

TOWN OF WESTLAKE

RESOLUTION 17-16

A RESOLUTION BY THE TOWN COUNCIL OF THE TOWN OF WESTLAKE, TEXAS, APPROVING THE FIRST AMENDMENT TO THE ECONOMIC DEVELOPMENT AGREEMENT WITH QUAIL HOLLOW DEVELOPMENT II, LLC, RELATED TO THE QUAIL HOLLOW DEVELOPMENT IN WESTLAKE, TEXAS.

WHEREAS, the Town is a duly created and validly existing Type A General Law Municipality, created under the laws of the State of Texas, including particularly, but not by way of limitation, Chapter 51, Texas Local Government Code (“LGC”); and

WHEREAS, the Town has an economic development policy adopted by Resolution 16-30; and

WHEREAS, the Economic Development Policy and the Tax Abatement Policy constitute appropriate guidelines and criteria governing economic development agreements to be entered into by the Town as contemplated by Chapter 378 and Chapter 380 of the LGC and Chapter 312 of the Tax Code, providing for the availability of economic incentives for new facilities and structures; and

WHEREAS, the Town of Westlake Town Council previously approved Resolution 16-35 on October 24, 2016 approving an Economic Development Agreement with Quail Hollow Development II, LLC (the Owner); and,

WHEREAS, the Town of Westlake is experiencing planned growth through the attraction of economic development projects such as Fidelity Investments and Deloitte University, residential developments such as Vaquero, Glenwyck Farms, Terra Bella, and Granada, and Entrada which are consistent with the Town’s Comprehensive Plan, as well as enrollment growth at Westlake Academy, all of which contribute to demand for improvements to Westlake’s infrastructure and public buildings: and,

WHEREAS, Quail Hollow Development II, LLC, as the owner of land located within the Town, is currently developing 188.28 acres (as defined herein), and the development and construction on such Land is expected to significantly enhance the economic base of the Town; and,

WHEREAS, the Town of Westlake (Town) and the Owner desire amend the original Economic Development Program Agreement with the First Amendment to the Quail Hollow Economic Development Program Agreement, Attached as **Exhibit “A”** to continue this planned growth through the proposed First Amendment to the Economic Development Agreement, which sets out responsibilities for the Owner and the Town as it relates to the development in Westlake; and,

WHEREAS, the Town Council finds that the passage of this Resolution is in the best interest of the citizens of Westlake.

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

SECTION 1: That, all matters stated in the Recitals hereinabove are found to be true and correct and are incorporated herein by reference as if copied in their entirety.

SECTION 2: That, the Town Council of the Town of Westlake, Texas, hereby approves the First Amendment to the Quail Hollow Developer Agreement attached hereto as **Exhibit "A"**, with the Owner; and further authorizes the Town Manager to execute said agreements and pursue any necessary procedures on behalf of the Town of Westlake.

SECTION 3: If any portion of this Resolution shall, for any reason, be declared invalid by any court of competent jurisdiction, such invalidity shall not affect the remaining provisions hereof and the Council hereby determines that it would have adopted this Resolution without the invalid provision.

SECTION 4: That this resolution shall become effective from and after its date of passage.

PASSED AND APPROVED ON THIS 27th DAY OF MARCH, 2017.



Laura Wheat, Mayor

ATTEST:

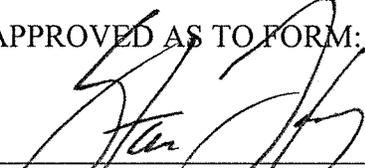


Kelly Edwards, Town Secretary



Thomas E. Brymer, Town Manager

APPROVED AS TO FORM:



Stan Lowry, Town Attorney

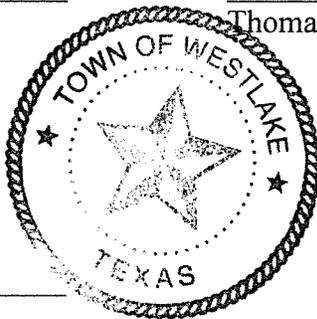


EXHIBIT A TO RESOLUTION NO. 17-16

FIRST AMENDMENT TO THE QUAIL HOLLOW ECONOMIC DEVELOPMENT PROGRAM AGREEMENT

THIS AMENDMENT ONE (1) OF ONE (1) TO THE TOWN OF WESTLAKE ECONOMIC DEVELOPMENT PROGRAM AGREEMENT ESTABLISHED WITH THE ADOPTION OF RESOLUTION 16-35 AS ADOPTED BY THE WESTLAKE TOWN COUNCIL FOR THE QUAIL HOLLOW DEVELOPMENT is made and entered into this 27th day of March, 2017, by and between the Town of Westlake, Texas (the “Town”), and Quail Hollow Development II, LLC, a Texas limited liability company (the “Developer”).

WITNESSETH:

The Quail Hollow Development (“Development”) is a residential project in Westlake and is currently being developed by Developer; and

On October 24, 2016, the Town Council for the Town of Westlake adopted Resolution 16-35 approving an Economic Development Agreement with Quail Hollow Development II, LLC, related to the Quail Hollow development which addressed various development issues for the Development, provided for the payment of certain fees, the timing of certain construction and the dedication of certain property, among others; and

The Town and the Developer wish to amend the Development Agreement to provide for construction of certain off-site drainage improvements; and

In consideration of the foregoing premises and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Town and Developer covenant and agree as follows:

1. The Economic Development Program Agreement Adopted by Resolution 16-35 Remains in Full Force and Effect. The Town and Developer acknowledge and agree that, except to the extent amended herein, all provisions and terms contained the Economic Development Program Agreement, including any other amendments or addenda to the Agreement besides this Amendment to the Economic Development Program Agreement, remain in full force and effect.

2. Specific Amendments Contained in this Amendment One (1) of One (1) to the Economic Development Program Agreement Adopted by Resolution 16-35 shall be amended as follows:

ECONOMIC DEVELOPMENT PROGRAM AGREEMENT

Section 5. TOWN’S AND OWNER’S OBLIGATIONS AND COMMITMENTS

5.2. Town of Westlake Specific Obligations- Program Resources

The Town shall maintain, or cause to be maintained, the median irrigation and landscape maintenance and submit an invoice to the Developer and/or HOA for reimbursement; such costs will not include reimbursement for water. Provided that the Town will pay for the water to irrigate the FM 1938 median defined above, following the expiration of 90 days after the recording of the final plat for Phase 2A of the Development, the Developer and/or HOA shall be responsible for 50% of the costs to perpetually maintain all existing irrigation system and landscaping that exists within the median of FM 1938 from Dove Road to south property line of the Development.

In consideration for the DEVELOPER'S construction of storm drain improvements on Dove Road in accordance with the attached construction plans approved by the Town of Westlake, Attachment "A", Westlake shall pay the Developer an amount not to exceed **ONE HUNDRED THOUSAND AND 00/100 DOLLARS (\$100,000.00) or THIRTY-THREE PERCENT (33%) OF CONSTRUCTION COSTS**, whichever is less, within thirty (30) days after completion and acceptance of the storm drain improvements by the Town of Westlake.

2. Binding Obligation. This Amendment to the Economic Development Program Agreement shall become a binding obligation of the signatories upon execution by all signatories hereto. The Town warrants and represents that the individual executing this Amendment to the Economic Development Program Agreement on behalf of the Town has full authority to execute this Amendment and bind the Town to the same. Developer warrants and represents that the individual executing this Economic Development Program Agreement on its behalf has full authority to execute this Amendment and bind it to the same.

3. Authorization. The Town Council shall authorize the Town Manager of the Town to execute this Amendment to the Economic Development Program Agreement on behalf of the Town.

4. Severability. In the event any provision of this Amendment to the Economic Development Program Agreement shall be determined by any court of competent jurisdiction to be invalid or unenforceable, the Amendment to the Economic Development Program Agreement shall, to the extent reasonably possible, remain in force as to the balance of its provisions as if such invalid provision were not a part hereof.

5. Filing in Deed Records. This Amendment to the Economic Development Program Agreement shall be filed in the deed records of Tarrant County, Texas. The provisions of this Amendment to the and Economic Development Program Agreement shall be deemed to run with the Property and shall be binding on heirs, successors and assigns of Developer.

6. Notices. Any notices required or permitted to be given hereunder shall be given by certified or registered mail, return receipt requested, to the addresses set forth below or to such other single address as either party hereto shall notify the other:

To the Town: Attn: Thomas E. Brymer
Town Manager
1301 Solana Blvd., Bldg. 4, Ste. 4202
Westlake, Texas 76262
FAX: 817.430.1812

With a copy to (**which
shall not constitute notice**):

Attn: L. Stanton Lowry
Town Attorney
Boyle & Lowry, L.L.P.
4201 Wingren, Suite 108
Irving, Texas 75062
FAX: 972.650.7105

To the Developer: Quail Hollow Development II, LLC
935 W. Dove Road
Southlake, TX 76092
Attn: Bryan Elliott

With a copy to (**which
shall not constitute notice**):

Wick Phillips Gould & Martin, LLP
3131 McKinney Ave. Suite 100
Dallas, TX 75204
Attn: Bradley K. Mahanay

7. **Counterparts.** This Amendment may be executed in counterparts, each of which shall be deemed an original.

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties have executed this Agreement as of this
the 27th MARCH 2017.

ATTEST:

TOWN OF WESTLAKE

Kelly Edwards
Name: Kelly Edwards
Title: Town Secretary

By: Thomas E. Brymer
Name: Thomas E. Brymer
Title: Town Manager

Date: 3/27/17

APPROVED AS TO FORM

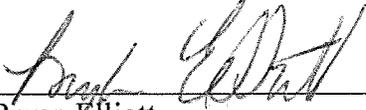
L. Stanton Lowry
Name: L. Stanton Lowry
Title: Town Attorney



DEVELOPER

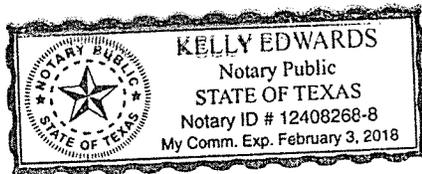
SIGNED AND EFFECTIVE on the date last set forth below.

DEVELOPER: Quail Hollow Development II, LLC


By: Bryan Elliott
Title: President
Address: 935 W. Dove Rd
Southlake, Texas 76092

STATE OF TEXAS
COUNTY OF TARRANT

On April 21, 2017, before me, Bryan Elliott, Notary Public, personally appeared Bryan Elliott, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.




WITNESS my hand and official seal.

PAVING & STORM DRAIN IMPROVEMENTS

FOR

Kirkwood Branch Culvert at Dove Road

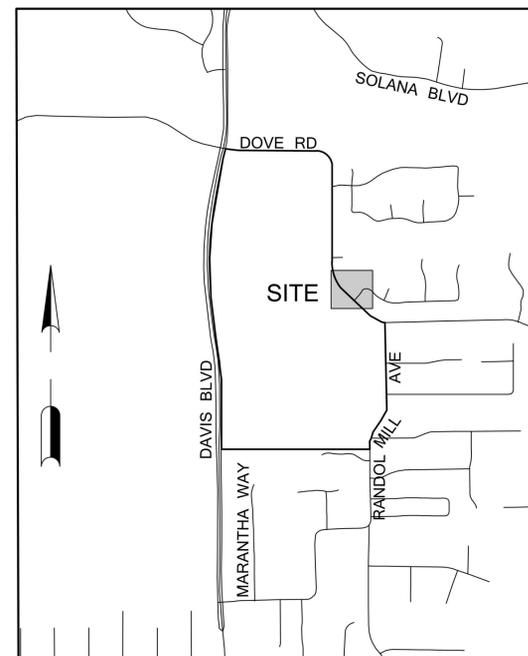
TARRANT COUNTY
TOWN OF WESTLAKE, TEXAS
MARCH 2017

PRELIMINARY
THIS DOCUMENT IS INTENDED FOR INFORMATIONAL
PURPOSES ONLY AND NOT FOR INTERIM REVIEW, BIDDING,
OR CONSTRUCTION PURPOSES.

