X:\CL_Abilene\23503 – Polaris Drive Sewer Line Extension – City of Abilene\Drafting_Plans_C_Civil\01 COVER SHEET.dwg Saved By: tking Save Time: 1/18/2024 7:51 AM Plotted by: tristan king Plot Date: 2/15/2024 10:55 AM

PLANS FOR
CITY OF ABILENE, TEXAS
POLARIS DRIVE SEWER LINE EXTENSION
JANUARY 2024

PROJECT LOCATION MAP NORTH

1"=2000'

CITY OF ABILENE CITY COUNCIL

WELDON HURT - MAYOR

SHANE PRICE LYNN BEARD

BLAISE REGAN BRIAN YATES

KYLE McALISTER TRAVIS CRAVER

ROBERT HANNA - CITY MANAGER

RODNEY TAYLOR - DIRECTOR OF WATER UTILITIES

APPROVED FOR CONSTRUCTION

BY THE

CITY OF ABILENE, TEXAS

SCOTT CHANDLER, P.E. DATE

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED
PROFESSIONAL ENGINEER

01/18/2024

JACOB MARTIN
3465 CURRY LANE
ABILENE, TEXAS 79606
325.695.1070

TBPE FIRM # 2448 | TBAE FIRM # BR 2261 | TBPELS FIRM # 10194493

LEGEND

- PROPOSED SEWER LINE
- PROPOSED PIPE BORE ENCASEMENT
- PROPOSED MANHOLE
- EXPLORATORY BORING LOCATION
- EXISTING STORM DRAIN MANHOLE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING IRRIGATION VALVE
- EXISTING FLUSH VALVE
- EXISTING FIRE HYDRANT
- EXISTING ELECTRIC METER
- EXISTING GAS TEST STATION
- EXISTING GAS METER
- EXISTING COMMUNICATION MANHOLE
- EXISTING SIGN
- EXISTING POWER POLE & ANCHOR
- EXISTING LIGHT POLE
- EXISTING TRAFFIC SIGNAL POLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING MAILBOX
- EXISTING TREE
- EXISTING ASPHALT SURFACE
- EXISTING CONCRETE SURFACE
- EXISTING GRAVEL SURFACE
- EXISTING LOT LINE
- EXISTING ROW
- EXISTING EASEMENT
- EXISTING FENCE
- EXISTING CHAINLINK FENCE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING GAS LINE
- EXISTING OIL/GAS/PETROLEUM LINE
- EXISTING BURIED PHONE LINES
- EXISTING BURIED TV CABLE
- EXISTING OVERHEAD ELECTRIC
- EXISTING FIBER OPTIC CABLE

PROJECT VICINITY MAP

NOT TO SCALE

NORTH

SHEET LIST

SHEET NO.	SHEET TITLE
01	COVER SHEET
02	SHEET LIST, LEGEND, AND VICINITY MAP
03	CONSTRUCTION NOTES
04	PLAN AND PROFILE STA. 0+00-5+00
05	PLAN AND PROFILE STA. 5+00-10+00
06	PLAN AND PROFILE STA. 10+00-15+00
07	PLAN AND PROFILE STA. 15+00-18+00
08	PLAN AND PROFILE STA. 18+00-23+00
09	PLAN AND PROFILE STA. 23+00-END
10	SEWER DETAILS 1
11	SEWER DETAILS 2
12	SEWER DETAILS 3
13	WATER & SEWER CROSSING DETAILS
14	EROSION CONTROL DETAILS

SHEET INDEX

1"=400'

NORTH

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

SHEET LIST, LEGEND, AND VICINITY MAP

NO.	REVISION	DATE
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PROJECT # 23503
SCALE AAS SHOWN
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.

SEQ. 02 / 14
SHEET 02

Plot Date: 2/15/2024 10:55 AM
Plotted by: tristan.king
Save Time: 1/18/2024 7:46 AM
Saved By: tking
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GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR TO FIELD VERIFY SIZE AND LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. (TEXAS ONE CALL SYSTEM (1-800-545-6005). CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES WHICH ARE TO REMAIN. BURIED UTILITIES SHOWN ON THE PLANS HAVE BEEN ESTABLISHED BY ON GROUND INFORMATION AS WELL AS COORDINATION WITH UTILITY COMPANIES. LOCATIONS MAY NOT BE EXACT AND OTHER UTILITIES MAY EXIST. CONTRACTOR SHALL COORDINATE WITH ENGINEER FOR DIRECTION ON ANY HORIZONTAL OR VERTICAL ALIGNMENT CONFLICTS.

2. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL PARTIES THAT MEET THE DEFINITION OF OPERATOR AS DEFINED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) TPDES CONSTRUCTION GENERAL PERMIT TXR150000 SHALL SUBMIT REQUIRED NOTIFICATION WHICH MAY INCLUDE A COPY OF THE NOTICE OF INTENT (NOI) FILED WITH THE TCEQ AND/OR A CONSTRUCTION SITE NOTICE (CSN). A COPY OF THE NOI OR THE CSN SHALL BE PROVIDED TO THE CITY. THE NOI/CSN FORMS AND PERMIT REQUIREMENTS MAY BE OBTAINED FROM TCEQ AT www.TCEQ.state.tx.us/nav/permits/wq_construction.html. A STORM WATER POLLUTION PREVENTION PLAN (SWP3) SHALL BE DEVELOPED AND IMPLEMENTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. QUESTIONS CONCERNING THESE REQUIREMENTS MAY BE ADDRESSED TO TCEQ SMALL BUSINESS LOCAL GOVERNMENT ASSISTANCE PROGRAM AT 800-447-2827.

3. ALL EXCAVATION GREATER THAN 5 FEET DEEP SHALL COMPLY WITH O.S.H.A. TRENCH SAFETY STANDARDS.

4. ALL MATERIAL FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

5. CONTRACTOR SHALL CONTACT A REPRESENTATIVE FROM THE GAS COMPANIES A MINIMUM OF 48 HOURS BEFORE COMPLETING GAS LINE CROSSINGS.

6. NO CHANGE IN THE WORK PERFORMED SHALL BE AUTHORIZED WITHOUT APPROVAL OF THE ENGINEER.

7. THE CONTRACTOR SHALL CONTROL EROSION AND SEDIMENTATION PER THE APPLICABLE PERMITS, LAWS, AND REGULATIONS.

8. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING LANDSCAPING ON PRIVATE PROPERTY. EXISTING LANDSCAPING SHALL BE REPAIRED TO ITS ORIGINAL CONDITION INCLUDING THE REPLACEMENT OF EXISTING LAWN AREAS WITH THE SAME TYPE OF LAWN AS WAS REMOVED.

9. ALL ABOVE GROUND STRUCTURES SHALL BE PROTECTED BY THE CONTRACTOR FROM DAMAGE DURING THE CONSTRUCTION PROCESS. ANY DAMAGE DONE ON PRIVATE PROPERTY SHALL BE REPLACED OR REPAIRED TO ORIGINAL OR BETTER CONDITIONS.

10. CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND FREE OF DEBRIS DURING CONSTRUCTION.

11. THE CITY RESERVES THE RIGHT TO WITHHOLD PAYMENT IF THE CONTRACTOR FAILS TO FOLLOW THE ABOVE GENERAL CONSTRUCTION GUIDELINES.

SEWER COLLECTION SYSTEM CONSTRUCTION NOTES:

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §217(C), AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.

2. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

3. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.

4. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

5. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE. THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON THE PLAN SHEETS. IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

6. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).

7. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE SHALL COMPLY WITH MAXIMUM ALLOWABLE CURVATURE RECOMMENDED BY THE PIPE MANUFACTURER.

8. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES. IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS WILL BE USED. THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN SHEETS AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAILS.

9. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

10. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §217.

11. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE PER SPECIFICATION 33 01 02.

12. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
    (A) ALL MANHOLES MUST PASS A LEAKAGE TEST.
    (B) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.
        (1) HYDROSTATIC TESTING.
            (A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.
            (B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.
            (C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.
        (2) VACUUM TESTING.
            (A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.
            (B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.
            (C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.
            (D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.
            (E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
            (F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.
            (G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.
            (H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

13. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

TRAFFIC CONTROL NOTES:

1. ALL TRAFFIC CONTROL SHALL COMPLY WITH SECTION 12 OF THE GENERAL CONDITIONS AND SPECIFICATION SECTION 502 OF THE CITY OF ABILENE STANDARD SPECIFICATIONS.

2. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN, PRIOR TO CONSTRUCTION, FOR REVIEW AND APPROVAL BY THE ENGINEER. ANY DEVIATIONS FROM THE APPROVED TRAFFIC CONTROL PLAN SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE APPROVAL.

3. WORK SHALL BE CONDUCTED IN A WAY AS TO MINIMIZE INTERFERENCE WITH TRAFFIC. CONTRACTOR SHALL PROVIDE ADVANCED WARNING CONSTRUCTION SIGNING AND TYPE III BARRICADES WITH "ROAD CLOSED" SIGNS LOCATED AT THE START OF CONSTRUCTION. ALL SIGNING AND BARRICADES PROVIDED SHALL BE IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TXMUTCD).

4. TRAFFIC CONTROL SHALL NOT BE PUT IN PLACE MORE THAN ONE DAY PRIOR TO START OF CONSTRUCTION.

5. TRAFFIC CONTROL SHALL BE PHASED SO THAT ROAD CLOSURES ARE LIMITED TO ONE WEEK UNLESS AUTHORIZED BY THE CITY TO BE LONGER.

6. IF ACCESS TO PRIVATE OR PUBLIC PROPERTY MUST BE DISRUPTED BY AN EXCAVATION, THE EXCAVATION SHALL BE BACKFILLED OR COVERED WITH STEEL PLATES TO RESTORE ACCESS IMMEDIATELY AFTER PIPE INSTALLATION AND NO LATER THAN THE END OF EACH WORKING DAY.

7. CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL DURING THE ENTIRE CONSTRUCTION PERIOD.

8. THE CITY RESERVES THE RIGHT TO WITHHOLD PAYMENT IF THE CONTRACTOR FAILS TO FOLLOW THE GUIDELINES FOR TRAFFIC CONTROL.

SEWER LINE CONSTRUCTION NOTES:

1. ALL EXISTING MANHOLES TO BE ABANDONED SHALL BE REMOVED PER STANDARD DETAIL.

2. CONTRACTOR SHALL LOCATE AND RECONNECT ALL EXISTING SEWER SERVICES AFFECTED BY THE PROJECT.

3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING MANHOLE LOCATIONS, INVERTS, SEWER LINE LOCATIONS, ELEVATIONS, AND SLOPES. CONTRACTOR SHALL FIELD TEST ALL NEW MANHOLES AND CONNECTIONS TO EXISTING SEWER LINES.

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED
PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION
CONSTRUCTION NOTES

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE N.T.S.

SEQ. 03 / 14 | SHEET 03

Plotted by: tristan.king Plot Date: 2/15/2024 10:55 AM
Saved By: tking Save Time: 12/13/2023 2:33 PM
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STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 0+00-5+00

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE AS SHOWN

SEQ. 04 / 14 | SHEET 04

Plot Date: 2/15/2024 10:55 AM
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STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 5+00-10+00

NO.	REVISION	DATE
1	ADDED SERVICE CONNECTION	02/01/2024

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE AS SHOWN

SEQ. 05 | SHEET 05 / 14

Plot Date: 2/15/2024 10:55 AM
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STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 10+00-15+00

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE AS SHOWN

SEQ. 06 / 14 | SHEET 06

Plot Date: 2/15/2024 10:56 AM
Plotted by: tristan.king
Save Time: 12/13/2023 4:37 PM
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CAUTION!!!
Contractor to call for locates (1-800-DIG-TESS) and field verify the location of all existing utilities prior to excavation.

GRAPHIC SCALE 1"=40'
20 0 20 40

NORTH

SCALE:
H:1"=40'
V:1"=4'

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 15+00-18+00

NO.	REVISION	DATE
1	SLICK BORE ACROSS POLARIS DR.	02/15/2024

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE AS SHOWN

SEQ. 07 / 14 | SHEET 07

CAUTION!!!
Contractor to call for locates (1-800-DIG-TESS) and field verify the location of all existing utilities prior to excavation.

GRAPHIC SCALE 1"=40'
20 0 20 40

NORTH

SCALE:
H:1"=40'
V:1"=4'

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 18+00-23+00

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 SCALE AS SHOWN

SEQ. 08 / 14 SHEET 08

Plot Date: 2/15/2024 10:56 AM
Plotted by: tristan king
Save Time: 12/19/2023 11:42 AM
Saved By: tking
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CAUTION!!!
Contractor to call for locates (1-800-DIG-TESS) and field verify the location of all existing utilities prior to excavation.

