

PARTICIPATION AGREEMENT
For Oversizing Water Distribution System
Per Texas Local Government Code §212.071

This PARTICIPATION AGREEMENT ("Agreement") is entered into between the City of Corpus Christi ("City"), a Texas home-rule municipal corporation, acting by and through its City Manager, or designee, and MPM Development LP, ("Developer"), a Texas Limited Partnership.

WHEREAS, the Owner owns certain real property located in Corpus Christi, Nueces County, Texas, being a 446.408 acre portion out of Abstract 577, Abstract 579, and Abstract 581, Cuadrilla Irrigation Company (the "Property"), and the Owner desires to develop and plat the Property designated on **Exhibit 1** of this Agreement, which exhibit is attached to and incorporated in this Agreement by reference, to be known as Kings Landing ("Plat");

WHEREAS, City Ordinance 032063 amended the City's Water Distribution System Master Water Plan for South of Oso Creek to provide a new alignment of the 16" Grid Main located on County Road 33 requiring oversizing for Kings Landing subdivision;

WHEREAS, as a condition of the Plat, the Developer/Owner is required to expand, extend, and construct master planned 16-inch grid main line per the water master plan for south of Oso Creek as depicted on and in accordance with the improvement requirements (the "16-inch Grid Main Line Extension") set forth in **Exhibit 2**, which exhibit is attached to and incorporated in this Agreement by reference;

WHEREAS, it is in the best interests of the City to have the water distribution system infrastructure installed by the Developer in conjunction with the Owner's final Plat;

WHEREAS, Section 212.071 of the Texas Local Government Code authorizes a municipality to make a contract with a developer of a subdivision or land in the municipality to construct public improvements related to the subdivision or land; and

WHEREAS, this Agreement is made pursuant to Section 212.071 & 212.072 of the Texas Local Government Code.

NOW, THEREFORE, in order to provide a coordinated public water distribution system improvement project, the City and the Developer agree as follows:

Section 1. RECITALS. The parties agree that the language contained in the preamble of this Agreement is substantive in nature, is incorporated into this Agreement by reference, and has been relied on by both parties in entering into and executing this Agreement.

Section 2. DEVELOPER PARTICIPATION. Subject to the terms of this Agreement, the Developer will construct the master planned 16-inch water arterial transmission and grid main line per Exhibit 1 and Exhibit 2 for and on behalf of the City in accordance with the plans and specifications approved in advance of construction by the City Engineer on behalf of the City. The parties acknowledge and confirm the total cost estimate for construction of the 16-inch Grid Main Line Extension, which estimate is attached to and

incorporated in this Agreement as **Exhibit 3** (the "Cost Estimate"). Subject to the limitations set forth below, the Developer shall pay a portion of the costs of construction of the 16-inch Grid Main Line Extension. Further, subject to the limitations set forth below, the City shall pay the remaining portion of the costs of construction of the 16-inch Grid Main Line Extension, designated as the total amount reimbursable by the City on the Cost Estimate. The Developer will also construct the 16-inch Grid Main Line in Exhibit 1 and 2 in accordance with City Standards.

Section 3. CITY PARTICIPATION. The City agrees to reimburse Developer for costs of the 16-inch Grid Main Line Extension in an amount not to exceed **\$874,000**.

Section 4. REIMBURSEMENT. The City shall reimburse the Developer a pro rata portion of the City's agreed costs of the 16-inch Grid Main Line monthly, based on the percentage of construction completed less the Developer's pro rata portion and contingent upon submission to the City of an invoice for the work performed. The invoices must be paid by the City no later than thirty (30) days following receipt of each monthly invoice. Such reimbursement will be made payable to the Developer at the address shown in section 14 of this Agreement.

Section 5. PERFORMANCE BOND. In accordance with the Texas Local Government Code, the Developer shall execute a performance bond for the construction of the 16-inch Grid Grid Main Line Extension to ensure completion of the project. The bond must be executed by a corporate surety in accordance with Chapter 2253 of the Texas Government Code. The Developer shall submit proof of the required performance bonds to the City.

Section 6. INSURANCE. Insurance requirements are as stated in **Exhibit 4**, the content of which is incorporated by reference into this Agreement as if fully set out here in its entirety. Before performance can begin under this Agreement, the Contractor must deliver a certificate of insurance ("COI"), as proof of the required insurance coverages, to the City's Risk Manager and Development Services Department. Additionally, the COI must state that the City will be given at least 30 days' advance written notice of cancellation, material change in coverage, or intent not to renew any of the policies. The City must be named as an additional insured. The City Attorney must be given copies of all insurance policies within 10 days of the City Manager's written request.

Section 7. CONSTRUCTION CONTRACT DOCUMENTS. Developer shall submit standard construction contract documents to the Director of Development Services for review and approval in advance of beginning any construction of the 16-inch Grid Main Line Extension.

Section 8. INSPECTIONS. Throughout construction, the City shall conduct periodic inspections and either approve the progress of the 16-inch Grid Main Line Extension or promptly notify the Developer of any defect, deficiency, or other non-approved condition in the progress of the 16-inch Grid Main Line Extension.

Section 9. WARRANTY. The Developer shall fully warranty the workmanship and construction of the 16-inch Grid Main Line Extension for a period of one year from and after the date of acceptance of the improvements by the Director of Engineering Services.

Section 10. INDEMNIFICATION.

DEVELOPER COVENANTS TO FULLY INDEMNIFY, SAVE AND HOLD HARMLESS THE CITY OF CORPUS CHRISTI, ITS OFFICERS, EMPLOYEES, AND AGENTS, ("INDEMNITEES") AGAINST ANY AND ALL LIABILITY, DAMAGE, LOSS, CLAIMS, DEMANDS, SUITS, AND CAUSES OF ACTION OF ANY NATURE WHATSOEVER ASSERTED AGAINST OR RECOVERED FROM INDEMNITEES ON ACCOUNT OF INJURY OR DAMAGE TO PERSON INCLUDING, WITHOUT LIMITATION ON THE FOREGOING, WORKERS' COMPENSATION AND DEATH CLAIMS, OR PROPERTY LOSS OR DAMAGE OF ANY OTHER KIND WHATSOEVER, TO THE EXTENT ANY INJURY, DAMAGE, OR LOSS MAY BE INCIDENT TO, ARISE OUT OF, BE CAUSED BY, OR BE IN ANY WAY CONNECTED WITH, EITHER PROXIMATELY OR REMOTELY, WHOLLY OR IN PART, THE CONSTRUCTION, INSTALLATION, EXISTENCE, OPERATION, USE, MAINTENANCE, REPAIR, RESTORATION, OR REMOVAL OF THE PUBLIC IMPROVEMENTS ASSOCIATED WITH THE PLATTING AND CONSTRUCTION OF THE 16-INCH GRID MAIN LINE EXTENSION DURING THE PERIOD OF CONSTRUCTION, INCLUDING THE INJURY, LOSS, OR DAMAGE CAUSED BY THE CONTRIBUTORY NEGLIGENCE OF THE INDEMNITEES OR ANY OF THEM, REGARDLESS OF WHETHER THE INJURY, DAMAGE, LOSS, VIOLATION, EXERCISE OF RIGHTS, ACT, OR OMISSION IS CAUSED OR IS CLAIMED TO BE CAUSED BY THE CONTRIBUTING OR CONCURRENT NEGLIGENCE OF INDEMNITEES, OR ANY OF THEM, BUT NOT IF CAUSED BY THE SOLE NEGLIGENCE OF INDEMNITEES, OR ANY OF THEM, UNMIXED WITH THE FAULT OF ANY OTHER PERSON OR ENTITY, AND INCLUDING ALL EXPENSES OF LITIGATION, COURT COSTS, AND ATTORNEYS FEES WHICH ARISE, OR ARE CLAIMED TO ARISE, OUT OF OR IN CONNECTION WITH THE ASSERTED OR RECOVERED INCIDENT. THIS INDEMNITY SURVIVES TERMINATION OF THIS AGREEMENT.

Section 11. DEFAULT. The following events shall constitute default:

1. Developer fails to submit plans and specifications for the 16-inch Grid Main Line Extension to the Executive Director of Public Works in advance of construction.
2. Developer does not reasonably pursue construction of the 16-inch Grid Main Line Extension under the approved plans and specifications.
3. Developer fails to complete construction of the 16-inch Grid Main Line Extension, under the approved plans and specifications, on or before the expiration of 18 calendar months measured from the date this document is executed by the City.
4. Either the City or the Developer otherwise fails to comply with its duties or obligations under this Agreement.

Section 12 NOTICE AND CURE.

1. In the event of a default by either party under this Agreement, the non-defaulting party shall deliver notice of the default, in writing, to the defaulting party stating, in sufficient detail, the nature of the default and the requirements to cure such default.
2. After delivery of the default notice, the defaulting party has 15 days from the delivery of the default notice ("Cure Period") to cure the default.
3. In the event the default is not cured by the defaulting party within the Cure Period, then the non-defaulting party may pursue its remedies in this section.
4. Should the Developer fail to perform any obligation or duty of this Agreement, the City shall give notice to the Developer, at the address stated in section 14, of the need to perform the obligation or duty and, should the Developer fail to perform the required obligation or duty within 15 days of receipt of the notice, the City may perform the obligation or duty, charging the cost of such performance to the Developer.
5. In the event of an uncured default by the Developer, after the appropriate notice and Cure Period, the City has all its common law remedies and the City may:
 - a. Terminate this Agreement after the required notice and opportunity to cure the default;
 - b. Refuse to record a related plat or issue any certificate of occupancy for any structure to be served by the project; and/or
 - c. Perform any obligation or duty of the Developer under this Agreement and charge the cost of such performance to the Developer. The Developer shall pay to the City the reasonable and necessary cost of the performance within 30 days from the date the Developer receives notice of the cost of performance. In the event the Developer pays the City under the preceding sentence and is not otherwise in default under this Agreement, then the Agreement shall be considered in effect and no longer in default.
6. In the event of an uncured default by the City after the appropriate notice and Cure Period, the Developer has all its remedies at law or in equity for such default.

Section 13. FORCE MAJEURE.

1. The term "force majeure" as employed in this Agreement means and refers to acts of God; strikes, lockouts, or other industrial disturbances; acts of a public enemy; insurrections; riots; epidemics; landslides; lightning; earthquakes; fires; hurricanes; storms; floods; washouts; droughts; arrests; civil disturbances; explosions; or other causes not reasonably within the control of the party claiming the inability.
2. If, by reason of force majeure, either party is rendered wholly or partially unable to carry out its obligations under this Agreement, then the party claiming force majeure shall give written notice of the full particulars of the force majeure to the other party within 10

days after the occurrence or waive the right to claim it as a justifiable reason for delay. The obligations of the party giving the required notice, to the extent affected by the force majeure, are suspended during the continuance of the inability claimed but for no longer period, and the party shall endeavor to remove or overcome such inability with all reasonable dispatch.

Section 14. NOTICES.

1. Any notice or other communication required or permitted to be given under this Agreement must be given to the other party in writing at the following address:

If to the City:

City of Corpus Christi
Attn: Director, Development Services
2406 Leopard Street / 78401
P.O. Box 9277/78469-9277
Corpus Christi, Texas

If to the Developer:

MPM Development, L.P.
Attn: Moses Mostaghasi
PO Box 331308
Corpus Christi, Tx 78401

with a copy to:

City of Corpus Christi
Attn: Asst. City Manager, Business Support Services
1201 Leopard Street / 78401
P. O. Box 9277 / 78469-9277
Corpus Christi, Texas

2. Notice must be made by United States Postal Service, First Class mail, certified, return receipt requested, postage prepaid; by a commercial delivery service that provides proof of delivery, delivery prepaid; or by personal delivery.

3. Either party may change the address for notices by giving notice of the change, in accordance with the provisions of this section, within five business days of the change.

Section 15. PROJECT CONTRACTS. Developer's contracts with the professional engineer for the preparation of the plans and specifications for the construction of the 16-inch Grid Main Line Extension, contracts for testing services, and contracts with the contractor for the construction of the 16-inch Grid Main Line Extension must provide that the City is a third party beneficiary of each contract.

Section 16. DISCLOSURE OF INTEREST. In compliance with City of Corpus Christi Ordinance No. 17112, the Developer agrees to complete the Disclosure of Interests form attached to this Agreement and incorporated by reference as **Exhibit 5.**

Section 17. CERTIFICATE OF INTERESTED PARTIES. Developer agrees to comply with Texas Government Code section 2252.908 and complete Form 1295 Certificate of Interested Parties as part of this agreement.

Form 1295 requires disclosure of "interested parties" with respect to entities that enter contracts with cities. These interested parties include:

(1) persons with a "controlling interest" in the entity, which includes:

- a. an ownership interest or participating interest in a business entity by virtue of units, percentage, shares, stock or otherwise that exceeds 10 percent;
- b. membership on the board of directors or other governing body of a business entity of which the board or other governing body is composed of not more than 10 members; or
- c. service as an officer of a business entity that has four or fewer officers, or service as one of the four officers most highly compensated by a business entity that has more than four officers.

(2) a person who actively participates in facilitating a contract or negotiating the terms of a contract with a governmental entity or state agency, including a broker, intermediary, adviser or attorney for the business entity.

Form 1295 must be electronically filed with the Texas Ethics Commission at https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm. The form must then be printed, signed, notarized and filed with the City. For more information, please review the Texas Ethics Commission Rules at <https://www.ethics.state.tx.us/legal/ch46.html>.

Section 18. CONFLICT OF INTEREST. Developer agrees to comply with Chapter 176 of the Texas Local Government Code and file Form CIQ with the City Secretary's Office, if required. For more information and to determine if you need to file a Form CIQ, please review the information on the City Secretary's website at <http://www.cctexas.com/government/city-secretary/conflict-disclosure/index>

Section 19. SEVERABILITY. The provisions of this Agreement are severable and, if any provision of this Agreement is held to be invalid for any reason by a court or agency of competent jurisdiction, the remainder of this Agreement shall not be affected and this Agreement shall be construed as if the invalid portion had never been contained herein.

Section 20. COOPERATION. The Parties agree to cooperate at all times in good faith to effectuate the purposes and intent of this Agreement.

Section 21. ENTIRE AGREEMENT. Except as otherwise expressly provided herein, this Agreement contains the entire agreement of the Parties regarding the sharing of costs for the Project and supersedes all prior or contemporaneous understandings or representations, whether oral or written, regarding the subject matter hereof.

Section 22. AMENDMENTS. Any amendment of this Agreement must be in writing and shall be effective if signed by the authorized representatives of both Parties.

Section 23. APPLICABLE LAW; VENUE. This Agreement shall be construed in accordance with Texas law. Venue for any action arising hereunder shall be in Nueces County, Texas.

Section 24. AUTHORITY. Each Party represents and warrants that it has the full right, power and authority to execute this Agreement.

Section 25. INDEPENDENT CONTRACTOR. Developer covenants and agrees that it is an independent contractor, and not an officer, agent, servant or employee of City; that Developer shall have exclusive control of and exclusive right to control the details of the work performed hereunder and all persons performing same, and shall be liable for the acts and omissions of its officers, agents, employees, contractors, subcontractors and consultants; that the doctrine of respondeat superior shall not apply as between City and Developer, its officers, agents, employees, contractors, subcontractors and consultants, and nothing herein shall be construed as creating a partnership or joint enterprise between City and Developer.

Section 26. NON-APPROPRIATION. The continuation of this Agreement after the close of any fiscal year of the City, which fiscal year ends on September 30th annually, is subject to appropriations and budget approval specifically covering this Agreement as an expenditure in said budget, and it is within the sole discretion of the City's City Council to determine whether or not to fund this Agreement. The City does not represent that this budget item will be adopted, as said determination is within the City Council's sole discretion when adopting each budget.

Section 27. TERM. This Agreement becomes effective, is binding upon, and inures to the benefit of the City and the Developer from and after the date of the last signatory to this Agreement. This Agreement expires 18 calendar months from the date this document is executed by the City, unless terminated earlier in accordance with the provisions of this Agreement. Such expiration date of this Agreement is presently anticipated, but not currently known, to be December 16, 2021.

EXECUTED in one original this _____ day of _____, 2020.

ATTEST:

CITY OF CORPUS CHRISTI

Rebecca Huerta
City Secretary

Al Raymond III
Director of Development Services

THE STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was signed by Rebecca Huerta, City Secretary, for the City of Corpus Christi, Texas, and acknowledged before me on the _____ day of _____, 2020.

Notary Public, State of Texas

THE STATE OF TEXAS §
 §
COUNTY OF NUECES §

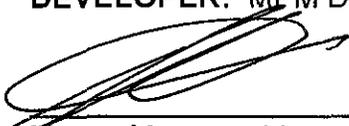
This instrument was signed by Al Raymond III, Director of Development Services, for the City of Corpus Christi, Texas, and acknowledged before me on the _____ day of _____, 2020.

Notary Public, State of Texas

APPROVED AS TO FORM: This _____ day of _____, 2020.

Assistant City Attorney
Buck Brice

DEVELOPER: MPM Development, LP



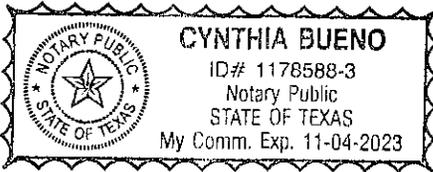
Moses Mostagashi
General Partner

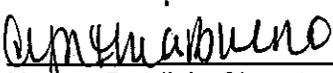
05/22/2020

Date

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on May 22, 2020, by Moses Mostagashi, MPM Development, LP, General Partner, on behalf of said corporation.





Notary Public's Signature

TXDOT Notes:

1. A Traffic Impact Analysis (TIA) shall be required for the ultimate 15 year development forecast for the intersections and access locations within 3500 feet of both sides of the subject property line along FM 43. This TIA shall be required during the public improvement stage of this plat, prior to TxDOT Access Permitting for new streets, or City Site-work Permitting.

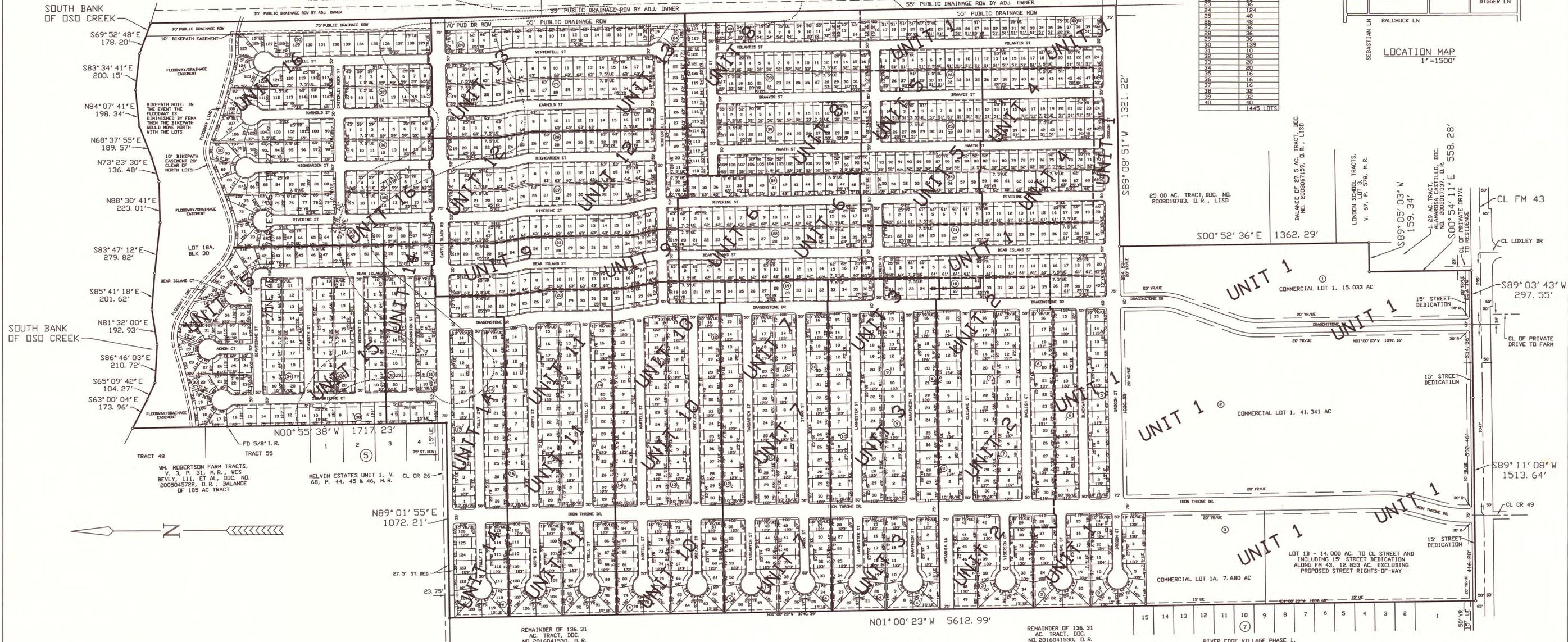
2. No access locations beyond those identified herein shall be authorized for plats or re-plats without a variance for lots adjacent to State Right-Of-Way. A variance may be granted on a case by case basis when the Owner or their agent provides significant justification of a public need for additional access. Justification shall be provided within a site specific Traffic Engineering Study that will be reviewed during the TxDOT Access Permitting process.

LEGEND:

- DE DRAINAGE EASEMENT
- D.R. DEED RECORDS, NUECES CO., TX
- M.R. MAP RECORDS, NUECES CO., TX
- O.R. OFFICIAL RECORDS, NUECES CO., TX
- UE UTILITY EASEMENT

118.126 ACRE TRACT II, DDC. NO. 2015011169, D.R. SAID
 118.126 ACRE TRACT BEING A PORTION OF SURVEY 135 ABSTRACT
 581, SURVEY 137, ABSTRACT 579 AND SURVEY 139, ABSTRACT 577,
 SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, AND
 SURVEY 140, ABS 612, NAMED I. & G. N. R. R., BILL BROWN ET. AL

145.50 AC. TRACT, DDC. NO. 1997034379,
 D.R., A PORTION OF CUADRILLA IRRIGATION
 COMPANY SURVEY 137 AND I. AND G. N. R. R.
 SURVEY 140, V. 3, P. 15, M.R., WALTER
 AND BETTY JO CAMP



BLOCK#	LOTS
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OWNERS:

THE WILLIAM EARL HENSCH TRUST, WILLIAM EARL HENSCH, TRUSTEE, 5027 HELLY ROAD, PASADENA, TX 77503, 713 417-7122

ANNA BELLE HENSCH, 1009 PEERMAN PLACE, CORPUS CHRISTI, TX 78411, 361 444-5800

RETTA MAURINE KASPER, 4805 VELMA, KILLEEN, TX 76542, 254 462-2976

CORPUS CHRISTI COMMUNITY CHURCH, 4833 SARATOGA BLVD #259, CORPUS CHRISTI, TX 78413, SCOTT MCDONALD 361 420-0022, ALSO JAMES F. DODSON, 4222 FM 665, ROBSTOWN, TX 78069, 361 977-3222

WFM DEVELOPMENT, LP, PO BOX 331398, CORPUS CHRISTI, TX 78463, 774-3832

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF NIXON M. WELSH, P.E. NO. 36240 OF BASS AND WELSH ENGINEERING, F. 52. IT IS NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

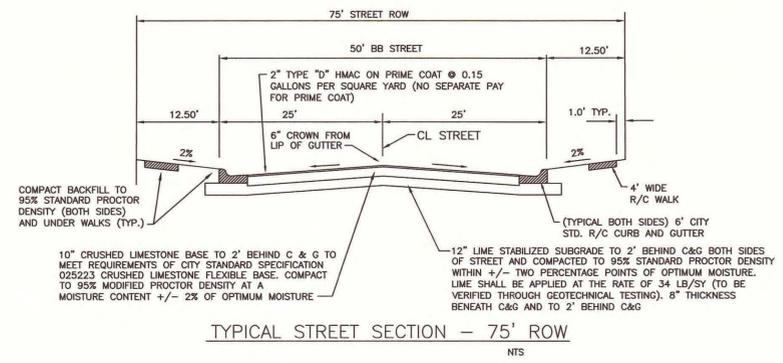
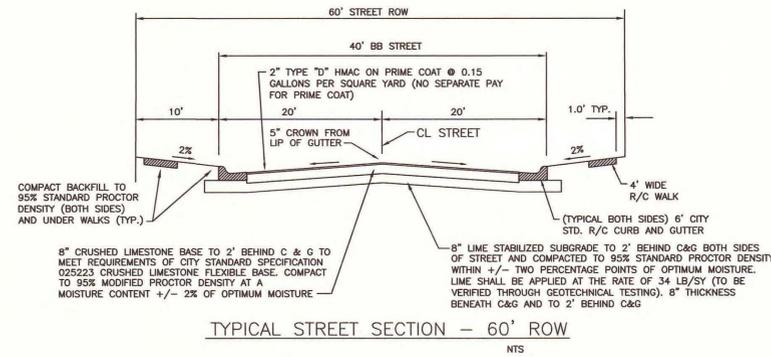
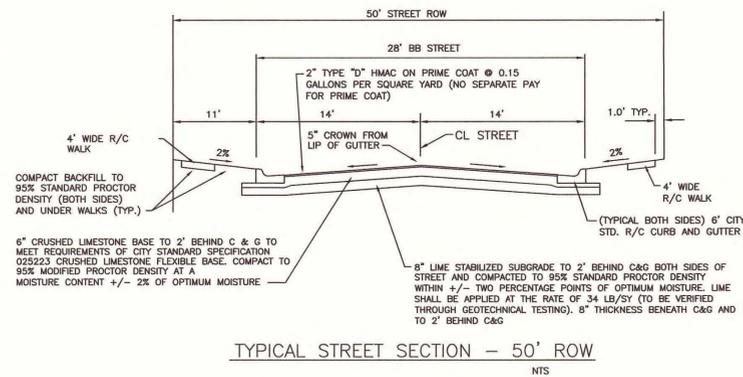
SCALE: 1" = 250'

DATE PLOTTED: 10/8/19

PREL AS PREL 18068

SHEET 1 OF 2





NOTES

1. THE SITE IS OCL, PROPOSED ANNEXATION AND ZONED RS-4.5 AND CN-1.
2. THE RECEIVING WATER FOR THE STORM WATER RUNOFF FROM THIS PROPERTY IS THE OSO CREEK. THE TCEQ HAS NOT CLASSIFIED THE AQUATIC LIFE USE FOR THE OSO CREEK, BUT IT IS RECOGNIZED AS AN ENVIRONMENTALLY SENSITIVE AREA. THE OSO CREEK FLOWS DIRECTLY INTO THE OSO BAY. THE TCEQ HAS CLASSIFIED THE AQUATIC LIFE USE FOR THE OSO BAY AS "EXCEPTIONAL" AND "OYSTER WATERS" AND CATEGORIZED THE RECEIVING WATER AS "CONTACT RECREATION" USE.
3. THE BASIS OF BEARINGS IS THE STATE OF TEXAS LAMBERT GRID, SOUTH ZONE, NAD 1983.
4. THE SUBJECT SITE IS DEPICTED IN FEMA MAP 4835500505G (10/23/15) AND CONTAINS ZONE AE-FLOODWAY AREAS, ZONE AE AREAS WITH ELEVATIONS BETWEEN 26' AND 27', ZONE X AREAS OF 0.2 PCT ANNUAL CHANCE FLOOD AND ZONE X AREA (NO DESIGNATION).
5. DESCRIPTION OF SITE DRAINAGE: THE ENTIRE SITE WILL DRAIN VIA UNDERGROUND PIPES AND DITCHES TO THE OSO CREEK AS SHOWN.
6. THERE ARE NO KNOWN NATURAL WATER BODIES, JURISDICTIONAL WETLANDS, ENDANGERED SPECIES HABITAT, STATE SUBMERGED LANDS OR CRITICAL DUNES ON THE SITE.
7. A STORM WATER POLLUTION PREVENTION PLAN WILL BE SUBMITTED WITH THE CONSTRUCTION PLANS FOR ANY PROJECT ONE (1) ACRE OR GREATER OR A STORM WATER POLLUTION CONTROL PLAN IF LESS THAN ONE (1) ACRE.
8. LEGAL DESCRIPTION - SEE RIGHT.

NOTES CONTINUED

9. THIS DEVELOPMENT MEETS THE CITY'S MASTER DRAINAGE PLAN. THE INCREASE IN DISCHARGE RATES, VOLUMES, AND DURATIONS OF CONCENTRATED AND NON-CONCENTRATED STORMWATER RUNOFF LEAVING THE PROPOSED DEVELOPMENT DUE TO THE DIVERTED FLOW WILL NOT HAVE AN ADVERSE IMPACT (E.G., SOIL EROSION; SEDIMENTATION; YARD, DWELLING, BUILDING, OR PRIVATE STRUCTURE FLOODING; DURATION OF PONDING WATER; INADEQUATE OVERLAND RELIEF) ON ADJACENT OR DOWNSTREAM PROPERTIES.
10. EACH LOT AREA MUST COMPLY WITH THE APPROPRIATE ZONING DESIGNATION.
11. WATER, WASTEWATER AND PARK FEES SHALL BE PAID PRIOR TO RECORDATION OF THE FINAL PLAT.
12. THE TOTAL PLATTED AREA CONTAINS 446.408 ACRES OF LAND INCLUDING STREET DEDICATIONS.
13. EACH ZONING DISTRICT SHALL CONFORM TO MINIMUM LOT WIDTH (FT.) AND LOT AREA (SF) STANDARDS.
14. THE YARD REQUIREMENT, AS DEPICTED, IS A REQUIREMENT OF THE UNIFIED DEVELOPMENT CODE AND IS SUBJECT TO CHANGE AS THE ZONING MAY CHANGE.
15. STREET CENTER LINES SHALL BE 25' - 25' FOR 50' RIGHTS-OF-WAY, 30' - 30' FOR 60' RIGHTS-OF-WAY AND 37.5' - 37.5' FOR 75' RIGHTS-OF-WAY.
16. CONFORMANCE TO THE VISIBILITY TRIANGLE REQUIREMENTS OF UDC SECTION 4.2.9. TO PREVENT VISION OBSTRUCTIONS AT STREET INTERSECTIONS SHALL BE REQUIRED.
17. ANY ACCESS ONTO FM 43 SHALL HAVE TxDOT APPROVAL.
18. NO DRAINAGE FROM THIS DEVELOPMENT INTO ROW OF FM 43.
19. ALL INSIDE STREET CORNER INTERSECTIONS REQUIRE A RADIUS OF A MINIMUM OF 10' ON LOCAL RESIDENTIAL STREETS, 15' TO 20' ON COLLECTOR/COMMERCIAL/INDUSTRIAL STREETS AND 20' TO 50' ON ARTERIALS. THE RADIUS MAY VARY DEPENDING ON THE CIRCUMSTANCES.
20. RESIDENTIAL DRIVEWAY ACCESS PROHIBITED ONTO IRON THORNE DRIVE, DROGON STREET, AND CASTLE BLACK ROAD.
21. ALL DRIVEWAYS TO PUBLIC STREETS WITHIN THE SUBDIVISION SHALL CONFORM TO ACCESS MANAGEMENT STANDARDS OUTLINED IN ARTICLE 7 OF THE UDC.
22. DRIVEWAY ACCESS TO FM43 SHALL CONFORM TO ACCESS MANAGEMENT STANDARDS OF TEXAS DEPARTMENT OF TRANSPORTATION.
23. ALL LOTS AT STREET INTERSECTIONS SHALL ADHERE TO VISIBILITY TRIANGLE REQUIREMENTS OF UDC SECTION 4.2.9.

LEGAL DESCRIPTION: A 446.408 ACRE TRACT OF LAND, MORE OR LESS, AND CONSISTING OF:

TRACT 1, A 293.041 ACRE TRACT OF LAND DESCRIBED BY DEED, DOC. NO. 2019035726, D.R.

TRACT 2, A 10.08 AC. TRACT OF LAND DESCRIBED BY DEED, DOC. NO. 2017010862, D.R., AND

TRACT 3, A 144.570 ACRE TRACT OF LAND, BEING CALLED 144.30 ACRE FIRST TRACT, VOL. 1066, P. 140, D.R.,

THE ABOVE THREE TRACTS BEING PORTIONS OF ONE OR MORE OF SURVEY 135 ABSTRACT 381, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX



10/8/19

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF NIXON M. WELSH, P.E. NO. 36240 OF BASS AND WELSH ENGINEERING, F 52. IT IS NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

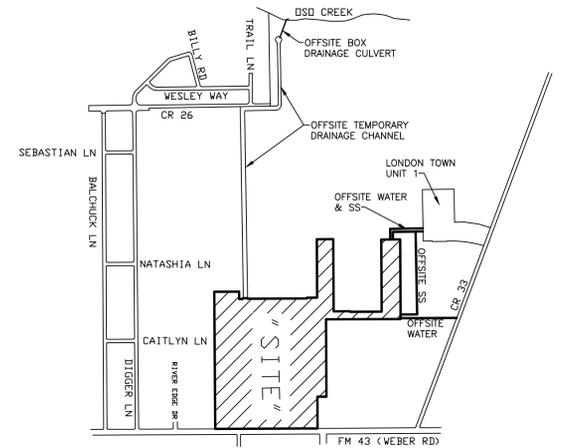


BASS & WELSH ENGINEERING
TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PRELIMINARY PLAT OF
KINGS LANDING,
CORPUS CHRISTI, NUECES COUNTY, TX

DWN.	SCALE (H):	1" = 250'	COM. NO.	PREL SH2
CHK.	SCALE (V):	NONE	JOB NO.	18068
	DATE PLOTTED:	10/8/19	SHEET 2 OF	2

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1, CORPUS CHRISTI, NUECES COUNTY, TEXAS



LOCATION MAP SHOWING OFFSITE DRAINAGE, SS AND WATER
1" = 1500'

CITY STANDARD SPECIFICATIONS

THE FOLLOWING CITY OF CORPUS CHRISTI STANDARD SPECIFICATIONS OF WHICH CAN BE OBTAINED FROM THE CITY OF CORPUS CHRISTI WEBSITE (WWW.CCITEXAS.COM) SHALL BE UTILIZED FOR THIS PROJECT. CONTRACTOR SHALL PRINT AND OBTAIN COPIES OF THESE SPECIFICATIONS PRIOR TO BIDDING THE WORK AND PRIOR TO CONSTRUCTION OF THE WORK. THE WORD "ENGINEER" AS USED IN SAID CITY STANDARD SPECIFICATIONS SHALL REFER TO BASS & WELSH ENGINEERING.

