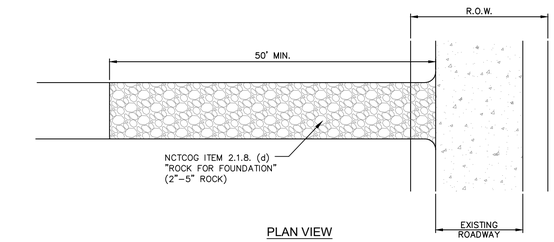


NOTE:
VERTICAL PANEL BARRICADES TO BE PLACED WHEN LOCATED ON AN ACTIVE STREET.

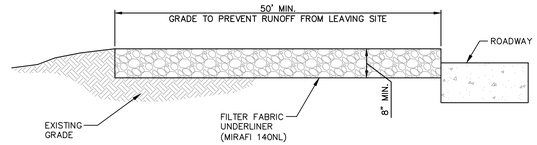
CROSS SECTION

CURB INLET PROTECTION DETAIL

N.T.S.



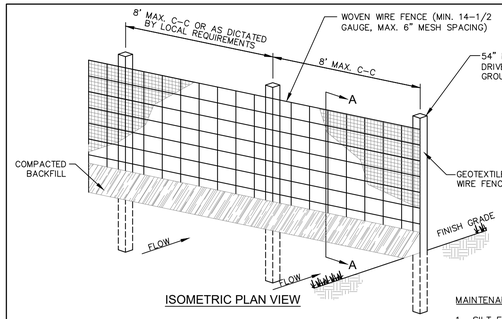
PLAN VIEW



PROFILE

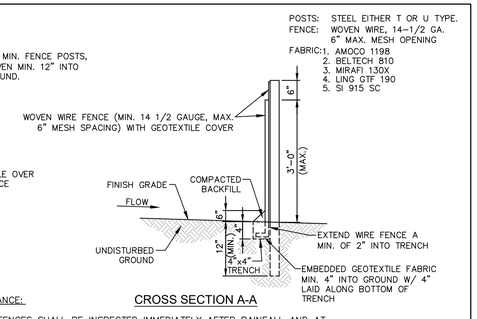
CONSTRUCTION ENTRANCE DETAIL

N.T.S.



ISOMETRIC PLAN VIEW

NOTE:
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
2. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF GEOTEXTILE ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE EROSION CONTROL PLAN.
5. COLLECTED MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT UNLESS INDICATED OTHERWISE



CROSS SECTION A-A

MAINTENANCE:
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE SILT FENCE IS STILL NECESSARY, IT SHALL BE REPLACED IMMEDIATELY.
3. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY 1/3 THE HEIGHT OF THE FENCE.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
5. THERE SHOULD BE NO GAPS OR SAGS IN THE SILT FENCE.

SILT FENCE DETAIL

N.T.S.

NO.	REVISIONS	DATE	BY

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

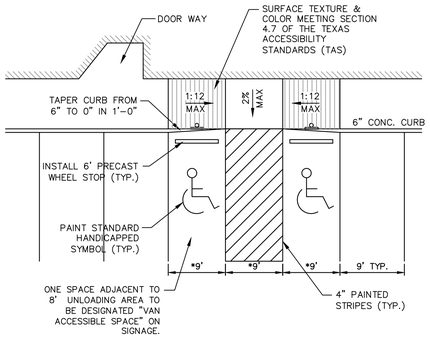
ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

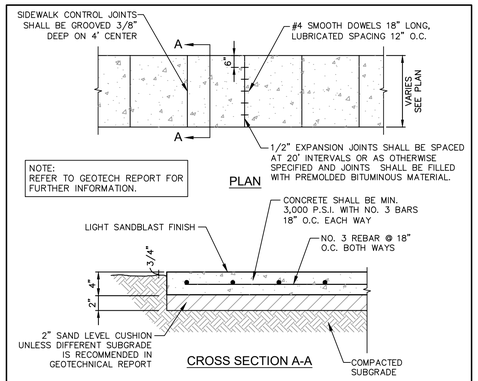
SHEET TITLE:
EROSION CONTROL DETAILS

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-8.01

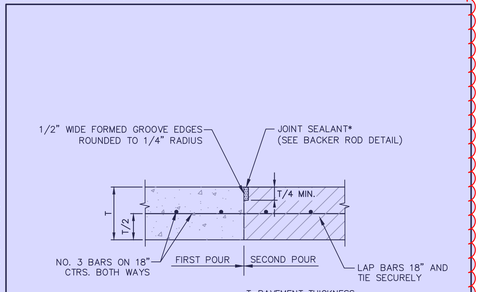


NOTES:
1. * DIMENSIONS MAY VARY REFER TO DIMENSIONAL CONTROL PLAN
2. SIGNAGE AND MARKINGS TO BE IN ACCORDANCE WITH FEDERAL STATE AND LOCAL REGULATIONS.
3. MAXIMUM SLOPE FOR HANDICAPPED ACCESSIBLE PATHS ARE 5% WITH A MAXIMUM CROSS FALL SLOPE OF 2%. THE FIRST FIVE FEET FROM THE DOOR IS NOT TO EXCEED 2% IN ANY DIRECTION.
4. HANDICAPPED SIGNS, INSTALL 2' FROM BACK OF CURB (TYP. EACH SPACE). SIGNAGE TO BE IN ACCORDANCE WITH TEXAS DEPARTMENT OF LICENSING AND REGULATION TEXAS ACCESSIBILITY STANDARDS (TAS) PER 4.6.4

HANDICAPPED PARKING DETAIL
N.T.S.



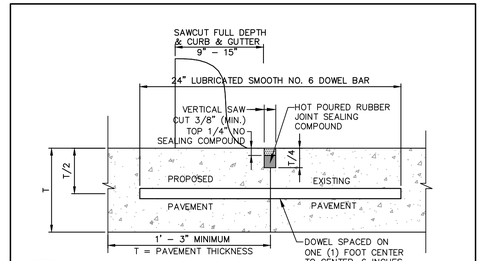
CONCRETE SIDEWALK DETAIL
N.T.S.



* READY-MIXED COLD-APPLIED JOINT SEALANT (EZ-7 OR APPROVED EQUAL SEALANT) CONTACT EZ Seal, Inc. AT 972-669-9178

NOTE: REFER TO GEOTECH REPORT FOR FURTHER INFORMATION.

CONSTRUCTION JOINT DETAIL
N.T.S.

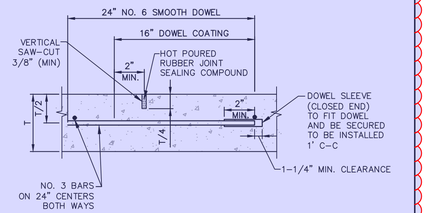


NOTES:
1. NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 5 INCH AND 6 INCH PAVEMENT THICKNESS.
2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
4. DRILLING BY HAND IS NOT ACCEPTABLE, PUSHING DOWEL BARS INTO GREEN CONCRETE NOT ACCEPTABLE.

T=PAVEMENT THICKNESS

NOTE: REFER TO GEOTECH REPORT FOR FURTHER INFORMATION.

LONGITUDINAL BUTT JOINT DETAIL
N.T.S.

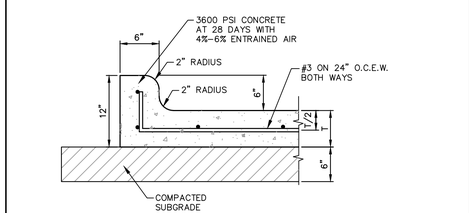


T=PAVEMENT THICKNESS

NOTE: DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

NOTE: REFER TO GEOTECH REPORT FOR FURTHER INFORMATION.

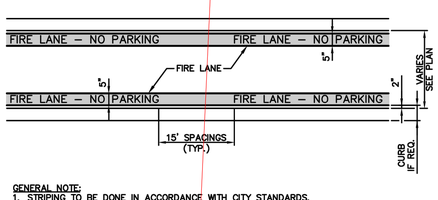
CONTRACTION JOINT DETAIL
N.T.S.



T=PAVEMENT THICKNESS

NOTE: REFER TO GEOTECH REPORT FOR FURTHER INFORMATION.

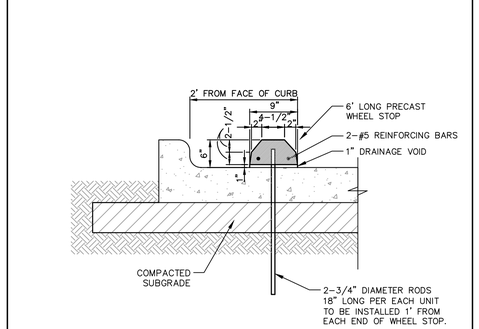
CURB & PAVING DETAIL
N.T.S.



GENERAL NOTE:
1. STRIPING TO BE DONE IN ACCORDANCE WITH CITY STANDARDS.

STRIPING DETAIL NOTES:
1. PAINT:
   1.1. STRIPE SHALL BE FIVE (5) INCHES WIDE PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT.
      A. COLOR SHALL BE "TRAFFIC RED" GLIDDEN NO. 63251 OR EQUAL.
   1.1. LETTERS SHALL BE FOUR (4) INCHES HIGH PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT.
      B. COLOR SHALL BE "TRAFFIC WHITE" GLIDDEN NO. 563245 OR EQUAL.
2. APPLICATION:
   2.1. STRIPE MAY BE BRUSHED OR SPRAYED, ONE COAT TO FINISH.
   2.2. LETTERS SHALL BE STENCIL FORMED, BRUSH APPLIED AND SPACED AS DETAILED ON THIS SHEET.

FIRE LANE STRIPING DETAIL
N.T.S.



NOTE: UNLESS OTHERWISE SHOWN, ALL SITE DIMENSIONS ARE TO FACE OF CURB WHERE PRECAST CONC. WHEEL STOP IS SPECIFIED.

PRECAST CONCRETE WHEEL STOP DETAIL
N.T.S.

Please provide pavement repair details

Duplicate details. Please delete one

NO.	BY	DATE	REVISIONS

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/7/2024

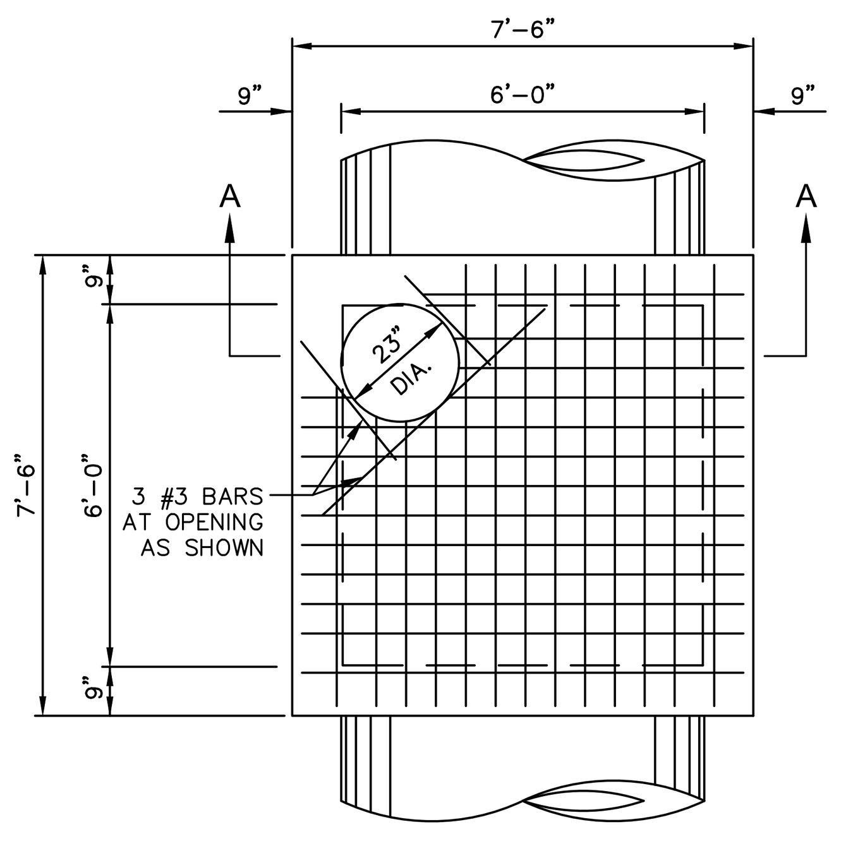
ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

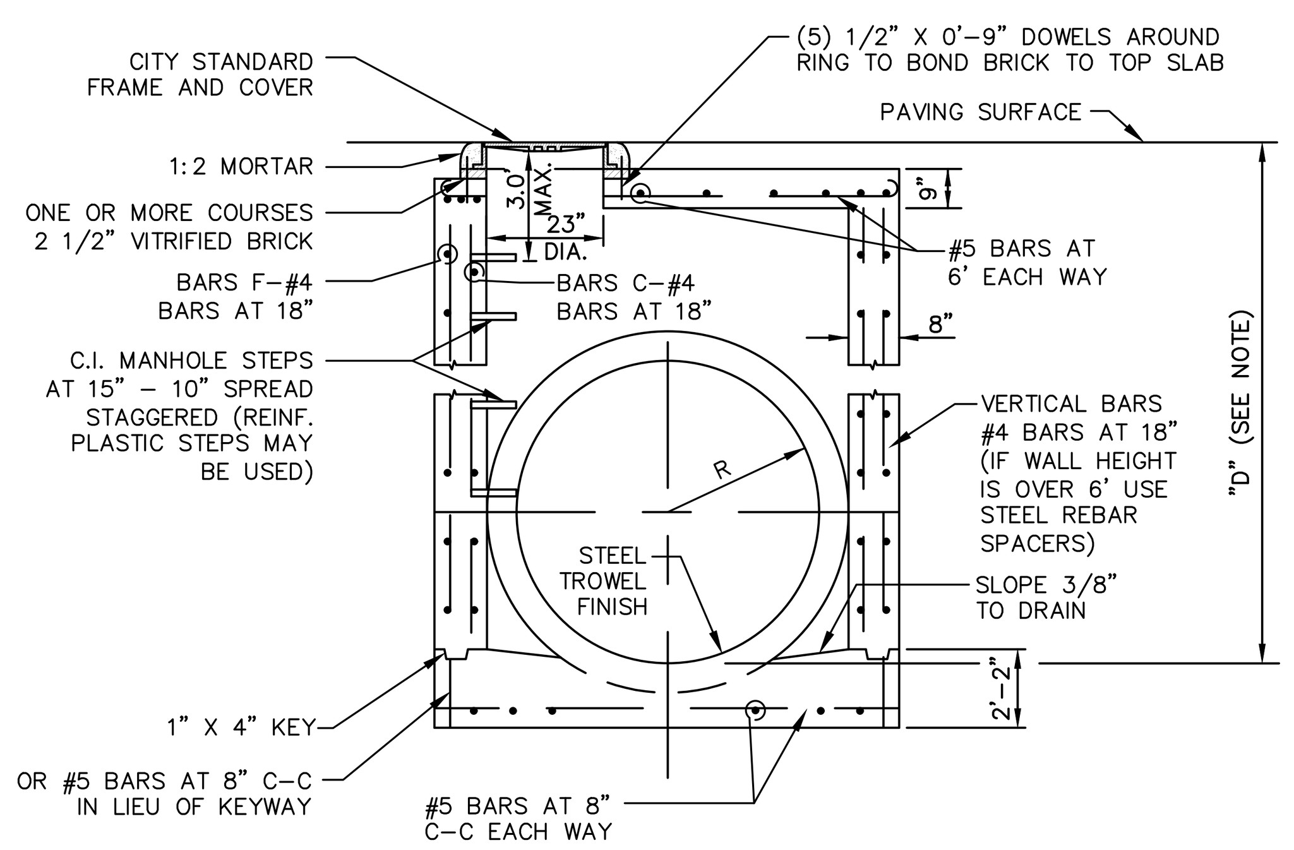
PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
PAVING DETAILS

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-8.02



PLAN VIEW



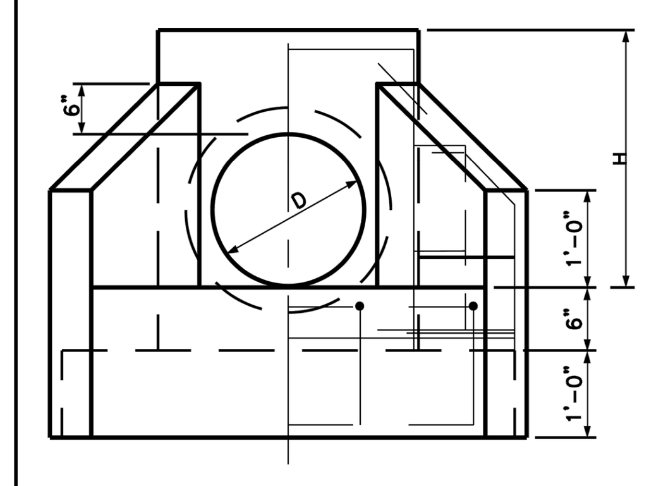
CROSS SECTION A-A

NOTE:
1. DEPTH "D" SHALL BE SHOWN ON STORM DRAIN PLAN AND PROFILE SHEETS.