GRAPHIC SCALE 1"=40'
20 0 20 40

NORTH

MATCHLINE STA. 23+00
SEE SHEET 08

SCALE:
H:1"=40'
V:1"=4'

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

PLAN AND PROFILE STA. 23+00-END

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE AS SHOWN

SEQ. 09 / 14 | SHEET 09

Plot Date: 2/15/2024 10:56 AM
Plotted by: tristan.king
Save Time: 12/19/2023 11:42 AM
Saved By: tking
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OUTSIDE ROADWAYS

PAVED AND GRAVEL AREAS

WASTEWATER TRENCH DETAILS

N.T.S.

WALL BRACING DETAIL

MOVABLE SHIELD

TRENCH WALL SLOPING

TRENCH WALL PROTECTION

N.T.S.

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

SEWER DETAILS 1

NO.	REVISION	DATE

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
CHECK SCALE AND ADJUST ACCORDINGLY.

PROJECT # 23503 | SCALE N.T.S.

SEQ. 10 / 14 | SHEET 10

Plotted by: tristan king Plot Date: 2/15/2024 10:56 AM
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PRECAST REINFORCED MANHOLE

PRECAST REINFORCED DROP MANHOLE

SECTION A-A

MANHOLE LINER NOTES:

1. CONCRETE MANHOLES SHALL BE LINED WITH RAVEN 405 LINING SYSTEM OR APPROVED EQUAL, WITH MINIMUM DRY FILM THICKNESS OF 100 MILS.
2. CONTRACTOR MAY USE ARMOROCK POLYMER MANHOLES IN LIEU OF CONCRETE, LINED MANHOLES.

MANHOLE FLOOR PLAN

REINFORCED CONCRETE MANHOLE

N.T.S.

NOTE:

1. CONTRACTOR MAY USE EITHER LINED CONCRETE MANHOLES, ARMOROCK POLYMER MANHOLES OR FIBERGLASS MANHOLES. CONTRACTOR SHALL NOTIFY CITY OF PROPOSED MANHOLE MATERIAL PRIOR TO ORDERING AND INSTALLING MANHOLES.

STATE OF TEXAS
HENRY K. HARLE
98381
LICENSED PROFESSIONAL ENGINEER
01/18/2024

ISSUED FOR CONSTRUCTION

JACOB MARTIN
TBPELS FIRM # 10194493
TBAE FIRM # BR 2261
TBPE FIRM # 2448

CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

SEWER DETAILS 2

NO.	REVISION	DATE

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PROJECT # 23503 | SCALE N.T.S.

SEQ. 11 / 14 | SHEET 11

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STANDARD SERVICE CONNECTION DETAIL

DEEP SERVICE CONNECTION DETAIL

NOTE:
EITHER WYE FITTING OR WYE SADDLE MAY BE USED FOR CONNECTION, NO TEES WILL BE ALLOWED.

4" OR 6" SANITARY SEWER SERVICE CONNECTION

N.T.S.

MANHOLE DETAIL

MANHOLE INVERT DETAIL

CITY OF ABILENE FIBERGLASS MANHOLE DETAILS

N.T.S.

STATE OF TEXAS
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CITY OF ABILENE
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SEWER DETAILS 3

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1	ADDED SERVICE CONNECTION	02/01/2024

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PROPOSED SEWER LINE CROSSING UNDER EXISTING WATER LINE

(PER TCEQ SEE SPECIFICATIONS) NTS

PROPOSED WATER LINE CROSSING OVER EXISTING SEWER LINE

(PER TCEQ SEE SPECIFICATIONS) NTS

PARALLEL WATER AND SEWER LINES

(WHEN 9' SEPARATION IS NOT POSSIBLE) NTS

PROPOSED SEWER LINE CROSSING OVER EXISTING WATER LINE

NTS

PROPOSED WATER LINE CROSSING UNDER EXISTING SEWER LINE

NTS

TCEQ TAC CHAPTER 290.44(e) WATER & SEWER SEPARATION NOTES:

(e) LOCATION OF WATERLINES. THE FOLLOWING RULES APPLY TO INSTALLATIONS OF WATERLINES, WASTEWATER MAINS OR LATERALS, AND OTHER CONVEYANCES/APPURTENANCES IDENTIFIED AS POTENTIAL SOURCES OF CONTAMINATION. FURTHERMORE, ALL RATINGS SPECIFIED SHALL BE DEFINED BY ASTM OR AWWA STANDARDS UNLESS STATED OTHERWISE. NEW MAINS, SERVICE LINES, OR LATERALS ARE THOSE THAT ARE INSTALLED WHERE NO MAIN, SERVICE LINE, OR LATERAL PREVIOUSLY EXISTED, OR WHERE EXISTING MAINS, SERVICE LINES, OR LATERALS ARE REPLACED WITH PIPES OF DIFFERENT SIZE OR MATERIAL.

(1) WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.

(2) POTABLE WATER DISTRIBUTION LINES AND WASTEWATER MAINS OR LATERALS THAT FORM PARALLEL UTILITY LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.

(3) NO PHYSICAL CONNECTION SHALL BE MADE BETWEEN A DRINKING WATER SUPPLY AND A SEWER LINE. ANY APPURTENANCE SHALL BE DESIGNED AND CONSTRUCTED SO AS TO PREVENT ANY POSSIBILITY OF SEWAGE ENTERING THE DRINKING WATER SYSTEM.

(4) WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.

(A) NEW WATERLINE INSTALLATION - PARALLEL LINES.

(i) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING, NON-PRESSURE OR PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS IS ABLE TO DETERMINE THAT THE EXISTING WASTEWATER MAIN OR LATERAL IS NOT LEAKING, THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE EXISTING WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE EXISTING WASTEWATER MAIN OR LATERAL. EVERY EFFORT SHALL BE EXERTED NOT TO DISTURB THE BEDDING AND BACKFILL OF THE EXISTING WASTEWATER MAIN OR LATERAL.

(ii) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING PRESSURE-RATED WASTEWATER MAIN OR LATERAL AND IT CANNOT BE DETERMINED BY THE LICENSED PROFESSIONAL ENGINEER IF THE EXISTING LINE IS LEAKING, THE EXISTING WASTEWATER MAIN OR LATERAL SHALL BE REPLACED WITH AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE NEW WASTEWATER LINE, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE REPLACED WASTEWATER MAIN OR LATERAL.

(iii) WHERE A NEW POTABLE WATERLINE PARALLELS A NEW WASTEWATER MAIN, THE WASTEWATER MAIN OR LATERAL SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE WASTEWATER MAIN OR LATERAL.

(B) NEW WATERLINE INSTALLATION - CROSSING LINES.

(i) WHERE A NEW POTABLE WATERLINE CROSSES ABOVE A WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND MUST BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. WHEN CROSSING AN EXISTING WASTEWATER MAIN OR LATERAL AND IT IS DISTURBED OR SHOWS SIGNS OF LEAKING, THE WASTEWATER MAIN OR LATERAL SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(I) THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE AN EXISTING, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL.

(II) THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE AN EXISTING, PRESSURE-RATED WASTEWATER MAIN OR LATERAL.

(ii) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:

(II) WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.

(II) ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.

(iii) WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL, THE WATERLINE SHALL BE ENCASED AS DESCRIBED FOR WASTEWATER MAINS OR LATERALS IN CLAUSE (II) OF THIS SUBPARAGRAPH OR CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN, THE PROCEDURES IN §217.53(D) OF THIS TITLE (RELATING TO PIPE DESIGN) MUST BE FOLLOWED.

(iv) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(v) WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

(5) WATERLINE AND WASTEWATER MAIN MANHOLE OR LATERAL MANHOLE OR CLEANOUT SEPARATION. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN MANHOLE OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.

(6) LOCATION OF FIRE HYDRANTS. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.

(7) LOCATION OF POTABLE OR RAW WATER SUPPLY OR SUCTION LINES. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.

(8) PROXIMITY OF SEPTIC TANK DRAINFIELDS. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.

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CITY OF ABILENE
POLARIS DR SEWER LINE EXTENSION

WATER & SEWER CROSSING DETAILS

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PROJECT # 23503 | SCALE N.T.S.