021202	SITE CLEARING AND STRIPPING
021040	SITE GRADING
022020	EXCAVATION AND BACKFILL FOR UTILITIES
022021	CONTROL OF GROUND WATER
022022	CONTROL OF GROUND WATER
022040	STREET EXCAVATION
022060	CHANNEL EXCAVATION
022080	EMBANKMENT
022100	SELECT MATERIAL
022420	SELECT MATERIAL
025210	LIME STABILIZATION
025223	CRUSHED LIMESTONE FLEXIBLE BASE
025404	ASPHALTS, OILS AND EMULSIONS
025412	PRIME COAT
025424	HOT MIX ASPHALTIC CONCRETE PAVEMENT
025608	INLETS
025610	CONCRETE CURB AND GUTTER
025612	CONCRETE SIDEWALKS AND DRIVEWAYS
025614	CONCRETE CURB RAMPS
025602	TEMPORARY TRAFFIC CONTROLS DURING CONSTRUCTION
026201	WATER LINE RISER ASSEMBLIES
026202	HYDROSTATIC TESTING OF PRESSURE SYSTEMS
026409	TAPPING SLEEVES AND TAPPING VALVES
026206	DUCTILE IRON PIPE AND FITTINGS
026210	PVC PIPE - AWWA C900/C905 PRESSURE PIPE FOR MUNICIPAL WATER MAINS AND WASTEWATER FORCE MAINS
026402	WATER LINES
026404	WATER SERVICE LINES
026411	GATE VALVES FOR WATER LINES
026416	FIRE HYDRANTS
027202	MANHOLES
027203	VACUUM TESTING OF WASTE WATER MANHOLES AND STRUCTURES
027205	FIBERGLASS MANHOLES
027402	REINFORCED CONCRETE PIPE CULVERTS
027404	CONCRETE BOX CULVERTS
027602	GRAVITY WASTE WATER LINES
027606	WASTE WATER SERVICE LINES
028020	SEEDING
030020	PORTLAND CEMENT CONCRETE
032020	REINFORCING STEEL
038000	CONCRETE STRUCTURES
055420	FRAMES, GRATES, RINGS AND COVERS

LEGEND - EXISTING FACILITIES AND APPURTENANCES

AP	ASPHALT PAVEMENT
⊙	BLOCK NO. 1
6" C & G	6" R/C CURB AND GUTTER
4' CW	4' R/C WALK
D.E.	DRAINAGE EASEMENT
EP	EDGE OF PAVEMENT
M.R.	MAP RECORDS
18" RCP	18" REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY LINE
R/W	RIGHT-OF-WAY LINE
8"SS	8" SANITARY SEWER LINE
U.E.	UTILITY EASEMENT
8"W	8" WATER LINE
Y.R.	YARD REQUIREMENT
	SPOT ELEVATION POINT OF "X"

LEGEND - PROPOSED FACILITIES AND APPURTENANCES

BB	BACK OF CURB TO BACK OF CURB
CL	CENTERLINE
CW	R/C CONCRETE WALK
DCSC	DEEP CUT SERVICE CONNECTION (SAN. SEWER)
→	DRAINAGE DIRECTION OR DIMENSION ARROW
⊕	FINISHED GROUND ELEVATION
⊕(13.45)	FINISHED GROUND ELEVATION
⊕	FIRE HYDRANT SYMBOL
FL	FLOW LINE OR INVERT ELEVATION
FW	FINISHED WALK ELEVATION
GB	GRADE BREAK (CHANGE OF DRAINAGE DIRECTION OR SLOPE)
LT	LEFT
MH	MANHOLE
PC	POINT OF CURVATURE (BEGINNING OF CURVE)
PT	POINT OF TANGENCY (END OF CURVE)
R/C	REINFORCED PORTLAND CEMENT CONCRETE
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
S = 0.3%	LONGITUDINAL SLOPE
SS	SANITARY SEWER
SSF	SEDIMENTATION SCREENING FENCE ALSO KNOWN AS SILT FENCE OR TEMPORARY SEDIMENT CONTROL FENCE
SSMH	SANITARY SEWER MANHOLE
SSS	SANITARY SEWER SERVICE (PIPE & FITTINGS, 4" AND 6")
STL	STREET LIGHT LOCATION
STPS	STOP SIGN
TC	TOP OF CURB
TW	TOP OF WALK
⊥	WATER VALVE SYMBOL
WSD	DOUBLE WATER SERVICE (1" PIPE, FITTINGS, CORPORATION STOP AND ANGLE METER VALVES)
WSS	SINGLE WATER SERVICE (1" PIPE, FITTINGS, CORPORATION STOP AND ANGLE METER VALVE)

PAVING, GRADING AND DRAINAGE NOTES

- ALL PROPOSED CONCRETE CURBS AND GUTTERS, WALKS, DRAINAGE INLETS AND VALLEY GUTTERS ARE SHOWN POCHED (SHADED).
- PRIOR TO ANY EARTHWORK, ALL TREES, VEGETATION, ORGANIC MATERIAL AND ANY DELETERIOUS SUBSTANCES SHALL BE REMOVED FROM THE ENTIRE PROJECT SITE EXCEPT TREES 6" DIAMETER AND LARGER OUTSIDE OF PROPOSED STREET PAVING SHALL BE LEFT IN PLACE UNHARMED. AFTER REMOVAL OF ALL VEGETATION, ORGANIC MATERIAL, DELETERIOUS SUBSTANCES, APPROPRIATE TREES, ETC., CONTRACTOR MAY BEGIN EARTHWORK CUT AND FILL OPERATIONS FOR LOT GRADING AND EARTHWORK ASSOCIATED WITH STREETS.
- CONTRACTOR SHALL PERFORM ALL ROUGH EARTHWORK (FILLING, GRADING, HAULING, CUTTING, LOADING, ETC.) TO VERIFY ADEQUATE EARTH QUANTITY ON-SITE TO ACHIEVE EARTH GRADES AS SHOWN PRIOR TO ANY OTHER CONSTRUCTION AND CONTRACTOR SHALL NOT PROCEED WITH SAID OTHER CONSTRUCTION UNTIL AFTER HE HAS RECEIVED ENGINEER'S PERMISSION. SHOULD THERE NOT BE AVAILABLE EARTH TO MEET GRADES AS SHOWN, CONTRACTOR SHALL HAUL EARTH ON TO THE SITE FROM OFFSITE SOURCES TO ACHIEVE GRADES AS SHOWN (NO SEPARATE PAY). AFTER COMPLETION OF ROUGH GRADING AND AFTER COMPLETION OF STREET, DRAINAGE, SANITARY SEWER AND WATER IMPROVEMENTS, THEN CONTRACTOR SHALL PROVIDE ALL FINAL/FINISH GRADING TO ACHIEVE GRADES AS SHOWN. THIS INCLUDES BACKFILL OF EXISTING DITCH.
- ALL CONCRETE, EXCEPT FOR PRECAST CONCRETE BOX CULVERTS, SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS AND ALL STEEL REINFORCING SHALL BE GRADE 60 (60,000 PSI YIELD STRENGTH) IN ACCORDANCE WITH ASTM A 615.
- REINFORCED CONCRETE STORM SEWER PIPE SHALL BE CLASS III, STANDARD STRENGTH. STORM SEWER MANHOLES SHALL BE PRE-CAST CONCRETE.
- ALL STREET, SANITARY SEWER AND STORM SEWER STATIONING IS MEASURED ALONG THE CENTERLINES OF STREETS.
- LINEARLY INTERPOLATE BETWEEN GRADES AS SHOWN TO DETERMINE A PROPOSED GRADE AT ANY PARTICULAR POINT.
- CURB AND GUTTER ALIGNMENT SHALL PARALLEL ADJACENT RIGHT-OF-WAY LINES EXCEPT WHERE INDICATED OTHERWISE.
- CURB AND GUTTER TO BE CONSTRUCTED 11.0' BACK OF CURB TO PROPERTY LINES FOR 50' STREET RIGHTS-OF-WAY, 10.0' BC TO PROPERTY LINES FOR 60' RIGHT-OF-WAY STREETS AND 12.5' BC TO PROPERTY LINES FOR 75' STREET RIGHTS OF WAY.
- CONSTRUCT PROPOSED CURB RAMPS AT ALL STREET INTERSECTIONS AND AS SHOWN AND ACCORDING TO CITY CURB RAMP DETAILS AS SHOWN IN PLANS HEREOF. DEPRESS CURBS AS REQUIRED. RAMPS SHALL BE SLOPED NOT EXCEEDING 1" PER FOOT LONGITUDINAL AND 2% TRANSVERSE AND SHALL MEET ALL APPLICABLE GOVERNMENTAL REGULATIONS. NO SEPARATE PAY FOR CURB RAMPS (PAY FOR CURB RAMPS IN THE SQUARE FOOT PRICE OF 4" THICK R/C WALKS).
- CONTRACTOR SHALL MEET ALL GOVERNMENTAL ONE-CALL AND OTHER REGULATIONS WITH REGARD TO EXISTING UNDERGROUND FACILITIES AND PIPELINES.
- NO SEPARATE PAY FOR PRIME COAT (PAY FOR IN THE ESTABLISHED UNIT PRICE FOR HMA).
- ADA CURB RAMPS - THE CITY NO LONGER ALLOWS THE PAVER OPTION AT CURB RAMPS. THE CONTRACTOR SHALL INSTALL COMPOSITE TACTILE WARNING PANELS AT ALL ADA CURB RAMPS.
- GEOTEXTILE FABRIC MATERIAL IS REQUIRED FOR WRAPPING RCP PIPE JOINTS AND SHALL MEET REQUIREMENTS OF AASHTO M288.
- COMPACT EARTH FOR ALL DITCH BACKFILL TO 95% STANDARD PROCTOR DENSITY WITHIN THREE PERCENTAGE POINTS OF OPTIMUM MOISTURE.

SEE FOLLOWING SHEET FOR CONTINUATION OF PAVING, GRADING AND DRAINAGE NOTES.

SANITARY SEWER NOTES

- ALL SANITARY SEWER STATIONING IS MEASURED ALONG THE CENTER LINE OF PROPOSED STREETS EXCEPT FOR OFFSITE SANITARY SEWER WHICH IS MEASURED ALONG PIPE. ALL SANITARY SEWER MANHOLES SHALL BE FIBERGLASS, 4" MINIMUM DIAMETER FOR MANHOLES 14" DEEP OR LESS AND 5' DIAMETER FOR MANHOLES OVER 14" IN DEPTH. 0.5" (MINIMUM) WALL AND CONSTRUCTED IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.
- ALL GRAVITY SEWER PIPES 8" THRU 18" SHALL BE PVC, SDR 26 AND SHALL BE BEDDED/ENCASSED IN ACCORDANCE WITH CITY STANDARD DETAILS AND SPECIFICATIONS (NO SEPARATE PAY). BED 4" AND SMALLER PIPES IN EARTH FROM THE EXCAVATION.
- NO SEPARATE PAY FOR ANY DE-WATERING OR SPECIAL EMBEDEDMENT REQUIRED FOR 8" SANITARY SEWER PIPES AND MANHOLES. PAY FOR DE-WATERING FOR 12" AND 18" PIPE SEPARATELY.
- THE WORDS SANITARY SEWER SHALL MEAN WASTE WATER AND VICE VERSA.

CITY STANDARD DETAIL SHEETS

THE FOLLOWING SHEETS ARE INCLUDED HEREIN BY REFERENCE AND SHALL BE USED ON THIS PROJECT. CONTRACTOR SHALL OBTAIN THESE SHEETS FROM THE CITY OF CORPUS CHRISTI (AT [HTTP://ENGINEERCOCOM/STANDARD-DETAILS](http://ENGINEERCOCOM/STANDARD-DETAILS)) FOR BIDDING AND CONSTRUCTION PURPOSES.

- STANDARD WATER DETAILS, 4 SHEETS
- WASTE WATER STANDARD DETAILS, 4 SHEETS
- STORM WATER STANDARD DETAILS, 3 SHEETS
- STORM WATER POLLUTION PREVENTION, 3 SHEETS
- CURB, GUTTER AND SIDEWALK STANDARD DETAILS, 1 SHEET
- PEDESTRIAN CURB RAMP STANDARD DETAILS, 4 SHEETS

TRAFFIC CONTROL AND STREET LIGHT FEES

- CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL AND BARRICADING PLAN AND SUBMIT IT TO THE CITY TRAFFIC ENGINEERING DEPARTMENT FOR APPROVAL AND SHALL DO NO WORK UNTIL HE HAS RECEIVED WRITTEN APPROVAL FROM THE CITY OF SAID PLAN. ALL TRAFFIC CONTROL AND BARRICADING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SAID PLAN.
- R.O.W. PERMITS ARE REQUIRED PRIOR TO STARTING WORK IN ANY PUBLIC STREET RIGHT-OF-WAY. THE CONTRACTOR SHALL CONTACT TRAFFIC ENGINEERING TO DETERMINE ALL APPLICABLE REQUIREMENTS (PERMITS, TRAFFIC CONTROL PLAN, FEES, ETC.).
- STREET LIGHT FEES SHALL BE PAID BY THE DEVELOPER TO THE CITY (NOT BY CONTRACTOR)

WATER NOTES

- NO SEPARATE PAY FOR THRUST BLOCKS NOR RESTRAINED JOINTS IN PIPE OR FITTINGS IN PROPOSED 6", 8", 12" AND 16" PVC WATER LINES. CONTRACTOR SHALL INSURE ALL WATER FITTINGS ARE RESTRAINED OR BLOCKED APPROPRIATELY.
- PROVIDE CAST IRON BOXES AND PVC PIPE EXTENSIONS WITH CONCRETE AT GATE VALVES PURSUANT TO CITY STANDARD WATER DETAILS.
- CONSTRUCT WATER RISERS AT END CAPS ON PIPES AND 2" BLOW-OFF VALVES FOR FILLING AND TESTING PURPOSES PURSUANT TO DETAILS AS SHOWN IN CITY STANDARD WATER DETAILS.
- CONSTRUCT WATER SERVICE LINES AND CONNECTIONS PURSUANT TO THE NOTES AND DETAILS AS SHOWN IN CITY STANDARD WATER DETAILS.
- ALL WATER MAINS 6" AND LARGER SHALL BE DR18 PVC WITH DUCTILE IRON MECHANICAL JOINT FITTINGS.
- PROVIDE MINIMUM CLEARANCE BETWEEN WATER AND SANITARY SEWER LINES AND/OR MANHOLES AS REQUIRED BY THE TEXAS ADMINISTRATIVE CODE 317-3, APPENDIX "E", SEPARATION DISTANCE (AS REQUIRED BY TEXAS STATE WATER HYGENE LAW) AND ACCORDING TO CITY STANDARD DETAILS AND SPECIFICATIONS).
- ALL WATER SERVICE LINES SHALL BE 1" DIAMETER FOR SINGLE AND DOUBLE WATER SERVICES.
- ALL PUBLIC WATER LINE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH REQUIREMENTS SET FORTH BY THE CITY OF CORPUS CHRISTI WATER DISTRIBUTION STANDARDS, DETAILS, AND PRACTICES. PVC PIPE AND FITTINGS FOR WATER LINES SHALL BE AWWA C-900, CLASS 150, WITH A DR OF 18. FIRE HYDRANTS WILL BE LOCKED ONTO VALVE BY USE OF RETAINER GLANDS ON DIP.

STORM WATER POLLUTION PREVENTION

- PAY FOR ALL STORM WATER POLLUTION PREVENTION MEASURES, SOLID WASTE DISPOSAL, SOIL TRACKING, SEEDING, ETC., AS PART OF "STORM WATER POLLUTION PREVENTION".
- UPON COMPLETION OF IMPROVEMENTS HEREOF, ALL DISTURBED AREAS SHALL BE GRASS SEEDDED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION 028020 "SEEDING".
- THE NPDES PERMIT CAN BE FOUND ON THE TCEQ WEB SITE AT [HTTPS://WWW.TCEQ.TEXAS.GOV/ASSETS/PUBLIC/PERMITTING/STORMWATER/TXR150000_CGP.PDF](https://www.tceq.texas.gov/ASSETS/PUBLIC/PERMITTING/STORMWATER/TXR150000_CGP.PDF).

CALL BEFORE YOU DIG!



811

THE LONE STAR NOTIFICATION COMPANY
AT 1-800-669-8344

GENERAL NOTES

- IF A PARTICIPATION AGREEMENT AND/OR REIMBURSEMENT ARE BEING REQUESTED BY THE DEVELOPER/ENGINEER, THEN PRIOR TO START OF CONSTRUCTION, THE CITY COUNCIL MUST APPROVE SAID AGREEMENT.
- THIS WORK WILL BE INSPECTED BY THE CITY'S CONSTRUCTION INSPECTION DIVISION. CONSTRUCTION INSPECTION SHOULD BE CONTACTED AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION. THE NUMBER TO CONTACT CONSTRUCTION INSPECTION IS (361) 826-1738.
- DEVELOPER/DEVELOPER'S AGENT SHALL ENSURE THAT BEST MANAGEMENT PRACTICES TO MINIMIZE EROSION AND SEDIMENTATION ARE BEING USED AND THAT ANY AND ALL TCEQ PERMITS WHERE NEEDED HAVE BEEN OBTAINED.
- DEVELOPER/DEVELOPER'S AGENT SHALL ENSURE THAT TRAFFIC CONTROL MEASURES ARE IMPLEMENTED AS NEEDED. ANY WORK IN CITY RIGHT-OF-WAY REQUIRES A PERMIT FROM THE CITY'S TRAFFIC ENGINEERING DIVISION.
- ANY WORK AFFECTING TXDOT RIGHT-OF-WAY REQUIRES REVIEW, APPROVAL AND/OR PERMIT AS APPLICABLE.
- ALL PUBLIC IMPROVEMENTS SHALL BE WARRANTED BY THE DEVELOPER PER UNIFIED DEVELOPMENT CODE (UDC) SECTION 8.1.6 FROM THE DATE OF ACCEPTANCE OF THOSE IMPROVEMENTS BY THE DIRECTOR OF ENGINEERING.
- APPROVAL FOR PUBLIC IMPROVEMENTS PERTINENT TO PLATTING REQUIREMENTS OF A FINAL PLAT SHALL EXPIRE IF THE FINAL PLAT EXPIRES. A FINAL PLAT EXPIRES SIX (6) MONTHS FROM THE DATE OF ITS APPROVAL BY PLANNING COMMISSION IF IMPROVEMENTS HAVE NOT BEEN INITIATED AND SUBSTANTIAL PROGRESS CONTINUED TOWARDS COMPLETION UNLESS AN EXTENSION HAS BEEN GRANTED BY ENGINEERING SERVICES.
- APPROVAL FOR PUBLIC IMPROVEMENTS ASSOCIATED WITH A BUILDING PERMIT SHALL EXPIRE IF THE BUILDING PERMIT EXPIRES. A BUILDING PERMIT EXPIRES 180 DAYS FROM THE DATE OF ISSUANCE UNLESS AN EXTENSION HAS BEEN GRANTED BY BUILDING INSPECTIONS.
- A PERMIT IS REQUIRED FOR ANY EXCAVATION IN PUBLIC RIGHT OF WAY. EXCAVATION MEANS AN ACTIVITY THAT CUTS, PENETRATES, OR BORES UNDER ANY PORTION OF THE PUBLIC WAY THAT HAS BEEN IMPROVED WITH A PAVED SURFACE FOR STREET, SIDEWALK, SURFACE DRAINAGE, OR RELATED PUBLIC TRANSPORTATION INFRASTRUCTURE PURPOSES. PERMITS WILL NOT BE ISSUED FOR EXCAVATION IN ANY PUBLIC WAY THAT HAS BEEN CONSTRUCTED, RECONSTRUCTED, REPAVED, OR RESURFACED IN THE PRECEDING PERIOD OF FIVE YEARS FROM THE DATE OF ACCEPTANCE BY THE PUBLIC WORKS CONSTRUCTION ENTITY.
- ANY EXCAVATIONS ALLOWED BY THE DIRECTOR OF DEVELOPMENT SERVICES ON CONCRETE STREETS MUST BE PERFORMED IN SUCH A WAY THE ENTIRE CONCRETE PANEL IS REPLACED.
- ELECTRICAL CASING PIPES SHALL BE PVC SCHEDULE 40 PIPE, SOLVENT WELD, CAPPED EACH END (WITHOUT SOLVENT WELD AT END CAPS). CASINGS ARE FOR FUTURE ELECTRICAL WIRE/CABLES TO BE INSERTED BY OTHERS. SIZE OF CASINGS AND PLACEMENT LOCATIONS SHALL BE MADE PURSUANT TO THE REQUIREMENTS OF CPL-PLACE ELECTRICAL CASINGS AND BACKFILL IN ACCORDANCE WITH ALL REQUIREMENTS FOR SANITARY SEWER SERVICE LINES. INSTALL CASING PIPES WITH A MINIMUM OF 4" OF COVER FROM FINISHED SURFACE. CONTRACTOR SHALL CONTACT CPL TO DETERMINE THE LOCATION OF CASINGS REQUIRED BY AEP.
- SUBSIDIARY WORK IN THE COURSE OF FURNISHING OR CONSTRUCTING A COMPLETE WORK OR IMPROVEMENT CERTAIN WORK MAY BE NECESSARY WHICH IS SUBSIDIARY TO THE ITEMS WHICH ARE ESTABLISHED AS PAY ITEMS. SOME SUCH SUBSIDIARY WORK MAY BE SHOWN AND SPECIFIED IN DETAIL IN THE PLANS AND SPECIFICATIONS, OTHER WORK MAY BE LESS COMPLETELY SHOWN, AND OTHER SUCH WORK WHICH IS ENTIRELY NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK AS A WHOLE MAY NOT BE NOTED ON THE PLANS OR IN THE SPECIFICATIONS. IT SHALL BE THE DUTY OF THE CONTRACTOR TO CARRY OUT ALL SUCH SUBSIDIARY WORK AS IF FULLY SHOWN, AND THE COST OF SUCH WORK SHALL BE MADE SUBSIDIARY TO THE ESTABLISHED PAY ITEM.

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DEVELOPERS:

MOSES MOSTAGHASI
P.O. BOX 331308, CORPUS CHRISTI, TEXAS
78463 774-3832

CORPUS CHRISTI COMMUNITY CHURCH
4833 SARATOGA BLVD. NO. 259
CORPUS CHRISTI, TX 78413-2213
420-0022

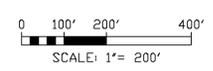
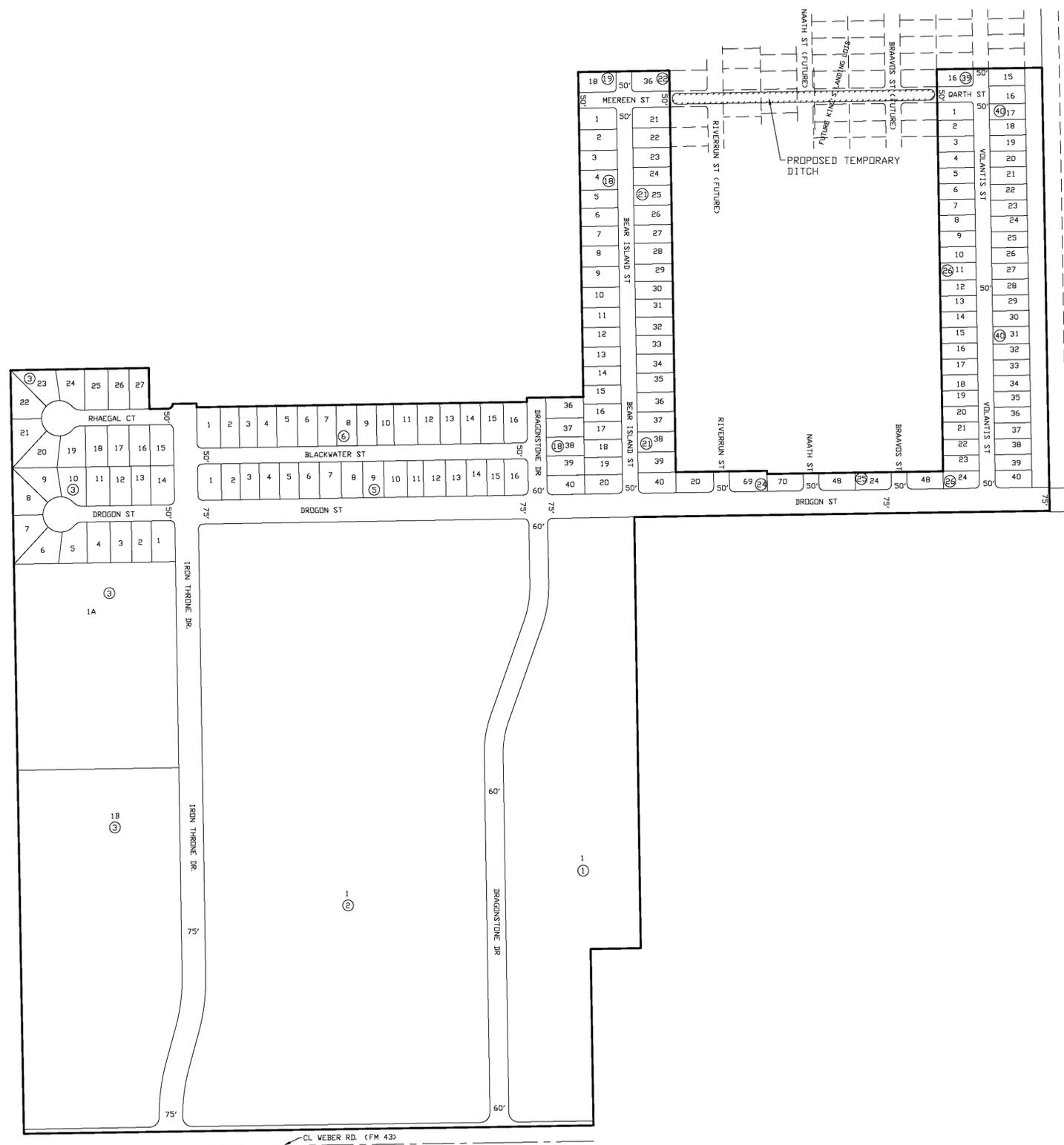
BENCHMARKS

CM IN CDC HEADWALL,
EL 35.60, SEE BOTTOM
SHEET 2 IN MIDDLE

TDP OF FH 336'44" 19'E
S01.83' FROM PROPERTY
CORNER, EL 36.21, SEE
SHEET 2 LOWER LEFT

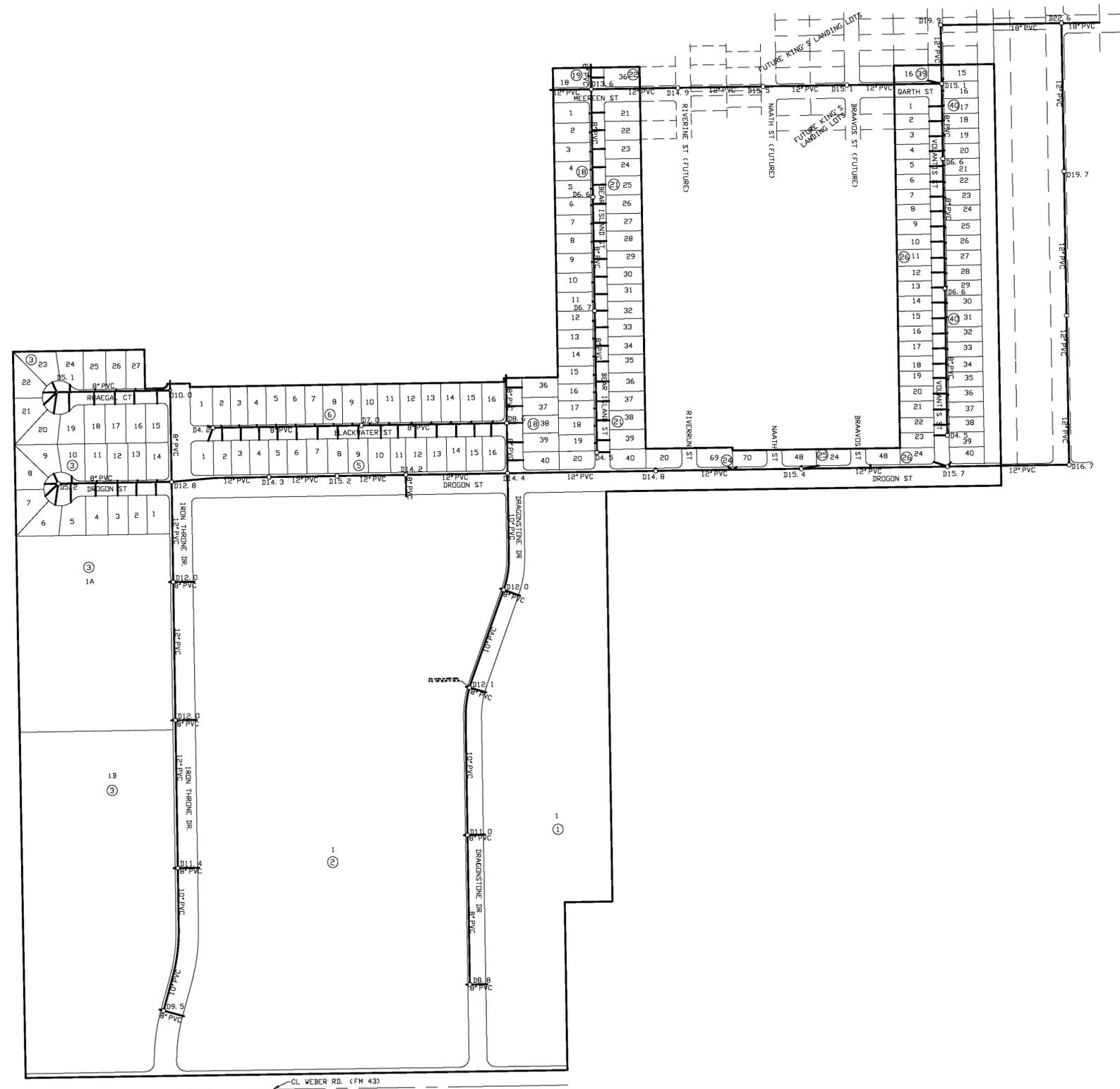
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BASS AND WELSH ENGINEERING TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
COVER SHEET AND MISCELLANEOUS INFORMATION			
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CHK: N. WELSH	SCALE (H): AS SHOWN	JOB NO. 18068	
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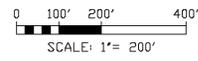


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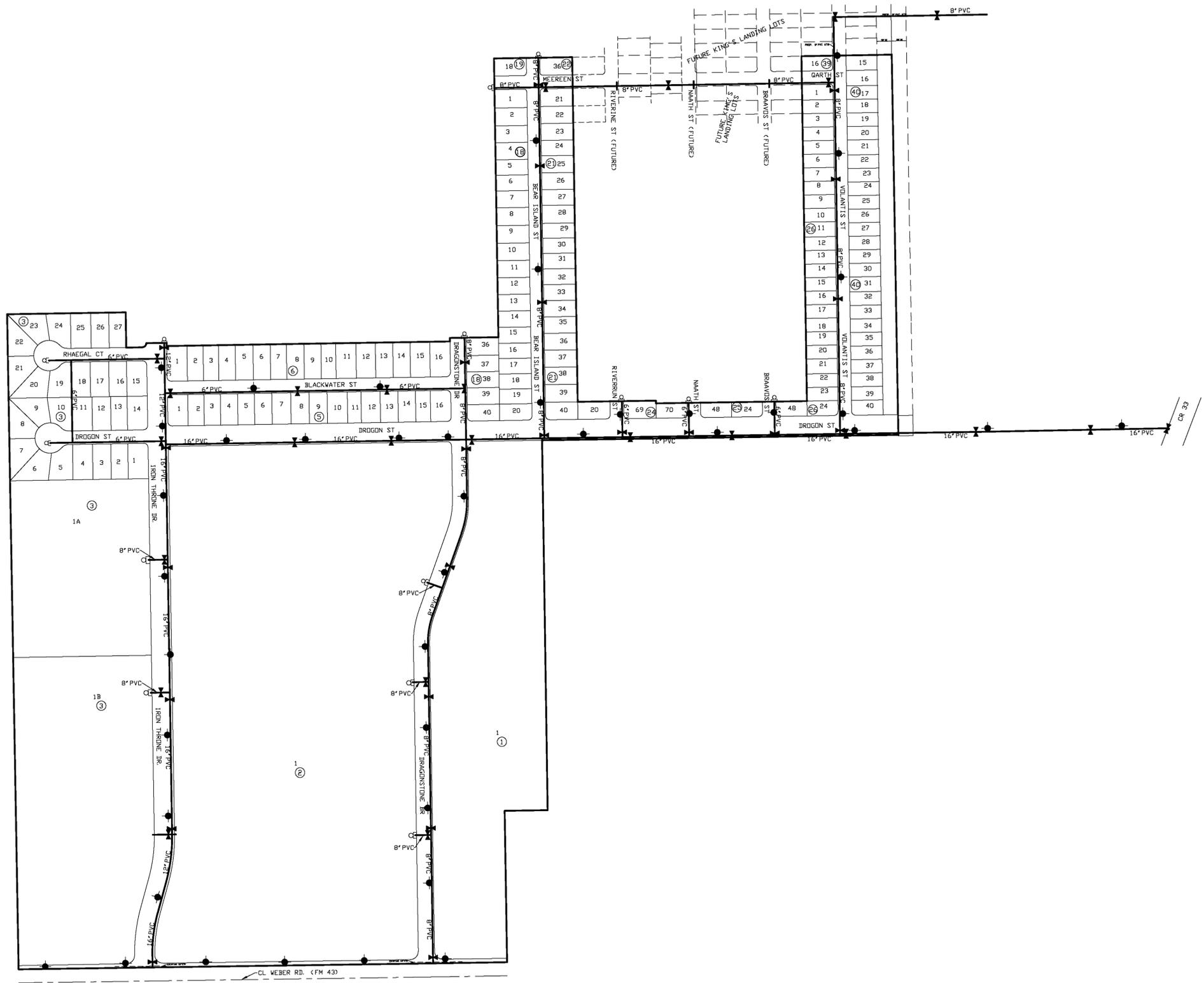
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PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
STREET BASE MAP		
OWN. _____ CHK. N. WELSH	PLOT SCALE: 1" = 200' SCALE (P): SAME SCALE (V): NONE DATE PLOTTED 2/18/20	COM. NO. STR-BASE.DWG JOB NO. 18068 SHEET 1A OF 33



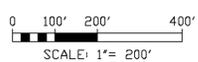
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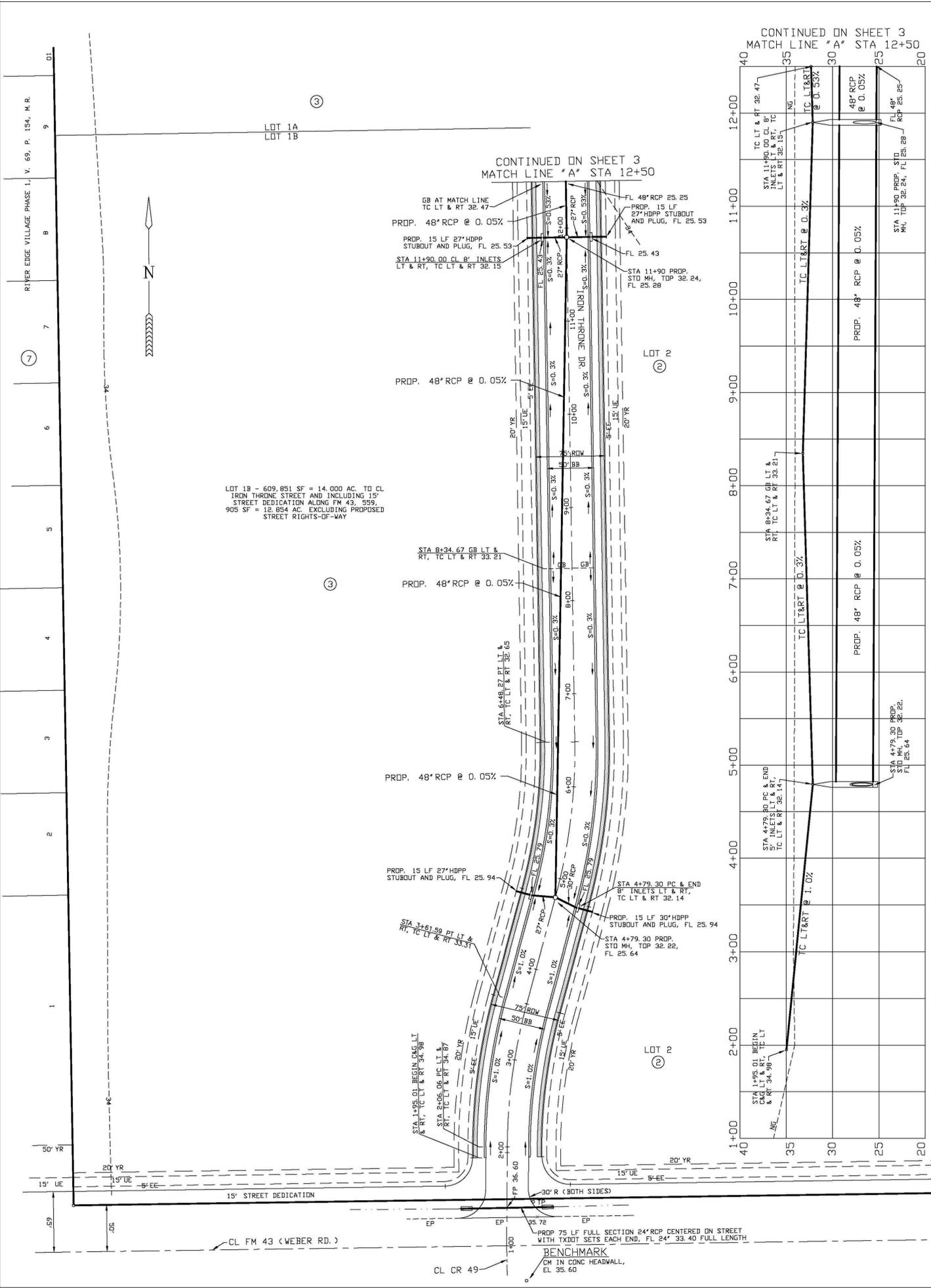
BASS & WELSH ENGINEERING TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
SANITARY SEWER BASE MAP		
OWN. _____	PLOT SCALE: 1" = 200'	COM. NO. SS-BASE.DWG
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 18068
	SCALE (V): NONE	DATE PLOTTED 2/18/20
		SHEET 1B OF 33



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BASS & WELSH ENGINEERING TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
WATER BASE MAP		
OWN. _____ CHK. N. WELSH	PLOT SCALE: 1" = 200' SCALE (H): SAME SCALE (V): NONE DATE PLOTTED 2/18/20	COM. NO. WTR-BASE.DWG JOB NO. 18068 SHEET 1C OF 33

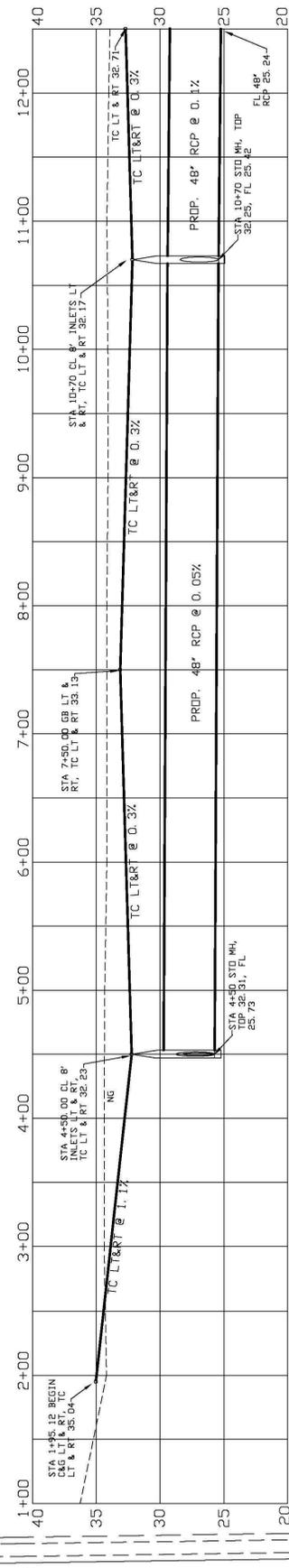


LOT 1B = 609,851 SF = 14,000 AC. TO CL IRON THRONE STREET AND INCLUDING 15' STREET DEDICATION ALONG FM 43, 559, 905 SF = 12,854 AC. EXCLUDING PROPOSED STREET RIGHTS-OF-WAY

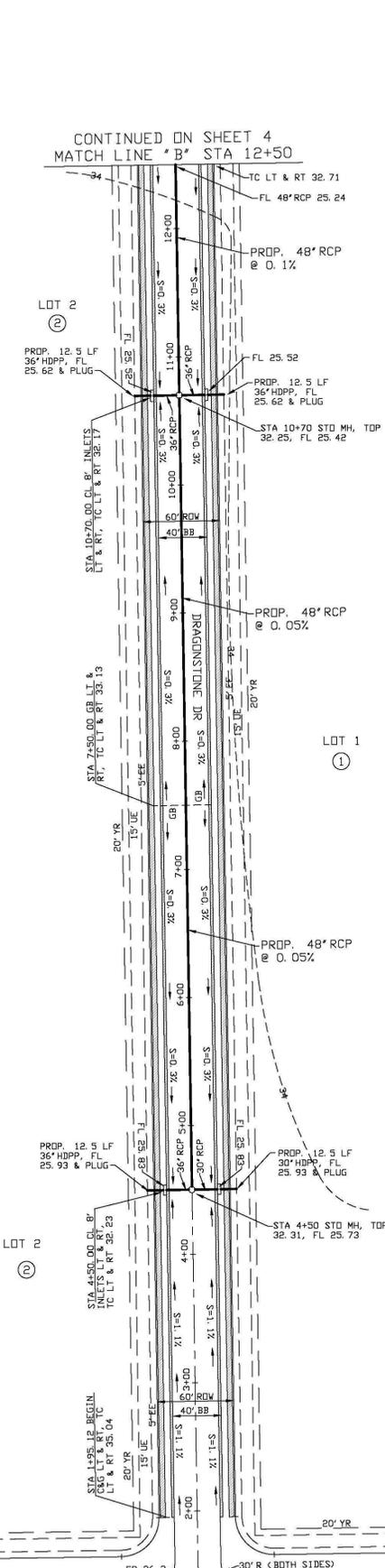
CONTINUED ON SHEET 3
MATCH LINE "A" STA 12+50

CONTINUED ON SHEET 4
MATCH LINE "B" STA 12+50

PROFILE -- IRON THRONE DR

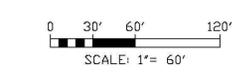


PROFILE -- DRAGONSTONE DR



HDDP (HIGH DENSITY POLYETHYLENE PIPE)
CONTRACTOR SHALL USE HDDP WHERE SHOWN IN THE PLANS FOR STORM SEWER. HDDP SHALL BE DUAL WALL, CORRUGATED EXTERIOR WALL WITH SMOOTH INTERIOR WALL WITH MANNING'S HYDRAULIC COEFFICIENT OF 0.12 OR LESS AND SHALL MEET THE REQUIREMENTS OF ASTM F855, D2681, F477, D3212 AND ASTM M252 AND M294 TYPE "S". CONTRACTOR SHALL SUBMIT MANUFACTURER'S CATALOG DATA FOR HDDP TO ENGINEER FOR APPROVAL AND SHALL DO NO HDDP CONSTRUCTION UNTIL HE HAS RECEIVED ENGINEER'S WRITTEN APPROVAL. PAY FOR HDDP AS LF OF SAME SIZE RCP.