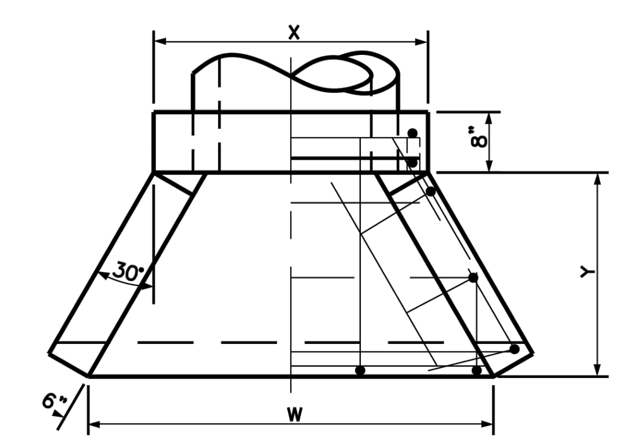
are any manholes proposed? recommend removing detail if not required. recommend providing manholes at least every 500'.

6' SQUARE MANHOLE DETAIL

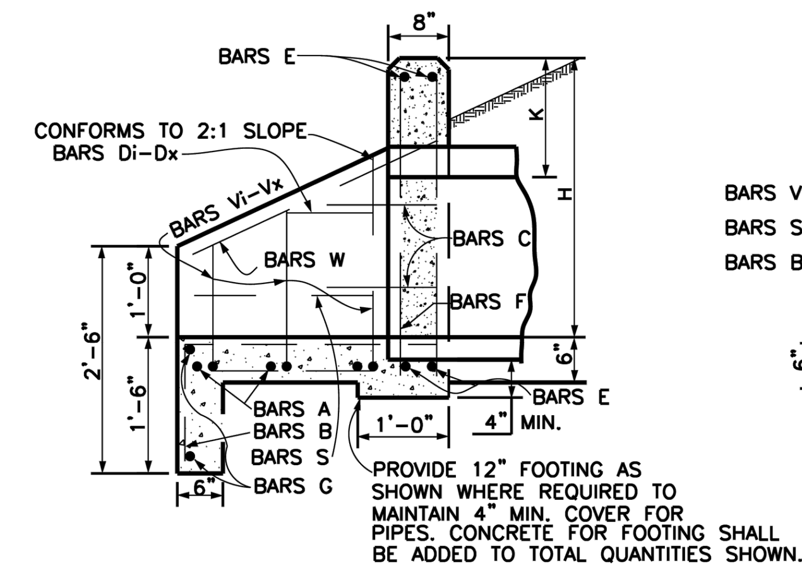
N.T.S.

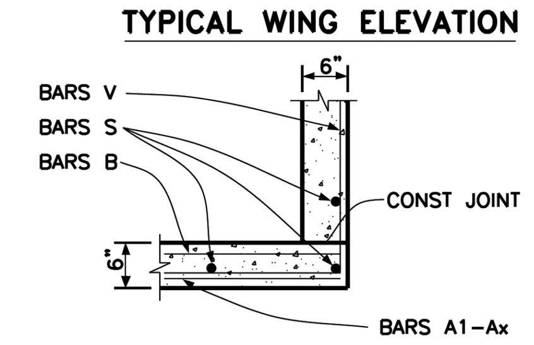


ELEVATION TYPE B



PLAN TYPE B





TYPICAL WING ELEVATION

NOTES:
1. DIMENSIONS ARE FOR TYPICAL INSTALLATION.
2. SPECIFIC SITE CONDITIONS MAY REQUIRE MODIFICATION OF DIMENSIONS AND ARRANGEMENT, WITH ENGINEERING DEPT. APPROVAL.
3. ALL CONCRETE SHALL BE CLASS "C".
4. ALL HEADWALLS SHALL BE CLASS 'C' CAST-IN-PLACE CONCRETE (UNLESS AUTHORIZED BY CITY OF GARLAND)

1/3

Revision Date: 07/07

Scale : N/A Date : 02/21/05	
Design :	
Drawn : JMK	TYPE B HEADWALL
Dwg. File : HDW_001.DWG	PAGE 3
Project No. : STANDARD-DETAILS	

TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE B HEADWALLS

TABLE OF DIMENSIONS / REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS / * TOTAL QUANTITIES

NO. OF PIPES	DIAM. OF PIPES	G	K	X	H	Y	W	BARS AI – Ax #4 at 12"± No.	BARS AI – Ax Av. Lgth.	BARS AI – Ax Wt.	BARS B #3 at 18"± No.	BARS B Lgth.	BARS B Wt.	BARS BI – Bx #3 at 18"± No.	BARS BI – Bx Av. Lgth.	BARS BI – Bx Wt.	C=2'-0" #4 at 12"± No.	C=2'-0" Wt.	BARS DI – Dx #3 at 12"± No.	BARS DI – Dx Av. Lgth.	BARS DI – Dx Wt.	BARS E 8–#5 Lgth.	BARS E Wt.	BARS F No.	BARS F Size	BARS F Lgth.	BARS F Wt.	BARS G 4–#3 Lgth.	BARS G Wt.	BARS S 12–#4 Lgth.	BARS S Wt.	BARS VI–Vx #4 at 12"± No.	BARS VI–Vx Av. Lgth.	BARS VI–Vx Wt.	BARS W 4–#5 Lgth.	BARS W Wt.	STEEL LBS.	CONC. C.Y.
1	12"	–	12"	2'-4"	2'-0"	1'-0"	2'-4"	2	2'-8"	4	6	2'-6"	6	–	–	–	4	5	–	–	–	2'-0"	17	8	#4	2'-2"	12	2'-8"	4	8"	5	4	2'-11"	8	1'-8"	7	68	.52
2	"	10"	"	4'-2"	"	"	4'-2"	"	4'-6"	6	8	"	8	–	–	–	"	"	–	–	–	3'-10"	32	12	"	"	17	4'-6"	7	"	"	"	"	"	"	"	95	.82
3	"	"	"	6'-0"	"	"	6'-0"	"	6'-4"	8	10	"	9	–	–	–	"	"	–	–	–	5'-8"	47	16	"	"	23	6'-4"	10	"	"	"	"	"	"	"	122	1.11
4	"	"	"	7'-10"	"	"	7'-10"	"	8'-2"	11	12	"	11	–	–	–	"	"	–	–	–	7'-6"	63	20	"	"	29	8'-2"	12	"	"	"	"	"	"	"	151	1.40
1	15"	–	12"	2'-7 1/2"	2'-3"	1'-6"	3'-2 1/2"	4	3'-0"	8	6	3'-0"	7	4	1'-10"	3	8	11	–	–	–	2'-3"	19	8	#4	2'-5"	13	3'-7"	5	1'-3"	10	8	3'-0"	16	2'-3"	9	101	.75
2	"	1'-0"	"	4'-10 1/2"	"	"	5'-5 1/2"	"	5'-3"	14	8	"	9	"	"	"	"	"	–	–	–	4'-6"	38	12	"	"	19	5'-10"	9	"	"	"	"	"	"	"	138	1.16
3	"	"	"	7'-1 1/2"	"	"	7'-8 1/2"	"	7'-6"	20	10	"	11	"	"	"	"	"	–	–	–	6'-9"	56	16	"	"	26	8'-1"	12	"	"	"	"	"	"	"	174	1.57
4	"	"	"	9'-4 1/2"	"	"	9'-11 1/2"	"	9'-9"	26	14	"	16	"	"	"	"	"	–	–	–	9'-0"	75	20	"	"	32	10'-4"	16	"	"	"	"	"	"	"	214	1.98
1	18"	–	12"	2'-11"	2'-6"	2'-0"	4'-0 1/2"	4	3'-10"	10	6	3'-6"	8	4	1'-10"	3	8	11	4	1'-0"	2	2'-7"	22	8	#4	2'-8"	14	4'-5"	7	1'-10"	15	12	3'-2"	25	2'-11"	12	129	1.00
2	"	1'-2"	"	5'-7"	"	"	6'-8 1/8"	"	6'-6"	17	8	"	11	"	"	"	"	"	"	"	"	5'-3"	44	12	"	"	21	7'-1"	11	"	"	"	"	"	"	"	172	1.55
3	"	"	"	8'-3"	"	"	9'-4 7/8"	"	9'-2"	25	12	"	16	"	"	"	"	"	"	"	"	7'-11"	66	16	"	"	29	9'-9"	15	"	"	"	"	"	"	"	219	2.11
4	"	"	"	10'-11"	"	"	12'-0 7/8"	"	11'-10"	32	16	"	21	"	"	"	"	"	"	"	"	10'-7"	88	20	"	"	36	12'-5"	19	"	"	"	"	"	"	"	264	2.65
1	21"	–	12"	3'-6"	3'-0"	3'-0"	5'-9 3/4"	6	5'-0"	20	6	4'-6"	10	4	1'-10"	3	8	11	4	1'-0"	2	3'-2"	26	8	#4	3'-2"	17	6'-2"	9	3'-0"	24	16	3'-5"	37	4'-2"	17	176	1.62
2	"	1'-5"	"	6'-11"	"	"	9'-2 3/4"	"	8'-5"	34	10	"	17	"	"	"	"	"	"	"	"	6'-7"	55	12	"	"	25	9'-7"	14	"	"	"	"	"	"	"	239	2.46
3	"	"	"	10'-4"	"	"	12'-7 3/4"	"	11'-10"	47	16	"	27	"	"	"	"	"	"	"	"	9'-10"	82	16	"	"	34	13'-0"	20	"	"	"	"	"	"	"	304	3.32
4	"	"	"	13'-9"	"	"	16'-0 3/4"	"	15'-3"	61	20	"	34	"	"	"	"	"	"	"	"	13'-5"	112	20	"	"	42	16'-5"	25	"	"	"	"	"	"	"	368	4.18
1	24"	–	12"	3'-6"	3'-0"	3'-0"	5'-9 3/4"	6	5'-0"	20	6	4'-6"	10	4	1'-10"	3	8	11	4	1'-0"	2	3'-2"	26	8	#4	3'-2"	17	6'-2"	9	3'-0"	24	16	3'-5"	37	4'-2"	17	176	1.62
2	"	1'-5"	"	6'-11"	"	"	9'-2 3/4"	"	8'-5"	34	10	"	17	"	"	"	"	"	"	"	"	6'-7"	55	12	"	"	25	9'-7"	14	"	"	"	"	"	"	"	239	2.46
3	"	"	"	10'-4"	"	"	12'-7 3/4"	"	11'-10"	47	16	"	27	"	"	"	"	"	"	"	"	9'-10"	82	16	"	"	34	13'-0"	20	"	"	"	"	"	"	"	304	3.32
4	"	"	"	13'-9"	"	"	16'-0 3/4"	"	15'-3"	61	20	"	34	"	"	"	"	"	"	"	"	13'-5"	112	20	"	"	42	16'-5"	25	"	"	"	"	"	"	"	368	4.18
1	30"	–	12"	4'-1"	3'-6"	4'-0"	7'-6 5/8"	8	6'-2"	33	6	5'-6"	12	8	3'-1"	9	12	16	8	2'-2"	7	3'-9"	31	8	#4	3'-8"	20	7'-11"	12	4'-2"	33	20	3'-8"	49	5'-5"	23	245	2.34
2	"	1'-8"	"	8'-3"	"	"	11'-8 5/8"	"	10'-4"	55	12	"	25	"	"	"	"	"	"	"	"	7'-11"	66	16	"	"	39	12'-1"	18	"	"	"	"	"	"	"	340	3.58
3	"	"	"	12'-5"	"	"	15'-10 5/8"	"	14'-6"	77	18	"	37	"	"	"	"	"	"	"	"	12'-1"	101	24	"	"	59	16'-3"	24	"	"	"	"	"	"	"	435	4.80
4	"	"	"	16'-7"	"	"	20'-0 5/8"	"	18'-8"	100	24	"	50	"	"	"	"	"	"	"	"	16'-3"	136	32	"	"	78	20'-5"	31	"	"	"	"	"	"	"	532	6.04
1	36"	–	12"	4'-8"	4'-0"	5'-0"	9'-3 1/2"	10	7'-4"	49	8	6'-6"	20	8	3'-1"	9	12	16	8	2'-2"	7	4'-4"	36	8	#4	4'-2"	22	9'-8"	15	5'-4"	43	24	3'-11"	63	6'-8"	28	308	3.23
2	"	1'-11"	"	9'-7"	"	"	14'-2 1/2"	"	12'-3"	82	14	"	34	"	"	"	"	"	"	"	"	9'-3"	77	16	"	"	45	14'-7"	22	"	"	"	"	"	"	"	426	4.89
3	"	"	"	14'-6"	"	"	19'-1 1/2"	"	17'-2"	115	20	"	49	"	"	"	"	"	"	"	"	14'-2"	118	24	"	"	67	19'-6"	29	"	"	"	"	"	"	"	544	6.55
4	"	"	"	19'-5"	"	"	24'-0 1/2"	"	22'-1"	147	28	"	68	"	"	"	"	"	"	"	"	19'-1"	159	32	"	"	89	24'-5"	37	"	"	"	"	"	"	"	666	8.22
1	42"	–	12"	5'-3"	4'-6"	6'-0"	11'-0 1/4"	12	8'-6"	68	8	7'-6"	23	12	4'-5"	20	16	21	12	3'-3"	15	4'-11"	41	8	#4	4'-8"	25	11'-5"	17	6'-5"	51	28	4'-2"	78	7'-11"	33	392	4.23
2	"	2'-2"	"	10'-11"	"	"	16'-8 1/4"	"	14'-2"	114	16	"	45	"	"	"	"	"	"	"	"	10'-7"	88	16	"	"	50	17'-1"	26	"	"	"	"	"	"	"	541	6.40
3	"	"	"	16'-7"	"	"	22'-4 1/4"	"	19'-10"	159	24	"	68	"	"	"	"	"	"	"	"	16'-3"	136	24	"	"	75	22'-9"	34	"	"	"	"	"	"	"	690	8.56
4	"	"	"	22'-3"	"	"	28'-0 1/4"	"	25'-6"	204	32	"	90	"	"	"	"	"	"	"	"	21'-11"	183	32	"	"	100	28'-5"	43	"	"	"	"	"	"	"	838	10.74
1	48"	–	15"	5'-10"	5'-3"	7'-0"	12'-9 1/8"	14	9'-8"	90	10	8'-6"	32	12	4'-5"	20	16	21	12	3'-4"	15	5'-6"	46	8	#5	5'-5"	45	13'-2"	20	7'-7"	61	32	4'-5"	94	9'-3"	39	483	5.43
2	"	2'-5"	"	12'-3"	"	"	19'-2 1/8"	"	16'-1"	150	18	"	58	"	"	"	"	"	"	"	"	11'-11"	99	16	"	"	90	19'-7"	29	"	"	"	"	"	"	"	676	8.25
3	"	"	"	18'-8"	"	"	25'-7 1/8"	"	22'-6"	210	26	"	83	"	"	"	"	"	"	"	"	18'-4"	153	24	"	"	136	26'-0"	39	"	"	"	"	"	"	"	871	11.07
4	"	"	"	25'-1"	"	"	32'-0 1/8"	"	28'-11"	270	36	"	115	"	"	"	"	"	"	"	"	24'-9"	207	32	"	"	181	32'-5"	49	"	"	"	"	"	"	"	1072	13.89
1	54"	–	15"	6'-5"	5'-9"	8'-0"	14'-6"	16	10'-10"	116	10	9'-6"	36	12	4'-5"	20	20	27	16	4'-5"	27	6'-1"	51	8	#5	5'-11"	49	14'-10"	22	8'-9"	70	40	4'-8"	125	10'-5"	43	586	6.71
2	"	2'-10"	"	13'-9"	"	"	21'-10"	"	18'-2"	194	20	"	71	"	"	"	"	"	"	"	"	13'-5"	112	20	"	"	123	22'-2"	33	"	"	"	"	"	"	"	845	10.28
3	"	"	"	21'-1"	"	"	29'-2"	"	25'-6"	273	30	"	107	"	"	"	"	"	"	"	"	20'-9"	173	32	"	"	198	29'-6"	44	"	"	"	"	"	"	"	1107	13.84
4	"	"	"	28'-5"	"	"	36'-6"	"	32'-10"	351	40	"	143	"	"	"	"	"	"	"	"	28'-1"	234	44	"	"	272	36'-10"	55	"	"	"	"	"	"	"	1367	17.42
1	60"	–	15"	7'-0"	6'-3"	9'-0"	16'-2 7/8"	18	12'-0"	144	10	10'-6"	39	16	5'-9"	35	20	27	16	4'-5"	27	6'-8"	56	8	#5	6'-5"	54	16'-7"	25	9'-11"	80	44	4'-11"	145	11'-8"	49	681	8.11
2	"	3'-0"	"	15'-0"	"	"	24'-2 7/8"	"	20'-0"	240	22	"	87	"	"	"	"	"	"	"	"	14'-8"	122	20	"	"	134	25'-7"	38	"	"	"	"	"	"	"	984	12.34
3	"	"	"	23'-0"	"	"	32'-2 7/8"	"	28'-0"	337	32	"	126	"	"	"	"	"	"	"	"	22'-8"	189	32	"	"	214	32'-7"	49	"	"	"	"	"	"	"	1278	16.57
4	"	"	"	31'-0"	"	"	40'-2 7/8"	"	36'-5"	438	44	"	174	"	"	"	"	"	"	"	"	30'-8"	256	44	"	"	295	40'-8"	61	"	"	"	"	"	"	"	1587	20.82
1	66"	–	15"	7'-7"	6'-9"	10'-0"	17'-11 3/4"	20	13'-2"	176	12	11'-6"	52	16	5'-9"	35	24	32	20	5'-7"	42	7'-3"	60	8	#5	6'-11"	58	18'-4"	28	11'-1"	89	48	5'-2"	166	13'-0"	54	792	9.65
2	"	3'-1"	"	16'-2"	"	"	26'-6 3/4"	"	21'-9"	291	24	"	104	"	"	"	"	"	"	"	"	15'-10"	32	20	"	"	144	26'-11"	40	"	"	"	"	"	"	"	1129	14.54
3	"	"	"	24'-9"	"	"	35'-1 3/4"	"	30'-4"	405	34	"	147	"	"	"	"	"	"	"	"	24'-5"	204	32	"	"	231	35'-6"	53	"	"	"	"	"	"	"	1458	19.42
4	"	"	"	33'-4"	"	"	43'-8 3/4"	"	39'-8"	530	46	"	199	"	"	"	"	"	"	"	"	33'-0"	275	44	"	"	318	44'-2"	67	"	"	"	"	"	"	"	1807	24.31
1	72"	–	15"	8'-2"	7'-3"	11'-0"	19'-8 5/8"	22	14'-4"	211	12	12'-6"	56	16	5'-9"	35	24	32	20	5'-7"	42	7'-10"	65	8	#5	7'-5"	62	20'-1"	30	12'-3"	98	52	5'-5"	188	14'-3"	59	878	11.32
2	"	3'-2"	"	17'-4"	"	"	28'-10 5/8"	"	23'-6"	345	24	"	113	"	"	"	"	"	"	"	"	17'-0"	142	20	"	"	155	29'-3"	44	"	"	"	"	"	"	"	1253	16.91
3	"	"	"	26'-6"	"	"	38'-0 5/8"	"	32'-10"	482	38	"	179	"	"	"	"	"	"	"	"	26'-2"	218	32	"	"	248	38'-5"	58	"	"	"	"	"	"	"	1639	22.52
4	"	"	"	35'-8"	"	"	47'-2 5/8"	"	41'-10"	615	50	"	235	"	"	"	"	"	"	"	"	35'-4"	295	44	"	"	341	47'-8"	72	"	"	"	"	"	"	"	2017	28.11