LAURA WHEAT

ALESA BELVEDERE
MICHAEL BARRETT
WAYNE STOLTENBERG
CAROL LANGDON
RICK RENNHACK

REVIEWED
TOWN OF WESTLAKE
Released for Construction
Date: _____
Public Works Director/City Engineer



LOCATION MAP
SCALE: 1" = 1000'

SHEET INDEX

SHT NO.	DESCRIPTION
C-0.1	COVER SHEET
C-0.2	GENERAL NOTES
C-1.0	GRADING PLAN
C-2.0	CULVERT PLAN & PROFILE
C-3.0	EROSION CONTROL PLAN
C-4.0	WALL & RAIL DETAILS
SD-1	TXDOT DETAIL PW
SD-2	TXDOT DETAIL MC-10-7 (1 OF 2)
SD-3	TXDOT DETAIL MC-10-7 (2 OF 2)

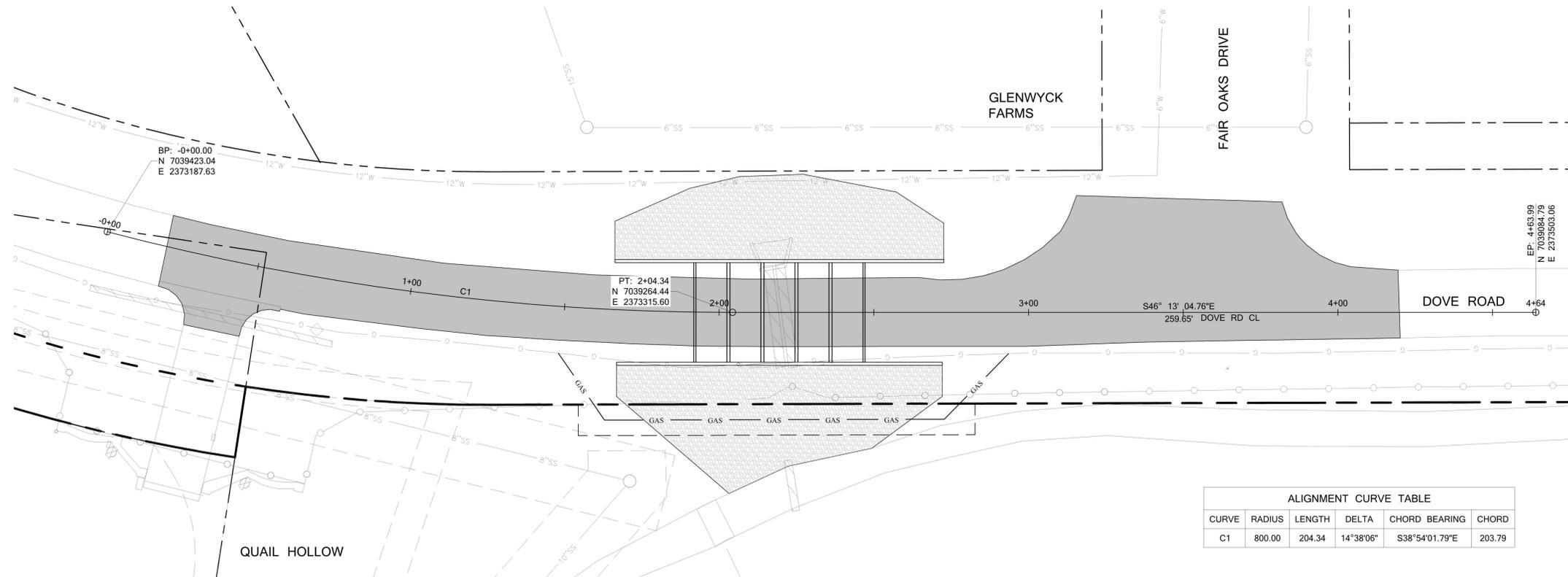
NOTE: CONSTRUCTION OF ALL GRADING, STORM DRAIN, EROSION CONTROL, AND SUBGRADE IMPROVEMENTS WILL BE THE RESPONSIBILITY OF THE QUAIL HOLLOW DEVELOPMENT. TRAFFIC CONTROL AND ALL OTHER IMPROVEMENTS WILL BE THE RESPONSIBILITY OF THE TOWN OF WESTLAKE, TEXAS.

THIS DOCUMENT IS FOR INTERIM REVIEW
AND IS NOT INTENDED FOR CONSTRUCTION,
BIDDING OR PERMIT PURPOSES.
BY: Clayton T. Redinger
Reg. No.: 97497
Date: 03/28/2017

SURVEYOR:
JPH LAND SURVEYING, INC.
807 BLUEBONNET DRIVE, SUITE C
KELLER, TEXAS 76248
CONTACT: JEWEL CHADD, R.P.L.S.
PHONE: (817) 431-4971

DEOTTE, INC.
CIVIL ENGINEERING
FIRM REGISTRATION # (TEXAS): F-003116

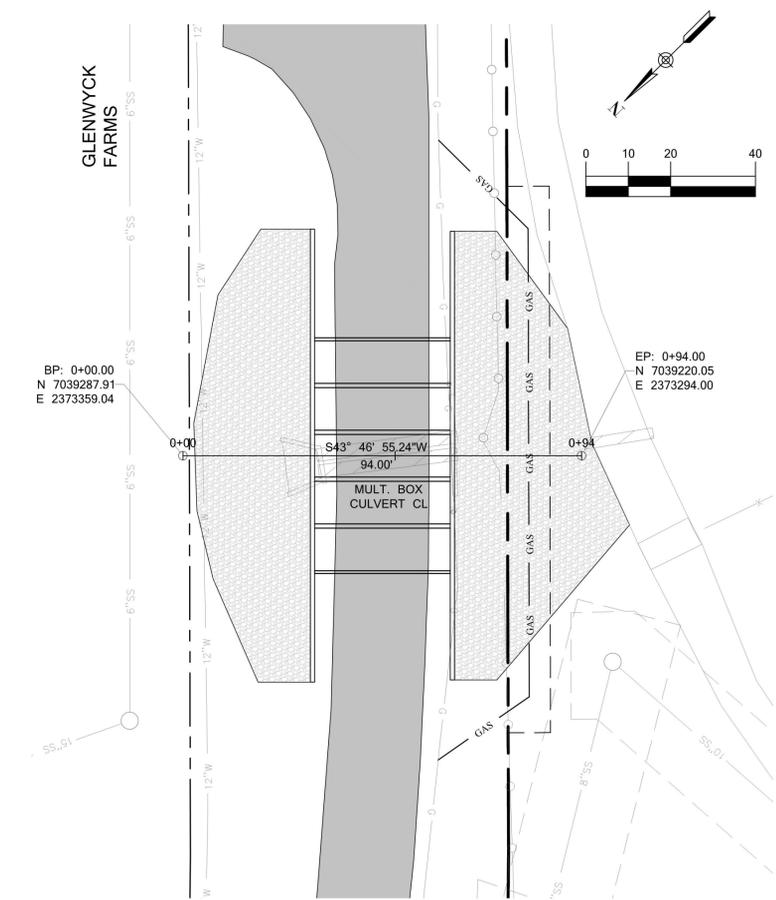
420 Johnson Road, Suite 303
Keller, Texas 76248
Phone (817) 337-8899
Fax (817) 337-5133



VICINITY MAP
N.T.S.

ALIGNMENT CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD
C1	800.00	204.34	14°38'06"	S38°54'01.79"E	203.79

PRELIMINARY
THIS DOCUMENT IS INTENDED FOR INFORMATIONAL PURPOSES ONLY AND NOT FOR INTERIM REVIEW, BIDDING, OR CONSTRUCTION PURPOSES.



PAVING NOTES

- GENERAL CONSTRUCTION NOTES: REFER TO SHEET C-0.2 - GENERAL NOTES FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
- PROTECTION OF EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL TAKE CARE NOT TO DISTURB EXISTING UTILITIES, BUILDING FOUNDATION OR OTHER SITE STRUCTURES DURING PAVEMENT OPERATIONS.
- SUBGRADE PREPARATION: PREPARATION OF SUBGRADE UNDER PAVED AREAS SHALL BE PERFORMED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' SPECIFICATIONS OR THE GEOTECHNICAL REPORT. THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY. PREPARATION OF THE SUBGRADE FOR PAVING WITHIN RIGHT-OF-WAY, ACCESS EASEMENTS AND/OR FIRE LANES SHALL NOT BE INITIATED UNTIL ALL TESTING OF UNDERGROUND UTILITIES HAS BEEN COMPLETED AND VERIFIED TO MEET THE GOVERNING AUTHORITIES' SPECIFICATIONS AND AUTHORIZATION TO PROCEED HAS BEEN RECEIVED FROM THE INSPECTOR. PAVEMENT SUBGRADE SHALL NOT BE ALLOWED TO RETAIN WATER. WET MATERIAL SHALL BE REMOVED TO DRY, SOUND MATERIAL AND APPROPRIATE DENSITY ACHIEVED PRIOR TO PAVING OPERATIONS.
- PROOF-ROLL SUBGRADE: THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND RE-COMPACTED IN CONFORMANCE WITH THE GEOTECHNICAL REPORT.
- HYDRATED LIME: HYDRATED LIME (IF REQUIRED) SHALL MEET THE REQUIREMENTS OF TxDOT ITEM 260, LIME TREATMENT USED AS SUBGRADE. LIME SHALL BE APPLIED AT THE RATE OF 6% BY WEIGHT, THOROUGHLY MIXED AND BLENDED WITH THE TOP 6" OF SUBGRADE AND UNIFORMLY COMPACTED TO A MINIMUM OF 100 PERCENT OF STANDARD PROCTOR (ASTM D698) DETERMINED BY THAT TEST. LIME STABILIZATION SHALL EXTEND ONE (1) FOOT OUTSIDE THE LIMITS OF THE PAVED AREA. IT SHOULD BE PROTECTED AND MAINTAINED IN A MOIST CONDITION UNTIL THE PAVEMENT IS PLACED.
- SAND CUSHION PROHIBITED: THE USE OF SAND CUSHION UNDER PAVEMENT, INCLUDING SIDEWALKS, IS STRICTLY PROHIBITED.
- REINFORCING BARS: ALL REINFORCING BARS SHALL BE GRADE 40 KSI DEFORMED REINFORCING STEEL. SIZE AND SPACING SHALL BE IN ACCORDANCE WITH THE DETAILS.
- BAR CHAIRS: ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS OR OTHER APPROVED SUPPORT.
- CONNECTION TO EXISTING PAVEMENT: WHERE PROPOSED PAVEMENT IS TO BE CONSTRUCTED BY THE CONTRACTOR, AT LEAST 15" OF REINFORCING STEEL SHALL BE EXPOSED FROM THE EXISTING PAVEMENT, OR THE CONTRACTOR SHALL PROVIDE HORIZONTAL DOWEL BARS PER THE DETAILS.
- TEMPERATURE CONDITIONS FOR CONCRETE PLACEMENT: CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN TEMPERATURE IS ABOVE 35 DEGREES FAHRENHEIT AND RISING. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT.
- CONCRETE PAVEMENT CURING: MEMBRANE CURING TYPE 2, WHITE PIGMENTED, SHALL BE USED FOR CURING ALL CONCRETE SURFACES IMMEDIATELY AFTER FINISHING OF SURFACES AND SHALL BE IN ACCORDANCE WITH THE TEXAS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS ITEM #526.
- TESTING: SAMPLES FOR STRENGTH TESTS OF THE CONCRETE PAVEMENT WILL BE TAKEN BY THE GEOTECHNICAL ENGINEER TO VERIFY DESIGN STRENGTH. PAVEMENT AREAS FOUND TO BE DEFICIENT IN STRENGTH SHALL BE REMOVED AND REPLACED SOLELY AT THE EXPENSE OF THE CONTRACTOR. THE GEOTECHNICAL ENGINEER SHALL ALSO RANDOMLY CORE THE PAVEMENT TO VERIFY THE THICKNESS OF CONCRETE. ANY AREA FOUND TO BE DEFICIENT IN THICKNESS SHALL BE REMOVED AND REPLACED SOLELY AT THE EXPENSE OF THE CONTRACTOR.
- SIDEWALKS AND RAMPS: CONSTRUCTION OF SIDEWALKS, WHEELCHAIR RAMPS AND ACCESSIBLE ROUTES SHALL BE IN ACCORDANCE WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND THE AMERICANS DISABILITY ACT (ADA).
- PAVEMENT MARKINGS: PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS "UNIFORM TRAFFIC MANUAL FOR PAVEMENT MARKINGS". FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' REQUIREMENTS. ALL HANDICAP SYMBOLS, SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH TAS AND ADA STANDARDS.
- PROTECTION OF EXISTING UTILITIES: AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT", TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-245-4545) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM. THE LOCATION AND DIMENSIONS SHOWN ON THE PLANS RELATIVE TO EXISTING UTILITIES ARE BASED ON THE BEST RECORDS AND/OR FIELD INFORMATION AVAILABLE AND ARE NOT GUARANTEED BY THE DEVELOPER OR ENGINEER TO BE ACCURATE AS TO LOCATION AND DEPTH. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF HIS ACTIVITIES IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING UTILITIES, SERVICES AND STRUCTURES ENCOUNTERED, WHETHER OR NOT THEY ARE INDICATED ON THE PLANS. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. TO AVOID UNNECESSARY INTERFERENCES OR DELAYS, THE CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS, REPLACEMENTS AND CONSTRUCTION WITH THE APPROPRIATE GOVERNING AUTHORITIES, THEN REQUEST WRITTEN AUTHORIZATION FROM THE ENGINEER. THE DEVELOPER WILL NOT BE LIABLE FOR DAMAGES DUE TO DELAY AS A RESULT OF THE ABOVE.