- PAVING, GRADING AND DRAINAGE NOTES, CONTINUED.**
- NO SEPARATE PAY FOR CLEARING AND GRUBBING IN COMMERCIAL LOTS (LOT 1, BLOCK 1, LOT 2 AND LOTS 1A & 1B, BLOCK 3) AND 55' DE ADJACENT TO AND EAST OF BLOCK 40 OF THIS SITE AS SHOWN SHEETS 11 AND 13 IN PLANS HEREOF.
 - PAY FOR CLEARING AND GRUBBING FOR 1) TEMPORARY OFFSITE DRAINAGE CHANNEL RUNNING NORTH IN FUTURE IRON THRONE DRIVE AND ASSOCIATED BOX CULVERT NEAR OSD CREEK AND 2) ALONG THE TEMPORARY DRAINAGE CHANNEL IN THE FUTURE RIGHTS-OF-WAY OF WEEBEE AND DARTH STREETS AS SHOWN SHEETS 12 AND 13 IN PLANS HEREOF ACCORDING TO A 60' WIDE STRIP OF LAND AS MEASURED ALONG THE CENTERLINE OF SAME.
 - PAYMENT FOR "BRIDGE" SHALL INCLUDE DOUBLE 4' X 8' 8/2" BOX CULVERT AND ASSOCIATED WINGWALLS, HEADWALLS, CONTINUOUS FOOTINGS, GALVANIZED HANDRAILS AND CONTINUOUS FOOTINGS ASSOCIATED THEREWITH. ANY SPECIAL UNDERLAYMENT BENEATH DOUBLE BOX CULVERT, ALL CLEARING AND GRUBBING AND EARTHWORK ASSOCIATED WITH BOX CULVERT AND ALL DEWATERING/WATER DIVERSION ASSOCIATE WITH THE ABOVE "BRIDGE" SHALL NOT INCLUDE CURB AND GUTTER, SIDEWALK, 8" LIME STABILIZED SUBGRADE, 11" CRUSHED LIMESTONE BASE, 4" MAC, ALL OF WHICH SHALL BE PAID FOR SEPARATELY.
 - PAY FOR HDDP SAME AS RCP OF SAME SIZE.
 - NO SEPARATE PAY FOR EARTHWORK, BEDDING, MATERIAL ENCASEMENT OR DEWATERING FOR STORM SEWER PIPES, INLETS AND BOX CULVERTS.



DATE PLOTTED	02/18/20
JOB NO.	18088
SHEET	2 OF 33
DATE	02/18/20
SCALE	1" = 60'
PROJECT	PAVING, GRADING AND DRAINAGE PLAN STREET AND STORM SEWER PROFILES
CLIENT	BASS & WELSH ENGINEERING
REG. NO.	TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404
DESIGNER	PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX

BENCHMARK
TOP OF FH S36°44'19"E
201.83' FROM PROPERTY
CORNER, EL. 36.21

VERIFY LOCATION OF EXISTING 16" WTR PRIOR TO ANY TAPS (WORK) ON IT

PROPOSED 75 LF FULL SECTION 24" RCP CENTERED ON STREET WITH TxDOT SETS EACH END, FL. 24' 33.40' FULL LENGTH

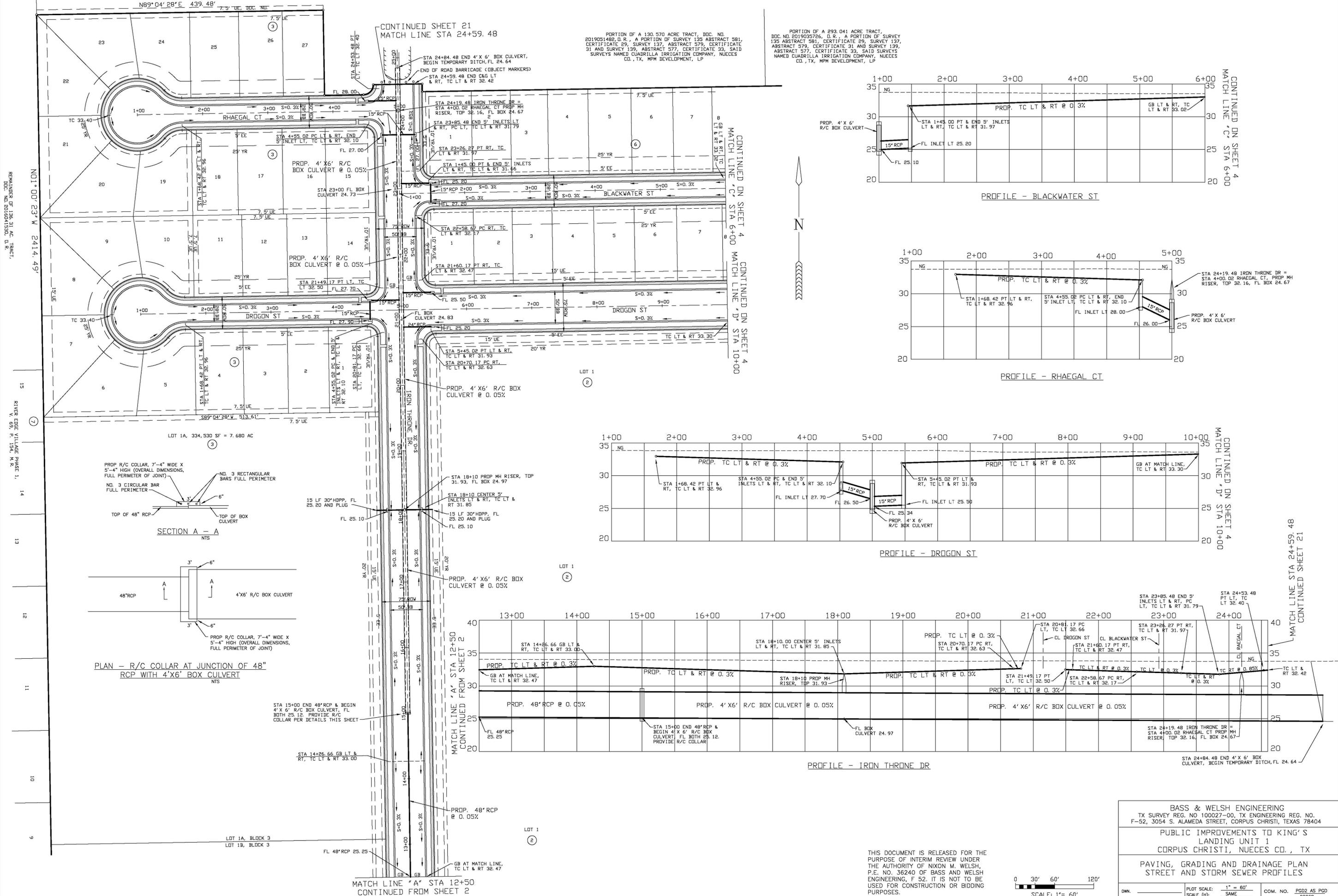
PROPOSED 64 LF FULL SECTION 24" RCP WITH TxDOT SETS EACH END, FL. 33.00' FULL LENGTH

BALANCE OF 27.5 AC. TRACT, DEC. NO. 2003067159, D.R., L15D
LONDON SCHOOL TRACTS, LOT 2,
V. 67, P. 576, N.M.

S89°05'03"W
159.34'

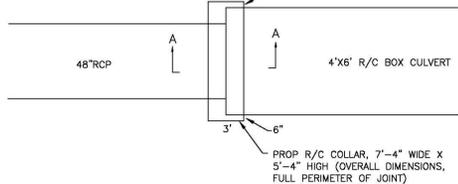
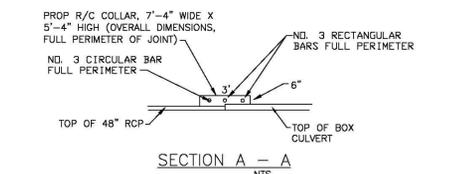
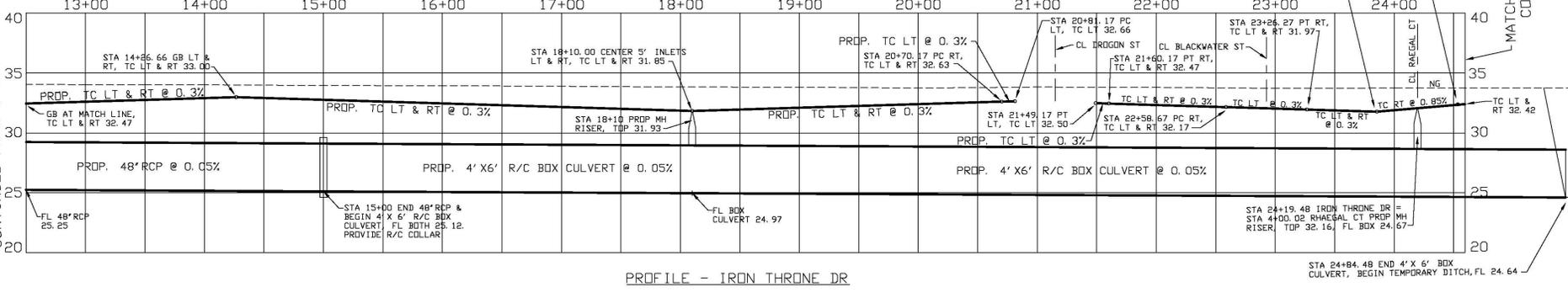
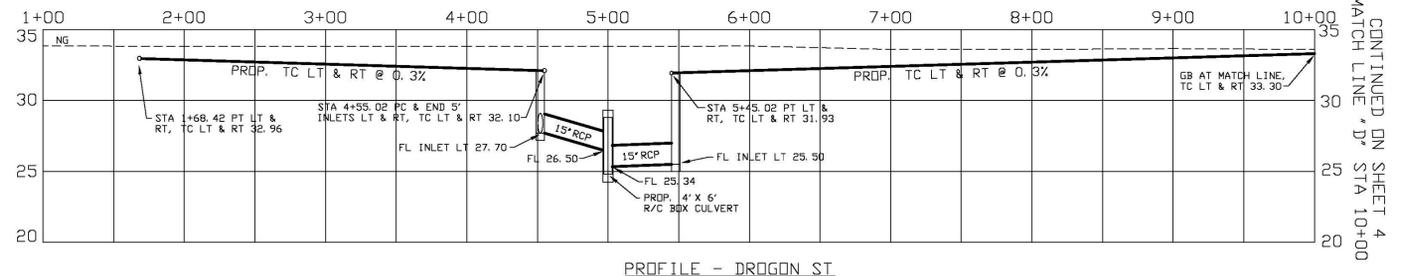
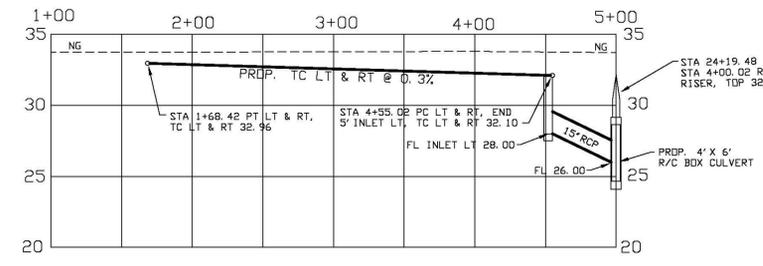
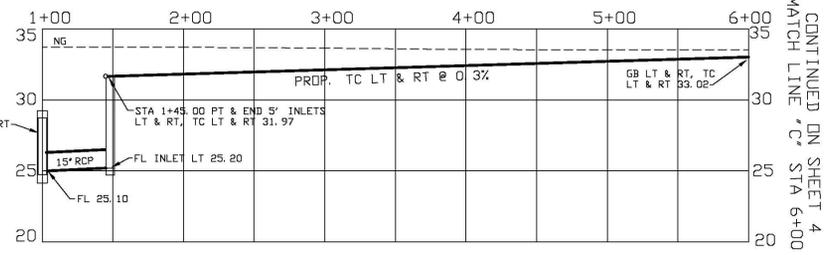
S00°54'11"E
558.28'

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PORTION OF A 130.570 ACRE TRACT, DOC. NO. 2019051482, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT, DOC. NO. 201905726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



BASS & WELSH ENGINEERING
 TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

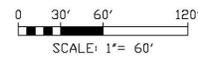
PAVING, GRADING AND DRAINAGE PLAN
 STREET AND STORM SEWER PROFILES

DWN. _____ PLOT SCALE: 1" = 60'
 SCALE (H): _____
 SCALE (V): _____
 DATE PLOTTED: 02/18/20

CHK. N. WELSH

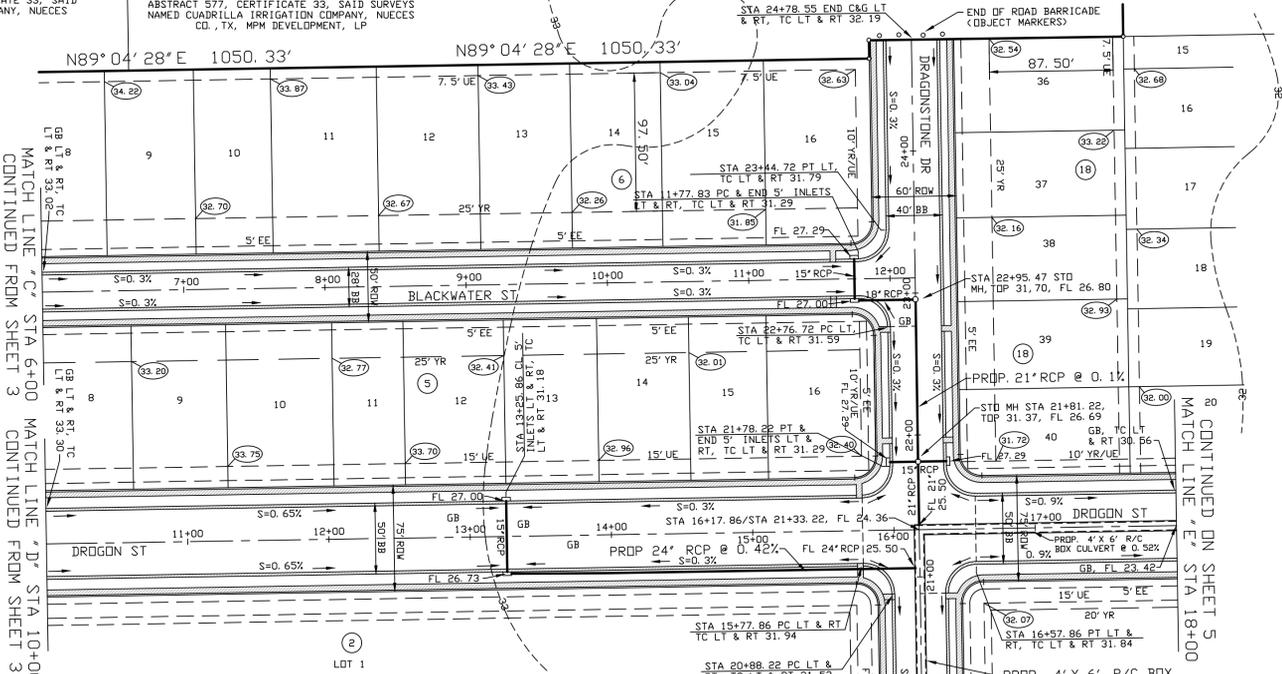
COM. NO. PG02 AS PGD
 JOB NO. 08068
 SHEET 3 OF 33

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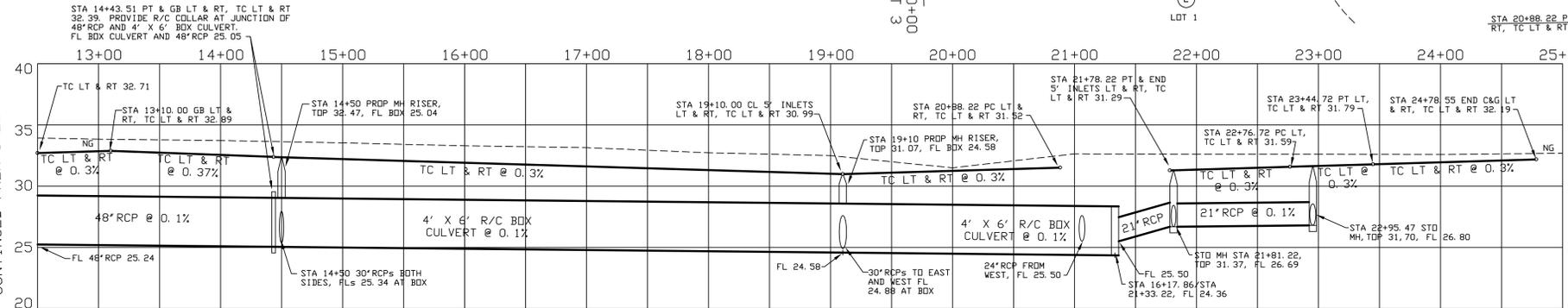


PORTION OF A 130.570 ACRE TRACT, D.C. NO. 2019051492, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT, D.C. NO. 2019035726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

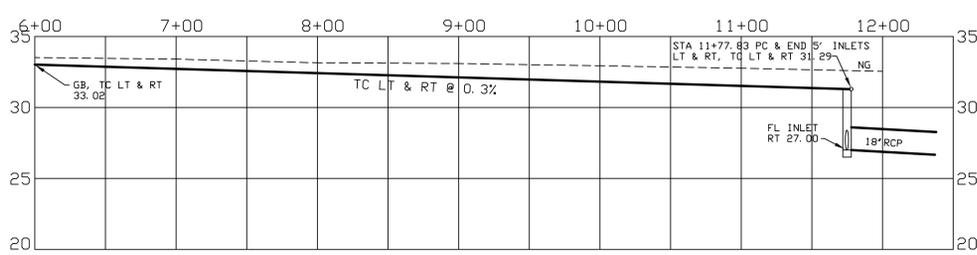


MATCH LINE 'B' STA 12+50
CONTINUED FROM SHEET 2



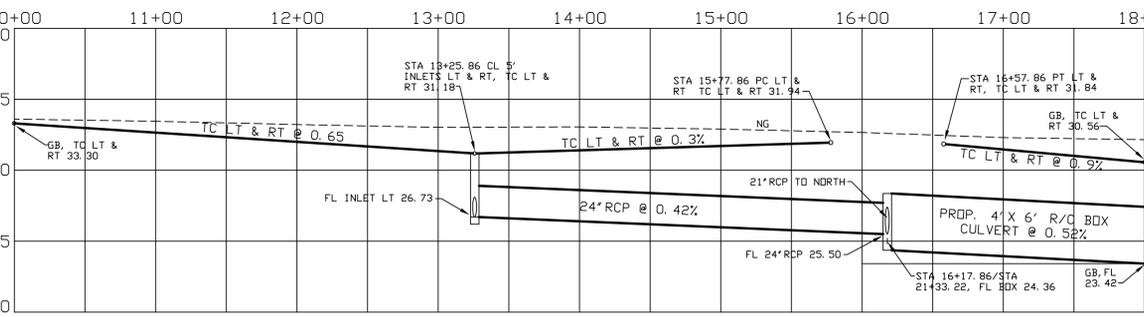
PROFILE - DRAGONSTONE

MATCH LINE 'C' STA 6+00
CONTINUED FROM SHEET 3

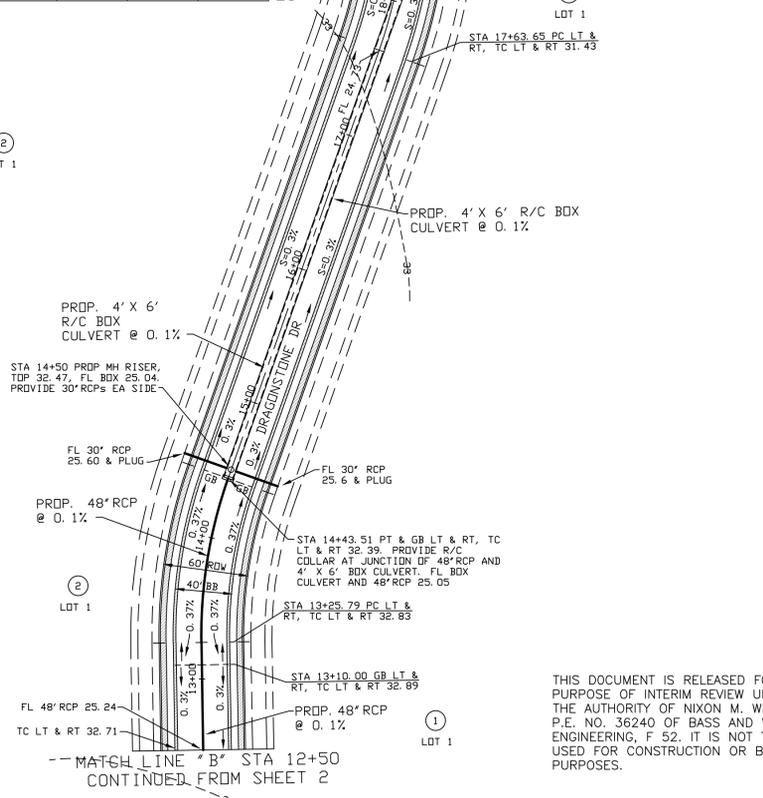


PROFILE - BLACKWATER ST

MATCH LINE 'D' STA 10+00
CONTINUED FROM SHEET 3



PROFILE - DRAGON ST



MATCH LINE 'B' STA 12+50
CONTINUED FROM SHEET 2

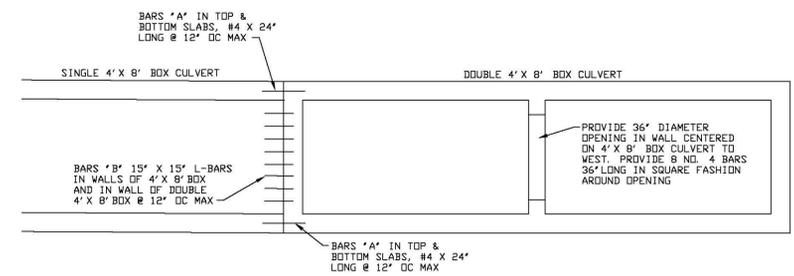
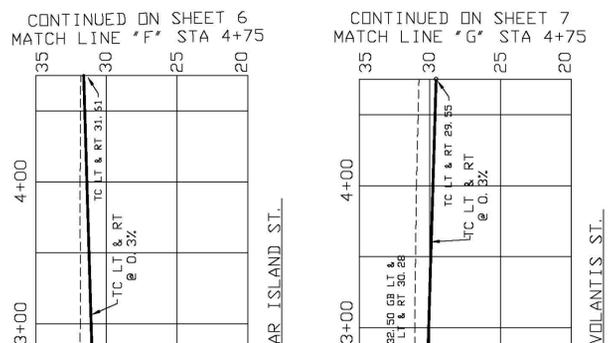
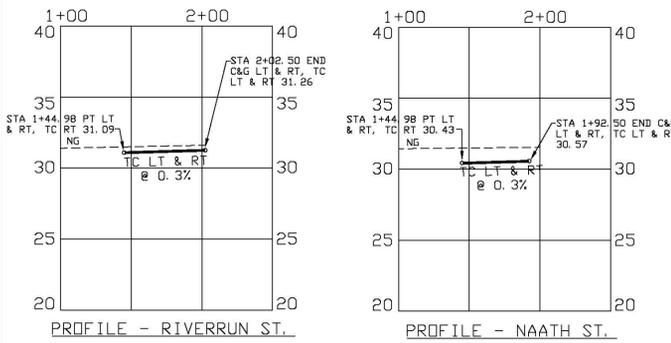
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25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

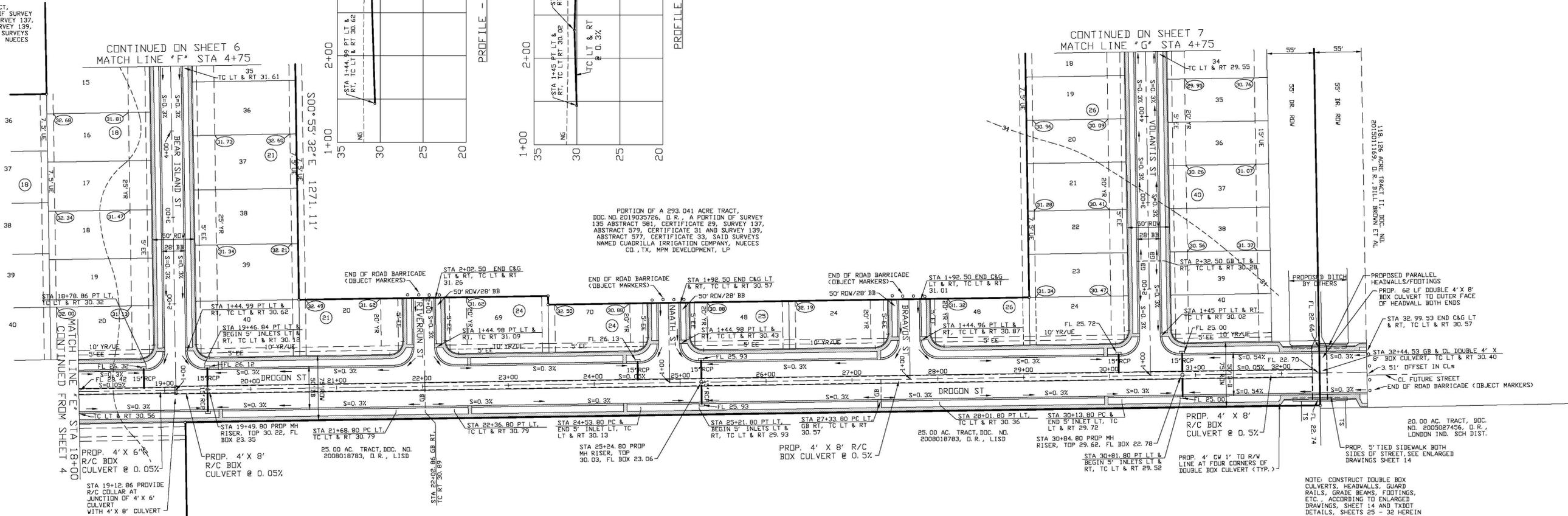
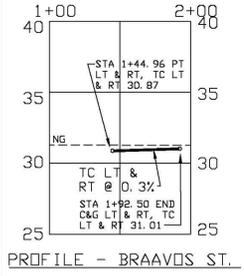
25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
PAVING, GRADING AND DRAINAGE PLAN STREET AND STORM SEWER PROFILES		
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG03 AS PGD
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068
	SCALE (V): NONE	DATE PLOTTED 02/18/20
		SHEET 4 OF 33

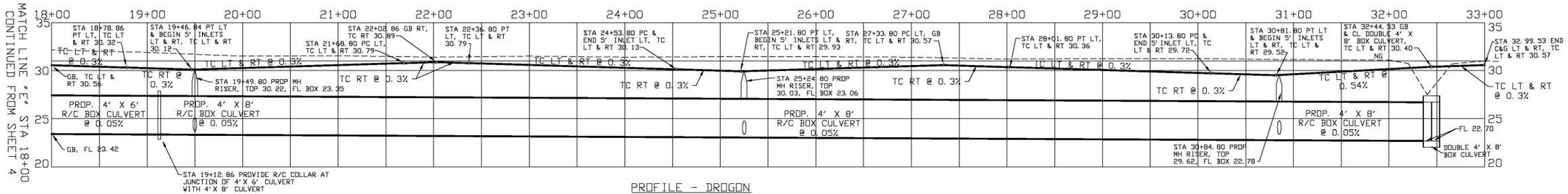


DETAIL - JUNCTION OF SINGLE 4' X 8' BOX CULVERT WITH DOUBLE 4' X 8' BOX CULVERT
(NOT TO SCALE)

PORTION OF A 293.041 ACRE TRACT, D.C. NO. 201903726, D.R., A PORTION OF SURVEY 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



PORTION OF A 293.041 ACRE TRACT, D.C. NO. 201903726, D.R., A PORTION OF SURVEY 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



NOTE: CONSTRUCT DOUBLE BOX CULVERTS, HEADWALLS, GUARD RAILS, GRADE BEAMS, FOOTINGS, ETC., ACCORDING TO ENLARGED DRAWINGS, SHEET 14 AND TxDOT DETAILS, SHEETS 25 - 32 HEREIN

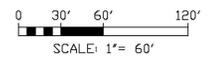
BASS & WELSH ENGINEERING
TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1
CORPUS CHRISTI, NUECES CO., TX

PAVING, GRADING AND DRAINAGE PLAN
STREET AND STORM SEWER PROFILES

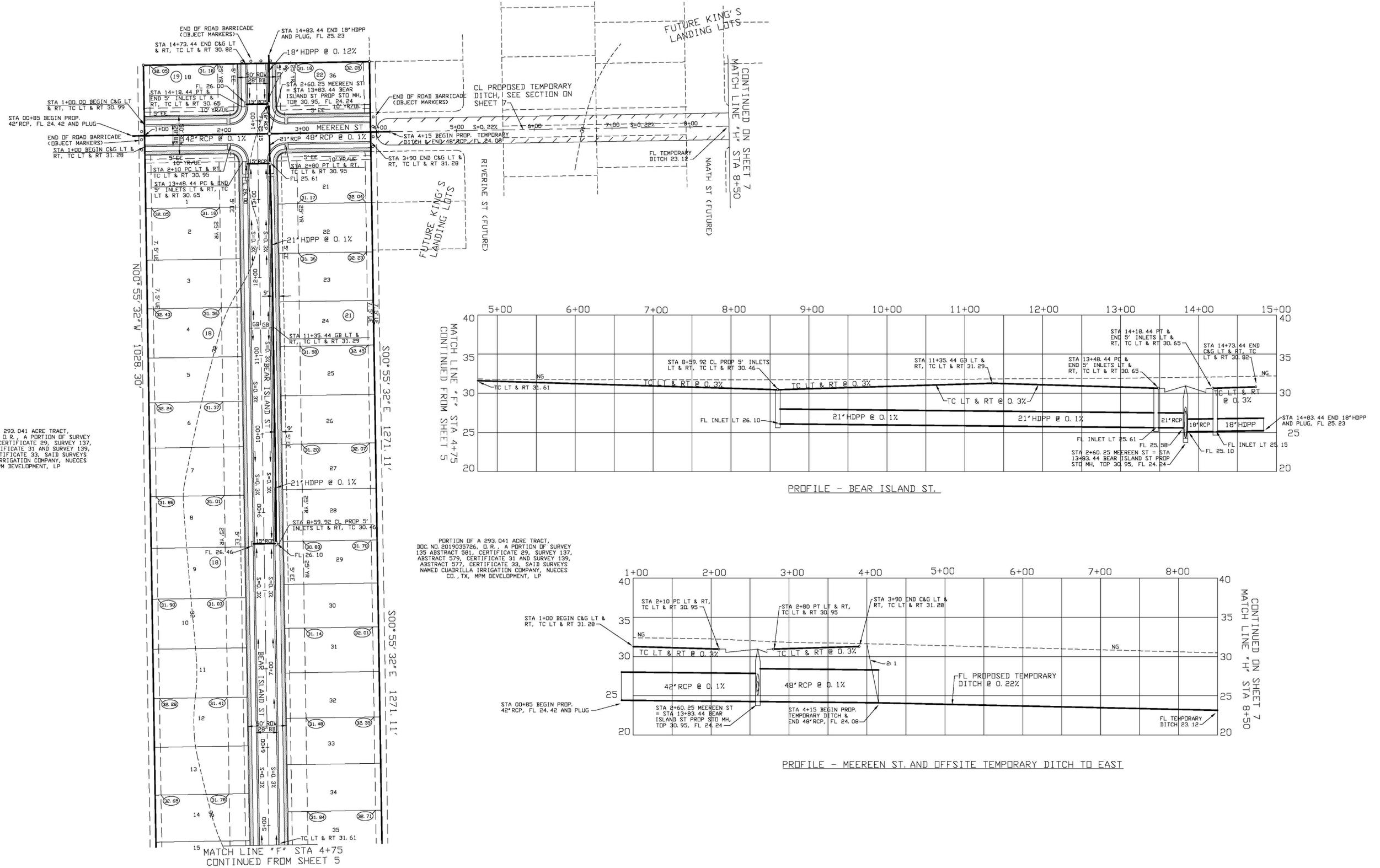
OWN.	PLOT SCALE: 1" = 60'	COM. NO.	PG04 AS PGD
CHK. N. WELSH	SCALE (H): SAME	JOB NO.	08068
	SCALE (V): NONE	DATE PLOTTED	02/18/20
		SHEET	5 OF 33

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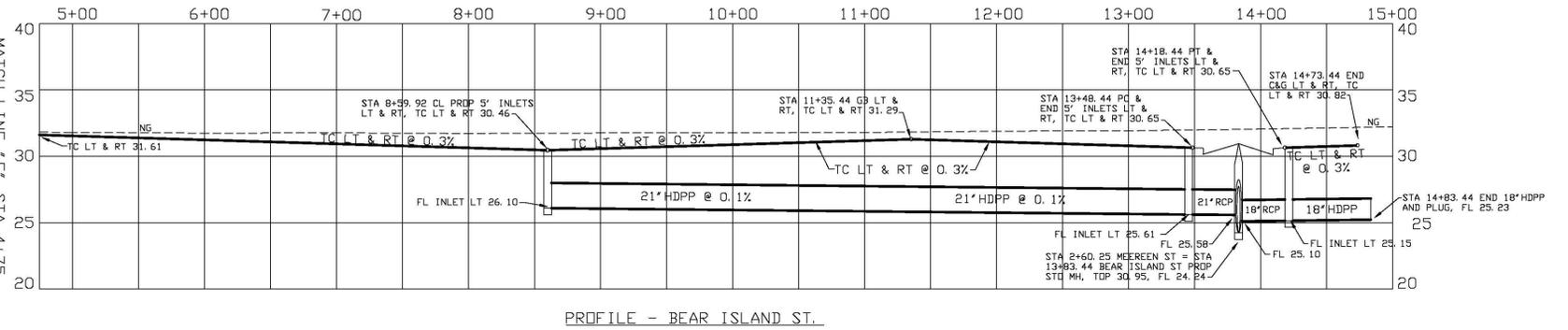


PORTION OF A 293.041 ACRE TRACT,
 DDC NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP

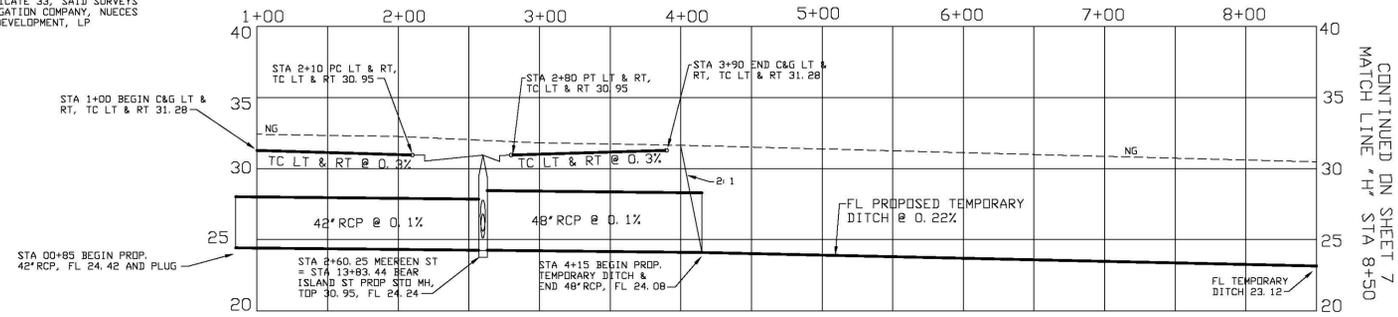


PORTION OF A 293.041 ACRE TRACT,
 DDC NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT,
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 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP

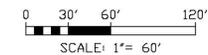


PROFILE - BEAR ISLAND ST.