3/3

Revision Date:

Scale : N/A Date : 02/21/05	
Design :	
Drawn : JMK	TYPE B HEADWALLS DIMENSIONS AND QUANTITIES TABLE
Dwg. File : HDW_001.DWG	PAGE 5
Project No. : STANDARD-DETAILS	

REINFORCING BAR SCHEDULE											
BAR	TYPE	SIZE	QTY	SPACING	LENGTH	WEIGHT(LBS)	TYPE	SIZE	QTY	SPACING	LENGTH	WEIGHT(LBS)
A	BT	4	13	12" MAX	5'-1 1/2"	45	BT	4	18	12" MAX	5'-1 1/2"	62
B	BT	4	7	12" MAX	4'-6"	23	BT	4	12	12" MAX	4'-10"	40
C	BT	4	6	10" MAX	4'-9"	19	BT	4	13	10" MAX	4'-9"	42
D	BT	4	4	12" MAX	7'-6"	20	BT	4	4	12" MAX	12'-6"	34
Ø E	BT	5	8	6" MAX	3'-8"	31	BT	5	18	6" MAX	3'-8"	70
F	BT	4	10	12" MAX	7'-6"	50	BT	4	10	12" MAX	12'-6"	84
F1	STR	5	5	–	5'-10"	31	STR	7	5	–	10'-10"	57
Ø G	STR	5	9	6" MAX	3'-2"	54	STR	5	19	6" MAX	3'-2"	114
H	BT	4	10	7" MAX	2'-8 3/4"	18	BT	4	20	7" MAX	2'-8 3/4"	36
Ø J	STR	5	7	6" MAX	5'-6"	40	STR	5	7	6" MAX	10'-6"	80
** M	STR	7	1	–	20'-0"	41	STR	7	1	–	20'-0"	41
N	BT	4	8	12" MAX	4'-10"	26	BT	4	8	12" MAX	4'-10"	26
		TOTAL WEIGHT (LBS)				398		TOTAL WEIGHT (LBS)				686
	5' RECESSED INLET						10' RECESSED INLET					

** BARS M ARE #7 (STRAIGHT) CUT TO FIT IN FIELD.

NOTE:
LENGTH OF BARS J, G, AND E IN TABLES IS GIVEN FOR BID PURPOSES. THESE BARS MAY BE CUT AS REQUIRED TO FIT AT MANHOLE.

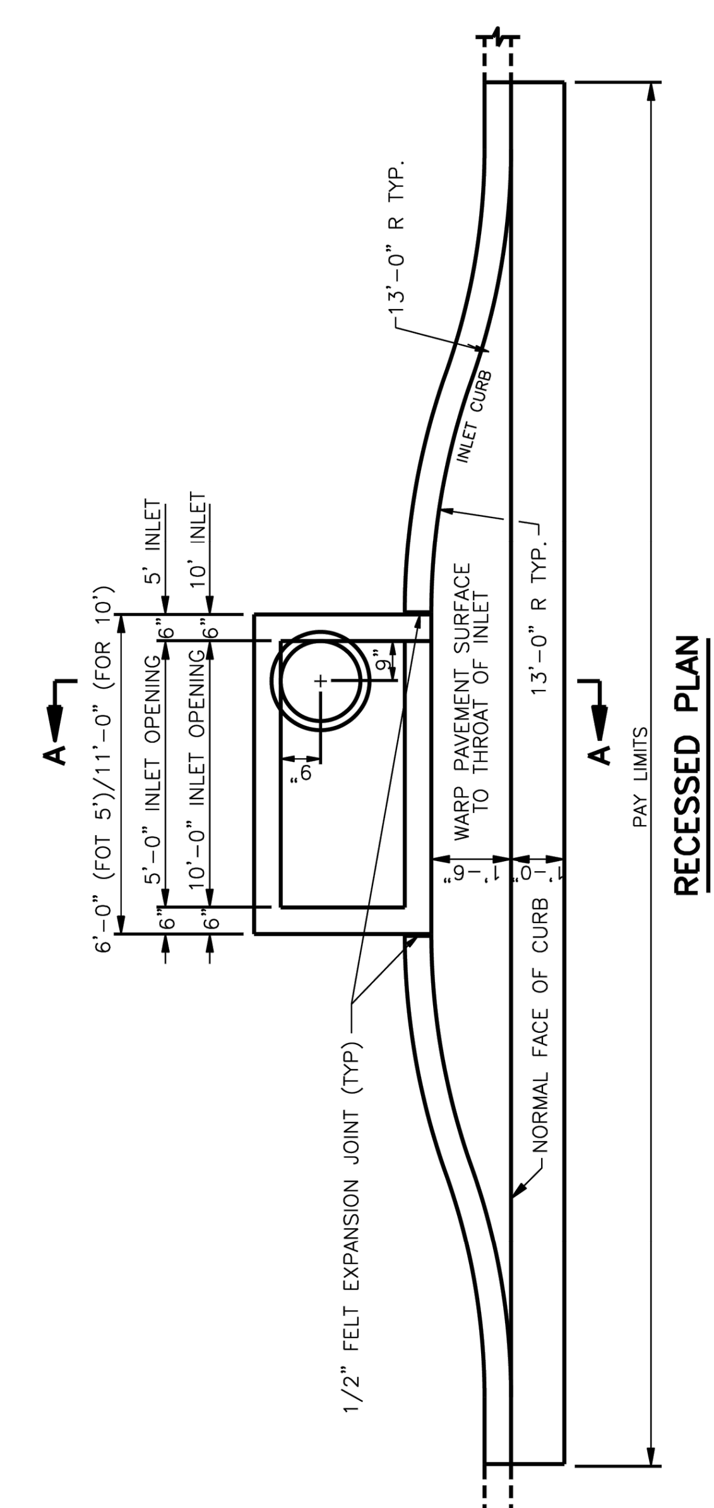
NOTES (APPLY UNLESS OTHERWISE SHOWN OR NOTED):

1. CONCRETE SHALL BE CLASS "C".
2. ALL REINFORCING BARS SHALL BE ASTM A615 GR. 60.
3. LATERAL PIPE MAY ENTER INLET THROUGH ANY WALL.
4. CAST IRON FRAME & COVER SHALL BE BASS & HAYS #184L.
5. ALL CONSTRUCTION JOINTS (CJ) ARE PERMISSIBLE, NOT MANDATORY. CONSTRUCTION JOINTS MAY BE KEYED AT CONTRACTOR'S DISCRETION.
6. CHAMFER ALL EXPOSED EDGES AROUND INLET OPENINGS 3/4".
7. LOADING: (UNFACTORED LOADING)
   WHEEL LOAD HS20: 16 KIPS.
   LATERAL SOIL PRESSURE: 30 PSF/FT.
   LATERAL HYDROSTATIC PRESSURE = 64 PSF/FT.
   SURCHARGE LATERAL PRESSURE 2 FT = 60 PSF.
8. IF 20' INLET IS DESIRED, USE 2–10' INLETS WITH INTERIOR WALL AS SHOWN ON SECTIONS A-A & B-B IN THE 15' INLET STANDARD DRAWING.
9. 2000 PSI CLASS B CONCRETE – WRAP TO SUIT CONDITIONS.
10. REINFORCING DIMENSIONS ARE TO CENTER OF BAR UNLESS OTHERWISE NOTED.
11. ALL INLETS SHALL BE CLASS 'C' CAST-IN-PLACE

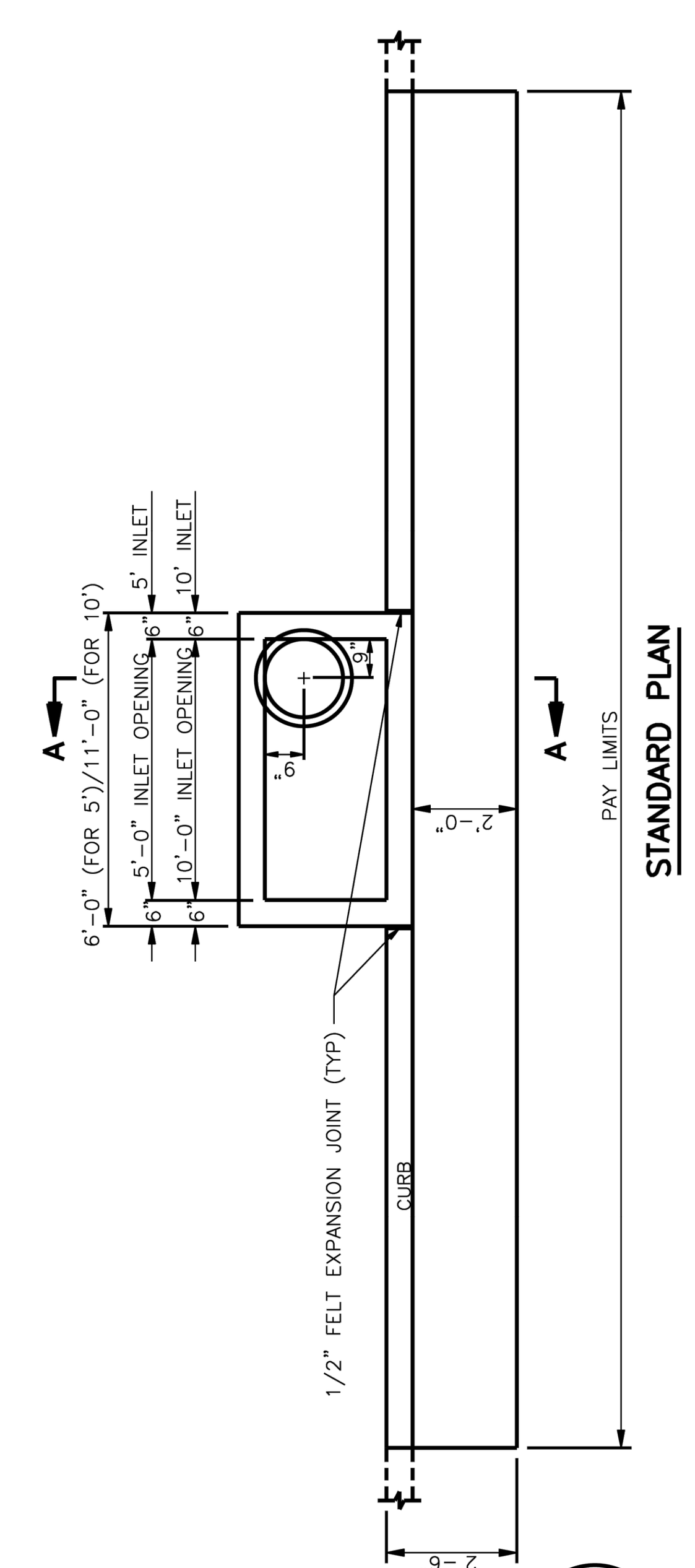
1/7

Revision Date: 07/07

Scale : N/A Date : 06/01/05	
Design :	
Drawn : GAV	INLET DETAILS 5' AND 10' STANDARD AND RECESSED
Dwg. File : REC_001.DWG	PAGE 1
Project No. : STANDARD-DETAILS	