CONDUIT AND SLEEVING NOTES

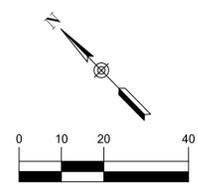
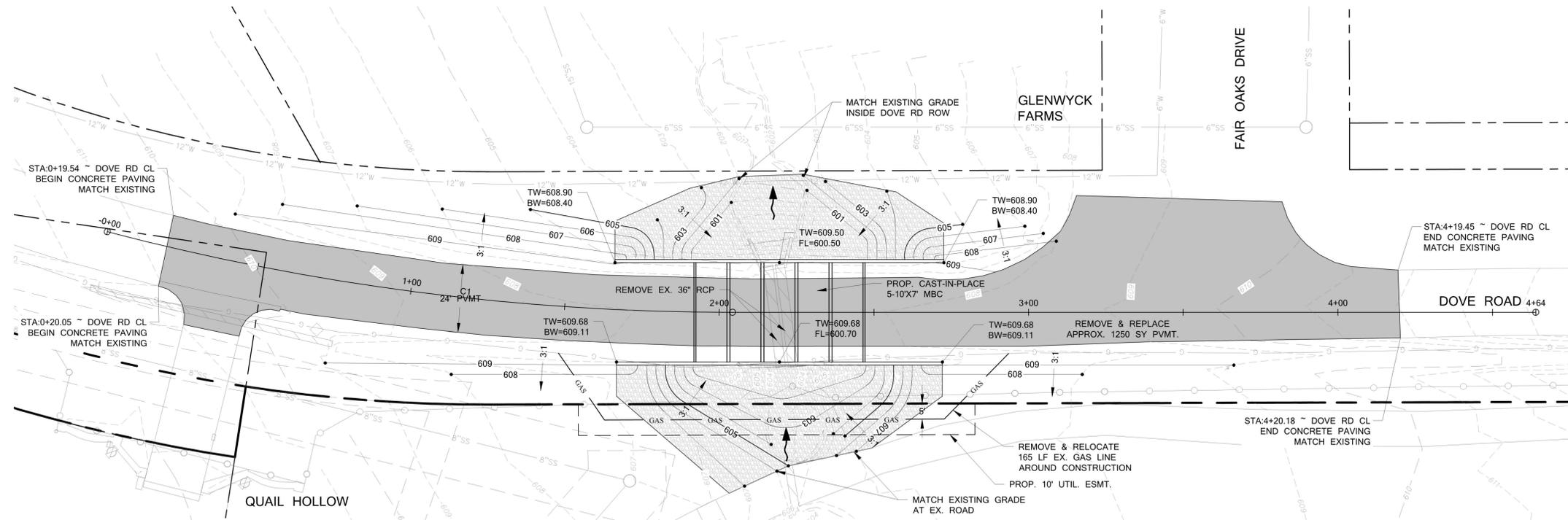
- PLACEMENT OF CONDUIT AND SLEEVES: ALL UNDERGROUND CONDUIT AND SLEEVES ARE TO BE PLACED BEFORE SITE PAVING CONSTRUCTION COMMENCES AND SHALL BE BURIED A MINIMUM OF 24" BELOW THE BOTTOM OF PAVEMENT, EXCEPT ELECTRICAL CONDUIT WHICH REQUIRE A MINIMUM COVER OF 36". ALL CONDUIT AND SLEEVES SHALL EXTEND TWO (2) FEET BEYOND THE BACK OF CURB OR EDGE OF SIDEWALK. TURN CONDUIT UPWARD AND CAP EACH CONDUIT 6" ABOVE FINISH GRADE. THE CONTRACTOR SHALL FURNISH DETAILED AS-BUILT LOCATION INFORMATION FOR ALL CONDUIT AND SLEEVES TO THE DEVELOPER.
- TELEPHONE CONDUIT: FURNISH AND INSTALL TWO (2) 4" DIAMETER SCHEDULE 40 PVC TELEPHONE CONDUIT WITH PULL WIRES FROM THE SITE PROPERTY LINE TO 5' OUTSIDE THE BUILDING WALL AT THE TELEPHONE ROOM IN THE BUILDING. CONDUIT SHALL BE CAPPED AT BOTH ENDS. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL TELEPHONE COMPANY TO VERIFY THE EXACT LOCATION OF CONDUIT TO BE INSTALLED FOR THEIR USE. MARK LOCATIONS OF CONDUIT WITH #3 X 36" REBAR INSTALLED 2' INTO THE GROUND AT EACH END LOCATION.
- ELECTRIC AND GAS CONDUIT: THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRIC AND GAS PROVIDER TO VERIFY THE EXACT SIZE, TYPE, NUMBER AND LOCATION OF CONDUIT AND/OR SLEEVING REQUIRED TO BE PROVIDED BY THE CONTRACTOR FOR GAS AND ELECTRIC FACILITIES TO SERVE THIS SITE. MARK LOCATIONS OF CONDUIT WITH #3 X 36" REBAR INSTALLED 2' INTO THE GROUND AT EACH END LOCATION.
- SITE LIGHTING CONDUIT: REFERENCE MEP PLANS FOR SITE LIGHTING AND ALL RELATED CONDUIT, WIRING, PULL BOXES, POLE BASES AND ASSOCIATED ELECTRICAL WORK TO BE COORDINATED AND/OR PROVIDED FOR BY THE CONTRACTOR PRIOR TO PAVING OPERATIONS.
- IRRIGATION CONDUIT: ALL IRRIGATION CONDUIT AND SLEEVES SHALL BE SCHEDULE 40 PVC, INSTALLED WITH A MINIMUM OF 24" COVER. REFERENCE THE PAVING PLAN AND/OR LANDSCAPE PLANS FOR NUMBER OF CONDUIT, SIZE AND LOCATIONS OF PROPOSED IRRIGATION CONDUITS AND SLEEVES.
- PULL WIRES: ALL UNDERGROUND CONDUIT AND SLEEVES SHALL BE INSTALLED WITH PULL WIRES.
- CONFLICTS: IN THE EVENT OF A CONFLICT BETWEEN CONDUIT AND STORM DRAIN AND/OR UTILITY PIPING, THE CONTRACTOR SHALL ADJUST CONDUIT DOWNWARD FOR CLEARANCE.

BENCHMARKS:

BM1
THE SITE BENCHMARK IS A MAG NAIL SET IN CONCRETE NEAR THE FACE OF THE CURB ON THE SOUTH END OF MEDIAN APPROXIMATELY 1366 FEET SOUTH OF THE INTERSECTION OF DAVIS BOULEVARD AND DOVE ROAD. THE BENCHMARK HAS THE FOLLOWING VALUES X = 2,371,356.00 Y = 7,039,974.15 (TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE) | Z = 675.07 (NAVD83).

BM2
THE SITE BENCHMARK IS A MAG NAIL SET APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF DOVE ROAD, 540 MAG NAIL BEING APPROXIMATELY 225 NORTH OF THE INTERSECTION OF HIDDEN SPRING COURT AND DOVE ROAD. THE BENCHMARK HAS THE FOLLOWING VALUES X = 2,373,155.14 Y = 7,039,995.61 (TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE) | Z = 615.54 (NAVD83).

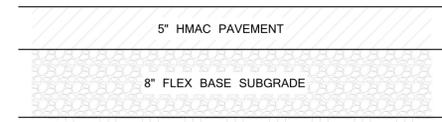
DOVE RD CULVERT			
DIMENSIONAL CONTROL			
TOWN OF WESTLAKE			
DEOTTE, INC.			
<small>CIVIL ENGINEERING FIRM REGISTRATION # E-003116 (TX) 420 Johnson Road, Suite 303 Keller, Texas 76248 Phone 817.337.5133 Fax 817.337.8899 WWW.DEOTTE.COM</small>			
DRAWN BY: DAC	SCALE: 1" = 20'	DATE: 3/28/2017	PROJECT NO.: 201511100
			SHEET: C-03



VICINITY MAP
N.T.S.

PRELIMINARY
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TYPICAL PAVEMENT SECTION
N.T.S.

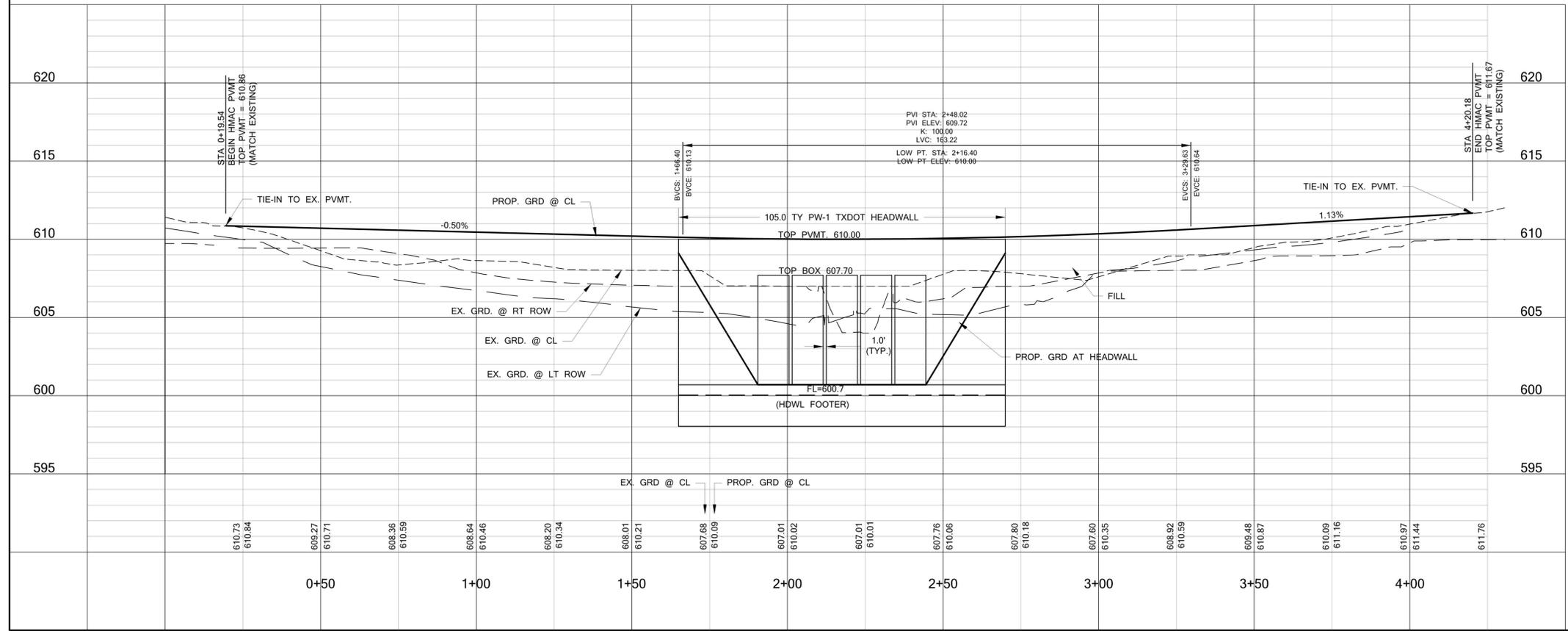


NOTE:
HMAc BASE COURSE SHALL BE TY C AND HMAc SURFACE COURSE SHALL BE TY D, PER TOWN OF WESTLAKE ENGINEERING STANDARDS.
HMAc PAVEMENT SHALL BE CONSTRUCTED BY THE TOWN OF WESTLAKE. ALL OTHER IMPROVEMENTS SHALL BE CONSTRUCTED THIS PHASE.

