



**NOTICE OF A WORK SESSION AND REGULAR MEETING
OF THE TOWN COUNCIL
TUESDAY, DECEMBER 13, 2016 – 5:00 pm**

Notice is hereby given as required by Title 5, Chapter 551.041 of the Government Code that the Argyle Town Council will meet in a work session and regular meeting December 13, 2016 at 5:00 pm at the Argyle Town Hall, 308 Denton Street, Argyle, Texas. The items listed below are placed on the agenda for discussion and/or action.

WORK SESSION AGENDA – 5:00 PM

A. CALL WORK SESSION TO ORDER

B. WORK SESSION

The pre-meeting work session is designed as an opportunity for the Town Council to discuss pending items. No action will be taken during the work session portion of the meeting.

1. Discussion and presentation regarding the Branding and Wayfinding System Plan.
2. Briefing on the Town of Argyle Standard Construction Details
3. Discussion regarding any regular session items.

REGULAR SESSION AGENDA – 7:00 PM

(or immediately following the 5:00 pm work session)

C. CALL REGULAR SESSION TO ORDER

D. INVOCATION

E. PLEDGE OF ALLEGIANCE

American Flag

Texas Flag: *“Honor the Texas Flag; I pledge allegiance to thee Texas, one state under God, one and indivisible”*

F. ANNOUNCEMENTS, PROCLAMATIONS AND PRESENTATIONS

1. Council Recognition of Students and Citizens
2. Town Council and Staff Presentations / Reports
 1. Development Project Updates
 2. Business Spotlight

G. OPEN FORUM:

The opportunity for citizens to address the Town Council on any non-agenda item (limit 5 minutes per person); however, the Texas Open Meetings Act prohibits the Town Council from discussing issues which the public has not been given seventy-two (72) hour notice. Issues raised may be referred to Town Staff for research and possible future action.

H. CONSENT AGENDA:

Any Council Member may request an item on the Consent Agenda to be taken up for individual consideration

1. Consider approval of the November 15, 2016 regular meeting minutes.
2. Consider approval of authorizing the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to complete the engineering design and surveying services for the S-1 Sanitary Sewer Lift Station located between Frenchtown Road and FM 407.
3. Consider approval of authorizing the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to prepare field note descriptions and exhibits for acquisition of easements by the Town for the S-1 Sanitary Sewer Line from TRA Meter Station North to the S-1 Lift Station.
4. Consider approval of an ordinance amending the Code of Ordinances, Chapter 12, Traffic and Vehicles, Argyle 12.300 Relative to Prima Facie Speed Limits.

I. NEW BUSINESS & PUBLIC HEARINGS:

1. PUBLIC HEARING: Consider and take appropriate action on a final plat (FP-16-010) on an approximately 27.75 acre tract of land, legally described as Lot 1R, Block A, Timberidge Addition and being located at 405 Crawford Road, Town of Argyle, Denton County, Texas.
2. Consider and take appropriate action on the approval of a resolution adopting the Town of Argyle Standard Construction Details.

J. OLD BUSINESS:

None

K. CONVENE INTO EXECUTIVE SESSION:

PURSUANT TO TEXAS GOVERNMENT CODE, ANNOTATED, CHAPTER 551, SUBCHAPTER D:

1. Section 551.071- Consultation with and legal advice from the Town Attorney regarding claim – Ben Boyd and FM 407.
2. Section 551.074 - Discuss the appointment, employment, evaluation, reassignment, or duties of a public officer or employee: Town Manager

3. Adjourn into Open Meeting.
4. Consider action on executive session items.

L. RECEIVE REQUESTS FROM COUNCIL MEMBERS/STAFF FOR ITEMS TO BE PLACED ON NEXT MEETING AGENDA (*discussion under this item must be limited to whether or not the Council wishes to include a potential agenda item on a future agenda*)

M. ADJOURN

CERTIFICATION

I hereby certify that the above notice was posted in the bulletin board at Argyle Town Hall, 308 Denton Street, Argyle, Texas, by 5:00 pm on the 9th day of December, 2016.



Kristi Gilbert, Town Secretary

NOTE: If, during the course of the meeting, any discussion of any item on the agenda should be held in a closed meeting, the Town Council will conduct a closed meeting in accordance with the Texas Open Meetings Act, Texas Government Code, Chapter 551, Subchapters D and E. The Town Council of the Town of Argyle reserves the right to meet in closed session on any of the items listed above should the need arise and if applicable pursuant to authorization by Title 5, Chapter 551 of the Texas Government Code.

 Persons with disabilities who plan to attend this public meeting and who may need auxiliary aid or services are requested to contact the Argyle Town Hall 48 hours in advance, at 940-464-7273, and reasonable accommodations will be made for assistance.



TOWN COUNCIL DATA SHEET



Agenda Item:

Discussion and presentation regarding the Branding and Wayfinding System Plan.

Staff:

Matt Jones, Director of Community Development

Background:

Town Staff prepared a Request for Proposals (RFP) that outlined the desired qualifications and components to be included with development of the plan. The Town began advertising for Request for Proposals (RFP) for branding and wayfinding services on April 11, 2016 with a due date of May 30, 2016. On May 30, 2016 Town Staff received three RFP's from three design consultant firms including MERJE, Focus^{EDG}, and FMG.

On June 14, 2016, the Branding and Wayfinding Committee unanimously selected Focus^{EDG} as the consulting firm to partner with the Town for this project. Town Council approved a contract with FocusEDG for branding and wayfinding services for your consideration.

The Branding and Wayfinding Committee has held three workshops with Focus^{EDG} to receive information and provide feedback on the development of the different elements within the Branding and Wayfinding System Plan. The consultants and committee are seeking input from Council regarding work to date on the Branding and Wayfinding System Plan.

Financial Impact:

The Argyle Economic Development Corporation (EDC) budgeted \$25,000 in their FY 2015-2016 Annual Budget to fund a Branding and Wayfinding System Plan to be completed by a third party consultant.

Staff Recommendation:

N/A

Requested Action:

Provide input on the work done to date on the various elements of the plan.

Attachments:

Draft Placemaking and Wayfinding System Schematic Design (under separate cover)



TOWN COUNCIL DATA SHEET



Agenda Item:

Briefing on the Town of Argyle Standard Construction Details

Prepared by:

Matt Jones, Director of Community Development

Background:

Town Staff has been working with the Town Engineer (John Birkhoff with Birkhoff, Hendricks, and Carter, LLP) to put together standard construction details for the Town. These construction details will be unique to Argyle and encompass details on various construction specifications on items ranging from sidewalks, to roadway details, to sewer line construction.

Historically the Town has utilized Denton County and the NCTCOG (North Central Texas Council of Governments) to provide certain details to developers when they produce construction documents for the Town. With the adoption of the Town's specific standard details there will be more uniformity and control over various construction and development projects within the Town.

These construction details will govern development within the Town and provide uniform infrastructure for all projects from multi-lot residential subdivisions to single tenant commercial projects. These details will become part of the construction plans to be submitted for projects that are being proposed in Town.

Financial Impact:

N/A

Staff Recommendation:

This item will be considered under New Business.

Requested Action:

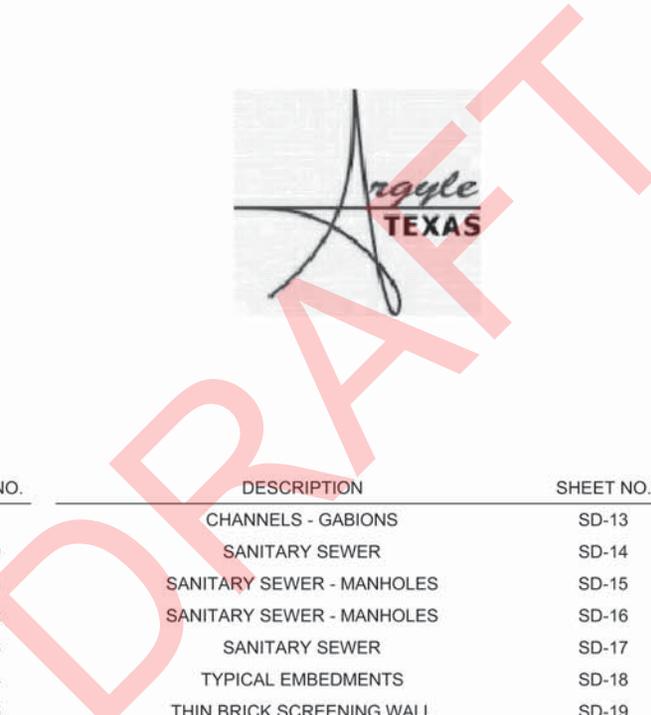
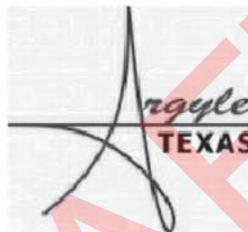
N/A

Attachments:

Proposed Standard Construction Details

TOWN OF ARGYLE, TEXAS

STANDARD CONSTRUCTION DETAILS



DESCRIPTION	SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION	SHEET NO.
COVER	SD-0	CHANNELS - GABIONS	SD-13	EROSION CONTROL MATTING	SD-27
GENERAL NOTES	SD-00	SANITARY SEWER	SD-14	PIPE INLET PROTECTION	SD-28
PAVING - SECTIONS	SD-01	SANITARY SEWER - MANHOLES	SD-15	GRASS LINED CHANNELS	SD-29
PAVING - SECTIONS - DETAILS	SD-02	SANITARY SEWER - MANHOLES	SD-16	OUTLET VELOCITY CONTROL STRUCTURE	SD-30
STANDARD CONSTRUCTION DETAILS	SD-03	SANITARY SEWER	SD-17	CURB INLET PROTECTION	SD-31
PAVING - DETAILS	SD-04	TYPICAL EMBEDMENTS	SD-18	CURB INLET PROTECTION	SD-32
PAVING - ALLEY - DRIVEWAYS	SD-05	THIN BRICK SCREENING WALL	SD-19	DROP INLET PROTECTION	SD-33
PAVING - RADIUS	SD-06	BRICK SCREENING - RETAINING	SD-20	EROSION & BMP NOTES	SD-34
PAVEMENT MARKINGS	SD-07	TEMP. STONE CONSTRUCTION ENTRANCE-EXIT	SD-21	SITE DESCRIPTION - EROSION & SEDIMENT CONTROLS	SD-35
SIDEWALKS	SD-08	TEMPORARY DIVERSION	SD-22		
STORM SEWER - INLET	SD-09	SILT FENCE - STONE OVERFLOW STRUCTURE	SD-23		
STORM SEWER - INLET	SD-10	ROCK CHECK DAMS	SD-24		
STORM SEWER - INLET - DETAILS	SD-11	STONE OUTLET SEDIMENT TRAP	SD-25		
CHANNELS - CONCRETE	SD-12	SEDIMENT BASIN	SD-26		

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
 JOHN W. BIRKHOFF
 TEXAS P.E. NO. 54137
 DECEMBER, 2016

NOTE:
 IF CONFLICT EXISTS BETWEEN HARD COPY AND ELECTRONIC FILE, HARD COPY WILL GOVERN.

DECEMBER, 2016

PAVING NOTES

1. CONCRETE FOR ALL STREETS SHALL BE IN ACCORDANCE WITH NCTCOG CLASS "C" CONCRETE. (MINIMUM COMPRESSIVE STRENGTH @ 28 DAYS) CONCRETE FOR ALL ALLEYS SHALL BE IN ACCORDANCE WITH NCTCOG CLASS "C" CONCRETE (3,600 COMPRESSIVE STRENGTH @ 28 DAYS). ALL CONCRETE FOR PAVING SHALL BE IN ACCORDANCE WITH NCTCOG ITEM 303.3.3. CONCRETE CYLINDERS FOR TESTING SHALL BE IN ACCORDANCE WITH NCTCOG ITEM 303.8.3
2. REINFORCING STEEL SHALL BE DEFORMED BARS NO. 3 ON 18-INCH CENTERS OR NO. 4 DEFORMED BARS ON 24-INCH CENTERS. REINFORCING SHALL BE IN BOTH DIRECTIONS ON CENTER. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM 615, 616 AND 617.
3. ALL REINFORCING STEEL SHALL BE TIED (100%). REINFORCING STEEL SHALL BE SET ON PLASTIC CHAIRS. BAR LAPS BE MINIMUM 30 DIAMETERS.
4. EXPANSION JOINTS SHALL BE SPACED EVERY 200 FEET AND AT ALL INTERSECTIONS. ALLEYS SHALL HAVE A MINIMUM OF TWO EXPANSION JOINTS.
5. SAWED TRANSVERSE DUMMY JOINTS SHALL BE SPACED EVERY 20 FEET ON PAVING 8 INCHES OR THICKER AND EVERY 15 FEET FOR PAVING THICKNESS LESS THAN 8 INCHES. SAWING SHALL OCCUR WITHIN 5 TO 12 HOURS AFTER THE POUR INCLUDING SEALING. OTHERWISE, THE SECTION SHALL BE REMOVED AND LONGITUDINAL BUTT JOINTS CONSTRUCTED.
6. SUBGRADE UNDER PAVEMENTS SHALL BE A MINIMUM OF 6 INCHES OF LIME TREATED SUBGRADE. ONLY HYDRATED LIME SHALL BE UTILIZED. OPTIMUM LIME SHALL BE APPLIED. OPTIMUM LIME CONTENT SHALL BE DETERMINED DURING THE EXCAVATION BY THE USE OF A LIME SERIES TEST. LIME SERIES TEST SHALL BE TAKEN ALONG THE EXCAVATION AT ALL CHANGES IN SOIL AND A MINIMUM OF 300 FEET LIME SERIES SHALL BE COMPLETED BY AN INDEPENDENT LABORATORY APPROVED BY THE TOWN.
7. LIME TREATED SUBGRADE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D-698. MOISTURE CONTENT SHALL BE WITHIN -2 TO +4 OF OPTIMUM. DENSITY TEST RESULTS SHALL BE COMPLETED BY AN INDEPENDENT LABORATORY APPROVED BY THE TOWN. ALL RESULTS SHALL BE PROVIDED TO THE TOWN.
8. LIME TRIMMINGS ARE NOT ACCEPTABLE FOR ANY USE.
9. ALL FILL SHALL BE COMPACTED BY MECHANICAL METHODS. MAXIMUM LOOSE LIFT FOR COMPACTION SHALL BE 8 INCHES. ALL LIFTS SHALL BE TESTED FOR DENSITY BY AN INDEPENDENT LABORATORY APPROVED BY THE TOWN. DENSITY REQUIREMENT SHALL BE AS SHOWN ON THE PLANS FOR THE TYPE OF MATERIAL CALLED FOR IN THE PLANS.
10. ALL DISTURBED AREAS OF ROADWAY WORK SHALL HAVE GRASS ESTABLISHED IMMEDIATELY. GRASS SHALL MEET THE REQUIREMENTS ESTABLISHED. NCTCOG ITEM 202.
11. ALL AREAS TO BE EXCAVATED OR FILLED SHALL HAVE EROSION CONTROL PLACED PRIOR TO COMMENCING EARTHWORK. EROSION CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE PROJECT IN ACCORDANCE WITH NCTCOG ITEM 201.
12. ALL SIDEWALKS SHALL INCLUDE BARRIER FREE RAMPS OR SIDEWALKS WITH ADA DETECTABLE WARNING DEVICES AT INTERSECTING STREETS, ALLEYS, DRIVEWAYS, ETC. BARRIER FREE RAMPS AND/OR DETECTABLE WARNING DEVICES SHALL MEET CURRENT ADA REQUIREMENTS AND BE APPROVED BY THE TEXAS LICENSING BOARD (TDLR).
13. SIDEWALKS SHALL BE DOWELED INTO PAVEMENT WHERE IT ABUTS DRIVEWAYS. EXPANSION JOINT MATERIAL SHALL BE USED AT THESE LOCATIONS.
14. NO VEHICLES SHALL BE PERMITTED ON CONCRETE PAVEMENT WITHOUT APPROVAL FROM THE TOWN. THE TOWN WILL MAKE DETERMINATION BASED ON CONCRETE STRENGTH BREAK REPORTS PROVIDE BY INDEPENDENT TESTING LABORATORY

LINED CHANNELS

1. CONSTRUCTION JOINT SHOWN IN DETAILS FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAY BE USED.
2. ALL VISIBLE SURFACES SHALL BE A TROWEL FINISH.
3. ALL REINFORCING STEEL SHALL BE NO. 3 DEFORMED BARS SPACED 12" INCHES CENTER TO CENTER BOTH WAYS UNLESS OTHERWISE SPECIFIED.
4. IF WOOD FORMS ARE USED WITH CONSTRUCTION JOINT, THEY SHALL BE 2 INCHES x 4 INCHES, AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACE.
5. ALL CONCRETE IN LINED CHANNEL SHALL BE NCTCOG CLASS "A" (MINIMUM 3,000 P.S.I.) CONCRETE. NCTCOG ITEM 700.
6. WHEN CHANNEL WIDTH IS LESS THAN 12 FEET, A FLAT BOTTOM CAN BE CONSTRUCTED.
7. 3/4 INCH CHAMFER ON ALL CONCRETE CORNERS.

CONCRETE FINISHES

1. ALL CONCRETE FINISHES REQUIRE A MOCK UP PANEL TO BE ERRECTED FOR APPROVAL BY THE TOWN. WORK NOT MEETING AESTHETICS OF PANEL WILL BE SUBJECT TO REMOVAL AND REPLACEMENT.

STORM SEWER

1. THE FLOOR OF THE EXCAVATION FOR INLET BOX MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON A MINIMUM OF 6 INCHES OF 1 INCH DIAMETER (MAXIMUM) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR IN LIEU OF THIS, AT LEAST 6 INCHES OF 2 SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED-SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.
2. AFTER PIPE HAS BEEN LAID ON PROPER BEDDING, BACKFILLING CAN COMMENCE WITH 8 INCH MAXIMUM LOOSE LIFTS. MECHANICALLY COMPACTED TO 95% STANDARD PROCTOR UNDER ROADWAY, 90% OUTSIDE PAVEMENT. MAXIMUM SIZE ROCK IN BACKFILL SHALL NOT EXCEED 4 INCHES IN DIAMETER.
3. PRECAST INLETS MUST BE APPROVED BY THE TOWN.
4. LOCKING DEVICE IS REQUIRED ON ALL STORM SEWER LIDS.
5. CONCRETE CAST-IN-PLACE INLETS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,200 P.S.I. @ 28 DAYS. NCTCOG CLASS F. CONCRETE. STRUCTURAL CONCRETE SHALL BE IN ACCORDANCE WITH NCTCOG ITEM 702.
6. EXISTING STORM SEWER PIPE AND / OR LATERALS SHALL BE LOCATED PRIOR TO SETTING OF CONSTRUCTING INLET BOXES. IF ADJUSTMENT IN GRADE OF LATERAL IS REQUIRED, A REVISED DESIGN BY THE ENGINEER OF RECORD SHALL BE SUBMITTED TO THE TOWN FOR APPROVAL.
7. REINFORCED CONCRETE PIPE CLASS III MINIMUM OR EQUIVALENT HIGH DENSITY POLYETHYLENE STORM SEWER PIPE IS APPROVED WITHIN THE TOWN.
8. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE NCTCOG ITEM 508.

SANITARY SEWER

1. ALL SEWER LINES CROSSING POTABLE WATERLINES SHALL BE AS SHOWN IN THE PLANS AND MEET TCEQ REQUIREMENTS.
2. PIPES 6 INCHES THROUGH 15 INCHES SHALL BE IN ACCORDANCE WITH ASTM D3034 WITH A MINIMUM SDR OF 35 OR ASTM D3350 AND DE-345434-C.
3. PIPES LARGER THAN 12 INCHES THROUGH 48 INCHES SHALL BE IN ACCORDANCE WITH ASTM STANDARDS F679, F794, F949 AND D3350 / DE-345434-C.
4. MANHOLES SHALL BE CAST-IN-PLACE OR PRECAST. ALL MANHOLES SHALL BE WATER TIGHT. ALL RING AND COVERS SHALL INCLUDE AN INTERNAL CHIMNEY SEAL AND BE 30 INCHES IN DIAMETER.
5. ALL PIPE OPENINGS IN MANHOLES SHALL INCLUDE COUPLINGS WITH "O" RING RUBBER GASKETS.
6. STUBOUTS OUT OF MANHOLES SHALL BE FITTED WITH A STOPPER AND CAP. STUBOUTS SHALL BE A MINIMUM OF 5 FEET FROM MANHOLE AND BE SUPPORTED BY A CONCRETE CRADLE.
7. ALL DROP MANHOLES SHALL BE OF THE INTERNAL TYPE UNDER PAVEMENT.
8. MANHOLES SHALL BE VENTED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
9. SEWER LINES SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH NCTCOG ITEM 507. TESTING SHALL INCLUDE PRESSURE TESTING, MANDREL TEST AND COLOR TV INSPECTION. "COLOR TV" INSPECTION SHALL BE COMPLETED IN PRESENCE OF TOWN REPRESENTATIVE AND THE ORIGINAL MEDIA SHALL BE GIVEN TO THE TOWN AT THE COMPLETION OF THE INSPECTION.
10. MANHOLES SHALL BE VACUUM TESTED IN THE PRESENCE OF THE TOWN REPRESENTATIVE. IN ACCORDANCE WITH NCTCOG ITEM 502.1.5
11. ONLY CAST IN PLACE CONCRETE, PRE CAST CONCRETE, OR POLYMER CONCRETE MANHOLES ARE ALLOWED.
12. SANITARY SEWER PIPE SHALL BE GREEN IN COLOR. PIPE MUST ALSO HAVE MARKING TAPE WITH THE WORDING "WASTEWATER MAIN" CONTINUOUSLY REPEATED IN AT LEAST 1.5 INCH LETTERS.
13. FORCE MAINS MUST HAVE MARKING TAPE LAID IN THE TRENCH ABOVE THE PIPE WITH THE WORDING "PRESSURIZED WASTEWATER" CONTINUOUSLY REPEATED IN AT LEAST 1.5 INCH LETTERS.
14. ALL SANITARY SEWER MAINS SHALL MAINTAIN A MINIMUM COVER OF 42".
15. 10 TO 12 GAUGE INSULATED COPPER WIRE SHALL BE INSTALLED OVER THE TOP OF THE PIPE AS A TRACER WIRE. WIRE SHALL BE TAPED TO CENTER LINE TOP OF PIPE PRIOR TO BACKFILL. UNDERGROUND SPLICES SHALL BE WATER TIGHT AND PERMANENT SIMILAR TO THE "SCOTCHCAST BRAND" METHOD. TEST LOCATE WIRE AT COMPLETION OF PROJECT AND PROVIDE A TWO YEAR MAINTENANCE WARRANTY.
16. INSTALL CHECK STATIONS EVERY 250' AND/OR BESIDE ALL MANHOLES WITH CONCRETE PADS WITH BOLT DOWN TYPE COVERS (NCTCOG STANDARD SPECIFICATION 502.10 AND STANDARD DRAWING NO. 5120 AND 5140 ARE ACCEPTABLE).
17. SANITARY SEWER MANHOLES IN UNPAVED AREAS SHALL BE ADJUSTED TO 6" ABOVE GRADE.
18. UTILITY CONTRACTOR SHALL INSTALL A CLEANOUT AT EVERY HOME AS REFERRED TO ON THE SANITARY SEWER DETAILS. THE CLEANOUT STACK SHALL BE EXTENDED 18-24" ABOVE GROUND AND CAPPED. BUILDING PLUMBER TO INSTALL CONCRETE PADS WITH BOLT DOWN TYPE CLEANOUT COVERS.

SCREENING WALLS

1. CONCRETE -- MINIMUM COMPRESSIVE STRENGTH OF 3,600 P.S.I. @28 DAYS. NCTCOG CLASS "C" CONCRETE. STRUCTURES CONCRETE SHALL BE IN ACCORDANCE WITH NCTCOG ITEM 702.
2. REINFORCEMENT -- ASTM A-36.
3. MASONRY -- COMPRESSIVE STRENGTH TYPES MORTAR 2100PSI @ 7 DAYS.
4. WIND LOAD FOR DESIGN -- 20 P.S.F.
5. PIER BEARING STRESSES -- SEE BRICK SCREENING WALL NOTES.
6. MORTAR -- TYPE "S".
7. CONTROL JOINTS LOCATED AT 50 FEET.
8. EXPANSION JOINTS LOCATED AT 200 FEET CENTER MAXIMUM.
9. PIER SHALL BE A MINIMUM 9-FOOT IN DEPTH AND 24-INCH IN DIAMETER WIDTH BELL IN CLAY OR OTHER SOIL MATERIAL. IN BLUE SHALE ALTERNATE PIER DESIGN WILL BE REVIEWED WITH GEOTECHNICAL INVESTIGATION AND RECOMMENDATION BEING SUBMITTED FOR REVIEW AND ACCEPTANCE. 6-FOOT MINIMUM DEPTH WITH 3-FOOT MINIMUM INTO BLUE SHALE WITHOUT A BALL.
10. ALL EXPOSED CONCRETE SHALL BE CLASS 2 RUBBED FINISHED SURFACE.
11. SIDEWALKS ADJACENT TO WALLS MUST BE 5-FOOT MINIMUM WIDTH FROM ALL PORTIONS OF THE WALL (INCLUDING PLASTERS, COLUMNS, ETC...).
12. MAXIMUM PILASTER SPACING 30 FEET.
13. WALLS SHALL NOT BE PLACED IN THE VISIBILITY EASEMENT OR STREET RIGHT-OF-WAY.
14. THE WALL SHALL BE A MINIMUM OF EIGHT FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS THE HIGHER. THE COLOR OF THE WALL SHALL BE LIMITED TO EARTH-TONE COLORS, EXCLUDING GRAY, GREEN AND WHITE. THE COLOR OF THE WALL SHALL BE UNIFORM ON EACH SIDE OF A THOROUGHFARE FOR THE ENTIRE LENGTH BETWEEN INTERSECTING THOROUGHFARES, UNLESS OTHERWISE APPROVED BY THE TOWN. THE FINISH OF THE WALL SHALL BE CONSISTENT ON ALL SURFACES.
15. IF WROUGHT IRON FENCING IS TO BE UTILIZED ON REQUIRED SCREENING, ALL WROUGHT IRON MUST BE SOLID STOCK. ALTERNATIVE IS ALUMINUM ORNAMENTAL FENCING, ULTRA FENCE OR EQUAL. COLOR OF FENCING SHALL BE SUBMITTED TO THE TOWN FOR ACCEPTANCE.

DETAILS

SPECIAL DETAILS OR MODIFICATIONS TO THESE STANDARD DETAILS TO BE UTILIZED ON ANY GIVEN PROJECT SHALL BE SUBMITTED TO THE TOWN FOR APPROVAL FOR USE.

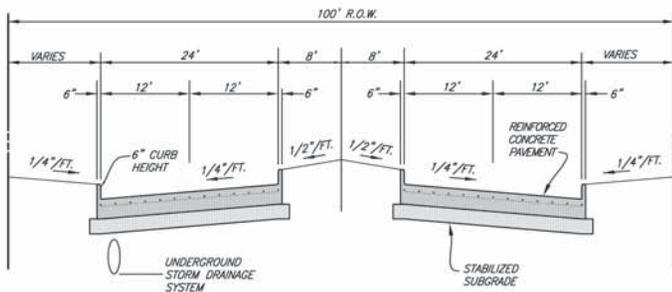
RAILING

1. BRIDGE RAILING AND CULVERT RAILING SHALL BE TxDOT STANDARD RAILING TYPE T411 "TEXAS CLASSIC" OR APPROVED STYLE APPROVED BY TOWN OF ARGYLE.

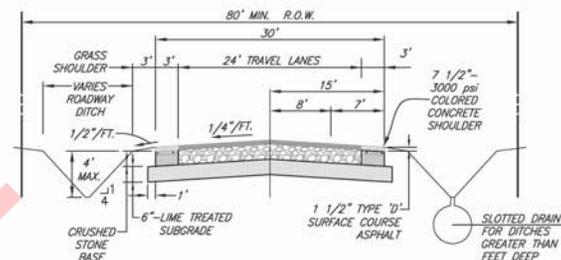
NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
GENERAL NOTES			
DATE:	DECEMBER, 2016	SHEET	SD-00

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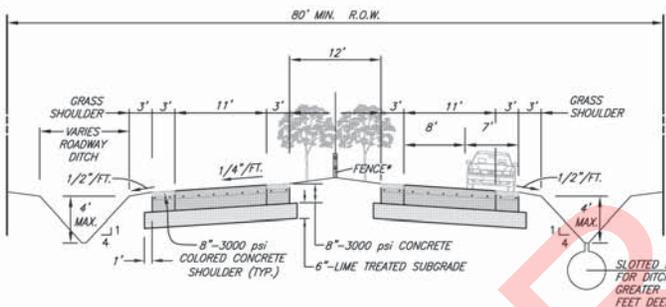
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



TYPE B MINOR ARTERIAL

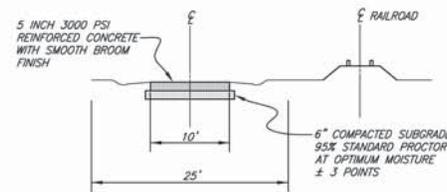


**ASPHALT SECTION
TYPE E RURAL COLLECTOR**

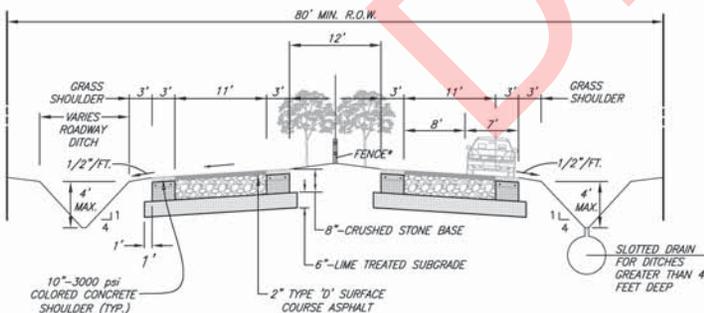


**CONCRETE SECTION
TYPE D MINOR COLLECTOR**

*SEE NOTE 5



TRAIL



**ASPHALT SECTION
TYPE D MINOR COLLECTOR**

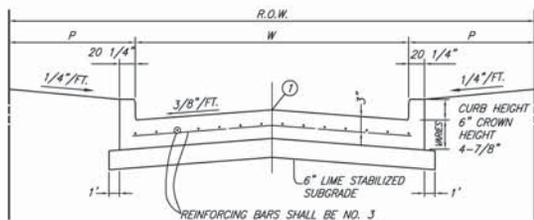
*SEE NOTE 5

- NOTES:
1. CONCRETE MCTCOG CLASS "A" MCTCOG ITEM 303
 2. LIME SHALL BE HYDRATED LIME MCTCOG ITEM 301.2
 3. CRUSHED STONE MCTCOG ITEM 301.5 GRADE 1
 4. ASPHALT MCTCOG ITEM 302
 5. FENCE IN MEDIAN SHALL BE 2 RAIL RANCH CEDAR WOOD FENCE. COLOR TO BE APPROVED BY THE TOWN OF ARGYLE. SEE DETAIL STD-02
 6. ALL PAVEMENT SECTIONS INCLUDING SUBBASE, SUBGRADE, AND RIDING SURFACE TO BE DESIGN AND SUPPORTED BY GEOTECHNICAL INVESTIGATION AND REPORT TO BE PROVIDED TO THE TOWN FOR REVIEW AND ACCEPTANCE.
 7. LIME SERIES TESTING IN THE FIELD SHALL BE COMPLETED EVERY 300 FEET AND AT CHANGE IN MATERIAL, TO ACHIEVE OPTIMUM LIME APPLICATION.
 8. COLOR AND TEXTURE OF COLORED CONCRETE SHOULDER SHALL BE APPROVED BY THE TOWN.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PAVING - SECTIONS			
DATE:	DECEMBER, 2016		SHEET SD-01

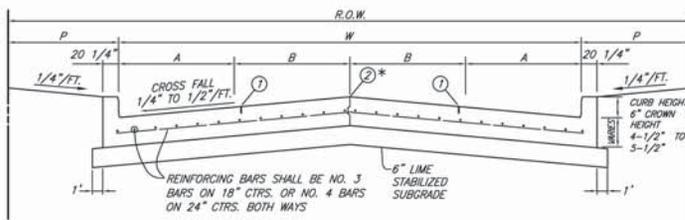
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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



REGULAR SECTION

SUBDIVISIONS LOT SIZE UNDER 2 ACRES

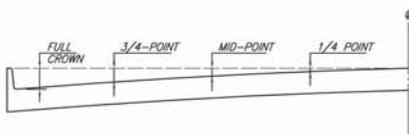


REGULAR SECTION

SUBDIVISIONS LOT SIZE UNDER 2 ACRES

LEGEND

- ① - SAWED LONGITUDINAL DUMMY JOINT
- ② - CONSTRUCTION JOINT (FULL WIDTH P.V.M.T. IS ALLOWED WHERE APPROVED BY CITY)



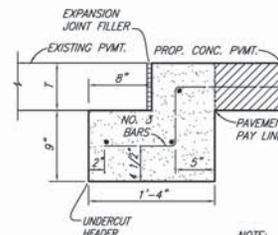
CLASSIFICATION	ROADWAY WIDTH (W)	TOTAL CROWN HEIGHT	3/4 POINT	MID-POINT	1/4 POINT
C2U	30'	6"	3-3/8"	1-1/2"	3/8"
R2U	40'	6"	3-3/8"	1-1/2"	3/8"

TABLE OF CROWN HEIGHTS AND ORDINATES FOR PARABOLIC SECTIONS

SLIP-FORM PAVEMENT MUST MEET CROWN GRADES AT GUTTERS, AT MID-POINTS & @ PARABOLIC ROADS ONLY TO BE CONSTRUCTED WITH SLIP FORM PAVERS

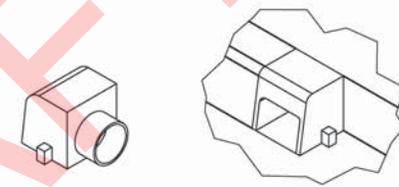
NOTES:

1. SUBDIVISION PAVING SECTIONS SHALL HAVE A MINIMUM CONCRETE PAVEMENT THICKNESS OF 6 INCHES.
2. SIDE SLOPES OUTSIDE ROW SHALL BE 4:1 MAX WITHIN SUBDIVISIONS.
3. SIDEWALKS TO BE LOCATED WITHIN PARKWAY.

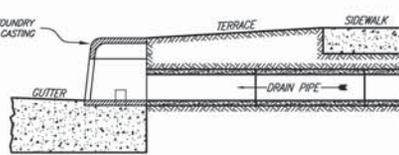


NOTE: PAVEMENT BARS TO BE BENT DOWN INTO HEADER. PAVEMENT AND HEADER SHALL BE MONOLITHIC.