RECESSED PLAN

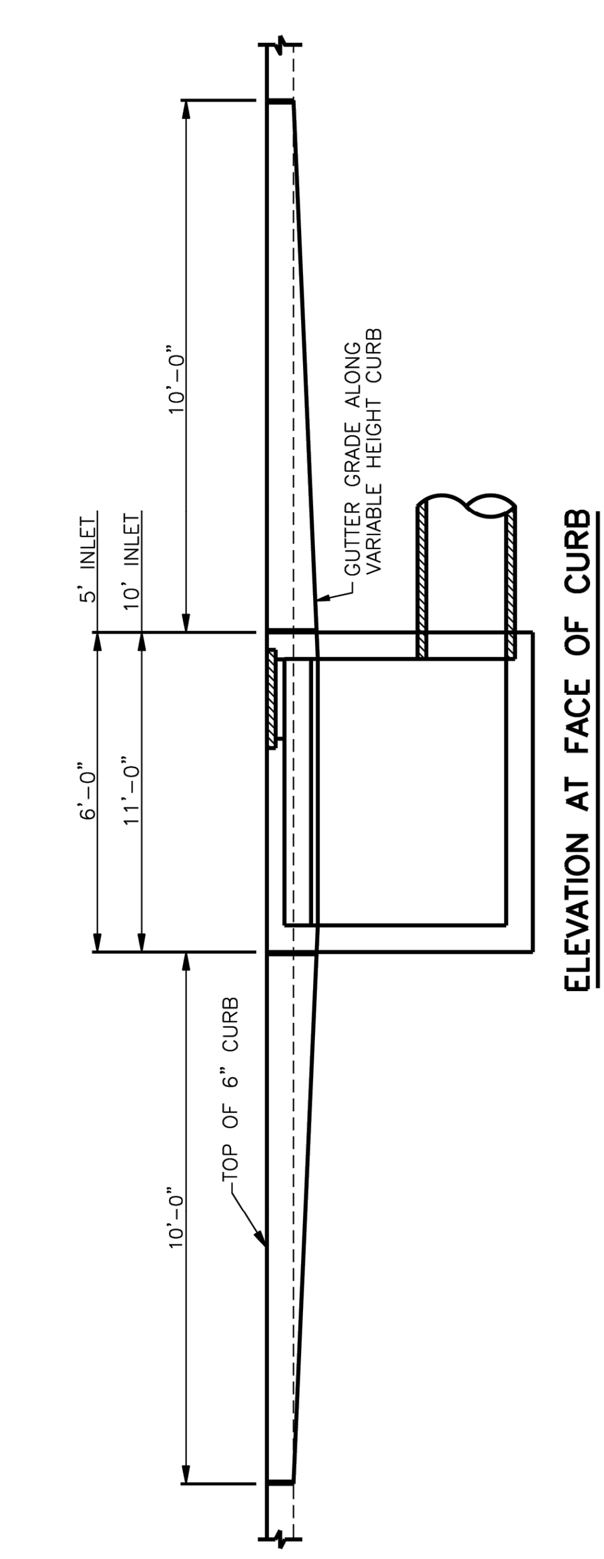


STANDARD PLAN

2/7

Revision Date: 01/06

Scale : N/A Date : 06/01/05	
Design :	
Drawn : GAV	INLET DETAILS 5' AND 10' STANDARD AND RECESSED
Dwg. File : REC_001.DWG	PAGE 2
Project No. : STANDARD-DETAILS	



ELEVATION AT FACE OF CURB

3/7

Revision Date:

Scale : N/A Date : 06/01/05	
Design :	
Drawn : GAV	INLET DETAILS 5' AND 10' STANDARD AND RECESSED
Dwg. File : REC_001.DWG	PAGE 3
Project No. : STANDARD-DETAILS	

REVISIONS		
NO	REVISIONS	DATE	BY

MICHAEL T. DOGGETT 98628 LICENSED PROFESSIONAL ENGINEER 12/7/2024

ANIMAS CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L SANGER, TEXAS

SHEET TITLE:
DRAINAGE DETAILS

ACE PROJECT: 01101

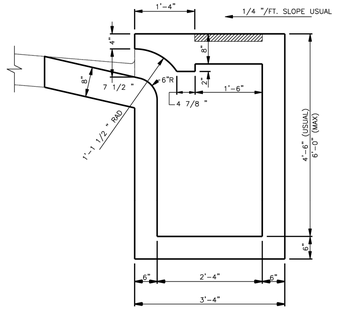
DATE DECEMBER 2024

SCALE AS SHOWN

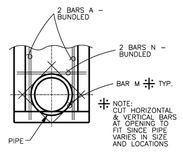
DRAWN BY: MD

SHEET NUMBER C-8.03

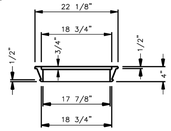
Saturday, December 7, 2024 2:51:01 PM



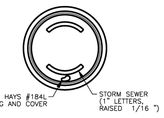
SECTION A–A
DIMENSIONAL SCHEMATIC



SECTION E–E
FRAMING AT OUTFLOW



INLET FRAME & COVER
SECTION

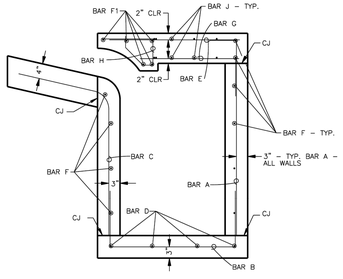


PLAN

4/7

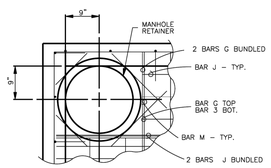
Revision Date: 12/12

Scale : N/A Date : 06/01/05 Design : Drawn : GAV Dwg. File : REC_001.DWG Project No. : STANDARD–DETAILS	INLET DETAILS 5' AND 10' STANDARD AND RECESSED	PAGE 4



CJ = PERMISSIBLE CONSTRUCTION JOINT – SEE NOTE 5

SECTION D–D



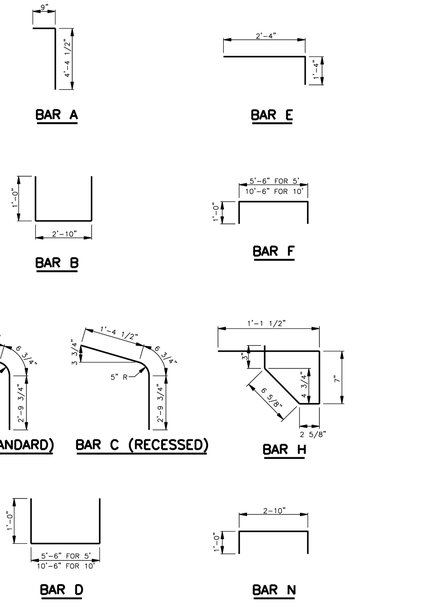
MANHOLE REINFORCING DETAIL

REINFORCING BAR LOCATIONS

6/7

Revision Date:

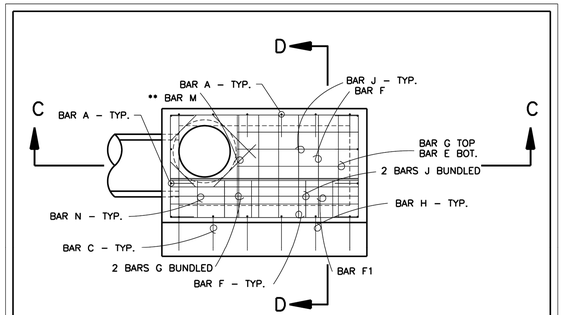
Scale : N/A Date : 06/01/05 Design : Drawn : GAV Dwg. File : REC_001.DWG Project No. : STANDARD–DETAILS	INLET DETAILS 5' AND 10' STANDARD AND RECESSED	PAGE 6



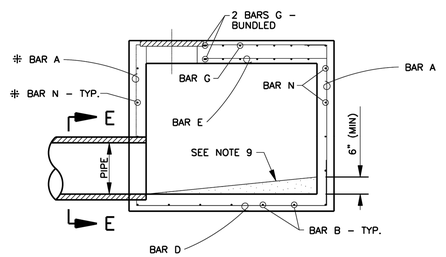
7/7

Revision Date:

Scale : N/A Date : 06/01/05 Design : Drawn : GAV Dwg. File : REC_001.DWG Project No. : STANDARD–DETAILS	INLET DETAILS 5' AND 10' STANDARD AND RECESSED	PAGE 7



PLAN



SECTION C–C
REINFORCING BAR LOCATIONS

5/7

Revision Date:

Scale : N/A Date : 06/01/05 Design : Drawn : GAV Dwg. File : REC_001.DWG Project No. : STANDARD–DETAILS	INLET DETAILS 5' AND 10' STANDARD AND RECESSED	PAGE 5

please provide bedding detail for SD

NO.	BY	DATE	REVISIONS

MICHAEL T. DOGGETT
98628
LICENSED
PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
DRAINAGE DETAILS

ACE PROJECT: 01101

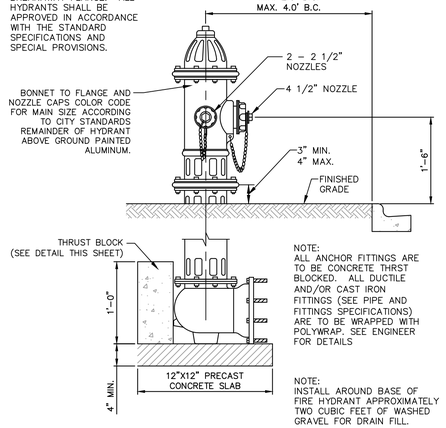
DATE: DECEMBER 2024

SCALE: AS SHOWN

DRAWN BY: MD

SHEET NUMBER: C-8.04

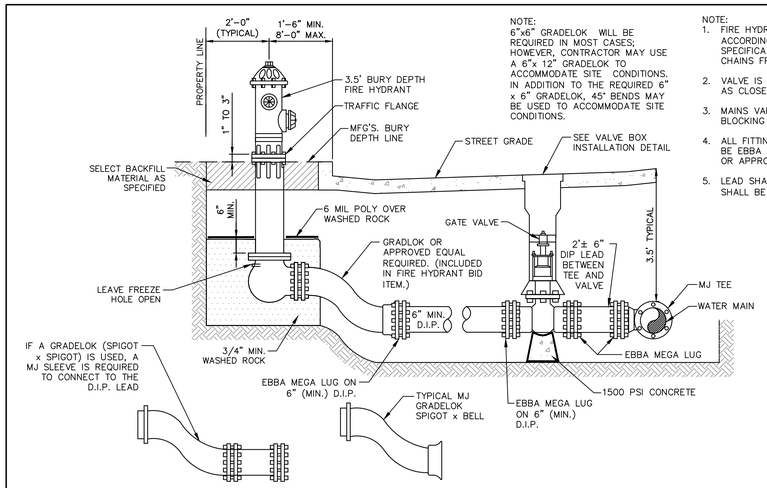
NOTE:
ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL HYDRANTS SHALL BE APPROVED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.



NOTE:
ALL ANCHOR FITTINGS ARE TO BE CONCRETE THRST BLOCKED. ALL DUCTILE AND/OR CAST IRON FITTINGS (SEE PIPE AND FITTINGS SPECIFICATIONS) ARE TO BE WRAPPED WITH POLYWRAP. SEE ENGINEER FOR DETAILS

NOTE:
INSTALL AROUND BASE OF FIRE HYDRANT APPROXIMATELY TWO CUBIC FEET OF WASHED GRAVEL FOR DRAIN FILL.

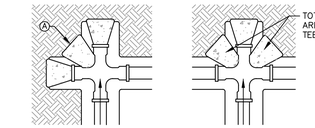
FIRE HYDRANT INSTALLATION DETAIL
N.T.S.



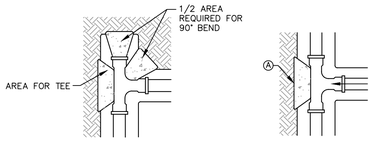
NOTE:
6"x6" GRADELOK WILL BE REQUIRED IN MOST CASES; HOWEVER, CONTRACTOR MAY USE A 6"x 12" GRADELOK TO ACCOMMODATE SITE CONDITIONS. IN ADDITION TO THE REQUIRED 6" x 6" GRADELOK, 45° BENDS MAY BE USED TO ACCOMMODATE SITE CONDITIONS.

NOTE:
1. FIRE HYDRANT TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. CONTRACTOR TO REMOVE CHAINS FROM F.H. CAPS.
2. VALVE IS REQUIRED TO BE POSITIONED AS CLOSE TO TEE AS POSSIBLE
3. MAINS VARY IN SIZE – REFER TO BLOCKING DETAIL
4. ALL FITTINGS ON FIRE HYDRANT LEAD TO BE EBBA MEGA LUG RETAINER GLANDS OR APPROVED EQUAL.
5. LEAD SHALL BE D.I.P. IN ALL CASES AND SHALL BE 6" MIN.

FIRE HYDRANT INSTALLATION DETAIL
N.T.S.



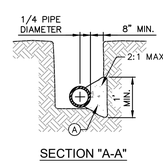
CROSSES



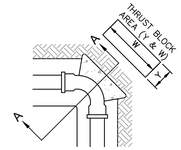
TEES

NOTES:
1. TABLE IS BASED ON 2000#/SQ. FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18" SHALL BE CALCULATED.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSION STRENGTH OF 2500 PSI.
4. THRUST BLOCK IS TO EXTEND TO UNDISTURBED SOIL.
5. SIZE MAY BE DECREASED FOR LESSER DEGREE BENDS AS DETERMINED BY ENGINEER.
6. KEEP CONCRETE CLEAR OF M.J. OR BELL AND SPIGOT JOINTS.
7. BLOCK IN A SIMILAR MANNER AT TEES, HYDRANTS, PLUG OR OTHER LOCATIONS AS REQUIRED.
8. IF CONCRETE BLOCKS CANNOT BE POURED, THEN USE TIE–RODS OR OTHER APPROVED METHOD TO RESTRAIN THRUST.