STORM DRAIN NOTES

- GENERAL CONSTRUCTION NOTES: REFER TO SHEET C-0.4 "GENERAL CONSTRUCTION NOTES, LEGEND AND ABBREVIATIONS" FOR THE GENERAL CONSTRUCTION NOTES FOR THE PROJECT.
- PROTECTION OF UTILITIES: THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, FENCES, TREES, SHRUBS, GAS MAINS, TELEPHONE CABLES, ELECTRIC CABLES, DRAINAGE PIPES, UTILITY SERVICES, AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND.
- PUBLIC STORM DRAIN PIPE: UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL PIPE FOR PUBLIC STORM DRAIN IMPROVEMENTS SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III.
- PRIVATE STORM DRAIN PIPE: UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL PIPE FOR PRIVATE STORM DRAIN IMPROVEMENTS NOT UNDER PAVEMENT SHALL BE AS FOLLOWS:
GREATER THAN 36": REINFORCED CONCRETE PIPE (RCP), CLASS III
15" THROUGH 36": REINFORCED CONCRETE PIPE (RCP), CLASS III OR HIGH DENSITY POLYETHYLENE PIPE (HDPE), N-12
4" THROUGH 12": POLYVINYL CHLORIDE PIPE (PVC), SDR - 35, OR HIGH DENSITY POLYETHYLENE PIPE (HDPE), N-12
- RCP JOINT SEALANT: REINFORCED CONCRETE PIPE JOINTS SHALL BE SEALED WITH RAMNECK OR APPROVED EQUAL.
- GROUTING: ALL PIPE ENTERING PUBLIC STORM DRAIN STRUCTURES SHALL BE GROUTED TO ASSURE WATERTIGHT CONNECTIONS.
- CONCRETE COLLARS: CONCRETE COLLARS SHALL BE INSTALLED AT ALL CHANGES IN CONDUIT SIZE AND AT ALL JOINTS THAT ARE PULLED IN EXCESS OF THAT RECOMMENDED BY THE CONDUIT MANUFACTURER.
- ROOF DRAINS: THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ROOF DRAIN LATERALS WITH BUILDING PLANS FOR DOWNSPOUT CONNECTIONS. END AND CAP ROOF DRAIN LATERALS FIVE (5) FEET FROM BUILDING AT 12" BELOW FINISH GRADE FOR CONNECTION OF DOWNSPOUTS.
- ADJUSTMENT OF STRUCTURES: ALL STORM DRAIN STRUCTURES INCLUDING MANHOLES, INLETS AND CLEANOUTS MUST BE ADJUSTED TO PROPER LINE AND GRADE BY THE CONTRACTOR PRIOR TO, AND AFTER, PLACEMENT OF PAVING AND GRASSING.
- PROTECTION OF EXISTING UTILITIES: AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT", TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-245-4545) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM. THE LOCATION AND DIMENSIONS SHOWN ON THE PLANS RELATIVE TO EXISTING UTILITIES ARE BASED ON THE BEST RECORDS AND/OR FIELD INFORMATION AVAILABLE AND ARE NOT GUARANTEED BY THE DEVELOPER OR ENGINEER TO BE ACCURATE AS TO LOCATION AND DEPTH. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF HIS ACTIVITIES IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING UTILITIES, SERVICES AND STRUCTURES ENCOUNTERED, WHETHER OR NOT THEY ARE INDICATED ON THE PLANS. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. TO AVOID UNNECESSARY INTERFERENCES OR DELAYS, THE CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS, REPLACEMENTS AND CONSTRUCTION WITH THE APPROPRIATE GOVERNING AUTHORITIES, THEN REQUEST WRITTEN AUTHORIZATION FROM THE ENGINEER. THE DEVELOPER WILL NOT BE LIABLE FOR DAMAGES DUE TO DELAY AS A RESULT OF THE ABOVE.

UPSTREAM HEADWALL

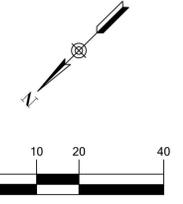
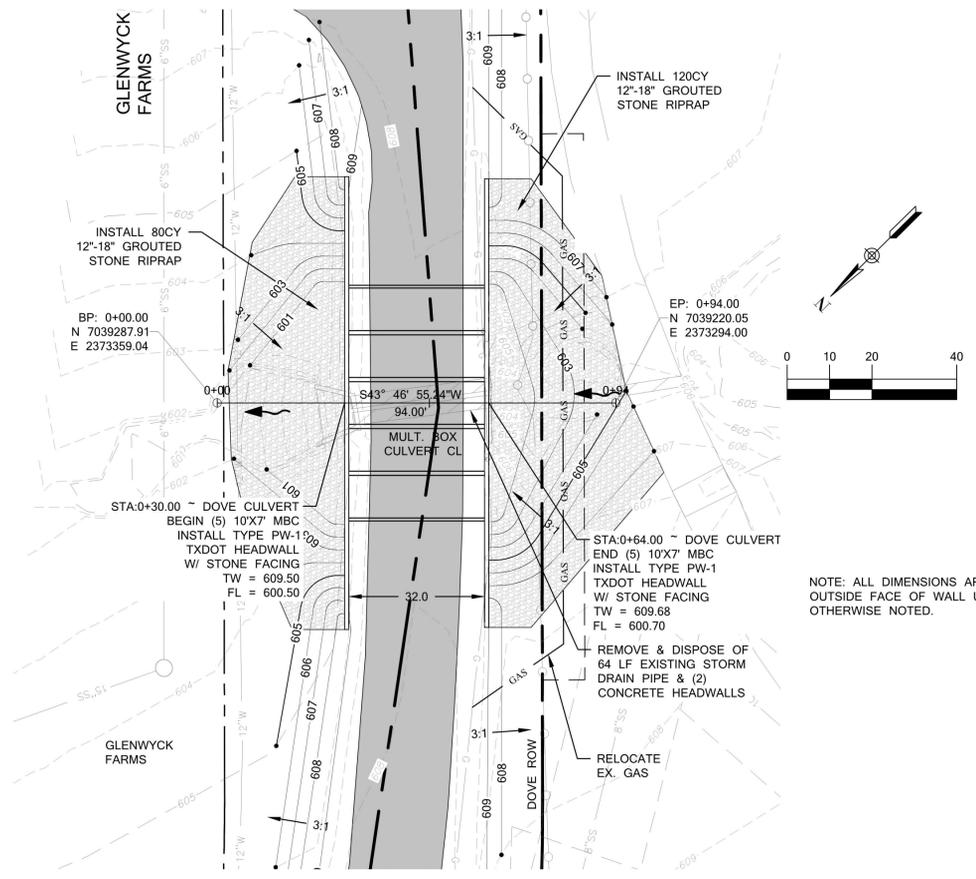


BENCHMARKS:
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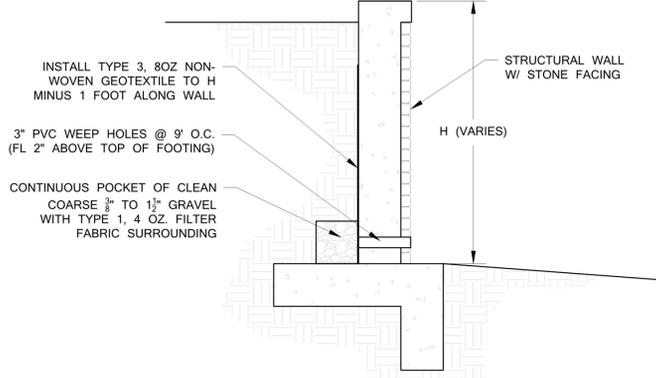
DOVE RD CULVERT GRADING PLAN
TOWN OF WESTLAKE

DEOTTE, INC.
CIVIL ENGINEERING FIRM REGISTRATION # E-003116 (TX)
420 Johnson Road, Suite 303, Keller, Texas 76248
Phone: 817-337-5133 Fax: 817-337-5133
WWW.DEOTTEINC.COM

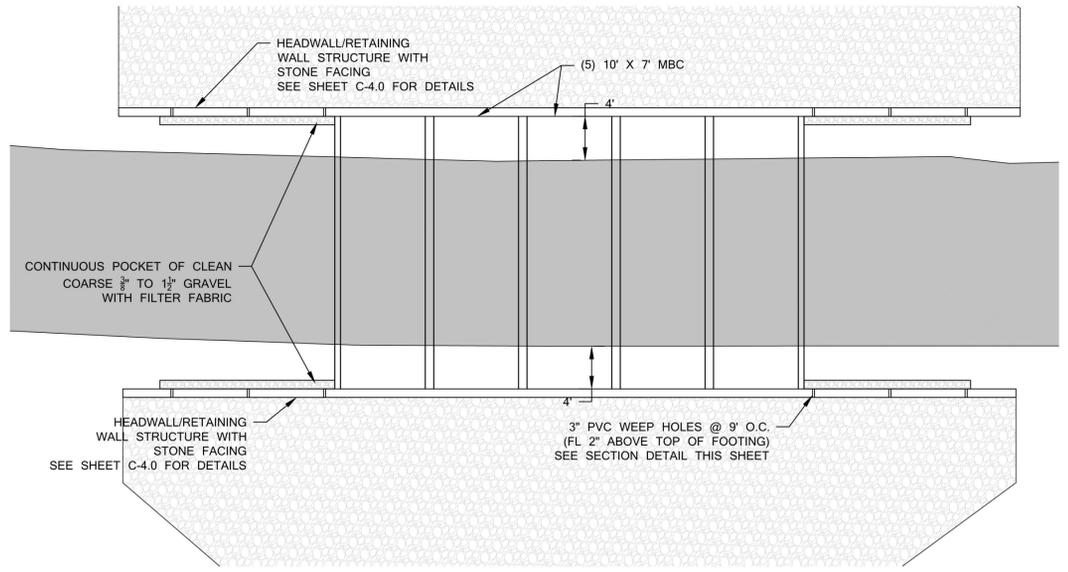
DRAWN BY: DAC SCALE: 1" = 20' DATE: 3/28/2017 PROJECT NO.: 201511100 SHEET: C-1.0



NOTE: ALL DIMENSIONS ARE TO OUTSIDE FACE OF WALL UNLESS OTHERWISE NOTED.