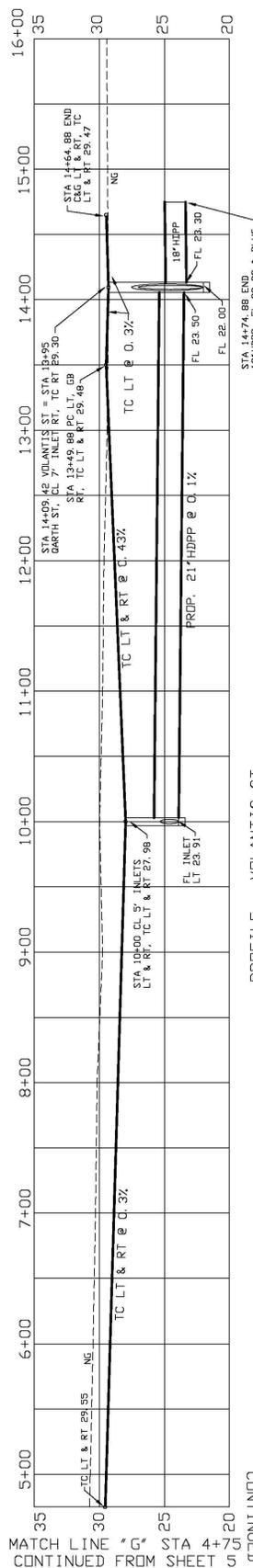


PROFILE - MEEREEN ST. AND OFFSITE TEMPORARY DITCH TO EAST

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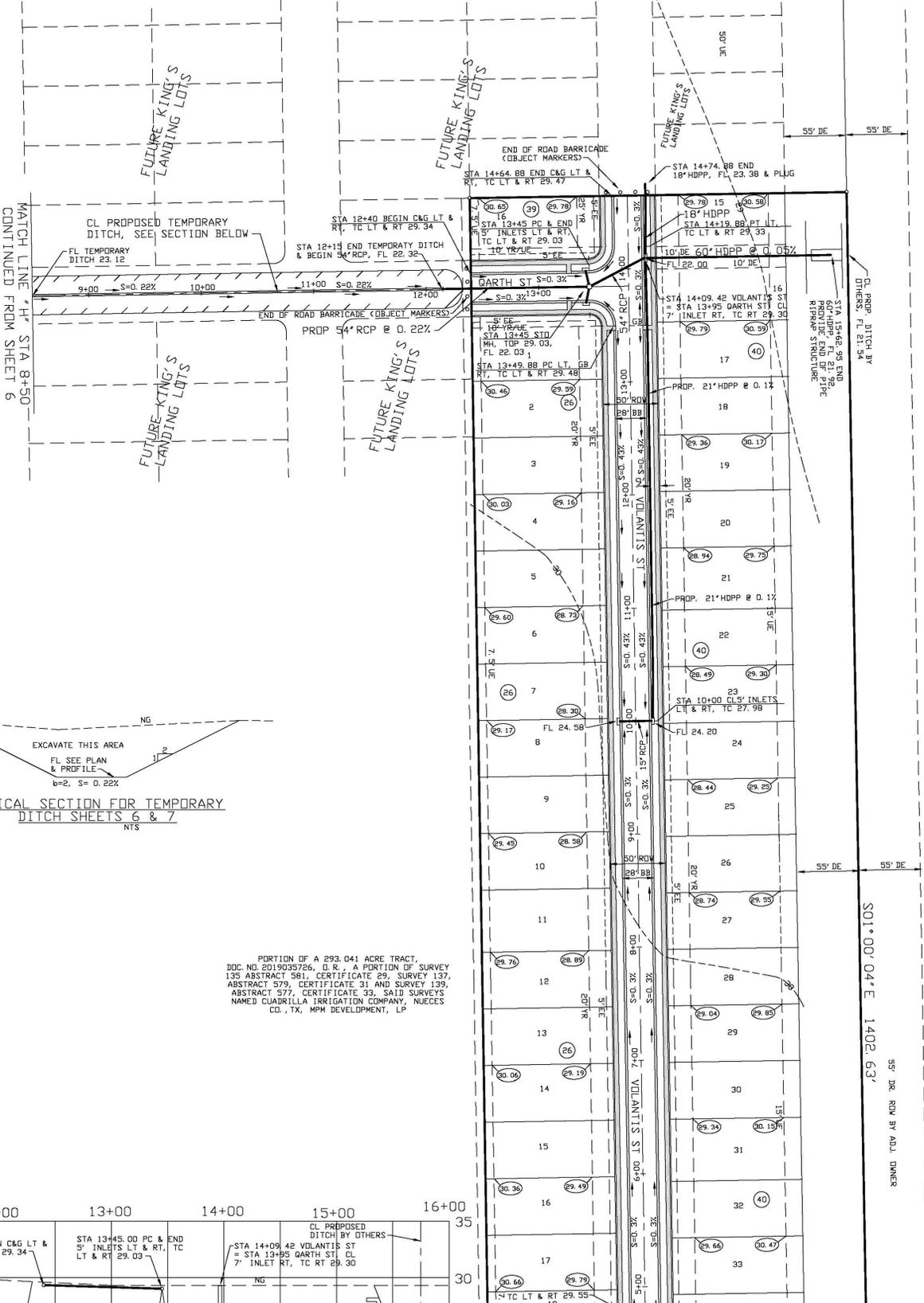
BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
PAVING, GRADING AND DRAINAGE PLAN STREET AND STORM SEWER PROFILES			
OWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG05 AS PGD	
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068	
	SCALE (V): NONE	DATE PLOTTED 02/18/20	SHEET 6 OF 33



PROFILE - VOLANTIS ST.

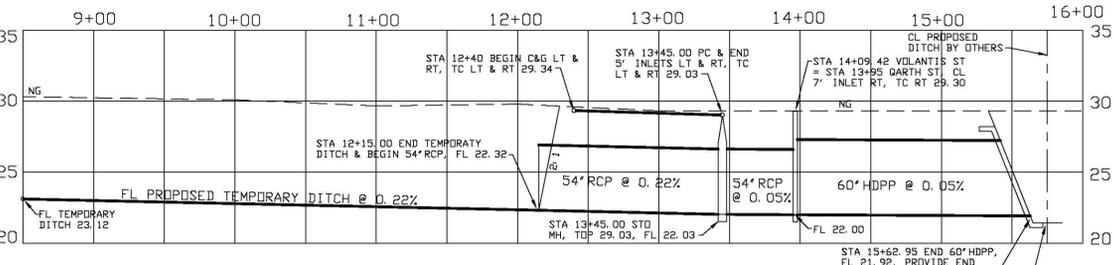
MATCH LINE "H" STA 8+50 CONTINUED FROM SHEET 6

PORTION OF A 293.041 ACRE TRACT, DOC. NO. 2019035726, D. R., A PORTION OF SURVEY 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



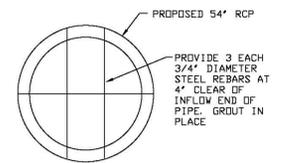
TYPICAL SECTION FOR TEMPORARY DITCH SHEETS 6 & 7

PROFILE - OFFSITE DRAINAGE, GARTH ST. AND 60\"/>



PORTION OF A 293.041 ACRE TRACT, DOC. NO. 2019035726, D. R., A PORTION OF SURVEY 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

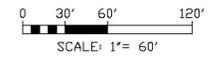
PORTION OF A 293.041 ACRE TRACT, DOC. NO. 2019035726, D. R., A PORTION OF SURVEY 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



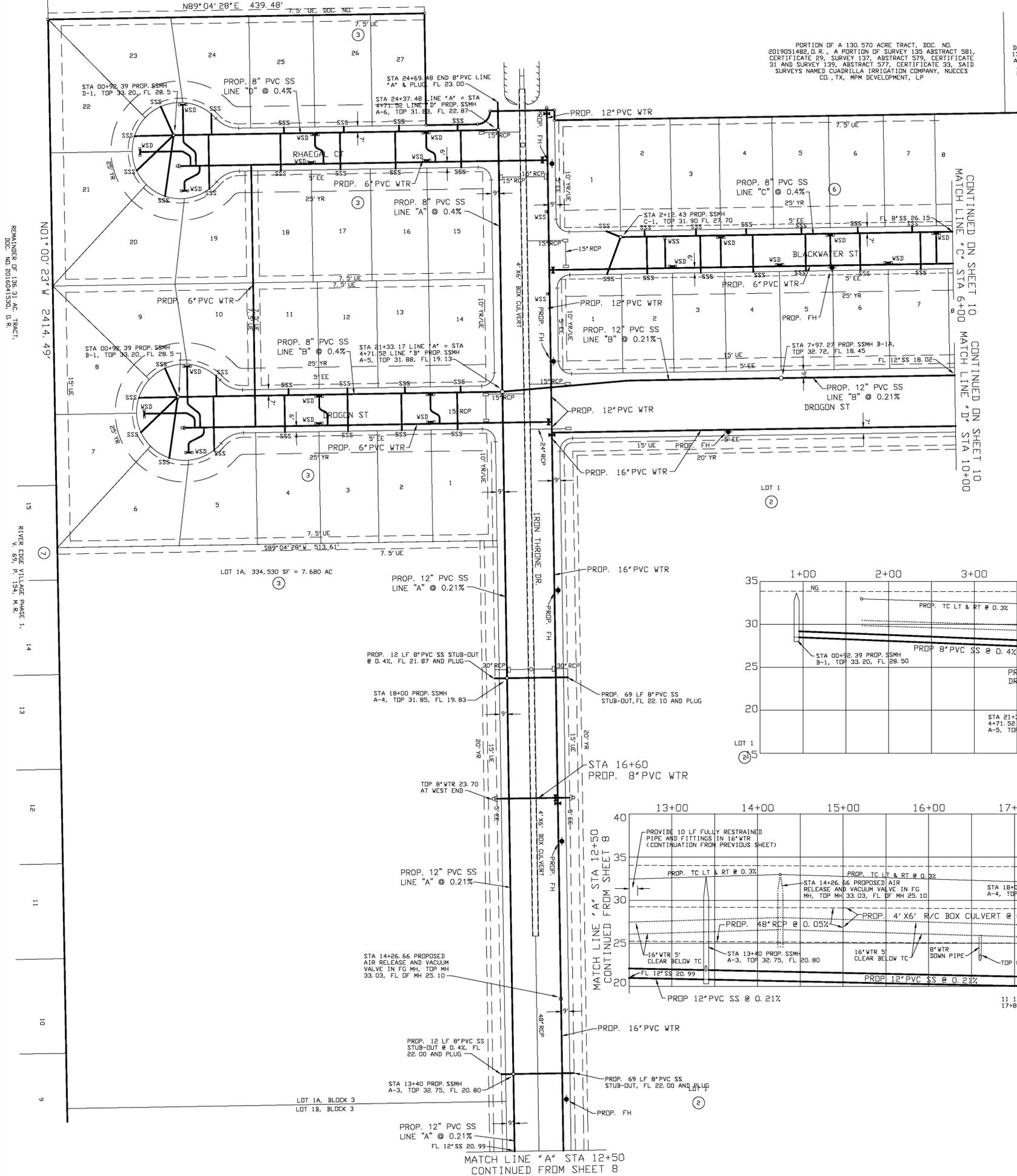
DETAIL - REBAR INSTALLATION AT DRAINAGE ENTRY TO PROPOSED 54\"/>

NOTE: USE THIS DETAIL AT FLOW ENTRY INTO 54\"/>

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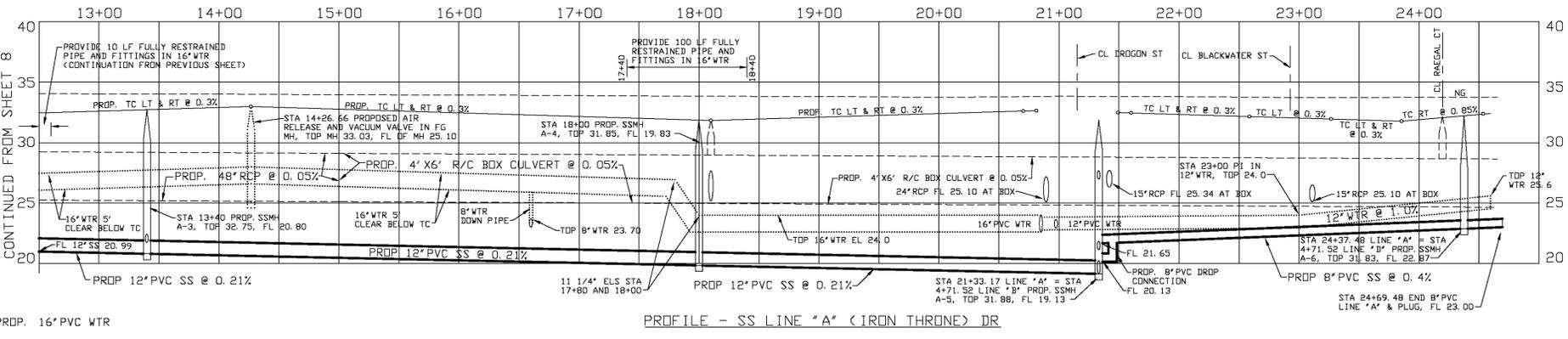
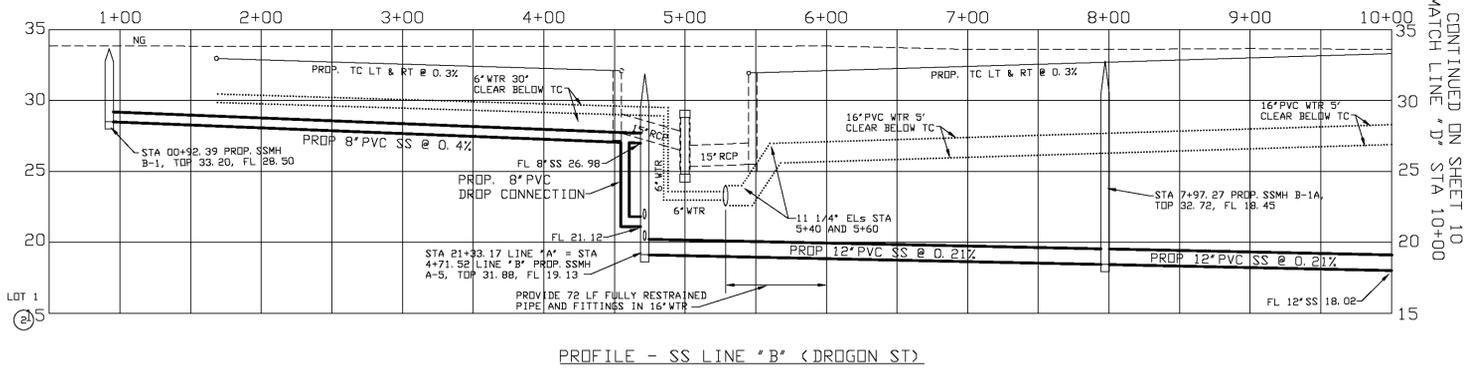
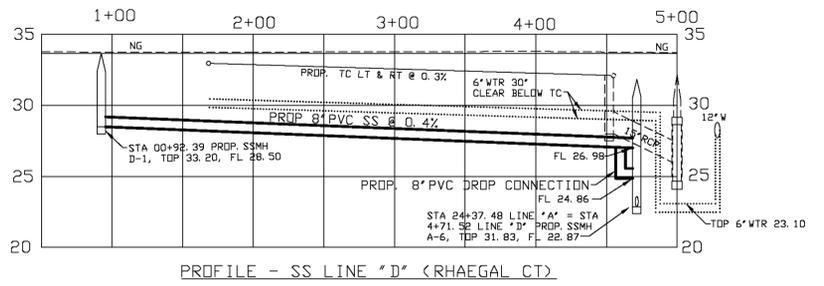
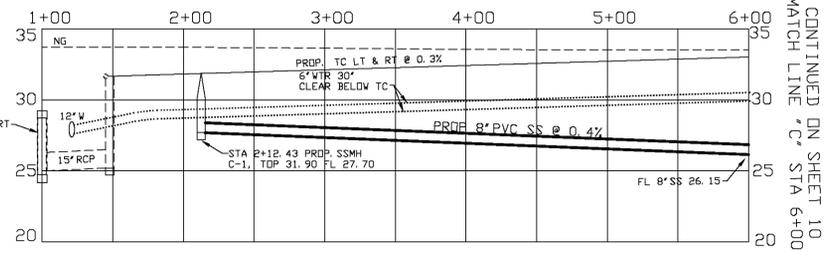


BASS & WELSH ENGINEERING TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
PAVING, GRADING AND DRAINAGE PLAN STREET AND STORM SEWER PROFILES		
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG06 AS PGD
CHK: N. WELSH	SCALE (H): SAME	JOB NO. 08068
	SCALE (V): NONE	SHEET 7 OF 33
	DATE PLOTTED: 02/18/20	



PORTION OF A 130.570 ACRE TRACT, DOC. NO. 2019051482, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT, DOC. NO. 201905726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



BASS & WELSH ENGINEERING
 TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

SANITARY SEWER AND WATER PLAN AND PROFILE

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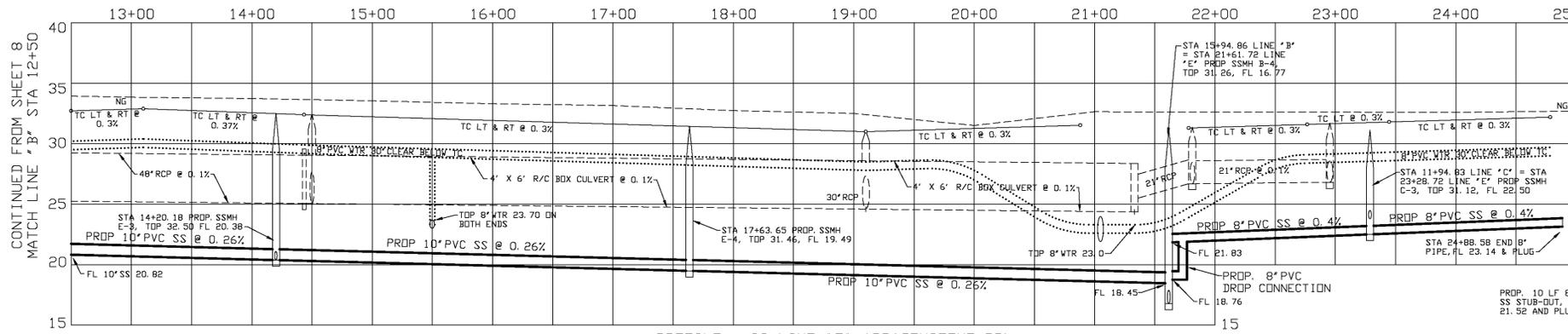
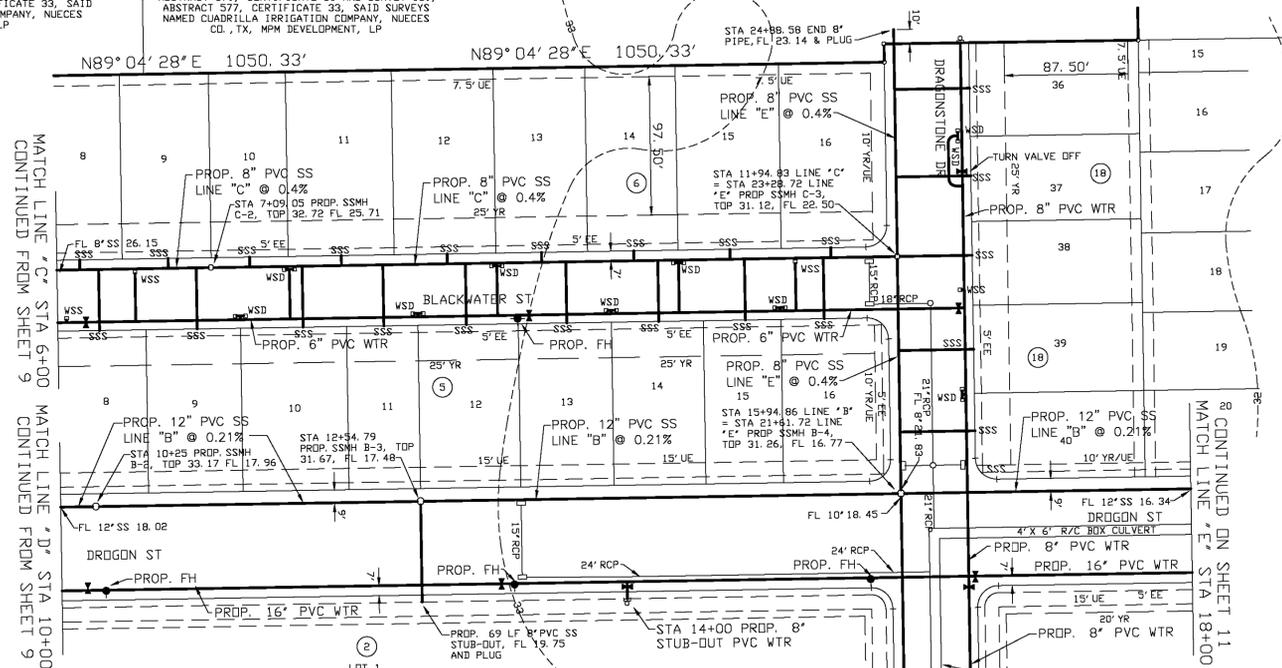
SCALE: 1" = 60'

DATE PLOTTED: 02/18/20

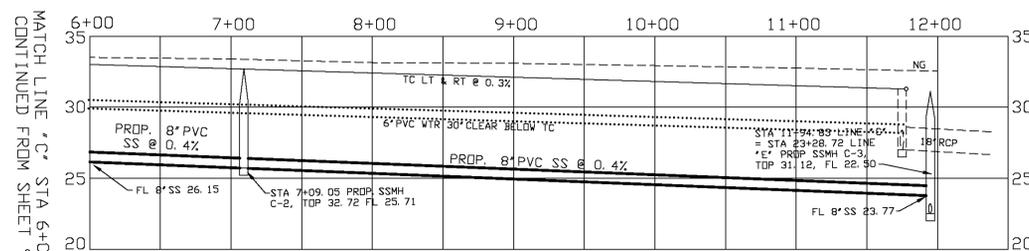
COM. NO. P02 AS SSW
 JOB NO. 08068
 SHEET 9 OF 33

PORTION OF A 120.570 ACRE TRACT, D.C. NO. 2019051482, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

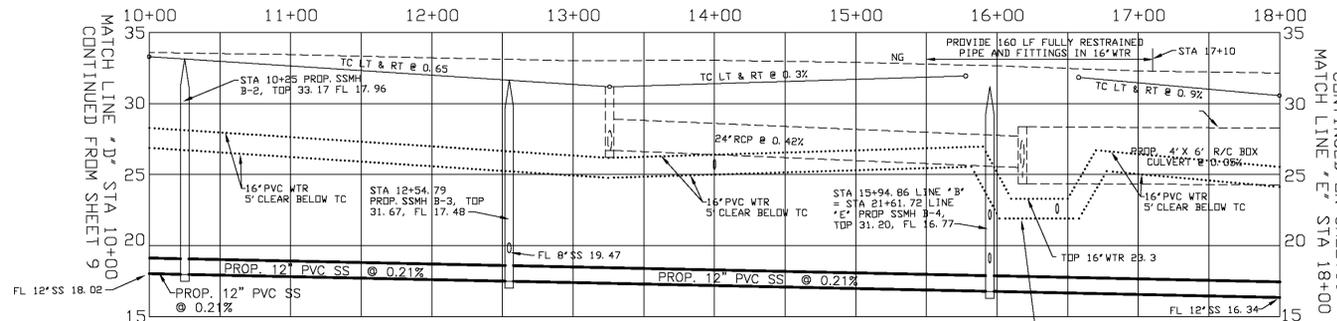
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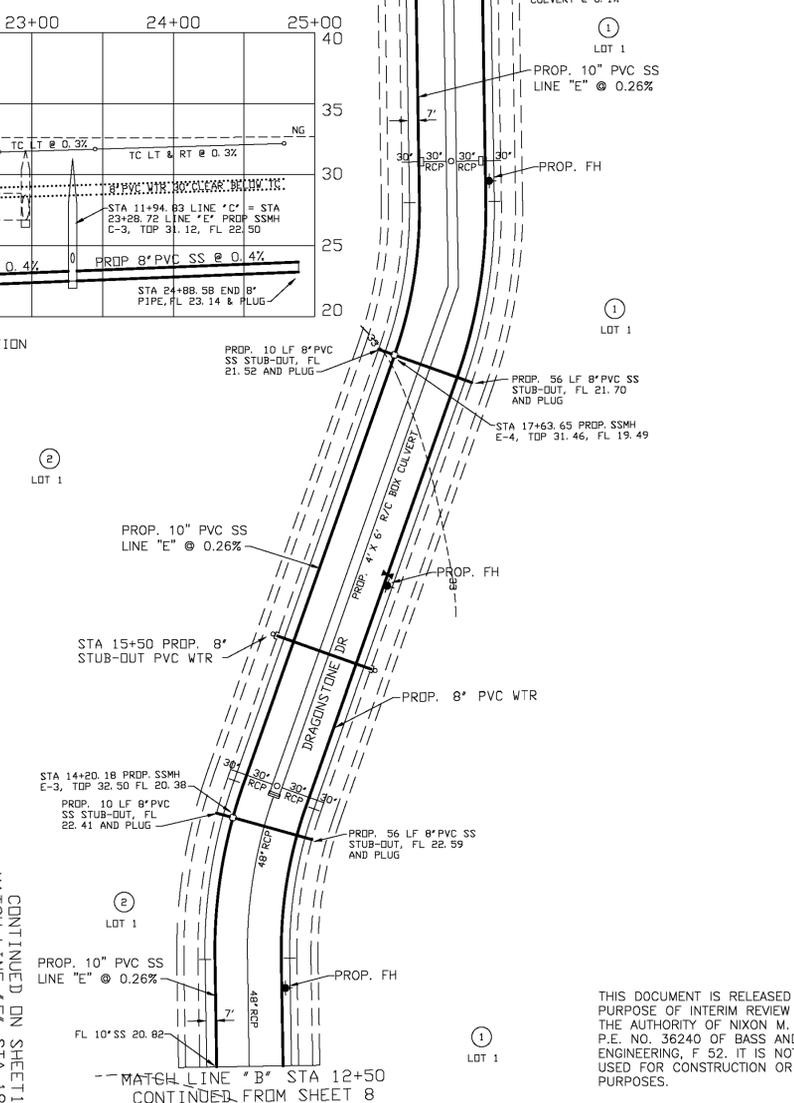
PROFILE - SS LINE "E" (DRAGONSTONE DR)



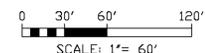
PROFILE - SS LINE "C" (BLACKWATER ST)



PROFILE - SS LINE "B" (DROGON ST)



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25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

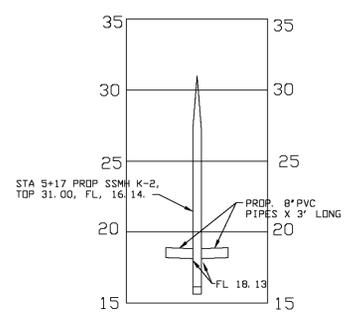
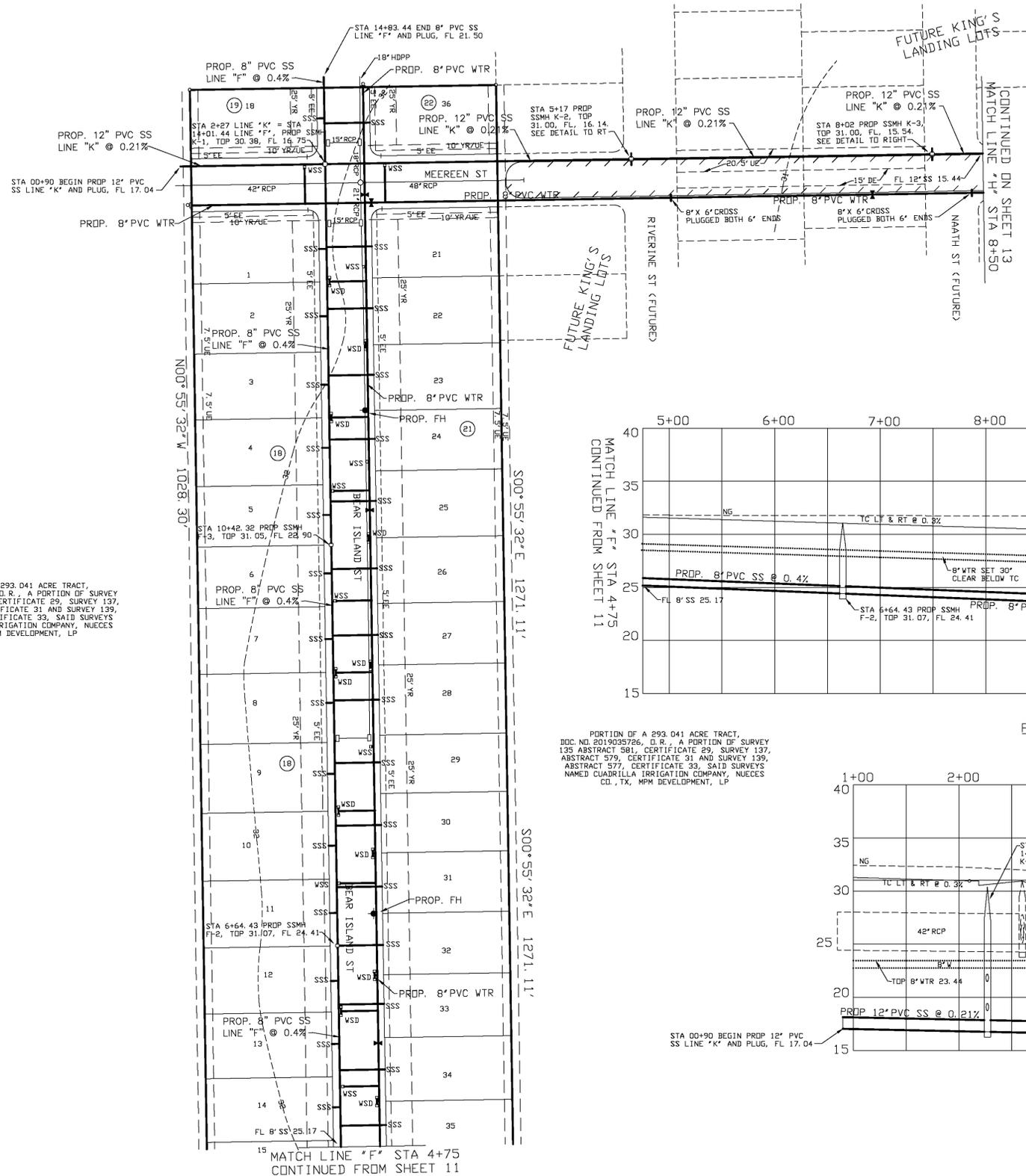
BASS & WELSH ENGINEERING
 TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX

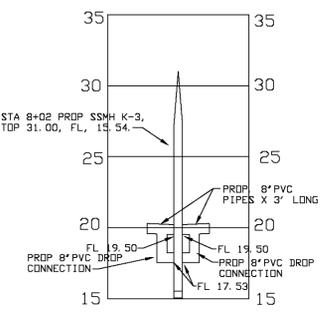
SANITARY SEWER AND WATER PLAN AND PROFILE

OWN.	PLOT SCALE: 1" = 60'	COM. NO.	PG03 AS SSW
CHK. N. WELSH	SCALE (H): SAME	JOB NO.	08068
	SCALE (V): NONE	DATE PLOTTED	02/18/20
		SHEET	10 OF 33

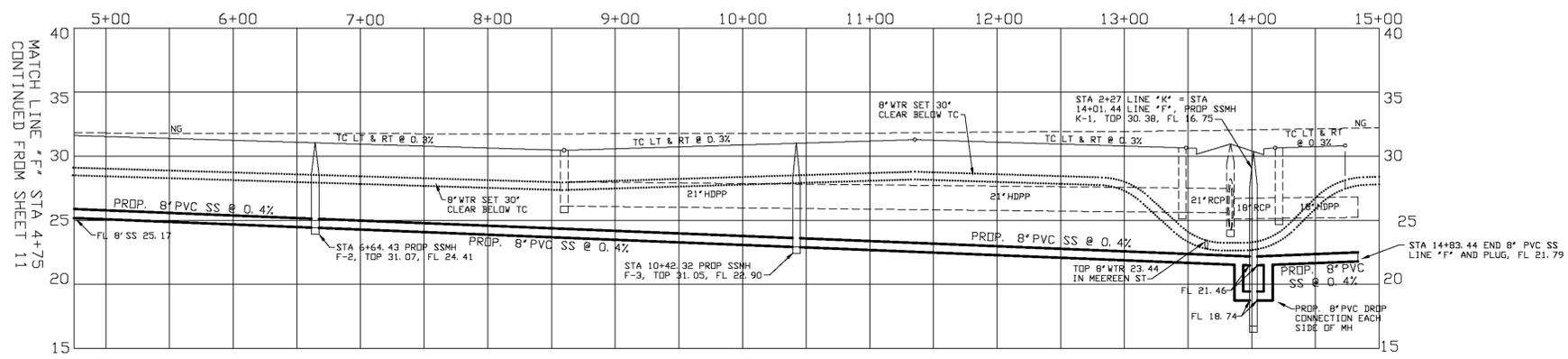
PORTION OF A 293.041 ACRE TRACT,
 DOC. NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP



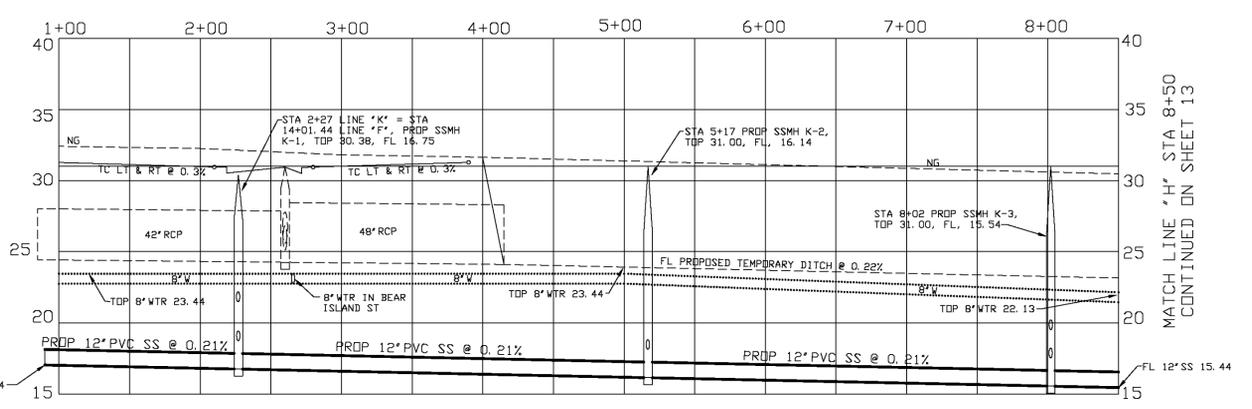
DETAIL - PROPOSED SSMH
 K-2 LOOKING EAST



DETAIL - PROPOSED SSMH
 K-3 LOOKING EAST



PROFILE - SS LINE "F" (BEAR ISLAND ST.)

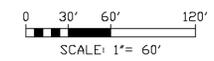


PROFILE - PROP SS LINE "K" (MEERREEN ST. AND OFFSITE TO EAST)

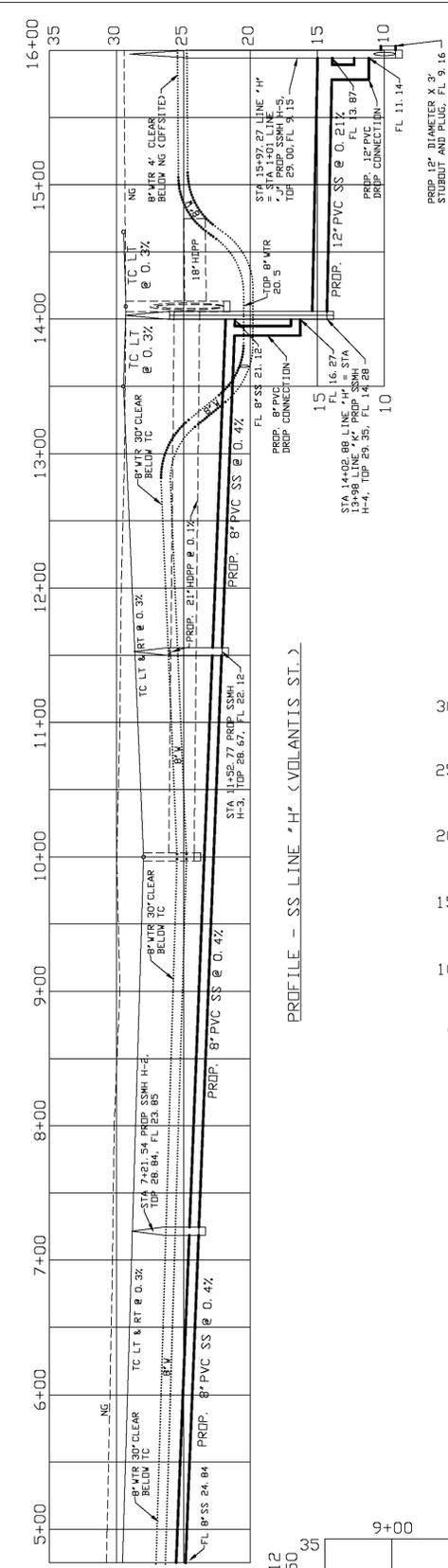
PORTION OF A 293.041 ACRE TRACT,
 DOC. NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
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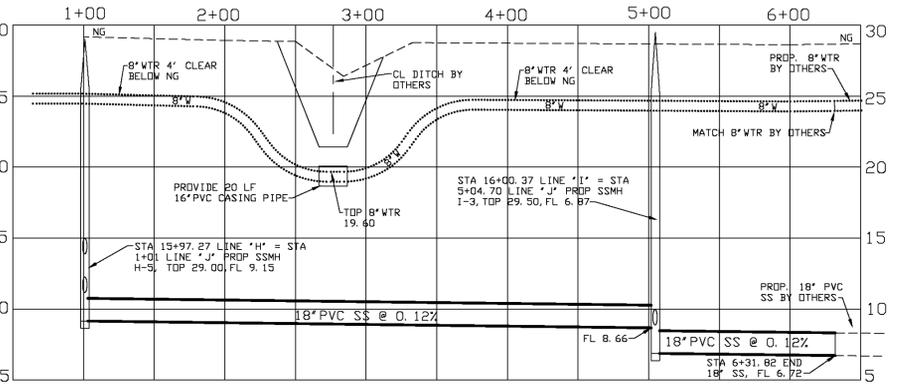
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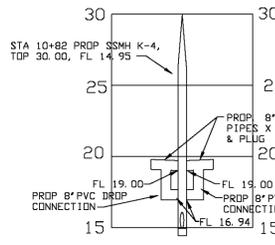
BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
SANITARY SEWER AND WATER PLAN AND PROFILE			
DWN.	PLOT SCALE: 1" = 60'	COM. NO.	PG05 AS SSW
CHK. N. WELSH	SCALE (H): SAME	JOB NO.	08068
	SCALE (V): NONE	DATE PLOTTED	02/18/20
		SHEET	12 OF 33



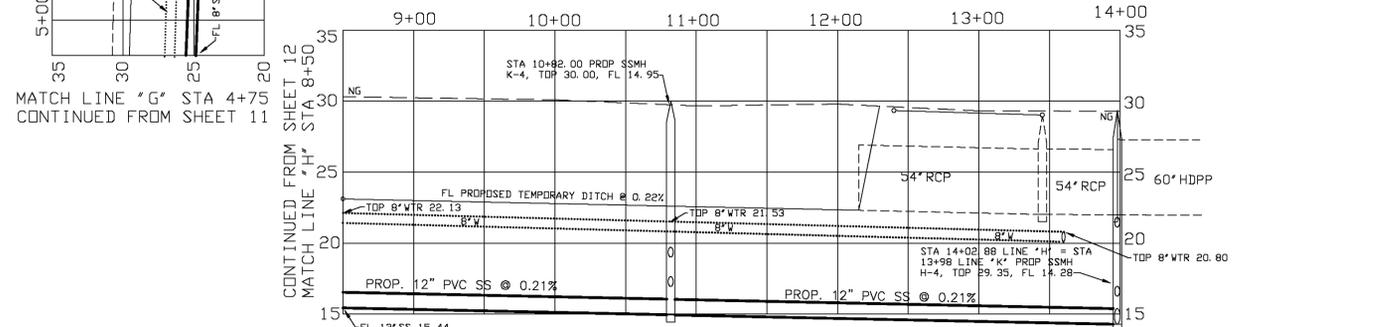
PROFILE - SS LINE 'H' (VOLANTIS ST.)