CONSTRUCTION KEY NOTES:
A. LENGTH "Y & W" AS REQUIRED TO OBTAIN BEARING AREA AGAINST UNDISTURBED SOIL.
B. ADDITIONAL EXCAVATION IF NECESSARY TO OBTAIN REQUIRED BEARING AREA.
C. MINIMUM THRUST BLOCK AREA REQUIREMENTS FOR (Y & W) AS FOLLOWS:



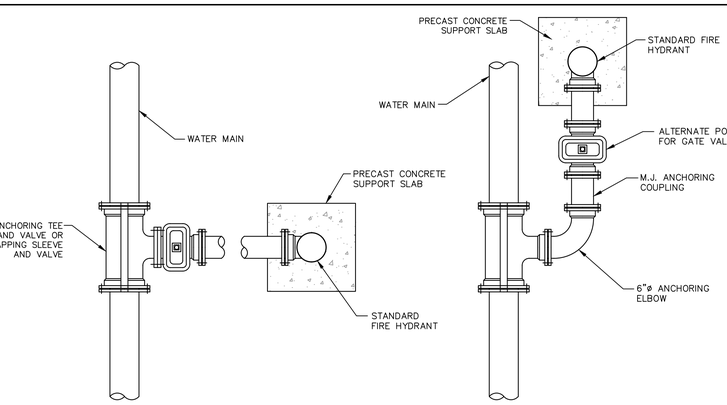
SECTION "A-A"



BENDS

PIPE SIZE	WATER PIPE	
	TEE, DEAD END 90° BEND	45° AND 22 1/2° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

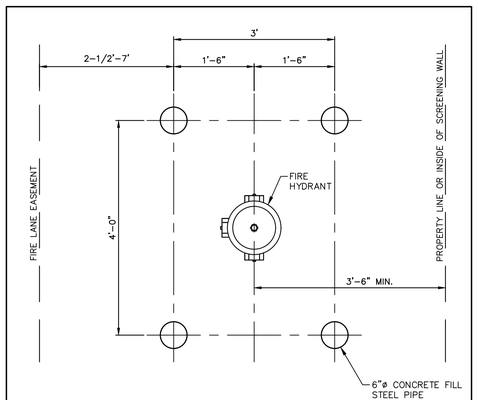
THRUST BLOCKING DETAIL
N.T.S.



STANDARD INSTALLATION

ALTERNATE INSTALLATION

FIRE HYDRANT INSTALLATION DETAIL
N.T.S.

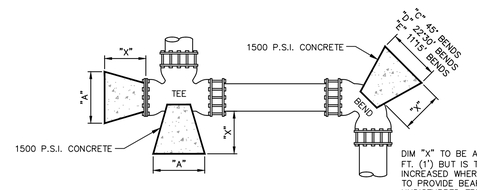


6"ø STEEL PIPE W/CONCRETE FILL 6' LENGTH (3' ABOVE PAVING, 3' BELOW PAVING) TO BE CASED IN 16"ø PIER TO DEPTH OF 1'–0". BELOW BOTTOM OF PIPE USE 2–#6x12" THRU PIPE INTO CONCRETE PIER. PIPES TO BE PAINTED

NOTE:
FOR USE ONLY WHERE CURBS ARE NOT POSSIBLE.

FIRE HYDRANT GUARD POST DETAIL
N.T.S.

Please provide water line embedment detail



DIM "X" TO BE A MIN. OF ONE FT. (1') BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.

HORIZONTAL BLOCKING TABLE

PIPE SIZE	"X" DIM.	PLUGS & TEES "A"	MIN. AREA	MAX. VOL.	90° BENDS "B"	MIN. AREA	MAX. VOL.	45° BENDS "C"	MIN. AREA	MAX. VOL.	22°30' BENDS "D"	MIN. AREA	MAX. VOL.	11°15' BENDS "E"	MIN. AREA	MAX. VOL.
4"	1'–0"	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05
6"	1'–6"	1'–0"	1.06	0.06	1'–2"	1.05	0.09	1'–0"	0.83	0.05	1'–0"	0.83	0.05	1'–0"	0.83	0.05
8"	1'–6"	1'–3"	1.89	0.11	1'–6"	2.66	0.15	1'–3"	1.44	0.08	1'–0"	0.83	0.05	1'–0"	0.83	0.05
10"	1'–6"	1'–9"	2.95	0.17	2'–0"	4.17	0.24	1'–6"	2.26	0.13	1'–3"	1.15	0.07	1'–0"	0.83	0.05
12"	1'–6"	2'–0"	4.25	0.24	2'–3"	6.00	0.34	1'–9"	3.25	0.18	1'–3"	1.65	0.10	1'–0"	0.83	0.05
16"	2'–0"	2'–7"	7.54	0.56	3'–0"	10.65	0.79	2'–3"	5.76	0.43	1'–8"	2.94	0.22	1'–2"	1.48	0.11
18"	2'–0"	2'–11"	7.70	0.57	3'–5"	10.89	0.82	2'–6"	5.89	0.44	1'–10"	3.01	0.22	1'–5"	1.51	0.11
20"	2'–0"	3'–3"	7.86	0.59	3'–9"	11.12	0.84	2'–9"	6.01	0.45	2'–0"	3.07	0.23	1'–7"	1.54	0.12
24"	2'–0"	3'–8"	11.33	0.84	4'–3"	16.00	1.20	3'–2"	8.65	0.65	2'–6"	4.42	0.33	1'–10"	2.22	0.17

NOTE: CALCULATIONS IN MIN. AREA COLUMN ARE IN SQUARE FEET.
CALCULATIONS IN THE MAX. VOLUME COLUMN ARE IN CUBIC YARDS.

HORIZONTAL BLOCKING DETAIL
N.T.S.

NO.	DATE	BY
	REVISIONS	

MICHAEL T. DOGGETT
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PROFESSIONAL ENGINEER
12/17/2024

ANIMAS
CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
UTILITY DETAILS

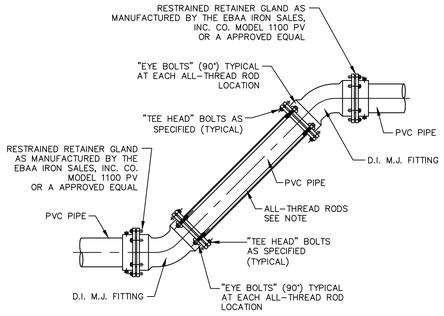
ACE PROJECT:
01101

DATE
DECEMBER 2024

SCALE
AS SHOWN

DRAWN BY:
MD

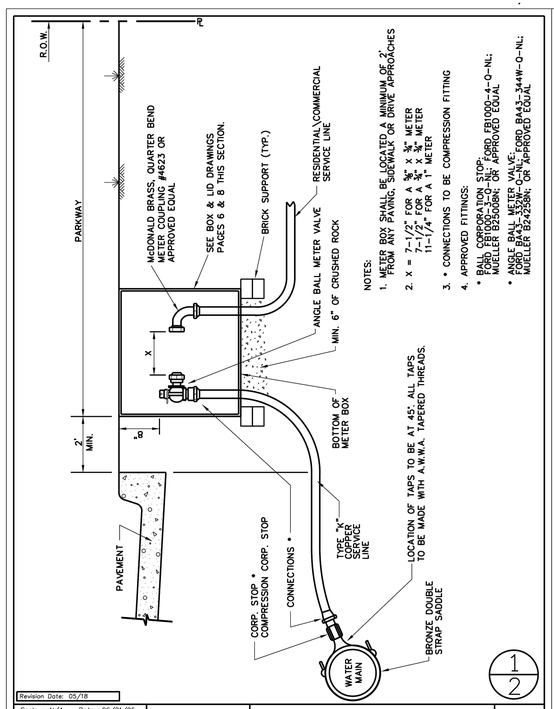
SHEET NUMBER
C-8.05



NOTES:
1. SEE THE MANUFACTURER FOR THE REQUIRED METALLURGICAL SPECIFICATIONS FOR ALL BOLTS, NUTS, WASHERS AND ALL-THREAD RODS.
2. COATINGS AND COVERING FOR THE FITTINGS, ETC. SHALL MEET CITY REQUIREMENTS.

STANDARD THRUST HARNESS DETAIL HORIZONTAL AND/OR VERTICAL OFFSETS

N.T.S.



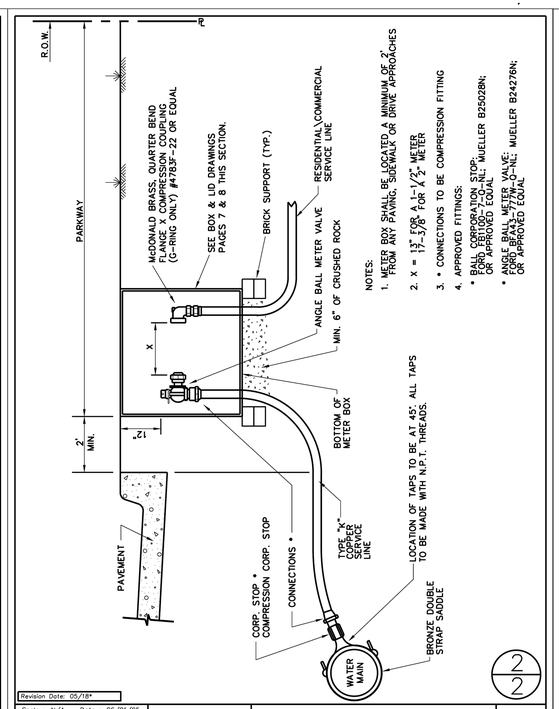
NOTES:
1. METER BOX SHALL BE LOCATED A MINIMUM OF 2' FROM ANY PAVING, SIDEWALK OR DRIVE APPROACHES
2. X = 7-1/2" FOR A ¾" x ¾" METER
   7-1/2" FOR A ¾" x ¾" METER
   11-1/4" FOR A 1" METER
3. • CONNECTIONS TO BE COMPRESSION FITTING
4. APPROVED FITTINGS:
   • BALL CORPORATION STOP: FORD FB1000-4-NL; FORD FB1000-4-O-NL; MUELLER B25008N; OR APPROVED EQUAL
   • ANGLE BALL METER VALVE: FORD BA43-344W-O-NL; FORD BA43-333W-O-NL; MUELLER B24258N; OR APPROVED EQUAL

1/2

Revision Date: 05/18
Scale : N/A Date : 06/01/05
Design :
Drawn : JMK
Dwg. File : SER_001.DWG
Project No. : STANDARD-DETAILS

WATER SERVICE INSTALLATION 3/4" OR 1" LINE

PAGE 3



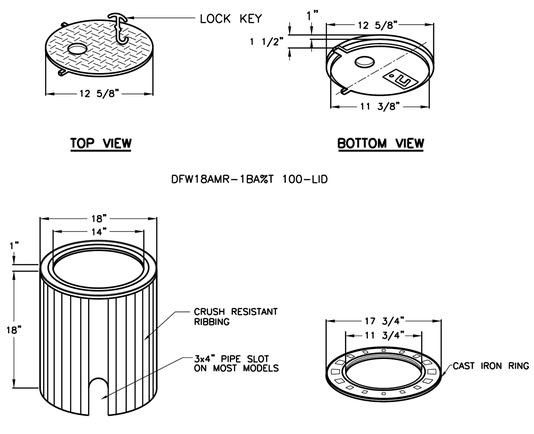
NOTES:
1. METER BOX SHALL BE LOCATED A MINIMUM OF 2' FROM ANY PAVING, SIDEWALK OR DRIVE APPROACHES
2. X = 13" FOR A 1-1/2" METER
   17-3/8" FOR A 2" METER
3. • CONNECTIONS TO BE COMPRESSION FITTING
4. APPROVED FITTINGS:
   • BALL CORPORATION STOP: FORD FB1000-6-NL; MUELLER B25028N; OR APPROVED EQUAL
   • ANGLE BALL METER VALVE: FORD BA43-444W-O-NL; MUELLER B24276N; OR APPROVED EQUAL

2/2

Revision Date: 05/18*
Scale : N/A Date : 06/01/05
Design :
Drawn : JMK
Dwg. File : SER_001.DWG
Project No. : STANDARD-DETAILS

WATER SERVICE INSTALLATION 2" LINE

PAGE 4



METER BOX SHALL BE "F" SERIES BY DFW PLASTICS INC. OR APPROVED EQUAL.
ALL SPECS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Part No.	Series	Size	Height	ID	OD
DFW-1818F	F	18x18"	18"	14"	18"
DFW-1818-PLCIR	F	18x18"	18"	14"	18"
DFW-18RING	F	18"	1 1/2"	11 3/4"	17 3/4"
DFW18AMR-1BA%T 100-LID	F	12"	1 1/2"		

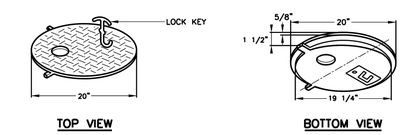
* SEE SHEET 4 FOR LID AND BODY DETAILS

1/4

Revision Date: 04/19
Scale : N/A Date : 06/01/05
Design :
Drawn : DCN
Dwg. File : SER_002.DWG
Project No. : STANDARD-DETAILS

BOX AND LID FOR 5/8" & 3/4" METERS

PAGE 5



METER BOX SHALL BE "F" SERIES BY DFW PLASTICS INC. OR APPROVED EQUAL.
ALL SPECS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Part No.	Series	Size	Height	ID	OD
DFW-2418F	F	24x18"	18"	20 1/2"	24 1/2"
DFW-2418-PLCIR	F	24x18"	18"	20 1/2"	24 1/2"
DFW-24RING	F	24"	1 1/2"	20 1/4"	24"
DFW20AMR-1BA%T 100-LID	F	20"	1 1/2"		

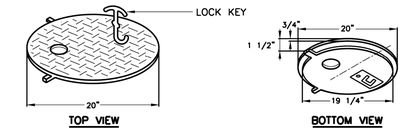
* SEE SHEET 4 FOR LID AND BODY DETAILS.

2/4

Revision Date: 04/19
Scale : N/A Date : 06/01/05
Design :
Drawn : DCN
Dwg. File : SER_004.DWG
Project No. : STANDARD-DETAILS

BOX AND LID FOR 1" METERS

PAGE 6



METER BOX SHALL BE "F" SERIES BY DFW PLASTICS INC. OR APPROVED EQUAL.
ALL SPECS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Part No.	Series	Size	Height	ID	OD
DFW-2818F	F	28x18"	18"	27"	29"
DFW-2818-PLCIR	F	28x18"	18"	27"	29"
DFW-28RING	F	28"	1 1/2"	20 1/4"	28"
DFW20AMR-1BA%T 100-LID	F	20"	1 1/2"		

* SEE SHEET 8 FOR LID AND BODY DETAILS

3/4

Revision Date: 04/19
Scale : N/A Date : 06/01/05
Design :
Drawn : DCN
Dwg. File : SER_003.DWG
Project No. : STANDARD-DETAILS

BOX AND LID FOR 1-1/2" & 2" METER

PAGE 7

NOTES

METER BOX SHALL BE BLACK AND CONSTRUCTED OUT OF MODIFIED POLYETHYLENE MATERIAL FOR MAXIMUM DURABILITY AND CORROSION RESISTANCE.