WEEP HOLE DETAIL
NOT TO SCALE



WEEP HOLE SYSTEM
NOT TO SCALE

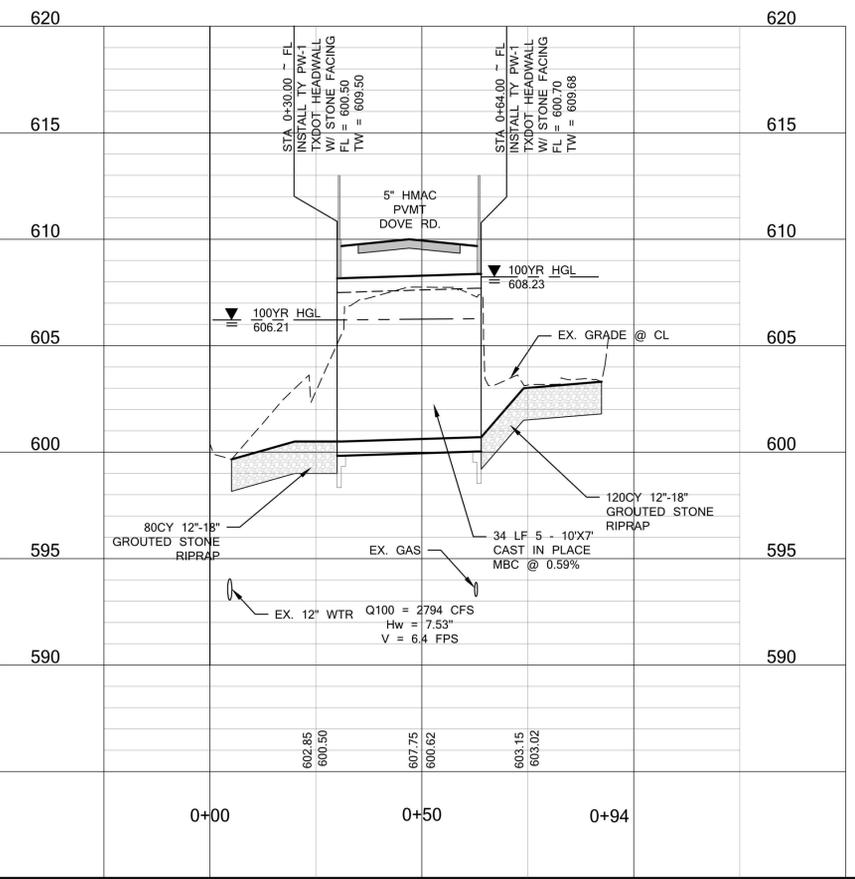
GRAVEL POCKET SIZING		
WALL HEIGHT	POCKET HEIGHT (h)	Pocket Width (w)
0-4'	12"	12"
>4'-8'	24"	12"
>8'	36"	12"

Non-Woven Geotextile Requirements Table				
Physical Properties	Test Method	Type 1	Type 2	Type 3
Fabric Weight, on an ambient temperature air-dried tension free sample	"TEX-6161, construction Fabrics" ASTM D 5261	4 oz/SY Minimum	6 oz/SY Minimum	8 oz/SY Minimum
Permittivity 1/second	ASTM D 4491	1.0, Min.	0.5, Min.	1.35, Min.
Tensile Strength, N	ASTM D 4632	445 N (100lbs) Minimum	890 N (200lbs) Minimum	912 N (205lbs) Minimum
Apparent Opening Size	ASTM D 4751	70-100	80-120	80-120
Elongation At Yield %	ASTM D 4632	20-100	20-100	20-100
Trapezoidal Tear, N	ASTM D 4533	156 N (35lbs) Minimum	334 N (75lbs) Minimum	378 N (85lbs) Minimum



VICINITY MAP
N.T.S.

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BENCHMARKS:
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 THE SITE BENCHMARK IS A MAG NAIL SET IN CONCRETE NEAR THE FACE OF THE CURB ON THE SOUTH END OF MEDIAN APPROXIMATELY 1366 FEET SOUTH OF THE INTERSECTION OF DAVIS BOULEVARD AND DOVE ROAD. THE BENCHMARK HAS THE FOLLOWING VALUES X = 2,371,356.007 Y = 7,039,974.15 (TEXAS COORDINATE SYSTEM OF 1983, CENTRAL ZONE) | Z = 675.07 (NAVD88).
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**DOVE RD CULVERT
CULVERT PLAN & PROFILE
TOWN OF WESTLAKE**

DEOTTE, INC.
CIVIL ENGINEERING FIRM REGISTRATION # E-003116 (TX) WWW.DEOTTE.COM

420 Johnson Road, Suite 301
Keller, Texas 76248
Phone: 817-337-5133 Fax: 817-337-8899

DRAWN BY: DAC SCALE: NTS DATE: 3/28/2017 PROJECT NO.: 201511100 SHEET: C-2.0



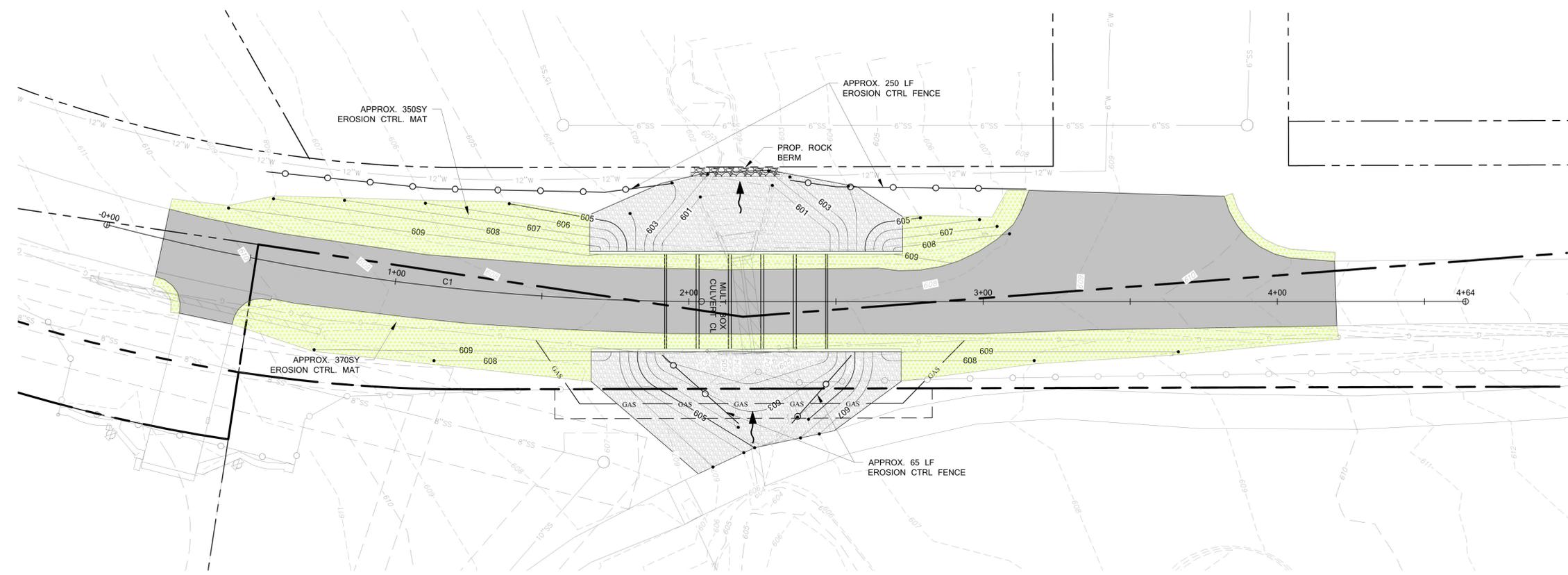
VICINITY MAP
N.T.S.

LEGEND

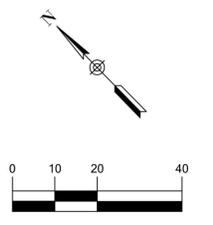
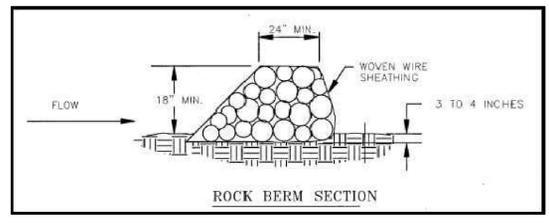
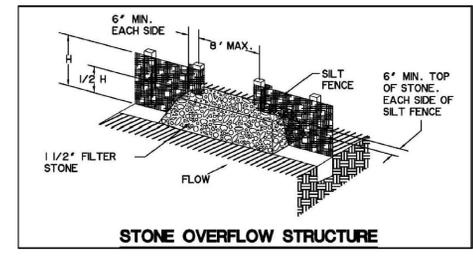
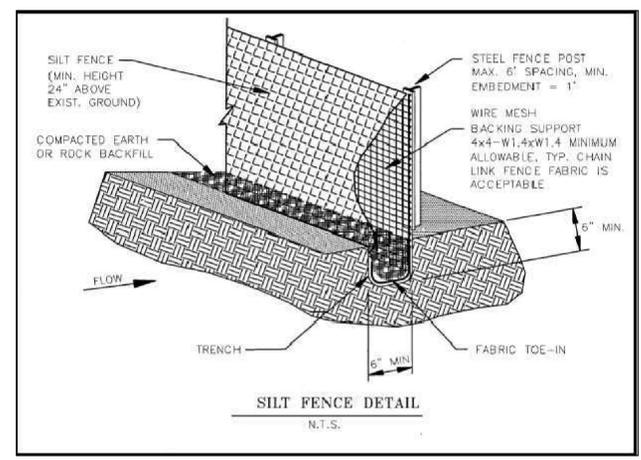
- EROSION CONTROL FENCE
- EROSION CONTROL MAT
- ROCK BERM

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EROSION CONTROL PLAN
1" = 20'



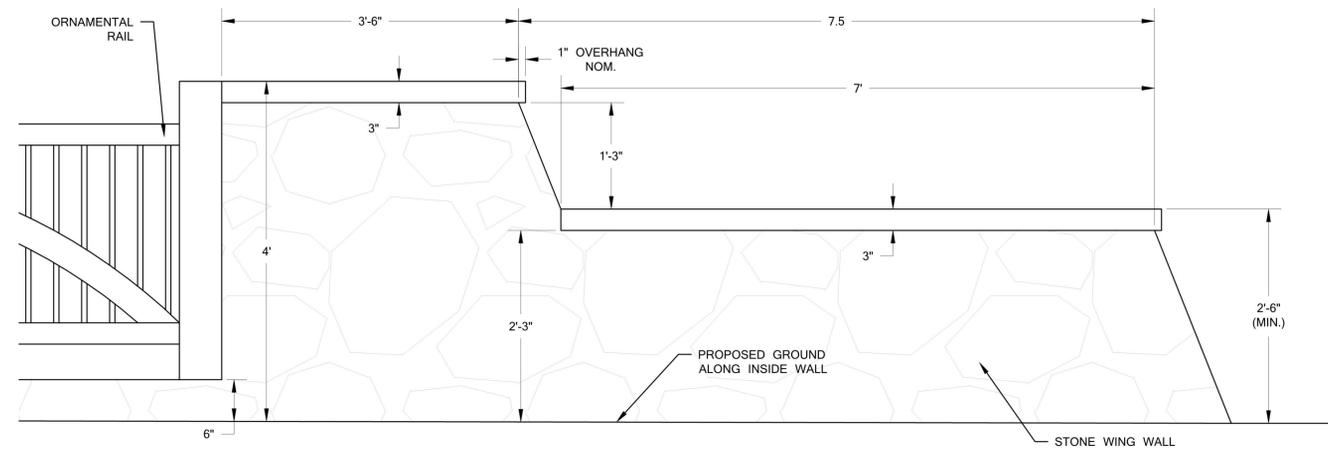
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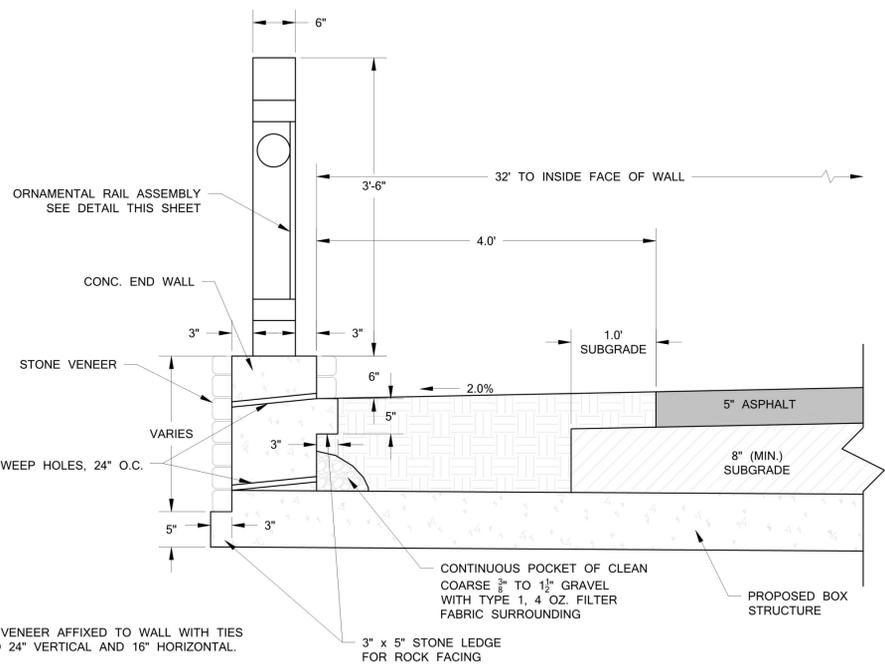
DOVE RD CULVERT				
EROSION CONTROL PLAN				
TOWN OF WESTLAKE				
DEOTTE, INC.				
CIVIL ENGINEERING	FIRM REGISTRATION: #E-00316 (TX)	DATE: 3/28/2017	PROJECT NO.: 20151100	SHEET: C-3.0
DRAWN BY: DAC	SCALE: NTS	DATE: 3/28/2017	PROJECT NO.: 20151100	SHEET: C-3.0