STREET HEADER

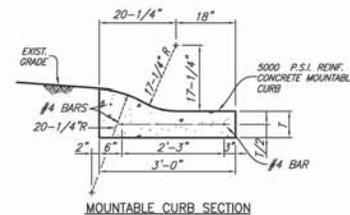


ISOMETRIC VIEW



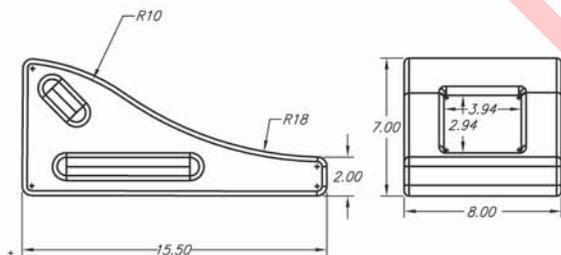
CURB OPENING DISCHARGE

(NOT TO SCALE)



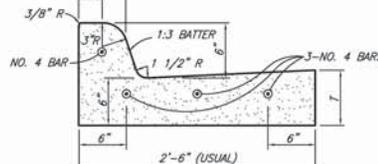
MOUNTABLE CURB SECTION

NOTE: REFLEX EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN BACK OF CURB AND SIDEWALK. ALL EXPANSION JOINT MATERIAL SHALL BE RECYCLED RUBBER AS PRODUCED BY THE JD RUSSELL COMPANY OF UTICO, MICHIGAN (JDRUSSELLCO.COM) OR EQUAL.



J DRAIN CURB DRAIN

NOT TO SCALE



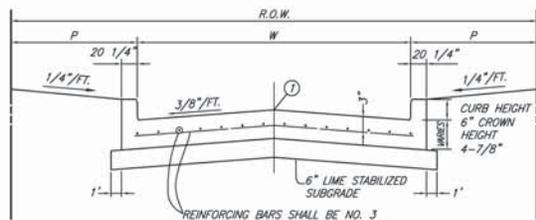
SEPARATE CURB AND GUTTER

NOTE: STORM WATER CURB OPENINGS SHALL HAVE CONCRETE CURB SAWCUT 4 LINEAR FEET, REMOVED AND NEENAH FOUNDRY PRODUCT R-3262-3 CURB OPENING CAST IN PLACE. NEW CURB SHALL BE DOWELED INTO EXISTING WEB.

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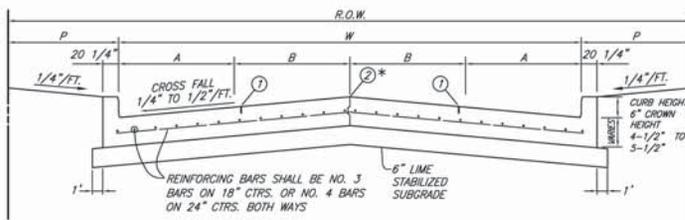
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PAVING - SECTIONS - DETAILS			
DATE:	DECEMBER, 2016		SHEET SD-02



REGULAR SECTION

SUBDIVISIONS LOT SIZE UNDER 2 ACRES

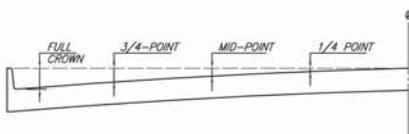


REGULAR SECTION

SUBDIVISIONS LOT SIZE UNDER 2 ACRES

LEGEND

- ① - SAWED LONGITUDINAL DUMMY JOINT
- ② - CONSTRUCTION JOINT (FULL WIDTH P.V.M.T. IS ALLOWED WHERE APPROVED BY CITY)



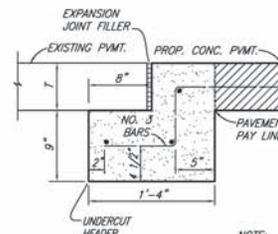
CLASSIFICATION	ROADWAY WIDTH (W)	TOTAL CROWN HEIGHT	3/4 POINT	MID-POINT	1/4 POINT
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TABLE OF CROWN HEIGHTS AND ORDINATES FOR PARABOLIC SECTIONS

SLIP-FORM PAVEMENT MUST MEET CROWN GRADES AT GUTTERS, AT MID-POINTS & @ PARABOLIC ROADS ONLY TO BE CONSTRUCTED WITH SLIP FORM PAVERS

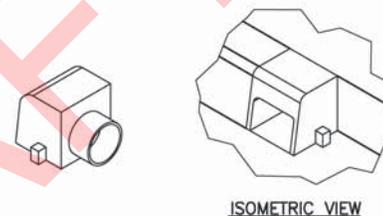
NOTES:

1. SUBDIVISION PAVING SECTIONS SHALL HAVE A MINIMUM CONCRETE PAVEMENT THICKNESS OF 6 INCHES.
2. SIDE SLOPES OUTSIDE ROW SHALL BE 4:1 MAX WITHIN SUBDIVISIONS.
3. SIDEWALKS TO BE LOCATED WITHIN PARKWAY.

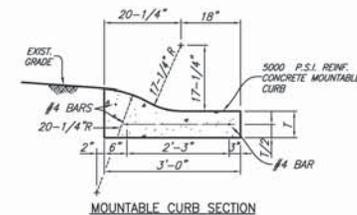


NOTE: PAVEMENT BARS TO BE BENT DOWN INTO HEADER. PAVEMENT AND HEADER SHALL BE MONOLITHIC.

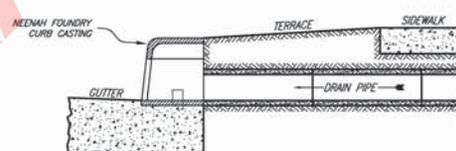
STREET HEADER



ISOMETRIC VIEW

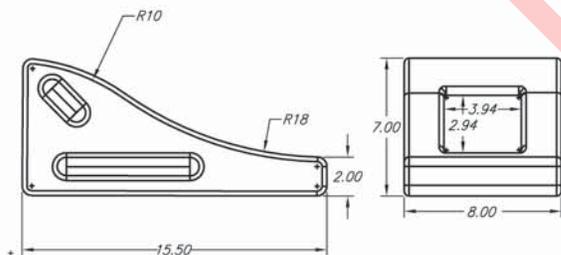


MOUNTABLE CURB SECTION



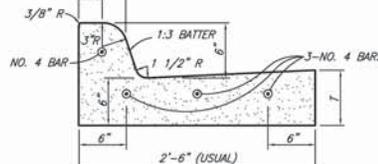
CURB OPENING DISCHARGE

(NOT TO SCALE)



J DRAIN CURB DRAIN

NOT TO SCALE



SEPARATE CURB AND GUTTER

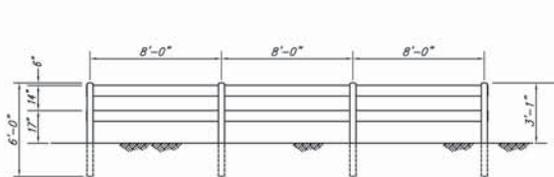
NOTE: STORM WATER CURB OPENINGS SHALL HAVE CONCRETE CURB SAWCUT 4 LINEAR FEET, REMOVED AND NEEDHAM FOUNDRY PRODUCT R-3262-J CURB OPENING CAST IN PLACE. NEW CURB SHALL BE DOWELED INTO EXISTING WEB.

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
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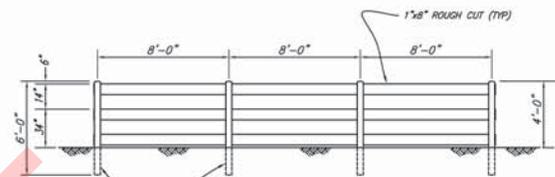
NOTE: REFLEX EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN BACK OF CURB AND SIDEWALK. ALL EXPANSION JOINT MATERIAL SHALL BE RECYCLED RUBBER AS PRODUCED BY THE JD RUSSELL COMPANY OF UTICO, MICHIGAN (JDRUSSELLCO.COM) OR EQUAL.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PAVING - SECTIONS - DETAILS			
DATE:	DECEMBER, 2016		SHEET SD-02



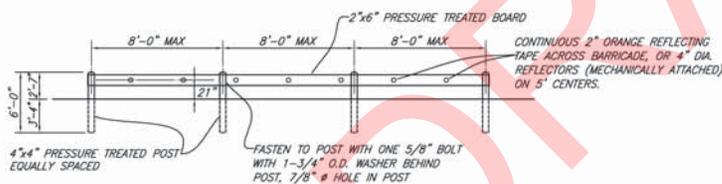
NOTE:
FENCE MATERIAL SHALL BE WESTERN RED CEDAR.

SPLIT RAIL MEDIAN FENCE



NOTE:
FENCE MATERIAL SHALL BE WESTERN RED CEDAR.

SPLIT RAIL ROW FENCE



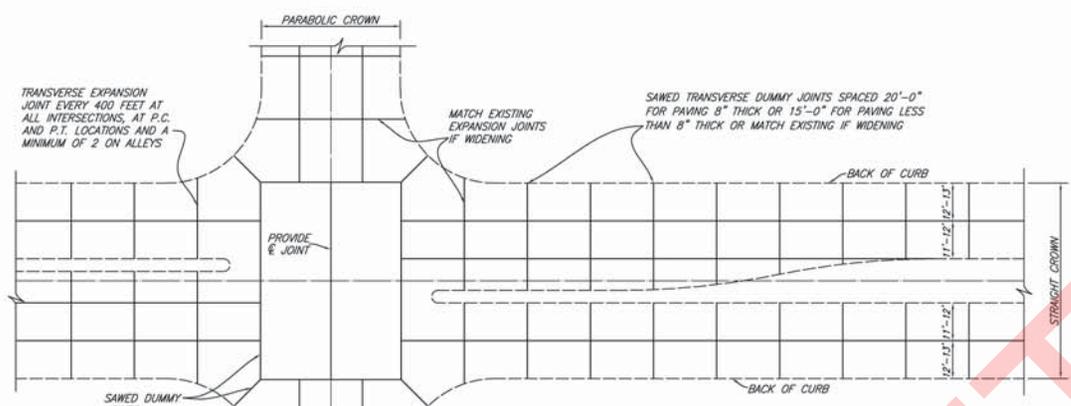
TYPICAL PERMANENT BARRICADE

NOTES:
SIZE OF RAILS AND POST SIZES TO BE APPROVED BY TOWN OF ARGYLE

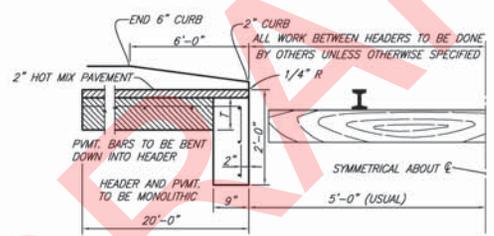
NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
FENCING-BARRICADE			
DATE:	DECEMBER, 2016	SHEET	SD-021

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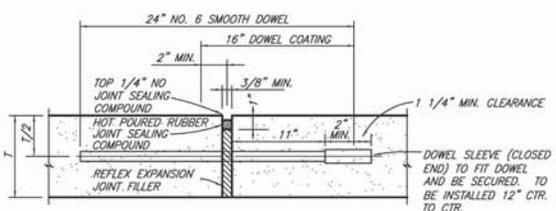
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



SPACING DIAGRAM FOR TRANSVERSE JOINTS
(ROADWAYS AND ALLEYS)

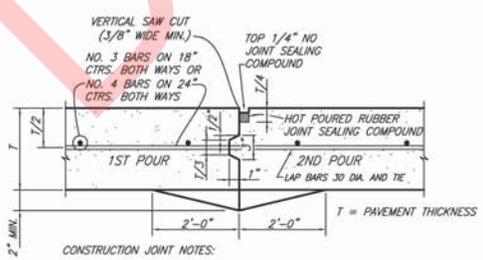


RAIL HEADER



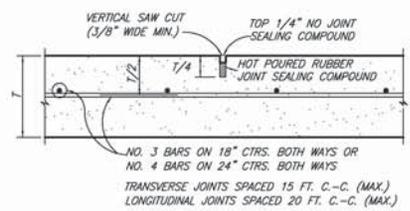
- TRANSVERSE EXPANSION JOINT NOTES:**
1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
 2. TRANSVERSE EXPANSION JOINTS SHALL BE SPACED AT 400 FT. MAXIMUM AND AT ALL INTERSECTIONS.
 3. EXPANSION JOINT FILLER SHALL BE REFLEX FROM JO RUSSELL COMPANY (RECYCLED RUBBER) OR EQUAL.

TRANSVERSE EXPANSION JOINT

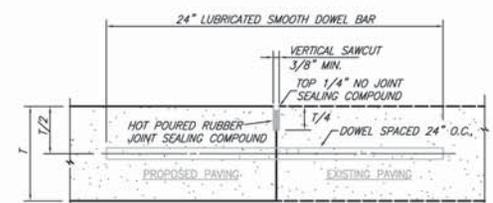


- CONSTRUCTION JOINT NOTES:**
1. CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT (DRILL DOWELS INTO FIRST POUR).
 2. THICKENED EDGES ARE REQUIRED FOR FUTURE WIDENING ONLY.

CONSTRUCTION JOINT

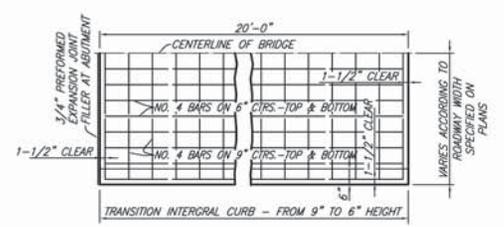


SAWED DUMMY JOINT

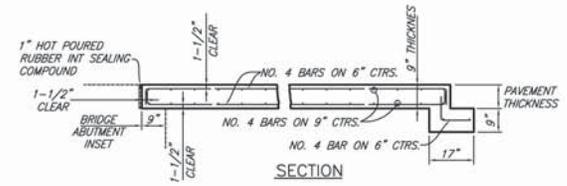


- NOTE:**
1. 1-8" AND GREATER NO. 6 BAR, 1-6" AND LESS NO. 5 BAR.
 2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
 3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. HAND DRILLING NOT ACCEPTABLE. DAMAGE TO EXISTING PAVEMENT SHALL BE REMOVED BY CONTRACTOR AND JOINT CONSTRUCTED AT CONTRACTORS EXPENSE.

LONGITUDINAL BUTT JOINT



PLAN

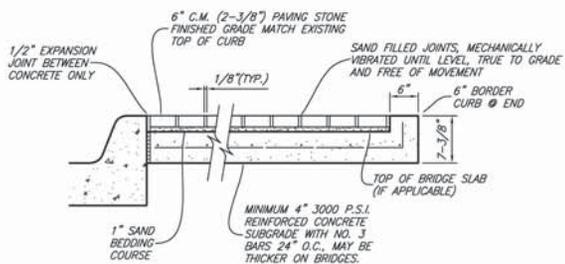


SECTION

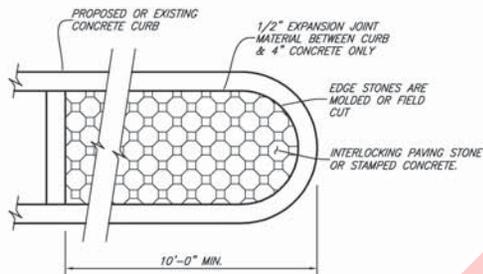
BRIDGE APPROACH SLAB

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
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STANDARD CONSTRUCTION DETAILS			
DATE:	DECEMBER, 2016	SHEET	SD-03

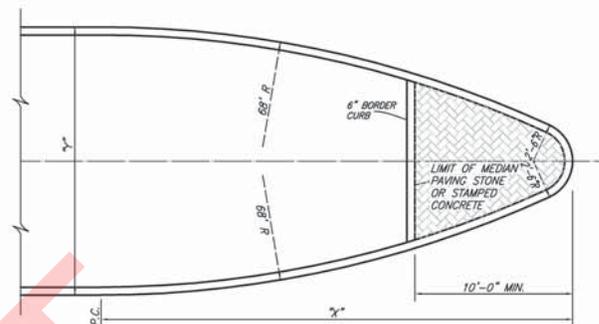


TYPICAL CROSS SECTION



PLAN

MEDIAN PAVING SHALL EXTEND TO A POINT WHERE MEDIAN IS 6' WIDE. IF MEDIAN IS 6' WIDE, SHALL EXTEND 15' FROM NOSE. FOR MEDIANS WIDER THAN 6', PAVING SHALL EXTEND 10' FROM NOSE. ALL DISTANCES ARE MINIMUM.



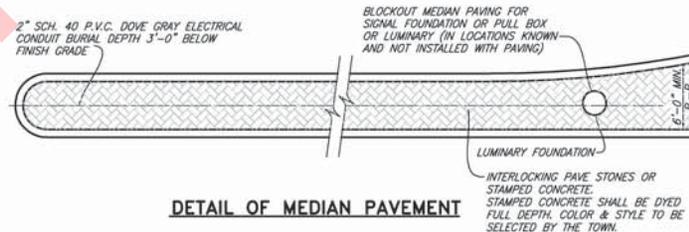
DETAIL OF NOSE FOR MEDIAN ISLAND

DIMENSIONS OF MEDIAN NOSE

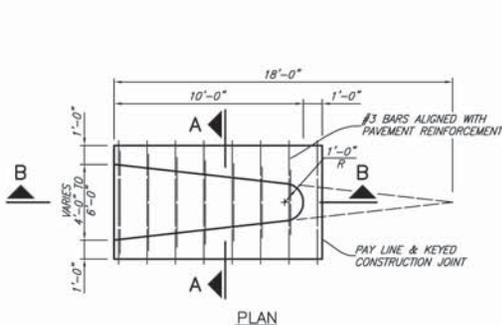
X = 13.90'	Y = 7.0'	X = 26.36'	Y = 14.0'
X = 16.44'	Y = 8.0'	X = 29.89'	Y = 17.0'
X = 18.06'	Y = 9.0'	X = 32.93'	Y = 20.0'
X = 20.42'	Y = 10.0'	X = 36.47'	Y = 24.0'

STAMPED CONCRETE OR INTERLOCKING PAVING STONE

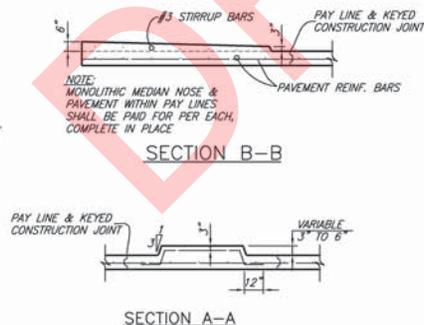
- NOTES:
1. PAVING STONE AND STAMPED CONCRETE PATTERN AND COLOR TO BE APPROVED BY TOWN OF ARGYLE. COLOR SHALL BE FULL DEPTH.
 2. STAMPED CONCRETE SHALL BE MINIMUM 4" 3,000 PSI REINFORCED CONCRETE WITH NO. 3 BARS 24" O.C., MAY BE THICKER ON BRIDGES.



DETAIL OF MEDIAN PAVEMENT

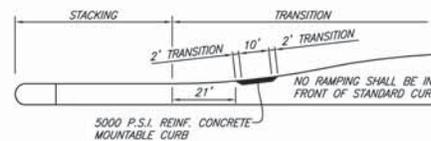


MONOLITHIC MEDIAN NOSE



SECTION B-B

SECTION A-A



MOUNTABLE CURB DETAIL-PLAN VIEW

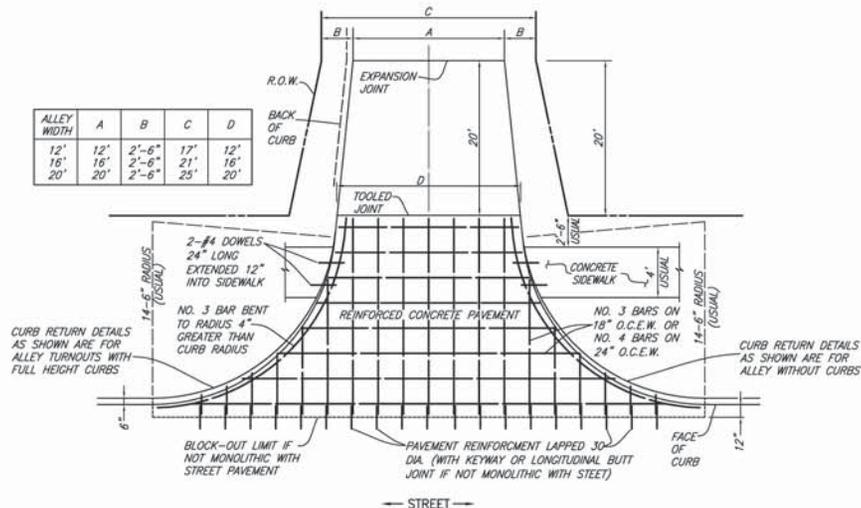
LANDSCAPE MAINTENANCE RAMP

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
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PAVING - DETAILS			
DATE:	DECEMBER, 2016	SHEET	SD-04

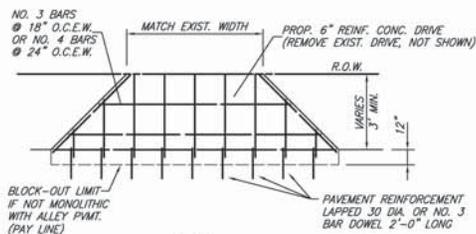
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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

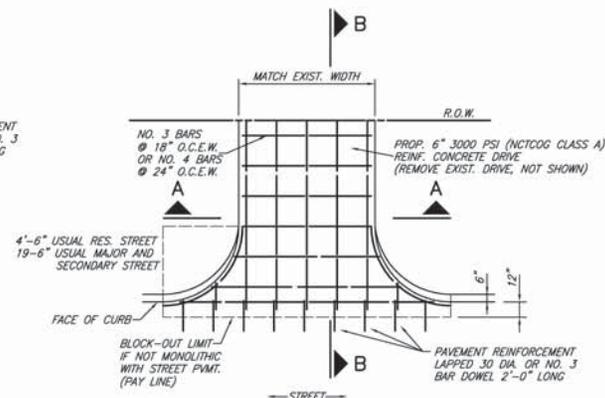
ALLEY WIDTH	A	B	C	D
12'	12'	2'-6"	17'	12'
16'	16'	2'-6"	21'	16'
20'	20'	2'-6"	25'	20'



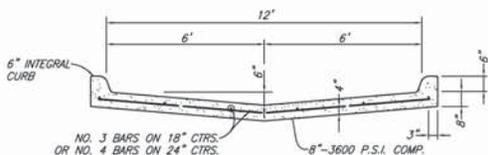
ALLEY RETURN DETAILS



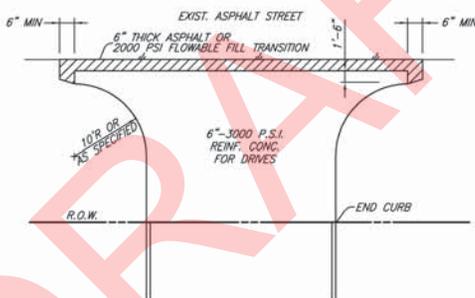
DRIVEWAY RETURN TO ALLEY



DRIVEWAY RETURN TO STREET

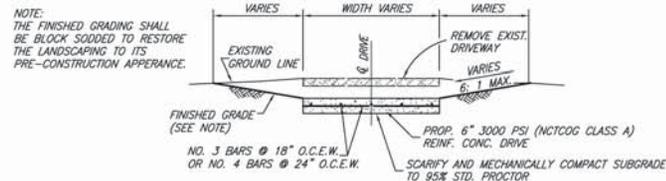


STANDARD ALLEY SECTION WITH CURBS



TYPICAL DRIVE OR STREET CONNECTION TO EXISTING ASPHALT STREET

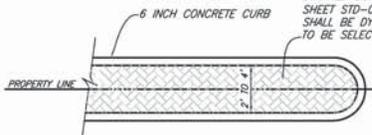
NOTE: STOP CURB AT RIGHT-OF-WAY



SECTION A-A

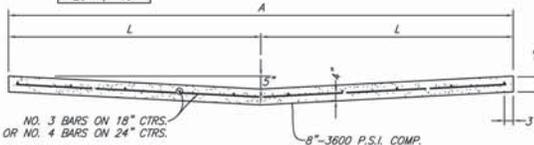
NOTE: STAMPED CONCRETE SHALL BE DYED FULL DEPTH. COLOR SELECTED BY THE TOWN

INTERLOCKING PAVE STONES OR STAMPED CONCRETE (SEE DETAIL SHEET STD-04) STAMPED CONCRETE SHALL BE DYED FULL DEPTH. COLOR TO BE SELECTED BY THE TOWN

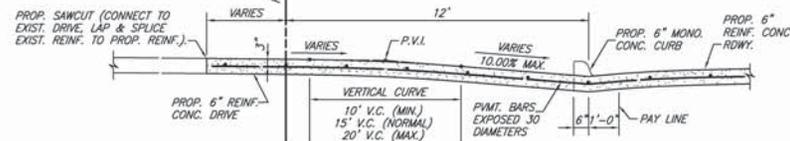


MEDIAN AT DRIVEWAYS SPLIT BY PROPERTY LINE

ALLEY WIDTH (A)	HALF WIDTH (L)
12'	6'
16'	8'
20'	10'



STANDARD 12, 16' & 20' ALLEY SECTION



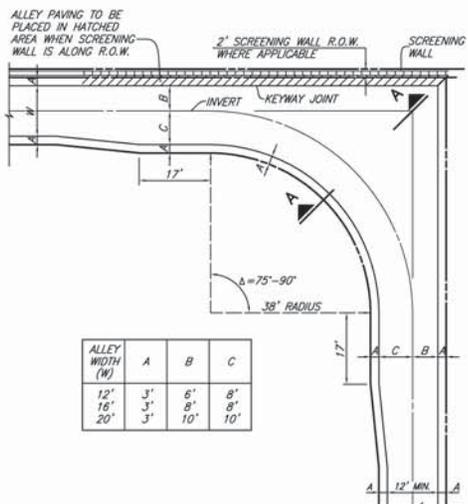
SECTION B-B

DRIVEWAY RETURN SECTIONS

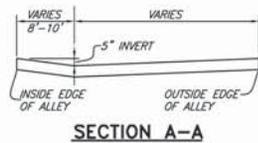
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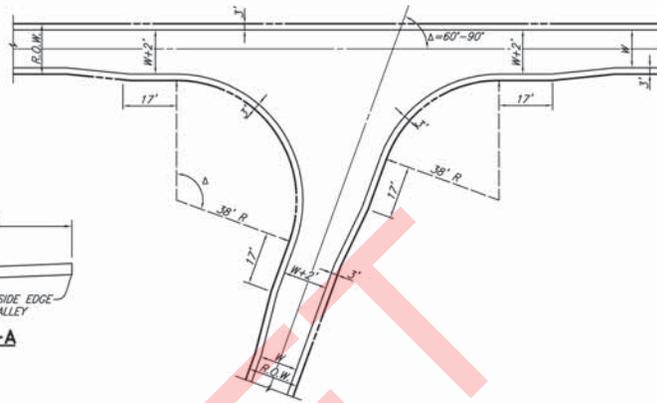
NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PAVING / ALLEY / DRIVEWAYS			
DATE:	DECEMBER, 2016		SHEET SD-05



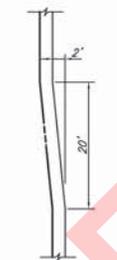
ALLEY TURN FOR $\Delta = 75^\circ-90^\circ$



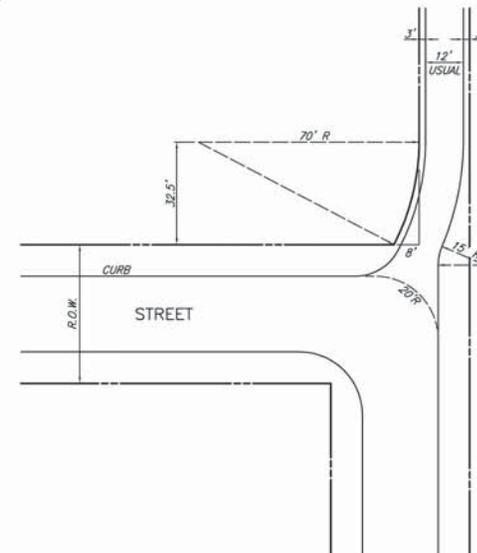
SECTION A-A



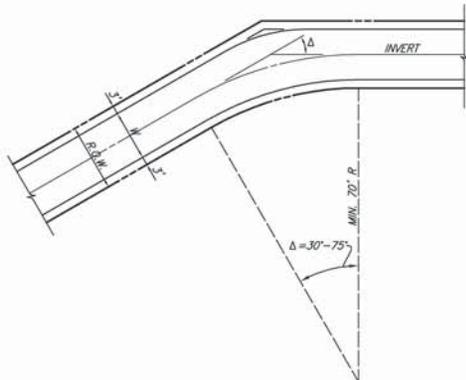
ALLEY TURN FOR $\Delta > 90^\circ$



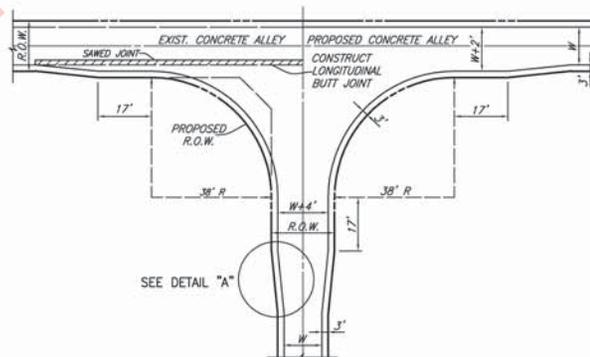
DETAIL "A"



ALLEY / STREET INTERSECTION



ALLEY TURN FOR $\Delta = 30^\circ-75^\circ$

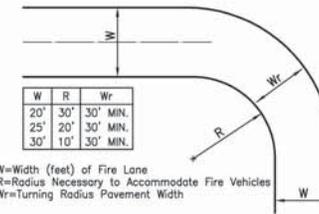


ALLEY INTERSECTING ALLEY

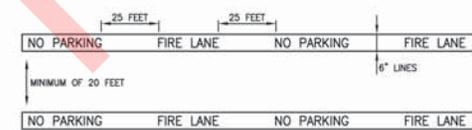
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PAVING - RADIUS			
DATE:	DECEMBER, 2016	SHEET	SD-06

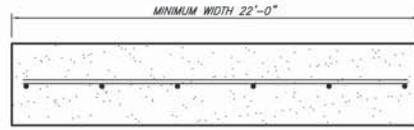


FIRE LANE DESIGN



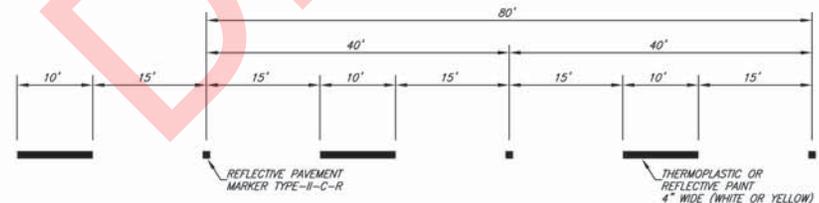
1. THE FIRE CHIEF IS AUTHORIZED TO DESIGNATE FIRE LANES.
2. FIRE LANES SHALL BE MARKED BY SIX INCH (6") WIDE LINES USING RED TRAFFIC PAINT, WITH THE WORDING "NO PARKING" AND "FIRE LANE" PAINTED ON THE LINES AT INTERVALS OF TWENTY-FIVE (25'). THE LETTERING WILL BE FOUR INCHES (4") HIGH WITH A ONE INCH (1") WIDE STROKE PAINTED WITH WHITE TRAFFIC PAINT.
3. FIRE LANES SHALL BE A MINIMUM OF TWENTY-FEET (20') IN WIDTH.
4. ANY DEAD-END FIRE LANE MORE THAN ONE HUNDRED FIFTY-FEET (150') LONG SHALL PROVIDE A TURN AROUND OF ONE HUNDRED FEET (100') IN DIAMETER AT THE CLOSED END.

FIRE LANE MARKING



1. ALL FIRE LANES SHALL BE PAVED WITH A MINIMUM OF 8 INCHES OF REINFORCED CONCRETE PAVEMENT (3600 PSI NCTCG CLASS C CONCRETE) WITH #3 REBAR PLACED ON 18 INCH CENTERS EACH WAY ON A 6 INCH LIME STABILIZED SUBGRADE. THE SUBGRADE SHALL BE STABILIZED WITH HYDRATED LIME IN SUFFICIENT AMOUNT TO REDUCE THE PLASTICITY INDEX BELOW FIFTEEN (15). LIME SERIES TEST SHALL BE RUN IN THE FIELD EVERY 500 FEET AND AT CHANGE IN MATERIAL TO DETERMINE LIME APPLICATION TO ACHIEVE OPTIMUM LIME.

FIRE LANE PAVING & JOINT DETAIL



REFLECTIVE PAVEMENT MARKER TYPE-II-C-R

PAVEMENT MARKERS (REFLECTORIZED) TYPE II-C-R SHALL BE SPACED ON 40' CENTERS WITH THE CLEAR FACE TOWARD NORMAL TRAFFIC AND THE RED FACE TOWARD THE WRONG WAY TRAFFIC.