THE BLACK MATERIAL IS FOR MAXIMUM UV PROTECTION. THE BLACK MATERIAL SHALL BE UNIFORM THROUGHOUT THE METER BOX FOR MAXIMUM LONGEVITY AND NOT HAVE A FOAMING AGENT THAT CREATES AIR POCKETS WITHIN THE PLASTIC WALL.

PLASTIC LID

- THE LID SHALL HAVE "WATER METER" MOLDED INTO THE LID WITH A DIAMOND PATTERN FOR SKID RESISTANCE.
- THE LID SHALL SEAT SECURELY AND EVENLY INSIDE THE CAST IRON RING.
- THE LID SHALL HAVE A SPRING LOADED PLASTIC LOCKING MECHANISM THAT USES A STANDARD BRASS KEY (MFG BY MIDLAND MFG. CO. #1414)

PLASTIC BODY

- THE BODY SHALL HAVE CRUSH RESISTANT RIBBING ALONG THE OUTSIDE OF THE BOX WITH 2" BASE FOOTING LOCATED AT THE BOTTOM OF THE METER PIT TO HELP ELIMINATE SINKING OR FLOATING ONCE INSTALLED.
- THE BODY SHALL HAVE A PATENTED UNIVERSAL RING LOCATOR MOLDED INTO THE TOP OF THE METER PIT TO HELP SECURE CAST IRON RING (MFG BY SIGMA) ONTO TOP OF METER PIT WITH 4 COATED SELF TAPPING BOLTS.
- THE BODY SHALL HAVE ONE PIPE SLOT ON EACH END OF THE BODY THAT MEASURE 3"X4"

4/4

Revision Date: 08/06
Scale : N/A Date : 06/01/05
Design :
Drawn : DCN
Dwg. File : SER_005.DWG
Project No. : STANDARD-DETAILS

GENERAL NOTES & LID AND BODY DETAILS

PAGE 8

NO.	BY	DATE	REVISIONS

MICHAEL T. DOGGETT 98628 LICENSED PROFESSIONAL ENGINEER
12/17/2024

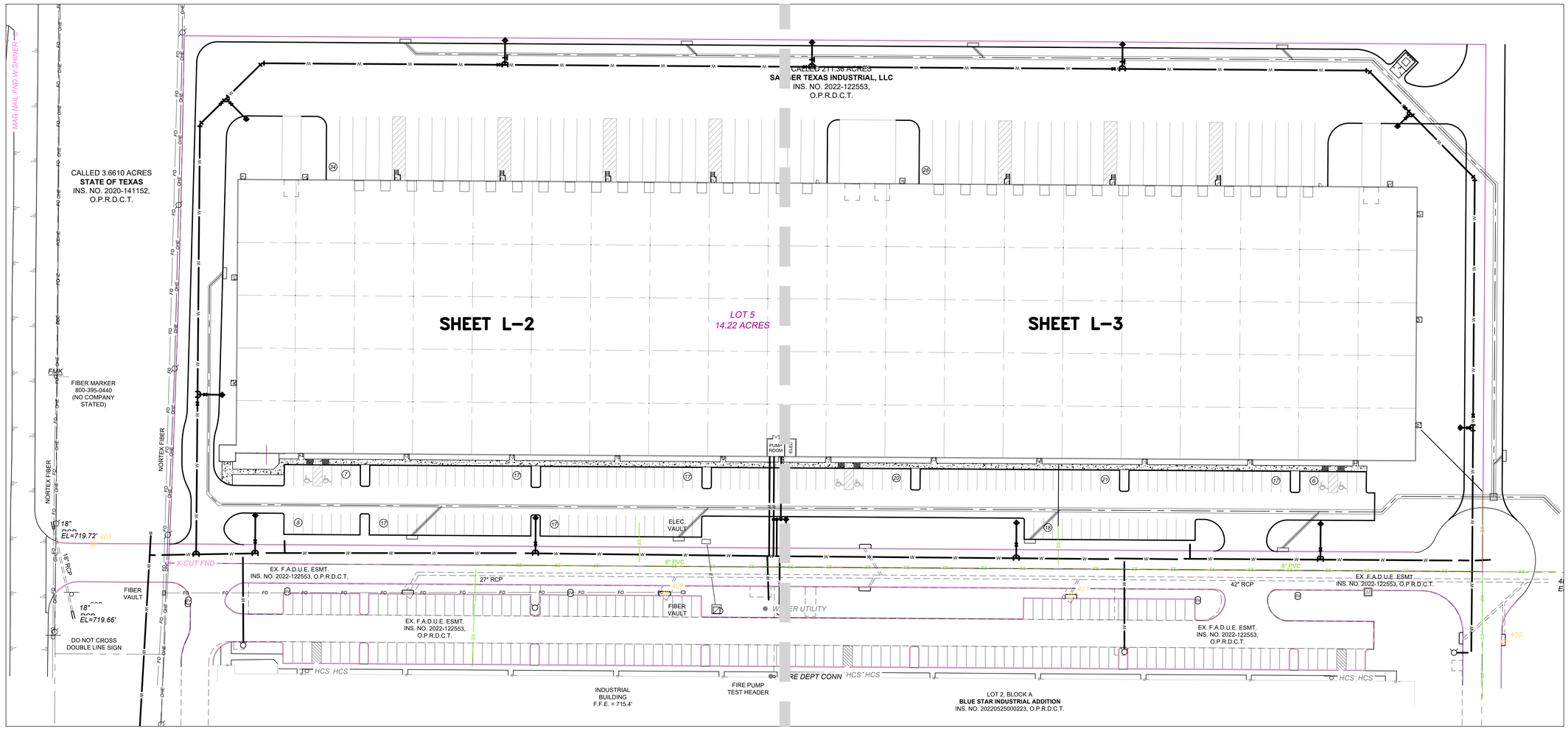
ANIMAS CIVIL ENGINEERING

PHONE: 214-803-1099
TX F-26500

PROJECT NAME:
BLUE STAR INDUSTRIAL BLDG. L
SANGER, TEXAS

SHEET TITLE:
UTILITY DETAILS

ACE PROJECT: 01101
DATE: DECEMBER 2024
SCALE: AS SHOWN
DRAWN BY: MD
SHEET NUMBER: C-8.06



NOTE:
NO LANDSCAPE PLANTINGS WITHIN 3' OF PARKING LOT CURBS.

BEFORE YOU DIG TEXAS 811

CAUTION!!!
UNDERGROUND UTILITIES ARE LOCATED IN THIS AREA. 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, CONTACT LINE LOCATES FOR FRANCHISE UTILITY INFO.
CALL BEFORE YOU DIG:
TEXAS EXCAVATION SAFETY SYSTEM (TESS)
1-800-344-8377
TEXAS ONE CALL SYSTEMS
1-800-245-4545
LONE STAR NOTIFICATION CENTER
1-800-669-8344 EXT. 5

BEFORE YOU DIG...

PLANTING NOTES:

1. PLANT SIZE, TYPE, AND CONDITION SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.
2. ALL PLANT MATERIAL TO BE NURSERY GROWN STOCK.
3. CONTRACTOR RESPONSIBLE FOR MAINTENANCE OF ALL PLANT MATERIAL UNTIL PROJECT ACCEPTANCE.
4. ALL CONTAINER GROWN PLANTS TO HAVE FULL, VIGOROUS ROOT SYSTEM, COMPLETELY ENCOMPASSING CONTAINER.
5. ALL PLANTS WELL ROUNDED AND FULLY BRANCHED. ALL TREES WITH SPREAD 2/3 OF HEIGHT.
6. CONTRACTOR TO PROVIDE OWNER WITH PREFERRED MAINTENANCE SCHEDULE OF ALL PLANTS AND LAWNS.
7. MAINTAIN/PROTECT VISIBILITY TRIANGLE WITH PLANT MATERIAL PER CITY STANDARDS AT ALL ENTRANCES TO SITE.
8. PREP ENTIRE WIDTH OF ALL DEFINED PLANTING BEDS WITH MIX AS OUTLINED IN SPECS. WHERE SHRUBS ARE LOCATED ALONG CURB, SET SHRUBS BACK FROM CURB 3 FT.
9. SEE DETAIL SHEET FOLLOWING FOR PLANTING DETAILS.
10. CONTRACTOR RESPONSIBLE FOR LOCATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO TELEPHONE, TELECABLE, ELECTRIC, GAS, WATER AND SEWER. ANY DAMAGE TO UTILITIES TO BE REPAIRED BY CONTRACTOR AT NO COST TO OWNER.
11. EXISTING TREES ARE SHOWN TO REMAIN, CONTRACTOR SHALL PRUNE ONLY ON APPROVAL OF CITY ARBORIST. WORK TO INCLUDE REMOVAL OF ALL SUCKER GROWTH; DEAD AND DISEASED BRANCHES AND LIMBS; VINES, BRIARS AND OTHER INVASIVE GROWTH; AND ALL INTERFERING BRANCHES. MAKE ALL CUTS FLUSH TO REMAINING LIMB. RETAIN NATURAL SHAPE OF PLANT. ALL WORK SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE.
12. QUANTITIES ARE PROVIDED AS A COURTESY AND NOT INTENDED FOR BID PURPOSES. CONTRACTOR TO VERIFY PRIOR TO PRICING.
13. INSTALL EDGING BETWEEN LAWN AND PLANTING BEDS. REFER TO SPECIFICATIONS. FILE ALL CORNERS SMOOTH.
14. INSTALL CURLEX BLANKET (OR EQUAL) PER MANUFACTURES INSTRUCTIONS ON ALL GROUNDCOVER/SHRUB BEDS WITH A SLOPE OF 4:1 OR GREATER.
15. AT TIME OF PLAN PREPARATION, SEASONAL PLANT AVAILABILITY CANNOT BE DETERMINED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE AND RESERVE ALL B&B PLANTS WHEN AVAILABLE IN CASE ACTUAL INSTALLATION OCCURS DURING THE OFF-SEASON. PURCHASE AND HOLD B&B PLANTS FOR LATE SEASON INSTALLATION.
16. BERM ALL PARKING LOT ISLANDS AS SHOWN ON ENCLOSED DETAIL SHEET. (BERMS MAY NOT BE SHOWN ON GRADING PLAN.)
17. PRIOR TO PLANTING, CONTRACTOR SHALL STAKE TREE LOCATIONS FOR APPROVAL BY OWNER.

N

0' 50' 100'
Scale : 1" = 50'-0"

FAIN • CUPPETT
LANDSCAPE ARCHITECTS, LLC
1921 MAPLEWOOD DR
WEATHERFORD, TX 76087 682-215-9151
PARKS AND OPEN SPACE PLANNING - LANDSCAPE ARCHITECTURE - IRRIGATION DESIGN

LANDSCAPE PLAN

REGISTERED LANDSCAPE ARCHITECT
GREGORY A. CUPPETT
2672
STATE OF TEXAS
11/18/24

ANIMAS CIVIL ENGINEERING

BLUE STAR
INDUSTRIAL PHASE 2
SANGER, TEXAS

L-1

NOTE:
NO LANDSCAPE PLANTINGS WITHIN 3' OF PARKING LOT CURBS.

BEFORE YOU DIG
Texas 811

CAUTION!!!
UNDERGROUND UTILITIES ARE LOCATED IN THIS AREA. 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, CONTACT LINE LOCATES FOR FRANCHISE UTILITY INFO.
CALL BEFORE YOU DIG:
TEXAS EXCAVATION SAFETY SYSTEM (TESS)
1-800-344-8377
TEXAS ONE CALL SYSTEMS
1-800-245-4545
LONE STAR NOTIFICATION CENTER
1-800-669-8344 EXT. 5

BEFORE YOU DIG...

MAG NAIL FND W SHINER

CALLED 3.6610 ACRES
STATE OF TEXAS
INS. NO. 2020-141152,
O.P.R.D.C.T.

QUE MON (3)
3" Cal.

MYR DON (37)
5 gal.

ULM CRA (4)
3" Cal.

ABE GRA (90)
5 gal.

FMK
FIBER MARKER
800-395-0440
(NO COMPANY
STATED)

NORTEX FIBER

MYR DON (21)
5 gal.

QUE MON (3)
3" Cal.

NORTEX FIBER

18" RCP
EL=719.72' 403

18" RCP

18" RCP
EL=719.66'

DO NOT CROSS
DOUBLE LINE SIGN

FIBER
VAULT

X-CUT FND

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

LOT 5
14.22 ACR

QUE MUE (2)
3" Cal.

(2) MAG GRA
3" Cal.

(2) MAG GRA
3" Cal.

QUE MUE (2)
3" Cal.

QUE MON (4)
3" Cal.

ULM CRA (5)
3" Cal.

ELEC.
VAULT

8" PVC

27" RCP

402

FIBER
VAULT

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

HCS HCS

FIRE PUM
TEST HEAI

INDUSTRIAL
BUILDING
F.F.E. = 715.4'

MATCHLINE, SHEET L-3

SEE PLANT LEGEND SHEET L-4

N

0' 30' 60'
Scale : 1" = 30'-0"

LANDSCAPE PLAN

FAIN • CUPPETT
LANDSCAPE ARCHITECTS, LLC
1921 MAPLEWOOD DR
WEATHERFORD, TX 76087 682-215-9151
PARKS AND OPEN SPACE PLANNING - LANDSCAPE ARCHITECTURE - IRRIGATION DESIGN

G Cuppett

REGISTERED LANDSCAPE ARCHITECT
GREGORY A. CUPPETT
2672
STATE OF TEXAS

11/18/24

ANIMAS
CIVIL ENGINEERING

BLUE STAR
INDUSTRIAL PHASE 2
SANGER, TEXAS

L-2

CALLED 21.1.36 ACRES
SANGER TEXAS INDUSTRIAL, LLC
INS. NO. 2022-122553,
O.P.R.D.C.T.

MATCHLINE, SHEET L-2

ES

PUMP ROOM

ELEC

QUE MUE (1)
3" Cal.

(1) QUE MUE
3" Cal.

(2) QUE MUE
3" Cal.

(7) ULM CRA
3" Cal.

(4) QUE MON
3" Cal.

MAG GRA (2)
3" Cal.

QUE MUE (2)
3" Cal.

(4) ULM CRA
3" Cal.

8" PVC

42" RCP

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553, O.P.R.D.C.T.

EX. F.A.D.U.E. ESMT.
INS. NO. 2022-122553,
O.P.R.D.C.T.

WATER UTILITY

FIRE DEPT CONN

HCS

HCS

HCS

LOT 2, BLOCK A
BLUE STAR INDUSTRIAL ADDITION
INS. NO. 20220525000223, O.P.R.D.C.T.

SEE PLANT LEGEND SHEET L-4

NOTE:
NO LANDSCAPE PLANTINGS WITHIN 3' OF PARKING LOT CURBS.

BEFORE YOU DIG
Texas 811

CAUTION!!!
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TEXAS ONE CALL SYSTEMS
1-800-245-4545
LONE STAR NOTIFICATION CENTER
1-800-669-8344 EXT. 5

BEFORE YOU DIG...

Please show that minimum landscaping requirements for non-residential uses per ordinance § 14A-48.5.2 I-1 and I-2 Industrial Districts have been met. Include narrative per ordinance on the plans to verify requirements have been met.

