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CIVIL CONSTRUCTION PLANS

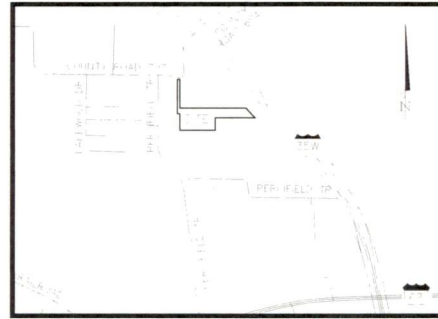
FOR

Alvarado RV Park

SOUTHBOUND IH-35 W ACCESS ROAD

ALVARADO RV
ALVARADO, TEXAS

1. ALL CONSTRUCTION WITHIN THE STATE RIGHT OF WAY WILL REQUIRE COMPLIANCE TO TxDOT STANDARD SPECIFICATIONS, STANDARD PLANS, AND TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 14, 2014 AND SPECIFICATION ITEMS LISTED AS FOLLOWS SHALL GOVERN ON THIS PROJECT FOR ALL WORK WITHIN THE STATE RIGHT OF WAY.
3. THE STANDARDS SHEETS, SPECIFICALLY IDENTIFIED IN THE INDEX OF SHEETS, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT. (STANDARD PLAN SHEETS ARE IDENTIFIED WITH AN * IN THE SHEET INDEX.)
4. BY SEALING AND SIGNING THESE PERMIT PLANS AS A PROFESSIONAL CIVIL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS, I CERTIFY THAT THE PROPOSED DRIVEWAY OR PUBLIC STREET CONNECTION(S) TO THE STATE ROADWAY MEETS OR EXCEEDS THE MINIMUM STOPPING DISTANCE REQUIRED FOR THE POSTED SPEED OF 50 MPH, BASED ON THE MOST RECENT TxDOT DESIGN MANUAL REQUIREMENTS.
5. FULL-DEPTH SAW CUT ALL JOINTS MADE FOR REMOVAL OF EXISTING STATE FACILITIES.
6. CONTRACTOR SHALL SCHEDULE A PRE-WORK INSPECTION WITH THE TxDOT INSPECTOR (BRENDA JOHNSON), 682-279-4327, AT LEAST TEN (10) DAYS PRIOR TO THE BEGINNING OF WORK.
7. NO LANE CLOSURES ALLOWED DURING PEAK HOURS. OFF-PEAK HOURS ARE FROM 9PM TO 5AM WEEKDAYS.



VICINITY MAP
NOT TO SCALE
ALVARADO, TEXAS

IN
ALVARADO, TEXAS
JOHNSON COUNTY

CONSTRUCTION SET
NOVEMBER 23, 2021

NOTE:
INFORMATION ON THIS SHEET AND OTHER SHEETS THROUGHOUT THIS PLAN SET IS PART OF A UNIFIED DESIGN. THE CONTRACTOR SHALL NOT SEPARATE DRAWINGS FROM THE SET FOR DISTRIBUTION TO SPECIFIC DISCIPLINES. EACH SUBCONTRACTOR SHALL BE PROVIDED WITH ALL SHEETS WITHIN THIS PLAN SET.



Know what's below.
Call before you dig.

(@ least 48 hours prior to digging)

SHEET INDEX	
Sheet Number	Sheet Title
C-0.0	Cover Sheet
C-0.1	Title Survey
C-1.1	General Notes
--	Traffic Control Plan
C-2.1	Overall Paving Plan
C-2.2	Paving Plan Details
C-3.1	Overall Grading Plan
C-3.2	Detailed Grading Plan
C-3.3	Detailed Grading Plan
C-3.4	Detailed Grading Plan
C-3.5	Eastern Detention Pond
C-3.6	Eastern Detention Calculations
C-3.7	Western Detention Pond
C-3.8	Culvert (I-35W Frontage Road)
C-4.1	Existing Drainage Area Map
C-4.2	Proposed Drainage Area Map
C-4.3	Detention Calculations
C-5.1	Water Plan
C-5.2	Wastewater Plan
C-6.1	Erosion Control Plan
C-6.2	Erosion Control Details
C-6.3	TxDOT Erosion Control Details (1 of 3)
C-6.4	TxDOT Erosion Control Details (2 of 3)
C-6.5	TxDOT Erosion Control Details (3 of 3)
C-7.1	Construction Details
C-7.2	TxDOT PSET-SP Detail
C-7.3	TxDOT TCP (1-1)-18
C-7.4	TxDOT TCP (2-1)-18
C-7.5	TxDOT TCP (2-6)-18
C-7.6	TxDOT TSR (5)-13
C-7.7	TxDOT JS (FTW)
C-7.8	TxDOT SMD (GEN)-08
C-7.9	TxDOT SMD (FRP)-08
C-7.10	TxDOT BC (1)-21
C-7.11	TxDOT BC (2)-21
C-7.12	TxDOT BC (3)-21
C-7.13	TxDOT BC (4)-21
C-7.14	TxDOT BC (5)-21
C-7.15	TxDOT BC (6)-21
C-7.16	TxDOT BC (7)-21
C-7.17	TxDOT BC (8)-21
C-7.18	TxDOT BC (9)-21
C-7.19	TxDOT BC (10)-21
C-7.20	TxDOT BC (11)-21
C-7.21	TxDOT BC (12)-21

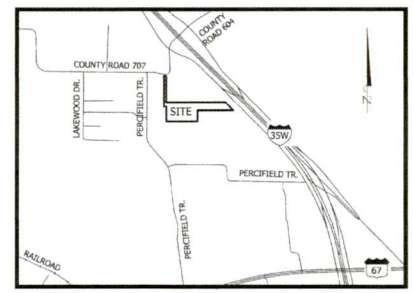
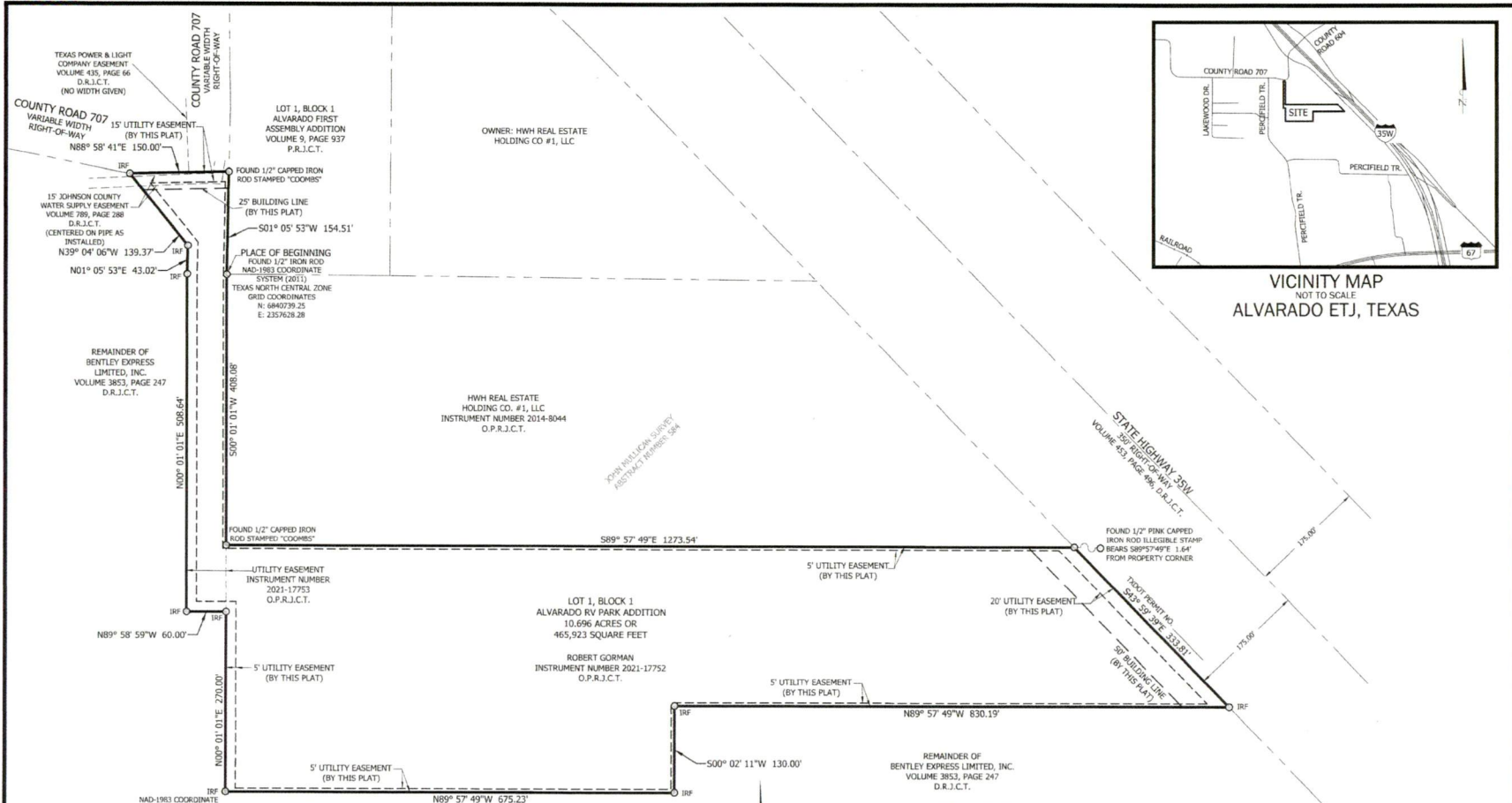
DEVELOPER:
CONTACT: TED GORMAN
1515 EAST HIGHWAY 199
SPRINGTOWN, TX 76082
(432) 230-7393
tedred85@icloud.com

PREPARED BY:

BANNISTER
ENGINEERING
240 North Mitchell Road | Mansfield, TX 76063 | 817.842.2094 | 817.842.2095 fax
REGISTRATION # F-10399 (TEXAS)

CONTACT: HECTOR SOTELO, P.E.
EMAIL: hsotelo@bannistereng.com

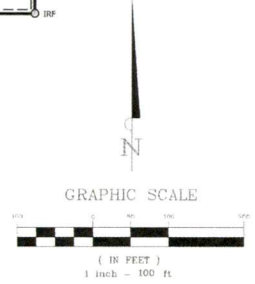




VICINITY MAP
NOT TO SCALE
ALVARADO ETJ, TEXAS

LEGEND

N	NORTH
S	SOUTH
E	EAST
W	WEST
°	DEGREES
'	MINUTES/FEET
"	SECONDS/INCHES
B.L.	BUILDING LINE
U.E.	UTILITY EASEMENT
O.P.R.J.C.T.	OFFICIAL PUBLIC RECORDS JOHNSON COUNTY, TEXAS
D.R.J.C.T.	DEED RECORDS JOHNSON COUNTY, TEXAS
P.R.J.C.T.	PLAT RECORDS JOHNSON COUNTY, TEXAS



APPROVED BY JOHNSON COUNTY COMMISSIONER'S COURT ON THE DAY OF _____, 2021

COUNTY JUDGE

Filed for Record _____
Year _____ Instrument No. _____
Slide _____

County Clerk

Deputy Clerk

**FINAL PLAT OF
ALVARADO RV PARK ADDITION
LOT 1, BLOCK 1**

BEING 10.696 Acres out of the John Mullican Survey, Abstract No. 584 Extra-Territorial Jurisdiction of the City of Alvarado, Johnson County, Texas

Prepared: August 2021
Revision Date: November 2021
Lot 1
SHEET 1 OF 2

OWNER / DEVELOPER:
ROBERT GORMAN
3050 W. 2ND.
ODESSA, TEXAS 79764
PHONE: 432-770-2705
pavingpro432@yahoo.com

ENGINEER / SURVEYOR:
BANNISTER ENGINEERING, LLC
240 NORTH MITCHELL ROAD
MANSFIELD, TEXAS 76063
CONTACT: MICHAEL DAVIS, RPLS
PHONE: 817-842-2094
Mike@bannistereng.com

"VOID UNLESS RECORDED IN THE PLAT RECORDS OF JOHNSON COUNTY, WITHIN ONE (1) YEAR OF THE DATE OF APPROVAL BY THE COUNTY."