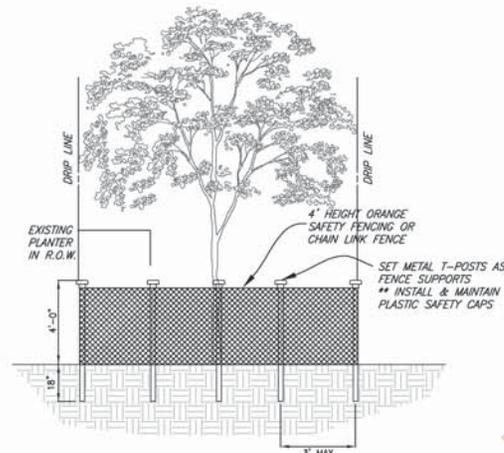
THERMOPLASTIC OR REFLECTIVE PAINT 4" WIDE (WHITE OR YELLOW)

LANE LINE PAVEMENT MARKING

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

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STANDARD CONSTRUCTION DETAILS			
PAVEMENT MARKINGS			
DATE:	DECEMBER, 2016	SHEET	SD-07

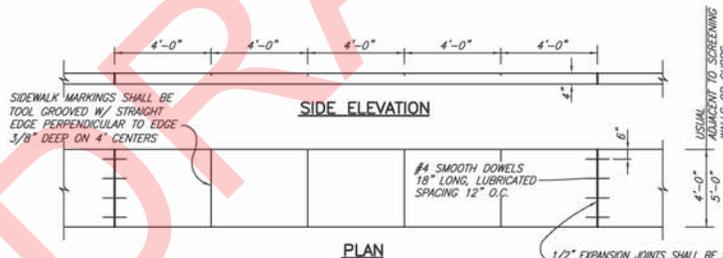


TREE PROTECTION PLAN

NOT TO SCALE

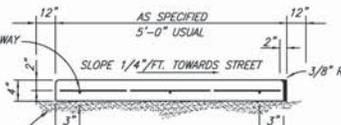
TREE PROTECTION NOTES:

1. TREES TO BE PROTECTED DURING CONSTRUCTION. ORANGE SAFETY FENCING (MIN. 4'-0" HEIGHT) SHALL BE INSTALLED AT THE DRIP LINE OF ALL TREES OF TREE GROUPS TO REMAIN. PARKING OF VEHICLES OR PERFORMING WORK WITHIN THESE AREAS, OTHER THAN SHOWN ON THE PLAN, WILL NOT BE ALLOWED. THE TREE PROTECTION SHALL REMAIN DURING CONSTRUCTION.
2. NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY TREE.
3. T-POSTS ARE TO BE INSTALLED ON 3 FOOT CENTERS AND ALUMINUM WIRE TIES PLACED ON 12 INCH CENTERS ON EACH POST TO SUPPORT FENCING AND PROPERLY MAINTAINED WITH PROTECTIVE SAFETY CAPS IN PLACE.
4. FENCE TO BE MAINTAINED AND REPAIRED AS NEEDED DURING CONSTRUCTION.
5. ACTIVITY WITHIN A FENCED TREE PROTECTION ZONE. NOT CONSTRUCTION, GRADING, PARKING, EQUIPMENT, OR MATERIAL STORAGE, OR ANY OTHER ACTIVITY SHALL BE ALLOWED WITHIN THE FENCED AREA.
6. SIGNS SHALL BE INSTALLED ON THE PROTECTIVE FENCE VISIBLE ON ALL SIDES OF THE FENCED-IN AREA. (MINIMUM ONE ON EACH SIDE AND/OR EVERY 300 LINEAR FEET). THE SIZE OF EACH SIGN MUST BE A MINIMUM OF ONE FOOT X ONE AND ONE HALF FEET AND SHALL CONTAIN THE FOLLOWING MESSAGE: "TREE PROTECTION ZONE: KEEP OUT."
7. CRITICAL ROOT ZONE. THE MINIMUM AREA BENEATH A TREE THAT MUST BE LEFT UNDISTURBED IN ORDER TO PRESERVE A SUFFICIENT ROOT MASS TO GIVE A TREE A REASONABLE CHANCE OF SURVIVAL. THE CRITICAL ROOT ZONE IS TYPICALLY REPRESENTED BY A CONCENTRIC CIRCLE CENTERING ON THE TREE TRUNK WITH A RADIUS EQUAL IN FEET TO ONE (1) TIMES THE NUMBER OF INCHES OF THE TRUNK DIAMETER. (CRZ IN FT = 1 X DIAMETER INCHES)
8. CLEARING ACTIVITIES. THE REMOVAL OF TREES ADJACENT TO A TREE PROTECTION ZONE CAN CAUSE INADVERTENT DAMAGE TO THE PROTECTED TREES. WHEREVER POSSIBLE, IT IS ADVISABLE TO CUT MINIMUM TWO-FOOT TRENCHES ALONG THE LIMITS OF LAND DISTURBANCE, SO AS TO CUT, RATHER THAN TEAR, ROOTS. TRENCHING IS REQUIRED FOR THE PROTECTION OF HISTORIC AND HERITAGE TREES.
9. SOIL COMPACTION. WHERE COMPACTION MIGHT OCCUR DUE TO TRAFFIC OR MATERIALS THROUGH THE TREE PROTECTION ZONE, THE AREA MUST FIRST BE MULCHED WITH A MINIMUM FOUR-INCH LAYER OF PROCESSED PINE.



SIDE ELEVATION

PLAN



SECTION

SALT FINISH NOTES:

1. SALT CRYSTALS RANGE FROM 1/8" TO 3/8" IN DIAMETER.
2. EVENLY DISTRIBUTE OVER THE SURFACE.
3. PRESS (ROLL) SALT CRYSTALS TO 1/2 DEPTH OF CRYSTAL DIAMETER. NO INDENTATION GREATER THAN 1/8" WILL BE ACCEPTED. PRESS CRYSTALS WHEN CONCRETE STARTS TO SET.
4. SALT CRYSTALS SHALL BE DISTRIBUTED UNIFORMLY.
5. POWER WASH AWAY SALT (MAX PRESSURE BOOPS) AFTER 24 HOURS OF SET TIME. ALL SALT MUST BE REMOVED.
6. CONTRACTOR SHALL CONSTRUCT MOCK-UP PANEL 4'X4' TO HAVE FINISH APPROVED BY TOWN. APPLICATION RATE WILL NEED TO BE APPROXIMATELY 10 LBS/100 SQUARE FEET, PLUS OR MINUS TO ESTABLISH A HEAVY PATTERN.

6" CRUSHED STONE BASE NCTCOG ITEM 504.2.2.1 GRADE 4 MECHANICALLY COMPACTED IN PLACE IN 4 INCH LOOSE LIFTS MAXIMUM

REINFORCED CONCRETE SIDEWALK

1. CONCRETE FINISH SHALL BE SMOOTH BROOM OR SALT FINISH AS ESTABLISHED ON CONSTRUCTION PLANS.
2. IF SIDEWALK PLACED AT BACK-OF-CURB, EXPANSION JOINT REQUIRED. EXPANSION JOINT MATERIAL SHALL BE REFLEX FROM THE JD RUSSELL COMPANY (RECYCLED RUBBER) OR EQUAL.

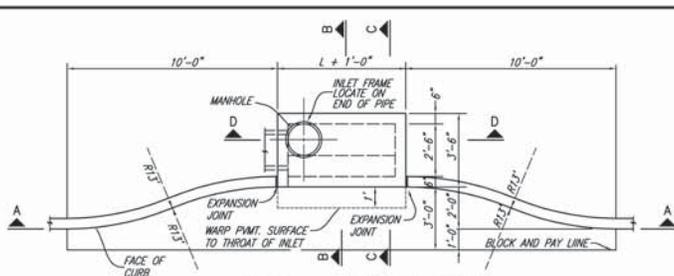
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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

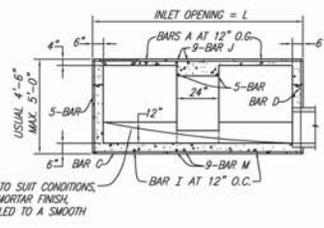
NOTES:

1. ALL SIDEWALKS SHALL MEET CURRENT ADA STANDARDS AND DETAILS. ALL DRIVEWAYS, STREET INTERSECTION SHALL MEET CURRENT ADA BARRIER FREE RAMP STANDARDS & DETAILS.
2. ALL SIDEWALK CONSTRUCTION SHALL MEET LATEST ADA REQUIREMENTS. ALL BARRIER FREE RAMP CONSTRUCTION SHALL MEET CURRENT ADA REQUIREMENTS.
3. CONTRACTOR TO HAVE STATE APPROVED ADA INSPECTOR COMPLETE SITE VISIT OF COMPLETED WORK AND PREPARE A REPORT OF FINDINGS TO THE CITY. ALL SIDEWALKS ARE REQUIRED TO MEET ADA REQUIREMENTS. ANY REMOVAL AND REWORK SHALL BE AT CONTRACTOR'S EXPENSE.

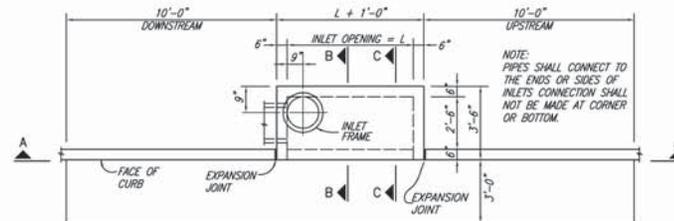
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STANDARD CONSTRUCTION DETAILS			
SIDEWALKS - TREE PROTECTION			
DATE:	DECEMBER, 2016	SHEET	SD-08



PLAN - RECESSED INLET

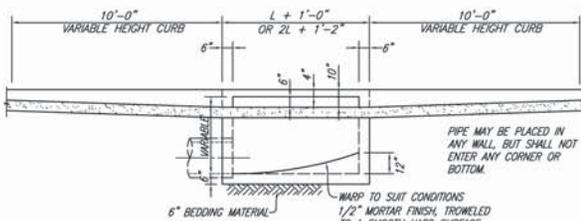


SECTION A-A - STANDARD AND RECESSED INLETS



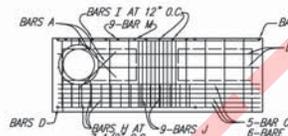
PLAN - STANDARD INLET

4, 6, 8 AND 10 FOOT INLETS

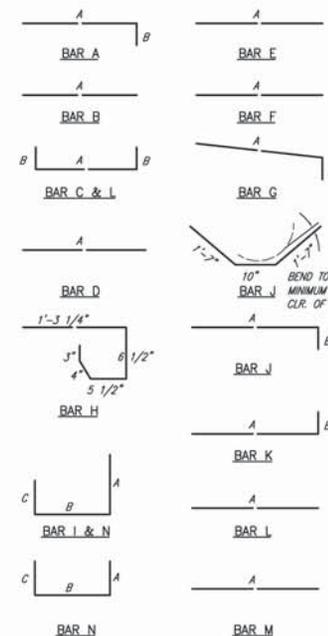


SECTION A-A-RECESSED AND STANDARD INLETS

4, 6, 8, AND 10 FOOT INLETS



PLAN - STANDARD INLET



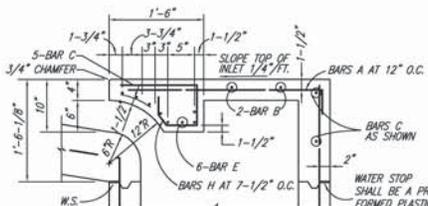
BAR DIAGRAMS

REINFORCING STEEL SCHEDULE

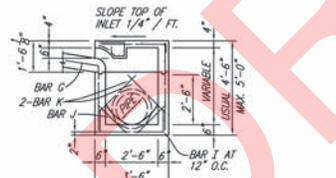
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA (1/8 IN)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
4	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
6	H	3	6	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
8	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	9	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
	A	3	12	3'-2"	0'-3"	-
	B	4	1	6'-10"	-	-
10	C	4	15	8'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	14	*	*	*
	I	4	8	4'-8"	3'-2"	3'-2"
L	4	5	4'-3"	-	-	

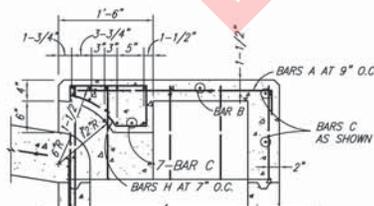
* SEE DIAGRAM FOR DIMENSIONS. 4', 6', 8' AND 10' INLETS



SECTION C-C



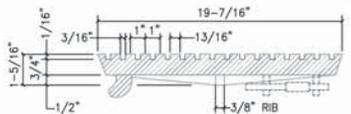
SECTION B-B



SECTION E-E



PLAN OF COVER



SECTION OF FRAME AND COVER SECTION A-A INLET FRAME AND COVER

BASS & HAYS COVER 55#, FRAME 45# OR EQUAL

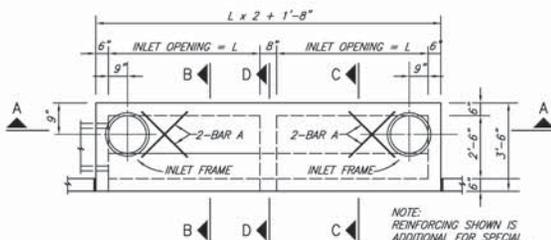
- NOTES:
1. THE FLOOR OF THE EXCAVATION FOR INLET BOX MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.
 2. A MINIMUM OF 6 INCHES OF 1" DIAMETER (MAXIMUM) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR LIEU OF THIS, AT LEAST 6 INCHES OF 2-SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.
 3. AFTER CASING HAS BEEN INSTALLED ON THE PROPER BEDDING, THE BACKFILL MATERIAL, WHICH IS FREE FLOWING AND CLEAR OF ROCKS, IN EXCESS OF 4" DIAMETER AND OTHER LUMPS WHICH WOULD PROHIBIT PROPER COMPACTION, SHALL BE COMMENCED IN LIFTS OF NO MORE THAN 18". THE MATERIAL USED FOR BACKFILL SHOULD BE A TYPE SUITABLE TO OBTAIN THE DENSITY REQUIREMENTS FOR THE SPECIFIC JOB.

NOTE: FOR ADDITIONAL INFORMATION SEE SECTION C-C

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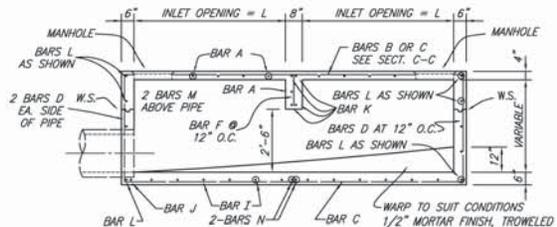
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

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STORM SEWER - INLET			
DATE:	DECEMBER, 2016		SHEET SD-09

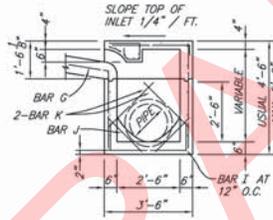


**PLAN
20 FOOT INLETS**

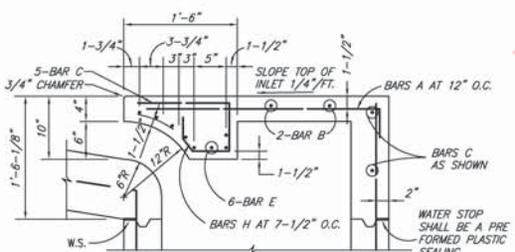
NOTE:
REINFORCING SHOWN IS
ADDITIONAL FOR SPECIAL
CONDITION, FOR REMAINDER
OF REINFORCEMENT, SEE
SECTIONS.



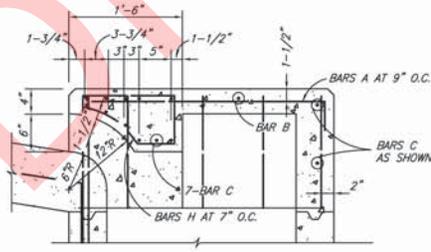
**SECTION A-A
12, 14, 16 AND 20 FOOT INLETS**



SECTION B-B



SECTION C-C



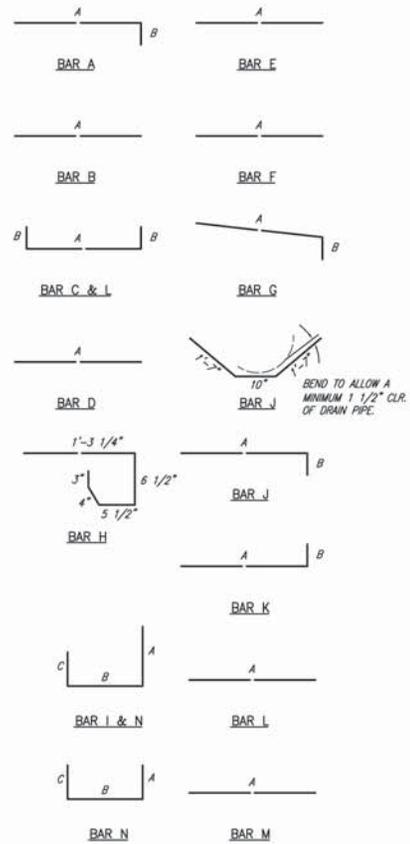
SECTION D-D

DOUBLE INLETS
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
6 FT.	A	3	15	3'-2"	0'-6"	-
	B	3	2	11'-6"	-	-
	C	4	16	13'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	13'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	12	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"
7 FT.	A	3	17	3'-2"	0'-6"	-
	B	3	2	13'-6"	-	-
	C	4	16	15'-4"	0'-3"	-
	D	4	9	4'-8"	-	-
	E	5	6	15'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	32	*	*	*
	I	4	14	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"
8 FT.	A	3	19	3'-2"	0'-6"	-
	B	3	2	15'-6"	-	-
	C	4	16	17'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	17'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"
10 FT.	A	3	23	3'-2"	0'-6"	-
	B	3	2	19'-6"	-	-
	C	4	16	21'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	21'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	32	*	*	*
	I	4	20	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"

* SEE DIAGRAM FOR DIMENSIONS.
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 16" AND 20" INLETS

REINFORCING STEEL SCHEDULE



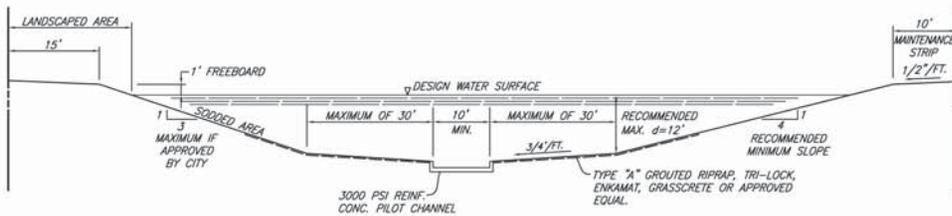
△ BEND TO ALLOW A MINIMUM 1 1/2" CIR. OF DRAIN PIPE
* SEE DIAGRAMS FOR DIMENSIONS
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE

BAR BENDING DIAGRAMS

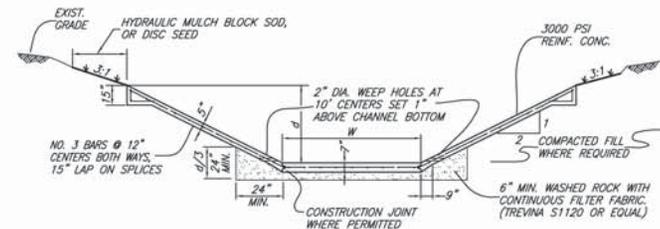
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STANDARD CONSTRUCTION DETAILS			
STORM SEWER - INLET			
DATE:	DECEMBER, 2016	SHEET SD-10	

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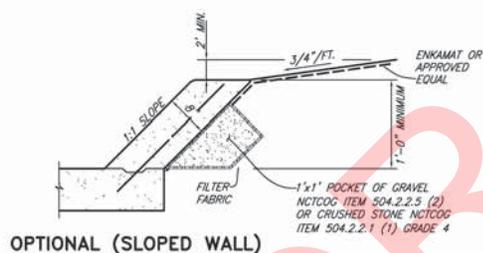
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



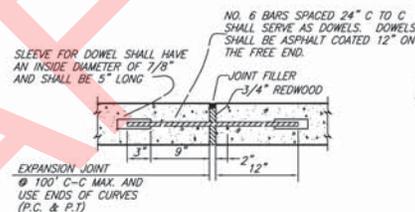
TYPICAL CHANNEL WITH 3000 PSI REINFORCED CONCRETE LINED PILOT CHANNEL



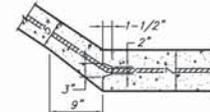
TYPICAL 3000 PSI REINFORCED CONCRETE CHANNEL



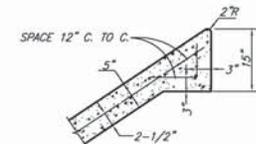
OPTIONAL (SLOPED WALL)



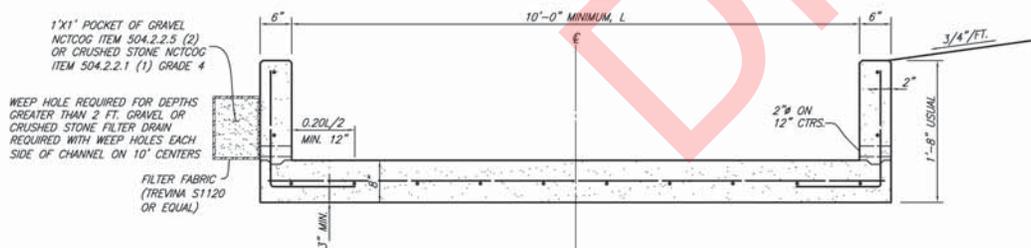
TRANSVERSE EXPANSION JOINT



**CONSTRUCTION JOINT
OPTIONAL
CONCRETE CHANNEL**



SLAB EDGE - DETAIL "A"



3000 PSI REINFORCED CONCRETE PILOT CHANNEL (VERTICAL WALL)

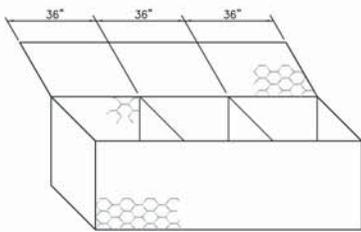
GENERAL NOTES FOR LINED CHANNELS

1. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAY BE USED.
2. ALL VISIBLE SURFACES SHALL BE A TROWEL FINISH UTILIZING A FREZNOUS TROWEL.
3. ALL REINFORCING STEEL SHALL BE 3/8" DIA. AND SPACED 12" CENTER TO CENTER BOTH WAYS UNLESS OTHERWISE SPECIFIED.
4. IF WOOD FORMS ARE USED WITH CONSTRUCTION JOINT, THEY SHALL BE TWO, 2"x4", AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACED.
5. ALL CONCRETE IN LINED CHANNEL SHALL BE NCTCOG CLASS "A" (MIN. 3000 P.S.I.) CONCRETE.
6. FLAT BOTTOM TO BE CONSTRUCTED WHEN CHANNEL WIDTH IS LESS THAN 12 FOOT.
7. 3/4" CHAMFER ON ALL CONCRETE CORNERS.
8. CONCRETE FINISH HEAVY BROOM.

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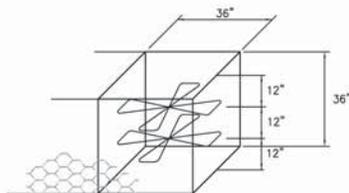
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DATE: December 2016

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TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
CHANNELS - CONCRETE			
DATE:	December 2016	SHEET SD-12	

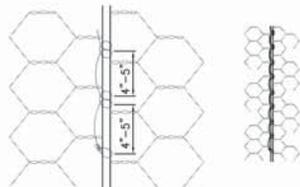


GABION CONTAINER
N.T.S.

NOTE: GABION MAY BE CUT BUT SHALL BE RETIED IN A MANNER TO PRODUCE A CLOSED CELL AND ALL TIES SHALL BE IN CONFORMANCE WITH DETAILS

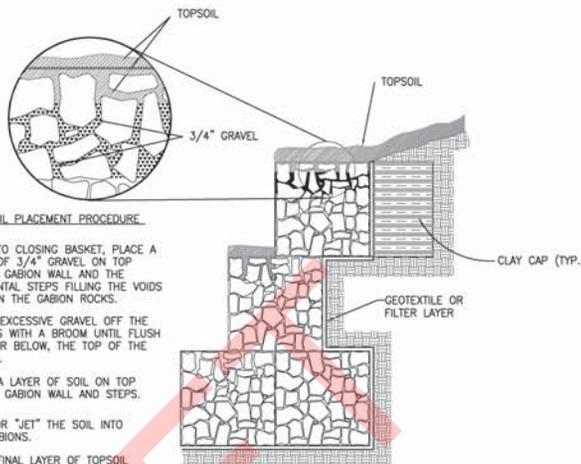


INNER TIE WIRE
N.T.S.



GABION TIE
N.T.S.

NOTE: ALL TYING OF GABIONS SHALL BE AS SHOWN



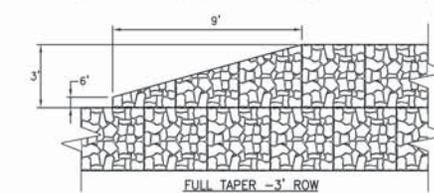
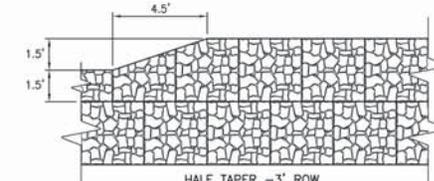
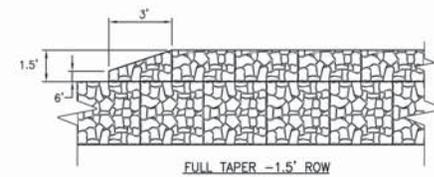
TOPSOIL PLACEMENT PROCEDURE

1. PRIOR TO CLOSING BASKET, PLACE A LAYER OF 3/4" GRAVEL ON TOP OF THE GABION WALL AND THE HORIZONTAL STEPS FILLING THE VOIDS BETWEEN THE GABION ROCKS.
2. SWEEP EXCESSIVE GRAVEL OFF THE GABIONS WITH A BROOM UNTIL FLUSH WITH, OR BELOW, THE TOP OF THE GABION.
3. PLACE A LAYER OF SOIL ON TOP OF THE GABION WALL AND STEPS.
4. WASH OR "JET" THE SOIL INTO THE GABIONS.
5. PLACE FINAL LAYER OF TOPSOIL ON THE GABIONS TO A DEPTH OF SIX INCHES.

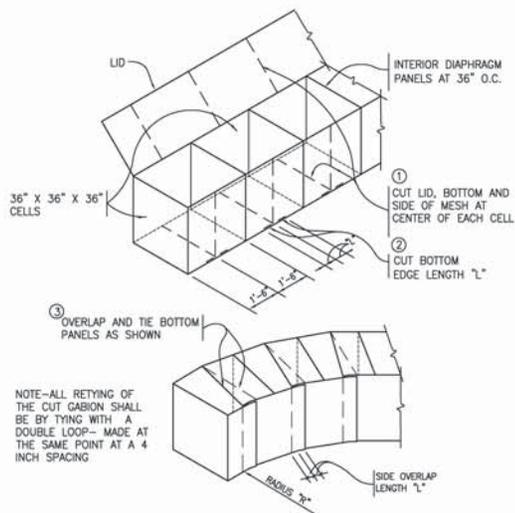
NOTE: DO NOT USE SHARP TOOLS WHEN SPREADING TOPSOIL ON GABIONS

SECTION

VEGETATED GABION WALL TOPSOIL PLACEMENT

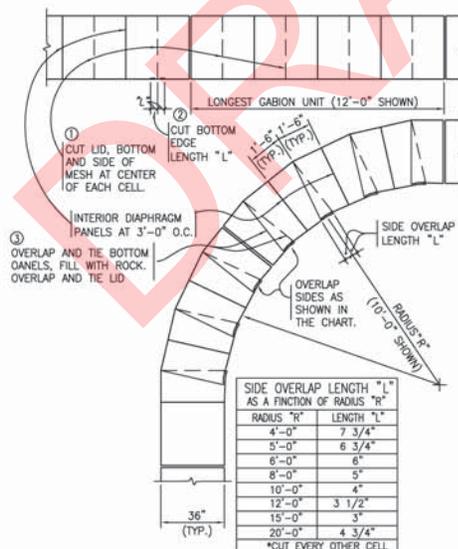


TAPERED WALL HEIGHT TRANSITION



GABION RADIUS PROCEDURE

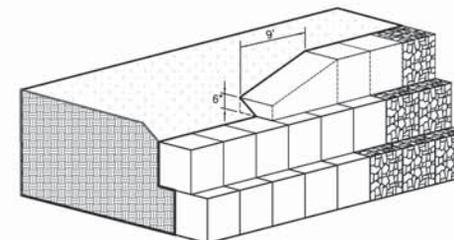
NOTE-ALL RETIYING OF THE CUT GABION SHALL BE BY TYING WITH A DOUBLE LOOP- MADE AT THE SAME POINT AT A 4 INCH SPACING



GABION RADIUS PROCEDURE

SIDE OVERLAP LENGTH "L" AS A FUNCTION OF RADIUS "R"	
RADIUS "R"	LENGTH "L"
4'-0"	7 3/4"
5'-0"	6 3/4"
6'-0"	6"
8'-0"	5"
10'-0"	4"
12'-0"	3 1/2"
15'-0"	3"
20'-0"	4 3/4"

*CUT EVERY OTHER CELL



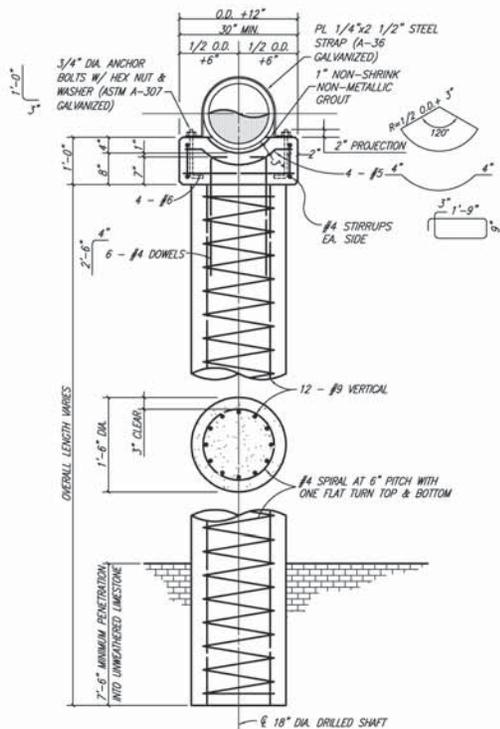
STANDARD TAPER FOR WALL HEIGHTS TRANSITIONS

NOTE: GEOTECHNICAL INVESTIGATION REQUIRED FOR FOUNDATION AND THE BACK REQUIREMENTS.

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TEXAS P.E. NO. 54137
DECEMBER, 2016

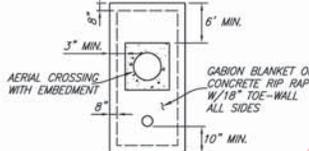
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TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
CHANNELS - GABIONS			
DATE:	DECEMBER, 2016	SHEET	SD-13



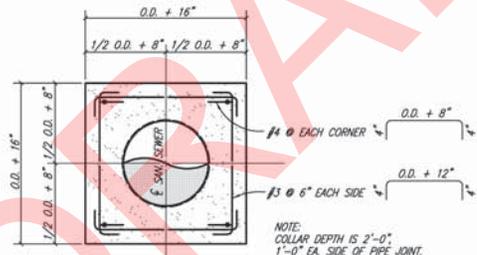
AERIAL CROSSING PIER & PIER CAP

STEEL PIPE SHALL BE OF THE TYPE SHOWN IN THE ENGINEER'S DESIGN. STEEL PIPE SHALL HAVE A THICKNESS REQUIRED FOR SIZE AND SPAN WITH MINIMUM WALL THICKNESS OF 3/8 INCHES.

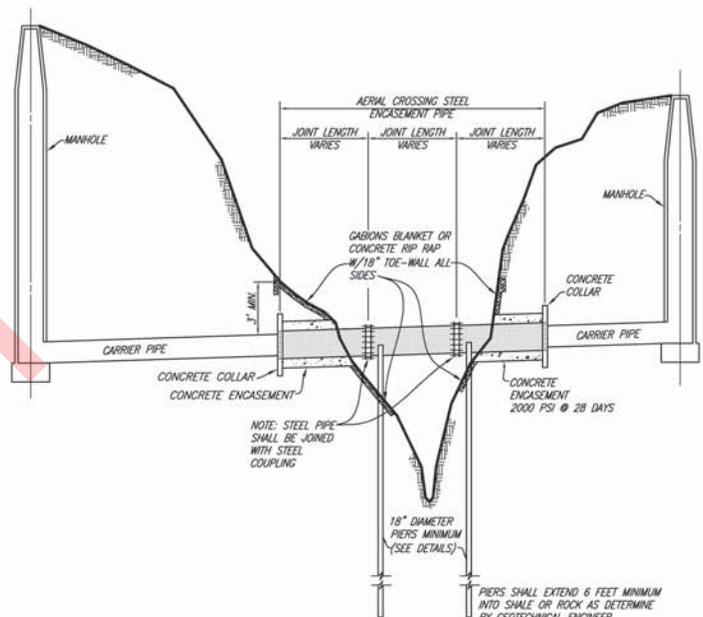
PIPE COUPLINGS SHALL BE PLACED A MAXIMUM OF 5 FEET FROM CENTERLINE OF PIERS.



BANK PROTECTION (TYP.)



AERIAL CROSSING CONCRETE COLLAR



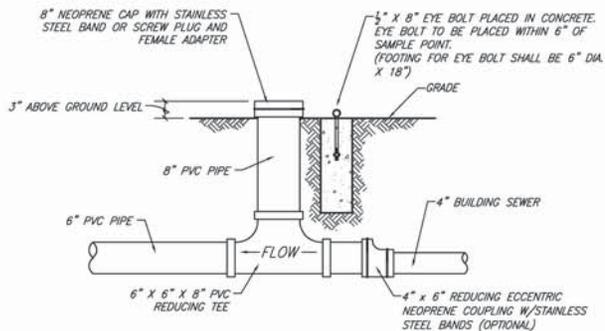
AERIAL CROSSING

NOTE:
ENGINEERING DESIGN SHALL BE SUBMITTED TO TOWN FOR APPROVAL FOR USE FOR EACH CROSSING. PIERS SHALL BE PLACED AT MAXIMUM SPAN DISTANCE AS DICTATED BY ENGINEER'S DESIGN.
ALL DESIGNS SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
GEOTECHNICAL BORES AND REPORT SHALL BE PART OF DESIGN SUBMITTED TO THE TOWN.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SANITARY SEWER			
DATE:	DECEMBER, 2016	SHEET	SD-14

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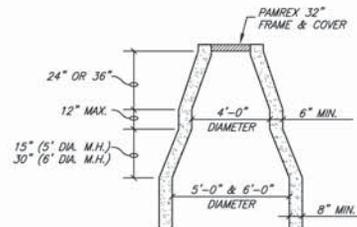
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DECEMBER, 2016



NOTE:
IF PROPOSED LOCATION IS IN PAVEMENT, CONTRACTOR SHALL INSTALL A CLEANOUT COVER PER CLEANOUT DETAIL.