N

0' 30' 60'
Scale : 1" = 30'-0"

LANDSCAPE PLAN

FAIN • CUPPETT
LANDSCAPE ARCHITECTS, LLC
1921 MAPLEWOOD DR
WEATHERFORD, TX 76087 682-215-9151
PARKS AND OPEN SPACE PLANNING - LANDSCAPE ARCHITECTURE - IRRIGATION DESIGN

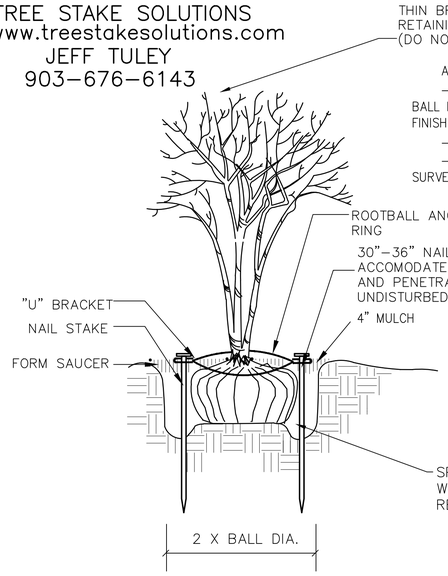
REGISTERED LANDSCAPE ARCHITECT
GREGORY A. CUPPETT
2672
STATE OF TEXAS
11/18/24

ANIMAS
CIVIL ENGINEERING

BLUE STAR
INDUSTRIAL PHASE 2
SANGER, TEXAS

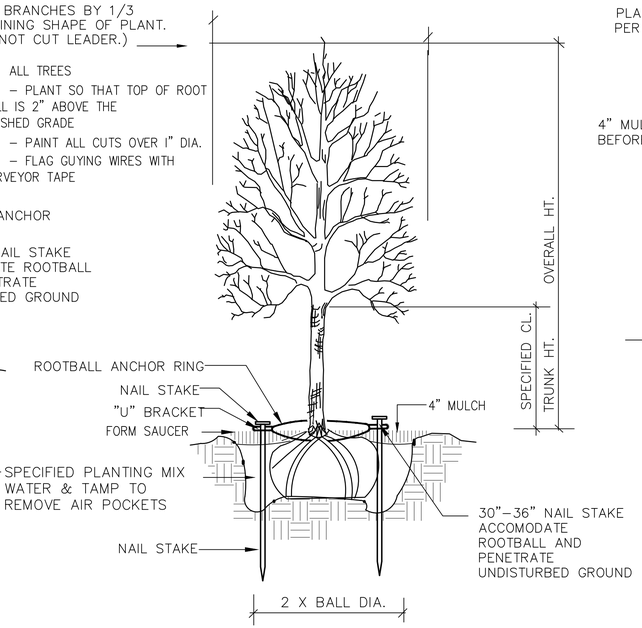
L-3

Contact Information:
TREE STAKE SOLUTIONS
www.treestakesolutions.com
JEFF TULEY
903-676-6143



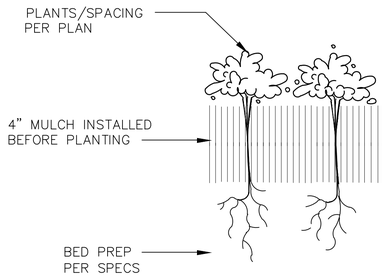
STAKING FOR MULTI-TRUNK TREES & TREES 2" CAL. & UNDER

SCALE: NOT TO SCALE



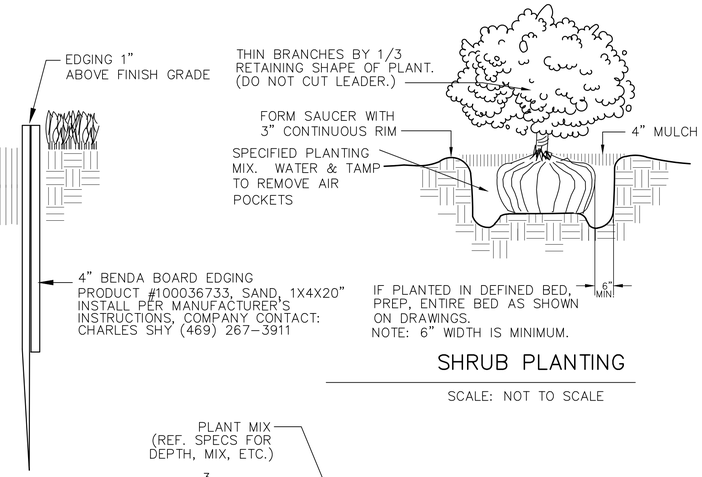
SAFETY STAKE BY TREE STAKE SOLUTIONS

SCALE: NOT TO SCALE



BEDDING PLANTS/ EDGING DETAIL

SCALE: NOT TO SCALE



TYPICAL PARKING LOT ISLAND MOUNDING

SCALE: NOT TO SCALE

SHRUB PLANTING

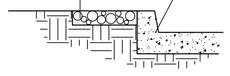
SCALE: NOT TO SCALE

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	SPACING	REMARKS
TREES								
	MAG GRA	6	Magnolia grandiflora	Southern Magnolia	3" Cal.	12` Height Min	As Shown	
	QUE MUE	10	Quercus muehlenbergii	Chinkapin Oak	3" Cal.	14` Min. Ht.	As Shown	
	QUE MON	14	Quercus polymorpha 'Monterey'	Monterey Mexican White Oak	3" Cal.	12` Height Min	As Shown	
	ULM CRA	20	Ulmus crassifolia	Cedar Elm	3" Cal.	12` Height Min	As Shown	
SHRUBS								
	ABE GRA	90	Abelia x grandiflora	Glossy Abelia	5 gal.	24" min.	36" O.C.	
	MYR DON	58	Myrica cerifera 'Don's Dwarf'	Don's Dwarf Wax Myrtle	5 gal.	24" min.	36" O.C.	

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	SPACING	SPACING	REMARKS
GROUND COVERS									
	CYN DAC	73,227 sf	Cynodon dactylon	Bermudagrass	Solid Sod				

6" DEPTH (REF PLAN FOR EXACT WIDTHS). RIVER ROCK 3"-5" DIAM, EARTH TONE COLOR. (INCLUDE NICOLON WEED BARRIER AT BOTTOM OF ROCK AND STEEL EDGING ON BACK SIDE). REF PLAN FOR LOCATIONS. PROVIDE SUBMITTAL FOR APPROVAL BY OWNER



RIVER ROCK STRIP

SCALE: NOT TO SCALE

FAIN • CUPPETT
LANDSCAPE ARCHITECTS, LLC
1921 MAPLEWOOD DR
WEATHERFORD, TX 76087 682-215-9151
PARKS AND OPEN SPACE PLANNING - LANDSCAPE ARCHITECTURE - IRRIGATION DESIGN

PLANTING DETAILS

G Cuppett
REGISTERED LANDSCAPE ARCHITECT
GREGORY A. CUPPETT
2672
STATE OF TEXAS
11/18/24

ANIMAS CIVIL ENGINEERING

BLUE STAR
INDUSTRIAL PHASE 2
SANGER, TEXAS

L-4

SECTION 02830

TREES SHRUBS, AND GROUNDCOVERS

PART I GENERAL

1.01 DESCRIPTION OF WORK

A. Scope

1. Bed prep
2. Metal edging
3. Topoil
4. Planting
5. Mulching
6. Guarantee

B. Related Work Specified Elsewhere

1. General Requirements – All locations
2. Section 02740 – Irrigation Trenching
3. Section 02750 – Irrigation
4. Section 02800 – Lawns

1.02 QUALITY ASSURANCE

A. Contractor Qualifications

Minimum of three (3) years experience on projects of similar characteristics and size.

B. Reference Standards:

1. American Joint Committee Of Horticultural Nomenclature: Standardized Plant Names, Second Edition, 1942;
2. American Association Of Nurserymen: American Standard For Nursery Stock, 1973

C. Substitutions

1. Substitutions accepted only upon written approval of Landscape Architect and Owner.
2. Submit substitutions possessing same characteristics as indicated on plans and specifications.

D. Inspection and Testing

1. The project Owner's representative reserves the right to inspect and tag plants at the place of growth with the Contractor.
2. Inspection at place of growth does not preclude the right of rejection due to improper digging or handling.
3. Owner's representative reserves the right to request soil samples and analysis of soil and plant mix. Remove or correct unacceptable soil. Cost of testing by Contractor.

1.03 SUBMITTALS

A. Certificates

1. Submit State and Federal certificates of inspection with invoice. (Only if required by Landscape Architect.)
2. File certificates with Owner's representative prior to material acceptance.

1.04 PRODUCT DELIVERY, STORAGE, & HANDLING

A. Preparation of Delivery

1. Balled & Burlaped (B&B) Plants

a. Dig and prepare for shipment in manner that will not damage roots, branches, shape, and future development after replanting.
b. Ball with firm, natural ball of soil, wrapped tightly with burlap covering entire ball.
c. Ball size and ratios: conform to American Association of Nurserymen standards unless otherwise shown on plant list.

2. Pack plant material to protect against climatic & seasonal damage, as well as breakage injuries during transit.
3. Securely cover plant tops with ventilated tarpaulin or canvas to minimize wind–whipping and drying in transit.
4. Pack and ventilate to prevent sweating of plants during transit. Give special attention to insure prompt delivery and careful handling to point of delivery at job site.

B. Delivery

1. Deliver fertilizer, fertilizer tablets, peat, mulch, soil additives, and amendment materials to site in original, unopened containers, bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark, and conformance to State law.
2. Deliver plants with legible identification and size labels on example plants.
3. Protect during delivery to prevent damage to root ball or desication of leaves.
4. Notify Owner's representative of delivery schedule in advance so plant material may be inspected upon arrival at job site.
5. Deliver plants to job site only when areas are prepared.

C. Storage

1. Protect roots of plant material from drying or other possible injury with wetted mulch or other acceptable material.
2. Protect from weather.
3. Maintain and protect plant material not to be planted immediately upon delivery.

D. Handling

1. Do not drop plants.
2. Do not damage ball, trunk, or crown.
3. Lift and handle plants from bottom of container or ball.

1.05 JOB CONDITIONS

E. Planting Season Perform actual planting only when weather and soil conditions are suitable in accordance with locally acceptable practices.
F. Protection Before excavations are made, take precautionary measures to protect areas trucked over and where soil is temporarily stacked.

1.06 GUARANTEE

A. Guarantee new plant material for one year after acceptance of final installation (ie Final Acceptance of project).
B. Make replacement (one per plant) during one year guarantee period at appropriate season with original plant type, size and planting mixture.
C. Repair damage to other plants, lawns, & irrigation caused during plant replacement at no cost to Owner.
D. Use only plant replacements of indicated size and species.
E. Ten days before end of guarantee period, notify Owner's representative in writing for year end inspection. Failure to do so, shall automatically extend guarantee until notification is received.

PART II PRODUCTS

2.01 MATERIALS

A. Plant Materials

1. Hardy under climatic conditions similar to locality of project.
2. True to botanical and common name variety.
3. Sound, healthy, vigorous, well branched, and densely foliated when in leaf; with healthy well–developed root system.
4. Free from disease, insects, and defects such as knots, sun–scald, windburn, injuries, disfigurement, or abrasions.
5. Conform to measurements after pruning with branches in normal positions.
6. Conform to American Association of Nurserymen standards unless shown differently on plant list.
7. Trees:
a. Single, straight trunks, unless indicated otherwise
b. Trees with weak, thin trunks not capable of support will not be accepated.
c. All multi–stem trees are to have a minimum of three stems, similar in size and shape, with a spread of approximately 2/3 of the height. All yaupons to be female. Crape myrtle color selection by Landscape Architect.
8. Nursery grown stock only.
9. Subject to approval of Landscape Architect.
10. Seasonal color
a. Annuals in 4" pots or as specified
b. Perennials in 4" pots, clumps, bulbs as specified

B. Topsoil

1. Natural, fertile, friable soils having a textural classification of loam or sandy loam possessing characteristics of soils in vicinity which produce heavy growth of crops, grass, or other vegetation.
2. Free of subsoil, brush, organic litter, objectionable weeds, clods, shale, stones ¾" diameter or larger, stumps, roots or other material harmful to grading, planting, plant growth, or maintenance operations.
3. Presence of vegetative parts of Bermuda grass (Cynodon dactylon), Johnson grass, nut grass (Cyperus rotundus), and other hard to eradicate weeds or grass will be cause for rejection of topsoil.
4. Test topsoil (cost by Contractor):

a. Available nitrogen
b. Available phosphorus
c. Available potash
d. Iron
e. Ph: 5.5 to 7.0
f. Decomposed organic matter: 6–10%

C. Mulch

1. Top Dressing Mulch – Shredded cypress or hard wood only
2. Mulch for soil prep – Shredded pine bark
3. In pre–packaged bags only; bulk shredded material is unacceptable.

D. Peat Moss Commercially available baled peat moss or approved equivalent.

E. Staking Material

1. Stakes for tree support

a. Tree Stake Solutions or equivalent.
b. To be removed after one year.

F. Water

1. Free of oils, acids, alkali, salt, and other substances harmful to plant growth
2. Location: Furnish temporary hoses and connections on site.

G. Sand Washed builders sand

H. Antidesicant – "Wilt–proof" or equal.

I. Edging – 3/16" X 4" green, new and unused; with stakes.

2.02 MIXES

A. Planting Mixture

Existing topsoil – 50%
3. Shredded pine bark – 50%
4. Fertiiizer 10:20:10 at 30 lb./1000 SF

B. Planting Mix for Annuals/Perennials

1. Prepare above mix
2. Add 2" of sand

C. Azalea mix: solid peat moss in hole 9" wider than root ball each direction. Plant in solid peat moss and provide mound at base of plant to allow for drainage.
D. Japanese maple, dogwood, camellias: Provide 50/50 peat moss to topsoil mix, raise for drainage.

PART III – EXECUTION

3.01 UTILITIES – verify location of all utilities prior to initiating construction; repair any damage caused by construction at no cost to owner.

3.02 INSPECTION

A. Inspect plants for injury and insect infestation; prune prior to installation.
B. Inspect site to verify suitable job conditions.

3.03 FIELD MEASUREMENTS

A. Location of all trees and shrubs to staked in the field and approved by Owner's representative prior to installation.
B. Location of all groundcover and seeding limits as shown on plans.

3.04 EXCAVATION FOR PLANTING

A. Pits

1. Shape – Vertical hand scarified sides and flat bottom.
2. Size for trees – 2 feet wider or twice the root ball, whichever is greater.
3. Size for shrubs – Size of planting bed as shown on drawings.
4. Rototill soil mix thoroughly, full depth of 12".
5. NOTE: If beds are proposed beneath drip line of existing tree canopy, pocket prep plants. Do not roto–till beneath existing trees.

B. Obstructions Below Ground

1. Remove rock or underground obstructions to depth necessary to permit planting.
2. If underground obstructions cannot be removed, notify Owner's representative for instruction.

C. Excess Soil Dispense of unacceptable or excess soil away from the project site at Contractor's expense.

3.05 PLANTING

A. General

1. Set plants 2" above existing grade to allow for settling.
2. Set plants plumb and rigidly braced in position until planting mixture has been tamped solidly around ball.
3. Apply soil in accordance with standard industry practice for the region.
4. Thoroughly settle by water jetting and tamping soil in 6" lifts.
5. Prepare 3" dish outside root ball after planting.
6. Thoroughly water all beds and plants.
7. Stake trees and large shrubs as indicated on plans.
8. Apply anti–desicant according to manufacturer's instructions.
9. Apply commercially manufactured root stimulator as directed by printed instruction.
10. Plant and fertilize bedding plants per trade standards.
11. Apply 3" mulch top dressing.
12. Provide weed mat and twelve inches (12") of amended topsoil to planting areas to ensure optimum plant health.