PREPARED BY: PROJECT NO. 235-21-001

BANNISTER ENGINEERING
740 North Mitchell Road
Mansfield, TX 76063 817.842.2094
TBPLS REGISTRATION NO. 10193823

WATER SERVICE:
PRIVATE INDIVIDUAL WATER WELLS

SEWER SERVICE:
PRIVATE INDIVIDUAL SEPTIC SYSTEMS

ELECTRIC SERVICE:
UNITED COOPERATIVE SERVICES
2601 S. INTERSTATE 35W
BURLERSON, TEXAS 76028
PHONE: 817-782-8316

GENERAL CONSTRUCTION NOTES

- THE NOTES AND SPECIFICATIONS CONTAINED ON THIS SHEET ARE INTEGRAL TO THE PROJECT AND MUST BE FOLLOWED BY THE CONTRACTOR. IN THE EVENT THAT THE CONTRACTOR FAILS TO PERFORM OR OTHERWISE APPROVED BY THE ENGINEER AND CONSTRUCTION MANAGER TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM CLOGGING STORM SEWER PIPES OR PROPOSED OR EXISTING INLETS, OR FROM BEING TRANSPORTED TO ADJACENT PROPERTIES AND STREET RIGHT-OF-WAYS. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE AND SHALL REMAIN IN PLACE UNTIL FINAL GRADING AND PAVING IS COMPLETE AND PERMANENT SOIL STABILIZATION IS ACHIEVED BY MEANS OF PAVEMENT AND VEGETATION OR OTHER PERMANENT EROSION CONTROL MEASURES.
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GRADING NOTES

- NO SLOPES UNPAVED SHALL BE GREATER THAN 4:1 UNLESS OTHERWISE SHOWN.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDS IN PAVED AREAS. CONTRACTOR FIELD ADJUSTMENTS TO SPOT GRADES TO MAINTAIN POSITIVE DRAINAGE ARE ALLOWED WITH THE PRIOR APPROVAL OF THE ENGINEER. CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PAVING, IF ANY AREAS OF POOR DRAINAGE ARE ENCOUNTERED OR ANTICIPATED.
- CONTRACTOR SHALL PRETECT ALL MANHOLE COVERS, VALVE COVERS, VALV LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES AND TELEPHONE BOXES WHICH ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
- CONTRACTOR SHALL CALCULATE THEIR OWN EARTHWORK QUANTITIES TO DETERMINE THEIR BID. ANY DEVIATION FROM A BALANCED OUT AND FILL SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND ANY VARIANCE SHALL BE SPECIFICALLY IDENTIFIED ON THE BID. THE CONTRACTOR IS EXPECTED TO CONSTRUCT THE PROJECT PER THE APPROVED GRADING PLAN. DISCREPANCIES IN EARTHWORK QUANTITIES AFTER BEGINNING CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL REFERENCE THE ARCHITECTURAL, STRUCTURAL PLANS, SPECIFICATIONS, AND GEOTECHNICAL REPORT FOR ALL BUILDING PADS.
- TOP AND BOTTOM SPOTS INDICATE FINAL GROUND ELEVATION AT HIGH SIDE AND THE LOW SIDE RESPECTIVELY. (IF THE SLOPE IS NOT ANY PHYSICAL ELEVATIONS OF THE WALL STRUCTURE) RETAINING WALL DESIGN IS NOT INCLUDED IN THESE PLANS.

PAVING AND STRIPING NOTES

- TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN AGENCY APPROVED BY THE OWNER FOR THE PAVING MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE, BY THE STANDARD TESTING PROCEDURES, THAT THE WORK CONSTRUCTED MEETS THE REQUIREMENTS OF THE APPLICABLE FEDERAL, STATE, OR LOCAL JURISDICTION REGULATIONS AND/OR SPECIFICATIONS TO ADJACENT PROPERTIES AND STREET RIGHT-OF-WAYS.
- ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- RAISED PAVEMENT MARKERS SHALL BE BOUNDED TO THE ROADWAY SURFACE WITH ADHESIVE CONSTRUCTION DEVICES WITH THE APPLICABLE JURISDICTION PRIOR TO INSTALLATION.
- THE PAVEMENT JOINTS WHICH THE LAKE AND PAVEMENT MARKERS ARE TO BE PLACED SHALL BE PREPARED TO THE APPROVAL OF THE INSPECTOR TO ENSURE PROPER CLEANING OF THE PAVEMENT SURFACE.
- ALL TRAFFIC STRIPING SHALL BE CHLORINATED RUBBER TRAFFIC PAINT OR APPROVED EQUAL.
- SIGN LOCATIONS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, OR LOCAL JURISDICTION STANDARDS. THE CONTRACTOR SHALL REVIEW LOCATION OF ALL TRAFFIC CONTROL DEVICES WITH THE APPLICABLE JURISDICTION PRIOR TO INSTALLATION.
- THE PAVING CONTRACTOR SHALL REFER TO THE IRRIGATION PLANS AND I.E.P. PLANS FOR LOCATION OF PROPOSED SEWERING AND CONDUITS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LINES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN THE PARKING LOT AND AROUND THE BUILDING AS SHOWN ON THE PLANS.
- FIRE LINES SHALL BE MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX (6) INCHES IN WIDTH TO SHOW THE BOUNDARIES OF THE LAKE. THE WORDS "NO PARKING FIRE LINE" OR "FIRE LANE NO PARKING" SHALL APPEAR IN FOUR (4) INCH HIGH WHITE LETTERS AT 20 FEET INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANE.
- CURBS ADJACENT TO FIRE LANES SHALL BE PAINTED BRIGHT RED IN COLOR FROM THE CURBS GUTTER LINE TO THE TOP BACK OF CURB.
- HANDICAPPED PARKING STRIPING AND PAVEMENT MARKINGS SHALL CONFORM TO THE 2012 TEXAS ACCESSIBILITY STANDARDS AND 2010 AMERICANS WITH DISABILITIES ACT (BOTH MANDATORY MARCH 15, 2012), AND ALL ADDENDUMS OR UPDATES.
- THE CONTRACTOR SHALL SUBMIT A PAVEMENT JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO THE BEGINNING OF ANY CONCRETE PAVING WORK.
- ANY EXISTING CONCRETE OR ASPHALT TO BE REMOVED SHALL BE PROPERLY DISPOSED BY THE CONTRACTOR OFF SITE. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM.
- THE PAVING CONTRACTOR AND THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE BUILDING CONTRACTOR TO ENSURE THAT ALL UTILITY SERVICE CONNECTIONS AND CONDUITS ARE IN PLACE PRIOR TO BEGINNING ANY PAVING ACTIVITIES.
- FIRE LANE PAVING WILL BE DESIGNED TO SUPPORT THE PROPOSED LOAD OF AN 80,000 POUND VEHICLE.

TRAFFIC CONTROL NOTES

- CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS PRIOR TO ANY WORK IN A PUBLIC RIGHT OF WAY. SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS.
- ALL TRAFFIC CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST VERSION.
- THE CONTRACTOR SHALL COVER EXISTING SIGNS AND DELIBERATE EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE INTENT OF TRAFFIC CONTROL PLANS TO AVOID CONFLICT TO THE TRAVELING PUBLIC.
- ALL TEMPORARY SIGNS, BARRICADES, WARNING LIGHTS AND OTHER MISCELLANEOUS TRAFFIC CONTROL MEASURES SHALL BE REMOVED AND PERMANENT TRAFFIC CONTROL MEASURES, SIGNS AND PAVEMENT MARKINGS REPLACED AT THE END OF THE CONTRACTORS CONSTRUCTION OPERATIONS.
- TRAFFIC BARRICADES WILL BE REQUIRED AT ALL PROPOSED DRIVEWAY CONNECTIONS TO STREETS, BARRICADES SHALL CONFORM TO THE INSTALLATION SHOWN IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST VERSION.
- CONTRACTOR SHALL OBTAIN LAKE CLOSURE PERMITS WHEN REQUIRED.
- CONTRACTOR SHALL COVER STREET ELEVATIONS WITH ADEQUATELY ANCHORED STEEL PLATES DURING NONWORKING HOURS AND OPEN LANEAS OF TRAFFIC FLOW.
- APPROVED COPIES OF TRAFFIC CONTROL PLANS BY AND UNDERSTANDABLE CLOSURE PERMITS SHALL BE AVAILABLE FOR INSPECTION AT JOB SITE AT ALL TIMES.

ACCESSIBILITY NOTES

- IT IS THE ENGINEER'S INTENT THAT SURFACES AT ACCESSIBLE PARKING SPACES AT DROP OFF AND PICK UP AREAS ALONG ACCESSIBLE ROUTES, AND AT BUILDING ENTRANCES OR EXITS ARE CONSTRUCTED SUCH THAT THOSE SURFACES SHALL HAVE A SLOPE NOT GREATER THAN 2.0% IN ANY DIRECTION AND NOT LESS THAN 1.0% IN THE DIRECTION OF STORM WATER RUNOFF. HOWEVER, LONGITUDINAL SLOPES ALONG ACCESSIBLE ROUTES MAY BE INCREASED TO NOT MORE THAN 5.0% IF SO INDICATED BY THE ENGINEER'S GRADING PLAN.
- IN CASE OF DISCREPANCY WITH SPOT ELEVATIONS OR ELEVATION CONTOURS, THE ENGINEER'S INTENT DESCRIBED IN THIS NOTE SHALL GOVERN. THE CONTRACTOR SHALL CONSTRUCT THE IMPROVEMENTS IN COMPLIANCE WITH THE ENGINEER'S INTENT AS DESCRIBED IN THIS NOTE UNLESS THE CONTRACTOR HAS COORDINATED WITH THE ENGINEER AND RECEIVED WRITTEN AUTHORIZATION TO PROCEED OTHERWISE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AS A PART OF THE CONTRACTORS CONSTRUCTION DRIVEWAY DESIGN TO THOROUGHLY REVIEW ALL PROPOSED SLOPES AND ELEVATIONS PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF PLAN DISCREPANCIES OR DISCREPANCIES BETWEEN THE PLANS AND THE RULE DESCRIBED IN "ACCESSIBILITY NOTE 1". PRIOR TO CONSTRUCTION, AND THE CONTRACTOR SHALL ALLOW THE ENGINEER TIME TO REVIEW THE PLANS AND MAKE REVISIONS IF NECESSARY.
- THE ENGINEER'S PLANS HAVE BEEN PREPARED WITHOUT THE BENEFIT OF DETAILS REGARDING THE THRESHOLD TO BE INSTALLED AT BUILDING ACCESSIBILITY LOCATIONS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE ARCHITECT OF THE BUILDING TO ENSURE THAT ELEVATION DIFFERENCES BETWEEN THE BUILDING'S FINISHED FLOOR, THE THRESHOLD, AND THE PLATFORM ADJACENT TO THE BUILDING ARE IN COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY REQUIREMENTS.
- THE CONTRACTOR SHALL ENSURE THAT THERE IS POSITIVE DRAINAGE AWAY FROM THE BUILDING AT ALL LOCATIONS.
- IT IS IMPERATIVE THAT THE CONTRACTOR COORDINATE ACCESSIBILITY CONCERNING WITH THE ENGINEER AND ARCHITECT PRIOR TO CONSTRUCTING THE IMPROVEMENTS. IF THE CONTRACTOR FAILS TO ADEQUATELY COORDINATE WITH THE ENGINEER AND THE ARCHITECT PRIOR TO CONSTRUCTING IMPROVEMENTS, ANY EXISTING ACCESSIBILITY IMPROVEMENTS WHICH WILL BE AT CONTRACTORS SOLE EXPENSE AND THE CONTRACTOR SHALL HAVE NO EXTRA PAY PERFORM PER WORK SUCH AS DEMOLITION, REMOVAL, RE-GRADING, AND REPLACEMENT OF ANY CONCRETE, ASPHALT, COMPACTED EARTH, OR OTHER SURFACES, AND ALL OTHER RELATED IMPROVEMENTS, WHICH HAVE BEEN CONSTRUCTED BY CONTRACTOR OR CONTRACTORS SUB CONTRACTOR THAT DO NOT COMPLY WITH ALL APPLICABLE CODES AND ACCESSIBILITY REQUIREMENTS.

WATER AND SANITARY SEWER NOTES

- PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES WHERE PROPOSED UTILITIES ARE BEING CONNECTED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF A CONFLICT IS DISCOVERED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN, COORDINATING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITY SERVICES ENTERING THE BUILDING AND/OR CROSSING OTHER UTILITIES.
- ALL UTILITY CONSTRUCTION, WATER TAPS, VALVES, MANHOLES, AND SERVICES SHALL BE INSTALLED BY THE CONTRACTOR AFTER APPROVAL FROM THE APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION AND SHALL CONFORM TO ALL GUIDELINES AND REGULATIONS SET FORTH BY THE APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION REGULATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
- ALL FIRE LINES AND APPURTENANCES USED FOR FIRE PROTECTION SHALL CONFORM TO THE CURRENT APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION REGULATIONS DESIGN AND INSTALLATION OF ALL FIRE PROTECTION SYSTEMS SHALL BE DONE BY A STATE LICENSED FIRE SPRINKLER CONTRACTOR.
- ALL WATER MAINS IF 24" SHALL MAINTAIN A MINIMUM COVER IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION REGULATIONS. UNPAVED FINISHED GRADE A PROPOSED OR EXISTING PAVEMENT, ALL SEWER MAINS SHALL MAINTAIN A MINIMUM COVER OF THE APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION REGULATIONS OR LOCAL JURISDICTION REGULATIONS.
- ALL SANITARY SEWER LINES SHALL BE A MINIMUM OF PVC (SOR) 30" PIPE. ALL SANITARY SEWER LINES DEEPER THAN 10 FEET SHALL BE SDR 26. ALL WATER LINES SHALL BE C900 (8) MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE OR LOCAL JURISDICTION REGULATIONS.
- THE CONTRACTOR SHALL SECURE CONSTRUCTION TO AVOID INTERRUPTION OF WATER AND SANITARY SEWER SERVICE TO SURROUNDING AREAS.
- EXISTING AND/OR PROPOSED WATER MAINS SHALL BE LOWERED BELOW OR ABOVE PROPOSED SANITARY AND STORM SEWER LINES TO MAINTAIN A MINIMUM OF 2.0 FEET OF VERTICAL SEPARATION. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF THREE (3) FEET OF VERTICAL SEPARATION BETWEEN SANITARY SEWER AND WATER MAINS.
- EXISTING MANHOLE TOPS, VALVE BOXES, FIRE HYDRANTS AND ALL OTHER UTILITY SERVICES AREAS AS SHOWN ON THE PLANS SHALL BE REMOVED AND RECONSTRUCTED AS SHOWN ON GRADING PLAN. 5.5 MANHOLES IN UNPAVED AREAS SHALL BE ADJUSTED TO BE 8" ABOVE ADJACENT GRADE.
- FOR EACH SEWER AND WATER CROSSING, CONTRACTOR SHALL CENTER ONE JOINT OF SEWER PIPE ON THE EXISTING OR PROPOSED WATER MAIN.
- FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE BUILDING NO LESS THAN 15' OR MORE THAN 10' FROM ADJACENT GRADE.
- THE CONTRACTOR SHALL INSTALL CONCRETE COLLARS (OR OTHER APPROVED METHOD) ON THE UNDERGROUND UTILITIES TO PREVENT GROUND WATER FROM MIGRATING IN THE UTILITY TRENCH, BELOW THE UTILITY SERVICE LINE.
- ALL WATER AND SANITARY SEWER SYSTEMS SHALL TERMINATE 5 FEET OUTSIDE THE BUILDING UNLESS OTHERWISE NOTED. THE END OF THESE SERVICES SHALL BE TIGHTLY PLUGGED OR CAPPED. SEE A E.P. OR ARCHITECTURAL PLANS FOR CONFIRMATION.