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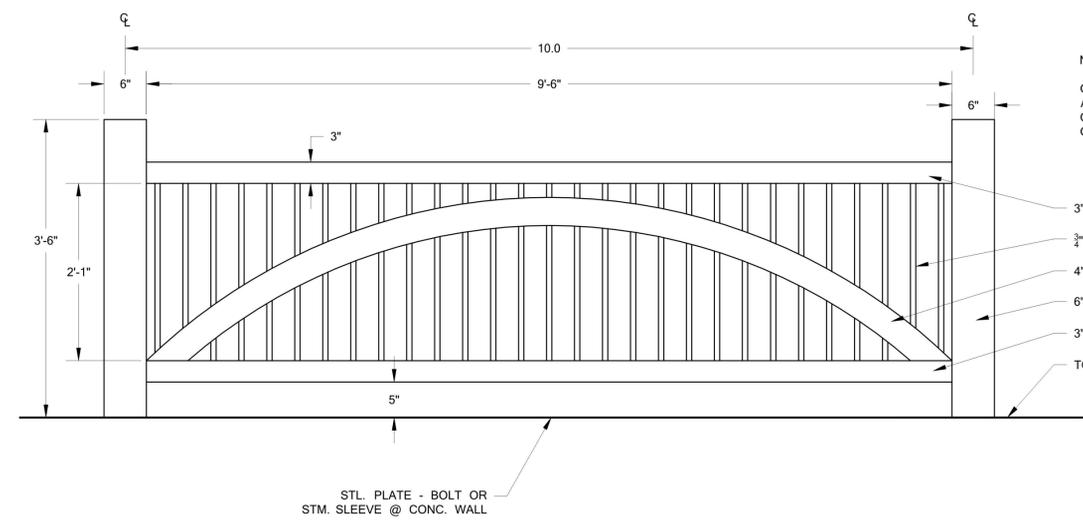
NOTE:
 CONTRACTOR TO EXTEND CONCRETE WINGWALL TO HEIGHTS AND LENGTHS SHOWN. ADD BARS AS NECESSARY TO MAINTAIN REQUIRED SPACING AND LENGTHEN BARS J1 AND V ACCORDING TO TXDOT STANDARD (PW).

STONE WING WALL ELEVATION (TYP.)
 NOT TO SCALE



STONE VENEER AFFIXED TO WALL WITH TIES SPACED 24" VERTICAL AND 16" HORIZONTAL.

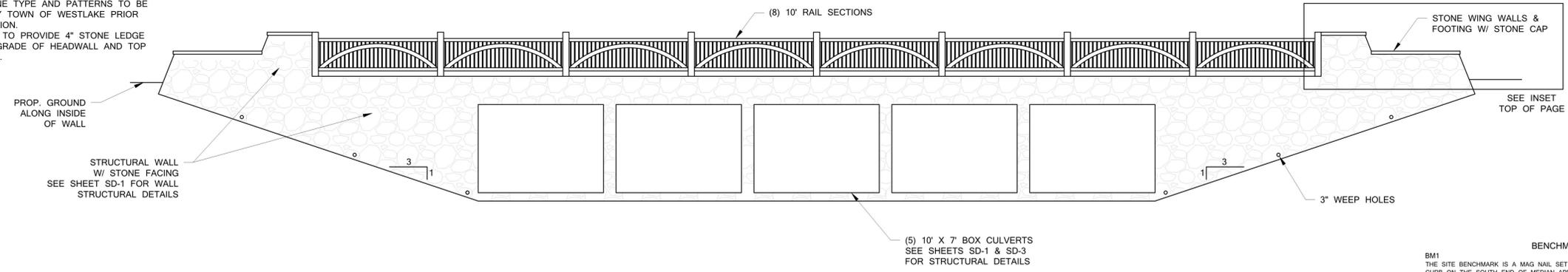
ORNAMENTAL RAILING PANEL SECTION (TYP.)
 NOT TO SCALE



NOTE:
 GRIND ALL ORNAMENTAL RAIL WELDS SMOOTH AND PAINT ALL SURFACES OF ALL MEMBERS. COLOR & HARDWARE TO BE CHOSEN BY TOWN OF WESTLAKE.

ORNAMENTAL RAILING PANEL W/ END POSTS (TYP.)
 NOT TO SCALE

- NOTES:
1. TYPICAL STONE TYPE AND PATTERNS TO BE APPROVED BY TOWN OF WESTLAKE PRIOR TO INSTALLATION.
 2. CONTRACTOR TO PROVIDE 4" STONE LEDGE AT BOTTOM GRADE OF HEADWALL AND TOP OF CULVERTS.



TYPICAL BOX CULVERT CROSSING ELEVATION
 NOT TO SCALE

BENCHMARKS:
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DOVE RD CULVERT WALL & RAIL DETAILS			
TOWN OF WESTLAKE			
DEOTTE, INC.			
CIVIL ENGINEERING	FIRM REGISTRATION: # E-003116 (TX)	420 Johnson Road, Suite 303 Keller, Texas 76248 Phone 817.337.8899 WWW.DEOTTE.COM	
DRAWN BY: DAC	SCALE: NTS	DATE: 3/22/2017	PROJECT NO.: 20151100
			SHEET: C-4.0

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DATE: FILE:

TABLE OF DIMENSIONS & REINFORCING STEEL
(Wings for One Structure End)

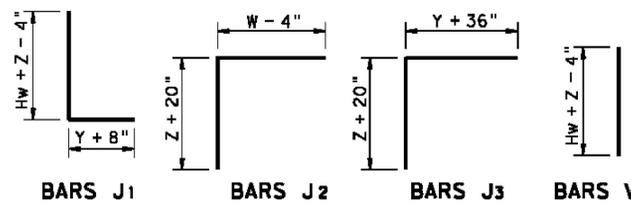
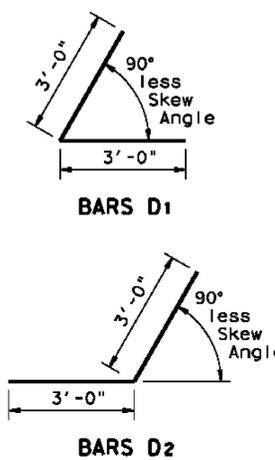
Maximum Wingwall Height Hw	Dimensions				Variable Reinforcing				Estimated Quantities per ft of wing (2-Wings)		Estimated Quantities per ft of Toewall (1-Toewall)	
	W	X	Y	Z	Bars J1		Bars J2		Reinf (Lb/Ft)	Conc (CY/Ft)	Reinf (Lb/Ft)	Conc (CY/Ft)
	Size	Spa	Size	Spa	Size	Spa						
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING
(2-Wings)

Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



WING DIMENSION CALCULATIONS:

Formulas: (All values are in Feet)

Hw = H + T + C
 Lw = (Hw) (SL) ÷ Cosine θ for Ty PW-1
 = (Hw - 1') (SL) ÷ Cosine θ for Ty PW-2 and Hw ≥ 4'
 = (Hw - 0.5') (SL) ÷ Cosine θ for Ty PW-2 and Hw < 4'

For Cast-in-place culverts:
 Ltw = [(N) (S) + (N + 1) (U)] ÷ Cosine θ

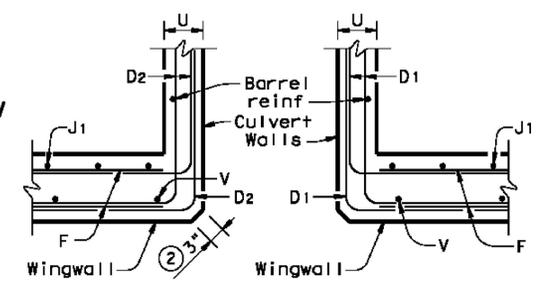
For Precast culverts:
 Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ Cosine θ

Total Wingwall Area (Two Wings ~ SF)
 = (2) (Hw) (Lw) for Ty PW-1
 = (2) (Hw) (Lw) - 6 SF for Ty PW-2 and Hw ≥ 4'
 = (2) (Hw) (Lw) - 1.5 SF for Ty PW-2 and Hw < 4'

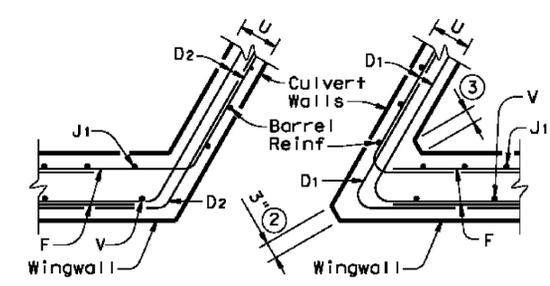
Hw = Height of Wingwall
 Lw = Length of Wingwall
 Ltw = Culvert Toewall Length
 N = Number of Culvert Spans
 SL:1 = Channel Slope ratio. (Horizontal: 1 Vertical, Usual value is 2:1)
 θ = Culvert Skew

See applicable box culvert standard for S, H, T and U values.