PROFILE - 18" SS LINE 'J' (OFFSITE, ABOVE RIGHT)



DETAIL - PROPOSED SSMH K-4 LOOKING EAST



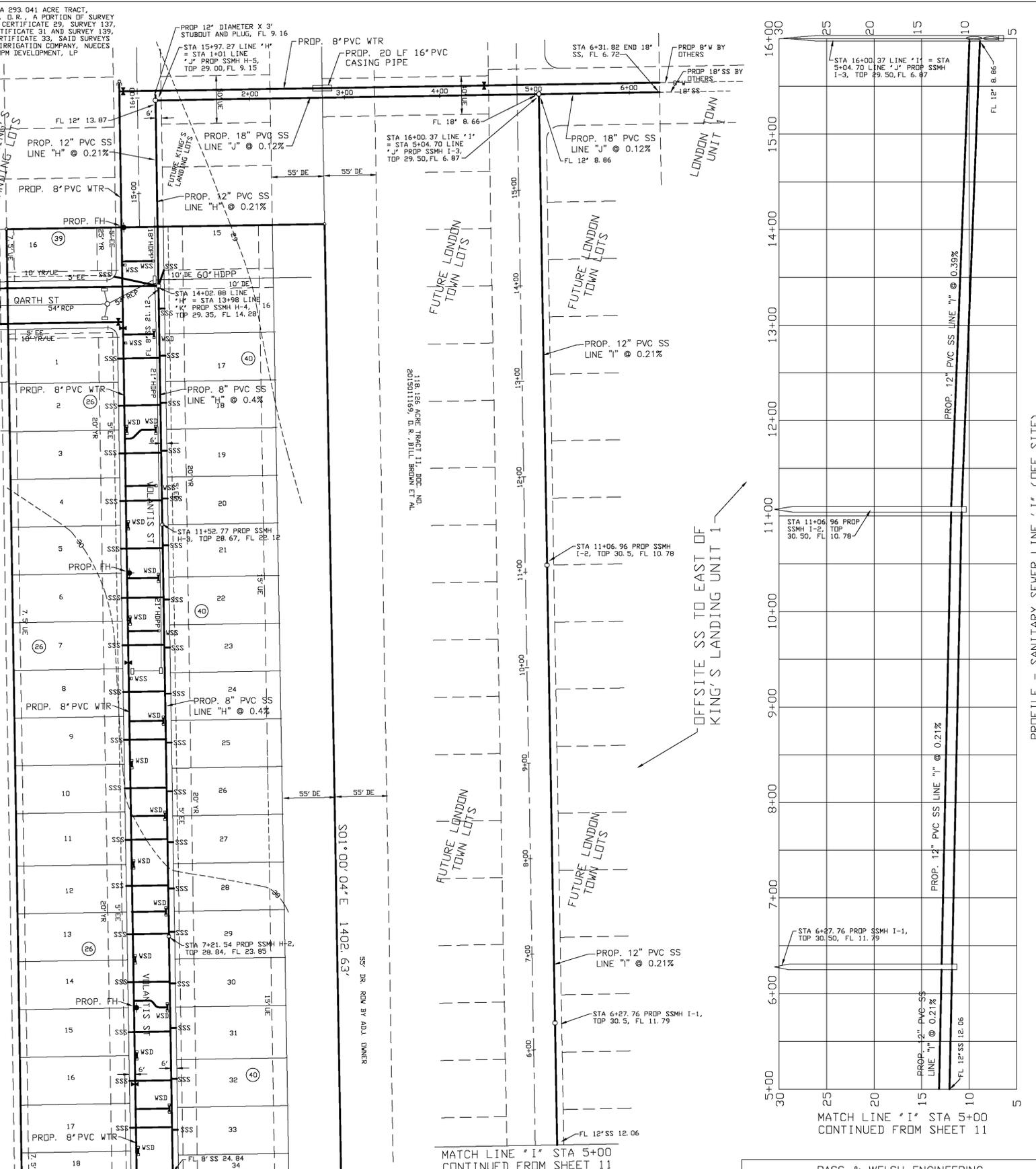
PROFILE - SS LINE 'K' (OFFSITE AND GARTH ST.)

PORTION OF A 293.041 ACRE TRACT, D.C. NO. 2019035726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

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OFFSITE SS TO EAST OF KING'S LANDING UNIT 1

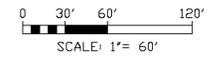
PROFILE - SANITARY SEWER LINE 'I' (OFF SITE)

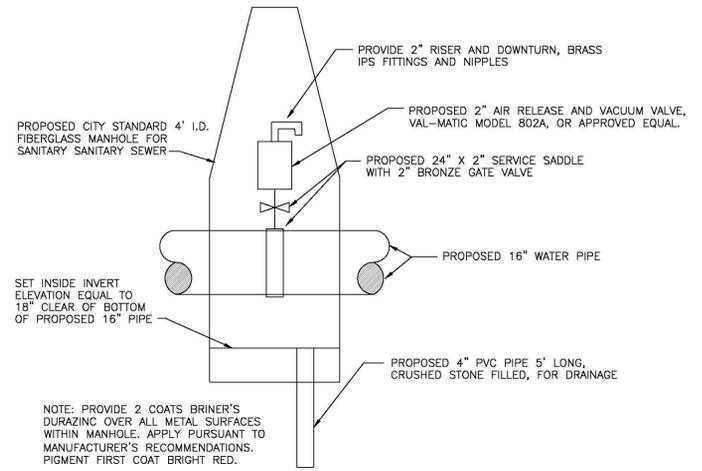
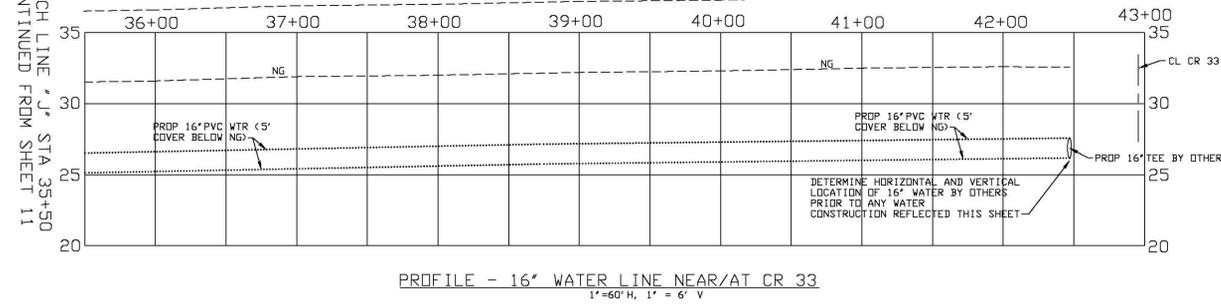
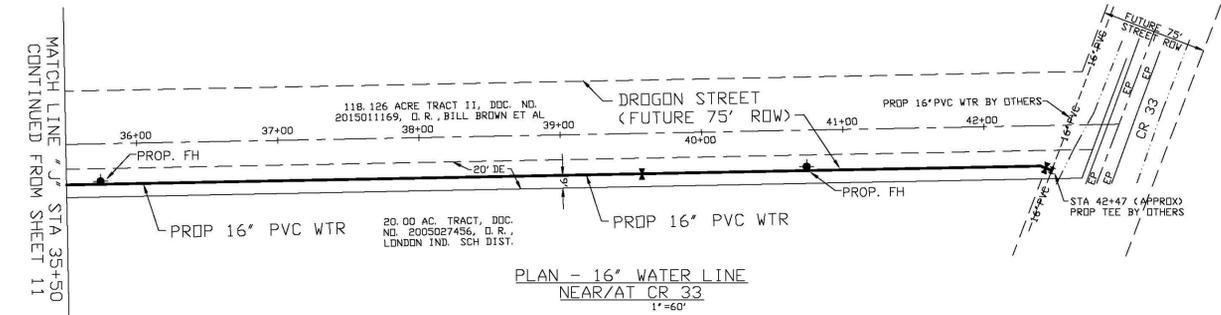
BASS & WELSH ENGINEERING
 TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX
 SANITARY SEWER AND WATER PLAN AND PROFILE AND OFFSITE SANITARY SEWER AND WATER TO EAST

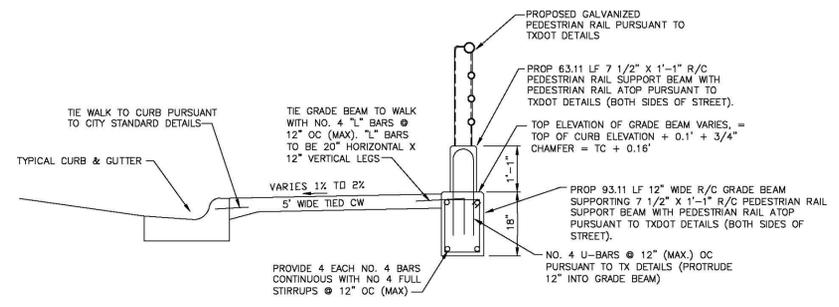
DWN. _____ PLOT SCALE: 1" = 60'
 SCALE (H): SAME
 SCALE (V): NONE
 DATE PLOTTED: 02/18/20

COM. NO. PG06 AS SSW
 JOB NO. 08068
 SHEET 13 OF 33

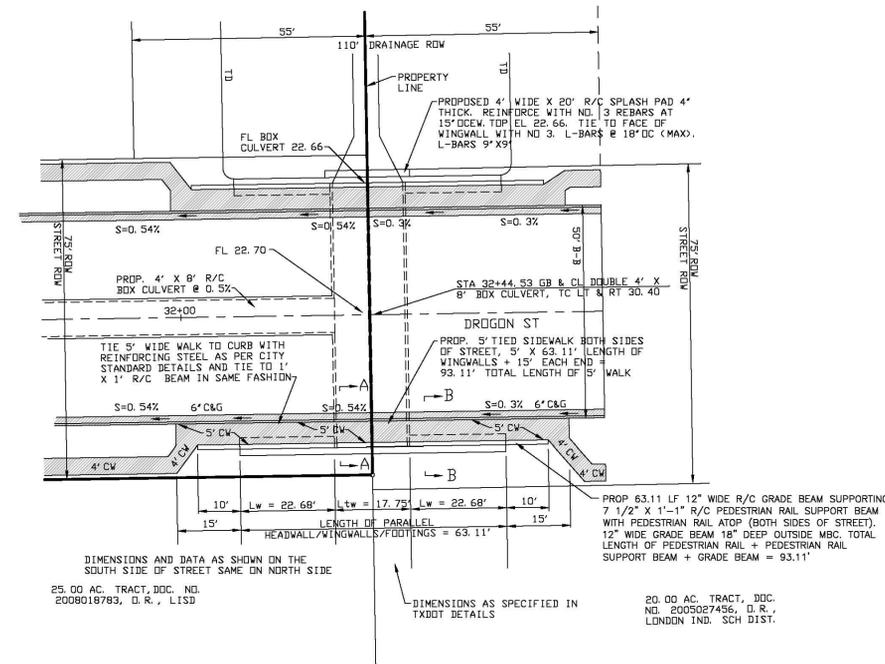




TYPICAL AIR RELEASE VALVE DETAIL
NTS



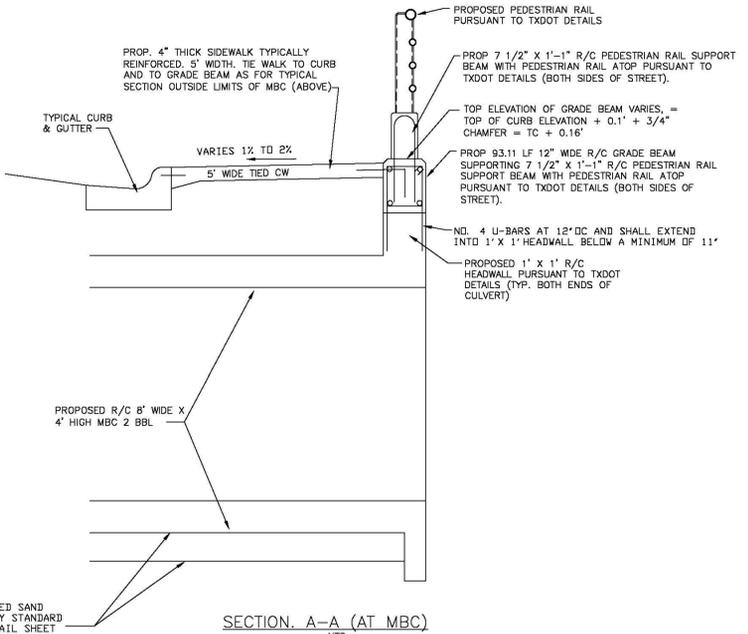
SECTION. B-B (OUTSIDE LIMITS OF MBC)
NTS



PLAN - 2 BBL 4' HIGH X 8' WIDE MBC WITH PARALLEL WINGWALLS AT CROSSING OF DROGAN STREET (SHEET 5)
NTS

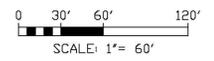
MULTIPLE BOX CULVERT NOTES:

1. THE PROPOSED TWO BARRELL 8' WIDE X 4' HIGH R/C MULTIPLE BOX CULVERT, WINGWALLS AND PEDESTRIAN RAILS SHALL BE CONSTRUCTED PURSUANT TO TXDOT DETAILS SHEETS IN THIS SET OF PLANS. THE PROPOSED MBC SHALL BE CONSTRUCTED WITH A 1' X 1' HEADWALL PROTRUDING ABOVE THE TOP OF THE MBC AND A TOEWALL PROTRUDING BELOW THE MBC, BOTH ENDS OF MULTIPLE BOX CULVERT.
2. THE REINFORCED CONCRETE WINGWALLS SHALL BE CONSTRUCTED WITH A TOEWALL PLUS THE 8" THICK WINGWALL ABOVE.
3. THE TXDOT METAL PEDESTRIAN RAIL ASSEMBLY SHALL BE CONSTRUCTED ON A 1'-1" HIGH X 7-1/2" WIDE REINFORCED CONCRETE CONTINUOUS RAIL SUPPORT BEAM CONSTRUCTED ON TOP OF THE ABOVE DESCRIBED GRADE BEAM ON TOP OF MBC AND CONSTRUCTED ON TOP OF THE PROPOSED 12" WIDE X 18" HIGH GRADE BEAM WHICH EXTENDS BEYOND THE LIMITS OF THE MBC. THE PROPOSED PEDESTRIAN RAIL SHALL TERMINATE ON BOTH SIDES OF THE MBC IN THE 12" X 18" GRADE BEAM.
4. PROVIDE 3/4" CHAMFER ALL EXPOSED EDGES OF CONCRETE STRUCTURES.
5. PAY FOR THE TWO BARRELL 8' WIDE X 4' HIGH R/C MULTIPLE BOX CULVERT, RELATED EARTHWORK, R/C WINGWALLS/FOOTINGS, R/C HEADWALLS, PEDESTRIAN RAILS, R/C BEAMS SUPPORTING PEDESTRIAN RAILS, DE-WATERING ASSOCIATED WITH THESE ITEMS AND CEMENT STABILIZED BEDDING BENEATH THE DOUBLE BOX CULVERT AS "DOUBLE 4' X 8' BOX CULVERT WITH WINGWALLS". THERE SHALL BE NO SEPARATE PAY FOR ANY OTHER WORK ASSOCIATED WITH THE DOUBLE BOX CULVERT.



SECTION. A-A (AT MBC)
NTS

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BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
WATER PLAN AND PROFILE, AIR RELEASE & VACUUM VALVE DETAIL AND MBC ENLARGED DRAWINGS			
OWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG07 AS WTR	
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068	
	SCALE (V): NONE	DATE PLOTTED 02/18/20	SHEET 14 OF 33

POLLUTION PREVENTION NOTES

- CONSTRUCTION ENTRANCE - CONSTRUCT A PROPOSED 28' X 30' CONSTRUCTION ENTRANCE CONSISTING OF AN AREA SURFACED WITH CRUSH STONE OR GRAVEL OF SIZE 2" TO 4". THE GRAVEL OR CRUSHED STONE SHALL BE PLACED IN A MINIMUM 6" THICK LAYER AND SHALL OVERLAY A LAYER OF FILTER CLOTH MEETING THE SAME REQUIREMENTS AS FOR SILT FENCE. CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION ENTRANCE IN GOOD CONDITION THROUGHOUT THE DURATION OF THE PROJECT AND SHALL REMOVE MUD OR OTHER DEBRIS FROM THE CONSTRUCTION ENTRANCE PERIODICALLY DURING THE PROJECT.
- CONSTRUCTION EQUIPMENT TRACKING - CONTRACTORS SHALL ENSURE THAT NO MUD OR ANY OTHER DEBRIS BE TRACKED ONTO ANY PAVED STREETS IN THE AREA OF THIS PROJECT. SHOULD ANY MUD OR OTHER DEBRIS BE TRACKED ONTO PAVED STREETS, CONTRACTOR SHALL IMMEDIATELY CLEANUP SAME AT HIS OWN EXPENSE.
- SILT SCREENS - CONSTRUCT SILT SCREENS AT LOCATIONS AS SHOWN IN THE PLANS. ALL SILT SCREENS SHALL MEET THE REQUIREMENTS OF CITY STANDARD SPECIFICATION 025460 SILT FENCES. THE SILT FENCES SHALL BE INSPECTED THROUGHOUT THE CONSTRUCTION PERIOD ON A WEEKLY BASIS AND SHALL BE REPAIRED/REPLACED AS NECESSARY.
- SOLID WASTE DISPOSAL - ALL TRASH AND DEBRIS WILL BE HAULED TO AN APPROVED LANDFILL. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON-SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED AT THE JOB SITE.
- HAZARDOUS WASTE - NO HAZARDOUS WASTE IS EXPECTED TO BE GENERATED OR ENCOUNTERED IN THIS PROJECT. IN THE EVENT THAT HAZARDOUS WASTE IS ENCOUNTERED, ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER.
- SPILL PREVENTION - THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THIS JOB. ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. WHENEVER POSSIBLE, ALL OF THE PRODUCT WILL BE USED UP BEFORE DISPOSING THE CONTAINER. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE. FUELING OF CONSTRUCTION VEHICLES SHALL BE MADE A MINIMUM OF 200' AWAY FROM ANY DRAINAGE INLET OR SWALE.
- PAY FOR SILT SCREEN FENCES, STABILIZED CONSTRUCTION ENTRANCE AND ALL POLLUTION PREVENTION MEASURES OF ALL TYPES IN UNIT PRICE OF "STORM WATER POLLUTION PREVENTION".
- CONTRACTOR SHALL ENSURE DUST ON THE SITE IS CONTROLLED (NOT ALLOWED TO BLOW TO ADJACENT PROPERTY) BY DAMPENING DURING CONSTRUCTION.
- CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT ANYWHERE ON THE PROJECT SITE UNLESS THE SURPLUS CONCRETE OR DRUM WASH WATER IN CONCRETE TRUCKS IS DISCHARGED AT A FACILITY ON THE CONSTRUCTION SITE THAT WILL RETAIN ALL CONCRETE WASH WATERS OR LEACHATES, INCLUDING ANY WASH WATERS OR LEACHATES MIXED WITH STORM WATER. CONCRETE WASH WATERS AND LEACHATES MAY NOT BE ALLOWED TO ENTER THE MUNICIPAL SEWER SYSTEM, CITY STREETS, THE WATERS OF THE UNITED STATES, OR GROUND WATERS.
- NON-CONCRETE TRUCK VEHICLES SHALL BE WASHED AT THE STABILIZED CONSTRUCTION ENTRANCE IN A MANNER TO REMOVE ALL MUD AND DEBRIS FROM THE TIRES.
- THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES) GENERAL PERMIT REQUIRES STABILIZATION MEASURES TO BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND MUST BE INITIATED IMMEDIATELY AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. CONSTRUCTION TEMPORARILY CEASED - "IMMEDIATELY" MEANS AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY. EXCEPT WHERE TEMPORARY STABILIZATION IS INFEASIBLE, BUT TEMPORARY PERIMETER CONTROLS ARE UTILIZED INSTEAD, THE OPERATOR MUST DOCUMENT WHY STABILIZATION IS INFEASIBLE AND DEMONSTRATE THAT PERIMETER CONTROLS WILL RETAIN SEDIMENT ON-SITE. CONSTRUCTION PERMANENTLY CEASED - "IMMEDIATELY" MEANS AS SOON AS PRACTICABLE, BUT NO MORE THAN 14 DAYS AFTER INITIATION, EXCEPT WHERE THE INITIATION OF PERMANENT STABILIZATION MEASURES IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS, STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.

CONTINUED ON SHEET 4
MATCH LINE "B" STA 12+50

ESTIMATE SUMMARY

STREET AND SURFACE ITEMS			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	6" CURB & GUTTER	24361	LF
2	4" THICK R/C WALK	97260	SF
3	4" H/MAC	26158	SY
4	2" H/MAC	24384	SY
5	11" CRUSHED LIMESTONE BASE TO 2" BC	30395	SY
6	8" CRUSHED LIMESTONE BASE TO 2" BC	11330	SY
7	6" CRUSHED LIMESTONE BASE TO 2" BC	19866	SY
8	8" LIME STABILIZED SUBGRADE TO 2" BC	61591	SY
9	END OF ROAD BARRICADE (OBJECT MARKERS)	11	SETS
10	EXCAVATION	1	LS
11	CLEARING & GRUBBING	60	AC
12	STREET SIGNS	17	EA

WATER GRID MAIN ITEMS REIMBURSABLE BY CITY			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	16" PVC PIPE	5665	LF
2	16" TAPPING SADDLE & 16" TAPPING GATE VALVE W/BOX	2	EA
3	16" TEE	23	EA
4	16" GATE VALVE W/BOX	12	EA
5	16" CROSS	3	EA
6	16" EL, ANY ANGLE	21	EA
7	16" X 12" REDUCER	1	EA
8	DEWATERING FOR 16" PVC PIPE	1150	LF
9	TRENCH SAFETY FOR 12" & 16" PIPES	6041	LF
10	12" GATE VALVE W/BOX	2	EA
11	12" TEE	5	EA
12	12" PVC PIPE	376	LF
13	12" CAP TAPPED FOR 2"	1	EA
14	AIR RELEASE AND VACUUM VALVE IN FG MH	2	EA
15	FIRE HYDRANT ASSEMBLY	17	EA
16	6" X 30" PVC PIPE NIPPLE	54	EA
17	6" 90° EL	17	EA
18	6" GATE VALVE W/BOX	17	EA

OVERWIDTH/OVERDEPTH 50'BB STREET FROM 28" BB STREET			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	OVERWIDTH OF 2" H/MAC	12472	SY
2	OVERWIDTH OF 11" CRUSHED LIMESTONE BASE	12472	SY
3	OVERWIDTH OF 8" LIME STABILIZED SUBGRADE	12472	SY
4	OVERDEPTH OF 11" CRUSHED LIMESTONE BASE (11"-6"=5"), HENCE 5" CRUSHED LIMESTONE BASE	13605	SY

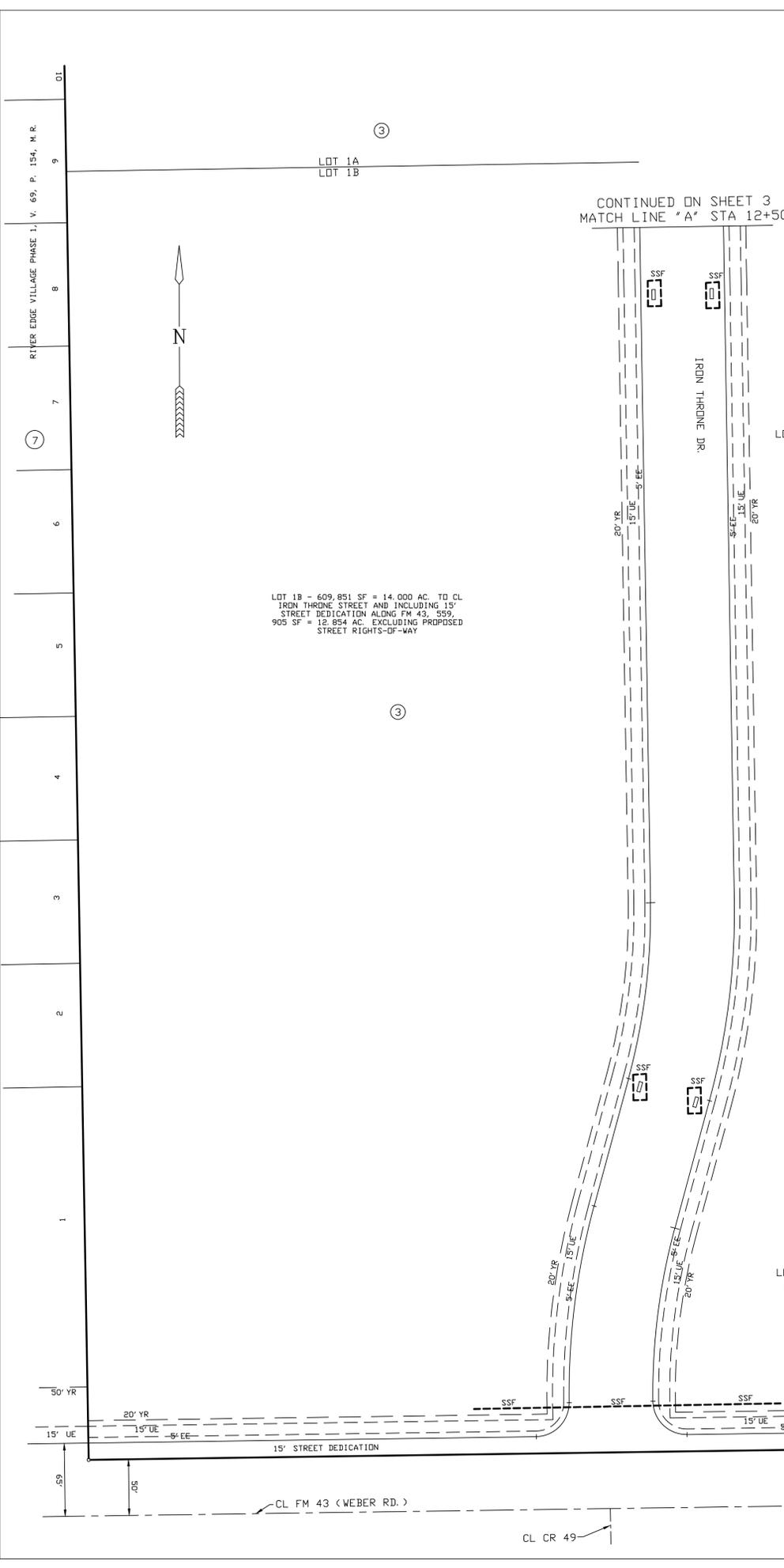
OFFSITE WATER DISTRIBUTION MAIN ITEMS (REIMBURSABLE BY CITY)			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	16" PVC CASING PIPE	10	LF
2	8" PVC PIPE	356	LF
3	8" GATE VALVE W/BOX	1	EA

STORM SEWER ITEMS			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	15" RCP	710	LF
2	18" RCP	159	LF
3	21" RCP	993	LF
4	24" RCP	515	LF
5	27" RCP	114	LF
6	30" RCP	211	LF
7	36" RCP	99	LF
8	42" RCP	173	LF
9	48" RCP	1796	LF
10	54" RCP	180	LF
11	60" RCP	164	LF
12	4'X6' R/C BOX CULVERT	1971	LF
13	4'X8' R/C BOX CULVERT	1324	LF
14	6'X8' R/C BOX CULVERT	378	LF
15	R/C RIPRAP STRUCTURE AT PIPE END AT DITCH	1	EA
16	R/C COLLAR AT JUNCTION OF PIPE TO BOX CULVERT OR BOX CULVERT TO BOX CULVERT	3	EA
17	5" INLET	38	EA
18	7" OR 8" INLET	9	EA
19	STORM MANHOLE	7	EA
20	SET FOR 24" RCP	4	EA
21	MANHOLE RISER ON BOX CULVERT	7	EA
22	DOUBLE 4'X8' R/C CULVERT W/WINGWALLS	1	LS
23	TEMPORARY DRAINAGE CHANNEL EXCAVATION SHEETS 6 & 7	1	LS
24	REBAR INSTALLATION IN 54" RCP, QARTH ST	1	LS
25	REBAR INSTALLATION IN 6' X 8' BOX CULVERT, SHEET 23	1	LS
26	OFFSITE TEMPORARY DRAINAGE CHANNEL EXCAVATION (CHANNEL RUNNING NORTH FROM IRON THRONE STREET)	1	LS
27	4" THICK R/C CHANNEL LINING	765	SF

ON-SITE WATER ITEMS (EXCLUDING 12"/16" GRID MAIN ITEMS & 8" OFFSITE WATER ITEMS NEAR NORTHEAST CORNER UNIT 1 PLAT)			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	16" PVC CASING PIPE	10	LF
2	16" TAPPING SADDLE W/6" OR 8" TAPPING GATE VALVE W/BOX	7	EA
3	8" PVC PIPE	7247	LF
4	8" CAP TAPPED FOR 2"	16	EA
5	8" GATE VALVE W/BOX	23	EA
6	8" TEE	18	EA
7	8" EL, ANY ANGLE	5	EA
8	8" CROSS	7	EA
9	FIRE HYDRANT ASSEMBLY	22	EA
10	6" PVC PIPE	2371	LF
11	6" EL, ANY ANGLE	25	EA
12	6"X30" PVC PIPE NIPPLE	66	EA
13	6" GATE VALVE W/BOX	30	EA
14	6" CAP TAPPED FOR 2"	5	EA
15	WATER SERVICE, SINGLE	29	EA
16	WATER SERVICE, DOUBLE	68	EA

MISCELLANEOUS ITEMS			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	TRAFFIC CONTROL AND BARRICADING PLAN AND PERMITTING (TRAFFIC CONTROL DURING CONSTRUCTION)	1	LS
2	TRENCH SAFETY FOR EXCAVATIONS (SANITARY SEWER AND STORM SEWER PIPES OF ALL SIZES)	24390	LF
3	4" PVC CONDUIT FOR ELECTRICAL	1800	LF
4	STORM WATER POLLUTION PREVENTION	1	LS

SANITARY SEWER ITEMS (DOES NOT INCLUDE ANY OFFSITE SS)			
ITEM	DESCRIPTION	QUANTITY	UNIT
1	18" PVC PIPE	176	LF
2	DEWATERING FOR 18" PVC PIPE	176	LF
3	12" PVC PIPE	5693	LF
4	DEWATERING FOR 12" PVC PIPE	5693	LF
5	10" PVC PIPE	899	LF
6	8" PVC PIPE	4761	LF
7	4" OR 6" PVC PIPE SERVICE	163	EA
8	MANHOLE	31	EA
9	DEEP CUT SERVICE CONNECTION	2	EA
10	8" PVC DROP CONNECTION	31	LF
11	12" PVC DROP CONNECTION	3	LF

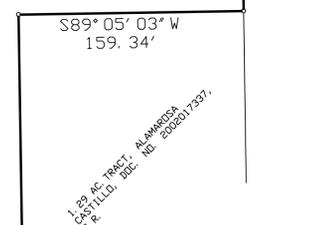


SEDIMENTATION SCREENING FENCE

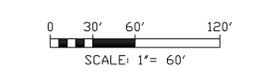
SEE CITY STANDARD STORM WATER POLLUTION PREVENTION DETAILS FOR CONSTRUCTION

CCR 015700
TEMPORARY CONTROLS

ALL STORM WATER POLLUTION WORK SHALL BE DONE IN ACCORDANCE WITH CCR 015700 "TEMPORARY CONTROLS". THIS SPECIFICATION SHALL BE OBTAINED BY CONTRACTOR FROM THE CITY ENGINEERING SERVICES DEPARTMENT OR ON LINE AT THE CITY'S WEB SITE, ENGINEERING SERVICES DEPARTMENT, PROCESS, STANDARDS AND CONTRACTS, FRONT END CONSTRUCTION CONTRACT DOCUMENTS, DIVISION 01.



VERIFY LOCATION OF EXISTING 16" WTR PRIOR TO ANY TAPS (WORK) ON IT

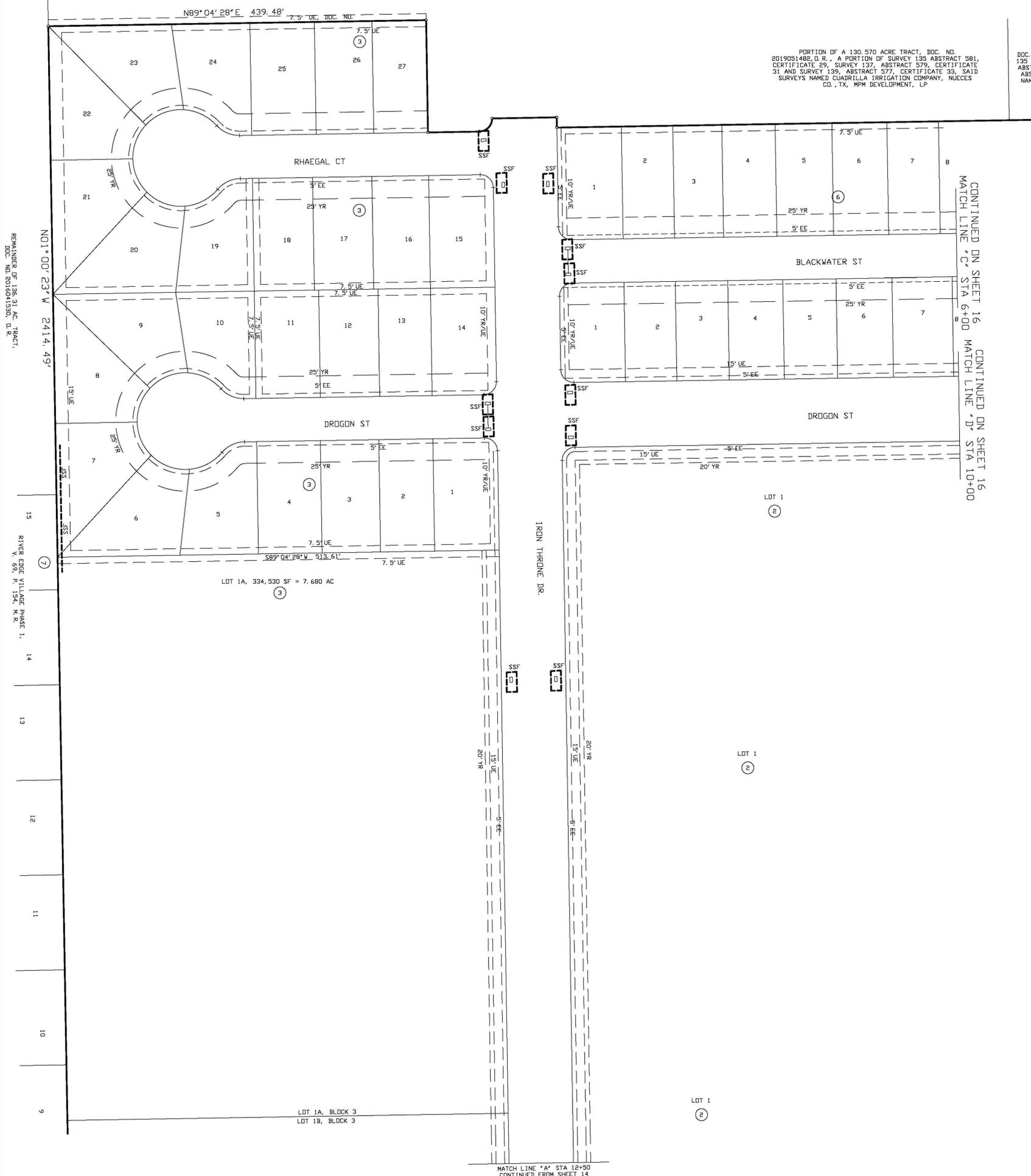


BASS & WELSH ENGINEERING
 TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404
 PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, TEXAS
 SHEETS CD, TX
 STORM WATER POLLUTION PREVENTION PLAN & ESTIMATE SUMMARY
 DATE PLOTTED: 02/18/20
 SCALE: 1" = 60'
 COM. NO. P01 AS SHIPPED
 JOB NO. 18088
 SHEET 15 OF 33

BALANCE OF 27.5 AC. TRACT. DEC. NO. 2003067159, D. R., L. 13D
 LONDON, TEXAS TRACTS, N. R. 1
 V. 67, P. 1, 576, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600

PORTION OF A 130.570 ACRE TRACT, DOC. NO. 2019051482, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT, DOC. NO. 201905726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

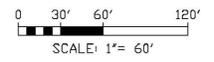


REMAINDER OF 136.31 AC. TRACT, DOC. NO. 2016041530, D.R.