FRANCHISE UTILITY NOTES

- CONTRACTOR SHALL CONTACT FRANCHISE UTILITY COMPANIES PRIOR TO CONSTRUCTION, IN ORDER TO LOCATE AND/OR DISCONNECT EXISTING SERVICES AND TO COORDINATE NEW SERVICE.
- ANY PROPOSED FRANCHISE UTILITY LOCATIONS SHOWN ON THESE DRAWINGS ARE CONCEPTUAL ONLY. THE CONTRACTOR SHALL COORDINATE THE EXACT DESIGN, ALIGNMENT, INSTALLATION REQUIREMENTS, AND THE SPECTOR ART SERVICES WITH THE APPROPRIATE FRANCHISE OWNERS AND THE PROJECT OWNER.
- THE CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL ASSOCIATED COSTS TO INSTALL FRANCHISE UTILITY (GAS, ELEC. PHONE, CABLE) SERVICE TO THE PROPOSED BUILDING. THE CONTRACTOR SHALL ESTABLISH ADEQUATE LEAD TIME IN THEIR CONSTRUCTION SCHEDULE FOR COORDINATING AND PROCURING FRANCHISE UTILITY SERVICES.

GEOTECHNICAL NOTES

- A GEOTECHNICAL REPORT WAS NOT PROVIDED TO BANNISTER ENGINEERING, LLC FOR USE ON THIS PROJECT. THE PROPOSED PAVING MATERIALS, PAVEMENT SECTIONS, AND SUBGRADE PREPARATION INDICATED ON THESE PLANS ARE THEREFORE PROVIDED WITHOUT THE BENEFIT OF A GEOTECHNICAL REPORT AND ARE BASED ON COMMON LOCAL PAVEMENT DESIGNS OF WHICH BANNISTER ENGINEERING, LLC IS FAMILIAR. BANNISTER ENGINEERING, LLC ASSUMES NO LIABILITY FOR CRACKING, HEAVING, OR OTHER PAVEMENT FAILURE WHICH COULD OCCUR DUE TO SOIL CONDITIONS OR SOIL MOVEMENT PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO OBTAIN THE OWNER'S APPROVAL OF THE PROPOSED PAVING MATERIALS, PAVEMENT SECTIONS, AND SUBGRADE PREPARATION. IN ADDITION, THE CONTRACTOR SHALL ACQUIRE THE SERVICES OF A LICENSED GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION TO REVIEW AND APPROVE PROPOSED PAVING MATERIALS, PAVEMENT SECTIONS, AND SUBGRADE PREPARATION INDICATED ON THESE PLANS. IF THE GEOTECHNICAL ENGINEER RECOMMENDS MODIFICATIONS TO THE PAVING MATERIALS, PAVEMENT SECTIONS, OR SUBGRADE PREPARATION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND BANNISTER ENGINEERING, LLC PRIOR TO CONSTRUCTION.



240 North Meador Road, Mansfield, TX 76063 | 817-842-2096 | REGISTRATION # F-10599 (TCEQS)

ALVARADO RV PARK SOUTHBOUND IH-35 W ACCESS ROAD ALVARADO, TEXAS

GENERAL NOTES

811 BENCHMARKS

SITE BM #1 4.00' NAIL SET IN PAVEMENT E:238717.15	ELEV = 78.62'
SITE BM #2 CAPED CONN. ROD SET IN GROUND N:09308.08 E:238717.15	ELEV = 77.51'

Know what's below. Call before you dig. (@ least 48 hours prior to digging)



SHEET NUMBER C-1.1

PROJECT NO. : 2352-21.001

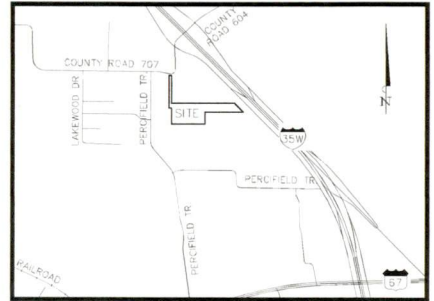
No.	Date	Revision/Description



OWNER/DEVELOPER:
 CONTACT: TED GORMAN
 1515 EAST HIGHWAY 199
 SPRINGTOWN, TX 76082
 tedted85@icloud.com

ENGINEER:
 BANNISTER ENGINEERING
 CONTACT: HECTOR J. SOTELO, P.E.
 240 NORTH MITCHELL ROAD
 MANSFIELD, TEXAS 76063
 (817) 840-2094
 hsotelo@bannistereng.com

TXDOT INFORMATION	
STREET NAME	SOUTHBOUND FRONTAGE ROAD OF I35W
ROUTE PREFIX TYPE	SOUTHBOUND FRONTAGE ROAD
ROUTE NUMBER	I-35W
MAXIMUM SPEED LIMIT	50 MPH
MINIMUM DRIVEWAY SPACING	425'



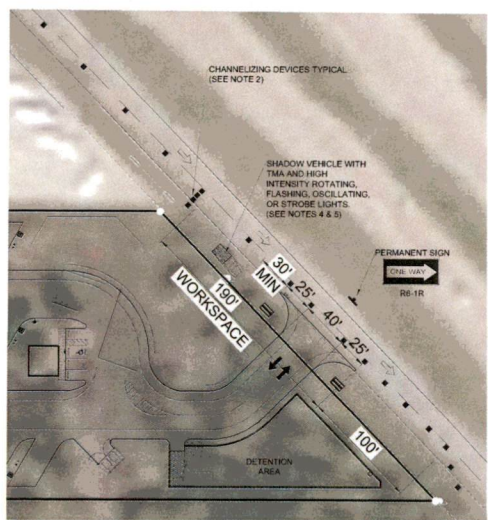
VICINITY MAP
 NOT TO SCALE
 ALVARADO, TEXAS

Posted Speed X	Formula	Minimum Desirable Taper Lengths			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- See TOP (5-1) for shoulder work on divided highways, expressways and freeways.
- CW21-5 "SHOULDER WORK" signs may be used in place of CW20-10 "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



INSET 'A'
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 50 ft

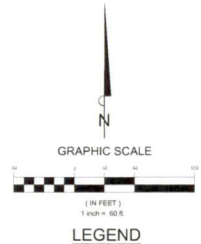
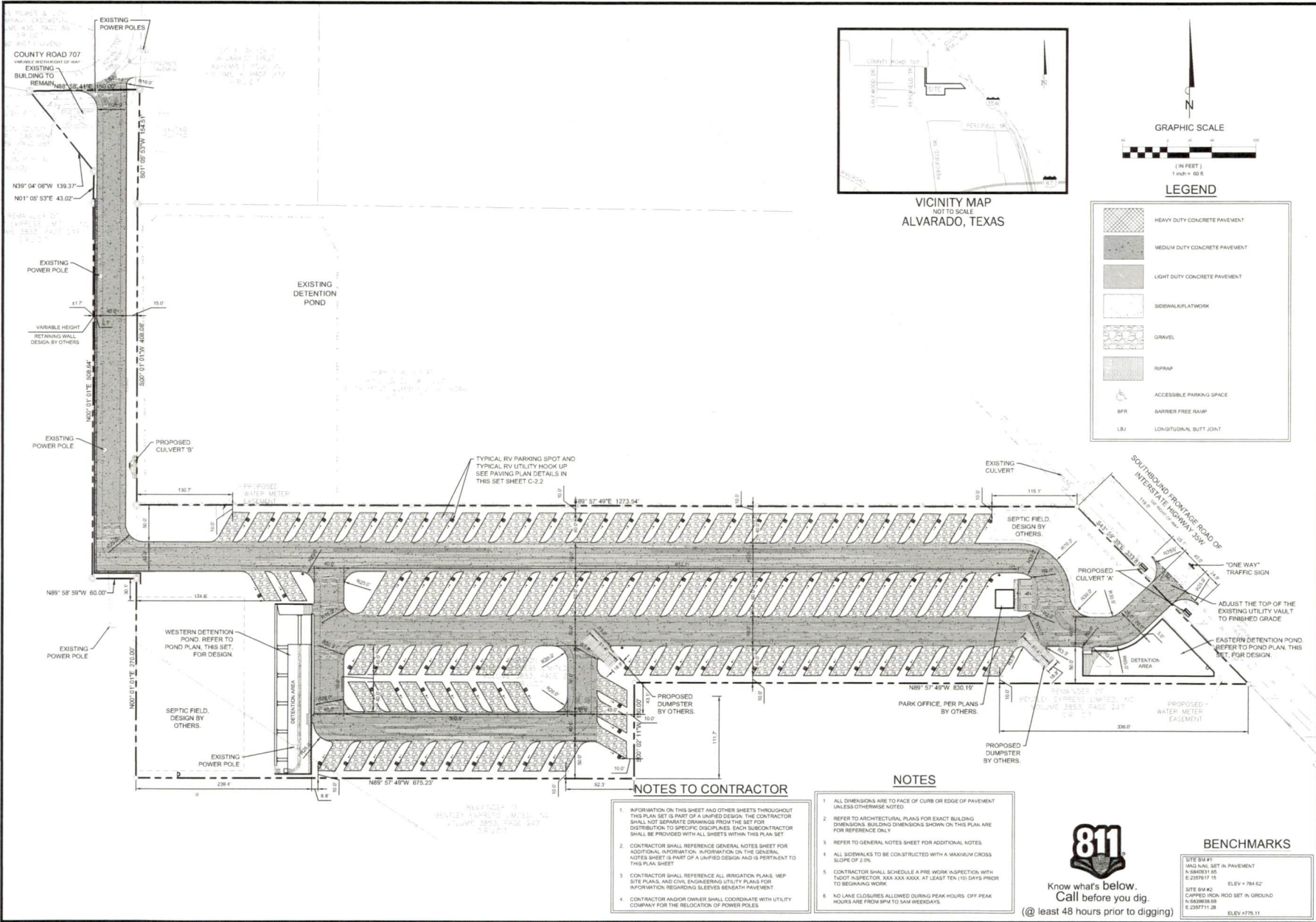


PLAN VIEW
 GRAPHIC SCALE
 (IN FEET)
 1 inch = 100 ft

BANNISTER ENGINEERING
 240 North Mitchell Road, Mansfield, TX 76063 817.842.2094 817.842.2095 fax
 REGISTRATION # F-10599 (TEXAS)



TRAFFIC CONTROL PLAN
 5300 BLOCK OF I-35W FRONTAGE ROAD
 ALVARADO RV PARK
 Alvarado, Texas
 BE No. 235-21-001
 Date Prepared: November 23, 2021



LEGEND

[Pattern]	HEAVY DUTY CONCRETE PAVEMENT
[Pattern]	MEDIUM DUTY CONCRETE PAVEMENT
[Pattern]	LIGHT DUTY CONCRETE PAVEMENT
[Pattern]	SIDEWALK/PATWALK
[Pattern]	GRAVEL
[Pattern]	R/R/PAV
[Symbol]	ACCESSIBLE PARKING SPACE
[Symbol]	BARRIER FREE RAUP
[Symbol]	LONGITUDINAL BUTT JOINT

BANNISTER ENGINEERING
REGISTRATION # F-10596 (TEXAS)

ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS

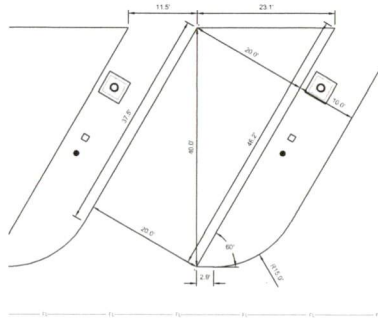
OVERALL PAVING PLAN

No.	Date	Revision Description

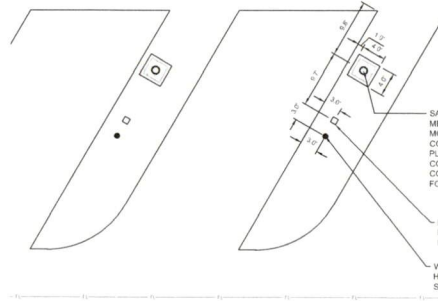
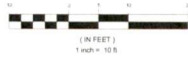
STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
No. 123456
J. B. Smith
12/31/2024