WASTE SAMPLING PORT

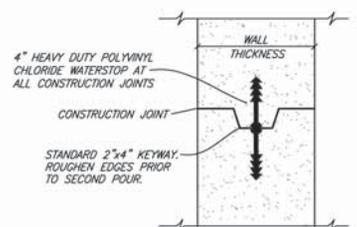
(NOT TO SCALE)



CONE TRANSITION

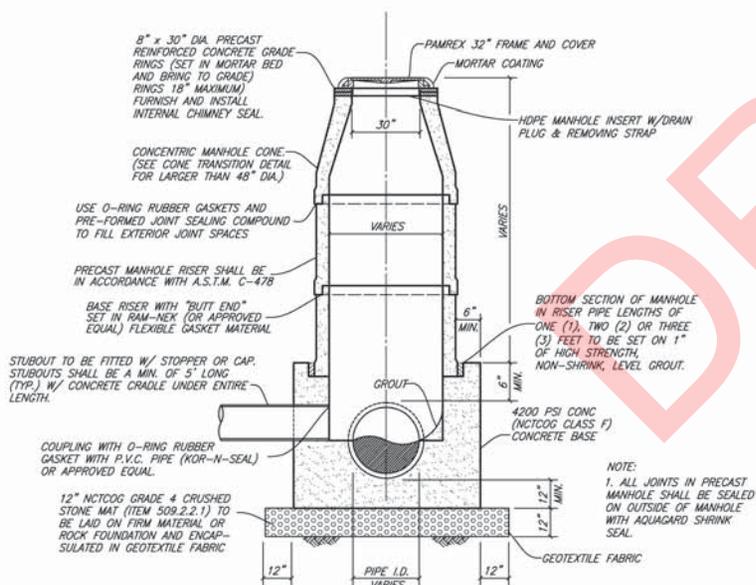
5' & 6' DIAMETER MANHOLES ONLY

MANHOLE CONE NOTE:
FOR MANHOLES WITH DIAMETER LARGER THAN 48\"/>



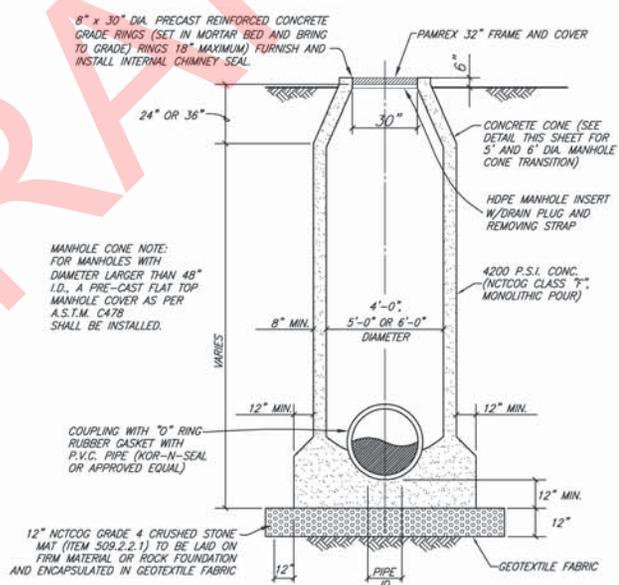
MANHOLE CONSTRUCTION JOINT

KEYWAY WITH WATERSTOP



PRECAST CONCRETE MANHOLE

4', 5' & 6' DIAMETER MANHOLES



CAST IN PLACE CONCRETE MANHOLE

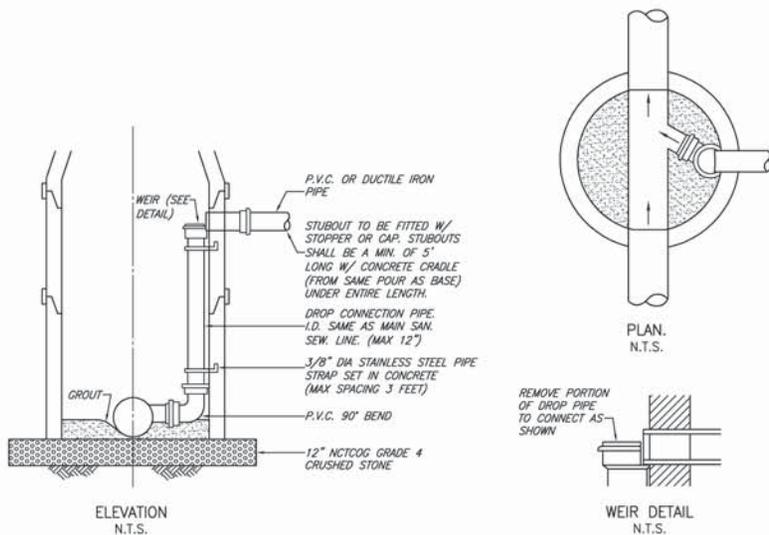
4', 5' & 6' DIAMETER MANHOLES

- MANHOLE NOTES:
1. PRESSURE TIGHT MANHOLE FRAME AND COVER WHERE REQUIRED SHALL BE PAMTIGHT 32.
 2. INTERIOR OF MANHOLES SHALL BE LINED WITH RAVEN COAT OR SPECTRA SHIELD.

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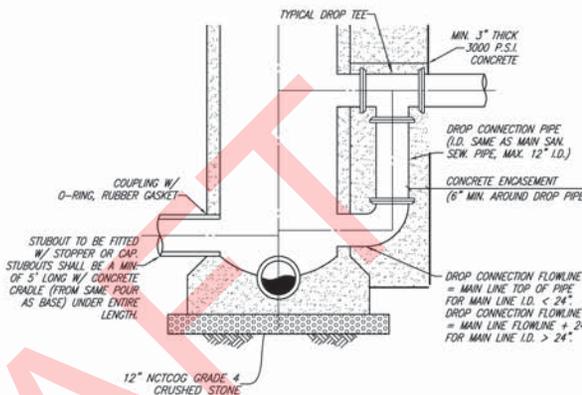
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STANDARD CONSTRUCTION DETAILS			
SANITARY SEWER – MANHOLES			
DATE:	DECEMBER, 2016	SHEET SD-15	



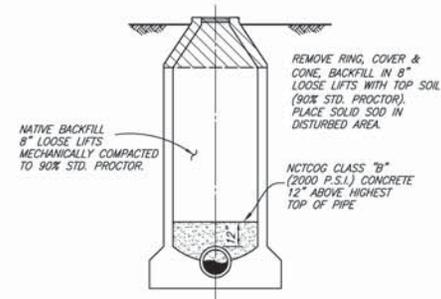
SANITARY SEWER MANHOLE – INSIDE DROP CONNECTION

MIN. DIAMETER 5 FEET
UNDER PAVEMENT



MANHOLE WITH EXTERNAL DROP CONNECTION

MIN. DIAMETER 5 FEET
OUTSIDE OF PAVEMENT

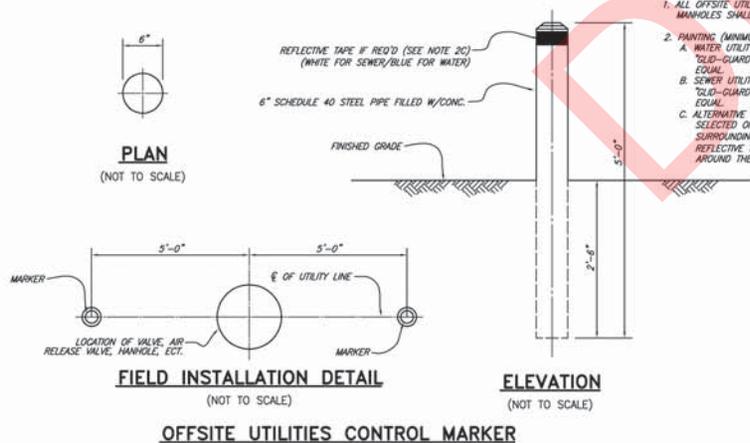


MANHOLE ABANDONMENT

OUTSIDE PAVEMENT AREA

GENERAL NOTES:

1. ALL OFFSITE UTILITIES WITH BURIED VALVES, CLEANOUTS, AND MANHOLES SHALL BE MARKED AS DETAILED ON THIS SHEET.
2. PAINTING (MINIMUM TWO (2) COATS REQUIRED):
 - A. WATER UTILITY MARKERS TO BE PAINTED WITH GLODDEN "GLOD-GUARD" INDUSTRIAL ENAMEL NO.4564 IMPERIAL BLUE OR EQUAL.
 - B. SEWER UTILITY MARKERS TO BE PAINTED WITH GLODDEN "GLOD-GUARD" INDUSTRIAL ENAMEL NO.4520 SAFETY RED OR EQUAL.
 - C. ALTERNATIVE COLORS (INCLUDING GREEN AND BROWN) MAY BE SELECTED ON A CASE-BY-CASE BASIS TO BLEND INTO SURROUNDING AREAS SUCH AS GREENBELTS. A 1" WIDE REFLECTIVE TAPE (DM TYPE 9 OR EQUAL) SHALL BE INSTALLED AROUND THE TOP OF THE MARKER IN THESE CASES.



FIELD INSTALLATION DETAIL

(NOT TO SCALE)

ELEVATION

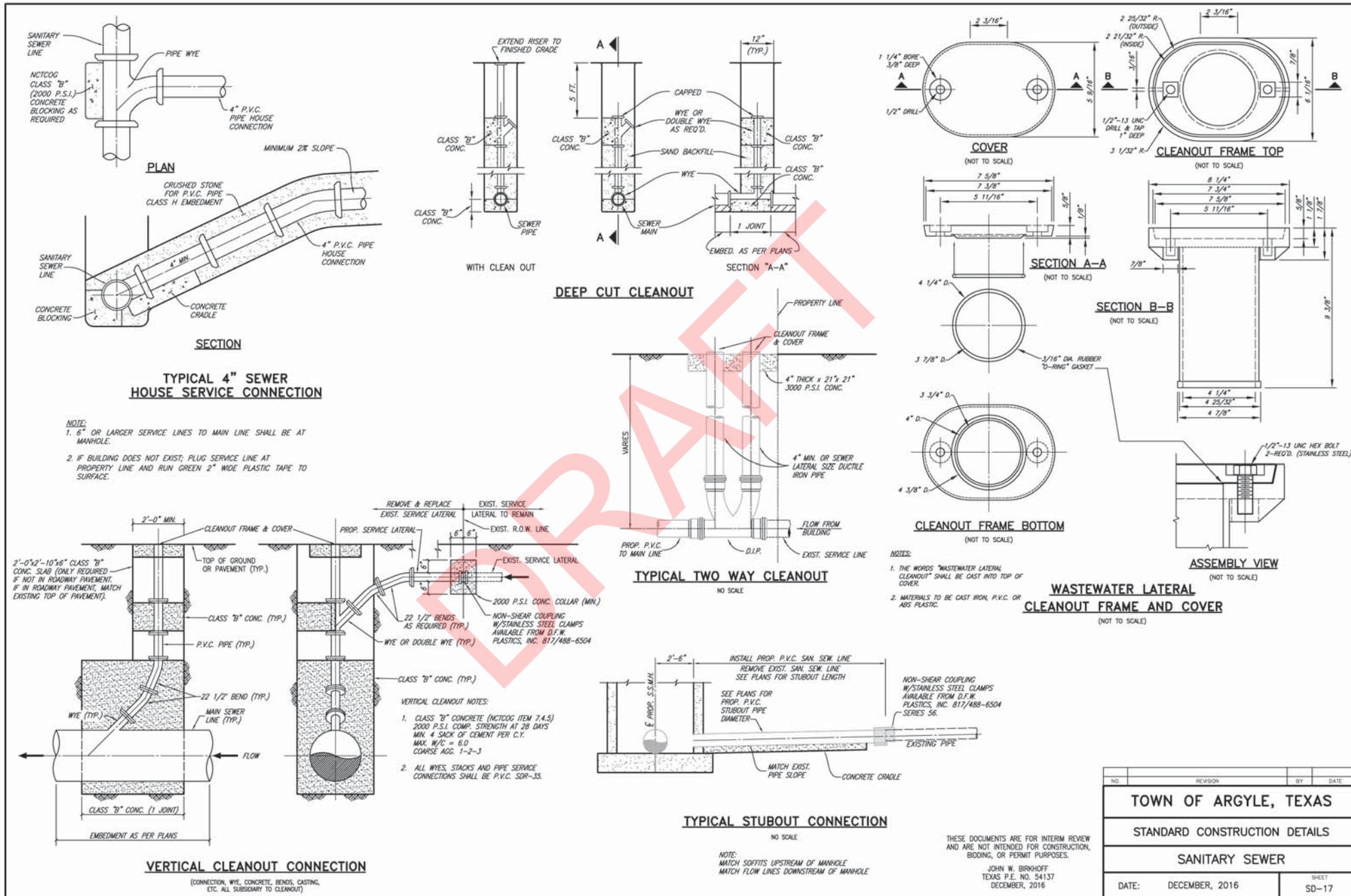
(NOT TO SCALE)

OFFSITE UTILITIES CONTROL MARKER

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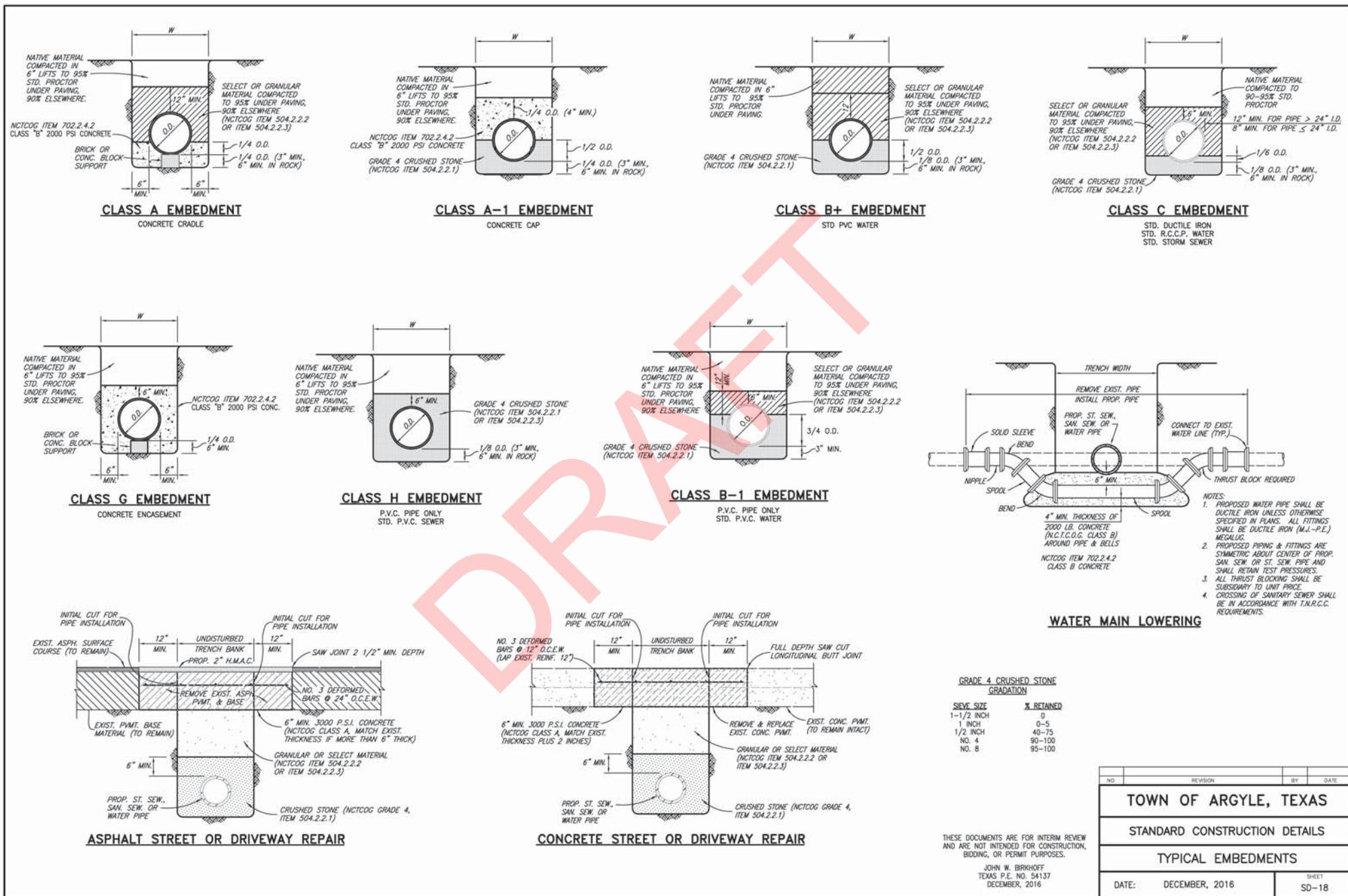
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DECEMBER, 2016

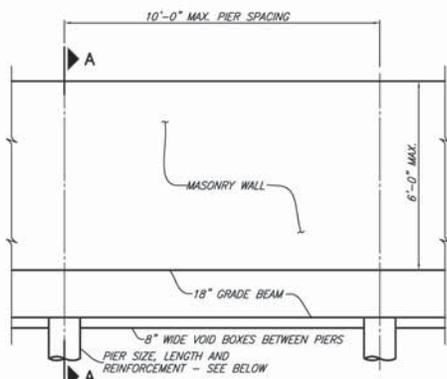
NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SANITARY SEWER – MANHOLES			
DATE:	DECEMBER, 2016	SHEET	SD-16



NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SANITARY SEWER			
DATE:	DECEMBER, 2016		
			SHEET SD-17

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 DECEMBER, 2016

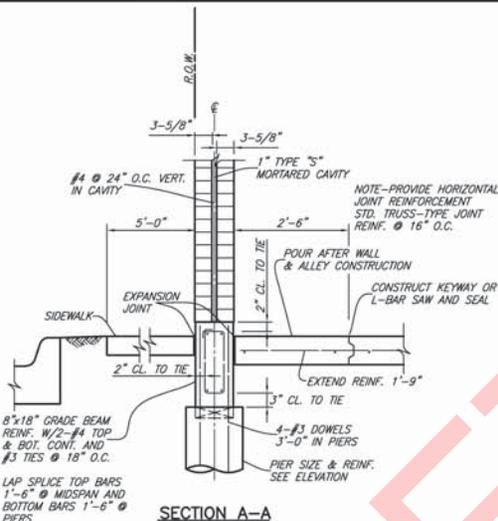




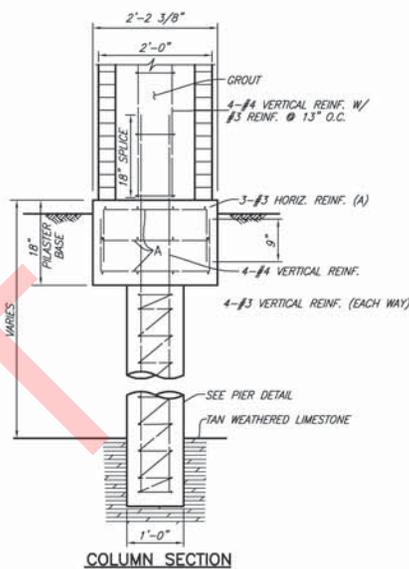
ELEVATION

DRILLED PIERS 12" DIA. REINF. W/ 4-#5 VERT. & #4 REINF. @ 18" O.C. MINIMUM LENGTH OF PIER IS 6'-0". *PIER BOTTOM MAY BE EITHER OF THE TWO ALTERNATES:

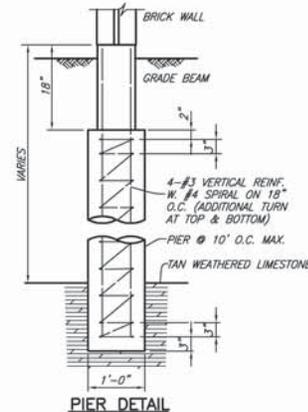
- 12" DIA. SHAFT EMBEDDED MINIMUM 3'-0" INTO BLUE SHALE RESULTING BEARING STRESS IS 8.0 KIIPS PER SQUARE FOOT.
 - 12" DIA. SHAFT W/ 24" DIA. BELL IN CLAY. RESULTING BEARING STRESS IN 2.0 KIIPS PER SQUARE FOOT.
- * SEE GENERAL NO. 8



SECTION A-A



COLUMN SECTION



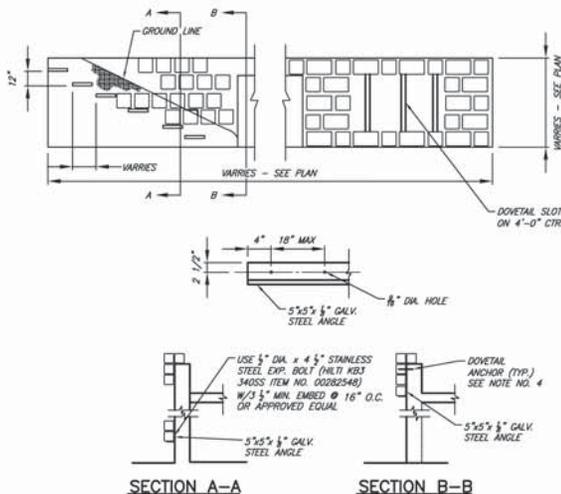
PIER DETAIL

BRICK SCREENING WALL

SCREENING WALL

GENERAL NOTES:

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. REINFORCEMENT - ASTM A 36
3. WIND LOAD - 20 P.S.F.
4. PIER BEARING STRESSES - SEE BRICK SCREENING WALL NOTES.
5. MORTAR - ASTM C207 - TYPE "S" - MINIMUM COMPRESSIVE STRENGTH 750 PSI @ 28 DAYS
6. PROVIDE EXPANSION JOINTS AT 50 FT.
7. PROVIDE CONTROL JOINTS AT 200 FT. CENTER MAXIMUM.
8. PROVIDE MIN. 9" FT. W/ 24" DIA. BELL IN CLAY OR OTHER MATERIAL EXCEPT BLUE SHALE, 6" MIN. WITH 3" MIN. INTO BLUE SHALE.
9. ALL EXPOSED CONCRETE SHALL BE RUBBED FINISHED SURFACE.
10. SIDEWALKS ADJACENT TO WALLS MUST BE 5'-0" MIN. WIDTH FROM ALL PORTIONS OF THE WALL (INCLUDING PILASTERS, COLUMNS, ETC.).
11. MAX. PILASTER SPACING 40 FT.
12. WALLS SHALL NOT BE PLACED IN THE VISIBILITY EASEMENT OR STREET R.O.W.
13. THE WALL SHALL BE A MINIMUM OF SIX FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS THE HIGHER. THE COLOR OF THE WALL SHALL BE LIMITED TO EARTH-TONE COLORS, EXCLUDING GRAY, GREEN AND WHITE. THE COLOR OF THE WALL SHALL BE UNIFORM ON EACH SIDE OF A THROUGHFARE FOR THE ENTIRE LENGTH BETWEEN INTERSECTING THROUGHFARES, UNLESS OTHERWISE APPROVED BY THE ENGINEERING DEPARTMENT. THE FINISH OF THE WALL SHALL BE CONSISTENT ON ALL SURFACES.
14. IF WROUGHT IRON FENCING IS TO BE UTILIZED ON REQUIRED SCREENING, ALL WROUGHT IRON MUST BE SOLID STOCK, NO TUBULAR STEEL WILL BE ALLOWED. ALTERNATIVE IS POWDER COATED ALUMINUM ORNAMENTAL FENCING ULTRA FENCE OR EQUAL (POST SPACING 6 FOOT), EXTERIOR EXPOSED WROUGHT IRON FENCING; COATING SHALL BE:
 1. SURFACE PREPARATION: SSPC-SP6 COMMERCIAL BLAST CLEANING TO ACHIEVE 4.75 MIL ANGLUAR SURFACE PROFILE.
 2. PRIMER: TNEMC SERIES 90-97, TNEMC-ZINC OR EQUAL APPLIED AT 2.5 TO 3.5 DRY MILS.
 3. INTERMEDIATE: TNEMC SERIES 161HS TNEMC-FASCURE, OR EQUAL APPLIED AT 4.0 TO 6.0 DRY MILS.
 4. FINISH: TNEMC SERIES 760UVK OR EQUAL APPLIED AT 2.0 TO 3.0 DRY MILS.



SECTION A-A

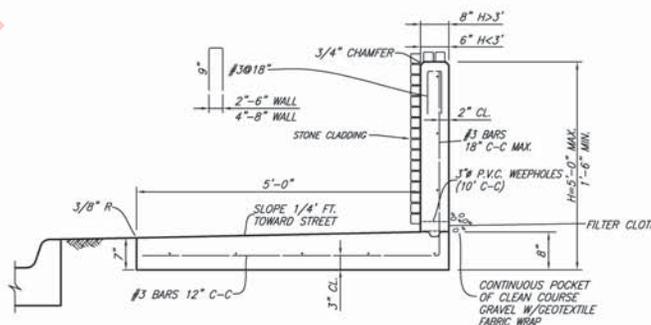
SECTION B-B

FASCIA DETAIL

RETAINING WALL/HEADWALL W/ MILSAP STONE FASCIA

RETAINING WALL NOTES:

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/4".
2. REINFORCING STEEL SHALL BE PLACED WITH THE OUTSIDE BARS 2" FROM THE SURFACE OF CONCRETE, UNLESS NOTED OTHERWISE.
3. DOVETAIL SLOTS, WHERE REQUIRED, SHALL BE 20 GAUGE, GALVANIZED. CODE NUMBER DAS-520 (MANUFACTURED BY GATEWAY BUILDING PRODUCTS) OR ENGINEER APPROVED EQUAL AND SHALL BE SPACED @ 4'-0" O.C. MAX.
4. DOVETAIL STONE ANCHORS SHALL BE 1/2" x 1/2" SPACED AT 1'-0" O.C. THE FULL LENGTH OF SLOT.
5. CAPSTONE SHALL BE FULL WIDTH OF WALL (UNLESS OTHERWISE SPECIFIED) AND A MIN. OF 1' LONG.
6. ALL JOINTS SHALL BE 1/2" THICK x 1/4" DEEP RANKED.
7. CONTRACTOR SHALL PROVIDE A MOCKUP A MIN. OF 4' x 4' FOR TOWN APPROVAL.



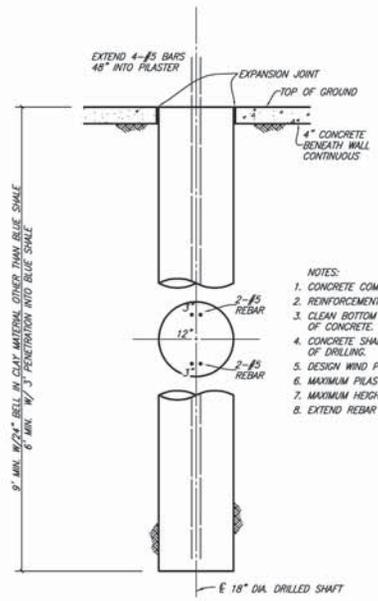
TYPE 6 RETAINING WALL

ALL EXPOSED CONCRETE SHALL BE FACED WITH STONE. SIZE, SHAPE AND COLOR OF STONE SHALL BE APPROVED BY THE TOWN.

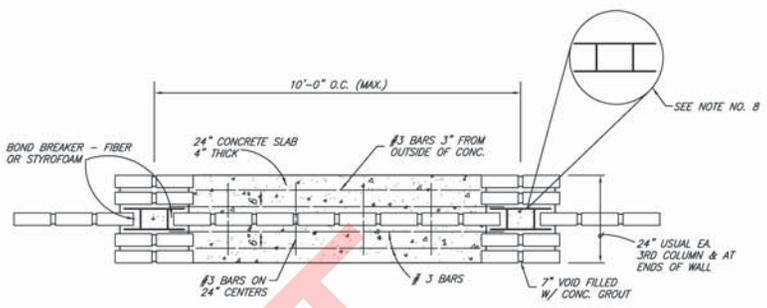
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TEXAS P.E. NO. 54137
DECEMBER, 2016

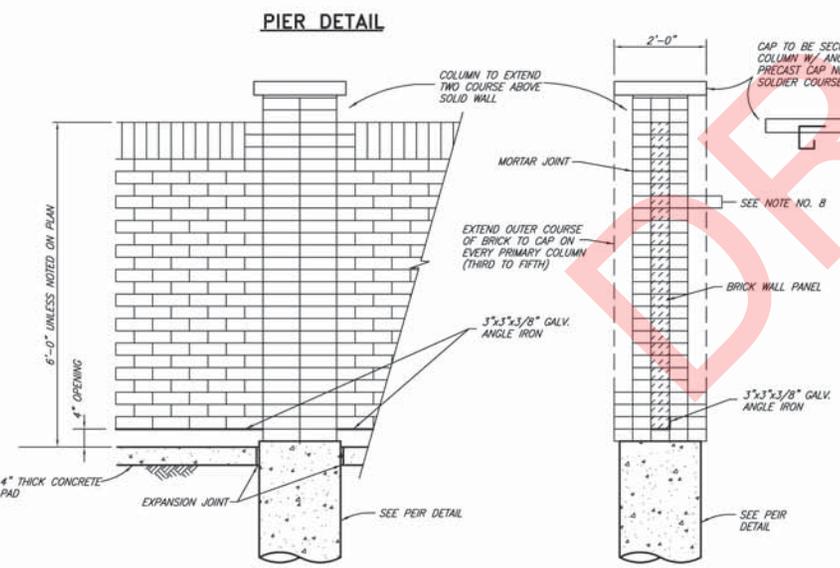
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TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
BRICK SCREENING - RETAINING			
DATE:	DECEMBER, 2016	SHEET	SD-20



- NOTES:
1. CONCRETE COMP. STRENGTH-4000 P.S.I.
 2. REINFORCEMENT STEEL - ASTM A615 - GR 60.
 3. CLEAN BOTTOM OF HOLE PRIOR TO PLACEMENT OF CONCRETE.
 4. CONCRETE SHALL BE PLACED WITHIN 8 HOURS OF DRILLING.
 5. DESIGN WIND PRESSURE - 20 PSF.
 6. MAXIMUM PILE SPACING - 10'-0"
 7. MAXIMUM HEIGHT OF WALL - 6'-0"
 8. EXTEND REBAR 48" INTO PLASTER AND COLUMN.



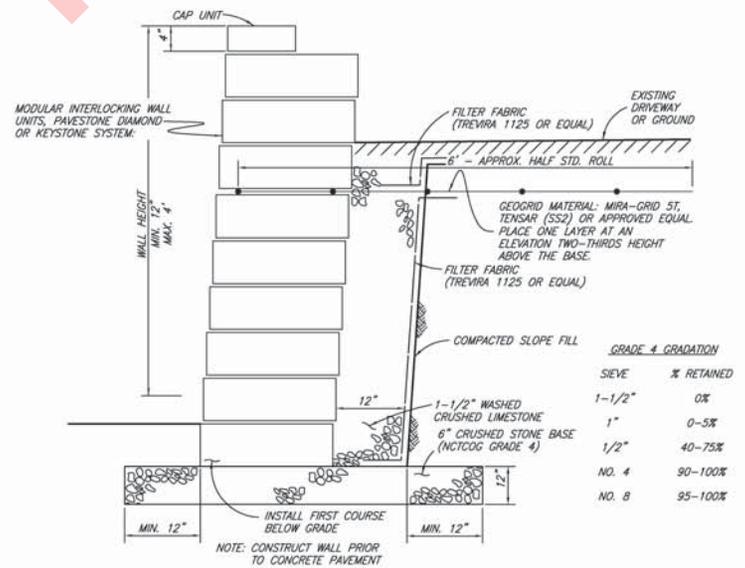
TYPICAL WALL & COLUMN LAYOUT PLAN



THIN WALL BRICK OR STONE SCREENING WALL ELEVATION

NOTE: STONE CAN BE UTILIZED IN PLACE OF BRICK.

- NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 P.S.I. AT 28 DAYS.
 2. REINFORCING STEEL SHALL BE NEW BILLET STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-615-GR.60.
 3. CONCRETE FOR DRILLED PIERS SHALL BE PLACED WITHIN 8 HOURS OF DRILLING PIER HOLES.
 4. MORTAR SHALL BE TYPE "S".
 5. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE "RECOMMENDED PRACTICE FOR ENGINEERED BRICK MASONRY"-- BRICK INSTITUTE OF AMERICA.
 6. USE #9 GAUGE 1-3/4" WIDE GALVANIZED LADDER WIRE TO EXTEND HORIZONTAL IN WALL PANEL DURAWALL CORP. EVERY COURSE.
 7. #9 GAUGE WIRE FABRICATED AS SHOWN BETWEEN EACH COURSE OF COLUMN BRICK.
 8. THE WALL SHALL BE A MINIMUM OF SIX FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS HIGHER. THE COLOR OF THE WALL SHALL BE SELECTED BY THE TOWN.
 9. BRICK OR STONE SIZE AND COLOR SHALL BE SUBMITTED TO THE TOWN FOR APPROVAL.



STONE RETAINING WALL

GRADE 4 GRADATION		
SIEVE	% RETAINED	
1-1/2"	0%	
1"	0-5%	
1/2"	40-75%	
NO. 4	90-100%	
NO. 8	95-100%	

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
THIN BRICK SCREENING WALL			
DATE:	DECEMBER, 2016		SHEET SD-19

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DECEMBER, 2016

4. TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT

A. Description: An aggregate area or pad located where vehicles enter and leave a construction site.

B. Purpose: To provide an area where vehicles can remove mud and sediment from their tires prior to driving on public streets. If used properly, it reduces the requirement to remove sediment from public streets, directs the majority of traffic to a single location, and provides protection for other BMPs on site through traffic control.

C. Applications: Use wherever traffic will be leaving a construction site and moving directly onto a public road or an off-site paved surface. Primary installations include exits from storage areas, staging areas, truck haul routes, and borrow/spoil areas.

D. Limitations: Selection of the stone construction exit/entrance location is critical, since to be effective all traffic must use the area(s) to exit a site. The device is not suitable for use on long, linear projects unless there are designated points for controlled access. Contractors shall clean-up excessive stone from existing paved streets during the construction process.

E. Design Criteria:

1) Minimum Pad Dimensions: Width = 15 feet or total width of vehicle access, whichever is greater.

Length = 50 feet (Residential lots use 20')
Depth = 6 inches

2) Grade: Avoid grades steeper than 5% and grade to drain back on to the site or to another BMP to control off-site sedimentation.

3) Location: Locate the construction entrance/exit to limit the amount of sediment that leaves the construction site and to provide for maximum use by vehicles leaving the site. Do not place along curves in the public roadway.

4) Filter Fabric: Shall be used for installations with a construction period of more than 6 months, where heavy truck traffic is anticipated daily, or very weak sub-grade soils are present.

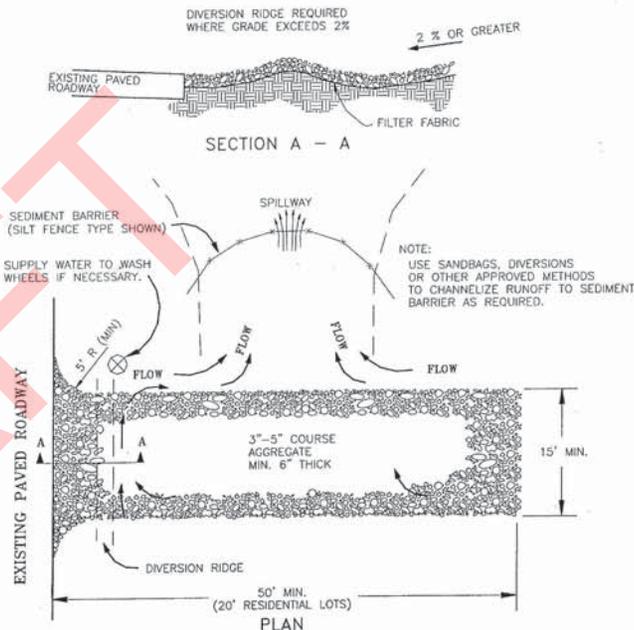
F. Material Specifications

1) **Aggregate:** Natural stone or re-cycled concrete meeting the gradation requirements

- Passing 5-inch Sieve 100%
- Retained 2-inch Sieve 100%

2) **Filter Fabric:** NCTCOG Item 201.5.2.1

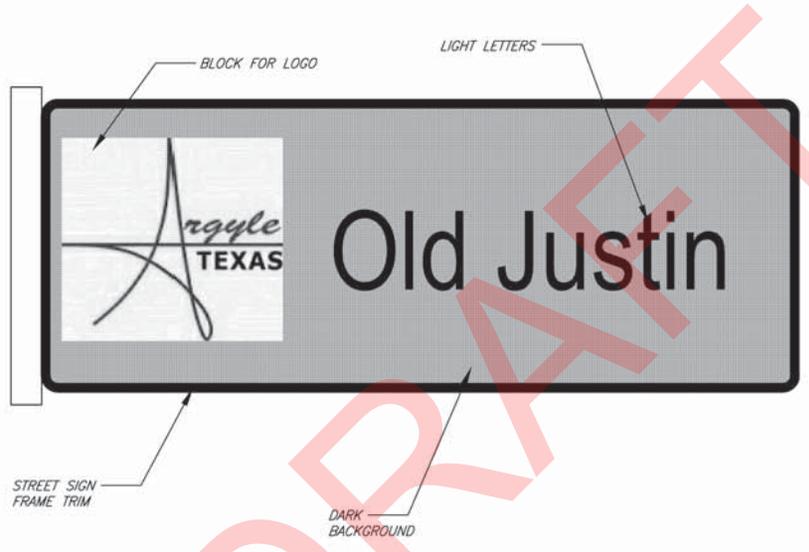
Maintenance Requirements: Inspections should be made weekly and after rain storm events to ensure that the device is functioning properly. When sediment or mud has clogged the void spaces between the stones or mud is being tracked onto the public roadway the aggregate pad must be washed down or replaced. Runoff from the wash-down operation shall not be allowed to drain directly off site without first flowing through another BMP to control off-site sedimentation. Periodic re-grading or the addition of new stone may be required to maintain the efficiency of the installation.



TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT
N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
TEMP. STONE CONSTRUCTION ENTRANCE-EXIT			
DATE:	DECEMBER, 2016	SHEET	SD-21

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



STREET SIGN
 NOTE: STREET SIGN SHALL
 BE EQUAL TO BRANDON
 INDUSTRIES H1094205 W/
 T0550992 TRIM



NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SIGNAGE			
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 TEXAS P.E. NO. 54137
 DECEMBER, 2016

5. TEMPORARY DIVERSIONS

A. Description: A ridge, excavated channel, or combination ridge and channel which redirects on-site or off-site runoff to a desired location, during the construction or land disturbing activity.

B. Purpose: To protect disturbed ground areas from up-slope runoff and to divert sediment laden on-site runoff to installed BMPs for sediment removal.

C. Applications: Typical applications include:

- 1) Installation above cut or fill slopes to intercept runoff before it flows down a steep slope.
- 2) Installations to intercept runoff from undisturbed areas to divert the flow around the construction site.
- 3) Across unprotected slopes, as a slope break, to reduce the slope length.
- 4) Around the perimeter of the site to prevent sediment laden runoff from leaving the site and to direct the runoff to an appropriate BMP.
- 5) Within the construction site to divert runoff to the appropriate BMP or to isolate an area from sedimentation damage.

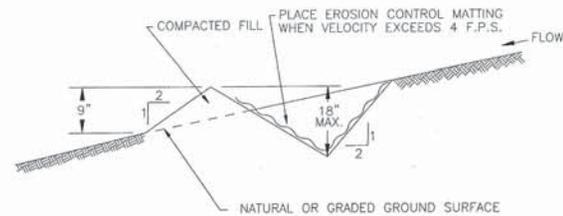
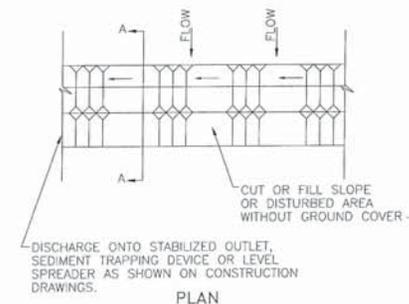
D. Limitations: Diversions must not be constructed at a steep grade. They must be sized to be able to convey the flow from the drainage area entering the diversion. The locations of diversions should be carefully planned since they may limit the movement of construction vehicles across the site.

E. Design Criteria:

- 1) Drainage Area - 5 acres or less.
- 2) Design Capacity - Peak runoff from a 10 year storm.
- 3) Design Velocity - 6 feet per second or less at design capacity.
- 4) Side Slopes - 2H:1V or flatter.
- 5) Freeboard - 0.5 feet between top of ridge and water surface at design flow.

F. Material Specifications: Erosion Control Matting - TxDOT approved Specification Item 169, Class 2.

G. Maintenance Requirements: Inspect diversions weekly or immediately after rainfall events. Particular attention must be paid to areas where sediment builds up in the channel, areas where vehicles have crossed or caused damage, areas where the ridge begins to erode, and any areas where flow overtops the ridge. Sediment in the channel shall be promptly removed and damaged areas of the ridge shall be stabilized by appropriate methods. Methods of stabilization may include the following or any combination of the following; netting, mulching, temporary seeding, or the flattening of the side slopes. Diversions to be left in place for more than 30 days should be stabilized by establishing temporary ground cover.



SECTION A-A
TEMPORARY DIVERSION
 N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
TEMPORARY DIVERSION			
DATE:	DECEMBER, 2016	SHEET	SD-23

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 JOHN W. BIRKHOFF
 TEXAS P.E. NO. 54137
 DECEMBER, 2016

6. SILT FENCE

A. Description: A temporary sediment barrier consisting of filter fabric stretched between and attached to metal or wooden posts, with the bottom of the fabric firmly embedded in the soil. At installations draining larger areas the filter fabric will be attached to a hog wire support that is attached to the fence posts.

B. Purpose: To slow the flow of sediment laden water from small disturbed areas to allow sedimentation to occur and to filter out larger sediment particles as the water flows through the filter fabric.

C. Applications: Silt fence is normally used as a perimeter control immediately downstream of small disturbed areas. It can also be used as a flow diversion for very small drainage areas, but does not function as well as a normal diversion channel and is usually much more expensive.

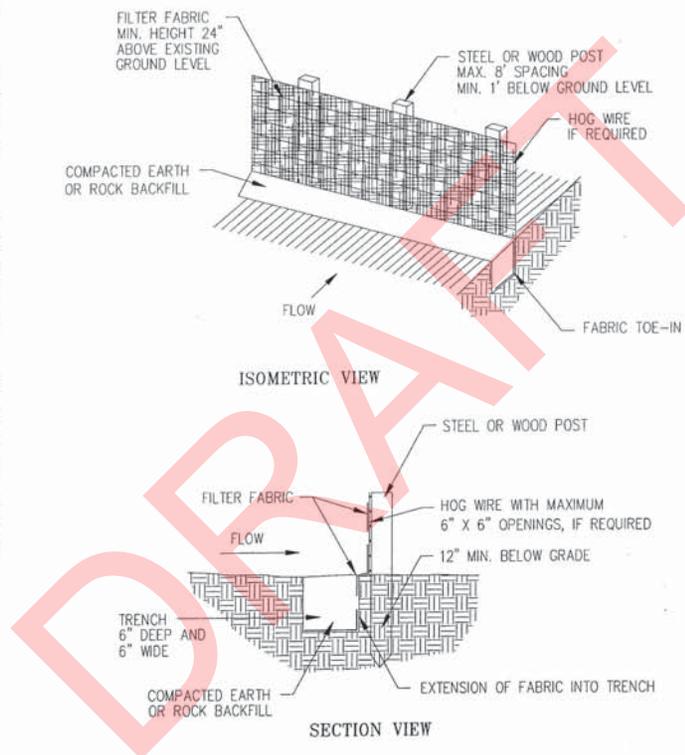
D. Limitations: Do not install silt fences across channels, ditches, streams, pipe outlets, or areas of concentrated water flow. Silt fence locations can limit construction vehicle access so the locations should be well planned to prevent obstructions. Water will pond behind the silt fence, resulting in localized flooding during major rain events.

E. Design Criteria: Place silt fence along perimeter of site where disturbed area sheet runoff must be controlled. Limit the drainage area to 0.25 acres per 100 lineal feet of fence. Provide wire support backing whenever the drainage area exceeds 0.10 acres per 100 lineal feet of fence. Maximum post spacing shall not exceed 8 feet. Stone overflow structures or other outlet device shall be installed at all low points along the fence or every 300 feet if there is no apparent low point.

F. Material Specifications:

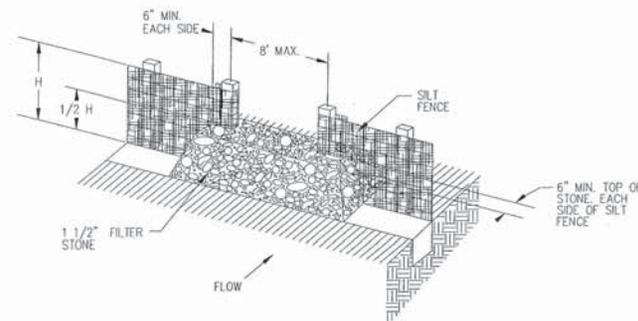
- 1) Filter Fabric: NCTCOG Item 201.5.2.1
- 2) Stone Overflow: NCTCOG Item 201.5.2.4
- 3) Wire Support: NCTCOG Item 201.5.2.3
- 4) Fence Posts: NCTCOG Item 201.5.2.2

Maintenance Requirements: Silt fence should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from behind fence when the depth of sediment has built up to one-third the height of the fence above grade. Inspect the base of the fence to ensure that no gaps have developed and re-trench as necessary. Inspect fence posts to ensure that they are properly supporting the fence. Straighten, reset and add posts if necessary. If filter fabric is ripped, damaged or deteriorated, replace it in accordance with the original specifications and details.



SILT FENCE

N.T.S.



STONE OVERFLOW STRUCTURE

N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SILT FENCE – STONE OVERFLOW STRUCTURE			
DATE:	DECEMBER, 2016	SHEET	SD-24

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TEXAS P.E. NO. 54137
DECEMBER, 2016

7. ROCK CHECK DAMS

A. Description: A small temporary dam made of stone or re-cycled concrete constructed across a swale, ditch, or channel.

B. Purpose: Reduces the velocity of flow and thus the erosion potential of the flowing water. Also provides minimal sediment storage behind the dam.

C. Applications: Rock check dams are used primarily in small to moderately sized open channels that have erosive velocities for design flow conditions. They are typically used in long linear roadway type projects or on short steep sections of drainage channel. These devices are a smaller version of stone outlet sediment traps which are used for larger drainage areas.

D. Limitations: Rock check dams shall not be used in a live stream. The installation of check dams reduces the hydraulic capacity of the channel and localized flooding may result. If not properly installed as detailed or not properly maintained the use of this method can lead to more serious channel erosion problems and channel instability. Method should not be used as a primary erosion control device, but in conjunction with other devices.

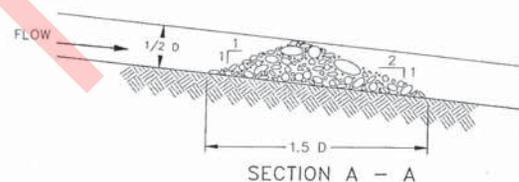
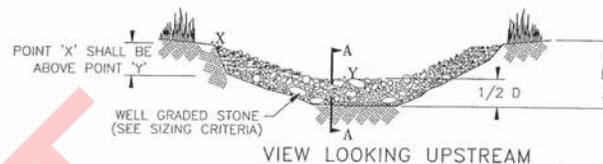
E. Design Criteria:

- 1) Drainage Area: 2.0 acres or less.
- 2) Linear Spacing: Top of the downstream dam is at the same elevation as the bottom of the upstream dam.
- 3) Maximum Height: 2 feet at the center of the dam.
- 4) Stone Size: Well graded from 1/2" diameter through the maximum stone diameter.
Max. Stone Diameter (inches) = (3 inches/ft.) x (Base Width in feet)
- 5) Stone Slope: 1.5H:1V or flatter.

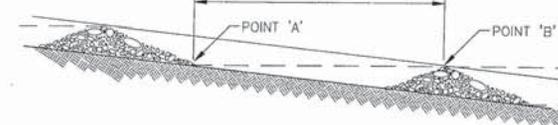
F. Material Specifications:

- Aggregate: Natural stone or re-cycled concrete in a mix ratio of 1:1 of 6-inch to 12-inch diameter stone with 2-inch to 4-inch diameter stone.

G. Maintenance Requirements: Rock check dams should be inspected weekly and after all rain events to ensure that the device is functioning properly. Remove sediment from the storage area upstream of the dam when the depth of sediment has built up to one-half of the dam height. Repair damage to the channel in the vicinity of the check dams immediately to prevent additional damage. Replace missing or dislodged rock as needed to maintain the design height and cross section of the check dam.



'L' = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM
N.T.S.

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TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
ROCK CHECK DAMS			
DATE:	DECEMBER, 2016	SHEET	SD-25

8. STONE OUTLET SEDIMENT TRAP

A. Description: A ponding area formed by placing an earth and/or stone embankment across a drainage-way or swale. The ponding area may be natural or improved to provide the required storage volume.

B. Purpose: To detain sediment laden runoff long enough to allow the majority of the sediment to settle from the water and to allow diffused runoff from the outlet.

C. Applications: Normally used where the natural topography allows for the construction of the embankment to form the ponding area. Diversions, drainage improvements, and localized grading will allow placement in almost any location that has adequate space for the storage area and will accept the runoff from the disturbed site. The stone outlet sediment trap can be used instead of the standard sediment basin.

D. Limitations: Do not place device in a live stream. Avoid placing in areas planned for future improvements such as pavement or buildings. Inlet channels or pipe should be located as far away from the stone outlet as is practicable to allow for maximum sediment settling time in the basin.

E. Design Criteria:

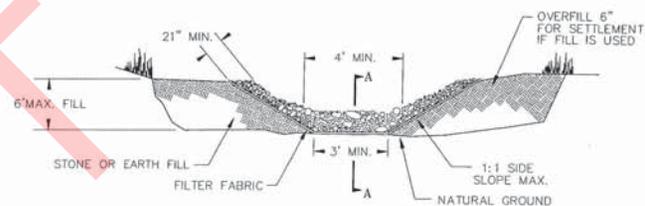
- 1) Drainage Area: 30 acres, maximum.
- 2) Storage Volume: 1800 cubic feet per acre of disturbed land draining to the device.
- 3) Surface Area of Storage Area: 1% (0.01) of the area draining to the device.
- 4) Embankment Height: 6 feet (maximum) to top.
- 5) Embankment Slopes: 1 5H:1V or flatter.
- 6) Embankment Top Width: 2 feet (minimum)
- 7) Stone Outlet Width: 4 feet (minimum)
- 8) Outlet Capacity: 10-year design storm, C = 0.50, Max. Tc = 15 minutes.
- 9) Freeboard @ Design Flow: 6 inches.

F. Material Specifications:

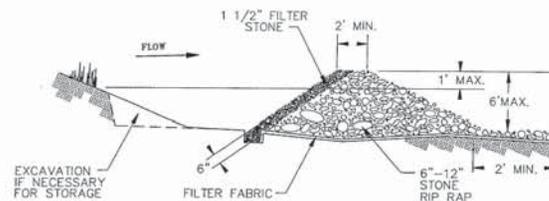
- 1) Stone Rip-Rap: Re-cycled concrete 6-inch to 12-inch in diameter
- 2) Filter Stone: Passing 1 1/2" Sieve 100%, Retained on 3/4" Sieve 100%

Filter Fabric: NCTCOG Item 201.5.2.1

G. Maintenance Requirements: Stone outlet sediment traps should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the storage area when the depth of sediment has built up to one-half the height of the stone outlet. Inspect the downstream base of the stone outlet and the downstream flow channel to ensure that no excessive erosion or gullies have developed and repair as necessary. The sediment storage area should drain within 48 to 72 hours after a rain event. The filter stone on the upstream face of the stone outlet may require cleaning or replacement if standing water remains for longer periods.



VIEW LOOKING UPSTREAM



SECTION

STONE OUTLET SEDIMENT TRAP
N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
STONE OUTLET SEDIMENT TRAP			
DATE:	DECEMBER, 2016	SHEET SD-26	

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

9. SEDIMENT BASIN

A. Description: A basin created by building an earth dam across a waterway or low drainage area and/or by excavation. The basin temporarily detains sediment laden runoff and releases it at a reduced rate normally through a perforated corrugated metal riser and barrel assembly.

B. Purpose: To detain the sediment laden runoff long enough to allow the sediment to settle from the stormwater and become trapped in the basin. Prevents sedimentation in off-site streams, lakes and drainageways.

C. Applications: The device is one of the most effective BMPs available for sedimentation control, but due to the area required for storage and the cost of construction it is usually used on larger projects with drainage areas greater than 5 acres. This application works particularly well where larger disturbed areas naturally drain toward one outlet point.

D. Limitations: Limitations on the use of this device include:

- 1) The drainage area to any one basin shall not exceed 100 acres.
- 2) Do not locate basin storage area in areas planned for future construction (i.e. buildings, pavements, structures, etc.)
- 3) If excessive erosion occurs in area draining to the basin, the cleanup, disposal and stabilization of sediment from the basin can become a very costly operation.
- 4) Access must be provided for heavy equipment to perform cleanout and removal operations.
- 5) Do not locate in live streams or within 100-year floodplains.

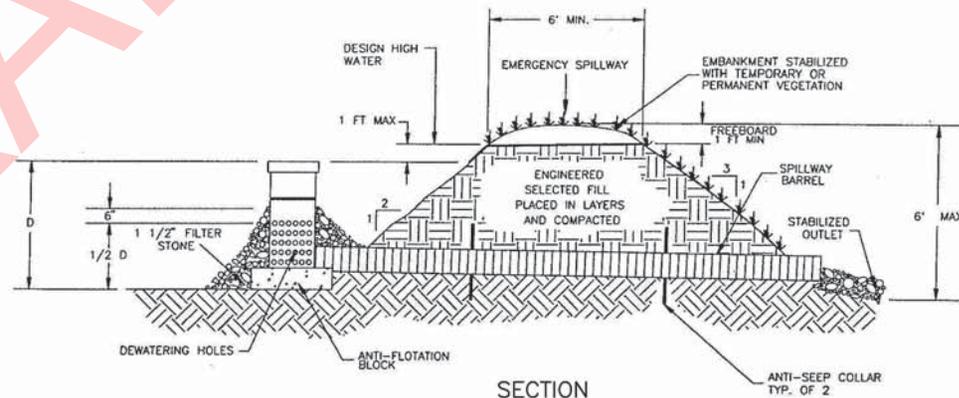
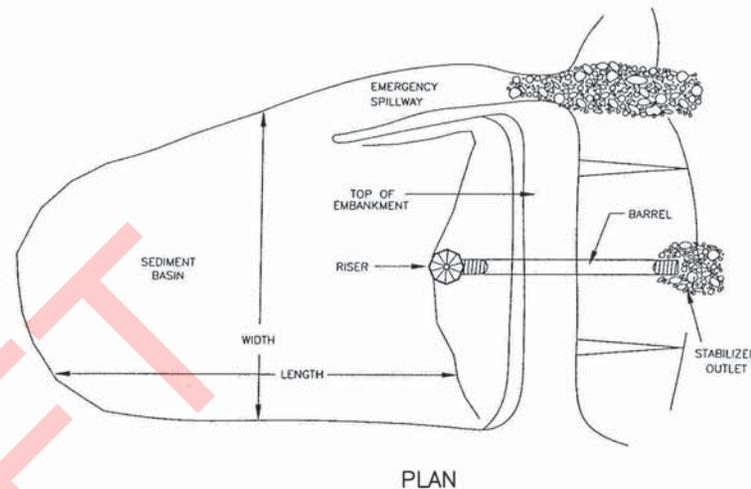
E. Design Criteria:

- 1) Drainage Area: Less than 100 acres.
- 2) Storage Volume: 1800 cubic feet per disturbed acre draining to basin.
- 3) Length/Width Ratio: 2:1
- 4) Surface Area: 1% of drainage area to basin.
- 5) Dam Height: 6 feet (Max.)
- 6) Embankment Slopes: 3H:1V or flatter on downstream face.
2H:1V or flatter on upstream face.
- 7) Top of Dam Width: 6 feet (Min.)
- 8) Riser/Barrel Capacity: Peak runoff from 10-year storm event.
- 9) Side Channel Overflow Capacity: Peak runoff from 100-year storm event.
- 10) Basin Dewatering: 1/2" diameter holes spaced 10" - 12" horizontally and 8" vertically from bottom of riser up to 1/2 of riser height. Place 1 1/2" filter stone around the outside of the riser to a height 6" above top row of 1/2" holes.

F. Material Specifications:

- 1) Riser/Barrel: Corrugated Metal Pipe with Holes Drilled
- 2) Filter Stone: Passing 1 1/2" Sieve 100%, Retained 3/4" Sieve 100%
- 3) Concrete: 2000 psi Concrete (Min.)
- 4) Stone Rip-Rap: Natural stone or re-cycled concrete:
 - Passing 5-inch Sieve = 100%
 - Retained on 2-inch Sieve = 100%

G. Maintenance Requirements: Periodically inspect sediment basin to ensure that facility is functioning properly. Clean out sediment and dispose of properly when the sediment storage volume is V2 full. Clean or replace filter stone when stone becomes clogged with sediment or facility will no longer drain properly. Check outlet of spillway barrel and downstream toe of dam to ensure that water is not flowing under the dam or along the outside edge of the spillway pipe. Check downstream channel and overflow channel for erosion and gullies and repair as needed.



SECTION
SEDIMENT BASIN/POND

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
SEDIMENT BASIN			
			SHEET

10. EROSION CONTROL MATTING

A. Description: A geomembrane or biodegradable fabric placed over disturbed ground areas or immediately downstream of disturbed ground areas.

B. Purpose: To limit the effects of erosive runoff, rainfall impact, and to control minor amounts of sediment runoff.

C. Applications: Matting can be used on any construction-related disturbed land areas, but are particularly effective for erosion control on short steep slopes and channel bottoms or sides. They are also well suited for sheet flow sedimentation control from small drainage areas on flat grades.

D. Limitations: Although matting can be highly effective for erosion control, it may be less cost effective than other BMPs in certain situations. When used for sedimentation control the drainage area must be kept small enough to ensure sheet flow on to the matting at relatively flat grades (i.e. low velocities).

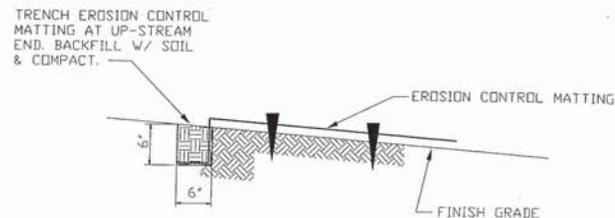
E. Design Criteria:

1) **Matting for Erosion Control and Flexible Channel Liners:** Follow the manufacturer's recommendations. All mats shall be pinned in place.

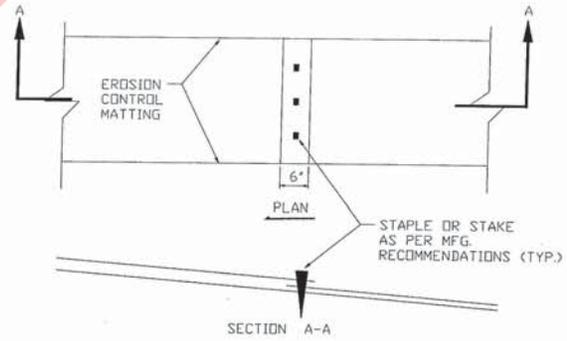
2) **Sedimentation Control:** Limit drainage area to 30 feet per linear foot of mat. Max. Slope < three percent (3%).

F. Material Specifications: Products listed in the most recent TxDOT Approved Product List for slope protection and flexible channel liners. Mats are usually installed according to the manufacturer's recommended guidelines. Manufacturer's information will verify acceptable applications for a particular product.

G. Maintenance Requirements: Inspect the erosion control matting installations after all rainfall events to ensure that the facilities are functioning properly and have not been displaced by runoff. Particular attention must be paid to the upstream ends of channel linings and slope protection, as well as the joints between adjacent mats. Repair any damaged areas promptly and replace any displaced matting. Additional staking may be required on steeper slopes and in channel bottoms.

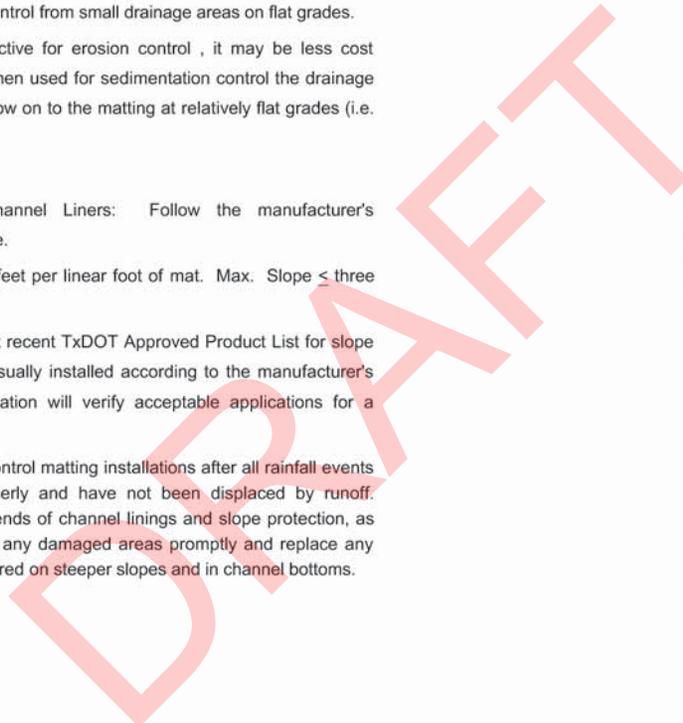


UPSTREAM ANCHORING



TYPICAL JOINT OVERLAP

EROSION CONTROL MATTING
N.T.S.



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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
EROSION CONTROL MATTING			
DATE:	DECEMBER, 2016	SHEET	SD-28

11. PIPE INLET PROTECTION

A. Description: A temporary sediment control barrier made of standard concrete block and filter stone or stone rip-rap and filter stone surrounding the inlet end of a storm drain pipe or inlet pipe headwall.

B. Purpose: To remove sediment from storm runoff before it enters into the storm drain system.

C. Applications: Where existing or proposed storm drain pipes or culverts are to be used prior to final stabilization of the area draining to the pipe inlet. This method is used where the pipe inlet will collect relatively heavy stormwater flows and overflow capability is needed.

D. Limitations: Ponding will occur around the pipe inlet with possible localized flooding as the result. Excavation of a sediment storage area can make final channel stabilization difficult and may create a separate erosion problem if not properly constructed. Do not use Cinder Block Pipe Inlet Protection for pipes larger than 36" in diameter.

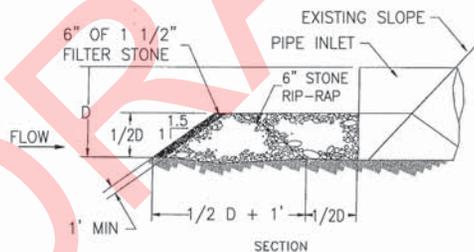
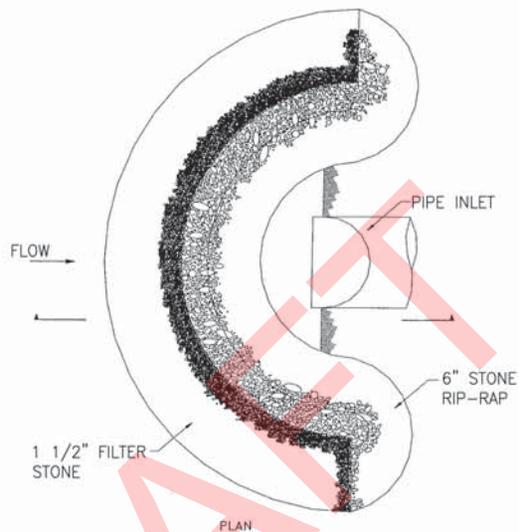
E. Design Criteria:

- Volume: 1800 Cubic Feet per Acre of Drainage Area.
- Side Slopes: 1.5H:1V or Flatter.
- Top of Stone and Sediment Storage: 1/2 of Inlet Pipe Diameter.

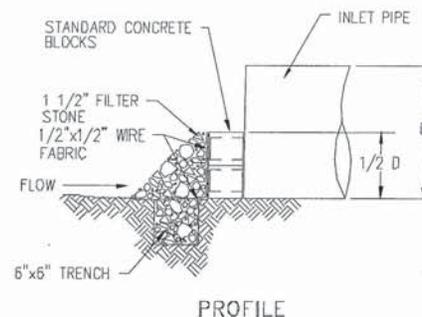
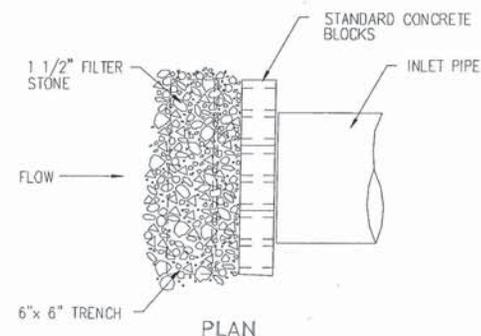
F. Material Specifications:

- Concrete Block: ASTM C 139, Concrete Masonry Unit for Construction.
- Wire Fabric: Standard Galvanized Hardware Fabric with 1/2" by 1/2" Openings.
- Filter Stone: Passing 1 1/2-inch Sieve 100%, Retained 3/4-inch Sieve 100%
- Stone Rip-Rap: 6-inch Diameter Stone or Crushed Concrete

G. Maintenance Requirements: Pipe inlet protection should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the sediment storage area when the depth of sediment has built up to one-half of the design depth. If de-watering of the storage volume is not occurring, clean or replace the filter stone surrounding the pipe inlet. Clean the stone surface the first few times by raking. Repeated sediment build-up will require filter stone replacement.



RIP-RAP PIPE INLET PROTECTION
N.T.S.



CINDER BLOCK PIPE INLET PROTECTION
N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PIPE INLET PROTECTION			
DATE:	DECEMBER, 2016	SHEET SD-29	

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

12. GRASS LINED CHANNELS

A. Description: A channel with vegetation and possibly temporary or permanent erosion control matting that is constructed to a design cross section and grade for the conveyance of stormwater runoff during long-term or different phases of construction. Channels shall be vegetated within 15-days of reaching final grade.

B. Purpose: To convey concentrated stormwater runoff without erosion, sediment deposition, or flooding.

C. Applications: This practice can be applied where:

- 1) Concentrated stormwater runoff must be conveyed on a site.
- 2) A vegetative lining can provide sufficient stability for the channel and flow conditions.
- 3) Channel grades are generally less than 5%.
- 4) Space is available for a relatively large cross section.

D. Limitations: The use of this practice is normally limited to:

- 1) Areas where a channel slope of from 1% to 5% can be attained.
- 2) Areas where the natural drainage patterns can be maintained by use of the open channels.
- 3) Design flow velocities that will be less than 6 feet per second.
- 4) Areas graded through existing ground conditions (i.e. not in fill material).

E. Design Criteria:

- 1) Capacity: shall convey the runoff from a 100-year storm.
- 2) Shape: Trapezoidal, parabolic or V bottom at the discretion of the designer.
- 3) Velocity: Less than 6 feet per second at design flow. Erosion control matting may be required to stabilize when design velocity > 6 fps.
- 4) Side Slopes: 3H:1V or flatter.
- 5) Freeboard: One foot between design flow depth and top of bank.

F. Material Specifications:

- 1) Seeding: NCTCOG Item 202.6 (Seeding/Hydromulching)
- 2) Sodding: NCTCOG Item 202.5.2 (Solid Sod)
- 3) Erosion Control Matting: TxDOT approved Specification Item 169, Class 2.

G. Maintenance Requirements: During the vegetation establishment period inspect channels after every rain event. Check for erosion and sediment buildup and repair as needed. After establishment of vegetation periodically check channel for damage. Particular attention must be given to side slopes, embankments at pipe inlets and outlets, and condition of the vegetative stabilization. Vegetated channels require maintenance for weed control, possible mowing, sediment removal and nil development. Silt shall be kept from entering channels from adjacent disturbed areas.

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 JOHN W. BIRKHOFF
 TEXAS P.E. NO. 54137
 DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
GRASS LINED CHANNELS			
DATE:	DECEMBER, 2016	SHEET	SD-30

13. OUTLET VELOCITY CONTROL STRUCTURE

A. Description: A 6" concrete with steel reinforcement structure placed at a pipe outlet, headwall outlet or the outlet end of an armored channel section.

B. Purpose: Used to reduce the outlet flow velocity and dissipate the outlet flow energy to reduce the potential for downstream channel erosion.

C. Applications: Applies to all pipe, headwall or armored channel outlets into vegetated channels where the outlet flow velocity exceeds 4 feet per second.

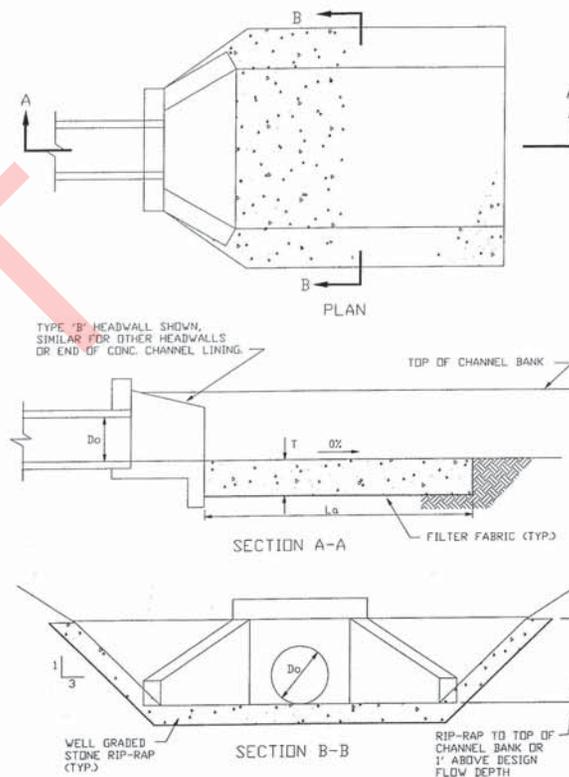
D. Limitations: Do not use where the downstream channel has a very steep longitudinal slope or where a vertical drop will result at the pipe end or end of the rip-rap pad. Method does not apply well to narrow downstream channels.

E. Material Specifications:

1) **Aggregate:** Natural stone or re-cycled concrete in a mix ratio of 1:1 of 6-inch to 12-inch diameter stone with 2-inch to 4-inch diameter stone.

2) **Filter Fabric:** NCTCOG Item 201.5.2.1

F. Maintenance Requirements: Inspect periodically and after major rain storm events to ensure that the facility is functioning properly. Repair dislodged or missing stone rip-rap and repair any downstream erosion as soon as possible.



OUTLET VELOCITY CONTROL STRUCTURE
N.T.S.

DRAFT

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
OUTLET VELOCITY CONTROL STRUCTURE			
DATE:	DECEMBER, 2016	SHEET	SD-31

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JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

14. CURB INLET PROTECTION

A. Description: A temporary sediment control barrier made of filter stone and standard concrete block, welded wire fabric, hardware fabric or 2x4 studs surrounding a storm drain inlet.