RIVER EDGE VILLAGE PHASE 1, 154' W.R.

9
10
11
12
13
14
15

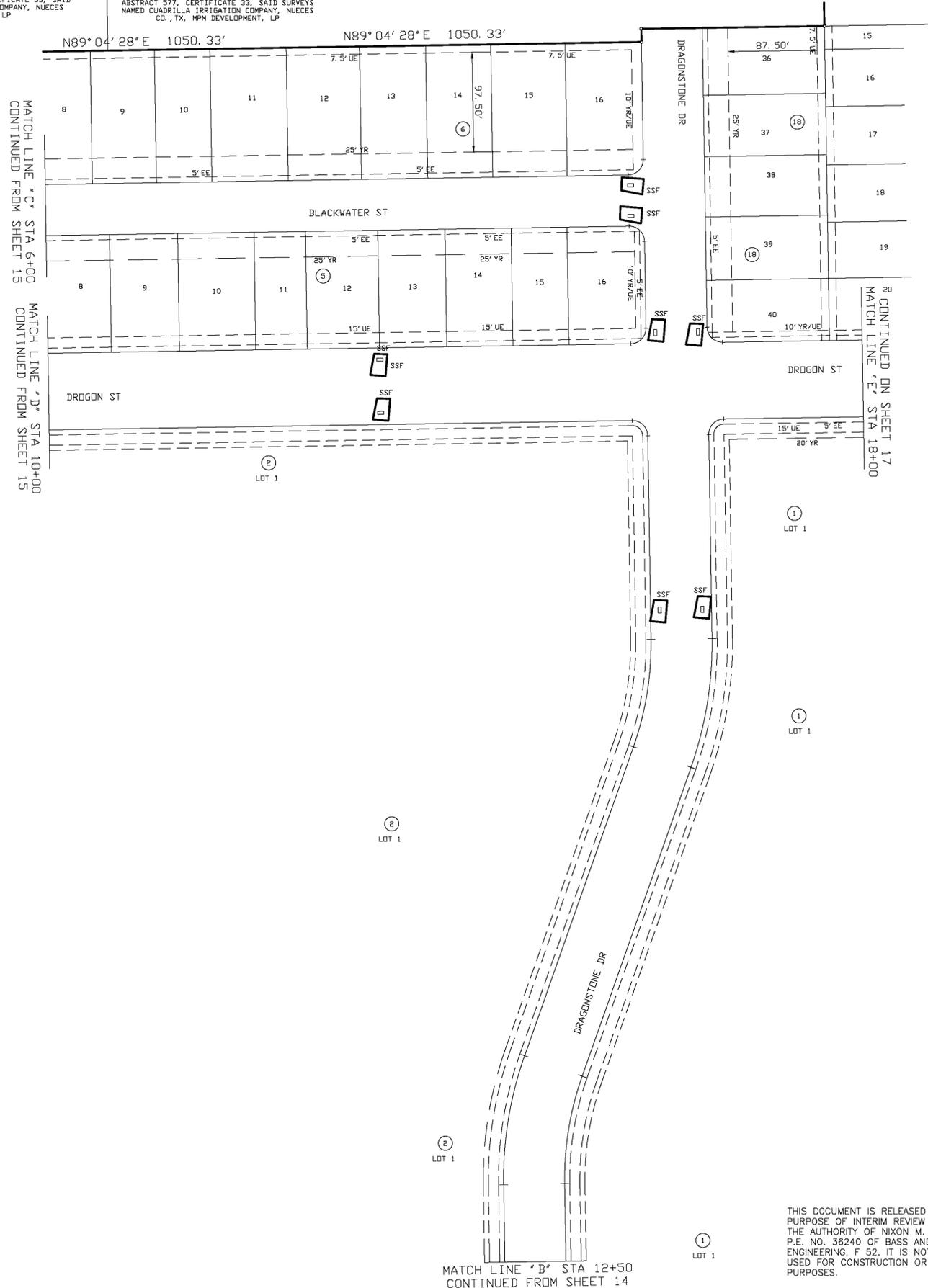
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BASS & WELSH ENGINEERING TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
STORM WATER POLLUTION PREVENTION PLAN			
DWN.	PLOT SCALE: 1" = 60'	COM. NO.	PG02 AS SWPPP
CHK. N. WELSH	SCALE (H): SAME	JOB NO.	08068
	SCALE (V): NONE	DATE PLOTTED	02/18/20
			SHEET 18 OF 33

PORTION OF A 120.570 ACRE TRACT, D.C. NO. 2019051482, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP

PORTION OF A 293.041 ACRE TRACT, D.C. NO. 2019035726, D.R., A PORTION OF SURVEY 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137, ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139, ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS NAMED CUADRILLA IRRIGATION COMPANY, NUECES CO., TX, MPM DEVELOPMENT, LP



MATCH LINE 'C' STA 6+00 CONTINUED FROM SHEET 15

MATCH LINE 'D' STA 10+00 CONTINUED FROM SHEET 15

CONTINUED ON SHEET 17 MATCH LINE 'E' STA 18+00

MATCH LINE 'B' STA 12+50 CONTINUED FROM SHEET 14

25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

25.00 AC. TRACT, D.C. NO. 2008018783, D.R., L1SD

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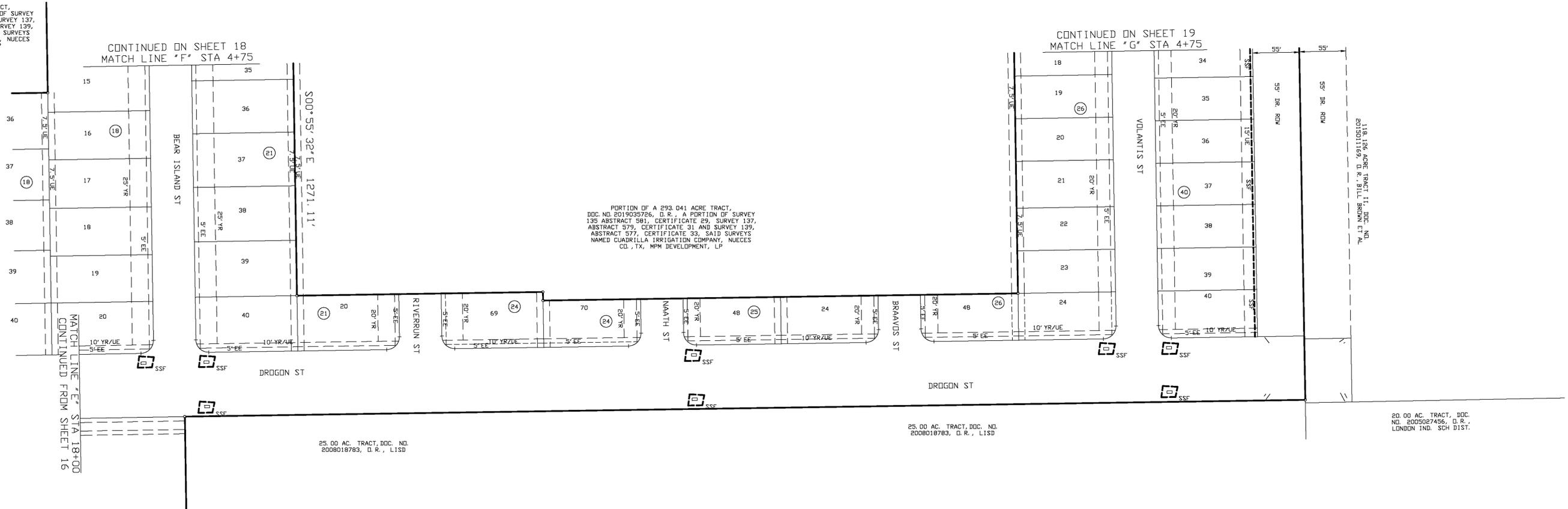
BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
STORM WATER POLLUTION PREVENTION PLAN		
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG03 AS SWPPP
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068
	SCALE (V): NONE	DATE PLOTTED 02/18/20
		SHEET 17 OF 33

PORTION OF A 293.041 ACRE TRACT,
 DDC NO. 201903726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP

CONTINUED ON SHEET 18
 MATCH LINE "F" STA 4+75

CONTINUED ON SHEET 19
 MATCH LINE "G" STA 4+75

PORTION OF A 293.041 ACRE TRACT,
 DDC NO. 201903726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 581, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP

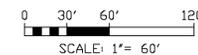


25.00 AC. TRACT, DDC NO.
 2008018783, D.R., LISD

25.00 AC. TRACT, DDC NO.
 2008018783, D.R., LISD

20.00 AC. TRACT, DDC NO.
 2005027456, D.R.,
 LONDON IND. SCH. DIST.

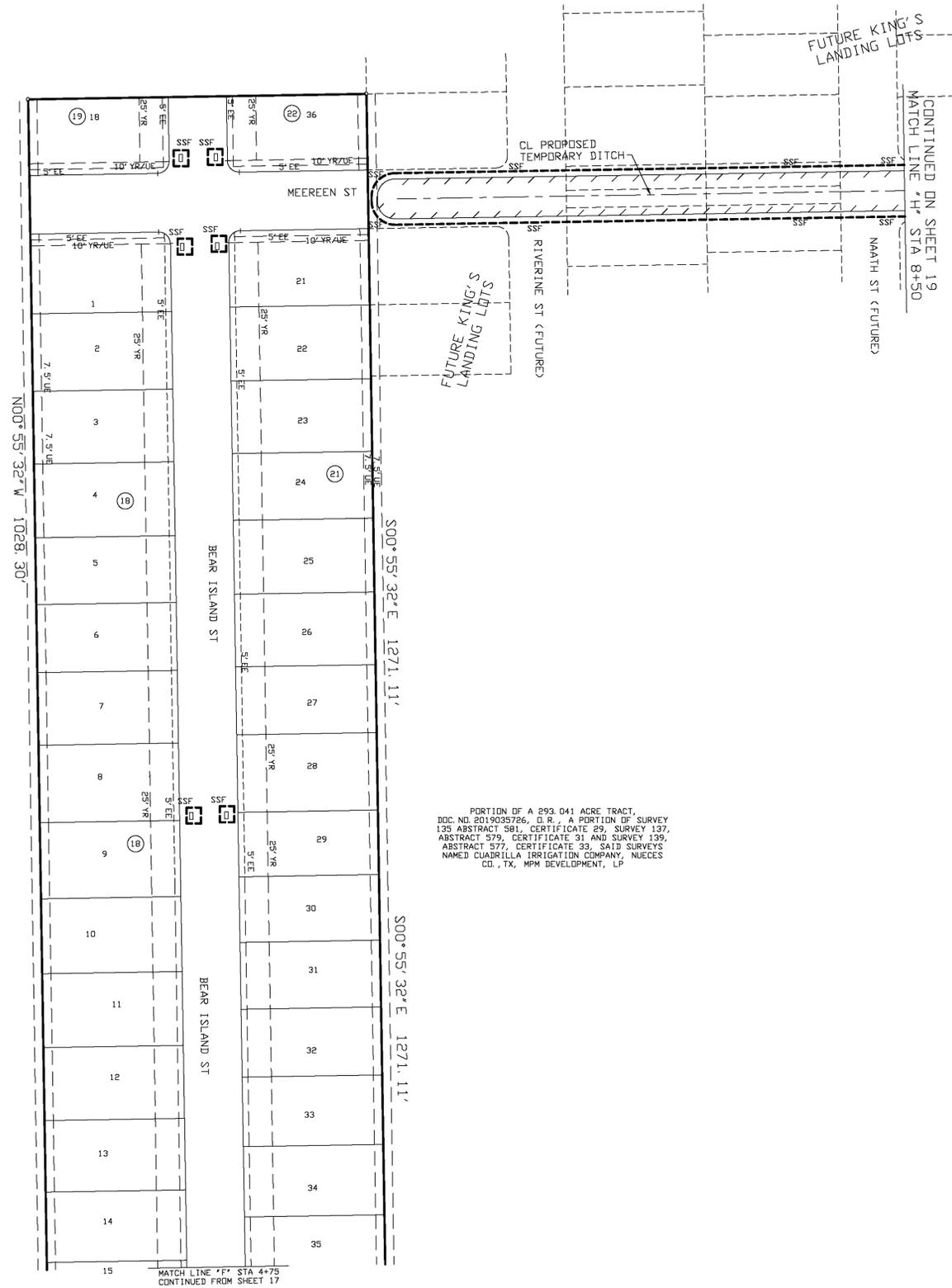
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PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
STORM WATER POLLUTION PREVENTION PLAN			
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PGD4 AS SWPPP	
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068	
	SCALE (V): NONE	DATE PLOTTED 02/18/20	SHEET 18 OF 33



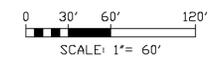
PORTION OF A 293.041 ACRE TRACT,
 DDC NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 561, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
 CO., TX, MPM DEVELOPMENT, LP



PORTION OF A 293.041 ACRE TRACT,
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 CO., TX, MPM DEVELOPMENT, LP

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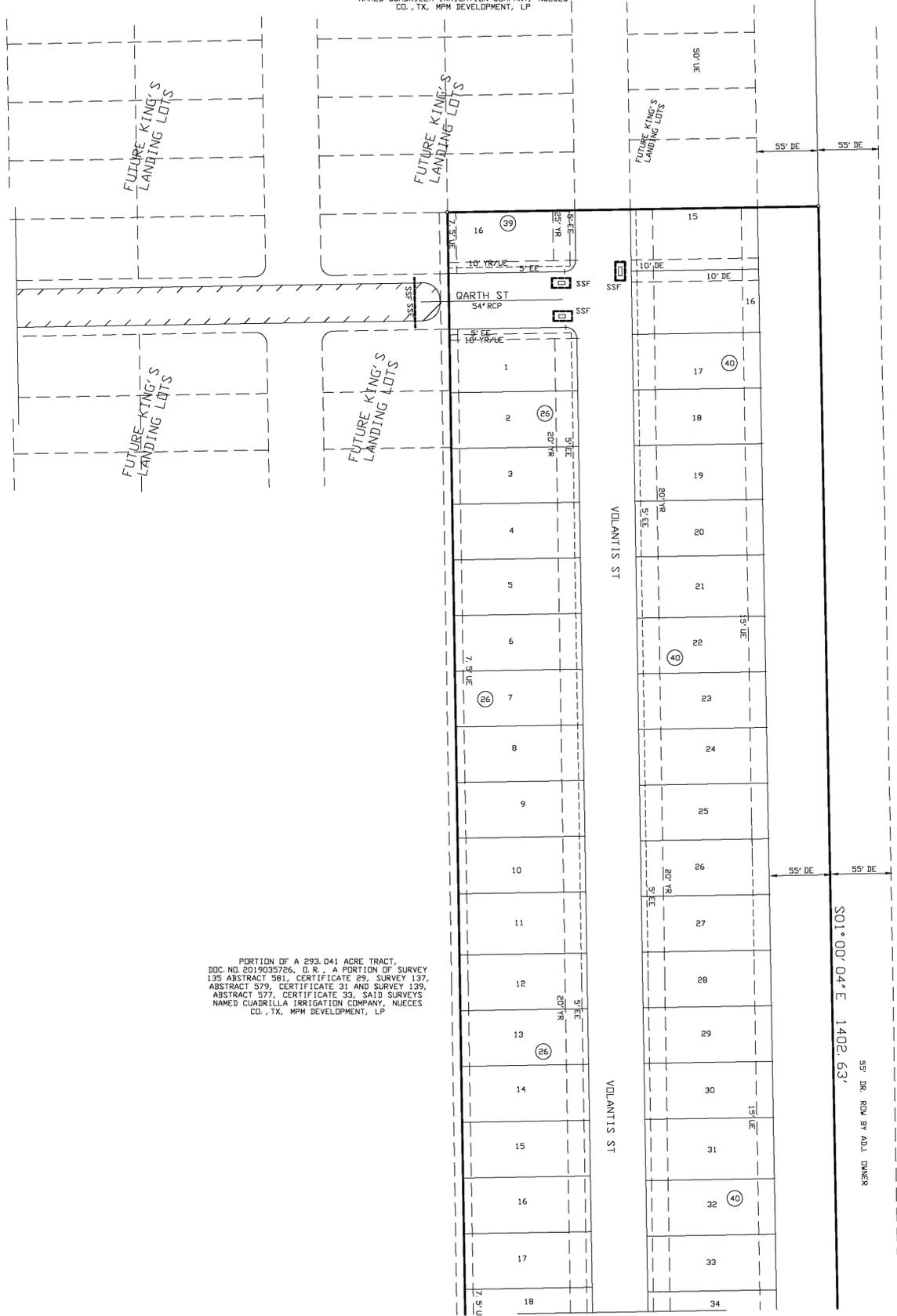
BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404			
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX			
STORM WATER POLLUTION PREVENTION PLAN			
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PGDS AS SWPPP	
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 08068	
	SCALE (V): NONE	DATE PLOTTED 02/18/20	SHEET 19 OF 33



PORTION OF A 293.041 ACRE TRACT,
 DOC. NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
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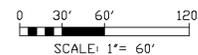
PORTION OF A 293.041 ACRE TRACT,
 DOC. NO. 2019035726, D.R., A PORTION OF SURVEY
 135 ABSTRACT 981, CERTIFICATE 29, SURVEY 137,
 ABSTRACT 579, CERTIFICATE 31 AND SURVEY 139,
 ABSTRACT 577, CERTIFICATE 33, SAID SURVEYS
 NAMED CUADRILLA IRRIGATION COMPANY, NUECES
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2019011959, E. R. STILL, JR. AND ET AL.

MATCH LINE "G" STA 4+75
 CONTINUED FROM SHEET 17

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BASS & WELSH ENGINEERING
 TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO.
 F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404
 PUBLIC IMPROVEMENTS TO KING'S
 LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

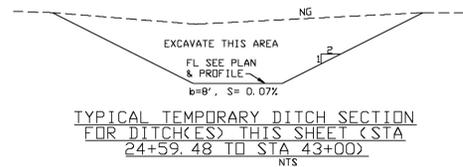
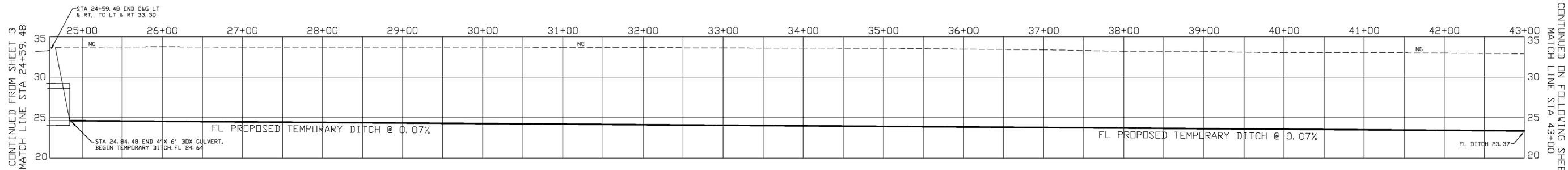
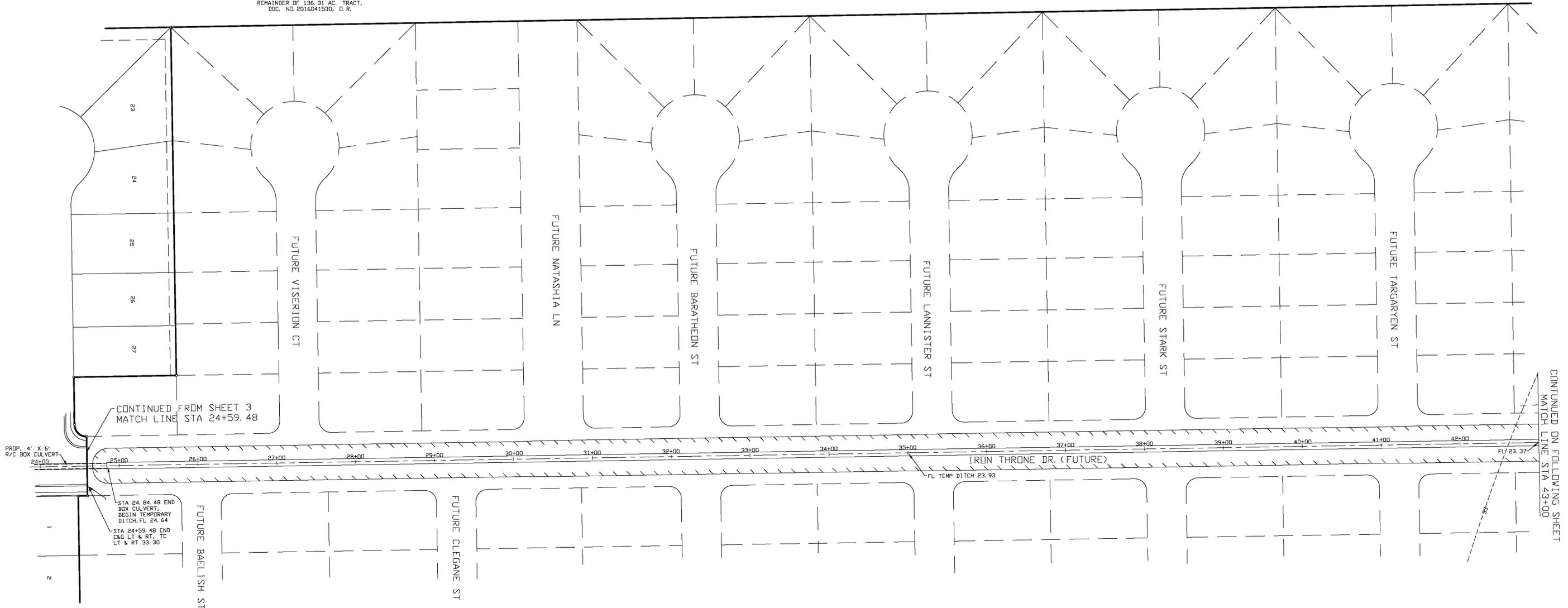
STORM WATER POLLUTION PREVENTION PLAN

OWN. _____	PLOT SCALE: 1" = 60'	COM. NO. PG06 AS SWPPP
SCALE (H): SAME	SCALE (V): NONE	JOB NO. 08068
CHK: N. WELSH	DATE PLOTTED: 02/18/20	SHEET 20 OF 33



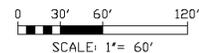
REMAINDER OF 136.31 AC. TRACT,
DOC. NO. 2016041530, D. R.

REMAINDER OF 136.31 AC. TRACT,
DOC. NO. 2016041530, D. R.



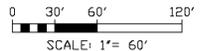
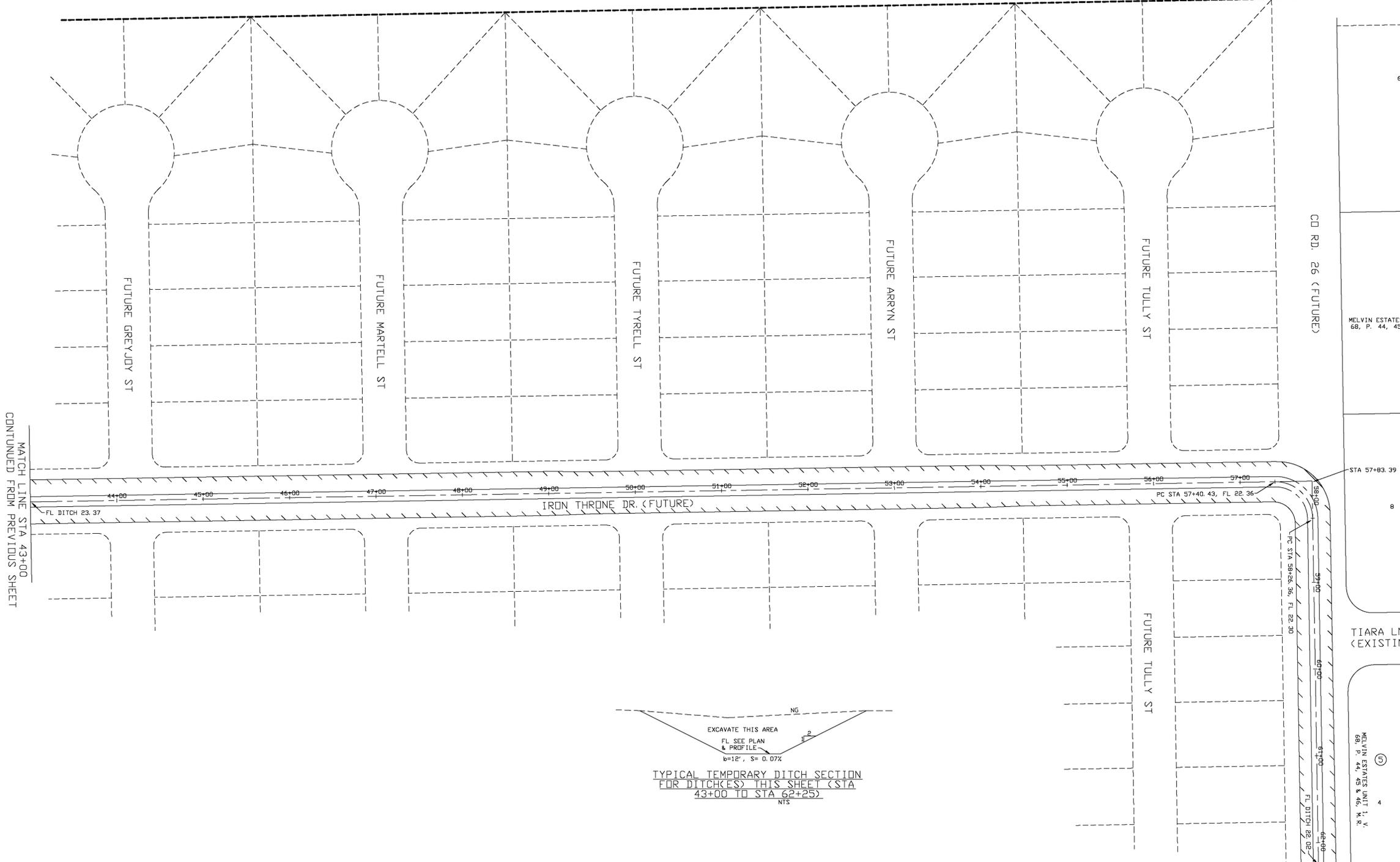
PROFILE - OFFSITE TEMPORARY DRAINAGE CHANNEL

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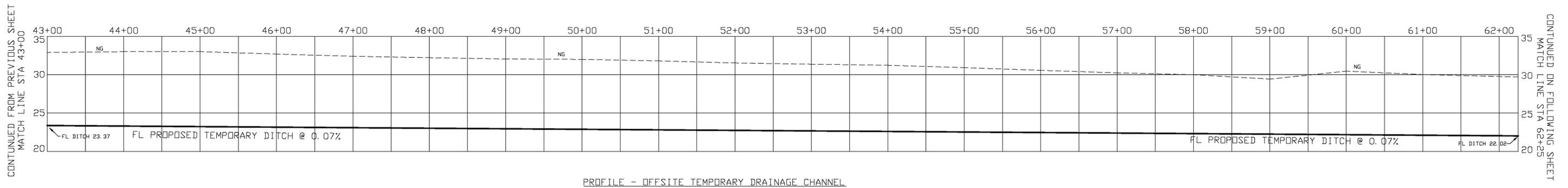
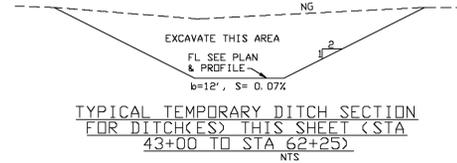
BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
OFFSITE DRAINAGE PLAN AND PROFILE		
DWN. _____	PLOT SCALE: 1"=60'	COM. NO. OS DR1
CHK. N. WELSH	SCALE (H): SAME	JOB NO. 18068
	SCALE (V): NONE	DATE PLOTTED 02/18/20
		SHEET 21 OF 33

REMAINDER OF 136.31 AC. TRACT,
DOC. NO. 2016041530, D. R.



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BASS & WELSH ENGINEERING TX SURVEY REG. NO 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
OFFSITE DRAINAGE PLAN AND PROFILE		
DWN: _____ CHK: N. WELSH	PLOT SCALE: 1"=60' SCALE (P): SAME SCALE (D): NONE	COM. NO. OS DR2 JOB NO. 18068 DATE PLOTTED 02/18/20 SHEET 22 OF 33



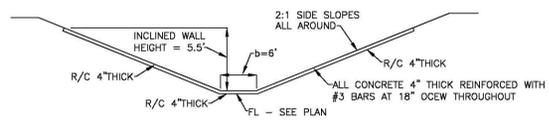
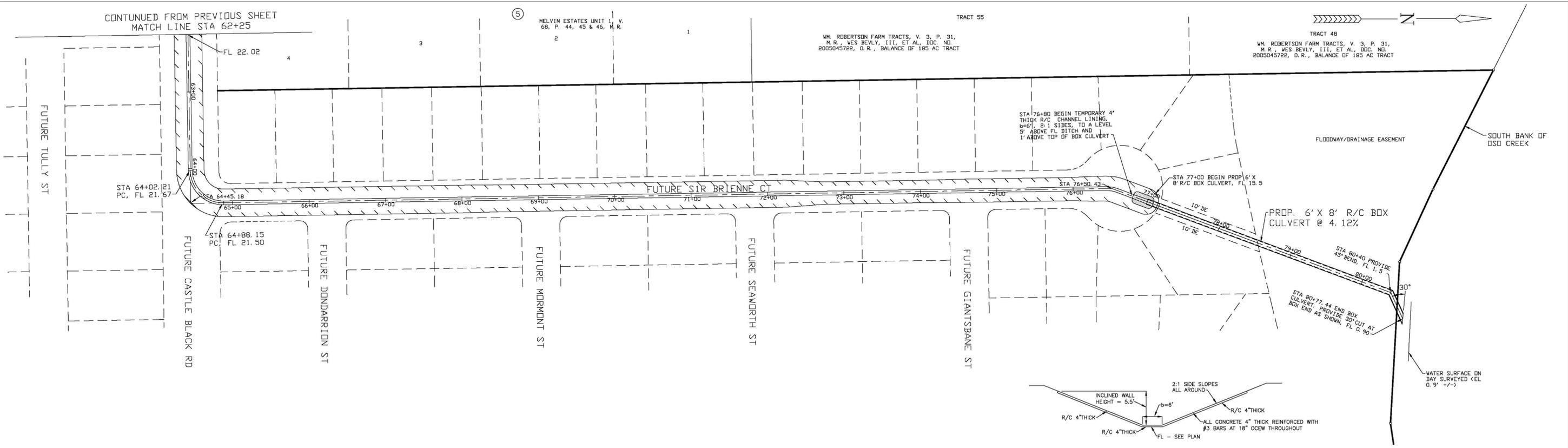
PROFILE - OFFSITE TEMPORARY DRAINAGE CHANNEL

CONTINUED FROM PREVIOUS SHEET
MATCH LINE STA 43+00

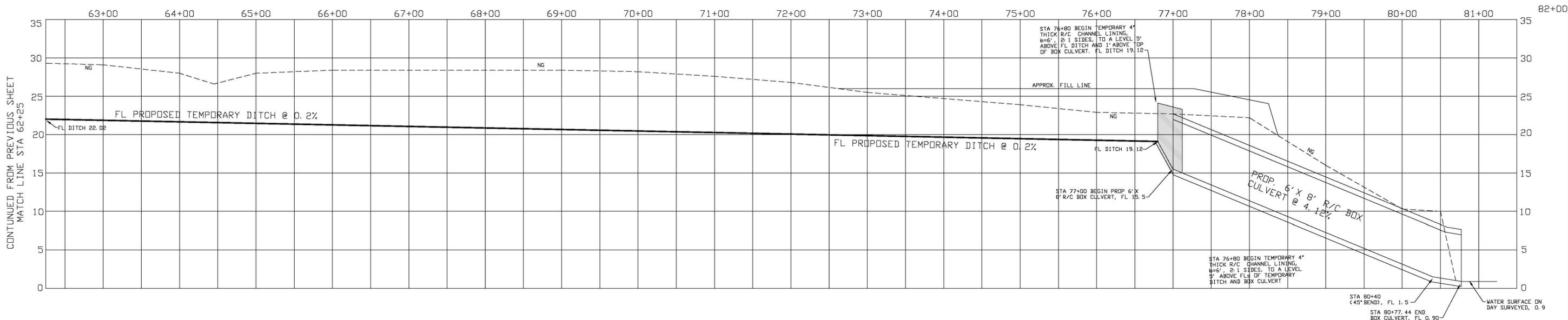
CONTINUED ON FOLLOWING SHEET
MATCH LINE STA 62+25

MATCH LINE STA 43+00
CONTINUED FROM PREVIOUS SHEET

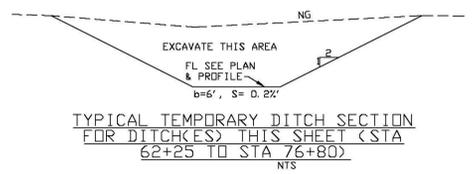
MATCH LINE STA 62+25
CONTINUED ON FOLLOWING SHEET



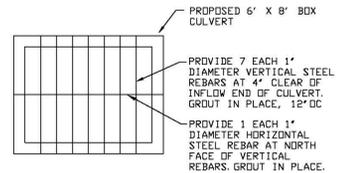
TYPICAL R/C LINED CHANNEL SECTION BEGINNING STA 76+80 AND ENDING STA 77+16
NTS



PROFILE - OFFSITE TEMPORARY DRAINAGE CHANNEL

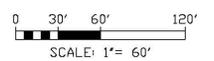


TYPICAL TEMPORARY DITCH SECTION FOR DITCHES ON THIS SHEET (STA 62+25 TO STA 76+80)
NTS

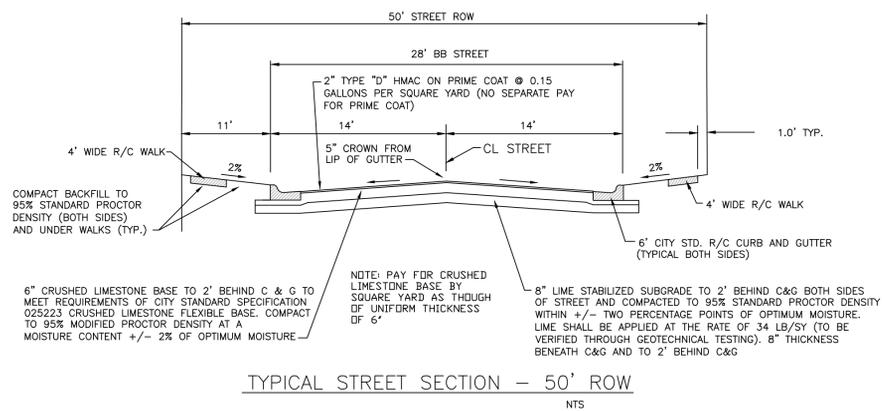
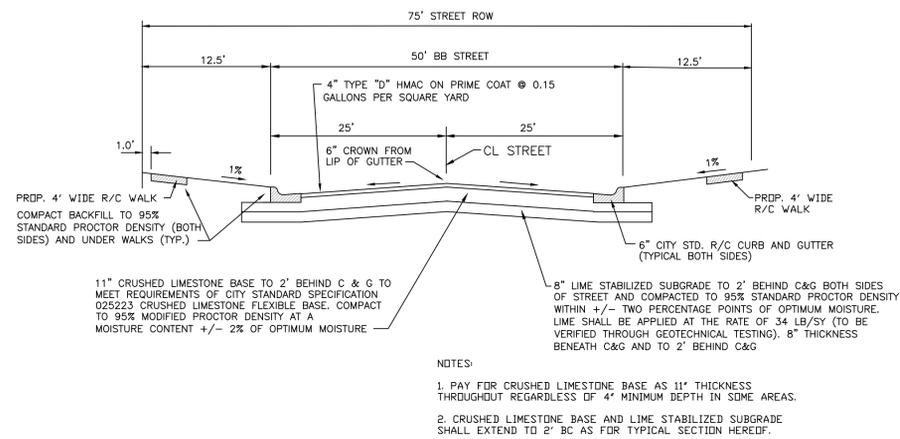
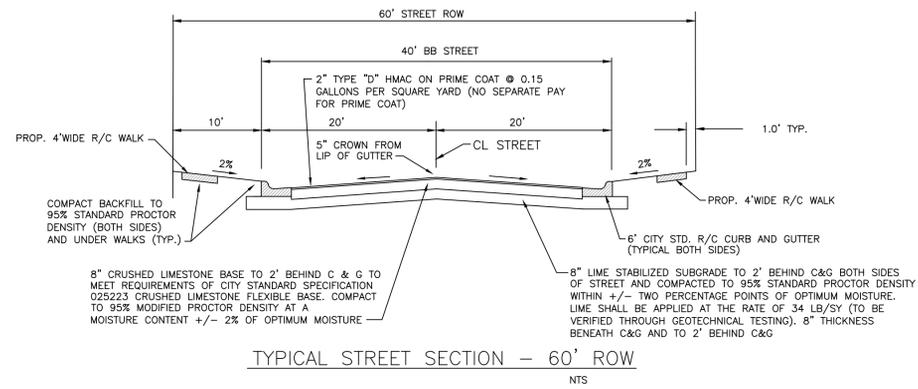


NOTE: USE THIS DETAIL AT DRAINAGE FLOW ENTRY INTO 6' X 8' BOX CULVERT AT OFFSITE DRAINAGE STATION 77+00 (THIS SHEET).
DETAIL - REBAR INSTALLATION AT DRAINAGE ENTRY INTO PROPOSED 6' X 8' BOX CULVERT
NTS

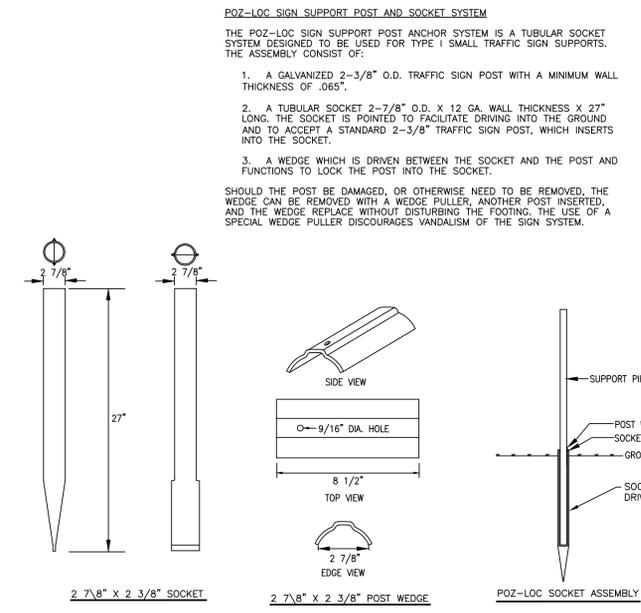
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BASS & WELSH ENGINEERING		
TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
OFFSITE DRAINAGE PLAN AND PROFILE		
OWN: _____	PLOT SCALE: 1"=60'	COM. NO. OS DR2
CHK: N. WELSH	SCALE (H): SAME	JOB NO. 18068
	SCALE (V): NONE	DATE PLOTTED 02/18/20
		SHEET 23 OF 33

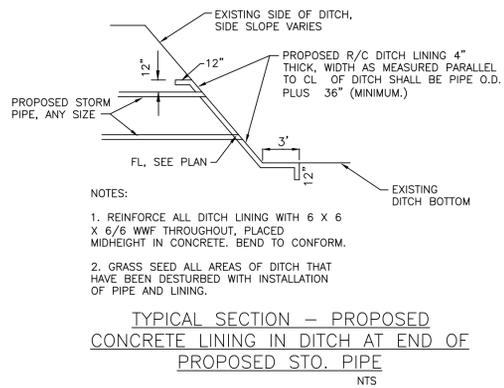
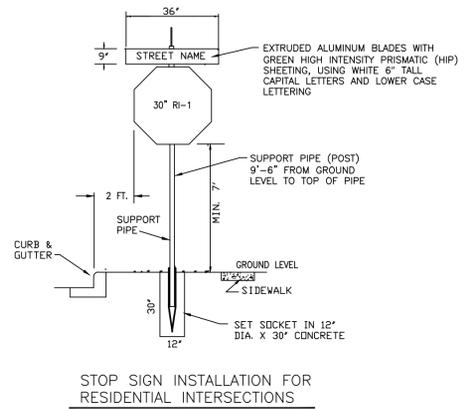
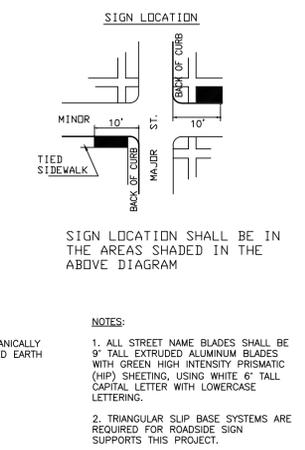
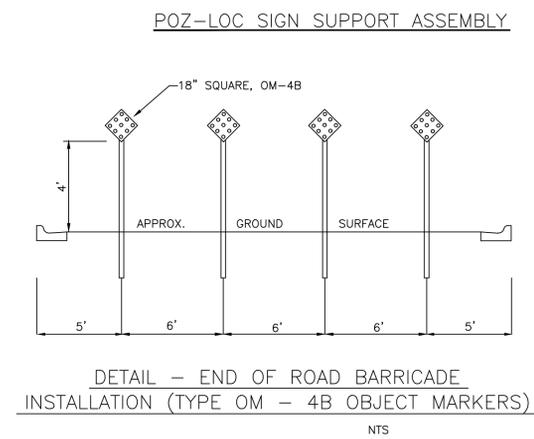


TENSAR GEO GRID
TENSAR GEOGRID TX-5 (OR PRE-APPROVED EQUAL) MAY BE USED IN LIEU OF 8" LIME STABILIZED SUBGRADE. PLACE GEO GRID TO 2' BC AND CONSTRUCT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CRUSHED LIMESTONE BASE SHALL OVERLAY GEO GRID. GEO GRID MAY BE SUBSTITUTED FOR (USED IN LIEU OF) 8" LIME STABILIZED SUBGRADE FOR ALL STREET SECTIONS (NO SEPARATE PAY). CONSTRUCT IN ACCORDANCE WITH CITY STANDARD SPECIFICATION 022040 AND THE MANUFACTURER'S RECOMMENDATIONS. IF GEOGRID IS USED PROVIDE 6" (MINIMUM) THICKNESS COMPACTED CRUSHED LIMESTONE BASE IMMEDIATELY ABOVE THE GEOGRID.