SHEET NUMBER
C-2.1

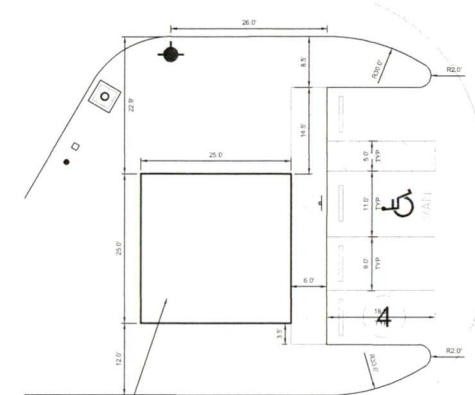
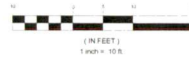
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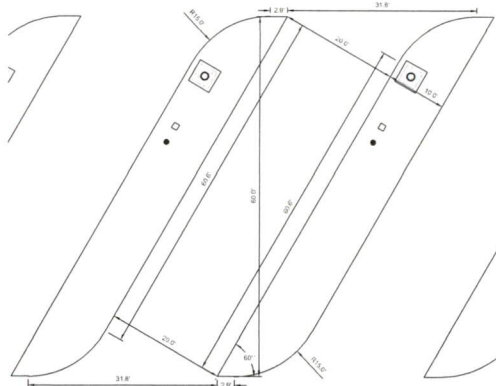
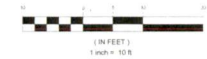
TYPICAL RV SPOT LAYOUT
GRAPHIC SCALE



TYPICAL RV UTILITY HOOKUP LAYOUT
GRAPHIC SCALE



PARK OFFICE LAYOUT
GRAPHIC SCALE



TYPICAL RV THROUGH SPOT LAYOUT
GRAPHIC SCALE



SANITARY SEWER HOOKUP: REFER TO MEP / OWNER SPECIFICATIONS FOR MODEL AND DETAILS OF RISER CONNECTION. CONNECTION TO BE PLACED IN 3'X3' DEEP CURBED CONCRETE SUMP. HOOKUP TO BE COVERED WITH A SELF-CLOSING FOOT OPERATED COVER.

ELECTRIC PEDESTAL FOR RV HOOKUP PER OWNER / MEP SPECIFICATIONS.

WATER FIXTURE FOR RV HOOKUP PER OWNER / MEP SPECIFICATIONS.

PARK OFFICE BUILDING
(DESIGN BY OTHERS)



ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS

PAVING PLAN DETAILS

No. | Date | Revision Description



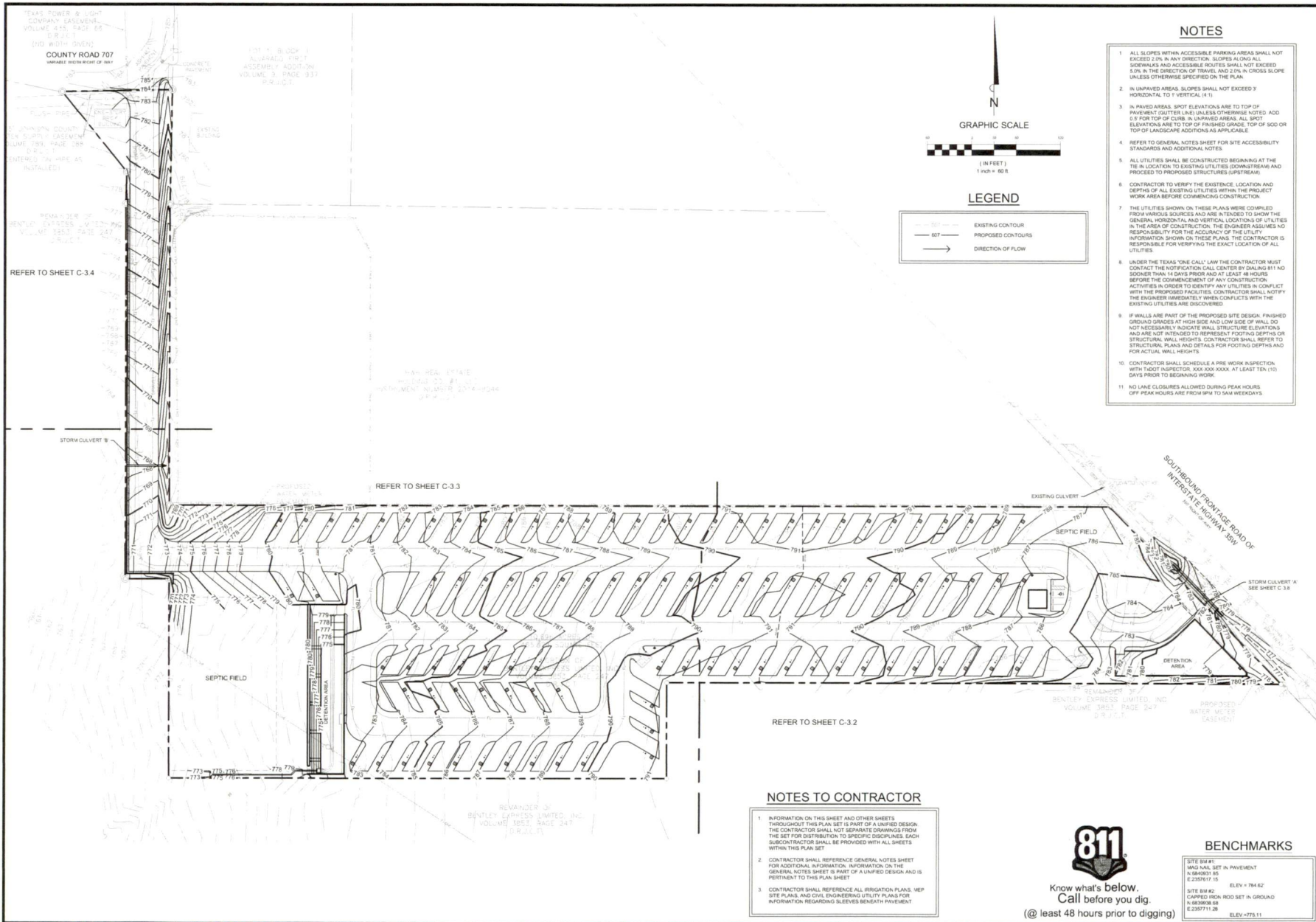
SHEET NUMBER
C-2.2



Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

SITE BM #1 MAG. NAIL SET IN PAVEMENT N 565051.05 E 2307617.15 ELEV = 794.62'	SITE BM #2 CARVED IRON ROD SET IN GROUND N 5629038.58 E 2307711.28 ELEV = 775.11
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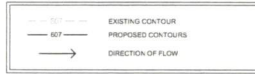
NOTES

- 1 ALL SLOPES WITHIN ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. SLOPES ALONG ALL SIDEWALKS AND ACCESSIBLE ROUTES SHALL NOT EXCEED 5.0% IN THE DIRECTION OF TRAVEL AND 2.0% IN CROSS SLOPE UNLESS OTHERWISE SPECIFIED ON THE PLAN.
- 2 IN UNPAVED AREAS, SLOPES SHALL NOT EXCEED 5% HORIZONTAL TO 1 VERTICAL (5:1).
- 3 IN PAVED AREAS, SPOT ELEVATIONS ARE TO TOP OF PAVEMENT (GUTTER LINE) UNLESS OTHERWISE NOTED. ADD 2.0" FOR TOP OF CURB IN UNPAVED AREAS. ALL SPOT ELEVATIONS ARE TO TOP OF FINISHED GRADE, TOP OF 800 OR TOP OF LANDSCAPE ADDITIONS AS APPLICABLE.
- 4 REFER TO GENERAL NOTES SHEET FOR SITE ACCESSIBILITY STANDARDS AND ADDITIONAL NOTES.
- 5 ALL UTILITIES SHALL BE CONSTRUCTED BEGINNING AT THE TIE-IN LOCATION TO EXISTING UTILITIES (DOWNSTREAM) AND PROCEED TO PROPOSED STRUCTURES UPSTREAM.
- 6 CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION AND DEPTHS OF ALL EXISTING UTILITIES WITHIN THE PROJECT WORK AREA BEFORE COMMENCING CONSTRUCTION.
- 7 THE UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES.
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- 9 IF WALLS ARE PART OF THE PROPOSED SITE DESIGN, FINISHED GROUND GRADES AT HIGH SIDE AND LOW SIDE OF WALL DO NOT NECESSARILY INDICATE WALL STRUCTURE ELEVATIONS AND ARE NOT INTENDED TO REPRESENT FOOTING DEPTHS OR STRUCTURAL WALL HEIGHTS. CONTRACTOR SHALL REFER TO STRUCTURAL PLANS AND DETAILS FOR FOOTING DEPTHS AND FOR ACTUAL WALL HEIGHTS.
- 10 CONTRACTOR SHALL SCHEDULE A PRE-WORK INSPECTION WITH TDDOT INSPECTOR, XXX-XXX-XXXX, AT LEAST TEN (10) DAYS PRIOR TO BEGINNING WORK.
- 11 NO LANE CLOSURES ALLOWED DURING PEAK HOURS. OFF-PEAK HOURS ARE FROM 8PM TO 5AM WEEKDAYS.

GRAPHIC SCALE



LEGEND



NOTES TO CONTRACTOR

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- 3 CONTRACTOR SHALL REFERENCE ALL IRRIGATION PLANS, MEP SITE PLANS, AND CIVIL ENGINEERING UTILITY PLANS FOR INFORMATION REGARDING SLEEVES BENEATH PAVEMENT.



Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

SITE BM #1: MAG. NAIL SET IN PAVEMENT N. 6840011 15 E. 2257617 15	ELEV = 794.62
SITE BM #2: CAPPED IRON ROD SET IN GROUND N. 6839908 08 E. 2258711 08	ELEV = 775.11



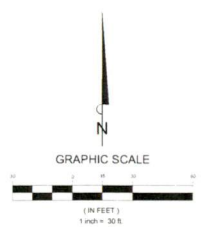
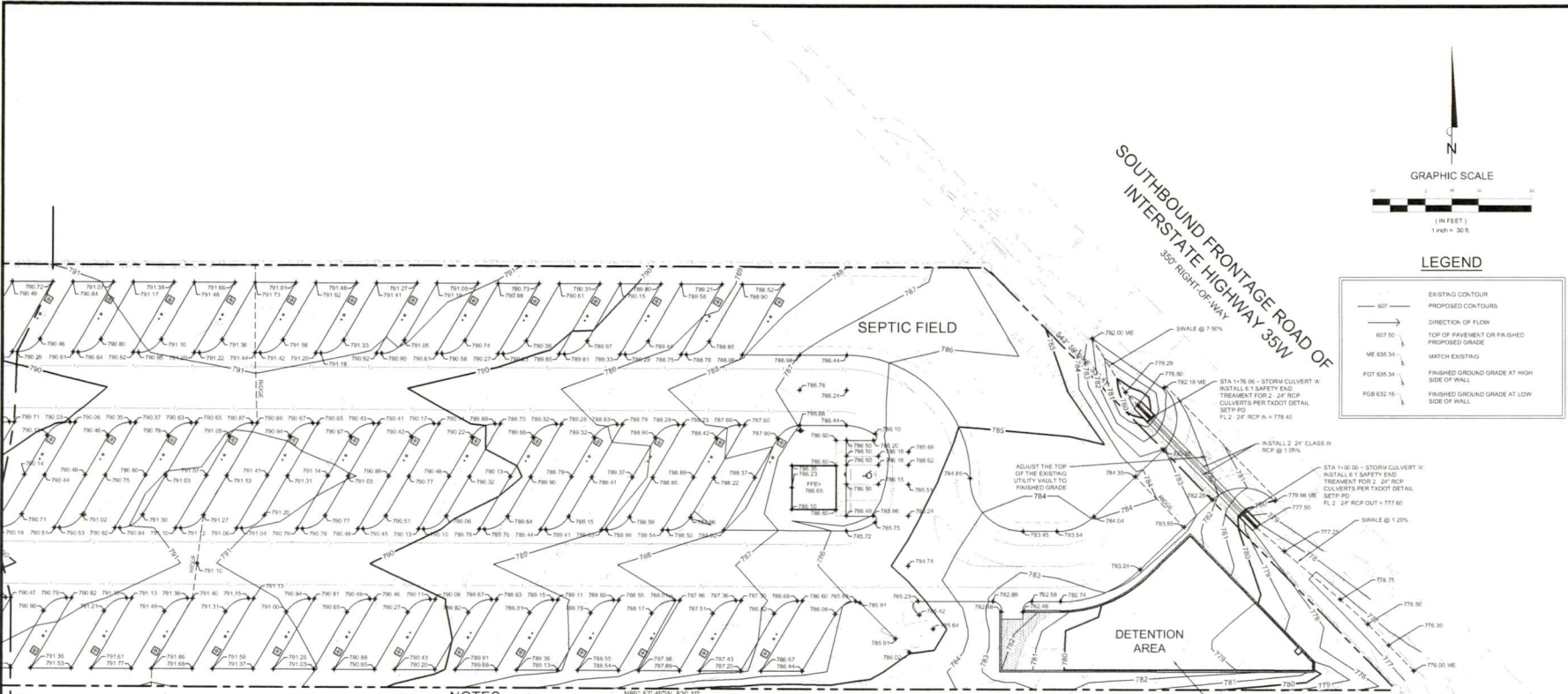
ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS
OVERALL GRADING PLAN