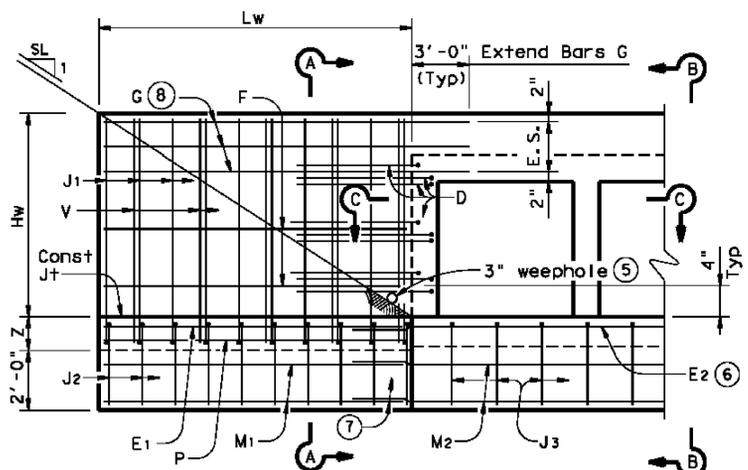
- Skew Angle = 0°
- At discharge end, chamfer may be 3/4".
- For 15° Skew ~ 1"
For 30° Skew ~ 2"
For 45° Skew ~ 3"
- Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
- Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
- Extend Bars E2 1'-6" minimum into the wingwall footing.
- Lap Bars M1 1'-6" minimum with Bars M2.
- Bars G equally spaced at 8" maximum, place as shown. Provide at least two pair Bars G per wing.
- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, curbs cannot project more than 3" above finished grade.
 - For structures with bridge rail, build curbs flush with finished grade.
 Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- 1'-0" typical. 2'-0" typical when RAC standard is referenced elsewhere in the plans.
- 3'-0" for Hw < 4'.
- 6" for Hw < 4'.



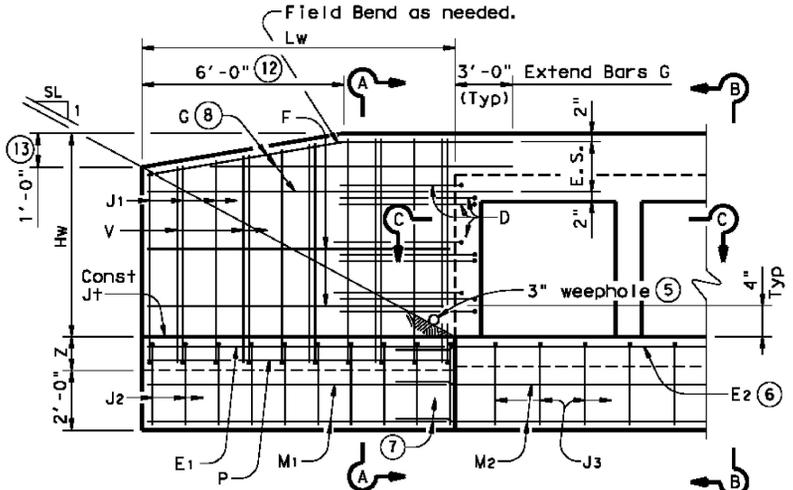
SECTION C-C



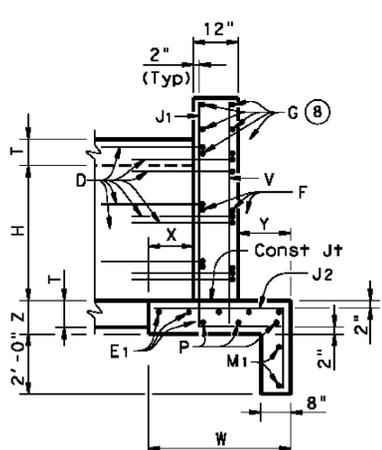
SECTION C-C



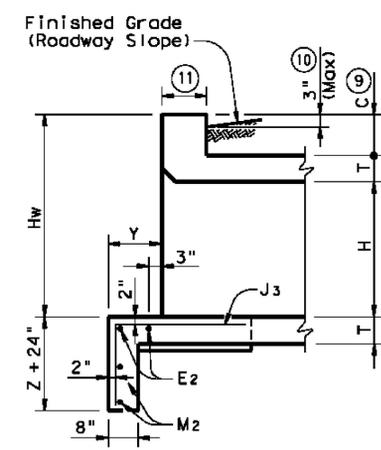
PARTIAL ELEVATION - PW-1



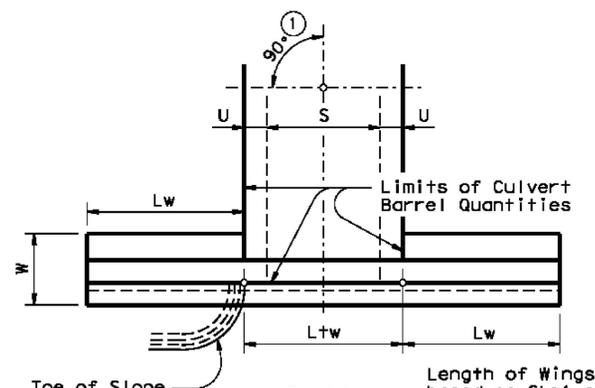
PARTIAL ELEVATION - PW-2



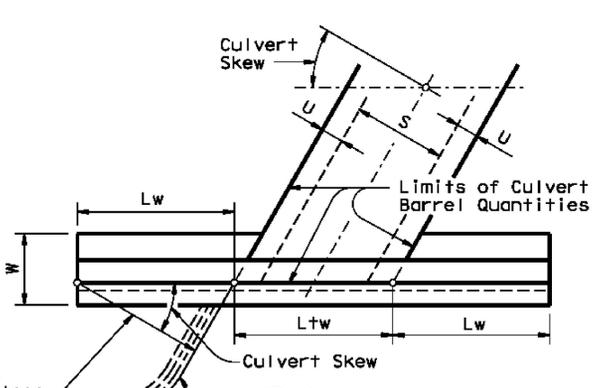
SECTION A-A
(Showing Wing Reinf)



SECTION B-B
(Showing Wing Reinf)



PLAN
DETAILS FOR NON-SKEWED BOX CULVERTS



PLAN
DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° Skew)

GENERAL NOTES:
 Designed in accordance with AASHTO LRFD Bridge Design Specifications.
 Provide Class "C" Concrete (f'c = 3,600 psi Min) and Grade 60 reinforcing steel.
 Provide 1 1/4" Min clear cover to reinforcing steel.
 Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
 See BCS sheet for wingwall type and additional dimensions and information.
 The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

DESIGNER NOTES:
 Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
 Type PW-2 can only be used for applications without a railing mounted to the wingwall.

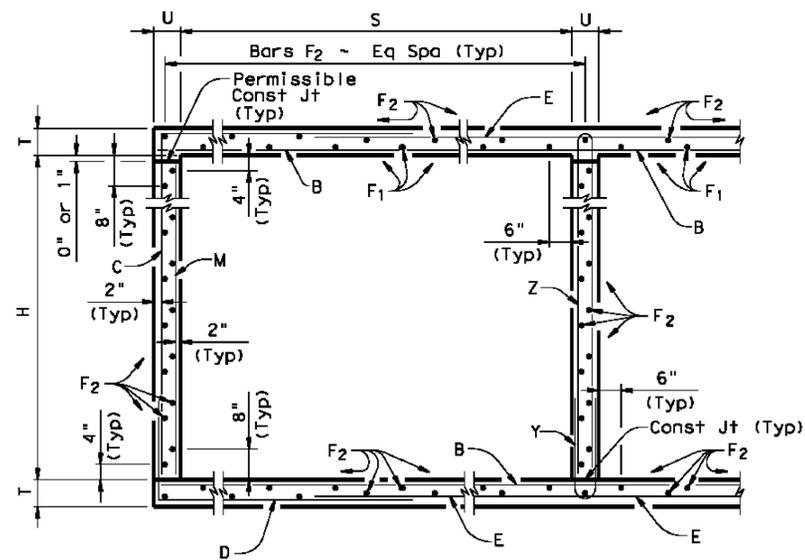
Texas Department of Transportation Bridge Division Standard

CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2

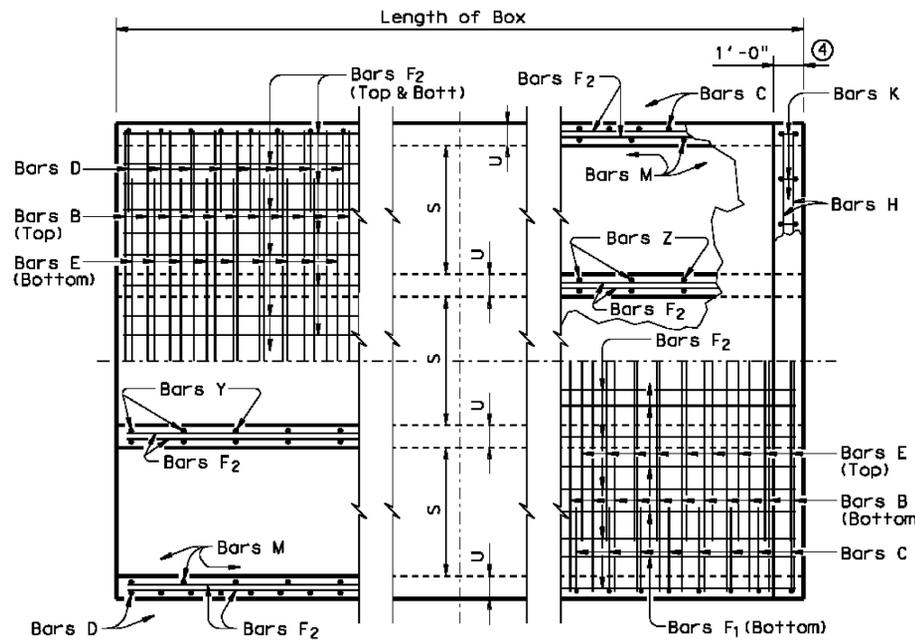
PW

FILE: pwstd01.dgn	DN: GAF	CK: CAT	DN: TxDOT	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Reinforcing Quantities.	DIST		COUNTY	SHEET NO.
01-12: PW-1 & PW-2				SD-1

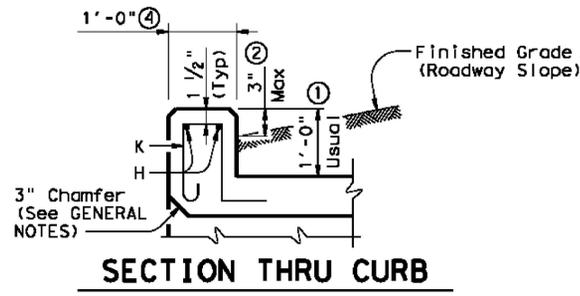
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TYPICAL SECTION

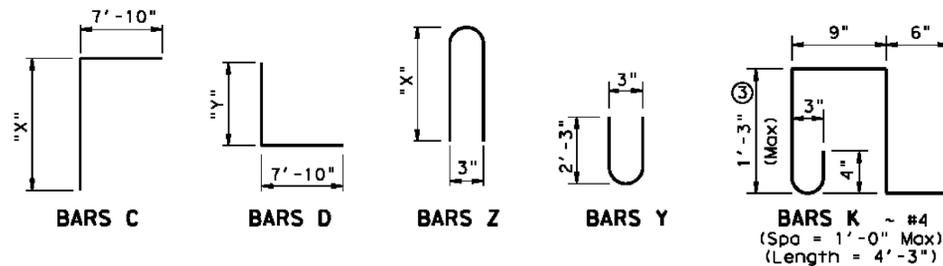


BOTTOM SLAB **PART PLANS** **TOP SLAB**



SECTION THRU CURB

H	Bar Dimensions	
	"X"	"Y"
5'-0"	5'-6"	2'-3"
6'-0"	6'-6"	2'-3"
7'-0"	7'-6"	2'-3"
8'-0"	8'-6"	2'-3"
9'-0"	9'-6"	2'-3"
10'-0"	10'-6"	2'-8"



- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
 - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications. Designed to the maximum fill height shown. All reinforcing steel shall be Grade 60. All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface. Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi. The use of permanent forms is not allowed. The bottom edge of the top slab shall be chamfered 3" at the entrance. Reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover. Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed. See standard MC-MD for skewed ends, angle sections and lengthening details.