MATERIAL
-2 7/8" O.D. X 12 GA. GALVANIZED TUBING
-ASTM A 787
-WEIGHT 7.2#

MATERIAL
-3 1/2" X 8 1/2" X 11 GA. GALVANIZED SHEET
-ASTM A - 526 G-90
-WEIGHT 1#

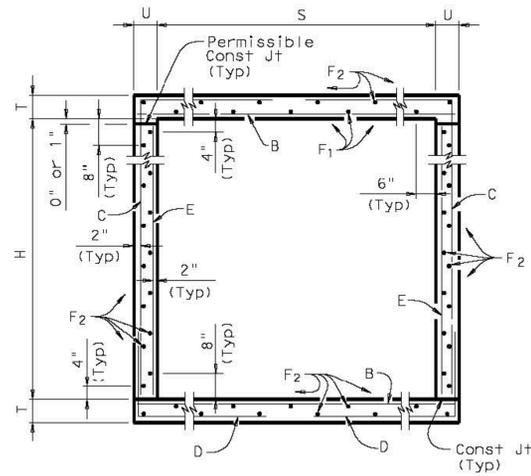


NOTES:
1. REINFORCE ALL DITCH LINING WITH 6 X 6 X 6/8 WWF THROUGHOUT, PLACED MIDHEIGHT IN CONCRETE. BEND TO CONFORM.
2. GRASS SEED ALL AREAS OF DITCH THAT HAVE BEEN DESTURBED WITH INSTALLATION OF PIPE AND LINING.

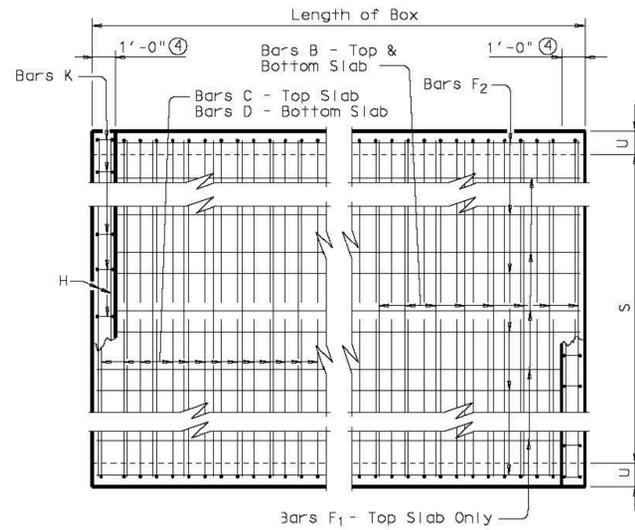
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BASS AND WELSH ENGINEERING TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX		
STREET & SIDEWALK DETAILS		
DWN. _____	PLOT SCALE: 1" = 60'	COM. NO. STR-DET
CHK. N. WELSH	SCALE (H): AS SHOWN	JOB NO. 18068
	SCALE (V): AS SHOWN	SHEET 24 OF 33
	DATE PLOTTED 02/18/20	

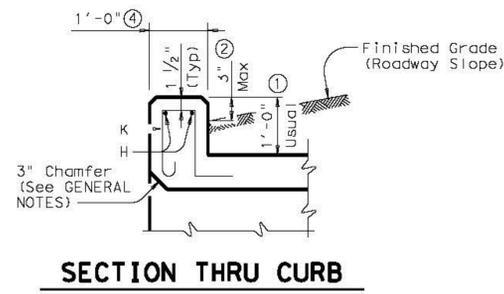
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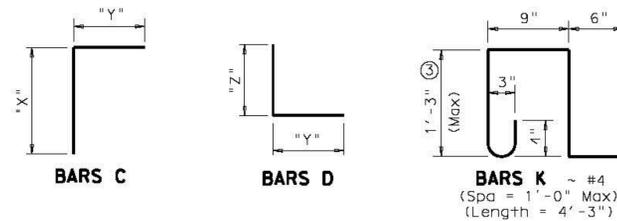
TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB



BARS C

BARS D

BARS K ~ #4
(Spa = 1'-0" Max)
(Length = 4'-3")

- ① 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.
- ② 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.
- ③ 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.
- ④ 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 E may be cut off or raised, and Bars C and D may be reversed. See standard SCC-MD for skewed ends, angle sections and lengthening details.

HL93 LOADING SHEET 1 OF 2

		Bridge Division Standard	
SINGLE BOX CULVERTS CAST-IN-PLACE 0' TO 30' FILL			
SCC-5 & 6			
FILE: scc56ste.dgn	DW: GAF	CK: LMW	DWR: BWH/TxDOT CK: GAF
TxDOT February 2010	CONT	SECT	JOB HIGHWAY
REVISIONS		DIST	COUNTY SHEET NO.
10-12: Added WWR			

DATE:
FILE:

BASS AND WELSH ENGINEERING TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET CORPUS CHRISTI, TEXAS 78404		
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX TxDOT SINGLE BOX CULVERTS CAST-IN PLACE SCC-5 & 6		
DWN: _____	PLOT SCALE: 1" = 60'	BOX CULV DET
CHK: N. WELSH	SCALE (H): AS SHOWN	CDM. NO. TxDOT 5-6' CIP
	SCALE (V): AS SHOWN	JOB NO. 18068
	DATE PLOTTED 02/18/20	SHEET 25 OF 33

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

QUANTITIES

SECTION DIMENSIONS S H T U				FILL HEIGHT	BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																				QUANTITIES																		
					Bars B					Bars C					Bars D					Bars E~#4 at 18" Max		Bars F1 ~#4		Bars F2~#4 at 18" Max		Bars H 4~#4		Bars K	Per foot of Barrel		Curb		Total										
					No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	Length	Wt	No.	#	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
5'-0"	2'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	162	#5	6"	5'-2"	873	2'-5"	2'-9"	162	#5	6"	5'-4"	901	2'-9"	2'-7"	56	2'-0"	75	8	7"	39'-9"	212	22	39'-9"	584	5'-11"	16	14	40	0.353	96.1	0.5	56	14.6	3,898
5'-0"	2'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'-0"	648	2'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	2'-0"	75	4	18"	39'-9"	106	22	39'-9"	584	5'-11"	16	14	40	0.391	80.7	0.5	56	16.1	3,282
5'-0"	3'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	5'-11"	767	3'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	3'-0"	112	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.396	89.6	0.5	56	16.3	3,639
5'-0"	3'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'-0"	778	3'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	3'-0"	112	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.434	87.5	0.5	56	17.9	3,555
5'-0"	4'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	6'-11"	896	4'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	4'-0"	150	8	7"	39'-9"	212	26	39'-9"	690	5'-11"	16	14	40	0.439	93.8	0.5	56	18.1	3,806
5'-0"	4'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'-0"	907	4'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	4'-0"	150	4	18"	39'-9"	106	26	39'-9"	690	5'-11"	16	14	40	0.477	91.7	0.5	56	19.6	3,722
5'-0"	5'-0"	7"	7"	26'	194	#5	5"	5'-11"	1,197	194	#4	5"	7'-11"	1,026	5'-5"	2'-6"	194	#4	5"	4'-8"	605	2'-6"	2'-2"	56	5'-0"	187	8	7"	39'-9"	212	30	39'-9"	797	5'-11"	16	14	40	0.483	100.6	0.5	56	19.8	4,080
5'-0"	5'-0"	8"	7"	30'	194	#5	5"	5'-11"	1,197	194	#4	5"	8'-0"	1,037	5'-6"	2'-6"	194	#4	5"	4'-9"	616	2'-6"	2'-3"	56	5'-0"	187	4	18"	39'-9"	106	30	39'-9"	797	5'-11"	16	14	40	0.521	98.5	0.5	56	21.3	3,996
6'-0"	3'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	162	#5	6"	6'-6"	1,098	3'-5"	3'-1"	162	#5	6"	5'-8"	957	3'-1"	2'-7"	56	3'-0"	112	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.439	115.1	0.5	63	18.1	4,666
6'-0"	3'-0"	8"	7"	26'	162	#6	6"	6'-11"	1,683	162	#5	6"	6'-7"	1,112	3'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.484	119.6	0.5	63	19.9	4,845
6'-0"	3'-0"	9"	8"	30'	162	#6	6"	7'-1"	1,724	162	#5	6"	6'-8"	1,126	3'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	3'-0"	112	5	18"	39'-9"	133	29	39'-9"	770	7'-1"	19	18	51	0.556	121.3	0.5	70	22.7	4,921
6'-0"	4'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	7'-3"	940	4'-5"	2'-10"	194	#4	5"	5'-0"	648	2'-10"	2'-2"	56	4'-0"	150	10	7"	39'-9"	266	29	39'-9"	770	6'-11"	18	16	45	0.483	104.4	0.5	63	19.8	4,237
6'-0"	4'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	7'-7"	1,281	4'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	6'-11"	18	16	45	0.527	133.0	0.5	63	21.6	5,384
6'-0"	4'-0"	9"	8"	30'	162	#6	6"	7'-1"	1,724	162	#5	6"	7'-8"	1,295	4'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	4'-0"	150	5	18"	39'-9"	133	29	39'-9"	770	7'-1"	19	18	51	0.605	126.5	0.5	70	24.7	5,128
6'-0"	5'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	8'-3"	1,069	5'-5"	2'-10"	194	#4	5"	5'-0"	648	2'-10"	2'-2"	56	5'-0"	187	10	7"	39'-9"	266	33	39'-9"	876	6'-11"	18	16	45	0.526	111.2	0.5	63	21.5	4,509
6'-0"	5'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	8'-7"	1,450	5'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	6'-11"	18	16	45	0.570	140.8	0.5	63	23.3	5,696
6'-0"	5'-0"	9"	8"	30'	194	#6	5"	7'-1"	2,064	162	#5	6"	8'-8"	1,464	5'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	5'-0"	187	5	18"	39'-9"	133	33	39'-9"	876	7'-1"	19	18	51	0.654	142.8	0.5	70	26.7	5,780
6'-0"	6'-0"	7"	7"	20'	194	#5	5"	6'-11"	1,400	194	#4	5"	9'-3"	1,199	6'-5"	2'-10"	194	#4	5"	5'-0"	648	2'-10"	2'-2"	56	6'-0"	224	10	7"	39'-9"	266	37	39'-9"	982	6'-11"	18	16	45	0.569	118.0	0.5	63	23.3	4,782
6'-0"	6'-0"	8"	7"	26'	194	#6	5"	6'-11"	2,015	162	#5	6"	9'-7"	1,619	6'-6"	3'-1"	162	#5	6"	5'-9"	972	3'-1"	2'-8"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	6'-11"	18	16	45	0.613	148.6	0.5	63	25.0	6,008
6'-0"	6'-0"	9"	8"	30'	194	#6	5"	7'-1"	2,064	162	#5	6"	9'-8"	1,633	6'-7"	3'-1"	162	#5	6"	5'-10"	986	3'-1"	2'-9"	56	6'-0"	224	5	18"	39'-9"	133	37	39'-9"	982	7'-1"	19	18	51	0.704	150.6	0.5	70	28.7	6,092

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

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).

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DATE: _____
FILE: _____

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation **Bridge Division Standard**

SINGLE BOX CULVERTS CAST-IN-PLACE 0' TO 30' FILL

SCC-5 & 6

FILE: scc56ste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT	CR: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-12: Added WWR	DIST	COUNTY	SHEET NO.	

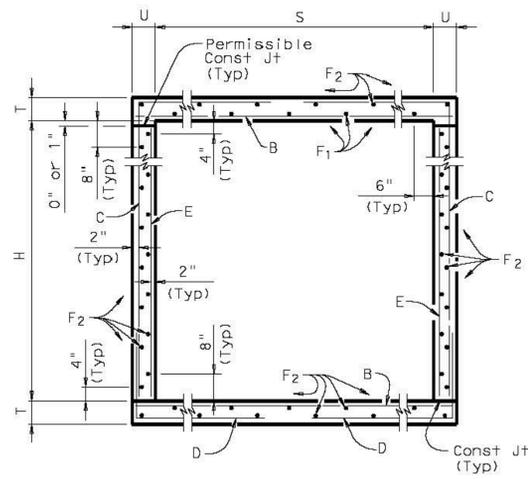
BASS AND WELSH ENGINEERING
TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
KING'S LANDING UNIT 1
CORPUS CHRISTI, NUECES CO., TX
TXDOT SINGLE BOX CULVERTS CAST-IN PLACE
SCC-5 & 6

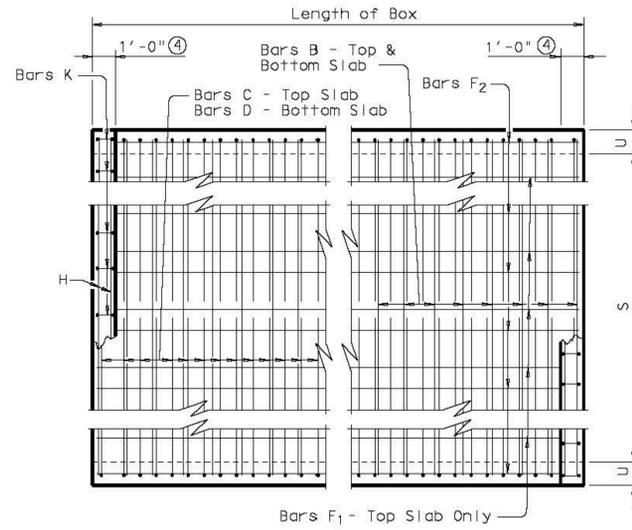
DWN: _____	PLT SCALE: 1" = 50'	COM. NO. TXDOT 5-8' DIP
CHK: N. WELSH	SCALE (H): AS SHOWN	JOB NO. 18088
	SCALE (V): AS SHOWN	SHEET 26 OF 33
	DATE PLOTTED 02/18/20	

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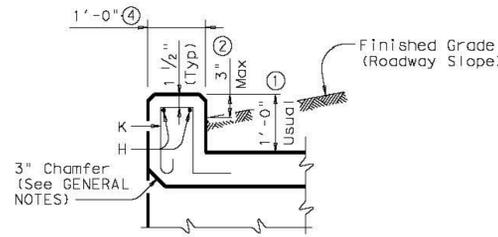
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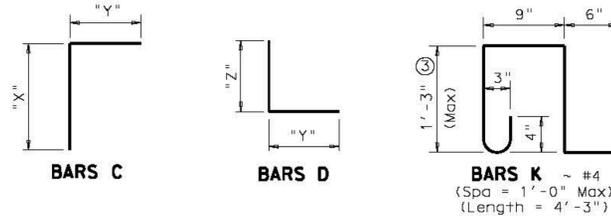
TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB



- ① 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.
- ② 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.
- ③ 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.
- ④ 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 E may be cut off or raised, and Bars C and D may be reversed.
 See standard SCC-MD for skewed ends, angle sections and lengthening details.

HL93 LOADING

SHEET 1 OF 2



**SINGLE BOX CULVERTS
 CAST-IN-PLACE
 0' TO 30' FILL**

SCC-8

FILE: scc08ste.dgn	DN: GAF	CK: LMW	DW: BWH/TXDOT	CK: GAF
TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-12: Added WWR	DIST	COUNTY	SHEET NO.	

BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

TxDOT SINGLE BOX CULVERTS CAST-IN PLACE
 SCC-8

DWN:	PLOT SCALE: 1" = 50'	COM. NO. BOX CULV DET
CHK: N. WELSH	SCALE (1): AS SHOWN	TXDOT 8" CIP
	SCALE (2): AS SHOWN	JOB NO. 18068
	DATE PLOTTED 02/18/20	SHEET 27 OF 33

DISCLAIMER: This standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:

SECTION DIMENSIONS				FILL HEIGHT	BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																				QUANTITIES																		
					Bars B					Bars C					Bars D					Bars E-#4 at 18" Max		Bars F1-#4		Bars F2-#4 at 18" Max		Bars H 4-#4		Bars K	Per foot of Barrel		Curb		Total										
					S	H	T	U	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	"X"	"Y"	No.	Size	Spa	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Length	Wt	No.	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)
8'-0"	4'-0"	7"	7"	13'	162	#6	6"	8'-11"	2,170	194	#5	5"	8'-8"	1,754	4'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	4'-0"	150	13	7"	39'-9"	345	32	39'-9"	850	8'-11"	24	20	57	0.569	166.3	0.7	81	23.5	6,733
8'-0"	4'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	8'-9"	1,770	4'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	8'-11"	24	20	57	0.626	173.2	0.7	81	25.7	7,008
8'-0"	4'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	8'-10"	1,787	4'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	9'-1"	24	22	62	0.716	175.2	0.7	86	29.3	7,095
8'-0"	4'-0"	10"	8"	23'	194	#6	5"	9'-1"	2,647	138	#6	7"	8'-11"	1,848	4'-8"	4'-3"	138	#6	7"	7'-6"	1,555	4'-3"	3'-3"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	9'-1"	24	22	62	0.774	180.2	0.7	86	31.7	7,295
8'-0"	4'-0"	11"	9"	30'	162	#7	6"	9'-3"	3,063	194	#5	5"	9'-0"	1,821	4'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	4'-0"	150	6	18"	39'-9"	159	34	39'-9"	903	9'-3"	25	22	62	0.867	188.7	0.7	87	35.4	7,633
8'-0"	5'-0"	7"	7"	13'	162	#6	6"	8'-11"	2,170	194	#5	5"	9'-8"	1,956	5'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	5'-0"	187	13	7"	39'-9"	345	36	39'-9"	956	8'-11"	24	20	57	0.612	174.9	0.7	81	25.2	7,078
8'-0"	5'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	9'-9"	1,973	5'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	5'-0"	187	6	18"	39'-9"	159	36	39'-9"	956	8'-11"	24	20	57	0.669	181.8	0.7	81	27.5	7,354
8'-0"	5'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	9'-10"	1,990	5'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	5'-0"	187	6	18"	39'-9"	159	36	39'-9"	956	9'-1"	24	22	62	0.765	183.9	0.7	86	31.3	7,441
8'-0"	5'-0"	10"	8"	23'	194	#6	5"	9'-1"	2,647	194	#5	5"	9'-11"	2,007	5'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	5'-0"	187	6	18"	39'-9"	159	36	39'-9"	956	9'-1"	24	22	62	0.823	184.7	0.7	86	33.6	7,475
8'-0"	5'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	10'-0"	2,023	5'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	5'-0"	187	6	18"	39'-9"	159	38	39'-9"	1,009	9'-3"	25	22	62	0.923	212.4	0.7	87	37.6	8,583
8'-0"	6'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	162	#5	6"	10'-8"	1,802	6'-5"	4'-3"	162	#5	6"	6'-10"	1,155	4'-3"	2'-7"	56	6'-0"	224	13	7"	39'-9"	345	40	39'-9"	1,062	8'-11"	24	20	57	0.655	179.7	0.7	81	26.9	7,267
8'-0"	6'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	10'-9"	2,175	6'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	8'-11"	24	20	57	0.712	190.5	0.7	81	29.2	7,699
8'-0"	6'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	10'-10"	2,192	6'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.815	192.5	0.7	86	33.3	7,786
8'-0"	6'-0"	10"	8"	23'	194	#6	5"	9'-1"	2,647	194	#5	5"	10'-11"	2,209	6'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.872	193.4	0.7	86	35.6	7,820
8'-0"	6'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	11'-0"	2,226	6'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	6'-0"	224	6	18"	39'-9"	159	42	39'-9"	1,115	9'-3"	25	22	62	0.978	221.1	0.7	87	39.8	8,929
8'-0"	7'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	194	#5	5"	11'-8"	2,361	7'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	7'-0"	262	13	7"	39'-9"	345	40	39'-9"	1,062	8'-11"	24	20	57	0.699	200.3	0.7	81	28.7	8,092
8'-0"	7'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	11'-9"	2,378	7'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	8'-11"	24	20	57	0.755	196.5	0.7	81	30.9	7,940
8'-0"	7'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	11'-10"	2,394	7'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.864	198.5	0.7	86	35.3	8,026
8'-0"	7'-0"	10"	8"	23'	162	#7	6"	9'-1"	3,008	194	#5	5"	11'-11"	2,411	7'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.922	208.4	0.7	86	37.6	8,421
8'-0"	7'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	12'-0"	2,428	7'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	7'-0"	262	6	18"	39'-9"	159	42	39'-9"	1,115	9'-3"	25	22	62	1.034	227.1	0.7	87	42.1	9,169
8'-0"	8'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	194	#5	5"	12'-8"	2,563	8'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	8'-0"	299	13	7"	39'-9"	345	44	39'-9"	1,168	8'-11"	24	20	57	0.742	208.9	0.7	81	30.4	8,437
8'-0"	8'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	12'-9"	2,580	8'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	8'-11"	24	20	57	0.798	205.1	0.7	81	32.6	8,285
8'-0"	8'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	12'-10"	2,597	8'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	9'-1"	24	22	62	0.914	207.2	0.7	86	37.3	8,372
8'-0"	8'-0"	10"	8"	23'	162	#7	6"	9'-1"	3,008	194	#5	5"	12'-11"	2,614	8'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	9'-1"	24	22	62	0.971	217.0	0.7	86	39.5	8,767
8'-0"	8'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	13'-0"	2,630	8'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	8'-0"	299	6	18"	39'-9"	159	46	39'-9"	1,221	9'-3"	25	22	62	1.090	235.7	0.7	87	44.3	9,514

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

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).

HL93 LOADING **SHEET 2 OF 2**


Bridge Division Standard

**SINGLE BOX CULVERTS
CAST-IN-PLACE
0' TO 30' FILL**

SCC-8

FILE: scc08ste.dgn	DN: GAF	CK: LMW	DW: BWH/TXDOT	CR: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-12: Added WWR	DIST	COUNTY	SHEET NO.	

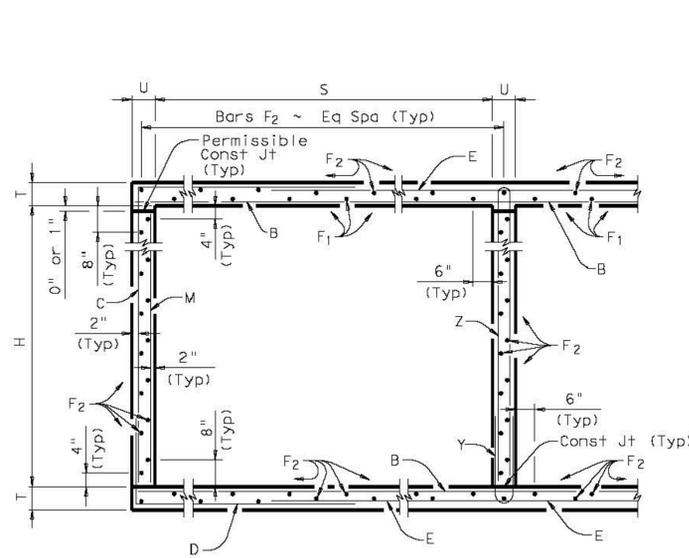
BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX
 TXDOT SINGLE BOX CULVERTS CAST-IN PLACE
 SCC-8

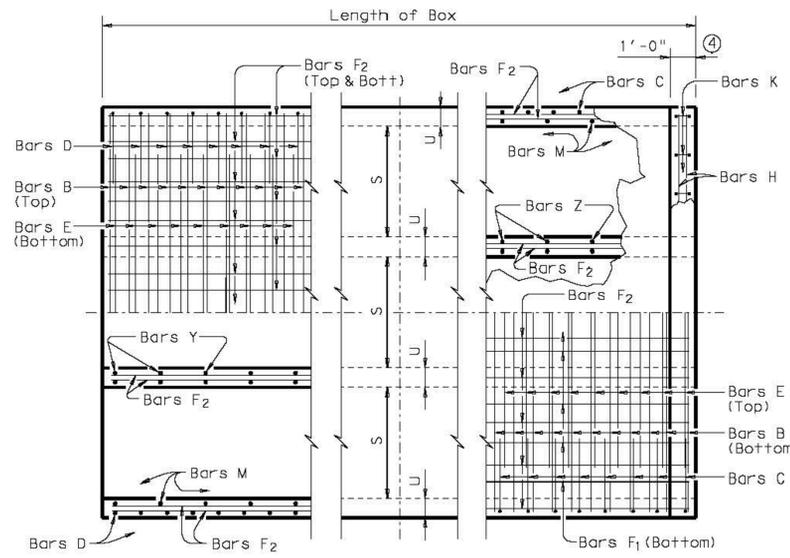
DWN: _____	PLOT SCALE: 1" = 60'	BOX CULV DET
CHK: N. WELSH	SCALE (H): AS SHOWN	TXDOT 8' CIP
	SCALE (V): AS SHOWN	JOB NO. 18068
	DATE PLOTTED 02/18/20	SHEET 28 OF 33

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DATE: FILE:



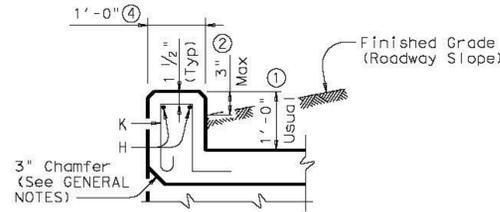
TYPICAL SECTION



BOTTOM SLAB

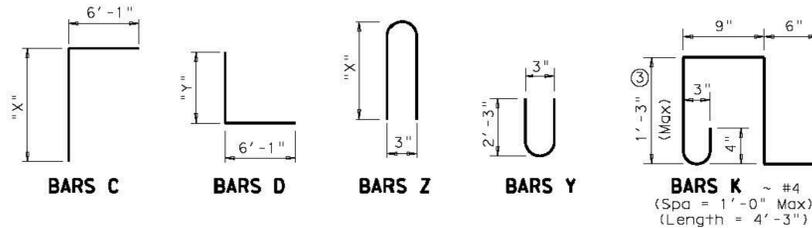
PART PLANS

TOP SLAB



SECTION THRU CURB

H	Bar Dimensions	
	"X"	"Y"
4'-0"	4'-6"	2'-3"
5'-0"	5'-6"	2'-3"
6'-0"	6'-6"	2'-3"
7'-0"	7'-6"	2'-3"
8'-0"	8'-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.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE
8'-0" SPAN
0' TO 13' FILL

MC-8-13

FILE: mc813ste.dgn	DN: GAF	CK: LMW	OW: BWH/TxDOT	CK: GAF
TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-12: Added WWR	DIST	COUNTY	SHEET NO.	

BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX
 TxDOT MULTIPLE BOX CULVERTS,
 CAST-IN PLACE, MC-8-13

DWN: _____	PLOT SCALE: 1" = 50'	COM. NO. TXDOT MC-8-13
CHK: N. WELSH	SCALE (P): AS SHOWN	JOB NO. 18068
	SCALE (V): AS SHOWN	SHEET 29 OF 33
	DATE PLOTTED 02/18/20	

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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 F1 ~#4				Bars F2 ~#4 at 1'-6" Max				Bars M~#4 at 1'-6" Max				Bars Y & Z~#4 at 10" 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)
2	8'-0"	4'-0"	8"	7"	162	#5	6"	17'-6"	2,957	194	#4	5"	10'-7"	1,372	8'-4"	1,080	194	#6	5"	8'-10"	2,574	22	9"	39'-9"	584	56	39'-9"	1,487	56	4'-0"	150	49	4'-8"	153	9'-2"	300	17'-6"	47	38	108	1.136	266.4	1.3	155	46.7	10,812
3	8'-0"	4'-0"	8"	7"	162	#5	6"	26'-1"	4,407	194	#4	5"	10'-7"	1,372	8'-4"	1,080	194	#6	5"	17'-5"	5,075	36	8"	39'-9"	956	80	39'-9"	2,124	56	4'-0"	150	98	4'-8"	305	9'-2"	600	26'-1"	70	54	153	1.646	401.7	2.0	223	67.8	16,292
4	8'-0"	4'-0"	8"	7"	162	#5	6"	34'-8"	5,857	194	#4	5"	10'-7"	1,372	8'-4"	1,080	194	#6	5"	26'-0"	7,576	48	8"	39'-9"	1,275	104	39'-9"	2,762	56	4'-0"	150	147	4'-8"	458	9'-2"	900	34'-8"	93	72	204	2.156	535.8	2.6	297	88.8	21,727
5	8'-0"	4'-0"	8"	7"	162	#5	6"	43'-3"	7,308	194	#4	5"	10'-7"	1,372	8'-4"	1,080	194	#6	5"	34'-7"	10,077	60	8"	39'-9"	1,593	128	39'-9"	3,399	56	4'-0"	150	196	4'-8"	611	9'-2"	1,200	43'-3"	116	90	256	2.667	669.8	3.2	372	109.9	27,162
6	8'-0"	4'-0"	8"	7"	162	#5	6"	51'-10"	8,758	194	#4	5"	10'-7"	1,372	8'-4"	1,080	194	#6	5"	43'-2"	12,578	72	8"	39'-9"	1,912	152	39'-9"	4,036	56	4'-0"	150	245	4'-8"	764	9'-2"	1,500	51'-10"	138	106	301	3.177	803.8	3.9	439	131.0	32,589
2	8'-0"	5'-0"	8"	7"	194	#5	5"	17'-6"	3,541	194	#4	5"	11'-7"	1,501	8'-4"	1,080	194	#6	5"	8'-10"	2,574	22	9"	39'-9"	584	62	39'-9"	1,646	56	5'-0"	187	49	4'-8"	153	11'-2"	366	17'-6"	47	38	108	1.201	290.8	1.3	155	49.3	11,787
3	8'-0"	5'-0"	8"	7"	194	#5	5"	26'-1"	5,278	194	#4	5"	11'-7"	1,501	8'-4"	1,080	194	#6	5"	17'-5"	5,075	36	8"	39'-9"	956	88	39'-9"	2,337	56	5'-0"	187	98	4'-8"	305	11'-2"	731	26'-1"	70	54	153	1.733	436.3	2.0	223	71.3	17,673
4	8'-0"	5'-0"	8"	7"	194	#5	5"	34'-8"	7,015	194	#4	5"	11'-7"	1,501	8'-4"	1,080	194	#6	5"	26'-0"	7,576	48	8"	39'-9"	1,275	114	39'-9"	3,027	56	5'-0"	187	147	4'-8"	458	11'-2"	1,097	34'-8"	93	72	204	2.264	580.4	2.6	297	93.2	23,513
5	8'-0"	5'-0"	8"	7"	194	#5	5"	43'-3"	8,751	194	#4	5"	11'-7"	1,501	8'-4"	1,080	194	#6	5"	34'-7"	10,077	60	8"	39'-9"	1,593	140	39'-9"	3,717	56	5'-0"	187	196	4'-8"	611	11'-2"	1,462	43'-3"	116	90	256	2.796	724.5	3.2	372	115.0	29,351
6	8'-0"	5'-0"	8"	7"	194	#5	5"	51'-10"	10,488	194	#4	5"	11'-7"	1,501	8'-4"	1,080	194	#6	5"	43'-2"	12,578	72	8"	39'-9"	1,912	166	39'-9"	4,408	56	5'-0"	187	245	4'-8"	764	11'-2"	1,828	51'-10"	138	106	301	3.328	868.7	3.9	439	137.0	35,185
2	8'-0"	6'-0"	8"	7"	194	#5	5"	17'-6"	3,541	194	#4	5"	12'-7"	1,631	8'-4"	1,080	194	#6	5"	8'-10"	2,574	22	9"	39'-9"	584	68	39'-9"	1,806	56	6'-0"	224	49	4'-8"	153	13'-2"	431	17'-6"	47	38	108	1.265	300.6	1.3	155	51.9	12,179
3	8'-0"	6'-0"	8"	7"	194	#5	5"	26'-1"	5,278	194	#4	5"	12'-7"	1,631	8'-4"	1,080	194	#6	5"	17'-5"	5,075	36	8"	39'-9"	956	96	39'-9"	2,549	56	6'-0"	224	98	4'-8"	305	13'-2"	862	26'-1"	70	54	153	1.819	449.0	2.0	223	74.8	18,183
4	8'-0"	6'-0"	8"	7"	194	#5	5"	34'-8"	7,015	194	#4	5"	12'-7"	1,631	8'-4"	1,080	194	#6	5"	26'-0"	7,576	48	8"	39'-9"	1,275	124	39'-9"	3,293	56	6'-0"	224	147	4'-8"	458	13'-2"	1,293	34'-8"	93	72	204	2.372	596.1	2.6	297	97.5	24,142
5	8'-0"	6'-0"	8"	7"	194	#5	5"	43'-3"	8,751	194	#4	5"	12'-7"	1,631	8'-4"	1,080	194	#6	5"	34'-7"	10,077	60	8"	39'-9"	1,593	152	39'-9"	4,036	56	6'-0"	224	196	4'-8"	611	13'-2"	1,724	43'-3"	116	90	256	2.926	743.2	3.2	372	120.2	30,099
6	8'-0"	6'-0"	8"	7"	194	#5	5"	51'-10"	10,488	194	#4	5"	12'-7"	1,631	8'-4"	1,080	194	#6	5"	43'-2"	12,578	72	8"	39'-9"	1,912	180	39'-9"	4,780	56	6'-0"	224	245	4'-8"	764	13'-2"	2,155	51'-10"	138	106	301	3.479	890.3	3.9	439	143.1	36,051
2	8'-0"	7'-0"	8"	7"	194	#5	5"	17'-6"	3,541	194	#4	5"	13'-7"	1,760	8'-4"	1,080	194	#6	5"	8'-10"	2,574	22	9"	39'-9"	584	68	39'-9"	1,806	56	7'-0"	262	49	4'-8"	153	15'-2"	496	17'-6"	47	38	108	1.330	306.4	1.3	155	54.5	12,411
3	8'-0"	7'-0"	8"	7"	194	#5	5"	26'-1"	5,278	194	#4	5"	13'-7"	1,760	8'-4"	1,080	194	#6	5"	17'-5"	5,075	36	8"	39'-9"	956	96	39'-9"	2,549	56	7'-0"	262	98	4'-8"	305	15'-2"	993	26'-1"	70	54	153	1.905	456.5	2.0	223	78.2	18,481
4	8'-0"	7'-0"	8"	7"	194	#5	5"	34'-8"	7,015	194	#4	5"	13'-7"	1,760	8'-4"	1,080	194	#6	5"	26'-0"	7,576	48	8"	39'-9"	1,275	124	39'-9"	3,293	56	7'-0"	262	147	4'-8"	458	15'-2"	1,489	34'-8"	93	72	204	2.480	605.2	2.6	297	101.8	24,505
5	8'-0"	7'-0"	8"	7"	194	#5	5"	43'-3"	8,751	194	#4	5"	13'-7"	1,760	8'-4"	1,080	194	#6	5"	34'-7"	10,077	60	8"	39'-9"	1,593	152	39'-9"	4,036	56	7'-0"	262	196	4'-8"	611	15'-2"	1,986	43'-3"	116	90	256	3.056	753.9	3.2	372	125.4	30,528
6	8'-0"	7'-0"	8"	7"	194	#5	5"	51'-10"	10,488	194	#4	5"	13'-7"	1,760	8'-4"	1,080	194	#6	5"	43'-2"	12,578	72	8"	39'-9"	1,912	180	39'-9"	4,780	56	7'-0"	262	245	4'-8"	764	15'-2"	2,482	51'-10"	138	106	301	3.631	902.7	3.9	439	149.1	36,545
2	8'-0"	8'-0"	8"	7"	194	#5	5"	17'-6"	3,541	162	#5	6"	14'-7"	2,464	8'-9"	1,478	194	#6	5"	8'-10"	2,574	22	9"	39'-9"	584	74	39'-9"	1,965	56	8'-0"	299	49	4'-8"	153	17'-2"	562	17'-6"	47	38	108	1.395	340.5	1.3	155	57.1	13,775
3	8'-0"	8'-0"	8"	7"	194	#5	5"	26'-1"	5,278	162	#5	6"	14'-7"	2,464	8'-9"	1,478	194	#6	5"	17'-5"	5,075	36	8"	39'-9"	956	104	39'-9"	2,762	56	8'-0"	299	98	4'-8"	305	17'-2"	1,124	26'-1"	70	54	153	1.992	493.5	2.0	223	81.7	19,964
4	8'-0"	8'-0"	8"	7"	194	#5	5"	34'-8"	7,015	162	#5	6"	14'-7"	2,464	8'-9"	1,478	194	#6	5"	26'-0"	7,576	48	8"	39'-9"	1,275	134	39'-9"	3,558	56	8'-0"	299	147	4'-8"	458	17'-2"	1,686	34'-8"	93	72	204	2.588	645.2	2.6	297	106.1	26,106
5	8'-0"	8'-0"	8"	7"	194	#5	5"	43'-3"	8,751	162	#5	6"	14'-7"	2,464	8'-9"	1,478	194	#6	5"	34'-7"	10,077	60	8"	39'-9"	1,593	164	39'-9"	4,355	56	8'-0"	299	196	4'-8"	611	17'-2"	2,248	43'-3"	116	90	256	3.185	796.9	3.2	372	130.6	32,248
6	8'-0"	8'-0"	8"	7"	194	#5	5"	51'-10"	10,488	162	#5	6"	14'-7"	2,464	8'-9"	1,478	194	#6	5"	43'-2"	12,578	72	8"	39'-9"	1,912	194	39'-9"	5,151	56	8'-0"	299	245	4'-8"	764	17'-2"	2,809	51'-10"	138	106	301	3.782	948.6	3.9	439	155.2	38,382

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).