No.	Date	Revision Description



SHEET NUMBER
C-3.1

PROJECT NO.: 23621001



LEGEND

	EXISTING CONTOUR
	PROPOSED CONTOURS
	DIRECTION OF FLOW
	TOP OF PAVEMENT OR FINISHED PROPOSED GRADE
	ME 635.34
	MATCH EXISTING
	FINISHED GROUND GRADE AT HIGH SIDE OF WALL
	FGS 632.15
	FINISHED GROUND GRADE AT LOW SIDE OF WALL

SOUTHBOUND FRONTAGE ROAD OF INTERSTATE HIGHWAY 35W
350' RIGHT-OF-WAY

SEPTIC FIELD

DETENTION AREA

MATCHLINE - SEE SHEET C-3.3

NOTES

- 1 ALL SLOPES WITHIN ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. SLOPES ALONG ALL SIDEWALKS AND ACCESSIBLE ROUTES SHALL NOT EXCEED 5.0% IN THE DIRECTION OF TRAVEL AND 2.0% IN CROSS SLOPE UNLESS OTHERWISE SPECIFIED ON THE PLAN.
- 2 IN UNPAVED AREAS, SLOPES SHALL NOT EXCEED 3% HORIZONTAL TO 1% VERTICAL (4:1).
- 3 IN PAVED AREAS, SPOT ELEVATIONS ARE TO TOP OF PAVEMENT GUTTER UNLESS OTHERWISE NOTED. ADD 0.5' FOR TOP OF CURB IN UNPAVED AREAS. ALL SPOT ELEVATIONS ARE TO TOP OF FINISHED GRADE, TOP OF SOIL OR TOP OF LANDSCAPE ADDITIONS AS APPLICABLE.
- 4 REFER TO GENERAL NOTES SHEET FOR SITE ACCESSIBILITY STANDARDS AND ADDITIONAL NOTES.
- 5 ALL UTILITIES SHALL BE CONSTRUCTED BEGINNING AT THE TIE-IN LOCATION TO EXISTING UTILITIES DOWNSTREAM AND PROCEED TO PROPOSED STRUCTURES (UPSTREAM).
- 6 CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION AND DEPTHS OF ALL EXISTING UTILITIES WITHIN THE PROJECT WORK AREA BEFORE COMMENCING CONSTRUCTION.
- 7 THE UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES.
- 8 UNDER THE TEXAS "ONE CALL" LAW, THE CONTRACTOR MUST CONTACT THE NOTIFICATION CALL CENTER BY CALLING 811 AND AT LEAST 48 HOURS BEFORE THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES IN ORDER TO IDENTIFY ANY UTILITIES IN CONFLICT WITH THE PROPOSED FACILITIES. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS WITH THE EXISTING UTILITIES ARE DISCOVERED.
- 9 IF WALLS ARE PART OF THE PROPOSED SITE DESIGN, FINISHED GROUND GRADES AT HIGH SIDE AND LOW SIDE OF WALL DO NOT NECESSARILY INDICATE WALL STRUCTURE ELEVATIONS AND ARE NOT AT-TENDED TO HEREIN. FOOTING DEPTHS OR STRUCTURAL WALL HEIGHTS CONTRACTOR SHALL REFER TO STRUCTURAL PLANS AND DETAILS FOR FOOTING DEPTHS AND FOR ACTUAL WALL HEIGHTS.
- 10 CONTRACTOR SHALL SCHEDULE A PRE-WORK INSPECTION WITH TxDOT INSPECTOR, XXX XXX XXXX, AT LEAST TEN (10) DAYS PRIOR TO BEGINNING WORK.
- 11 NO LANE CLOSURES ALLOWED DURING TEAM HOURS, OFF TEAM HOURS ARE FROM 9PM TO 5AM WEEKDAYS.

NOTES TO CONTRACTOR

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Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

SITE BM #1	MAG NAIL SET IN PAVEMENT
N 684931.85	ELEV = 784.62'
E 258761.15	
SITE BM #2	ELEV = 784.62'
CAPPED IRON ROD SET IN GROUND	
N 683908.68	
E 259711.28	ELEV = 775.11'

BANNER ENGINEERING
240 North Main Street | Meriden, TX 76663 | 817.842.2094 | 817.842.2095 fax
REGISTRATION # F-10599 (TEAS)

ALVARADO RV PARK
SOUTHBOUND IH-35W ACCESS ROAD
ALVARADO, TEXAS

DETAILED GRADING PLAN

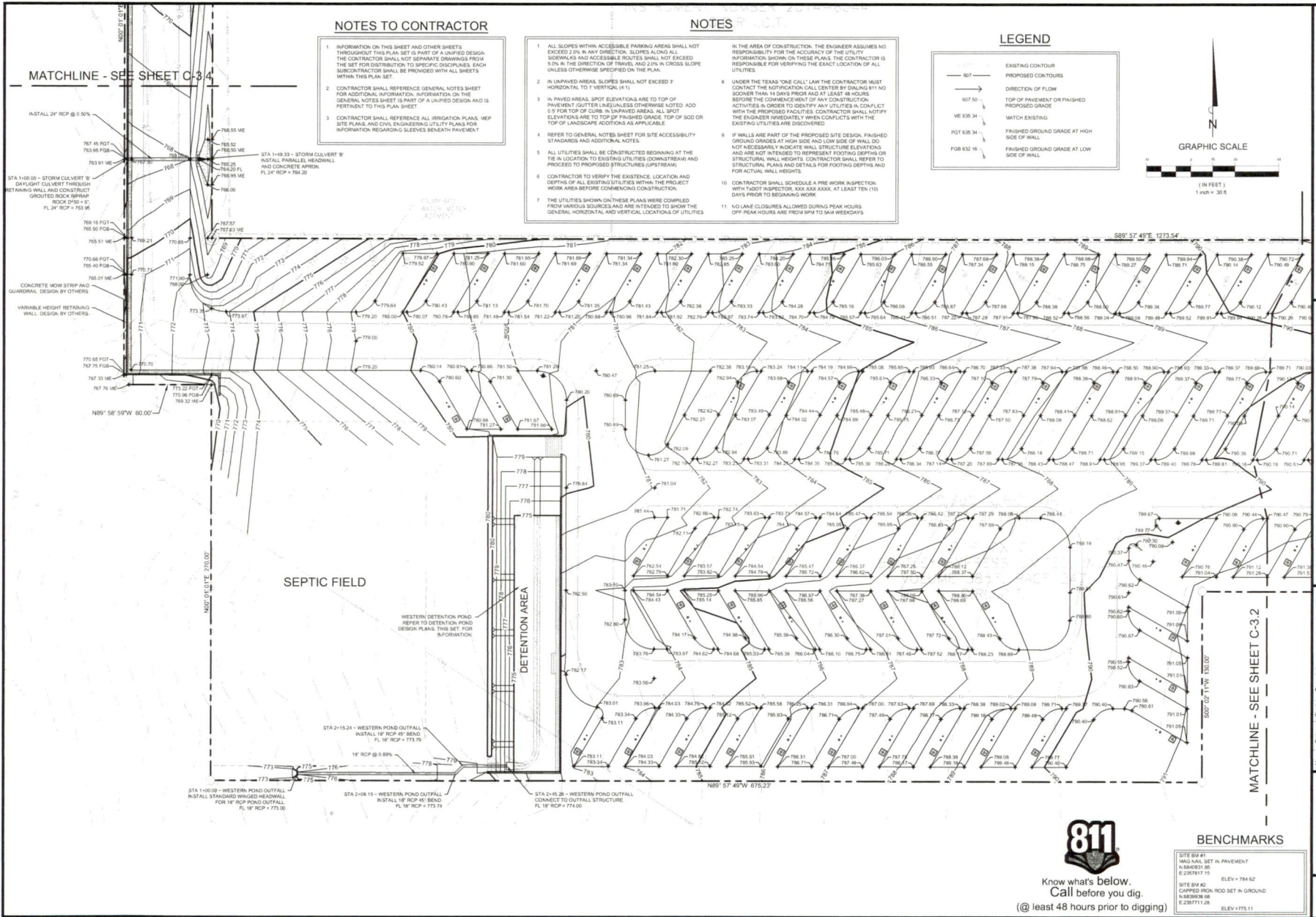
No. Date Revision Description



SHEET NUMBER

C-3.2

PROJECT NO.: 235-21-001



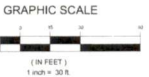
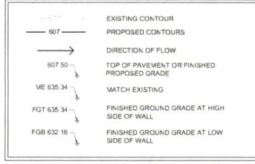
NOTES TO CONTRACTOR

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NOTES

1. ALL SLOPES WITHIN ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 5% IN ANY DIRECTION. SLOPES ALONG ALL SIDEWALKS AND ACCESSIBLE ROUTES SHALL NOT EXCEED 5% IN THE DIRECTION OF TRAVEL AND 2.0% IN CROSS SLOPE UNLESS OTHERWISE SPECIFIED ON THE PLAN.
2. IN UNPAVED AREAS, SLOPES SHALL NOT EXCEED 7% HORIZONTAL TO 1% VERTICAL (4:1).
3. IN PAVED AREAS, SPOT ELEVATIONS ARE TO TOP OF PAVEMENT (GUTTER UNLESS OTHERWISE NOTED) AND 8.9" FOR TOP OF CURB. IN UNPAVED AREAS, ALL SPOT ELEVATIONS ARE TO TOP OF FINISHED GRADE, TOP OF SOO DR TOP OF LANDSCAPE ADDITIONS AS APPLICABLE.
4. REFER TO GENERAL NOTES SHEET FOR SITE ACCESSIBILITY STANDARDS AND ADDITIONAL NOTES.
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11. NO LANE CLOSURES ALLOWED DURING PEAK HOURS OFF PEAK HOURS ARE FROM 8PM TO 5AM WEEKDAYS.

LEGEND



BANNISTER ENGINEERING
 240 North Mitchell Road | Mansfield, TX 76063 | 817.842.2096 | 817.842.2096 fax
 REGISTRATION # F-10598 (TEXAS)

ALVARADO RV PARK
 SOUTHBOUND IH-35 W ACCESS ROAD
 ALVARADO, TEXAS
 DETAILED GRADING PLAN

No.	Date	Revision Description

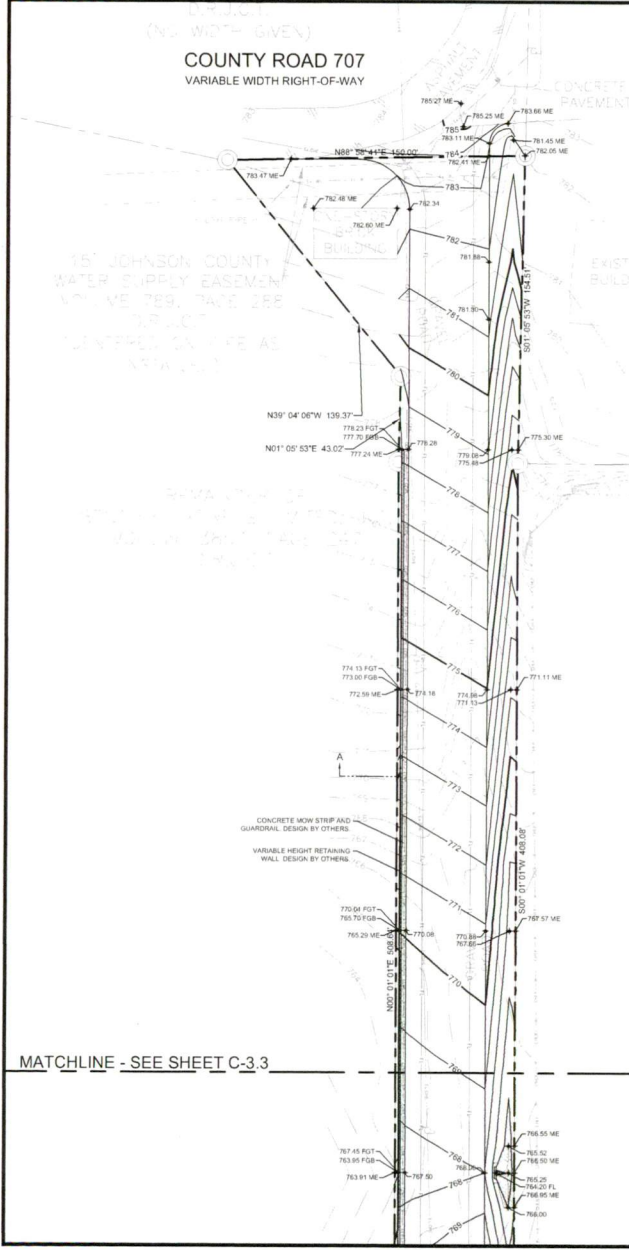
STATE OF TEXAS
 REGISTERED PROFESSIONAL ENGINEER
 PROJECT NO.: 235-21-001
 SHEET NUMBER
C-3-3

811
 Know what's Below.
 Call before you dig.
 (@ least 48 hours prior to digging)

BENCHMARKS

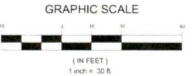
SITE BV #1 MAG NAIL SET IN PAVEMENT N: 6840801.00 E: 2357617.15	ELEV = 794.62
SITE BV #2 CAPPED IRON ROD SET IN GROUND N: 6839928.08 E: 2367711.08	ELEV = 775.11

File: B:\Clients\209 - Bannister\Grading\235-21-001\Alvarado RV Park\Detailed Grading C-3-3.dwg, Pinned: 11/30/2021 9:08 AM, E: Pinned By: rreaves



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LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- TOP OF PAVEMENT OR FINISHED PROPOSED GRADE
- MATCH EXISTING
- FINISHED GROUND GRADE AT HIGH SIDE OF WALL
- FINISHED GROUND GRADE AT LOW SIDE OF WALL

NOTES

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ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS

DETAILED GRADING PLAN

No. | Date | Revision Description



SHEET NUMBER

C-3.4



Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

- SITE BM #1
MAG NAIL SET IN PAVEMENT
N 684001 BR
E 2927617 15
ELEV = 794.62'
- SITE BM #2
CAPPED IRON ROD SET IN GROUND
N 583938 BR
E 2007711 28
ELEV = 775.11'

15-YEAR STORM WATER DETERMINATION CALCULATIONS

Table with 4 columns: Inlet, Area (sq ft), S, and Outlet. Includes a 'Total' row and a 'Calculation for alternate return period' section.