**MULTIPLE BOX CULVERTS
 CAST-IN-PLACE
 10'-0" SPAN
 0' TO 7' FILL**

MC-10-7

FILE: mc107ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
10-12: Added WWR	DIST	COUNTY	SHEET NO.	
			SD-2	

DATE:
FILE:

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DATE: FILE:

NUMBER OF SPANS	SECTION DIMENSIONS		BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																												QUANTITIES															
			Bars B [Ⓢ]				Bars C & D				Bars E				Bars F ₁ ~#4				Bars F ₂ ~#4 at 1'-6" Max				Bars M~#4 at 1'-6" Max				Bars Y & Z~#4 at 8" Max				Bars H [Ⓢ] 4~#4		Bars K		Per foot of Barrel		Curb		Total							
	S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Bar C		Bar D		No.	Size	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	No.	Length	Wt	No.	Bar Y Length	Bar Y Wt	Bar Z Length	Bar Z Wt	Length	Weight	No.	Weight	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
2	10'-0"	5'-0"	8"	7"	162	#6	6"	21'-6"	5,231	194	#4	5"	13'-4"	1,728	10'-1"	1,307	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	72	39'-9"	1,912	56	5'-0"	187	61	4'-8"	190	11'-2"	455	21'-6"	57	46	131	1.398	362.1	1.6	188	57.5	14,672
3	10'-0"	5'-0"	8"	7"	162	#6	6"	32'-1"	7,807	194	#4	5"	13'-4"	1,728	10'-1"	1,307	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	103	39'-9"	2,735	56	5'-0"	187	122	4'-8"	380	11'-2"	910	32'-1"	86	66	187	2.029	537.5	2.4	273	83.6	21,774
4	10'-0"	5'-0"	8"	7"	162	#6	6"	42'-8"	10,382	194	#4	5"	13'-4"	1,728	10'-1"	1,307	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	134	39'-9"	3,558	56	5'-0"	187	183	4'-8"	570	11'-2"	1,365	42'-8"	114	88	250	2.659	712.9	3.2	364	109.6	28,881
5	10'-0"	5'-0"	8"	7"	162	#6	6"	53'-3"	12,957	194	#4	5"	13'-4"	1,728	10'-1"	1,307	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	165	39'-9"	4,381	56	5'-0"	187	244	4'-8"	761	11'-2"	1,820	53'-3"	142	110	312	3.290	888.4	4.0	454	135.6	35,988
6	10'-0"	5'-0"	8"	7"	162	#6	6"	66'-5"	16,161	194	#4	5"	13'-4"	1,728	10'-1"	1,307	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	196	39'-9"	5,204	56	5'-0"	187	305	4'-8"	951	11'-2"	2,275	65'-7"	175	130	369	3.921	1,079.5	4.7	544	161.5	43,724
2	10'-0"	6'-0"	8"	7"	162	#6	6"	21'-6"	5,231	194	#4	5"	14'-4"	1,857	10'-1"	1,307	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	78	39'-9"	2,071	56	6'-0"	224	61	4'-8"	190	13'-2"	537	21'-6"	57	46	131	1.463	372.3	1.6	188	60.1	15,079
3	10'-0"	6'-0"	8"	7"	162	#6	6"	32'-1"	7,807	194	#4	5"	14'-4"	1,857	10'-1"	1,307	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	111	39'-9"	2,947	56	6'-0"	224	122	4'-8"	380	13'-2"	1,073	32'-1"	86	66	187	2.115	551.1	2.4	273	87.0	22,315
4	10'-0"	6'-0"	8"	7"	162	#6	6"	42'-8"	10,382	194	#4	5"	14'-4"	1,857	10'-1"	1,307	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	144	39'-9"	3,824	56	6'-0"	224	183	4'-8"	570	13'-2"	1,610	42'-8"	114	88	250	2.767	729.9	3.2	364	113.9	29,558
5	10'-0"	6'-0"	8"	7"	162	#6	6"	53'-3"	12,957	194	#4	5"	14'-4"	1,857	10'-1"	1,307	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	177	39'-9"	4,700	56	6'-0"	224	244	4'-8"	761	13'-2"	2,146	53'-3"	142	110	312	3.420	908.6	4.0	454	140.8	36,799
6	10'-0"	6'-0"	8"	7"	162	#6	6"	66'-5"	16,161	194	#4	5"	14'-4"	1,857	10'-1"	1,307	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	210	39'-9"	5,576	56	6'-0"	224	305	4'-8"	951	13'-2"	2,683	65'-7"	175	130	369	4.072	1,103.2	4.7	544	167.6	44,670
2	10'-0"	7'-0"	8"	7"	162	#6	6"	21'-6"	5,231	194	#4	5"	15'-4"	1,987	10'-1"	1,307	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	78	39'-9"	2,071	56	7'-0"	262	61	4'-8"	190	15'-2"	618	21'-6"	57	46	131	1.528	378.5	1.6	188	62.7	15,328
3	10'-0"	7'-0"	8"	7"	162	#6	6"	32'-1"	7,807	194	#4	5"	15'-4"	1,987	10'-1"	1,307	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	111	39'-9"	2,947	56	7'-0"	262	122	4'-8"	380	15'-2"	1,236	32'-1"	86	66	187	2.202	559.3	2.4	273	90.5	22,646
4	10'-0"	7'-0"	8"	7"	162	#6	6"	42'-8"	10,382	194	#4	5"	15'-4"	1,987	10'-1"	1,307	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	144	39'-9"	3,824	56	7'-0"	262	183	4'-8"	570	15'-2"	1,854	42'-8"	114	88	250	2.876	740.2	3.2	364	118.2	29,970
5	10'-0"	7'-0"	8"	7"	162	#6	6"	53'-3"	12,957	194	#4	5"	15'-4"	1,987	10'-1"	1,307	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	177	39'-9"	4,700	56	7'-0"	262	244	4'-8"	761	15'-2"	2,472	53'-3"	142	110	312	3.549	921.0	4.0	454	146.0	37,293
6	10'-0"	7'-0"	8"	7"	162	#6	6"	66'-5"	16,161	194	#4	5"	15'-4"	1,987	10'-1"	1,307	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	210	39'-9"	5,576	56	7'-0"	262	305	4'-8"	951	15'-2"	3,090	65'-7"	175	130	369	4.223	1,117.5	4.7	544	173.6	45,245
2	10'-0"	8'-0"	8"	7"	162	#6	6"	21'-6"	5,231	194	#4	5"	16'-4"	2,117	10'-1"	1,307	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	84	39'-9"	2,230	56	8'-0"	299	61	4'-8"	190	17'-2"	700	21'-6"	57	46	131	1.593	388.7	1.6	188	65.3	15,736
3	10'-0"	8'-0"	8"	7"	162	#6	6"	32'-1"	7,807	194	#4	5"	16'-4"	2,117	10'-1"	1,307	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	119	39'-9"	3,160	56	8'-0"	299	122	4'-8"	380	17'-2"	1,399	32'-1"	86	66	187	2.288	572.9	2.4	273	93.9	23,189
4	10'-0"	8'-0"	8"	7"	162	#6	6"	42'-8"	10,382	194	#4	5"	16'-4"	2,117	10'-1"	1,307	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	154	39'-9"	4,089	56	8'-0"	299	183	4'-8"	570	17'-2"	2,099	42'-8"	114	88	250	2.984	757.1	3.2	364	122.6	30,647
5	10'-0"	8'-0"	8"	7"	162	#6	6"	53'-3"	12,957	194	#4	5"	16'-4"	2,117	10'-1"	1,307	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	189	39'-9"	5,019	56	8'-0"	299	244	4'-8"	761	17'-2"	2,798	53'-3"	142	110	312	3.679	941.3	4.0	454	151.2	38,105
6	10'-0"	8'-0"	8"	7"	162	#6	6"	66'-5"	16,161	194	#4	5"	16'-4"	2,117	10'-1"	1,307	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	224	39'-9"	5,948	56	8'-0"	299	305	4'-8"	951	17'-2"	3,498	65'-7"	175	130	369	4.374	1,141.2	4.7	544	179.7	46,192
2	10'-0"	9'-0"	8"	7"	162	#6	6"	21'-6"	5,231	194	#4	5"	17'-4"	2,246	10'-1"	1,307	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	90	39'-9"	2,390	56	9'-0"	337	61	4'-8"	190	19'-2"	781	21'-6"	57	46	131	1.657	398.9	1.6	188	67.9	16,144
3	10'-0"	9'-0"	8"	7"	162	#6	6"	32'-1"	7,807	194	#4	5"	17'-4"	2,246	10'-1"	1,307	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	127	39'-9"	3,372	56	9'-0"	337	122	4'-8"	380	19'-2"	1,562	32'-1"	86	66	187	2.374	586.5	2.4	273	97.4	23,731
4	10'-0"	9'-0"	8"	7"	162	#6	6"	42'-8"	10,382	194	#4	5"	17'-4"	2,246	10'-1"	1,307	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	164	39'-9"	4,355	56	9'-0"	337	183	4'-8"	570	19'-2"	2,343	42'-8"	114	88	250	3.092	774.0	3.2	364	126.9	31,324
5	10'-0"	9'-0"	8"	7"	162	#6	6"	53'-3"	12,957	194	#4	5"	17'-4"	2,246	10'-1"	1,307	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	201	39'-9"	5,337	56	9'-0"	337	244	4'-8"	761	19'-2"	3,124	53'-3"	142	110	312	3.809	961.6	4.0	454	156.4	38,916
6	10'-0"	9'-0"	8"	7"	162	#6	6"	66'-5"	16,161	162	#5	6"	17'-4"	2,929	10'-6"	1,774	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	238	39'-9"	6,320	56	9'-0"	337	305	4'-8"	951	19'-2"	3,905	65'-7"	175	130	369	4.526	1,193.6	4.7	544	185.7	48,288
2	10'-0"	10'-0"	8"	7"	162	#6	6"	21'-6"	5,231	162	#5	6"	18'-4"	3,098	10'-6"	1,774	162	#6	6"	11'-0"	2,677	30	8"	39'-9"	797	90	39'-9"	2,390	56	10'-0"	374	61	4'-8"	190	21'-2"	862	21'-6"	57	46	131	1.722	434.8	1.6	188	70.5	17,581
3	10'-0"	10'-0"	8"	7"	162	#6	6"	32'-1"	7,807	162	#5	6"	18'-4"	3,098	10'-6"	1,774	162	#6	6"	21'-7"	5,252	45	8"	39'-9"	1,195	127	39'-9"	3,372	56	10'-0"	374	122	4'-8"	380	21'-2"	1,725	32'-1"	86	66	187	2.461	624.4	2.4	273	100.8	25,250
4	10'-0"	10'-0"	8"	7"	162	#6	6"	42'-8"	10,382	162	#5	6"	18'-4"	3,098	10'-6"	1,774	162	#6	6"	32'-2"	7,827	60	8"	39'-9"	1,593	164	39'-9"	4,355	56	10'-0"	374	183	4'-8"	570	21'-2"	2,587	42'-8"	114	88	250	3.200	814.0	3.2	364	131.2	32,924
5	10'-0"	10'-0"	8"	7"	162	#6	6"	53'-3"	12,957	162	#5	6"	18'-4"	3,098	10'-6"	1,774	162	#6	6"	42'-9"	10,402	75	8"	39'-9"	1,991	201	39'-9"	5,337	56	10'-0"	374	244	4'-8"	761	21'-2"	3,450	53'-3"	142	110	312	3.938	1,003.6	4.0	454	161.5	40,598
6	10'-0"	10'-0"	8"	7"	162	#6	6"	66'-5"	16,161	162	#5	6"	18'-4"	3,098	10'-6"	1,774	162	#6	6"	53'-4"	12,977	90	8"	39'-9"	2,390	2																				



MARY LOUISE NICHOLSON
COUNTY CLERK

Resolution 17-16

100 West Weatherford Fort Worth, TX 76196-0401

PHONE (817) 884-1195

TOWN OF WESTLAKE
1500 SOLANA BLVD BLDG 7 STE 7200
WESTLAKE, TX 76262

Submitter: TOWN OF WESTLAKE

DO NOT DESTROY
WARNING - THIS IS PART OF THE OFFICIAL RECORD.

Filed For Registration: 3/21/2019 11:10 AM

Instrument #: D219055979

OPR 18 PGS \$80.00

By: Mary Louise Nicholson

D219055979

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