B. Purpose: To remove sediment from storm runoff before it enters into the storm drain system.

C. Applications: Where storm drain inlets are to be used prior to final stabilization of the area draining to the structure. This method is used where the inlet will collect relatively heavy flows and overflow capability is needed. This method is also to be used to protect existing curb inlets located in paved areas.

D. Limitations: Ponding will occur around the inlet with possible localized flooding as the result. When used at locations that are open to vehicle traffic, this device will encroach into the traveled way. If the curb inlet is not a recessed type inlet a traffic barricade shall be placed at each end of the inlet protection device.

E. Design Criteria:

1) Drainage Area: 2.0 acres or less.

2) Height: 6" (Maximum).

F. Material Specifications:

1) Concrete Block: ASTM C 139, Concrete Masonry Unit for Construction.

2) Wire Fabric: Standard galvanized hardware fabric with 1/2 by 1/2' openings.

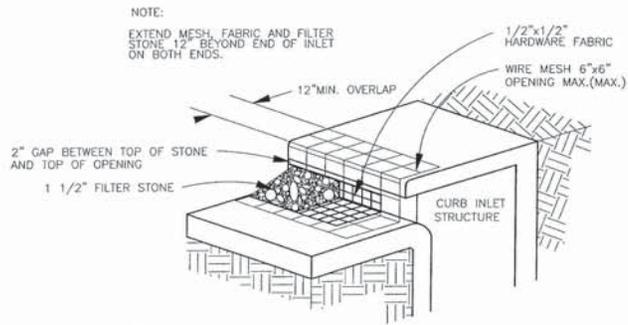
3) Filter Stone: Passing 1 1/2" Sieve = 100%
Retained 3/4" Sieve = 100%

4) Wire Mesh: Welded wire fabric conforming to NCTCOG Item 201.14.2.5 maximum opening 6" x 6".

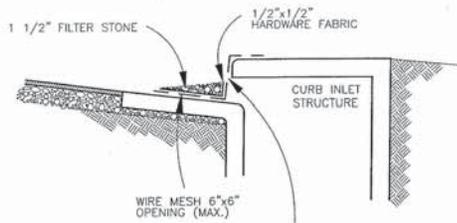
G. Maintenance Requirements: Inlet protection should be inspected weekly and after major rain events to ensure that the device is functioning properly. Remove sediment from the storage area when the depth of sediment has built up to one-half of the storage depth. If de-watering of the storage volume is not occurring, clean or replace the filter stone. Clean the filter stone surface the first few times by raking. Repeated sediment build-up will require filter stone replacement.

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
CURB INLET PROTECTION			
DATE:	DECEMBER, 2016	SHEET	SD-32

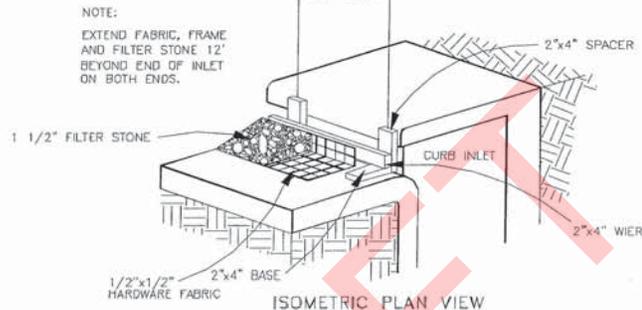


ISOMETRIC PLAN VIEW

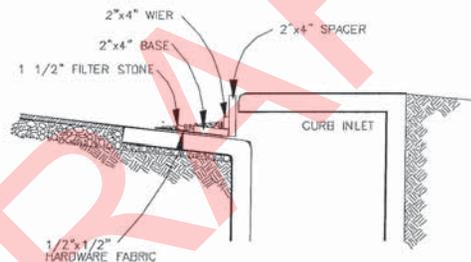


INLET SECTION

TYPE A CURB INLET PROTECTION
N.T.S.

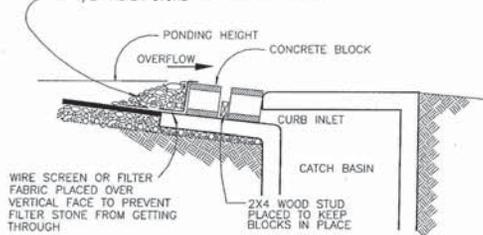
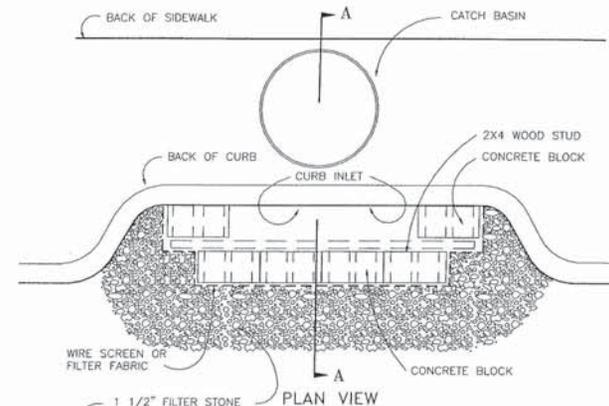


ISOMETRIC PLAN VIEW



INLET SECTION

TYPE B CURB INLET PROTECTION
N.T.S.



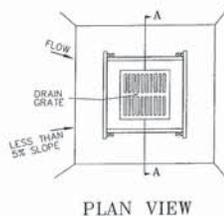
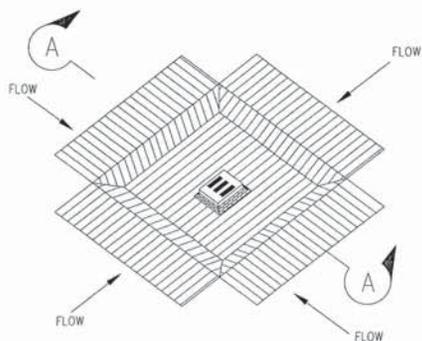
SECTION A - A

BLOCK AND GRAVEL RECESSED CURB INLET PROTECTION
N.T.S.

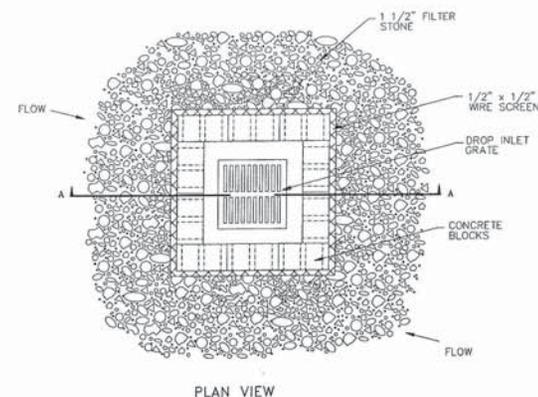
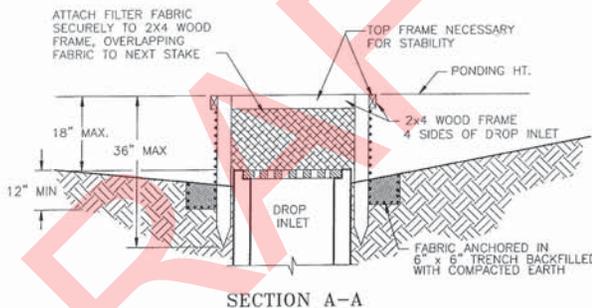
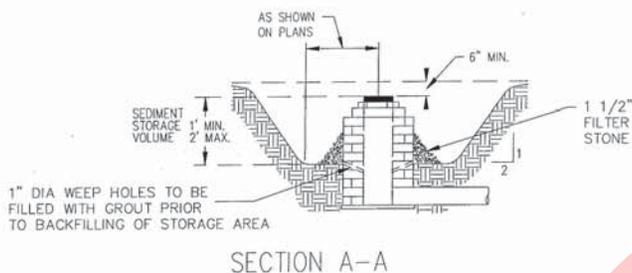
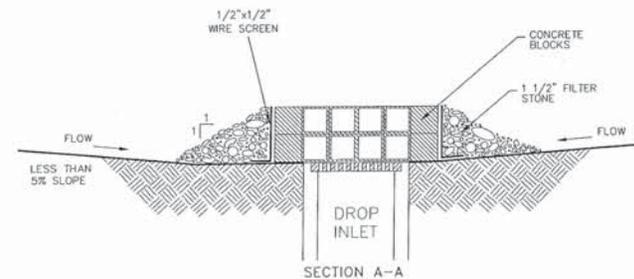
NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
CURB INLET PROTECTION			
DATE:	DECEMBER, 2016	SHEET	SD-33

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



NOTE: CONCENTRATED DITCH FLOW COMING FROM ONE OR MORE SIDES TOWARD THE DROP INLET MAY REQUIRE A STONE OVERFLOW STRUCTURE TO BE CONSTRUCTED ON ONE SIDE OF THE DROP INLET. HOG WIRE SHOULD BE USED TO SUPPORT THE FILTER FABRIC FOR INSTALLATIONS USED MORE THAN 90 DAYS



EXCAVATED DROP INLET PROTECTION
N.T.S.

FILTER FABRIC DROP INLET PROTECTION
N.T.S.

BLOCK/GRAVEL DROP INLET PROTECTION
N.T.S.

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
DROP INLET PROTECTION			
DATE:	DECEMBER, 2016	SHEET SD-34	

1. VEGETATIVE STABILIZATION

This chapter provides standards and specifications for the use of vegetative BMPs for controlling erosion due to land disturbing activities. These methods are primarily for preventing erosion caused by rainfall impact and storm water runoff. The timely use of temporary and permanent ground covers can have a dramatic effect on the amount of erosion that will leave the site of land disturbing activity.

Material specifications listed in this Chapter use the latest versions of the North Central Texas Council of Governments, Standard Specifications for Public Works Construction, the Town of Argyle, Special Provisions to Standard Specifications for Public Works Construction and the Texas Department of Transportation, Standard Specifications for Construction of Highways, Streets and Bridges to the maximum extent possible.

2. TEMPORARY SEEDING

A. Description: The planting of fast growing annual grasses or small grains to provide initial, temporary ground cover for disturbed areas.

B. Purpose: To temporarily stabilize disturbed land areas and earthen BMPs that will not be brought to final grade or have permanent stabilization applied within a period of 30 days.

C. Applications: This practice applies to graded areas, soil areas with sparse vegetation, and soil areas with no vegetation. Specific construction site applications include diversions, earth dams, temporary sediment basins, roadway embankments, rough graded areas and soil stockpiles.

D. Limitations: The application of temporary seeded ground cover has the following limitations:

- 1) Areas must be re-seeded or permanently stabilized within 1-year.
- 2) High cost for short term uses.
- 3) Improper attention to materials and application techniques can lead to higher maintenance costs and severe erosion damage.
- 4) Not applicable to areas used by foot and vehicle traffic.
- 5) Not applicable to areas with excessive stormwater runoff or high velocity runoff.

E. Design Criteria: Comply with requirements of NCTCOG Standard Construction Specification Item No. 202, Landscaping.

F. Material Specifications: Comply with requirements of NCTCOG Standard Construction Specification Item No. 202, Landscaping.

G. Maintenance Requirements: inspect areas with temporary ground cover weekly and immediately after heavy rainfall events. Repair rills, bare areas, and washouts immediately and re-seed to establish temporary ground cover. Watering may be required to initiate the germination process. The use of annual grasses requires that the areas be re-seeded yearly or be stabilized with permanent ground cover. Protect seeded areas from foot and vehicle traffic.

3. PERMANENT SEEDING

A. Description: Stabilizing disturbed ground areas by establishing perennial vegetative ground cover by seeding.

B. Purpose: To permanently stabilize disturbed areas by establishing a relatively low cost, maintainable ground cover.

C. Applications: Permanent vegetative techniques can and should be applied to almost all construction sites at the completion of the project. Permanent seeding is used on fine- graded areas on which long-lived vegetative ground cover is the most practical and effective method for stabilizing the soil. The method can also be used on rough-graded areas that will not be brought to final grade for more than a year.

D. Limitations: The application of permanent seeded ground cover has the following limitations:

- 1) Seasonal limits on suitable seeding dates for specific varieties of seed.
- 2) Improper attention to materials and application techniques can lead to higher maintenance costs and severe erosion damage.
- 3) Not applicable to areas used by foot and vehicle traffic.
- 4) Not applicable to areas with excessive stormwater runoff or high velocity runoff.
- 5) Not applicable to steep slopes. Slopes steeper than 3H:1V restrict the use of equipment for seedbed preparation and mowing.
- 6) May require permanent irrigation.

E. MATERIAL SPECIFICATIONS: Comply with requirements of the North Central Texas Council of Governments (NCTCOG), Standard Specifications for Public Works Construction, Item 202.6.1 - Seeding, along with Item 202.4 - Fertilizer.

F. Maintenance Requirements: Repair rills, bare areas, and washouts immediately and re-seed to establish permanent ground cover. Watering, fertilization and soil supplements may be required to initiate the germination process and to maintain permanent ground cover. Protect seeded areas from excessive water runoff and traffic prior to establishing vegetation. May require periodic mowing and weed control.

4. REMNANT SODDING

A. Description: Stabilizing bare ground areas by laying a continuous cover of grass sod.

B. Purpose: To provide immediate vegetative stabilization to disturbed land areas and earthen BMPs.

C. Applications: Practice applies to disturbed land areas that require immediate and permanent ground cover or where sodding is the preferred method of establishing grass. Locations that are particularly well suited to stabilization with sod include:

- 1) Swales, channels and ditches carrying storm water at acceptable velocities.
- 2) Steeper slopes than can be stabilized by normal seeding.
- 3) Residential or commercial lawns and golf courses where prompt use and aesthetics are important.
- 4) Areas around drop inlets after the drainage basin has been stabilized.

D. Limitations: The application of sod ground cover has the following limitations:

- 1) More costly to install than seeding.
- 2) More difficult to obtain, transport and store.
- 3) May require permanent irrigation.

E. Material Specifications: Comply with requirements of the North Central Council of Governments (NCTCOG), Standard Specifications for Public Works Construction, Item 202.5.1 - Solid Sod, along with Item 202.4 - Fertilizer.

F. Maintenance Requirements: Repair rills and washouts immediately and re-sod to establish permanent ground cover. Watering, fertilization and soil supplements may be required to establish and maintain permanent ground cover. Remove dead sod and replace promptly. May require periodic mowing and weed control. Slopes steeper than 3H:1V will require staking of the sod to hold it in place.

5. OTHER BMP's

Other BMP's shall be included in the design plans.

All inlet protection shall meet the requirements of Erosion Control BMP's found in the latest edition of Standard for Construction, North Central Texas Council of Governments (NCTCOG).

NO.	REVISION	BY	DATE
TOWN OF ARGYLE, TEXAS			
STANDARD CONSTRUCTION DETAILS			
EROSION & BMP NOTES			
DATE:	DECEMBER, 2016	SHEET SD-35	

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

JOHN W. BIRKHOFF
TEXAS P.E. NO. 54137
DECEMBER, 2016



Town Council Work Session & Regular Meeting Minutes – November 15, 2016

The Work Session and Regular Meeting of the Town Council was held on **November 15, 2016** at 6:00 p.m. at the Argyle Town Hall. This was an OPEN MEETING, open to the public, subject to the open meeting laws of the State of Texas and, as required by law, was duly posted, at Argyle Town Hall, giving notice of time, date, place, and agenda thereof.

A. CALL WORK SESSION TO ORDER

Mayor Pro Tem Hasty called the work session to order at 6:03 p.m.

Attendee Name	Title	Status	Arrived
Peggy Krueger	Mayor	Absent	
Joey Hasty	Mayor Pro Tem	Present	
Kay Teer	Council Member, Place 2	Present	
Eric Lamon	Council Member, Place 3	Present	
Jay Haynes	Council Member, Place 4	Present	
Marla Hawkesworth	Council Member, Place 5	Present	

B. WORK SESSION

The pre-meeting work session is designed as an opportunity for the Town Council to discuss pending items. No action will be taken during the work session portion of the meeting.

1. Discuss item related to the Argyle Community Park.

Dennis Sims, Park Consultant for the Town, presented the Council with the master plan and final site plan for the proposed Argyle Community Park. Mr. Sims reviewed elements including renovated baseball fields, a new softball field, playground, soccer field, picnic pavilion, volleyball court, half-size basketball court and trail system. Argyle Youth Sport Association President William Strittmatter spoke with regard to current facilities and the partnership with the Town and the Association.

2. Discuss proposed amendments to the Town of Argyle Employee Handbook.

Town Secretary Kristi Gilbert reviewed proposed amendments to the Employee Handbook. Ms. Gilbert stated the Benefit Committee had met and discussed the items to include legal amendments, a vacation buy-back program, the elimination of holiday banking, a revised holiday schedule, an inclement weather policy and a social media policy.

3. Discussion regarding any regular session items.

The work session was adjourned at 7:10 p.m.

C. CALL REGULAR SESSION TO ORDER

Mayor Pro Tem Hasty called the regular session to order at 7:12 p.m.

D. INVOCATION

E. PLEDGE OF ALLEGIANCE

F. ANNOUNCEMENTS, PROCLAMATIONS, AND PRESENTATIONS

1. Council Recognition of Students and Citizens
2. Town Council and Staff Presentations / Reports
 - a. Development Project Updates

G. OPEN FORUM:

The opportunity for citizens to address the Town Council on any non-agenda item (limit 5 minutes per person); however, the Texas Open Meetings Act prohibits the Town Council from discussing issues which the public has not been given seventy-two (72) hour notice. Issues raised may be referred to Town Staff for research and possible future action.

No one chose to speak.

H. CONSENT AGENDA:

Any Council Member may request an item on the Consent Agenda to be taken up for individual consideration

1. Consider approval of the October 25, 2016 regular meeting minutes.
2. Consider approval of an ordinance amending the Code of Ordinances Chapter 12, Traffic & Vehicles, Article 12.05.01 Relative to Traffic Control Devices. *(Ordinance 2016-21)*
3. Consider approval of casting a vote for Skip Kalb to the Denton County Transportation Authority.

ACTION: Item H.1. through H.3.

APPROVED

Councilmember Lamon moved to approve the consent agenda as presented. Councilmember Haynes seconded the motion. For: Unanimous. The motion passed 5 to 0.

I. NEW BUSINESS & PUBLIC HEARINGS:

1. Discuss and consider the approval of a resolution approving a Park Master Plan for the Argyle Community Park consisting of essential renovations and improvements to Park and Ballfield facilities located at the Argyle Intermediate School, 800 Eagle Drive, Argyle, Texas 76226 on approximately fifteen (15) acres, a portion of which is located in the 100-year floodplain.

ACTION: Item I.1.

APPROVED

Councilmember Hawkesworth moved to approve the resolution as presented. Councilmember Lamon seconded the motion. For: Unanimous. The motion passed 5 to 0. (*Resolution 2016-33*)

2. Discuss and consider approval of a resolution amending the Town of Argyle Employee Handbook.

ACTION: Item I.2.

APPROVED

Councilmember Lamon moved to approve the resolution as presented. Councilmember Teer seconded the motion. For: Unanimous. The motion passed 5 to 0. (*Resolution 2016-34*)

J. OLD BUSINESS:

None

K. CONVENE INTO EXECUTIVE SESSION:

The Council convened into executive session at 7:16 p.m.

PURSUANT TO TEXAS GOVERNMENT CODE, ANNOTATED, CHAPTER 551, SUBCHAPTER D:

1. Section 551.071 – Consultation with the Town Attorney regarding pending litigation, to wit: Cause No. 02-16-00052-CV: Texas Voices for Reason and Justice, Inc vs. the Town of Argyle, Texas; the Town of Hickory Creek, Texas; the City of Oak Point, Texas and the City of Ponder, Texas.
2. Adjourn into Open Meeting at 7:20 p.m.
3. Consider action on executive session items.
No action was taken.

L. RECEIVE REQUESTS FROM COUNCIL MEMBERS/STAFF FOR ITEMS TO BE PLACED ON NEXT MEETING AGENDA (*discussion under this item must be limited to whether or not the Council wishes to include a potential agenda item on a future agenda*)

Councilmember Hawkesworth requested discussion on future land purchase.

Mayor Pro Tem Hasty requested an update on silent crossings.

M. ADJOURN

Mayor Pro Tem Hasty adjourned the meeting at 7:23 p.m.

Peggy Krueger, Mayor

Kristi Gilbert, Town Secretary



TOWN COUNCIL DATA SHEET

**Agenda Item:**

Consider approval of authorizing the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to complete the engineering design and surveying services for the S-1 Sanitary Sewer Lift Station located between Frenchtown Road and FM 407.

Prepared by:

Paul Frederiksen, Town Manager

Background:

The Town of Argyle joined the Denton Creek Regional Wastewater System, a regional sewer system administered by the Trinity River Authority of Texas (TRA) on June 25, 2008, a result of an approved 4-party TRA agreement which resulted in the construction of Segments A and B of the Graham Branch Regional Sewer project to allow gravity flow sanitary sewer service. For many years the Town of Argyle has contemplated the extension of the U.S. 377 main sanitary sewer system (S-1 Sanitary Sewer Line) to the south upon completion of the interceptor sewer through the Town of Flower Mound to the Denton Creek Waste Water Treatment Plant in Roanoke, Texas. The S-1 Sanitary Sewer Line will allow for sanitary sewer service along the southern end of U.S. 377, south of FM 407 to reduce the amount of wastewater being pumped to the Denton Graveyard Branch Line, freeing up additional capacity for the northern portions of the Town.

The Town Council authorized the engineering design and surveying services for the S-1 Sanitary Sewer Gravity Trunk (TRA Manhole to Frenchtown Road) and S-1 Sanitary Force Main (Frenchtown Road North to Proposed Lift Station at Convergence of Two Creeks just South of F.M. 407) at the Town Council meeting held July 28, 2015. With the completion of that phase, it is necessary to begin the process to complete both the engineering design and survey services for the S-1 Lift Station and also with the preparation of field note descriptions for easements prior to construction of the S-1 Sanitary Sewer Line.

The funds for this project will be provided by the developer of the Waterbrook project to be placed in escrow. Once executed and the Notice to Proceed (NTP) has been issued, it is anticipated that the engineering design and survey services will be completed by the 2nd Quarter of 2017.

Financial Impact:

\$84,000 – Waterbrook Development Escrow Agreement Funds.

Staff Recommendation:

Approval

Requested Action:

A motion to authorize the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to complete the engineering design and surveying services for the S-1 Sanitary Sewer Lift Station located between Frenchtown Road and FM 407.

Attachments:

Professional Engineering Services Agreement (Lift Station)

Resolution

S-1 Alignment

**TOWN OF ARGYLE, TEXAS
RESOLUTION NO. 2016-__**

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS APPROVING AN AGREEMENT WITH BIRKHOFF, HENDRICKS & CARTER, L.L.P. TO COMPLETE ENGINEERING DESIGN AND PROVIDE SURVEYING SERVICES FOR THE S-1 SANITARY SEWER LINES FROM THE TRINITY RIVER AUTHORITY (TRA) METER STATION NORTH TO THE S-1 LIFT STATION AND AUTHORIZING THE TOWN MANAGER TO EXECUTE ALL DOCUMENTS RELATED THERETO ON BEHALF OF THE TOWN OF ARGYLE.

WHEREAS, Birkhoff, Hendricks & Carter, L.L.P. desires to provide services to complete the engineering design and surveying services for the S-1 Sanitary Sewer Lift Station located between Frenchtown Road and FM 407 for the Town of Argyle; and

WHEREAS, after careful review and consideration, it has been determined to be in the best interest, welfare and safety of the citizens of Argyle that said agreement for the professional services, hereinafter described in Exhibit “A”, be hereby approved.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS:

Section 1. THAT, the above findings are hereby found to be true and correct and are incorporated herein in their entirety.

Section 2. THAT, the Town Council of the Town of Argyle, Texas hereby approves an agreement with Birkhoff, Hendricks & Carter, L.L.P., attached hereto as Exhibit “A” and authorizes the Town Manager to execute said agreement on behalf of the Town of Argyle.

AND IT IS SO RESOLVED.

PASSED AND APPROVED this the 13th day of December 2016.

TOWN OF ARGYLE, TEXAS

Peggy Krueger, Mayor

ATTEST:

Kristi Gilbert, Town Secretary

PROFESSIONAL ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered into by and between the **Town of Argyle, Texas**, hereinafter referred to as "Town", and **Birkhoff, Hendricks & Carter, L.L.P.**, hereinafter referred to as "Engineer", to be effective from and after the date as provided herein.

WITNESSETH:

WHEREAS, the Town desires to engage the services of the Engineer to complete engineering design and provide surveying services for the *S-1 Sanitary Sewer Lift Station located between Frenchtown Road and F.M. 407*, hereinafter referred to as the "Project"; and

WHEREAS, the Engineer desires to render such engineering design services for the Town under the terms and conditions provided herein.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That for and in consideration of the covenants contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

I. Employment of the Engineer

The Town hereby agrees to retain the Engineer to perform professional engineering services in connection with the Project; Engineer agrees to perform such services in accordance with the terms and condition of this Agreement.

II. Scope of Services

The parties agree that Engineer shall perform such services as are set forth and described in Exhibit "A", which is attached hereto and thereby made a part of this Agreement. The parties understand and agree that deviations or modifications, in the form of written changes may be authorized from time to time by the Town.

III. Schedule of Work

The Engineer agrees to commence services immediately upon execution of this Agreement, and to proceed diligently with said service to completion as described in the Completion Schedule attached hereto as Exhibit "B" and thereby made a part of this Agreement.

IV. Compensation and Method of Payment

The parties agree that Engineer shall be compensated for all services provided pursuant to this Agreement in the amount and manner described and set forth in the Payment Schedule attached hereto as Exhibit "C" and thereby made a part of this Agreement. Engineer further agrees that it will prepare and present such monthly progress reports and itemized statements as are described in said Exhibit "C". Town agrees to pay invoices upon receipt. Statement for services shall include a line for previous payments, contract amount, and amount due current invoice.

V. Insurance

Engineer agrees to procure and maintain for the duration of the contract Professional Liability Insurance (\$2,000,000), Worker's Compensation, General Liability and Automobile Insurance.

VI. Assignment and Subletting

The Engineer agrees that neither this Agreement nor the services to be performed hereunder will be assigned or sublet without the prior written consent of the Town. The Engineer further agrees that the assignment or subletting of any portion or feature of the work or materials required in the performance of this Agreement shall not relieve the Engineer from its full obligations to the Town as provided by this Agreement.

VII. Contract Termination

The parties agree that Town or the Engineer shall have the right to terminate this Agreement without cause upon thirty (30) days written notice to the other. In the event of such termination without cause, Engineer shall deliver to Town all finished or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs or other items prepared by Engineer in connection with this Agreement. Engineer shall be entitled to compensation for any and all services completed to the satisfaction of Town in accordance with the provisions of this Agreement prior to termination.

VIII. Engineer's Opinion of Cost

The parties recognize and agree that any and all opinions of cost prepared by Engineer in connection with the Project represent the best judgment of Engineer as a design professional familiar with the construction industry, but that the Engineer does not guarantee that any bids solicited or received in connection with the Project will not vary from the opinion by the Engineer.

IX. Ownership of Documents

Original drawings, specifications and reports are the property of the Engineer; however, the Project is the property of the Town. Town shall be furnished with such reproductions of drawings, specifications and reports. Upon completion of the services or any earlier termination of this Agreement under Article VII, Engineer will revise drawings to reflect changes made during construction as reported by the Town and contractor, and he will furnish the Town with one complete set of reproducible drawings, two sets of record prints, and electronic files.

X. Complete Contract

This Agreement, including the exhibits hereto numbered "A" through "C" constitutes the entire agreement by and between the parties regarding the subject matter hereof.

XI. Mailing of Notices

Unless instructed otherwise in writing, Engineer agrees that all notices or communications to Town permitted or required under this Agreement shall be addressed to Town at the following address:

Mr. Paul E. Frederiksen
Town Manager
Town of Argyle
308 Denton Street
P.O. Box 609
Argyle, Texas 76226

Town agrees that all notices or communications to Engineer permitted or required under this Agreement shall be addressed to Engineer at the following address:

Mr. John W. Birkhoff, P.E.
Birkhoff, Hendricks & Carter, L.L.P.
11910 Greenville Ave., #600
Dallas, Texas 75243
Phone: (214) 361-7900

All notices or communications required to be given in writing by one party or the other shall be considered as having been given to the addressee on the date such notice or communication is posted by the sending party.

XII. Texas Board of Professional Land Surveying Contact Information

Recipients of professional land surveying services under this agreement may direct complaints regarding such services to the Texas Board of Professional Land Surveying, 12100 Park 35 Circle, Building A, Suite 156, MC 230, Austin, TX 78753, Phone (512) 239-5263, Fax (512) 239-5253.

XIII. Contract Amendments

This Agreement may be amended only by the mutual agreement of the parties expressed in writing.

XIV. Effective Date

This Agreement shall be effective from and after execution by both parties hereto.

WITNESS OUR HANDS AND SEALS on the date indicated below.

TOWN OF ARGYLE, TEXAS

BIRKHOFF, HENDRICKS & CARTER, L.L.P.

Texas Board of Professional Engineers Firm No. 526

Texas Board of Professional Land Surveyors Firm No. 100318-00

By: _____
Paul E. Frederiksen, Town Manager

By:  _____
John W. Birkhoff, P.E., Managing Partner

Date: _____

Date: 9/15/16

ATTEST

By: _____

EXHIBIT “A”
ENGINEERING SERVICES
S-1 Sanitary Sewer Lift Station

SCOPE OF WORK

Consultant shall provide professional civil engineering consulting services required for the design, preparation of plans and specifications, along with services during the bidding and construction administration phases of the S-1 Sanitary Sewer Lift Station. Tract of land will be coordinated with land owner as they plat this property. General location is between Frenchtown Road and F.M. 407.

These improvements include construction of up to a 1.2-MGD duplex lift station. The lift station will include submersible pumps and have an aboveground exterior mounted control panel. Phasing of the lift station pumps and motors will be reviewed in the design.

We have reviewed the project requirements and our opinion of probable construction cost is in the range of \$1,000,000.00.

Part I: Preliminary Design

Prepare construction plans and specifications for the S-1 Sanitary Sewer Lift Station. The design phase services will include:

- A. Preparation of Construction Plan-Profile Sheets prepared at a scale of not less than 1" = 20' along with cross sections of the proposed lift station.
- B. Design will include civil, structural, electrical and mechanical services. An aboveground exterior mounted control panel will house the electrical switchgear and SCADA RTU. Structural services outside civil may be completed by specialized subconsultants.
- C. Design of emergency generator to meet TCEQ Requirements for wet well size.
- D. Piping profile stubout to connect to future gravity lines.
- E. Preparation of Standard and Special Details.

- F. Cover Sheet, Location Map and Sheet Index.
- G. Meet with electrical service provider to determine availability and cost to provide 3-phase service to the site.
- H. Work with City and property owner to locate lift station site on the property. Site must be located prior to field surveys and design commencing.
- I. Coordination with other Utility Companies.
- J. Design review meetings as required or directed by the Owner.
- K. Preparation of Engineers Opinion of Probable Construction Cost.
- L. Preparation of Specifications and Contract Documents.
- M. Printing of preliminary plans and specifications for review by the City and Utility Companies. Plans will be completed on 11" x 17" sheets. Three sets will be provided for City review at preliminary and final submittals.
- N. Address City comments and revise documents as required from review comments.

Part II: Final Design

- A. Revise preliminary plans for the lift station incorporating comments from the City.
- B. Incorporate comments from the utility companies.
- C. Finalize construction plans, specifications and bidding documents.
- D. Prepare erosion control details around the site.
- E. Prepare final quantity take-off and prepare opinion of probable construction cost based on final plans.
- F. Submit three sets of final bid documents including bid proposal forms, construction plans (11" x 17"), specifications, and contract documents.

Part III: Bidding Phase

- A. Assist the Town staff in advertising for bids. This will include e-mailing “Notice to Contractors” to contractors experienced in this type of construction. We will email or fax Notice to contractors and contractor publishers.
- B. Sell bidding documents to potential bidders and their suppliers and other parties.
- C. Prepare and email, fax, or mail addenda as required.
- D. Provide bidding documents to Town of Argyle, Dodge Reports and two other parties requested by the Town.
- E. Assist Town during opening of bids and provide bidding tally sheets.
- F. Provide bid tabulation to Town and contractors who submitted bids.
- G. Obtain the following information from the lowest bidder:
 - 1. Past work history,
 - 2. Physical resources to produce the project.

Formulate opinion from information received and provide the Town of Argyle a recommendation for award of the construction contract.

- H. Handle Contract Documents for execution by the Contractor and the Town.

Part IV: Construction Phase

- A. Conduct pre-construction conference at Town facilities, including preparing an agenda.
- B. After award of contract, furnish 8 sets of prints of final plans (11” x 17”), specifications and contract documents to the Town for construction use by the Town and Contractor (3-sets for Town and 5-sets for Contractor) project.
- C. Review shop drawings and other submittal information which the Contractor submits. This review is for the benefit of the Owner and covers only general conformance with information given by the Contract Documents. The contractor is to review and stamp their approval on submittals prior to submitting to the Engineer. Review by the

Engineer does not relieve the Contractor of any responsibilities, safety measures or the necessity to construct a complete and workable facility in accordance with the Contract Documents. Shop drawings will be handled electronically in .PDF format.

- D. Provide responses to requests for information or clarification to Town or Contractor.
- E. Prepare and process routine change orders for this project as they pertain to the original scope of services.
- F. Prepare monthly pay requests form, from information received from contractor. Review request and make recommendation to the Town.
- G. Accompany the Town during their final inspection of the project.
- H. Recommend final acceptance of the project based on observations and information provided by the Town.
- I. The design engineer will visit the site at appropriate intervals as construction proceeds to observe progress and formulate opinion as to quality of work as it relates to contract documents. These visits specifically exclude any responsibility by the Engineer for job safety or means and methods of construction.
- J. Utilizing the Town and the Contractor's construction record information, the Engineer will prepare and submit one set of half-size (11" x 17") drawings for the Town of Argyle and a compact disk with the files in PDF or TIFF format.

Part V: Additional Services

- A. Survey of Design: Field surveys at the site to pick up existing topography. Contact Dig-TESS for them to mark existing underground utilities. Our survey crew will pick up Dig-Tess markings. Field surveys will pick up edge of existing pavement, drainage channels and right-of-way limits (from available iron pins found). Permission to survey will be required for field survey on private property.
- B. Reproduction: Cost associated with printing of preliminary and final plans for review and submittal, and for the City's directed distribution and for bidding documents to

publishers. The bidding documents to Contractors and Suppliers are not included, as bidders and suppliers are required to purchase the plans.

- C. Prepare field note description for electric easement for the Lift Station.
- D. Provide Geotechnical Investigation, including up to two borings, two copies of report will be provided to the City. (Geotechnical Investigation to be completed by Henley-Johnston & Associates of Dallas.)