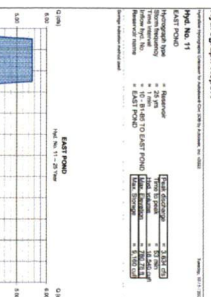
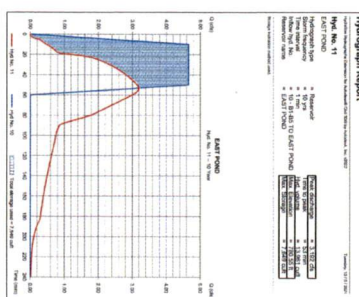
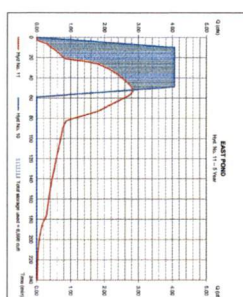
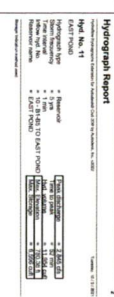
10-YEAR STORM WATER DETERMINATION CALCULATIONS

Table with 4 columns: Inlet, Area (sq ft), S, and Outlet. Includes a 'Total' row and a 'Calculation for alternate return period' section.

25-YEAR STORM WATER DETERMINATION CALCULATIONS

Table with 4 columns: Inlet, Area (sq ft), S, and Outlet. Includes a 'Total' row and a 'Calculation for alternate return period' section.

Table with 4 columns: Inlet, Area (sq ft), S, and Outlet. Includes a 'Total' row and a 'Calculation for alternate return period' section.



Know what's below. Call before you dig. @ least 48 hours prior to digging!



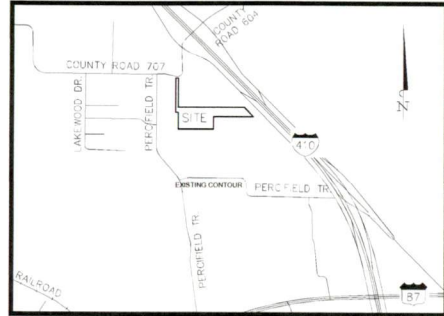
BENCHMARKS
BENCHMARKS
BENCHMARKS
BENCHMARKS

Professional seal and signature area for the engineer.

Table with 3 columns: No., Date, Revision Description. Contains revision history.

ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS
EASTERN DETENTION CALCULATIONS

BANNISTER ENGINEERING
240 North Mitchell Road | Mansfield, TX 76063 | 817.842.2094 | 817.842.2095 fax
REGISTRATION # F-10999 (TEXAS)

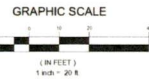
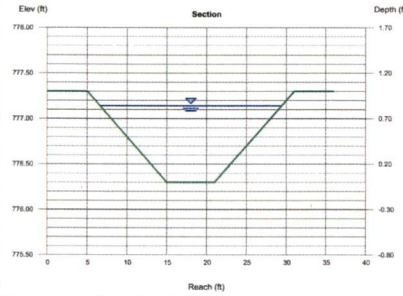


VICINITY MAP
NOT TO SCALE
ALVARADO, TEXAS

Channel Report

Hydrotek Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Date: Sep 3 2021

<Name>			
Trapezoidal		Highlighted	
Bottom Width (ft)	= 6.00	Depth (ft)	= 0.84
Side Slopes (2:1)	= 10.00, 10.00	Q (cfs)	= 37.00
Total Depth (ft)	= 1.00	Area (sqft)	= 12.10
Invert Elev (ft)	= 778.30	Velocity (ft/s)	= 3.06
Slope (%)	= 1.26	Wetted Perim (ft)	= 22.88
N-Value	= 0.035	Cr1 Depth, Yc (ft)	= 0.73
Calculations		Top Width (ft)	= 22.80
Known Q (cfs)	= 37.00	ECC1 (ft)	= 0.99



LEGEND

	EXISTING CONTOUR
	PROPOSED CONTOURS

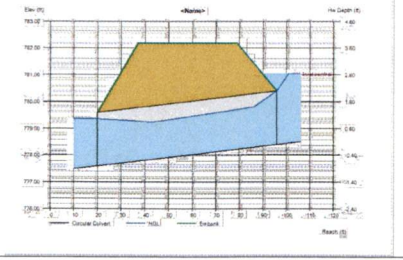
NOTES

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- 2 REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES.
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- 4 IN PAVED AREAS, SPOT ELEVATIONS ARE TO TOP OF PAVEMENT (DOTTED LINE) UNLESS OTHERWISE NOTED AND 6:1 FOR TOP OF CURB IN UNPAVED AREAS. ALL SPOT ELEVATIONS ARE TO TOP OF FINISHED GRADE. TOP OF 800 OR TOP OF LANDSCAPE ADDITIONS AS APPLICABLE.
- 5 REFER TO GENERAL NOTES SHEET FOR SITE ACCESSIBILITY STANDARDS AND ADDITIONAL NOTES.
- 6 ALL UTILITIES SHALL BE CONSTRUCTED BEGINNING AT THE IN-LOCATION TO EXISTING UTILITIES (DOWN THE LANE) AND PROCEED TO PROPOSED STRUCTURES (UP THE LANE).
- 7 CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE PROJECT WORK AREA BEFORE COMMENCING CONSTRUCTION.
- 8 THE UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM VARIOUS SOURCES AND ARE INTENDED TO SHOW THE GENERAL HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES IN THE AREA OF CONSTRUCTION. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES.
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Culvert Report

Hydrotek Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Date: Sep 3 2021

Circular Culvert			
Invert Elev Dn (ft)	= 777.60	Calculations	
Pipe Length (ft)	= 78.00	Qmin (cfs)	= 36.14
Slope (%)	= 1.05	Qmax (cfs)	= 36.14
Invert Elev Up (ft)	= 778.60	Talwater Elev (ft)	= (p+D)/2
Rise (ft)	= 24.0	Highlighted	
Shape	= Circular	Qtotal (cfs)	= 36.14
Span (ft)	= 24.0	Qopen (cfs)	= 36.14
No. Barrels	= 2	Qcovered (cfs)	= 0.00
N-Value	= 0.013	Veloc Dn (ft/s)	= 6.16
Culvert Type	= Circular Concrete	Veloc Up (ft/s)	= 7.51
Culvert Entrance	= Square edge with chamfer (C)	HGL Up (ft)	= 779.37
Coeff. K.M.C.Y.A.	= 0.0098, 2, 0.0398, 0.87, 0.5	Hw Elev (ft)	= 779.95
Embankment		Hw/D (ft)	= 1.32
Top Elevation (ft)	= 782.19	Flow Regime	= Inlet Control
Top Width (ft)	= 42.00		
Crest Width (ft)	= 10.00		

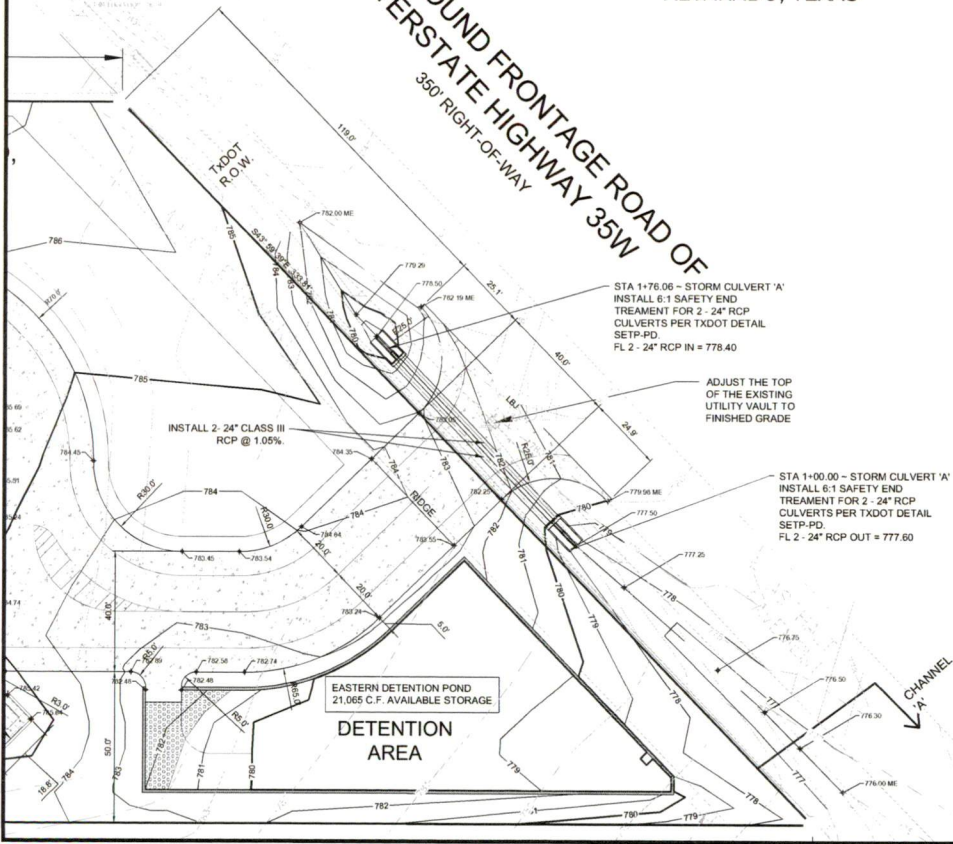


Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

SITE BM #1	NAZ NAZ SET IN PAVEMENT	ELEV = 784.62
MARKED AS		
E 2250167 15		
SITE BM #2	CAPTOP FROM ROD SET IN GROUND	ELEV = 775.11
MARKED AS		
N 6039268 08		
E 225711 28		

SOUTHBOUND FRONTAGE ROAD OF INTERBOUND HIGHWAY 35W
350' RIGHT-OF-WAY



STA 1+76.06 - STORM CULVERT 'A'
INSTALL 6:1 SAFETY END TREATMENT FOR 2'-24" RCP CULVERTS PER TxDOT DETAIL SETP-PD
FL 2'-24" RCP IN = 778.40

ADJUST THE TOP OF THE EXISTING UTILITY VAULT TO FINISHED GRADE

STA 1+00.00 - STORM CULVERT 'A'
INSTALL 6:1 SAFETY END TREATMENT FOR 2'-24" RCP CULVERTS PER TxDOT DETAIL SETP-PD
FL 2'-24" RCP OUT = 777.60

EASTERN DETENTION POND
21,065 C.F. AVAILABLE STORAGE
DETENTION AREA

CHANNEL 'A'