B. Balled Plants

1. Place in pit of planting mixture that has been hand tamped prior to placing plant.
2. Place with burlap intact to ground line. Top of ball to be 2" above surrounding soil to allow for settling.
3. Remove binding at top of ball and lay top of burlap back 6".
4. Do not pull wrapping from under ball, but cut all binding cord.
5. Do not plant if ball is cracked or broken before or during planting process or if stem or trunk is loose.
6. Backfill with planting mixture in 6" lifts.

C. Container Grown Plants

1. Place in pit on planting mixture that has been hand tamped prior to placing plant.
2. Cut cans on two sides with an acceptable can cutter, and remove root ball from can.

Do not injure root ball.
3. Carefully remove plants without injury or damage to root balls.
4. Backfill with planting mixture in 6" lifts.

D. Mulching

1. Cover planting bed evenly with 4" of mulch to hide drip irrigation system, retain soil moisture and minimize weed growth.
2. Water immediately after mulching.
3. Where mulch has settled, add additional mulch to regain 3" thickness.
4. Hose down planting area with fine spray to wash leaves of plants.

D. Pruning

1. Prune minimum necessary to remove injured twigs and branches, dead wood, and succors; remove approximately 1/3 of twig growth as directed by landscape architect; do not cut leaders or other major branches of plant unless directed by landscape architect.
2. Make cuts flush, leaving no stubs.
3. Paint cuts over 1" diameter with approved tree wound paint.
4. Do not prune evergreens except to remove injured branches.

3.06 EDGING

A. Stake edging alignment with string line prior to installation. Use framing square to insure right angles are true.
B. Install all edging straight and true as indicated on drawings. Where edging layout is circular in design, maintain true and constant radii as shown.
C. When required on slopes, make vertical cuts (approximately 6" on center) on bottom of edging to allow bending without crimping edging.
D. Install edging so that approximately 1" is exposed on lawn side. Edging should not be visible from bed side after application of mulch.
E. Align edging with architectural features (ie pavement joints, windows, columns, wall, etc.) when drawings indicate.
F. Bend all corners, do not cut corners.
G. Interlock all pieces with pre–fabricated connectors.
H. Install with all stakes on inside of planting bed.
I. Remove, file off all sharp corners and burrs.

3.07 CLEAN–UP

A. Sweep and wash all paved surfaces.

Remove all planting and construction debris from site, including rocks, trash and all other miscellaneous materials.

3.08 MAINTENANCE

A. Contractor responsible for routine, and regular maintenance of site until Final Acceptance is awarded by Owner. Work includes:

1. Weeding (weekly)
2. Watering (as required)
3. Pruning
4. Spraying
5. Fertilizing
6. Mulching
7. Mowing (weekly)

B. Provide Owner and Landscape Architect with preferred maintenance schedule in writing. Schedule shall include the above–listed tasks and shall address all frequencies, rates, times, levels, etc.

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PARKS AND OPEN SPACE PLANNING - LANDSCAPE ARCHITECTURE - IRRIGATION DESIGN

PLANTING SPECS

REGISTERED LANDSCAPE ARCHITECT
GREGORY A. CUPPETT
2672
STATE OF TEXAS
11/18/24

ANIMAS
CIVIL ENGINEERING

BLUE STAR
INDUSTRIAL PHASE 2
SANGER, TEXAS

L-5

SECTION 02800

FINISH GRADING, LAWN WORK, WILD FLOWERS

PART I – GENERAL

1.01 DESCRIPTION

A. Work includes turf establishment (sod, hydromulch, etc.) as described on drawings.

B. Make required analysis and material tests for topsoil, fertilizers, and other materials of similar character per current methods of the Association of Official Agricultural Chemists, when required.

C. Grass seed shall conform to tolerances for germination and purity per applicable standards of U.S. Department of Agriculture.

D. The turf contractor shall have a stand of grass established prior to substantial completion of the project. If this is not possible due to time of year or schedule, he shall maintain and protect the seeded areas until the grass is established.

PART II – PRODUCTS

2.01 TOPSOIL MATERIAL

A. Topsoil material (stockpiled, as specified in Specifications) has been saved for use in finish grading. After sifting out all plant growth, rubbish, and stones, use for areas designated to receive grass. If stockpiled topsoil is not sufficient quantity to complete work, furnish acceptable topsoil from another approved source to provide four inches (4") of topsoil for grass areas unless otherwise noted on drawings. Grass areas shall be defined as the graded areas disturbed during construction not to be paved or built upon.

B. Acceptable topsoil material shall be defined as natural, fertile, agricultural soil, capable of sustaining vigorous plant growth, uniform composition throughout admixture of subsoil, free of stones, lumps, plants, and their roots, sticks, or other extraneous matter; do not deliver while in a frozen or muddy condition.

2.02 FERTILIZER

A. Provide a commercial balanced fertilizer delivered to the job in bags labeled with manufacturer's guaranteed analysis. Store in weatherproof storage, place in such a manner that its effectiveness will not be impaired.

B. Fertilizer shall be a grade containing the percentages of plant food elements by weight as specified elsewhere in these specifications.

C. Availability of various elements shall be per Standards of the Association of Official Agricultural Chemists.

2.03 GRASS SEED

A. Grass seed shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine (9) months of the time of delivery to the project. When requested by the Owner or Representative, the seeding contractor shall furnish a sample of seed from each bag for testing.

B. The seed shall comply with all provisions of the U.S. Department of Agriculture as to labeling, purity, and germination.

2.04 MULCHING

A. Dry straw or hay of good quality, free of seeds of competing plants and at such rate of 1 1/2 – 2 tons per acre; or,

B. Wood cellulose or cane fiber mulch at a rate of 1,000 pounds per acre when the slope is 3/4:1 and steeper; or,

C. A combination of good quality dry straw or hay free of seeds of competing plants at a rate of 2 1/2 tons per acre and wood cellulose or cane fiber mulch at a rate of 500 pounds per acre. This combination shall be used when the slope is flatter than 3/4:1; or,

D. Sericea lespedza seed bearing hay at a rate of 3 tons per acre. This mulch may be applied green or air dried, but must contain mature seed.

E. Manufactured mulch materials, such as soil retention blankets, erosion control netting, or others that may be required on special areas of high water concentration or unstable soils. When these materials are used, follow the manufacturer's recommendations for installation.

2.05 HYDRO–MULCHING

Wood cellulose fiber or cane fiber mulch will be applied with hydraulic seeding and fertilizing equipment. All slurry ingredients shall be mixed to form a homogeneous slurry and spray applied within one hour after the mixture is made.

When wood cellulose or cane fiber mulch is used at the 500 pound per acre rate, straw or hay mulch with asphalt emulsion is applied over this to complete the mulch.

Wood cellulose or cane fiber mulch at the 1,000 pound per acre rate is used alone where other mulch material will not stick.

Wood cellulose or cane fiber mulch is self anchoring.

PART III – EXECUTION

3.01 RESPONSIBILITY

The site grading contractor will be responsible to stockpile acceptable topsoil in a sufficient quantity to provide four inches (4") minimum cover for all grass areas, including but not limited to all curbed islands, and topsoil planting mounds/berms at the appropriate height and width as defined and shown on the landscaping and/or planting drawings. The topsoil and grass areas shall be further defined as any area disturbed during the grading and construction process.

The site grading contractor, shall be responsible to spread the topsoil within all perimeter graded areas and future building areas only.

The site grading contractor shall be responsible for backfilling of all curbed islands and planting mounds/berms. They shall also be responsible for removal of all stones, roots, and raking of all topsoil areas hat are to be seeded and/or planted. It will also be the site grading contractor's responsibility to provide fertilizer, grass seed, and any additional topsoil required and mulching.

3.02 GRASS SEEDING

A. Remove stones, roots, rubbish and other deleterious materials from topsoiled areas that are to be seeded.

B. Immediately prior to sowing seed, scarify ground as necessary; rake until surface is smooth and friable. Sow seed evenly, lightly wood rake into 02800–3
C. ground, then roll ground with suitable roller; water thoroughly with fine
spray. During any weather, keep lawn watered with sprinklers or other approved methods. Re–seed any areas not doing well or damaged. At intervals as may be required according to seasonal conditions, mow and water grass and execute necessary weeding until acceptable and full stand of grass has been obtained.

D. Provide permanent grass seeding for lawn areas so indicated. Seed in accordance with the following schedule (unless otherwise directed by Owner or Owner's Representative::

1. Sow areas ready for seeding between March 1 and October 1 with Hulled Common Bermuda at a rate of 85 pounds per acre.

2. Sow areas ready for seeding between October 1 and March 1 with Unhulled Common Bermuda at a rate of 90 pounds per acre, and Annual Rye Grass at the rate of 50 pounds per acre.

3. Apply fertilizer at a rate of 20/25 pounds per 1,000 square feet.

3.03 WILD FLOWERS

A. Areas indicated on plans to receive wild flower coverage shall br fine graded, fertilized, and prepared in a manner similar to traditional turf establishment.

B. Area to be hydromulched with seed mix as follows:

Tickseed	10 pounds/acre
Cosmos	15 pounds/acre
Ox–Eyed Daisy	5 pounds/acre
Side Oats Grama	4 pounds/acre
Showy Primrose	0.5 pounds/acre
Plains Coreopsis	2 pounds/acre
Black Eyed Susan	2 pounds/acre
Indian Blanket	10 pounds/acre
Texas Bluebonnet	4 pounds/acre
Little Bluestem	4 pounds/acre

3.04 MULCH
A. All areas to be seeded shall be mulched.
B. Mulch materials shall be applied uniformly over the seeded area. Mulch shall be straw and shall be at the rate of 1 1/2 – 2 tons per acre.

B. Mulch shall be anchored with an emulsified asphalt binder at the rate of 10 gallons per 1,000 square feet.

3.05 PROTECTION

Provide, at no additional cost to Owner, fencing, railing, wire or other types of protection for topsoiled and seeded areas against trespassing and damage. If lawns are damaged prior to Final Acceptance, treat or replace them as directed.
Remove protection when so directed.

3.06 MAINTENANCE

Provide maintenance from start of work until Final Acceptance. Maintenance includes watering of lawns, weeding, mowing, edging, repairs of wash–outs and gullies, repairs to protection, and other necessary work of maintenance. Maintain slopes against erosion.

3.07 REHYDROMULCHING

The Owner's representative will designate areas to be replanted. Areas on which a stand of growing grass is not present in a reasonable length of time, (Bermuda grass seed should be germinating in 6–8 days) shall be prepared, reseeded and remulched, as specified for original planting at no additional cost to Owner. A stand shall be defined as live plants from seed occurring at a rate of not less than 1,000 growing plants per square foot. Replanting required because of faulty operations or negligence on the part of the Contractor shall be performed without
cost to Owner.

3.08 FINAL CLEAN–UP

A. At time of final inspection of work, and before final acceptance, clean paved areas that are soiled or stained by operations of work of this section. Clean by sweeping or washing, and remove all defacements or stains.

B. Remove construction equipment, excess material and tools. Cart away from site any debris resulting from work of this section and dispose of as directed.

SECTION 02922
SODDING

PART I – GENERAL

1.01 DESCRIPTION

A. Work Included

1. Sod bed preparation
2. Fertilizing
3. Sodding
4. Miscellaneous management practices

B. Related Work Specified Elsewhere

1. Finish Grading, Section 02800
2. Lawns and Grasses, Section 02930

1.02 REFERENCE STANDARDS

A. Standardized Plant Names

American Joint Committee of Horticultural Nomenclature, Second Edition, 1942.

B. Texas Highway Department – Standard Specifications for Construction, Item 164, Seeding for Erosion Control.

1.03 SUBMITTALS

A. Vendors Certification That Sod Meets Texas State Sod Law

1. Include labeling requirements.
2. Include purity and type.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A Sod:

1. Previous season's crop with date of analysis on each bag.
2. Furnish and deliver each variety in separate bags or containers.
3. Sod to be cut no more than three days before delivery.

B. Fertilizer:

1. Unopened bags labeled with the analysis.
2. Conform to Texas Fertilizer Law.

1.05 JOB CONDITIONS

A. Planting Season:

1. Only during suitable weather and soil conditions.
2. As specifically authorized by the Owner's Representative.

B. Schedule – Only after all other construction is complete.

C. Protect and Maintain Sodded Areas

1. From traffic and all other use.
2. Until sodding is complete and accepted.

PART II – PRODUCTS

2.01 MATERIALS

A. Sod:

1. Sod: As specified on drawings, weed, insect, and disease free having a minimum of 1 inch of topsoil attached to the roots and cut no more than three days prior to installation.
2. The sod shall be cut in strips of at least 1/2 sq. yd. and not more than 1 sq. yd. Sod shall be cut into strips not less than 12" in width or more than 9' in length. At the time of harvest, the top growth shall not exceed 3" in length.
3. All sod shall conform to the laws of the State and shall be obtained from sources meeting the approval of the Department of Agriculture, Division of Entomology.

B. Fertilizer:

1. Uniform in composition, free flowing.
2. Suitable for application in approved equipment.
3. Analysis of 16–20–0, 16–8–8 or as directed.

C. Water:

1. Free of oil, acid, alkali, salts or other substances harmful to growth of grasses.

PART III – EXECUTION

3.01 SOD BED PREPARATION

A. Cultivate to a depth of four (4") inches by disking and tilling with a power tiller.

B. Clear surfaces of all materials:

1. Stumps, stones, and other objects larger than one inch (1").
2. Roots, brush, wire, stakes, etc.
3. Any objects that may interfere with sodding or maintenance.

C. Prepare sod bed:

1. Remove soil clods larger than one inch (1").
2. Grade areas to smooth, even surface, removing ridges and filling depressions. Final grade to be below finish grade of curbing and edging as shown on details. All grades shall meet approval of Owner's Representative before sodding.

3.02 SODDING

A. Sodding:

1. Lightly water prepared grade, lay sod with staggered joints and with edges touching. Topdress with topsoil at edges if necessary to provide smooth surface. On slopes of 2 to 1 and greater, fasten sod in place with wood pegs (two each piece) or other approved method. Sod damaged by storage or during installation shall be rejected. Following settling, topdress with screened, approved topsoil.
2. Water and fertilize at 5 lbs. per 1,000 sq. ft.
3. Sod shall not be placed during a drought, nor during periods when sod is not normally placed in the area, and shall not be placed on frozen ground. No dry or frozen sod is acceptable.
4. The contractor shall keep all keep all sodded areas moist and growing until Final Acceptance. All areas shall be maintained in an acceptable condition until acceptance by Owner.

B. Rolling:

1. After placing sod, roll with a hand roller, weighing not more than 100 lbs. per foot of width, in two directions.
2. Eliminate all air pockets; finished surface should be free of excessive undulations.

3.05 MAINTENANCE AND MANAGEMENT

A. Includes protection, replanting, maintaining grades, repair of erosion damage. Also includes weekly mowing at 1 1/2" height until final acceptance.

B. Resodding:

1. Resod damaged or unacceptable areas.
2. Ruts, ridges, and other surface irregularities shall be corrected.

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TURF SPECS

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