Part VI: Exclusions

The intent of this scope of services is to include only the services specifically listed herein and none others. Services specifically excluded from this scope of services include, but are not necessarily limited to the following:

- A. Fees for Permits or Advertising.
- B. Trench Safety Designs.
- C. Phasing of Contractor's Work.
- D. On-site safety precautions, programs and responsibility.
- E. Revisions and/or change orders as a result of revisions after completion of original design (unless to correct error on plans).
- F. Fiduciary responsibility to the Client
- G. Cost to obtain electric service from electric provider.
- H. Field note description and exhibit to acquire lift station site. Site will be acquired by the Town through platting of the property.

EXHIBIT "B"

COMPLETION SCHEDULE

S-1 Sanitary Sewer Lift Station

Notice to Proceed	December 13, 2016
Meet with City and Property Owner to Locate Site	December 19 - 20, 2016
Field Surveys	December 28 - 30, 2016
Begin Preliminary Plans	January 4, 2017
Submit Preliminary Plans to Town for Review	April 28, 2017
Receive Comments Back From Town	May 16, 2017
Complete Final Plans	June 30, 2017
Advertise Project	July 2017
Receive Bid	July 2017
Award Contract	August 2017
Notice to Proceed	September 2017

EXHIBIT “C”

PAYMENT SCHEDULE

S-1 Sanitary Sewer Lift Station

Payment for engineering services described under Exhibit “A” - Parts I, II, III and IV shall be a lump sum amount of Seventy-Three Thousand Dollars (\$73,000.00) based on an opinion of probable construction cost of \$1,000,000.00. Invoicing will be monthly, based on percent completion for each phase and for additional services rendered for this period. Payment is due upon receipt. The following is a summary of the estimated charges for the various elements of the proposed services:

Preliminary Plans	\$35,000.00
Final Plans	\$25,000.00
Bidding	\$5,000.00
Construction Administration	<u>\$8,000.00</u>
Subtotal:	\$73,000.00

Payment for engineering services described in Exhibit “A”, Part V – Additional Services, shall be on the basis of salary cost times a multiplier of 2.4, with expenses at invoice cost times 1.15. Survey crew will be at \$165.00 per hour with plotting at \$5.00 per sheet.

Additional Services:

A. Survey for Design	\$2,640.00
B. Reproduction Costs	\$600.00
C. Field Note Description and Exhibit for Electrical Easement	\$3,000.00
D. Geotechnical Investigation	<u>\$4,500.00</u>
Subtotal:	\$10,740.00

Maximum Fee Not to Exceed: \$83,740.00

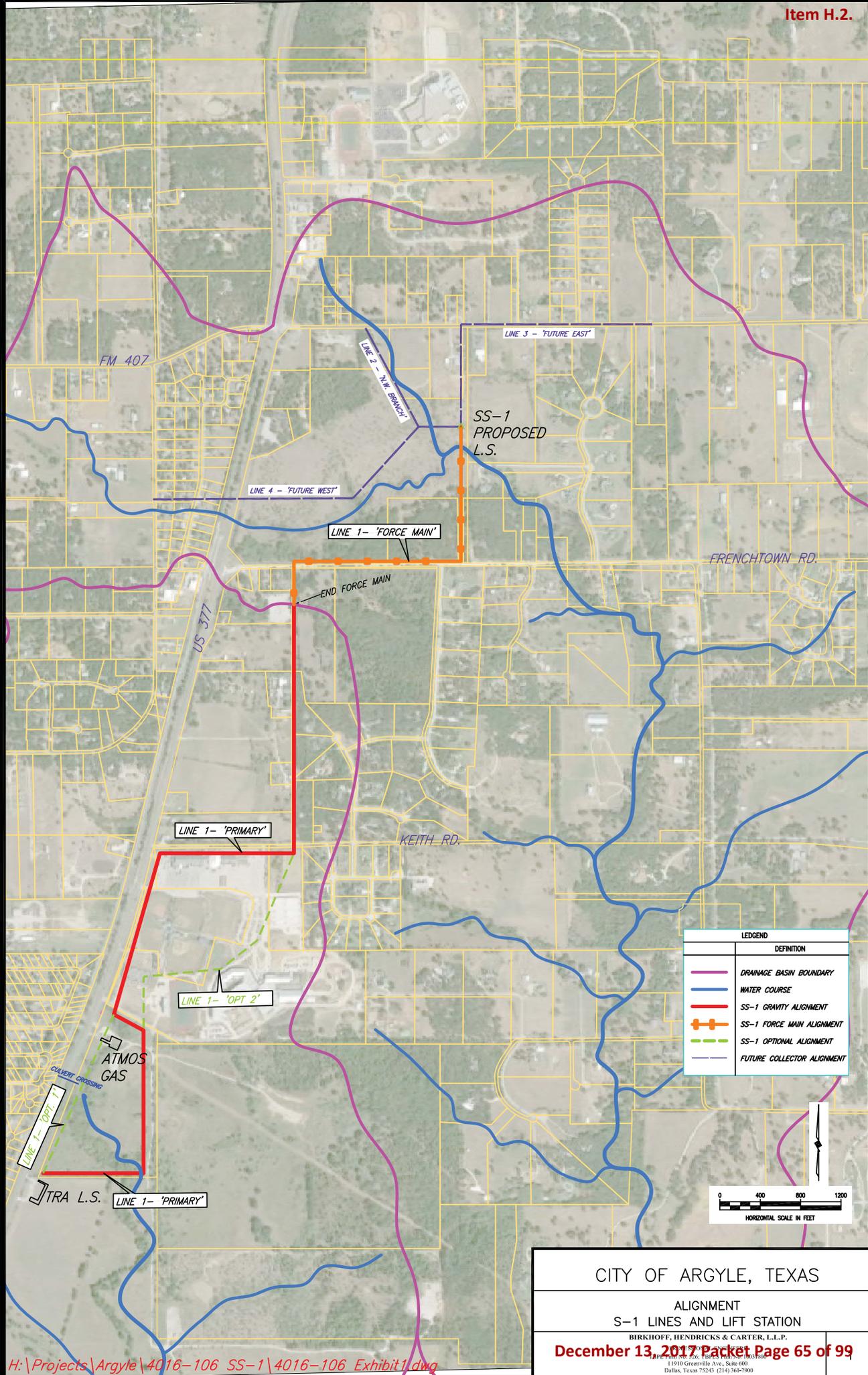
The maximum overall fee, including expenses, established herein shall not be exceeded without written authorization from the Town of Argyle, based on increased scope of services.

EXHIBIT “D”

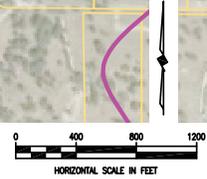
INFORMATION TO BE PROVIDED BY THE TOWN

S-1 Sanitary Sewer Lift Station

Access to property for field surveys, geotechnical investigation, and setting iron pins for property corners where lift station will be located.



LEGEND	
	DEFINITION
	DRAINAGE BASIN BOUNDARY
	WATER COURSE
	SS-1 GRAVITY ALIGNMENT
	SS-1 FORCE MAIN ALIGNMENT
	SS-1 OPTIONAL ALIGNMENT
	FUTURE COLLECTOR ALIGNMENT



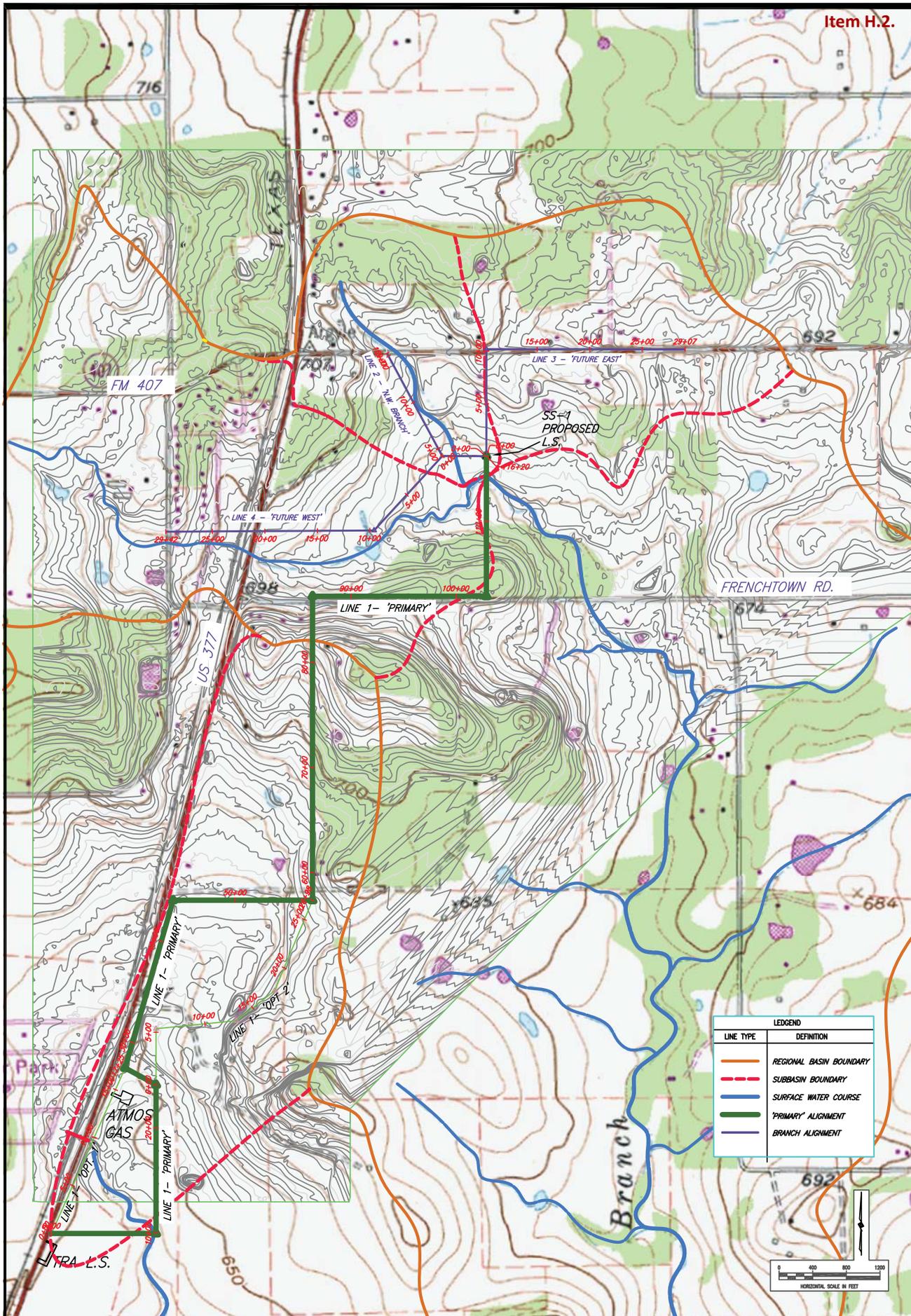
CITY OF ARGYLE, TEXAS

ALIGNMENT
S-1 LINES AND LIFT STATION

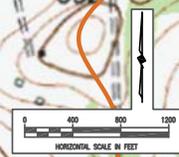
BIRKHOFF, HENDRICKS & CARTER, L.L.P.

December 13, 2017 Packet Page 65 of 99

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Dallas, Texas 75243 (214) 361-7900



LEGEND	
LINE TYPE	DEFINITION
	REGIONAL BASIN BOUNDARY
	SUBBASIN BOUNDARY
	SURFACE WATER COURSE
	'PRIMARY' ALIGNMENT
	BRANCH ALIGNMENT



CITY OF ARGYLE, TEXAS

SUBBASIN MAP
S-1 LINES AND LIFT STATION

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Dallas, Texas 75243 (214) 361-7900

December 13, 2017 Packet Page 66 of 99



TOWN COUNCIL DATA SHEET

**Agenda Item:**

Consider approval of authorizing the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to prepare field note descriptions and exhibits for acquisition of easements by the Town for the S-1 Sanitary Sewer Line from TRA Meter Station North to the S-1 Lift Station.

Prepared by:

Paul Frederiksen, Town Manager

Background:

The Town of Argyle joined the Denton Creek Regional Wastewater System, a regional sewer system administered by the Trinity River Authority of Texas (TRA) on June 25, 2008, a result of an approved 4-party TRA agreement which resulted in the construction of Segments A and B of the Graham Branch Regional Sewer project to allow gravity flow sanitary sewer service. For many years the Town of Argyle has contemplated the extension of the U.S. 377 main sanitary sewer system (S-1 Sanitary Sewer Line) to the south upon completion of the interceptor sewer through the Town of Flower Mound to the Denton Creek Waste Water Treatment Plant in Roanoke, Texas. The S-1 Sanitary Sewer Line will allow for sanitary sewer service along the southern end of U.S. 377, south of FM 407 to reduce the amount of wastewater being pumped to the Denton Graveyard Branch Line, freeing up additional capacity for the northern portions of the Town.

The Town Council authorized the engineering design and surveying services for the S-1 Sanitary Sewer Gravity Trunk (TRA Manhole to Frenchtown Road) and S-1 Sanitary Force Main (Frenchtown Road North to Proposed Lift Station at Convergence of Two Creeks just South of F.M. 407) at the Town Council meeting held July 28, 2015. With the completion of that phase, it is necessary to begin the process to complete both the engineering design and survey services for the S-1 Lift Station and also with the preparation of field note descriptions for easements prior to construction of the S-1 Sanitary Sewer Line.

The funds for this project will be provided by the developer of the Waterbrook Development to be held in an executed escrow agreement. It is anticipated that the preparation of field note descriptions and exhibits for acquisition of easements will be completed by the 1st Quarter of 2017.

Financial Impact:

\$30,000 – Waterbrook Development Escrow Agreement Funds.

Staff Recommendation:

Approval

Requested Action:

A motion to authorize the Town Manager to execute an agreement by and between the Town of Argyle, Texas and Birkhoff, Hendricks & Carter, L.L.P (Town Engineer) to prepare field note descriptions and exhibits for acquisition of easements by the Town for the S-1 Sanitary Sewer Line from TRA Meter Station North to the S-1 Lift Station.

Attachments:

Professional Engineering Services Agreement (Easement Field Note Descriptions)
Resolution
S-1 Alignment

**TOWN OF ARGYLE, TEXAS
RESOLUTION NO. 2016-__**

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS APPROVING AN AGREEMENT WITH BIRKHOFF, HENDRICKS & CARTER, L.L.P. TO PREPARE FIELD NOTE DESCRIPTIONS AND EXHIBITS FOR THE ACQUISITION OF EASEMENTS FOR THE S-1 SANITARY SEWER LINES FROM THE TRINITY RIVER AUTHORITY (TRA) METER STATION NORTH TO THE S-1 LIFT STATION AND AUTHORIZING THE TOWN MANAGER TO EXECUTE ALL DOCUMENTS RELATED THERETO ON BEHALF OF THE TOWN OF ARGYLE.

WHEREAS, Birkhoff, Hendricks & Carter, L.L.P. desires to provide services to prepare field note descriptions and exhibits for acquisition of easements by the Town for the S-1 Sanitary Sewer Line from TRA Meter Station North to the S-1 Lift Station to the Town of Argyle; and

WHEREAS, after careful review and consideration, it has been determined to be in the best interest, welfare and safety of the citizens of Argyle that said agreement for the professional services, hereinafter described in Exhibit "A", be hereby approved.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS:

Section 1. THAT, the above findings are hereby found to be true and correct and are incorporated herein in their entirety.

Section 2. THAT, the Town Council of the Town of Argyle, Texas hereby approves an agreement with Birkhoff, Hendricks & Carter, L.L.P., attached hereto as Exhibit "A" and authorizes the Town Manager to execute said agreement on behalf of the Town of Argyle.

AND IT IS SO RESOLVED.

PASSED AND APPROVED this the 13th day of December 2016.

TOWN OF ARGYLE, TEXAS

Peggy Krueger, Mayor

ATTEST:

Kristi Gilbert, Town Secretary

PROFESSIONAL ENGINEERING SERVICES AGREEMENT

THIS AGREEMENT is made and entered into by and between the **Town of Argyle, Texas**, hereinafter referred to as "Town", and **Birkhoff, Hendricks & Carter, L.L.P.**, hereinafter referred to as "Engineer", to be effective from and after the date as provided herein.

WITNESSETH:

WHEREAS, the Town desires to engage the services of the Engineer to provide field note description and exhibits for acquisition of easements by the Town for the *S-1 Sanitary Sewer Lines from TRA Meter Station North to S-1 Lift Station*, hereinafter referred to as the "Project"; and

WHEREAS, the Engineer desires to render such engineering design services for the Town under the terms and conditions provided herein.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That for and in consideration of the covenants contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

I. Employment of the Engineer

The Town hereby agrees to retain the Engineer to perform professional engineering services in connection with the Project; Engineer agrees to perform such services in accordance with the terms and condition of this Agreement.

II. Scope of Services

The parties agree that Engineer shall perform such services as are set forth and described in Exhibit "A", which is attached hereto and thereby made a part of this Agreement. The parties understand and agree that deviations or modifications, in the form of written changes may be authorized from time to time by the Town.

III. Schedule of Work

The Engineer agrees to commence services immediately upon execution of this Agreement, and to proceed diligently with said service to completion as described in the Completion Schedule attached hereto as Exhibit "B" and thereby made a part of this Agreement.

IV. Compensation and Method of Payment

The parties agree that Engineer shall be compensated for all services provided pursuant to this Agreement in the amount and manner described and set forth in the Payment Schedule attached hereto as Exhibit "C" and thereby made a part of this Agreement. Engineer further agrees that it will prepare and present such monthly progress reports and itemized statements as are described in said Exhibit "C". Town agrees to pay invoices upon receipt. Statement for services shall include a line for previous payments, contract amount, and amount due current invoice.

V. Insurance

Engineer agrees to procure and maintain for the duration of the contract Professional Liability Insurance (\$2,000,000), Worker's Compensation, General Liability and Automobile Insurance.

VI. Assignment and Subletting

The Engineer agrees that neither this Agreement nor the services to be performed hereunder will be assigned or sublet without the prior written consent of the Town. The Engineer further agrees that the assignment or subletting of any portion or feature of the work or materials required in the performance of this Agreement shall not relieve the Engineer from its full obligations to the Town as provided by this Agreement.

VII. Contract Termination

The parties agree that Town or the Engineer shall have the right to terminate this Agreement without cause upon thirty (30) days written notice to the other. In the event of such termination without cause, Engineer shall deliver to Town all finished or unfinished documents, data, studies, surveys, drawings, maps, models, reports, photographs or other items prepared by Engineer in connection with this Agreement. Engineer shall be entitled to compensation for any and all services completed to the satisfaction of Town in accordance with the provisions of this Agreement prior to termination.

VIII. Engineer's Opinion of Cost

The parties recognize and agree that any and all opinions of cost prepared by Engineer in connection with the Project represent the best judgment of Engineer as a design professional familiar with the construction industry, but that the Engineer does not guarantee that any bids solicited or received in connection with the Project will not vary from the opinion by the Engineer.

IX. Ownership of Documents

Original drawings, specifications and reports are the property of the Engineer; however, the Project is the property of the Town. Town shall be furnished with such reproductions of drawings, specifications and reports. Upon completion of the services or any earlier termination of this Agreement under Article VII, Engineer will revise drawings to reflect changes made during construction as reported by the Town and contractor, and he will furnish the Town with one complete set of reproducible drawings, two sets of record prints, and electronic files.

X. Complete Contract

This Agreement, including the exhibits hereto numbered "A" through "C" constitutes the entire agreement by and between the parties regarding the subject matter hereof.

XI. Mailing of Notices

Unless instructed otherwise in writing, Engineer agrees that all notices or communications to Town permitted or required under this Agreement shall be addressed to Town at the following address:

Mr. Paul E. Frederiksen
Town Manager
Town of Argyle
308 Denton Street
P.O. Box 609
Argyle, Texas 76226

Town agrees that all notices or communications to Engineer permitted or required under this Agreement shall be addressed to Engineer at the following address:

Mr. John W. Birkhoff, P.E.
Birkhoff, Hendricks & Carter, L.L.P.
11910 Greenville Ave., #600
Dallas, Texas 75243
Phone: (214) 361-7900

All notices or communications required to be given in writing by one party or the other shall be considered as having been given to the addressee on the date such notice or communication is posted by the sending party.

XII. Texas Board of Professional Land Surveying Contact Information

Recipients of professional land surveying services under this agreement may direct complaints regarding such services to the Texas Board of Professional Land Surveying, 12100 Park 35 Circle, Building A, Suite 156, MC 230, Austin, TX 78753, Phone (512) 239-5263, Fax (512) 239-5253.

XIII. Contract Amendments

This Agreement may be amended only by the mutual agreement of the parties expressed in writing.

XIV. Effective Date

This Agreement shall be effective from and after execution by both parties hereto.

WITNESS OUR HANDS AND SEALS on the date indicated below.

TOWN OF ARGYLE, TEXAS

BIRKHOFF, HENDRICKS & CARTER, L.L.P.

Texas Board of Professional Engineers Firm No. 526

Texas Board of Professional Land Surveyors Firm No. 100318-00

By: _____
Paul E. Frederiksen, Town Manager

By:  _____
John W. Birkhoff, P.E., Managing Partner

Date: _____

Date: 9/15/16 _____

ATTEST

By: _____

EXHIBIT "A"

ENGINEERING SERVICES

S-1 Sanitary Sewer Line Easement Preparation

Part I: Services

- A. Obtain property ownership and copy of deed for each property permanent sanitary sewer line easements, as required.
- B. Prepare field note description and exhibits for permanent easement and temporary construction easement for each property.
- C. All documents to be prepared under the direction of a Texas Registered Professional Public Land Surveyor. All final documents to be sealed, signed and dated by the Land Surveyor.
- D. Two copies of each document will be provided to the Town for acquisition.
- E. Tracts included
 - Old WR Ranch 1
 - Billy & Maxine Evans
 - MBCB Land Management
 - Laverine Gwarty
 - Julia F. Lunt
 - Ron & Amber Meyers
- F. Tracts by Platting
 - Miles Production Company
- G. Tracts in covered prepare to public easements
 - Liberty Educational Ministries
 - Cross Timbers Community Church

Part II: Exclusions

The intent of this scope of services is to include only the services specifically listed herein and none others. Services specifically excluded from this scope of services include, but are not necessarily limited to the following:

- A. Title Searches
- B. Property Surveys
- C. Condemnation Hearings
- D. Acquisition Services

EXHIBIT “B”

COMPLETION SCHEDULE

S-1 Sanitary Sewer Line Easement Preparation

45-calendar days after completion of preliminary plans are complete for the S-1 Sanitary Sewer Lines.

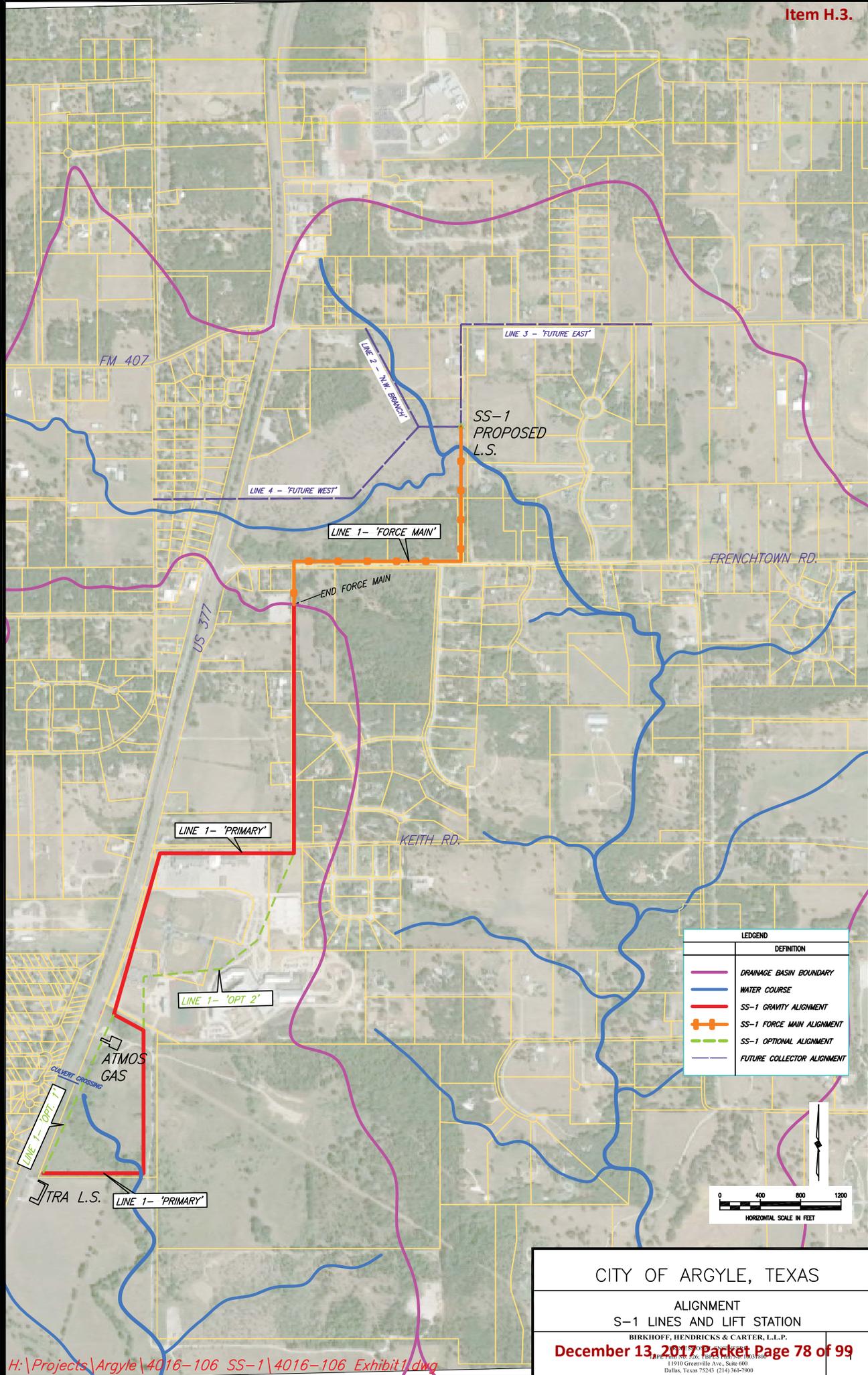
EXHIBIT “C”

PAYMENT SCHEDULE

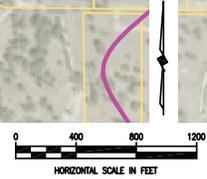
S-1 Sanitary Sewer Line Easement Preparation

Payment for engineering services described in Exhibit “A”, Part I – Services, shall be on the basis of salary cost times a multiplier of 2.4, with expenses at invoice cost times 1.15. Survey crew will be at \$165.00 per hour. Recommended budget for approximately ten (10) documents is \$30,000.00.

The maximum overall fee, including expenses, established herein shall not be exceeded without written authorization from the Town of Argyle, based on increased scope of services.



LEGEND	
	DEFINITION
	DRAINAGE BASIN BOUNDARY
	WATER COURSE
	SS-1 GRAVITY ALIGNMENT
	SS-1 FORCE MAIN ALIGNMENT
	SS-1 OPTIONAL ALIGNMENT
	FUTURE COLLECTOR ALIGNMENT



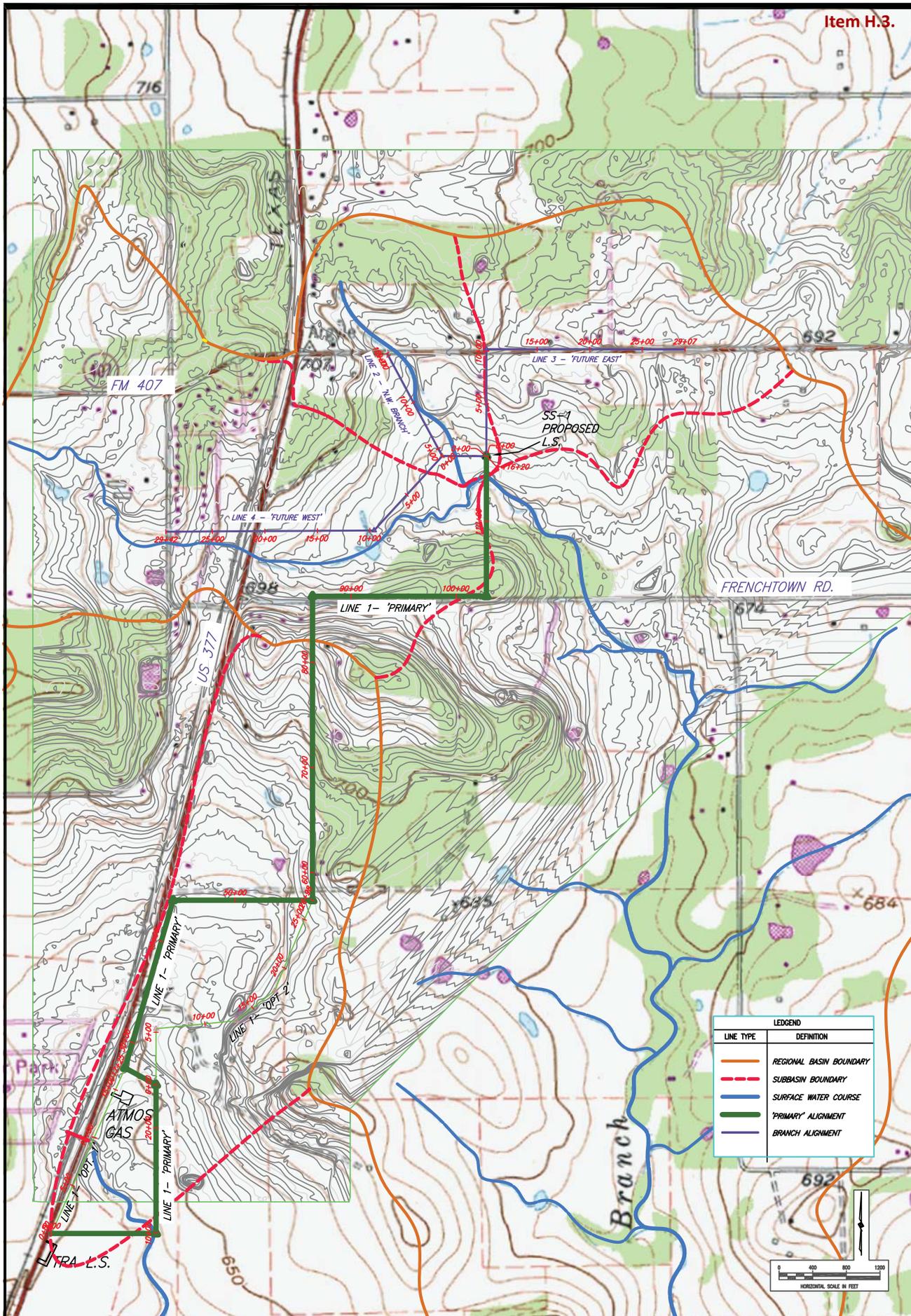
CITY OF ARGYLE, TEXAS

ALIGNMENT
S-1 LINES AND LIFT STATION

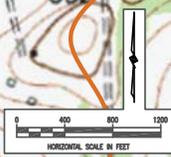
BIRKHOFF, HENDRICKS & CARTER, L.L.P.

December 13, 2017 Packet Page 78 of 99

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Dallas, Texas 75243 (214) 361-7900



LEGEND	
LINE TYPE	DEFINITION
	REGIONAL BASIN BOUNDARY
	SUBBASIN BOUNDARY
	SURFACE WATER COURSE
	'PRIMARY' ALIGNMENT
	BRANCH ALIGNMENT



CITY OF ARGYLE, TEXAS

SUBBASIN MAP
S-1 LINES AND LIFT STATION

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

December 13, 2017 Packet Page 79 of 99



TOWN COUNCIL DATA SHEET



Agenda Item:

Consider approval of an ordinance amending the Code of Ordinances, Chapter 12, Traffic and Vehicles, Argyle 12.300 Relative to Prima Facie Speed Limits.

Requested by:

William T. Tackett, Chief of Police

Background:

The completion of the reconstruction of Country Club Road between FM 1830 and Harrison Lane has resulted in an improved roadway design. Prior to the reconstruction of Country Club Road and after the construction of Harrison Road, the speed limit on Country Club Road was established at 45 MPH. In 2007, due to the addition of Harrison Lane, it was recommended by our Town Engineer (Cheatham and Associates) that the speed limit be lowered to 30 mph for a half mile section due to narrow road width and site visibility. On October 9, 2007, the Town Council approved the lower speed limit through the adoption of Ordinance 2007-17. The portion of the road in the unincorporated County remained at 45 mph.

After the reconstruction of Country Club Road staff collected speed data and other related information and forwarded it to our current Town Engineer (Birkhoff, Hendricks & Carter, LLP) to conduct an engineering study to consider increasing the speed limit as a result of the improved roadway. Jody Short from Lee Engineering conducted the traffic study. His report and recommendation are attached. Highlights of the report are as follows:

- Speed could be increased up to a maximum of 45 mph.
- Identified limited site distance for traffic on Harrison Lane due to brush growth at the southeast corner of Country Club and Harrison which will be remedied.
- One crash noted in that area last three years.
- Possibility of modifications of existing turn lane onto Harrison (westbound Country Club Road). This will be monitored by the Police Department to determine need.
- The Police Department will continue to monitor area for any additional crash data or safety issues that arise.

By approving the recommendation of the report, it will make the speed limit consistent on Country Club Road between FM 1830 and US 377, reducing motorist confusion.

Financial Impact:

The signs will be paid for out of the current FY 17 budget.

Staff Recommendation:

Discuss and consider approval of the ordinance.



TOWN COUNCIL DATA SHEET



Requested Action:

Consider approval of an ordinance amending the Code of Ordinances, Chapter 12, Traffic and Vehicles, Argyle 12.300 Relative to Prima Facie Speed Limits.

Attachments:

Proposed Ordinance

Traffic Engineer's report

**TOWN OF ARGYLE, TEXAS
ORDINANCE NO. 2016-__**

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS, AMENDING THE CODE OF ORDINANCES CHAPTER 12, TRAFFIC & VEHICLES, ARTICLE 12.300 RELATIVE TO PRIMA FACIE SPEED LIMITS BY DELETING CHAPTER 12, ARTICLE 12.300 IN ITS ENTIRETY AND ADDING A NEW ARTICLE 12.300; AUTHORIZING THE ERECTION OF TRAFFIC REGULATION SIGNS; REPEALING CONFLICTING ORDINANCES; PROVIDING A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO HUNDRED DOLLARS (\$200.00) FOR EACH OFFENSE AND A SEPARATE OFFENSE SHALL BE DEEMED COMMITTED EACH TIME A VIOLATION OCCURS OR CONTINUES; PROVIDING A SEVERABILITY CLAUSE; DECLARING AN EMERGENCY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Texas Transportation Code § 545.356 provides that the governing body of a municipality, for a highway or part of a highway in the municipality, including a highway of the state highway system, has the same authority to alter by ordinance prima facie speed limits from the results of an engineering and traffic investigation as the Texas Transportation Commission on an officially designated or marked highway of the state highway system; and

WHEREAS, Texas Transportation Code § 545.356 provides that the governing body of a municipality, for a highway or a part of a highway in an urban district in the municipality that is not an officially designated or marked highway or road of the state highway system, is 35 feet or less in width, and along which vehicular parking is not prohibited on one or both sides of the highway, may declare a lower speed limit of not less than 25 miles per hour, if the governing body determines that the prima facie speed limit on the highway is unreasonable or unsafe; and

WHEREAS, Country Club Road is currently controlled by two different speed limits and signage, and in the best interest of the traveling public, the Town desires consistency for the traveling public; and

WHEREAS, based upon a traffic and engineering study, the Town Council of the Town of Argyle declares the reasonable and prudent speed for Country Club Road to be 45 MPH; and

WHEREAS, the Town Council of the Town of Argyle deems the passage of this ordinance as necessary to protect the public, health, safety, and welfare;

WHEREAS, the Town Council of the Town of Argyle has complied with all necessary legislative prerequisites to the passage of this ordinance.