SEQ. 13/14 | SHEET 13

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EROSION CONTROL REQUIREMENTS:

IT IS REQUIRED THAT ALL CONSTRUCTION ACTIVITY BE IN COMPLIANCE WITH THE LATEST REGULATIONS OF THE ENVIRONMENTAL PROTECTION AGENCY, THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY, AND ALL OTHER CITY, STATE, AND FEDERAL REGULATIONS.

TO BE IN COMPLIANCE THE CONTRACTOR WILL FURNISH, INSTALL AND MAINTAIN ALL DEVICES NECESSARY TO INSURE THE ENVIRONMENT IS PROTECTED AS REQUIRED BY SAID REGULATIONS. PROTECTION WILL BE IN PLACE BEFORE CONSTRUCTION BEGINS. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR LEAVING THE PROJECT IN A STABILIZED CONDITION THAT ASSURES PREVENTION OF FUTURE EROSION AND SEDIMENTATION POLLUTION.

"STABILIZED CONDITION" IMPLIES THAT DISTURBED AREAS AFFECTED BY THIS ACTIVITY HAVE BEEN RESTORED TO A CONDITION EQUAL TO, OR BETTER THAN, THEY WERE BEFORE THE ACTIVITY OCCURRED. DIFFERENT METHODS SUCH AS PERMANENT GRASS SOD, CONCRETE RIPRAP, CONCRETE RETARDS, GRASS COVERED EARTH BERMS, AND OTHER METHODS MAY ACCOMPLISH THE RESTORATION. UNTIL PERMANENT POLLUTION AND SEDIMENTATION CONTROL IS ESTABLISHED, THE CONTRACTOR WILL PROVIDE TEMPORARY CONTROL SUCH AS SILT FENCE, ROCK RETARDS, BERMS, ETC.

THE COST ASSOCIATED WITH PROVIDING THESE CONTROLS WILL BE CONSIDERED SUBSIDIARY UNLESS SPECIFIC BID ITEMS ARE INCLUDED IN THE PLANS.

SEDIMENT CONTROL FENCE USAGE GUIDELINES:

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 100 GPM/FT . SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES:

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

BALED HAY FOR EROSION CONTROL

PROFILE VIEW

SECTION A-A

TEMPORARY SEDIMENT CONTROL FENCE

SECTION B-B

PLAN VIEW

SLOPE INSTALLATION

DITCH INSTALLATION

SOIL RETENTION BLANKET EROSION CONTROL

GENERAL NOTES:

1. USE WIRE STAPLES, .091" IN DIAMETER OR GREATER "U" SHAPED WITH LEGS 6" IN LENGTH AND A 1" CROWN. SIZE AND SHAPE OF STAPLES USED WILL VARY WITH SOIL CONDITIONS. DRIVE STAPLES VERTICALLY INTO THE GROUND. USE FOUR STAPLES ACROSS AT THE START OF EACH ROLL.

2. FOR SLOPE INSTALLATION, CONTINUE TO STAPLE ALONG THE LENGTH OF THE ROLL AT 6 FT. INTERVALS.

3. FOR DITCH LINER, STAPLE ALONG THE LENGTH OF THE ROLL AT 4 FT. INTERVALS.

4. ANOTHER ROW OF STABLES IN THE CENTER OF EACH BLANKET SHOULD BE ALTERNATELY SPACED BETWEEN EACH SIDE FOR EITHER SLOPE OR DITCH.

5. USE A COMMON ROW OF STAPLES ON ADJOINING BLANKETS.

BALED HAY USAGE GUIDELINES:

A BALED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM/FT OF CROSS SECTIONAL AREA. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

1. WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10%, THE LENGTH OF SLOPE UPSTREAM THE BALED HAY SHOULD BE LESS THAN 50'.

2. WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.

3. WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE. FOR BALED HAY INSTALLATIONS IN SMALL DITCHES, THE ADDITIONAL FOLLOWING CONSIDERATIONS APPLY:

1. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.

2. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERTOPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BALED HAY. BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTEGRITY IS ACCELERATED.

GENERAL NOTES:

1. HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.

2. HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETATIVE MATTER.

3. HAY BALES SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND WHERE POSSIBLE ½ THE HEIGHT OF THE BALE.

4. HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.

5. HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3/8" DIA. REBAR OR 2" X 2" WOOD STAKES, DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.

6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

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