HL93 LOADING SHEET 2 OF 2

MULTIPLE BOX CULVERTS
CAST-IN-PLACE
8'-0" SPAN
0' TO 13' FILL
MC-8-13

FILE: mc813ste.dgn	DN: GAF	CK: LMW	DN: BWH/TxDOT	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
10-12: Added WWR	DIST	COUNTY	SHEET NO.	

BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX
 TxDOT MULTIPLE BOX CULVERTS,
 CAST-IN PLACE, MC-8-13

DWN: _____	PLOT SCALE: 1" = 60'	BOX CULV DET
CHK: N. WELSH	SCALE (H): AS SHOWN	TxDOT MC-8-13
	SCALE (V): AS SHOWN	JOB NO. 18068
	DATE PLOTTED 02/18/20	SHEET 30 OF 33

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

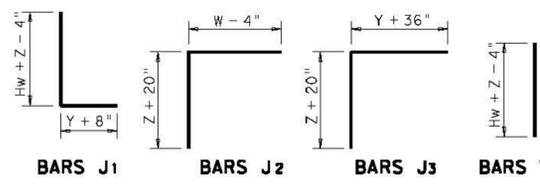
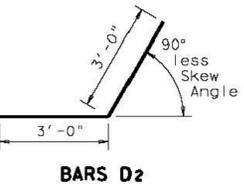
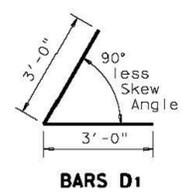
Maximum Wingwall Height Hw	Dimensions				Variable Reinforcing		Estimated Quantities per ft of wing (2-Wings)	Estimated Quantities per ft of Toewall (1-Toewall)		
	W	X	Y	Z	Bars J1	Bars J2				
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	49.31	0.424	6.85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

$Hw = H + T + C$
 $Lw = (Hw) (SL) \div \text{Cosine } \theta$ for Ty PW-1
 $= (Hw - 1') (SL) \div \text{Cosine } \theta$ for Ty PW-2 and $Hw \geq 4'$
 $= (Hw - 0.5') (SL) \div \text{Cosine } \theta$ for Ty PW-2 and $Hw < 4'$

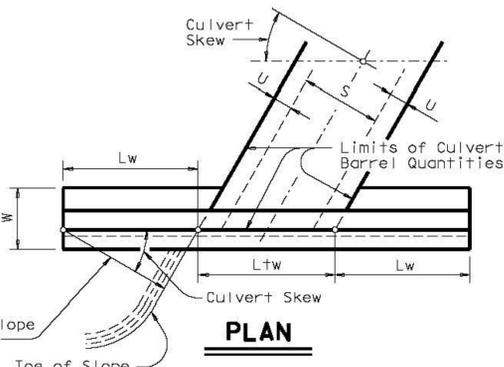
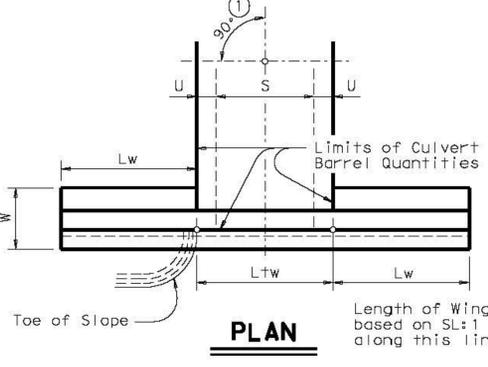
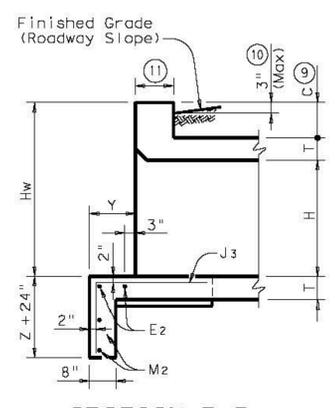
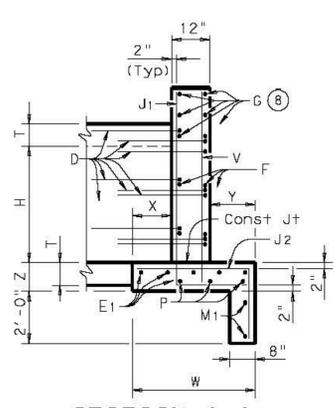
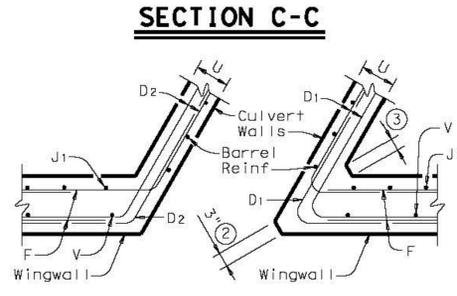
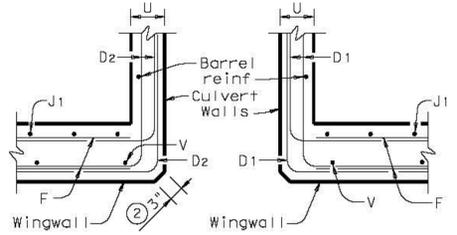
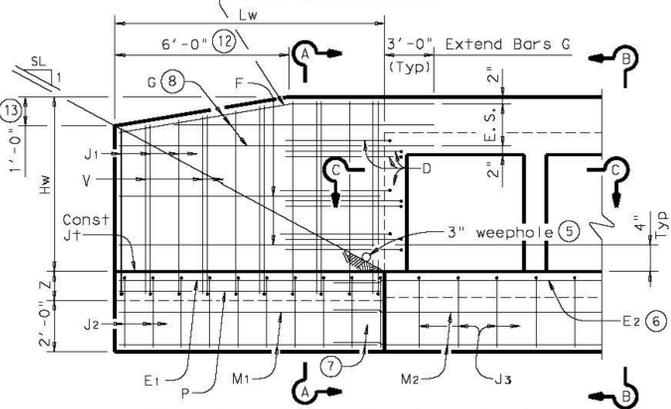
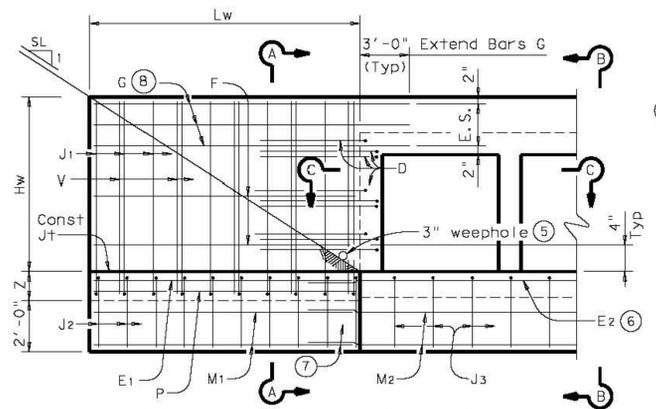
For Cast-in-place culverts:
 $Ltw = [(N) (S) + (N + 1) (U)] \div \text{Cosine } \theta$

For Precast culverts:
 $Ltw = [(N) (2U + S) + (N - 1) (0.5')] \div \text{Cosine } \theta$
 Total Wingwall Area (Two Wings ~ SF)
 $= (2) (Hw) (Lw)$ for Ty PW-1
 $= (2) (Hw) (Lw) - 6$ SF for Ty PW-2 and $Hw \geq 4'$
 $= (2) (Hw) (Lw) - 1.5$ 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'.



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.

Bridge Division Standard

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

PW

FILE: pws1de01.dgn	DWG: GAF	CHK: CAT	REV: TxDOT	CK: GAF
TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Reinforcing Quantities.				
01-12: PW-1 & PW-2.				
	DIST	COUNTY	SHEET NO.	

BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

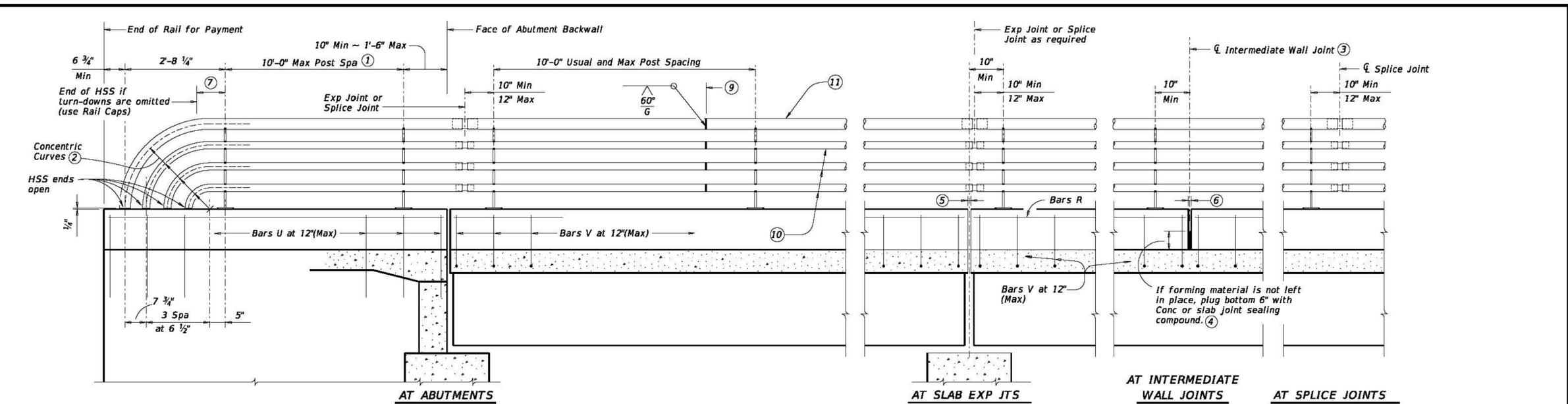
PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

TxDOT CONCRETE WINGWALLS W/PARALLEL WINGS FOR BOX CULVERTS, PW-1 & PW-2

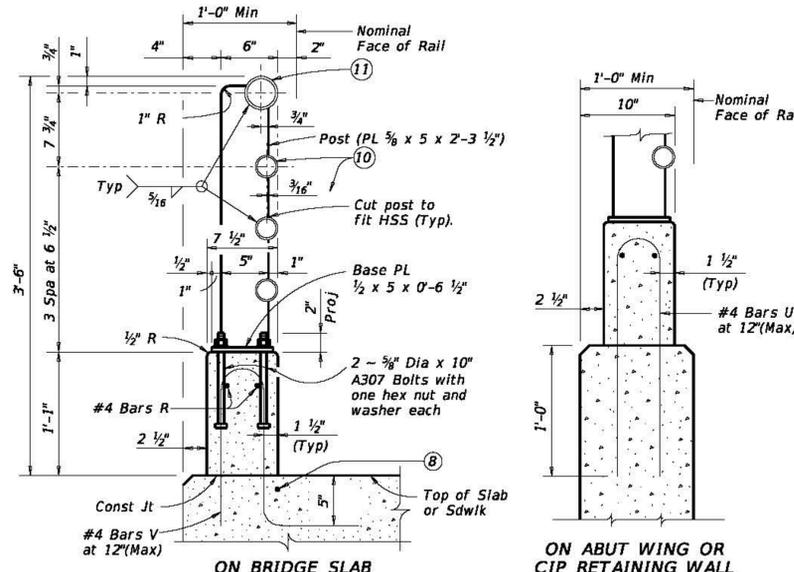
DWN: _____	PLOT SCALE: 1" = 50'	COM. NO. _____
CHK: N. WELSH	SCALE (S): AS SHOWN	JOB NO. 18068
	SCALE (V): AS SHOWN	SHEET 31 OF 33
	DATE PLOTTED 02/18/20	

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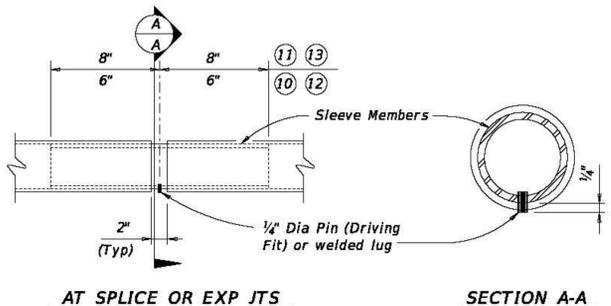
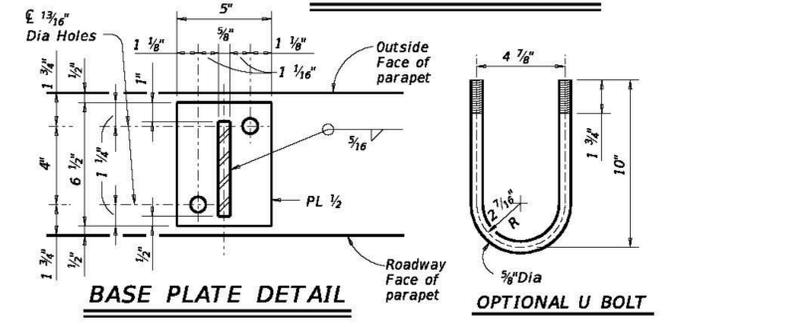
DATE: FILE:



ROADWAY ELEVATION OF RAIL

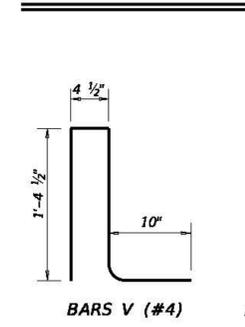


SECTIONS THRU RAIL



PIPE SPICE DETAIL

RAIL CAP DETAIL



CONSTRUCTION NOTES:
 Panel lengths of railing must be attached to a minimum of three posts except on abutment wingwalls. Face of rail, posts and parapet must be vertical transversely unless otherwise approved. Rail posts must be perpendicular to top of adjacent concrete parapet grade. Use Type VIII epoxy mortar under post base plates if gaps larger than 1/16" exist.
 For curved railing applications, fabricate the HSS rail to the radius when the radius is 600' or less. Submit shop drawings for approval when tubes are required to be fabricated to a radius. Shop drawings must be submitted to the Engineer for approval.
 Round or chamfer exposed edges of HSS rail and HSS rail posts to approximately 1/16" by grinding.

MATERIAL NOTES:
 Provide ASTM-A500 Grade B, A1085 or A53 Grade B for all HSS. Provide ASTM-A36 for post and plates.
 Galvanize all steel components unless otherwise shown.
 Anchor bolts must be 5/8" Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Threaded rods may be 0.557" minimum diameter with rolled threads. Nuts must conform to A563 requirements.
 Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
 Epoxy coat all reinforcing if slab bars are epoxy coated.
 Provide Grade 60 reinforcing steel.
 Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U, and V unless noted otherwise.
 Provide bar laps, where required, as follows:

Uncoated ~ #4 = 1'-5"
 Epoxy coated ~ #4 = 2'-1"

GENERAL NOTES:
 Designed according to AASHTO LRFD Specifications.
 Do not use this railing on bridges with expansion joints providing more than 5" movement. Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
 For all rails, submit erection drawings showing section lengths, splice locations, rail post spacing and anchor bolt setting for approval.
 Average weight of railing: 102 plf ~ Conc (with no Overlay)
 23 plf ~ Steel

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.

- 1 Min of 2 posts required on wingwall.
- 2 Portion of railing with turn-downs to be used or omitted as indicated on Bridge Layout.
- 3 Provide at all interior bents without slab expansion joints. Location independent of HSS rail splices.
- 4 Material used in forming joint may be left in place if it is compressible and light in color such as the following materials: polystyrene, molded cork granules, sponge rubber sheet, etc.
- 5 Same as Slab opening
- 6 1/4" Min ~ 3/4" Max
- 7 10" Min ~ 1'-6" Max if turn-downs are omitted.
- 8 Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie rail reinforcing.
- 9 One shop splice per panel is permitted (with minimum 85 percent penetration). The weld may be square groove or single vee groove. Grind smooth.
- 10 HSS 2.375 x 0.154
- 11 HSS 3.500 x 0.216
- 12 HSS 1.900 x 0.145
- 13 HSS 2.875 x 0.203

Texas Department of Transportation		Bridge Division Standard	
PEDESTRIAN RAIL			
TYPE PR2			
FILE: r1st0029.dgn	DN: TxDOT	CK: TxDOT	DW: JTR
REV: TxDOT July 2014	COM: SECT	JOB: HIGHWAY	CK: TxDOT
REVISIONS	DIST	COUNTY	SHEET NO.

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF NIXON M. WELSH, P.E. NO. 38240 OF BASS AND WELSH ENGINEERING, F 52. IT IS NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

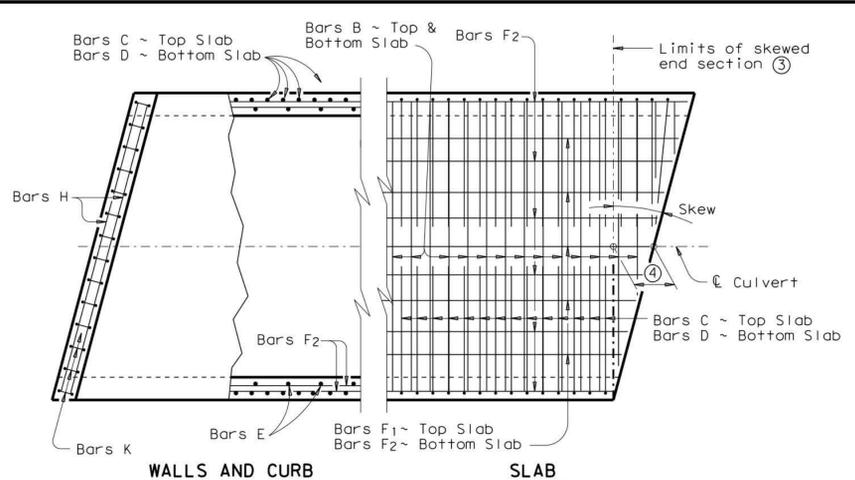
BASS AND WELSH ENGINEERING
 TX REGISTRATION NO. F-52, 3054 S. ALAMEDA STREET
 CORPUS CHRISTI, TEXAS 78404

PUBLIC IMPROVEMENTS TO
 KING'S LANDING UNIT 1
 CORPUS CHRISTI, NUECES CO., TX

TXDOT PEDESTRIAN RAIL, TYPE PR-2

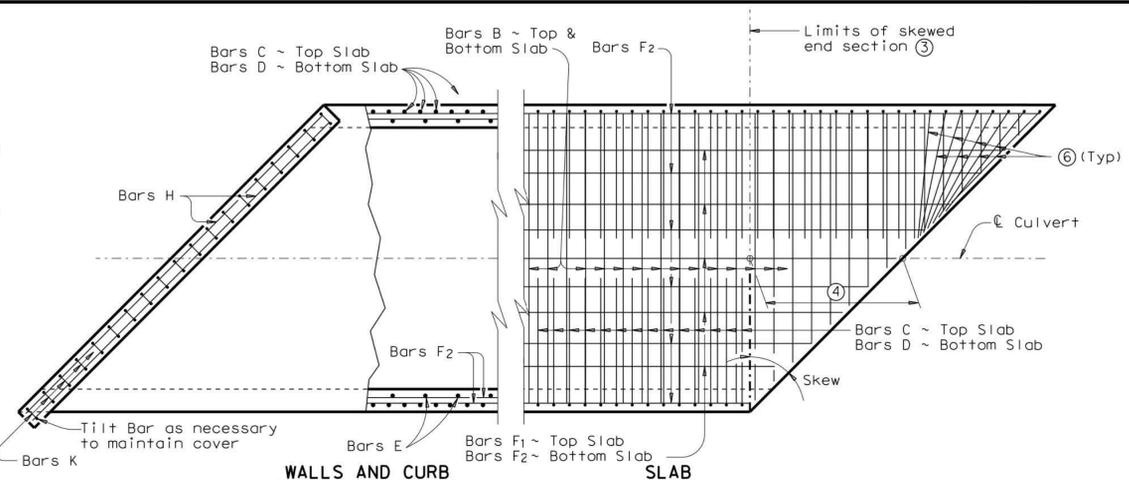
PLOT SCALE: 1" = 60'	DDM. NO. TXDOT PR.DWG
SCALE (H): AS SHOWN	JOB NO. 18068
SCALE (V): AS SHOWN	SHEET 32 OF 33
DATE PLOTTED: 02/18/20	

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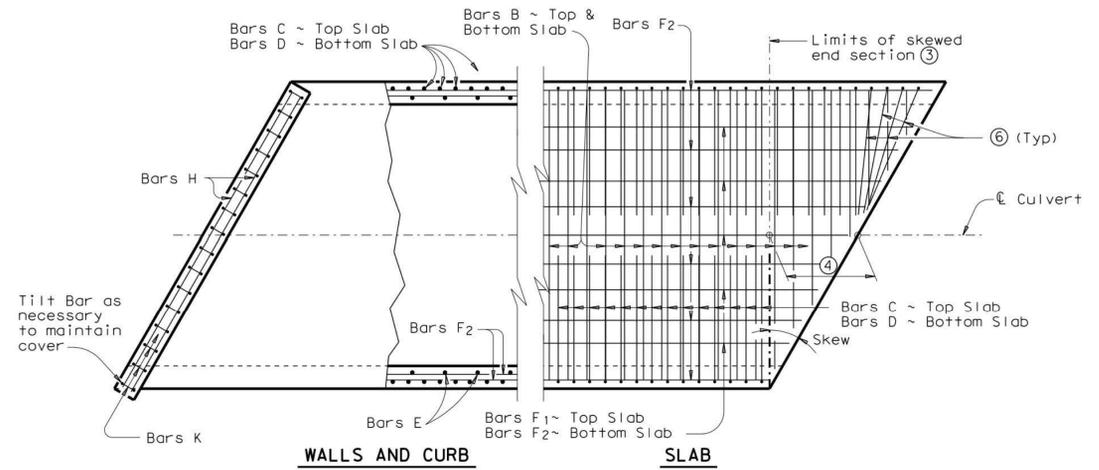


PLAN OF SKEWED ENDS ~ FROM 0° TO 15°

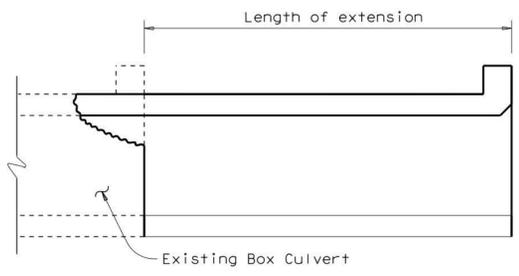
- ② When the spacing between Bars B becomes less than half of the normal spacing, bars shall be cut to avoid fouling.
- ③ The length of Bars B and E will vary in the skewed end sections [One half of overall width] x [Tan of the skew angle].
- ④ Bars F1 and F2 shall be continuous through the angle section. They shall be bent to remain parallel to the walls of the Box Culvert.
- ⑤ When necessary to avoid fouling in acute corners, the slab extension leg of Bars C and Bars D may be shortened to a minimum of 1'-6" for skews of 30° and 45°.
- ⑥ For skews of 15° or less, the contractor has the option of placing Bars B, C and D parallel to the skewed end while maintaining spacing along centerline box. Lengths of Bars B shown on the standards shall be increased to accommodate the skew.



PLAN OF SKEWED ENDS ~ OVER 30° TO 45°



PLAN OF SKEWED ENDS ~ OVER 15° TO 30°

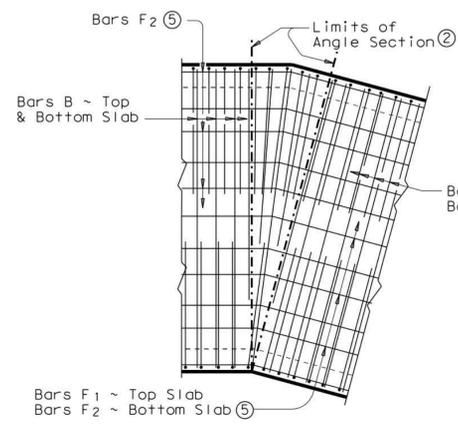


LENGTHENING DETAIL

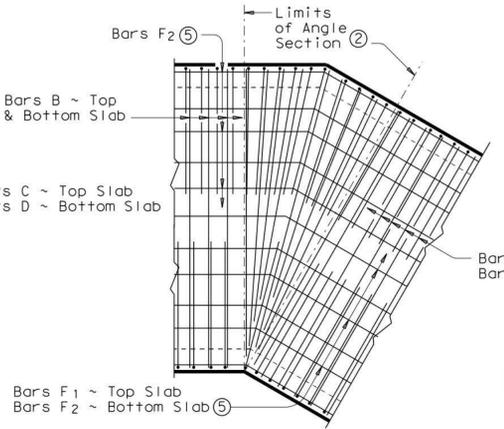
① For box culverts with less than 2'-0" of fill, the top slab shall be broken back to provide a minimum 1'-10" lap of the existing longitudinal bars with the longitudinal bars in the extension. If the depth of fill is 2'-0" or greater, the top slab shall be broken back to provide a 1'-0" minimum embedment of existing longitudinal reinforcing into the extension. Alternatively, if the fill height is greater than 2'-0", the existing curb may be left in place and 2'-0" long #6 bars shall be drilled and grouted 1'-0" into the existing top slab at 1'-6" center to center spacing. Wings and apron shall be broken back as necessary to install the extension. Exposed wingwall and apron reinforcing may be removed or cleaned and included in the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, horizontal and vertical transitions shall be formed as directed by the Engineer. Bottom slabs shall match to maintain an uninterrupted flow line. Existing and new reinforcing shall be field bent into transition maintaining specified cover requirements.

GENERAL NOTES:

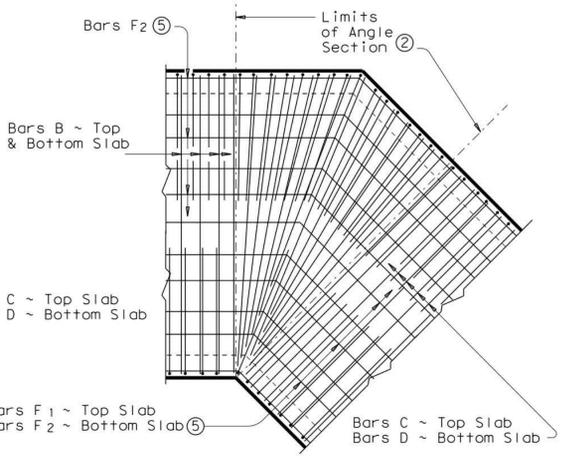
Designed according to AASHTO LRFD Specifications.
 All reinforcing steel shall be Grade 60.
 All concrete shall be Class "C" with these exceptions:
 use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.
 Class "C" 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.
 Refer to Single Box Culverts Cast-in-Place standard for details of straight sections of culvert. For skewed sections and angle sections refer to Single Box Culverts Cast-in-Place standard for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown. For Skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume and reinforcing steel weight by dividing the values shown on the culvert standards by the cosine of the skew angle.
 Laps for Bars H, when required, shall be 1'-9" for uncoated bars and 2'-7" for epoxy coated.



PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

HL93 LOADING

Texas Department of Transportation		Bridge Division Standard	
SINGLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS			
SCC-MD			
FILE: sccmdste.dgn	DN: GAF	CK: LMW	DW: BWH/TxDOT
TXDOT February 2010	CONT	SECT	JOB HIGHWAY
REVISIONS		DIST	COUNTY SHEET NO.

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF NIXON M. WELSH, P.E., NO. 36240 OF BASS AND WELSH ENGINEERING, F. 52. IT IS NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

BASS & WELSH ENGINEERING TX SURVEY REG. NO. 100027-00, TX ENGINEERING REG. NO. F-52, 3054 S. ALAMEDA STREET, CORPUS CHRISTI, TEXAS 78404	
PUBLIC IMPROVEMENTS TO KING'S LANDING UNIT 1 CORPUS CHRISTI, NUECES CO., TX	
TxDOT SINGLE BOX CULVERTS, CAST IN PLACE, MISCELLANEOUS DETAILS, SCC-MD	
DWN: _____	PLOT SCALE: 1"=60'
CHK: N. WELSH	SCALE (H): SAME
	SCALE (V): NONE
	DATE PLOTTED: 02/18/20
COM. NO. TxDOT-SBC	JOB NO. 18068
SHEET 33 OF 33	

KING'S LANDING UNIT 1
 PRELIMINARY COST ESTIMATE
 12" & 16" GRID MAIN
 WATER IMPROVEMENTS REIMBURSABLE BY CITY

WATER ITEMS		QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	16" PVC PIPE	5665	LF	110.00	623,150.00
2	16" TAPPING SADDLE & 16" TAPPING GATE VALVE W/BOX	2	EA	7,500.00	15,000.00
3	16" TEE	23	EA	1,500.00	34,500.00
4	16" GATE VALVE W/BOX	12	EA	9,000.00	108,000.00
5	16" CROSS	3	EA	1,900.00	5,700.00
6	16" EL, ANY ANGLE	21	EA	1,100.00	23,100.00
7	16" X 12" REDUCER	1	EA	1,500.00	1,500.00
8	DEWATERING FOR 16" PVC PIPE	1150	LF	40.00	46,000.00
9	TRENCH SAFETY FOR 12" & 16" PIPES	6041	LF	10.00	60,410.00
10	12" GATE VALVE W/BOX	2	EA	2,200.00	4,400.00
11	12" TEE	5	EA	600.00	3,000.00
12	12" PVC PIPE	376	LF	62.00	23,312.00
13	12" CAP TAPPED FOR 2"	1	EA	450.00	450.00
14	AIR RELEASE AND VACUUM VALVE IN FG MH	2	EA	8,500.00	17,000.00
15	FIRE HYDRANT ASSEMBLY	17	EA	3,500.00	59,500.00
16	6" X 30" PVC PIPE NIPPLE	54	EA	150.00	8,100.00
17	6" 90° EL	17	EA	400.00	6,800.00
18	6" GATE VALVE W/BOX	17	EA	1,000.00	17,000.00
19	UTILITY EASEMENT	1	LS	35,000.00	35,000.00

SUBTOTAL 1,091,922.00

7.5% ENGINEERING, SURVEYING & TESTING 81,894.15

SUBTOTAL \$1,173,816.15

LESS WATER DISTRIBUTION AREAGE FEE (COMMERCIAL LOTS) -112,299.56

LESS WATER DISTRIBUTION AREAGE FEE (RESIDENTIAL LOTS) -33,390.36

TOTAL AMMOUNT REIMBURSABLE \$1,028,126.23



INSURANCE REQUIREMENTS

I. CONTRACTOR’S LIABILITY INSURANCE

- A. Contractor shall not commence work under this agreement until all insurance required herein has been obtained and approved by the City's Risk Manager or designee. Contractor must not allow any subcontractor to commence work until all similar insurance required of the subcontractor has been so obtained.
- B. Contractor shall furnish to the Risk Manager or designee two (2) copies of Certificates of Insurance, with applicable policy endorsements showing the following minimum coverage by an insurance company(s) acceptable to the Risk Manager or designee. The City must be listed as an additional insured for the General Liability policy and Business Auto Liability policy, and a waiver of subrogation is required on all applicable policies.

TYPE OF INSURANCE	MINIMUM INSURANCE COVERAGE
30-Day Notice of Cancellation required on all certificates or by policy endorsement(s)	Bodily injury and Property Damage Per Occurrence / aggregate
COMMERCIAL GENERAL LIABILITY 1. Broad Form 2. Premises – Operations 3. Products/Completed Operations Hazard 4. Contractual Liability 5. Broad Form Property Damage 6. Independent Contractors 7. Personal and Advertising Injury 8. Professional Liability (if applicable) 9. Underground Hazard (if applicable) 10. Environmental (if applicable)	\$1,000,000 Per Occurrence \$2,000,000 Aggregate
BUSINESS AUTOMOBILE LIABILITY 1. Owned 2. Hired & Non-owned 3. Rented & Leased	\$1,000,000 Combined Single Limit
WORKERS’ COMPENSATION (for paid employees)	Which Complies With The Texas Workers’ Compensation Act And Paragraph II Of This Exhibit.
EMPLOYER’S LIABILITY	\$500,000 / \$500,000 / \$500,000
PROPERTY INSURANCE	Contractor shall be responsible for insuring all owned, rented, or leased personal property for all perils.

- C. In the event of accidents of any kind related to this project, Contractor shall furnish the Risk Manager with copies of all reports of such accidents within ten (10) days of the accident.

II. ADDITIONAL REQUIREMENTS

- A. Contractor must obtain workers' compensation coverage through a licensed insurance company in accordance with Texas law. The contract for coverage must be written on a policy and endorsements approved by the Texas Department of Insurance. The coverage provided must be in amounts sufficient to assure that all workers' compensation obligations incurred will be promptly met. An "All States endorsement shall be included for Companies not domiciled in Texas.
- B. Contractor shall obtain and maintain in full force and effect for the duration of this Contract, and any extension hereof, at Contractor's sole expense, insurance coverage written on an occurrence basis, by companies authorized and admitted to do business in the State of Texas and with an A.M. Best's rating of no less than A- VII.
- C. Contractor shall be required to submit replacement certificate of insurance to City at the address provided below within 10 days of the requested change. Contractor shall pay any costs incurred resulting from said changes. All notices under this Article shall be given to City at the following address:

City of Corpus Christi
Attn: Risk Management
P.O. Box 9277
Corpus Christi, TX 78469-9277

- D. Contractor agrees that with respect to the above required insurance, all insurance policies are to contain or be endorsed to contain the following required provisions:**
- List the City and its officers, officials, employees, volunteers, and elected representatives as additional insured by endorsement, or comparable policy language, as respects to operations, completed operations and activities of, or on behalf of, the named insured performed under contract with the City.
 - The "other insurance" clause shall not apply to the City of Corpus Christi where the City is an additional insured shown on the policy;
 - Workers' compensation and employers' liability policies will provide a waiver of subrogation in favor of the City; and
 - Provide thirty (30) calendar days advance written notice directly to City of any suspension, cancellation, non-renewal or material change in coverage, and not less than ten (10) calendar days advance written notice for nonpayment of premium.
- E. City shall have the option to suspend Contractor's performance should there be a lapse in coverage at any time during this contract. Failure to provide and to maintain the required insurance shall constitute a material breach of this contract.
- F. In addition to any other remedies the City may have upon Contractor's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, the City shall have the right to order Contractor to stop work hereunder, and/or withhold any payment(s) which become due to Contractor hereunder until Contractor demonstrates compliance with the requirements hereof.

- G. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payments of damages to persons or property resulting from Contractor's or its subcontractor's performance of the work covered under this agreement.

- H. It is agreed that Contractor's insurance shall be deemed primary and non-contributory with respect to any insurance or self insurance carried by the City of Corpus Christi for liability arising out of operations and completed operations and activities under this agreement.

- I. It is understood and agreed that the insurance required is in addition to and separate from any other obligation contained in this agreement.