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS:

Section 1. All matters stated hereinabove are found to be true and correct and are incorporated herein by reference as if copied in their entirety.

Section 2. That Chapter 12, Article 12.300, of the Code of Ordinances of the Town of Argyle, Texas, is hereby deleted in its entirety and a new Chapter 12, Article 12.300, be added as follows:

“ARTICLE 12.300 SPEED LIMITS ESTABLISHED

(a) No person shall drive, as defined by state law, a motor vehicle, a motorcycle, bicycle, motor driven cycle, motor assisted cycle or any other vehicle of any kind (hereinafter collectively referred to as "vehicle") on a public street, alley or highway within the corporate limits of the Town of Argyle at a speed greater than is reasonable and prudent under the circumstances then existing and having regard to the actual and potential hazards then existing. The limits specified in this article shall be the lawful speed limits and any speed in excess of the limits so specified and established as authorized by law shall be prima facie evidence that the speed is not reasonable or prudent and that it is unlawful. In every event speed shall be controlled as may be necessary to avoid colliding with any person, vehicle or other conveyance on or entering the public street or public alley, in compliance with legal requirements and the duty of all persons to use due care.

(b) Unless a special hazard exists that requires a slower speed for compliance with the law, the following speeds are lawful: 30 miles per hour in an urban district on a street other than an alley and 15 miles per hour in an alley.

(c) Upon the basis of an engineering and traffic investigation heretofore made as authorized by the provisions of Section 169, Tex. Rev. Civ. Stat. Ann. Art. 6701d, Uniform Act Regulating Traffic on Highways, the following speed limits hereafter indicated for vehicles are hereby determined and declared to be prima facie reasonable and safe and such speed limits are fixed at the rate of speed indicated for vehicles traveling upon the named public streets and highways or parts thereof. The streets and highways hereby regulated and the maximum prima facie speed limits thereof are as follows:

<u>STREET</u>	<u>SPEED LIMIT</u>
Rolling Acres Drive	20 mph
Whispering Trails	20 mph

The Town Administrator, or his designee, is hereby directed to post signs at appropriate locations along the above roads indicating the required speed limits.

(d) Upon the basis of a traffic investigation heretofore made as authorized by the provisions of Section 169, Tex. Rev. Civ. Stat. Ann. Article 6701d, Uniform Act Regulating on Highways, the following prima facie speed limit hereafter indicated for vehicles are hereby determined and declared to be reasonable and safe; and such speed limits are hereby fixed at the rate of speed indicated for vehicles traveling upon the named streets and highways, or parts thereof. From and after the date of the passage of this speed zone ordinance, no motor vehicle shall be operated along and upon U.S. Highway 377, within the corporate limits of the Town of Argyle in excess of the speed now set forth in the following limits:

- (1) Beginning at said point being the south town limits of the Town of Argyle, Texas thence in a northerly direction along U.S. Highway 377 for a distance of 0.440 miles approximately, a maximum speed limit of 60 miles per hour;
- (2) Thence continuing in a northerly direction along U.S. Highway 377 for a distance of 1.950 miles, approximately, a maximum speed limit of 50 miles per hour; and
- (3) Thence continuing in a northerly direction along U.S. Highway 377 for a distance of .0450 miles, approximately a maximum speed limit of 60 miles per hour.

(e) Based upon Section 545.356, Transportation Code the following maximum speed limit hereafter indicated for vehicles traveling on that portion of Country Club Road that lies within the town limits of Argyle, Texas is hereby determined and declared to prima facie reasonable and safe and such speed limit is fixed as follows:

<u>STREET LOCATION</u>	<u>MAXIMUM SPEED LIMIT</u>
Beginning at said point being the east town limits of the Town of Argyle, Texas thence in a westerly direction along Country Club Road for a distance of 0.50 <u>1.0</u> miles approximately <u>to the intersection of US Hwy 377</u> , a maximum speed limit of 45 miles per hour;	45 MPH
Thence continuing on Country Club Road for a distance of .50 miles, to the intersection of US Hwy 377, a maximum speed limit of 45 miles per hour.	30 MPH

(f) Based upon the basis of a traffic investigation heretofore made as authorized by the provisions of Section 169, Tex. Rev. Civ. Stat. Ann. Article 6701d Uniform Act Regulating Traffic on Highways, the following prima facie speed limits hereafter

indicated for vehicles are hereby determined and declared to be reasonable and safe rate of speed indicated for vehicles traveling upon the named streets and highways, or parts thereof. No vehicle shall be operated along and upon Farm to Market Road 407, within the corporate limits of the Town of Argyle, in excess of the following prima facie speed limits:

- (1) Beginning at said point being the east town limits of the Town of Argyle, Texas thence in a westerly direction along Farm to Market Road 407 for a distance of approximately 2.703 miles, a maximum speed limit of 55 miles per hour;
- (2) Thence continuing in a westerly direction along Farm to Market Road 407 for a distance of approximately .5 miles, a maximum speed limit of 45 miles per hour; and
- (3) Thence continuing in a westerly direction along Farm to Market Road 407 for a distance of approximately 1.735 miles, and ending at a point being the west town limits of the Town of Argyle, Texas, a maximum speed limit of 55 miles per hour.

(g) Based upon the attached traffic investigation heretofore made, the following prima facie speed limits are hereby determined and declared to be reasonable and prudent speeds for vehicles traveling upon the named streets and highways, or parts thereof. No vehicle shall be operated along and upon Robson Ranch Road, within the corporate limits of the Town of Argyle, in excess of the following prima facie speed limits:

- (1) Beginning at said point being the west town limits of the Town of Argyle, Texas thence in a easterly direction along Robson Ranch Road for a distance of approximately 2750 feet to IH 35W, a maximum speed limit of 50 miles per hour.

(h) The following school zone speed limits and effective days and times hereafter indicated for vehicles are hereby determined and declared to be prima facie, reasonable and safe. Such speed limits are fixed at their rate of speed and effective day and times indicated for vehicles traveling upon the following public streets and roadways or parts thereof and shall be designated by official school zone speed limit signs located on said streets and roadways during the hours and days so indicated and designated:

<u>SCHOOL ZONES</u>	<u>MAXIMUM SPEED LIMIT</u>	<u>EFFECTIVE</u>
Harrison Lane	20 mph	7:30 am-8:30 am 2:30 pm-3:30 pm
On the West side of Harrison Lane approximately 200 feet North of the driveway serving The parking lot on the north side of the school and on the East side		

20 feet South of Hearth Terrace.

(i) The following speed limits are placed on residential streets that are not an officially designated or marked highway or road of the state highway system, and the Town Council has declared a lower speed limit of not less than 25 miles per hour, and the governing body has determined that the prima facie speed limit on the highway is unreasonable due to special hazards.

<u>STREET</u>	<u>SPEED LIMIT</u>
Redbud Street	25 mph
Oak Street	25 mph
Willow Street	25 mph
Peyton Place	25 mph
Old Town Boulevard North	25 mph
Old Town Boulevard South	25 mph
Highland Circle	25 mph
Boonesville Bend	25 mph
Ellison Trace	25 mph
Nora Lane	25 mph
Myrtle Lane	25 mph
Big Sky Way	25 mph
Trigger Trail	25 mph
Travelers Terrace	25 mph
Pegasus Ridge	25 mph
Comanche Run	25 mph
Appaloosa Run	25 mph
5T Ranch Road	25 mph

(j) That the Town Manager, or his designee, is hereby authorized to have the proper traffic signs erected, constructed, and placed at such points along said highways, streets or alleys, or portions hereof under construction, maintenance or repair so that travelers will be reasonably notified of said traffic regulations.

(k) Notwithstanding anything contained in this article to the contrary, the maximum permissible speed limit on any street or roadway within the Town of Argyle shall not exceed the speed designated on temporary signs posted by the town to specify a lower reasonable and prudent speed because of street repairs, construction, emergency conditions or other actual or potential hazards then existing on such street and roadways.

(l) Any person violating any of the provisions of this Chapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in a sum not to exceed Two Hundred Dollars (\$200.00) and a separate offense shall be deemed committed each time a violation occurs.

Section 3. That all ordinances or any parts thereof in conflict with the terms of this ordinance shall be and hereby are deemed repealed and of no force or effect; provided, however, that the ordinance or ordinances under which the cases currently filed and pending in the Municipal Court of the Town of Argyle, Texas, shall be deemed repealed only when all such cases filed and pending under such ordinance or ordinances have been disposed of by a final conviction or a finding not guilty or nolo contendere, or dismissal.

Section 4. If any section, article, paragraph, sentence, clause, phrase or word in this ordinance, or application thereto any person or circumstances is held invalid or unconstitutional by a Court of competent jurisdiction, such holding shall not affect the validity of the remaining portions of this ordinance; and the Town Council hereby declares it would have passed such remaining portions of the ordinance despite such invalidity, which remaining portions shall remain in full force and effect.

Section 5. The fact that the present ordinances and regulations of the Town of Argyle, Texas are inadequate to properly safeguard the health, safety, morals, peace and general welfare of the public creates an emergency which requires that this ordinance become effective from and after the date of its passage, and it is accordingly so ordained.”

PASSED AND APPROVED BY THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS on this the 13th day of December, 2016.

APPROVED:

Peggy Krueger

Mayor

ATTEST:

Kristi Gilbert
Town Secretary

APPROVED AS TO FORM:

Matthew C.G. Boyle
Town Attorney



ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

December 7, 2016

Mr. John Birkhoff P.E.
Birkhoff, Hendricks & Carter L.L.P.
11910 Greenville Ave # 600
Dallas, TX 75243

Re: *Speed Study along Country Club Road in Argyle, TX*

Dear Mr. Birkhoff:

Lee Engineering has conducted a speed zone study along Country Club Road within the Town of Argyle. The limits of the study were the intersection with US 377 (Fort Worth Dr) to the west and the driveway of the residence at 501 Country Club Road to the east (approximately one half mile). This letter report presents the results of our study.

STUDY AREA

Within the study area bounds, the configuration of Country Club Road from two-lane, undivided roadway with turn lanes to four-lane undivided roadway. The existing posted speed limit is 30 miles per hour (mph). Country Club Road is formally designated as a "Type 'B' Minor Arterial" according to the Argyle Thoroughfare Plan (April 13, 2010). A figure of the study area (highlighted in yellow) is shown below in **Figure 1**:



Figure 1: Study Area

At the eastern study area boundary, the posted speed limit changes from 30 to 45 mph. At the western study area boundary, Country Club Road intersects with US 377 and Crawford Rd. The posted speed

limit along US 377 is 50 mph; signs for both northbound and southbound traffic are posted approximately 750 feet from the intersection. The posted speed limit along Crawford Rd is 30 mph; a sign for westbound traffic is posted approximately 300 feet from the intersection.

24 HOUR AUTOMATED SPEED DATA

The Argyle Police Department collected automated speed data from Sunday, November 13, 2016 to Wednesday, November 30, 2016. Speed data was gathered in both directions by recording the speed of every vehicle. Raw speed data which was provided to Lee Engineering is attached to this letter.

The collected speed data is summarized in **Table 1**.

Table 1: Speed Data Summary

Westbound						Eastbound					
Hours	Veh/day (Avg)	Min Speed	Max Speed	Avg Speed	85% Speed	Hours	Veh/day (Avg)	Min Speed	Max Speed	Avg Speed	85% Speed
0:00	6	21	48	34	37	0:00	27	10	52	35	38
1:00	3	15	49	31	34	1:00	31	15	46	35	37
2:00	3	16	57	30	32	2:00	18	10	47	33	35
3:00	2	20	41	33	34	3:00	21	10	51	34	36
4:00	13	15	58	35	41	4:00	19	10	51	36	38
5:00	33	17	50	33	37	5:00	43	10	51	30	34
6:00	108	15	68	32	37	6:00	81	10	61	31	38
7:00	252	15	56	28	33	7:00	179	10	56	34	40
8:00	129	15	57	33	38	8:00	155	10	58	35	42
9:00	112	15	54	33	39	9:00	167	10	54	34	41
10:00	109	15	55	33	39	10:00	173	10	58	35	42
11:00	162	15	53	32	38	11:00	182	10	67	36	42
12:00	118	15	56	33	40	12:00	184	10	58	36	43
13:00	108	15	58	35	41	13:00	172	10	56	37	43
14:00	174	15	56	30	36	14:00	177	10	63	35	42
15:00	185	15	58	32	39	15:00	184	10	66	37	43
16:00	157	15	59	34	40	16:00	202	10	60	37	44
17:00	152	15	55	34	39	17:00	207	10	59	37	43
18:00	103	15	60	33	39	18:00	176	10	54	36	42
19:00	66	15	59	33	38	19:00	115	10	60	36	43
20:00	43	15	60	34	39	20:00	111	10	57	36	42
21:00	28	16	51	34	39	21:00	74	10	54	37	42
22:00	17	15	56	36	40	22:00	56	11	59	37	42
23:00	8	15	52	34	37	23:00	41	10	51	35	39
Total	2,091	Weighted Average:			38.3	Total	2,796	Weighted Average:			41.8
Combination of Westbound & Eastbound											
Total Vehicles/day:					4,887	Weighted Average 85% Speed [mph]:					40.3

TxDOT *Procedures for Establishing Speed Zones* indicate that the speed limit for a section of roadway should be set based upon the 85th percentile spot speed rounded to the nearest 5 mph increment. This value can be increased or decreased based upon factors such as the roadway geometric constraints, driveway density, pedestrian activity, development density, crash history, and the professional judgment of the engineer supervising the speed study.

Because the collected speed data does not distinguish between vehicles whose drivers set their own speed (characterized by a headway of three seconds or more) and vehicles whose drivers did not set their own speeds (part of a vehicle platoon), the data is assumed to *underestimate* the 85% speed. Additionally, because the data collection seems to include traffic turning at the intersection with Harrison Lane, the data is assumed to *underestimate* the 85% speed.

FIELD OBSERVATIONS

The following observations were made during the field visit:

- Markings and transition lengths at the business drives and US 377 intersection appear to be appropriate for the posted 30 mph speed limit.
- The left lane on the southwest bound approach of Country Club Road at Harrison Lane is a left-turn only lane.
- There is currently limited sight distance to the east for traffic turning left from Harrison Lane onto Country Club Road. Sight distance is limited by the brush growth at the south east corner of the intersection.

CRASH DATA

Historical crash data for the study area was provided by the TxDOT Crash Record Information System. Records from January of 2014 to November of 2016 (2.9 years) were available for analysis.

In the 2.9-year period, one (1) crash occurred along the study segment of Country Club Road. The crash data and resulting crash rate are summarized in **Table 2**.

Table 2: Crash Data Summary

Segment	Segment Length	Daily Two Way Volume	Crashes (Jan. 2014 – Nov. 2016)	Crash Rate (crashes / 100,000,000 vehicle miles)
From US 377 to 501 Country Club Road	0.5 mile	4,887	1	37.37

According to TxDOT, the 2015 (most recent available) statewide average crash rate for 2-lane, 2-way, rural roads was 100.60 crashes per one-hundred-million vehicle miles. The study segment has a crash rate below the statewide average.

OBSERVATIONS & RECOMMENDATION

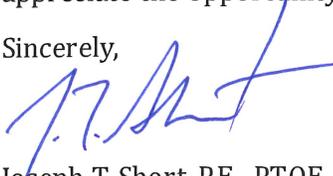
Lee Engineering offers the following observations of the study results:

- The average of all 85th percentile speeds was slightly greater than 40 mph.
- This value is likely lower than the true average of 85th percentile speeds due to the following:
 - The speed data does not account for vehicle headways (likely including vehicles whose drivers are not setting their own speeds, but are following more slowly than they would otherwise choose).
 - The speed data includes low-speed turning movements at Harrison Lane.
- Markings and transition lengths at the business drives and US 377 intersection should be evaluated if the speed limit is increased.
- Because the left lane on the southwest bound approach of Country Club Road at Harrison Lane intersection is a left-turn only lane, additional signing and marking modifications may be required to accommodate a speed limit increase.
- Brush growth in the southeast corner of the intersection of Harrison Lane and Country Club Road should be cleared in order to remove sight distance limitations for traffic turning left from Harrison Lane.
- The crash history does not indicate the need for posting the speed limit lower than the average of 85th percentile speeds.

Based on the observations listed above, it is our recommendation that the posted speed limit be raised from 30 mph to no greater than 45 mph. In accordance with this increase, crash data should be monitored to determine if any changes become necessary in the future. Also, signing and markings throughout the study area should be modified to accommodate any speed increase.

If you have any questions regarding this speed study, please contact me at (972) 248-3006. We appreciate the opportunity to provide these services.

Sincerely,



Joseph T. Short, P.E., PTOE
President
Lee Engineering
TBPE Firm F-450

Speed Summary Report

For Town of Argyle on 12/1/2016 at 2:29 PM

Generated by Chief William Tackett
 Location: Streets, Country Club Rd, W

Time of Day: 0:00 to 23:59
 Dates: 11/13/2016 to 11/30/2016 (Su, M, T, W, Th, F, Sa)

Notes:

Hours	Mode	Speed Limit	Total # Vehicles	Total # Violations	% Violations	Average # Vehicles per day	Average # of Violations	Minimum Speed Recorded	Maximum Speed Recorded	Average Speed	50% Speed	85% Speed	Sign Effectiveness
0:00	Conditional	30	90	70	77.8%	6	4.1	21	48	34	32.9	37.2	64.2%
1:00	Conditional	30	37	18	48.6%	3	1.4	15	49	31	29.9	33.6	78.0%
2:00	Conditional	30	42	20	47.6%	3	1.0	16	57	30	28.7	31.9	92.2%
3:00	Conditional	30	30	23	76.7%	2	1.4	20	41	33	32.3	34.0	55.0%
4:00	Conditional	30	148	103	69.6%	13	9.0	15	58	35	34.2	40.7	75.2%
5:00	Conditional	30	426	302	70.9%	33	20.8	17	50	33	32.0	37.1	69.9%
6:00	Conditional	30	1,067	733	68.7%	108	64.8	15	68	32	31.8	37.0	64.2%
7:00	Conditional	30	2,140	912	42.6%	252	86.7	15	56	28	27.4	33.4	43.6%
8:00	Conditional	30	1,634	1,128	69.0%	129	79.3	15	57	33	32.1	38.3	60.4%
9:00	Conditional	30	1,422	1,048	73.7%	112	78.1	15	54	33	32.8	39.1	60.1%
10:00	Conditional	30	1,628	1,187	72.9%	109	73.2	15	55	33	33.0	39.0	59.4%
11:00	Conditional	30	1,983	1,378	69.5%	162	87.4	15	53	32	31.2	38.1	54.9%
12:00	Conditional	30	1,886	1,388	73.6%	118	77.4	15	56	33	32.9	39.6	54.8%
13:00	Conditional	30	1,627	1,295	79.6%	108	80.5	15	58	35	33.9	40.7	62.0%
14:00	Conditional	30	2,156	1,228	57.0%	174	76.3	15	56	30	29.5	36.5	47.8%
15:00	Conditional	30	2,240	1,452	64.8%	185	98.3	15	58	32	31.4	38.6	46.9%
16:00	Conditional	30	2,041	1,536	75.3%	157	105.3	15	59	34	33.4	39.8	53.8%
17:00	Conditional	30	2,001	1,540	77.0%	152	107.4	15	55	34	33.6	39.3	60.7%
18:00	Conditional	30	1,368	1,030	75.3%	103	68.8	15	60	33	32.7	38.6	65.4%
19:00	Conditional	30	855	648	75.8%	66	42.1	15	59	33	32.4	38.3	63.9%
20:00	Conditional	30	602	442	73.4%	43	27.6	15	60	34	33.1	38.9	64.6%
21:00	Conditional	30	433	337	77.8%	28	20.3	16	51	34	33.6	39.1	66.1%
22:00	Conditional	30	268	219	81.7%	17	13.2	15	56	36	35.3	40.1	72.3%
23:00	Conditional	30	130	87	66.9%	8	4.9	15	52	34	32.4	36.7	65.2%
Total Volumes/ Avg Speeds	Conditional Messages, Display Off	30	26,254	18,124	69.0%	2,090.7	1,229.4	15	68	33	32.2	37.7	63.0%
Total/Avg w/o Feedback			0	0	0.0%	0.0	0.0	0	0	0	0.0	0.0	0.0%
Total/Avg w/Feedback			0	0	0.0%	0.0	0.0	0	0	0	0.0	0.0	0.0%

Speed Summary Report

For Town of Argyle on 12/1/2016 at 2:30 PM

Generated by Chief William Tackett

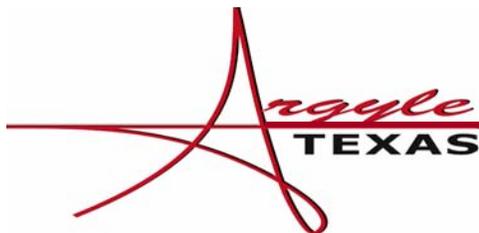
Location: Streets, 300 Country Club Rd, E

Time of Day: 0:00 to 23:59

Dates: 11/13/2016 to 11/30/2016 (Su, M, T, W, Th, F, Sa)

Notes:

Hours	Mode	Speed Limit	Total # Vehicles	Total # Violations	% Violations	Average # Vehicles per day	Average # of Violations	Minimum Speed Recorded	Maximum Speed Recorded	Average Speed	50% Speed	85% Speed	Sign Effectiveness
0:00	Speed Display	30	326	250	76.7%	27	20.8	10	52	35	34.9	38.5	34.2%
1:00	Speed Display	30	376	329	87.5%	31	27.4	15	46	35	35.1	36.6	25.5%
2:00	Speed Display	30	198	136	68.7%	18	12.4	10	47	33	32.4	34.7	34.4%
3:00	Speed Display	30	253	177	70.0%	21	14.8	10	51	34	33.7	36.0	26.7%
4:00	Speed Display	30	212	194	91.5%	19	17.6	10	51	36	36.3	38.2	31.7%
5:00	Speed Display	30	517	311	60.2%	43	25.9	10	51	30	29.3	33.6	37.3%
6:00	Speed Display	30	973	616	63.3%	81	51.3	10	61	31	30.9	37.6	41.9%
7:00	Speed Display	30	2,145	1,528	71.2%	179	127.3	10	56	34	34.2	39.9	40.0%
8:00	Speed Display	30	1,854	1,464	79.0%	155	122.0	10	58	35	36.0	42.0	38.4%
9:00	Speed Display	30	2,008	1,525	75.9%	167	127.1	10	54	34	35.0	41.3	38.2%
10:00	Speed Display	30	2,079	1,682	80.9%	173	140.2	10	58	35	36.2	41.9	35.4%
11:00	Speed Display	30	2,186	1,798	82.3%	182	149.8	10	67	36	36.6	42.4	37.5%
12:00	Speed Display	30	2,210	1,797	81.3%	184	149.8	10	58	36	36.5	42.9	39.1%
13:00	Speed Display	30	2,060	1,738	84.4%	172	144.8	10	56	37	36.9	43.1	37.6%
14:00	Speed Display	30	2,302	1,746	75.8%	177	134.3	10	63	35	35.4	42.3	40.3%
15:00	Speed Display	30	2,388	1,997	83.6%	184	153.6	10	66	37	37.0	42.9	39.7%
16:00	Speed Display	30	2,630	2,258	85.9%	202	173.7	10	60	37	37.2	43.7	41.0%
17:00	Speed Display	30	2,690	2,287	85.0%	207	175.9	10	59	37	37.3	42.7	41.2%
18:00	Speed Display	30	2,285	1,909	83.5%	176	146.8	10	54	36	36.7	42.2	42.1%
19:00	Speed Display	30	1,496	1,219	81.5%	115	93.8	10	60	36	36.3	42.6	42.4%
20:00	Speed Display	30	1,443	1,206	83.6%	111	92.8	10	57	36	36.4	41.6	45.1%
21:00	Speed Display	30	968	836	86.4%	74	64.3	10	54	37	36.7	41.7	41.4%
22:00	Speed Display	30	731	634	86.7%	56	48.8	11	59	37	37.1	41.8	40.8%
23:00	Speed Display	30	527	431	81.8%	41	33.2	10	51	35	35.5	38.8	36.8%
Total Volumes / Avg Speeds	Speed Display	30	34,857	28,068	80.5%	2,795.9	2,248.4	10	67	35	35.4	40.4	38.0%
Total/Avg w/o Feedback			0	0	0.0%	0.0	0.0	0	0	0	0.0	0.0	0.0%
Total/Avg w/Feedback			34857	28068	80.5%	2,795.9	2,248.4	10	67	35	35.4	40.4	38.0%



TOWN COUNCIL STAFF REPORT

Meeting

Date: December 13, 2016

To: Mayor and Town Council members

From: Matt Jones, Director of Community Development

Subject: Final Plat –Timberidge Addition

Purpose:

PUBLIC HEARING: Consider and take appropriate action on a final plat (FP-16-010) for Lot 1R, Block A, Timberidge Addition; an approximately 27.75 acre tract of land; being located at 405 Crawford Road, Town of Argyle, Denton County, Texas.

Existing Condition of Property:

The subject property is currently undeveloped and is densely covered with mature trees. The topography of the property rises to the south moving away from Crawford Rd. The property has an approved 300' x 500' gas well pad site and associated access easements.

Adjacent Existing Land Uses and Zoning:

North: Town of Argyle Right-of-Way
 South: SF-2.5-Single Family Residential
 East: SF-2.5-Single Family Residential
 West: SF-2.5-Single Family Residential

Development Review Analysis:

The applicant is proposing a residential replat that would result in the creation of three (3) residential lots out of a one (1) existing 27.75 residential lot. The property is currently zoned SF-2.5 – Residential Estates 2.5 district. Lots 1R2 and 1R3 are proposed as being 2.5 acre lots, while lot 1R1 will comprise 22.756 acres.

The Development Review Committee has reviewed this plat and has determined that it meets all minimum standards of the Town Development Standards and Subdivision Regulations for the SF-2.5 – Residential Estates 2.5 zoning district for approval. A public hearing is required in accordance with Texas Local Government Code – Section(s) 212.014 and 212.015.

Staff Recommendation:

Town staff forwards this request for your approval with the following recommendations:

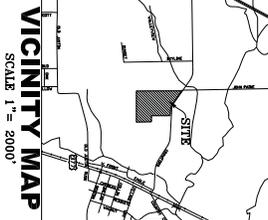
1. Provide and label the locations for the approved gas wells on the plat including the 300' buffer restricting the construction of any residential structures.
2. Label the access easement for the gas pad site.

Planning and Zoning Commission Recommendation:

The Planning and Zoning Commission will consider this request at their December 6, 2016 regularly scheduled meeting.

Attachments:

Proposed Final Plat

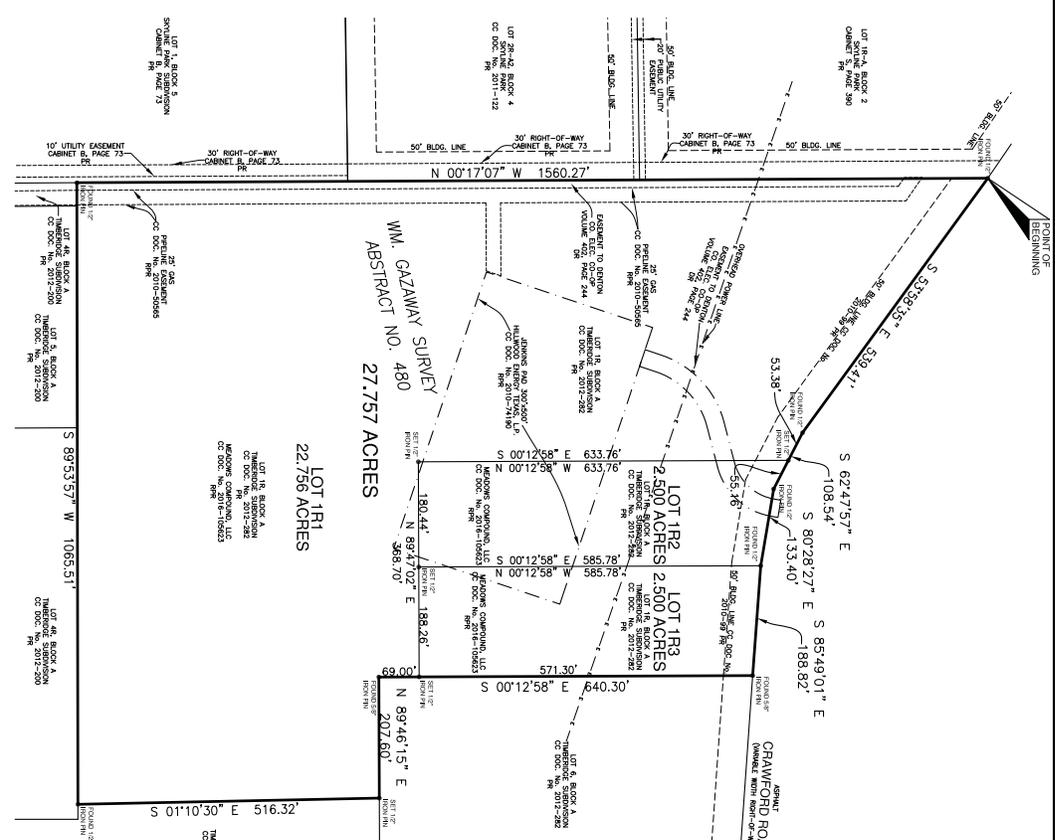


NOTES:
 1) 1/2 INCH PER INCH SET AT ALL EXTERIOR CORNERS WITH YELLOW PLASTIC CAP STAMPED WITH 10223230.
 2) 3/4 INCH PER INCH FOR RESIDENTIAL USE.
 3) PER ORDER OF THE TOWN, THIS RESERVATION WITHIN ZONE 20-10-1000-1000 DETERMINED TO BE COURSE OF A RESUBDIVISION TO BE COMPLETED BY YEAR 2020. FLOOR PLAN AS SHOWN BY FINAL COMMUNITY PLAN NUMBER 4410 DATED APRIL 18, 2011. NO SURVEYS HAVE BEEN ORDERED TO DETERMINE THIS COURSE.
 4) A PARKER SHALL BE MAINTAINED AT THE TIME OF BUILDING PERMIT FOR ANY NEW CONSTRUCTION OF THIS SUBDIVISION IN ACCORDANCE WITH ARTICLE VII OF THE TOWN DEVELOPMENT ORDINANCES.
 5) THE PROPERTY OWNER IS REQUIRED TO EXTEND SANITARY SEWER TO EACH LOT WITHIN THIS SUBDIVISION IN ACCORDANCE WITH ARTICLE VII OF THE TOWN DEVELOPMENT ORDINANCES.
 6) THESE LOTS ONLY AFTER THE REQUIRED SANITARY SEWERS IS CONSTRUCTED AND ACCEPTED BY THE TOWN OF ANGLE.

STATE OF TEXAS
 COUNTY OF DENTON
 BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR SAID COUNTY, TEXAS, DID COME PERSONALLY APPEAR AND PERSONALLY SIGN AND MAKE PUBLIC RECORD OF THE FOREGOING INSTRUMENT AND ACKNOWLEDGE THE SAME TO BE HIS OWN ACT AND DEED FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.
 GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS ____ DAY OF _____, 2016.

KNOW ALL MEN BY THESE PRESENTS, THAT I, BRAD G. SHELTON, DO HEREBY CERTIFY THAT I PREPARED THIS PLAN FROM AN ORIGINAL AND ACCURATE SURVEY OF THE LAND AND THAT THE CORNER POINTS AND BOUNDARIES THEREON WERE DETERMINED BY ME OR BY A PERSON UNDER MY PERSONAL SUPERVISION IN ACCORDANCE WITH THE STATUTES AND REGULATIONS OF THE TOWN OF ANGLE, TEXAS.
NOT TO BE RECORDED FOR ANY PURPOSE UNLESS THE REQUIRED SANITARY SEWERS HAS BEEN CONSTRUCTED.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS
 SUPERVISOR'S CERTIFICATE



Approved by Town of Angle Community Development Department

Director of Community Development
 Town Secretary
 Date of Approval: _____

CALL AT LEAST 48 HOURS BEFORE DIGGING
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TOWN COUNCIL DATA SHEET



Agenda Item:

Consider and take appropriate action on the approval of a resolution adopting the Town of Argyle Standard Construction Details.

Prepared by:

Matt Jones, Director of Community Development

Background:

Town Staff has been working with the Town Engineer (John Birkhoff with Birkhoff, Hendricks, and Carter, LLP) to put together standard construction details for the Town. These construction details will be unique to Argyle and encompass details on various construction specifications on items ranging from sidewalks, to roadway details, to sewer line construction.

Historically the Town has utilized Denton County and the NCTCOG (North Central Texas Council of Governments) to provide certain details to developers when they produce construction documents for the Town. With the adoption of the Town's specific standard details there will be more uniformity and control over various construction and development projects within the Town.

These construction details will govern development within the Town and provide uniform infrastructure for all projects from multi-lot residential subdivisions to single tenant commercial projects. These details will become part of the construction plans to be submitted for projects that are being proposed in Town.

Financial Impact:

None.

Staff Recommendation:

Staff recommends approval.

Requested Action:

Approval of a resolution adopting the Town of Argyle Standard Construction Details.

Attachments:

Resolution

Proposed Standard Construction Details (Attached under Item B.2.)

**TOWN OF ARGYLE, TEXAS
RESOLUTION NO. 2016-__**

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF
ARGYLE, TEXAS APPROVING STANDARD CONSTRUCTION
DETAILS FOR THE TOWN OF ARGYLE.**

WHEREAS, the Town of Argyle desires to establish standards for infrastructure design and construction to provide for uniform, quality construction to protect the health, safety and welfare of the Town.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF ARGYLE, TEXAS:

Section 1. THAT, the above findings are hereby found to be true and correct and are incorporated herein in their entirety.

Section 2. THAT, the Town Council of the Town of Argyle, Texas hereby approves the Town of Argyle, Texas Standard Construction Details attached as Exhibit "A" for the Town of Argyle.

AND, IT IS SO RESOLVED.

PASSED AND APPROVED this the 13th day of December, 2016.

TOWN OF ARGYLE, TEXAS

Peggy Krueger, Mayor

ATTEST:

Kristi Gilbert, Town Secretary

Approved as to Form and Legality:

Matthew C. G. Boyle, Town Attorney