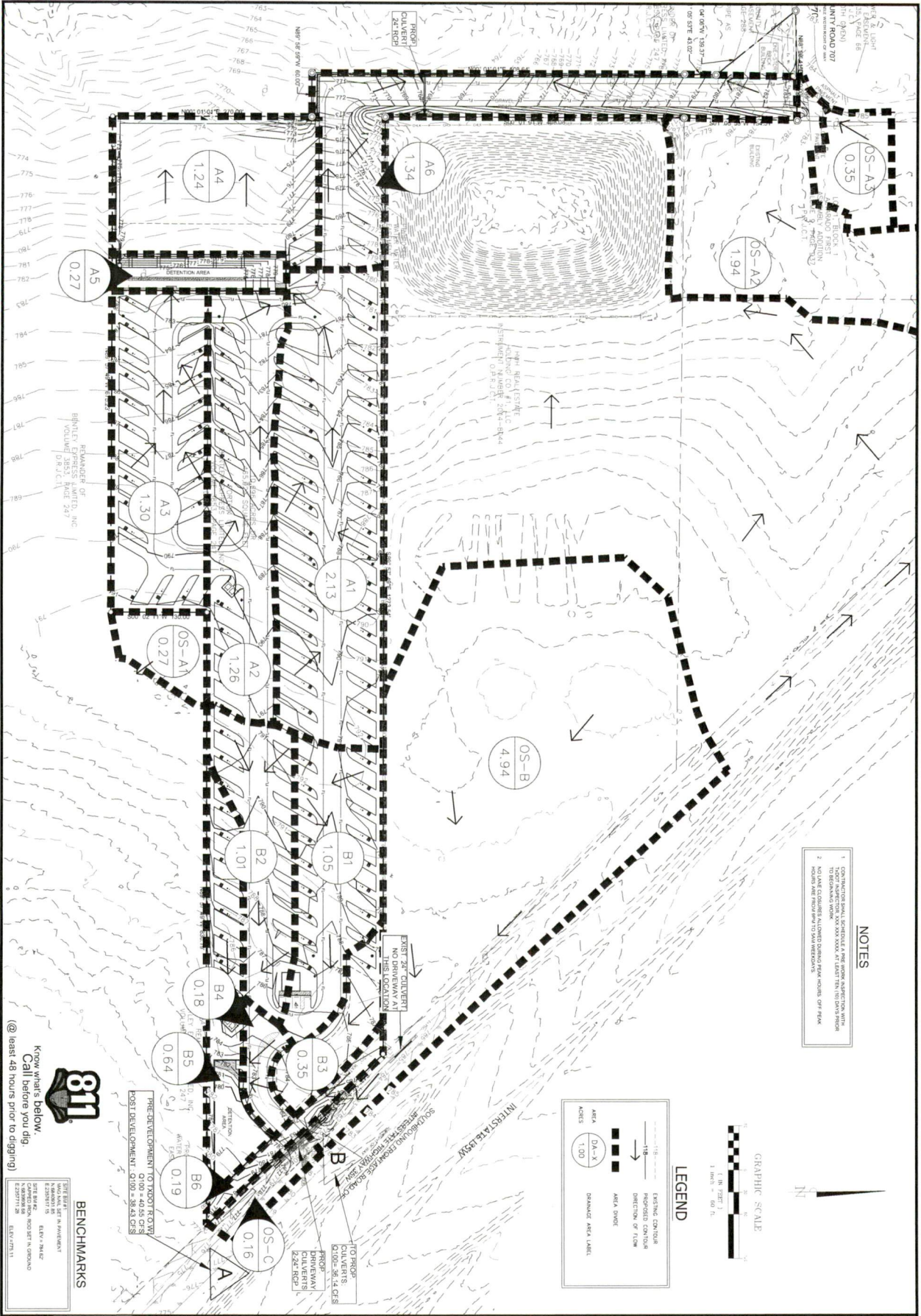


ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS
CULVERT (I-35W FRONTAGE ROAD)

No.	Draw	Revision Description



SHEET NUMBER
C-3.8



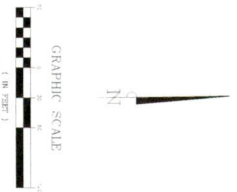
NOTES

1. CONSTRUCTION SHALL BE SCHEDULED A WEEK BEFORE INTERSECTION WITH TO BE BOUNDING WORK.
2. NO LANE CLOSURES ALLOWED DURING PEAK HOURS OF TRAFFIC.

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- AREA DROVE
- DRAINAGE AREA LABEL

AREA DA-X
KIND 1.00



811

Know What's Below.
Call before you dig.
@ least 48 hours prior to digging!

BENCHMARKS

MARK	DESCRIPTION	ELEVATION
BENCH 1	WOOD SIGN IN PAVEMENT	752.91
BENCH 2	WOOD SIGN IN PAVEMENT	752.91
BENCH 3	ELEV. MARK	752.91
BENCH 4	WOOD SIGN IN PAVEMENT	752.91
BENCH 5	WOOD SIGN IN PAVEMENT	752.91
BENCH 6	WOOD SIGN IN PAVEMENT	752.91

No.	Date	Revision Description

PROJECT NO.: 235-21-001

ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS

PROPOSED DRAINAGE AREA MAP

BANNISTER ENGINEERING

240 North Mitchell Road | Mansfield, TX 76063 | 817.842.2094 | 817.842.2095 fax
REGISTRATION # F-10599 (TEXAS)

ISWM TECHNICAL MANUAL-HYDROLOGY

Table 1-6 Recommended Runoff Coefficient Values

Description of Area	Runoff Coefficient (C)
Lawns	
Sandy soil, flat, 2%	0.10
Sandy soil, average, 2 - 7%	0.15
Sandy soil, very, 7 - 15%	0.20
Clay soil, flat, 2%	0.17
Clay soil, average, 2 - 7%	0.22
Clay soil, steep, 7 - 15%	0.30
Asphalt	
Streets, Lanes, Water Surfaces	1.00
Business	
Commercial areas	0.50
Neighborhood areas	0.70
Residential	
Single Family (0.8 acre or less)	0.45
Single Family (1.4 acre or less)	0.50
Small Family (2 acre or less)	0.55
Single Family (1+ acre or less)	0.45
Multi-Family (apts, duplex)	0.60
Multi-Family (theory)	0.65
Commercial/Industrial	
Light areas	0.70
Heavy areas	0.80
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad yard areas	0.40
Streets	
Asphalt and Concrete	0.85
Stucco	0.80
Drives, walks, and roads	0.50
Drives areas	0.30
Concrete or no plant cover	
Beauty mat, flat, 0 - 1%	0.30
Beauty mat, flat, 1 - 2%	0.40
Beauty mat, flat, 2 - 3%	0.50
Beauty mat, average, 0 - 10%	0.60

JOHNSON COUNTY SUBDIVISION RULES AND REGULATIONS

RUNOFF COEFFICIENTS FOR TYPES OF LAND USE
 Type of Area Adjusted Runoff Coefficient (C)
 of Land Use (Ratio of Runoff to Rainfall)

Parks or Open Areas: 0.30
 Residential (1 acre or more): 0.35
 Residential (1 acre or less than 1 acre): 0.30
 Industrial: 0.70
 Apartments: 0.70
 Business: 0.80
 Mercantile District: 0.80

Subdivision Rules and Regulations of Johnson County An Amended January 15, 2011

JOHNSON COUNTY SUBDIVISION RULES AND REGULATIONS

(b)

Type of Area	Minimum Time	Maximum Time
Open Areas	20 minutes	30 minutes
Residential	15 minutes	20 minutes
Industrial	10 minutes	15 minutes
Business	10 minutes	20 minutes
Mercantile	5 minutes	20 minutes

Proposed Composite "C"

DRAINAGE AREA (ACRES)	AREA (ACRES)	C	Tc (MIN)	I5 (in/hr)	I10 (in/hr)	I25 (in/hr)	Q5 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)	COMMENTS
A1											
Concrete	0.90	0.31	0.40	0.25							
Grass	0.90	0.29	0.30	0.28							
Total	1.80	0.30	0.35	0.265							
A2											
Concrete	0.71	0.56	0.40	0.43							
Grass	0.32	0.25	0.30	0.28							
Gravel	0.16	0.19	0.35	0.38							
Total	1.19	0.39	0.40	0.40							
A3											
Concrete	0.42	0.35	0.40	0.38							
Grass	0.45	0.25	0.30	0.28							
Gravel	0.43	0.30	0.30	0.30							
Total	1.30	0.30	0.33	0.32							
A4											
Concrete	0.09	0.50	0.40	0.50							
Grass	1.20	0.27	0.30	0.29							
Gravel	0.70	0.30	0.30	0.31							
Total	2.00	0.34	0.33	0.34							
A5											
Concrete	0.05	0.19	0.40	0.15							
Grass	0.32	0.21	0.35	0.24							
Total	0.37	0.20	0.40	0.20							
A6											
Concrete	0.81	0.50	0.40	0.48							
Grass	0.38	0.28	0.30	0.29							
Gravel	0.19	0.11	0.30	0.26							
Total	1.38	0.30	0.33	0.32							
A7											
Concrete	0.40	0.43	0.30	0.34							
Grass	0.22	0.24	0.30	0.27							
Gravel	0.31	0.31	0.30	0.30							
Total	0.93	0.33	0.33	0.31							
A8											
Concrete	0.37	0.30	0.40	0.40							
Grass	0.15	0.27	0.30	0.28							
Gravel	0.32	0.30	0.30	0.30							
Total	0.84	0.29	0.33	0.33							
A9											
Concrete	0.17	0.57	0.40	0.77							
Grass	0.01	0.03	0.30	0.02							
Total	0.18	0.50	0.30	0.75							
B1											
Concrete	0.47	0.74	0.30	0.32							
Grass	0.17	0.37	0.30	0.28							
Total	0.64	0.70	0.30	0.30							

PROPOSED RUNOFF

DRAINAGE AREA (ACRES)	AREA (ACRES)	C	Tc (MIN)	I5 (in/hr)	I10 (in/hr)	I25 (in/hr)	Q5 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)	COMMENTS
A1	2.15	0.58	10	5.71	6.43	7.50	9.14	7.05	7.94	9.25	11.29
A2	1.26	0.70	10	5.71	6.43	7.50	9.14	5.04	5.68	6.62	8.08
A3	1.30	0.58	10	5.71	6.43	7.50	9.14	4.20	4.83	5.63	6.87
A4	1.34	0.31	10	5.71	6.43	7.50	9.14	2.15	2.42	2.83	3.48
A5	0.27	0.42	10	5.71	6.43	7.50	9.14	0.86	0.74	0.87	1.06
A1+A2+A3+A5	4.96	0.60	10	5.71	6.43	7.50	9.14	17.04	19.18	22.37	27.29
A6	1.34	0.71	10	5.71	6.43	7.50	9.14	5.87	6.16	7.18	8.76
B1	0.95	0.64	10	5.71	6.43	7.50	9.14	3.49	3.92	4.57	5.57
B2	0.74	0.89	10	5.71	6.43	7.50	9.14	2.86	3.25	3.79	4.62
B3	0.35	0.32	10	5.71	6.43	7.50	9.14	0.80	0.71	0.83	1.01
B4	0.18	0.53	10	5.71	6.43	7.50	9.14	0.95	1.07	1.24	1.52
B5	0.64	0.35	10	5.71	6.43	7.50	9.14	1.30	1.48	1.70	2.08
B6	0.16	0.40	10	5.71	6.43	7.50	9.14	0.32	0.36	0.42	0.51
B1+B2+B3+B4	2.21	0.63	10	5.71	6.43	7.50	9.14	7.84	8.94	10.43	12.72
B1+B2+B3+B4+B5	2.86	0.57	10	5.71	6.43	7.50	9.14	9.24	10.41	12.13	14.80
OB-A1	0.27	0.30	20	4.21	4.81	5.64	7.03	0.34	0.39	0.46	0.57
OB-A2	1.96	0.30	20	4.21	4.81	5.64	7.03	2.45	2.80	3.28	4.09
OB-A3	0.35	0.60	10	5.71	6.43	7.50	9.14	1.60	1.80	2.10	2.56
OS-A1+OS-A2+A6	3.63	0.50	10	5.71	6.43	7.50	9.14	10.39	11.70	13.64	16.84
OS-D	4.94	0.60	10	5.71	6.43	7.50	9.14	22.56	25.40	29.62	36.14
OS-C	0.16	0.80	10	5.71	6.43	7.50	9.14	0.15	0.84	0.98	1.30
East Pond Outfall + OS-B + OS-C + B6								24.06	27.07	31.53	38.43

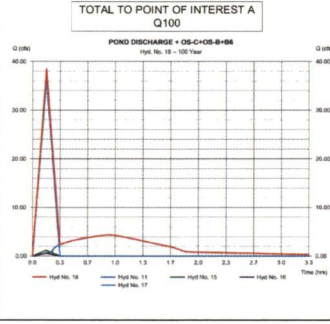
Hydrograph Report

Hydrograph Extension for Autodesk Civil 3D by Autodesk, Inc. L022
 Friday, 07/18/2011

Hyd. No. 18
 POND DISCHARGE + OS-C+OS-B+OB

Hydrograph type = Combine
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hydro. = 11, 15, 16, 17

Peak discharge = 38.43 cfs
 Time to peak = 0.17 hrs
 Hyd. volume = 44,178 cuft
 Corbett drain area = 5.250 ac

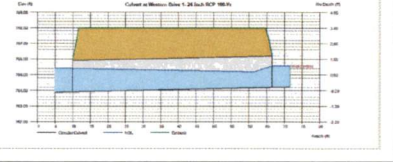


Culvert Report

Hydrograph Extension for Autodesk Civil 3D by Autodesk, Inc. L022
 Friday, Jul 15 2011

Culvert at Western Drive 1-24 inch RCP 100-Yr

Invert Elev On (ft)	= 763.91	Calculations	
Pipe Length (ft)	= 98.50	Qmin (cfs)	= 7.65
Slope (%)	= 0.51	Qmax (cfs)	= 25.00
Invert Elev Up (ft)	= 764.20	Q = (Qc+D)/2	
Rise (ft)	= 24.3	Highlighted	
Shape	= Circular	Orbit (cfs)	= 7.65
Span (ft)	= 24.0	Capex (cfs)	= 7.65
n-Value	= 1	Covertop (cfs)	= 0.00
r-Value	= 0.013	Veloc On (ft/s)	= 3.04
Culvert Type	= Circular Concrete	Veloc Up (ft/s)	= 4.08
Culvert Entrance	= Groove end subheadwall (C)	HOL On (ft)	= 785.40
Coef K _{M,C,Y,k}	= 0.0018, 2, 0.0292, 0.74, 0.2	HOL Up (ft)	= 785.13
Embankment		Hw Elev (ft)	= 785.57
Top Elevation (ft)	= 788.00	HwD (ft)	= 0.69
Top Width (ft)	= 53.00	Flow Regime	= Intel Control
Crest Width (ft)	= 5.00		



WEST DETENTION POND

WEST POND VOLUME CALCULATIONS

ELEVATION	AREA	VOLUME	TOTAL VOLUME
774.5	3	0	0
775	5,478	1,371	1,371
776	8,346	5,912	7,283
777	7,274	6,810	14,093
778	8,207	7,721	21,860
779	9,293	8,780	30,643
790	10,564	9,829	40,572

WEST DETENTION POND SUMMARY

Storm Event	Estimated Required Storage (cu ft)	Target Elevation (cfs)	Design Elevation (cfs)	Storage Provided (cu ft)	Q Outflow (cfs)	Top of Berm (ft)	Floodboard (ft)
100-YEAR	25,806	776.45	5.88	778.36	24,944	5.00	780.0
25-YEAR	20,103	777.77	4.60	777.52	19,119	4.15	780.0
10-YEAR	16,835	777.36	3.88	777.06	14,376	3.73	780.0
5-YEAR	14,498	777.01	3.30	776.70	11,021	3.36	780.0

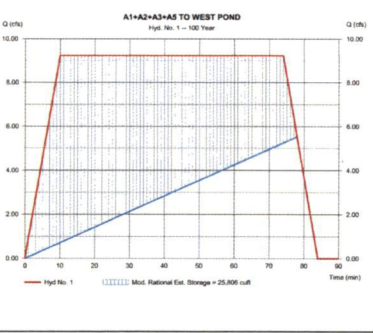
Hydrograph Report

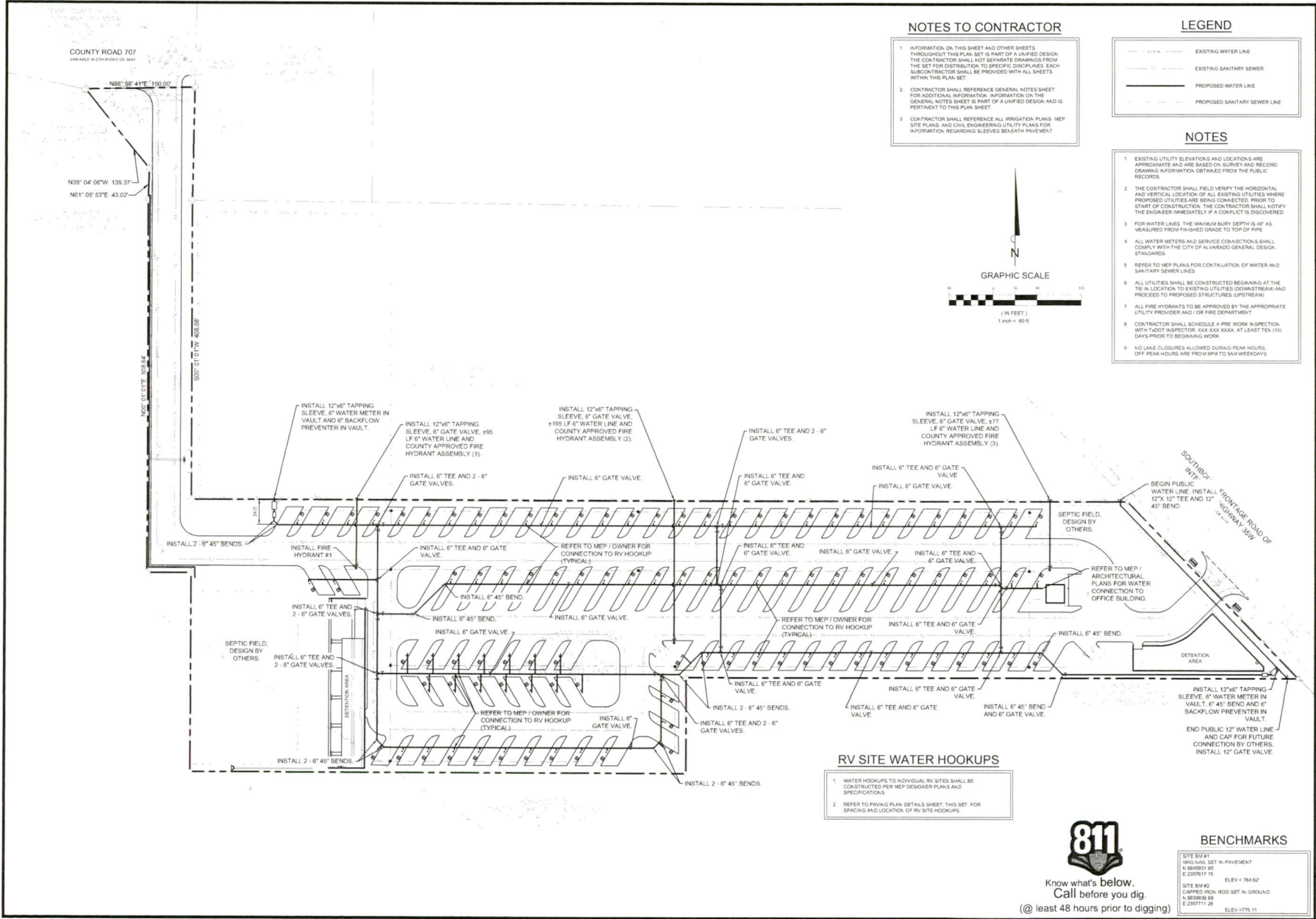
Hydrograph Extension for Autodesk Civil 3D by Autodesk, Inc. L022
 Friday, 07/18/2011

Hyd. No. 1
A1+A2+A3+A5 TO WEST POND

Hydrograph type = Mod. Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 4,892 ac
 Intensity = 3.382 in/hr
 IDF Curve = Johnson County IDF
 Target C = $C=0.980$ cfs

Peak discharge = 9.226 cfs
 Time to peak = 10 min
 Hyd. volume = 40,982 cuft
 Runoff coeff. = 0.507
 Tc-by User = 10.00 min
 Storm duration = 7.4 x Tc
 Est. Ret'd Storage = $25,806$ cuft





BANNISTER ENGINEERING
 246 North Nichols Road, Mesquite, TX 75069 | 972.262.2094 | 817.942.2093 fax
 REGISTRATION # E-10599 (TEXAS)

ALVARADO RV PARK
 SOUTHBOUND IH-35 W ACCESS ROAD
 ALVARADO, TEXAS

WATER PLAN

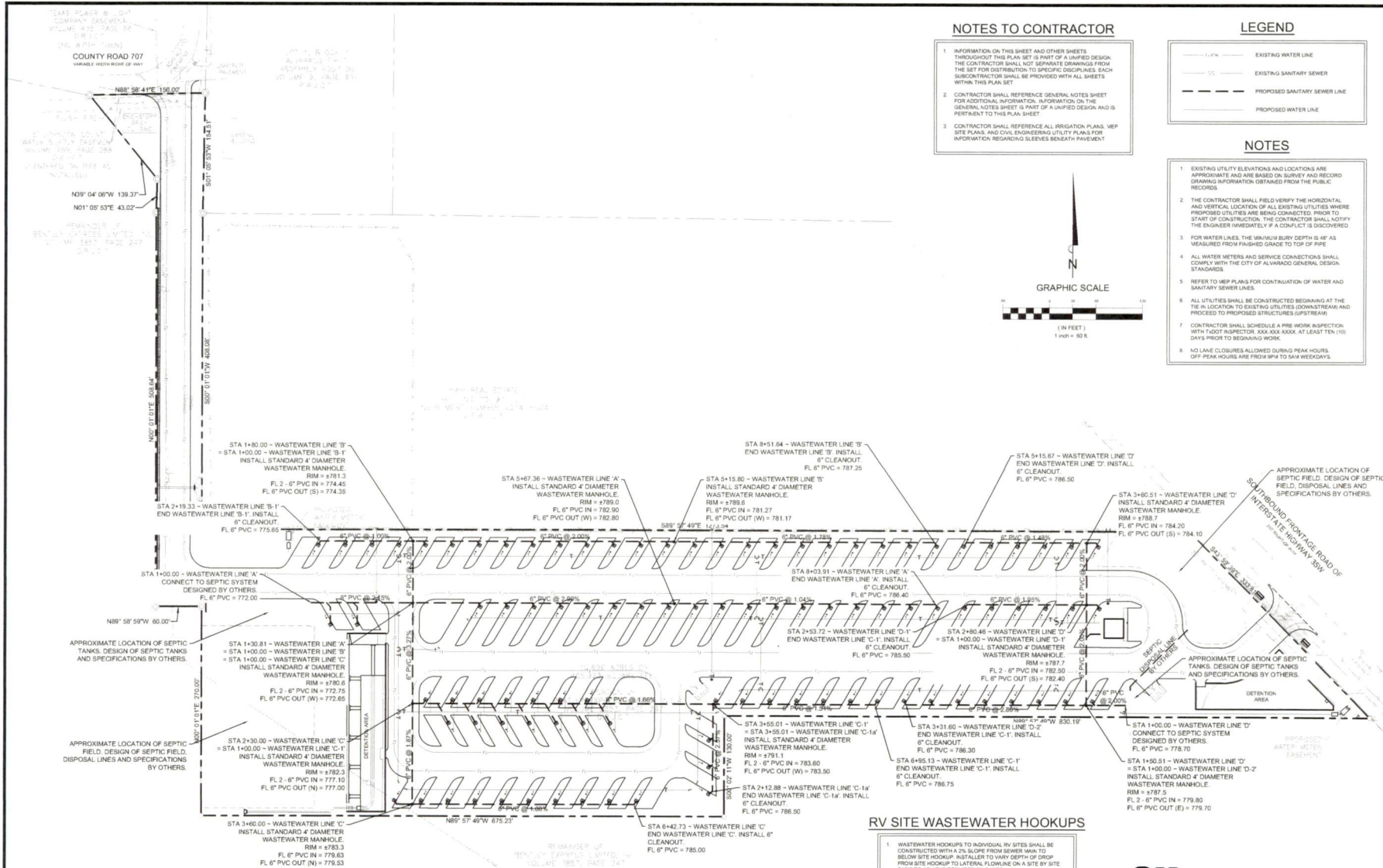
No. Date Revision Description

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STATE OF TEXAS
 SECTOR 7, SOTTELLO
 1645001
 (Exp. 08/31/2024)

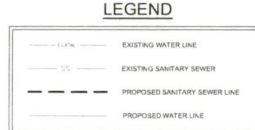
John Sotello
 11/23/2024

SHEET NUMBER
C-5.1



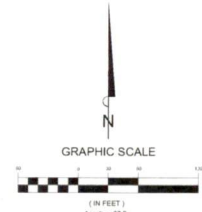
NOTES TO CONTRACTOR

- INFORMATION ON THIS SHEET AND OTHER SHEETS THROUGHOUT THIS PLAN SET IS PART OF A INTEGRATED DESIGN. THE CONTRACTOR SHALL NOT SEPARATE DRAWINGS FROM THE SET FOR DISTRIBUTION TO SPECIFIC CONTRACTORS. EACH SUBCONTRACTOR SHALL BE PROVIDED WITH ALL SHEETS WITHIN THIS PLAN SET.
- CONTRACTOR SHALL REFERENCE GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION. INFORMATION ON THE GENERAL NOTES SHEET IS PART OF AN INTEGRATED DESIGN AND IS PERTINENT TO THIS PLAN SET.
- CONTRACTOR SHALL REFERENCE ALL IRRIGATION PLANS, MEP SITE PLANS, AND CIVIL ENGINEERING UTILITY PLANS FOR INFORMATION REGARDING SLEEVES BENEATH PAVEMENT.



NOTES

- EXISTING UTILITY ELEVATIONS AND LOCATIONS ARE APPROXIMATE AND ARE BASED ON SURVEY AND RECORD DRAWING INFORMATION OBTAINED FROM THE PUBLIC RECORDS.
- THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES WHERE PROPOSED UTILITIES ARE BEING CONNECTED. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF A CONFLICT IS DISCOVERED.
- FOR WATER LINES, THE MINIMUM BURY DEPTH IS 48\"/>



ALVARADO RV PARK
SOUTHBOUND IH-35 W ACCESS ROAD
ALVARADO, TEXAS

No.	Date	Revision Description



SHEET NUMBER
C-5.2

RV SITE WASTEWATER HOOKUPS

- WASTEWATER HOOKUPS TO INDIVIDUAL RV SITES SHALL BE CONSTRUCTED WITH A 2% SLOPE FROM SEWER MAIN TO BELOW SITE HOOKUP. INSTALLER TO VARY DEPTH OF DROP FROM SITE HOOKUP TO LATERAL FLOWLINE ON A SITE BY SITE BASED TO ACHIEVE REQUIRED 2% SLOPE.
- REFER TO PAVING PLAN DETAILS SHEET THIS SET FOR SPACING AND LOCATION OF RV SITE HOOKUPS.



Know what's below.
Call before you dig.
(@ least 48 hours prior to digging)

BENCHMARKS

SITE BM #1	4\"/>
SITE BM #2	4\"/>
SITE BM #3	4\"/>
SITE BM #4	4\"/>
SITE BM #5	4\"/>